For safety and warning information, please read this manual before attempting to use the equipment.

Additional safety and warning information is provided within the MT8852B Bluetooth Test Set Operation Manual. Please also refer to it before using the equipment.

Keep this manual with the equipment.
Safety Symbols

To prevent the risk of personal injury or loss related to equipment malfunction, Anritsu Corporation uses the following safety symbols to indicate safety-related information. Ensure that you clearly understand the meanings of the symbols BEFORE using the equipment. Some or all of the following symbols may be used on all Anritsu equipment. In addition, there may be other labels attached to products that are not shown in the diagrams in this manual.

Symbols Used in Manuals

- **DANGER**
  - This indicates a very dangerous procedure that could result in serious injury or death if not performed properly.
- **WARNING**
  - This indicates a hazardous procedure that could result in serious injury or death if not performed properly.
- **CAUTION**
  - This indicates a hazardous procedure or danger that could result in light-to-severe injury, or loss related to equipment malfunction, if proper precautions are not taken.

Safety Symbols Used on Equipment and in Manuals

The following safety symbols are used inside or on the equipment near operation locations to provide information about safety items and operation precautions. Ensure that you clearly understand the meanings of the symbols and take the necessary precautions BEFORE using the equipment.

- This indicates a prohibited operation. The prohibited operation is indicated symbolically in or near the barred circle.
- This indicates a compulsory safety precaution. The required operation is indicated symbolically in or near the circle.
- This indicates a warning or caution. The contents are indicated symbolically in or near the triangle.
- This indicates a note. The contents are described in the box.
- These indicate that the marked part should be recycled.
Notes On Export Management

This product and its manuals may require an Export License/Approval by the Government of the product's country of origin for re-export from your country. Before re-exporting the product or manuals, please contact us to confirm whether they are export-controlled items or not. When you dispose of export-controlled items, the products/manuals need to be broken/shredded so as not to be unlawfully used for military purpose.
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Chapter 1 — General Information

1-1  About this Manual

This manual provides instructions on the remote operation of the following model types:

- MT8852B Bluetooth Test Set (with EDR and Audio)
- MT8852B-040 Bluetooth Test Set (without EDR or Audio)
- MT8852B-041 Bluetooth Test Set (without EDR but with Audio)
- MT8852B-042 Bluetooth Test Set (with EDR but without Audio)
- MT8852B-043 Bluetooth Test Set for Low Energy tests only (without EDR or Audio)

Explanations in this manual apply equally to all of the above model types unless otherwise stated.

Comments on this Manual

Every effort has been made to ensure that this manual is thorough, easy to use, and free from errors. However, to ensure continued improvement, we would welcome your comments on this, or any other Anritsu document.

Please contact us at the address below if you have any comments, good or bad, find any errors or omissions, or have any suggestions on how our documentation could be improved further.

Bluetooth.support@anritsu.com

Your comments will be logged and reviewed, and whenever possible, will be reflected in a subsequent release of the document.

Software Versions

This manual provides details of the remote operation of the following software versions:

- MT8852B: 5.00.016(N)
- MT8852B-040: 5.00.016(N)
- MT8852B-041: 5.00.016(N)
- MT8852B-042: 5.00.016(N)
- MT8852B-043: 5.00.016(N)

Some of the features documented in this manual may not be available to users of earlier software releases. Check the version of software you are using by following the procedure below.

1. Power up the unit and press [Config].
2. Select "MT8852B" and press [Sel].
3. Select "Identity" and press [Sel].
4. Check the number that displays to the right of "Version".
Notification of Software Release

The MT8852B software is periodically updated as new features are added to meet market demands. To receive automatic notification of software releases, send a blank e-mail with the subject heading of "MT8852B Software Notification Request" to Bluetooth.support@anritsu.com. You will receive an e-mail when new software is available to download.

Associated Documentation

In addition to this manual, the following document is also available on the Product CD shipped with the MT8852B Bluetooth Test Set.

Table 1-1. Associated Documentation

<table>
<thead>
<tr>
<th>Part number</th>
<th>Document</th>
</tr>
</thead>
<tbody>
<tr>
<td>W3968AE</td>
<td>MT8852B Bluetooth Test Set Operation Manual</td>
</tr>
</tbody>
</table>

The above document is in PDF format and can be viewed using Adobe Reader™, a freeware program that can be downloaded from http://www.adobe.com/.

Conventions

The following conventions have been adopted in this manual.

Table 1-2. Notation Conventions

<table>
<thead>
<tr>
<th>Item</th>
<th>Convention</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT8852B</td>
<td>Unless otherwise stated, the name “MT8852B” is used generically throughout this manual to refer to all model types of the MT8852B Bluetooth Test Set. Refer to the table on the following page for details of model types.</td>
</tr>
<tr>
<td>EUT</td>
<td>The Bluetooth enabled device being tested is referred to as the EUT (Equipment Under Test).</td>
</tr>
<tr>
<td>Config</td>
<td>The five hard keys (Run, Loop/Stop, Script, Config, and Preset) are depicted using an image of the key in question.</td>
</tr>
<tr>
<td>Sel</td>
<td>The keys on the numeric keypad are depicted using an image of the key in question.</td>
</tr>
<tr>
<td>[Setup]</td>
<td>The names of soft keys appearing on the front panel are enclosed in square brackets.</td>
</tr>
<tr>
<td>“Output Power”</td>
<td>Test appearing on the display is enclosed in quotation marks when used in a body of text. Items with quotation marks are selected by pressing [Sel].</td>
</tr>
<tr>
<td>Config &gt; “MT8852B”</td>
<td>A chevron (&gt;) is used to indicate that the user should select the items or keys in sequential order.</td>
</tr>
<tr>
<td>[Log Capture]</td>
<td>The names of software windows and dialogs are enclosed in square brackets.</td>
</tr>
</tbody>
</table>
1-2 Command Format

The commands are presented in a structured manner as shown below.

Set command format  For each command, the command name and syntax are detailed. For example:
COMMAND<ws>[<param1>,<param2>,<paramN>]
Each of the allowable values for the command argument(s) is described.

Remarks  An expanded description of the command, how to use it, and programming hints or restrictions.

Example  An example of the command in use.

Query command format  The command used when requesting a response from the MT8852B.

Response  The command string returned from the MT8852B.

Example  An example of a response from the MT8852B.
Chapter 2 — GPIB Overview

The MT8852B Bluetooth Test Set can be operated remotely through a General Purpose Interface Bus (GPIB) connection to a host computer. The MT8852B conforms to the IEEE488.1 and IEEE488.2 standards.

2-1 Requirements when using GPIB

A GPIB card, cable, and the associated control software are required to communicate with the MT8852B over the GPIB bus.

2-2 Syntax

The following rules must be adhered to when sending GPIB commands to the instrument.

1. An ASCII space must be present between the command mnemonic and the first parameter.
2. All subsequent parameters must be separated by commas (,).
3. Multiple commands may be sent on the same line, but each must be separated by a semicolon (;).

The conventions used are detailed in the table below.

Table 2-1. GPIB Syntax Rules

<table>
<thead>
<tr>
<th>Item</th>
<th>Meaning</th>
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<tr>
<td>&lt;&gt;</td>
<td>The parameters or characters within the angled brackets must be present. Throughout this document the angled brackets are employed merely as a convention to help users interpret the commands. They must not be included in the command string when issuing commands over GPIB.</td>
</tr>
<tr>
<td>ws</td>
<td>White space character.</td>
</tr>
<tr>
<td>[]</td>
<td>Optional parameters. Do not include the square brackets in the command string.</td>
</tr>
<tr>
<td>,</td>
<td>Parameter separator. All GPIB commands having more than one parameter must use the comma (,) separator between each parameter.</td>
</tr>
<tr>
<td>;</td>
<td>Message unit terminator. A GPIB command message can be made up of a number of command units separated by the semicolon, as seen in the following example.</td>
</tr>
<tr>
<td></td>
<td>COMMAND param1a,param1b;COMMAND2 param2a</td>
</tr>
<tr>
<td></td>
<td>The mnemonics and all the parameters can use either upper or lower case characters unless specified otherwise.</td>
</tr>
</tbody>
</table>
2-3 Termination

All commands sent over the GPIB interface to the MT8852B must be terminated with either (or both) of the following:

End Of String (EOS): The ‘\n’ or 0x0A character.

End Of message Indicator (EOI): A hardware line on the GPIB interface bus.

2-4 Suffixes

Parameters containing floating-point values can use the E-0x convention or a suffix multiplier. The GPIB unit conventions specified by the IEEE have been implemented for the suffix units and multipliers. The suffix unit is always allowed but is not required and is shown in brackets where appropriate.

The following table lists the numeric suffixes for the MT8852B Bluetooth Test Set. Suffix units are optional and can be omitted.

<table>
<thead>
<tr>
<th>Suffix Multipliers</th>
<th>Suffix Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definition</td>
<td>Mnemonic</td>
</tr>
<tr>
<td>1E18</td>
<td>EX</td>
</tr>
<tr>
<td>1E15</td>
<td>PE</td>
</tr>
<tr>
<td>1E12</td>
<td>T</td>
</tr>
<tr>
<td>1E9</td>
<td>G</td>
</tr>
<tr>
<td>1E6</td>
<td>MA</td>
</tr>
<tr>
<td>1E3</td>
<td>K</td>
</tr>
<tr>
<td>1E-3</td>
<td>M</td>
</tr>
<tr>
<td>1E-6</td>
<td>U</td>
</tr>
<tr>
<td>1E-9</td>
<td>N</td>
</tr>
<tr>
<td>1E-12</td>
<td>P</td>
</tr>
<tr>
<td>1E-15</td>
<td>F</td>
</tr>
<tr>
<td>1E-18</td>
<td>A</td>
</tr>
</tbody>
</table>

For example 10 microseconds can be represented in any of the following formats:

a. Straight value format 0.000010

b. With the E format 10E-6

c. Suffix multiplier format 10U
2-5 GPIB 488.2 Registers

The following diagram shows the GPIB event and status registers. The meaning of each bit is described below.

Status Byte Register and Service Request Enable Register

---

**Table 2-3.** STB and SRE Bit Definitions

| RQS/MSS | When the Status byte is read via a Serial Poll operation this bit is RQS (Request Service). When the Status byte is read via the *STB? Command this bit is MSS (Master Summary Status). This bit has no function in the Service Request Enable Register. (Request service) This bit is set when one of the other bits in the status byte is set and the corresponding bit in the Service Request Enable Register (SRE) has been set. When this bit is set an SRQ is indicated over the GPIB interface. The SRQ is cleared by a serial poll, the status byte returned to the controller and the bit that caused the SRQ is cleared. (Master Summary Status) This bit is the inclusive OR of the bitwise combination (excluding bit 6) of the Status Byte register and the Service Request Enable register. Note that the *STB? Command does not alter the Status byte, nor will it clear an SRQ. |
Table 2-4.

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESB</td>
<td>(Event status bit) When a bit is set in the event register and the corresponding bit has been set in the event status enable register (ESE) the ESB bit in the status register is set.</td>
</tr>
<tr>
<td>MAV</td>
<td>(Message available) This bit is always set when there is data available to be read out from the output buffer and it is cleared when the output buffer is empty.</td>
</tr>
<tr>
<td>CHG</td>
<td>(Change indication) This bit is cleared at power ON initialisation, following a serial poll, or upon sending the *CLS command. This bit is set when one of the change bits has been set and the corresponding bit in the change status enable (CHE) register has been set.</td>
</tr>
<tr>
<td>EPS</td>
<td>(EUT Power Status) This bit is cleared at power ON initialisation or upon sending the *CLS command. This bit is set when the EUT power matches the maximum or minimum power. Use the status command to read whether max or min was reached.</td>
</tr>
<tr>
<td>ETF</td>
<td>(Equipment Test Fail) This bit is cleared at power ON initialisation or upon sending *CLS. This bit is set to indicate a test failure if the following conditions apply: One of the tests has failed (the instrument will set the appropriate bit in the ETF or EETF registers) and the appropriate bit within the ETE or EETE registers has been enabled by the user prior to running the test. See definitions of the ETF, EETF, ETE, EETE in this manual for more details.</td>
</tr>
<tr>
<td>INS</td>
<td>(Instrument status) This bit is cleared on initialisation and when the *CLS command has been sent. This bit is set when one of the instrument status bits has been set and the corresponding bit in the instrument status enable (INE) register has been set.</td>
</tr>
</tbody>
</table>

**Note**

The Status Byte register is read via a Serial Poll or with the *STB? Command. It cannot be written to directly by the user. The Service Request Enable Register is written to with the *SRE command and read with the *SRE? Command. It is cleared by *CLS.
Standard Event Status Register and Standard Event Status Enable Register

![Diagram of Standard Event Status Register]

**Figure 2-2.** Standard Event Status and Standard Event Status Enable Registers

**Table 2-5.** ESR and ESE Bit Definitions

<table>
<thead>
<tr>
<th>Bit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Operation complete. When a program message that includes the *OPC command has been completed and the GPIB interface is idle with any responses read out of the output buffer this bit is set. For example, if the last command in a configuration sequence is *OPC, the OPC bit in the event status register is set when that configuration list has been completed.</td>
</tr>
<tr>
<td>1</td>
<td>Request Control. GPIB controllers only.</td>
</tr>
<tr>
<td>2</td>
<td>Query Error</td>
</tr>
<tr>
<td>3</td>
<td>Device Dependent Error. The specific error can be found by using the ERRLST command.</td>
</tr>
<tr>
<td>4</td>
<td>Execution error. Could not execute a command. For example, a parameter is out of the allowable range.</td>
</tr>
<tr>
<td>5</td>
<td>Command error. Received an unrecognized command.</td>
</tr>
<tr>
<td>6</td>
<td>User request</td>
</tr>
<tr>
<td>7</td>
<td>Power On bit. This bit is set on power up of the device only and cleared if the instrument is reset or receives a *CLS command. This bit only indicates that a power on has occurred.</td>
</tr>
</tbody>
</table>

**Note**

The Standard Event Status Register is read with the *ESR? Command. Reading the ESR clears it. The Standard Events Status Enable Register is written to with the *ESE command and read with the *ESE? command. Both registers are cleared by *CLS.
EUT Fail Register and Fail Enable Register

This EUT register is cleared on the start of a test or script. When a test completes, if it has failed the test limit parameters enabled to give a fail result the corresponding bit in this register is set. These events can be programmed to provide an SRQ by setting the corresponding bit(s) in the Equipment Under Test Fail Enable Register (ETE).

Table 2-6. ETF and ETE Bit Definitions

<table>
<thead>
<tr>
<th>OP</th>
<th>Output power test fail bit. This bit indicates that the output power test failed the limit criteria set.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PC</td>
<td>Power control test fail bit. This bit indicates that the power control test failed the limit criteria set.</td>
</tr>
<tr>
<td>IC</td>
<td>Initial carrier test fail bit. This bit indicates that the initial carrier test failed the limit criteria set.</td>
</tr>
<tr>
<td>CD</td>
<td>Carrier drift test fail bit. This bit indicates that the carrier drift test failed the limit criteria set.</td>
</tr>
<tr>
<td>MC</td>
<td>Modulation index test fail bit. This bit indicates that the modulation index test failed the limit criteria set.</td>
</tr>
<tr>
<td>SS</td>
<td>Single slot sensitivity test fail bit. This bit indicates that the single slot sensitivity test failed the limit criteria set.</td>
</tr>
<tr>
<td>MS</td>
<td>Multi slot sensitivity test fail bit. This bit indicates that the multi slot sensitivity test failed the limit criteria set.</td>
</tr>
<tr>
<td>MP</td>
<td>Maximum input power test fail bit. This bit indicates that the maximum input power sensitivity test failed the limit criteria set.</td>
</tr>
</tbody>
</table>

Note: The EUT Fail register is read with the *ETF?.

Figure 2-3. UET Fail and Fail Enable Registers

![Diagram of UET Fail and Fail Enable Registers]

- Output power
- Power control
- Initial carrier
- Carrier drift
- Modulation index
- Single slot sensitivity
- Multi slot sensitivity
- Maximum input power
Instrument Status Register and Instrument Status Enable Register

The INS register displays the present status of the instrument and can be used to provide SRQs for test or script completion and the connection status of the instrument by setting the corresponding bits in the INE register.

Table 2-7. INS and INE Bit Definitions

<table>
<thead>
<tr>
<th>Bit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEFG</td>
<td>BLE Frame generator counter stopped. This bit is set when the BLE Frame generator has sent the defined number of packets to the EUT.</td>
</tr>
<tr>
<td>OVT</td>
<td>Instrument Over temperature Warning.</td>
</tr>
<tr>
<td>INQ</td>
<td>EUT Address Inquiry complete.</td>
</tr>
<tr>
<td>CMP</td>
<td>Script or test completion. This bit is cleared when a test or script has started and is set on its completion or termination.</td>
</tr>
<tr>
<td>DIS</td>
<td>Disconnect. This bit is cleared when a connection has been made and set when disconnected.</td>
</tr>
<tr>
<td>CON</td>
<td>Connection. This bit is set when a connection has been made and cleared when the connection no longer exists.</td>
</tr>
</tbody>
</table>

Note: A Device Dependant Error (DDE in the ESR register) will indicate if an error occurred, causing the test or script to be aborted. The ERRLST command can be used to get the cause of the termination.

The INS register is read with the *INS? Command. It cannot be cleared by reading it or by the *CLS command. The INE register is written to by the *INE command and read by the *INE? Command. It is cleared by *CLS.
Change Register and Change Enable Register

The CHG register indicates when a change of state has occurred in the instrument, and can be used to provide SRQs by setting the corresponding bits in the CHE register.

The CHG register is read with the *CHG? command. It is cleared by reading it or with the *CLS command.

The CHE register is written to with the *CHE command and read by the *CHE? command. It is cleared by the *CLS command.

**Table 2-8. CHG and CHE Bit Definitions**

<table>
<thead>
<tr>
<th>Bit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCC</td>
<td>This bit is set to indicate when a SCO status has changed. Use the &quot;STATUS&quot; command to retrieve the present SCO status. (MT8852B and MT8852B-041 only)</td>
</tr>
<tr>
<td>USB</td>
<td>This bit is set to indicate when a USB attached status has changed. Use the &quot;STATUS&quot; command to retrieve the present USB status. (MT8852B and MT8852B-041 only)</td>
</tr>
<tr>
<td>AFH</td>
<td>This bit is set to indicate that a change has occurred to the channel map. Use &quot;AFHCFG? ACM&quot; to retrieve the present state of the map.</td>
</tr>
</tbody>
</table>
EDR EUT Fail Register and EDR EUT Fail Enable Register (MT8852B and MT8852B-042 only)

The EDR EETF Test Fail register is cleared at the start of a test or script. If an EDR test fails any of the test limits applied, the appropriate bit within the EETF register is set (e.g. if the EDR Sensitivity test fails, the EBS bit is set to '1'). To program the GPIB to provide an SRQ event upon failure of any of the EDR tests, the appropriate bit(s) must be set within the EDR EETE Fail Enable register.

**Figure 2-6.** EDR EUT Fail and EDR EUT Fail Enable Registers

**Table 2-9.** EETF and EETE Bit Definitions

<table>
<thead>
<tr>
<th>Bit</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPC</td>
<td>Enhanced Power Control test fail bit. This bit indicates whether or not the test failed the limits criteria set.</td>
</tr>
<tr>
<td>EMP</td>
<td>EDR Maximum Input Power test fail bit. This bit indicates whether or not the test failed the limits criteria set.</td>
</tr>
<tr>
<td>EFS</td>
<td>EDR Floor Sensitivity test fail bit. This bit indicates whether or not the test failed the limits criteria set.</td>
</tr>
<tr>
<td>EBS</td>
<td>EDR Sensitivity test fail bit. This bit indicates whether or not the test failed the limits criteria set.</td>
</tr>
<tr>
<td>EDP</td>
<td>EDR Differential Phase Encoding test fail bit. This bit indicates whether or not the test failed the limits criteria set.</td>
</tr>
<tr>
<td>ECM</td>
<td>EDR Carrier Frequency Stability and Modulation Accuracy test fail bit. This bit indicates whether or not the test failed the limits criteria set.</td>
</tr>
<tr>
<td>ERP</td>
<td>EDR Relative Transmit Power. This bit indicates whether or not the test failed the limits criteria set.</td>
</tr>
</tbody>
</table>

**Note** The EDR EUT Fail register is read with the *EETF? query.
2nd EDR EUT Fail Register and 2nd EDR EUT Fail Enable Register (MT8852B and MT8852B-042 Only)

Except the test targets, the 2nd EDR EETF Test Fail register and the 2nd EDR EETE Fail Enable register are same as the EDR EETF Test Fail register and the EDR EETE Fail Enable register.

Table 2-10. 2nd EETF and 2nd EETE Bit Definitions

<table>
<thead>
<tr>
<th>EGT</th>
<th>EDR Guard Time test fail bit. This bit indicates whether or not the test failed the limits criteria set.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EST</td>
<td>EDR Synchronization Sequence and Trailer test fail bit. This bit indicates whether or not the test failed the limits criteria set.</td>
</tr>
</tbody>
</table>

Note: The 2nd EDR EUT Fail register is read with the *EETF2? Query.
BLE EUT Fail Register and BLE EUT Fail Enable Register (MT8852B-043 and units with option 27 only)

The BLE LEETF Test Fail register is cleared at the start of a test or script. If a BLE test fails any of the test limits applied, the appropriate bit within the LEETF register is set (e.g., if the BLE Sensitivity test fails, the LESS bit is set to '1'). To program the GPIB to provide an SRQ event upon failure of any of the BLE tests, the appropriate bit(s) must be set within the BLE LEETE Fail Enable register.

### Table 2-11. LEETF and LEETE Bit Definitions

<table>
<thead>
<tr>
<th>Bit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEPRI</td>
<td>PER integrity test fail bit. This bit indicates that the PER integrity test failed the limit criteria set.</td>
</tr>
<tr>
<td>LEOP</td>
<td>Output power test fail bit. This bit indicates that the output power test failed the limit criteria set.</td>
</tr>
<tr>
<td>LEICD</td>
<td>Initial carrier test fail bit. This bit indicates that the initial carrier test failed the limit criteria set.</td>
</tr>
<tr>
<td>LEMI</td>
<td>Modulation index test fail bit. This bit indicates that the modulation index test failed the limit criteria set.</td>
</tr>
<tr>
<td>LESS</td>
<td>Single slot sensitivity test fail bit. This bit indicates that the single slot sensitivity test failed the limit criteria set</td>
</tr>
<tr>
<td>LEMP</td>
<td>Maximum input power test fail bit. This bit indicates that the maximum input power sensitivity test failed the limit criteria set</td>
</tr>
<tr>
<td>LEPS</td>
<td>Tx power stability test fail bit. This bit indicates that the Tx power stability test failed the limit criteria set</td>
</tr>
</tbody>
</table>

**Note** The EUT Fail register is read with the *LEETF? query.
2-6  GPIB over RS232

Version 1.1 or above of the control software supports the use of RS232 in addition to GPIB commands. Use the RS232 connector on the rear panel of the unit.

Hardware handshake CTS and RTS lines are used to control the flow of data in and out of the tester and must be available in the cable as hardware handshaking is always enabled. The RS232 cable used between the COM port on the PC and the connector on the rear of the MT8852B must be of a Null Modem type such as that supplied with the MT8852B itself.

The DTR and DSR lines are connected together within the tester.

The MT8852B Bluetooth test set’s serial connector pin-outs are:

**Table 2-12. Serial Connector Pin Outputs**

<table>
<thead>
<tr>
<th>Pin</th>
<th>Signal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>NOT USED</td>
</tr>
<tr>
<td>2</td>
<td>Rx Data</td>
</tr>
<tr>
<td>3</td>
<td>Tx Data</td>
</tr>
<tr>
<td>4</td>
<td>DTR handshake signal</td>
</tr>
<tr>
<td>5</td>
<td>Signal ground</td>
</tr>
<tr>
<td>6</td>
<td>DSR handshake signal</td>
</tr>
<tr>
<td>7</td>
<td>RTS handshake signal</td>
</tr>
<tr>
<td>8</td>
<td>CTS handshake signal</td>
</tr>
<tr>
<td>9</td>
<td>NOT USED</td>
</tr>
</tbody>
</table>

The serial interface baud rate can be set using the MT8852B “System Interfaces” menu under the **Config** menu. Available baud rates are; 1200, 2400, 4800, 9600 (default), 19200, 38400, 57600, and 115200. The other RS232 parameters are predefined as 8 bits, no parity and 1 stop bit and cannot be changed.

Commands are entered in the same manner as the GPIB interface, conforming to the GPIB command format. All GPIB commands are supported. There are some additional commands, specific to the serial interface that are prefixed with an exclamation mark (!). All GPIB type commands and command strings should be terminated with a new line character (0A hex). The special serial mode commands do NOT require a termination character.

Requested data is returned in the same format as GPIB, but with a preceding 'R' and a terminating new line character.

SRQs are available, and are output as an SRQ message 'S' followed by a terminating new line character. When the SRQ message has been received, an "!SPL" command (equivalent to the GPIB serial poll) can be issued. The tester will respond with the serial poll data message, which is a single character, proceeded by 'P' and terminated by a new line character.

A device clear message !DCL can be sent to clear the tester input and output message queues, and terminate any GPIB or serial actions pending.
## 2-7 Summary of RS232 Commands

### Table 2-13. Mnemonic Definitions

<table>
<thead>
<tr>
<th>Mnemonic</th>
<th>Meaning</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>!DCL</td>
<td>Device clear</td>
<td>Clear all queues and terminates any pending actions.</td>
</tr>
<tr>
<td>!SPL</td>
<td>Serial poll</td>
<td>Clears SRQ cause and returns the status byte.</td>
</tr>
<tr>
<td>P</td>
<td>Response to serial poll</td>
<td>Status byte</td>
</tr>
<tr>
<td>R</td>
<td>Return of requested data</td>
<td></td>
</tr>
</tbody>
</table>
Chapter 3 — IEEE 488.2 Mandatory and Register Commands

This chapter provides details of the event register and mandatory commands. The commands are listed in alphabetical order as shown below.

*CHE (Change Enable Register)

The bits in the Change Enable Register are the same as those in the Change Register. The two registers are bitwise AND'ed to determine whether to set the CHG bit in the Status Register.

Set command format
*CHE<ws><val>

<val> decimal representation of an 8 bit binary mask.

Remarks
<val> is the sum of the binary weights of each of the bits to be enabled. See the explanation in chapter 2 for a description of the bits in the Change and Change Enable registers.

Example
To enable bit 0 (SCO Connection)
*CHE 1

Query command format
*CHE?

Response
<val>

<val> is a decimal representation of the 8 bit mask as defined above.

Remarks
*CHE? Does not clear the Change Enable register. Use *CHE 0 or *CLS for this purpose.

*CHG (Change Register)

Returns the current state of the Change Register (CHG).

Query command format
*CHG?

Response
<val>

<val> is a decimal representation of the binary value of the Change Register.

Example
A return value of 1 indicates that bit 0 (SCO Connection) is set.

Remarks
See the explanation in chapter 3 for bit definitions of the Change Register. *CHG? Does not clear the Change Register.
**CLS (Clear GPIB Status Bytes)**

**Set command format**

*CLS

**Remarks**

Clears all the GPIB status data structures, including the Event Status Register and Status Register, except for the MAV bit. *CLS does not clear the Output Queue.

**EETE (EDR EUT Fail Enable Register) (MT8852B and MT8852B-042 only)**

The bits in the EDR EUT Fail Enable Register are the same as those in the EDR EUT Fail Register. The two registers are bitwise AND'ed to determine which failed test(s) will generate a SRQ event.

**Set command format**

*EETE<ws><val>

<val> decimal representation of an 8 bit binary mask.

**Remarks**

<val> is the sum of the binary weights of each of the bits to be enabled. Refer to chapter 3 of this manual for a description of the bits in the EDR EUT Fail and EDR EUT Fail Enable registers.

**Examples**

To enable bit 3 (EDR Sensitivity)

*EETE 8

To enable bit 5 (EDR Maximum Input Power)

*EETE 32

To enable both bits

*EETE 40

**Query command format**

*EETE?

<val> decimal representation of an 8 bit binary mask.

**Response**

<val>

<val> is a decimal representation of the 8 bit mask as defined above.

**Remarks**

*EETE? Does not clear the EUT Fail Enable register. Use *EETE 0 or *CLS for this purpose.
**EETE2 (2nd EDR EUT Fail Enable Register) (MT8852B and MT8852B-042 only)**

The bits in the 2nd EDR EUT Fail Enable Register are the same as those in the 2nd EDR EUT Fail Register. The two registers are bitwise AND’ed to determine which failed test(s) will generate a SRQ event.

**Set command format**

*EETE2<ws><val>

<val> decimal representation of an 8 bit binary mask.

**Remarks**

<val> is the sum of the binary weights of each of the bits to be enabled. Refer to chapter 3 of this manual for a description of the bits in the EDR EUT Fail and 2nd EDR EUT Fail Enable registers.

**Examples**

To enable bit 0 (Guard Time)

*EETE2 1

To enable bit 1 (Synchronization Sequence and Trailer)

*EETE2 2

To enable both bits

*EETE2 3

**Query command format**

*EETE2?

<val> decimal representation of an 8 bit binary mask.

**Response**

<val> is a decimal representation of the 8 bit mask as defined above.

**Remarks**

*EETE2? Does not clear the EUT Fail Enable register. Use *EETE2 0 or *CLS for this purpose.
*EETF (EDR EUT Fail Register Query) (MT8852B and MT8852B-042 only)

Returns the current state of the EDR EUT Fail Register (EETF).

Query command format

*EETF?

Response

<val>

<val> is a decimal representation of the binary value of the EDR EUT Fail Register.

Example

A return value of 9 indicates that bit 0 (EDR Relative Transmit Power) and bit 3 (EDR Sensitivity) are set.

Remarks

See chapter 2 for bit definitions of the EDR EUT Fail Register.

*EETF? Clears the EDR EUT Fail Register.

*EETF2 (2nd EDR EUT Fail Register Query) (MT8852B and MT8852B-042 only)

Returns the current state of the 2<sup>nd</sup> EDR EUT Fail Register (EETF2).

Query command format

*EETF2?

Response

<val>

<val> is a decimal representation of the binary value of the 2<sup>nd</sup> EDR EUT Fail Register.

Example

A return value of 3 indicates that bit 0 (Guard Time) and bit 1 (Synchronization Sequence and Trailer) are set.

Remarks

See chapter 2 for bit definitions of the 2<sup>nd</sup> EDR EUT Fail Register.

*EETF2? Clears the 2<sup>nd</sup> EDR EUT Fail Register.
**ESE (Standard Event Status Enable)**

The bits in the Standard Event Status Enable Register are the same as those in the Standard Event Status Register. The two registers are bitwise AND’ed to determine which standard event(s) will generate a SRQ.

**Set command format**

*ESE<ws><val>*

<val> decimal representation of an 8 bit binary mask.

**Remarks**

<val> is the sum of the binary weights of each of the bits to be enabled. Refer to chapter 3 of this manual for a description of the bits in the Standard Event Status and Standard Event Status Enable registers.

**Examples:**

- To enable bit 4 (Execution Error)
  
  *ESE 16

- To enable bit 5 (Command Error)
  
  *ESE 32

- To enable both bits
  
  *ESE 48

**Query command format**

*ESE?

**Response**

<val>

<val> is a decimal representation of the 8 bit mask as defined above.

**Remarks**

*ESE? Does not clear the Standard Event Status Enable register. Use *ESE 0 or *CLS for this purpose.
*ESR (Standard Event Status Register Query)

Returns the current state of the Standard Event Register (ESR).

Query command format
*ESR?

Response <val>

<val> is a decimal representation of the binary value of the Standard Event Status Register.

Example A return value of 5 indicates that bits 0 (Operation Complete) and 2 (Query Error) are set.


*ETE (EUT Fail Enable Register)

The bits in the EUT Fail Enable Register are the same as those in the EUT Fail Register. The two registers are bitwise AND’ed to determine which failed test(s) will generate a SRQ.

Set command format
*ETE<ws><val>

<val> decimal representation of an 8 bit binary mask

Remarks <val> is the sum of the binary weights of each of the bits to be enabled. Refer to chapter 3 of this manual for a description of the bits in the EUT Fail and EUT Fail Enable registers.

Examples To enable bit 4 (Carrier Drift)
*ETE 16

To enable bit 5 (Initial Carrier)
*ETE 32

To enable both bits
*ETE 48

Query command format
*ETE?

Response <val>

<val> is a decimal representation of the 8 bit mask as defined above.

Remarks *ETE? Does not clear the EUT Fail Enable register. Use *ETE 0 or *CLS for this purpose.
**ETF (EUT Fail Register Query)**

Returns the current state of the EUT Fail Register (ETF).

**Query command format**  
*ETF?

**Response**  
<val>

<val> is a decimal representation of the binary value of the EUT Fail Register.

**Example**  
A return value of 5 indicates that bits 0 (Maximum Input Power) and 2 (Single Slot Sensitivity) are set.

**Remarks**  
See chapter 2 for bit definitions of the EUT Fail Register. *ETF? Clears the EUT Fail Register.

**IDN (Identification Query)**

**Query command format**  
*IDN?  
(alternatively OI can be used)

**Response**  
A string is returned containing the manufacturer’s name, the model number, the serial number, and the software revision. Commas separate the items.

**Example**  
ANRITSU,MT8852B,00801001,4.16.000

**Remarks**  
The operation of this command is identical to SYSCFG? IDENT see chapter 5 for details.
**INE (Instrument Status Enable Register)**

The bits in the Instrument Status Enable Register are the same as those in the Instrument Status Register. The two registers are bitwise AND'ed to determine which condition(s) will generate a SRQ.

**Set command format**

*INES ws val*

<val> decimal representation of an 8 bit binary mask.

**Remarks**

<val> is the sum of the binary weights of each of the bits to be enabled. Refer to chapter 2 of this manual for a description of the bits in the Instrument Status and Instrument Status Enable registers.

**Example**

To enable bit 3 (Inquiry Complete)

*INE 8

To enable bit 2 (Test or Script Complete)

*INE 4

To enable both bits

*INE 12

**Query command format**

*INE?

**Response**<val>

<val> is a decimal representation of the 8 bit mask as defined above.

**Remarks**

*INE? Does not clear the Instrument Status Enable register. Use *INE 0 or *CLS for this purpose.

**INS (Instrument Status Register Query)**

Returns the current state of the Instrument Status Register (INS).

**Query command format**

*INS?

**Response**<val>

<val> is a decimal representation of the binary value of the Instrument Status Register.

**Example**

A return value of 5 indicates that bits 0 (Connected) and 2 (Test or Script Complete) are set.

**Remarks**

See chapter 2 for bit definitions of the Instrument Status Register.

*INS? Does not clear the Instrument Status Register.
*LEETE (BLE EUT Fail Enable Register) (Option 27 and MT8852B-043 only)
The bits in the BLE EUT Fail Enable Register are the same as those in the BLE EUT Fail Register. The two registers are bitwise AND'ed to determine which failed test(s) will generate a SRQ event.

Set command format

*LEETE<ws><val>

<val> decimal representation of an 8 bit binary mask.

Remarks

<val> is the sum of the binary weights of each of the bits to be enabled. Refer to chapter 2 of this manual for a description of the bits in the BLE EUT Fail and BLE EUT Fail Enable registers.

Examples

To enable bit 2 (BLE Modulation index)

*LEETE 4

To enable bit 0 (BLE Maximum Input Power)

*LEETE 1

To enable both bits

*LEETE 5

Query command format

LEETE?

<val> decimal representation of an 8 bit binary mask

Response

<val>

<val> is a decimal representation of the 8 bit mask as defined above.

Remarks

*LEETE? Does not clear the EUT Fail Enable register. Use *LEETE 0 or *CLS for this purpose.

*LEETF (BLE EUT Fail Register Query) (Option 27 and MT8852B-043 only)

Returns the current state of the BLE EUT Fail Register (LEETF).

Command format

*LEETF?

Response

<val>

<val> is a decimal representation of the binary value of the BLE EUT Fail Register.

Example

A return value of 5 indicates that bit 0 (BLE Modulation Index) and bit 2 (BLE Maximum Input Sensitivity) are set.

Remarks

See chapter 2 for bit definitions of the BLE EUT Fail Register.

*LEETF? Clears the BLE EUT Fail Register.
IEEE 488.2 Mandatory and Register Commands

**OPC (Operation Completed Indication)**
These commands generate indications when all pending operations are completed. An operation is complete when all input messages processed and all responses have been written into the GPIB Output queue.

**Set command format**  
*OPC

**Example**  
OPMD SCRIPT;SCPTSEL 3; *OPC

**Remarks**  
The OPC bit is set in the ESR when the OPMD and SCPTSEL commands have been completed.

**Query command format**  
*OPC?

**Example**  
OPMD SCRIPT;SCPTSEL 3; *OPC?

**Remarks**  
An ASCII ‘1’ is placed in the Output queue when the OPMD and SCPTSEL commands have been completed.

**RST (Instrument Reset)**
 Resets the MT8852B to its default state.

**Set command format**  
*RST

**Remarks**  
The GPIB Address is not changed and the GPIB Status registers and Input/Output queues are not cleared. The effect of this command is the same as pressing the PRESET key on the front panel.
*SRE (Service Request Enable Register)

The bits in the Service Request Enable Register (SRE) are the same as those in the Status Byte Register (STB) except for bit 6, which is not used in the SRE. With the exception of bit 6 the two registers are bitwise AND’ed to determine which condition(s) will generate a SRQ.

Set command format
*SRE<ws><val>

<val> decimal representation of an 8 bit binary mask.

Remarks <val> is the sum of the binary weights of each of the bits to be enabled. Refer to chapter 2 of this manual for a description of the bits in the Status Byte and Service Request Enable registers. Note that bit 6 should never be set.

Examples To enable bit 4 (Message Available)
*SRE 16
To enable bit 2 (Internal Error)
*SRE 4
To enable both bits
*SRE 20

Query command format
*SRE?

Response <val>

<val> is a decimal representation of the 8 bit mask as defined above.

Remarks *SRE? Does not clear the Instrument Status Enable register. Use *SRE 0 or *CLS for this purpose. Bit 6 will never be set.

*STB (Status Byte Register Query)

Returns the current state of the Status Byte Register (STB) with the RQS bit replaced by the MSS bit (bit 6).

Query command format
*STB?

Response <val>

<val> is a decimal representation of the binary value of the Instrument Status Register.

Example A return value of 70 indicates that bits 1 (EUT Fail), 2 (Internal Error Bit), and bit 6 (Master Summary Status) are set.

Remarks See chapter 2 for bit definitions of the Status Byte Register. *STB? Does not clear the Instrument Status Register.
**TST (Self Test Query)**

Invokes an instrument Self-Test cycle and places the results in the Output Queue

- **Query command format**: `*TST?`
- **Response**: “ALL TESTS PASSED”
  “SELFTEST FAILED”
- **Remarks**: This command differs from STERR in that it invokes a Self-Test before returning the results.

**WAI (Wait to Continue)**

This mandatory IEEE488.2 command is decoded but produces no action because the Overlapping Commands feature is not implemented on the MT8852B.

- **Set command format**: `*WAI`
Chapter 4 — General GPIB Commands

BOOTSTATUS? (Startup Self Test Status Request)

Query Command format
Remarks

On startup the instrument performs a self test. If the self test fails, a warning screen is displayed indicating the cause. This command returns the status of the instrument during power up.

0 Passed self test. Instrument running.
1 Startup running self test.
–1 Self test FAILED.

During the startup procedure all commands except STERR, BOOTSTATUS?, CONT and GPIB 488.2 event and status commands will produce a GPIB execution error. STERR will return the self test results.

Related Commands
STERR, CONT

CONT (Continue After Self Test)

Set command format
Remarks

This command will allow the system to continue the startup sequence if there are self test failures other than DSP errors.

Related Commands
STERR, BOOTSTATUS?
ERRLST (Error List)

This command reads out and clears the recorded error states latch. The error states latch records an error occurring and retains the error states until the instrument is reset, the power is cycled, or the error states latch is read using this command. The errors are indicated via the DDE bit of the event register (ESR).

Set command format

<table>
<thead>
<tr>
<th>Set command format</th>
<th>ERRLST</th>
</tr>
</thead>
</table>

Response

| A | CONNECTION ALREADY EXISTS | 0 | No previous connection |
|   | 1 | Connection already exists |
| B | EUT TEST MODE STATE | 0 | EUT Test Mode enabled |
|   | 1 | EUT Test Mode not enabled |
| CC | EUT HCI ERROR | 00 | OK |
|    | XX | 2 digit hexadecimal error code (EUT controlled via RS232 interface) |
| DD | INTERNAL HCI ERROR | 00 | OK |
|    | XX | 2 digit hexadecimal error code |
| E | INTERNAL SYNC ERROR | 0 | OK |
|    | 1 | Internal HCI synchronization error |
| F | EUT SYNC ERROR | 0 | OK |
|    | 1 | EUT HCI synchronization error (control via RS232) |
| G | EUT HARDWARE ERROR | 0 | OK |
|    | 1 | EUT Reported HCI Hardware error message |
| H | REQUEST FAILED | 0 | OK |
|    | 1 | Request failed (system busy) |
| II | DSP STATUS | 00 | OK |
|    | 01 | Searching channel |
|    | 02 | Searching sync word |
|    | 03 | Incorrect packet length |
|    | 04 | No payload |
|    | 05 | Auto ranging |
|    | 06 | Incorrect packet |
|    | 07 | Incorrect packet type |
|    | 08 | Over range |
|    | 09 | Under range |
10 Invalid payload
11 Error finding start of packet using power profile
12 Error locating P0/GFSK sync word
13 Location of P0/GFSK sync word exceeds allowed limits
14 Error locating EDR sync word
15 Location of EDR sync word exceeds allowed limits
16 Error decoding the packet type field
17 Modulation mode of PI/4-DQPSK or 8DPSK not specified
18 Specified (pi/4-DQPSK) modulation mode does not agree with detected packet type
19 Specified (8DPSK) modulation mode does not agree with detected packet type
20 Invalid packet type decoded
21 Unknown packet type decoded
22 Expected and measured packet lengths do not match
23 Insufficient blocks in packet for measurement

**Note** Setting of the DSP status code will not set the DDE bit of the event register.

<table>
<thead>
<tr>
<th>J</th>
<th>EUT BT ADDRESS</th>
<th>0</th>
<th>OK</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>No EUT Bluetooth Address set (in Manual mode)</td>
</tr>
<tr>
<td>KK</td>
<td>HCI COMM STATUS</td>
<td>00</td>
<td>OK</td>
</tr>
<tr>
<td></td>
<td></td>
<td>01</td>
<td>Unknown HCI command</td>
</tr>
<tr>
<td></td>
<td></td>
<td>02</td>
<td>No connection</td>
</tr>
<tr>
<td></td>
<td></td>
<td>03</td>
<td>Hardware failure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>04</td>
<td>Paging timeout</td>
</tr>
<tr>
<td></td>
<td></td>
<td>05</td>
<td>Connection timeout</td>
</tr>
<tr>
<td></td>
<td></td>
<td>06</td>
<td>Unsupported feature parameter</td>
</tr>
<tr>
<td></td>
<td></td>
<td>07</td>
<td>Connection ended by user</td>
</tr>
<tr>
<td></td>
<td></td>
<td>08</td>
<td>Low resource connection ended</td>
</tr>
<tr>
<td></td>
<td></td>
<td>09</td>
<td>Power Off connection ended</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10</td>
<td>Local host connection ended</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11</td>
<td>Unsupported remote feature</td>
</tr>
</tbody>
</table>
General GPIB Commands

12 Role change not allowed
13 LMP response timeout
14 IQ modem DAC saturation

LLLLLLL Internal core error text (variable length)
MMMMMMM EUT core error text (variable length)
NNNNNNN Last GPIB command that caused a Command error (variable length)
OOOOOOO Last GPIB command that caused a Execution error (variable length)

EUTINIT (Bluetooth Slave Mode)
This command puts the MT8852B into Bluetooth Slave mode. It is the equivalent to:

> “System Features” > “Connection Control” > “Make me an EUT”.

Set command
format
Remarks
EUTINIT
To return the MT8852B to normal (Master) mode, use *RST.

EUTMAXPWR (Send EUT to Max Power Control)
This command enables or disables the setting of an EUT to maximum power at the start of a test even if the EUT reports that it supports power control.

Set command
format
Example
Query command
format
Response
EUTMAXPWR<ws><script><,><state>
EUTMAXPWR 3,OFF
EUTMAXPWR?<ws><script>
EUTMAXPWR 4,OFF

LECTETIME (Set the CTE time)
This command sets the CTE time for Bluetooth low energy (BLE) tests with CTE.

Set command
format
Example
LECTETIME<ws><script number><,><value>
LECTETIME 3,20

Example
To set the CTE time to 20, the command would be:
LECTETIME 3,20
LECTETIMEMODE (Set the CTE time mode)

This command sets the CTE time mode for Bluetooth low energy (BLE) tests with CTE.

**Query command format**

LECTETIME?<ws><script number>

<script number> 1 to 10

**Response**
The response is the CTE time.

**Example**
To request the CTE time for BLE tests in script 7, the command would be:

LECTETIME? 7

**Response**
If the CTE time has previously been set to 18

LECTETIME 7,18

**LECTETIMEMODE (Set the CTE time mode)**

This command sets the CTE time mode for Bluetooth low energy (BLE) tests with CTE.

**Set command format**

LECTETIMEMODE<ws><script number>,<value>

<script number> 3 to 10

<value> AUTO (Default) or MANUAL

**Example**
To set the CTE time mode to AUTO, the command would be:

LECTETIMEMODE 3,AUTO

**Remarks**
AUTO - In this mode the MT8852B will request the CTE time from the EUT.

If the EUT address source is BLE2WIRE/USBBLE2WIRE or if the EUT responds to the HCI command with an error, the CTE time (LECTETIME) will be set to the default value, 20.

MANUAL - In this mode the CTE time can be set between 2 and 20 using LECTETIME.

**Query command format**

LECTETIMEMODE?<ws><script number>

<script number> 1 to 10

**Response**
The response is the CTE time mode.

**Example**
To request the CTE time mode for BLE tests in script 7, the command would be:

LECTETIMEMODE? 7

**Response**
If the mode has previously been set to MAUAL

LECTETIMEMODE 7,MANUAL
LEPKTLEN (Set the BLE data packet length)
This command sets the data packet length for Bluetooth low energy (BLE) tests.

Set command format
LEPKTLEN<ws><script number><,><packet length>

Example
To set the packet length to 45 bytes, the command would be:
LEPKTLEN 1,45

Query command format
LEPKTLEN?<ws><script number>

Response The response is the packet length.

Example
To request the packet length for BLE tests in script 5, the command
would be:
LEPKTLEN? 5

LEPKTMODE (Set the BLE data packet mode)
This command sets the data mode for the Bluetooth low energy (BLE) tests.

Set command format
LEPKTMODE<ws><script number><,><mode>

Example
To set the packet mode to AUTO, the command would be:
LEPKTMODE 1,AUTO

Remarks
AUTO - In this mode the MT8852B will request the maximum data
length from the EUT.
If the EUT address source is BLE2WIRE/USBBLE2WIRE or if the EUT
responds to the HCL command with an error, the data length will be set
to the default value, 37.
MANUAL - In this mode the data length can be set between 2 and 255
bytes using LEPKTLEN.

Query command format
LEPKTMODE?<ws><script number>

Example
To request the packet mode for BLE tests in script 5, the command
would be:
LEPKTMODE? 5
LKPASS (Update Lock/Unlock Password)
This command enables the operator to change the script lock password. The password is a number between 1 and 65535. All spaces are removed.

**Set command format**
LKPASS<ws><old password><,><new password>

<old password> Present lock/unlock password
<new password> New lock/unlock password

**Example**
To change the present password “1234” to “6543”, the command would be:
LKPASS 1234,6543

LOCK (Script Lock)
This command locks a script so that it cannot be altered unless it is unlocked with the unlock command. The enquiry version of this command will return TRUE or FALSE indicating whether a script has been locked.

**Set command format**
LOCK<ws><script number><,><password>

<script number> 3 to 9
<password> The lock/unlock password. Default is “1234”.

**Example**
Lock script 4
LOCK 4,1234

**Query command format**
LOCK?<ws><script number>

<script number> 1 to 9

**Response**
The response is just a TRUE or FALSE.

**Example**
To request the status of script 5 the command would be:
LOCK? 5

**Response**
If script 5 is locked
TRUE
OPMD (Operation Mode)

This command configures the operation mode of the instrument.

Set command format

```
OPMD<ws><operation mode>{,<,<test>}

<operation mode>
SCRIPT     script mode
STEST      single test mode
SIGGEN     signal generator mode
ESIGGEN    EDR signal generator mode
LESIGGEN   BLE signal generator mode
CWMEAS     CW measurement mode
ECWMEAS    EDR CW measurement mode

Selected script test <test>

OP          Output power
PC          Power control
EPC         Enhanced power control
MI          Modulation Index
IC          Initial carrier
CD          Carrier drift
SS          Single slot sensitivity
MS          Multi slot sensitivity
MP          Max input power
ERP         EDR Relative transmit power test
            (MT8852B and MT8852B-042 only)
ECM         EDR Carrier frequency stability and
            modulation accuracy test (MT8852B and
            MT8852B-042 only)
EDP         EDR Differential phase encoding test
            (MT8852B and MT8852B-042 only)
EBS         EDR Sensitivity test
            (MT8852B and MT8852B-042 only)
EFS         EDR Floor sensitivity test
            (MT8852B and MT8852B-042 only)
EMP         EDR Maximum Input Power test
            (MT8852B and MT8852B-042 only)
EGT         EDR Guard Time
            (MT8852B and MT8852B-042 only)
EST         EDR Synchronization Sequence and Trailer
            (MT8852B and MT8852B-042 only)
```
**LOCK (Script Lock)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEOP</td>
<td>BLE Output power</td>
<td>(option 27 and MT8852B-043 only)</td>
</tr>
<tr>
<td>LEICD</td>
<td>BLE Carrier frequency offset and drift</td>
<td>(option 27 and MT8852B-043 only)</td>
</tr>
<tr>
<td>LEMI</td>
<td>BLE Modulation characteristics</td>
<td>(option 27 and MT8852B-043 only)</td>
</tr>
<tr>
<td>LESS</td>
<td>BLE Receiver sensitivity</td>
<td>(option 27 and MT8852B-043 only)</td>
</tr>
<tr>
<td>LEPRI</td>
<td>BLE PER report integrity test</td>
<td>(option 27 and MT8852B-043 only)</td>
</tr>
<tr>
<td>LEMP</td>
<td>BLE Max input signal level</td>
<td>(option 27 and MT8852B-043 only)</td>
</tr>
<tr>
<td>LEPS</td>
<td>BLE Tx power stability</td>
<td>(option 37 only)</td>
</tr>
</tbody>
</table>

Remarks: `<test>` is applicable only when the operation mode is set to `STEST`. Changing from `SIGGEN`, `ESIGGEN`, or `LESIGGEN` modes to any of the other modes will cause a reset of the internal Bluetooth core.

Note that in single test mode, only the test that has been selected can be configured. An execution error is returned if an attempt is made to configure any other tests.

**Examples**

**Example 1**
Set to script mode.

```
OPMD SCRIPT
```

**Example 2**
Set to single test mode, with the initial carrier test selected

```
OPMD STEST,IC
```

**Example 3**
Set to single test mode, with the EDR differential phase encoding test selected.

```
OPMD STEST,EDP
```

**Query command format**

```
OPMD?
```

**Response**
Response is in the form of the command to set that state.

**Example**
If the operation mode is single test mode with the power control test selected the command would be:

```
OPMD?
```

**Response**
```
OPMD STEST,PC
```
**OPTSTATUS? (Option Status)**

Query command format

OPTSTATUS?

Remarks

This command returns the options enabled.

Response

OPTSTATUS,<num_opts>{,<options>,...}

<num_opts> 0 to 7 (five options available at present)

Number of enabled options that follow.

=options> Comma separated list of enabled options

15 AFH (Adaptive frequency hopping) support
17 Allows IQ data output for EDR measurements
25 EDR Measurements support
27 BLE Measurements support
29 BLE Measurements only
34 BLE Data Length Extension support

Example

If option 15 is the only option enabled the response would be.

Response

OPTSTATUS,1,15

**SCPTCFG (Configure Script)**

This command is used to select which tests are run as part of a script. All scripts and their tests are independent.

Set command format

SCPTCFG<ws><script number><,><test><,><state>

<script number> 3 to 10
<test>
OP Output power
PC Power control
MI Modulation Index
IC Initial carrier
CD Carrier drift
SS Single slot sensitivity
MS Multi slot sensitivity
MP Max input power
ERP EDR Relative transmit power test (MT8852B and MT8852B-042 only).
ECM EDR Carrier frequency stability and modulation accuracy test (MT8852B and MT8852B-042 only).
EDP EDR Differential phase encoding test (MT8852B and MT8852B-042 only)
SCPTCFG (Configure Script)

EBS  EDR Sensitivity test (MT8852B and MT8852B-042 only)
EFS  EDR floor sensitivity test (MT8852B and MT8852B-042 only)
EMP  EDR Maximum Input Power test (MT8852B and MT8852B-042 only)
EGT  EDR Guard Time (MT8852B and MT8852B-042 only)
EST  EDR Synchronization Sequence and Trailer (MT8852B and MT8852B-042 only)
EPC  Enhanced power control
LEOP BLE Output power (option 27 and MT8852B-043 only)
LEMI BLE Modulation index (option 27 and MT8852B-043 only)
LEICD BLE Initial carrier (option 27 and MT8852B-043 only)
LESS BLE Single shot sensitivity (option 27 and MT8852B-043 only)
LEMP BLE Max input power (option 27 and MT8852B-043 only)
LEPRI BLE Max input power (option 27 and MT8852B-043 only)
LEPS BLE Tx power stability (option 37 only)
STDTSTS To set the status of all the basic rate tests in this script at once. (MT8852B and MT8852B-042 only)
EDRTSTS To set the status of all the EDR tests in this script at once. (MT8852B and MT8852B-042 only)
BLETSTS To set the status of all the BLE tests in this script at once. (option 27 and MT8852B-043 only)
PCTSTS Turns on or off both power control tests when the EPC option is installed.
ALLTSTS To set the status of all tests in this script at once

<state> ON | OFF

Remarks All ten scripts can be read but only 3 to 10 can be set.
Example To select the output power test in script 4 the command would be:

SCPTCFG 4,OP,ON
Query command format

```
SCPTCFG?<ws><script number>[,<ext-code>]
```

- `<script number>`: 1 to 10
- `<ext-code>`
  - 0 or omitted: standard (except EGT, EST, and LEPS)
  - 1: with EGT and EST (except LEPS)
  - 2: with EGT and EST and LEPS

Response

The response is a list of ON or OFF for each test in the following order separated by commas.

- Output power
- Power control
- Modulation Index
- Initial carrier
- Carrier drift
- Single slot sensitivity
- Multi slot sensitivity
- Max input power
- EDR Relative Transmit Power test (MT8852B and MT8852B-042 only)
- EDR Carrier Frequency stability and Modulation accuracy test (MT8852B and MT8852B-042 only)
- EDR Differential Phase Encoding test (MT8852B and MT8852B-042 only)
- EDR Sensitivity test (MT8852B and MT8852B-042 only)
- EDR BER Floor Sensitivity test (MT8852B and MT8852B-042 only)
- EDR Maximum Input Power test (MT8852B and MT8852B-042 only)
- EDR Guard Time (MT8852B and MT8852B-042 only)
- EDR Synchronization Sequence and Trailer (MT8852B and MT8852B-042 only)
- Enhanced power control
- BLE Output power (option 27 or MT8852B-043 only)
- BLE Modulation Index (option 27 or MT8852B-043 only)
- BLE Carrier and drift (option 27 or MT8852B-043 only)
- BLE sensitivity (option 27 or MT8852B-043 only)
- BLE Max input power (option 27 or MT8852B-043 only)
- BLE PER integrity (option 27 or MT8852B-043 only)
- BLE TX power stability (option 37 only)
SCPTNM (Set Script Name)

Set or request the script name. The Anritsu predefined scripts names cannot be set.

**Set command format**

```
SCPTNM<ws><script number><,><script name>
```

- `<script number>`: 3 to 10
- `<script name>`: Script name using up to 9 characters.

**Remarks**

If more than 9 characters are used the name is terminated at the 9th character. The names of scripts 1 and 2 cannot be modified. If the script number is set to 1 or 2 an execution error is output.

**Example**

To set the name of script 4 to “ENG TEST1” the command would be:

```
SCPTNM 4,ENG TEST1
```

**Query command format**

```
SCPTNM?<ws><script number>
```

- `<script number>`: 1 to 10

All ten scripts can be read but only 3 to 10 can be set.

**Response**

Response is in the form of the command to set that state.

**Example**

If the script 5 name is “ENG TEST X” the command would be:

```
SCPTNM? 5
```

**Response**

```
SCPTNM 5,ENG TEST X
```
**General GPIB Commands**

### SCPTRST (Reset Script)
This command resets a script to its default values.

- **Set command format**: `SCPTRST<ws><script number> <script number> 1 to 10 | 'ALL'
- **Remarks**: ‘ALL’ resets all 10 test scripts at once.
- **Example 1**: Reset script 3.
  ```
  SCPTRST 3
  ```
- **Example 2**: Reset all scripts
  ```
  SCPTRST ALL
  ```

### SCPTSEL (Select Script)
Set or request the selected script to be executed. If this command is sent when in single test mode, the selected test is executed.

- **Set command format**: `SCPTSEL<ws><script number> <script number> 1 to 10
- **Example**: SCPTSEL 1
- **Query command format**: `SCPTSEL?
- **Response format**: Response is in the form of the command to set that state.
- **Example**: If the script selected was 5 the response would be:
  ```
  SCPTSEL 5
  ```

### SCPTTSTGP (Set Test Group State) (MT8852B and MT8852B-042 only)
This command is used to select which groups of tests are run as part of a script. The states of all the tests in the selected group are affected by this command, e.g., turning off a group will turn off all tests within that group.

- **Set command format**: `SCPTTSTGP<ws><script number>,<testgroup>,<state> <test group> STDTSTS To set the status of all the basic rate tests in this script at once.
  EDRTSTS To set the status of all the EDR tests in this script at once.
  BLELTSTS To set the status of all the BLE tests in this script at once.
  ALLTSTS To set the status of all tests in this script at once.
- **<state>**: ON | OFF

SCRIPTMODE (Script Mode)

This command determines how the tests within the specified script are run.

Example
To select the standard tests in script 4 the command would be:
SCRIPTMODE 4,STDTSTS,ON

Query command for format
This command outputs the test group states of this script.

Example
To read the configuration of script 5 where basic rate tests are selected but the EDR and BLE tests are not:
SCRIPTMODE? 5
Response
SCRIPTMODE 5,ON,OFF,OFF

SCRIPTMODE (Script Mode)

This command determines how the tests within the specified script are run.

Set command format
SCRIPTMODE<ws><script number>,<mode>

Example
Set the Script Mode for script 3 to NULL Packet
SCRIPTMODE 3,NULLPKT

Query command format
SCRIPTMODE?<ws><script number>

Response
The response is in the form of the command to set that state.

Example
If the script mode for script 9 is set to standard the command would be:
SCRIPTMODE? 9
Will produce the response:
SCRIPTMODE 9,STANDARD
STATUS (Status Command)

This command requests the instrument measurement status. It can be sent at any time. If it is sent while a script is running, it provides information about the measurement that is currently in progress.

<table>
<thead>
<tr>
<th>Set command format</th>
<th>STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response</td>
<td>A B C C D D E F G H I J K L M</td>
</tr>
</tbody>
</table>

The response is extended depending on the value of characters “DD”:
- A B C C D D E F G H I J K L M N N N (when “DD” is “EX”)
- A B C C D D E F G H I J K L M O O O O O (when “DD” is “LE”)

A 0 Script mode
1 Single test mode
2 Basic Rate Signal generator mode (GFSK)
3 CW Measurement mode
4 AFH measurement
5 EDR Signal generator mode (MT8852B and MT8852B-042 only)
6 EDR CW Measurement mode (MT8852B and MT8852B-042 only)
7 BLE Signal generator mode (Option 27 only and MT8852B-043 only)

B 0 Not in single remote test state
1 In single remote test state

CC Script number selected: 1 to 10

DD Test selected:
- OP Output power test
- PC Power control test
- EP Enhanced power control test
- MI Modulation characteristics test
- IC Initial carrier test
- CD Carrier drift test
- SS Single slot sensitivity test
- MS Multi slot sensitivity test
- MP Maximum input power sensitivity test
- EX Extended EDR tests (see string 'NNN' for selected EDR test) (MT8852B and MT8852B-042 only)
- LE Extended BLE tests (see string 'OOO' for selected BLE test) (MT8852B-043 and units with option 27 only)

E 0 Not connected
1 Connected
F  Receiver Range: 1 to 6 | A = Auto

G  10 MHz reference source:
   0  Internal
   1  External

H  EUT power state:
   0  EUT at minimum power
   1  EUT at intermediate power
   2  EUT at maximum power

I  SCO Channel 1:
   0  Disconnected
   1  Connected

J  SCO Channel 2:
   0  Disconnected
   1  Connected

K  SCO Channel 3:
   0  Disconnected
   1  Connected

L  EUT test mode:
   0  EUT in normal mode
   1  EUT in test mode

M  USB Connection status:
   1  USB device attached
   2  USB device removed
   3  Non Bluetooth USB device attached

NNN  EDR Test selected:
   ERP  EDR Relative transmit power test (MT8852B and MT8852B-042 only)
   ECM  EDR Carrier frequency stability and modulation accuracy test (MT8852B and MT8852B-042 only)
   EDP  EDR Differential phase encoding test (MT8852B and MT8852B-042 only)
   EBS  EDR Sensitivity test (MT8852B and MT8852B-042 only)
   EFS  EDR floor sensitivity test (MT8852B and MT8852B-042 only)
   EMP  EDR Maximum Input Power test (MT8852B and MT8852B-042 only)
   EGT  EDR Guard Time (MT8852B and MT8852B-042 only)
   EST  EDR Synchronization Sequence and Trailer (MT8852B and MT8852B-042 only)
STERR (Request POST or *TST? Results)

This command returns the results of the most recent Self-Test. It does not initiate a Self-Test itself.

Set command format
STERR

Response
Where the Self-Test has completed without failures the response is the following string:-
ALL TESTS PASSED

Where the Self-Test has failed, the response is a list of those items which have failed. If there is more than one item they are separated by commas.

Example
ARMBOOT, VOLRAM 10FFFF0F, DSPIF

Indicates the Self-Test failed with ARM Boot checksum, Volatile RAM, and DSP interface errors.

A list of self test items is shown in the table below.

Related Commands
BOOTSTATUS?, CONT, *TST

Self Test Items
The following is a list of all Self-Test items. For more information see the MT8852B Service Manual.

<table>
<thead>
<tr>
<th>Self test item</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLASHCSUM</td>
<td>Flash Code checksum error.</td>
</tr>
<tr>
<td>CALCSUM</td>
<td>Calibration Data checksum error.</td>
</tr>
<tr>
<td>PERSONCSUM</td>
<td>Personality checksum error.</td>
</tr>
<tr>
<td>ARMBOOT</td>
<td>ARM Boot checksum error.</td>
</tr>
<tr>
<td>ARMCD</td>
<td>ARM Code checksum error.</td>
</tr>
<tr>
<td>FPGACSUM</td>
<td>Virtex FPGA checksum error.</td>
</tr>
<tr>
<td>Item</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>ARMBT</td>
<td>ARM BT checksum error.</td>
</tr>
<tr>
<td>ARM DSP</td>
<td>ARM DSP checksum error.</td>
</tr>
<tr>
<td>ARM SPARTAN</td>
<td>ARM SPARTAN checksum error.</td>
</tr>
<tr>
<td>VOLRAM&lt;A&lt;BBBBBB&gt;</td>
<td>Volatile RAM. &lt;A&gt; indicates the type of test that failed and &lt;BBBBBB&gt; is the list of addresses where the test failed.</td>
</tr>
<tr>
<td>NONVOLRAM</td>
<td>Non-Volatile RAM</td>
</tr>
<tr>
<td>DPRAM&lt;A&lt;BBBBBB&gt;</td>
<td>CPU Dual Port RAM. &lt;A&gt; indicates the type of test that failed and &lt;BBBBBB&gt; is the list of addresses where the test failed.</td>
</tr>
<tr>
<td>DPRAMIF&lt;A&lt;BBBBBB&gt;</td>
<td>IF Dual Port RAM. &lt;A&gt; indicates the type of test that failed and &lt;BBBBBB&gt; is the list of addresses where the test failed.</td>
</tr>
<tr>
<td>DSPRAM&lt;A&lt;B&lt;CCCCC&gt;</td>
<td>&lt;A&gt; indicates the type of test that failed, &lt;B&gt; indicates the type of RAM where the failure occurred and &lt;CCCCC&gt; is the list of addresses where the test failed.</td>
</tr>
<tr>
<td>DSPIF</td>
<td>DSP Interface error.</td>
</tr>
<tr>
<td>UART&lt;A&lt;BB&gt;</td>
<td>&lt;A&gt; indicates the type of test that failed and &lt;BB&gt; is the address on which the failure occurred.</td>
</tr>
<tr>
<td>HCIDPRAM&lt;A&lt;BBBBBB&gt;</td>
<td>ARM ↔ CPU Dual Port RAM. &lt;A&gt; indicates the type of test that failed and &lt;BBBBBB&gt; is the list of addresses where the test failed.</td>
</tr>
<tr>
<td>ARMST&lt;A&gt;</td>
<td>ARM Self Test. &lt;A&gt; indicates the result of the self test</td>
</tr>
<tr>
<td>ARM HS</td>
<td>ARM handshake jumpers.</td>
</tr>
<tr>
<td>DISPLAY</td>
<td>Display interface communication error.</td>
</tr>
<tr>
<td>KBD</td>
<td>Keyboard interface communication error.</td>
</tr>
<tr>
<td>DSPERR&lt;AAAA&gt;</td>
<td>DSP Startup Error. &lt;AAAA&gt; indicates at which stage the error occurred.</td>
</tr>
<tr>
<td>NORF PCB</td>
<td>RF PCB communication error.</td>
</tr>
<tr>
<td>NOT CALLED</td>
<td>No Calibration Data found.</td>
</tr>
<tr>
<td>NOEDR RF PW</td>
<td>Invalid EDR reference power table.</td>
</tr>
<tr>
<td>NOEDRI QCAL</td>
<td>Invalid EDR IQ modulator correction tables.</td>
</tr>
<tr>
<td>VIRTEX&lt;AAAA&gt;</td>
<td>Virtex loading error. &lt;AAAA&gt; indicates at which stage the error occurred.</td>
</tr>
<tr>
<td>SPARTAN&lt;AAAA&gt;</td>
<td>Spartan loading error. &lt;AAAA&gt; indicates at which stage the error occurred.</td>
</tr>
<tr>
<td>ARMIN INIT</td>
<td>ARM initialization error.</td>
</tr>
<tr>
<td>TEMP WARN</td>
<td>Over temperature warning.</td>
</tr>
</tbody>
</table>
**TSTPAUSE (Test Pause)**

This command specifies whether a Test Pause LMP test control is used between changes in a test control format.

**Set command format**

\[ \text{TSTPAUSE}<ws><\text{script number}><,><\text{state}> \]

- \(<\text{script number}>\) 1 to 10
- \(<\text{state}>\) ON or OFF

**Example**

Turn Test Pause on for script 3.

\[ \text{TSTPAUSE 3,ON} \]

**Query command format**

\[ \text{TSTPAUSE?}<ws><\text{script number}> \]

- \(<\text{script number}>\) 1 to 10

**Response**

The response is in the form of the command to set that state.

**Example**

If Test Pause is turned off for script 5 then the command would be:

\[ \text{TSTPAUSE? 5} \]

Will produce the response

\[ \text{TSTPAUSE 5,OFF} \]

**TXPWR (Transmitter Power Level)**

This command sets the default transmitter power level for a script. It is the power level at which the connection and any inquiry are made. Individual tests within the script may modify the power level for their own purposes but the level is returned to the script default on completion of the test. If a connection already exists then executing a TXPWR command will have immediate effect. For this reason do not use TXPWR whilst a test is in progress.

**Set command format**

\[ \text{TXPWR}<ws><\text{script number}><,><\text{power level}> \]

- \(<\text{script number}>\) 1 to 10
- \(<\text{power Level}>\) 0.0 to –90.0 (dBm, in 0.1 dB steps)

**Remarks**

The default transmitter power level can be set for all ten scripts.

**Example**

To set the default transmitter power level of script 3 to –10dBm.

\[ \text{TXPWR 3,-10.0} \]

**Query command format**

\[ \text{TXPWR?}<ws><\text{script number}> \]

- \(<\text{script number}>\) 1 to 10

**Response**

The response is in the form of the command to set that power level.

**Example**

If the transmitter power level for script 6 is –25.3 dBm then the command would be:

\[ \text{TXPWR? 6} \]

**Response**

\[ \text{TXPWR 6,-25.3} \]
UNLOCK (Script Unlock)

This command will unlock a locked script so that it can be altered. If the unlock failed, an execution error is indicated.

**Set command format**

UNLOCK<ws><script number><,><password>

<script number>  3 to 10

<password>       The lock/unlock password. Default is “1234”.

**Example**

To unlock script 4 the command would be:

UNLOCK 4,1234
Chapter 5 — System Configuration

This chapter provides details of the system configuration command and the associated parameters. The commands are listed in alphabetical order as detailed below.

**SYSCFG (Set or Query System Configuration)**

Set command format

```
SYSCFG<ws><config selection>[<,><parameters>……]
```

Query command format

```
SYSCFG?<ws><config selection>[<,><parameters>……]
```

\(<\text{config selection}>\)

- **AUTH** (See sub-commands) Authentication settings
- **BNCOUTPUT** Set | Query Rear panel output
- **BTADDR** Query Tester Bluetooth address
- **CONFIG** (See sub-commands) Tester configuration
- **DISPSOUND** (See sub-commands) Tester display and sound control
- **EUTADDR** Set | Query EUT address
- **EUTFEAT** Query EUT supported features
- **EUTHANDSHAKE** Set | Query EUT handshaking
- **EUTNAME** Query EUT user friendly name request
- **EUTRS232** Set | Query EUT RS232 HCI set up
- **EUTSRCE** Set | Query EUT address source
- **HWINFO** Query Hardware information
- **IDENT** Query Tester identity
- **INQSET** (See sub-commands) Inquiry set up
- **PAGSET** (See sub-commands) Page scan and timeout
- **SCPTSET** (See sub-commands) Script set up
- **USBADAPTOR** (See sub-commands) USB Adaptor set up
- **VERDATE** Query Tester firmware date and time stamp
- **VERNUM** Query Tester firmware version numbers
System Configuration

AUTH (Authentication Settings)
This command supports the following settings:

- **PINCODE Set | Query**  Pin Code setup
- **PINLEN Set | Query**  Pin Code Length setup
- **STATE Set | Query**  Enable Connection Authentication

**PINCODE (PIN Code)**
This command sets the PIN Code

**Set command format**

```
SYSCFG<ws>AUTH,PINCODE,<Variable>
```

<Variable> numeric value of PIN

**Example**

```
SYSCFG AUTH, PINCODE, 0000
```

**Query command format**

```
SYSCFG?<ws>AUTH,PINCODE
```

**Example**

```
SYSCFG? AUTH, PINCODE
```

**Response**

```
SYSCFG AUTH, PINCODE, 0000
```

**PINLEN (PIN Code Length)**
This command sets the PIN Length

**Set command format**

```
SYSCFG<ws>AUTH,PINLEN,<Variable>
```

<Variable> Integer 1 to 16

**Example**

```
SYSCFG AUTH, PINLEN, 4
```

**Query command format**

```
SYSCFG?<ws>AUTH,PINLEN
```

**Example**

```
SYSCFG? AUTH, PINLEN
```

**Response**

```
SYSCFG AUTH, PINLEN, 4
```

**STATE (Connection Authentication Enable)**
This command enables/disables the connection authentication.

**Set command format**

```
SYSCFG<ws><AUTH><,><STATE>,<Variable>
```

<Variable>

- **ON** Enable Connection Authentication
- **OFF** Disable Connection Authentication

**Example**

```
SYSCFG AUTH, STATE, ON
```
**BNCOUTPUT (Rear Panel Output)**

This command defines the output directed to the rear panel BNC outputs.

The allowable selections are restricted as follows:

- Output 1 cannot be RXON and Output 2 cannot be TXON.
- If Output 1 is TXON, output 2 can be any value.
- If Output 2 is RXON, output 1 can be any value.
- Otherwise Output 1 and Output 2 must be set to the same value.

### Query command

**format**

```
SYSCFG? <ws> AUTH, STATE
```

**Example**

```
SYSCFG? AUTH, STATE
```

**Response**

```
SYSCFG AUTH, STATE, ON
```

### Set command

**format**

```
SYSCFG<ws> BNCOUTPUT<,><output 1><,><output 2><output>
```

- TXON (output 1 only)
- RXON (output 2 only)
- TXDATA (Sig Gen Mode only)
- RXDATA
- CORRFIRED

**Example**

To set the rear panel output to Tx ON on output 1 and Correlator fired on Output 2, the command would be:

```
SYSCFG BNCOUTPUT, TXON, CORRFIRED
```

### Query command

**format**

```
SYSCFG? <ws> BNCOUTPUT
```

**Response**

The information is returned in the order:

```
<OUTPUT 1>, <OUTPUT 2>
```

**Example**

If the information is as follows, the response would be:

Output 1 – Tx on
Output 2 – Rx on

**Response**

```
SYSCFG BNCOUTPUT, TXON, RXON
```
BTADDR (Tester Bluetooth Address)

This command allows the operator to read the MT8852B Bluetooth address.

Query command format
- SYSCFG?<ws>BTADDR

Example
- SYSCFG? BTADDR

Response
- Example, if the BT address is 0x000123ABCDEF, the response would be:
  - 000123ABCDEF
CONFIG (Tester Configuration)

Under this system configuration section the following parameters can be controlled:

- **FILTER Set | Query**  
  Measurement filter bandwidth setting
- **GPIB Set | Query**  
  Tester GPIB address
- **LKTIMO Set | Query**  
  Tester’s link timeout setting
- **MODINDEX Set | Query**  
  Tester modulation index set up
- **NPMODE Set | Query**  
  Measurements done on POLL/NULL sequence
- **RANGE Set | Query**  
  Tester measurement power range hold
- **RS232 Set | Query**  
  Tester RS232 baud rate
- **RSMODE Set | Query**  
  Tester rear panel RS232 mode

### FILTER (Filter Setting)

This command is used to change the measurement bandwidth when performing the frequency receiver tests (Initial Carrier, Carrier Drift and Modulation Index). The default measurement bandwidth is set to 1.3 MHz, but this can be changed to 2 MHz.

- **Set command format**  
  `SYSCFG<ws>CONFIG,FILTER,<type>`
  where `<type>` is 2MHZ or 1.3MHZ
- **Example**  
  Set the measurement bandwidth to 2MHZ:
  `SYSCFG CONFIG,FILTER,2MHZ`

- **Query command format**  
  `SYSCFG?<ws>CONFIG,FILTER`
- **Example**  
  `SYSCFG? CONFIG,FILTER`
- **Response**  
  `SYSCFG CONFIG,FILTER,2MHZ`
GPIB (Tester GPIB Address)

Set command format
SYSCFG<ws>CONFIG<,>GPIB<,><address>

<address> 1 to 30 (Default 27)

Remarks
If the GPIB address is changed, any further GPIB communication must be performed to the new GPIB address.

Example
To set the GPIB address to 5 the command would be:
SYSCFG CONFIG,GPIB,5

Query command format
SYSCFG?<ws>CONFIG<,>GPIB

Response
The response is returned in the form of the command to set that state.

Example
SYSCFG? CONFIG,GPIB
If the GPIB address is 6 the response would be:
SYSCFG CONFIG,GPIB,6

LKTIMO (Link Timeout Setting)

This command sets the amount of time the unit waits after losing a (Bluetooth) link before abandoning the connection. This command is used before a link is made.

Set command format
SYSCFG<ws>CONFIG<,>LKTIMO<,><timeout>

Timeout
1 to 40 seconds. Default is 10. (Integers only)

Example
To set the link supervision timeout to 25 seconds:
SYSCFG CONFIG,LKTIMO,25

Query command format
SYSCFG?<ws>CONFIG<,>LKTIMO

Response
The response is in the form of the command to set that value

Example
If the timeout value is 15 seconds the response would be
SYSCFG CONFIG,LKTIMO,15
**MODINDEX (Mod Index Setting)**

The MT8852B default setting for the modulation index of the communication channel is 0.32. This command allows this value to be changed.

<table>
<thead>
<tr>
<th>Set command format</th>
<th>SYSCFG&lt;ws&gt;CONFIG&lt;,&gt;MODINDEX&lt;,&gt;&lt;setting&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;setting&gt;</td>
<td>0.25 to 0.50</td>
</tr>
</tbody>
</table>

**Example**

To set the mod index to 0.38 the command would be:

```
SYSCFG CONFIG,MODINDEX,0.38
```

**Query command format**

SYSCFG? CONFIG,MODINDEX

**Response**

The response is returned in the form of the command to set that state.

**Example**

```
SYSCFG? CONFIG,MODINDEX
```

**Response**

If the Mod index was set to 0.32 then the response would be:

```
SYSCFG CONFIG,MODINDEX,0.32
```

**NPMODE (Poll/Null Measurement Mode)**

This command has been maintained to ensure compatibility with software version 1.00. It should not be used in any of the new test programs and ideally should be replaced in existing test programs with the SCRIPTMODE command detailed in chapter 4 of this manual.

This command allows the MT8852B to make measurements on the POLL/NULL sequence used to maintain the Bluetooth link rather than using Test mode. This allows some measurements to be carried out even if test mode has not been fully implemented.

This command puts every script into NULL Packet mode. Refer to the SCRIPTMODE command description.

<table>
<thead>
<tr>
<th>Set command format</th>
<th>SYSCFG&lt;ws&gt;CONFIG&lt;,&gt;NPMODE&lt;,&gt;&lt;setting&gt;</th>
</tr>
</thead>
</table>
| <setting>         | ON: Sets scripts 3 to 10 to NULL packet mode.  
|                   | OFF: Sets scripts 3 to 10 to standard mode. |

**Example**

To set the null packet measurement mode to ON the command would be:

```
SYSCFG CONFIG,NPMODE,ON
```

**Query command format**

SYSCFG? CONFIG,NPMODE

**Remarks**

If scripts 3 to 10 are all in NULL packet mode, this will return ON.

**Response**

The response is returned in the form of the command to set that state.

**Example**

```
SYSCFG? CONFIG,NPMODE
```

**Response**

If the null packet measurement mode was OFF the response would be:

```
SYSCFG CONFIG,NPMODE,OFF
```
RANGE (Tester Measurement System Power Range)

This command allows the power range of the measurement system to be controlled if required. There are six power ranges plus auto ranging which is the default.

Set command format

SYSCFG<ws>CONFIG<,>RANGE<,><setting>

<setting>
0 Auto ranging
1 +22 to +7 dBm
2 +9 to –3 dBm
3 +5 to –7 dBm
4 –4 to –16 dBm
5 –12 to –26 dBm
6 –24 to –35 dBm
AUTO Auto ranging

Example

To set the range to auto the command would be:

SYSCFG CONFIG,RANGE,AUTO

Query command format

SYSCFG?<ws>CONFIG<,>RANGE

Response

The response is returned in the form of the command to set that state.

Example

SYSCFG? CONFIG,RANGE

Response

If the range was held at range 1 then the response would be:

SYSCFG CONFIG,RANGE,1
RS232 (Tester Communication RS232 Baud Rate)

Set command format

SYSCFG<ws>CONFIG<,>RS232<,><baud rate>

Example

To set the baud rate to 19200 the command would be:

SYSCFG CONFIG,RS232,19200

Query command format

SYSCFG?<ws>CONFIG<,>RS232

Response

The response is returned in the form of the command to set that state.

Example

SYSCFG? CONFIG,RS232

Response

If the baud rate is 38400 the response would be:

SYSCFG CONFIG,RS232,38400

1200
2400
4800
9600
19200
38400
57600
**RSMODE (Tester Rear Panel RS232 Mode)**

This command sets the rear panel RS232 into one of the following modes:

- **EXTCOM** The connector can be used for GPIB type control and communication.
- **EXTHCI** The connector is used to send HCI commands directly to the Bluetooth core. In this mode the standalone MT8852B cannot communicate to the internal Bluetooth core. In this mode the baud rate is 57600.

**Set command format**

```
SYSCFG<ws>CONFIG<,>RSMODE<,><mode>
```

- **<mode>**
  - EXTCOM
  - EXTHCI

**Note:** All GPIB commands are disabled if RS232 mode is set to EXTHCI.

**Example**

To set the connector to be used for GPIB commands the command would be:

```
SYSCFG CONFIG,RSMODE,EXTCOM
```

**Query command format**

```
SYSCFG?<ws>CONFIG<,>RSMODE
```

**Response**

The response is returned in the form of the command to set that state.

**Example**

```
SYSCFG? CONFIG,RSMODE
```

**Response**

If the mode is EXTHCI the response would be:

```
SYSCFG CONFIG,RSMODE,EXTHCI
```
DISPSOUND (Tester Display and Sound Control)

This command configures the following sub-command group:

**CONTRAST**  Set | Query  Front panel display contrast
**ENTRY**     Set | Query  Error beep on illegal entry
**FOLTST**    Set | Query  Follow test mode
**KEY**       Set | Query  Keyboard tactile feedback
**TEXT**      Set | Query  User text string
**TEXTS**     Set | Query  User text display state

**CONTRAST (Front Panel Display Contrast)**

This command allows the contrast of the MT8852B LCD contrast to be altered.

**Set command format**

SYSCFG<ws>DISPSOUND<,>CONTRAST<,><contrast>

<contrast>
1 to 10

UP for increment by one

DOWN for decrement by one

**Example**

To set the contrast to 8 the command would be:

SYSCFG DISPSOUND,CONTRAST,8

**Query command format**

SYSCFG?<ws>DISPSOUND<,>CONTRAST

**Response**

The response is returned in the form of the command to set that state

**Example**

SYSCFG? DISPSOUND<,>CONTRAST

**Response**

If contrast was 5 the response would be:

SYSCFG DISPSOUND,CONTRAST,5
ENTRY (Error Beep on Illegal Entry)

This command sets the instrument to make an audible beep when an illegal entry is made from the front panel.

**Set command format**

```
SYSCFG<ws>DISPSOUND<,>ENTRY<,><state>
```

*<state>*  ON or OFF

**Example**

To set the entry error beep on the command would be:

```
SYSCFG DISPSOUND,ENTRY,ON
```

**Query command format**

```
SYSCFG?<ws>DISPSOUND<,>ENTRY
```

**Response**

The response is returned in the form of the command to set that state

**Example**

```
SYSCFG? DISPSOUND,ENTRY
```

**Response**

If the state was OFF the response would be:

```
SYSCFG DISPSOUND,ENTRY,OFF
```

FOLTST (Follow Test Mode)

This command is used to set the follow test display mode.

**Set command format**

```
SYSCFG<ws>DISPSOUND<,>FOLTST<,><mode>
```

*<mode>*

- OFF = the current results page displays
- SUM = the summary results page displays
- EXT = the extended results page displays.

**Example**

To set the follow test mode to Summary, the command would be:

```
SYSCFG DISPSOUND,FOLTST,SUM
```

**Query command format**

```
SYSCFG?<ws>DISPSOUND<,>FOLTST
```

**Response**

```
OFF, SUM, EXT
```

**Example**

```
SYSCFG? DISPSOUND,FOLTST
```

**Response**

If the follow test mode is Extended:

```
SYSCFG DISPSOUND,FOLTST,EXT
```
KEY (Tactile Feedback Control ‘Key Click’)  
This command controls the key click from the front panel keypad.

Set command format  
SYSCFG<ws>DISPSOUND,<KEY,<state>  
<state>  ON or OFF
Example  
To turn on the key click the command would be:  
SYSCFG DISPSOUND,KEY,ON

Query command format  
SYSCFG<ws>DISPSOUND,<KEY
Response  
The response is returned in the form of the command to set that state
Example  
SYSCFG? DISPSOUND,KEY
Response  
If key click is OFF the response would be:  
SYSCFG DISPSOUND,KEY,OFF

TEXT (User Text String)  

Set command format  
SYSCFG<ws>DISPSOUND,<TEXT,<text>  
<text>  Up to ASCII 20 characters.
Remarks  
Defines the text string that is displayed using the TEXTS command.
Example  
To set the text string to Bluetooth the command would be:  
SYSCFG DISPSOUND,TEXT,Bluetooth

Query command format  
SYSCFG?<ws> DISPSOUND,<TEXT
Response  
The response is returned in the form of the command to set that state
Example  
SYSCFG? DISPSOUND,TEXT
Response  
If the text was Bluetooth the response would be:  
SYSCFG DISPSOUND,TEXT,Bluetooth
**TEXTS (User Text Display State)**

**Set command format**

SYSCFG<ws>DISPSOUND,<TEXTS,<state>

<state> ON or OFF

**Example**

To set the user text display state to ON, the command would be:

SYSCFG DISPSOUND,TEXTS,ON

**Query command format**

SYSCFG?<ws>DISPSOUND,<TEXTS

**Response**

The response is returned in the form of the command to set that state

**Example**

SYSCFG? DISPSOUND,TEXTS

**Response**

If the state was OFF the response would be:

SYSCFG DISPSOUND,TEXTS,OFF
EUTADDR (EUT Address)

This command is used to set the EUT address when the EUT address source is set to manual. If the source is not set to manual the command is ignored and an execution error given.

The query command is used to request the EUT address. The present value is returned, which could be the power up initialisation value of zeros. The only indication of a valid BT address is after a connection has been made.

Set command format
SYSCFG<ws>EUTADDR<,><address>

Example
If the Bluetooth address is 0x000123ABCDEF the command would be:
SYSCFG EUTADDR,000123ABCDEF

Query command format
SYSCFG? EUTADDR

Response
6 byte (12 character address) i.e. 000123ABCDEF

Example
SYSCFG? EUTADDR
Response
If the address is 000123ABCDEF
000123ABCDEF

EUTFEAT (EUT supported features)

This section allows the operator to read the supported features of the EUT.

Query command format
SYSCFG?<ws>EUTFEAT

Response
The response is a 16-character string representation of a hexadecimal number containing the features information coded in the form specified in the Bluetooth HCI specification.

Example: 000018187805FFFF
System Configuration

EUTHANDSHAKE (EUT RS232 handshake setting)

This command is used to set the EUT RS232 handshake mode.

Set command format
SYSCFG<ws>EUTHANDSHAKE<,><handshake mode>

<handshake mode>
NONE
RTS/CTS

Remarks
NONE: Handshaking is disabled.
RTS/CTS: Request to send / clear to send hardware handshaking is enabled.

Example
To set the EUT handshake mode to RTS/CTS the command would be:
SYSCFG EUTHANDSHAKE,RTS/CTS

Query command format
SYSCFG?<ws>EUTHANDSHAKE

Response
The response is returned in the form of the command to set that state.

Example
SYSCFG? EUTHANDSHAKE

Response
If the handshake is disabled the response would be:
SYSCFG EUTHANDSHAKE,NONE

EUTLEFEAT (EUT supported features for Low energy)

This section allows the operator to read the Low energy supported features of the EUT.

Query command format
SYSCFG?<ws>EUTLEFEAT

Response
The response is a 16-character string representation of a hexadecimal number containing the features information coded in the form specified in the Bluetooth HCI specification for Low energy.

Example: 0000000000000120
EUTNAME (EUT User Friendly Name Request)

This command returns the user-friendly name of the EUT if it is available. When a test or script is run the standard connection procedure requests the user-friendly name. If the connection has been made using the auxiliary commands the auxiliary user friendly name command can be used to read the user-friendly name.

**Set command format**

SYSCFG? <ws> EUTNAME

**Response**

The user friendly name is returned as a text string of up to 248 characters.

**Example**

SYSCFG? EUTNAME

**Response**

The user friendly name is returned as a text string of up to 248 characters. If no user-friendly name is available, the string “not available” is returned.

EUTRS232 (EUT RS232 HCI Set Up)

This section allows the operator to set the baud rate of the HCI RS232 connection to the EUT.

**Set command format**

SYSCFG <ws> EUTRS232, <baud rate>

**Example**

To set the baud rate to 9600 the command would be:

SYSCFG EUTRS232, 9600

**Query command format**

SYSCFG? <ws> EUTRS232

**Response**

The response is returned in the form of the command to set that state.

**Example**

SYSCFG EUTRS232

**Response**

For baud rate set to 19200 the response would be:

SYSCFG EUTRS232, 19200

Remarks

The RS232 HCI link does not at present support the Bluetooth RS232 protocol negotiation and compression or handshaking.
EUTSRCE (EUT Address Source)

Set command format

```
SYSCFG<ws>EUTSRCE<,><source>
```

<source>
MANUAL
RS232
INQUIRY
USB
BLE2WIRE
USBADAPTOR
USBBLE2WIRE

Remarks

This command is used to set the source of the EUT address.

**MANUAL**
The address of the EUT is entered via the front panel or GPIB.

**RS232**
The EUT address is acquired via the RS232 HCI link and the EUT is initialised for tests.

**INQUIRY**
The EUT Bluetooth address is obtained by performing an inquiry. If the EUT address source is set to inquiry, a GPIB Run command will produce an execution error if the number of responses is set to greater than “1”.

**USB**
The EUT address is acquired via the USB HCI link and the EUT is initialised for tests.

**BLE2WIRE**
The BLE2WIRE link is used to initialize the EUT for tests.

**USBADAPTOR**
The EUT address is acquired via the USB-Serial link and the EUT is initialised for tests.

**USBBLE2WIRE**
The EUT address is acquired via the USBBLE2-Wire link and the EUT is initialised for tests.

Example

To set the EUT address source to MANUAL the command would be:
```
SYSCFG EUTSRCE,MANUAL
```

Query command format

```
SYSCFG?<ws>EUTSRCE
```

Response

Response is in the form of the command to set that state.

Example

If the EUT address source was manual the response would be:
```
SYSCFG? EUTSRCE
```

Response

```
SYSCFG EUTSRCE,MANUAL
```
HWINFO (Hardware information)

This command returns the RF PCB serial number and revision and the Control PCB serial number and revision.

Query command format
SYSCFG?<ws>HWINFO

Response
The information is returned in the order:
<RF PCB ser no.>,<RF PCB rev>,
<control PCB ser no.>,<control PCB rev>

Example
If the information is as follows, the response would be:
RF PCB serial number: 01090021
RF PCB revision:
4
Control PCB serial number:
07020011
Control PCB revision:
3

Response
SYSCFG HWINFO,01090021,4,07020011,3

IDENT (Tester Identity)

This command allows the operator to read the identity, serial number and firmware version number of the Anritsu Bluetooth test set. The response is the same as the standard “*IDN?” command.

Query command format
SYSCFG?<ws>IDENT

Response
A string is returned containing the manufacturer’s name, the model number, the serial number (10 digits), and the software revision. Commas separate the items.
ANRITSU,MT8852B,00801001,4.16.000
INQSET (Inquiry Set Up)

This command configures the inquiry. The inquiry continues until the maximum number of responses has been reached or the maximum period of time has expired. The inquiry can also be terminated by the inquiry stop auxiliary command. The sub parameters are:

- **NAME** Set | Query User-friendly EUT name control
- **RNUM** Set | Query Number of responses before inquiry termination
- **TIMEOUT** Set | Query Max period over which the inquiry is done

NAME (Common Name During Inquiry)

This parameter controls whether the user-friendly name is requested for each of the inquired devices after an inquiry has ended.

**Set command**

Set command format: `SYSCFG<ws>INQSET<,>NAME<,><state>`

Example: To request the user friendly name after the inquiry the command would be:

```
SYSCFG INQSET,NAME,ON
```

**Query command**

Query command format: `SYSCFG?<ws>INQSET<,>NAME`

Example:

```
SYSCFG? INQSET,NAME
```

Response: If this state was set off the response would be:

```
SYSCFG INQSET,NAME,OFF
```

RNUM (Number of Response)

The inquiry can be configured to stop after a maximum number of responses. The command parameters used to set this value.

**Set command**

Set command format: `SYSCFG<ws>INQSET<,>RNUM<,><value>`

Example: To set the maximum number of responses to 12 the command would be:

```
SYSCFG INQSET,RNUM,12
```

**Query command**

Query command format: `SYSCFG?<ws><INQSET<,>RNUM`

Example:

```
SYSCFG? INQSET,RNUM
```

Response: If the maximum number of responses set was 3 the response would be:

```
SYSCFG INQSET,RNUM,3
```
TIMEOUT (Maximum Inquiry Time)

The inquiry can be configured to stop after a maximum period of time. The command parameters used to set this value.

Set command format
SYSCFG<ws>INQSET,<,>TIMEOUT,<,><value>

Example
To set the inquiry time to approximately 12 seconds, the command would be:
SYSCFG INQSET,TIMEOUT,12

Query command format
SYSCFG?<ws>INQSET,<,>TIMEOUT

Example
SYSCFG? INQSET,TIMEOUT

Response
If the maximum timeout was set to 5 the response would be:
SYSCFG INQSET,TIMEOUT,5
PAGSET (Page Setting)

This command configures the following group:

- **EUTPSRM** Set | Query  EUT Page Scan Repetition Mode
- **PAGETO** Set | Query  Set | Query Page Timeout Setting

**EUTPSRM (EUT Page Scan Repetition Mode)**

This command is used to set the EUT page scan repetition mode.

<table>
<thead>
<tr>
<th>Set command format</th>
<th>SYSCFG&lt;ws&gt;PAGSET,EUTPSRM&lt;,&gt;&lt;psrm&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;psrm&gt; R0</td>
</tr>
<tr>
<td></td>
<td>R1</td>
</tr>
<tr>
<td></td>
<td>R2</td>
</tr>
</tbody>
</table>

**Example**

To set the page scan repetition mode to R1, the command would be:

SYSCFG PAGSET,EUTPSRM,R1

**Query command format**

| SYSCFG?<ws>PAGSET,EUTPSRM |

**Response**

R0, R1, R2

**Example**

SYSCFG? PAGSET,EUTPSRM

**Response**

If the page scan repetition mode is R1

SYSCFG PAGSET,EUTPSRM,R1

**PAGETO (Page Timeout Setting)**

This command changes the page timeout used for making a connection. When requesting a test run or a connection, the MT8852B makes two connection attempts. The time set here is the total paging time for both attempts.

<table>
<thead>
<tr>
<th>Set command format</th>
<th>SYSCFG&lt;ws&gt;PAGSET,PAGETO&lt;,&gt;&lt;time&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;time&gt; 2 to 30 seconds (Integers only)</td>
</tr>
</tbody>
</table>

**Query command format**

| SYSCFG?<ws>PAGSET,PAGETO |

**Response**

The response is in the form of the command to set that value.

**Example**

If the page timeout value is 10 seconds the response would be:

SYSCFG PAGSET,PAGETO,10
SCPTSET (Script Set Up)

This command group allows the set up of the action of the loop run command and the form in which frequencies are displayed and reported over GPIB.

**LOOPCNT** Set | Query  Loop test/script a defined number of times

**LPCONT** Set | Query  Loop test/script continuously

**LPSTFAIL** Set | Query  Loop test/script stop on fail

**FRQDISP** Set | Query  Frequency display mode

**LOOPCNT (Test Loop Count)**

When running a test or script in loop mode this command allows the test or script to run a number of times rather than continuously. When this loop continuous is ON the loop count does not apply.

**Set command format**

```
SYSCFG<ws>SCPTSET,<,>LOOPCNT,<,><value>
```

<value>  2 to 100 (10 default)

**Example**

To set the loop count to 50 the command would be:

```
SYSCFG SCPTSET,LOOPCNT,50
```

**Query command format**

```
SYSCFG?<ws>SCPTSET,LOOPCNT
```

**Response**

The response is returned in the form of the command to set that state.

**Example**

```
SYSCFG? SCPTSET,LOOPCNT
```

**Response**

If the loop count value is 7 the response would be:

```
SYSCFG SCPTSET,LOOPCNT,7
```

**LPCONT (Loop Test/Script Continuously)**

When running a test or script in loop mode this command allows the test or script to run continuously. When this is ON the loop count will not apply.

**Set command format**

```
SYSCFG<ws>SCPTSET,<,>LPCONT,<,><state>
```

<state> ON or OFF

**Example**

To set the loop continuously to ON the command would be:

```
SYSCFG SCPTSET,LPCONT,ON
```

**Query command format**

```
SYSCFG?<ws>SCPTSET,LPCONT
```

**Response**

The response is returned in the form of the command to set that state.

**Example**

```
SYSCFG? SCPTSET,LPCONT
```

**Response**

If the loop continuous state was OFF the response would be:

```
SYSCFG SCPTSET,LPCONT,OFF
```
System Configuration

LPSTFAIL (Loop test/script stop on fail)
When running a test or script in loop mode this command allows the testing to stop on a test failing.

Set command format
SYSCFG<ws>SCPTSET,<,LPSTFAIL,<,><state>

Example
To set the stop on fail to ON the command would be:
SYSCFG SCPTSET,LPSTFAIL,ON

Query command format
SYSCFG?<ws>SCPTSET,LPSTFAIL

Response
The response is returned in the form of the command to set that state.

Example
SYSCFG? SCPTSET,LPSTFAIL

Response
If the stop on fail was OFF the response would be:
SYSCFG SCPTSET,LPSTFAIL,OFF

FRQDISP (Frequency Display Mode)
This command sets the way that the Bluetooth channels are reported and displayed between the frequency and the channel number. Channel 0 = 2402 MHz and channel 78 = 2480 MHz.

Set command format
SYSCFG<ws>SCPTSET,<,FRQDISP,<,><state>

Example
To set the frequency display mode to frequency the command would be:
SYSCFG SCPTSET,FRQDISP,FREQ

Query command format
SYSCFG?<ws>SCPTSET,FRQDISP

Response
The response is returned in the form of the command to set that state.

Example
SYSCFG? SCPTSET,FRQDISP

Response
If the frequency display mode is channel number the response would be:
SYSCFG SCPTSET,FRQDISP,CHAN
USBADAPTOR (Adaptor Set Up)
This command group allows the set up of the USB port adaptor.

NUMPORTS Query Query the number of ports on the USB->RS232 adaptor.
PORT Set | Query Set or query the port in use on the USB->RS232 adaptor.

NUMPORTS (Number of USB Adaptor Ports)

Query command format SYSCFG?<ws>USBADAPTOR<,>NUMPORTS
Example If the number of ports was 4, the response would be:
4

PORT (USB Adaptor Port)

Set command format SYSCFG<ws>USBADAPTOR<,>PORT<,><port>
Example To set the port to A, the command would be:
SYSCFG USBADAPTOR,PORT,A

Query command format SYSCFG?<ws>USBADAPTOR,PORT
Response The response is returned in the form of the command to set that state.
Example SYSCFG? USBADAPTOR,PORT
Response If the port was set to port A, the response would be:
SYSCFG USBADAPTOR,PORT,A
VERDATE (Tester Firmware Version and Date Stamp)

This command returns the version and date stamp information for all the modules within the Anritsu Bluetooth test set.

Set command format
SYSCFG?<ws>VERDATE

Response format
SYSCFG?<ws>VERDATE,<Bbbootstamp>,<Bbarmstamp>,<BBFPAGAstamp>,<RFFPGAstamp>,<DSPversion>

Example:

VERNUM (Tester Firmware Version Numbers)

This command returns the version numbers for all the modules within the Anritsu Bluetooth test set.

Query command format
SYSCFG?<ws>VERNUM

Response format
SYSCFG?<ws>VERNUM,<Bbbootstamp>,<Bbarmstamp>,<BBFPAGAstamp>,<RFFPGAstamp>,<DSPversion>

Example:
SYSCFG VERNUM,N/A,0.01.017,cfc210bc,01.03,1.05.032
Chapter 6 — SCO Configuration

This chapter provides details of the SCO configuration command and the associated parameters. SCO connections are used to carry audio data. A SCO connection can only be set up when an ACL connection has been made between the two units. The commands are listed in alphabetical order as detailed below.

**SCOCFG (Set SCO Configuration)**

Command format  
SCOCFG<ws><config selection>[,<><parameters>......]

<config selection>

- **AIRCODE**  
  Set | Query  
  SCO air code format

- **BITPOSN**  
  Set | Query  
  SCO bit position

- **INPUTCODE**  
  Set | Query  
  SCO input code format

- **INPUTDATA**  
  Set | Query  
  SCO input data format

- **LBMODE**  
  Set | Query  
  Loopback mode

- **PKTTYPE**  
  Set | Query  
  SCO packet type

- **SAMPsize**  
  Set | Query  
  SCO sample size

- **TONEGEN**  
  Set | Query  
  SCO tone generator
**SCO Configuration**

**AIRCODE (SCO Air Code Format)**

Set command format

```
SCOCFG<ws>AIRCODE<,><format>
```

<format>

CVSD
ULAW
ALAW

Remarks

This command is used to set the format to be used over air for the SCO connection. Both ends of the SCO link must use the same air code format.

The value will also be used for the EUT if the MT8852B is controlling an EUT via the front panel connection.

The command is only allowed when there is an ACL connection but no SCO connection.

Query command format

```
SCOCFG?<ws>AIRCODE
```

Response

Response is in the form of the command to set that state.

Example

If the air code format is CVSD the response would be:

```
Response
SCOCFG AIRCODE,CVSD
```

**BITPOSN (SCO Linear PCM Bit Position)**

Set command format

```
SCOCFG<ws>BITPOSN<,><posn>
```

<posn> 0 to 7

Remarks

This command is used to set the bit offset position for linear PCM input. The PCM bit position is the number of bit positions that the MSB of the sample is away from starting MSB (only for Linear PCM).

The value is only used by the MT8852B when it is controlling an EUT via the front panel connection.

The command can only be used when there is an ACL connection (and if the EUT is controlled via the front panel, no SCO connection).

Query command format

```
SCOCFG?<ws>BITPOSN
```

Response

Response is in the form of the command to set that state.

Example

If the bit position is set to 0, the response would be:

```
Response
SCOCFG BITPOSN,0
```
INPUTCODE (SCO Input Coding Format)

Set command format

SCOCFG<ws>INPUTCODE<,><format>

<format>
LINEAR
ULAW
ALAW

Remarks
This command is used to set the input coding format for the audio connection.
The value is only used by the MT8852B when it is controlling an EUT via the front panel connection.
The command can only be used when there is an ACL connection (and if the EUT is controlled via the front panel, no SCO connection).

Query command format

SCOCFG?<ws>INPUTCODE

Response
Response is in the form of the command to set that state.

Example
If the input coding format is set to ULAW, the response would be:
Response
SCOCFG INPUTCODE,ULAW

INPUTDATA (SCO Input Data Format)

Set command format

SCOCFG<ws>INPUTDATA<,><format>

<format>
1SCOMP
2SCOMP
SIGNMAG

Remarks
This command is used to set the input data format for the audio connection to either 1’s compliment, 2’s compliment or sign magnitude.
The value is only used by the MT8852B when it is controlling an EUT via the front panel connection.
The command can only be used when there is an ACL connection (and if the EUT is controlled via the front panel, no SCO connection).

Query command format

SCOCFG?<ws>INPUTDATA

Response
Response is in the form of the command to set that state.

Example
If the input data format is set to sign magnitude, the response would be:
Response
SCOCFG INPUTDATA,SIGNMAG
**SCO Configuration**

### LBMODE (Loopback Mode)

**Set command format**

```
SCOCFG<ws>LBMODE<,><status>
<status>
ON
OFF
```

**Remarks**

This command is used to set the unit into remote loopback mode. In this mode all data received over air (including SCO data) is looped back and sent back out over air.

The command is only allowed when there is an ACL connection but no SCO connection.

**Query command format**

```
SCOCFG?<ws>LBMODE
```

**Response**

Response is in the form of the command to set that state.

**Example**

If the unit is in loopback mode, the response would be:

```
Response
SCOCFG LBMODE,ON
```

### PKTTYPE (SCO Packet Type)

**Set command format**

```
SCOCFG<ws>PKTTYPE<,><type>
?type>
HV1
HV2
HV3
```

**Remarks**

This command is used to set the SCO packet type. Only one packet type can be selected.

Note: The packet type selected restricts the number of SCO connections available, as follows:

<table>
<thead>
<tr>
<th>Pkt. Type</th>
<th>Max connections available</th>
</tr>
</thead>
<tbody>
<tr>
<td>HV1</td>
<td>1</td>
</tr>
<tr>
<td>HV2</td>
<td>2</td>
</tr>
<tr>
<td>HV3</td>
<td>3</td>
</tr>
</tbody>
</table>

The command is only allowed when there is an ACL connection but no SCO connection.

**Query command format**

```
SCOCFG?<ws>PKTTYPE
```

**Response**

Response is in the form of the command to set that state.

**Example**

If the packet type is set to HV3, the response would be:

```
Response
SCOCFG PKTTYPE,HV3
```
**SCOCFG (Set SCO Configuration)**

**SAMPSIZE (SCO Input Sample Size)**

Set command format

```plaintext
SCOCFG<ws>SAMPSIZE<,><size>
<size>
8 BIT
16 BIT
```

Remarks
This command is used to set the input sample size for the audio connection to either 8 bit or 16 bit.

The value is only used by the MT8852B when it is controlling an EUT via the front panel connection.

The command can only be used when there is an ACL connection (and if the EUT is controlled via the front panel, no SCO connection).

Query command format

```plaintext
SCOCFG?<ws>SAMPSIZE
```

Response
Response is in the form of the command to set that state.

Example
If the input sample size is set to 16 bit, the response would be:

```
Response
SCOCFG SAMPSIZE,16BIT
```

**TONEGEN (SCO Tone Generator)**

Set command format

```plaintext
SCOCFG<ws>TONEGEN<,><state>
<state>
ON
OFF
```

Remarks
This command is used to turn the SCO tone generator on and off.

It is only allowed when there is an ACL and a SCO connection.

Query command format

```plaintext
SCOCFG?<ws>TONEGEN
```

Response
Response is in the form of the command to set that state.

Example
If the tone generator is on, the response would be:

```
Response
SCOCFG TONEGEN,ON
```
Chapter 7 — SCO Connections

This chapter provides details of the SCO connect and disconnect commands. A SCO connection can only be created when an ACL connection already exists between the two units. The following list is an example GPIB command sequence to create a SCO connection:

CONNECT
GETEUTFEAT
[SCOCFG ... ]
SCOCCONN 1

SCOCCONN (SCO Connect)

Set command format
SCOCCONN<ws><channel>
<channel> 1 to 3

Remarks
This command is used to create a SCO connection on the specified channel. When the connection has been completed the SCC bit in the CHG register is set.

The current state of the SCO connections can be obtained by using the STATUS command.

SCODISC (SCO Disconnect)

Set command format
SCODISC<ws><channel>
<channel> 1 to 3

Remarks
This command is used to terminate a SCO connection on the specified channel. When the disconnection has been completed the SCC bit in the CHG register is set.

The current state of the SCO connections can be obtained by using the STATUS command.
Chapter 8 — AFH Measurement

This chapter provides details of the Adaptive Frequency Hopping (AFH) configuration commands and associated parameters. AFH is a method used to improve the transmission quality by preventing hopping to channels that are being used by an interfering signal. The commands in this chapter are listed in alphabetical order as detailed below.

**AFHCFG (Set AFH Configuration)**

Command format  
AFHCFG<ws><config selection>[<,><parameters>…]

<table>
<thead>
<tr>
<th>&lt;config selection&gt;</th>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACM</td>
<td>Query</td>
<td>Read the MT8852B Active Channel Map.</td>
</tr>
<tr>
<td>AFH</td>
<td>Set</td>
<td>Query</td>
</tr>
<tr>
<td>DISPLAY</td>
<td>Set</td>
<td>Query</td>
</tr>
<tr>
<td>EUTRPT</td>
<td>Set</td>
<td>Query</td>
</tr>
<tr>
<td>EUTRRATE</td>
<td>Set</td>
<td>Query</td>
</tr>
<tr>
<td>FER</td>
<td>Query</td>
<td>Read the EUT Frame Error Rate</td>
</tr>
<tr>
<td>MINCHAN</td>
<td>Set</td>
<td>Query</td>
</tr>
<tr>
<td>MPLAM</td>
<td>Set</td>
<td></td>
</tr>
<tr>
<td>SCALE</td>
<td>Set</td>
<td>Query</td>
</tr>
</tbody>
</table>
**AFH Measurement**

### ACM (Read Active Channel Map)

<table>
<thead>
<tr>
<th>Query command format</th>
<th>AFHCFG?&lt;ws&gt;ACM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response</td>
<td>Response is a hexadecimal representation of the active channel map.</td>
</tr>
<tr>
<td>Example</td>
<td>If all channels are in use, the response would be:</td>
</tr>
<tr>
<td>Response</td>
<td>AFHCFG? ACM ffffffffffffffffff7f</td>
</tr>
</tbody>
</table>

### AFH (AFH on / off)

<table>
<thead>
<tr>
<th>Set command format</th>
<th>AFHCFG&lt;ws&gt;AFH,&lt;,&gt;&lt;state&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;state&gt;</td>
<td>ON or OFF</td>
</tr>
<tr>
<td>Remarks</td>
<td>This command enables AFH on the current connection.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Query command format</th>
<th>AFHCFG?&lt;ws&gt;AFH?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response</td>
<td>The response is in the form of the command to set the current state.</td>
</tr>
<tr>
<td>Example</td>
<td>If AFH is enabled, the response would be:</td>
</tr>
<tr>
<td>Response</td>
<td>AFHCFG AFH,ON</td>
</tr>
</tbody>
</table>

### DISPLAY (Display Channel Utilization or FER Page)

<table>
<thead>
<tr>
<th>Set command format</th>
<th>AFHCFG&lt;ws&gt;DISPLAY,&lt;,&gt;&lt;screen&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;screen&gt;</td>
<td>CHVST or FERVST</td>
</tr>
<tr>
<td>Remarks</td>
<td>This command is used to select either the channel use versus time or the FER versus time display.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Query command format</th>
<th>AFHCFG?&lt;ws&gt;DISPLAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response</td>
<td>Response is in the form of the command to set that state.</td>
</tr>
<tr>
<td>Example</td>
<td>If the current display was FER versus time, the response would be:</td>
</tr>
<tr>
<td>Response</td>
<td>AFHCFG DISPLAY,FERVST</td>
</tr>
</tbody>
</table>
AFHCFG (Set AFH Configuration)

EUTRPT (EUT Reporting on / off)

Set command format AFHCFG<ws>EUTRPT<,><state>
<state> ON or OFF
Remarks This command is used to enable or disable EUT reporting.

Query command format AFHCFG?<ws>EUTRPT
Response Response is in the form of the command to set that state.
Example If EUT reporting was on, the response would be:
Response AFHCFG EUTRPT,ON

EUTRRATE (EUT Reporting Rate)

Set command format AFHCFG<ws>EUTRRATE<,><rate>
<rate> 1 to 30
Remarks This command is used to set the rate, in seconds, at which the EUT generates local assessment reports.

Query command format AFHCFG?<ws>EUTRRATE
Response Response is in the form of the command to set that state.
Example If the EUT reporting rate was 1s, the response would be:
Response AFHCFG EUTRRATE,1

FER (Read Frame Error Rate)

Query command format AFHCFG?<ws>FER
Response Response is the current Frame Error Rate.
Example AFHCFG? FER
Response If the FER is 3.16%, the response would be:AFHCFG FER,3.16
**MINCHAN (Minimum number of active channels)**

**Set command format**

AFHCFG<ws>MINCHAN<,><No.Channels>

<No. Channels>

1 to 20

**Remarks**

This command is used to set the minimum number of channels that may remain as active in the Active Channel Map as a result of changes to the MPLAM or SLAM.

**Query command format**

AFHCFG?<ws>MINCHAN

**Response**

Response is in the form of the command to set that state.

**Example**

If the minimum active channels parameter is set to its default of 20, the response would be:

Response

AFHCFG MINCHAN,20

---

**MPLAM (Set MT8852B Pseudo Local Assessment Map)**

**Set command format**

AFHCFG<ws>MPLAM<,><map>

<map>

All disabled:

00000000000000000000

All enabled:

FFFFFFFFFFFFFFFFFFFF7F

Lower 32 enabled, rest disabled:

FFFFFFFF000000000000

**Remarks**

This command is used to set the channel map.

The channel map is represented by a string of 20 hexadecimal digits that define 10 bytes. The first channel, (channel 0) corresponds to bit 0 of the first byte and the last channel (channel 78) by bit 6 of the tenth byte. A “1” in each bit position means that the channel is available for use; “0” means that it is masked.
SCALE

Set command format  
AFHCFG<ws>SCALE<,><scale factor>

<scale factor>
10
20
50
100

Remarks  
This command sets the scale value used for the “chart recorder” display when measuring channel utilisation or FER.

Query command format  
AFHCFG?<ws>SCALE

Response  
The response is in the form of the command to set the current state.

Example  
If scale is set to 20 then the response would be:

Response  
AFHCFG SCALE,20
Chapter 9 — Signal Generator Mode and CW Measurement

The MT8852B can be used to generate fixed data patterns at calibrated levels. The instrument can be placed into signal generator mode by using the OPMD command or sending the SIGGEN or ESIGGEN commands.

Basic Rate Signal Generator Mode

Use this command to generate Basic Data rate signals.

Set command format

```
SIGGEN<ws><pattern><,><channel mode><,><chan><,><freq><,><mod index><,><pwr><,><rfstate>
```

<table>
<thead>
<tr>
<th>&lt;pattern&gt;</th>
<th>DATACW</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DATA10101010</td>
</tr>
<tr>
<td></td>
<td>DATA11110000</td>
</tr>
<tr>
<td></td>
<td>DATAPRBS9</td>
</tr>
<tr>
<td></td>
<td>DATAPRBS15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>&lt;channel mode&gt;</th>
<th>CHAN</th>
<th>FREQ</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>&lt;chan&gt;</th>
<th>–10 to 98 (2392 MHz to 2500 MHz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;freq&gt;</td>
<td>2392e6 to 2500e6</td>
</tr>
<tr>
<td>&lt;mod index&gt;</td>
<td>0.25 to 0.40</td>
</tr>
<tr>
<td>&lt;pwr&gt;</td>
<td>0 to –90 dBm</td>
</tr>
<tr>
<td>&lt;rfstate&gt;</td>
<td>ON or OFF</td>
</tr>
</tbody>
</table>

Examples

To set up the MT8852B to output a 101010101 data stream on channel 3 with 0.26 mod index at a power level of –20 dBm and to turn the RF output ON, use following command:

```
SIGGEN DATA10101010,CHAN,3,0.26,-20,ON
```

To set up the MT8852B to output a 101010101 data stream on frequency 2400 MHz with 0.24 mod index at a power level of –20 dBm and to turn the RF output ON, use following command:

```
SIGGEN DATA10101010,FREQ,2400e6,0.24,-20,ON
```

Remarks

SIGGEN is used to configure the Signal Generator function. To enter and exit the Signal Generator mode use OPMD and OPMD?

Query command format

```
SIGGEN?
```

Response

The response is returned in the form of the command to set that state.

Example

```
SIGGEN DATA10101010,CHAN,3,0.32,-20,ON
```
**BLE Signal Generator Mode**

*(Option 27 and MT8852B-043 only)*

Use this command to generate *Bluetooth* low energy (BLE) modulation schemes.

### Set command format

```
LESIGGEN<ws><syncword><,><pattern><,><spacing><,><channel><,><NumPkts><,><TxPwr><,><Dirty><,><AltCrcState><,><state>
```

- `<syncword>`: 32 bit hexadecimal value. (BLE default: 71764129)
- `<pattern>`: 10101010, 11110000, PRBS9
- `<spacing>`: 1μs steps, default is 625 for 625μs spacing (625 to 65535)
- `<channel>`: *Bluetooth* low energy channels 0 to 39 (in MHz only)
- `<NumPkts>`: 0 = continuous
  1 - 65535 = Fixed number of packets to be sent
- `<TxPwr>`: Transmitted power level 0.0 to –90.0
- `<Dirty>`: ON or OFF
  When ON, the packet generator uses the dirty table from the selected script LESS test.
- `<AltCrcState>`: ON or OFF
  When ON, packets are generated with alternate correct and incorrect CRC. The first packet transmitted has correct CRC.
- `<state>`: START, STOP

### Example

To set up the instrument to output a GFSK *Bluetooth* low energy packet with a PRBS9 data stream on channel 0 continuously at –20.0 dBm with dirty parameters applied and the CRC always correct, use the following command:

```
LESIGGEN 71764129,PRBS9,625,2402,0,-20.0,ON,OFF,START
```

### Remarks

LESIGGEN is used to configure the Signal Generator function. To enter or exit the Signal Generator mode use OPMD and OPMD? The BLE signal generator will use a modulation BT of 0.5.

See also LESIGGENX, which supports Data Length Extension and LEPKTGEN, which supports Data Length Extension and Bluetooth 5 (2LE and BLR packets).

### Query Command format

```
LESIGGEN?
```

### Response

If the instrument configuration is as in example above, the response will be:

```
LESIGGEN 71764129,PRBS9,625,2402,0,-20.0,ON,OFF,START
```
BLE Extended Signal Generator Mode (Supports Data Length Extension)
(Option 34 only)

Use this command to generate Bluetooth low energy (BLE) modulation schemes.

<table>
<thead>
<tr>
<th>Set command format</th>
<th>LESIGGENX&lt;ws&gt;&lt;syncword&gt;,&lt;pattern&gt;,&lt;spacing&gt;,&lt;channel&gt;,&lt;NumPkts&gt;,&lt;TxPwr&gt;,&lt;Dirty&gt;,&lt;AltCRCState&gt;,&lt;PacketLen&gt;,&lt;state&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;syncword&gt;</td>
<td>32 bit hexadecimal value. (BLE default: 71764129)</td>
</tr>
<tr>
<td>&lt;pattern&gt;</td>
<td>10101010, 11110000, PRBS9</td>
</tr>
<tr>
<td>&lt;spacing&gt;</td>
<td>1 µs steps, default is 625 for 625 µs spacing (625 to 65535)</td>
</tr>
<tr>
<td>&lt;channel&gt;</td>
<td>Bluetooth low energy channels 0 to 39 (in MHz only)</td>
</tr>
<tr>
<td>&lt;NumPkts&gt;</td>
<td>0 = continuous, 1 - 65535 = Fixed number of packets to be sent</td>
</tr>
<tr>
<td>&lt;TxPwr&gt;</td>
<td>Transmitted power level 0.0 to –90.0</td>
</tr>
<tr>
<td>&lt;Dirty&gt;</td>
<td>ON or OFF, When ON, the packet generator uses the dirty table from the selected script LESS test.</td>
</tr>
<tr>
<td>&lt;AltCRCState&gt;</td>
<td>ON or OFF, When ON, packets are generated with alternate correct and incorrect CRC. The first packet transmitted has correct CRC.</td>
</tr>
<tr>
<td>&lt;PacketLen&gt;</td>
<td>2 to 255 bytes</td>
</tr>
<tr>
<td>&lt;state&gt;</td>
<td>START, STOP</td>
</tr>
</tbody>
</table>

Example

To set up the instrument to output a GFSK Bluetooth low energy packet with a PRBS9 data stream on channel 0 continuously with a spacing of 625 µs at –10.0 dBm, Dirty off, CRC always correct, and a packet length of 37, use the following command:

```
LESIGGENX 71764129,PRBS9,625,2402,0,-10.0,OFF,OFF,37,START
```

Remarks

LESIGGENX extends the LESIGGEN function to support Data Length Extension and is only available when Option 34 is installed. An additional parameter allows the data length to be set.

To enter or exit the Signal Generator mode use OPMD and OPMD?
The BLE signal generator will use a modulation BT of 0.5.

Query Command format

```
LESIGGENX?
```

Response

If the instrument configuration is as in example above, the response will be:

```
LESIGGENX 71764129,PRBS9,625,2402,0,-10.0,OFF,OFF,37,START
```
BLE Extended Signal Generator Mode (Supports Bluetooth 5 - 2LE and BLR)
(Options 35 and 36 only)

Use this command to generate Bluetooth low energy (BLE) modulation schemes.

Set command format

LEPKTGEN<ws><syncword><,><pattern><,><spacing><,><channel><,><NumPkts><,><TxPwr><,><Dirty><,><AltCRCState><,><PacketLen><PktType<,><state>

<syncword> 32 bit hexadecimal value. (BLE default: 71764129)
<pattern> 10101010, 11110000, PRBS9, 11111111, 00000000, ONES, ZEROS.

Note: ONES is equivalent to 11111111 and ZEROS is equivalent to 00000000. These patterns are intended for use when generating BLR packets.

.spacing> 1 μs steps, default is 625 for 625 μs spacing (625 to 65535)

<channel> Bluetooth low energy channels 0 to 39 (in MHz only)
<NumPkts> 0 = continuous
1 - 65535 = Fixed number of packets to be sent
<TxPwr> Transmitted power level 0.0 to –90.0 dBm
<Dirty> ON or OFF
When ON, the packet generator uses the dirty table from the selected script LESS test.

<AltCrcState> ON or OFF
When ON, packets are generated with alternate correct and incorrect CRC. The first packet transmitted has correct CRC.

<PacketLen> 2 to 255 bytes
<PktType> BLE, 2LE, LR8, LR2
<state> START, STOP

Example
To set up the instrument to output a 2LE Bluetooth low energy packet with a PRBS9 data stream on channel 10 continuously with a spacing of 625 μs at –10.0 dBm, Dirty off, CRC always correct, and a packet length of 37, use the following command:

LEPKTGEN 71764129,PRBS9,625,2422,0,-10.0,OFF,OFF,37,2LE,START
**Remarks**

LEPKTGEN extends the LESIGGENX to include support for Bluetooth 5 (2LE and BLR). It is only available when Option 35 (2LE) and / or Option 36 (BLR) is installed. An additional parameter allows the packet type to be set.

To enter or exit the Signal Generator mode use OPMD and OPMD? The BLE signal generator will use a modulation BT of 0.5.

**Query command format**

LEPKTGEN?

**Response**

If the instrument configuration is as in example above, the response will be:

`LEPKTGEN 71764129, PRBS9, 625, 2422, 0, -10.0, OFF, OFF, 37, 2LE, START`
BLE Extended Signal Generator Mode (Supports Bluetooth 5.1 - Constant Tone Extension)

(Options 37 only)

Use this command to generate Bluetooth low energy (BLE) modulation schemes.

Set command format

LEPKTGENX<ws><syncword><,><pattern><,><spacing><,><channel><,><NumPkts><,><TxPwr><,><Dirty><,><AltCRCState><,><PacketLen><,><PktType><,><CTE><,><CTE type><,><CTE time><,><state>

<syncword> 32 bit hexadecimal value. (BLE default: 71764129)
<pattern> 10101010, 11110000, PRBS9, 11111111, 00000000, ONES, ZEROS.

Note: ONES is equivalent to 11111111 and ZEROS is equivalent to 00000000. These patterns are intended for use when generating BLR packets.

<spacing> 1 µs steps, default is 625 for 625 µs spacing (625 to 65535)

<channel> Bluetooth low energy channels 0 to 39 (in MHz only)
<NumPkts> 0 = continuous
1 - 65535 = Fixed number of packets to be sent
<TxPwr> Transmitted power level 0.0 to –90.0 dBm
<Dirty> ON or OFF
When ON, the packet generator uses the dirty table from the selected script LESS test.

<AltCrcState> ON or OFF
When ON, packets are generated with alternate correct and incorrect CRC. The first packet transmitted has correct CRC.

<PacketLen> 2 to 255 bytes

<PktType> BLE, 2LE, LR8, LR2

<CTE> ON or OFF
When ON, the packets are generated with the Constant Tone Extension.

<CTE type> AOA, AOD1, AOD2.
AOA - AoA Constant Tone Extension
AOD1 - AoD Constant Tone Extension with 1 µs slots
AOD2 - AoD Constant Tone Extension with 2 µs slots

<CTE time> 2 to 20 (1 means 8 µs)

<state> START, STOP
**Example**

To set up the instrument to output a 2LE Bluetooth low energy packet with a PRBS9 data stream on channel 10 continuously with a spacing of 625 μs at –10.0 dBm, Dirty off, CRC always correct, and a packet length of 37, and CTE(AoD 2 μs, CTE time is 10), use the following command:

```
LEPKTGENX 71764129,PRBS9,625,2422,0,-10.0,OFF,OFF,37,2LE,ON,AOD2,10,START
```

**Remarks**

LEPKTGENX extends the LEPKTGEN to include support for Bluetooth 5.1 (Constant Tone Extension). It is only available when Option 37 (BLE AoA/AoD supported) is installed. An additional parameter allows the CTE type and CTE time to be set.

To enter or exit the Signal Generator mode use OPMD and OPMD?
The BLE signal generator will use a modulation BT of 0.5.

**Query command format**

```
LEPKTGENX?
```

**Response**

If the instrument configuration is as in example above, the response will be:

```
LEPKTGENX 71764129,PRBS9,625,2422,0,-10.0,OFF,OFF,37,2LE,ON,AOD2,10,START
```
EDR Signal Generator Mode

(MT8852B and MT8852B-042 only)

Use this command to generate Enhanced Data Rate (EDR) modulation schemes.

Set command format

ESIGGEN<ws><mod_scheme><,><pattern><,><ch_dispmode><,><channel><,><pwr><,><rf_state>

<mod_scheme> PI4 | 8DPSK
<pattern> DATAPRBS9 | DATAPRBS15
<ch_dispmode> CHAN | FREQ
<channel> –10 to 98 (2392 MHz to 2500 MHz)
<freq> 2392e6 to 2500e6
<pwr> 0.0 to –90.0 dBm
<rfstate> OFF | ON

Example

To set up the instrument to output PI4 modulation with a PRBS15 data stream on channel 7 at a power level of –40.0 dBm and to turn the RF output ON the use following command:

ESIGGEN PI4, DATAPRBS15, CHAN, 7, –40.0, ON

Note

Under certain circumstances it may be necessary to send the command string twice.

Remarks

ESIGGEN is used to configure the Signal Generator function. To enter or exit the Signal Generator mode use OPMD and OPMD?

Query command format

SIGGEN?

Response

If the instrument configuration is as in example above, the response will be:

ESIGGEN PI4, DATAPRBS15, CHAN, 7, –40.0, ON
CW Measurement Mode

The MT8852B can be used to measure a fixed frequency modulation signal. Power, frequency, and modulation can be measured. The OPMD command can be used to put the MT8852B into CW measurement mode, although using the CWMEAS command to set the measurement parameters will also put the MT8852B into CW measurement mode.

The CWMEAS command is used to set the Bluetooth channel/frequency and measurement gate width parameters.

**Set command format**

```
CWMEAS<ws><channel mode><,><channel><,><gate width>
```

- **<channel mode>**  
  - CHAN
  - FREQ

- **<channel>**  
  - -2 to 98 (2400 MHz to 2500 MHz)

- **<freq>**  
  - 2392e6 to 2500e6

- **<gate width>**  
  - 0.1 ms to 3.0 ms

**Example**

To set up the MT8852B to measure on channel 92 with a gate width of 3 ms use the following command.

```
CWMEAS CHAN,92,3e-3
```

**Remarks**

CWMEAS is used to configure CW Measurement mode. To enter and exit CW measurement mode use OPMD and OPMD?

**Query command format**

```
SIGGEN?
```

**Response**

The response is returned in the form of the command to set that state

**Example**

If set to measure frequency 2494 MHz with a gate width of 3 ms, the response would be:

```
CWMEAS FREQ,2494e6,3e-3
```

The CWRESULT command is used to read the CW measurement result from the MT8852B.

**Query command format**

```
CWRESULT<ws><measurement type>
```

- **<measurement type>**  
  - FREQOFF (frequency offset from the frequency set in CWMEAS)
  
  **Response**  
  - <Frequency value in Hz to 2 decimal places>

- **<measurement type>**  
  - POWER
  
  **Response**  
  - <Power value in dBm to 2 decimal places>

- **<measurement type>**  
  - MOD
  
  **Response**  
  - <Positive modulation in Hz to 2 decimal places>
  - <Negative modulation in Hz to 2 decimal places>
**EDR CW Measurement Mode (MT8852B and MT8852B-042 only)**

The MT8852B can be set up in CW measurement mode to allow calibration of an incoming fixed frequency signal. The instrument will measure power and DEVM for EDR modulation schemes. This mode is intended only for the measurement of continuous non-packetized signals and does not support triggering.

Using the ECWMEAS command will automatically place the instrument into EDR CW measurement mode (no need to send the OPMD command).

**Set command format**

```
ECWMEAS<ws><mod_scheme><,><ch_dispmode><,><channel><,><gate_width>
```

- `<mod_scheme>`: PI4 | 8DPSK
- `<ch_dispmode>`: CHAN | FREQ
- `<channel>`: –2 to 98 (2400 MHz to 2500 MHz)
- `<freq>`: 2392e6 to 2500e6
- `<gate_width>`: 0.1 to 3.0 ms

**Remarks**

ECWMEAS is used to configure EDR CW Measurement mode. The `<gate width>` parameter specifies the acquisition time over which the test results are calculated.

Using the CWMEAS command will automatically place the instrument into EDR CW measurement mode (no need to send the OPMD command). To exit EDR CW measurement mode use OPMD.

**Example**

To set up the instrument to measure a 8DPSK signal on channel 78 with a gate width of 3 ms use the following command.

```
ECWMEAS 8DPSK,CHAN,78,3e-3
```

**Query command format**

```
ECWMEAS?
```

The response string returned for the query is in the identical format as the configuration command string.

**Example**

If set to measure PI4 at frequency 2494 MHz with a gate width of 3 ms, the response would be:

```
ECWMEAS PI4,FREQ,2494e6,3e-3
```
CWRESULT (CW Measurements Results Output)

This command is used to fetch the measurement results from the MT8852B when configured in CW Measurement mode.

Query command format

```
CWRESULT<ws><meas_type>
```

Where:

- **FREQOFF**: frequency offset from the frequency set in CWMEAS
- **POWER**: signal power in dBm
- **MOD**: <pos_mod>,<neg_mod>
  - `<pos_mod>` positive modulation (Hz)
  - `<neg_mod>` negative modulation (Hz)

Remarks

Returns the requested measurement when the instrument is set to CW measurement mode. An execution error is raised if sending this command when the instrument is not in CW Measurement mode.

Example

If frequency offset was requested the command would be as follows:

```
CWRESULT  FREQOFF
```

If the frequency offset was \(-2.50\) kHz, the reply would be as follows:

```
CWRESULT  FREQOFF,-2.50e+003
```
ECWRESULT (EDR CW Measurements Results Output) (MT8852B and MT8852B-042 only)

This command is used to fetch the measurement results from the MT8852B when configured in EDR CW Measurement mode.

Query command format

```
ECWRESULT<ws><meas_type>
```

<meas_type> PKPWR | RMSPWR | PKDEVM | RMSDEVM

Where:
- PKPWR    Peak power (dBm)
- RMSPWR   RMS power (dBm)
- PKDEVM   Peak Error Vector Measurement
- RMSDEVM RMS Error Vector Measurement

Remarks

Returns the requested measurement when the instrument is set to EDR CW measurement mode. An execution error is raised if sending this command when the instrument is not in EDR CW Measurement mode.
Chapter 10 — Configuring Tests in Standard Mode

Basic Rate tests (#1)

- Output Power (TRM/CA/BV-01-C)
- Power Control (TRM/CA/BV-03-C)
- Enhanced Power Control (TRM/CA/BV-14-C)
- Initial Carrier Frequency (TRM/CA/BV-08-C)
- Carrier Frequency Drift (TRM/CA/BV-09-C)
- Single Slot Packets Sensitivity (RCV/CA/BV-01-C)
- Multi-slot Packets Sensitivity (RCV/CA/BV-02-C)
- Modulation Index (TRM/CA/BV-07-C)
- Maximum Input Power (RCV/CA/BV-06-C)

EDR tests (#2)

- EDR Relative Transmit Power (TRM/CA/BV-10-C)
- EDR Carrier Frequency Stability and Modulation Accuracy (TRM/CA/BV-11-C)
- EDR Differential Phase Encoding (TRM/CA/BV-12-C)
- EDR Sensitivity (RCV/CA/BV-07-C)
- EDR BER Floor Sensitivity (RCV/CA/BV-08-C)
- EDR Maximum Input Power (RCV/CA/BV-10-C)
- EDR Guard Time (TRM/CA/BV-15-C)
- EDR Synchronization Sequence and Trailer (TRM/CA/BV-16-C)

Low Energy tests (#3)

- BLE Output Power (TRM-LE/CA/BV-01-C)
- BLE Carrier frequency offset and drift, uncoded data at 1 Ms/s (TRM-LE/CA/BV-06-C)
- BLE Modulation characteristics, uncoded data at 1 Ms/s (TRM-LE/CA/BV-05-C)
- 2LE Carrier frequency offset and drift at 2 Ms/s (#4) (TRM-LE/CA/BV-12-C)
- 2LE Modulation characteristics at 2 Ms/s (#4) (TRM-LE/CA/BV-10-C)
- BLR Modulation characteristics, LE coded (S=8) (#5) (TRM-LE/CA/BV-13-C)
- BLR Carrier frequency offset and drift, LE coded (S=8) (#5) (TRM-LE/CA/BV-14-C)
- BLE Receiver sensitivity, uncoded data at 1 Ms/s (RCV-LE/CA/BV-01-C)
- 2LE Receiver sensitivity at 2 Ms/s (#4) (RCV-LE/CA/BV-08-C)
- BLR Receiver sensitivity, LE coded (S=2) (#5) (RCV-LE/CA/BV-26-C)
- BLR Receiver sensitivity, LE coded (S=8) (#5) (RCV-LE/CA/BV-27-C)
- BLE PER Report Integrity, uncoded data at 1 Ms/s (RCV-LE/CA/BV-07-C)
Configuring Tests in Standard Mode

2LE PER report integrity at 2 Ms/s (#4) (RCV-LE/CA/BV-13-C)
BLR PER report integrity, LE coded (S=2) (#5) (RCV-LE/CA/BV-30-C)
BLR PER report integrity, LE coded (S=8) (#5) (RCV-LE/CA/BV-31-C)
BLE Maximum input signal level, uncoded data at 1 Ms/s (RCV-LE/CA/BV-06-C)
2LE Maximum input signal level at 2 Ms/s (#4) (RCV-LE/CA/BV-12-C)

(#1) Not available on MT8852B-043.
(#2) MT8852B and MT8852B-042 only.
(#3) MT8852B-043 or models with option 27 only.
(#4) With Option 35.
(#5) With Option 36 or Option 62
10-1 Basic Rate Tests

Output Power Test Configuration (OPCFG)

The output power test performs power measurements on the EUT transmitted packets using either the loopback test control or the Tx test control. The default is to use the loopback test control. This test can be made with either hopping on or off.

The MT8852B can perform the test using either loopback test controls or Tx test controls. The MT8852B transmits a pseudo random data payload (PRBS 9) of the longest supported type (DH5, DH3 or DH1) or the selected packet type, to the EUT. The EUT loops back the data at its maximum output power and the MT8852B measures the received power. This test is performed while hopping, and the test is repeated until the requested number of packets has been measured on each of the selected frequencies. The LOW, MEDIUM and HIGH frequencies relate to the default frequencies specified in the Bluetooth RF test specification. The MT8852B allows all these frequencies to be changed from their default values.

Set command format

```
OPCFG<ws><scriptnumber><,><variable><,> [<params>……]
```

* <script number> 3 to 10
* <variable>
  * LRXFREQ Low Rx frequency setting.
  * MRXFREQ Medium Rx frequency setting.
  * HRXFREQ High Rx frequency setting.
  * HOPMODE Use Defined, All, or Any MT8852B custom mode.
  * HOPPING Hopping stages of the test.
  * LFREQSEL Use the low frequency settings in test.
  * MFREQSEL Use the medium frequency settings in test.
  * HFREQSEL Use the high frequency settings in test.
  * LTXFREQ Set the EUT low frequency Tx value.
  * MTXFREQ Set the EUT medium frequency Tx value.
  * HTXFREQ Set the EUT high frequency Tx value.
  * NUMPKTS Number of packets.
  * PKTTYPE Packet type to use in performing test.
  * TSTCTRL Test control to use in test.
  * AVGMXLIM Average power high limit.
  * AVGMNLIM Average power low limit.
  * PEAKLIM Peak power limit.
  * DEFAULT Set the test to its default settings (set only).

<params>

Specify either frequency (FREQ) or channel (CHAN).

Example

To set the DEFAULT OPCG the command would be:

```
OPCFG 3, DEFAULT
```
### Query command format

```
OPCFG?<ws><scriptnumber><,><variable>
```

- **<script number>** 1 to 10
- **<variable>**
  - **LRXFREQ**  
    - Low Rx frequency setting.
  - **MRXFREQ**  
    - Medium Rx frequency setting.
  - **HRXFREQ**  
    - High Rx3 frequency setting.
  - **HOPMODE**  
    - Use Defined, All, or Any MT8852B custom mode.
  - **HOPPING**  
    - Hopping stages of the test.
  - **LFREQSEL**  
    - Use the low frequency settings in test.
  - **MFREQSEL**  
    - Use the medium frequency settings in test.
  - **HFREQSEL**  
    - Use the high frequency settings in test.
  - **LTXFREQ**  
    - Set the EUT low frequency Tx value.
  - **MTXFREQ**  
    - Set the EUT medium frequency Tx value.
  - **HTXFREQ**  
    - Set the EUT high frequency Tx value.
  - **NUMPKTS**  
    - Number of packets.
  - **PKTTYPE**  
    - Packet type to use in performing test.
  - **TSTCTRL**  
    - Test control to use in test.
  - **AVGMXLIM**  
    - Average power high limit.
  - **AVGMNLIM**  
    - Average power low limit.
  - **PEAKLIM**  
    - Peak power limit.

**Response**  
The response is returned in the form of the command to set that state.

**Example**  
```
OPCFG? 3,PEAKLIM
```

**Response**  
If the value of the OPCFG PEAKLIM was 15, the response would be:
```
OPCFG 3,PEAKLIM,15
```

### Note
Refer to chapter 12 for details of the test parameter variables listed above.
Power Control Test Configuration (PCCFG)

The power control test performs power measurement cycles on the EUT output, if the EUT supports power control, at each of the defined frequencies (LOW, MEDIUM and HIGH). This measurement is always performed with hopping off. The MT8852B can perform the test using either loopback test control or Tx test control. The default form for this test is to use loopback. The following test is described using the default test control.

The MT8852B transmits a DH1 (or the operator selected packet type) packet with a pseudo random data payload (PRBS 9). This test is performed with hopping off. The LOW, MEDIUM and HIGH frequency sets relate to the default frequencies specified in the Bluetooth RF test specification. The MT8852B allows all the frequencies to be changed.

A power measurement cycle sets the EUT output power to its maximum, steps the power down to the minimum, and then up to the maximum again one step at a time. For each power step a number of data packets are sent to the EUT and looped back to the MT8852B. When the test is performed in Tx test mode only the Tx frequency settings are used since both Rx and Tx frequencies must be the same.

Set command format

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCCFG</td>
<td>Set command for power control configuration.</td>
</tr>
<tr>
<td>&lt;script number&gt;</td>
<td>3 to 10</td>
</tr>
<tr>
<td>&lt;variable&gt;</td>
<td></td>
</tr>
<tr>
<td>LFREQSEL</td>
<td>Use the low frequency settings in test.</td>
</tr>
<tr>
<td>MFREQSEL</td>
<td>Use the medium frequency settings in test.</td>
</tr>
<tr>
<td>HFREQSEL</td>
<td>Use the high frequency settings in test.</td>
</tr>
<tr>
<td>LTXFREQ</td>
<td>Set the EUT low frequency Tx value.</td>
</tr>
<tr>
<td>MTFREQ</td>
<td>Set the EUT medium frequency Tx value.</td>
</tr>
<tr>
<td>HTXFREQ</td>
<td>Set the EUT high frequency Tx value.</td>
</tr>
<tr>
<td>LRXFREQ</td>
<td>Set the EUT low frequency Rx value.</td>
</tr>
<tr>
<td>MRXFREQ</td>
<td>Set the EUT medium frequency Rx value.</td>
</tr>
<tr>
<td>HRXFREQ</td>
<td>Set the EUT high frequency Rx value.</td>
</tr>
<tr>
<td>NUMCYC</td>
<td>Number of cycles.</td>
</tr>
<tr>
<td>PKTTYPE</td>
<td>Packet type to use in performing test.</td>
</tr>
<tr>
<td>TSTCTRL</td>
<td>Test control to use in test.</td>
</tr>
<tr>
<td>MXSTEPLIM</td>
<td>Set max power step limit.</td>
</tr>
<tr>
<td>MNSTEPLIM</td>
<td>Set min power step limit.</td>
</tr>
<tr>
<td>NUMPKTS</td>
<td>Set the number of packets measured per step.</td>
</tr>
<tr>
<td>MINPWR</td>
<td>Set the minimum power to which the test will go.</td>
</tr>
<tr>
<td>PWRDELAY</td>
<td>Set the delay allowed for the EUT to change power levels.</td>
</tr>
<tr>
<td>DEFAULT</td>
<td>Set the test to its default settings (set only).</td>
</tr>
<tr>
<td>&lt;params&gt;</td>
<td></td>
</tr>
</tbody>
</table>

Specify either frequency (FREQ) or channel (CHAN).
Example: To set the DEFAULT PCCFG, the command would be:

```
PCCFG 3, DEFAULT
```

Query command format:

```
PCCFG?<ws><scriptnumber><,><variable>
```

- `<script number>` 1 to 10
- `<variable>`
  - LFREQSEL: Read the low frequency settings in test.
  - MFREQSEL: Read the medium frequency settings in test.
  - HFREQSEL: Read the high frequency settings in test.
  - LTXFREQ: Read the EUT low frequency Tx value.
  - MTXFREQ: Read the EUT medium frequency Tx value.
  - HTXFREQ: Read the EUT high frequency Tx value.
  - LRXFREQ: Read the EUT low frequency Rx value.
  - MRXFREQ: Read the EUT medium frequency Rx value.
  - HRXFREQ: Read the EUT high frequency Rx value.
  - NUMCYC: Read the current number of cycles.
  - PKTTYPE: Read the packet type to be used in testing.
  - TSTCTRL: Read the test control to be used in testing.
  - MXSTEPLIM: Read the max power step limit.
  - MNSTEPLIM: Read the min power step limit.
  - NUMPKTS: Read the number of packets measured per step.
  - MINPWR: Read the minimum power to which the test will go.
  - PWRDELAY: Read the delay allowed for the EUT to change power levels.

Response: The response is returned in the form of the command to set that state.

Example:

```
PCCFG? 3, NUMCYC
```

Response: If the value of the PCCFG NUMCYC was 5, the response would be:

```
PCCFG 3, NUMCYC, 5
```

Note: Refer to chapter 12 for details of the test parameter variables listed above.
Enhanced Power Control Test Configuration (EPCCFG)

The enhanced power control test performs power measurement cycles on the EUT output at each of the defined frequencies (LOW, MEDIUM and HIGH). This measurement is always performed with hopping off. The MT8852B can perform the test using either loopback test control or Tx test control. The default form for this test is to use loopback. The following test is described using the default test control.

The MT8852B transmits a DH1 (or the operator selected packet type) packet with a pseudo random data payload (PRBS 9), then a 2-DH1 and then a 3-DH1 packet at the power step levels. These are looped back by the EUT and measured by the MT8582B. The LOW, MEDIUM and HIGH frequency sets relate to the default frequencies specified in the Bluetooth RF test specification. The MT8852B allows all the frequencies to be changed.

A power measurement cycle sets the EUT output power to its maximum, steps the power down to the minimum, and then up to the maximum again one step at a time. For each power step a number of data packets are sent to the EUT and looped back to the MT8852B. When the test is performed in Tx test mode only the Tx frequency settings are used since both Rx and Tx frequencies must be the same.

<table>
<thead>
<tr>
<th>Set command format</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPCCFG&lt;ws&gt;&lt;scriptnumber&gt;,&lt;variable&gt;[&lt;params&gt;....]</td>
<td></td>
</tr>
<tr>
<td>&lt;script number&gt; 3 to 10</td>
<td></td>
</tr>
<tr>
<td>&lt;variable&gt;</td>
<td></td>
</tr>
<tr>
<td>LFREQSEL</td>
<td>Use the low frequency settings in test.</td>
</tr>
<tr>
<td>MFREQSEL</td>
<td>Use the medium frequency settings in test.</td>
</tr>
<tr>
<td>HFREQSEL</td>
<td>Use the high frequency settings in test.</td>
</tr>
<tr>
<td>LTXFREQ</td>
<td>Set the EUT low frequency Tx value.</td>
</tr>
<tr>
<td>MRXFREQ</td>
<td>Set the EUT medium frequency Rx value.</td>
</tr>
<tr>
<td>HRXFREQ</td>
<td>Set the EUT high frequency Rx value.</td>
</tr>
<tr>
<td>LTXFREQ</td>
<td>Set the EUT low frequency Tx value.</td>
</tr>
<tr>
<td>MTXFREQ</td>
<td>Set the EUT medium frequency Tx value.</td>
</tr>
<tr>
<td>HTXFREQ</td>
<td>Set the EUT high frequency Tx value.</td>
</tr>
<tr>
<td>NUMCYC</td>
<td>Number of cycles.</td>
</tr>
<tr>
<td>NUMPKTS</td>
<td>Set the number of packets measured per step.</td>
</tr>
<tr>
<td>PKTTYPE</td>
<td>Packet type to use in performing test.</td>
</tr>
<tr>
<td>DHXPKT</td>
<td>DHx test packet type in use.</td>
</tr>
<tr>
<td>TSTCTRL</td>
<td>Test control to use in test.</td>
</tr>
<tr>
<td>MXSTEPLIM</td>
<td>Set max power step limit.</td>
</tr>
<tr>
<td>MNSTEPLIM</td>
<td>Set min power step limit.</td>
</tr>
<tr>
<td>MXEPECLIM</td>
<td>Set maximum EPC difference limit.</td>
</tr>
<tr>
<td>MXRPTLIM</td>
<td>Set maximum power repeatability limit.</td>
</tr>
<tr>
<td>MINPWR</td>
<td>Set the minimum power to which the test will go.</td>
</tr>
<tr>
<td>DEFAULT</td>
<td>Set the test to its default settings (set only).</td>
</tr>
</tbody>
</table>
Example To set the DEFAULT EPCCFG the command would be:

EPCCFG 3, DEFAULT

Query command format EPCCFG? <ws> <scriptnumber><,><variable>

<script number> 1 to 10
<variable>

LFREQSEL Read the low frequency settings in test.
MFREQSEL Read the medium frequency settings in test.
HFREQSEL Read the high frequency settings in test.
LRXFREQ Read the EUT low frequency Rx value.
MRXFREQ Read the EUT medium frequency Rx value.
HRXFREQ Read the EUT high frequency Rx value.
LTXFREQ Read the EUT low frequency Tx value.
MTXFREQ Read the EUT medium frequency Tx value.
HTXFREQ Read the EUT high frequency Tx value.
NUMCYC Read the current number of cycles.
NUMPKTS Read the number of packets measured per step.
PKTTYPE Read the packet type to be used in testing.
DHXPKT Read the DHx test packet type in use.
TSTCTRL Read the test control to be used in testing.
MXSTEPLIM Read the maximum power step limit.
MNSTEPLIM Read the minimum power step limit.
MXEPCCLIM Read the maximum EPC difference limit.
MXRPCTLIM Read the maximum power repeatability limit.
MINPWR Read the minimum power to which the test will go.

Response The response is returned in the form of the command to set that state.

Example EPCCFG? 3, NUMCYC

Response If the value of the EPCCFG NUMCYC was 5, the response would be:

EPCCFG 3, NUMCYC, 5

Note Refer to chapter 12 for details of the test parameter variables listed above.
Initial Carrier Test Configuration (ICCFG)

The initial carrier test performs a frequency accuracy test on a DH1 pseudo random data packet. (PRBS 9) This test can be performed using either the loopback test control or the Tx test control. The default is to use the loopback test control. This test can be made with either hopping on or off.

When the measurement is made using Tx mode the MT8852B sets up the EUT so that when the EUT is polled, it transmits a DH1 packet with a pseudo random payload for each of the frequencies selected (LOW, MEDIUM and HIGH).

Set command format  
ICCFG<ws><scriptnumber><,><variable><,> [<params>......]

<script number>  3 to 10
<variable>
HOPMODE  Use All or ANY MT8852B custom mode.
HOPPING  Hopping stages of the test.
LFREQSEL  Use the low frequency settings in test.
MFREQSEL  Use the medium frequency settings in test.
HFREQSEL  Use the high frequency settings in test.
LTXFREQ  Set the low frequency Tx and Rx value.
MTXFREQ  Set the medium frequency Tx and Rx value.
HTXFREQ  Set the high frequency Tx and Rx value.
LRXFREQ  Set the EUT low frequency Rx value.
MRXFREQ  Set the EUT medium frequency Rx value.
HRXFREQ  Set the EUT high frequency Rx value.
NUMPKTS  Set the number of packets used for each.
TSTCTRL  Test control to use in test.
MXPOSLIM  Set the positive offset limit.
MXNEGLIM  Set the negative offset limit.
DEFAULT  Set the test to its default settings (set only).

<params>
Specify either frequency (FREQ) or channel (CHAN).

Example
To set the DEFAULT ICCFG the command would be:
ICCFG 3,DEFAULT

Query command format
ICCFG?<ws><scriptnumber><,><variable>

<script number>1 to 10
<variable>
HOPMODE  Read the MT8852B custom mode.
HOPPING  Read the hopping stages of the test.
LFREQSEL  Read the low frequency settings in test.
MFREQSEL  Read the medium frequency settings in test.
HFREQSEL Read the high frequency settings in test.
LTXFREQ Read the low frequency Tx and Rx value.
MTXFREQ Read the medium frequency Tx and Rx value.
HTXFREQ Read the high frequency Tx and Rx value.
LRXFREQ Read the EUT low frequency Rx value.
MRXFREQ Read the EUT medium frequency Rx value.
HRXFREQ Read the EUT high frequency Rx value.
NUMPKTS Read the number of packets used.
TSTCTRL Read the test control used in testing.
MXPOSLIM Read the positive offset limit.
MXNEGLIM Read the negative offset limit.

Response The response is returned in the form of the command to set that state.

Example ICCFG? 3,NUMPKTS

Response If the value of the ICCFG NUMPKTS was 100, the response would be:

ICCFG 3,NUMPKTS,100

Note Refer to chapter 12 for details of the test parameter variables listed above.
Carrier Drift Test Configuration (CDCFG)

The carrier drift test performs a frequency drift measurement over the length of the packet received. The test can be carried out for each of the supported packet types with either hopping on or hopping off. This test can be performed using either the loopback test control or the Tx test control. The default is to use the loopback test control.

**Set command format**

CDCFG<ws><scriptnumber><,><variable><,> [<params>……]

*<script number>* 3 to 10
*<variable>*

- **HOPMODE** Use standard or custom MT8852B custom mode.
- **HOPPING** Hopping stages of the test.
- **LFREQSEL** Use the low frequency settings in test.
- **MFREQSEL** Use the medium frequency settings in test.
- **HFREQSEL** Use the high frequency settings in test.
- **LTXFREQ** Set the low frequency Tx and Rx value.
- **MTXFREQ** Set the medium frequency Tx and Rx value.
- **HTXFREQ** Set the high frequency Tx and Rx value.
- **LRXFREQ** Set the EUT low frequency Rx value.
- **MRXFREQ** Set the EUT medium frequency Rx value.
- **HRXFREQ** Set the EUT high frequency Rx value.
- **NUMPKTS** Set the number of packets used.
- **PKTSIZE** Set the packet sizes to be used.
- **TSTCTRL** Test control to use in test.
- **DFT1LIM** Set the 1 slot packet drift limit.
- **DFT3LIM** Set the 3 slot packet drift limit.
- **DFT5LIM** Set the 5 slot packet drift limit.
- **DFTNPLIM** Set the drift limit in NULL packets.
- **DFTRATE** Set the drift rate limit.
- **DEFAULT** Set the test to its default settings (set only).

*<params>*

Specify either frequency (FREQ) or channel (CHAN).

**Example**

To set the DEFAULT CDCFG the command would be:

CDCFG 3,DEFAULT

**Query command format**

CDCFG?<ws><scriptnumber><,><variable>

*<script number>* 1 to 10
*<variable>*

- **HOPMODE** Read the MT8852B custom mode.
- **HOPPING** Read the hopping stages.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LFREQSEL</td>
<td>Read the low frequency settings in test.</td>
</tr>
<tr>
<td>MFREQSEL</td>
<td>Read the medium frequency settings in test.</td>
</tr>
<tr>
<td>HFREQSEL</td>
<td>Read the high frequency settings in test.</td>
</tr>
<tr>
<td>LTXFREQ</td>
<td>Read the low frequency Tx and Rx value.</td>
</tr>
<tr>
<td>MTXFREQ</td>
<td>Read the medium frequency Tx and Rx value.</td>
</tr>
<tr>
<td>HTXFREQ</td>
<td>Read the high frequency Tx and Rx value.</td>
</tr>
<tr>
<td>LRXFREQ</td>
<td>Read the EUT low frequency Rx value.</td>
</tr>
<tr>
<td>MRXFREQ</td>
<td>Read the EUT medium frequency Rx value.</td>
</tr>
<tr>
<td>HRXFREQ</td>
<td>Read the EUT high frequency Rx value.</td>
</tr>
<tr>
<td>NUMPKPTS</td>
<td>Read the number of packets used.</td>
</tr>
<tr>
<td>PKTSIZE</td>
<td>Read the packet sizes to be used.</td>
</tr>
<tr>
<td>TSTCTRL</td>
<td>Read the test control used in testing.</td>
</tr>
<tr>
<td>DFT1LIM</td>
<td>Read the 1 slot packet drift limit.</td>
</tr>
<tr>
<td>DFT3LIM</td>
<td>Read the 3 slot packet drift limit.</td>
</tr>
<tr>
<td>DFT5LIM</td>
<td>Read the 5 slot packet drift limit.</td>
</tr>
<tr>
<td>DFTNPLIM</td>
<td>Read the drift limit in NULL packets.</td>
</tr>
<tr>
<td>DFTRATE</td>
<td>Read the drift rate limit.</td>
</tr>
</tbody>
</table>

Response: The response is returned in the form of the command to set that state.

Example: `CDCFG? 3, HOPPING`

Response: If the value of the CDCFG HOPPING was ON, the response would be:

`CDCFG 3, HOPPING, HOPON`

**Note**: Refer to chapter 12 for details of the test parameter variables listed above.
Single Slot Sensitivity Test Configuration (SSCFG)

For a single slot sensitivity measurement the MT8852B transmits DH1 packets with a pseudo random payload (PRBS 9) to the EUT at a minimum power level. If the dirty transmitter parameters are applied, then every 20 ms the MT8852B changes the transmitter parameters as specified in the dirty transmitter table for this test. The EUT loops back the received data and a bit error rate (BER) calculation and frame error rate (FER) calculation is performed by the MT8852B test set. The test is repeated for each of the frequencies selected (LOW, MEDIUM and HIGH). This test is performed with hopping off. The LOW, MEDIUM and HIGH frequencies relate to the default frequencies specified in the Bluetooth RF test specification. The MT8852B allows all the frequencies to be changed.

The MT8852B can also carry out this test with hopping on.

Set command format

```
SSCFG<ws><scriptnumber><,><variable><,> [<params>......]
```

- **<script number>** 3 to 10
- **<variable>**
  - LFREQSEL Use the low frequency settings in test.
  - MFREQSEL Use the medium frequency settings in test.
  - HFREQSEL Use the high frequency settings in test.
  - LTXFREQ Set the low frequency Tx value.
  - LRXFREQ Set the low frequency Rx value.
  - MTXFREQ Set the medium frequency Tx value.
  - MRXFREQ Set the medium frequency Rx value.
  - HTXFREQ Set the high frequency Tx value.
  - HRXFREQ Set the high frequency Rx value.
  - HOPPING Set the Hopping modes used.
  - NUMPKTS Set the number of packets used for each.
  - TXPWR Set the requested EUT Rx power level.
  - DIRTYTX Use dirty parameter table ON/OFF.
  - DIRTYTAB Update the dirty table parameters.
  - DRIFTS Set the Drift status.
  - BERLIM Set overall BER limit.
  - FERLIM Set overall FER limit.
  - PKTCOUNT Set the method used to count packets.
  - DEFAULT Set the test to its default settings (set only).
- **<params>** Specify either frequency (FREQ) or channel (CHAN).

**Example** To set the SSCFG to on the command would be:

```
SSCFG 3,LFREQSEL,ON
```
Configuring Tests in Standard Mode

Query command format

SSCFG?<ws><scriptnumber><,><variable>

<script number> 1 to 10
<variable>

LFREQSEL       Read the low frequency settings in test.
MFREQSEL       Read the medium frequency settings in test.
HFREQSEL       Read the high frequency settings in test.
LTXFREQ        Read the low frequency Tx value.
LRXFREQ        Read the low frequency Rx value.
MTXFREQ        Read the medium frequency Tx value.
MRXFREQ        Read the medium frequency Rx value.
HTXFREQ        Read the high frequency Tx value.
HRXFREQ        Read the high frequency Rx value.
HOPPING        Read the Hopping modes used.
NUMPKTS        Read the number of packets used.
TXPWR           Read the requested EUT Rx power level.
DIRTYTX        Read the dirty parameter table setting.
DIRTYTAB       Read the dirty table parameters.
DRIFTS         Read the Drift status.
BERLIM         Read the overall BER limit.
FERLIM         Read the overall FER limit.
PKTCOUNT       Read the method used to count packets.

Response  The response is returned in the form of the command to set that state.

Example  SSCFG? 3, LFREQSEL

Response  If the value of SSCFG was LFREQSEL, the response would be:
SSCFG 3, LFREQSEL, ON

Note  Refer to chapter 12 for details of the test parameter variables listed above.
Multi Slot Sensitivity Test Configuration (MSCFG)

For a multi slot sensitivity measurement the MT8852B transmits the longest supported packet type as reported by the EUT during link set up with a pseudo random payload (PRBS 9) to the EUT at a minimum power level. If the dirty parameters are enabled then every 20 ms the MT8852B changes the transmitter parameters as specified in the dirty transmitter table for this test. The EUT loops back the received data and a bit error rate (BER) calculation and frame error rate (FER) calculation is performed by the MT8852B test set. This test is performed with hopping off. Measurements are made at each of the frequencies selected (LOW, MEDIUM and HIGH). The LOW, MEDIUM and HIGH frequencies relate to the default frequencies specified in the Bluetooth RF test specification. The MT8852B allows all the frequencies to be changed.

The MT8852B can also carry out this test with hopping on.

### Set command format

MSCFG<ws><scriptnumber><,><variable><,> [<params>......]

- **<script number>** 3 to 10
- **<variable>**
  - **LFREQSEL** Use the low frequency settings in test.
  - **MFREQSEL** Use the medium frequency settings in test.
  - **HFREQSEL** Use the high frequency settings in test.
  - **LTXFREQ** Set the low frequency Tx value.
  - **LRXFREQ** Set the low frequency Rx value.
  - **MTXFREQ** Set the medium frequency Tx value.
  - **MRXFREQ** Set the medium frequency Rx value.
  - **HTXFREQ** Set the high frequency Tx value.
  - **HRXFREQ** Set the high frequency Rx value.
  - **HOPPING** Set the Hopping modes used.
  - **NUMPKTS** Set the number of packets used for each.
  - **TXPWR** Set the requested EUT Rx power level.
  - **DIRTYTX** Use dirty parameter table ON/OFF.
  - **DIRTYTAB** Update the dirty table parameters.
  - **DRIFTS** Set the Drift status.
  - **PKTTYPE** Packet type to use in performing test.
  - **BERLIM** Set overall BER limit.
  - **FERLIM** Set overall FER limit.
  - **PKTCOUNT** Set the method used to count packets.
  - **DEFAULT** Set the test to its default settings (set only).

#### Example

To set the DEFAULT MSCFG the command would be:

```bash
MSCFG 3,DEFAULT
```
Configuring Tests in Standard Mode

**Query command format**

MSCFG?<ws><scriptnumber><,><variable>

<script number> 1 to 10

<variable>

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LFREQSEL</td>
<td>Read the low frequency settings in test.</td>
</tr>
<tr>
<td>MFREQSEL</td>
<td>Read the medium frequency settings in test.</td>
</tr>
<tr>
<td>HFREQSEL</td>
<td>Read the high frequency settings in test.</td>
</tr>
<tr>
<td>LTXFREQ</td>
<td>Read the low frequency Tx value.</td>
</tr>
<tr>
<td>LRXFREQ</td>
<td>Read the low frequency Rx value.</td>
</tr>
<tr>
<td>MTXFREQ</td>
<td>Read the medium frequency Tx value.</td>
</tr>
<tr>
<td>MRXFREQ</td>
<td>Read the medium frequency Rx value.</td>
</tr>
<tr>
<td>HTXFREQ</td>
<td>Read the high frequency Tx value.</td>
</tr>
<tr>
<td>HRXFREQ</td>
<td>Read the high frequency Rx value.</td>
</tr>
<tr>
<td>HOPPING</td>
<td>Read the hopping modes used.</td>
</tr>
<tr>
<td>NUMPKTS</td>
<td>Read the number of packets used.</td>
</tr>
<tr>
<td>TXPWR</td>
<td>Read the requested EUT Rx power level.</td>
</tr>
<tr>
<td>DIRTYTX</td>
<td>Read the dirty parameter table setting.</td>
</tr>
<tr>
<td>DIRTYTAB</td>
<td>Read the dirty table parameters.</td>
</tr>
<tr>
<td>DRIFTS</td>
<td>Read the Drift status.</td>
</tr>
<tr>
<td>PKTTYPE</td>
<td>Read the packet type used in testing.</td>
</tr>
<tr>
<td>BERLIM</td>
<td>Read the overall BER limit.</td>
</tr>
<tr>
<td>FERLIM</td>
<td>Read the overall FER limit.</td>
</tr>
<tr>
<td>PKTCOUNT</td>
<td>Read the method used to count packets.</td>
</tr>
</tbody>
</table>

**Response**
The response is returned in the form of the command to set that state.

**Example**

MSCFG? 3,DRIFTS

**Response**
If the value of the MSCFG DRIFTS was ON, the response would be:

MSCFG 3,DRIFTS,ON

**Note**
Refer to chapter 12 for details of the test parameter variables listed above.
Modulation Index Test Configuration (MICFG)

This test measures the modulation characteristics on the EUT output for each of the frequency ranges selected (LOW, MEDIUM and HIGH). The MT8852B can perform the test using either loopback test controls or Tx test controls. The default form for this test is to use loopback. The following test is described using the default test control.

The MT8852B transmits packets with a 11110000 payload and then packets a 10101010 payload. These packets are looped back by the EUT. These packets are the longest supported packet type as reported by the EUT during link set up (DH1, DH3 or DH5) or the selected packet type.

This test is performed with hopping off, and the test is repeated until the number of packets has been measured on each of the selected frequencies as set in the “Number of packets” field. The LOW, MEDIUM and HIGH frequencies relate to the default frequencies specified in the Bluetooth RF test specification. The MT8852B allows all the frequencies to be changed. When the test is performed in Tx test mode EUT transmitter and receiver frequencies must be the same.

Set command format

| MICFG<ws><scriptnumber><,><variable><,> [<params>......] |
| --- | --- |
| <script number> 3 to 10 |
| <variable> |
| LFREQSEL Use the low frequency settings in test. |
| MFREQSEL Use the medium frequency settings in test. |
| HFREQSEL Use the high frequency settings in test. |
| LTXFREQ Set the low frequency Tx value. |
| LRFREQ Set the low frequency Rx value. |
| MTFREQ Set the medium frequency Tx value. |
| MRXFREQ Set the medium frequency Rx value. |
| HTXFREQ Set the high frequency Tx value. |
| HRXFREQ Set the high frequency Rx value. |
| NUMPKTS Set the number of packets used for each. |
| PKTTYPE Packet type to use in performing test. |
| TSTCTRL Test control to use in test. |
| F1AVGMIN Set the f1avg min limit. |
| F1AVGMAX Set the f1avg max limit. |
| F2MAXLIM Set the f2max limit. |
| F1F2MAX Set the f1/f2 avg max limit. |
| TOGGLE Set the payload type. |
| DEFAULT Set the test to its default settings (set only) |
| <params> Specify either frequency (FREQ) or channel (CHAN). |
| Example To set the DEFAULT MICFG the command would be: |
| MICFG 3,DEFAULT |
Configuring Tests in Standard Mode

Query command format

- MICFG?<ws><scriptnumber><,><variable>
  - <script number> 1 to 10
  - <variable>

- LFREQSEL  Read the low frequency settings in test.
- MFREQSEL  Read the medium frequency settings in test.
- HFREQSEL  Read the high frequency settings in test.
- LTXFREQ   Read the low frequency Tx value.
- LRXFREQ   Read the low frequency Rx value.
- MTXFREQ   Read the medium frequency Tx value.
- MRXFREQ   Read the medium frequency Rx value.
- HTXFREQ   Read the high frequency Tx value.
- HRXFREQ   Read the high frequency Rx value.
- NUMPKTS   Read the number of packets used.
- PKTTYPE   Read the packet type used in testing.
- TSTCTRL   Read the test control used in testing.
- F1AVGMIN  Read the f1avg min limit.
- F1AVGMAX  Read the f1avg max limit.
- F2MAXLIM  Read the f2max limit.
- F1F2MAX   Read the f1/f2 avg max limit.
- TOGGLE    Read the payload type.

Response The response is returned in the form of the command to set that state.

Example

  MICFG? 3, NUMPKTS

Response If the value of the MICFG NUMPKTS was 10, the response would be:

  MICFG 3, NUMPKTS, 10

Note Refer to chapter 12 for details of the test parameter variables listed above.
## Input Power Sensitivity Test Configuration (MPCFG)

For the EUT maximum input power test the MT8852B transmits a pseudo random payload (PRBS 9) DH1 data packet to the EUT so that the EUT receives the signal at a power level of -20 dBm. The EUT loops back the received data and bit error rate (BER) and frame error rate (FER) calculations are performed by the MT8852B. The test is repeated for each of the frequency ranges selected (LOW, MEDIUM and HIGH). This test is performed with hopping off. The LOW, MEDIUM and HIGH frequencies relate to the default frequencies specified in the Bluetooth RF test specification but the MT8852B allows all the frequencies to be changed.

### Set command format

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPCFG</td>
<td>Use low frequency settings in test.</td>
</tr>
<tr>
<td>MFREQSEL</td>
<td>Use medium frequency settings in test.</td>
</tr>
<tr>
<td>HFREQSEL</td>
<td>Use high frequency settings in test.</td>
</tr>
<tr>
<td>LTXFREQ</td>
<td>Set low frequency Tx value.</td>
</tr>
<tr>
<td>LRXFREQ</td>
<td>Set low frequency Rx value.</td>
</tr>
<tr>
<td>MTXFREQ</td>
<td>Set medium frequency Tx value.</td>
</tr>
<tr>
<td>MRXFREQ</td>
<td>Set medium frequency Rx value.</td>
</tr>
<tr>
<td>HTXFREQ</td>
<td>Set high frequency Tx value.</td>
</tr>
<tr>
<td>HRXFREQ</td>
<td>Set high frequency Rx value.</td>
</tr>
<tr>
<td>NUMPKTS</td>
<td>Set number of packets used for each.</td>
</tr>
<tr>
<td>TXPWR</td>
<td>Set requested EUT Rx power level.</td>
</tr>
<tr>
<td>BERLIM</td>
<td>Set BER limit.</td>
</tr>
<tr>
<td>FERLIM</td>
<td>Set FER limit.</td>
</tr>
<tr>
<td>PKTCOUNT</td>
<td>Set method used to count packets.</td>
</tr>
<tr>
<td>DEFAULT</td>
<td>Set test to default settings (set only).</td>
</tr>
</tbody>
</table>

Specify either frequency (FREQ) or channel (CHAN).

**Example**

To set the DEFAULT MPCFG the command would be:

```
MPCFG 3, DEFAULT
```
**Configuring Tests in Standard Mode**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTXFREQ</td>
<td>Read the medium frequency Tx value.</td>
</tr>
<tr>
<td>MRXFREQ</td>
<td>Read the medium frequency Rx value.</td>
</tr>
<tr>
<td>HTXFREQ</td>
<td>Read the high frequency Tx value.</td>
</tr>
<tr>
<td>HRXFREQ</td>
<td>Read the high frequency Rx value.</td>
</tr>
<tr>
<td>NUMPKTS</td>
<td>Read the number of packets used.</td>
</tr>
<tr>
<td>TXPWR</td>
<td>Read the requested EUT Rx power level.</td>
</tr>
<tr>
<td>BERLIM</td>
<td>Read the BER limit.</td>
</tr>
<tr>
<td>FERLIM</td>
<td>Read the FER limit.</td>
</tr>
<tr>
<td>PKTCOUNT</td>
<td>Read the method used to count packets.</td>
</tr>
</tbody>
</table>

**Response**

The response is returned in the form of the command to set that state.

**Example**

```
MPCFG 3, NUMPKTS
```

**Response**

If the value of the MPCFG NUMPKTS was 10, the response would be:

```
MPCFG 3, NUMPKTS, 10
```

**Note**

Refer to chapter 12 for details of the test parameter variables listed above.
10-2   Enhanced Data Rate Tests

Relative Transmit Power Test Configuration (ERPCFG)
(MT8852B and MT8852B-042 only)

The EDR relative transmit power measurement ensures that the difference in average transmit power during the frequency modulated [GFSK] and phase modulated [PSK] parts of a packet is within the range specified below.

Pass criteria = (PGFSK - 4dB) < PDPSK < (PGFSK + 1dB)

The test can be performed using either Loopback or Tx mode test controls with hopping on or off. If the EUT supports both $\pi$DQPSK and 8DPSK modulation, then the test must be performed on both modulation formats using the longest support packet type.

The test must be performed with the EUT transmitting at its maximum power, and if the EUT supports power control, also at its minimum transmitter power level. The MT8852B will set the EUT to the Max and Min transmit power automatically if the EUT reports that it supports power control and both Max and Min have been selected in the “EUT power level” entry field.

Set command format

```
ERPCFG<ws><scriptnumber><,><variable><,> [<params>......]
```

<script number> 3 to 10

<variable>

1. NUMPKTS Number of packets.
2. DHXPKT DHx test packet type to use.
3. TSTCTRL Test control to use in test.
5. HOPPING Hopping stages.
6. HOPMODE MT8850/52 custom hopping modes.
7. LRXFREQ Low Rx frequency.
8. MRXFREQ Medium Rx frequency.
9. HRXFREQ High Rx frequency.
10. LTXFREQ Low Tx frequency.
11. MTXFREQ Medium Tx frequency.
12. HTXFREQ High Tx frequency.
13. LFREQSEL Use the low frequency settings in test.
14. MFREQSEL Use the medium frequency settings in test.
15. HFREQSEL Use the high frequency settings in test.
16. PDIFFLH PDPSK to PGFSK difference window upper limit.
17. PDIFFLLL PDPSK to PGFSK difference window lower limit.
18. MINCHECK Minimum sensitivity check.
19. DEFAULT Set the test to its default settings (set only).
<params>
Specify either frequency (FREQ) or channel (CHAN).

Query command format
ERPCFG?<ws><scriptnumber><,><variable>

<script number> 1 to 10
<variable>
NUMPKTS Read the number of packets.
DHXPKT Read the DHx test packet type.
TSTCTRL Read the test control used in test.
PTXLEV Read the Maximum-Minimum Output Power.
HOPPING Read the hopping stages.
HOPMODE Read the custom hopping modes.
LRXFREQ Read the Low Rx frequency.
MRXFREQ Read the Medium Rx frequency.
HRXFREQ Read the High Rx frequency.
LTXFREQ Read the Low Tx frequency.
MTXFREQ Read the Medium Tx frequency.
HTXFREQ Read the High Tx frequency.
LFREQSEL Read the low frequency settings used in test.
MFREQSEL Read the medium frequency settings used in test.
HFREQSEL Read the high frequency settings used in test.
PDIFFLH Read the PDPSK to PGFSK difference window upper limit.
PDIFFLL Read the PDPSK to PGFSK difference window lower limit.
MINCHECK Read the minimum sensitivity check.

Response The response is returned in the form of the command to set that state.

Note Refer to chapter 12 for details of the test parameter variables listed above.
Carrier Frequency Stability and Modulation Test Configuration (ECMCFG)  
(MT8852B and MT8852B-042 only)

This test verifies the transmitter carrier frequency stability and modulation accuracy. This test comprises of both a frequency measurement and a Differential Error Vector Magnitude (DEVM) measurement.

The frequency measurements defined are;

- Initial frequency error of the packet header which is GFSK modulated - \( i \) (Pass criteria ±75kHz)
- Block frequency error during 50\( \mu \)s time blocks in the PSK modulated payload - \( 0 \) (pass criteria ±10kHz)  
  This frequency error is measured relative to the Initial frequency error. The MT8852B continues to measure packets until the user selected number of 50\( \mu \)s blocks has been tested, the default being 200 blocks.
- It is also a requirement of the test that the sum of the above 2 tests \( (i + 0) \) does not exceed ±75kHz

The modulation measurements defined are;

- RMS DEVM. This is the average DEVM for all the symbols in each 50\( \mu \)s block measured. The result is calculated for each block, and each block must pass the following criteria, 0.20 for all \( \pi/4 \)DQPSK blocks and 0.13 for all 8DPSK blocks.
- Peak DEVM. This is the DEVM value of the single symbol in all the blocks measured that has the highest value. The pass criterion is 0.35 for all \( \pi/4 \)DQPSK symbols and 0.25 for all 8DPSK symbols.
- 99% DEVM. This is the DEVM value below which 99% of all the symbols measured in all the blocks are present. The pass criterion is 0.30 for all \( \pi/4 \)DQPSK symbols, and 99% of all symbols are 0.20 for all 8DPSK symbols.
- The default criteria for this measurement is that the longest supported \( \pi/4 \)DQPSK and the longest support 8DPSK packets must both be tested in loopback mode with hopping off.

Set command format  
ECMCFG<ws><scriptnumber><,><variable><,> [<params>.......] 
<script number> 3 to 10 
<variable> 
NUMBLKS Number of blocks to test. 
DHXPKT DHx test packet type to use. 
TSTCTRL Test control to use in test. 
HOPPING Hopping stages. 
HOPMODE MT8850/52 custom hopping modes. 
LRXFREQ Low Rx frequency. 
MRXFREQ Medium Rx frequency. 
HRXFREQ High Rx frequency. 
LTXFREQ Low Tx frequency. 
MTXFREQ Medium Tx frequency. 
HTXFREQ High Tx frequency.
### Configuring Tests in Standard Mode

<table>
<thead>
<tr>
<th>LFREQSEL</th>
<th>Use the low frequency settings in test.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MFREQSEL</td>
<td>Use the medium frequency settings in test.</td>
</tr>
<tr>
<td>HFREQSEL</td>
<td>Use the high frequency settings in test.</td>
</tr>
<tr>
<td>INITFRQLH</td>
<td>Initial frequency error upper limit value.</td>
</tr>
<tr>
<td>INITFRQLL</td>
<td>Initial frequency error lower limit value.</td>
</tr>
<tr>
<td>FREQERLH</td>
<td>Frequency error upper limit value.</td>
</tr>
<tr>
<td>FREQERLL</td>
<td>Frequency error lower limit value.</td>
</tr>
<tr>
<td>BLKFRQLH</td>
<td>Block frequency error upper limit value.</td>
</tr>
<tr>
<td>BLKFRQLL</td>
<td>Block frequency error lower limit value.</td>
</tr>
<tr>
<td>LRMSDEVM</td>
<td>2Mbps RMS DEVM limit value.</td>
</tr>
<tr>
<td>HRMSDEVM</td>
<td>3Mbps RMS DEVM limit value.</td>
</tr>
<tr>
<td>LPKDEVM</td>
<td>2Mbps peak DEVM limit value.</td>
</tr>
<tr>
<td>HPKDEVM</td>
<td>3Mbps peak DEVM limit value.</td>
</tr>
<tr>
<td>LPCTDEVM</td>
<td>2Mbps 99% packets DEVM limit value.</td>
</tr>
<tr>
<td>HPCTDEVM</td>
<td>3Mbps 99% packets DEVM limit value.</td>
</tr>
<tr>
<td>DEFAULT</td>
<td>Set the test to its default settings (set only).</td>
</tr>
</tbody>
</table>

Specify either frequency (FREQ) or channel (CHAN).

**Query command format**

```
ECMCFG?<ws><scriptnumber><,><variable>
```

* <script number> 1 to 10
* <variable>*

- **NUMBLKS** Read the number of blocks to test.
- **DHXPKT** Read the DHx test packet type used.
- **TSTCTRL** Read the test control to use in test.
- **HOPPING** Read the hopping stages.
- **HOPMODE** Read the custom hopping modes.
- **LRXFREQ** Read the Low Rx frequency.
- **MRXFREQ** Read the Medium Rx frequency.
- **HRXFREQ** Read the High Rx frequency.
- **LTXFREQ** Read the Low Tx frequency.
- **MTXFREQ** Read the Medium Tx frequency.
- **HTXFREQ** Read the High Tx frequency.
- **LFREQSEL** Read the low frequency settings in test.
- **MFREQSEL** Read the medium frequency settings in test.
- **HFREQSEL** Read the high frequency settings in test.
- **INITFRQLH** Read the initial frequency error upper limit value.
Enhanced Data Rate Tests

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>INITFRQLL</td>
<td>Read the initial frequency error lower limit value.</td>
</tr>
<tr>
<td>FREQERLH</td>
<td>Read the frequency error upper limit value.</td>
</tr>
<tr>
<td>FREQERLL</td>
<td>Read the frequency error lower limit value.</td>
</tr>
<tr>
<td>BLKFRQLH</td>
<td>Read the block frequency error upper limit value.</td>
</tr>
<tr>
<td>BLKFRQLL</td>
<td>Read the block frequency error lower limit value.</td>
</tr>
<tr>
<td>LRMSDEVM</td>
<td>Read the 2Mbps RMS DEVM limit value.</td>
</tr>
<tr>
<td>HRMSDEVM</td>
<td>Read the 3Mbps RMS DEVM limit value.</td>
</tr>
<tr>
<td>LPKDEVM</td>
<td>Read the 2Mbps peak DEVM limit value.</td>
</tr>
<tr>
<td>HPKDEVM</td>
<td>Read the 3Mbps peak DEVM limit value.</td>
</tr>
<tr>
<td>LPCTDEVM</td>
<td>Read the 2Mbps 99% packets DEVM limit value.</td>
</tr>
<tr>
<td>HPCTDEVM</td>
<td>Read the 3Mbps 99% packets DEVM limit value.</td>
</tr>
</tbody>
</table>

Response: The response is returned in the form of the command to set that state.

**Note**: Refer to chapter 12 for details of the test parameter variables listed above.
Differential Phase Encoding Test Configuration (EDPCFG)
(MT8852B and MT8852B-042 only)

In this measurement the EUT transmits a packet with a defined PRBS9 payload. The payload of the received packet is demodulated and compared with the defined ideal packet to give a resultant symbol error rate. The Bluetooth 2.0 specification stipulates that zero errors are detected in 99% of 100 packets transmitted.

The Bluetooth test specification only requires this test to be performed on 2-DH1 and 3-DH1 packets on channel 0.

Set command format

EDPCFG<ws><scriptnumber><,><variable><,> [<params>……]

<script number> 3 to 10

<variable>

NUPKTS Number of packets.
DHXPKT DHx test packet type to use.
HOPPING Hopping stages.
LTXFREQ Set Low Tx / Rx frequency.
MTXFREQ Set Medium Tx / Rx frequency.
HTXFREQ Set High Tx / Rx frequency.
LFREQSEL Use the low frequency settings in test.
MFREQSEL Use the medium frequency settings in test.
HFREQSEL Use the high frequency settings in test.
PCTPKT Percentage of packets with no errors limit value.
DEFAULT Set the test to its default settings (set only).

<params>
Specify either frequency (FREQ) or channel (CHAN).

Query command format

EDPCFG?<ws><scriptnumber><,><variable>

<script number> 1 to 10

<variable>

NUPKTS Read the number of packets.
DHXPKT Read the DHx test packet type to use.
HOPPING Read the hopping stages.
LTXFREQ Read the Low Tx / Rx frequency.
MTXFREQ Read the Medium Tx / Rx frequency.
HTXFREQ Read the High Tx / Rx frequency.
LFREQSEL Read the low frequency settings in test.
MFREQSEL Read the medium frequency settings in test.
HFREQSEL Read the high frequency settings in test.
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PCTPKT

Read the percentage of packets with no errors limit value.

Response

The response is returned in the form of the command to set that state.

**Note** Refer to chapter 12 for details of the test parameter variables listed above.
EDR Sensitivity Test Configuration (EBSCFG)
(MT8852B and MT8852B-042 only)

The sensitivity test case is to test the EUT receiver sensitivity performance in terms of bit error rate using a non-ideal (dirty) test signal. The test should be performed on the longest supported $\pi/4$DQPSK and 8DPSK packets with frequency hopping off.

The signal source level is set so that the EUT receiver has an input level of –70dBm with defined signal impairments. At each of the test frequencies, the tester transmits packets to the EUT. The EUT loops back the packets to the tester until the tester has receiver 1,600,000 bits. If the BER measured is $7 \times 10^{-5}$ the test has passed and the test stops. If the BER is $7 \times 10^{-5}$ the test continues until the tester has received 16,000,000 bits. If the BER measured is $1 \times 10^{-4}$ the EUT has passed. This pass criteria applies to each test frequency.

Set command format

```
EBSCFG<ws><scriptnumber>,><variable>,> [<params>......]
```

<script number> 3 to 10
<variable>

- **DHXPKT**: DHx test packet type to use.
- **DIRTYTX**: Use the dirty table parameters.
- **DIRTYTAB**: Write the dirty table.
- **DRIFTS**: Drift status.
- **HOPPING**: Hopping stages.
- **PKTCOUNT**: Set the method used to count packets.
- **THBITCNT**: Threshold bit count.
- **TTBITCNT**: Total test bit count.
- **TXPWR**: Set the EUT Rx power.
- **LRXFREQ**: Low Rx frequency.
- **MRXFREQ**: Medium Rx frequency.
- **HRXFREQ**: High Rx frequency.
- **LTXFREQ**: Low Tx frequency.
- **MTXFREQ**: Medium Tx frequency.
- **HTXFREQ**: High Tx frequency.
- **LFREQSEL**: Use the low frequency settings in test.
- **MFREQSEL**: Use the medium frequency settings in test.
- **HFREQSEL**: Use the high frequency settings in test.
- **THERR**: Threshold error limit.
- **TTERR**: Total test error limit.
- **DEFAULT**: Set the test to its default settings (set only).

Specify either frequency (FREQ) or channel (CHAN).
### Query command format

```
EBSCFG?<<scriptnumber>><<variable>>
```

- `<script number> 1 to 10`
- `<variable>`

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DHXPKT</td>
<td>Read the DHx test packet type to use.</td>
</tr>
<tr>
<td>DIRTYTX</td>
<td>Read the dirty table parameters.</td>
</tr>
<tr>
<td>DIRTYTAB</td>
<td>Read the dirty table.</td>
</tr>
<tr>
<td>DRIFTS</td>
<td>Read the drift status.</td>
</tr>
<tr>
<td>HOPPING</td>
<td>Read the hopping stages.</td>
</tr>
<tr>
<td>PKTCOUNT</td>
<td>Read the method used to count packets.</td>
</tr>
<tr>
<td>THBITCNT</td>
<td>Read the threshold bit count.</td>
</tr>
<tr>
<td>TTBITCNT</td>
<td>Read the total test bit count.</td>
</tr>
<tr>
<td>TXPWR</td>
<td>Read the EUT Rx power.</td>
</tr>
<tr>
<td>LRXFREQ</td>
<td>Read the Low Rx frequency.</td>
</tr>
<tr>
<td>MRXFREQ</td>
<td>Read the Medium Rx frequency.</td>
</tr>
<tr>
<td>HRXFREQ</td>
<td>Read the High Rx frequency.</td>
</tr>
<tr>
<td>LTXFREQ</td>
<td>Read the Low Tx frequency.</td>
</tr>
<tr>
<td>MTXFREQ</td>
<td>Read the Medium Tx frequency.</td>
</tr>
<tr>
<td>HTXFREQ</td>
<td>Read the High Tx frequency.</td>
</tr>
<tr>
<td>LFREQSEL</td>
<td>Read the low frequency settings in test.</td>
</tr>
<tr>
<td>MFREQSEL</td>
<td>Read the medium frequency settings in test.</td>
</tr>
<tr>
<td>HFREQSEL</td>
<td>Read the high frequency settings in test.</td>
</tr>
<tr>
<td>THERR</td>
<td>Read the threshold error limit.</td>
</tr>
<tr>
<td>TTERR</td>
<td>Read the total test error limit.</td>
</tr>
</tbody>
</table>

### Response

The response is returned in the form of the command to set that state.

**Note** Refer to chapter 12 for details of the test parameter variables listed above.
EDR BER Floor Sensitivity Test Configuration (EFSCFG)
(MT8852B and MT8852B-042 only)

The BER floor performance test case is to test whether the EUT receiver sensitivity has low residual BER performance when tested at a level 10dB above its minimum sensitivity. The test should be performed on the longest supported π/4DQPSK and 8DPSK packets with frequency hopping off.

The signal source level is set so that the EUT receiver has an input level of -60dBm with no signal impairments. At each of the test frequencies, the tester transmits packets to the EUT. The EUT loops back the packets to the tester until the tester has receiver 8,000,000 bits. If the BER measured is $7 \times 10^{-6}$ the test has passed and the test stops. If the BER is $7 \times 10^{-5}$ the test continues until the tester has received 160,000,000 bits. If the BER measured is $1 \times 10^{-5}$ the EUT has passed. This pass criteria applies to each test frequency.

Set command format

```
EFSCFG<ws><scriptnumber><,><variable><,> [<params>......]
```

- `<script number>`: 3 to 10
- `<variable>`
  - DHXPKT: DHx test packet type to use.
  - PKTCOUNT: Set the method used to count packets.
  - HOPPING: Hopping stages.
  - THBITCNT: Threshold bit count.
  - TTBITCNT: Total test bit count.
  - TXPWR: Set the EUT Rx power.
  - LRXFREQ: Low Rx frequency.
  - MRXFREQ: Medium Rx frequency.
  - HRXFREQ: High Rx frequency.
  - LTXFREQ: Low Tx frequency.
  - MTXFREQ: Medium Tx frequency.
  - HTXFREQ: High Tx frequency.
  - LFREQSEL: Use the low frequency settings in test.
  - MFREQSEL: Use the medium frequency settings in test.
  - HFREQSEL: Use the high frequency settings in test.
  - THERR: Threshold error limit.
  - TTERR: Total test error limit.
  - DEFAULT: Set the test to its default settings (set only).

Specify either frequency (FREQ) or channel (CHAN).

Query command format

```
EFSCFG?<ws><scriptnumber><,><variable>
```

- `<script number>`: 1 to 10
- `<variable>`
Enhanced Data Rate Tests

DHXPKT Read the DHx test packet type to use.
PKTCOUNT Read the method used to count packets.
HOPPING Read the hopping stages.
THBITCNT Read the threshold bit count.
TTBITCNT Read the total test bit count.
TXPWR Read the EUT Rx power.
LRXFREQ Read the Low Rx frequency.
MRXFREQ Read the Medium Rx frequency.
HRXFREQ Read the High Rx frequency.
LTXFREQ Read the Low Tx frequency.
MTXFREQ Read the Medium Tx frequency.
HTXFREQ Read the High Tx frequency.
LFREQSEL Read the low frequency settings in test.
MFREQSEL Read the medium frequency settings in test.
HFREQSEL Read the high frequency settings in test.
THERR Read the threshold error limit.
TTERR Read the total test error limit.

Response The response is returned in the form of the command to set that state.

Note Refer to chapter 12 for details of the test parameter variables listed above.
EDR Maximum Input Power Test Configuration (EMPCFG)
(MT8852B and MT8852B-042 only)

The EDR Maximum input level test case is to test whether the EUT receiver sensitivity has low BER performance when tested at a high signal level close to its maximum specified input. The test should be performed on the longest supported \(\pi/4\)DQPSK and 8DPSK packets with frequency hopping off.

The signal source level is set so that the EUT receiver has an input level of –20 dBm with no signal impairments. At each of the test frequencies, the tester transmits packets to the EUT. The EUT loops back the packets to the tester until the tester has received 1,600,000 bits. The pass criterion is that the EUT BER shall be \(1 \times 10^{-3}\). This pass criterion applies to each test frequency.

**Set command format**

```
EMPCFG<ws><scriptnumber><,><variable><,> [<params>……]  
<script number> 3 to 10
<variable>  
DHXPKT    DHx test packet type to use.
TXPWR     Set the EUT Tx power.
NUMBITS   Number of bits.
HOPPING   Hopping stages.
PKTCOUNT  Set the method used to count packets.
LRXFREQ   Low Rx frequency.
MRXFREQ   Medium Rx frequency.
HRXFREQ   High Rx frequency.
LTXFREQ   Low Tx frequency.
MTXFREQ   Medium Tx frequency.
HTXFREQ   High Tx frequency.
LFREQSEL  Use the low frequency settings in test.
MFREQSEL  Use the medium frequency settings in test.
HFREQSEL  Use the high frequency settings in test.
BERLIM    Set overall BER limit.
DEFAULT   Set the test to its default settings (set only).
<params>  
Specify either frequency (FREQ) or channel (CHAN).
```

**Query command format**

```
EMPCFG?<ws><scriptnumber><,><variable>
<script number>1 to 10
<variable>  
DHXPKT    Read the DHx test packet type to use.
TXPWR     Read the EUT Tx power.
NUMBITS   Read the number of bits.
```
Enhanced Data Rate Tests

HOPPING Read the hopping stages.
PKTCOUNT Read the method used to count packets.
LRXFREQ Read the Low Rx frequency.
MRXFREQ Read the Medium Rx frequency.
HRXFREQ Read the High Rx frequency.
LTXFREQ Read the Low Tx frequency.
MTXFREQ Read the Medium Tx frequency.
HTXFREQ Read the High Tx frequency.
LFREQSEL Read the low frequency settings in test.
MFREQSEL Read the medium frequency settings in test.
HFREQSEL Read the high frequency settings in test.
BERLIM Read the overall BER limit.

Response
The response is returned in the form of the command to set that state.

Note Refer to chapter 12 for details of the test parameter variables listed above.
Configuring Tests in Standard Mode

EDR Guard Time Test Configuration (EGTCFG)
(MT8852B and MT8852B-042 only)

The EDR guard time measurement ensures that the duration of the guard time between the basic rate packet header and the Enhanced Data Rate synchronization sequence of packets is within the range specified below.

Pass criteria = \(4.75 - \varepsilon \mu s < \text{guard time} < 5.25 + \varepsilon \mu s\) 
(where \(\varepsilon = 0.15 \mu s\) as allowed uncertainty)

The test can be performed using either Loopback or Tx mode test controls with hopping off. If the EUT supports both \(\pi/4\text{DQPSK}\) and 8DPSK modulation, then the test must be performed on both modulation formats using 2-DH1 and 3-DH1 support packet type.

The test must be performed with the EUT transmitting at its maximum power. The MT8852B will set the EUT to the Max transmit power automatically.

Set command format

\[
\text{EGTCFG<ws><scriptnumber><,><variable><,> [<params>......]}
\]

\(<\text{script number}> 3 \text{ to } 10\)
\(<\text{variable}>\)

- NUMPKTS Number of packets.
- DHXPKT DHx test packet type to use
- TSTCTRL Test control to use in test
- LRXFREQ Set the Low Rx frequency.
- MRXFREQ Set the Medium Rx frequency.
- HRXFREQ Set the High Rx frequency.
- LTXFREQ Set the Low Tx frequency.
- MTXFREQ Set the Medium Tx frequency.
- HTXFREQ Set the High Tx frequency.
- LFREQSEL Use the low frequency settings in test.
- MFREQSEL Use the medium frequency settings in test.
- HFREQSEL Use the high frequency settings in test.
- PCTPKT Percentage of packets with no errors limit value.
- GDTIMELH Guard time upper limit value.
- GDTIMELL Guard time lower limit value.
- DEFAULT Set the test to its default settings (set only).

<params>

Specify either frequency (FREQ) or channel (CHAN).

Query command format

\[
\text{EGTCFG?<ws><scriptnumber><,><variable>}
\]

\(<\text{script number}> 1 \text{ to } 10\)
\(<\text{variable}>\)
Enhanced Data Rate Tests

NUMPKTS: Read the number of packets.
DHXPKT: Read the DHx test packet type to use.
TSTCTRL: Read the test control to use in test.
LRXFREQ: Read the Low Rx frequency.
MRXFREQ: Read the Medium Rx frequency.
HRXFREQ: Read the High Rx frequency.
LTXFREQ: Read the Low Tx frequency.
MTXFREQ: Read the Medium Tx frequency.
HTXFREQ: Read the High Tx frequency.
LFREQSEL: Read the low frequency settings in test.
MFREQSEL: Read the medium frequency settings in test.
HFREQSEL: Read the high frequency settings in test.
PCTPKT: Read the percentage of packets with no errors limit value.
GDTIMELH: Read the guard time upper limit value.
GDTIMELL: Read the guard time lower limit value.

Response: The response is returned in the form of the command to set that state.

Note: Refer to chapter 12 for details of the test parameter variables listed above.
EDR Synchronization Sequence and Trailer Test Configuration (ESTCFG)
(MT8852B and MT8852B-042 only)

The EDR guard synchronization sequence and trailer measurement ensures zero bit errors in the synchronization sequences and no more than bit error in all the trailer symbols.

The test can be performed using either Loopback or Tx mode test controls with hopping off. If the EUT supports both $\pi/4$DQPSK and 8DPSK modulation, then the test must be performed on both modulation formats using 2-DH1 and 3-DH1 support packet type.

The test must be performed with the EUT transmitting at its maximum power. The MT8852B will set the EUT to the Max transmit power automatically.

Set command format

```
ESTCFG<ws><scriptnumber><,><variable><,> [<params>......]
```

<script number> 3 to 10

<variable>

- NUMPKTS Number of packets.
- DHXPKT DHx test packet type to use
- TSTCTRL Test control to use in test.
- LRXFREQ Set the Low Rx frequency.
- MRXFREQ Set the Medium Rx frequency.
- HRXFREQ Set the High Rx frequency.
- LTXFREQ Set the Low Tx frequency.
- MTXFREQ Set the Medium Tx frequency.
- HTXFREQ Set the High Tx frequency.
- LFREQSEL Use the low frequency settings in test.
- MFREQSEL Use the medium frequency settings in test.
- HFREQSEL Use the high frequency settings in test.
- LSYNCBITS Set the 2Mbps synchronization sequence bits limit value.
- HSYNCBITS Set the 3Mbps synchronization sequence bits limit value.
- LTRLBITS Set the 2Mbps trailer bits limit value.
- HTRLBITS Set the 3Mbps trailer bits limit value.

<params>

Specify either frequency (FREQ) or channel (CHAN).

Query command format

```
ESTCFG?<ws><scriptnumber><,><variable>
```

<script number> 1 to 10

<variable>

- NUMPKTS Read the number of packets.
- DHXPKT Read the DHx test packet type to use
**TSTCTRL**
Read the test control to use in test.

**LRXFREQ**
Read the Low Rx frequency.

**MRXFREQ**
Read the Medium Rx frequency.

**HRXFREQ**
Read the High Rx frequency.

**LTXFREQ**
Read Low Tx frequency.

**MTXFREQ**
Read the Medium Tx frequency.

**HTXFREQ**
Read the High Tx frequency.

**LFREQSEL**
Read the low frequency settings in test.

**MFREQSEL**
Read the medium frequency settings in test.

**HFREQSEL**
Read the high frequency settings in test.

**LSYNCBITS**
Read the 2Mbps synchronization sequence bits limit value.

**HSYNCBITS**
Read the 3Mbps synchronization sequence bits limit value.

**LTRLBITS**
Read the 2Mbps trailer bits limit value.

**HTRLBITS**
Read the 3Mbps trailer bits limit value.

**Response**
The response is returned in the form of the command to set that state.

---

**Note**
Refer to chapter 12 for details of the test parameter variables listed above.
10-3  Low Energy Tests  
(Option 27 and MT8852B-043 only)  

**BLE Output Power Test Configuration (LEOPCFG)**

The output power test performs power measurements on the EUT transmitted packets.

The MT8852B measures the EUT output power at the three frequencies defined on the LOW, MEDIUM and HIGH set up screen. The number of packets measured at each frequency is set by the user in the "Number of packets" field.

The following test description is described using the default test control. The MT8852B sends a BLE Tx Test command to the EUT specifying a BLE reference packet with a PRBS9 payload type to be transmitted back to the MT8852B. The EUT transmits the data at its maximum output power and the MT8852B measures the received power. This test is repeated until the requested number of packets has been measured on each of the selected frequencies. The LOW, MEDIUM and HIGH frequencies relate to the default frequencies specified in the Bluetooth low energy RF test specification. The MT8852B allows all these frequencies to be changed from their default values.

<table>
<thead>
<tr>
<th>Set command format</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LEOPCFG&lt;ws&gt;&lt;scriptnumber&gt;&lt;,&gt;&lt;variable&gt;&lt;,&gt; [&lt;params&gt;......]</strong></td>
<td></td>
</tr>
<tr>
<td>&lt;script number&gt;</td>
<td>3 to 10</td>
</tr>
<tr>
<td>&lt;variable&gt;</td>
<td></td>
</tr>
<tr>
<td><strong>LFREQSEL</strong></td>
<td>Use the low frequency settings in test.</td>
</tr>
<tr>
<td><strong>MFREQSEL</strong></td>
<td>Use the medium frequency settings in test.</td>
</tr>
<tr>
<td><strong>HFREQSEL</strong></td>
<td>Use the high frequency settings in test.</td>
</tr>
<tr>
<td><strong>LTXFREQ</strong></td>
<td>Set the EUT low frequency Tx value.</td>
</tr>
<tr>
<td><strong>MTXFREQ</strong></td>
<td>Set the EUT medium frequency Tx value.</td>
</tr>
<tr>
<td><strong>HTXFREQ</strong></td>
<td>Set the EUT high frequency Tx value.</td>
</tr>
<tr>
<td><strong>LEPKTTYPE</strong></td>
<td>Set the packet type. (Option 35, 36, 37, 62 only.)</td>
</tr>
<tr>
<td><strong>NUMPKTS</strong></td>
<td>Number of packets.</td>
</tr>
<tr>
<td><strong>AVGMXHLIM</strong></td>
<td>Average power high limit.</td>
</tr>
<tr>
<td><strong>AVGMNLLIM</strong></td>
<td>Average power low limit.</td>
</tr>
<tr>
<td><strong>AVGMXCTELIM</strong></td>
<td>Average power high limit for CTE.</td>
</tr>
<tr>
<td><strong>AVGMNCTELIM</strong></td>
<td>Average power low limit for CTE.</td>
</tr>
<tr>
<td><strong>PEAKLIM</strong></td>
<td>Peak to average power limit.</td>
</tr>
<tr>
<td><strong>PEAKCTELIM</strong></td>
<td>Peak to average power limit for CTE.</td>
</tr>
<tr>
<td><strong>DEFAULT</strong></td>
<td>Set the test to its default settings (set only).</td>
</tr>
</tbody>
</table>
Low Energy Tests

<params>
Specify either frequency (FREQ) or channel (CHAN).

Example
To set the DEFAULT LEOPCG the command would be:
LEOPCFG 3,DEFAULT

Query command format
LEOPCFG?<ws><scriptnumber><,><variable>

<script number> 1 to 10

<variable>

- LFREQSEL: Read the low frequency settings in test.
- MFREQSEL: Read the medium frequency settings in test.
- HFREQSEL: Read the high frequency settings in test.
- LTXFREQ: Read the EUT low frequency Tx value.
- MTXFREQ: Read the EUT medium frequency Tx value.
- HTXFREQ: Read the EUT high frequency Tx value.
- LEPKTTYPE: Read the packet type used for the test
- NUMPKTS: Read the number of packets.
- AVGMXLIM: Read the average power high limit.
- AVGMXNLM: Read the average power low limit.
- AVGMEMXTELIM: Read the average power high limit for CTE.
- AVGMEMNTELIM: Read the average power low limit for CTE.
- PEAKLIM: Read the peak power limit.
- PEAKCTELEM: Read the peak power limit for CTE.

Response
The response is returned in the form of the command to set that state.

Example
LEOPCFG? 3,PEAKLIM

Response
If the value of the LEOPCFG PEAKLIM was 15, the response would be:
LEOPCFG 3,PEAKLIM,5

Note
Refer to chapter 12 for details of the test parameter variables listed above.
BLE Carrier Frequency Offset and Drift Test Configuration (LEICDCFG)
(Option 27 and MT8852B-043 only)

The carrier drift test performs an initial carrier frequency offset, drift and drift rate measurements.

Note that measurements on 2LE packets require option 35, option 36 is required for BLR and option 37 is required for BLE-CTE and 2LE-CTE.

The MT8852B sends a BLE Tx Test command to the EUT which specifies a BLE reference packet with a 10101010 payload type (11111111 for BLR8) to be transmitted to the MT8852B at each of the frequencies selected (LOW, MEDIUM and HIGH). The LOW, MEDIUM and HIGH frequencies are the default frequencies specified in the Bluetooth low energy RF test specification. The number of packets of each length measured is set in the “Number of packets” field. The MT8852B allows all the frequencies to be changed. This is the test method described in the Bluetooth Low Energy RF Test Specification.

Set command format

LEICDCFG<ws><scriptnumber><,><variable><,><params>......]
<script number> 3 to 10
<variable>

LFREQSEL Use the low frequency settings in test.
MFREQSEL Use the medium frequency settings in test.
HFREQSEL Use the high frequency settings in test.
LTXFREQ Set the low frequency Tx and Rx value.
MTXFREQ Set the medium frequency Tx and Rx value.
HTXFREQ Set the high frequency Tx and Rx value.
LEPKTTYPE Set the packet type. (Option 35, 36, 37 only.)
NUMPKTS Set the number of packets used.
MXPOSLIM Set the positive offset limit.
MXPOSLRLIM Set the positive offset limit (BLR).
MXPOSCTELIM Set the positive offset limit (BLE-CTE).
MXPOS2CTELIM Set the positive offset limit (2LE-CTE).
MXNEGGLIM Set the negative offset limit.
MXNEGLRLIM Set the negative offset limit (BLR).
MXNEGCTELIM Set the negative offset limit (BLE-CTE).
MXNEG2CTELIM Set the negative offset limit (2LE-CTE).
DFTBLELIM Set the packet drift limit.
DFTBLELRLIM Set the packet drift limit (BLR).
DFTBLECTELIM Set the packet drift limit (BLE-CTE).
DFTBLE2CTELIM Set the packet drift limit (2LE-CTE).
INITDFTUBLERATE Set the initial drift rate limit.
INITDFTUBLELRRATE Set the initial drift rate limit (BLR).
INITDFTUBLECTERATE Set the initial drift rate limit (BLE-CTE).
INITDFTBLE2CTERATE Set the initial drift rate limit (2LE-CTE).
DFTBLERATE Set the drift rate limit.
DFTBLELRRATE Set the drift rate limit (BLR).
DFTBLECTERATE Set the drift rate limit (BLE-CTE).
DFTBLE2CTERATE Set the drift rate limit (2LE-CTE).
DEFAULT Set the test to its default settings (set only).

<params>
Specify either frequency (FREQ) or channel (CHAN).

Example
To set the DEFAULT LEICDCFG, the command would be:
LEICDCFG 3, DEFAULT

Query command format
LEICDCFG?<ws><scriptnumber><,><variable>

<script number> 1 to 10
<variable>
LFREQSEL Get the low frequency settings in test.
MFREQSEL Get the medium frequency settings in test.
HFREQSEL Get the high frequency settings in test.
LTXFREQ Get the low frequency Tx and Rx value.
MTXFREQ Get the medium frequency Tx and Rx value.
HTXFREQ Get the high frequency Tx and Rx value.
LEPKTTYTE Get the packet type.
NUMPKTS Get the number of packets used.
MXPOSOLIM Get the positive offset limit.
MXPOSRLRLIM Get the positive offset limit (BLR).
MXPOSCTELIM Get the positive offset limit (BLE-CTE).
MXPOS2CTELIM Get the positive offset limit (2LE-CTE).
Configuring Tests in Standard Mode

- **MXNEGLIM**: Get the negative offset limit.
- **MXNEGLRLIM**: Get the negative offset limit (BLR).
- **MXNEGCTELEM**: Get the negative offset limit (BLE-CTE).
- **MXNEG2CTELEM**: Get the negative offset limit (2LE-CTE).
- **DFTBLELIM**: Get the packet drift limit.
- **DFTBLELRRLIM**: Get the packet drift limit (BLR).
- **DFTBLECTELEM**: Get the packet drift limit (BLE-CTE).
- **DFTBLE2CTELEM**: Get the packet drift limit (2LE-CTE).
- **INITDFTBLERATE**: Get the initial drift rate limit.
- **INITDFTBLELRRLATE**: Get the initial drift rate limit (BLR).
- **INITDFTBLECTERATE**: Get the initial drift rate limit (BLE-CTE).
- **INITDFTBLE2CTERATE**: Get the initial drift rate limit (2LE-CTE).
- **DFTBLERATE**: Get the drift rate limit.
- **DFTBLELRRATE**: Get the drift rate limit (BLR).
- **DFTBLECTERATE**: Get the drift rate limit (BLE-CTE).
- **DFTBLE2CTERATE**: Get the drift rate limit (2LE-CTE).

**Response**
The response is returned in the form of the command to set that state.

**Example**
LEICDCFG? 3, NUMPKTS

**Response**
If the value of the LEICDCFG NUMPKTS was 25, the response would be:
LEICDCFG 3, NUMPKTS, 25

**Note**
Refer to chapter 12 for details of the test parameter variables listed above.
BLE Modulation Characteristics Test Configuration (LEMICFG)
(Option 27 and MT8852B-043 only)

This test measures the modulation characteristics of the EUT output for each of the frequency ranges selected (LOW, MEDIUM and HIGH).

Note that measurements on 2LE signals requires Option 35 and measurements on BLR signals requires Option 36 or 62.

The MT8852B sends a BLE Tx Test command to the EUT which specifies a BLE reference packet with an 11110000 payload type to be transmitted back to the MT8852B. The MT8852B then instructs the EUT to send packets with alternate ones and zeros (10101010) payload back to the MT8852B. This is repeated at each of the frequencies selected (LOW, MEDIUM and HIGH), for the number of packets specified. In the case of BLR8 signals a 11111111 payload is used. (Measurements on BLR2 signals are not required by the Test Specification and are not supported.)

The LOW, MEDIUM and HIGH frequencies relate to the default frequencies specified in the Bluetooth Low Energy RF test specification. The MT8852B allows all the frequencies to be changed.

<table>
<thead>
<tr>
<th>Set command format</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEMICFG&lt;ws&gt;&lt;scriptnumber&gt;,&lt;variable&gt;,&gt; [&lt;params&gt;......]</td>
<td>Use the low frequency settings in test.</td>
</tr>
<tr>
<td>LFSQSEL</td>
<td>Use the medium frequency settings in test.</td>
</tr>
<tr>
<td>HFREQSEL</td>
<td>Use the high frequency settings in test.</td>
</tr>
<tr>
<td>LTXFREQ</td>
<td>Set the low frequency Tx value.</td>
</tr>
<tr>
<td>MTXFREQ</td>
<td>Set the medium frequency Tx value.</td>
</tr>
<tr>
<td>HTXFREQ</td>
<td>Set the high frequency Tx value.</td>
</tr>
<tr>
<td>LEPKTTYPE</td>
<td>Set the packet type. (Option 35, 36, 62 only.)</td>
</tr>
<tr>
<td>NUMPKTS</td>
<td>Set the number of packets used.</td>
</tr>
<tr>
<td>F1AVGMIN</td>
<td>Set the f1avg min limit.</td>
</tr>
<tr>
<td>F1AVGMAX</td>
<td>Set the f1avg max limit.</td>
</tr>
<tr>
<td>F1AVG2MIN</td>
<td>Set the f1avg 2LE min limit.</td>
</tr>
<tr>
<td>F1AVG2MAX</td>
<td>Set the f1avg 2LE max limit.</td>
</tr>
<tr>
<td>F2MAXLIM</td>
<td>Set the f2max limit.</td>
</tr>
<tr>
<td>F1MAXLIM</td>
<td>Set the f1max (BLR8) limit.</td>
</tr>
<tr>
<td>F2MAX2LIM</td>
<td>Set the f2max (2LE) limit.</td>
</tr>
<tr>
<td>F1F2MAX</td>
<td>Set the f1/f2 avg max limit.</td>
</tr>
</tbody>
</table>
Configuring Tests in Standard Mode

TOGGLE
  Set the payload type.

DEFAULT
  Set the test to its default settings (set only).

<params>
  Specify either frequency (FREQ) or channel (CHAN).

Example
  To set the DEFAULT LEMICFG the command would be:
  LEMICFG 3,DEFAULT

Query command format
  LEMICFG?<ws><scriptnumber><,><variable>
  <script number> 1 to 10
  <variable>
  LFREQSEL  Read the low frequency settings in test.
  MFREQSEL  Read the medium frequency settings in test.
  HFREQSEL  Read the high frequency settings in test.
  LTXFREQ   Read the low frequency Tx value.
  MTXFREQ   Read the medium frequency Tx value.
  HTXFREQ   Read the high frequency Tx value.
  LEPKTTYPE Read the packet type.
  NUMPKTS   Read the number of packets used.
  F1AVGMIN  Read the f1avg min limit.
  F1AVGMAX  Read the f1avg max limit.
  F1AVG2MIN Read the f1avg 2LE min limit.
  F1AVG2MAX Read the f1avg 2LE max limit.
  F2MAXLIM  Read the f2max limit.
  F1MAXLIM  Read the f1max (BLR8) limit.
  F2MAX2LIM Read the f2max (2LE) limit.
  F1F2MAX   Read the f1/f2 avg max limit.
  TOGGLE    Read the payload type.

Response
  The response is returned in the form of the command to set that state.

Example
  LEMICFG? 3,NUMPKTS

Response
  If the value of the LEMICFG NUMPKTS was 10, the response would be:
  LEMICFG 3,NUMPKTS,10
| **Note** | Refer to chapter 12 for details of the test parameter variables listed above. |
BLE Tx Power Stability Test Configuration (LEPSCFG)

(Option 37 only)

This test measures the Tx power stability of the CTE within the EUT transmitted packets. The MT8852B measures the CTE within the packets at the three frequencies defined on the LOW, MEDIUM and HIGH set up screen. The number of packets measured at each frequency is set by the user in the “Number of packets” field.

The following test description is described using the default test control. The MT8852B sends a BLE Tx Test command to the EUT specifying a BLE packet with CTE to be transmitted back to the MT8852B. The EUT transmits the data at its maximum output power and the MT8852B measures the CTE. This test is repeated until the requested number of packets has been measured on each of the selected frequencies. The LOW, MEDIUM and HIGH frequencies relate to the default frequencies specified in the Bluetooth low energy RF test specification. The MT8852B allows all these frequencies to be changed from their default values.

Set command format

LEPSCFG<ws><scriptnumber><,><variable><,> [<params>......]

<script number> 3 to 10
<variable>

LFREQSEL Use the low frequency settings in test.
MFREQSEL Use the medium frequency settings in test.
HFREQSEL Use the high frequency settings in test.
LTXFREQ Set the EUT low frequency Tx value.
MTXFREQ Set the EUT medium frequency Tx value.
HTXFREQ Set the EUT high frequency Tx value.
LEPKTTYPE Set the packet type.
NUMPKTS Set the number of packets.
CTESLOT Set the CTE slot duration.
NUMANT Set the number of antenna.
NUMANTMODE Set the number of antenna mode.
ANTSWPAT Antenna switching pattern
SWPATLEN Length of switching pattern
ANTSWLIST Antenna switching list
REFPWRLIM Set the reference power ratio limit.
SLOTPWRLIM Set the slot power ratio limit.
DEFAULT Set the test to its default settings (set only).
Low Energy Tests

<params>
Specify either frequency (FREQ) or channel (CHAN).

Example
To set the CTE 2 \(\mu\)s slot duration, the command would be:
LEPSCFG 3,CTESLOT,2US,TRUE

Query command format
LEPSCFG?<ws><scriptnumber><,><variable>

<script number> 3 to 10
<variable>
LFREQSEL Read the low frequency settings in test.
MFREQSEL Read the medium frequency settings in test.
HFREQSEL Read the high frequency settings in test.
LTXFREQ Read the EUT low frequency Tx value.
MTXFREQ Read the EUT medium frequency Tx value.
HTXFREQ Read the EUT high frequency Tx value.
LEPKTTYPE Read the packet type used for the test
NUMPKTS Read the number of packets.
CTESLOT Read the CTE slot duration.
NUMANT Read the number of antenna.
NUMANTMODE Read the number of antenna mode.
ANTSWPAT Antenna switching pattern
SWPATLEN Length of switching pattern
ANTSWLIST Antenna switching list
REFPWRLIM Read the reference power ratio limit.
SLOTPWRLIM Read the slot power ratio limit.

Response
The response is returned in the form of the command to set that state.

Example
LEPSCFG? 3,CTESLOT,2US

Response
If the value of the LEPSCFG CTESLOT 2 \(\mu\)s was true, the response would be:
LEPSCFG 3,LECTESLOT,2US,TRUE

Note Refer to chapter 12 for details of the test parameter variables listed above.
BLE Receiver Sensitivity Test Configuration (LESSCFG)
(Option 27 and MT8852B-043 only)

For BLE sensitivity measurement, the MT8852B first sends the BLE Rx Test command to the EUT and then transmits BLE reference packets with a pseudo random payload (PRBS 9) to the EUT at a minimum power level. The EUT counts the number of received packets and sends this value back to the MT8852B. Frame error rate (FER) calculation is performed by the MT8852B test set. The test is repeated for each of the frequencies selected (LOW, MEDIUM and HIGH). The LOW, MEDIUM and HIGH frequencies relate to the default frequencies specified in the Bluetooth low energy RF test specification. The MT8852B allows all the frequencies to be changed. This is the test method described in the Bluetooth Low Energy RF Test Specification for a sensitivity test.

Set command format

```
LESSCFG<ws><scriptnumber>,<variable>, [<params>……]
```

- `<script number>` 3 to 10
- `<variable>`
  - LFREQSEL Use the low frequency settings in test.
  - MFREQSEL Use the medium frequency settings in test.
  - HFREQSEL Use the high frequency settings in test.
  - LRXFREQ Set the low frequency Rx value.
  - MRXFREQ Set the medium frequency Rx value.
  - HRXFREQ Set the high frequency Rx value.
  - LEPKTTYPE Set the packet type. (Option 35, 36, 62 only.)
  - NUMPKTS Set the number of packets used.
  - TXPWR Set the requested EUT Rx power level.
  - FERLIM Set overall FER limit.
  - FERLIMMODE Set the BLE PER limit mode: manually, or automatically based on the packet length.
  - DIRTYTX Use dirty parameter table ON/OFF.
  - DEFAULT Set the test to its default settings (set only).

Example

To set the LESSCFG to ON on the command would be:

```
LESSCFG 3,LFREQSEL,ON
```

Query command format

```
LESSCFG?<ws><scriptnumber>,<variable>
```

- `<script number>` 1 to 10
- `<variable>`
<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LFREQSEL</td>
<td>Read the low frequency settings in test.</td>
</tr>
<tr>
<td>MFREQSEL</td>
<td>Read the medium frequency settings in test.</td>
</tr>
<tr>
<td>HFREQSEL</td>
<td>Read the high frequency settings in test.</td>
</tr>
<tr>
<td>MRXFREQ</td>
<td>Read the medium frequency Rx value.</td>
</tr>
<tr>
<td>HTXFREQ</td>
<td>Read the high frequency Tx value.</td>
</tr>
<tr>
<td>HRXFREQ</td>
<td>Read the high frequency Rx value.</td>
</tr>
<tr>
<td>LEPKTTYPE</td>
<td>Read the packet type.</td>
</tr>
<tr>
<td>NUMPKTS</td>
<td>Read the number of packets used.</td>
</tr>
<tr>
<td>TXPWR</td>
<td>Read the requested EUT Rx power level.</td>
</tr>
<tr>
<td>FERLIM</td>
<td>Read the overall FER limit.</td>
</tr>
<tr>
<td>FERLIMMODE</td>
<td>Read the BLE PER limit mode.</td>
</tr>
</tbody>
</table>

**Response**  The response is returned in the form of the command to set that state.

**Example**  
```
LESCFG? 3,LFREQSEL
```

**Response**  If the value of LESSCFG was LFREQSEL, the response would be:  
```
LESCFG 3,LFREQSEL,ON
```

**Note**  Refer to chapter 12 for details of the test parameter variables listed above.
Configuring Tests in Standard Mode

BLE PER Report Integrity (LEPRICFG)
(Option 27 and MT8852B-043 only)

The MT8852B sends BLE reference packets with a PRBS9 payload at a power level of -30 dBm and with the CRC value alternating between a valid and invalid value. The EUT counts the number of valid received packets and, at the end of the test, sends this value back to the MT8852B. Frame error rate (FER) calculation is performed by the MT8852B test set. The test is repeated three times (default) at the frequency selected (MEDIUM default). The MEDIUM frequency relates to the default frequencies specified in the Bluetooth low energy RF test specification. The MT8852B allows the frequency to be changed.

Set command format
LEPRICFG<ws><scriptnumber><,><variable><,>
[<params>……]
<script number>  3 to 10
<variable>
MRXFREQ              Set the medium frequency Rx value.
NUMCYC               Set the number or cycles of the test.
LEPKTTYPE            Set the packet type. (Option 35, 36, 62 only.)
NUMPKTS              Number of packets used for each test in fixed mode. Must be set to an even number.
PKTNUMMODE           The packet number mode.
TXPWR                Set the requested EUT Rx power level.
FERLIMMODE           Set the limit mode: manually, or automatically based on the packet length.
LOWPERLIM            Set the lower PER limit.
HIGHPERLIM           Set the higher PER limit.
DEFAULT              Set the test to its default settings.

<params>
Specify either frequency (FREQ) or channel (CHAN).

Example
To set the LEPRICFG to on the command would be:
LEPRICFG 3,PKTNUMMODE,RANDOM

Query command format
LEPRICFG?<ws><scriptnumber><,><variable>
<script number> 1 to 10
<variable>
MRXFREQ              Read the medium frequency Rx value.
NUMCYC               Read the number or cycles of the test.
LEPKTTYPE            Read the packet type.
NUMPKTS  Read the number of packets used for each test in fixed mode.

PKTNUMMODE  Read the packet number mode.

TXPWR  Read the requested EUT Rx power level.

FERLIMMODE  Read the BLE PER limit mode.

LOWPERLIM  Read the lower PER limit.

HIGHPERLIM  Read the higher PER limit

Response  The response is returned in the form of the command to set that state.

Example  LEPRICFG? 3,PKTNUMMODE

Response  If the value of PKTNUMMODE was FIXED, the response would be:

LEPRICFG 3,PKTNUMMODE,FIXED

Note  Refer to chapter 12 for details of the test parameter variables listed above.
BLE Maximum Input Signal Level Test Configuration (LEMPCFG)
(Option 27 and MT8852B-043 only)

For the BLE Maximum Input Signal Level measurement the MT8852B first sends the BLE Rx Test command to the EUT and then transmits BLE reference packets with a pseudo random payload (PRBS 9) to the EUT at a high power level. The EUT counts the number of received packets and, at the end of the test, sends this value back to the MT8852B. Frame error rate (FER) calculation is performed by the MT8852B test set. The test is repeated for each of the frequencies selected (LOW, MEDIUM and HIGH). The LOW, MEDIUM and HIGH frequencies relate to the default frequencies specified in the Bluetooth low energy RF test specification. The MT8852B allows all the frequencies to be changed.

Set command format  
LEMPCFG<ws><scriptnumber><,><variable><,> [<params>……]

<script number> 3 to 10
<variable>
  LFREQQSEL Use the low frequency settings in test.
  MFREQQSEL Use the medium frequency settings in test.
  HFREQQSEL Use the high frequency settings in test.
  LRXFREQ Set the low frequency Rx value.
  MRXFREQ Set the medium frequency Rx value.
  HRXFREQ Set the high frequency Rx value.
  LEPKTTYPE Set the packet type. (Option 35, 36, 62 only.)
  NUMPKTS Set the number of packets used for each.
  TXPWR Set the requested EUT Rx power level.
  FERLIMMODE Set the limit mode: manually, or automatically based on the packet length.
  FERLIM Set FER limit.
  DEFAULT Set the test to its default settings (set only).

<params>
Specify either frequency (FREQ) or channel (CHAN).

Example
To set the DEFAULT MPCFG the command would be:
MSCFG 3,DEFAULT

Query command format  
LEMPCFG?<ws><scriptnumber><,><variable>

<script number> 1 to 10
<variable>
  LFREQQSEL Read the low frequency settings in test.
Low Energy Tests

MFREQSEL  Read the medium frequency settings in test.
HFREQSEL  Read the high frequency settings in test.
LRXFREQ   Read the low frequency Rx value.
MRXFREQ   Read the medium frequency Rx value.
HRXFREQ   Read the high frequency Rx value.
LEPKTTYPE Read the packet type.
NUMPKTS   Read the number of packets used.
TXPWR     Read the requested EUT Rx power level.
FERLIMMODE Read the BLE PER limit mode.
FERLIM    Read the FER limit.

Response The response is returned in the form of the command to set that state.

Example LEMP_CFG 3, NUMPKTS

Response If the value of the UMPCFG NUMPKTS was 10, the response would be:
LEMP_CFG 3, NUMPKTS, 10

Note Refer to chapter 12 for details of the test parameter variables listed above.
Chapter 11 — Configuring Tests in Single Payload Mode

11-1 Single Payload Configuration (SPCFG)

This command is used to configure parameters when test scripts are carried out in Single Payload mode (see Operation Manual for more information on this mode). When running a script in this mode, the instrument uses the configuration parameters listed below.

Note that for the tests listed below, the instrument does NOT support measurements on the received packets when in Single Payload mode.

- Receiver sensitivity (BER)
- Receiver Maximum Input Power (BER)
- Power Control
- Any of the eight EDR measurements (MT8852B, MT8852B-042 only)
- Any of the six low energy measurements (option 27 and MT8852B-043 only)

The PKTTYPE parameter allows selection of all EDR packet types, as well as the Basic Rate packets. This is to allow continuous transmission of any packet when using the instrument as an ‘interferer’ for certain types of tests (e.g. C/I Performance or Blocking Performance tests). All EDR packets looped back to the instrument is discarded (i.e. no measurements is made).

Set command format

SPCFG<ws><script_num><,><variable><,>[<params>……]

<script_num> 3 to 10
<variable>
TSTCTRL Test control to use in test
PAYLOAD Set the test control payload type
PKTTYPE Packet type to use in performing test
HOPSTATE Set the hopping modes used
TXFREQ Set the Tx frequency value
RXFREQ Set the Rx frequency value
DIRTYTX Use dirty parameter table ON/OFF
DEFAULT Restore the default settings (set only)
<params>
Specify either frequency (FREQ) or channel (CHAN).

Query command format

SPCFG?<ws><script number><,><variable>
### Configuring Tests in Single Payload Mode

<table>
<thead>
<tr>
<th>&lt;script_num&gt;</th>
<th>1 to 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSTCTRL</td>
<td>Read test control to be used in test</td>
</tr>
<tr>
<td>PAYLOAD</td>
<td>Read the test control payload type</td>
</tr>
<tr>
<td>PKTTYPE</td>
<td>Read type to use in performing test</td>
</tr>
<tr>
<td>HOPSTATE</td>
<td>Read the hopping modes used</td>
</tr>
<tr>
<td>TXFREQ</td>
<td>Read the Tx frequency value</td>
</tr>
<tr>
<td>RXFREQ</td>
<td>Read the Rx frequency value</td>
</tr>
<tr>
<td>DIRTYTX</td>
<td>Read dirty parameter table</td>
</tr>
</tbody>
</table>

**Note**

Refer to chapter 12 for specific details of frequency related set and request variables.
Chapter 12 — Test Parameter Variables

This section provides details of the non-limit type variables that may be used for all or any of the tests. For ease of referencing, the variables are listed in alphabetical order.

**Actual Frequencies Used (LTXFREQ, LRXFREQ, LFREQ, MTXFREQ, MRXFREQ, MFREQ, LRFREQ, HRXFREQ, HFREQ, TXFREQ, RXFREQ)**

Use the appropriate parameter to set or query the Low, Medium or High frequencies for the selected test. Confirm in the list for the specific test configuration that the parameter is supported. The following exceptions apply depending on the specific Test or Test Control Mode:

- When in Tx Test Control Mode ONLY, use parameters LFREQ, MFREQ or HFREQ to set both Tx and Rx frequencies (parameters LTXFREQ, MTXFREQ, LRXFREQ can also be used as alternatives).
- The TXFREQ, RXFREQ parameters must be used when the test mode is Single Payload Mode.

| Note | The Tx frequencies are the EUT Tx frequencies and the Rx frequencies are the EUT Rx frequencies. |
**Test Parameter Variables**

**Set command format**

```
PCCFG<ws><script_number><,><freq_select><,><form><,><frequency>[suffix]
```

- `<script_number>` 3 to 10
- `<freq_select>`
  - **LTXFREQ** Low Tx frequency (also Rx frequency when in Tx Test Control Mode).
  - **LRXFREQ** Low Rx frequency setting.
  - **LFREQ** Sets both Tx and Rx low frequencies when in Tx Test Control Mode.
  - **MTXFREQ** Medium Tx frequency (also Rx frequency when in Tx Test Control Mode).
  - **MRXFREQ** Medium Rx frequency setting. For the BLE PER integrity test, the frequencies allowed are limited to those defined in the low energy specification.
  - **MFREQ** Sets both Tx and Rx Medium frequencies when in Tx Test Control Mode.
  - **HTXFREQ** High Tx frequency (also Rx frequency when in Tx Test Control Mode).
  - **HRXFREQ** High Rx frequency setting.
  - **HFREQ** Sets both Tx and Rx high frequencies when in Tx Test Control Mode.
  - **TXFREQ** Tx frequency setting used in Single Payload Test (SPCFG).
  - **RXFREQ** Rx frequency setting used in single payload test (SPCFG).

- `<form>`
  - **FREQ** The `<frequency>` data is in the frequency form (i.e. 2400 MHz to 2483 MHz).
  - **CHAN** The `<frequency>` data is in the channel number form (i.e. 0 to 78).

- `<frequency>` Frequency as a channel number or frequency value (Hz).

**Example**

**Example 1**

To set low Tx frequency to 2434 MHz in script 4 power control test using frequency form the command would be:

```
PCCFG 4, LTXFREQ, FREQ, 2434MHz
```

**Example 2**

To set low Tx frequency to 2434 MHz in script 4 power control test using channel form the command would be:

```
PCCFG 4, LTXFREQ, CHAN, 32
```
### Query command format

<table>
<thead>
<tr>
<th>Format</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>PCCFG?&lt;ws&gt;&lt;script number&gt;&lt;,&gt;&lt;freq_select&gt;&lt;,&gt;&lt;form&gt;</code></td>
<td>Query command format</td>
</tr>
<tr>
<td><code>&lt;script number&gt;</code></td>
<td>1 to 10</td>
</tr>
<tr>
<td><code>&lt;freq_select&gt;</code></td>
<td>LTXFREQ: Tx frequency (also Rx frequency when in Tx Test Control Mode). LRFREQ: Low Rx frequency setting. LFREQ: Tx and Rx low frequencies when in Tx Test Control Mode. MTXFREQ: Medium Tx frequency (also Rx frequency when in Tx Test Control Mode). MRXFREQ: Medium Rx frequency setting. MFREQ: Tx and Rx Medium frequencies when in Tx Test Control Mode. HTXFREQ: High Tx frequency (also Rx when in Tx Test Control Mode). HRXFREQ: High Rx frequency setting. HFREQ: Tx and Rx high frequencies when in Tx Test Control Mode. TXFREQ: Tx frequency setting used in Single Payload Test (SPCFG). RXFREQ: Rx frequency setting used in single payload test (SPCFG).</td>
</tr>
<tr>
<td><code>&lt;form&gt;</code></td>
<td>FREQ: The &lt;frequency&gt; data is in the frequency form. i.e. 2402 MHz to 2480 MHz. CHAN: The &lt;frequency&gt; data is in the channel number form. i.e. 0 to 78.</td>
</tr>
</tbody>
</table>

### Response

The response string returned for the query is in the identical format as the configuration command string.

### Example

**Example1:**

```
PCCFG? 7,MRXFREQ,FREQ
```

Response: If the power control medium Rx frequency in script 7 is 2480 MHz, the response would be:

```
PCCFG 7,MRXFREQ,FREQ,2480E+006
```

**Example2:**

```
EDPCFG? 7,LTXFREQ,FREQ
```

Response: If the low TX/Rx frequencies are 2402 MHz, the response would be:

```
EDPCFG 7,LTXFREQ,FREQ,2402E+006
```
**ANTSWLIST**

This parameter is used to set up the antenna switching list in BLE Tx power stability.

**Set command format**

LEPSCFG <script number>, ANTSWLIST, <antenna ID[0]>, ..., <antenna ID[74]>

- **<script number>** 1 to 10
- **<antenna ID[i]**) 0 to 255 (default: antenna ID[0]=1, antenna ID[1]=2,..., antenna ID[74]=75)

**Example**

To set the antenna ID[0] to [9] for the tx power stability in script 3 the commands are:

LEPSCFG 3, ANTSWLIST, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

**Query command format**

LEPSCFG?<ws><scriptnumber><,> ANTSWLIST

- **<script number>** 1 to 10

**Response**

The response is returned in the form of the command to set that state, the number of antenna IDs are depend on SWPATLEN value.

**Example**

LEPSCFG? 3, ANTSWLIST

**Response**

If the antenna switching list in script3 was default value and SWPATLEN was set to 75, the response would be:

LEPSCFG 3, ANTSWLIST, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75

**ANTSWPAT**

This parameter is used to set up the antenna switching pattern in BLE Tx power stability.

**Set command format**

LEPSCFG<ws><script number><,> ANTSWPAT<,><pattern>

- **<script number>** 1 to 10
- **<pattern>** A (default) B LIST

**Example**

To set the antenna switching pattern to A for tx power stability test in script 3, the command would be:

LEPSCFG 3, ANTSWPAT, A

**Query command format**

LEPSCFG?<ws><scriptnumber><,> ANTSWPAT

- **<script number>** 1 to 10

**Response**

The response is returned in the form of the command to set that state.

**Example**

LEPSCFG? 3, ANTSWPAT
Response

If the antennas switching pattern in script 3 was A, the response would be:

LEPSCFG 3, ANTSWPAT, A

CTESLOT

This parameter is used to set up the CTE slot duration in the BLE packet.

Set command format

LEPSCFG<ws><script number><,>CTESLOT<,><duration><,><value>

<script number> 3 to 10
<duration> 1US (slot duration 1 μs)
         2US (slot duration 2 μs)
<value> TRUE
         FALSE

Example

To set the slot duration to 2 μs only for the tx power stability in script 3, the commands are:

LEPSCFG 3, CTESLOT, 1US, FALSE
LEPSCFG 3, CTESLOT, 2US, TRUE

Query command format

LEPSCFG?<ws><script number><,>CTESLOT<,><duration>

<script number> 1 to 10
<duration> 1US (slot duration 1 μs)
         2US (slot duration 2 μs)

Response

The response is returned in the form of the command to set that state.

Example

LEPSCFG? 7, CTESLOT, 1US

Response

If the CTE slot duration of script 7 was 1US is TRUE, the response would be:

LEPSCFG 7, CTESLOT, 1US, TRUE

DEFAULT

This parameter applies to all tests and will set that test back to its default settings.

Set command format

PCCFG<ws><script number><,>DEFAULT

<script number> 3 to 10 for set

Example

To set the power control test in script 3 to defaults the command would be:

PCCFG 3, DEFAULT
**Test Parameter Variables**

**DHXPKT (MT8852B and MT8852B-042 only)**

This parameter is used to set up the EDR packet type to be used in both the 2 Mbps and the 3 Mbps EDR type packet tests.

**Set command format**

- `ERPCFG<ws><script number><,>DHXPKT<,><data rate><,><packet type>`
  
  - `<script number>`: 3 to 10
  - `<data rate>`: 2 | 3  Where: 2 = 2Mbps, 3 = 3Mbps
  - `<packet type>`: Parameters depend on `<data rate>` (see below)

  - if `<data rate>` = 2:
    - `<packet type>`: OFF | LONG | 2DH1 | 2DH3 | 2DH5
  
  - if `<data rate>` = 3:
    - `<packet type>`: OFF | LONG | 3DH1 | 3DH3 | 3DH5

- **LONG** Use longest packet type supported by EUT
- **OFF** Do not do this test stage

**Example**

To set the ERPCFG test packet type for the 2MB/s part of the test to a 2DH3 for script 4 the command will be:

`ERPCFG 4, DHXPKT, 2, 2DH3`

**Query command format**

- `ERPCFG?<ws><script number><,>DHXPKT<,><data rate>`
  
  - `<script number>`: 1 to 10
  - `<data rate>`: 2 | 3  Where: 2 = 2Mbps, 3 = 3Mbps

**Response**

The response string returned for the query is in the identical format as the configuration command string.

**Example**

`ERPCFG? 4, DHXPKT, 3`

**Response**

If the packet type was the longest supported type the response would be:

`ERPCFG 4, DHXPKT, 2, 2DH3`
DIRTYTAB

This parameter is used with the EDR sensitivity test, multi-slot sensitivity and single slot sensitivity tests where the dirty parameter table is available. The command allows a single entry or all entries for a parameter to be changed or read within a table. Note that the maximum number of entries for the dirty parameter table is 10 entries for single-slot sensitivity and multi-slot sensitivity tests and 3 entries for EDR sensitivity test.

Set command format

SSCFG<ws><scriptnumber><,>DIRTYTAB<,><variable><,><entry><,><number>

<script number> 3 to 10

<variable> OFFSET | SYMT | MODINDEX
OFFSET Set the frequency offset.
SYMT Set symbol timing value.
MODINDEX Set the modulation index value (does not apply to EDR sensitivity test).

<entry> 0 | 1 to 10 for single-slot and multi-slot sensitivity tests.
0 | 1 to 3 for EDR sensitivity test.
Select ‘0’ to set all entries at once. In this case <number> consists of comma separated entries for the whole table.

<number> Ranges depend on the <variable> parameter (see below)
OFFSET –75 kHz to +75 kHz
SYMT –25 ppm to +25 ppm
MODINDEX 0.25 to 0.50 (does not apply to EDR sensitivity test)

Example

Example 1: To set the single slot dirty table offset entry 4 value to –10 kHz in script 4 single slot sensitivity test the command would be:
SSCFG 4,DIRTYTAB,OFFSET,4,-10kHz

Example 2: To set all the table entries at once of OFFSET the command would be:
SSCFG 4,DIRTYTAB,OFFSET,0,-75 kHz,0kHz,15kHz,3kHz,-20kHz,-10E3,13E3,-4.6E4,1kHz,0

Example 3: To set all table entries for script 7 EDR Sensitivity test using OFFSET, the command would be:
EBSCFG 7,DIRTYTAB,OFFSET,0,15kHz,3kHz,-20kHz
Test Parameter Variables

**DIRTYTX**

This parameter is used to set or read whether the dirty transmitter is applied during the single slot and multi slot sensitivity tests, and single payload test when a payload of PRBS9 is used.

**Query command format**

```
EBSCFG? <ws><script number><,><DIRTYTAB><,><variable><,><entry>
```

- `<script number>`: 1 to 10
- `<variable>`: OFFSET | SYMT | MODINDEX
- OFFSET: Set the frequency offset
- SYMT: Set symbol timing value
- MODINDEX: Set the modulation index value (does not apply to EDR sensitivity test)
- `<entry>`: 0 | 1 to 10 for normal data rate
  0 | 1 to 3 for EDR

**Response**

The response string returned for the query is in the identical format as the configuration command string.

**Example**

For script 4 EDR sensitivity test dirty table entry 3 as OFFSET, the command would be:
```
EBSCFG? 4,DIRTYTAB,OFFSET,3
```

**Response**

If the offset is 15 kHz, the response would be:
```
EBSCFG 4,DIRTYTAB,OFFSET,3,1.5E+004
```

**Set command format**

```
SSCFG<ws><script number><,><DIRTYTX><,><status>
```

- `<script number>`: 3 to 10
- `<status>`: ON or OFF

**Example**

To apply the dirty parameters to the multi slot sensitivity test in script 3 the command would be:
```
MSCFG 3,DIRTYTX,ON
```

**Query command format**

```
MSCFG? <ws><script number><,><DIRTYTX
```

- `<script number>`: 1 to 10

**Response**

The response is returned in the form of the command to set that state.

**Example**

```
MSCFG? 7,DIRTYTX
```

**Response**

If the dirty Tx is not applied to the multi sensitivity test in script 7 the response would be:
```
MSCFG 7,DIRTYTX,OFF
```
Frequencies Used (LFREQSEL, MFREQSEL, HFREQSEL)

These parameters are used to select or read whether the low, medium or high frequencies are used when the test is run.

**Set command format**

PCCFG<ws><script number><,><selection><,><status>

- **<script number>** 3 to 10
- **<selection>** LFREQSEL, MFREQSEL, HFREQSEL
- **<status>** ON or OFF

**Example**

To set low frequency select in power control test of script 4 to ON the command would be:

PCCFG 4,LFREQSEL,ON

**Query command format**

PCCFG?<ws><script number><,><selection>

- **<script number>** 1 to 10
- **<selection>** LFREQSEL, MFREQSEL, HFREQSEL

**Response**

The response is returned in the form of the command to set that state.

**Example**

PCCFG? 7,MFREQSEL

**Response**

If the medium frequency select of script 7 was OFF the response would be:

PCCFG 7,MFREQSEL,OFF
Test Parameter Variables

DRIFTS
This application turns on or off the application of drift as specified in the RF Bluetooth test specification.

Set command format
SSCFG<ws><script number><,><DRIFTS><status>
<script number>   3 to 10
$status>   ON or OFF

Example
To set drift to ON in script 3 single sensitivity test, the command would be:
SSCFG 3,DRIFTS,ON

Query command format
SSCFG?<ws><script number><,><DRIFTS>
<script number>  1 to 10

Response
The response is returned in the form of the command to set that state.

Example
SSCFG 3,DRIFTS,ON

FERLIMMODE
Following the introduction of support for Data Length Extension (DLE) with Option 34, this variable sets the mode for calculating the PER test limit based on the packet payload length. In AUTO mode the limit is calculated automatically. (The default is MANUAL for backwards compatibility.)

Set command format
LESSCFG<ws><script number><,>FERLIMMODE<,><mode>
<script number>   1 to 10
<mode>   MANUAL or AUTO

Example
To set the PER limit mode to manual for the BLE receiver sensitivity test in script 3, the command would be:
LESSCFG 3,FERLIMMODE,MANUAL

Query command format
LESSCFG?<ws><script number><,>FERLIMMODE

Response
The response is returned in the form of the command to set that state.

Example
LESSCFG? 3,FERLIMMODE

Response
If script 3 PER test limit mode is AUTO, the response would be:
LESSCFG 3,FERLIMMODE,AUTO
HOPMODE

When a test is run with hopping on, this parameter is used to set which packets in the hop sequence are used for measurement.

**Set command format**

ICCFG<ws><script number><,><HOPMODE><,><mode>

- `<script number>`: 3 to 10
- `<mode>`: DEFINED, ALL, ANY

**Example** To set hopping mode in script 4 initial carrier test to custom the command would be:

ICCFG 4,HOPMODE,ALL

**Query command format**

ICCFG?<ws><script number><,><HOPMODE>

- `<script number>`: 1 to 10

**Response** The response is returned in the form of the command to set that state.

**Example**

ICCFG? 7,HOPMODE

**Response** If script 7 initial carrier test hopping mode is ANY, the response would be:

ICCFG 7,HOPMODE,ANY
Test Parameter Variables

HOPPING

Some of the tests can be done in both hopping ON and hopping OFF states. This parameter is used to set or read in which states the test is done when a test with this parameter is run.

**Set command format**

```
ICCFG<ws><script number><,><HOPPING><,><variable>

<script number>  3 to 10
<variable>

HOPON         Test performed with hopping ON.
HOPOFF        Test performed with hopping OFF.
HOPBOTH       Test performed with both ON and OFF.
```

**Example**

To set hopping on mode in script 4 initial carrier test to ON the command would be:

```
ICCFG 4,HOPPING,HOPON
```

**Query command format**

```
ICCFG?<ws><script number><,><HOPPING>

<script number>  1 to 10

Response The response is returned in the form of the command to set that state.
```

**Example**

```
ICCFG? 7,HOPPING
```

**Response**

If script 7 initial carrier test hopping off is OFF, the response would be:

```
ICCFG 7,HOPPING,HOPOFF
```
HOPSTATE

The single payload test can be performed in both hopping on and hopping off states. This parameter is used to set or read in which state the single payload test is performed.

Set command format

SPCFG<ws><script number><,><HOPSTATE><,><variable>

<script number> 3 to 10
<variable> On | OFF

ON Test performed with hopping ON
OFF Test performed with hopping OFF

Example
To set the single payload hopping state to on for script 4:
SPCFG 4,HOPSTATE,ON

Query command format

SPCFG?<ws><script number><,><HOPSTATE>

<script number> 1 to 10

Response The response is returned in the form of the command to set that state.

Example
SPCFG? 4,HOPSTATE

Response If script 4 single payload test hop state is on, the response would be:
SPCFG 4,HOPSTATE,ON
LEPKTTYPE

(MT8852B-027 and MT8852B-043 with options 35, 36, 37, 62 only)

This configuration parameter is used to set the Bluetooth Low Energy packet type. It is used with the following BLE test configuration commands: LEOPCFG, LEICDCFG, LEMICFG, LEPSCFG, LESSCFG, LEPRICFG and LEMPCFG. It is also used with the LESCPTCFG command to set the packet type for all of the above test configurations in parallel.

The allowed packet types for each configuration command are shown in the following table. Note that not all supported tests require BLR packets, and where testing on BLR packets is required, most tests specify BLR (S=8). (This is not a limitation of the instrument but a requirement of the Bluetooth Test Specification.)

In the case of LESCPTCFG, the command enables only those packet types that are supported by each test, so it is permissible to set LR2 to TRUE and the command will ensure that this setting is only applied to the LESSCFG (receiver sensitivity) and LEPRICFG (PER report integrity) tests as shown in the table.

Support for 2LE requires option 35, BLR requires either option 36 or 62 and BLE-CTE/2LE-CTE requires option 37.

<table>
<thead>
<tr>
<th></th>
<th>BLE 1 Msym/s</th>
<th>2LE 2 Msym/s</th>
<th>LR8 BLR (S=8)</th>
<th>LR2 BLR (S=2)</th>
<th>BLECTE 1 Msym/s with CTE</th>
<th>2LECTE 1 Msym/s with CTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEOPCFG</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>LEICDCFG</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>LEMICFG</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>LEPSCFG</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>LESSCFG</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>LEPRICFG</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>LEMPCFG</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>LESCPTCFG</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

Set command format

LESSCFG<ws><script number><,><LEPKTTYPE><,><type><,><value>

(Here LESSCFG is used as an example of a command that can take LEPKTYPE as a parameter.)

<script number> 1 to 10
<table>
<thead>
<tr>
<th>&lt;type&gt;</th>
<th>BLE (1 Msym/s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2LE (2 Msym/s)</td>
</tr>
<tr>
<td></td>
<td>LR8 (BLR S=8)</td>
</tr>
<tr>
<td></td>
<td>LR2 (BLR S=2)</td>
</tr>
<tr>
<td></td>
<td>BLECTE (1 Msym/s with CTE)</td>
</tr>
<tr>
<td></td>
<td>2LECTE (2 Msym/s with CTE)</td>
</tr>
<tr>
<td>&lt;value&gt;</td>
<td>TRUE</td>
</tr>
<tr>
<td></td>
<td>FALSE</td>
</tr>
</tbody>
</table>

(Default value: BLE is TRUE on Low energy tests. 2LE, LR8, LR2 and 2LECTE are FALSE on Low energy tests. BLECTE is TRUE on Low energy Tx power stability.)

**Example**

To set the packet type to LR2 (only) for the single sensitivity test in script 3 the commands are:

```
LESSCFG 3, LEPKTYPE, LR2, TRUE
LESSCFG 3, LEPKTYPE, LR8, FALSE
LESSCFG 3, LEPKTYPE, 2LE, FALSE
LESSCFG 3, LEPKTYPE, BLE, FALSE
```

**Query command format**

```
LESSCFG?<ws><script number><,>LEPKTYPE,<type>
```

<table>
<thead>
<tr>
<th>&lt;script number&gt;</th>
<th>1 to 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;type&gt;</td>
<td>BLE (1 Msym/s)</td>
</tr>
<tr>
<td></td>
<td>2LE (2 Msym/s)</td>
</tr>
<tr>
<td></td>
<td>LR8 (BLR S=8)</td>
</tr>
<tr>
<td></td>
<td>LR2 (BLR S=2)</td>
</tr>
<tr>
<td></td>
<td>BLECTE (1 Msym/s with CTE)</td>
</tr>
<tr>
<td></td>
<td>2LECTE (2 Msym/s with CTE)</td>
</tr>
</tbody>
</table>

**Response**

The response is returned in the form of the command to set that state:

**Example**

```
LESSCFG? 3, LEPKTYPE, 2LE
```

**Response**

If the 2LE packet type was enabled for the receiver sensitivity test in script 3, the response would be:

```
LESSCFG 3, LEPKTYPE, 2LE, TRUE
```
MINCHECK

(MT8852B and MT8852B-042 only)

This parameter is used in the EDR Relative power test only. If the EUT supports power control and its minimum power is less than the MT8852B measurement receiver sensitivity, this parameter should be set to TRUE.

When this parameter is set to TRUE the EDR Relative power test will set the EUT Tx power to a Tx power based on the Power control test setting “Minimum test power” for the minimum EUT Tx power stage of the EDR relative power test.

Set command format

ERPCFG<ws><script number><,><MINCHECK><,><value>

<script number> 3 to 10
<value> TRUE
FALSE (Default)

Example

To set the MINCHECK to TRUE for script 3 the command would be:
ERPCFG 3,MINCHECK,TRUE

Query command format

ERPCFG?<ws><script number><,><MINCHECK>

<script number> 1 to 10

Response The response is returned in the form of the command to set that state:

Example

ERPCFG? 3,MINCHECK

Response If script 3 MINCHECK was set to FALSE the response would be:

ERPCFG 3,MINCHECK,FALSE
**MINPWR**

This parameter is used to set or read the required minimum EUT Tx power level the power control test will step to if the EUT has not already reached its minimum.

**Set command format**
PCCFG<ws><script number><,><MINPWR><,><value>[DBM]
<script number> 3 to 10
<value> –40 dBm to 0 dBm

**Example**
To set the power level to -40 dBm in script 4 the command would be:
PCCFG 4,MINPWR,-40

**Query command format**
PCCFG?<ws><script number><,><MINPWR>
<script number> 1 to 10

**Response**
The response is returned in the form of the command to set that state.

**Example**
PCCFG? 7,MINPWR

**Response**
If script 7 power control test min power level is set to –35 dBm, the response would be:
PCCFG 7,MINPWR,-35

**NUMANT**

This parameter is used to set up the CTE number of antenna for BLE Tx power stability.

**Set command format**
LEPSCFG<ws><script number><,>NUMANT<,><slot><,><number>
<script number> 3 to 10
<number> 2 to 75 (default 2)

**Example**
To set the number of antenna to 10 in script 3 tx power stability test, the command would be:
LEPSCFG 3,NUMANT,10

**Query command format**
LEPSCFG?<ws><script number><,>NUMANT
<script number> 2 to 10

**Response**
The response is returned in the form of the command to set that state.

**Example**
LEPSCFG? 7,NUMANT

**Response**
If the Number of antenna in script 7 was 18, the response would be:
LEPSCFG 7,NUMANT,18
**NUMANTMODE**

This parameter is used to set up the mode for number of antenna in BLE Tx power stability. In AUTO mode the number of antenna is obtained from EUT. In MANUAL mode the number of antenna can be set using NUMANT.

**Set command format**

LEPSCFG<ws><script number><,>NUMANTMODE<,><mode>

<script number>  3 to 10
<number> AUTO or MANUAL (default)

**Example**

To set the number of antenna mode to manual for BLE Tx power stability test in script 3, the command would be:

LEPSCFG 3, NUMANTMODE, MANUAL

**Query command format**

LEPSCFG?<ws><scriptnumber><,>NUMANTMODE

<script number>  1 to 10

**Response**

The response is returned in the form of the command to set that state.

**Example**

LEPSCFG? 3, NUMANTMODE

**Response**

If the number of antenna mode in script 3 was manual, the response would be:

LEPSCFG 3, NUMANTMODE, MANUAL

**NUMBITS (MT8852B and MT8852B-042 only)**

This parameter is used to set up the number of bits for the EDR Maximum input power level test.

**Set command format**

EMPCFG<ws><script number><,>NUMBITS<,><mbits>

<script number>  3 to 10
<mbits>  1.0 to  999.0  Mbits (default = 1.6 Mbits)

**Example**

To set the EMPCFG test bit count to 1.6 Mbits for script 4 the command will be:

EMPCFG 4,NUMBITS,1.6

**Query command format**

EMPCFG?<ws><script number><,>NUMBITS

<script number>  1 to 10

**Response**

The response string returned for the query is in the identical format as the configuration command string.

**Example**

EMPCFG? 7,NUMBITS

**Response**

If the threshold bit count is set to 1.6 Mbits the response would be:

EMPCFG 7,NUMBITS,1.6E+000
NUMBLKS (MT8852B and MT8852B-042 only)
This parameter is used to define the number of blocks over which the EDR carrier frequency stability and modulation accuracy test is to be performed.

Set command format
ECMCFG<ws><script number><,><num blocks>
<script number> 3 to 10
<num blocks> 1 to 500 (default = 200)

Example
To set the ECMCFG test number of blocks to 200 for script 4 the command will be:
ECMCFG 4,NUMBLKS,200

Query command format
ECMCFG?<ws><script number><,>NUMBLKS
<script number> 1 to 10

Response
The response string returned for the query is in the identical format as the configuration command string.

Example
ECMCFG? 4,NUMBLKS
If <num blocks> is set to 200 the response will be:
ECMCFG 4,NUMBLKS,200

NUMCYC
This parameter is used to set or read the number of cycles used in the power control test. Each cycle of the test is as follows. The EUT is set to its maximum power level, stepped down to its minimum power level, and then stepped up to the maximum power again. For the PER integrity test, the number of cycles or runs is limited to a range of 1 to 5 with a default of 3.

Set command format
PCCFG<ws><script number><,><NUMCYC><,><number>
<script number> 3 to 10
<number> 1 to 1000 (Default 1)

Example
To set the number of cycles to 11 in script 4 power control test the command would be:
PCCFG 4,NUMCYC,11

Query command format
PCCFG?<ws><script number><,><NUMCYC>
<script number> 1 to 10

Response
The response is returned in the form of the command to set that state.

Example
PCCFG? 7,NUMCYC
Response
If script 7 power control number of cycles is 2, the response would be:
PCCFG 7,NUMCYC,2
NUMPKTS

This parameter is used to set or read the number of packets that are used for each part of the test. For each of the LOW, MEDIUM and HIGH frequencies selected to be used as part of the test, this is the number of packets measured. For hopping tests this value is used depending on the test and the hopping mode. For the power control test, this is the number of packets measured per step. For the PER integrity test, the number of packets that can be set in FIXED mode must be an even value in the range of 10 to 10000. An error is output if an odd value is specified.

Set command format
OPCFG<ws><script number><,><NUMPKTS><,><number>
<script number>  3 to 10
<number>     1 to 10000 (Default will depend on the test)

Example To set the number of packets to 11 in script 4 output power test the command would be:
OPCFG 4,NUMPKTS,11

Query command format
OPCFG?<ws><script number><,><NUMPKTS>
<script number>  1 to 10

Response The response is returned in the form of the command to set that state.

Example
OPCFG? 7,NUMPKTS

Response If script 7 output power number of packets is 2, the response would be:
OPCFG 7,NUMPKTS,11

Note For the BLE PER Integrity test (LEPRICFG), the number of packets must be set to an even value.
PAYLOAD

This sets the payload data for the packet type defined.

Set command format

SPCFG<ws><script number><,>PAYLOAD<,><payload type>

<script number> 3 to 10
<payload type> DATA 10101010
DATA 11110000
DATA PRBS9 (default)

Example
To set the payload to PRBS9 for script 4:
SPCFG 4, PAYLOAD, DATAPRBS9

Query command format

SPCFG?<ws><script number><,>PAYLOAD

<script number> 1 to 10

Response The response is returned in the form of the command to set that state.

Example
SPCFG? 4, PAYLOAD

Response If script 4 single payload test payload type was PRBS9, the response would be:
SPCFG 4, PAYLOAD, DATAPRBS9

PKTCOUNT

This parameter is used to configure how the packets are counted during this test. If the packet count is set to transmitted packets the test may not be performed on 1.6 million or greater due to lost packets. If the packet count is set to packets received then the test would be carried out on the 1.6 million or greater bits, but could take longer to complete.

Set command format

SSCFG<ws><script number><,>PKTCOUNT<,><param>

<script number> 3 to 10
<param> Tx (for Transmitted). Default Rx (for Received)

Example
To set to received in script 5, the command would be:
SSCFG 5, PKTCOUNT, RX

Query command format

SSCFG? 5, PKTCOUNT

<script number> 1 to 10

Response The response is returned in the form of the command to set that state.
**PKTNUMMODE**

*(Option 27 and MT8852B_043 only)*

This parameter configures whether the BLE PER integrity test is run using a fixed or random number of packets. The NUMPKTS parameter is used only to define the number of packets used in the test when the PKTNUMMODE is set to FIXED. When PKTNUMMODE is set to RANDOM the number of packets used in the test is randomly chosen when the test is run.

**Set command format**

```
LEPRICFG<ws><script number><,>PKTNUMMODE<,><type>
```

- `<script number>`: 3 to 10
- `<type>`: RANDOM (Default), FIXED

**Example**

To set the LE PER integrity test packet number mode to FIXED for script 7 the command will be:

```
LEPRICFG 7,PKTNUMMODE,FIXED
```

**Query command format**

```
LEPRICFG?<ws><script number><,>PKTNUMMODE
```

- `<script number>`: 1 to 10

**Response**

The response is returned in the form of the command to set that state.

**Example**

```
LEPRICFG? 7,PKTNUMMODE
```

**Response**

Response: If the packet number type is set to FIXED for script 7 the response would be:

```
LEPRICFG 7,PKTNUMMODE,FIXED
```
PKTSIZE

This parameter is used to set or read the packet sizes used for the carrier drift test. The test can be performed with all or any combination of the DH1, DH3 or DH5 packets depending on which packet types the EUT support.

If the EUT does not support the requested packet size the test will FAIL reporting an execution error.

Set command format

CDCFG<ws><script number><,>PKTSIZE<,><variable><,><status>

<variable>  3 to 10
ONESLOT       Test performed with 1 slot packet DH1.
THREESLOT     Test performed with 3 slot packet DH3.
FIVESLOT      Test performed with 5 slot packet DH5.
<status>     TRUE or FALSE

Example

To set to use 3 slot packets in carrier drift test script 4 to true the command would be:

CDCFG 4,PKTSIZE,THREESLOT,TRUE

Query command format

CDCFG?<ws><script number><,>PKTSIZE<,><variable>

<variable>  1 to 10
ONESLOT       Test performed with 1 slot packet DH1.
THREESLOT     Test performed with 3 slot packet DH3.
FIVESLOT      Test performed with 5 slot packet DH5.

Response

The response is returned in the form of the command to set that state.

Example

CDCFG? 7,PKTSIZE,FIVESLOT

Response

If script 7 carrier drift test five slot packet is false, the response would be:

CDCFG 7,PKTSIZE,FIVESLOT,FALSE
PKTTYPE

This parameter is used to set or read the packet type used for a test. The valid parameters depended on the test and whether an EUT supports that packet type.

The packet types that can be selected from the <type> list in the command format depend on the selected test and whether the EUT supports that packet type (see table below for supported packets).

Output power: Longest supported (default), DH5, DH3 or DH1
Power control: DH1 (default), DH3 or DH5
Modulation characteristics: Longest supported (default), DH5, DH3 or DH1
Initial carrier: N/A
Carrier drift: Inherently selectable in test
Single slot sensitivity: N/A
Multi slot sensitivity: Longest supported (default), DH5 or DH3
Maximum input power sensitivity: N/A
Single payload Basic Data Rate: DH5, DH3, DH1 (default)
Single payload Enhanced Data Rate: 2DH5, 2DH3, 2DH1, 3DH5, 3DH3, 3DH1

Note that EDR packets are transmitted, but no measurements are performed when looped back to the instrument.

Set command format

OPCFG<ws><script number><,>PKTTYPE <,><type>
<script number> 3 to 10
Basic Data Rate, all tests including Single Payload:
$type>
LONG | DH5 | DH3 | DH1
Enhanced Data Rate (if option enabled), Single Payload only:
$type>
2DH5 | 2DH3 | 2DH1 | 3DH5 | 3DH3 | 3DH1

Example

To set the packet type for the output power test to always use DH3 in script 4 the command would be:

OPCFG 4,PKTTYPE,DH3

Query command format

PCCFG?<ws><script number><,>PKTTYPE
<script number> 1 to 10
Response The response is returned in the form of the command to set that state.
Example PCCFG? 7,PKTTYPE
Response If script 7 power control test packet type was DH1, the response would be:
PCCFG 7,PKTTYPE,DH1
PTXLEV (MT8852B and MT8852B-042 only)

This parameter is used to define whether the EDR Relative Transmit power test (ERPCFG) should be carried out at minimum and/or maximum power levels.

**Set command format**

ERPCFG<ws><script number><,><PTXLEV><,><pow level>
<script number> 3 to 10
<pow level> MIN | MAX | MINMAX

**Example**

To set the ERPCFG to perform the test at both minimum and maximum power for script 7 the command will be:

ERPCFG 7,PTXLEV,MINMAX

**Query command format**

ERPCFG?<ws><script number><,><PTXLEV
<script number> 1 to 10

**Response**

The response string returned for the query is in the identical format as the configuration command string.

**Example**

ERPCFG? 4,PTXLEV

**Response**

If the power level was set to maximum the command will be:

ERPCFG 4,PTXLEV,MAX

**PWRDELAY**

This parameter is used to set or read the delay required for the EUT to change the Tx power as requested before measurements are made. Bluetooth devices that support power control should have this time specified in the ‘Implementation Extra Information for Testing’ (IXIT) document.

**Set command format**

PCCFG<ws><script number><,><PWRDELAY<,><value>
<script number> 3 to 10
<value> 100 Milliseconds to 100 seconds in seconds
(1 sec default)

**Example**

To set the delay to 1 second in script 4, the command would be:

PCCFG 4,PWRDELAY,1

**Query command format**

PCCFG?<ws><script number><,><PWRDELAY
<script number> 1 to 10

**Response**

The response is returned in the form of the command to set that state.

**Example**

PCCFG? 7,PWRDELAY

**Response**

If script 7 delay is set to 5 seconds, the response would be:

PCCFG 7,PWRDELAY,5.0e+000
**TEST PARAMETER VARIABLES**

**SWPATLEN**

This parameter is used to set up the length of switching pattern in BLE Tx power stability.

Set command format

LEPSCFG<ws><script number><,>SWPATLEN<,><length>

<script number>  1 to 10

<length>2 to 75 (default: 2)

Example

To set the length of switching pattern to 4 for BLE Tx power stability test in script 3, the command would be:

LEPSCFG 3,SWPATLEN,4

Query command format

LEPSCFG?<ws><scriptnumber><,>SWPATLEN

Response The response is returned in the form of the command to set that state.

Example

LEPSCFG? 3,SWPATLEN

Response If the number of antenna mode in script 3 was 4, the response would be:

LEPSCFG 3,SWPATLEN,4

**THBITCNT (MT8852B and MT8852B-042 only)**

This parameter is used to set up the threshold bit count for the EDR sensitivity tests.

Set command format

EBSCFG<ws><script number><,>THBITCNT<,><mbits>

<script number>  3 to 10

<mbits>  1.0 to 999.0  Mbits (default = 1.6 Mbits)

Example

To set the EBSCFG test threshold bit count to 1.6 Mbits for script 4 the command will be:

EBSCFG 4,THBITCNT,1.6

Query command format

EBSCFG?<ws><script number><,>THBITCNT

Response The response string returned for the query is in the identical format as the configuration command string.

Example

EBSCFG? 7,THBITCNT

Response If the threshold bit count is set to 1.6 Mbits the response would be:

EBSCFG 7,THBITCNT,1.6E+000
TOGGLE

The modulation index test as defined in the RF test spec requires a measurement made on two different payloads per measurement. This increases the time the test takes to complete. To shorten the time taken to perform this test, the MT8852B can change the payload after the requested number of packets have been measured with the first payload, and then measure the requested number of packets with the second payload.

Set command format

MICFG<ws><scriptnumber>,TOGGLE<mode>

<table>
<thead>
<tr>
<th>&lt;script number&gt;</th>
<th>3 to 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;mode&gt;</td>
<td>ONCE : Changes the payload only once per measurement stage. CONT : Changes the payload per measurement (Default as RF test spec)</td>
</tr>
</tbody>
</table>

Example To set script 7 for Mod Index test to change the payload type ONCE would be:

MICFG 7,TOGGLE,ONCE

Query command format

MICFG? <scriptnumber>,TOGGLE

| <script number> | 1 to 10 |

Response

MICFG <scriptnumber>,TOGGLE, <ONCE | CONT>

Example

MICFG 3,TOGGLE,CONT
TSTCTRL

This parameter is used to configure the test control type to be applied on a test-by-test basis. All test that support both loopback and Tx mode are listed below with their default value setting.

- Output power (OPCFG): Loop back test control
- Power control (PCCFG): Loop back test control
- Enhanced power control (EPCFG): Loop back test control
- Modulation Index (MICFG): Loop back test control
- Initial carrier (ICCFG): Loop back test control
- Carrier drift (CDCFG): Loop back test control
- EDR Relative Transmit Power (ERPCFG) (#1): Loop back test control
- EDR Carrier Frequency & Modulation accuracy (ECMCFG) (#1): Loop back test control

**Set command format**

```plaintext
OPCFG<ws><script number><,>TSTCTRL<,><type>
```

- `<script number>`: 3 to 10
- `<type>`: LOOPBACK | TXTEST

**Example**

To set the power control test type to Tx test for script 4 the command would be:

```
PCCFG 4,TSTCTRL,TXTEST
```

**Query command format**

```plaintext
PCCFG?<ws><script number><,>TSTCTRL
```

- `<script number>`: 1 to 10

**Response**

The response string returned for the query is in the identical format as the configuration command string.

**Example**

```
PCCFG? 7,TSTCTRL
```

**Response**

If script 7 power control test control was LOOPBACK, the response would be:

```
PCCFG 7,TSTCTRL,LOOPBACK
```

(#1) (MT8852B and MT8852B-042 only)
**TTBITCNT (MT8852B and MT8852B-042 only)**

This parameter is used to set up the total bit count for the EDR sensitivity tests.

**Set command format**

```
EFSCFG<ws><script number><,>TTBITCNT<,><total mbits>
```

- <script number> 3 to 10
- <total mbits> 1.0 to 999.0 Mbits (default = 16.0 Mbits)

**Example**

To set the EFSCFG test total bit count to 16.0 Mbits for script 4 the command will be:

```
EFSCFG 4,TTBITCNT,16.0
```

**Query command format**

```
EFSCFG?<ws><script number><,>TTBITCNT
```

- <script number> 1 to 10

**Response**

The response string returned for the query is in the identical format as the configuration command string.

**Example**

```
EFSCFG? 7,TTBITCNT
```

**Response**

If the threshold bit count is set to 16.0 Mbits the response would be:

```
EFSCFG 7,TTBITCNT,1.6E+001
```

**TXPWR**

This parameter is used to configure the required Tx power level during the sensitivity tests. When the path loss table and/or fixed offset parameters are enabled, the specified power level is corrected accordingly to minimize connection losses and ensure that the EUT receives at the stated power level.

**Set command format**

```
SSCFG<ws><script number><,><TXPWR<,><value>[dBm]
```

- <script number> 3 to 10
- <value> range 0.0 to –90.0 dBm

**Example**

To set power level to –3.0 dBm in script 4 single slot sensitivity test the command would be:

```
SSCFG 4,TXPWR,-3.0
```

**Query command format**

```
SSCFG?<ws><script number><,>TXPWR
```

- <script number> 1 to 10

**Response**

The response string returned for the query is in the identical format as the configuration command string.

**Example**

```
SSCFG? 7,TXPWR
```

**Response**

If script 7 single slot sensitivity test has the power level set to -3.0 dBm, the response would be:

```
SSCFG 7,TXPWR,-3.0
```
13-1 Output Power Test Limit Commands

AVGMXLIM, AVGMNLIM, PEAKLIM

These parameters are used to set or read the limits used to determine if the average power reading in the output power test passes or fails.

Set command format

OPCFG<ws><script number><,><parameter><,><limit value>[dBm]

<script number> 3 to 10

<parameter> AVGMXLIM

AVGMNLIM

PEAKLIM

<limit value> –80 dBm to +30 dBm (Default +20 dBm)

AVGMNLIM range is –80dBm to +20dBm

PEAKLIM default is +23 dBm

Example

To set the average limit in script 3 output power test to 18 dBm the command would be:

OPCFG 3,AVGMNLIM,18

Query command format

OPCFG?<ws><script number><,><parameter>

<script number> 1 to 10

<parameter> AVGMXLIM

AVGMNLIM

PEAKLIM

Response

The response is returned in the form of the command to set that state.

Example

OPCFG? 7,AVGMXLIM

Response

If the average high limit in script 7 output power test was 22 the response would be:

OPCFG 7,AVGMXLIM,22
13-2  Power Control Test Limit Commands

**MXSTEPLIM, MNSTEPLIM**

These parameters are used in the power control test configuration to set or read the power step limits. If the step sizes are not within these limits the test is reported as failed.

**Set command format**

```
PCCFG<ws><script number><,><selection><,><value>
```

- `<script number>` 3 to 10
- `<selection>`
  - MXSTEPLIM Maximum power step
  - MNSTEPLIM Minimum power step
- `<value>` 1.0 to 10.0 dBm
- `step size` 0.1 dBm

**Example**

To set the max step limit to 3 dBm in script 4 power control test the command would be:

```
PCCFG 4,MXSTEPLIM,3
```

**Query command format**

```
PCCFG?<ws><script number><,><selection>
```

- `<script number>` 1 to 10
- `<selection>`
  - MXSTEPLIM Maximum power step
  - MNSTEPLIM Minimum power step

**Response**

The response is returned in the form of the command to set that state.

**Example**

```
PCCFG? 4,MXSTEPLIM
```

**Response**

If the max step limit in script 4 power control test is 3 dB the response would be:

```
PCCFG 4,MXSTEPLIM,3
```
13-3 Enhanced Power Control Test Limit Commands

MXSTEPLIM, MNSTEPLIM, MXEPCLIM

These parameters are used to setup the upper limit for the difference between the GFSK packet and the GFSK portion of the EDR packets on any increment or decrement. The value must be less than or equal to this limit to pass.

Set command format

EPCCFG<ws><script number><,>MXEPCLIM<,><up limit>

<script number> 3 to 10

<up limit> 0.0 to 20.0 dB (Default 10.0)

Example

To set the enhanced power control test upper limit to 14.0 dB for script 7 the command will be:

EPCCFG 7,MXEPCLIM,14.0

Query command format

EPCCFG?<ws><script number><,>MXEPCLIM

<script number> 1 to 10

Response The response string returned for the query will be in the identical format as the configuration command string.

Example

EPCCFG? 7,MXEPCLIM

Response If the upper limit is set to 12.0 dB for script 7 the response would be:

EPCCFG 7,MXEPCLIM,12.0
13-4 Initial Carrier Frequency Test Limit Commands

MXPOSLIM, MXNEGLIM

These parameters are used to set or read the maximum positive or negative offset limits for the initial carrier test.

**Set command**

<table>
<thead>
<tr>
<th>Format</th>
<th>Description</th>
</tr>
</thead>
</table>
| ICCFG<ws><script number><,><selection><,><limit value>[kHz] | <script number> 3 to 10  
| selection> | MXPOSLIM Maximum positive limit  
| MXNEGLIM Maximum negative limit  
| <limit value> Range –200 to +200 kHz (Default 75 kHz) |  

**Example**

To set the maximum positive offset limit to 11 kHz in script 3 the command would be:

```
ICCFG 3,MXPOSLIM,11kHz
```

**Query command**

<table>
<thead>
<tr>
<th>Format</th>
<th>Description</th>
</tr>
</thead>
</table>
| ICCFG<ws><script number><,>MXNEGLIM | <script number> 1 to 10  

**Response**

The response is returned in the form of the command to set that state.

**Example**

```
ICCFG? 7,MXNEGLIM
```

**Response**

If the maximum negative offset limit in script 7 is –75 kHz the response would be:

```
ICCFG 7,MXNEGLIM,−7.5E4
```
13-5 Carrier Frequency Drift Limit Commands

DFT1LIM, DFT3LIM, DFT5LIM, DFTNPLIM, DFTRATE

These parameters are used to set or read the drift limit values in the carrier drift test. The drift rate is in units of Hz/50µs.

**Set command format**

```
CDCFG<ws><script number><,><variable><,><number>
```

- `<script number>`: 3 to 10
- `<variable>`: DFT1LIM, DFT3LIM, DFT5LIM, DFTNPLIM, DFTRATE
- `<number>`: Ranges depend on the parameter.

**Example**

To set the drift limit for 5 slot packets to +/- 70 kHz in script 4 carrier drift test the command would be:

```
CDCFG 4,DFT5LIM,70kHz
```

**Query command format**

```
CDCFG?<ws><script number><,><variable>
```

- `<script number>`: 1 to 10
- `<variable>`: DFT1LIM, DFT3LIM, DFT5LIM, DFTNPLIM, DFTRATE

**Response**

The response is returned in the form of the command to set that state.

**Example**

```
CDCFG? 7,DFT3LIM
```

**Response**

If script 7 drift limit for 3 slot packets is 55 kHz carrier drift test, the response would be:

```
CDCFG 7,DFT3LIM,55E3
```
13-6 Standard Rate Sensitivity Test Limit Commands

BERLIM, FERLIM

These parameters are used to set or read the BER/FER limit value used in the sensitivity tests.

Set command format

SSCFG<ws><script number><,>,<parameter><,><number>

<script number>  3 to 10
<parameter>      BERLIM
                 FERLIM
<number>         Ranges depend on the parameter (unit %)
                 0.001 to 100 - FER
                 0.001 to 10 - BER

Example

Set the BER limit for script 4 single slot sensitivity test to 0.4% the command would be:

SSCFG 4,BERLIM,0.4

Query command format

SSCFG?<ws><script number><,><parameter>

<script number>  1 to 10
<parameter>      BERLIM
                 FERLIM

Response

The response is returned in the form of the command to set that state.

Example

SSCFG? 7,BERLIM

Response

If script 7 single slot sensitivity test BER limit is set to 0.2%, the response would be:

SSCFG 7,BERLIM,0.2
13-7 Modulation Index Limit Commands

F1AVGMIN, F1AVGMAX, F2MAXLIM, F1F2MAX

These parameters are used to set or read the limit values used in the modulation characteristic test to determine if the test has passed or failed.

**Set command format**

MICFG<ws><script number><,><variable><,><number>

- <script number> 3 to 10
- <variable>
  - F1AVGMIN Set the f1avg min limit
  - F1AVGMAX Set the f1avg max limit
  - F2MAXLIM Set the f2max limit
  - F1F2MAX Set the f1/f2 avg max limit
- <number> Ranges depend on the parameter:
  - F1AVGMIN Range –200 to +200
  - F1AVGMAX Range –200 to +200
  - F2MAXLIM Range –200 to +200
  - F1F2MAX Range 0.0 to 1.0

**Example**

Set the f1avg min value to 140 kHz in script 4 modulation index test the command would be:

MICFG 4,F1AVGMIN,140kHz

**Query command format**

MICFG?<ws><script number><,><variable>

- <script number> 1 to 10
- <variable>
  - F1AVGMIN Read the f1avg min limit
  - F1AVGMAX Read the f1avg max limit
  - F2MAXLIM Read the f2max limit
  - F1F2MAX Read the f1/f2 avg max limit

**Response**

The response is returned in the form of the command to set that state.

**Example**

MICFG? 7,F1AVGMAX

**Response**

If script 7 modulation index test f1avg max limit is 200 kHz, the response would be:

MICFG 7,F1AVGMAX,200E3
13-8  EDR Relative Transmit Power Limit Commands
(MT8852B and MT8852B-042 only)

PDIFFLL, PDIFFLH

PDIFFLL – PDPSK to PGFSK difference window lower limit
This parameter is used to set up the lower limit for the average power difference window for the EDR Relative Power test pass-fail criteria. The pass criteria is defined as:

Pass criteria = (PGFSK - X) < PDPSK < (PGFSK + Y)

Where X and Y have the same meaning as defined in the operation manual. The variables X, Y define the average power difference window in dB, where X is the lower limit and Y is the upper limit. The command PDIFFLL sets the X-value lower limit power. Note that only |X| can be set.

Set command format
ERPCFG<ws><script number><,>PDIFFLL<,><low limit>[DB]
<script number>  3  to 10
<low limit>       0.0 to 8.0  dB

Example
To set the ERPCFG lower limit to 4.0 dB for script 7 the command will be:
ERPCFG 7,PDIFFLL,4.0

Query command format
ERPCFG?<ws><script number><,>PDIFFLL
<script number>  1  to 10

Response
The response string returned for the query will be in the identical format as the configuration command string.

Example
ERPCFG? 7,PDIFFLL

Response
If the lower limit is set to 4.0 dB for script 7 the response would be:
ERPCFG 7,PDIFFLL,4.0E+000
**PDIFFLH – PDPSK to PGFSK difference window upper limit**

This parameter is used to set up the upper limit for the average power difference window for the EDR Relative Power test pass-fail criteria. The pass criteria is defined as:

\[
\text{Pass criteria} = (\text{PGFSK} - X) < \text{PDPSK} < (\text{PGFSK} + Y)
\]

Where X and Y have the same meaning as defined in the operation manual. The variables X, Y define the average power difference window in dB, where X is the lower limit and Y is the upper limit. The command PDIFFLH sets the Y-value upper limit power. Note that only |Y| can be set.

**Set command format**

ERPCFG<ws><script number><,>PDIFFLH<,><up limit>[DB]

<script number> 3 to 10

<up limit> 0.0 to 4.0  dB

**Example**

To set the ERPCFG upper limit to 1.0 dB for script 7 the command will be:

ERPCFG 7, PDIFFLH, 1.0

**Query command format**

ERPCFG?<ws><script number><,>PDIFFLH

<script number> 1 to 10

**Response**

The response string returned for the query will be in the identical format as the configuration command string.

**Example**

ERPCFG? 7, PDIFFLH

**Response**

If the upper limit is set to 1.0 dB for script 7 the response would be:

ERPCFG 7, PDIFFLH, 1.0E+000
13-9 EDR Carrier Frequency and Accuracy Limit Commands (MT8852B and MT8852B-042 only)

INITFRQLH, INITFRQLL, FREQERLH, FREQERLL, BLKFRQLH, BLKFRQLL, LRMSDEVM, HRMSDEVM, LPKDEVM, HPKDEVM, LPCTDEVM, HPCTDEVM

INITFRQLH - Initial frequency error upper limit value

This parameter is used to set up the initial frequency error upper limit value for the EDR carrier frequency and modulation accuracy test.

**Set command format**

ECMCFG<ws><script number><,>INITFRQLH<,><up limit>

<script number> 3 to 10
<brup limit> –100.0 to +100.0 kHz

**Example**

To set the ECMCFG initial upper limit to +75.0 kHz for script 7 the command will be:

ECMCFG 7, INITFRQLH, 75.0KHZ

**Query command format**

ECMCFG?<ws><script number><,>INITFRQLH

<script number> 1 to 10

**Response**

The response string returned for the query will be in the identical format as the configuration command string.

**Example**

ECMCFG? 7, INITFRQLH

**Response**

If the initial frequency upper limit is set to +75.0 kHz for script 7 the response would be:

ECMCFG 7, INITFRQLH, 7.5E+004
**INITFRQLL - Initial frequency error lower limit value**

This parameter is used to set up the initial frequency error lower limit value for the EDR carrier frequency and modulation accuracy test.

**Set command format**

ECMCFG<ws><script number><,>INITFRQLL<,><low limit>

<script number>  3 to 10
<low limit>    –100.0 to +100.0 kHz

**Example**

To set the ECMCFG lower limit to -75.0 kHz for script 7 the command will be:

ECMCFG 7,INITFRQLL,-75.0KHZ

**Query command format**

ECMCFG?<ws><script number><,>INITFRQLL

<script number>  1 to 10

**Response**

The response string returned for the query will be in the identical format as the configuration command string.

**Example**

ECMCFG? 7,INITFRQLL

**Response**

If the initial frequency lower limit is set to -75.0 kHz for script 7 the response would be:

ECMCFG 7,INITFRQLL,-75.0E+004

**FREQERLH - Frequency error upper limit value**

This parameter is used to set up the frequency error upper limit value for the EDR carrier frequency and modulation accuracy test.

**Query command format**

ECMCFG?<ws><script number><,>FREQERLH

<script number>  1 to 10

**Response**

The response string returned for the query will be in the identical format as the configuration command string.

**Example**

ECMCFG? 7,FREQERLH

**Response**

If the frequency error upper limit is set to +10.0 kHz for script 7 the response would be:

ECMCFG 7,FREQERLH,1.0E+004
**FREQERLL - Frequency error lower limit value**

This parameter is used to set up the frequency error lower limit value for the EDR carrier frequency and modulation accuracy test.

**Set command format**

```
ECMCFG<ws><script number><,>FREQERLL<,><low limit>
```

- `<script number>`: 3 to 10
- `<low limit>`: –100.0 to +100.0 kHz

**Example**

To set the ECMCFG lower limit to -10.0 kHz for script 7 the command will be:

```
ECMCFG 7, FREQERLL, -10.0KHZ
```

**Query command format**

```
ECMCFG?<ws><script number><,>FREQERLL
```

- `<script number>`: 1 to 10

**Response**

The response string returned for the query will be in the identical format as the configuration command string.

**Example**

```
ECMCFG? 7, FREQERLL
```

**Response**

If the frequency lower limit is set to -10.0 kHz for script 7 the response would be:

```
ECMCFG 7, FREQERLL, -1.0E+004
```

**BLKFRQLH - Block frequency error upper limit value**

This parameter is used to set up the block frequency error upper limit value for the EDR carrier frequency and modulation accuracy test.

**Set command format**

```
ECMCFG<ws><script number><,>BLKFRQLH<,><up limit>
```

- `<script number>`: 3 to 10
- `<up limit>`: –100.0 to +100.0 kHz

**Example**

To set the ECMCFG upper limit to +75.0 kHz for script 7 the command will be:

```
ECMCFG 7, BLKFRQLH, 75.0KHZ
```

**Query command format**

```
ECMCFG?<ws><script number><,>BLKFRQLH
```

- `<script number>`: 1 to 10

**Response**

The response string returned for the query will be in the identical format as the configuration command string.

**Example**

```
ECMCFG? 7, BLKFRQLH
```

**Response**

If the block frequency error upper limit is set to +75.0 kHz for script 7 the response would be:

```
ECMCFG 7, BLKFRQLH, 7.5E+004
```
BLKFRQLL - Block frequency error lower limit value

This parameter is used to set up the block frequency error lower limit value for the EDR carrier frequency and modulation accuracy test.

**Set command format**

```
ECMCFG<ws><script number><,>BLKFRQLL<,><low limit>
```

- **<script number>**: 3 to 10
- **<low limit>**: -100.0 to +100.0 kHz

**Example**

To set the ECMCFG lower limit to -75.0 kHz for script 7 the command will be:

```
ECMCFG 7,BLKFRQLL,-75.0KHZ
```

**Query command format**

```
ECMCFG?<ws><script number><,>BLKFRQLL
```

- **<script number>**: 1 to 10

**Response**

The response string returned for the query will be in the identical format as the configuration command string.

**Example**

```
ECMCFG? 7,BLKFRQLL
```

**Response**

If the frequency lower limit is set to -75.0 kHz for script 7 the response would be:

```
ECMCFG 7,BLKFRQLL,-7.5E+004
```

LRMSDEVM - 2Mbps RMS DEVM limit value

This parameter is used to set up the 2Mbps RMS DEVM limit value for the EDR carrier frequency and modulation accuracy test.

**Set command format**

```
ECMCFG<ws><script number><,>LRMSDEVM<,><2mbs limit>
```

- **<script number>**: 3 to 10
- **<2mbs limit>**: 0.0 to 1.0

**Example**

To set the LRMSDEVM limit to 0.2 for script 7 the command will be:

```
ECMCFG 7,LRMSDEVM,0.2
```

**Query command format**

```
ECMCFG?<ws><script number><,>LRMSDEVM
```

- **<script number>**: 1 to 10

**Response**

The response string returned for the query will be in the identical format as the configuration command string.

**Example**

```
ECMCFG? 7,LRMSDEVM
```

**Response**

If the 2Mbps RMS DEVM limit is set to 0.2 for script 7 the response would be:

```
ECMCFG 7,LRMSDEVM,2.0E-001
```
**Test Limit Variables**

**HRMSDEVM - 3Mbps RMS DEVM limit value**

This parameter is used to set up the 3Mbps RMS DEVM limit value for the EDR carrier frequency and modulation accuracy test.

**Set command format**

```
ECMCFG<ws><script number><,>HRMSDEVM<,><3mbs limit>
```

- `<script number>`: 3 to 10
- `<3mbs limit>`: 0.0 to 1.0

**Example**

To set the HRMSDEVM limit to 0.13 for script 7 the command will be:

```
ECMCFG 7,HRMSDEVM,0.13
```

**Query command format**

```
ECMCFG?<ws><script number><,>HRMSDEVM
```

- `<script number>`: 1 to 10

**Response**

The response string returned for the query will be in the identical format as the configuration command string.

**Example**

```
ECMCFG? 7,HRMSDEVM
```

**Response**

If the 3Mbps RMS DEVM limit is set to 0.13 for script 7 the response would be:

```
ECMCFG 7,HRMSDEVM,1.3E-001
```

**LPKDEVM - 2Mbps Peak DEVM limit value**

This parameter is used to set up the 2Mbps Peak DEVM limit value for the EDR carrier frequency and modulation accuracy test.

**Set command format**

```
ECMCFG<ws><script number><,>LPKDEVM<,><2mbs limit>
```

- `<script number>`: 3 to 10
- `<2mbs limit>`: 0.0 to 1.0

**Example**

To set the LPKDEVM limit to 0.35 for script 7 the command will be:

```
ECMCFG 7,LPKDEVM,0.35
```

**Query command format**

```
ECMCFG?<ws><script number><,>LPKDEVM
```

- `<script number>`: 1 to 10

**Response**

The response string returned for the query will be in the identical format as the configuration command string.

**Example**

```
ECMCFG? 7,LPKDEVM
```

**Response**

If the 2Mbps Peak DEVM limit is set to 0.35 for script 7 the response would be:

```
ECMCFG 7,LPKDEVM,3.5E-001
```
**HPKDEVM - 3Mbps Peak DEVM limit value**

This parameter is used to set up the 3Mbps Peak DEVM limit value for the EDR carrier frequency and modulation accuracy test.

**Set command format**

```
ECMCFG<ws><script number><,>HPKDEVM<,><3mbs limit>
```

- `<script number>`: 3 to 10
- `<3mbs limit>`: 0.0 to 1.0

**Example**

To set the HPKDEVM limit to 0.25 for script 7 the command will be:

```
ECMCFG 7,HPKDEVM,0.25
```

**Query command format**

```
ECMCFG?<ws><script number><,>HPKDEVM
```

- `<script number>`: 1 to 10

**Response**

The response string returned for the query will be in the identical format as the configuration command string.

**Example**

```
ECMCFG? 7,HPKDEVM
```

**Response**

If the 3Mbps Peak DEVM limit is set to 0.25 for script 7 the response would be:

```
ECMCFG 7,HPKDEVM,2.5E-001
```

**LPCTDEVM - 2Mbps 99% packets DEVM limit value**

This parameter is used to set up the 2Mbps 99% packets DEVM limit value for the EDR carrier frequency and modulation accuracy test.

**Set command format**

```
ECMCFG<ws><script number><,>LPCTDEVM<,><2mbs limit>
```

- `<script number>`: 3 to 10
- `<2mbs limit>`: 0.0 to 1.0

**Example**

To set the LPCTDEVM limit to 0.30 for script 7 the command will be:

```
ECMCFG 7,LPCTDEVM,0.30
```

**Query command format**

```
ECMCFG?<ws><script number><,>LPCTDEVM
```

- `<script number>`: 1 to 10

**Response**

The response string returned for the query will be in the identical format as the configuration command string.

**Example**

```
ECMCFG? 7,LPCTDEVM
```

**Response**

If the 2Mbps 99% packets DEVM limit is set to 0.30 for script 7 the response would be:

```
ECMCFG 7,LPCTDEVM,3.0E-001
```
**Test Limit Variables**

**HPCTDEVM - 3Mbps 99% packets DEVM limit value**

This parameter is used to set up the 3Mbps 99% packets DEVM limit value for the EDR carrier frequency and modulation accuracy test.

**Set command format**

```
ECMCFG<ws><script number><,>HPCTDEVM,<,><3mbs limit>
```

- `<script number>`: 3 to 10
- `<3mbs limit>`: 0.0 to 1.0

**Example**

To set the HPCTDEVM limit to 0.20 for script 7 the command will be:

```
ECMCFG 7, HPCTDEVM, 0.20
```

**Query command format**

```
ECMCFG?<ws><script number><,>HPCTDEVM
```

- `<script number>`: 1 to 10

**Response**

The response string returned for the query will be in the identical format as the configuration command string.

**Example**

```
ECMCFG? 7, HPCTDEVM
```

**Response**

If the 3Mbps 99% packets DEVM limit is set to 0.20 for script 7 the response would be:

```
ECMCFG 7, HPCTDEVM, 0.20E-001
```
13-10 EDR Differential Phase Encoding Limit Commands
(MT8852B and MT8852B-042 only)

PCTPKT - Percentage of packets with no errors limit value

This parameter is used to set up the percentage limit for the number of packets with no error for the EDR Differential Phase Encoding test (EDP). Note that this applies to both the 2 Mbps & 3 Mbps data rates.

Set command format
EDPCFG<ws><script number><,>PCTPKT<,><limit value>
<script number> 3 to 10
<limit value> 1 to 99 %

Example
To set the PCTPKT limit to 99% for script 7 the command will be:
EDPCFG 7,PCTPKT,99

Query command format
EDPCFG?<ws><script number><,>PCTPKT
<script number> 1 to 10

Response
The response string returned for the query will be in the identical format as the configuration command string.

Example
EDPCFG? 7,PCTPKT
Response
If the percentage of packets in error limit is set to 99.0 for script 7 the response would be:
EDPCFG 7,PCTPKT,9.9E+001
13-11 EDR Sensitivity and EDR BER Floor Limit Commands
(MT8852B and MT8852B-042 only)

THERR, TTERR

THERR - Threshold error limit

This parameter is used to set up the Threshold error limit for the EDR sensitivity test (EBSCFG) and the EDR BER floor sensitivity test (EFSCFG).

Set command format

EBSCFG<ws><script number><,>THERR<,><trsh limit>

Example

To set the EBSCFG sensitivity test THERR limit to 7.0e–05 for script 7 the command will be:

EBSCFG 7,THERR,7

To set the EFSCFG floor sensitivity test THERR limit to 3.0e–06 for script 7 the command will be:

EFSCFG 7,THERR,3

Query command format

Example

EBSCFG?<ws><script number><,>THERR

Response

The response string returned for the query will be in the identical format as the configuration command string.

Example

EBSCFG? 4,THERR

Response

If the EBSCFG sensitivity test THERR limit is set to 7.0e-05 for script 4 the response would be:

EBSCFG 4,THERR,7
**TTERR - Total test error limit**

This parameter is used to set up the Total Test error limit for the EDR sensitivity test (EBSCFG) and the EDR BER floor sensitivity test (EFSCFG).

**Set command format**

```
EBSCFG<ws><script number><,>TTERR,<terr limit>
```

- **<script number>**: 3 to 10
- **<terr limit>**: 1 to 999 (the value selected will be multiplied internally by 1e–04)

For the EDR Sensitivity Test:

- **<terr limit>**: 1 to 999 (the value selected will be multiplied internally by 1e–04)

For the EDR BER Floor Sensitivity Test:

- **<terr limit>**: 1 to 999 (the value selected will be multiplied internally by 1e–05)

**Example**

To set the EDR BER sensitivity test TTERR limit to 1.0e–04 for script 7 the command will be:

```
EBSCFG 7,TTERR,1
```

To set the EDR BER floor sensitivity test TTERR limit to 3.0e–05 for script 7 the command will be:

```
EFSCFG 7,TTERR,3
```

**Query command format**

```
EBSCFG?<ws><script number><,>TTERR
```

- **<script number>**: 1 to 10

**Response**

The response string returned for the query will be in the identical format as the configuration command string.

**Example**

```
EBSCFG? 7,TTERR
```

**Response**

If the EBSCFG sensitivity test TTERR limit is set to 1.0e-04 for script 7 the response would be:

```
EBSCFG 7,TTERR,1
```
**13-12 EDR Maximum Input Power Limits**  
* (MT8852B and MT8852B-042 only)*

This parameter is used to set or read the BER limit value used in the EDR Maximum input power test. Note that different units and ranges apply to the EDR test.

**Set command format**

```plaintext
EMPCFG<ws><script number><,><parameter><,><limit>
```

- `<script number>`: 3 to 10
- `<parameter>`: BERLIM
- `<limit>`: 1 to 999 (the value selected will be multiplied internally by 1e–03)

**Example**

To set the EMPCFG maximum input power test BERLIM limit to 1.0e-03 for script 7 the command will be:

```
EMPCFG 7,BERLIM,1
```

To set the BER limit for script 4 single slot sensitivity test to 0.4% the command would be:

```
SSCFG 4,BERLIM,4
```

**Query command format**

```plaintext
EMPCFG?<ws><script number><,><parameter>
```

- `<script number>`: 1 to 10
- `<parameter>`: BERLIM

**Response**

The response string returned for the query will be in the identical format as the configuration command string.

**Example**

```
EMPCFG? 7,BERLIM
```

**Response**

If the EMPCFG maximum input power BERLIM is set to 1.0e–03 for script 7 the response would be:

```
EMPCFG 7,BERLIM,3
```
13-13 EDR Guard Time Limit Commands

**GDTIMELH, GDTIMELL**

These parameters are used to set or read the limit values used in the guard time characteristic test to determine if the test has passed or failed.

**Set command format**

```
EGTCFG<ws><script number><,><variable><,><number>
```

- `<script number>`: 3 to 10
- `<variable>`:
  - GDTIMELH: Set the guard time upper limit
  - GDTIMELL: Set the guard time lower limit
- `<number>`: Ranges depend on the parameter:
  - GDTIMELH: Range 5.25 to 5.50 μsec (Default 5.25 μsec)
  - GDTIMELL: Range 4.50 to 4.75 μsec (Default 4.75 μsec)

**Example**

Set the guard time upper limit to 5.30 μsec in script 3 EDR guard time test the command would be:

```
EGTCFG 3, GDTIMELH, 5.30
```

**Query command format**

```
EGTCFG?<ws><script number><,><variable>
```

- `<script number>`: 1 to 10
- `<variable>`:
  - GDTIMELH: Read the guard time upper limit
  - GDTIMELL: Read the guard time lower limit

**Response**

The response is returned in the form of the command to set that state.

**Example**

```
EGTCFG? 5, GDTIMELL
```

**Response**

If script 5 guard time test lower limit is 4.80 μsec, the response would be:

```
EGTCFG 5, GDTIMELL, 4.80
```
# 13-14 EDR Synchronization Sequence and Trailer Limit Commands

**LSYNCBITS, HSYNCBITS, LTRLBITS, HTRLBITS**

These parameters are used to set or read the limit values used in the synchronization sequence and trailer test to determine if the test has passed or failed.

### Set command format

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESTCFG&lt;ws&gt;&lt;script number&gt;&lt;,&gt;&lt;variable&gt;&lt;,&gt;&lt;number&gt;</td>
<td>Set the 2Mbps synchronization sequence error bits limit value</td>
</tr>
<tr>
<td>LSYNCBITS</td>
<td>Set the 3Mbps synchronization sequence error bits limit value</td>
</tr>
<tr>
<td>HSYNCBITS</td>
<td>Set the 2Mbps trailer error bits limit value</td>
</tr>
<tr>
<td>LTRLBITS</td>
<td>Set the 3Mbps trailer error bits limit value</td>
</tr>
<tr>
<td>HTRLBITS</td>
<td>Set the 2Mbps trailer error bits limit value</td>
</tr>
</tbody>
</table>

*<script number> 3 to 10*

*<variable>*

*<number>*

Ranges depend on the parameter:

- **LSYNCBITS** Range 0 to 1 (Default 0)
- **HSYNCBITS** Range 0 to 1 (Default 0)
- **LTRLBITS** Range 0 to 1 (Default 1)
- **HTRLBITS** Range 0 to 1 (Default 1)

### Example

Set the 3Mbps trailer error bits limit to 0 in script 4 EDR synchronization sequence and trailer test the command would be:

```
ESTCFG 4,HTRLBITS,0
```

### Query command format

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESTCFG?&lt;ws&gt;&lt;script number&gt;&lt;,&gt;&lt;variable&gt;</td>
<td>Read the 2Mbps synchronization sequence error bits limit value</td>
</tr>
<tr>
<td>LSYNCBITS</td>
<td>Read the 3Mbps synchronization sequence error bits limit value</td>
</tr>
<tr>
<td>HSYNCBITS</td>
<td>Read the 2Mbps trailer error bits limit value</td>
</tr>
<tr>
<td>LTRLBITS</td>
<td>Read the 3Mbps trailer error bits limit value</td>
</tr>
<tr>
<td>HTRLBITS</td>
<td>Read the 3Mbps trailer error bits limit value</td>
</tr>
</tbody>
</table>

*<script number> 1 to 10*

*<variable>*

Response: The response is returned in the form of the command to set that state.

### Example

```
ESTCFG? 5,LTRLBITS
```

Response: If script 5 synchronization sequence and trailer test 2Mbps trailer limit is 1, the response would be:

```
ESTCFG 5,LTRLBITS,1
```
13-15 BLE Output Power Test Limit Commands

(MT8852B-043 and option 27 units only)

AVGMXLIM, AVGMNMLIM, PEAKLIM, AVGMXCTELIM, AVGMNCTELIM, PEAKCTELIM

These parameters are used to set or read the limits used to determine if the average power reading in the BLE output power test passes or fails.

| Set command | LEOPCFG<ws><script number><,><parameter><,><limit value>[DBM]
|-------------|-------------------------------------------------------------|
| <script number> | 3 to 10
| <parameter> | AVGMXLIM Set the average power max limit.
| | AVGMNMLIM Set the average power min limit.
| | PEAKLIM Set the peak to average power limit.
| | AVGMXCTELIM Set the average power max limit for CTE.
| | AVGMNCTELIM Set the average power min limit for CTE.
| | PEAKCTELIM Set the peak to average power limit for CTE.
| <limit value> | Ranges depending on the parameter
| AVGMXLIM | Range –80 to +30 dBm (Default +10 dBm)
| AVGMNMLIM | Range –80 to +20 dBm (Default –20 dBm)
| PEAKLIM | Range 0.0 to +10.0 dBm (Default +3 dBm)
| AVGMXCTELIM | Range –80 to +30 dBm (Default +20 dBm)
| AVGMNCTELIM | Range –80 to +20 dBm (Default –20 dBm)
| PEAKCTELIM | Range 0.0 to +10.0 dBm (Default +3 dBm)

Example

To set the average limit in script 3 output power test to 18 dBm the command would be:

LEOPCFG 3,AVGMNLIM,18
**Test Limit Variables**

**Query command format**

LEOPCFG?<ws><script number><,><parameter>

<script number>  1 to 10

<parameter>

AVGMXLIM
AVGMNLIM
PEAKLIM
AVGMXCTELIM
AVGMNCTELIM
PEAKCTELIM

**Response**

The response is returned in the form of the command to set that state.

**Example**

LEOPCFG? 7,AVGMXLIM

**Response**

If the average high limit in script 7 BLE output power test was 22 the response would be:

LEOPCFG 7,AVGMXLIM,22
### 13-16 BLE Carrier Frequency Offset and Drift Limit Commands

**(MT8852B-043 and option 27 units only)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MXPOSLIM</td>
<td>Set the maximum positive frequency offset limit. Range –250 to +250 kHz (Default 150 kHz)</td>
</tr>
<tr>
<td>MXPOSLRLIM</td>
<td>Set the maximum positive frequency offset limit - BLR. Range –250 to +250 kHz (Default 150 kHz)</td>
</tr>
<tr>
<td>MXPOSCTELIM</td>
<td>Set the maximum positive frequency offset limit - BLE-CTE. Range –250 to +250 kHz (Default 150 kHz)</td>
</tr>
<tr>
<td>MXPOS2CTELIM</td>
<td>Set the maximum positive frequency offset limit - 2LE-CTE. Range –250 to +250 kHz (Default 150 kHz)</td>
</tr>
<tr>
<td>MXNEGLIM</td>
<td>Set the maximum negative frequency offset limit. Range –250 to +250 kHz (Default 150 kHz)</td>
</tr>
<tr>
<td>MXNEGLRLIM</td>
<td>Set the maximum negative frequency offset limit - BLR. Range –250 to +250 kHz (Default 150 kHz)</td>
</tr>
<tr>
<td>MXNEGCTELIM</td>
<td>Set the maximum negative frequency offset limit - BLE-CTE. Range –250 to +250 kHz (Default 150 kHz)</td>
</tr>
<tr>
<td>MXNEG2CTELIM</td>
<td>Set the maximum negative frequency offset limit - 2LE-CTE. Range –250 to +250 kHz (Default 150 kHz)</td>
</tr>
</tbody>
</table>

This parameter is used to set or read the limit values used in the BLE carrier frequency offset and drift test. Note that measurements on 2LE signals require Option 35, measurements on BLR8 signals require Option 36 or 62 and measurements on BLE-CTE/2LE-CTE signals require Option 37.

**Set command format**

```
LEICDCFG<ws><script number>,<variable>,<number>
```

*<script number>*  3 to 10
*<variable>*  Ranges depend on the parameter
*<number>*  

- **MXPOSLIM**
- **MXPOSLRLIM**
- **MXPOSCTELIM**
- **MXPOS2CTELIM**
- **MXNEGLIM**
- **MXNEGLRLIM**
- **MXNEGCTELIM**
- **MXNEG2CTELIM**
### Test Limit Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFTBLELIM</td>
<td>Set the packet drift limit. Range 0.0 to 200 kHz (Default 50 kHz)</td>
</tr>
<tr>
<td>DFTBLELRLIM</td>
<td>Set the packet drift limit - BLR. Range 0.0 to 200 kHz (Default 50 kHz)</td>
</tr>
<tr>
<td>DFTBLECTELIM</td>
<td>Set the packet drift limit - BLE-CTE. Range 0.0 to 200 kHz (Default 50 kHz)</td>
</tr>
<tr>
<td>DFTBLE2CTELIM</td>
<td>Set the packet drift limit - 2LE-CTE. Range 0.0 to 200 kHz (Default 50 kHz)</td>
</tr>
<tr>
<td>INITDFTBLERATE</td>
<td>Set the initial drift rate limit (the drift rate between the preamble and the first 10-bit block of the payload). Range 1 to 90 kHz (Default 23 kHz)</td>
</tr>
<tr>
<td>INITDFTBRELRRATE</td>
<td>Set the initial drift rate limit (the drift rate between the preamble and the first 10-bit block of the payload) - BLR. Range 1 to 90 kHz (Default 19.2 kHz)</td>
</tr>
<tr>
<td>INITDFTBLECTERATE</td>
<td>Set the initial drift rate limit (the drift rate between the preamble and the first 10-bit block of the payload) - BLE-CTE. Range 1 to 90 kHz (Default 19.2 kHz)</td>
</tr>
<tr>
<td>INITDFTBLE2CTERATE</td>
<td>Set the initial drift rate limit (the drift rate between the preamble and the first 10-bit block of the payload) - 2LE-CTE. Range 1 to 90 kHz (Default 19.2 kHz)</td>
</tr>
<tr>
<td>DFTBLERATE</td>
<td>Set the drift rate limit. Range 1 to 90 kHz (Default 20000 Hz/50 μs)</td>
</tr>
<tr>
<td>DFTBRELRRATE</td>
<td>Set the drift rate limit - BLR. Range 1 to 90 kHz (Default 19.2 kHz)</td>
</tr>
<tr>
<td>DFTBLECTERATE</td>
<td>Set the drift rate limit - BLE-CTE. Range 1 to 90 kHz (Default 19.2 kHz)</td>
</tr>
<tr>
<td>DFTBLE2CTERATE</td>
<td>Set the drift rate limit - 2LE-CTE. Range 1 to 90 kHz (Default 19.2 kHz)</td>
</tr>
</tbody>
</table>

**Example**

To set the BLE carrier drift limit to +/- 70 kHz in script 4 the command would be:

```
LEICDCFG 4, DFTBLELIM, 70kHz
```

**Query command format**

```
LEICDCFG?<ws><script number>,><variable>
```

- `<script number>`: 1 to 10
- `<variable>`
### BLE Carrier Frequency Offset and Drift Limit Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MXPOSLIM</td>
<td>Read the maximum positive limit.</td>
</tr>
<tr>
<td>MXPOSRLRLIM</td>
<td>Read the maximum positive limit (BLR)</td>
</tr>
<tr>
<td>MXPOSCTELIM</td>
<td>Read the maximum positive limit (BLE-CTE)</td>
</tr>
<tr>
<td>MXPOS2CTELIM</td>
<td>Read the maximum positive limit (2LE-CTE)</td>
</tr>
<tr>
<td>MXNEGLIM</td>
<td>Read the maximum negative offset limit</td>
</tr>
<tr>
<td>MXNEGLRLRLIM</td>
<td>Read the maximum negative offset limit (BLR)</td>
</tr>
<tr>
<td>MXNEGCTELIM</td>
<td>Read the maximum negative offset limit (BLE-CTE)</td>
</tr>
<tr>
<td>MXNEG2CTELIM</td>
<td>Read the maximum negative offset limit (2LE-CTE)</td>
</tr>
<tr>
<td>DFTBLELIM</td>
<td>Read the packet drift limit</td>
</tr>
<tr>
<td>DFTBLELRLRLIM</td>
<td>Read the packet drift limit (BLR)</td>
</tr>
<tr>
<td>DFTBLECTELIM</td>
<td>Read the packet drift limit (BLE-CTE)</td>
</tr>
<tr>
<td>DFTBLE2CTELIM</td>
<td>Read the packet drift limit (2LE-CTE)</td>
</tr>
<tr>
<td>INITDFTBLERATE</td>
<td>Read the initial drift rate limit</td>
</tr>
<tr>
<td>INITDFTBLELRLRATE</td>
<td>Read the initial drift rate limit (BLR)</td>
</tr>
<tr>
<td>INITDFTBLECTERATE</td>
<td>Read the initial drift rate limit (BLE-CTE)</td>
</tr>
<tr>
<td>INITDFTBLE2CTERATE</td>
<td>Read the initial drift rate limit (2LE-CTE)</td>
</tr>
<tr>
<td>DFTBLERATE</td>
<td>Read the drift rate limit</td>
</tr>
<tr>
<td>DFTBLELRLRATE</td>
<td>Read the drift rate limit (BLR)</td>
</tr>
<tr>
<td>DFTBLECTERATE</td>
<td>Read the drift rate limit (BLE-CTE)</td>
</tr>
<tr>
<td>DFTBLE2CTERRATE</td>
<td>Read the drift rate limit (2LE-CTE)</td>
</tr>
</tbody>
</table>

**Response**
The response is returned in the form of the command to set that state.

**Example**
`LEICDCFG? 7, DFTBLELIM`

**Response**
If script 7 BLE drift limit is 55 kHz, the response would be:
`LEICDCFG 7, DFTBLELIM, 55E3`
13-17 BLE Modulation Characteristics Limit Commands
(MT8852B-043 and option 27 units only.
2LE requires option 35 and BLR requires option 36 or 62)
F1AVGMIN, F1AVGMAX, F1AVG2MIN, F1AVG2MAX, F2MAXLIM, F1MAXLIM,
F2MAX2LIM, F1F2MAX

These parameters are used to set or read the limit values used in the BLE modulation characteristic test to determine if the test has passed or failed.

<table>
<thead>
<tr>
<th>Set command format</th>
<th>LEMICFG&lt;ws&gt;&lt;script number&gt;&lt;,&gt;&lt;variable&gt;&lt;,&gt;&lt;number&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;script number&gt;</td>
<td>3 to 10</td>
</tr>
<tr>
<td>&lt;variable&gt;</td>
<td></td>
</tr>
<tr>
<td>F1AVGMIN</td>
<td>Set the f1avg min limit (BLE, BLR8)</td>
</tr>
<tr>
<td>F1AVGMAX</td>
<td>Set the f1avg max limit (BLE, BLR8)</td>
</tr>
<tr>
<td>F1AVG2MIN</td>
<td>Set the f1avg min limit (2LE)</td>
</tr>
<tr>
<td>F1AVG2MAX</td>
<td>Set the f1avg max limit (2LE)</td>
</tr>
<tr>
<td>F2MAXLIM</td>
<td>Set the f2max limit (BLE)</td>
</tr>
<tr>
<td>F1MAXLIM</td>
<td>Set the f1max limit (BLR8)</td>
</tr>
<tr>
<td>F2MAX2LIM</td>
<td>Set the f2max limit (2LE)</td>
</tr>
<tr>
<td>F1F2MAX</td>
<td>Set the f1/f2 avg max limit</td>
</tr>
</tbody>
</table>

<number> Ranges depend on the parameter:

- F1AVGMIN: Range –350 to +350 kHz (Default 225 kHz)
- F1AVGMAX: Range –350 to +350 kHz (Default 275 kHz)
- F1AVG2MIN: Range –600 to +600 kHz (Default 450 kHz)
- F1AVG2MAX: Range –600 to +600 kHz (Default 550 kHz)
- F2MAXLIM: Range –300 to +300 kHz (Default 185 kHz)
- F1MAXLIM: Range –300 to +300 kHz (Default 185 kHz)
- F2MAX2LIM: Range –600 to +600 kHz (Default 370 kHz)
- F1F2MAX: Range 0.0 to 1.0
Example

Set the f1avg min value to 140 kHz in script 4 modulation index test
the command would be:

LEMICFG 4,F1AVGMIN,140kHz

Query command format

LEMICFG?<ws><script number><,><variable>

<script number> 1 to 10

<variable>

F1AVGMIN Read the f1avg min limit (BLE, BLR8)
F1AVGMAX Read the f1avg max limit (BLE, BLR8)
F1AVG2MIN Read the f1avg min limit (2LE)
F1AVG2MAX Read the f1avg max limit (2LE)
F2MAXLIM Read the f2max limit (BLE)
F1MAXLIM Read the f1max limit (BLR8)
F2MAX2LIM Read the f2max limit (2LE)
F1F2MAX Read the f1/f2 avg max limit

Response

The response is returned in the form of the command to set that state.

Example

LEMICFG? 7,F1AVGMAX

Response

If script 7 modulation index test f1avg max limit is 200 kHz, the
response would be:

LEMICFG 7,F1AVGMAX,200E3
**13-18 BLE Tx Power Stability Limit Commands**  
*(MT8852B-043 and option 27 units only.*  
**CTE requires option 37)**

**REFPWRLIM, SLOTPWRLIM**

These parameters are used to set or read the limit values used in the BLE Tx power stability test to determine if the test has passed or failed.

Set command format

LEPSCFG<ws><script number><,><variable><,><number>

*<script number>*  3 to 10  
*<variable>*  
REFPWRLIM   Set the reference power ratio limit  
SLOTPWRLIM   Set the slot power ratio limit  

*<number>* Ranges depend on the parameter:

REFPWRLIM   0.01 to 1.00 (Default 0.25)  
SLOTPWRLIM   0.01 to 1.00 (Default 0.25)  

Example

Set the reference power ratio limit value to 0.25 in script 4 Tx power stability test the command would be:

LEPSCFG 4,REFPWRLIM,0.25

Query command format

LEPSCFG?<ws><script number><,><variable>

*<script number>*  1 to 10  
*<variable>*  
REFPWRLIM   Read the reference power ratio limit  
SLOTPWRLIM   Read the slot power ratio limit  

Response  
The response is returned in the form of the command to set that state.  

Example

LEMPSCFG? 7,REFPWRLIM

Response  
If script 7 Tx power stability test reference power ratio limit is 0.25, the response would be:

LEPSCFG 7,REFPWRLIM,0.25
13-19 BLE Sensitivity Test and Maximum Input Limit Commands (MT8852B-043 and option 27 units only)

FERLIM

These parameters are used to set or read the FER limit value used in the BLE sensitivity tests.

Set command format

LESSCFG<ws><script number><,>,<parameter><,><number>

<script number> 3 to 10
<parameter> FERLIM
<number> Ranges depend on the parameter (unit %)
0.001 to 100 – FER

Example

Set the FER limit for script 4 single slot sensitivity test to 20.5% the command would be:

LESSCFG 4,FERLIM,20.5

Query command format

LESSCFG?<ws><script number><,><parameter>

<script number> 1 to 10
<parameter> FERLIM

Response

The response is returned in the form of the command to set that state.

Example

LESSCFG? 7,FERLIM

Response

If script 7 single slot sensitivity test FER limit is set to 0.2%, the response would be:

LESSCFG 7,FERLIM,0.2
13-20 BLE PER Report Integrity Test Limit Commands
(MT8852B-043 and option 27 units only)

LOWPERLIM, HIGHERLIM

These parameters configure the BLE PER integrity test limits.

**Set command format**

LEPRICFG<ws><script number><,>LOWPERLIM<,><limit>

- <script number> 3 to 10
- <parameter> LOWPERLIM
- <limit> 10.0 to 100.0 %

Low limit default is 50.0 %
Higher limit default is 65.4 %

**Example**

To set the low limit for script 7 to 34.6 the command will be:

LEPRICFG 7,LOWPERLIM,34.6

**Query command format**

LEPRICFG?<ws><script number><,>LOWPERLIM

- <script number> 1 to 10

Response The response is returned in the form of the command to set that state.

**Example**

LEPRICFG? 7,LOWPERLIM

Response If the high limit is set to 78.8% for script 7 the response would be:

LEPRICFG 7,HIGHERLIM,78.8
Chapter 14 — Running and Aborting Code

Running Tests (RUN)
This command runs either the test or the script depending on the operation mode. Refer to the operation mode command (OPMD) for details.

Command format
RUN

Note
When the EUT mode is set to Inquiry, the number of responses must be 1 or the GPIB RUN command is rejected with an execution error.

Aborting Tests (ABORT)
This command aborts the test or script being run. The test or script stops immediately and does not wait for the end of the test or script.

Command format
ABORT
Chapter 15 — Reading Test Results

Data

The commands listed in this section request measurement results for the Bluetooth tests or scripts that were last run. If measurement results are requested while a script or test is ongoing, an execution error is output via the appropriate GPIB status register.

Measurement results are organised into initial “Summary” results and additional “Extended” results, giving a breakdown of measurements for each of the test stages executed. This chapter details how the Summary and Extended measurement results can be requested over GPIB.

Within the formatted data string returned upon requesting measurement results, a ‘Results Valid’ flag is used throughout, to indicate whether the actual measurements for a given Bluetooth test or test stage are valid. The ‘Results Valid’ flag is invalidated upon the following conditions:

- When the instrument is powered ON
- At the beginning of a test-run prior to running a Bluetooth Test
- Upon receiving a GPIB “*RST” command.

The ‘Results Valid’ flag is subsequently set depending on the outcome of the Bluetooth Test.

The PASS/FAIL indicator flag is used exclusively to indicate whether the measurement results are within the instrument-defined test limits for a given Bluetooth Test. To test for a premature ending of a Bluetooth test or script, due to any other failure, the DDE bit in the ESR register should be checked.
15-1 Summary Results

Set command format

OResult<ws>SCRIPT<,><ext-code>
or
OResult<ws>TEST<,><ext-code><,><test>
<ext-code>

Extension code: 0 to N (N is test dependent). If a test does not support a given extension code the next valid lower code is used (0 = standard).
<test>

OP Output power (#1)
PC Power control (#1)
EPC Enhanced power control (#1)
MI Modulation index (#1)
IC Initial carrier (#1)
CD Carrier drift (#1)
SS Single slot sensitivity (#1)
MS Multi slot sensitivity (#1)
MP Maximum input power (#1)
ERP EDR Relative transmit power test (#2)
ECM EDR Carrier frequency stability and accuracy test (#2)
EDP EDR Differential phase encoding test (#2)
EGT EDR Guard time test (#2)
EST EST Synchronization sequence and trailer (#2)
EBS EDR Sensitivity test (#2)
EFS EDR Floor sensitivity test (#2)
EMP EDR Maximum input power test (#2)
LEOP BLE Output power (#3)
LEOP2M 2LE Output power (#4)
LEOPLR8 BLR8 Output power (#5)
LEOPBLECTE BLE-CTE Output power (#6)
LEOP2LECTE 2LE-CTE Output power (#7)
LEICD BLE Carrier frequency offset and drift (#3)
LEICD2M 2LE Carrier frequency offset and drift (#4)
LEICDLR8 BLR8 Carrier frequency offset and drift (#5)
LEICDBLECTE BLE-CTE Carrier frequency offset and drift (#6)
LEICD2LECTE 2LE-CTE Carrier frequency offset and drift (#7)
LEMI BLE Modulation characteristics (#3)
Summary Results

<table>
<thead>
<tr>
<th>Test Code</th>
<th>Description</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEMI2M</td>
<td>2LE Modulation characteristics (#4)</td>
<td></td>
</tr>
<tr>
<td>LEMILR8</td>
<td>BLR8 Modulation characteristics (#5)</td>
<td></td>
</tr>
<tr>
<td>LESS</td>
<td>BLE Receiver sensitivity (#3)</td>
<td></td>
</tr>
<tr>
<td>LESS2M</td>
<td>2LE Receiver sensitivity (#4)</td>
<td></td>
</tr>
<tr>
<td>LESSL8R</td>
<td>BLR8 Receiver sensitivity (#5)</td>
<td></td>
</tr>
<tr>
<td>LESSL2R</td>
<td>BLR2 Receiver sensitivity (#5)</td>
<td></td>
</tr>
<tr>
<td>LEPRI</td>
<td>BLE PER report integrity (#3)</td>
<td></td>
</tr>
<tr>
<td>LEPRI2M</td>
<td>2LE PER report integrity (#4)</td>
<td></td>
</tr>
<tr>
<td>LEPRIL8R</td>
<td>BLR8 PER report integrity (#5)</td>
<td></td>
</tr>
<tr>
<td>LEPRIL2R</td>
<td>BLR2 PER report integrity (#5)</td>
<td></td>
</tr>
<tr>
<td>LEMP</td>
<td>BLE Max input signal level (#3)</td>
<td></td>
</tr>
<tr>
<td>LEMP2M</td>
<td>2LE Max input signal level (#4)</td>
<td></td>
</tr>
<tr>
<td>LEPSBLECTE1US</td>
<td>BLE-CTE Tx power stability with 1 μs slots (#6)</td>
<td></td>
</tr>
<tr>
<td>LEPS2LECTE1US</td>
<td>2LE-CTE Tx power stability with 1 μs slots (#7)</td>
<td></td>
</tr>
<tr>
<td>LEPSBLECTE2US</td>
<td>BLE-CTE Tx power stability with 2 μs slots (6)</td>
<td></td>
</tr>
<tr>
<td>LEPS2LECTE2US</td>
<td>2LE-CTE Tx power stability with 2 μs slots (7)</td>
<td></td>
</tr>
</tbody>
</table>

(#1) Not available on MT8852B-043
(#2) MT8852B and MT8852B-042 only
(#3) MT8852B-043 and units with option 27 only
(#4) Units with option 35 only
(#5) Units with option 36 or 62 only
(#6) Units with option 37 only
(#7) Units with option 35 and 37 only

Example

To request the standard results for the Output Power test only, the command would be:

ORESULT TEST,0,OP

To request the whole script standard results (extension code 0), the command would be:

ORESULT SCRIPT,0

Notes:

The measurement results for a script include all Bluetooth tests supported by the instrument.

The measurement result for a script is a ‘fixed length text string. If any test is disabled, the results for that test are invalidated (i.e. the ‘Results valid’ flag will be set to ‘false’ and all measurement fields are set to zero).

Output format

See ‘Results Output Format’ sections for details on Test Results formatting.
15-2  Summary Results Output Format

Set command format

<Header><ext-code>,<data>

<Header>
2 to 11 ASCII characters indicating which test the results are for.

OP  Output power (#1)
PC  Power control (#1)
EPC  Enhanced power control (#1)
MI  Modulation index (#1)
IC  Initial carrier (#1)
CD  Carrier drift (#1)
SS  Single slot sensitivity (#1)
MS  Multi slot sensitivity (#1)
MP  Maximum input power (#1)
ERP  EDR Relative transmit power test (#2)
ECM  EDR Carrier frequency stability and accuracy test (#2)
EDP  EDR Differential phase encoding test (#2)
EBS  EDR Sensitivity test (#2)
EFS  EDR Floor sensitivity test (#2)
EMP  EDR Maximum input power test (#2)
EGT  EDR Guard time test (#2)
EST  EDR Synchronization sequence and trailer (#2)
LEOP  BLE Output power (#3)
LEOP2M  2LE Output power (#4)
LEOPLR8  BLR8 Output power (#5)
LEOPBLECTE  BLE-CTE Output power (#6)
LEOP2LECTE  2LE-CTE Output power (#7)
LEICD  BLE Carrier frequency offset and drift (#3)
LEICD2M  2LE Carrier frequency offset and drift (#4)
LEICDLR8  BLR8 Carrier frequency offset and drift (#5)
LEICDUBLECTE  BLE-CTE Carrier frequency offset and drift (#6)
LEICD2LECTE  2LE-CTE Carrier frequency offset and drift (#7)
LEMI  BLE Modulation characteristics (#3)
LEMI2M  2LE Modulation characteristics (#4)
LEMILR8  BLR8 Modulation characteristics (#5)
LESS  BLE Receiver sensitivity (#3)
<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LESS2M</td>
<td>2LE Receiver sensitivity (#4)</td>
</tr>
<tr>
<td>LESSLR8</td>
<td>BLR8 Receiver sensitivity (#5)</td>
</tr>
<tr>
<td>LESSLR2</td>
<td>BLR2 Single slot sensitivity (#5)</td>
</tr>
<tr>
<td>LEPRI</td>
<td>BLE PER report integrity (#3)</td>
</tr>
<tr>
<td>LEPRI2M</td>
<td>2LE PER report integrity (#4)</td>
</tr>
<tr>
<td>LEPRILR8</td>
<td>BLR8 PER report integrity (#5)</td>
</tr>
<tr>
<td>LEPRILR2</td>
<td>BLR2 PER report integrity (#5)</td>
</tr>
<tr>
<td>LEMP</td>
<td>BLE Maximum input signal level (#3)</td>
</tr>
<tr>
<td>LEMP2M</td>
<td>2LE Maximum input signal level (#4)</td>
</tr>
<tr>
<td>LEPSBLECTE1US</td>
<td>BLE-CTE Tx power stability with 1 μs slots (#6)</td>
</tr>
<tr>
<td>LEPS2LECTE1US</td>
<td>2LE-CTE Tx power stability with 1 μs slots (#7)</td>
</tr>
<tr>
<td>LEPSBLECTE2US</td>
<td>BLE-CTE Tx power stability with 2 μs slots (#6)</td>
</tr>
<tr>
<td>LEPS2LECTE2US</td>
<td>2LE-CTE Tx power stability with 2 μs slots (#7)</td>
</tr>
</tbody>
</table>

(#1) Not available on MT8852B-043
(#2) MT8852B and MT8852B-042 only
(#3) MT8852B-043 and units with option 27 only
(#4) Units with option 35 only
(#5) Units with option 36 or 62 only
(#6) Units with option 37 only
(#7) Units with option 35 and 37 only

<ext-code>
Single byte indicating the extension information code. The extension code is test-related.

0 Extension code for standard results.
1 to N Extension code for extended measurement results 1 to N, where N is the maximum extension code supported (see individual Bluetooth test results formatting in the following pages).

<data>
The data is in ASCII format. Formatting of <data> is Bluetooth test dependent.

All <data> elements are comma delimited for clarity.
Example 1  When sending the following command to request the Output Power test results:

ORESULT TEST,0,OP

The Summary Output Power test results, extension code 0, would be:

OP0,<data>

Where <data> for this test is formatted as follows:

$results_valid_flag>,<current_packet_average_power>,<max_test_average_power>,<min_test_average_power>,<overall_peak_power>,<pass/fail_flag>

An example of test results for this test will be:

OP0,TRUE,1.61,1.94,1.53,2.02,PASS

Example 2  When requesting a complete script via the command:

ORESULT SCRIPT,0

The summary results for the Test Script just executed will be:

OP0,<op_data>,PC0,<pc_data>,MI0,<mi_data>,IC0,<ic_data>,
CD0,<cd_data>,SS0,<ss_data>,MS0,<ms_data>,MP0,<mp_data>,
ERP0,<erp_data>,ECM0,<ecm_data>,EDP0,<edp_data>,
EGT0,<egt_data>,EST0,<est_data>,EBS0,<ebs_data>,
EFS0,<efs_data>,EMP0,<emp_data>,LEOP0,<leop_data>,
LEOPBLECTE0,<leop_data>,LEICD0,<leicd_data>,
LEICDBLECTE0,<leicd_data>,LESS0,<less_data>,
LEMP0,<lemp_data>,LEMI0,<lemi_data>,
LEPR10,<lepri_data>,EFC0,<epc_data>,LEOP2M0,<leop_data>,
LEOP2LECTE0,<leop_data>,LEICD2M0,<leicd_data>,
LEICD2LECTE0,<leicd_data>,LESS2M0,<less_data>,
LEMP2M0,<lemp_data>,LEMI2M0,<lemi_data>,
LEPR12M0,<lepri_data>,LEOPLR80,<leop_data>,
LEICDLR80,<leop_data>,LEMLR80,<lemp_data>,
LESSLR80,<less_data>,LESSLR20,<less_data>,
LEMLR20,<lemp_data>,LEMLR80,<lemi_data>,
LEPR1LR80,<lepri_data>,LEPR1LR20,<lepri_data>,
LEPSBLECTE1US0,<leps_data>,LEPS2PECTE1US0,<leps_data>,
LEPSBLECTE2US0,<leps_data>,LEPS2LECTE2US0,<leps_data>

Where each individual test result string is appended to the previous test string by a comma separator.
## 15-3 Extended Results Data Output

### Set command format

```
XRESULT<ws><test><,><stage>[<,><ext_code>]
```

### <test>

- **OP**: Output power (#1)
- **PC**: Power control (#1)
- **EPC**: Enhanced power control (#1)
- **MI**: Modulation index (#1)
- **IC**: Initial carrier (#1)
- **CD**: Carrier drift (#1)
- **SS**: Single slot sensitivity (#1)
- **MS**: Multi slot sensitivity (#1)
- **MP**: Maximum input power (#1)
- **ERP**: EDR Relative transmit power test (#2)
- **ECM**: EDR Carrier frequency stability and accuracy test (#2)
- **EDP**: EDR Differential phase encoding test (#2)
- **EGT**: EDR Guard time test (#2)
- **EST**: EST Synchronization sequence and trailer (#2)
- **EBS**: EDR Sensitivity test (#2)
- **EFS**: EDR Floor sensitivity test (#2)
- **EMP**: EDR Maximum input power test (#2)
- **LEOP**: BLE Output power (#3)
- **LEOP2M**: 2LE Output power (#4)
- **LEOPLR8**: BLR8 Output power (#5)
- **LEOPBLECTE**: BLE-CTE Output power (#6)
- **LEOP2LECTE**: 2LE-CTE Output power (#7)
- **LEICD**: BLE Carrier frequency offset and drift (#3)
- **LEICD2M**: 2LE Carrier frequency offset and drift (#4)
- **LEICDLR8**: BLR8 Carrier frequency offset and drift (#5)
- **LEICDBLECTE**: BLE-CTE Carrier frequency offset and drift (#6)
- **LEICD2LECTE**: 2LE-CTE Carrier frequency offset and drift (#7)
- **LEMI**: BLE Modulation characteristics (#3)
- **LEMI2M**: 2LE Modulation characteristics (#4)
- **LEMILR8**: BLR8 Modulation characteristics (#5)
- **LESS**: BLE Receiver sensitivity (#3)
- **LESS2M**: 2LE Receiver sensitivity (#4)
### Reading Test Results Data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LESSLR8</td>
<td>BLR8 Receiver sensitivity (#5)</td>
</tr>
<tr>
<td>LESSLR2</td>
<td>BLR2 Receiver sensitivity (#5)</td>
</tr>
<tr>
<td>LEPRI</td>
<td>BLE PER report integrity (#3)</td>
</tr>
<tr>
<td>LEPRII2M</td>
<td>2LE PER report integrity (#4)</td>
</tr>
<tr>
<td>LEPRILR8</td>
<td>BLR8 PER report integrity (#5)</td>
</tr>
<tr>
<td>LEPRILR2</td>
<td>BLR2 PER report integrity (#5)</td>
</tr>
<tr>
<td>LEMP</td>
<td>BLE Maximum input signal level (#3)</td>
</tr>
<tr>
<td>LEMP2M</td>
<td>2LE Maximum input signal level (#4)</td>
</tr>
<tr>
<td>LEPSBLECTE1US</td>
<td>BLE-CTE Tx power stability with 1 μs slots (#6)</td>
</tr>
<tr>
<td>LEPS2LECTE1US</td>
<td>2LE-CTE Tx power stability with 1 μs slots (#7)</td>
</tr>
<tr>
<td>LEPSBLECTE2US</td>
<td>BLE-CTE Tx power stability with 2 μs slots (#6)</td>
</tr>
<tr>
<td>LEPS2LECTE2US</td>
<td>2LE-CTE Tx power stability with 2 μs slots (#7)</td>
</tr>
</tbody>
</table>

- (#1) Not available on MT8852B-043
- (#2) MT8852B and MT8852B-042 only
- (#3) MT8852B-043 and units with option 27 only
- (#4) Units with option 35 only
- (#5) Units with option 36 or 62 only
- (#6) Units with option 37 only
- (#7) Units with option 35 and 37 only

If $<\text{test}> = \text{ERP}$, use the following parameters:

- HOPONLMIN: Hopping ON, low frequency, min power
- HOPONLMAX: Hopping ON, low frequency, max power
- HOPONMMIN: Hopping ON, mid frequency, min power
- HOPONMMAX: Hopping ON, mid frequency, max power
- HOPONHMIN: Hopping ON, high frequency, min power
- HOPONHMAX: Hopping ON, high frequency, max power
- HOPONALLMIN: Hopping ON, all channels, min power
- HOPONALLMAX: Hopping ON, all channels, max power
- HOPONANYMIN: Hopping ON, any channel, min power
- HOPONANYMAX: Hopping ON, any channel, max power
- HOPOFFLMIN: Hopping OFF, low frequency, min power
- HOPOFFLMAX: Hopping OFF, low frequency, max power
- HOPOFFMMIN: Hopping OFF, mid frequency, min power
- HOPOFFMMAX: Hopping OFF, mid frequency, max power
- HOPOFFHMIN: Hopping OFF, high frequency, min power
- HOPOFFHMAX: Hopping OFF, high frequency, max power
For any other <test> use the following parameters:

- HOPONL  Hopping ON, low frequency
- HOPONM  Hopping ON, mid frequency
- HOPONH  Hopping ON, high frequency
- HOPONALL Hopping ON, all channels
- HOPONANY Hopping ON, any channel
- HOPOFFL Hopping OFF, low frequency
- HOPOFFM Hopping OFF, mid frequency
- HOPOFFH Hopping OFF, high frequency

[<ext_code>]

The optional extension code field can be used to obtain additional measurements or can be omitted for standard measurements. Note that this field does not apply to all measurements (see measurement results for each Bluetooth test over the following pages)

**Example**

To request the Output Power Hopping ON Low Channel results, the command would be:

```
XRESULT OP, HOPONL
```

To request the extended EDR Relative Power ‘Hopping OFF, Low frequency, Max power’ results with ‘optional’ extension code 2, the command would be:

```
XRESULT ERP, HOPOFFLMAX, 2
```
15-4  Extended Results Output Format

Set command format  

<Header>[<ext-code>],[data>

<Header>
ASCII characters indicating which test the results are for.

XOP           Output power (#1)
XPC           Power control (#1)
XEPC          Enhanced power control (#1)
XMI           Modulation index (#1)
XIC           Initial carrier (#1)
XCD           Carrier drift (#1)
XSS           Single slot sensitivity (#1)
XMS           Multi slot sensitivity (#1)
XMP           Maximum input power (#1)
XERP          EDR Relative transmit power test (#2)
XECM          EDR Carrier frequency stability and accuracy test (#2)
XEDP          EDR Differential phase encoding test (#2)
XEBS          EDR Sensitivity test (#2)
XEFS          EDR Floor sensitivity test (#2)
XEMP          EDR Maximum input power test (#2)
XEGT          EDR Guard time test (#2)
XEST          EDR Synchronization sequence and trailer (#2)
XLEOP         BLE Output power (#3)
XLEOP2M       2LE Output power (#4)
XLEOPLR8      BLR8 Output power (#5)
XLEOPBLECTE   BLE-CTE Output power (#6)
XLEOP2LECTE   2LE-CTE Output power (#7)
XLEICD        BLE Carrier frequency offset and drift (#3)
XLEICD2M      2LE Carrier frequency offset and drift (#4)
XLEICDLR8     BLR8 Carrier frequency offset and drift (#5)
XLEICDBLECTE  BLE-CTE Carrier frequency offset and drift (#6)
XLEICD2LECTE  2LE-CTE Carrier frequency offset and drift (#7)
XLEMI         BLE Modulation characteristics (#3)
XLEMI2M       2LE Modulation characteristics (#4)
XLEMIILR8     BLR8 Modulation characteristics (#5)
XLESS         BLE Receiver sensitivity (#3)
XLESS2M 2LE Receiver sensitivity (#4)
XLESSLR8 BLR8 Receiver sensitivity (#5)
XLESSLR2 BLR2 Receiver sensitivity (#5)
XLEPRI BLE PER report integrity (#3)
XLEPRI2M 2LE PER report integrity (#4)
XLEPRILR8 BLR8 PER report integrity (#5)
XLEPRILR2 BLR2 PER report integrity (#5)
XLEMP BLE Maximum input signal level (#3)
XLEMP2M 2LE Maximum input signal level (#4)
XLEPSBLECTE1US BLE-CTE Tx power stability with 1 μs slots (#6)
XLEPS2LECTE1US 2LE-CTE Tx power stability with 1 μs slots (#7)
XLEPSBLECTE2US BLE-CTE Tx power stability with 2 μs slots (#6)
XLEPS2LECTE2US 2LE-CTE Tx power stability with 2 μs slots (#7)

(#1) Not available on MT8852B-043
(#2) MT8852B and MT8852B-042 only
(#3) MT8852B-043 and units with option 27 only
(#4) Units with option 35 only
(#5) Units with option 36 or 62 only
(#6) Units with option 37 only
(#7) Units with option 35 and 37 only

[<ext-code>]

Single character which is appended to the header mnemonic, indicating
the extension information code. The extension code is Bluetooth test
related.

0 NA (Does not apply to the Extended results
Data Output. No character will be appended to
the output mnemonic <Header> field )

1 to N Extension code for extended measurement
results 1 to N, where N is the maximum
extension code supported (see individual Bluetooth test results formatting over the
following pages).

<data>
The data is in ASCII format. Formatting of data is Bluetooth test
dependent.

All <data> elements are comma delimited for clarity.
Example 1 When sending the following command to request the EDR Relative Power test results:

```
XRESULT ERP,HOPOFFLMAX
```

The formatting for the Extended EDR Relative Power test results is:

```
XERP,HOPOFFLMAX,<default_ext_data>
```

A typical set of test results will be as follows:

```
XERP,HOPOFFLMAX,TRUE,-1.38,-1.37,-1.37,PASS,TRUE,-1.40,
-1.36,-1.39,PASS
```

Example 2 When requesting the same test results with extension code 2:

```
XRESULT ERP,HOPOFFLMAX,2
```

The text string received would be:

```
XERP2,HOPOFFLMAX,<default_ext_data>,<ext_code1_data>,<ext_code2_data>
```

The extension code measurements for this test are additional absolute power readings (see appropriate section on EDR test results for additional information)

The extension code data is appended to the end of the default data in numerically ascending order, up to the highest extension code requested (in this example ‘2’)

A typical set of test results will be:

```
XERP2,HOPOFFLMAX,TRUE,-1.38,-1.37,-1.37,PASS,TRUE,-1.40,
-1.36,-1.39,PASS,1.76,1.66,1.71,2.11,1.47,1.44,1.46,
1.84,0.39,0.28,0.33,3.09, 0.10,0.04,0.06,2.74
```

Where the first block of eight readings, following the default readings, is appended by extension code1 and the remaining block by extension code2.
## 15-5 Basic Rate Tests
(Not MT8852B-043)

### Output Power Test Results

#### Summary Results

<table>
<thead>
<tr>
<th>Extension Codes</th>
<th>0</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extension Code: 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Results valid</td>
<td>e.g. TRUE</td>
<td>FALSE</td>
</tr>
<tr>
<td>Packet average power in dBm</td>
<td>e.g. –12.5</td>
<td></td>
</tr>
<tr>
<td>Test avg max in dBm</td>
<td>e.g. 11.6</td>
<td></td>
</tr>
<tr>
<td>Test avg min in dBm</td>
<td>e.g. 10.4</td>
<td></td>
</tr>
<tr>
<td>Test peak power in dBm</td>
<td>e.g. 11.2</td>
<td></td>
</tr>
<tr>
<td>Pass/fail result</td>
<td>e.g. PASS</td>
<td>FAIL</td>
</tr>
</tbody>
</table>

**Example:** OP0, TRUE, –12.5, 11.6, 10.4, 11.2, PASS

#### Extended Results

**Valid stages:** HOPONL | HOPONM | HOPONH | HOPONALL | HOPONANY, HOPOFFL | HOPOFFM | HOPOFFH

<table>
<thead>
<tr>
<th>Results valid</th>
<th>text string</th>
<th>TRUE</th>
<th>FALSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test max</td>
<td>floating point</td>
<td>e.g. –0.95</td>
<td></td>
</tr>
<tr>
<td>Test min</td>
<td>floating point</td>
<td>e.g. –0.97</td>
<td></td>
</tr>
<tr>
<td>Test peak</td>
<td>floating point</td>
<td>e.g. –0.83</td>
<td></td>
</tr>
<tr>
<td>Test Average</td>
<td>floating point</td>
<td>e.g. –0.95</td>
<td></td>
</tr>
<tr>
<td>Failed</td>
<td>Integer</td>
<td>e.g. 2</td>
<td></td>
</tr>
<tr>
<td>Tested</td>
<td>Integer</td>
<td>e.g. 10</td>
<td></td>
</tr>
<tr>
<td>State</td>
<td>Text string</td>
<td>PASS</td>
<td>FAIL</td>
</tr>
</tbody>
</table>

**Example:** OP0, TRUE, –12.5, 11.6, 10.4, 11.2, PASS
Power Control Test Results

Summary Results

<table>
<thead>
<tr>
<th>Extension Codes</th>
<th>0</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>All steps in last cycle</td>
</tr>
</tbody>
</table>

Extension Code: 0

Results valid e.g. TRUE | FALSE
Average power of last packet (dBm) e.g. 0.4
Maximum power of all packets (dBm) e.g. 1.5
Minimum power of all packet (dBm) e.g. –2.6
Maximum step size (dBm) e.g. 6.4
Minimum step size (dBm) e.g. 2.5
Pass/fail state e.g. PASS | FAIL

Example: PC0,TRUE,0.4,1.5,–2.6,6.4,2.5,PASS

Extension Code: 1

If the extension code is 1, the result would appended to the end, each power steps average power for the last cycle. This comprises:

Number of entries - e.g. 5 (Max number of steps kept is 50).
Value in dB for the number of entries

Example:
PC1,TRUE,0.4,1.5,–2.6,6.4,2.5,PASS,5,–20.8,–16.2,–14.9,–11.0,–5.8

Extended Results

Valid stages: HOPOFFL | HOPOFFM | HOPOFFH

Results valid text string TRUE | FALSE
Max power floating point e.g. –1.7
Min power floating point e.g. –41.1
Max step floating point e.g. 4.0
Min step floating point e.g. 2.8
Failed integer e.g. 0
Tested integer e.g. 26
State text string PASS | FAIL

Example: XPC,HOPOFFL,TRUE,–1.7,–41.1,4.0,2.8,0,26,PASS
# Enhanced Power Control Test Results

## Summary Results

<table>
<thead>
<tr>
<th>Extension Codes</th>
<th>0</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>All steps in last cycle</td>
</tr>
</tbody>
</table>

### Extension Code: 0

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>DHx Results valid</td>
<td>e.g. TRUE</td>
</tr>
<tr>
<td>Maximum power of all DHx packets (dBm)</td>
<td>e.g. 1.5</td>
</tr>
<tr>
<td>Minimum power of all DHx packet (dBm)</td>
<td>e.g. –34.6</td>
</tr>
<tr>
<td>Maximum DHx step size (dB)</td>
<td>e.g. 6.4</td>
</tr>
<tr>
<td>Minimum DHx step size (dB)</td>
<td>e.g. 2.5</td>
</tr>
<tr>
<td>DHx Repeat Max diff (dB)</td>
<td>e.g. 0.1</td>
</tr>
</tbody>
</table>

### 2DHx Results valid

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum power of all 2DHx packets headers (dBm)</td>
<td>e.g. 1.0</td>
</tr>
<tr>
<td>Minimum power of all 2DHx packets headers (dBm)</td>
<td>e.g. –32.5</td>
</tr>
<tr>
<td>Maximum 2DHx step size (dB)</td>
<td>e.g. 7.2</td>
</tr>
<tr>
<td>Minimum 2DHx step size (dB)</td>
<td>e.g. 3.1</td>
</tr>
<tr>
<td>2DHx Repeat Max diff (dB)</td>
<td>e.g. 0.1</td>
</tr>
<tr>
<td>Max 2DHx to DHx diff (dB)</td>
<td>e.g. 2.5</td>
</tr>
</tbody>
</table>

### 3DHx Results valid

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum power of all 3DHx packets headers (dBm)</td>
<td>e.g. 1.2</td>
</tr>
<tr>
<td>Minimum power of all 3Mbps packets headers (dBm)</td>
<td>e.g. –30.4</td>
</tr>
<tr>
<td>Maximum 3DHx step size (dB)</td>
<td>e.g. 5.7</td>
</tr>
<tr>
<td>Minimum 3DHx step size (dB)</td>
<td>e.g. 5.0</td>
</tr>
<tr>
<td>3DHx Repeat Max diff (dB)</td>
<td>e.g. 0.1</td>
</tr>
<tr>
<td>Max 3DHx to DHx diff (dB)</td>
<td>e.g. 8.0</td>
</tr>
<tr>
<td>Max 2DHx to 3DHx diff (dB)</td>
<td>e.g. 5.0</td>
</tr>
<tr>
<td>Pass/fail state</td>
<td>e.g. PASS</td>
</tr>
</tbody>
</table>
Example: EPC0, TRUE, 1.5, -34.6, 6.4, 2.5, 0.1, TRUE, 1.0, -32.5, 7.2, 3.1, 0.1, 2.5, TRUE, 1.2, -30.4, 5.7, 5.0, 0.1, 8.0, 5.0, PASS

Extended Results

Extension Code: 1

If the extension code is 1, the results are appended to the end of each enhanced power step average power for the last cycle of each modulation supported. This comprises:

- Number of entries - e.g. 5 (Max number of steps kept is 150).
- Modulation code, Value in dB for each entry
  0 – GFSK
  1 – 2 Mbps
  2 – 3 Mbps

The GFSK result must always be present. The other modulations are only present within an entry if the packet configured was not OFF.

Example:

EPC1, TRUE, 1.5, -34.6, 6.4, 2.5, 0.1, TRUE, 1.0, -32.5, 7.2, 3.1, 0.1, 2.5, TRUE, 1.2, -30.4, 5.7, 5.0, 0.1, 8.0, 5.0, PASS, 225, 0, -1.90, 1, -1.91, 2, -1.91, 0, -4.89, 1, -4.90, 2, -4.90, 0, -7.88, 1, -7.89, 2, -7.89, 0, -10.87, 1, -10.89, 2, -10.89, 0, -13.85, 1, -13.87, 2, -13.88, 0, -16.86, 1, -16.87, 2, -16.88, 0, -19.89, 1, -19.91, 2, -19.91, 0, -22.87, 1, -22.88, 2, -22.89, 0, -25.88, 1, -25.92, 2, -25.91, 0, -28.96, 2, -28.96, 0, -31.96, 1, -31.95, 2, -31.98, 0, -34.95, 1, -34.97, 2, -34.97, 0, -38.03, 1, -38.04, 2, -38.04, 0, -34.93, 1, -34.96, 2, -34.96, 0, -31.93, 1, -31.95, 2, -31.95, 0, -28.96, 1, -28.97, 2, -28.97, 0, -25.88, 1, -25.90, 2, -25.92, 0, -22.87, 1, -22.89, 2, -22.89, 0, -19.89, 1, -19.91, 2, -19.91, 0, -16.86, 1, -16.87, 2, -16.88, 0, -13.86, 1, -13.87, 2, -13.88, 0, -10.88, 1, -10.89, 2, -10.89, 0, -7.88, 1, -7.89, 2, -7.89, 0, -4.90, 1, -4.91, 2, -4.90, 0, -1.90, 1, -1.91, 2, -1.91, 0, -1.88, 1, -1.89, 2, -1.89, 0, -4.87, 1, -4.88, 2, -4.89, 0, -7.86, 1, -7.87, 2, -7.87, 0, -10.84, 1, -10.85, 2, -10.86, 0, -13.82, 1, -13.83, 2, -13.84, 0, -16.91, 1, -16.91, 2, -16.92, 0, -19.91, 1, -19.92, 2, -19.93, 0, -22.88, 1, -22.89, 2, -22.90, 0, -25.89, 1, -25.91, 2, -25.92, 0, -28.75, 1, -2

Extension Codes

0  GFSK Standard
1  DPSK absolute power readings
2  8DPSK absolute power readings

Valid stages: HOPOFFL | HOPOFFM | HOPOFFH

Extension Code: 0

Results valid text string TRUE | FALSE
Max power floating point e.g. –1.7
Min power floating point e.g. –41.1
Max step floating point e.g. 4.0
Min step floating point e.g. 2.8
Rpt max Diff floating point e.g. 0.0
Basic Rate Tests

Rel Diff 2DHx floating point e.g. 5.0
Rel Diff 3DHx floating point e.g. 4.0
Failed integer e.g. 0
Tested integer e.g. 26
State text string PASS | FAIL
Example: XEPC,HOPOFFL,TRUE,-1.7,-41.1,4.0,2.8,0.0,5.0,4.0,0,26,PASS

Extension Code: 1

Results valid text string TRUE | FALSE
2DHx Max power floating point e.g. –1.7
2DHx Min power floating point e.g. –41.1
2DHx Max step floating point e.g. 4.0
2DHx Min step floating point e.g. 2.8
Rpt max Diff floating point e.g. 0.0
Rel Diff DHx floating point e.g. 5.0
Rel Diff 3DHx floating point e.g. 4.0
Failed integer e.g. 0
Tested integer e.g. 26
State text string PASS | FAIL
Example: XEPC1,HOPOFFL,TRUE,-1.7,-41.1,4.0,2.8,0.0,5.0,4.0,0,26,PASS

Extension Code: 2

Results valid text string TRUE | FALSE
3Mbps Max power floating point e.g. –1.7
3Mbps Min power floating point e.g. –41.1
3Mbps Max step floating point e.g. 4.0
3Mbps Min step floating point e.g. 2.8
Rpt max Diff floating point e.g. 0.0
Rel Diff DHx floating point e.g. 5.0
Rel Diff 2DHx floating point e.g. 4.0
Failed integer e.g. 0
Tested integer e.g. 26
State text string PASS | FAIL
Example: XEPC2,HOPOFFL,TRUE,-1.7,-41.1,4.0,2.8,0.0,5.0,4.0,0,26,PASS
Reading Test Results Data

Modulation Index Test Results

Summary Results

<table>
<thead>
<tr>
<th>Extension Codes</th>
<th>0: Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1: F2max % pass rate</td>
</tr>
</tbody>
</table>

Extension Code: 0

Results valid: e.g. TRUE | FALSE

Delta f1 max in Hz: e.g. 22e+003

Delta f1 average in Hz: e.g. 143e+003

Delta f2 max in Hz: e.g. 120e+003

Delta f2 average in Hz: e.g. 119e+003

Delta f2avg/ delta f1avg: e.g. 0.5

Pass/fail result: e.g. PASS | FAIL

Example: MII0, TRUE, 22e+003, 143e+003, 120e+003, 119e+003, 0.5, PASS

Extension Code: 1

F2max % pass rate: e.g. 98.70%

Example: MII0, TRUE, 22e3, 143e3, 120e3, 119e3, 0.5, PASS, 98.70

Extended Results

Valid stages: HOPOFFL | HOPOFFM | HOPOFFH

Results valid: text string

F1 max: floating point

F1 average: floating point

F2 max: floating point

F2 average: floating point

F2avg/F1avg: floating point

F2 max Failed: integer

F2 Max count (Total): integer

Failed: integer

Tested: integer

State: text string

PASS | FAIL

Example:

XMI, HOPOFFL, TRUE, 1.368e+005, 1.551e+005, 1.304e-005, 1.585e+005, 8.8e-001, 0, 3, 0, 20, PASS
Initial Carrier Test Results

**Summary Results**

<table>
<thead>
<tr>
<th>Extension Codes</th>
<th>0 Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Results valid</td>
<td>e.g. TRUE</td>
</tr>
<tr>
<td>Frequency offset in Hz</td>
<td>e.g. 12e+003</td>
</tr>
<tr>
<td>Test average offset in Hz</td>
<td>e.g. 10.4e+003</td>
</tr>
<tr>
<td>Max positive offset in Hz</td>
<td>e.g. 34e+003</td>
</tr>
<tr>
<td>Max negative offset in Hz</td>
<td>e.g. -38e+003</td>
</tr>
<tr>
<td>Pass/fail result</td>
<td>e.g. PASS</td>
</tr>
</tbody>
</table>

Example: **IC0,TRUE,12e3,10.4e3,34e3,-38e3,PASS**

**Extended Results**

Valid stages: HOPOFL | HOPOFM | HOPOFH | HOPONALL | HOPONANY | HOPONL | HOPONM | HOPONH

<table>
<thead>
<tr>
<th>Results valid</th>
<th>text string</th>
<th>TRUE</th>
<th>FALSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average offset</td>
<td>floating point value</td>
<td>e.g. 1.81e+004</td>
<td></td>
</tr>
<tr>
<td>Max +ve offset</td>
<td>floating point value</td>
<td>e.g. 2.07e+004</td>
<td></td>
</tr>
<tr>
<td>Max –ve offset</td>
<td>floating point value</td>
<td>e.g. 1.38e+004</td>
<td></td>
</tr>
<tr>
<td>Failed</td>
<td>integer</td>
<td>e.g. 0</td>
<td></td>
</tr>
<tr>
<td>Tested</td>
<td>integer</td>
<td>e.g. 10</td>
<td></td>
</tr>
<tr>
<td>State</td>
<td>text string</td>
<td>PASS</td>
<td>FAIL</td>
</tr>
</tbody>
</table>

Example: **XIC,HOPOFL,TRUE,1.81e+004,2.07e+004,1.38e+004,0,10**
Carrier Drift Test Results

Summary Results

**Extension Codes**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Standard</td>
<td></td>
</tr>
</tbody>
</table>

**Extension Code: 0**

- **Drift rate valid**: e.g. TRUE | FALSE
- **Test drift rate in Hz/50uS**: e.g. 24000
- **One slot drift valid**: e.g. TRUE | FALSE
- **One slot packet drift in Hz**: e.g. 23e+003
- **Three slot drift valid**: e.g. TRUE | FALSE
- **Three slot packet drift in Hz**: e.g. –33e+003
- **Five slot drift valid**: e.g. FALSE  (Five slot packets not tested)
- **Five slot packet drift in Hz**: e.g. –31e+003
- **Pass/fail result**: e.g. PASS | FAIL

Example:

```
CD0,TRUE,24000,TRUE,23e+003,TRUE,–33e+003,FALSE,–31e+003,PASS
```

Extended Results

**Valid stages:** HOPOFFL | HOPOFFM | HOPOFFH | HOPONALL | HOPONANY | HOPONL | HOPONM | HOPONH

**DH1 results valid**

- **text string**: TRUE | FALSE
- **Max rate DH1**: floating point e.g. 5170
- **Max drift DH1**: integer e.g. –7e+003
- **Average drift DH1**: integer e.g. –4e+003
- **DH1 Failed**: integer e.g. 0
- **DH1 Tested**: integer e.g. 30
- **DH1 State**: text string PASS | FAIL
- **DH3 results valid**

- **text string**: TRUE | FALSE
- **Max rate DH3**: integer e.g. 5170
- **Max drift DH3**: integer e.g. –7e+003
- **Average drift DH3**: integer e.g. –4e+003
- **DH3 Failed**: integer e.g. 0
- **DH3 Tested**: integer e.g. 30
- **DH3 State**: text string PASS | FAIL
- **DH5 results valid**

- **text string**: TRUE | FALSE
- **Max rate DH5**: floating point value e.g. 5170
- **Max drift DH5**: integer e.g. –7e+003
- **Average drift DH5**: integer e.g. –4e+003
Basic Rate Tests

DH5 Failed
Integer
 e.g. 0

DH5 Tested
Integer
 e.g. 30

DH5 State
Text “PASS | FAIL”
 e.g. PASS

Example:

XCD,HOPOFFL,TRUE,5170,-7e+003,-4e+003,0,10,PASS,TRUE,5170,-7e+003,
4e+003,0,10,PASS,TRUE,5170,-7e+003,-4e+003,0,10,PASS

Carrier Drift RESULT Output in NULL Packet Mode

The reply to the ORESULT request for the carrier drift test when in NULL Packet mode is as follows:

Null Average Drift valid
 e.g. TRUE | FALSE

Null Average Drift value in Hz
 e.g. 24e+003

Null Maximum Drift valid
 e.g. TRUE | FALSE

Null Maximum Drift value in Hz
 e.g. 25e+003

Dummy Entry 1
 always FALSE

Dummy Entry 2
 always 0.0

Dummy Entry 3
 always FALSE

Dummy Entry 4
 always 0.0

Pass/Fail result
 e.g. PASS | FAIL

Example:

CD0,TRUE,24e+003,TRUE,25e+003,FALSE,0.0,FALSE,0.0,PASS
Single Slot Sensitivity Test Results

Summary Results

Extension Codes
0: Standard
1: Frame Error Details
2: Received Packets errors
3: Total Transmitted Packets

Extension Code: 0
Results valid e.g. TRUE | FALSE
Current BER % e.g. 0.005
Overall BER % e.g. 0.005
Current FER % e.g. 0.009
Overall FER % e.g. 0.009
Pass/fail result e.g. PASS | FAIL

Extension Code: 1
Overall CRC frame errors e.g. 5 Returned packet had a changed CRC
Overall Length frame errors e.g. 1 Returned packet had a different length
Overall lost packet frame errors e.g. 10 No packet returned or unrecognisable

Example: SS1,TRUE,0.005,0.005,0.009,0.009,PASS,5,1,10

Extension Code: 2
Total packets received e.g. 100
Total bits in error e.g. 120
Total frames in error e.g. 10

Extension Code: 3
Total packets sent e.g. 100

Extended Results

Note The following results are applicable to both the single and multi slot sensitivity tests, and also to maximum input power.

Valid stages: HOPOFFL | HOPOFFM | HOPOFFH | HOPONANY (Note: HOPONANY is not applicable to Maximum input power)

Results valid text string e.g. TRUE | FALSE
Overall BER % floating point e.g. 0.019
Overall FER % floating point e.g. 0.001
State text string e.g. PASS | FAIL
FER CRC integer e.g. 4
Basic Rate Tests

FER length  integer  e.g. 1
FER lost     integer  e.g. 4
Packets received integer  e.g. 7404
Bit errors   integer  e.g. 11
Frame errors integer  e.g. 8
Packets sent integer  e.g. 7408

Example: XSS,HOPOFFL,TRUE,0.19,0.001,PASS,4,1,4,7404,11,8,7408
Multi Slot Sensitivity Test Results

Summary Results

Extension Codes
0: Standard
1: Frame Error Details
2: Received Packets errors
3: Total Transmitted Packets

Extension Code: 0
Results valid e.g. TRUE | FALSE
Current BER % e.g. 0.005
Overall BER % e.g. 0.005
Current FER % e.g. 0.009
Overall FER % e.g. 0.009
Pass/fer result e.g. PASS | FAIL

Extension Code: 1
Overall CRC FERs e.g. 5 Returned packet had a changed CRC
Overall Length FERs e.g. 1 Returned packet had a different length
Overall lost packet FERs e.g. 10 No packet returned or unrecognisable
Example: MS1,TRUE,0.005,0.005,0.009,0.009,PASS,5,1,10

Extension Code: 2
Total packets received e.g. 100
Total bits in error e.g. 120
Total frames in error e.g. 10

Extension Code: 3
Total packets sent e.g. 100

Extended Results
Refer to the extended screens section of the single slot sensitivity test.
Maximum Input Power Test Results

Summary Results

<table>
<thead>
<tr>
<th>Extension Codes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Standard</td>
</tr>
<tr>
<td>1</td>
<td>Frame Error Details</td>
</tr>
<tr>
<td>2</td>
<td>Received Packets errors</td>
</tr>
<tr>
<td>3</td>
<td>Total Transmitted Packets</td>
</tr>
</tbody>
</table>

Extension Code: 0

Results valid e.g. TRUE | FALSE
Current BER % e.g. 0.005
Overall BER % e.g. 0.005
Current FER % e.g. 0.009
Overall FER % e.g. 0.009
Pass/fail result e.g. PASS | FAIL

Extension Code: 1

Overall CRC FERs e.g. 5 Returned packet had a changed CRC
Overall Length FERs e.g. 1 Returned packet had a different length
Overall lost packet FERs e.g. 10 No packet returned or unrecognisable

Example: MP1,TRUE,0.005,0.005,0.009,0.009,PASS,5,1,10

Extension Code: 2

Total packets received e.g. 100
Total bits in error e.g. 120
Total frames in error e.g. 10

Extension Code: 3

Total packets sent e.g. 100

Extended Results

Refer to the extended screens section of the single slot sensitivity test.
15-6  EDR Tests

EDR Relative Transmit Power Test Results
(MT8852B and MT8852B-042 only)

Summary Results

Extension Codes

0: Standard
1: GFSK absolute power readings
2: DPSK absolute power readings
3: EDR packet guard time readings

Extension Code: 0

2 Mbps DHx results valid  e.g. TRUE | FALSE
Max 2 DHx power difference (dB)  e.g. –1.41
Min 2 DHx power difference (dB)  e.g. –1.37
Avg 2 DHx power difference (dB)  e.g. –1.38
2 Mbps Pass or Fail  e.g. PASS | FAIL

Extension Code: 1

Max 2 DHx GFSK absolute power (dBm)  e.g. 1.76
Min 2 DHx GFSK absolute power (dBm)  e.g. 0.86
Avg 2 DHx GFSK absolute power (dBm)  e.g. 1.33
Peak 2 DHx GFSK absolute power (dBm)  e.g. 2.11
Max 3 DHx GFSK absolute power (dBm)  e.g. 1.47
Min 3 DHx GFSK absolute power (dBm)  e.g. 0.94
Avg 3 DHx GFSK absolute power (dBm)  e.g. 1.28
Peak 3 DHx GFSK absolute power (dBm)  e.g. 1.84

Example:
ERP0,TRUE,-1.41,-1.37,-1.38,PASS,TRUE,-1.42,-1.36,-1.40,PASS

Extension Code: 2

Max 2 DHx DPSK absolute power (dBm)  e.g. 0.39
Min 2 DHx DPSK absolute power (dBm)  e.g. –0.54
Avg 2 DHx DPSK absolute power (dBm)  e.g. –0.05
Peak 2 DHx DPSK absolute power (dBm)  e.g. 3.09
Extended Results

The individual stage measurements for the EDR Relative Power test also includes extension code results. Note that there is no extension code ‘0’, as this only applies to the Summary measurement results.

Extension Code: 3

Max 3 DHx DPSK absolute power (dBm)  e.g. 0.10
Min 3 DHx DPSK absolute power (dBm)  e.g. –0.46
Avg 3 DHx DPSK absolute power (dBm)  e.g. –0.12
Peak 3 DHx DPSK absolute power (dBm)  e.g. 2.78

Example:
ERP3,TRUE,—1.41,—1.37,—1.38,PASS,TRUE,—1.42,—1.36,—1.40,PASS,1.76,
0.86,1.33,2.11,1.47,0.94,1.28,1.84,0.39,—0.54,—0.05,3.09,0.10,—0.46,
—0.12,2.78

Extension Code: 3

Min 2 DHx packet guard time (seconds)  e.g. 4.96e–006
Max 2 DHx packet guard time (seconds)  e.g. 5.01e–006
Min 3 DHx packet guard time (seconds)  e.g. 4.96e–006
Max 3 DHx packet guard time (seconds)  e.g. 5.01e–006

Example:
ERP3,TRUE,—1.41,—1.37,—1.38,PASS,TRUE,—1.42,—1.36,—1.40,PASS,1.76,
0.86,1.33,2.11,1.47,0.94,1.28,1.84,0.39,—0.54,—0.05,3.09,0.10,—0.46,
—0.12,2.78,4.96e–006,5.01e–006,4.96e–006,5.01e–006
Reading Test Results Data

3Mbps Pass or fail e.g. PASS | FAIL

Example:
XERP,HOPOFFLMAX,TRUE,-1.38,-1.36,-1.37,PASS,TRUE,-1.40,-1.36,-1.39,PASS

Extension Code: 1

Max 2 DHx GFSK absolute power (dBm) e.g. 1.76
Min 2 DHx GFSK absolute power (dBm) e.g. 1.66
Avg 2 DHx GFSK absolute power (dBm) e.g. 1.71
Peak 2 DHx GFSK absolute power (dBm) e.g. 2.11
Max 3 DHx GFSK absolute power (dBm) e.g. 1.47
Min 3 DHx GFSK absolute power (dBm) e.g. 1.44
Avg 3 DHx GFSK absolute power (dBm) e.g. 1.46
Peak 3 DHx GFSK absolute power (dBm) e.g. 1.84

Example:
XERP1,HOPOFFLMAX,TRUE,-1.38,-1.37,-1.37,PASS,TRUE,-1.40,-1.36,-1.39,PASS,1.76,1.66,1.71,2.11,1.47,1.44,1.46,1.84

Extension Code: 2

Max 2 DHx DPSK absolute power (dBm) e.g. 0.39
Min 2 DHx DPSK absolute power (dBm) e.g. 0.28
Avg 2 DHx DPSK absolute power (dBm) e.g. 0.33
Peak 2 DHx DPSK absolute power (dBm) e.g. 3.09
Max 3 DHx DPSK absolute power (dBm) e.g. 0.10
Min 3 DHx DPSK absolute power (dBm) e.g. 0.04
Avg 3 DHx DPSK absolute power (dBm) e.g. 0.06
Peak 3 DHx DPSK absolute power (dBm) e.g. 2.74

Example:
XERP2,HOPOFFLMAX,TRUE,-1.38,-1.37,-1.37,PASS,TRUE,-1.40,-1.36,-1.39,PASS,1.76,1.66,1.71,2.11,1.47,1.44,1.46,1.84,0.39,0.28,0.33,3.09,0.10,0.04,0.06,2.74

Extension Code: 3

Min 2 DHx packet guard time (seconds) e.g. 4.96e-006
Max 2 DHx packet guard time (seconds) e.g. 4.99e-006
Min 3 DHx packet guard time (seconds) e.g. 4.96e-006
Max 3 DHx packet guard time (seconds) e.g. 4.99e-006

Example:
XERP3,HOPOFFLMAX,TRUE,-1.38,-1.37,-1.37,PASS,TRUE,-1.40,-1.36,-1.39,PASS,1.76,1.66,1.71,2.11,1.47,1.44,1.46,1.84,0.39,0.28,0.33,3.09,0.10,0.04,0.06,2.74,4.96e-006,4.99e-006,4.96e-006,4.99e-006
EDR Carrier Frequency Stability and Modulation Accuracy Test Results
(MT8852B and MT8852B-042 only)

Summary Results

Extension Codes 0: Standard

Guard times

Extension Code: 0

2Mbps results Valid e.g. TRUE | FALSE
2Mbps RMS EVM e.g. 0.069
2Mbps PEAK DEVM e.g. 0.162
2Mbps 99% DEVM e.g. 100.00
2Mbps Avg RMS DEVM % e.g. 0.049
2Mbps Initial frequency error (kHz) e.g. –5.3
2Mbps Frequency error (kHz) e.g. 1.9
2Mbps Block freq error in (kHz) e.g. –6.3
2Mbps Pass or Fail e.g. PASS | FAIL

3Mbps results Valid e.g. TRUE | FALSE
3Mbps RMS EVM e.g. 0.063
3Mbps PEAK DEVM e.g. 0.162
3Mbps 99% DEVM e.g. 100.00
3Mbps Avg RMS DEVM % e.g. 0.050
3Mbps Initial frequency error (kHz) e.g. –5.9
3Mbps Frequency error (kHz) e.g. –6.5
3Mbps Block freq error (kHz) e.g. 2.0
3Mbps Pass or Fail e.g. PASS | FAIL

Example:
ECM0, TRUE, 0.069, 0.162, 100.00, 0.049, –5.3, 1.9, –6.3, PASS, TRUE, 0.063, 0.162, 100.00, 0.050, –5.9, 2.0, –6.5, PASS

Extension Code: 1

Min 2 DHx packet guard time (seconds) e.g. 4.96e–006
Max 2 DHx packet guard time (seconds) e.g. 5.00e–006
Min 3 DHx packet guard time (seconds) e.g. 4.95e–006
Max 3 DHx packet guard time (seconds) e.g. 5.00e–006

Example:
EECM1, TRUE, 0.069, 0.162, 100.00, 0.049, –5.3, 1.9, –6.3, PASS, TRUE, 0.063, 0.162, 100.00, 0.050, –5.9, 2.0, –6.5, PASS, 4.96e–006, 5.00e–006, 4.95e–006, 5.00e–006
Extended Results

The individual stage measurements for the EDR carrier Frequency Stability & Modulation Accuracy test also includes extension code results. Note that there is no extension code '0', as this only applies to the Summary measurement results.

Extension Codes

1: Guard times

Valid stages: HOPOFFL | HOPOFFM | HOPOFFH | HOPONL | HOPONM | HOPONH | HOPONALL | HOPONANY

Default Extended Results

<table>
<thead>
<tr>
<th>2Mbps results Valid text string</th>
<th>e.g. TRUE</th>
<th>FALSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2Mbps RMS EVM floating point</td>
<td>e.g. 0.070</td>
<td></td>
</tr>
<tr>
<td>2Mbps PEAK DEV floating point</td>
<td>e.g. 0.170</td>
<td></td>
</tr>
<tr>
<td>2Mbps 99% DEV floating point</td>
<td>e.g. 100.00</td>
<td></td>
</tr>
<tr>
<td>2Mbps Avg RMS DEV % floating point</td>
<td>e.g. 0.054</td>
<td></td>
</tr>
<tr>
<td>2Mbps Initial frequency error (kHz) floating point</td>
<td>e.g. –5.0</td>
<td></td>
</tr>
<tr>
<td>2Mbps Frequency error in (kHz) floating point</td>
<td>e.g. 1.7</td>
<td></td>
</tr>
<tr>
<td>2Mbps Block freq error in (kHz) floating point</td>
<td>e.g. –6.0</td>
<td></td>
</tr>
<tr>
<td>2Mbps Pass or Fail text string</td>
<td>e.g. PASS</td>
<td>FAIL</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3Mbps results Valid text string</th>
<th>e.g. TRUE</th>
<th>FALSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>3Mbps RMS EVM floating point</td>
<td>e.g. 0.064</td>
<td></td>
</tr>
<tr>
<td>3Mbps PEAK DEV floating point</td>
<td>e.g. 0.160</td>
<td></td>
</tr>
<tr>
<td>3Mbps 99% DEV floating point</td>
<td>e.g. 100.00</td>
<td></td>
</tr>
<tr>
<td>3Mbps Avg RMS DEV % floating point</td>
<td>e.g. 0.052</td>
<td></td>
</tr>
<tr>
<td>3Mbps Initial frequency error (kHz) floating point</td>
<td>e.g. –5.2</td>
<td></td>
</tr>
<tr>
<td>3Mbps Frequency error (kHz) floating point</td>
<td>e.g. –5.8</td>
<td></td>
</tr>
<tr>
<td>3Mbps Block freq error (kHz) floating point</td>
<td>e.g. 1.9</td>
<td></td>
</tr>
<tr>
<td>3Mbps Pass or Fail text string</td>
<td>e.g. PASS</td>
<td>FAIL</td>
</tr>
</tbody>
</table>

Example output:

XECM, HOPOFFL, TRUE, 0.070, 0.170, 100.00, 0.054, –5.0, 1.7, –6.0, PASS, TRUE, 0.064, 0.160, 100.00, 0.052, –5.2, 1.9, –5.8, PASS

Extension Code: 1

<table>
<thead>
<tr>
<th>Min 2 DHx packet guard time (seconds)</th>
<th>e.g. 4.96e–006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max 2 DHx packet guard time (seconds)</td>
<td>e.g. 4.99e–006</td>
</tr>
<tr>
<td>Min 3 DHx packet guard time (seconds)</td>
<td>e.g. 4.95e–006</td>
</tr>
<tr>
<td>Max 3 DHx packet guard time (seconds)</td>
<td>e.g. 4.99e–006</td>
</tr>
</tbody>
</table>
Example:

XECM1, HOPOFFL, TRUE, 0.070, 0.170, 100.00, 0.054, -5.0, 1.7, -6.0,
PASS, TRUE, 0.064, 0.160, 100.00, 0.052, -5.2, 1.9, -5.8, PASS, 4.96e-006,
4.99e-006, 4.95e-006, 4.99e-006
EDR Differential Phase Encoding Test Results
(MT8852B and MT8852B-042 only)

**Summary Results**

Extension Codes
0: Standard

Frame Error Details

Extension Code: 0

2Mbps Results Valid  e.g. TRUE | FALSE
2Mbps Packets received  e.g. 1000
2Mbps Packets in error  e.g. 4
2Mbps % Good Packets  e.g. 99
2Mbps Pass or Fail  e.g. PASS | FAIL

3Mbps Results Valid  e.g. TRUE | FALSE
3Mbps Packets received  e.g. 1000
3Mbps Packets in error  e.g. 6
3Mbps % Good Packets  e.g. 99
3Mbps Pass or Fail  e.g. PASS | FAIL

Example:
EDPO,TRUE,1000,4,99,PASS,TRUE,1000,6,99,PASS

Extension Code: 1

2Mbps Overall CRC FERs  e.g. 2 Returned packet had a changed CRC
2Mbps Overall Length FERs  e.g. 0 Returned packet had a different length
2Mbps Overall lost packet FERs  e.g. 2 No packet returned or unrecognisable
3Mbps Overall CRC FERs  e.g. 3
3Mbps Overall Length FERs  e.g. 0
3Mbps Overall lost packet FERs  e.g. 3

Example:
EDP1,TRUE,1000,4,99,PASS,TRUE,1000,6,99,PASS,2,0,2,3,0,3

**Extended Results**

The individual stage measurements for this test also includes extension code results. Note that there is no extension code ‘0’, as this only applies to the Summary measurement results.

Extension Codes

1: Frame Error Details

Valid stages: HOPOFFL | HOPOFFM | HOPOFFH | HOPONANY

Default Extended Results

2Mbps Results Valid  text string  e.g. TRUE | FALSE
2Mbps Packets received  integer  e.g. 100
2Mbps Packets in error  integer  e.g. 0
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>2Mbps Good Packets %</td>
<td>integer</td>
<td>e.g. 100</td>
</tr>
<tr>
<td>2Mbps Pass or Fail</td>
<td>text string</td>
<td>e.g. PASS</td>
</tr>
<tr>
<td>3Mbps Results Valid</td>
<td>text string</td>
<td>e.g. TRUE</td>
</tr>
<tr>
<td>3Mbps Packets received</td>
<td>integer</td>
<td>e.g. 100</td>
</tr>
<tr>
<td>3Mbps Packets in error</td>
<td>integer</td>
<td>e.g. 2</td>
</tr>
<tr>
<td>3Mbps Good Packets %</td>
<td>integer</td>
<td>e.g. 98</td>
</tr>
<tr>
<td>3Mbps Pass or Fail</td>
<td>text string</td>
<td>e.g. PASS</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
<td>XEDP, HOPOFFL, TRUE, 100, 0, 100, PASS, TRUE, 100, 2, 98, FAIL</td>
</tr>
<tr>
<td>Extension Code:</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>2Mbps Overall CRC FERs</td>
<td>e.g. 0</td>
<td>Returned packet had a changed CRC</td>
</tr>
<tr>
<td>2Mbps Overall Length FERs</td>
<td>e.g. 0</td>
<td>Returned packet had a different length</td>
</tr>
<tr>
<td>2Mbps Overall lost packet FERs</td>
<td>e.g. 0</td>
<td>No packet returned or unrecognisable</td>
</tr>
<tr>
<td>3Mbps Overall CRC FERs</td>
<td>e.g. 1</td>
<td></td>
</tr>
<tr>
<td>3Mbps Overall Length FERs</td>
<td>e.g. 0</td>
<td></td>
</tr>
<tr>
<td>3Mbps Overall lost packet FERs</td>
<td>e.g. 1</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
<td>XEDP1, HOPOFFL, TRUE, 100, 0, 100, PASS, TRUE, 100, 2, 98, FAIL, 0, 0, 0, 1, 0, 1</td>
</tr>
</tbody>
</table>
EDR Sensitivity Test Results
(MT8852B and MT8852B-042 only)

Summary Results

Extension Codes
0: Standard
1: Frame Error Details
2: Received Packets errors

Extension Code: 0
2Mbps results Valid e.g. TRUE | FALSE
2Mbps overall BER e.g. 0.00e+000
2Mbps Bits in error e.g. 0
2Mbps packets sent e.g. 900
2Mbps packets in error e.g. 0
2Mbps Pass or Fail e.g. PASS | FAIL
3Mbps results Valid e.g. TRUE | FALSE
3Mbps overall BER e.g. 3.89e–006
3Mbps Bits in error e.g. 20
3Mbps packets sent e.g. 630
3Mbps packets in error e.g. 23
3Mbps Pass or Fail e.g. PASS | FAIL
Example: EBS0,TRUE,0.00e+000,0,900,0,PASS,TRUE,3.89e-006,20,630,23,PASS

Extension Code: 1
2Mbps Overall CRC FERs e.g. 0 Returned packet had a changed CRC
2Mbps Overall Length FERs e.g. 0 Returned packet had a different length
2Mbps Overall lost packet FERs e.g. 0 No packet returned or unrecognisable
3Mbps Overall CRC FERs e.g. 22
3Mbps Overall Length FERs e.g. 0
3Mbps Overall lost packet FERs e.g. 1
Example:
EBS1,TRUE,0.00e+000,0,900,0,PASS,TRUE,3.89e-006,20,630,23,
PASS,0,0,22,0,1

Extension Code: 2
2Mbps Total packets received e.g. 900
3Mbps Total packets received e.g. 629
Example:
EBS2,TRUE,0.00e+000,0,900,0,PASS,TRUE,3.89e-006,20,630,23,PASS,
0,0,22,0,1,900,629
Extended Results

The individual stage measurements for this test also includes extension code results. Note that there is no extension code ‘0’, as this only applies to the Summary measurement results.

Extension Codes

1: Frame Error Details
2: Received Packets

Valid stages: HOPOFFL  |  HOPOFFM  |  HOPOFFH  |  HOPONANY

Default Extended Results

2Mbps Results valid  text string  e.g. TRUE | FALSE
2Mbps overall BER  floating point  e.g. 0.00e+000
2Mbps Bits in error  integer  e.g. 0
2Mbps packets sent  integer  e.g. 300
2Mbps packets in error  integer  e.g. 0
2Mbps Early Exit valid  text string  e.g. TRUE | FALSE
2Mbps Pass or Fail  text string  e.g. PASS | FAIL
3Mbps Results valid  text string  e.g. TRUE | FALSE
3Mbps overall BER  floating point  e.g. 5.83e-007
3Mbps Bits in error  integer  e.g. 1
3Mbps packets sent  integer  e.g. 210
3Mbps packets in error  integer  e.g. 2
3Mbps Early Exit valid  text string  e.g. TRUE | FALSE
3Mbps Pass or Fail  text string  e.g. PASS | FAIL

Example:
XEBS,HOPOFFM,TRUE,0.00e+000,0,300,0,TRUE,PASS,TRUE,5.83e-007,1,210,2,TRUE,PASS

Extension Code: 1

2Mbps Overall CRC FERs  e.g. 0  Returned packet had a changed CRC
2Mbps Overall Length FERs  e.g. 0  Returned packet had a different length
2Mbps Overall lost packet FERs  e.g. 0  No packet returned or unrecognisable
3Mbps Overall CRC FERs  e.g. 2
3Mbps Overall Length FERs  e.g. 0
3Mbps Overall lost packet FERs  e.g. 0

Example:
XEBS1,HOPOFFM,TRUE,0.00e+000,0,300,0,TRUE,PASS,TRUE,5.83e-007,1,210,2,TRUE,PASS,0,0,0,2,0,0

Extension Code: 2

2Mbps Total packets received  e.g. 300
3Mbps Total packets received  e.g. 210
Reading Test Results Data

Example:

XEBS2, HOPOFFM, TRUE, 0.00e+000, 0, 300, 0, TRUE, PASS, TRUE, 5.83e-007,
1, 210, 2, TRUE, PASS, 0, 0, 2, 0, 0, 300, 210
BER Floor Sensitivity Test Results
(MT8852B and MT8852B-042 only)

Summary Results

Extension Codes
0: Standard
1: Frame Error Details
2: Received Packets errors

Extension Code: 0
2Mbps results Valid e.g. TRUE | FALSE
2Mbps overall BER e.g. 0.00e+000
2Mbps Bits in error e.g. 0
2Mbps packets sent e.g. 4500
2Mbps packets in error e.g. 0
2Mbps Pass or Fail e.g. PASS | FAIL
3Mbps results Valid e.g. TRUE | FALSE
3Mbps overall BER e.g. 1.24e–006
3Mbps Bits in error e.g. 30
3Mbps packets sent e.g. 2970
3Mbps packets in error e.g. 29
3Mbps Pass or Fail e.g. PASS | FAIL

Example:
EFS0, TRUE, 0.00e+000, 0, 4500, 0, PASS, TRUE, 1.24e–006, 30, 2970, 29, PASS

Extension Code: 1
2Mbps Overall CRC FERs e.g. 0 Returned packet had a changed CRC
2Mbps Overall Length FERs e.g. 0 Returned packet had a different length
2Mbps Overall lost packet FERs e.g. 0 No packet returned or unrecognisable
3Mbps Overall CRC FERs e.g. 28
3Mbps Overall Length FERs e.g. 0
3Mbps Overall lost packet FERs e.g. 1

Example:
EFS1, TRUE, 0.00e+000, 0, 4500, 0, PASS, TRUE, 1.24e–006, 30, 2970, 29, PASS, 0, 0, 0, 28, 0, 1

Extension Code: 2
2Mbps Total packets received e.g. 4500
3Mbps Total packets received e.g. 2969

Example:
EFS2, TRUE, 0.00e+000, 0, 4500, 0, PASS, TRUE, 1.24e–006, 30, 2970, 29, PASS, 0, 0, 0, 28, 0, 1, 4500, 2969
Extended Results

The individual stage measurements for this test also includes extension code results. Note that there is no extension code ‘0’, as this only applies to the Summary measurement results.

Extension Codes
1: Frame Error Details
2: Received Packets

Valid stages: HOPOFFL | HOPOFFM | HOPOFFH | HOPONANY

Default Extended Results

2Mbps Results valid text string e.g. TRUE | FALSE
2Mbps overall BER floating point e.g. 0.00e+000
2Mbps Bits in error integer e.g. 0
2Mbps packets sent integer e.g. 1500
2Mbps packets in error integer e.g. 0
2Mbps Early Exit valid text string e.g. TRUE | FALSE
2Mbps Pass or Fail text string e.g. PASS | FAIL
3Mbps Results valid text string e.g. TRUE | FALSE
3Mbps overall BER floating point e.g. 9.89e–007
3Mbps Bits in error integer e.g. 8
3Mbps packets sent integer e.g. 990
3Mbps packets in error integer e.g. 7
3Mbps Early Exit valid text string e.g. TRUE | FALSE
3Mbps Pass or Fail text string e.g. PASS | FAIL

Example:
XEFS,HOPOFFM,TRUE,0.00e+000,0,1500,0,TRUE,PASS,TRUE,9.89e-007,8,990,7,TRUE,PASS

Extension Code: 1

2Mbps Overall CRC FERs e.g. 0 Returned packet had a changed CRC
2Mbps Overall Length FERs e.g. 0 Returned packet had a different length
2Mbps Overall lost packet FERs e.g. 0 No packet returned or unrecognisable
3Mbps Overall CRC FERs e.g. 7
3Mbps Overall Length FERs e.g. 0
3Mbps Overall lost packet FERs e.g. 0

Example:
XEFS1,HOPOFFM,TRUE,0.00e+000,0,1500,0,TRUE,PASS,TRUE,9.89e-007,8,990,7,TRUE,PASS,0,0,0,7,0,0

Extension Code: 2

2Mbps Total packets received e.g. 1500
3Mbps Total packets received e.g. 990
Example:
XEFS2, HOPOFFM, TRUE, 0.00e+000, 0, 1500, 0, TRUE, PASS, TRUE, 9.89e-007, 8, 990, 7, TRUE, PASS, 0, 0, 0, 7, 0, 0, 1500, 990
Maximum Input Power Test Results
(MT8852B and MT8852B-042 only)

Summary Results

Extension Codes
0: Standard
1: Frame Error Details
2: Received Packets

Extension Code: 0
2Mbps results Valid e.g. TRUE | FALSE
2Mbps overall BER e.g. 1.01e+000
2Mbps Bits in error e.g. 477
2Mbps packets sent e.g. 885
2Mbps packets in error e.g. 13
2Mbps Pass or Fail e.g. PASS | FAIL
3Mbps results Valid e.g. TRUE | FALSE
3Mbps overall BER e.g. 3.07e–004
3Mbps Bits in error e.g. 1403
3Mbps packets sent e.g. 588
3Mbps packets in error e.g. 32
3Mbps Pass or Fail e.g. PASS | FAIL

Example:
EMP0, TRUE, 1.01e-004, 477, 885, 13, PASS, TRUE, 3.07e-004, 1403, 588, 32, PASS

Extension Code: 1
2Mbps Overall CRC FERs e.g. 1 Returned packet had a changed CRC
2Mbps Overall Length FERs e.g. 1 Returned packet had a different length
2Mbps Overall lost packet FERs e.g. 12 No packet returned or unrecognisable
3Mbps Overall CRC FERs e.g. 4
3Mbps Overall Length FERs e.g. 2
3Mbps Overall lost packet FERs e.g. 28

Example:
EMP1, TRUE, 1.01e-004, 477, 885, 13, PASS, TRUE, 3.07e-004, 1403, 588, 32,
PASS, 1, 1, 12, 4, 2, 28

Extension Code: 2
2Mbps Total packets received e.g. 873
3Mbps Total packets received e.g. 560

Example:
EMP2, TRUE, 1.01e-004, 477, 885, 13, PASS, TRUE, 3.07e-004, 1403, 588, 32,
PASS, 1, 1, 12, 4, 2, 28, 873, 560
Extended Results

The individual stage measurements for this test also includes extension code results. Note that there is no extension code ‘0’, as this only applies to the Summary measurement results.

Extension Codes
1: Frame Error Details
2: Received Packets

Valid stages: HOPOFFL | HOPOFFM | HOPOFFH | HOPONANY

Default Extended Results

2Mbps Results valid   text string   e.g. TRUE | FALSE
2Mbps overall BER    floating point e.g. 3.10e–004
2Mbps Bits in error  integer       e.g. 477
2Mbps packets sent   integer       e.g. 295
2Mbps packets in error integer       e.g. 13
2Mbps Pass or Fail   text string   e.g. PASS | FAIL
3Mbps Results valid   text string   e.g. TRUE | FALSE
3Mbps overall BER    floating point e.g. 9.35e–004
3Mbps Bits in error  integer       e.g. 1403
2Mbps packets sent   integer       e.g. 196
2Mbps packets in error integer       e.g. 16
3Mbps Pass or Fail   text string   e.g. PASS | FAIL

Example:
XEMP, HOPOFFM, TRUE, 3.10e-004, 477, 295, 13, PASS, TRUE, 9.35e-004, 1403, 196, 16, PASS

Extension Code: 1

2Mbps Overall CRC FERs e.g. 1 Returned packet had a changed CRC
2Mbps Overall Length FERs e.g. 1 Returned packet had a different length
2Mbps Overall lost packet FERs e.g. 12 No packet returned or unrecognisable
3Mbps Overall CRC FERs   e.g. 4
3Mbps Overall Length FERs e.g. 2
3Mbps Overall lost packet FERs e.g. 12

Example:
XEMP1, HOPOFFM, TRUE, 3.10e-004, 477, 295, 13, PASS, TRUE, 9.35e-004, 1403, 196, 16, PASS, 1, 1, 12, 4, 2, 12

Extension Code: 2

2Mbps Total packets received  e.g. 283
3Mbps Total packets received  e.g. 184
Example:

XEMP2, HOPOFFM, TRUE, 3.10e-004, 477, 295, 13, PASS, TRUE, 9.35e-004, 1403, 196, 16, PASS, 1, 1, 12, 2, 12, 283, 184
EDR Guard Time Test Results
(MT8852B and MT8852B-042 only)

Summary Results

Extension Codes
  Extension Code: 0
  2Mbps results Valid e.g. TRUE | FALSE
  Max 2 DHx packet guard time (seconds) e.g. 5.01e–006
  Min 2 DHx packet guard time (seconds) e.g. 4.98e–006
  2Mbps packets in error e.g. 6
  2Mbps packets pass % e.g. 98
  2Mbps Pass or Fail e.g. PASS | FAIL
  3Mbps results valid e.g. TRUE | FALSE
  Max 3 DHx packet guard time (seconds) e.g. 5.00e–006
  Min 3 DHx packet guard time (seconds) e.g. 4.99e–006
  3Mbps packets in error e.g. 13
  3Mbps packets pass % e.g. 96
  3Mbps Pass or Fail e.g. PASS | FAIL

Example:
EGT0, TRUE, 5.01e-006, 4.98e-006, 6, 98, PASS, TRUE, 5.00e-006, 4.99e-006, 13, 96, PASS

Extended Results

Extension Codes
  Extension Code: 0
  Valid stages: HOPOFFL | HOPOFFM | HOPOFFH

  2Mbps results valid text string e.g. TRUE | FALSE
  Max 2 DHx packet guard time (seconds) floating point e.g. 5.01e–006
  Min 2 DHx packet guard time (seconds) floating point e.g. 4.98e–006
  2Mbps packets in error integer e.g. 2
  2Mbps packets pass % integer e.g. 98
  2Mbps Pass or Fail text string e.g. PASS | FAIL
  3Mbps results valid text string e.g. TRUE | FALSE
  Max 3 DHx packet guard time (seconds) floating point e.g. 5.00e–006
  Min 3 DHx packet guard time (seconds) floating point e.g. 4.99e–006
**Reading Test Results Data**

<table>
<thead>
<tr>
<th>3Mbps packets in error</th>
<th>integer</th>
<th>e.g. 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>3Mbps packets pass %</td>
<td>integer</td>
<td>e.g. 96</td>
</tr>
<tr>
<td>3Mbps Pass or Fail</td>
<td>text string</td>
<td>e.g. PASS</td>
</tr>
</tbody>
</table>

Example:

XEGT HOPOFFL,TRUE,5.01e-006,4.98e-006,2,98,PASS,TRUE,5.00e-006,4.99e-006,4,96,PASS
EDR Synchronization Sequence and Trailer Test Results
(MT8852B and MT8852B-042 only)

Summary Results

- Extension Codes
  - Extension Code: 0: Standard
- 2Mbps results Valid
  - e.g. TRUE | FALSE
- 2 DHx synchronization sequence bits received
  - e.g. 3000
- 2 DHx synchronization sequence bits in error
  - e.g. 0
- 2 DHx synchronization sequence bits percent %
  - e.g. 0
- 2 DHx trailer bits received
  - e.g. 600
- 2 DHx trailer bits in error
  - e.g. 0
- 2 DHx trailer bits percent %
  - e.g. 0
- 2Mbps Pass or Fail
  - e.g. PASS | FAIL

- 3Mbps results valid
  - e.g. TRUE | FALSE
- 3 DHx synchronization sequence bits received
  - e.g. 4500
- 3 DHx synchronization sequence bits in error
  - e.g. 0
- 3 DHx synchronization sequence bits percent %
  - e.g. 0
- 3 DHx trailer bits received
  - e.g. 900
- 3 DHx trailer bits in error
  - e.g. 0
- 3 DHx trailer bits percent %
  - e.g. 0
- 3Mbps Pass or Fail
  - e.g. PASS | FAIL

Example:

```
EST0,TRUE,3000,0,0,600,0,0,PASS,TRUE,4500,0,0,900,0,0,PASS
```

Extended Results

- Extension Codes
  - 0: Standard
- Valid stages: HOPOFFL | HOPOFFM | HOPOFFH
- Extension Code: 0
- 2Mbps Results valid
  - text string
  - e.g. TRUE | FALSE
- 2 DHx synchronization sequence bits received
  - integer
  - e.g. 1000
- 2 DHx synchronization sequence bits in error
  - integer
  - e.g. 0
- 2 DHx synchronization sequence bits percent %
  - integer
  - e.g. 0
- 2 DHx trailer bits received
  - integer
  - e.g. 200
- 2 DHx trailer bits in error
  - integer
  - e.g. 0
- 2 DHx trailer bits percent %
  - integer
  - e.g. 0
### Reading Test Results Data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>2Mbps Pass or Fail</td>
<td>text string</td>
<td>e.g. PASS</td>
</tr>
<tr>
<td>3Mbps results valid</td>
<td>text string</td>
<td>e.g. TRUE</td>
</tr>
<tr>
<td>3 DHx synchronization sequence bits received</td>
<td>integer</td>
<td>e.g. 1500</td>
</tr>
<tr>
<td>3 DHx synchronization sequence bits in error</td>
<td>integer</td>
<td>e.g. 0</td>
</tr>
<tr>
<td>3 DHx synchronization sequence bits percent %</td>
<td>integer</td>
<td>e.g. 0</td>
</tr>
<tr>
<td>3 DHx trailer bits received</td>
<td>integer</td>
<td>e.g. 300</td>
</tr>
<tr>
<td>3 DHx trailer bits in error</td>
<td>integer</td>
<td>e.g. 0</td>
</tr>
<tr>
<td>3 DHx trailer bits percent %</td>
<td>integer</td>
<td>e.g. 0</td>
</tr>
<tr>
<td>3Mbps Pass or Fail</td>
<td>text string</td>
<td>e.g. PASS</td>
</tr>
</tbody>
</table>

Example:

`XEST, HOPOFFL, TRUE, 1000, 0, 0, 200, 0, 0, PASS, TRUE, 1500, 0, 0, 300, 0, 0, PASS`
15-7  Low Energy Tests

BLE Output Power Test Results
(MT8852B-043 and units with option 27 only)

Summary Results

<table>
<thead>
<tr>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extension Codes</td>
<td>0: Standard</td>
</tr>
<tr>
<td>Extension Code:</td>
<td>0</td>
</tr>
<tr>
<td>Results valid</td>
<td>e.g. TRUE</td>
</tr>
<tr>
<td>Packet average power in dBm</td>
<td>e.g. –3.43</td>
</tr>
<tr>
<td>Test avg max in dBm</td>
<td>e.g. –2.40</td>
</tr>
<tr>
<td>Test avg min in dBm</td>
<td>e.g. –4.64</td>
</tr>
<tr>
<td>Test peak to average power in dBm</td>
<td>e.g. 0.12</td>
</tr>
<tr>
<td>Number of failed packets</td>
<td>e.g. 0</td>
</tr>
<tr>
<td>Number of tested packets</td>
<td>e.g. 30</td>
</tr>
<tr>
<td>Pass/fail result</td>
<td>e.g. PASS</td>
</tr>
</tbody>
</table>

Example:

LEOP0,TRUE,-3.43,-2.40,-4.64,0.12,0,30,PASS

Extended Results

Valid stages: HOPOFFL | HOPOFFM | HOPOFFH

<table>
<thead>
<tr>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Results valid</td>
<td>text string</td>
</tr>
<tr>
<td>Test avg</td>
<td>floating point</td>
</tr>
<tr>
<td>Test max</td>
<td>floating point</td>
</tr>
<tr>
<td>Test min</td>
<td>floating point</td>
</tr>
<tr>
<td>Test peak to average</td>
<td>floating point</td>
</tr>
<tr>
<td>Failed</td>
<td>Integer</td>
</tr>
<tr>
<td>Tested</td>
<td>Integer</td>
</tr>
<tr>
<td>State</td>
<td>Text string</td>
</tr>
</tbody>
</table>

Example:

XLEOP,HOPAFFL,TRUE,-4.64,-4.63,-4.64,0.10,0,10,PASS
BLE Carrier Frequency Offset and Drift Test Results  
(MT8852B-043 and units with option 27 only)

### Summary Results

<table>
<thead>
<tr>
<th>Extension Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Standard</td>
</tr>
<tr>
<td>1</td>
<td>Include initial drift rate measurement in results</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Extension Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Include initial drift rate measurement in results</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Drift rate valid</th>
<th>e.g. TRUE</th>
<th>FALSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Fn</td>
<td>e.g. –800</td>
<td></td>
</tr>
<tr>
<td>Maximum Positive Fn</td>
<td>e.g. 300</td>
<td></td>
</tr>
<tr>
<td>Minimum Negative Fn</td>
<td>e.g. –2300</td>
<td></td>
</tr>
<tr>
<td>Drift rate</td>
<td>e.g. –1865</td>
<td></td>
</tr>
<tr>
<td>Average drift</td>
<td>e.g. –2000</td>
<td></td>
</tr>
<tr>
<td>Maximum drift</td>
<td>e.g. –2000</td>
<td></td>
</tr>
<tr>
<td>Packets Failed</td>
<td>e.g. 0</td>
<td></td>
</tr>
<tr>
<td>Packets Tested</td>
<td>e.g. 10</td>
<td></td>
</tr>
<tr>
<td>Pass/fail result</td>
<td>e.g. PASS</td>
<td>FAIL</td>
</tr>
</tbody>
</table>

#### Example:

**LEICD0,TRUE,–800,300,–2300,–1865,–2000,–2000,0,10,PASS**

#### Extension Code: 1

| Initial drift rate | e.g. 2000 |

#### Example:

**LEICD1,TRUE,–800,300,–2300,–1865,–2000,–2000,0,10,PASS,2000**

### Extended Results

<table>
<thead>
<tr>
<th>Extension Codes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>initial carrier drift</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Valid stages</th>
<th>HOPOFL</th>
<th>HOPOFFM</th>
<th>HOPOFFH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Results valid</td>
<td>text string</td>
<td>TRUE</td>
<td>FALSE</td>
</tr>
<tr>
<td>Average Fn</td>
<td>integer</td>
<td>e.g. –800</td>
<td></td>
</tr>
<tr>
<td>Maximum Positive Fn</td>
<td>integer</td>
<td>e.g. 300</td>
<td></td>
</tr>
<tr>
<td>Maximum Negative Fn</td>
<td>integer</td>
<td>e.g. –2300</td>
<td></td>
</tr>
<tr>
<td>Max drift rate</td>
<td>integer</td>
<td>e.g. –1865</td>
<td></td>
</tr>
<tr>
<td>Parameter</td>
<td>Type</td>
<td>Example</td>
<td></td>
</tr>
<tr>
<td>-----------------</td>
<td>------------</td>
<td>----------------</td>
<td></td>
</tr>
<tr>
<td>Average drift</td>
<td>integer</td>
<td>e.g. –2000</td>
<td></td>
</tr>
<tr>
<td>Max drift</td>
<td>integer</td>
<td>e.g. –2000</td>
<td></td>
</tr>
<tr>
<td>Failed</td>
<td>integer</td>
<td>e.g. 0</td>
<td></td>
</tr>
<tr>
<td>Tested</td>
<td>integer</td>
<td>e.g. 30</td>
<td></td>
</tr>
<tr>
<td>State</td>
<td>text string</td>
<td>PASS</td>
<td>FAIL</td>
</tr>
</tbody>
</table>

Example:

```
XLEICD,HOPPOFFL,TRUE,-800,300,-2300,1865,-2000,-2000,0,30,PASS
```

Extension code: 1

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial carrier drift</td>
<td>integer</td>
<td>e.g. –1934</td>
</tr>
</tbody>
</table>

Example:

```
XLEICD1,HOPPOFFL,TRUE,-800,300,-2300,1865,-2000,-2000,0,30,PASS,-1934
```
BLE Modulation Characteristics Test Results
(MT8852B-043 and units with option 27 only)

Summary Results (Note variations when measuring BLR8 packets.)

<table>
<thead>
<tr>
<th>Extension Codes</th>
<th>0: Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Results valid</td>
<td>e.g. TRUE</td>
</tr>
<tr>
<td>Delta f1 max in Hz</td>
<td>e.g. 2.717e+005</td>
</tr>
<tr>
<td>Delta f1 average in Hz</td>
<td>e.g. 2.644e+005</td>
</tr>
<tr>
<td>Delta f2 max in Hz</td>
<td>(Delta f1 max lowest for BLR8)</td>
</tr>
<tr>
<td>Delta f2 average in Hz</td>
<td>(omitted for BLR8)</td>
</tr>
<tr>
<td>Delta f2 avg / delta f1 avg</td>
<td>(Omitted for BLR8)</td>
</tr>
<tr>
<td>Delta f2 max Failed limit</td>
<td>(Delta f1 max Failed limit for BLR8)</td>
</tr>
<tr>
<td>Delta f2 max count</td>
<td>(Delta f1 max count for BLR8)</td>
</tr>
<tr>
<td>Packets failed</td>
<td>e.g. 0</td>
</tr>
<tr>
<td>Packets tested</td>
<td>e.g. 30</td>
</tr>
<tr>
<td>Pass/fail result</td>
<td>e.g. PASS</td>
</tr>
<tr>
<td>Delta f2 max % pass rate</td>
<td>(Delta f1 max % pass rate for BLR8)</td>
</tr>
</tbody>
</table>

Example:
LEMI0,TRUE,2.717e+005,2.644e+005,2.086e+005,2.191e+005,0.820,0,8640,0,30,PASS,100.00%

Extended Results (Note variations when measuring BLR8 packets)

<table>
<thead>
<tr>
<th>Valid stages</th>
<th>text string</th>
<th>HOPOFFL</th>
<th>HOPOFFM</th>
<th>HOPOFFH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Results valid</td>
<td>text string</td>
<td>TRUE</td>
<td>FALSE</td>
<td></td>
</tr>
<tr>
<td>Delta f1 max</td>
<td>floating point</td>
<td>e.g. 2.696e+005</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delta f1 average</td>
<td>floating point</td>
<td>e.g. 2.644e+005</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delta f2 max</td>
<td>floating point</td>
<td>e.g. 2.136e+005</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Delta f1 max lowest for BLR8)
### Low Energy Tests

<table>
<thead>
<tr>
<th>Description</th>
<th>Type</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delta f2 average (Omitted for BLR8)</td>
<td>floating point</td>
<td>e.g. 2.253e+05</td>
</tr>
<tr>
<td>Delta f2avg / Delta f1avg (Omitted for BLR8)</td>
<td>floating point</td>
<td>e.g. 0.850</td>
</tr>
<tr>
<td>Delta f2 max Failed (Delta f1 max failed for BLR8)</td>
<td>integer</td>
<td>e.g. 0</td>
</tr>
<tr>
<td>Delta f2 max count (Total) (Delta f1 max count - total - for BLR8)</td>
<td>integer</td>
<td>e.g. 2880</td>
</tr>
<tr>
<td>Failed</td>
<td>integer</td>
<td>e.g. 0</td>
</tr>
<tr>
<td>Tested</td>
<td>integer</td>
<td>e.g. 20</td>
</tr>
<tr>
<td>State</td>
<td>text string</td>
<td>PASS</td>
</tr>
<tr>
<td>Delta f2 max % pass rate (Delta f1 max % pass rate for BLR8)</td>
<td>floating point</td>
<td>e.g. 100.0%</td>
</tr>
</tbody>
</table>

Example:

```
XLEMI,HOPOFFL,TRUE,2.696e+005,2.644e+005,2.136e+005,2.253e+005,0.850,0,2880,0,20,PASS,100.00%
```
BLE Tx Power Stability Test Results
(Units with option 37 only)

Summary Results

Extension Codes

0: Standard
1: All slot results

Extension Code: 0

Results valid e.g. TRUE | FALSE

Tx reference power e.g. 0.04

Slot max power e.g. 0.23

Slot average power e.g. 0.18

Number of failed packets e.g. 0

Number of tested packets e.g. 30

Pass/fail result e.g. PASS

Example:
LEPSBLECTE1US0,TRUE,0.04,0.23,0.11,0,30,PASS

Extension Code: 1

Slot #01 power e.g. 0.21

Slot #02 power e.g. 0.01

... Slot #74 power (when 1 μs slot duration)

or Slot #37 power (when 2 μs slot duration) e.g. 0.14

Example:
LEPSBLECTE1US0,TRUE,0.04,0.23,0.11,0,30,PASS,0.21,0.01,0.23,0.13,0.17,0.19,0.20,0.23,0.12,0.11,0.19,0.19,0.20,0.21,0.12,0.17,0.00,0.03,0.17,0.11,0.18,0.16,0.05,0.18,0.13,0.00,0.05,0.06,0.11,0.03,0.04,0.01,0.09,0.06,0.12,0.09,0.21,0.19,0.21,0.04,0.20,0.03,0.05,0.06,0.09,0.22,0.16,0.15,0.13,0.12,0.03,0.08,0.22,0.19,0.16,0.01,0.23,0.13,0.02,0.19,0.17,0.08,0.18,0.21,0.02,0.17,0.05,0.02,0.16,0.22,0.04,0.12,0.03,0.14

Remark

–999.00 is returned when no measurement is performed in the slot powers.
**Extended Results**

Valid stages: | HOPOFFL | HOPOFFM | HOPOFFH
---|---|---|---
Extension Codes: 0: Standard | | |
1: All slot results | | |

Extension Code: 0

Results valid: e.g. TRUE | FALSE
Tx reference power: e.g. 0.04
Slot max power: e.g. 0.23
Slot average power: e.g. 0.18
Number of failed packets: e.g. 0
Number of tested packets: e.g. 30
Pass/fail result: e.g. PASS

Example:

XLEPSBLECTE1US, HOPOFFL, TRUE, 0.04, 0.23, 0.018, 0, 30, PASS

Extension Code: 1

Slot #01 power: e.g. 0.16
Slot #02 power: e.g. 0.14
Slot #74 power (when 1 µs slot duration) or Slot #37 power (when 2 µs slot duration) e.g. 0.10

Example:

XLEPSBLECTE1US, HOPOFFL, TRUE, 0.04, 0.23, 0.018, 0, 30, PASS, 0.16, 0.14, 0.11, 0.09, 0.21, 0.16, 0.01, 0.03, 0.09, 0.21, 0.22, 0.08, 0.12, 0.20, 0.06, 0.05, 0.17, 0.08, 0.08, 0.09, 0.19, 0.10, 0.22, 0.06, 0.16, 0.09, 0.04, 0.20, 0.16, 0.06, 0.19, 0.16, 0.02, 0.19, 0.15, 0.06, 0.17, 0.13, 0.01, 0.09, 0.11, 0.03, 0.07, 0.17, 0.08, 0.09, 0.19, 0.17, 0.09, 0.07, 0.05, 0.12, 0.12, 0.21, 0.21, 0.17, 0.16, 0.18, 0.19, 0.01, 0.12, 0.15, 0.18, 0.01, 0.22, 0.13, 0.10

Remark

-999.00 is returned when no measurement is performed in the slot powers.
BLE Receiver Sensitivity Test Results
(MT8852B-043 and units with option 27 only)

Summary Results

Extension Codes 0: Standard
Extension Code: 0
Results valid e.g. TRUE | FALSE
Overall FER % e.g. 1.6%
Total Frames Counted by DUT e.g. 1476
Total Frames Sent by Tester e.g. 1500
Pass/fail result e.g. PASS | FAIL

Example:
LESS0,TRUE,0.016, 1476,1500,PASS

Extended Results

Valid stages: HOPOFL | HOPOFM | HOPOFFH
Results valid text string e.g. TRUE | FALSE
Overall FER % floating point e.g. 0.016
Total Frames Counted by DUT integer e.g. 1476
Total Frames Sent by Tester integer e.g. 1500
Pass/fail result text e.g. PASS | FAIL

Example:
XLESS,HOPOFL,TRUE,0.016,1476,1500,PASS
BLE PER Report Integrity Test Results
(MT8852B-043 and units with option 27 only)

Extension code: 0: Standard
Extension Code: 0
Results valid text string e.g. TRUE | FALSE
Mode text string e.g. RANDOM
Cycles Integer e.g. 3

Results are in pairs of Number of packets followed by the PER result. So for 3 cycles the results would be:

PER results for each run floating point e.g. 50.0,
Number of pkts Received Integer e.g. 63,
Number of pkts Transmitted Integer e.g. 126,
Run state text string e.g. PASS
PER results for each run floating point e.g. 55.4,
Number of pkts Received Integer e.g. 32,
Number of pkts Transmitted Integer e.g. 254,
Run state text string e.g. PASS
PER results for each run floating point e.g. 55.8,
Number of pkts Received Integer e.g. 32,
Number of pkts Transmitted Integer e.g. 1500,
Run state text string e.g. PASS
State text string e.g. PASS | FAIL

Example:
LEPRI0,TRUE,RANDOM,3,50.0,63,126,PASS,55.4,32,254,PASS,55.8,32,1500,FAIL,FAIL
BLE Maximum Input Signal Level Test Results
(MT8852B-043 and units with option 27 only)

Summary Results

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Extension Codes</td>
<td>0: Standard</td>
</tr>
<tr>
<td>Extension Code</td>
<td>0</td>
</tr>
<tr>
<td>Results valid</td>
<td>e.g. TRUE</td>
</tr>
<tr>
<td>Overall FER %</td>
<td>e.g. 1.6%</td>
</tr>
<tr>
<td>Total Frames Counted by DUT</td>
<td>e.g. 1476</td>
</tr>
<tr>
<td>Total Frames Sent by Tester</td>
<td>e.g. 1500</td>
</tr>
<tr>
<td>Pass/fail result</td>
<td>e.g. PASS</td>
</tr>
</tbody>
</table>

Example:
LEMP0,TRUE,0.016,1476,1500,PASS

Extended Results

Valid stages: HOPOFFL | HOPOFFM | HOPOFFH

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Results valid</td>
<td>text string</td>
</tr>
<tr>
<td>Overall FER %</td>
<td>floating point</td>
</tr>
<tr>
<td>Total Frames Counted by DUT</td>
<td>integer</td>
</tr>
<tr>
<td>TotalFrames Sent by Tester</td>
<td>integer</td>
</tr>
<tr>
<td>Pass/fail result</td>
<td>text</td>
</tr>
</tbody>
</table>

Example:
XLEMP0,HOP,HOPOFFL,TRUE,0.016,1476,1500,PASS
Chapter 16 — BLE Measurement

This chapter provides details of the Bluetooth low energy measurement commands and associated parameters. The commands in this chapter are listed in alphabetical order.

**ABORTCAP Abort the BLE Measurement Capture**

If the MT8852B is unable to measure a BLE packet, the ABORTCAP command can be used to stop the measurement capture.

Set Command format  ABORTCAP

**CFGBLECAP (Configure BLE Capture)**

<table>
<thead>
<tr>
<th>Set command format</th>
<th>CFGBLECAP&lt;ws&gt;&lt;channel&gt;&lt;,&gt;&lt;ExtTrig&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remarks</td>
<td>This command configures the MT8852B to receive a BLE test packet on the configured BLE channel.</td>
</tr>
<tr>
<td>&lt;channel&gt;</td>
<td>BLE RF channel number, range 0 to 39.</td>
</tr>
<tr>
<td>&lt;ExtTrig&gt;</td>
<td>Trigger source for capture:</td>
</tr>
<tr>
<td></td>
<td>RF: Trigger on the received RF signal</td>
</tr>
<tr>
<td></td>
<td>EXT: Trigger on the EXT BNC input</td>
</tr>
<tr>
<td>Example</td>
<td>To configure the MT8852B to capture a BLE test packet on BLE RF channel 3 (2406MHz), and to trigger on the received RF, the command would be:</td>
</tr>
<tr>
<td></td>
<td>CFGBLECAP  3,RF</td>
</tr>
</tbody>
</table>

16-1
LESCPTCFG (Configure all measurements in a script in parallel)

LEPKTTYPE

Set command format

LESCPTCFG<ws><script><,>LEPKTTYPE<,><packet_type><,><state>

Remarks

This command allows all low energy measurements in a script to be configured in parallel. It is when testing Bluetooth 5 devices because it allows the same combination of packet types to be applied to every measurement in the script. For example “BLE”, “2LE” and “LR8” can be enabled for every measurement in a script using a single command.

<script> Script number, 1 to 10

<packet_type> BLE - BLE 1 Msymbol/s.
2LE - 2 Msymbol/s
LR8 - LE coded (S=8)
LR2 - LE coded (S=2)
BLECTE - BLE 1 Msymbol/s with CTE
2LECTE - 2 Msymbol/s with CTE

Note that these settings will be applied only to those tests that support them and will be ignored for other cases. For example, LR2 packets are not supported for any of the transmitter tests.

<state> TRUE or FALSE

Example

To enable testing on the 2LE packet type only for all tests in script 3, use:

LESCPTCFG 3, LEPKTTYPE, LR2, FALSE
LESCPTCFG 3, LEPKTTYPE, LR8, FALSE
LESCPTCFG 3, LEPKTTYPE, 2LE, TRUE
LESCPTCFG 3, LEPKTTYPE, BLE, FALSE
LESCPTCFG 3, LEPKTTYPE, BLECTE, FALSE
LESCPTCFG 3, LEPKTTYPE, 2LECTE, FALSE
**CTESLOT**

<table>
<thead>
<tr>
<th>Set command format</th>
<th>LESCPTCFG&lt;ws&gt;&lt;script&gt;,&lt;,&gt;CTESLOT,&lt;,&gt;&lt;duration&gt;,&lt;,&gt;&lt;state&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remarks</td>
<td>This command allows all low energy measurements in a script to be configured in parallel. It is when testing Bluetooth 5 devices because it allows the same combination of CTE slot duration to be applied to every measurement in the script.</td>
</tr>
<tr>
<td>&lt;script&gt;</td>
<td>Script number, 3 to 10</td>
</tr>
<tr>
<td>&lt;duration&gt;</td>
<td>1US (slot duration 1 µs) 2US (slot duration 2 µs)</td>
</tr>
<tr>
<td>&lt;state&gt;</td>
<td>TRUE or FALSE</td>
</tr>
<tr>
<td>Example</td>
<td>To enable testing on the 1 µs only for all tests in script 3, use:</td>
</tr>
<tr>
<td></td>
<td>LESCPTCFG 3, CTESLOT, 1US, TRUE</td>
</tr>
<tr>
<td></td>
<td>LESCPTCFG 3, CTESLOT, 2US, FALSE</td>
</tr>
</tbody>
</table>
MEASBLECAP (Capture and Make BLE Tx Measurement)

Set command format

MEASBLECAP<ws><BLEmeas><,><MODType><,><syncword>

Remarks

This command enables the MT8852B to capture the BLE test packet based on the trigger set up using the CFGBLECAP command. When the packet is captured, the BLE Tx test measurement is performed using the limit parameters set in the selected script.

<BLEmeas>

- LEOP: Perform output power measurement on BLE, 2LE or BLR8 packets.
- LEOP2M(#1), LEOPLR8 (#2): Perform carrier frequency offset and drift measurement on BLE, 2LE or BLR8 packets.
- LEICD: Perform modulation characteristics measurements on BLE, 2LE or BLR8 packets.
- LEICD2M, LEICDLR8 (LEMI, LEMI2M (#1), LEMILR8 (#2): Requires Option 35 or 62

<MODType>

Modulation measurements performed. Only used when the BLEmeas is set to one of the modulation characteristics measurements. Otherwise set to “NA”.

- MOD10101010: Only allowed when BLEmeas is LEMI or LEMI2M.
- MOD11110000: Only allowed when BLEmeas is LEMI or LEMI2M.
- MOD11111111: Only allowed when BLEmeas is LEMILR8.

<syncword>

32 bit Hexadecimal value (BLE Default: 71764129)

Example

To configure the MT8852B to capture the BLE test packet and make a LEOP measurement, the command format would be:

MEASBLECAP LEOP, NA, 71764129
MEASBLECAPX (Capture and Make BLE Tx Measurement - Extended)

Set command format

MEASBLECAPX<ws><BLEmeas><,><MODType><,><syncword><,><PacketLen>

Remarks

This command enables the MT8852B to capture the BLE test packet based on the trigger set up using the CFGBLECAP command. When the packet is captured, the BLE Tx test measurement is performed using the limit parameters set in the selected script. This is an extended version of the MEASBLECAP command that allows the packet length to be set.

<BLEmeas>

LEOP
LEOP2M(#1)
LEOPLR8 (#2)
LEICD
LEICD2M
LEICDLR8
LEMI
LEMI2M (#1)
LEMILR8 (#2)

REMARKS

Perform output power measurement on BLE, 2LE or BLR8 packets.
LEOP2M(#1) performs carrier frequency offset and drift measurement on BLE, 2LE or BLR8 packets.
Perform modulation characteristics measurements on BLE, 2LE or BLR8 packets.
Requires Option 35
Requires Option 36 or 62

<MODType>

MOD10101010 Only allowed when BLEmeas is LEMI or LEMI2M.
MOD11110000 Only allowed when BLEmeas is LEMI or LEMI2M.
MOD11111111 Only allowed when BLEmeas is LEMILR8.

<syncword>

32 bit Hexadecimal value (BLE Default : 71764129)

<PacketLen>

Packet length. 2 to 255 bytes.

Example

To configure the MT8852B to capture the BLE test packet of length 37 bytes and make a LEOP measurement, the command format would be:

MEASBLECAPX LEOP, NA, 71764129, 37
MEASBLECAPX2 (Capture and Make BLE Tx Measurement - Extended for CTE)

Set command format

MEASBLECAPX2<ws><BLEmeas><,><MODType><,><syncword><,><PacketLen><,><CTEType><,><CTEtime>

Remarks

This command enables the MT8852B to capture the BLE test packet based on the trigger set up using the CFGBLECAP command. When the packet is captured, the BLE tx test measurement is performed using the limit parameters set in the selected script.

This is an extended version of the MEASBLECAPX command that allows the packet length to be set.

<BLEmeas>

LEOP
LEOP2M(#1)
LEOPLR8 (#2)
LEOPBLECTE(#3)
LEOP2LECTE (#4)

LEICD
LEICD2M
LEICDLR8
LEICDBLECTE(#3)
LEICD2LECTE (#4)

LEMI
LEMI2M ( #1)
LEMILR8 ( #2)
LEPSBLECTE(#3)
LEPS2LECTE ( #4)

(<#1>) Requires Option 35
(<#2>) Requires Option 36 or 62
(<#3>) Requires Option 37
(<#4>) Requires Option 35 and 37

<MODType>

Modulation measurements performed. Only used when the BLEmeas is set to one of the modulation characteristics measurements. Otherwise set to “NA”.

MOD10101010 Only allowed when BLEmeas is LEMI or LEMI2M.
MOD11110000 Only allowed when BLEmeas is LEMI or LEMI2M.
MOD11111111 Only allowed when BLEmeas is LEMILR8.

<syncword> 32 bit Hexadecimal value (BLE Default : 71764129)
MEASBLECAPX2 (Capture and Make BLE Tx Measurement - Extended for CTE)

<PacketLen> Packet length. 2 to 255 bytes. (except Tx power stability measurements)
Set to "0" when BLE meas is set to one of the Tx power stability measurements.

<CTEtype>
AOA Only allowed when BLEmeas is LEOPBLECTE or LEOP2LECTE or LEICDBLECTE or LEICD2LECTE.
AOD1 Slot duration 1 μs. Only allowed when BLEmeas is LEPSBLECTE or LEPS2LECTE.
AOD2 Slot duration 2 μs. Only allowed when BLEmeas is LEPSBLECTE or LEPS2LECTE.

<CTEtime> 2 to 20 (1 means 8 μs)

Remark <CTEtype> and <CTEtime> is ignored when BLEmeas is LEOP or LEOP2M or LEOPLR8 or LEICD or LEICD2M or LEICDLR8 or LEMI or LEMI2M or LEMILR8.

Example To configure the MT8852B to capture the BLE test packet of length 37 bytes and make a LEOPBLECTE measurement, the command format would be:
MEASBLECAPX2 LEOPBLECTE,NA,71764129,37,AOA,20
SETBLECAPTYP (Set the capture type to BLE, 2LE or BLR)

Set command format

SETBLECAPTYP<ws><capture type>

Remarks

This command configures the MT8852B to capture a low energy packet type.

<capture type>

BLE  1 Msym/s uncoded
2LE  2 Msym/s
BLR  1 Msym/s coded (S=2 or S=8)

Example

To configure the MT8852B to capture a 2LE test packet, the command format would be:

SETBLECAPTYP  2LE
Example BLE Measurement

An example of the processes required to perform a BLE Tx measurement is given below.

1. Configure the DUT to transmit BLE test packets with the required payload.

   - The output power test requires a payload of PRBS9.
   - The carrier frequency offset and drift test requires a payload of 10101010 for BLE and 2LE packets, and 11111111 for BLR8 packets. (This test does not apply to BLR2 packets.)
   - The modulation characteristics test requires a payload of 10101010 or 11110000 for BLE and 2LE packets, and 11111111 for BLR8 packets. (This test does not apply to BLR2 packets.)

2. Set the capture type to BLE, 2LE or BLR:
   ```
   SETBLECAPTYP <capture type>
   <capture type> is BLE or 2LE or BLR
   ```

3. Configure the MT8852B range:
   ```
   SYSCFG CONFIG,RANGE,<range>
   ```

4. Configure the MT8852B to capture the BLE test packet on a BLE channel:
   ```
   CFGBLECAP 0,RF
   ```

5. Make sure that the MT8852B is in script mode:
   ```
   OPMD SCRIPT
   ```

6. Configure the MT8852B to capture the test packet and make a BLE measurement as shown in the BLE output power example below:
   ```
   MEASBLECAP LEOP,NA,71764129
   ```

7. Wait for the test to complete by checking the CMP bit of the INS register. This can be polled or an SRQ can be configured.

8. When the test is complete, request the test results as shown in the example below:
   ```
   ORESULT TEST,0,LEOP
   and read them:
   LEOP0,TRUE,1.32,1.32,1.32,0.19,0,2,PASS
   ```

Note: If a problem occurs during measurement, the ABORTCAP command can be used to stop the capture.
Chapter 17 — Auxiliary Commands

This chapter provides details of the auxiliary commands allowed over the GPIB interface to help development and demonstrations. The commands are detailed in alphabetical order as shown in the list below.

<table>
<thead>
<tr>
<th>Command</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONNECT</td>
<td>Set</td>
<td>Connect to EUT address</td>
</tr>
<tr>
<td>CONEUTNAME</td>
<td>Set</td>
<td>Query</td>
</tr>
<tr>
<td>CONNPKT</td>
<td>Set</td>
<td>Query</td>
</tr>
<tr>
<td>CONTIME</td>
<td>Query</td>
<td></td>
</tr>
<tr>
<td>DISCONNECT</td>
<td>Set</td>
<td>Disconnect from device</td>
</tr>
<tr>
<td>EUTRESET</td>
<td>Set</td>
<td>Sends HCI reset to the DUT via the EUT Control port</td>
</tr>
<tr>
<td>EUTRMTPWR</td>
<td>Set</td>
<td>Change the state of the EUT Tx power</td>
</tr>
<tr>
<td>EUTVENDCMD</td>
<td>Set</td>
<td>Send a vendor-specific command to the EUT</td>
</tr>
<tr>
<td>FIXEDOFF</td>
<td>Set</td>
<td>Query</td>
</tr>
<tr>
<td>GETEUTFEAT</td>
<td>Query</td>
<td></td>
</tr>
<tr>
<td>INQCANCEL</td>
<td>Set</td>
<td>Cancel an inquiry</td>
</tr>
<tr>
<td>INQRSP?</td>
<td>Query</td>
<td></td>
</tr>
<tr>
<td>INQUIRY</td>
<td>Set</td>
<td>Perform an inquiry</td>
</tr>
<tr>
<td>LOOPBACK</td>
<td>Request</td>
<td></td>
</tr>
<tr>
<td>PATHDEL</td>
<td>Set</td>
<td>Delete an entry from a path loss table</td>
</tr>
<tr>
<td>PATHEDIT</td>
<td>Set</td>
<td>Query</td>
</tr>
<tr>
<td>PATHOFF</td>
<td>Set</td>
<td>Query</td>
</tr>
<tr>
<td>PATHRD</td>
<td>Query</td>
<td></td>
</tr>
<tr>
<td>PATHBL</td>
<td>Set</td>
<td>Query</td>
</tr>
<tr>
<td>PATHBLCLR</td>
<td>Set</td>
<td>Clear a path loss table</td>
</tr>
<tr>
<td>TESTMODE</td>
<td>Set</td>
<td>Put the EUT into test mode</td>
</tr>
<tr>
<td>TSTDELAY</td>
<td>Set</td>
<td>Query</td>
</tr>
<tr>
<td>TXTEST</td>
<td>Set</td>
<td>Perform a Tx test control sequence</td>
</tr>
<tr>
<td>WRDTY</td>
<td>Set</td>
<td>Write the dirty parameter settings to the core</td>
</tr>
</tbody>
</table>
**CONNECT (Connect to EUT Address)**

This command is used to connect to the EUT address listed in the MT8852B.

Set command format

```
CONNECT
```

This command does not request the EUT features. Do not use this command to make a connection before running a normal test. Only use the RUN command to perform normal testing.

**CONEUTNAME (Read EUT User Name on a Connection)**

When a test or script is run, the MT8852B first makes a connection to the EUT. During this connection process the EUT features and user friendly name are requested. This command allows the user to turn off this request.

Set command format

```
CONEUTNAME<ws><script><,><state>
```

- `<script>`: 1 to 10
- `<state>`: ON or OFF

Example

To set the requesting the name as OFF:

```
CONEUTNAME 1,OFF
```

Query command format

```
CONEUTNAME? <script>
```

Example

Reply if OFF would be:

```
CONEUTNAME 2,OFF
```
**CONNPKT (Connection packet control)**

**Set command format**

`CONNPKT<ws><packet mask>`

`<packet mask>`

This is a 'binary string' where a ‘1’ indicates that the packet type shall be used and a ‘0’ that the packet type won't be used. The order of the packet type is as follows:

`<DH1><DM1><DH3><DM3><DH5><DM5><2-DH1><3-DH1><2-DH3><3-DH3><2-DH5><3-DH5>`

**Remarks**

This command is used to specify which packet types the Link Manager uses for the ACL connection.

**Example**

To turn off all the EDR packet types, the command would be:

`CONNPKT 11111000000`

**Query command format**

`CONNPKT?`

**Response**

If all the DH5 & DM5 packet types were not allowed, the response would be:

`CONNPKT 111100111100`

**CONTIME? (Connection time) (Option 15 required)**

**Query command format**

`CONTIME?`

**Remarks**

The MT8852B makes up to two connection attempts when requested to connect to an EUT. This command returns the connection number, and if a connection is present, the time taken in milliseconds (ms) to make the connection. On power on or before a connection has been made, the connection number displays as 0 and is not followed by a time.

**Response**

`CONTIME,<number>[,<connection time>]`

`<number>`

Connection number

- no connection
- Connection made on first attempt
- Connection made on second attempt

`<Connection time>`

Time taken to make the connection in ms.

**Example**

If the connection was made on the first attempt and took 1.3 seconds the response would be

`CONTIME,1,1300`
**Auxiliary Commands**

**DISCONNECT (Disconnect From Device)**
This command disconnects any existing ACL connection. If an ACL connection does not exist, an execution error is indicated. This command invalidated the EUT address when it is anything other than manual.

Set command format

**EUTRESET (Send HCI Reset to the DUT)**
This command sends an HCI reset to the EUT via the “EUT Control” port.

Set command format

**EUTRMTPWR (Change the State of the EUT Tx Power)**
This command is used to alter the state of the EUT Tx power if the EUT supports power control. If no connection is present, if the EUT does not support power control, or if the MT8852B has not got the supported features for the EUT, the command reports an execution error. This command can be used in conjunction with the EUTMAXPWR, set to OFF, to use the output power test to measure the power of each step.

Set command format

<param> MIN Set the EUT to minimum power
DEC EUT increments its power by one step
INC EUT decrements its power by one step
MAX Set the EUT to maximum power
EUTVENDCMD (Send a Vendor-Specific Command to EUT)

Set command format

EUTVENDCMD<ws><opcode>,<param length>,<param data>

Remarks

This command writes the defined vendor-specific HCI command to the EUT via the control port on the MT8852B. The vendor-specific event received, or the command-complete event returned for this command, is written into the GPIB output queue.

If a command status event is received with an error status for the vendor-specific command, the event reply is returned with the command status parameter set to a non-zero value.

<opcode> The HCI vendor-specific command opcode in hexadecimal form, i.e., FCAB

<param length> Length of the parameter data.

<param data> Parameter data.

Note: To be consistent with the Bluetooth HCI specification, the parameter data is in little-endian format, i.e., the least significant byte is transferred first.

Example

To send a vendor-specific command with the opcode 0xFCAB, with a single byte parameter of 0x03, the command would be:

EUTVENDCMD FCAB,2,03

To send a vendor-specific command with the opcode 0xFCAB, with a 2 byte parameter of 0x0312, the command would be:

EUTVENDCMD FCAB,4,1203

To send a vendor-specific command with the opcode 0xFCAB, with one 2 byte parameter of 0x0312 and a second single byte parameter of 0x01, the command would be:

EUTVENDCMD FCAB,6,120301

Response

The response written to the GPIB output queue on completion of the command is:

EUTVENDEVENT<ws><status>,<length>,<data>

<status> 0 - Vendor-specific command completed successfully. 01-FF - Vendor-specific command completed failed. Standard Bluetooth HCI error code.

<length> Length of the data returned. Range 000 to 254.

<data> The response data.
Example

If the response from a successful vendor-specific command was a vendor-specific event or a command-complete event, and the event was 12 bytes long, the reply would be:

EUTVENEVENT, 0, 12, 0E0501ABFC00

If the response from a unsuccessful vendor-specific command was a command status event with a status of 14, the reply would be:

EUTVENEVENT, 14, 0
**FIXEDOFF (Set Fixed Offset Value)**

This command is used to set or read the fixed path offset value applied during testing when the path offset mode is set to FIXED.

**Set command format**

```plaintext
FIXEDOFF<ws><script no><,><value>
```

<script number>  1 to 10
[value]  number of dB (range 0 to -40.0 dB).

**Example**

To set the fixed offset to 10 dBm in script 4, the command would be:

```
FIXEDOFF 4,-10.00DB
```

**Query command format**

```plaintext
FIXEDOFF?<ws><script number>
```

<script number>  1 to 10

**Response**

The response is returned in the form of the command to set that state.

**Example**

```
FIXEDOFF? 7,
```

**Response**

If script 7 single slot sensitivity test fixed offset was set to -2.3 dBm, the response would be:

```
FIXEDOFF 7,-2.3
```

**GETEUTFEAT (Obtain Supported Features from EUT)**

This command is used to request the supported features from the EUT regardless of whether or not this information is already available from a previous request or connection. The features are then available to be read over the GPIB using the SYSCFG? EUTFEAT command. If a connection has not already been made, an execution error will be reported.

**Query command format**

```plaintext
GETEUTFEAT
```

**INQCANCEL (Cancel an Inquiry)**

This command cancels an inquiry operation. The INQ bit in the Instrument Status Register is set. The MAV bit is not set and there is no data in the Output Buffer. Any addresses found during the inquiry before the INQCANCEL command was received is available via the INQ RSP? command.

**Set command format**

```plaintext
INQCANCEL
```
Auxiliary Commands

INQRSP? (Obtain the Results of an Inquiry)

This command is used after an INQUIRY or INQCANCEL command to obtain the results of the inquiry.

Query command format
INQRSP?

Response
<n>,<response 1>,<response 2>,...<response n>
where
<n> = number of addresses found by the inquiry (256 max)
and
<response n> = <address>,<length of name>,<name string>
where
<address> = Bluetooth address in standard Bluetooth format.
<length of name> = Length of User Friendly Name (up to 20 characters).
[name string] = User Friendly Name truncated 20 characters maximum. Contains the string ‘NO NAME’ if there is no User Friendly Name.

INQUIRY (Perform an Inquiry)

This command performs an inquiry based on the internal inquiry parameters already set up within the MT8852B. On completion of the inquiry the INQ bit in the Instrument Status Register (INS) is set. The MAV bit is not set and there is no data in the Output Buffer.

To obtain the results of an inquiry use the INQRSP? Command.

Query command format
INQUIRY
LOOPBACK (Perform a Loopback Test Control Sequence)

This command allows a single loopback test control sequence to be requested. The command is rejected with an execution error if an ACL connection does not already exist or if the device the MT8852B is connected to is not already in test mode.

Set command format

```
LOOPBACK<ws><pattern><,><hotype><,><EUT txchan><,> <EUT rxchan><,><pkt><,><datalen><,> <dirtyen><,> <dirty index><,><dirty window><,><numpkts><,>
<whitening>

<pattern> DATA10101010 DATA11110000 DATAPRBS9
<hotype> FIXED: Fixed frequency using the EUT txchan and EUT rxchan settings
STANDARD: Use standard hopping scheme of 79 channels

<EUT txchan> 0 to 78
<EUT rxchan> 0 to 78
<pkt> DH1, DH3, DH5, 2DH1, 2DH3, 2DH5, 3DH1, 3DH3, 3DH5
<datalen> Size in bytes of the payload to be used in the packet type chosen.
DH1 maximum length is 27 bytes
DH3 maximum length is 183 bytes
DH5 maximum length is 339 bytes
2DH1 maximum length is 54 bytes
2DH3 maximum length is 367 bytes
2DH5 maximum length is 679 bytes
3DH1 maximum length is 83 bytes
3DH3 maximum length is 552 bytes
3DH5 maximum length is 1021 bytes

<dirtyen> ENABLE or ON
DISABLE or OFF
The dirty transmitter can only be enabled if a dirty parameter table has been written to the Bluetooth core first. This can be done using the WRDTY GPIB command.

<dirtyindex> 0 to 9
The dirty parameter table has 10 entries, the index is the offset from the start of the table from which to use the dirty parameters.

<dirtywindow> 1 to 10
This is the amount of the dirty table to use within the dirty table from the index to the end of the table. The table does not wrap around so if the index is 4 the maximum window is 6.
```
**Auxiliary Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PATHDEL</td>
<td>Deleting an Entry from a Path Loss Table</td>
</tr>
<tr>
<td>PATHEDIT</td>
<td>Adding or Changing Entries in a Path Loss Table</td>
</tr>
</tbody>
</table>

**PATHDEL (Delete an Entry from a Path Loss Table)**

This command is used to delete an entry from a path loss table. If there is no entry for the given channel number in the table specified, a GPIB execution error is returned.

Set command format

```
PATHDEL<ws><table><,><form><,><channel>
```

- `<table>`: 1 to 5
- `<form>`: CHAN: The `<channel>` parameter is in channel form (0 to 78)
  FREQ: The `<channel>` parameter is in frequency form (2402MHZ to 2480MHZ)
- `<channel>`: 0 to 78 (or 2402MHz to 2480MHz)

**PATHEDIT (Add or Change Entries in a Path Loss Table)**

This command is used to add or change entries in a path loss table. If the channel number entered already exists, the offset for that channel is updated to the new value. If the channel number does not already exist in the table specified, the new entry is added.

Set command format

```
PATHEDIT<ws><table><,><form><,><channel><,><offset>
```

- `<table>`: 1 to 5
- `<form>`: CHAN: The `<channel>` parameter is in channel form (0 to 78)
  FREQ: The `<channel>` parameter is in frequency form (2402MHZ to 2480MHZ)
- `<channel>`: 0 to 78 (or 2402MHz to 2480MHz)
- `<offset>`: Offset in dBs. Range is 0.0 to –40.0

Example

To set the offset for channel 4 (2406MHz) to –2.3dB in table 3:

```
PATHEDIT 3,CHAN,4,-2.3
```

Query command format

```
PATHEDIT?<ws><table><,><form><,><channel>
```

Example

To read the offset for table 3 channel 4 in channel form use:

```
PATHEDIT? 4,CHAN,4
```

Response

Reply would be in the offset –2.3
PATHOFF (Set Path Offset Mode)

This command is used to set up the user path offset mode for the single slot and multi slot sensitivity tests. This is the path loss offset that is added to the transmitted power.

Set command format

```
PATHOFF<ws><script number><,><mode>
```

- `<script number>`: 1 to 10
- `<mode>`:
  - OFF: Apply no user offsets
  - FIXED: Apply the fixed offset value for all channels
  - TABLE: Apply the offset table

Example

To set the single slot sensitivity test to use the fixed offset value the command would be:

```
PATHOFF 4,FIXED
```

Query command format

```
PATHOFF?<ws><script number>
```

- `<script number>`: 1 to 10

Response

The response is returned in the form of the command to set that state.

Example

```
PATHOFF? 7
```

Response

If script 7 multi slot sensitivity test path offset was set to use the path offset table, the response would be:

```
PATHOFF 7,TABLE
```

PATHRD (Read a Complete Path Loss Table)

This command reads a complete path loss table and outputs it over the GPIB.

Set command format

```
PATHRD<ws><table><,><form>
```

- `<table>`: 1 to 5
- `<form>`:
  - CHAN: The `<channel>` parameter is in channel form (0 to 78)
  - FREQ: The `<channel>` parameter is in frequency form (2402MHZ to 2480MHZ)

Example

To set the offset for channel 4 (2406MHz) to –2.3dB in table 3:

```
PATHEDIT 3,CHAN,4,-2.3
```

Output format

```
<number of entries><,><entry><,><entry>
```

- `<number of entries>`: Number of entry sets that follow. If zero no entries follow
- `<entry>`: Each entry consists of a channel (or frequency number) followed by a loss:
  - `<channel>`
  - `<loss>`
Auxiliary Commands

Example

For PATHRD 1,CHAN: 2,0,-2.3,4,-14.7
For PATHRD 1,FREQ: 2,2.402e+009,-2.3,2.406e+009,-14.7

**PATHTBL (Set Path Offset Table)**

This command selects which of the PATH offset tables is applied to the script.

**Set command format**

PATHTBL<ws><script no><,><table no>

<script number> 1 to 10
<table number> 1 to 5

**Example**

To select offset table 3 in script 4 the command would be:

PATHTBL 4,3

**Query command format**

PATHTBL?<ws><script number>

<script number> 1 to 10

**Response**

The response is returned in the form of the command to set that state.

**Example**

PATHTBL? 7

**Response**

If the offset table for script 7 was 2, the response would be:

PATHTBL 7,2

**PATHTBLCLR (Clear a User Path Table)**

This command can be used to clear one of the user path loss tables.

**Set command format**

PATHTBLCLR<ws><table number>

<table number> 1 to 5

**Example**

To clear offset table 3 the command would be:

PATHTBLCLR 3

**TESTMODE (Put the EUT into Test Mode)**

This command sets the device the MT8852B is connected to into test mode. The slave device must have test mode enabled locally for the command to succeed.

An execution error is output if the command fails.

**Set command format**

TESTMODE
TSTDELAY (Test Control Delay)

Each device reacts to a test control command at a different speed. This command allows a delay to be set up for each script to allow for the time taken to change to the test control parameters. The test control delay is set in number of packets.

**Set command format**

TSTDELAY<ws><script number><,><number of packets>

- `<script number>`: 1 to 10
- `<number of packets>`: 0 to 100 (Default 10).

**Example**

To set the test control delay of script 1 to 100 packets, use the command:

TSTDELAY 1,100

**Query command format**

TSTDELAY?<ws><number of packets>

- `<number of packets>`: 0 to 100 (Default 10).

**Response**

The response is in the form of the command to set that particular state.

**Example**

If the test control delay of script 3 is 10 packets then the command would be:

TSTDELAY? 3

**Response**

The response would be:

TSTDELAY 3,10
**Auxiliary Commands**

**TXTEST (Perform a Tx Test Control Sequence)**

This command allows a single Tx test control sequence to be requested. The command is rejected with an execution error if an ACL connection does not already exist (see CONNECT command) or if the device the MT8852B is connected to is not already in test mode (see TESTMODE command).

Set command format

\[
\begin{align*}
&\text{TXTEST<ws><pattern>,><hoptype>,><txrxchan>,><pkt>,><datalen>,><numpkts>} \\
&<\text{pattern}> \quad \text{DATA10101010} \\
&\quad \text{DATA11110000} \\
&\quad \text{DATAPRBS9} \\
&<\text{hoptype}> \quad \text{FIXED: Fixed frequency using the EUT txchan and EUT rxchan settings.} \\
&\quad \text{STANDARD: Use standard hopping scheme of 79 channels.} \\
&<\text{txrxchan}> \quad 0 \text{ to 78 Tx and Rx frequency of the EUT.} \\
&<\text{pkt}> \quad \text{DH1, DH3, DH5, 2DH1, 2DH3, 2DH5, 3DH1, 3DH3, 3DH5} \\
&<\text{datalen}> \quad \text{Size in bytes of the payload to be used in the packet type chosen.} \\
&\quad \text{DH1 maximum length is 27 bytes} \\
&\quad \text{DH3 maximum length is 183 bytes} \\
&\quad \text{DH5 maximum length is 339 bytes} \\
&\quad \text{2DH1 maximum length is 54 bytes} \\
&\quad \text{2DH3 maximum length is 367 bytes} \\
&\quad \text{2DH5 maximum length is 679 bytes} \\
&\quad \text{3DH1 maximum length is 83 bytes} \\
&\quad \text{3DH3 maximum length is 552 bytes} \\
&\quad \text{3DH5 maximum length is 1021 bytes} \\
&<\text{numpkts}> \quad 0 \text{ to 10000 packets} \\
&\quad 0 \text{ means loop back until another test control or a disconnect}
\end{align*}
\]

**WRDTY (Write the Dirty Parameter Settings to the Core)**

This command is used to configure a set of dirty parameters for the LOOPBACK command. The command selects a dirty parameter table from either the multi-slot or single-slot sensitivity tests from any script.

Set command format

\[
\begin{align*}
&\text{WRDTY<ws><script number>,><test>} \\
&<\text{script number}> \quad 1 \text{ to 10} \\
&<\text{test}> \quad \text{SS: Single slot sensitivity} \\
&\quad \text{MS: Multi slot sensitivity}
\end{align*}
\]
# Appendix A — Supported Features Format

## A-1 EUT Feature Format

This table details the EUT feature format mask as defined in the BT specification. Refer to commands GETEUTFEAT and EUTFEAT for details on how to obtain EUT features information.

<table>
<thead>
<tr>
<th>Byte</th>
<th>Bit</th>
<th>Supported feature</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>3-slot packets</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>5-slot packets</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>encryption</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>slot offset</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>timing accuracy</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>switch</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>hold mode</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>sniff mode</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>park mode</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>RSSI</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>channel quality driven data rate</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>SCO link</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>HV2 packets</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>HV3 packets</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>u-law log</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>A-law log</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>CVSD</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>paging scheme</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>power control</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Transparent SCO data</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Flow control lag (bit 0)</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>Flow control lag (bit 1)</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>Flow control lag (bit 2)</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>Broadcast encryption</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>Reserved</td>
</tr>
<tr>
<td>----</td>
<td>----</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>EDR ACL 2Mbps mode</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>EDR ACL 3Mbps mode</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Enhanced inquiry scan</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Interlaced inquiry scan</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>Interlaced page scan</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>RSSI with inquiry results</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>Extended SCO link (EV3 packets)</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>EV4 packets</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>EV5 packets</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Reserved</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>AFH capable slave</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>AFH classification slave</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>Reserved</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>Reserved</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>3-slot EDR ACL packets</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>5-slot EDR ACL packets</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Reserved</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Reserved</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>AFH capable master</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>AFH classification master</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>EDR eSCO 2Mbps mode (MT8852B only)</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>EDR eSCO 3Mbps mode (MT8852B only)</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>3-slot EDR eSCO packets (MT8852B only)</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
<td>Reserved</td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td>Extended features</td>
</tr>
</tbody>
</table>
Appendix B — GPIB PC Card Set-up

The following GPIB driver configuration setup is recommended for reliable GPIB communication with the MT8852B. The setup is expressed in the terms used by the National Instruments GPIB ISA and PCI cards and drivers for Windows and DOS.

B-1 GPIB Card Settings

The recommended GPIB board settings are as follows:

Table B-1.  Recommended GPIB Settings

<table>
<thead>
<tr>
<th>Setting</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terminate read on EOS</td>
<td>NO</td>
</tr>
<tr>
<td>Set EOI with EOS on write</td>
<td>YES</td>
</tr>
<tr>
<td>Type of compare on EOS</td>
<td>8 bit</td>
</tr>
<tr>
<td>Send EOI at end of write</td>
<td>YES</td>
</tr>
<tr>
<td>EOS byte</td>
<td>10 (0x0A hexadecimal)</td>
</tr>
<tr>
<td>System controller</td>
<td>YES</td>
</tr>
<tr>
<td>Assert REN when SC</td>
<td>YES</td>
</tr>
<tr>
<td>Enable Auto serial polling</td>
<td>NO</td>
</tr>
<tr>
<td>NI card. Cable length for HS488</td>
<td>OFF</td>
</tr>
</tbody>
</table>

B-2 GPIB Device Template

The MT8852B GPIB Default Primary Address is 27. Device templates for the primary address of each device can usually be set up separately. The settings for the device template for the MT8852B are detailed in the table below.

Table B-2.  GPIB Device Configuration

<table>
<thead>
<tr>
<th>Setting</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terminate Read on EOS</td>
<td>NO</td>
</tr>
<tr>
<td>Set EOI with EOS on Write</td>
<td>YES</td>
</tr>
<tr>
<td>Type of Compare on EOS</td>
<td>8-bit</td>
</tr>
<tr>
<td>EOS Byte</td>
<td>10 (0x0A hexadecimal)</td>
</tr>
<tr>
<td>Send EOI at end of write</td>
<td>YES</td>
</tr>
<tr>
<td>Readdressing</td>
<td>YES</td>
</tr>
<tr>
<td>Secondary address</td>
<td>NONE</td>
</tr>
</tbody>
</table>
## Appendix C — Script Default Settings

### C-1 Script 1 Default Settings

<table>
<thead>
<tr>
<th>Table C-1. Script 1 Default Settings</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Hopping</th>
<th>Hopping test mode</th>
<th>Frequency</th>
<th>Test type</th>
<th>Packet type</th>
<th>Number of packets</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Output power</strong></td>
<td>On</td>
<td>Any</td>
<td>—</td>
<td>Loopback</td>
<td>DH1</td>
<td>100</td>
</tr>
<tr>
<td><strong>Init carrier</strong></td>
<td>On</td>
<td>Any</td>
<td>—</td>
<td>Loopback</td>
<td>DH1</td>
<td>100</td>
</tr>
<tr>
<td><strong>Single sens.</strong></td>
<td>On</td>
<td>Any</td>
<td>—</td>
<td>Loopback</td>
<td>DH1</td>
<td>500</td>
</tr>
<tr>
<td><strong>Mod. index</strong></td>
<td>Off</td>
<td>Any</td>
<td>—</td>
<td>Loopback</td>
<td>DH1</td>
<td>10</td>
</tr>
<tr>
<td><strong>Rel. Tx power</strong></td>
<td>On</td>
<td>Any</td>
<td>—</td>
<td>Loopback</td>
<td>2-DH1, 3-DH1</td>
<td>10</td>
</tr>
<tr>
<td><strong>Carrier &amp; mod.</strong></td>
<td>On</td>
<td>Any</td>
<td>—</td>
<td>Loopback</td>
<td>2 &amp; 3 Mbps</td>
<td>50 blocks</td>
</tr>
<tr>
<td><strong>Diff. phase</strong></td>
<td>Off</td>
<td>Defined</td>
<td>L</td>
<td>TX</td>
<td>2 &amp; 3 Mbps</td>
<td>100</td>
</tr>
<tr>
<td><strong>EDR sensitivity</strong></td>
<td>On</td>
<td>Any</td>
<td>—</td>
<td>Loopback</td>
<td>2-DH1, 3-DH1</td>
<td>0.3 Mbits</td>
</tr>
<tr>
<td><strong>Output power</strong></td>
<td>Off</td>
<td>Defined</td>
<td>L,M,H</td>
<td>—</td>
<td>—</td>
<td>10</td>
</tr>
<tr>
<td><strong>Carrier &amp; drift</strong></td>
<td>Off</td>
<td>Defined</td>
<td>L,M,H</td>
<td>—</td>
<td>—</td>
<td>10</td>
</tr>
<tr>
<td><strong>Mod. index</strong></td>
<td>Off</td>
<td>Defined</td>
<td>L,M,H</td>
<td>—</td>
<td>—</td>
<td>10</td>
</tr>
<tr>
<td><strong>Sensitivity</strong></td>
<td>Off</td>
<td>Defined</td>
<td>L,M,H</td>
<td>—</td>
<td>—</td>
<td>500</td>
</tr>
</tbody>
</table>
## C-2  Script 2 Default Settings

**Table C-2.** Script 2 Default Settings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Hopping</th>
<th>Hopping test mode</th>
<th>Frequency</th>
<th>Test type</th>
<th>Packet type</th>
<th>Number of packets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output power</td>
<td>On</td>
<td>Defined</td>
<td>L,M,H</td>
<td>Loopback</td>
<td>Longest</td>
<td>10</td>
</tr>
<tr>
<td>Power control</td>
<td>Off</td>
<td>Defined</td>
<td>L,M,H</td>
<td>Loopback</td>
<td>DH1</td>
<td>1</td>
</tr>
<tr>
<td>Enhanced pwr cntrl</td>
<td>Off</td>
<td>Defined</td>
<td>L,M,H</td>
<td>Loopback</td>
<td>2DH1, 3DH1</td>
<td>1</td>
</tr>
<tr>
<td>Init carrier</td>
<td>On</td>
<td>Defined</td>
<td>L,M,H</td>
<td>Loopback</td>
<td>DH1</td>
<td>10</td>
</tr>
<tr>
<td>Carrier &amp; drift</td>
<td>On</td>
<td>Defined</td>
<td>L,M,H</td>
<td>Loopback</td>
<td>1, 3, &amp; 5</td>
<td>10</td>
</tr>
<tr>
<td>Single sens.</td>
<td>Off and On</td>
<td>Defined</td>
<td>L,M,H</td>
<td>Loopback</td>
<td>DH1</td>
<td>7408</td>
</tr>
<tr>
<td>Multi sens.</td>
<td>Off and On</td>
<td>Defined</td>
<td>L,M,H</td>
<td>Loopback</td>
<td>Longest</td>
<td>590</td>
</tr>
<tr>
<td>Mod. index</td>
<td>Off</td>
<td>Defined</td>
<td>L,M,H</td>
<td>Loopback</td>
<td>Longest</td>
<td>10</td>
</tr>
<tr>
<td>Max. input</td>
<td>Off</td>
<td>Defined</td>
<td>L,M,H</td>
<td>Loopback</td>
<td>DH1</td>
<td>7408</td>
</tr>
<tr>
<td>Rel. Tx power</td>
<td>Off</td>
<td>Defined</td>
<td>L,M,H</td>
<td>Loopback</td>
<td>2, 3 Mbps: Longest</td>
<td>10</td>
</tr>
<tr>
<td>Carrier &amp; mod.</td>
<td>Off</td>
<td>Defined</td>
<td>L,M,H</td>
<td>Loopback</td>
<td>2, 3 Mbps: Longest</td>
<td>200 blocks</td>
</tr>
<tr>
<td>Diff. phase</td>
<td>Off</td>
<td>Defined</td>
<td>L</td>
<td>TX</td>
<td>2DH1, 3DH1</td>
<td>100</td>
</tr>
<tr>
<td>EDR sensitivity</td>
<td>Off</td>
<td>Defined</td>
<td>L,M,H</td>
<td>Loopback</td>
<td>2, 3 Mbps: Longest</td>
<td>1.6 Mbits / 16 Mbits</td>
</tr>
<tr>
<td>EDR BER floor</td>
<td>Off</td>
<td>Defined</td>
<td>L,M,H</td>
<td>Loopback</td>
<td>2, 3 Mbps: Longest</td>
<td>8 Mbits / 160 Mbits</td>
</tr>
<tr>
<td>EDR max input pwr</td>
<td>Off</td>
<td>Defined</td>
<td>L,M,H</td>
<td>Loopback</td>
<td>2, 3 Mbps: Longest</td>
<td>1.6 Mbits</td>
</tr>
<tr>
<td>EDR guard time</td>
<td>Off</td>
<td>Defined</td>
<td>L</td>
<td>Loopback</td>
<td>2DH1, 3DH1</td>
<td>100</td>
</tr>
<tr>
<td>EDR sync. &amp; trailer</td>
<td>Off</td>
<td>Defined</td>
<td>L</td>
<td>Loopback</td>
<td>2DH1, 3DH1</td>
<td>50</td>
</tr>
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<td>L,M,H</td>
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<tr>
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<td>Defined</td>
<td>M</td>
<td>—</td>
<td>—</td>
<td>Random</td>
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<td>L,M,H</td>
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### Table C-3. Scripts 3 to 10 Default Settings

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<td>L,M,H</td>
<td>Loopback</td>
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<td>Power control</td>
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<td>Enhanced pwr cntrl</td>
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<td>Loopback</td>
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<td>Init carrier</td>
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<td>Loopback</td>
<td>DH1</td>
<td>10</td>
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<td>Carrier &amp; drift</td>
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<td>DH1</td>
<td>7408</td>
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<td>Loopback</td>
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<td>10</td>
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<tr>
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<td>Rel. Tx power</td>
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<td>L,M,H</td>
<td>Loopback</td>
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<td>10</td>
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<td>L,M,H</td>
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<td>TX</td>
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<td>Loopback</td>
<td>2DH1, 3DH1</td>
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### Table C-3. Scripts 3 to 10 Default Settings

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<td>PER integrity</td>
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<td>M</td>
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<td>—</td>
<td>Random</td>
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<tr>
<td>Max input pwr</td>
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<td>L,M,H</td>
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<td>—</td>
<td>1500</td>
</tr>
</tbody>
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**Note**  
Items shown in bold are factory set and cannot be changed by the user.
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