Product Introduction

Anritsu

MT8820B

Radio Communication Analyzer

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Product Introduction

Version 7.0
Sep. 2009

ANRITSU CORPORATION

MT8820B

New All-in-One Tester with High-Speed Tx Measurement and 3.5G Platform

Features

- Supports all manufacturing processes
- Supports
  - W-CDMA/HSPA/HSPA Evolution
  - GSM/GPRS/EGPRS
  - CDMA2000 1X/1xEV-DO Rev. 0/1xEV-DO Rev. A
  - TD-SCDMA/HSPA
  - PHS/ADVANCED PHS
- High-speed Tx measurement (two times faster than MT8820A)
- Parallelphone™ Measurement
- Compatibility with MT8820A
- 3.5G Platform

The MT8820B is the new Anritsu all-in-one tester platform for manufacturing mobile terminals.

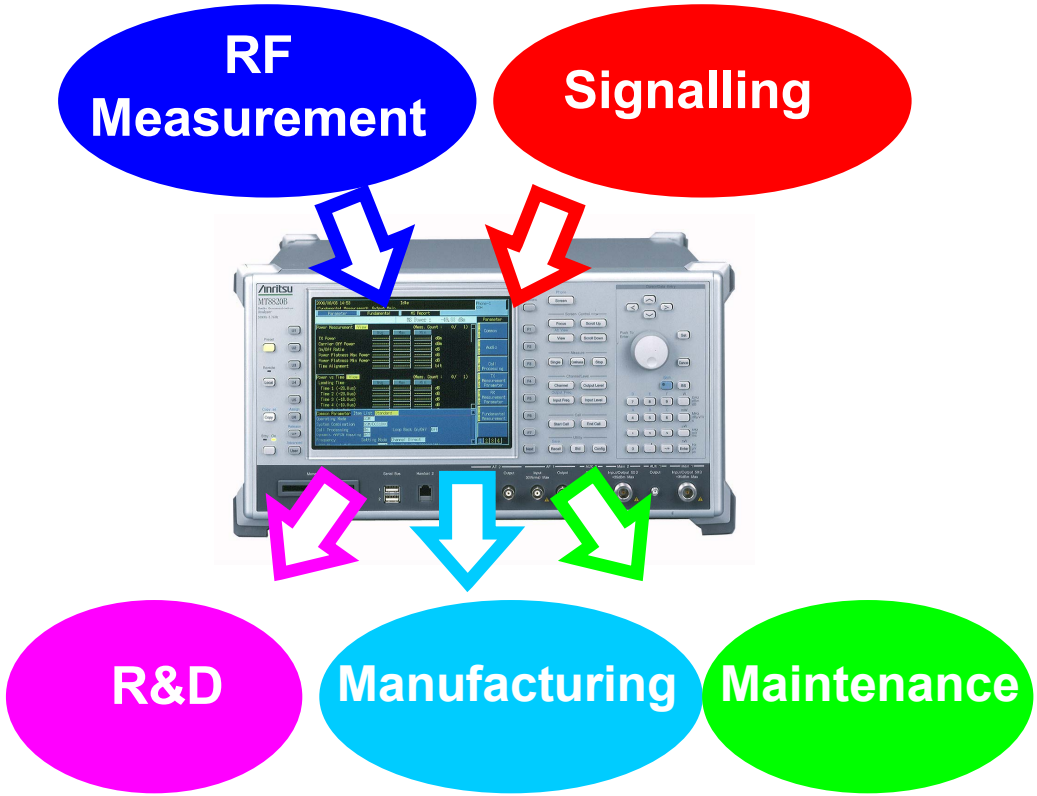
The cost of manufacturing mobile terminals depends heavily on equipment costs and manufacturing throughput. The Anritsu Parallelphone™ Measurement function helps cut equipment costs and space, and the lower power consumption cuts running costs too. Moreover, the Tx measurement speed is twice that of the MT8820A, greatly improving manufacturing throughput.

Since the all-in-one MT8820B supports all manufacturing processes, including calibration, RF parametric testing, and functional/quality tests, it can be incorporated easily into existing production lines.

MT8820B Overview

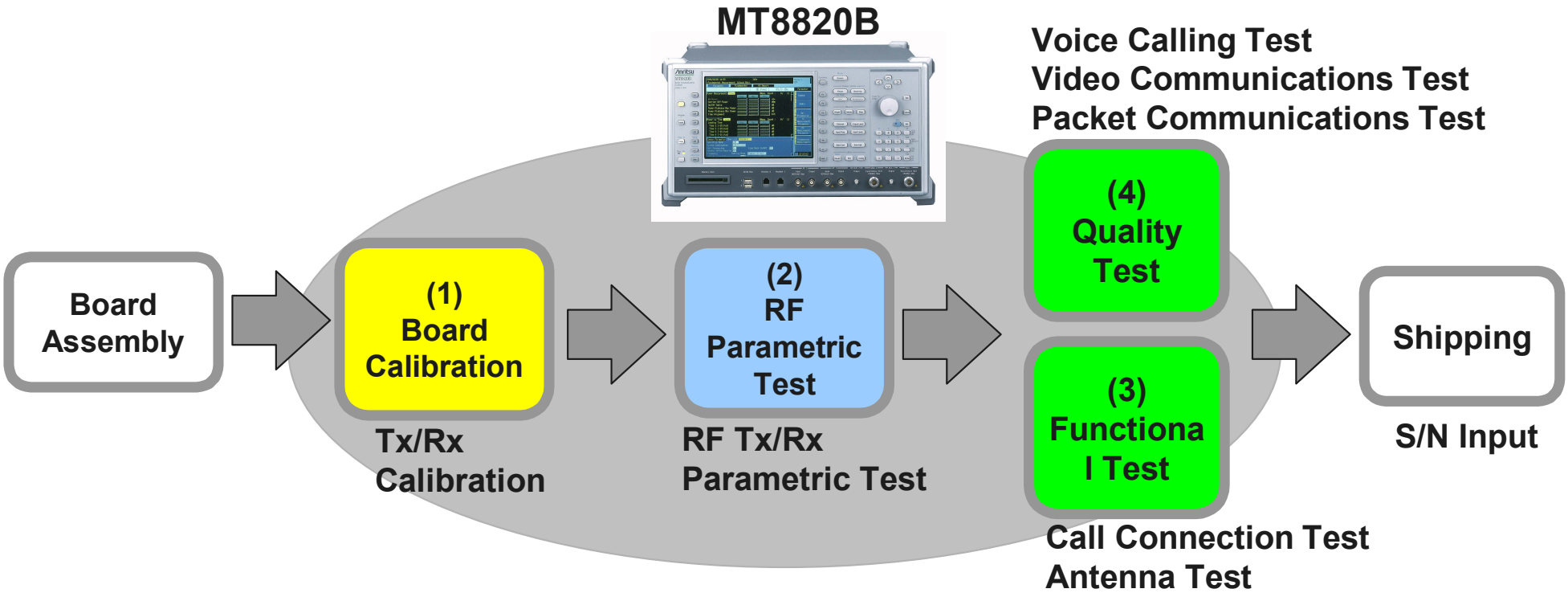
Effective Combination of Signalling and RF Measurement Technology

The MT8820B combines signalling and high-performance RF measuring technologies to provide wide support for R&D, manufacturing, and maintenance.



Supports All Manufacturing Processes

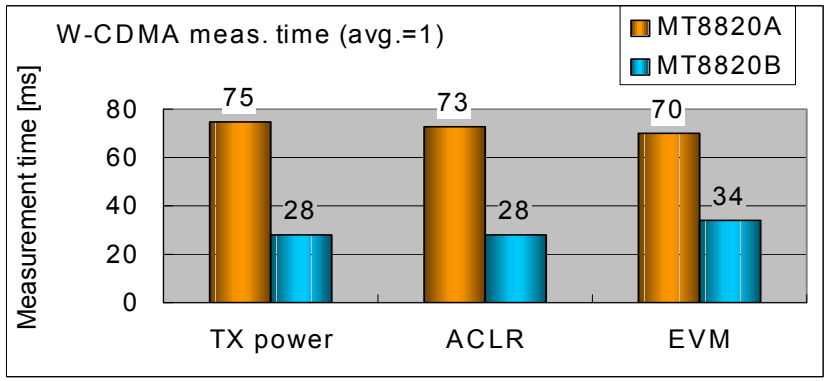
The various MT8820B functions, such as calibration, RF parametric testing, signalling, voice calling, and packet communications, support all manufacturing processes shown below, so it can be incorporated easily into existing production lines.

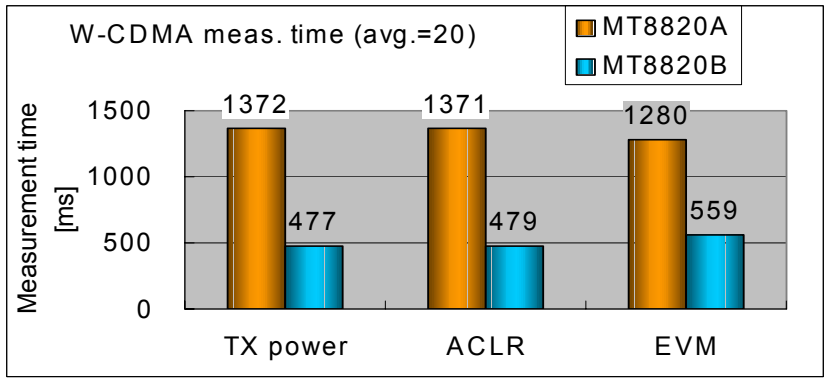


High-Speed Tx Measurement

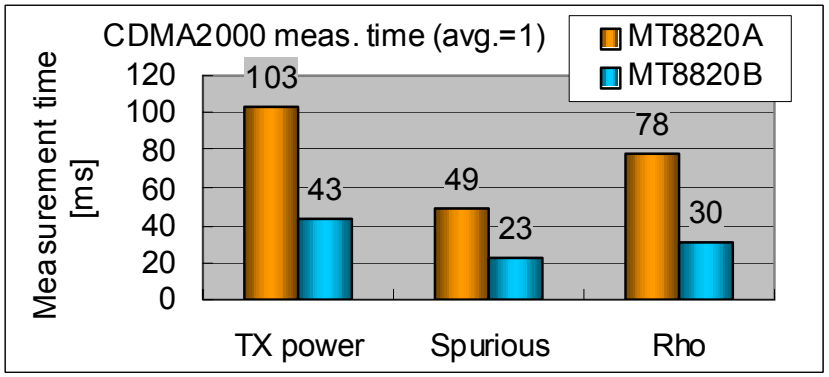
The W-CDMA, CDMA2000, GSM (GMSK modulation), and EGPRS (8PSK modulation) Tx measurement times excluding signalling time are shown below. The MT8820B is two times faster than the MT8820A.

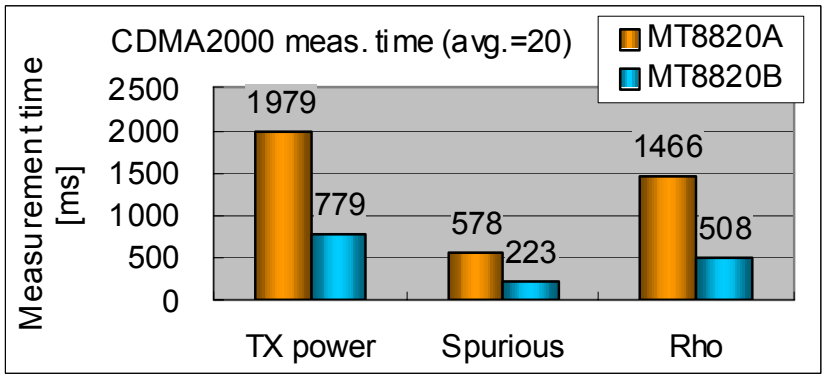
W-CDMA (avg. = 1 and avg. = 20)





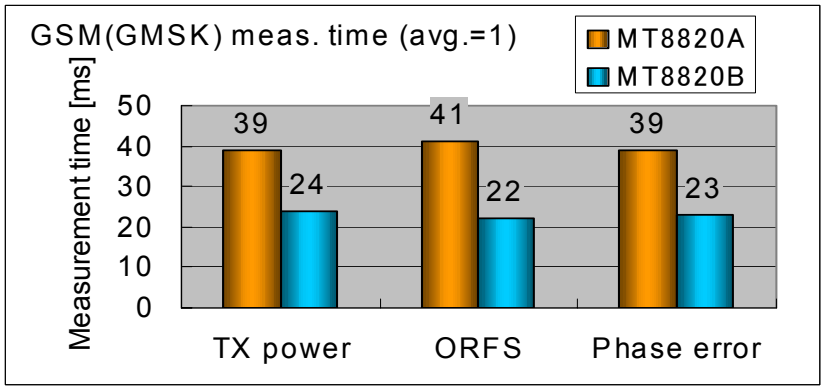
CDMA2000 (avg. = 1 and avg. = 20)

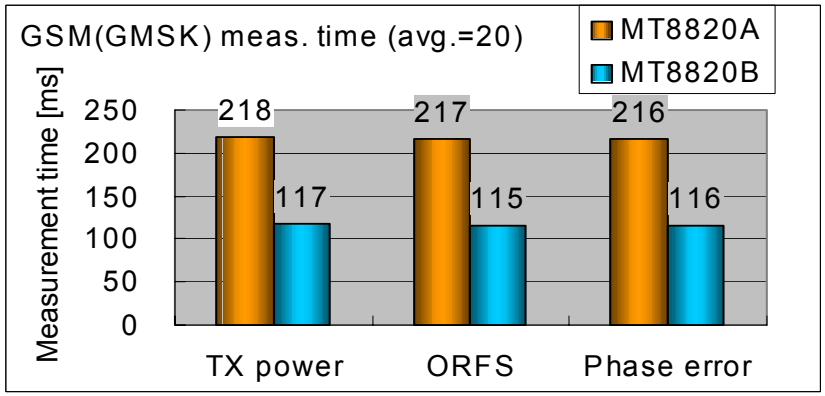




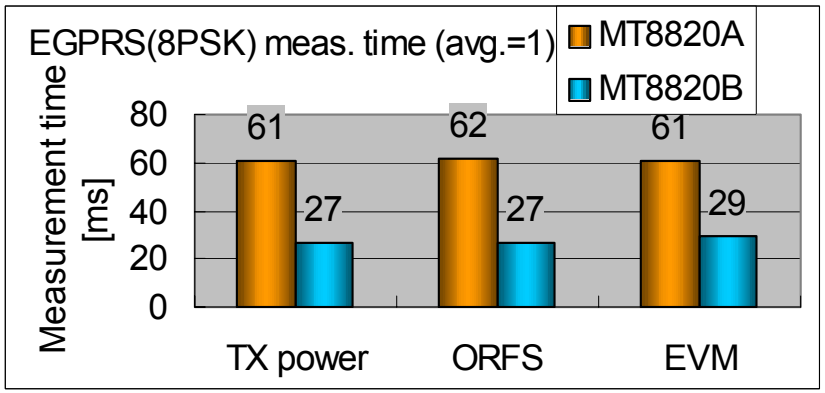
High-Speed Tx Measurement

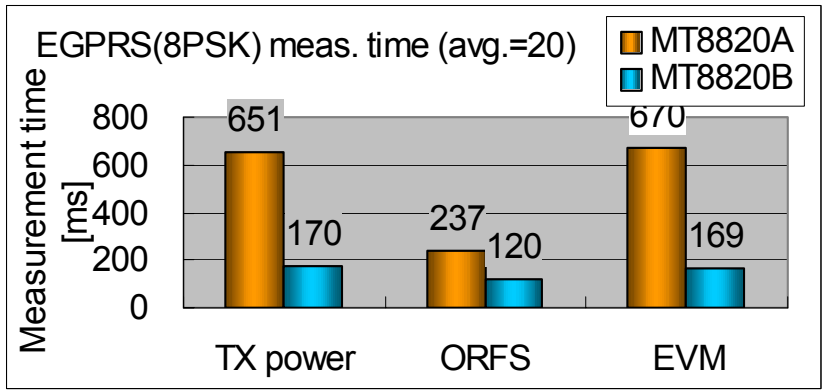
GSM (GMSK Modulation) (avg. = 1 and avg. = 20)





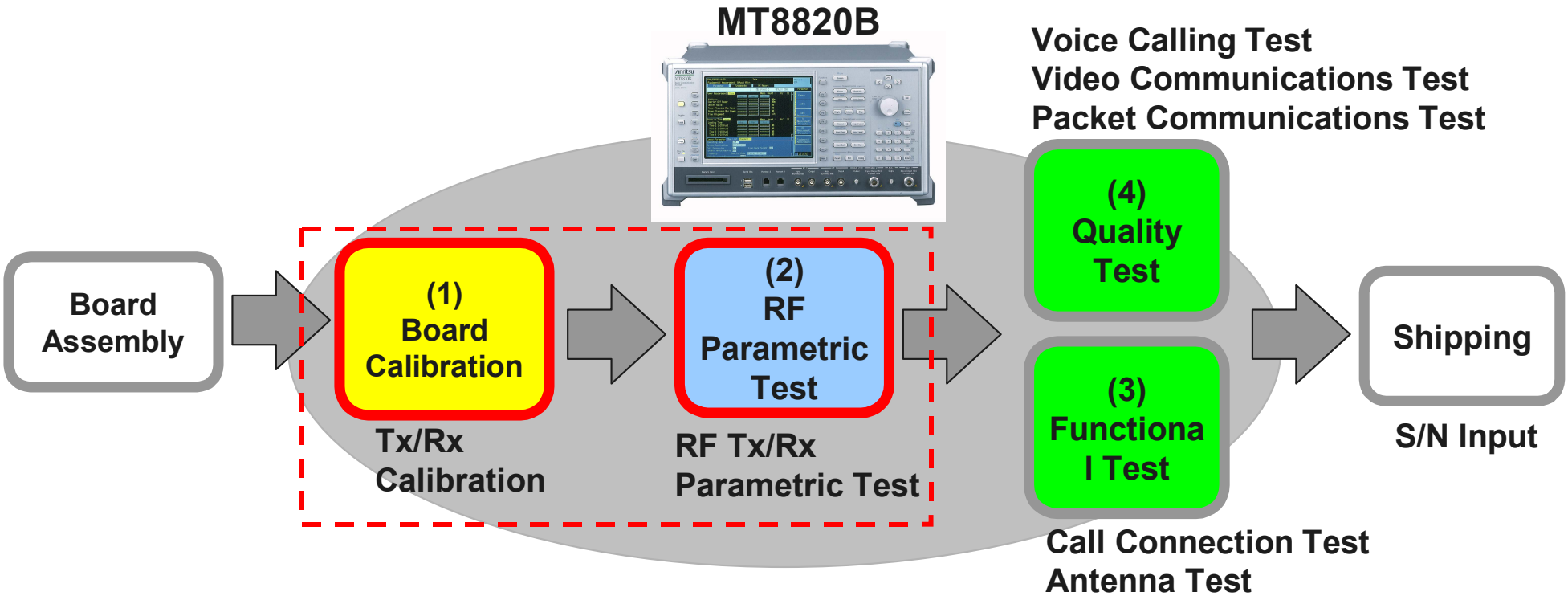
EGPRS (8PSK Modulation) (avg. = 1 and avg. = 20)





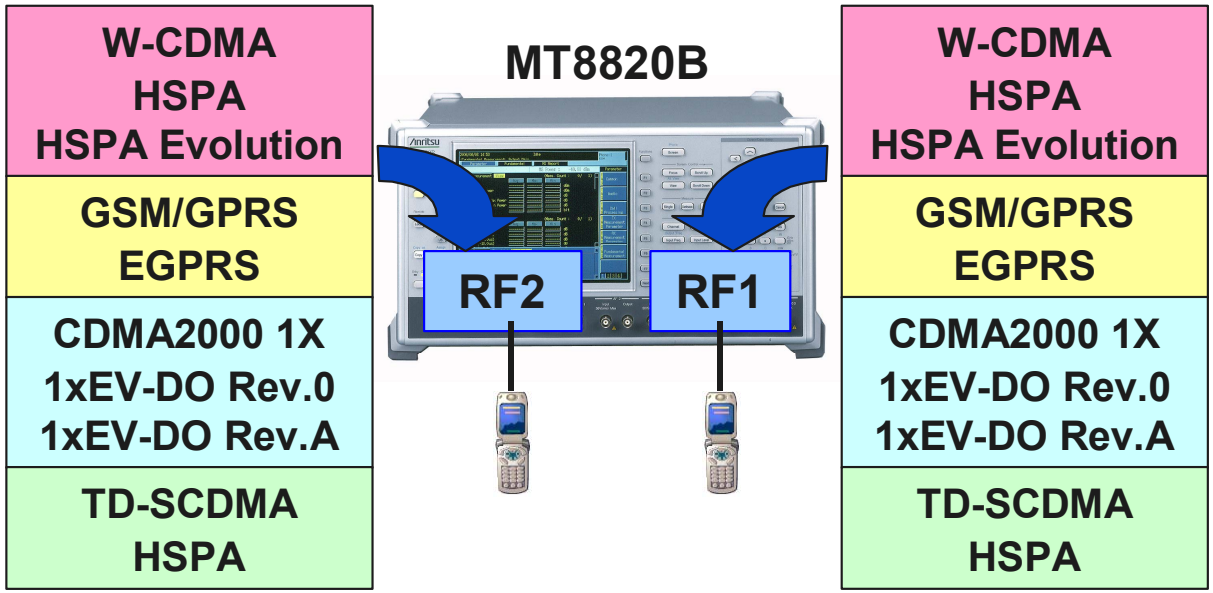
High-Speed Tx Measurement

The reduced Tx measurement time of the MT8820B increases manufacturing throughput. It is particularly effective at the calibration and RF parametric test phases without signalling.



Parallelphone Measurement

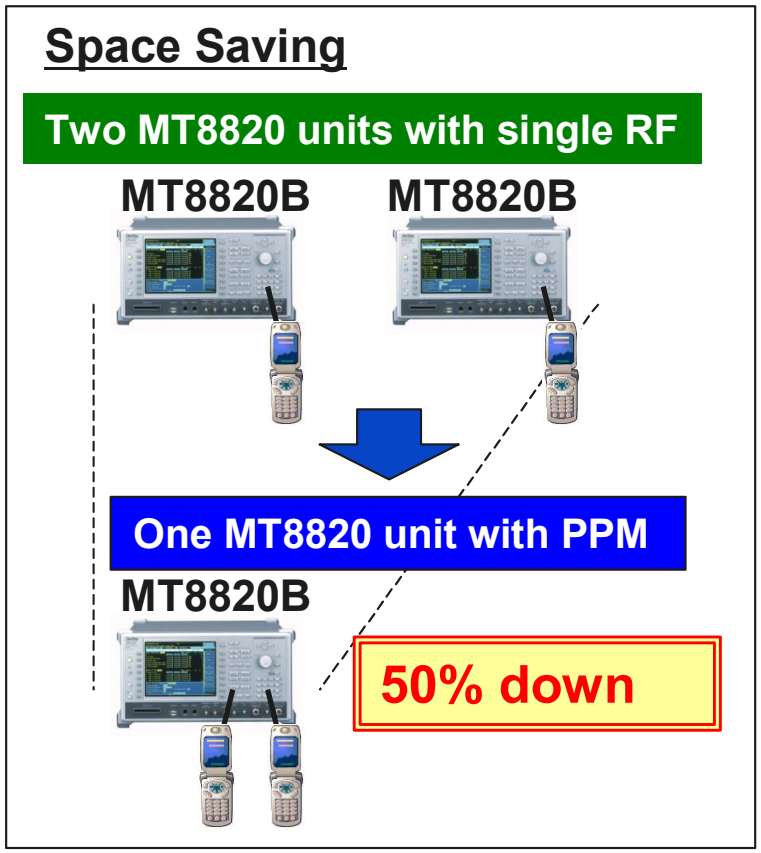
Using Anritsu's unique Parallelphone™ Measurement (PPM) function, two measurement functions can be installed in one MT8820B to test two mobile terminals simultaneously and independently.

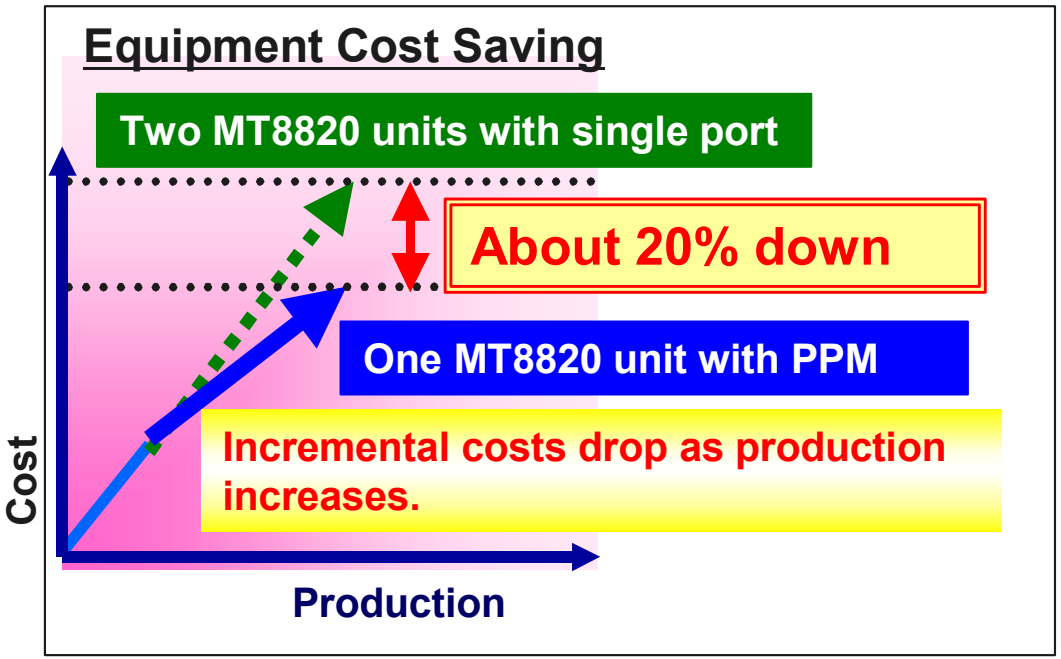


For example, two GSM mobile can be tested simultaneously at RF1 and RF2, respectively.

Parallelphone Measurement

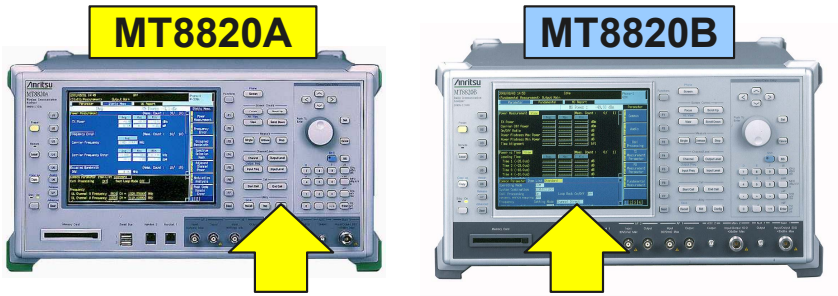
Parallelphone Measurement cuts capital costs by 20%, power consumption by 30%, and benchtop space per port (RF) by 50%.





MT8820A Compatibility

Because the MT8820B is compatible with MT8820A functions, GPIB commands, and operations (GUI), investment in existing assets is maintained.



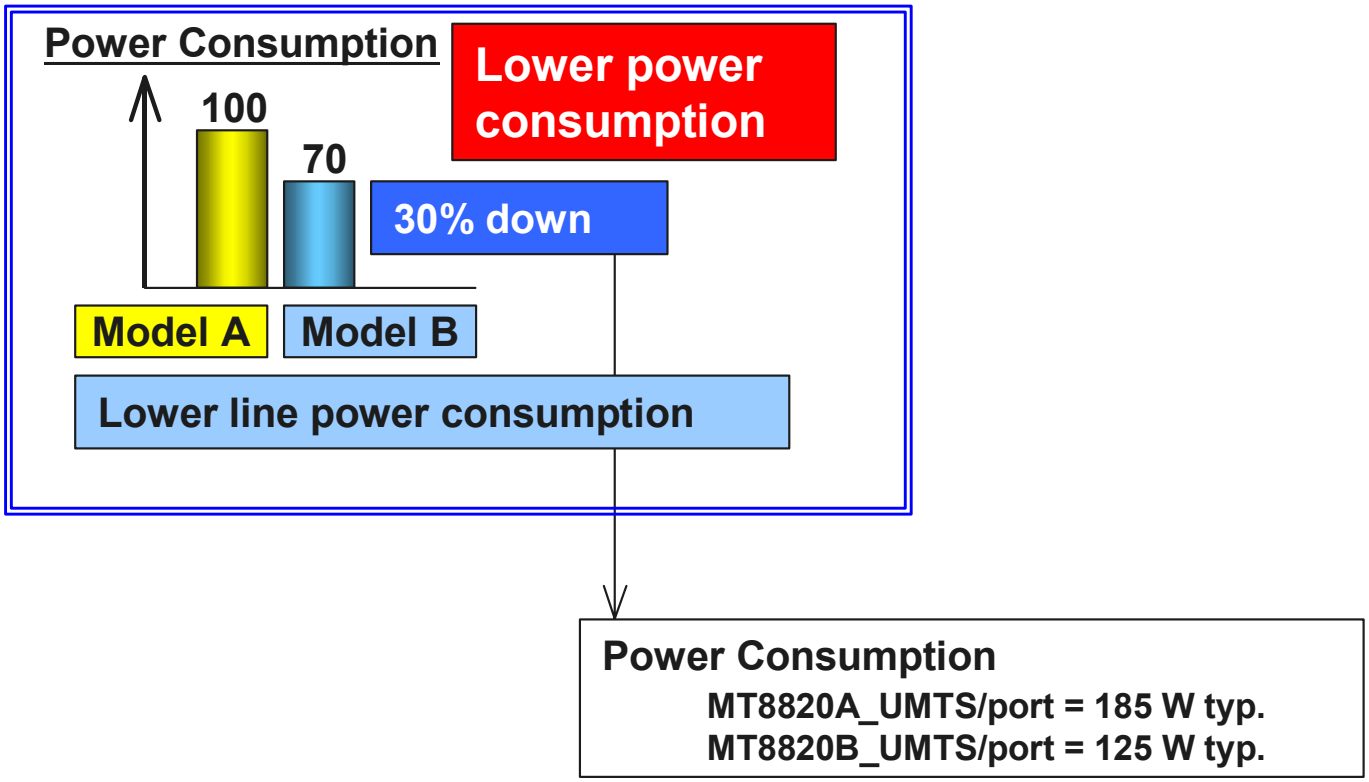
Compatible

- Functions
- GPIB Commands
- Operation (GUI)

Same jig
Same control software
Same operation (GUI)

Quality Improvement (Lower Power Consumption)

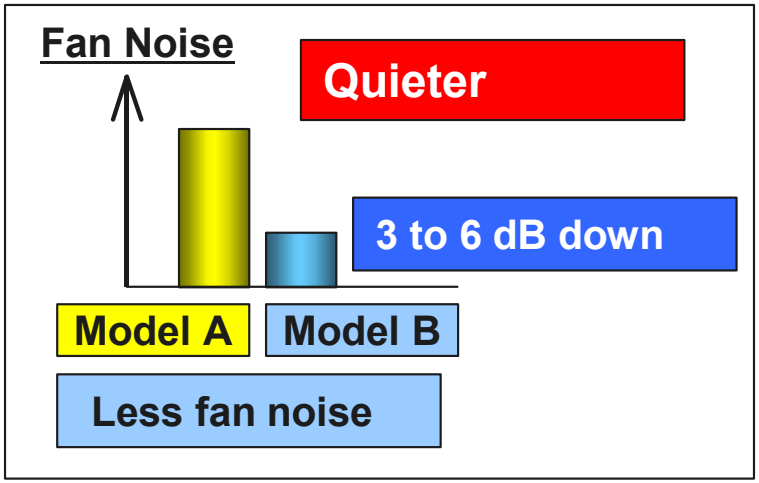
The MT8820B cuts power consumption by 30% to reduce running costs.

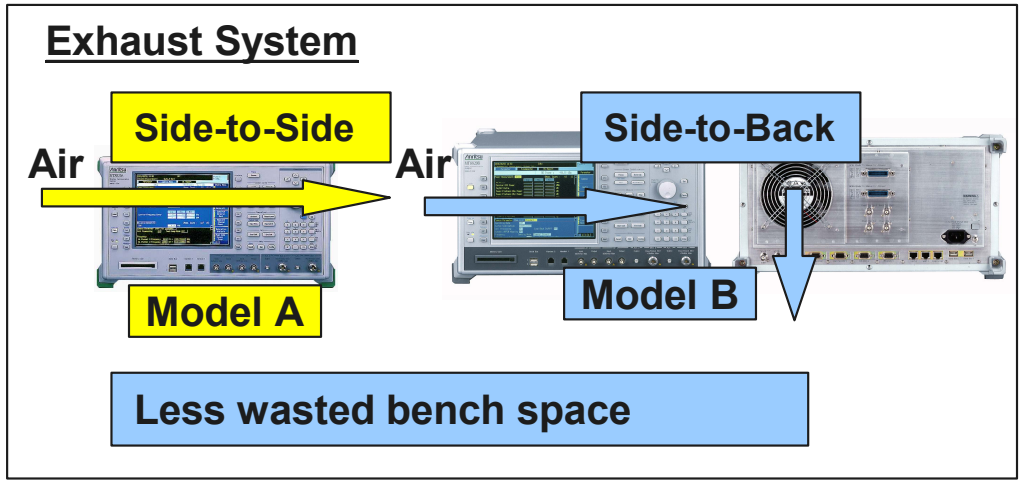


Less Fan Noise and Rerouted Exhaust

The MT8820B has less fan noise for a better working environment.

The MT8820A heat exhaust air flow is side-to-side, but the MT8820B exhaust flow is side-to-back, allowing MT8820B units to be placed closer to each other and saving space.





MX882000C W-CDMA Measurement Software

MX882000C-011 HSDPA Measurement Software

MX882000C-013 HSDPA High Data Rate

MX882000C-021 HSUPA Measurement Software

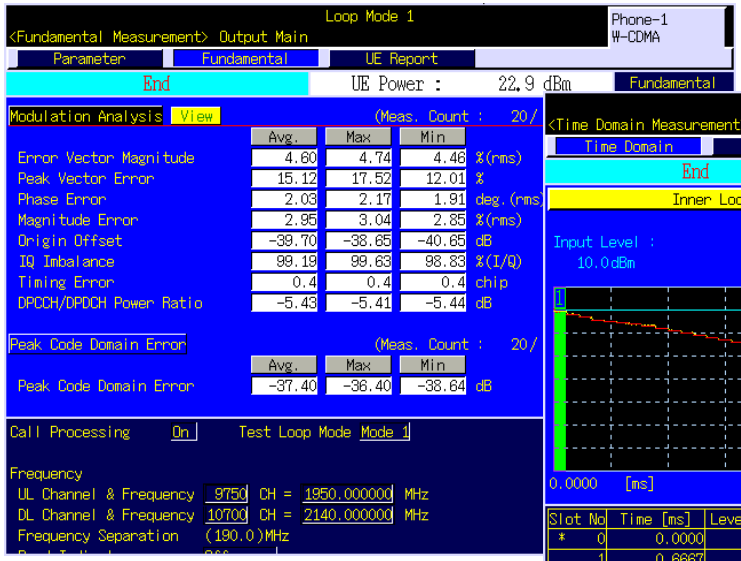
MX882000C-031 HSPA Evolution Measurement Software[*1]

*1: Available in the near future

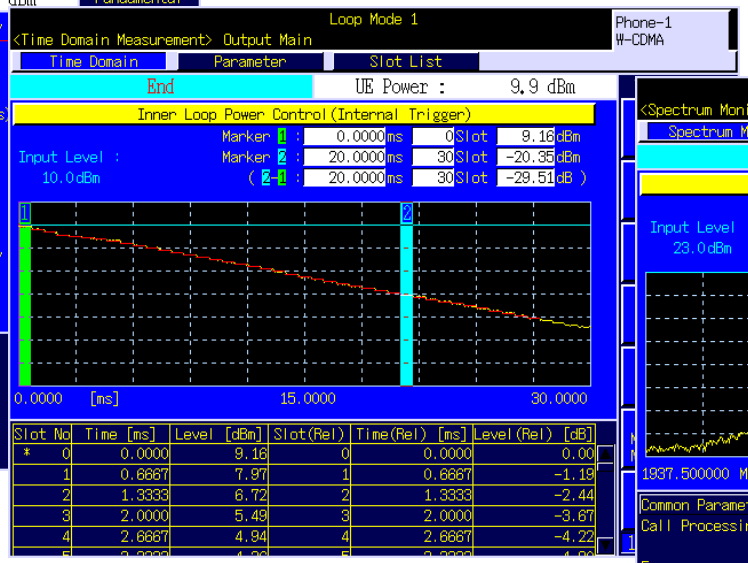
MX882000C W-CDMA Measurement Software

In addition to supporting basic Tx/Rx measurements of W-CDMA mobile terminals, power can be measured in the time domain and the spectrum can be checked at the Spectrum Monitor screen. A stable signal can be measured at the Fundamental Measurement screen, while a signal changing over time can be measured at the Time Domain Measurement screen.

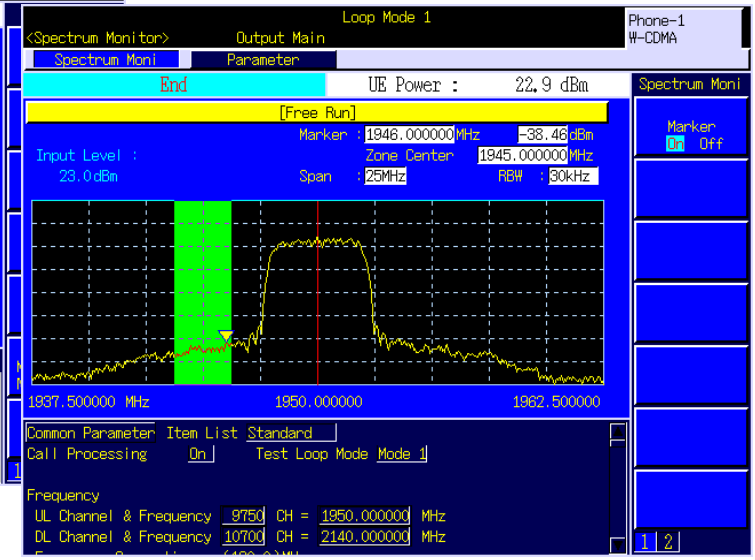
Fundamental Measurement Screen



Time Domain Measurement Screen



Spectrum Monitor Screen



MX882000C W-CDMA Measurement Software

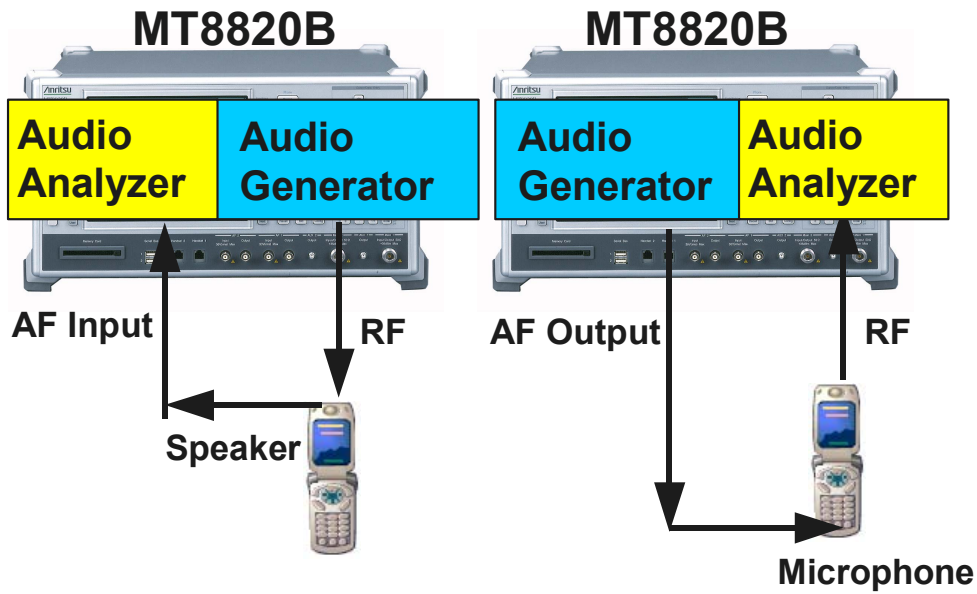
When the audio board and voice codec options are installed, the MT8820B can perform the tests shown below.

Voice End-to-End Test

Voice calling between a W-CDMA mobile and handset can be tested.

Audio Tx/Rx Measurement

The audio characteristics of a W-CDMA terminal can be measured with one MT8820B unit with built-in audio generator and audio analyzer.

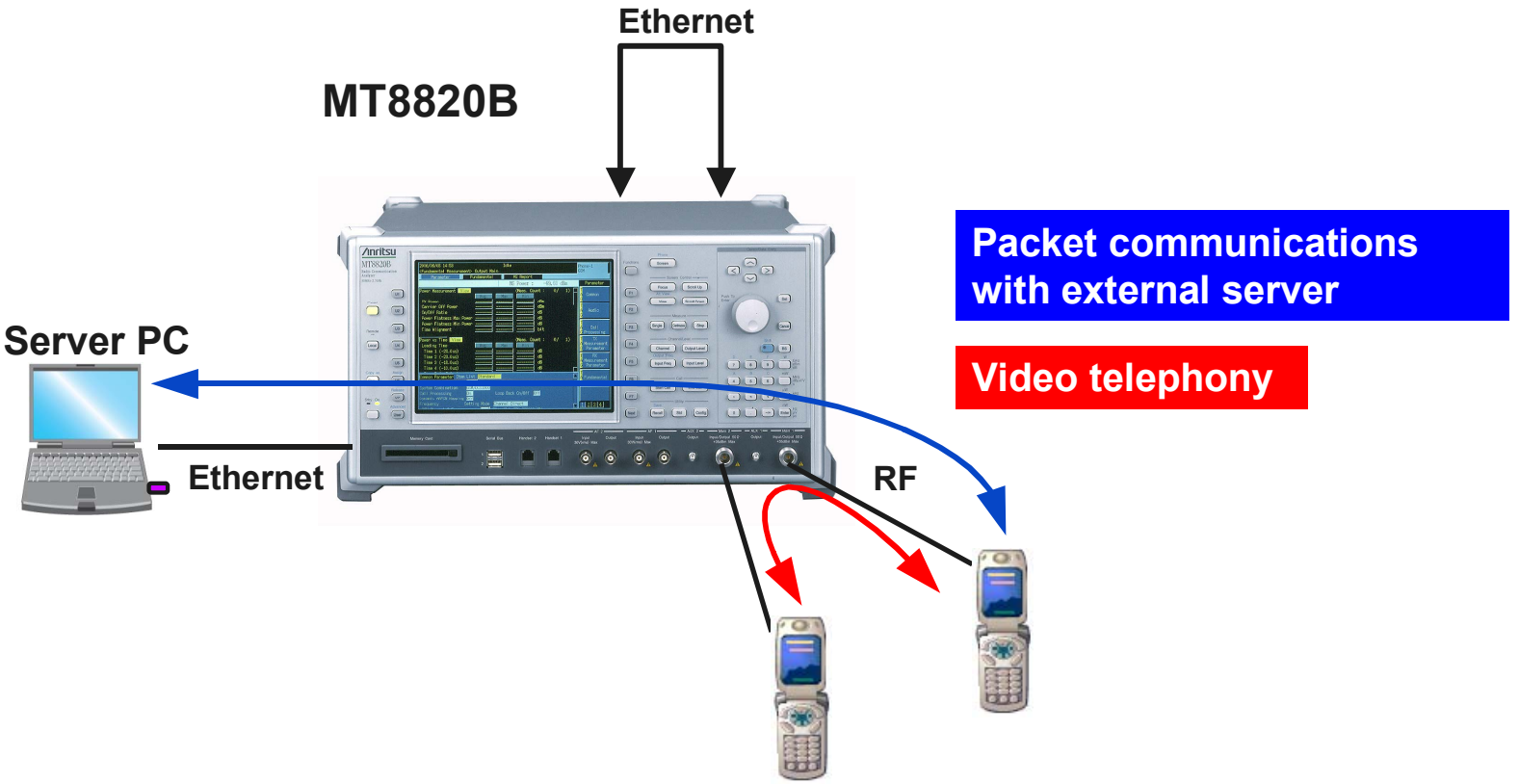


Audio Rx and Mobile Speaker Test

Audio Tx and Mobile Microphone Test

MX882000C W-CDMA Measurement Software

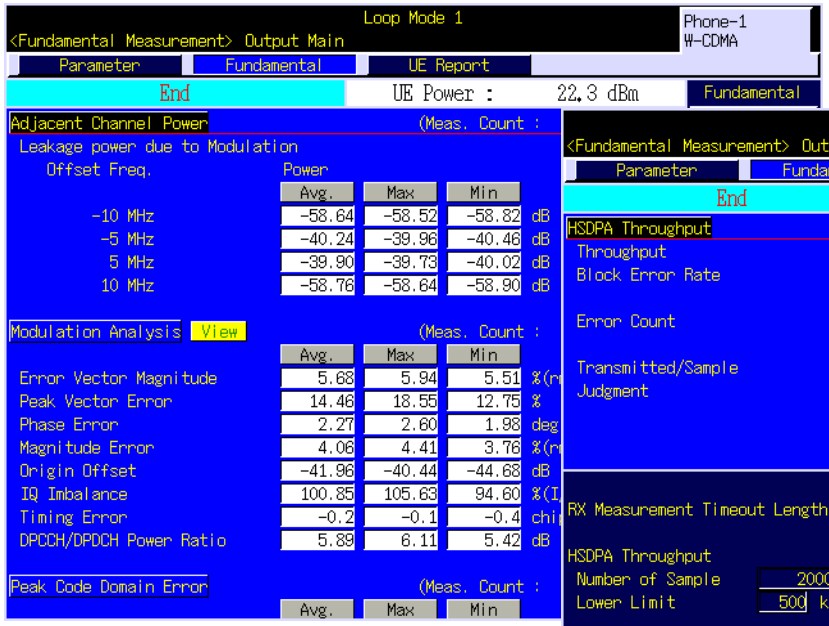
Installing this optional software supports tests of W-CDMA supplementary functions, such as video telephony and PPP/IP packet communications with an external server.



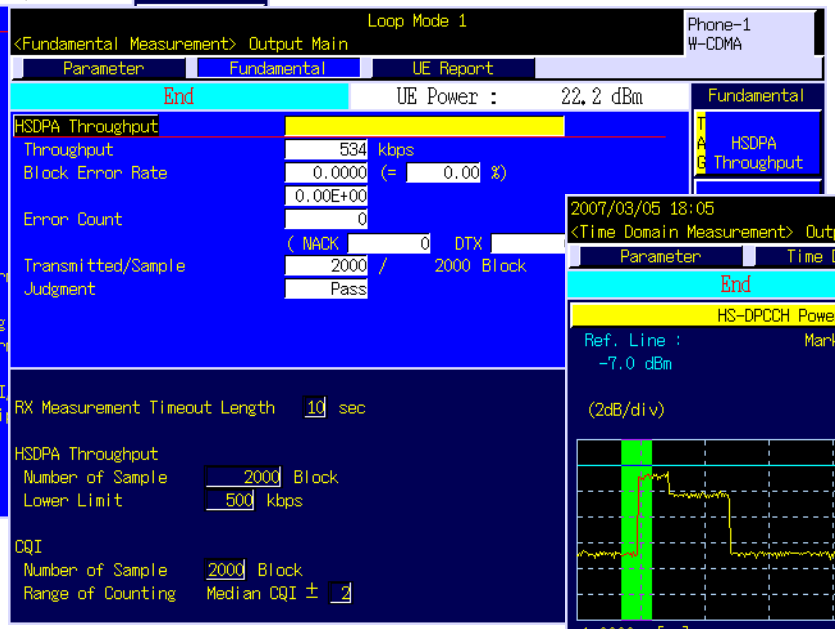
MX882000C-011 HSDPA Measurement Software

The Tx characteristics at HS-DPCCH sending, throughput, and burst power variation at HS-DPCCH sending can be measured with this software.

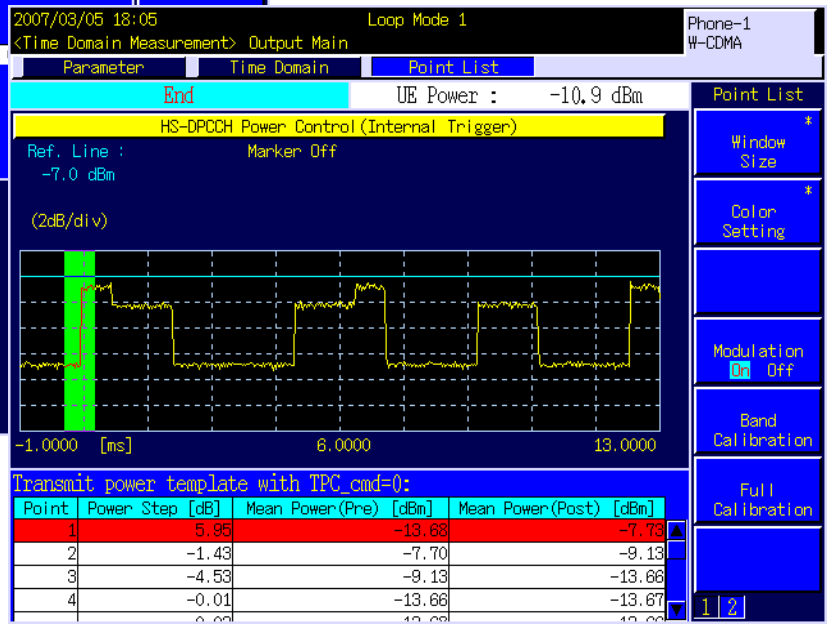
Power, SEM, ACLR, EVM



Throughput



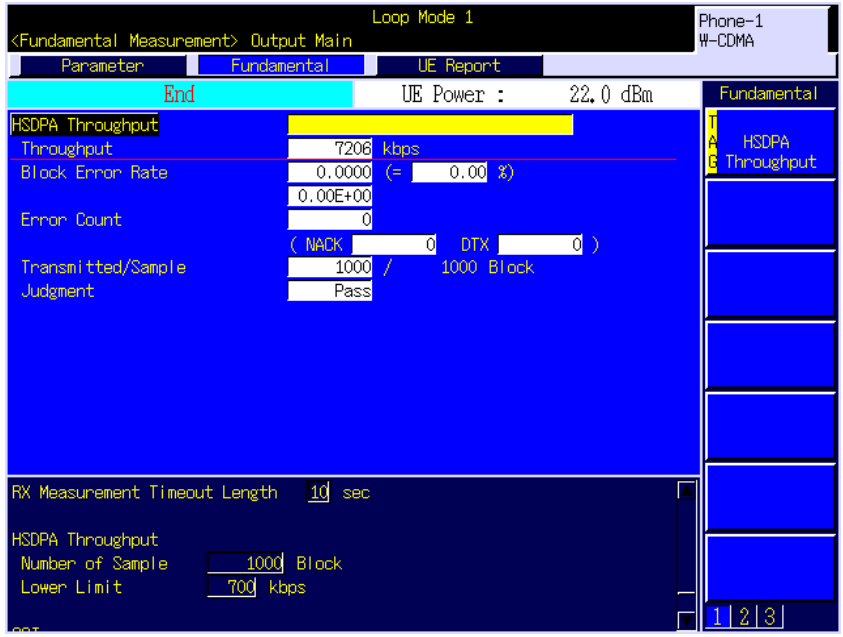
HS-DPCCH Power Control



MX882000C-013 HSDPA High Data Rate

This option supports the following signals for testing HSDPA throughput with high-speed data rates, including 14 Mbps.

Throughput: Ex. Category 8, Max.



Parameter (Channel Coding)	Maximum data rate (Prioritised RABs DL Max)	Explanation of signal
H-Set 6 (QPSK)	3219 kbps	Signal defined by 3GPP to test throughput of HSDPA terminal of HS-DSCH category 7, 8 (7.2 Mbps class). (QPSK modulation)
H-Set 6 (16QAM)	4689 kbps	Signal defined by 3GPP to test throughput of HSDPA terminal of HS-DSCH category 7, 8 (7.2 Mbps class). (16QAM modulation)
Category 6, Max.	3649 kbps	Signal to test throughput of HSDPA terminal of HS-DSCH category 6 (3.6 Mbps class) with maximum data rate.
Category 8, Max.	7205.5 kbps	Signal to test throughput of HS-DSCH category 8 (7.2 Mbps class) HSDPA terminal with maximum data rate.
Category 10, Max.	13976 kbps	Signal to test throughput of HS-DSCH category 10 (14 Mbps class) HSDPA terminal with maximum data rate.

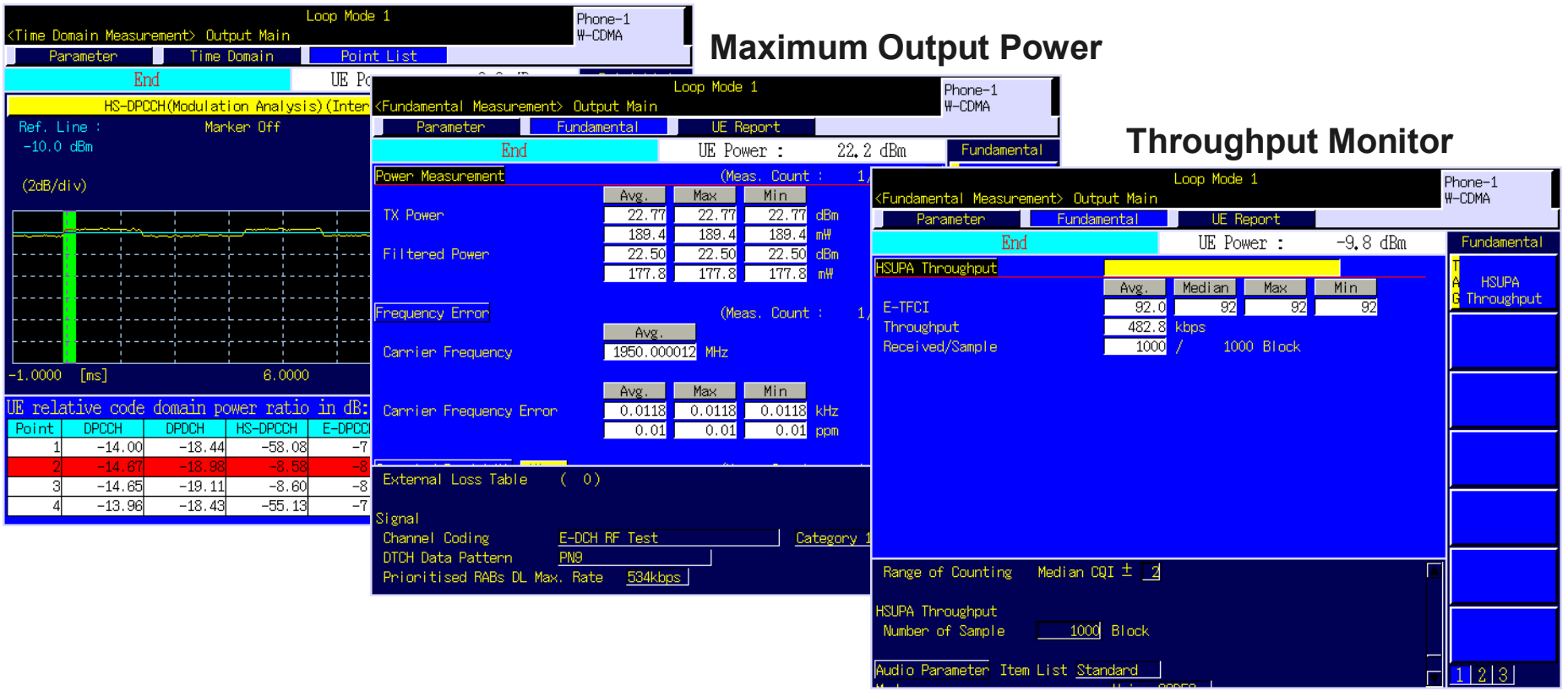
MX882000C-021 HSUPA Measurement Software

The E-DCH Tx characteristics can be measured with this software. Terminals supporting categories 1 to 6, and 2- and 10-ms TTI can be tested. E-DCH throughput can be monitored too.

Relative Code Domain Power

Maximum Output Power

Throughput Monitor

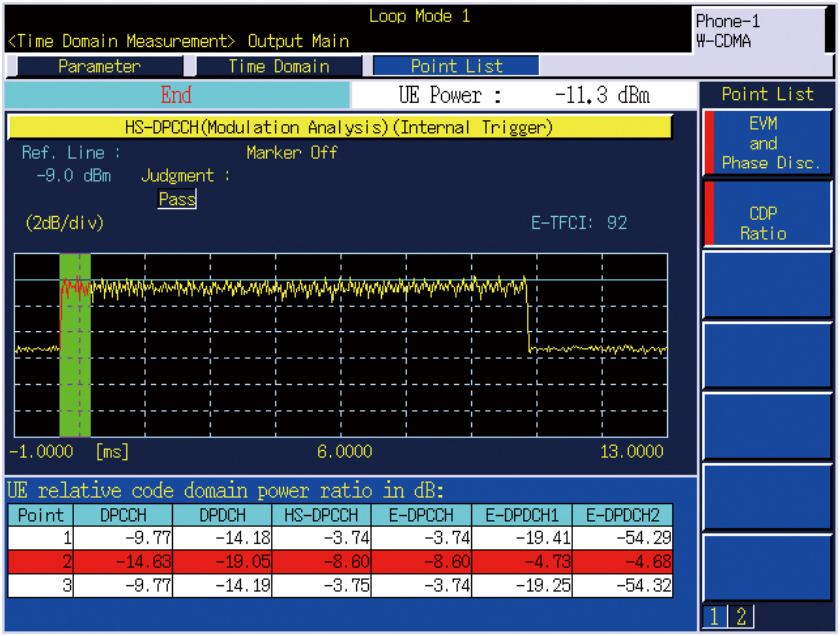


*Throughput monitor value is calculated based on bit rate information of E-TFCI value.

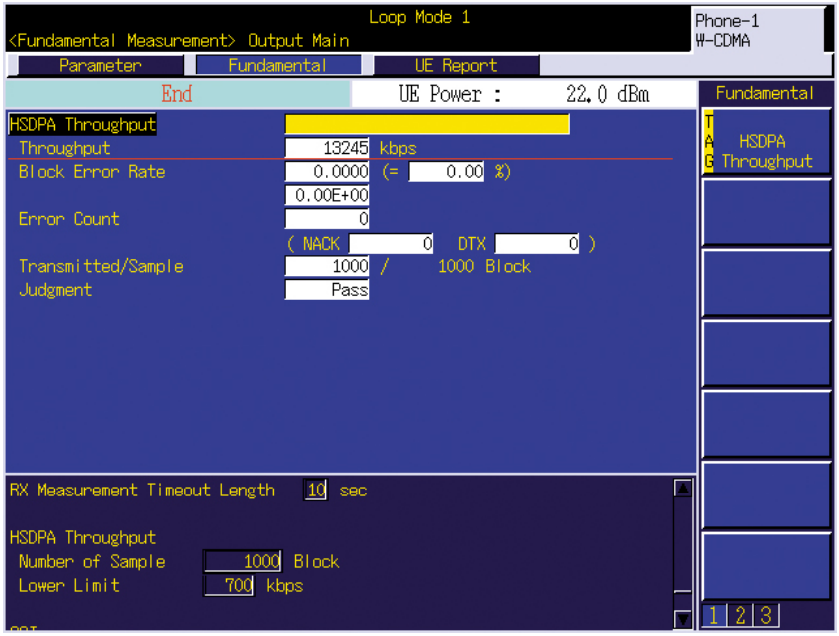
MX882000C-031 HSPA Evolution Measurement Software *1

UE Relative Code Domain Power Accuracy and Relative Code Domain Error for HS-DPCCH and E-DCH with 16QAM can be measured. The HSDPA throughput with FRC H-Set 8 (64QAM) can be measured. The throughput can be measured for 21-Mbps class HSDPA terminals with Category 14 with maximum data rate.

UE Relative Code Domain Power Accuracy



Throughput Measurement (Ex. FRC H-Set 8 (64QAM))



*1: For terminal connectivity, contact your Anritsu sales representative.

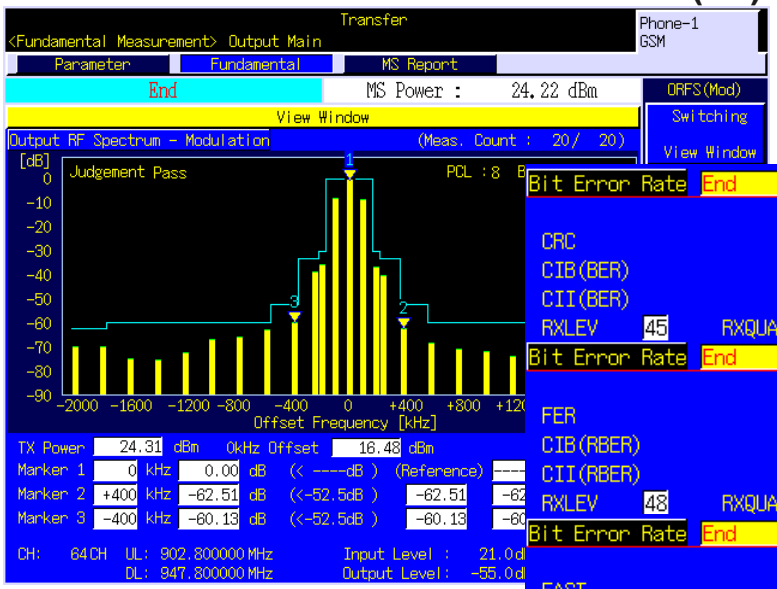
MX882001C GSM Measurement Software

MX882001C-011 EGPRS Measurement Software

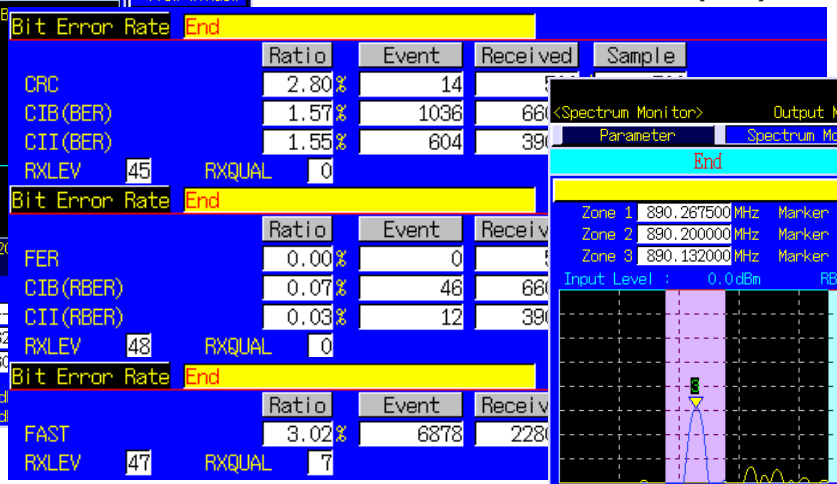
MX882001C GSM Measurement Software

In addition to basic RF Tx/Rx measurements of GSM/GPRS terminals, the spectrum can be checked at the Spectrum Monitor screen to adjust the IQ modulator. Furthermore, installing the optional software supports tests of packet communications between GPRS mobiles and an external server.

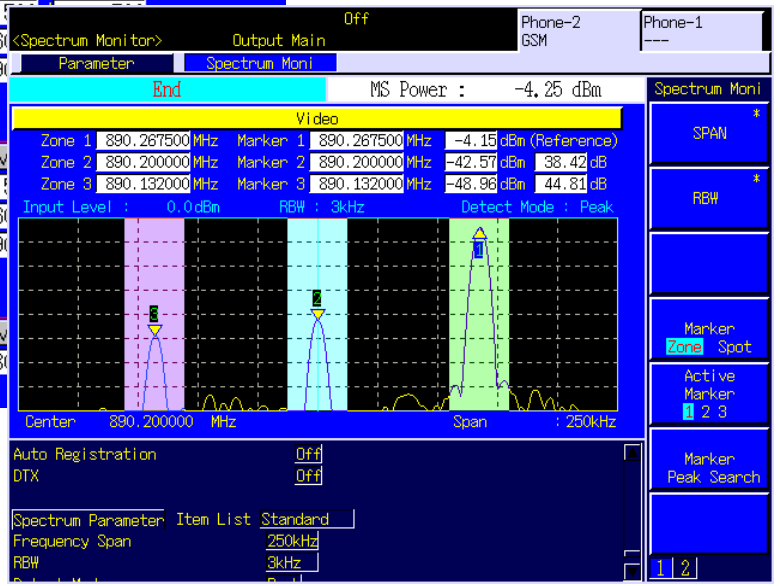
Fundamental Measurement Screen (Tx)



Fundamental Measurement Screen (Rx)



Spectrum Monitor Screen



MX882001C GSM Measurement Software

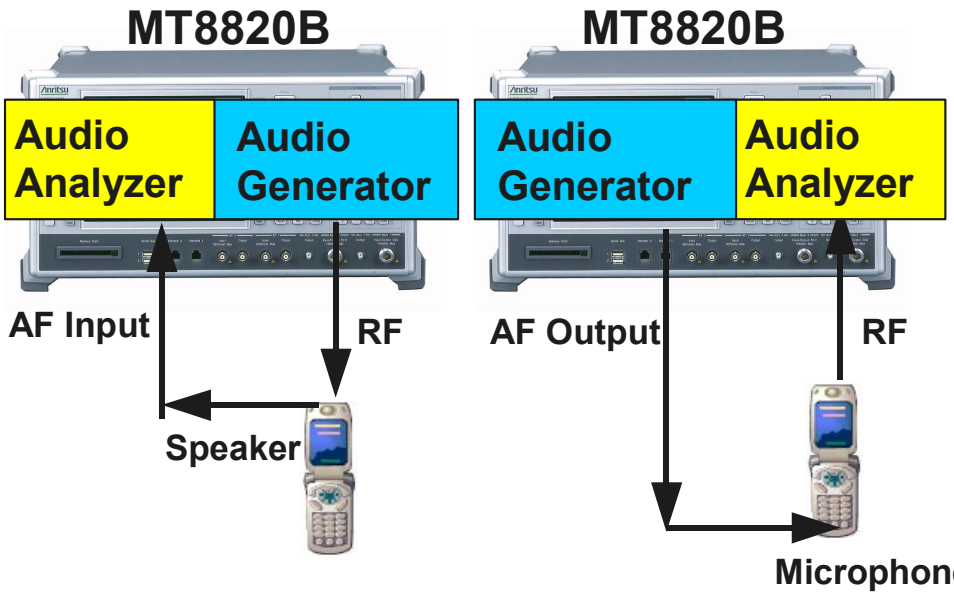
When the audio board and voice codec options are installed, the MT8820B can perform the tests shown below.

Voice End-to-End Test

Voice calling between a GSM mobile and handset can be tested.

Audio Tx/Rx Measurement

The audio characteristics of a GSM terminal can be measured with one MT8820B unit with built-in audio generator and audio analyzer.



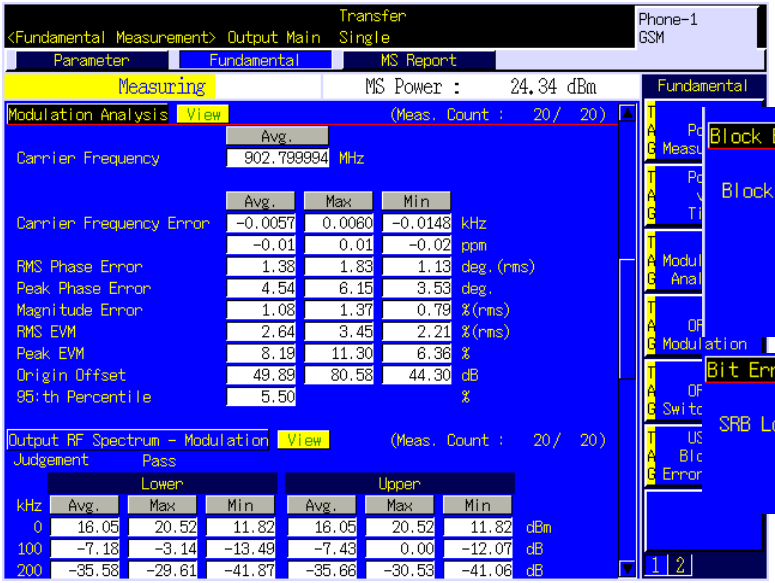
Audio Rx and Mobile Speaker Test

Audio Tx and Mobile Microphone Test

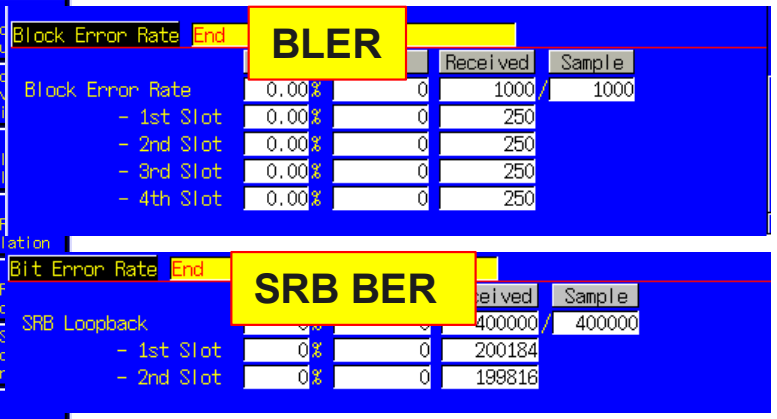
MX882001C-011 EGPRS Measurement Software

The Tx/Rx characteristics of EGPRS terminals using 8PSK modulation can be measured along with the 8PSK modulation accuracy, such as EVM and origin offset, using this software. BER at SRB loopback plus BLER can be measured for Rx too.

Fundamental Measurement Screen (Tx)



Fundamental Measurement Screen (Rx)



MX882002C CDMA2000 1X Measurement Software

MX882006C 1xEV-DO Measurement Software

MX882006C-011 1xEV-DO Rev. A Measurement Software

*The MX882006C is compatible with the MX882003C measurement items; the MX882006C supports RF tests for 1xEV-DO (Rev. 0) mobiles.
To perform RF tests for 1xEV-DO Rev. A mobiles, add the MX882006-011 software option.

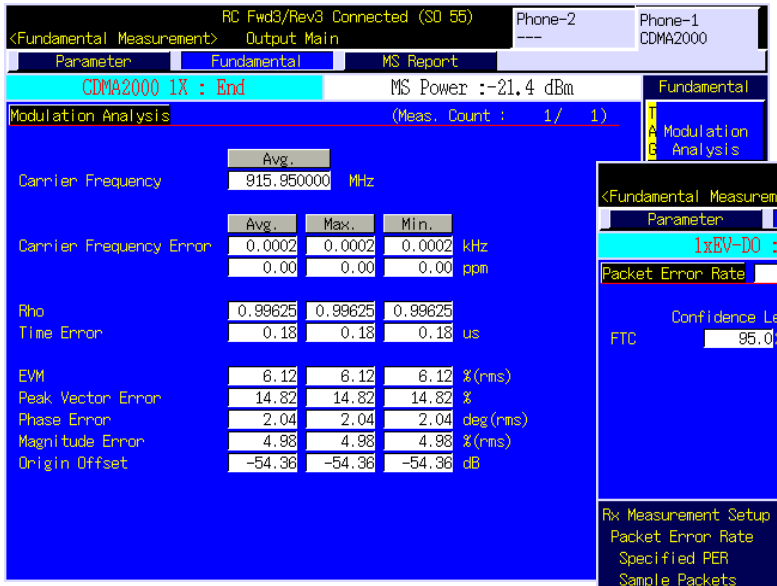
Measurement Software and Protocol Revision

Model	Protocol Revision
MX882006C	IS-856-0 (1xEVDO Rev. 0)
MX882006C-002	IS-856-0 (1xEVDO Rev. 0)
MX882006C-011	IS-856-A (1xEVDO Rev. A)

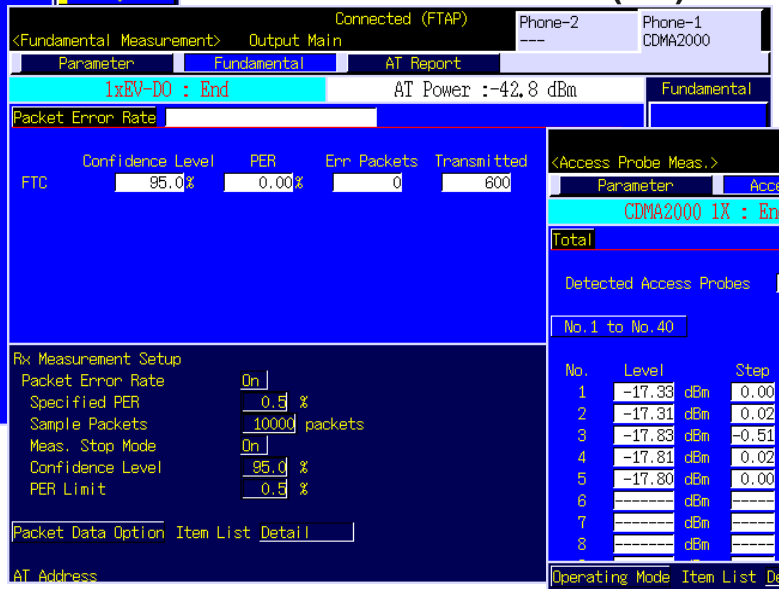
MX882002C CDMA2000 1X Measurement Software

In addition to the basic RF Tx/Rx measurements of CDMA2000 1X terminals, the access probe power and open loop time response can be measured with this software. Moreover, it supports testing of packet communications between CDMA2000 1X terminals and an external server.

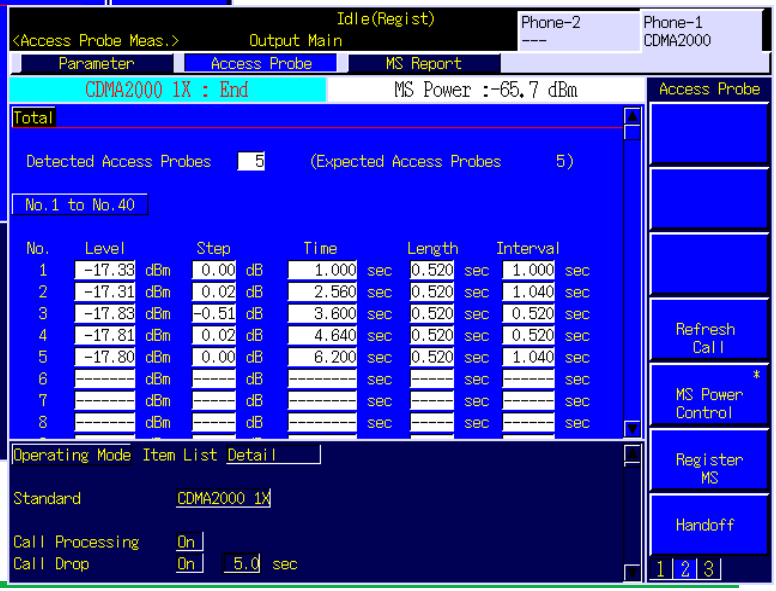
Fundamental Measurement Screen (Tx)



Fundamental Measurement Screen (Rx)



Access Probe Measurement Screen



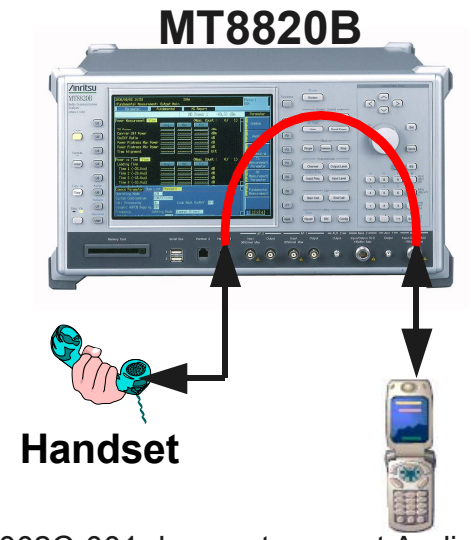
MX882002C CDMA2000 1X Measurement Software

When the audio board and voice codec options are installed, the MT8820B can perform the tests shown below.

***Voice End-to-End Test**
***Audio signal input from AF 1 Input connector of MT8820B**
***Audio signal output to AF 1 Output connector of MT8820B**

Voice End-to-End Test

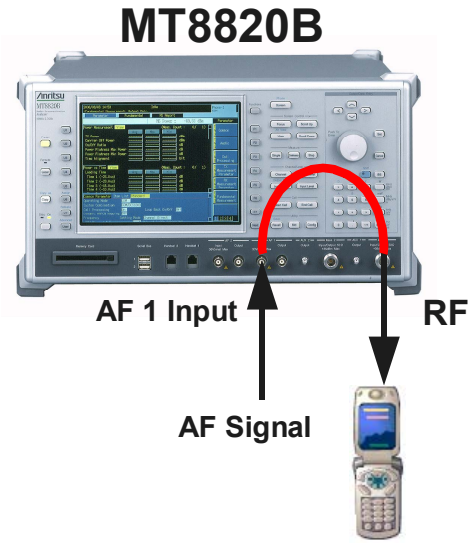
Voice calling between a CDMA2000 1X mobile and handset can be tested.



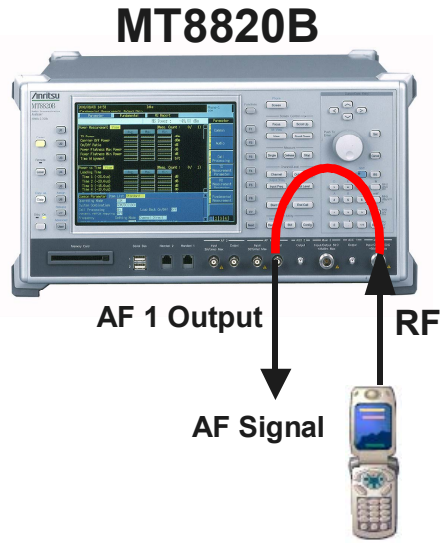
*The MX882002C-001 does not support Audio Tx/Rx Measurement like the other system.

Audio Signal Input and Output Function

The MT8820B can output and input an audio signal at the AF 1 Input/Output connector.



Audio Signal Input function

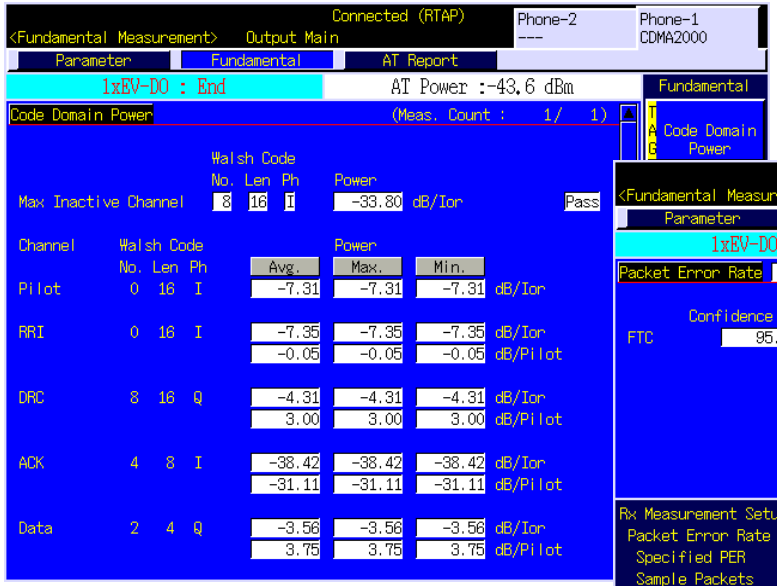


Audio Signal Output function

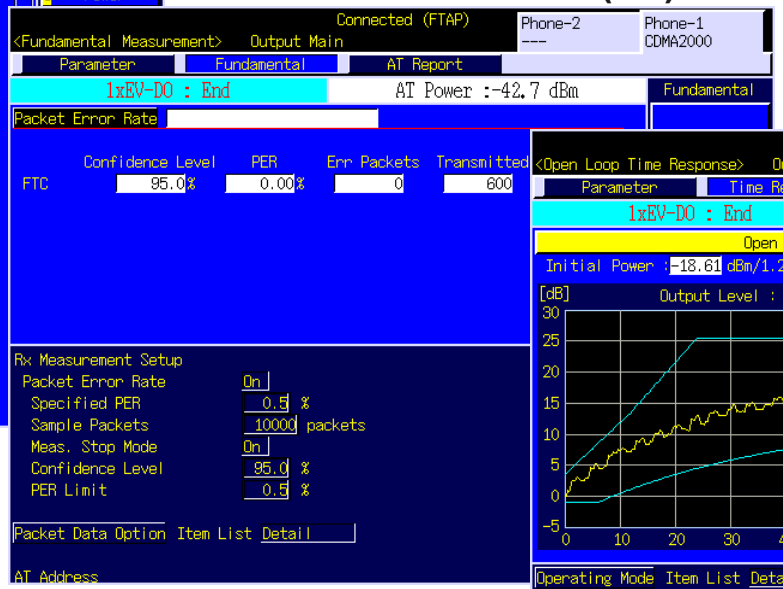
MX882006C 1xEV-DO Measurement Software

In addition to the basic RF Tx/Rx measurements of CDMA2000 1xEV-DO (Rev. 0) terminals, the access probe power and open loop time response can be measured using this software. Moreover, it supports testing of packet communications between CDMA2000 1xEV-DO (Rev. 0) terminals and an external server.

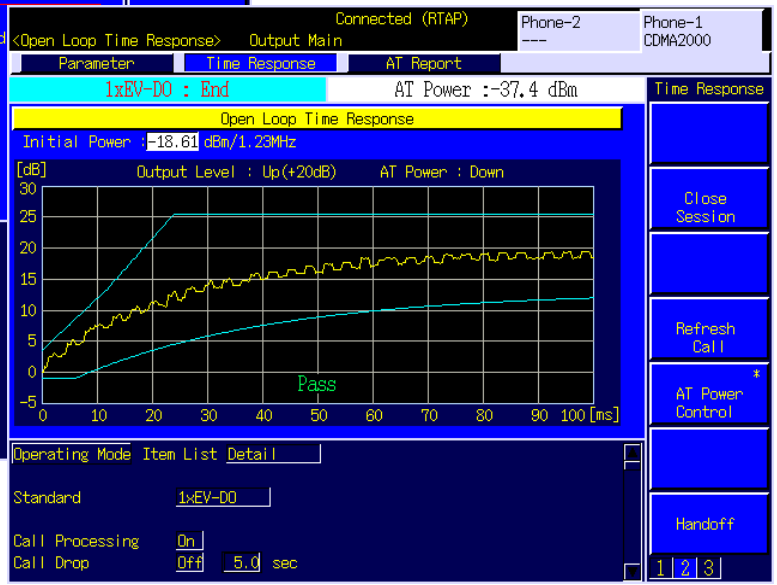
Fundamental Measurement Screen (Tx)



Fundamental Measurement Screen (Rx)



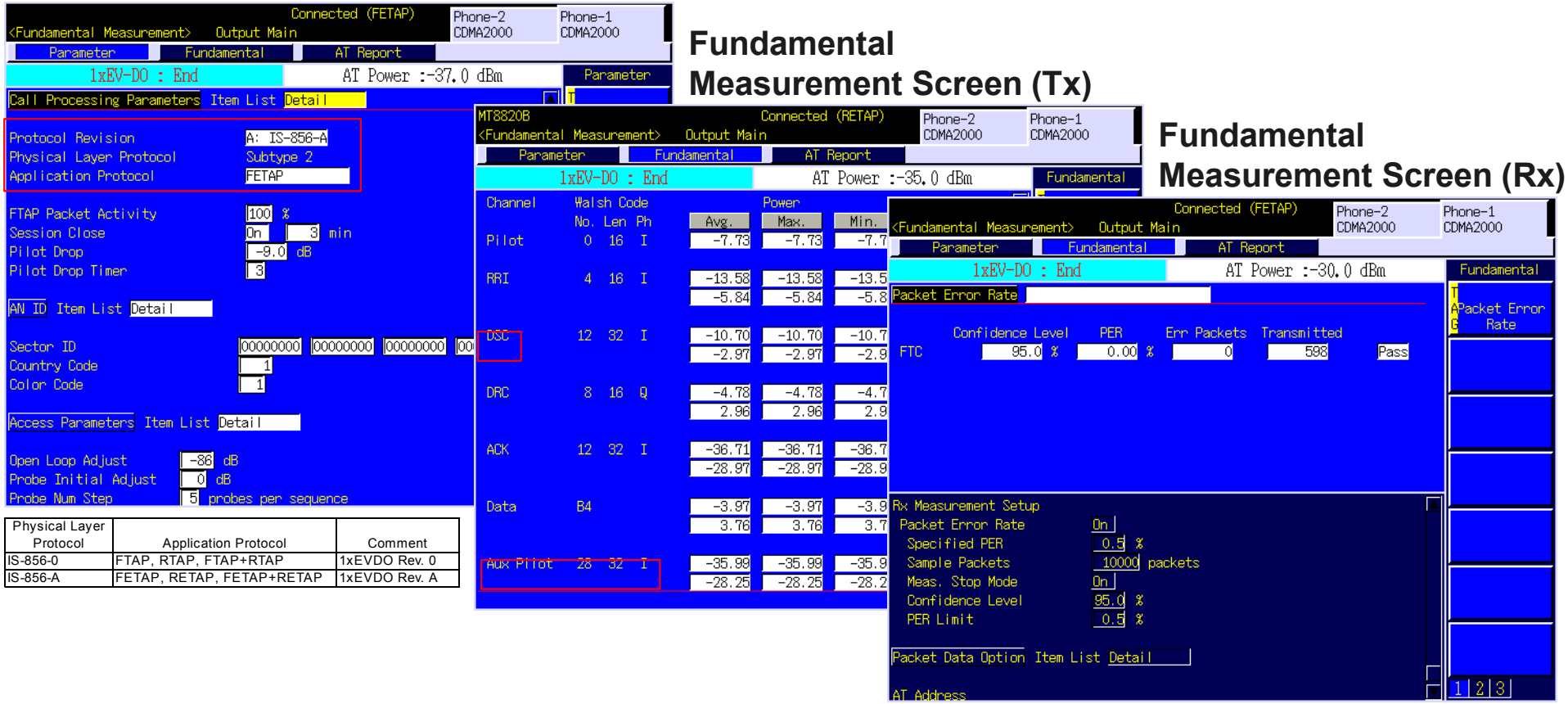
Open Loop Time Response Measurement Screen



MX882006C-011 1xEV-DO Rev. A Measurement Software

This software supports call processing (ETAP) with IS-865-A (1xEV-DO Rev. A) for Tx/Rx signals under test. In addition, the MT8820B can measure DSC and Aux Pilot added to 1xEV-DO Rev. A Code Domain Power Measurement.

Call Processing Parameters Setting View Window



Physical Layer Protocol	Application Protocol	Comment
IS-856-0	FTAP, RTAP, FTAP+RTAP	1xEVDO Rev. 0
IS-856-A	FETAP, RETAP, FETAP+RETAP	1xEVDO Rev. A

*PER Measurement can be tested with FETAP. However, Anritsu approves Rx measurement in the non-call processing mode.

MX882007C TD-SCDMA Measurement Software

MX882007C-001 TD-SCDMA Voice Codec

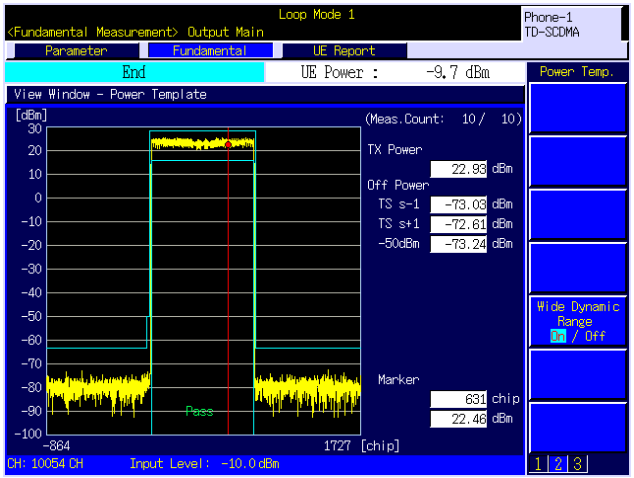
MX882007C-003 TD-SCDMA Video Phone Test

MX882007C-011 TD-SCDMA HSDPA Measurement Software

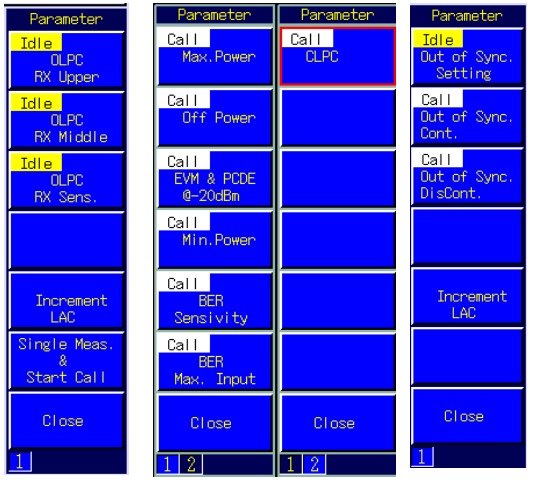
MX882007C-021 TD-SCDMA HSUPA Measurement Software

MX882007C TD-SCDMA Measurement Software

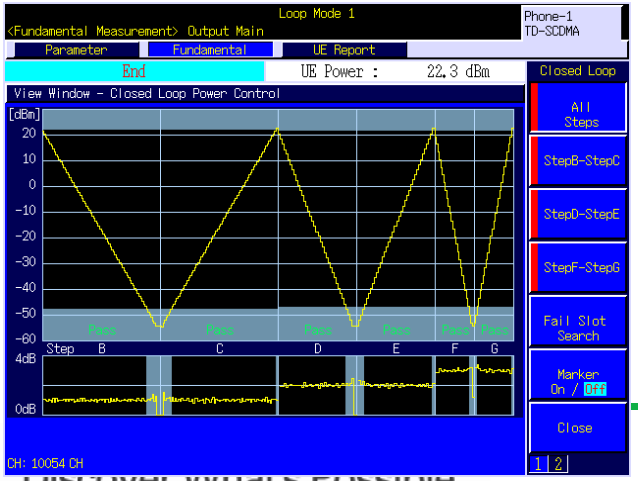
The main RF Tx/Rx measurements of TD-SCDMA (1.28 Mcps TDD) terminal can be performed with call-processing. Settings for the main Tx/Rx tests are made easy by one-touch operation, and closed-loop power control supports automated measurements for simple, 3GPP-compliant testing. In addition, the mobile terminal report function, spectrum monitor function plus test plan function offering batch measurements are all supported along with a multi-power measurement function for fast adjustment of the terminal Tx output level.



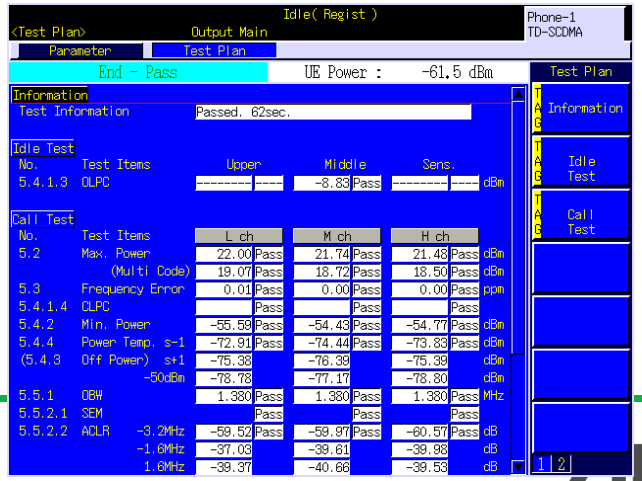
Tx/Rx Measurement Example: Power Template



One-touch test condition setting menu



Automatic closed-loop power control measurement



Batch measurement test plan

Discover What's Possible

Anritsu

MX882007C-001 TD-SCDMA Voice Codec

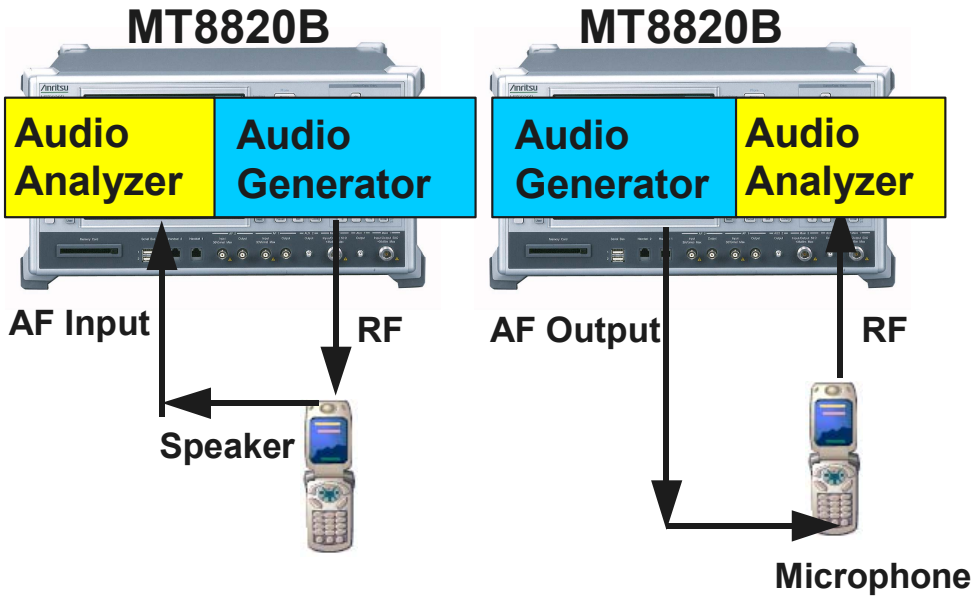
When the audio board and voice codec options are installed, the MT8820B can perform the tests shown below.

Voice End-to-End Test

Voice calling between a TD-SCDMA mobile and handset can be tested.

Audio Tx/Rx Measurement

The audio characteristics of a TD-SCDMA terminal can be measured with one MT8820B unit with built-in audio generator and audio analyzer.

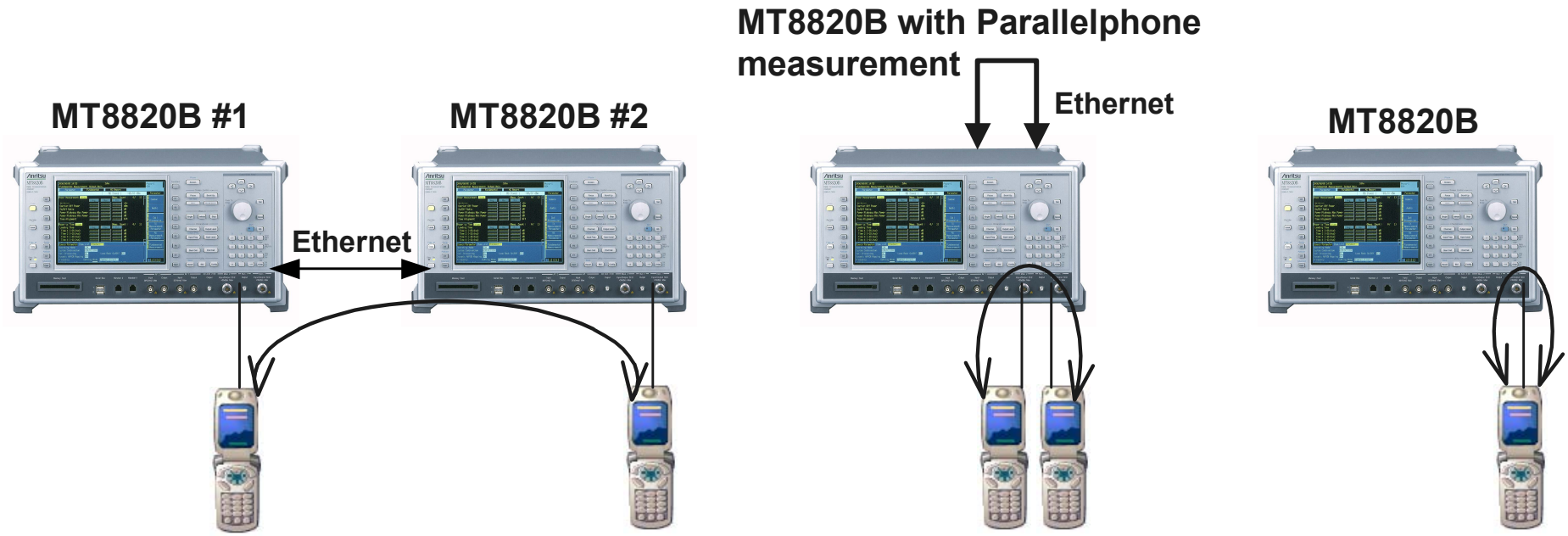


Audio Rx and Mobile Speaker Test

Audio Tx and Mobile Microphone Test

MX882007C-003 TD-SCDMA Video Phone Test

The MX882007C-003 TD-SCDMA Video Phone Test option can test end-to-end video communication between two TD-SCDMA mobiles using either two MT8820B units or one MT8820B unit with the Parallelphone measurement option. Moreover, video communication can be tested with a single TD-SCDMA mobile using the video loopback function.



Video phone test by end-to-end video communication with two MT8820B units

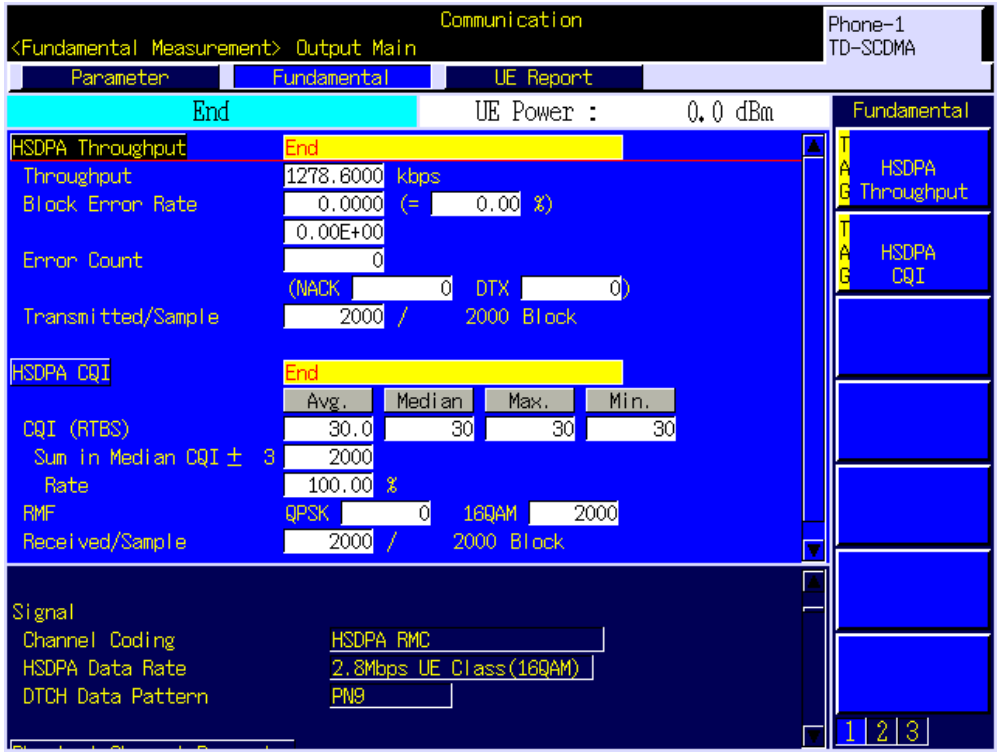
Video phone test by end-to-end video communication with one MT8820B unit

Video phone test by video loopback with one MT8820B

MX882007C-011 TD-SCDMA HSDPA Measurement Software

3GPP-compliant Rx throughput measurements and CQI measurement are supported at connection to TD-SCDMA HSDPA mobile terminals. Both RMC signals supporting TD-SCDMA HSDPA all categories and maximum data rate (2.8 Mbps) signals for category-15 are provided as DUT throughput test signals.

TD-SCDMA HSDPA Throughput / CQI Measurement

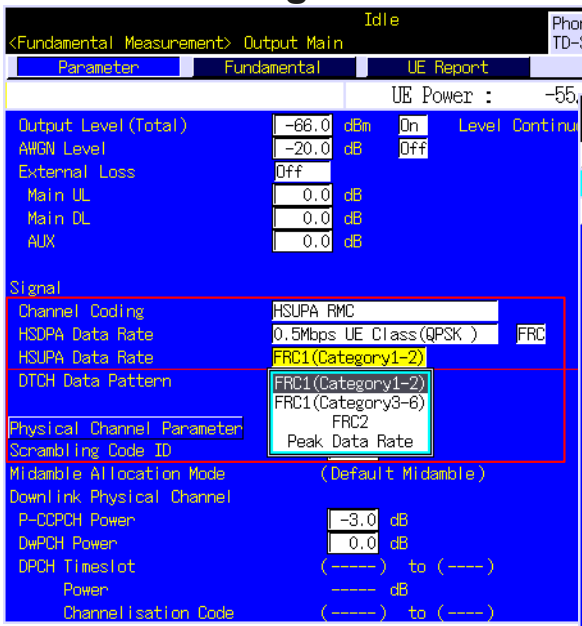


* For terminal connectivity, contact your Anritsu sales representative

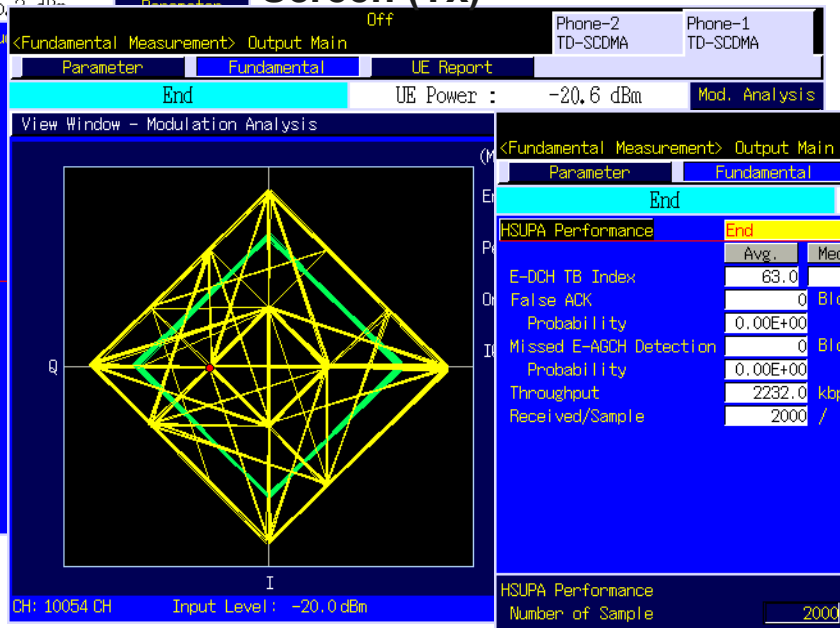
MX882007C-021 TD-SCDMA HSUPA Measurement Software

This software supports RF Tx characteristics tests of HSUPA terminals specified in TS34.122 chapter 5 and evaluating the RF performance of HSUPA terminals. Both RMC signals supporting TD-SCDMA HSUPA category 1 to 6 (2.23 Mbps UE class) are provided as DUT throughput test signals.

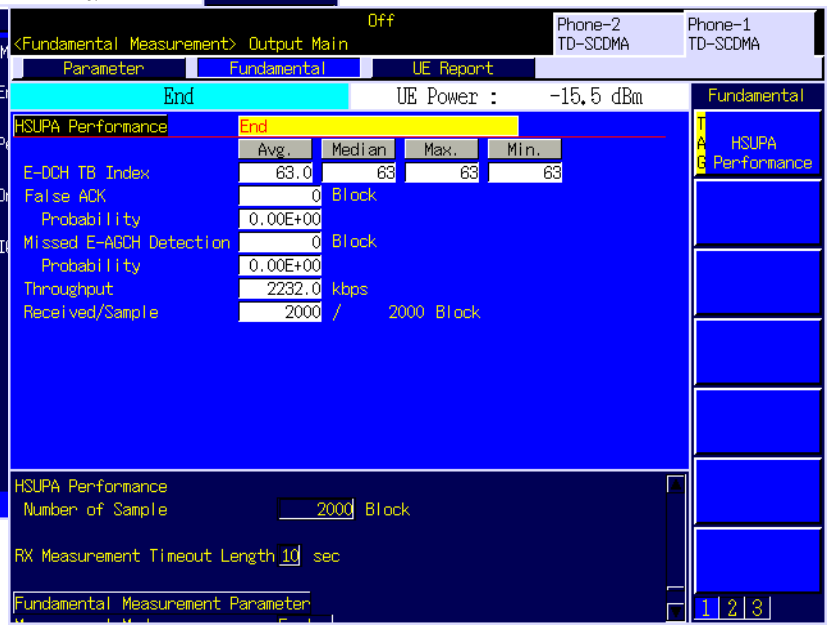
Call Processing Parameters Setting View Window



Fundamental Measurement Screen (Tx)



Performance Measurement Screen



*For terminal connectivity, contact your Anritsu sales representative

*Throughput monitor value is calculated based on bit rate information of E-DCH TE Index value.

Note

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Specifications are subject to change without notice.

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No. MT8820B-E-L-1-(7.00) 公知 Printed in Japan 2009-9 PRS