

MT8820B

Radio Communication Analyzer

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Radio Communication Analyzer

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. 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.

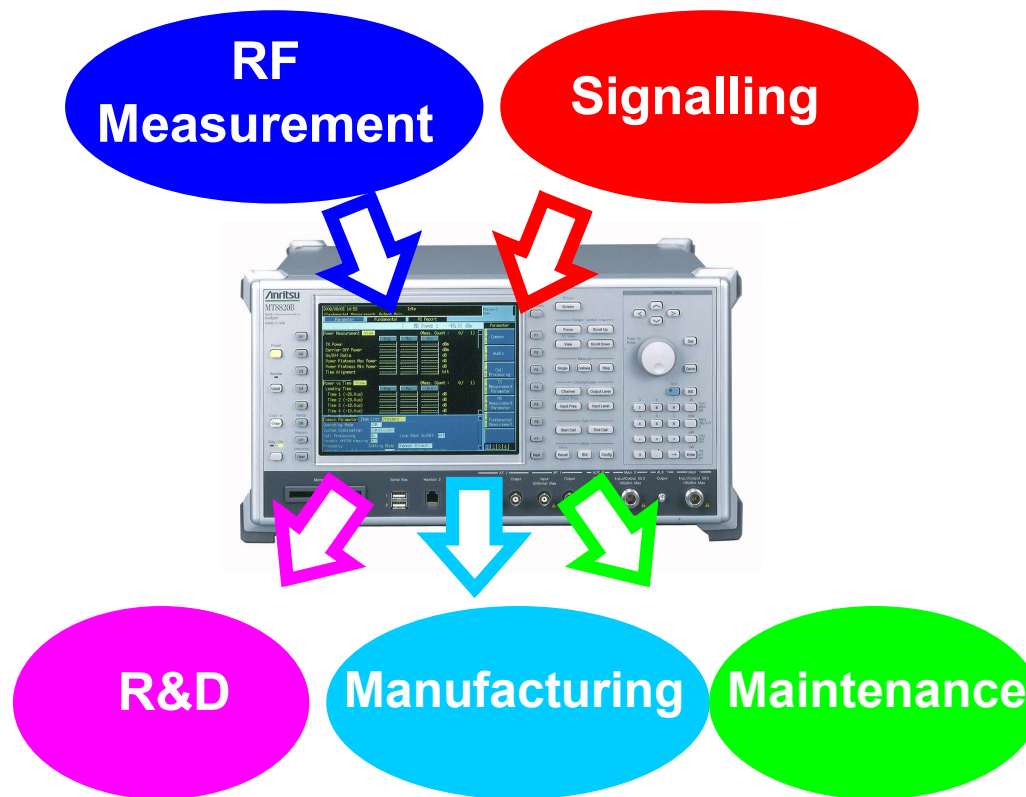
The cost of manufacturing mobile terminals depends heavily on equipment costs and manufacturing throughput. The Anritsu Parallelphone™ Measurement function helps cut equipment costs and space, and the lower power consumption cuts running costs too. Moreover, the Tx measurement speed is twice that of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

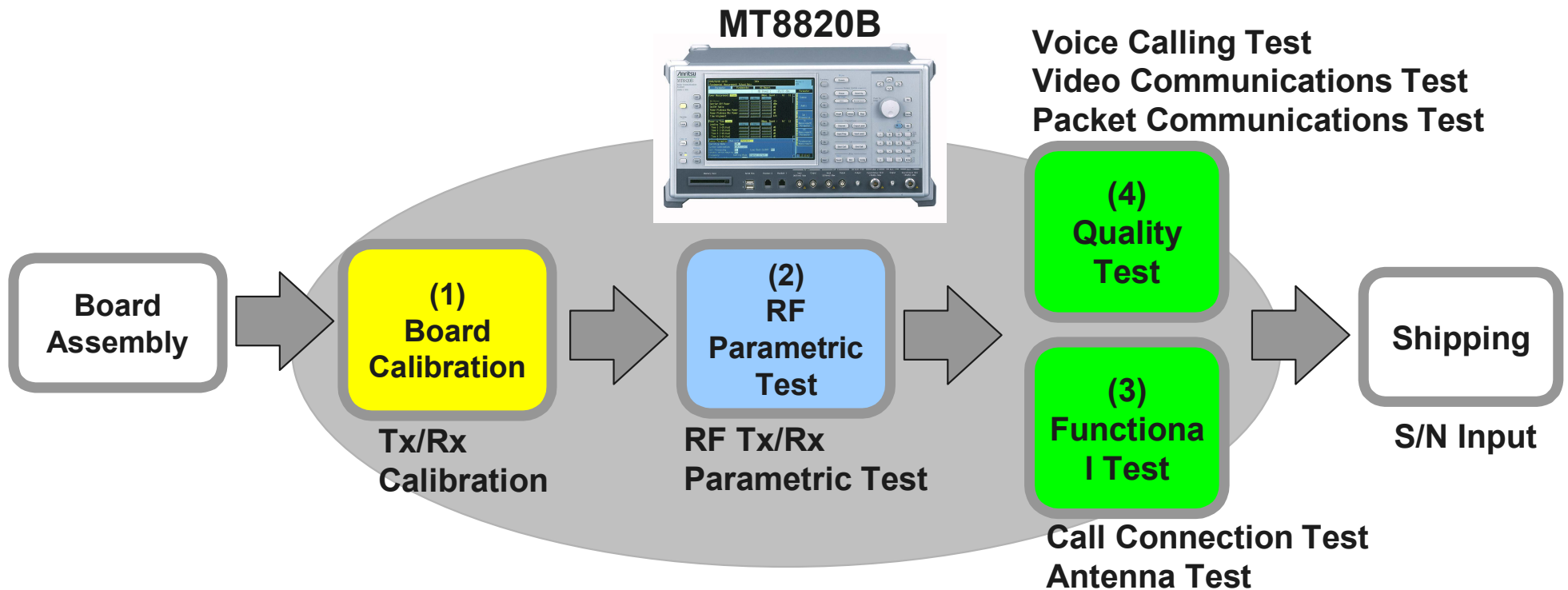
Effective Combination of Signalling and RF Measurement Technology

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



Supports All Manufacturing Processes

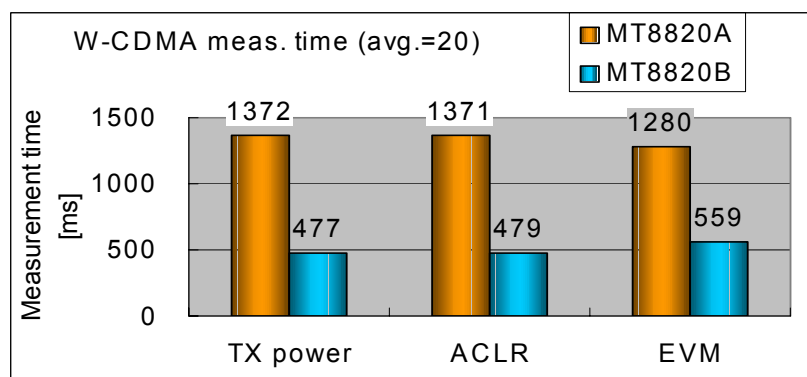
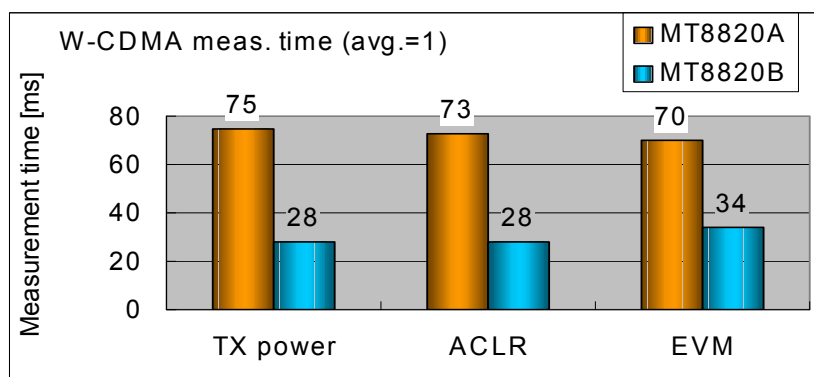
The various MT8820B functions, such as calibration, RF parametric testing, signalling, voice calling, and packet communications, support all manufacturing processes shown below, so it can be incorporated easily into existing production lines.



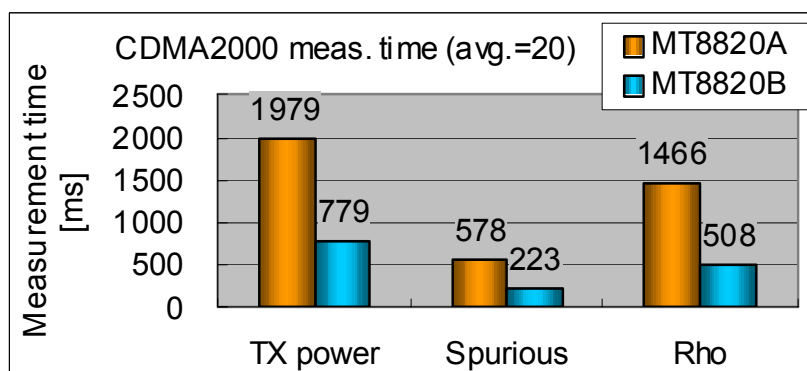
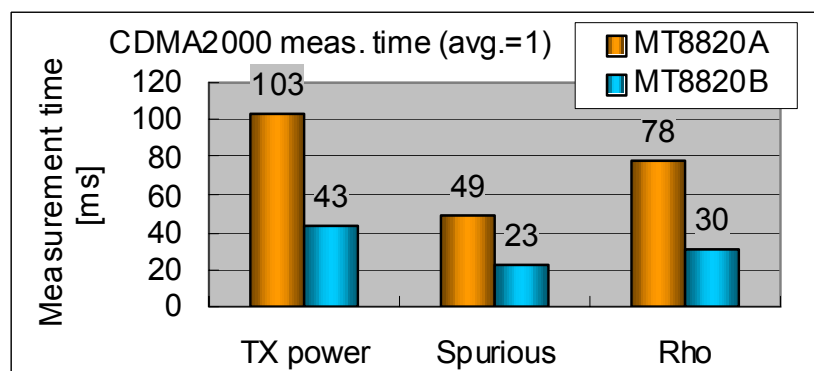
High-Speed Tx Measurement

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)

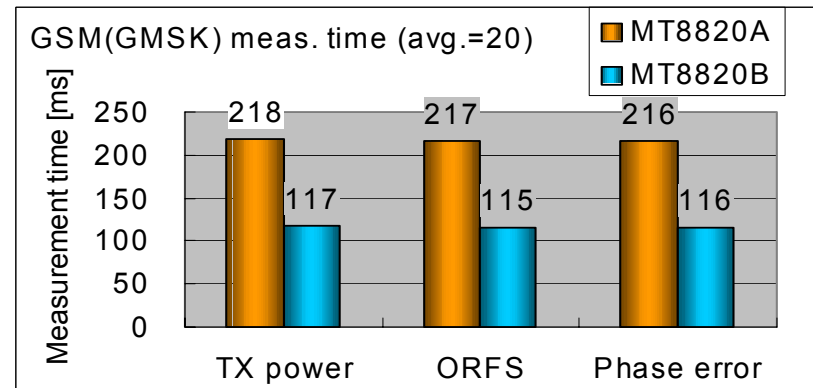
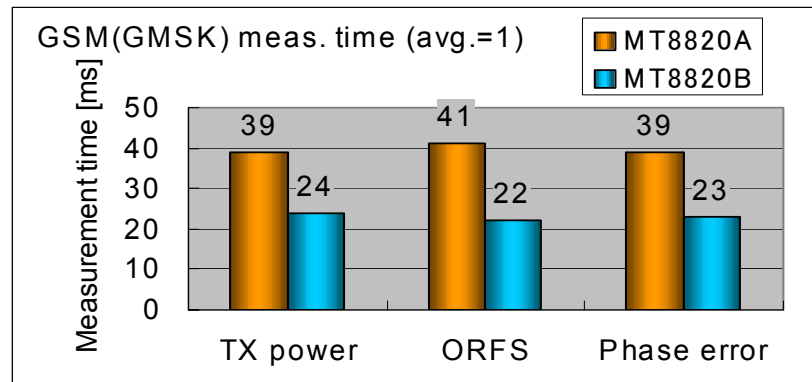


CDMA2000 (avg. = 1 and avg. = 20)

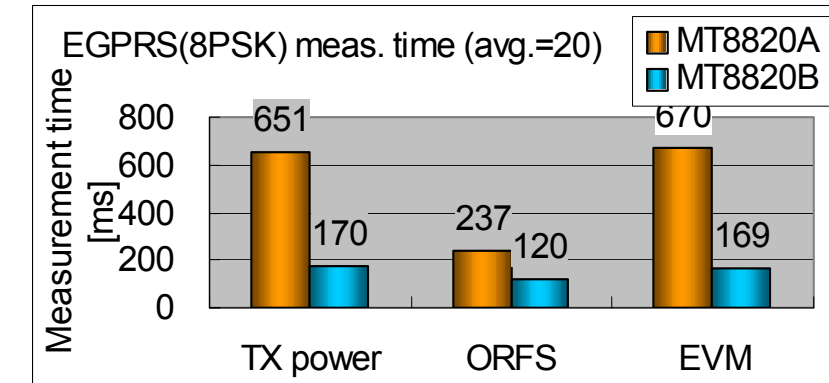
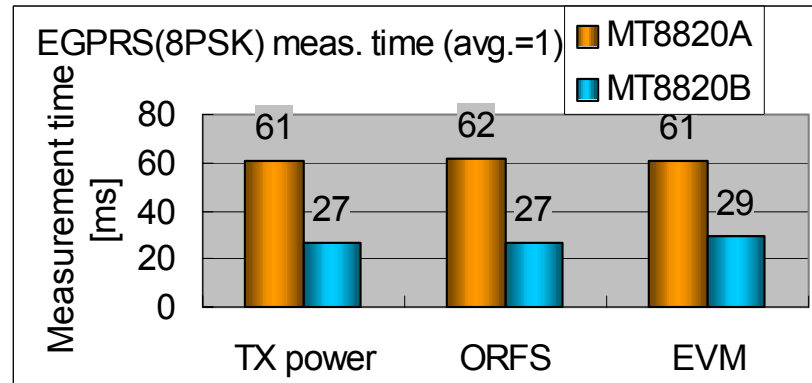


High-Speed Tx Measurement

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

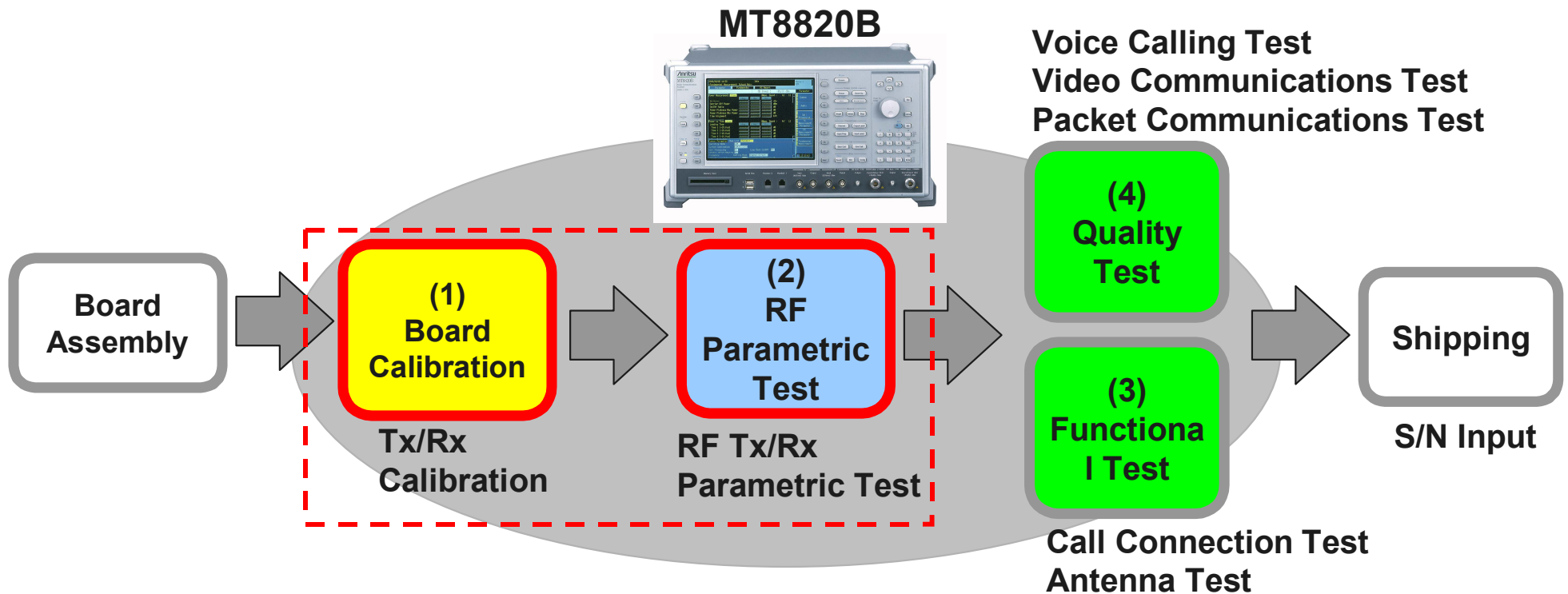


EGPRS (8PSK Modulation) (avg. = 1 and avg. = 20)



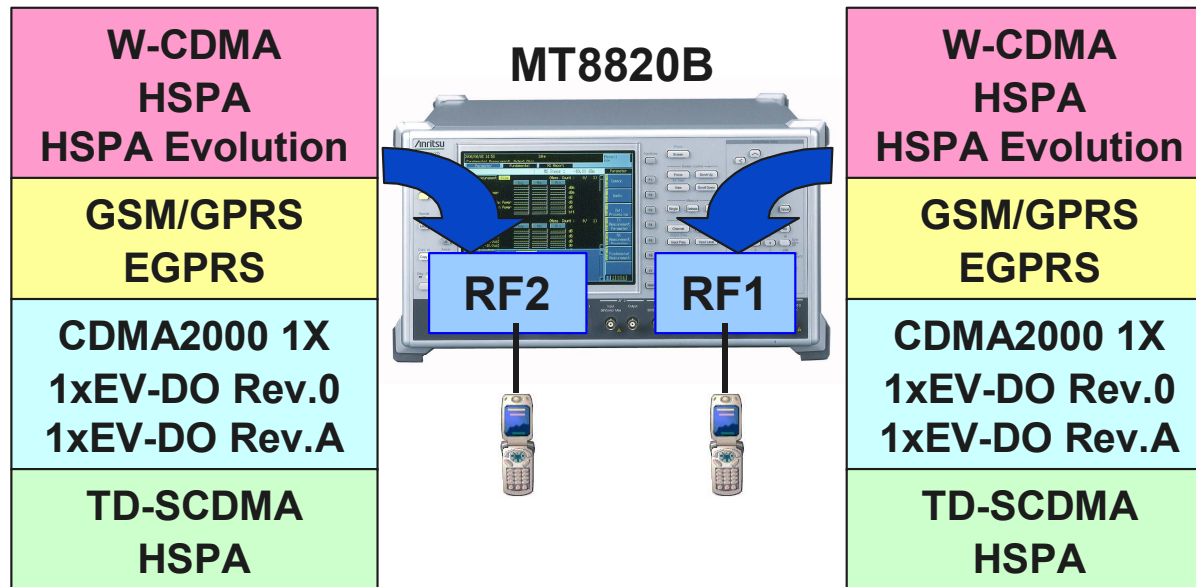
High-Speed Tx Measurement

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%.

Space Saving

Two MT8820 units with single RF



One MT8820 unit with PPM



50% down

Equipment Cost Saving

Two MT8820 units with single port

About 20% down

One MT8820 unit with PPM

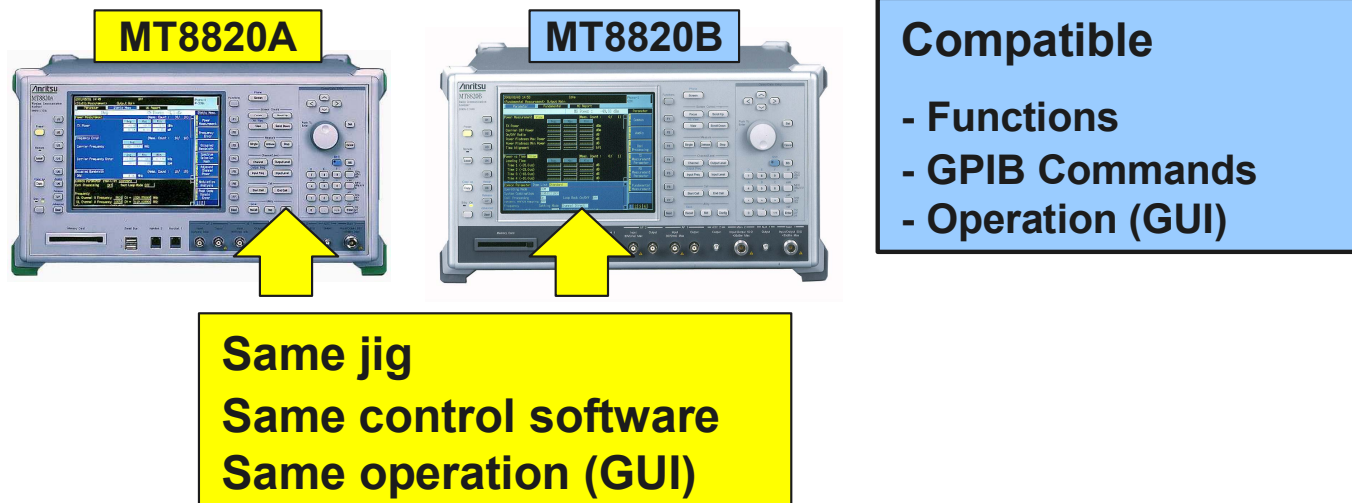
Incremental costs drop as production increases.

Cost

Production

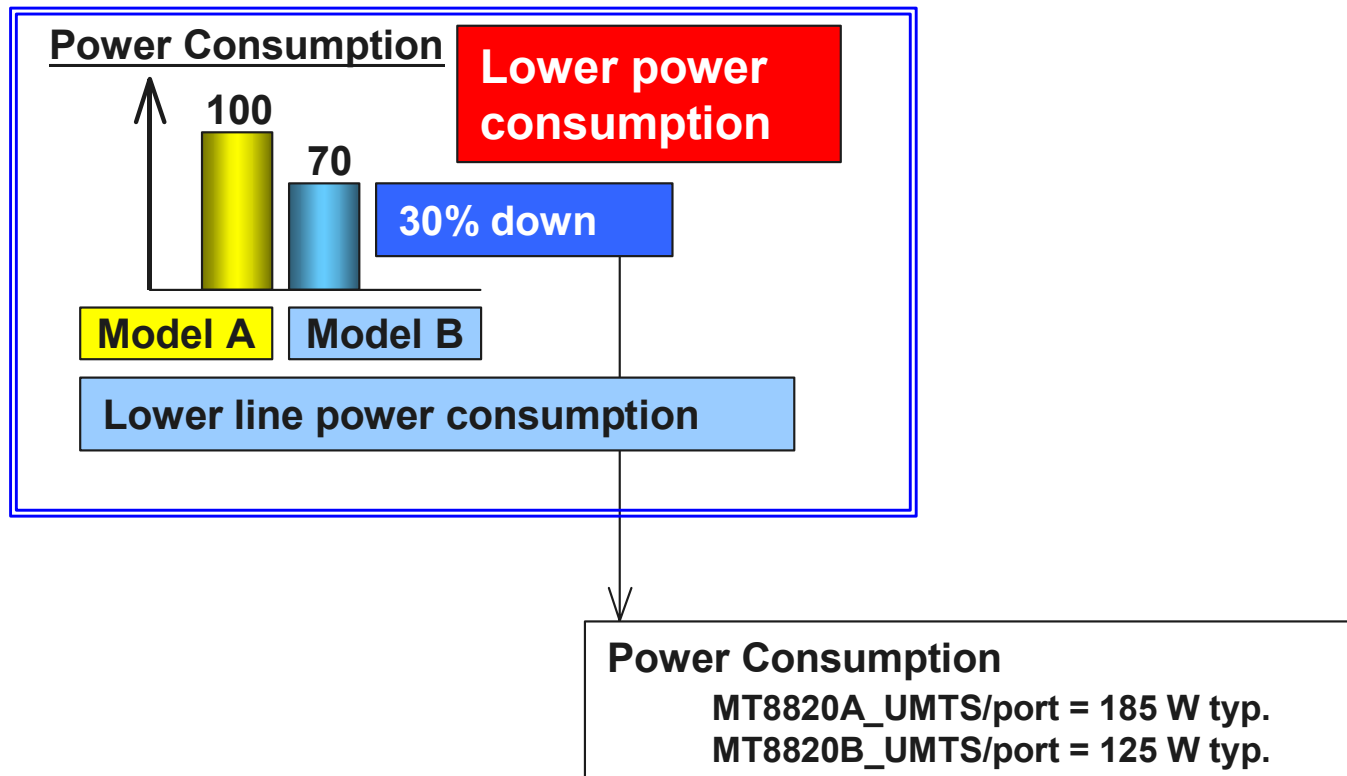
MT8820A Compatibility

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



Quality Improvement (Lower Power Consumption)

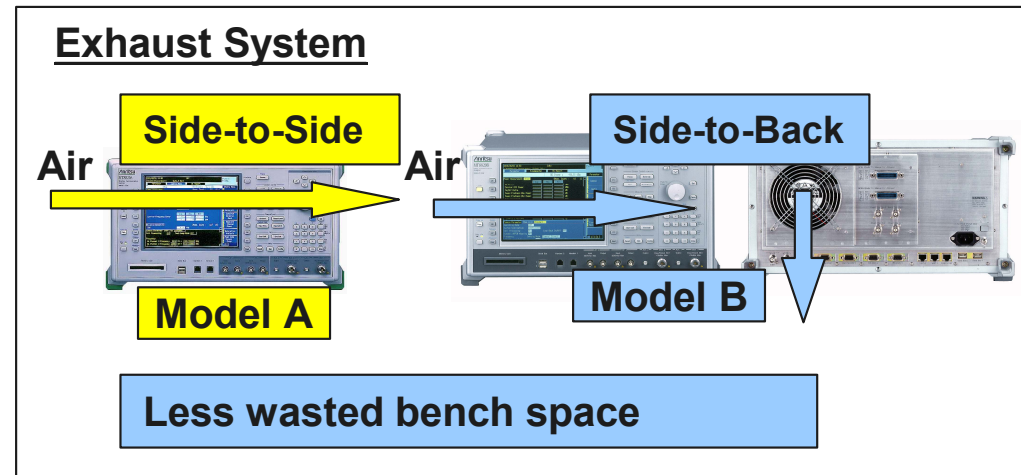
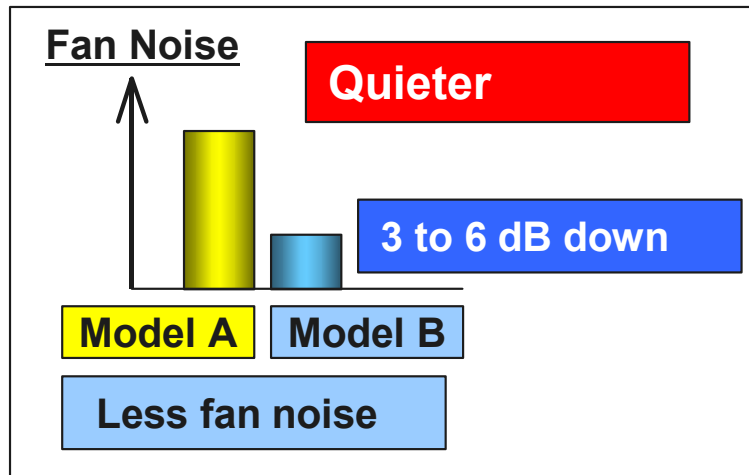
The MT8820B cuts power consumption by 30% to reduce running costs.



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

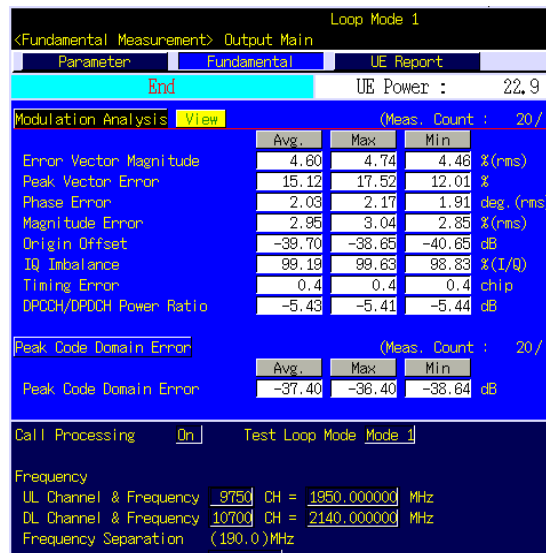
MX882000C-031 HSPA Evolution Measurement Software^{*1}

^{*1}: Available in the near future

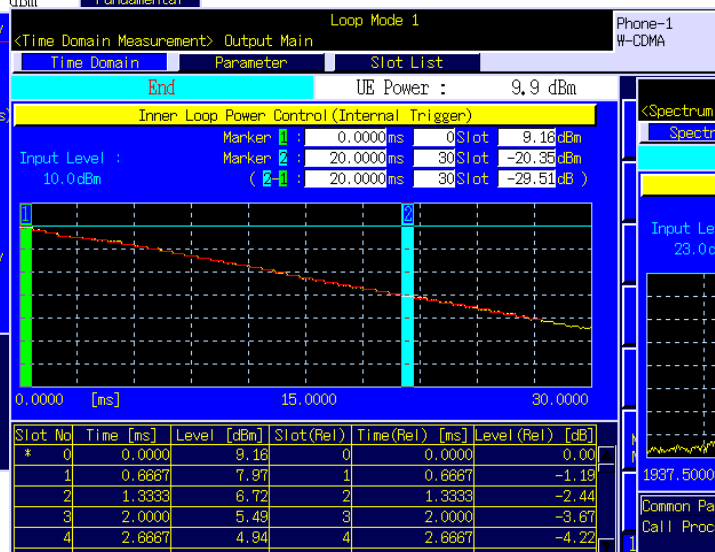
MX882000C W-CDMA Measurement Software

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.

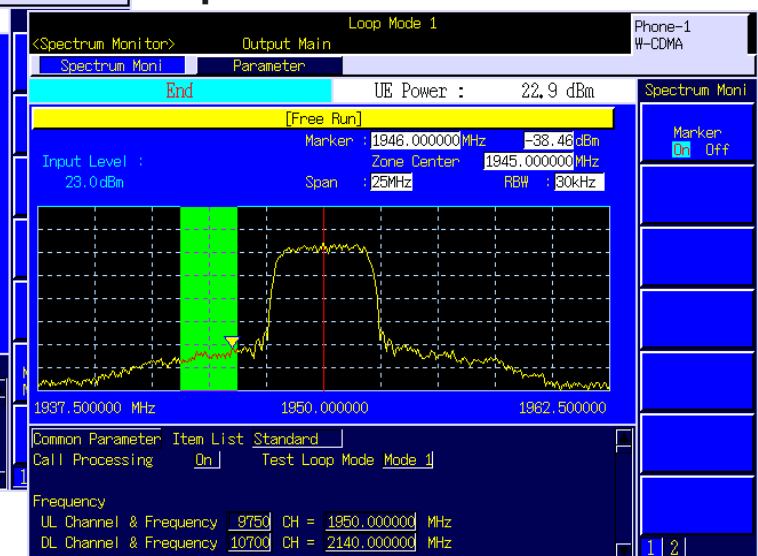
Fundamental Measurement Screen



Time Domain Measurement Screen



Spectrum Monitor Screen

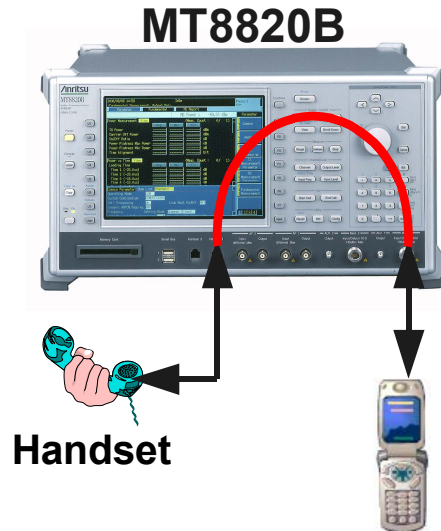


MX882000C W-CDMA Measurement Software

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

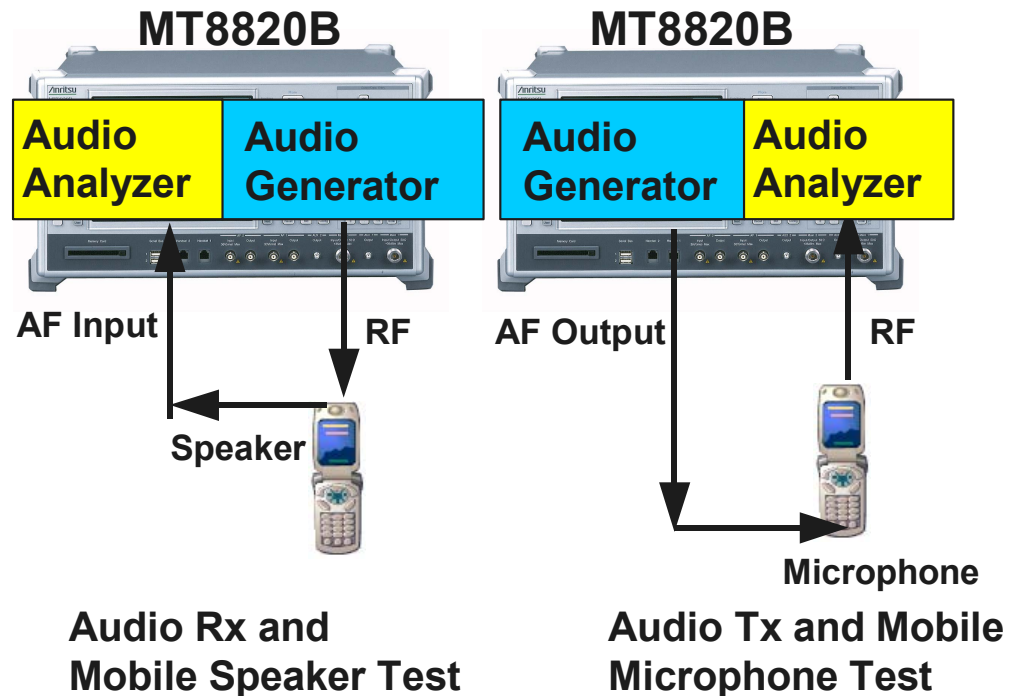
Voice End-to-End Test

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



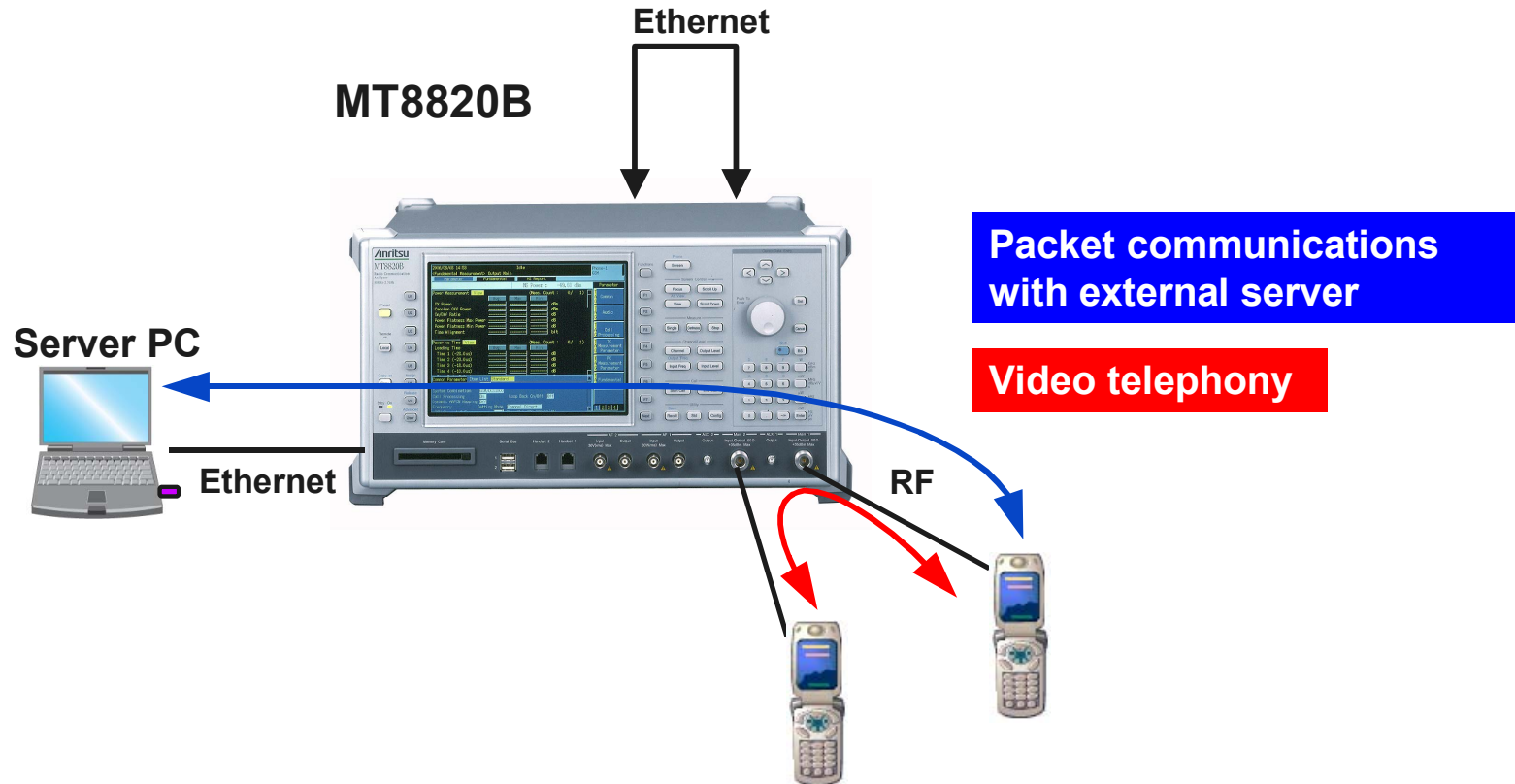
Audio Tx/Rx Measurement

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



MX882000C W-CDMA Measurement Software

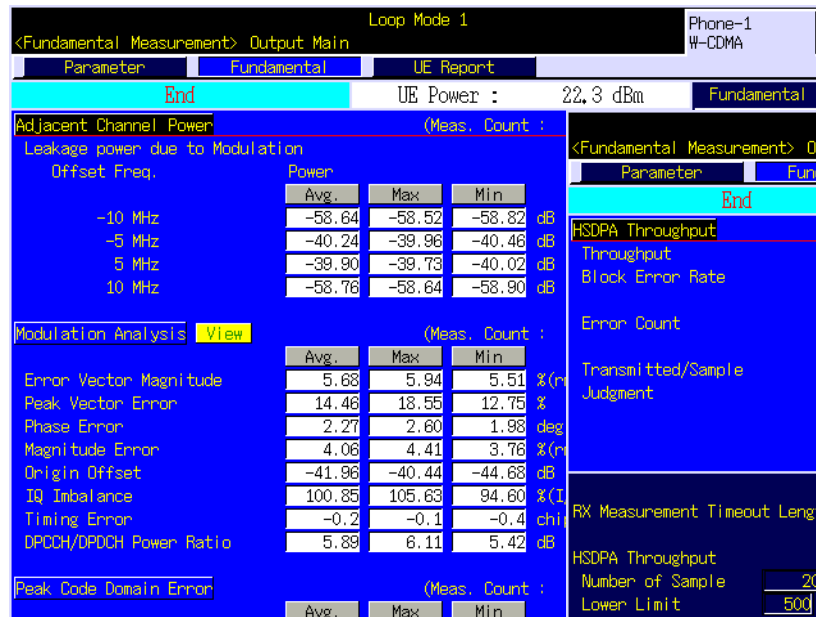
Installing this optional software supports tests of W-CDMA supplementary functions, such as video telephony and PPP/IP packet communications with an external server.



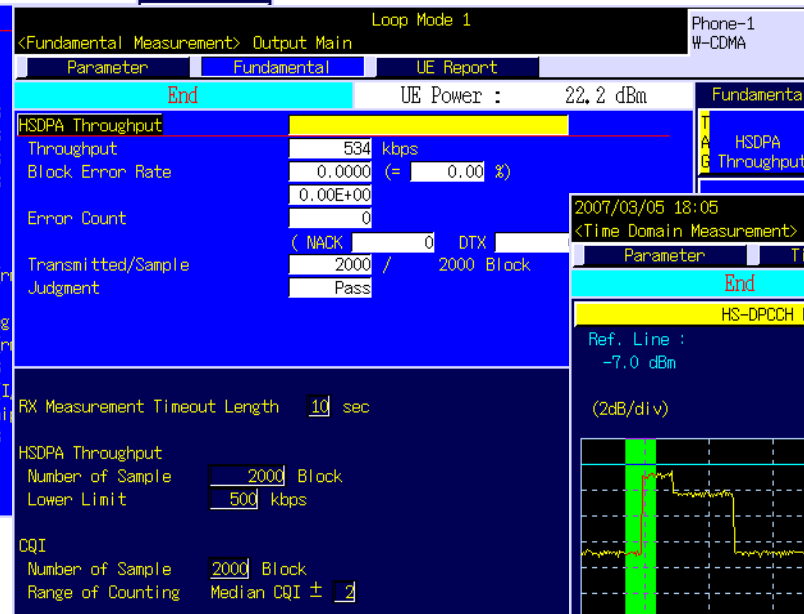
MX882000C-011 HSDPA Measurement Software

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

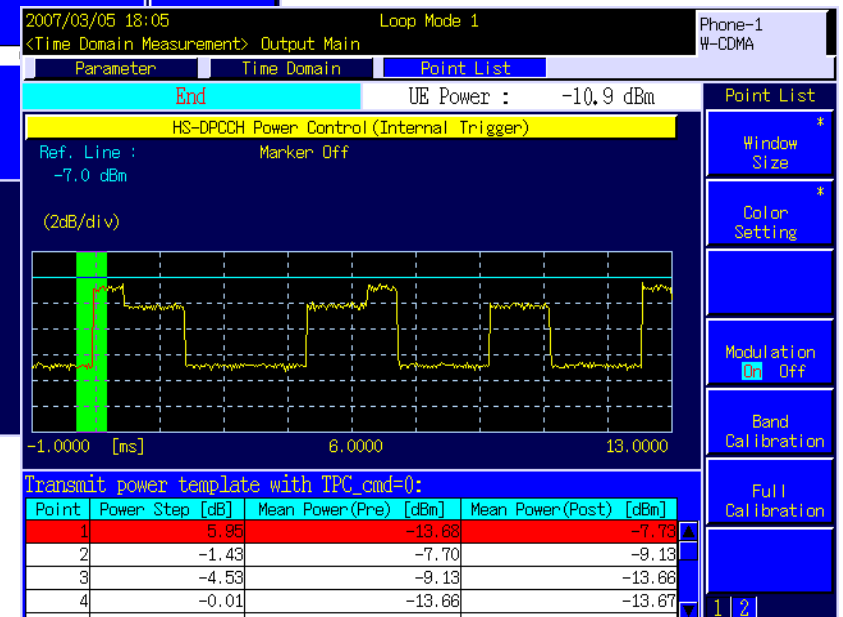
Power, SEM, ACLR, EVM



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.

The screenshot displays the 'Fundamental Measurement' output main screen. The 'Fundamental' tab is selected, showing the following data:

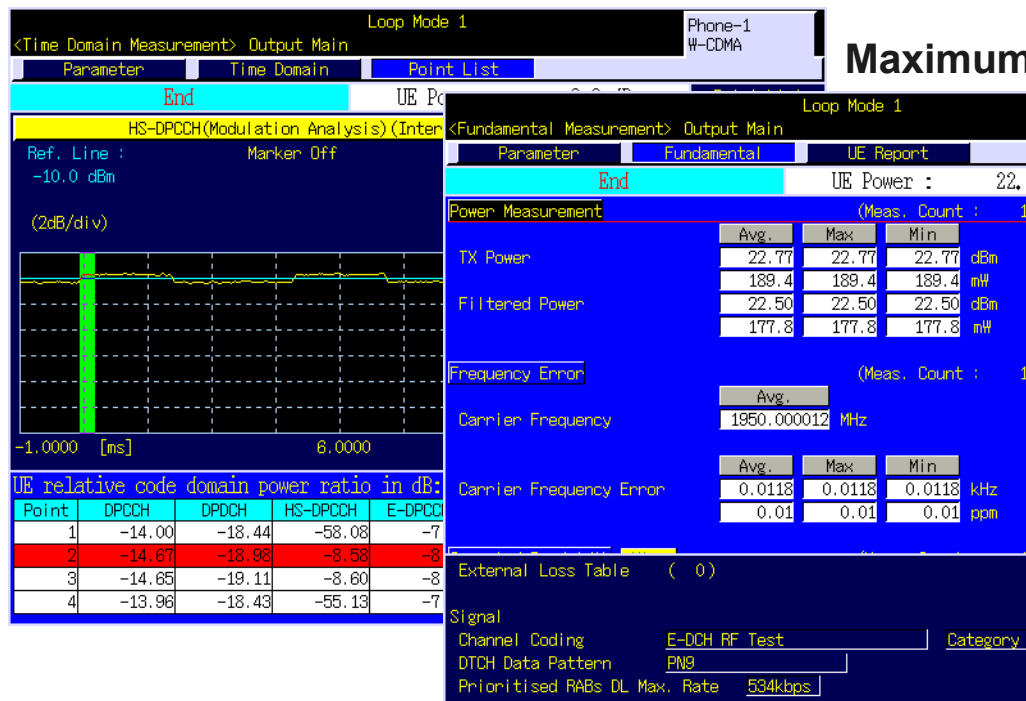
- Loop Mode 1
- Phone-1 W-CDMA
- Parameter: Fundamental
- UE Report
- End
- UE Power : 22.0 dBm
- HSDPA Throughput: 7206 kbps
- Block Error Rate: 0.0000 (= 0.00 %)
- Error Count: 0
- Transmitted/Sample Judgment: (NACK 0 DTX 0) 1000 / 1000 Block Pass
- RX Measurement Timeout Length: 10 sec
- HSDPA Throughput Number of Sample: 1000 Block
- Lower Limit: 700 kbps

| 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. |

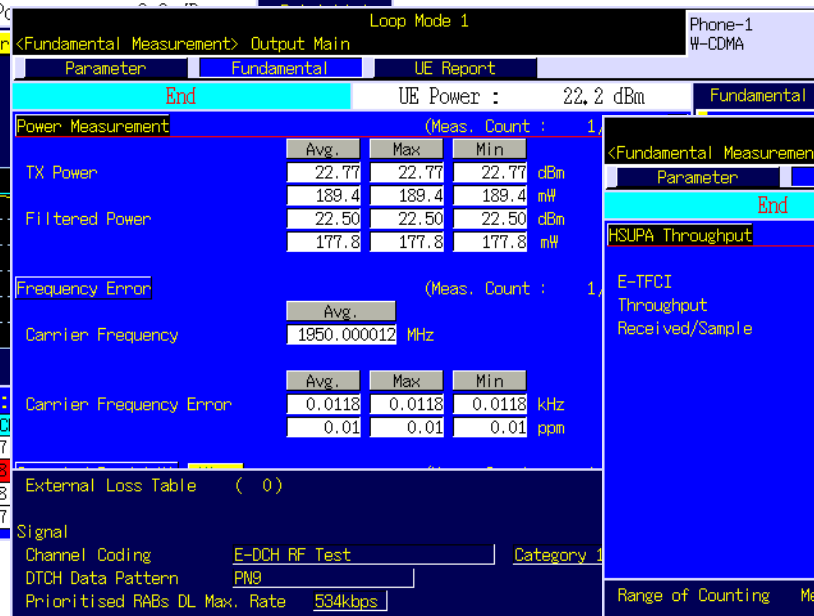
MX882000C-021 HSUPA Measurement Software

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.

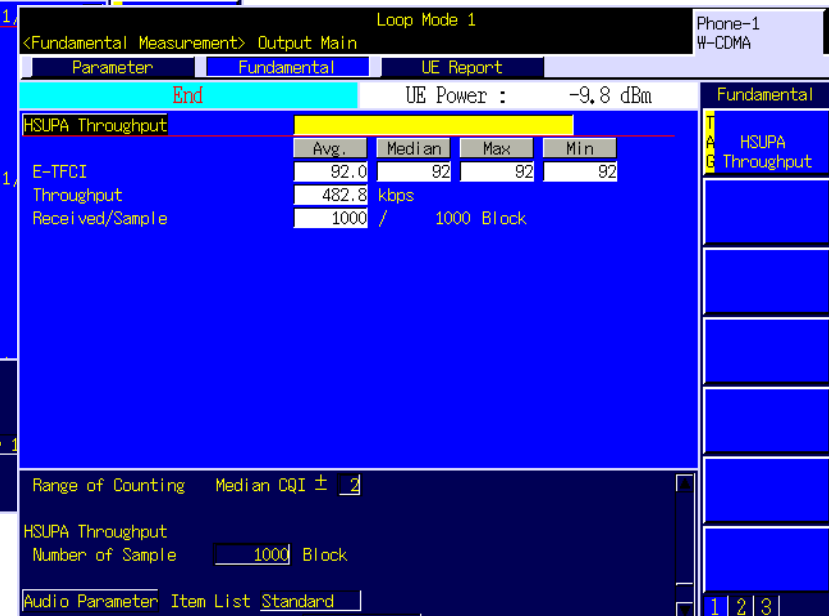
Relative Code Domain Power



Maximum Output Power



Throughput Monitor

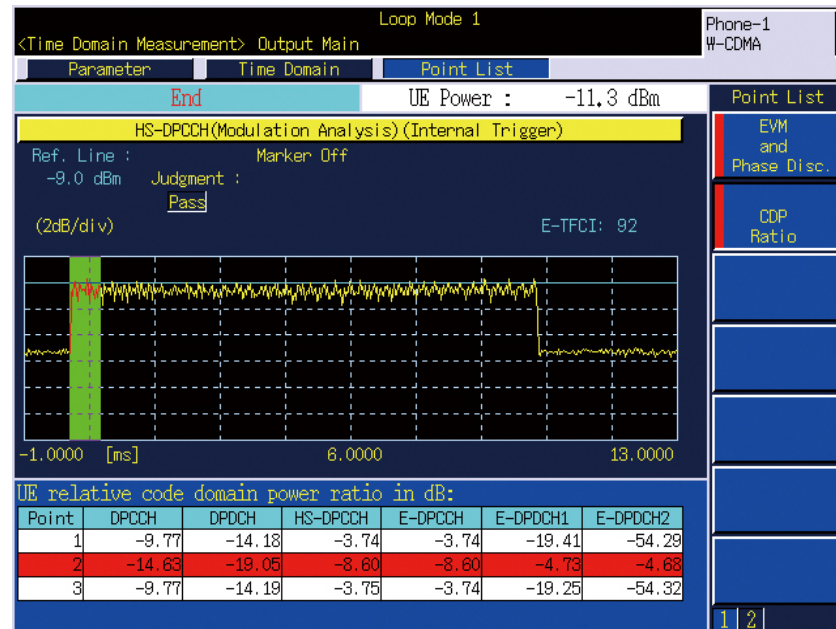


*Throughput monitor value is calculated based on bit rate information of E-TFCI value.

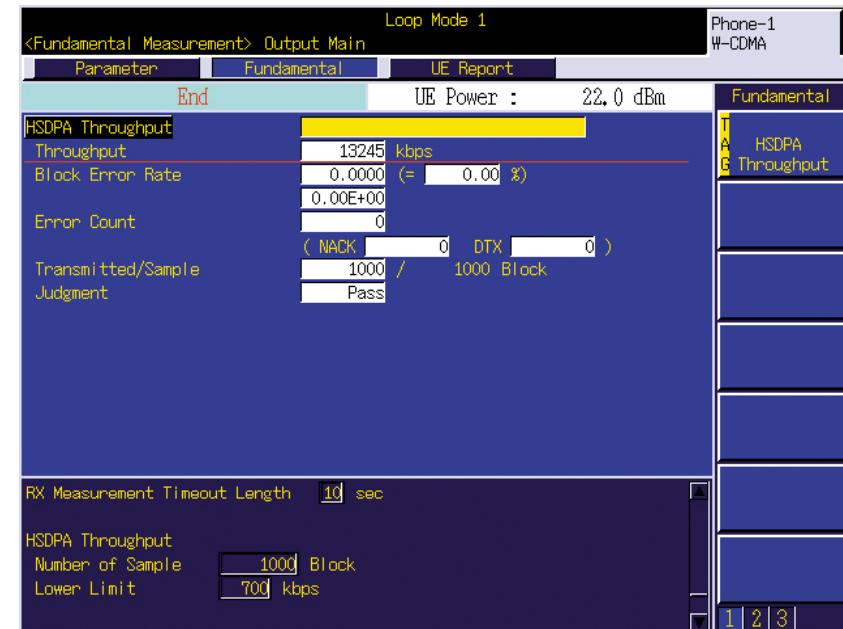
MX882000C-031 HSPA Evolution Measurement Software *1

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.

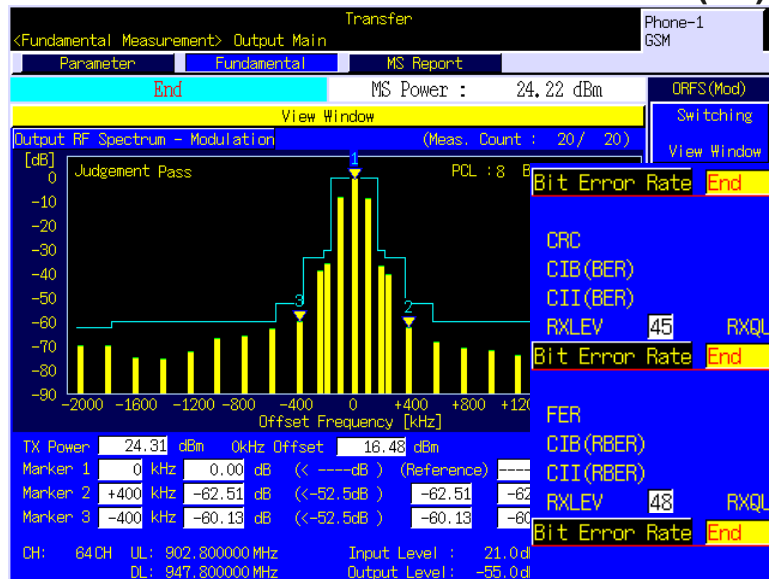
MX882001C GSM Measurement Software

MX882001C-011 EGPRS Measurement Software

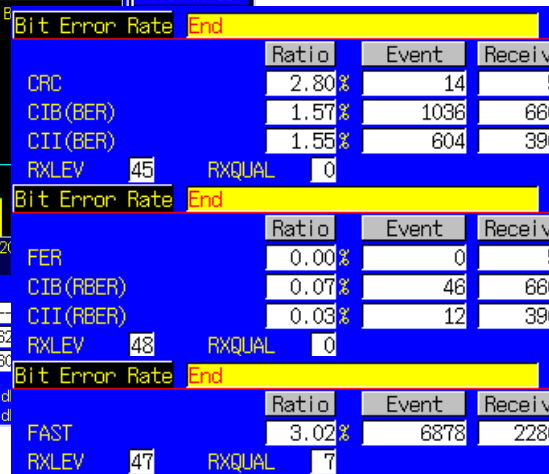
MX882001C GSM Measurement Software

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.

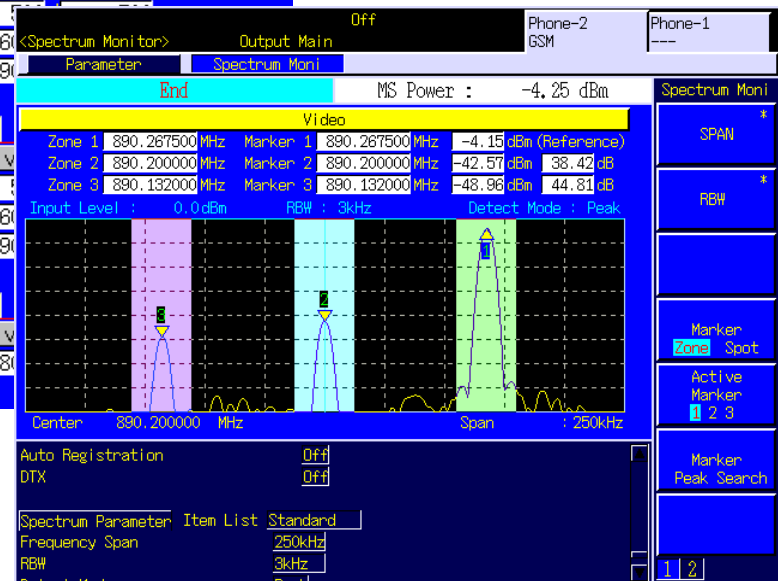
Fundamental Measurement Screen (Tx)



Fundamental Measurement Screen (Rx)



Spectrum Monitor Screen

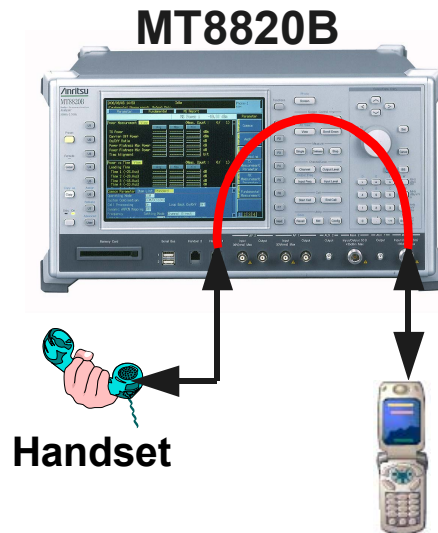


MX882001C GSM Measurement Software

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

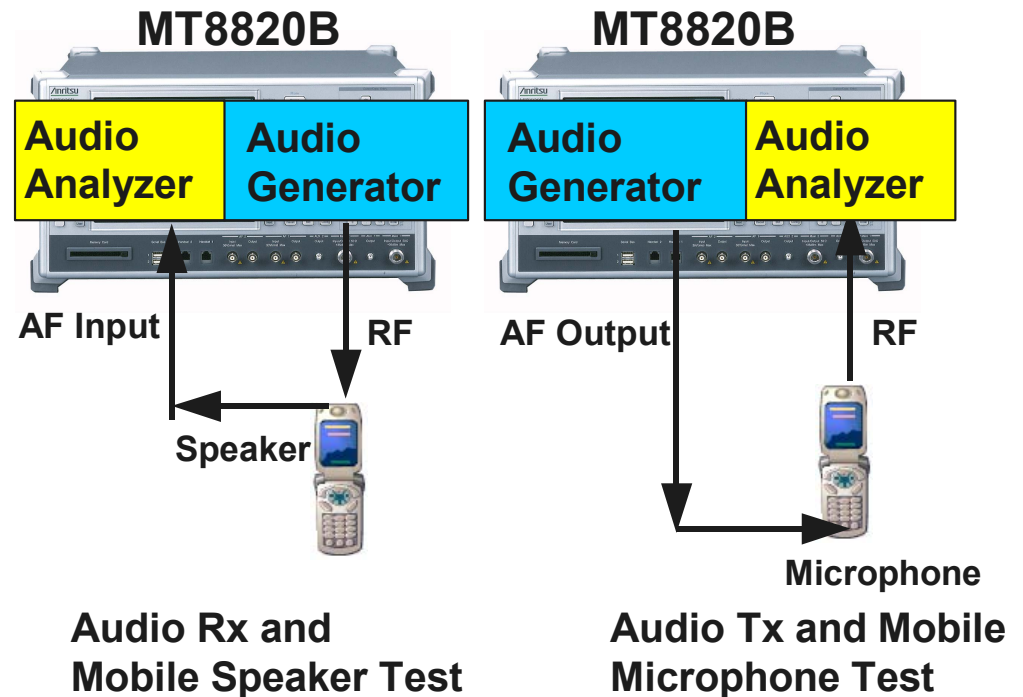
Voice End-to-End Test

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.



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)

| | | |
|--|----------------------|------------------------------------|
| Transfer | | Phone-1 |
| <Fundamental Measurement> Output Main Single | | GSM |
| Parameter | Fundamental | MS Report |
| Measuring | MS Power : 24.34 dBm | |
| Modulation Analysis | View | (Meas. Count : 20 / 20) |
| Carrier Frequency | Avg. 902.799994 MHz | |
| Carrier Frequency Error | Avg. -0.0057 | Max 0.0060 Min -0.0143 kHz |
| | -0.01 | 0.01 -0.02 ppm |
| RMS Phase Error | 1.38 | 1.83 1.13 deg. (rms) |
| Peak Phase Error | 4.54 | 6.15 3.53 deg. |
| Magnitude Error | 1.08 | 1.37 0.79 % (rms) |
| RMS EVM | 2.64 | 3.45 2.21 % (rms) |
| Peak EVM | 8.19 | 11.30 6.36 % |
| Origin Offset | 49.89 | 80.58 44.30 dB |
| 95:th Percentile | 5.50 | % |
| Output RF Spectrum - Modulation | View | (Meas. Count : 20 / 20) |
| Judgement | Pass | |
| kHz | Avg. | Lower Max Min Avg. Max Min dBm |
| 0 | 16.05 | 20.52 11.82 16.05 20.52 11.82 |
| 100 | -7.18 | -3.14 -13.49 -7.43 0.00 -12.07 |
| 200 | -35.58 | -29.61 -41.87 -35.66 -30.53 -41.06 |

Fundamental Measurement Screen (Rx)

| | | | | | | |
|------------------|-------|-----|---------|--------|----------|--------|
| Block Error Rate | | End | BLER | | Received | Sample |
| Block Error Rate | 0.00% | 0 | 0 | 1000 | 1000 | |
| - 1st Slot | 0.00% | 0 | 0 | 250 | | |
| - 2nd Slot | 0.00% | 0 | 0 | 250 | | |
| - 3rd Slot | 0.00% | 0 | 0 | 250 | | |
| - 4th Slot | 0.00% | 0 | 0 | 250 | | |
| Bit Error Rate | | End | SRB BER | | Received | Sample |
| SRB Loopback | 0% | 0 | 0 | 400000 | 400000 | |
| - 1st Slot | 0% | 0 | 0 | 200184 | | |
| - 2nd Slot | 0% | 0 | 0 | 199816 | | |

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)

RC Fwd3/Rev3 Connected (S0 55) Phone-2 Phone-1
<Fundamental Measurement> Output Main --- CDMA2000

Parameter Fundamental MS Report

CDMA2000 1X : End MS Power :-21.4 dBm Fundamental

Modulation Analysis (Meas. Count : 1/ 1) Modulation Analysis

| | | | |
|-------------------------|------------|---------|----------|
| Carrier Frequency | Avg. | | |
| | 915.950000 | MHz | |
| Carrier Frequency Error | Avg. | Max. | Min. |
| | 0.0002 | 0.0002 | 0.0002 |
| | 0.00 | 0.00 | 0.00 |
| | | kHz | ppm |
| Rho | 0.99625 | 0.99625 | 0.99625 |
| Time Error | 0.18 | 0.18 | 0.18 |
| | | | us |
| EVM | 6.12 | 6.12 | 6.12 |
| | | | %(rms) |
| Peak Vector Error | 14.82 | 14.82 | 14.82 |
| | | | % |
| Phase Error | 2.04 | 2.04 | 2.04 |
| | | | deg(rms) |
| Magnitude Error | 4.98 | 4.98 | 4.98 |
| | | | %(rms) |
| Origin Offset | -54.36 | -54.36 | -54.36 |
| | | | dB |

Rx Measurement Setup

Packet Error Rate On

Specified PER 0.5 %

Sample Packets 10000 packets

Meas. Stop Mode On

Confidence Level 95.0 %

PER Limit 0.5 %

Packet Data Option Item List Detail

AT Address

Fundamental Measurement Screen (Rx)

Connected (FTAP) Phone-2 Phone-1
<Fundamental Measurement> Output Main --- CDMA2000

Parameter Fundamental AT Report

1xEV-DO : End AT Power :-42.8 dBm Fundamental

Packet Error Rate

| | | | |
|------------------|-------|--------------|-------------|
| Confidence Level | PER | Err. Packets | Transmitted |
| FTC 95.0% | 0.00% | 0 | 600 |

Rx Measurement Setup

Packet Error Rate On

Specified PER 0.5 %

Sample Packets 10000 packets

Meas. Stop Mode On

Confidence Level 95.0 %

PER Limit 0.5 %

Packet Data Option Item List Detail

AT Address

Access Probe Measurement Screen

Idle(Regist) Phone-2 Phone-1
<Access Probe Meas.> Output Main --- CDMA2000

Parameter Access Probe MS Report

CDMA2000 1X : End MS Power :-65.7 dBm Access Probe

Total

Detected Access Probes 5 (Expected Access Probes 5)

No.1 to No.40

| No. | Level | Step | Time | Length | Interval |
|-----|------------|----------|-----------|-----------|-----------|
| 1 | -17.83 dBm | 0.00 dB | 1.000 sec | 0.520 sec | 1.000 sec |
| 2 | -17.31 dBm | 0.02 dB | 2.560 sec | 0.520 sec | 1.040 sec |
| 3 | -17.83 dBm | -0.51 dB | 3.600 sec | 0.520 sec | 0.520 sec |
| 4 | -17.81 dBm | 0.02 dB | 4.640 sec | 0.520 sec | 0.520 sec |
| 5 | -17.80 dBm | 0.00 dB | 6.200 sec | 0.520 sec | 1.040 sec |
| 6 | | | | | |
| 7 | | | | | |
| 8 | | | | | |

Operating Mode Item List Detail

Standard CDMA2000 1X

Call Processing On

Call Drop On 5.0 sec

1 2 3

Refresh Call

MS Power Control

Register MS

Handoff

MX882002C CDMA2000 1X Measurement Software

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

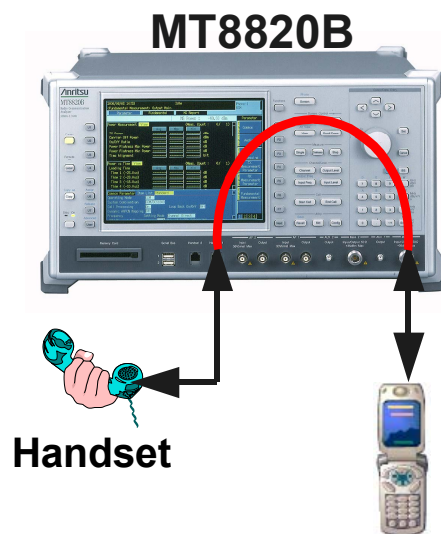
***Voice End-to-End Test**

***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

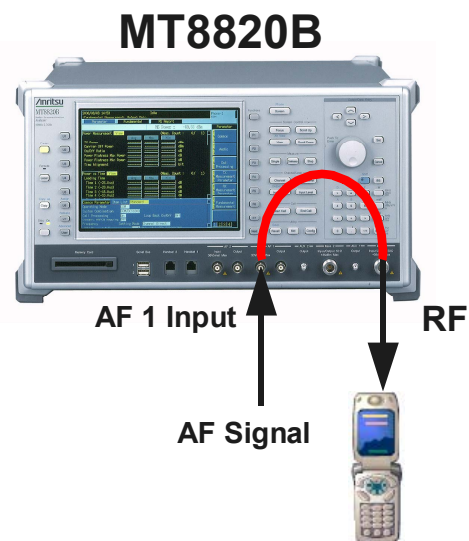
Voice calling between a CDMA2000 1X mobile and handset can be tested.



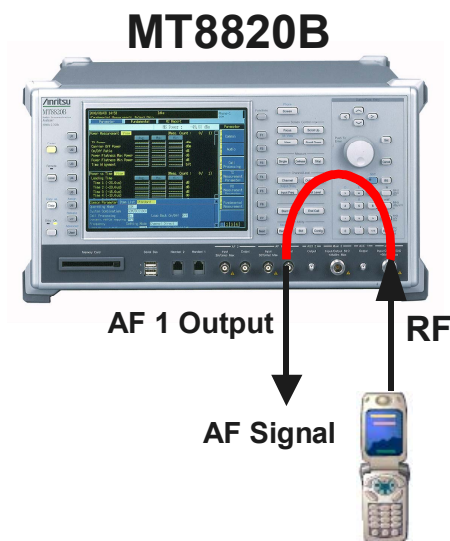
*The MX882002C-001 does not support Audio Tx/Rx Measurement like the other system.

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

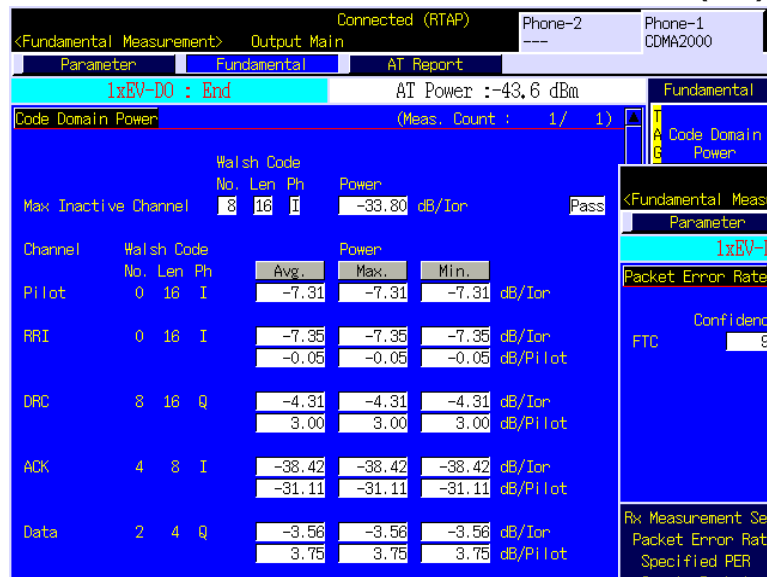


Audio Signal Output function

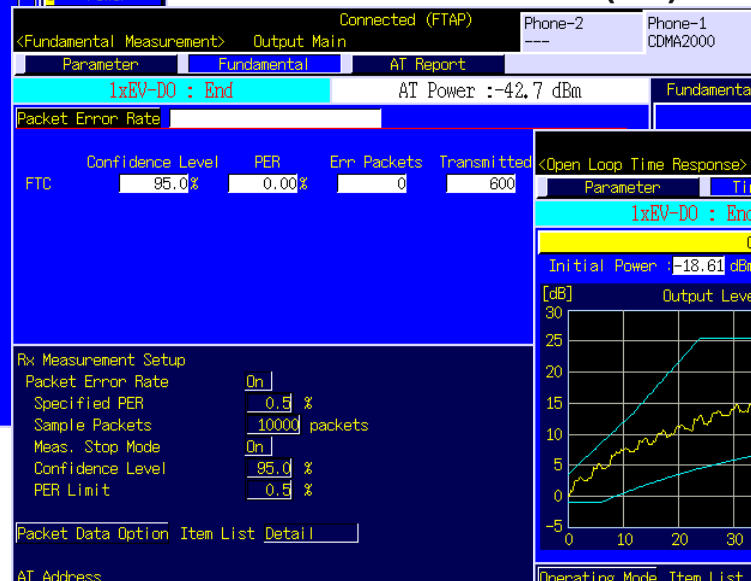
MX882006C 1xEV-DO Measurement Software

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.

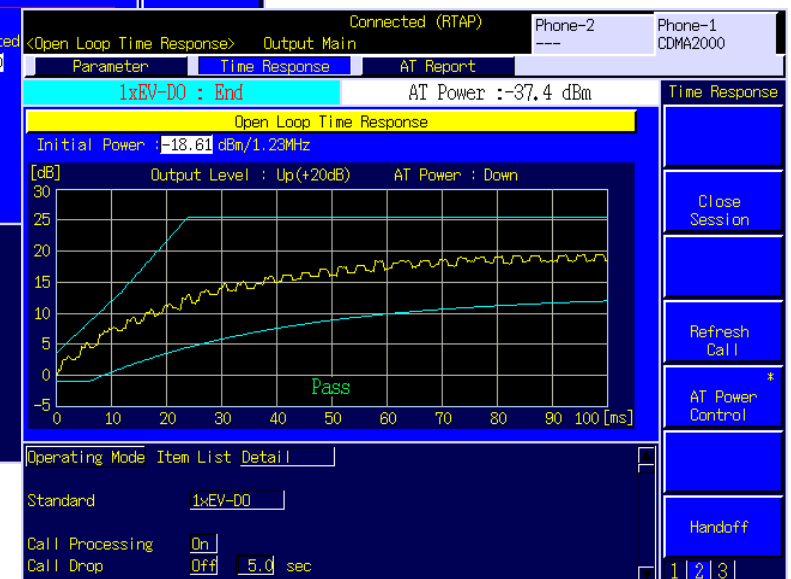
Fundamental Measurement Screen (Tx)



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

Connected (FETAP) Phone-2 CDMA2000 Phone-1 CDMA2000

<Fundamental Measurement> Output Main

Parameter Fundamental AT Report

1xEV-DO : End AT Power :-37.0 dBm

Call Processing Parameters Item List Detail

Protocol Revision A: IS-856-A

Physical Layer Protocol Subtype 2

Application Protocol FETAP

FTAP Packet Activity 100 %

Session Close On 3 min

Pilot Drop -9.0 dB

Pilot Drop Timer 3

AW ID Item List Detail

Sector ID 00000000 00000000 00000000 00

Country Code 1

Color Code 1

Access Parameters Item List Detail

Open Loop Adjust -88 dB

Probe Initial Adjust 0 dB

Probe Num Step 5 probes per sequence

| 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 |

Fundamental Measurement Screen (Tx)

MT8820B Connected (RETAP) Phone-2 CDMA2000 Phone-1 CDMA2000

<Fundamental Measurement> Output Main

Parameter Fundamental AT Report

1xEV-DO : End AT Power :-35.0 dBm

| Channel | Walsh Code | No. | Len | Ph | Avg. | Max. | Min. |
|-----------|------------|-----|-----|----|--------|--------|-------|
| Pilot | 0 | 16 | I | | -7.73 | -7.73 | -7.7 |
| PRI | 4 | 16 | I | | -13.58 | -13.58 | -13.5 |
| | | | | | -5.84 | -5.84 | -5.8 |
| DSC | 12 | 32 | I | | -10.70 | -10.70 | -10.7 |
| | | | | | -2.97 | -2.97 | -2.9 |
| DRC | 8 | 16 | Q | | -4.78 | -4.78 | -4.7 |
| | | | | | 2.96 | 2.96 | 2.9 |
| ACK | 12 | 32 | I | | -36.71 | -36.71 | -36.7 |
| | | | | | -28.97 | -28.97 | -28.9 |
| Data | B4 | | | | -3.97 | -3.97 | -3.9 |
| | | | | | 3.76 | 3.76 | 3.7 |
| Aux Pilot | 28 | 32 | I | | -35.99 | -35.99 | -35.9 |
| | | | | | -28.25 | -28.25 | -28.2 |

Fundamental Measurement Screen (Rx)

Connected (FETAP) Phone-2 CDMA2000 Phone-1 CDMA2000

<Fundamental Measurement> Output Main

Parameter Fundamental AT Report

1xEV-DO : End AT Power :-30.0 dBm

Packet Error Rate

| Confidence Level | PER | Err Packets | Transmitted | Pass | |
|------------------|--------|-------------|-------------|------|------|
| FTC | 95.0 % | 0.00 % | 0 | 598 | Pass |

Rx Measurement Setup

Packet Error Rate On

Specified PER 0.5 %

Sample Packets 10000 packets

Meas. Stop Mode On

Confidence Level 95.0 %

PER Limit 0.5 %

Packet Data Option Item List Detail

AT Address 1 2 3

*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

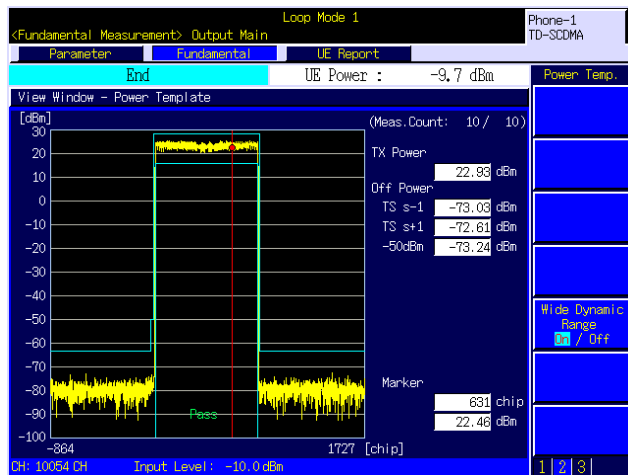
MX882007C-003 TD-SCDMA Video Phone Test

MX882007C-011 TD-SCDMA HSDPA Measurement Software

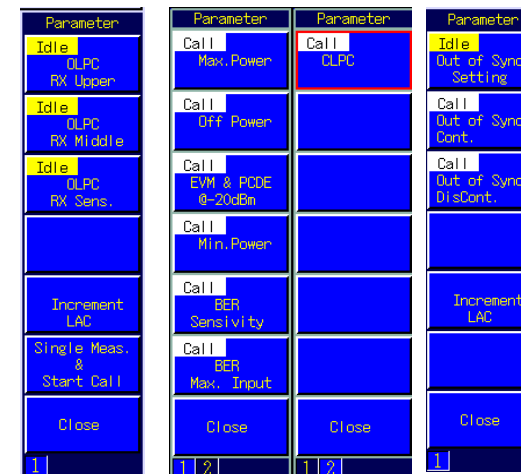
MX882007C-021 TD-SCDMA HSUPA Measurement Software

MX882007C TD-SCDMA Measurement Software

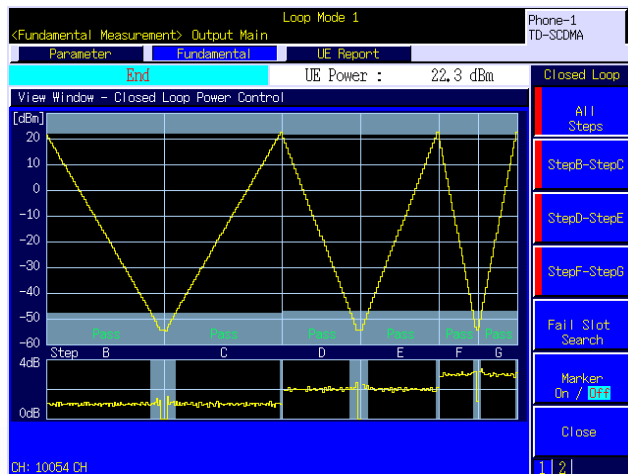
The main RF Tx/Rx measurements of TD-SCDMA (1.28 Mcps TDD) terminal can be performed with call-processing. Settings for the main Tx/Rx tests are made easy by one-touch operation, and closed-loop power control supports automated measurements for simple, 3GPP-compliant testing. In addition, the mobile 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

Test Plan
Idle(Regist)
Phone-1 TD-SCDMA
<Test Plan> Output Main
Parameter Test Plan
End - Pass UE Power: -61.5 dBm
Information Passed: 62sec.
Test Information
Idle Test
No. Test Items Upper Middle Sens.
5.4.1.3 CLPC -8.83 Pass
Call Test
No. Test Items L ch M ch H ch
5.2 Max. Power 22.00 Pass 21.74 Pass 21.48 Pass dBm
(Multi Code) 19.07 Pass 18.72 Pass 18.50 Pass dBm
5.3 Frequency Error 0.01 Pass 0.00 Pass 0.00 Pass ppm
5.4.1.4 CLPC Pass Pass Pass
5.4.2 Min. Power -55.59 Pass -54.43 Pass -54.77 Pass dBm
5.4.4 Power Temp. s-1 -72.91 Pass -74.44 Pass -73.83 Pass dBm
(5.4.3 Off Power) s+1 -75.38 -76.39 -75.39 dBm
-78.78 -77.17 -78.80 dBm
5.5.1 DBW 1.380 Pass 1.380 Pass 1.380 Pass MHz
5.5.2.1 SEM Pass Pass Pass
5.5.2.2 ACLR -3.2MHz -59.52 Pass -59.97 Pass -60.57 Pass dB
-1.6MHz -37.03 -39.61 -39.98 dB
1.6MHz -39.37 -40.66 -39.53 dB

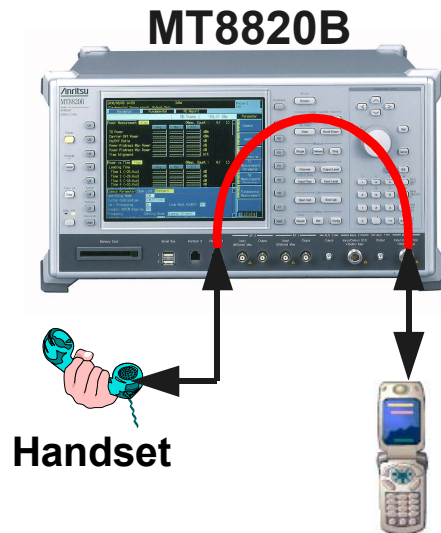
Batch measurement test plan

MX882007C-001 TD-SCDMA Voice Codec

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

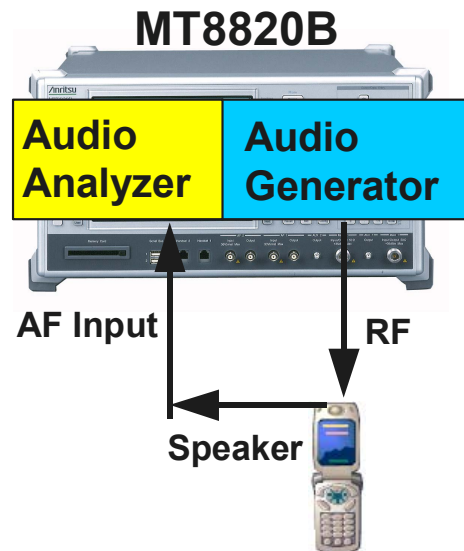
Voice End-to-End Test

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

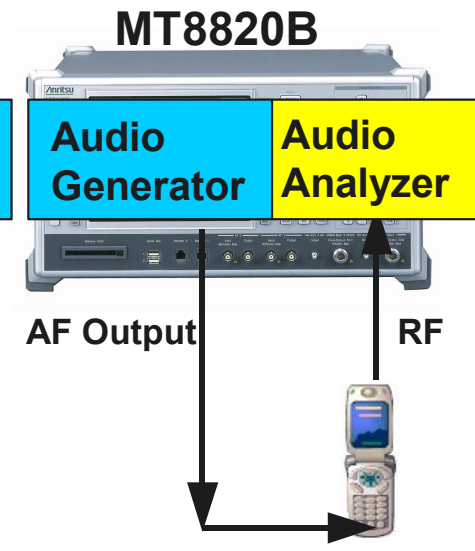


Audio Tx/Rx Measurement

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



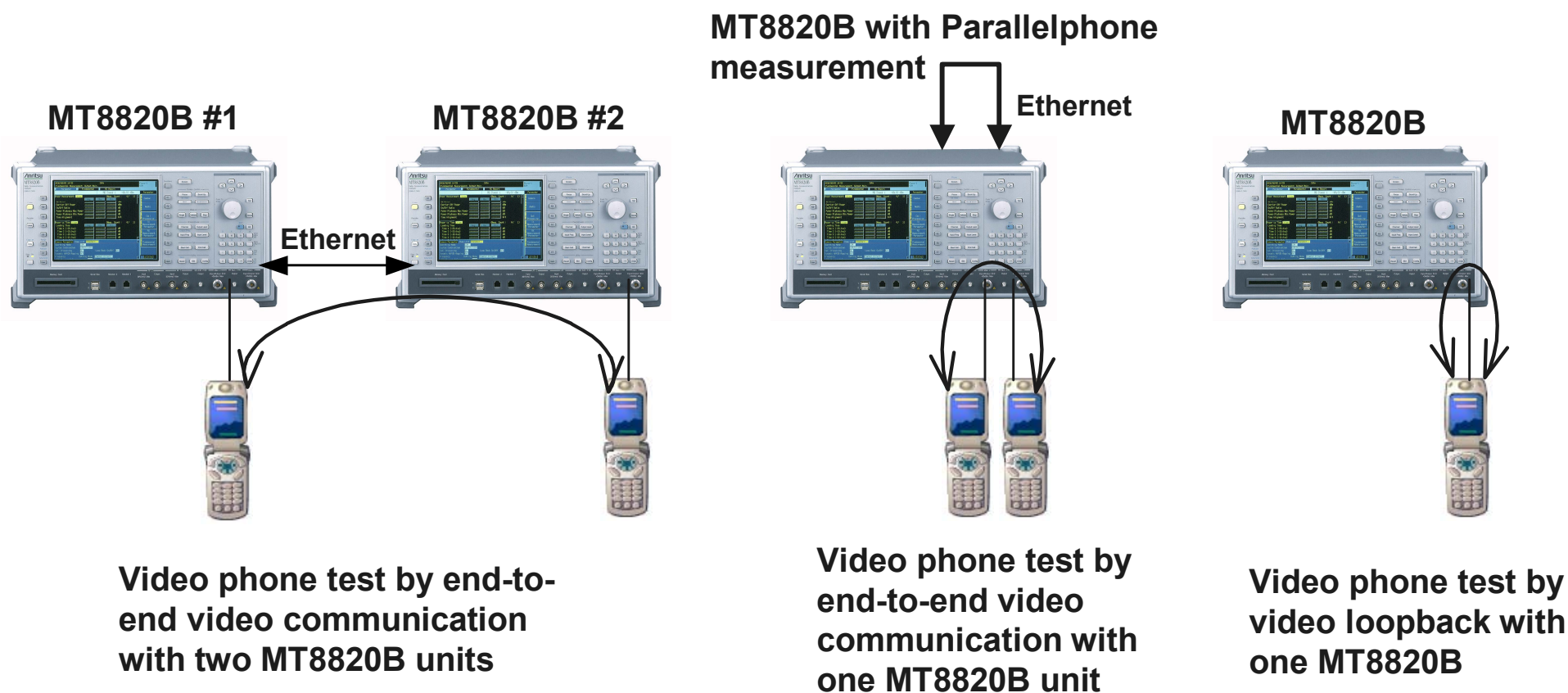
**Audio Rx and
Mobile Speaker Test**



**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.



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

Communication Phone-1 TD-SCDMA

<Fundamental Measurement> Output Main

Parameter Fundamental UE Report

End UE Power : 0.0 dBm Fundamental

HSDPA Throughput End

Throughput 1278.6000 kbps

Block Error Rate 0.0000 (= 0.00 %)

Error Count 0.00E+00

Error Count 0

(NACK 0 DTX 0)

Transmitted/Sample 2000 / 2000 Block

HSDPA CQI End

Avg. Median Max. Min.

CQI (RTBS) 30.0 30 30 30

Sum in Median CQI ± 3 2000

Rate 100.00 %

RMF QPSK 0 16QAM 2000

Received/Sample 2000 / 2000 Block

Signal

Channel Coding HSDPA RMC

HSDPA Data Rate 2.8Mbps UE Class(16QAM)

DTCH Data Pattern PNG

1 2 3

* 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

Idle Phone-2 TD-SCDMA Phone-1 TD-SCDMA

<Fundamental Measurement> Output Main

Parameter Fundamental UE Report

UE Power : -55.0 dBm Level Contin...

Output Level (Total) -68.0 dBm On

AWGN Level -20.0 dB Off

External Loss Off

Main UL 0.0 dB

Main DL 0.0 dB

AUX 0.0 dB

Signal

Channel Coding HSUPA RMC

HSUPA Data Rate 0.5Mbps UE Class(QPSK) FRC

HSUPA Data Rate FRC1(Category1-2)

DTCH Data Pattern FRC1(Category1-2)

Physical Channel Parameter FRC1(Category3-6)

Scrambling Code ID FRC2

Midamble Allocation Mode (Default Midamble)

Downlink Physical Channel

P-CPCH Power -3.0 dB

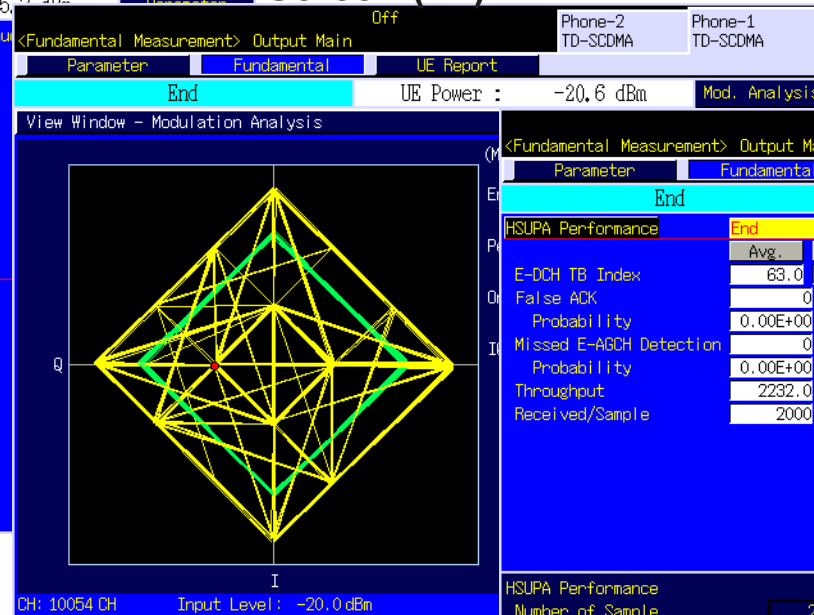
DwPCH Power 0.0 dB

DPCH Timeslot (----) to (----)

Power ---- dB

Channelisation Code (----) to (----)

Fundamental Measurement Screen (Tx)



Performance Measurement Screen

Off Phone-2 TD-SCDMA Phone-1 TD-SCDMA

<Fundamental Measurement> Output Main

Parameter Fundamental UE Report

End UE Power : -15.5 dBm Fundamental

| HSUPA Performance | Avg. | Median | Max. | Min. |
|-------------------------|----------|--------|-------|------|
| E-DCH TB Index | 63.0 | 63 | 63 | 63 |
| False ACK | 0 | Block | | |
| Probability | 0.00E+00 | | | |
| Missed E-AGCH Detection | 0 | Block | | |
| Probability | 0.00E+00 | | | |
| Throughput | 2232.0 | kbps | | |
| Received/Sample | 2000 | / 2000 | Block | |

HSUPA Performance

Number of Sample 2000 Block

RX Measurement Timeout Length 10 sec

Fundamental Measurement Parameter

1 2 3

*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

Anritsu Corporation

5-1-1 Onna, Atsugi-shi, Kanagawa, 243-8555 Japan
Phone: +81-46-223-1111
Fax: +81-46-296-1238

• U.S.A.

Anritsu Company

1155 East Collins Blvd., Suite 100, Richardson,
TX 75081, U.S.A.
Toll Free: 1-800-267-4878
Phone: +1-972-644-1777
Fax: +1-972-671-1877

• Canada

Anritsu Electronics Ltd.

700 Silver Seven Road, Suite 120, Kanata,
Ontario K2V 1C3, Canada
Phone: +1-613-591-2003
Fax: +1-613-591-1006

• Brazil

Anritsu Eletrônica Ltda.

Praca Amadeu Amaral, 27 - 1 Andar
01327-010-Paraiso-São Paulo-Brazil
Phone: +55-11-3283-2511
Fax: +55-11-3288-6940

• Mexico

Anritsu Company, S.A. de C.V.

Av. Ejército Nacional No. 579 Piso 9, Col. Granada
11520 México, D.F., México
Phone: +52-55-1101-2370
Fax: +52-55-5254-3147

• U.K.

Anritsu EMEA Ltd.

200 Capability Green, Luton, Bedfordshire, LU1 3LU, U.K.
Phone: +44-1582-433200
Fax: +44-1582-731303

• France

Anritsu S.A.

16/18 avenue du Québec-SILIC 720
91961 COURTABOEUF CEDEX, France
Phone: +33-1-60-92-15-50
Fax: +33-1-64-46-10-65

• Germany

Anritsu GmbH

Nemetschek Haus, Konrad-Zuse-Platz 1
81829 München, Germany
Phone: +49-89-442308-0
Fax: +49-89-442308-55

• Italy

Anritsu S.p.A.

Via Elio Vittorini 129, 00144 Roma, Italy
Phone: +39-6-509-9711
Fax: +39-6-502-2425

• Sweden

Anritsu AB

Borgafjordsgatan 13, 164 40 KISTA, Sweden
Phone: +46-8-534-707-00
Fax: +46-8-534-707-30

• Finland

Anritsu AB

Teknobulevardi 3-5, FI-01530 VANTAA, Finland
Phone: +358-20-741-8100
Fax: +358-20-741-8111

• Denmark

Anritsu A/S

Kirkebjerg Allé 90, DK-2605 Brøndby, Denmark
Phone: +45-72112200
Fax: +45-72112210

• Spain

Anritsu EMEA Ltd.

Oficina de Representación en España

Edificio Veganova
Avda de la Vega, n.º 1 (edf 8, pl 1, of 8)
28108 ALCOBENDAS - Madrid, Spain
Phone: +34-914905761
Fax: +34-914905762

• Russia

Anritsu EMEA Ltd.

Representation Office in Russia

Tverskaya str. 16/2, bld. 1, 7th floor.
Russia, 125009, Moscow
Phone: +7-495-363-1694
Fax: +7-495-935-8962

• United Arab Emirates

Anritsu EMEA Ltd.

Dubai Liaison Office

P O Box 500413 - Dubai Internet City
Al Thuraya Building, Tower 1, Suit 701, 7th Floor
Dubai, United Arab Emirates
Phone: +971-4-3670352
Fax: +971-4-3688460

• Singapore

Anritsu Pte. Ltd.

60 Alexandra Terrace, #02-08, The Comtech (Lobby A)
Singapore 118502
Phone: +65-6282-2400
Fax: +65-6282-2533

• India

Anritsu Pte. Ltd.

India Branch Office

3rd Floor, Shri Lakshminarayan Niwas, #2726, 80 ft Road,
HAL 3rd Stage, Bangalore - 560 075, India
Phone: +91-80-4058-1300
Fax: +91-80-4058-1301

• P.R. China (Hong Kong)

Anritsu Company Ltd.

Units 4 & 5, 28th Floor, Greenfield Tower, Concordia Plaza,
No. 1 Science Museum Road, Tsim Sha Tsui East,
Kowloon, Hong Kong
Phone: +852-2301-4980
Fax: +852-2301-3545

• P.R. China (Beijing)

Anritsu Company Ltd.

Beijing Representative Office

Room 2008, Beijing Fortune Building,
No. 5, Dong-San-Huan Bei Road,
Chao-Yang District, Beijing 100004, P.R. China
Phone: +86-10-6590-9230
Fax: +86-10-6590-9235

• Korea

Anritsu Corporation, Ltd.

8F Hyunjuk Building, 832-41, Yeoksam Dong,
Kangnam-ku, Seoul, 135-080, Korea
Phone: +82-2-553-6603
Fax: +82-2-553-6604

• Australia

Anritsu Pty. Ltd.

Unit 21/270 Ferntree Gully Road, Notting Hill,
Victoria 3168, Australia
Phone: +61-3-9558-8177
Fax: +61-3-9558-8255

• Taiwan

Anritsu Company Inc.

7F, No. 316, Sec. 1, Neihu Rd., Taipei 114, Taiwan
Phone: +886-2-8751-1816
Fax: +886-2-8751-1817

Please Contact: