Product Brochure

Anritsu

MT8870A

Universal Wireless Test Set

MU887000A

TRX Test Module

10 MHz to 3.8 GHz, 10 MHz to 6 GHz (Option)

Excellent Eco Product

Designed to Maximise Production Throughput

For Production Lines of Smartphone and Communications Module

The remarkable success of smartphones and tablets is driving demand for faster inspection speeds on smartphone and communication module production lines and this market trend is expected to continue. Coupled with this, wireless communication standards are continuing to evolve and develop, leading to a growing range of specifications. In these circumstances, terminal and module makers are looking to increase line efficiency while assuring smooth and flexible support for the various new standards.
With support for up to four test modules, the MT8870A Universal Wireless Test Set is the ideal cost-effective solution for high-efficiency inspection lines.

Four High-performance Modules in One Chassis

To enhance efficiency and reduce initial costs, up to four TRX modules can installed in each MT8870A. This modular system brings with it the flexibility to adapt to changes in volume and to shifts and developments in wireless standards.

Up to 4 Modules

Up to four modules can be installed in one chassis

MT8870A

Flexible Product Design for Parallel Testing of Multiple Wireless Standards

Up to
4
Measurement
Types

Four standards can be measured at once using four modules in one chassis

Simultaneous Measurement of Multiple Communication Standards

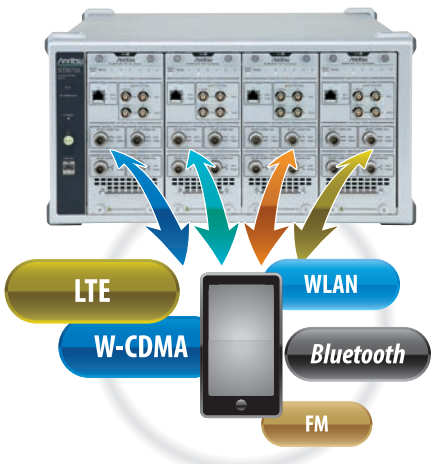
Smartphones and tablets with various wireless chipsets and antennas can all be tested with one MT8870A Universal Wireless Test Set.
Because each installed module can be controlled independently, multiple wireless tests can be run simultaneously.

Simultaneous Control of Four Modules

Installing four independent modules in the MT8870A Universal Wireless Test Set supports simultaneous measurement of four separate wireless devices. A unique IP address can be allocated to each slot and each module supports remote control by Ethernet or optional GPIB connections.

Four Simultaneous Measurements

Today's smartphones and tablets often support multiple wireless chipsets that all need to be tested and approved in the shortest possible time. Configuring an MT8870A with four modules enables simultaneous testing of all wireless standards and greatly increases throughput efficiency.



50% to 75% Smaller Instrument Footprint

Instead of four separate test stations each requiring setup, the all-in-one, high-performance MT8870A main frame with up to four test modules saves both production line space and setup time.

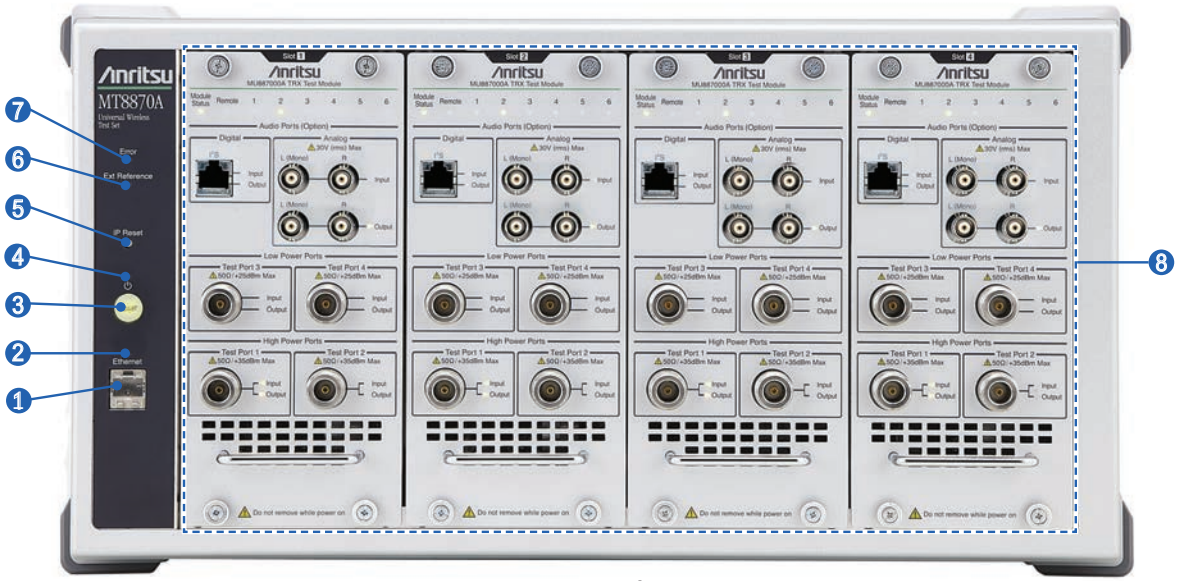
Compared to conventional Anritsu products	All-in-one Tester (Parallel Phone)	VSA/VSG
MT8870A 4-module Configuration	50% smaller	75% smaller

40%* Reduction in Infrastructure Costs with Four Installed Modules

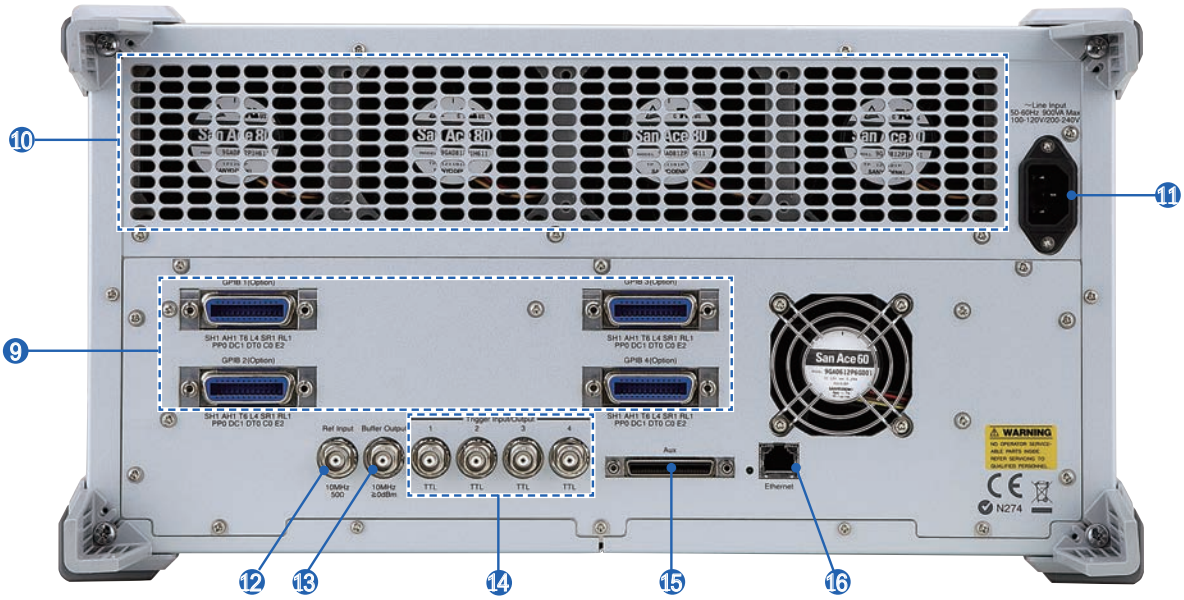
With four TRX modules in one MT8870A main frame, the shared components cut capital costs by about 40%.

*: Typical 4-module configuration compared to single module design

Panel Layout



Front panel



Rear panel

1. Ethernet Connector
2. Access Lamp
3. Power Switch
4. Standby Lamp
5. IP Address Reset Button (IP Reset)
6. External Reference Signal Lamp (Ext. Reference)
7. Error Lamp
8. Slot 1 to 4
9. GPIB Connector (option)
10. Cooling Fan
11. Power Cord Connector
12. External Reference Signal Input (Ref Input)
13. Reference Signal Output (Buffer Output)
14. Trigger Input/Output Connector
15. AUX Connector
16. Ethernet Connector

High Performance Coupled with Flexibility and Expandability

MU887000A
TRX Test Module

MU887000A
TRX Test Module
with OPT. 002 (Audio)

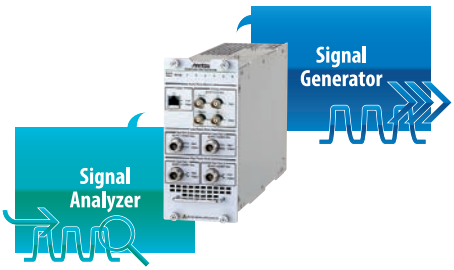
Future-proof Inspection Lines

Mobile terminal manufacturers require not only production line efficiency but also the flexibility to adapt to changes in wireless standards. The MT8870A is the ideal instrument to meet these needs.

POINT

1 Built-in Signal Generator and Signal Analyzer in Each Module

The MU887000A TRX Test Module has been developed for communication terminal device inspection lines. Each installed module has an independent high-performance signal generator and signal analyzer.



2 160 MHz Wide Bandwidth

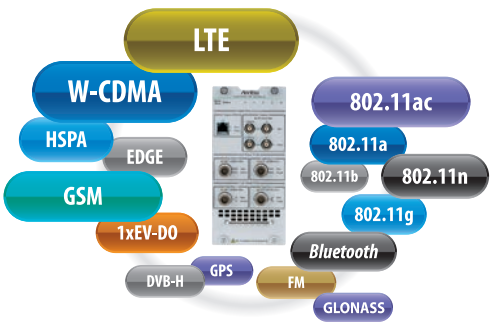
To support the WLAN802.11ac and (extended) LTE-Advanced wireless standards requiring bandwidths of 100 MHz or more, the MU887000A incorporates a signal generator and signal analyzer with a bandwidth of 160 MHz.

3 Wide Frequency Range from 10 MHz to 6 GHz (option)

The MU887000A signal generator and signal analyzer cover a frequency range from 10 MHz to 3.8 GHz (extended to 6 GHz as option), assuring flexible support for new wireless standards.

4 Each Module Supports Multiple Wireless Standards

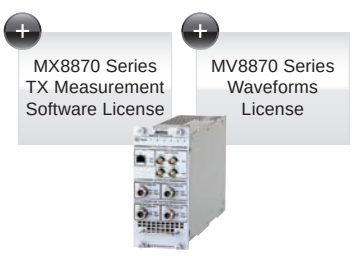
One MU887000A TRX Test Module supports multiple wireless communication standards.



Wireless Standards	Specifications
W-CDMA/HSDPA	3GPP TS 34.121-1
GSM/EDGE	3GPP TS 51.010-1
LTE	3GPP TS 36.521-1
CDMA2000	3GPP2 TSG-C.S0011-C
1xEV-DO	3GPP2 TSG-C.S0033-B
TD-SCDMA	3GPP TS 34.122
WLAN	IEEE 802.11a/b/g/n/ac
Bluetooth	Basic Rate/EDR/*Bluetooth* low energy
FM	RDS (IEC 62106 Edition 2.0)
GPS	GPS standard Positioning Service Signal
GLONASS	GLONASS ICD Navigational radiosignal In bands L1, L2
DVB-H	ETSI EN300 744
ISDB-T/Tmm	ARIB STD-B31/B46

Each standard is supported easily using a cost-effective licensing scheme

Licenses are obtained by adding TX measurement software packages and waveform files.



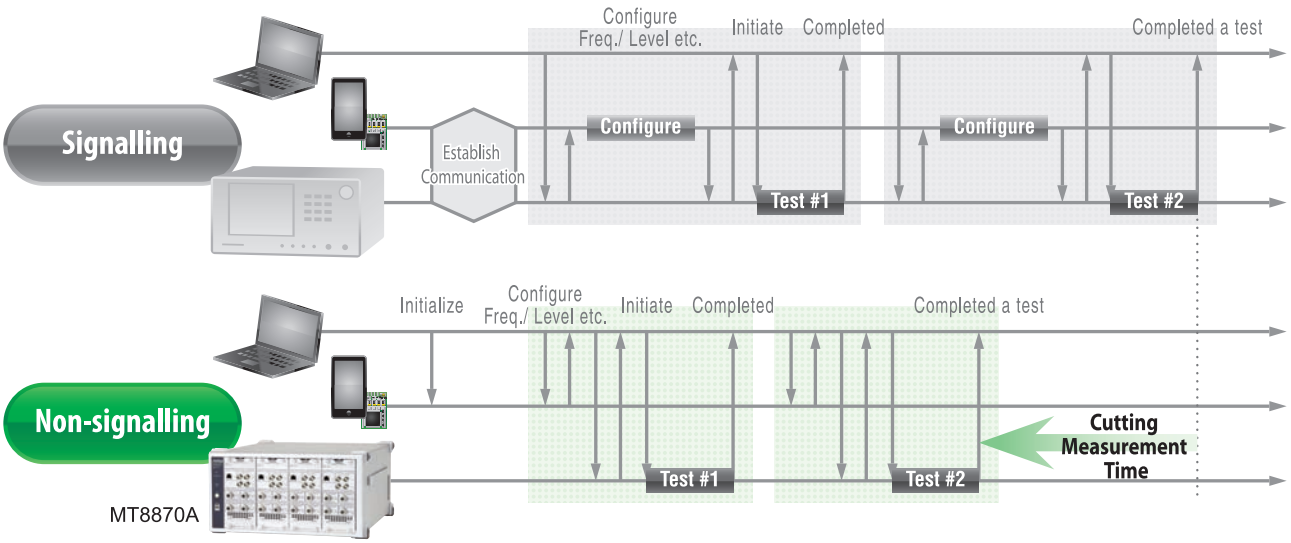
MU887000A
TRX Test Module

Integration with Leading-edge High-speed Measurement Methods

Times for manufacturing and testing mobile terminals have been slashed using leading-edge hardware architecture and parallel measurement technology. Additionally, multiple items for batch measurement processing can be freely selected for any number of repeat measurements. Batch measurement of selected items greatly simplifies and speeds up key tests.

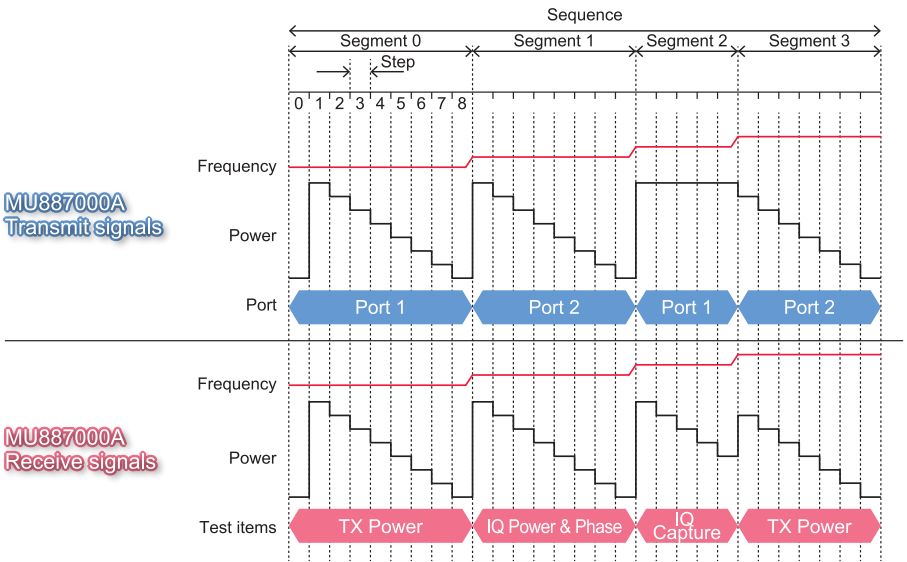
Non-signalling Measurement Support

The MT8870A performs measurements in a non-signalling environment. As shown in the figure below, alleviating the need to establish direct communication with the DUT brings considerable savings in both time and manufacturing costs.



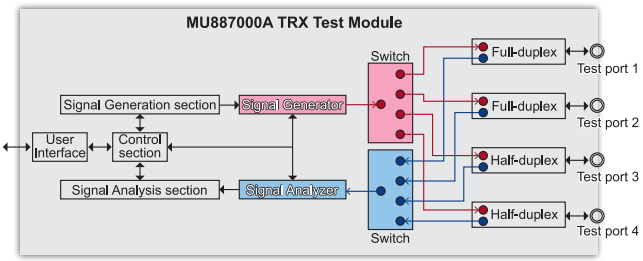
Sequence Measurement (Mobile Communication Terminals)

- For mobile terminals supporting sequence measurements (list mode), TRX tests are performed in accordance with a sequence table (list) where measurement conditions are recorded while changing the test conditions.
- Since each measurement is executed at high speed in accordance with a predetermined sequence without using remote control commands, line tact times are greatly reduced, increasing line throughput and efficiency.



Four Test Ports per Module

Each MU887000A TRX Test Module has two duplex and two half-duplex RF connectors.
The duplex ports (Test port 1 and 2) incorporate dividers at the front end to support simultaneous tests in both TX and RX directions when testing typical wireless standards.
The half-duplex ports (Test port 3 and 4) incorporate switches at the front end to switch between each test port when used either for TX or RX tests. These half-duplex ports have higher sensitivity than the full-duplex ports and are ideal for low-level wireless signals.



The four test ports can be used for level calibration because they have high level accuracy over a wide frequency range from 10 MHz to 6 GHz (option). Internal switches can switch the TRX ports between input and output. Normally, simultaneous coupling measurements of multiple antennas require troublesome calibration corrections when using the required external dividers and external switches. With four test ports each incorporating the internal switch level deviation, the MU887000A modules supports high level accuracy measurements over a wide frequency range.

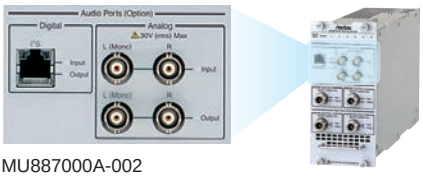
Test Port and Wireless Technology

	Test port 1 and 2	Test port 3 and 4
Name	High Power Test Port	Low Power Test Port
Connector	N (Female)	N (Female)
Type (Configuration)	Duplex (divider)	Half-duplex (switch)
Outline	Support simultaneous use of VSG and VSA required for measuring mobile terminal standards	Do not support simultaneous use of VSA and VSG each of which must be used separately High accuracy supports measurement of low-level signals
Wireless Standards and Recommended Port	LTE FDD, LTE TDD, W-CDMA, GSM, EDGE, CDMA2000, 1xEV-DO, TD-SCDMA, WLAN 802.11b/g/a/n/ac*, *Bluetooth**, FM, GPS, GLONASS, DVB-T, ISDB-T, ISDB-Tmm	Cellular Diversity, WLAN 802.11b/g/a/n/ac, *Bluetooth*, FM, GPS, GLONASS, DVB-T, ISDB-T, ISDB-Tmm

∗: Since test ports 1 and 2 have higher input levels than ports 3 and 4, use ports 3 and 4 when the MU887000A input level is low.

Built-in Audio Analyzer/Audio Generator

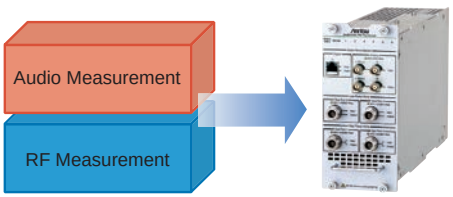
Installing the MU887000A-002 Audio Measurement Hardware in the MU887000A TRX Test Module supports a built-in audio analyzer and audio generator.
The MU887000A-002 supports both analog and digital audio. The stereo and mono analog audio inputs and outputs of a communications device can be measured using the four BNC connectors (input and output for both left and right channels). Additionally, digital audio communications modules without analog audio inputs and outputs are supported without needing an AD/DC converter using the RJ45 connector on the MU887000A TRX Test Module to measure digital audio signals using the standard I2S (inter-IC Sound) format.



MU887000A-002
Audio Measurement Hardware

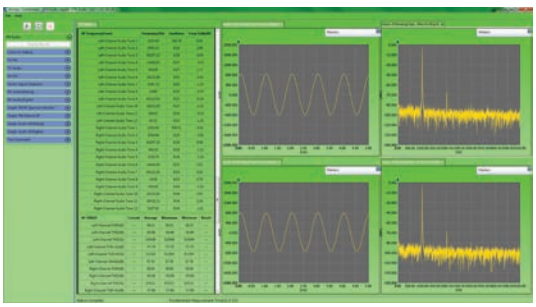
MU887000A
TRX Test Module

The MU887000A-002 Audio Measurement Hardware solution saves spaces and cuts costs by combining RF and audio measurements into one unit, eliminating the need for separate production lines for RF measurements and audio measurements.



MU887000A TRX Test Module
MU887000A-002 Audio Measurement Hardware

∗ The audio analyzer and audio generator functions cannot be used simultaneously.



CombiView Audio Measurement Screen

Ease of Configuration

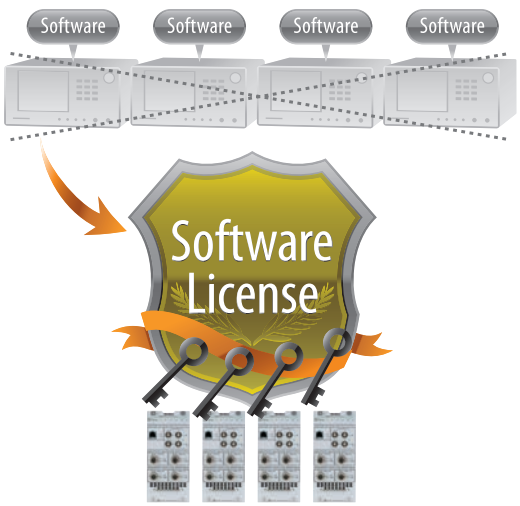
Line capacity can change from week to week or month to month, depending on customers' needs and the specifications of the device under test. The number of MU887000A modules installed*1 in the MT8870A Universal Wireless Test Set can be tailored to meet changes in line test stations and items, keeping the line efficiency high without needing major configuration changes to the line and stations.

∗1: Modules cannot be hot-swapped with the power on.

One License for All Modules

Versatile Software Licenses

TX and RX measurement capabilities are enabled through licenses that can be purchased as required. Each license enables the associated capabilities on all installed modules and represents excellent value for money in comparison to traditional, non-modular test systems.



Software for MU887000A TRX Test Module

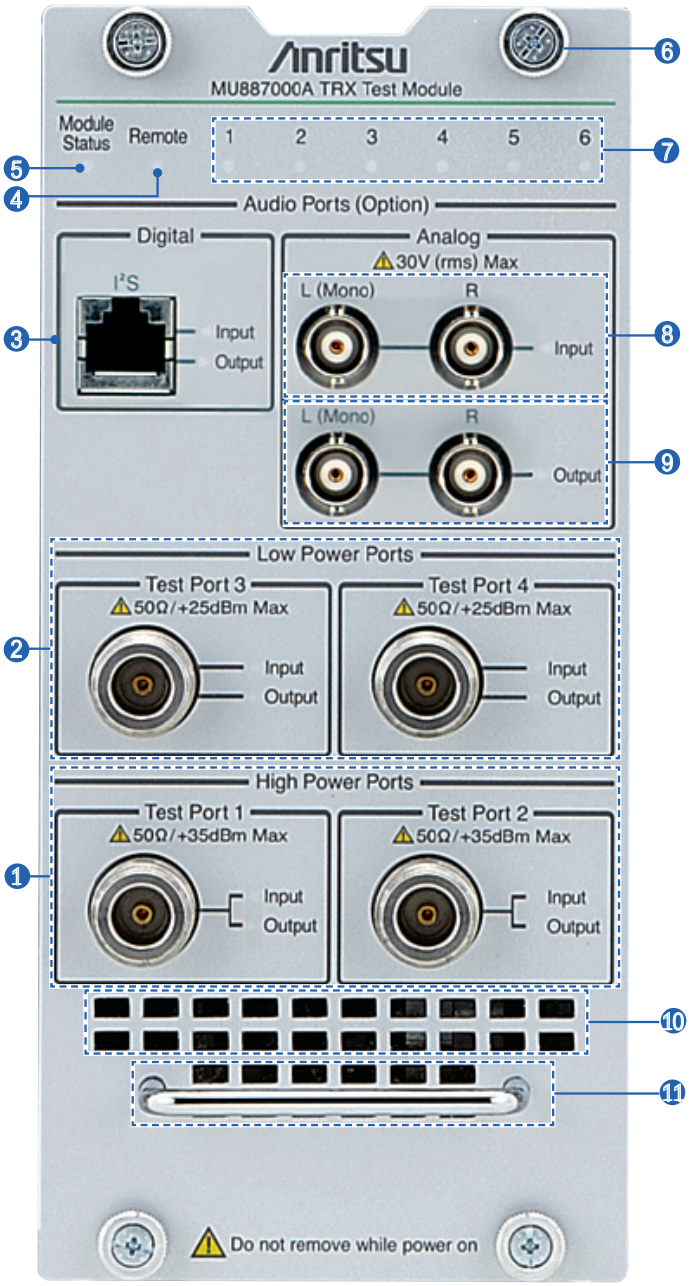
MX887x Series Measurement Software

Model	Description
MX887010A	Cellular Standards Sequence Measurement
MX887011A	W-CDMA/HSPA Uplink TX Measurement
MX887012A	GSM/EDGE Uplink TX Measurement
MX887013A	LTE FDD Uplink TX Measurement
MX887014A	LTE TDD Uplink TX Measurement
MX887015A	CDMA2000 Reverse Link TX Measurement
MX887016A	1xEV-DO Reverse Link TX Measurement
MX887017A	TD-SCDMA Uplink TX Measurement
MX887030A	WLAN 802.11b/g/a/n TX Measurement
MX887031A	WLAN 802.11ac TX Measurement
MX887040A	*Bluetooth* TX Measurement
MX887050A	Short Range Wireless Average Power and Frequency Measurement
MX887070A	FM/Audio TRX Measurement

MV887x Series Waveforms

Model	Description
MV887011A	W-CDMA/HSPA Downlink Waveforms
MV887012A	GSM/EDGE Downlink Waveforms
MV887013A	LTE FDD Downlink Waveforms
MV887014A	LTE TDD Downlink Waveforms
MV887015A	CDMA2000 Forward Link Waveforms
MV887016A	1xEV-DO Forward Link Waveforms
MV887017A	TD-SCDMA Downlink Waveforms
MV887030A	WLAN 802.11b/g/a/n Waveforms
MV887031A	WLAN 802.11ac Waveforms
MV887040A	*Bluetooth* Waveforms
MV887070A	FM RDS Waveforms
MV887100A	GPS Waveforms
MV887102A	GLONASS Waveforms
MV887110A	DVB-H Waveforms
MV887111A	ISDB-T Waveforms
MV887112A	ISDB-Tmm Waveforms

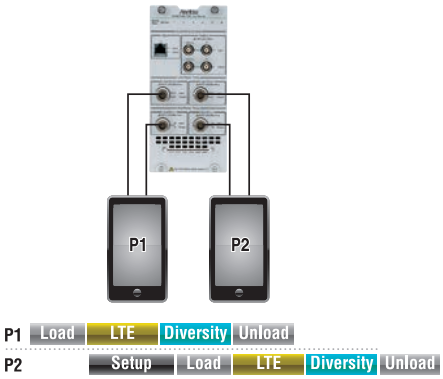
MU887000A TRX Test Module Panel Layout



1. Test Port 1, 2
2. Test Port 3, 4
3. Digital Audio Input/Output (Option)
4. Remote Lamp (Remote)
5. Status Lamp (Module Status)
6. Mounting screws
7. Status Lamp (1 to 6)
8. Analog Audio Input (Option)
9. Analog Audio Output (Option)
10. Vent
11. Handle

Application Examples

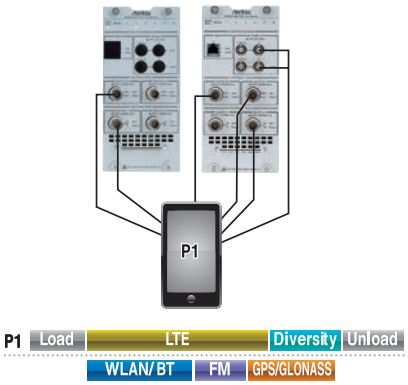
Manufacturing Smartphones



Two smartphones can be measured alternately using one TRX Test Module. While one smartphone is being measured, the second is being prepared for measurement. When measurement of the first phone is completed, measurement of the second phone starts and the phone measured first can be replaced with a third phone to start measurement preparation.
This continuing sequence greatly reduces wasted time at connection and measurement to improve line throughput.

LTE Smartphone Measurement Examples

Model	Description	Qty.
MT8870A	Universal Wireless Test Set	1
MU887000A	TRX Test Module	1
MX887013A	LTE FDD Uplink TX Measurement	1
MV887013A	LTE FDD Downlink Waveforms	1

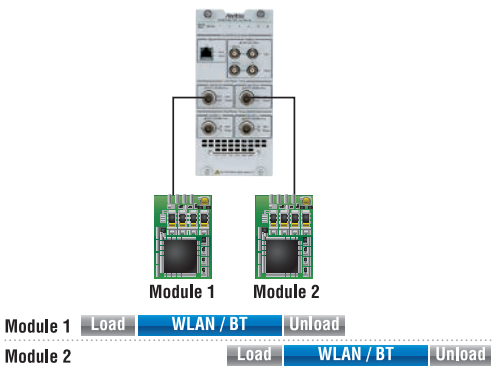


Two TRX Test Modules can be used to measure multiple wireless technologies in one smartphone.
The multiple antennas for the various wireless technologies in the smartphone are connected all at one time to execute measurements in parallel, greatly reducing the problems of moving smartphones between test stations and re-booting time for smartphone.

Smartphone Measurement Examples
(Simultaneous Measurement of Multiple Wireless Technologies)

Model	Description	Qty.
MT8870A	Universal Wireless Test Set	1
MU887000A	TRX Test Module	2
MU887000A-001	6 GHz Frequency Extension	2
MU887000A-002	Audio Measurement Hardware	1
MX887013A	LTE FDD Uplink TX Measurement	1
MX887030A	WLAN 802.11b/g/a/n TX Measurement	1
MX887031A	WLAN 802.11ac TX Measurement	1
MX887040A	*Bluetooth* TX Measurement	1
MX887070A	FM/Audio TRX Measurement	1
MV887013A	LTE FDD Downlink Waveforms	1
MV887030A	WLAN 802.11b/g/a/n Waveforms	1
MV887031A	WLAN 802.11ac Waveforms	1
MV887040A	*Bluetooth* Waveforms	1
MV887070A	FM RDS Waveforms	1
MV887100A	GPS Waveforms	1
MV887102A	GLONASS Waveforms	1

Manufacturing Communication Modules



One TRX Test Module can be used to measure WLAN 802.11b/g/a/n+ac, *Bluetooth* modules.

Model	Description	Qty.
MT8870A	Universal Wireless Test Set	1
MU887000A	TRX Test Module	1
MU887000A-001	6 GHz Frequency Extension	1
MX887030A	WLAN 802.11b/g/a/n TX Measurement	1
MX887031A	WLAN 802.11ac TX Measurement	1
MX887040A	*Bluetooth* TX Measurement	1
MV887030A	WLAN 802.11b/g/a/n Waveforms	1
MV887031A	WLAN 802.11ac Waveforms	1
MV887040A	*Bluetooth* Waveforms	1

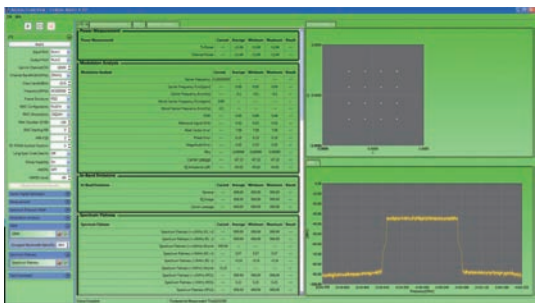
PC Applications

CombiView

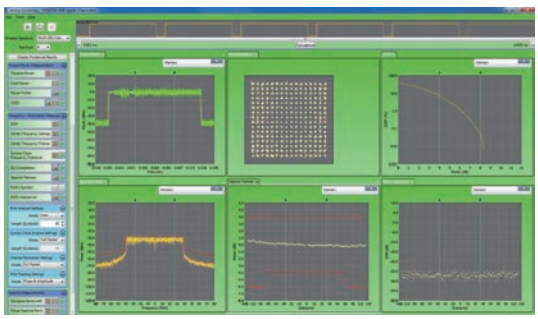
CombiView is a PC application used to control the MT8870A and display graphical and numerical test results.
It has the following functions:

Key Features

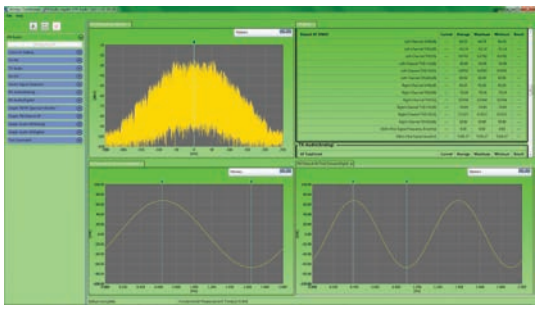
- Graphical display of TX measurement results using Windows interface
- Remote control of MT8870A (MU887000A) via Ethernet and GPIB (option)
- Setting of MT8870A (MU887000A)
- Signal generator interface for RX tests



LTE FDD Uplink TX Measurement with Cellular Application Applet



WLAN 802.11ac TX Measurement with SRW Application Applet



Audio Measurement with FM/Audio Application Applet

Utility Tool

The utility tool is a PC application used to detect the network and perform firmware updates.

Key Features

- Displays details of MT8870A and MU887000A TRX Test Module(s) detected on network
- MU887000A TRX Test Module firmware upgrade
- Waveform file transfer
- License registration

Specifications

MT8870A Universal Wireless Test Set

Electrical Characteristics

Number of Slots		4
Internal Reference Oscillator		Starting characteristics 25°C, Referenced to frequency at 24-hour after power-on ±5 × 10^{-7} (2 minutes after power-on) ±5 × 10^{-8} (5 minutes after power-on) Aging rate: ±1 × 10^{-7}/year Temperature characteristics: ±2 × 10^{-8} (5° to 45°C)
Connector	External Reference Input	Connector: BNC-J (Rear panel), 50Ω (nominal) Frequency: 10 MHz Operating range: ±1 ppm Input level: –15 to +20 dBm, 50Ω (AC coupling)
	Reference Signal Output	Connector: BNC-J (Rear panel), 50Ω (nominal) Frequency: 10 MHz Output level: ≥0 dBm (AC coupling)
	Trigger	Input/Output switching: Trigger Input/Output selectable Connector: BNC-J (Rear panel: 4 ports) Input/Output level: TTL level
	Ethernet Controller	Control from external controller (Excluding power-On/Off) Ethernet (1000BASE-T) Connector: RJ-45 (Front panel, Rear panel) GPIB (With MT8870A-001) Connector: IEEE488 bus connector (Rear panel: 4 ports) Aux Connector: 50-pin (Correspond to DX10BM-50S, Rear panel)

General

Dimensions and Mass	426 (W) × 221.5 (H) × 498 (D) mm (Exclusive of surface projections) ≤11.5 kg (Excluding all options and modules) ≤30.0 kg (Including options and modules)
Power Supply	Power voltage: 100 V(ac) to 120 V(ac)/200 V(ac) to 240 V(ac) Frequency: 50 Hz/60 Hz Power consumption: ≤900 VA (Including all options and modules)
Temperature Range	+5° to +45°C (Operating), –20° to +60°C (Storage)
EMC	EN61326-1, EN61000-3-2

MU887000A TRX Test Module

Input/Output Connector

RF Test Ports	Ports	4
	Connector	N(f)
	Impedance	50Ω (nominal)
	VSWR	Test port 1 and 2 <1.5 (10 MHz ≤ f < 400 MHz) <1.2 (400 MHz ≤ f ≤ 2.7 GHz) <1.3 (2.7 GHz < f ≤ 3.8 MHz) <1.5 (3.8 GHz < f ≤ 6.0 GHz) Test port 3 and 4 <1.8 (10 MHz ≤ f < 30 MHz) <1.5 (30 MHz ≤ f ≤ 3.8 GHz) <1.6 (3.8 GHz < f ≤ 6.0 MHz)
	Maximum Input Level	+35 dBm (Test port 1 and 2) +25 dBm (Test port 3 and 4)
AF Test Ports	Ports	Analog Port, Digital Port
	Connector	Analog Port: BNC(f) Digital Port: RJ-45

Signal Generator

Frequency	Setting Range	10 MHz to 3.8 GHz 10 MHz to 6.0 GHz (with MU887000A-001)
	Resolution	1 Hz
	Accuracy	Depends on MT8870A reference oscillator accuracy
Amplitude	Setting Range	Test port 1 and 2 –130 to –10 dBm (≤3.8 GHz) –130 to –18 dBm (>3.8 GHz) Test port 3 and 4 –120 to 0 dBm (≤3.8 GHz) –120 to –8 dBm (>3.8 GHz)
	Setting Resolution	0.1 dB
	Accuracy	CW, After CAL, 10° to 40°C Test port 1 and 2 Output level: ≥–120 dBm (≤3.8 GHz), ≥–100 dBm (>3.8 GHz) ±1.3 dB (10 MHz ≤ f < 400 MHz) (Signal Analyzer input level: +15 dBm) ±1.0 dB, ±0.7 dB (typ.) (400 MHz ≤ f ≤ 3.8 GHz) ±1.3 dB, ±1.0 dB (typ.) (3.8 GHz < f ≤ 6.0 GHz) Test port 3 and 4 Output level: ≥ –110 dBm ±1.3 dB (10 MHz ≤ f < 400 MHz) ±1.0 dB, ±0.7 dB (typ.) (400 MHz ≤ f ≤ 3.8 GHz) ±1.3 dB, ±0.7 dB (typ.) (3.8 GHz < f ≤ 6.0 GHz)
Spurious Response	Harmonic Distortion	<–25 dBc
Vector Modulation	Bandwidth	Maximum 160 MHz

Signal Analyzer

Frequency	Setting Range	10 MHz to 3.8 GHz 10 MHz to 6.0 GHz (with MU887000A-001)
	Resolution	1 Hz
Amplitude	Setting Range	CW Test port 1 and 2 –65 to +15 dBm (10 MHz ≤ f < 350 MHz) –65 to +35 dBm (350 MHz ≤ f ≤ 6.0 GHz) Test port 3 and 4 –65 to +15 dBm (10 MHz ≤ f < 350 MHz) –65 to +25 dBm (350 MHz ≤ f ≤ 6.0 GHz)
	Resolution	0.1 dB
	Accuracy	CW, Measurement bandwidth: 300 kHz, RBW: 100 kHz, After CAL Test port 1 and 2 10 MHz ≤ f < 400 MHz, Signal Generator: Off, +10° to +40°C ±0.7 dB (–30 dBm ≤ p ≤ +15 dBm) ±0.9 dB (–55 dBm ≤ p < –30 dBm) ±1.1 dB (–65 dBm ≤ p < –55 dBm) 400 MHz ≤ f ≤ 3.8 GHz, +10° to +40°C ±0.5 dB, ±0.3 dB (typ.) (–30 dBm ≤ p ≤ +35 dBm) ±0.7 dB (–55 dBm ≤ p < –30 dBm) ±0.9 dB (–65 dBm ≤ p < –55 dBm) 3.8 GHz < f ≤ 6.0 GHz, +20° to +30°C ±0.7 dB (–30 dBm ≤ p ≤ +35 dBm) ±0.9 dB (–55 dBm ≤ p < –30 dBm) ±1.1 dB (–65 dBm ≤ p < –55 dBm) Test port 3 and 4 10 MHz ≤ f < 400 MHz, +10° to +40°C ±0.7 dB (–30 dBm ≤ p ≤ +15 dBm) ±0.9 dB (–55 dBm ≤ p < –30 dBm) ±1.1 dB (–65 dBm ≤ p < –55 dBm) 400 MHz ≤ f ≤ 3.8 GHz, +10° to +40°C ±0.7 dB (–30 dBm ≤ p ≤ +25 dBm) ±0.9 dB (–55 dBm ≤ p < –30 dBm) ±1.1 dB (–65 dBm ≤ p < –55 dBm) 3.8 GHz < f ≤ 6.0 GHz, +20° to +30°C ±0.7 dB (–30 dBm ≤ p ≤ +25 dBm) ±0.9 dB (–55 dBm ≤ p < –30 dBm) ±1.1 dB (–65 dBm ≤ p < –55 dBm)
	Linearity	CW, Measurement bandwidth: 300 kHz, RBW: 100 kHz ±0.2 dB (0 to –40 dB, ≥ –55 dBm) ±0.4 dB (0 to –40 dB, ≥ –65 dBm)
Modulation Analysis	Maximum Bandwidth	25 MHz (10 MHz ≤ f < 500 MHz) 80 MHz (500 MHz ≤ f < 1.9 GHz) 160 MHz (1.9 GHz ≤ f ≤ 6.0 GHz)

General

Interface	Trigger	Trigger signals Input/Output at Trigger connectors (Rear panel)
	Remote Control	Ethernet: via MT8870A interface GPIB: with MT8870A GPIB option (MT8870A-001) Interface function: SH1, AH1, T6, L4, SR1, RL1, PP0, DC1, DT0, C0, E2
Dimensions and Mass		90 (W) × 193.6 (H) × 325 (D) mm (Exclusive of surface projections) ≤5 kg (Including options)

MU887000A-002 Audio Measurement Hardware

Analog Audio	Audio Generator	Frequency Range: 20 Hz to 20 kHz Output Level Range: 0 (off), 1 mV to 5 Vpeak (100 kΩ termination) Impedance: 1Ω (nominal), (AC Coupling)
	Audio Analyzer	Frequency Range: 20 Hz to 20 kHz Input Level Range: 1 mV peak to 5 V peak (30 Vrms Max.) Impedance: 100 kΩ (AC coupling)
Digital Audio	Audio Generator	Frequency Range: 20 Hz to 20 kHz (44.1 kHz, 48 kHz Sampling) 20 Hz to 14 kHz (32 kHz Sampling) 20 Hz to 7 kHz (16 kHz Sampling) Bit Resolution: 16 bits/24 bits
	Audio Analyzer	Sampling Rate: 16 kHz, 32 kHz, 44.1 kHz, 48 kHz Bit Resolution: 16 bits/24 bits

Ordering Information

Please specify the model/order number, name and quantity when ordering.
The names listed in the chart below are Order Names. The actual name of the item may differ from the Order Name.

Model/Order No.	Name
	Main frame
MT8870A	Universal Wireless Test Set
	Standard accessories
	Power Cord: 1 pc
B0666A	Blank Panel: 3 pcs*1
	DVD-R: 1 pc
MX880050A	CombiView (DVD-R)
MX880051A	Cellular Application Applet (DVD-R)
MX880052A	SRW Application Applet (DVD-R)
MX880053A	FM/Audio Application Applet (DVD-R)
MX880054A	Signal Generator Application Applet (DVD-R)
MX887900A	MT8870A Utility Tool (DVD-R)
W3605AE	MT8870A Operation Manual (DVD-R)
W3606AE	MU887000A Operation Manual (DVD-R)
	Options
MT8870A-001	GPIB Control
MT8870A-101	GPIB Control Retrofit
	Warranty
MT8870A-ES210	2 Years Extended Warranty Service
MT8870A-ES310	3 Years Extended Warranty Service
MT8870A-ES510	5 Years Extended Warranty Service
	Application parts
B0666A	Blank Panel
B0664A	Rack Mount Kit (MT8870A)
B0665A	Carrying Case (MT8870A)
B0669A	Front Cover for 1MW5U (MT8870A)
J0006	GPIB Cable, 0.5 m
J0007	GPIB Cable, 1.0 m
J0008	GPIB Cable, 2.0 m
J0127A	Coaxial Cord, 1 m (BNC-P · RG-58A/U · BNC-P)
J0127B	Coaxial Cord, 2.0 m (BNC-P · RG-58A/U · BNC-P)
J0127C	Coaxial Cord, 0.5 m (BNC-P · RG-58A/U · BNC-P)
J0576B	Coaxial Cord, 1.0 m (N-P · 5D-2W · N-P)
J0576D	Coaxial Cord, 2.0 m (N-P · 5D-2W · N-P)
J0322A	Coaxial Cord, 0.5 m (SMA-P · SMA-P, DC to 18 GHz, 50Ω)
J0322B	Coaxial Cord, 1.0 m (SMA-P · SMA-P, DC to 18 GHz, 50Ω)
J0322C	Coaxial Cord, 1.5 m (SMA-P · SMA-P, DC to 18 GHz, 50Ω)
J0322D	Coaxial Cord, 2.0 m (SMA-P · SMA-P, DC to 18 GHz, 50Ω)
J0004	Coaxial Adapter (N-P · SMA-J)
J1261A	Ethernet Cable (Shield type, Straight, 1 m)
J1261B	Ethernet Cable (Shield type, Straight, 3 m)
J1261C	Ethernet Cable (Shield type, Crossover, 1 m)
J1261D	Ethernet Cable (Shield type, Crossover, 3 m)

∗1: Installed in empty slots

Model/Order No.	Name
	Test module
MU887000A	TRX Test Module
	Standard accessories
	DVD-R: 1 pc
W3606AE	MU887000A Operation Manual (DVD-R)
	Options
MU887000A-001	6 GHz Frequency Extension
MU887000A-101	6 GHz Frequency Extension Retrofit
MU887000A-002	Audio Measurement Hardware
MU887000A-102	Audio Measurement Hardware Retrofit
	Warranty
MU887000A-ES210	2 Years Extended Warranty Service
MU887000A-ES310	3 Years Extended Warranty Service
MU887000A-ES510	5 Years Extended Warranty Service

Model/Order No.	Name
	Software
MX887010A	Cellular Standards Sequence Measurement
MX887011A	W-CDMA/HSPA Uplink TX Measurement
MX887012A	GSM/EDGE Uplink TX Measurement
MX887013A	LTE FDD Uplink TX Measurement
MX887014A	LTE TDD Uplink TX Measurement
MX887015A	CDMA2000 Reverse Link TX Measurement
MX887016A	1xEV-DO Reverse Link TX Measurement
MX887017A	TD-SCDMA Uplink TX Measurement
MX887030A	WLAN 802.11b/g/a/n TX Measurement*2
MX887031A	WLAN 802.11ac TX Measurement*2
MX887040A	*Bluetooth* TX Measurement
MX887050A	Short Range Wireless Average Power and Frequency Measurement
MX887070A	FM/Audio TRX Measurement*3
	Waveform file
MV887011A	W-CDMA/HSPA Downlink Waveforms
MV887012A	GSM/EDGE Downlink Waveforms
MV887013A	LTE FDD Downlink Waveforms
MV887014A	LTE TDD Downlink Waveforms
MV887015A	CDMA2000 Forward Link Waveforms
MV887016A	1xEV-DO Forward Link Waveforms
MV887017A	TD-SCDMA Downlink Waveforms
MV887030A	WLAN 802.11b/g/a/n Waveforms*2
MV887031A	WLAN 802.11ac Waveforms*2
MV887040A	*Bluetooth* Waveforms
MV887070A	FM RDS Waveforms
MV887100A	GPS Waveforms
MV887102A	GLONASS Waveforms
MV887110A	DVB-H Waveforms
MV887111A	ISDB-T Waveforms
MV887112A	ISDB-Tmm Waveforms

∗2: Requires MU887000A-001 for 5 GHz (802.11a/n/ac) frequency measurements
∗3: Requires MU887000A-002 for Audio Signal measurements

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Specifications are subject to change without notice.

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