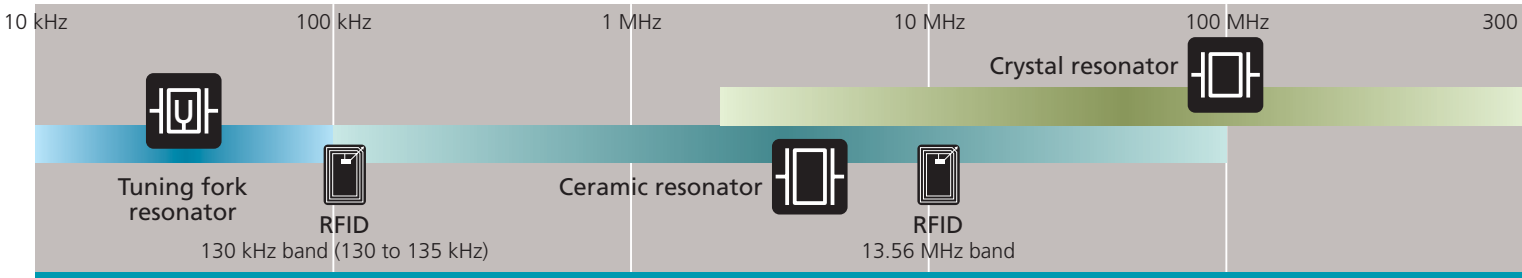
ADVANTEST

Board Network Analyzers

R3755A/3760

Making a personal computer a vector network analyzer



300 MHz Board Network Analyzer R3755A

Compact size, light weight, low power consumption of less than 15 W, and with the capacity to drive up to eight units in parallel.

The R3755A network analyzer evaluates the frequency characteristics of electronic components, such as the crystal resonator and ceramic resonator used in a broad range of electronic equipment, as well as antennas for receiving/transmitting wireless signals.

R3755A Key Specifications

Measurement functions

Measurement channels:	4
Measurement parameters:	A/R (R channel is connected internally)

Signal source characteristics (25C° ± 5C°, calibration cycle one year)

Frequency characteristics	
Range:	10 kHz to 300 MHz
Resolution;	1 mHz
Accuracy:	±20 ppm (OPT.20: ±1 ppm)
Output characteristics	
Range:	10 kHz to 1 MHz: 0 to -30 dBm 1 to 300 MHz: +18 to -43 dBm 0.1 dB resolution
Range set-up:	Start/Stop, or Center/Span
Sweep type:	Arbitrary sweep of specified segment (Frequency, Output level, RBW, Point, Settling time)
Sweep speed:	Maximum 50 µsec/point (RBW 15 kHz)
Measurement point:	Maximum 1601 points (segment)
Output port:	SMA (female) 50Ω connector

Receiving section characteristics (25C° ± 5C°, calibration cycle one year)

Input characteristics	
Input:	SMA (female) 50Ω connector
Frequency range:	Same as the signal source characteristics
Average noise level:	-70 dBm (RBW: 1 kHz)
Resolution bandwidth:	10 Hz to 15 kHz (1, 1.5, 2, 3, 4, 5, or 7 steps)
Error correction functions:	Normalize, Trans Full Call (Full Call: Open, Short, Load)

Connections to external devices

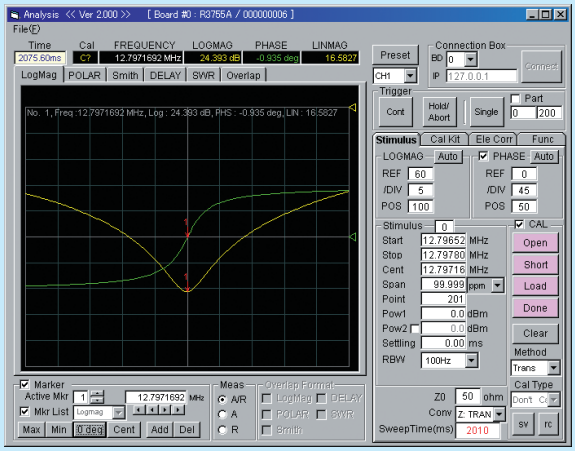
Parallel I/O:	8-bit output (C-MOS), 4-bit input (C-MOS)

General specifications

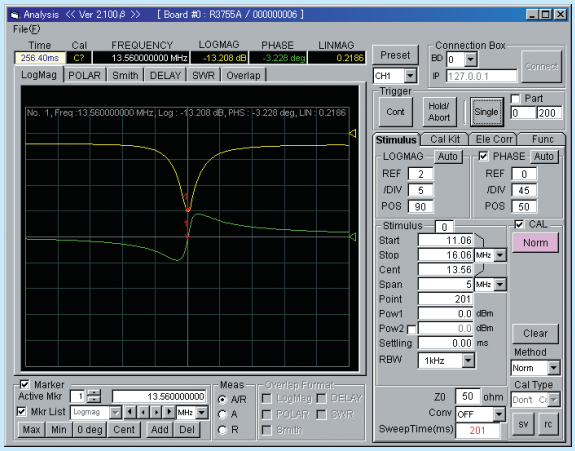
Loadable PC [1]	
Expansion-slot [2]:	PC which carries 1 PCI slot (32 Bit, 5 V, half-size)
OS:	Windows XP
Development environment of application:	Microsoft Visual Basic 2008 or Visual C++2008 Microsoft Visual Basic 6.0 or Visual C++6.0
Power supply:	+5 VDC (5W), +3.3 VDC (5W), +12 VDC (1W), -12 VDC (1W) (typical)
Power consumption:	15 W or less
External dimensions:	Approx. 190 (W) x 126 (H) x 20 (D) mm
Mass:	1 kg or less

1) Depending on the specifications of the PC to be used, it may not operate.
2) Please keep the ambient air temperature (temperature in the PC) of this device equipped to the PC expansion slot from exceeding +55 degree C.

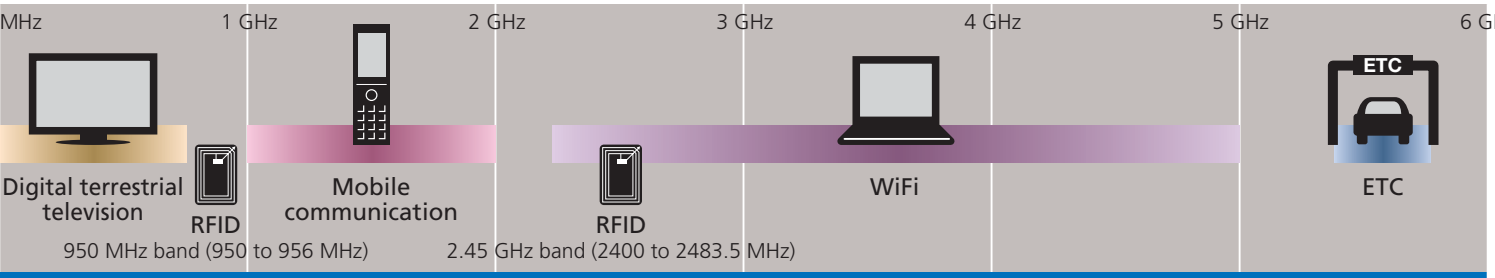
Measurement example with R3755A sample software



Example of oscillation characteristics measurement for crystal resonator



Example of oscillation frequency measurement for RFID

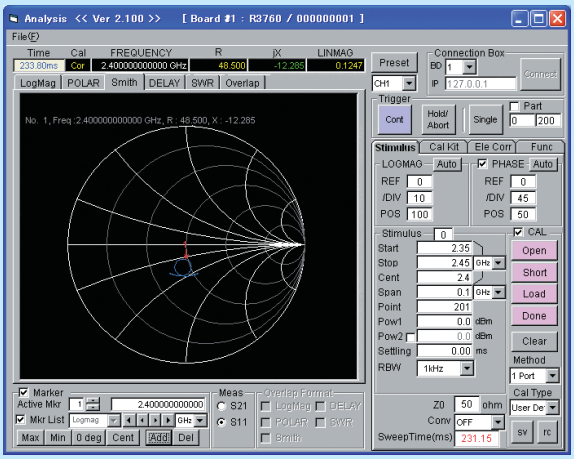


6 GHz Board Network Analyzer R3760

Compact size, light weight, low power consumption of less than 20 W, and with the capacity to drive up to eight units in parallel.

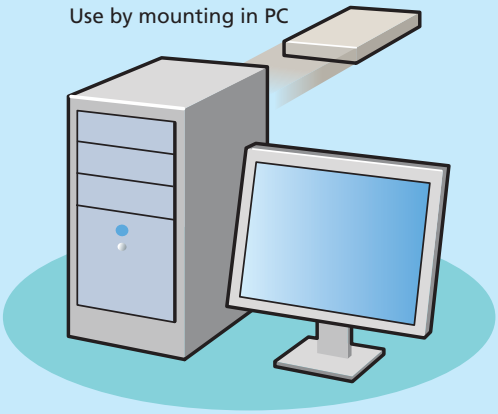
The R3760 network analyzer, low in cost and with a space-saving design, measures and evaluates the frequency characteristics of receiving/transmitting antennas and filters, which are used for wireless communications such as mobile phones, WiMAX, WiFi, and ETC systems for ubiquitous communication.

Measurement example with R3760 sample software



Example of impedance measurement for antenna

Use by mounting in PC



For more information on the calibration kit required for impedance measurement, please contact our office.

R3760 Key Specifications

Measurement functions

Measurement channels:	4
Measurement parameters:	Reflection (S11), Transmission (S21)

Signal source characteristics (25C° ± 5C°, calibration cycle one year)

Frequency characteristics	
Range:	S11/S21: 300 MHz to 6 GHz
Resolution;	10 kHz
Accuracy:	±50 ppm (OPT.20: ±1 ppm stability)
Output characteristics	
Range:	≤3 GHz: 0 to -10 dBm >3 GHz: -5 to -10 dBm 0.1 dB resolution
Range set-up:	Start/Stop, or Center/Span
Sweep type:	Arbitrary sweep of specified segment (Frequency, Output level, RBW, Point, Settling time)
Sweep speed:	Maximum 300 µsec/point
Measurement point:	Maximum 1601 points (segment)
Output port:	SMA (female) 50Ω connector

Receiving section characteristics (25C° ± 5C°, calibration cycle one year)

Input characteristics	
Input:	SMA (female) 50Ω connector
Frequency range:	Same as the signal source characteristics
Average noise level:	-70 dBm (RBW: 1 kHz)
Resolution bandwidth:	10 Hz to 15 kHz (1, 1.5, 2, 3, 4, 5, or 7 steps)
Error correction functions:	1-Port Full Cal, Normalize, Trans Full Cal

Connections to external devices

Parallel I/O:	8-bit output (C-MOS), 4-bit input (C-MOS)

General specifications

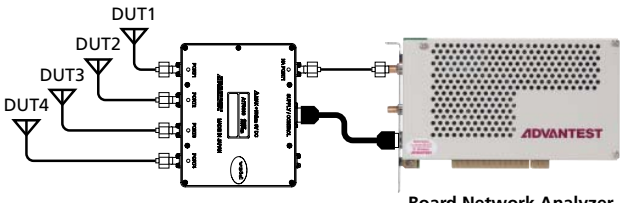
Loadable PC [1]	
Expansion-slot [2]:	PC which carries two PCI slots (32Bit, 5V, half-size)
OS:	Windows XP
Development environment of application:	Microsoft Visual Basic 2008 or Visual C++2008 Microsoft Visual Basic 6.0 or Visual C++6.0
Power supply:	+5 VDC (7W), +3.3 VDC (10W), +12 VDC (1W), -12 VDC (1W) (typical)
Power consumption:	20 W or less
External dimensions:	Approx. 190 (W) x 126 (H) x 42 (D) mm
Mass:	1 kg or less

1) Depending on the specifications of the PC to be used, it may not operate.
2) Please keep the ambient air temperature (temperature in the PC) of this device equipped to the PC expansion slot from exceeding +55 degree C.

Please refer to product manual for complete system specifications.
Specifications may change without notification.

Optional Accessories for Expanding Applications of Board Network Analyzer

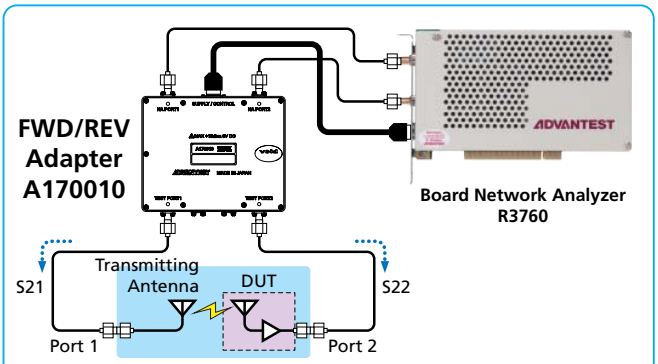
● 4-Port Adapter A170009



4-Port Adapter
A170009

Board Network Analyzer
R3760

● Forward/Reverse Adapte A170010



A170009 Key Specifications

Input/Output port

Port numbers:	5
Switchable path	
On State1:	Path between NA PORT1 - PORT1 is On
On State2:	Path between NA PORT1 - PORT2 is On
On State3:	Path between NA PORT1 - PORT3 is On
On State4:	Path between NA PORT1 - PORT4 is On
Connector:	SMA (female) 50Ω connector

Input/Output signal characteristics (25C° ± 5C°)

Frequency characteristics range:	300 MHz to 6 GHz
Input characteristics	
Maximum input level:	0 dBm
Absolute maximum input level:	+15 dBm, 0 VDC
Insertion loss	
Between On State path:	300 MHz to 500 MHz: <2.5 dB 500 MHz to 3 GHz: <4.0 dB 3 GHz to 6 GHz: <5.5 dB

General specifications

Power supply:	+5 VDC (0.5 W) The power supply is supplied from R3760 by accessory cable for parallel I/O.
Power consumption:	0.5 W or less
Dimensions:	Approx. 132 (W) x 26 (H) x 126 (D) mm
Mass:	1 kg or less

Accessories		
	DC power and Control cable	1
	RF cable	1
	Application software (provide in CD-ROM for the operation manual)	1

A170010 Key Specifications

Input/Output port

Port numbers:	4
Switchable path	
On State1:	Path between NA PORT1 - TEST PORT1, and path between NA PORT2 – PORT2 are On
On State2:	Path between NA PORT1 - TEST PORT2, and path between NA PORT2 – PORT1 are On
Connector:	SMA (female) 50Ω connector

Input/Output signal characteristics (25C° ± 5C°)

Frequency characteristics range:	300 MHz to 6 GHz
Input characteristics	
Maximum input level:	0 dBm
Absolute maximum input level:	+15 dBm, 0 VDC
Insertion loss	
Between On State path:	300 MHz to 500 MHz: <2.5 dB 500 MHz to 3 GHz: <4.0 dB 3 GHz to 6 GHz: <5.5 dB

General specifications

Power supply:	+5 VDC (0.5 W) The power supply is supplied from R3760 by accessory cable for parallel I/O.
Power consumption:	0.5 W or less
Dimensions:	Approx. 132 (W) x 26 (H) x 126 (D) mm
Mass:	1 kg or less

Accessories		
	DC power and Control cable	1
	RF cable	2
	Application software (provide in CD-ROM for the operation manual)	1

ADVANTEST

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