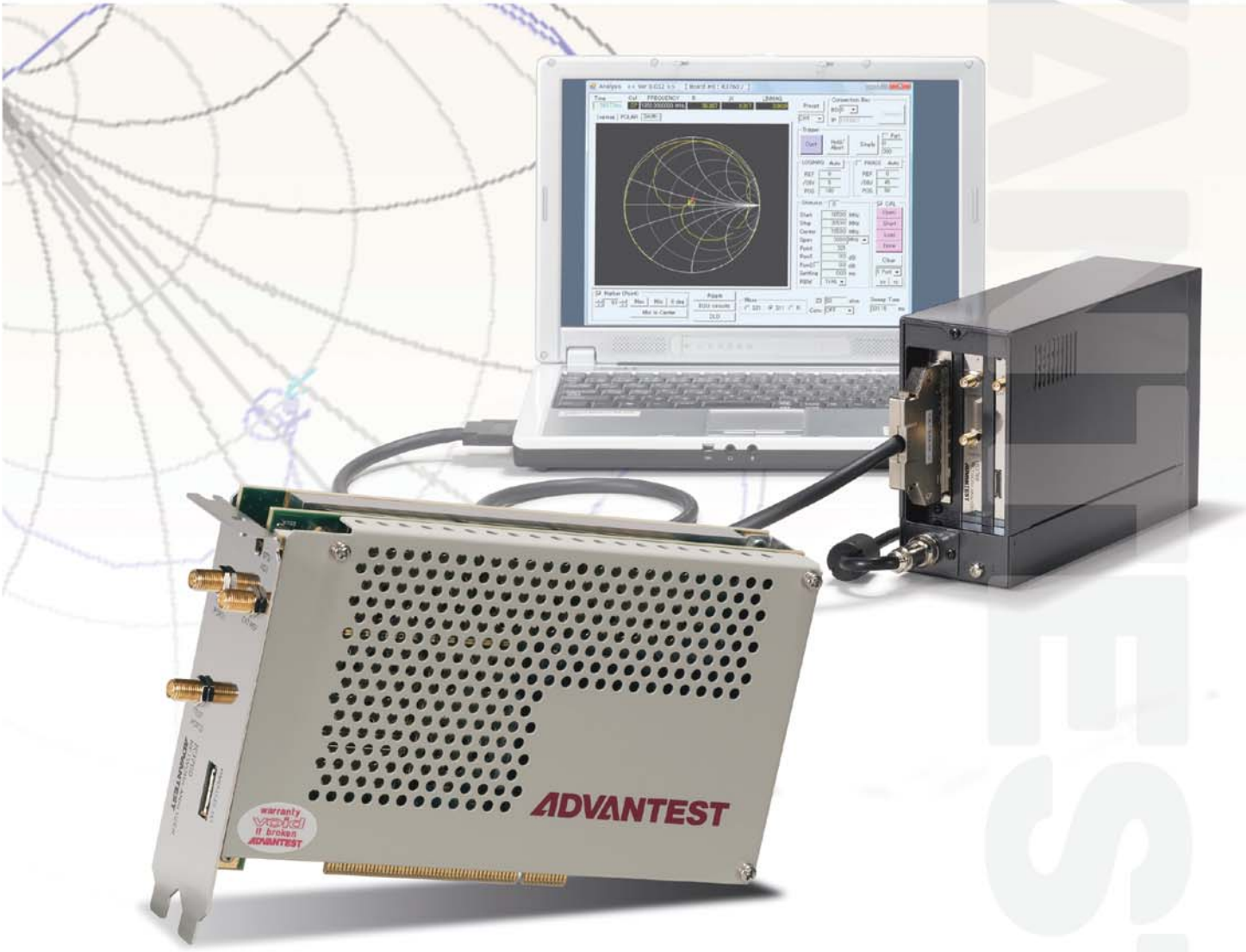
ADVANTEST

Board Network Analyzer

R3760

Making a personal computer a vector network analyzer



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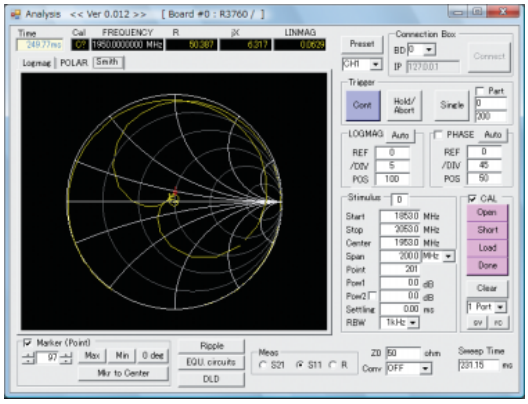
Demands for miniaturization and lower costs of antenna are increasing with spread of wireless communications, such as wireless LAN and Bluetooth. ADVANTEST has developed the world's first semi-microwave band board network analyzer R3760 taking advantage of its technology in board network analyzer accumulated with mass production equipment of the quartz device. By incorporating the compact main body into the PCI slot of a personal computer, drastic space-saving and cost lowering effects are realized in various automated machines, such as antenna inspection systems.

Optimal choice for mounting on an automated machine

R3760 has a compact body and can perform transmission/reflective measurement. Moreover, it is not necessary to connect a bridge outside at the time of the VSWR measurement, the most crucial moment for an antenna. Since error correction for reflective measurement supports 1 port full calibration, a highly accurate measurement is possible even with an automated machine with which the analyzer and the device contacting point are wide apart. Since control signals of automated machine can be transmitted from/to parallel I/O ports, it can contribute to a simple system upgrade.



Example of measuring sample software

Windows® application environment

R3760 supports the development environment of Microsoft® Visual Basic®. Since development of an automated machine measurement program etc. is easy, it is best suited for building a proprietary system. Construction of the measurement environment optimized for the purpose of the customer is possible.

The sample software shown in the following figure, required driver, and source files are provided in the enclosed CD.

Fast measurement with a flexible sweeping setup

Although the reproducibility of measured values improves by setting resolution bandwidth to a narrow bandwidth, it declines the measuring speed. In order to resolve this trade-off, R3760 has adopted a flexible program sweep function. Separate setting of each segment is possible for number of points, RBW, and power. Since numbers of points and segments can be arbitrarily chosen from 1 to 1601, you can perform optimal setting easily depending on the object to be measured, and both measurement stability and fast measurement are realized.

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: 500 MHz to 6 GHz, S21: 300 MHz to 6 GHz
Resolution;	10 kHz
Output characteristics	
Range:	≤3 GHz: 0 dBm to -10 dBm >3 GHz: -5 dBm 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
Frequency range:	Same as the signal source characteristics
Average noise level:	-70 dBm (RBW: 1 kHz)
Resolution bandwidth:	10 Hz to 5 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:	Windows2000, 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 120 (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.

ADVANTEST®

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