ADVANTEST

Spectrum Analyzers

U3741/3751

Compact Design with High Performance
Pioneering 3 GHz/8 GHz Spectrum Analyzers are Now Available!

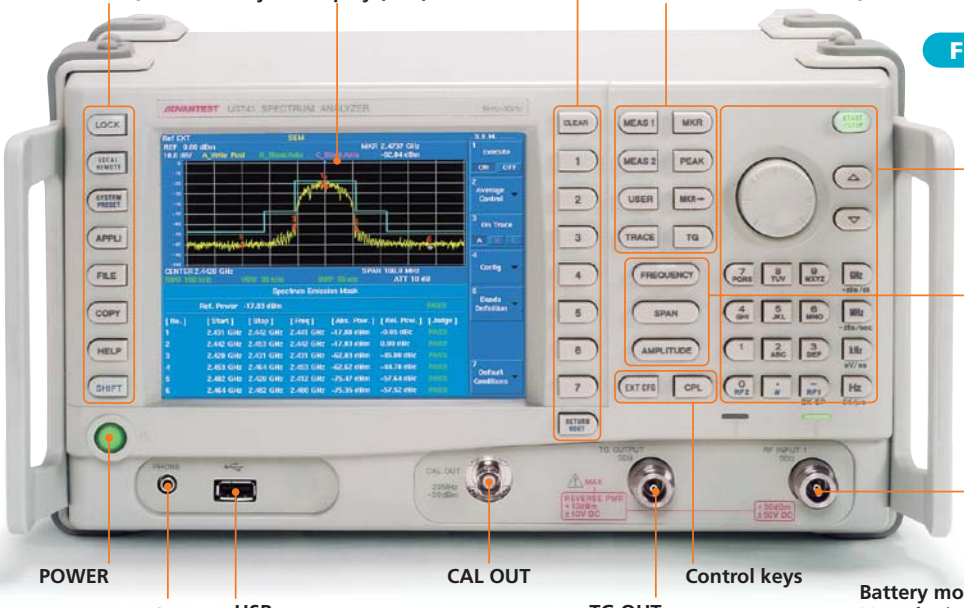
The U3741/3751 portable spectrum analyzer supports a great range of applications, from use on production lines to system installation and maintenance. Its digital IF enables dramatic improvements in power measurement accuracy for digitally modulated signals. Moreover, the U3741/3751 provides twice the throughput of its predecessor. A light and compact 3 GHz/8 GHz spectrum analyzer, the U3741/3751 provides basic performance reliably and at a low cost.

- Better measuring speed due to high-speed processing (twice as fast as its predecessor)
- Dramatically improved power measurement accuracy for digitally modulated signals
- Built-in 3 GHz/8 GHz pre-amp standard
- Average display noise level: -155 dBm/Hz@1 GHz, pre-amp ON
- Tracking generator covering a frequency range of 100 kHz to 3 GHz
- Option available for measurement of phase noise characteristics
- Lightweight and compact design, with a maximum weight of only 5.6 kg
- Continuous operation of up to 2.5 hours with the battery pack

U3741/3751 Web Demonstration

Please access to the **http://www.advantest.co.jp/en-index.shtml** and click on the following links.

PRODUCTS & SUPPORT > **Electronic Measuring Instruments** > **Products** > **U3751**



Mobility

Option Guide

	Product name	Model number	Overview	Main unit support U3741 1ch	U3741 2ch	U3751 1ch	U3751 2ch
50 Ω series 1)	2 Channel input (50 Ω)	OPT.10	Addition of RF INPUT2 (9 kHz to 3 GHz) Individual RF measurement with RF INPUT 1 and RF INPUT 2	—	●	—	●
	EMC filter	OPT.28	Addition of CISPR bandwidth for EMI measurement RBW (6 dB Down): 200 Hz, 9 kHz,120 kHz, 1 MHz	●	●	●	●
	High-purity spectrum analysis 2)	OPT.70	Spectrum analysis with -102 dBc/Hz @ 10 kHz offset (Typical) Addition of RBW 30 Hz	●	×	●	×
	Tracking generator (3 GHz)	OPT.76	Frequency range: 100 kHz to 3 GHz Output level range: 0 to -60 dBm	●	●	● 3)	×
	Tracking generator (6 GHz)	OPT.77	Frequency range: 100 kHz to 6 GHz Output level range: 0 to -30 dBm	×	×	● 3)	×
75 Ω series 1)	2 Channel input (75 Ω)	OPT.11	RF INPUT 2 (9 kHz to 2.2 GHz) in addition to OPT.15 Individual RF measurement with RF INPUT 1 and RF INPUT 2	—	●	—	×
	1 Channel input (75 Ω)	OPT.15	RF INPUT: 75 Ω (100 kHz to 2.2 GHz) For CATV and TV picture signal measurement. Channel table data installed.	●	—	×	—
	Tracking generator (2.2 GHz)	OPT.75	Frequency range: 100 kHz to 2.2 GHz. Output level range: 107 to 47 dBμV	●	●	×	×
Commons	High-stability frequency reference source	OPT.20	Reference oscillator with an aging rate of ±2 x 10^{-8}/day, ±1 x 10^{-7}/year	●	●	●	●
	Time-domain analysis (1 ch) 2)	OPT.53	Analyze the basic parameter of RF signal on a time domain (amplitude/phase/frequency/FFT/IQ/IQ output)	●	—	●	—
	Time-domain analysis (2 ch) 2)	OPT.54	Analyze the basic parameter of RF signal on a time domain (amplitude/phase/frequency/FFT/IQ/IQ output)	—	●	—	●

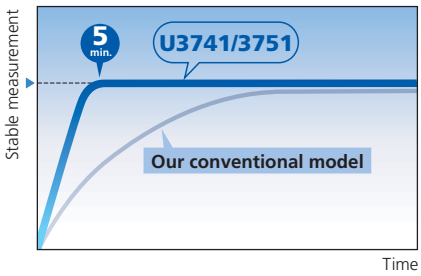
1) The options of 50 Ω series and 75 Ω series cannot be installed simultaneously. 2): OPT.70 cannot be installed simultaneously with OPT.53/54.
3): One must be selected from OPT.76/77.

● *Available*
× *Not available*

Compact Design with High Performance

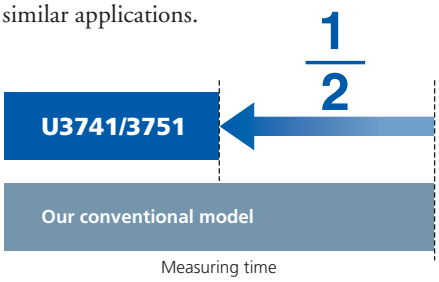
5-minute warm-up time

With the U3741/3751, warm-up time has been reduced to a scant 5 minutes (at an ambient temperature of 20 to 30°C). This shortened period virtually eliminates pre-warming time as a consideration, and permits quick and accurate measurement.



High throughput

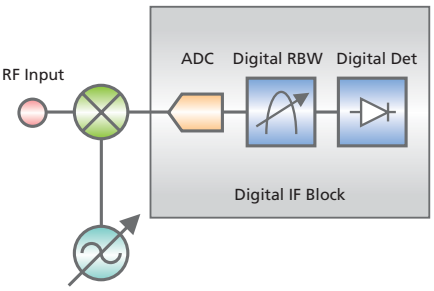
This spectrum analyzer delivers data transfer speed superior to that of its predecessor. While the previous model delivered 875 ms, the U3741/3751 boasts a speed of 350 ms: double the system throughput [*2] (using the GPIB interface)[*3]. This faster speed contributes to a significant reductions to cost of test on production lines and in similar applications.



Improvements in overall accuracy

Digitized IF sections and innovative circuit technology dramatically improve absolute power measurement accuracy.

±0.8 dB (10 MHz to 3 GHz: U3741/3751)
±1.0 dB (3 to 8 GHz: U3751)



Standard USB (1.1) interface

Screenshots in BMP or PNG format can easily be sent via USB external memory. Users can easily store data, and easily paste measurement data into reports.

Up to 2.5 hours [*1] of nonstop battery-driven operation

The spectrum analyzer uses one of three power systems: AC (100 V/200 V), DC (+11 V to +17 V), or the battery pack. This flexibility enables measurement in a variety of applications, whether in the factory or in the field.

Compact design

At about half the size of its predecessor, this spectrum analyzer offers a compact design while maintaining the same level of functionality. Its form factor gives it portability, enabling it to be used anywhere.

**1: Typical value at room temperature, without options*
**2: Twice that of its predecessor*
**3: Sample case where the frequency and span are specified, and the channel power measurement result is transferred*

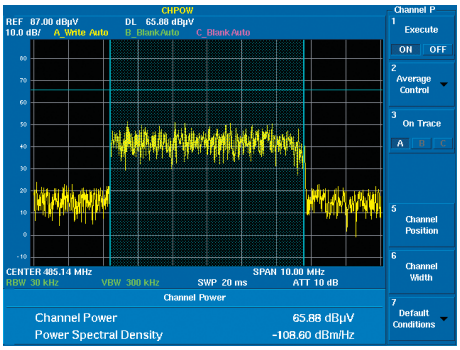
Extensive array of measurement functions

Measurement functions include Channel Power, Total Power, Avg Power, OBW, ACP, Spurious measurement, Harmonics measurement, IM measurement, Noise/Hz calculation functions, multi-marker (10 markers), delta marker, peak marker functions, a channel setting function, and a 3-trace simultaneous sampling function.

Measurement Functions

RMS Average, essential for power measurement

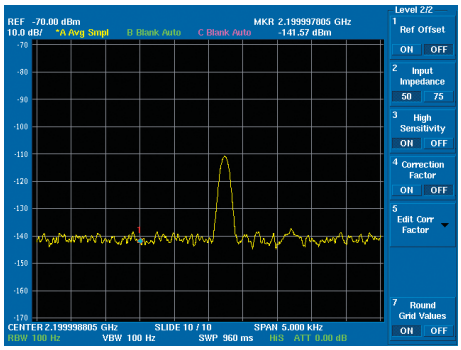
Power tends to be spread over a wide frequency range, and the peak factor tends to be higher in digital modulation, with it's expanded communication capacity. The U3741/3751 allows precise power measurements by determining the effective values (RMS values) from instantaneous power values obtained in high-speed sampling and translating them into a power spectrum. This method also enables measurement reproducibility of 0.01 dB in power measurement of digitally modulated signals.



Example of ISDB-T Channel Power measurement

Pre-Amp covering the 3 GHz/8 GHz bandwidth

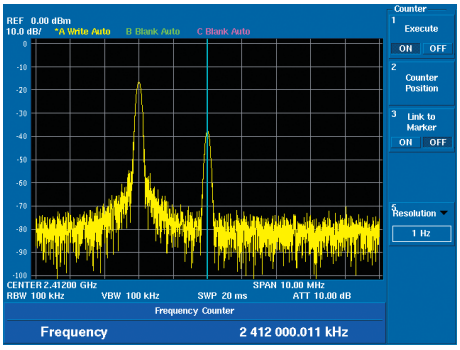
The U3741/3751 contains as standard a pre-amp that covers all frequency bands. In the analysis of faint signals, its input sensitivity can be equivalent to that of high-end models. Also, it effectively compensates for the loss from the antenna when measuring radio signals in an outdoor environment.



Example of high-sensitivity measurement in high-sensitivity mode

Built-in frequency counter with 1-Hz resolution

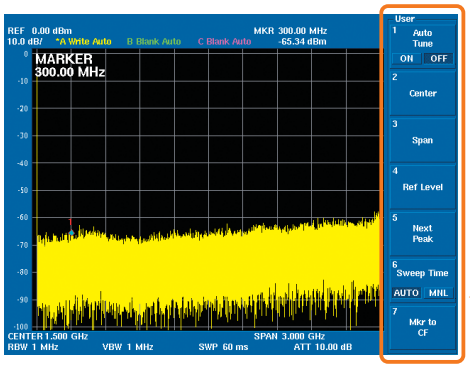
Frequency can be accurately measured by simply positioning the cursor on the target spectrum selected from multiple spectral lines. The U3741/3751 is indispensable for measuring the carrier wave frequency in a general multi-carrier system.



Example of multi-carrier signal frequency measurement

USER keys

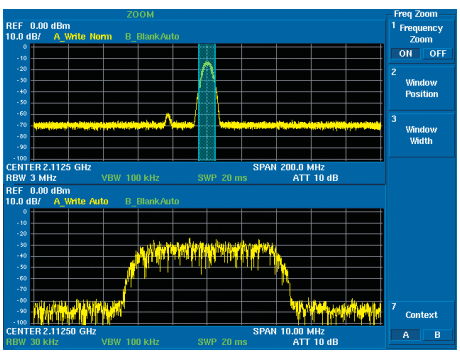
An arbitrary key can be selected from the hierarchical function keys and assigned to a USER function. Users can thus configure their own, original setup for operations by assigning frequently used functions to specific software keys.



Example of user function assignment

Zoom function

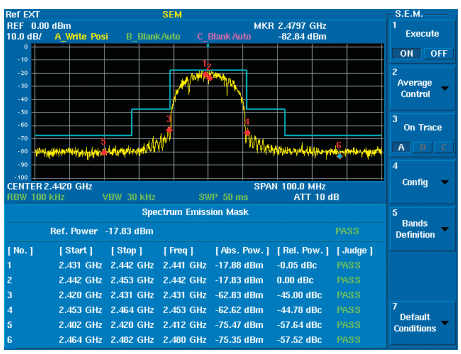
The measuring window and F-F mode can facilitate analysis of a specific signal in broadband measurement. Also, RBW can be changed independently, enabling high-speed measurement of the target signal in both broadband and narrowband. A variety of other signal analysis functions are also available, including those in F-T mode or T-T mode.



Example of two-screen sample from measurement in broadband and narrowband

Spectrum emission mask function

Using tools such as a spectrum mask and limit line to judge PASS/FAIL is effective at improving production line throughput for digital appliances. Using the spectrum emission mask (SEM) function can facilitate measurement for standards such as wireless LAN.

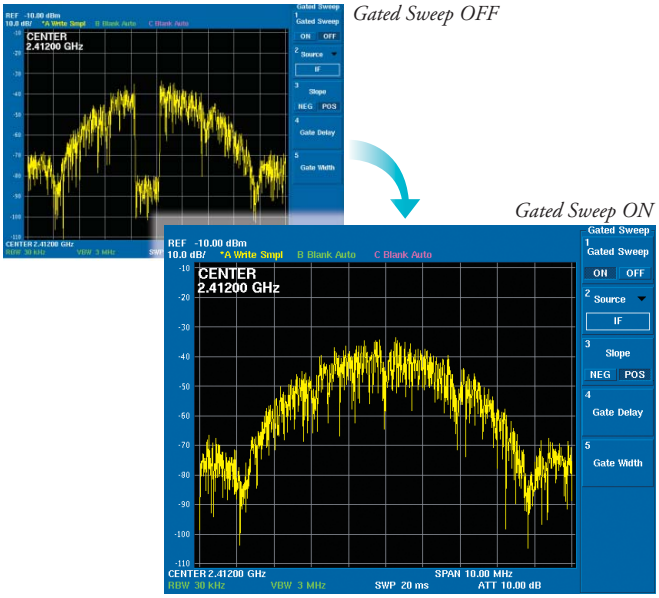


Example of S.E.M. measurement for wireless LAN

User-friendly and Convenient Functions

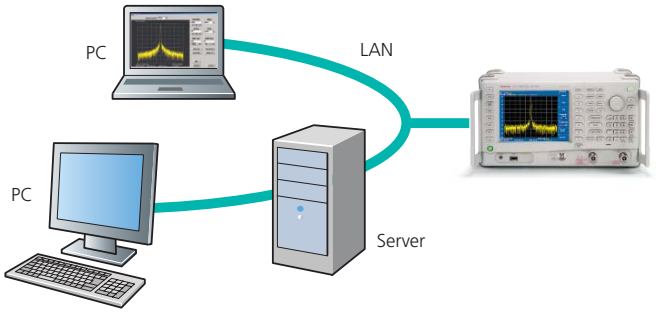
Gated Sweep function

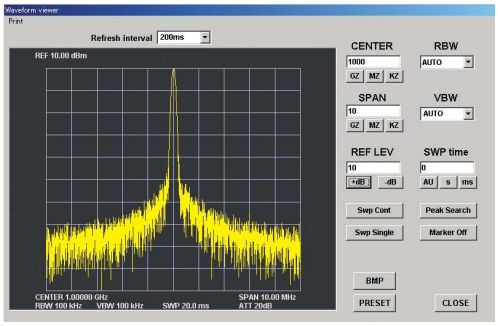
A radar or TDMA communication system controls its output transmission by turning the power on/off intermittently. To monitor the power spectrum during transmission, the Gated Sweep function is effective at analyzing the spectrum only when the signal is present and over only the area chosen. This function also includes an IF trigger that does not require synchronized signals.



Ideal for remote operation/monitoring via a LAN

This spectrum analyzer is equipped with a 10/100BASE-T LAN port as standard, so it can be operated remotely from an external PC. It can be installed in an unattended radio transmission station, and remotely operated and monitored from another station.

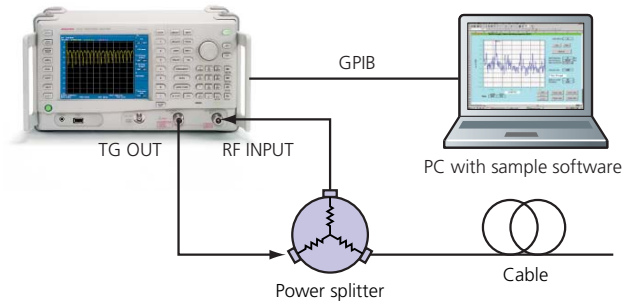


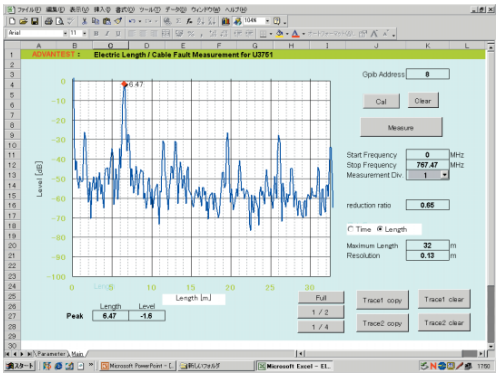


Screen of remote operation/monitoring from an external PC via LAN

Searching for the location of a fault in a coaxial cable

When used with its tracking generator option and the sample software for an external PC, the U3741/3751 can measure the distance to the failure point (open/short) in a coaxial cable. This application permits this distance to be measured from one end of the coaxial cable.



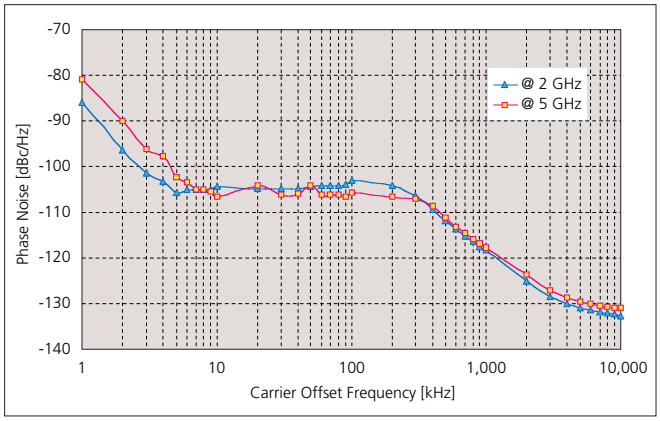


Screen for measuring the distance to a cable failure point

Extensive Array of Options

High-Purity Spectrum Analysis OPT.70

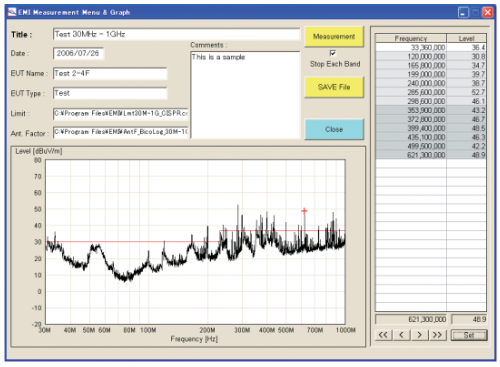
Phase noise measurement is indispensable to evaluation of the characteristics of high-frequency oscillation circuits or modules. The high-purity spectrum analysis option offered with the U3741/3751 can improve the phase noise measurement performance of the spectrum analyzer. Because the performance can be selected, selecting the most suitable spectrum analyzer for the device under test (DUT) is simple. At the same time, the added resolution bandwidth of 30 Hz enables reduction of the display average noise level and analysis in a high dynamic range.



Phase noise characteristic graph (representative values)

EMC Filter OPT.28

Option 28 adds 6 dB RBW CISPR bandwidths for EMI measurement of 200 Hz, 9 kHz, 120 kHz, and 1 MHz. A broadband sweep by the spectrum analyzer is very effective at measuring noise emitted from electrical devices. Installing OPT.28 allows measurement in CISPR-specified bandwidths. It enables simple, fast measurement using the Positive peak detector and Max Hold, which makes it effective at compensating for emitted noise. It guarantees an impulse bandwidth accuracy of 1 MHz. This capability conforms to the standard for noise measurement of 1 GHz or above.

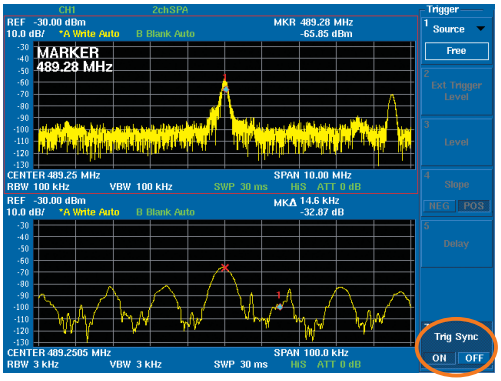


Example of measurement using EMI sample software

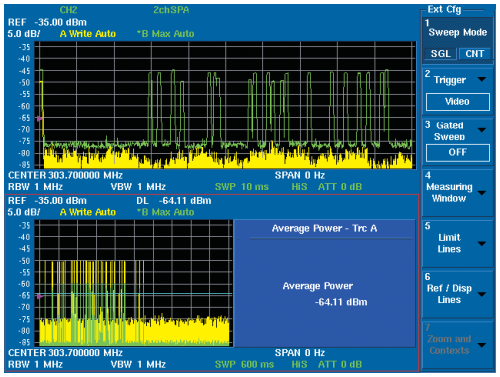
2 Channel Input OPT.10 (50 Ω)/11 (75 Ω)

With the 2 channel input option (OPT.10/OPT.11), you can set unique measurement conditions respectively for the two independent RF inputs. By synchronized sweep, respective timing measurement can be performed even at different frequencies (when sweep time is the same). Moreover, it is possible to coincide the start of different measurements by using the synchronous trigger. Unique measurement methods which are not seen in the conventional spectrum analyzers, such as reduced measuring time due to the 2 channels and space-saving at production line are offered.

Example of timing measurement of the harmonic burst signal with synchronized sweep



Example of simaltaneous measurement with synchronized sweep in broadband and narrowband ranges



Example of burst and average power measurement with synchronous trigger

Extensive Array of Options and Accessories

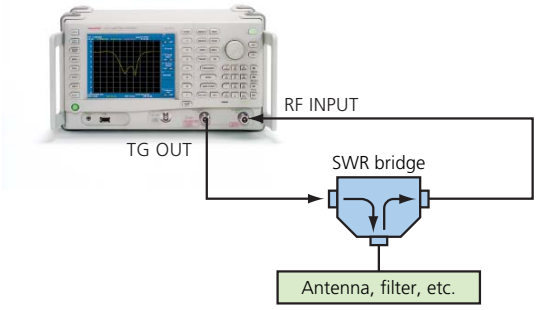
Tracking Generator OPT.75/76/77

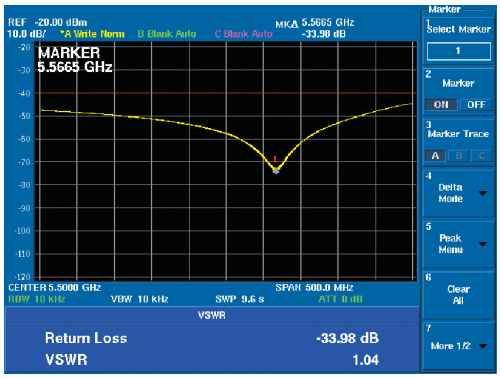
Generates synchronized signals for frequency sweeps by the spectrum analyzer.

OPT.75 Output impedance: 75 Ω
Output frequency range: 100 kHz to 2.2 GHz
OPT.76 Output impedance: 50 Ω
Output frequency range: 100 kHz to 3 GHz
OPT.77 Output impedance: 50 Ω
Output frequency range: 100 kHz to 6 GHz

Function for return loss measurement

The SWR bridge can be used to measure reflection characteristics of an antenna or filter. It can determine the return loss and evaluate the VSWR.

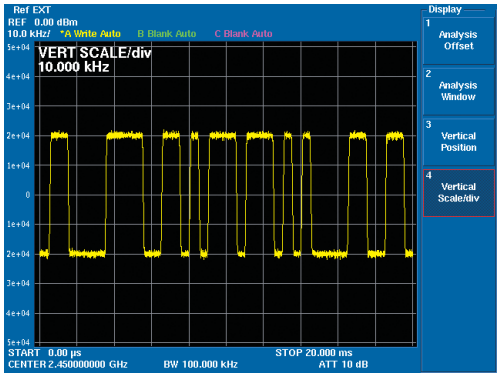




Example of filter return loss measurement

Time-domain analysis OPT.53 (1 CH)/54 (2 CH)

At center frequency, the signal within measurement bandwidth (BW) is digitized, and basic time-domain analysis functions including time vs. frequency, time vs. phase, time vs. power, FFT analysis are offered. The measurement bandwidth is 100Hz to 3 MHz, and the number of IQ waveform record samples are 1M samples (I/Q). The resolution equivalent to 1Hz RBW is realized in FFT analysis.



EXample of Time vs. frequency measurement of FSK modulating wave

Accessories

Many accessories are available, including an easy-to-carry transit case and a battery pack, useful for field work.

Specifications

Frequency

Frequency range	
U3741:	9 kHz to 3 GHz, 9 kHz to 2.2 GHz (with the OPT.15 installed)
Pre-Amp:	10 MHz to 3 GHz, 10 MHz to 2.2 GHz (with the OPT.15 installed)
Synchronizable frequency range:	9 kHz to 3 GHz
U3751:	9 kHz to 8 GHz
Frequency band:	9 kHz to 3.1 GHz (band 0), 3 GHz to 8 GHz (band 1)
Pre-Amp:	10 MHz to 8 GHz
Frequency reading accuracy:	± (marker read value x frequency reference accuracy + span x span accuracy + residual FM)
Frequency reference stability	
Aging rate:	±2 x 10^{-6}/year
Temperature stability:	±2.5 x 10^{-6} (0 to 50°C)
Frequency counter:	Resolution bandwidth ≤100 kHz, span ≤100 MHz, signal level: S/N >50 dB
Resolution:	1 Hz to 1 kHz
Accuracy:	± (counter read value x frequency reference accuracy + residual FM + 1 LSB)
Frequency stability	
Residual FM (zero/span):	< 60 Hzp-p/100 ms (internal frequency reference)
Frequency span	
Range:	5 kHz to Full, zero span 1 kHz to Full, zero span (with the OPT.70 installed)
Accuracy:	< ±1%
Spectrum purity:	-85 dBc/Hz (offset 10 kHz, span < 200 kHz)
Resolution bandwidth	
Range:	
U3741:	100 Hz to 1 MHz (1 to 3 steps) 30 Hz to 1 MHz (with the OPT.70 installed)
U3751:	100 Hz to 3 MHz (1 to 3 steps) 30 Hz to 3 MHz (with the OPT.70 installed)
Accuracy:	< ±12%
Video bandwidth range:	10 Hz to 3 MHz (1 to 3 steps)

Sweep

Sweep time	
Setting range:	20 ms to 1000 s (spectrum mode) 50 µs to 1000 s (zero span)
Accuracy:	< ±2% (zero span)
Sweep mode:	Continuous, single, gated
Trigger function	
Trigger source:	Free run, video, external, IF

Amplitude range

Measurement range:	Displayed average noise level to +30 dBm Displayed average noise level to 134 dBµV (with the OPT.15 installed)
Maximum safe input level:	Attenuator ≥ 10 dB
Pre-Amp OFF:	+30 dBm, 134 dBµV (with the OPT.15 installed)
Pre-Amp ON:	+13 dBm, 120 dBµV (with the OPT.15 installed)
U3741:	±50 VDC max.
U3751:	±15 VDC max.
Input attenuator range:	0 to 50 dB (10 dB steps)
Display range:	100/50/20/10/5 dB, linear
Scale unit:	dBm, dBmV, dBµV, dBµVemf, dBpW, W, V
Reference level setting range:	-140 to +40 dBm -31.2 to 148.8 dBµV (with the OPT.15 installed)
Detection mode:	Normal, Positive peak, Negative peak, Sample, RMS, and Average

Amplitude accuracy

Calibration signal	
Frequency:	20 MHz
Level:	-20 dBm (75 Ω, with the OPT.15 installed)
Accuracy:	±0.3 dB, ±0.4 dB (with the OPT.15 installed)
Scale display accuracy	
Log:	±0.5 dB/10 dB, ±0.5 dB/80 dB, ±0.2 dB/1 dB
Overall amplitude accuracy:	After calibration, with the pre-amp OFF, and at a temperature ranging from 20 to 30°C Input attenuator 10 dB
U3741:	Reference level 0 dBm, input signal level -10 to -50 dBm ±1.0 dB (9 kHz to 3 GHz) ±0.8 dB (10 MHz to 3 GHz)
With the OPT.15 installed:	Reference level 108.8 dBµV Input signal level 98.8 to 58.8 dBµV ±2.1 dB (9 kHz to 2.2 GHz) ±0.9 dB (10 MHz to 2.2 GHz)
U3751:	Reference level 0 dBm, input signal level -10 to -50 dBm Image suppression OFF ±1.5 dB (9 kHz to 10 MHz) ±0.8 dB (10 MHz to 3.1 GHz) ±1.0 dB (3.1 GHz to 8 GHz)

Dynamic range

Displayed average noise level:	Reference level < -45 dBm (63.8 dBµV, with the OPT.15 installed) Resolution bandwidth 100 Hz
U3741:	Frequency 10 MHz to 3 GHz
Pre-Amp OFF:	-123 dBm + 2f (GHz) dB (f < 2.5 GHz) -123 dBm + 2.5f (GHz) dB (f ≥ 2.5 GHz) -12 dBµV + 2f (GHz) dB (f ≤ 2.2 GHz, with the OPT.15 installed)
Pre-Amp ON:	-138 dBm + 3f (GHz) dB -27 dBµV + 3f (GHz) dB (with the OPT.15 installed)
U3751:	Frequency 10 MHz to 8 GHz
Pre-Amp OFF:	-123 dBm + 2f (GHz) dB (f ≤ 3.1 GHz, band 0) -122 dBm + 1f (GHz) dB (f ≥ 3 GHz, band 1)
Pre-Amp ON:	-138 dBm + 3f (GHz) dB (f ≤ 3.1 GHz, band 0) -139 dBm + 1.3f (GHz) dB (f ≥ 3 GHz, band 1)
1 dB gain compression	
U3741:	Frequency > 20 MHz
Pre-Amp OFF:	> -5 dBm > 102 dBµV (with the OPT.15 installed)
Pre-Amp ON:	> -25 dBm > 82 dBµV (with the OPT.15 installed)
U3751:	Frequency > 20 MHz
Pre-Amp OFF:	> -8 dBm
Pre-Amp ON:	> -25 dBm
Second harmonic distortion	
U3741:	<-70 dBc (Pre-Amp OFF, Frequency > 20 MHz, Mixer input level -30 dBm (77 dBµV, with the OPT.15 installed))
U3751:	<-70 dBc (Pre-Amp OFF, Frequency > 200 MHz, Mixer input level -40 dBm) <-75 dBc (typ., Pre-Amp OFF, Frequency > 300 MHz, Mixer input level -30 dBm)
Third order intermodulation distortion	
U3741:	< -60dBc (Pre-Amp OFF, Mixer input level -20 dBm (88.8 dBµV, with the OPT.15 installed), Frequency > 10 MHz, 2 signal separation > 200 kHz)
U3751:	< -50 dBc (Pre-Amp OFF, Mixer input level -20 dBm, Frequency 10 MHz to 8 GHz, 2 signal separation > 200 kHz)

Image/multiple/out of band response	
U3741:	< -60 dBc (Mixer input level -20 dBm (88.8 dBµV, with the OPT.15 installed))
U3751:	< -60 dBc (Mixer input level -30 dBm, Image suppression ON)
Residual response	
U3741:	< -90 dBm (Frequency > 1 MHz , Pre-Amp OFF) < 21 dBµV (with the OPT.15 installed)
U3751:	< -80 dBm (Frequency 10 MHz to 8 GHz, Pre-Amp OFF)

Inputs/outputs

RF input	
Connector:	N-type female
Impedance:	50 Ω (nominal) 75 Ω (nominal, with the OPT.15 installed)
VSWR:	Input attenuator ≥ 10 dB
U3741:	< 1.5 : 1 < 1.6 : 1 (with the OPT.15 installed)
U3751:	< 1.7 : 1 (10 MHz ≤ Frequency ≤ 3.0 GHz) < 2.0 : 1 (Frequency > 3.0 GHz)
Calibration signal output	
Connector:	BNC female
Impedance:	50 Ω (nominal) 75 Ω (nominal, with the OPT.15 installed)
Frequency:	20 MHz
Level:	-20 dBm
Frequency reference input	
Connector:	BNC female
Impedance:	50 Ω (nominal)
Frequency (MHz):	1, 1.544, 2.048, 5, 10, 12.8, 13, 13.824, 14.4, 15.36, 15.4, 16.8, 19.2, 19.44, 19.6608, 19.68, 19.8, 20, 26
Level:	0 to +16 dBm
External trigger input	
Connector:	BNC female
Impedance:	10 kΩ (nominal), DC coupling
Level:	0 to +5 V
21.4-MHz IF output	
Connector:	BNC female
Impedance:	50 Ω (nominal)
Level:	Approx. mixer input level + 10 dB (at a frequency of 20 MHz)
Battery mount	
Connector:	AntonBauer QR mount
External DC power input	
Connector:	XLR-4
Voltage range:	+11 to +17 V
GPIB:	IEEE-488 bus connector
USB:	USB 1.1
Video output connector:	D-sub15 pin female
LAN connector:	RJ45 type, 10/100 base-T
Audio output:	Small monophonic jack

General specifications

Operating environment range:	Ambient temperature: 0 to + 50°C Humidity: RH 85% or less (no condensation)
Storage environment range:	-20 to +60°C, RH 85% or less
AC power input:	Automatic switching to 100 VAC or 200 VAC 100 V: 100 to 120 V, 50/60 Hz 200 V: 220 to 240 V, 50/60 Hz
DC power input:	DC + 11 V to +17 V
Power consumption:	100 VA or less (AC operation) 70 W or less (DC operation)
Mass	
U3741:	5 kg or less (without option)
U3751:	5.6 kg or less (without option)
External dimensions (W x H x D):	Approx. 308 x 175 x 209 mm (not including protruding parts) Approx. 337 x 190 x 307 mm (including the handle and feet)

OPT.10/11 2 Channel Input (50 Ω/75 Ω)

Cross talk between input channels (between RF input 1 and RF input 2):	<-90 dBc (Input level: -10 dBm (OPT.10)/ 98.8 dBµV (OPT.11), Input attenuator 0 dB, Preamplifier off)
RF input 2	
Connector:	N type female
Impedance (nominal):	50 Ω (OPT.10)/75 Ω (OPT.11)
VSWR:	<1.5 : 1 (Input attenuator > 10 dB)
External trigger input:	An external trigger input can be selected as a trigger input of RF input 2 when installing the OPT.10/11. The input connector is only 1 system.
21.4 MHz IF output:	Only IF output which supports RF input 1, when installing the OPT.10/11.

Except for all items mentioned above, the frequency, sweep, amplitude range, amplitude accuracy, dynamic range, input/output, and performance of specifications follow the standard specifications of the RF input 1 option of the U3741 spectrum analyzer.

OPT.20 High-Stability Frequency Reference Source

Frequency reference stability	
Aging rate:	±2 x 10^{-8}/day ±1 x 10^{-7}/year
Warm-up drift:	±5 x 10^{-8} (+25°C, 10 minutes after power-on)
Temperature stability:	±5 x 10^{-8} (0 to +40°C, with reference to 25°C)

OPT.28 EMC Filter

6 dB bandwidth:	200 Hz, 9 kHz, 120 kHz, 1 MHz
Bandwidth accuracy:	< ±10%

OPT.53/54 Time-Domain Analysis (1 ch/2 ch)

RF range:	Follows the U3741/3751.
RF amplitude range:	Noise level to +30 dBm*1)
Wave recording method:	I/Q vector time waveform
Measuring bandwidth (BW):	100 Hz to 3 MHz (1 to 3 steps)
IQ sampling rate:	713 Hz (BW 100 Hz) to 21.4 MHz (BW 3 MHz)
IQ waveform recording time:	49 msec (BW 3 MHz) to 1000 sec (BW 100 Hz)
Number of IQ waveform recording samples:	1 M samples (I/Q)

**1) The noise level follows the dynamic range of the U3741/3751.*

OPT.70 High-Purity Spectrum Analysis

Frequency span	
Range:	1 kHz to Full, zero span
Accuracy:	< ±1%
Resolution bandwidth	
Range:	U3741: 30 Hz to 1 MHz (1 to 3 steps) U3751: 30 Hz to 3 MHz (1 to 3 steps)
Accuracy:	< ±12%
Spectrum purity:	≤ -98 dBc/Hz (offset 10 kHz, span ≤ 1 MHz) -102 dBc/Hz (Typical)
Displayed average noise level:	Reference level < -45 dBm, Resolution bandwidth 30 Hz
U3741:	Frequency 10 MHz to 3 GHz
Pre-Amp OFF:	-126 dBm + 2f (GHz) dB (f < 2.5 GHz) -126 dBm + 2.5f (GHz) dB (f ≥ 2.5 GHz)
Pre-Amp ON:	-141 dBm + 3f (GHz) dB
U3751:	Frequency 10 MHz to 8 GHz
Pre-Amp OFF:	-126 dBm + 2f (GHz) dB (f ≤ 3.1 GHz, band 0) -125 dBm + 1f (GHz) dB (f ≥ 3 GHz, band 1)
Pre-Amp ON:	-141 dBm + 3f (GHz) dB (f ≤ 3.1 GHz, band 0) -142 dBm + 1.3f (GHz) dB (f ≥ 3 GHz, band 1)

OPT.75 Tracking Generator (75 Ω, 2.2 GHz)

Frequency range:	100 kHz to 2.2 GHz
Output level range:	107 to 47 dBµV (0.5 dB steps)
Output level accuracy:	±0.5 dB (20 MHz, 97 dBµV, +20 to +30°C)
Output level flatness:	Using 20 MHz and 97 dBµV as a reference ±1.0 dB (1 MHz to 1 GHz) ±1.5 dB (100 kHz to 2.2 GHz)
TG leakage:	< 31 dBµV (Input attenuator 0 dB)
Output impedance:	75 Ω (nominal)
VSWR:	≤ 2.0 : 1 (Output level ≤ 97 dBµV)
Maximum allowable level:	117 dBµV, ±10 VDC

OPT.76 Tracking Generator (50 Ω, 3 GHz)

Frequency range:	100 kHz to 3 GHz
Output level range:	0 to -60 dBm (0.5 dB steps)
Output level accuracy:	±0.5 dB (20 MHz, -10 dBm, +20 to +30°C)
Output level flatness:	Using 20 MHz and -10 dBm as a reference ±1.0 dB (1 MHz to 1 GHz) ±1.5 dB (100 kHz to 3 GHz)
TG leakage:	< -80 dBm (Input attenuator 0 dB)
Output impedance:	50 Ω (nominal)
VSWR:	≤2.0 : 1 (Output level ≤ -10 dBm)
Maximum allowable level:	+10 dBm, ±10 VDC

OPT.77 Tracking Generator (50 Ω, 6 GHz) *2)

Frequency range:	100 kHz to 6 GHz
Output level range:	0 to -30 dBm (0.5 dB steps)
Output level accuracy:	≤ ±0.5 dB (20 MHz, -10 dBm, +20 to +30°C)
Output level flatness:	20 MHz on -10 dBm criterion, at +20 to +30°C ≤ ±1 dB (1 MHz to 1 GHz) ≤ ±1.5 dB (100 kHz to 3.1 GHz) ≤ ±2.0 dB (100 kHz to 6 GHz)
TG leakage:	≤ -80 dBm (input attenuator: 0 dB)
Output impedance:	50 Ω (nominal)
VSWR:	≤ 2.0 : 1 (Output level ≤ -10 dBm)
Maximum allowable level:	+10 dBm, ±10 VDC

**2) The OPT.77 is not allowed to be installed on the U3741.*

Ordering information

Main unit	
Spectrum analyzer:	U3741 U3751
Accessories	
Operating manual (CD):	BU3700S
Power cable:	A01412
Input cable:	A01037-0300
With the OPT.15 installed:	A01045
N-BNC adapter:	JUG-201A/U
With the OPT.15 installed:	BA-A165
NC-F adapter (with the OPT.15 installed):	NCP-NFJ
Ferrite core:	ESD-SR-120, E04SR150718
Options	
2 Channel input (50 Ω, 3 GHz)	OPT.10
2 Channel input (75 Ω, 2.2 GHz)	OPT.11
1 Channel input (75 Ω)	OPT.15
High-stability frequency reference source	OPT.20
EMC filter	OPT.28
Time-domain analysis (1 ch)	OPT.53
Time-domain analysis (2 ch)	OPT.54
High-purity spectrum analyzsis	OPT.70
Tracking generator (75 Ω, 2.2 GHz)	OPT.75
Tracking generator (50 Ω, 3 GHz)	OPT.76
Tracking generator (50 Ω, 6 GHz)	OPT.77
Accessories	
Japanese operating manual (printed manual):	JU3700S
English operating manual (printed manual):	EU3700S
Battery pack:	A870008
Charger:	A870009
75 Ω input impedance converter:	ZT-130NC
DC power cable:	A114020
Carrying bag:	A129001
Transit case:	A129002
Rack mount kit (JIS):	A122003
Rack mount kit (EIA):	A124004

Note on accessories:
The operating manual on the CD is supplied as standard.
The printed version of the operating manual is offered as an accessory.

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

ADVANTEST®

http://www.advantest.co.jp

ADVANTEST CORPORATION
Shin-Marunouchi Center Building, 1-6-2 Marunouchi, Chiyoda-ku, Tokyo 100-0005, Japan Phone: +81-3-3214-7500

 Printed in Japan Bulletin No.U3741/3751-3Ea Mar. '09