

Spectrum Analyzers U3641, U3661

U3641: 9 kHz to 3 GHz

U3661: 9 kHz to 26.5 GHz

Lightweight, portable analyzers with synthesizer accuracy for mobile use



Photo 42744

Brief description

Spectrum Analyzers U3641 and U3661 (Advantest) feature exceptional characteristics such as:

- Size and weight: only 148 mm x 291 mm x 330 mm and 6.5 kg/8.3 kg (without battery or power supply unit)
- Three types of power supply possible: AC supply, battery (up to 1.5 h/1 h) or direct DC supply
- 15.2 cm (6 inch) colour LCD
- Integrated preamplifier with a gain of >25 dB
- Full dynamic range, eg for GSM pulse measurements
- Two memory card drives to PCMCIA standard for saving measurement results and instrument settings

The main technical features at a glance

- Optional OCXO reference oscillator with aging of 2×10^{-8} /day
- Operation independent of AC supply

Measurements on mobile radio base stations

- Dynamic range >70 dB for measuring the power ramp of GSM base stations
- SWR measurements on antennas in conjunction with tracking generator and SWR Bridge ZRB2 (see page 194)
- With BasePak hardware and software package (see page 175): SWR measurements and detection of cable faults using FDR (frequency domain reflectometry)
- Precision measurement of pulse power with the aid of various power measurement functions

- Different power measurement functions (only U3661)
- Gated sweep for display of spectrum due to modulation or switching
- GSM application software for optional controller (only U3641)

Radiomonitoring

- High sensitivity through built-in preamplifier up to 3 GHz for measurements down to -135 dBm with 1 kHz resolution bandwidth
- Input of antenna correction factors and limit curves
- Output of all results also in dB μ V
- Ideal combination with Rohde & Schwarz antennas

Modularity through retrofittable options

Options and their functions	Option
Internal controller	15 (only U3641)
Improved reference frequency	20 (not usable with option 73)
100 Hz, 300 Hz RBW additionally	26
CDMA measurements at a key stroke	60 (only U3641, not usable with option 72)
TV demodulator including screen display	72
FM deviation measurements	73 (not usable with option 20)
Tracking generator 100 kHz to 2.2 GHz	74
Channel input	78

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Specifications in brief

Internal reference oscillator	standard
Frequency drift in temperature range 0 to +50°C	$\geq \pm 1 \times 10^{-5}$
Aging	$\geq \pm 2 \times 10^{-6}$
OCCO reference oscillator	option 20
Frequency drift in temperature range 0 to +50°C	$\geq \pm 1 \times 10^{-7}$
Aging	$\geq \pm 2 \times 10^{-8}$
Frequency	
Frequency range U3641	9 kHz to 3 GHz
U3661	9 kHz to 26.5 GHz
Resolution bandwidths option 26	1 kHz to 3 MHz, wide (5 MHz)/auto 100 Hz, 300 Hz
Shape factor	15 : 1
Frequency span	1 kHz to 3.2 GHz/zero span
Residual FM	≤ 60 Hz pp/100 ms
Max. input level	
Preamplifier off	$\geq \pm 27$ dBm
Preamplifier on	$\geq \pm 13$ dBm
Sweep time	
	50 ms to 1000 s
	50 μ s to 100 s Zero Span
Tracking generator	option 74
Frequency range	100 kHz to 2.2 GHz
Output level	0 to -31 dBm in 1 dB steps
Level accuracy	$\leq \pm 0.5$ dB at 30 MHz
Frequency response	$\leq \pm 0.7$ dB up to 1 GHz $\leq \pm 1.5$ dB from 100 kHz to 2.2 GHz
General data	
Operating temperature range	0 to 50°C
Storage temperature range	-20 to +60°C
EMC	complies with the requirements of the European EMC Directives EN 50081-1 and EN 50082-1

Distortion signals, frequency response	U3641	U3661 band 0 (N = 1)	U3661 band 1 (N = 1)	U3661 band 2 (N = 2)	U3661 band 4 (N = 4)
Frequency range	9 kHz to 3 GHz	9 kHz to 3.2 GHz	3.0 GHz to 7.1 GHz	6.7 GHz to 14.5 GHz	13.7 GHz to 26.5 GHz
Noise floor	Preamplifier off: ≤ -117 dBm + 2.7 f[GHz]dB Preamplifier on: ≤ -135 dBm + 4.3 f[GHz]dB	-118 dBm + 2f [GHz] >1 MHz	-115 dBm	-110 dBm	-105 dBm
Intermodulation	Preamplifier off: ≤ -70 dBc Preamplifier on: ≤ -70 dBc	-70 dBc < 1.7 GHz -80 dBc > 1.7 GHz	-100 dBc	-100 dBc	-100 dBc
Internal distortion signals	Preamplifier off: ≤ -100 dB Preamplifier on: ≤ -105 dB	-100 dBm >1 MHz	-90 dBm	-90 dBm	-90 dBm
Phase noise	≤ -100 dBc/Hz (10 kHz carrier offset)	≤ -100 dBc/Hz + 20 logN	≤ -100 dBc/Hz + 20 logN	≤ -100 dBc/Hz + 20 logN	≤ -100 dBc/Hz + 20 logN
Frequency response	Preamplifier off: $\leq \pm 1.0$ dB (100 kHz to 2.7 GHz) $\leq \pm 2.0$ dB (9 kHz to 3 GHz) Preamplifier on: $\leq \pm 1.0$ dB (100 kHz to 2.7 GHz) $\leq \pm 2.0$ dB (9 kHz to 3 GHz)	± 2 dB	± 1.5 dB	± 3.5 dB	± 4 dB

Permissible humidity	<85% non-condensing
Power supply	200 to 240 V AC ± 10 %, 48 to 66 Hz 100 to 120 V AC ± 10 %, 48 to 66 Hz 10 to 16 V DC at XLR connector
Power consumption	approx. 60 W
Dimensions (W x H x D)	148 mm x 291 mm x 330 mm
Weight	approx. 6.9 kg without battery, without power supply

Ordering information

Spectrum Analyzer	
50 Ω	U3641
75 Ω	U3641N
50 Ω	U3661

Options	
Internal controller	15 (only for U3641)
Improved reference frequency	20
100/300 Hz resolution bandwidths	26
CDMA measurements	60 (only for U3641)
TV demodulator including option 78	72
Broadband FM demodulator	73
Tracking generator	74
Channel input	78

Extras		
Battery 60 Wh	U4000-B5	
Charger for 2 batteries B5	U4000-C4	
Charger for 4 batteries B5	U4000-C5	
Charger for 4 batteries B5 and diagnostic module	U4000-C6	
Memory card 256 k	A09508	
GSM MS application		
Program for Internal Controller	PU36410300-IC	
GSM BS application		
Program for Internal Controller	PU36410310-IC	
Display Hood	R16601	
DC Connecting Cable	A01434	
SWR Bridge	ZRB2	0373.9017.5x
Transit Case	R16072	
Carrying Case	R16216	
Front Cover	A02806	