9102 Handheld Spectrum Analyzer

Specifications

Specifications apply for 9102B series devices with serial number 0604001 and higher without the 9151 Frequency Extension 7.5 GHz.

General data

Display (TFT)

Size	6.5"
Brightness	300 cd
Resolution	640 x 480, 256 colours
Measurement result points	2 x 501

Power supply

DC voltage, external	11 to 15 V / max. 28 W
Changeable Internal battery	Li-Ion
Operating time, battery fully charged, full brightness, TG on	2.0 h min.

Memory

Type	Flash Disk
Capacity (set-ups and traces)	257

Dimensions (W x H x D)

355 x 190 x 91 [mm]

Weight

With battery and Tracking Generator	3.2 kg (7 lbs)
Power supply only	0.32 kg (0.7 lbs)

Environmental conditions (unless otherwise specified)

MIL-PRF28800F class 2

Operating temperature	0 to +45 °C
Rel. humidity (non-condensing)	80%
Storage temperature	-10 to + 50 °C

Connectors

RF in	Connector type N (female), impedance 50 ohm
Serial interface	For software updates and remote control Speed 57.6 kbit/s
LAN (TCP/IP)	For software updates and remote control Speed 10 Mbit/s

Standard deliveries

9102 Handheld Spectrum Analyzer incl. power supply (90 to 240 V/50 to 60 Hz), crossover Ethernet communication cable, 9100 Data Exchange Software (1 license, user's guide on CD) and getting started manual

Frequency

Frequency range

Measurement range	100 kHz to 4 GHz
Resolution	1 kHz

Sweep time

Span > 10 kHz	1 ms to 250 s
Span = 0 Hz	1 ms to 250 s

Resolution bandwidth (RBW)
RBW (-3 dB) range 100 Hz to 1 MHz (RBW selection manual or automatic)

Video bandwidth (VBW)
VBW range (-3 dB) 10 Hz to 1 MHz (VBW selection manual or automatic)

SSB noise
< -80 dBc/Hz (f = 2 GHz, Δf = 100 kHz, RBW = 10 kHz, VBW = 1 kHz)

Amplitude

Measurement range
Averaged noise floor to 20 dBm

Display units
dBm, dBµV, dBmV, dBV, dB

Displayed average noise level (DANL) (RBW = 100 Hz, attenuation = 0 dB)

10 to 1000 MHz	< -127 dBm, typ.-130 dBm
1000 to 4000 MHz	< -130 dBm, typ.-135 dBm

Input attenuation

Setting range	0(10) to 50 dB
Attenuation steps	10 dB

Dynamic range

Range	> 70 dB
Max. measurable input level (attenuation = 40 dB)	20 dBm
Min. measurable input level	-130 dBm

Level accuracy

10 to 3600 MHz	±1 dB

RF input match (1 to 4000 MHz, input attenuation = 10 dB)

VSWR	< 1.6, typ. < 1.5
Return loss	< -12 dB

Spurious response

Image rejection (f = 1 GHz)	> 80 dB
LO breakthrough (attenuation = 10 dB)	< -77 dBm
Spurious level (attenuation = 0 dB)	< -90 dBm
Intermodulation-free range	> 63 dB

(input level -30 dBm, f1 = 990 MHz, f2 = 992 MHz)

Functions

Detector & sweep

Detector types	pos./neg. peak, pos. peak, neg. peak, sample
Sweep processing	actual, average, max. hold, min. hold

Trace

Max. displayed traces	2
Trace points	2 x 501
	(Two independent traces are available, min. hold, max. hold at the same time)
Trace functions	A+B ? A, A-B ? A,
	trace offset, copy a>b, copy b>a

Marker

Max. markers	6
Delta markers	5
Marker functions	max. peak, next peak
Transfer functions	M ? centre frequency, M ? ref. level, M ? f step

Limit check

Limit functions	upper, lower, upper and lower

Power measurement

Measurement functions	Channel Power, ACPR, OBW
Default systems	GSM, WCDMA, DECT, WLAN

Demodulation

AM/FM	on marker/permanent/on multi marker

9102 Handheld Spectrum Analyzer with 9151 Frequency Extension 7.5 GHz

Specifications

Frequency range

Measurement range	100 kHz to 7.5 GHz

SSB noise

< -80 dBc/Hz (f = 5.7 GHz, ?f = 100 kHz, RBW = 10 kHz, VBW = 1 kHz)

Displayed average noise level (DANL) (RBW = 100 Hz, attenuation = 0 dB)

10 MHz to 4 GHz	< -119 dBm, typ. -121 dBm
4 GHz to 7 GHz	< -120 dBm, typ. -123 dBm
7 to 7.5 GHz	< -113 dBm

Dynamic range

Range (5.000 GHz / 5.001 GHz)	> 70 dB
Max. measurable input level	20 dBm
(attenuation = 40 dB)	
Min. measurable input level (<4 GHz)	-119 dBm
Min. measurable input level (4 GHz to 7 GHz)	-120 dBm
Min. measurable input level (7 GHz to 7.5 GHz)	-112dBm
(attenuation = 0 dB)	

RF input match (input attenuation = 10 dB)

VSWR (100 MHz to 4 GHz)	< 1.6

VSWR (4 GHz to 6 GHz)	< 2.0
VSWR (6 GHz to 7.5 GHz)	< 2.3
Return loss (100 MHz to 4 GHz)	< −15 dB
Return loss (4 GHz to 6 GHz)	< −9 dB
Return loss (6 GHz to 7.5 GHz)	< −7 dB
Spurious response	
Image rejection (f = 6.7 GHz))	> 60 dB
Spurious level (100 kHz to 4 GHz)	< −90 dBm
Spurious level (4 GHz to 7.5 GHz) (attenuation = 0 dB)	< −83 dBm
LO leakage (7.7 GHz) (attenuation = 10 dB)	< −57 dBm