

Data Sheet

VIAVI

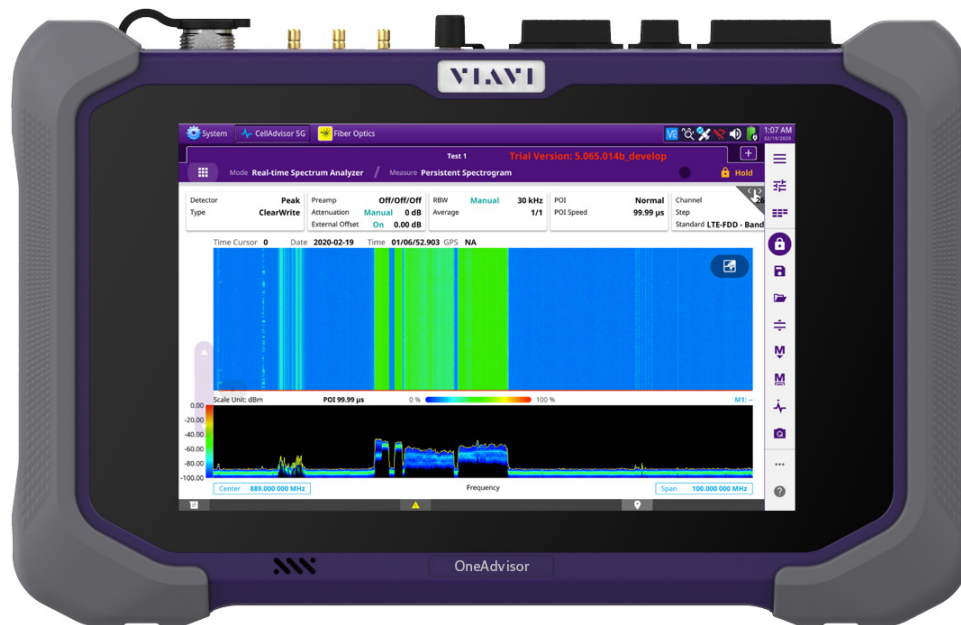
Radio Analysis Module

Module for OneAdvisor-800

SPA06MA-O is a radio analysis module supporting spectrum analysis, signal analysis (LTE-TDD, LTE-FDD and 5G), and RFoCPRI interference analysis.

Specifications apply under these conditions*:

- The instrument has been turned on for at least 15 minutes
- The instrument is operating within a valid calibration period
- Data with no tolerance are considered typical values
- Typical and nominal values are defined as:
 - Typical: performance statistic represented by 80% of production units
 - Nominal: a general, descriptive term or parameter



*All specifications are subject to change without notice

Spectrum Analyzer (Option: SPA06MA-O or SPA06MA)

Frequency range		
9 kHz to 6 GHz		
Frequency reference		
Stability	±0.5 ppm (-30 to 85°C) + aging	
Accuracy with GPS	±25 ppb	GPS lock
	±50 ppb	GPS Holdover (over 30 min after losing GPS lock. Temperature variation < 8°C)
Aging	±1 ppm/year	
Frequency readout accuracy (start, stop, center, marker)		
± (readout frequency x frequency reference accuracy + RBW centering + 0.5 x horizontal resolution + 2 Hz)		horizontal resolution = frequency span/trace #
		RBW center = 15% x RBW
Frequency span		
Range	0 Hz (zero span), 9 kHz to 6 GHz	
Resolution	1 Hz	
Accuracy	± (2 x RBW centering + horizontal resolution)	
Sweep time readout	The time required to complete a sweep from start to finish, including tuning, data acquisition and process	
Trace update		Nominal
15 trace/ sec		Span = 10 MHz
		RBW 3 kHz Fast
Sweep time		Nominal
Range	0.4 ms to 200 s manual	Sweep
	1 µs to 200 s	zero span
Accuracy	±2 %	zero span
Type	Continuous, Single	
Mode	Gated sweep (requires option ONA-SP-GSS), Normal and FFT modes, Fast	
Trigger		
Trigger source	Free run, video, external, GPS	
Trigger delay	Range: 0 to 10 s	
	Resolution: 6 µs	
Resolution Bandwidth (RBW)		Nominal
Range	1 Hz to 3 MHz	~ 3 dB bandwidth
		1-3-10 sequence
Accuracy	±10%	
Video Bandwidth (VBW)		Nominal
Range	1 Hz to 3 MHz	~ 3 dB bandwidth
		1-3-10 sequence
Accuracy	±10%	

Spectrum Analyzer (continued)

Amplitude range		
Measurement range	9 kHz to 6 GHz: DANL to +25 dBm	
Input attenuator range	9 kHz to 6 GHz: 0 to 55 dB in 5 dB steps	
Preamplifier		
Frequency range	10MHz to 6 GHz	
Gain	20 dB	
Max RF input operating level		
	9 kHz to 6 GHz: +25 dBm, ± 50 VDC	Average CW power
Display range		
Log/Linear scale	10 divisions	
	1 to 20 dB/Division in 1 dB	
Scale units	dBm, dBV, dBmV, dB μ V, V, mV, W, mW	
Reference level		
Range	-120 to +100 dBm	
Resolution	Log scale: 0.1 dB	
	Linear scale: 1 % of reference level	
Trace		
Detectors	Normal, positive peak, negative peak, sample, Average (RMS)	
Number	6	
States	Clear/write, maximum hold, minimum hold, capture, load, blank, trace math, trace info	
Functions	Time expired maximum hold and minimum hold, trace math, trace info	
Marker		
Type	Normal, delta, delta pair, marker table	
Number	6	
Functions	Noise marker	
Marker to ->	Peak, next peak, next peak right, next peak left, min search, always peak Center, start, stop	
Audio beep	Tone change with signal strength	
Marker table	Display 6 markers	
Absolute amplitude accuracy		
Preamplifier Off: input signal \geq -50 dBm, auto-coupled, 15-minute warm-up		
Preamplifier On: -90 dBm < input signal < -50 dBm, auto-coupled, 15-minute warm-up		
9 kHz to 5 MHz	± 2.0 dB, ± 1.0 dB (T)	20 to 30°C (68 to 86°F)
5 MHz to 3.2 GHz	± 1.3 dB, ± 1.0 dB (T)	
3.2 GHz to 6 GHz	± 1.5 dB, ± 1.0 dB (T)	
9 kHz to 6 GHz	± 2.5 dB, ± 2 dB (T)	0 to 50°C (32 to 131°F)
Input VSWR		Nominal
9 kHz to 6 GHz:	1.9:1 (Nominal)	@ 10 dB Attenuation

Spectrum Analyzer (continued)

Displayed average noise level (DANL)

1 Hz RBW, 1 Hz VBW, 50 Ω termination, 0 dB attenuation, RMS detector

Preamplifier off	9 kHz to 10MHz	-140 dBm, -142 dBm (T)
	10 MHz to 1.87 GHz	-141 dBm, -143 dBm (T)
	1.87 GHz to 4.0 GHz	-140 dBm, -142 dBm (T)
	4.0 GHz to 6.0 GHz	-138 dBm, -140 dBm (T)
Preamplifier on	9 kHz to 10MHz	-140 dBm, -142 dBm (T)
	10 MHz to 4.0 GHz	-158 dBm, -161 dBm (T)
	4.0 GHz to 6.0 GHz	-157 dBm, -160 dBm (T)

Second harmonic distortion

500 MHz to 3.0 GHz	< -60 dBc, typical	Input -40 dBm
--------------------	--------------------	---------------

Third-order inter-modulation (third-order intercept: TOI)

10 MHz to 6.0 GHz	+9 dBm, typical	Preamp Off
10 MHz to 6.0 GHz	-11 dBm, typical	Preamp On

Spur free dynamic range

2/3 (TOI-DANL) in 1 Hz RBW	> 101 dB, typical	@ 1 GHz
----------------------------	-------------------	---------

Spurious

Inherent residual response	Input terminated, 0 dB attenuation, Preamp off	
	Sweep Tuned: 10 kHz RBW, 1 kHz VBW, Peak detector	
	Real time: RBW: 30 kHz, VBW: 30 kHz, Peak Mode, Span = 100 MHz	
	9 kHz to 6 GHz	
	Sweep tuned: -95 dBm	Typical
	Real time: -90 dBm	Typical
Input-related Spurious	0 dB attenuation, Input signal= -25 dBm, Preamp off	
	Sweep tuned: Peak detector, Span < 1 GHz	
	9 kHz to 6 GHz (10 kHz RBW, 1 kHz VBW)	
	Images and blockers: < -75 dBc	
Sidebands	< -60 dBc	
LO feedthrough to input	9 kHz to 6 GHz: < -85 dBm	

Single sideband (SSB) phase noise

-94 dBc/Hz, -96 dBc/Hz (T) @ 10 kHz offset	@ 1 GHz
-97 dBc/Hz, -99 dBc/Hz (T) @ 100 kHz offset	
-107 dBc/Hz, -110 dBc/Hz (T) @ 1 MHz offset	

Spectrum Analyzer (continued)

Measurement	
Channel Power	Channel power
	Spectral Density
	PAR (Peak to Average Ratio)
Occupied Bandwidth	Occupied bandwidth
	Integrated power
	Occupied power
	x dB bandwidth
Spectrum Emission Mask	Reference power
	Peak level at defined range
	Reference power
	Peak level at defined range
Adjacent Channel Power (ACP)	Reference power
	Absolute power at defined frequency offset
	Relative power at defined frequency offset
Multi-ACP (Adjacent Channel Power)	Reference power at lowest defined frequency
	Reference power at highest defined frequency
	Absolute power at defined frequency offset
	Relative power at defined frequency offset
Spurious Emissions	Peak power at defined range
	Frequency of peak power at defined range
Total Harmonic Distortion	Power level at each harmonic
	% of THD
Field Strength	Field strength power at markers

GPS connectivity with antenna (Option ONA-SP-GNSS)

GPS receiver type	
	Built-in type
GPS time and location	
GPS information	Latitude, longitude, Satellite, Status
GPS time and location	Time, Latitude, and longitude on display
	Time, Latitude, and longitude on trace
High-Frequency Accuracy	
GPS lock	± 25 ppb
Connector	SMA, female
Supplied antenna	SMA (m), 3.3 VDC or 5 VDC

Bluetooth Connectivity (Option ONA-MF-BT)

Interface type	Build-in type
Mode	Personal area network (PAN)
	File transfer profile (FTP)

Wi-Fi Connectivity (Option ONA-MF-WIFI)

Interface type	Build-in type
Interface standard	IEEE 802.11 a/b/g/n/ac
Wireless mode	Infrastructure mode
Internet protocol version	IPv4, IPv6

Real Time Spectrum Analyzer (Option ONA-SP-RT50/RT100)

Frequency range		
	9 kHz to 6 GHz	
Frequency Span		
Option ONA-SP-RT50	50 MHz real time	
Option ONA-SP-RT100	100 MHz real time	100 MHz step sequence
Acquisition		
IF bandwidth	50 MHz or 100 MHz	
Resolution bandwidth	30 kHz to 3 MHz	1-3-10 sequence
A/D converter	245.76 Msps	
FFT lengths	8192	
Maximum acquisition time	1000 ms	
Minimum IQ resolution	8.138 ns	
Probability of Intercept (POI)	34 μ s	Span: 100 MHz
Spectrum display		
Trace Detectors	Normal, positive peak, negative peak, sample, Average (RMS)	
Trace number	6	
Trace states	Clear/write, maximum hold, minimum hold, capture, load, blank	
Marker Type	Normal, delta, delta pair, marker table	
Marker Number	6	
Marker to ->	Peak, next peak, next peak right, next peak left, min search, always peak Center, start, stop	
Audio beep	Tone change with signal strength	
Marker table	Display 6 markers	

Real Time Spectrum Analyzer (Option ONA-SP-RT50/RT100) continued

Persistence spectrum display	
Spectrum processing rate	≤ Max 15,000/s
DPX bitmap resolution	201 x 801
Marker information	Frequency, amplitude, signal density
Dwell time per step	100 ms to 100 s
Trace processing	Color-graded bitmap, +Peak, -Peak, average
Trace length	801
Marker Type	Normal, delta, marker table
Marker Number	6
Marker to ->	Peak, next peak, next peak right, next peak left, min search, always peak Center, start, stop
Audio beep	Tone change with signal strength
Marker table	Display 6 markers
Persistence spectrogram display	
Trace detection	+Peak, -Peak, Average (RMS)
Trace length, memory depth	
Time resolution per line	100 ms to 1sec, user selectable

Interference analyzer (Option ONA-SP-INTAN)

Measurement	
Spectrum Analyzer	Sound indicator, interference ID, spectrum recorder
Spectrogram	Collect up to 72 hours of data
RSSI Interference finder Radar Chart	Collect up to 72 hours of data
Spectrum replayer	Playback recorded data using ONA-800

Route Map (Option ONA-SP-RM)

Mode	Spectrum analyzer	
Plot method	Time, position, GPS	
Plot legend	Excellent, very good, good, poor	User definable range
Map type	Outdoor (position information embedded)	Import maps using VIAVI Mapcreator
	Indoor (No position information embedded)	
Measurement item	RSSI	
	ACP	

Gated Sweep (Option ONA-SP-GSS)

Gate method	Gated FFT
Gated delay range	0 to 100 ms
Gated length	1 us to 100 ms
Trigger source	External, video and GPS

RFoCPRI Interference Analyzer (Option ONA-SP-CPRI17/8/18)

General Parameters

Optical Interface	Dual SFP/SFP+(supports all MSA compliant SFP modules)	Supported with CA5000-F001-O and CA5000-F002-O
Line rates	CPRI Rate 1 to 7	Option: ONA-SP-CPRI17
	CPRI Rate 8	Option: ONA-SP-CPRI8
	CPRI Rate 1 to 8	Option: ONA-SP-CPRI18
Resolution Bandwidth (RBW)	- 3dB bandwidth	10 kHz to 100 kHz with 1-3 step 7.5kHz
	Accuracy	±10% (nominal)
Video Bandwidth (VBW)	- 3dB bandwidth	10 kHz to 100 kHz with 1-3 step 7.5kHz
	Accuracy	±10% (nominal)
CPRI Parameters	IQ Sample width	4 – 20 bits
	Mapping Method	1 and 3
	Bandwidth	3.84 MHz x N, where N=1 to 8
	TX clock	Internal, External, Recovered
	Port Type	Master, Slave

Measurements

Link Status	LOS, LOF, SDI, RAI, Optic RX Level	Port 1 and Port 2
SFP Information	Wavelength, Vendor, Vendor PN, Vendor Rev, Power level type, Diagnostic byte, Nominal rate, Min rate, Max RX level, Max TX level	Port 1 and Port 2
Interference Analyzer	Spectrum	Single, Dual, and Quad Chart
	Spectrogram	Single and Dual spectrum Chart with 2-D and 3-D waterfall diagram
	Interference ID	
	Sound Indicator	
	PRB Table	
	IQ Activity Scan	

LTE/LTE-A FDD Analyzer

General Parameters				
Frequency range	Band 1 to 32, 65 to 76, 85, 87, 88			
Input signal range	-65 to +25 dBm			
Supported bandwidth	1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, and 20 MHz			
Frequency error	±10 Hz + ref freq accuracy, 99% confidence level			
Measurements (Option: ONA-SP-LTEFDOTA)				
Channel Power Channel power Spectral density Peak to average power	Occupied bandwidth Occupied bandwidth Integrated power Occupied power	Spectrum emission Reference power Peak level at defined range	ACLR Reference power Abs power at defined range Rel power at defined range	Multi-ACLR Lowest reference power Highest reference power Absolute power at defined range Relative power at defined range
Channel Scanner (Up to 6 Carriers) PCI (Group, Sector ID), Channel power (dBm), RSSI, RSRP, RSRQ, RS-SINR, Antenna port	D Scanner (up to 6 PCI) PCI (Group, Sector ID), RSRP, RSRQ, P-SS SNR, S-SS SINR, S-SS RSSI, P-SS RSRP, S-SS RSRP, S-SS Ec/Io	Control Channel Physical Cell ID, Group ID, Sector ID, MBSFN* RS Power & EVM trend Absolute power, EVM, phase for P-SS, S-SS, PBCH, PCFICH, RS0, RS1, RS2, RS3 Frequency Error Time Error Time Alignment Error	Route Map Date and Time, Latitude, Longitude, PCI(Group, Sector ID), RSRP, RSRQ, RS-SINR, S-SS RSSI, P-SS,/S-SS power, S-SS Ec/Io	Freq/Time/Power Variation Frequency Offset Time Offset RS Power
Measurements (Option: ONA-SP-LTEFDSIA)				
Constellation MBSFN* RS power PDSCH/Data* QPSK EVM PDSCH/Data* 16 QAM EVM PDSCH/Data* 64 QAM EVM PDSCH/Data* 256 QAM EVM Data EVM RMS Data EVM peak Frequency error Time error	Frame Summary Frame Physical Cell ID, Group ID, Sector ID MBSFN* Frame power Channel summary table EVM, relative or absolute power, modulation type for P-SS, S-SS, PBCH, PCFICH, PHICH, PDCCH, RS, MBSFN RS* PBSCH/PMCH QPSK, 16/64/256 QAM Subframe summary OFDM symbol power, Frequency error, IQ-origin offset, Data EVM RMS, Data EVM peak EVM RMS, EVM peak	Data Allocation Map Frame data utilization OFDM symbol power Data allocation vs frame Subframe data utilization Resource block power Data allocation vs subframe	Power vs. Time (Frame) Frame average power I-Q origin offset, Time Offset Subframe power First slot power Second slot power Physical Cell ID, Group ID, Sector ID	

*Measurement is performed when MBMS is enabled

LTE/LTE-A TDD Analyzer

General Parameters	
Frequency range	Band 33 to 53
Input signal range	-65 to +25 dBm
Supported bandwidth	1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, and 20 MHz
Frequency error	±10 Hz + ref freq accuracy, 99% confidence level

Measurements (Option ONA-SP-LTETDOTA)				
Channel Power Channel power Spectral density Peak to average power	Occupied bandwidth Occupied bandwidth Integrated power Occupied power	Spectrum emission Reference power Peak level at defined range	ACLR Reference power Abs power at defined range Rel power at defined range	Multi-ACLR Lowest reference power Highest reference power Absolute power at defined range Relative power at defined range
Channel Scanner (Up to 6 Carriers) PCI (Group, Sector ID), Channel power (dBm), RSSI, RSRP, RSRQ, RS-SINR, Antenna port	ID Scanner (up to 6 PCI) PCI (Group, Sector ID), RSRP, RSRQ, P-SS SNR, S-SS SINR, S-SS RSSI, P-SS RSRP, S-SS RSRP, S-SS Ec/Io	Control Channel Physical Cell ID, Group ID, Sector ID, MBSFN* RS Power & EVM trend Absolute power, EVM, phase for P-SS, S-SS, PBCH, PCFICH, RS0, RS1, RS2, RS3 Frequency Error Time Error Time Alignment Error	Route Map Date and Time, Latitude, Longitude, PCI(Group, Sector ID), RSRP, RSRQ, RS-SINR, S-SS RSSI, P-SS, S-SS power, S-SS Ec/Io	Freq/Time/Power Variation Frequency Offset Time Offset RS Power

Measurements (Options ONA-SP-LTETDSIA)			
Constellation MBSFN* RS power PDSCH/Data* QPSK EVM PDSCH/Data* 16 QAM EVM PDSCH/Data* 64 QAM EVM PDSCH/Data* 256 QAM EVM Data EVM RMS Data EVM peak Frequency error Time error	Frame Summary Frame Physical Cell ID, Group ID, Sector ID MBSFN* Frame power Channel summary table EVM, relative or absolute power, modulation type for P-SS, S-SS, PBCH, PCFICH, PHICH, PDCCH, RS, MBSFN RS* PBSCH/PMCH QPSK, 16/64/256 QAM Subframe summary OFDM symbol power, Frequency error, IQ-origin offset, Data EVM RMS, Data EVM peak EVM RMS, EVM peak	Data Allocation Map Frame data utilization OFDM symbol power Data allocation vs frame Subframe data utilization Resource block power Data allocation vs subframe	Power vs. Time (Frame) Frame average power I-Q origin offset, Time Offset Subframe power First slot power Second slot power Physical Cell ID, Group ID, Sector ID

*Measurement is performed when MBMS is enabled

5G NR Signal Analyzer (Options ONA-SP-5GOTA)

General Parameters		
Frequency range	FR1: 410 MHz to 6 GHz	
Input signal range	-60 to +25 dBm	
Supported bandwidth	5 MHz, 10 MHz, 15 MHz, 20 MHz, 25 MHz, 30 MHz, 40 MHz, 50 MHz, 60 MHz, 70 MHz, 80 MHz, 90 MHz, and 100 MHz	
Frequency error	±10 Hz + ref freq accuracy, 99% confidence level	- 60 dBm to + 25 dBm
	2.0% Typical for QPSK	- 60 dBm to + 25 dBm

Measurements (Option: ONA-SP-5GOTA)				
Channel Power Channel power EIRP Spectral Density Peak to average power	Occupied bandwidth Occupied bandwidth Integrated power Occupied power	Spectrum emission Reference power Peak level at defined range	ACLR Reference power Abs power at defined range Rel power at defined range	
Carrier Scanner (Up to 8 Carriers) PCI, SSB Index, Channel Power, S-SS RSRP, PBCH EVM, Time Error (us), Freq Error (Hz)	Beam Analyzer (up to 8 beams) PCI (Group, Sector ID), SSB Index (DM-RS, PBCH), S-SS RSRP, P-SS RSRP, P-SS SINR, S-SS SINR, S-SS RSRQ	Route Map Date and Time, Latitude, Longitude, PCI(Group, Sector ID), Beam Index, S-SS RSRP, S-SS SINR (dB), P-SS RSRP, S-SS RSRQ (dB), P-SS SNR (dB)	Freq / Time / Power Variation Frequency Offset Time Offset RS Power	Multipath Profile PCI (Group, Sector ID), SSB Index P-SS delay profile S-SS delay profile

Measurements (Options: ONA-SP-5GSIA)
Power vs Time (Frame) Frame average power IQ Origin Offset Time Error Slot Power

DSS OTA Analyzer (Option ONA-SP-DSSOTA)

General Parameters		
Frequency range	LTE FDD: Band 1 to 14, 17 to 26	
	LTE TDD: Band 33 to 43	
Minimum detectable level	LTE: -117 dBm	S-SS RSRP
	NR: -117 dBm	
Input signal level	FR1 Band: -70 to +25 dBm	
Supported bandwidth	5 MHz, 10 MHz, 15 MHz, and 20 MHz	
Frequency error	±0.05 ppm with GPS	
Residual EVM	3.0 % (typical)	@ -20 dBm
Measurement		
Channel Power	OTA ID Scanner (up to 6)	
Channel power	LTE: PCI, RSRP, RSRQ, P-SS SNR, S-SS SINR,	
Spectral density	S-SS RSSI, P-SS, S-SS, S-SS Ec/Io	
Peak to average power	NR: PCI, SSB index, S-SS RSRP, P-SS RSRP,	
Occupied bandwidth	S-SS SINR, S-SS RSRQ	
Occupied bandwidth	OTA Multipath Profile	
Integrated power	LTE: RS0, RS1, RS2, RS3 Ec/Io, Delay	
Occupied power	NR: P-SS, S-SS Ec/Io, Delay	
Power vs. Time (frame)	LTE/NR Physical Cell ID, Group ID, Sector ID	
Frame average power	OTA Control Channel	
I-Q origin offset, Time offset, Subframe power,	LTE: P-SS, S-SS, PBCH, RS power and EVM	
First slot power, Second slot power	NR: P-SS, S-SS, PBCH power and EVM	
LTE Physical cell ID, Group ID, Sector ID	Frequency error, Time error,	
Power vs. Time (Slot)	Time alignment error	
Slot average power	LTE/NR Physical Cell ID, Group ID, Sector ID	
Transition period length	OTA Route map	
Off power	RSPR, RSRP, SINR, SNR, PCI	
LTE Physical cell ID, Group ID, Sector ID	Freq/Time Error Variation	
OTA Channel Scanner (up to 3)	Frequency error trend	
Channel power and RSRP bar graph	Time error trend	
LTE: PCI, RS RSSI, RS RSRP, RS RSRQ, RS SINR	RS0, RS1, RS2, RS3 power trend	
NR: PCI, P-SS RSSI, P-SS RSRP, P-SS RSRQ, P-SS SINR		

NSA Analyzer (Option ONA-SP-NSAOTA)

General Parameters		
Frequency range	LTE-FDD: Band 1 to 14, 17 to 26	
	LTE-TDD: Band 33 to 43	
	NR: 410 MHz to 6 GHz	
Minimum detectable level	LTE: -117 dBm	SS-RSRP
	NR: -117 dBm	
Input signal level	Up to +25 dBm	
Supported bandwidth	Up to 100 MHz	
Frequency error	±0.05 ppm with GPS	-60 dBm to + 25 dBm
Residual EVM	3.0 % (typical)	@ -20 dBm

Measurements (Option: ONA-SP-NSAOTA)		
NSA Analyzer	NSA Scanner	Route map
Up to 8 LTE/NR carriers	Up to 8 LTE/NR carriers	Up to 8 LTE/NR carriers
Fast mode: Strongest PCI	Fast mode	Fast mode: Strongest PCI
Normal mode: Multi PCIs	NR scanner	Normal mode: Multi PCIs
NR Analyzer	Strongest Cell ID	NR Analyzer
Cell ID/SSB index	SS-RSRP/Channel power	Cell ID/SSB index
SS-RSRP/PS-RSRP	LTE scanner	SS-RSRP/PS-RSRP
PS-SNR/SS-SINR/SS-RSRQ	Strongest Cell ID	PS-SNR/SS-SINR/SS-RSRQ
LTE Analyzer	RSRP/Channel power	LTE Analyzer
Cell ID	Normal mode	Cell ID
RSRP, RSRQ, PS-SNR, SS-SINR, S-SS RSSI, P-SS, S-SS, S-SS Ec/Io	NR scanner	RSRP,RSRQ,PS-SNR,SS-SINR
	Strongest Cell ID/SSB index	S-SS RSSI, P-SS,S-SS,S-SS Ec/Io
	SS-RSRP/Channel power	
	PBCH EVM	
	Frequency error, Time error	
	LTE scanner	
	Strongest Cell ID	
	RSRP/Channel power	
	RS EVM	
	Frequency error, Time error	

Blind Scanner (Option ONA-SP-BS)

General parameters		
Frequency range	LTE-FDD: Band 1 to 14, 17 to 26 LTE-TDD: Band 33 to 43 NR: 410 MHz to 6 GHz	
Minimum detectable level	LTE: -111 dBm NR: -115 dBm	SS-RSRP
Input signal level	Up to +25 dBm	
Supported bandwidth	Up to 100 MHz	
SCS	NR: 15kHz & 30kHz LTE & DSS: 15kHz	
CP Type for LTE	Normal and Extended	
Frame Period for NR and DSS	5, 10, 20, 40, 80, 160 ms	

Measurements (Option: ONA-SP-BS)		
NR	LTE	DSS
SSB Frequency	Carrier Frequency	Carrier Frequency
SS-RSRP	Carrier Bandwidth	Carrier Bandwidth
	SS-RSRP	SSB Frequency
	Duplex type	SS-RSRP
		Duplex type

EMF Analyzer (Options ONA-SP-EMF-SA)

General Parameters

Supported Antenna	G700050381: 400MHz to 6GHz Isotropic Antenna (VIAVI) G700050366: 650MHz – 4GHz (VIAVI) G700050367: 650MHz – 6GHz (VIAVI) USLP9143: 300 MHz – 7GHz (Schwarzbeck) USLP9143B: 200 MHz – 7GHz (Schwarzbeck) USLP9142: 800 MHz – 5GHz (Schwarzbeck)
Measurement Time	1 – 60 minutes
Dwell Time	1 – 60 seconds
Units	dB μ V/m, dBmV/m, dBV/m, V/m, W/m ² , dBm/m ² , A/m, dBA/m, mW/cm ² , %
Frequency error	\pm 10 Hz + ref freq accuracy, 99% confidence level
Limit	ICNIRP 2020 Occupational ICNIRP 2020 General Public ARPANSA Occupational ARPANSA General Public BGV B11 Exposure area 1 26. BlmSchV General Public FCC 1997 Occupational FCC 1997 General Public ICNIRP 1998 Occupational ICNIRP 1998 General Public IEEE C95.1 2005 Upper Tier IEEE C95.1 2005 General Public Italy CM 2003 Exposure Italy CM 2003 Attention Safety Code 6 (2015) Uncontrolled Safety Code 6 (2015) Controlled Safety Code 6 (2009) Uncontrolled Safety Code 6 (2009) Controlled Safety Code 6 (99-EHD-237) Exposed Workers Safety Code 6 (99-EHD-237) General Public

Measurements (ONA-SP-EMF-SA)

Spectrum (Integrated Power)

Isotropic* EMF Power

Accumulated Isotropic* EMF Power: AVG, MAX, MIN

* Requires Isotropic Antenna, G700050381

5G NR EMF Analyzer (Options ONA-SP-EMF-SA, ONA-SP-EMF-NR or ONA-SP-5GOTA)

General Parameters	
Frequency range	FR1 Band, Antenna dependent
Input signal range	-60 to +25 dBm
Supported bandwidth	5 MHz, 10 MHz, 15 MHz, 20 MHz, 25 MHz, 30 MHz, 40 MHz, 50 MHz, 60 MHz, 70 MHz, 80 MHz, 90 MHz, and 100 MHz
Supported Antenna	G700050381: 400MHz to 6GHz Isotropic Antenna (VIAVI) G700050366: 650MHz – 4GHz (VIAVI) G700050367: 650MHz – 6GHz (VIAVI) USLP9143: 300 MHz – 7GHz (Schwarzbeck) USLP9143B: 200 MHz – 7GHz (Schwarzbeck) USLP9142: 800 MHz – 5GHz (Schwarzbeck)
Measurement Time	1 – 60 minutes
Dwell Time	1 – 60 seconds
Units	dBµV/m, dBmV/m, dBV/m, V/m, W/m2, dBm/m2, A/m, dBA/m, mW/cm2, %
Frequency error	±10 Hz + ref freq accuracy, 99% confidence level
Limit	ICNIRP 2020 Occupational ICNIRP 2020 General Public ARPANSA Occupational ARPANSA General Public BGV B11 Exposure area 1 26. BImSchV General Public FCC 1997 Occupational FCC 1997 General Public ICNIRP 1998 Occupational ICNIRP 1998 General Public IEEE C95.1 2005 Upper Tier IEEE C95.1 2005 General Public Italy CM 2003 Exposure Italy CM 2003 Attention Safety Code 6 (2015) Uncontrolled Safety Code 6 (2015) Controlled Safety Code 6 (2009) Uncontrolled Safety Code 6 (2009) Controlled Safety Code 6 (99-EHD-237) Exposed Workers Safety Code 6 (99-EHD-237) General Public
Measurements (ONA-SP-EMF-SA, ONA-SP-EMF-NR or ONA-SP-5GOTA)	
Beam PCI, RSRP, Extrapolated RSRP	EMF Power Extrapolated Isotropic* EMF Power Extrapolated Accumulated Isotropic* EMF Power: AVG, MAX, MIN

* Requires Isotropic Antenna, G700050381

General Information

RF In		
Connect Type	Type-N, female	
Impedance	50 Ω	Nominal
Damage level	+33 dBm, \pm 50 VDC	Average CW power
Trigger In/Out, GPS		
Connect Type	SMA, female	
Impedance	50 Ω	Nominal
Reference Clock In		
Connect Type	SMB, female	
Impedance	50 Ω	Nominal
Frequency	10 MHz, 13 MHz, 15 MHz	
Input range	-5 to +5 dBm	
SFP Cage		
SFP+	3 ports	SPA06MA-O only
QSFP	2 ports	
Battery Operation		
Option SPA06MA-O	> 2.0 hours	Spectrum mode with 30% LCD brightness
Option SPA06MA	> 3 hours	
Size and Weight		
Weight	< 1.4 kg (3.0 lb.)	
Size (W x H x D)	269mm X 170mm X 41mm with bumper	
Warranty		
	3 years	
Recommended calibration cycle		
	1 year	