



CellAdvisor™

JD785B Base Station Analyzer

Spectrum Analyzer (Standard)

Frequency		
Frequency range	9 kHz to 8 GHz	
Internal 10 MHz Frequency Reference		
Accuracy	±0.05 ppm + aging (0 to 50°C)	
Aging	±0.5 ppm/year	
Frequency Span		
Range	0 Hz (zero span) 10 Hz to 8 GHz	
Resolution	1 Hz	
Resolution Bandwidth (RBW)		
-3 dB bandwidth	1 Hz to 3 MHz	1-3-10 sequence
Accuracy	±10% (nominal)	
Video Bandwidth (VBW)		
-3 dB bandwidth	1 Hz to 3 MHz	1-3-10 sequence
Accuracy	±10% (nominal)	
Single Sideband (SSB) Phase Noise		
Fc 1 GHz, RBW 10 kHz, VBW 1 kHz, RMS detector		
Carrier Offset		
30 kHz	-100 dBc/Hz (-102 dBc/Hz, typical)	
100 kHz	-105 dBc/Hz (-112 dBc/Hz, typical)	
1 MHz	-115 dBc/Hz (-120 dBc/Hz, typical)	
Measurement Range		
	DANL to +25 dBm	
Input attenuator range	0 to 55 dB, 5 dB steps	
Maximum Input Level		
Average continuous power	+25 dBm	
DC voltage	±50 V DC	

Spectrum Analyzer: 9 kHz to 8 GHz

Cable and Antenna Analyzer: 5 MHz to 6 GHz

Power Meter: 10 MHz to 8 GHz

Specification* Conditions

JD785B 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
- Cable and antenna measurements apply after calibration to the OSL standard
- Typical and nominal values are defined as:
 - Typical: expected performance of the instrument operating at 20 to 30°C after being at this temperature for 15 minutes
 - Nominal: a general, descriptive term or parameter

Displayed Average Noise Level (DANL)		
1 Hz RBW, 1 Hz VBW, 50 Ω termination, 0 dB attenuation, RMS detector		
Preamplifier Off		
10 MHz to 3 GHz	-140 dBm (-145 dBm, typical)	
>3 GHz to 5 GHz	-138 dBm (-142 dBm, typical)	
>5 GHz to 7 GHz	-135 dBm (-138 dBm, typical)	
>7 GHz to 8 GHz	-132 dBm (-135 dBm, typical)	
Preamplifier On		
10 MHz to 3 GHz	-160 dBm (-165 dBm, typical)	
>3 GHz to 5 GHz	-158 dBm (-162 dBm, typical)	
>5 GHz to 7 GHz	-155 dBm (-158 dBm, typical)	
>7 GHz to 8 GHz	-152 dBm (-155 dBm, typical)	
Display Range		
Log scale and units (10 divisions displayed)	1 to 20 dB/division in 1 dB steps dBm, dBV, dBmV, dB μ V	
Linear scale and units (10 divisions displayed)	V, mV, mW, W	
Detectors	Normal, positive peak, sample, negative peak, RMS	
Number of traces	6	
Trace functions	Clear/write, maximum hold, minimum hold, capture, load view on/off	
Total Absolute Amplitude Accuracy		
Preamplifier off, power level > -50 dBm, auto-coupled		
1 MHz to 8 GHz	± 1.3 dB (± 0.5 dB typical)	20 to 30°C
	Add ± 1.0 dB	-10 to 55°C after 60-minute warm up
Reference Level		
Setting range	-120 to +100 dBm	
Setting Resolution		
Log scale	0.1 dB	
Linear scale	1% of reference level	
Markers		
Marker types	Normal, delta, delta pair, noise, frequency count marker	
Number of markers	6	
Marker functions	Peak, next peak, peak left, peak right, minimum search marker to center/start/stop	
RF Input VSWR		
1 MHz to 8 GHz	1.5:1 (typical)	Atten >20 dB
Second Harmonic Distortion		
Mixer level	-25 dBm	
50 MHz to 2.6 GHz	< -65 dBc (typical)	
>2.6 GHz to 8 GHz	< -70 dBc (typical)	

Third-Order Inter-Modulation (third-order intercept: TOI)		
200 MHz to 3 GHz	+10 dBm (typical)	
>3 GHz to 8 GHz	+12 dBm (typical)	
Spurious		
Inherent residual response		
Input terminated, 0 dB attenuation, preamplifier off, RBW at 10 kHz, Sweep mode	-90 dBm (nominal)	
Exceptions	-85 dBm at 164.1 MHz, 2.57264, 3.2, and 4.5 GHz -80 dBm at 4.8/7.8 GHz -75 dBm at 85.6 MHz and 428 MHz -70 dBm at 256.8 MHz and 770.4 MHz	
Input-related spurious	< -70 dBc (nominal)	
Dynamic Range		
2/3 (TOI-DANL) in 1 Hz RBW	>104 dB	at 2 GHz
Sweep Time		
Range	0.4 ms to 1000 s 24 μ s to 200 s	Span = 0 Hz (zero span)
Accuracy	$\pm 2\%$	Span = 0 Hz (zero span)
Mode	Continuous, single	
Gated Sweep		
Trigger source	External, video, and GPS	
Gate length	1 μ s to 100 ms	
Gate delay	0 to 100 ms	
Trigger		
Trigger source	Free run, video, external	
Trigger Delay		
Range	0 to 200 s	
Resolution	6 μ s	
Measurements*		
Channel power		
Occupied bandwidth		
Spectrum emission mask		
Adjacent channel power		
Spurious emissions		
Field strength		
AM/FM audio demodulation		
Route map		
PIM detection		
Dual spectrum		

* High-power CW signal generator (Option 003) can be set up simultaneously.

Cable and Antenna Analyzer (Standard)

Frequency	
Range	5 MHz to 6 GHz
Resolution	10 kHz
Accuracy	±1 ppm
Data Points	
126, 251, 501, 1001, 2001	
Measurement Speed	
Reflection/DTF	1.0 ms/point (typical)
Measurement Accuracy	
Corrected directivity	40 dB
Reflection uncertainty	$\pm(0.3 + 20\log(1+10-EP/20))$ (typical) EP = directivity – measured return loss
Output Power	
High	5 MHz to 5.5 GHz, 0 dBm (typical) 5.5 GHz to 6 GHz, –5 dBm (typical)
Low	5 MHz to 6 GHz, –30 dBm (typical)
Dynamic Range	
Reflection	60 dB
Maximum Input Level	
Average continuous power	+25 dBm (nominal)
DC voltage	±50 V DC
Interference Immunity	
On channel	+17 dBm at >14 MHz from carrier frequency (nominal)
On frequency	0 dBm within ±10 kHz from carrier frequency (nominal)
Measurements	
Reflection (VSWR)	
VSWR range	1 to 65
Return loss range	0 to 60 dB
Resolution	0.01
Distance to Fault (DTF)	
Vertical VSWR range	1 to 65
Vertical return loss range	1 to 60 dB
Vertical resolution	0.01
Horizontal range	0 to (# of data points – 1) x horizontal resolution Maximum = 1500 m (4921 ft)
Horizontal resolution	$(1.5 \times 10^8) \times (V_p)/\Delta$ V_p = propagation velocity Δ = stop freq – start freq (Hz)
Cable Loss (1-port)	
Range	0 to 30 dB
Resolution	0.01 dB
1-Port Phase	
Range	–180 to +180°
Resolution	0.01°
Smith Chart	
Resolution	0.01

RF Power Meter (Standard)

General Parameters			
Display range	100 to +100 dBm		
Offset range	0 to 60 dB		
Resolution	0.01 dB or 0.1 x W (x = m, u, p)		
Internal RF Power Sensor			
Frequency range	10 MHz to 8 GHz		
Span	1 kHz to 100 MHz		
Dynamic range	–120 to +25 dBm		
Maximum power	+25 dBm		
Accuracy	Same as spectrum analyzer		
External RF Power Sensors			
Directional	JD731B	JD733A	
Frequency range	300 MHz to 3.8 GHz	150 MHz to 3.5 GHz	
Dynamic range	0.15 to 150 W (average) 4 to 400 W (peak)	0.1 to 50 W (average) 0.1 to 50 W (peak)	
Connector type	Type-N female on both ends		
Measurement type	Forward/reverse average power, forward peak power, VSWR		
Accuracy	$\pm(4\% \text{ of reading} + 0.05 \text{ W})^{1,2}$		
Terminating	JD732B	JD734B	JD736B
Frequency range	20 MHz to 3.8 GHz		
Dynamic range	–30 to +20 dBm		
Connector type	Type-N male		
Measurement type	Average	Peak	Average and peak
Accuracy	$\pm 7\%^1$		

Optical Power Meter (Standard)

Optical Power Meter		
Display range	–100 to +100 dBm	
Offset range	0 to 60 dB	
Resolution	0.01 dB or 0.1 mW	
External Optical Power Sensors		
	MP-60A	MP-80A
Wavelength range	780 to 1650 nm	
Max permitted input level	+10 dBm	+23 dBm
Connector type	Type-N female on both ends	
Connector input	Universal 2.5 and 1.25 mm	
Accuracy	±5%	

1. CW condition at 25°C ±10°C

2. Forward power

2-Port Transmission Measurements (Option 001)

Frequency		
Frequency range	5 MHz to 6 GHz	
Frequency resolution	10 kHz	
Output Power		
High	5 MHz to 5.5 GHz, 0 dBm (typical) 5.5 GHz to 6 GHz, -5 dBm (typical)	
Low	5 MHz to 6 GHz, -30 dBm (typical)	
Measurement Speed		
Vector	1.6 ms/point (typical)	
Scalar	3.4 ms/point (typical)	
Dynamic Range		
Vector	5 MHz to 3 GHz, 80 dB >3 GHz to 6 GHz, 75 dB	at average 5 at average 5
Scalar	5 MHz to 4.5 GHz, >110 dB 4.5 GHz to 6 GHz, >105 dB	
Measurements		
Insertion Loss/Gain		
Range	-120 to 100 dB	
Resolution	0.01 dB	
2-Port Phase		
Range	-180 to +180°	
Resolution	0.01°	

Bias-Tee (Option 002)

Voltage	
Voltage range	+12 to +32 V
Voltage resolution	0.1 V
Power	
8 W Max	

High Power CW Signal Generator (Option 003)

Frequency	
Frequency range	10 MHz to 5500 MHz
Frequency reference	<±1 ppm maximum
Frequency resolution	10 kHz
Output Power	
Range	10 MHz to 3.5 GHz, -60 to +10 dBm 3.5 GHz to 5.5 GHz, -60 to +5 dBm
Step	1 dB
Accuracy	±1.5 dB (20 to 30°C)

GPS Receiver and Antenna (Option 010)

GPS Indicator		
		Latitude, longitude, altitude
High-Frequency Accuracy		
Spectrum, interference, and signal analyzer		
GPS lock	±25 ppb	
Hold over (for 3 days)	±50 ppb (0 to 50°C)	15 minutes after satellite locked
Connector	SMA, female	

Interference Analyzer (Option 011)

Measurements	
Spectrum analyzer	Sound indicator, AM/FM audio demodulation, interference ID, spectrum recorder
Spectrogram	Collect up to 72 hours of data
RSSI	Collect up to 72 hours of data
Interference finder	
Spectrum replayer	
Dual spectrogram	

Channel Scanner (Option 012)

Frequency Range	
1 MHz to 8 GHz	
Measurement Range	
110 to +25 dBm	
Measurements	
Channel scanner	1 to 20 channels
Frequency scanner	1 to 20 frequencies
Custom scanner	1 to 20 channels or frequencies

Bluetooth® Connectivity (Option 013)

Personal area network (PAN)
File transfer profile (FTP)
Web-based remote control

Wi-Fi Connectivity (Option 016)

Interface type	USB LAN Card
Interface standard	IEEE 802.11 b/g/n
Chipset	RealTek, Ralink
USB wireless mode	Infrastructure mode
Web-based remote control	Internet Explorer, Chrome, Safari
Internet protocol version	IPv4, IPv6

GSM/GPRS/EDGE Signal Analyzer (Options 022 and 042)

General Parameters		
Frequency range	450 MHz to 500 MHz 820 MHz to 965 MHz 1.705 GHz to 1.995 GHz	
Input signal range	-40 to +25 dBm	
Burst power	±1.0 dB	
Frequency error	±10 Hz + ref freq accuracy	99% confidence level
GMSK modulation quality		
Phase RMS Accuracy		
Residual error	±1.0 degrees	(0 < Phase RMS < 8)
Phase peak accuracy	0.7 degrees (typical)	
8 PSK modulation quality	±2.0 degrees	(0 < Phase peak < 30)
EVM Accuracy		
Residual error	±1.5%	(2% < EVM < 8%)
RF power vs. time	2.5%	
	±0.25 symbol	
Connector	SMA, female	

Measurements

Option 022

Channel Power	Spectrum Emission Mask	Power vs. Time (slot)	Frequency error	Auto Measure	Phase error RMS
Channel power	Reference power	Burst power	Phase error RMS	Channel power	Phase error peak
Spectral density	Peak level at defined range	Max/min point	Phase error peak	Occupied bandwidth	EVM RMS*
Peak to average power		Power vs. Time (frame)	I/Q origin offset*	Spectrum emission mask	EVM Peak*
Occupied Bandwidth	Spurious Emissions	Frame average power	TSC	Spurious emission mask	I/Q origin offset
Occupied bandwidth	Peak frequency at defined range	Burst power (Slot 0 to 7)	BSIC	Burst power	C/I*
Integrated power		TSC (Slot 0 to 7)	C/I*	PvsT – mask	
Occupied power	Peak level at defined range	Constellation	EVM RMS*	Frame average power	
		Burst power	EVM Peak*	Frequency error	
		Modulation type	EVM 95th*		

Option 042

Channel/Frequency Scanner	Group (traffic, control)	Multipath Profile	Modulation Analyzer	Frame average power	Burst power
	BSIC (NCC, BCC)	(10 strongest)	Frame avg power trend	BSIC, frame no. and time	Modulation type
Channels or frequencies		Frame average power	C/I trend	C/I, frequency error	
Absolute power		SNR, delay			

Longitude, latitude, and satellite in all screens

* Measurements performed for 8PSK modulation signals (edge) only.

WCDMA/HSPA+ Signal Analyzer (Options 023 and 043)

General Parameters		
Frequency range	Band 1 to 14, 19 to 22, 25, 26	
Input signal range	-40 to +25 dBm	
RF channel power accuracy	±1.0 dB, ±0.7 dB (typical)	
Occupied bandwidth accuracy	±100 kHz	
Adjacent channel leakage ratio (ACLR)	<-56 dB, ±0.7 dB at 5 MHz offset, <-58 dB, ±0.8 dB at 10 MHz offset	
WCDMA modulation	QPSK	
HSPA+ modulations	QPSK, 16 QAM, 64 QAM	
Frequency error	±10 Hz + ref freq accuracy	99% confidence level
EVM accuracy	±2.0%	2% ≤ EVM ≤ 20%
Residual EVM	2.5% (typical)	
Code domain power	±0.5 dB relative power ±1.5 dB absolute power	Code channel power >-25 dB Code channel power >-25 dB
CPICH power accuracy	±0.8 dB (typical)	

Measurements					
Option 023					
Channel Power	ACLR	Constellation	Max, avg active power	Codogram	Auto Measure
Channel power	Reference power	CPICH power	Max, avg inactive power	Code utilization	Channel power
Spectral density	Abs power at defined range	Rho, EVM	Scramble code	RCSI	Occupied bandwidth
Peak to average power		Peak CDE	Relative Code Domain Error		Spectrum emission mask
Occupied Bandwidth	Rel power at defined range	Frequency error	Abs/Rel code power	CDP Table	ACLR
Occupied bandwidth		Time offset			Multi-ACLR
Integrated power	Multi-ACLR	Carrier feed-through	Code error	Reference power	Spurious emission mask
Occupied power	Lowest reference power	Scramble code	Individual code EVM, RCDE, and its constellation	Code utilization	Frequency error
Spectrum Emission Mask	Highest reference power	Code Domain Power		Code, spreading factor	EVM
Reference power	Abs power at defined range	Abs/Rel code power	Channel power	Allocation (channel type)	Peak CDE
Peak level at defined range	Rel power at defined range	Individual code EVM and its constellation		EVM, modulation type	Carrier feed-through
			Channel power	Relative, absolute power	CPICH absolute power
	Spurious Emissions	Power bar graph (Abs/Rel/Delta power)	CPICH, P-CCPCH, S-CCPCH, PICH, P-SCH, S-SCH		CPICH relative power
	Peak frequency at defined range	CPICH, P-CCPCH, S-CCPCH	Avg RCDE QPSK, 16 QAM, 64 QAM		Max inactive power
	Peak level at defined range	PICH, P-SCH, S-SCH			Scramble code
					Power Statistics CCDF

Option 043					
Channel Scanner (up to 6)	Scramble Scanner (up to 6)	Multipath Profile	Code Domain Power	Max, avg active power	Amplifier capacity
		Channel, multipath power	Abs/Rel code power	Max, avg inactive power	Peak amplifier capacity
Frequencies or channels	Channel power	Ec/Io, delay	Individual code EVM	Frequency error	Average amplifier capacity
Channel power, scramble code, CPICH power, Ec/Io	CPICH dominance Scramble code		Channel power Scramble code	Time offset, Rho Carrier feed-through	Code, peak utilization
	Ec/Io, CPICH power, delay		CPICH, P-CCPCH, S-CCPCH, PICH, P-SCH, S-SCH	(Composite) EVM	Average utilization
				CPICH EVM, P-CCPCH EVM	Route Map
					CPICH power, Ec/Io

Longitude, latitude, and satellite in all screens

cdmaOne/cdma2000® Signal Analyzer (Options 020 and 040)

General Parameters					
Frequency range	Band 0 to 10				
Input signal level	-40 to +25 dBm				
RF channel power accuracy	±1.0 dB (typical)				
CDMA compatibility	cdmaOne and cdma2000				
Frequency error	±10 Hz + ref freq accuracy	99% confidence level			
Rho accuracy	±0.005	0.9 < Rho < 1.0			
Residual Rho	>0.995 (typical)				
PN offset	1 x 64 chips				
Code domain power	±0.5 dB relative power ±1.5 dB absolute power	Code channel power > -25 dB Code channel power > -25 dB			
Pilot power accuracy	±1.0 dB (typical)				
Time offset	±1.0 µs, ±0.5 µs (typical)	External trigger			
Measurements					
Option 020					
Channel Power	ACPR	Spurious Emissions	Code Domain Power	RCSI	Auto Measure
Channel power	Reference power	Peak freq at defined range	Abs/Rel code power	Pilot, Paging, Sync, Q-Paging	Channel power
Spectral density	Abs power at defined range	Peak level at defined range	Channel power		Occupied bandwidth
Peak to average power		Constellation	Power bar graph (Abs/Rel)	CDP Table	Spectrum emission mask
Occupied Bandwidth	Rel power at defined range	Pilot power	Pilot, Paging, Sync, Q-Paging	Reference power	ACPR
Occupied bandwidth		Rho		Code utilization	Multi-ACPR
Integrated power	Multi-ACPR	EVM	Max, avg active power	Code, spreading factor	Rho
Occupied power	Lowest reference power	Frequency error	Max, avg inactive power	Allocation (channel type)	Frequency error
Spectrum Emission Mask	Highest reference power	Time offset	PN offset	Relative, absolute power	Time offset
Reference power	Abs power at defined range	Carrier feed-through	Codogram		Carrier feed-through
Peak level at defined range		PN offset	Code utilization		Pilot power
	Rel power at defined range				Max inactive power
					Power Statistics CCDF
Option 040					
Channel Scanner (up to 6)	PN Scanner (up to 6)	Multipath Profile	Code Domain Power	Frequency error	Code utilization
	Channel power		Abs/Rel code power	Time offset, Rho, EVM	Peak utilization
Frequencies or channels	Pilot dominance	Multipath power	Channel power	Carrier feed-through	Average utilization
Channel power, PN offset	PN offset	Ec/Io, delay	PN offset	Amplifier capacity	Route Map
Pilot power, Ec/Io	Ec/Io, pilot power, delay		Pilot, Paging, Sync, Q-Paging power	Peak amplifier capacity	Pilot power
				Max, avg active power	Average amplifier capacity
			Max, avg inactive power		

Longitude, latitude, and satellite in all screens

EV-DO Signal Analyzer (Options 021 and 041)

General Parameters		
Frequency range	Band 0 to 10	
Input signal level	-40 to +25 dBm	
RF channel power accuracy	±1.0 dB (typical)	
EV-DO compatibility	Rev 0, Rev A and Rev B	
Frequency error	±10 Hz + ref freq accuracy	99% confidence level
Rho accuracy	±0.005	0.9 < Rho < 1.0
Residual Rho	>0.995 (typical)	
PN offset	1 x 64 chips	
Code domain power	±0.5 dB relative power ±1.5 dB absolute power	Code channel power > -25 dB Code channel power > -25 dB
Pilot power accuracy	±1.0 dB (typical)	
Time offset	±1.0 µs, ±0.5 µs (typical)	External trigger

Measurements					
Option 021					
Channel Power	ACPR	Power vs. Time (idle and active slot)	Constellation (pilot, MAC 64/128, and data)	Code Domain Power (data)	Auto Measure
Channel power	Reference power				Channel power
Spectral density	Abs power at defined range	Slot average power	Channel power	Data channel power	Occupied bandwidth
Peak to average power		On/off ratio	Rho, EVM, peak CDE	Slot average power	Spectrum emission mask
Occupied Bandwidth	Rel power at defined range	Idle activity	Frequency error	Max, avg active power	ACPR
Occupied bandwidth		Pilot, MAC, data power	Time offset	Max, avg inactive power	Multi-ACPR
Integrated power	Multi-ACPR	Constellation (composite 64/128)	Carrier feed-through	PN offset	Pilot, MAC, data power
Occupied power	Lowest reference power		PN offset	MAC Codogram	On/off ratio
Spectrum Emission Mask	Highest reference power	Channel power	Modulation type*	Code utilization	PvsT mask (idle slot) or PvsT mask (active slot)
	Abs power at defined range	Rho, EVM, Peak CDE	Code Domain Power (pilot and MAC 64/128)	RCSI	
Reference power	Rel power at defined range	Frequency error		Slot, pilot, MAC, data	Frequency error
Peak level at defined range	Rel power at defined range	Time offset	Pilot/MAC channel power	MAC CDP Table	Time offset
		Carrier feed-through	Slot average power	Reference power	Carrier feed-through
	Spurious Emissions	PN offset	Max active I/Q power	Code utilization	Pilot, MAC, data Rho
	Peak frequency at defined range	Pilot, MAC, data power	Avg active I/Q power	Code, spreading factor	Max inactive I/Q power
		Pilot, MAC, data EVM	Max inactive I/Q power	Allocation (channel type)	PN offset
	Peak level at defined range		Avg inactive I/Q power	Relative, absolute power	Power Statistics CCDF
			PN offset		

Option 041					
Channel Scanner (up to 6)	PN Scanner (up to 6)	Multipath Profile	Code Domain Power	Frequency error	Peak utilization
	Channel power	Channel power	Slot average power	Time offset	Average utilization
Frequencies or channels	Pilot dominance	Multipath power	PN offset	Carrier feed-through	Route Map
PN offset	PN offset	Ec/Io, delay	Pilot, MAC, data power	Max active I/Q power	Pilot power
Pilot, MAC, data power	Ec/Io, pilot power, delay		Pilot, MAC, data Rho	Avg active I/Q power	Ec/Io
			(Composite) EVM	Code utilization	

Longitude, latitude, and satellite in all screens

*Measurement is performed in Data Constellation only.

TD-SCDMA Signal Analyzer (Options 025 and 045)

General Parameters					
Frequency range	1.785 GHz to 2.22 GHz				
Input signal level	-40 to +25 dBm				
Channel power (RRC) accuracy	±1.0 dB (typical)				
Modulations	QPSK, 8 PSK, 16 QAM, 64 QAM				
Frequency error	±10 Hz + ref freq accuracy	99% confidence level			
Residual EVM (RMS)	2.0% (typical)	P-CCPCH slot and 1 channel			
Code domain power	±0.5 dB relative power ±1.5 dB absolute power	Code channel power >-25 dB Code channel power >-25 dB			
Time error (Tau)	±0.2 µs (typical)	External trigger			
Spreading factor	Auto (DL, UL), 1, 2, 4, 8, 16				
Measurements					
Option 025					
Channel Power	Multi-ACLR	Power vs. Time (frame)	Midamble Power	Code Error	Auto Measure
Channel power	Lowest reference power	Slot power	Slot power	Code power and error	Channel power
Spectral density	Highest reference power	(TS [0 to 6], DwPTS, UpPTS)	DwPTS power	Individual code EVM and its constellation	Occupied bandwidth
Peak to average power	Abs power at defined range	Data power left	Midamble power (1 to 16)		Spectrum emission mask
Occupied Bandwidth		(TS [0 to 6], DwPTS, UpPTS)	Code Power	Data format	ACLR
Occupied bandwidth	Rel power at defined range	Midamble Power	Abs/Rel code power	Slot, DwPTS power	Multi-ACLR
Integrated power		(TS [0 to 6], DwPTS, UpPTS)	Individual code EVM and its constellation	No. of active code	Slot power
Occupied power	Spurious Emissions	Data power right		Scramble code	DwPTS power
Spectrum Emission Mask	Peak frequency at defined range	(TS [0 to 6], DwPTS, UpPTS)	Data format	Max active code power	UpPTS power
Reference power		Time offset	Slot power, DwPTS power	Avg active code power	On/off slot ratio
Peak level at defined range	Peak level at defined range	(TS [0 to 6], DwPTS, UpPTS)	No. of active code	Max inactive code power	Frequency error
ACLR		Power vs. Time (mask)	Scramble code	Avg inactive code power	EVM RMS
Reference power	Power vs. Time (slot)	Slot power	Max active code power	Peak CDE and peak active CDE	Peak CDE
Abs power at defined range	Slot power	On/off slot ratio	Avg active code power		Max inactive power
	DwPTS power	Off power	Max inactive code power		Scramble code
Rel power at defined range	UpPTS power	Timogram	Avg inactive code power		
	On/off slot ratio	Constellation			
	Slot PAR	Rho			
	DwPTS code	EVM RMS, EVM peak			
		Peak CDE			
		Frequency error			
		I/Q origin offset			
		Time offset			
Option 045					
Sync-DL ID Scanner (32)	Sync-DL ID vs. Tau (up to 6)	Sync-DL ID Multipath	Sync-DL ID Analyzer	Pilot dominance	Route Map
Scramble code group		Ec/Io, Tau	DwPTS power, Ec/Io trend	EVM, frequency error	DwPTS Power
Ec/Io, Tau	ID, power, Ec/Io, Tau	DwPTS power	DwPTS power	Ec/Io, CINR	
DwPTS power	DwPTS power	Pilot dominance			
Pilot dominance	Pilot dominance				

Longitude, latitude, and satellite in all screens TD-SCDMA Signal Analyzer (Option 025)

Mobile WiMAX Signal Analyzer (Options 026 and 046)

General Parameters		
Frequency range	2.1 GHz to 2.7 GHz 3.4 GHz to 3.85 GHz	
Input signal level	-40 to +25 dBm	
Channel power accuracy	±1.0 dB (typical)	
Supported bandwidth	7 MHz, 8.75 MHz, and 10 MHz	
Frequency error	±10 Hz + ref freq accuracy	99% confidence level
Residual EVM (RMS)	1.5% (typical)	

Measurements					
Option 026					
<i>Channel Power</i>	<i>Spurious Emissions</i>	<i>Constellation</i>	<i>EVM vs. Subcarrier</i>	<i>Auto Measure</i>	Time offset
Channel power	Peak frequency at defined range	Channel power	RCE RMS, RCE peak	Channel power	I/Q origin offset
Spectral density		RCE RMS, RCE peak	EVM RMS, EVM peak	Occupied bandwidth	Spectral flatness
Peak to average power	Peak level at defined range	EVM RMS, EVM peak	Segment ID, cell ID	Spectrum emission mask	Frequency error
<i>Occupied Bandwidth</i>	<i>Power vs. Time (frame)</i>	Frequency error	Preamble index	Spurious emission mask	RCE RMS
Occupied bandwidth	Channel power	Time offset	<i>EVM vs. Symbol</i>	Preamble power	RCE peak
Integrated power	Frame average power	Segment ID, cell ID	RCE RMS, RCE peak	DL burst power	EVM RMS
Occupied power	Preamble power	Preamble index	EVM RMS, EVM peak	UL burst power	EVM peak
<i>Spectrum Emission Mask</i>	DL burst power	<i>Spectral Flatness</i>	Segment ID, cell ID	Frame average power	<i>Power Statistics CCDF</i>
Reference power	UL burst power	Average subcarrier power	Preamble index		
Peak level at defined range	I/Q origin offset	Subcarrier power variation			
	Time offset				
		Max, min, avg power			

Option 046					
<i>Preamble Scanner (up to 6)</i>	<i>Multipath Profile</i>	<i>Preamble Power Trend</i>	Frame avg power	Preamble	<i>Route Map</i>
	Total preamble power	Relative power trend	Relative power	Cell ID, sector ID	Preamble power
Total preamble power	Multipath power	Preamble power	C/I	Time offset	
Preamble, relative power	Relative power, delay				
Cell ID, sector ID	Preamble power trend				
Time offset					

Longitude, latitude, and satellite in all screens

LTE/LTE-Advanced—FDD Signal Analyzer (Options 028/030/032 and 048)

General Parameters						
Frequency range	Band 1 to 14, 17 to 26					
Input signal level	-40 to +25 dBm					
Channel power accuracy	±1.0 dB (typical)					
Supported bandwidths	1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, and 20 MHz					
Frequency error	±10 Hz + ref freq accuracy	99% confidence level				
Residual EVM (RMS)	2.0% (typical)	Data EVM				
Measurements						
Option 028/030/032						
Channel Power	Power vs. Time (frame)	Control Channel	Data EVM RMS, peak	Antenna 1 RS power and EVM	PDSCH/Data* 64 QAM EVM	
Channel power	Frame average power	Control channel summary (P-SS, S-SS, PBCH, PCFICH, PHICH, PDCCH, RS, MBSFN*)	RS EVM RMS, peak	Antenna 2 RS power and EVM**	PDSCH 256QAM EVM	
Spectral density	Subframe power		Cell, group, sector ID	Frame	Data EVM RMS, peak	
Peak to average power	First slot power		MBSFN*		Antenna 3 RS power and EVM**	RS, P-SS, S-SS EVM
Occupied Bandwidth	Second slot power		Frame summary table	(P-SS, S-SS, PBCH, PCFICH, PHICH, PDCCH, RS, MBSFN*, PDSCH/	Data Allocation Map	RS, P-SS, S-SS power
Occupied bandwidth	Cell ID, I/Q origin offset		Frame summary table		Data allocation vs frame	PBCH power
Integrated power	Time offset		EVM, relative or absolute power, modulation type	Data* QPSK, PDSCDH/	Resource block power	OFDM power
Occupied power	Constellation		Each control channels'	Data* 16 QAM, PDSCH/	OFDM symbol power	Time error
Spectrum Emission mask	MBSFN*		I/Q diagram	Data* 64 QAM, PDSCH 256QAM)	Data utilization	I/Q origin offset
Reference power	RS TX power		Modulation format	EVM, relative or absolute power, modulation type	Data allocation vs sub-frame	Carrier Aggregation**
Peak level at defined range	PDSCH/Data* 16 QAM EVM		Frequency error	Frame average power	Resource block power	Component carriers: up to 5
ACLR	PDSCH/Data* 64 QAM EVM	I/Q origin offset	OFDM symbol power	Auto Measure	Subframe power	
Reference power	PDSCH 256QAM EVM	EVM RMS, EVM peak	Frequency error	Channel power	P-SS, S-SS, PBCH, RS power and EVM	
Abs power at defined range	Data EVM RMS	Subframe	I/Q origin offset	Occupied bandwidth	PDSCH/Data* QPSK power and EVM	
Rel power at defined range	Data EVM peak	MBSFN*	EVM RMS, peak	Spectrum emission mask	PDSCH/Data* 16 QAM power and EVM	
Multi-ACLR	Frequency error	Subframe summary table (P-SS, S-SS, PBCH, PCFICH, PHICH, PDCCH, RS, MBSFN*, PDSCH/	Data EVM RMS, peak	ACL	PDSCH/Data* 64 QAM power and EVM	
Lowest reference power	Time error	Data* QPSK, PDSCH/	Cell, group, sector ID	Multi-ACLR	PDSCH/Data* 64 QAM power and EVM	
Highest reference power	Data Channel	Data* 16 QAM, PDSCH/	Time Alignment Error	Spurious emission mask	PDSCH/Data* 64 QAM power and EVM	
Abs power at defined range	Resource block power	Data* 64 QAM, PDSCH 256QAM)	Time alignment error trend	Frame average power	PDSCH 256QAM EVM	
Rel power at defined range	I/Q diagram	EVM, relative or absolute power, modulation type	Time alignment error	Time alignment error	Cell ID	
Spurious Emissions	RB power	Subframe power	Time alignment error	Frequency error	Frequency error	
Peak frequency at defined range	Modulation format	EVM, relative or absolute power, modulation type	RS power difference	Frequency error	Frequency error	
Peak level at defined range	I/Q origin offset	Subframe power	Antenna 0 RS power and EVM	MBSFN*	Time alignment error	
	EVM RMS, EVM peak	OFDM symbol power		PDSCH/Data*QPSK EVM	Antenna port	
		Frequency, time error		PDSCH/Data*16 QAM EVM	Power Statistics CCDF	
Option 048						
Channel Scanner (up to 6)	ID Scanner (up to 6)	Multipath Profile	Control channel table	PMCH subframe power*	Route Map	
Frequency or channels	RSRP/RSRQ dominance	Cell, group, sector ID	(P-SS, S-SS, PBCH, PCFICH, RS 0, RS 1, RS 2**, RS 3**, MBSFN RS*)	Time alignment error	RSRP	
Cell, group, sector ID	S-SS RSSI dominance	Ant 0 RS Ec/Io, delay		Time offset	RSRQ	
Channel power	S-SS Ec/Io dominance	Ant 1 RS Ec/Io, delay		Datagram	RS-SINR	
RSRP/RSRQ	Cell, group, sector ID	Ant 2 RS Ec/Io**, delay**	Absolute power	Datagram	S-SS RSSI	
RS-SINR	RSRP/RSRQ	Ant 3 RS Ec/Io**, delay**	Relative power	Resource block power	P-SS/S-SS Power	
Antenna port	RS-SINR/S-SS RSSI	Control Channel	EVM RSM, phase	Data utilization	S-SS Ec/Io	
	P-SS/S-SS Power	RS power trend	Frequency error			
	S-SS Ec/Io	Cell, group, sector ID				

Longitude, latitude, and satellite in all screens

*Measurement is performed when MBMS is enabled.

**Measurement is performed when option 030 is enabled.

LTE/LTE-Advanced— TDD Signal Analyzer (Options 029/031/033 and 048)

General Parameters		
Frequency range	Band 33 to 43	
Input signal level	-40 to +25 dBm	
Channel power accuracy	±1.0 dB (typical)	
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
Residual EVM (RMS)	2.0% (typical)	Data EVM

Measurements

Option 029/031/033					
Channel Power	Spurious Emissions	Data EVM peak	Subframe	Antenna 3 RS power and EVM**	PDSCH/Data* 64 QAM EVM
Channel power	Peak frequency at defined range	Frequency error	MBSFN*		PDSCH 256QAM EVM
Spectral density		Time error	Subframe summary table (P-SS, S-SS, PBCH, PCFICH, PHICH, PDCCH, RS, MBSFN*, PDSCH/Data*)	Cell, group, sector ID	Data EVM RMS, peak
Peak to average power	Peak level at defined range	Data Channel		Data Allocation Map	RS, P-SS, S-SS EVM
Occupied Bandwidth		MBSFN*		Data allocation vs frame	RS, P-SS, S-SS power
Occupied bandwidth	Power vs. Time (frame)	Resource block power		Resource block power	PBCH power
Integrated power	Frame average power	I/Q diagram		OFDM symbol power	Subframe power
Occupied power	Subframe power	RB power		Data utilization	OFDM power
Spectrum Emission Mask	First slot power	Modulation format	EVM, relative or absolute power, modulation type	Data allocation vs subframe	Time error
Reference power	Second slot power	I/Q origin offset			I/Q origin offset
Peak level at defined range	Cell ID, I/Q origin offset	EVM RMS, EVM peak	Subframe power	Resource block power	Carrier Aggregation**
	Time offset	Control Channel	OFDM symbol power	Data utilization	Component carriers: up to 5
ACLR	Power vs. Time (slot)	Control channel summary (P-SS, S-SS, PBCH, PCFICH, PHICH, PDCCH, RS, MBSFN*)	Frequency, time error	Auto Measure	Subframe power
Reference power	Slot average power		Data EVM RMS, peak	Channel power	P-SS, S-SS, PBCH, RS power and EVM
Abs power at defined range	Transient period length		RS EVM RMS, peak	Occupied bandwidth	
	Off power		Cell, group, sector ID	Spectrum emission mask	
Rel power at defined range	Constellation	EVM, relative or absolute power, modulation type	Time Alignment Error	ACLR	PDSCH/Data* QPSK power and EVM
	MBSFN*		Time alignment error trend	Multi-ACLR	
Multi-ACLR	RS TX power	Each control channels'	Time alignment error	Spurious emission mask	PDSCH/Data* 16 QAM power and EVM
Lowest reference power	PDSCH/Data* QPSK EVM	I/Q diagram	RS power difference	Slot average power	
Highest reference power	PDSCH/Data* 16 QAM EVM	Modulation format	Antenna 0 RS power and EVM	Off power	PDSCH/Data* 64 QAM power and EVM
Abs power at defined range		Frequency error		Transition period	PDSCH 256QAM EVM
Rel power at defined range	PDSCH/Data* 64 QAM EVM	I/Q origin offset	Antenna 1 RS power and EVM	Time alignment error	Cell ID
	PDSCH 256QAM EVM	EVM RMS, EVM peak	Antenna 2 RS power and EVM**	MBSFN*	Frequency error
				PDSCH/Data* QPSK EVM	Time alignment error
					Antenna port
	Data EVM RMS				Power Statistics CCDF

Option 049					
Channel Scanner (up to 6)	ID Scanner (up to 6)	Multipath Profile	Control Channel	EVM RSM, phase	Route Map
	RSRP/RSRQ dominance	Cell, group, sector ID	RS power trend	Frequency error	RSRP
Frequency or channels	S-SS RSSI dominance	Ant 0 RS Ec/Io, delay	Cell, group, sector ID	PMCH subframe power*	RSRQ
Cell, group, sector ID	S-SS Ec/Io dominance	Ant 1 RS Ec/Io, delay	Control channel table (P-SS, S-SS, PBCH, PCFICH, RS 0, RS 1, RS 2**, RS 3**, MBSFN RS*)	Time alignment error	RS-SINR
Channel power	Cell, group, sector ID	Ant 2 RS Ec/Io**, delay**		Time offset	S-SS RSSI
RSRP/RSRQ	RSRP/RSRQ	Ant 3 RS Ec/Io**, delay**		Datagram	P-SS, S-SS power
RS-SINR	RS-SINR/S-SS RSSI			Datagram	S-SS Ec/Io
Antenna port	P-SS/S-SS power		Absolute power	Resource block power	
	S-SS Ec/Io		Relative power	Data utilization	

Longitude, latitude, and satellite in all screens

*Measurement is performed when MBMS is enabled.

**Measurement is performed when option 031 is enabled.

EMF Analyzer (Option 050)

General Parameters		
Supported Antenna	Isotropic Antenna G700050380 26 MHz to 3 GHz	
Mode	Sweep / FFT	
Trace	X-Axis, Y-Axis, Z-Axis, Current, Isotropic, Isotropic Accumulated	
Limit lines	MSL, ICNIRP	
Dwell Time	1 to 60s	
Measurement Time	1 to 30 min (# of measurement = Measurement Time / (Dwell Time x 3))	
Units	dB μ V/m, dBmV/m, dBV/m, V/m, W/m ² , dBm/m ² , dBW/m ² , A/m, dBA/m, and Watt/cm ² .	
Miscellaneous	Spectrum logging and Replay Export to CSV PDF Report Generation	
Measurement		
Option 050 and G700050380		
Trace: X-Axis, Y-Axis, Z-Axis, Current, Isotropic, Isotropic Accumulated	Isotropic EMF Power: AVG, Max, Min	Accumulated Isotropic EMF Power: AVG, Max, Min

RFoCPRI™/Interference Analyzer (Option 008, 060, 061, 062, 063, 064, and 065)

General Parameters					
Optical interface	Dual SFP/SFP+ (supports all MSA compliant SFP modules)				
Line rates	614.4 Mbps (1x) , 1228.8 Mbps (2x)		Option 008 and 060		
	2457.6 Mbps (4x)		Option 008 and 061		
	3072.0 Mbps (5x)		Option 008 and 062		
	4915.2 Mbps (8x)		Option 008 and 063		
	6144.0 Mbps (10x)		Option 008 and 064		
	9830.4 Mbps (16x)		Option 008 and 065		
Resolution Bandwidth (RBW)					
-3 dB bandwidth	1 kHz to 10 kHz (span ≤ 3.84 MHz) 1 KHz to 100 kHz (3.84 MHz < span < 30.86 MHz)		1-3-10 sequence		
Accuracy	±10% (nominal)				
VBW					
-3 dB bandwidth	1 Hz to 100 KHz		1-3-10 sequence		
Accuracy	±10% (nominal)				
CPRI Parameter					
IQ Sample width	4 – 20 (step 1)				
Mapping method	1 and 3				
TX clock	Internal/external/recovered				
Port type	Master/slave				
Map position	AxC#0 – AxC#7				
Bandwidth	1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
Measurements					
Layer-2 Monitoring		Layer-2 Term		Interference analyzer	
Port 1	Port 2	Port 1 or 2 (exclusive)		Spectrum	Sound indicator, AM/FM audio demodulation, interference ID, spectrum recorder
LOS	LOS	LOS SDI			
LOF	LOF	LOF RAI		Spectrogram	Collect up to 72 hr of data
SDI	SDI	Optic RX level	dBm		
RAI	RAI	Protocol version	1 to 10	RSSI	Collect up to 72 hr of data
Optic RX level	Optic RX level	C and M HDLC rate (kbps)	No HDLC, 240, 480, 960, 1920, 2400		
SFP Information	SFP Information	C and M Ethernet subchannel number	20 to 63	Spectrum replay	X1, x2, x4, x8
Wavelength	Wavelength	Alarm Injection		PIM Detection	
Vendor	Vendor	R-LOS	Single	Single carrier	
Vendor PN	Vendor PN	R-LOF	Single	Multi carrier	
Vendor rev	Vendor rev	Error Injection		PIM calculator	
Power level type	Power level type	Code	Single/rate		
Diagnostic byte	Diagnostic byte	K30.7	Single/rate		
Nominal rate	Nominal rate	Error rate	1E-3 to 1E-9		
Min rate	Min rate				
Max RX level	Max RX level				
Max TX level	Max TX level				

RFoBSAI™ Interference Analyzer (Option 070, 071, 072, 073)

General Parameters		
Optical interface	Dual SFP/SFP+ (supports all MSA compliant SFP modules)	
Line rates	768 Mbps (1x)	Option 008 and 070
	1536 Mbps (2x)	Option 008 and 071
	3072 Mbps (4x)	Option 008 and 072
	6144 Mbps (8x)	Option 008 and 073
Resolution bandwidth (RBW)	1 kHz to 10 kHz (span ≤ 3.84 MHz)	
	1 kHz to 100 kHz (3.84 MHz < span ≤ 30.86 MHz)	
	Accuracy	±10% (nominal)
Video bandwidth (RBW)	1 Hz to 100 kHz	
	Accuracy	±10% (nominal)
RP3 type	LTE (FDD/TDD), UMTS (FDD)	
RP3 address	Hexadecimal	
TX clock	Internal/external/recovered	
Port type	Master/slave	
Bandwidth	LTE-FDD/TDD: 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz UMTS: 3 MHz for downlink, 5 MHz for uplink	
RP3 address list	RP3 address, Technology, Scrambler seed*, Message Count*	
Scrambler seed	Nx7 Index: 0 – 17, step 1	

Measurements					
Layer-2 Monitoring		Layer-2 Term		Interference analyzer	
Port 1	Port 2	Port 1 or 2 (exclusive)			
LOS	LOS	LOS		Spectrum	Sound indicator
LOF	LOF	LOF			AM/FM audio demodulation
Code violation	Code violation	Optic RX level	dBm		Interference ID
K30.7 words	K30.7 words	Optic TX level	dBm	Spectrogram	Spectrum recorder
Optic RX level	Optic RX level	Port type	Master		Collect up to 72 hr of data
Optic TX level	Optic TX level	TX state	State machine	RSSI	Collect up to 72 hr of data
Messages address	Message address	RX state	State machine	Spectrum replay	X1, x2, x4, x8
Message counter	Message counter	TX address	RP3 address (hexadecimal)		PIM detection
SFP Information	SFP Information	RX address	RP3 address (hexadecimal)		Multicarrier
Wavelength	Wavelength	Word sync loss event			PIM calculator
Vendor	Vendor	Code violation			
Vendor PN	Vendor PN	K30.7 words			
Vendor rev	Vendor rev	Frame sync loss events			
Power level type	Power level type	Alarm Injection			
Diagnostic byte	Diagnostic byte	K30.7	Single		
Nominal rate	Nominal rate	Error Injection			
Min rate	Min rate	Code	Single/rate		
Max RX level	Max RX level	Error rate	1E-3 to 1E-9		
Max TX level	Max TX level				

*Available only when the link rate is 6.1 Gbps

RFoCPRI LTE-FDD Signal Generator (Option 081)

General Parameters		
Optical interface	Dual SFP/SFP+ (supports all MSA compliant SFP modules)	
Line rates	614.4 Mbps (1x), 1228.8 Mbps (2x), 2457.6 Mbps (4x), 3072.0 Mbps (5x), 4915.2 Mbps (8x), 6144.0 Mbps (10x), 9830.4 Mbps (16x)	
IQ Sample width	8 – 20 bits	
Mapping method	Packed and Flexible	
Waveform	Off: CW On: LTE-FDD E-TM1.1, E-TM1.2, E-TM2, E-TM3.1, E-TM3.2, E-TM3.3	
Bandwidth	5 MHz, 10 MHz, 15 MHz, 20 MHz	
Sampling Frequency	N x 3.84 MHz (N=2, 4, 6, 8)	
Gain dynamic range	0 to -50 dB	
Frequency error	±10 Hz + ref freq accuracy	99% confidence level
Residual EVM (RMS)	0.2% (typical)	Data EVM

RFoCPRI™ LTE-TDD Signal Generator (Option 082)

General Parameters		
Optical Hardware (Option 008)		
Interface	Two SFP/SFP+ ports (supports all MSA compliant SFP modules), one Ethernet port	
CPRI Parameter		
Line coding	8B/10B	
Line rates	614.4 Mbps, 1228.8 Mbps (Option 060)	
	2457.6 Mbps (Option 061)	
	3072.0 Mbps (Option 062)	
	4915.2 Mbps (Option 063)	
	6144.0 Mbps (Option 064)	
	9830.4 Mbps (Option 065)	
CPRI Parameter		
IQ Sample width	4 – 20 (step 1)	
Mapping method	1 and 3	
Waveform	CW, LTE-TDD E-TM1.1, E-TM1.2, E-TM2, E-TM3.1, E-TM3.2, E-TM3.3	
Bandwidth	5 MHz, 10 MHz, 15 MHz, 20 MHz	
Sampling Frequency	N x 3.84 MHz (N=2, 4, 6, 8)	
Gain dynamic range	0 to -50 dB	
Frequency error	±10 Hz + ref freq accuracy, 99% confidence level	
Residual EVM (RMS)	0.02% (typical), data EVM	

RFoOBSAI™ LTE-FDD Signal Generator (Option 086)

General Parameters	
Optical Hardware (Option 008)	
Interface	Two SFP/SFP+ ports (supports all MSA compliant SFP modules), one Ethernet port
OBSAI Parameter	
Line coding	8B/10B
Line rates	768 Mbps (Option 070)
	1536 Mbps (Option 071)
	3072 Mbps (Option 072)
	6144 Mbps (Option 073)
CPRI Parameter	
RP3 type	LTE
RP3 address	Hexadecimal
Waveform	CW, LTE-FDD E-TM1.1, E-TM1.2, E-TM2, E-TM3.1, E-TM3.2, E-TM3.3
Bandwidth	5 MHz, 10 MHz, 15 MHz, 20 MHz
Sampling frequency	N x 3.84 MHz (N=2, 4, 6, 8)
Gain dynamic range	0 to -50 dB
Frequency error	±10 Hz + ref freq accuracy, 99% confidence level
Residual EVM (RMS)	0.02% (typical), data EVM

RFoCPRI LTE-FDD Signal Analyzer (Option 091)

General Parameters		
Optical interface	Dual SFP/SFP+ (supports all MSA compliant SFP modules)	
Line rates	614.4 Mbps (1x), 1228.8 Mbps (2x), 2457.6 Mbps (4x), 3072.0 Mbps (5x), 4915.2 Mbps (8x), 6144.0 Mbps (10x), 9830.4 Mbps (16x)	
RBW	100 kHz	
IQ Sample width	Uplink: 4 - 20 bits, Downlink: 8 - 20 bits	
Mapping method	Packed and Flexible	
AxC Container/Carrier	Up to 8 AxC container per carrier	
LTE Signal Bandwidth	5 MHz, 10MHz, 15MHz, 20MHz	
Span	Fixed and equal to sampling frequency of LTE signal.	
Frequency error	±10 Hz + ref freq accuracy	99% confidence level
Residual EVM (RMS)	0.02% (typical)	Data EVM

Measurements				
Option 091				
Channel Power	Power vs. Time (frame)	Control Channel	Data EVM RMS, peak	Antenna 1 RS power and EVM
Channel power	Frame average power	Control channel summary (P-SS, S-SS, PBCH, PCFICH, PHICH, PDCCH, RS, MBSFN*)	RS EVM RMS, peak	Antenna 2 RS power and EVM
Spectral density	Subframe power		Cell, group, sector ID	
Peak to average power	First slot power		Frame	
Occupied Bandwidth	Second slot power		MBSFN*	Data Allocation Map
Occupied bandwidth	Cell ID, I/Q origin offset	EVM, relative or absolute power, modulation type	Frame summary table (P-SS, S-SS, PBCH, PCFICH, PHICH, PDCCH, RS, MBSFN*, PDSCH/Data* QPSK, PDSCH/Data* 16 QAM, PDSCH/Data* 64 QAM)	Data allocation vs frame
Integrated power	Constellation	Each control channels'		Resource block power
Occupied power	MBSFN*	I/Q diagram		OFDM symbol power
	RS TX power	Modulation format	EVM, relative or absolute power, modulation type	Data utilization
	PDSCH/Data* QPSK EVM	Frequency error		EVM, relative or absolute power, modulation type
	PDSCH/Data* 16 QAM EVM	I/Q origin offset	EVM, relative or absolute power, modulation type	
	PDSCH/Data* 64 QAM EVM	EVM RMS, EVM peak		EVM, relative or absolute power, modulation type
		Subframe	Frame average power	
	Data EVM RMS	MBSFN*	OFDM symbol power	
	Data EVM peak	Error rate	Frequency error	
	Frequency error	Subframe summary table (P-SS, S-SS, PBCH, PCFICH, PHICH, PDCCH, RS, MBSFN*, PDSCH/Data* QPSK, PDSCH/Data* 16 QAM, PDSCH/Data* 64 QAM)	I/Q origin offset	
	Time error		EVM RMS, peak	
	Data Channel		Data EVM RMS, peak	
	MBSFN*	QPSK, PDSCH/Data* 16 QAM, PDSCH/Data* 64 QAM)	Cell, group, sector ID	
	Resource block power		Time Alignment Error	
	I/Q diagram		Time alignment error trend	
	RB power modulation format	EVM, relative or absolute power, modulation type	Time alignment error	
	I/Q origin offset	Subframe power	RS power difference	
	EVM RMS, EVM peak	OFDM symbol power	Antenna 0 RS power and EVM	
		Frequency, time error		

*Measurement is performed when MBMS is enabled.

RFoCPRI™ LTE-TDD Analyzer (Option 092)

General Parameters				
Optical Hardware (Option 008)				
Interface	Two SFP/SFP+ ports (supports all MSA compliant SFP modules), one Ethernet port			
CPRI Parameter				
Line coding	8B/10B			
Line rates	614.4 Mbps, 1228.8 Mbps (Option 060)			
	2457.6 Mbps (Option 061)			
	3072.0 Mbps (Option 062)			
	4915.2 Mbps (Option 063)			
	6144.0 Mbps (Option 064)			
9830.4 Mbps (Option 065)				
Resolution Bandwidth (RBW)				
-3 dB bandwidth	100 kHz			
Accuracy	±10% (nominal)			
CPRI Parameter				
IQ Sample width	4 – 20 (step 1)			
Mapping method	1 and 3			
TX clock	Internal/external/recovered			
Port type	Master/slave			
Map position	AxC#0 – AxC#7			
Bandwidth	5 MHz, 10 MHz, 15 MHz, 20 MHz			
Span	Fixed and equal to sampling frequency of LTE signal			
Frequency error	±10 Hz + ref freq accuracy, 99% confidence level			
Residual EVM (RMS)	0.02% (typical), data EVM			
Measurements				
Option 008, 060, 061, 062, 063, 064, and 065				
Channel Power	Constellation	Data Channel	Time Alignment Error	Data Allocation Map
Channel power	MBSFN*	MBSFN*	Time alignment error trend	Data allocation vs. frame
Spectral density	RS TX power	Resource block power	Time alignment error	Resource block power
Peak to average power	PDSCH/Data* QPSK EVM	I/Q diagram	RS power difference	OFDM symbol power
Occupied Bandwidth	PDSCH/Data* 16QAM EVM	RB power	Antenna 0 RS power, EVM	Data utilization
Occupied bandwidth	PDSCH/Data* 64QAM EVM	Modulation format	Antenna 1 RS power, EVM	Data allocation vs.subframe
Integrated power	Data EVM RMS, peak	I/Q origin offset	Cell, group, sector ID	Resource block power
Occupied power	Frequency error	EVM RMS, peak		Data utilization
Power vs. Time (Frame)	Time error	Subframe		Power Statistics CCDF
Frame average power	Control Channel	MBSFN*		Average power
Subframe power	Control Channel summary EVM, rel., or abs. power of each control channel	Subframe summary		Peak power crest factor
First Slot power		EVM, abs. and rel. power		
Second Slot power		Subframe power		
Cell ID, I/Q origin offset	IQ diagram	OFDM symbol power		
Time offset	Modulation format	Frequency error		
Power vs. Time (Slot)	Frequency error	Time error		
Slot average power	I/Q origin offset	Data EVM RMS, peak		
Transient period length	Control EVM RMS, peak	RS EVM RMS, peak		
Off power		Cell, group, sector ID		

Longitude, latitude, and satellite in all screens

*Measurement is performed when MBMS is enabled.

RFoBSAI™ LTE-FDD Analyzer (Option 096)

General Parameters				
Optical Hardware (Option 008)				
Interface	Two SFP/SFP+ ports (supports all MSA compliant SFP modules), one Ethernet port			
OBSAI Parameter				
Line coding	8B/10B			
Line rates	768 Mbps (Option 070)			
	1536 Mbps (Option 071)			
	3072 Mbps (Option 072)			
	6144 Mbps (Option 073)			
Resolution Bandwidth (RBW)				
-3 dB bandwidth	100 kHz			
Accuracy	±10% (nominal)			
OBSAI Parameter				
RP3 type	LTE (FDD/TDD), UMTS (FDD)			
RP3 address	Hexadecimal			
TX clock	Internal/external/recovered			
Port type	Master/slave			
Bandwidth	LTE-FDD/TDD: 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz UMTS: 3 MHz for downlink, 5 MHz for uplink			
RP3 address list	RP3 address, technology, scrambler seed*, message count			
Scrambler seed	Nx7 Index: 0 – 17, step 1			
Measurements				
Channel Power	Constellation	Data Channel	Time Alignment Error	Data Allocation Map
Channel power	MBSFN**	MBSFN**	Time alignment error trend	Data allocation vs. frame
Spectral density	RS TX power	Resource block power	Time alignment error	Resource block power
Peak to average power	PDSCH/data** QPSK EVM	I/Q diagram	RS power difference	OFDM symbol power
Occupied Bandwidth	PDSCH/data** 16QAM EVM	RB power	Antenna 0 RS power, EVM	Data utilization
Occupied bandwidth	PDSCH/data** 64QAM EVM	Modulation format	Antenna 1 RS power, EVM	Data allocation vs. subframe
Integrated power	Data EVM RMS, peak	I/Q origin offset	Cell, group, sector ID	Resource block power
Occupied power	Frequency error	EVM RMS, peak	Frame	Data utilization
Power vs. Time (frame)	Time error	Subframe	MBSFN**	
Frame average power	Control Channel	MBSFN**	Frame summary	
Subframe power	Control channel summary EVM, rel., or abs power of each control channel	Subframe summary	EVM, abs. and rel. power	
First slot power		EVM, abs. and rel. power	Frame average power	
Second slot power		Subframe power	OFDM symbol power	
Cell ID, I/Q origin offset	IQ Diagram	OFDM symbol power	Frequency error	
Time offset	Modulation format	Frequency error	IQ origin offset	
Power Statistics CCDF	Frequency error	Time error	Data EVM RMS, peak	
Average power	I/Q origin offset	Data EVM RMS, peak	Control EVM RMS, peak	
Peak power Crest Factor	Control EVM RMS, peak	RS EVM RMS, peak	Cell, group, sector ID	
		Cell, group, sector ID		

Longitude, latitude, and satellite in all screens

*OBSAI 6144 Mbps only.

**Measurement is performed when MBMS is enabled.

RFoCPRI BBU Emulation for Alcatel-Lucent (Option 101)

General Parameters			
Optical Hardware (Option 008)			
Interface	Two SFP/SFP+ ports (supports all MSA compliant SFP modules), one Ethernet port		
CPRI Parameter			
Line coding	8B/10B		
Line rates	614.4 Mbps, 1228.8 Mbps (Option 060)		
	2457.6 Mbps (Option 061)		
	3072.0 Mbps (Option 062)		
	4915.2 Mbps (Option 063)		
	6144.0 Mbps (Option 064)		
	9830.4 Mbps (Option 065)		
Resolution Bandwidth (RBW)			
-3 dB bandwidth	1 kHz to 10 kHz (span ≤ 3.84 MHz)		
	1 KHz to 100 kHz (3.84 MHz < span ≤ 30.86 MHz)		
Accuracy	±10% (nominal)		
CPRI Parameter			
IQ Sample width	4 – 20 (step 1)		
Mapping method	1 and 3		
TX clock	Internal/external		
Port type	Master		
Bandwidth	5 MHz, 10 MHz, 15 MHz, 20 MHz		
Span	Adjustable (max span= sampling frequency)		
Measurements			
Carrier Configuration	SFP Information	Spectrum Clearance	Coverage Range
RRH description	RRH description	Spectrum	Spectrum
Carrier information	SFP information	Spectrogram	Carrier information
CPRI and Active SW	Profile Editor	RSSI	VSWR
RRH description		Dual spectrum	Tilt
CPRI state		Dual active trace	PIM Analysis
Active SW		Dual spectrogram	Single radio
			Spectrum flatness

General Information

Inputs and Outputs	
RF in	Spectrum analyzer
Connector	Type-N, female
Impedance	50 Ω (nominal)
Damage level	>+33 dBm, \pm 50 V DC (nominal), 3 min
Reflection/RF out	Cable and antenna analyzer
Connector	Type-N, female
Impedance	50 Ω (nominal)
Damage level	>+40 dBm, \pm 50 V DC (nominal), 3 min
RF in	Cable and antenna analyzer
Connector	Type-N, female
Impedance	50 Ω (nominal)
Damage level	>+25 dBm, \pm 50 V DC (nominal)
External trigger, GPS	
Connector	SMA, female
Impedance	50 Ω (nominal)
External ref	
Connector	SMA, female
Impedance	50 Ω (nominal)
Input frequency	10 MHz, 13 MHz, 15 MHz
Input range	-5 to +5 dBm
USB	
USB host ¹	Type A, 1 port
USB client ²	Type B, 1 port
SFP Cage	
Port 1	RFoFiber (with option 008)
	SFP/SFP+ compatible
Port 2	SFP/SFP+ compatible
LAN	RJ45, 10/100Base-T
Audio jack	3.5 mm headphone jack
External power	5.5 mm barrel connector
Speaker	Built-in speaker
Display	
Type	Resistive touch screen
Size	8 inch, LED backlight, transfective LCD with anti-glare coating
Power	
External DC input	18 to 19 V DC
Power consumption	42 W
	54 W maximum (when charging battery)

Battery	
Type	10.8 V, 7800 mA/hr (Lithium ion)
Operating time	>3 hr (typical)
Charge time	3 hr (while not operating) 9 hr (while operating)
Charging temperature	0 to 45°C (32 to 104°F) \leq 85% RH
Discharging temperature	-20 to 55°C (4 to 131°F) \leq 85% RH
Storage temperature ³	0 to 25°C (32 to 77°F)
Data Storage	
Internal ⁴	Maximum 512 MB
External ⁵	Limited by size of USB flash drive
Environmental	
Operating temperature	
AC power	0 to 40°C (32 to 104°F) with no derating
Battery	0 to 40°C (32 to 104°F) at charging -10 to 55°C (14 to 131°F) at discharging -10 to 50°C (14 to 122°F) at discharging with Option 008
Maximum humidity	95% RH (noncondensing)
Shock and vibration	MIL-PRF-28800F class 2
Storage temperature ⁶	-30 to 71°C (-22 to 160°F)
EMC	
IEC/EN 61326-1:2006 (complies with European EMC)	
CISPR11:2009 +A1:2010	
ESD	
IEC/EN 61000-4-2	
Size and Weight (standard configuration)	
Weight (with battery)	4.4 kg (9.7 lb)
Size (W x H x D)	295 x 195 x 82 mm
Warranty	
3 years	
Calibration Cycle	
1 year	

1. Connects flash drive and power sensor.
2. Connects to PC for data transfer.
3. 20 to 85% RH, store battery pack in low-humidity environment; extended exposure to temperature above 45°C could significantly degrade battery performance and life.
4. Up to 3800 traces.
5. Supports USB 2.0 compatible memory devices.
6. With the battery pack removed.

Ordering Information

Description	Part Number
Standard CellAdvisor Base Station Analyzer	
Base station analyzer includes:	JD785B ^{1,2}
· Spectrum analyzer 9 kHz to 8 GHz	
· RF power meter 10 MHz to 8 GHz	
· Cable and antenna 5 MHz to 6 GHz	
Options	
Note: Upgrade options for the JD785B use the designation JD785BU before the respective last three-digit option number	
2 Port transmission measurements for JD785B ³	JD785B001
Bias Tee for JD785B ⁴	JD785B002
CW signal generator for JD785B	JD785B003
Optical hardware for JD785B ⁵	JD785B008
GPS receiver and antenna for JD785B	JD785B010
Interference analyzer for JD785B ^{6,7}	JD785B011
Channel scanner for JD785B	JD785B012
Bluetooth connectivity for JD785B ⁸	JD785B013
LTE-FDD RAN performance indicator for JD785B ⁹	JD785B014
LTE-TDD RAN performance indicator for JD785B ¹⁰	JD785B015
Wi-Fi connectivity for JD785B ¹¹	JD785B016
cdmaOne/cdma2000 analyzer for JD785B	JD785B020
EV-DO analyzer for JD785B ¹²	JD785B021
GSM/GPRS/EDGE analyzer for JD785B	JD785B022
WCDMA/HSPA+ analyzer for JD785B	JD785B023
TD-SCDMA analyzer for JD785B	JD785B025
Mobile WiMAX analyzer for JD785B	JD785B026
LTE - FDD analyzer for JD785B ¹³	JD785B028
LTE - TDD analyzer for JD785B ¹³	JD785B029
LTE Advanced - FDD analyzer for JD785B ^{14,15}	JD785B030
LTE Advanced - TDD analyzer for JD785B ^{15,16}	JD785B031
LTE-FDD 256 QAM Demodulator for JD785B ¹⁷	JD785B032
LTE-TDD 256 QAM Demodulator for JD785B ¹⁸	JD785B033
cdmaOne/cdma2000 OTA analyzer for JD785B ¹⁹	JD785B040
EV-DO OTA analyzer for JD785B ¹⁹	JD785B041
GSM/GPRS/EDGE OTA analyzer for JD785B ¹⁹	JD785B042
WCDMA/HSPA+ OTA analyzer for JD785B ¹⁹	JD785B043
TD-SCDMA OTA analyzer for JD785B ¹⁹	JD785B045
Mobile WiMAX OTA analyzer for JD785B ¹⁹	JD785B046
LTE - FDD OTA analyzer for JD785B ¹⁹	JD785B048
LTE - TDD OTA analyzer for JD785B ¹⁹	JD785B049
EMF analyzer for JD785B ²⁰	JD785B050
RFoCPRI 614M & 1.2G interference analyzer for JD785B ^{21,22}	JD785B060
RFoCPRI 2.4G interference analyzer for JD785B ^{21,22}	JD785B061
RFoCPRI 3.1G interference analyzer for JD785B ^{21,22}	JD785B062
RFoCPRI 4.9G interference analyzer for JD785B ^{21,22}	JD785B063
RFoCPRI 6.1G interference analyzer for JD785B ^{21,22}	JD785B064
RFoCPRI 9.8G interference analyzer for JD785B ^{21,22}	JD785B065
RFoBSAI 768M Interference analyzer for JD785B ^{21,22}	JD785B070

Description	Part Number
RFoBSAI 1.5G interference analyzer for JD785B ^{21,22}	JD785B071
RFoBSAI 3.1G interference analyzer for JD785B ^{21,22}	JD785B072
RFoBSAI 6.1G interference analyzer for JD785B ^{21,22}	JD785B073
RFoCPRI LTE-FDD signal generator for JD785B ^{21,22,23}	JD785B081
RFoCPRI LTE-TDD signal generator for JD785B ^{21,22,23}	JD785B082
RFoBSAI LTE-FDD signal generator for JD785B ^{21,22,24}	JD785B086
RFoCPRI LTE-FDD signal analyzer for JD785B ^{21,22,23}	JD785B091
RFoCPRI LTE-TDD signal analyzer for JD785B ^{21,22,23}	JD785B092
RFoBSAI LTE-FDD signal analyzer for JD785B ^{21,22,24}	JD785B096
BBU Emulation for AT&T for JD785B ^{21,22}	JD785B100
ALU BBU emulation for JD785B ^{21,22}	JD785B101
2 port transmission measurements floating license for JD740B/JD780B	JD780B001-FL
GPS receiver and antenna floating license for JD740B/JD780B	JD780B010-FL
Interference analyzer floating license for JD740B/JD780B	JD780B011-FL
Channel scanner floating license for JD740B/JD780B	JD780B012-FL
Bluetooth connectivity floating license for JD740B/JD780B	JD780B013-FL
LTE-FDD RAN performance indicator floating license for JD740B/JD780B	JD780B014-FL
LTE-TDD RAN performance indicator floating license for JD740B/JD780B	JD780B015-FL
Wi-Fi connectivity floating license for JD740B/JD780B	JD780B016-FL
cdmaOne/cdma2000 analyzer floating license for JD740B/JD780B	JD780B020-FL
EV-DO analyzer floating license for JD740B/JD780B	JD780B021-FL
GSM/GPRS/EDGE analyzer floating license for JD740B/JD780B	JD780B022-FL
WCDMA/HSPA+ analyzer floating license for JD740B/JD780B	JD780B023-FL
TD-SCDMA analyzer floating license for JD740B/JD780B	JD780B025-FL
Mobile WiMAX analyzer floating license for JD740B/JD780B	JD780B026-FL
LTE - FDD analyzer floating license for JD740B/JD780B	JD780B028-FL
LTE - TDD analyzer floating license for JD740B/JD780B	JD780B029-FL
LTE Advanced - FDD analyzer floating license for JD740B/JD780B	JD780B030-FL
LTE Advanced - TDD analyzer floating license for JD740B/JD780B	JD780B031-FL
LTE-FDD 256 QAM Demodulator floating license for JD740B/JD780B	JD780B032-FL
LTE-TDD 256 QAM Demodulator floating license for JD740B/JD780B	JD780B033-FL

Ordering Information (Continued)

Description	Part Number
cdmaOne/cdma2000 OTA analyzer floating license for JD740B/JD780B	JD780B040-FL
EV-DO OTA analyzer floating license for JD740B/JD780B	JD780B041-FL
GSM/GPRS/EDGE OTA analyzer floating license for JD740B/JD780B	JD780B042-FL
WCDMA/HSPA+ OTA analyzer floating license for JD740B/JD780B	JD780B043-FL
TD-SCDMA OTA analyzer floating license for JD740B/JD780B	JD780B045-FL
Mobile WiMAX OTA analyzer floating license for JD740B/JD780B	JD780B046-FL
LTE - FDD OTA analyzer floating license for JD740B/JD780B	JD780B048-FL
LTE - TDD OTA analyzer floating license for JD740B/JD780B	JD780B049-FL
EMF analyzer floating license for JD740B/JD780B	JD780B050-FL
RFoCPRI 614M & 1.2G interference analyzer floating license for JD740B/JD780B	JD780B060-FL
RFoCPRI 2.4G interference analyzer floating license for JD740B/JD780B	JD780B061-FL
RFoCPRI 3.1G interference analyzer floating license for JD740B/JD780B	JD780B062-FL
RFoCPRI 4.9G interference analyzer floating license for JD740B/JD780B	JD780B063-FL
RFoCPRI 6.1G interference analyzer floating license for JD740B/JD780B	JD780B064-FL
RFoCPRI 9.8G interference analyzer floating license for JD740B/JD780B	JD780B065-FL
RFoBSAI 768M interference analyzer floating license for JD740B/JD780B	JD780B070-FL
RFoBSAI 1.5G interference analyzer floating license for JD740B/JD780B	JD780B071-FL
RFoBSAI 3.1G interference analyzer floating license for JD740B/JD780B	JD780B072-FL
RFoBSAI 6.1G interference analyzer floating license for JD740B/JD780B	JD780B073-FL
RFoCPRI LTE-FDD signal generator floating license for JD740B/JD780B	JD780B081-FL
RFoCPRI LTE-TDD signal generator floating license for JD740B/JD780B	JD780B082-FL
RFoBSAI LTE-FDD signal generator floating license for JD740B/JD780B	JD780B086-FL
RFoCPRI LTE-FDD signal analyzer floating license for JD740B/JD780B	JD780B091-FL
RFoCPRI LTE-TDD signal analyzer floating license for JD740B/JD780B	JD780B092-FL
RFoBSAI LTE-FDD signal analyzer floating license for JD740B/JD780B	JD780B096-FL
BBU Emulation for AT&T floating license for JD740B/JD780B	JD780B100-FL

Description	Part Number
ALU BBU emulation floating license for JD740B/JD780B	JD780B101-FL
Optional Accessories	
Accessory - RF Calibrators (General)	
Y- calibration kit Type-N(m), DC to 4 GHz, 50 ohm	JD72450509
Y- calibration kit DIN(m), DC to 4 GHz, 50 ohm	JD72450510
Y- calibration kit Type-N(m), DC to 6 GHz, 50 ohm	JD78050509
Y- calibration kit DIN(m), DC to 6 GHz, 50 ohm	JD78050510
EZ-Cal kit Type-N(m), DC to 6 GHz, 50 ohm	JD70050509
Dual port Type-N 4 GHz calibration kit	JD71050507
Dual port DIN 4 GHz calibration kit	JD71050508
Dual port Type-N 6 GHz calibration kit	JD78050507
Dual port DIN 6 GHz calibration kit	JD78050508
50 ohm Load, DC to 4 GHz, 1 W	GC72550511
Accessory - RF Cables (Cables)	
RF cable DC to 8 GHz Type-N(m) to Type-N(m), 1.0 m	G700050530
RF cable DC to 8 GHz Type-N(m) to Type-N(f), 1.5 m	G700050531
RF cable DC to 8 GHz Type-N(m) to Type-N(f), 3.0 m	G700050532
RF cable DC to 18 GHz Type-N(m) to SMA(m), 1.5 m	G710050533
RF cable DC to 18 GHz Type-N(m) to QMA(m), 1.5 m	G710050534
RF cable DC to 18 GHz Type-N(m) to SMB(m), 1.5 m	G710050535
RF cable DC to 6 GHz Type-N(m) to DIN(f), 1.5 m	G710050536
RF cable DC to 4 GHz Type-N(m) to 1.0/2.3 (m), 1.5 m	G710050537
Phase-stable RF cable w grip DC to 6 GHz Type-N(m) to Type-N(f), 1.5 m	G700050540
Phase-stable RF cable w grip DC to 6 GHz Type-N(m) to DIN(f), 1.5 m	G700050541
RF cable DC to 18 GHz Type-N(m) to Type-N(f), 1.5 m	G710050531
Accessory - Optic Cables (Cables)	
SM/LC T-Jumper and 1.5 m fiber cable ²⁹	G700050401
MM/LC T-Jumper and 1.5 m fiber cable ²⁹	G700050402
Accessory - RF Antennas (General)	
RF omni antenna Type-N(m), 806 to 896 MHz ³⁰	G700050353
RF omni antenna Type-N(m), 870 to 960 MHz ³⁰	G700050354
RF omni antenna Type-N(m), 1710 to 2170 MHz ³⁰	G700050355
RF omni antenna Type-N(m), 720 to 800 MHz ³⁰	G700050356
RF omni antenna Type-N(m), 2300 to 2700 MHz ³⁰	G700050357
Mag mount RF omni antenna Type-N(m), 689 to 1200 MHz, 1700 to 2700 MHz, 3000 to 6000 MHz ³⁰	G700050358
RF yagi antenna Type-N(f), 1750 to 2390 MHz, 10.2 dBd ^{30,31}	G700050363
RF yagi antenna Type-N(f), 806 to 896 MHz, 10.2 dBd ^{30,31}	G700050364
RF yagi antenna Type-N(f), 866 to 960 MHz, 9.8 dBd ^{30,31}	G700050365
RF yagi antenna SMA(f), 700 to 4000 MHz, 1.85 dBd ^{30,31}	G700050366
RF yagi antenna SMA(f), 700 to 6000 MHz, 2.85 dBd ^{30,31}	G700050367

Ordering Information (Continued)

Description	Part Number
Isotropic Antenna Type-N(m), 26 MHz to 3 GHz ³²	G700050380
Accessory - RF Power Sensor (General)	
Directional power sensor (peak and average power) 300 to 3800 MHz	JD731B
Terminating power sensor (Average Power) 20 to 3800 MHz	JD732B
Directional power sensor (peak and average power) 150 to 3500 MHz	JD733A
Terminating power sensor (peak power) 20 to 3800 MHz	JD734B
Terminating power sensor (average/peak power) 20 to 3800 MHz	JD736B
Accessory - RF Adapters (Connector & Adapters)	
Adapter Type-N(m) to DIN(f), DC to 7.5 GHz, 50 ohm	G700050571
Adapter DIN(m) to DIN(m), DC to 7.5 GHz, 50 ohm	G700050572
Adapter Type-N(m) to SMA(f) DC to 18 GHz, 50 ohm	G700050573
Adapter Type-N(m) to BNC(f), DC to 4 GHz, 50 ohm	G700050574
Adapter Type-N(f) to Type-N(f), DC to 18 GHz 50 ohm	G700050575
Adapter Type-N(m) to DIN(m), DC to 7.5 GHz, 50 ohm	G700050576
Adapter Type-N(f) to DIN(f), DC to 7.5 GHz, 50 ohm	G700050577
Adapter Type-N(f) to DIN(m), DC to 7.5 GHz, 50 ohm	G700050578
Adapter DIN(f) to DIN(f), DC to 7.5 GHz, 50 ohm	G700050579
Adapter Type-N(m) to Type-N(m), DC to 11 GHz 50 ohm	G700050580
Adapter N(m) to QMA(f), DC to 6.0 GHz, 50 ohm	G700050581
Adapter N(m) to QMA(m), DC to 6.0 GHz, 50 ohm	G700050582
Adapter N(m) to 4.1/9.5 MINI DIN (f), DC to 6.0 GHz, 50 ohm	G700050583
Adapter N(m) to 4.1/9.5 MINI DIN (m), DC to 6.0 GHz, 50 ohm	G700050584
Adapter N(m) to 4.3-10 (f), DC to 6.0 GHz, 50 ohm	G700050585
Adapter N(m) to 4.3-10 (m), DC to 6.0 GHz, 50 ohm	G700050586
Adapter Type-N(m) to DIN(f), DC to 4 GHz, 50 ohm	G710050571
Adapter N(f) to N(f), DC to 4 GHz, 50 ohm	G710050575
Adapter Type-N(f) to DIN(f), DC to 4 GHz, 50 ohm	G710050577
Adapter Type-N(f) to DIN(m), DC to 7 GHz, 50 ohm	G710050578
Accessory - RF Miscellaneous (General)	
Attenuator 40 dB, 100 W, DC to 4 GHz (unidirectional)	G710050581
RF directional coupler, 700 to 4000 MHz, 30 dB, 50 W Input/output; Type-N(m) to Type-N(f), tap off; Type-N(f) ³³	G710050585
RF combiner, 700 to 4000 MHz, Type-N(f) to Type-N(m) ³³	G710050586
4x1 RF combiner, 700 to 4000 MHz, Type-N(f) to Type-N(m) ³⁴	G710050587
Bandpass filter 696 MHz to 716 MHz, N(m) to N(f), 50 ohm	G700050601
Bandpass filter 776 MHz to 788 MHz, N(m) to N(f), 50 ohm	G700050602
Bandpass filter 806 MHz to 849 MHz, N(m) to N(f), 50 ohm	G700050603

Description	Part Number
Bandpass filter 1710 MHz to 1755 MHz, N(m) to N(f), 50 ohm	G700050604
Bandpass filter 1850 MHz to 1910 MHz, N(m) to N(f), 50 ohm	G700050605
Accessory - General	
USB Bluetooth dongle and dipole antenna 5 dBi	JD70050006
GPS antenna for JD740 and JD780 series	JD71050351
AntennaAdvisor handle35	JD70050007
Cross LAN cable (6ft)	G700550335
USB A to B cable (1.8m)	GC73050515
> 1GB USB memory	GC72450518
Stylus pen	G710550316
Accessory - Battery & Chargers	
Rechargeable lithium ion battery	G710550325
JD700B series AC/DC power adapter_90 W_15 V	JD70050326
Automotive cigarette lighter/12V DC adapter	G710550323
External battery charger	G710550324
Accessory - Manual & Documentation	
JD700B series user's guide - printed version	JD700B362
Accessory - Carrying Case	
Soft carrying case	JD74050341
Hard carrying Case	JD71050342
Hard carrying case with wheels	JD70050342
CellAdvisor backpack carrying case	JD70050343
Optional TAP	
Optical nTAP, three-channel, 50 µm, MM, LC, 50/50 split ratio	TO3-M5-LC-55-K
Optical nTAP, three-channel, 9 µm, SM, LC, 50/50 split ratio	TO3-SM-LC-55-K
Optional SFP Transceiver	
SFP 4G/2G/1G Fibre Channel & 1G Ethernet, 850nm, 150-500m, SX ³⁰	CSFP-4G-8-1
SFP 4G/ 2G/ 1G Fibre Channel & 1G Ethernet, 1310nm, 5km, LX ³⁰	CSFP-4G-3-1
SFP 4G/2G/1G Fibre Channel & 1G Ethernet, 1310nm, 20km, LX ³⁰	CSFP-4G-3-2
SFP+ 8G/4G/2G Fibre Channel, 6G/4.9G CPRI 850 nm MM Multirate ³¹	CSFP-PLUS-8G-8-1
SFP+ 8G/4G/2G Fibre Channel, 6G/4.9G CPRI 1310nm SM, 10km ³¹	CSFP-PLUS-8G-3-1
SFP+ 1G/10G Ethernet, 1G/10G Fiber Channel & 9.8G CPRI, 850nm, MM, 300m ³²	SFPPLUS-1GE-10GE-8-1
SFP+ 1G/10G Ethernet, 1G/10G Fiber Channel & 9.8G CPRI, 1310nm, SM, 10km ³²	SFPPLUS-1GE-10GE-3-1
Optional StrataSync™	
StrataSync for CellAdvisor BSA - Asset Management-1 Yr.	SS-CA-BSA-AM-01
StrataSync for CellAdvisor BSA - Asset Management-2 Yr.	SS-CA-BSA-AM-02
StrataSync for CellAdvisor BSA - Asset Management-3 Yr.	SS-CA-BSA-AM-03

Ordering Information (Continued)

Description	Part Number
StrataSync for CellAdvisor BSA - Test Data Management-1 Yr	SS-CA-BSA-TDM-01
StrataSync for CellAdvisor BSA - Test Data Management-2 Yr	SS-CA-BSA-TDM-02
StrataSync for CellAdvisor BSA - Test Data Management-3 Yr	SS-CA-BSA-TDM-03
Optical Power Meters and Fiber Microscope Kits	
USB optical power meter with software, 2.5 and 1.25 mm interfaces, 30-inch USB extender, and carry- ing pouch	MP-60A
USB optical power meter — high power, with software, 2.5 and 1.25 mm interfaces, 30-inch USB extender, and carrying pouch	MP-80A
KIT: FBP-P5000i digital probe, FiberChekPRO software, case, and four tips	FBP-SD101
KIT: FBP-P5000i digital probe, FiberChekPRO software, case, and seven tips	FBP-MTS-101
KIT: FBP-P5000i digital probe, MP-60A USB power meter, FiberChekPRO software, case, tips, and adapters	FIT-SD103
KIT: FBP-P5000i digital probe, MP-60A USB power meter, FiberChekPRO software, case, tips, adapters, and cleaning materials	FIT-SD103-C
KIT: FBP-P5000i digital probe, MP-80A USB power meter, FiberChekPRO software, case, tips, and adapters	FIT-SD113

- Supplied accessories: User's Guide, USB Memory (1GB), Cross LAN Cable, USB Cable, DC car adapter, Li-Ion Battery, AC/DC adapter, Stylus Pen
- Highly recommended using the Calibration Kit (JD78050509, JD78050510, JD70050509)
- Highly recommended using the Calibration Kit (JD78050507, JD78050508) and Bias Tee (option 002)
- Requires option 001
- Needs for RfOFIBER options 060,061,062,063,064,065,070,071,072,073,081,091,092,096,101
- Needs Omni or Yagi antenna
- Highly recommended adding option 010
- Includes a Bluetooth USB dongles with 5 dBi dipole antennas (JD70050006)
- Requires option 013 and option 028 and Needs TrueSite(FTA)
- Requires option 013 and option 029 and Needs TrueSite(FTA)
- Includes a Wi-Fi USB dongle
- Requires option 020
- Highly recommended using the RF Directional Coupler or RF combiner (G710050585 or G710050586)
- Requires option 028
- Highly recommended using the 4x1 RF combiner (G710050587)
- Requires option 029
- Requires option 030
- Requires option 031
- Requires option 010
- Requires G700050380
- Requires option 008, Including Layer2 Term and Monitoring
- Needs proper SFP/SFP+ Transceiver and Optical Tap or thur mode fiber cable (G700050401 or G700050402)
- Requires at least one of RfOCPRI Interference Analyzer options (option 060 to 065), needs each of the respective/corresponding Interference Analyzer line rate
- Requires at least one of RfOBBSAI Interference Analyzer options (option 070 to 073), needs each of the respective/corresponding Interference Analyzer line rate
- Includes G700050358, Android Tablet (Galaxy Tab S2), Car Mount Kit, 1x2 USB Hub, Accessory Soft carrying case
- Requires option 016
- Requires factory return for the upgrade
- Requires serial number for placing an order of the upgrade
- Needs for RfOFIBER measurements (060,061,062,063,064,065,070,071,072,073,081,091,092,096,101)
- Needs for OTA/Interference measurements (options 011/040, 041, 042, 043, 044, 045, 046, 048, 049)
- Needs Proper RF Cables for the inter-connection
- Needs option 050
- Needs for LTE measurement (option 028, 029)
- Needs for LTE-A measurement (option 030, 031)
- Needs G700050366 or G700050367



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