



# CellAdvisor™

## JD748B Signal Analyzer Specifications

### Spectrum Analyzer (Standard)

<b>Frequency</b>		
Frequency range	100 kHz to 4 GHz	
<b>Internal 10 MHz Frequency Reference</b>		
Accuracy	±0.05 ppm + aging (0 to 50°C)	
Aging	±0.5 ppm/year	
<b>Frequency Span</b>		
Range	0 Hz (zero span) 10 Hz to 4 GHz	
Resolution	1 Hz	
<b>Resolution Bandwidth (RBW)</b>		
-3 dB bandwidth	1 Hz to 3 MHz	1-3-10 sequence
Accuracy	±10% (nominal)	
<b>Video Bandwidth (VBW)</b>		
-3 dB bandwidth	1 Hz to 3 MHz	1-3-10 sequence
Accuracy	±10% (nominal)	
<b>Single Sideband (SSB) Phase Noise</b>		
Fc 1 GHz, RBW 10 kHz, VBW 1 kHz, RMS detector		
<b>Carrier Offset</b>		
30 kHz	< -90 dBc/Hz (typical)	
100 kHz	< -95 dBc/Hz (typical)	
1 MHz	< -102 dBc/Hz (typical)	
<b>Measurement Range</b>		
DANL to +20 dBm		
Input attenuator range	0 to 50 dB, 5 dB steps	
<b>Maximum Input Level</b>		
Average continuous power	+20 dBm	
DC voltage	±50 V DC	

**Spectrum Analyzer: 100 kHz to 4 GHz**

**Power Meter: 10 MHz to 4 GHz**

### Specification Conditions

JD748B 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

<b>Preamplifier Off</b>	
10 MHz to 2.3 GHz	-140 dBm (-146 dBm, typical)
>2.3 GHz to 3 GHz	-138 dBm (-144 dBm, typical)
>3 GHz to 4 GHz	-135 dBm (-140 dBm, typical)
<b>Preamplifier On</b>	
10 MHz to 2.3 GHz	-155 dBm (-160 dBm, typical)
>2.3 GHz to 3 GHz	-153 dBm (-158 dBm, typical)
>3 GHz to 4 GHz	-150 dBm (-156 dBm, typical)

**Display Range**

Log scale and units (10 divisions displayed)	1 to 20 dB/division in 1 dB steps dBm, dBV, dBmV, dBμV
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, trace math

**Total Absolute Amplitude Accuracy**

Preamplifier off, power level >-50 dBm, auto-coupled (20 to 30°C)

5 MHz to 4 GHz	±1.25 dB, ±0.5 dB (typical)	Attenuation <40 dB
	±1.55 dB, ±1.0 dB (typical)	Attenuation ≥40 dB

**Reference Level**

Setting range	-120 to +100 dBm
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**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, always peak on/off

**RF Input VSWR**

20 MHz to 4 GHz	1.5:1 (typical)
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**Second Harmonic Distortion**

Mixer level	-25 dBm
10 MHz to 1.3 GHz	<-65 dBc (typical)
>1.3 GHz to 4 GHz	<-70 dBc (typical)

**Third-Order Inter-Modulation (third-order intercept: TOI)**

200 MHz to 2 GHz	+10 dBm (typical)
>2 GHz to 4 GHz	+12 dBm (typical)

**Spurious**

Inherent residual response  
Input terminated, 0 dB attenuation, preamplifier off, RBW at 10 kHz, Sweep mode

20 MHz to 3 GHz	-90 dBm (nominal)
>3 GHz to 4 GHz	-85 dBm (nominal)
Exceptions	<-80 dBm at 311.94 MHz <-84 dBm at 415.92 MHz <-85 dBm at 519.90, 1599.00, and 2497.80 MHz
Input-related spurious	<-70 dBc (nominal)

**Dynamic Range**

2/3 (TOI-DANL) in 1 Hz RBW	>95 dB
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**Sweep Time**

Range	80 ms to 1000 s 24 μs to 200 s	Span = 0 Hz (zero span)
Accuracy	±2%	Span = 0 Hz (zero span)
Mode	Continuous, single	

**Gated Sweep**

Trigger source	External, video, and GPS
Gate length	1 μs to 100 ms
Gate delay	0 to 100 ms

**Trigger**

Trigger source	Free run, video, external
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**Trigger Delay**

Range	0 to 200 s
Resolution	6 μs

**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

\* CW signal generator (Option 003) can be set up simultaneously.

## 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 4 GHz		
Span	1 kHz to 100 MHz		
Dynamic range	-120 to +20 dBm		
Maximum power	+20 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)

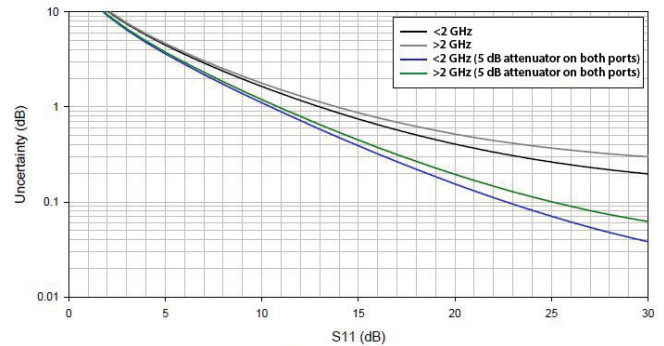
Optical Power Meter		
Display range	-100 to +100 dBm	
Offset range	0 to 60 dB	
Resolution	0.01 dB or 0.1 mW	
External Optical Power Sensors		
	MP-60A	MP-80A
Wavelength range	780 to 1650 nm	
Max permitted input level	+10 dBm	+23 dBm
Connector input	Universal 2.5 and 1.25 mm	
Accuracy	$\pm 5\%$	

1. CW condition at 25°C  $\pm 10^\circ\text{C}$

2. Forward power

## 2-Port Transmission Measurements (Option 001)

Frequency	
Frequency range	5 MHz to 4 GHz
Frequency resolution	10 kHz
Transmission uncertainty	



Use 5 dB attenuators on both ports to lessen uncertainty.

Output Power	
High	0 dBm (typical)
Low	-30 dBm (typical)
Dynamic Range	
Scalar	5 MHz to 4 GHz, >100 dB
Measurements	
Insertion Loss/Gain	
Range	-120 to 100 dB
Resolution	0.01 dB

## CW Signal Generator (Option 003)

Frequency	
Frequency range	25 MHz to 4 GHz
Frequency reference	±25 ppm Maximum
Frequency resolution	10 kHz
Output Power	
Range	0 dBm, -30 to -80 dBm
Step	1 dB
Accuracy	±1.5 dB (15 to 35°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	
10 MHz to 4 GHz	
Measurement Range	
110 to +20 dBm	
Measurements	
Channel scanner	1 to 20 channels
Frequency scanner	1 to 20 frequencies
Custom scanner	1 to 20 channels or frequencies

## 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 +20 dBm				
Burst power	±1.0 dB				
Frequency error	±10 Hz + reference-frequency accuracy	99% confidence level			
GMSK modulation quality					
<b>Phase RMS Accuracy</b>					
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)			
<b>EVM Accuracy</b>					
Residual error	±1.5%	(2% < EVM < 8%)			
RF power vs. time	2.5%				
	±0.25 symbol				
Measurements					
Option 022					
<b>Channel Power</b>	Reference power	Frame average power	I/Q origin offset*	EVM Peak*	Frame average power
Channel power	Peak level at defined range	Burst power (Slot 0 to 7)	TSC	EVM 95th*	Frequency error
Spectral density	<b>Spurious Emissions</b>	TSC (Slot 0 to 7)	BSIC	<b>Auto Measure</b>	Phase error RMS
Peak to average power	Peak frequency at defined range	<b>Constellation</b>	C/I*	Channel power	Phase error peak
<b>Occupied Bandwidth</b>	Peak level at defined range	Burst power	EVM RMS*	Occupied bandwidth	EVM RMS*
Occupied bandwidth	<b>Power vs. Time (slot)</b>	Modulation type	TSC	Spectrum emission mask	EVM Peak*
Integrated power	Burst power	Frequency error	BSIC	Spurious emission mask	I/Q origin offset
Occupied power	Max/min point	Phase error RMS	C/I*	Burst power	C/I*
<b>Spectrum Emission mask</b>	<b>Power vs. Time (frame)</b>	Phase error peak	EVM RMS*	PvsT – Mask	
Option 042					
<b>Channel/Frequency Scanner</b>	Group (traffic, control)	(10 strongest)	<b>Modulation Analyzer</b>	Frame average power	Burst power
Channels or frequencies	BSIC (NCC, BCC)	Frame average power	Frame avg power trend	BSIC, frame no. and time	Modulation type
Absolute power	<b>Multipath Profile</b>	SNR, delay	C/I trend	C/I, frequency error	

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 +20 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 + reference-frequency 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					
<b>Channel Power</b>	<b>Multi-ACLR</b>	Peak CDE	Max, avg active power	Code utilization	Channel power
Channel power	Lowest reference power	Frequency error	Max, avg inactive power	<b>RCSI</b>	Occupied bandwidth
Spectral density	Highest reference power	Frequency error	Scramble code	CPICH, P-CCPCH, S-CCPCH, PICH, P-SCH, S-SCH	Spectrum emission mask
Peak to average power	Abs power at defined range	Time offset	<b>Relative Code Domain Error</b>	<b>CDP Table</b>	EVM
<b>Occupied Bandwidth</b>	Rel power at defined range	Carrier feed-through	Abs/Rel code power	Reference power	Peak CDE
Occupied bandwidth	<b>Spurious Emissions</b>	Scramble code	Code error	Code utilization	Carrier feed-through
Integrated power	Peak frequency at defined range	<b>Code Domain Power</b>	Individual code EVM, RCDE, and its constellation	Code, spreading factor	CPICH absolute power
Occupied power	Peak level at defined range	Abs/Rel code power	Channel power	Allocation (channel type)	CPICH relative power
<b>Spectrum Emission Mask</b>	<b>Constellation</b>	Individual code EVM and its constellation	Power bar graph (Abs/Rel/Delta power) CPICH, P-CCPCH, S-CCPCH, PICH, P-SCH, S-SCH	EVM, modulation type	Max inactive power
Abs power at defined range	CPICH power	Channel power	Avg RCDE QPSK, 16 QAM, 64 QAM	Relative, absolute power	Scramble code
Rel power at defined range	Rho, EVM	Power bar graph (Abs/Rel/Delta power) CPICH, P-CCPCH, S-CCPCH, PICH, P-SCH, S-SCH	<b>Codogram</b>	<b>Auto Measure</b>	<b>Power Statistics CCDF</b>
Option 043					
<b>Channel Scanner (up to 6)</b>	Channel power	Channel, multipath power	Channel power	Frequency error	Amplifier capacity
Frequencies or channels	CPICH dominance	Ec/Io, delay	Scramble code	Time offset, Rho	Peak amplifier capacity
Channel power, scramble code, CPICH power, Ec/Io	Scramble code	<b>Code Domain Power</b>	CPICH, P-CCPCH, S-CCPCH, PICH, P-SCH, S-SCH	Carrier feed-through	Average amplifier capacity
<b>Scramble Scanner (up to 6)</b>	Ec/Io, CPICH power, delay	Abs/Rel code power	Max, avg active power	(Composite) EVM	Code, peak utilization
Channel power	<b>Multipath Profile</b>	Individual code EVM	Max, avg inactive power	CPICH EVM, P-CCPCH EVM	

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 +20 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					
<b>Channel Power</b>	<b>ACPR</b>	Peak level at defined range	Channel power	Reference power	Rho
Channel power	Reference power	<b>Constellation</b>	Power bar graph (Abs/Rel)	Code utilization	Frequency error
Spectral density	Abs power at defined range	Pilot power	Pilot, Paging, Sync, Q-Paging	Code, spreading factor	Time offset
Peak to average power	Rel power at defined range	Rho	Max, avg active power	Allocation (channel type)	Carrier feed-through
<b>Occupied Bandwidth</b>	<b>Multi-ACPR</b>	EVM	Max, avg inactive power	Relative, absolute power	Pilot power
Occupied bandwidth	Lowest reference power	Frequency error	PN offset	<b>Auto Measure</b>	Max inactive power
Integrated power	Highest reference power	Time offset	<b>Codogram</b>	Channel power	PN offset
Occupied power	Abs power at defined range	Carrier feed-through	Code utilization	Occupied bandwidth	<b>Power Statistics CCDF</b>
<b>Spectrum Emission Mask</b>	Rel power at defined range	PN offset	<b>RCSI</b>	Spectrum emission mask	
Reference power	<b>Spurious Emissions</b>	<b>Code Domain Power</b>	Pilot, Paging, Sync, Q-Paging	ACPR	
Peak level at defined range	Peak freq at defined range	Abs/Rel code power	<b>CDP Table</b>	Multi-ACPR	
Option 040					
<b>Channel Scanner (up to 6)</b>	Pilot dominance	Ec/Io, delay	Max, avg active power	Peak amplifier capacity	Ec/Io
Frequencies or channels	PN offset	<b>Code Domain Power</b>	Max, avg inactive power	Average amplifier capacity	
Channel power, PN offset	Ec/Io, pilot power, delay	Abs/Rel code power	Frequency error	Code utilization	
Pilot power, Ec/Io	<b>Multipath Profile</b>	Channel power	Time offset, Rho, EVM	Average utilization	
<b>PN Scanner (up to 6)</b>	Channel power	PN offset	Carrier feed-through	<b>Route Map</b>	
Channel power	Multipath power	Pilot, Paging, Sync, Q-Paging power	Amplifier capacity	Pilot 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 +20 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					
<b>Channel Power</b>	<b>Multi-ACPR</b>	Rho, EVM, Peak CDE	<b>Code Domain Power (pilot and MAC 64/128)</b>	Code utilization	Pilot, MAC, data power
Channel power	Lowest reference power	Frequency error	Pilot/MAC channel power	<b>RCSI</b>	On/off ratio
Spectral density	Highest reference power	Time offset	Slot average power	Slot, pilot, MAC, data	PvsT mask (idle slot) or PvsT mask (active slot)
Peak to average power	Abs power at defined range	Carrier feed-through	Max active I/Q power	<b>MAC CDP table</b>	Frequency error
<b>Occupied Bandwidth</b>	Rel power at defined range	PN offset	Avg active I/Q power	Reference power	Time offset
Occupied bandwidth	<b>Spurious Emissions</b>	Pilot, MAC, data power	Max inactive I/Q power	Code utilization	Carrier feed-through
Integrated power	Peak frequency at defined range	Pilot, MAC, data EVM	Avg inactive I/Q power	Code, spreading factor	Pilot, MAC, data Rho
Occupied power	Peak level at defined range	<b>Constellation (pilot, MAC 64/128, and data)</b>	PN offset	Allocation (channel type)	Max inactive I/Q power
<b>Spectrum Emission Mask</b>	<b>Power vs. Time (idle and active slot)</b>	Channel power	<b>Code Domain Power (data)</b>	Relative, absolute power	PN offset
Reference power	Slot average power	Rho, EVM, peak CDE	Data channel power	<b>Auto Measure</b>	<b>Power Statistics CCDF</b>
Peak level at defined range	On/off ratio	Frequency error	Slot average power	Channel power	
<b>ACPR</b>	Idle activity	Time offset	Max, avg active power	Occupied bandwidth	
Reference power	Pilot, MAC, data power	Carrier feed-through	Max, avg inactive power	Spectrum emission mask	
Abs power at defined range	<b>Constellation (composite 64/128)</b>	PN offset	PN offset	ACPR	
Option 041					
<b>Channel scanner (up to 6)</b>	Channel power	Channel power	PN offset	Time offset	Peak utilization
Frequencies or channels	Pilot dominance	Multipath power	Pilot, MAC, data power	Carrier feed-through	Average utilization
PN offset	PN offset	Ec/Io, delay	Pilot, MAC, data Rho	Max active I/Q power	<b>Route Map</b>
Pilot, MAC, data power	Ec/Io, pilot power, delay	<b>Code Domain Power</b>	(Composite) EVM	Avg active I/Q power	Pilot power
<b>PN Scanner (up to 6)</b>	<b>Multipath Profile</b>	Slot average power	Frequency error	Code utilization	Ec/Io

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			
Time error (Tau)	±1.0 μs (typical)	External trigger			
Spreading factor	Auto (DL, UL), 1, 2, 4, 8, 16				
Measurements					
Option 025					
<b>Channel Power</b>	Peak level at defined range	<b>Spurious Emissions</b>	<b>Power vs. Time (frame)</b>	(TS [0 to 6], DwPTS, UpPTS)	Frequency error
Channel power	<b>ACLR</b>	Peak frequency at defined range	Slot power	<b>Power vs. Time (mask)</b>	I/Q origin offset
Spectral density	Reference power	Peak level at defined range	(TS [0 to 6], DwPTS, UpPTS)	Slot power	Time offset
Peak to average power	Abs power at defined range	<b>Power vs. Time (slot)</b>	Data power left	On/off slot ratio	<b>Midamble Power</b>
<b>Occupied Bandwidth</b>	Rel power at defined range	Slot power	(TS [0 to 6], DwPTS, UpPTS)	Off power	Slot power
Occupied bandwidth	<b>Multi-ACLR</b>	DwPTS power	<b>Midamble Power</b>	<b>Timogram</b>	DwPTS power
Integrated power	Lowest reference power	UpPTS power	(TS [0 to 6], DwPTS, UpPTS)	<b>Constellation</b>	Midamble power (1 to 16)
Occupied power	Highest reference power	On/off slot ratio	Data power right	Rho	<b>Code Power</b>
<b>Spectrum Emission Mask</b>	Abs power at defined range	Slot PAR	(TS [0 to 6], DwPTS, UpPTS)	EVM RMS, EVM peak	Abs/Rel code power
Reference power	Rel power at defined range	DwPTS code	Time offset	Peak CDE	Individual code EVM and its constellation
Data format	Max inactive code power	Slot, DwPTS power	Avg inactive code power	ACLR	Frequency error
Slot power, DwPTS power	Avg inactive code power	No. of active code	Peak CDE and peak active CDE	Multi-ACLR	EVM RMS
No. of active code	<b>Code Error</b>	Scramble code	<b>Auto Measure</b>	Slot power	Peak CDE
Scramble code	Code power and error	Max active code power	Channel power	DwPTS power	Max inactive power
Max active code power	Individual code EVM and its constellation	Avg active code power	Occupied bandwidth	UpPTS power	Scramble code
Avg active code power	Data format	Max inactive code power	Spectrum emission mask	On/off slot ratio	
Option 045					
<b>Sync-DL ID Scanner (32)</b>	Pilot dominance	Pilot dominance	Pilot dominance	Pilot dominance	DwPTS Power
Scramble code group	<b>Sync-DL ID vs. Tau (up to 6)</b>	<b>Sync-DL ID Multipath</b>	<b>Sync-DL ID Analyzer</b>	EVM, frequency error	
Ec/Io, Tau	ID, power, Ec/Io, Tau	Ec/Io, Tau	DwPTS power, Ec/Io trend	Ec/Io, CINR	
DwPTS power	DwPTS power	DwPTS power	DwPTS power	<b>Route Map</b>	

Longitude, latitude, and satellite in all screens

## 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 +20 dBm	
Channel power accuracy	±1.0 dB (typical)	
Supported bandwidth	7 MHz, 8.75 MHz, and 10 MHz	
Frequency error	±10 Hz + reference-frequency accuracy	99% confidence level
Residual EVM (RMS)	1.5% (typical)	

### Measurements

#### Option 026

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

#### Option 046

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

Longitude, latitude, and satellite in all screens

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

General Parameters					
Frequency range	Band 1 to 14, 17 to 26				
Input signal level	-40 to +20 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 + reference-frequency accuracy	99% confidence level			
Residual EVM (RMS)	2.0% (typical)	Data EVM			
Measurements					
Option 028/030					
<b>Channel Power</b>	<b>Power vs. Time (frame)</b>	<b>Control Channel</b>	Data EVM RMS, peak	Antenna 1 RS power and EVM	PDSCH/Data* 64 QAM EVM
Channel power	Frame average power	Control channel	RS EVM RMS, peak		
Spectral density	Subframe power	summary (P-SS, S-SS, PBCH, PCFICH, PHICH, PDCCH, RS, MBSFN*)	Cell, group, sector ID	Antenna 2 RS power and EVM**	Data EVM RMS, peak RS, P-SS, S-SS EVM
Peak to average power	First slot power		<b>Frame</b>		
<b>Occupied Bandwidth</b>	Second slot power		MBSFN*	Antenna 3 RS power and EVM**	RS, P-SS, S-SS power
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/	<b>Data Allocation Map</b>	PDSCH/ Data* 16 QAM, PDSCH/ Data* 64 QAM)
Integrated power	Time offset				
Occupied power	<b>Constellation</b>	I/Q diagram	Data* QPSK, PDSCH/	Data allocation vs frame	OFDM power
<b>Spectrum Emission Mask</b>	MBSFN*			Modulation format	Resource block power
Reference power	RS TX power	Frequency error	Data* 16 QAM, PDSCH/ Data* 64 QAM)	OFDM symbol power	I/Q origin offset
Reference power	PDSCH/Data* QPSK EVM	I/Q origin offset	EVM, relative or absolute power, modulation type	Data utilization	<b>Carrier Aggregation**</b>
Peak level at defined range	PDSCH/Data* 16 QAM EVM			Data allocation vs subframe	Component carriers: up to 5
<b>ACLR</b>	PDSCH/Data* 64 QAM EVM	EVM RMS, EVM peak	modulation type	Resource block power	
Reference power	Data EVM RMS	<b>Subframe</b>	Frame average power	Data utilization	Subframe power
Abs power at defined range	Data EVM peak	MBSFN*	OFDM symbol power	<b>Auto Measure</b>	P-SS, S-SS, PBCH, RS power and EVM
Rel power at defined range	Frequency error	Subframe summary table (P-SS, S-SS, PBCH, PCFICH, PHICH, PDCCH, RS, MBSFN*, PDSCH/ Data* 16 QAM, PDSCH/ Data* 64 QAM)	Frequency error	Channel power	PDSCH/Data* QPSK power and EVM
<b>Multi-ACLR</b>	Time error		I/Q origin offset	Occupied bandwidth	
<b>Multi-ACLR</b>	<b>Data Channel</b>	EVM, relative or absolute power, modulation type	EVM RMS, peak	Spectrum emission mask	
Lowest reference power	MBSFN*		Data EVM RMS, peak	ACLR	PDSCH/Data* 16 QAM power and EVM
Highest reference power	Resource block power	EVM, relative or absolute power, modulation type	Cell, group, sector ID	Multi-ACLR	PDSCH/Data* 64 QAM power and EVM
Abs power at defined range	I/Q diagram		<b>Time Alignment Error</b>	Spurious emission mask	
Rel power at defined range	RB power	EVM, relative or absolute power, modulation type	Time alignment error trend	Frame average power	Cell ID
<b>Spurious Emissions</b>	Modulation format		Time alignment error	Frequency error	Frequency error
Peak frequency at defined range	I/Q origin offset	Subframe power	Time alignment error	Frequency error	Frequency error
Peak level at defined range	EVM RMS, EVM peak	OFDM symbol power	RS power difference	MBSFN*	Time alignment error
		Frequency, time error	Antenna 0 RS power and EVM	PDSCH/Data* QPSK EVM	Antenna port
				PDSCH/Data* 16 QAM EVM	<b>Power Statistics CCDF</b>
Option 048					
<b>Channel Scanner (up to 6)</b>	<b>ID Scanner (up to 6)</b>	<b>Multipath Profile</b>	Control channel table	PMCH subframe power*	<b>Route Map</b>
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	Absolute power	<b>Datagram</b>	RS-SINR
RSRP/RSRQ	Cell, group, sector ID	Ant 2 RS Ec/Io**, delay**		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	<b>Control Channel</b>	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 and 049)

General Parameters					
Frequency range	Band 33 to 43				
Input signal level	−40 to +20 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 + reference-frequency accuracy	99% confidence level			
Residual EVM (RMS)	2.0% (typical)	Data EVM			
Measurements					
Option 029/031					
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*	Cell, group, sector ID	Data EVM RMS, peak
Spectral density	Peak level at defined range	Time error	Subframe summary table	<b>Data Allocation Map</b>	RS, P-SS, S-SS EVM
Occupied Bandwidth	Power vs. Time (frame)	Data Channel	(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	RS, P-SS, S-SS power
Occupied bandwidth		MBSFN*	Resource block power	Resource block power	PBCH power
Integrated power	Frame average power	I/Q diagram	RS, MBSFN*, PDSCH/Data*	OFDM symbol power	Subframe power
Occupied power	Subframe power	RB power	Data*	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	Subframe power	Resource block power	I/Q origin offset
Peak level at defined range	Cell ID, I/Q origin offset	EVM RMS, EVM peak	OFDM symbol power	Data utilization	<b>Carrier Aggregation**</b>
	Time offset	<b>Control Channel</b>	Frequency, time error	<b>Auto Measure</b>	Component carriers: up to 5
ACLR	Power vs. Time (slot)	Control channel summary	Data EVM RMS, peak	Channel power	Subframe power
Reference power	Slot average power	(P-SS, S-SS, PBCH, PCFICH, PHICH, PDCCH, RS, MBSFN*)	RS EVM RMS, peak	Occupied bandwidth	P-SS, S-SS, PBCH, RS power and EVM
Abs power at defined range	Transient period length		Cell, group, sector ID	Spectrum emission mask	
	Off power			ACLR	PDSCH/Data* QPSK power and EVM
Rel power at defined range	<b>Constellation</b>	EVM, relative or absolute power, modulation type	<b>Time Alignment Error</b>	Multi-ACLR	
	MBSFN*		Time alignment error trend		
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	PDSCH/Data* 64 QAM EVM	Frequency error	Antenna 1 RS power and EVM	Transition period	
Rel power at defined range		I/Q origin offset		Time alignment error	Cell ID
		EVM RMS, EVM peak		MBSFN*	Frequency error
	Data EVM RMS		Antenna 2 RS power and EVM**	PDSCH/Data* QPSK EVM	Time alignment error
				PDSCH/Data* 16 QAM EVM	Antenna port
					<b>Power Statistics CCDF</b>
Option 049					
Channel Scanner (up to 6)	ID Scanner (up to 6)	Multipath Profile	Control Channel	EVM RSM, phase	Route Map
Frequency or channels	RSRP/RSRQ dominance	Cell, group, sector ID	RS power trend	Frequency error	RSRP
Cell, group, sector ID	S-SS RSSI dominance	Ant 0 RS Ec/Io, delay	Cell, group, sector ID	PMCH subframe power*	RSRQ
Channel power	S-SS Ec/Io dominance	Ant 1 RS Ec/Io, delay	Control channel table	Time alignment error	RS-SINR
RSRP/RSRQ	Cell, group, sector ID	Ant 2 RS Ec/Io**, delay**	(P-SS, S-SS, PBCH, PCFICH, RS 0, RS 1, RS 2**, RS 3**, MBSFN RS*)	Time offset	S-SS RSSI
RS-SINR	RSRP/RSRQ	Ant 3 RS Ec/Io**, delay**		<b>Datagram</b>	P-SS, S-SS power
Antenna port	RS-SINR/S-SS RSSI			Datagram	S-SS Ec/Io
	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.

## 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		
SDI	SDI	Optic RX level	dBm		
RAI	RAI	Protocol version	1 to 10	Spectrogram	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	RSSI	Collect up to 72 hr of data
SFP Information	SFP Information			Spectrum replay	X1, x2, x4, x8
Wavelength	Wavelength	C and M Ethernet subchannel number	20 to 63	PIM Detection	
Vendor	Vendor			Single carrier	
Vendor PN	Vendor PN	Alarm Injection		Multi carrier	
Vendor rev	Vendor rev	R-LOS	Single	PIM calculator	
Power level type	Power level type	R-LOF	Single		
Diagnostic byte	Diagnostic byte	Error Injection			
Nominal rate	Nominal rate	Code	Single/rate		
Min rate	Min rate	K30.7	Single/rate		
Max RX level	Max RX level	Error rate	1E-3 to 1E-9		
Max TX level	Max TX level				

## Bluetooth Connectivity (Option 013)

Personal area network (PAN)

File transfer profile (FTP)

## General Information

### Inputs and Outputs

<b>RF In</b>	Spectrum analyzer
Connector	Type-N, female
Impedance	50 $\Omega$ (nominal)
Damage level	>+40 dBm, $\pm$ 50 V DC (nominal)

<b>RF Out</b>	Type-N, female
Connector	Type-N, female
Impedance	50 $\Omega$ (nominal)
Damage level	>+37 dBm, $\pm$ 50 V DC (nominal)

<b>External Trigger, GPS</b>	SMA, female
Connector	50 $\Omega$ (nominal)
Impedance	

<b>External Ref</b>	SMA, female
Connector	50 $\Omega$ (nominal)
Impedance	10 MHz, 13 MHz, 15 MHz
Input frequency	–5 to +5 dBm
Input range	

<b>USB</b>	Type A, 1 port
USB host <sup>1</sup>	Type B, 1 port
USB client <sup>2</sup>	

<b>SFP Cage</b>	RFoFiber (with option 008)
Port 1	SFP/SFP+ compatible
Port 2	

LAN	RJ45, 10/100Base-T
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Audio jack	3.5 mm headphone jack
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External power	5.5 mm barrel connector
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Speaker	Built-in speaker
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### 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
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Power consumption	42 W	54 W maximum (when charging battery)
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### Battery

Type	10.8 V, 7800 mA/hr (Lithium ion)
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Operating time	>3 hr (typical at spectrum analyzer)
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Charge time	3 hr (while not operating) 9 hr (while operating)
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Charging temperature	0 to 45°C (32 to 104°F) $\leq$ 85% RH
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Discharging temperature	–20 to 55°C (4 to 131°F) $\leq$ 85% RH
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Storage temperature <sup>3</sup>	0 to 25°C (32 to 77°F)
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### Data Storage

Internal <sup>4</sup>	Maximum 512 MB
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External <sup>5</sup>	Limited by size of USB flash drive
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### Environmental

#### Operating Temperature

AC power	0 to 40°C (32 to 104°F) with no derating
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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
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Maximum humidity	95% RH (noncondensing)
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Shock and vibration	MIL-PRF-28800F class 2
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Storage temperature <sup>6</sup>	–30 to 71°C (–22 to 160°F)
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### EMC

IEC/EN 61326-1:2013 (complies with European EMC)

CISPR11:2009 +A1:2010

### ESD

IEC/EN 61000-4-2

### Size and Weight (standard configuration)

Weight (with battery)	Standard	3.77 kg (8.31 lb)
	Full loaded	4.34 kg (9.57 lb)

Size (W x H x D)	295 x 195 x 82 mm
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### Warranty

2 years

### Calibration Cycle

1 year

1. Connects flash drive, power sensor, EZ-Cal kit, and fiber microscope.

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
<b>Standard CellAdvisor Base Station Analyzer</b>	
100 kHz to 4 GHz spectrum analyzer 10 MHz to 4 GHz RF power meter (internal mode)	JD748B
<b>Options</b>	
NOTE: Upgrade options for the JD748B use the designation JD748BU before the respective last three-digit option number.	
2 port transmission measurements <sup>1</sup>	JD748B001
CW signal generator <sup>1</sup>	JD748B003
Signal generator hardware	JD748B007
Optical hardware <sup>2</sup>	JD748B008
<b>Standard CellAdvisor Base Station Analyzer</b>	
20 MHz demodulation hardware <sup>3</sup>	JD748B009
GPS receiver and antenna interference analyzer <sup>5,6</sup>	JD748B010
Channel scanner	JD748B011
Bluetooth connectivity <sup>4</sup>	JD748B012
cdmaOne/cdma2000 Analyzer	JD748B013
EV-DO analyzer <sup>7</sup>	JD748B020
GSM/GPRS/EDGE analyzer	JD748B021
WCDMA/HSPA+ analyzer	JD748B022
TD-SCDMA analyzer	JD748B023
Mobile WiMAX analyzer	JD748B025
LTE - FDD analyzer	JD748B026
LTE - TDD analyzer	JD748B028
LTE Advanced - FDD analyzer <sup>8</sup>	JD748B029
LTE Advanced - TDD analyzer <sup>9</sup>	JD748B030
cdmaOne/cdma2000 OTA analyzer <sup>6,10</sup>	JD748B031
EV-DO OTA analyzer <sup>6,10</sup>	JD748B040
GSM/GPRS/EDGE OTA analyzer <sup>6,10</sup>	JD748B041
WCDMA/HSPA+ OTA analyzer <sup>6,10</sup>	JD748B042
TD-SCDMA OTA analyzer <sup>6,10</sup>	JD748B043
Mobile WiMAX OTA analyzer <sup>6,10</sup>	JD748B044
LTE - FDD OTA analyzer <sup>6,10</sup>	JD748B045
LTE - TDD OTA analyzer <sup>6,10</sup>	JD748B046
RFoCPRI 614 Mbps and 1.2 Gbps interference analyzer <sup>11</sup>	JD748B048
RFoCPRI 2.4 Gbps interference analyzer <sup>11</sup>	JD748B049
RFoCPRI 3.1 Gbps interference analyzer <sup>11</sup>	JD748B060
RFoCPRI 4.9 Gbps interference analyzer <sup>11</sup>	JD748B061
RFoCPRI 6.1 Gbps interference analyzer <sup>11</sup>	JD748B062
RFoCPRI 9.8 Gbps interference analyzer <sup>11</sup>	JD748B063
RFoCPRI 9.8 Gbps interference analyzer <sup>11</sup>	JD748B064
RFoCPRI 9.8 Gbps interference analyzer <sup>11</sup>	JD748B065
<b>Standard Accessories (can be purchased separately)</b>	
AC/DC power adapter <sup>12</sup>	G700550326
Cross LAN cable (1.5 m) <sup>12</sup>	G710550335
USB A to B cable (1.8 m) <sup>12</sup>	GC73050515
>1 GB USB memory <sup>12</sup>	GC72450518
Rechargeable lithium ion battery <sup>12</sup>	G710550325
Automotive cigarette lighter 12 V DC adapter <sup>12</sup>	G710550323
Stylus pen <sup>12</sup>	G710550316

Description	Part Number
<b>Optional RF Cable</b>	
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
Phase-stable RF cable with grip DC to 6 GHz Type-N(m) to Type-N(f), 1.5 m	G700050540
Phase-stable RF cable with grip DC to 6 GHz Type-N(m) to DIN(f), 1.5 m	G700050541
<b>Optional Omni Antennas</b>	
RF omni antenna Type-N(m), 806 to 896 MHz	G700050353
RF omni antenna Type-N(m), 870 to 960 MHz	G700050354
RF omni antenna Type-N(m), 1710 to 2170 MHz	G700050355
RF omni antenna Type-N(m), 720 to 800 MHz	G700050356
RF omni antenna Type-N(m), 2300 to 2700 MHz	G700050357
<b>Optional YAGI Antennas</b>	
RF Yagi antenna Type-N(f), 1750 to 2390 MHz, 10.2 dBd <sup>13</sup>	G700050363
RF Yagi antenna Type-N(f), 806 to 896 MHz, 10.2 dBd <sup>13</sup>	G700050364
RF Yagi antenna Type-N(f), 866 to 960 MHz, 9.8 dBd <sup>13</sup>	G700050365
RF Yagi antenna SMA(f), 700 to 4000 MHz, 1.85 dBd <sup>14</sup>	G700050366
<b>Optional YAGI Antennas</b>	
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, dual (average/peak) power 20 to 3800 MHz	JD736B

- Requires Option 007.
- Requires SFP/SFP+ and optical cable.
- Required for Options 020, 021, 022, 023, 025, 026, 028, 029, 030, 031, 040, 041, 042, 043, 045, 046, 048, 049.
- Includes a pair of Bluetooth USB dongles with 5 dBi dipole antenna (JD70050006).
- Recommend adding Option 010.
- Recommend adding antennas G70005035x and/or G70005036x0.
- Requires Option 020.
- Requires Option 028.
- Requires Option 029.
- Requires Option 010.
- Requires Option 008.
- Standard accessory that can be purchased separately.
- Requires RF cable G710050530.
- Requires RF cable G710050533.

## Ordering Information (continued)

Description	Part Number
<b>Optional Optical Power Meters and Fiber Microscope Kits</b>	
USB optical power meter with software, 2.5 and 1.25 mm interfaces, 30-inch USB extender, and carrying 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 tips	FBP-SD101
KIT: FBP-P5000i digital probe, FiberChekPRO software, case, and 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, and adapters, and cleaning materials	FIT-SD103-C
KIT: FBP-P5000i digital probe, MP-60A USB power meter, FiberChekPRO software, case, tips, and adapters	FIT-SD113
<b>Optional RF Adapters</b>	
Adapter Type-N(m) to DIN(f), DC to 7.5 GHz, 50 Ω	G700050571
Adapter DIN(m) to DIN(m), DC to 7.5 GHz, 50 Ω	G700050572
Adapter Type-N(m) to SMA(f) DC to 18 GHz, 50 Ω	G700050573
Adapter Type-N(m) to BNC(f), DC to 4 GHz, 50 Ω	G700050574
Adapter Type-N(f) to Type-N(f), DC to 18 GHz 50 Ω	G700050575
Adapter Type-N(m) to DIN(m), DC to 7.5 GHz, 50 Ω	G700050576
Adapter Type-N(f) to DIN(f), DC to 7.5 GHz, 50 Ω	G700050577
Adapter Type-N(f) to DIN(m), DC to 7.5 GHz, 50 Ω	G700050578
Adapter DIN(f) to DIN(f), DC to 7.5 GHz, 50 Ω	G700050579
Adapter Type-N(m) to Type-N(m), DC to 11 GHz 50 Ω	G700050580
Adapter N(m) to QMA(f), DC to 6.0 GHz, 50 Ω	G700050581
Adapter N(m) to QMA(m), DC to 6.0 GHz, 50 Ω	G700050582
<b>Optional Miscellaneous</b>	
Soft carrying case	JD74050341
Hard carrying case	JD71050342
Hard carrying case with wheels	JD70050342
CellAdvisor backpack carrying case	JD70050343
External battery charger	G71050324
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)	G710050585
RF combiner, 700 to 4000 MHz, Type-N(f) to Type-N(m) <sup>1</sup>	G710050586
4x1 RF combiner, 700 to 4000 MHz, Type-N(f) to Type-N(m) <sup>2</sup>	G710050587
Attenuator 40 dB, 100 W, DC to 4 GHz (unidirectional)	G710050581
JD700B series user's guide - printed version	JD700B362
USB Bluetooth dongle and dipole antenna 5 dBi	JD70050006

Description	Part Number
<b>Optional SFP Transceiver</b>	
SFP 4/2/1 G Fibre Channel and 1 G Ethernet, 850 nm, 150 – 500 m, SX 3.072/2.4/1.2 Gbps, 614 Mbps CPRI; 3.072/1.5 Gbps, 768 Mbps OBSAI	CSFP-4G-8-1
SFP 4G/2G/1G Fibre Channel and 1 G Ethernet, 1310 nm, 5 km, LX 3.072/2.4/1.2 Gbps, 614 Mbps CPRI; 3.072/1.5 Gbps, 768 Mbps OBSAI	CSFP-4G-3-1
SFP 4G/2G/1G Fibre Channel and 1 G Ethernet, 1310 nm, 20 km, LX 3.072/2.4/1.2 Gbps, 614 Mbps CPRI; 3.072/1.5 Gbps, 768 Mbps OBSAI	CSFP-4G-3-2
SFP+ 8/4/2 G Fibre Channel, 6/4.9 Gbps CPRI 850 nm mm multirate 4.9/3.072/2.4 Gbps CPRI and 6/3.072 Gbps OBSAI	CSFPPLUS-8G-8-1
SFP+ 8/4/2 G Fibre Channel, 6/4.9 Gbps CPRI 1310 nm SM, 10 km 4.9/3.072/2.4 Gbps CPRI and 6/3.072 Gbps OBSAI	CSFPPLUS-8G-3-1
SFP+ 1/10 G Ethernet, 1/10 G Fiber Channel 1310 nm SM 10 km 1000BASE-LX 1G and 10GBASE-LR/LW, 1/10 G Fibre Channel and 9.8 Gbps CPRI	SFPPLUS-1GE-10GE-3-1
SFP+ 1/10 G Ethernet 1310 nm SM 10 km 1000BASE-LX 1G and 10GBASE-LR/LW, 1/10 G Fibre Channel and 9.8 Gbps CPRI	SFPPLUS-1GE-10GE-3-1
<b>Optional StrataSync™</b>	
StrataSync asset management annual subscription for CellAdvisor signal analyzer	StrataSync-AM-CA-SA-1YR
StrataSync test data management annual subscription for CellAdvisor signal analyzer <sup>3</sup>	StrataSync-TDMCA-SA-1YR
<b>Optional Warranty and Calibration</b>	
Warranty extension of 1 year for Asia and North America	JD785B200
Warranty extension of 1 year for Latin America and EMEA	JD785B201
Calibration service for Asia and North America	JD785B250
Calibration service for Latin America and EMEA	JD785B251
<b>Optional TAP</b>	
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

1. Recommended for LTE testing.
2. Recommended for LTE-Advanced testing.
3. Requires STRATASYNC-AM-CA-SA-1YR.



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