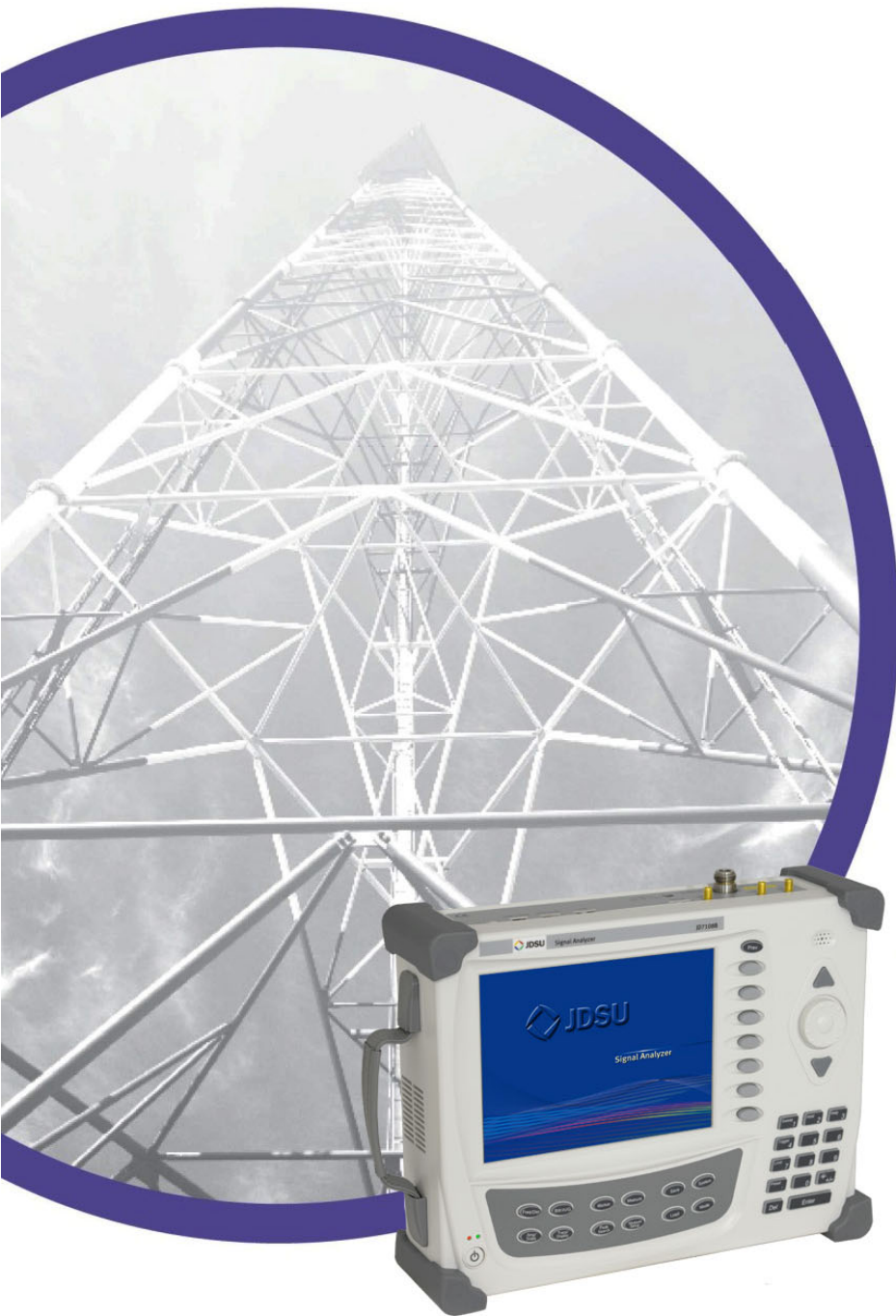




JD7108B

Signal Analyzer

Technical Data Sheet

Table of Contents

Table of Contents.....	1
Conditions of Specifications	2
Spectrum Analyzer (Standard).....	2
Power Meter (Standard).....	5
GPS Receiver (Option 010)	5
Interference Analyzer (Option 011).....	6
Channel Scanner (Option 012)	6
GSM/GPRS/EDGE Signal Analyzer (Option 022)	7
WCDMA/HSDPA Signal Analyzer (Option 023 for WCDMA, Option 024 for HSDPA).....	8
cdmaOne/CDMA2000 Signal Analyzer (Option 020).....	9
EV-DO Signal Analyzer (Option 021)	10
TD-SCDMA Signal Analyzer (Option 025).....	11
Mobile WiMAX Signal Analyzer (Option 026)	12
LTE Signal Analyzer (Option 028)	13
General Information	14
Ordering Information	16

Conditions of Specifications

The JD7108B specifications apply under the following conditions.

- After 30 minute warm-up and then two hours of operation temperature.
- The instrument is operating within a valid calibration period.
- Data with no tolerance is considered as typical values.
- The 'typical' or 'nominal' values are defined as follows:
 - Typical: Expected performance of the instrument operating under 20 °C to 30 °C after being at this temperature for two hours.
 - Nominal: A general, descriptive term or parameter.

Spectrum Analyzer (Standard)

Supplemental Information

Frequency

Frequency Range: 100 kHz to 7.2 GHz

Internal 100 MHz Frequency Reference

Accuracy: ± 0.1 ppm (25°C $\pm$ 25°C) + aging
Aging: ± 2.5 ppm per 10 years

Frequency Span

Range: 0 Hz (Zero Span)
10 Hz to 7.2 GHz
Resolution: 1 Hz

Resolution Bandwidth (RBW)

-3 dB Bandwidth: 1 Hz to 3 MHz
Accuracy: ± 10 % (Nominal)
1-3-10 Sequence

Video Bandwidth (VBW)

-3 dB Bandwidth: 1 Hz to 3 MHz
Accuracy: ± 10 % (Nominal)
1-3-10 Sequence

Single Sideband (SSB) Phase Noise

Fc = 1 GHz, RBW 10 kHz, VBW 1 kHz, RMS Detector

Carrier Offset:
30 kHz < -100 dBc/Hz
100 kHz < -102 dBc/Hz
1 MHz < -115 dBc/Hz

Measurement Range

DANL to +30 dBm
Input Attenuator Range: 0 to 55 dB, 5 dB steps

Maximum Safe Input Level

Average Continuous Power: +36 dBm; 3 minutes maximum
DC Voltage: ± 50 VDC
Nominal

Displayed Average Noise Level (DANL)

1 Hz RBW, 1 Hz VBW, 50 Ω Termination, 0 dB Attenuation, RMS Detector

Preamplifier Off:

10 MHz to 1 GHz	-145 dBm
> 1 GHz to 2 GHz	-143 dBm
> 2 GHz to 3 GHz	-140 dBm
> 3 GHz to 6 GHz	-135 dBm
> 6 GHz to 7.2 GHz	-130 dBm

Preamplifier On:

10 MHz to 1 GHz	-160 dBm
> 1 GHz to 2 GHz	-158 dBm
> 2 GHz to 3 GHz	-156 dBm
> 3 GHz to 6 GHz	-154 dBm
> 6 GHz to 7.2 GHz	-145 dBm

Display Range

Log Scale and Units:	1 to 20 dB/division in 1 dB steps dBm, dBmV, dBuV	10 divisions displayed
Linear Scale and Units:	10 divisions displayed V, mV, mW, W	
Detectors:	Normal, Positive Peak, Sample, Negative Peak, Sample, Average	
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 (25°C $\pm$ 5°C)

10 MHz to 4.350 GHz	± 1.00 dB	
> 4.350 GHz to 5.750 GHz	± 1.25 dB	Attenuation $\leq$ 40 dB
	± 1.75 dB	Attenuation > 40 dB
> 5.750 GHz to 7.2 GHz	± 1.50 dB	Attenuation $\leq$ 40 dB
	± 2.00 dB	Attenuation > 40 dB

Reference Level

Setting Range:	-120 dBm 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

1.5:1

Typical

Second Harmonic Distortion (Second Harmonic Intercept: SHI)

Mixer Level = -25 dBm

100 kHz to 1 GHz < -65 dBc

1 GHz to 7.2 GHz < -70 dBc

Third Order Inter-modulation (Third Order Intercept: TOI)

1 GHz +12 dBm

2 GHz +15 dBm

Spurious

Inherent Residual Response

Input Terminated, 0 dB Attenuation, Preamplifier Off, RBW @10 kHz

100 kHz to 3.2 GHz -90 dBm

3.2 GHz to 7.2 GHz -85 dBm

Exceptions <-75 dBm @ 4281 to 4292 MHz

<-60 dBm @ 95.836 MHz, 191.672 MHz

Input Related Spurious: < -70 dBc

Exceptions -50 dBc @ 175 MHz $\pm$ 0.8 MHz

Sweep Time

Range: 80 ms to 1000 s

24 μ s to 200 s

Span = 0 Hz (Zero Span)

Sweep Mode: Continuous, Single

Gated Sweep

Trigger Source: External

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 BW

Spectrum Emission Mask

Adjacent Channel Power

Spurious Emissions

AM/FM Audio Demodulation

RF Source

Power Meter (Standard)

Power Meter			
Display Range :	-100 dBm to +100 dBm		
Offset Range:	0 to 60 dB		
Resolution:	0.01 dB or 0.1xW		x = m, u, p
Internal Power Sensor			
Frequency Range:	10 MHz to 7.2 GHz		
Span:	1 kHz to 100 MHz		
Dynamic Range:	-120 dBm to +30 dBm		
Maximum Power:	+30 dBm		
Accuracy:	Same as Spectrum Analyzer		
External Power Sensor			
Directional Power Sensors	JD731A		JD733A
Frequency Range:	300 MHz to 3800 MHz		150 MHz to 3800 MHz
Dynamic Range:	Average	0.15 W to 150 W	Average 0.1 W to 50 W
	Peak	4 W to 400 W	Peak 0.1 W to 50 W
Connector Type:	N-female on both ends		
Measurement Type:	Forward/reverse average power, forward peak power, VSWR		
Accuracy:	±4 % + 0.05 W ¹		
Terminating Power Sensors	JD732A	JD734A	JD736A
Frequency Range:	20 to 3800 MHz	20 to 3800 MHz	20 to 3800 MHz
Dynamic Range:	-30 to 20 dBm	-30 to 20 dBm	-30 to 20 dBm
Connector Type:	Type N (m)	Type N (m)	Type N (m)
Measurement Type:	Average	Peak	Average and Peak
Accuracy:	±7 % ¹	±7 % ¹	±7 % ¹

¹CW condition at 25°C $\pm$ 10°C

GPS Receiver (Option 010)

GPS Indicator		Supplemental Information
Latitude, Longitude, Altitude		
High Frequency Accuracy		Spectrum, Interference, and Signal Analyzer
GPS Lock:	± 25 ppb	
Hold Over:	± 50 ppb	3 minutes after satellite locking
Connector:	SMA, Female	

Interference Analyzer (Option 011)

Measurements		Supplemental Information
Spectrum Analyzer:	Sound Indication, AM/FM Audio Demodulation	
Spectrogram:	Collect data up to 72 hours	
RSSI:	Collect data up to 72 hours	Received Signal Strength Indicator

Channel Scanner (Option 012)

Frequency Range		Supplemental Information
	100 kHz to 7.2 GHz	
Measurement Range		
	-110 dBm to +30 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 (Option 022)

Supplemental Information

Frequency Range:	450 MHz to 500 MHz 820 MHz to 965 MHz 1705 MHz to 1995 MHz	
Input signal Range:	-40 dBm to +30 dBm	
Burst Power:	±1.0 dB	
Frequency Error:	±10 Hz + time base error	99 % confidence level
GMSK Modulation Quality		
Phase RMS Accuracy:	±1.0 degree	(0 < Phase RMS < 8)
Residual Error:	0.7 degree	Typical
Phase Peak Accuracy:	±2.0 degree	(0 < Phase Peak < 30)
8 PSK Modulation Quality		
EVM Accuracy:	±1.5 %	(2 % < EVM < 8 %)
Residual Error:	2.5 %	
RF Power vs Time:	±0.25 symbol	

Measurements

	Option 022		Option 042
Channel Power	Power vs Time (Slot)	Auto Measure	Channel/Frequency
Channel Power	Burst Power	Channel Power	Scanner
Spectral Density	Max/Min Point	Occupied BW	Power
Peak to Average Power	Power vs Time (Frame)	Spectrum Emission Mask	Group (Traffic, Control)
Occupied BW	Frame Average Power	Spurious Emissions	BSIC (NCC, BCC)
Occupied Bandwidth	Burst Power (Slot 0 to 7)	Burst/Frame Average Power	Multipath Profile
Integrated Power	TSC (Slot 0 to 7)	Frequency Error	(Six Strongest)
Occupied Power	Constellation	Phase Error RMS/Peak	SNR, Delay
Spectrum Emission Mask	Burst Power	EVM RMS/Peak*	Longitude, Latitude,
Peak Level @defined range	Modulation Type	Origin Offset	Satellite
Spurious Emissions	Frequency Error	C/I*	Modulation Analyzer
Peak Level @defined range	Phase Error RMS/Peak		Frame Avg Power Trend
	IQ Origin Offset		C/I Trend,
	TSC		Frame Average Power
	BSIC		BSIC
	C/I*		Frame No, Frame Time
	EVM RMS/Peak*		C/I
	EVM 95 th *		Frequency Error
			Burst Power
			Modulation Type
			Longitude, Latitude,
			Satellite

WCDMA/HSDPA Signal Analyzer

(Option 023 for WCDMA, Option 024 for HSDPA)

Supplemental Information

Frequency Range:	Band I to Band XIV	
Input Signal Level:	-40 dBm to + 30 dBm	
RF Channel Power Accuracy:	±1.0 dB, ±0.7 dB (typical)	
Occupied Bandwidth Accuracy:	±100 kHz	
Adjacent Channel Leakage Ratio:	< -56 dB, ±0.7 dB@5 MHz offset	
(ACLR)	< -58 dB, ±0.8 dB@10 MHz offset	
WCDMA Modulations:	QPSK	
HSDPA Modulations:	QPSK, 16 QAM, 64 QAM	
Frequency Error:	±10 Hz + time base error	99 % confidence level
EVM Accuracy:	±2.0 %, 2 % ≤ EVM ≤ 20 %	
Residual EVM:	2.5 %	Typical
Code Domain Power:	±0.5 dB relative power	Code channel power > -25 dB
	±1.5 dB absolute power	
CPICH Accuracy (dBm):	±0.8 dB	Typical

Measurements

Option 023 and 024		Option 043	
Channel Power	Constellation	Auto Measure	Scramble Code Scanner
Channel Power	Channel Power	Channel Power	(Six Strongest)
Spectral Density	Rho, EVM	Occupied BW	Channel Power
Peak to Average Power	Peak CDE	Spectrum Emission Mask	CPICH Dominance
Occupied BW	Frequency Error	ACLR	Scramble Code
Occupied Bandwidth	Time Offset	Multi-ACLR	Ec/Io, CPICH Power, Delay
Integrated Power	Carrier Feed Through	Spurious Emissions	Multipath Profile
Occupied Power	Scramble Code	Rho, EVM	Channel Power
Spectrum Emission Mask	Code Domain Power	Peak CDE	Multipath Power
Peak Level @defined range	Channel Power	Frequency Error	Ec/Io, Delay
ACLR	CPICH Power (Abs/Rel)	Time Offset	Code Domain Power
Reference Power	PCCPCH Power (Abs/Rel)	Carrier Feed Through	Channel Power
Abs Power@defined range	SCCPCH Power (Abs/Rel)	Scramble Code	Scramble Code
Rel Power@defined range	PSCH Power (Abs/Rel)	CPICH Power	CPICH Power (Abs/Rel)
Multi-ACLR	SSCH Power (Abs/Rel)	Noise Floor	PCCPCH Power (Abs/Rel)
Lowest Reference Power	PICH Power (Abs/Rel)		SCCPCH Power (Abs/Rel)
Highest Reference Power	Max/Avg Active Power		PSCH Power (Abs/Rel)
Abs Power@defined range	Max/Avg Inactive Power		SSCH Power (Abs/Rel)
Rel Power@defined range	Scramble Code		PICH Power (Abs/Rel)
Spurious Emissions	Codogram		Max/Avg Active Power
Peak Level @defined range	Code Utilization		Max/Avg Inactive Power
	Longitude, Latitude		Rho, EVM
	RCSI		Frequency Error
	CPICH, PCCPCH, SCCPCH		Time Offset, Peak CDE
	PSCH, SSCH, PICH		Carrier Feed Through
	CDP Table		Amplifier Capacity
	Code, Spreading Factor		Peak Amplifier Capacity
	Channel Type, Power		Average Amplifier Capacity
	Code Utilization		Code/Peak Utilization
			Average Utilization
			Longitude, Latitude,
			Satellite in all screens

cdmaOne/CDMA2000 Signal Analyzer (Option 020)

Supplemental Information

Frequency Range:	Band 1 to Band 10	
Input Signal Level:	-40 dBm to +30 dBm	
RF Channel Power Accuracy:	±1.0 dB	Typical
CDMA Compatibility:	cdmaOne and CDMA2000	
Frequency Error:	±10 Hz + time base error	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	
Pilot Power Accuracy:	±1.0 dB	
Time Offset:	±1.0 µs, ±0.5 µs (typical)	External Trigger

Measurements

Option 020		Option 040	
Channel Power	Constellation	Auto Measure	PN Scanner
Channel Power	Channel Power	Channel Power	(Six Strongest)
Spectral Density	Rho	Occupied BW	Channel Power
Peak to Average Power	EVM	Spectrum Emission Mask	Pilot Dominance
Occupied BW	Frequency Error	ACLR	PN Offset
Occupied Bandwidth	Time Offset	Multi-ACLR	Ec/Io, Pilot Power, Delay
Integrated Power	Carrier Feed Through	Spurious Emissions	Channel Scanner (up to 6)
Occupied Power	PN Offset	Rho, EVM	Frequencies or Channels
Spectrum Emission Mask	Code Domain Power	Frequency Error	Channel Power, PN Offset
Peak Level @defined range	Channel Power	Time Offset	Pilot Power, Ec/Io
ACPR	Pilot Power (Abs/Rel)	Carrier Feed Through	Multipath Profile
Reference Power	Sync Power (Abs/Rel)	PN Offset	Channel Power
Abs Power@defined range	Page Power (Abs/Rel)	Pilot Power	Multipath Power
Rel Power@defined range	Q-Page Power (Abs/Rel)	Noise Floor	Ec/Io, Delay
Multi-ACPR	Max/Avg Active Power		Code Domain Power
Lowest Reference Power	Max/Avg Inactive Power		Channel Power
Highest Reference Power	PN Offset		PN Offset
Abs Power@defined range	Codogram	Power Statistics CCDF	Pilot Power (Abs/Rel)
Rel Power@defined range	Code Utilization		Sync Power (Abs/Rel)
Spurious Emissions	Longitude, Latitude		Page Power (Abs/Rel)
Peak Level @defined range	RCSI		Q-Page Power (Abs/Rel)
	Pilot, Paging, Sync, Q-Page		Max/Avg Active Power
	CDP Table		Max/Avg Inactive Power
	Code, Spreading Factor		Frequency Error
	Channel Type, Power		Time Offset, Rho, EVM
	Code Utilization		Carrier Feed Through
			Amplifier Capacity
			Peak Amplifier Capacity
			Average Amplifier Capacity
			Code/Peak Utilization
			Average Utilization
			Longitude, Latitude
			Satellite in all screens

EV-DO Signal Analyzer (Option 021)

		Supplemental Information
Frequency Range:	Band 1 to Band 10	
Input Signal Level:	-40 dBm to +30 dBm	
RF Channel Power Accuracy:	±1.0 dB	Typical
EV-DO Compatibility:	Rev 0, Rev A and Rev B	
Frequency Error:	±10 Hz + time base error	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	
Pilot Power Accuracy:	±1.0 dB	
Time Offset:	±1.0 µs, ±0.5 µs (typical)	External Trigger

Measurements			
Option 021		Option 041	
Channel Power	Power vs Time	MAC Codogram	PN Scanner
Channel Power	(Idle Slot and Active Slot)	Code Utilization	(Six Strongest)
Spectral Density	Slot Average Power	Longitude, Latitude	Channel Power
Peak to Average Power	Pilot, MAC, Data Power	RCSI	Pilot Dominance
Occupied BW	On/Off Ratio	Slot, Pilot, MAC, Data	PN Offset
Occupied Bandwidth	Idle Activity	MAC CDP Table	Ec/Io, Pilot Power, Delay
Integrated Power	Constellation	Code, Spreading Factor	Channel Scanner (up to 6)
Occupied Power	(Pilot, MAC64/128, Data, Composite 64/128)	Channel Type, Power	Frequencies or Channels
Spectrum Emission Mask	Channel Power	Code Utilization	Channel Power, PN Offset
Peak Level @defined range	Rho, EVM	Auto Measure	Pilot Power, Ec/Io
ACPR	Peak CDE	Channel Power	Multipath Profile
Reference Power	Frequency Error	Occupied BW	Channel Power
Abs Power@defined range	Time Offset	Spectrum Emission Mask	Multipath Power
Rel Power@defined range	Carrier Feed Through	ACL	Ec/Io, Delay
Multi-ACPR	PN Offset	Multi-ACL	Code Domain Power
Lowest Reference Power	Code Domain Power	Spurious Emissions	Slot Average Power
Highest Reference Power	(Pilot/MAC)	Slot Average Power	PN Offset
Abs Power@defined range	Pilot/MAC Power	Pilot, MAC, Data Power	Pilot, MAC, Data Power
Rel Power@defined range	Slot Average Power	On/Off Ratio	Pilot, MAC, Data Rho, EVM
Spurious Emissions	Max/Avg I/Q Power	Idle Activity	Max/Avg Active I/Q Power
Peak Level @defined range	Code Domain Power	Pilot/MAC/Data Rho, EVM	Frequency Error
	(Data)	Frequency Error	Time Offset, Peak CDE
	Data Power	Time Offset	Carrier Feed Through
	Slot Average Power	Carrier Feed Through	Code/Peak Utilization
	Avg Data Code Power	PN Offset	Average Utilization
	Max Data Code Power	Power Statistics CCDF	
	Min Data Code Power		Longitude, Latitude
	PN Offset		Satellite in all screens

TD-SCDMA Signal Analyzer (Option 025)

Supplemental Information

Frequency Range:	1785 MHz to 2220 MHz	
Input Signal Level:	-40 dBm to +30 dBm	
Channel Power (RRC) Accuracy:	±1.0 dB	Typical
Modulations:	QPSK, 8PSK, 16QAM	
Frequency Error:	±10 Hz + time base error	99 % confidence level
Residual EVM (RMS):	2.0 % typical	P-CCPCH slot & 1 channel
Time Error (Tau):	±0.2 µs (typical)	External Trigger
Spreading Factor:	Auto (DL, UL), 1, 2, 4, 8, 16	

Measurements

Option 025		Option 045	
Channel Power	Power vs Time (Slot)	Code Error	Sync-DL ID Scanner (32)
Channel Power	Slot Power	Slot, DwPTS Power	Scramble Code
Spectral Density	DwPTS Power	No of Active Code	Ec/Io, Tau
Peak to Average Power	UpPTS Power	Max Active Code Power	Sync-DL ID vs Tau (up to 6)
Occupied BW	On/Off Slot Ratio	Avg Active Code Power	DwPTS Power
Occupied Bandwidth	Slot PAR	Max Inactive Code Power	Pilot Dominance
Integrated Power	DwPTS Code	Avg Inactive Code Power	Power, Ec/Io, Tau
Occupied Power	Power vs Time (Frame)	Peak CDE	Sync-DL ID Multipath (up to 6)
Spectrum Emission Mask	Slot Power (TS 0 to 6)	EVM RMS/Peak	DwPTS Power
Peak Level @defined range	Data Power Left (TS 0 to 6)	Frequency Error	Pilot Dominance
ACLR	Midamble Power (TS 0 to 6)	Time Offset	Power, Ec/Io, Tau
Reference Power	Data Power Right (TS 0 to 6)	Auto Measure	Sync-DL ID Analyzer
Abs Power@defined range	Time Offset	Channel Power	DwPTS Power
Rel Power@defined range	Power vs Time (Mask)	Occupied BW	Pilot Dominance
Multi-ACLR	Slot Power	Spectrum Emission Mask	EVM, Ec/Io, CINR
Lowest Reference Power	On/Off Slot Ratio	ACLR	Frequency Error
Highest Reference Power	Timogram	Multi-ACLR	
Abs Power@defined range	Constellation	Spurious Emissions	
Rel Power@defined range	Rho	Slot Power	Longitude, Latitude
Spurious Emissions	EVM RMS/Peak	UpPTS Power	Satellite in all screens
Peak Level @defined range	PCDE	UpPTS Power	
	Frequency Error	On/Off Slot Ratio	
	IQ Origin Offset	DwPTS Code	
	Time Offset	Rho	
	Midamble Power	EVM RMS/Peak	
	Midamble Power (1 to 16)	PCDE	
	Code Power	Frequency Error	
	Slot Power, DwPTS Power	IQ Origin Offset	
	No of Active Code	Time Offset	
	Max Active Code Power		
	Avg Active Code Power		
	Max Inactive Code Power		
	Avg Inactive Code Power		

Mobile WiMAX Signal Analyzer (Option 026)

Supplemental Information

Frequency Range:	2100 MHz to 2700 MHz 3400 MHz to 3850 MHz 5200 MHz to 5900 MHz	
Input Signal Level:	-40 dBm to +30 dBm	
Channel Power Accuracy:	±1.0 dB typical	
Supported Bandwidth:	7 MHz, 8.75 MHz, 10 MHz	
Frequency Error:	±0.1ppm + time base error	99 % confidence level
Residual EVM (RMS):	1.5 % typical	

Measurements

Option 026

Channel Power

Channel Power
Spectral Density
Peak to Average Power

Occupied BW

Occupied Bandwidth
Integrated Power
Occupied Power

Spectrum Emission Mask

Peak Level @defined range

Spurious Emissions

Peak Level @defined range

Power vs Time (Frame)

Channel Power
Frame Average Power
Preamble Power
DL Burst Power
UL Burst Power

Spectral Flatness

Subcarrier Average Power
Subcarrier Max/Min/Avg

Constellation

Frequency Error
EVM RMS/Peak
RCE RMS/Peak
Time Offset
Segment ID, Cell ID
Preamble Index

EVM vs Subcarrier

RCE RMS/Peak
EVM RMS/Peak
Segment ID, Cell ID
Preamble Index

EVM vs Symbol

RCE RMS/Peak
EVM RMS/Peak
Segment ID, Cell ID
Preamble Index

Auto Measure

Channel Power
Occupied BW
Spectrum Emission Mask
Spurious Emissions
Preamble Power
UL Burst Power
Interval Power
Frequency Error
Time Offset
RCE
EVM
IQ Origin Offset

Power Statistics CCDF

LTE Signal Analyzer (Option 028)

Frequency Range:	700 MHz to 1000 MHz 1800 MHz to 2200 MHz 2600 MHz to 2700 MHz	Supplemental Information
Input Signal Level:	-40 dBm to +30 dBm	
Channel Power Accuracy:	±1.0 dB	Typical
Supported Bandwidth:	10 MHz	
Frequency Error:	±10 Hz + time base error	99 % confidence level
Residual EVM (RMS):	2.0 % typical	Data EVM

Measurements

Option 028

Channel Power

Channel Power
Spectral Density
Peak to Average Power

Occupied BW

Occupied Bandwidth
Integrated Power
Occupied Power

Spectrum Emission Mask

Peak Level @defined range

ACLR

Reference Power
Abs Power@defined range
Rel Power@defined range

Spurious Emissions

Peak Level @defined range

Control Channel

PSCH EVM/Power/Mod Type
SSCH EVM/Power/Mod Type
PBCH EVM/Power/Mod Type
PCFICH EVM/Power/Mod Type
PHICH EVM/Power/Mode Type
PDCCH EVM/Power/Mode Type
RS EVM/Power/Mode Type
Each Data Channels'
IQ Diagram
Modulation Format
Frequency Error
IQ Origin Offset
EVM RMS/Peak

Frame Summary

PSCH EVM/Power/Mod Type
SSCH EVM/Power/Mod Type
PBCH EVM/Power/Mod Type
PCFICH EVM/Power/Mod Type
PHICH EVM/Power/Mode Type
PDCCH EVM/Power/Mode Type
PDSCH EVM/Power/Mode Type
Frame Average Power
RS TX Power
EVM RMS/Peak
Data EVM RMS/Peak
Frequency Error
IQ Origin Offset

Subframe Summary

PSCH EVM/Power/Mod Type
SSCH EVM/Power/Mod Type
PBCH EVM/Power/Mod Type
PCFICH EVM/Power/Mod Type
PHICH EVM/Power/Mode Type
PDCCH EVM/Power/Mode Type
PDSCH EVM/Power/Mode Type
Subframe Power
OFDM Symbol Power
RS EVM RMS/Peak
Data EVM RMS/Peak
Frequency Error, Time Error
Cell ID, Group ID, Sector ID

Power vs Time (Frame)

Frame Average Power
Subframe Power
First Slot Power
Second Slot Power
Cell ID, IQ Origin Offset
Time Offset

Data Channel

Resource Block Power
IQ Diagram
RB Power
Modulation Format
IQ Origin Offset
EVM RMS/Peak

Auto Measure

Channel Power
Occupied BW
Spectrum Emission Mask
ACLR
Spurious Emissions
PSCH EVM/Power
SSCH EVM/Power
PBCH EVM/Power
PCFICH EVM/Power
PHICH EVM/Power
PDCCH EVM/Power
PDSCH EVM/Power
Frame Average Power
RS TX Power
EVM RMS/Peak
Data EVM RMS/Peak
Frequency Error
IQ Origin Offset

Power Statistics CCDF

General Information

Inputs and Outputs		Supplemental Information
RF In		Spectrum Analyzer
Connector:	Type-N, female	
Impedance:	50 Ω (nominal)	
Maximum Level:	+30 dBm, $\pm$ 50 VDC	
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 dBm to +5 dBm	
USB		
USB Host:	Type A, 1 port	Connect flash drive and power sensor
USB Client:	Type B, 1 port	Connect to PC for data transfer
LAN:	RJ45, 10/100 Base-T	Connect to PC for data transfer
E1/T1:	RJ48C	
Audio Jack:	3.5 mm headphone jack	
External Power:	5.5 mm barrel connector	
Speaker:	Built-in speaker	
Display		
Size:	8 inch, LED backlight	
Resolution:	800 x 600	
Power		
External DC Input:	12 VDC to 19 VDC	
Power Consumption:	33 W	60 W maximum when battery charging
External AC/DC Adapter		
Input:	100 to 240 VAC, 50 to 60 Hz, 1.5 A	
Output:	19 VDC, 4.74 A	
Battery		
	10.8 V, 7200 mA-h	Lithium Ion
Operating Time:	> 2.5 hours	Typical
Charge Time:	A fully discharged battery	

takes about 6 hours to
 recharge to 80 %, 8 hours to
 100 %

Storage Temperature: -20 to 50 °C, ≤ 85 % RH

The battery pack should be stored in
 an environment with low humidity.
 Extended exposure to temperature
 above 45 °C could degrade battery
 performance and life.

Data Storage

Internal:	Minimum 1 GB	Up to 1000 instrument states and trace Supports USB 2.0 compatible memory devices
External:		

Environmental

Operating Temperature:	-10 to 50 °C	With the battery pack removed
Maximum Humidity:	85 %	
Shock and Vibration:	MIL-PRF-28800F Class 2	
Storage Temperature:	-55 to 71 °C	

Size and Weight

Weight:	< 4.2 kg (9.26 lb)	< 4.65 kg (10.25 lb) with battery
Size:	315 x 245 x 75 (mm) 12.4 x 9.6 x 2.9 (Inch)	Approximately (W x H x D)

Warranty

2 years

Calibration Cycle

1 year

EMC

EN 61326-2-1	Complies with European EMC
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Ordering Information

JD7108B

100 kHz to 7.2 GHz	Spectrum Analyzer	
10 MHz to 7.2 GHz	Power Meter	Internal mode

Options

NOTE: Upgrade options for the JD7108B use the designation JD7108BU before the respective last two digit option number.

JD7108B010	GPS Receiver and Antenna	
JD7108B011	Interference Analyzer ^{3,4}	
JD7108B012	Channel Scanner	
JD7108B020	cdmaOne/CDMA2000 Signal Analyzer	
JD7108B021	EV-DO Signal Analyzer	(Requires option 20)
JD7108B022	GSM/GPRS/EDGE Signal Analyzer	
JD7108B023	WCDMA Signal Analyzer	
JD7108B024	HSDPA Signal Analyzer	(Requires option 23)
JD7108B025	TD-SCDMA Signal Analyzer	
JD7108B026	Mobile WiMAX Signal Analyzer	
JD7108B028	LTE Signal Analyzer	
JD7108B040	cdmaOne/CDMA2000 OTA Analyzer ⁴	(Requires options 10 and 20)
JD7108B041	EV-DO OTA Analyzer ⁴	(Requires options 10 and 21)
JD7108B042	GSM/GPRS/EDGE OTA Analyzer ⁴	(Requires options 10 and 22)
JD7108B043	WCDMA/HSDPA OTA Analyzer ⁴	(Requires options 10 and 23/24)
JD7108B045	TD-SCDMA OTA Analyzer ⁴	(Requires options 10 and 25)
JD7108B046	Mobile WiMAX OTA Analyzer ⁴	(Requires options 10 and 26)

³Highly recommends adding JD7108B010

⁴Highly recommends adding G70005035x and/or G70005036x

Standard Accessories

JD71050341	Soft Carrying Case ⁵
G710550322	AC/DC Power Adapter ⁵
G710550335	Cross LAN Cable (1.5 m) ⁵
GC73050515	USB A to B Cable (1.8 m) ⁵
GC72450518	> 1 G Byte USB Memory ⁵
G710550325	Rechargeable Lithium Ion Battery ⁵
G710550323	Automotive Cigarette Lighter 12 VDC Adapter ⁵
JD7108B361	JD7108B User's Manual and Application Software – CD

⁵Standard accessories can be purchased separately.

Optional Miscellaneous

G710050581	Attenuator 40 dB, 100 W, DC to 4 GHz (Unidirectional)
JD71050342	Hard Carrying Case
JD71050343	Backpack Carrying Case
G710550324	External Battery Charger
JD7108B362	JD7108B User's Manual – Printed Version

Optional Power Sensors

JD731A	Directional Power Sensor (peak and average power) Frequency: 300 MHz to 3.8 GHz Power: Average 0.15 to 150 W, Peak 4 to 400 W
JD733A	Directional Power Sensor (peak and average power) Frequency: 150 MHz to 3.5 GHz Power: Average/Peak 0.1 to 50 W
JD732A	Terminating Power Sensor (average power) Frequency: 20 MHz to 3.8 GHz Power: -30 to 20 dBm
JD734A	Terminating Power Sensor (peak power) Frequency: 20 MHz to 3.8 GHz Power: -30 to 20 dBm
JD736A	Terminating Power Sensor (peak and average power) Frequency: 20 MHz to 3.8 GHz Power: -30 to 20 dBm

Optional RF Cables

G710050531	1.5 m (4.92 ft) RF Cable DC to 18 GHz N(m)-N(f), 50 Ω
G710050532	3.0 m (9.84 ft) RF Cable DC to 18 GHz N(m)-N(f), 50 Ω

Optional Omni Antennas

G700050351	RF Omni Antenna	400 MHz to 450 MHz
G700050352	RF Omni Antenna	450 MHz to 500 MHz
G700050353	RF Omni Antenna	806 MHz to 896 MHz
G700050354	RF Omni Antenna	870 MHz to 960 MHz
G700050355	RF Omni Antenna	1710 MHz to 2170 MHz

Optional Yaggi Antennas

G700050364	RF Yaggi Antenna	806 MHz to 896 MHz
G700050365	RF Yaggi Antenna	866 MHz to 960 MHz
G700050363	RF Yaggi Antenna	1750 MHz to 2390 MHz

Optional Adapters

G710050571	Adapter N(m) to DIN(f), DC to 4 GHz, 50 Ω
G710050572	Adapter DIN(m) to DIN(m), DC to 4 GHz, 50 Ω
G710050573	Adapter N(m) to SMA(f), DC to 18 GHz, 50 Ω
G710050574	Adapter N(m) to BNC(f), DC to 1.5 GHz, 50 Ω
G710050575	Adapter N(f) to N(f), DC to 4 GHz, 50 Ω
G710050577	Adapter N(f) to DIN(f), DC to 4 GHz, 50 Ω
G710050578	Adapter N(f) to DIN(m), DC to 4 GHz, 50 Ω
G710050579	Adapter DIN(f) to DIN(f), DC to 4 GHz, 50 Ω



JD7108B

Signal Analyzer



Test & Measurement Regional Sales

NORTH AMERICA
Tel: +1 866 228 3762
Fax: +1 301 353 9216

LATIN AMERICA
Tel: +55 11 5503 3800
Fax: +55 11 5505 1598

ASIA PACIFIC
Tel: +852 2892 0990
Fax: +852 2892 0770

EMEA
Tel: +49 7121 86 2222
Fax: +49 7121 86 1222