

JDSU 723A Cable & Antenna Analyzer Specs

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JD723A/JD724B

Cable and Antenna Analyzer



Key Features

- Portable and lightweight handheld instrument
- Built-in wireless frequency bands as well as the most commonly used RF cable types
- Touch-screen 7" TFT color display
- Superior immunity to RF interferences
- Up to 1001 data points for high resolutions and long distance problem location
- USB port, allowing external USB memory device
- Saves up to 400 measurement traces
- Saves up to 100 measurement screens
- Saves up to 20 user definable setups
- Interface with application software, JDViewer, for data management and report creation
- On-screen keyboard permitting saving files quickly and easily
- Rechargeable and field replaceable lithium-ion battery

Key Measurements

- VSWR/Return Loss
- DTF (Distance To Fault)
- Cable Loss
- Power Meter

Advanced Functions

- Trace overlay allows comparative analysis of up to 4 traces in a single measurement screen
- In addition to its 6 markers it also provides up to 3 marker bands
- Reflection measurements are presented in VSWR, Return Loss or Smith Charts

Introduction

The majority of problems in mobile networks occur at the base station infrastructure composed of the antenna system, cables, and connectors. It's essential to have the optimal instrument for properly servicing or installing cell sites.

JDSU's JD723A and JD724B Cable and Antenna Analyzers are the optimal test solution to characterize cell site's infrastructure due to its handheld design, ease of use, and rich functionality.

The JD723A and JD724B have all of the measurement functions necessary to accurately verify the site's transmission line and antenna system from signal reflections (VSWR/Return Loss) to RF transmission power.

In addition, the JD723A and JD724B make accurate Distance-To-Fault (DTF) measurements properly identifying fault's location.

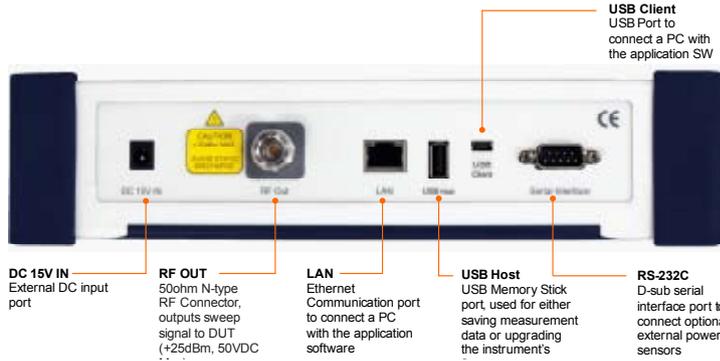
The instrument's touch panel operation and 7 inch wide TFT color display allows measurements to be easily made and displayed. Its application specific software allows the user to easily compare and analyze measurements and generate professional reports.

A rechargeable and field installable lithium-ion battery for operating longer than three hours is part of the JD723A and JD724B.

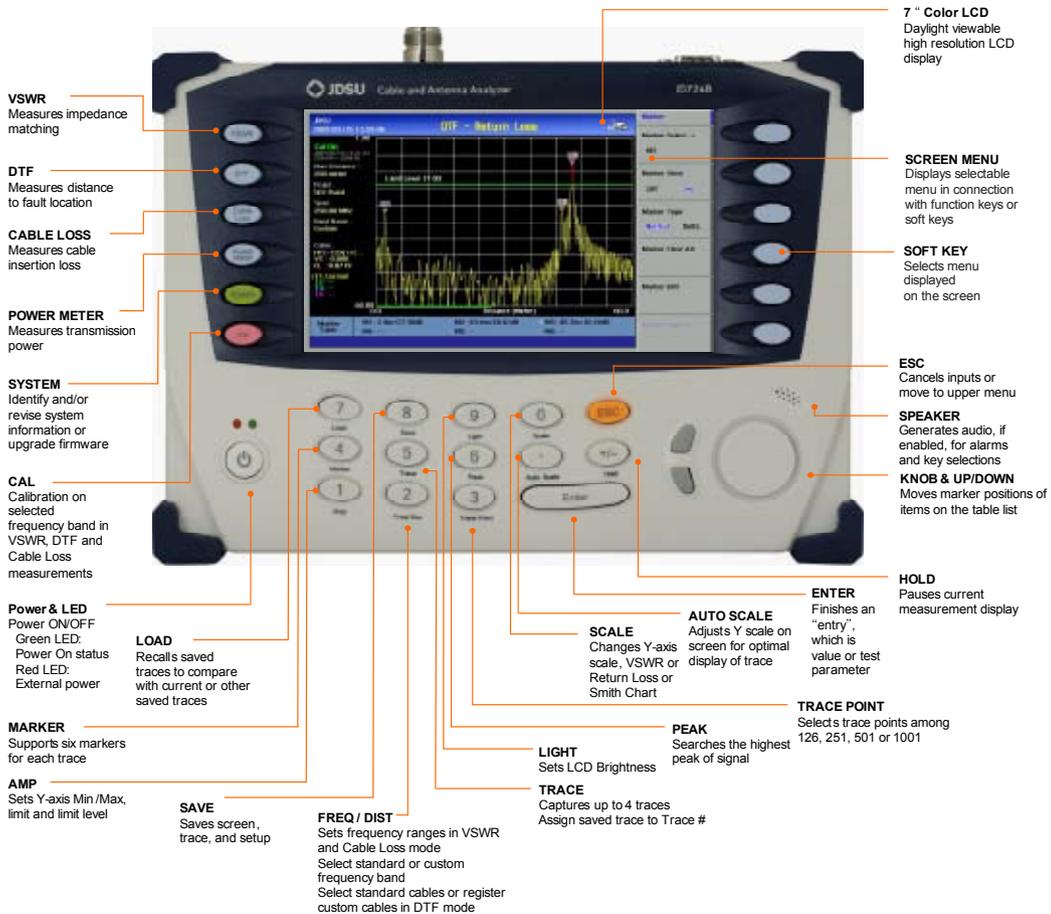
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Panel Overview

Top View



Front view



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Main Functions

VSWR / Return Loss

VSWR and return loss measurements provide the impedance performance and signal reflection characteristics of the cell site.

The JD723A and JD724B provide high resolution VSWR/return loss measurement capability.

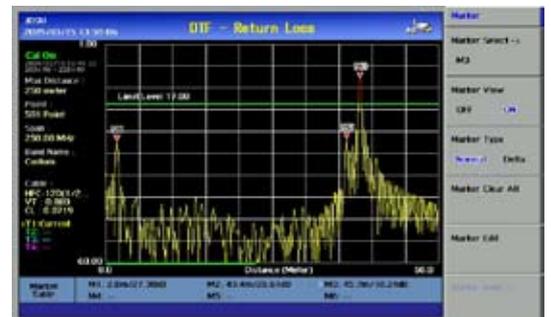
- Frequency range
 - JD723A: 100 to 2700 MHz
 - JD724B: 25 to 4000 MHz
- Dynamic range: 60 dB
- Over 80 wireless frequency bands built-in in the instrument's database
- Flexibility to incorporate additional frequency bands
- User definable limit line for fast Pass/Fail characterization



DTF (Distance to Fault)

The DTF measurement function allows user to accurately identify faulty locations.

- Frequency range
 - JD723A: 100 to 2700 MHz
 - JD724B: 25 to 4000 MHz
- Distance : Up to 1.250 m (4.125 ft)
- Dynamic range: 60 dB
- 1001 high resolution mode
- Over 95 cable types built-in in the instrument's database
- Flexibility to incorporate additional cable types
- User definable limit line for fast Pass/Fail characterization



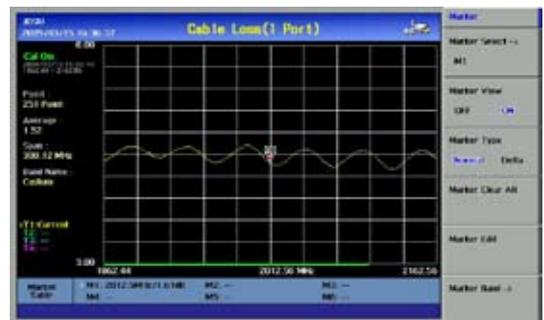
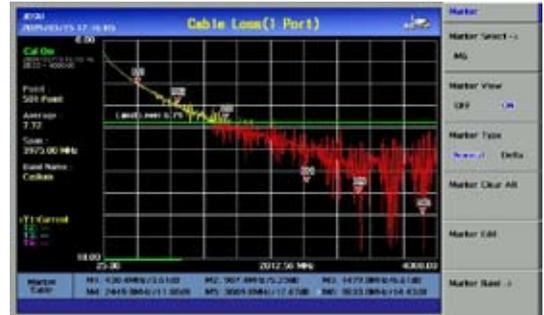
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Main Functions

Cable Loss

Cable Loss measures the amount of signal lost by the cable line, this measurement facilitates a rapid compliance verification analysis throughout the transmission line.

- Frequency range:
 - JD723A: 100 to 2700MHz
 - JD724B: 25 to 4000MHz
- Dynamic Range: 0 to 30dB
- User definable limit line for fast Pass/Fail characterization



Power Meter

The Power Meter function makes power measurements easy and comprehensible using external power sensors. Its configurable settings allow display range, maximum and minimum limits, and the selection of power units in dBm or Watts.

- Lower/Upper power limit can be set for a fast testing through Pass/Fail indication
- Power Sensor types
- Directional Power Sensor
- Terminating Power Sensor



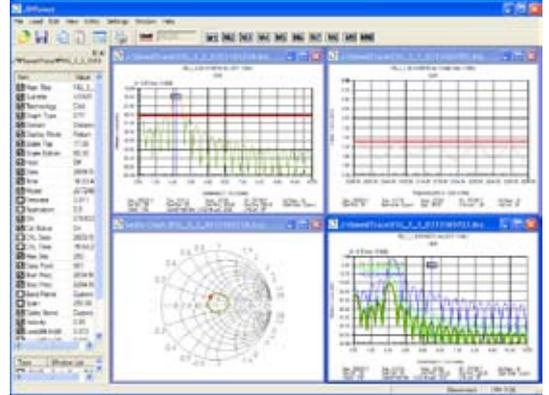
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Main Functions

Application Software

The JD723A and JD724B Application Software, JDViewer, provides all the necessary tools to operate the instrument more conveniently including:

- Communication with the instrument via LAN/USB
- Smith Chart support
- VSWR-DTF conversion
- Captures saved plots
- Registers or edits user definable wireless frequency bands into the instrument's custom bands list
- Registers or edits user definable cable types into the instrument's custom cable list
- Edits measurement charts
- Report templates available
- Generates and prints reports
- Exports measurement reports



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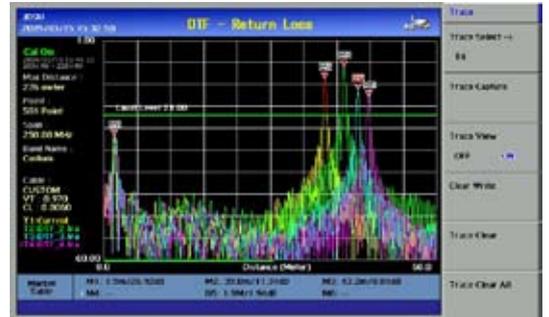
Advanced Functions

The JD723A and JD724B provide additional functionality allowing superior analysis.

Trace Overlay

Trace Overlay allows comparative analysis of up to 4 traces by superimposing them together on one measurement graph.

Additionally, up to 6 markers can be set on any trace among multiple traces to see its corresponding value.



Marker Bands

Marker bands are user definable markers on frequency sub-bands enabling a visual identification of uplink and downlink frequencies performing compliance verification with a single measurement trace.



Smith Chart

The JD723A and JD724B are capable of performing Smith chart measurements to display on the site impedance of the antenna and transmission line.



Specifications

General

Max input power	+25 dBm, ± 50 VDC
Frequency accuracy	<± 75 ppm
Frequency resolution	100 kHz
Test port impedance	50 Ω
Test port	Type N Female
Trace storage	Up to 400
Screen storage	Up to 100
Setup storage	Up to 20
Data points	126, 251, 501, 1001
Measurement speed	1, 1.3, 2.5, 5 s for each data point
One port power	0 dBm (typical)
Corrected directivity	40 dB typical
One port accuracy	$\leq \pm(0.8 + 20 \log(1 + 10^{EP/20}))$ dB (typical) EP = Directivity-measured return loss
Immunity to interference	On frequency: +5 dBm On channel: +17 dBm

VSWR

Frequency range	25 ~ 4000 MHz (JD724B) 100 ~ 2700 MHz (JD723A)
Range	1 dB ~ 65 dB
Resolution	0.01

Return loss

Frequency range	25 ~ 4000 MHz (JD724B) 100 ~ 2700 MHz (JD723A)
Range	0 dB ~ 60 dB
Resolution	0.01

DTF

Frequency range	25 ~ 4000 MHz (JD724B) 100 ~ 2700 MHz (JD723A)
Vertical range	VSWR:1 ~ 65 Return Loss 0 dB ~ 60 dB
Vertical resolution	0.01
Distance	0 ~ 1250 m (4 125 ft)
Horizontal range	0 to (# of data points-1) x horizontal resolution
Horizontal resolution	$(1.5 \times 10^8)(V_p)/(\Delta f) * 0.95$ Vp: cable's relative propagation velocity $\Delta f[\text{Hz}] = \text{Stop Freq} - \text{Start Freq}$

Cable Loss

Frequency range	25 ~ 4000 MHz (JD724B) 100 ~ 2700 MHz (JD723A)
Range	0 dB ~ 30 dB
Resolution	0.01 dB

Power Meter (requires optional directional/terminating power sensor)

Display range	-80 dBm ~ +120 dBm
Offset range	0 ~ 60 dB
Resolution	0.01 dB or 0.1 xW

Directional Power Sensors (optional)

JD731A

Sensor type	Average and peak
Frequency range	300 MHz ~ 3800 MHz
Power range	Average: 0.15 ~ 150 W (21.76 ~ 51.76 dBm) Peak: 4 ~ 400 W (36.02 ~ 56.02 dBm)
Measurement uncertainty	± 4% of reading + 0.05 W ^{1,2)}
Input return loss	≤ 2500 MHz, 27 dB min > 2500MHz, 25dB
Directivity	27 dB min
Insertion loss	< 1 GHz, < 0.05 dB 1 ~ 2 GHz, < 0.1 dB, 2 ~ 3.8 GHz < 0.13 dB
Connector type	N-female on both ends

JD733A

Sensor type	Average and peak
Frequency range	150 MHz ~ 3500 MHz
Power range	Average: 0.25 ~ 20 W (24 ~ 43 dBm) Peak: 0.25 ~ 20 W (24 ~ 43 dBm)
Measurement uncertainty	± 4% of reading + 0.05 W ^{1,2)}
Input return loss	≤ 2500 MHz, 27 dB Min
Directivity	27 dB Min
Insertion loss	<1 GHz, <0.05 dB 1 ~2 GHz, < 0.1 dB, 2 ~ 3.5 GHz < 0.13 dB
Connector type	N-female on both ends

Terminating Power Sensors (optional)

JD732A, JD734A, JD736A

Sensor type	Average (JD732A) Peak (JD734A) Average and Peak (JD736A)
Frequency range	20 MHz ~ 3800 MHz
Power range	-30 ~ +20 dBm (1 μW ~ 100 mW)
Measurement uncertainty	± 7% of reading ^{1,2}
Connector type	N-male

JD72450551

Sensor type	Average
Frequency range	40 MHz ~ 3000 MHz
Power range	~30 dBm ~ 0 dBm (1 μW ~ 1 mW)
Measurement uncertainty	± 10% of reading ^{1,2}
Connector type	N-male

JD72450552

Sensor type	Peak
Frequency range	40 MHz ~ 4000 MHz
Power range	~40 dBm ~ 0 dBm (0.1 μW ~ 1 mW)
Measurement uncertainty	± 10% of reading ^{1,2}
Connector type	N-male

Miscellaneous

Dimension	260 x 190 x 60 mm (10.2" x 7.5" x 2.4")
Weight	< 2.0 kg (4.41 lbs)
Battery	Li-Ion (>3 h continuous operating)
Operating temperature	-10 ~ 50 °C (14 ~ 122 °F)
Storage temperature	-40 ~ 80 °C (-40 ~ 176 °F)
Humidity	95% no condensation

1) The specification provided at a temperature of 25°C ± 10°C.

2) CW condition

* All Specifications based on calibrating after 5 minute warm-up.

Ordering Information

Mainframe

JD723A	Cable and Antenna Analyzer (100 ~ 2700 MHz)
JD724B	Cable and Antenna Analyzer (25 ~ 4000 MHz)

Standard Accessories

Soft carrying case
AC-DC adapter
Cross LAN cable (1.5 m)
1 GB USB memory
Automotive cigarette lighter/12 VDC adapter
Lithium-Ion battery
Stylus pen
User's manual and application software on CD
2 years warranty

Optional Accessories

JD72450509	Calibration Kit (N(m)), 40 dB, 4 GHz
JD72450510	Calibration Kit (DIN(m)), 40 dB, 4 GHz
GC72450531	RF cable, 1.5 m N(m)-N(f)
GC72450532	RF Cable, 3.0 m N(m)-N(f)
JD72350542	Hard case
JD72350562	JD723A/JD724B user's manual- printed version
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
GC7236000	JD723A Warranty extension of 1 year for Asia, NA
GC7236001	JD723A Warranty extension of 1 year for LA, EMEA
GC7246000	JD724B Warranty extension of 1 year for Asia, NA
GC7246001	JD724B Warranty extension of 1 year for LA, Asia

Note: select one calibration kit and one RF cable

Power Meter Accessories

JD731A	Directional power sensor, 300 ~ 3800 MHz, Average 0.15 ~ 150 W, Peak 4 ~ 400W
JD733A	Directional power sensor, 150 ~ 3500 MHz, Average/Peak 0.25 ~ 20 W
JD732A	Terminating average power sensor 20 MHz~ 3800 MHz, -30 ~ +20 dBm
JD734A	Terminating peak power sensor, 20 ~ 3800 MHz, -30 ~ +20 dBm
JD736A	Terminating average and peak power sensor, 20 ~ 3800 MHz, -30 ~ +20 dBm
JD72450551	Terminating average power sensor, 40 ~ 3000 MHz, -30 ~ 0 dBm
JD72450552	Terminating peak power sensor, 40 ~ 4000 MHz, -40 ~ 0 dBm
G710050581	Attenuator 40 dB, 100 W, DC to 4 GHz (unidirectional)

Test & Measurement Regional Sales

NORTH AMERICA TEL: 1 866 228 3762 FAX: +1 301 353 9216	LATIN AMERICA TEL: +1 954 688-5660 FAX: +1 954 3454668	ASIA PACIFIC TEL:+852 2892 0990 FAX:+852 2892 0770	EMEA TEL:+49 7121 86 2222 FAX:+49 7121 86 1222	www.jdsu.com/test
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