

DSI-450

EMI Test Receiver

Product Specifications



Version 0.2.00
April 2008

DSI-450 Specifications

Receiver

Application: DSI-450

Frequency Range 1 kHz to 4 GHz

SOFTWARE

Operating System: Windows XP/VISTA

Frequency Resolution .1 Hz

Internal Reference Frequency 100 MHz
OCXO

Aging per year (after 30 days continuous operation) $10^{-6} + 1$ PPM/year +0.05 PPM 0°C to 60°C

Temperature drift (+5°C to +45°C)

$5 \cdot 10^{-8}$, 0°C to 60°C

Frequency display (Receiver mode) 8 digit

Frequency display response referred to 1 GHz
<50 kHz +/- 0.5 dB
50 kHz to 2 GHz +/- 4 dB

Marker resolution 1 Hz

Spectral purity, SSB phase noise IF=500 MHz, (RBW=1 Hz)

10 kHz -90 dBc

100 kHz, span>100 kHz -90 dBc

Residual FM, RBW=1 kHz, Sweep time=100 mS <-120 dBm

Sweep (Analyzer Mode)

Selectable Sweep time in frequency domain, span >10 Hz

Automatically Set by the BW and selectable

EMI Bandwidths 6 dB Bandwidths
200 Hz, 9kHz, 120 kHz

EMI Bandwidths, pulse 1 MHz

Bandwidth accuracy, <100 kHz
10%

Bandwidth accuracy, 300 kHz to 3 MHz
10%

Shape factor 60 dB:3 dB, <100 kHz
4:1

Shape factor 60 dB:3 dB, 300 kHz to 3 MHz
4:1

Video Bandwidth, Analyzer Mode
> selected IF BW/2

FFT FILTERS

6 dB band widths 10 Hz, 20 Hz, 50 Hz

Bandwidth accuracy <.1 %

Shape factor 60 dB:3 dB 4:1

IF FILTERS

Bandwidth accuracy 10 %

RBW 6dB Filters, Hz 100,200, 250,300, 400, 500,640, 800

RBW 6 dB Filters, kHz 1, 1.3, 1.6, 2, 2.5, 3, 4, 5, 6.4, 8, 9, 10, 13, 16, 20, 30, 100, 120, 500

RBW 6 dB Filters, MHz 1

Internal Preselector

Selectable, on and off switch

125 kHz-280 kHz

280 kHz-450 kHz

450 kHz-720 kHz

720 kHz-1.2 MHz

1.2 MHz-2 MHz

2 MHz-3.7 MHz

3.7 MHz-5.9 MHz
5.9 MHz-10.9 MHz
10.9 MHz-16.5 MHz
15 MHz-1.0 GHz

Tunable Tracking Bandpass filter

1.1 GHz-4.0 GHz

LO Radiation from Input Port

1 KHz -2 GHz <-90 dBm
2 GHz – 4 GHz <-80 dBm

Impulse Overshoot

<2% for BW < 20 kHz
<10% for BW < 120 kHz

Display Range

>30 dB Linear
>70 dB Logarithmic

Max Input DC Voltage

AC coupled

50 V

Max Input CW RF Power

RF Attenuation 0 dB

1 W

Inter-Modulation

**1 dB Compression of Input Mixer f>15 Mhz,
RF Attention 0 dB Preselection -17dBm**

Third Order Intercept, Level -65 dBm

Displayed Average Noise Level (DANL) (sensitivity)

RF attenuation 0 dB, S/N=0 dB, RBW=10 Hz,
VBW=1 Hz, span=0 Hz, 50 Ohm termination.

Without pre-selection, AC coupled

1 KHz-20 kHz: -152 dBm

20 kHz-600 MHz: -155 dBm

600 MHz-4 GHz: -152 dBm

Displayed Average Noise Level (DANL)

RF attenuation 0 dB, Normalized to RBW=1
Hz. **Without Preamplifier**

1 KHz-9 kHz: -55 dBuV

9 kHz-200 MHz: -58 dBuV

200 MHz-4 GHz: -55 dBuV

Immunity to Interference

Image Frequency >80 dB

Intermediate Frequency >80 dB

Level Display Resolution:

Digital: 0 dB

Analog: 0.1 dB

Dynamic Readout:150 dB

Uncertainty of attenuator settings, 0 to 70 dB, referenced to 10 dB RF Attenuation

+/-0.5 dB

Units of Level Display: dBm, dBuV, dBuA,
dBuV/m, dBuA/m, dBmV, dBpT

Simultaneous Detectors: Average, Quasi
Peak, RMS, Peak

Dynamic Range (1 dB Compression Point Equivalent Input Noise Density)

1 KHz-20 kHz: >150 dB

20 kHz-600 MHz: >153 dB

600 MHz-2 GHz: >150 dB

2 GHz-4 GHz: >148 dB

Noise Figure

1 KHz-20 kHz: <12 dB

20 kHz-600 MHz: <9 dB

600 MHz-2 GHz: <12 dB

2 GHz-4 GHz: <20 dB

Video Linear Dynamic Range

>50 dB

Video Output Level (50Ω)

0 to 4 V

Signal Monitor at 21.4 MHz, 20 MHz Bandwidth -107 dBm to 10 dBm

Detectors: AM

Screen:

TFT, 640 X 480

Linear Level Display Range:

>30 dB

Number of Tandem (one after another)

Traces: 20

Trace Detectors, in the Measure Mode:

Peak, Quasi Peak, Average, RMS

Trace Functions Number of Measurement Points: 1,000,000 per Segment Out of 20 Segments possible

Measurement Accuracy (S/N>10dB):

+/- 2 dB

Correction Factors:

Preloaded/ User Defined

Quasi Peak Indication:

+/- 2 dB

Dwell Time:

Preset/Adjustable

Demodulation/Detection Modes:

AM

Audio Output:

>3Vp-p, 20 Hz to 20 kHz

Connectors and Controllers

Front Panel

TFT, 640x480

IF Out BNC Female

3.5 mm mini-Jack

Input Connector N Type

Rear Panel

Connectors BNC female (Signal Monitor, Video, IF Out)

IEEE-GPIB -488.2

2 USB Interfaces

2 Ethernet

Mouse, Keyboard

Connector for external monitor (VGA)

AC Supply Connector 69 to 258 VAC

Fuse 15A Chasis GND

Remote Controller - IEEE-GPIB -488.2

Mass Memory

Data Storage: 40 GB hard disc, 7200 RPM

Storage Temperature Range: -20⁰C to +50⁰C

Climatic Loading (IEC 60068-2-30:2002-02):
0% to 80% non condensing

Power and Safety

AC Supply: 96 to 258 VAC, 47 to 400 Hz,

Power Consumption: 300 W

Safety: UL

Test Marks: CE, UL

Recommended Calibration Interval:
Operation with Internal Reference 1 Year

Mechanical/Environmental

Weight: 45 lbs (21 kg) **Total System Weight**

Cooling: Built-in low velocity fan

Mounting: Rack Mount

Temperature Range: + 10 to + 40°C

Storage Conditions:-20 to 50°C

Humidity Range: 0% to 80%

Internal PC

Processor: Pentium 4 or better

CPU Speed: 32 bit or better

RAM: 2 GB or better

Hard-disk: Removable: 80 GB (min)

CD ROM: 48 X (min)

Documentation

Receiver Technical Manual

Receiver User Manual

Certificate of Calibration

Warranty Certificate

Certificate of Conformance

Compliance & Software Licenses

Optional Equipment

19" Rack Mount Case with Shock Mounts:

Portable Antenna Kit DC to 1 GHz

Antenna 1 GHz to 4.0 GHz

Line Impedance Stabilization Network (LISN)

Microsoft Office

DC to 4 GHz N - N (Male to Male) Cable

(available in various cables lengths)

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www.dynamicsciences.com

6130 Variel Avenue
Woodland Hills, CA 91367

Tel: 818-226-6262

Fax: 818-226-6247

Email: market@dynamicsciences.com

