DSI-600 EMI TEST & MEASUREMENT SYSTEM SPECIFICATIONS

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Dynamic Sciences International, Inc.

DSI-600

EMI Test & Measurement Receiver System Specifications

Frequency Characteristics	Specifications
Frequency Range DSI-600-2 DSI-600-4 DSI-600-12 DSI-600-27 DSI-600-40	 20 Hz to 2 GHz 20 Hz to 4 GHz 20 Hz to 12.5 GHz 20 Hz to 26.5 GHz 20 Hz to 40.0 GHz
Frequency resolution	20 Hz to 150 KHz = .1 Hz >150 KHz =1 Hz
Internal Reference Frequency 100 MHz	OCXO
Aging per year (after 30 days continuous operation)	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)	$5*10^{-8}$, 0°C to 60°C
Frequency display (Receiver mode)	8 digit
Frequency display response referred to 1 GHz <50 kHz 50 kHz to 2 GHz	 +/- 0.5 dB +/- 4 dB
Marker resolution	1 Hz
Spectral purity, SSB phase noise IF=500 MHz, (RBW= 1Hz)	
10 kHz	-70 dBc
100 kHz, span>100 kHz	-70 dBc
Residual FM, RBW=1 kHz, Sweep time=100 mS	<-120 dBm
Sweep (Analyzer Sweep (Analyzer Mode)	
Sweep time, in time domain, span 0 Hz,	Selectable
Sweep time in frequency domain, span >10 Hz	Automatically Set by the BW and selectable
Resolution Bandwidths	
Sweep Filters	
6 dB Bandwidths	10%
Bandwidth accuracy, <100 kHz	10%
Bandwidth accuracy, 300 kHz to 3 MHz	4:1
Shape factor 60 dB:3 dB, <100 kHz	4:1
Shape factor 60 dB:3 dB, 300 kHz to 3 MHz	10%
Bandwidth accuracy, <=120 kHz	10%
Shape factor 60 dB:6 dB, <=120 kHz	>4:1
Shape factor 60 dB:6 dB, 1 MHz	>4:1
Video Bandwidths, Analyzer Mode >	> Selected IF BW/2

Characteristic	Specifications
6 dB band widths	1Hz, 5Hz, 10 Hz, 20 Hz, 50 Hz
Bandwidth accuracy	<0.1%
Shape factor 60 dB:3 dB	4:1
IF Bandwidths	
RBW 6 dB Filters	Hz 10, 20, 50, 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, 15, 20, 25, 30, 40, 50, 100, 120, 200, 500
RBW 6 dB Filters	MHz 1, 3, 10, 15
Internal Preselector	
Selectable, on and off switch	125 kHz-280 kHz
Selectable, on and off switch	280 kHz-450 kHz
Selectable, on and off switch	450 kHz-720 kHz
Selectable, on and off switch	720 kHz-1.2 MHz
Selectable, on and off switch	1.2 MHz-2 MHz
Selectable, on and off switch	2 MHz-3.7 MHz
Selectable, on and off switch	3.7 MHz-5.9 MHz
Selectable, on and off switch	5.9 MHz-10.9 MHz
Selectable, on and off switch	10.9 MHz-16.5 MHz
Always on	15 MHz-1.1 GHz
Always on	1.1 GHz-1.3 GHz
Always on	1.3 GHz-1.6 GHz
Always on	1.6 GHz-2 GHz
Always on	2 GHz-12.7 GHz
Always on	12.7 GHz-26.5 GHz
Always on	26.5 GHz-40 GHz
LO Radiation from Input Port	20 Hz -2 GHz <-90 dBm 2 GHz – 26.5 GHz <-80 dBm 26.5 GHz – 40 GHz <-60 dBm
Impulse Overshoot	<2% for BW < 20 kHz <10% for BW < 120 kHz
AGC	Selectable
Level	**Specifications**
Display Range	140dB
Max Input DC Voltage AC coupled	50 V
Max Input CW RF Power	1W
Inter-Modulation 1 dB Compression of Input Mixer, f>200 MHz, RF Attenuation 0 dB, Pre-selection and Preamplifier on	-17 dBm
Third Order Intercept, Level	20 Hz to 2 GHz > 0dBm 2 GHz to 40 GHz < -15dBm
Displayed Average Noise Level (DANL) 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	
20 Hz-20 kHz	-152 dBm
20 kHz-600 MHz	-155 dBm
600 MHz-12.8 GHz	-152 dBm
12.8 GHz-26.5 GHz	-150 dBm

26.5 GHz-40 GHz	-144 dBm
Displayed Average Noise Level (DANL) RF attenuation 0 dB, Normalized to RBW=1 Hz.	
Without Preamplifier 20 Hz-9 kHz 9 kHz-200 MHz 200 MHz-18 GHz 18 GHz-26.5 GHz 26.5 GHz-40 GHZ	 -55 dBuV -58 dBuV -55 dBuV -53 dBuV -47 dBuV
Immunity to Interference Image Frequency Intermediate Frequency Spurious response, f>1 MHz, 0 dB RF attenuation, without input signal	 >80 dB. >80 dB <-120 dBm <-110 dBm
Characteristic **Level Display (Receiver**	**Specification**
Level Display Resolution: Digital Analog Dynamic Readout	 0 dB 0.1 dB 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:	Peak, Quasi Peak RMS, RMS/Average, Average
Dynamic Range (1 dB Compression Point**/** Equivalent Input Noise Density) 20 Hz-20 kHz 20 kHz-600 MHz 600 MHz-2 GHz 2 GHz-26.5 GHz 26.5 GHz-40 GHz	 >150 dB >153 dB >150 dB >148 dB >134 dB
Noise Figure 20 Hz-20 kHz 20 kHz-600 MHz 600 MHz-2 GHz 2 GHz-26.5 GHz 26.5 GHz-40 GHz	 <12 dB <9 dB <12 dB <20 dB <34 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
Characteristic **Level Display**	**Specification**
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
Number of Measurement Points	1,000,000 per Segment Out of 20 Segments possible
Units of Level Axis Logarithmic Level Display	dBm, dBuV, dBuA, dBuV/m, dBuA/m, dBmV, dBpT
Measurement Accuracy (S/N>10dB)	+/- 2 dB
Quasi Peak Indication	+/- 2 dB
Demodulation Modes	AM
Audio Output	>3Vp-p, 20 Hz to 20 kHz
Input and Outputs (rear panel) RF Input	
Connectors	BNC female
Impedance	50Ω
IF Output	-80 dBm to 15 dBm
IEC/IEEE bus remote control	IEEE – 488.2
Connectors	24 pin D sub
Command Set	SCPI 1988
Serial Interfaces	Included
Printer Interfaces	Parallel port
USB Interfaces	Included
Connector for External Monitor (VGA)	Included
Display	TFT, 640X480 External monitor will enable enhanced resolution
Mass Memory	
Data Storage	40 GB hard disc, 7200 RPM
Storage Temperature Range	-20^0C to $+50^0$C
Climatic Loading (IEC 60068-2-30:2002-02)	0% to 80% non condensing
Power / Safety	
AC Supply	24 VDC, +/- 5% 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
Connector	N/SMA female 20 Hz to 26.5 GHz TNC, 26.5 GHz to 40 GHz
VSWR RF Attenuation <10 dB, AC coupled 20 Hz to 40 GHz	<2:1
Setting Range of Attenuator	0 to 70 dB in 10 dB steps
Keyboard Connector	PS/2 female for MF-2 keyboard.
Audio Output	
Connector	3.5 mm Mini Jack
Impedance Voltage Frequency range	8 OHMS >3Vp-p 20 Hz to 20KHz

Open circuit voltage	>1V RMS flat 20 Hz-20 kHz
Impulse Over-Shoot BW<20 kHz BW<120 kHz	 <2% <10%
Band Switching and Settling Time	<50 ms
Mechanical / Environmental	
Power	170 watts, 90/260 VAC, 47 – 63 Hz, 24 Volt DC
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%
Software	
Operating System	Windows Pro/XP Installed & CD & License Included
Application	EMIT Software Installed & CD & License Included
Documentation	
DSI-600 EMI Test Measurement Receiver System Technical Manual	
DSI-600 EMI Test Measurement Receiver System User Manual	
DSI-600 EMI Spectrum Analyzer Operator's Manual	
Certificate of Calibration	
Warranty Certificate	
Certificate of Conformance/Compliance & Software Licenses	
Options	
19 Rack Mount Shipping Case with Shock Mounts	
Portable Antenna Kit DC to 1 GHz	
Antenna 1 GHz to 26.5 GHz	
Antenna, 18 GHz to 26.5 GHz	
Antenna, 26.5 to 40 GHz (required w/DSI-600-40)	
Various Cables & Connectors	
Line Impedance Stabilization Network (LISN)	
Rack Mount Computer	
Various Monitors	
Microsoft Office	

www.dynamicsciences.com

9400 Lurline Ave. Unit B,
Chatsworth, CA 91311
Tel: 818-226-6262
Fax: 818-226-6247
market@dynamicsciences.com