

Specifications

FREQUENCY	
Range:	
LSX2091D:	100 kHz to 20 GHz
LSX4091D:	100 kHz to 40 GHz
Resolution:	0.001 Hz
Phase offset:	0.01 deg
Switching speed:	
Standard:	500 μ s
FS Option:	100 μ s

FREQUENCY REFERENCE	
Temp. Stability:	\pm 25 ppb max.
Aging:	\pm 3 ppm for 20 years
Warm up time:	30 min

AMPLITUDE		
Max output power:		
Settable:	+15 dBm	
Calibrated:	+10 dBm	
Min output power:	Base	LP Opt.
Settable:	-70 dBm	-80 dBm
Calibrated:	-50 dBm	-70 dBm
Resolution:	0.01 dB	
Power Mute:	-70 dBm	
Output Return Loss:	-10 dBm	
Accuracy (dB):	-50dBm to +15dBm	
Up to 100MHz:	\pm 0.3 (typ.)	
100MHz to 3GHz:	\pm 0.4 (typ.)	
3GHz to 9GHz:	\pm 0.7 (typ.)	
Above 9GHz:	\pm 1 (typ.)	

PHASE NOISE (dBc/Hz)	
Measured @ 10kHz offset	
100MHz	-155 (typ.)
250MHz	-147 (typ.)
500MHz	-141 (typ.)
1GHz	-134 (typ.)
2GHz	-128 (typ.)
4GHz	-123 (typ.)
8GHz	-116 (typ.)
10GHz	-115 (typ.)
20GHz	-109 (typ.)
40GHz	-103 (typ.)

HARMONICS (typ.)		
Range:	0dBm	+10dBm
Up to 8GHz:	-50dBc	-42dBc
8GHz to 20GHz:	-40dBc	-32dBc
20GHz to 40GHz:	-35dBc	-28dBc

SUB-HARMONICS (typ.)	
Up to 20GHz:	-75 dBc
20 to 40GHz:	-35 dBc

NON-HARMONICS (dBc)	
Up to 40GHz:	-90dBc (typ.) -60dBc max. ⁽¹⁾

MODULATION	
FREQUENCY MODULATION	
Maximum Deviation:	10MHz
Resolution:	0.1% or 1Hz (the greater)
Modulation Rate:	1MHz
Resolution:	1Hz

AMPLITUDE MODULATION	
AM Depth:	
Type:	Linear
Maximum settable:	100%
Resolution:	0.1% of depth
Modulation rate:	DC to 100kHz

PHASE MODULATION	
Peak Deviation:	360 deg
Modulation Rate:	DC to 100 kHz

SWEEP	
Range:	Same as freq. range
Modes:	Frequency step, Amplitude step, List
Dwell time:	10 μ s to 1000 s
Resolution:	1 μ s
Number of points:	
List:	2 to 4,096
Step:	2 to 65,535
Step change:	Linear
Trigger:	Free run, External, Bus, Timer

PATTERN MODULATION (PAT OPTION)	
Number of steps:	1 to 2048
Step Repetition:	1 to 65535
On/off time:	20ns to 20 days

PULSE MODULATION (PLS OPTION)	
On/off ratio:	70dB
Rise/fall time:	15ns, 10%-90% (typ.)
Resolution:	10ns
Minimum Width:	30ns
Repetition frequency:	DC to 10MHz

INPUTS / OUTPUTS	
RF OUT	
Impedance:	50 Ω
Connector type:	2.4mm
REFERENCE OUT	
Impedance:	50 Ω
Connector type:	SMA
Frequency:	10 MHz or 100 MHz
Shape:	Sine
Power:	3 to 7 dBm

MODULATION INPUT	
Connector Type:	SMP
Input Impedance:	50 Ω
Max. input voltage:	\pm 1V
Input damage level:	\pm 3.5V

PULSE / TRIGGER INPUT	
Connector type:	SMP
Input Impedance:	50 Ω
Input voltage:	TTL, CMOS compatible
Threshold:	1.5V
Damage level:	-0.42V or 5.42V

REFERENCE INPUT	
Connector type:	SMA
Input Impedance:	50 Ω
Waveform:	Sine or Square
Frequency:	10/100MHz
Power:	-3dBm to +10dBm
Absolute Max. Level:	+15dBm

CLOCK INPUT / OUTPUT	
Number of Ports:	2, (1 Input & 1 Output)
Connector type:	SMA
Input Impedance:	50 Ω
Waveform:	Sine
Frequency:	2.7GHz – 3.3GHz
Power:	+10dBm
Absolute Max. Level:	+12dBm

⁽¹⁾ Boundary spurs which may appear @ -100MHz to +100MHz offset from CW.

Specifications

MULTI-INSTRUMENT SYNCHRONIZATION	
Number of Ports:	2
Type:	SYNC I/O & SYNC X
Connector type:	MMCX
Input Impedance:	50Ω

GENERAL	
Voltage:	+12.0 to +12.6 VDC
Power Consumption:	40W max.
Interface:	USB TYPE C, SPI
Dimensions:	14.5 x 9.5 x 3 cm
Weight:	
Without Package:	1.0 kg
Shipping Weight:	1.5 kg
Temperature:	
Operating:	0°C to +40°C
Storage:	-40°C to +70°C
Warm up time:	15 minutes
Humidity:	85% RH, non-condensing
Safety:	CE Marked, IEC61010-1:2010
EMC:	IEC 61326-1:2013
Calibration:	2 years
Warranty:	3 year standard

ORDERING INFORMATION	
MODEL	DESCRIPTION
LSX2091D	20GHz Microwave Signal Generator Desktop Module
LSX4091D	40GHz Microwave Signal Generator Desktop Module
OPTIONS	
LP	Low Power Option (-90dBc)
PLS	Pulse Modulation
PAT	Pattern Modulation
FS	Fast Switching
EMU	Emulator pack for Keysight, R&S, Anapico & Holzworth

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