

## Specifications

FREQUENCY	
<b>Range:</b>	
LSX2091/2/4R:	100 kHz to 20 GHz
LSX4091/2/4R:	100 kHz to 40 GHz
<b>Resolution:</b>	0.001 Hz
<b>Phase offset:</b>	0.01 deg
<b>Switching speed:</b>	
Standard:	500 $\mu$ s
FS Option:	100 $\mu$ s

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

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

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

NON-HARMONICS (dBc)	
<b>Up to 40GHz:</b>	-90dBc (typ.) -60dBc max. <sup>(1)</sup>

MODULATION	
<b>FREQUENCY MODULATION</b>	
<b>Maximum Deviation:</b>	10MHz
Resolution:	0.1% or 1 Hz (the greater)
<b>Modulation Rate:</b>	1MHz
Resolution:	1Hz
<b>AMPLITUDE MODULATION</b>	
<b>AM Depth:</b>	
Type:	Linear
Maximum settable:	100%
Resolution:	0.1% of depth
<b>Modulation rate:</b>	DC to 100kHz
<b>PHASE MODULATION</b>	
<b>Peak Deviation:</b>	360 deg
<b>Modulation Rate:</b>	DC to 100 kHz
<b>SWEEP</b>	
<b>Range:</b>	Same as freq. range
<b>Modes:</b>	Frequency step, Amplitude step, List
<b>Dwell time:</b>	10 $\mu$ s to 1000 s
<b>Resolution:</b>	1 $\mu$ s
<b>Number of points:</b>	
List:	2 to 4,096
Step:	2 to 65,535
<b>Step change:</b>	Linear
<b>Trigger:</b>	Free run, External, Bus, Timer
<b>PATTERN MODULATION (PAT OPTION)</b>	
<b>Number of steps:</b>	1 to 2048
<b>Step Repetition:</b>	1 to 65535
<b>On/off time:</b>	20ns to 20 days

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

INPUTS / OUTPUTS	
<b>RF OUT</b>	
<b>Impedance:</b>	50 $\Omega$
<b>Connector type:</b>	2.4mm
<b>Number of outputs:</b>	
LSX2091/4091R:	1
LSX2092/4092R:	2
LSX2094/4094R:	4
<b>REFERENCE OUT</b>	
<b>Impedance:</b>	50 $\Omega$
<b>Connector type:</b>	BNC
<b>Frequency:</b>	10 MHz or 100 MHz
<b>Shape:</b>	Sine
<b>Power:</b>	3 to 7 dBm
<b>MODULATION INPUT</b>	
<b>Connector Type:</b>	BNC (per channel)
<b>Input Impedance:</b>	50 $\Omega$
<b>Max. input voltage:</b>	$\pm$ 1V
<b>Input damage level:</b>	$\pm$ 3.5V
<b>PULSE / TRIGGER INPUT</b>	
<b>Connector type:</b>	BNC (per channel)
<b>Input Impedance:</b>	50 $\Omega$
<b>Input voltage:</b>	TTL, CMOS compatible
Threshold:	1.5V
<b>Damage level:</b>	-0.42V or 5.42V
<b>REFERENCE INPUT</b>	
<b>Connector type:</b>	BNC (per channel)
<b>Input Impedance:</b>	50 $\Omega$
<b>Waveform:</b>	Sine or Square
<b>Frequency:</b>	10/100MHz
<b>Power:</b>	-3dBm to +10dBm
<b>Absolute Max. Level:</b>	+15dBm

AMPLITUDE	
<b>Max output power:</b>	
Settable:	+15 dBm
Calibrated:	+10 dBm
<b>Min output power:</b>	Base LP Opt.
Settable:	-70 dBm -80 dBm
Calibrated:	-50 dBm -70 dBm
<b>Resolution:</b>	0.01 dB
<b>Power Mute:</b>	-70 dBm
<b>Output Return Loss:</b>	-10 dBm
<b>Accuracy (dB):</b>	-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)	
<b>Measured @ 10kHz offset</b>	
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.)

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

## Specifications

GENERAL	
<b>Voltage Range:</b>	90VAC to 264VAC
<b>Frequency Range:</b>	47Hz to 63Hz
<b>Power Consumption:</b>	
1U box:	100W
3U box:	400W
<b>Interface:</b>	
Host:	2 x front panel USB type A 1 x rear panel USB type A
Device:	
USB:	1 x rear panel USB type B
LAN:	1 x rear panel 1000/100/10 BASE-T
<b>Storage:</b>	Removable SD card
<b>Dimensions (W x H x D):</b>	
1U box:	450 X 43 x 500 mm
3U box:	450 X 129 x 500 mm
<b>Weight:</b>	
Without Package:	
1U box:	6.0 kg
3U box:	12 kg
Shipping Weight:	
1U box:	7.0 kg
3U box:	13 kg
<b>Temperature:</b>	
Operating	0°C to +40°C
Storage	-40°C to +70°C
<b>Warm up time:</b>	15 minutes
<b>Humidity:</b>	85% RH, non-condensing
<b>Safety:</b>	CE Marked, EC61010-1:2010
<b>EMC:</b>	IEC 61326-1:2013
<b>Calibration:</b>	2 years
<b>Warranty:</b>	3 year standard

ORDERING INFORMATION	
MODEL	DESCRIPTION
LSX2091R	20GHz 1CH Rack-Mounted Microwave Signal Generator
LSX2092R	20GHz 2CH Rack-Mounted Microwave Signal Generator
LSX2094R	20GHz 4CH Rack-Mounted Microwave Signal Generator
LSX4091R	40GHz 1CH Rack-Mounted Microwave Signal Generator
LSX4092R	40GHz 2CH Rack-Mounted Microwave Signal Generator
LSX4094R	40GHz 4CH Rack-Mounted Microwave Signal Generator
OPTIONS	
PLS	Pulse Modulation
PAT	Pattern Modulation
ELP	Extended Low Power (-150dBc)
EPR	Extended Power Range (-130dBc to +20dB)
FS	Fast Switching
EMU	Emulator pack for Keysight, R&S, Anapico & Holzworth
W-Rack	Rack mount kit