

## Specifications

FREQUENCY	
<b>Range:</b>	
LSX2091/2/4B:	100 kHz to 20 GHz
LSX4091/2/4B:	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

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

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)	
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.)		
<b>Range:</b>	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. <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>	
LSX2091/4091B:	1
LSX2092/4092B:	2
LSX2094/4094B:	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

REFERENCE OUT	
<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

MODULATION INPUT	
<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

PULSE / TRIGGER INPUT	
<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

REFERENCE INPUT	
<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

<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>	100W
<b>Display Type:</b>	5", TFT capacitive touch screen
<b>Interface:</b>	
Host:	2 x front panel USB type A 1 x rear panel USB type A
Device: USB: LAN:	1 x rear panel USB type B 1 x rear panel 1000/100/10 BASE-T
<b>Storage:</b>	Removable SD card
<b>Dimensions (W x H x D):</b>	
Without feet	315 X 88 x 425 mm
With feet	315 X 102 x 425 mm
<b>Weight:</b>	
Without Package:	6.0 kg
Shipping Weight:	6.5 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
LSX2091B	20GHz Single Channel Microwave Signal Generator
LSX2092B	20GHz Dual Channel Microwave Signal Generator
LSX2094B	20GHz Four Channel Microwave Signal Generator
LSX4091B	40GHz Single Channel Microwave Signal Generator
LSX4092B	40GHz Dual Channel Microwave Signal Generator
LSX4094B	40GHz Four Channel 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