

## Specifications

FREQUENCY	
<b>Range:</b>	
LS3081/2/4B:	9 kHz to 3GHz
LS6081/2/4B:	9 kHz to 6GHz
LS1291/2/4B:	9 kHz to 12GHz
<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:	+20 dBm	
Calibrated:	+15 dBm <sup>(1)</sup>	
<b>Min output power:</b>		
Settable:	-100 dBm	
Calibrated:	-80 dBm	
<b>Resolution:</b>	0.01 dB	
<b>Power Mute:</b>	-95 dBm	
<b>Output Return Loss:</b>	-10 dBm	
<b>Accuracy (dB):</b>	-50dBm to +15dBm	-90dBm to -50dBm
Up to 100MHz:	$\pm$ 0.3 (typ.)	$\pm$ 0.5 (typ.)
100MHz to 3GHz:	$\pm$ 0.4 (typ.)	$\pm$ 0.6 (typ.)
3GHz to 9GHz:	$\pm$ 0.7 (typ.)	$\pm$ 0.9 (typ.)
Above 9GHz:	$\pm$ 1 (typ.)	$\pm$ 1.5 (typ.)

PHASE NOISE (dBc/Hz)	
<b>Measured @ 10kHz offset</b>	
<b>1 GHz:</b>	-138 (typ.)
<b>2 GHz:</b>	-133 (typ.)
<b>3 GHz:</b>	-130 (typ.)
<b>6 GHz:</b>	-124 (typ.)
<b>12 GHz:</b>	-118 (typ.)

HARMONICS (dBc)	
<b>Up to 100 MHz:</b>	-30 dBc
<b>100 MHz to 12 GHz:</b>	-50 dBc <sup>(2)</sup>

SUB-HARMONICS (dBc)	
<b>6 to 12 GHz:</b>	-55 dBm

NON-HARMONICS (dBc)	
<b>Up to 12 GHz:</b>	-90dBc (typ.) <sup>(3,4)</sup> -60dBc max. <sup>(5)</sup>

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

AMPLITUDE MODULATION <sup>(6)</sup>	
<b>AM Depth:</b>	
Type:	Linear
Maximum settable:	90%
Resolution:	0.1% of depth
<b>Modulation rate:</b>	DC to 100 kHz

PHASE MODULATION	
<b>Peak Deviation:</b>	360 deg
<b>Modulation Rate:</b>	DC to 100 kHz

PULSE MODULATION (PLS OPTION)	
<b>On/off ratio:</b>	60 dB
<b>Rise/fall time (10%-90%):</b>	15ns (typ.)
<b>Resolution:</b>	6.4ns
<b>Minimum Width:</b>	32ns
<b>Repetition frequency:</b>	DC to 10 MHz

PATTERN MODULATION (PAT OPTION)	
<b>Number of steps:</b>	1 to 2048
<b>Step Repetition:</b>	1 to 65535
<b>On/off time:</b>	32 ns to 20 days

SWEEP	
<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

INPUTS	
<b>MODULATION INPUT</b>	
<b>Connector Type:</b>	BNC
<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>EXTERNAL 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>	-3 dBm to +10 dBm
<b>Absolute Max. Level:</b>	+15 dBm
<b>Locking Range:</b>	$\pm$ 2 ppm

OUTPUTS	
<b>RF OUT</b>	
<b>Impedance:</b>	50 $\Omega$
<b>Connector type:</b>	SMA
<b>Number of outputs:</b>	
LS3081/6081/1291B:	1
LS3082/6082/1292B:	2
LS3084/6084/1294B:	4
<b>REFERENCE OUT</b>	
<b>Impedance:</b>	50 $\Omega$
<b>Connectors type:</b>	2 x BNC
<b>Frequency:</b>	10 MHz or 100 MHz
<b>Shape:</b>	Sine
<b>Power:</b>	3 to 7 dBm

<sup>(1)</sup> Above 25kHz; <sup>(2)</sup> 750MHz to 900MHz -35dBc (typ.); <sup>(3)</sup> -60dBm max. @ 1GHz, 1.5GHz, 2.5GHz and 3GHz; <sup>(4)</sup> -75dBm max. @ -15dBm to +15dBm and f>6GHz; <sup>(5)</sup> Boundary spurs which may appear @ -100MHz to +100MHz offset from CW. <sup>(6)</sup> Specified for >100MHz.

## 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>	1 / 3 year warranty plan

ORDERING INFORMATION	
MODEL	DESCRIPTION
<b>LS3081B</b>	3GHz Single Channel RF Analog Signal Generator
<b>LS3082B</b>	3GHz Dual Channel RF Analog Signal Generator
<b>LS3084B</b>	3GHz Four Channel RF Analog Signal Generator
<b>LS6081B:</b>	6GHz Single Channel RF Analog Signal Generator
<b>LS6082B</b>	6GHz Dual Channel RF Analog Signal Generator
<b>LS6084B</b>	6GHz Four Channel RF Analog Signal Generator
<b>LS1291B</b>	12GHz Single Channel RF Analog Signal Generator
<b>LS1292B</b>	12GHz Dual Channel RF Analog Signal Generator
<b>LS1294B</b>	12GHz Four Channel RF Analog Signal Generator
OPTIONS	
<b>PLS</b>	Pulse Modulation
<b>PAT</b>	Pattern Modulation
<b>ELP</b>	Extended Low Power (-150dBc)
<b>EPR</b>	Extended Power Range (-130dBc to +27dB)
<b>FS</b>	Fast Switching
<b>EMU</b>	Emulator pack for Keysight, R&S, Anapico & Holzworth
<b>W-Rack</b>	Rack mount kit