





LUCID SERIES
THINK RF THINK LUCID

RACK MOUNT MODELS


The all-new Lucid-X Series Rack mount platform is designed to offer maximum channel density at minimum cost of space. The rack-mounted platform, offers up to 4 phase coherent channels in a 19" 1U box. Featuring extremely fast switching speed, superior signal integrity and purity, removable memory card for maximum security, all the necessary modulated signals for analog communication systems, built in LAN and USB interface, the Lucid Series is designed to meet today's most demanding specifications, needed for ATE and production lines.



20 & 40GHz Microwave signal generator




Remotely programmable via MATLAB, Python, LabVIEW and other software programming environments.



Phase noise of $-134\text{dBc}/\text{Hz}$ @1GHz and 10kHz offset




Frequency Resolution of 0.001Hz




USB and LAN interfaces




Rack mount dedicated for maximum channel density in minimum rack space



Up to 4 phase coherent channels in a single rack-mounted box



Removable SD card for instrument security



AM, FM, PM, Sweep, Pulse & Pattern Modulation



Multiple Ways to Control the Unit and Write Your Code

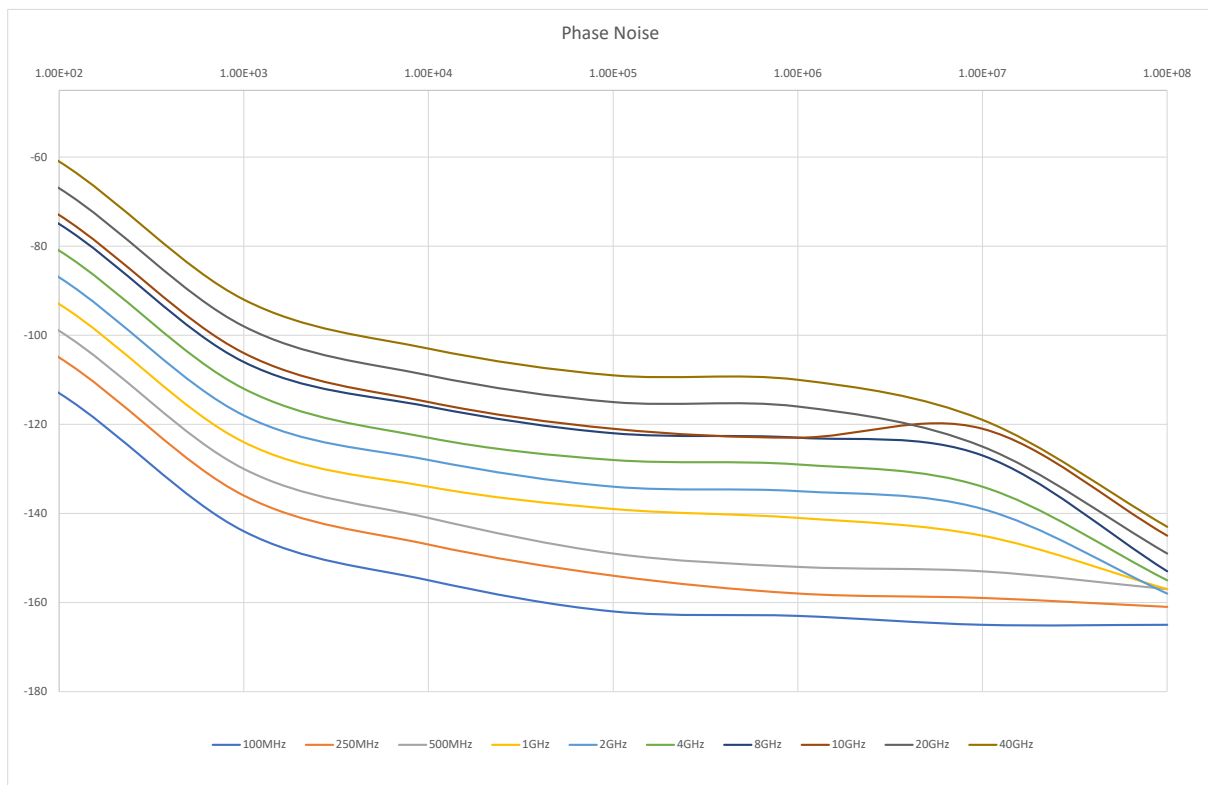
The Lucid Series has a dedicated software to control the instrument functions, modes and features via a graphical user interface (GUI). It also includes a complete set of drivers, allowing you to write applications in various environments, including LabVIEW, Python, CVI, C++, VB and MATLAB. You may also link the supplied DLL to other Windows-based API's or use low-level SCPI commands to program the instrument, regardless of whether the application is written for Windows, Linux or Macintosh operating systems.

Signal Integrity and Purity

One of the most important requirements in today's testing and measurement applications is a high signal quality. With a typical SSB phase noise of -134dBc/Hz at 1GHz , and -115dBc/Hz at 10GHz , at 10kHz carrier offset, Tabor's Lucid X Series platform delivers great quality signals with the best price to performance value.

Multi-channel, phase coherent, benchtop generator

Many test systems and experimental setups require multiple RF channels, either separate or synchronized. The Lucid series rack mounted platform offers up to 4 separate or phase coherent, Microwave outputs in a single 19" 1U box, saving up to 8 times the space compared to available rack mounted benchtop solutions on the market. You can save both valuable bench/rack space and investment capital without compromising performance.



Specifications

FREQUENCY	
Range:	
LSX2091/2/4R:	100 kHz to 20 GHz
LSX4091/2/4R:	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 1 Hz (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
Number of outputs:	
LSX2091/4091R:	1
LSX2092/4092R:	2
LSX2094/4094R:	4

REFERENCE OUT	
Impedance:	50 Ω
Connector type:	BNC
Frequency:	10 MHz or 100 MHz
Shape:	Sine
Power:	3 to 7 dBm

MODULATION INPUT	
Connector Type:	BNC (per channel)
Input Impedance:	50 Ω
Max. input voltage:	\pm 1V
Input damage level:	\pm 3.5V

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

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

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

Specifications

GENERAL	
Voltage Range:	90VAC to 264VAC
Frequency Range:	47Hz to 63Hz
Power Consumption:	
1U box:	100W
3U box:	400W
Interface:	
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
Storage:	Removable SD card
Dimensions (W x H x D):	
1U box:	450 X 43 x 500 mm
3U box:	450 X 129 x 500 mm
Weight:	
Without Package:	
1U box:	6.0 kg
3U box:	12 kg
Shipping Weight:	
1U box:	7.0 kg
3U box:	13 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, EC61010-1:2010
EMC:	IEC 61326-1:2013
Calibration:	2 years
Warranty:	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