LUCID SERIES
THINK RF THINK **LUCID**

DESKTOP MODELS

The All-new Lucid-X extends the frequency range of Tabor's industry leading Lucid series of analog signal generator all the way up to mm-Wave, in the smallest footprint module available on the market. Its small size enables using it as a desktop unit or easily scaling up to multiple of channels, while keeping the required space to a minimum, let it be 20GHz or 40GHz, excellent signal quality and integrity and fast switching speeds. The Lucid-X Series is designed to meet today's most demanding specifications, needed from the R&D benches to the production lines.

20 & 40GHz Microwave signal generator

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

Phase noise of -134dBc/Hz @1GHz and 10kHz offset

Frequency Resolution of 0.001Hz

SPI and USB C integrated interfaces

Extra small, compact module platform

Multi instrument synchronization capability

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

Flexible modular platform for OEM and custom requirements and applications, to satisfy specific customer demands

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Signal Integrity and Purity

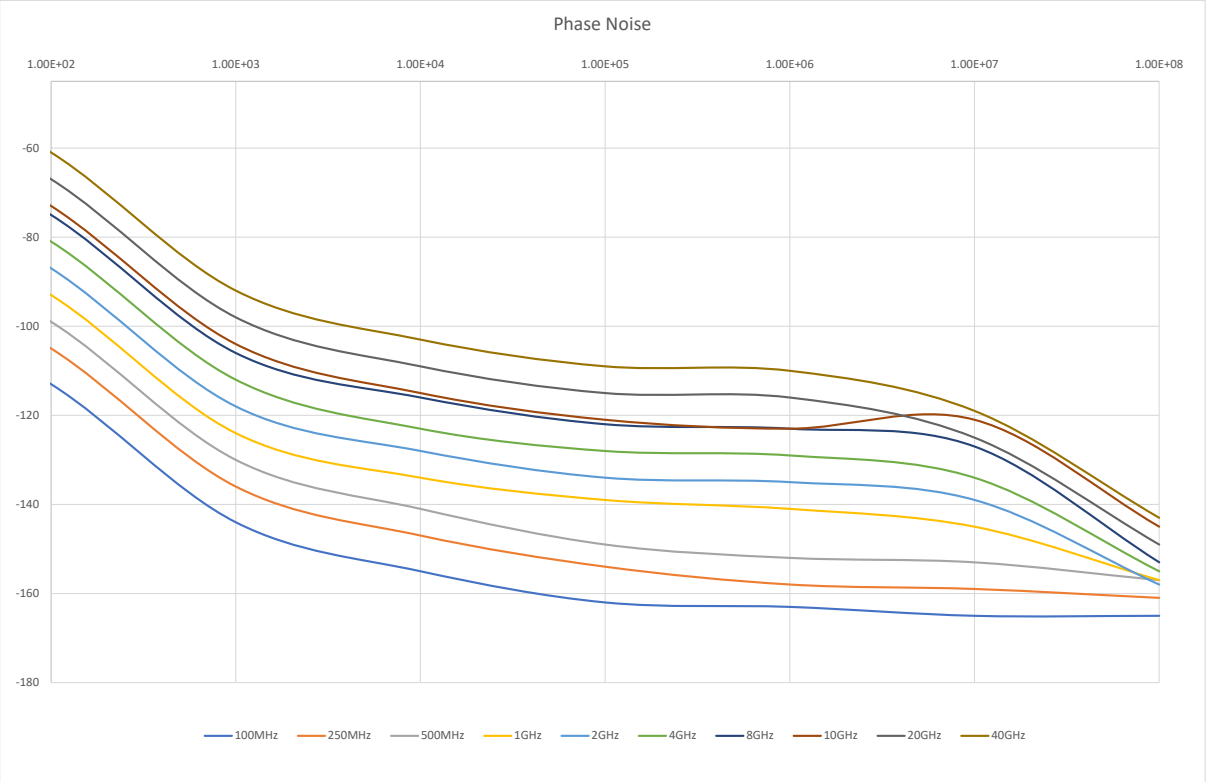
One of the most important requirements in today's testing and measurement applications is a high signal quality. With a typical SSB phase noise of -134dBc/Hz at 1GHz, and -115dBc/Hz at 10GHz, at 10kHz carrier offset, Tabor's Lucid X Series platform delivers great quality signals with the best price to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

Multiple Ways to Control the Unit and Write Your Code

Tabor's 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 your application 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 your application is written for Windows, Linux or Macintosh operating systems.

Modulation Schemes

Signal bursts and chirps have become common need in most aerospace or defense application. With Tabor's All-New Lucid Series, any signal modulation is possible, no matter if "narrow" or "standard" signals are required. On top of its outstanding pulse modulation performance, the Lucid Series is also equipped with many CW interferers, and modulated signals such as AM, FM, PM, Pulse, Pattern and Sweep.



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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 µs
FS Option:	100 µs

FREQUENCY REFERENCE

Temp. Stability:	±25 ppb max.
Aging:	± 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:	±0.3 (typ.)	
100MHz to 3GHz:	±0.4 (typ.)	
3GHz to 9GHz:	±0.7 (typ.)	
Above 9GHz:	±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 µs to 1000 s
Resolution:	1 µs
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:	50Ω
Connector type:	2.4mm
REFERENCE OUT	
Impedance:	50Ω
Connector type:	SMA
Frequency:	10 MHz or 100 MHz
Shape:	Sine
Power:	3 to 7 dBm
MODULATION INPUT	
Connector Type:	SMP
Input Impedance:	50Ω
Max. input voltage:	±1V
Input damage level:	±3.5V
PULSE / TRIGGER INPUT	
Connector type:	SMP
Input Impedance:	50Ω
Input voltage:	TTL, CMOS compatible
Threshold:	1.5V
Damage level:	-0.42V or 5.42V
REFERENCE INPUT	
Connector type:	SMA
Input Impedance:	50Ω
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:	50Ω
Waveform:	Sine
Frequency:	2.7GHz – 3.3GHz
Power:	+10dBm
Absolute Max. Level:	+12dBm

[1] Boundary spurs which may apear @ -100MHz to +100MHz offset from CW.

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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