



## LUCID SERIES

### PXI Express 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. The 2 slot PXIe module can be used as a single desktop unit or easily scaled up to multiple channels, while keeping the required space to a minimum. With frequency ranges of 8GHz, 20GHz or 40GHz, excellent signal quality and integrity and fast switching speeds - the Lucid-X PXIe Series is designed to meet today's most demanding applications in ATE, production or embedded systems.

8, 20 & 40GHz Microwave signal generator



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

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



Frequency Resolution of 0.001Hz



High speed communication interface

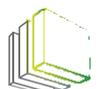


Modular and space efficient PXI Express platform



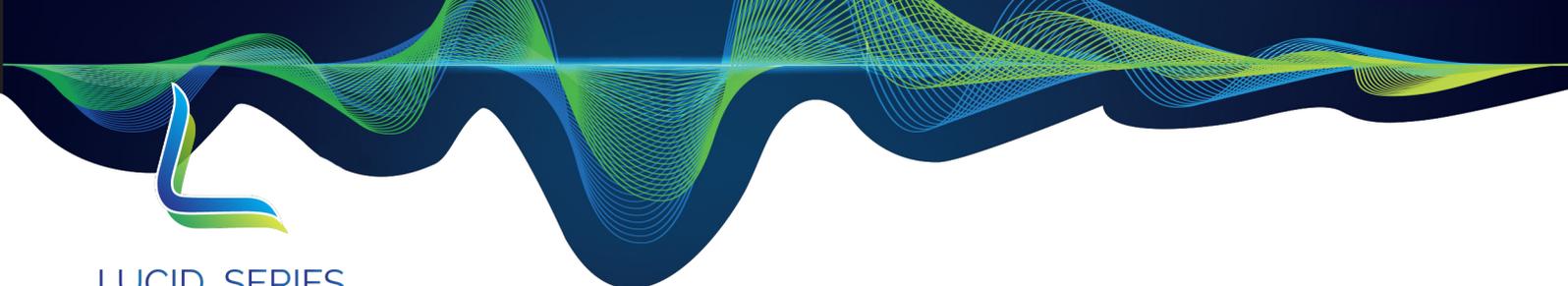
Multi instrument synchronization capability

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



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





## LUCID SERIES

### Signal Integrity and Purity

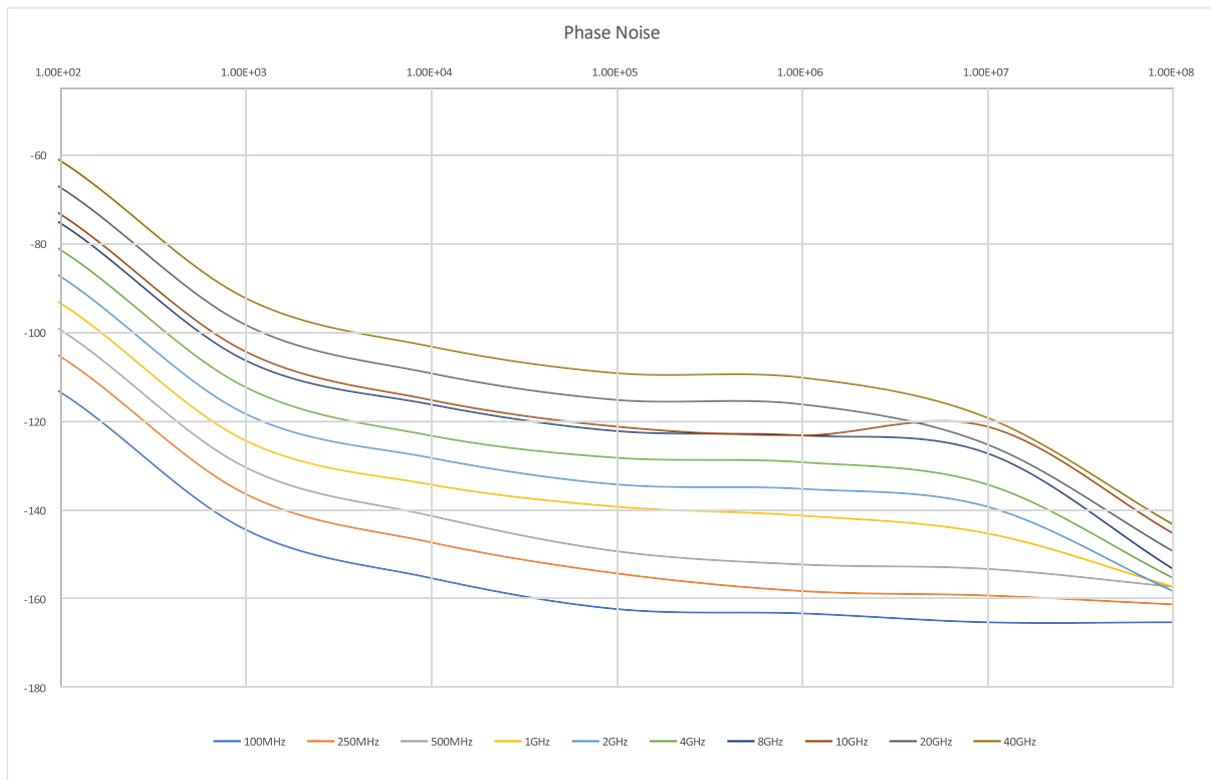
One of the most important requirements in today's testing and measurement applications is a high signal quality. With a typical SSB phase noise of  $-134\text{dBc/Hz}$  at 1GHz, and  $-115\text{dBc/Hz}$  at 10GHz, at 10kHz carrier offset, Tabor's Lucid X Series platform delivers great quality signals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



## Specifications

FREQUENCY	
<b>Range:</b>	
LSX8081X:	100 kHz to 8 GHz
LSX2091X:	100 kHz to 20 GHz
LSX4091X:	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.)	
<b>Up to 20GHz:</b>	-75 dBc
<b>20 to 40GHz:</b>	-35 dBc

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

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

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

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

PATTERN MODULATION (PAT OPTION)	
<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>	
LSX8081X/2091X	2.92mm
LSX4091X	2.4mm

REFERENCE OUT	
<b>Impedance:</b>	50 $\Omega$
<b>Connector type:</b>	SMA
<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>	SMP
<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>	SMP
<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>	SMA
<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

CLOCK INPUT / OUTPUT	
<b>Number of Ports:</b>	2, (1 Input & 1 Output)
<b>Connector type:</b>	SMA
<b>Input Impedance:</b>	50 $\Omega$
<b>Waveform:</b>	Sine
<b>Frequency:</b>	2.7GHz, 3.0GHz, 3.3GHz
<b>Power:</b>	+10dBm
<b>Absolute Max. Level:</b>	+12dBm

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

## LUCID SERIES

# Specifications & Ordering Information

### MULTI-INSTRUMENT SYNCHRONIZATION

<b>Number of Ports:</b>	2
<b>Type:</b>	SYNC I/O & SYNC X
<b>Connector type:</b>	MMCX
<b>Input Impedance:</b>	50Ω

### GENERAL

<b>Voltage:</b>	+12.0 to +12.6 VDC
<b>Power Consumption:</b>	30W max. per slot
<b>Current Consumption:</b>	+3.3V 0.5A max. +12V 5.5A max.
<b>Interface:</b>	PXle Gen3 x8 Lanes
<b>Dimensions:</b>	8HP PXle (2 Slots)
<b>Weight:</b>	
Without Package:	1.0 kg
Shipping Weight:	1.5 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, IEC61010-1:2010
<b>EMC:</b>	IEC 61326-1:2013
<b>Calibration:</b>	2 years
<b>Warranty:</b>	3 years

### ORDERING INFORMATION

MODEL	DESCRIPTION
<b>LSX8081X</b>	8GHz PXle Microwave Signal Generator
<b>LSX2091X</b>	20GHz PXle Microwave Signal Generator
<b>LSX4091X</b>	40GHz PXle Microwave Signal Generator
<b>OPTIONS</b>	
<b>LP</b>	Low Power Option (-80dBm)
<b>PLS</b>	Pulse Modulation
<b>PAT</b>	Pattern Modulation
<b>FS</b>	Fast Switching
<b>EMU</b>	Emulator pack for Keysight, R&S, Anapico & Holzworth

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