

Product Datasheet - Technical Specifications



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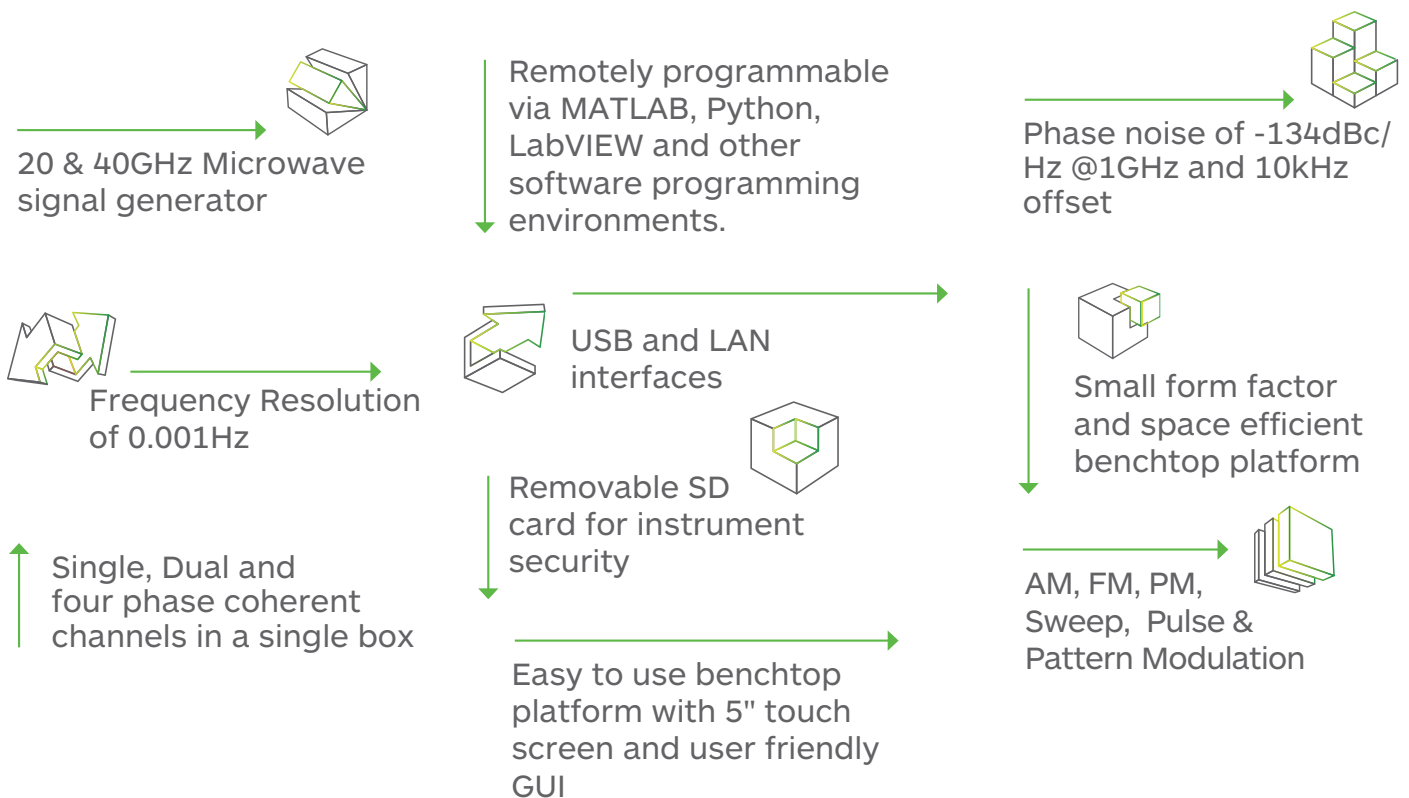
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LUCID SERIES

THINK RF THINK LUCID

BENCHTOP MODELS

The all-new Lucid-X Series benchtop platform offers up to 4 phase coherent channels in a standalone compact unit. The series feature 20 and 40GHz models in single, dual or four channel versions, all sharing the very same industry leading highlighted features. 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 interfaces, the Lucid Series is designed to meet today's most demanding specifications, needed from the R&D benches to the production lines.





LUCID SERIES
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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 $-134\text{dBc}/\text{Hz}$ at 1GHz , and $-115\text{dBc}/\text{Hz}$ at 10GHz , at 10kHz carrier offset, Tabor's Lucid X Series platform delivers great quality signals with the best price to performance value.

Modulation Schemes

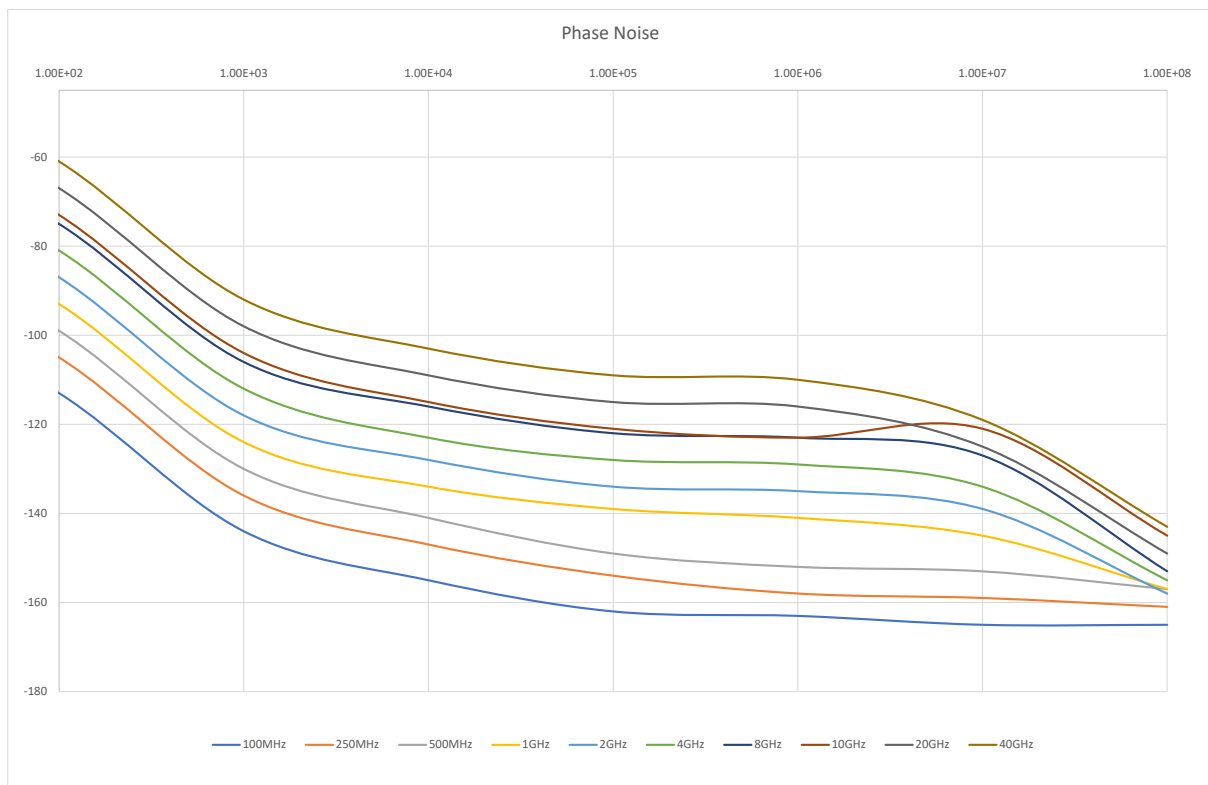
Signal bursts and chirps have become common need in most aerospace or defense application. With Tabor's Lucid Series, any signal modulation is possible, no matter if "narrow" or "standard" signals are required. On top of its outstanding pulse modulation performance, the Lucid Series is also equipped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

Multi-channel, phase coherent, benchtop generator

Many test systems and experimental setups require multiple RF channels, either separate or synchronized. The Lucid series benchtop platform offers up to 4, separate or phase coherent, RF outputs in a single 19" 2U box, saving up to 4 times the space compared to available benchtop solutions on the market. You can save both valuable bench/rack space and investment capital without compromising performance.

Easy to use

The benchtop platform offers a 5" touch screen with user friendly GUI to quickly and easily generate the required signal, while displaying all the critical information. For remote control, the series is equipped with Ethernet and USB interface enabling remote programming from PC.



Specifications

FREQUENCY	
Range:	
LSX2091/2/4B:	100 kHz to 20 GHz
LSX4091/2/4B:	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:	
LSX2091/4091B:	1
LSX2092/4092B:	2
LSX2094/4094B:	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:	100W
Display Type:	5", TFT capacitive touch screen
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):	
Without feet	315 X 88 x 425 mm
With feet	315 X 102 x 425 mm
Weight:	
Without Package:	6.0 kg
Shipping Weight:	6.5 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, EC61010-1:2010
EMC:	IEC 61326-1:2013
Calibration:	2 years
Warranty:	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