

Product Datasheet - Technical Specifications



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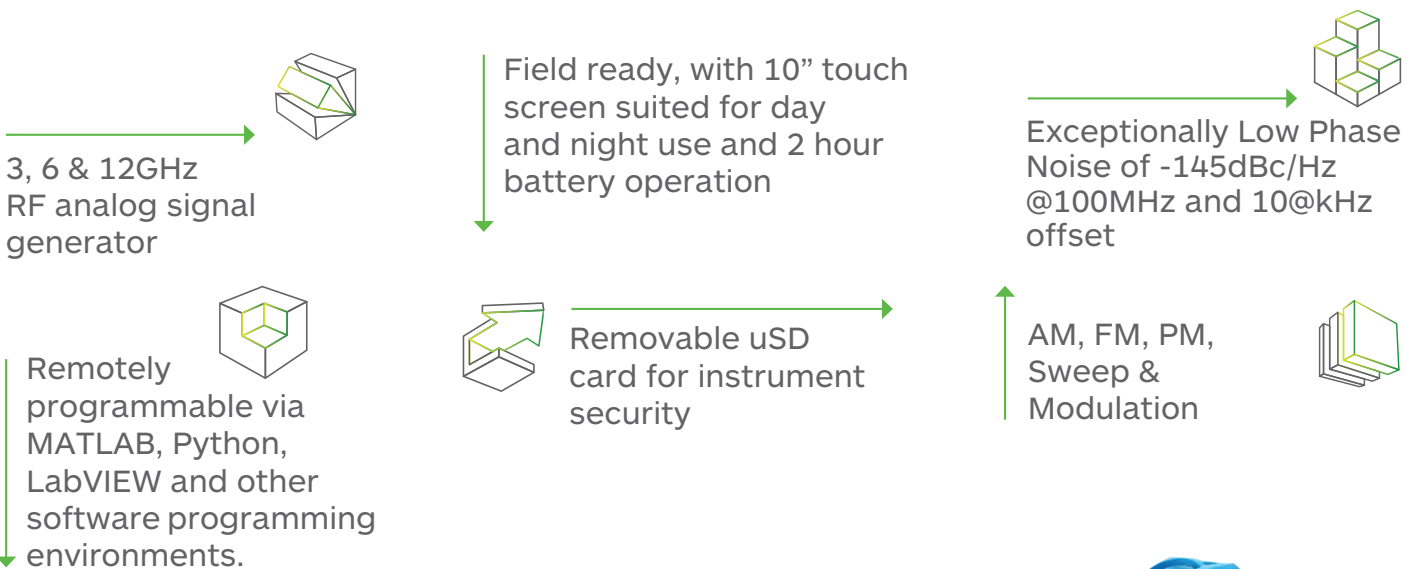


LUCID SERIES

THINK RF THINK LUCID

PORTABLE MODELS

Tabor's latest addition to its line of RF analog signal generators is by far the most advanced portable, handheld signal generator on the market. The all-new Lucid Series portable platform offers a modern design capable of operating either as a benchtop or a portable signal generator. The series feature 3, 6 and 12 GHz single channel versions, all sharing the very same industry leading highlighted features. Featuring superior signal integrity and purity, all the necessary modulated signals for analog communication systems, built in USB, optional LAN interfaces and removable micro-SD card, the Lucid Series is designed to meet today's most demanding applications, whether in the lab or out in the field.



Multiple Ways to Control the Unit and Write Your Code

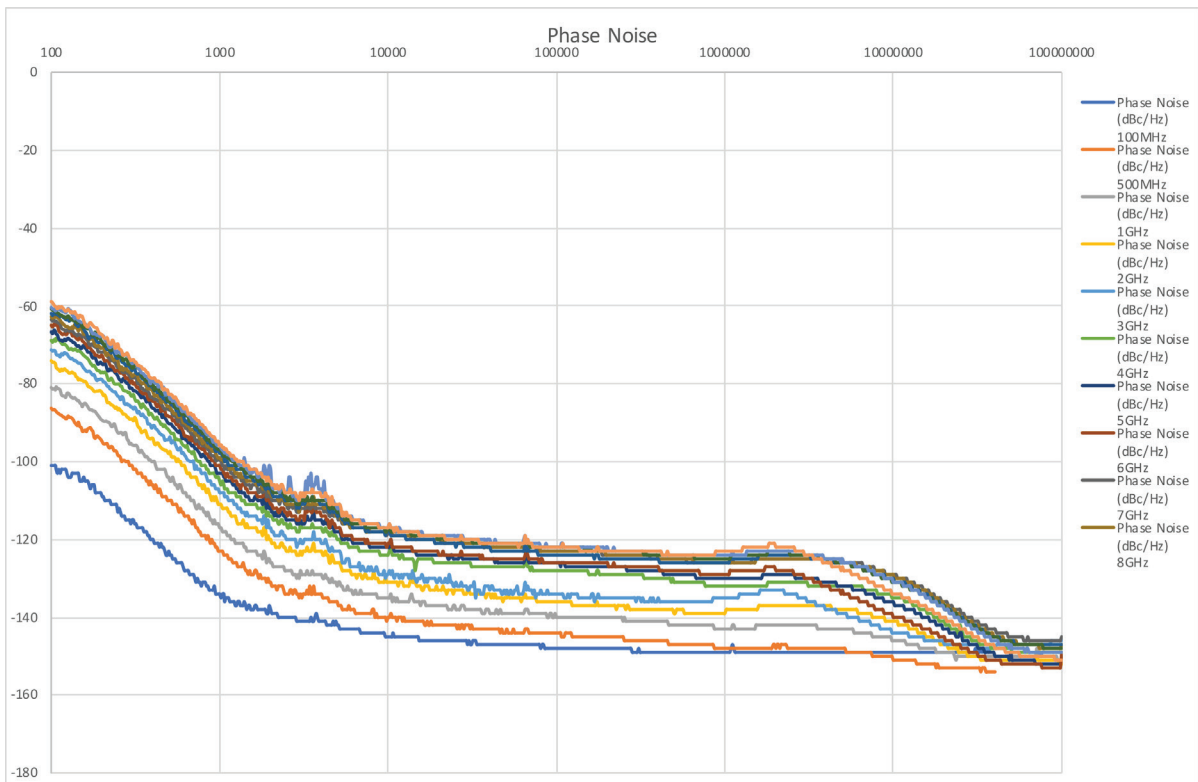
The Lucid Series has a dedicated software to control the instrument functions, modes and features via a graphical user interface (GUI). It also includes a complete set of drivers, allowing you to write applications in various environments, including LabVIEW, Python, CVI, C++, VB and MATLAB. You may also 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.

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.

Easy to use

The Portable platform offers a 10" 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 a built-in USB interface enabling remote programming from PC. For those requiring LAN interface a USB to LAN converter can be provided.



Specifications

FREQUENCY		
Range:		
LS3081P:	9 kHz to 3GHz	
LS6081P:	9 kHz to 6GHz	
LS1291P:	9 kHz to 12GHz	
Resolution:	0.001 Hz	
Phase offset:	0.01 deg	
Switching speed:	500 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:	+20 dBm	
Calibrated:	+15 dBm ⁽¹⁾	
Min output power:	Base	LP Opt.
Settable:	-30 dBm	-100 dBm
Calibrated:	-20 dBm	-80 dBm
Resolution:	0.01 dB	
Power Mute:	-95 dBm	
Output Return Loss:	-10 dBm	
Accuracy (dB):	-50dBm to +15dBm	-90dBm to -50dBm ⁽²⁾
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)		
Measured @ 10kHz offset		
1 GHz:	-138 (typ.)	
2 GHz:	-133 (typ.)	
3 GHz:	-130 (typ.)	
6 GHz:	-124 (typ.)	
12 GHz:	-118 (typ.)	

HARMONICS (dBc)	
Up to 100 MHz:	-30 dBc
100 MHz to 12 GHz:	-50 dBc ⁽³⁾

SUB HARMONICS (dBc)	
6 to 12 GHz:	-55 dBm

NON HARMONICS (dBc)	
Up to 12 GHz:	-90dBc (typ.) ^(4,5) -60dBc max. ⁽⁶⁾

MODULATION	
FREQUENCY MODULATION	
Maximum Deviation:	10 MHz
Resolution:	0.1% or 1 Hz (the greater)
Modulation Rate:	1 MHz
Resolution:	1 Hz
AMPLITUDE MODULATION	
AM Depth:	
Type:	Linear
Maximum settable:	90%
Resolution:	0.1% of depth
Accuracy (1 kHz)	$\lt \pm$ 4% of setting
Modulation rate:	DC to 100 kHz
PHASE MODULATION	
Peak Deviation:	360 deg
Modulation Rate:	DC to 100 kHz
PULSE MODULATION (PLS OPTION)	
On/off ratio:	80 dB
Rise/fall time (10%-90%):	15ns (typ.)
Resolution:	6.4ns
Minimum Width:	32ns
Repetition frequency:	DC to 10 MHz
PATTERN MODULATION (PAT OPTION)	
Number of steps:	1 to 2048
Step Repetition:	1 to 65535
On/off time:	32 ns to 20 days

SWEEP	
Range:	Same as freq. range
Modes:	Frequency and amplitude
Dwell time:	10 μ s to 1000 s
Resolution:	1 μ s
Number of points:	2 to 65535
Step change:	Linear
Trigger:	Free run, External, Bus, Timer

INPUTS	
MODULATION INPUT	
Connector Type:	SMA
Input Impedance:	50 Ω
Max. input voltage:	\pm 1V
Input damage level:	\pm 3.5V
PULSE / TRIGGER INPUT	
Connector type:	SMA
Input Impedance:	50 Ω
Input voltage:	TTL, CMOS compatible
Threshold:	1.5V
Damage level:	-0.42V or 5.42V
EXTERNAL REFERENCE INPUT	
Connector type:	SMA
Input Impedance:	50 Ω
Waveform:	Sine or Square
Frequency:	10/100MHz
Power:	-3 dBm to +10 dBm
Absolute Max. Level:	+15 dBm
Locking Range:	\pm 2 ppm

OUTPUTS	
RF OUT	
Impedance:	50 Ω
Connector type:	SMA
Number of channels:	1

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

Specifications

GENERAL	
Voltage:	+12.0 to +12.6 VDC
Supply Voltage:	+15 V DC
Power Consumption:	60W max. (45W typ)
Display Type	10", TFT capacitive touch screen
Battery:	
Type:	4-cell, replaceable
Standby:	Up to 2 hours
Max. load:	Up to 1 hours
Interface:	
Host:	2 x USB type A
Device:	1 x USB type B 1 x micro USB for LAN adapter
Storage:	Removable SD card
Dimensions:	280 x 225 x 65 mm (W x H x D)
Weight:	
Without Package:	3 kg
Shipping Weight:	4.5 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:	1/3 year warranty plan

ORDERING INFORMATION	
MODEL	DESCRIPTION
LS3081P	3GHz Portable RF Analog Signal Generator
LS6081P	6GHz Portable RF Analog Signal Generator
LS1291P	12GHz Portable RF Analog Signal Generator
OPTION	
BAT	4-cell, replaceable battery
PLS	Pulse Modulation Option
PAT	Pattern Modulation Option
LP	Low Power Option