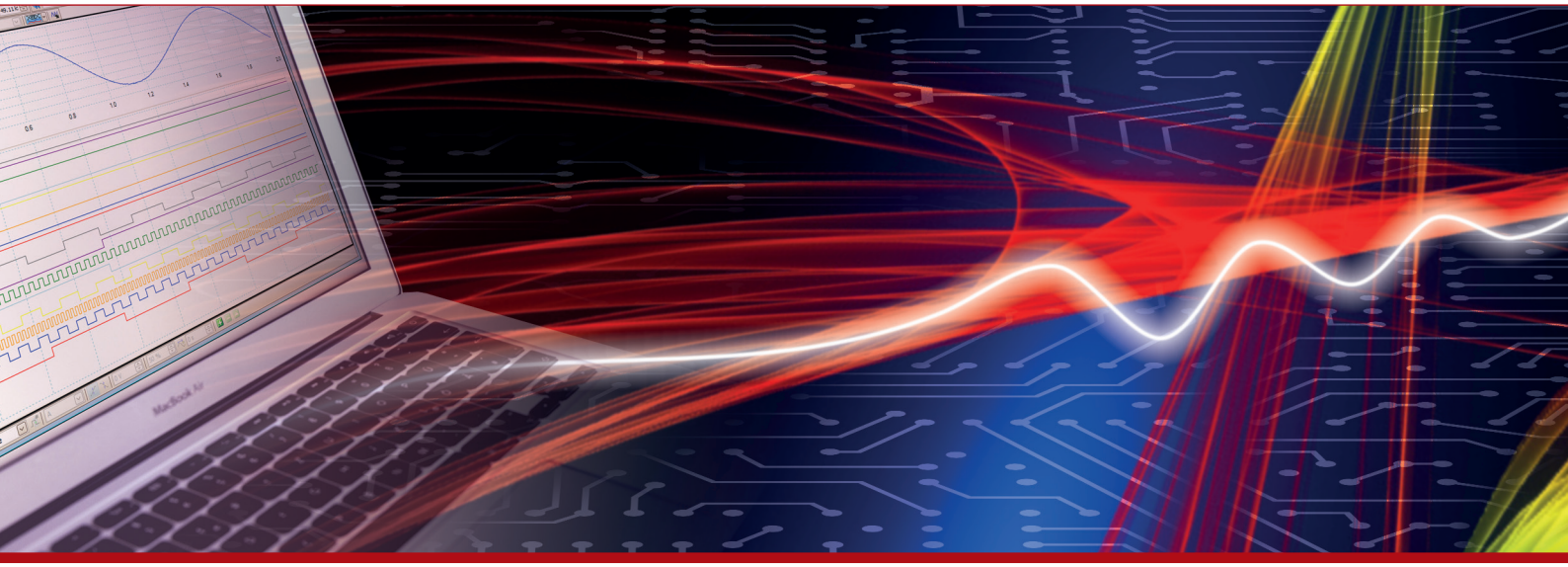
Product Datasheet - Technical Specifications



More information in our Web-Shop at ▸ **www.meilhaus.com** and in our download section.

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LUCID SERIES
THINK RF THINK **LUCID**

RACK MOUNT MODELS

The all-new Lucid 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 and up to 16 phase coherent channels in a 19” 3U 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.

3, 6 & 12GHz multi-channel RF analog signal generator

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

Exceptionally Low Phase Noise of -145dBc/Hz @100MHz and 10@kHz offset

Fast Switching speed of <100us

USB and LAN interfaces

Rack mount dedicated for maximum channel density in minimum rack space

Up to 16 phase coherent channels in a single rack-mounted box

Removable SD card for instrument security

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

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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 -145dBc at 100MHz, and -132dBc at 1GHz, at 10 kHz carrier offset. Lucid delivers one of the best quality signals available on the market today.

Multiple Ways to Control the Unit and Write Your Code

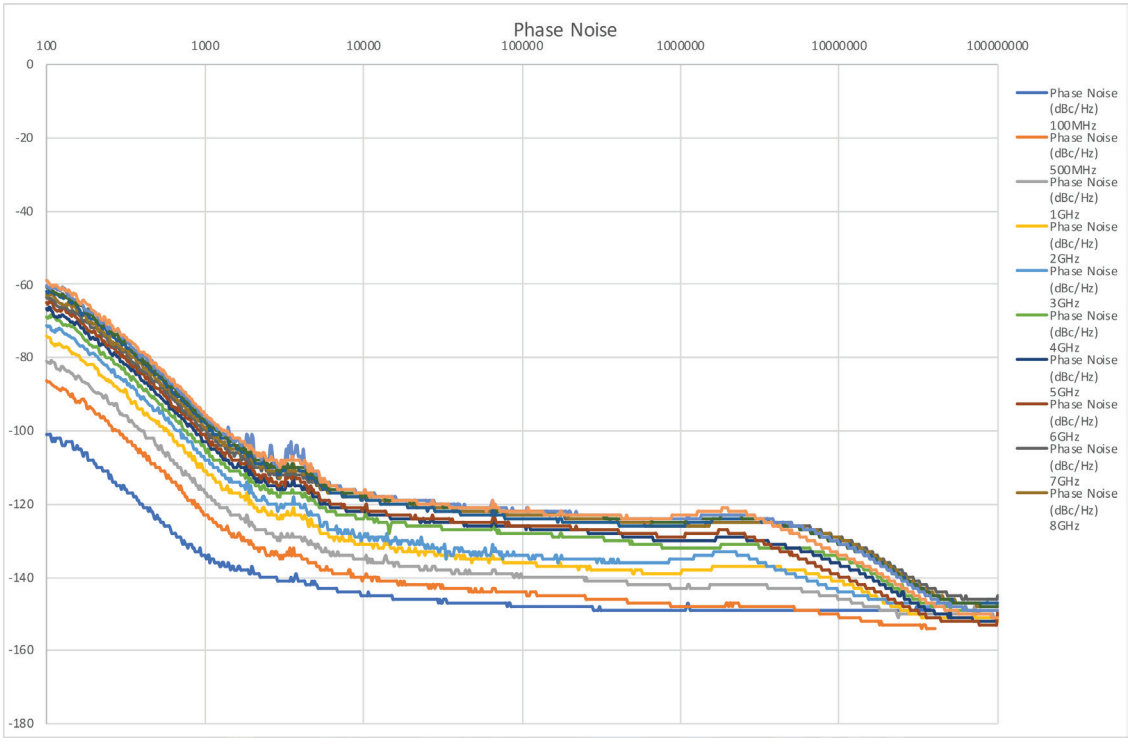
The Lucid Series has a dedicated software to control the instrument functions, modes and features via a graphical user interface (GUI). It also includes a complete set of drivers, allowing you to write applications in various environments, including LabVIEW, Python, CVI, C++, VB and MATLAB. You may also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

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 16 separate or phase coherent, RF outputs in a single 19" 3U box, saving up to 16 times the space compared to available rack mounted solutions on the market. You can save both valuable bench/rack space and investment capital without compromising performance.



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Specifications

FREQUENCY

Range:	
LS3081/2/4/16R:	9 kHz to 3GHz
LS6081/2/4/16R:	9 kHz to 6GHz
LS1291/2/4/16R:	9 kHz to 12GHz
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:	+20 dBm	
Calibrated:	+15 dBm [1]	
Min output power:		
Settable:	-100 dBm	
Calibrated:	-80 dBm	
Resolution:	0.01 dB	
Power Mute:	-95 dBm	
Output Return Loss:	-10 dBm	
Accuracy (dB):	-50dBm to +15dBm	-90dBm to -50dBm
Up to 100MHz:	±0.3 (typ.)	±0.5 (typ.)
100MHz to 3GHz:	±0.4 (typ.)	±0.6 (typ.)
3GHz to 9GHz:	±0.7 (typ.)	±0.9 (typ.)
Above 9GHz:	±1 (typ.)	±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 [2]

SUB-HARMONICS (dBc)

6 to 12 GHz:	-55 dBm

NON-HARMONICS (dBc)

Up to 12 GHz:	-90dBc (typ.) [3,4] -60dBc max.[5]

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)	< ± 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 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

INPUTS

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

OUTPUTS

RF OUT	
Impedance:	50Ω
Connector type:	SMA
Number of outputs:	
LS3081/6081/1291R:	1
LS3082/6082/1292R:	2
LS3084/6084/1294R:	4
LS30816/60816/12916R:	16
REFERENCE OUT	
Impedance:	50Ω
Connectors type:	2 x BNC
Frequency:	10 MHz or 100 MHz
Shape:	Sine
Power:	3 to 7 dBm

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

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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:	1 / 3 year warranty plan

ORDERING INFORMATION	
MODEL	**DESCRIPTION**
LS3081R:	3GHz 1CH Rack-Mounted Analog Signal Generator
LS3082R:	3GHz 2CH Rack-Mounted Analog Signal Generator
LS3084R:	3GHz 4CH Rack-Mounted Analog Signal Generator
LS30816R:	3GHz 16CH Rack-Mounted Analog Signal Generator
LS6081R:	6GHz 1CH Rack-Mounted Analog Signal Generator
LS6082R:	6GHz 2CH Rack-Mounted Analog Signal Generator
LS6084R:	6GHz 4CH Rack-Mounted Analog Signal Generator
LS60816R:	6GHz 16CH Rack-Mounted Analog Signal Generator
LS1291R:	12GHz 1CH Rack-Mounted Analog Signal Generator
LS1292R:	12GHz 2CH Rack-Mounted Analog Signal Generator
LS1294R:	12GHz 4CH Rack-Mounted Analog Signal Generator
LS12916R:	16GHz 4CH Rack-Mounted Analog Signal Generator
OPTIONS	
PLS	Pulse Modulation
PAT	Pattern Modulation
ELP	Extended Low Power (-150dBc)
EPR	Extended Power Range (-130dBc to +27dB)
FS	Fast Switching
EMU	Emulator pack for Keysight, R&S, Anapico & Holzworth
W-Rack	Rack mount kit

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