LA19-15-04 Signal Generator
300 kHz to 8 GHz

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Data Sheet

New

- +17 dBm Output
- 45 µs Settling
- 0.1 Hz Resolution
- FM & AM Modulation
- 30 dB Amplitude control
- PLL Lock alarm
- ALC Lock alarm
- -90 dBc/Hz Phase noise at 4 GHz
- User applications supported with DLL library

The LA19-15-04 is a fast, general purpose multi-decade signal generator with a wide range of useful features. The instrument is conveniently housed in a small case that includes a mains power supply.

The signal generator is controlled by a host PC through a USB port. The user software provides a comprehensive list of features including linear and arbitrary (list mode) frequency sweep modes as well as frequency and phase hop modes.

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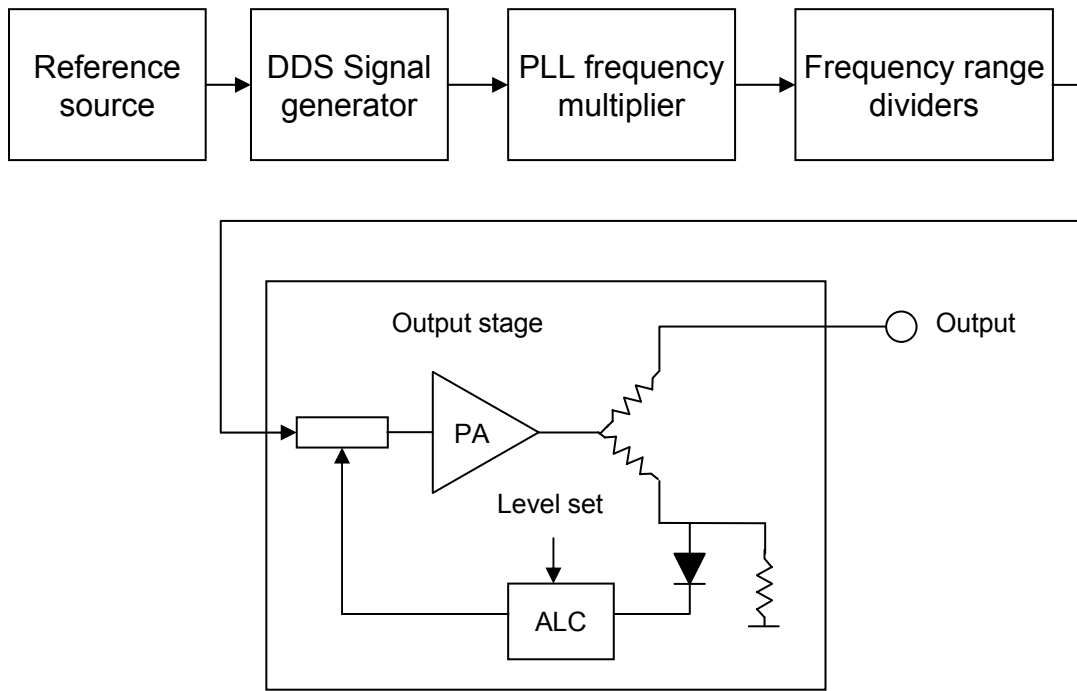
LA19-15-04 Specification

Parameter	Units	Min	Typ	Max
Frequency range	MHz	0.3	-	8192
Resolution (Freq > 4 GHz)	Hz	20	-	-
Resolution (Freq < 4 GHz)[5]	Hz	10	-	-
Maximum output power	dBm	+15	+17	-
Minimum output power	dBm	-	-20	-15
Frequency settling time (within 10ppm)	µs	-	40	45
Phase noise at 10 kHz offset 2 GHz	dBc/Hz	-	-96	-94
4 GHz	dBc/Hz		-90	-88
8 GHz	dBc/Hz		-85	-83
Harmonics[1]	dBc	-	-26	-20
Sub-harmonics[1]	dBc	-	-46	-40
Spurious[1]	dBc	-	-60	-50
Internal reference stability	ppm	-	-	2.5
Internal reference accuracy[2]	ppm	-	-	1.5
Internal 10 MHz reference output[4]	dBm	-3	0	+3
External 10 MHz reference input[4]	dBm	-6	0	+6
External reference lock range	ppm	-8	-	+8
Trigger input threshold voltage	V	0.5	1.4	2.5
Trigger output voltage low/high level	V	0 / 3.6	-	0.5 / 5.2
Trigger output rise and fall times[6]	ns	-	-	40
External AM and FM modulation frequency response bandwidth	kHz	dc	-	10
Case dimensions (W x D x H)	mm	173 x 232 x 56		
Mains power supply requirements	VAC	85	-	250
	VA	15	-	20
Operating case temperature range	°C	0		+45
Programming interface		USB		

Notes:
1. Output set to +10 dBm
2. Case temperature at 25°C
4. BNC Connector
5. Resolution is 0.1 Hz below 125 MHz
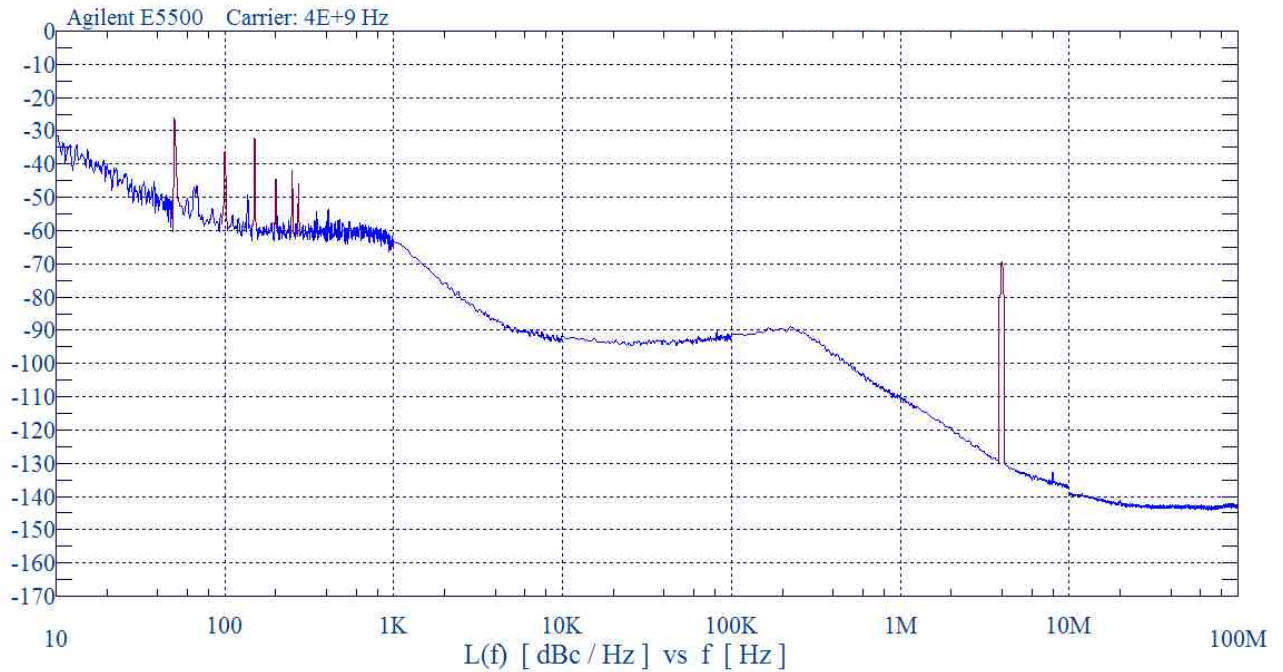6. 1 kΩ in parallel with 50pF load

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Simplified block diagram of the LA19-15-04 signal generator

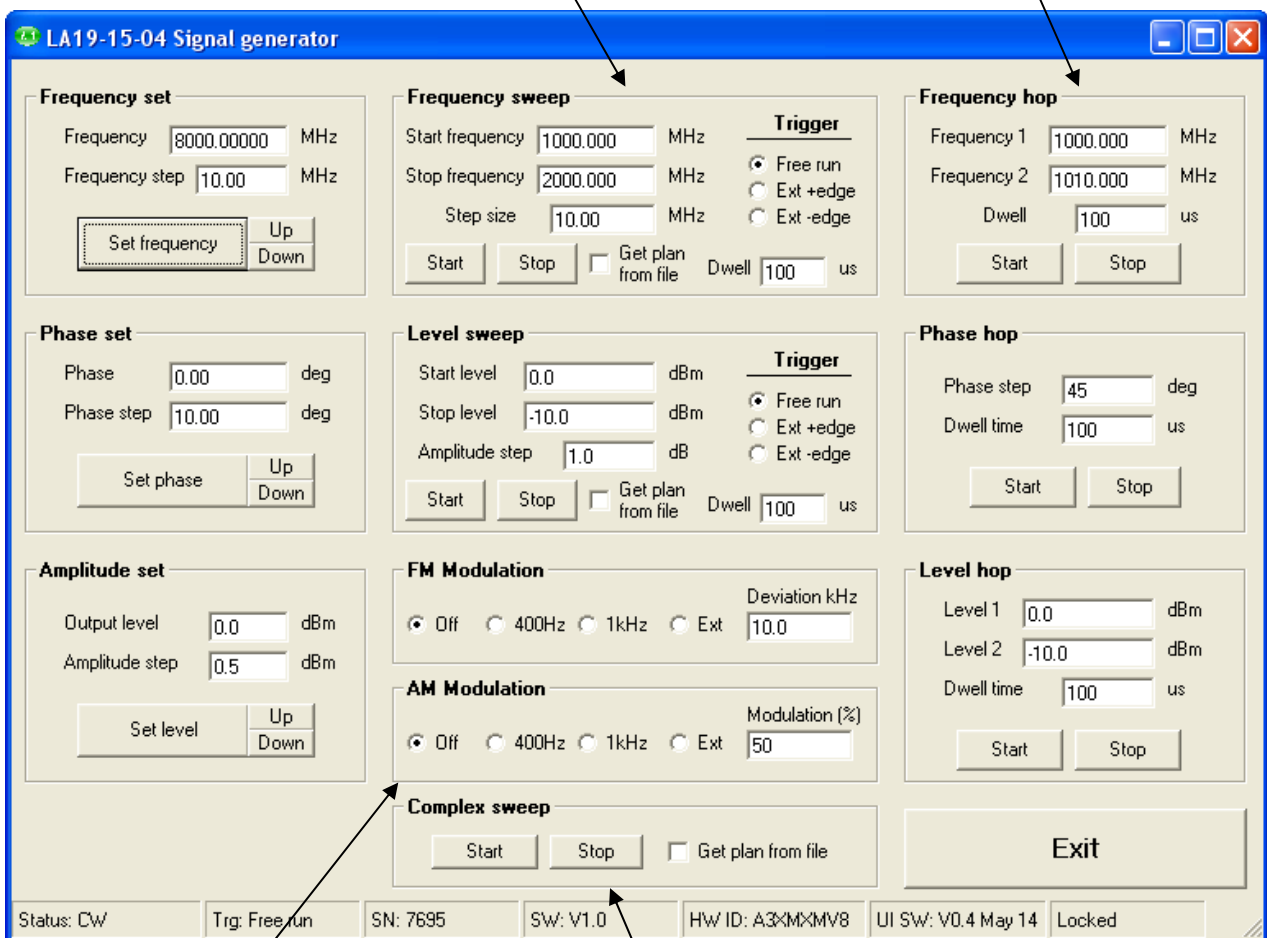**Measured phase noise at 4 GHz**

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UI software

The signal generator is provided with user interface (UI) software that provides a wide range of features including support for complex sweep (phase and amplitude), external AM and FM modulation extending down to dc, and frequency and level sweeps, both triggered or free running.

Frequency and level sweeps include list mode and trigger synchronisation

Phase, frequency and level hop modes include adjustable dwell time

LA19-15-04 Signal generator

Frequency set

Frequency	8000.00000	MHz
Frequency step	10.00	MHz

Set frequency | Up / Down

Frequency sweep

Start frequency	1000.000	MHz
Stop frequency	2000.000	MHz
Step size	10.00	MHz

Trigger
- ○ Free run
- ○ Ext +edge
- ○ Ext -edge

Start | Stop | ☐ Get plan from file | Dwell 100 us

Frequency hop

Frequency 1	1000.000	MHz
Frequency 2	1010.000	MHz
Dwell	100	us

Start | Stop

Phase set

Phase	0.00	deg
Phase step	10.00	deg

Set phase | Up / Down

Level sweep

Start level	0.0	dBm
Stop level	-10.0	dBm
Amplitude step	1.0	dB

Trigger
- ○ Free run
- ○ Ext +edge
- ○ Ext -edge

Start | Stop | ☐ Get plan from file | Dwell 100 us

Phase hop

Phase step	45	deg
Dwell time	100	us

Start | Stop

Amplitude set

Output level	0.0	dBm
Amplitude step	0.5	dBm

Set level | Up / Down

FM Modulation

- ○ Off ○ 400Hz ○ 1kHz ○ Ext   Deviation kHz 10.0

AM Modulation

- ○ Off ○ 400Hz ○ 1kHz ○ Ext   Modulation (%) 50

Level hop

Level 1	0.0	dBm
Level 2	-10.0	dBm
Dwell time	100	us

Start | Stop

Complex sweep

Start | Stop | ☐ Get plan from file

Exit

Status: CW | Trg: Free run | SN: 7695 | SW: V1.0 | HW ID: A3XMXMV8 | UI SW: V0.4 May 14 | Locked

FM and AM modulation includes external, with a modulation bandwidth from DC to 10kHz.

Complex sweep can emulate modulation schemes such as QPSK.

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LA19-15-04 Rear panel connections

10 MHz Reference: Input / output
typically 0 dBm

10 MHz In   10 MHz Out

Trig In   Trig Out

85-250 VAC
47-63 Hz
15 VA Max

7695
UK Made

Warning. Instrument must be earthed

IEC127

Fuse: 2xF1.6A   www.latechniques.net

Trigger input: rising or falling
edge trigger modes

USB connection:
to host PC

Mains input: 85 to 250 VAC

Trigger output: 0 V to +5 V output
levels. Rising edge is start of sweep

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