

LOW PHASE NOISE FREQUENCY SYNTHESIZER



200 MHz to 20 GHz

Low phase noise
RS-232 control
0.1 Hz frequency step
Switching time: $\leq 200 \mu\text{s}$; communication time
excluded
 $\leq 146.1 \times 95 \times 21 \text{ mm}$ package
Weight: $\leq 0.5 \text{ kg}$

The OLFS11-0220-M is a low phase noise frequency synthesizer with an output frequency range of 200 MHz to 20 GHz. Control interface: RS-232. The frequency step is 0.1 Hz. Frequency switching time: $\leq 200 \mu\text{s}$; communication time excluded. Output power: -40 to +10 dBm. Dimensions: $\leq 146.1 \times 95 \times 21 \text{ mm}$; 3U PXI single-slot dimensions. Weight: $\leq 0.5 \text{ kg}$. Operating temperature: -40 to +70 °C.

TECHNICAL SPECIFICATIONS

OLFS11-0220-M

Property	Value
Output frequency range	200 MHz-20 GHz
Frequency step	0.1 Hz
Frequency switching time	≤200 μs; communication time excluded
Output power	-40 to +10 dBm
Output power stability	±1 dB (0 to +10 dBm); ±2 dB (-40 to 0 dBm)
Frequency stability	2×10^{-7} ; follows external reference when connected
Frequency accuracy	2×10^{-7} ; follows external reference when connected
Spurious level	≤-70/-65 dBc (typical/maximum; 0.2-20 GHz); at 0 dBm
Harmonic level	≤-20 dBc at 0 dBm
Supply voltage	+12 V
Supply current	1.6 A startup; 1.3 A steady state
Control interface	RS-232
Operating temperature	-40 to +70 °C
Storage temperature	-55 to +85 °C
Dimensions	≤146.1 × 95 × 21 mm; 3U PXI single-slot dimensions
Weight	≤0.5 kg
Reference connector	SMA-KFD
RF output connector	2.92 mm female
Power/control connector	J30J-9ZKP
Pulse modulation	Internal/external; depth ≥60 dBc at +10 dBm
Pulse width	100 ns-10 ms
Pulse period	500 ns-10 ms
Pulse rise/fall time	≤50 ns / ≤100 ns

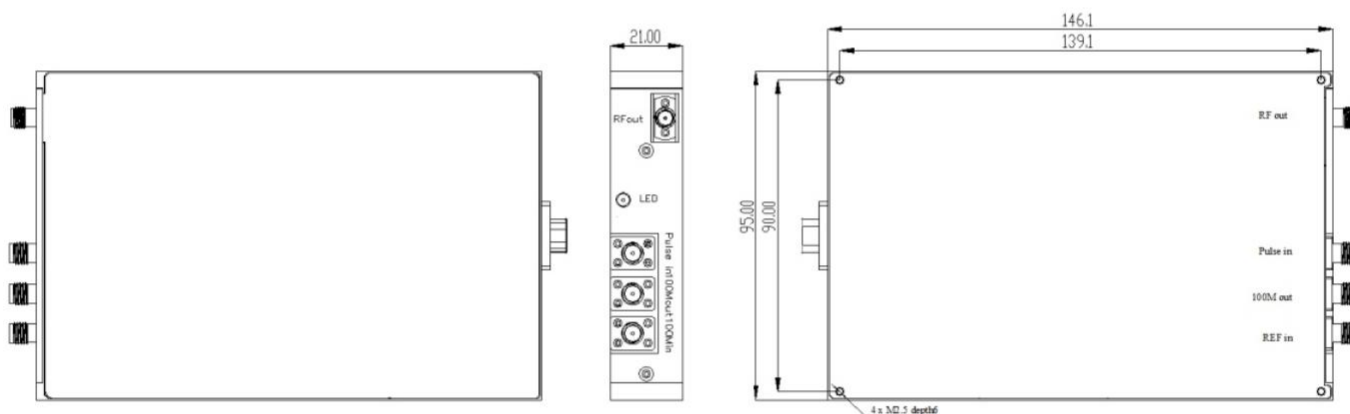
TECHNICAL INFORMATION

OLFS11-0220-M | Phase Noise (dBc/Hz)

Output Frequency	100 Hz	1 kHz	10 kHz	100 kHz	1 MHz
0.5 GHz	-110	-131	-141	-141	-141
1 GHz	-105	-125	-135	-135	-135
5 GHz	-91	-113	-122	-122	-122
10 GHz	-85	-107	-116	-116	-116
20 GHz	-79	-101	-110	-110	-110

Column headings specify frequency offset from the carrier. Output frequency is listed in the first column. Values and limit signs follow the source tables.

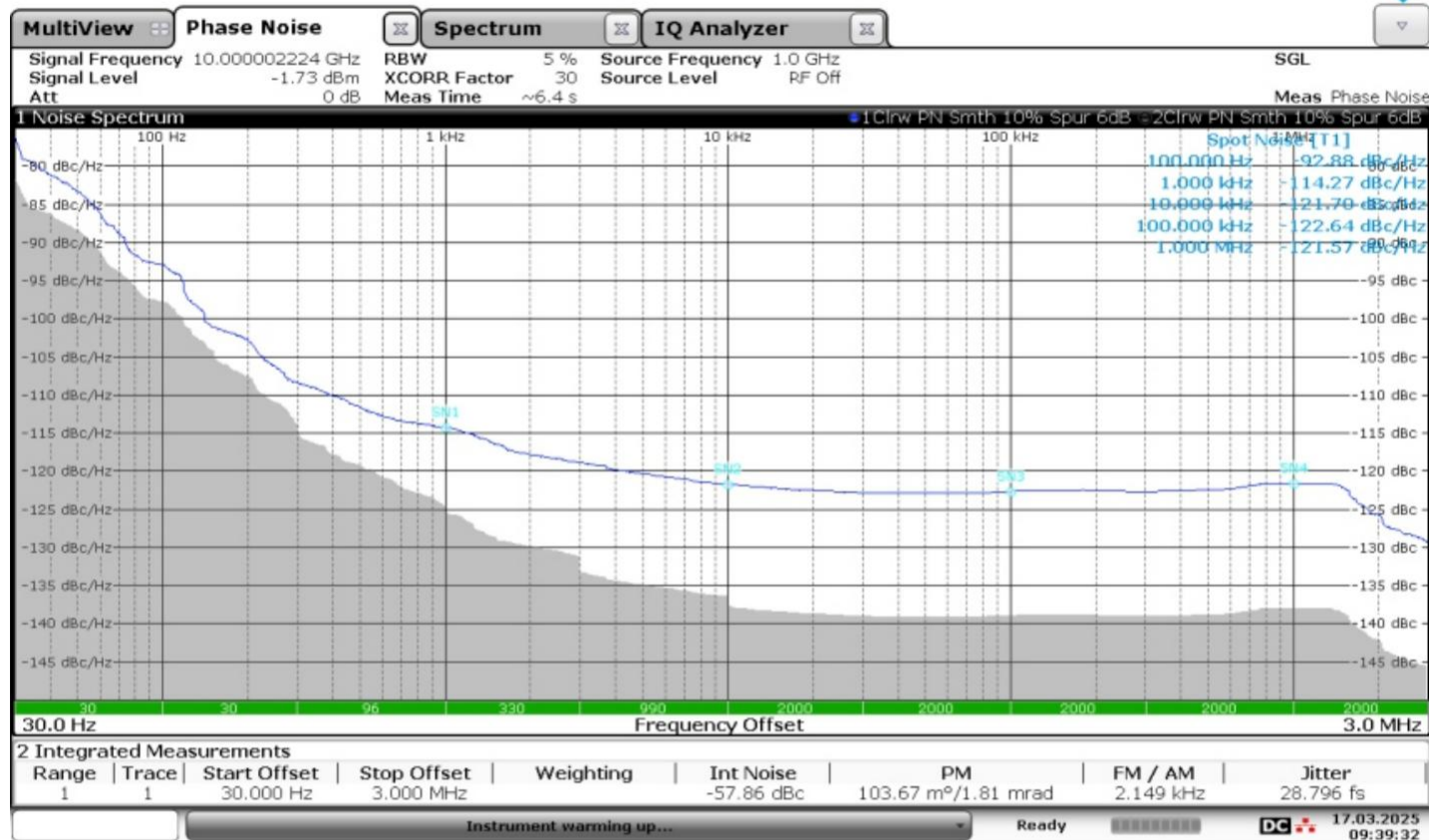
Mounting Dimensions



Dimensions in mm.

MEASUREMENT CURVES

10 GHz Phase Noise Measurement



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Source measurement example. Curves represent the illustrated test conditions.

INTERFACES & PIN ASSIGNMENTS

Power / Control Pin Assignments

Pin	Definition
1	+12 V
2	+12 V
3	GND
4	GND
5	NC
6	NC
7	NC
8	RS232-RX
9	RS232-TX