

Ultra Low Noise 7.225GHz VCO

Developed for extremely jitter sensitive applications and with focus on excellent AM-noise properties, this VCO is to deliver quartz-crystal-like stability with atto-second jitter noise floor and high output power.

With a high performance dielectric resonator at its heart, the design reaches typical phase noise values of -115dBc/Hz at 1kHz, -145dBc/Hz at 10kHz and <-175dBc/Hz in the noise floor, yielding attosecond jitter, when integrated from 10kHz to 30MHz.

The VCO runs off a single +5,7V supply and provides high internal power supply noise rejection to facilitate integration in noisy environments.

Electronic tuning of ± 100 kHz with a tuning voltage of 0 .. 10V is offered as an option for easy integration into phase-locked loops.

Technical Data:

Operating Frequency: 7.225 GHz (± 1 MHz typical mechanical tuning range)
Output Power: +19 dBm
Output Power Variation: typ. $< \pm 0.5$ dB (max. $< \pm 1.0$ dB)
Return Loss: > 20 dB / VSWR < 1.22 (typ. < 25 dB, VSWR < 1.12)
Harmonic Distortion: typ. > 50 dB (min. > 40 dB)
Discrete Spurious Tones: > -30 dB + $30 \log(f_m)$ dB for Offsets < 100 kHz
 > 120 dBc for Offsets > 100 kHz

		Guaranteed	Typical
Phase Noise:	@ 100Hz:	$< - 80$ dBc/Hz	- 85 dBc/Hz
	@ 1kHz:	$< - 110$ dBc/Hz	- 115 dBc/Hz
	@ 10kHz:	$< - 140$ dBc/Hz	- 145 dBc/Hz
	@ 100kHz:	$< - 160$ dBc/Hz	- 165 dBc/Hz
	@ 1MHz:	$< - 168$ dBc/Hz	- 173 dBc/Hz
	@ 10MHz:	$< - 173$ dBc/Hz	- 178 dBc/Hz

		Guaranteed	Typical
AM Noise:	@ 100Hz:	$< - 138$ dBc/Hz	- 143 dBc/Hz
	@ 1kHz:	$< - 158$ dBc/Hz	- 163 dBc/Hz
	@ 10kHz:	$< - 168$ dBc/Hz	- 173 dBc/Hz
	@ 100kHz:	$< - 175$ dBc/Hz	- 180 dBc/Hz
	@ 1MHz:	$< - 178$ dBc/Hz	- 183 dBc/Hz
	@ 10MHz:	$< - 180$ dBc/Hz	- 185 dBc/Hz

Power Supply: +5,7V / 250mA

Dimensions: Milled Aluminum Case 125mm x 110mm x 59mm
(Baseplate 125mm x 130mm)

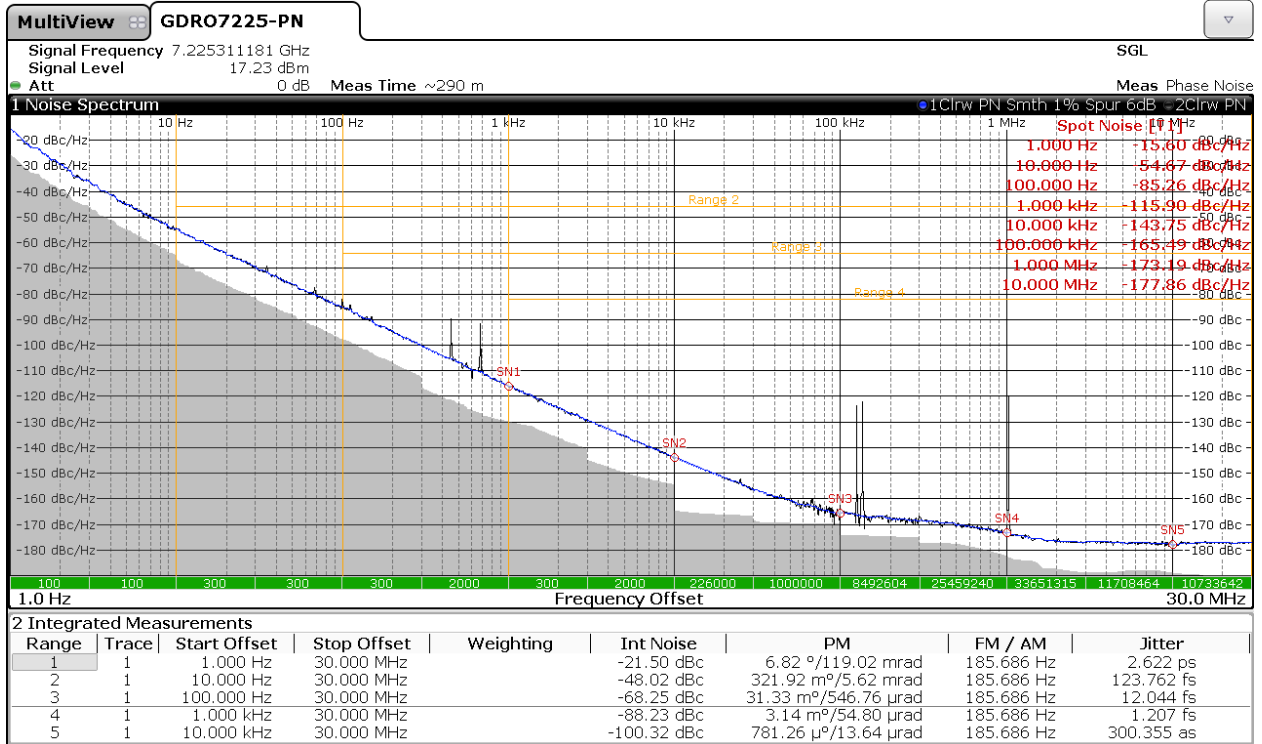
Connectors: SMA (RF-Output), Feed-Through for +5,7V / Ground

Temperatur Range: 0°C .. +50°C operating (-40°C .. +71°C storage), non Condensing

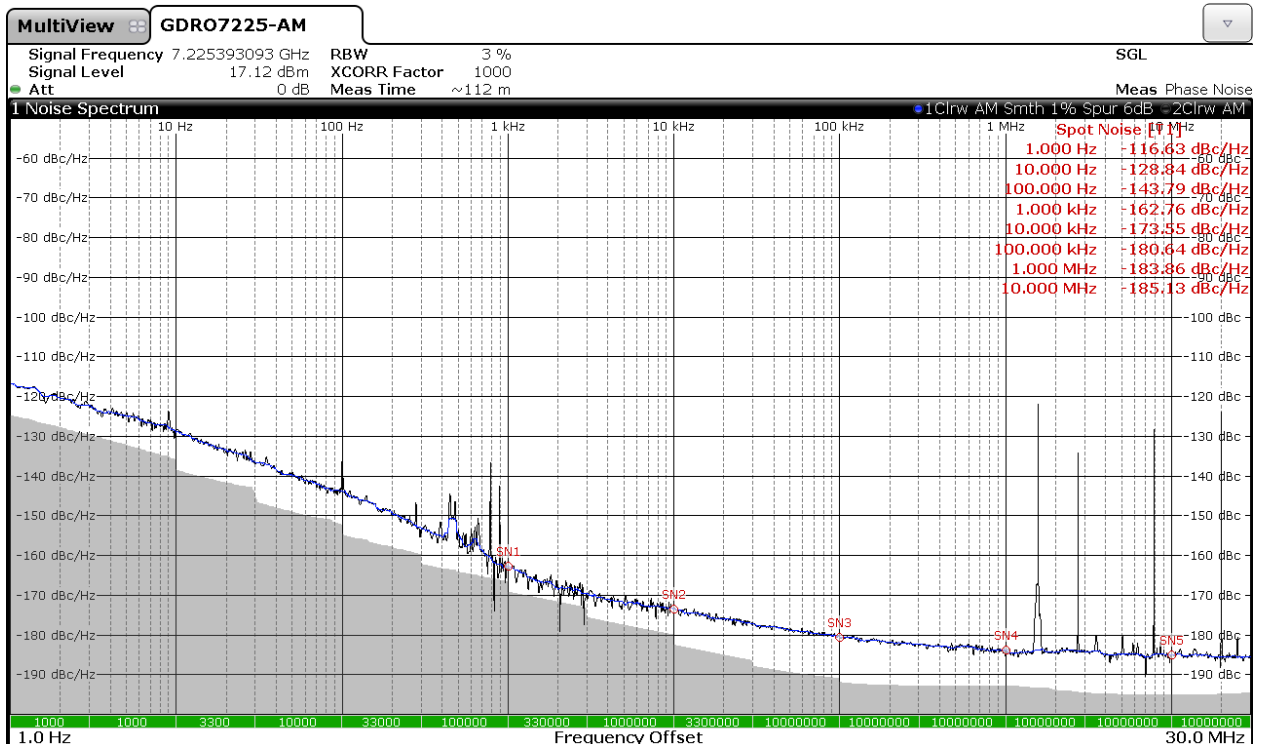
Option TP (Tuning Port):

Tuning Range: ± 100 kHz Tuning Range (0 .. +10V)
Tuning Slope: 20kHz/V
Output Power: +19 dBm
Output Power Variation: typ. $< \pm 1.5$ dB (max. $< \pm 3.0$ dB)
Tuning Port Connector: SMA

Typical Phase Noise Plot:



Typical AM Noise Plot:



Mechanical Drawings:

