

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 -170dBc/Hz in the noise floor, yielding attosecond jitter, when integrated from 10kHz to 30MHz.

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

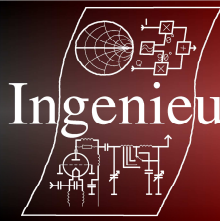
Electronic tuning of ± 100 kHz with a tuning voltage of 0 .. 10V is offered as an option for easy integration into phase-locked loops.

Technical Data:

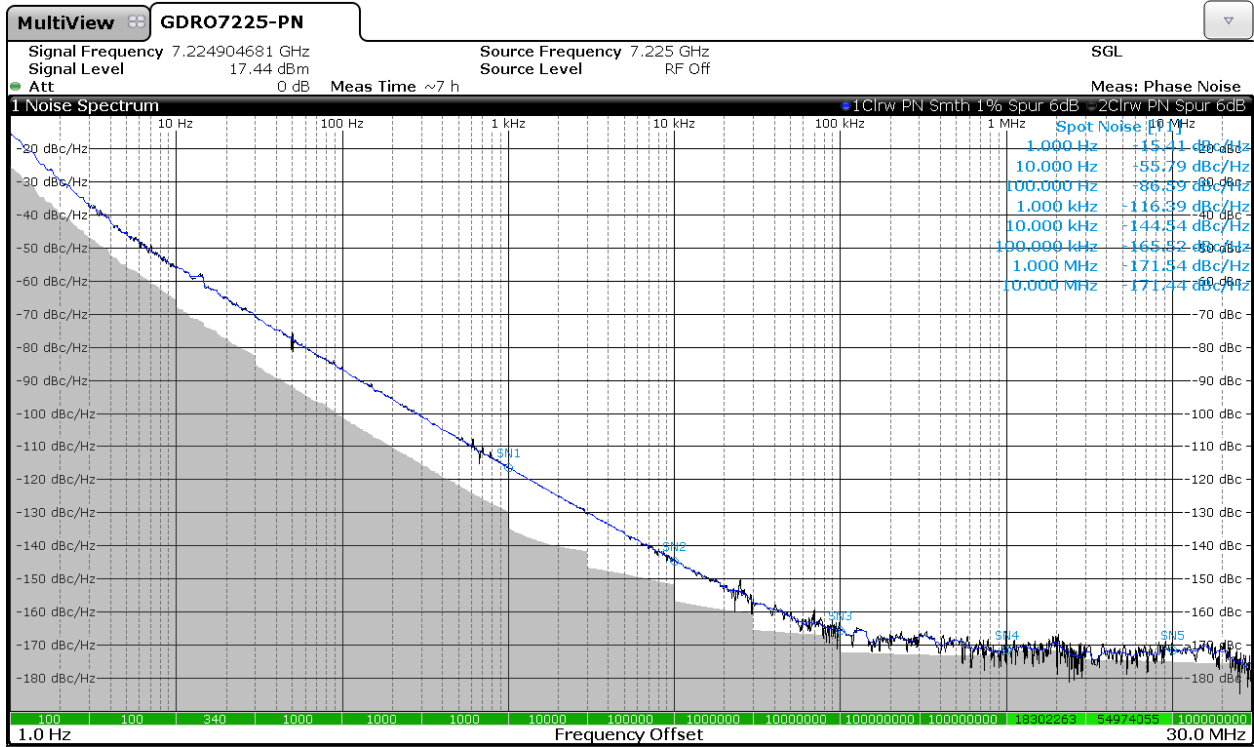
Operating Frequency:	7.225 GHz (± 3 MHz typical mechanical tuning range)		
Output Power:	+19 dBm		
Output Power Variation:	typ. $< \pm 0.5$ dB	(max. $< \pm 1.0$ dB)	
Return Loss:	> 20 dB / VSWR < 1.22	(typ. < 25 dB, VSWR < 1.12)	
Harmonic Distortion:	typ. > 50 dB (min. > 40 dB)		
Discrete Spurious Tones:	> -30 dB + $30 \log(f_m)$ dB for Offsets < 100 kHz > 120 dBc for Offsets > 100 kHz		
Phase Noise:		Guaranteed	Typical
	@ 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:	$< - 165$ dBc/Hz	- 170 dBc/Hz
		Guaranteed	Typical
AM Noise:	@ 100Hz:	$< - 145$ dBc/Hz	- 153 dBc/Hz
	@ 1kHz:	$< - 160$ dBc/Hz	- 165 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):

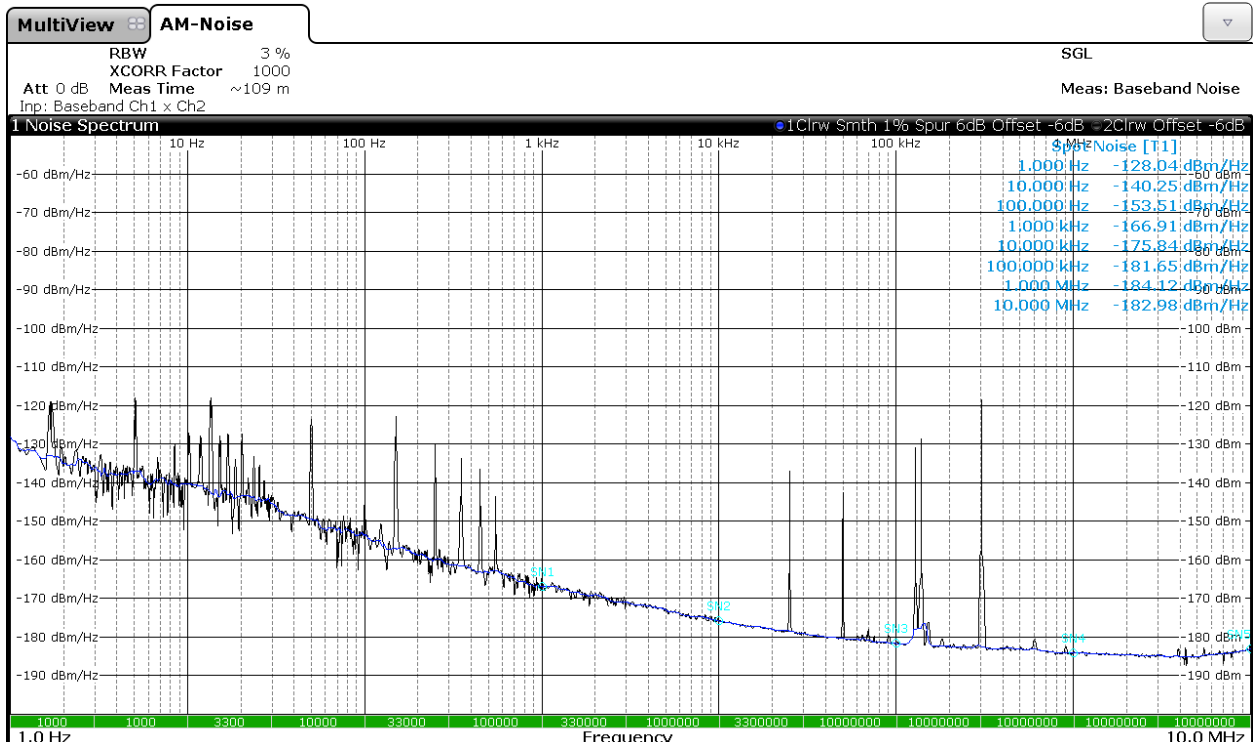
Tuning Range:	± 100 kHz Tuning Range (0 .. +10V)	
Tuning Slope:	20kHz/V	
Output Power:	+19 dBm	
Output Power Variation:	typ. $< \pm 1.5$ dB	(max. $< \pm 3.0$ dB)
Tuning Port Connector:	SMA	



Typical Phase Noise Plot:



Typical AM Noise Plot:



Mechanical Drawings:

