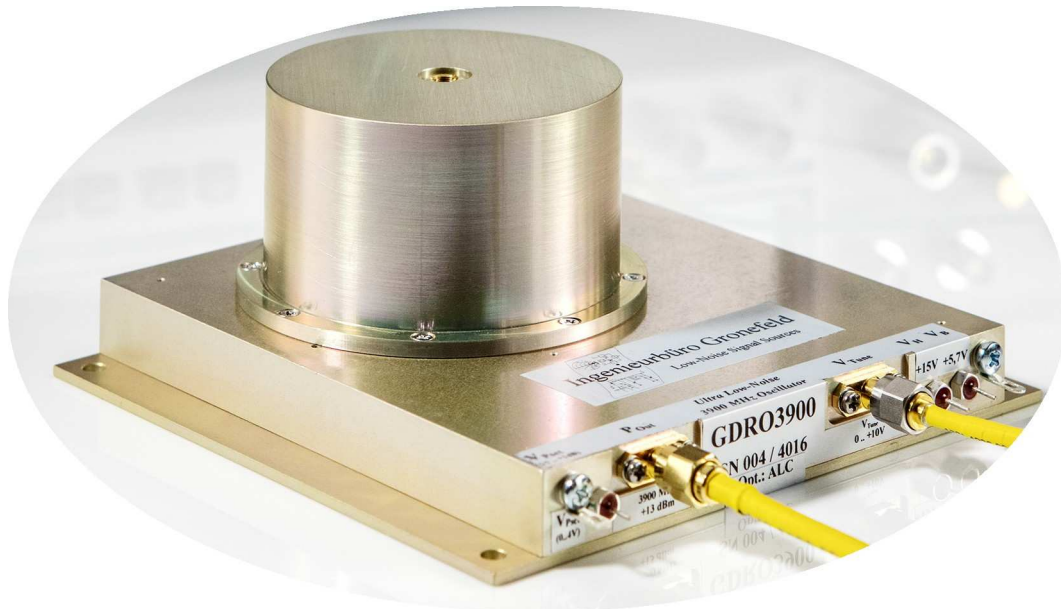




Oven-Stabilized Ultra Low Noise S-Band DRO for 3.900GHz (± 50 MHz)

Developed for extremely jitter sensitive applications like electron beam accelerators, this voltage-controlled Dielectric-Resonator Oscillator delivers ultimate phase noise performance at 3.900GHz, comparable to quartz crystal oscillators.

While developed for 3.900GHz, the design can be factory tuned to any frequency within a ± 50 MHz range with the same guaranteed and comparable typical performance.

With a high performance dielectric resonator at its heart, phase noise typically reaches -125dBc/Hz at 1kHz, -155dBc/Hz at 10kHz offset and -180dBc/Hz in the noise floor, yielding attosecond jitter performance when integrated from 1kHz to 30MHz.

Double buffering on the output keeps pulling below 1ppm (typically) and a two tier voltage stabilization scheme virtually eliminates pushing.

The tuning port accepts 0..10V for a ± 100 kHz tuning range and easy integration into phase-locked loops.

The DRO runs off a single +5.7V supply voltage. In addition a +15V supply, drawing a maximum current of 1100mA, is required to keep the unit at a stable temperature of +35°C, ensuring frequency accuracy.

Available option:

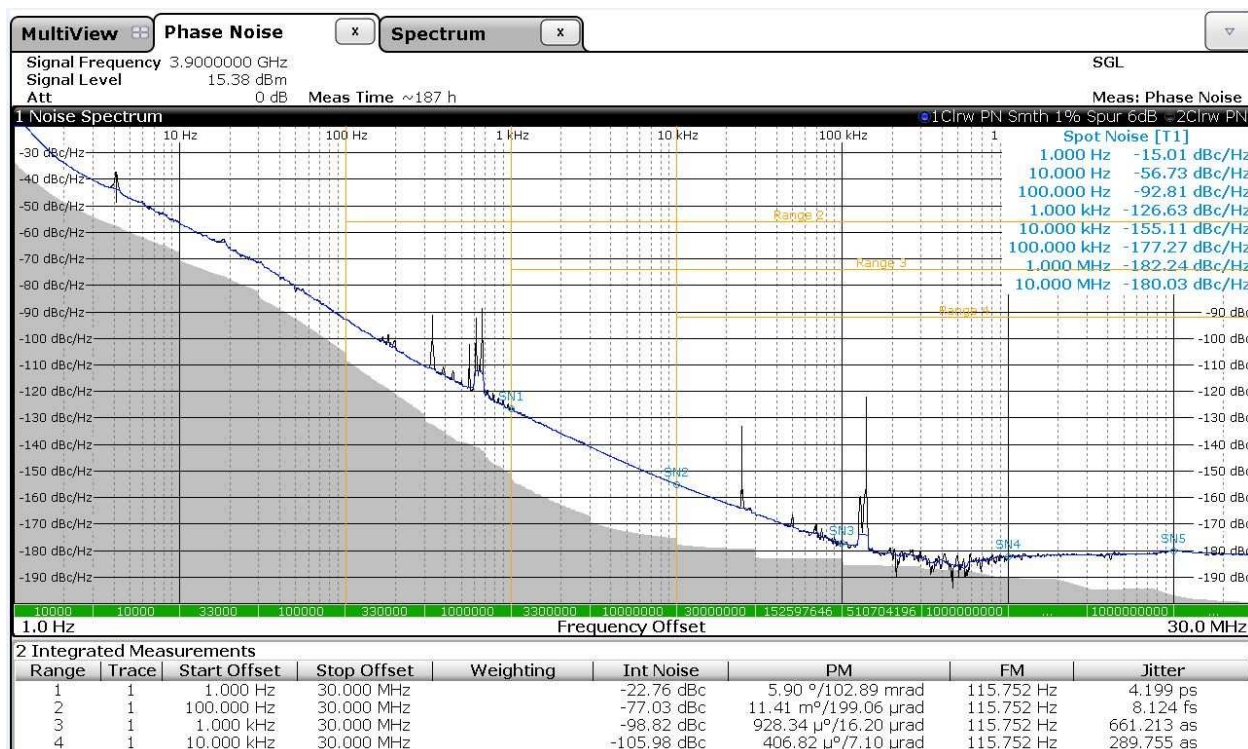
ALC: Amplitude stabilization to ± 0.1 dB

Technical Data:

Operating Frequency:	3.900GHz (±50MHz factory set, ±1.0 MHz mechanical tuning)		
Output Power:	+17dBm		
Output Power Variation:	< ±1.5dB (typ. < ±0.75dB)		
Return Loss:	> 20dB, VSWR < 1.22 (typ. < 25dB, VSWR < 1.12)		
Harmonic Distortion:	> -40dBc (typ. > 50dB)		
Discrete Spurious Tones:	> -20dBc - 20log(Offset[Hz]) dB for Offsets < 100kHz > -120dBc for Offsets > 100kHz		
		Guaranteed	Typical
Phase Noise:	@ 100Hz:	< - 80 dBc/Hz	- 90 dBc/Hz
	@ 1kHz:	< - 115 dBc/Hz	- 125 dBc/Hz
	@ 10kHz:	< - 145 dBc/Hz	- 155 dBc/Hz
	@ 100kHz:	< - 170 dBc/Hz	- 175 dBc/Hz
	@ 1MHz:	< - 175 dBc/Hz	- 180 dBc/Hz
	@ 10MHz:	< - 175 dBc/Hz	- 180 dBc/Hz
Electronic Tuning:	0 .. +10V (-100kHz .. +100kHz)		
Tuning Slope:	20kHz/V		
Modulation Bandwidth:	160 kHz		
Power Supply:	+5.7V/450mA +15V/1100mA max. (Heater)		
Dimensions:	Milled Aluminum Case 125mm x 130mm x 56mm		
Connectors:	2 x SMA (RF-Output, VCO-Tuning Port), Feed-Through for +5.7V and +15V, 2 x Ground Solder Pins		
Temperatur Range:	23°C ±10°C operating (-40°C..+71°C storage, non Condensing)		
Oven warm-up Time:	< 5min for <50kHz frequency error		

Option ALC:	Output Power:	+17dBm
	Output Power Variation:	< ± 0.1 dB

Typical Phase Noise Plot:



Mechanical Drawings:

