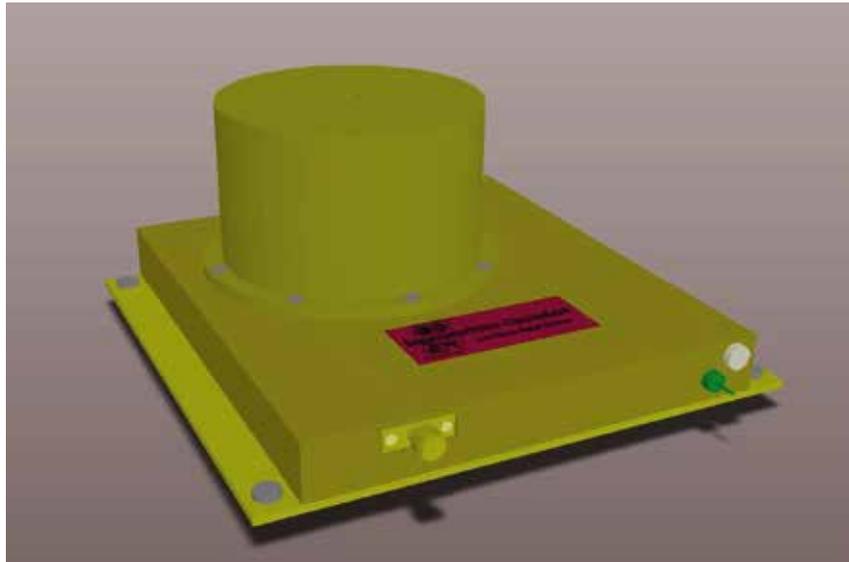


DATA SHEET

Ultra Low Noise 5.000 GHz C-Band DRO



Oven-Stabilized Ultra Low Noise

C-Band DRO for 5.000 GHz

Developed for extremely jitter sensitive applications, this voltage-controlled Dielectric-Resonator Oscillator delivers ultimate phase noise performance at 5.000 GHz, comparable to quartz crystal oscillators. With a high performance dielectric resonator at its heart, phase noise is expected to typically reach -120dBc/Hz at 1kHz, -145dBc/Hz at 10kHz offset and -180dBc/Hz in the noise floor, yielding attosecond jitter performance when integrated from 10kHz 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 $\pm 150\text{kHz}$ 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 $+35^\circ\text{C}$, ensuring frequency accuracy.

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Ultra Low Noise 5.000 GHz C-Band DRO

Available option

HP: Higher output power level of +17dBm.
ALC: Amplitude stabilization to ± 0.1 dB

Technical Data

Operating Frequency:	5.000 GHz (± 1 MHz mechanical tuning)		
Output Power:	+13 dBm		
Output Power Variation:	< ± 1.5 dB	(typ. < ± 0.75 dB)	
Return Loss:	> 20 dB, VSWR < 1.22	(typ. < 25 dB, VSWR < 1.12)	
Harmonic Distortion:	< - 40 dBc	(typ. < - 50dBc)	
Discrete Spurious Tones:	< - 20 dBc - 20log(fm) dBc for Offsets < 100kHz < - 120 dBc for Offsets > 100kHz		
Phase Noise:		Guaranteed	Expected
	@ 100Hz:	< - 85 dBc/Hz	- 90 dBc/Hz
	@ 1kHz:	< - 115 dBc/Hz	- 120 dBc/Hz
	@ 10kHz:	< - 140 dBc/Hz	- 145 dBc/Hz
	@ 100kHz:	< - 165 dBc/Hz	- 170 dBc/Hz
	@ 1MHz:	< - 175 dBc/Hz	- 180 dBc/Hz
	@ 10MHz:	< - 175 dBc/Hz	- 180 dBc/Hz
Electronic Tuning:	0 .. +10V (-150kHz .. +150kHz)		
Tuning Slope:	30kHz/V		
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		
Temperature Range:	5°C/+40°C operating (-40°C/+71°C storage), non Condensing)		
Oven warm-up Time:	< 5min for <70kHz frequency error		

Option HP:

Output Power:	+17dBm
Output Power Variation:	< ± 1.5 dB (typ. < ± 0.75 dB)

Option ALC:

Output Power:	+13dBm / +17dBm (w. Opt. HP)
Output Power Variation:	< ± 0.1 dB