RADITEK INC.

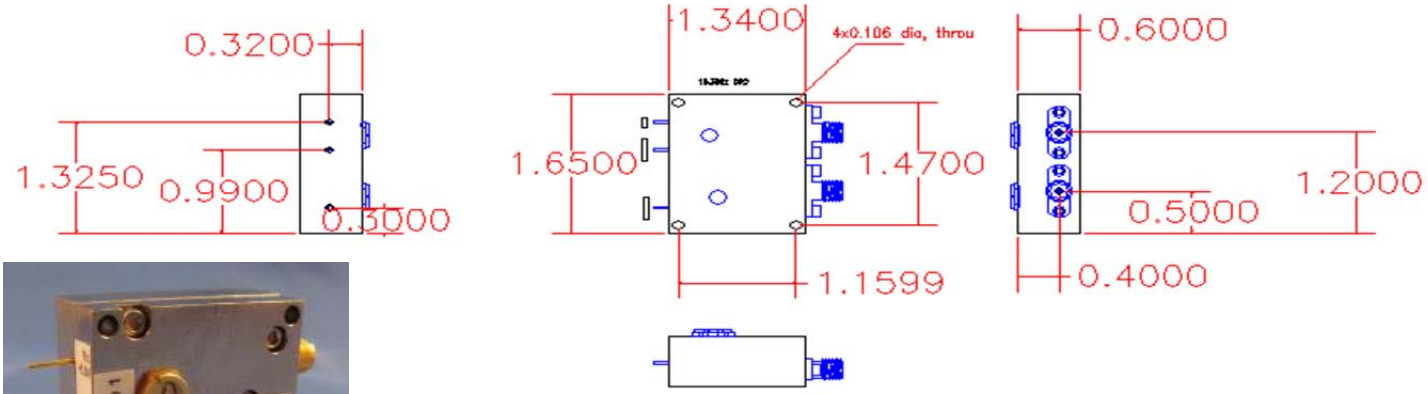
RoHS COMPLIANT

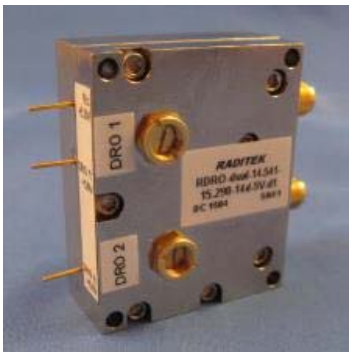
code-d1

Redundant, Dual Dielectric Resonant Oscillator

14.541-15.290GHz, SMA connectors, 14 dBm RF Power, 5 Volts DC Power

Low Current for use in Meteorological Satellite





Units: Inch
Not to scale

Order Examples: RDRO-dual-14.541-15.290-14d-5v-d1
Description: *(Dual Dielectric Resonant Oscillator, 14.541-15.290GHz, 14 dBm RF Power, 5 Volts DC Power)*

Critical specifications			**Units**
Frequency (both DROs)		14.541-15.290	GHz
Power output at “RF output 1” and “RF output 2”		>+14	dBm
DC power		5.0 regulated	Volts
Dimension		1.34” x 1.65” x 0.60”(not including connectors)	Inches
Other specifications			
Frequency stability over time		1 or less (Crystal aging at 25C)	ppm/year
Output power variation over temperature		3 or less	dB
Harmonics		<-25 or lower	dBc
Spurious		<-60 or lower	dBc
Operating temperature		-40 to +60	°C
Storage temperature		-40 to +70	°C
Phase noise	@ 10 kHz	-90	dBc/Hz
	@ 100 kHz	-89	dBc/Hz
	@ 1 MHz	-114	dBc/Hz
Mechanical Tuning		±10	MHz
Frequency Pushing		745	KHz/V
Load Pulling (1)		2.98	MHz

1) Maximum frequency variation for 360 degree phase change in a 1.5:1 load.
2) Total frequency variation over entire operating temperature range.
3) Total power variation over entire operating temperature range.

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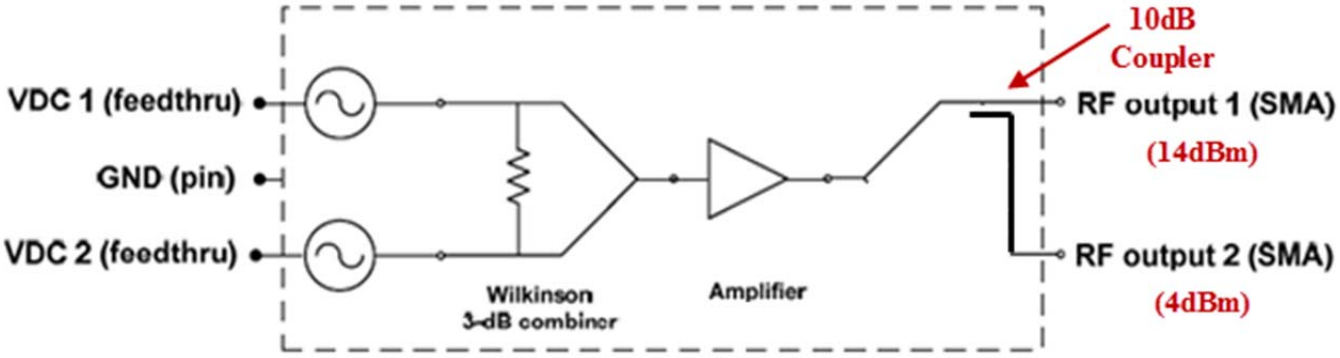
Redundant DRO Notional Block Diagram



Description:

1. The required component is a redundant DRO module with 2 identical DRO in a single module with two RF outputs
2. Each DRO will have a dedicated DC power pin so that only one DRO will be powered on at any given time.
3. Within the module, each DRO output will be combined in a Wilkinson combiner to provide isolation of the DRO outputs (i.e. so that the “powered on” DRO will not be affected by the “powered off” DRO).
4. At the output of that combiner, a 10dB Coupler will split the signal in order to provide two RF outputs using SMA (female) connectors. 14dBm on Port 1 and 4dBm on Port 2.
5. The RF output uses HNC 441 with 20dB P1 (18Ghz 15dB gain, 5v @ 100mA)
6. If only one DRO is on (output 14dBm), other output is 4dBm, the overall current will be around 110mA to 130mA.

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