

Master Reference Oscillator

(MRO)

APITech's line of Master reference oscillators (MROs) is vibration hardened ultra low noise crystal oscillators intended for an airborne military application.

Features

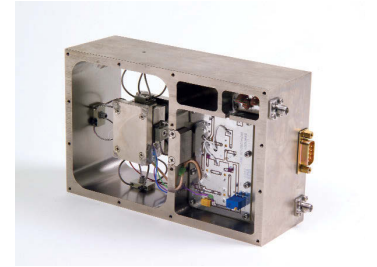
- SC cut crystal for stability and low noise
- Ovenized oscillator has a less than 10-minute warm-up to achieve 0.5 PPM accuracy
- Integrated doublers (x2 and x4), amplifier, built in power test, and band pass filter circuits
- TTL oven ready indicator
- Internal voltage regulation to minimize pushing
- Low resonance (<10 Hz) vibration isolation system to minimize the effects of vibration on phase noise performance

Phase Noise (60 MHz – 120 MHz output frequency)

Offset Freq. Hz	Static Noise dBc/Hz	Dynamic Noise dBc/Hz
10	-100	-84
100	-131	-116
1000	-158	-152
10K	-173	-172
20K	-176	-176
1Meg	-176	-176

Phase Noise (120 MHz – 240 MHz output frequency)

Offset Freq. Hz	Static Noise dBc/Hz	Dynamic Noise dBc/Hz
10	-95	-78
100	-125	-110
1000	-152	-146
10K	-167	-166
20K	-170	-170
1Meg	-170	-170



Typical Performance Characteristics

- Frequency** 60 - 480 MHz
- Output Power Level** +20 dBm
- Aging** ± 1 PPM per year after 30 days of operation
- Harmonics** -40 dBc
- Spurious**
 - 90 dBc max in a ±2 MHz B.W. about 160 MHz
 - 75 dBc from ±2 to ±20 MHz about 160 MHz
- Temperature Stability** ±0.5 PPM, -20 to +60° C, REF +25° C
- Dimensions** 6.75" x 5" x 2.688"
- Connector RF** SMA Female
- Connector E-Tune** SMA Female
- DC and Bits** Male 9 pin D connector
- Packaging** Machined aluminum housing
Nickel plated per MIL-C-26074
- DC Power** 15 V
- DC Current** 1.5 A during warm up
0.5 A after warm up
- VSWR** 1.5:1 max @160 MHz into a 50 ohm system

Phase Noise (120 MHz – 240 MHz output frequency)

Offset Freq. Hz	Static Noise dBc/Hz	Dynamic Noise dBc/Hz
10	-89	-72
100	-119	-104
1000	-146	-140
10K	-161	-160
20K	-164	-164
1Meg	-164	-164