

# MULTIPLIED PHASE-LOCKED COAXIAL RESONATOR OSCILLATOR

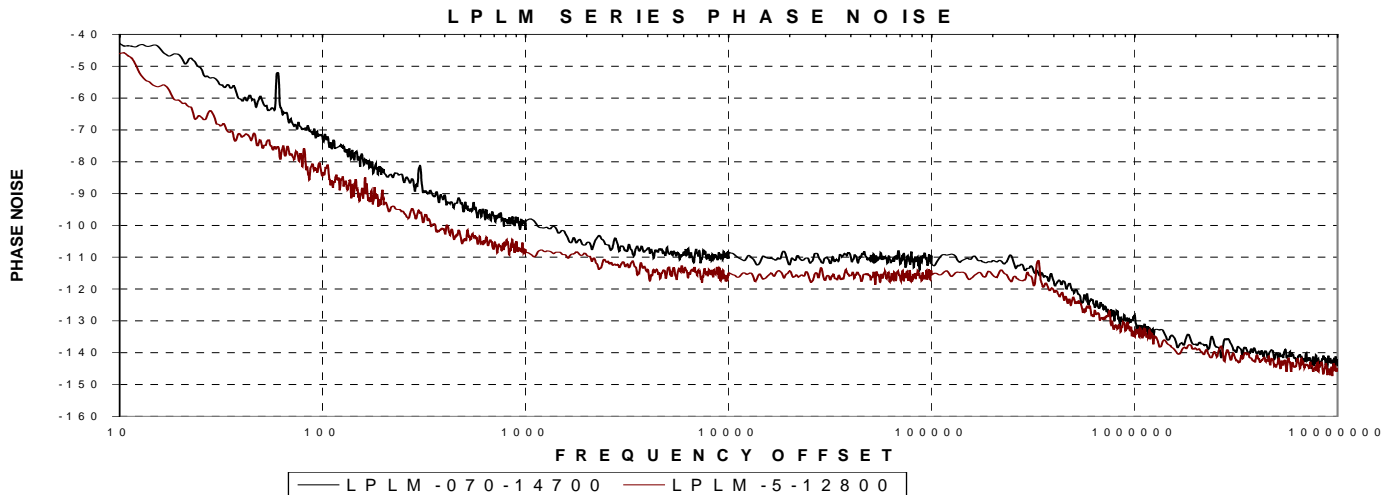
## LPLM SERIES: 8 – 15 GHz

### FEATURES

- Superior phase noise
- Ideal for digital radio links
- 100% burn in, 3 year warranty

### OPTIONS

- Internal crystal reference (mechanically adjustable)
- 1 – 20 MHz input reference (dual-loop design)



### ELECTRICAL SPECIFICATIONS

Output frequency range	8 – 15 GHz
Output power	+13 dBm minimum
Output power variation	±1.5 dB maximum
Output impedance	50 ohms nominal
Output tuning range	2% Typical
Phase noise	See graphs
Harmonic output	-50 dBc minimum
Spurious output	-70 dBc minimum (standard) -65 dBc minimum (dual loop)
Input reference frequency	50 – 550 MHz (Reference Option A) 1 – 20 MHz (optional)
Input power level	0 ±3 dBm
Load VSWR	1.5:1 nominal
DC power requirements	+15, +20 volts @ 400 mA typical (standard) @ 600 mA (optional)

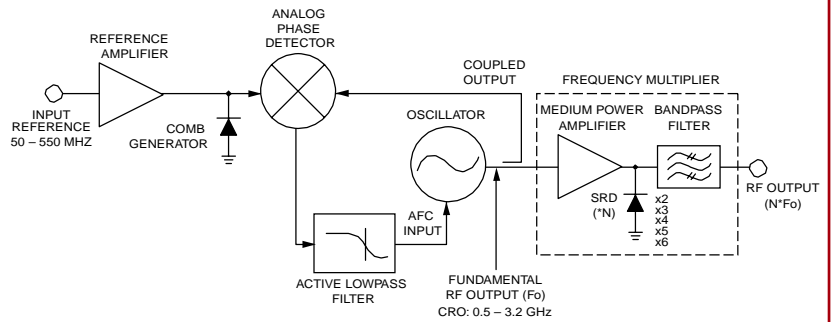
# MULTIPLIED PHASE-LOCKED COAXIAL RESONATOR OSCILLATOR

## GUARANTEED PHASE NOISE

Offset from Carrier	Phase Noise at 15 GHz Carrier (dBc/Hz)
100 Hz	-75
1 kHz	-95
10 kHz	-100
100 kHz	-100
1 MHz	-120
10 MHz	-140

Note: Applies to Ref. Option A, 100 MHz (typ). Reference phase noise must be at least -121 @ 100 Hz, -141 @ 1 kHz, -153 @ 10 kHz for guaranteed performance.

## BLOCK DIAGRAM



## ORDERING INFORMATION

Standard (input reference 50 – 550 MHz), For internal reference option specify C.

LPLM - \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ P

Reference freq. (MHz)                      Output freq. (MHz)                      Ref. Option                      Alarm Option                      Supply Voltage

Optional (dual loop, input reference 1 – 20 MHz) Temperature range 0 to 60 C

LPLM- \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_

Input freq. (MHz)                      Reference freq. (MHz)                      Output freq. (MHz)                      Ref. Option                      Alarm Option                      Supply Voltage

## REFERENCE OPTIONS

A. External reference (50 – 550 MHz).

C. ±5 ppm (-20 to +70°C).

Note: For Option C specify output frequency to 6 decimal places.

## SUPPLY VOLTAGE OPTIONS

15. +15 VDC.

20. +20 VDC.

## ALARM OPTIONS

0. 0 volts in-lock, +V out-of-lock.

1. Relay, open in-lock, closed out-of-lock, (contact closure to ground).

2. Relay, closed in-lock, open out-of-lock, (contact closure to ground).

3. TTL Low in-lock, High out of lock

4. TTL High in-lock, Low out of lock

## MECHANICAL SPECIFICATIONS

Outline drawings ..... 165653

Weight ..... 350 grams maximum

RF connectors ..... SMA female

DC connectors ..... Feedthru filter

## ENVIRONMENTAL SPECIFICATIONS

Temperature

Operating ..... see reference option

Storage ..... -45 to +85°C (standard)

Humidity ..... 95% at 40°C noncondensing

Shock (survival) ..... 30 g's, 10 ms pulse

Vibration (survival) ..... 20 to 2000 Hz random to 4 g's

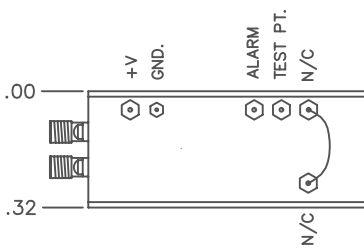
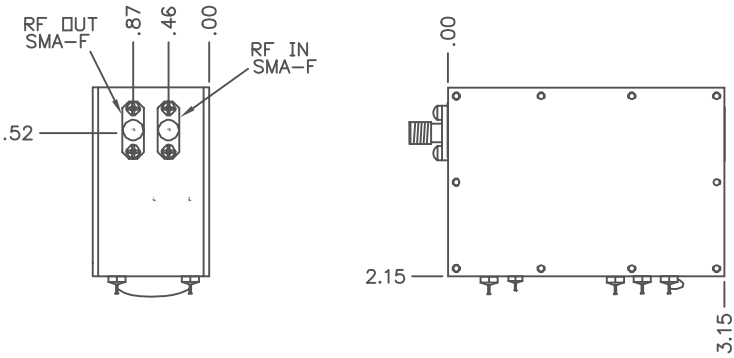
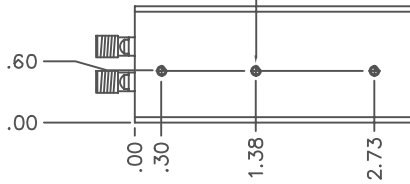


# OUTLINE DRAWINGS

## LPLM SERIES 165653

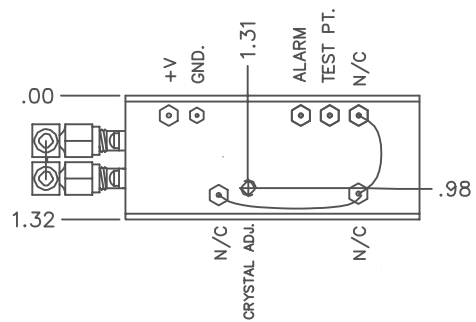
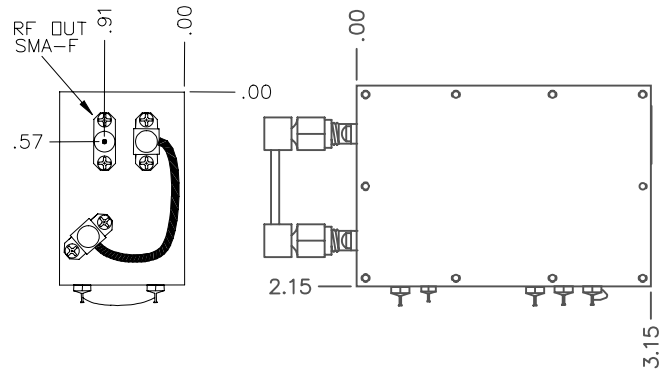
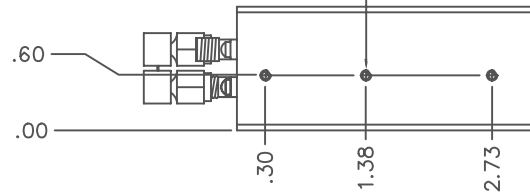
OPTION A (EXTERNAL REF.)

MOUNTING: 4-40 X .20 D. X3 ( )



OPTION B,C (INTERNAL REF.)

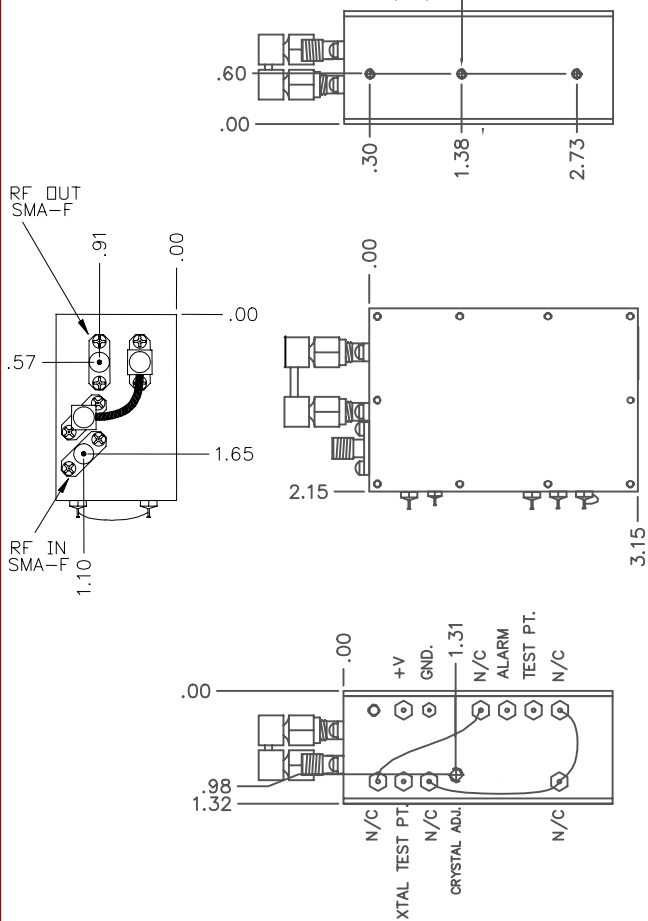
MOUNTING: 4-40 X .20 D. (X3)



# OUTLINE DRAWINGS

## OPTION -5,-10 (DUAL LOOP)

MOUNTING: 4-40 X .20 D. (X3)



## OPTIONAL MOUNTING PLATE CONFIGURATION

