

PRECISE

ULTRA LOW NOISE

RUGGED

RELIABLE

2 YEAR WARRANTY

# EDPLO – 4000

EXTERNALLY PHASE LOCKED | 5 OR 10 MHz INPUT

## APPLICATION

Commercial

Military

Airborne

Space

Missile Guidance

Cable TV Links (CATV)

Satellite Communications

Local Area Networks (LAN)

Global Positioning Systems  
(GPS)

Up / Down Converters

Transmitters &amp; Receivers

Traffic Sign Post

Test Equipment

Digital Radios

Point to Point

LMDS



## FEATURES

- Dielectric Resonator Technology
- External Reference 5 or 10 MHz
- Phase Lock Indicator Alarm
- Ultra Low Phase Noise
- MIC and SMT Fabrication
- Ultra Low Microphonics
- Low Power Consumption
- Up To +25 dBm Output Power
- Available From 1 – 40 GHz
- Operating Range -55° to +105°C
- Vibration/Shock Upgrade
- RoHS Compliant

## DESCRIPTION

**EDPLO-4000** series Phase Locked Dielectric Resonator Oscillator (PLDRO) utilizes advanced MIC and SMT technology to generate crystal stability at microwave and mm-wave bands up to 40 GHz. The low profile and rugged construction provide excellent durability against harsh environmental conditions due to Shock/Vibration, Temperature and Humidity.

**EDPLO-4000** series oscillator is designed using an ultra-low noise amplifier with series feedback at source and Dielectric Resonator at the gate. High gain, low noise GaAs FETs/BJTs are biased precisely to ensure minimum phase noise. The device is carefully matched for maximum power, minimum phase noise and Voltage Standing Wave Ratio (VSWR). The oscillator is compensated for maximum temperature stability, optimum negative resistance and lowest phase noise possible.

**EDPLO-4000** series oscillator is buffered by cascaded low-noise driver and power amplifiers for minimum load pulling, maximum isolation and power. Transistor devices, and all chip components, are directly attached to gold plated Kovar carriers to minimize shear effect and maximize device heat transfer. Kovar carriers are mounted to the chassis to provide an efficient thermal junction and a stable structure for reduction of microphonics. To ensure oscillator stability over the full temperature range, the tuning elements are precisely designed and positioned to compensate for temperature drift by a factor of three.

**EDPLO-4000** series proprietary Phase lock loop and Internal Multiplier circuitry uses Surface Mount Technology. The reference frequency is multiplied and sampled to output frequency. Produced error voltage due to frequency drift is sensed by a Wein-Bridge Oscillator to provide the necessary sweep voltage to an ultra Hi-Q tuning varactor diode for the purpose of compensation and phase locking. The unique construction of phase lock loop sub-assembly provides excellent temperature stability and minimum solder joints for maximum reliability.

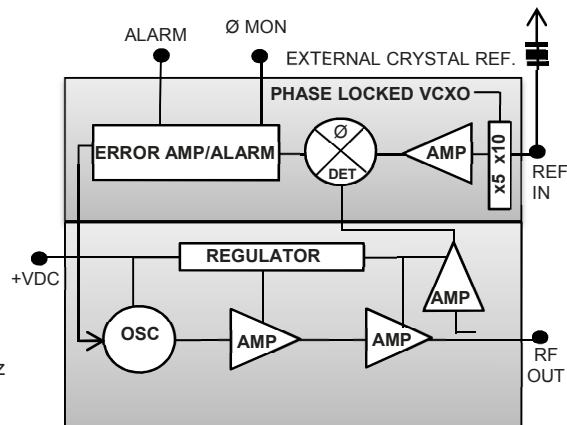
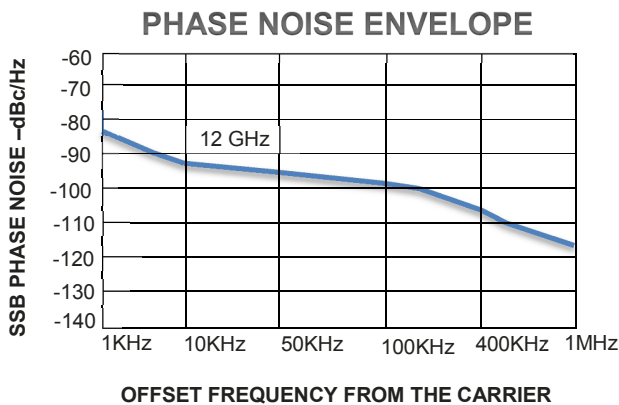
**EDPLO-4000** series is internally voltage regulated to avoid reverse bias, frequency pushing, bias modulation and voltage transients. A phase lock indicator alarm of TTL type is provided as a feature. The EDPLO-4000 series are externally locked and factory tuned to specified frequency. Mechanical frequency adjustment is provided for optimum phase voltage setting. Buffered Reference Monitor and adjustment are standard features of this Hi-Tech oscillator.



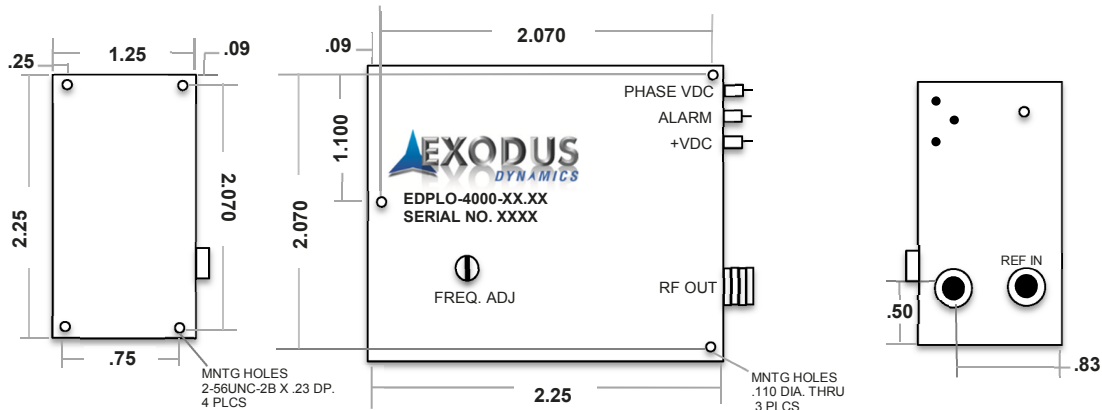
1935 Jamboree Drive, Suite 164  
 Colorado Springs, CO 80920  
 Phone: 719.445.2999  
 Fax: 719.452.3900  
 sales@exodusdynamics.com  
 www.exodusdynamics.com

**SPECIFICATIONS**

Model Number	EDPLO-4000-XX.XX (Where XX.XX is freq. in GHz)
Single Frequency	1 to 40 GHz
Mechanical Tuning Range	100 MHz
Power Output	+13 dBm, up to +25 dBm Optional
Load VSWR, Maximum	2.0 : 1.0
Power Requirements	+12, +15 VDC, 400 mA
Reference Input Frequency	10 MHz or 5 MHz Optional
Reference Power Input	0 +/- 6 dBm
Frequency Stability	Same as Reference
Phase Noise	Reference Noise +20 Log(N) +3db
Spurious	-80 dBc
Harmonics	-25 dBc
Alarm	TTL
Operating Temperature	-55° to +105°C Optional
Storage Temperature	-55° to +120°C
Connectors	SMA Female or 2.92 mm
Size	2.25" x 2.25" x 1.25"
Finish	Nickel



**OUTLINE DRAWING**



NOTE: Drawing not to scale  
 Dimensions in inches