



## System Interface Products

### PODM – Precision 10 MHz Oscillator - Dual Mux/Tees



10MHz Master Oscillator plus Dual Mux/Tees in one package

#### How to order a Precision Oscillator Dual Mux/Tees (PODM)

##### Module

PODM - Precision Oscillator Dual Mux/Tees

##### Mux/Tee -1 Connectors

**J1:** To LNB, BDC or BUC  
**J2:** To Receiver or modem  
**J3:** DC in  
**J4:** 10 MHz in

##### Oscillator Connectors

**J5:** Oscillator DC out  
**J6:** 10 MHz out  
**J7:** Oscillator DC in  
**J8:** 10 MHz out

PODM-NNBS-BSBS-NNBS-AM

##### Mux/Tee -2 Connectors

**J9:** To LNB, BDC or BUC  
**J10:** To Rx or modem  
**J11:** DC in  
**J12:** 10 MHz in

##### Optional

" " - (blank) Standard version  
EP - Enhanced Phase Noise  
AM - Optimized for Airborne.

##### Connectors available:

**J1, J2, J9, J10:** To LNB/BUC & Rx/Modem

F - F, 75Ω                      S - SMA, 50Ω  
N - N, 50Ω

**J3, J5, J7, J11:** DC Supply

B - BNC (preferred)    N - N                      T - TNC  
S - SMA                      ft - feedthru

**J4, J6, J8, J12:** 10 MHz Signal

All connectors are SMA

#### PODM Features

##### Ovenized Oscillator (OCXO)

Orbital Research now has three OCXO Oscillators depending on your requirements:

- 1) Our standard offering for most applications
- 2) Our enhanced offering with better phase noise
- 3) Our Airborne offering with better immunity to vibration and a greater temperature range.

##### Mux/Tee (as secondary modules)

- Highpass filtered L band, rolloff below 900 MHz, flat 950 thru 2900 MHz
- Very low bandpass ripple
- Very high Rx to 10MHz port isolation (no leakage back to receiver)

##### Functional

- Will operate with LNBS, BDCs, VSATs, BUCs, and Modems

##### Structural

- Machined from solid aluminum billet for strength and stability
- Allodyne finish for corrosion protection and excellent RF shielding/grounding
- Connectors are 'O' ring sealed for weather resistant operation
- RoHS & REACH compliant

##### Power Supply

Orbital advises that a separate power supply be used for each power input (Oscillator and dual packages) as one power supply for all can cause extraneous signals to be transferred to the Oscillator, which can degrade its performance.

Because the Oscillator is ovenized, it can draw as much as 350 mA during startup, until it heats to operating temperature.

##### Sales contact:

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# System Interface Product: PODM - Specifications

## ELECTRICAL SPECIFICATIONS

		Specification			
Parameter	Standard	Enhanced	Airborne		
10 MHz Reference Oscillator	Frequency	10 MHz			
	Output Level	2 dBm			
	Stability over Temperature	$\pm 5 \times 10^{-8}$	$\pm 5 \times 10^{-8}$	$\pm 1 \times 10^{-8}$	
	10 year aging	$\pm 5 \times 10^{-7}/\text{year}$	$\pm 5 \times 10^{-7}/\text{year}$	$\pm 1 \times 10^{-7}/\text{year}$	
	24 Hour aging	$\pm 0.5 \times 10^{-9}/\text{day}$	$\pm 0.5 \times 10^{-9}/\text{day}$	$\pm 0.5 \times 10^{-9}/\text{day}$	
	Temperature Range	0°C to +50°C	0°C to +50°C	-40°C to +80°C	
	Phase Noise	10Hz 100Hz 1 kHz 10 kHz 100 kHz 1 MHz	-120 dBc/Hz -145 dBc/Hz -152 dBc/Hz -155 dBc/Hz -155 dBc/Hz -155 dBc/Hz	-120 dBc/Hz -145 dBc/Hz -158 dBc/Hz -160 dBc/Hz -160 dBc/Hz -160 dBc/Hz	-120 dBc/Hz -150 dBc/Hz -158 dBc/Hz -165 dBc/Hz -165 dBc/Hz -165 dBc/Hz
	Harmonics	< -45 dBc			
	Port-to-Port Isolation	30 dB			
	Power requirement	+12.5 to +18 VDC supplied through Oscillator DC input connector.			
	Current Drain	350 mA max during warm-up. 125 mA max after warm-up.			
	Mux/Tee	Bandpass	900 to 2100 MHz		
		Thru Loss	0.5 dB max		
Ripple		+/-0.3 dB max			
Input VSWR		1.3 : 1 max			
Output VSWR		1.3 : 1 max			
10 MHz Passband		1-100 MHz (3 dB down)			
10 MHz Thru Loss		0.2 dB, 10 MHz to LNB port			
10 MHz Isolation		>90 dB, 10 MHz to Rx port			
DC Filtering		Hash filter, low pass filter			
DC Resistance		0.132 ohms average			
Power Capability		+12 to +48 VDC, 4.0 Amps			
Power Requirement		Passive. No power required			

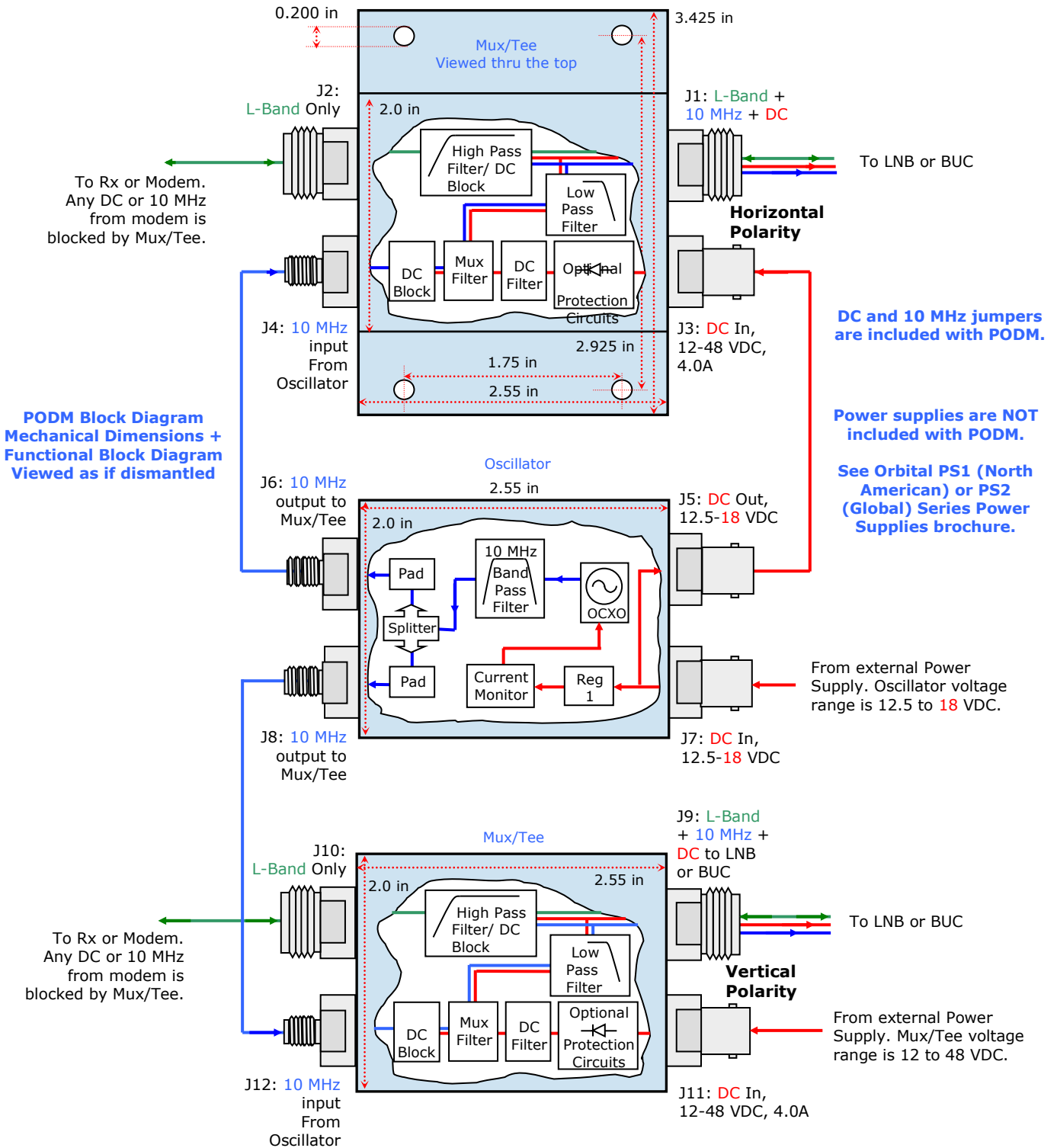
## MECHANICAL SPECIFICATIONS

Size / Dimensions (case)	3.425(L) x 2.55(W) x 2.72(H) inches
Weight	20 oz
Paint / Color	Anodized Blue, MIL-STD-595
All jumpers between modules are included. Power Supplies not included. See PS1 & PS2 brochures.	

## ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	0°C to +50°C	0°C to +50°C	-40°C to +80°C
Relative Humidity	Up to 100% condensation and frost		
MTBF	50,000 hours		
	RoHS & REACH		

# System Interface Product: PODM – Mechanical Diagram



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PODM-Precision\_Osc\_Dual\_MuxTees-180502

