

## System Interface Products

### MODM – Master Oscillator - Dual Modules



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

### How to order a Master Oscillator Dual Module (MODM)

#### Module

MODM - Master Oscillator Dual Module

#### Mux/Tee -1 Connectors

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

#### 10MHz Oscillator Connectors

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

MODM-NNBS-BSBS-NNBS

#### Mux/Tee -2 Connectors

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

#### Connectors available:

#### J1, J2, J9, J10: L-Band: 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  
 F - F

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

All connectors are SMA

BNC-to-pigtail adapters and BNC-to-binding post adapters sold separately. See SIP price list for part number and price.

### MODM Features

#### Oscillator

- Great phase noise: -147 dBc/Hz @ 1 kHz
- Excellent stability, long and short term
- Sine wave purity, low harmonic content

#### Mux/Tees (high power version)

- Highpass filtered L band, rolloff below 900 MHz, flat 950 thru 2900 MHz
- Low thru loss from 10 MHz input to LNB
- Any in, Any out Impedance transforms (eg. 75 Ω in, 50 Ω out)
- Very low bandpass ripple
- Very low L band through loss
- Very high Rx to 10MHz port isolation, no leakage back to rx
- Superior Input and Output VSWR
- Protects phase noise performance

#### 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

#### Oscillator Power Supply

The Orbital MODM Oscillator has a second, feedthrough connector to allow the input DC to be fed through to one of the Mux/Tees to power the LNB or BUC attached.

#### Ordering

The part number includes each connector on the MODM. Some of the connectors have only one option but including them all seems to decrease confusion when ordering.

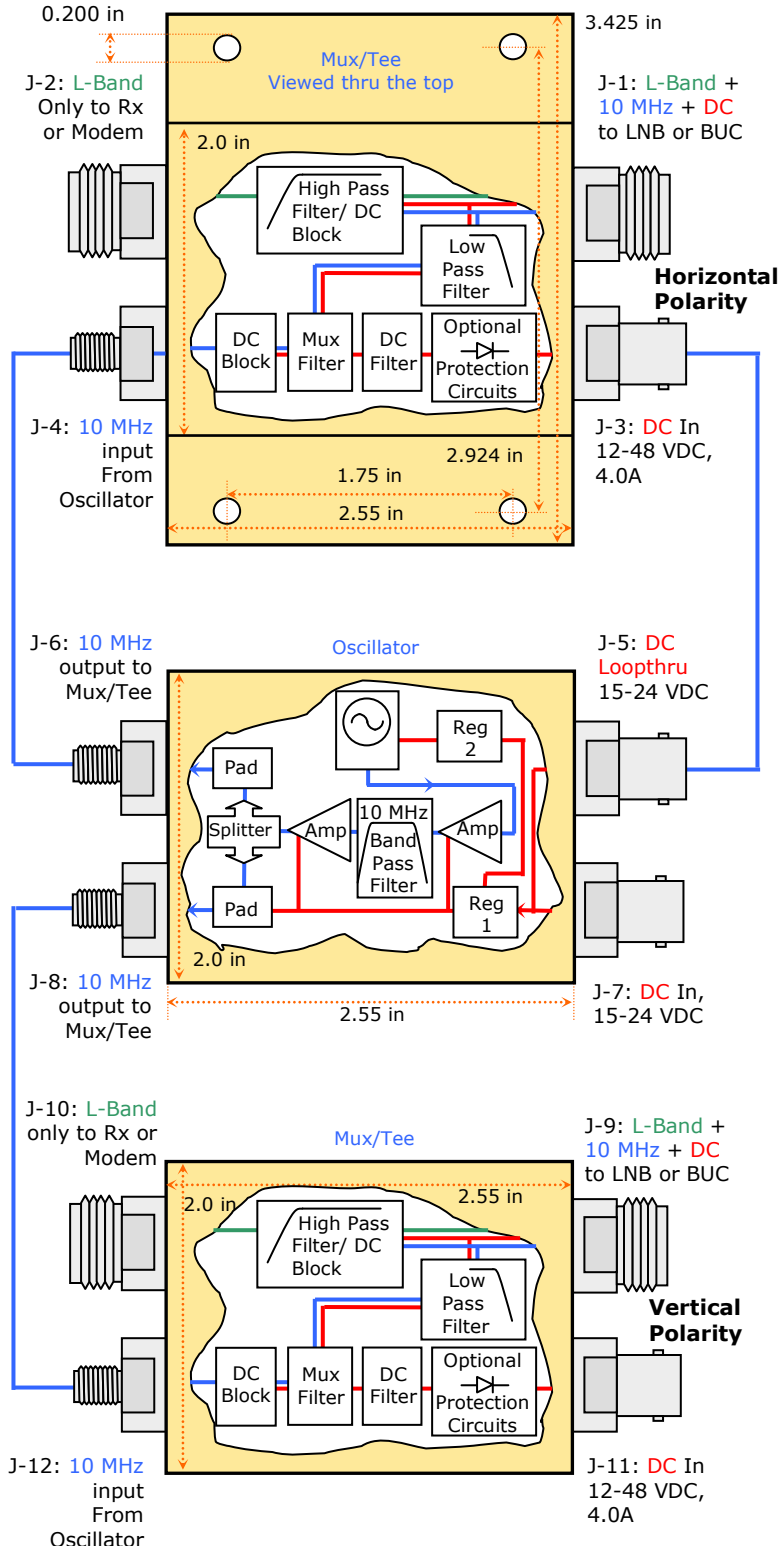
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# System Interface Product: MODM - Specifications

**MODM Block Diagram  
Mechanical Dimensions +  
Functional Block Diagram  
Viewed as if dismantled**



## Mux/Tee

### L Band

Bandpass: 900 to 2100 MHz  
Thru Loss: 0.5 dB maximum  
Ripple:  $\pm 0.3$  dB maximum  
Input VSWR: 1.3 : 1 maximum  
Output VSWR: 1.3 : 1 maximum

### 10 MHz

Passband: 1-100 MHz (3 dB down)  
Thru Loss: 0.1 dB 10 MHz to LNB port  
Isolation:  $> 90$  dB 10 MHz to Rx port

### DC

Filtering: Hash filter, low pass filter  
Resistance: 0.132 ohms (average)

## 10 MHz Oscillator

Frequency: 10 MHz  
Level: +2 dBm  
Stability:  $\pm 1.5 \times 10^{-7}$ , 0 to +40°C  
Aging:  $\pm 1 \times 10^{-6}$  per day after 30 days  
 $\pm 5 \times 10^{-6}$  per year after 180 days  
Phase Noise:  
100Hz -130 dBc/Hz  
1kHz -147 dBc/Hz  
10kHz -148 dBc/Hz  
100kHz -148 dBc/Hz

## Power Specifications

### Oscillator

Input DC Voltage: +15 to +24 V supplied via DC input connector  
Current Drain: Approximately 100 mA

### Mux/Tees

Input DC Voltage: +12 to +48V supplied via DC input connector  
Current Capacity: 4.0 Amps

## Mechanical Specifications

Measurements: Tolerance  $\pm 0.005$  in.  
Size: 3.425l x 2.55w x 2.45h in.  
Weight: 15 oz  
Paint / Colour: Gold Allodyne finish  
Mounting holes: 3/8" (5mm)  
Accepts standard rackmounting screws: 10/32 or 10/34

## Environmental Specifications

Operating Temp: 0 to +40° Celsius  
Relative Humidity: Up to 100% condensation and frost

## Power Supply (not included with MODM)

See: PS1 brochure for North America  
PS2 brochure for Global

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