System Interface Products

MODM – Master Oscillator - Dual MuxTees

orbital™ RESEARCH

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

How to order a Master Oscillator Dual Mux/Tees (MODM)

Module
MODM - Master 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

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

MODM -NNBS-BSBS-NNBS-CK

Mux/Tee -2 Connectors
J9: To LNB, BDC or BUC
J10: To Rx or modem
J11: DC in
J12: 10 MHz in

Cable Kit
Set of three Cables

Connectors available:

J1, J2, J9, J10: L-Band: To LNB/BUC & Rx/Modem
F - F, 75Ω
N - N, 50Ω
S - SMA, 50Ω

J3, J5, J7, J11: DC Supply
B - BNC (preferred)
T - TNC
N - N
S - SMA
ft - feedthru

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, Roll-off 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 Ωout)
- 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
- Anodyzed finish for corrosion protection and excellent RF shielding/grounding
- Connectors are 'O' ring sealed for weather resistant operation
- RoHS and REACH compliant

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.

Sales contact:

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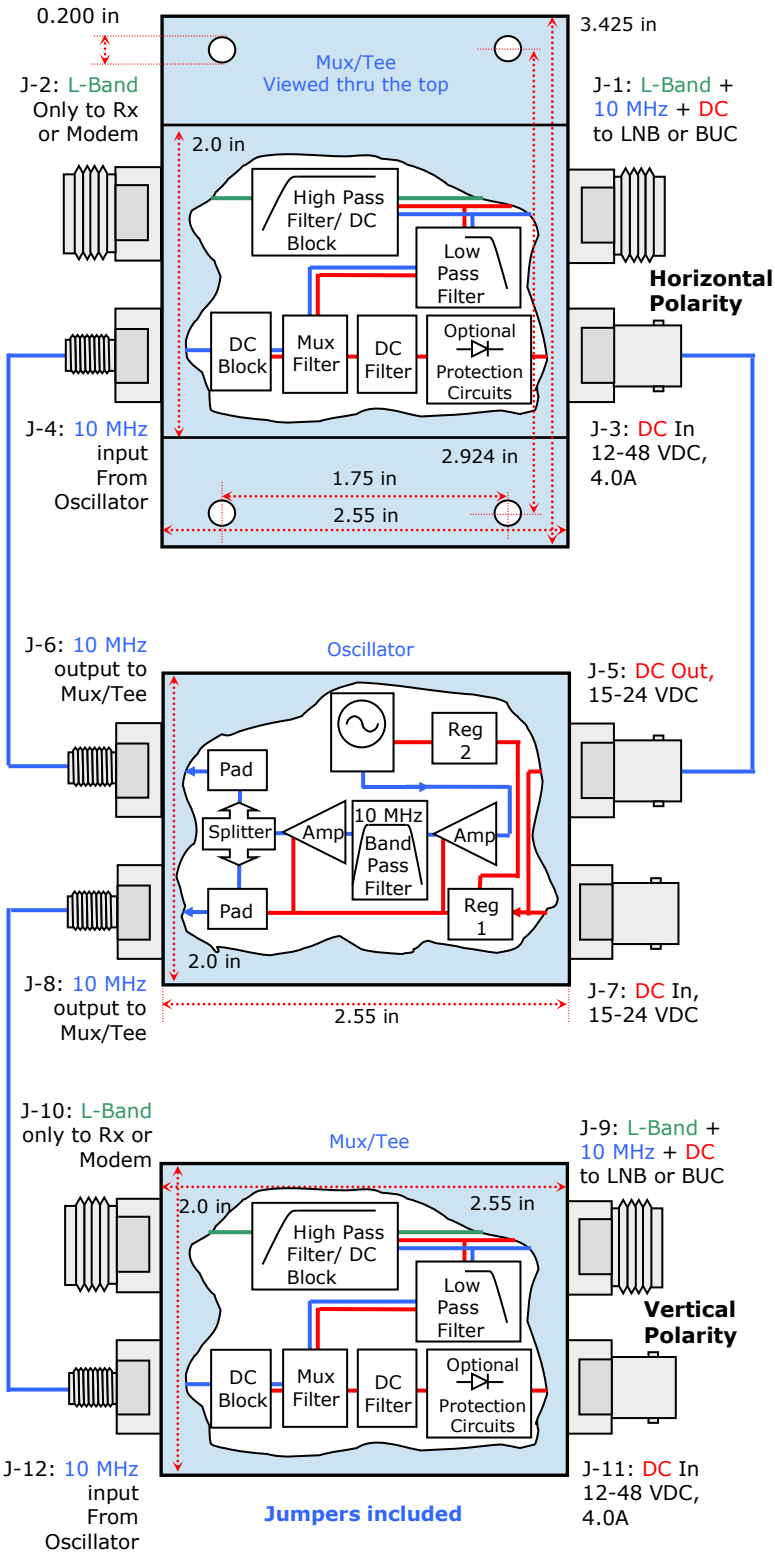
System Interface Product: MODM - Specifications

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:	±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 ±.005 in.
Size:	3.425l x 2.55w x 2.38h in.
Weight:	15 oz
Paint / Colour:	Blue Anodyzed finish
Mounting holes:	3/8" (5mm) Accepts standard rackmounting screws: 10/32 or 10/34

RoHs and REACH Compliant

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