

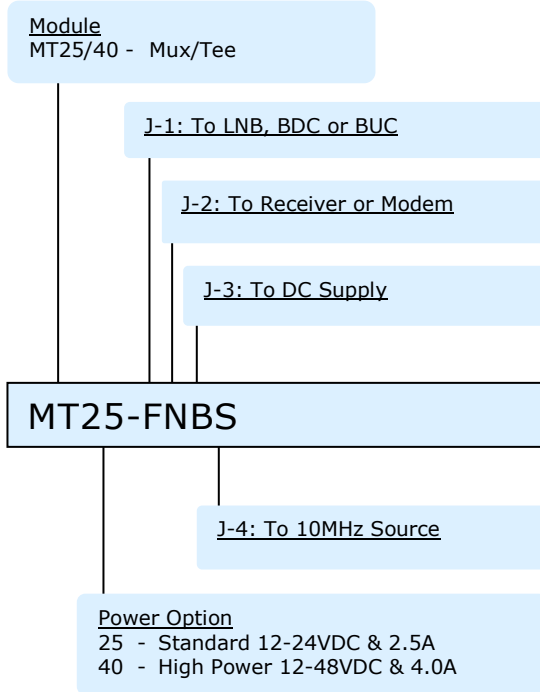
System Interface Products

MT25/40 - Mux Tee



10MHz Multiplexer and Bias Tee in one package

How to order a MT25/40 - Mux/Tee



Connectors available:

J1, J2: L-Band: To LNB/BUC & Receiver/Modem

F - F, 75Ω S - SMA, 50Ω
N - N, 50Ω

J4: 10MHz

S - SMA (recommended)
B - BNC
N - N

J3: DC Supply

B - BNC (preferred)
F - F
N - N

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

Orbital Design:

Orbital Research introduces a System Interface Product (SIP) that can be used as 6 different products. The Mux/Tee can be used as a Bias Tee, Diplexer or Mux/Tee to inject DC and/or 10MHz into the L-Band signal. But it can also be installed backwards to strip out DC, 10MHz or both. So it effectively is 6 products in one.

Orbital Features:

Specifications

- Highpass filtered L band: rolloff below 900MHz, flat 950 thru 2100MHz Assures DC block to Rx port and 10 MHz port
- Filtered 10MHz
- low thru loss from 10 MHz input to LNB
- Lowpass filtered DC, 2.5A (12 to 24V) capacity standard; and 4.0A capacity (12 to 48V) optional - for LNBS or transmitters
- Any combination of 50Ω and 75Ω in/out Impedance transforms, (eg. 75Ω J-1 to 50Ω J-2)
- Very low passband ripple
- Very low L band through loss
- Very high Rx port to 10MHz port isolation, no leakage back to rx
- Superior Input and Output VSWR
- Will not degrade phase noise performance
- Exceptionally low insertion loss

Functional

- Will operate with LNBS, BDCs, VSATs, BUCs, and Modems
- Will operate in S-Band with 0.7 dB insertion loss (max) and in C-Band (3.4 to 4.2 GHz) with 1.0 dB insertion loss (max)
- Connectors O ring sealed for weather resistant operation
- Will not cause loss of lock
- Will not impair bit error rate

Structural

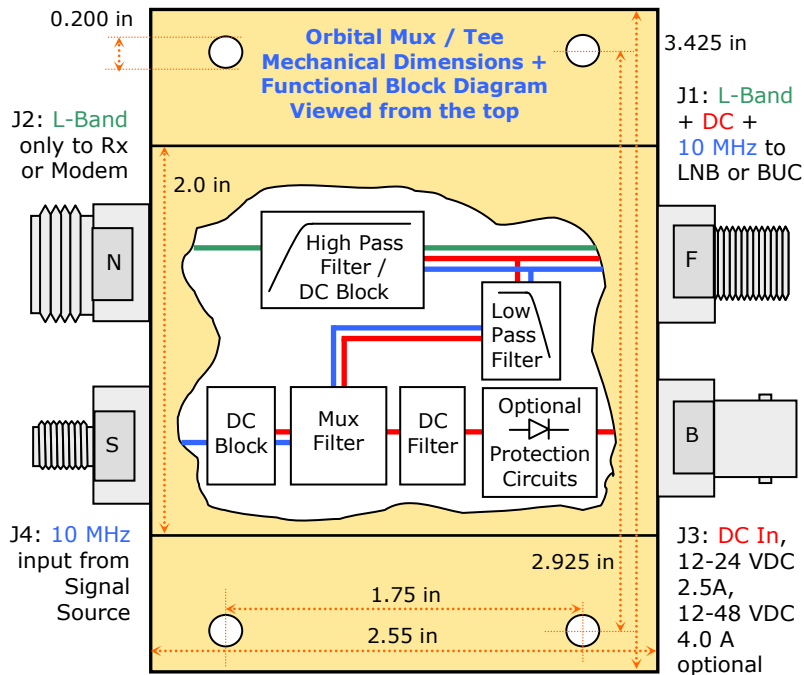
- Machined from solid aluminum block for strength, stability and endurance
- Allodyne finish for corrosion protection and excellent RF shielding/grounding
- 'Back O Rack' mounting bracket for ease of installation & lead dress
- Fewer cables and connector yields less signal degradation
- Reduces the mess of cables at the back of the rack and
- Provides stability for cables

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System Interface Product: MT25/40 - Mux Tee Specifications



Electrical Specifications

L Band

Bandpass: 900 to 2100 MHz
 From 2.1 to 3.4 GHz with 0.7 dB insertion loss (maximum)
 From 3.4 to 4.2 GHz with 1 dB insertion loss (maximum)
 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: 0.3 dB 10 MHz to LNB port maximum
 Isolation: >90 dB 10 MHz to Rx port

DC

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

Mechanical Specifications

Size (sans conn): 3.425L x 2.55W x 0.88H in.
 Weight: 5 oz
 Paint / Colour: Gold Allodyne finish
 MIL SPEC C-5541 CAT-3
 Mounting holes: 0.200" (5mm)
 Accepts standard rackmounting screws: 10/32 or 10/34

Environmental Specifications

Operating Temp: -40 to $+60^\circ$ Celsius
 Relative Humidity: Up to 100% condensation and frost
 MTBF: $>125,000$ hours

Power Specifications

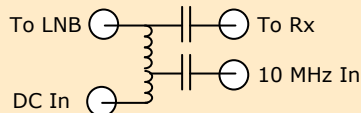
Input DC Voltage: Passive Device. No power required
 Power Capacity: 12 to 24 VDC - 2.5A, 12 to 48 VDC - 4.0A optional

Switching Power Supply

(not included with Oscillator)

See: PS1 brochure for North America
 PS2 brochure for Global

Standard Mux/Tees are not designed for Satellite applications. They are very simple circuits.



Orbital's Mux/Tee is designed specifically for sensitive Satellite applications. We filter and condition the line between LNB and receiver so your equipment works as it should (as shown in the diagram at the top). The 10MHz goes only to the LNB and is highly isolated from the receiver.

Each connector type has an impedance of either 50 or 75 ohms. Orbital uses 1 of 4 distinct boards to achieve the appropriate impedance transform between the LNB/BUC interface and Rx/Modem interface:

- V1 - 50 Ω to LNB/BUC, 50 Ω to Rx/modem
- V2 - 75 Ω to LNB/BUC, 50 Ω to Rx/modem
- V3 - 75 Ω to LNB/BUC, 75 Ω to Rx/modem
- V4 - 50 Ω to LNB/BUC, 75 Ω to Rx/modem

All Orbital products are shipped individually boxed in plain brown boxes as Orbital brand, or plain for re-labeling.

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