

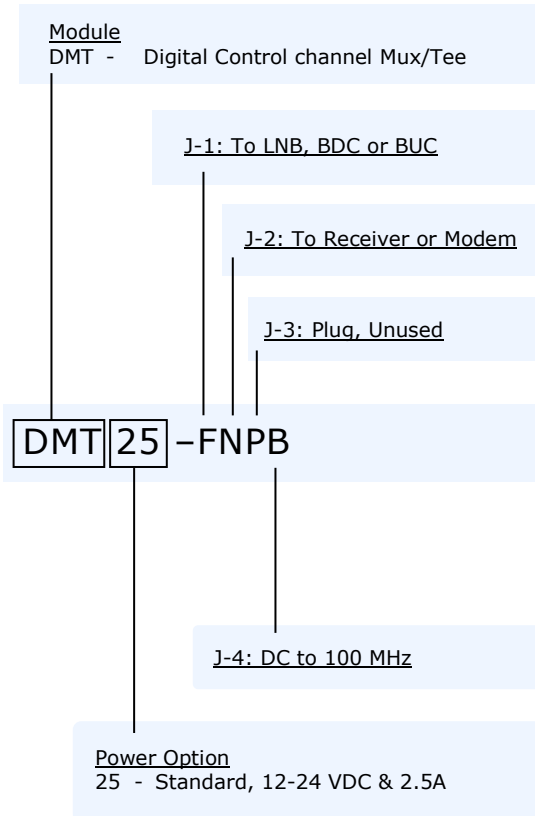
System Interface Product

Digital Control Channel Multiplexer



Bias Tee and Control Channel Multiplexer

How to order an Orbital D-Mux/Tee



Connectors available:

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

F - F, 75Ω S - SMA, 50Ω
N - N, 50Ω

J3: Unused

P - Plug

J4: 10MHz

S - SMA
B - BNC
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 an evolution of our standard Mux/Tee to accommodate emerging digital data control applications. The DC and 10 MHz ports have been merged into a Digital port that injects combined DC and digital control signals up to 250 MHz onto the L-Band signal stream. All other specifications remain the same.

Orbital Features:

Warranty: 3 years, repair or replace defective product

Specifications

- Highpass filtered L band:
 rolloff below 900MHz, flat 950 thru 2100MHz
 Assures DC block to combined port and Digital port
- DC: 2.5A (12 to 24V) standard; 4.0A (12 to 48V) high power;
- Any combination of 50Ω and 75Ω in/out Impedance transforms,
 (eg. 75Ω J-1 to 50Ω J-2)
- Will not degrade phase noise performance
- Exceptionally low insertion loss for L band and 10 MHz

Functional

- Will operate with LNBS, BDCs, VSATs, BUCs, and Modems
- Will operate in S-Band with 1.0 dB insertion loss (max) and in C-Band (3.4 to 4.2 GHz) with 2.0 dB insertion loss (max)
- Connectors O ring sealed for weather resistant operation
- Will help prevent loss of lock by protecting signal integrity
- Will help preserve bit error rate

Structural

- Machined from solid aluminum block for strength, stability and endurance
- Anodized blue finish for corrosion and scratch protection, with laser etched grounding for excellent RF conductivity/shielding
- Labels are laser etched for durability and Mil Spec Compliance
- RoHS and REACH compliant

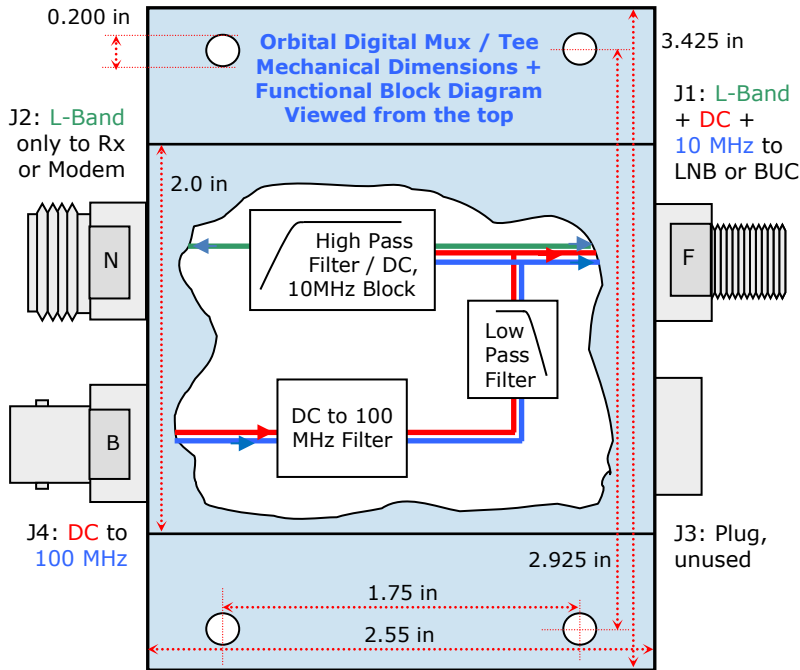
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System Interface Product: DMT25 Digital Mux/Tee Specs



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 above). Any DC or 10MHz coming from the modem (J-2) is blocked. This ensures that there's no mixing of DC or digital signals between the modem and J-4.

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

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

Digital Port

Passband: 0 up to 250 MHz (3 dB down)
 Thru Loss: 0.5 dB up to 20MHz to LNB port maximum
 VSWR at 10 MHz (J4 port): 1.2:1
 Isolation: >90 dB Rx to Digital Port

Mechanical Specifications

Measurements: Tolerance ±.005 in.
 Size (case): 3.425l x 2.55w x 0.88h in.
 Size (with conn): 3.425l x 3.8w x 0.88h in.
 Weight: 5 oz
 Paint / Color: Blue Anodized finish
 MIL-STD-595

Mounting holes: 0.200" (5mm)
 Accepts standard rackmounting screws:
 10/32 or 10/34

RoHs & REACH Compliant

Environmental Specifications

Operating Temp: -40 to +60° 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,

Switching Power Supply

(not included with Mux/Tee)

See: PS1 brochure for North America
 PS2 brochure for Global

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