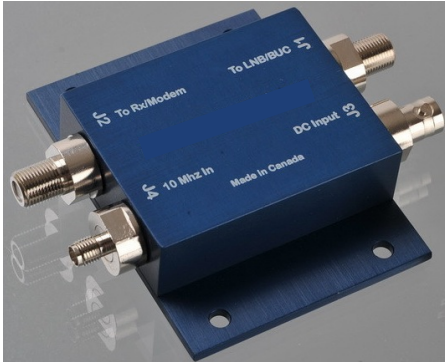


System Interface Product

Orbital DC Thru Diplexer DTD25/40



Passes DC and L-Band. Multiplexes 10 MHz into L-Band line

How to order a DTD25/40 – DC Thru Diplexer

Module

DTD25/40 - DC Thru Diplexer

J-1: To LNB, BDC or BUC

J-2: To Receiver or Modem

J-3: To DC Supply

DTD 40 - NNBS

J-4: To 10 MHz Source

Power Option

25 - Standard 12-24 VDC & 2.5 A

40 - High Power 12-48 VDC & 4.0 A

Connectors available:

J1, J2: L-Band

S - SMA, 50Ω F - F, 75Ω

N - N, 50Ω

J3: DC Supply

B - BNC (preferred) N - N

S - SMA T - TNC

ft - feedthru

J4: 10MHz

S - SMA (recommended)

B - BNC T - TNC

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:

Your modem supplies the DC but either doesn't supply the 10 MHz or it's 10 MHz source isn't of the quality required. You need a diplexer that will inject a 10 MHz source (J-4), but let the DC pass through from the modem.

Orbital Research introduces the DC Thru-Tee, which passes both L-band AND DC from the modem to the BUC (or LNB) with less than a single dB of insertion loss. It also allows the injection of up to 2.5A (standard) and 4.0A (high power) of current at 12 to 24 or 12 to 48 volts (at J-3) of DC respectively, if you prefer a separate supply other than the modem.

Orbital Features:

Specifications

- Selective Filter Network: filtered 10 MHz bandpass and a filtered L-band, 900-2100 MHz selective band pass system
- Lowpass filtered DC, 12 to 24 VDC - 2.5 A standard power, 12 to 48 VDC - 4.0 A high power
- Low passband ripple
- Low L-band through loss
- Superior Input and Output VSWR
- Will not degrade phase noise performance
- Low 10 MHz insertion loss

Functional

- Will operate with VSATs, LNBs, BDCs, BUCs, Rxs and Modems
- Connectors O ring sealed for weather resistant operation
- Will not cause loss of lock
- Will not impair bit error rate

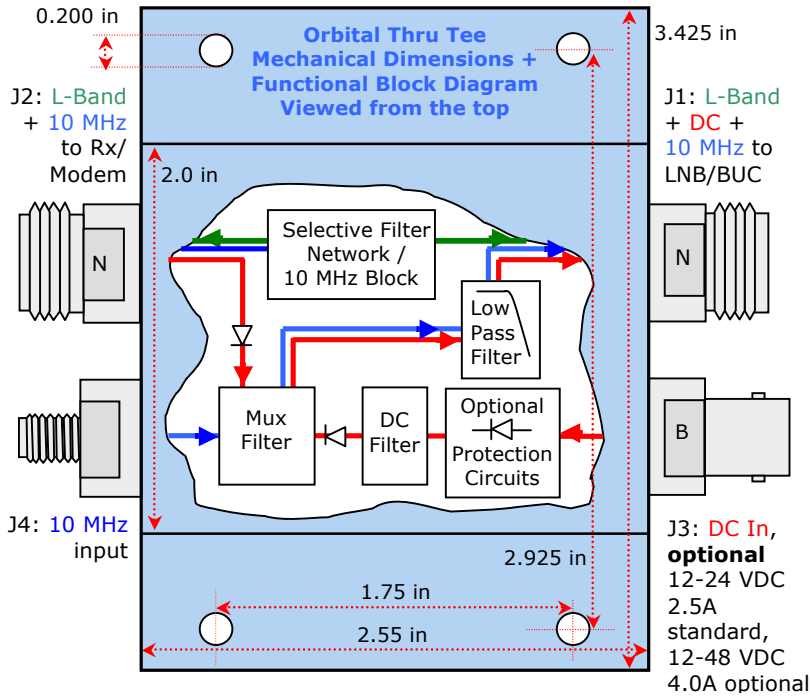
Structural

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

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DTD25/40 – DC Thru Diplexer Specifications



Electrical Specifications

L Band

Bandpass: DC & 900 to 2100 MHz
 Thru Loss: 1.0 dB maximum
 Ripple: ± 0.5 dB maximum
 Input VSWR: 1.5 : 1 maximum
 Output VSWR: 1.5 : 1 maximum

DC

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

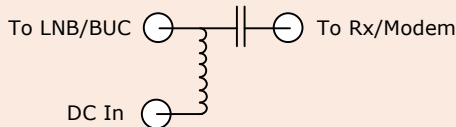
Mechanical Specifications

Measurements: Tolerance ± 0.005 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
 Mounting holes: 3/8" (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

Standard Bias Tees are not designed for Satellite applications. They are very simple circuits, and will short the 10 MHz to ground:



Orbital's DC Thru Tee is specifically designed for sensitive satellite applications with the ability to let both the L band signal and the DC pass through.

Welcome to the DTD25/40 – DC Thru Tee. The DC Thru Tee replaces Orbital's MT25/40 - Mux Tee L-band filter with a filtered DC bandpass and a filtered L band, 900-2100 MHz selective band pass system that will allow injection of up to 4 amps at 12 to 48 VDC, and will pass the L-band signal AND DC from the modem to the BUC with less than a single dB of insertion loss.

Power Specifications

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

Switching Power Supply

(not included with Thru Tee)

See: PS1 brochure for North America
 PS2 brochure for Global

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:

V5 - 50 Ω to LNB/BUC, 50 Ω to Rx/modem
 V7 - 75 Ω to LNB/BUC, 75 Ω to Rx/modem

Only V5 & V7 available at this time.