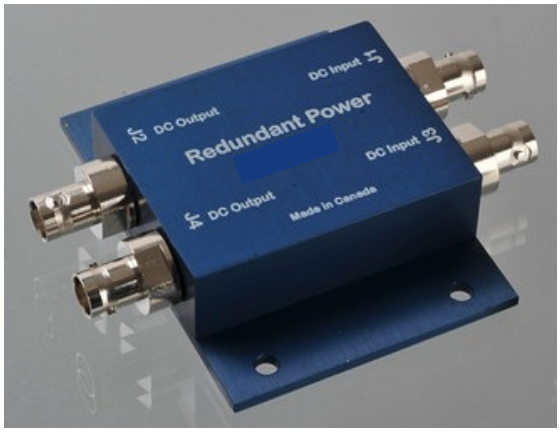

System Interface Passives

RPT – Redundant Power Tee

Orbital Research.net

Bias Tee with Redundant Power Inputs

How to order an RPT – Redundant Power Tee

Module
RPT - Redundant Power Tee

J-1: To LNB or BUC

J-2: To Rx or Modem

J-3: To DC supply

J-4: To DC supply

RPT | 25 | -FNBB

Standard Power Option
25 - Standard 12-24VDC & 2.5A
40 - High Power 12-48VDC & 4.0A

Connectors available:

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

F - F, 75Ω
N - N, 50Ω
S - SMA, 50Ω

J3, J4: DC Supply

B - BNC (preferred)
N - N
ft - feedthru
S - SMA
T - TNC

BNC-to-pigtail adapters and BNC-to-binding post adapters sold separately. Contact Orbital Research for part number and price.

Orbital Design:

Orbital Research introduces the RPT – Redundant Power Tee, a System Interface Passive (SIP) that is a Bias Tee with two DC inputs for redundant power supplies. As with the Mux/Tee, the Redundant Power Tee injects and filters external DC to the LNB/BUC while providing exceptional low thru loss with highpass filtering of the L band signal. Additional features of the Redundant Power Tee are Transorbs to protect the LNB/BUC and other components from power spikes. The diodes are Schotkky to yield high power but with a low barrier voltage to minimize voltage drop. Inductors are placed in each DC line to provide AC isolation between each output, along with filters to provide proper bypass, and a DC filter mitigates interaction between the power supplies.

If you only need to bias the DC, you might as well get a Bias Tee that has the capability of adding a second, redundant, Power Supply with only the added cost of a Power Supply.

Orbital Features:

Functional

- Will operate with LNBs, VSATs, BDCs, BUCs, Rxs 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)
- O ring sealed connectors and Hylomar sealed enclosure

Structural

- The system mounts on the back of the rack, out of the way. This makes this product ideal for flyaway systems.
- Since it is integrated into the Bias Tee, you do not need multiple boxes, and you get an L band filter as well.
- Diode protection to prevent accidentally applying reverse polarity DC.
- Solid billet milled box and lid.
- Blue Anodized finish, MIL SPEC C-5541 CAT-3.

Orbital Benefits:

- Lower cost, higher quality with a one-box solution
- No labor to source, assemble, and test a "kluge"
- RoHS & REACH compliant

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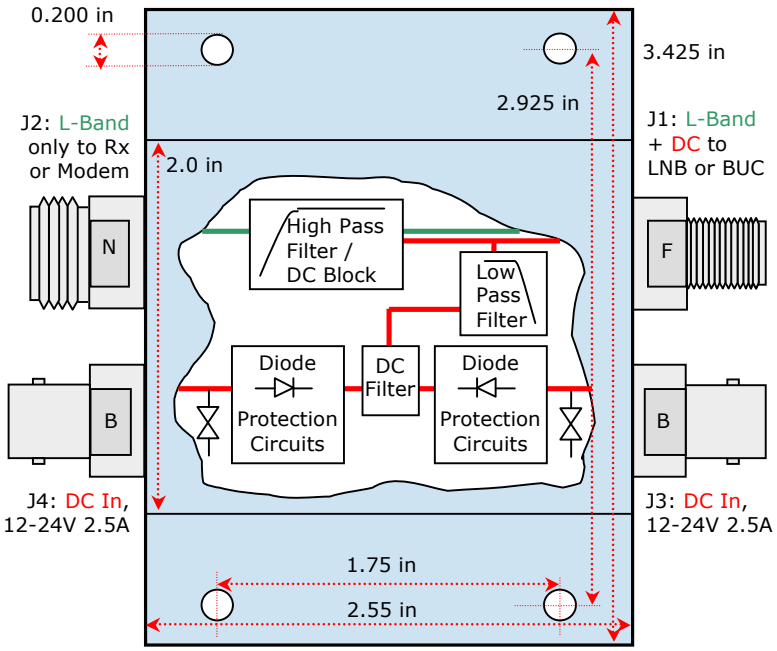
RPT – Redundant Power Tee Specifications

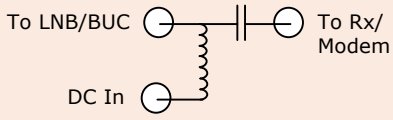
Orbital Redundant Power Tee
Mechanical Dimensions +
Functional Block Diagram
Viewed from the top



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

The Bias Tee is the foundation of Orbital's Redundant Power Tee. Standard Bias Tees as shown below are not designed for Satellite applications. They are very simple circuits.



Orbital's Bias Tee (and Redundant Power Tee) is designed specifically for sensitive Satellite applications. We filter and condition the line between LNB/BUC and receiver / modem so your equipment works as it should.

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

- Transorb

Environmental Specifications

Operating Temp:	-40 to +60° Celsius
Relative Humidity:	Up to 100% condensation and frost

Power Specifications

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

Mechanical Specifications

Size (case):	3.425l x 2.55w x 0.88h in.
Weight:	5 oz
Paint / Color:	Blue Anodized finish MIL SPEC C-5541 CAT-3

RoHs & REACH Compliant

Switching Power Supply (optional)

See PS1 or PS2 brochure for ordering information