

VSAT TX-RX Module



The VSAT TX-RX module is an L-band hybrid splitter and combiner shelf designed to power and reference VSAT terminals, as well as facilitate the use of multiple modems.



The receive section comprises of a 4-way splitter and provides 18V DC LNB power. The transmit section comprises of a 4-way combiner and provides 24 or 48V DC BUC power. Both sections have a selectable amplifier and provide a 10MHz reference signal via the common port. An optional ethernet port & web browser interface are also available.



A DIL switch on the rear panel is used to select the BUC voltage and also the internal or external 10 MHz reference source. The shelf incorporates monitoring of LNB and BUC current, as well as 10MHz signal presence. Alarms are triggered if LNB or BUC power, 10MHz signal, or PSU's fail. Alarms are indicated via the front panel LED's and also remotely via a serial port.

The shelf is housed in a 1U high rack with a single mains inlet (there are 3 internal power supplies), and has 50Ω N-type RF connectors. Other connectors and impedances are also available.



RESILIENCE FLEXIBILITY RF PERFORMANCE

Technical Specifications



• RF Parameters

TX Capacity	4 x 1 combiner
RX Capacity	1 x 4 splitter
Frequency Range	850-2150 MHz
Insertion Gain (TX & RX)	3dB \pm 1dB
Flatness (TX & RX active)	\pm 1dB
Input Return Loss	15dB typical
Noise Figure	9dB
1dB Compression Point TX	+15dBm
1dB Compression Point RX	+10dBm
10 MHz Reference Source	Internal source is OCXO type.
Frequency	10 MHz Factory setting to \pm 1 ppm, \pm 10Hz for 10MHz source. Provision to retune at later date.
Output level	-3.5 \pm 2 dBm (Tx & Rx Ports Terminated) -3.5 \pm 3 dBm (all conditions)
Output Type	Sine Wave
Harmonic & Spurious Levels	<-60dBc (2nd Harmonic level) <-55dBc (3 rd Harmonic level) <-55dBc (all other spurious)
Reference Source Ageing	\pm 5x10 ⁻⁷ /year \pm 2x10 ⁻⁹ /day
10 MHz Reference Source	DIL switch to select internal/external
Frequency Stability Over Temp	< \pm 3x 10 ⁻⁸
Over Time (per year)	< \pm 5x 10 ⁻⁸
Short Term Stability (per sec)	< \pm 1x 10 ⁻¹¹
Load Change	< \pm 5x 10 ⁻⁹
Power Supply Variations	< \pm 5x 10 ⁻⁹

Reference Source Phase Noise	<-85dBc/Hz @ 1Hz
Reference Source Phase Noise	<-115dBc/Hz @ 10Hz
Reference Source Phase Noise	<-140dBc/Hz @ 100Hz
Reference Source Phase Noise	<-150dBc/Hz @ 1000Hz
Reference Source Phase Noise	<-155dBc/Hz @ 10000Hz

• Environmental

Operating Temperature	0 to 45°C
Location	Indoor Use Only
Storage Temperature	-20°C to +75°C
Humidity	85% Non Condensing

ETL Model Number – 22253-E

For additional information or details, please contact us at:

• System Control

Local Control	DIL switch on rear panel
Remote Connection	RS232/RS485 and optional RJ45 ethernet port & web browser interface on model 22253-E

• Physical

Connectors	N-type
Impedance	50 Ω
Dimensions	1U x 450mm x 19"
Weight (fully populated)	6 Kgs
Colour	White 00-E-55 semi-gloss, front panel

• Power

Power Requirement	85/264 VAC, 200W, 50/60 Hz (3 single PSU's)
LNB Power (RX side)	18V DC, 500 mA via common port always on
BUC Power	24V DC 3.2A or 48V DC 4.1A via common port always on

• Key Features

DIL switch	On rear panel to select 10 MHz reference source and BUC voltage
Self Diagnostics	BUC and LNB current monitoring, PSU monitoring and 10MHz signal presence monitoring
Passive Mode	The Tx & Rx modules can be switched to passive mode via DIL switch

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