

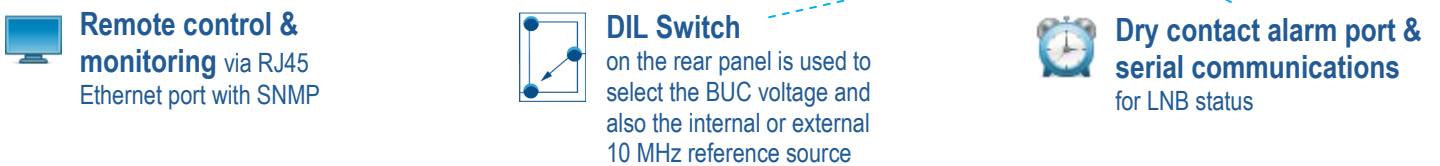
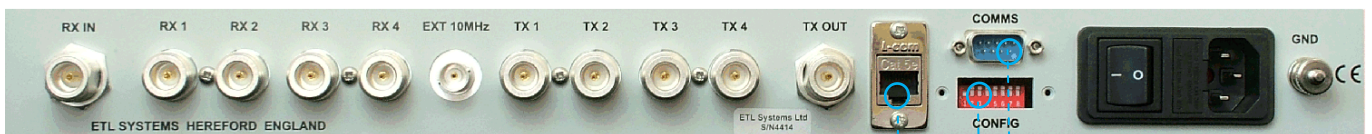
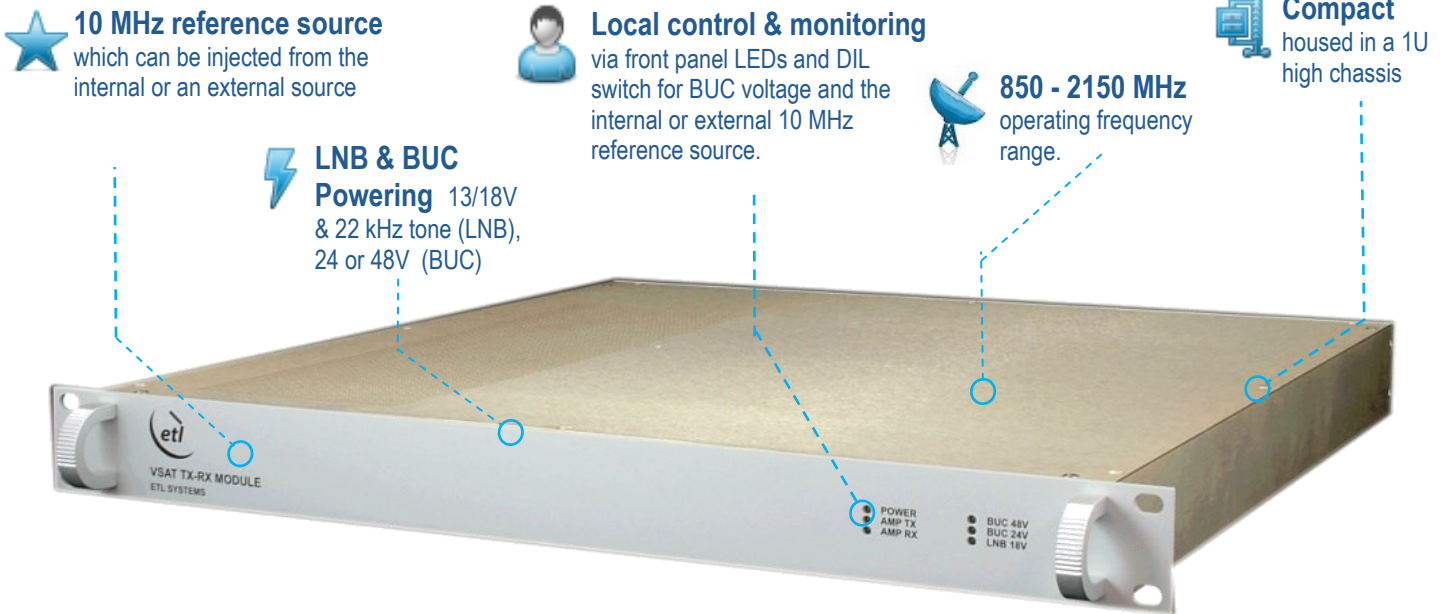


# 4-way L-band VSAT TX-RX Hybrid Unit with LNB Powering, BUC Powering & 10MHz Source

**Typical applications:**

- GSM Backhaul
- VSAT networks
- SNG and Outside Broadcast Trucks
- Teleports with limited rack space

ETL's 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.





### Technical specifications and operating parameters

RF Parameters			
RX Side			
Capacity	1 in x 4 out Splitter		
Frequency Range	850-2150 MHz (L-band)		
Insertion gain	Passive	-10 dB ±1 dB	Nominal mean across band
	Active	3 dB ±1 dB	
Flatness over 850-2150 MHz	Passive	±2 dB	Slope compensating amplifier
	Active	±1 dB	
Return loss	50Ω	15 dB Typical & 8 dB Minimum	In & Out
	75Ω	12 dB Typical & 8 dB Minimum	
1 dB Compression Point	+ 10 dBm		
Noise Figure	14 dB		
LNB Power	18V DC, 500 ma via common (RF in) port	Always on	
10 MHz tone	Always supplied via common (RF in) port	Always on, selectable internal/external	
TX Side			
Capacity	4 In x 1 out Combiner		
Frequency Range	850-2150 MHz (L-band)		
Insertion gain	Passive	-10 dB ±1 dB	Nominal mean across band
	Active	3 dB ±1 dB	
Flatness over 850-2150 MHz	Passive	±2 dB	Slope compensating amplifier
	Active	±1 dB	
Return loss	50Ω	15 dB Typical & 8 dB Minimum	In & Out
	75Ω	12 dB Typical & 8 dB Minimum	
1 dB Compression Point	+ 15 dBm	-40 dBm to + 5 dBm signal input per channel	
Noise Figure	20 dB		
BUC Power	24 or 48V DC via common (RF out) port	Always on, user selectable	
10 MHz tone	Always supplied via common (RF out) port	Always on, selectable internal/external	

Environmental		
Operating temperature	0 to 50° C	
Location	Indoor use only	
Storage temperature	-20° C to +75° C	
Humidity	85% non-condensing	Relative Humidity
Altitude	10,000 feet AMSL	Above Mean Sea Level

System Control		
Alarms	Dry contact (D-type) for LNB status	
Local control & monitoring	Via DIL switch on rear panel for 10 MHz int / ext source and BUC DC 24 or 48V .	Status LED's on front pane)
Remote control Monitoring	Via RJ45 ethernet port & RS232/485 serial port	LNB & BUC current and amplifier current monitoring

RF Parameters			
10 MHz Source			
10MHz Reference Source	Internal/external (via BNC on rear panel)	Selectable internally/externally, always supplied to both Rx & Tx sides	
Frequency	10MHz	Factory setting is to ± 1ppm, ± 10Hz	
Output Level	-3.5 ±2 dBm (Tx & Rx ports terminated)	10MHz levels measured using good quality spectrum analyser. Web Browser can be used for indicative measurements with typical uncertainty of ± 3 dB plus the true variations in levels	
	-3.5 ±3 dBm (all conditions)		
Output Type	Sine Wave		
Harmonic & Spurious Levels	2nd Harmonic Level	<- 60 dBc	With respect to 10MHz level 2nd harmonic level is typically 70 dBc 3rd harmonic level is typically 60 dBc
	3rd Harmonic Level	<- 55 dBc	
	All other spurious	<- 65 dBc	
Internal Reference	10MHz Sine Wave	Ovenised Crystal Oscillator	
Frequency Stability Over Temperature	±1 x 10 <sup>-8</sup>	0 to +55°C	
Reference Source Ageing	±5 x 10 <sup>-8</sup> / year		
	±5 x 10 <sup>-10</sup> / day		
Reference Source Phase Noise	<-85 dBc / Hz @ 1Hz		
	<-115 dBc / Hz @ 10Hz		
	<-140 dBc / Hz @ 100Hz		
	<-150 dBc / Hz @ 1000Hz		
	<-155 dBc / Hz @ 10000Hz		
Warm up time	<2 minutes	At 25°C to within <±1 x 10 <sup>-7</sup>	

Physical	
Impedance and Connectors	50Ω SMA, 50Ω BNC, 50Ω N-Type, 75Ω BNC & 75Ω F-type
Dimensions	1U high x 350mm deep x 19" wide
Weight	3.05 kg
Colour	White 00-E-55 semi-gloss

Power		
Power Supply	85-264Vac 50/60Hz	Single power supply and mains inlet (with on/off switch built into the inlet)
PSU 24V	3.2A, 24V DC	
PSU 48V	4.15A, 48V DC	200W max

Note 1: The specification is subject to regular reviews and will be updated from time to time as part of our continuing product development and improved spec accuracy.  
 Note 2: Operation beyond the quoted limits stated above may cause instantaneous and permanent damage.

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