

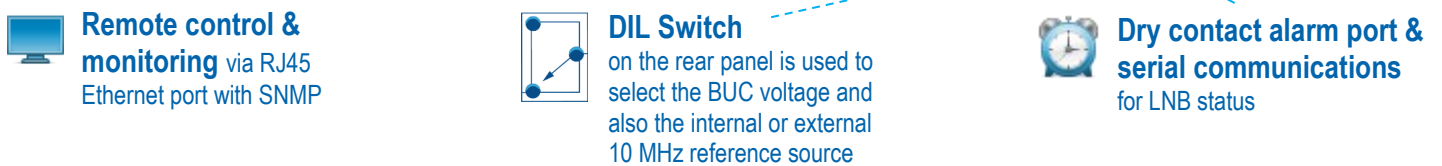
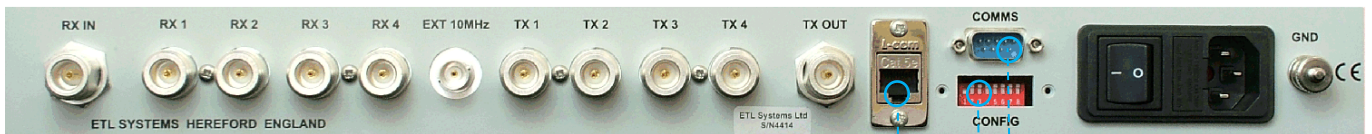
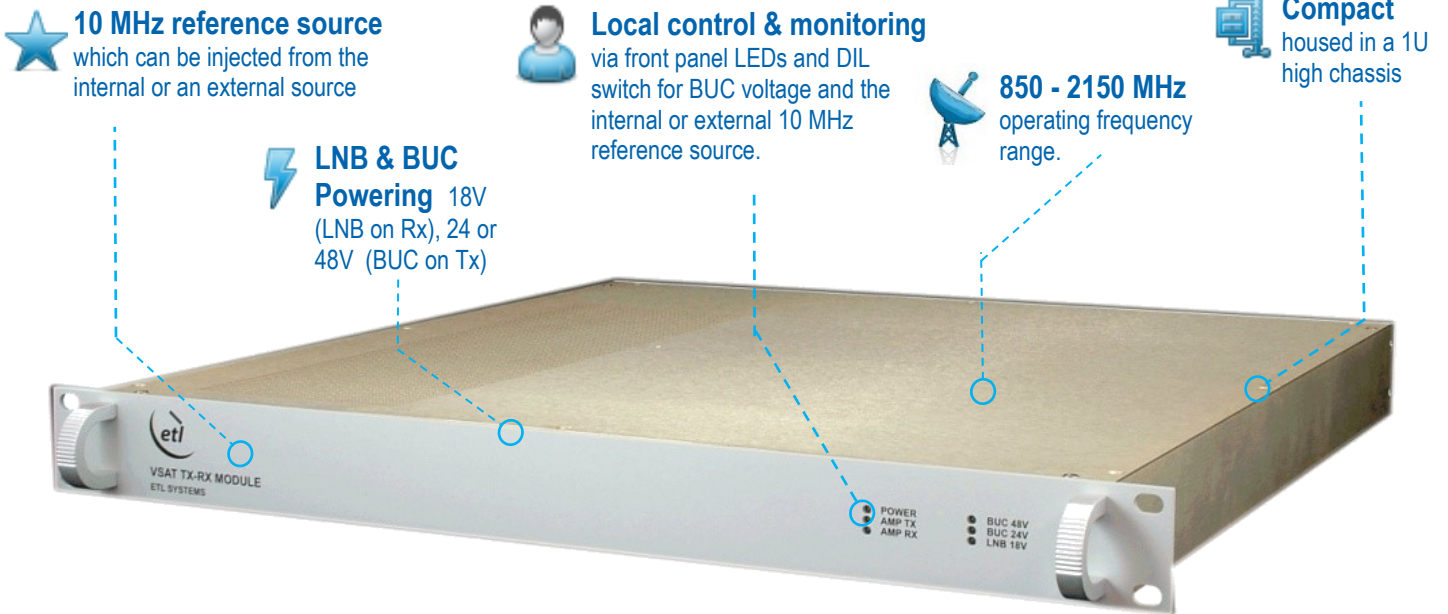


# 4-way L-band VSAT TX-RX Hybrid Splitter & Combiner

## 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	TX Side		
Capacity		1 in x 4 out Splitter	4 In x 1 out Combiner		
Frequency Range		850-2150 MHz (L-band)			
Insertion gain	Passive	-10 dB $\pm$ 1 dB (Nominal mean across band)			
	Active	3 dB $\pm$ 1 dB (Nominal mean across band)			
Flatness over 850-2150 MHz	Passive	$\pm$ 2 dB			
	Active	$\pm$ 1 dB Slope compensating amplifier			
Return loss	50 $\Omega$	15 dB Typical / 8 dB Minimum (In & Out)			
	75 $\Omega$	12 dB Typical / 7 dB Minimum (In & Out)			
1 dB Compression Point		+ 10 dBm	+ 15 dBm (-40 dBm to + 5 dBm signal input per channel)		
Noise Figure		14 dB	20 dB		
LNB / BUC Power		18V DC, 500 ma via common (RF in) port (Always on)	24 or 48V DC via common (RF out) port (Always on, user selectable)		
10 MHz tone		Available via internal source - always supplied via common (RF in) port or external source - via BNC on rear panel			
<b>10 MHz Source</b>					
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 $\pm$ 1ppm, $\pm$ 10Hz)			
Output Level	-3.5 $\pm$ 2 dBm (Tx & Rx ports terminated)				
	-3.5 $\pm$ 3 dBm (all conditions)				
10MHz Insertion Loss		7.5dB $\pm$ 2dB (when 10MHz injected from external port)			
Output Type		Sine Wave			
Harmonic & Spuri Levels		2nd Harmonic Level: <- 60 dBc (typically 70 dBc)	3rd Harmonic Level: <- 55 dBc (typically 60 dBc)	All other spuri: <- 65 dBc	
Internal Reference		10MHz Sine Wave Ovenised Crystal Oscillator			
Frequency Stability Over Temperature		$\pm$ 1 x 10 <sup>-8</sup> (0 to +55°C)			
Reference Source Ageing		$\pm$ 5 x 10 <sup>-8</sup> / year	$\pm$ 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
Warm up time		<2 minutes At 25°C to within $\pm$ 1 x 10 <sup>-7</sup>			

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

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

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 panel
Remote control Monitoring	Via RJ45 Ethernet port & RS232/485 serial port	LNB & BUC current and amplifier current monitoring

Physical	
Impedance and Connectors	50 $\Omega$ SMA, 50 $\Omega$ BNC, 50 $\Omega$ N-Type, 75 $\Omega$ BNC & 75 $\Omega$ F-type
Dimensions	1U high x 450mm deep x 19" wide
Weight	6.7 kg (TBC)
Colour	White 00-E-55 semi-gloss

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.

ETL SYSTEMS LIMITED  
Coldwell Radio Station  
Madley  
Hereford  
England HR2 9NE

TELEPHONE  
+44 (0)1981 259020  
  
EMAIL  
info@etlsystems.com

FACSIMILE  
+44 (0)1981 259021  
  
WEB  
www.etlsystems.com

