



**EUROSATCOM**  
VSATECH ASSOCIÉ

# Ka-BAND TRANSLATORS OUTDOOR MOUNTED FOR SATELLITE COMMUNICATION

These Frequency Band Translators are designed for applications where frequency translation is needed with a minimum of amplitude and group delay distortion.

Ka RF transmit band to Ka RF receive band, and Ka Transmit band to L-band are covered in multiple models.

Both military and commercial Ka bands are available.

The outdoor package is allows for mounting on the antenna.

See data sheet GS26 for companion block up and downconverter models, and data sheet GS9 for indoor rack mount models.



## STANDARD FEATURES

- Small-sized weather resistant enclosure
- RS422, RS485 and 10/100 Base-T Ethernet
- Local oscillator monitor port
- Output signal monitor port (L-band output only)
- Low phase noise, IESS-308/309
- Low intermodulation distortion
- 30 dB level control
- CE Mark

## OPTIONS

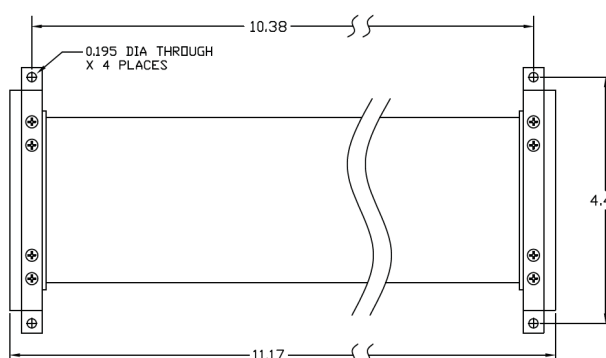
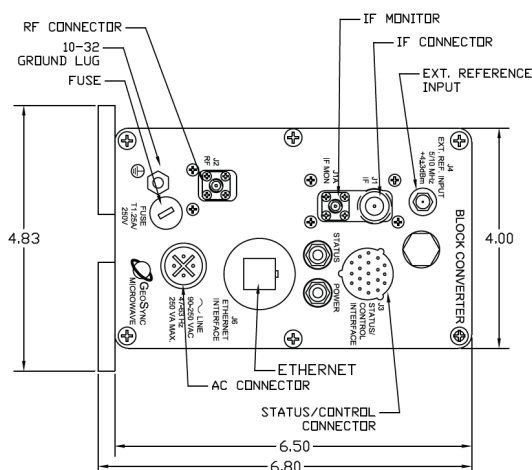
- Additional gain - Transmit to L-band
- Reference clean-up loop and improved stability
- Local oscillator 2nd harmonic rejection

## RF TRANSMIT-BAND TO L-BAND

Input Frequency (GHz)	Output Frequency (GHz)	LO Frequency (GHz)	Model Number
27.5-27.75	1.0-1.25	26.5	TLE-27.62
28-29	0.95-1.95	27.05	TLE-28.5
28.35-28.6	0.95-1.2	27.4	TLE-28.475
28.5-29.5	0.95-1.95	27.55	TLE-29
29-30	0.95-1.95	28.05	TLE-29.5
29.25-29.5	0.95-1.2	28.3	TLE-29.375
29.25-30.0	0.95-1.7	28.3	TLE-29.75
30.0-31.0	0.95-1.95	29.05	TLE-30.5
30.0-31.0	1.0-2.0	29.0	TLE-30.5-1

## RF TRANSMIT-BAND TO RF RECEIVE-BAND

Input Frequency (GHz)	Output Frequency (GHz)	LO Frequency (GHz)	Model Number
29.5-30.0	19.2-19.7	10.3	TRE-29.75-19.45
29.5-30.0	19.7-20.2	9.8	TRE-29.75-19.95
29.0-30.0	20.2-21.2	9.8	TRE-29.5-19.7
30.0-31.0	20.2-21.2	9.8	TRE-30.5-20.7
27.97-28.02	18.67-18.72	9.3	TRE-28-18-6001248



NOTE:  
1. MOUNTING LEGS CAN BE DISASSEMBLED AND REINSTALLED ON WIDE SIDE OF ENCLOSURE (SHOWN INSTALLED ON NARROW SIDE.)



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# Ka-BAND TRANSLATORS OUTDOOR MOUNTED FOR SATELLITE COMMUNICATION

## SPECIFICATIONS

### INPUT CHARACTERISTICS

Frequency	Refer to model number table
Impedance	50 ohms
Return Loss	18 dB minimum
Input Level (Non-damage)	+10 dBm maximum

### OUTPUT CHARACTERISTICS

Frequency	Refer to model number table	
Impedance	50 ohms	
Return Loss	18 dB minimum	
Output Signal Monitor	N/A	-20 dBc nominal

### TRANSFERT CHARACTERISTICS

Level Control	30 dB/0.2 dB step	
Amplitude Response	±0.25 dB/40 MHz, ±1 dB/output frequency band	
Noise Figure at Minimum Attenuation	25 dB maximum	15 dB maximum
Frequency Stability	±5 x 10 <sup>-8</sup> , -40 to 60°C (reference 25°C)	
Frequency Aging	5 x 10 <sup>-9</sup> /day after 24 hours on time	
Conversion Loss	25 dB maximum	15 dB maximum (20 dB gain optional)
Conversion Loss Stability	±0.25 dB/day at 23°C	
Intermodulation	-50 dBc minimum at -5 dBm input	

#### Phase Noise (dBc/Hz) -

Typical Phase Noise

LO Frequency	Offset (Hz)				
	100	1K	10K	100K	1M
Below 10.3 GHz	-64	-75	-85	-95	-100
Up to 30 GHz	-65	-78	-85	-92	-110

Automatic Reference Configuration

External 5 or 10 MHz at  $+4 \pm 3$  dBm. If external reference is below  $+1$  dBm nominal, the converter will automatically lock to the internal reference.

Input/Output Isolation

60 dB minimum

Translator Mute

60 dB minimum

## INDICATOR and ALARMS

LO Out-of-lock	Red LED (front panel)
Internal Reference	Yellow LED (front panel)
Power ON Indicator	Green LED (front panel)
Summary Alarm	Contact closure status for DC voltage and local oscillator

## REMOTE CONTROLS

Serial Interface	RS485/RS422
Ethernet Interface	10/100 Base-T Ethernet interface providing: <ul style="list-style-type: none"><li>- HTTP-based web server</li><li>- Telnet Access</li><li>- Password protection</li></ul>



# SELECTABLE FREQUENCY BAND OUTDOOR BLOCK CONVERTERS FOR SATELLITE COMMUNICATION

## OPTIONS

47-1. Reference Clean-up Loop and Improved Frequency Stability

Reference oscillator acts as an analog phase lock with a 0.1 Hz nominal loop bandwidth.  
Typical loop suppression of the external reference is as follows:  
28 dB at 1 Hz offset, 65 dB at 10 Hz offset and 100 dB at 100 Hz offset

Frequency Stability:  $\pm 5 \times 10^{-9}$ , -40 to 60°C  
-9

Frequency Aging:  $1 \times 10^{-9}$  per day after 24 hours operation preceded by 10 days operation

47-3 LO 2nd harmonic rejection (Tx to Rx units only) -

In band LO 2nd harmonic signal  
Independent spurious : -45 dBm maximum

47-4 External LO input

Selectable external LO Input : +10 dBm  $\pm 3$  dB, frequency determined by model.  
Connector : 2.92 mm/SMA female

## PRIMARY POWER REQUIREMENTS

Voltage  
Frequency  
Consumption  
Fuse

90-250 VAC  
47-63 Hz  
16W typical  
T1.25A

## PHYSICAL

Weight  
Connectors  
RF  
L-band  
L-band Monitor  
External Reference  
Status/Control Interface

6 pounds (2.7 kg) nominal  
2.92 mm/SMA female  
N female  
SMA female  
SMA female  
MS3116F14-18P type for summary alarm, RS422, RS485, and LNA power  
RJ-45 female for Ethernet RS485 available on Status connector  
FCI clipper series CL1M1102

Remote Interface  
Primary Power

## ENVIRONMENTAL

Enclosure Rating  
Operating  
Ambient Temperature  
Altitude  
Non-operating  
Ambient Temperature  
Altitude

IP-65  
-40 to 60°C  
Up to 10,000 feet  
-50 to +70°C  
Up to 40,000 feet  
Normal handling by commercial carriers

Shock and Vibration

