



EUROSATCOM
VSATECH ASSOCIÉ

FREQUENCY 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.

The outdoor package is allows for mounting on the antenna. Multiple remote connections and a robust protocol provide strong M&C support.



STANDARD FEATURES

- Small-sized weather resistant enclosure
- Local oscillator monitor port
- RS422, RS485 and 10/100Base-T Ethernet
- 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
- Selectable External LO input

RF TRANSMIT-BAND TO RF RECEIVE-BAND

Input Frequency (GHz)	Output Frequency (GHz)	LO Frequency (GHz)	Model Number
5.85-6.425	3.625-4.2	2.225	TRE-6.1-3.9
5.85-6.65	3.4-4.2	2.45	TRE-6.25-3.8
6.725-7.025	4.5-4.8	2.225	TRE-6.8-4.6
7.9-8.4	7.25-7.75	0.65	TRE-8.15-7.5
7.9-8.4	7.175-7.675	0.725	TRE-8.15-7.4
12.75-13.25	10.7-11.2	2.05	TRE-13-11.2
13.2-14.2	10.7-11.7	2.5	TRE-13.7-11.2
13.75-14.5	10.7-11.45	3.05	TRE-14-11
13.75-14.5	11.45-12.2	2.3	TRE-14-11.8
13.75-14.5	12.0-12.75	1.75	TRE-14-12.3
13.75-14.5	10.95-11.7	2.8	TRE-14-11.3
13.75-14.5	11.7-12.45	2.05	TRE-14-12
17.3-17.8	12.2-12.7	5.1	TRE-17.55-12.45
17.3-18.1	11.7-12.5	5.6	TRE-17.7-12.1

Ka Band also available – See GS47-SPC



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RF TRANSMIT-BAND TO L-BAND

Input Frequency (GHz)	Output Frequency (GHz)	LO Frequency (GHz)	Model Number
5.85-6.65	0.95-1.75	4.9	TLE-6.25
5.925-6.425	0.95-1.45	7.375	TLE-6.175-INV
7.9-8.4	0.95-1.45	6.95	TLE-8.15
12.75-13.25	0.95-1.45	11.8	TLE-13
14.0-14.5	0.95-1.45	13.05	TLE-14.25
13.75-14.5	0.95-1.7	12.80	TLE-14.125
14.5-14.8	0.95-1.25	13.55	TLE-14.65
17.3-18.1	0.95-1.75	16.35	TLE-17.7
17.3-18.4	0.95-2.05	16.35	TLE-17.85

Ka Band also available – See GS47-SPC

SPECIFICATIONS (1/2)

RF TRANSMIT-BAND TO RF RECEIVE BAND

RF TRANSMIT-BAND TO L-BAND

INPUT CHARACTERISTICS

Frequency
Impedance
Return Loss
Input Level (Non-damage)

Refer to model number table
50 ohms
18 dB minimum
+10 dBm maximum

OUTPUT CHARACTERISTICS

Frequency
Impedance
Return Loss
Output Signal Monitor

Refer to model number table
50 ohms
18 dB minimum
N/A
-20 dBc nominal

TRANSFERT CHARACTERISTICS

Level Control
Amplitude Response
Noise Figure at Minimum Attenuation
Frequency Stability
Frequency Aging
Conversion Loss
Conversion Loss Stability
Intermodulation
Phase Noise (dBc/Hz) –
Typical Phase Noise

30 dB continuously adjustable, 30 dB/0.2 dB step (Option 9-2)
±0.25 dB/40 MHz, ±1 dB/output frequency band
25 dB maximum
15 dB maximum
±2 x 10⁻⁸, 0 to 50°C
5 x 10⁻⁹/day after 24 hours on time
25 dB maximum
15 dB maximum (20 dB gain optional)
±0.25 dB/day at 23°C
-50 dBc minimum at -5 dBm input

LO Frequency	Offset (Hz)				
	100	1K	10K	100K	1M
≤4.2 GHz	-85	-90	-92	-100	-120
4.2 < LO ≤ 9 GHz	-80	-84	-87	-90	-115
9 GHz < LO ≤ 16 GHz	-70	-77	-85	-87	-110



FREQUENCY BAND TRANSLATORS OUTDOOR MOUNTED FOR SATELLITE COMMUNICATION

SPECIFICATIONS (2/2)

Automatic Reference Configuration	External 5 or 10 MHz at +4 ±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: - HTTP-based web server - SNMP1.0 configuration - Alarm reporting via SNMP Trap - Telnet Access - Password protection

OPTIONS (1/2)

10-1. Reference Clean-up Loop and Improved Frequency Stabi- lity

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 o set, 65 dB at 10 Hz o set and
65 dB at 10 Hz o set and
Frequency Stability: $\pm 2 \times 10^{-9}$, 0 to 50°C
Frequency Aging: 1×10^{-9} per day after 24 hours operation
preceded by 10 days operation

10-3. Gain on Transmit to L-band Units

Gain	20 ±3 dB
Power Output (1 dB Compression)	+18 dBm minimum
Gain Slope	0.03 dB/MHz maximum
Gain Stability	±0.25 dB/day maximum at constant temperature
Group Delay	1 ns peak-to-peak maximum
Spurious Outputs (Inband)	
Signal Related	65 dBc minimum at 0 dBm output
Signal Independent	-75 dBm maximum
Intermodulation Distortion (Third Order)	With two inband signals at 0 dBm output, third order intermodulation products are less than 60 dBc minimum and 50 dBc minimum (Ka-band units)





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OPTIONS (2/2)

10-4. External LO input

Selectable external LO Input
Connector

+10 dBm ± 3 dB, frequency determined by model.
SMA female

PRIMARY POWER REQUIREMENTS

Voltage
Frequency
Consumption
Fuse

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

PHYSICAL

Weight

6 pounds (2.7 kg) nominal

Connectors

RF
L-band
L-band Monitor
LO Monitor
External Reference
Status/Control Interface
Remote Interface

Primary Power

SMA female
N female
SMA female
SMA female
BNC female
MS3116F14-18P type for summary alarm, RS422/ RS485
RJ-45 female for Ethernet
RS485 available on Status connector
FCI clipper series
CL1M1102

ENVIRONMENTAL

Enclosure rating

IP-65

Operating

Ambient Temperature
Altitude

-40 to 60°C
Up to 10,000 feet

Non-operating

Ambient Temperature
Altitude
Shock and Vibration

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



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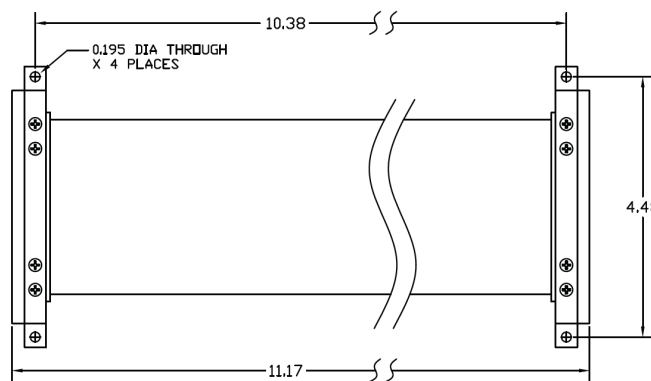
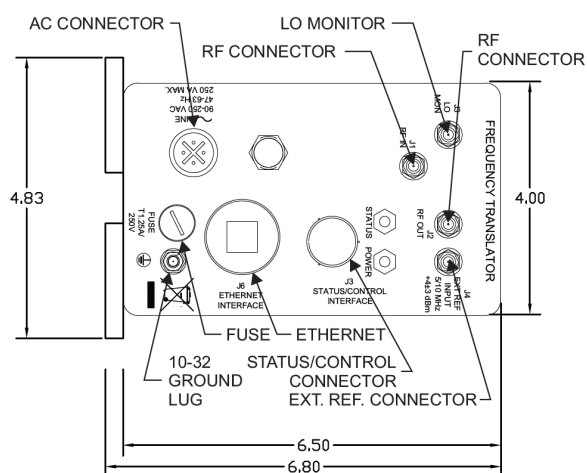




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TYPICAL OUTLINE



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



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