



HIGH PERFORMANCE OUTDOOR TEST TRANSLATORS



Unit shown with Option 17

Input Frequency (GHz)	Output Frequency (GHz)	LO Frequency (GHz)	Model Number
RF TRANSMIT-BAND TO RF RECEIVE-BAND			
5.85-6.425	3.625-4.2	2.225	DN-WS-6.1/3.9
5.85-6.65	3.4-4.2	2.45	DN-WS-6.25/3.8
6.725-7.025	4.5-4.8	2.225	DN-WS-6.8/4.6
7.9-8.4	7.25-7.75	0.65	DN-WS-8.15/7.5
7.9-8.4	7.175-7.675	0.725	DN-WS-8.15/7.4
12.75-13.25	10.7-11.2	2.05	DN-WS-13/11.2
13.75-14.5	10.7-11.45	3.05	DN-WS-14/11
13.75-14.5	11.45-12.2	2.3	DN-WS-14/11.8
13.75-14.5	12-12.75	1.75	DN-WS-14/12.3
13.75-14.5	10.95-11.7	2.8	DN-WS-14.1/11.3
13.75-14.5	11.7-12.45	2.05	DN-WS-14/12
17.3-18.1	11.7-12.5	5.6	DN-WS-17.7/12.1
Ka-Band			
29.5-30	19.2-19.7	10.3	DN-WS-29.75/19.45
29.5-30	19.7-20.2	9.8	DN-WS-29.75/19.95
29-30	19.2-20.2	9.8	DN-WS-29.5/19.7
30-31	20.2-21.2	9.8	DN-WS-30.5/20.7
RF TRANSMIT-BAND TO L-BAND			
5.85-6.65	0.95-1.75	4.9	DN-WS-6.25
5.925-6.425	0.95-1.45	7.375	DN-WS-6.175-INV
7.9-8.4	0.95-1.45	6.95	DN-WS-8.15
12.75-13.25	0.95-1.45	11.8	DN-WS-13
14-14.5	0.95-1.45	13.05	DN-WS-14.25
13.75-14.5	0.95-1.7	12.80	DN-WS-14.125
14.5-14.8	0.95-1.25	13.55	DN-WS-14.65
17.3-18.1	0.95-1.75	16.35	DN-WS-17.7
Ka-Band			
28.35-28.6	0.95-1.2	27.4	DN-WS-28.475
29.25-29.5	0.95-1.2	28.3	DN-WS-29.375
29.25-30	0.95-1.7	28.3	DN-WS-29.75
30-31	0.95-1.95	29.05	DN-WS-30.5
30-31	1-2	29	DN-WS-30.5-1

This equipment is designed for applications where frequency translation is needed with a minimum of amplitude and group delay distortion.

A contact closure summary alarm is provided for fault monitoring.

FEATURES

- Small weather resistant enclosure
- 30 dB level control
- Local oscillator monitor port
- Output signal monitor port (L-band output only)
- Low phase noise
- Low intermodulation distortion

OPTIONS

- Higher frequency stability
- RS422/RS485 and 10/100Base-T Ethernet
- Automatic 5/10 MHz internal/external reference selection
- Gain on transmit to L-band units



GENERAL SPECIFICATIONS

PRIMARY POWER REQUIREMENTS

Voltage	90–250 VAC
Frequency	47–63 Hz
Consumption	12 W typical

PHYSICAL

Weight	15 pounds (2.04 kg) nominal,
Front panel connectors	
RF band	N female (below 15 GHz), SMA female compatible (above 15 GHz) WR28 (Ka-band above 27 GHz)
L-band	N female
L-band monitor	SMA female
External reference input	SMA female
Status monitor	MS3116F14-18P*
Remote interface (Option 17)	RJ-45 female for Ethernet, RS422/485 available on status connector
Primary power input	FCI clipper series CL1M1102*

*Note: Unit supplied with mating connector.

ENVIRONMENTAL

Operating	
Temperature	-40 to +60°C
Atmospheric pressure	Up to 10,000 feet
Nonoperating	
Temperature	-50 to +70°C
Atmospheric pressure	Up to 40,000 feet
Shock and vibration	Normal handling by commercial carriers

TEST TRANSLATORS

INPUT CHARACTERISTICS

Frequency Refer to model number table
 Return loss (50 ohms)..... 18 dB minimum
 Non-damage level +10 dBm maximum

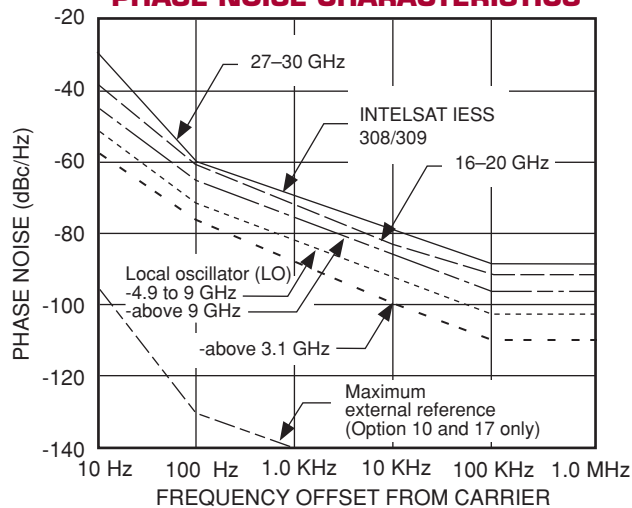
OUTPUT CHARACTERISTICS

Frequency Refer to model number table
 Return loss (50 ohms)..... 18 dB minimum
 Signal monitor -20 dBc nominal (RF transmit-band to L-band only)

TRANSFER CHARACTERISTICS

Conversion loss..... 25 dB maximum (RF transmit-band to RF receive-band),
 15 dB maximum (RF transmit-band to L-band)/(20 dB gain optional)
 Level control..... 30 dB continuously adjustable, 30 dB in 0.2 dB steps with Option 17
 Conversion loss stability..... ± 0.25 dB/day at 23°C
 Amplitude response..... ± 0.25 dB/40 MHz maximum, ± 1 dB maximum over RF frequency band
 Intermodulation..... -50 dBc minimum at -5 dBm input
 Frequency stability 5×10^{-6} /day (-40 to +60°C)
 Input/output isolation 60 dB minimum
 Mute function..... 60 dB minimum

PHASE NOISE CHARACTERISTICS



OPTIONS

- 1.** Gain on transmit to L-band units
Gain 20 \pm 3 dB
Power output (1 dB compression) 18 dBm minimum
Gain slope..... 0.03 dB/MHz maximum
Gain stability \pm 0.25 dB/day maximum at constant temperature
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).

- 7.** 30 dB additional level control.

- 8.** LO level detect.

- 9.** Input filter.

- 10.** Higher frequency stability reference.
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. 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. Internal oscillator is available with the following stabilities:
 - A.** \pm 5 \times 10⁻⁸, -40 to +60°C,
1 \times 10⁻⁹/day typical (fixed temperature after 24 hour on time).
 - B.** \pm 1 \times 10⁻⁸, -40 to +60°C,
1 \times 10⁻⁹/day typical (fixed temperature after 24 hour on time).
 - C.** \pm 5 \times 10⁻⁹, -40 to +60°C,
1 \times 10⁻⁹/day typical (fixed temperature after 24 hour on time).

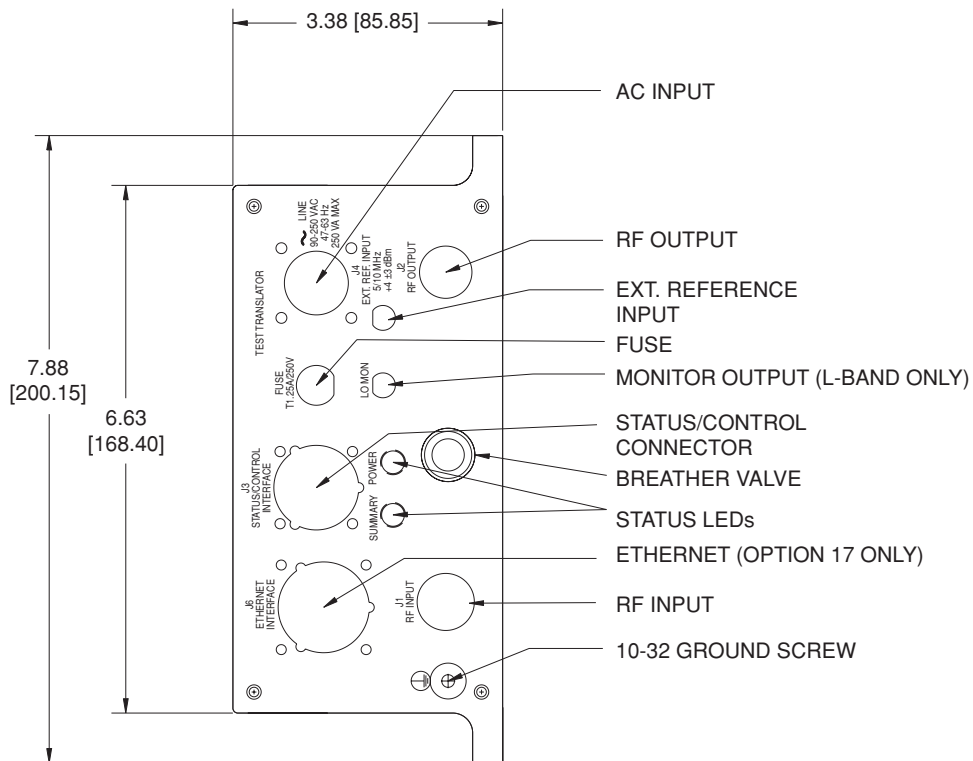
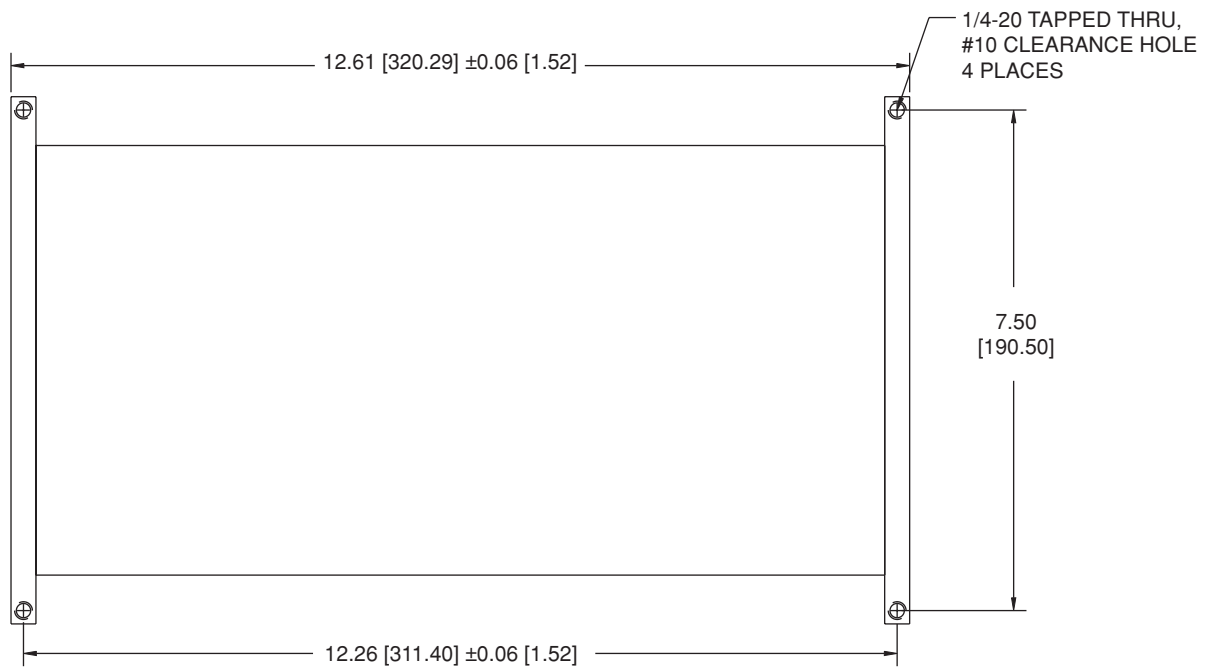
- Note: Translator may require 7-10 days to reach stability after long storage periods.

- 17.** Remote control 10/100Base-T Ethernet interface providing:
HTTP-based web server
SNMP 1.0 configuration
Alarm reporting via SNMP Trap
Telnet access
Password protection and selectable RS485/422
Gain control is 30 dB in 0.2 dB steps

- 19.** DC power input.
 - A.** +24 to +32 VDC input
 - B.** +42 to +60 VDC input
 - C.** -42 to -60 VDC input

Note: For literature describing local control (front panel) and remote control (bus control), refer to MITEQ's Technical Note 25T060. Technical Note only applies for Option 17. Missing option numbers are not applicable for this product.

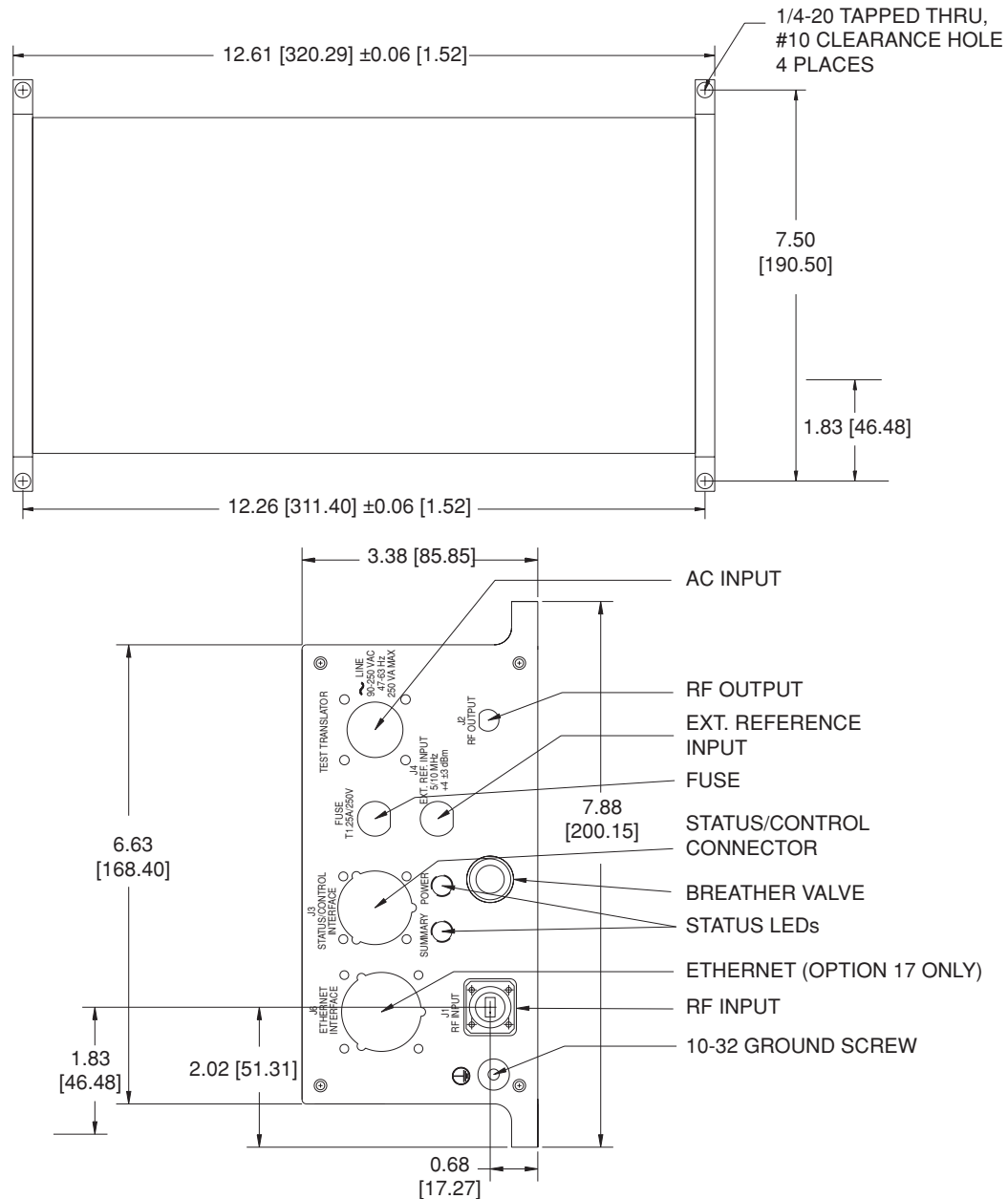
TRANSLATOR OUTLINE DRAWING



NOTE: DIMENSIONS SHOWN IN BRACKETS [] ARE IN MILLIMETERS.

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Ka-BAND TRANSLATOR OUTLINE DRAWING



NOTE: DIMENSIONS SHOWN IN BRACKETS [] ARE IN MILLIMETERS.



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