

High Performance Outdoor Test Translators



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.

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
- RS422/RS485 and 10/100Base-T Ethernet

Options

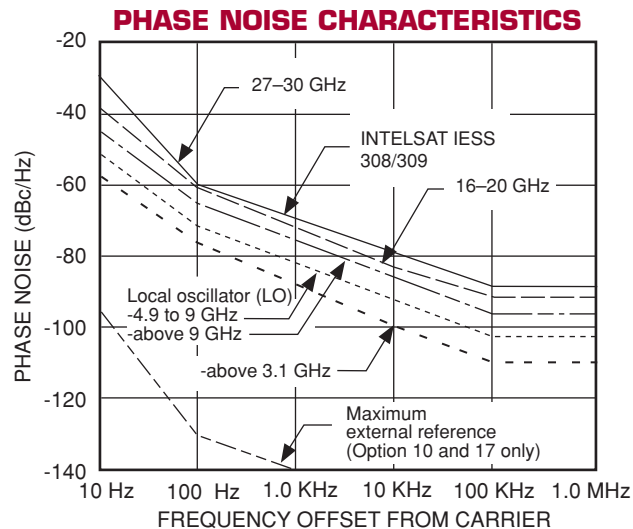
- Higher frequency stability
- Automatic 5/10 MHz internal/external reference selection
- Gain on transmit to L-band units

Specifications

Test Translators

Input characteristics	
Frequency	Refer to model number table
Return loss (50 ohms)	18 dB minimum
Non-damage level	+10 dB 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 in 0.2 dB steps
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
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

Phase Noise Specifications



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 x 10⁻⁸, -40 to +60°C,
1 x 10⁻⁹/day typical (fixed temperature after 24 hour on time).
 - B.** \pm 1 x 10⁻⁸, -40 to +60°C,
1 x 10⁻⁹/day typical (fixed temperature after 24 hour on time).
 - C.** \pm 5 x 10⁻⁹, -40 to +60°C,
1 x 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.

- 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. Missing option numbers are not applicable for this product.

General Specifications

Primary Power Requirements

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

Physical

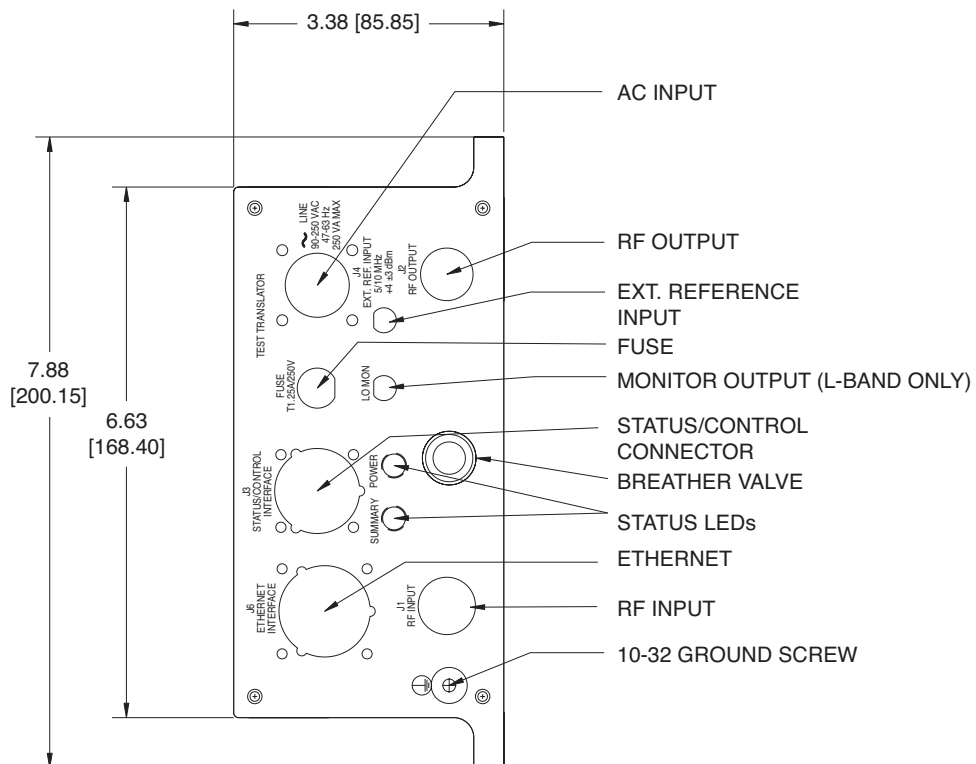
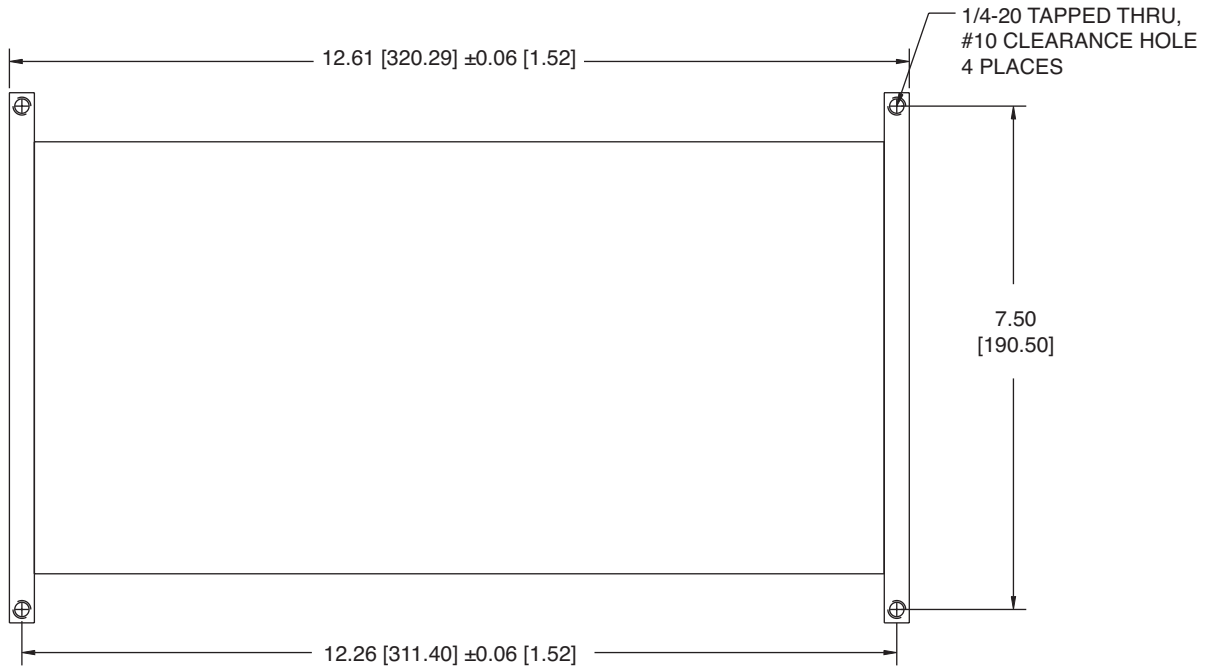
Weight.....	15 pounds (6.8 kg) nominal
Front panel connectors	
RF band	N female (below 15 GHz), SMA female compatible (above 15 GHz), WR28 (Ka-band above 27 GHz)
L-band	N female
L-band monitor	SMA female
External reference input.....	SMA female
Status monitor	MS3116F14-18P*
Remote interface.....	RJ-45 female for Ethernet, RS422/485 available on status connector
Primary power input	FCI clipper series CL1M1102*

*Note: Unit supplied with mating connector.

Environmental

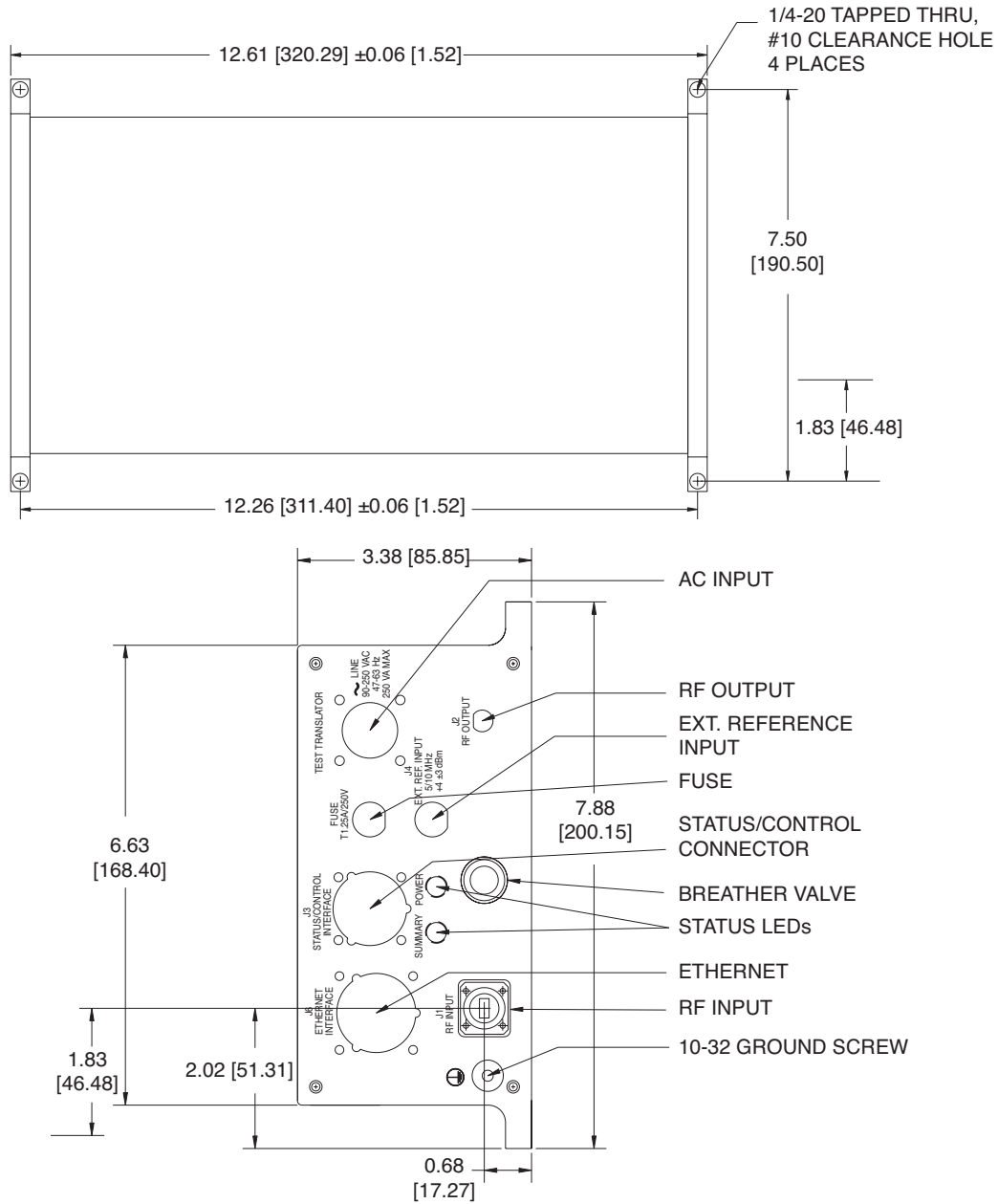
Operating	
Temperature	-40 to +60°C
Atmospheric pressure	Up to 10,000 feet
Nonoperating	
Temperature	-50 to +70°C
Atmospheric pressure	Up to 40,000 feet
Shock and vibration.....	Normal handling by commercial carriers

Translator Outline Drawing



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

Ka-Band Translator Outline Drawing



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