

Dual-, Tri- and Quad-Band Outdoor Block Converters



Input (GHz)	Output (GHz)	Model Number
Downconverters		
3.4-4.2	0.95-1.75	DNB-T/Q-BCEG
7.25-7.75	0.95-1.45	
10.7-11.7	0.95-1.95	
11.7-12.75	0.95-2	
3.4-4.2	0.95-1.75	DNB-T/Q-BCDFH
7.25-7.75	0.95-1.45	
10.7-11.45	0.95-1.7	
11.45-12.2	0.95-1.7	
12.2-12.75	0.95-1.5	
3.4-4.2	1.2-2	DNB-T/Q-ACEGK
7.25-7.75	0.95-1.45	
10.7-11.7	0.95-1.95	
11.7-12.75	0.95-2	
20.2-21.2	0.95-1.95	
7.25-7.75	0.95-1.45	DNB-T/Q-CK
20.2-21.2	0.95-1.95	
Upconverters		
0.95-1.75	5.85-6.65	UPB-T/Q-ABC
0.95-1.45	7.9-8.4	
0.95-1.7	13.75-14.5	
0.95-1.75	5.85-6.65	UPB-T/Q-ABCE
0.95-1.45	7.9-8.4	
0.95-1.7	13.75-14.5	
0.95-1.95	30-31	
0.95-1.45	7.9-8.4	UPB-T/Q-BE
0.95-1.95	30-31	
0.95-1.75	5.85-6.85	UPB-T/Q-ABCD
0.95-1.45	7.9-8.4	
0.95-1.7	13.75-14.5	
0.95-1.45	14-14.5	
0.95-1.75	5.85-6.65	UPB-T/Q-ABD
0.95-1.45	7.9-8.4	
0.95-1.45	14-14.5	

This series of multiband block upconverters and downconverters are designed for antenna mounting.

A strong set of monitor and control functions support powerful remote control. A contact closure summary alarm is provided for fault monitoring.

A continuously updated log of time-stamped records of activity is also provided.

Features

- Small weather resistant enclosure
- RS422/485 and 10/100Base-T Ethernet remote control
- Output signal monitor port
- 30 dB gain control
- Automatic 5/10 MHz internal/external reference selection
- Low phase noise
- LNA power provided with current detection (downconverter)
- High frequency stability
- Summary alarm
- AC power supply (CE Mark)

Options

- Higher stability reference
- LNA power on RF center conductor (downconductor)

Note: Additional models and bands available. Please contact factory with band requirements.

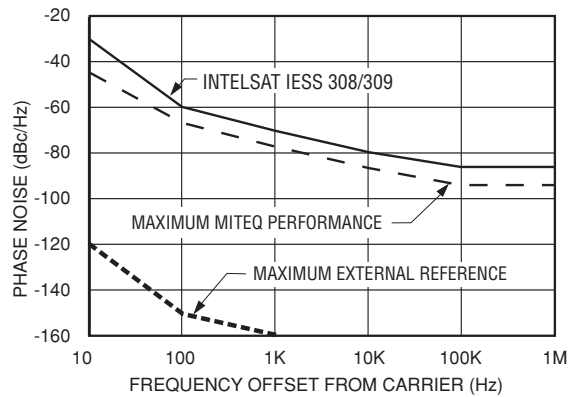
Specifications

Frequency sense	No inversion
Input Characteristics	
Impedance	50 ohms
Return loss	18 dB minimum
Nondamage	+10 dBm
Local oscillator leakage (downconverter)	-80 dBm maximum
Output Characteristics	
Impedance	50 ohms
Return loss	18 dB minimum
Power output (1 dB compression)	+10 dBm minimum
Signal monitor	20 dBc nominal
Transfer Characteristics	
Gain (at minimum attenuation)	
Upconverters (except Ka-Band)	13 dB, ± 3 dB at 23°C
Upconverters (Ka-Band)	20 dB, ± 3 dB at 23°C
Downconverters	30 dB, ± 3 dB at 23°C
Image rejection	60 dB minimum
Level stability	
Constant temperature	± 0.25 dB/day maximum
Over operating temperature	± 2 dB maximum
Noise figure (at minimum attenuation)	
Upconverters	20 dB maximum
Downconverters	15 dB maximum
Amplitude response	± 0.5 dB/ ± 40 MHz, ± 2 dB over RF band
Group delay	1 ns peak-to-peak maximum
Intermodulation distortion (third order)	With two 0 dBm output signals, 40 dBc minimum
Spurious outputs	
Signal related	60 dBc minimum up to 0 dBm output level
Signal independent	-60 dBm maximum
LO leakage at RF	-70 dBm maximum
Gain adjustment	30 dB in 0.2 dB steps
Frequency stability	$\pm 5 \times 10^{-8}$, -40 to +60°C (higher stability options available), $\pm 5 \times 10^{-9}$ /day typical (fixed temperature after 24 hour on time)
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.
Remote interface	10/100Base-T Ethernet interface providing Web-browser-based configuration, SNMP 1.0 configuration, alarm reporting via SNMP trap, telnet access, password protection and selectable RS485/RS422. Refer to MITEQ's Technical Note 25T060 for details.
Indicator and Summary alarms (front panel)	Red LED (for active alarm), Amber LED (for logged alarms), Summary alarm indicates: LO out-of-lock or DC voltage alarm or LNA current on block downconverters
Power ON indicator	Green LED (front panel)
Summary alarm	Contact closure status for DC voltage and local oscillator, external mute input on J3 connector (Programmable LNA current alarm for downconverters +12 VDC up to 500 mA maximum)

Note: All specifications at maximum gain unless otherwise noted.

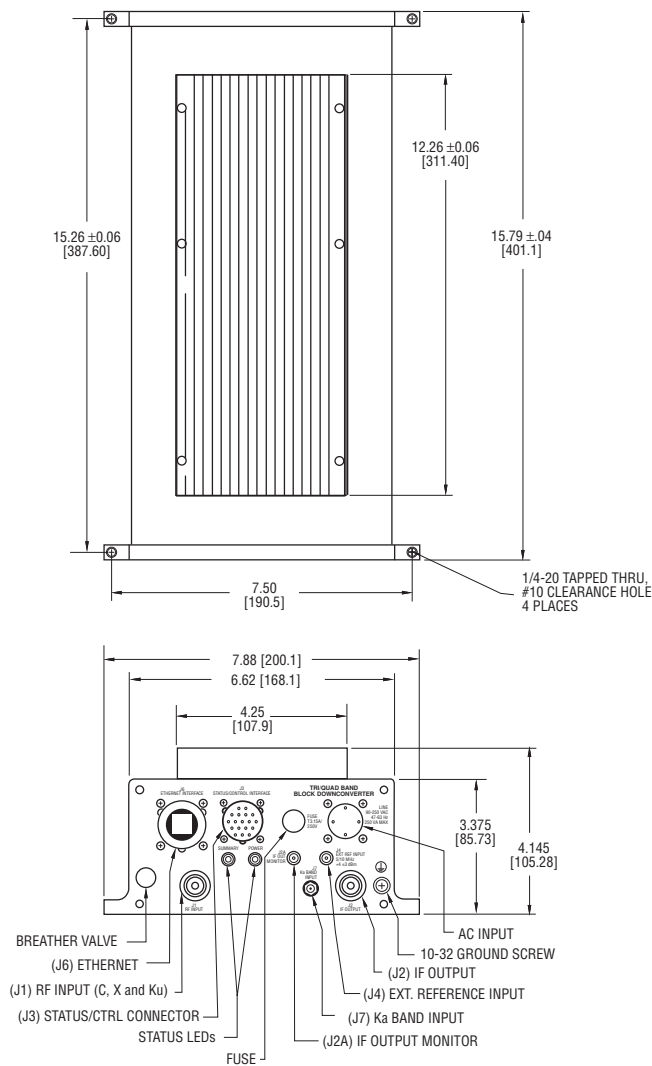
Phase Noise Specifications

TYPICAL PHASE NOISE CHARACTERISTICS (1.0 Hz BANDWIDTH)

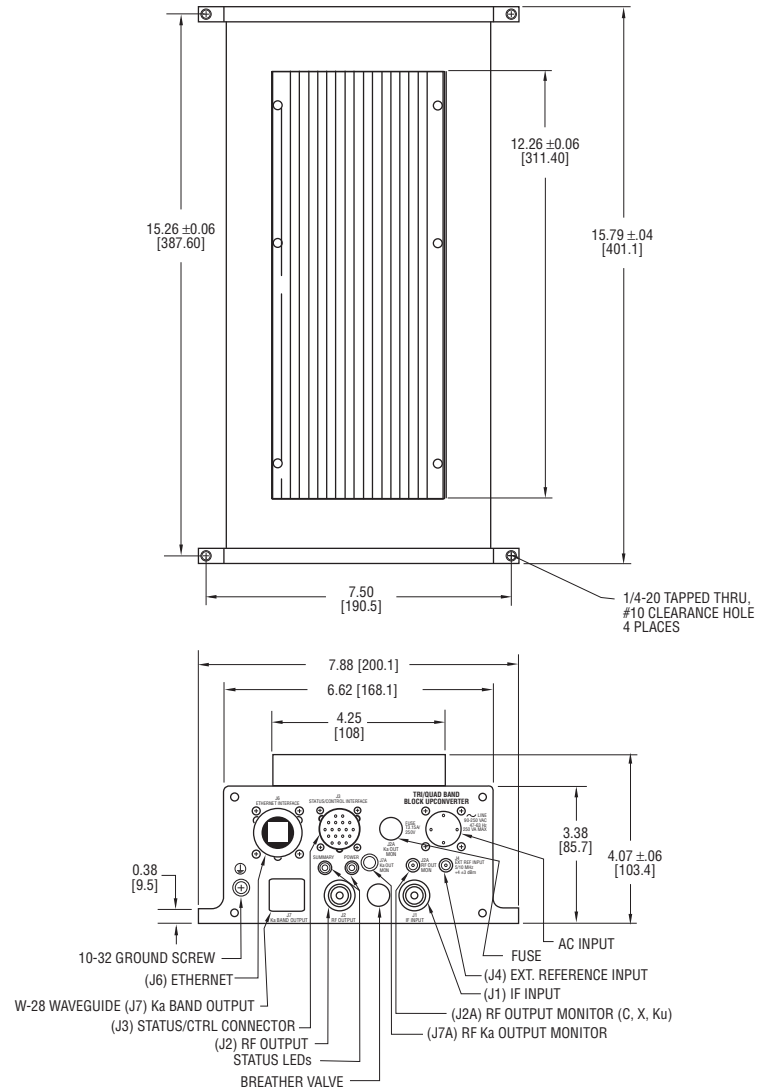


Outline Drawings

Downconverter



Upconverter



NOTE: Dimensions shown in brackets [] are in millimeters.

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Options

4B. LNA power on RF center conductor (downconverter only).

Paint colors:

Furniture WhiteFED-STD-595B color #27875

Desert Tan.....FED-STD-595B color #33303

10. Higher frequency stability reference.

$\pm 5 \times 10^{-9}$, -40 to +60°C,

1×10^{-9} /day typical (fixed temperature after 24 hour on time).

VM. Vertical Mounting

Note: Missing option numbers are not applicable for this product.

For literature describing local control (front panel) and remote control (bus protocols), refer to MITEQ's Technical Note 25T060.

General Specifications

Primary Power Requirements

Voltage 90–250 VAC

Frequency 47–63 Hz

Power 20 W typical

Summary Alarm

Contact closure/open for DC voltage and/or LO alarm

Physical

Weight 14 pounds (6.35 kg) typical

Color..... Powder coat green hybrid matte #383,
FED-STD-595 color #34094 (standard)

Connectors

RF

Below 22 GHz N female

Above 26.5 GHz..... WR-28 grooved

RF output monitor SMA female

RF output monitor above 26.5 GHz..... 2.92 mm female (upconverter)

IF..... N female

IF output monitor..... SMA female (downconverter)

External reference SMA female

Ethernet interface RJ-45 female (Amphenol RJF6MGF)*

Status/control interface..... MS3116F14-18P for summary alarm, RS422/485
and LNA power*

Power/status interface FCI Clipper series CL1M1102*

*Note: Unit supplied with mating connector.

Environmental

Operating

Ambient temperature -40 to +60°C

Atmospheric pressure..... Up to 10,000 feet

Nonoperating

Ambient temperature -50 to +70° C

Atmospheric pressure..... Up to 40,000 feet

Shock and vibration Normal handling by commercial carriers



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