



HIGH PERFORMANCE OUTDOOR BLOCK UPCONVERTERS AND BLOCK DOWN- CONVERTERS



FEATURES

- Small weather resistant enclosure
- Automatic 5/10 MHz internal/external reference selection
- RS485/RS422 and 10/100Base-T Ethernet remote control
- RF input/output signal monitor ports
- 30 dB gain control
- 32 memory locations
- High frequency stability
- Summary alarm
- AC power supply (CE mark)

This series of outdoor block upconverters and down-converters 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.

OPTIONS

- Higher performance package
- Higher frequency stability
- Lower phase noise
- LO level monitor
- Lower gain
- DC power



SPECIFICATIONS (CONT.)

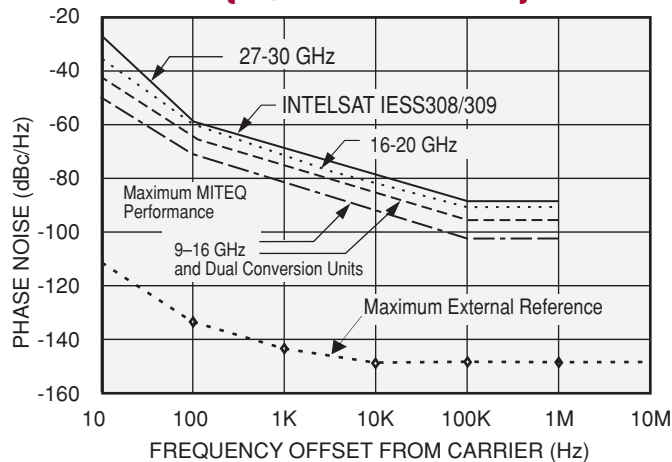
TRANSFER CHARACTERISTICS

Gain	
Upconverters.....	33 dB, ± 3 dB at 23°C
Downconverters	38 dB, ± 3 dB at 23°C
Gain adjustment.....	30 dB in 0.2 dB steps
Gain stability.....	± 0.25 dB/day maximum at constant temperature
Amplitude response	± 0.25 dB/ ± 40 MHz maximum, ± 1 dB over RF frequency band
Image rejection.....	80 dB minimum
Noise figure (at minimum attenuation).....	15 dB maximum (20 dB for upconverters with 1 GHz IF bandwidth and Ka-band above 22 GHz)
Intermodulation distortion (third order)	With two inband signals at 0 dBm output, third order intermodulation products are less than 60 dBc minimum (downconverters) and 50 dBc minimum (upconverters, and all Ka-band units)
Spurious outputs (inband)	
Signal related.....	65 dBc minimum up to 0 dBm output (including 2x1 spurious on 1 GHz IF bandwidth units)
Signal independent	-75 dBm maximum
Phase noise	See graph
Frequency stability	$\pm 5 \times 10^{-8}$, -40 to +60°C (higher stability options available), 5×10^{-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 above +1 dBm, the internal reference oscillator will lock to the external reference input. 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; 100 dB at 100 Hz offset
Upconverter mute.....	60 dB minimum on summary alarm or mute command
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 ALARMS

LO out-of-lock.....	Red LED (front panel)
Power ON indicator.....	Green LED (front panel)
Summary alarm.....	Contact closure status for DC voltage and local oscillator (Programmable LNA current alarm for downconverters +12 VDC up to 500 mA maximum)

PHASE NOISE CHARACTERISTICS (1.0 Hz BANDWIDTH)



OPTIONS (CONT.)

14. Low noise option (downconverters only).

Frequency (GHz)	Available Noise Temperature At +25°C (Maximum)	Interface Input
3.40 - 4.20	35	CPR-229GN
3.70 - 4.20	35	CPR-229GN
7.25 - 7.75	50	CPR-112G
10.70 - 11.70	80	WR-75 Grooved Flange
10.95 - 11.70	70	WR-75 Grooved Flange
11.45 - 12.25	70	WR-75 Grooved Flange
11.70 - 12.50	70	WR-75 Grooved Flange
12.20 - 12.75	70	WR-75 Grooved Flange
18.30 - 18.80	140	WR-42 Grooved Flange
19.70 - 20.20	140	WR-42 Grooved Flange
20.20 - 21.20	140	WR-42 Grooved Flange

NOTE: Gain increase to 62 ±3 dBm.

19. DC power input.

A. +24 to +32 VDC input

B. +42 to +60 VDC input

C. -42 to -60 VDC input

27. RF connector option RF connector on rear panel as per Outline Drawing 3 Waveguide TBD

GENERAL SPECIFICATIONS

PRIMARY POWER REQUIREMENTS

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

PHYSICAL

Weight 15 pounds nominal

Connectors

Front panel connectors

RF band

Below 22 GHz SMA female compatible

Above 26.5 GHz WR-28 grooved

L-band N female

RF band monitor SMA female compatible

L-band monitor SMA female

External reference input SMA female

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

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

Ambient temperature -40 to +60°C

Atmospheric pressure Up to 10,000 feet

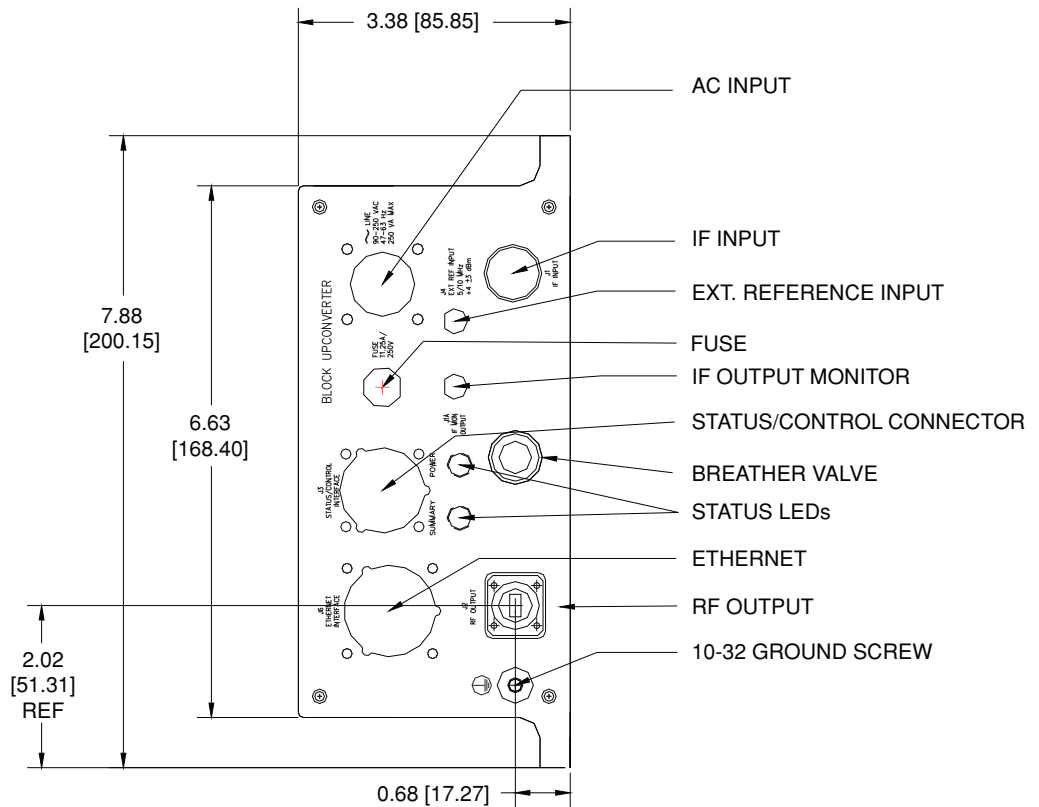
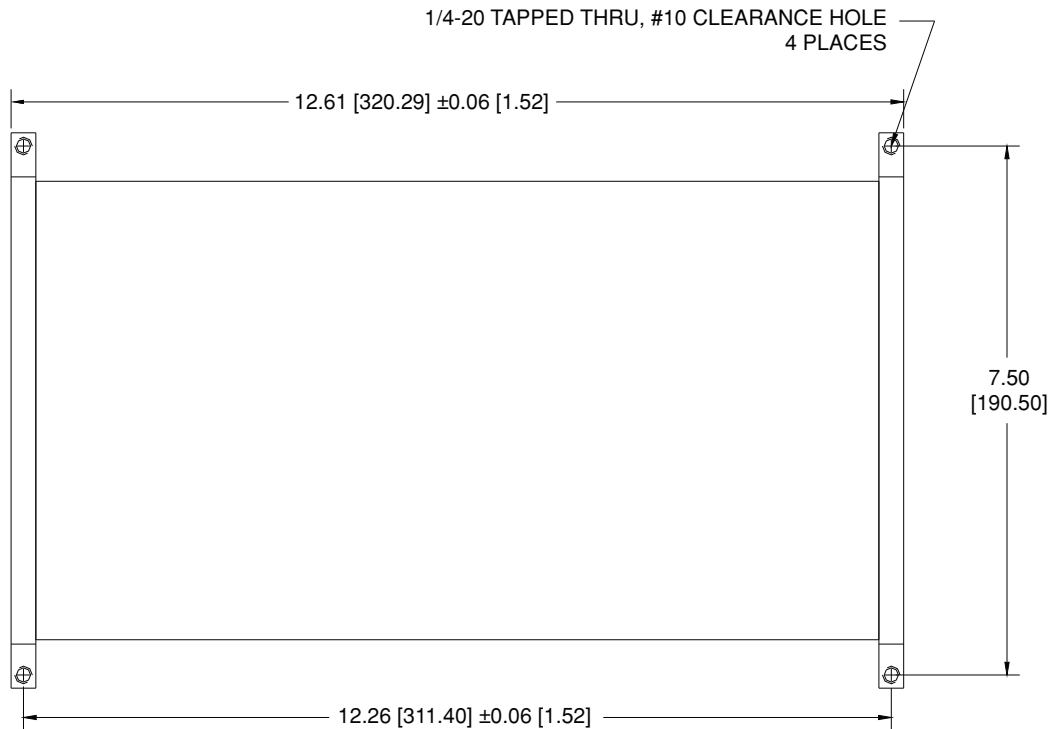
Nonoperating

Ambient temperature -50 to +70°C

Atmospheric pressure Up to 40,000 feet

Shock and vibration Normal handling by commercial carriers

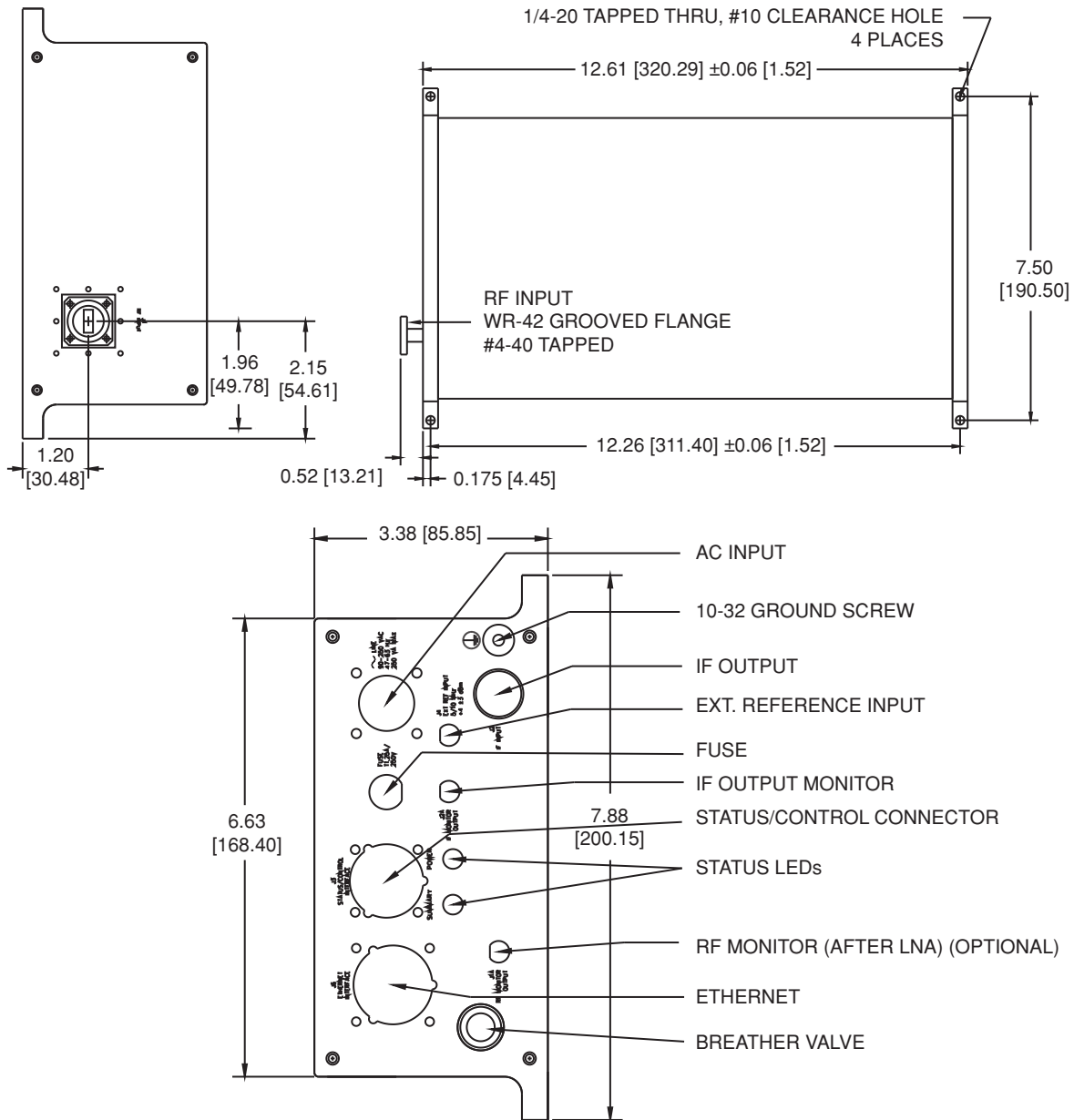
OUTLINE DRAWING - Ka-BAND UP PACKAGE



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

HIGH PERFORMANCE OUTDOOR BLOCK UP CONVERTERS AND BLOCK DOWN CONVERTERS

OUTLINE DRAWING - Ka-BAND DOWN WITH LOW NOISE OPTION



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