



This equipment is designed for applications where frequency translation is needed between L-band and the Q-band transponder frequencies.

STANDARD FEATURES

- Amplitude slope adjust
- RS422, RS485 and 10/100 Base-T Ethernet
- Serial output for Redundancy Switchover units
- L-band monitor ports
- Automatic 5/10 MHz internal/external reference selection
- Electronic adjust of internal reference frequency
- Low phase noise
- Low intermodulation distortion
- 64 programmable memory locations
- 30 dB of L-band level control
- Mute function on alarm or external mute input command
- Elapsed time and event log after power turn on
- CE Mark

EUROSATCOM

BLOCK UPCONVERTERS

Band	Output (GHz)	Input (GHz)	Model Number	
1	44-45	0.95-1.95	UBR-44.5/48-6001535	
2	47.5-48.5	0.95-1.95		

SPECIFICATIONS

	UPCONVERTER	DOWNCONVERTER
INPUT CHARACTERISTICS		
Return Loss (50 Ohms)	18 dB minimum	15 dB minimum
Signal Monitor	-20 dBc nominal	N/A
LO Leakage	N/A	-80 dB maximum
Input Level (Non-damage)	+10	dBm
OUTPUT CHARACTERISTICS		
Return Loss (50 Ohms)	15 dB minimum	18 dB minimum
Signal Monitor	N/A	-20 dBc nominal
Power Output (1 dB Compression)	-5 dBm minimum	+18 dBm minimum
		WADE BY
		OGEOS
		MADE BY

OPTIONS

- High performance package
- Lower gain
- Reference clean-up loop and improved stability



BLOCK DOWNCONVERTERS

_	A A A			
	Output (GHz)	Input (GHz)	Model Number	
A	37.5-38.5	0.95-1.95	DBR-38-6001535	



SPECIFICATIONS

UPCONVERTER

17 dB, \pm 3 dB at center frequency

18 dB maximum

20 dBc minimum

(0 dBm IP3)

DOWNCONVERTER

21 dB, \pm 3 dB at center frequency

25 dB maximum at maximum gain

70 dBc minimum

(+25 dBm IP3)

TRANSFER CHARACTERISTICS

Gain L-band Level Control Level Stability Amplitude Response Slope Adjust Noise Figure at Minimum Attenuation

Image Rejection

Third Order Intermodulation Distortion With two inband signals each at 0 dBm, measured at the output

Spurious Outputs (Inband)

Signal Related up to 0 dBm output Signal Independent Signal Harmonic Related up to 0 dBm output

Maximum Phase Noise (dBc/Hz)

With Maximum Reference Phase Noise:

10 Hz: -120 dBc/Hz 100 Hz: -145 dBc/Hz 1 kHz: -160 dBc/Hz

Frequency Stability Frequency Aging Automatic Reference Configuration

Converter Mute

REMOTE CONTROLS

Serial Interface Ethernet Interface RS485/RS422

- 10/100Base-T Ethernet
- HTTP-based web
- SNMP 1.0
- Alarm reporting via SNMP
- Telnet access
- Password protection

Note: All specifications are at maximum gain unless otherwise noted.

INDICATORS and ALARMS

Status Indicator

Power ON Indicator Green LED Summary Alarm

Red LED: Alarm, Yellow LED: External Reference Contact closure/open for DC voltage and local oscillator





10K 10 100 1K -32 -60 -68 -78 -87 -87

65 dBc minimum -75 dBm maximum

30 dB in 0.2 dB steps

±0.25 dB over any 20°C, ±1.5 dB over 0° to 50°C

±0.25 dB/40 MHz maximum, ±1.5 dB maximum over RF frequency

0 to 6 dB minimum

70 dBc minimum

65 dBc minimum (including 2 x 1 55 dBc minimum spurious on IF bandwidths >1 GHz (Including 2nd harmonic)

Offset (Hz) 100K 1M

±2 x 10⁻⁸, 0° to 50°C (reference 25°C) 5×10^{-9} /Day after 24 hours on time 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. 60 dB minimum on summary alarm or mute command.



OPTIONS

57-1. High Performance Package

Power Output (1 dB Compression) Gain Slope Level Stability

Group Delay Spurious Outputs (Inband) Signal Related Signal Independent Local Oscillator Leakage Image Rejection Intermodulation Distortion (Third Order)

AM/PM Conversion (at 0 dBm Output) Upconverter Mute

57-3. Lower Gain

57-4. Reference Clean-up Loop and Improved Frequency Stability

57-5. Waveguide connector

+20 dBm minimum 0.03 dB/MHz maximum ±0.25 dB/day maximum at constant temperature, ±1.0 dB maximum/0 to 50°C 1 ns peak-to-peak maximum

65 dBc minimum at 0 dBm output -80 dBm maximum -65 dBm maximum (upconverters only) 80 dB minimum With two inband signals at 0 dBm output, third order Intermodulation products are less than 60 dBc minimum. 0.1°/dB maximum 80 dB minimum on summary alarm, external mute input control or remote command 10 ±3 dB at 23°C. 20 dB noise figure

(22 dB noise figure for upconverters with 1 GHz bandwidth)(2 x 1 signal related, 65 dBc at -10 dBm output)

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 phase noise 10 Hz at -130 dBc/Hz; 100 Hz at -155 dBc/Hz and 1 KHz at -165 dBc/Hz Frequency Stability: ±2 x10⁻⁹, 0 to 50°C Frequency Aging: 1 x 10⁻⁹ per day after 24 hours operation proceeded by 10 days operation

WR-22 located on rear panel. Flange requested.



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PRIMARY POWER REQUIREMENTS

Voltage
Frequency
Consumption
Fuse

PHYSICAL

Weight

Chassis Dimensions Connectors

RF L-band L-band Monitor External Reference Summary Alarm Remote Interface

Primary Power Redundancy Interface

ENVIRONMENTAL

Operating

Ambient Temperature Relative Humidity Altitude

Non-operating

Ambient Temperature Relative Humidity Altitude Shock and Vibration 90-250 VAC 47-63 Hz 40W typical T1.25A

9 pounds (4.08 kg) nominal without rack slides 13 pounds (5.9 kg) nominal with rack slides 19" x 1.75" panel height x 20" maximum

2.4 mm female SMA female SMA female BNC female DE-9S DE-9S for RS485, RS422 RJ-45 female for Ethernet IEC-320 DE-9P

0 to 50°C Up to 95% at 30°C Up to 10,000 feet

-50 to +70°C Up to 95% at 45°C Up to 40,000 feet Normal handling by commercial carriers



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