

BLOCK CONVERTER MODULES WITH HIGH PERFORMANCE OPTIONS

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

Multiple remote connections and a robust protocol provide strong M&C support.



STANDARD FEATURES

- Amplitude slope adjust
- RS422, RS485 and 10/100 Base-T Ethernet
- RF and L-band monitor ports
- Low intermodulation distortion
- Low phase noise
- Independent RF and IF level control
- Mute function on alarm or external mute input commande
- Elapsed time and event log after power turn on
- 10 MHz reference input
- Summary alarm

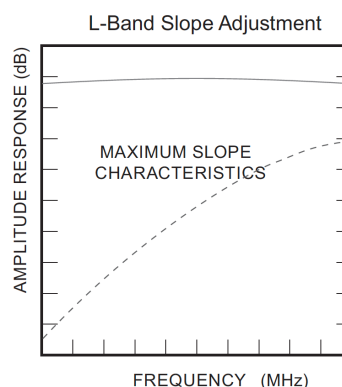
BLOCK UPCONVERTERS

Input (GHz)	Output (GHz)	LO (GHz)	Model Number
0.95-1.525	5.85-6.425	7.375	UBM-6.1-INV
0.95-1.75	5.85-6.65	4.9	UBM-6.25
0.95-1.35	6.7-7.1	5.75	UBM-6.9
0.95-1.45	7.9-8.4	6.95	UBM-8.15
0.95-1.45	12.75-13.25	11.8	UBM-13
0.95-1.7	13.75-14.5	12.8	UBM-14.125
0.95-1.45	14.0-14.5	13.05	UBM-14.25
0.95-1.75	17.3-18.1	16.35	UBM-17.7
0.95-2.05	17.3-18.4	16.35	UBM-17.85
0.95-1.25	18.1-18.4	17.15	UBM-18.25

Note : The DBM-7.5 Block Downconverter incorporates an inter-stage filter to attenuate the transmit frequency. Published performance will be maintained with a presence of a 7.9 GHz signal at a level of -5 dBm.

OPTIONS

- High performance package
- Lower gain
- Lower phase noise (high performance package)



BLOCK DOWNCONVERTERS

Input (GHz)	Output (GHz)	LO (GHz)	Model Number
3.4-4.2	0.95 - 1.35	3.85/4.9	D-2.2
3.4-4.2	0.95 - 1.75	5.15	D3.8INV
3.7-4.2	0.95 - 1.75	9/6.55	D3.8
4.5-4.8	0.95 - 1.45	9/6.25	D3.95
7.25-7.75	0.95 - 1.25	3.55	D4.65
10.7-11.7	0.95 - 1.45	6.3	D7.5 ^(Note 1)
10.95-11.7	0.95 - 1.95	9.75	D11.2
11.2-12.0	0.95 - 2	9.75	D11.225
11.45-12.25	0.95 - 1.7	10	D11.35
11.7-12.5	0.95 - 1.75	10.25	D11.6
11.7-12.75	0.95 - 1.75	10.45	D11.8
12.2-12.75	0.95 - 1.75	10.5	D11.85

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SPECIFICATIONS

	UPCONVERTER	DOWNCONVERTER
INPUT CHARACTERISTICS		
Return Loss (50 Ohms)	18 dB minimum	18 dB minimum
Signal Monitor	-20 dBc nominal	
LO Leakage	N/A	-80 dB maximum
OUTPUT CHARACTERISTICS		
Return Loss (50 ohms)	18 dB minimum	18 dB minimum
Signal Monitor	-20 dBc nominal	
Power Output (1 dB Compression)	+13 dBm minimum	+18 dBm minimum
TRANSFER CHARACTERISTICS		
Gain	30 dB, ±3 dB at 23°C	35 dB, ±3 dB at 23°C
RF Level Control	15 dB in 0.2 dB steps	
L-band Level Control	30 dB in 0.2 dB steps	
Level Stability	±0.25 dB maximum constant temperature	
Amplitude Response	±0.25 dB/40 MHz maximum, ±1 dB maximum over RF frequency band	
Slope Adjust	0 to 6 dB	
Noise Figure at Minimum Attenuation	N/A	15 dB maximum
Noise Power Density	-125 dBm/Hz maximum	N/A
Image Rejection	60 dB minimum	
Third Order Intermodulation Distortion	50 dBc minimum	60 dBc minimum
With two inband signals each at	(+25 dBm IP3)	(+30 dBm IP3)
0 dBm, measured at the output		
Spurious Outputs (Inband)		
Signal Related	65 dBc minimum up to 0 dBm output (including 2 x1 spurious on 1 GHz IF bandwidth units)	
Signal Independent	75 dBm maximum	
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		
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REMOTE CONTROLS

Serial Interface	RS485/RS422
Ethernet Interface	10/100 Base-T Ethernet interface providing: - HTTP-based web server - SNMP 1.0 configuration - Alarm reporting via SNMP Trap - Telnet Access - Password protection

OPTIONS

7-1. High Performance Package -

Power Output (1 dB Compression)	+20 dBm minimum
Gain Slope	0.03 dB/MHz maximum
Level Stability	±0.25 dB/day maximum at constant temperature, 1.0 dB peak-to-peak maximum, 0 to 50°C
Group Delay	1 ns peak-to-peak maximum
Spurious Outputs (Inband)	
Signal Related	65 dBc minimum at 0 dBm output
Signal Independent	-80 dBm maximum
Image Rejection	80 dB minimum
Intermodulation Distortion (Third Order)	With two inband signals at 0 dBm output each, third order inter-modulation products are less than 60 dBc minimum.
Noise Spectral Density	-85 dBm/4 KHz maximum
AM/PM Conversion (at 0 dBm output)	0.1°/dB maximum
Upconverter Mute	80 dB minimum on summary alarm, external mute input control or remote control.

High Performance Phase Noise (dBc/Hz maximum, not available with Multi-band units) -

LO Frequency	Offset (Hz)					
	10	100	1K	10K	100K	1M
<6.7 GHz	-54	-78	-108	-116	-119	-136
<12 GHz	-48	-73	-103	-112	-115	-132
<17.15 GHz	-47	-70	-100	-108	-111	-128

7-2. Lower Gain

20 ±3 dB at 23°C, 18 dB noise figure
(20 dB noise figure for upconverters with 1 GHz bandwidth)
(2 x 1 signal related, 65 dBc at -10 dBm output)

7-3. Lower Gain

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)



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PRIMARY POWER REQUIREMENTS

Primary Power +12V 31V, 25W typical

PHYSICAL

Weight 3 pounds (1.4 kg), typical
Chassis Dimensions 4" x 6" x 1.2"

Connectors

RF	SMA female
RF Monitor	SMA female
IF	N female
IF Monitor	SMA female
External Reference	SMA female
Alarm, RS485, RS422	DE-9P
Ethernet	RJ-45 female
Primary Power	Molex 22-12-2024
Auxiliary Analog Interface	JST-S7B-PH-SM4
Analog Input	0-12 VDC
Analog Output	0-14 VDC
DC Output	15V at 0.5A unfused

ENVIRONMENTAL

Operating

Baseplate Temperature	-40 to +60°C
Relative Humidity	Up to 95% at 30°C
Altitude	Up to 10,000 feet

Non-operating

Ambient Temperature	-50 to +70°C
Relative Humidity	Up to 95% at 40°C
Altitude	Up to 40,000 feet
Shock and Vibration	Normal handling by commercial carriers



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