

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.

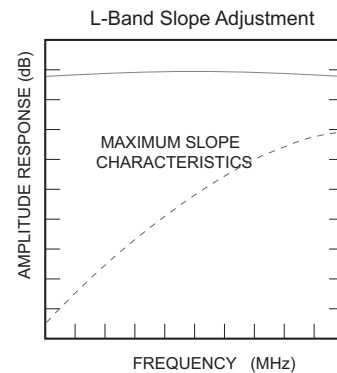


STANDARD FEATURES

- 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 command
- Elapsed time and event log after power turn on
- 10 MHz reference input
- Summary alarm

OPTIONS

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



BLOCK UP CONVERTERS

| 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 |

BLOCK DOWN CONVERTERS

| Input (GHz) | Output (GHz) | LO (GHz) | Model Number |
|-------------|--------------|-----------|------------------|
| 3.4-4.2 | 0.95-1.75 | 5.15 | DBM-3.8-INV |
| 3.4-4.2 | 0.95-1.75 | 8.55/11 | DBM-3.8 |
| 3.7-4.2 | 0.95-1.45 | 8.55/11.3 | DBM-3.95 |
| 4.5-4.8 | 0.95-1.25 | 3.55 | DBM-4.65 |
| 7.25-7.75 | 0.95-1.45 | 6.3 | DBM-7.5*(Note 1) |
| 10.7-11.7 | 0.95-1.95 | 9.75 | DBM-11.2 |
| 10.95-11.7 | 0.95-1.7 | 10.0 | DBM-11.35 |
| 11.2-12.0 | 0.95-1.75 | 10.25 | DBM-11.6 |
| 11.45-12.25 | 0.95-1.75 | 10.5 | DBM-11.85 |
| 11.7-12.5 | 0.95-1.75 | 10.75 | DBM-12.1 |
| 11.7-12.75 | 0.95-2.0 | 10.75 | DBM-12.225 |
| 12.2-12.75 | 0.95-1.5 | 11.25 | DBM-12.475 |

NOTE: 1. The DBM-7.5 Block Down converter 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.

SPECIFICATIONS

| INPUT CHARACTERISTICS – | UPCONVERTER | DOWNCONVERTER |
|-------------------------|---------------|---------------|
| ReturnLoss(50Ohms) | 18dBminimum | 18dBminimum |
| SignalMonitor | -20dBcnominal | |
| LOLeakage | N/A | -80dBmaximum |

OUTPUT CHARACTERISTICS –

| | | |
|----------------------------------|---------------|---------------|
| ReturnLoss(50Ohms) | 18dBminimum | 18dBminimum |
| SignalMonitor | -20dBcnominal | |
| Power Output (1dB Compression) – | +13dBmminimum | +18dBmminimum |

TRANSFER CHARACTERISTICS -

| | | |
|---|---|-------------------------------|
| Gain | 30dB,±3dBat23°C35dB,±3dBat23°C | |
| RFLevelControl | 15dBin0.2dBsteps | |
| L-bandLevelControl | 30dBin0.2dBsteps | |
| LevelStability | ±0.25dB/daymaximumatconstanttemperature | |
| AmplitudeResponse | ±0.25dB/40MHzmaximum,±1dBmaximumoverRFfrequencyband | |
| Slope Adjust | 0to6dB | |
| NoiseFigureatMinimum Attenuation | N/A | 15dBmaximum |
| Noise Power Density | -125dBm/Hzmaximum | N/A |
| ImageRejection | 60dBminimum | |
| ThirdOrderIntermodulationDistortion Withtwoinbandsignalseachat 0dBm,measuredattheoutput | 50dBcminimum (+25 dBm IP3) | 60dBcminimum (+30 dBm IP3) |
| SpuriousOutputs(Inband)– SignalRelated | 65dBcminimumupto0dBmoutput (including2x1spuriouson1GHzIFbandwithunits) | |
| SignalIndependent | -75dBmmaximum | |
| Maximum Phase Noise (dBc/Hz) – With Maximum Reference Phase Noise: | LOFrequency | Offset(Hz) |
| 10Hz:-120dBc/Hz, | | 10 100 1K 10K 100K 1M |
| 100Hz:-145dBc/Hz, | ≤ 6.7 GHz | -52 -80 -90 -100 -110 -125 |
| 1kHz:-160dBc/ Hz | ≤ 12 GHz | -46 -73 -84 -94 -104 -119 |
| | ≤ 17.15 GHz | -45 -68 -80 -90 -100 -115 |
| FrequencyStability | SameasFrequencyReference | |
| Frequency Accuracy | SameasFrequencyReference | |
| FrequencyReference | 10MHzat+4±3dBm. | |
| ConverterMute | 60dBminimumonsummaryalarmormutecommand. | |

REMOTE CONTROLS

| | |
|-------------------|--|
| SerialInterface | RS485/RS422 |
| EthernetInterface | 10/100Base-T Ethernetinterfaceproviding: |
| | • HTTP-based web server |
| | • SNMP 1.0 configuration |
| | • Alarm reporting via SNMP Trap |
| | • Telnetaccess |
| | • Password protection |

OPTIONS

7-1. High Performance Package -

| | |
|---------------------------------------|---|
| Power Output (1 dB Compression) | +20dBmminimum |
| GainSlope | 0.03dB/MHzmaximum |
| LevelStability | ±0.25dB/daymaximumatconstanttemperature, 1.0dBpeak-to-peakmaximum,0to50°C |
| GroupDelay | 1nspeak-to-peakmaximum |
| SpuriousOutputs(Inband)– | |
| SignalRelated | 65dBcminimumat0dBmoutput |
| SignalIndependent | -80dBmmaximum |
| ImageRejection | 80dBminimum |
| IntermodulationDistortion(ThirdOrder) | Withtwoinbandsignalsat0dBmouput,thirdorder intermodulationproductsarelessthan60dBcminimum. |

High Performance Phase Noise (dBc/Hz) (Maximum) -

| 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 |

| | |
|------------------------------------|---|
| NoiseSpectralDensity | -85dBm/4kHzmaximum |
| AM/PM Conversion (at 0 dBm Output) | 0.1°/dBmaximum |
| UpconverterMute | 80dBminimumonsummaryalarm,external muteinputcontrolorremotecommand |

7-2.LowerGain 20 ±3 dB at 23°C, 18 dB noise figure
(20 dB noise figure for upconverters with 1 GHz bandwidth)
(2x1signalrelated,65dBcat-10dBmoutput)

7-3.LowerGain 10 ±3 dB at 23°C, 20 dB noise figure
(22 dB noise figure for upconverters with 1 GHz bandwidth)
(2x1signalrelated,65dBcat-10dBmoutput)

PRIMARY POWER REQUIREMENTS

Primary Power +12V±1V,25Wtypical

PHYSICAL

Weight 3pounds(1.4kg),typical

ModuleDimensions 4"x6"x1.2"

Connectors-

RF SMA female

RFMonitor SMA female

IF NFemale

IFMonitor SMA Female

ExternalReference SMA female

Alarm,RS485,RS422 DE-9P

Ethernet RJ-45female

Primary Power Molex22-12-2024

Auxiliary AnalogInterface JST-S7B-PH-SM4

AnalogInput 0-12VDC

AnalogOutput 0-14VDC

DCAOutput 15Vat0.5A unfused

ENVIRONMENTAL

Operating-

Baseplate Temperature -40to+60°C

RelativeHumidity Upto95%at30°C

Altitude Upto10,000feet

Non-operating-

Ambient Temperature -50to+70°C

RelativeHumidity Upto95%at40°C

Altitude Upto40,000feet

ShockandVibration Normalhandlingbycommercialcarriers

NOTE : FOR DESCRIPTION OF OPERATION REFER TO TECHNICAL NOTE GS7-TCN.