DESCRIPTION

Ultra Electronics Herley series MBUC block upconverters offer broadband frequency coverage with very low phase noise in a compact package. This series offers products specifically designed for commercial and military SatCom ground terminal applications in the C through Ka band frequency spectrum. The Ultra Electronics Herley series MBUC utilizes CTI’s proprietary technology enabling excellent performance and ultra low phase noise. The phase noise for a 14 to 14.5 GHz MBUC is typically -105 dBc/Hz at 10 kHz and -110 dBc/Hz at 100 kHz offset.

The series MBUC offers an optional adjustable conversion gain of 0 to 20 dB in 0.5 dB steps and an optional 60 dBm mute function that operates on command or unit fault.

Several standard models are available that provide high quality signals for both military and commercial applications.

Contact the factory to discuss your special requirements.

FEATURES

- Broadband coverage
- Wide operating temperature
- Low phase noise
- Low Spurious
- Excellent gain flatness
- High output power
- Phase locks to references from 10 MHz to 100 MHz

OPTIONS

- Adjustable gain
- Frequencies to Ka band
- DC multiplexed on IF input
- Custom frequency plans
- Extended temperature ranges
Bringing more benefits to RF, microwave and millimeter-wave technology for defense systems, integrated subsystems, components... and more

**TYPICAL PERFORMANCE SPECIFICATIONS**

- IF input range 950 to 2000 MHz in bands up to 1 GHz wide
- IF input power level up to -25 dBm/carrier, 10 carriers maximum
- IF input power with no damage +10 dBm Maximum
- IF input return loss >15 dB
- RF output frequency ranges C, X, Ku and Ka band in bands up to 1 GHz wide
- Output return loss >14 dB
- Output power @ P 1 dB, 10 dBm
- Output IP3, 20 dBm
- 2 tone IM3, -50 dBc, assumes carriers @ -10 dBm each
- Spurious - Non-carrier related -70 dBm
- Spurious - carrier related -70 dBc with -10 dBm input
- 2IF + LO @ -10 dBm input -40 dBc
- LO leakage -70 dBm
- Conversion gain 17 to 22 dB with ±1 dB at center frequency
- Gain stability ±0.5 dB from 0˚ to 40˚ C (0.025 dB per degree C)
- Variation over temperature ±1.5 dB
- Gain flatness ±1 dB full band, ±0.5 dB over any 40 MHz band
- External reference input 10 MHz to 100 MHz @ 0 dBm nominal, specify at time of order
- Alarm TTL high in lock

**TYPICAL PHASE NOISE**

<table>
<thead>
<tr>
<th>Offset kHz</th>
<th>X Band</th>
<th>Ku Band</th>
<th>Ka Band</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1</td>
<td>-75</td>
<td>-75</td>
<td>-65</td>
</tr>
<tr>
<td>1</td>
<td>-104</td>
<td>-100</td>
<td>-95</td>
</tr>
<tr>
<td>10</td>
<td>109</td>
<td>-105</td>
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<tr>
<td>100</td>
<td>-114</td>
<td>-110</td>
<td>-105</td>
</tr>
<tr>
<td>1000</td>
<td>-129</td>
<td>-125</td>
<td>-120</td>
</tr>
</tbody>
</table>

Note: Phase noise <100 kHz is reference dependent

**CONNECTORS**

- Reference input SMA-F
- IF input SMA-F
- RF output SMA-F or K-type 2.92 mm female
- Supply voltage, alarm filter feed-thru
- Ground solder lug

**POWER AND ENVIRONMENTAL**

- DC input voltage +12 V to +15 V
- Supply current 450 to 550 mA for C, X and Ku band models, 550 to 650 mA for Ka band models
- Operating temperature -20˚ to +70˚ centigrade baseplate
- Non-operating temperature -40˚ to +85˚ centigrade
- Humidity 0% to 95% non-condensing
- Altitude 10,000 feet ASML maximum
- Operating temperature 0˚ to +50˚ centigrade
- Non-operating temperature -30˚ to +70˚ centigrade

**STANDARD OUTLINE DRAWING**