



## 1:1 Redundant Ku-band BUC for Satellite Earth Stations



The 1:1 Redundant Ku-band Block Upconverter (BUC) with ITS Redundancy Controller Unit MC-200 provides reliable means to ensure uninterrupted service in critical Satellite Earth Station Installations.

The 1:1 Redundant BUC consists of 2 identical 1/3 rack-width Block Upconverters and a 1/3 rack-width switchover unit.

### INTERFACE

#### IF INPUT CHARACTERISTICS:

|                      |                                 |
|----------------------|---------------------------------|
| Frequency            | 950 to 1,450 MHz                |
| Return Loss (50 Ohm) | 20 dB Typical,<br>18 dB Minimum |

#### RF OUTPUT CHARACTERISTICS:

|                                     |                                 |
|-------------------------------------|---------------------------------|
| Frequency                           | 17.30 to 17.80 GHz              |
| Return Loss                         | 20 dB Typical,<br>18 dB Minimum |
| P <sub>1dB</sub> @ Min. Attenuation | +13 dB Minimum                  |
| IP3 @ Min. Attenuation              | +25 dBm Minimum                 |
| Output Monitor Level                | -20 ± 2 dBc                     |

#### EXTERNAL REFERENCE INPUT:

|                       |   |
|-----------------------|---|
| Frequency             | 10 MHz  |
| Power Level           | -3 ± 3 dBm  |
| Input SSB Phase Noise | -120 dBc/Hz @ 10 Hz<br>-140 dBc/Hz @ 100 Hz<br>-145 dBc/Hz @ 1 kHz<br>-150 dBc/Hz @ ≥10 kHz |

#### SUMMARY ALARM:

|           |                        |
|-----------|------------------------|
| Interface | Type-C Contact Closure |
|-----------|------------------------|

#### AC POWER SUPPLY INPUT:

|                   |                          |
|-------------------|--------------------------|
| Voltage           | 90 – 250 V <sub>AC</sub> |
| Frequency         | 47 – 63 Hz               |
| Power Consumption | 50 W Maximum             |

#### CONNECTORS:

|                     |                           |
|---------------------|---------------------------|
| IF Input            | SMA Female (rear panel)   |
| RF Output           | SMA Female (rear panel)   |
| RF Output Monitor   | SMA Female (front panel)  |
| External Reference  | SMA Female (rear panel)   |
| Monitor and Control | RJ-45 Female (rear panel) |
| Summary Alarm       | DB-9 Female (rear panel)  |
| AC Power Input      | IEC-320 (rear panel)      |

#### LED STATUS INDICATOR:

|                           |       |
|---------------------------|-------|
| Powered and without Fault | GREEN |
| Powered and with Fault    | RED   |

### MODEL: RUC-17A317A8-1330-1U

#### PERFORMANCE

##### TRANSFER CHARACTERISTICS:

|                          |   |
|--------------------------|---|
| Conversion Type          | Single Conversion   |
| Frequency Sense          | No Inversion  |
| Gain @ Min. Attenuation  | +30 ± 2 dB  |
| Gain Control             | 30 dB in 0.2 dB / step  |
| Default Gain Setting     | 0 dB  |
| Gain Step Accuracy       | ±0.10 dB  |
| Gain Setting Accuracy    | ±0.50 dB  |
| Gain Stability           | ±0.25 dB/24 hours @ constant temperature  |
| Gain Stability vs. Temp. | ±0.5 dB ptp over entire range   |
| Gain Flatness            | ±1.0 dB ptp over entire band<br>±0.25 dB ptp over any 40 MHz  |
| Gain Slope               | ±0.05 dB/MHz over any 40 MHz  |
| Image Rejection          | 80 dB Minimum   |
| NF @ Min. Attenuation    | 15 dB Maximum   |
| Output Mute              | 60 dB Minimum on command & unit fault   |
| Mute Delay               | 40 ± 10 ms  |
| Group Delay Variation    | 1.5 ns ptp over entire bandwidth  |
| Spurious, Signal Related | -65 dBc Max. upto 0 dBm output  |
| Signal Independent       | -75 dBm Maximum   |
| LO Leakage at RF Output  | -75 dBm Maximum   |
| Output SSB Phase Noise   | -59 dBc/Hz @ 10Hz,<br>-84 dBc/Hz @ 100Hz,<br>-90 dBc/Hz @ 1kHz,<br>-105 dBc/Hz @ 10kHz,<br>-114 dBc/Hz @ 100kHz<br>-120 dBc/Hz @ ≥ 1MHz |
| Additive Phase Jitter    | 0.4° RMS, 100 Hz – 10 MHz   |

##### INTERNAL REFERENCE CHARACTERISTICS:

The upconverter automatically operates from its internal reference when the external reference is not present.

|                     |   |
|---------------------|---|
| Frequency Stability | ±5 × 10 <sup>-8</sup> over 0 to +50 °C<br>±5 × 10 <sup>-10</sup> /day |
|---------------------|---|

#### MECHANICAL

|            |   |
|------------|---|
| Dimensions | Standard 19" Rack, 1U (1.75")<br>High, 18.6" Deep |
| Weight     | 16.5 lbs  |

#### ENVIRONMENTAL

##### OPERATING:

|             |                          |
|-------------|--------------------------|
| Temperature | 0 to +50 °C              |
| Humidity    | Up to 95% at 50 °C       |
| Altitude    | 10,000 Feet AMSL Maximum |

##### NON-OPERATING:

|                     |  |
|---------------------|--|
| Temperature         | -50 to +70 °C                          |
| Altitude            | 55,000 Feet AMSL Maximum               |
| Shock and Vibration | Normal handling by commercial carriers |

Specifications are Subject to Change without Notice  
Errors & Omissions Excepted