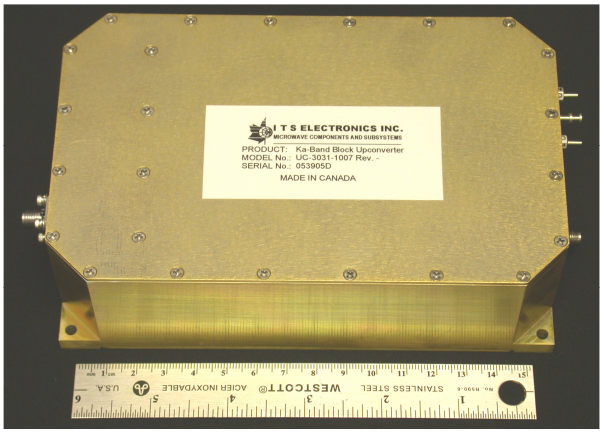
# ITS ELECTRONICS INC.

MICROWAVE COMPONENTS AND SUBSYSTEMS

ISO 9001:2008 AND
SAE AS9100C CERTIFIED

# Compact Ka-Band Block Upconverter

## MODEL: UC-3031-1007




## INTERFACE

### L-BAND INPUT:

| | |
|---|---|
| Frequency | 1.0 to 2.0 GHz |
| Connector | 50 Ohm SMA Female |
| Return Loss | ≥15 dB into 50 Ohm |
| Maximum Input Power without Damage | +10 dBm |
| Multiplexed Reference Input | 10 MHz, -5 to 0 dBm |

### KA-BAND OUTPUT:

| | |
|---|---|
| Frequency | 30.0 to 31.0 GHz |
| Connector | 3.5mm Female |
| Return Loss | ≥10 dB into 50 Ohm |
| Power @ 1dB GCP | ≥-10 dBm |
| 3rd Order Intercept | ≥0 dBm |
| In-band Spurious | -60 dBc max. |
| 2×IF + LO Spurious | -50 dBc max. |
| Out-of-band Spurious | -75 dBm max. |
| LO Leakage | -80 dBm max. |

### POWER SUPPLY:

| | |
|---|---|
| Voltage | +15 $V_{DC}$ |
| Current | 1.2 A max. |
| DC Input Connector | Solder Pin |

### REMOTE MONITOR:

| | |
|---|---|
| Phase Lock Indication | Solder Pin for Open Collector, Active (high) for Fault condition. |

## PERFORMANCE

*The upconverter provides a frequency translation of an L-band input to a Ka-band output. It features high stability and low phase noise performance.*

### TRANSFER CHARACTERISTICS:

| | |
|---|---|
| Spectrum Inversion | No |
| Small Signal Gain @ $F_C$ | 4 to 8 dB |
| Gain Variation | ±0.25 dB ptp max. over 24 hours at constant temperature |
| Gain Variation | ±1.0 dB ptp max. over operating temperature |
| Gain Flatness | ±0.5 dB ptp max. over the frequency bands specified |
| Group Delay Variation | 0.5 ns ptp max. over any 40 MHz |
| Output SSB Phase Noise | -72 dBc/Hz @ 1 kHz<br>-82 dBc/Hz @ 10 kHz<br>-92 dBc/Hz @ 100 kHz<br>-102 dBc/Hz @ 1 MHz<br>-112 dBc/Hz @ ≥10 MHz |

### INTERNAL REFERENCE CHARACTERISTICS:

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

| | |
|---|---|
| Frequency Variation | ±1 x $10^{-7}$ over 24 hours at constant temperature |
| Frequency Variation | ±1 x $10^{-6}$ over operating temperature |

## MECHANICAL

| | |
|---|---|
| Dimensions | 6.5” × 4.0” × 2.25” |
| Weight | 2 lbs. |

## ENVIRONMENTAL

| | |
|---|---|
| Operating Temperature: | -40 to +75 °C |
| Non-Operating Temp. | -50 to +85 °C |
| Humidity | Up to 95% Non-condensing |
| Altitude | Up to 10,000 Feet AMSL |

***Other frequency bands available. Contact ITS for details.***

*Specifications are Subject to Change without Notice*
*Errors & Omissions Excepted*

ITS PROPRIETARY

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