

# RADITEK

## SATCOM L-Ka Band BUC

### Block Up Converter L to Ka-Band K (2.92mm) Female Connector, 10MHz Ext Reference, 1 Watt +30dBm Output P1dB over Temp, +28VDC Supply Voltage, Optional 10MHz Internal Reference



Preliminary

**Output Frequency**  
Band selectable thru M&C  
(29.0-30.0GHz, or 30.0-31.0GHz).



**Order Examples:** RBUC-L(950-1950M) to Ka(29.0-30.0)-Kf-ER10M-1W-c8

**Description:** (Block Up Converter, L Band(950-1950MHz) to Ka(29.0-30.0GHz), K Female Connector, 10MHz External Reference, 1 Watt)

**Additional Options:** Ka(30.0-31.0) External Reference: ER10M or Internal Reference: IR10M

| Specifications                                  |                |        |               |                                                                    |
|-------------------------------------------------|----------------|--------|---------------|--------------------------------------------------------------------|
| Parameters                                      |                | Unit   | Specification | Remark                                                             |
| Interface                                       |                |        |               |                                                                    |
| Input                                           | Connector type |        | K-type        | K or 2.9                                                           |
|                                                 | Impedance      | ohms   | 50            |                                                                    |
|                                                 | Return loss    | dB     | <= -10        |                                                                    |
| Output                                          | Connector type |        | K-type        | K or 2.9                                                           |
|                                                 | Impedance      | ohm    | 50            |                                                                    |
|                                                 | Return loss    | dB     | <= -10        |                                                                    |
| M&C, DC                                         | Connector type |        | TBD           |                                                                    |
| Transmitter                                     |                |        |               |                                                                    |
| Input frequency                                 |                | MHz    | 950 to 1950   |                                                                    |
| Output frequency                                |                | GHz    | 29.0-31.0     | Band selectable thru M&C (29.0-30.0GHz, or 30.0-31.0GHz).          |
| LO Frequency                                    |                | GHz    | 28.05 / 29.05 | @LO selectable thru M&C<br>Internal center frequency $\pm 0.001\%$ |
| RF output power @ 1dB Compression point         |                | dBm    | +30           | Over operating temperature                                         |
| Spectrum Re growth                              |                | dBc    | <= -19        | @ P1dB                                                             |
| Gain                                            |                | dB     | 20            | @ Maximum Gain Setting                                             |
| Gain Control Range                              |                | dB     | 20.0          | @ Thru M&C Connector                                               |
| Gain Control Step Size                          |                | dB     | 1.0           |                                                                    |
| Gain Flatness                                   |                | dBp-p  | 5.0           | @ 1GHz Bandwidth (30.0~31.0GHz)                                    |
| Gain Variation over Operating Temperature Range |                | dBp-p  | 5.0           |                                                                    |
| Phase noise                                     | 100Hz          | dBc/Hz | <= -60        | Opt. (Internal Ref.) : -63                                         |
|                                                 | 1KHz           | dBc/Hz | <= -70        | Opt. (Internal Ref.) : -73                                         |
|                                                 | 10KHz          | dBc/Hz | <= -80        | Opt. (Internal Ref.) : -83                                         |
|                                                 | 100KHz         | dBc/Hz | <= -93        | Opt. (Internal Ref.) : -93                                         |
|                                                 | 1MHz           | dBc/Hz | <= -105       | Opt. (Internal Ref.) : -105                                        |
| Spurious                                        | In band        | dBc    | <= -45.0      | @ P1dB                                                             |
|                                                 | Out of band    | dBc    | <= -50.0      | @ P1dB                                                             |
| DC Input voltage                                |                | VDC    | 28            |                                                                    |
| Power consumption                               |                | W      | 40            |                                                                    |

RBUC-LBand to Ka-Kf-ERorIR10M-L14

Specifications may be subject to change

11/18/12

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## Block Up Converter L to Ka-Band K (2.92mm) Female Connector, 10MHz Ext Reference, 1 Watt

| External Reference          |                                    |        |        |                                                                                                                                |        |
|-----------------------------|------------------------------------|--------|--------|--------------------------------------------------------------------------------------------------------------------------------|--------|
|                             | External Reference Frequency       |        | MHz    | 10MHz                                                                                                                          |        |
|                             | External Reference level           |        | dBm    | 0+/-5                                                                                                                          |        |
|                             | Reference Frequency<br>phase noise | 10Hz   | dBc/Hz | -120                                                                                                                           |        |
|                             |                                    | 100Hz  | dBc/Hz | -135                                                                                                                           |        |
|                             |                                    | 1KHz   | dBc/Hz | -145                                                                                                                           |        |
|                             |                                    | 10KHz  | dBc/Hz | -150                                                                                                                           |        |
|                             |                                    | 100KHz | dBc/Hz | -155                                                                                                                           |        |
| Parameters                  |                                    |        | Unit   | Specification                                                                                                                  | Remark |
| Environmental & Mechanical  |                                    |        |        |                                                                                                                                |        |
| Operating Temperature range |                                    |        | °C     | -30 to +70                                                                                                                     |        |
| Dimension (LxWxH)           |                                    |        | mm     | 180x150x50                                                                                                                     |        |
| Weight                      |                                    |        | kg     | 2.2                                                                                                                            |        |
| Shock                       |                                    |        |        | 10g, 10msec, each axis                                                                                                         |        |
| Vibration                   |                                    |        |        | 5-350Hz, 0.00185g <sup>2</sup> /Hz<br>350-500Hz, -6dB/oct sloping from 0.00185 to 0.00091<br>500Hz, 0.00091 g <sup>2</sup> /Hz |        |