



# Block Up-Converter

## Model: BUC-13G75-14G5-100-IP67

13.75-14.5GHz 100W CW, Output Power

Low power consumption, low phase noise and small size

### Features:

- IF Frequency: 950~1700MHz.
- RF Frequency: 13.75-14.5GHz.
- Saturated output power: 100W.
- External Reference Adaptive.

### Applications:

- Communication/Radar Systems
- Test Labs

### Product Overview:

The BUC-13G75-14G5-100-IP67 is a block up-converter operating in the Ku-band. It features an integrated local oscillator, with input IF frequency of 950-1700 MHz and output RF frequency of 13.75-14.5GHz. Providing up to 100W of saturated output power.



Electrical Specifications at 25°C:

| Parameter                             |            | Min                                                                                               | Typ            | Max  | Units  |
|---------------------------------------|------------|---------------------------------------------------------------------------------------------------|----------------|------|--------|
| RF Frequency Range                    |            | 13.75                                                                                             |                | 14.5 | GHz    |
| Dual LO Frequency range               |            |                                                                                                   | 12.8 and 13.05 |      | GHz    |
| IF Frequency Range                    |            | 950                                                                                               |                | 1700 | MHz    |
| Output Power                          |            | 100                                                                                               |                |      | W      |
| Output P1dB                           |            | 47.1                                                                                              |                |      | dBm    |
| Gain                                  |            | 68                                                                                                | 72             |      | dB     |
| Two-tone intermodulation (5MHz space) |            | -26 dBc max at total P1dB                                                                         |                |      | MHz    |
| LO leakage                            |            |                                                                                                   |                | -45  | dBm    |
| Spurious                              |            |                                                                                                   |                | -50  | dBc    |
| External Reference Input Frequency    |            |                                                                                                   | 10(sine wave)  |      | MHz    |
| External Reference Input Power        |            | -5                                                                                                |                | +5   | dBm    |
| TX Gain Variation                     | @40MHz     |                                                                                                   | ±0.5           |      | dB     |
|                                       | @full band |                                                                                                   | ±1.8           |      |        |
| TX Gain Stability@temperature range   |            |                                                                                                   | ±1.5           | ±1.8 | dB     |
| Spectral Regrowth                     |            | -30(QPSK at 1.5x and OQPSK at 1.0x symbol rate off set with 2dB back-off from rated output power) |                |      | dBc    |
| Phase Noise                           | @10Hz      |                                                                                                   |                | -55  | dBc/Hz |
|                                       | @100Hz     |                                                                                                   |                | -65  |        |
|                                       | @1KHz      |                                                                                                   |                | -75  |        |
|                                       | @10KHz     |                                                                                                   |                | -85  |        |
|                                       | @100KHz    |                                                                                                   |                | -95  |        |
|                                       | @1MHz      |                                                                                                   |                | -115 |        |
| Noise Power Density                   | @Transmit  |                                                                                                   |                | -80  | dBm/Hz |
|                                       | @Receive   |                                                                                                   |                | -125 |        |
| Noise Figure                          |            |                                                                                                   |                | 15   | dB     |
| VSWR                                  |            |                                                                                                   |                | 1.5  | :1     |
| AC Supply Voltage                     |            | 80                                                                                                |                | 240  | V AC   |
| Power Consumption@Psat                |            |                                                                                                   |                | 499  | W      |



## Mechanical Specifications:

| Parameter                | Value                       | Units    |
|--------------------------|-----------------------------|----------|
| IF Connector             | N type or F type            |          |
| Output Connector         | WR-75                       |          |
| M&C connectors           | RS-232/485 / Ethernet / FSK | Optional |
| Ingress Protection Grade | IP-67                       |          |
| Size                     | TBD                         | mm       |
| Weight                   | 7.5                         | Kg       |

## Absolute Maximum Ratings:

| Parameter             | Value                |
|-----------------------|----------------------|
| RF Input Power        | +5 dBm               |
| ESD sensitivity (HBm) | Class 0, passed 150V |

**Outline Drawing:**      Unit:mm; Tolerance:±0.1mm

## COrdering Information:

| Base Number             | Description                                                                                                        |
|-------------------------|--------------------------------------------------------------------------------------------------------------------|
| BUC-13G75-14G5-100-IP67 | Block Up-Converter, IF frequency range:950-1700MHz;<br>RF output frequency range: 13.75-14.5GHz; 100W output power |