# FemtoBUC

## Super Compact Fanless 10W C and 8W Ku GaAs Powered SSPA/BUC

## Overview


**The new IRT Fanless low power Smart FemtoBUCs ® series** offers an ideal solution for a low power VSAT terminal. Fanless **FemtoBUC®** is compact, lightweight, cost efficient and at the same time offers full set of M&C features including Ethernet and SNMP support. Highly efficient thermal design resulted in very compact and light weight FANLESS package. Field reliability of such a fanless package is substantially better; no fan maintenance-fan replacement in the field required!

**IRT GaN FemtoBUC®** can be powered via IF line, saving some installation cost and complexity. DC power via separate connection option is also available.

## Key Features

- **Compact fanless package**
  - 10W C-Band: **7.6" x 6.75" x 3.55"**
  - 8W Ku-Band: **8.15" x 7.25" x 4.1"**
- **Superior RF performance**
  - Superior Phase Noise: 8 dB better than IESS308/309 recommendation
  - Spurious emission below -55 dBc
  - Wide range Gain Control
  - Highest Linearity at small back – off
- **Available in different frequency options**
  - Standard & Extended Ku band
  - Ext Ku-Band; Palapa, Insat
- **Extensive M&C capability**
  - Serial: RS 232 & RS 485
  - Ethernet: embedded Web browser (HTTP) & SNMP support
- **Input and output True RMS power detection**
- **Field upgradable software**
- **Redundancy ready with no need of external controller**
- **Status LED**
- **Analogue Interface**

## Options & Accessories

- **Internal 10 MHz Reference clock**
- **Autosense 10 MHz Reference clock**
- **ALC option**
- **Antenna Mounting kit**
- **1:1 and 1:2 Redundancy Kit**
- **Remote Control Panel**

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## 10W C-Band and 8W Ku-Band Fanless FemtoBUC Specification

| RF Parameters | | |
|---|---|---|
| | 10W C-Band | 8W Ku-Band |
| Output Frequency Band, GHz | 5.85-6.425GHz; other options available | 13.75-14.5GHz; other options available |
| Input L band Frequencies. MHz | 950-1550MHz; other options available | 950-1700MHz; other options available |
| LO Frequency | 4.9GHz; other options available | 12.8/13.05GHz switchable |
| Conversion | Single Conversion; non-inverting | |
| P1dB Compression point, dBm/W | 40dBm/10W min | 39dBm/8W min |
| Psat, Saturated power, dBm/W | 41dBm/12W nominal | 40dBm/10W nominal |
| Plin, Linear Power | 37dBm/5W min | 36dBm, 4W min |
| Conversion Gain, dB | 68dB minimum, 72dB typical | |
| Gain Flatness, dB | +/-1 typical +/-1.5 maximum over full band<br>+/-0.4 maximum over any 40MHz | |
| Gain Stability, dB | +/-1.5 maximum over full temperature range | |
| Gain Control, dB | 20dB minimal dynamic range | |
| External Reference Frequency | 10MHz 0dBm+/-5dB multiplexed with IF In | |
| External Reference Required Phase Noise | -130dBc/Hz @ 100Hz; -140dBc/Hz @ 1kHz;<br>-150dBc/Hz @ 10kHz; -155dBc/Hz @ 100 kHz. | |
| Up-Converter Phase Noise, dBm/Hz | -68dBc/Hz @ 100Hz; -80dBc/Hz @ 1kHz; -90dBc/Hz @ 10kHz<br>-95dBc/Hz @ 100kHz; -115dBc/Hz @ 1MHz. | |
| Linearity at Pout=Plin: 2 tone IMD<br>Spectral Re-growth | -25dBc max<br>-30dBc for QPSK at 1 x symbol rate | |
| Noise Power Density, dBm/Hz | -70 in Transmit Band,<br>-145 in Receive Band (10.7 GHz – 12.8 GHz) | |
| Spurious Emission dBc; Non-signal related / Signal related (at Plin) | -60 / -55 max | |

| Power | | |
|---|---|---|
| 48VDC /28VDC (optional) | Via IF Connector/Separate DC connector optional | |
| Power Consumption DC power In | 75W typ. | 90W typ |
| | | |

| Mechanical & Environment | | |
|---|---|---|
| Cooling | Convection | |
| Operating temperature / Relative Humidity | -40°C to +55°C / Up to 100% condensing | |
| Size | 7.6” x 6.75” x 3.55” | 8.15” x7.25” x 4.1” |
| Weight | 8lbs / 3.7kg | 10lbs / 4.5kg |

| Interfaces | | |
|---|---|---|
| IF Input Connector | N-type female | |
| RF Output Connector | CPR137 grooved | WR75 grooved |
| DC Power In optional | MS3112E12-3P | |
| RS485-RS232-Ethernet-SNMP | MS3112E14-19S | |

Specifications are subject to change without notice

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