



FemtoBUC®

# Ultra-Compact GaN 20W – 200W Ku band Outdoor SSPA/SSPB Family

## Overview

The IRT Technologies 20W-400W SSPB / SSPA powered by GaN technology FemtoBUC® series are *revolutionary in size, weight and power density*- FemtoBUC® offers superior performance in an extremely compact package that can fit in your palm! Weighing at only 4.5 lbs (20W-65W), 10 lbs (100W) and 26 lbs (200W), our feature-rich GaN FemtoBUC® is exceptionally powerful for its size: up to 200W Psat. Built in DC or AC power supply provides the customer with the simplest and least expensive plug-into-the wall solution. IRT GaN FemtoBUC® features best in class RF characteristics, embedded WG circulator, extensive monitor and control capabilities enabled via Ethernet, Serial and/or Analog Interfaces. FemtoBUC®'s remarkably small size and low power consumption results in better heat extraction that leads to overall system size and cost reduction making it an ideal candidate for portable, mobile and VSAT on the move applications. Its small size and weight allows direct feed horn mounting, which makes it a most economical solution for fixed VSAT applications



## Key Features

- **Extremely high power density**
  - Up to 65W: 5.5" x 5.9" x 3.8"
  - Up to 100W: 7.5" x 6.61" x 4.17"
  - Up to 200W: 17" x 8.25" x 4.25"
- **Superior RF performance**
  - Superior Phase Noise: 8 dB better than IESS308/309 recommendation
  - Spurious emission below -60 dBc
  - Wide range Gain Control
  - Highest Linearity at small back – off
- **Available in different frequency options**
  - Standard & Extended Ku band
  - Low Ku – Band 12.75-13.25GHz
- **Above 25% overall power efficiency**
- **Extensive M&C capability**
  - Serial: RS 232 & RS 485
  - Ethernet: embedded Web browser (HTTP) & SNMPv3 support
- **Built In Output Isolator – full output VSWR Protection**
- **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**
- **Built in auto – ranging AC power supply (90 – 230 V AC)**
- **ALC option**
- **Antenna Mounting kit**
- **1:1 and 1:2 Redundancy Kit**
- **Remote Control Panel**

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## 20W-200W L- to Ku-Band Block-Up-Converter GaN Specification

RF Parameters					
Output Frequency Band, GHz	13.75 – 14.5 / 14.0 – 14.5 / 12.75 – 13.25				
Input L band Frequencies, MHz	950 – 1 450 / 950 – 1 700 / 950 – 1 450				
Conversion Gain, dB	75 minimum, 77 typical				
Gain Flatness, dB	+/-1 typical +/-1.5 maximum over full band +/-0.4 maximum over any 40MHz				
Gain Stability, dB	+/-1.5 maximum over full temperature range				
Gain Control, dB	20dB minimal dynamic range				
Linearity at Pout=Plin: 2 tone IMD Spectral Re-growth	-25dBc max -30dBc for QPSK at 1 x symbol rate				
Input Impedance, Ohm	50				
Input/Output VSWR	1.4 : 1 / 1.3 : 1				
Noise Power Density, dBm/Hz	-70 in Transmit Band, -145 in Receive Band (10.7 GHz – 12.8 GHz)				
Spurious Emission dBc; Non-signal related / Signal related(at Plin)	-60 / -55 max				
AM/PM conversion at Plinear, °/dB	1.0 maximum				
Group Delay	Ripple 1 nsec p-p max over any 40 MHz band				
BUC Parameters					
LO Frequency, MHz	12 800/13 050 switchable				
Type of Conversion	Single conversion, non – inverting				
External 10 MHz Frequency	Over IF L band cable with multiplexing				
Phase Noise, dBc/Hz	-70 @ 100Hz; -80 @ 1kHz; -90 @ 10kHz: -95 @ 100kHz: -115 @ 1MHz				
Power					
48V DC Voltage Range	32-72VDC Isolated (other options available)				
AC Voltage Range	90 – 265V AC 50 – 60Hz auto – ranging; PFC				
Mechanical & Environment					
Size 20-65W/100W/200W	5.5" x 5.9" x 3.8" / 7.5" x 6.61" x 4.17" / 17"x8.25"x4.25"				
Weight 20-65W/100W/200W	4.5lbs/10lbs/26lbs				
Cooling	Forced Air				
Operating temperature / Humidity	-40°C to +55°C / Up to 100% condensing				
Interfaces					
IF Input Connector	N-type female				
RF Output Connector	WR75 grooved				
DC Power In	MS3112E12-3P				
RS485-RS232-Ethernet-SNMP	MS3112E14-19S				
IRT Part Number	Output Power (W)	Prated (dBm/W)	Plinear (dBm/W)	P Cons at Prated	P Cons at Plin
TFB-KXB0430-HMS X*	20W	43/20	40/10	160	130
TFB-KXB0470-HMS X*	40W	47/40	43/20	230	180
TFB-KXB0470-HMS X*	50W	47/50	44/25	250	210
TFB-KXB0480-HMS X*	65W	48/65	45/30	280	230
TFB-KXB0500-HMS X*	100W	50/100	47/50	480	400
TFB-KXB0530-HMS X*	200W	53/200	50/100	950	850

Specifications are subject to change without notice

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