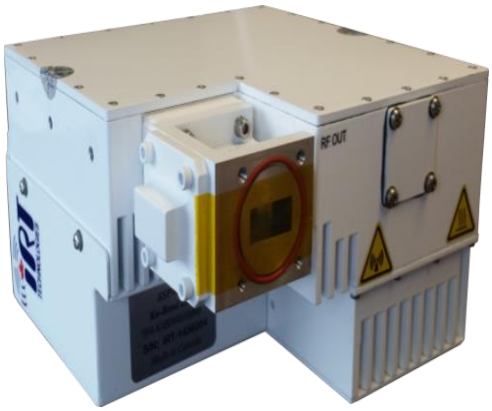
PicoBUC®

Ultra-Compact GaAs-GaN 16W – 65W Ku band Outdoor SSPA/SSPB Family

Overview

Ku band PicoBUC® family from IRT Technologies is the breakthrough in satellite communication market due the unprecedented compact package, lightweight and superior performance.

High power PicoBUC® family provides up to 65W maximum output power in ultra-compact package powered by GaN technology. IRT PicoBUC® features best in class RF characteristics, embedded output isolator, extensive monitor and control capabilities, enabled via Ethernet, Serial and/or Analog Interfaces.



Low power consumption and smart heat extraction technology lead to ultra-compact design and great cost reduction. PicoBUC® remarkably compact size and high thermal efficiency results in overall system size and cost reduction making it the ideal candidate for mobile DSNG and fixed medium earth station applications.

Key Features

- **Ultra – compact design and light weight for up to 65W output power**
  - Lightweight design:8 lbs (3.6 kg) Compact package: 6.5"x7.6"x4.2" (165mm x 193mm x 105mm)
- **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
- **Extensive M&C capability**
  - Serial: RS 232 & RS 485
  - Ethernet: embedded Web browser (HTTP) & SNMP 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**
- **Ruggedized version for extended temperature range**

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16W – 65W Ku band Outdoor SSPA/SSPB Technical 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, ^{0}/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
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	
AC Voltage Range	90 – 2 65V AC 50 – 6 0Hz auto – ranging
DC Voltage Range	36-75VDC isolated; other options available
Mechanical & Environment	
Size	6.5”x7.6”4.2”
Weight	8lbs
Cooling	Forced Air
Operating temperature / Relative Humidity	-40°C .. +60°C / Up to 100% condensing
Interfaces	
IF Input Connector	N – type female
RF Output Connector	WR75 Grooved
AC Power In	MS3112E12 – 3P
RS485 – Ethernet – SNMP	MS3112E14 – 19S

IRT Part Number	Output Power (W)	Psat (dBm/W)	P1dB (dBm/W)	Plinear (dBm/W)	P Cons at Prated	P Cons at Plin	GaAs/GaN
TPB-KXB0420-HMA X*	**16W**	43/20	42/16	39/8	135W	110W	GaAs
TPB-KXB0430-HMA X*	**20W**	44/25	43/20	40/10	180W	160W	GaAs
TPB-KXB0440-HMA X*	**25W**	45/30	44/25	41/12	220W	190W	GaAs
TPB-KXB0460-HMS X*	**40W**	46/40	N/A	43/20	225W	160W	GaN
TPB-KXB0470-HMS X*	**50W**	47/50	N/A	44/25	250W	200W	GaN
TPB-KXB0480-HMS X*	**65W**	48.1/65	N/A	45.1/32.5	260W	200W	GaN

Specifications are subject to change without notice

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