

# IRT Super Compact 150W / 200W Ku-Band GaN BUC / SSPA

The IRT Ku-Band SSPA series is powered by GaN technology and is one of the smallest, lightweight efficient units available today.

With best in class RF characteristics, RF sample port, true RMS power measurements, extensive monitor and control capabilities enabled via Ethernet, Serial and/or Analogue interfaces.

Designed for portable, mobile and VSAT on the move applications. Its small size and weight allows and high thermal efficiency, which makes it a most economical solution for fixed VSAT applications.

### **Options**

- Internal 10MHz Reference
- Available in both standard and extended Ku-Band
- Automated Level Control (ALC) option
- Antenna Mounting Kit
- Switchable LO option Standard and Extended Ku-Band in one unit

#### **Features**

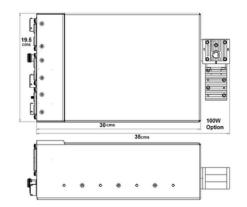
- Extremely high power density Up to 200W Psat in 12.5Kg, 39.5 x 25.5 x 16 cms.
- Superior RF performance:
- o Phase noise 8-10dB better than IESS308/309
- o Psat up to 54dBm
- o Spurious below -60dBc
- o Wide dynamic range of Gain control
- RF overdrive protection
- Status LED
- Input and Output True RMS power detection
- Configuration via RS-232 serial console, packet protocol RS-485 - User friendly HTTP based GUI and SNMP optional
- Redundant ready with no external controller required
- Field upgradeable software

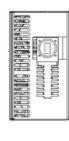


#### Outline









## TPB-KUB0520-530-HMS



15   15   15   15   15   15   15   15	RF Parameters						
15   15   15   15   15   15   15   15				150W		200W	
13.05GHz	RF Frequency Range-Available in/switched:		14-14.5GHz 13.75-14.5GHz				
Single Conversion; non-inverting Saturated Power Saturated Saturated Power Saturated Saturated Saturated Power Saturated Saturated Saturated Saturated Saturated Saturated Saturated Power Saturated Saturat	IF Frequency Rage		950-1450MHz 950-1700MHz				
Saturated Power S2dBm min S3dBm min Linear Power 49dBm min 50dBm min 77dB min	LO Frequency		13.05GHz 12.8GHz				
Linear Power Conversion Gain Conversion Conver	Conversion		Single Conversion; non-inverting				
Conversion Gain 75dB min, 77dB typ  Gain Flatness +/-1dB typ +/-1.5dB max over full band; +/-0.5dB max over any 40MHz  Gain Stability +/-1.5dB max over any 40MHz	Saturated Power			52dBm min		53dBm min	
### ### ##############################	Linear Power			49dBm min		50dBm min	
Gain Stability  Gain Stability	Conversion Gain		75dB min, 77dB typ				
Gain Control  20dB min dynamic range  External Reference Frequency  10MHz multiplexed with IF In  External Reference Required Phase Noise  -130dBc/Hz @100Hz -140dBc/Hz @10Hz -150dBc/Hz @10kHz -155dBc/Hz @10kHz  170dBc/Hz@100Hz -80dBc/Hz @10kHz -150dBc/Hz @10kHz -150dBc/Hz @10kHz  170dBc/Hz@100Hz -80dBc/Hz @10kHz -150dBc/Hz @10kHz -150dBc/Hz @10kHz  -130dBc/Hz@100Hz -80dBc/Hz @10kHz -15dBc/Hz @10kHz  -15dBc/Hz @10kHz -115dBc/Hz @10kHz  -15dBc/Hz @10kHz -115dBc/Hz @10kHz  -24dBc at P linear  -24dBc at P linear  -24dBc at P linear  -24dBc at P linear  -30dBc for QPSK at 1.5 x symbol rate at 2dB back off from rated power  -85dBm/Hz max  -85dBm/Hz max  -85dBm/Hz max  -85dBm/Hz max  -85dBm/Hz max  -80dBc/Hz	Gain Flatness						
External Reference Frequency  10MHz multiplexed with IF In  External Reference Required Phase Noise  1-30dBc/Hz @100Hz -140dBc/Hz @1kHz -150dBc/Hz @10kHz -155dBc/Hz @100kHz  1-95dBc/Hz @100Hz -90dBc/Hz @1kHz -90dBc/Hz @10kHz  1-95dBc/Hz @100Hz -95dBc/Hz @1kHz -90dBc/Hz @10kHz  1-95dBc/Hz @10kHz -115dBc/Hz @1kHz  1-95dBc/Hz @10kHz  1-14dBc at P linear  Spectral Re-growth  1-30dBc for QPSK at 1.5 x symbol rate at 2dB back off from rated power  8-5dBm/Hz max  1-148dBm/Hz	Gain Stability						
External Reference Required Phase Noise  -130dBc/Hz @100Hz -140dBc/Hz @10kHz -155dBc/Hz @100kHz  -195dBc/Hz @100Hz -80dBc/Hz @10kHz -195dBc/Hz @10kHz -95dBc/Hz @100kHz -115dBc/Hz @10kHz -95dBc/Hz @100kHz -95dBc	Gain Control			20dB min dynamic range			
Up-Converter Phase Noise  70dBc/Hz@100Hz -80dBc/Hz@10kHz -90dBc/Hz@10kHz -90dBc/Hz@10kHz -95dBc/Hz@10kHz -115dBc/Hz@10kHz -10kHz -115dBc/Hz@10kHz -100kHz -115dBc/Hz@10kHz -115d	External Reference Frequency		10MHz multiplexed with IF In				
Linearity: 2 tone IMD -24dBc at P linear Spectral Re-growth -30dBc for QPSK at 1.5 x symbol rate at 2dB back off from rated power Noise Power Density: Receive Band -148dBm/Hz max Output Spurious: Non-signal related -60dBc Signal related -55dBc  Power & Mechanical  AC Voltage Range 90-265VAC 50-60Hz Auto-Ranging PFC Power Consumption at rated power 850W typ 1000W typ Power Consumption at 3dB back off 650W typ 750W typ 48VDC Isolated optional 40-72VDC Isolated Size 93 x 22.5 x 11cms Weight 12KGs Cooling Forced Air Operating Temperature / Relative Humidity -40°C to +55°C / Up to 100% condensing Interfaces  IF Input Connector / RF Sample N-type Female / N-type Female RF Output Connector WR75 grooved AC Power In MS3112E12-3P M&C Interface-Serial, Analog, Ethernet	External Reference Required Phase Noise		-130c	-130dBc/Hz @100Hz -140dBc/Hz @ 1kHz -150dBc/Hz @ 10kHz -155dBc/Hz @ 100kHz			
Linearity: Spectral Re-growth Noise Power Density: Receive Band Output Spurious: Output Spurious: Non-signal related Signal related Signal related Fower & Mechanical AC Voltage Range Power Consumption at rated power Power Consumption at 3dB back off Size Size Size Size Size Size Size Size	Up-Converter Phase Noise						
Spectral Re-growth Noise Power Density:  Receive Band  Non-signal related  Non-signal related  Signal related  AC Voltage Range  Power Consumption at rated power  Power Consumption at 3dB back off  Size	Linearity:	2 tone IMD	-24dBc at P linear				
Density: Receive Band Output Spurious: Non-signal related Signal related Signal related Fower & Mechanical  AC Voltage Range Power Consumption at rated power Power Consumption at 3dB back off Size Fourth Spurious: Size Fourth Spurious: Forced Air Cooling Forced Air Coperating Temperature / Relative Humidity Fourth Connector / RF Sample RF Output Connector Fourth Spurious: Fourt		Spectral Re-growth	-:	-30dBc for QPSK at 1.5 x symbol rate at 2dB back off from rated power			
Output Spurious:    Non-signal related   -60dBc    -55dBc    -5dBc    -5	Noise Power Density:	Transmit Band	-85dBm/Hz max				
Signal related  -55dBc  Power & Mechanical  AC Voltage Range  90-265VAC 50-60Hz Auto-Ranging PFC  Power Consumption at rated power  850W typ  1000W typ  Power Consumption at 3dB back off  650W typ  750W typ  48VDC Isolated optional  40-72VDC Isolated  Size  39 x 22.5 x 11cms  Weight  12KGs  Cooling  Forced Air  Operating Temperature / Relative Humidity  -40°C to +55°C / Up to 100% condensing  Interfaces  IF Input Connector / RF Sample  RF Output Connector  WR75 grooved  AC Power In  MS3112E12-3P  M&C Interface-Serial, Analog, Ethernet  MS3112E14-19S		Receive Band	-148dBm/Hz max				
Signal related   Power & Mechanical	Output Spusious	Non-signal related	-60dBc				
AC Voltage Range 90-265VAC 50-60Hz Auto-Ranging PFC Power Consumption at rated power 850W typ 1000W typ Power Consumption at 3dB back off 650W typ 750W typ  48VDC Isolated optional 40-72VDC Isolated Size 39 x 22.5 x 11cms Weight 12KGs Cooling Forced Air Operating Temperature / Relative Humidity -40°C to +55°C / Up to 100% condensing  Interfaces  IF Input Connector / RF Sample N-type Female RF Output Connector AC Power In MS3112E12-3P  M&C Interface-Serial, Analog, Ethernet MS3112E14-19S	output sparious.	Signal related	-55dBc				
Power Consumption at rated power  Power Consumption at 3dB back off  650W typ  750W typ  48VDC Isolated optional  40-72VDC Isolated  39 x 22.5 x 11cms  Weight  12KGs  Cooling  Forced Air  Operating Temperature / Relative Humidity  -40°C to +55°C / Up to 100% condensing  Interfaces  IF Input Connector / RF Sample  RF Output Connector  WR75 grooved  AC Power In  MS3112E12-3P  M&C Interface-Serial, Analog, Ethernet  MS3112E14-19S	Power & Mechanical						
Power Consumption at 3dB back off 650W typ 750W typ  48VDC Isolated optional 40-72VDC Isolated  Size 39 x 22.5 x 11cms  Weight 12KGs  Cooling Forced Air  Operating Temperature / Relative Humidity -40°C to +55°C / Up to 100% condensing  Interfaces  IF Input Connector / RF Sample N-type Female / N-type Female  RF Output Connector WR75 grooved  AC Power In MS3112E12-3P  M&C Interface-Serial, Analog, Ethernet MS3112E14-19S	AC Voltage Range			90-265VAC 50-60Hz Auto-Ranging PFC		z Auto-Ranging PFC	
48VDC Isolated optional 40-72VDC Isolated  Size 39 x 22.5 x 11cms  Weight 12KGs  Cooling Forced Air  -40°C to +55°C / Up to 100% condensing  Interfaces  IF Input Connector / RF Sample RF Output Connector WR75 grooved AC Power In MS3112E12-3P M&C Interface-Serial, Analog, Ethernet MS3112E14-19S	Power Consumption at rated power			850W typ		1000W typ	
Size 39 x 22.5 x 11cms  Weight 12KGs  Cooling Forced Air  Operating Temperature / Relative Humidity -40°C to +55°C / Up to 100% condensing  Interfaces  IF Input Connector / RF Sample N-type Female / N-type Female  RF Output Connector WR75 grooved  AC Power In MS3112E12-3P  M&C Interface-Serial, Analog, Ethernet MS3112E14-19S	Power Consumption at 3dB back off			650W typ		750W typ	
Weight 12KGs  Cooling Forced Air  Operating Temperature / Relative Humidity -40°C to +55°C / Up to 100% condensing  Interfaces  IF Input Connector / RF Sample N-type Female / N-type Female  RF Output Connector WR75 grooved  AC Power In MS3112E12-3P  M&C Interface-Serial, Analog, Ethernet MS3112E14-19S	48VDC Isolated optional			40-72VDC Isolated			
Cooling Forced Air  Operating Temperature / Relative Humidity -40°C to +55°C / Up to 100% condensing  Interfaces  IF Input Connector / RF Sample N-type Female / N-type Female  RF Output Connector WR75 grooved  AC Power In MS3112E12-3P  M&C Interface-Serial, Analog, Ethernet MS3112E14-19S	Size			39 x 22.5 x 11cms			
Operating Temperature / Relative Humidity  -40°C to +55°C / Up to 100% condensing  Interfaces  IF Input Connector / RF Sample  RF Output Connector  WR75 grooved  AC Power In  MS3112E12-3P  M&C Interface-Serial, Analog, Ethernet  MS3112E14-19S	Weight			12KGs			
Interfaces  IF Input Connector / RF Sample  RF Output Connector  AC Power In  M&C Interface-Serial, Analog, Ethernet  Interfaces  N-type Female / N-type Female  WR75 grooved  MR75 grooved  MS3112E12-3P  MS3112E14-19S	Cooling			Forced Air			
IF Input Connector / RF Sample  RF Output Connector  WR75 grooved  AC Power In  MS3112E12-3P  M&C Interface-Serial, Analog, Ethernet  N-type Female / N-type Female  WR75 grooved  MS3112E12-3P	Operating Temperature / Relative Humidity			-40°C to +55°C / Up to 100% condensing			
RF Output Connector  AC Power In  MS3112E12-3P  M&C Interface-Serial, Analog, Ethernet  MS3112E14-19S	Interfaces						
AC Power In MS3112E12-3P  M&C Interface-Serial, Analog, Ethernet MS3112E14-19S	IF Input Connecto	or / RF Sample	N-type Female / N-type Female				
M&C Interface-Serial, Analog, Ethernet MS3112E14-19S	RF Output Conne	ctor	WR75 grooved				
	AC Power In		MS3112E12-3P				
Redundancy Interface MS3112E14-19P	M&C Interface-Se	rial, Analog, Ethernet	MS3112E14-19S				
	Redundancy Interface		MS3112E14-19P				