

Solid State Broadband High Power Amplifier

2016 - BBS3C3KNP

100 – 500 MHz / 200 Watts

The BBS3C3KNP (2016) is suitable for broadband and band specific high power linear applications. This rack mount amplifier is utilizing Push-Pull MOSFET power devices that provide high gain, wide dynamic range, low distortions and good linearity. Exceptional performance, long term reliability and high efficiency are achieved by employing advanced broadband RF matching networks and combining techniques, built in high quality power supply, EMI/RFI filters, machined housings and all qualified components. Empower RF's ISO9001 Quality Assurance Program assures consistent performance and the highest reliability.



SKU#: 2014DFFAAXLXX

- Solid-state Class AB design
- Instantaneous ultra broadband
- Front panel manual gain adjust
- Suitable for CW, FM, AM (Consult factory for other modulation types)
- 50 Ohm Input/Output impedance
- High reliability and ruggedness

ELECTRICAL SPECIFICATIONS @ 120V_{AC}, 25°C, 50Ω system

Parameter	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	100		500	MHz
Output Power CW	P _{SAT}	220			Watt
Output Power @ 1dB Gain Compression	P _{1dB}	200			Watt
Power Gain @ 1dB Gain Compression	G _{1dB}	52			dB
Input Power for Rated P _{SAT}	P _{IN}		0	3	dBm
Small Signal Gain Flatness	ΔG		±1.5	±2.0	dB
Gain Adjustment Range	FGA	25	30		dB
Input Return Loss	S ₁₁			-10	dB
Noise Figure @ maximum gain	NF		7	10	dB
Third Order Intercept Point 2-Tone @ 43dBm/Tone, 100kHz Spacing	IP3		+63		dBm
Harmonics @ P _{OUT} = 200W	H		-20		dBc
Spurious Signals	Spur		-70	-60	dBc
Operating Voltage (1-phase)	V _{AC}	100		240	Volt
Power Consumption @ P _{OUT} = 220W CW	P _D		1000	1100	Watt

MECHANICAL SPECIFICATIONS

Parameter	Value	Unit
Dimensions W x H x D	19 x 5.25 x 22	Inch
Weight	47	Pound
RF Connectors Input / Output	Type-N, Female	
Cooling	Built-in forced-air cooling system	

ENVIRONMENTAL SPECIFICATIONS (Design to Meet)

Parameter	Symbol	Value	Unit
Operating Ambient Temperature	T _A	0	°C
Non-operating Temperature	T _{STG}	-40	°C
Relative Humidity (non-condensing)	RH	95	%
Altitude (MIL-STD-810F Method 500.4)	ALT		30,000 Feet
Vibration / Shock MIL-STD-810F - Method 514.5/516.5 – Proc I	VI / SH		Airborne

Solid State Broadband High Power Amplifier

2016 - BBS3C3KNP

100 – 500 MHz / 200 Watts

LIMITS

Input RF drive level without damage	+6dBm	Max
Load VSWR @ P _{OUT} = 200W	∞ @ all load phase & amplitude for duration of 1 minute 3:1 @ all load phase continuous	-
Thermal Overload	85°C shutdown	Max

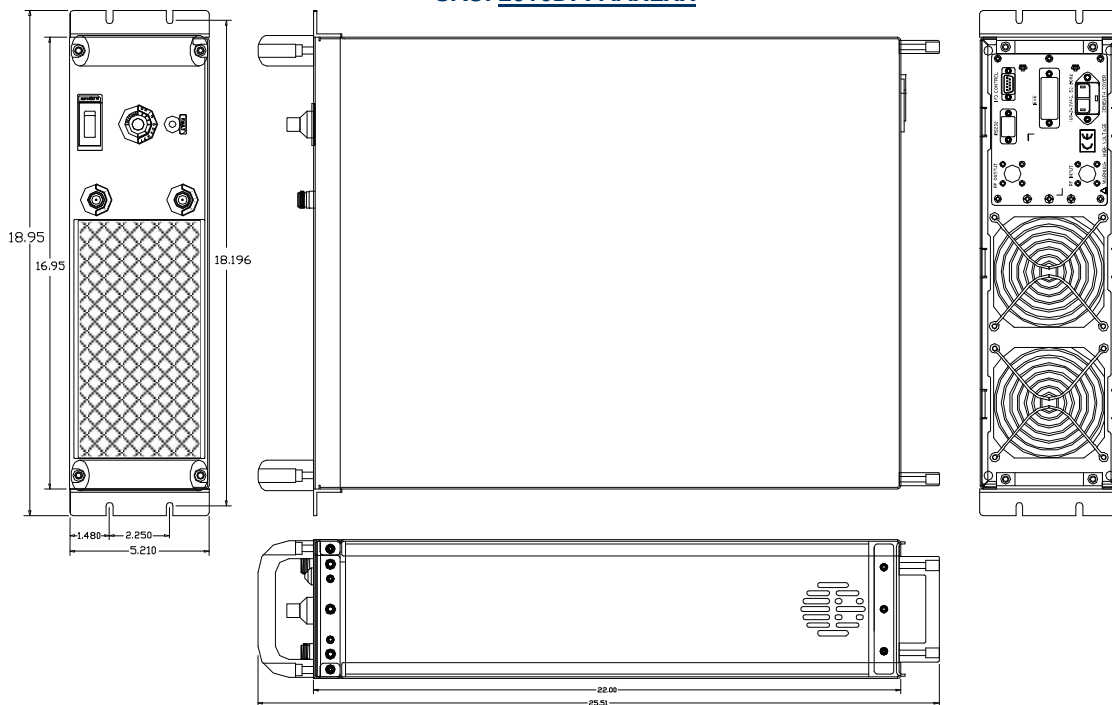
AVAILABLE OPTIONS

SKU #	Description
2016DFFAAXLXX	FGA (Front Gain Adjust), Front RF connectors, 100-240VAC, 50/60Hz
2016DFRAAXXXX	FGA (Front Gain Adjust), Rear RF connectors, 100-240VAC, 50/60Hz
Optional	Rack Slides (Call for price)

I/O INTERFACE CONNECTOR – D-sub 9-pin, Female

Pin #	Description	Specification
1	N/C	No Connection
2	N/C	No Connection
3	5V Test Point	Output +5.0V _{DC} ±0.2V
4	VVA Test Point	VVA Gain Control +5.6V _{DC} ±0.2V
5	EXT Shutdown	Amplifier Disable: TTL Logic High (5V) (Internally Pulled-Low)
6	12V Test Point	Output +12.0V _{DC} ± 0.5V
7	P/S Test Point	Power Supply Output voltage: +26.0-30.0V _{DC}
8&9	GND	Ground

OUTLINE DRAWING Shown SKU: [2016DFFAAXLXX](#)



Solid State Broadband High Power Amplifier

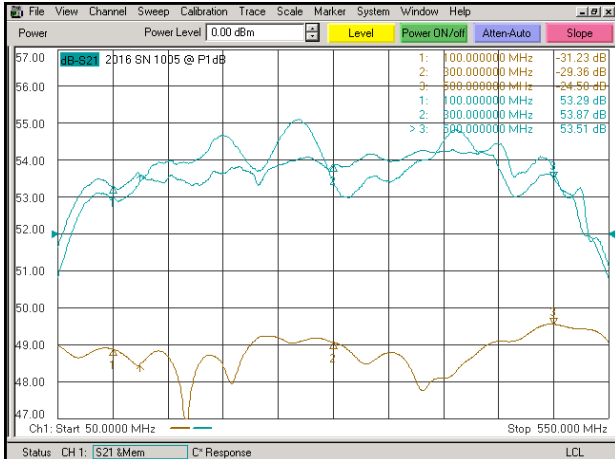
2016 - BBS3C3KNP

100 – 500 MHz / 200 Watts

PERFORMANCE PLOTS

Plot 1 – Small Signal Gain and P_{1dB}

Top Curve: Small Signal Gain @ $P_{IN} = -20dBm$
 Middle Curve: Power Gain @ P_{1dB} , $P_{IN} = 0.0dBm$
 Reference: 52dB, 1dB/div.
 Bottom Curve: Input Return Loss
 Reference: 0dB, 10dB/div.



Plot 2 – Small Signal Gain and P_{SAT}

Top Curve: Small Signal Gain @ $P_{IN} = -20dBm$
 Middle Curve: Power Gain @ P_{SAT} , $P_{IN} = 1.0dBm$
 Reference: 52dB, 1dB/div.
 Bottom Curve: Input Return Loss
 Reference: 0dB, 10dB/div.



Plot 3 – Gain Adjustment Range

Top Curve: Maximum Gain @ $P_{IN} = -20dBm$
 Middle Curve: Minimum Gain @ $P_{IN} = -20dBm$
 Reference: 42dB, 10dB/div.
 Bottom Curve: Input Return Loss @ Minimum Gain
 Reference: 0dB, 10dB/div.

