

APKA-80-100

GaAs + GaN Technology

80W KA-Band BUC 27.5 - 31.0 GHz



FEATURES:

- Light and Robust Package: 10lbs (4.54kg)
- Superior Quality, Efficiency, Reliability and Performance
- Built-in HPA Overdrive Circuit Protection
- High Temperature Mode - up to + 70°C
- OPEN-BMIP Ready to Work with iDirect X7 and 950MP
- Complies with MIL-STD-188-164C, RTCA DO-160G, WGS
- Industry Leading Over Temperature Performance
- Field Replaceable IP68 Long Life Rated Fans
- Assembled and Rigorously Tested in the USA
- 3 Year Warranty



DESIGN OVERVIEW:

The "PHANTOM" series 27.5 - 31.0 GHz Frequency 80W Full Ka-Band BUCs are the next generation of the World's Smallest feed-horn & boom-arm mountable BUCs in the industry, weighing-in only at 10lbs (4.54kg) and working at high temp up to 70°C.

PERFORMANCE SPECIFICATIONS

Operating RF Frequency	APKA 27.5 - 31.0 GHz	
Operating IF frequency	950 to 1950 MHz 1000 - 2000 MHz	
Local Oscillator	Selectable	
Rated Output Power PSAT	APKA-80	80W 49.0 dBm
		60W 47.8 dBm
Linear Power SR @ -26dBc PLIN	APKA-100	100W 50.0 dBm
		80W 49.0 dBm
IMD3 (two tones) 3dB Back Off	-25 dBc max. 2 signal 5MHz apart at P-LINEAR	
Spectral Regrowth at PLINEAR (QPSK at 1.5x and OQPSK at 1.0x symbol rate offset with 2dB back-off from rated power)	-30 dBc	
10MHz or 50 MHz External Ref. 0dBm +/- 5dBm	10MHz or 50MHz	

SPURIOUS & PHASE NOISE

In-Band/Out-band Spurious	-60dBc max.	
Group Delay	Ripple 1 nsec point to point max.	
AM/PM Conversion	2.0°/dB max. at 3 dB output backoff	
Noise Power Density (TX)	-80dBm/Hz	
Noise Power Density (RX)	-150dBm/Hz	
Phase Noise (Up Converter) [(Ext. Ref.)]	-33 dBc/Hz @ 10 Hz	-115dBc/Hz
	-63 dBc/Hz @ 100 Hz	-135dBc/Hz
	-73 dBc/Hz @ 1 kHz	-150dBc/Hz
	-83 dBc/Hz @ 10 kHz	-155dBc/Hz
	-93 dBc/Hz @ 100 kHz	-160dBc/Hz

POWER CONSUMPTION

APKA-80	80W 49.0 dBm PSAT	485W
	60W 47.8 dBm PLIN	445W
APKA-100	100W 50.0 dBm PSAT	605W
	80W 49.0 dBm PLIN	595W

PROTECTION

VOLTAGE	OVERTEMP	VSWR
SMART ALARMS IN THE M&C	MICROPHONIC	CURRENT

COMPLIANCE INFORMATION

MIL - STD - 188/164C	MIL - STD - 461	ROHS, REACH,
MIL - STD - 810E	DO - 160 G	WEEE

ENVIRONMENT SPECIFICATIONS

Environmental MIL-STD	Compliant with MIL-STD810E
Vibration MIL-STD	MIL-STD810F, Method 514.5
Operating Temperature Range	- 40° C to + 70° C
Storage Temperature Range	- 60°C to + 85°C
Fan Rating / Field Replaceable	IP 68, Long Life
Humidity	100% Condensing, IP67 Rated
Shock	20 g peak, 11 msec, 1/2 sine
Altitude	50,000ft, 15,240m
Built-in Receive Reject Filter	Suppression by +60dB (min)

GAIN

Gain (Temperature Compensated)	64dB(min) 68 dB(typ.)
TX Gain Flatness	± 0.75 dB max. over 40 MHz
TX Gain variation 50MHz	± 0.5 dB
TX Gain variation 500MHz	± 1.5 dB

PART NUMBERING SYSTEM

AP - "PHANTOM" MODEL SERIES
 KAF - Full Ka-Band 27.5 - 31.0 GHz
 KAC - Commercial Ka-Band 29.0 - 30.0 GHz
 KAM - Military and Commercial Band 29 - 31.0 GHz
 KAO - O3B Bands 27.652 - 28.388 GHz, 28.172 - 29.071 GHz
 80 | 100 - Rated PSAT Power in Watts
 N | F - 50 Ohm or 75 Ohm IF Input Connector Type
 A - AC Power 85-260VAC (increases size and weight)
 R - 10 MHz Ref. Auto Sense | Internal Reference
 K - FSK Option
 U - Universal Mounting Bracket
 J - Weatherproof DC/RJ45 Cable Dongle
 C xxxx - Custom RAL Color Code
 L - Custom Language
 P - Custom Part number
 B - Custom Label
 G - Custom Logo
 T- Redundancy Ready
 H - High Gain (+79dB - 82dB)
 W - Weatherproof Pelican Style Case
 O - Other Custom Option
 X- Custom Cable



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INPUT|OUTPUT INTERFACE

IF Connector	N-type (50 Ohm)
Universal Prime Power via IF or MS/M&C Connector (7.0 A Current Limit Protection Through Coax)	+ 22 - 55 VDC
Output VSWR	1.5:1 (1.35:1 with optional Isolator)
Output Interface	WR28 Grooved
Input VSWR	1.5:1

M&C INTERFACE

Advanced Monitor & Control	Ethernet Web Page Based, SNMP, RS232/485, FSK (opt.)
ALARMS	PLL LOCK, HPA, VSWR, MUTE, TX
Stealth PLin Operation Mode	LED Shut-Off Silenced fans

MECHANICAL SPECIFICATIONS

Dimensions	8.5" x 5.2" x 4.54" (215x132x114 mm) Without Connectors
Weight	10lbs (4.54kg)

