APKU(S)-80W(M)

THE SMALLEST OUTDOOR 80W Ku-Band BUC High Temp +70C

FEATURES:

- Wide-Band MultiCarrier Amplifiers
- Robust, Light Package Design Only 9.2 lbs (4.2 kg)
- Extreme Stability, Reliability and Performance
- Built-in HPA Overdrive Circuit Protection
- High Temperature Mode - up to + 70°C
- Built-in Optimized Linearization
- Built-in Receive Band Reject Filter
- Built-in Anti Vibration Technology
- Extreme GaN Linearity and Efficiency
- Exceeds ALL IESS-308/309 Phase Noise Standards
- Triple protection sealed waveguide output
- Field Replaceable IP68 (150,000 hr) Rated Fans
- Assembled and Rigorously Tested in California
- 3-Year Warranty

DESIGN OVERVIEW:

The "PHANTOM" series Extended (13.75 - 14.5 GHz) and Standard (14.0 - 14.5 GHz) Ku-Band BUCs are the next generation of the World's Most efficient and compact size BUCs in the industry, weighing only 9.2 lbs (4.2 kg) and handling output power of 80W (min) at the Extended Ku-Band frequencies. The most mature, proven efficient, and reliable GaAs + Multi-Carrier capable GaN High Power Amplifiers are implemented in BUCs.

PERFORMANCE SPECIFICATIONS

Operating RF Frequency	APKS 14.0-14.5 GHz APKU 13.75-14.5 GHz
Operating IF frequency	950-1450 MHz | 950-1700 MHz
Local Oscillator	13.05 GHz | 12.8 GHz
Rated Output Power PSAT **Linear Power SR @-26 dBc PLIN**	80W 49.0 dBm 60W 47.8 dBm
IMD3 (two tones) 3 dB Back Off	-25 dBc max. 2 signal 5 MHz apart at P-LINEAR
Spectral Regrowth at P-LINEAR (QPSK at 1.5x and OQPSK at 1.0x symbol rate offset with 2 dB back-off from rated power)	-30 dBc
10 MHz External Ref. **(Internal High Stability Optional)**	10 MHz Ref. Level: 0 dBm +/- 5 dBm Internal Ref. Stability +/- 0.1 ppm

POWER CONSUMPTION

80W 49.0 dBm PSAT	370W
60W 47.8 dBm PLIN	290W

COMPLIANCE INFORMATION

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

SPURIOUS & PHASE NOISE

In-Band/Out-band Spurious	-60 dBc max.
Group Delay	Ripple 1 nsec point to point max.
AM/PM Conversion	1.0°/dB max. at 3 dB output backoff
Noise Power Density (TX)	-85 dBm/Hz
Noise Power Density (RX)	-155 dBm/Hz (10.95 - 12.75 GHz)
Phase Noise **(Up Converter)|(Ext. Ref.)**	-55 dBc/Hz @ 10 Hz -115 dBc/Hz -65 dBc/Hz @ 100 Hz -135 dBc/Hz -75 dBc/Hz @ 1 kHz -150 dBc/Hz -85 dBc/Hz @ 10 kHz -155 dBc/Hz -95 dBc/Hz @ 100 kHz -160 dBc/Hz

GAIN

Gain (Temperature Compensated)	72 dB (min) 78 dB (typ.)
TX Gain Flatness	± 0.75 dB max. over 40 MHz
TX Gain variation 50 MHz	± 0.5 dB
TX Gain variation 500 MHz	± 1.5 dB
Built-in Receive Reject Filter	Suppression by +20 dB (min.)

ENVIRONMENTAL SPECIFICATIONS

Environmental MIL-STD Vibration MIL-STD	Compliant with MIL-STD810E MIL-STD810F, Method 514.5 C-2 Transport
Operating Temperature Range	- 40°C to + 70°C
Storage Temperature Range	- 60°C to + 85°C
Fan Rating / Field Replaceable	IP68, Field Interchangeable
Humidity	100% Condensing, IP67 Rated
Shock	20 g peak, 11 msec, 1/2 sine
Altitude	50,000 ft, 15,240 m

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" (215×132×114 mm) Without Connectors
Weight	9.2 lbs (4.2 kg)

PART NUMBERING SYSTEM

AP - "PHANTOM" MODEL SERIES
KU - Universal Ku-Band 13.75 - 14.50 GHz
KS - Standard Ku-Band 14.0 - 14.50 GHz
80 | 100 | 125 | 150 - Rated Power in Watts
N | F - 50 Ohm or 75 Ohm IF Input Connector Type
M - M&C Option - RS232/485 + Ethernet + SNMP
A - AC Power 85-260 VAC
D - DC Power 36-76 VDC
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 (+79 dB - 82 dB)
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) | F-type (75 Ohm)
AC	**Universal Prime Power via 3pin Power Connector Aphenol PT02E-12-3P, Current protection** (depending on the option)	+ 85-260 VAC
DC	**Universal Prime Power via 3pin Power Connector Aphenol PT02E-12-4P, Current protection** (depending on the option)	+ 36-76 VDC
Output VSWR		1.5:1
Output Interface		WR75 Sealed & Grooved
Input VSWR		1.5:1
10 MHz External Ref. (Internal High Stability +/- 0.1ppm Option Available)		10 MHz Ref. Level: 0 dBm +/- 5 dBm Internal Ref. Stability +/- 0.1 ppm

PROTECTION

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