

AK(S,F,G)-8-20W

GaAs + GaN Technology

Low cost 8-20W Ku-Band BUCs



FEATURES:

- Low Cost Solution
- Extreme Efficiency, Stability, Reliability and Performance
- Hyper-Light Package, Only 1lbs
- Super Low Power Consumption (30/35W* @8W)
- High Temperature Mode - up to + 60°C
- IP68 150,000 Hr Long Life Fan
- Exceeds ALL IESS-308/309 Phase Noise Standards
- 3 Year Warranty
- Fan-less Design (AKS, AKF, AKG series)



DESIGN OVERVIEW:

The low cost Ku-Band BUCs are above and beyond the next generation of the World's Smallest feed-horn & boom-arm mountable BUCs in the industry, weighing only 1lbs and handling output power up to 20W at the Ku-Band frequencies. We've picked the most mature, reliable and proven to be highly efficient amplifiers with internal overdrive protection. Each unit is vigorously tested at our California facility according to our ATP (Acceptance Testing Procedure).

PERFORMANCE SPECIFICATIONS

Operating RF Frequency	AKS 14.0 - 14.5 GHz	
	AKU 13.75 - 14.5 GHz	
	AKD 13.75 - 14.5 14.0 - 14.5 GHz	
	AKL 12.75 - 13.25 GHz	
Operating IF frequency	950 - 1700 950 - 1450 MHz	
Local Oscillator	12.80 13.05 GHz 11.80 GHz	
Rated Output Power PSAT Linear Power SR @ -26dBc PLIN	AK(S,F,G)8	8W 39.0 dBm 6W 37.8 dBm
	AK(S,F,G)10	10W 40.0 dBm 8W 39.0 dBm
	AK(S,F,G)13	13W 41.0 dBm 10W 40.0 dBm
	AK(S,F,G)16	16W 42.0 dBm 12W 41.0 dBm
	AK(S,F,G)20	20W 43.0 dBm 16W 42.0 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	

SPURIOUS & PHASE NOISE

In-Band/Out-band Spurious	-60dBc 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)	-85dBm/Hz	
Noise Power Density (RX)	-155dBm/Hz (10.95 - 12.75 GHz)	
Phase Noise (Up Converter) (Ext. Ref.)	-55 dBc/Hz @ 10 Hz	-115dBc/Hz
	-65 dBc/Hz @ 100 Hz	-135dBc/Hz
	-75 dBc/Hz @ 1 kHz	-150dBc/Hz
	-85 dBc/Hz @ 10 kHz	-155dBc/Hz
	-95 dBc/Hz @ 100 kHz	-160dBc/Hz

POWER CONSUMPTION

	AK	AKS/AKF/AKG
8W 39.0 dBm PSAT 6W 37.8 dBm PLIN	35W 25W	30W 20W
10W 40.0 dBm PSAT 8W 39.0 dBm PLIN	45W 35W	40W 30W
13W 41.0 dBm PSAT 10W 40.0 dBm PLIN	55W 45W	50W 40W
16W 42.0 dBm PSAT 12W 41.0 dBm PLIN	65W 55W	60W 50W
20W 43.0 dBm PSAT 16W 42.0 dBm PLIN	75W 65W	70W 60W

ENVIROMENT SPECIFICATIONS

Environmental MIL-STD	Compliant with MIL-STD810E
Vibration MIL-STD	MIL-STD810F, Method 514.5 C-2 Transport
Operating Temperature Range	- 40° C to + 70°C
Storage Temperature Range	- 60°C to + 85°C
Humidity	100% Condensing, IP67
Shock	20 g peak, 11 msec, 1/2 sine
Altitude	50,000ft, 15,240m
Fan Rating / Field Replaceable *	
*not applicable for fanless series (AKS, AKF, AKG)	
IP 68, Long Life	

MECHANICAL SPECIFICATIONS

Dimensions	AK	5.4" x 3.1" x 2.3" (137 x 78 x 59mm)
	AKS	6.1" x 3.9" x 1.4" (153 x 98 x 35mm)
	AKF	6.1" x 4.7" x 2.8" (153 x 120 x 71mm)
	AKG	5.46" x 2.52" x 1.575" (139 x 64 x 40mm)
Weight	AK	1lbs (0.45kg)
	AKS	1.1lbs (0.5kg)
	AKF	1.5lbs (0.68kg)
	AKG	Less than 1lbs (0.45kg)

PART NUMBERING SYSTEM

- S - Slim Size Series
- F - Fan-less Series
- G - Fan-less and Slim Series
- KU - Universal Ku-Band 13.75 - 14.50 GHz
- KS - Standard Ku-Band 14.0 - 14.50 GHz
- KL - Low Ku-Band 12.75 - 13.25 GHz
- KD - Dual Ku-Band 13.75 - 14.50 GHz | 14.0 - 14.50 GHz
- 8 | 10 | 12 | 16 | 20 - Rated Power in Watts
- N | F - 50 Ohm or 75 Ohm IF Input Connector Type
- M1 - M&C Option RS232 Only
- M2 * - RS232/485, Ethernet, SNMP, Telnet
- R - 10 MHz Ref. Auto Sense | Internal Reference
- U - Universal Mounting Bracket

* Advanced M&C option coming soon



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INPUT|OUTPUT INTERFACE

IF Connector	N-type (50 Ohm) F-type (75 Ohm)
Universal Prime Power via IF	+ 18 - 55 VDC
Output Interface	WR75 Sealed & Grooved
GAIN	
Gain (Temperature Compensated)	55 dB(min) 60 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

M&C INTERFACE

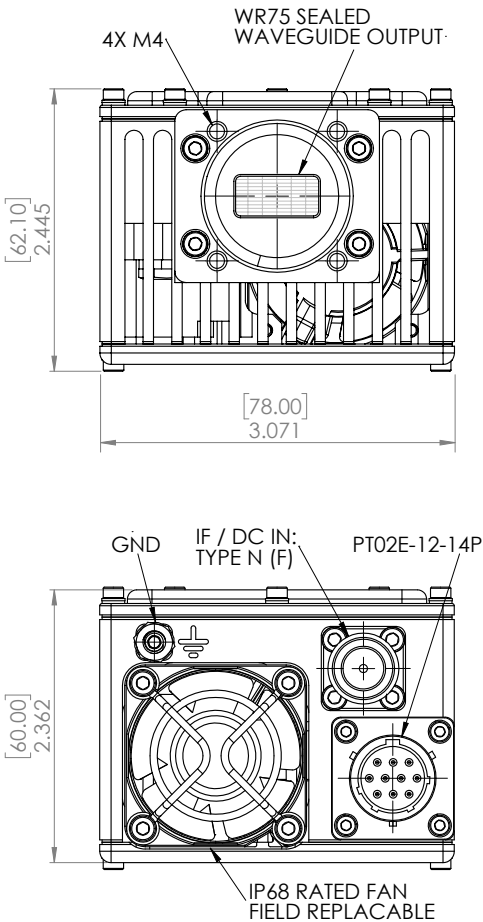
Advanced Monitor & Control	RS232 (RS485, Ethernet Web Page Based, Telnet)*
ALARMS	PLL LOCK, HPA, MUTE, TX
Stealth PLin Operation Mode	LED Shut-Off Silenced fan

PROTECTION

VOLTAGE	OVERTEMP	CURRENT
SMART ALARMS IN THE M&C	MICROPHONIC	

COMPLIANCE INFORMATION

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



FAN-LESS OPTIONS:



AKS - Fan-less Series

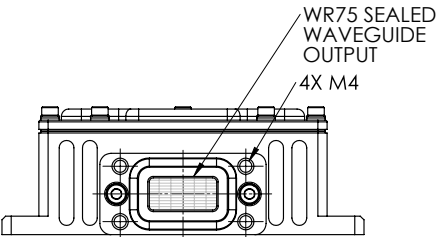
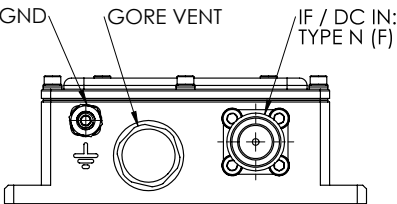
AKS - Slim Size Series

AKG - Fan-less & Slim Series

FEATURES:

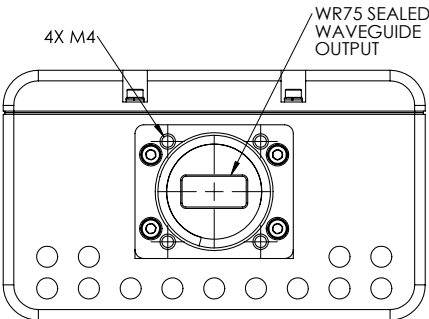
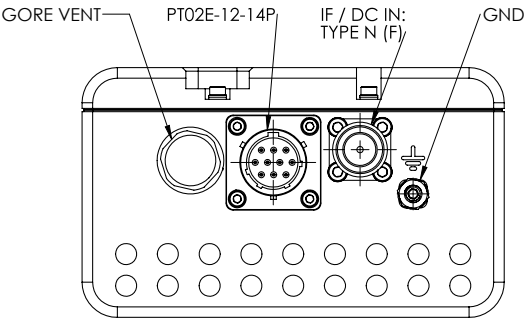
- AKF - Fan-less Series - convection cooled housing
- AKS - Slim Size Series - external cooling is required
- AKG - Fan-less & Slim Series - Non-IP housing, external cooling is required

SLIM SERIES



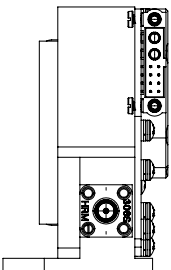
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FANLESS SERIES

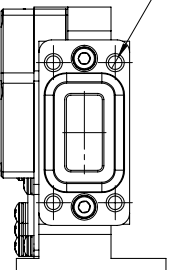


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FANLESS AND SLIM SERIES



- 4 x $\varnothing$ 0.130[3.30] THRU ALL
- M4 - 6H THRU ALL
- ✓ $\varnothing$ 0.173[4.40] X 90.000°, Near Side
- ✓ $\varnothing$ 0.173[4.40] X 90.000°, Far Side



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