

# A(L,T,S)KA-8-50W



The World's Smallest Outdoor 8-50 Ka-Band BUC

## FEATURES:

- Hyper-Light yet Robust Package: 2 - 4 lbs (0.9 - 1.8 kg)
- 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 Ka-Band BUCs are the next generation of the world's most compact and efficient feed-horn & boom-arm mountable Ka-Band BUCs in the industry handling the output power up to 50W. We've picked the most mature, reliable and proven to be highly efficient amplifiers with internal overdrive protection. Its weatherproof and robust Hyper-Light package is constructed with the most advanced materials and mechanical precision engineering in mind, taking the MTBF to the next level of at least 15 years during normal operation. Each unit is vigorously tested at our California facility according to our Acceptance Testing Procedure.

## PART NUMBERING SYSTEM

- AL - "LIGHTWEIGHT" MODEL SERIES
- AT - "TRIMMED FAN-LESS" MODEL SERIES
- AS - "SLIM FAN-LESS" 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
- 8 | 10 | 13 | 16 | 20 | 25 | 30 | 40 | 50 - Rated PSAT Power in Watts
- N - 50 Ohm IF Input Connector (other interface options available)
- A - AC Power 85-260 VAC (increases size and weight)
- I - Isolator for VSWR Improvement to 1.35:1
- M - M&C Option - RS232/485 + Ethernet + SNMP
- O - OPENBMIP Protocol Ready
- R - Auto Sense Ref Detector | Internal +/- 0.05 ppm Stability
- C - Custom color, housing or other options available
- X - Custom option

## GAIN

Gain (Temperature Compensated)	64 dB (min) 68 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

## POWER CONSUMPTION

	ALKA	ATKA/ASKA
8W 39.0 dBm PSAT 5W 37.0 dBm PLIN	85W 40W	75W 30W
10W 40.0 dBm PSAT 6W 37.8 dBm PLIN	95W 45W	85W 35W
13W 41.0 dBm PSAT 8W 39.0 dBm PLIN	110W 60W	100W 50W
16W 42.0 dBm PSAT 10W 40.0 dBm PLIN	125W 75W	115W 65W
20W 43.0 dBm PSAT 12W 41.0 dBm PLIN	150W 90W	140W 80W
25W 44.0 dBm PSAT 16W 42.0 dBm PLIN	170W 120W	160W 110W
30W 44.8 dBm PSAT 20W 43.0 dBm PLIN	205W 150W	195W 140W
40W 46.0 dBm PSAT 25W 44.0 dBm PLIN	270W 185W	260W 175W
50W 47.0 dBm PSAT 32W 45.0 dBm PLIN	340W 235W	330W 225W

## PERFORMANCE SPECIFICATIONS

Operating RF Frequency	A(L,S)KA 27.5 to 31.0 GHz	
Operating IF frequency	950 to 1950   1000 to 2000 MHz	
Local Oscillator	Selectable	
	A(L,T,S)KA8	8W 39.0 dBm 5W 37.0 dBm
	A(L,T,S)KA10	10W 40.0 dBm 6W 37.8 dBm
	A(L,T,S)KA13	13W 41.0 dBm 8W 39.0 dBm
	A(L,T,S)KA16	16W 42.0 dBm 10W 40.0 dBm
Rated Output Power PSAT Linear Power SR @ -26 dBc PLIN	A(L,T,S)KA20	20W 43.0 dBm 12W 41.0 dBm
	A(L,T,S)KA25	25W 44.0 dBm 16W 42.0 dBm
	A(L,T,S)KA30	30W 44.8 dBm 20W 43.0 dBm
	A(L,T,S)KA40	40W 46.0 dBm 25W 44.0 dBm
	A(L,T,S)KA50	50W 47.0 dBm 32W 45.0 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 3 dB back-off from rated power)	-30 dBc	
10 MHz or 50 MHz External Ref. 0 dBm +/- 5 dBm	10 MHz or 50 MHz	

## 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

## ENVIRONMENTAL 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	IP68, Long Life
Humidity	100% Condensing, IP67 Rated
Shock	20 g peak, 11 msec, 1/2 sine
Altitude	50,000 ft, 15,240 m
Built-in Receive Reject Filter	Suppression by +60 dB (min)

## SPURIOUS & PHASE NOISE

In-Band/Out-Band Spurious	-60 dBc 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)	-80 dBm/Hz	
Noise Power Density (RX)	-150 dBm/Hz	
Phase Noise (Up Converter) (Ext. Ref.)	-33 dBc/Hz @ 10 Hz	-115 dBc/Hz
	-63 dBc/Hz @ 100 Hz	-135 dBc/Hz
	-73 dBc/Hz @ 1 kHz	-150 dBc/Hz
	-83 dBc/Hz @ 10 kHz	-155 dBc/Hz
	-93 dBc/Hz @ 100 kHz	-160 dBc/Hz

## 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

## PROTECTION

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

## COMPLIANCE INFORMATION

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

## MECHANICAL SPECIFICATIONS

Dimensions	ALKA	6.5" x 3.94" x 3" (165 x 100 x 76 mm) Without Connectors
	ATKA	6.5" x 4.92" x 1.81" (165 x 125 x 46 mm) Without Connectors
	ASKA	6" x 4.41" x 1.43" (173.4 x 102 x 36.3 mm)
Weight	ALKA	3.5lbs (1.6kg)
	ATKA	4lbs (1.8kg)
	ASKA	2lbs (0.9kg)

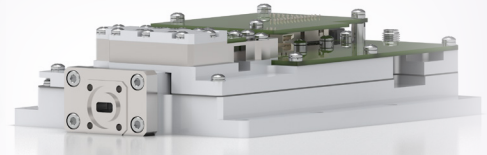
# KA-BAND BUC OPTIONS:



ALKA - Lightweight Brick Series



ATKA - Trimmed Fan-less Series  
IP67 Rated Housing



ASKA - Slim Series  
Non-IP Rated Housing

## FEATURES:

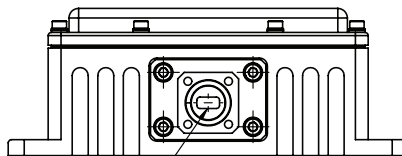
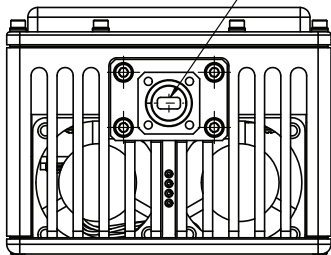
- ALKA - Lightweight Brick Series - world's most compact and efficient outdoor Ka-Band BUCs in the industry
- ATKA - Trimmed Fan-less Series with IP67 rated housing. Customer cooling baseplate required
- ASKA - Slim Series - Non-IP Rated Housing. Customer cooling baseplate required

### LIGHTWEIGHT SERIES

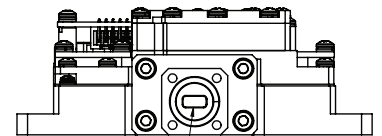
### TRIMMED FANLESS SERIES

### SLIM SERIES

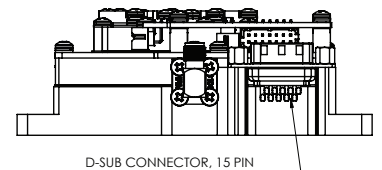
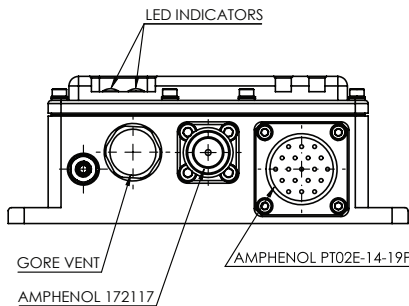
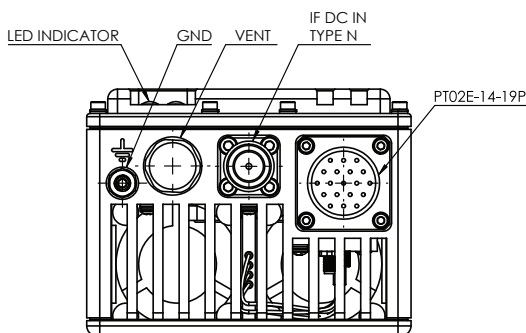
WR 28 GROOVED WITH M3X0.5 TAPPED HOLE



WR 28 GROOVED WITH M3X0.5 TAPPED HOLE



WR28 SEALED WAVEGUIDE OUTPUT



D-SUB CONNECTOR, 15 PIN



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