

# A(L,S)KA-10-40W

## GaAs + GaN Technology

The World's Smallest Outdoor 10-40 Ka-Band BUC



### FEATURES:

- Hyper-Light yet Robust Package: up to 3.5lbs (1.6kg)
- 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 40W. 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  
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  
10 | 13 | 16 | 20 | 25 | 30 | 40 - Rated PSAT Power in Watts  
N - 50 Ohm IF Input Connector (other interface options available)  
A - AC Power 85-260VAC (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 +/- 0.05ppm Stability  
C - Custom color, housing or other options available  
X - Custom option  
IP67 - IP67 Rated Housing of Fan-less Slim model series  
NONIP - Non-IP Rated Housing of Fan-less Slim model series

### POWER CONSUMPTION

	ALKA	ASKA (IP67/NONIP)
10W 40.0 dBm PSAT 6W 37.8 dBm PLIN	60W 45W	60W 45W
13W 41.0 dBm PSAT 8W 39.0 dBm PLIN	80W 60W	80W 60W
16W 42.0 dBm PSAT 10W 40.0 dBm PLIN	95W 75W	95W 75W
20W 43.0 dBm PSAT 12W 41.0 dBm PLIN	120W 90W	120W 90W
25W 44.0 dBm PSAT 16W 42.0 dBm PLIN	150W 120W	150W 120W
30W 44.8 dBm PSAT 20W 43.0 dBm PLIN	180W 150W	180W 150W
40W 46.0 dBm PSAT 25W 44.0 dBm PLIN	240W 185W	240W 185W

### 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

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	
Rated Output Power PSAT Linear Power SR @ -26dBc PLIN	A(L,S)KA10	10W 40.0 dBm 6W 37.8 dBm
	A(L,S)KA13	13W 41.0 dBm 8W 39.0 dBm
	A(L,S)KA16	16W 42.0 dBm 10W 40.0 dBm
	A(L,S)KA20	20W 43.0 dBm 12W 41.0 dBm
	A(L,S)KA25	25W 44.0 dBm 16W 42.0 dBm
	A(L,S)KA30	30W 44.8 dBm 20W 43.0 dBm
	A(L,S)KA40	40W 46.0 dBm 25W 44.0 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 3dB back-off from rated power)	-30 dBc	
10MHz or 50 MHz External Ref. 0dBm +/- 5dBm	10MHz or 50MHz	

PROTECTION

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

COMPLIANCE INFORMATION

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

ENVIROMENT SPECIFICATIONS

Environmental MIL-STD Vibration MIL-STD	Compliant with MIL-STD810E 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)

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

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	ALKA	6.5" x 3.94" x 3" (165 × 100 × 76 mm) Without Connectors
	ASKA IP67	6.5" x 4.92" x 1.81" (165 × 125 × 46 mm) Without Connectors
	ASKA NONIP	6" x 4.41" x 1.43" (173.4 × 102 × 36.3 mm)
Weight	ALKA	3.5lbs (1.6kg)
	ASKA IP67	4lbs (1.8kg)
	ASKA NONIP	2lbs (0.9kg)

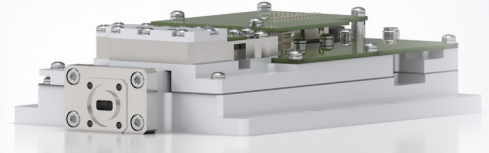
# KA-BAND BUC OPTIONS:



ALKA - Lightweight Brick Series



ASKA IP67 - Slim Fan-less Series  
IP67 Rated Housing



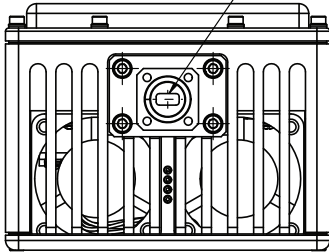
ASKA NONIP - Slim Fan-less Series  
Non-IP Rated

## FEATURES:

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

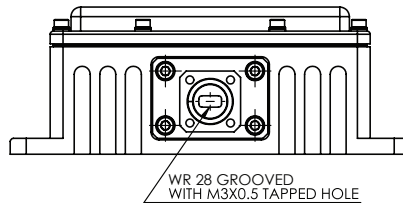
## LIGHTWEIGHT SERIES

WR 28 GROOVED  
WITH M3X0.5 TAPPED HOLE



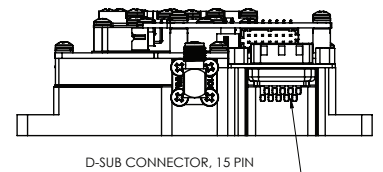
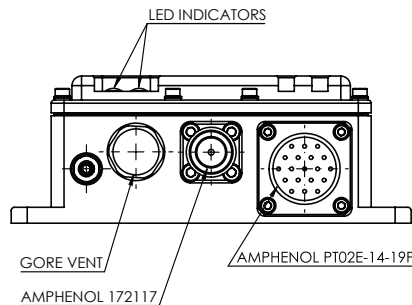
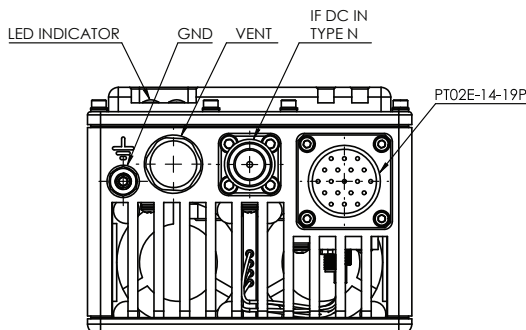
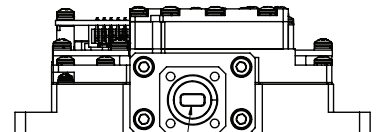
## FANLESS & SLIM SERIES IP RATED

WR 28 GROOVED  
WITH M3X0.5 TAPPED HOLE



## FANLESS & SLIM SERIES NON IP

WR28 SEALED WAVEGUIDE OUTPUT



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