

# ALX-30W

## GaAs + GaN Technology

THE WORLD'S SMALLEST OUTDOOR 30W X-Band BUC High Temp +70C



### FEATURES:

- Hyper-Light Package Design Only 4lbs (1.8kg)
- Extreme Stability, Reliability and Performance
- Built-in HPA Overdrive Circuit Protection
- Built-in Optimized Linearization
- Built-in Ultra Receive Band Reject Filter
- Built-in Anti Vibration Technology
- Extreme GaAs + GaN Linearity and Efficiency
- Triple protection sealed waveguide output
- Field Replaceable IP69K Rated Fans
- Fully Assembled, and Rigorously Tested in the USA
- 3 Year Warranty



### DESIGN OVERVIEW:

Amkom's X-band 7.9 -8.4 GHz BUCs are the next generation of the world's most compact and efficient feed-horn & boom-arm mountable BUCs in the industry. They come with the following available output powers: 20W, 30W and 40W . We've chosen the best of both worlds as we implemented the most mature, proven efficient and reliable GaAs + GaN High Power Amplifiers with added internal overdrive protection. We take MTBF seriously and to the next level of at least 15 years during normal operation. We've taken absolutely no compromises during each of the design stages. Each unit is designed and tested to comply with the WGS, MIL-STD-188-164, and RTCA/DO-160G. It is vigorously tested at our California facility according to our ATP (Acceptance Testing Procedure).

### PERFORMANCE SPECIFICATIONS

Operating RF Frequency	7.9 - 8.4 GHz
Operating IF frequency	950 to 1450 MHz
Local Oscillator	6.95 GHz
Rated Output Power PSAT	30W 44.8 dBm
Linear Power SR @ -26dBc PLIN	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 2dB back-off from rated power)	-30 dBc
10MHz External Ref. (Internal High Stability Optional)	10MHz Ref. Level: 0dBm +/- 5dBm Internal Ref. Stability +/- 0.1 ppm

### COMPLIANCE INFORMATION

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

### 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	
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

30W 44.8 dBm PSAT	140W
25W 44.0 dBm P-LIN	130W

### PROTECTION

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

## ENVIROMENT SPECIFICATIONS

Environmental MIL-STD	Compliant with WGS, MIL-
Vibration MIL-STD	STD-188-164, and RTCA/DO-160G
Operating Temperature Range	- 40° C to + 70°C
Storage Temperature Range	- 60°C to + 85°C
Fan Rating / Field Replaceable	IP 69K (fan module can be purchased separately)
Humidity	100% Condensing, IP67 Rated
Shock	20 g peak, 11 msec, 1/2 sine
Altitude	21,500ft, 6,500m
Built-in Receive Reject Filter	Suppression by +60dB (min)

## M&C INTERFACE

Advanced Monitor & Control	Ethernet Web Page Based, SNMP, RS232/485
ALARMS	PLL LOCK, HPA, VSWR, MUTE, TX
Stealth PLin Operation Mode	LED Shut-Off   Silenced fans
Administrative Interface (Optional)	OpenBMIP through RS-422

## PART NUMBERING SYSTEM

- AL- "LIGHT BRICK" MODEL SERIES  
X - X-Band 7.9 - 8.4 GHz  
20 | 30 | 40 - Rated Power in Watts  
N | F - 50 Ohm or 75 Ohm IF Input Connector Type  
M - Full M&C Option RS232/485, SNMP, Ethernet  
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)   F-type (75 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
Output Interface	CPR-112G, WR-90G, WR-112G
Input VSWR	1.5:1

## GAIN

Gain (Temperature Compensated)	66dB(min) 70 dB(typ.)
Gain Flatness 1MHz	± 0.1 dB
Gain Flatness 36MHz	± 0.5 dB
Gain Flatness Full Band	± 1.5 dB

## MECHANICAL SPECIFICATIONS

Dimensions (DC Powered)	6.55" x 4.4" x .3" (166.5×112×76 mm) Without Connectors
Weight (DC Powered)	4lbs (1.8kg )

