

# AMDB-20W

## Highly Efficient GaN Technology

20W DBS-Band BUC 17.3-18.1 GHz & 18.1 -18.4 GHz



### FEATURES:

- Ruggedized Design
- Extreme Stability, Reliability and Performance
- Multiple Layers of Protection
- Highly Customizable
- Extreme GaN Linearity and Efficiency
- OPENBMIP Ready
- Sealed waveguide output
- Field Replaceable IP69K Rated Fans
- Fully Assembled, and Rigorously Tested in the USA
- 3 Year Warranty



### DESIGN OVERVIEW:

The "AMDB" series is a DBS-Band BUC with dual L.O. covering 17.3 - 18.1 GHz & 18.1 to 18.4 GHz frequencies. It is not only the world's smallest and most efficient feed-horn mountable BUC, but it is filled with state of the art architecture, weighing under 4lbs and handling output power of up to 20W PSAT. We've hand picked world's most efficient components to build the most advanced architecture in DC and GaN amplification circuits with total protection. We've chosen an absolute and "No Corner Cutting" concept in our design. Each unit is vigorously tested at our California facility according to our ATP (acceptance testing procedure).

### PERFORMANCE SPECIFICATIONS

<b>Operating RF Frequency</b>	17.3 - 18.1 GHz & 18.1 to 18.4 GHz
<b>Operating IF frequency</b>	950 to 1750 MHz, 1400MHz - 1700MHz
<b>Local Oscillator</b>	16.35GHz, 16.70GHz
<b>Rated Output Power PSAT</b>	20W 43.0 dBm
<b>Linear Power SR @ -26dBc PLIN</b>	16W 42.0 dBm
<b>IMD3 (two tones) 3dB Back Off</b>	-25 dBc max. 2 signal 5MHz apart at P-LINEAR
<b>Spectral Regrowth at PLINEAR</b> (QPSK at 1.5x and OQPSK at 1.0x symbol rate offset with 2dB back-off from rated power)	-30 dBc
<b>10MHz External Ref. (Internal High Stability Optional)</b>	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

<b>In-Band/Out-band Spurious</b>	-60dBc max.	
<b>Group Delay</b>	Ripple 1 nsec point to point max.	
<b>AM/PM Conversion</b>	1.0°/dB max. at 3 dB output backoff	
<b>Noise Power Density (TX)</b>	-85dBm/Hz	
<b>Noise Power Density (RX)</b>	-155dBm/Hz	
<b>Phase Noise (Up Converter) (Ext. Ref.)</b>	-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

<b>20W 43.0 dBm PSAT</b>	115W
<b>16W 42.0 dBm PLIN</b>	95W

### PROTECTION

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

## ENVIRONMENT SPECIFICATIONS

<b>Environmental MIL-STD</b>	Compliant with MIL-STD 810E
<b>Vibration MIL-STD</b>	MIL-STD 810F, Method 514.5
<b>Operating Temperature Range</b>	- 40° C to + 70° C
<b>Storage Temperature Range</b>	- 50°C to + 85°C
<b>Fan Rating / Field Replaceable</b>	IP 69K (fan module can be purchased separately)
<b>Humidity</b>	100% Condensing, IP67 Rated
<b>Shock</b>	20 g peak, 11 msec, 1/2 sine
<b>Altitude</b>	70,000ft, 21,336m

## M&C INTERFACE

<b>Advanced Monitor &amp; Control</b>	HTTPS Ethernet, SNMP, Telnet, RS232/485, FSK Optional
<b>ALARMS</b>	PLL LOCK, HPA, VSWR, MUTE, TX
<b>Stealth PLin Operation Mode</b>	LED Shut-Off   Silenced fans

## MECHANICAL SPECIFICATIONS

<b>Dimensions (DC Powered)</b>	6" x 3.7" x 2.9" (152×94×74 mm)
<b>Weight (DC Powered)</b>	3.2 lbs ( 1.45 kg )

## PART NUMBERING SYSTEM

AM - Amkom "MINI" SIZE MODEL SERIES  
 DB - DBS-Band 17.3 - 18.1 GHz & 18.1 to 18.4 GHz  
 10 | 20 | 30 | 40 - Rated Power in Watts  
 N | F - 50 Ohm or 75 Ohm IF Input Connector Type  
 M - M&C RS232/485, Ethernet, Telnet & SNMP  
 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

<b>IF Connector</b>	N-type (50 Ohm)   F-type (75 Ohm)
<b>Universal Prime Power via IF or MS/M&amp;C Connector (7.0 A Current Limit Protection Through Coax)</b>	+18 -55 VDC
<b>Output VSWR</b>	1.5:1
<b>Output Interface</b>	WR62 Grooved
<b>Input VSWR</b>	1.5:1
<b>10MHz External Ref. (Internal High Stability +/- 0.1ppm Option Available)</b>	10MHz Reference Level: 0dBm +/- 5dBm

## GAIN

<b>Gain (Temperature Compensated)</b>	65dB(min) 70 dB(typ.)
<b>Gain Flatness 1MHz</b>	± 0.1 dB
<b>Gain Flatness 36MHz</b>	± 0.5 dB
<b>Gain Flatness Full Band</b>	± 1.5 dB
<b>Gain Attenuation</b>	31.5dB in 0.5dB Steps, 0.1dB available

