

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

Operating RF Frequency	17.3 - 18.1 GHz & 18.1 to 18.4 GHz
Operating IF frequency	950 to 1750 MHz, 1400MHz - 1700MHz
Local Oscillator	16.35GHz, 16.70GHz
Rated Output Power PSAT	20W 43.0 dBm
Linear Power SR @ -26dBc PLIN	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
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

20W 43.0 dBm PSAT	115W
16W 42.0 dBm PLIN	95W

PROTECTION

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

ENVIRONMENT SPECIFICATIONS

Environmental MIL-STD	Compliant with MIL-STD 810E
Vibration MIL-STD	MIL-STD 810F, Method 514.5
Operating Temperature Range	- 40° C to + 70° C
Storage Temperature Range	- 50°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	70,000ft, 21,336m

M&C INTERFACE

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

MECHANICAL SPECIFICATIONS

Dimensions (DC Powered)	6" x 3.7" x 2.9" (152×94×74 mm)
Weight (DC Powered)	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

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)	+18 -55 VDC
Output VSWR	1.5:1
Output Interface	WR62 Grooved
Input VSWR	1.5:1
10MHz External Ref. (Internal High Stability +/- 0.1ppm Option Available)	10MHz Reference Level: 0dBm +/- 5dBm

GAIN

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

