AFKU(S,D)-20W

GaAs + GaN Technology

THE WORLD's SMALLEST Fan-less 20W Ku-Band BUC



FEATURES:

- Hyper-Light Package Design Only 4.2lbs (1.9kg)
- Extreme Stability, Reliability and Performance
- Built-in HPA Overdrive Circuit Protection
- Built-in Optimized Linearization
- · Built-in Receive Band Reject Filter
- Built-in Anti Vibration Technology
- Built-in DC Input Noise Suppression Filter
- Extreme GaN Linearity and Efficiency
- Exceeds ALL IESS-308/309 Phase Noise Standards
- Triple protection sealed waveguide output
- Fan-less Design
- Fully Assembled and Rigorously Tested in the USA
- 3 Year Warranty



DESIGN OVERVIEW:

The "FANLESS BRICK" series Extended (13.75 - 14.5GHz), Standard (14.0 - 14.5GHz) and Dual(13.75 - 14.5GHz | 14.0 - 14.5GHz) Frequency 20W Ku-Band BUCs are the next generation of the World's Smallest feed-horn & boom-arm mountable BUCs in the industry, weighing-in only at 4.2lbs (1.9kg) and working at high temp up to 60°C.

PERFORMANCE SPECIFICATIONS

Operating RF Frequency	AFKS 14.0 - 14.5 GHz AFKU 13.75 -14.5GHz AFKD 13.75 -14.5 14.0 - 14.5 GHz
Operating IF frequency	950 to 1450 MHz 950 - 1700 MHz
Local Oscillator	11.80 GHz 13.05 GHz 12.80 GHz
Rated Output Power PSAT Linear Power SR @ -26dBc PLIN	20W 43.0 dBm 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

PROTECTION

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

SPURIOUS & PHASE NOISE

In-Band/Out-band Spurious	-60dBc max.	
Group Delay	Ripple 1 nsec point to po	oint 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 (10.95 - 12	2.75 GHz)
Phase Noise (Up Converter) (Ext. Ref.)	-55 dBc/Hz @ 10 Hz -65 dBc/Hz @ 100 Hz -75 dBc/Hz @ 1 kHz -85 dBc/Hz @ 10 kHz -95 dBc/Hz @ 100 kHz	-115dBc/Hz -135dBc/Hz -150dBc/Hz -155dBc/Hz -160dBc/Hz

POWER CONSUMPTION

20W 43.0 dBm PSAT 95W **16W 42.0 dBm PLIN** 75W

COMPLIANCE INFORMATION

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

ENVIROMENT SPECIFICATIONS

Environmental MIL-STD Vibration MIL-STD	Compliant with MIL-STD810E MIL-STD810F, Method 514.5 C-2 Transport
Operating Temperature Range	- 40° C to + 60°C
Storage Temperature Range	- 60°C to + 85°C
Humidity	100% Condensing, IP67 Rated
Shock	20 g peak, 11 msec, 1/2 sine
Altitude	21,500ft, 6,500m

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 (DC Powered)	6.54" x 4.72" x 3.10" (166×120×79 mm) Without Connectors
Weight (DC Powered)	4.2lbs (1.9kg)

PART NUMBERING SYSTEM

- AF "FAN-LESS BRICK" MODEL SERIES
- KU Universal Ku-Band 13.75 14.50 GHz
- KS Standard Ku-Band 14.0 14.50 GHz
- KL Low Ku-Band 12.75 13.25 GHz
- KD Dual Ku-Band 13.75 14.50 GHz 14.0 14.50 GHz
- 16 | 20 Rated Power in Watts
- N | F 50 Ohm or 75 Ohm IF Input Connector Type
- M Full M&C Option RS232/485, SNMP, Ethernet
- 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

N-type (50 Ohm) F-type (75 Ohm)
+ 18 - 55 VDC
1.3:1
WR75 Sealed & Grooved
1.5:1
10MHz Ref. Level: 0dBm +/- 5dBm Internal Ref. Stability +/- 0.1 ppm

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
Built-in Receive Reject Filter	Suppression by +50dB (min)



