

ASKU(S,L,D)-20W

GaAs + GaN Technology

20W Fanless Slim Ku-Band BUC for specific applications



FEATURES:

- Hyper-Light Package Design Only 3.3lbs
- Extreme Stability, Reliability and Performance
- High Temperature Mode - up to + 70°C
- Built-in HPA Overdrive Circuit Protection with over - temp shut down
- Built-in Optimized Linearization to specific power
- 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 (Customer cooling baseplate required)
- Built-in Internal Reject Filter
- 3 Year Warranty



DESIGN OVERVIEW:

The "SLIM FAN-LESS BRICK" series Extended (13.75 - 14.5GHz), Standard (14.0 - 14.5GHz) and Low(12.75 - 13.25GHz) Frequency 20W Ku-Band BUCs are the next generation of the World's Most efficient and compact size BUCs in the industry, weighing only 3.3lbs (1.5kg) and handling output power of 20W (min) at the Extended Ku-Band frequencies.

PERFORMANCE SPECIFICATIONS

| | |
|---|------------------------------------|
| Operating RF Frequency | ASKL 12.75 - 13.25 GHz |
| | ASKS 14.0 - 14.5 GHz |
| | ASKU 13.75 -14.5GHz |
| | ASKD 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 | 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 |

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 | -55dBc 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) | -155 dBm/Hz (10.95 - 12.75 GHz) | |
| 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 | 100W |
| 16W | 42.0 dBm PLIN | 75W |

PROTECTION

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

ENVIROMENT SPECIFICATIONS

| | |
|------------------------------------|--|
| Environmental MIL-STD | Compliant with MIL-STD810E |
| Vibration MIL-STD | MIL-STD810F, Method 514.5 C-2 Transport |
| Operating Temperature Range | - 40° C to + 70°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 |
| Cooling | Customer Supplied Mounted Cooling Baseplate |

GAIN

| | |
|---------------------------------------|----------------------------|
| Gain (Temperature Compensated) | 66dB(min) 70 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 |

PART NUMBERING SYSTEM

AS - "SLIM 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
 20 | 30 | 40 | 50 - Rated Power in Linear 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) | + 18-55 VDC |
| Output VSWR | 1.3:1 |
| Output Interface | WR75 Grooved |
| Input VSWR | 1.5:1 |
| RX Rejection | Internal RX Reject Filter |

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 |

MECHANICAL SPECIFICATIONS

| | |
|--------------------------------|---------------------------------------|
| Dimensions (DC Powered) | 6" x 4.41" x 1.82" Without Connectors |
| Weight (DC Powered) | 3.3lbs (1.5kg) |

WR75 SEALED WAVEGUIDE OUTPUT

