# AKLF-20W

Low cost 20W low Ku-Band BUCs

## FEATURES:

- Low Cost Solution
- Extreme Efficiency, Stability, Reliability and Performance
- Hyper-Light Package, Only 1.5 lbs
- Super Low Power Consumption (70W* @20W)
- Fan-less Design
- Exceeds ALL IESS-308/309 Phase Noise Standards
- 3-Year Warranty

## DESIGN OVERVIEW:

The low cost "FANLESS BRICK" series low Ku-Band BUCs are the next generation of the World's Smallest feed-horn & boom-arm mountable BUCs in the industry, weighing only 1.5 lbs and handling output power of 20W at the Ku-Band frequencies. We've picked the most mature, reliable and proven to be highly efficient amplifiers with internal overdrive protection. Each unit is vigorously tested at our California facility according to our ATP (Acceptance Testing Procedure).

## PERFORMANCE SPECIFICATIONS

| | |
|---|---|
| **Operating RF Frequency** | AKLF 12.75 - 13.25 GHz |
| **Operating IF frequency** | 950 - 1450 MHz |
| **Local Oscillator** | 11.80 GHz |
| **Rated Output Power PSAT**<br>**Linear Power SR @ -26dBc PLIN** | 20W 43.0 dBm<br>16W 42.0 dBm |
| **IMD3 (two tones) 3 dB Back Off** | -25 dBc max.<br>2 signal 5MHz apart at P-LINEAR |
| **Spectral Regrowth at PLINEAR**<br>**(QPSK at 1.5x and OQPSK at 1.0x symbol rate offset with 2 dB back-off from rated power)** | -30 dBc |

## SPURIOUS & PHASE NOISE

| | | |
|---|---|---|
| **In-Band/Out-band Spurious** | -60 dBc 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)** | -85 dBm/Hz | |
| **Noise Power Density (RX)** | 155 dBm/Hz (10.7 - 11.7 GHz) | |
| **Phase Noise**<br>**(Up Converter)\|(Ext. Ref.)** | -55 dBc/Hz @ 10 Hz<br>-65 dBc/Hz @ 100 Hz<br>-75 dBc/Hz @ 1 kHz<br>-85 dBc/Hz @ 10 kHz<br>-95 dBc/Hz @ 100 kHz | -115 dBc/Hz<br>-135 dBc/Hz<br>-150 dBc/Hz<br>-155 dBc/Hz<br>-160 dBc/Hz |

## POWER CONSUMPTION

| | |
|---|---|
| **20W 43.0 dBm PSAT** | 70W |
| **16W 42.0 dBm PLIN** | 60W |

## COMPLIANCE INFORMATION

| | | |
|---|---|---|
| MIL-STD-188/164C<br>MIL-STD-461E | DO-160G | ROHS, REACH, WEEE |

## PROTECTION

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

## 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 + 70° C |
| **Storage Temperature Range** | - 60° C to + 85° C |
| **Humidity** | 100% Condensing, IP67 |
| **Shock** | 20 g peak, 11 msec, 1/2 sine |
| **Altitude** | 50,000 ft, 15,240 m |

## M&C INTERFACE

| | |
|---|---|
| **Advanced Monitor & Control** | RS232 (RS48, Ethernet Web Page Based, Telnet)* |
| **ALARMS** | PLL LOCK, HPA, MUTE, TX |
| **Stealth PLIN Operation Mode** | LED Shut-Off \| Silenced fan |

## PART NUMBERING SYSTEM

S - Slim Size Series
F - Fan-less Series
G - Fan-less and Slim 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
6 \| 8 \| 10 \| 12 \| 16 \| 20 - Rated Power in Watts
N \| F - 50 Ohm or 75 Ohm IF Input Connector Type
M1 - M&C Option RS232 Only
M2 * - RS232/485, Ethernet, SNMP, Telnet
E - Power through MC connector
R - 10 MHz Ref. Auto Sense \| Internal Reference
B - Custom Label
H - High Gain +5 dB
U - Universal Mounting Bracket
C xxxx - Custom RAL Color Code
X - Custom Cable

* Advanced M&C option coming soon

## INPUT|OUTPUT INTERFACE

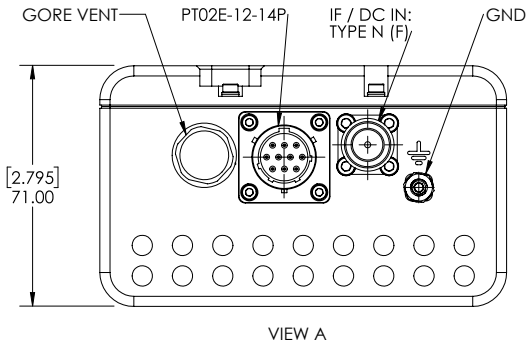
| | |
|---|---|
| **IF Connector** | N-type (50 Ohm) \| F-type (75 Ohm) |
| **Universal Prime Power via IF** | + 18 - 55 VDC |
| **Output Interface** | WR75 Sealed & Grooved |

## GAIN

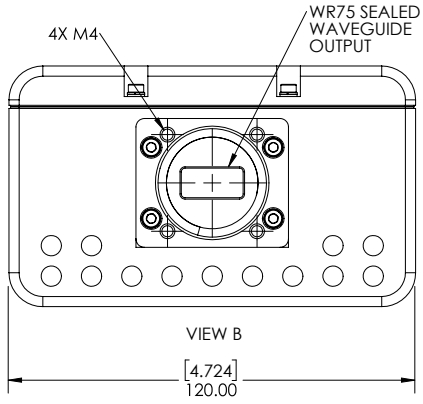
| | |
|---|---|
| **Gain (Temperature Compensated)** | 55 dB (min) 60 dB (typ.) |
| **TX Gain Flatness** | ± 0.75 dB max. over 40 MHz |
| **TX Gain variation 50 MHz** | ± 0.5 dB |
| **TX Gain variation 500 MHz** | ± 1.5 dB |

## MECHANICAL SPECIFICATIONS

| | |
|---|---|
| **Dimensions** | 6.1" x 4.7" x 2.8" (153 × 120 × 71 mm) |
| **Weight** | 1.5 lbs (0.68 kg) |



VIEW A



VIEW B

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