

ALKU(S,D)-60W(NA)

GaAs + GaN Technology

AC POWERED OUTDOOR 60W Ku-Band



FEATURES:

- Hyper-Light Package Design Only 5.5lbs (2.5kg)
- Extreme Stability, Reliability and Performance
- Built-in HPA Overdrive Circuit Protection
- Built-in Optimized Linearization
- Built-in Ultra 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
- Field Replaceable IP68 Rated Fans
- AC Power 85-260VAC
- Fully Assembled, and Rigorously Tested in the USA
- 3 Year Warranty



DESIGN OVERVIEW:

The "LIGHTWEIGHT" series Extended (13.75 - 14.5GHz), Standard (14.0 - 14.5GHz) and Dual(13.75 - 14.5GHz | 14.0 - 14.5GHz) Frequency 60W Ku-Band BUCs are the next generation of the AC Powered feed-horn & boom-arm mountable BUCs, at only at 5.5lbs (2.5kg) and working at high temp up to 70°C.

PERFORMANCE SPECIFICATIONS

| | |
|---|---|
| Operating RF Frequency | ALKS 14.0 - 14.5 GHz ALKU 13.75 -14.5GHz ALKD 13.75 -14.5 14.0 - 14.5 GHz |
| Operating IF frequency | 950 - 1700 MHz 950 - 1450 MHz |
| Local Oscillator | 12.80 GHz 13.05 GHz |
| Rated Output Power PSAT | 60W 47.8 dBm |
| Linear Power SR @ -26dBc PLIN | 48W 46.8 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 |

PROTECTION

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

POWER CONSUMPTION

| | |
|---------------------------|------|
| 60W 47.8 dBm PSAT | 260W |
| 48W 46.8 dBm P-LIN | 220W |

ENVIRONMENT SPECIFICATIONS

| | |
|---------------------------------------|------------------------------|
| Environmental MIL-STD | Compliant with MIL-STD810E |
| Vibration MIL-STD | MIL-STD810F, Method 514.5 |
| Operating Temperature Range | - 40° C to + 70°C |
| Storage Temperature Range | - 60°C to + 85°C |
| Fan Rating / Field Replaceable | IP 68, Ultra Long Life |
| 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) | 6.55" x 3.94" x 4.93" (166×100×125 mm) Without Connectors |
| Weight (DC Powered) | 5.5lbs (2.5kg) |

PART NUMBERING SYSTEM

AL- "LIGHT 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
 40 | 50 | 60 Rated Power in 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 3pin Power Connector | + 85-260 VAC |
| Aphenol PT02E-12-3P, Current Protection | |
| Output VSWR | 1.3:1 |
| Output Interface | WR75 Grooved |
| Input VSWR | 1.5:1 |
| 10MHz External Ref. (Internal High Stability +/- 0.1ppm Option Available) | 10MHz Ref. Level: 0dBm +/- 5dBm Internal Ref. Stability +/- 0.1 ppm |

GAIN

| | |
|---------------------------------------|--|
| Gain (Temperature Compensated) | 66dB(min) 72 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 |
| Gain Attenuation | 31.5dB in 0.5dB Steps, 0.1dB available |

