

ALKL-40W

GaAs + GaN Technology

THE WORLD'S SMALLEST OUTDOOR 40W Low Ku-Band BUC High Temp +70C



FEATURES:

- Hyper-Light Package Design Only 3.5lbs (1.6kg)
- 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
- Fully Assembled, and Rigorously Tested in the USA
- 3 Year Warranty



DESIGN OVERVIEW:

The "LIGHTWEIGHT" series Low(12.75 - 13.25GHz) Frequency 40W Low 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 3.5lbs (1.6kg) and working at high temp up to 70°C.

PERFORMANCE SPECIFICATIONS

Operating RF Frequency	ALKL 12.75 - 13.25 GHz
Operating IF frequency	950 - 1700 MHz 950 - 1450 MHz
Local Oscillator	11.80 GHz 13.05 GHz 12.80 GHz
Rated Output Power PSAT	40W 46.0 dBm
Linear Power SR @ -26dBc PLIN	32W 45.0 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 (10.7 - 11.7 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

PROTECTION

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

POWER CONSUMPTION

40W 46.0 dBm PSAT	190W
32W 45.0 dBm P-LIN	155W

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, Field Replaceable
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 .3" (166×100×76.2 mm) Without Connectors
Weight (DC Powered)	3.5lbs (1.6kg)

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 IF or MS/M&C Connector (7.0 A Current Limit Protection Through Coax)	+22 -55 VDC
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

