ALKA-13

13 Ka-Band BUC 27.5 - 31.0 GHz

FEATURES:

- Hyper-Light yet Robust Package: 3.5 lbs (1.6 kg)
- Superior Quality, Efficiency, Reliability and Performance
- Built-in HPA Overdrive Circuit Protection
- High Temperature Mode - up to + 70°C
- OPEN-BMIP Ready to Work with iDirect X7 and 950MP
- Complies with MIL-STD-188-164C, RTCA DO-160G, WGS
- Industry Leading Over Temperature Performance
- Field Replaceable IP68 Long Life Rated Fans
- Assembled and Rigorously Tested in the USA
- 3-Year Warranty

DESIGN OVERVIEW:

The "LIGHTWEIGHT" series 27.5 - 31.0 GHz Frequency 13W Full Ka-Band BUCs are the next generation of the World's Smallest feed-horn & boom-arm mountable BUCs in the industry, weighing-in only at 3.5 lbs (1.6 kg) and working at high temp up to 70°C.

PERFORMANCE SPECIFICATIONS

Operating RF Frequency	ALKA 27.5 - 31.0 GHz	
Operating IF frequency	950 - 1950 | 1000 - 2000 MHz	
Local Oscillator	Selectable	
Rated Output Power PSAT **Linear Power SR @ -26 dBc PLIN**	ALKA-13	13W 41.0 dBm 8W 39.0 dBm
IMD3 (two tones) 3 dB Back Off	-25 dBc max. 2 signal 5 MHz apart at P-LINEAR	
Spectral Regrowth at P-LINEAR **(QPSK at 1.5x and OQPSK at 1.0x symbol rate offset with 3 dB back-off from rated power)**	-30 dBc	
10 MHz or 50 MHz External Ref. **0 dBm +/- 5 dBm**	10 MHz or 50 MHz	

PROTECTION

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

COMPLIANCE INFORMATION

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

SPURIOUS & PHASE NOISE

In-Band/Out-band Spurious	-60 dBc max.	
Group Delay	Ripple 1 nsec point to point max.	
AM/PM Conversion	2.0°/dB max. at 3 dB output backoff	
Noise Power Density (TX)	-80 dBm/Hz	
Noise Power Density (RX)	-150 dBm/Hz	
Phase Noise **(Up Converter)|(Ext. Ref.)**	-33 dBc/Hz @ 10 Hz -63 dBc/Hz @ 100 Hz -73 dBc/Hz @ 1 kHz -83 dBc/Hz @ 10 kHz -93 dBc/Hz @ 100 kHz	-115 dBc/Hz -135 dBc/Hz -150 dBc/Hz -155 dBc/Hz -160 dBc/Hz

POWER CONSUMPTION

ALKA-13	**13W 41.0 dBm PSAT** **8W 39.0 dBm PLIN**	110W 60W

GAIN

Gain (Temperature Compensated)	64 dB (min) 68 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

ENVIRONMENTAL SPECIFICATIONS

Environmental MIL-STD **Vibration MIL-STD**	Compliant with MIL-STD-810E MIL-STD-810F, Method 514.5
Operating Temperature Range	- 40° C to + 70° C
Storage Temperature Range	- 60° C to + 85° C
Fan Rating / Field Replaceable	IP68, Long Life
Humidity	100% Condensing, IP67 Rated
Shock	20 g peak, 11 msec, 1/2 sine
Altitude	50,000 ft, 15,240 m
Built-in Receive Reject Filter	Suppression by +60 dB (min)

MECHANICAL SPECIFICATIONS

Dimensions (DC Powered)	6.5" x 3.94" x 3" (165 × 100 × 76 mm) Without Connectors
Weight (DC Powered)	3.5 lbs (1.6 kg)

PART NUMBERING SYSTEM

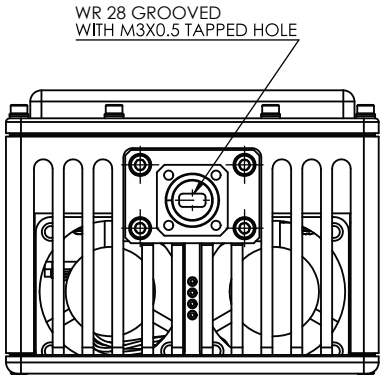
AL - "LIGHTWEIGHT" MODEL SERIES
KAF - Full Ka-Band 27.5 - 31.0 GHz
KAC - Commercial Ka-Band 29.0 - 30.0 GHz
KAM - Military and Commercial Band 29 - 31.0 GHz
KAO - O3B Bands 27.652 - 28.388 GHz, 28.172 - 29.071 GHz
10 | 13 | 16 | 20 | 25 | 30 | 40 - Rated PSAT Power in Watts
N - 50 Ohm IF Input Connector (other interface options available)
I - Isolator for VSWR Improvement to 1.35:1
M - M&C Option - RS232/485 + Ethernet + SNMP
O - OPENBMIP Protocol Ready
R - Auto Sense Ref Detector| Internal +/- 0.05ppm Stability
C - Custom color, housing or other options available
X - Custom option

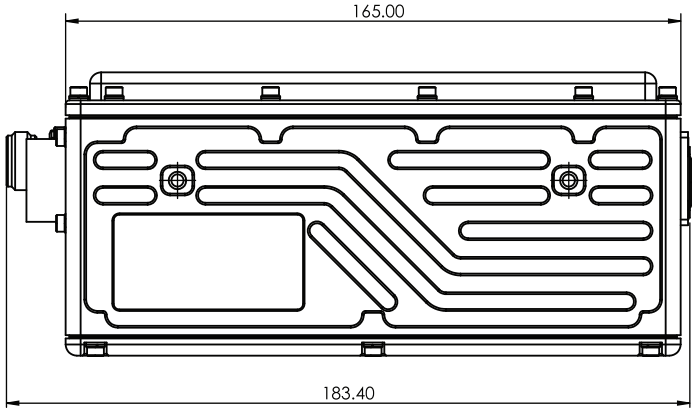
INPUT|OUTPUT INTERFACE

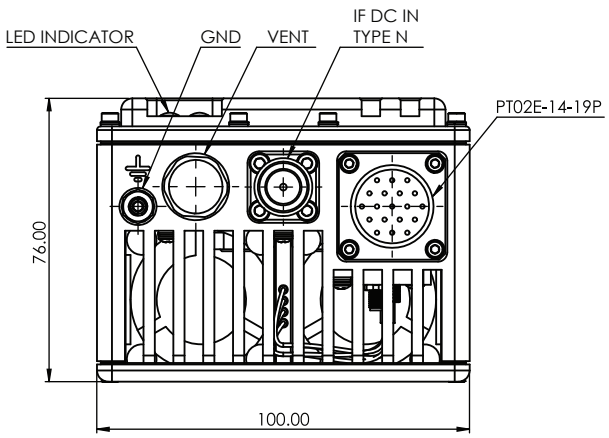
IF Connector	N-type (50 Ohm)
Universal Prime Power via IF or MS/M&C Connector (7.0 A Current Limit Protection Through Coax)	+ 22 - 55 VDC
Output VSWR	1.5:1 (1.35:1 with optional Isolator)
Output Interface	WR28 Grooved
Input VSWR	1.5:1

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







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