

ALX-50



THE WORLD'S SMALLEST OUTDOOR 50W X-Band BUC High Temp +70C

FEATURES:

- Hyper-Light Package Design Only 4 lbs (1.8 kg)
- 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
- Extreme GaN Linearity and Efficiency
- Triple protection sealed waveguide output
- Field Replaceable IP69K Rated Fans
- Fully Assembled, and Rigorously Tested in the USA
- 3-Year Warranty



DESIGN OVERVIEW:

The 'LIGHTWEIGHT' Series 7.9 - 8.4 GHz 50W X-band BUCs are the next generation of the world's most compact and efficient feed-horn & boom-arm mountable BUCs in the industry, weighing only 4 lbs (1.8 kg) and working at high temp up to 70°C.

PERFORMANCE SPECIFICATIONS

| | |
|--|---|
| Operating RF Frequency | 7.9 - 8.4 GHz |
| Operating IF frequency | 950 - 1450 MHz |
| Local Oscillator | 6.95 GHz |
| Rated Output Power PSAT | 50W 47.0 dBm |
| Linear Power SR @-26 dBc PLIN | 40W 46.0 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 2 dB back-off from rated power) | -30 dBc |
| 10 MHz External Ref. (Internal High Stability Optional) | 10 MHz Ref. Level: 0 dBm +/- 5 dBm Internal Ref. Stability +/- 0.1 ppm |

COMPLIANCE INFORMATION

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

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 | |
| Phase Noise (Up Converter) (Ext. Ref.) | -55 dBc/Hz @ 10 Hz | -115 dBc/Hz |
| | -65 dBc/Hz @ 100 Hz | -135 dBc/Hz |
| | -75 dBc/Hz @ 1 kHz | -150 dBc/Hz |
| | -85 dBc/Hz @ 10 kHz | -155 dBc/Hz |
| | -95 dBc/Hz @ 100 kHz | -160 dBc/Hz |

POWER CONSUMPTION

| | |
|-------------------|------|
| 50W 47.0 dBm PSAT | 175W |
| 40W 46.0 dBm PLIN | 157W |

PROTECTION

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

ENVIRONMENTAL SPECIFICATIONS

| | |
|---------------------------------------|--|
| Environmental MIL-STD | Compliant with WGS, MIL-STD-810E |
| Vibration MIL-STD | STD-188-164, and RTCA/DO-160G |
| Operating Temperature Range | - 40° C to + 70° C |
| Storage Temperature Range | - 60° C to + 85° C |
| Fan Rating / Field Replaceable | IP69K (fan module can be purchased separately) |
| 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) |

M&C INTERFACE

| | |
|--|--|
| Advanced Monitor & Control | Ethernet Web Page Based, SNMP, RS232/485 |
| ALARMS | PLL LOCK, HPA, VSWR, MUTE, TX |
| Stealth PLIN Operation Mode | LED Shut-Off Silenced fans |
| Administrative Interface (Optional) | OpenBMIP through RS-422 |

PART NUMBERING SYSTEM

AL - "LIGHTWEIGHT" MODEL SERIES

X - X-Band 7.9 - 8.4 GHz

20 | 30 | 40 | 50 | 60 | 80 | 100 - 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 (+79 dB - 82 dB)

W - Weatherproof Pelican Style Case

O - Other Custom Option

X - Custom Cable



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INPUT|OUTPUT INTERFACE

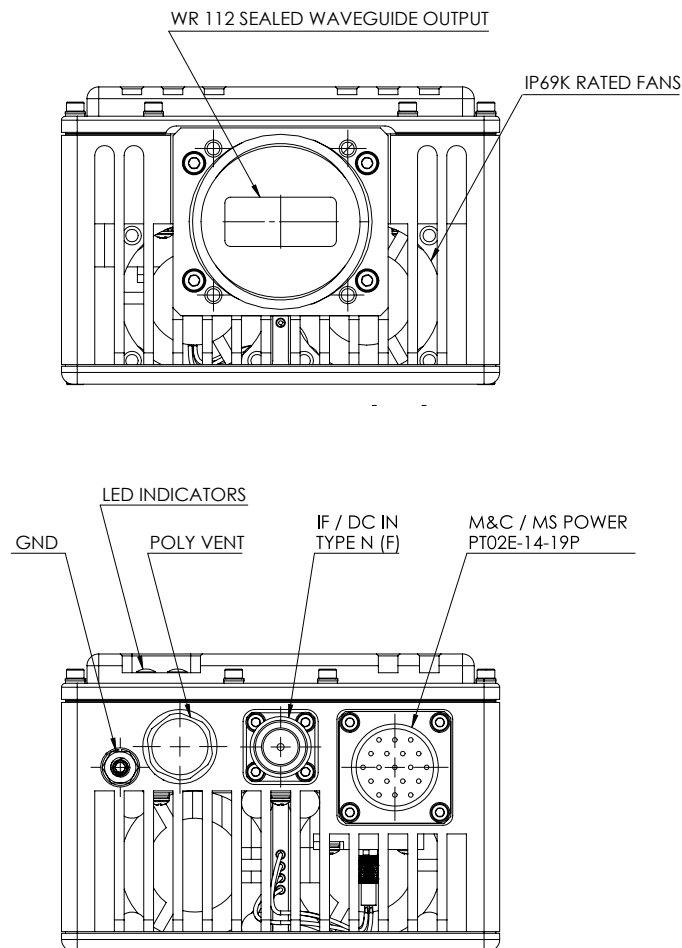
| | |
|---|-----------------------------------|
| IF Connector | N-type (50 Ohm) F-type (75 Ohm) |
| Universal Prime Power via IF or MS/M&C Connector (7.0 A Current Limit Protection Through Coax) | + 22 - 55 VDC |
| Output VSWR | 1.5:1 |
| Output Interface | CPR-112G, WR-90G, WR-112G |
| Input VSWR | 1.5:1 |

GAIN

| | |
|---------------------------------------|--------------------------|
| Gain (Temperature Compensated) | 66 dB (min) 70 dB (typ.) |
| Gain Flatness 1 MHz | ± 0.1 dB |
| Gain Flatness 36 MHz | ± 0.5 dB |
| Gain Flatness Full Band | ± 1.5 dB |

MECHANICAL SPECIFICATIONS

| | |
|--------------------------------|--|
| Dimensions (DC Powered) | 6.55" x 4.4" x .3" (166.5 x 112 x 76 mm) Without Connectors |
| Weight (DC Powered) | 4 lbs (1.8 kg) |



2892 S Santa Fe Ave, Bldg, 115 San Marcos CA 92069