ALB Ku/Ka Series

Ruggedized BUC

ALB Ku/Ka series of ruggedized BUCs have been developed for operation in extreme environments. Powerful and robust, these BUCs are designed and tested to meet the stringent MIL STD 810F for shock and vibration. The units are light and compact and have in-built redundancy feature. With just a control cable connection between the two units, they can be ready for operation in the redundancy mode.

The BUCs operate over a very wide output frequency range from 13.75 GHz to 14.80GHz (Ku band) /29-31GHz (Ka band). Stringent phase noise specification renders the BUC suitable for use in low, medium and high data rate links. The BUCs are highly linear, so that they can be used close to their rated output power.

The BUCs are designed to meet the EN310489-1 for Radio Spectrum matters. IEC60950 for safety and FCC part 15 class B for EMI/EMC.

The BUC can be controlled and monitored through the PC on RS 485 interface.

Features

- Fully MIL STD 810F certified
- World's first rugged BUC design with Ku band and Ka band
- Compact with enhanced M&C feature
- Available for wide frequency range of operation
- 13.75 to 14.80GHz (Ku band) & 29 to 31 GHz (Ka band)
- Highly reliable with wide operation temperature range
- Gain compensation over temperature
- RS485 and Ethernet M&C option
- Built-in redundancy feature
- Built-in 10MHz (auto sensing)

Applications

- Emergency link restoration
- Hub and VSAT terminals
- Video conferencing
- Broadcast

Quality Assurance

100% of all BUCs go through stringent quality checks in addition to well-defined Electrical Stress Screening to ensure operations in harsh outdoor environments. The BUCs are also subjected to seal test for water ingress verification.

Reliability

Field proven under harsh environment conditions, Agilis ODUs can withstand temperature ranging from -40 °C to +60 °C with up to 100% humidity.

Agilis

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Technical Specifications

RF Specifications (Ka band)

Transmit Frequency	29.0GHz to 31.0GHz
IF Frequency Range	950MHz to 1950MHz
Lo Frequency Range	Switchable 28.55/29.05 GHz
Output Power @ P1dB	39dBm (8W)
Small Signal Gain	62dB (Min for 8W)
Gain Flatness	±2.0dB 500MHz BW
Gain Flatness over 40MHz	±0.5dB typ
Gain Variation	±2dB over the operating temperature range
Inter Modulation	-25dBc relative to combine power of two carriers at 3dB total power backoff from P1dB
Phase Noise @ Offset	
1KHz	-75dBc/Hz typ
10KHz	-85dBc/Hz typ
100KHz	-95dBc/Hz typ
Spurious	-60dBc typ
I/P VSWR	1.5:1 max
O/P VSWR	2.0:1 max

Interfaces

IF Input Interface	50 Ohms N-type Female / 75 Ohms F-type Female (optional)
Output Interface	WR28 grooved

RF Specifications (Ku band)

Transmit Frequency	14.00GHz – 14.5GHz 13.75GHz – 14.5GHz 13.75GHz – 14.8GHz
IF Frequency Range	950MHz – 1450MHz 950MHz – 1700MHz
LO Frequency	13.05GHz (Ku-Band) 12.80GHz (Extended Ku-Band) 13.10GHz (Super Extended Ku-Band)
Output Power P1dB	46dBm
Inter Modulation	-25dBc relative to combine power of two carriers at 3dB total power backoff from P1dB
Small Signal Gain	70dB Min
Gain Flatness Full Band	±2dB over the O/P frequency band
Gain Variation	±2dB over the operating temperature range
Gain Control	20dB in step of 0.5dB
O/P spurious	According to EN301428
Phase Noise @ Offset	
1KHz	-73dBc/Hz
10KHz	-83dBc/Hz
100KHz	-93dBc/Hz
I/P VSWR	1.5:1
O/P VSWR	1.25:1 (with optional external isolator)
Noise Power Density Tx BD	70dBW/4KHz
Rx BD	142dBW/4KHz

Interfaces

IF Input Interface	50 Ohms N-type Female
Output Interface	WR 75G grooved

Power

Prime Power	90 – 264VAC
Power Consumption	300W (typical)

External Reference

Frequency	10 MHz (50MHz optional for Ka band)
Power	-5dBm to +5dBm
External reference phase noise requirement @ frequency offset	
1KHz	-150dBc/Hz
10KHz	-155dBc/Hz

Environmental

Operating Voltage	-40ºC to +60ºC
Power Supply Interface	Up to 100% Weather protection sealed to IP65

Monitor & Control

Monitor	BUC temperature LO unlocked alarm Status alarm RF Output Power detection LED indication
Control	Adjustable gain with 0.5dB step size RF output mute
Interface	RS232/RS485, Ethernet (SNMP & HTTP)
Tx Redundancy	Redundancy-ready (inbuilt)

Mechanical

Dimensions	300L X 210W x 180H
Weight	18kg
Colour	White powder coat

Compliance Standard

IEC 609501-2nd Edition	International Safety Standard for Information Technology Equipment
ETSI EN 301 489-12	Electromagnetic Compatibility and Radio Spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) Standard for radio equipment and services; Part 12: Specific conditions for Very Small Aperture Terminal, Satellite Interactive Earth Stations operated in the frequency ranges between 4 GHz and 30 GHz in the fixed Satellite Service (FSS)
ETSI EN 301 489-1	Electromagnetic Compatibility and Radio Spectrum Matters (ERM); ElectroMagnetic Compatibility Standard for Radio Equipment and Services
FCC Part 15 Class B	Two levels of radiation and conducted emissions Limits for unintentional radiators (FCC Mark)

Note: All specifications are subject to change without notice.
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