

VBC2020 Satellite BUC 20 Watt



Features

- Complete BUC for L-band Earth Stations
- Low Cost
- Built-in Monitor and Control Capability
- Converter and Power Amplifier in Single Housing
- Digital Gain Compensation



Description

The Vitacom C-band 20 Watt BUC, model VBC2020, is designed to provide a low-cost, high-performance solution for satellite communications' networks. The BUC is designed with a 950-1525 MHz input, to be able to interface with a wide range of commercially-available L-band modems, including the Vitacom M500 family of modems. The BUC performs a block upconversion of the input frequency band to the transmit range of 5850 – 6425 MHz.

The BUC is designed to mount on the kingpost or feed support arm of the antenna. The Type-N output can be connected to the feed very simply with a heliax or other low-loss RF cable.

Monitor and Control

The operation of the BUC is controlled by a microprocessor-based computer mounted inside the BUC. This M&C card controls the operation of the BUC, including the built-in digital gain control. Via the RS-232 interface, the operator can control the transmit and receive gains of the unit, the transmit and receive frequencies, and the power amplifier mute. In addition, the operator can monitor the status of the BUC.

Built-in Surge Suppressor

Each BUC includes a built-in AC line surge suppressor in series with the AC input of the unit. The surge suppressor is designed to work in conjunction with the customer UPS to insure that the BUC continues to operate during and after power line spikes and surges.

Power Supply

The 20 Watt BUC is designed to operate from 115 V/230 VAC via an autoranging power supply. Careful design has resulted in low power consumption by the BUC, reducing the size of fans needed for fan cooling. This greatly improves the reliability of the unit and reduces the need for periodic site visits for maintenance.

Redundancy

Each Vitacom BUC has built-in programmed intelligence to allow fully redundant operation. This integrated and economical approach brings redundant capability to a level suitable for even low cost remote stations. The addition of a second BUC, appropriate waveguide switches/cables, and the waveguide control unit results in an economical redundant earth station.

Installation

Vitacom has designed installation kits to mount the BUC to a wide range of available antennas. These installation kits include detailed drawings and installation procedures for installing the BUC on specific antennas. The BUC weighs approximately 32 lbs. Vitacom technical support can provide assistance in determining the best location for mounting the BUC.

When the installation kit is ordered, all necessary connectors are provided for the required cables. Supply of all the miscellaneous parts required for the installation helps speed the process and provides a consistent, high-quality installation every time.



VBC2020 Satellite BUC 20 Watt Specifications

Transmit RF Input

Frequency Range	950-1525 MHz
Connector	Type-N female
Impedance	50 Ohms nom
VSWR	<2.0:1
Input Level	P1dB GCP obtained with input of -23 dBm nominal

Transmit RF Output

Frequency Range	5850 to 6425 MHz
IF Bandwidth	575 MHz Instantaneous

Power Level, 1 dB GCP

10-Watt BUC	+43 dBm min over temp and frequency
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Gain	67 dB nom
Gain Stability -40C to +50C	+/- 2 dB
Gain Stability 24 hours	+/- 0.25 dB

Spurious Outputs

Dependent, at rated power	- 50 dBc max
Independent	- 10 dBm max
Harmonic Outputs	- 30 dBc max at rated power
Third Order IMD Products	- 30 dBc (relative to each carrier) with 2 carriers each at -10 dB rel to rated P1 dB GCP and -20 dBc for 2 carriers each at - 6 dB rel to rated P1 dB GCP

Local Oscillator

Phase Noise	Offset	Level
	0.1 kHz	-60 dBc/Hz
	1 kHz	-70 dBc/Hz
	10 kHz	-80 dBc/Hz
	100 kHz	-90 dBc/Hz
	1000 kHz	-100 dBc/Hz

Monitor and Control System

Local Signal level	RS-232
Local Emulation	VT-100
Local Data Rate	9600 baud
Local Data	8 data bits, 1 stop bit, no parity

Input Power

AC Voltage	115/230 Volts AC
AC Power	200 Watts nom

Environmental Conditions

Temperature Range	-40° deg C to +50° deg C
Humidity	100%, Condensing

Mechanical Specifications

18" L x 8.5" W x 11.5" H	32 lbs.
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Specifications subject to change without notice.

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