

MAIN FEATURES

- ❖ 70 MHz input frequency
- ❖ 2000 – 2400 MHz output frequency range
- ❖ 20 MHz IF bandwidth
- ❖ Excellent phase noise parameters
- ❖ Low spurious level
- ❖ Indoor construction



DESCRIPTION

This document describes the BMCU32 S-band Indoor upconverter developed and manufactured by BHE. This upconverter has 20 MHz IF bandwidth and low group delay ripple, thus it is suitable for high data rate signal transmission in satellite ground stations. It has an Indoor construction. The upconverter channel is operated from internal local sources tuneable in 1 kHz steps which have excellent phase noise and low spurious level. The upconverter can be controlled and monitored via Ethernet, RS-232.

SPECIFICATIONS

GENERAL PARAMETERS	
IF input frequency	70 MHz
RF output band	2000 MHz – 2400 MHz
Type	Double conversion without inversion
No. of channels	1
Local source	Internal LO sources
IF INPUT PARAMETERS	
IF input frequency	70 MHz
IF bandwidth (-1 dB points)	40 MHz
Maximum input power level (non-destructive)	+15 dBm
Input VSWR	1.22:1 maximum
Nominal input impedance	50 Ω
Noise figure	12dB typical, 15 dB max. @ maximum gain
LO leakage	≤-95 dBm typical, -85dBm max.
RF OUTPUT PARAMETERS	
RF output band	2000 MHz – 2400 MHz
Output P1dB	≥+15 dBm (@ maximum gain)
3 rd order intermodulation	≥-54 dBc with two 0 dBm output signals (@ max. gain)
AM / PM conversion	≤0.03 ° / dB @ 0 dBm RF output power
Output VSWR	1.22:1 maximum
Nominal output impedance	50 Ω
Signal independent spurious	≤-70 dBm
Signal related spurious	≤-65 dBc
LO leakage	≤-90 dBm



BMCU32

S-band Indoor Upconverter 70 MHz to 2000 – 2400 MHz

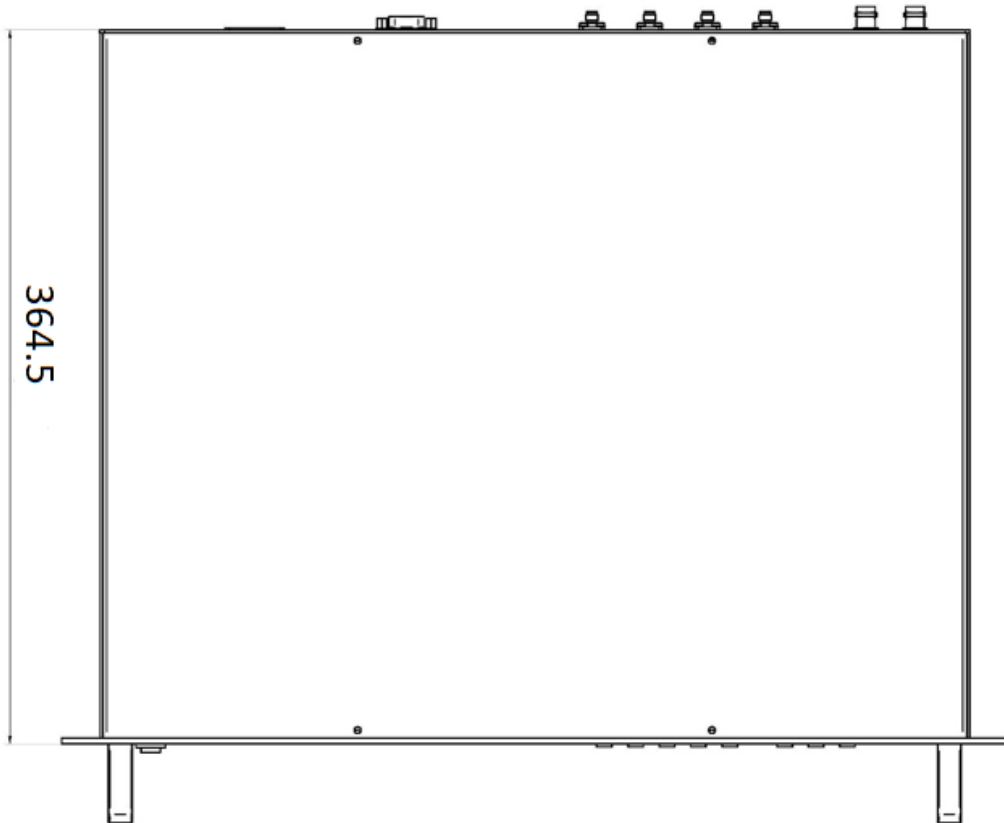
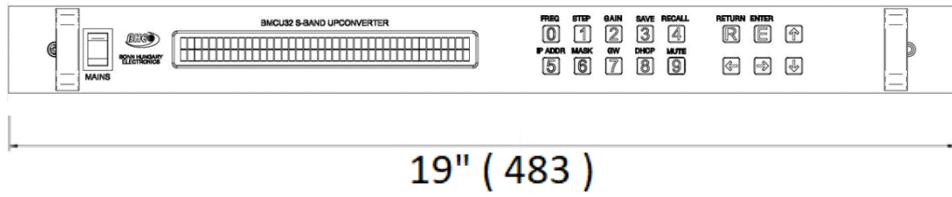
TRANSFER PARAMETERS		
Nominal conversion gain		+35 dB typical
Attenuation range		0-30 dB
Attenuation step		0.2 dB
Gain flatness any 40MHz		±0.3 dB typical, ±0.5 dB maximum
Image rejection		≥80 dB
Mute rejection		≥60 dB
Group delay ripple within IF band	Linear	≤0.03 ns / MHz
	Parabolic	≤0.01 ns / MHz ²
	Ripple	≤1 ns peak-peak
LOCAL OSCILLATOR PARAMETERS		
Step size		1 kHz
Frequency stability		≤±0.005 ppm within temperature range on internal reference
Frequency drift / day		≤±0.001 ppm at constant temperature
Phase noise on internal reference	@ 10 Hz	≤-60 dBc / Hz, -70 dBc / Hz typical
	@ 100 Hz	≤-78 dBc / Hz, -88 dBc / Hz typical
	@ 1 kHz	≤-88 dBc / Hz, -98 dBc / Hz typical
	@ 10 kHz	≤-96 dBc / Hz, -103 dBc / Hz typical
REFERENCE INPUT / OUTPUT PARAMETERS		
Frequency		10MHz
Input Level		-3 dBm – +6 dBm
Output level		0dBm typical
Reference Selection		Automatic change-over
SOFTWARE PARAMETERS		
Control and monitoring interface		TCP/IP 10 / 100 BaseT Ethernet M&C port Serial RS-232 (for redundancy control also)
Controlled parameters		RF frequency, Frequency step, Gain
Monitored parameters		Reference source (Int./Ext.), PLL status, Overheating temperature, Internal DC voltage and current error, Reference heating status
MECHANICAL PARAMETERS		
Dimension		19" 1U rack (364 mm depth)
Weight		5.5 kg
Surface finish		Light grey (RAL7035) powder coating
RF input / RF monitor connectors		SMA-type female
IF output /IF monitor connectors		SMA-type female
Reference input/output connectors		BNC-type female
Power connector		IEC C14 male
Control connector		RJ45 for Ethernet, DSUB-9 for RS-232
POWER SUPPLY PARAMETERS		
Voltage		90 – 250 VAC
Frequency		47 – 63 Hz
Power consumption		≤20 W
ENVIRONMENTAL PARAMETERS		
Operating temperature range		0 °C ... +50 °C
Storage temperature range		-20 °C ... +70 °C
Relative humidity		≤95 % (non-condensing)
Degree of protection		IP50
Shock and vibration		Normal handling by commercial carriers

Specifications are subject to change without notice.



BMCU32 S-band Indoor Upconverter 70 MHz to 2000 – 2400 MHz

OUTLINE DRAWING (mm)



ORDERING INFORMATION

MODEL NUMBER	DESCRIPTION
BMCU32K00191	BMCU32 S-band Indoor Upconverter 70 MHz to 2000 – 2400 MHz

DOCUMENT REVISION

DOCUMENT NAME	REVISION	DATE
BMCU32-LM-K00191	V01	2023-03-30