

## MAIN FEATURES

- ❖ Low phase noise
- ❖ Fine frequency step
- ❖ Low intermodulation distortion
- ❖ Dual conversion
- ❖ High stability internal reference
- ❖ High reliability
- ❖ Remote / manual control



## DESCRIPTION

This double conversion upconverter is intended for use in professional applications in S band such as satellite earth stations. BMCU68 includes a high performance upconverter modul with a low noise local oscillators, microprocessor based monitor and control circuitry, a front panel with control keys and status display and own AC / DC power supply. BMCU68 can be controlled from the front panel (manual control) and via Ethernet (remote control). There is an AGC function within the upconverter and output level is independent of input level within a certain range.

## SPECIFICATIONS

IF INPUT CHARACTERISTICS	
Frequency	230MHz±4MHz
IF bandwidth	20MHz typ.
Input level	0 to -30dBm
Input level (damage threshold)	+5dBm
Impedance	50ohms
VSWR	<1.3:1
LO leakage at input ports	<-70dBm
RF OUTPUT CHARACTERISTICS	
Frequency	2025-2120MHz
Frequency step	1kHz
RF output level	7 to +13dBm, adjustable in 0.5dB step with +/-1dB accuracy The adjusted output level is constant in input level range (AGC function)
RF OUT monitor port	0dBc +/-1.0dB typ. from main output
Conversion	Dual conversion without inversion
Impedance	50ohms
VSWR	<1.35:1
Spurious, harmonics and LO leakage	<-60dBc in band signal related <-75dBm outside RF band <-100dBm in 2.2-2.3GHz band

TRANSFER CHARACTERISTICS	
Conversion type and sense	Dual conversion, no inversion
Gain range	20dB in 0.5dB steps (nominal gain depends on adjusted RF output level and nominal input level)
Gain flatness	+/-0.5dB in any 8MHz band, +/-0.8dB in full band
Gain slope	0.1dB/MHz max.
Gain stability	≤0.5dB p-p within temperature range 22±3°C
Mute rejection	>60dB
Noise figure	≤12dB at max. gain and ≤15dB at 15dB gain
Image rejection	>60dB
IM3 distortion	<-50dBc at 0dBm output power
LO spurious content	Related to frequency: <-60dBc Other: <-70dBc
Group delay variation	Linear: ≤0.5ns/MHz Parabolic: ≤0.1ns/MHz <sup>2</sup> Ripple: ≤1ns p-p within ±5MHz of center freq.
Group delay stability	≤2ns within temperature range 22±3°C
Phase stability	≤5degrees within temperature range 22±3°C
LO CHARACTERISTICS	
Frequency stability	better than $\pm 2 \times 10^{-8}$ over temperature
Frequency aging	<±5 × 10 <sup>-8</sup> /year
Warm-up time	<5min.
Step size	1kHz
Phase Noise	@100Hz ≤-80dBc/Hz, -85dBc/Hz typ. @1kHz ≤-90dBc/Hz, -95dBc/Hz typ. @10kHz ≤-98dBc/Hz, -103dBc/Hz typ.
External reference input	5 or 10 or 100MHz, -3 to +7dBm typ., automatic change-over Note that there is a warm-up time (<5min.) when returning to internal reference.
MONITORING & CONTROL	
Remote M & C Interface	TCP/IP Ethernet, (100Mbps)
Manual	on front panel via the keyboard and display
Controlled parameters	Output frequency, output level, frequency step, mute/unmute, reference frequency selection
Monitored parameters	LO1&LO2 lock/unlock, reference source, failures/alarms
GENERAL	
RF output connector	N-type female, rear panel
RF OUT monitor connector	N-type female, rear panel
IF input connector	N-type female, rear panel
EXT REF. input connector	BNC-type female, rear panel
LO1, LO2 monitor connectors	SMA-type female, front panel
M&C connector	RJ-45 type connector, rear panel
Power supply input voltage	90-264VAC
Power supply input frequency	47-63Hz
Power consumption	20W typ.



## BMCU68 230MHz to S-band Upconverter

Operational temperature range	0 to +50°C
Storage temperature range	-20 to +70°C
Relative humidity	Up to 95% (non condensing)
Mechanical characteristics	19" Rack, 1U high
Weight	5.6kg
Front and rear panel finish	Painted (RAL7035)

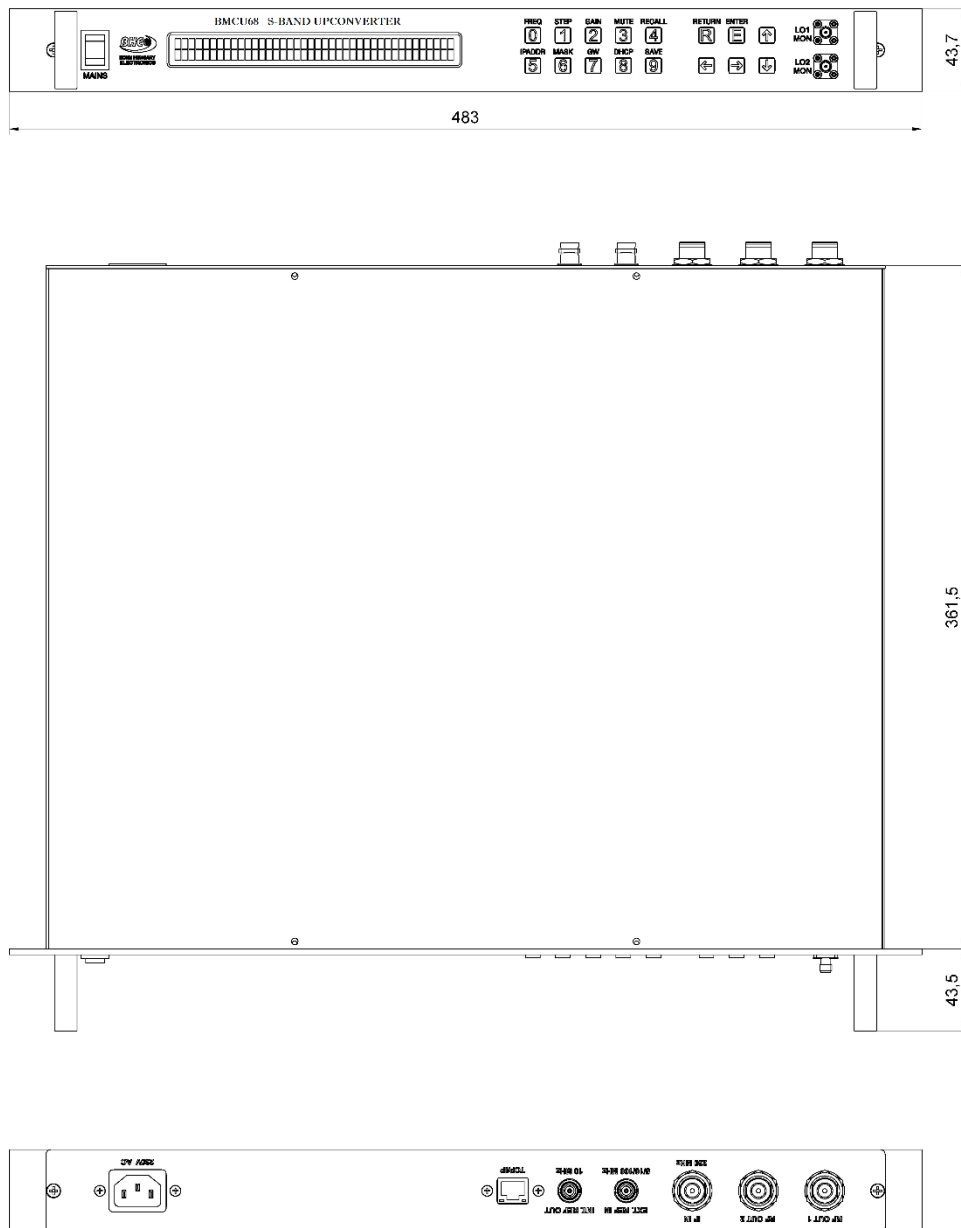
The local synthesizer design is based on Integer-N multiple loop type and provides exact frequency conversion when locked to external reference.

Specifications are subject to change without notice.



# BMCU68 230MHz to S-band Upconverter

## OUTLINE DRAWING (mm)



## ORDERING INFORMATION

MODEL NUMBER	DESCRIPTION
BMCU68K10832	BMCU68 230 MHz to S band, 2025-2120 MHz, step 1kHz, 19" 1U

## DOCUMENT REVISION

DOCUMENT NAME	REVISION	DATE
BMCU68-LM-K10832	V01	29/03/2023