

MAIN FEATURES

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



DESCRIPTION

This double conversion down converter is intended for use in professional applications in X band such as satellite earth stations. The BMCD49 includes a high performance downconverter module with low noise local oscillator, microprocessor based monitor and control circuitry, a front panel with control keys and status display and an AC/DC power supply. The BMCD49 can be controlled from the front panel (manual control) and via Ethernet or RS-232 (remote control).

SPECIFICATIONS

GENERAL	
Nominal RF input frequency	8000-8500MHz (signal bandwidth of ± 200 MHz is supported)
IF output frequency	720MHz
Type	Single conversion without inversion
No. of Channels	1
Local source	Internal LO source
Local frequency	7280-7780MHz (tunable in 1kHz steps)
RF INPUT CHARACTERISTICS	
RF input frequency	8000-8500MHz
Input return loss	> 18dB, 22dB typ.
Nominal input impedance	50 Ω
Input operational signal level	-70dBm to -40dBm
Max. input power level (nondestructive)	> +7dBm
Noise figure	≤ 12 dB @ maximum gain, 8dB typ.
IF OUTPUT CHARACTERISTICS	
IF output frequency	720MHz
IF bandwidth (-1dB points)	$\geq \pm 200$ MHz
Output P1dB	$\geq +15$ dBm @ maximum gain
Output return loss	> 18dB, 20dB typ.
Nominal output impedance	50 Ω
Nominal output power level	-20dBm to 0dBm
Spurious (signal related)	≤ -60 dBc, -65dBc typ.



BMCD49 X-band Downconverter 8000-8500MHz to 720MHz

TRANSFER CHARACTERISTICS		
Nominal conversion gain		50dB±1.5dB
Attenuation range		0dB to 20dB attenuation
Attenuation step		0.2dB
Gain ripple		≤±1.5dB in full frequency band ≤±0.6dB in any 36MHz band
Image rejection		>65dB
LO leakage		≤-70dBm
Group delay	Linear	≤0.05ns/MHz
	Parabolic	≤0.015ns/MHz ²
	Ripple	≤1ns peak-peak
INPUT FREQUENCY REFERENCE		
Frequency		The equipment shall lock on 5MHz, 10MHz and 100MHz
Level		0dBm±6dB
Reference output		-10dBm typ.
LOCAL OSCILLATOR CHARACTERISTICS		
Step size		1kHz
Frequency accuracy		±10Hz considering a perfect external frequency reference
Frequency stability		±0.01ppm within temperature range on internal reference
Phase noise on internal local sources [dBc/Hz]	@10Hz	≤-60
	@100Hz	≤-78
	@1kHz	≤-94
	@10kHz	≤-98
	@100kHz	≤-100
CONTROL & MONITORING		
Control and monitoring interface		Keypad and LCD display for local M&C TCP/IP over Ethernet and RS232 for remote M&C
Controls		ON/OFF switch, input frequency, gain, memory functions
MECHANICAL CHARACTERISTICS		
Dimensions		1U 19" rack (364mm depth)
Front and rear panel finishing		Light grey (RAL7035) powder coating
Weight		10kg
RF and IF connector		SMA female (rear panel)
Reference input&output connector		BNC female (rear panel)
AC mains input connector		IEC C14 inlet
Control connector		RJ45 for Ethernet, DSUB-9 for RS232
POWER SUPPLY		
Voltage		90-264VAC
Frequency		47-63 Hz
Power consumption		20VA typ.
ENVIRONMENT		
Operating temperature range		0°C ... +50°C
Storage temperature range		-30°C ... +70°C
Humidity		up to 95% (not condensing)
Ingress protection level		IP40

Specifications are subject to change without notice.

OUTLINE DRAWING (mm)

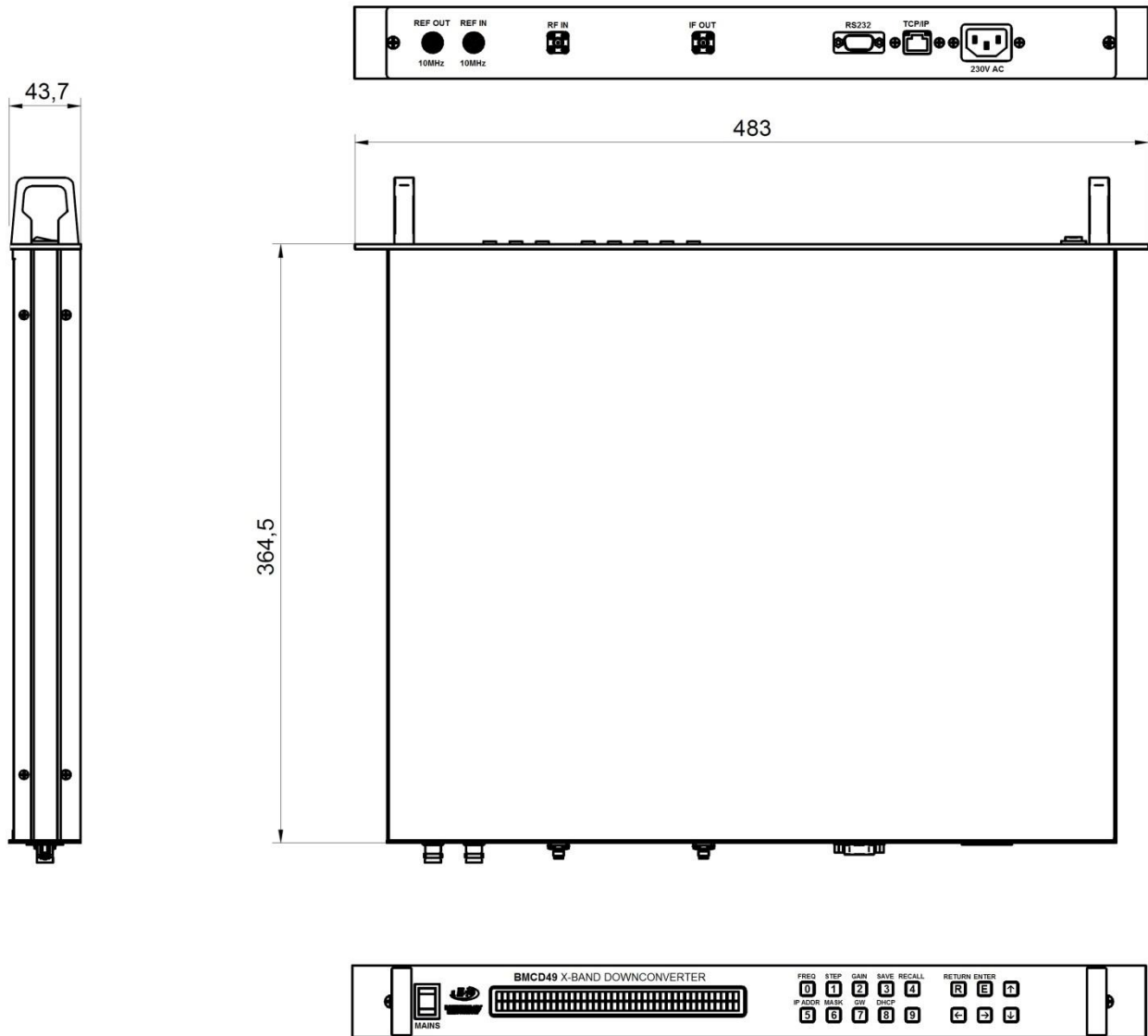


Figure 1. Outline drawing



BMCD49 X-band Downconverter 8000-8500MHz to 720MHz

ORDERING INFORMATION

MODEL NUMBER	DESCRIPTION
BMCD49K00183	X-band Downconverter 8000-8500MHz to 720MHz

DOCUMENT REVISION

DOCUMENT NAME	REVISION	DATE
BMCD49-LM-K00183	V01	29/03/2023