

MAIN FEATURES

- ❖ Indoor construction
- ❖ Three independent channels with good phase and amplitude tracking
- ❖ Tuneable in 1kHz steps
- ❖ High isolation between channels
- ❖ Excellent phase noise parameters
- ❖ Low unwanted spurious level
- ❖ Local and remote control (Ethernet TCP/IP)



DESCRIPTION

The BMCD76 is a 3-channel X-band indoor tracking downconverter. It contains a two stage downconverter in all channels. The channels are operated from common local sources which have very good spectral purity. The converter channels are equipped with phase and amplitude control elements in order to achieve very good phase and amplitude balance between the channels. The downconverter can be controlled and monitored via front panel keyboard and display or remotely via Ethernet (TCP/IP protocol).

SPECIFICATIONS

GENERAL	
RF input frequency	8025 to 8500MHz
IF output frequency	70MHz
Type	Double conversion without inversion
No. of Channels	3
Local source	Common internal LO sources
RF INPUT CHARACTERISTICS	
RF input frequency	8025 to 8500MHz
Nominal input impedance	50Ω
Input VSWR	≤1.4
RF input connectors	N female on rear panel
IF OUTPUT CHARACTERISTICS	
IF output frequency	70MHz
Nominal input impedance	50Ω
Output VSWR	≤1.4
No. of IF outputs	2 per channel, equal level
IF output connectors	N female on rear panel
TRANSFER CHARACTERISTICS	
Conversion type	Dual conversion, no inversion
Conversion gain	35dB±2dB
Attenuator	30dB range in 0.5dB steps
Gain stability	±0.5dB/day @ constant temperature
3dB IF bandwidth	> ±25MHz
Output 1dB compression	> +10dBm @ maximum gain
Output 3 rd order IM distortion	< -60dBc @ 0dBm output power and maximum gain

TRANSFER CHARACTERISTICS		
Image rejection		>60dB
Gain tracking between channels		better than ± 1 dB
Phase tracking between channels		better than $\pm 5^\circ$
Isolation between inputs and outputs		>60dB
Isolation between two outputs of the same channel		>40dB
Isolation between outputs of different channels		>65dB
Noise figure		10 dB at max. gain 12 dB typical at 10 dB lower gain
Output spurious		signal related: ≤ -60 dBc (-65dBc typ.) signal independent: ≤ -80 dBm
Local leakage		≤ -65 dBm
Group delay ripple in IF band @22°C±3°C	Linear	<0.8ns/MHz
	Parabolic	<0.2ns/MHz ²
	Ripple	<1ns peak-to-peak within $F_{center} \pm 10$ MHz
Group delay stability vs. temperature		≤ 5 ns in the temperature range 22°C±3°C
LO CHARACTERISTICS		
Frequency step		1kHz
Phase noise	@100Hz	-77dBc/Hz typ.
	@1kHz	-90dBc/Hz typ.
	@10kHz	-97dBc/Hz typ.
Frequency stability		± 0.05 ppm within temperature range on internal reference
Frequency aging		± 0.1 ppm/year
External reference		The equipment shall lock on 5MHz and 10MHz automatically
Connector		BNC-female on rear panel
External reference level		-3...+6dBm
Local monitor		-10dBm typ. separately for both LO signal SMA connectors on front panel
CONTROL AND MONITORING		
Manual control		Display with functional keys on front panel
Remote monitoring and control		Ethernet with TCP/IP protocol
Local&remote functions		Frequency selection and display LO lock indication Channel gain adjustment and display Reference internal/external Failures/alarms Local/remote mode
POWER SUPPLY		
Voltage		90-264VAC
Frequency		47-63 Hz
Power consumption		≤ 50 VA
Fuse value		T4A (4A, Slow blow)

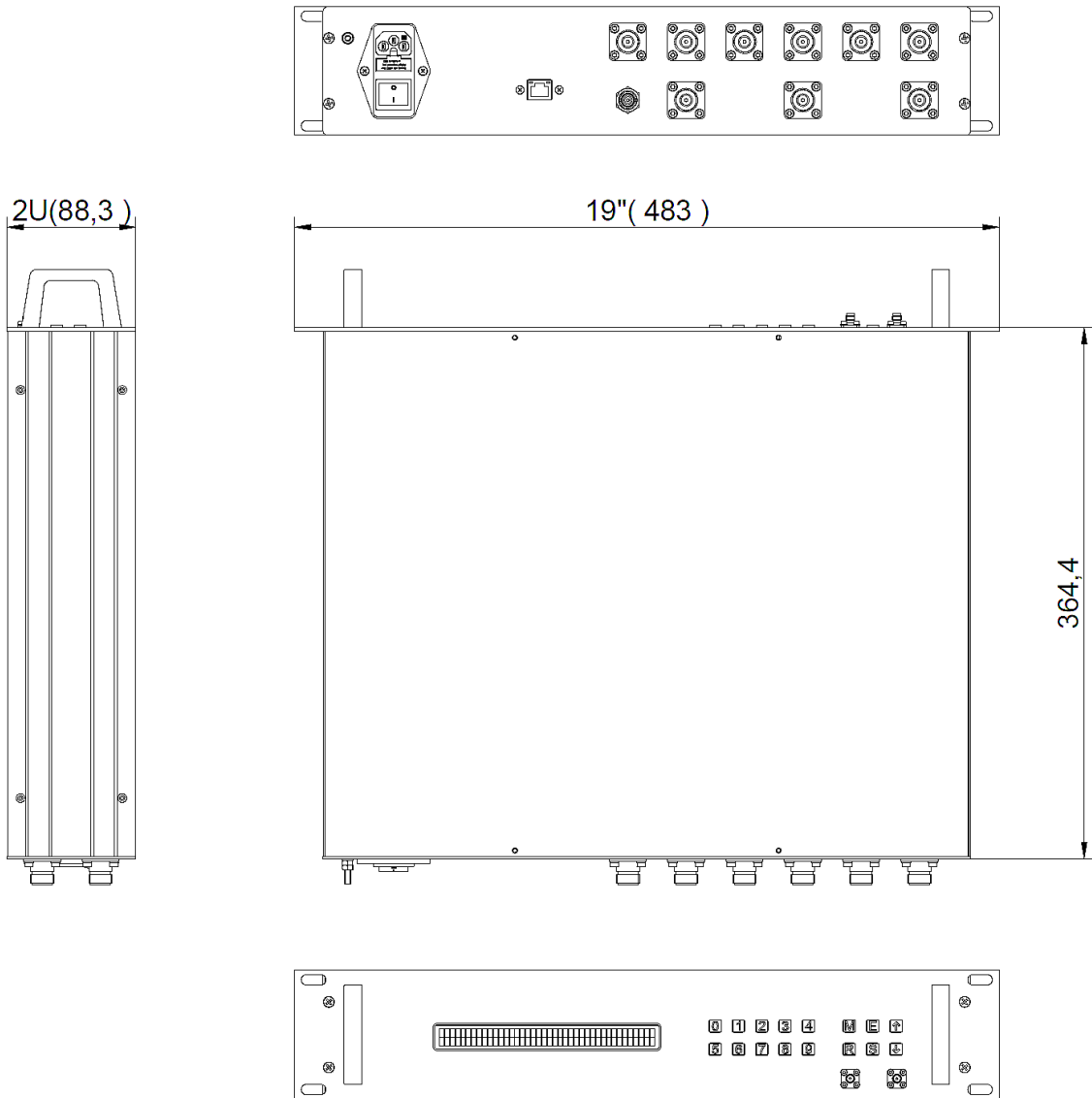


BMCD76 3-channel X-band Indoor Tracking Downconverter

MECHANICAL CHARACTERISTICS	
Dimensions	2U 19" rack cabinet (360mm depth)
Weight	<12kg
Front and rear panel finish	Powder painted (RAL7035)
RF connectors	N-female, rear panel
IF connectors	N-female, rear panel
LO monitors	SMA-female, front panel
External reference connector	BNC-female, rear panel
AC mains input connector	IEC C14 inlet
Control connector	RJ45 for Ethernet, rear panel
ENVIRONMENT	
Operating temperature range	0°C ... +50°C
Storage temperature range	-30°C ... +70°C
Humidity	up to 95% (non-condensing)
DOCUMENTATION	
Submitted documentation	Test reports and performance graphs for each equipment
MTBF	>50000hours (calculated)

Specifications are subject to change without notice.

OUTLINE DRAWING (mm)



ORDERING INFORMATION

MODEL NUMBER	DESCRIPTION
BMCD76K10342	BMCD76 X-band to 70 MHz, 3 chs, 8025-8500 MHz, step 1 kHz, 19" rack, Ethernet M&C

DOCUMENT REVISION

DOCUMENT NAME	REVISION	DATE
BMCD76-LM-K10342	V01	2023/03/29