

MAIN FEATURES

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



DESCRIPTION

This double conversion down converter is intended for use in professional applications in X band such as satellite earth stations. BMCD127 includes a high performance downconverter module with 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. BMCD127 can be controlled from the front panel (manual control) and via Ethernet (remote control).

SPECIFICATIONS

INPUT CHARACTERISTICS	
Frequency	7700-8500 MHz
Frequency Step Size	100 kHz
Dynamic RF Level Range	-70 to -30dBm, abs max. +10dBm
Frequency sense	Double conversion, No inversion
Impedance	50 Ohms
Return Loss	18 dB min.
Input connector	N type (f)
Noise Figure	8dB typical, 10dB max. at maximum gain
OUTPUT CHARACTERISTICS	
Frequency	720 MHz
Bandwidth (3dB)	± 200 MHz typ.
No. of channels	1
No. of output ports	1
IF monitor port level	-20dBc typ. (on front plate)
Impedance	50 Ohms
Return Loss	20dB typ., 18 dB min.
Gain	42 dB +/-2dB (Gain max.). adjustable 20dB in 1dB steps
Gain ripple over IF BW	better than +/-1dB typ., +/-1.5dB max.
Level stability	1dB over a day @ constant temperature
Output connector	N type (f)
Image rejection	70dB typ., 65dB min.
P1dB	+10 dBm min.
Spurious	Signal related < -60 dBc at 0 dBm output Signal independent -80 dBm max.



BMCD127 X-band to 720 MHz Downconverter

External reference input	10 MHz, 0dBm +/-3dB, automatic change-over
Phase noise	-78dBc/Hz typ., -72dBc/Hz max@100 Hz -94dBc/Hz typ., -88dBc/Hz max.@ 1 kHz -98dBc/Hz typ., -93dBc/Hz max. @ 10kHz -100dBc/Hz typ., -95dBc/Hz max. @ 100kHz
Frequency stability	Better than +/-1 x 10 ⁻⁸ over temp
LO Leakage	< - 90dBm @ RF input < -70dBm @ IF output
Group delay (for temp. range 22 +/-3 deg. C)	Linear: ≤ 0.05 ns / MHz Parabolic: ≤ 0.015ns / MHz ² Ripple: ≤ 1 ns p-p within +/- 20 MHz of center freq.
Group delay variation	< 2ns over 320MHz
MONITORING & CONTROL	
Remote M & C Interface	TCP/IP Ethernet, (100Mbps)
Manual	on front panel via the keyboard and display
Controlled parameters	Frequency, Gain, Freq. Step, Remote/ Local
Monitored parameters	LO lock indication, Failures / Alarms, Int. / Ext. reference
GENERAL	
RF/IF Input / Output Connectors	N-type female, Rear Panel
EXT REF. input Connector	BNC type female, Rear Panel
IF, LO Monitoring Connectors	SMA type female, Front Panel
M&C Connector	TCP/IP Connector (RJ45 type), Rear Panel
Power Supply	100-250V AC, 47 – 63 Hz
Operating Temperature	5 to 50 deg C
Humidity	Up to 95%
MTBF	> 50000 hours
Colour	Light Grey (RAL7035)
Mechanical	19" Rack, 1U high

Specifications are subject to change without notice.

OUTLINE DRAWING (mm)



BMCD127 X-band to 720 MHz Downconverter

ORDERING INFORMATION

MODEL NUMBER	DESCRIPTION
BMCD127K10992	BMCD127 X-band downconverter, 7700-8500MHz to 720MHz, BW: +/-200MHz

DOCUMENT REVISION

DOCUMENT NAME	REVISION	DATE
BMCD127-LM-K10992	V01	29/03/2023