

6.425 – 6.525 GHz Block Down Converter Card (BDCC)

COBHAM

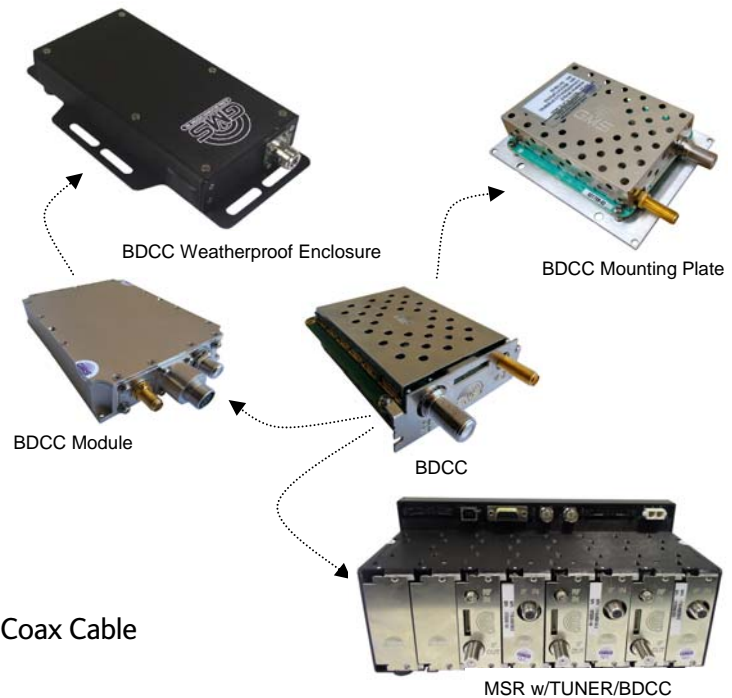
The most important thing we build is trust.

Applications

- Long Distance A/V Mobile Links
- Airborne Surveillance Links
- Electronic News Gathering (ENG)
- Repeaters
- UAV/UGV Applications

Key Features

- Input Frequency: 6.425 – 6.525 GHz
- IF Output: 695 - 795 MHz
- First Down-conversion stage for MSR
- Supports COFDM & other Modulations
- High-level Integrated AGC
- Drives 200+ feet of RG-6 or Belden 1694A Coax Cable



Cobham's 6.425 – 6.525 GHz "Block Down-Converter Card" (BDCC) was designed as a first down-conversion stage for the Messenger Smart Receiver (MSR). It was designed to support COFDM, however, it can be used with a wide variety of analog and digital modulation schemes! It features a high compression level, high-level AGC, programmable IF amplifier, high-linearity, wide spurious-free dynamic range, and low-phase noise Local Oscillator (LO). The input signal is band selected with a pre-selector filter. The low insertion loss of the input filter between two high gain LNA stages that sustains a high suppression of unwanted signals and establishes a noise figure of 3.5 dB for the system. The High-Level AGC system is designed to reduce overload when the input signal approaches the input compression point. For an 8 MHz DVB-T signal, the maximum dynamic range is > 70 dB!

This card can be installed into the MSR chassis for portable Rx applications or can be mounted into an optional weatherproof enclosure. The remote mounting option provides superior system performance when the antenna is mounted away from the receiving system! It outputs an IF signal with programmable gain that can drive up to 200+ feet of RG-6 or Belden 1694A cable. DC power can be supplied either remotely via the IF output's coax cable or locally via the HIROSE connector. The input signal is band selected with a pre-selector filter.

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Specifications

General

Type: Single Conversion
Inversion: No

RF Input (Bandpass Filtered)

Center freq range: 6.425 – 6.525 GHz
LO leakage: -65 dB
Input impedance: 50 Ohms
Input VSWR: <1.5:1
P1dB_(in): -22 dBm

IF Characteristics

LO frequency: 5.73 GHz
IF Center frequency: 745 MHz
Frequency range: 695 - 795 MHz
Impedance: 75 ohms
VSWR: 2:1 minimum

Transfer Characteristics

Noise figure: 3.5 dB
Gain (Prog.): 32 - 25 dB
Image rejection: 50 dB
Frequency stability: +/-0.001%
Spurious outputs: -70 dBc
@ +/- 20 MHz of IF Freq
(output level -10dB from P1dB)
Phase Noise: <1.2 Deg RMS overall

Power

Voltage: 9 - 32 VDC
(Reverse Voltage Protection)
Current: 320 mA @12 VDC

Environment

Temperature range: -20 to +70 °C
Humidity: 0 -100% non-condensing

Mechanical

Card Only:
Size (less endplate) 3.8" x 2.78" x 0.7"
9.65 cm x 7 cm x 1.78 cm
Weight: 0.212 lb, 96 grams
BDCC Enclosure:
Size: 4.25" x 3.25" x 0.859"
10.80 cm x 8.26 cm x 2.18 cm
Weight: 0.590 lbs, 268 grams

Connectors

RF input connector: SMA-F
IF Output: "F"-Type-F
Power: HIROSE, SR30-10R-7S

Pinouts:

RS-232C: Pin 1 - Tx, Pin 7 - Rx,
Pin 2 -GND

DC Power In: Pin 4
DC Return: Pins 5 & 6

RF input connector: SMA-F
IF Output: N-F
Power: (optional enclosure) DB-9M

Pinouts:

RS-232C: Pin 9 - Tx, Pin 4 - Rx,
Pin 5 -GND

DC Power In: Pin 1
DC Return: Pins 3

Optional Power: Via IF Output Connector
(+Vcc center pin, GND Shield)

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Part Number

GMS P/N: <u>BDCCX7UPS7N_1</u>	Card Only (MSR Application)
GMS P/N: <u>BDCCX7UPS7N_2</u>	Module (Chassis)
GMS P/N: <u>BDCCX7UPS7N_3</u>	MNT Plate (Internal Applications)