The 2016-8085-720 Downconverter converts 8.0 to 8.5 GHz to 720 ±20 MHz in 125 kHz steps (1 kHz steps, option X1006) with low group delay and flat frequency response. Synthesized local oscillators (LO) provide low phase noise and ±0.01 ppm stability frequency selection. Multi-function push button switches select the RF frequency, gain, and other parameters. Front panel LEDs provide indication of DC power (green), PLL alarm (red), and remote operation (yellow). Gain is adjustable manually over a +30 to +50 dB range as adjusted by the front panel multi-function push-button switches. Remote operation allows selection of frequency and gain. Parameter selection and frequency and gain settings appear on the LCD display. Connectors are BNC (female) for IF output and the 10MHz reference input and output, and Type N (female) for the RF input. External 10 MHz is standard. A 10 MHz output connector contains either the internal or external 10 MHz reference signal. It is powered by a 100-240 ±10% VAC power supply, and in a 1 3/4” X 19” X 16” rack mount chassis.

**Equipment Specifications**

**Input Characteristics (RF)**
- Impedance/Return Loss: 50±20 dB typ; 18 dB min.
- Frequency: 8.0 to 8.5 GHz
- Noise Figure, max.: 15 dB (max gain)
- Level: -70 to -40 dBm

**Output Characteristics (IF)**
- Impedance/Return Loss: 75±20 dB typ., 18 dB min.
- Frequency: 720 ±20 MHz
- Level: -20 to 0 dBm
- 1dB compression: +10 dBm

**Channel Characteristics**
- Gain range (adjustable): +30 to +50 dB, 1 ±1 dB steps
- Image Rejection: > 50 dB, min
- Spurious Response: <55 dBC, typical; <50 dBC, maximum, inband
- Frequency Response: ±1.5 dB, 8.0-8.5 GHz; ±0.6 dB, 36 MHz BW; ±1.0 dB 40 MHz BW
- Group Delay, max: 0.015 ns/MHz² parabolic; 0.05 ns/MHz linear, 1 ns ripple
- Frequency Sense: Non-inverting

**Synthesizer Characteristics**
- Frequency Accuracy: ±0.01 ppm internal reference; external reference input
- Frequency Step: 125 kHz minimum; (1 kHz steps, option X1006)
- 10 MHz In/Out Level: Input=+1 dBm in; Output = 3 ± 3 dBm

**Block Diagram**

**Available Options**
- W7 - RF/IF Monitor Ports (Front)
- W31 - Ext. Temp 0°C to +50°C
- X1006 - 1 kHz frequency step

**Remote & M&C Interfaces:**
- Q - RS485/422
- W8 - Ethernet; w/Web Browser (WB)
- W18 - Ethernet; w/WEB & SNMP
- W28 - Ethernet; w/TCP/IP, Telnet
- W828 - Ethernet, W18 + W28

**Connectors/Impedance**
- STD. - 50Ω Type N (RF), 75Ω BNC (IF)
- M - 50Ω Type N (RF), 50Ω BNC (IF)
- S - 50Ω SMA (RF), 50Ω BNC (IF)
- S7 - 50Ω SMA (RF), 75Ω BNC (IF)

**Controls, Indicators**
- Freq/Gain Selection: direct readout LCD; pushbutton switches or remote selection
- Power; Alarm; Remote: Green LED; Red LED; Yellow LED
- Remote: RS232C, 9600 baud; RS485/422 or Ethernet optional

**Other**
- RF / IF Connectors: RF - Type N (female), 50Ω / IF - BNC (female), 75Ω
- 10 MHz Connectors: BNC (female), 75Ω, works with 50 or 75 ohms
- Alarm/Remote Connector: DB9 - NO or NC contact closure on Alarm
- Size: 19 inch, 1RU standard chassis 1.75” high X 16.0” deep
- Power: 100-240 ±10% VAC, 47-63 Hz, 45 watts max

*±10°C to 40°C; Specifications subject to change without notice*