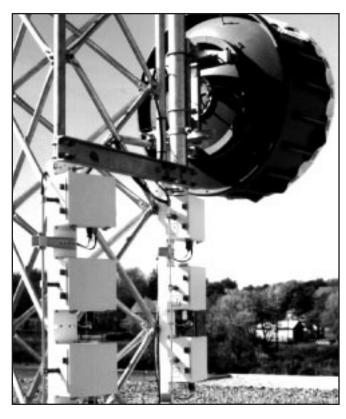
# MR-23CX

## 23 GHz Broadcast Quality Video Microwave System

### Main Features

- Broadcast-quality 525/625 line video with up to 3 plug-in audio subcarriers
- Range to 10 miles
- 2', 4', or 6' antennas, single or dual polarization
- RF multiplexing of up to 4 duplex channels on a single antenna
- Optional 12 MHz bandwidth for high-resolution video



Multiple MR-23CX RF Units with 4' Antenna.



The MR-23CX is a solid-state analog microwave radio system operating in the 21.2 to 23.6 GHz frequency band. With proven reliability and outstanding performance, the MR-23CX is the economical short-haul choice to deliver professional broadcast-quality or high-resolution video.

The system employs an automatic frequency control (AFC) module in the receiver RF subsystem which tracks the transmitter frequency, thereby improving reliability in the field.

With its wide variety of configurations, it's easy to design the ideal system to meet your needs. Three antenna sizes are available in simplex, duplex or multiplex configurations, which allows transmission ranges of up to 10 miles. Repeaters allow even greater distances without significant degradation.

The optional 12 MHz bandwidth allows transmission of high-resolution images such as CAD/CAM and medical imaging at  $1024 \times 1024$  lines of video.

Easy access is provided to all RF and electronics assemblies. Transmitter and receiver consist of weather-resistant integrated antenna/RF assemblies designed for outdoor use. Rack-mountable indoor Baseband Processing Units contain power supply and baseband circuits. Interconnection between indoor and outdoor units is by coax cable and power cable—no waveguide is necessary.

The compact, lightweight MR-23CX contains microwave technology that has been proven in thousands of installations worldwide. The combination of proven electronics design and sound innovative techniques assure outstanding performance and reliability.

### MR-23CX SPECIFICATIONS

Signal to Noise Ratio (10 kHz to 5.0 MHz): 67 dB min.
Signal to Hum (0 to 10 kHz): 62 dB min.
Signal to Periodic Noise Ratio (300 Hz to 4.2 MHz): 67 dB min.
Audio Performance
Harmonic Distortion @ 1 kHz: 1.0% maximum
Signal to Noise Ratio: 66 dB minimum

ANTENNA, (Simplex, Duplex or Multiplex)

FCC Licensed Use: Entire Part 21 and 94 bands Type: FCC Category A 3" or 4" pole or wall Mount: RF Interface: WR-42 choke or "O" ring Size: 2' dia. 4' dia. 6' dia. Gain (including radome loss): 40 dBi 46.2 dBi 49.9 dBi Beamwidth (3 dB): 1.8° 0.8°  $0.5^{\circ}$ Weight (net): 24 lbs 145 lbs 225 lbs (10.9 kg) (65.8 kg) (102 kg)

#### ALARMS AND STATUS INDICATORS

TX/RX Summary Alarms:

System Indicators, TX Meter:

TX LED:

RX Meter:

RX Meter:

RX LED:

RX LED:

AGC Voltage:

Form C

Receiver RF Monitor

RX Carrier Level

RX Carrier, Primary Power, Phase Lock

Back panel connection

#### **TRANSMITTER**

Power Output (at output of source)

Minimum: 50 mW (+ 17 dBm) Typical: 66 mW (+ 18 dBm) Maximum: 100 mW (+ 20 dBm) Frequency Stability:  $\pm 0.03\%$  (-30° to +50°C) Spurious Response: per FCC Part 94 and Part 21 Video Input, Input Signal Level: 1 Vp-p Impedance:  $75\Omega$ Return Loss (0 to 4.2 MHz): 30 dB (without low pass filter) Audio Input (up to 3), Level: + 8 dBm (adjustable 0 to +18 dBm) Impedance:  $\Omega$ 000 Return Loss (50 Hz to 15 kHz): 30 dB Subcarrier Frequencies: 6.2, 6.8, 7.5 MHz standard (other frequencies available) Auxiliary Baseband Unit, Impedance:  $75\Omega$ Return Loss (0 to 8 MHz): 26 dB

Input Level: **RECEIVER** 

Superheterodyne Type: -74 dBm Receiver Threshold (37 dB weighted S/N): Noise Figure: 12 dB Video Output, Impedance:  $75\Omega$ Return Loss: 30 dB (without lowpass filter) Video Level: 1 Vp-p Audio Output (up to 3), Impedance (selectable):  $600\Omega$  balanced (less than  $50\Omega$  via jumper) Return Loss (10 Hz to 15 kHz): 30 dB +8 dBm (adjustable 0 to +18 dBm) Signal Level: Auxiliary Baseband Output: 1 Vp-p,  $75\Omega$ 

#### **OPERATING ENVIRONMENT**

Temperature Range, RF Unit:

Baseband Processing Unit:

Relative Humidity, RF Unit:

Baseband Processing Unit:

up to 100%

up to 95%

#### **PHYSICAL**

RF Unit: 6.5" h x 12" d x 9.875" w (16.5 x 30.5 x 25.1 cm) Baseband Unit: 1.75" h x 13" d x 19" w (4.5 x 33.0 x 48.3 cm) Weight, RF Unit, Simplex TX: 7 lbs (3.2 kg) RF Unit, Simplex RX: 8 lbs (3.6 kg) RF Unit, Duplex: 9 lbs (4.1 kg) TX Baseband Unit: 9 lbs (4.1 kg) 10 lbs (4.5 kg) **RX Baseband Unit:** Interconnection Cables: 50, 100, 250 foot standard kits. Up to 1000 feet upon request.

#### **FCC DATA**

Type Accepted: Parts 21 and 94 FCC Identifier: BV88U4MA23CC Emission Designator: 25M0F8W



### MICROWAVE RADIO COMMUNICATIONS



1 Vp-p

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