

QM-MD7X2

7x2 QuickMedia® Distribution Center

The QM-MD7X2 is a versatile matrix switcher and multi-channel digital audio signal processor featuring two QuickMedia® inputs and outputs plus five sets of local AV inputs, gated microphone mixing, and two audio outputs sections each with discrete program and speech channels. Occupying just one rack space, the QM-MD7X2 affords extensive signal routing and processing capability as a midpoint distribution switcher or front-end multimedia interface for a complete MediaManager AV presentation system.

Three sets of 3 BNC connectors are provided on the QM-MD7X2 to accept video inputs from three composite, S-Video, component, or HDTV sources. Two RGB inputs are also included to accept high-resolution computer sources up to 1920 X 1200 pixels. Five stereo audio inputs accommodate unbalanced line-level signals from computers and program audio sources.

In addition to the local inputs, there are two QuickMedia (QM) input ports which receive RGB, video, program audio and mic signals from FlipTop or Wall Plate transmitters over inexpensive CAT5e type cable* via Crestron's exclusive QuickMedia transport.

The 7X2 video and audio switchers built into the QM-MD7X2 allow any of the local or QM input signals to be routed independently to either of two QM outputs. Each QM output can be used to feed a separate QuickMedia Receiver to support two independent display devices.

Additionally, two gated microphone inputs are included on the QM-MD7X2 with software switchable 48V phantom power at both inputs to support either dynamic or condenser microphones. Balanced or unbalanced line-level sources such as wireless microphones can also be accommodated. These two microphone/line inputs can be mixed with the two mic signals brought in at either QM input, with two independent 4X1 mixes possible to feed each of the two QM outputs. Each mix also includes independent 4-band speech-optimized graphic equalization for each individual microphone input.

Also key to the QM-MD7X2 is its two sets of local audio outputs, each consisting of a stereo program channel and a mono speech channel. These six balanced/unbalanced line-level outputs are designed to drive rack-mounted amplifiers like the **QM-AMP3X80**, as well as codecs, recorders, assistive listening devices, and more. Generally, Audio Output 1 contains the same stereo program signal and microphone mix as that fed to QM Output 1, and likewise for Output 2. However, the mix of left program, right program, and microphones is independently adjustable for each local output channel.

Each local output channel includes adjustments for volume, bass, and treble, a mute control, plus ten-band graphic equalization and 2-band parametric equalization. In addition, the speech outputs include up to 40mS of delay adjustment for loudspeaker alignment.

With such extensive control over the system's audio performance, the QM-MD7X2 effectively eliminates the need for expensive outboard processors to attain precise adjustment tailored to the acoustical



environment. All audio processing and mixing is performed in the digital domain, adjustable at setup using Crestron's QM Tools software (part of Crestron Toolbox). Many parameters are also controllable in real-time from a keypad or touchpanel, with numerous presets that can be saved for instant recall to account for varying source material or room conditions.

To gain additional signal routing flexibility and expand input and output capacity, up to two QuickMedia Distribution Centers, Distribution Amplifiers, and Matrix Switchers may be cascaded in a given QuickMedia signal path*. For instance, a **QM-MD8X8** or **QM-MD4X2** may be used to expand the input capacity of the QM-MD7X2. Complete system operation can be made transparent to the end-user with all signal routing occurring smoothly under the command of the MediaManager control system. Built-in video-sensing on every input can be utilized to trigger automatic input selection and provide power status information to the control system.

Control and monitoring of the QM-MD7X2 is also possible independent of the control system using its front panel pushbuttons and LEDs. Customizable label strips are provided to easily designate inputs and outputs by name using Crestron Engraver software or standard 3/8" tape labels. For security, the front panel controls can be locked out.

- > Versatile matrix switcher and audio processor
- > 3 video, S-Video, or component inputs
- > 2 RGB inputs | 1 RGB monitor pass-thru
- > 5 stereo audio inputs | 2 gated microphone inputs
- > 2 QuickMedia inputs | 2 QuickMedia outputs
- > 2 audio outputs w/discrete stereo program and speech channels

- > Graphic and parametric equalization
- > Versatile input mixing and microphone EQ

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> Up to 40ms speech delay
> Front panel controls | Single-space rack-mountable

SPECIFICATIONS

Video

Switcher: 7x2 crosspoint matrix; routes any of (3) multi-format video, (2) RGBHV, and (2) QM inputs to (2) QM outputs
Signal Types: RGB and composite, S-Video, or component video (does not transcode)
Video/HDTV Formats: NTSC or PAL, HDTV up to 1080i/1080p
RGB Formats: RGBHV, RGBS, or RGsB
Gain: 0dB (75 ohms terminated)
Maximum Resolution: 1920 x 1200 @ 60Hz (at unity gain) with maximum cable length of 450 feet and maximum compensation at receiver
Crosstalk: -60dB

Audio

Features: 7X2 stereo crosspoint matrix, 2-channel gated mic preamp, 2X2 QM mic input switcher, 4-channels mic EQ, 4X2 mic mixer, (2) 3X3 speech/program matrix mixers, stereo volume/tone control and EQ per each of (2) PROGRAM outputs, mono volume/tone control and EQ/delay per each of (2) SPEECH outputs
A-D/D-A conversion: 24-bit, 48 kHz
Output Volume Range: -80dB to +20dB, 0.1dB steps
Mixer Volume Range: -80dB to 0dB, 0.1dB steps
Input Compensation: ±10dB, 0.1dB steps
Mic Input Gain: 0 to 100 % (40dB range) plus mute
Gate Level (Threshold): 0 to 100 %
Attack: 0 to 100 mS
Decay (Release): 0 to 5000 mS
Mic EQ Filter Gain: ±12dB, 0.1dB steps
Mic EQ Filter Center Frequencies: 160, 500, 1.2k, 3k Hz
Bass Gain Range: ±12dB @ 100Hz, 0.5dB steps
Treble Gain Range: ±12dB @ 10kHz, 0.5dB steps
Output Equalization: 10-band graphic + 2-band parametric
PEQ Filter Gain: ±12dB, 0.1 dB steps
PEQ Filter Bandwidth: 0.1 to 3.0 octaves, 0.1 octave steps
PEQ Filter Center Frequency: 25Hz to 20kHz, 0.5Hz steps
PEQ Filter Types: Low Pass, High Pass, Peaking Eq, Notch, Treble Shelf, Bass Shelf
GEQ Filter Gain: ±12dB, 0.1dB steps
GEQ Filter Center Frequencies: 31, 63, 125, 250, 500, 1k, 2k, 4k, 8k, 16k Hz
Speech Output Delay: 0 to 40 mS, 1mS steps
Frequency Response: 20Hz to 20kHz ±0.5dB
S/N Ratio: 90dB, 20Hz to 20kHz A-weighted
THD+N: 0.05%, 20Hz to 20kHz

Connectors

COMP/Pb, Y/Y, C/Pr 1 - 3: (3) sets of (3) BNC female video inputs, each set configurable as:

- (1) Component/HDTV (YPbPr or RGsB) video input, or
- (1) S-Video (Y/C) input, or
- (1) Composite input

Maximum Input Level: 1 Vp-p nominal (0.7 Vp-p for Pb/B and Pr/R);
Input Impedance: 75 ohms nominal;
Discrete video signal sensing on COMP/Pb and Y/Y
RGB 4 - 5: (2) DB15HD female, RGBHV (VGA) inputs;
Format: RGBHV or RGBS;
RGB Input Level: 0.7 Vp-p maximum;
RGB Input Impedance: 75 ohms nominal;
Sync Input Level: 5 Vp-p maximum;
Sync Input Impedance: 1k ohms;

RGB 5 OUTPUT: (1) DB15HD female;
Buffered RGBHV pass-thru from RGB 5 input

AUD 1 - 5: (5) 3-pin 3.5mm detachable terminal blocks;
Unbalanced stereo line-level audio inputs;
Maximum Input Level: 2 Vrms;
Input Impedance: 10k ohms

MIC 1 - 2: (2) 5-pin 3.5mm detachable terminal blocks;
Comprises (2) balanced microphone/line inputs;
Balanced Mic Input Level: -60 to -20 dBV nominal;
Balanced Line Input Level: -28 to +12 dBV; 4 Vrms maximum;
Unbalanced Line Input Level: -34 to +6 dBV; 2 Vrms maximum;
Mic Input Impedance: 10k ohms, accepts 60 to 600 ohm source;
Line Input Impedance: 22k ohms balanced, 11k ohms unbalanced;
Phantom Power: 10 mA (total) @ 48 Volts DC, software enabled independently to either input

SP AUDIO OUT 1 - 2: (2) 3-pin 3.5mm detachable terminal blocks comprising (2) speech-channel balanced line-level outputs;
Output Impedance: 200 ohms balanced, 100 ohms unbalanced;
Maximum Output Level: 4 Vrms balanced, 2 Vrms unbalanced

PRG AUDIO OUT 1 - 2: (2) 5-pin 3.5mm detachable terminal blocks comprising (2) stereo program-channel balanced line-level outputs;
Output Impedance: 200 ohms balanced, 100 ohms unbalanced;
Maximum Output Level: 4 Vrms balanced, 2 Vrms unbalanced

IN 6 - 7: (2) 8-wire RJ45 female and (2) 4-pin 3.5mm detachable terminal blocks comprising (2) QuickMedia input ports with (2) Cresnet ports;
Connect to Cresnet and QM output ports of other QuickMedia devices via **CresCAT-QM** cable*

OUT 1 - 2: (2) 8-wire RJ45 female and (2) 4-pin 3.5mm detachable terminal blocks comprising (2) QuickMedia output ports with (2) Cresnet ports;
Connect to Cresnet and QM input ports of other QuickMedia devices via **CresCAT-QM** cable*

NET: (1) 4-pin 5mm detachable terminal block;
Cresnet slave port, connects to Cresnet control network

Ground: (1) 6-32 screw, chassis ground lug

Buttons & Indicators

PWR: (1) green LED, indicates 24 Volts DC power supplied from Cresnet control network

NET: (1) yellow LED, indicates communication with Cresnet system

AUDIO BREAK: (1) recessed pushbutton & red LED, enables audio breakaway in local mode, indicates audio breakaway in system mode

A: (1) pushbutton & red LED, selects audio routing in local mode when audio breakaway is enabled, selects audio routing view in system mode

V: (1) pushbutton & red LED, selects video routing in local mode when audio breakaway is enabled, selects video routing view in system mode

SYS: (1) pushbutton & red LED, activates Cresnet system control mode

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Environmental

Temperature: 41° to 104°F (5° to 40°C)
Humidity: 10% to 90% RH (non-condensing)

Enclosure

Chassis: Steel, black matte powder coat finish, convection-cooled, vented top and sides
Faceplate: Extruded aluminum, black matte powder coat finish with polycarbonate label overlay
Mounting: Freestanding or 1U 19-inch rack-mountable (adhesive feet and rack ears included)

Dimensions

Height: 1.70 in (4.32 cm)
Width: 17.03 in (43.24 cm);
 19.0 in (48.26 cm) with ears

Depth: 7.15 in (18.17 cm)

Weight

4.2 lb (1.9 kg)

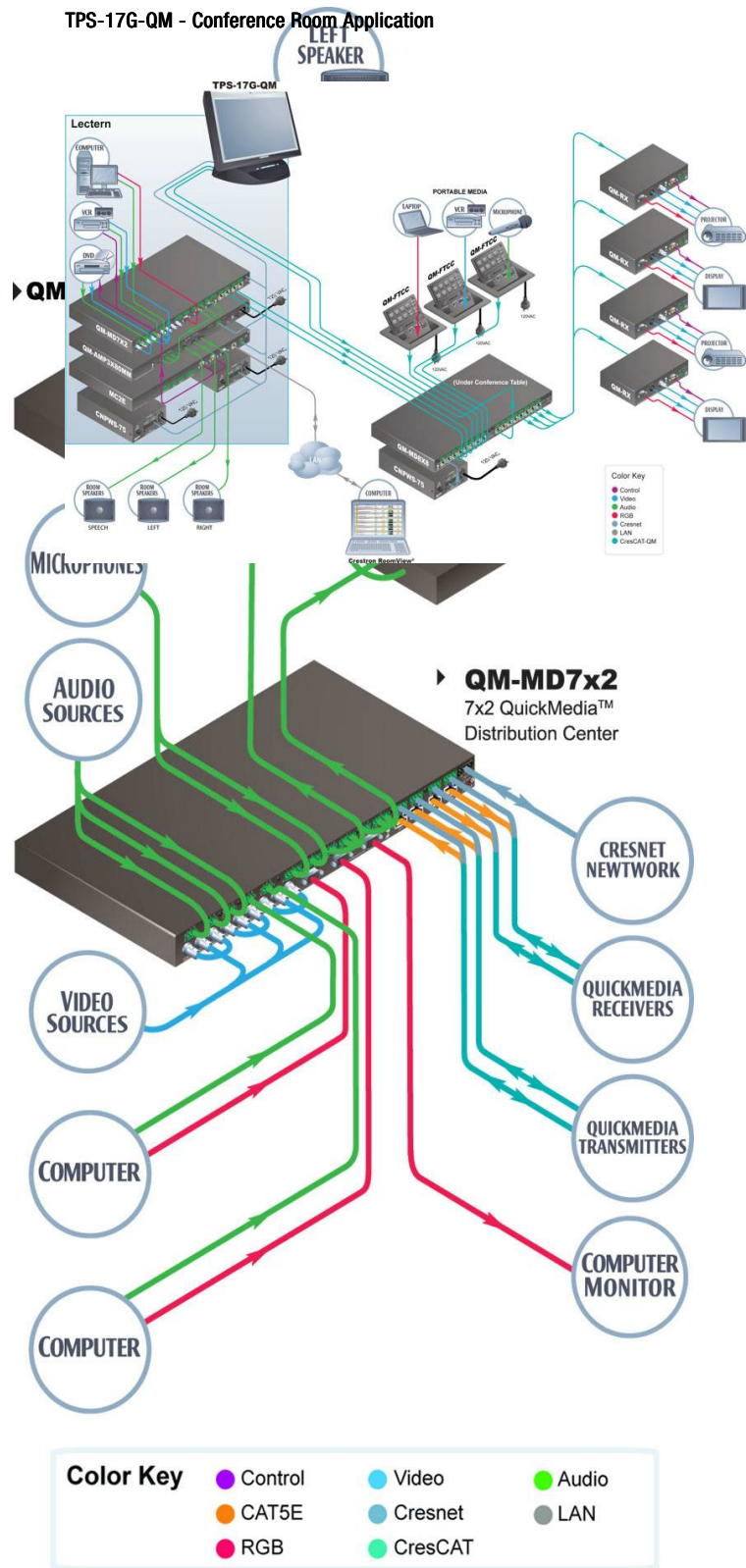
* For QuickMedia wiring use CresCAT-QM, CresCAT-IM, or quality CAT5e/CAT6 cable with a delay skew of ≤ 15 nS per 100m; the maximum aggregate cable length and delay skew between any QM transmitter (origination point) and QM receiver (endpoint) is 450 ft (137 m) and 22 nS; a maximum of two QM midpoint devices may be inserted in a given QM signal path; exceptions apply, refer to each respective product manual for full detail.

Available Models

QM-MD7X2 [6500469]: 7x2 QuickMedia Distribution Center [Discontinued]

QuickMedia System #7

Typical QM-MD7x2 Application



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