

QM-AE1

QuickMedia® Audio Extractor

Crestron® MediaManager is a comprehensive family of affordable products fusing high-performance AV signal distribution, device control, and facility-wide system management. MediaManager simplifies the art of ProAV system design and installation with complete hardware, software, and low-cost wiring solutions. Whether installing a single boardroom or a campus-wide network of AV systems, MediaManager delivers power and value far beyond conventional products and designs.

The QM-AE1 provides a solution for extracting stereo program and microphone audio signals from the **QuickMedia** transport to feed a power amplifier or other audio device. It may be inserted anywhere along the QM signal path without affecting the audio, video, and computer signals passing through it. For ultimate flexibility, it can also operate as a QM endpoint, effectively functioning as a QM audio receiver.^[1]

QuickMedia® Transport

The revolutionary QuickMedia transport routes all audio, video, and RGB computer signals over a single inexpensive CAT5e type cable^[1]. Stereo audio and microphone signals are transmitted digitally over QuickMedia with high-performance 24-bit resolution.

High-Performance Audio

The QuickMedia transport carries four channels of 24-bit digital audio comprising a stereo program signal and two discrete microphone signals. Within the QM-AE1, the two incoming microphone signals are each processed separately by a 4-band speech-optimized graphic equalizer. Versatile 4x4 matrix mixing allows the mic signals and stereo program signal to be precisely adjusted and routed to any of four audio outputs. These outputs are configured as one stereo program channel and two discrete mono speech channels, perfect for feeding a Crestron QM-Series 3-channel amplifier^[2] along with other recording and assistive listening equipment. All outputs are balanced line-level for proper integration with professional and semi-pro gear.

Professional DSP

The QM-AE1 lets you control and optimize your system's audio performance without the need for additional outboard processors. Each output channel includes programmable volume, bass, treble, and mute, plus ten-band graphic equalization and 2-band parametric equalization. In addition, each speech output includes up to 40 ms of delay adjustment for proper ceiling speaker alignment. All audio processing and mixing is performed in the digital domain, adjustable at setup using Crestron QM Tools software (part of **Crestron Toolbox™**).

MediaManager System Integration

The QM-AE1 affords seamless audio signal routing and control under the command of a MediaManager control system. Many parameters are controllable in real-time from a keypad or touchpanel, and numerous presets can be saved for instant recall. A complete MediaManager system is easy to design, program and adjust from start to finish using Crestron **SystemBuilder™** software.

> *Extracts QuickMedia audio signals*

> *Inserts transparently in the QM signal path*

> *Functions as a QM midpoint or endpoint device^[1]*

> *Provides stereo program and 2 discrete speech outputs*

> *Includes built-in digital mixing, signal routing,*



equalization, and delay processing

> *Features professional balanced line-level outputs*

> *An ideal QM signal interface for any QM-Series 3-channel amplifier^[2]*

> *1/2-space rack-mountable*

SPECIFICATIONS

Audio

Features: 4x4 mic/program matrix, 2-channels mic EQ at input, stereo volume/tone control and EQ on PROGRAM output, mono volume/tone control and EQ/delay on each MIC output

Mixer Volume Range: -80.0 to 0.0 dB per input

Mixer Presets: 1 thru 5

Input Compensation: ±10.0 dB per input

Input Compensation Presets: 1 thru 256

Mic Input EQ Mode: 4-band graphic per mic input

Mic Input EQ Center Frequencies: 160, 500, 1.2k, 3k Hz

Mic Input EQ Gain: ±12.0 dB per band

Mic Input EQ Presets: 1 thru 10

Output Volume Range: -80 to +20 dB, adjustable from 0% to 100%, plus mute, per output

Bass Control: ±15.0 dB @ 150Hz shelf per output

Treble Control: ±15.0 dB @ 4kHz shelf per output

Output EQ Mode: 10-band graphic + 2-band parametric per output

Output GEQ Center Frequencies: 31, 63, 125, 250, 500, 1k, 2k, 4k, 8k, 16k Hz

Output GEQ Gain: ±12.0 dB per band

Output GEQ Presets: 1 thru 10

Output PEQ Types: Low Pass, High Pass, Peaking Eq, Notch, Treble Shelf, Bass Shelf

Output PEQ Center Frequency: 25 to 20,000 Hz per band

Output PEQ Gain: ±12.0 dB per band

Output PEQ Bandwidth: 0.1 to 3.0 octaves per band

Output PEQ Presets: 1 thru 5

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Speech Output Delay: 0 to 40 ms per MIC output
D-A Conversion: 24-bit, 48 kHz
Frequency Response: 20Hz to 20kHz \pm 0.25 dB
S/N Ratio: 90dB 20Hz to 20kHz A-weighted
THD+N: 0.015% 20Hz to 20kHz

Video

Provides unbuffered, unprocessed pass-thru of video/RGB portion of QM signal; does not affect delay skew, bandwidth, or gain

Communications

QuickMedia: QM midpoint or endpoint device^[1], QM auto-compensation with self-peaking

Cresnet: Cresnet slave device

Connectors

AUDIO OUT, PROG L - R: (1) 5-pin 3.5mm detachable terminal block; Stereo “program” balanced line-level audio output;

Output Impedance: 200 ohms balanced, 100 ohms unbalanced;

Maximum Output Level: 4 Vrms balanced, 2 Vrms unbalanced

AUDIO OUT, MIC 1 - 2: (1) 5-pin 3.5mm detachable terminal block;

Two-channel “speech” balanced line-level audio outputs;

Output Impedance: 200 ohms balanced, 100 ohms unbalanced;

Maximum Output Level: 4 Vrms balanced, 2 Vrms unbalanced

QM IN & NET: (1) QuickMedia input port with Cresnet, comprised of (1) 8-wire

RJ45 female (QM) and (1) 4-pin 3.5mm detachable terminal block (Cresnet);

Connects to QM output port of another QuickMedia device via **CresCAT-QM**

cable^[1];

NOTE: Both NET connectors are paralleled. Together they function as a Cresnet

slave port with pass-thru.

QM OUT & NET: (1) QuickMedia output port with Cresnet, comprised of (1) 8-wire

RJ45 female (QM) and (1) 4-pin 3.5mm detachable terminal block (Cresnet);

Connects to QM input port of another QuickMedia devices via **CresCAT-QM**

cable^[1];

NOTE: Both NET connectors are paralleled. Together they function as a Cresnet

slave port with pass-thru.

G: (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) amber LED, indicates communication with Cresnet system

SETUP (rear): (1) miniature pushbutton and red LED, used for touch-settable ID

(TSID)

Power Requirements

Cresnet Power Usage: 7 Watts (0.3 Amp @ 24 Volts DC)

Environmental

Temperature: 41° to 104°F (5° to 40°C)

Humidity: 10% to 90% RH (non-condensing)

Heat Dissipation: 24 BTU/Hr

Enclosure

Chassis: Metal, black matte powder coat finish

Faceplate: Extruded aluminum, black matte powder coat finish with polycarbonate label overlay

Mounting: Freestanding or 0.5U 19-inch rack-mountable (adhesive feet included, **ST-RMK** rack kit sold separately)

Dimensions

Height: 1.80 in (46 mm);

1.70 in (44 mm) without feet

Width: 7.07 in (180 mm)

Depth: 6.37 in (162 mm)

Weight

1.94 lb (0.88 kg)

Available Models

QM-AE1: QuickMedia® Audio Extractor

[Available August, 2010]

Available Accessories

ST-RMK: Rack Mount Kit for all Crestron 1/2-space modules

CRESCAT-QM-NP-SP500: QuickMedia® Cable, Low-skew CAT5e & Cresnet, non-plenum, 500 ft spool

CRESCAT-QM-P-SP500: QuickMedia® Cable, Low-skew CAT5e & Cresnet, plenum, 500 ft spool

Notes:

1. For QuickMedia wiring use CresCAT-QM, CresCAT-IM, or quality CAT5e/CAT6 cable with a delay skew of \approx 15nS 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, however the QM-AE1 does not count as a midpoint device in this sense.

2. Item sold separately.

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