**MRX7-D Specifications**

### General Specifications
- **Channel type**: MTX Series / Input Expander / Output Expander
- **Sampling frequency rate**: 48kHz/44.1kHz
- **Signal delay**: 1.8 ms (AD-DA @ 48kHz)
- **Total harmonic distortion**: 0.05% (+4dBu, Gain: -6dB, 48kHz)
- **Frequency response**: 20Hz to 20kHz, max: +0.5dB, min: -1.5dB
- **Dynamic range**: 107dB (typ. Gain: -6dB)
- **Phantom Power**: +48V
- **Dimensions/Weight**: 448W x 88H x 366Dmm / 6.5kg
- **Power requirements**: AC100V-240V 50Hz/60Hz
- **Power consumption**: 65W
- **Included items**: Power cord, Euroblock plugs (3-pin, tabbed) x16, Euroblock plugs (16-pin) x2, Cable Ties, Manual

### Analog Input Specifications

| INPUT 1-8 | 13dB | 1942 | 50-600Ω Microphone | +22dB (1.01V) | +22dB (1.01V) | EUROBLOCK (5.08mm pitch) | Balanced |
| INPUT 1-8 | 13dB | 1942 | 50-600Ω Line | +196dB (4.15V) | +396dB (24.5V) | EUROBLOCK (5.08mm pitch) | Balanced |

### Analog Output Specifications

| OUTPUT 1-8 | 13dB | 1942 | 50-600Ω Line | +48dB (1.23V) | +48dB (1.23V) | EUROBLOCK (5.08mm pitch) | Balanced |

### Digital Input and Output Specifications

<table>
<thead>
<tr>
<th>Terminal Format</th>
<th>IN/OUT</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>YDIF in</td>
<td>YDIF</td>
<td>EUROBLOCK (5.08mm pitch)</td>
</tr>
<tr>
<td>YDIF out</td>
<td>YDIF</td>
<td>EUROBLOCK (5.08mm pitch)</td>
</tr>
</tbody>
</table>

### Control I/O Specifications

<table>
<thead>
<tr>
<th>Control I/O</th>
<th>Terminal Format</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPI:16IN / 8OUT</td>
<td>In</td>
<td>9-pin D-sub (2400base-T)</td>
</tr>
<tr>
<td>Out</td>
<td>Open Collector</td>
<td>Euroblock</td>
</tr>
<tr>
<td>DCC</td>
<td>Digital</td>
<td>Euroblock</td>
</tr>
<tr>
<td>DCC</td>
<td>Remote</td>
<td>RS-232C (Baud Rate: 38.4kbps or 115.2kbps)</td>
</tr>
</tbody>
</table>

### MTX5-9
- **Input Expander**: 9x16 matrix mixer and signal processor
- **Output Expander**: 9x16 matrix mixer and signal processor
- **Input**: 9 mono microphone line inputs, 9 analog mono inputs
- **Output**: Up to 16 digital output channels via 1YDIF
- **Option**: 9 Mini-HDMI expansion card slot

### EXo8
- **Input Expander**: 8x16 matrix mixer and signal processor
- **Output Expander**: 8x16 matrix mixer and signal processor
- **Input**: 8 mono microphone line inputs, 8 analog mono inputs
- **Output**: 8 digital output channels via 1YDIF
- **Option**: 8 Mini-HDMI expansion card slot

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**Simple solutions for commercial sound system design**

**MTX3**
- 8x8 matrix mixer and signal processor
- 8 mono microphone line inputs, 8 analog mono inputs
- Built-in SD card slot for audio file playback
- Up to 16 digital output channels via 1YDIF

**Input Expander**
- 8x8 converter for input expander
- Converts 8 channels of microphone line inputs to 1YDIF for digital transmission to MRX7-D or MTX series units
- Presets remotely controllable from MRX7-D or MTX series units

**Output Expander**
- 8x8 converter for output expander
- Converts digital YDIF signals from MRX7-D or MTX series units to 8 channels of analog output

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**Commercial Installation Solutions**

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Large Scale System Support

Built-in Dante digital audio networking capability makes it easy to set up systems of just about any scale while significantly reducing cabling cost and labor. Dante capable devices can be added to the system at any time, allowing flexible reconfiguration and expansion as needed.

Features for a Wide Range of Installation Needs

AEC (Acoustic Echo Canceller) for remote conferencing systems, automatic mixing for multiple microphone inputs, a speech privacy function that can mask conversations in hospital or corporate systems where confidential information must be protected, and more. The MRX7-D offers a comprehensive range of components that offer effective solutions for a variety of issues faced in today’s audio installations.

Flexibility and Operation Ease

As the scale and control requirements of an audio system grow, the number of devices required and overall complexity increase correspondingly. With the MRX7-D and dedicated MTX-MRX Editor software, input and output devices can be quickly arranged via a software wizard and internal MRX7-D processing components can be combined as needed. One simple software application provides everything needed for comprehensive system design and management.

Ample I/O and Expansion Capability

• 8 mono line and 2 stereo line inputs, 8 analog mono outputs
• 64 in/out Dante capacity supports large digital audio networks
• I/O expansion via YDIF connected MTX series matrix processor, EXi8 input expander, and EXo8 output expander units

Broad Support for External Controllers

DCP Series
Up to 8 DCP series control panel units can be daisy chain over distances of up to 200 meters via CAT5e Ethernet cable. Power is also supplied via the CAT5e cable, allowing control panels to be installed at any convenient locations.

Wireless DCP
Wireless DCP allows remote control from an iPad, Android smart device, or other compatible device. This is an easy, intuitive way to control volume, select presets, and control SD player operation from a convenient location.

An SD memory card slot allows direct playback of MP3/WAV format audio files.

YDIF

YDIF (Yamaha Digital Interface) is an original Yamaha digital audio protocol that allows standard CAT5e Ethernet cable to be used for bidirectional transfer up to 16 channels of audio and word clock signals over distances of up to 30 meters. It allows cascading of multiple MTX series units as well as signal transfer to XMV series power amplifiers via connections that are fast and simple to set up.

AMX / CRESTRON

The MRX7-D includes RS232C and Ethernet connectors that facilitate connection to a variety of external controllers such as those manufactured by AMX and CRESTRON. This handy iPad application allows MTX/MRX system control via a WiFi network. A variety of control widgets can be arranged as required to create custom control panel layouts that are easily configured for individual systems.

ProVisionaire Touch

This handy iPad application allows direct playback of SD/MP3/WAV format audio files. ProVisionaire Touch can be downloaded from Apple’s App Store at no charge (Apple, iPad are trademarks of Apple Inc., registered in the US and other countries. App Store is a service mark of Apple Inc.).
MTX-MRX Editor

The MTX-MRX Editor software facilitates sound system design with a workflow that simulates standard installation procedure. An easy-to-use wizard lets you start by arranging the devices to be used in the desired layout, then processing components can be added whenever needed. MTX series matrix processors, EXi8 input expanders, EXo8 output expanders, XMV series power amplifiers, and DCP digital control panels can be added according to the needs and scale of the application. The MTX-MRX Editor provides comprehensive, intuitive tools for designing sound systems from input to output.

Device Layout Wizard
In addition to the MRX7-D, the wizard allows MTX series matrix processors, XMV series power amplifiers, and EXi8/EXo8 input and output expanders to be added and arranged as needed.

Component Configuration
The MRX7-D features a versatile range of built-in processing components: faders, ON/OFF switch-e, matrix source selectors, GEO, Dugan automatic mixing, speech privacy, echo canceller, and more. Simply select the required components and arrange them via a graphical interface.

External Controller Setup
Parameters that will be available to the end user can be specified via the MTX-MRX Editor. A variety of external controllers can be accommodated to ideally match the requirements of each installation.

Conference Rooms, Banquet Halls, Hospitals, and More: Built-in Solutions for Diverse Needs

Dugan Automixer

Prevent feedback and unwanted pickup with multiple microphones
Feedback and unwanted noise pickup can be difficult to control at corporate meetings and panel discussions where multiple microphones are used, often resulting in impaired sound quality and intelligibility. The Dugan Automixer automatically increases the gain of microphones that are in use while reducing the gain of unused microphones. It also keeps track of the relationship between individual inputs and the overall input level to ensure ideally consistent mixer gain. A safe feedback margin and optimum signal-to-noise ratio are maintained at all times.

When nobody is speaking the input level at all microphones is low and the gain is equal. Rather than being muted, the gain of unused microphones is instantly increased to 0dB while the gain of the remaining microphones is lowered. The same occurs when any other one person is speaking.

When one person is speaking the gain of that person's microphone is instantly increased to 0dB while the gain of the remaining microphones is lowered. The same occurs when any other one person is speaking.

When two people speak simultaneously the gain distribution between the active microphones is adjusted to achieve consistent overall gain, while the gain of the remaining microphone is lowered.

Acoustic Echo Canceller

Eliminate remote conferencing echo for maximum intelligibility
In remote conferencing situations echo from the remote location emanating from the local speaker can be picked up by the local microphone and returned to the remote location in addition to the local speech. This type of echo can significantly degrade the intelligibility of the sound heard at the remote location.

The Acoustic Echo Canceller effectively suppresses this type of unwanted echo, maximizing clarity and intelligibility. The sound received at all the microphones is compared with the sound emanating from the speaker and analyzed. An adaptive filter is employed to subtract the speaker output from the microphone input, preventing the speaker output from being returned as an echo by the microphone. Please note that this function is not designed to eliminate the room's own acoustic reflections or reverberation.

Speech Privacy System
Keep confidential information in the conference room
The need to protect privacy in conference rooms and meeting areas, particularly in financial or medical institutions, is a growing concern. The Speech Privacy System uses an original sonic masking technique to prevent leakage of confidential information.

Rather than masking the conversation with high volume noise, an “information masking tone” synthesized from elements of human speech using an original process effectively camouflages spoken information. This approach allows the information to be protected by relatively low volume masking, helping to maintain the comfort of the conference environment.

Sound synthesized from human speech renders conversation unintelligible to eavesdroppers. This function does not silence the sound of the conversation.

* The Acoustic Echo Canceller is available in version 2.1 and later.