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STUDIO ELECTRONICS

DMX₁₆

Modular Matrix for Digital Audio Signals

User´s Manual
Version 7.10

Introduction

The DMX 16 is a modular patchbay system for digital audio signals, which allows signals of various formats to share one matrix, and even connect to each other using format converting modules.

The following modules are currently available:

MAES	4 I/O 110 ohm transformer balanced
MCO4	4 I/O 75 ohm RCA connectors
MOP4	4 I/O TOSLINK for SP DIF or ADAT
M2-2	2 I/O RCA, 2 I/O TOSLINK
MQA	ADAT <> AES / SP DIF convert
MQT	TDIF <> AES / SP DIF converter
MQ4	quad sample rate / format converter

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Any combination of these modules may be assembled into one matrix. Each module has four stereo inputs and four stereo outputs at its rear panel (except MQ4), and connects to the matrix with four stereo inputs (sources) and four stereo outputs (destinations).
MQT and MQA convert between four stereo lines and 8 channel formats.

Installation

Facing the unit from the rear, modules count from left to right. The first module on the left connects to sources and destinations 01 to 04.

DMX 16 Frame

1 - 4	5 - 8	9 - 12	13 - 16	

NOTE: Save the internal memory by midi sysex dump before installing new modules.
Start the system with a total reset after installation:
Press and hold down any key, while you power up the system.

Keys and Display

All functions, patches and device names can be programmed from the front panel. Therefore most keys have more than one function. Labels above each key describe the main function. Additional functions are selected by holding down the *EDIT* key while pressing the respective key for the desired function.

For example: The monitor function is selected by holding down *EDIT* while pressing *MONITOR*.

The destinations of the matrix are displayed in the lower line, while assigned sources are displayed in the upper line. The right part of the display *FROM / TO* shows the selected source and destination. All four destinations of the addressed module and the assigned sources are displayed on the left.
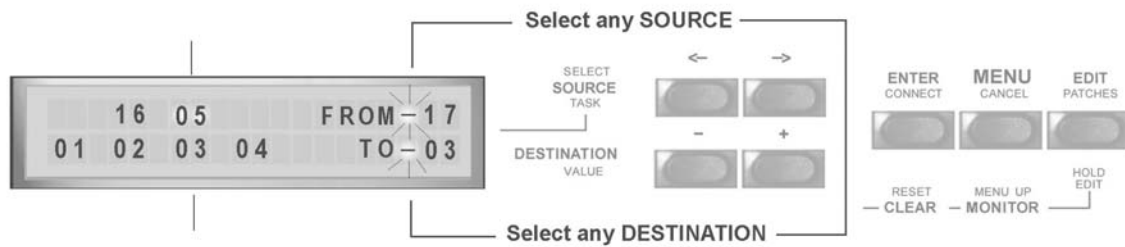
Editing Patches

The DMX unit is ready for editing patches right after power-up.

- Select any *SOURCE* with the ←→ keys.
- Select any *DESTINATION* with the ± keys.
- Press *ENTER* to connect the two selected devices.
- Select next *SOURCE* and next *DESTINATION.*

NOTE: Blinking indicates that the selected devices are not connected yet.
Still any other source and destination may be selected.
If a source is already connected to the selected destination,
this source is displayed in the left part of the display.

- *ENTER*   changes the patch.
- *EDIT*   cancels the selection and keeps the existing patch.

Changing Patches

An existing patch can be changed as follows:

- Select the desired *SOURCE* with the ←→ keys.
- Select the desired *DESTINATION* with the ± keys.

NOTE: If a source is already patched to the selected destination, this source
is displayed in the left part of the display.
See the picture in "Editing Patches":
destination 03 is already connected to source 05
while the selected source is source 17.

You may overwrite the existing patch, or cancel the new selection.

- Press *ENTER* to overwrite the existing patch.
- Press *EDIT* to cancel the selection and to keep the existing patch.

Clearing Patches

Clearing a Single Patch

- Select the desired *DESTINATION* with the ± keys.
- Press and hold down *EDIT*.
- Press *CLEAR* while still holding down *EDIT*.
  The assigned source is deleted.

Clearing the Complete Buffer and Matrix

- Press and hold down *EDIT*.
- Press *BUFFER* while still holding down *EDIT* and find the
  following selection on display:

```
CLEAR          YES->
BUFFER ?        NO->
```
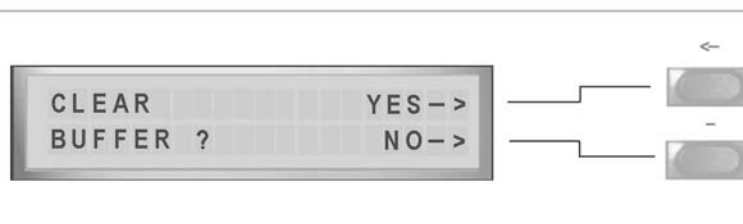
- Use the   - *KEY* to avoid clearing buffer and matrix.
- Press the ← *KEY* to clear both, buffer and matrix.

Display

Display Device Numbers

The display is split in two sections, as long as "DISPLAY DEVICE NUMBERS" is selected. The right part *FROM.xx / TO.xx* shows the latest selected devices. The left part shows all four destinations of the currently addressed module (lower line) and the assigned sources (upper line).

```
       16              FROM. 16
  01  02  03  04         TO. 02
```

Display Device Names

When "DISPLAY DEVICE NAMES" is selected, the names and numbers of the currently selected source and destination are displayed.
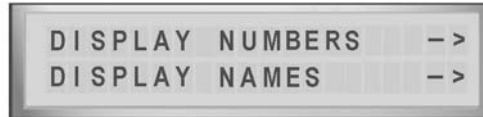
```
CD  PLAYER        FROM. 16
DAT RECORDER        TO. 02
```

Changing Display Mode

Display mode may be changed at any time.

- Press and hold down *EDIT.*
- Press *DISPLAY*, while still holding *EDIT*, find the following selection.

```
DISPLAY  NUMBERS      ->
DISPLAY  NAMES        ->
```

- Press the   ← *KEY* to select NUMBERS
- Press the   - *KEY* to select NAMES

Monitor

MONITOR offers the possibility to view all patches in the matrix. Whenever a destination is selected, the assigned source is also displayed. Select destinations step by step to display all patches. As soon as the ←→ keys select any source, the system returns to edit mode, and programming may be continued.

Entering MONITOR MODE

- Press and hold down *EDIT*, while pressing *MONITOR*.
  A pointer in the display indicates that monitor mode is selected.
- Release both keys.
- Select any destination and the assigned source is displayed.

```
CD PLAYER        FROM. 16
DAT RECORDER      ->. 02
```
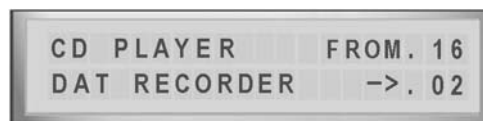
- Hit *EDIT* or select any source with the ←→ keys to return to edit mode.

MENU

MENU offers the following list of tasks:

- LOAD   loads patches from hardware memory.
- SAVE   stores new patches to hardware memory.
- DUMP MEMORY   sends all data in memory as a midi sysex dump.
- BOOT   selects the patch which is loaded on power up.
- MIDI SETUP   selects a channel number for midi program changes.

- SOURCE NAMES   to enter source names.
- DESTINATIONS   to enter destination names.
- PRESET NAMES   to enter preset names.

NOTE: hit *MENU*, and select any task with the ←→ keys.
                The *MENU key* its self only selects *LOAD* and *SAVE.*
                You may return to edit mode at any time with *EDIT*.

LOAD

Hit *MENU* once to select LOAD.

- Select the desired preset with the ± keys.
- Press *ENTER* to load the preset into the edit buffer and matrix hardware.

```
------< LOAD >------
RECORD          P.01
```

SAVE

Hit *MENU* twice to select SAVE.

- Select the desired memory location with the ± keys.
- Press *ENTER* to save the edit buffer to the selected memory location.
- After data is saved, the display changes for name entry.
- Select characters with the ± keys.
- Move cursor with the ←→ keys.
- Exit with ENTER.
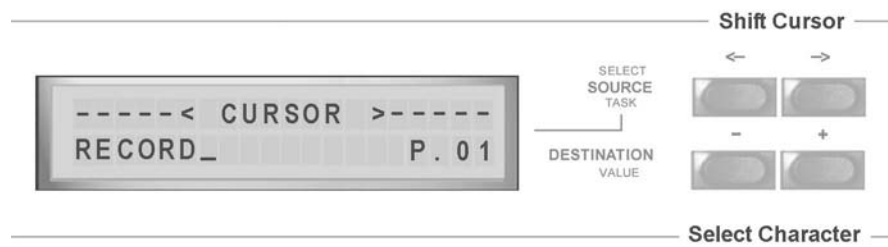
NOTE: You may skip the name entry with ENTER.
           While the name editing mode is on, you may clear the name
           with "hold *EDIT* and *CLEAR*".
           You may cancel the latest entry with *CANCEL* (MENU key).

MIDI SETUP

Each DMX unit is addressed by an ID number when receiving midi sysex data. This number is fixed to 01 and must be set to 01 in the remote software. You may load presets from the hardware memory to the matrix by sending MIDI programm change commands to the DMX unit.

The midi channel defaults to 01, but may be changed.

- Hit *MENU* once, to enter the menu list
- Select the task MIDI SETUP using the ←→ keys
- Select the desired MIDI CHANNEL NUMBER with the ± keys.

BOOT

The DMX system can boot with any stored preset or with the latest set before power-down

- Hit *MENU* once, to enter the menu list.
- Select the task BOOT with the ←→ keys
- Select the desired preset for BOOT

NOTE: "__"   boots with latest setup.

Entering Names

Entering a name is the same for sources, destinations and presets.

- Hit *MENU* once to enter the menu list.
- Select SOURCE NAMES (or DESTINATIONS, or PRESET NAMES) with the ←→ keys,
- Select the desired device number.
- Hit *ENTER* and the display changes for name entry:

- Select characters with the the ± keys.
- Move cursor with the ←→ keys.
- Exit with ENTER.

NOTE: You may skip the name entry with ENTER.
While the name editing mode is on, you may clear the name with "hold *EDIT* and *CLEAR*".
You may cancel the latest entry with *CANCEL* (MENU key).

Software Remote Control

All functions of the DMX system can be remotely controlled by software from MAC or PC.
Your computer must have at least one midi port. Please read installation manual before you start
with any software. Please also read carefully all the details about warranty and copyrights.

In any case visit our website for latest versions and news.

PC and Windows

For DMX16 and Windows you may use the DMXremote.exe from the DMX CD, or you may install
the JAVA runtime environment to use the DMXremote.jar JAVA program.

MAC and OS 9

for MAC OS 09 you may use the free SoundDiver OEM from EMAGIC from the DMX CD.

MAC and OS X

For MAC OS X you may use our DMXremote.jar JAVA program. Please note, that MAC OS X has
JAVA already implemented, but MIDI hardware is not supported. You need to install drivers
from MANDOLANE to fix this problem. Please get more details from our website or from the CD.

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DMX16

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