Preface

Many thanks for purchasing the Memotron m2d. The Memotron m2d enables you to reproduce the famous sound of the original vintage instrument with highest authenticity. Thanks to latest digital technology, the Memotron m2d is easy to use and most reliable in every stage and studio situation. To become quickly familiar with the Memotron m2d’s capabilities, we recommend you to take a break and study (and internalize...) this manual first.

Enjoy your Memotron m2d!

Your Manikin team

The Memotron m2d development team:

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</tr>
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<td>Version</td>
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</tr>
</tbody>
</table>

Note

Manikin Electronic will not assume any responsibility for errors which may occur in this manual. The content of these instructions is subject to change without prior notice. When this manual was created, good care was taken to exclude any mistakes and contradictions. Manikin Electronic will not accept any guarantees for this manual except those provided by commercial law.

No part of this user manual is allowed to be reproduced without the expressly written consent of the manufacturer.

Manikin Electronic, Lipaer Straße 5, D-12203 Berlin, Germany
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Introduction

About the Memotron m2d

The Memotron m2d is an advanced sample playback based musical instrument. It can emulate the famous, specific and genuine sound in highest audio quality. Thanks to its digital technology, the Memotron m2d is most reliable and easy to use. Features are:

- Access to up to three sounds simultaneously
- Fully polyphony
- Internal, adjustable effect processor
- Complete MIDI implementation
- Internal data storage, import of new sounds by means of an external memory card (SD card)
- Compatible with G-Media M-Tron® sound library

The special characteristics of the original have been carefully emulated. This includes a maximum duration of a played note of about 8 seconds (about 16 seconds at HALF SPEED).

The Memotron m2d supports standard data structures of memory cards. This compatibility enables you to create and organize your own Memotron m2d sound library with your PC.

The Memotron m2d is fully compatible with G-Media's M-Tron® plug-in and can play its sounds (recognizable at the ending .cpt). The Memotron m2d is not compatible with the newer M-Tron Pro® plug-in.

About this manual

This manual is intended to make the first steps of using the Memotron m2d easier for you. Moreover it also provides support and hints to the experienced user for his/her daily work.

Symbols used

To ensure a better overview, this manual uses standardized spelling and symbols which are explained below. Important notes are highlighted in bold print.

! Attention – Pay special attention to this note to avoid malfunctions

- Some short additional information is given

+ Instructions – Mind these instructions to execute the requested function

Marking of parameters

All designations of buttons, controllers and parameters of the Memotron m2d in the text are highlighted in bold print.

Example: Press the ESC button

The value range permitted for a parameter setting is highlighted by indicating the maximum and minimum values in italics, separated by three dots. Settings, which can not be represented by a value range, are separated by a comma.

Example: Rx Channel 01... 16, omni
General safety instructions

Please read the safety instructions below very carefully. They comprise some basic rules for the use of electronic devices. Please read all the notes before you start using the device.

Suitable location

• Only operate the device in closed rooms.
• Never operate the device in humid environments such as bathrooms, washing rooms or swimming pools.
• Do not operate the device in extremely dusty or dirty environments.
• Ensure unhindered air supply to all sides of the device. Do not place the device in close proximity of heat sources such as radiators.
• Do not expose the device to direct sunlight.
• Do not expose the unit to heavy vibration.

Mains connection

• Only use the supplied connection cable or the supplied power supply.
• If the supplied mains connector does not fit into your socket you should consult a qualified electrician.
• Disconnect the mains connector from the socket if you do not use the device for a longer period of time.
• Never touch the mains connector with wet hands.
• When disconnecting, always pull the connector and never the cable.

Operation

• Never place any vessels containing liquids on top of the device.
• Ensure that the device cannot move during operation. We recommend to install it into a 19" rack or to put it on a sturdy pad.
• Ensure that no objects can get inside the device. Should this happen against all odds, switch the device off, disconnect it from the mains and contact a qualified technician.

Maintenance

• Do not open the device. Any repair or maintenance should be done by qualified tech-personnel only. There are no parts inside the device that could be maintained by the user. You will also lose your right to claim warranty if you open the device.
• Only use a dry, smooth cloth or brush for cleaning the device. Do not use any alcohol, solvents or similar chemicals that will damage the surfaces.

Proper use

This device is exclusively intended for creating audio signals and creating / processing control signals according to the MIDI standard. Any other use is not permitted and will exclude any warranty claims towards Manikin Electronic.
Controls & Connectors

Top

DATA: Encoder with click function to edit menu-driven functions
ESC: Exits the current menu page, cancels a function
HALF SPEED: Simulates the halving of the tape speed
A B C: Simulates the track selector for shifting the tape heads from sound to sound
PITCH: Pitch alteration by +/- 3 halftones
TONE: Changes the sound by means of a 12 dB lowpass filter
VOLUME: Master volume

Rear Panel

OUTPUT Phones: Headphones output jack
OUTPUT Left / Right: Audio output jacks, line level, unbalanced
PEDAL Volume: Socket for a volume pedal
LCD: Contrast control for the LC-display
CARD: Card slot for insertion of an external memory card (SD card)
MIDI In: MIDI-Data input jack
MIDI Out: MIDI-Data output jack
AC In: Power supply socket (110V – 240VAC & 50Hz / 60Hz)
Setting Up

Unpacking

When unpacking, please check if all parts are included. If something should be incomplete, please contact your local Manikin dealer immediately.

The Memotron m2d box contains:

- the Memotron m2d
- power cable
- this user manual
- one memory card (SD card)
- one DVD packed with sounds

We recommend to keep the original box for further transportation – or better – purchase a suitable case.

Installation

Set up the Memotron m2d on a clean and smooth pad. For this purpose four stable feet are provided underneath the Memotron m2d.

Connections

You require a mains outlet and a suitable audio system or at least headphones.

- The Memotron m2d automatically adapts to your local power system (110V – 240V AC & 50Hz / 60Hz)

- How to hook up the Memotron m2d:
  
  + Make sure that both the Memotron m2d and your audio system are powered OFF.
  
  + Connect the included power cable to the Memotron m2d’s AC socket and to a suitable power outlet.
  
  + Connect the audio outputs of the Memotron m2d to the line-level inputs of your audio system. Use shielded high quality 6,3 mm mono jack cables.
  
  + Connect the MIDI input of the Memotron m2d with the MIDI output of a master keyboard, a computer or a sequencer (like the Manikin Schrittmacher) using only fitting MIDI cables.
  
  + Power ON the Memotron m2d and subsequently your audio system (!)

Proceed with the chapter “Basic Operation” on the next page.
Basic Operation

Power On

Push the Power switch on the rear to switch on the Memotron m2d. The Memotron m2d will need some seconds to initialize and will then be ready for use.

! Attention – First power ON the Memotron m2d and then power ON your audio system in order to avoid a cracking noise.

- After powering ON the Memotron m2d and the initialization, settings that were stored in a “Default Frame” might be loaded automatically.

Power Off

Push the Power switch to switch off Memotron m2d.

! Attention – To avoid a cracking noise, first power OFF your audio system and then switch OFF the Memotron m2d.

! By switching OFF the Memotron m2d, all settings will be lost. Thus save your settings as a ‘Frame’ on a memory card before you switch OFF!

Realtime Sound-manipulation Functions

Up to three sounds (here called tracks) can simultaneously be selected and played in the Memotron m2d. By means of several controls on the top that can not be stored and only serve your performance, the sound of the selected tracks can be processed.

- **A B C** cross-fades the tracks by turning the knob, simulating the Tron’s tape heads shifting from sound to sound.

- **PITCH** shifts the pitch 3 halftones up and 3 halftones down. This will slightly affect the maximum duration of a played note.

- **TONE** changes the sonic character with help of a passive 12 dB lowpass filter.

- **HALF SPEED** emulates the halving of the tape speed. The playback-pitch will be lowered by one octave and the duration of a played note of about 8 seconds is doubled. Using HALF SPEED results in a slight reduction of the audio quality, especially in higher frequency ranges.

- **VOLUME** defines the total output volume.
Menu-driven Functions

All other functions of the Memotron m2d are controlled via the menus with the help of the display and the DATA knob. These functions are:

- Load, save and delete frames (sound selection and effect settings) in the Frame Menu
- Select and initialize tracks (sounds) in the Track Menu
- Set the sound parameters in the Sound Settings
- Set the effect parameters in the Effect Setup
- Configure the MIDI interface in the Midi Setup
- Import and delete sound data in the Internal Mem Menu
- Update the operating system with Update.

Basic access to menu-driven functions:

1. Move the DATA knob to place the CURSOR in the desired position. Menus may cover several display pages – simply turn the DATA knob...
2. Click the DATA knob to select a function or to enter a deeper menu level.
3. Move and click the DATA knob to select a parameter and to enable a parameter value change.
4. Move the DATA knob to alter the value of the selected parameter.
5. Press the ESC button to cancel a function and / or return to a higher menu level.
The menu overview shows all menu-driven functions of the Memotron m2d.
Track Menu

The Memotron m2d makes use of sound sample data (here called tracks) that can be stored in and loaded from the internal memory. Up to three tracks can be selected and played in the Memotron m2d.

Selecting Tracks

With the DATA knob you navigate through the menu levels to the Sound Settings. By pressing the DATA knob, you select which track shall be loaded into one of the sound slots (A, B, C). Subsequently you are automatically prompted to the Track Menu where you switch by “Select Track” into the data system of the internal memory.

In the data system, directories and data can easily be selected. Pressing the DATA knob, enables the change into a sub-directory. Choose “..” to get back to the next higher level. By pressing the ESC button you can leave the data system without selecting any track.

Press the DATA knob to select the corresponding track. To make things easier, a selected track will then be replaced and without warning all its sound parameters will be initialized. After the completion of the selection process the Sound Settings appear again.

Initializing Tracks

This feature allows to initialize one of the three selected tracks. The track and all its sound parameters will be reset while the effect settings are retained.

Please select from the Sound Settings (A, B, C) the track to be initialized. Now enter the Track Menu and select “Init Track”. To cancel the function, choose “No” or hit the ESC button and jump back into the Track Menu. Choose “Yes” to initialize the selected track. When the initialization is done, the display jumps back to the Sound Settings.

The finished initialization can not be made undone!!!
Frame Menu

Frames offer the possibility to save and manage on an external memory card complete setups consisting of the selected tracks, the associated sound parameters and the effect settings. To this end, these functions are available in the Frame Menu: Load, Save, Delete and Initialize.

! In a frame, only the names of the tracks are stored, but not the sound data itself. This enables more rapid storage and saves space on the memory card. However, when loading a frame, the selected tracks must be installed in the internal memory.

Loading Frames

If you want to load a frame, first make sure that the desired memory card is in the Memotron m2d. If this is not the case, please insert the appropriate SD card into the card slot on the rear panel.

Use the DATA knob to navigate through the menu levels to the Sound Settings. Here, select "F:" and enter the Frame Menu. By selecting the menu item "Load Frame", you switch to the file system of the external memory card.

Navigate through the file system and select the desired frame. By pressing the ESC key, the file system will be left without loading a frame.

Pressing the DATA knob loads the tracks specified in the frame with all associated sound parameters and effect settings. When the loading is completed, the Sound Settings reappear automatically.

! If two or more tracks of the frame are not installed, the frame can not be loaded.
Saving Frames

If you want to save a frame, first make sure that there is the desired memory card in Memotron m2d. If this is not the case, please insert the appropriate SD card into the card slot on the rear panel.

Use the DATA knob to navigate through the menu levels to the Sound Settings. Here, select "F:" and enter the Frame Menu. After selecting the menu item "Save Frame", you must first name the frame.

By turning the DATA knob, letters and characters can be selected which are appended to the name by pressing the DATA knob. By choosing [Backspace], it is possible to delete the last character. After entering the name, the frame can be saved with [SAVE].

If a frame with the specified name already exists on the external memory card, a confirmation dialog will be displayed, asking if the existing frame should be overwritten. After the saving procedure, you will automatically return to the Sound Settings.

- Frames cannot be saved in the internal memory.

Creating a Default Frame

If a Frame is named "Default" on the external memory card, it is automatically loaded when you start the Memotron. Upon delivery, such a default Frame is already on the supplied SD card.

To create your own Default Frame, just save your Frame under the name "Default". Alternatively, you can select [DEFAULT] at the character selection.

If you already have a Default Frame on the external memory card, a confirmation dialog will be displayed here.
Deleting Frames

With this function, a frame can be deleted from the external memory card. If you merely want to reset the active Frame, then please see the "Initializing Frames" section.

To delete a frame from the external memory card, first navigate, using the DATA knob, through the menu levels to the Sound Settings. Here select "F:" and enter the Frame Menu. By selecting the menu item "Delete Frame", you change to the file system of the external memory card.

Navigate through the file system and select the desired Frame. By pressing the ESC key, you can exit the file system at any time without deleting a frame.

Pressing the DATA knob, the frame will be deleted from the external memory card after a security check. Then the Sound Settings will reappear automatically.

A deleted Frame can not be restored!!!

Initializing Frames

With this feature, the selected tracks together with the associated sound parameters and effect settings can be reset.

In the Frame Menu, a prompt is displayed after selecting the menu item "Init Frame". Select "No" or press the ESC key to return to the Frame Menu. When you select "Yes", the frame is initialized. After the initialization, the system returns to the Sound Settings.

The initialization of a Frame can not be undone!!!
Internal Mem

The Memotron m2d features an internal memory from which the tracks will be played. On delivery, the hundred tracks of the Basic Collection are preinstalled here. To use other tracks, they first must be imported. Besides its own Memotron sample files (file extension ".mtk"), also sample files of the plug-in M-Tron® of G-Media (file extension "cpt") can be used. With G-Media’s newer M-Tron Pro® plug-in, the Memotron m2d is not compatible.

- **On a Windows® PC installed M-Tron® sample files can not be used in the Memotron m2d as these were converted during the installation of the plug-in. Use the original sample files of the M-Tron® CD-Roms instead.**

With the following functions you can import individual tracks or all tracks of a directory, remove individual tracks or erase all internal memory of the Memotron m2d. In addition, the info page gives information on the number of installed tracks, the remaining capacity for other tracks and the maximum number of installable tracks.

Importing Tracks

This function allows you to import individual tracks from an external memory card to the internal memory. If you want to import a complete Sound Collection or more tracks, then please see the "Importing Directories" section.

To import a single track into the internal memory of Memotron m2d, go first to the "Internal Mem" menu. By selecting the menu item "Import Track", you change to the file system of the external memory card.

Navigate through the file system and select the track you want to import. By pressing the ESC key, you can exit the file system at any time without importing a track.

After selecting the desired track, the Memotron m2d starts the import which takes a few seconds to complete. After a successful import, you are returned to the file system of the external memory card and can now select another track. If you do not want to import any other track, you return by pressing the ESC key to the "Internal Mem" menu. With one more press on the ESC key, you return to the main menu.

- **If a Memotron sample file (".mtk") is not too big (some original samples were recorded longer than others!), the first two keys (F & F#) will be interpolated during the import and the track can then be played with the full keyboard range.**
Importing Directories

If all tracks of a sound collection shall be imported to the internal memory of Memotron m2d, the function "Import Dir" is very useful. With this function, all tracks within a directory can be imported from an external memory card to the internal memory of the Memotron m2d.

To start the import, first switch to the "Internal Mem" menu. By selecting the menu item "Import Dir", you change to the file system of the external memory card.

Navigate through the file system and select the directory that contains the tracks you want to import. Depending on the amount of tracks, the import of multiple tracks from a directory can take a few minutes to complete. The current import can be cancelled at any time by pressing the ESC key.

Deleting Tracks

To delete individual tracks from the Memotron m2d's internal memory, first go to the "Internal Mem" menu. By selecting the menu item "Delete Track", you switch to the file system of the internal memory.

The track to be deleted can now be selected and deleted after confirming a confirmation prompt. To cancel the operation, select in the prompt "No" or press the ESC key. After the deletion, you will automatically return to the Sound Settings.

! The deleted track can only be restored by importing it again!!!
Deleting the Internal Memory

This feature deletes the Memotron m2d's entire internal memory. To do this, switch to the "Internal Mem" menu and select the menu item "Delete All".

The internal memory can be deleted after confirming a confirmation prompt. To cancel the operation, select "No" in the prompt or press the ESC key. After the deletion, you will automatically return to the Sound Settings.

! Deleting the internal memory can not be undone. To use the Memotron m2d again, tracks have to be imported with the "Import Track" or "Import Dir".

Memory Information

This function provides an overview of the way the internal memory is used. First change to the "Internal Mem" menu and select the menu item "Info".

On the Info Page, the number of the already installed, the free and the maximum installable tracks appears. You leave the Info Page by pressing the ESC key and return to the "Internal Mem" menu. One more press on the ESC key brings you back to the main menu.

! The maximum amount of installable tracks depends on the built-in internal memory card and may therefore differ from the displayed amount.
Sound Settings

The Sound Settings contain Frame and track names as well as various parameters to tailor each track to your personal needs.

The following parameters can be adjusted on each of the three tracks:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value Range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume</td>
<td>0 ... 127</td>
<td>Volume of a track</td>
</tr>
<tr>
<td>Attack</td>
<td>0 ... 127</td>
<td>Fast or slow attack phase of the sound</td>
</tr>
<tr>
<td>Release</td>
<td>0 ... 127</td>
<td>Fast or slow decaying of the sound after the key release</td>
</tr>
<tr>
<td>Panorama</td>
<td>L64 ... C00 ... R63</td>
<td>Stereo panning</td>
</tr>
<tr>
<td>Velocity</td>
<td>-63 ... 0 ... 63</td>
<td>Touch response (max. inverted … off … max. active)</td>
</tr>
<tr>
<td>Mix</td>
<td>Off, A, B, C</td>
<td>Blending of tracks</td>
</tr>
<tr>
<td>Place</td>
<td>Place, First, Last</td>
<td>Positioning of tracks</td>
</tr>
</tbody>
</table>

All Sound Setting parameters can be accessed by turning the DATA knob. A selected parameter can be edited by pushing the DATA knob. The cursor will turn into a pointer. Turning the DATA knob, will now alter the parameter values. Pushing the DATA knob again, will confirm the value changes and by turning the DATA knob, another parameter can be selected for tailoring.

By pressing the ESC button, you can leave the Sound Settings and return to the main menu.
Blending Tracks (Mix)

The Memotron m2d offers the possibility to blend three tracks. To control the blending effect, you can use the ABC Controller of the Memotron m2d, the modulation wheel of a connected master keyboard or the ABC Controller of a Memotron keyboard. By default, the cross-fading of the tracks is initially configured that position A of the ABC Controller is assigned to Track A, position B to Track B and position C to Track C.

The mix mode for each track is set in the Sound Settings with the parameters "MixC:", "MixB:" and "MixA:". The following settings are possible:

- **Off**: The blending of this track is deactivated. It can be heard constantly.
- **A**: The track can be heard at full volume in the position A of the ABC Controller or respectively in the lower position of the modulation wheel. Moving it towards the position B / middle position constantly fades out the track.
- **B**: The track can be heard at full volume in the position B of the ABC Controller or respectively in the middle position of the modulation wheel. Moving it towards the position A or C / lower or upper position constantly fades out the track.
- **C**: The track can be heard at full volume in the position C of the ABC Controller or respectively in the upper position of the modulation wheel. Moving it towards the position B / middle position constantly fades out the track.

The assignments of the individual tracks can be selected in the Sound Settings by turning the DATA knob. After a parameter has been selected, it is ready for editing by pressing the DATA knob. The cursor changes its shape to an arrow. Turning the DATA knob, the parameter value can now be changed. By pressing the DATA knob again, another parameter can be selected for editing.
Positioning Tracks

Usually a track consists of 37 sounds that can be played in the range from “F 3” to “F 6”. In the Midi Settings, each track can be positioned by means of the parameter “Place” while its tonal range can be restricted by the parameters “First” and “Last”. With “Place”, you can define the first key on the keyboard where the first sound of a track can be heard, while “First” defines the lowest and “Last” the highest audible sound of a track.

The following illustration shall explain the various options.

In this configuration, the parameters of track A are unchanged and correspond to the basic setting. Here, all 37 sounds of track A are playable from “F 3” to “F 6”. This track is cut off in the illustration on the right side and is not fully visible due to restricted space.

Track B was limited to 12 playable sounds from “C 4” to “H 4” (= B 4) while in the lower part 7 notes and at the top 18 notes were cut off. These sounds can be played with a keyboard from “C 3” to “H 3” (= B 3).

Like Track B, Track C is limited to 12 playable sounds from “C 4” to “H 4” (= B 4). With a connected keyboard, the sound can thus be played one octave higher from “C 4” to “H 4” (= B 4). Track C also is not fully visible due to restricted space.
Effect Setup

The Memotron m2d has a digital effects section which enhances its tonal expressiveness a lot. In addition, the Memotron m2d is largely independent (especially on stage) from external effects devices.

The effect section consists of three successive effect blocks: the Amplifier Modeling Effect block, a Modulation / Delay effect block and a Reverberation / Echo effect block. All three blocks can be used individually or simultaneously, each with one effect program.

The Effect Setup is accessible from the main menu. After a parameter has been selected, it can be released for editing by pressing the DATA knob. The cursor changes its shape to an arrow. Turning the DATA knob, the parameter value can now be changed. By pressing the DATA knob again, another parameter can be selected for editing.

By pressing the ESC button, you can quit the Effect Settings section and return to the main menu.

Effect Block 1: Amplifier Modeling

This effect block provides twelve different effect algorithms:

1. JC Clean
2. Acoustic
3. Black Panel
4. Brit Combo
5. Tweed
6. Stack Classic
7. Metal
8. R-Fier
9. Crunch
10. VO Drive
11. BG Lead
12. MS Higain

The following parameters can be adjusted in the Amplifier Modeling effect block:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value Range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMP MODEL</td>
<td>OFF / ON</td>
<td>deactivates / activates this effect block</td>
</tr>
<tr>
<td>Prog</td>
<td>JC Clean … MS Higain</td>
<td>selects one of 12 effect algorithms</td>
</tr>
<tr>
<td>Send</td>
<td>0 ... 127</td>
<td>adjusts the effect amount in the output signal</td>
</tr>
</tbody>
</table>
Effect Block 2: Modulation / Delay

This effect block provides six different effect algorithms:

1. Chorus
2. Flanger
3. Phaser
4. Tremolo
5. Delay Mono
6. Delay Stereo

The following parameters can be adjusted in the Modulation / Delay effect block:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value Range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOD/DELAY</td>
<td>OFF / ON</td>
<td>deactivates / activates this effect block</td>
</tr>
<tr>
<td>Prog</td>
<td>Chorus … Delay Stereo</td>
<td>selects one of six effect algorithms</td>
</tr>
<tr>
<td>Send</td>
<td>0 … 127</td>
<td>adjusts the effect amount in the output signal</td>
</tr>
</tbody>
</table>

Depending on the effect algorithm, further parameters can be set in this effect block.

Chorus / Flanger:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value Range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate</td>
<td>0 … 127</td>
<td>Modulation rate: 0= ~0,023Hz to 127= ~5,8Hz</td>
</tr>
<tr>
<td>Depth</td>
<td>0 … 127</td>
<td>Modulation depth: 0= 0% to 127= 100%</td>
</tr>
<tr>
<td>Feedback</td>
<td>0 … 127</td>
<td>Feedback rate: 0= 0% to 127= 100%</td>
</tr>
</tbody>
</table>

Phaser:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value Range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate</td>
<td>0 … 127</td>
<td>Modulation rate: 0= ~0,023Hz to 127= ~5,8Hz</td>
</tr>
<tr>
<td>Feedback</td>
<td>0 … 127</td>
<td>Feedback rate: 0= 0% to 127= 100%</td>
</tr>
<tr>
<td>HiDamp</td>
<td>0 … 127</td>
<td>High frequency damping: 0= 0% to 127= 100%</td>
</tr>
</tbody>
</table>

Tremolo:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value Range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate</td>
<td>0 … 127</td>
<td>Modulation rate: 0= ~1Hz to 127= ~20Hz</td>
</tr>
<tr>
<td>Shape</td>
<td>0 … 127</td>
<td>Modulation waveform: 0= Triangle to 127= Square</td>
</tr>
<tr>
<td>HiDamp</td>
<td>0 … 127</td>
<td>High frequency damping: 0= 0% to 127= 100%</td>
</tr>
</tbody>
</table>

Delay Mono / Delay Stereo:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value Range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>0 … 127</td>
<td>Delay time: 0= ~1ms to 127= ~150ms</td>
</tr>
<tr>
<td>Feedback</td>
<td>0 … 127</td>
<td>Feedback amount: 0= 0% to 127= 100%</td>
</tr>
<tr>
<td>HiDamp</td>
<td>0 … 127</td>
<td>High frequency damping: 0= 0% to 127= 100%</td>
</tr>
</tbody>
</table>
Effect Block 3: Reverb / Echo

This effect block provides 26 different effect algorithms:

<table>
<thead>
<tr>
<th>Reverb</th>
<th>Echo</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Short Room A</td>
<td>19. Mono Echo</td>
</tr>
<tr>
<td>2. Short Room B</td>
<td>20. Stereo Echo</td>
</tr>
<tr>
<td>4. Room A</td>
<td>22. Stereo 3 / 4 Echo</td>
</tr>
<tr>
<td>5. Room B</td>
<td>23. Mono 4 / 4 Echo</td>
</tr>
<tr>
<td>7. Small Hall B</td>
<td>25. Mono Triple Echo</td>
</tr>
<tr>
<td>8. Large Hall</td>
<td>26. Stereo Triple Echo</td>
</tr>
<tr>
<td>9. Spring</td>
<td></td>
</tr>
<tr>
<td>10. Short Plate</td>
<td></td>
</tr>
<tr>
<td>11. Vocal Plate</td>
<td></td>
</tr>
<tr>
<td>12. Church A</td>
<td></td>
</tr>
<tr>
<td>13. Church B</td>
<td></td>
</tr>
<tr>
<td>14. Cathedral</td>
<td></td>
</tr>
<tr>
<td>15. Gated Reverb A</td>
<td></td>
</tr>
<tr>
<td>16. Gated Reverb B</td>
<td></td>
</tr>
<tr>
<td>17. Gated Plate A</td>
<td></td>
</tr>
<tr>
<td>18. Gated Plate B</td>
<td></td>
</tr>
</tbody>
</table>

The following parameters can be adjusted in the Reverb / Echo effect block:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value Range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>REVERB/ECHO</td>
<td>OFF / ON</td>
<td>deactivates / activates this effect block</td>
</tr>
<tr>
<td>Prog</td>
<td>Short Room A … St. Tri Echo</td>
<td>selects one of 26 effect algorithms</td>
</tr>
<tr>
<td>Send</td>
<td>0 ... 127</td>
<td>adjusts the effect amount in the output signal</td>
</tr>
</tbody>
</table>
MIDI Setup

The MIDI Setup controls all functions that are used to play the Memotron m2d from a suitable external MIDI device (e.g. a master keyboard or a MIDI sequencer such as the Manikin Schrittmacher).

The following parameters can be edited:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Values</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rx Channel</td>
<td>1 ... 16</td>
<td>MIDI channel on which the track receives MIDI data</td>
</tr>
<tr>
<td>Tx Channel</td>
<td>1 ... 16</td>
<td>MIDI channel on which MIDI data is sent</td>
</tr>
<tr>
<td>Local Control</td>
<td>Off / On</td>
<td>Separates the controllers from the Memotron m2d’s sound generator.</td>
</tr>
</tbody>
</table>

Enter the MIDI Setup via the main menu. A selected MIDI parameter can be edited by pressing the DATA knob. The cursor will turn into a pointer. Turning the DATA knob will now alter the parameter values. Pressing the DATA knob again will confirm the value changes and by turning the DATA knob, another parameter can be selected.

By pressing the ESC key, you can leave the MIDI Setup and you are returned to the main menu.
**Update**

To keep the Memotron m2d on the latest technical level, Manikin Electronic will launch operation system updates from time to time. These updates can easily be installed from a memory card. The operation is basically no different from loading a Frame.

The update process can be accessed via the main menu item “Update”. By pressing the DATA knob, you enter the “Update” menu. The currently installed operation system version number is displayed here. To update, you select the menu item "Update" and enter the file system of the external memory card.

The following procedure is basically the same as loading a Frame: Select the directory which holds the new operation system file. Select the operation system file (m2d_m2k_OSXX.mos) and press the DATA knob to initiate the update process. The update process will take some seconds and will be completed when the main menu reappears.

The Memotron m2d is ready for performance as soon as the update process has been successfully performed.

> **While the update process is running, do NOT switch off the Memotron m2d!**
Appendix

Product Support

If you would like to ask any questions concerning your Manikin Electronic product, there are four ways to contact us:

1. Send us an email.
   
   support@manikin-electronic.com

2. Send us a telefax.
   
   +49 (0) 30 – 63 49 49 51

3. Send us a letter.
   
   Manikin Electronic
   Lipaer Straße 5
   12203 Berlin
   Germany

4. In very urgent cases, call us.
   
   +49 (0) 30 – 63 49 49 50
**Technical data**

<table>
<thead>
<tr>
<th>Power Supply</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal voltage</td>
<td>AC 100V - 240V / 50Hz – 60Hz</td>
</tr>
<tr>
<td>Maximum power consumption</td>
<td>12W</td>
</tr>
<tr>
<td>Connector</td>
<td>Standard IEC socket</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Connections</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MIDI</td>
<td>In and Out</td>
</tr>
<tr>
<td>Line Out</td>
<td>Left, right (6,3 mm jack, mono)</td>
</tr>
<tr>
<td>Headphones</td>
<td>Output (6,3 mm jack, stereo)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dimensions and weight</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions (width / height / depth)</td>
<td>272 mm x 80 mm x 240 mm</td>
</tr>
<tr>
<td>Overall weight</td>
<td>3,2 kg</td>
</tr>
</tbody>
</table>

**Disposal**

The device is RoHS compliantly manufactured in accordance with the directive of the European Parliament and Council and is thus free of lead, mercury, cadmium and hexavalent chromium.

Nevertheless this product is special waste and shall not be disposed in ordinary household waste!!!

For disposal, please contact your local dealer or

**Manikin Electronic**  
Lipaer Straße 5  
12203 Berlin  
Germany
The product conforms to the following harmonized European standards:
EN 55013: 2003, CENELEC EN 55020: 2003, EN61000-3-2: 2000 and
EN 61000-3-3: 1995 + correction 1998

FCC Information (U.S.A.)

1. IMPORTANT NOTICE: DO NOT MODIFY THIS UNIT! This product, when installed as indicated in
the instructions, contained in this manual, meets FCC requirements. Modifications not expressly
approved by Manikin Electronic may void your authority, granted by the FCC, to use this product.
2. IMPORTANT: When connecting this product to accessories and/or another product, use only high
quality shielded cables. Cable/s supplied with this product MUST be used. Follow all installation
instructions. Failure to follow instructions could void your FCC authorization to use this product in the
USA.
3. NOTE: This product has been tested and found to comply with the requirements listed in FCC
Regulations, Part 15 for Class „B“ digital devices. Compliance with these requirements provides a
reasonable level of assurance that your use of this product in residential environment will not result in
harmful interference with other electronic devices. This equipment generates/uses radio frequencies
and, if not installed and used according to the instructions found in the users manual, may cause
interference harmful to the operation of other electronic devices. Compliance with FCC regulations
does not guarantee that interference will not occur in all installations. If this product is found to be the
source of interference, which can be determinated by turning the unit „OFF“ and „ON“, please try to
eliminate the problem by using one of the following measures: Relocate either this product or the
device that is being affected by the interference. Utilize power outlets that are on branch (circuit
breaker or fuse) circuits or install AC line filter/s. In the case of radio or TV interference,
relocate/reorient the antenna. If the antenna lead-in is 300 ohm ribbon lead, change the lead-in to co-
axial type cable. If these corrective measures do not produce satisfactory results, please contact the
local retailer authorized to distribute this type of product.
The statements above apply ONLY to products distributed in the USA.

Canada

The digital section of this apparatus does not exceed the „Class B“ limits for radio noise emissions
from digital apparatus set out in the radio interference regulation of the Canadian Department of
Communications.
Le present appareil numerique n`emet pas de bruit radioelectriques depassant les limites applicables
aux appareils numeriques de la „Classe B“ prescrites dans la reglement sur le brouillage
radioelectrique edicte par le Ministre Des Communications du Canada.
Ceci ne s`applique qu`aux produits distribues dans Canada.

Other Standards (Rest of World)

This product complies with the radio frequency interference requirements of the Council Directive
89/336/EC.

Cet appareil est conforme aux prescriptions de la directive communautaire 89/336/EC.

Dette apparat overholder det gældende EF-direktiv vedrørendareadiostøj.
## MIDI Implementation Table

<table>
<thead>
<tr>
<th>Function ...</th>
<th>Transmitted</th>
<th>Recognized</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic</td>
<td>Default</td>
<td>x</td>
<td>1</td>
</tr>
<tr>
<td>Channel</td>
<td>Default</td>
<td>x</td>
<td>1 – 16</td>
</tr>
<tr>
<td>Mode</td>
<td>Messages</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Altered</td>
<td>**********</td>
<td>x</td>
</tr>
<tr>
<td>Note</td>
<td>Number</td>
<td>x</td>
<td>0 – 127</td>
</tr>
<tr>
<td></td>
<td>True Voice</td>
<td>**********</td>
<td>0 – 127</td>
</tr>
<tr>
<td>Velocity</td>
<td>Note ON</td>
<td>x</td>
<td>o v=1-127</td>
</tr>
<tr>
<td></td>
<td>Note OFF</td>
<td>o</td>
<td></td>
</tr>
<tr>
<td>After</td>
<td>Key’s</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Touch</td>
<td>Ch’s</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Pitch Bender</td>
<td>o</td>
<td>o 3 semi</td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>1</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>Change</td>
<td>7</td>
<td>0 Pedal</td>
<td>o</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>x</td>
<td>o</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td></td>
<td>64</td>
<td>x</td>
<td>o</td>
</tr>
<tr>
<td></td>
<td>74</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>Prog</td>
<td>Change: True</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>System Exclusive</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Common</td>
<td>Tune</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>System</td>
<td>: Clock</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Real Time</td>
<td>: Commands</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Aux</td>
<td>: Local ON/OFF</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Messages</td>
<td>: All Notes OFF</td>
<td>x</td>
<td>(123-125)</td>
</tr>
<tr>
<td></td>
<td>: Active Sense</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>: Reset</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>: All Sound OFF</td>
<td>x</td>
<td>o</td>
</tr>
</tbody>
</table>

**Notes**
- Mode 1: OMNI ON, POLY
- Mode 2: OMNI ON, MONO
- Mode 3: OMNI OFF, POLY
- Mode 4: OMNI OFF, MONO

**Legend**
- o: Yes
- x: No
Glossary

**CD-ROM**
Removable “Read Only Memory” data storage device.

**Memory card**
Removable and rewritable storage medium for storing and archiving data. The Memotron m2d uses SD cards.

**Data system**
Hierarchical structure within an electronic storage medium, organizing data in drives, folders and files.

**Effect Algorithm**
A software-based process to generate a certain kind of sound processing. The Memotron m2d offers the following different effect algorithms:
- **Hall**: Simulation of a big room / environment
- **Room**: Simulation of a small room / environment
- **Plate**: Simulation of a Plate Reverberation
- **Chorus**: Type of signal processing. Several slightly detuned copies of a signal are mixed together, to generate a type of choir-like effect that adds subtle animation and density to a sound.
- **Flange**: Type of signal processing. A slightly time-delayed copy of a signal is mixed with the original, adding animation to a sound.
- **Delay**: Echo effect
- **Phaser**: A sound effect that is produced by a modulated filter with multiple erasures and increases in the frequency spectrum.

**Effect Section**
The Memotron m2d's internal selection of signal processing features.

**MIDI**
MIDI is short for “Musical Instrument Digital Interface”. It was developed in the early eighties to link electronic musical instruments of different types and from different manufacturers. Up to that time, there was no standard for linking several sound generators and so MIDI was a considerable improvement. From then on, it became possible to link all devices using easy and always identical connection cables.

The basic steps are: a transmitter is always connected with one or several receivers. If e.g. a computer is to play a synthesizer, the computer is the transmitter and the synthesizer becomes the receiver. For this purpose, all MIDI devices (with only a few exceptions) have two or three connections: MIDI IN, MIDI OUT and possibly MIDI THRU. The transmitting device provides the information to the outside world via its MIDI OUT connection. The data are passed on to the MIDI IN connection of the receiver by means of a cable.

**MIDI Clock**
The time interval of the MIDI Clock message defines the tempo of a musical piece. It is used for synchronizing time-dependent processes.

**MIDI functions**
See MIDI

**MIDI Channel**
An important part of most messages. A receiving device only reacts to incoming messages if its set receiving channel is identical with the transmitting channel of the message. This enables a clear
information transfer to a receiver. The MIDI channel can be selected within the range from 1 to 16. Beyond this range, a device can be switched to Omni to receive all 16 channels.

**Frame**
In the Memotron m2d, it is a combination of up to three tracks and their effect settings.

**Note on / Note off**
This is the most important MIDI message, determining the tone pitch and the velocity of the generated tone. The time of its arrival is at the same time the starting point of the tone. The pitch is the result of the transmitted note numbers, ranging from 0 to 127. The velocity's range is from 1 to 127. The velocity value 0 means “NoteOff”, i.e. the note is switched off.

**Panning**
Designates the panorama position of a sound.

**Pitch Bend**
Pitch Bend is a MIDI message. Although the functions of the Pitch Bend message are similar to those of the control change messages, it represents a message type of its own. The reason why is above all that the Pitch Bend message is transmitted with a considerably finer resolution than the “usual” controller. This takes into account that the human ear is extremely sensitive to pitch changes.

**Sample data**
A digitally recorded representation of a sound.

**Sampling**
The process of encoding an analogue signal into digital form by reading (sampling) its level at short and precisely spaced intervals of time.

**System Exclusive data**
System Exclusive data represent the access to the innermost part of a MIDI device. They enable access to data and functions which are not represented by any other MIDI messages. “Exclusive” also means that the data indicated here only apply to one single type of device. Each device has its own System Exclusive data. The most frequent applications for this data type are the transmission of complete memory contents as well as the complete device control by means of a computer.

**Low pass Filter**
A filter that alters a sound by attenuating its high frequencies.

**Track**
In the Memotron m2d, it denotes one of three independent memory areas into which sound data can be loaded.

**Sound Settings**
In this menu, frames can be loaded and saved. Further tracks can be selected and the associated sound parameters can be set.