# ML-303 BassLine

DIY project

**USER MANUAL**
***BETA 1.03***

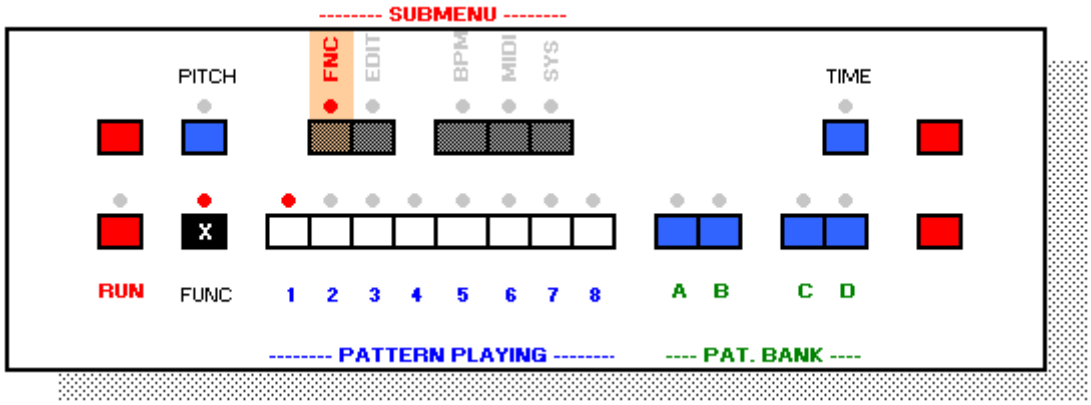
**Load default settings**

Hold down “TIME” while turning the unit on. The default configuration will be loader (Midi-Channel, BPM, Clock-settings).

**Soundmodule-Mode**

Hold down “RUN” while turning the unit on. The ML will then enter a special Midi Mode where the internal sequencer is turned off and the ML reacts on Midi-Data.

## FUNC/NORMAL MODE




Press **FUNC** key to enter the FUNC/NORMAL MODE.

The white keyboard-keys represent the 8 patterns of the actual pattern bank. One of the eight LED`s will blink to show you which pattern is actually selected.

With the **A**,**B**,**C**,**D** keys you can choose one of the 16 pattern-banks. Each bank contains 8 patterns. This makes a total of 8x16 = 128 patterns accessible via keys but also via Midi-Program-Change and Bank-Change commands.

**Pattern-Banks**

| | A | B | C | D |
|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 1 |
| 3 | 0 | 0 | 1 | 0 |
| 4 | 0 | 0 | 1 | 1 |
| 5 | 0 | 1 | 0 | 0 |
| 6 | 0 | 1 | 0 | 1 |
| 7 | 0 | 1 | 1 | 0 |
| 8 | 0 | 1 | 1 | 1 |

| | A | B | C | D |
|---|---|---|---|---|
| 9 | 1 | 0 | 0 | 0 |
| 10 | 1 | 0 | 0 | 1 |
| 11 | 1 | 0 | 1 | 0 |
| 12 | 1 | 0 | 1 | 1 |
| 13 | 1 | 1 | 0 | 0 |
| 14 | 1 | 1 | 0 | 1 |
| 15 | 1 | 1 | 1 | 0 |
| 16 | 1 | 1 | 1 | 1 |

While a pattern is playing you can switch to another pattern with the white keys and you can also change the pattern-bank in realtime.

If you want to clear the whole pattern hold down **CLR** some seconds until all LED`s are flashing up.

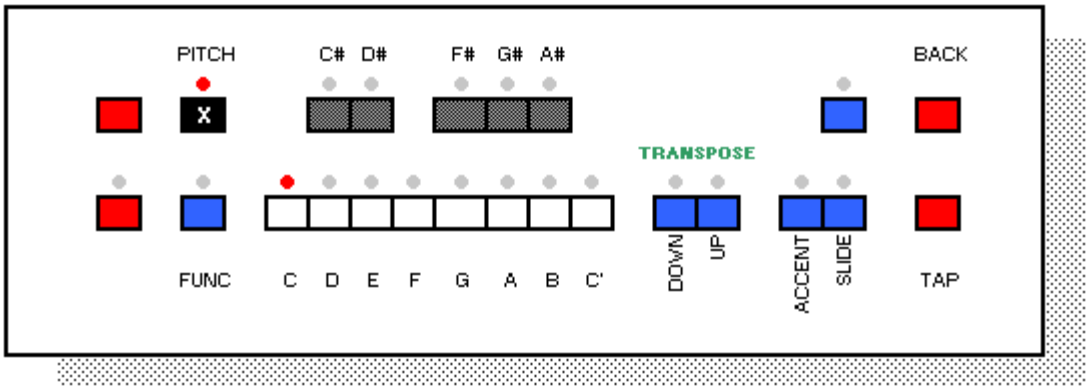
Press **RUN** to start/stop playing a pattern.

While playing is stopped you can access one of the 4 submenus using the black keyboard-keys:

- **EDIT**
- **BPM**
- **MIDI**
- **SYSTEM**

Use the **PITCH** key to enter the PITCH-Mode and use the **TIME** key to enter the TIME-Mode (both modes are only available when playing is stopped).

## PITCH MODE




To enter the PITCH-Mode you have to choose a pattern to edit (and pattern-bank) from the FUNC-MODE, then press the **PITCH** key.

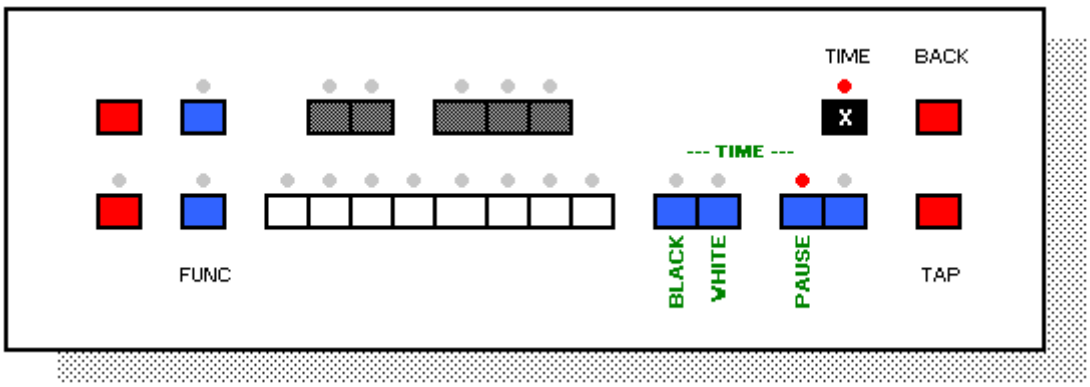
Now you are on Step #1 of the choosen pattern. Enter note value with the keyboard-keys, transpose them with the **DOWN** and **UP** keys, set **ACCENT** and **SLIDE**.

To edit the next step just press the **TAP** key. If you wan`t to go 1 step back press **BACK**.

If the end of the pattern is reached all LED`s will flash up to signalize that the pattern-position is on position #1 again.

To return to FUNC/NORMAL-MODE press **FUNC**.

**TIME-MODE**

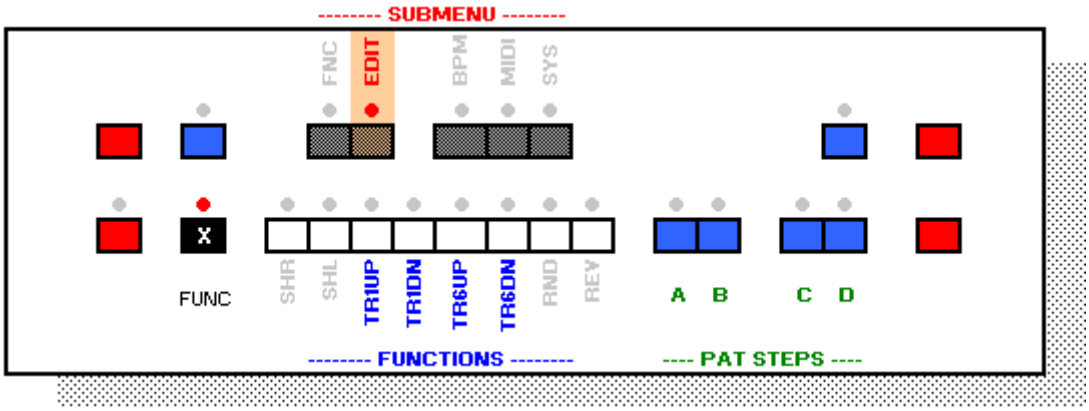



In TIME-Mode the keys have the same functions as in PITCH-Mode, except **DOWN**, **UP**, **ACCENT**. In TIME-Mode this keys are used to set the note-length:

**BLACK** = 1/16 Note
**WHITE** = + 1/16
**PAUSE** = 1/16 Pause

To return to FUNC/NORMAL-MODE press **FUNC**.

## SUBMENU: EDIT




While in FUNC-Mode press the **EDIT** key to enter the EDIT-Submenu.

| | |
|---|---|
| SHR | Shift the pattern 1 step right |
| SHL | Shift the pattern 1 step left |
| TR1UP | Transpose the pattern 1 note up |
| TR1DN | Transpose the pattern 1 note down |
| TR6UP | Transpose the pattern 6 notes up |
| TR6DN | Transpose the pattern 6 notes down |
| RND | Randomizes the pattern |
| REV | Reverses the pattern |

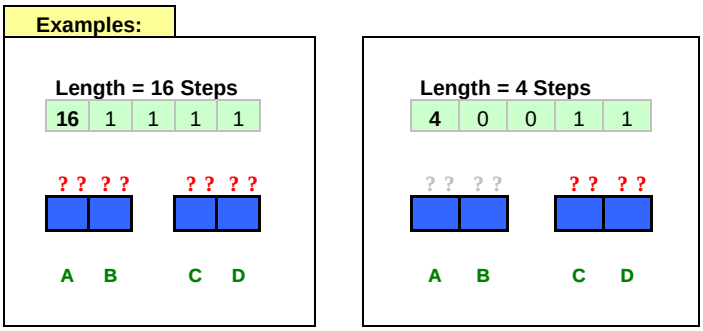
Please note that these functions affect all 16 steps of the pattern – even if the pattern-length is set to a smaller amount of steps!

**Steps Table**

| | A | B | C | D |
|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 1 |
| 3 | 0 | 0 | 1 | 0 |
| 4 | 0 | 0 | 1 | 1 |
| 5 | 0 | 1 | 0 | 0 |
| 6 | 0 | 1 | 0 | 1 |
| 7 | 0 | 1 | 1 | 0 |
| 8 | 0 | 1 | 1 | 1 |

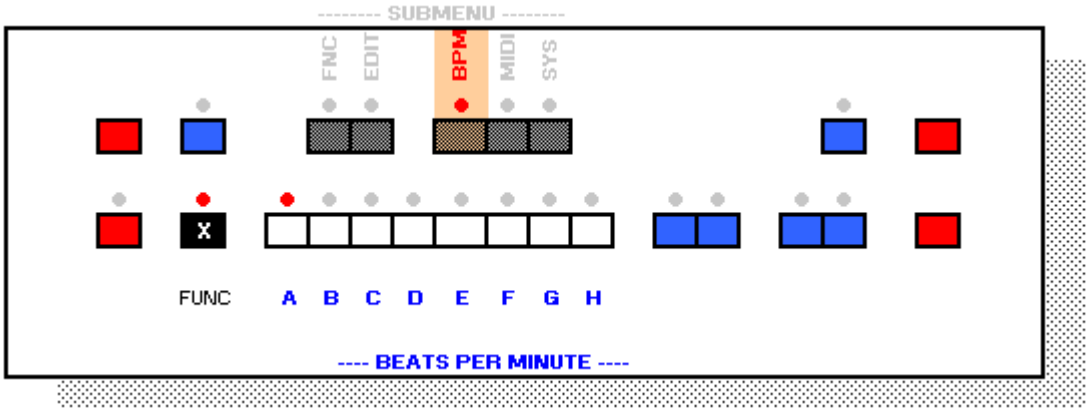
| | A | B | C | D |
|---|---|---|---|---|
| 9 | 1 | 0 | 0 | 0 |
| 10 | 1 | 0 | 0 | 1 |
| 11 | 1 | 0 | 1 | 0 |
| 12 | 1 | 0 | 1 | 1 |
| 13 | 1 | 1 | 0 | 0 |
| 14 | 1 | 1 | 0 | 1 |
| 15 | 1 | 1 | 1 | 0 |
| 16 | 1 | 1 | 1 | 1 |

**Examples:**




To return to FUNC/NORMAL-MODE press **FUNC**.

**SUBMENU: BPM**




While in FUNC-Mode press the **BPM** key to enter the BPM-Submenu.

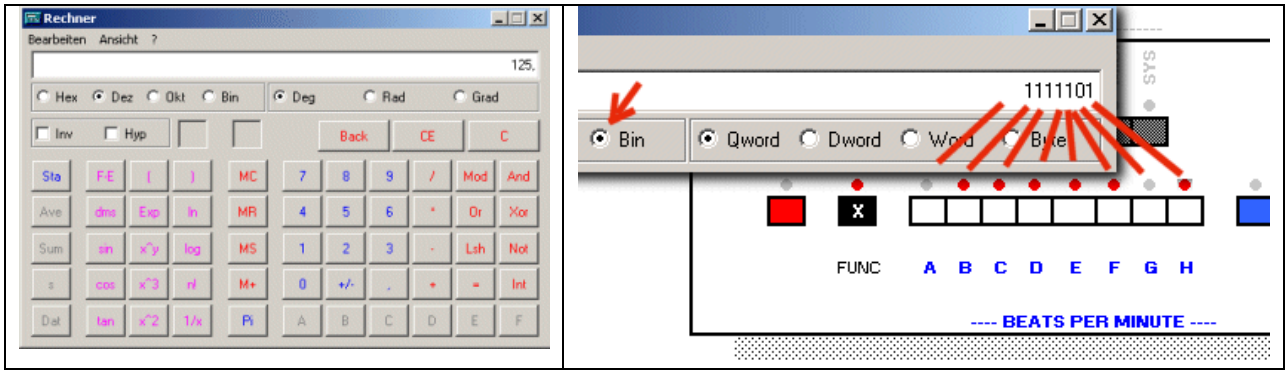
With the white keyboard keys you can program the internal clock in the range from 48 BPM up to 255 BPM in 1 BPM steps.
In future firmware-versions the BPM resolution will be 0,1 BPM.

Tip: when you sync you ML V4 with an external midi-clock instead using the internal clock you don`t have the limitations (48-255, 1 BPM resolution).

The format is binary (A = MSB, H = LSB).

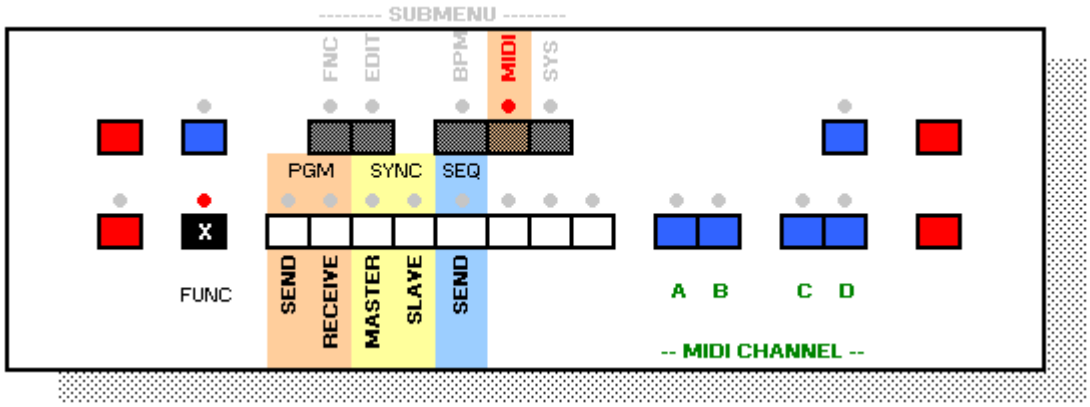
**TIP – How to calculate the binary BPM settings**
Start the Microsoft Windows Calculator.
Go to the options menu and set scientific-mode. Enter the BPM and press BIN.

Example: 125 BPM




A “1” means that the LED must be set on. Start from the right, because the calculator does not show the leading zeros.

**SUBMENU: MIDI**




While in FUNC-Mode press the **MIDI** key to enter the MIDI-Submenu.

**PGM Send**
Program and Bank-Changes will be send via Midi-Out.

**PGM Receive**
Program and Bank Changes will be received via Midi In.

**SYNC Master**
The ML-303 uses the internal BPM-Clock and sends Midi Start/Stop Commands.

**SYNC Slave**
The ML-303 turns of the internal BPM-Clock and syncs to incoming clock-data. It also reacts on incoming Midi Start/Stop/Continue Commands.

**MIDI Send**
If MIDI-Send is enabled the internal sequencer will send note-values and ACCENT Trigger over Midi to external gear.

**DUMP Actual Pattern**
This function sends the actual pattern as SYSEX to your sequencer.

**DUMP All**
This function sends all patterns as SYSEX to your sequencer

## MIDI Channel

With the **A**,**B**,**C**,**D** keys you can choose one of the 16 Midi channels for sending and receiving. Please note that the ML-303 send on the same channel where it receives. Send/Receive-can`t be set to different channels.

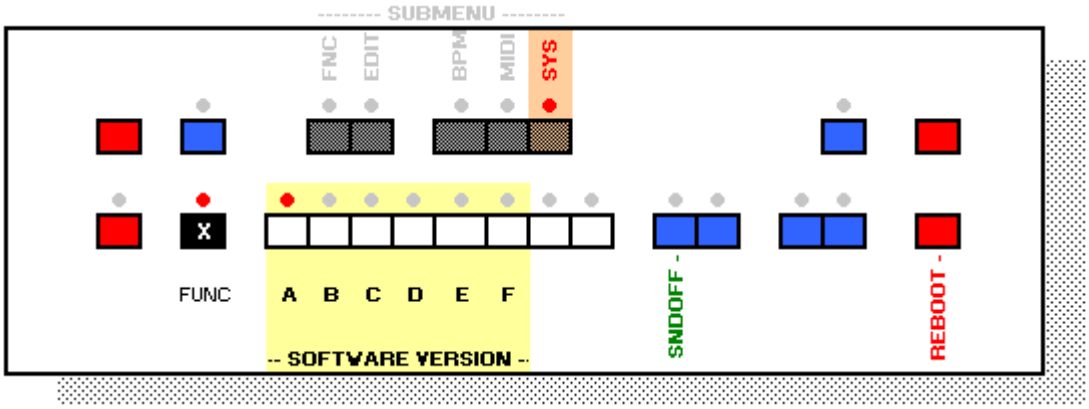
**MIDI CHANNEL TABLE**

| | A | B | C | D |
|---|---|---|---|---|
| **1** | 0 | 0 | 0 | 0 |
| **2** | 0 | 0 | 0 | 1 |
| **3** | 0 | 0 | 1 | 0 |
| **4** | 0 | 0 | 1 | 1 |
| **5** | 0 | 1 | 0 | 0 |
| **6** | 0 | 1 | 0 | 1 |
| **7** | 0 | 1 | 1 | 0 |
| **8** | 0 | 1 | 1 | 1 |

| | A | B | C | D |
|---|---|---|---|---|
| **9** | 1 | 0 | 0 | 0 |
| **10** | 1 | 0 | 0 | 1 |
| **11** | 1 | 0 | 1 | 0 |
| **12** | 1 | 0 | 1 | 1 |
| **13** | 1 | 1 | 0 | 0 |
| **14** | 1 | 1 | 0 | 1 |
| **15** | 1 | 1 | 1 | 0 |
| **16** | 1 | 1 | 1 | 1 |

To save the changes and return to FUNC/NORMAL-MODE press **FUNC**.

## SUBMENU: SYSTEM




While in FUNC-Mode press the **SYS** key to enter the SYSTEM-Submenu.

The A-F LED`s indicate the current Firmware-Version:

**Software-Version Table**

| | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| 0.1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0.2 | 0 | 0 | 0 | 0 | 0 | 1 |
| 0.3 | 0 | 0 | 0 | 0 | 1 | 0 |
| 0.4 | 0 | 0 | 0 | 0 | 1 | 1 |
| 0.5 | 0 | 0 | 0 | 1 | 0 | 0 |
| 0.6 | 0 | 0 | 0 | 1 | 0 | 1 |
| 0.7 | 0 | 0 | 0 | 1 | 1 | 0 |
| 0.8 | 0 | 0 | 0 | 1 | 1 | 1 |
| 0.9 | 0 | 0 | 1 | 0 | 0 | 0 |
| 1.0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 1.1 | 0 | 0 | 1 | 0 | 1 | 0 |
| 1.2 | 0 | 0 | 1 | 0 | 1 | 1 |
| 1.3 | 0 | 0 | 1 | 1 | 0 | 0 |
| 1.4 | 0 | 0 | 1 | 1 | 0 | 1 |
| 1.5 | 0 | 0 | 1 | 1 | 1 | 0 |
| 1.6 | 0 | 0 | 1 | 1 | 1 | 1 |

| | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| 1.7 | 0 | 1 | 0 | 0 | 0 | 0 |
| 1.8 | 0 | 1 | 0 | 0 | 0 | 1 |
| 1.9 | 0 | 1 | 0 | 0 | 1 | 0 |
| 2.0 | 0 | 1 | 0 | 0 | 1 | 1 |
| 2.1 | 0 | 1 | 0 | 1 | 0 | 0 |
| 2.2 | 0 | 1 | 0 | 1 | 0 | 1 |
| 2.3 | 0 | 1 | 0 | 1 | 1 | 0 |
| 2.4 | 0 | 1 | 0 | 1 | 1 | 1 |
| 2.5 | 0 | 1 | 1 | 0 | 0 | 0 |
| 2.6 | 0 | 1 | 1 | 0 | 0 | 1 |
| 2.7 | 0 | 1 | 1 | 0 | 1 | 0 |
| 2.8 | 0 | 1 | 1 | 0 | 1 | 1 |
| 2.9 | 0 | 1 | 1 | 1 | 0 | 0 |
| 3.0 | 0 | 1 | 1 | 1 | 0 | 1 |
| 3.1 | 0 | 1 | 1 | 1 | 1 | 0 |
| 3.2 | 0 | 1 | 1 | 1 | 1 | 1 |

| | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| 3.3 | 1 | 0 | 0 | 0 | 0 | 0 |
| 3.4 | 1 | 0 | 0 | 0 | 0 | 1 |
| 3.5 | 1 | 0 | 0 | 0 | 1 | 0 |
| 3.6 | 1 | 0 | 0 | 0 | 1 | 1 |
| 3.7 | 1 | 0 | 0 | 1 | 0 | 0 |
| 3.8 | 1 | 0 | 0 | 1 | 0 | 1 |
| 3.9 | 1 | 0 | 0 | 1 | 1 | 0 |
| 4.0 | 1 | 0 | 0 | 1 | 1 | 1 |
| 4.1 | 1 | 0 | 1 | 0 | 0 | 0 |
| 4.2 | 1 | 0 | 1 | 0 | 0 | 1 |
| 4.3 | 1 | 0 | 1 | 0 | 1 | 0 |
| 4.4 | 1 | 0 | 1 | 0 | 1 | 1 |
| 4.5 | 1 | 0 | 1 | 1 | 0 | 0 |
| 4.6 | 1 | 0 | 1 | 1 | 0 | 1 |
| 4.7 | 1 | 0 | 1 | 1 | 1 | 0 |
| 4.8 | 1 | 0 | 1 | 1 | 1 | 1 |

| | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| 4.9 | 1 | 1 | 0 | 0 | 0 | 0 |
| 5.0 | 1 | 1 | 0 | 0 | 0 | 1 |
| 5.1 | 1 | 1 | 0 | 0 | 1 | 0 |
| 5.2 | 1 | 1 | 0 | 0 | 1 | 1 |
| 5.3 | 1 | 1 | 0 | 1 | 0 | 0 |
| 5.4 | 1 | 1 | 0 | 1 | 0 | 1 |
| 5.5 | 1 | 1 | 0 | 1 | 1 | 0 |
| 5.6 | 1 | 1 | 0 | 1 | 1 | 1 |
| 5.7 | 1 | 1 | 1 | 0 | 0 | 0 |
| 5.8 | 1 | 1 | 1 | 0 | 0 | 1 |
| 5.9 | 1 | 1 | 1 | 0 | 1 | 0 |
| 6.0 | 1 | 1 | 1 | 0 | 1 | 1 |
| 6.1 | 1 | 1 | 1 | 1 | 0 | 0 |
| 6.2 | 1 | 1 | 1 | 1 | 0 | 1 |
| 6.3 | 1 | 1 | 1 | 1 | 1 | 0 |
| 6.4 | 1 | 1 | 1 | 1 | 1 | 1 |

**SOUNDOFF**
If SOUNDOFF is enabled the internal sound-source will be disabled. This could be useful when you use the internal sequencer in MIDI-Send-Mode to play external gear

**REBOOT**
Use the REBOOT key to reboot the ML-303.

To return to FUNC/NORMAL-MODE press **FUNC**.

**How to update the Firmware**

**PC / MAC**

Download the update file from the homepage in .MID Format into your sequencer.
Set the BPM to 60.

Press Play on your sequencer and power on the ML-303 within 1 second.

**PC (alternative method)**

If you are a PC owner you could also use the firmware in .SYX Format. Load the .SYX File into the freeware-tool MIDI-OX and set the F7-Delay to 750ms in the options menu.

Power on the ML-303 and start sending SYSEX within 1 second.