

# ML-303 BassLine

DIY project



# ML-303 MANUAL

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

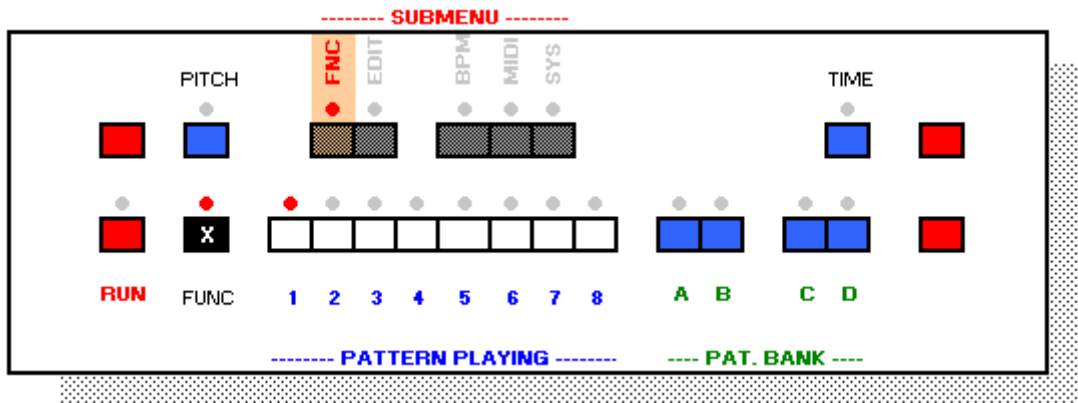
### **Load default settings**

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  $8 \times 16 = 128$  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
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.

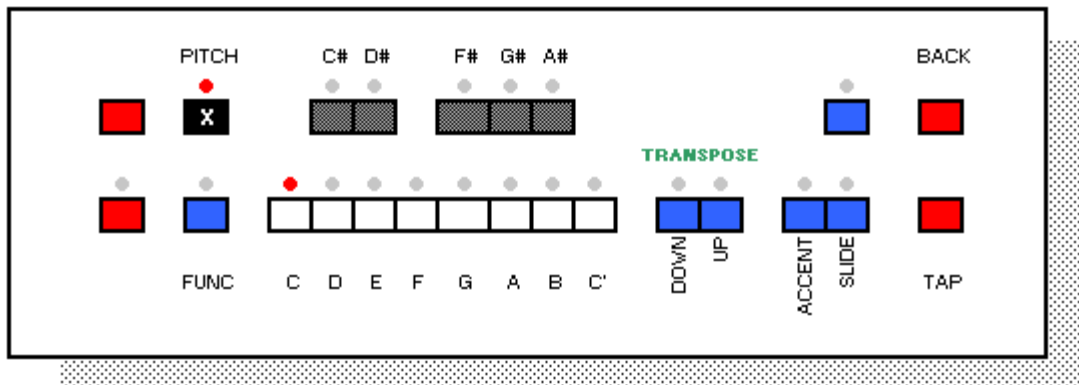
Press **RUN** to start/stop playing a pattern.

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.

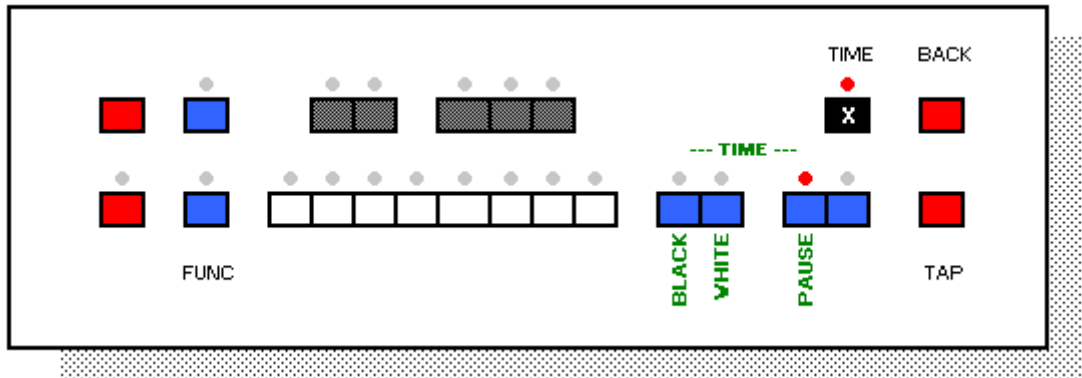
Now you are on Step #1 of the chosen pattern. Enter note value with the keyboard-keys, transpose them with the **DOWN** and **UP** keys, set **ACCENT** and **SLIDE**.

To edit the next step just press the **TAP** key. If you want 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:

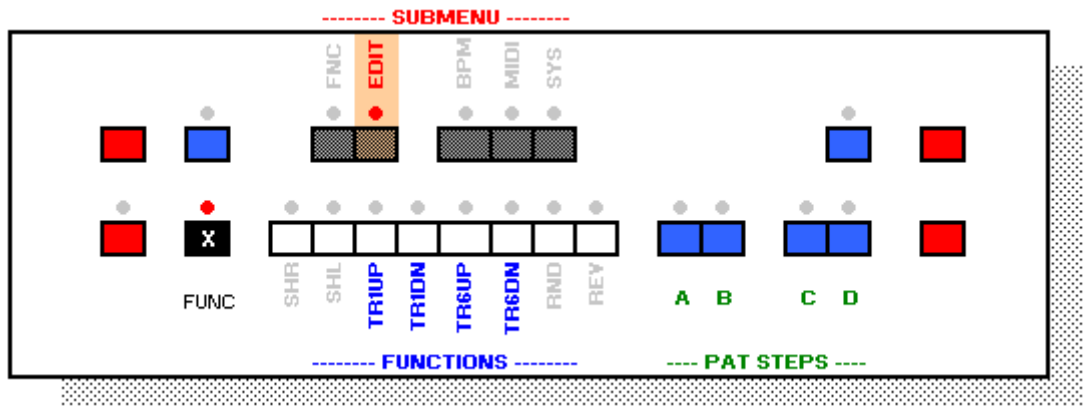
**BLACK** = 1/16 Note

**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.

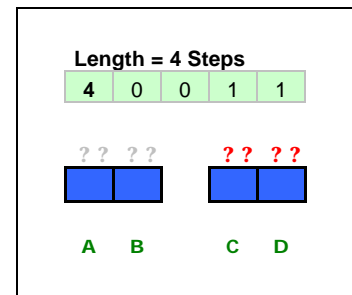
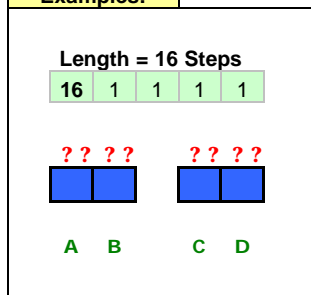
- SHR            Shift the pattern 1 step right
- SHL            Shift the pattern 1 step left
- TR1UP        Transpose the pattern 1 note up
- TR1DN        Transpose the pattern 1 note down
- TR6UP        Transpose the pattern 6 notes up
- TR6DN        Transpose the pattern 6 notes down
- RND      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

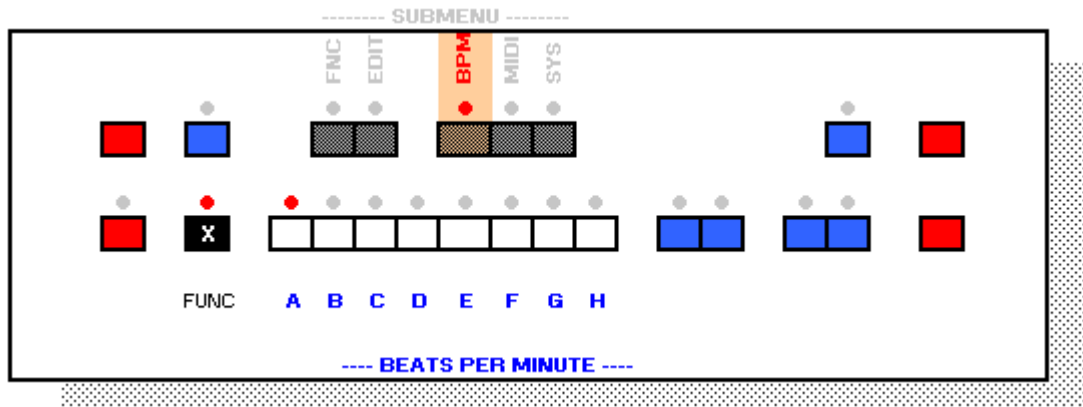
	A	B	C	D
1	0	0	0	0
2	0	0	0	1
3	0	0	1	0
4	0	0	1	1
5	0	1	0	0
6	0	1	0	1
7	0	1	1	0
8	0	1	1	1
9	1	0	0	0
10	1	0	0	1
11	1	0	1	0
12	1	0	1	1
13	1	1	0	0
14	1	1	0	1
15	1	1	1	0
16	1	1	1	1

**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).

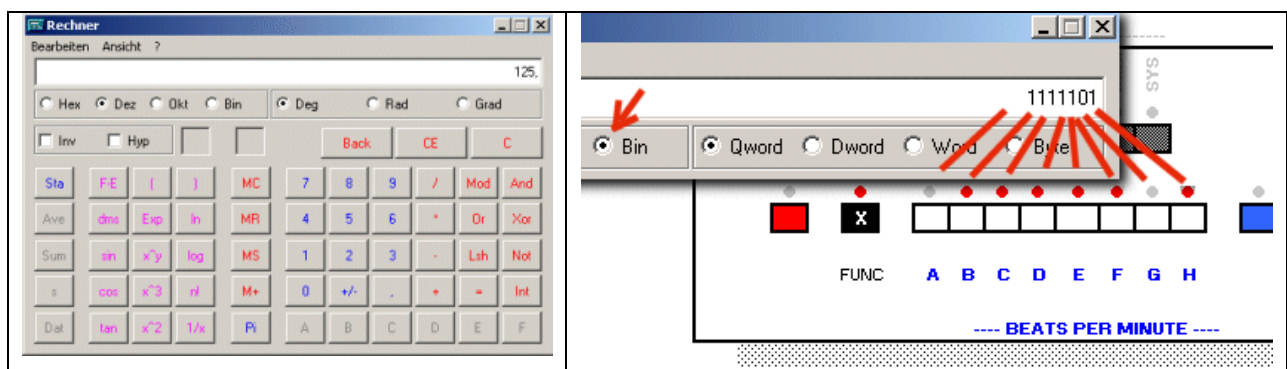
The format is binary (A = MSB, H = LSB).

**TIP – How to calculate the binary BPM settings**

Start the Microsoft Windows Calculator.

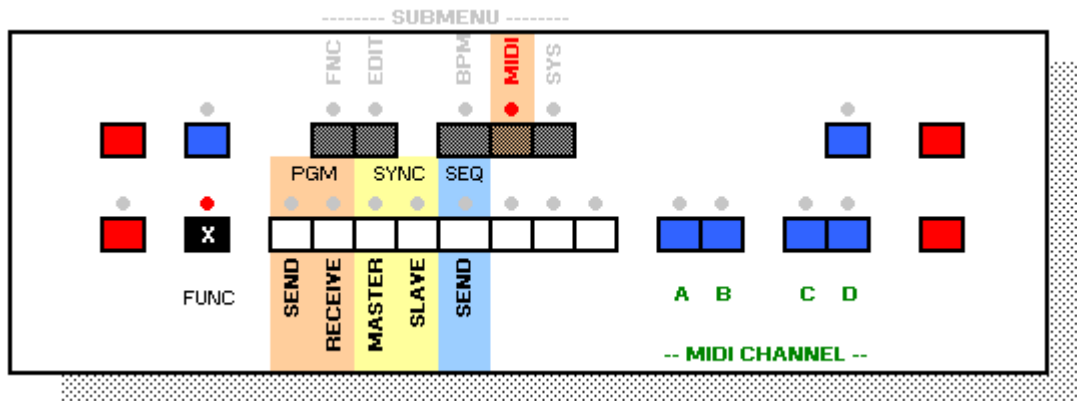
Go to the options menu and set scientific-mode. Enter the BPM and press BIN.

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

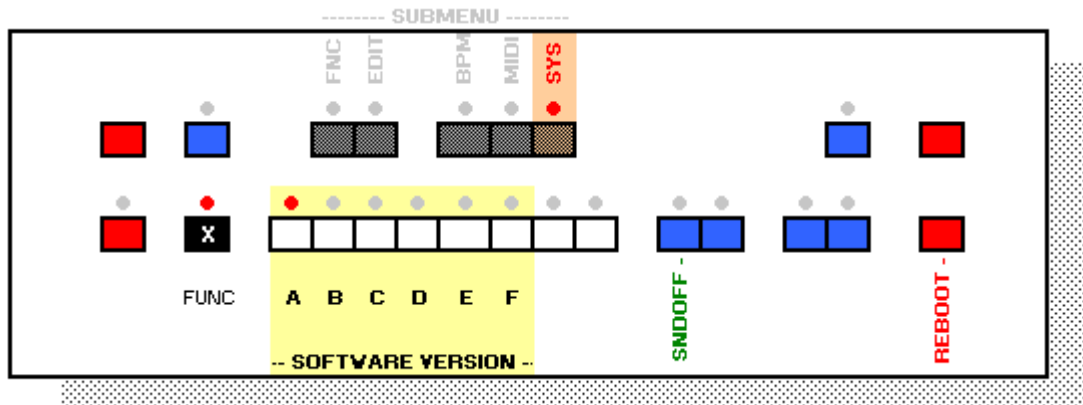
With the **A,B,C,D** keys you can choose one of the 16 Midi channels for sending and receiving. Please note that the ML-303 send on the same channel where it receives. Send/Receive-can't be set to different channels.

### MIDI CHANNEL TABLE

	A	B	C	D		A	B	C	D
1	0	0	0	0	9	1	0	0	0
2	0	0	0	1	10	1	0	0	1
3	0	0	1	0	11	1	0	1	0
4	0	0	1	1	12	1	0	1	1
5	0	1	0	0	13	1	1	0	0
6	0	1	0	1	14	1	1	0	1
7	0	1	1	0	15	1	1	1	0
8	0	1	1	1	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.