

# MBase 11

Analog Bass Drum Module

**Operating Manual**

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## Introduction

Thank you very much for using the MBase11! The MBase11 is a great sounding, dedicated bass drum module with a real analog sound production.

Actually it is a single voice analog synthesizer which is optimized for producing bass drum sounds. The MBase11 is fully controllable by Midi. Furthermore, there is an audio input provided to trigger the sound by a drum pad piezo pick up or an external audio signal.

The usage of this unique drum module is simple and self-explaining at most points. We recommend though to read this manual carefully to let you quickly explore all the MBase11's amazing musical possibilities.

Before we start just some important security instructions:

- Please use the MBase11 only in dry rooms. Please never let fluids or humidity penetrate to the device!
- Only use the original wall wart adapter. Other power supplies may damage the MBase11 seriously!
- For cleansing of the MBase11, please use a slightly damp cloth, never solvents or agents!
- The MBase11 is a complex electronic device and should therefore be treated carefully!
- If any damages or malfunctions occur, please immediately turn off the device, unplug the power supply and contact your local music dealer or send an email to [mail@jomox.de](mailto:mail@jomox.de).

## 1. Connections

Turn off the device before you connect it to other devices.  
The MBase11 has following connections:

ON/OFF 9V DC  Midi In      Midi Out      X Trig In      Audio Out

### 1.1. 9V DC

The provided 9V DC wall wart adapter has to be plugged into this jack. Please don't use other wall wart adapters.

### 1.2. Midi In

Here you can hook up another midi device to control the MBase11 by either a software sequencer, a controller box or any other hardware device like e.g. a JoMoX XBase09, XBASE999/888. Please use a cable that is as short as possible.

### 1.3. Midi Out

Connection of the MBase11 to a midi capable device to receive midi sys ex dumps or note triggers from the MBase11. Please use a standard midi cable which is as short as possible.

### 1.4. X Trig In

Audio input to trigger the bass drum by an audio signal or drum pad. Connect the Trigger In to an appropriate drum pad piezo pick up or audio source, for instance the output of a mixer or a CD-Player. Please use a standard 1/4" audio cable.

### 1.5. Audio Out

Outputs the audio signal of the MBase11. The output is mono unbalanced and has a line level of about 0 dBu. Hook up the Audio Out to an appropriate audio mixer or amplifier. Please note that, for the choice of your amp system, the MBase11 can produce very high levels at ultra low frequencies! Therefore, a correspondingly powerful sound reinforcement system should be used for the MBase11. Please use standard mono 1/4" audio cables.

## **2. Functional Description**

This chapter describes the most important functions of the MBase11. Together with the following detailed descriptions of the sound and master parameters you will quickly be able to understand the functions of the MBase11.

### **2.1. Listening to preset sounds**

As long none of the 16 leds lights up, the MBase11 is in preset mode. With the endless value knob you can recall 100 pre-programmed factory sounds as well as 10 user programmable presets. The display shows up < **Pr0** > to < **Pr9** > for the user presets and < **r00** > to < **r99** > for the factory "ROM" sounds. The factory "ROM" sounds are stored in a flash memory area that can also be written to by the user. We recommend to use the user presets < **Pr0 - Pr9** > for frequent programming jobs and the "ROM" or flash memory area for the rarely changed archive material. In the MBase11 however (other than the older MBase01), the number of guaranteed error-free storage cycles by the manufacturer is nearly unlimited (>100,000).

With the Play button you can trigger and listen to the sounds.

### **2.2. Control of the MBase11 by Midi**

#### **2.2.1. Note trigger**

The MBase11 processes midi note commands. Thus, it can be triggered by any midi sequencer. If the MBase11 receives midi data on its own channel, a dot under the display lights up. The settings of the various midi functions please find in the Midi Implementation.

#### **2.2.2. Parameter control by Midi controllers**

All sound parameters can be controlled by midi controllers. The controller map can be found in the Midi Implementaion at the end of this operating manual.

### **2.2.3. LFO synchronisation with Midi clock**

The tempo of the internal LFO can be synced to midi clock to generate rhythmic modulations of pitch in the MBase11. All necessary parameters are described in chapter 4 Master Parameter. (please note that midi clock is always sent and received regardless of any midi channel)

### **2.2.4. SysEx Dump**

The memory content of the MBase11 (means the presets) can be transferred to a midi sequencer or file player by a sysex dump. Only single presets are sent and received. So you can reorder your presets and store them back in another order. Thus the sysex transmission time is way shorter and doesn't make trouble with newer sequencer systems, which are less capable of handling continuous midi data streams.

#### **2.2.4.1. Transmit dump**

Set the connected midi device to record mode, activate the 2<sup>nd</sup> function and press the down button until "dMP" appears in the display. Transmission of the sysex dump is triggered by pressing the click of the value knob. The display reads "rDY".

#### **2.2.4.2. Load dump**

Activate the 2<sup>nd</sup> function and press the down button until the display reads "Ld" (load). By clicking on the value knob you set the device into record mode, which is displayed by a flashing LED display. As soon as you play back a previously recorded sysex dump, the MBase11 acknowledges the received preset by displaying "fin". The data is automatically stored in the actual preset number.

### **2.3 Control of the MBase11 by X Trig In**

The X Trig In is an analog input which lets you trigger the MBase11 by an audio signal, a click track or a drum pad pick up. It works in parallel to the midi control, so that triggering by midi and by analog trigger is possible at the same time. Also you can change the sound parameters by midi controllers during the triggering by Trigger In. If the Trigger In of the MBase11 receives a signal, the decimal dot next to the second digit flashes.

### **2.3.1. Triggering with a drum pad**

- Just hook up an appropriate drum pad pickup to the Trigger In.
  - Adjust the trigger level with X TRIG Level to about <150>.
  - Set X Trig On/Off to < on>.
- Increase the X TRIG Level of the MBase11 until the device gives out a sound with a beat on the pad. Now you can adjust precisely how sensitive the MBase11 reacts to the velocity of your drum playing. Have fun!

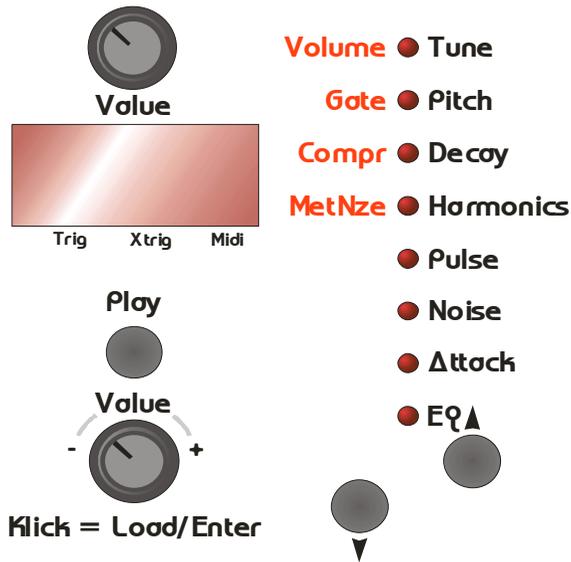
### **2.3.2. Triggering with an audio signal**

The MBase11 can be triggered by any audio signal too. The audio material has to have enough high peaks to trigger the MBase11 properly. The higher and shorter those peaks are, the more precisely the triggering. Maybe you have to provide an own channel for triggering in the mixer setup and lower the bass EQ in it, although the direct signaling works perfect in most cases. Hook up the audio source (DJ mixer, CD player, etc.) to the MBase11 and set the controls as described above at 2.3.1. to obtain the best result.

### 3. Sound Parameter

**Choosing with up/down buttons, change value with endless value knob.** At the same time you can adjust the value by the potentiometer above the display to edit wide ranges quicker and with more feeling. The value has to be picked up with the potentiometer first to control it then continuously: turn the potentiometer to about the shown value, and it will lock in and be able to change the parameter. If the endless encoder is used again, the potentiometer locking is lost. You can re-lock it of course again.

In the MBase11 there are more than 8 parameters. If you step beyond "EQ" by pressing the down button, the first LED starts to blink. Now the the red marked parameters left to the LED column are active. If you extend "MetNze", you are again in preset selection mode – no LED lights up. Opposingly, you start with "MetNze" if you go up from preset selection mode by pressing the up button and go up to "Volume". Now the LED jumps over to "EQ" and goes up to "Tune" and then only jumps back to preset selection mode.



### **3.1. Tune** < 000-255 >

This parameter determines the intensity of tune change. On a synthesizer this would be the pitch envelope modulation intensity (Attack=0, Decay fixed adjusted) of the VCO. A high value makes the typical 909 kick-in-the-gut effect, and a low value makes softer, 808-styled kick drums and bass tones.

### **3.2. Pitch** < 000-255 >

This parameter determines the basic pitch of the bass drum. Sub basses down to 10 Hz or relatively high tones are possible. Don't mistake this with the Tune parameter. With most kinds of instruments this parameter is called "tune", but because everybody knows the 909 and its specific tune, we called it pitch.

### **3.3. Decay** < 000-255 >

Controls the decay time (length) of the kick drum.

### **3.4. Harmonics** < 000-255 >

Control of harmonics of the VCO. The almost sinusoid wave form of the kick drum oscillator can be continuously shaped into a parabolic waveform. That results in a harder, timpani-like sound that differs clearly from a simple distortion.

### **3.5. Pulse** < 000-255 >

Change of the pure pulse part of the attack (see also attack parameter). Pulse is a clicking pulse shape waveform at the begin of the kick drum which goes to the VCA.

### **3.6. Noise** < 000-255 >

Change of the pure noise part of the attack (see also attack parameter). Noise makes a more clap-like (or wet) sound in the

attack. Please note that the EQ parameter also influences this sound. With high EQ values you will hardly or not hear the noise part of the kick drum, because the high frequencies of the noise are filtered by the EQ. On the MBase11, the sound of the noise signal is significantly affected by parameter 3.12 MetNze because the noise can be assembled by metallic high pitch tones.

### **3.7. Attack** **< 000-255 >**

Important for the understanding of the bass drum attack section is the following: Pulse and noise are mixed together and the mix is controlled again by attack intensity. If attack is cranked down, you won't notice any change on pulse or noise.

If noise or pulse is set to zero, the signal flow is interrupted for any of them too. You have to leave the unwanted part at a small level to let the other signal go through. So you can program bass drums without any attack, or only pulse or only noise, or just with the mix of both.

### **3.8. EQ** **< 000-255 >**

Smooths the output of the kick drum sound production with a flat slope filter. For a value of 000 the filter is opened at maximum, for 255 closed at maximum. Note: changes of the noise parameter can only be heard with an opened filter.

### **3.9. Volume** **< 000-255 >**

Controls the main level of the MBase11. The velocity of incoming midi notes is only processed up to this main volume. For best sounding results keep this value at <255>.

### **3.10. Gate** **< 000-255 >**

The gate time for the trigger of the analog bass drum circuitry can be changed within 0.1ms to 16 ms. This parameter significantly affects the sound of the attack – from very short clicking sounds to a clappy sound where you can clearly hear the noise part of the attack.

### **3.11. Compr**

**< 000-255 >**

The compression parameter changes the loudness envelope during the decay phase of the kick drum. So the decaying sound can be very low if this parameter is set high. This is useful for instance to adapt the "belly" of the kick drum to the mix or the room. At very high levels the envelope of the kick drum is cutten so strong that very short and clicky bass drums are possible.

### **3.12. MetNze**

**< 000-255 >**

Changes the noise of the noise generator to a metallic noise. At a value of <000> the noise is a random noise as in the older MBase01. On values above that a complex signal made from high pitch digital multi tones and the bit pattern of the value is created. Each unique single pattern is corresponding to a value number. This does not result in a continuous signal change over the value range, instead the signal patterns jump with each number. But every time they return very interesting tone patterns similar to a caleidoscope. Trial and error is the choice.

### **3.13. Endless Value knob**

The endless value knob is used for selection of a preset or adjustment of parameter in edit mode. As soon a value is changed, it is indicated by a lighting red dot right down in the display (Edit On). By clicking on the value knob (pressing it) during any edit modes the preset can be reloaded from memory and the Edit On display disappears. The click function also serves as an enter key for some functions like storing of presets and sysex dump.

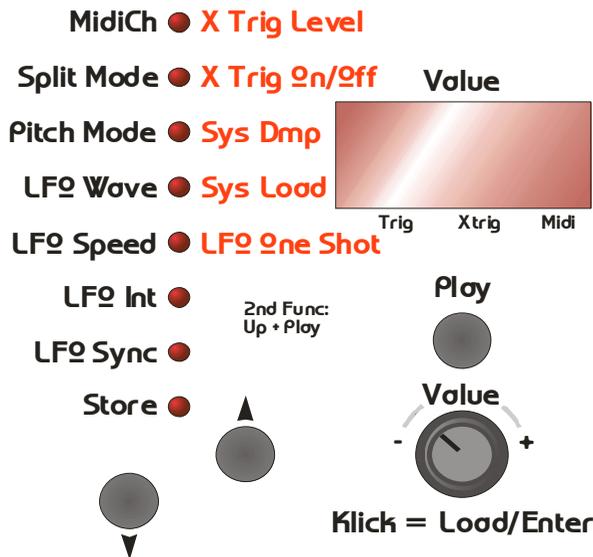
### **3.14. Play button**

Manual triggering of sound.

Selection of 2<sup>nd</sup> function by pressing play and up button simultaneously. See also 4.9. 2<sup>nd</sup> function.

## 4. Master Parameter

Selection with up/down buttons, changing values with the endless value knob. If after 10 seconds no further input is made with the value knob, the unit switches automatically back to sound parameter or preset selection.



### 4.1. Midi Ch(annel)

< 001 - 016 >

Defines the midi channel on which the MBase11 sends and receives midi. Following midi data is received: note on/off, -number, midi-clock, program change, CC controller, sysex data. Transmitted data: note on/off, -number, program change, sysex data.

### 4.2. Split Mode

< SM1 / SM2 >

<SM1> The bass drum is only played by standard note C1 with the internally stored pitch.

<SM2> The bass drum is played over the whole keyboard, varying the pitch of the VCO depending on the key pressed.

### 4.3. Pitch Mode

< Lin / SEM >

<Lin> The bass drum pitch (the VCO frequency) is output as a linear frequency over the keyboard in Split Mode 2 (see above).

<SEM> The bass drum pitch (the VCO frequency) is output in musical semitone intervals over the keyboard. The usable range is approximately 3 octaves. So it is possible to turn the MBase11 into a little bass synthesizer, if you turn tune low and decay long. The long decaying tone can now be played in melodies.

### 4.4. LFO Wave < SuP / Sdo / Sin / Si- / tri / tr- / rCt / rC- >

With the LFO you can produce periodic pitch changes (vibrato).

The polarity of waveform is of importance if LFO Sync is set to <SYn>. Then the LFO works like a second envelope that is triggered by a note event.

The wave parameter determines the LFO wave form:

<SuP> Saw up / saw tooth with ascending ramp /|

<Sdo> Saw down / saw tooth with descending ramp |\

<Sin> Sine with ascending wave form

<Si-> Sine with descending wave form

<tri> Triangular wave form with ascending and descending ramp /\

<tr-> Triangular wave form with descending and ascending ramp \/

<rCt> Rectangular, jump from maximum to minimum value

<rC-> Rectangular, jump from minimum to maximum value

### 4.5. LFO Speed

< Mid / 041-290 >

Speed of LFO modulation. This value displays the speed of the LFO directly in BPM (Beats Per Minute). Each waveform runs through once in a quarter of the selected tempo beat.

<Mid> The lowest value shows midi clock synchronisation. The speed of the LFO is controlled by midi clock and adapts to the speed of the master sequencer. Also with midi clock the wave form runs through once in a quarter of the received beat clock.

### 4.6. LFO Int(ensity)

< 000-255 >

Controls the intensity of the LFO. A value of 0 shuts the LFO off.

#### 4.7. LFO Sync

< FrE / SYn >

<FrE> The LFO runs free.

<SYn> The LFO restarts with each key trigger. For instance, it is also suitable to use the LFO as a second pitch envelope.

#### 4.8. Store

If you want to store a sound preset, go on Store. The display blinks and shows the current preset number. Now select the wanted preset number you want to store the sound to by the endless value knob if it is different to the current one.

Clicking on the value knob performs the storage process. This automatically contains a copy function, because if you store a non-edited preset to another location than the actual preset, the MBase11 stores an identical copy of that preset to the other location.

#### 4.9. 2<sup>nd</sup> Functions

**Select by pressing UP and PLAY button at the same time (upmost LED flashes). If not an input is made by the value knob or the up/down buttons within 5 seconds, the device returns to sound parameter or preset selection.**

##### 4.9.1. X Trig Level 2<sup>nd</sup> Funct < 000 - 255 >

Controls the sensitivity of the Trigger In. The higher this value is, the more sensitive is the input and so it can be well adapted to any kind of the used audio or trigger source.

The value is stored globally if a sound preset is stored (see 4.8. Store).

##### 4.9.2. X Trig On/Off 2<sup>nd</sup> Funct < oFF/ \_on >

The external trigger can be switched off and on. The sensitivity of X Trig Level is unaffected by this setting.

### 4.9.3. Sys Dmp 2<sup>nd</sup> Funct < dMP / rdY >

A click on the endless value knob sends out the sysex dump. See also 2.2.4.1 Transmit dump.

### 4.9.4. Sys Load 2<sup>nd</sup> Funct < \_Ld / fin >

A click on the endless value knob enables MBase11 sysex reception mode. See also 2.2.4.2 Receive dump.

### 4.9.5. LFO One Shot 2<sup>nd</sup> Funct < oFF/ onE >

<oFF> The LFO runs continuously and modulates the pitch of the bass drum.

<onE> The LFO runs only through one wave form and can therefore be used as an additional effects envelope. The LFO Sync should also be set to <Syn> if LFO One Shot is on.

## 5. MBase11 Midi Implementation

### 5.1. Sound Parameter

BASS DRUM	Controller No.	Value Range	Internal Resolution
Tune	100	0..127	256
Pitch	101	0..127	256
Decay	102	0..127	256
Harmonics	103	0..127	256
Pulse	104	0..127	256
Noise	105	0..127	256
Attack	106	0..127	256
EQ	107	0..127	256
Compression	113	0..127	256
Gate Time	114	0..127	256
Metal Noise	115	0..127	256
Volume	117	0..127	256
LFO Sync	120	0/64	Off/On
LFO One Shot	123	0/64	Off/On
LFO Intensity	121	0..127	256
LFO Rate	122	0..127	256

## 5.2. Note Commands

Instrument	Split Mode 1	Split Mode 2
	Note Number	Note Number
Bass Drum	C1 (36)	C1..F3

## 5.3. System Exclusive Data

Only actual chosen preset hex dumps are sent and received with Sys Ex data because the sound control is normally done with midi cc controllers.

The System Exclusive control command line looks as follows:

\$F0(SysEx begin), \$31(JoMoX- manufact. code), \$7F(Command Sys Ex dump), \$57(Product code), \$XX(Preset No.),XX(Data0),XX(Data1),..., \$F7(End of SysEx)

16 bytes (0..255) of data per preset are transmitted. They are split into MSB (bit 7) in Data0 and LSB 0..127 in Data1. The MSB (Most significant bit) is coded in Data0 = 1 or = 0, depending if bit 7 of the actual byte was set or cleared.

The numbers and digits of Sys Ex sequences are shown, as always, in hexadecimal signs.

And finally...

Service, tips and tricks:

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We wish you lots of fun on creative usage of our products!

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