M.Brane 1_1

Analog Membrane Modeling

True Analog Percussion Synthesizer

Operating Manual

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Introduction

Thank you very much for using the M.Brane 11! The M.Brane 11 is a great sounding, dedicated percussion module with a real analog sound production.
Actually it is a single voice analog synthesizer which is optimized for producing membrane-like snare/percussion drum sounds. The M.Brane 11 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 M.Brane 11's amazing musical possibilities.

Before we start just some important security instructions:

- Please use the M.Brane 11 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 damadge the M.Brane 11 seriously!
- For cleansing of the M.Brane 11, please use a slightly damp cloth, never solvents or agents!
- The M.Brane 11 is a complex electronic device and should therefore be treated carefully!
- If any damadges or malfunctions occur, please immediatly turn off the device, unplug the power supply and contact your local music dealer or send an email to mail@jomox.de.

1. Connections

Turn off the device before you connect it to other devices.
The M.Brane 11 has following connections:

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. If though, please use a 9 Volt DC (mAmps don't care) universal power supply with a 2.5 mm plug, plus inner contact, minus outer contact.

1.2. Midi In

Here you can hook up another midi device to control the M.Brane 11 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.

1.1. Midi Out

Connection of the M.Brane 11 to a midi capable device to receive midi sys ex dumps or note trigggers from the M.Brane 11. Please use a standard midi cable which is as short as possible.

1.2. Trigger In

Audio input to trigger the M.Brane 11 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.

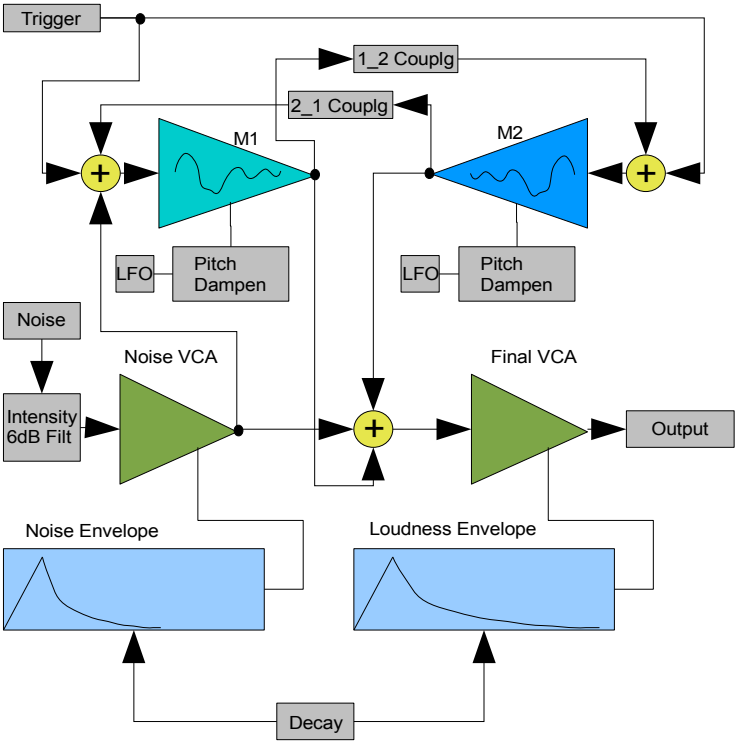
1.3. Audio Out

Outputs the audio signal of the M.Brane 11. 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 use standard mono ¼" audio cables.

2. Functional Description

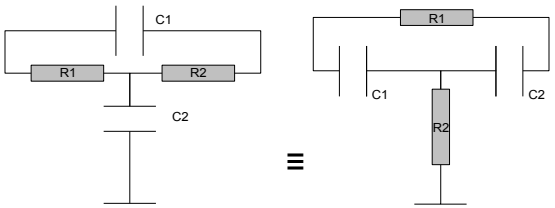
The M.Brane 11 is a true analog synthesizer optimized for percussion sounds. The most important parts of the sound are composed by a membrane-like T-OSC network and noise being mixed together. Those, who don't want to spend their attention too much with the technical details of the sound production may jump now to chapter 3. Sound Parameter.

How does it work?



Pic. 1: M.Brane 11 block diagram

The sound production in the M.Brane 11 is made up of 2 T-bridge oscillators (M1 and M2) that have a different frequency range. M1 is tuned about an octave higher than M2.
A T-bridge oscillator (T-OSC) is actually something like a band pass filter which is working close to the resonant frequency. The name comes from the basic circuitry in which each 2 resistors and 2 capacitors form a network that looks similar to a T:



Pic. 2: T-Bridge Netzwerk, both variants are equivalent (The active part has been left out).

This kind of sound generators has often been used throughout the 1970/80s in vintage drum machines as the tonal basis for percussion instruments – as e.g. in the CR-78 or TR-808.

Because the T-bridge becomes an actual sine oscillator at perfect tuning of its components, you call the deviation of ideal resonance dampen. In this case, the oscillator decays in form of an attenuated vibration if it's exited - similar to a single membrane that is hit.

In the M.Brane 11 there are two of such T-OSC. The dampen can be either negative (as just described) or positive. Then it really becomes a continuously vibrating oscillator. The more negative the dampen is, the more the T-OSC becomes a filter with sharp q-factor (quality). This can be useful at e.g. snare drums or hi hat-ish sounds.

Looking at the drumskins of an acoustic drum, there are 2 membranes positioned that modulate and interact with each other by the coupling through pressure waves of the content air. That produces the typical sound of a drum. By resonance and counteractive interference of waves new frequency bands and overtones create.

Similar to that the parameter Coupling works at the M.Brane 11. Both, in the first place independently vibrating T-OSCs, can attenuate or gain the vibration of the partner by means of negative or positive coupling on either ways (1_2 and 2_1). With lightfingered tweaking you get these interesting membran-like dampened sounds, especially by cross-wise positive/negative coupling.

The values can sometimes be very close to another. Therefore it is a great advantage that the M.Brane allows for storing the parameters (by use of digital potentiometers as R's in Pic.2), because sometimes tiny value changes can cause great sound changes if the system is close to a chaotic state.

The M.Brane definetely is something for sound nerds - less for preset-twiddlers, as the manifold and sensitive modulation settings want to be explored and played with.

In order to create snaredrum- or cowbell-like sounds, the M.Brane 11 has a noise generator with an own envelope. A part of this signal is fed into the T-bridge network to exite the "membrane" with the noise signal itself. Another part of the noise signal ist mixed into the final VCA (Voltage Controlled Amplifier) which produces the overall volume envelope of the resulting instrument. The noise can be wether white noise or metal noise, which is a binary pattern of different metallic sounding frequency bands.

The length of noise decay and the decay of the resulting tone are controlled by two different envelopes that are commonly controlled by the parameter Decay. The noise envelope is always shorter than the final VCA envelopes. That lets you work out the precise noise attacks by tweaking the Decay. The T-OSC's mostly have their own

decay themselves, and they only sometimes need an own (and then longer) loudness envelope.

The LFO can either modulate a choice of one T-OSC or both. It always restarts with the note trigger and works like an additional pitch envelope.

In Split Mode 2 both the T-OSCs or only M2 can be played over the keyboard, which again makes it a creative thing to play.

2.1. Listening to Preset Sounds

As long none of the 16 leds lights up, the M.Brane 11 is in preset mode. With the endless value knob you can recall 110 pre-programmed factory sounds.
The display shows up **< Pr0 >** to **< Pr9 >** for the E²prom-stored user presets and **< r00 >** to **< r99 >** for the flash memory sounds. The factory "r" sounds are stored in a flash memory area that can also be overwritten by the user. We recommend to use the user presets **< Pr0 - Pr9 >** for frequent programming jobs and the "r" or flash memory area for the rarely changed archive material. In the M.Brane 11 however, the number of guaranteed error-free storage cycles to flash memory 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 M.Brane 11 by Midi

2.2.1. Note Trigger

The M.Brane 11 processes midi note commands. Thus, it can be triggered by any midi sequencer. If the M.Brane 11 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 at the end of this documentation.

2.2.2. Parameter Control by Midi Controllers

All sound parameters can be controlled by continuous midi controllers (CC). The controller map can be found in the Midi Implementation at the end of this operating manual.

2.2.3. SysEx Dump

The memory content of the M.Brane 11 (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 sometimes less capable of handling continuous midi data streams.

2.2.3.a) Transmit Dump:

Set the connected midi device to record mode, activate the 2nd 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".

2.2.3.b) Receive Dump:

Activate the 2nd 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 M.Brane 11 acknowledges the received preset by displaying "fin". The data is automatically stored in the actual preset number.

2.3. Control of the M.Brane 11 by X Trig In

The X Trig In is an analog input which lets you trigger the M.Brane 11 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 M.Brane 11 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 (for instance a piezo pickup that is attached to a snare drum) to the X Trig In.

- Press the buttons Up + Play at the same time (upmost LED blinks) and crank up the trigger level with X TRIG Level until the M.Brane 11 triggers on a hit. After 60 sec. of no input, the display jumps back to the preset selection mode.
On a received trigger, a note on is sent via Midi Out so that you can use the M.Brane 11 as a simple trigger-to-midi converter – however only trigger, no pitch information. Have fun!

- Set X Trig On/Off to <on> (default setting), if it wasn't selected before. Here you can turn off or on the trigger function without changing the trigger sensivity if needed.

- To transfer the trigger settings into global memory, store the preset you are in once again like in 4.8 Store described. Then, after next power-up, the trigger information is available again.

2.3.2. Triggering with an Audio Signal

The M.Brane 11 can be triggered by any audio signal too. The audio material has to have enough high peaks to trigger the M.Brane 11 properly. The higher and shorter those peaks are, the more precise the triggering. Maybe you have to provide an own mixer channel for triggering in your 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 M.Brane 11 and set the controls as described above at 2.3.1. to obtain the best result without double triggers or drop outs.

3. Sound Parameter

Choosing with up/down buttons, changing values with the 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.

We recommend to unlock the pot again by pressing once the up/down buttons (parameter change) or by one or two clicks with the endless encoder after editings made by the potentiometer. If the parameter remains on potentiometer input, it may produce some unwanted slight zipper noise effects by the unavoidable jittering between two values. This is important especially on recordings.

In the M.Brane 11 there are more than 8 parameters. If you step beyond "Noise" 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 "Volume", you are again in preset selection mode – no LED lights up.
Opposingly, you start with "Volume" if you go up from preset selection mode by pressing the up button and ascend to "Noise Filter". Now the LED jumps over to "Noise" and goes up to "Decay" and then only jumps back to preset selection mode.

3.1. Decay < 000-255 >

Controls the decay time (length) of the M.Brane 11. As can be seen in Pic.1, this value controls either the noise envelope and the final VCA envelope. The noise envelope is always shorther than the final VCA envelope in order to adjust the noise attacks precisely, whilst the decay of T-OSC M1 and M2 are mostly controlled by parameter Dampen.

3.2. M1 Pitch < 000-255 >

This parameter controls the pitch of the first membrane oscillator M1 (T-OSC). The range is from about 150Hz to 18kHz. The membrane oscillator M1 is about an octave higher than M2. Please note that the pitch is also little affected by the settings of M1 Dampen and both coupling parameters 1_2 Couplg and 2_1 Couplg. Because of the sensitive analog circuitry, these values interfere each other a little bit so that re-adjustment of values may be neccessary to achieve a special sound.
At very high pitches of the wide tuning range, the resolution of the used digital potentiometers is rather narrow so that small value changes can cause large frequency shifts.

3.3. M1 Dampen < (-128)-127 >

By the parameter M1 dampen you change the decay of sound, means the dampen of T-OSC M1. The value has a zero position. If turned into positive direction, M1 fades longer and becomes a steadily vibrating oscillator. Although values above about 30 are not very useful in most cases because the T-OSC starts to distort and turns more and more into a rectangle, we did not limit the possibility and think that some of you guys would use it as an effects sounds – especially with the final VCA envelope controlled by decay.
Values below zero shorten the decay, and the T-OSC M1 becomes more and more a filter with a high peak resonance or Q (quality). Please note that the decay and value ranges are not fully independent from the wide tuning range of the T-OSCs.

3.4. M2 Pitch < 000-255 >

This parameter controls the pitch of the second membrane oscillator M2 (T-OSC). The range is from about 75Hz to 15kHz. The membrane oscillator M2 is tuned about an octave deeper than M1. Other than that, the same qualities yield like in 3.2. M1 Pitch described.

3.5. M2 Dampen < (-128)-127 >

By the parameter M2 Dampen you change the decay of sound, means the dampen of T-OSC M2. Other than that, the same qualities yield like in 3.3. M1 Dampen described.

3.6. 1_2 Couplg < (-128)-127 >

This parameter determines the coupling between M1 and M2. The value can be either positve or negative. This controls at which phase (+/-) the signal is coupled (added) from M1 into M2. Zero is the

initial setting at which no interference occurs. If both coupling parameters have the same sign, they gain each other and create a feedback vibration of both T-OSC. At opposing signs, they attenuate each other. By playing with these two parameters you can create those wave interferences and interactions that are characteristic for membrane-like percussion sounds.

3.7. 2_1 Couplg < (-128)-127 >

This parameter determines the coupling between M2 and M1. The value can be either positve or negative. This controls at which phase (+/-) the signal is coupled (added) from M2 into M1. Zero is the initial setting at which no interference occurs. Other than that, the same qualities yield like in 3.6. 1_2 Couplg described.

3.8. Noise < 000-255 >

The noise signal creates the snare drum noise or metallic attacks. The parameter Noise controls the intensity of this signal. As can be seen in Pic.1, the noise signal is processed by a noise envelope and is then mixed into the T-OSC network and a small portion into the final VCA.
In the T-OSC network, the noise mixes up with the hit (trigger pulse) and the T-OSC sounds in a similar way like in a real snare drum and reaches a fairly homogeneous sound. If Noise is too much cranked up (>180) it may lead to internal distortions that might be desired though.
The noise may be either random white noise (MetNze A = <000>) or metallic noise made up by thousands of combinations between MetNze A and B.

3.9. Noise Filter < 000-255 >

Behind the noise level control there is a simple 6 dB/octave low pass filter which can make the noise a bit more dull. A strong filtering of noise with a 6 dB/octave filter is also known as "pink noise". The noise looses its sharpness if you crank up this value. At <000> the filter is opened and lets all high frequency parts pass through. The function is therefore in opposite to an EQ, because the initial state <000> means: no affection of the noise signal.

3.10. MetNze A < 000-255 >

Changes the noise of the noise generator to a metallic noise. At a value of <000> the noise is a random white noise. On values above that a complex signal is made from high pitch digital multi tones according to the bit pattern of the value. Each unique single frequency pattern is corresponding to a pair of value numbers of MetNze A and B. If you turn the parameter up, it does not result in a continuous signal change over the value range, but instead the signal patterns jump with each number. However, almost every time they return with very interesting frequency mix patterns similar to a caleidoscope. Try and check it out.

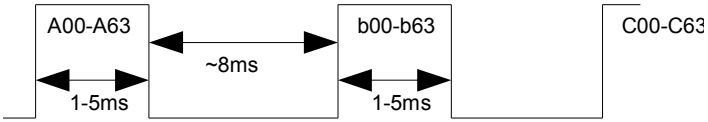
3.11. MetNze B < 000-255 >

See 3.10 MetzNze A. Only MetNze A can switch metallic noise to random white noise if set to <000>.

3.12. Gate < A00-A63 / b00-b63 / C00-C63 / d00-d63 >

The gate time for the trigger of the analog T-OSC circuitry can be changed within 1ms to 5 ms. This parameter significantly affects the sound of the attack.

If the value is cranked up above 63, two 1 ms impulses with a delay of about 8ms are created, of which the length of each impulse can be varied again up to 5ms. Thus, you can produce flam- or clap-like attacks. Purposefully the delays between the multi trigger pulses are never 100% exact and jitter a little what makes them sound a bit more natural. Up to 4 multi triggers are possible.



<A00-A63> 1 trigger impulse
<b00-b63> 2 trigger impulses
<C00-C63> 3 trigger impulses
<d00-d63> 4 trigger impulses

3.13. Volume < 000-255 >

Controls the main level of the M.Brane 11. The velocity of incoming midi notes is only processed up to this main volume. For best sounding results keep this value at <255>.

3.14. 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.

3.15. Play Button

Manual triggering of sound. Selection of 2nd function by pressing play and up button simultaneously. See also 4.9. 2nd function.

4. Master Parameter

Selection with up/down buttons, changing values with the endless value knob. If after 60 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 M.Brane 11 sends and receives midi. Following midi data is received: note on/off, -number, program change, CC controller, sysex data. Transmitted data: note on/off, -number, program change, sysex data.

4.2. Split Mode < SM1 / SM2 >

<SM1> The percussion instrument is only played by standard note D1 (GM Snare Drum) with the internally stored pitch.
<SM2> The percussion instrument is played over the whole keyboard, varying the pitch depending on the key pressed.
Please note the following:
Because of the used analog circuitry in combination with the implemented digital potentiometers and the very wide but in discrete steps adjustable tuning range, it is impossible to play the T-OSC in musical semitones. All parameters as Pitch, Dampen and Coupling do interfere with each other affecting the tuning, and the ranges are way to wide. So we easily assign each note to a tune value of M1 and M2 which makes it much more intuitive in the end. And because the ranges can be very different, it may also be that tune ranges skip over the keyboard when they reach their limit or sound completely different because the dampen shifts in the high pitch area.
Just think and make use of it in a creative way. One can greatly work with it if you get rid of thinking about semitones and only concentrate on the sound or the pitch of the instrument.

4.3. Pitch Mode < Lin / M 2 >

<Lin> The pitch (the T-OSC frequency) of M1 and M2 is controlled as a linear frequency over the keyboard in Split Mode 2 (see above).
<M 2> The pitch is only directed to M2, the lower of both T-OSC, whilst M1 remains on the internal pitch. Very interesting e.g. for Bongos or Congas.

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

With the LFO (Low Frequency Oscillator) you can produce periodic pitch changes (vibrato) by modulation.
The polarity of waveform is of importance as the LFO always restarts on a note trigger. Therefore the LFO works like a pitch 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 decending 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 < off / 040-290 >

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.
The lowest value <oFF> shuts down the LFO. Because it is rather unavoidable that the LFO affects the software driven metal noise a little in sound by the internal interrupts, you can turn it off if desired.

4.6. LFO Int(ensity) < 000-255 >

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

4.7. LFO Select < oFF / M1_ / M_2 / M12 >

<oFF> The LFO is shut off.
<M1_> The LFO modulates only T-OSC M1.
<M_2> The LFO modulates only T-OSC M2.
<M12> The LFO modulates both T-OSC M1 and M2.

4.8. Store

I you want to store a sound preset, press the up button once to enter 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 M.Brane 11 stores an identical copy of that preset to the other location.

4.9. 2nd Function

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 60 seconds, the device returns to sound parameter or preset selection.

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

Controls the sensivity 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 2nd Funct < oFF/ _on >

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

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

A click on the endless value knob sends out the sysex dump. See also 2.2.3.a) Transmit dump.

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

A click on the endless value knob enables M.Brane 11 sysex reception mode. See also 2.2.3.a) Receive dump.

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

<oFF> The LFO runs continuously and modulates the pitch of both the T-OSC M1 and/or M2.
<onE> The LFO runs only through one wave form and can therefore be used as an additional effects envelope.

5. M.Brane 11 Midi Implementation

5.1. Sound Parameter CC

In the M.Brane 11, the fine resolution controllers such as Tune and Dampen can be sent with 2 MSB/LSB controllers in order to have the full 8 bit resolution. Most state-of-the-art sequencer programs are able to do this, you only have to define the controllers as 14 bit CCs with MSB and LSB and edit the corresponding values.
The other controllers use one step of 7 bit CC resolution for 2 steps 8 bit internal resolution. However, with these parameters the controlling range is absolutely satisfying.

Parameter	Controller No.	Value Range	Internal Resolution
Decay	110	0..127	256
M1 Pitch MSB	90	0..1	
M1 Pitch LSB	91	0..127	256
M1 Dampen MSB	92	0..1	
M1 Dampen LSB	93	0..127	256
M2 Pitch MSB	94	0..1	
M2 Pitch LSB	95	0..127	256
M2 Dampen MSB	96	0..1	
M2 Dampen LSB	97	0..127	256
M1_2 Couplg MSB	100	0..1	
M1_2 Couplg LSB	101	0..127	256
M2_1 Couplg MSB	102	0..1	
M2_1 Couplg LSB	103	0..127	256
Noise	109	0..127	256
Noise Filter	112	0..127	256
Metal Noise A MSB	106	0..1	
Metal Noise A LSB	107	0..127	256
Metal Noise B MSB	115	0..1	
Metal Noise B LSB	116	0..127	256
Gate	114	0..127	256
Volume	117	0..127	256
LFO Wave	119	0..7	Sup/Sdo/Sin/Si-/tri/tri-/rCt/rC-
LFO Select	120	0/32/64/96	Off/M1/M2/M12
LFO One Shot	123	0/64	Off/On
LFO Intensity	121	0..127	256
LFO Speed	122	0..127	256

For limited controllability by the Jomox XBASE 09/888/999 in the snare drum department these CCs are intended:

Parameter	Controller No.	Value Range	XBase Parameter
M1 Pitch LSB	108	0..127	Snare Tune
Noise	109	0..127	Snare Snappy
Decay	110	0..127	Snare Decay
M2 Pitch LSB	111	0..127	Snare Detune
Noise Filter	112	0..127	Snare Noise Tune

5.2. Soft Calibration

Since there are unavoidable analog tolerances of the T-Bridge oscillators and the partly very sensitive effects on the sounds we have implemented calibration values for the parameters pitch and dampen in order to keep the factory spreadings at a reasonable level. These values keep permanently stored and can only remotely be changed by CC controllers. After adjustment, they have to be stored so that they are active on next turning on.
A CC value of 64 corresponds to 0% deviation. Smaller values decrease, higher values increase the tuning and will be automatically added or deducted with every sound played. We recommend not to overwrite the factory settings, but a damadge to the unit is not to be expected.

Parameter	Controller No.	Value Range	Initial Value
M1 Pitch Cal	98	0..127	64
M1 Dampen Cal	99	0..127	64
M2 Pitch Cal	104	0..127	64
M2 Dampen Cal	105	0..127	64
Store Preset	62	0/64	Store Preset

5.3. Note Commands

Instrument	Split Mode 1	Split Mode 2
	Note Number	Note Number
M.Brane 11	D1 (38)	C1..C6

5.4. 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), $5a(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 numbers.

And finally...
Service, tips and tricks:

JoMoX GmbH
Körtestr. 10
10967 Berlin / Germany

http://www.jomox.com
email mail@jomox.de

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