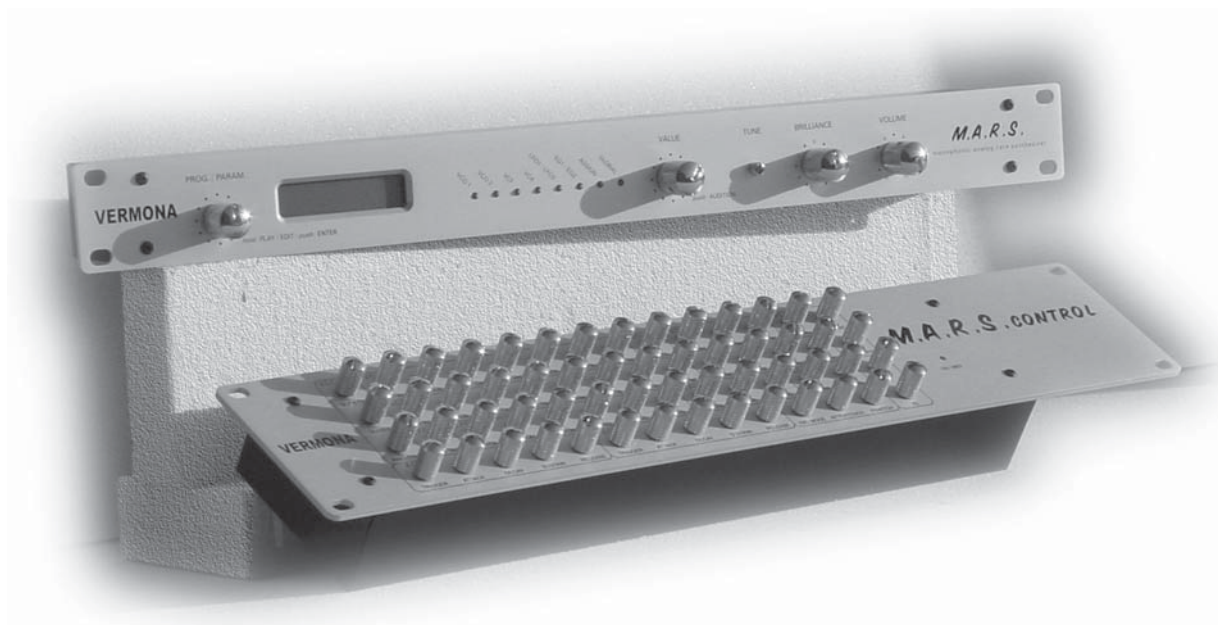


M.A.R.S.

monophonic analog rack synthesizer



OWNER'S MANUAL

Foreword

Thank you for purchasing the Vermona M.A.R.S. - monophonic analog rack synthesizer.

The M.A.R.S. is a very flexible, monophonic dual-oscillator analog synthesizer that builds upon the classic VCO - VCF - VCA structure.

It is able to generate all the typical lead and bass sounds with the desirable warmth and vintage character of old analog idols, as well as completely new sonic creations, thanks to its unique features.

For saving space in the studio or on stage, the M.A.R.S. is built into a robust, single rack-space (1U) enclosure. All parameters are controllable via MIDI, and for those who like to program with "real knobs", we offer the M.A.R.S. Control - a special, optional rack-mountable programmer for the M.A.R.S. featuring 56 knobs!

Vermona has designed the user interface of the M.A.R.S. to be as simple and intuitive as possible. Using two detented rotary encoders with built-in push-buttons, in conjunction with a backlit, 2-line LCD display, programming is made fast and easy. A built-in auditioning feature lets you program new sounds without the need for any MIDI controller to be connected. Still, to get the most out of your new synthesizer, we recommend that you read this manual in its entirety to become familiar with all the available functions and associated parameters. You will soon see that the M.A.R.S. is simple and enjoyable to program!

We wish you much success and fun with your M.A.R.S.!

The VERMONA Team.

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General

Important safety information

The following safety precautions must be observed during all phases of operation, service and repair of this equipment. Failure to comply with these precautions or with specific warnings in this manual violates safety standards of design, manufacture and intended use of this equipment.

The manufacturer assumes no liability for the customer's failure to comply with these requirements!

Ground and power connection

To prevent the risk of electrical shock, this equipment must be grounded. The factory setting for power is already made for each country (115V AC, 230V AC). An individual setting is not allowed by virtue of safety reasons. This modification must be done by a qualified technician only!

Voltage peak

This equipment is equipped to manage voltage peaks, which are often generated in live sound situations. When using the unit with unstable voltage, please make sure that the device is grounded.

Use near explosive goods

The unit should not be used near easily flammable or explosive goods.

Dampness

The unit should not be used in damp or wet places. Make sure the unit is not used in a humid atmosphere, as this could cause condensation within the equipment.
WARNING: Risk of electrical shock!

Connections

Only use cables, plugs and adapters that do not affect the normal operation of the unit.

Cooling System

The unit should not be used near heating ducts or appliances, or warm or hot fans. When using the unit in a rack or wall system, make sure that it has enough space to let the generated heat dissipate.

Cleaning

Please clean the unit only with a dry duster or cloth. Do not use solvents, cleaning fluids or water!

Spare parts or modifications

Modification instructions and schematic information should only be used by the service departments of our official authorized VERMONA dealers. To prevent the risk of electrical shock, please do not open or modify the unit yourself. Before opening the unit, always disconnect the power lead. Opening or modifying the unit voids all warranty claims!

Warranty

The manufacturer warrants this product to be free of defects in material and/or workmanship. The manufacturer's warranty does not apply to products that have been damaged due to and/or subjected to improper handling by shipping companies (forwarders), negligence, accidents, improper use, or alteration not authorized by the manufacturer.

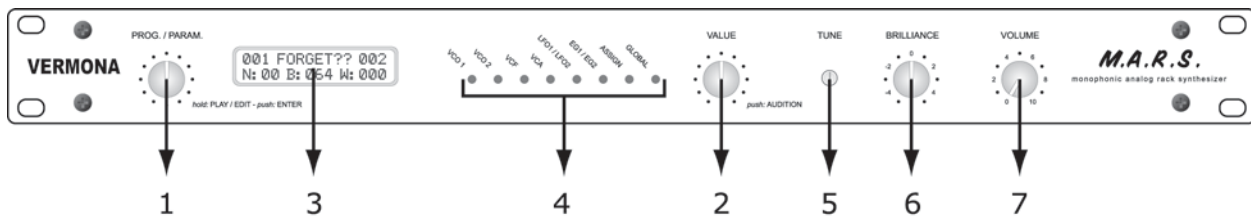
This warranty is exclusive and in lieu of all other warranties, expressed or implied. The manufacturer will not be liable for incidental or consequential loss or damage whatsoever, whether based upon allegations or negligence, breach of warranty, or otherwise. This disclaimer of incidental or consequential damages includes, but is not limited to, property damages, loss of profits, loss of time or other losses or inconvenience resulting from any defect in the material or workmanship of this product, or any other connection with the purchase, operation or use of this product.

Technical changes

All changes which improve the technical features of this product can be made without advance notice by the manufacturer.

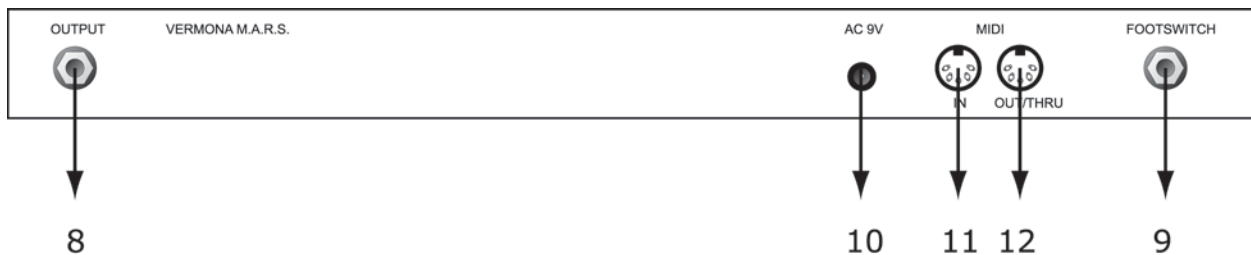
Control Surface Features

Front Panel



- (1) **PROG./PARAM.** - Rotary encoder for selecting (turn) and activating (push) presets in PLAY MODE, for selecting parameters in EDIT MODE, and for changing between modes (push & hold).
- (2) **VALUE** - Rotary encoder for adjusting values (turn). By pressing this control knob, the M.A.R.S. auditions the active preset and clears the internal note memory (reset function).
- (3) **LCD DISPLAY**
- (4) **SECTION LEDs** - show which synthesizer section is being edited (EDIT MODE).
- (5) **TUNE** - Set-screw for tuning the M.A.R.S. (+/- one half-tone).
- (6) **BRILLIANCE** - Control knob for adjusting the CUTOFF frequency in a smaller range (working in conjunction with VCF frequency cutoff parameter).
- (7) **VOLUME** - Control knob that sets the main output level of the M.A.R.S.

Rear Panel



- (8) **OUTPUT** - output jack (mono).
- (9) **FOOTSWITCH / ENV1 OUT** - It is possible to connect a foot switch or sustain pedal to this jack for controlling different parameters. It also can be used to access the control voltage of envelope one (EG1).
- (10) **9-12V AC** - jack for connecting the external power supply.
- (11) **MIDI IN** - MIDI In jack.
- (12) **MIDI OUT / THRU** - MIDI Out or Thru jack (selectable).

Getting started

Unpacking

All VERMONA products are checked and tested carefully before being packaged. In spite of specially made shipping cartons and the solid build quality of the devices themselves, damages during transport are possible. Therefore, we would like to ask you to check the unit after receipt for visual damage.

Please do not discard the original packaging! Use it for shipping the unit again, if necessary.

Inventory

The VERMONA M.A.R.S. comes complete with:

- VERMONA M.A.R.S.
- AC adapter (AC 9V/500 mA or 12V/830 mA)
- this Owner's Manual

Connections

Setting up the necessary audio connections

- Connect the audio output of the M.A.R.S. (8) to the line input of your mixer, amplifier, etc.
- Connect the included AC adapter to the AC JACK (19) of the M.A.R.S. (do this before plugging the AC adapter into a power receptacle).

NOTE: The M.A.R.S. is not equipped with an AC power switch. The M.A.R.S. automatically powers up once you connect the AC adapter to a power receptacle socket. The M.A.R.S. needs about 3-4 minutes of warm-up time before it is completely in tune.

Setting up the necessary MIDI connections

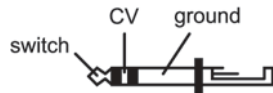
- Connect the MIDI IN jack of the M.A.R.S. to the MIDI OUT jack of your MIDI control source, i.e., keyboard, sequencer, computer, etc.
- Other MIDI devices can be connected to the MIDI OUT/THRU jack.
The function of the MIDI OUT/THRU jack depends on the current setting of Global parameter G4. If set to MIDI THRU, incoming MIDI messages are routed directly to the MIDI OUT/THRU jack for other connected MIDI devices. If set to OUT, the M.A.R.S.' MIDI controller messages or system exclusive data can be sent from the jack.

FOOTSWITCH / ENV1 OUT jack

The M.A.R.S. offers functionality allowing the connection of a footswitch, or sustain pedal, that can be assigned to various program functions, or which can be used for stepping through the Programs.

The jack also outputs the control voltage of envelope 1 (EG1). You can use that voltage output to control devices that are equipped with a standard CV input, such as the VERMONA DAF-1 filter or the VERMONA PH-16 phaser.

Both the foot switch and envelope control voltage output functions can be utilized simultaneously, with an insert cable (Y-cable). The cable must be configured in the following way:



Operation

The M.A.R.S. has two rotary encoders with integrated push-button functionality: **PROG./PARAM. (1)** and **VALUE (2)**. You are able to control and edit every Program parameter, or any function of the synthesizer, with these two controls.

The **VALUE** encoder is responsible for adjusting the parameter values. You can audition the currently loaded Program by pushing the **VALUE** encoder. The push function also clears the internal note memory of the M.A.R.S. (reset function).

The function of the **PROG./PARAM.** encoder depends on which operating MODE is currently selected.

To make the user interface as simple as possible, the M.A.R.S. has just two modes: PLAY MODE and EDIT MODE.

PLAY MODE

Selecting and Playing Programs

The M.A.R.S. uses two terms in conjunction with loading and storage of "sounds" within it: Programs and Pre-selected Programs. To use a baseball analogy, think of the Program as being "up to bat", and the Pre-Selected Program as being "on deck". It makes sense then, that the currently activated sound is called the Program. More on the Pre-selected Program in a moment.

Programs are selected, then activated (loaded) in the M.A.R.S. using the PROG./PARAM. encoder.

After the power supply is connected, the M.A.R.S. will power up in PLAY MODE. The upper line of the LCD display shows the number and name of the currently loaded Program. It also shows the "Pre-selected" Program Number (this is the number on the right, on the upper line of the LCD display), which is the next Program number that will be loaded when the PROG./PARAM. encoder is pressed again. Remember the baseball analogy? It's like always having a new Program on deck, ready to be loaded quickly. For example:

```
001 FORGET?? 002
```

001 FORGET?? = Currently Active Program, 002 = Pre-selected Program.

With any Program loaded, turning the PROG./PARAM. encoder will cause the upper line of the LCD display to change, showing the name and number of the new Pre-selected Program that will be loaded when the PROG./PARAM. encoder is pressed. The Pre-selected Program's name and number is shown in angular parenthesis, as such:

```
[068 DynaBass ]
```

If you push the PROG./PARAM. encoder immediately after scrolling to a new Pre-selected Program number, the Pre-selected program will load and become the active Program (press the VALUE knob to audition it, if you like!) If you scroll to a new Pre-selected Program number and do not press the PROG./PARAM encoder within about two seconds, the LCD readout will change back to its normal display without loading anything, and the Program that was loaded before you turned the PROG./PARAM. encoder will still be active. However, the number of the Pre-selected program you scrolled to is now displayed in the upper-right corner of the LCD display; "on deck" so to speak. It will stay there until you push the PROG./PARAM. encoder to load it, or turn the PROG./PARAM. encoder again, to pick a new Pre-selected Program.

After a new Pre-selected Program is loaded and becomes the active program, the Pre-selected Program number in the display automatically jumps to the next higher Program number. This feature allows you to step through the Programs one by one, just by pushing the PROG./PARAM. encoder. For example, loading Program 081 automatically changes the Pre-selected Program number to 082, without having to turn the PROG./PARAM. encoder.

When the M.A.R.S. powers up, Program 001 is automatically selected, and 002 is the Pre-selected Program number. Simply push the PROG./PARAM. encoder to step through and load each successive Program.

The lower line of the LCD display shows three different MIDI IN activities:

```
N: 00 B: 064 W: 000
```

N: shows the incoming note number
B: shows the incoming pitch bend value
W: shows the incoming mod-wheel value

Changing between MODES

To change between PLAY and EDIT modes, you must push and hold the PROG./PARAM. encoder knob for about 2 seconds. Easy!

EDIT MODE

To edit an existing program, create a completely new program, or make global settings, the M.A.R.S. must be in EDIT MODE. (If the M.A.R.S. is in PLAY mode, push and hold the **PROG./PARAM.** encoder until the LCD display changes and one of the Section Indicator LEDs lights up.)

When in EDIT MODE, any Program parameters you wish to edit are selected with the **PROG./PARAM.** encoder, and the values of those parameters are adjusted with the **VALUE** encoder.

An easy visual indicator of the M.A.R.S. being in EDIT MODE is the array of SECTION LEDs, showing which synthesizer group parameters are currently being edited. These are laid out in logical fashion from left to right, and one is always lit in EDIT MODE: VCO1, VCO2, VCF, VCA, LFO1/LFO2, EG1/EG2, Assign and Global. Looking at the SECTION LEDs, it's always easy to see where you are, within the editing hierarchy. For example, if the SECTION LED under the VCA heading is lit, you know you need to scroll back if you want to edit parameters for VCO1, or scroll forward if you want to adjust something related to Global operation!

Program Parameters

Oscillators

The M.A.R.S. has two identical voltage controlled oscillators. Each of them offers three waveforms: sawtooth, square and pulse (fixed pulse width of 12.5%). Further, each oscillator features two sub-oscillators, one and two octaves below the main oscillator. The sub-oscillators have a square waveform.

Overall, the M.A.R.S. has a pitch range of seven octaves (without the sub-oscillators).

Voltage Controlled Oscillator 1 (VCO1) - Parameters

01. Control (KBD, FIX 036 ... 096, S&H)

This is the parameter for selecting the oscillator's control source.

KBD The pitch of the oscillator depends on the incoming MIDI note number. When the control parameter is set to KBD, you can play the VCO with a MIDI keyboard, sequencer, etc.

FIX 036 ... FIX 096 The VCO is set to a fixed MIDI note number between 036 and 096. Incoming MIDI notes have no effect on the oscillator's pitch.

S&H The pitch of the VCO is generated by a random (sample & hold) generator. Its speed depends on the setting of LFO1 (parameter 34).

02. Wave

The wave parameter selects the waveform of the oscillator and switches the sub-oscillators on or off. The waveforms are represented on the LCD display in following way:

sawtooth
square
pulse



```
01. VCO1
Wave: 4 8 16
```

The lower line of the LCD display shows the main oscillator's waveform and range, and also the status of the square-wave sub-oscillators. The first number (4) and waveform represents the main oscillator. The second number and waveform (8) represents the first sub-oscillator and the third number and waveform (16) represents the secondary sub-oscillator.

The waveforms and sub-oscillators can be adjusted in 15 different combinations:

1. Main Osc: On, Wave: Saw; Sub-osc 1: Off; Sub-osc 2: Off
2. Main Osc: On, Wave: Pulse; Sub-osc 1: Off; Sub-osc 2: Off
3. Main Osc: On, Wave: Triange; Sub-osc 1: Off; Sub-osc 2: Off
4. Main Osc: Off; Sub-osc 1: On; Sub-osc 2: Off
5. Main Osc: Off; Sub-osc 1: Off; Sub-osc 2: On
6. Main Osc: On, Wave: Saw; Sub-osc 1: On; Sub-osc 2: Off
7. Main Osc: On, Wave: Pulse; Sub-osc 1: On; Sub-osc 2: Off
8. Main Osc: On, Wave: Triange; Sub-osc 1: On; Sub-osc 2: Off
9. Main Osc: On, Wave: Saw; Sub-osc 1: Off; Sub-osc 2: On
10. Main Osc: On, Wave: Pulse; Sub-osc 1: Off; Sub-osc 2: On
11. Main Osc: On, Wave: Triange; Sub-osc 1: Off; Sub-osc 2: On
12. Main Osc: On, Wave: Saw; Sub-osc 1: On; Sub-osc 2: On
13. Main Osc: On, Wave: Pulse; Sub-osc 1: On; Sub-osc 2: On
14. Main Osc: On, Wave: Triange; Sub-osc 1: On; Sub-osc 2: On
15. Main Osc: Off; Sub-osc 1: On; Sub-osc 2: On

When the parameter is set to OFF, the oscillator inactive.

03. Tune Coarse (-24 ... 0 ... +12)

Sets the pitch of the oscillator in half-tones, within a range of three octaves.

04. Glissando (OFF / ON)

Switches glissando for the VCO on or off.

If the parameter is ON, the pitches glides from one note to another in half-tones.

05. Glide (OFF, 1 ... 7)

Sets the GLIDE time in seven stages, or can be turned OFF completely.

06. EG Pitch Int (0 ... 127)

This parameter sets the intensity of the pitch envelope for the oscillator.

The oscillators have a single, dedicated ATTACK-DECAY (AD) envelope generator routed to their pitch. This single-cycle envelope generator is a special preceding stage of LFO1, and its attack, decay and invert parameters are set in the LFO1 section - see parameters 31, 32 and 33.

07. LFO1 Int (0 ... 127)

Sets the modulation intensity of LFO1 for the oscillator.

VCO1 + VCO2

These parameters affect both oscillators.

08. Gliss.Time (0 ... 127)

Sets the glissando time. Lower values correspond to shorter glissando times.

09. Gliss.EG (ON / OFF)

If this parameter is set to ON, each note that is generated by the glissando re-triggers all envelopes.

10. Noise (OFF, 20%, 60%, 100%)

The noise generator of the M.A.R.S. generates white noise and can be mixed with the oscillator signals in three volume stages of 20%, 60%, 100%, or can be set to OFF.

11. RINGMOD+SYNC

This parameter switches the ring modulator or oscillator-synchronization function on or off as follows:

OFF no function (ring mod and osc sync are both turned off).

Ringmodulator ON the ring modulator is active.
The ring modulator multiplies the signals of both VCOs and generates their sum and difference. The ring modulated signal is generated in addition to the VCO signals. To hear only the pure ring modulator signal, you must switch the oscillators off (WAVE: OFF).

Sync VCO2->VCO1 In sync mode, VCO1 is synchronized to VCO2. Opposite to what you might expect, that means VCO1 works as the slave and is controlled by VCO2, acting as the master.

Voltage Controlled Oscillator 2 (VCO2) - Parameters

The parameters of oscillator 2 are identical to those of oscillator 1, except parameters 13 and 15.

12. Control

13. Wave

In addition to the main and sub-oscillator combinations of VCO1 there are two volume settings available for each combination: Normal and LOW. LOW is indicated by the word "LOW" appearing in the upper line of the LCD display.

14. Tune Coarse (-24 ... 0 ... +12)

15. Tune Fine (-64 ... 0 ... +63)

VCO2 can be detuned against VCO1, +/- one half-tone.

16. Glissando (ON / OFF)

17. Glide (OFF, 1 ... 7)

18. EG Pitch Int (0 ... 127)

19. LFO1 Int (0 ... 127)

Voltage Controlled Filter (VCF)

The M.A.R.S. is equipped with a 24db lowpass filter, with resonance.

20. CutOff (0 ...255)

The cutoff frequency can be adjusted within a range of 0 ... 255.

Note: The CUTOFF frequency depends also on the setting of the dedicated front panel BRILLIANCE control. When the CUTOFF parameter is set to be controlled via MIDI (i.e. M.A.R.S. Control, MIDI fader box, etc.), there are just 127 steps available in the cutoff range.

21. Resonance (OFF ... 63, LFO2, EG1, EG2)

The filter's resonance can be adjusted manually, or can be modulated by LFO2, EG1 or EG2. There are 63 increments available in the resonance control range.

OFF	no resonance.
1 ... 63	resonance setting value, from 1 ... 63.
LFO2	the resonance will be modulated by LFO2.
EG1	the resonance will be modulated by EG1.
EG2	the resonance will be modulated by EG2.

Note: The modulation intensity of LFO2, EG1 and EG2 is 100%, i.e., the full value range, from 1 to 63.

22. LFO2 Int (0 ... 127)

Sets the LFO2 modulation intensity for the cutoff frequency.

23. EG1 Int (0 ... 127)

Sets the modulation intensity of envelope 1 (EG1) for the cutoff frequency.

24. EG1 Invert (OFF / ON)

Setting this parameter to ON, the envelope modulation is inverted and becomes negative.

25. Keytrack (OFF / ON)

Sets filter tracking of the keyboard on or off. When the parameter is set to ON, the CUTOFF frequency depends on the incoming note number - the higher the notes played, the higher the cutoff frequency.

26. Velocity (OFF, 1...8)

Sets the intensity of the affect the keyboard's velocity response has on the cutoff frequency, in 8 stages. Can be turned off completely (OFF).

Voltage Controlled Amplifier (VCA)

27. Control (EG1, EG2, ON)

Sets the control source of the amplifier:

EG1	the VCA is modulated by EG1.
EG2	the VCA is modulated by EG2.
ON	the VCA is ON (Watch your speakers as selecting this setting will result in immediate, full-on sound!)

28. LFO2 Int

Sets the control intensity (depth) of LFO2 modulation to the amplifier.

29. Velocity (OFF, 1...8)

Sets the intensity of the keyboard's velocity response on the amplifier in 8 stages. Can also be turned off completely (OFF).

Low Frequency Oscillators (LFOs)

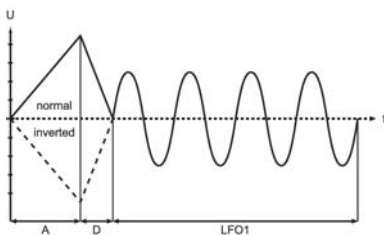
30. LFO 1+2 Trigger

This parameter selects different trigger and synchronization settings:

OFF	The LFOs are not synchronized and are free-running.
KBD	The LFOs will be re-triggered on each keystroke.
MIDI 4	The LFOs will be re-triggered by MIDI CLOCK on each quarter note.
MIDI 8	The LFOs will be re-triggered by MIDI CLOCK on each eighth note.
MIDI 16	The LFOs will be re-triggered by MIDI CLOCK on each sixteenth note.
MIDI tr	The LFOs will be re-triggered by MIDI CLOCK on each triplet.

LFO1

LFO1 modulates the pitch of the oscillators. The modulation intensity can be adjusted independently for each oscillator (parameters 7 and 22, for osc's 1 and 2 respectively). In addition, as described earlier, LFO1 has a preceding single-cycle ATTACK-DECAY envelope, whose intensity can also be adjusted independently for each oscillator, and independently of the cyclical LFO's intensity.



The LFO starts only after the ATTACK-DECAY envelope has finished.

31. EG PITCH (VCO) Attack (0 ... 127)

Sets the envelope's attack time between 1ms and 2s.

32. EG PITCH (VCO) Decay (0 ... 127)

Sets the envelope's decay time between 1ms and 2s.

NOTE: If the intensity of the EG PITCH parameter is set to "0", the attack and decay times of the ATTACK-DECAY envelope can be used as a delay parameter for LFO1. By setting the release time to "0", the attack time parameter can be adjusted to any desired value resulting in a delay period, within which no LFO modulation is heard. After the set attack time duration, the LFO modulation will "turn on" to its set intensity level. For even longer delay times, the decay parameter of the ATTACK-DECAY envelope can be increased as well.

As soon as an attack and/or decay time is adjusted for the pitch envelope, the TRIGGER MODE (parameter 30) does not affect LFO1 - the LFO and accompanying ATTACK-DECAY envelope are retriggered with each keystroke.

33. EG PITCH (VCO) EG Invert (OFF / ON)

If the EG1 INVERT parameter is set to ON, the pitch envelope is inverted (negative).

34. Speed (0 ... 127)

Sets the speed for LFO1.

35. Wave

Sets the waveform for LFO1:

triangle
square
sine 1
sine 2
s&h

36. Ratio (0 ... equal ... 128)

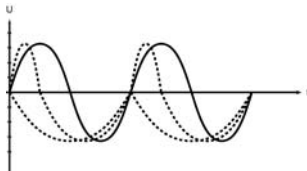
With the RATIO parameter, the symmetry of the waveform can be altered.

Note: If the WAVE parameter set to Sample & Hold, the RATIO parameter has no effect.
If the RATIO parameter is set to EQUAL, the waveform is symmetrical.

Triangle: The triangle can be transformed into a negative (position 0) or positive (position 128) sawtooth.

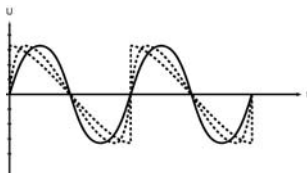
Square: The pulse-width of the square wave can be varied.

Sine 1: The RATIO parameter's affect on sine1 is similar to that on the square wave. It adjusts the relationship between the positive and negative portions of the cycle, similar to altering "pulse width" for the sine wave. Values between 0 and 63 cause the duration of the positive portion of the wave to be shorter than negative portion. Values between 65 and 127 results in a longer positive portion.



example: Sine 1, RATIO values between 1 and 63

Sine 2: The RATIO parameter's affect on sine2 is similar to that on the triangle waveform. The result is an extremely smooth sawtooth waveform (positive or negative) with all values between them.



example: Sine2, RATIO values between 0 and 63

LFO2

LFO2 modulates the VCA and/or the filter (VCF cutoff frequency and/or resonance). The parameters of LFO2 are the same as for LFO1, except the preceding ATTACK-DECAY envelope is omitted.

37. Speed (0 ... 127)

38. Wave (triangle, square, sine 1, sine 2, s&h)

39. Ratio (1 ... equal ... 128)

Envelope Generators (EGs)

EG1

EG1 is responsible for modulating the filter cutoff frequency, but can also be routed to the filter's resonance, and the VCA. EG1's control voltage is also routed to the FOOTSWITCH / ENV1 OUT jack. You can control other devices with a standard CV input, such as the VERMONA DAF-1 filter and the VERMONA PH-16 phaser.

40 TrigSRC (KBD, LFO2, KBD+LFO2)

This parameter sets the trigger source for the envelope:

KBD	the envelope is triggered on every keystroke (every incoming note-on message).
LFO2	the envelope is triggered after each completed cycle of LFO2.
KBD+LFO2	the envelope is triggered after each completed cycle of LFO2, as long as a key is held down.

41. Attack (0 ... 127)

Sets the ATTACK time of the envelope in a range of 1ms to about 10s.

42. Decay (0 ... 127)

Sets the DECAF time of the envelope in a range of 1ms to 20s.

43. Sustain (0 ... 127)

Sets the SUSTAIN level.

44. Release (0 ... 127)

Sets the RELEASE time of the envelope in a range of 1ms to 20s.

EG2

EG2 is identical to EG1. It's routed to the VCA and/or the filter's resonance.

45. TrigSRC (KBD, LFO2, KBD+LFO2)

46. Attack (0 ... 127)

47. Decay (0 ... 127)

48. Sustain (0 ... 127)

49. Release (0 ... 127)

ASSIGN

The parameters of the Assign section allow different routing assignments for mod wheel, aftertouch, program name editing, etc.

50. ASSIGN Bender

Assigns different parameters to the pitch bender:

no Function	the pitch bender has no function.
Tune Fine	the fine tuning between VCO1 and VCO2 (max. +/- one halftone).
1 Note	the pitch bend range is one halftone.
2 Notes	the pitch bend range is two notes.
4 Notes	the pitch bend range is four notes.
5 Notes	the pitch bend range is five notes.
7 Notes	the pitch bend range is seven notes.
Tune Coar. VCO1	VCO1 can be tuned within a range of one octave in halftone steps.
Tune Coar. VCO1+2	VCO1 and VCO2 can be tuned within a range of one octave in halftone steps.

51. ASSIGN Wheel

Assigns different parameters to the mod wheel:

no Function	the mod wheel has no assignment.
GlissTime	the mod wheel controls the glissando time.
VCO1 Glide	controls the glide time of VCO1.
VCO1 Mod LOW	vibrato for VCO1 - low intensity.
VCO1 Mod HI	vibrato for VCO1 - high intensity.
VCO2 Glide	controls the glide time of VCO2.
VCO2 Mod LOW	vibrato for VCO2 - low intensity.
VCO2 Mod HI	vibrato for VCO2 - high intensity.
VCO1+2 Glide	controls the glide time of VCO1 and VCO2.
VCO1+2 Mod LOW	vibrato for VCO1 and VCO2 - low intensity.
VCO1+2 Mod HI	vibrato for VCO1 and VCO2 - high intensity.
VCF CutOff LOW	controls the cutoff frequency - low intensity.
VCF CutOff HI	controls the cutoff frequency - high intensity.
VCF Resonance	controls the VCF resonance.
VCF Mod LOW	controls the LFO modulation of the cutoff frequency - low intensity.
VCF Mod HI	controls the LFO modulation of the cutoff frequency - high intensity.
VCA Mod LOW	controls the LFO modulation of the VCA - low intensity.
VCA Mod HI	controls the LFO modulation of the VCA - high intensity.
LFO1 Speed	controls the speed of LFO1.
LFO2 Speed	controls the speed of LFO2.
EG1 Release	controls the RELEASE time of EG1.

EG2 Release controls the RELEASE time of EG1 and EG2.

ASSIGN AfterT (Aftertouch)

Assigns different parameters to aftertouch:

no Function	aftertouch has no assignment.
VCO1 Mod LOW	aftertouch controls the LFO1 modulation of VCO1 - low intensity.
VCO1 Mod HI	aftertouch controls the LFO1 modulation of VCO1 - high intensity.
VCO2 Mod LOW	aftertouch controls the LFO1 modulation of VCO2 - low intensity.
VCO2 Mod HI	aftertouch controls the LFO1 modulation of VCO2 - high intensity.
VCO1+2 Mod LOW	aftertouch controls the LFO1 modulation of VCO1 and VCO2 - low intensity.
VCO1+2 Mod HI	aftertouch controls the LFO1 modulation of VCO1 and VCO2 - high intensity.
CutOff LOW	aftertouch controls the LFO2 modulation of the cutoff frequency - low intensity.
CutOff HI	aftertouch controls the LFO2 modulation of the cutoff frequency - high intensity.
VCF Resonance	aftertouch controls the VCF resonance.
VCF Mod LOW	aftertouch controls the LFO2 modulation of the VCA - low intensity.
VCF Mod HI	aftertouch controls the LFO2 modulation of the VCA - high intensity.

53. ASSIGN FootSw (Foot Switch)

Assigns different functions to the footswitch jack:

Note: This function only works if the footswitch isn't set to "Prog UP" in the Global Menu.

no Function	footswitch has no assignment.
Glide VCO1	footswitch enables/disables glide for VCO1.
Glide VCO2	footswitch enables/disables glide for VCO2.
Glide VCO1+2	footswitch enables/disables glide for VCO1 and VCO2.
Glissando VCO1	footswitch enables/disables glissando for VCO1.
Glissando VCO2	footswitch enables/disables glissando for VCO2.
Glissando VCO1+2	footswitch enables/disables glissando for VCO1 and VCO2.
Hold VCA Release	footswitch stops the RELEASE phase of EG2.
Hold VCF Release	footswitch stops the RELEASE phase of EG1.
Hold VCA+VCF Rel	footswitch stops the RELEASE phase of EG2 and EG1.

54. ASSIGN KBD (Keyboard)

Sets the keyboard mode for the program.

In general, there are modes "with EG" (+EG) and "without EG". Modes with EG trigger all envelopes on each keystroke, and modes without EG do not re-trigger the envelopes while playing in a legato style.

last Note +EG	the last note has priority (with envelopes).
last Note	the last note has priority (without envelopes).
lowest Note + EG	the lowest note has priority (with envelopes).
lowest Note	the lowest note has priority (without envelopes).
highest Note +EG	the highest note has priority (with envelopes).
highest Note	the highest note has priority (without envelopes).

55. ASSIGN Trigger Note (036 ... 096)

Sets the pitch of the audition function's note. To audition any program, simply push the VALUE encoder.

56. ASSIGN Edit Param. (1 ... 49)

Assigns a parameter number that can be adjusted in PLAY MODE with the VALUE encoder.

57. ASSIGN NAME

Allows naming of each program (max. eight symbols). When the Assign Name parameter is selected, the first character of the corresponding Program name appears between two asterisks. To change the character, turn the VALUE encoder. Turning the PROG./ASSIGN. encoder again will bring each successive letter of the Program's name into the display, and can then be edited using the VALUE encoder. For example, if there are three characters of the Program name displayed in the LCD, the third character is being edited; if there are four characters being displayed, the fourth is being edited, etc. When the final character of the name is displayed, turning the PROG./PARAM. encoder will then select the first parameter of the Global Parameter section.

Storing Programs

To store a program, you must scroll to the STORE PARAMETER. The STORE PARAMETER is the final parameter in EDIT MODE (of the Global Parameter section). You can jump directly to this parameter by pressing both rotary encoders (PROG./PARAM. + VALUE) in EDIT MODE, or turning the PROG./PARAM. encoder until you reach the last parameter. All Section LEDs will light, and the LCD displays the following message:

```
SAVE as Prog. 001
press both knobs
```

Before pressing both encoders, you may select a different program number, if desired, with the VALUE encoder. Then, store the program to the selected Program number by simultaneously pressing, and holding, both rotary encoders until the display indicates an "OK".

Global Parameters

The Global parameters affect all programs. They are displayed with a "G" before their number.

G1 Foot Switch

This parameter selects whether the footswitch jack should be used for stepping through the programs, or for switching the assigned program function.

(+) Program UP	the next program will be activated when the switch/pedal is closed (activated).
(+) sel. Param.53	the assigned parameter will be switched when the switch/pedal is closed (activated).
(-) Program UP	the next program will be activated when the switch/pedal is opened (released).
(-) sel. Param.53	the assigned parameter will be switched when the switch/pedal is opened (released).

G2 WHEEL CONTROL

Sets the mode for the mod wheel:

Mode1 add	incoming mod wheel messages will be added to the assigned parameter value.
Mode2 take on	incoming mod wheel messages will override and replace the current setting for the assigned parameter.

G3 MIDI IN

Rec. Mode OMNI	the M.A.R.S. receives MIDI messages on all 16 channels.
Rec. Channel 1 ... 16	sets the desired MIDI channel.

G4 MIDI OUT

Transmit: THRU	incoming midi messages will be routed directly to the MIDI OUT/THRU jack. The jack behaves as a standard MIDI Thru port.
Tra. Channel 1 ... 16	sets a MIDI OUT channel for the M.A.R.S. and the MIDI OUT/THRU jack acts as a MIDI out port.

G5 SYSEX ID

Device-ID No. 000 ... 126	The device ID is important for sysex dumps. With each sysex dump, the selected device-ID will be transferred with the data. When transferring the sysex files back into the M.A.R.S., the device-ID stored with the data, and the current device-ID set for the M.A.R.S. must be identical.
---------------------------	--

G6 SYSEX Files

Program Dump	sends the program that is currently in the EDIT memory as sysex data.
Controller Dump	sends the program that is currently in the EDIT memory as midi controller messages.
All Program Dump	sends the complete program memory as sysex data.
Firmware Update	for updating the OS (Operating System).
reload Presets	for initializing the presets.

System Exclusive Data Transfer

The system exclusive data transfer functions allow you to send and receive the program memories of the M.A.R.S. The M.A.R.S. supports the following kinds of sysex data transfer:

Program Dump	transfer of a single program.
All Program Dump	transfer of the complete program memory (All 127 Programs).

Sending System Exclusive Data

The send function will be activated when the VALUE control is pushed and held for about 2 seconds, (while an applicable sysex data parameter is displayed - Program Dump or All Program Dump) until the upper line of the LCD display indicates "OK". The memory of the M.A.R.S. will be sent via the MIDI OUT jack. This data can be stored in a MIDI sequencer or other device able to receive and store sysex data via MIDI.

NOTE: The Global parameter, G4 MIDI OUT, must be set to one of the 16 MIDI OUT channels. If this parameter is set to MIDI THRU, the LCD display shows the following error message:

```
not possible  
Transmit: THRU
```

Controller Dump

The Controller Dump is similar to the Program Dump. The EDIT memory will not be sent as system exclusive messages, but as MIDI controller messages.

Receiving System Exclusive Data

If you have stored system exclusive data in a sequencer, you can transfer it back into the M.A.R.S. The M.A.R.S. doesn't need to be set into a special receive mode. But it's imperative that the selected Device-ID (parameter G5) on the M.A.R.S. is the same as that stored with the sysex data.

NOTE: As soon as the M.A.R.S. receives any system exclusive data, the program that is currently in the EDIT memory buffer will be lost. In order not to lose the Program in the edit buffer, please save it to a memory location before sending any sysex data to the M.A.R.S.

Please also ensure that the M.A.R.S. is connected directly to your sequencer or data storage device, with no other MIDI devices between them, when transferring system exclusive data.

When transferring a single Program (Program Dump) to the M.A.R.S., the data will be loaded into the EDIT memory buffer. It is wise to then save the Program to a memory location to avoid loss. If the transferred Program is not saved and a new Pre-selected Program is loaded, the data in the EDIT buffer will be lost.

When transferring the all programs (all Program Dump) to the M.A.R.S., the entire memory of the M.A.R.S. will be overwritten.

Firmware Update

The Operating System (OS) of the M.A.R.S. can be updated via MIDI. The updated OS software will be available as a standard MIDI file and can be read from any MIDI sequencer that is able to handle system exclusive messages.

The following steps are necessary to update the OS:

- Load the Standard MIDI File with the new OS of the M.A.R.S. into your sequencer. If you are unsure how to complete this step, please consult the user's guide of your sequencer!
- Set the Global Parameter G6, "G6 SYSEX Files" to "Firmware Update" and push and hold the VALUE encoder for about 2 seconds. The M.A.R.S. asks if you are sure.
- Push and hold the VALUE encoder for about 2 seconds to continue. To abort the procedure, you have to turn or press the PROG./PARAM. encoder.
- Confirm again by pressing both encoders (PROG./PARAM. and VALUE)

```

<--- UPDATE MODE
CANCEL --->
    
```

Push the PROG./PARAM. encoder to start the UPDATE MODE or push the VALUE encoder to cancel the procedure.

- If you have started the UPDATE MODE, you will be asked to make a test run. Please start your sequencer after the LCD display shows the following message:

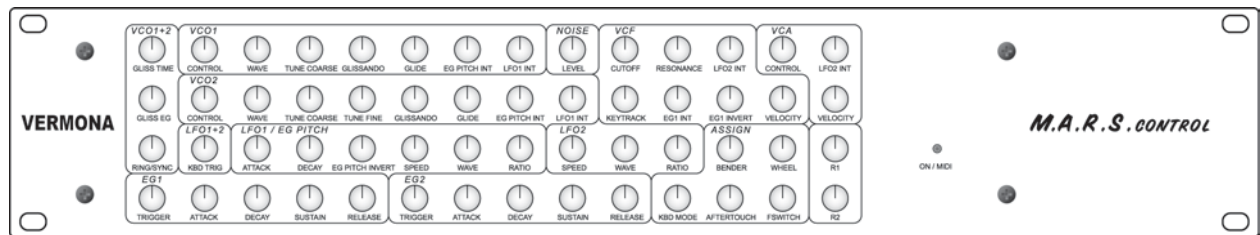
```

PLEASE START
DOWNLOAD
    
```

If the data file is a compatible M.A.R.S. file, and the M.A.R.S. receives the correct data, you will be asked to start the download for a second time. Jump back to the beginning of the MIDI file and start the sequencer again, after the LCD display on the M.A.R.S. displays the message: "PLEASE START DOWNLOAD"

After the M.A.R.S. has loaded the complete OS, it reboots with the new system.

M.A.R.S. Control



The M.A.R.S. Control is a special programmer for the M.A.R.S., with 56 control pots, one for each program parameter.

Connecting the M.A.R.S. Control

The M.A.R.S. Control is connected via MIDI to the M.A.R.S.:

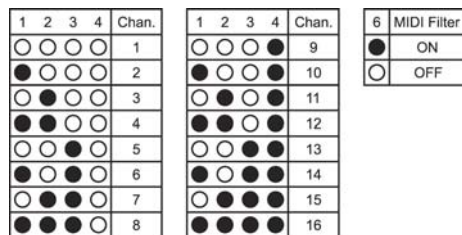
- Connect the MIDI OUT jack of the M.A.R.S. Control with the MIDI IN jack of the M.A.R.S. (11).
- Connect the MIDI IN jack of the M.A.R.S. Control with the MIDI OUT jack of your MIDI source (synthesizer, sequencer, etc.).

NOTE: The M.A.R.S. gets its necessary power supply voltage through the MIDI connection with the M.A.R.S. Therefore, it is necessary that a 5 pin DIN cable is used. Make sure that the M.A.R.S. isn't powered on when connecting the programmer (M.A.R.S. Control).

When turning a knob on the M.A.R.S. Control, the LCD display of the M.A.R.S. jumps to automatically show the corresponding parameter. If the M.A.R.S. is in PLAY MODE, the displayed parameter page disappears after about 3 seconds.

Selecting the MIDI Channel.

The MIDI channel of the M.A.R.S. Control is selected with the DIP switches as shown in the following diagram:



NOTE: The MIDI channel on the M.A.R.S. Control has to be identical to the MIDI channel set on the M.A.R.S.

If the MIDI Filter on the M.A.R.S. Control is switched on, the M.A.R.S. Control sends out only the MIDI data for the selected MIDI channel, preventing unwanted MIDI information from reaching the M.A.R.S.

MIDI Controller List

No.	Range	Parameter	Value	intern/Function
0	-	-		
1	0...127	Modulation wheel	0...127	
2	-	-		
3	-	-		
4	-	-		
5	-	-		
6	-	-		
7	-	-		
8	-	-		
9	-	-		
10	-	-		
11	-	-		
12	0...127	VCO1 Control	0...1 2...125 126...127	KDB FIX 36-96 S&H
13	0...127	VCO1 Wave	0...7 8...15 16...23 24...31 32...39 40...47 48...55 56...63 64...71 72...79 80...87 88...95 96...103 104...111 112...119 120...127	OFF 4'Saw 4'Square 4'Pulse 8'Square 16'Square 4'Saw + 8'Square 4'Square + 8'Square 4'Pulse + 8'Square 4'Saw + 16' Square 4'Square + 16'Square 4'Pulse + 16'Square 4'Saw + 8'Square + 16'Square 4'Square + 8'Square + 16'Square 4'Pulse + 8'Square + 16'Square 8'Square + 16'Square
14	0...127	VCO1 Tune coarse	0...2 3...5 6...8 ... 75...77 78...80 ... 125...127	-24 -23 -22 0 +1 +12
15	0...127	VCO1 Glissando OFF/ON	0...63 64...127	OFF ON
16	0...127	VCO1 Glide time	0...15 16...31 32...47 48...63 64...79 80...95 96...111 112...127	OFF 1 2 3 4 5 6 7
17	0...127	VCO1 EG Pitch	OFF, 1...127	
18	0...127	VCO1 LFO1 Int. (Modulation)	OFF, 1...127	
19	0...127	VCO1+2 Glissando Time	OFF, 1...127	
20	0...127	VCO1+2 Glissando EG	0...63 64...127	OFF ON
21	0...127	VCO1+2 Mode	0...42 43...85 86...127	OFF Ringmodulator ON Sync ON
22	0...127	VCO2 Control	0...1 2...125 126...127	KDB FIX 36-96 S&H
23	0...127	VCO2 Wave	0...3 4...7 8...11 12...15 16...19 20...23 24...27 28...31 32...35 36...39 40...43 44...47 48...51 52...55 56...59 60...63 64...67 68...71 72...75 76...79 80...83 84...87 88...91 92...95 96...99	OFF 4'Saw 4'Saw LOW 4'Square 4'Square LOW 4'Pulse 4'Pulse LOW 8'Square 8'Square LOW 16'Square 16'Square LOW 4'Saw + 8'Square 4'Saw + 8'Square LOW 4'Square + 8'Square 4'Square + 8'Square LOW 4'Pulse + 8'Square 4'Pulse + 8'Square LOW 4'Saw + 16'Square 4'Saw + 16'Square LOW 4'Square + 16'Square 4'Square + 16'Square LOW 4'Pulse + 16'Square 4'Pulse + 16'Square LOW 4'Saw + 8'Square + 16'Square 4'Saw + 8'Square + 16'Square LOW

No.	Range	Parameter	Value	intern/Function
			100...103	4'Square + 8'Square + 16'Square
			104...107	4'Square + 8'Square + 16'Square LOW
			108...111	4'Pulse + 8'Square + 16'Square
			112...115	4'Pulse + 8'Square + 16'Square LOW
			116...119	8'Square + 16'Square
			120...127	8'Square + 16'Square LOW
24	0...127	VCO2 Tune coarse	0..4	-24
			3..5	-23
			6..8	-22
			...	
			75...77	24 = 0
			78...80	25 = +1
			...	
			125...127	36 = +12
26	0...127	VCO2 Glissando OFF/ON	0...63	OFF
			64...127	ON
27	0...127	VCO2 Glide time	0...15	OFF
			16...31	1
			32...47	2
			48...63	3
			64...79	4
			80...95	5
			96...111	6
			112...127	7
28	0...127	VCO2 EG Pitch	OFF, 1...127	
29	0...127	VCO2 LFO1 Int. (Modulation)	OFF, 1...127	
30	0...127	VCO1+2 Noise	0...31	OFF
			32...63	25%
			64...95	50%
			96...127	100%
31	0...127	VCF CutOff	0,2,4,6,...255	
32	-	-	-	-
33	0...127	VCF Resonance	0	OFF
			1...63	1...63
			64...85	LFO2
			86...107	EG1
			108...127	EG2
34	0...127	VCF LFO2 Int. (Modulation)	OFF, 1...127	
35	0...127	VCF EG1 Int. (Contour)	OFF, 1...127	
36	0...127	VCF EG1 (Contour) Invert	0...63	OFF
			63...127	ON
37	0...127	VCF KeyTrack	0...63	OFF
			64...127	ON
38	0...127	VCF Velocity	0...15	OFF
			16...31	1
			32...47	2
			48...63	3
			64...79	4
			80...95	5
			96...111	6
			112...127	7
39	0...127	VCA Control	0..42	EG1
			43...85	EG2
			86...127	ON
40	0...127	VCA LFO2 Int. (Modulation)	OFF, 1...127	
41	0...127	VCA Velocity	0...15	OFF
			16...31	1
			32...47	2
			48...63	3
			64...79	4
			80...95	5
			96...111	6
			112...127	7
42	0...127	LFO1+2 KBD Trig	0...20	OFF
			21...41	KBD
			42...62	MIDI 4
			63...83	MIDI 8
			84...104	MIDI 16
			105...127	MIDI tr
43	0...127	EG PITCH (VCO)Attack	0...127	
44	0...127	EG PITCH (VCO)Decay	0...127	
45	0...127	EG PITCH (VCO) invert	0...63	OFF
			64...127	ON
46	0...127	LFO1 (VCO) Speed	0...127	
47	-	-	-	-

No.	Range	Parameter	Value	intern/Function
48	0...127	LFO1 (VCO) Wave	0...24 25...49 50...74 75...99 100...127	Triangle Square Sine1 Sine2 S&H
49	0...127	LFO1 (VCO) Ratio	0...127	
50	0...127	LFO2 (VCF+VCA) Speed	0...127	
51	-	-		
52	0...127	LFO2 (VCF+VCA) Wave	0...24 25...49 50...74 75...99 100...127	Triangle Square Sine1 Sine2 S&H
53	0...127	LFO2 (VCF+VCA) Ratio	0...127	
No.	Range	Parameter	Value	intern/Function
54	0...127	EG1 VCF TrigSRC	0...42 43...85 86...127	KBD LFO2 KBD+LFO2
55	0...127	EG1 VCF Attack	0...127	
56	0...127	EG1 VCF Decay	0...127	
57	0...127	EG1 VCF Sustain	0...127	
58	0...127	EG1 VCF Release	0...127	
59	0...127	EG2 VCA TrigSRC	0...42 43...85 86...127	KBD LFO2 KBD+LFO2
60	0...127	EG2 VCA Attack	0...127	
61	0...127	EG2 VCA Decay	0...127	
62	0...127	EG2 VCA Sustain	0...127	
63	0...127	EG2 VCA Release	0...127	
64	0...127	!! lt. Standard PEDAL	0...63 64...127	OFF ON
65	0...127	ASSIGN Bender	0...11 12...23 24...35 36...47 48...59 60...71 72...83 84...95 96...127	OFF Detune 1 Note 2 Notes 4 Notes 5 Notes 7 Notes Pitch 1 Octave VCO1 Pitch 1 Octave VCO1+2
66	0...127	ASSIGN Wheel	0...4 5...9 10...14 15...19 20...24 25...29 30...34 35...39 40...44 45...49 50...54 55...59 60...64 65...69 70...74 75...79 80...84 85...89 90...94 95...99 100...104 105...127	OFF VCO1+2 Glissando VCO1 Glide VCO1 Modulation Low VCO1 Modulation High VCO2 Glide VCO2 Modulation Low VCO2 Modulation High VCO1+2 Glide VCO1+2 Modulation Low VCO1+2 Modulation High VCF CutOFF 50% VCF CutOFF 100% VCF Resonance VCF Modulation Low VCF Modulation High VCA Modulation Low VCA Modulation High LFO1 Speed LFO2 Speed EG1 Release EG2 Release
67	0...127	ASSIGN After Touch	0...8 9...17 18...26 27...35 36...44 45...53 54...62 63...71 72...80 81...89 90...98 99...107 108...116 117...127	OFF VCO1 Modulation Low VCO1 Modulation High VCO2 Modulation Low VCO2 Modulation High VCO1+2 Modulation Low VCO1+2 Modulation High CUT OFF Low CUT OFF High VCF Resonance VCF Modulation Low VCF Modulation High VCA Modulation Low VCA Modulation High

No.	Range	Parameter	Value	intern/Function
68	0...127	ASSIGN Switch	0...11 12...23 24...35 36...47 48...59 60...71 72...83 84...95 96...107 108...127	OFF GLIDE VCO1 ON GLIDE VCO2 ON GLIGE VCO1+2 ON GLISSANDO VCO1 ON GLISSANDO VCO2 ON GLISSANDO VCO1+2 ON HOLDEG1 HOLDEG2 HOLDEG1+2
69	0...127	ASSIGN Play Mode	0...20 21...41 42...62 63...83 84...104 105...127	last + EG last lowest + EG lowest highest + EG highest
70	0...127	SYSTEM	0...127	EDIT-Mode ON

Systemexclusive / Program Dump

No.	Wert	Parameter	Value
0	\$F0	Exclusive Status	Beginn SysEx Message
1-3	\$00 \$20 \$4D	Manufacturer ID	Hersteller-ID VERMONA
4	\$01	Model ID	M.A.R.S.
5	0...126	Device ID	Geräte ID,(Globalparameter G5)
6	\$01	Function Code	Program Dump
7	0...127	Program No	Programmnummer
8	0...127	VCO1+2 Glissando Time	OFF, 1...127
9	0...36	VCO1 Tune coarse	-24 / 0 / +12
10	0...15	VCO1 Wave	0 = OFF 1 = 4'Saw 2 = 4'Square 3 = 4'Pulse 4 = 8'Square 5 = 16'Square 6 = 4'Saw + 8'Square 7 = 4'Square + 8'Square 8 = 4'Pulse + 8'Square 9 = 4'Saw + 16'Square 10 = 4'Square + 16'Square 11 = 4'Pulse + 16'Square 12 = 4'Saw + 8'Square + 16'Square 13 = 4'Square + 8'Square + 16'Square 14 = 4'Pulse + 8'Square + 16'Square 15 = 8'Square + 16'Square
11	0...7	VCO1 Glide time	OFF, 1...7
12	0...127	VCO1 LFO1 Int. (Modulation)	OFF, 1...127
13	0...36	VCO2 Tune coarse	-24 / 0 / +24
14	0...30	VCO2 Wave	0 = OFF 1 = 4'Saw 3 = 4'Square 5 = 4'Pulse 7 = 8'Square 9 = 16'Square 11 = 4'Saw + 8'Square 13 = 4'Square + 8'Square 15 = 4'Pulse + 8'Square 17 = 4'Saw + 16'Square 19 = 4'Square + 16'Square 21 = 4'Pulse + 16'Square 23 = 4'Saw + 8'Square + 16'Square 25 = 4'Square + 8'Square + 16'Square 27 = 4'Pulse + 8'Square + 16'Square 29 = 8'Square + 16'Square 2, 4, 6, 8 ...30 LOW
15	0...7	VCO2 Glide time	OFF, 1...7
16	0...127	VCO2 LFO1 Int. (Modulation)	OFF, 1...127
17	0...127	VCO2 Tune fine	+/- 1Halbton -64 / 0 / +63
18	0...2	VCO1+2 Mode	OFF, Ringmodulator ON, Sync ON
19	0...3	VCO1+2 Noise	OFF, 25%, 50%, 100%
20	0...127	VCF CutOff LSB	0,2,4,6,...255
21	0...66	VCF Resonance	OFF, 1...63, LFO2, EG1, EG2
22	0...127	VCF LFO2 Int. (Modulation)	OFF, 1...127

No.	Wert	Parameter	
23	0...127	VCF EG1 Int. (Contour)	OFF, 1...127
24	0...1	VCF EG1 (Contour) Invert	OFF, ON
25	0...1	VCF KeyTrack	OFF, ON
26	0...7	VCF Velocity	OFF, 1...7
27	0...127	VCA LFO2 Int. (Modulation)	OFF, 1...127
28	0...7	VCA Velocity	OFF, 1...7
29	0...127	LFO1 (VCO) Speed	0...127
30	0...62	VCO1 Control	0 = KDB, 1...61 = FIX 36-96, 62 = S&H
31	0...127	LFO1 (VCO) Ratio	0...127
32	0...4	LFO1 (VCO) Wave	Triangle, Square, Sine1, Sine2, S&H
33	0...127	LFO2 (VCF+VCA) Speed	0...127
34	0...62	VCO2 Control	0 = KDB, 1...61 FIX 36-96, 62 = S&H
35	0...127	LFO2 (VCF+VCA) Ratio	0...127
36	0...4	LFO2 (VCF+VCA) Wave	Triangle, Square, Sine1, Sine2, S&H
37	0...127	EG1 VCF Attack	0...127
38	0...127	EG1 VCF Decay	0...127
39	0...127	EG1 VCF Sustain	0...127
40	0...127	EG1 VCF Release	0...127
41	0...127	EG2 VCA Attack	0...127
42	0...127	EG2 VCA Decay	0...127
43	0...127	EG2 VCA Sustain	0...127
44	0...127	EG2 VCA Release	0...127
45	0...60	ASSIGN Trigger Note	Note Number 36...96
46	0...5	ASSIGN KBD Mode	0 = last + EG 1 = last 2 = lowest + EG 3 = lowest 4 = highest + EG 5 = highest
47	0...48	ASSIGN Edit Parameter	1...49
48	0...8	ASSIGN Bender	0 = OFF 1 = Detune 2 = 1 Note 3 = 2 Notes 4 = 4 Notes 5 = 5 Notes 6 = 7 Notes 7 = Pitch 1 Octave VCO1 8 = Pitch 1 Octave VCO1+2
49	0...21	ASSIGN Wheel	0 = OFF 1 = VCO1+2 Glissando 2 = VCO1 Glide 3 = VCO1 Modulation Low 4 = VCO1 Modulation High 5 = VCO2 Glide 6 = VCO2 Modulation Low 7 = VCO2 Modulation High 8 = VCO1+2 Glide 9 = VCO1+2 Modulation Low 10 = VCO1+2 Modulation High 11 = VCF CutOFF 50% 12 = VCF CutOFF 100% 13 = VCF Resonance 14 = VCF Modulation Low 15 = VCF Modulation High 16 = VCA Modulation Low 17 = VCA Modulation High 18 = LFO1 Speed 19 = LFO2 Speed 20 = EG1 Release 21 = EG2 Release
50	0...1	VCO1+2 Glissando EG	OFF, ON

No.	Wert	Parameter	
51	0...13	ASSIGN After Touch	0 = OFF 1 = VCO1 Modulation Low 2 = VCO1 Modulation High 3 = VCO2 Modulation Low 4 = VCO2 Modulation High 5 = VCO1+2 Modulation Low 6 = VCO1+2 Modulation High 7 = CUT OFF Low 8 = CUT OFF High 9 = VCF Resonance 10 = VCF Modulation Low 11 = VCF Modulation High 12 = VCA Modulation Low 13 = VCA Modulation High
52	0...9	ASSIGN Switch	0 = OFF 1 = GLIDE VCO1 ON 2 = GLIDE VCO2 ON 3 = GLIGE VCO1+2 ON 4 = GLISSANDO VCO1 ON 5 = GLISSANDO VCO2 ON 6 = GLISSANDO VCO1+2 ON 7 = HOLD EG1 8 = HOLD EG2 9 = HOLD EG1+2
53	0...2	VCA Control	EG2, EG1, ON
54	0...127	VCO1 EG Pitch	OFF, 1...127
55	0...1	LFO1+2 KBD-trigger	0 = OFF 1 = KBD 2 = MIDI 4 3 = MIDI 8 4 = MIDI 16 5 = MIDI tr
56	0...127	EG PITCH (VCO)Attack	0...127
57	0...127	EG PITCH (VCO)Decay	0...127
58	0...1	EG PITCH (VCO) invert	OFF, ON
59	0...127	VCO2 EG Pitch	OFF, 1...127
60	0...2	EG1 VCF TrigSRC	KBD, LFO2, KBD+LFO2
61	0...2	EG2 VCA TrigSRC	KBD, LFO2, KBD+LFO2
62	0...1	VCO1 Glissando OFF/ON	OFF, ON
63	0...1	VCO2 Glissando OFF/ON	OFF, ON
64-71	0...68	ASSIGN Name	ABCDEF...
72	0...1	VCF CutOff MSB	CutOff MSB (Werte 128...255)
73		reserved	reserviert
74		reserved	reserviert
75		reserved	reserviert
76		reserved	reserviert
77	\$F7	EOX	End of SysEx Message

Systemexklusiv / Program Bulk Dump

No.	Wert	Parameter	
0	\$F0	Exclusive Status	Beginn SysEx Message
1-3	\$00 \$20 \$4D	Manufacturer ID	Hersteller-ID VERMONA
4	\$01	Model ID	M.A.R.S.
5	0...126	Device ID	Geräte ID, (Globalparameter G5)
6	\$02	Function Code	Program Bulk Dump
7	0...127	Program No	Programmnummer
8...77		analog Program Dump	

Declaration of Conformity

for the product/type

VERMONA M.A.R.S. & M.A.R.S. Control

We declare under our sole responsibility that this product is in conformity with the following standards or standardization documents in attention of operation conditions and installation arrangements acc. to operating manual:
EN61000-3-2, EN 61000-3-3, EN 55013, EN 55020, EN 60065
according to the provisions of the regulations 89/336/EWG and 73/23/EWG.

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