

MAM

MB33

ANALOG RETRO BASS SYNTHESIZER



LIMITED EDITION

Thank you for purchasing our MB33 Retro.

The MB33 Retro is manufactured completely in Germany, including assembly, mounting, casing, print and packaging - which is something, we are particularly proud of.

My thanks go to Hans Thomann and Bernd Siegismund from Musikhaus Thomann and Hari Rupp from the Music Store in Cologne, without whom this project would not have been possible. Thanks also to Artur Grönke and Harry Brandes, both of which have contributed greatly to the development of the MB33.

As with all analog devices the tolerance within the individual components is different from each other. Thus each MB33 is unique and always sounds somewhat different. This is what makes up a large part of the appeal for analogue instruments. Thus creating a much smaller device due to the SMD construction, it still contains all relevant components of the original.

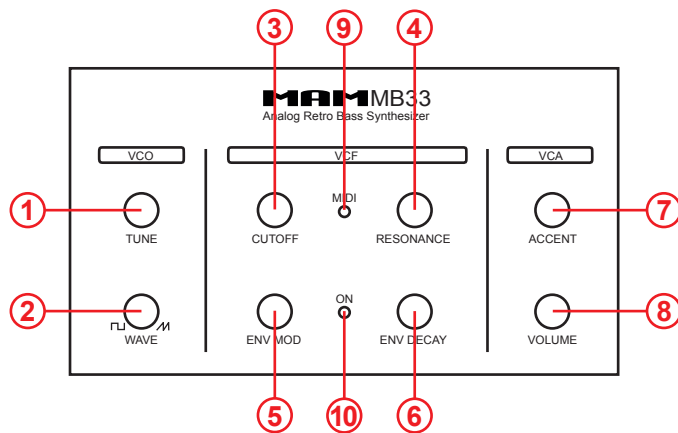
The MB33 Retro was, like his predecessor, developed by Dipl.Ing. Stefan Schmidt.

Stefan Schmidt is one of the best engineers worldwide in this field , emphasized by building his own synthesizer "Schmidt", a high-end synthesizer, used in all the top studios in the world. As with the original it was dispensed of the on-off switch, since the power supply consumes almost 20 times more electricity than the MB33 by itself.

Questions and suggestions please address to "service@mam-germany.de"

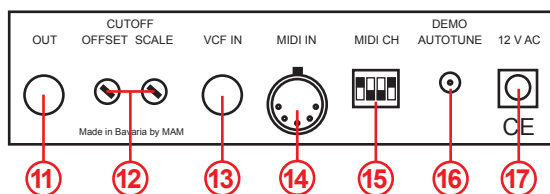
1 Brief Description

1.1 Front Panel



1. **TUNE**: fine pitch tuning +/- 50 cent
2. **WAVE**: Blends the waveforms square and sawtooth
3. **CUTOFF**: Sets the upper cutoff frequency of the filter
4. **RESONANCE**: Creates resonances in the square frequency
5. **ENV MOD**: intensity of an Envelope to the cutoff frequency
6. **ENV DECAY**: Decay time of the Envelope
7. **ACCENT**: is triggered via MIDI and affects Envelope, Cutoff and Volume
8. **VOLUME**: volume control at the output of MB33
9. **MIDI-LED**: alternately on incoming MIDI signals, permanently at Autotune
10. **ON-LED**: the MB33 is on

1.2 Back



11. **Output**: Audio output of MB33
12. **SCALE / OFFSET**: Adjusts the intensity of the cutoff controller
13. **VCF IN**: EXT. Audio signal can be processed via the VCF of the MB33
14. **MIDI IN**: socket for controlling the sound generator of the MB33
15. **MIDI CH**: Set the MIDI channel (see below)
16. **DEMO / AUTOTUNE**: Activates AUTOTUNE (in normal operation), or the DEMO (button down while turning on)
17. **12VAC**: Socket AC adapter



For damage or consequential damage of MB33 (due to operation of the device by a different AC adapter), no liability is accepted.

2 START

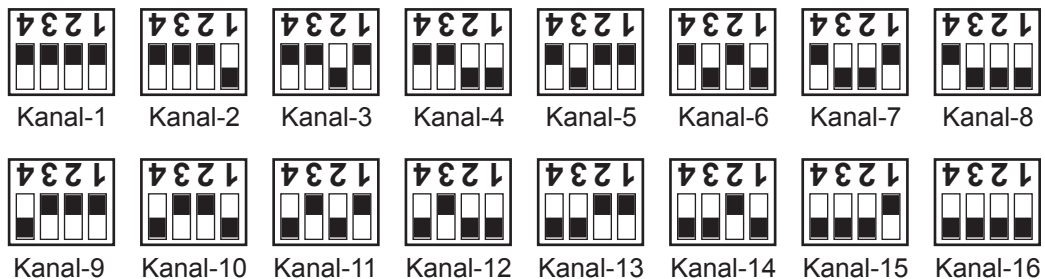
1. Set the desired receive channel with Midi-Select
2. Connect the output of the MB33 with a mixer, amplifier etc. For means of safety turn down the volume control of both devices.
3. In order to control the MB33, connect the MIDI IN socket with the MIDI OUT (or THRU) of a MIDI controller (computer, keyboard, sequencer ...). Make sure that the preset receive channel of the MB33 matches the transmit channel of the Midi controller.
4. The MB33 now carries out Autotuning. Once this process is completed, the MIDI LED turns off and the MB33 is ready for use. The ON LED must be lit permanently, as long as the device is turned on. If you now send notes to the MB33, the Midi-LED lights up in the note rhythm.



The MB33 plays a short demo melody when you simultaneously press the Autotune button while connecting the power supply. The demo melody is stopped by pressing the Autotune button once again.

3 Setting of the MIDI receive channel - MIDI SELECT

The MIDI SELECT switches allow the preset of the MIDI receive channel.



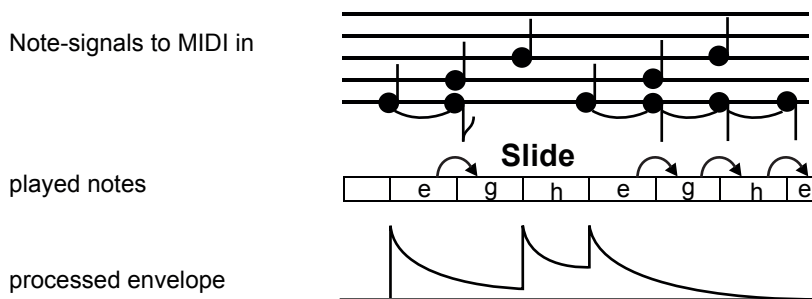
4 VCO

VCO is a voltage controlled oscillator and generates the waveforms square and sawtooth. The spectrum of the square wave contains only even harmonics. Since on the other hand all harmonics are represented in the spectrum of the sawtooth wave, this offers a fuller sound. The two waveforms can be mixed with the Wave controller in any desired ratios.

The TUNE control changes the pitch of the VCO by +/- 50 cents. In the center position the pitch is adapted to the tuning of other MIDI instruments.

5 Autoslide

The Slide (also known as portamento) enables sliding from one pitch to another. This effect is triggered automatically, when more than one note is played on the MB33. In this case, the Envelope will not be triggered.



6 VCF

The VCF is a 24 dB lowpass filter with adjustable resonance. It is used to boost or reduce overtones in the output of the VCO. It features a controller for CUTOFF, Resonance and Envelope Modulation:

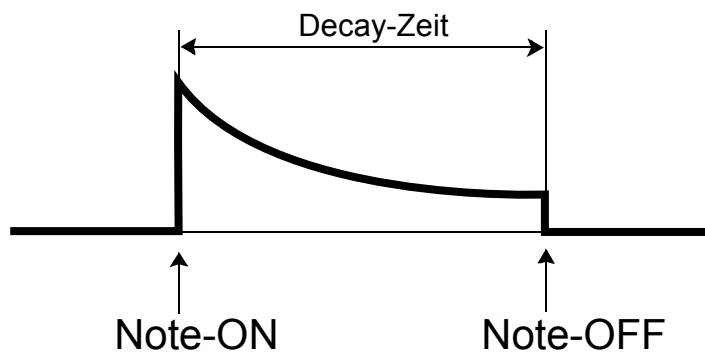
- The CUTOFF controller specifies the frequency (cutoff frequency) of the VCF. Overtones above the cutoff frequency are cut off. On the other hand all Overtones below the cutoff frequency pass the VCF unchanged. The control range of the cutoff controller is designed so that in its maximum position the VCO signals are not changed. In minimum position almost all overtones are suppressed.
- The RESONANCE controller can be used to raise the overtones within the range of the cutoff frequency. In the left position no raising of overtones takes place. Turning the control to the right increases the raise of overtones.
- The ENV MOD control determines how much the Envelope Generator (ENV) affects the Cutofffrequenz.

7 Envelope (ENV)

The Envelope generates a control voltage that can be used for modulating the cutoff frequency (controller ENV MOD), (VCA has a separate Envelope with a set voltage gradient). The control voltage is always regenerated with each note received, but not if the AutoSlide feature is enabled (more than 1 note is played simultaneously).

How quickly the ENV voltage decreases, depends on the position of the ENV-control.

The following figure shows the curve of the envelope voltage:



8 Accent

The Accent is decisive for the dynamics of your playing by accentuating individual notes, so that they are to be clearly differentiated. The Accent of MB33 is particularly effective, because it affects several parameters simultaneously.

- The volume is raised significantly.
- For the duration of the Accent, Decay time is set to minimum (at Accent-end the currently set Decay time is reestablished). The effect of the Accent may therefore be additionally reinforced by a long Decay time.
- With increasing Resonance the Accent effects an increase of the Cutoff frequency
- By using the Accent, you can control the intensity of the increase of Volume and Cutoff frequency.
- The Accent is triggered via Midi at Velocity values ≥ 120

9 Volume

The VOLUME control sets the output volume of the MB33.



A maximum volume can - for certain parameter settings - lead to overriding of the output signal (Accent on maximum, Resonance to minimum), which becomes noticeable in form of distortions as a consequence. Turn down the Volume, if this is not a desired effect.

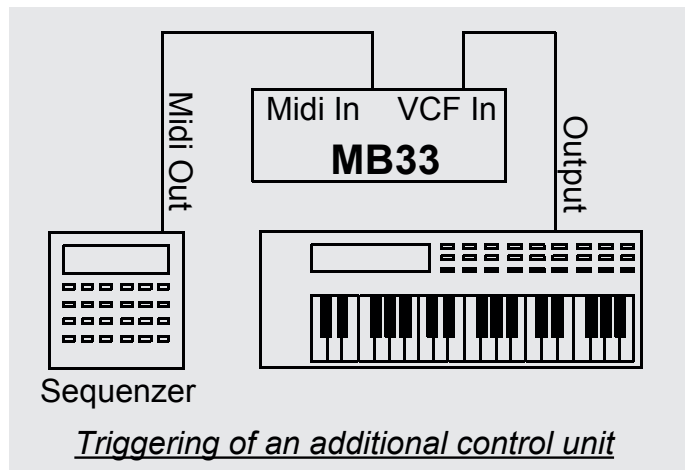
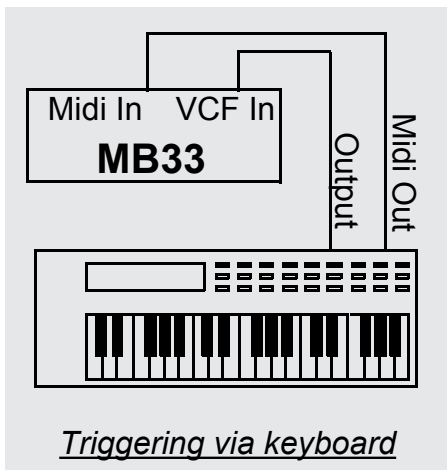
10 VCF IN

At the VCF IN socket external audio signals can be connected for further processing of sound with the help of MB33.

Processing external audio signals

1. Connect an external audio signal to the VCF IN socket of the MB33. The internal oscillator is thereby separated from the input of the VCF, but connected to the external signal. As a result, only the processed audio signal is played at the MB33 Output. All functions of the MB33 - including Midi control - are still active.
2. Since the external signal in the MB33 first passes the VCF, then the VCA, it must be triggered via MIDI. There are merely note-ON (VCA lets the signal pass through) or Note Off messages (the VCA blocks) required, the pitch values are irrelevant. When triggering the VCA the Envelope is automatically triggered, thus to modulate the cutoff frequency of the VCF. Note that the Envelope will not discharge, if Auto Slide function is activated.

For example, the following configurations are possible :



3. You can now edit the external audio signal using the controls of the MB33.

Wichtige Sicherheits-Instruktionen

1. Lesen Sie alle Anweisungen, bevor Sie das Gerät benutzen.
2. Benutzen Sie das Gerät niemals in der Nähe von Wasser, z.B. neben einer Badewanne, einem Waschbecken, einem Küchenabfluß, in einem feuchten Keller oder neben einem Swimming Pool.
3. Dieses Gerät kann in Kombination mit einem Verstärker und einem Kopfhörer oder Lautsprecherboxen Schallpegel erzeugen, die dauerhafte Gehörschäden zur Folge haben können. Vermeiden Sie deshalb über einen längeren Zeitraum zu hohe oder unangenehme Lautstärken. Sollten Sie einen Gehörschaden oder Ohrensaußen feststellen, konsultieren Sie einen Ohrenarzt.
4. Das Gerät sollte so aufgestellt werden, daß eine ausreichende Frischluftzufuhr immer gewährleistet ist.
5. Das Gerät sollte nicht in der Nähe von Wärmequellen, z.B. Heizkörpern, Öfen oder anderen hitzeentwickelnden Geräten aufgestellt werden.
6. Das Gerät darf nur an genormte Steckdosen angeschlossen werden.
7. Plazieren Sie das Gerät so, daß keine Gegenstände, Flüssigkeiten oder Staub in das Geräte-Innere dringen können.
8. Wird das Gerät über einen längeren Zeitraum nicht benutzt, ziehen Sie das externe Steckernetzteil aus der Steckdose.
9. Das Gerät sollte von einem qualifizierten Fachpersonal gewartet werden, wenn:
 - das externe Netzteil beschädigt ist oder
 - Gegenstände oder Flüssigkeiten in das Gerät eingedrungen sind oder
 - das Gerät im Regen war oder
 - das Gerät infolge eines Sturzes beschädigt wurde oder
 - das Gerät in seiner normalen Funktionsweise gestört sein sollte.
10. Nehmen Sie Reparaturen nicht selbst vor, sondern lassen Sie diese von einem qualifizierten Techniker durchführen.



Konformitätserklärung

Dieses Produkt entspricht den nachstehend aufgeführten EMC Richtlinien EN 50082-1, EN 50091-1, EN60005
Vetreter in der EU, Name und Adresse des Herstellers gemäß der Richtlinie 2001/95/EG:

MAM Music and More, Nürnbergerstr. 14, 90762 Fürth/Bay.

Fürth, 1.9.2015

Ort, Datum

Unterschrift des Bevollmächtigten

MAM Music and More gewährt für dieses Produkt eine Garantie gegen Material- und Verarbeitungsfehler für einen Zeitraum von vierundzwanzig (24) Monaten, sechs (6) Monate für die folgenden Verschleißteile und Zubehör: Netzteil, Potentiometer, Kabel. Wenn sich das Produkt unter normalen Umständen als defekt erweist, wenden Sie sich bitte an Ihren Fachhändler oder an unsere Hotline mb33.service@mam-germany.de .

Die Garantie gilt nur bei Vorlage des Kaufnachweises bestehend aus einer Original-Kaufquittung oder eines Kassenbelegs mit Angabe des Kaufdatums, des Händlernamens und der Modellbezeichnung.

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Specifications

VCO	Waveforms: sawtooth and square mixable Tune control: +/- 50 cent Switch for Autotune Auto Slide Function Range: 4 octaves
VCF	24dB lowpass filter Cutoff frequency control (20Hz - 20kHz) Resonance control ENV-modulation depths control
ENV	control for decay time (200ms - . 2,5Sek)
VCA	Control for built in Envelope generator with set (non-modifiable) parameters
ACCENT	control for Accent-intensity; triggered at velocity values > = 120
SOCKETS	output socket VCF input socket Socket for Midi In Socket for external power supply
CONSUMPTION	MB33 0.5 VA, AC power supply 9.6 VA
DIMENSIONS	147.5 x 85 x 49 mm W / D / H
WEIGHT	0,430 kg