

KT-M1



Manual

Operating System 1.32



Thank you...

for choosing the KAT Percussion KT-M1 module. You have chosen wisely. Your new sound module comes with an open sound architecture and a universal trigger interface. To get up and running with your KT-M1 module, we recommend taking the time to read this manual.

It provides a concise presentation of all functions you need to be aware of and everything you need to know to enjoy this feature-rich instrument.

Have fun!



= important advice



= practical tip

= note



= note for advanced users

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*= PAGE for settings of single Drum-Channels

1 Intro

Thank you for choosing the KAT Percussion KT-M1 module. You made the right choice. Your new instrument combines first-class sound with highest flexibility. The KT-M1 module has an open sound architecture and offers 15 independent trigger channels, 4 audio outs and 4 GB sound memory.

Trigger

The KT-M1 has an ultra-fast and precise trigger interface and allows virtually latency-free playing with a huge dynamical range. Depending on the pads used, several zones are available for triggering different sounds. The snare channel, for instance, supports 3 zones (head, rim, cross stick), the KT-M1's tom channels provide 2 (head, rim) and the cymbal channels 3 (edge, bow and bell). In addition, the cymbal channels feature a "Choke" function that allows drummers to abruptly silence the cymbal sound in the same way as on an acoustic kit.

Sounds

The sounds of the KT-M1 are convincing through an absolutely natural listening experience. This is achieved by a complex multi-layer method. Drums and cymbals were recorded at hi-end recording studios with sophisticated multi-micing and at various distances. All sounds were mixed in stereo, some rather "dry" and others with clearly audible room ambiance.

The KT-M1 is "multi-layer", meaning every Instrument is recorded at many different volume levels. So, the intensity of a stroke not only affects the volume, but also the sound and frequency response. Some of the factory presets consist of up to 128 single-layers! The result is an absolutely natural sound performance and an outstanding authenticity of the samples.

You can assign any sound to any drum channel. However, there are instruments with multiple (sound) zones, which are only fully available when they are controlled by a matching pad (for example, cymbal sounds with 3 zones: edge, bow, bell). Each drum sound is saved as a single file and sorted in the respective folders. This way, you keep track of everything and can organize your sounds simple and straightforward.

Memory locations (KITs)

The KT-M1 sound module provides 4 GB of sound memory space with 100 presets (KITs). In contrast to common practice, where memory slots are divided into factory-KITs and (blank) user-KITs, in the KT-M1 all KITs are already preconfigured at the factory and can also be modified and saved according to your needs. Of course, you can rename and rearrange KITs to make access and handling on stage easier. Please note that for this, the SAVE mode has to be enabled (see page 59).

Play-Along function

If you like to practice with songs or backing tracks, you can load standard .WAV files in CD quality (stereo, 16 Bit/44,1 kHz) into the module via USB and then assign them to a KIT. Alternatively, you can connect a CD or MP3 player to the line-in jack. Of course, you can also use this input for other instruments or a monitor mix (live, studio).

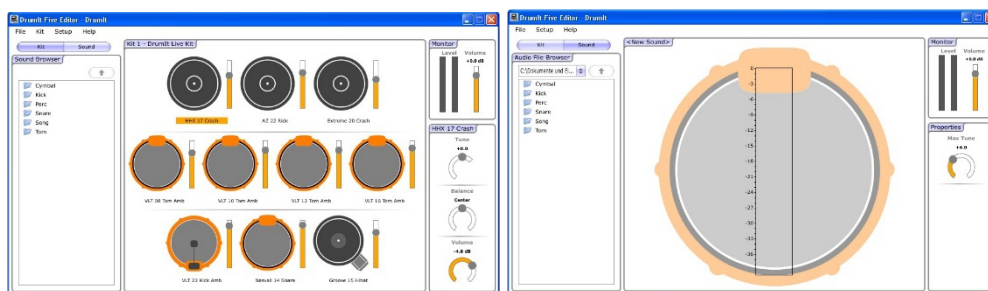
Metronome

The built-in metronome not only helps you with practicing and refining your technique, but can also be used for live performances. You can save one individually programmed metronome per KIT. There is a variety of time signatures and sounds available and the tempo can precisely be adjusted according to your specifications. The metronome can as well be used as a one or two bar count in: The Click automatically stops in the respective mode.

PC / Mac Editor

The KAT KT-M1 is fully compatible with the 2 BOX DrumIt Editor. With this software editor you can easily manage your module from your computer, and even create your own sounds in KT-M1 format. Once the KT-M1 module is connected to your computer (Mac or PC) via USB, you can organize and manage the 100 internal KITs. Assign sounds from the extensive internal DrumIt library and make your personal settings (tuning, volume, pan). You can preview the sounds comfortably on the computer and edit settings with ease.

In addition, you can create your own sounds in the specific KT-M1 format. Create your own multi-layered sound files from .WAV files, eg. from recordings of your acoustic set or sounds from sample libraries.



The 2BOX Editor is available as a free download at www.2box-drums.com.

2 Important Safety Precautions



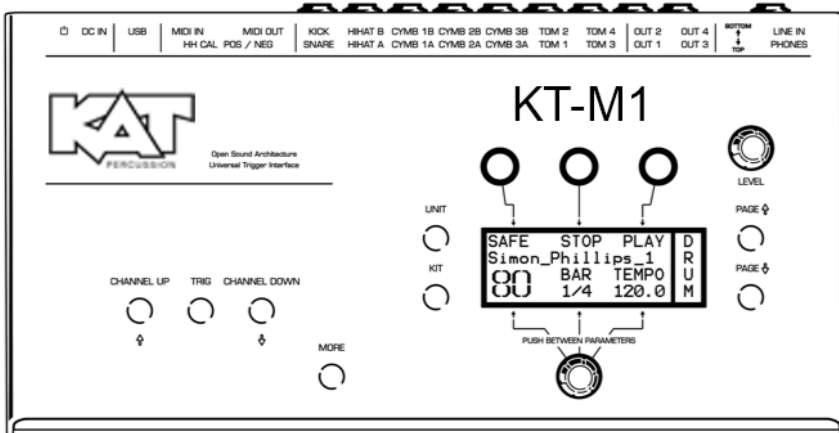
Never try to open or modify the power supply adapter.

- If the power supply is damaged, be sure to purchase a new original adapter. When using a third-party adapter, make sure it is a 12V/1000mA DC power supply (100-240V).
- Never use the power supply outdoors or in damp locations.
- The KT-M1 module operates at low power and should therefore pose no particular hazard. We nevertheless urge you to operate it in a responsible manner.
- Do not allow any liquids to penetrate inside the unit.
- Never drop the unit.
- Never apply excessive force to the module or its controls.
- Never expose the module to extremely hot ($>40^{\circ}\text{C}$) or cold (below 0°C) temperatures.
- Avoid covering the module's bottom or rear panel, or its power supply adapter with blankets and the like. These areas become hot while the unit is in use, and this heat needs to be dissipated in one way or another.
- In short: be sure to handle the KT-M1 module with the same care as any other electronic device you own. This will ensure maximum enjoyment for years to come.

3 Basic Know-How

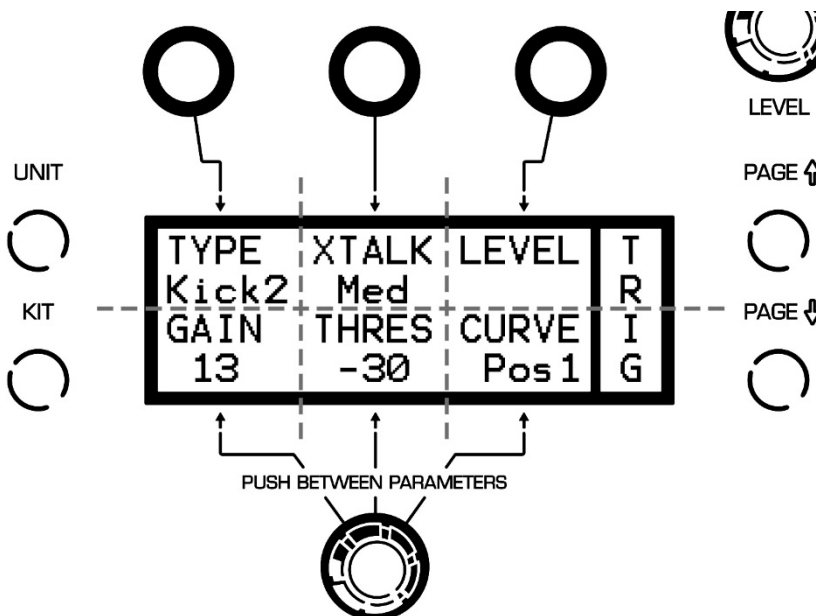
3.1 Operation

The module's user interface is highly intuitive and based on two menu items (UNIT and KIT), each with a number of parameter pages. The parameter pages can be selected sequentially using the PAGE UP and PAGE DOWN buttons. There are no secondary levels or hidden menu items.



The main page comprises six logical areas. The three DATA buttons above the display are assigned to the values or functions that appear in the top row. Press the button above the desired entry to set values or select functions.

The three entries in the bottom row are controlled using the rotary knob below the display. This knob can be used to set the value of the parameter that is currently selected. To select a different parameter in the bottom row, simply press the knob. The flashing entry refers to the parameter that is currently selected. Hold MORE and press the knob to toggle between alternative parameters indicated by an arrow.



3.2 Menu structure

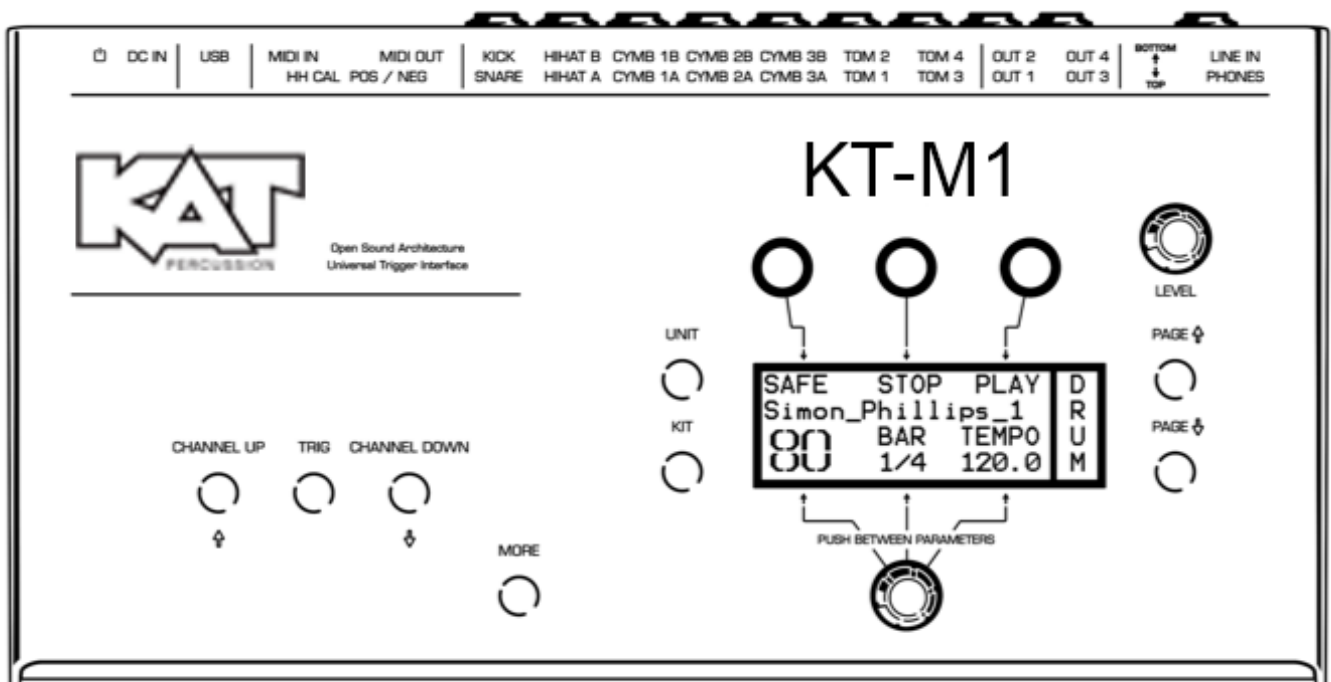
The KT-M1 module is characterized by a simple and intuitive menu structure. There are two general operating modes:

UNIT: In UNIT mode, you make general settings for your module.

KIT: In KIT mode, you will find all pages that you need to edit a KIT. A “KIT” is a set, factory made or programmed by you, that contains all drum channel, sound, effect, tempo and song settings and is stored on one of the 100 program memory locations.

Each mode has a number of pages, on which the various functions are grouped thematically. There are pages that contain global settings and others that allow separate settings for each drum channel. The latter are indicated by * in the chapter heading and the table of contents.

Scroll through the respective menu with PAGE ▲ or PAGE ▼ to select the desired page.



3.3 USB mode

When you connect the KT-M1 module via USB to your computer (PC or Mac) and run it in USB mode, it will be recognized and displayed as a "normal" memory drive. The module now behaves exactly like an external USB hard drive or a card reader. You can e.g. exchange, move and copy the sound files by drag & drop between your computer and your KAT Percussion module. This makes the management of KAT Percussion sounds as easy and straightforward as working with digital photos, MP3s or Office files.

In order to start the KT-M1 module in USB mode, simply hold down the left DATA button above the display, while powering up the unit.



No USB connection



Active USB connection

When the module is correctly connected to the computer, "R" (below "Stat") symbolizes read mode and "W" write mode. Please note that errors may occur in the file system when you disconnect the USB cable while the module is in read (R) or write mode (W).














Back Up

When your KT-M1 module is connected to your PC via USB, you can easily save the content of the module so as to prevent accidental loss of your sound files.

Copy the uncompressed files to your computer or use a conventional back-up program.

3.4 File-System

 .metadata_never_index	METADATA_NEVE...	0 KB
 DrumItOS1.36.3.bin	BIN File	133 KB
 Empty.dkit	DKIT File	151 KB
 globalconfig.dcfg	DCFG File	10 KB
 KT-M1 Quick Start Guide v3....	Adobe Acrobat D...	826 KB
 TPK 4.01 FACTORY.syx	SYX File	35 KB
 TPK 4.01 USER.syx	SYX File	35 KB
 TPK 5.0KS FACTORY.syx	SYX File	35 KB
 TPK 5.0KS USER.syx	SYX File	35 KB
 TPK FACTORY KITS.dkit	DKIT File	151 KB
 TPK USER KITS.dkit	DKIT File	151 KB








At the root level, you will find the following files:

Empty. dkit	Standard blank KIT Bank. This file contains no KIT or UNIT settings.
TPK USER. dkit	This file contains the KIT and UNIT settings programmed at the factory for trapKAT User KITS.
TPK FACTORY. dkit	This file contains the KIT and UNIT settings programmed at the factory for trapKAT Factory KITS.
DrumItOS1.3x.xx. bin	Firmware (operating system) of the KT-M1.
TPK 4.01 FACTORY. syx	MIDI System Exclusive file for trapKAT 4.01 Factory Kits.
TPK 4.01 USER. syx	MIDI System Exclusive file for trapKAT 4.01 User Kits
TPK 5.0KS FACTORY. syx	MIDI System Exclusive file for trapKAT 5.0KS Factory Kits.
TPK 5.0KS USER. syx	MIDI System Exclusive file for trapKAT 5.0KS User Kits
KT-M1 x.x. pdf	Quick Start Guide in PDF format.
globalconfig. dcfg	Index file, which is required for Mac operating systems.
.metadata_never_index	System file.

Note: The trapKAT 6.0 contains both Factory and User Kits. An upgrade chip is available to upgrade from 4.01 or from 5.0KS to version 6.0. The .syx files contained on the KT-M1 memory card are for those who wish to keep their current trapKAT version, but still use the 6.0 KT-M1 KITS. Only one .syx file can be loaded into the trapKAT at a time. Each .syx file contains 24 KITS that can be loaded into the User Kits of the trapKAT.

The folders contain the KAT sound files in the **.dsnd** format.

 1 KT Kick	File folder
 2 KT Snare	File folder
 2 KT Snare3zone	File folder
 2 KT SnareClick	File folder
 3 KT HiHat	File folder
 4 KT Ride	File folder
 5 KT Crash	File folder

 805 10 Snare Amb.dsnd	DrumIt Instrument
 Alu 14 Snare Amb.dsnd	DrumIt Instrument
 AMC Piccolo Snare.dsnd	DrumIt Instrument
 Birch 14x5 brush.dsnd	DrumIt Instrument
 DaWe 14 Snare Amb.dsnd	DrumIt Instrument
 DS Large Snare.dsnd	DrumIt Instrument
 KA Snare 14 Amb D.dsnd	DrumIt Instrument

Feel free to change the folder structure so as to organize the files in a way that works for you. Given the KT-M1 module's display size, we recommend using short folder names and working with a limited number of folder levels.



Don't forget to back up regularly!

Connect your KT-M1 module to a computer and save your files with a back-up program or by simply copying via drag and drop. It is highly recommended to make a copy the original .dkit files before making any edits. This way if you wish to undo your changes, you can load the original KIT bank and start over.

3.5 User-KIT-Bank and Single-KIT-file

User-KIT-Bank

The user-KIT-banks (TPK USER.dkit / TPK FACTORY.dkit) contains 24 KITs each (program memory locations), which are already filled with a variety of factory preset KIT setups. All KITs can be changed freely by you and then stored if necessary. Please note that for this the SAVE mode has to be enabled (see page 59).



Multiple user KIT banks

It is possible to have multiple user KIT banks. Just copy a .dkit file to your module and rename the file according to your ideas. To switch between the user-KIT-banks, you have to select the respective bank when starting the module. To do this, hold down the KIT

button when the unit is powered up. In the menu that now appears, you can choose between the various user KIT banks (PREV and NEXT) and then open the desired KIT bank (OPEN).



Switching the KIT bank

By pressing the MORE and the KIT button for 2 seconds you will enter a menu where you are able to switch to another KIT Bank. At next power up, the KT-M1 will start with the last chosen KIT Bank.

3.6 Channel overview

The table below provides basic information about the functions of the KT-M1 module.

							Choke
			1	4	8	9	
KICK	KICK	C2	Head	-	-	-	
SNARE	SNARE	F2	Head	-	-	-	
	PERC 5	F#2	-	-	Rim	-	
HIHAT	HIHAT	A2-A#2-B2	-	Bow	Edge	Foot	
TOM 1	TOM 1	D3	Head	-	-	-	
	PERC 1	D#3	-	-	Rim	-	
TOM 2	TOM 2	F3	Head	-	-	-	
	PERC 2	F#3	-	-	Rim	-	
TOM 3	TOM 3	A3	Head	-	-	-	
	PERC 3	A#3	-	-	Rim	-	
TOM 4	TOM 4	C4	Head	-	-	-	
	PERC 4	C#4	-	-	Rim	-	
CYMB 1	CYMB 1	E4-F4-F#4-(G4)	Bell	Bow	Edge	-	X
CYMB 2	CYMB 2	B4-C5-C#5-(D5)	Bell	Bow	Edge	-	X
CYMB 3	CYMB 3	E5-F5-F#5-(G5)	Bell	Bow	Edge	-	X

Drum-Channel

A Drum Channel is synonymous with the connectivity options of the module (see also page 14). The HIHAT and CYMBAL 1~3 channels have 2 connectors—A and B. Input A receives pad signals, and input B optional control signals (HH Control, Bell Control).

Trigger-Channel

The KT-M1 module provides 10 connectors for pads (i.e. drum channels). But there are up to 15 independent trigger channels available, since five of the drum channels are designed as **Dual-Channels** (SNARE, TOM 1 to TOM 4). These additional trigger channels are referred to as **PERC 1** to **PERC 5** (see table) and can be edited like the other drum channels. The additional channels can be controlled via both MIDI and pads.

MIDI-Note

The table shows the MIDI notes that are assigned to the individual trigger channels at the factory. Of course these settings can be changed individually (see also page 52).

There is a special feature on the Drum Channels HIHAT and CYMB 1 to 3 (highlighted in gray in the table). Each MIDI note controls one zone resp. the choke function (in the table marked by ()).

Here's an example:

CYMB 1: E4 = bell, F4 bow, F#4 = edge, (G4) = choke function

The four MIDI notes are grouped together and can not (!) be changed individually. Only the first MIDI note can be edited (see page 52). The other MIDI notes are linked to the first note. The notes are always successive half-steps. If e.g., the MIDI note of the Drum Channel CYMB 1 (see example above) is changed from E4 to G4, the MIDI notes of the other zones automatically change accordingly.

CYMB 1: G4 = bell, G#4 = bow, A4 = edge, (A#4) = choke function

Please make sure that there is no overlap with other channel settings.

Zone

Similar to an acoustic instrument that sounds different depending on where it is played, there are sound areas, called zones, which, depending on the type of drum channel (e.g. TOM, CYMB), have different sounds assigned to. The various types of Pads feature in turn playing areas (zones), corresponding to the respective (sound) zones.

Please note that you may not be able to use all of the sounds when you connect a pad in which the playing zones do not match the zones of the drum channel. For example, if you use a tom pad on a CYMBAL channel, you will not be able to trigger all sounds.

Trigger-Channel PERC 1 to PERC 5

To edit a **PERC Channel**, you have to hold the MORE button while you press the TRIG button

If there is no sound assigned to a PERC channel, the rim sound of the associated trigger channel is used automatically.

Example:

Situation	Trigger channel	Assigned sound	Zone	
			1	8
No sound assigned to the PERC-Channel	SNARE	Maple_10_Snare	head sound "Maple_10_Snare"	rim sound "Maple_10_Snare"
	PERC 5	-	-	-
With sound assigned to the PERC channel	SNARE	Maple_10_Snare	head sound "Maple_10_Snare"	-
	PERC 5	Bobs 1950 cowbell	-	sound "Bobs 1950 cowbell"

3.7 Connecting FSR Pads

The KTB (KAT Trigger Box) and the FTB (FSR Trigger Box) are devices that enables you to use FSR (Force Sensing Resistor) heads and pads. The KTB and FTB can accommodate up to 12 single zone heads or 6 dual zone heads, as well as multi-zone FSR instruments such as Alternate Mode's jamKAT™ and hybriKIT™. The outputs of the KTB or FTB can then be connected directly to the KT-M1.

Compatible products for the KTB and FTB include:

Alternate Mode's hybriHEAD™, hybriPAD™ altZONE™ eRIM™, jamKAT™, hybriKIT™

Aquarian's onHEAD™ and inHEAD™

KAT's trigKAT™

Setting Up The KTB or FTB for FSR Heads and Pads

Plug in the AC adapter and turn the "Sensitivity" dial until it clicks. This powers on the unit.

For single zone heads, use a MONO 1/4" cable to connect from the head to the 1/4" input of the KTB/FTB. Use another MONO 1/4" cable to connect from the 1/4" output of the KTB/FTB to the KT-M1 Module.

For dual zone heads, use a STEREO 1/4" cable to connect from the head to the 1/4" input of the KTB/FTB. Use another STEREO 1/4" cable to connect from the 1/4" output of the KTB/FTB to the KT-M1 Module.

The center zone of the dual zone pad or head is the "HEAD" signal, and the outer zone is the "RIM" signal.

Important: The correct cable must be used or the pads and heads will not work.

Start with the following settings and adjust to your liking.

KTB/FTB Sensitivity = Set the Sensitivity Dial 3/4 up (or 3 o'clock)

Pad Type = PADPP

Gain = 4

Threshold = -38

XTalk = OFF

Curve = NEG1

Using Multi-Zone Instruments Such As The jamKAT™ and hybriKIT™ With The KTB or FTB

The KTB/FTB has a HD15 IN and a HD15 OUT connector. This is for connecting Alternate Mode's jamKAT™ or hybriKIT™ instruments to the KTB/FTB. Use Alternate Mode's "HD15 Input Cable" to connect from the jamKAT™ or hybriKIT™ to the HD15 IN on the KTB/FTB. The HD15 IN connector is routed to both the HD15 OUT and the 1/4" OUT connectors of the KTB/FTB simultaneously. This means you can either use the HD15 OUT connector or the 1/4" OUT connectors to connect to the KT-M1.

The best way to connect a multi-zone instrument from the KTB/FTB to the KT-M1 is to use Alternate Mode's "HD15 Output Cable". This breakout cable is a HD15 to 1/4" cable. The Mono plugs are numbered with the pad number it connects to (eg. TRS plug #1 connects to pad #1 of the instrument). Choose a KT-M1 channel for each pad on the instrument, plug the corresponding TRS jack into the KT-M1 input for that channel, and assign the desired sound to that channel.



HD15 Output Cable

Note: The KT-M1 has 10 trigger inputs. If using a multi-zone instrument with more than 10 zones, a "Y" cable must be used on any of the KT-M1's dual channel inputs. The Snare and Tom channels are all dual channel inputs. This will create an additional input for the instrument. From there, a sound can be assigned to each zone of that channel (Snare, Snare Rim or Tom, Tom Rim).

Refer to the KTB/FTB manual for more details on connectivity.

4 Connections



This module provides the following inputs and outputs:

- USB** This port lets you connect the module to a computer (PC or Mac). The USB port on the KT-M1 is a 1.1 port (full speed - 12 Mbit/s) and compatible with USB 1.1 and USB 2.0. The KT-M1 module is designed as a standard USB mass storage device and requires no driver installation. Once the module is connected to the computer and started in USB mode, it is immediately recognized as an external storage drive. You can now handle the module like an external hard drive or a USB stick.
- 12V DC** This is where you connect the external power supply.
- MIDI IN** Connect this to the MIDI OUT socket on the external MIDI controller to allow the module to receive MIDI messages.
- MIDI OUT** Connect this to the MIDI IN socket of the device that should receive MIDI messages from the module.
- Channels** Connect your pads to the inputs that correspond to the instrument you wish to trigger. The hi-hat controller needs to be connected to the HIHAT B socket. The B channels of CYMB 1~3 are intended for pads that accommodate 2 stereo cables. Given that all inputs are balanced (stereo), be sure to only connect stereo cables.
- OUT 1~4** These are the KT-M1 outputs, which can be connected to a mixer or amplifier. By default, OUT1 and 2 transmit the mixed stereo signal. OUT3 and 4, on the other hand, are assigned to BUS3 and BUS4 respectively. If necessary, OUT 1 and 2 can also output BUS signals (BUS1 and BUS2). This can be set on the UNIT-OUT page.
- PHONES** Plug your headphones into this 1/4" stereo phone jack (recommended impedance 32 Ω - 600 Ω). Adjust to the desired volume with the LEVEL control LEVEL control right above the display.
- LINE IN** This is where you can connect an external signal source. You can use a stereo cable (for your smartphone, for instance) or a mono cable (e.g. to listen to the monitor signal via the KT-M1 in a live setting). If you plug in a mono cable, the audio signal is only heard in the "center", when you select "mono" on the page OUT in the menu UNIT (see also page 55). Please note that the factory default setting of the LINE IN volume is set to "0" in the MIX. To hear LINE IN you will need to raise the value.



Connector Assignment

All pads are connected with stereo jack cables. The trigger signal for the main zone is always on the tip of the plug, the signals of other zones or controllers are on the ring.



Additional Trigger-Channels

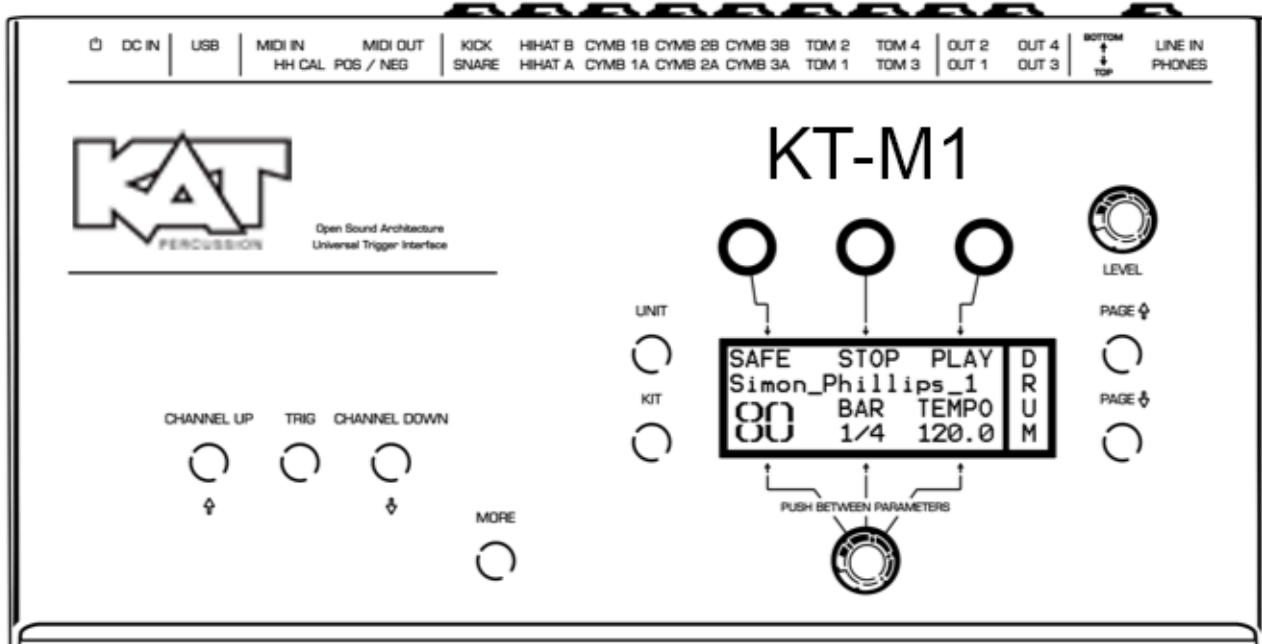
It is possible to use an additional five trigger channels (PERC 1 to 5) to increase the number of pads connected to the KT-M1 module from 10 to a total of 15 pads.

In order to be able to use the additional trigger channels, connect two pads with a Y-splitter cable (1 x stereo jack to 2 x mono jack) to the SNARE or the TOM channel. Here, the stereo plug is inserted into the module and the two mono plugs into the pads.

Important! If you connect the pads this way, you can only use the main zone (e.g. head) and will lose all other trigger signals (e.g. rim).

For example, you connect two pads to a TOM channel as described above. On both pads only the head sensor works, but no longer the rim sensor. On one side you lose the rim as a trigger source, but on the other hand, you gain an additional playing area, to which you can assign a sound of your choice.

5 Controls



CHANNEL UP / CHANNEL DOWN

The CHANNEL UP and CHANNEL DOWN buttons on the left are used to select the drum channels sequentially for editing, etc. To see which channel is currently selected, take a look at the “UNIT CHAN” page. Alternatively, channels can be selected simply by hitting the assigned pad. To switch to the selected channel’s Trigger channel (PERC 1~5), press the MORE and TRIG buttons simultaneously.

TRIG Button

Press the TRIG button to audition the sound assigned to the selected channel. Press MORE+TRIG to select the associated Trigger channel (rim).

MORE Button

With the MORE button you can access the additional trigger channels (PERC 1 to 5 - see above). You also need the MORE button for additional functions and operational steps (such as undo / redo, see page 25).

With the help of the MORE button you can e.g. call up the most recently visited edit page in the modes UNIT or KIT. For this, hold down the MORE button and press UNIT or KIT. Now the display will automatically jump to the last page you were on (for example KIT VOL, or UNIT TRIG) and you do not have to scroll through the entire menu again.

If you hold down the MORE button, you can use the DATA buttons to call up parameter values in reverse order – i.e. backwards.

UNIT Button

This button takes you to the "UNIT" mode and the corresponding pages. In the UNIT menu, you make settings of parameters that affect the entire KT-M1 system and apply globally to all KITS (e.g. mixer, trigger, MIDI and general pad settings).

KIT Button

Pressing this button, you enter the "KIT" mode with the corresponding pages and change the respective KIT settings. The KT-M1 is in KIT mode when the module is powered on.

DATA Button

These three buttons are used to stepwise change the parameters that are displayed in the upper two rows of the display below. Examples: saving of settings, undo / redo steps, start / stop commands for the metronome respectively the media player).

DATA Controller

This knob can be used to set the value of the parameter that is currently selected. To select a different parameter in the bottom row, simply press the knob. The flashing entry refers to the parameter that is currently selected. Hold MORE and press the knob to toggle between alternative parameters indicated by an arrow.

LEVEL Control

This control adjusts the overall volume of the module. By default, this affects both the headphone output and the main outputs OUT1 and OUT2; but in the menu the latter can be uncoupled from the LEVEL control, so that your output always has a fixed level (see page 55 UNIT – OUT).

PAGE Button

Use these buttons to move through the respective menus (UNIT or KIT).

Display

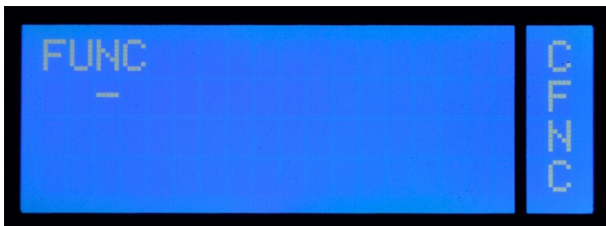
The display of the KT-M1 Module can give a readout of up to 6 parameters. In general, these are three below the DATA buttons and three above the DATA controllers. The name of the parameter is always in the upper row (see example: SOUND, LAYER, VOICE, ATTACK, HOLD, DECAY) and the value to be edited beneath (see Example: ATTACK = .003).



However, there are pages in which the value extends over several fields. However, from the context it is obvious what it is about. In the example below, the entire second row is used for the KIT name and the KIT number is displayed without a heading.



In addition, on some pages not all the buttons / controllers have a function assigned. On the page MIDI (see example below) two of the three controllers have no function.



On the right side, a separate, vertical section of the display always shows which page you are currently on in the menu.

6 Setting Up and Calibrating the Hi-Hat

The hi-hat is the most complex instrument of your drum kit. The KT-M1 module has been designed to accommodate a vast number of hi-hat pads and controllers of several manufacturers. This flexibility, however, also means that there are a number of parameters that need to be set to take advantage of the KT-M1's full potential. In most instances, these setup and calibration steps only need to be performed once.

Just follow the steps below to set up your hi-hat within minutes.

1. Connect the hi-hat pad and optional hi-hat controller (if available) to the corresponding inputs on the module. Input A is to be used for the trigger signals while Input B is to be used for the control commands.
2. Navigate to the UNIT-HCAL page. Remember that this page is only displayed while the hi-hat channel is selected. Use the CHANNEL buttons to select the hi-hat channel or simply hit the hi-hat pad.
3. Next, specify the hi-hat type you connected.

DEF	All popular hi-hat types and brands
2BOXHH	2BOX DrumIt Five Hi-hat
ALEHH	Alesis Crimson hi-hat controller, KAT eHAT ²

4. Set the RAW value so that it matches the connected pad. Use a screwdriver to change the setting of the recessed screw (HH Cal) on the module's back panel. The values below are merely indications of what might work for you. Feel free to tweak the setting to adapt the response to your playing style.

Yamaha	850-900
Roland	800-850
Alesis	830-880
2BOX	600-650
KAT eHAT ²	850-997

5. Start the calibration process:
 - 5.1. Press the leftmost DATA button once. A closed hi-hat icon appears in the display and starts flashing.



- 5.2. Close the hi-hat pad or press the controller's pedal with your foot.

5.3. Press the leftmost DATA button a second time. An open hi-hat icon appears in the display and starts flashing.



5.4. Open the hi-hat pad or remove your foot from the pedal.

5.5. Press the leftmost DATA button yet again to exit the calibration function.

5.6. The display shows “done”. The hi-hat has been successfully calibrated. If the message “NoChg” is displayed instead, the calibration could either not be performed or was repeated with the exact same settings. If the calibration routine failed, start by repeating steps 1~4 and then calibrate your hi-hat again.

6. If the calibration was successful, you can now check whether the hi-hat responds to your playing as expected. If you are not happy with the response, either repeat the calibration steps or fine-tune the following parameters.

PFACT Increase this value to raise the calibration threshold. This is useful for a consistent “foot chick” (pedaled hi-hat) and “foot splash” (quick release of the pedal after a chick) sound. We recommend taking your time to find the setting that you are most comfortable with.

POFF This parameter allows you to change the hi-hat’s calibration range: higher values extend the range, while lower values narrow it down. Bear in mind that changing this setting also affects the PFACT setting. We recommend editing this parameter only once you are thoroughly familiar with the system.

7. Another important aspect is the hi-hat channel’s trigger response. This can be set using the relevant menu items.

UNIT-TRIG This is where you set the hi-hat pedal’s response and sensitivity. Set the main parameters (GAIN, THRES, CURVE) to match your playing style. The most important of these is GAIN. Set it so that only the most forceful strikes produce a Level value of 0.0.



UNIT-HSET This page is used to set the hi-hat pedal’s sensitivity/level (SENS) and its dynamic response (CURVE).

KAT eHAT2 Settings

GAIN = 0
THRESHOLD = -36
TYPE = ALEHH
CURVE = NORM

PFACT = 60
RAW = 847-997
POFF = 27144

Important: A **Mono** cable must be used with the eHAT2 with the ALEHH pedal type setting.

The POFF and RAW number values depend on where the HH CAL screw is set . The KAT eHAT2 has a very wide dynamic range, and can be successfully calibrated regardless of the HH CAL screw position. The settings above were calculated using the default HH CAL screw position.

This completes the hi-hat settings!

7 Menu Structure

UNIT

Menu: The UNIT menu contains settings that apply to the module as a whole. This means that they affect all KITS (presets). they affect all KITS (presets). they affect all KITS (presets). they affect all KITS (presets).

MIX: This is where the internal mixer is located. The mixer allows you to set and balance the levels of all channels/instruments.

CHAN: This is where you can select trigger channels for editing (although you can also select trigger channels simply by hitting the corresponding pad).

TRIG: This is where you will find the main trigger settings for each channel. Here are a few examples: What pad type did you connect? How responsive should the pad be? Which dynamics curve best matches your playing style? It would be a good idea to take some time to familiarize yourself with these settings. We are confident you will be impressed by the KT-M1 module's responsiveness once all settings are in place.

HCAL*: This is where you set up your hi-hat and calibrate the corresponding pad. See below for a detailed discussion of these settings.

HSET*: This page is used to fine-tune the settings you made on the HCAL page. Use it to ensure the response matches your playing style.

SPEC: This page allows you to set aspects that help you avoid double triggering and cross-talk. This is especially important for acoustic drum triggers you may be using.

INTF: This page is used to specify the MIDI and routing settings for each individual channel. Here you can select MIDI channels, route the signals to the mixer and assign the required channels to DIRECT OUTs.

- OUT:** This page allows you to set the output routing. For determining which signals should be assigned to the MAIN outputs (OUT 1 and 2) and which to the PHONES connector, etc.
- METR:** This is where you select the sound of the built-in metronome.
- MIDI:** This page allows you to set global MIDI parameters. Should the module respond to program change messages, and which control change messages should the hi-hat transmit? These settings are important for recording MIDI data with your computer.
- PREF:** This page is used to manage the SAVE function and to reset the module to its factory defaults.
- MEM:** This is where you can check the remaining memory capacity for additional sounds.
- INFO:** This page displays the firmware's version number.

* (only available after selecting the hi-hat channel)

KIT

- Menu:** The KIT menu allows you to manage and edit the internal memory slots. The module comes with 100 factory KITs (memory slots). Those KITs can be edited and overwritten with your own settings. The KIT menu allows you to assign the desired sounds to the selected KIT, to edit their settings, to configure the metronome and playback functions and to adjust the built-in equalizer.
- PROG:** The KIT home page allows you to select a KIT and to start/stop the built-in metronome or song player.
- DRUM:** This page is used to assign a sound to the selected drum channel and to set the tuning and volume.
The channel can be selected using the CHANNEL buttons (left) or simply by hitting the assigned pad.
Note: The Rim channels of toms 1 through 4 and the snare (PERC 1~5) can be selected by simultaneously pressing the MORE and TRIG buttons.
- ENV:** This is where you fine-tune the selected sound and specify the loop setting for each channel.
- CFNC:** If you like, you can also assign a function to a pad rather than a sound. Doing so would allow you to start and stop the metronome, or to select the next KIT by hitting such a pad.
- KFNC:** The HHPOS function on this page allows you to set the hi-hat's opening level ("bashiness") without recalibrating the pad. This is especially useful if the left foot is used for something else (like double bass drum playing, for instance).
- VOL:** This is where you set the level and stereo placement (pan) of the selected channel.
- EQ:** Each KIT is equipped with a 3-band equalizer. It can either be applied to all instruments or just for a specific channel.

ACMP: This page contains the built-in player. Use it to specify whether you wish to play to a song or the built-in metronome. The metronome's settings and the tempo can be customized and saved.

8 Saving Your Settings

Any changes you make can be saved internally.

Important: Your settings can only be saved after unlocking the SAVE function in the UNIT-PREF menu (you only need to do so once). Press the leftmost DATA button to switch the SAVE function “On”.



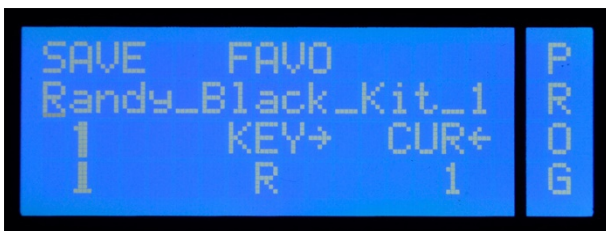
Saving one KIT

Changes you wish to keep after editing the settings on a KIT page require that you save the KIT in question.

If the settings of selected KIT no longer correspond to the stored version, a “?” symbol appears next to **SAVE** on the KIT home page.



Press the leftmost DATA button above the display.



Pressing the button above SAVE yet again will write your changes to the selected KIT.

Renaming a KIT

To rename a KIT, press the button above SAVE on the KIT home page.



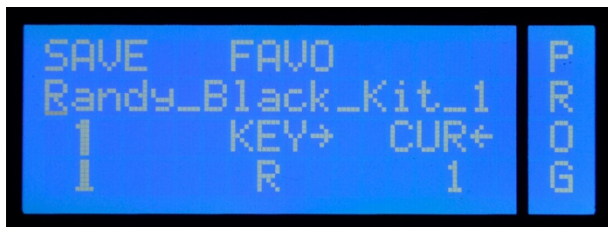
You can use uppercase and lowercase letters, numbers as well as several special characters for the names you enter. Use the knob to select the desired character (KEY flashes) or hold down the MORE button while pressing the knob to insert a space. Press the knob without holding down the MORE button to select the CUR parameter. Now, the knob can be used to move the flashing underline cursor to another position you want to edit.

Holding down the MORE button while rotating the knob towards the right allows you to insert new spaces. Rotating it to the left in this state deletes the character at the cursor position. To confirm the name, press the leftmost DATA button above the display (SAVE).

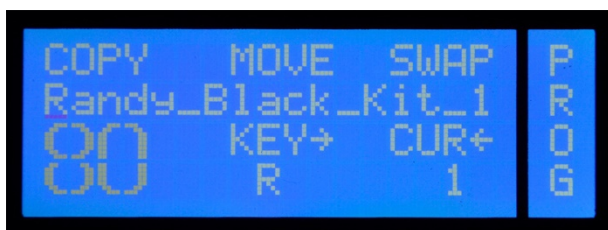
Copying, Moving and Swapping KITS

Existing KITS can be moved (MOVE) to a different memory slot, swapped with other KITS (SWAP) and copied (COPY).

Start by pressing the leftmost button above the display.



Rotate the knob to select the number of the KIT that should act as target for the currently selected KIT. After specifying the new KIT number, you can select among three functions: COPY, MOVE and SWAP.



Pressing the leftmost DATA button allows you to copy the selected KIT to the target memory. MOVE allows you to move the KIT towards the target memory (the KITS at and behind this position move one slot). SWAP, finally, causes the two selected KITS to change places. In this example, KIT no. 1 moves to memory 80, while the settings of KIT no. 80 move to memory location 1.

If you like, you can rename the settings during the COPY, MOVE or SWAP operation.

Saving Your UNIT Settings

When you change a setting in the UNIT menu, a “?” appears next to SAVE. Press the leftmost DATA button to save the changes if you want to keep them. The “?” disappears and your changes will be remembered. Please be aware that this is only possible if SAVE mode on the PREF page has been switched on. If the “?” doesn’t disappear after pressing the leftmost DATA button, the SAVE function is currently disabled.

Canceling the SAVE Process

To cancel the save process and exit the SAVE menu, simply press the KIT button. The changes you made remain valid, as the "?" next to the SAVE option in the menu indicates, but are not stored.

Dismissing Changes

If you decide not to save the changes you made, there are two ways to cancel the settings:

Simply select, without saving, another KIT, and the changes are lost.

The UNDO / REDO function offers another possibility.

UNDO/REDO

If you press the MORE button before you save, an UNDO function comes up in place of the SAVE function. If you select UNDO, the changes will be reset, but stay cached.



If you press the MORE button once again, you get a REDO option. With this, you can restore your changes.



UNDO/REDO

The UNDO / REDO function is a great way to compare new settings with the original KIT. This feature allows you to switch back and forth between two KIT variants. This way, you can check simply and easily e.g. during a sound check whether the new toms work with the band sound or not.

The various PAGES of the menu are explained in the following. To access these, scroll with the PAGE ▲ and PAGE ▼ buttons to the right of the screen.

Please note that some menu pages affect the whole KIT, while others change the settings for a single drum channel. To make clear at which pages you can make settings for single drum channels, the respective sections are marked as follows:

* = Page with settings for single drum channels within a KIT Mode

The KIT menu allows you to manage and edit the internal memory slots. The module comes with 100 factory KITs (memory slots). Those KITs can be edited and overwritten with your own settings.

The KIT menu allows you to assign the desired sounds to the selected KIT, to edit their settings, to configure the metronome and playback functions and to adjust the built-in equalizer.

Changes in the mode KIT are saved on the KIT Main page (see Chapter 8 and 9.1).

8.1 KIT – PROG



Display view: KIT with Song



Display view: KIT with metronome

NUMBER The large numeral indicates the KIT number. Use the rotary control to select a KIT (program location).

SAVE See detailed descriptions on page 21.

PLAY/PAUSE PLAY starts - if available – the song or metronome loaded with the KIT (see also page 38). Do this with the DATA button to the right.

When you have started a song with PLAY (right DATA button), the display changes to PAUSE. With PAUSE (right DATA button again), you can pause the song. The time display below TIME will flash, signaling the PAUSE status.

After assigning the metronome to this KIT you can use the right DATA button to “tap” the tempo. The metronome speed (TEMPO) is calculated automatically based on your taps. The tap functionality can also be assigned to a pad (see the “KIT CFUNC” menu).

STOP Stops playing back the song or the metronome (DATA button in the middle)

Functions for KITs with a Song:

TIME Shows the elapsed time of the song. If no song is selected, "-" appears in the display. (The knob has no function)

PITCH

This feature allows you to change the the pitch and the tempo of the song . You can adjust the tempo in a range between .50 and 1. This feature is useful for playing back the song slower while practicing.

Functions for KITs with Metronome:

BAR

Indicates the selected metronome setting. While the metronome is running, you can read the current bar and the current beat here. *(The rotary control has no function)*

TEMPO

Here you can see or edit the current tempo of the metronome. The metronome has a tempo range from 30 to 280 bpm. When you push the rotary control while holding the MORE button, an arrow appears pointing to the right and you can set the tempo in decimals. If you push the controller once more, you can change the tempo in whole bpm steps again.



Saving the Tempo

The tempo of the metronome is stored with the selected KIT. If you want to change the tempo and keep this change, you have to save the KIT (SAVE).

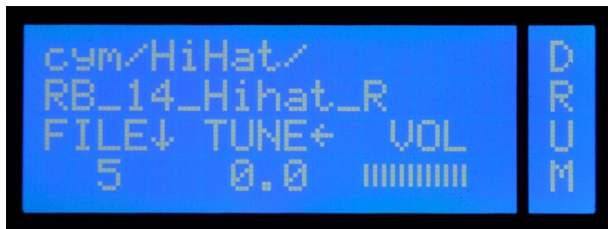
This function is useful for preparing several tempos for a live performance, which you can recall in succession by selecting the respective KITs.



STOP ALL

With the key combination MORE + STOP (DATA button in the middle) you stop the playback of all sources at once (song, metronome, loops).

8.2 KIT – DRUM*



FILE↓/FOLD↑ Here you can assign a sound to a channel. The name of the sound is displayed in the second row. The first row contains information about the folder (category of sounds). Turn the DATA controller to browse the sounds. The FILE number indicates the position within the selected folder and is not part of the sound name.

If you press the rotary controller while holding the MORE button, the display switches to FOLD↑. Now you can navigate the folders with the rotary controller. Pressing it again switches back to the FILE↓ mode. Should a deleted sound be assigned to the channel, a "?" is displayed instead of the FILE number.

With the three DATA buttons you can trigger the currently selected sound. Each button triggers a different zone, depending on the sound. With a cymbal sound, for example, you can preview Bell, Bow, and Edge, with a kick sound, of course, only the sound of the head.

TUNE← TUNE changes the pitch of the sound. The lowest pitch is at **-12** (12 semitones = one octave down). The highest achievable tuning value. Usually it is about four half-steps up (**+4**). But there are sounds that are can be changed more respectively less than 4 half-steps up. If you press the rotary control while holding the MORE button, you switch to a fine-tuning mode. Then you can adjust the pitch in decimal steps.

VOL With the rotary control you set the volume of the sound of the trigger channel. Changing this parameter will automatically affect the VOL value on the KIT-page VOL (see Section).

Please note that the volume of the channel set here affects both the volume in the mixer and the volume in the selected BUS (see also page 63). I.e.: Increasing the volume of this channel increases the volume of the single output (selected BUS) and the volume in the corresponding mixer channel at the same time. This in turn affects the sum and/or the headphone volume.



Selecting a Channel

To select a channel for editing, you can either hit the corresponding pad or select it using the CHANNEL UP and CHANNEL DOWN buttons.

8.3 KIT – ENV*



SOUND

Here you can specify which zone of the selected sound will be used. Depending on the type of sound, several zones can be controlled. For example, with cymbal sounds, three zones (**+ Bell + Bow + Edge**) are available, with snare sounds, only two zones (**+ Bell + Rim**). You change the value by pressing the left DATA button. You will be offered all possible combinations sequentially.

Example 1: tom sound: **+ +** = depending on where you hit the pad (head or rim) - the respectively assigned sound is generated

Example 2: tom sound: **- +** = no matter where you hit the pad, always the rim sound is generated.

Example 3: cymbal sound: **+ - -** = the sound of the bell is always generated.

This feature is helpful if you want to trigger a cymbal on a pad and assign e.g a crash sound on the rim of a tom pad (additional trigger channel (PERC)) and play the bell or the ride on the head.

Loop-Sounds are an exception. When a loop is selected on the DRUM page, the following parameters are available:

Loop The loop will be played until the pad is struck again (start / stop)

Loop! Regardless of the velocity, the loop is always played at the maximum level

Solo The loop is played only once.

Solo! The loop is also played only once, but with maximum volume.

LG1/.../LG3 There are 3 independent loop groups. These allow you to perform instant switches among loops while performing. Example: Let's suppose you assigned loop A to the TOM1 channel (for the verses) and loop B to the TOM2 channel (for the choruses). If both loops/channels are assigned to the same group (LG1, for instance) starting loop B will automatically stop loop A. Hit TOM1 to start loop A. Next, hit TOM2: loop B starts and loop A stops automatically. Obviously, you can also stop the running loop (without starting the other) by striking the assigned pad again.

LG1!.../LG3! As above, but with a fixed maximum level.

To avoid a double-trigger, in loop mode the threshold is internally raised to -24 dB automatically.

LAYER

With LAYER you determine the way each sample layer (volume levels) of the sound will be triggered.

Var: (default setting of most sounds) At random, the module selects a layer which is in the volume range that best matches the trigger-impulse intensity. With this setting, the typical "machine gun effect" is avoided, because even with an identical trigger impulse at the following beat, another sound layer will be used (randomly) and previously generated sound layers can still fade out completely.

Top: Regardless of the velocity, always the "top layer" sound, i.e. the loudest layer is used.

Fix: The layer best matching the trigger impulse is used. I.e. with identical trigger-impulse intensity the same layer is used.

In all three situations the audible volume of the sound corresponds with the intensity of the stroke, only the layer within the sound selected by the module changes. When a loop sound is selected, only "fix" is available.



Custom Sounds

With the Drumit Editor you can create custom KT-M1 sound files (.dsnd) from your own samples (see separate instructions for the Editor). For custom sounds with only a few layers (1-10 layers) the layer setting "FIX" should be selected for the parameter settings on this page, because otherwise the sound has an unnatural effect.

VOICE

The values **Poly** and **Mono** are available here. When "Mono" is selected, a sound layer can only sound exactly once and might be truncated.

ATTACK

This parameter defines the transient response of the sound. The minimum value "0" defines that the sound starts immediately. A value >0 sets the time until maximum volume is reached.

HOLD

With HOLD you determine for how long this maximum volume will sound. Combined with other parameters alienated sounds can be produced this way.

DECAY

This value determines how long the underlying sample of the sound will be played back. With the setting ∞ (infinity), the whole sample will be played back.



Gated Sound

With the parameters HOLD and DECAY you can create "gated sounds" (e.g. gated snare). To do this, set the HOLD value to the desired time length and a short DECAY time value.



Loops

The KT-M1 can play back loops in various playing modes. Loops can be assigned to any drum channel just like a regular sound and thus started and stopped via the pads (see details on page 30).

You can also create your own loops. With the Drumit Editor, standard .WAV files (e.g. from loop libraries) can be converted to the KT-M1 file format (.dsnd).

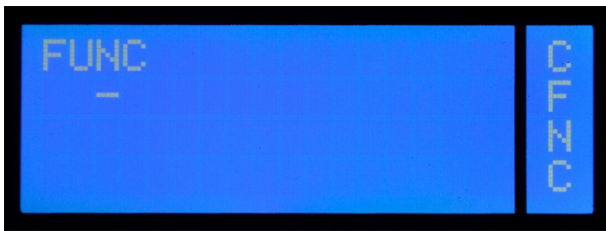
When creating your own loops, pay attention to the correct bar length of the wave file. Otherwise, the loop will not play correctly.

The tempo of loops can be edited using TUNE ← on the page DRUM in the KIT menu. Please note that this also changes the pitch.

The TRIG button can also be used for previewing loops. However, only one second of the loop is played. If you want to hear the entire loop, you have to hold the button for half a second. To stop the loop, hold the button half a second once again.

With the key combination MORE + STOP (DATA button in the middle) you stop all running loops at once.

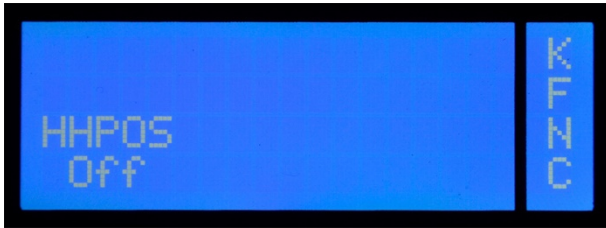
8.4 CFUNC*



Each DRUM CHANNEL (Pad) can be assigned both sounds and control functions. This is especially useful in a live situation. Press the left DATA button to select the desired function. Hold down MORE while pressing that button to return to the previous function.

- Default setting. The assigned sound is triggered. No function has been assigned.
- START** Starts the metronome or the built-in song player, depending on which of these two has been selected for the current KIT.
- STOP** Stops the metronome or song player.
- StSto** Starts and stops the metronome or song player: the first strike starts it, the second stops it, and so on.
- StPau** Like StSto, except that song playback is pauses and then continues.
- N Kit** Selects the following KIT (NEXT KIT).
- P Kit** Selects the preceding KIT (PREVIOUS KIT).
- STPLP** Stops all running loops.
- Tap** Allows you to tap the desired tempo while the metronome is running.
- Tap4** A kind of automated count-in: at the 5th strike, the metronome starts with the calculated tempo.
- Tap8** Like Tap4, but with 8 strikes.
- NONE** The trigger channel does nothing. It neither triggers a sound nor controls a function.

8.5 KFNC*

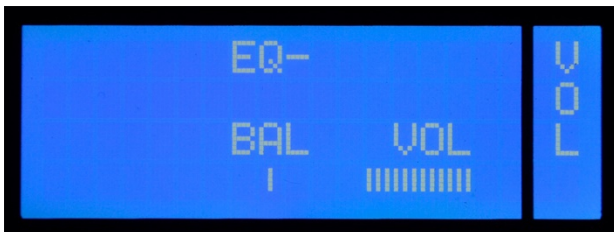


This page allows you to set the hi-hat's aperture. This setting only applies to the currently selected KIT. When this value is changed, the HH Controller is no longer available.

This function is useful when you need a “bashy” hi-hat sound to accompany double bass drum parts.

The setting range is 1 (hi-hat completely open) through 31 (hi-hat completely closed). “Off” means that the hi-hat controller can be used.

8.6 KIT – VOL*



EQ This feature allows you to specify whether the signal of the selected drum channel is sent through the EQ (see page 36) (**EQ+**) or not (**EQ-**). This feature is only available if the value for BUS on the EQ-page is set to "drum".

The BUS signal itself is not affected by the EQ. Please check pages 54 and 63 for more information about BUS settings.

BAL With BAL you determine where the sound is placed in the stereo sound image (left <> right). Please note that the setting affects both the signal going to the internal mixer and the signal on the BUS (individual outputs). If you have for instance a tom routed to BUS 3+4 and now turn BAL all the way to the right, the signal is only on BUS 4, but not on BUS 3.

8.7 KIT – EQ

VOL With VOL you control the volume of the sound of the drum channel. If you change the value, this will automatically affect the VOL value on the KIT page DRUM, which is identical with this VOL value here. See also page 29.



Each KIT is equipped with a 3-band EQ with a semi-parametric mid band.

CURVE Shows you a graphical view of the EQ settings made. Pressing the left DATA button (over CURVE) resets the equalizer. Pressing the button again restores the deleted setting.

FREQ Select the desired frequency for the mid band with the DATA button. Frequencies from 125 Hz to 8 kHz in octave steps are at your disposal. You can also set the desired frequency by using the rotary control. Press the controller and hold the MORE button. The display changes to **MID**. Now you can fine-tune the cutoff frequency of the mid band with a 1/3-octave equalizer in the range from 100 Hz to 10 kHz.

BUS Select here which signals should be routed to the KIT-EQ. The choices are:

- Drum:** The drum channels are routed individually through the EQ. Turn on the EQ on the page VOL separately for every channel you want.
- Mix:** The EQ settings are applied to the internal mixer. All drum channels are automatically routed through the EQ.
- Sub:** The EQ settings are applied to the internal SUB-mix and automatically affect all drum channels that are routed to the sub-mix.



Live Sound

If you want to process only certain instruments of your KIT with the EQ, e.g. to give the snare a little more mid without changing the tom sound, then select "Drum" as bus setting and turn on the EQ on page VOL only for the snare.

LOW The low band has a shelf characteristic, the cutoff frequency is 80Hz. You can cut or boost in a range from -12 to +12 dB. In addition, a high-pass filter at 80 Hz is available.

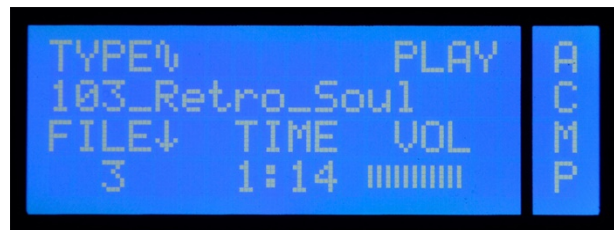
MID Here you determine how much the mid band should be boosted or cut (**MID↓**-mode). You have a control range from -12 to +12 dB. By pressing the controller while holding the MORE button you change to the **MID**. Now you can set the desired frequency (see also under **FREQ**)

8.8 KIT – ACMP

HIGH Like the low-band, the high band also has a shelf-characteristic with a cutoff frequency at 12 kHz. Again, you have a control range from -12 to +12 dB and a low pass filter at 12 kHz.





Display view: TYPE metronome



Display view: TYPE song

For live and studio applications, as well as for jamming and practicing, an internal player is provided. The settings you make here are stored in the respective KIT just like sound and equalizer settings. There are two different types of players:

TYPE Choose between the **song player**  and **metronome** .

PLAY/STOP Use the right DATA button to start or stop the song or the metronome.

VOL This sets the output level of the player. Please note that this signal is sent to the internal mixer and can be processed there, too (see also page 41).

Functions for TYPE "Metronome":

REP REP controls the playback mode of the metronome. **REP+** means that the metronome is playing until you press STOP. With **REP1** the metronome plays only one bar, with **REP2** two bars. REP1 and REP2 can thus be used as a perfect count-in.

BAR Here you can set the time signature for the metronome. You can choose from a selection of the most important variations with different accents: 1/4, 2/4, 3/4, 4/4, 5/4, 6/4, 7/4, 3/8, 5/8, 6/8, 7/8, 9/8 or 12/8. A setting of 1/4 is recommended if you do not want accents in the click.

TEMPO Here you can set the tempo. There is a tempo range from 30 to 280 bpm. When you press the rotary control while holding the MORE button, an arrow appears pointing to the right → and you can set the tempo in steps of ten. Press the control once more ←, and you can change the tempo in whole bpm steps again. The selected tempo can be saved, of course, with each KIT.



Metronome sound

In UNIT mode, on the METR page, you can select a sound for the metronome. It is a global setting that applies to all KITS. See also page 57.

Functions for TYPE "Song":



TIME Gives information on the duration of the song (the controller has no function).

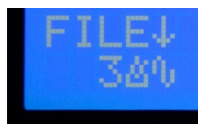
FILE↓ Use the rotary control to select the desired song. The second display row shows the name of the song (= filename). The number under FILE specifies the song position. All .WAV files on the module - regardless of their location - are listed in alphabetical order.

If the linked Song no longer exists because it was deleted from the module, a "?" appears under FILE instead of a number.

Split Wave-Mode

Press the DATA controller and hold MORE to go into the split-wave mode.

Now, next to the FILE number the symbols for song  and metronome  appear. In split wave mode, the left and right signal of the song (.WAV file) are automatically sent to separate channels in the SUB-mix (see also page 55). In effect, this means for situation 1 (see figure below) that the left channel of the song is treated as a "metronome" and the right channel as a "song". With Situation 2, it's the other way around.



Split-wave mode: Situation 1



Split-wave mode: Situation 2



Split wave Split-Wave Mode In Practice

You need the split-wave mode, e.g., if you want to play live with a backing track. To stay "on time", you maybe have produced a playback, with the music on the left and a matching click on the right. If you would let the song play just like that now, the click would be heard via the PA system. In the split-wave mode, you have the option to route the side of the song that contains the click to a different channel in the SUB-mix and to set individually to which output the click signal is sent. In our example you would set up the routing in such a way, that the click is heard only on the headphones and not on the main output (OUT1·2). How this works in detail is explained from page 55 on.

9 UNIT Mode

In the mode UNIT you make general settings. On the pages in this section, you can change the general routing and trigger settings, adjust the internal mixer and calibrate the hi-hat. The settings made here are global and therefore apply to all KITS.

Changes in the mode UNIT are saved on the UNIT Main page (see SAVE on the next page).

9.1 UNIT – MIX



The KT-M1 includes a mixer that allows you to balance out the volume levels of the drum channels. There are eight FADER groups whose levels can be controlled individually.

LINE (L) controls the line-in channel's signal and **ACMP (A)** controls, depending on the selection within the kit, either the volume of the metronome or of the song player. The assignment of this group is fixed and can not be changed.

The remaining six groups are used to control the volume levels of the drum channels. By default, the respective channels are already assigned to the following groups: **KICK (K)**, **SNARE (S)**, **HIHAT (H)**, **TOMS (T)**, **CYMBS (C)** and **PERC (P)**. You can change the assignment of every channel individually on the INTF page (see page 52).

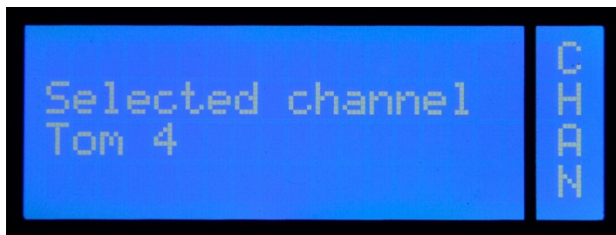
View

The mixer page shows the three currently active FADERS - with full names. The "+" in the display "+ - -" below FADER indicates which FADER group is currently selected. Again, you press the middle DATA button to switch to the next group of three: You will notice that the "+" moves accordingly. To the right of FADER a horizontal bar meter is depicted, which indicates the level of the output signal.

SAVE If you have made changes in the UNIT mode, this will be indicated by a "?" next to SAVE. To make these changes permanent, press the left DATA button. The "?" disappears and the changes are saved. Please be aware that for this the SAVE mode on the page PREF has to be switched on (see page 59). Should the "?" still be there after you pressed the DATA button, the SAVE mode is disabled.

FADER With the DATA buttons above FADER, you select which FADER group is active, i.e. which FADERS can be changed by the DATA controller. Press the knob to select the desired mixer channel. The flashing entry refers to the internal mixer's selected channel.

9.2 UNIT . CHAN



This page shows the currently selected trigger channel that can be edited. Channels can be selected in 2 ways: either strike the assigned pad or use the unit's CHANNEL UP and CHANNEL DOWN buttons to navigate to the desired channel.

9.3 UNIT – TRIG*



On this page, you can change the trigger settings for the pads and optimize them for your playing style. The parameters on this page are particularly important if you want to hook up acoustic triggers or pads from other manufacturers to the KT-M1 module.

TYPE Here you can set what trigger type is connected to the corresponding drum channel. TYPEs include various optimized trigger parameters for the respective pad type.

Please note that not all types are available on every trigger channel. See the table below for what options exist.

Type	Brands (examples)	Zones - configuration				Information
		Head/Bow	Rim/Edge	Cross-stick/Bell	Choke	
PadPP	2box, Roland	Piezo	Piezo	-		
PaPSS	Huaxin	Piezo	Switch	Switch		
PaPSY	Yamaha	Piezo	Switch	Switch		
PadPS	Roland, Alesis	Piezo	Switch	-		
Rim	various					
CyPSV	2box	Piezo	Switch	Velocity	yes	
CyPSB	Roland	Piezo	Switch	Switch	yes	
CyPS	Alesis, Roland	Piezo	Switch	-	yes	
CyPSS	Huaxin, Alesis	Piezo	Switch	Switch	yes	
CyPSY	Yamaha	Piezo	Switch	Switch	yes	
HiHat	various	Piezo	Switch	-	-	control to Input B
AcTr1	2box, Ddrum	Piezo	Piezo			small drum
AcTr2	2box, Ddrum	Piezo	Piezo			medium drum
AcTr3	2box, Ddrum	Piezo	Piezo			big drum
RubH1	2box	Piezo	Piezo			Rubber Heads S
RubH2	2box	Piezo	Piezo			Rubber Heads M
RubH3	2box	Piezo	Piezo			Rubber Heads XL
Kick1	various	Piezo				faster response
Kick2	various	Piezo				slower response

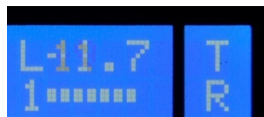
Type	Instrument												
	Kick	HH	Snare			Tom		Rim	Cymbal			Acoustic	various
			1 Zone	2 Zones	3 Zones	1 Zone	2 Zones		1 Zone	2 Zones	3 Zones	Trigger	
PadP			x	x		x	x						x
PaPSS					x								
PaPSY					x								
PadPS				x			x						
Rim								x					
CyPSV											x		
CyPSB											x		
CyPS									x	x			
CyPSS											x		
CyPSY											x		
HiHat		x											
AcTr1												x	
AcTr2												x	
AcTr3												x	
RubH1													x
RubH2													x
RubH3													x
Kick1	x												
Kick2	x												

XTALK

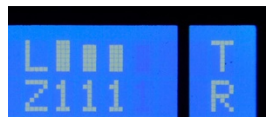
This feature can be used to prevent unwanted trigger impulses (cross talk) from other pads. If, e.g. a hard cymbal stroke triggers a tom sound, you can suppress the latter. Just select the channel of the unwanted sound (in our case: tom) and change the value of XTALK. You have the following parameter values: **Off** (no suppression), **Low** (low suppression), **Med** (medium suppression), **High** (maximum suppression).

LEVEL

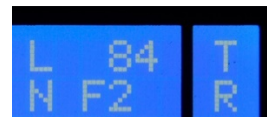
Here you can read the level of the trigger signal. There are three different views you can select by pressing the DATA button to the right.



View 1



View 2



View 3

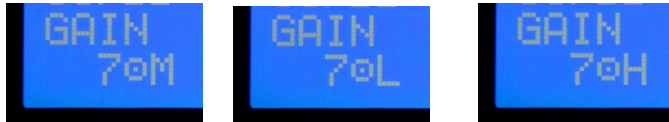
- View 1** The number indicates which zone was triggered last. The graph displays the signal level. While triggering, the dB value of the signal is shown in the top row.
- View 2** This view shows the last four strokes. You see the signal level in the first row and the zone number in the second row.
- View 3** This view gives you information about the triggered MIDI note number (N) and the velocity value (L).

GAIN

With GAIN, you can increase the level of the trigger signal. This feature is important if you use acoustic triggers or pads from other manufacturers, which may have comparatively lower trigger output. In addition, you can customize the triggering behavior to your personal playing style.

Set GAIN so that exactly all LED-meter segments are lit when you hit the hardest (see above). You have an adjustment range from +1 to +24 dB. With a GAIN value higher +12 dB the THRES value is automatically set to -36 to avoid double triggers.

The drum channels **CYMB1-3** have an **additional GAIN parameter** for the bell signal.



First, set the GAIN value (number) for the zone “bow” so that the hardest stroke triggers no bell sound. Then you can press the DATA knob while holding the MORE button to adjust the GAIN value for the zone “cup”.

You can switch between **L** (low - minimum GAIN increase), **M** (medium increase) and **H** (high increase).

THRES

With the threshold value you determine how strong the lightest stroke has to be for triggering an impulse. Useful you when you need pad to be less sensitive for stray triggers. You have a control range from -48 to -18dB.



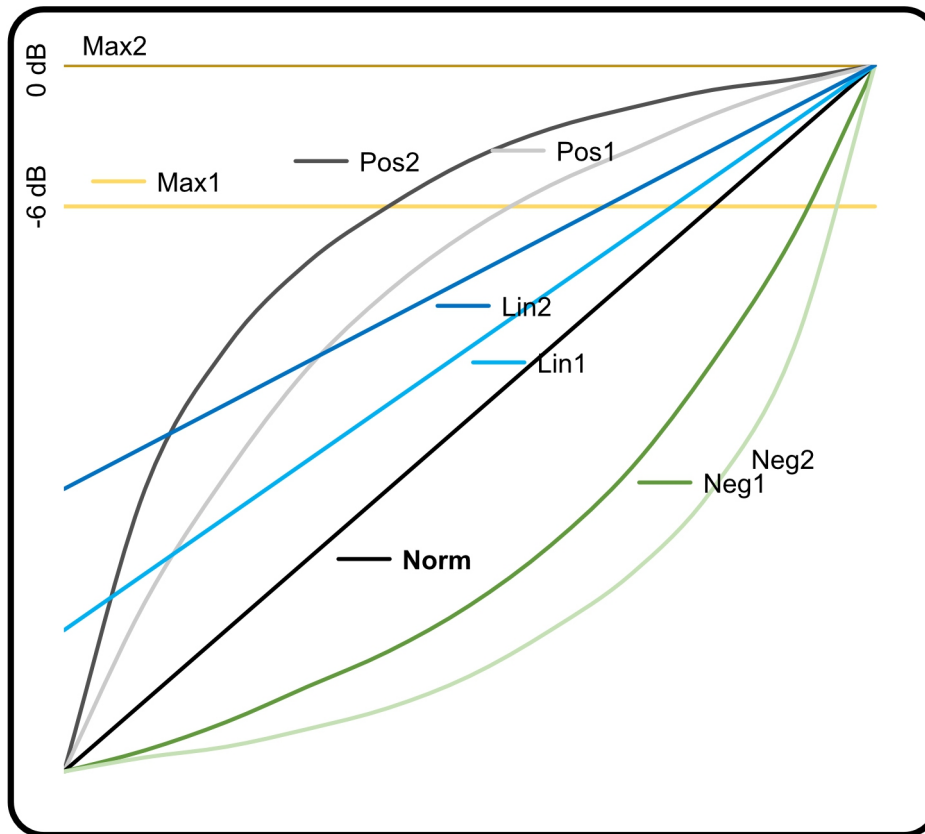
Low Threshold

The lower you set this value, the higher is the risk of double-trigger impulses and crosstalk.

CURVE

With CURVE you can set the relationship between velocity and signal volume. Nine different curves are available. Depending on the sound or application situation, different settings can make sense.

Take advantage of this feature also to adjust the trigger behavior to your playing.



Max2: Regardless of the velocity, a fixed signal level of 0dB is generated.

Max1: Like Max 2, although with a fixed signal level of -6 dB.

Pos2: The signal level increases more than the velocity. But at high velocities, the signal level increase is much smaller, i.e. the signal level changes only marginally with real hard strokes.

Pos1: Like Pos2 but the difference is not as pronounced.

Lin2: The faintest stroke triggers already a high signal level. With increasing velocity, the signal level then grows steadily and evenly.

Lin1: Like Lin2, but the initial volume level is lower.

Norm: The signal and velocity levels increase at the same rate (linearly).

Neg1: The signal level grows with increasing velocity, at first only slowly. Only at higher stroke strengths the signal level increases accordingly.

Neg2: Like Neg1, although the difference is more pronounced.



Adjusting Trigger Behavior with CURVES

With CURVES you can optimize the trigger behavior so it suits your playing best. It pays to experiment a little with the parameter values.

Depending on your playing style, the various options can give you a more realistic feel.

9.4 UNIT – HCAL



On this page important adjustments for the hi-hat are made.

CALIB On this menu page you can calibrate the hi hat, i.e. adjust it to your playing. Because of the importance, we have dedicated an extra chapter to this subject. Please read the detailed explanations starting on page 19.

RAW Depending on the hi-hat pad you connect, you may have to change the RAW setting to ensure optimum performance. The RAW value can be set with the small recessed screw (HH Cal) on the module's back panel. The values below are merely indications of what might work for you. Feel free to tweak the setting to adapt the response to your playing style.

Yamaha: 850-900, Roland: 800-850, Alesis: 830-880, 2BOX: 600-650 KAT: 547-997

LEVEL Here you can read the signal level of Zone 9 (pedaled hi hat - the DATA button has no function).

HTYP With this parameter you specify the hi-hat type you have connected.

DEF All popular hi-hat types and brands

2BOXHH 2BOX DrumIt Five Hi-hat

ALEHH Alesis Crimson hi-hat controller, KAT eHAT²

POFF This parameter allows you to change the hi-hat's calibration range: higher values extend the range, while lower values narrow it down. Bear in mind that changing this setting also affects the PFACT setting. We recommend editing this parameter only once you are thoroughly familiar with the system.

PFACT Increase this value to raise the calibration threshold. This is useful for a consistent "foot chick" (pedaled hi-hat) and "foot splash" (quick release of the pedal after a chick) sound. We recommend taking your time to find the setting that you are most comfortable with.

9.5 UNIT – HSET



HHPOS This parameter allows you to set the hi-hat's aperture. This setting applies to all KITs (presets). When this value is changed, the HH Controller loses its function—again globally.

This function may come in handy if you don't want to use a hi-hat controller and prefer a fixed aperture setting instead.

The setting range is 1 (hi-hat completely open) through 31 (hi-hat completely closed). "Off" means that the hi-hat controller can be used.

SENS Set the sensitivity of the hi hat pedal (pedaled signal) here. You have a control range of -6 to +6 dB.

CURVE There are nine different trigger curves. Select the value that supports your playing best by rotating the DATA controller. Detailed information on the topic CURVE can be found in the notes to page TRIG on page 46 ff.

9.6 UNIT – SPEC



Use this page to fine-tune the trigger settings (UNIT-TRIG).

GAINR “GAINR” (gain reduction) allows you to decrease the selected channel’s sensitivity. This function may come in handy for pads that deliver a powerful signal. Together with the “GAIN” parameter on the “UNIT-TRIG” page, this allows you to specify the optimum input sensitivity.

Please bear in mind that this function is only available for the hi-hat and cymbal 1~3 channels.

LXTR This parameter allows you to eliminate or minimize crosstalk between the head and the rim channels (local xtalk reduction). High values mean that crosstalk is attenuated more radically.

The following parameters are available: **Off, Low, Med, High, vHigh**

MASK Mask Time is used to avoid double triggers. This sets the duration during which the module will ignore subsequent trigger signals. This is useful for avoiding that head vibrations generate spurious trigger signals. You will probably need this parameter when using acoustic drum triggers.



MASK

Start by trying out extreme MASK settings to get to grips with how this function works.

9.7 UNIT – INTF*



On this page you make the global routing and MIDI settings for each trigger channel. Here you set to which BUS the respective signals should be sent and the settings for the MIDI control of each channel. Application examples expanding on this topic can be found from page 63 on.

ZONES

Here you can see how many (sound) zones are assigned to a trigger channel. The number of zones indicates how many MIDI notes are used for the channel. Please note that for all trigger channels with multiple zones the MIDI notes are a consecutive sequence that can be shifted, but not separated from each other.

example:

Cymbal 2 has 4 zones and has B4 assigned as MIDI note. Therefore, the MIDI note sequence for the cymbal 2 is:

B4 = bell, C5 = bow, C#5 = edge, D5 = choke function.

FADER

Select here to which FADER group of the internal mixer (see also mode UNIT Page MIX on page 41 the respective trigger channel should be assigned. Please note that for this purpose only the first six FADER groups are eligible, the assignment of the groups LINE, ACMP is fixed.

CHAN

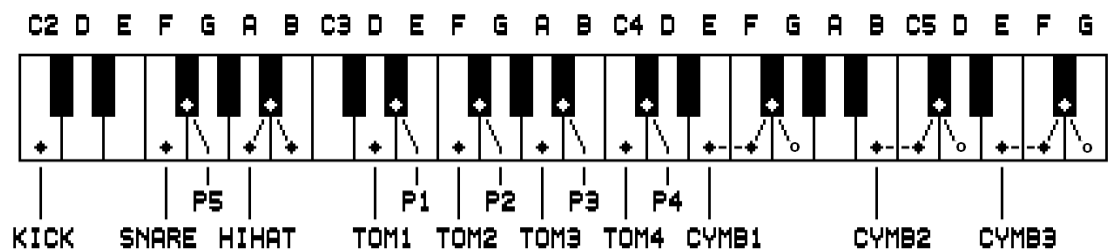
This sets the MIDI channel for the transmitting or receiving of MIDI signals for the respective drum channel. You can assign a different MIDI channel (1 to 16) to each drum channel. The default setting for all channels is the global MIDI channel (see also menu item MIDI on page 58). This channel is marked with "!" and can be set manually. To do this, turn the DATA controller to the far right.

NOTE↓

Here you can specify with which MIDI note the respective channel will send and receive "NOTE ON" and "NOTE OFF" messages with. Channels with multiple zones use a consecutive sequence of MIDI notes (see also ZONES, as well as explanations about MIDI notes on page 12). Push the DATA controller while holding the MORE button to toggle between the display of the note (e.g. "C1") and the display of the respective MIDI note number (e.g. "24").

The MIDI note number "0" equals the MIDI note "C-1". You can use the range from 0 (C-1) to 127 (G9).

Default MIDI Configuration (see also page 12)



Explanations to the figure:

P1 to P5 = PERC channels (see also explanations on PERC channels on page 13)

o = choke function (G4, D5 and G5)



MIDI Messages Hi-Hat and Cymbals

A cymbal stroke at zone 1 (Bell), 4 (Bow) or 8 (Edge) generates a NOTE ON and a NOTE OFF command. A choke generates a NOTE ON command which continues until the pad is released (NOTE OFF).

Playing the hi-hat in zone 4 or 8 also generates both a NOTE ON and NOTE OFF signal. Parallel to this, the KT-M1 produces pedal controller data. When you step on the hi-hat pedal (Zone 9), initially only a NOTE ON message is generated. When the pedal moves back up, a NOTE OFF message is transmitted. The time between the NOTE ON and NOTE OFF message determines whether a chick (long duration) or a foot splash sound (short duration) is generated.

BUS

Here you can send signals to BUS channels according to your needs. There are four single BUS channels (1-4) and two BUS groups (1+2, 3+4).



BUS

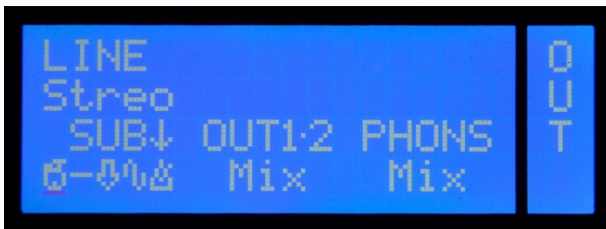
Think of a bus as an internal signal path. It leads the respective signal to a specific output (direct out).

Which BUS signals can be routed to which output jacks is shown in the following table:

	OUT1	OUT2	OUT3	OUT4	PHONES
BUS1	○				○
BUS2		○			○
BUS3			●		○
BUS4				●	○

● = fixed ○ = optional

9.8 UNIT – OUT



Concerning the signal routing the KT-M1 module offers a number of options. In Chapter 10. “**Signal Flow and Routing Options**” on page 63 some connection scenarios are listed, which will explain clearly what routings are available.

LINE This parameter is important if you want to connect a mono signal to the line-in jack. Select "Mono" so that the fed-in signal is heard in the center of the stereo sound image (only the signal of the tip of the jack will be transmitted). If "Stereo" is set (logically the default setting for stereo sources) an incoming mono signal will be placed only on the left channel.



Line In - Mono

This setting is useful if you are using the KT-M1 module as an in-ear monitor station and only a single monitor signal is provided by an external mixer (AUX). In this situation, you should select "mono" so that the signal will sound in the middle, i.e. on both sides of the headphones.

OUT1·2 This determines which signal is going to the main output jacks (OUT1·2). You can choose from the following options:

Mix The entire sum signal of the internal mixer (see also page 41) (all instruments, metronome, line in and the song player).

Mix! Like "Mix", only with a fixed volume. The output volume no longer depends on the LEVEL control. The control can thus be used exclusively for the headphone output.

Sub In this setting, the sub-mix signal is used (see SUB).

Sub! Like "Sub", only with a fixed volume - independent of the LEVEL control.

1+2! The Signals of BUS 1 and BUS 2 are outputted with a fixed volume on the jacks OUT1 and OUT2, which then serve as additional individual outputs (Direct out).







Fixed Volume - ! -

Decoupling the output volume from the LEVEL control makes especially sense in live use because this ensures that the volume of the drum signal on the PA system is not changed when you change the volume of the headphones.

SUB↓



As an alternative to the complete signal from the internal mixer, you can create a so-called "SUB-mix." The SUB-Mix allows you to disable certain channel groups of the mixer, so that they don't go, for example, to the main output. The following groups of signals are available:

-  Drum channels (kick, snare, toms, cymbals, hi-hat, perc)
-  line in signal
-  song signal
-  metronome

Select a group by rotating the DATA controller and disable or enable the signal for the sub-mix by pressing the controller while holding the MORE button.



Song and Metronome

The signals "song" () and "metronome" () are treated separately in the sub-mix, although they share one FADER in the internal mixer (ACMP). The reason for this is that per kit only either a song or the metronome can be selected. A differentiation is not necessary in the mixer. But through settings in the sub-mix it can be ensured that the metronome signal, independent from the chosen kit, is generally sent only to the headphones (PHONS).

PHONS

Allows you to specify which signal will go to the headphone output. As with „OUT1-2“ you can choose between the options **Mix** and **Sub**. In addition, various BUS groups can be selected: **BUS1+2**, **BUS3+4**.

9.9 UNIT – METR



On this page you can change the sound settings of the metronome. Please note that these are global settings that affect all KITS.

FILE↓ Like on the DRUM Page in the KIT menu, you can select a sound by rotating the DATA controller. Pressing the DATA controller and holding the MORE button switches to **FOLD↑** and you can navigate through the folder structure. The first line of the display shows the folder, the second line, as usual, the name of the sound.

TUNE← TUNE changes the pitch of the sound. The lowest pitch is at **-12**. The highest achievable pitch is dependent on the selected sound. Four half-steps up (**+4**) are common. But there are sounds that can be changed even more or less than 4 half steps up. If you press the controller while you hold the MORE button, you switch into a fine-tuning mode and you can adjust the pitch in decimals.

DECAY This value determines how long the underlying sample of the sound will be played back. With the setting ∞ (infinity), the whole sample will be played back. Turn the controller to the left to shorten the sound. In practice, it is recommendable to shorten the sound length using DECAY in order to generate a clearly audible and precise click.

With the DATA buttons you can listen to the various zones of the selected sounds. Please note that only the first zone (left DATA button) can be used as a metronome sound.

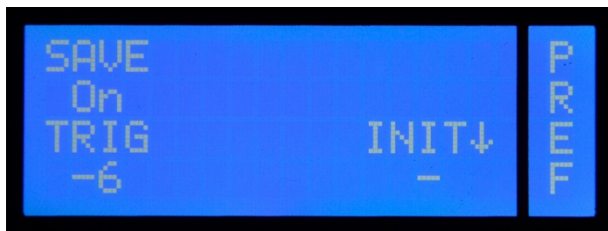
9.10 UNIT – MIDI



On this page, you can change the global MIDI settings.

- PRCHG** You can choose between **On** and **Off**. If you have selected "On", the KT-M1 module can both send and receive MIDI program change messages. This is useful. e.g. changing KITS via a MIDI keyboard or, in the reverse case, to control an external MIDI device from the KT-M1 module.
- LOCAL** Turn LOCAL "Off" to disable the internal sound engine. Now the KT-M1 only transmits MIDI messages and no longer triggers the internal sounds. This setting is useful if you want to control an external sound source without having the KT-M1 sound engine always playing along.
- THRU** When you switch from "Off" to "On" here, MIDI-IN signals are routed directly to the MIDI-OUT. This way, an external MIDI device can control both the KT-M1 module and another MIDI device connected to the KT-M1.
- CHAN** Here you can specify on which MIDI channel program changes and MIDI note messages for the various trigger channels will be sent and received. Please note that the global MIDI channel (Program Change) setting made here can be set to an individual trigger channel (see also menu UNIT-INF explained on page 52).
- PED** This sets the controller format for the foot controller of the hi-hat. You can choose between **CC1** (modulation wheel) and **CC4** (pedal control). For each controller format there are 4 different modes.
- ▼: value 0 for the open and value 127 for the closed hi hat
 - ▼!: In difference to ▼ the controller data is sent continuously and not just once with the NOTE-ON command.
 - ▲: value 0 with closed and value 127 with open hi hat
 - ▲!: In comparison to ▲ the controller data is sent continuously and not just once with the NOTE-ON command.

9.11 UNIT – PREF



SAVE

This parameter determines whether changes in the modes KIT and UNIT can be saved or not. Select "**On**", to be able to save your results permanently after successful programming by pressing the left DATA button. The saving process is executed on the main page of the modes (KIT Page PROG or UNIT Page MIX). As soon as something is changed in the original settings, a "?" is displayed to the right of SAVE.

In the **Off** mode, your changes will not be saved.



SAVE-Off Mode

The SAVE-Off mode is particularly useful when several percussionists play on your KT-M1 (e.g. at a festival) and you want to prevent people from tampering with your drum kits and configurations and then saving that.

TRIG

Here you can set the volume at which the sounds will be played back when pressing the TRIG button - i.e. when pre-listening. The available range extends from -48 to 0 dB (default -6 dB). You can turn off the pre-listen function of the TRIG button as well. Just select "Off".

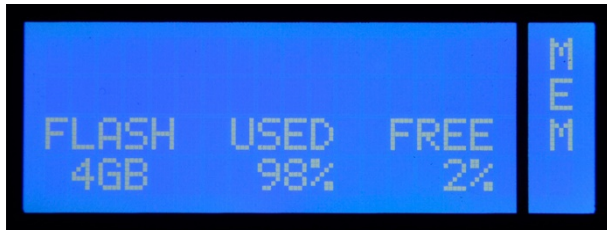


Restore Factory setting

It is possible to create a personal init file so you have access to the original KIT settings in case of emergency. For this, back up the original .dkit file on your computer and copy this file to the module. Rename this copy to "(kit name)Init.dkit". Example: TPK USERInit.dkit

This way you create an initialization file that contains the original factory settings. Another option is to save or download the original factory .dkit file, and keep an unedited copy as a backup.

9.12 UNIT – MEM



On this page you can read information about memory usage (DATA buttons and DATA controllers have no function).

FLASH Displays the size of the internal flash memory.

USED Percentage of the flash memory that is used.

FREE Percentage of the flash memory that is still free and available to you for additional sound files.



Memory Capacity

When you frequently copy additional sounds to your KT-M1 module, it may occur that there is not enough memory available. In this case, you should clear up your module to make room for new sounds. Make a back-up of the entire contents of your module and in the second step, delete those sounds from the module, you don't like. This way, you create free space and still have all the original KAT Percussion sounds archived.

9.13 UNIT – INFO



This page gives you information about the software version of your module (DATA buttons and DATA controllers have no function).

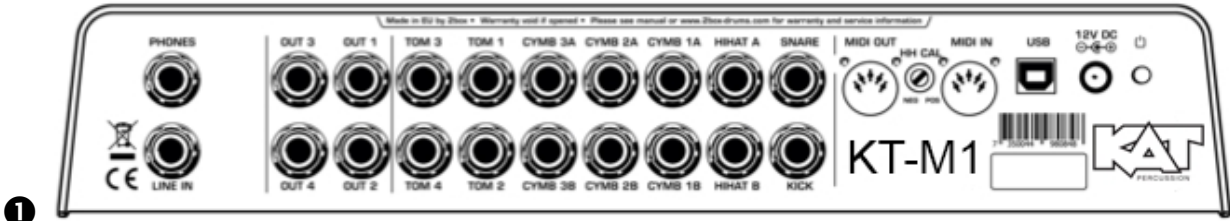
SERNR Serial number of your module

BOOT Software version of the boot program

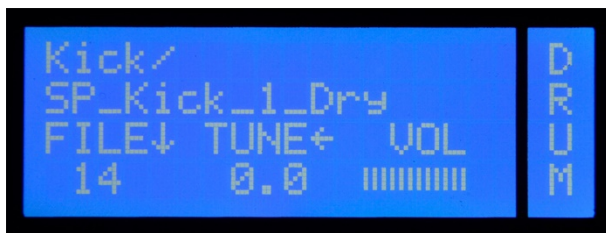
OS Software version of the operating system

10 Signal Flow and Routing Options

In this chapter we show you how the signal flow is set up within the module and give you suggestions for the use of the KT-M1 in real life on the basis of a few examples.

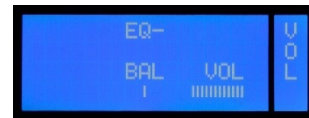


1



2

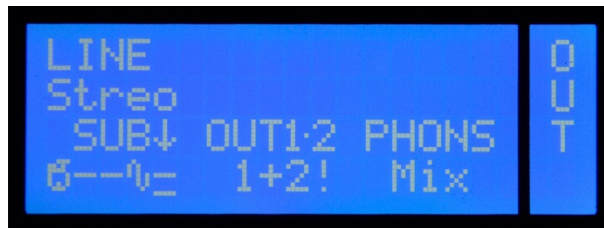
alternativ:



3



4



5



- ❶ The pads are connected to the corresponding drum channel input (in our example, a kick-pad).

- ❷ In KIT mode on the DRUM page, a sound is assigned to the trigger signal of the respective drum channel, and the overall volume of the signal is set. Alternatively, the volume can be set on the VOL page, since both VOL controls are identical (see page 33).

- ❸ The signal of the drum channel is then routed on the page INTF in the mode UNIT. The signal is sent to both the selected BUS (BUS 1 here) and to the fader group of the internal mixer (here KICK / K). The volume level of the signal set on the page DRUM (resp. VOL) remains unaffected from this (see ❷). Now the signal is present in two different places. Once on the BUS (solid line) and once in the internal mixer (dashed line).

- ❹ The two parallel signals can then be assigned to the desired outputs in UNIT mode, on the OUT page (BUS and mixer). In this case, BUS 1 is assigned to the outputs OUT1·2 and the mixer signal to the headphone output (see ❺).





Result: This way the volume of the kick drum can be changed for the headphones without affecting the direct out signal. For this, you only need to adjust the fader "kick" in the mixer accordingly. The mixer does not affect the BUS signal at the output OUT1, since these are two independent signal paths.










The examples on the following pages show what options you have with the routing capabilities of the KT-M1. Of course, these are just a few configurations and not an exhaustive list of all the options that are available for your personal use.

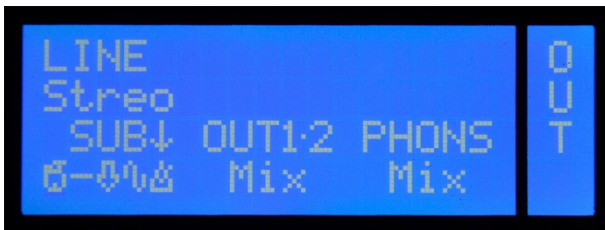
Please note that there is not an example for every drum channel in the following explanations. Only the essential pages are shown, comments on the corresponding pages are noted below.

Situation 1 - Rehearsal Room: The same signal on PA and headphones

You connect the KT-M1 module to a small PA in the rehearsal room and/or play with headphones.

All signals from the mixer (**MIX**) (drum channels , line-in signal , song player  and metronome ) are on both the headphones and the output jacks (OUT1-2). The bus settings on page INTF do not affect the result. The volumes of the various instruments are controlled with the mixer on the MIX page.

	KICK	SNARE	HIHAT	TOMS	CYMB	PERC	LINE	SONG	METRO
Output									
OUT1	x	x	x	x	x	x	x	x	x
OUT2	x	x	x	x	x	x	x	x	x
PHONES	x	x	x	x	x	x	x	x	x



For both OUT1-2 and PHONS the setting is Mix.

Situation 2 – Live 1: Mix for the PA, click and monitor signal on the headphones

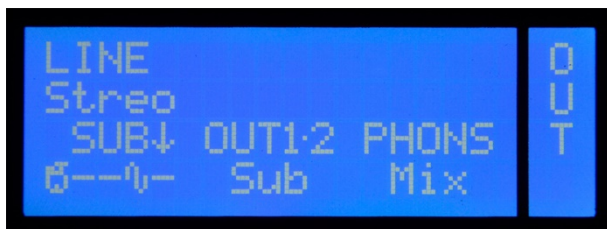
In this setup, you want to output the drum signals and songs as a stereo mix. At the same time you want to use the KT-M1 as an "in-ear monitor station" (stereo mix, metronome, external monitor signal).

For this, you connect the output jacks OUT1·2 of the KT-M1 with an external mixer and simultaneously the monitor output of the mixer (Aux) with the line-in jack of the KT-M1 module.

On the headphone output are now the signals of the KT-M1 (drum channels, metronome, song player) plus the external monitor signal (e.g. vocals, bass, guitar).

For the stereo output, use the SUB mix. So that neither the signal of the metronome nor of the line-in channel are in the stereo sum, the respective sub-groups are switched off (see also page 55).

	KICK	SNARE	HIHAT	TOMS	CYMB	PERC	LINE	SONG	METRO
Output	☐	☐	☐	☐	☐	☐	☐	☐	☐
OUT1	x	x	x	x	x	x		x	
OUT2	x	x	x	x	x	x		x	
Phones	x	x	x	x	x	x	x	x	x



The output jacks OUT1·2 get only the SUB-mix (with no line-in and metronome).

The headphone jack is fed with the complete mix (internal mixer).

Situation 3 – Live 2: A maximum number of individual signals for the PA, click and monitor signal only in the headphones

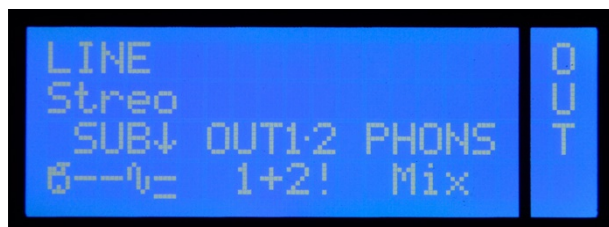
In this scenario, the goal is to transmit a maximum number of individual drum signals to allow the sound engineer to prepare a convincing mix. Here, the KT-M1 is used as an “in-ear monitor station” (stereo master bus, metronome, external monitor signal).

Connect the KT-M1’s OUT1~OUT4 sockets to the external mixing console and the console’s monitor output (AUX) to the KT-M1’s LINE IN socket.

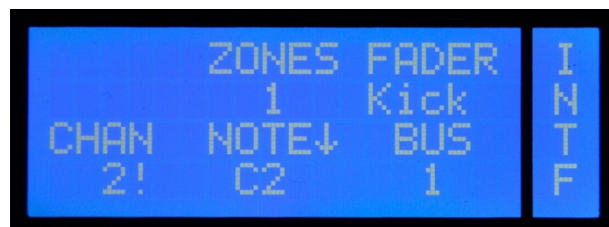
The KT-M1’s PHONES socket transmits the drum channel, metronome and song player signals, plus the external monitor signal (e.g. vocals, bass, guitar).

Outputs 1~4 transmit drum signals. OUT1 and OUT2 are used as direct outputs in this scenario. The internal signals (LINE, SONG, METR) are therefore only transmitted to the PHONES socket. The hi-hat and the cymbals share one output, as do all toms and the additional percussion channels.

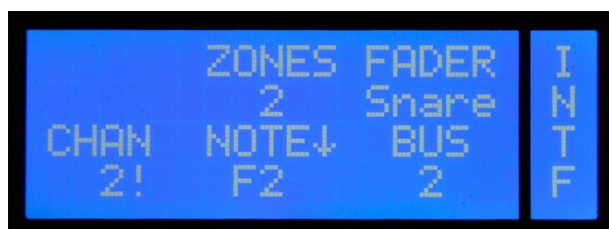
	KICK	SNARE	HIHAT	TOMS	CYMB	PERC	LINE	SONG	METRO
output	☐	☐	☐	☐	☐	☐	⬇	⤴	⚠
OUT1	x								
OUT2		x							
OUT3			x		x				
OUT4				x		x			
Phones	x	x	x	x	x	x	x	x	x



Busses 1 and 2 are assigned to OUT1 & 2



The kick drum is assigned to BUS 1



The snare is assigned to BUS 2



The hi-hat is assigned to BUS 3

	ZONES	FADER	I
	4	Cymbs	N
CHAN	NOTE↓	BUS	T
2!	E4	3	F

The cymbals are also assigned to BUS 3

	ZONES	FADER	I
	1	Toms	N
CHAN	NOTE↓	BUS	T
2!	D3	4	F

The toms are assigned to BUS 4

Situation 4 - Studio: The most important Instruments Separately

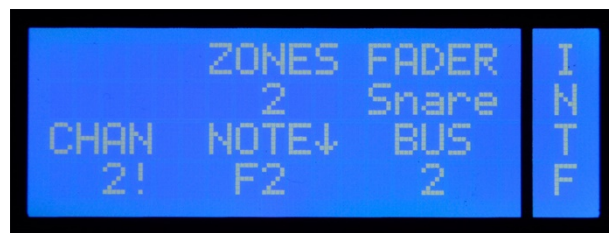
You connect the KT-M1 to an external mixer and want to provide the sound engineer with as many separate channels as possible.

In this example, the PHONES socket is used as additional output (5+6). The internal song player and the metronome are not needed in this scenario. This allows us to have the cymbals and hi hat share one stereo output pair and to use a second pair for the toms and percussion sounds. The advantage of this approach is that the aforementioned signals can be panned across the stereo field.

	KICK	SNARE	HIHAT	TOMS	CYMB	PERC	LINE	SONG	METRO
Output	☐	☐	☐	☐	☐	☐	↓	↓	⚠
OUT1	x								
OUT2		x							
OUT3				x		x			
OUT4				x		x			
PHONES L			x		x				
PHONES R			x		x				



Kick: only BUS 1 is selected



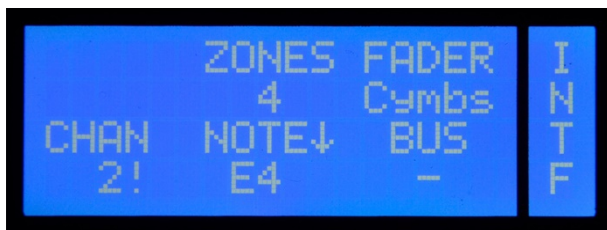
Snare: only BUS 2 is selected



Toms: stereo on BUS 3+4



Hi hat: no BUS assigned



Cymbals: no BUS assigned



Be sure to set all channels—except HIHAT and CYMBS—to the minimum level on the internal mixer (“UNIT-MIX” page).



Just try it!

You'll see, there are (almost) no limits to your creativity. Try it out!

11 Technical Data

Connectors:	10 x Trigger Input (6.3mm stereo jack) 4 x Control-Input for Hi hat and Cymbals (6.3mm stereo jack) 1 x Line In, stereo (6.3 mm stereo jack) 4 x line out, mono (6.3 mm mono jack) 1 x headphone jack (6.3 mm stereo jack) 1 x USB 1.1 (Full Speed) 1 x MIDI IN 1 x MIDI OUT 1 x power supply (12 V DC, external power supply)
Display / Memory Type:	LCD (20 x 4 characters) 4 GB Flash memory
Controls:	11 x push button 1 x rotary push controller (endless) 1 x rotary controller
Amount of manageable Data:	The operating system can manage up to 8,000 dsnd files, 1,000 folders and 800 Wav files.
Name Size:	File names can have up to 63 characters and folder names (including sub folders) up to 127 characters.

12 Update

Thanks to the Open Sound System of KAT Percussion the module can be updated easily and comfortably using drag and drop.

This way you can always keep your KT-M1 up to date and benefit from the operating system updates, new features and technical enhancements.

1. Download the current operating system from the 2Box website (www.2box-drums.com). The file format of the operating system is a **.bin file** (see picture).
2. Start the module in USB mode (see page 9).
3. Copy the new .bin file to the module with drag & drop.
4. Restart the module. The module shows the new operating system number during the boot process at the bottom right (you can also get this information in UNIT mode on the INFO Page)
5. Done!

You don't need to delete the old operating system file. The module will automatically recognize the newer version. In the example below, the system recognizes the file DrumIt120.bin (OS 1.20) as the latest version and ignores the file DrumIt110.bin (OS 1.10).

Tom	Dateiordner
.metadata_never_index	0 KB METADATA_NEVER...
DrumIt110	103 KB VLC media file (.bin)
DrumIt120	120 KB VLC media file (.bin)
DrumIt User Manual 1.1x r3	267 KB PDF-XChange View...
drumit.dkit	151 KB DKIT-Datei
DrumItInit.dkit	151 KB DKIT-Datei
Quickstart 1.1x	509 KB PDF-XChange View...



Choosing Between Operating Systems

During the boot process, you have the option to choose between the various operating systems that are available on your module. To do so, press the middle DATA button while powering up.



After you have selected the desired operating system with Prev/Next (left and middle DATA button), start the boot process by pressing the DATA button to the right (load).

Please note:

Settings in the modes KIT and UNIT that relate to functions of a higher operating system will be lost if you edit and save the same part (e.g. a kit) in an earlier version of the operating system.

13 FAQs

How can I adjust the volumes of the instruments to each other?

For this purpose you have an internal mixer in UNIT mode on the MIX page (see page 41). Refer also to the detailed explanations on this topic starting on page 63.

How can I save my settings?

Changes can be saved in both modes UNIT and KIT at the main page (KIT PROG respectively UNIT MIX) by pressing the left DATA button. Any changes you made in the respective areas are indicated by a "?". Refer also to page 21 and page 41. In order to be able to save, you have to have the SAVE function enabled on the page PREF in UNIT mode (see page 59).

How can I optimize the response behavior of the hi hat to my needs?

Special configuration options for the hi-hat can be found in UNIT mode on the pages HPED (see page 49) and TRIG (see page 43). In any case, you should calibrate the hi hat properly. It is also recommended that you experiment with the trigger-curves and GAIN. Please note that an electronic hi-hat always responds somewhat different from a normal hi-hat.

How can I assign a different sound to the Rim?

Call up the DRUM page in KIT mode, and select the desired PERC channel by simultaneously pressing the MORE button and the respective Drum Channel button. Now you can assign a sound to the PERC channel as accustomed (see also page 29).

How can I avoid double triggers?

At first, you should check the tension of the heads of the affected pads. It should be even and not too loose. You should also make sure that the pad is mounted properly and does not vibrate too much. If you still have problems with double triggers, you can change the trigger settings (GAIN and THRES) on the TRIG page in UNIT mode. See section UNIT . CHAN UNIT . CHAN starting on page 43.

How do I assign individual drum channels to direct outputs?

The KT-M1 provides many routing options. Read from page 63 on to see what settings you need to make in order to assign individual channels directly to specific outputs.

Can I connect two pads to one plug and assign different sounds?

Absolutely. The drum channels TOM 1 to TOM 4 and SNARE have a parallel PERC channel, which can be utilized separately using a Y-split cable. How this works is described in detail on page 13 and page 15.

Can I assign a separate MIDI channel to each drum channel?

Yes, in UNIT mode on the INTF page. How this exactly works is described on page 52.

I've lost a cable. Do I need to buy something special?

The KAT Percussion cables are standard stereo jack cables (6.3 mm).

Can I use the KT-M1 with acoustic triggers?

Of course. The KT-M1 works fine with products from most major manufacturers, the most common triggers have been tested successfully with the KT-M1. In the UNIT mode on page TRIG you will find specific trigger TYPES (AcTr1, AcTr2 and AcTr3) and other parameters (GAIN, THRES), that allow you to set the module so it is perfectly suited to the use with acoustic triggers. Please refer to the section UNIT . CHAN UNIT . CHAN starting on page 43.

14 Contact and Support

Do you have questions about your KT-M1 or a technical problem?



Visit our website at:

katpercussion.com

In our support area you'll find answers to your questions.

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