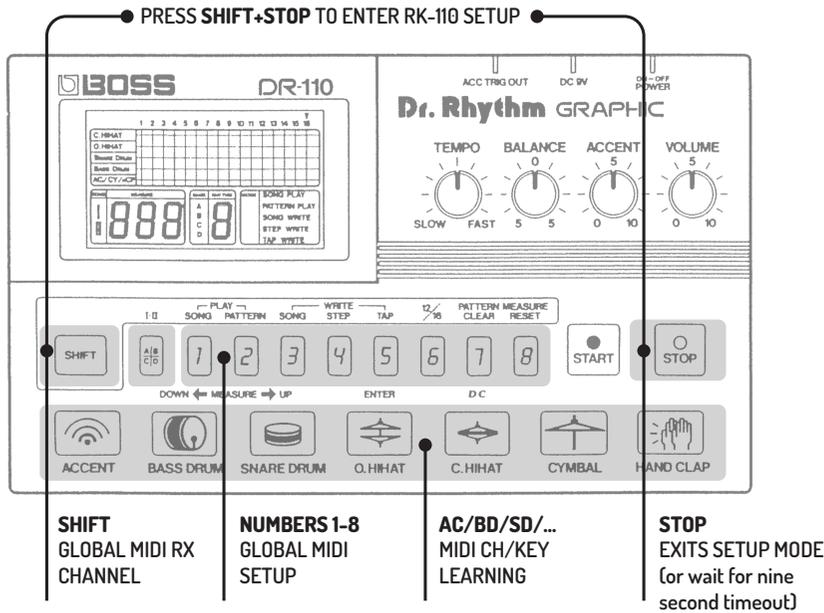


RK110



MANUAL

The RK-110 is a small add-on board which adds MIDI Remote control to the BOSS DR-110 'Dr. Rhythm' Drumcomputer

HISTORY

The DR-110 is an analog drumcomputer with a microprocessor driven sequencer. It has a trig-out for integrating it with other music gear but can not tempo-slave to others - let alone does it have MIDI control.

Because it is an Analog/Digital hybrid (and has a magnificent analog Clap) it is also a popular machine amongst modders. It is fairly cheap to acquire and because you can adapt the analog (=sound) circuitry: Triggering sounds individually and adding multiple outs or changing the sound characteristics is very doable.

FULL CONTROL

Adding the RK-110 to this little drummachine it will allow you to integrate it into the MIDI world in the most extensive (and probably simplest) way possible: We built the RK-110 in a way which requires only one wire to be added to the PCB: Lazy Tweakers Galore!

As where other MIDI modification boards mostly rely on tapping into the analog PCB and use the trigger points of the sound circuitry, the RK-110 taps directly 'the nerves' of the DR-110s brain so we can make it believe there's a highly skilled someone pressing it's blue squishy buttons - but in reality you are using MIDI to control it!

This means you can now do anything you would normally do with your fingers on the DR-110 but now via MIDI: Full Automation. If you want to do a pattern switch or even program in a whole pattern via MIDI: this is all possible. (And ehm... yes of course it is also possible to just trigger drum sounds...)

RK-110 SETUP MODE

Once the RK-110 is built in, it will auto-slave the internal sequencer to a MIDI clock and has mapped the DR-110 in a 'General MIDI Drum mode'-fashion. This means a standard note mapping, receiving on MIDI Channel 10:

Sound	Key
AC	37
BD	36
SD	38
HH	46
OH	42
CY	49
CP	39

If you have special needs for integrating the DR-110 in your setup; Pressing the SHIFT+STOP button on the DR-110 for more than 1 second will enter the RK-110 in Setup Mode. It will sound the DR-110 Clap 2 times to indicate it's setup time.

Setup Mode will exit after a non-active period of 9 seconds. You will hear a Cymbal if it times out. You can manually exit the Setup Mode any time by pressing the STOP button as well.

SHIFT Pad : Global MIDI Response Channel

Pressing SHIFT in setup mode allows you to quickly remap the RK-110 response channel to any MIDI Channel (default=10)

After pressing SHIFT, subsequently press any key on a connected MIDI device. If the channel is set, you will hear 2x Clap sound, if it has timed out, you will hear 2x Kickdrum. Note that this channel will override all previous set channel definitions via the individual sounds.

AC-BD-SD-CH-OH-CY-CP Pads: MIDI Drum Notes and Program Change

As mentioned before, all sounds (Accent, BD, SD, CH, OH, CY and CP) are mapped out by default on General MIDI Drum channel mapping on MIDI Channel 10, however, these keys can also be trained to respond to a specific MIDI Key/Channel.

A special note on the ACCENT Key:

ACCENT is a track on the DR-110 which boosts the sound if it's activated and it also sends out pulses to external hardware. With the RK-110 you can trigger ACCENT in two ways:

- 1 - Send any drum sound with velocity above 120 will trigger an ACCENT
- 2 - Pressing the ACCENT Key (default C#)

Note that any sound with a high velocity will trigger the ACCENT for all sounds!

BANK Pad : Train Program Change MIDI Channel + base offset

The first received MIDI Program Change Event hereafter will set the Program change MIDI Channel + Base Program Change offset (you can also start sending MIDI Program Changes from e.g. nr 40 only to affect the DR110 pattern changes) Note that MIDI channel change for this event will not change MIDI Note On reception which trigger drum parts.

REMARK:

The Accent level of the sound is a fixed setting defined by the note velocity. Any note played with velocity 100 or above will trigger the DR-110 Accent level. Note that the DR-110 has only one global Accent level for every sound.

1-8 Pads: RK-110 Global / MIDI RX Settings

The number 1-8 pads on the DR-110 are used to toggle settings and will trigger a sound to indicate it's state:

- 2x Kickdrum = setting off
- 2x Clap = setting on

BUTTONS:

1 = RX MIDI Start/Stop

Defines if the DR-110 internal sequencer will start and run along with MIDI clock automatically

2 = RX MIDI Program Change Messages

Defines if the DR-110 will do pattern changes on MIDI Program Change messages.

3 = RX note triggers

Defines if the DR-110 will trigger sounds on MIDI Note On messages.

4 = User Pattern A1 on startup.

If you want to start at user pattern A1 (instead of the ROM C1 pattern at default) this setting will send two bank-buttons at startup so the DR-110 will move on to A1 at startup. This can be handy if you want a blank pattern at startup.

5 = Remote control key area

On top of the default (but redefinable) GM Drum mapping on channel 10 we have also mapped out all DR-110 buttons on note numbers 100-119 on MIDI Channel 10. You can use this area to do full automation of the DR-110. We think it is not in the way of your MIDI mapping but should that be the case: use button 5 to toggle this reception on/off.

6,7 = reserved

8 = RK-110 Factory Defaults

Messed up your settings? - press this button and settings will be restored to default. Factory Reset is confirmed by 6 handclaps

ASSEMBLY

The RK-110 can be added to the DR-110 without too much hassle but **soldering skills ARE required.**

Remove the four potmeter caps on the top and three screws on the bottom. Place The RK-110 it below the 4 potmeter holes so it matches up with the DR-110 PCB like below. Cut the clock trace of the DR-110 so the RK-110 can intercept the MIDI Clock. Solder the 11 castellated holes (white circled dots below) and add the MIDI IN method of your choice.

