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## BECOS TS8-MS Analog Overdrive with External Relay Switching and MIDI Functions

Thank you for using BECOS products!

TS8-MS is an analog overdrive guitar effect with classic 808 sounds, which combines MIDI functionalities and external switching relay capabilities that can be used to switch guitar amplifier channels or other available features (EQ, boost, reverb, etc.), making it a reliable, one-of-a-kind tool for guitarists. We call it the Swiss Knife of Tone.

**It can be used concomitantly as classic tubescreamer guitar effect pedal and guitar amplifier channel switcher. It responds to MIDI Program Change and MIDI Control Change messages for all its switching capabilities - Bypass and external switching -, which perform simultaneously in both MIDI Receive or MIDI Transmit mode. Yes, it can be used even as a very simple MIDI Controller! On footswitch action, TS8-MS transmits three MIDI Program Change numbers, one for each pedal state: Bypass, Effect and Extended.**

With TS8-MS you have a quality tubescreamer guitar effect and a guitar amplifier channel switcher (with 2 independent relays), both functions being MIDI or Footswitch controlled. This pedal can sit not only under your foot, but also in a rack drawer.

*Note: We will update this document from time to time, so please check product website for the latest version. Last updated: 15-Apr-2017*

## Feedback

We appreciate feedback and suggestions regarding our products. If you wish to share them, send us an email at [office@becos.ro](mailto:office@becos.ro)

## TS8-MS MIDI Features

TS8-MS does NOT store presets. It simply executes fast all MIDI commands received, be these simple and solitary MIDI commands, or a group of MIDI commands in series - as is the case when a preset change occurs.

### Receiving Program Change MIDI messages

Program Change (PC) MIDI messages may be sent from an external MIDI Controller. TS8-MS pedal is pre-programmed to respond to the following Program Change numbers:

Program Change Number	Bypass / Effect Relay	Switching Relay 1 Tip-To-Gnd	Switching Relay 2 Ring-To-Gnd
#50	Bypass	Off	Off
#51	Bypass	On	On
#52	Bypass	Off	On
#53	Bypass	On	Off
#54	Effect	Off	Off
#55	Effect	On	On
#56	Effect	Off	On
#57	Effect	On	Off

Table 2 - MIDI Program Change switching options in TS8-MS

### Receiving Control Change MIDI messages

TS8-MS can respond to Continuous Controllers or Control Change (CC) MIDI messages that may be sent along with Program Change messages by an external MIDI Controller. TS8-MS pedal is pre-programmed to respond to the following MIDI Control Change numbers:

Control Change Number	Relays Controlled	Relay/LED OFF	Relay/LED ON
		CC Value	CC Value
80	Bypass	0-63	64-127
81	R1		
82	R2		
83	Bypass, R1, R2		
84	Bypass, R1		
85	R1, R2		
86	Bypass, R2		

Table 3 - MIDI Control Change switching options in TS8-MS

**Note:** *Bypass* = Effect/Bypass Relay. *R1* = External Switching Relay 1 (Tip-to-Ground). *R2* = External Switching Relay 2 (Ring-to-Ground).

## Examples of ways to configure an external MIDI Controller to control TS8-MS and MIDI amplifier channel switching

### *Rocktron MidiMate Controller*

#### **Example 1 - Control pedal Bypass and an amplifier's Channel / Feature switching using Program Change MIDI commands**

We will make two presets on the midi controller. Preset **MIDI 1** will put TS8-MS Overdrive pedal in **Bypass** and preset **MIDI 2** will switch the **overdrive on**. You can also edit the name of these presets for better reading.

1. Connect TS8-MS pedal in your audio rig;
2. Connect **midi output** of the midi controller (or output/through of another midi device in your rig, if you have more midi devices) to **midi input** on the overdrive pedal;
3. Use the rotary switch inside TS8-MS Overdrive pedal to set midi receive channel = 2;
4. Put the midi controller in Controller mode;
5. Choose preset **MIDI 1** on the midi controller and press 2ND button to edit this preset:
  - a. scroll to MIDI CHANNELS submenu and set midi transmit channel of S2CH = 2; this is the same midi channel number programmed in TS8-MS; you can set the other remaining SETS to control other midi devices on different channels; this setting is global on MidiMate controller, which means you only have to set it once;
  - b. continue to scroll to PROGRAMABLE PATCH CHANGES submenu and set program change number of SET2 = 100; when this program change number is transmitted over midi channel 2, the TS8-MS Overdrive will be **Bypassed**;
  - c. press 2ND button again to save and exit the edit mode of this preset.
6. Choose preset **MIDI 2** on the midi controller and press 2ND button to edit the preset:
  - a. scroll to PROGRAMABLE PATCH CHANGES submenu and set program change number of SET2 = 104; when this program change number is transmitted over midi channel 2, the **overdrive pedal will be on**;
  - b. press 2ND button again to save and exit edit mode.

That's it! Now, when you select preset **MIDI 1** on the midi controller, the TS8-MS Overdrive pedal will be put in **Bypass** and when you select preset **MIDI 2** the **overdrive will be on**.

If you need to switch amp's channel / feature concomitantly with switching overdrive on, all you have to do is set a different program change number to be transmitted by the midi preset, corresponding to your switching needs. For example, if you need to engage the overdrive and switch amp's channel at the same time, you may use Relay 1 in the pedal which must be switched on (Tip-To-Ground) when the overdrive is on. Edit preset MIDI 2 in the example above and set program change number of SET2 = 107 in the PROGRAMABLE PATCH CHANGES function. **See Table 2 for all available switching options using Program Change commands.**

## Example 2 - Control pedal Bypass and an amplifier's Channel / Feature switching using Control Change MIDI commands

For this example we will edit a midi preset on the same MidiMate controller to control TS8-MS Overdrive from within this preset. We will use **Button 5** to control overdrive pedal (there are five buttons available in Controller Mode that can be configured as on/off switches within a preset). The state of these buttons can be saved within any midi preset. We can choose a Control Change number from **Table 3** and assign this button to switch on/off one or more relays in the TS8-MS pedal, according to our needs. For this example, we will only control **pedal Bypass** so we will use control change number 80.

Of course, any other of the five available buttons can be assigned with a different CC number, and its state can also be saved within this (or other) preset. However, you may have other midi devices where you would want parameters to be controlled by these on/off switches, so you have to think and organize your gear to serve them all.

1. Connect TS8-MS pedal in your audio rig;
2. Connect **midi output** of the midi controller (or output/through of another midi device in your rig, if you have more midi devices) to **midi input** on the overdrive pedal;
3. Use the rotary switch inside TS8-MS Overdrive pedal to set midi receive channel = 2;
4. Put the midi controller in Controller mode;
5. Choose preset **MIDI 1** on the midi controller and press **2ND** button to edit this preset:
  - a) scroll to **MIDI CHANNELS** submenu and set midi transmit channel of **S2CH = 2**; this is the same midi channel number programmed in TS8-MS; you can set the other remaining SETS to control other midi devices on different channels; this setting is global on MidiMate controller, which means you only have to set it once;
  - b) continue to scroll to **PROGRAMABLE PATCH CHANGES** submenu and set program change number of **SET2 = 100**; when this program change number is transmitted over midi channel 2, the TS8-MS Overdrive will be **Bypassed**; we will use this **neutral state of the pedal** because we will use the on/off CC button to switch pedal on and off within this preset; **this setting is not mandatory but it might be useful to combine Program Change and Control Change commands**;
  - c) continue to scroll to **CONTROLLER ASIGNMENT** and set control change number for button **BTN5 = 80**; controller assignment settings are global in MidiMate, so this button will be used to switch overdrive pedal on and off from all midi presets;
  - d) press **2ND** button again to save and exit edit mode;

When loading preset MIDI 1 in Controller mode and pressing Button 5 (the first in the upper row of buttons) repeatedly, you will switch TS8-MS Overdrive pedal on and off. If you want to have the state of the button on, corresponding to overdrive pedal being on, you have to:

1. press Button 5 to ON (LED will lit);
2. press **2ND** button to edit MIDI 1 preset;
3. press **STORE** button (STORED will be displayed momentarily);

That's it. Now, when you select preset MIDI 1, Button 5 will be **on** and the TS8-MS overdrive pedal will be also **on**. While this preset is loaded, you can use Button 5 to switch pedal on and off, but

when you load the MIDI 1 preset again, Button 5 will be on again, because that's its state saved within this preset. If you wish to switch an amplifier channel / feature along with the overdrive pedal, set up the corresponding control change number from **Table 3** (for ex. number **84** if you want to control pedal **Bypass** and switching **Relay 1**) and store the state of that Button within that preset. Because the BTN assignment is global in MidiMate, you will use this button for this function only, across all midi presets.