External MIDI Control

Incoming PC and Bank Messages

The Mastermind can be controlled by an external MIDI device such as a computer, sequencer or other type of MIDI controller. To enable this feature, set the **MIDI Receive Channel** parameter to the desired MIDI channel. This setting is found in the Globals Tab on the GT or in the MIDI Tab on the LT or PBC. Any bank or Program Change messages received through the MIDI In or USB B (To PC) ports on this channel will cause a preset change on the Mastermind.

The bank and program numbers are interpreted differently based on some settings:

Setlist=None

In normal bank and preset mode (no setlist active), the bank MSB (CC#32), LSB (CC#0) and program numbers are combined to create the desired preset number. The formula is:

(Bank MSB x 16384) + (Bank LSB x 128) + PC number = preset number

There are only 768 presets within the Mastermind, so only bank numbers 0 through 5 are valid. The Bank MSB should always be set to 0 (or not sent at all), and Bank LSB should be 0 through 5.

Examples:

To select preset 200, you would send:

CC#32, value 1
PC#72

Because 128 x 1 + 72 equals 200

To return to preset 4, send

CC#32, value 0
PC#4

Because 128 x 0 + 4 is 4.

> The Mastermind always remembers the last bank numbers you send it, so if you use more than one bank of presets, you should always send a bank select CC before sending a PC to the Mastermind. Otherwise, you may end up with unexpected results where the incorrect

> preset is selected.

Setlist active, MIDI Bank Selects Song turned on

If you are using a setlist, and the **MIDI Bank Selects Song** parameter (found in the Globals Tab on the GT or in the MIDI Tab on the LT or PBC) is turned on, the Bank MSB and Bank LSB are combined to select a song out of the current setlist. The number is calculated as follows:

> (Bank MSB x 128) + Bank LSB = song number

The setting **Use Song Index** determines how the song number is interpreted:

If **Use Song Index** is turned on: the song number indicates the song's position in the current setlist (0 = first song in the current setlist, 1 = second song in the setlist, etc.)

If **Use Song Index** is *not* turned on: the song number indicates the actual song number to load (0 = load song #0, 1 = load song #2)

The PC number selects which preset within the song is selected (0 = first preset in song, 1 = second preset in song, etc.)

Please note: *If you try to select a song that's not in the current setlist, or a preset that isn't in the selected song, the Mastermind will ignore the request and remain on the current song and preset.*

Examples (Use Song Index is turned on):

To select the first preset in the third song:

CC#32, value 2
PC#0

To select the fourth preset in song number 170:

CC#0, value 1
CC#32, value 41
PC#3

Examples (Use Song Index is turned off):

To select the first preset in song #12:

CC#32, value 12
PC#0

To select the third preset in song number 260:

CC#0, value 2
CC#32, value 4
PC#2

Setlist active, MIDI Bank Selects Song turned off

If you are using a setlist, and the **MIDI Bank Selects Song** parameter is turned off, the bank MSB, LSB and program numbers are combined to create the desired preset number. The formula used is the same as in the **Setlist=None** section above.

Upon receiving bank and program change messages, the Mastermind will find the first song that contains the resulting preset and will load that song and preset.

Other settings

In MIDI settings, there is also a **Swap Bank MSB/LSB** setting that reverses how the Mastermind handles bank CCs. With this checked, CC#0 is now Bank LSB and CC#32 is now Bank MSB. Typically, this setting should be turned off, but may be turned on for compatibility with certain devices.

CC Link: Controlling buttons using incoming CC messages

It’s also possible to control IA buttons using CC messages sent from a computer or other MIDI controller. Each IA button has a parameter **CC Link** that enables this feature. When you turn **CC Link** on, incoming CCs are compared against the first action in each button’s action list. If the incoming CC matches the channel and CC number assigned to the first action in the action list, the button will update based on the CC’s value (0-63 = off, 64-127 = on).

For example, if the first action on a button is *Device 1 / CC Toggle #14*, and MIDI device 1 is set to channel 4, then incoming CCs on MIDI channel 4 with CC number 14 will control the button.

Please note that each device has an **Ignore Incoming CCs** setting, which when set, will disable the CC Link feature for that device.

When an IA button is activated due to an incoming CC message, the button will execute all of its actions except the first one in the list (the CC that triggered the button in the first place). This helps to avoid endless loops between the Mastermind and computer.

Remote Control

The **Remote Control** setting works with CC Link. When **Remote Control** is checked, the button still sends its actions as normal, but the button's visible state doesn't change. Only incoming CCs can change the visible state of the button. This feature is used with DAW software like Ableton which allows bidirectional synchronization of Mastermind buttons and Ableton controls.

Individual Loop and Switch Control using CC Messages

On the Mastermind LT and PBC, you can also assign CC messages to control individual loops, function switches, outputs and buffers. The **MIDI Rx Ch** parameter is used to choose the MIDI channel these CCs are received on. The default CC numbers are as follows:

Function	CC Number	Values
Loop 1 off/on	48	0-63 off, 64-127 on
Loop 2 off/on	49	0-63 off, 64-127 on
Loop 3 off/on	50	0-63 off, 64-127 on
Loop 4 off/on	51	0-63 off, 64-127 on
Loop 5 off/on	52	0-63 off, 64-127 on
Loop 6 off/on	53	0-63 off, 64-127 on
Loop 7 off/on	54	0-63 off, 64-127 on
Loop 8 off/on	55	0-63 off, 64-127 on
Loop 9 off/on	56	0-63 off, 64-127 on
Loop 10 off/on	57	0-63 off, 64-127 on
Loop 7 series/parallel	58	0-63 series, 64-127 parallel
Loop 8 series/parallel	59	0-63 series, 64-127 parallel
Loop 9 series/parallel	60	0-63 series, 64-127 parallel
Loop 10 series/parallel	61	0-63 series, 64-127 parallel
Buffer 1 disable/enable	62	0-63 off, 64-127 on
Buffer 2 disable/enable	63	0-63 off, 64-127 on
Buffer 3 disable/enable	64	0-63 off, 64-127 on
Function Switch 1 off/on	65	0-63 off, 64-127 on
Function Switch 2 off/on	66	0-63 off, 64-127 on
Function Switch 3 off/on	67	0-63 off, 64-127 on
Function Switch 4 off/on	68	0-63 off, 64-127 on
Output A/Left off/on	69	0-63 off, 64-127 on
Output B/Right off/on	70	0-63 off, 64-127 on
Output B Invert	71	0-63 normal, 64-127 invert
Mute	72	0-63 muted, 64-127 not muted
Dry Send to Mixer	73	0-63 muted, 64-127 not muted

Tuner	74	0-63 off, 64-127 on
Page	75	0-15 (page number minus 1)

These CC numbers can be changed using the settings in the MIDI Tab.

Mastermind GT Special CCs

There are a few special CC numbers that affect the Mastermind GT as well. These only function if **MIDI Receive Channel** is set to something other than *None*, and the CC is received on the channel indicated by **MIDI Receive Channel**.

Function	CC Number	Values
Bank Down	117	any
Bank Up	118	any
Select Page Number	119	0 = page 1, 1 = page 2, etc.

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