

MidiXLate

MIDI Router · User Manual

"Expanding Your MIDI Creativity"

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MidiXLate is a hardware MIDI router: six DIN MIDI ports plus USB, a color display, and a free Windows program that tells it exactly where every message should go. Set it up once, and it runs on its own — in the studio or on stage.

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Welcome

MidiXLate sits in the middle of your MIDI setup. Plug your keyboards, sound modules, pedal boards, guitar processors and computer into its six DIN MIDI ports and its USB port, then use the free MidiXLate program on your Windows PC to say, once, how everything should be connected: which devices talk to which, which kinds of messages are allowed through, how certain messages are changed on the way, and which MIDI channel each destination hears. The finished setup is stored on a microSD card inside the router, so the router needs no computer once it has been configured.

Step	What you do	Where
1	Read the safety notes and unpack the router.	Section 1, Section 4
2	Connect your devices with the router powered off .	Section 4
3	Install the MidiXLate program on your Windows PC.	Section 4, Section 5
4	Name your ports and click the routing grid to connect them.	Section 6
5	Optional: add translation rules and channel overrides.	Section 7, Section 8
6	Save the configuration and download it to the router.	Section 9
7	Restart the router and play.	Section 10

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1. Safety first

Please read these cautions before you connect anything. Use only high-quality, commercially available MIDI and USB cables, and the power supply that came with the router.

- Read, keep and follow these instructions, and heed all warnings.
- Do not remove the front or rear panel. There are no user-serviceable parts inside; all repairs are performed by Sierra Digital Audio.
- To reduce the risk of fire or electric shock, do not expose the router to rain or moisture, and do not place objects filled with liquid, such as vases, on it.
- Do not install the router near heat sources such as radiators, heat registers or amplifiers, and do not block its ventilation slot.
- Clean only with a dry cloth.
- Power comes from the supplied 9 volt DC power supply. Plug it into a properly grounded outlet and never defeat the ground connection of the power supply.

Important: Power off before connecting cables. All MIDI and USB cable connections must be made while the router's power is **off**. Connecting cables with the power on risks damage to your music equipment and to the router, and can make MIDI connections stop working.

2. What MidiXLate does

2.1 A router, not a hub

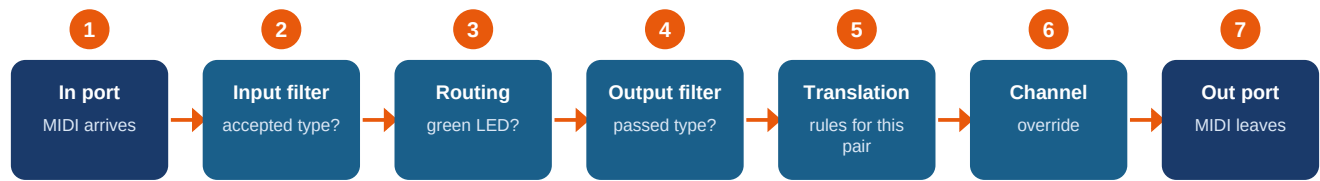
A MIDI hub or thru box copies everything it receives to every connected device. In a studio with a keyboard, a computer and several sound modules, every device then hears everything, and you spend your time telling each device what to ignore. A simple USB-to-MIDI cable is the opposite: easy, but one device talks to one device. MidiXLate sits in the middle and decides, message by message, who gets what.

Analogy: if you have set up a home network, think of MidiXLate as the router: it decides which device may talk to which, and it can rewrite traffic on the way through, much as a network router translates addresses.

2.2 Four tools

Tool	What it does	Set up in
Routing	Chooses which input ports send to which output ports. One input can feed many outputs. A 7 × 7 grid (six DIN ports plus USB). This is the only required step.	Section 6
Filtering	Chooses which <i>kinds</i> of message each port accepts or passes: notes, program change, control change, pitch bend, aftertouch, SysEx, and clock / transport.	Section 6
Translation rules	Up to 128 rules that translate one message into another, block a message, step a value up or down, or turn a program change into a bank change .	Section 7
Channel override	Forces everything one input sends to one output onto a chosen MIDI channel, whatever channel the sender used.	Section 8

2.3 How a message travels through the router



A message that fails a step is dropped there. Real-time bytes (clock etc) and SysEx follow the same path but skip the translation and channel steps.

Every message follows the same path. The numbers match the list below.

- 1 In port.** The message arrives on a DIN input or the USB port. Active Sensing bytes are discarded here.
- 2 Input filter.** The input port must accept this type of message (the NT, PC, CC, SX, PB, AT and RT boxes for that input).
- 3 Routing.** The router looks along that input's row of the routing grid and continues once for every **green** output.
- 4 Output filter.** That output port must pass this type of message.
- 5 Translation rules.** Rules for this input/output pair are checked. A matching rule translates, blocks, steps or bank-changes the message; with no matching rule the message continues unchanged.
- 6 Channel override.** If the pair has an override channel, the message is moved onto that channel. This happens last, so it also applies to translated messages.
- 7 Out port.** The message is sent.

2.4 A worked example

The sample configuration that installs with the program describes a real rig: a computer running a DAW, a Roland Integra-7, a Fractal Axe-Fx, a Yamaha MU15 drum module, a VI62 keyboard, an FCB1010 foot controller and a stomp box. Its six translation rules show what the four tools can do together:

Rule	Type	What it does
1 and 2	Block	Keeps the DAW's channel-10 and channel-1 notes away from the Integra-7 and the MU15, so a drum track does not play the wrong sound module.
3 and 4	Step	Two keyboard buttons raise and lower the MU15's volume in steps.
5	Bank Change	One program-change button on the keyboard selects a whole Integra-7 sound bank.
6	Translate	A keyboard controller is turned into a program change that selects Integra-7 patch 1.
Channels	Override	Everything sent to the MU15 is forced onto MIDI channel 10, so the drum module hears drums whatever channel the sender used.

3. The router: front and rear panels

3.1 Front panel



Front panel. The numbers match the table below.

- | | |
|--------------------------------|---|
| 1 Power button (red) | Switches the router on and off; the button lights while the router is on. At start-up the router reads its configuration from the microSD card (if the card is missing it stops and shows an error on the display), flashes the port lights as a self-test, then shows a summary of the configuration on the display. |
| 2 Logger button (blue) | A latching button. Engaged when the router is switched on: the router sends a detailed log to a terminal program on your PC (Section 10). Engaged while the router is running: the display becomes a live MIDI monitor. |
| 3 Config button (green) | A latching button. Engaged when the router is switched on: the router waits for a new configuration from your PC (Section 9). While the router is running: each press steps the display through the information screens in Section 3.3. |
| 4 Port lights | One light for each input and each output, for USB and ports 1–6. A light blinks when MIDI is received or sent on that port. They are only a visual indication of activity. |
| 5 Color display | Shows the configuration, port names, routing, channel overrides and filters, and a live MIDI monitor (Section 3.3). |

Caution: do not engage the Logger and Config buttons at the same time. If both are engaged when the router is switched on, it will not start and the Power light blinks. Release one of them and switch the router off and on again.

3.2 Rear panel



Rear panel. The numbers match the table below.

- | | |
|----------------------------|--|
| 1 MIDI ports 1–6 | Six pairs of 5-pin DIN connectors, In and Out , numbered 1 to 6. Use ordinary MIDI cables. A device that both sends and receives, such as a keyboard, can use both connectors of a pair. In and Out are independent, so you can also connect a keyboard to In 1 and a sound module to Out 1. |
| 2 MIDI USB (USB-C) | The seventh port, called USB in the program. It appears to your computer as a standard USB MIDI device, so a DAW or software synth can send to and receive from the router. |
| 3 LOG / CFG (USB-C) | Connects the router to your PC for downloading a configuration (Section 9) and for the logger terminal (Section 10). It appears on the PC as a serial (COM) port. This is a separate connector from MIDI USB. |
| 4 Ventilation slot | Keep it clear. The router draws only a few watts, but should not be placed in a hot or damp location. |
| 5 SD CARD (microSD) | Holds the router's configuration file, <i>MidiMap.mmp</i> . The card must be in the router when it is switched on. To remove it, switch the router off and gently push the card further in; a spring pops it out. |
| 6 PWR | Power socket for the supplied 9 V DC adapter (2.1 mm, center positive). |

Tip: Use USB data cables. Some USB-C cables are charge-only and will not work for MIDI, configuration or logging. Keep the LOG / CFG cable short: 3 feet is ideal and 6 feet is the limit.

3.3 The display

When the router starts, a splash screen with Sierra Digital Audio's contact details appears briefly. After the self-test, the display shows **Router Services**, a summary of the configuration it has just loaded. Press the **Config** button while the router is running to step through the information screens in turn: Router Services, Device Names, Routings, Channel Locks and Port Filtering. The button latches, so release it before pressing again for the next screen.

Router Services			
Configuration: Larry Test			
6 Input MIDI Devices	Routing	Enabled	
5 Output MIDI Devices	Translation	Enabled	
13 Routings Defined	Chnl Lock	Enabled	
3 Mappings Defined	SysEx	Enabled	
13 Chnl Locks Defined			
0 Configuration Errors			

Router Services

Device Names			
Input Ports:		Output Ports	
U	PC Reaper DAW	U	PC Reaper DAW
1	Roland Integra 7	1	Roland Integra 7
2	Fractal Axe Guitar	2	Fractal Axe Guitar
3	VI62 Keyboard	3	Yamaha Drums
4	FC1010	4	nu
5	StompBox	5	nu
6	nu	6	PC Development

Device Names

Port Routings							
OUT IN	U	1	2	3	4	5	6
	PC	INT	Axe	MU15	nu	nu	PCD
U PC							
1 INT							
2 Axe							
3 KB							
4 FC10							
5 STMP							
6 nu							

Port Routings

Port Channel Locks							
OUT IN	U	1	2	3	4	5	6
	PC	INT	Axe	MU15	nu	nu	PCD
U PC	0	0	0	10	0	0	0
1 INT	0	0	0	10	0	0	0
2 Axe	0	0	0	10	0	0	0
3 KB	0	0	0	10	0	0	0
4 FC10	0	0	0	10	0	0	0
5 STMP	0	0	0	10	0	0	0
6 nu	0	0	0	10	0	0	0

Port Channel Locks

Port Filtering							
IN PORT				OUT PORT			
Port	Device	N	P	C	S	Port	Device
U	pc	y	y	y	n	U	pc
1	int	y	y	y	n	1	int
2	axe	y	y	y	n	2	axe
3	kb	y	y	y	n	3	mu15
4	fc10	y	y	y	n	4	nu
5	stmp	y	y	y	n	5	nu
6	nu	y	y	y	n	6	pcd

Port Filtering

The five information screens of the display.

Screen	What it shows
Router Services	The configuration's short name; how many input and output devices are named; how many routings (green LEDs), translation lines and channel overrides are defined; and the number of configuration errors (lines of the file the router could not understand — normally 0). On the right, whether Routing, Translation, Channel Lock and SysEx are enabled.
Device Names	The full description you gave each input and output port.
Port Routings	The routing grid: a green dot where an input is connected to an output.
Port Channel Locks	The channel override for each input/output pair (0 = no change).
Port Filtering	The NT, PC, CC and SX boxes for every port. The PB, AT and RT filters are set and shown in the PC program only.

Live MIDI monitor. Engage the **Logger** button while the router is running and the display lists each message as it is received (**RCV**) and sent (**XMT**): the message type, the port number and name, and the message bytes in hexadecimal. SysEx is shown with a byte count. The display is buffered and updates slowly, which is normal, and it may not show every message when traffic is heavy.

3.4 Start-up and the three modes

Mode	How to start it	What happens
Run	Switch the router on with neither button engaged.	The normal mode. The router reads the configuration from the microSD card and processes MIDI. This is the mode you use for playing.
Configure	Engage the Config button, then switch the router on.	The display shows <i>Configuration Update / Download Started</i> . The router waits for a configuration from your PC and writes it to the microSD card. It does not process MIDI.
Logger	Engage the Logger button, then switch the router on.	The router works normally but also sends a very detailed log to a terminal program on your PC. It becomes very slow ; use it only for troubleshooting.

The start-up sequence is: power on, splash screen, microSD configuration read, port-light self-test, Router Services screen, then Run mode (or Configure or Logger mode if that button was engaged).

4. Setting up

4.1 What you need

- The MidiXLate router with its 9 V power supply and its microSD card (already inside the router).
- A Windows PC to create and download configurations (Windows 10 or 11).
- MIDI cables for your devices, and a USB data cable with a USB-C plug for the router end (for configuring the router).
- Optional: a USB cable from the router's MIDI USB port to your computer, if you want a DAW or software synth on the USB port.

4.2 Plan your connections

List the devices you will connect and give each a short name of up to four characters, such as KB for a keyboard or PCS for a computer synth. Decide which devices *send* MIDI (keyboards, pedal boards, your DAW's output) and which *receive* it (sound modules, effects processors, your DAW's input); a device that does both can use both an input and an output. Sending devices connect to router **inputs**; receiving devices connect to router **outputs**.



Always: a device's MIDI OUT goes to a router IN, and a router OUT goes to a device's MIDI IN.
Cable direction.

Port	Input side (sends to the router)	Output side (receives from the router)
USB	PC — PC Reaper DAW	PC — PC Reaper DAW
1	INT7 — Roland Integra 7	INT7 — Roland Integra 7
2	Axe — Fractal Axe Guitar	Axe — Fractal Axe Guitar
3	KB — VI62 Keyboard	MU15 — Yamaha Drums
4	FC10 — FCB1010 foot controller	nu — not used
5	STMP — StompBox	nu — not used
6	nu — not used	PCD — PC Development

The planning sheet above is the sample configuration that installs with the program. Notice that one device can use an input on one port and a different device an output on the same port (port 3 above).

4.3 Connect the router

- 1 Make sure the router is **switched off**.
- 2 Connect your MIDI cables: each device's **MIDI OUT** to a router **In** connector, and each router **Out** connector to a device's **MIDI IN**.
- 3 If you want a computer on the USB port, connect it to **MIDI USB**.
- 4 Connect the power supply to **PWR**, then switch the router on. Watch the start-up sequence (Section 3.4). Connect the **LOG / CFG** cable only when you are configuring or logging (and then with the router off).

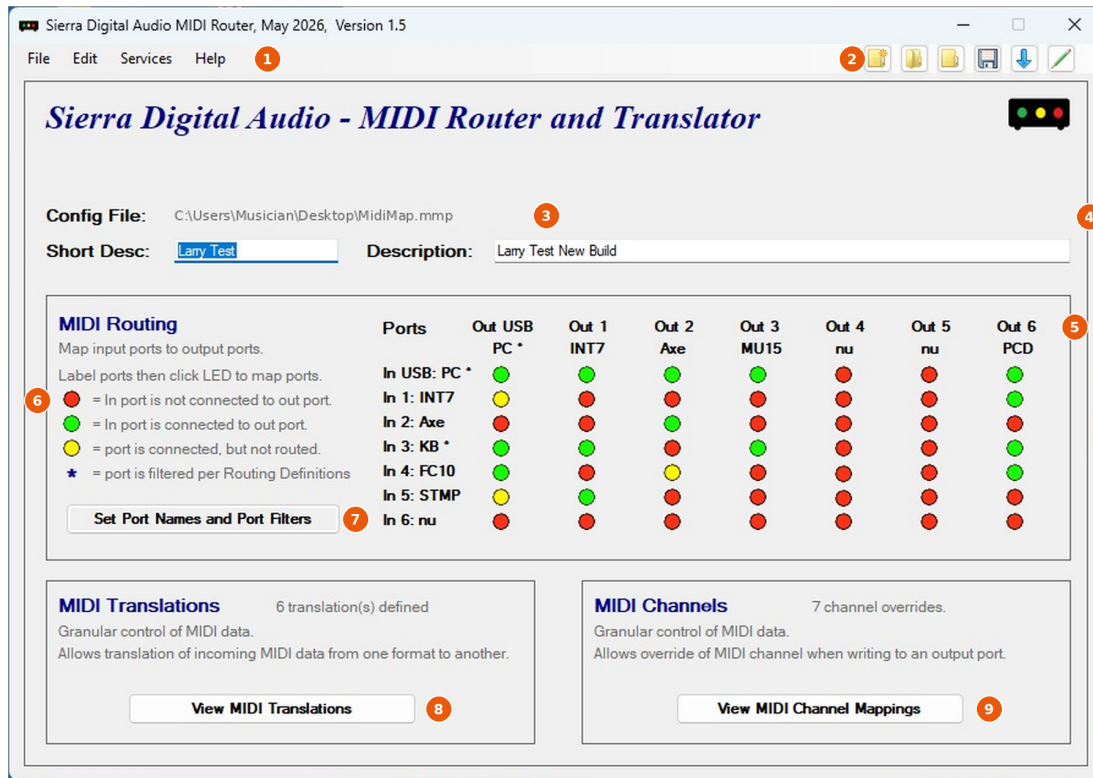
4.4 Install the MidiXLate program

- 1 Go to **SierraDigitalAudio.com**, open the MidiXLate page and download the installer (*setupMidiXLate-V1.5.exe*). The page also lists the installer's SHA-256 fingerprint, so you can check that your download is unmodified.
- 2 The program needs the Microsoft .NET Framework 4.7.2 or newer, which is already included in current Windows 10 and 11. If your PC is older, install the .NET Framework from Microsoft first.
- 3 Run the installer, accept the defaults and choose to create a desktop shortcut.
- 4 Start MidiXLate. The first time, it offers to open the **sample configuration** or start with an empty one. Choosing the sample is a good way to explore the program.

5. The MidiXLate program

5.1 The main window

The main window is where you describe your whole setup. Everything else (port names, translations, channel overrides) opens from here.



The main window, showing the sample configuration. The numbers match the table below.

1	Menu bar	File (New, Open, Close, Save, Download, Exit), Services (Section 5.3) and Help (About, Routing Definitions).
2	Toolbar	Speed buttons, left to right: New , Open , Close , Save , Download to router (blue arrow) and Notes (pencil). Hover over a button for a hint.
3	Config File	The file you are working on. (<i>new configuration</i>) until you save it or open a file.
4	Short Desc and Description	A short name (shown on the router's display) and a longer description. Both must be filled in before you can save or download.
5	MIDI Routing grid	Inputs down the side, outputs across the top. Click a LED to change it (Section 6.2).
6	LED colors	Red : not connected. Green : connected, MIDI is routed. Yellow : connected on paper but not routed, so no MIDI passes. A * beside a port name means its filters differ from the defaults.
7	Set Port Names and Port Filters	Opens the window where you name the ports and choose which message types each accepts and passes (Section 6.1).
8	MIDI Translations	Shows how many translation lines are defined; View MIDI Translations opens the list (Section 7).

5.2 Creating and managing configurations

A **configuration** is everything you set up: port names and filters, routing, translation rules, channel overrides and the service switches. It is saved as a small text file with the extension **.mmp**. Keep a separate file for each rig or each gig; the router holds only one configuration at a time, the one you last downloaded.

- **New** clears everything and starts a fresh configuration.
- **Open** and **Save** use the standard Windows dialogs. The program remembers the last file you used and reopens it at start-up.
- **Starting with a particular file:** add the file's path after *MidiXLate.exe* in the desktop shortcut's *Target* box (for example *MidiXLate.exe "C:\Rigs\Studio.mmp"*).
- **Save and Download stay greyed out** until the Short Description and Description are filled in and at least one input port and one output port have been named.
- **Notes** (the pencil button) is a scratch pad stored with the program. It is not part of the .mmp file.

Important: your PC file is the **master copy**. The router cannot send its configuration back to the PC, so always save your configuration on the PC before or after downloading it.

5.3 The Services menu

The **Services** menu switches whole features on or off. A switched-off feature keeps its settings, so you can turn it back on later without re-entering anything. The switches are saved in the configuration.

Item	What it does
Routing	Always on in this release. Selecting it shows a message explaining this.
Translation	On: translation rules are applied. Off: all rules are ignored and the View MIDI Translations button is greyed out.
Channel Lock	On: channel overrides are applied. Off: they are ignored and the View MIDI Channel Mappings button is greyed out.
System Exclusive	Off by default. Turn it on to let SysEx pass between ports whose SX boxes are ticked (Section 13).
Active Sensing	No effect. The router always discards Active Sensing messages.

5.4 A typical workflow

Do this	Section
New , then fill in Short Desc and Description .	Section 5
Set Port Names and Port Filters: name the ports you use and choose their filters.	Section 6
Click the routing grid to connect inputs to outputs.	Section 6
Optional: translation rules and channel overrides .	Section 7, Section 8
Save the configuration, then Download it to the router.	Section 9

6. Routing, port names and filters

6.1 Naming ports and choosing filters

Press **Set Port Names and Port Filters** on the main window. Do this *before* you route: the names appear on the routing grid, in the translation screens and on the router's display.

	Abbreviation	Description		Command Filtering When receiving MIDI data Accept these MIDI commands;
In USB:	PC	PC Reaper DAW	X	☒ NT ☒ PC ☒ CC ☒ SX
In Port 1:	INT7	Roland Integra 7	X	☒ NT ☒ PC ☒ CC ☐ SX
In Port 2:	Axe	Fractal Axe Guitar	X	☒ NT ☒ PC ☒ CC ☐ SX
In Port 3:	KB	VI62 Keyboard	X	☒ NT ☒ PC ☒ CC ☒ SX
In Port 4:	FC10	FC1010	X	☒ NT ☒ PC ☒ CC ☐ SX
In Port 5:	STMP	StompBox	X	☒ NT ☒ PC ☒ CC ☐ SX
In Port 6:	nu	nu	X	☒ NT ☒ PC ☒ CC ☐ SX

	Abbreviation	Description		Command Filtering When writing MIDI data Pass these MIDI commands;
Out USB:	PC	PC Reaper DAW	X	☒ NT ☒ PC ☒ CC ☒ SX
Out Port 1:	INT7	Roland Integra 7	X	☒ NT ☒ PC ☒ CC ☐ SX
Out Port 2:	Axe	Fractal Axe Guitar	X	☒ NT ☒ PC ☒ CC ☐ SX
Out Port 3:	MU15	Yamaha Drums	X	☒ NT ☒ PC ☒ CC ☐ SX
Out Port 4:	nu	nu	X	☒ NT ☒ PC ☒ CC ☐ SX
Out Port 5:	nu	nu	X	☒ NT ☒ PC ☒ CC ☐ SX
Out Port 6:	PCD	PC Development	X	☒ NT ☒ PC ☒ CC ☐ SX

CLEAR CANCEL SAVE

The MIDI Port Labels window: one row for each of the seven inputs (top) and seven outputs (bottom).

- | | | |
|---|------------------------------|--|
| 1 | Port rows | In USB and In Ports 1–6 above; Out USB and Out Ports 1–6 below. |
| 2 | Abbreviation | Up to four characters, such as <i>KB</i> or <i>INT7</i> . Used on the routing grid, in the translation screens and by the router when it shows MIDI traffic. |
| 3 | Description | The full name, shown on the router's Device Names screen. |
| 4 | Clear (red X) | Empties that row. |
| 5 | Accept these commands | Input side. The checkboxes choose which kinds of message this input will accept (Section 6.1.1). |
| 6 | Pass these commands | Output side. The checkboxes choose which kinds of message this output will send. |
| 7 | CLEAR | Empties every row and resets the filters to their defaults. |
| 8 | CANCEL | Closes the window and discards your changes. |
| 9 | SAVE | Keeps your changes. |

Tip: Leave unused ports empty (or call them *nu*). The router does not poll ports that are not used, which keeps it fast. When an input has no name, its whole row on the routing grid is set to red automatically, and an unnamed output turns its whole column red.

6.1.1 The message filters

the original four				pitch bend, aftertouch, real-time		
☒ NT	☒ PC	☒ CC	☐ SX	☒ PB	☒ AT	☐ RT

Factory defaults: NT, PC, CC, PB and AT ticked; SX and RT clear. The same seven boxes appear for every input and every output port.

Box	Message type	Notes
NT	Notes	Note on and note off.
PC	Program change	Patch selection.
CC	Control change	Knobs, sliders, pedals, bank select.
SX	System Exclusive	Off by default. Also needs Services > System Exclusive switched on (Section 13).
PB	Pitch bend	On by default.
AT	Aftertouch	Both key (poly) pressure and channel pressure. On by default.
RT	Real-time and system common	MIDI clock, start, continue, stop, system reset, MTC quarter frame, song position, song select and tune request. Off by default.

A message gets through only if **the input accepts it, the route is green** and **the output passes it**. The filters look at the message as it was received, before any translation. Active Sensing never passes. A * beside a port name on the main window warns you that its filters differ from the defaults.

Tip: use filters to keep unwanted data away from a device: for example, untick **PC** on an output so a synth ignores program changes from a keyboard, or leave **RT** unticked on devices that should not follow your clock.

6.2 Routing: connecting inputs to outputs

The routing grid on the main window has an input for each row and an output for each column. Click a LED to change it; each click moves it to the next color: **red** (not connected), **green** (connected, MIDI is routed), **yellow** (connected on paper, nothing is routed), and back to red.

LED	Meaning
Green	MIDI received on this input is sent to this output (subject to the filters, translation rules and channel overrides).
Red	This input does not send to this output.
Yellow	A marker for a connection you have planned but switched off. It carries no MIDI, exactly like red. It is useful for turning a route off temporarily while keeping a note of it.

- **One input can feed many outputs**, for example a keyboard to both a sound module and your DAW.
- Route only what you need. Every extra route costs a little processing time and sends MIDI that nobody wants.
- A translation rule only works on a pair of ports that is routed (green). If a rule does nothing, check the route first.
- Hover over a LED for a hint naming its input and output; **Help > Routing Definitions** explains the colors.

7. Translation rules

Translation rules change, block or generate MIDI as it passes through. Click **View MIDI Translations** on the main window to open the list. The window shows up to 128 lines; each line is one rule. The sample configuration has six.

7.1 The translation list

Line	TrnBlkStp	Description	In Port	In Cmd	In Chnl	In Data1	In Data2	Out
1	Block	Block notes from Reaper on channel 10 to I7	7: PC	Note On-Off	10 (0A hex)	All	All	1: I
2	Block	Block notes from Reaper on channel 1 to MU15	7: PC	Note On-Off	1 (01 hex)	All	All	3: I
3	Step	MU15 Volume Step UP	3: KB	Ctl Chg	4 (04 hex)	7 (07 hex)	All	3: I
4	Step	MU15 Volume Step DOWN	3: KB	Ctl Chg	4 (04 hex)	6 (06 hex)	All	3: I
5	Bank Chg	Integra-7 Bank Change	3: KB	Pgm Chg	1 (01 hex)	10 (0A hex)		1: I
6	Translate	Keyboard set Integra-7 patch 1 Grand Piano	3: KB	Ctl Chg	2 (02 hex)	20 (14 hex)	1 (01 hex)	1: I
7								

is 1-128.									Bulk Copy, Move, Delete
Out Port	Out Cmd	Out Chnl	Out Data1	Out Data2	Copy Row	Paste Row	Delete Row		
1: INT7	Note On-Off	10 (0A hex)	All	All	COPY	PASTE	DELETE		
3: MU15	Note On-Off	1 (01 hex)	All	All	COPY	PASTE	DELETE		
3: MU15	Ctl Chg	1 (01 hex)	6 (06 hex)	50 (32 hex)	COPY	PASTE	DELETE		
3: MU15	Ctl Chg	1 (01 hex)	6 (06 hex)	50 (32 hex)	COPY	PASTE	DELETE		
1: INT7	Ctl Chg	1 (01 hex)	64 (40 hex)	89 (59 hex)	COPY	PASTE	DELETE		
1: INT7	Pgm Chg	3 (03 hex)	1 (01 hex)		COPY	PASTE	DELETE		
					COPY	PASTE	DELETE		

The translation list, shown in two halves so that it can be read: the left half (line, type, description and the message to match) and the right half (what to do, and the row buttons).

- 1 Line** The line number, 1 to 128. Lines are independent; order does not matter.
- 2 TrnBlkStp** The rule type: **Translate**, **Block**, **Step** or **Bank Chg**.
- 3 Description** The full description of the rule.
- 4 In Port ... In Data2** The message to **match**: the input port, the message type (command), the channel and the data values. *All* matches any value.
- 5 Out Port ... Out Data2** What to **do**: where to send the result, and the message it becomes. For a Block rule these show what is blocked.
- 6 Copy, Paste, Delete** Row buttons. Copy a line, paste it over another line, or delete a line. You can also **drag and drop** a line to copy it.
- 7 Bulk Copy, Move, Delete** Opens the bulk window (Section 7.5).

There is no Save button on this window: your changes are kept when you save the configuration from the main window. **Double-click a line** to open the line editor.

7.2 The line editor

Block incoming MIDI from being sent to an outbound MIDI port.

Line: 1

1 **Type:** ☐ Translate ☒ Block ☐ Step ☐ Bank Change

2 **Description Short:** 3% 17 Ch 10

3 **Description Full:** Block notes from Reaper on channel 10 to 17

4 **Block From**

5 **In Port:** 7: PC

6 **Message type:** ☐ Control Change ☐ Program Change ☒ Note On-Off

7 **Channel and data:** Channel: 10 (0A hex) Note: All Velocity: All

8 **Block To**

Out Port: 1: INT7

Message type: ☐ Control Change ☐ Program Change ☒ Note On-Off

Channel and data: Channel: 10 (0A hex) Note: All Velocity: All

MIDI channels are numbered 1-16. MIDI data is numbered 1-128.

9 **CANCEL** **SAVE**

- 1 **Type** Translate, Block, Step or Bank Change. The panels below change to suit.
- 2 **Description Short** A short label for the rule.
- 3 **Description Full** A fuller description. **Both descriptions are required**; a line with no description is treated as empty.
- 4 **From panel** Titled *Translate From*, *Block From*, *Step From* or *From Bank Chg Cmd*.
- 5 **In Port** The input port to watch. USB is port 7 on these screens.
- 6 **Message type** Control Change, Program Change or Note On-Off.
- 7 **Channel and data** Channel (*All* or 1–16) and the values to match. Their labels change with the type: Controller / Value, Patch, or Note / Velocity.
- 8 **To panel** Where the result goes: the output port, the new message type, channel and values.
- 9 **CANCEL / SAVE** Discard or keep the line.

The line editor, showing a Block rule. A message is matched on its input port, message type, channel and data values.

7.3 The four rule types

Type	What it does	To side
Translate	Turns the matching message into a different message: a control change, program change or note, in any combination (control change to control change, program change to control change, and so on).	Output port, message type, channel and values.
Block	Stops the matching message from reaching one output port. The To side is greyed out, because nothing is sent.	Only the output port.
Step	Each time the matching message arrives, sends the controller value stepped up or down by a fixed amount. Use a button or pedal as a volume or pan up/down control.	Control change only: <i>Controller</i> , <i>Init Value</i> (the first value sent) and <i>Inc Value</i> (the amount to add each time; negative to step down).
Bank Change	Turns a matching program change into a bank select (control change 0 with the MSB, then control change 32 with the LSB), so one button can select a whole bank on a module.	Control change only: <i>Bank MSB</i> and <i>Bank LSB</i> .

What the From fields mean. *Channel*, *Data1* and *Data2* may each be **All** (match anything) or a specific number. For a control change, *Data1* is the controller and *Data2* the value; for a program change, *Data1* is the patch; for a note, *Data1* is the note and *Data2* the velocity. A **Note On-Off** match covers both note-on and note-off messages.

7.4 How rules are applied

- A rule belongs to **one input port and one output port**, and only acts if that pair is routed (green).
- When a message matches a Translate, Step or Bank Change rule for an output, **only the result is sent to that output**, not the original. Other outputs fed by the same input still receive the original unless they have rules of their own. To send both the original and a translation to one output, add a second rule that translates the message into itself.
- Several rules can match the same message; each acts. Two Step rules on the same controller (one with a positive and one with a negative increment) share the running value, so a pair of up and down buttons stays in step.
- A message that matches no rule for that pair passes unchanged. Only control change, program change and note messages are matched; everything else passes unchanged, subject to the filters.
- The channel override (Section 8) is applied **after** translation, so it also changes the channel of translated messages.

Examples

Goal	Type and settings
Keep a DAW's channel-10 drum notes away from a synth.	Block. In Port: PC (USB). Note On-Off, Channel 10, Note All, Velocity All. Out Port: the synth.
Two keyboard buttons raise and lower a module's volume.	Step , two lines. From: the keyboard, Control Change, the controller number each button sends. To: the module, Control Change, the module's volume controller, Init Value 50, Inc Value +10 on one line and -10 on the other.
One program-change button selects a sound bank.	Bank Change. From: the keyboard, Program Change, the patch number the button sends. To: the module, Bank MSB and Bank LSB values from the module's MIDI chart.
A keyboard controller picks a patch on a module.	Translate. From: Control Change, the controller and value. To: the module, Program Change, the patch number.

Tip: MIDI numbers can be counted from 0 or from 1, and devices differ. On these screens channels are shown as 1–16 and data values as 1–128, with the number in hexadecimal beside it. **Always test a new rule with the live MIDI monitor** (engage the Logger button while the router is running) and compare the bytes sent with your device's MIDI implementation chart.

Note: when you translate *to a note*, the editor also shows *Delay1* and *Delay2* fields. They are reserved for a future release and are not used by the current router.

7.5 Bulk Copy, Move and Delete

Press **Bulk Copy, Move, Delete** on the translation list to work on many lines at once, which is handy when cloning a set of rules for a second device.

- 1 Choose **Copy, Move** or **Delete**.
- 2 Enter the first and last line of the block (*Copy From Begin* and *Copy From End*).
- 3 For Copy and Move, enter the line where the block should start (*Copy To*).
- 4 Press the action button (**Bulk Copy**, and so on), then close the window to see the changes in the list.

8. Channel override

Channel override forces everything that one input sends to one output onto a single MIDI channel, whatever channel the sender used. It is ideal for a drum module that only listens on channel 10, or for a keyboard that can only transmit on one channel. Click **View MIDI Channel Mappings** on the main window.

Force MIDI data (from an input port) to a specific MIDI channel when writing to output port.
Zero means no change to MIDI channel. Incoming MIDI channel is written to outgoing MIDI port.

Channel	OutU: PC	Out1:INT7	Out2:Axe	Out3:MU15	Out4:nu	Out5:nu	Out6:PCD
InU: PC	0	0	0	10	0	0	0
In1: INT7	0	0	0	10	0	0	0
In2: Axe	0	0	0	10	0	0	0
In3: KB	0	0	0	10	0	0	0
In4: FC10	0	0	0	10	0	0	0
In5: STMP	0	0	0	10	0	0	0
In6: nu	0	0	0	10	0	0	0

CANCEL SAVE

The channel override grid.

- | | | |
|---|-----------------------|--|
| 1 | Instructions | 0 means no change: the message keeps the channel it arrived on. |
| 2 | Input rows | One row for each input port, named as you labeled them. |
| 3 | Output columns | One column for each output port. Each box holds the channel for that input-to-output pair: 0 for no change, or 1–16 to force that channel. |
| 4 | CANCEL | Closes the grid and discards your changes. |
| 5 | SAVE | Keeps your changes. They are saved in the configuration. |

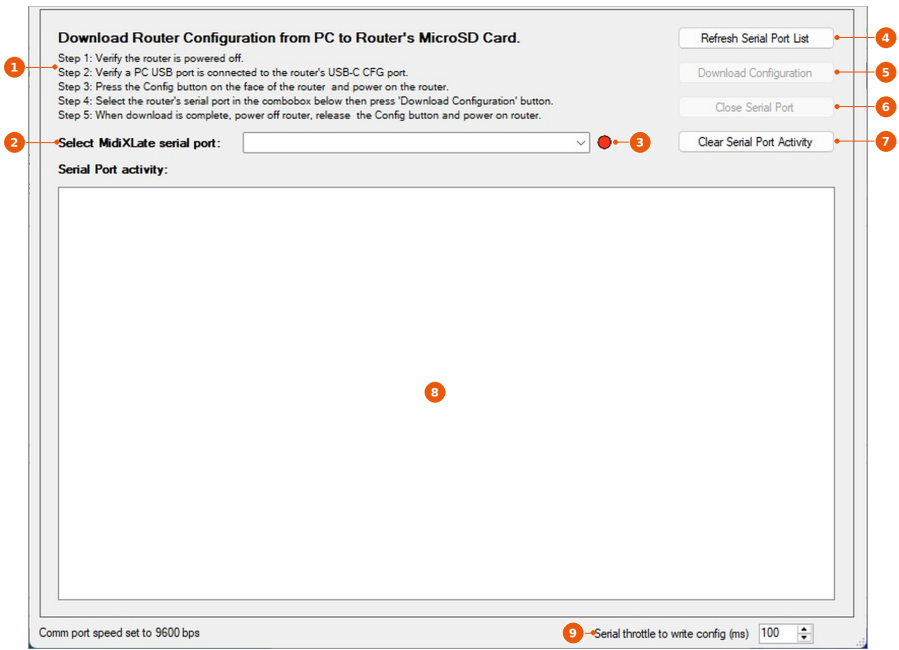
- The override applies to notes, program changes, control changes, pitch bend and aftertouch. SysEx and real-time messages are never changed.
- It is applied **last**, so it also overrides the channel set by a translation rule.
- In the sample configuration every input is forced to channel 10 on Out 3, where the drum module is connected.

- **Services > Channel Lock** must be on. The router's *Port Channel Locks* screen shows the grid you downloaded.

9. Saving and downloading to the router

Save your configuration first (**File > Save**), then send it to the router. The download writes your configuration to the router's microSD card, replacing the previous one. It is done with the router in **Configure mode**.

9.1 The Download window



The download window, before a download starts. The activity list fills as the configuration is sent.

1	Instructions	The same five steps as in Section 9.2.
2	Serial port list	Pick the router's serial (COM) port. Selecting it makes the program send a handshake; when the router answers, the light turns green .
3	Connection light	Red : no router answering. Green : the router is ready to receive.
4	Refresh Serial Port List	Rescans the PC for serial ports, for example after plugging in the cable.
5	Download Configuration	Starts the download. Available only when the light is green.
6	Close Serial Port	Releases the port when you are finished.
7	Clear Serial Port Activity	Empties the activity list.
8	Serial Port activity	Lists each line of the configuration as it is sent, with download statistics.
9	Serial throttle	The pause in milliseconds between lines. The default (100) is right for most PCs; raise it if a download fails.

9.2 Downloading step by step

- 1 **Save** your configuration on the PC.
- 2 Switch the router **off**.
- 3 Connect a USB data cable from the PC to the router's **LOG / CFG** port (three feet is ideal, six feet at most).
- 4 On the PC, click the blue **Download** arrow on the toolbar (or **File > Download Configuration**). The download window opens.
- 5 **Engage the Config button** (green) on the router, then **switch the router on**. The display reads *Configuration Update / Download Started*.
- 6 In the download window, choose the router's serial port from the list. After a moment the light turns **green** and the **Download Configuration** button becomes available.
- 7 Press **Download Configuration**. The lines of the configuration scroll up the activity list as the router acknowledges each one and writes it to the microSD card.
- 8 When the download finishes, a message appears and the router's display reads *Configuration Update Complete*. **Release the Config button, switch the router off, then on again**. The new configuration loads.

Important: connect or disconnect the LOG / CFG cable only with the router **switched off**. And remember to save your PC copy: the router cannot send its configuration back to the PC.

Tip: if a translation line uses a pair of ports that is not routed (green), the program lists it when the download finishes. The line is still sent, but it has no effect until you route that pair.

Problems: if the light stays red, see the troubleshooting table: the usual causes are a charge-only cable, the Config button not being engaged *before* power-on, or another program such as a terminal window holding the COM port.

10. Using the router

10.1 Day to day

Switch the router on with neither the Logger nor the Config button engaged. It loads its configuration from the microSD card and runs by itself; no PC is needed. The port lights show activity, and the Router Services screen confirms what was loaded. To change anything, edit the configuration on the PC and download it again (Section 9).

10.2 Checking what was loaded

Press the **Config** button to step through the display screens (Section 3.3). They show exactly what the router is using, which is the quickest way to confirm that a download worked: the configuration name, the number of routings, translations and overrides, and the routing grid itself.

10.3 Watching MIDI live

Engage the **Logger** button while the router is running. The display lists each message received (RCV) and sent (XMT) with its port, type and bytes. Use it to confirm that a rule or filter does what you intended. Release the button to return to the information screens.

10.4 The logger terminal (for support)

For difficult problems the router can send a very detailed log to a terminal program on your PC. It is slow, so use it only for troubleshooting, and **never during a performance**.

- 1 Install a free terminal program such as **PuTTY** on your PC.
- 2 Switch the router off and connect a USB data cable from the PC to the **LOG / CFG** port.
- 3 In Windows Device Manager, note the COM port number that appears for the router.
- 4 In the terminal program choose a **Serial** connection to that COM port at **9600 baud** (8 data bits, no parity, 1 stop bit).
- 5 **Engage the Logger button**, then switch the router on. The display reads *Log Router Startup and Runtime Activity*, and the router prints its configuration to the terminal.
- 6 Play a note, send a program change or move a controller. Every step of the router's processing is logged.
- 7 To report a problem, clear the terminal, reproduce the problem, and email the log together with your *.mmp* configuration file to support.
- 8 When finished, release the Logger button and switch the router off and on again.

10.5 The microSD card

The configuration is stored on the microSD card as **MidiMap.mmp**, read once when the router is switched on. With the router **off**, you can push the card in gently to eject it, put it in your PC's card reader and open the file in Notepad or another Windows text editor. **Make a backup before changing anything**. Editing by hand is not recommended: the structure and delimiters are very specific (Appendix A). The card must be in place whenever the router is switched on.

11. Troubleshooting

Problem	What to try
The router will not start	If the microSD card is missing, the router stops and shows an error on the display: switch it off, insert the card and restart. If the Power light blinks , both the Logger and Config buttons are engaged: release one and restart.
No MIDI passes at all	Check the cables (a device's MIDI OUT goes to a router In). Press Config to see the Port Routings screen and confirm the input is connected to the output with a green dot. In the program, check the port names (unnamed ports are treated as unused) and that the input and output filter boxes are ticked.
One kind of message is missing	Check the filter boxes for both the input <i>and</i> the output: NT notes, PC program change, CC control change, PB pitch bend, AT aftertouch, SX SysEx, RT clock and transport. SX and RT are off by default.
SysEx does not pass	Three things must be set: Services > System Exclusive on, SX ticked on the input, and SX ticked on the output, and the route must be green. While a SysEx dump is being sent to an output, other traffic to that output is discarded, so do not play during a dump.
MIDI clock or Start/Stop does not arrive	Tick RT on the input and on the output. RT is off by default.
A device hears the wrong channel	Look for a channel override for that input and output pair (Section 8), and for a translation rule that sets the channel (Section 7). The override is applied last.
A translation rule does nothing	Check that the pair of ports is routed (green); that both descriptions are filled in; that Services > Translation is on; and that the In Port, message type, channel and data values match what the device really sends. Use the live MIDI monitor to see the actual bytes.
Save or Download is greyed out	Fill in the Short Description and Description, and name at least one input port and one output port.
The download light stays red	The Config button must be engaged before the router is switched on. Use a USB data cable (not charge-only), no longer than six feet. Choose the right COM port, press Refresh, and close any terminal program that has the port open.
The display shows configuration errors	The router could not understand some lines of the file. Open the configuration in the program, save it again and re-download it. Do not edit the file by hand.
The router is very slow	The Logger button is engaged. Release it and restart the router.
Strange behavior after plugging in a cable	Cables were connected with the power on. Switch the router off and on again, and always connect cables with the power off.

12. Specifications

Item	Specification
MIDI ports	6 × MIDI In and 6 × MIDI Out (5-pin DIN) plus one USB-C MIDI port (7 × 7 routing)
USB MIDI	USB-C; appears as a standard USB MIDI device
Configuration and logging	USB-C LOG / CFG port; appears on the PC as a serial (COM) port
Processor	Atmel SAM3X8E 32-bit ARM Cortex-M3, 84 MHz
Display	3.5 inch color, 320 × 480 pixels
Configuration storage	Removable microSD card (FAT format); the configuration is the file <i>MidiMap.mmp</i>
Translation rules	Up to 128 lines: Translate, Block, Step, Bank Change
Channel override	One setting for each input/output pair
Filters	Per port: notes, program change, control change, SysEx, pitch bend, aftertouch, real-time and system common
Power	9 V DC adapter, 2.1 mm center positive (supplied); under 10 watts
Dimensions (W × H × D)	14 in × 4.5 in × 6 in (356 × 114 × 152 mm)
PC program	MidiXLate, free, Windows 10 and 11, .NET Framework 4.7.2 or newer

Sierra Digital Audio is constantly improving the MidiXLate router, so specifications and appearance may change without notice. For the latest information visit SierraDigitalAudio.com.

13. Technical notes

System Exclusive (SysEx)

- SysEx passes through the router **unchanged**. It is routed, but it cannot be translated, and it is not affected by channel overrides.
- It needs **Services > System Exclusive** switched on, the **SX** box ticked on the input and on the output, and a green route.
- SysEx is passed at full MIDI speed in both directions between the DIN ports and USB, so large patch and bank dumps pass without being throttled.
- While a SysEx dump is passing to an output port, other messages for that port from different inputs are discarded (except real-time messages such as clock). Do not play during a dump.
- A SysEx that never ends (for example because a cable was pulled) is closed by the router after about two seconds.

Real-time messages and Active Sensing

- MIDI clock, start, continue, stop and system reset, and the system common messages (MTC quarter frame, song position, song select, tune request), pass unchanged when **RT** is ticked on the input and the output. They are never translated and never channel-overridden. They are off by default.
- The router handles real-time bytes that arrive in the middle of other messages, and running status (messages sent without repeating the status byte).
- **Active Sensing** is discarded. It is a safety message some devices send continuously; it is useful in principle, but devices that send it many times a second flood a MIDI network, add latency and are better filtered out.

Translation and routing

- Only control change, program change and note messages are matched by rules. Pitch bend, aftertouch and the rest are routed as received, subject to the filters.
- A rule affects only the input and output port it names. If an input feeds several outputs, the others receive the original message unless they have rules of their own.
- Anything the router cannot recognize as MIDI is logged (in logger mode) and ignored.

Cables and latency

- Keep all cables as short as practical. USB cables can be up to six feet but three feet is recommended; MIDI cables can run to 50 feet but keeping them under 36 feet is better.

14. Warranty, support and legal

14.1 Limited warranty

- The warranty is valid only if you purchased the router directly from Sierra Digital Audio, and it is not transferable.
- The electronic components are guaranteed to be free of defects in material and workmanship, under normal operating conditions, for **one year** from the original date of purchase.
- If the router shows a defect within the warranty period, Sierra Digital Audio will, at its discretion, repair it or replace it with new or reconditioned parts. A replacement carries the remainder of the original one-year warranty.
- When a warranty claim is validated, the repaired or replacement router is returned to you freight prepaid by Sierra Digital Audio.
- Warranty claims other than those described here are expressly excluded.

Keep your sales receipt. It is your proof of purchase, and this limited warranty is void without it.

14.2 Returns

Contact support first, with your contact details, a description of the problem and the router's serial number (on the rear of the unit). If the claim is eligible you will be given a Return Material Authorization (RMA) number. Routers received without an RMA will not be accepted. You ship the router to Sierra Digital Audio by UPS Ground; Sierra Digital Audio ships it back.

14.3 Support

This manual gives an overview of the router and its software. For more information, issues and updates, visit the support pages at **SierraDigitalAudio.com**. Sierra Digital Audio provides pre-sales and technical support: email **LScottAE@GMail.com** and expect a reply within about 48 hours. Simple requests are usually answered by email; harder ones may become a phone or video call.

14.4 Legal

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Appendix A. The configuration file format

The configuration is a plain text file (.mmp, and *MidiMap.mmp* on the microSD card). Each line is enclosed in square brackets, begins with a tag and uses the tilde ~ as the field separator, with a ~ after the last field. Lines starting with # are comments. Edit these files by hand only if you must, with a Windows text editor, and back up the file first.

Line	Meaning
[Cfg~short~description~]	The short name and long description.
[Routing~true~] [Translation~true~] [ChannelLock~true~] [SysEx~false~] [ActiveSense~false~]	The Services switches.
[SxDelay~20~]	Not used by the router. Kept so the file format does not change.
[LED~r~g~...~]	49 letters: the routing grid, input 1 (USB) first, each row left to right. r red, g green, y yellow.
[CHN~0~0~10~...~]	49 numbers: the channel override grid in the same order. 0 = no change.
[IP1~abbr~description~y~y~y~n~] [OP1~...~]	Input and output port names and the filters in the order PC , CC , NT , SX (y = on). Ports 1–7, where 7 is USB.
[XIP1~y~y~n~] [XOP1~...~]	The filters PB , AT , RT for each port. If these lines are missing, PB and AT follow NT and RT is off.
[Dtl~row~...~]	One translation line (below). Lines with no description are empty.

Translation line fields

Field	Meaning	Field	Meaning
1	Line number (1–128)	13–14	Input parameters (unused)
2	Short description	15	Output port (1–7)
3	Full description	16	Output message: c control, p program, n note
4	Type: t translate, b block, s step, k bank change	17–19	Output channel, data1, data2: a all or s specific
5	Input port (1–7)	20	Output channel
6	Input message: c , p or n	21–22	Output data1 and data2 (bank change: LSB and MSB)
7–9	Input channel, data1, data2: a all or s specific	23	Step increment (negative to step down)
10	Input channel	24	Step running value (stored as 0)
11–12	Input data1 and data2		

Example: a bank-change rule like the one in the sample configuration, as one line of the file:

```
[Dtl~5~Integra-7 Bank Change~Integra-7 Bank Change~k~3~p~s~s~a~1~10~0~0~0~1~c~s~s~s~1~64~89~0~0~]
```

Appendix B. MIDI quick reference

A short reminder of the messages mentioned in this manual. *n* is the channel (0 to 15 in the message, shown as 1 to 16 by most devices).

Message	Status byte	Data bytes	Notes
Note off	8 <i>n</i>	note, velocity	Covered by the NT filter
Note on	9 <i>n</i>	note, velocity	A note on with velocity 0 acts as a note off
Polyphonic key pressure	A <i>n</i>	note, pressure	AT filter
Control change	B <i>n</i>	controller, value	CC filter. Controller 0 and 32 are bank select MSB and LSB
Program change	C <i>n</i>	patch	PC filter (one data byte)
Channel pressure	D <i>n</i>	pressure	AT filter (one data byte)
Pitch bend	E <i>n</i>	LSB, MSB	PB filter
System Exclusive	F0 ... F7	any number	SX filter; vendor-specific
MTC quarter frame, song select	F1, F3	one byte	RT filter
Song position	F2	LSB, MSB	RT filter
Tune request	F6	none	RT filter
Clock, start, continue, stop	F8, FA, FB, FC	none	RT filter; may arrive in the middle of other messages
Active sensing	FE	none	Always discarded by the router
System reset	FF	none	RT filter

Appendix C. Videos and more help

The MidiXLate page at **SierraDigitalAudio.com** has a hardware tutorial video and a software tutorial video, the latest installer with its SHA-256 fingerprint, sample photographs and answers to common questions. For help that this manual does not cover, email **LScottAE@GMail.com**.

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