KORG

Pa-Series

Connecting an external controller

E 1

Preliminary notice

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Connecting a Pa-Series instrument to an external controller

The world of KORG Pa-Series instruments is open to any kind of configuration. You can control Pa-Series instrument with an external controller, like a KORG synthesizer, a controller of the **KORG nano** series, a mute master keyboard, a digital piano, or a breath controller.

These devices allow to replace the internal keyboard with an external one. Also, they allow for adding new controls to play some of the sounds while still using the internal keyboard for the other sounds. Furthermore, they allow for easier mixing, or to play percussions and special effects.

This manual will show some examples based on a few selected devices. These are only to be intended as examples. Since the Pa-Series instruments can be freely and deeply programmed by the user, you can adapt them to a plethora of different situations.

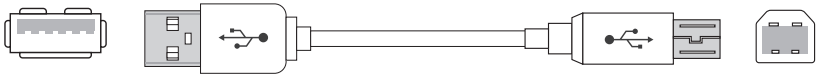
For a general introduction to the MIDI system, please check the relevant chapter in the User Manual.

Connecting the controller

Connection through the USB HOST port

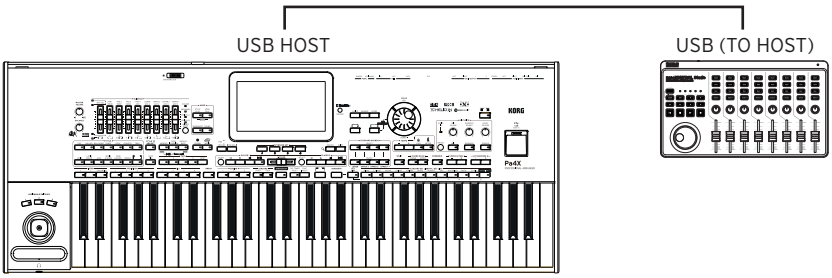
If your controller has an USB port, you can use it to connect it to Pa-Series instrument.

- Connect the **USB HOST** port (Type-A) of the Pa-Series instrument to the **USB** port of the master controller (Type-B, sometimes named **TO HOST** or **DEVICE**).



Pa-Series USB HOST
(Type-A connector)

External controller USB TO HOST / DEVICE
(Type-B connector)



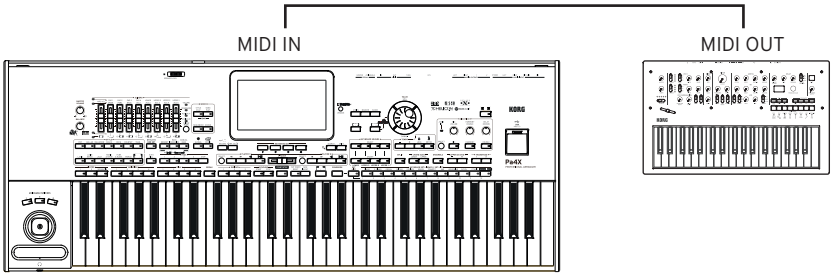
Connection through the MIDI ports

If your controller has a MIDI interface, you can use it to connect it to the Pa-Series instrument.

- Connect the **MIDI OUT** port of the master controller to the **MIDI IN** port of the Pa-Series instrument.

Pa-Series MIDI IN

External controller MIDI OUT



Setting the MIDI channels

Programming the master controller

Match the MIDI channel(s) on which the master controller will send data with those on which the Pa-Series instrument will receive data.

1 On the master controller, set the MIDI channel(s) on which data will be transmitted. Usually, channel 1 is the default setting (when only a single channel is transmitted).

2 If the master controller also includes a sound generator, lower its master volume to zero, to avoid hearing its own sounds. If you want to layer the sounds of the master controller and the Pa-Series instruments, increase the volume.

As an alternative, you can set it to the Local Off status, to only allow it to play via MIDI the sounds of the Pa-Series instrument, and not its own.

Please, read the manual of the master controller for instructions on how to set the various parameters.

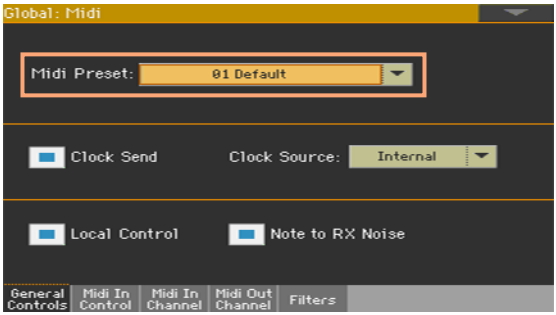
Programming the Pa-Series instrument

Configure the MIDI channels on the Pa-Series instrument.

1 Go to the **Global** > **MIDI** pages.

2 Either choose a MIDI Preset, or manually program the MIDI IN channels.

- If a MIDI Preset matching your type of connection exists, go to the **Global** > **MIDI** > **General Controls** page and use the **Midi Preset** pop-up menu to choose the MIDI Preset.



- If no MIDI Preset matches your type of connection, go to the **Global > MIDI > MIDI IN Channel** page and set the MIDI channels to match the incoming data. You can start from an existing MIDI Preset with some of the programming already set to your needs.

3 After having set the MIDI channels, you can save the new configuration into a new MIDI Preset, by choosing the **Write Midi Preset** command from the **page menu**.

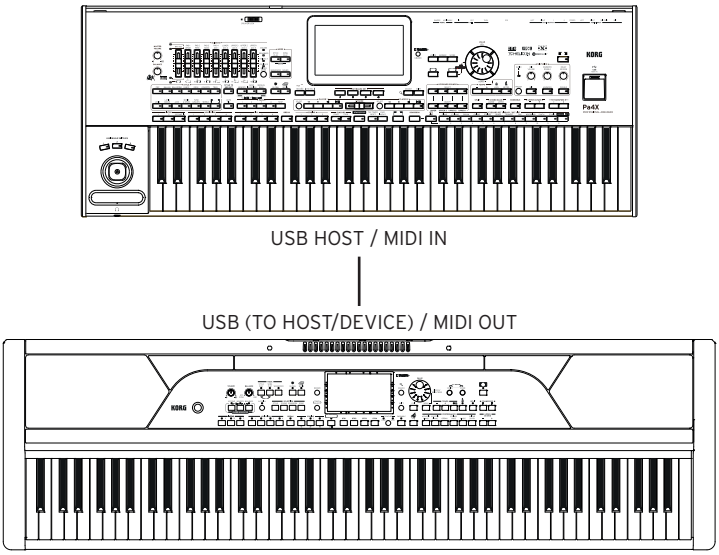
Some examples of external controller connections

Connecting a master controller to replace the internal keyboard

A master controller can be, for example, an 88-key master keyboard without a sound generator, a digital piano, or a synthesizer. You can use it as a replacement of the internal keyboard, in case you prefer to control all your setup from a single keyboard.

Connect the devices

1 Connect the USB (TO HOST or DEVICE) or MIDI OUT port of the master controller to the USB HOST or MIDI IN port of the Pa-Series instrument.



Configure the master controller

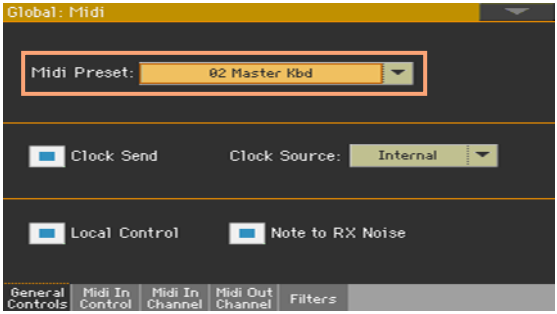
2 In the master controller, set the MIDI channel on which data will be transmitted to channel 1. This is usually the default setting.

3 If the master controller also includes a sound generator, lower its master volume to zero, to avoid hearing its own sounds. If you want to layer the sounds of the master controller and the Pa-Series instruments, increase the volume.

As an alternative, you can set it to the Local Off status, to only allow it to play via MIDI the sounds of the Pa-Series instrument, and not its own.

Configure the Pa-Series instrument

4 In the Pa-Series instrument, go to the **Global > MIDI > General Controls** page, and use the **Midi Preset** pop-up menu to choose the **Master Kbd** MIDI Preset.



You can go to the **Global > MIDI > MIDI IN Channel** page to see how MIDI channels for the Keyboard Sounds are programmed.

MIDI IN Channel	Keyboard Sound
Ch01	Global (Upper 1-3, Lower Sounds)

This setup will let the external keyboard, transmitting on MIDI channel 1, play all the Sounds on the keyboard.

Play

5 Play the master controller. Notes played on it will be considered as if they were generated by the internal keyboard and controllers of the Pa-Series instrument.

Connecting an external keyboard to control a single Sound

You can use an external keyboard, for example a master keyboard, a synthesizer, or one of the KORG microKEY or nanoKEY models, as a secondary keyboard to play one of the Upper Sounds (for example, Upper 3), while still using the internal keyboard to play the other Sounds.

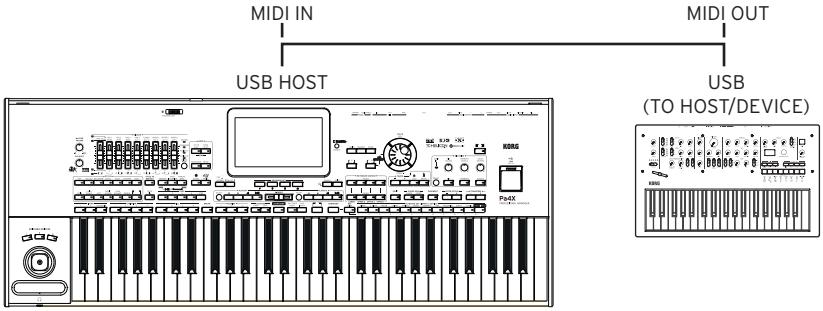
Configure the external keyboard

1 Be sure the external keyboard is sending data on MIDI channel 1. This is usually the default setting.

With the KORG microKEY, nanoKEY and devices of the same series, you can choose a different MIDI channel by using the KORG KONTROL Editor software, that you can freely download from our web site.

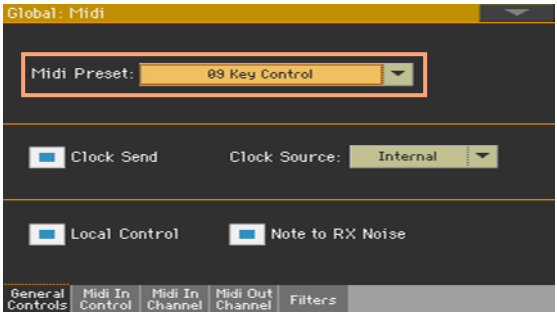
Connect the devices

2 Connect the USB or MIDI OUT port of the external keyboard to the USB HOST or MIDI IN port of the Pa-Series instrument. Be sure the external keyboard's USB port is enabled.



Configure the Pa-Series instrument

3 In the Pa-Series instrument, go to the **Global > MIDI > General Controls** page, and use the **Midi Preset** pop-up menu to choose the **Key Control** MIDI Preset.

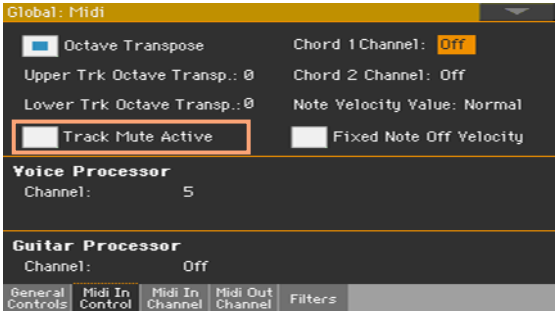


You can go to the **Global > MIDI > MIDI IN Channel** page to see how the MIDI channel for the Upper 3 Sound is programmed.

MIDI IN Channel	Keyboard Sound
Ch01	Upper 3

This setup will let the external keyboard, transmitting on MIDI channel 1, play the Upper 3 Sound. The internal keyboard will still play the Upper and Lower Sounds that are not set in mute.

Also, you can go to the **Global > MIDI > MIDI IN Controls** page, and see how the **Track Mute Active** parameter has been deselected. This will let you play from an external keyboard any Sound that is set in mute in the Pa-Series instrument.



4 Program some Keyboard Sets, with the Upper 1 and 2 Sounds meant for playing from the integrated keyboard, and the Upper 3 Sound (set in mute) meant for playing with the external keyboard. Don't forget to Write it to memory.

Play

5 When you want, play the Upper 3 Sound on the external keyboard. You can still play the other Upper (1 and 2) Sounds and the Lower Sound on the internal keyboard.

Connecting an external control surface to mix the Sounds

You can use an external control surface, for example a KORG nanoKONTROL, nanoKONTROL Studio or a KORG taktile, to mix the Sounds live, as you would do with a stage mixer when playing acoustic instruments.

Configure the external control surface

1 Program the external control surface to match the parameters you want to control in the Pa-Series instrument.

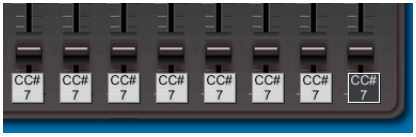
Make each slider and/or knob of the external control surface send data on separate MIDI channels, according to the programming suggested below. For example, make the sliders send Control Change #07 (Channel Volume) messages, and the knobs send Control Change #10 (Pan) messages.

With devices like the KORG controllers cited above, program the sliders and knobs by using the KORG KONTROL Editor software, that you can freely download from our web site.

Devices like the KORG nanoKONTROL Studio allow for saving programming to different Scenes, to be recalled when needed. In the following examples, we will program two Scenes to control (1) Keyboard Sounds and Pads, and (2) Accompaniment Sounds. With a Song, we will control two groups of eight tracks with each Scene.

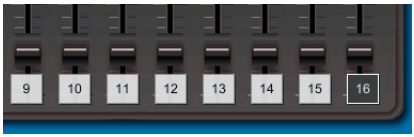
In the following images, you can see how nanoKONTROL Studio sliders are programmed in the KORG KONTROL Editor for the first Scene, sending data on MIDI channels 1-8.

Scene 1: MIDI channels 1-8

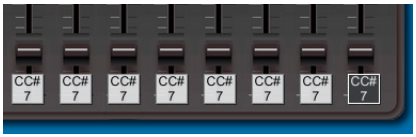


Scene 1: CC numbers (CC#7)

In the following images, you can see how sliders are programmed for the second Scene, sending data on MIDI channels 9-16.

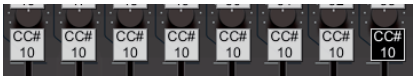


Scene 2: MIDI channels 9-16



Scene 2: CC numbers (CC#7)

You can program the knobs in the same way. Here is an example of the Pan messages assigned to the eight knobs of a Scene:

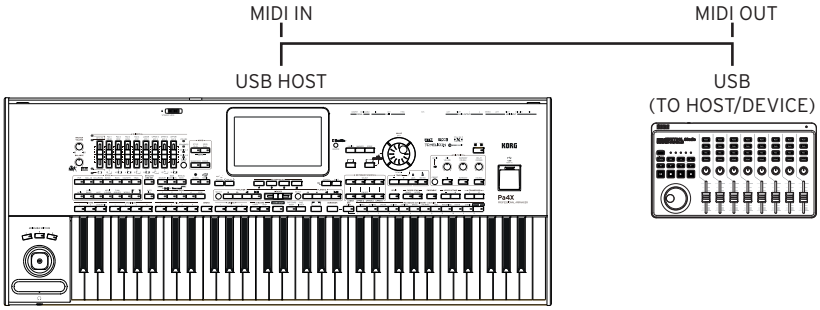


Scene 1/2: CC numbers (CC#10)

After having programmed these two Scenes, save them in the nanoKONTROL Studio's memory.

Connect the devices

2 Connect the USB or MIDI OUT port of the external control surface to the USB HOST or MIDI IN port of the Pa-Series instrument. Be sure the external controller's USB port is enabled.

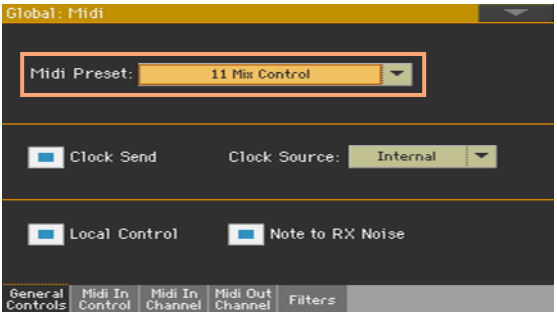


Configure the Pa-Series instrument

3 In the Pa-Series instrument, go to the **Global > MIDI > General Controls** page, and use the **Midi Preset** pop-up menu to choose a MIDI Preset.

When working with the Styles...

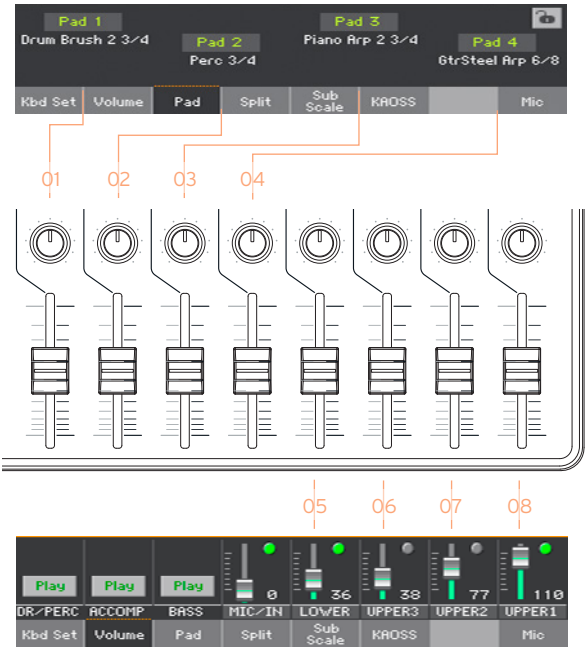
When working with the Styles, choose the **Mix Control** Preset.



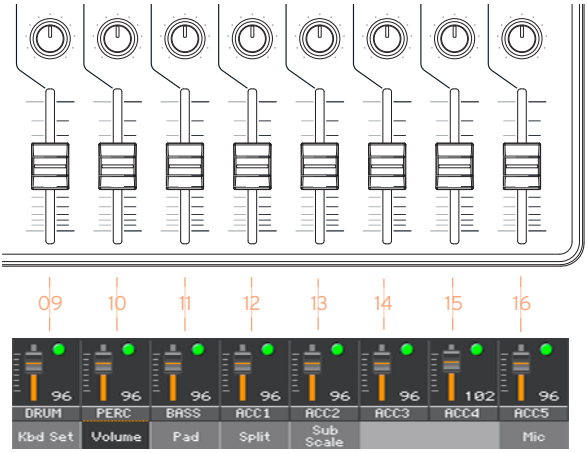
With this preset, Keyboard Sounds and Pads are assigned to MIDI channels 1-8 (Scene 1), and the Accompaniment Sounds to MIDI channels 9-16 (Scene 2). You can go to the **Global > MIDI > MIDI IN Channel** page to see how MIDI channels are programmed.

SCENE 1 (Keyboard/Pads)		**SCENE 2 (Accompaniment)**	
MIDI IN Channel	**Sound/Track**	**MIDI IN Channel**	**Sound/Track**
Ch01	Pad 1	Ch09	Drum
Ch02	Pad 2	Ch10	Percussion
Ch03	Pad 3	Ch11	Bass
Ch04	Pad 4	Ch12	Acc 1
Ch05	Lower	Ch13	Acc 2
Ch06	Upper 3	Ch14	Acc 3
Ch07	Upper 2	Ch15	Acc 4
Ch08	Upper 1	Ch16	Acc 5

Scene 1 (MIDI channels 1-8):

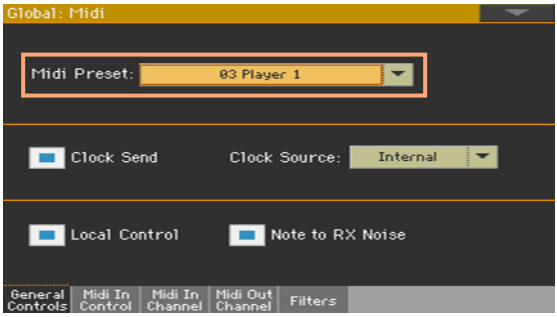


Scene 2 (MIDI channels 9-16):



When working with the MIDI Songs...

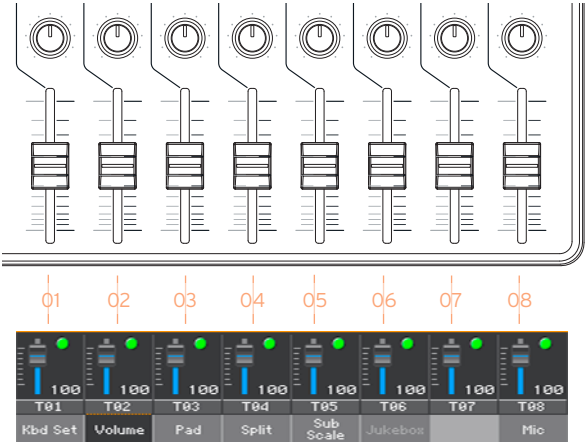
When working with MIDI Songs, choose the **Player 1** or **Player 2** Preset (where available). If you instrument features two Players, the external controller will only control the one selected in the MIDI Preset.



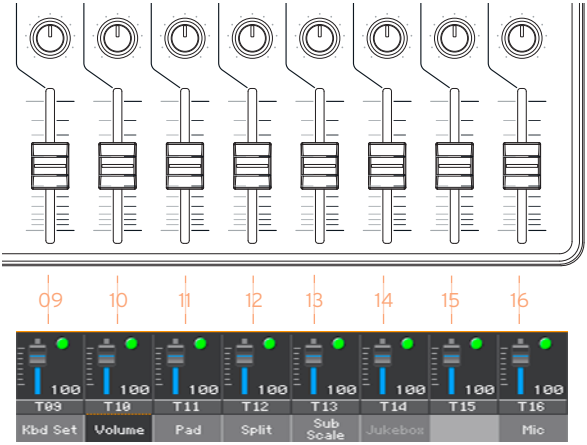
With one of the presets, each slider will match the corresponding MIDI channel. Song Tracks 1-8 will be Scene 1, Song Tracks 9-16 will be Scene 2.

SCENE 1 (Song Tracks 1-8)		**SCENE 2 (Song Tracks 9-16)**	
MIDI IN Channel	**Sound/Track**	**MIDI IN Channel**	**Sound/Track**
Ch01	Player Track 1	Ch09	Player Track 9
Ch02	Player Track 2	Ch10	Player Track 10
Ch03	Player Track 3	Ch11	Player Track 11
Ch04	Player Track 4	Ch12	Player Track 12
Ch05	Player Track 5	Ch13	Player Track 13
Ch06	Player Track 6	Ch14	Player Track 14
Ch07	Player Track 7	Ch15	Player Track 15
Ch08	Player Track 8	Ch16	Player Track 16

Scene 1 (MIDI channels 1-8):



Scene 2 (MIDI channels 9-16):



Play

4 When you want to mix the Sounds on the Pa-Series instrument, select the Scene of the external controller corresponding to the group of Sounds to be mixed, and move the sliders and/or knobs on the control surface.

If you like, you can create your own set of sounds to be controlled, by mixing and matching the different MIDI channels. This is especially useful when using a controller with no memorizable Scenes (like our nanoKONTROL2).

Connecting an external controller with pads to play percussive sounds or special effects

You can use an external controller with pads, for example one of the KORG nanoPADs, to play percussive sounds or special effects in the Pa-Series instrument.

In this example, the percussive sounds or special effects will be assigned to the Upper 3 Sound, so that you can easily program it from the main page of the Pa-Series instrument.

As an alternative, you could play the percussive instruments usually assigned to MIDI channels 10 (Drums) or 11 (Percussion), but you will have a more limited control on the sounds, and will compete with the internal Arranger or Player for the same sounds.

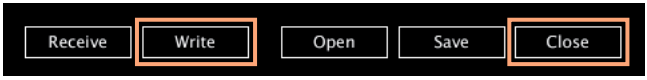
Configure the external controller

1 Be sure the external controller is sending data on MIDI channel 1. This is usually the default setting.

With the nanoPAD2 and devices of the same series, you can choose a transmission MIDI channel by using the KORG KONTROL Editor software, that you can freely download from our web site.

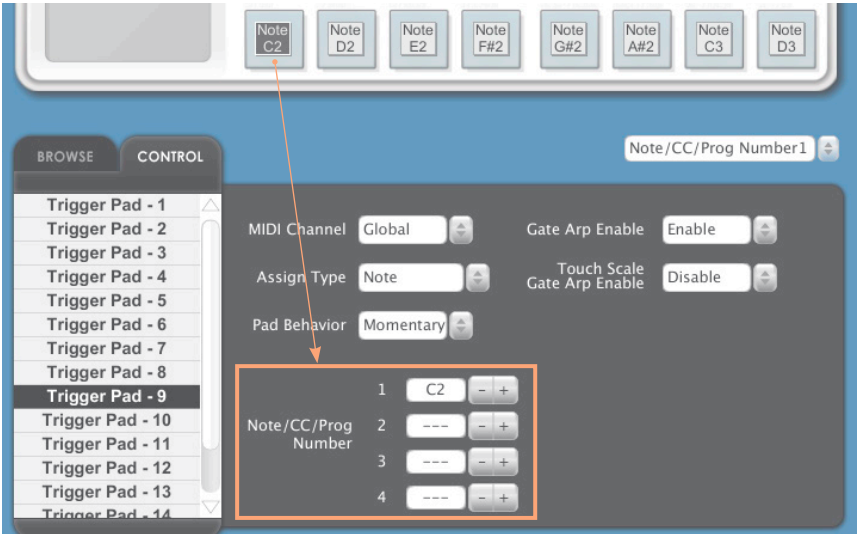
In the following image, you can see how the nanoPAD2's Global channel has been set to MIDI channel 1 in the **Global** dialog.

If you have changed the transmit MIDI channel (that is, in this case, the Global channel), press the **Write** button to save the setting in the controller's memory. Then press the **Close** button to close the dialog.



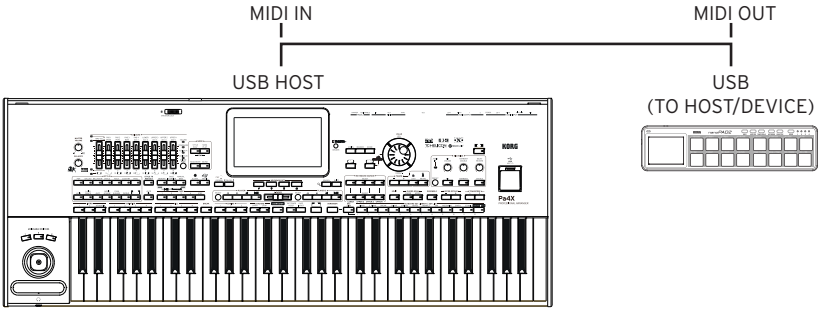
2 Be sure the external controller is sending Note data to trigger a percussive sound.

By default, KORG nanoPAD2 transmits Note messages from C2 to D#3. This will cover a wide range of percussive sounds in the Pa-Series instrument. You can use the KORG KONTROL Editor software to choose different notes.



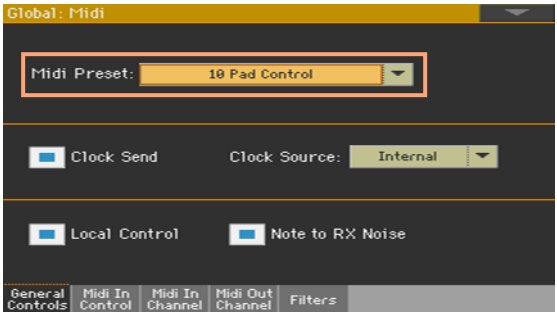
Connect the devices

3 Connect the USB or MIDI OUT port of the external controller to the USB HOST or MIDI IN port of the Pa-Series instrument. Be sure the external controller's USB port is enabled.



Configure the Pa-Series instrument

4 In the Pa-Series instrument, go to the **Global > MIDI > General Controls** page, and use the **Midi Preset** pop-up menu to choose the **Pad Control** MIDI Preset.

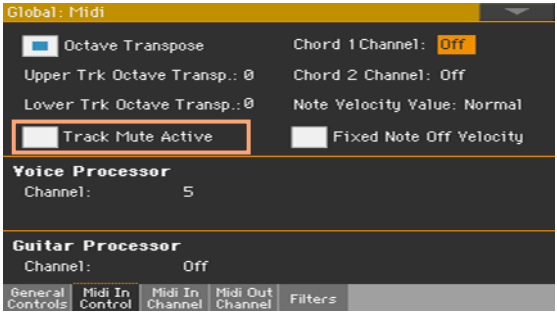


You can go to the **Global > MIDI > MIDI IN Channel** page to see how the MIDI channel for the Upper 3 Sound is programmed.

MIDI IN Channel	Keyboard Sound
Ch01	Upper 3

This setup will let the external controller, transmitting on MIDI channel 1, play the Upper 3 Sound. The internal keyboard will still play the Upper and Lower Sounds that are not set in mute.

Also, you can go to the **Global > MIDI > MIDI IN Controls** page, and see how the **Track Mute Active** parameter has been deselected. This will let you play from an external controller any Sound that is set in mute in the Pa-Series instrument.



5 Program some Keyboard Sets, with the Upper 1 and 2 Sounds meant for playing from the integrated keyboard, and the Upper 3 Sound meant for playing percussive sounds and special effects with the external controller. Be sure the Upper 3 Sound is set to mute. Don't forget to Write it to memory.

Play

6 Play the percussive sounds or special effects assigned to Upper 3 on the pads of the external controller. You can still play the other Upper and Lower Sounds on the internal keyboard.

Connecting an external controller with pads to send chords to the arranger

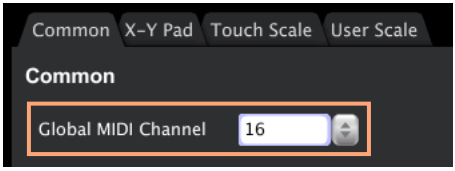
You can play chords on an external set of pads, like those of the KORG nanoPADs. This way, you can play freely with both hands, without having to play chords for the Arranger on the keyboard.

Configure the external controller

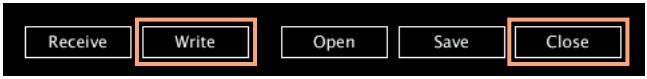
1 Program the external controller to send data on MIDI channel 16 (that we will use for the Chord 1 channel in the Pa-Series instrument).

With the KORG nanoPAD2 and devices of the same series, program the transmit channel and message sent by the pads by using the KORG KONTROL Editor software, that you can freely download from our web site.

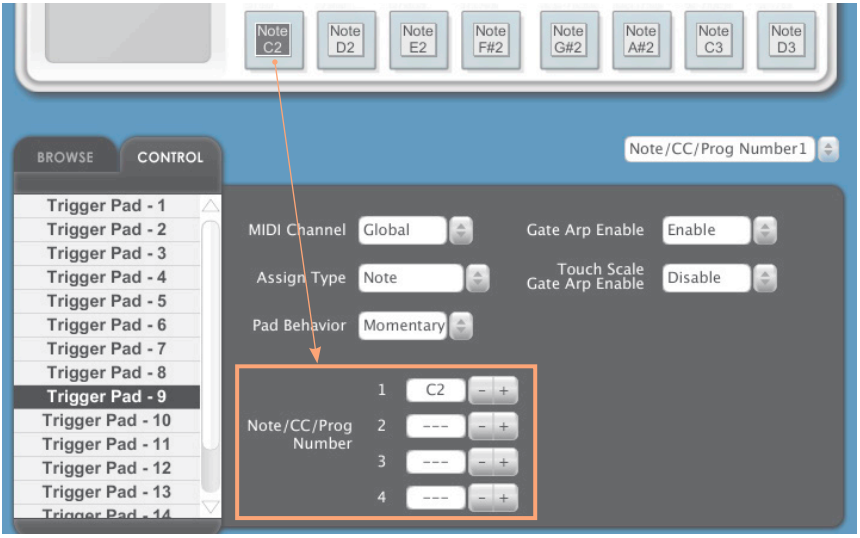
In the following image, you can see how the nanoPAD2's Global channel has been set to MIDI channel 16 in the **Global** dialog.



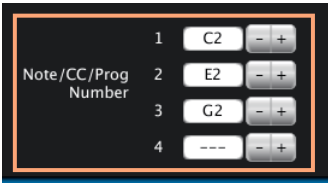
After having chosen the transmit MIDI channel (that is, in this case, the Global channel), press the **Write** button to save the setting in the controller's memory. Then press the **Close** button to close the dialog.



2 Be sure the external controller is sending Note data.

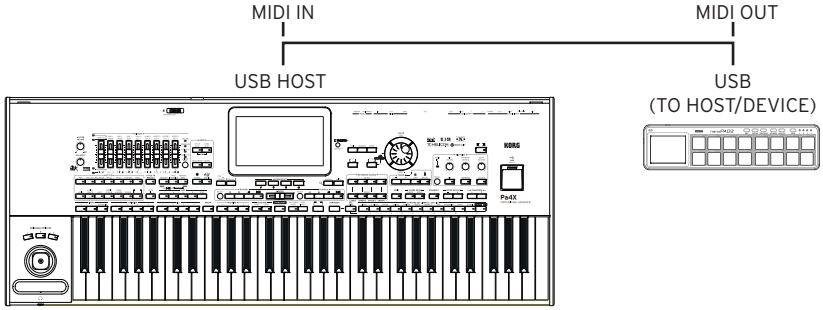


To send chords, assign the chord notes to each pad. Assign a different chord of a chord sequence to each pad.



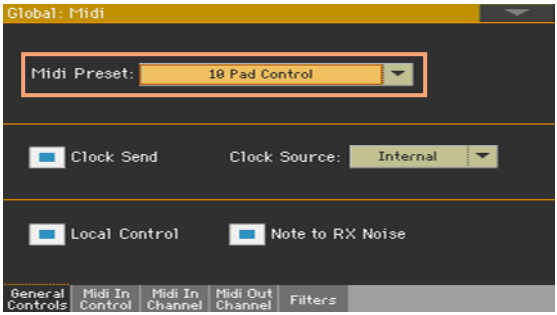
Connect the devices

3 Connect the USB or MIDI OUT port of the external controller to the USB HOST or MIDI IN port of the Pa-Series instrument. Be sure the external controller's USB port is enabled.



Configure the Pa-Series instrument

4 In the Pa-Series instrument, go to the **Global > MIDI > General Controls** page, and use the **Midi Preset** pop-up menu to choose the **Pad Control** MIDI Preset.



You can go to the **Global > MIDI > MIDI IN Channel** page to see how the MIDI channel for the special Chord 1 channel is programmed.

MIDI IN Channel	Sound/Track
Ch16	Chord 1

This setup will let the external controller send data on the Chord 1 channel. These notes will be used as chords sent to the Arranger.

Play

5 When you want to play a chord, play the corresponding pad on the external controller.

Connecting an external controller with an X/Y pad to control sound parameters

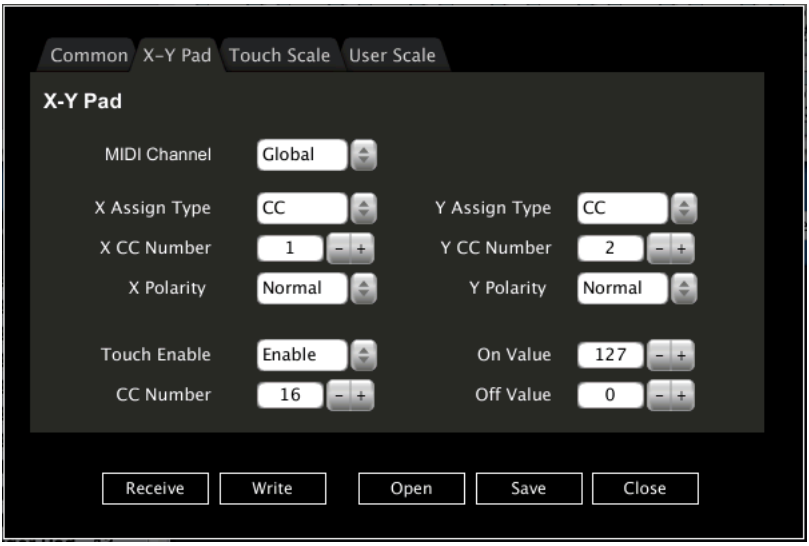
By connecting an external controller with an X/Y pad (for example, the KORG nanoPAD2 or padKONTROL) you can control specific parameters of the sound, like Brightness or Resonance, or both at the same time.

Configure the external controller

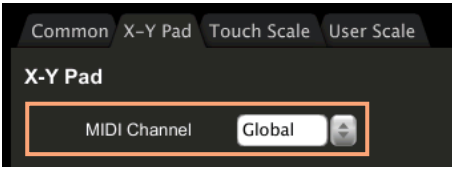
1 Program the external controller to send data on the MIDI channel corresponding to the Sound you wish to control. For example, use MIDI channel 1, usually the default.

With the nanoPAD2 and devices of the same series, you can choose a transmission MIDI channel by using the KORG KONTROL Editor software, that you can freely download from our web site.

In the editor, press the **Global** button to open the **Global** dialog, and go to the **X-Y Pad** page.

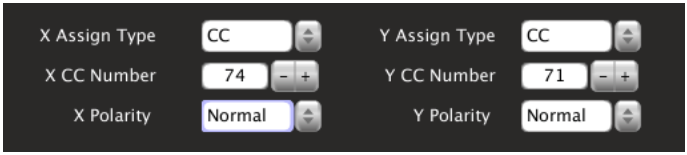


In the following image, you can see how the nanoPAD2's Global channel has been set to MIDI channel 1.



2 Make the external controller control Brightness on the X-axis, Resonance on the Y-axis.

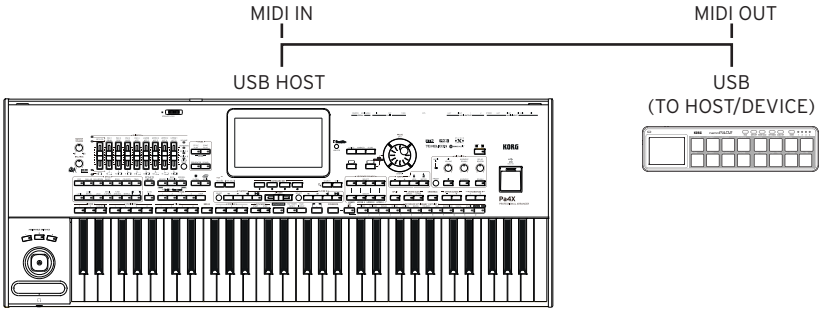
Still in the **X-Y Pad** page, program the X/Y pad. Assign to the X-axis CC#74 (corresponding to the Brightness parameter), to the Y-axis CC#71 (corresponding to the Resonance parameter).



3 After having edited the parameters, press the **Write** button to save the setting in the controller's memory. Then press the **Close** button to close the dialog.

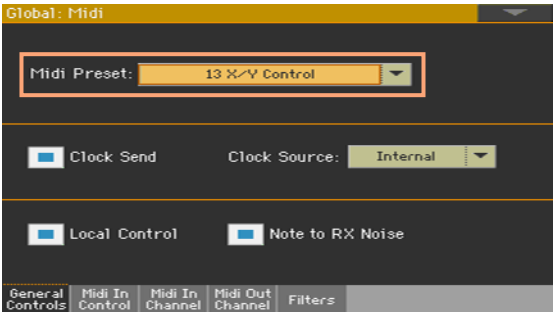
Connect the devices

4 Connect the **USB** or **MIDI OUT** port of the external controller to the **USB HOST** or **MIDI IN** port of the Pa-Series instrument. Be sure the external controller's USB port is enabled.



Configure the Pa-Series instrument

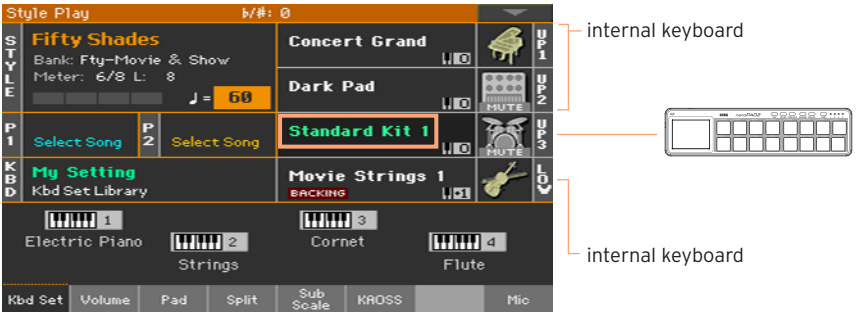
5 In the Pa-Series instrument, go to the **Global > MIDI > General Controls** page, and use the **Midi Preset** pop-up menu to choose the **X/Y Control** MIDI Preset.



You can go to the **Global > MIDI > MIDI IN Channel** page to see how MIDI channels for the Keyboard Sounds are programmed.

MIDI IN Channel	Keyboard Sound
Ch01	Upper 1

6 Choose a Synth Sound for Upper 1. This category usually features a filter with controllable Brightness (a.k.a. Filter Cutoff) and Resonance.



Play

7 Play on the keyboard, and move your finger along the X- and Y-axis of the X/Y pad. You will hear the sound's timbre change while you move your finger.

Connecting a studio controller to send more controls at the same time

You can connect an external controller incorporating several different controls, conceived for a complex studio configuration. For example, the KORG nanoKEY Studio includes a keyboard, a set of knobs, an X/Y pad, a set of pads and a series of programmable switches. Each of them can send data to a Pa-Series instrument.

Configure the external controller

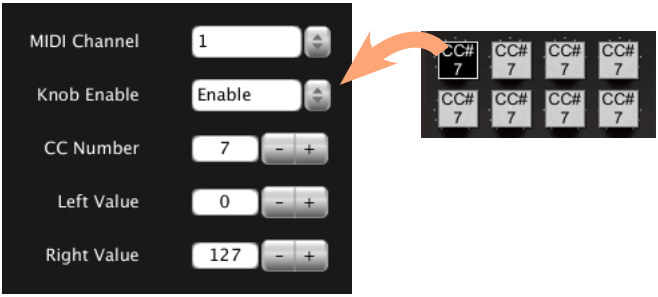
1 Program the external controller to match the parameters you want to control in the Pa-Series instrument.

With the nanoKEY Studio and devices of the same type, program the various controls by using the KORG KONTROL Editor software, that you can freely download from our web site.

Make each control of the external controller send data on separate MIDI channels, according to the programming suggested below. For example, make the knobs adjust the volume of the Upper and Accompaniment Sounds, the keyboard play the Upper 2 Sound, the XY pad change the filter's Brightness and Resonance of the Upper 1 Sound, and the pads play percussive sounds or effects on the Upper 3.

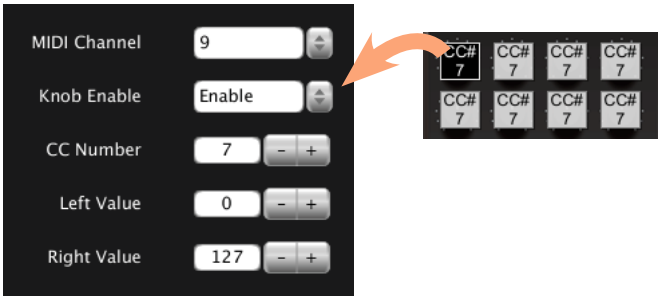
Devices like the KORG nanoKEY Studio allow for saving programming to different Scenes, to be recalled when needed. So, you can make different programming, and save them in different scenes.

In the following image, you can see how nanoKEY Studio's knobs are programmed in the KORG KONTROL Editor for the first Scene, sending Volume messages on MIDI channels 1-3.



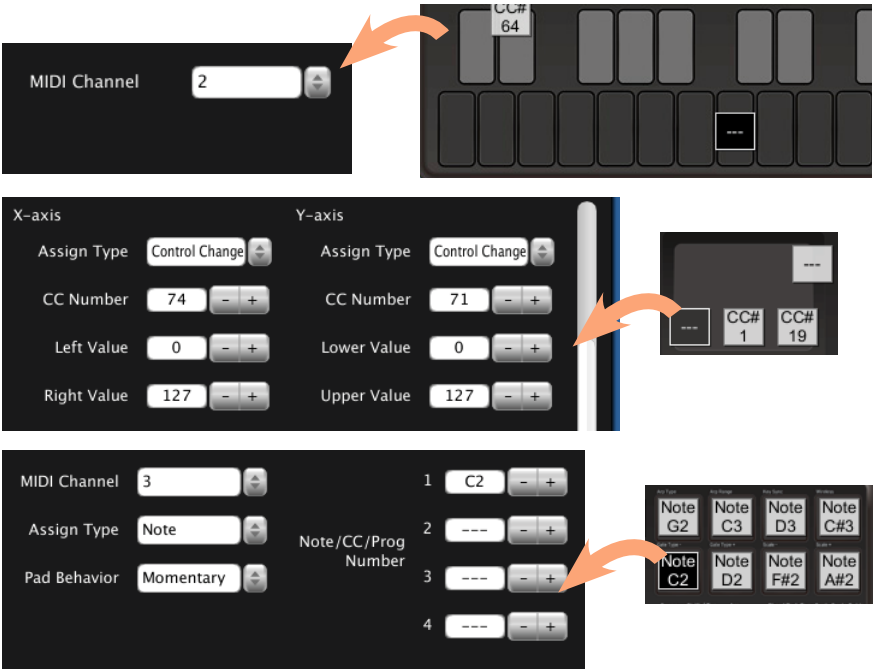
Control	Sound/Track	MIDI Channel	Parameter
SCENE 1			
Knobs	Upper 1	Ch01	Volume
	Upper 2	Ch02	
	Upper 3	Ch03	
	Lower	Ch04	
	Pad 1	Ch05	
	Pad 2	Ch06	
	Pad 3	Ch07	
	Pad 4	Ch08	

Then, here is how the knobs are programmed for the second Scene, sending Volume messages on MIDI channels 9-16.



Control	Sound/Track	MIDI Channel	Parameter
SCENE 2			
Knobs	Drum	Ch09	Volume
	Percussion	Ch10	
	Bass	Ch11	
	Acc 1	Ch12	
	Acc 2	Ch13	
	Acc 3	Ch14	
	Acc 4	Ch15	
	Acc 5	Ch16	

And here is how the keyboard, XY pad and Pads are programmed for both Scenes.

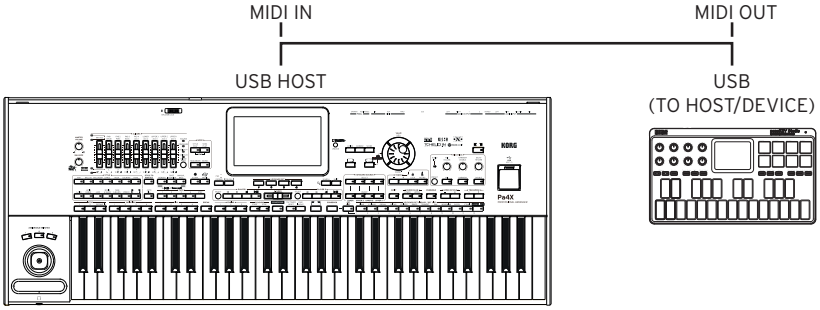


Control	Sound/Track	MIDI Channel	Parameter
SCENE 1+2			
Keyboard	Upper 2	Ch02	Notes (Melody/Harmony)
XY pad (X)	Upper 1	Ch01	CC#74 (Brightness)
XY pad (Y)	Upper 1	Ch01	CC#71 (Resonance)
Pads	Upper 3	Ch03	Notes (Percussive/SFX)

After having programmed these two Scenes, save them in the nanoKEY Studio's memory.

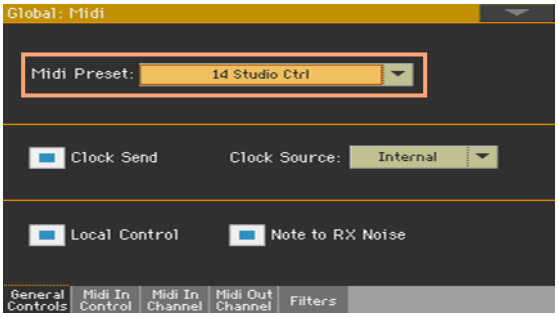
Connect the devices

2 Connect the USB or MIDI OUT port of the external control to the USB HOST or MIDI IN port of the Pa-Series instrument. Be sure the external controller's USB port is enabled.



Configure the Pa-Series instrument

3 In the Pa-Series instrument, go to the Global > MIDI > General Controls page, and use the Midi Preset pop-up menu to choose the Studio Ctrl MIDI Preset.



With this preset, Keyboard Sounds are assigned to MIDI channels 1-3 (Scene 1), and the Accompaniment Sounds to MIDI channels 9-16 (Scene 2). You can go to the Global > MIDI > MIDI IN Channel page to see how MIDI channels are programmed.

SCENE 1 (Keyboard/Pads)		SCENE 2 (Accompaniment)	
MIDI IN Channel	**Sound/Track**	**MIDI IN Channel**	**Sound/Track**
Ch01	Upper 1	Ch09	Drum
Ch02	Upper 2	Ch10	Percussion
Ch03	Upper 3	Ch11	Bass
Ch04	–	Ch12	Acc 1
Ch05	–	Ch13	Acc 2
Ch06	–	Ch14	Acc 3
Ch07	–	Ch15	Acc 4
Ch08	–	Ch16	Acc 5

Play

4 When you want to send messages to the Pa-Series instrument, select the Scene of the external controller corresponding to the group of Sounds to be controlled, and use the controls on the external controler.

If you like, you can create your own set of sounds to be controlled, by mixing and matching the different MIDI channels. This is especially useful when using a controller with no memorizable Scenes.

Connecting a breath controller

You can use a breath controller to control some parameters of the sound, in particular the volume/expression. Some controllers also allow for controlling multiple parameters, for example volume/expression with the wind pressure, and vibrato with the lip pressure.

Configure the breath controller

1 First of all, set the breath controller to transmit on MIDI channel 1 (usually, the default setting).

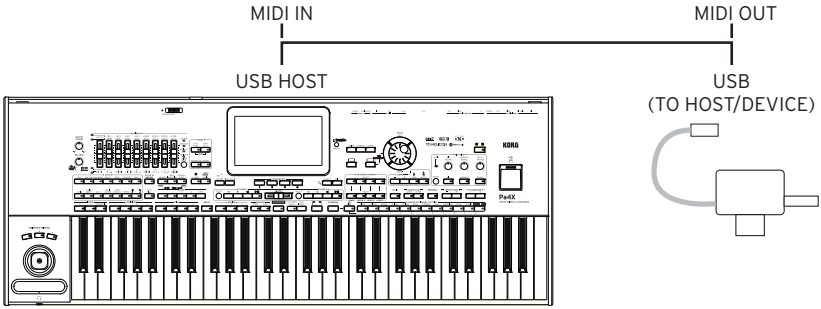
When configuring the breath controller, you will also have to choose which Control Change message(s) to send. By default, breath controllers send CC#02 (Breath Controller) messages. In the Pa-Series instruments, not all Sounds can react to this CC message, so changing it to CC#11 (Expression) is a safer choice.

When lip pressure control is also available, it can be set to send CC#01 (Modulation) messages. Some controllers also allow for messages generated by tilting your head. Choose the sound parameter better fitting your style of playing.

When programming a breath controller and the sounds to use with it, also consider the different use of wind pressure on the different categories of sounds. Controlling expression and filter with wind pressure is great on wind instruments and synths, while using it for vibrato can work very well on strings.

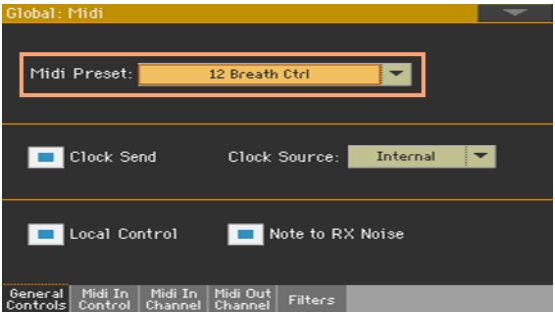
Connect the devices

2 After having configured it, connect the breath controller to the Pa-Series instrument. Modern-day controllers are equipped with an USB port, but some older models could still feature the MIDI port. Connect the **USB** or **MIDI OUT** port of the breath controller to the **USB HOST** or **MIDI IN** port of the Pa-Series instrument.



Configure the Pa-Series instrument

3 In the Pa-Series instrument, go to the Global > MIDI > General Controls page, and use the Midi Preset pop-up menu to choose the Breath Ctrl MIDI Preset.



You can go to the Global > MIDI > MIDI IN Channel page to see how MIDI channels for the Keyboard Sounds are programmed.

MIDI IN Channel	Keyboard Sound
Ch01	Upper 1

This setup will let data from MIDI channel 1 go to the Upper 1 Sound. You will play notes with the internal keyboard, while controlling the sound expression with your breath. Other controls, like pitch bend, modulation and aftertouch, will still go to the Upper 1 Sound.

Play

4 Use the breath controller to control expression of the sound(s) you are playing on the keyboard.

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