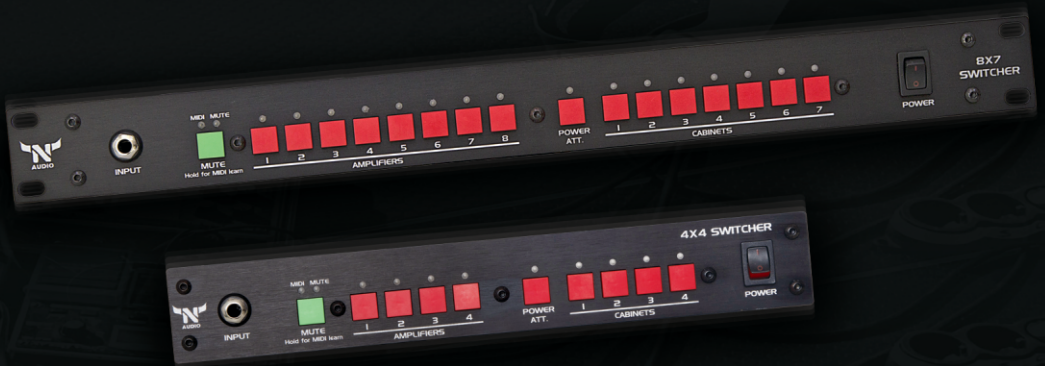




Models 8X7 and 4X4

User Manual

Amplifier Cabinet Switching Systems





THANK YOU for choosing the N-audio Amp Cabinet Switcher, and welcome to the N-audio family!

This manual will help you make the most of your Switcher

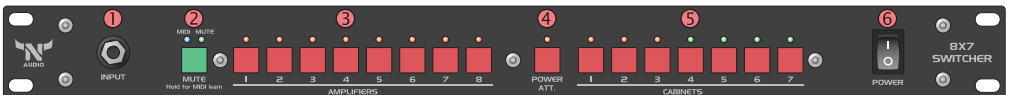
Introduction

These Switchers have been designed to make it easy for you to switch between amplifiers and speaker cabinets, without having to manually route cables. With the ability to handle up to 8 (4) amplifiers and up to 7 (4) cabinets, along with an external power attenuator, they are great choice for anyone looking to compare different guitar tones, change the sound while recording, playing on stage or testing a lot of equipment quickly.

One of the great features of these Amp Cabinet Switchers is that they work seamlessly with any type of amplifier, including tube, solid-state and bridged mono amplifiers. They also include built-in hardware and software protection to keep your amplifiers safe. The signal path consists of relays only, ensuring a pure tone with no active electronics. A special circuit has been implemented to reduce pops when switching, and there are no dead spots when switching between amplifiers or cabinets, making them perfect for use on stage or in the studio.

Controls and connectors

Front panel



1. INPUT -plug your guitar here. It disables the back input when in use.
2. MUTE/MIDI learn button for quickly muting the Switcher or adding a preset via MIDI.
3. Amplifier buttons for switching between the connected amplifiers.
4. Power attenuator button for activating an external power attenuator.
5. Cabinet buttons for selecting the desired speaker cabinets.
6. Power button for turning the device on/off.

Back panel



1. Mains IEC power supply connector.
2. Outputs to cabinets for sending signals to the speaker cabinets.
3. Send/return jack plugs for using an external power attenuator.
4. Jack plugs for connecting the speaker outputs from your amplifiers, where you would normally plug in your cabinet.
5. MIDI IN and OUT connectors for external MIDI control.
6. Jack plugs for connecting to the inputs of your amplifiers, where you would normally plug in your guitar.
7. Slave guitar input. It turns off when the front panel jack is used.
8. Tuner out jack plug for connecting an external tuner.

Connecting the whole rig

It's important to ensure that you have the right cables for your setup. There are two types of cables commonly used: Guitar cables and speaker cables. The use of quality shielded guitar cables and proper speaker cables, where $2 \times 1.5\text{mm}^2$ or $2 \times 2.5\text{mm}^2$ is highly recommended.

Connecting the amplifiers

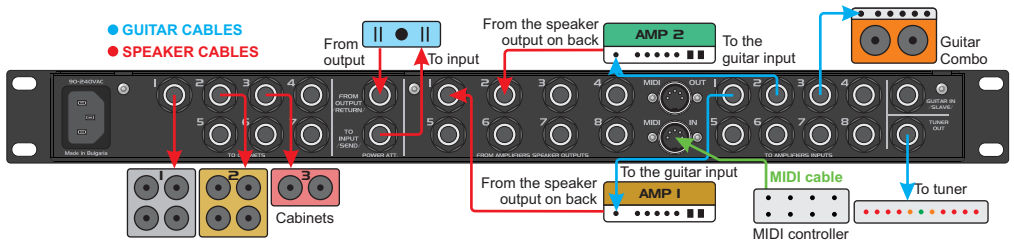
To connect the amplifiers, you will need two cables for each amplifier. Follow these steps:

- Connect a shielded guitar cable from the input on the amplifier where you would typically plug your guitar into the "to amplifiers inputs" jack.
- Connect a speaker cable from the cabinet jack on the back of your amplifier, where you would normally connect an external speaker cabinet, to the "from amplifiers speaker output" jack.

The jacks on the back of the Switcher correspond to the amplifier button numbers on the front. **It is crucial to connect each amplifier between the same numbers on the back.** Therefore, the cables from the first amplifier should be connected to the first "to amplifiers inputs" and the first "from amplifiers speaker outputs". Repeat this procedure for all other amplifiers when connecting them to the Switcher.

⚠ NEVER CONNECT ONE AMPLIFIER TO DIFFERENT JACK NUMBERS ON THE BACK OF THE SWITCHER!

Typical wiring



Please pay close attention when connecting the amplifiers. For optimal performance and reducing the interferences among the cables, try to keep some distance between the input guitar cables and output speaker cables, if possible.

Connecting a guitar combo

Connect a shielded guitar cable from the input on the combo where you would typically plug your guitar into the "to amplifiers inputs" jack of any of the amplifier's inputs. Note that the second "from amplifiers speaker output" jack plug is not used when playing with a combo. To enable playing through a guitar combo, you will need to bypass the implemented speaker cabinet protection of the Switcher. This can be done by enabling one of the connected cabinets or the power attenuator by pressing and holding the PowerAtt. button.

Connecting an external power attenuator

To use an external power attenuator with the N-audio 8X7 or 4X4 Switcher, simply follow these steps:

- Connect the input of the attenuator to the "to input/send" jack of the Switcher using only speaker cable.
- Connect the output of the attenuator to the "from output/return" jack of the Switcher using only speaker cable.

Connecting the cabinets

Connect the cabinets using speaker cables to the "to cabinets" jacks

Power On/Off sequences

Power-on sequence

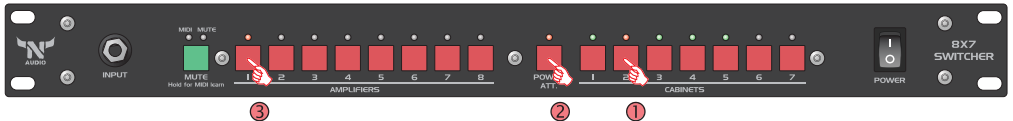
1. Turn on the 4X4 Switcher.
2. Turn on the amplifiers.
3. Test each amplifier and cabinet with reduced volume.

Power-off sequence

1. Turn off the amplifiers
2. Turn off the 4X4 Switcher

When the Switcher is powered off, all amplifier inputs are automatically muted and the outputs are connected to an internal resistive load.

First use



When you first power on the device, it will perform an LED sequential test while in a muted state. Each cabinet button on top of the device has a dual-color LED: green indicates a connected cabinet, while if it is OFF, it can't be selected.

Follow these steps to start playing:

1. Choose a cabinet by pressing its button. The active cabinet will be indicated by a red LED.
2. Enable the attenuator, if needed.
3. Select an amplifier.

To avoid mistakes while routing the whole rig, start with reduced master volume and increase it only when you hear a signal. During play, you can select any possible cabinet, attenuator or amplifier using the front panel buttons or via MIDI. If you press the Mute switch, you'll need to start over by selecting a cabinet.

Extra features

Using more than one cabinet in parallel

To use more than one cabinet in parallel, simply press and hold the button for the first cabinet, then press the button for the second cabinet. Repeat this step to add a third cabinet. The unit can drive up to three cabinets in parallel simultaneously. To exit this mode, press any of the allowed cabinet buttons.



- ① Press and hold
- ② Press to enable second cabinet

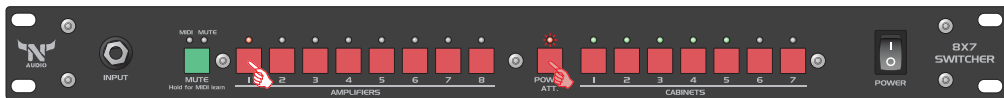


- ① Press and hold
- ② Press to enable second cabinet
- ③ Press to enable third cabinet

⚠ CAUTION! When adding cabinets in parallel, the output impedance of the unit is reduced. For instance, two 8 Ohm cabinets in parallel have 4 Ohm output impedance. It is highly recommended to use 16 Ohm cabinets when using this mode. Using more than one 4 Ohm cabinets simultaneously can cause damage to the amplifier!

Silent recording via an external power attenuator

The Switcher normally only turns on an amplifier and the attenuator when a cabinet is selected. However, it also offers an extra feature for silent recording without driving a cabinet. To enable this mode, press and hold the power attenuator button until its LED starts flashing. Once the LED stays on, the attenuator is turned on and you can enable an amplifier without a cabinet. To exit this mode, simply press the MUTE or POWER ATT button.



② Enable the desired amplifier

① Press and hold until stops flashing and stays on

⚠ CAUTION! Use this mode only when you have a power attenuator connected to the Switcher!

Hardware and software protections

The N-audio Switcher has built-in hardware and software protection to safeguard the amplifiers:

- Only connected cabinets can be turned on, thanks to the sense circuit in each cabinet jack plug that detects connected jacks. Green LEDs indicate that cabinets are connected to the switcher.
- When a cabinet is selected and its jack is removed from the Switcher, it turns into mute state.
- If there is a missing cabinet corresponding to the MIDI preset, the Switcher turns into mute state.
- Each amplifier has a grounded input and a resistive load connected to the output when not in use.
- The Switcher has a resistive load connected before the attenuator input to protect against cable routing mistakes.
- Each amplifier is completely galvanically isolated, enabling the use of any amplifier including bridged mono amplifiers.

MIDI implementation

The N-audio 8X7 and 4X4 Switcher has two ways to be controlled via MIDI by **preset mode** and **fixed Control Changes**. In preset mode, you select the desired amp and cabinets for any program change from your MIDI controller, which is handy for live performance. Fixed Control Change allows you to control each amplifier and cabinet individually using a fixed CC, making it a better choice for studio use.

To select a MIDI channel, follow these steps

- While holding the MUTE button, power on the unit. The MIDI and MUTE LEDs will start flashing sequentially.
- Release the MUTE button. A red LED will indicate the active MIDI channel. Channel 1 is the default MIDI channel.
- Press one of the red buttons, which corresponds to a specific MIDI channel.
- The selected MIDI channel will flash, followed by the power on sequential LED lights.

NOTE: The N-audio 8X7 Switcher supports all 16 MIDI channels, while the N-audio 4X4 Switcher only supports MIDI channels 1 through 9.



MIDI Preset Mode programming steps

- Select the desired cabinets and amplifier from their buttons.
- Press and hold the MUTE/MIDI button until the MIDI LED starts flashing.
- Send a MIDI command from the MIDI controller. The MIDI LED will stop flashing.
- Done. The preset is stored.

Deleting all stored MIDI presets

- Turn off the unit.
- While holding down the MUTE button, turn on the unit. The MIDI and MUTE LEDs will start flashing in sequence.
- Release the MUTE button and press it again.

- The MIDI LED will continue flashing followed by the startup LED sequence lights.

All stored MIDI presets will be deleted.

If you want to cancel the preset mode procedure, press the MUTE/MIDI button while the MIDI LED is flashing.

Fixed MIDI Control Changes

Each button on the N-audio Switcher can be controlled remotely via fixed Control Changes. The table below shows the available control changes.

8X7 Switcher	4X4 Switcher	CC#	Value
MUTE	MUTE	102	any
Amp 1	Amp 1	103	any
Amp 2	Amp 2	104	any
Amp 3	N/A	105	any
Amp 4	N/A	106	any
Amp 5	Amp 3	107	any
Amp 6	Amp 4	108	any
Amp 7	N/A	109	any
Amp 8	N/A	110	any
Attenuator ON	Attenuator ON	111	any
Attenuator OFF	Attenuator OFF	112	any
Cabinet 1	N/A	113	any
Cabinet 2	N/A	114	any
Cabinet 3	Cabinet 1	115	any
Cabinet 4	Cabinet 2	116	any
Cabinet 5	N/A	117	any
Cabinet 6	Cabinet 3	118	any
Cabinet 7	Cabinet 4	119	any

NOTE: If a control change from the table above is sent when **preset mode** is activated, the switcher cancels it and enables the specific device if available.

NOTE: If a MIDI preset or control change from the table above is sent to the Switcher and one or more cabinets from the preset are not connected, their LEDs will flash and the Switcher goes to MUTE state.

Tips for impedance limitations and impedance mismatch in amplifiers

Impedance mismatch with tube amplifiers has been widely discussed, and there is a lot of information available on what is and isn't possible. Here are some quick tips and limitations to keep in mind regarding impedance and impedance mismatch based on the type of amplifier.

Solid-state Amplifiers

Most solid-state amplifiers work with any impedance greater than 4 Ohm. However, they typically have a minimum listed impedance. Lower impedance should be avoided! Increasing the impedance will reduce the power output. It's generally recommended to use 4 or 8 Ohm cabinets, but when using more than one cabinet simultaneously, the impedance will decrease. In such cases, it's highly recommended to use 16 Ohm cabinets. Bridged mono amplifiers and some modern class D amplifiers can work with impedance as low as 2 Ohm, but this is not the case for all other class AB amplifiers. Always refer to the amplifier manual for its specific specs. A good practice when using solid-state amplifiers is to keep the speaker cabinet impedance at or above 4 Ohm.

Tube Amplifiers

The tube amplifiers have an output transformer that match the output impedance of the power tubes to the impedance of the connected speaker. Impedance selectors on the back of most tube amplifiers offer the flexibility to use different cabinets with varying impedances. It is recommended to match the impedance of the amplifier and cabinet for the best tone. Using mismatched impedance won't harm the amplifier but will affect the tone slightly. To use an amplifier and cabinet with different impedance, try to keep the impedance ratio within one step, such as 4 and 8 Ohm or 8 and 16 Ohm. Avoid using a 16 Ohm amplifier with a 4 Ohm or less cabinet.

Practical tips

When using more than one cabinet simultaneously, use 16 Ohm cabinets with the 8 Ohm output of the tube amplifiers. If some impedance mismatch occurs, keep the master level slightly below from its maximum for safety. When the amplifier's output impedance is lower than the speaker cabinet's impedance, it will increase the mids in the sound. Conversely, if the amplifier's impedance is higher than the cabinet's impedance, it will decrease the mids.



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