Y-Not™

User's Manual

RJM Music Technology, Inc.

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Version 2.0
July 14, 2014

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Table of Contents

Introduction

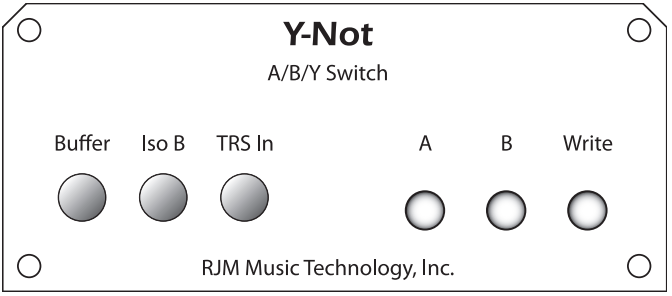
Thank you for purchasing a Y-Not. This product is designed to provide all of the features you need to switch one audio signal to two audio outputs, while being able to address the common problems that can occur in a two-amp system. The Y-Not features a high-quality buffer, a phase inversion switch and an isolation transformer all in a compact package.

The Y-Not can be controlled by its front panel switches, by an external footswitch, or by an external MIDI controller, making it adaptable to virtually any situation.

In this revision of the Y-Not, some features have been added. The first is MIDI controlled phase inversion on the B output. This comes in handy if you are using two channel switching amps at the same time. Different channel combinations will have different phase relationships, and the ability to switch phase will insure that each combination sounds good.

There is also now a **TRS In** switch. This switch is designed to work specifically with electric guitars that have piezo pickups. These guitars typically send both signals over one TRS (tip-ring-sleeve) cable. Pressing the **TRS In** switch will allow the Y-Not to use both signals, sending the tip to the A output and the ring to the B output. With this arrangement, you can use the Y-Not to select whether your magnetic or piezo signal is active, and send the signals to separate amps.

Front Panel



Buffer – When this button is in, the input signal will go through a high-quality audio buffer. A buffer lowers the impedance of the input signal, making it "stronger" and preventing it from losing treble or signal level when splitting the signal to two outputs. When this button is out, the buffer is disconnected from the signal path.

If you find your signal sounds dull or muted, try engaging the buffer. Unless your signal is already buffered, you will likely want to use the buffer when using the **Iso B** button or if the B output is inverted (see below).

Iso B – When this button is pressed in, it inserts an isolation transformer in front of the B output. The isolation transformer breaks ground loops between the two amps. Ground loops are a common occurrence when using more than one amp, and you can tell you have a ground loop if you hear an unusually large amount of hum or buzz from your amps. Pressing the **Iso B** button should break the ground loop and eliminate the hum.

TRS In – Pressing this button switches the input jack to accept a TRS (tip-ring-sleeve) or stereo input. When engaged, the signal from the input tip conductor will only be sent to the A output, and the signal from the ring conductor will only be sent to the B output. This is typically used for electric guitars with piezo pickups – each pickup's

signal can be sent to a different amp, and can be turned on and off independently.

A – This button turns the A output on and off. When this button is lit, the A output is on. When this button is not lit, the A output is off (shorted to ground).

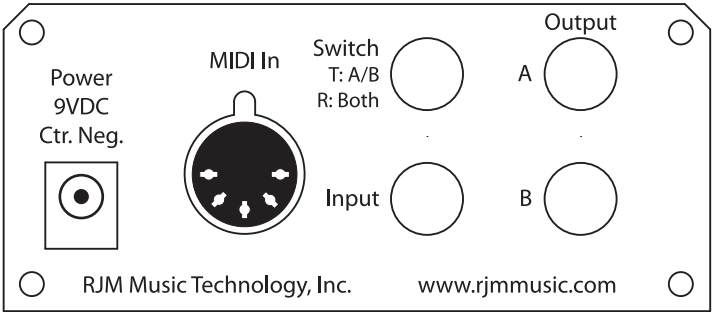
B – This button turns the B output on and off, and also inverts the B output. Pressing the button cycles through three states:

> **Red** – The B output is on and is not inverted.
>
> **Orange** – The B output is on and is inverted. In this mode, the signal should be buffered. Otherwise, it may sound dull.
>
> **Off** – The B output is turned off (shorted to ground).

Write – When held down for 3 seconds, this button saves the current switch state to non-volatile memory. This function is not active until a Program Change message is received at the MIDI In jack. See the MIDI Usage section for more details.

The Write button is always lit up with a green LED to indicate that the Y-Not is powered on.

Back Panel



Power – This unit requires a 9 volt DC power supply (center negative polarity). The plug should be a 5.5mm/2.1mm barrel connector, similar to those used in most effects pedals. The Y-Not requires a minimum 100mA of current.

MIDI In – Jack for incoming MIDI commands. Connect your MIDI foot controller or other MIDI device here.

Switch – You can connect a two-button footswitch or other external switching device to this jack. The tip conductor of this jack turns the B output on when shorted to ground, and the A output on when not shorted to ground. The ring conductor, when shorted to ground, turns on both the A and B outputs simultaneously. This switch jack does not change the state of the B output's phase.

Input – Connect your input signal (guitar or other audio signal) here.

A – This is the first (A) output from the Y-Not, controlled by the A switch on the front panel.

B – This is the second (B) output from the Y-Not, controlled by the B switch on the front panel.

Phase Inversion

Any time two amps are used together, it's important to insure that the phase of the two amplifiers is correct. The phase relationship of the amps depends on the position of each amp and their individual design.

If the two amps are out of phase with each other, you may hear phase cancellations, resulting in poor tone or diminished volume levels. Inverting the phase of one amp will fix the phase cancellations and create a more desirable sound.

Phase can also be an issue when using the Y-Not to connect to two different inputs of the same amp. Certain amps have a phase inversion between the two inputs, making it impossible to run both inputs at once – unless you have a way to invert the phase of one signal. If you're running the Y-Not with a two input amp and notice a volume decrease when running both inputs simultaneously, try inverting the B output - it should resolve the problem.

MIDI Usage

The Y-Not can receive MIDI messages from any MIDI controller. You can store different switch settings for MIDI program numbers 0 through 127 in MIDI banks 0 and 1. When a Program Change message is received on the correct channel, the Y-Not will automatically recall the saved settings for the given program number.

To set up for MIDI use, simply connect your MIDI controller to your Y-Not's MIDI In jack. The Y-Not is set for MIDI Channel 1 by default. Either make sure your MIDI controller is set up to transmit commands on Channel 1, or use the Y-Not's setup mode to change which MIDI channel the Y-Not responds to. See the Setup Mode section for more details.

To save a program setting, perform the following steps:

1. Using your MIDI controller, select a MIDI program number.
2. Using the Y-Not buttons, turn the A and B outputs on or off as desired.
3. Hold down the Write button on the Y-Not until the LEDs flash. This should take about 3 seconds.

That's all it takes. You can repeat this for any or all of MIDI program numbers 1 though 128.

If the lights don't flash after a few seconds of holding down the Write button, it means that your Y-Not did not receive the MIDI Program Change message. Check your MIDI cable connection, and make sure that the MIDI controller and Y-Not are set to the same MIDI channel.

Now that your settings have been saved, you can recall your settings by using your MIDI controller to send a Program Change message again. The Y-Not will call up your saved settings and select the desired active output(s) whenever it receives a MIDI Program Change message.

Continuous Controllers

In addition to supporting MIDI Program Change messages, the Y-Not supports MIDI Continuous Controller messages. The following Continuous Controllers are supported by default:

Continuous Controller	Value	Function
CC88	0…63 64…127	A output off A output on
CC89	0…63 64…127	B output off B output on
CC90	0…63 64…127	B output normal B output inverted
CC91	0…63 64…127	A output on, B off A output off, B on
CC92	0…63 64…127	A and B outputs off A and B outputs on

Bank Selection

The Y-Not can store programs in MIDI banks 0 and 1, for a total of 256 programs. Continuous Controller #0 (Bank MSB) is used to select the current MIDI bank. Bank numbers above bank 1 are ignored.

By default, bank selection is disabled. You can enable bank selection using Setup Mode (see Setup Mode section).

Setup Mode

To configure the Y-Not, you must first enter setup mode. Holding down selected buttons while powering the unit on will bring up selected setup modes, as detailed in this section.

Selecting MIDI Channel

Hold the A button while powering the Y-Not on. Keep holding the button until the LEDs flash. The Switch buttons will now allow you to select the MIDI channel the Y-Not responds to.

The Y-Not is set by default to send and receive on MIDI Channel 1. To change the send/receive channel:

MIDI Channel	A LED	B LED
1	OFF	OFF
2	**ON**	OFF
3	OFF	**ON**
4	**ON**	**ON**

Saving MIDI Channel

Once you've set the MIDI channel and options, press the Write button. The Y-Not is now in normal operational mode.

Selecting Other Options

There are two other options that can be set on the Y-Not. To access and change these options, hold the B button while powering on the Y-Not. Keep holding the button until the LEDs flash.

Once you've entered this mode, you can adjust the following settings:

Switch Invert

You can use the A button to invert the sense of the Switch jack. If the A button is lit, the Switch jack is inverted. If not lit, it's set to the normal state.

This is particularly useful if you're using a lighted footswitch to control the Y-Not. Some footswitches will behave the opposite of what you'd expect: the A/B button turns on the A output when lit, and the Both button turns on both outputs when it's *not* lit. Turning on this option makes the footswitch operate normally.

Bank Select Enable

You can use the B button to enable MIDI bank select. If the B button is lit, the Y-Not will respond to MIDI bank select (CC#0, values 0 and 1 only). If the B button is not lit, the Y-Not will ignore MIDI bank select messages.

Saving Options

Once you've set the desired options, press the Write button. The Y-Not is now in normal operational mode.

Factory Reset

You can factory reset the Y-Not by holding the A and Write buttons as you power it up. Keep holding the buttons for about 3 seconds – the lights on the Y-Not should turn on briefly, then turn off. The Y-Not is now returned to its factory state.

Troubleshooting

Problem: My guitar sounds muddy or too quiet when running through the Y-Not.

Solution: Your signal needs to be buffered. Press the Buffer button on the front of the Y-Not, and you'll be sounding good once again.

Problem: When running into an amp with two inputs, the signal level drops when I turn on both the A and B output.

Solution: The two inputs of your amp are out of phase with each other. Press the Invert B button to fix the phase inversion. You may also need to press the Buffer button to avoid possible tone loss.

Problem: There is excessive hum or buzz.

Solution: There is likely a ground loop in your system. Press the Iso B button to engage the isolation transformer. You may also need to press the Buffer button to avoid possible tone loss.

Specifications

Dimensions	Quarter-rack enclosure 4 (W) x 1.5 (H) x 4 (D) inches 10.2 (W) x 3.8 (H) x 10.2 (D) cm
Weight	10 ounces 300 grams
Power	9 Volts DC @ 100mA, center negative 5.5mm OD, 2.1mm ID x 9.5mm barrel connector
Memory	256 programs, arranged in 2 banks of 128 Memory is non-volatile and requires no backup battery