SOLID STATE

MultiSystem II MIDI Operation Guide

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Introduction

This Organ is equipped with MIDI, a system which allows you to connect electronic devices that may be played from the Organ keyboards, or allow you to couple stops on the organ to electronic keyboards. It also enables the organ to be recorded and played back.

Also available from Solid State are:

MFMII: In addition to the features above, MFMII supports the addition of MIDI stops and couplers to the organ console. These allow MIDI to be turned on and off using stops (and therefore pistons).

MFMII + Wi-Fi: Adding our Wi-Fi server to MFMII allows sophisticated control of MIDI using an Apple™ iPad™.

MIDI Keyboards
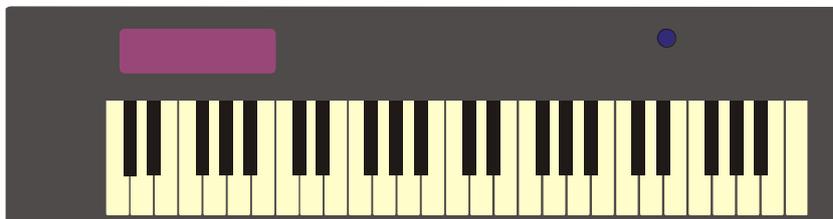
MIDI keyboards are probably the most common of the MIDI devices in use today. They have evolved from simple electronic keyboards and vary in price and facilities enormously. Typically, the keyboard has internal electronic sounds that may be synthesised from a combination of pure tones or recalling "sampled" sounds from a digital memory.

Early in the development of the electronic keyboard, it became desirable to couple sounds from other keyboards in much the same way as we do in the organ. Initially it became possible to connect keyboards of a similar manufacturer together. However, the obvious solution was to be able to couple any keyboard from any manufacturer, and MIDI was born.
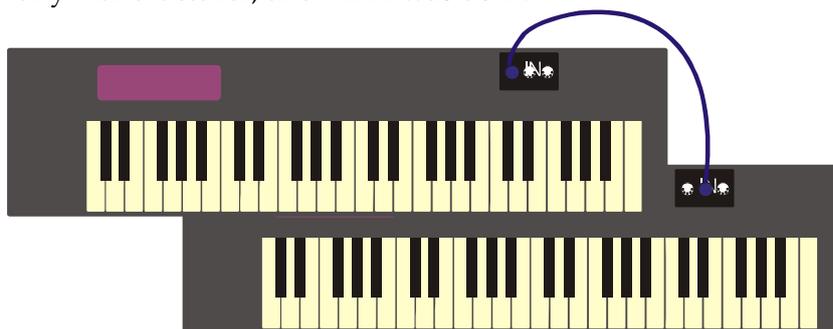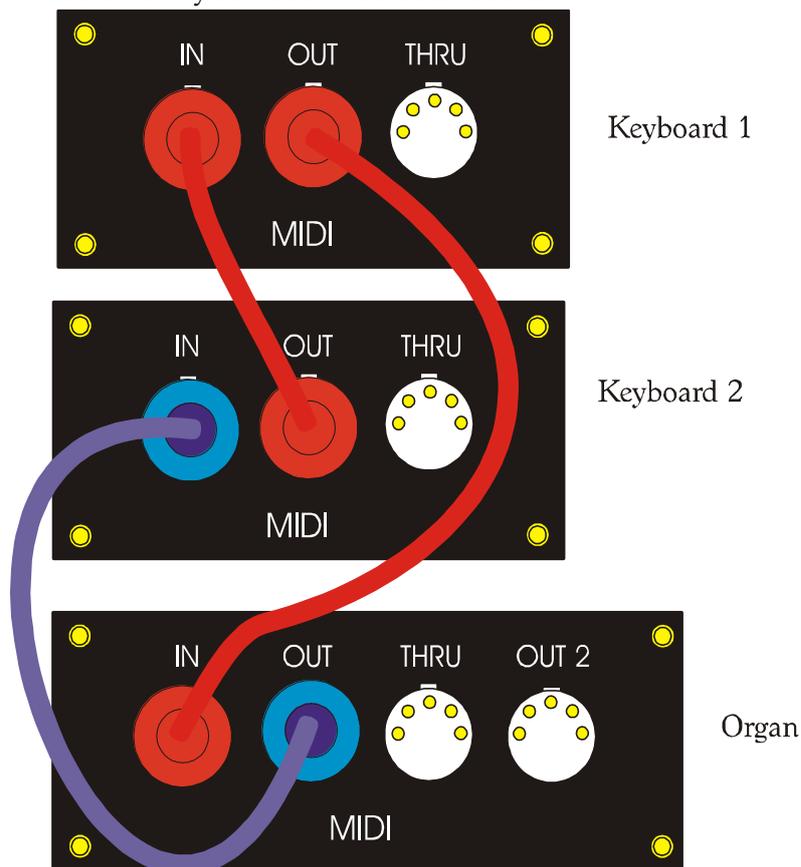
Connecting up

MIDI systems may be connected together in two basic ways, although as you become more involved and introduce a larger selection of equipment there are still more methods to be considered. For starters let us just consider the basics.
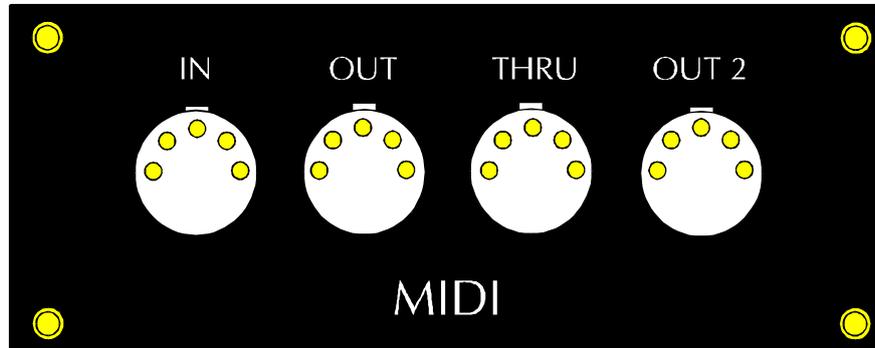
The picture above shows the connector panel that is used with the system. MIDI systems standardise on three basic connections, IN, OUT & THRU, we also add another called OUT2, which will be covered later.

Each MIDI device has a connector panel with connectors labelled IN, OUT & THRU, and a variety of standard cables are available from your local music store to connect from one device to another.

When connecting the devices together it is important to use the correct connections. Each device has one input called IN and two outputs OUT & THRU, THRU being an abbreviation for Through.

THRU passes the information received at the IN connector directly to THRU whereas OUT sends the information created on the instrument.

In the example above two devices are linked together so that each keyboard can play the sounds on the other. Please note it is important to connect an OUT to an IN, do not connect similar named

connections together. MIDI sends information OUT to other devices that receive it at the IN connection.

When connecting three devices there are two alternatives. The first alternative is to connect each IN and OUT together as shown below.
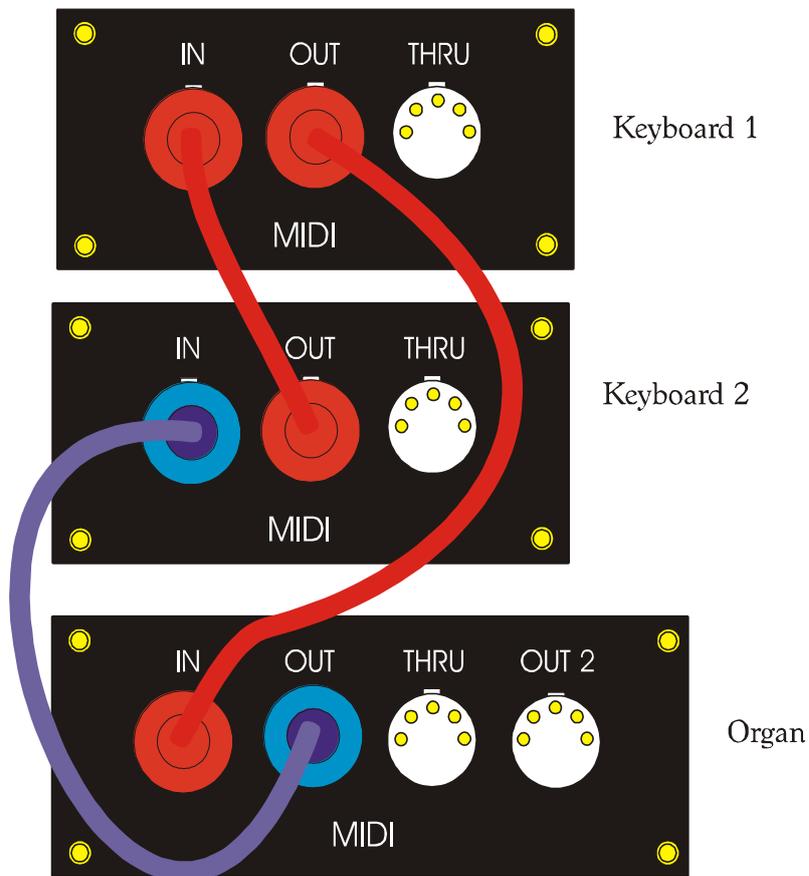
Another alternative suggestion below uses the THRU connection on Keyboard 2. If this method of connection is used, Keyboard 1 will receive the same data as Keyboard 2; there will be no additional information from Keyboard 2.

Keyboard 1

Keyboard 2

Organ
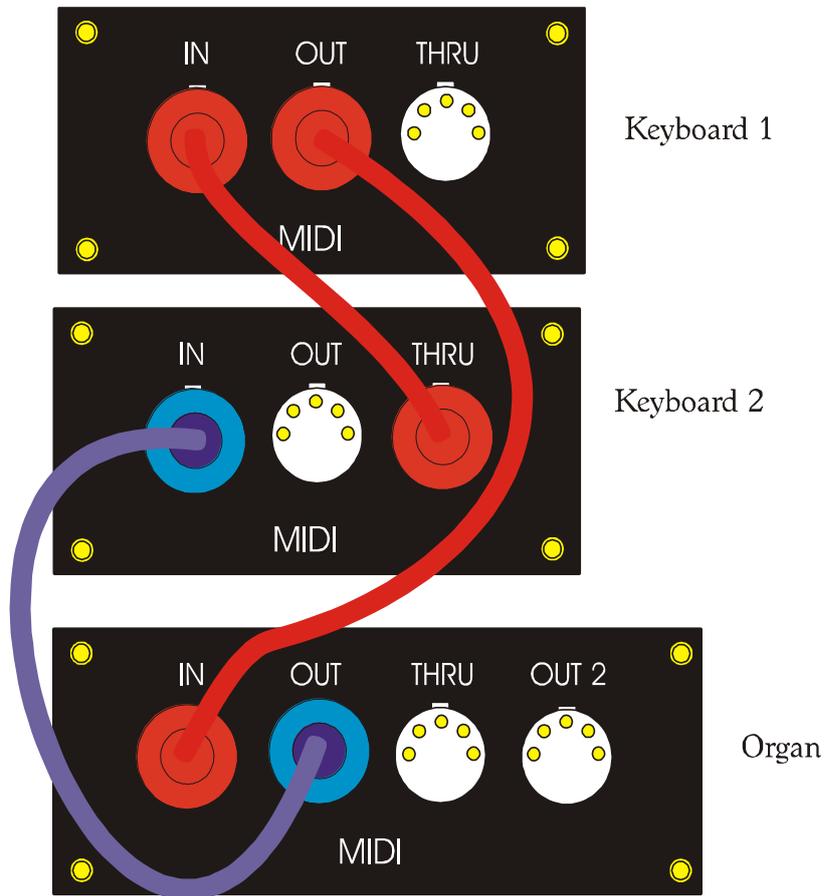
Summary

IN receives MIDI data from another device.

THRU is used to pass on a copy of the MIDI information received at the IN connection. The THRU output does not contain information generated by the device.

OUT passes data generated from the current device to the next one in the chain.

Playing from the MIDI Keyboard

If you wish to play stops on the organ from the MIDI keyboard, you must first connect the MIDI keyboard's OUT connector to the organ's IN connector.

Choose the correct division, by selecting the MIDI channel that corresponds to the division you wish to play.

The standard MIDI channels are:

Division Name	Channel Number
Swell (Manual III)	2
Great (Manual II)	1
Choir (Manual I)	3
Pedal	4
Manual IV	5
Manual V	6

If you wish to play the Swell Bourdon from the MIDI keyboard, you would send data on MIDI channel 2.

Select transmit on MIDI channel 2 on the MIDI device.

Draw the Swell Bourdon.

The Swell Bourdon will now play any notes played from the MIDI keyboard, functions such as transpose may be accomplished from the MIDI device set-up.

It is possible to play on the Swell manual simultaneously. Any stops drawn on the Swell division will play from either the Swell manual or the MIDI device.

Playing MIDI sounds from the organ

If you wish to play MIDI sounds from the organ keyboards, you must first connect the organ's OUT connector to the MIDI keyboard or tone generator's IN connector.

Set the receive channel filter on the MIDI device to accept data from the organ on the channel corresponding to the division in the table above.

Select the sound to be played on the MIDI device.

Recording and replaying the organ

To record an organ, MultiSystem II transmits all of the actions of the organist to a MIDI recording device connected to OUT2.

How do we record?

You will need a recording device. This may a simple "direct to disk" MIDI recorder or a personal computer with MIDI capability.

For most flexibility it is possible to connect the organ to a personal computer. Computers may be made MIDI compatible by using a USB to MIDI adapter. Computers can run very sophisticated music scoring and editing software.

It is possible to record yourself on the organ, edit the detail (and mistakes!) print the music and replay the modified recording.

Connect the OUT2 connector from the organ to the IN connector on the recording device.

Important things to watch for when recording

- General Cancel before starting.
- Start the recorder before drawing any stops or using any pistons; otherwise they will not be recorded.
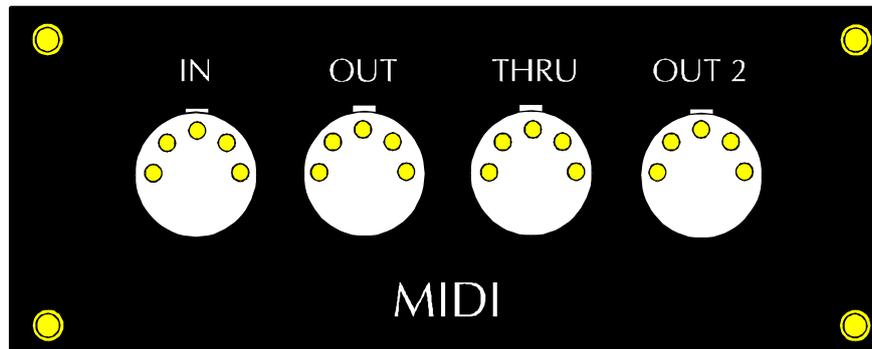- General Cancel before stopping the recorder.

How do we play back?

Connect the OUT connector from the recording device to the IN connector on the organ.

- Never stop a playback before the end, if you do the stops will remain on in the console and can only be cancelled by switching off the console.

Appendix - MultiSystem II MIDI Connectors and Channels

MIDI Connectors

Connector	MIDI Data
IN	Receives MIDI Notes, Stops and Expression Used for playback of recording and for playing the organ from another MIDI device.
OUT	Transmits MIDI Notes and Expression Used for playing MIDI sounds from the organ.
THRU	Retransmits MIDI Notes, Stops and Expression received on MIDI IN Used for linking multiple devices to one keyboard.
OUT2	Transmits MIDI Notes, Stops and Expression

MIDI Channels

The standard MIDI channels used by MultiSystem II are:

Division Name	Channel Number
Swell (Manual III)	2
Great (Manual II)	1
Choir (Manual I)	3
Pedal	4
Manual IV	5
Manual V	6

MIDI Messages

Notes are transmitted as MIDI Note messages with velocity = 64.
Notes are received as MIDI Note messages, velocity is ignored.

Expression is transmitted/received as MIDI Master Volume.

Stops are transmitted/received as 8 byte MIDI SysEx messages.

        F0-2B-01-01-22/23-nn-nn-F7
        22 = Stop Off
        23 = Stop On
        nn-nn = internal stop number