The Wholehog 3 software is capable of triggering or being triggered by a wide variety of Audio Visual products through the use of Midi Show Control (MSC). This document provides a rough outline of capabilities with popular AV products. Section 28.2 of the Wholehog 3 User Manual details the exact configuration and use of the Wholehog 3 software.

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For further questions regarding the Wholehog 3 system, please use any of the following:
- 24/7 Support: 1-800-890-8989
- Email Support: support@flyingpig.com
- Website Support: www.flyingpig.com
**Basic Midi Understanding**

MIDI Show Control is a technology that allows you to control all the elements of a performance (lighting, sound, video, effects, etc) from a single controller. It uses a variation of the well-established MIDI standard to send cue information between the show controller and the controllers specific to each performance element. You can configure the Wholehog 3 to receive commands from a show controller. Alternately, you can configure the Wholehog 3 to send commands to other devices.

General MIDI Show Control information is available from the following resources:

- [http://www.midi.org/](http://www.midi.org/)

The Wholehog 3 can send or receive the same types of MSC commands. The basic structure of MIDI Show Control messages is:

```
F0 7F device_id 02 command_format command [data] F7
```

- The `device_id` is one byte and is set to the ID of the controller that should receive and process the message.
- The `command_format` is one byte with a decimal value of 0 through 127. The lighting industry most commonly uses value 01, which is General Lighting.
- The `command` is one byte with a decimal value of 0 through 127. Some commands require an amount of data to follow the command.
- `F7` completes the command.

**Examples of MSC Messages**

Pressing Go for List 1, Cue 1, sends this message:

```
F0 7F 01 02 01 01 31 00 31 00 F7
```

Command 01 is **GO**, which runs using the assigned cue time.

Pressing **Skip Forward** >> to bump to List 1, Cue 2, sends this message:

```
F0 7F 01 02 01 04 00 00 00 00 32 00 31 00 F7
```

Command 04 is a **TIMED_GO** with data to tell the controller to run the cue in a time 0.

Pressing **Skip Back** |<< to bump to List 1, Cue 1, sends this message:

```
F0 7F 01 02 01 04 00 00 00 00 31 00 31 00 F7
```

which is also a **TIMED_GO**.

Pressing **Skip Forward** >> when the cuelist is released and in cue 1 (to advance to List 1, Cue 2 without playing the list), sends this message:

```
F0 7F 01 02 01 11 32 00 31 00 F7
```

Command 11 is **STANDBY_+**, which tells the controller to standby for the next cue without playing it.

Pressing **Skip Back** |>> when the cuelist is released and in cue 2 (to step back to List 1, Cue 1 without playing the list), sends this message:

```
F0 7F 01 02 01 12 31 00 31 00 F7
```

Command 11 is **STANDBY_-**, which tells the controller to standby for the previous cue without playing it.
The Wholehog 3 send and responds to the following MSC commands:

<table>
<thead>
<tr>
<th>Wholehog 3 Command</th>
<th>MSC Command</th>
<th>MSC Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Go</td>
<td>0x1 GO</td>
<td>Cue number, cuelist number</td>
</tr>
<tr>
<td>Halt</td>
<td>0x2 STOP</td>
<td>Cuelist number</td>
</tr>
<tr>
<td>Resume</td>
<td>0x3 Resume</td>
<td>Cuelist number</td>
</tr>
<tr>
<td>Skip Forward</td>
<td>0x4 TIMED_GO</td>
<td>Time=0, cue number, cuelist number</td>
</tr>
<tr>
<td>Skip Back</td>
<td>0x4 TIMED_GO</td>
<td>Time=0, cue number, cuelist number</td>
</tr>
<tr>
<td>Release</td>
<td>0xb GO_OFF</td>
<td>Cuelist number</td>
</tr>
<tr>
<td>Change Page</td>
<td>0x1d OPEN_CUE_PATH</td>
<td>Page number</td>
</tr>
</tbody>
</table>

**Formatting Macros to Transmit MIDI Strings**

Wholehog 3 macros can be used to send MIDI strings when a show is launched, a page changed, or a cue/scene is played. In the macro field the syntax `MS [node type and number]/[MIDI message]` The node type should be formatted as “h” for console output or “I” for a MIDI/Timecode processor (IOP). The node number should be the net number associated with the defined device. The MIDI message should be entered in HEX.

**Examples of Macro Syntax**

- `MSh1/F07F0102010131003100F7`
  - Sends MSC command Go for List 1, Cue 1 through the console MIDI OUT
- `MSh1/90473F`
  - Sends custom MIDI string through the console MIDI OUT
- `MSh2/F000005022011400F7`
  - Sends MIDI System Exclusive string through the second console MIDI OUT
**Working with AMX products**
AMX based systems can use the AMX AXB-MIDI interface to transmit and/or receive MSC commands with a Wholehog 3 system.

**Triggering AMX products from the Wholehog 3**
- Connect a MIDI cable to the MIDI OUT of the Wholehog 3 product and the MIDI IN of the AXB-MIDI interface.
- Configure the Wholehog 3 to transmit MSC output (refer to the Wholehog 3 User Manual section 28.2).
- Refer to the *MIDI Programming* section of the AXB-MIDI manual for details about the MSC commands accepted by the AMX system.
- Use the *MIDI String Macro* method described on page 3 of this document to compose and send MSC triggers to the AMX system.

**Triggering the Wholehog 3 from AMX products**
- Connect a MIDI cable to the MIDI IN of the Wholehog 3 product and the MIDI OUT of the AXB-MIDI interface.
- Configure the Wholehog 3 to receive MSC input (refer to the Wholehog 3 User Manual section 28.2).
- Refer to the *system exclusive* section of the AXB-MIDI manual for details to compose MSC commands to the Wholehog 3.
- Page 3 of this document describes the types of MSC messages the Wholehog 3 can receive.
**Working with Crestron products**

Crestron based systems can use the Crestron CNXMIDI interface to transmit and/or receive MSC commands with a Wholehog 3 system.

**Triggering Crestron products from the Wholehog 3**
- Connect a MIDI cable to the MIDI OUT of the Wholehog 3 product and the MIDI IN of the CNXMIDI interface.
- Configure the Wholehog 3 to transmit MSC output (refer to the Wholehog 3 User Manual section 28.2).
- Open the *Program System View* of the Crestron SIMPL Windows application and configure the system to receive MIDI strings.
- Use the *MIDI String Macro* method described on page 3 of this document to compose and send MSC triggers to the Crestron system.

**Triggering the Wholehog 3 from Crestron products**
- Connect a MIDI cable to the MIDI IN of the Wholehog 3 product and the MIDI OUT of the CNXMIDI interface.
- Configure the Wholehog 3 to receive MSC input (refer to the Wholehog 3 User Manual section 28.2).
- Open the *Program System View* of the Crestron SIMPL Windows application and configure the system to transmit MIDI strings.
- Page 3 of this document describes the types of MSC messages the Wholehog 3 can receive.