TCP/IP control is available via the Network port on the Avantis mixer. Messages are sent using the MIDI format, as described in this document.

All MIDI message numbers shown in this specification are hexadecimal. Refer to the end of this document for a table of values for each of the parameters listed here.

Clients should be configured to use TCP port 51325.

MIDI Controllable Functions and Parameters:

- Fader levels NRPN Input, Mix master, FX send, FX return, DCA
- Mutes Note On Input, Mix master, FX send, FX return, DCA, Mute Groups
- Send levels SysEx Aux, FX and Matrix sends
- DCA assign NRPN
- Input to Main assign NRPN
- Name & Colour SysEx
- Scene Recall Program Change
- MIDI transport MIDI Machine Control (MMC)
- MIDI Strips Custom Messages DAW and remote equipment control
- SoftKeys Custom Messages Press and release messages

MIDI Channel Number

MIDI channel 1 to 16 = 0 to F

To extend the range of audio channels that can be controlled by MIDI messages the Avantis MIDI protocol uses a range of five MIDI channels to select between audio channel types. The base MIDI channel N is the lowest channel of the range selected in Utility / Control / MIDI and cannot exceed 12 (B). The default is MIDI Channel 12 to 16.

The audio channel type is selected by offsetting the MIDI channel used in the message and the audio channel number is selected using the note number, as detailed in 'Channel Selection' below.

Scene Recall and MIDI transport use the base MIDI channel N.

Channel Selection

\[ N = \text{Base MIDI channel} \]

\[ CH = \text{Channel Note number (refer to table)} \]

Channels are selected using the MIDI channel number and Note number as follows:

- Inputs 1 to 64: \( N = N, \quad CH = 00 \) to 3F
- Mono Groups 1 to 40: \( N = N + 1, \quad CH = 00 \) to 27
- Stereo Groups 1 to 20: \( N = N + 1, \quad CH = 40 \) to 53
- Mono Aux 1 to 40: \( N = N + 2, \quad CH = 00 \) to 27
- Stereo Aux 1 to 20: \( N = N + 2, \quad CH = 40 \) to 53
- Mono Matrix 1 to 40: \( N = N + 3, \quad CH = 00 \) to 27
- Stereo Matrix 1 to 20: \( N = N + 3, \quad CH = 40 \) to 53
- Mono FX Send 1 to 12: \( N = N + 4, \quad CH = 00 \) to 0B
- Stereo FX Send 1 to 12: \( N = N + 4, \quad CH = 10 \) to 1B
- FX Return 1 to 12: \( N = N + 4, \quad CH = 20 \) to 2B
- Mains 1 to 3: \( N = N + 4, \quad CH = 30 \) to 32
- DCA 1 to 16: \( N = N + 4, \quad CH = 36 \) to 45
- Mute Group 1 to 8: \( N = N + 4, \quad CH = 46 \) to 4D

SysEx Header

SysEx Header

This applies to all SysEx messages described later in this specification.

F0, 00, 00, 1A, 50, 10, 01, 00
### Mute

**Mute ON**

NOTE ON with velocity > 40 followed by NOTE OFF

\[ \text{9N, CH, 7F, 9N, CH, 00} \]

**Mute OFF**

NOTE ON with velocity < 40 followed by NOTE OFF

\[ \text{9N, CH, 3F, 9N, CH, 00} \]

### Received Mute Messages

- Velocity 00 and NOTE OFF messages are ignored
- Velocity 01 to 3F = Mute OFF
- Velocity 40 to 7F = Mute ON

### Fader Level

NRPN with parameter ID 17

Fader value \( \text{LV} \) \(-\infty\) to +10dB = 00 to 7F (refer to table)

<table>
<thead>
<tr>
<th>Select channel</th>
<th>Parameter</th>
<th>Set fader value</th>
</tr>
</thead>
<tbody>
<tr>
<td>BN, 63, CH</td>
<td>BN, 62, 17</td>
<td>BN, 06, LV</td>
</tr>
</tbody>
</table>

### AUX / FX / Matrix Send Level

SysEx message

Where \( \text{SndN} \) and \( \text{SndCH} \) are the MIDI channel and Note number for the Mix to be sent to.

Send value \( \text{LV} \) \(-\infty\) to +10dB = 00 to 7F (refer to table)

**Message:**

\[ \text{SysEx Header, 0N, 0D, CH, SndN, SndCH, LV, F7} \]

### DCA Assignment ON

NRPN with parameter ID 40

ON value \( \text{DB} \) for DCA 1 to 16 = 40 to 4F (refer to table)

<table>
<thead>
<tr>
<th>Select channel</th>
<th>Parameter</th>
<th>Set ON</th>
</tr>
</thead>
<tbody>
<tr>
<td>BN, 63, CH</td>
<td>BN, 62, 40</td>
<td>BN, 06, DB</td>
</tr>
</tbody>
</table>

### DCA Assignment OFF

NRPN with parameter ID 40

OFF value \( \text{DA} \) for DCA 1 to 16 = 00 to 0F (refer to table)

<table>
<thead>
<tr>
<th>Select channel</th>
<th>Parameter</th>
<th>Set OFF</th>
</tr>
</thead>
<tbody>
<tr>
<td>BN, 63, CH</td>
<td>BN, 62, 40</td>
<td>BN, 06, DA</td>
</tr>
</tbody>
</table>

### Mute Group Assignment ON

NRPN with parameter ID 40

ON value \( \text{DB} \) for Mute Group 1 to 8 = 50 to 57 (refer to table)

<table>
<thead>
<tr>
<th>Select channel</th>
<th>Parameter</th>
<th>Set ON</th>
</tr>
</thead>
<tbody>
<tr>
<td>BN, 63, CH</td>
<td>BN, 62, 40</td>
<td>BN, 06, 7F</td>
</tr>
</tbody>
</table>

### Mute Group Assignment OFF

NRPN with parameter ID 40

OFF value \( \text{DA} \) for Mute Group 1 to 8 = 10 to 17 (refer to table)

<table>
<thead>
<tr>
<th>Select channel</th>
<th>Parameter</th>
<th>Set OFF</th>
</tr>
</thead>
<tbody>
<tr>
<td>BN, 63, CH</td>
<td>BN, 62, 40</td>
<td>BN, 06, 3F</td>
</tr>
</tbody>
</table>
**Channel Name**

SysEx message

Gets or sets the Name with up to 8 characters (up to 8 can be displayed on the Avantis strip LCD)

To get Name from Avantis

Send... SysEx Header, 0N, 01, CH, F7

Reply... SysEx Header, 0N, 02, CH, Name, F7 where Name = Hex ASCII String

To set Name

SysEx Header, 0N, 03, CH, Name, F7 where Name = Hex ASCII String

**Channel Colour**

SysEx message

Gets or sets the Colour with a choice of 7 colours or no colour

To get Colour from Avantis

Send... SysEx Header, 0N, 04, CH, F7

Reply... SysEx Header, 0N, 05, CH, Col, F7 where Col = 00 to 07 (refer to table)

To set Colour

SysEx Header, 0N, 06, CH, Col, F7 where Col = 00 to 07 (refer to table)

**Scene Recall**

Bank and Program Change message

To recall one of the 500 Scenes using 4 banks

Also transmits this message when a Scene is recalled from the Avantis screen

SS = Scene number within bank = 00 to 7F (refer to table)

Bank = Bank of scenes

Bank 1 - Scene 1 to 128  Bank = 00
Bank 2 - Scene 129 to 256  Bank = 01
Bank 3 - Scene 257 to 384  Bank = 02
Bank 4 - Scene 385 to 500  Bank = 03

Select bank Recall Scene

BN, 00, Bank, CN, SS

**MIDI Strips**

Custom MIDI messages

Fader strips can be assigned as MIDI Strips. There are 32 MIDI Strips available.

Each fader strip control can be assigned to transmit a custom MIDI message. This is used for controlling audio within a Digital Audio Workstation (DAW), a slave mixer, or parameters on external equipment such as effects devices. MIDI Strips can be named and coloured. They are stored within Scenes and can be made Safe from Scene recall.

The Template Shows load the following factory default messages for the MIDI Strip controls. These can be edited to suit your application. If required, they can be restored to default from within Scene 1 ‘Reset Settings’ in the Template Show.

- Fader
  - B1, 00, <VAR> to B1, 1F, <VAR>
  - B2, 00, <VAR> to B2, 1F, <VAR>
  - B2, 20, <VAR> to B2, 3F, <VAR>
  - B2, 40, <VAR> to B2, 5F, <VAR>
  - B2, 60, <VAR> to B2, 7F, <VAR>
  - B2, 60, <VAR> to B2, 7F, <VAR>

- Gain Rotary
  - 91, 00, <VAR> to 91, 1F, <VAR>
  - 91, 20, <VAR> to 91, 3F, <VAR>

- Pan Rotary
  - 91, 40, <VAR> to 91, 5F, <VAR>

- Rotary Custom 1
  - 91, 60, <VAR> to 91, 7F, <VAR>

- Rotary Custom 2
  - 91, 60, <VAR> to 91, 7F, <VAR>

- Rotary Custom 3
  - 91, 60, <VAR> to 91, 7F, <VAR>

- Rotary Custom 4
  - 91, 60, <VAR> to 91, 7F, <VAR>

- Mute switch
  - 91, 80, <VAR> to 91, 9F, <VAR>

- Mix switch
  - 91, 10, <VAR> to 91, 1F, <VAR>

- PAFL switch
  - 91, 10, <VAR> to 91, 1F, <VAR>

Where <VAR> is the value determined by the position of the control.

Sel is not included as this is required to select the Processing screen for configuring the MIDI Strip.

By default, Rotary Custom 2 and 3 use the same values as Rotary Custom 1.

**MMC (Transport Control)**

SysEx message

F0, 7F, 7F 06, TC, F7

Where TC transport control is:

- 01 = Stop
- 02 = Play
- 04 = Fast Forward
- 05 = Rewind
- 06 = Record
- 09 = Pause
<table>
<thead>
<tr>
<th>Scene Number</th>
<th>Scene Number</th>
<th>Inputs</th>
<th>Mono Group</th>
<th>Mono Aux</th>
<th>Mono Matrix</th>
<th>FX Return</th>
<th>DCA</th>
<th>DCA Assign</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>145</td>
<td>1</td>
<td>2</td>
<td>145</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>145</td>
</tr>
</tbody>
</table>

### Stereo FX Send

- **Mute Level**: 
  - **Mute**: 0

- **Fader Level**: 
  - **Fader 1**: 0
  - **Fader 2**: 0
  - **Fader 3**: 0
  - **Fader 4**: 0

- **Colour**: 
  - **Red**: 0
  - **Green**: 0
  - **Blue**: 0

- **Mains**: 
  - **Mains 1**: 0
  - **Mains 2**: 0
  - **Mains 3**: 0

- **SysEx Header**: 
  - **F0**: 0
  - **F0 + 00**: 0
  - **F0 + 01**: 0
  - **F0 + 02**: 0
  - **F0 + 03**: 0

- **Mute Level**: 
  - **Mute**: 0

- **Fader Level**: 
  - **Fader 1**: 0
  - **Fader 2**: 0
  - **Fader 3**: 0
  - **Fader 4**: 0

- **Colour**: 
  - **Red**: 0
  - **Green**: 0
  - **Blue**: 0

- **Mains**: 
  - **Mains 1**: 0
  - **Mains 2**: 0
  - **Mains 3**: 0

- **SysEx Header**: 
  - **F0**: 0
  - **F0 + 00**: 0
  - **F0 + 01**: 0
  - **F0 + 02**: 0
  - **F0 + 03**: 0

### Scene Recall

- **Scene Name**: AVANTIS MIDI TCP/IP Reference Table - V1.1

- **Scene Number**: 0

- **Scene Description**: 
  - **Scene 1**: Scene 1
  - **Scene 2**: Scene 2
  - **Scene 3**: Scene 3
  - **Scene 4**: Scene 4

- **Scene Details**: 
  - **Scene 1**: Scene 1
  - **Scene 2**: Scene 2
  - **Scene 3**: Scene 3
  - **Scene 4**: Scene 4

- **Scene Options**: 
  - **Scene Option 1**: Scene Option 1
  - **Scene Option 2**: Scene Option 2
  - **Scene Option 3**: Scene Option 3
  - **Scene Option 4**: Scene Option 4