For each channel (AMP, CAB or FX) one jack socket is used for cable detect (socket ring shorted to sleeve by inserted mono jack). The associated channel is only “enabled” when a jack plug is inserted in the socket

|  |  |  |  |
| --- | --- | --- | --- |
| **Channel Type** | **Send Socket** | **Return Socket** | **Cable Detect Is On** |
| AMP x 4 | Signal out | From speaker output | RETURN |
| CAB x 2 | To speaker | n/a | SEND |
| FX x 2 | Effect send | Effect return | SNED |

Each channel has an associated LED

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| AMP1 | AMP2 | AMP3 | AMP4 | CAB1 | CAB2 | FX1 | FX2 |

The LEDs shows the following states

* **LED is OFF** – cable is not connected, channel is “disabled”
* **LED is GREEN** – cable is connected, channel is enabled but not selected
* **LED is RED** – cable is connected, channel is both enabled and selected. This is the active channel of the type

Each channel also has an associated push button. The behaviour associated with cable detect and push buttons are as follows

**Channel is DISABLED**

Pressing the button has no effect – channel cannot be selected

When a cable is connected the channel becomes ENABLED

**Channel is ENABLED**

Pressing the button makes the channel SELECTED

* For AMP or CAB channels there can only be one SELECTED channel of that type, so any other SELECTED channel goes back to the ENABLED state
* For FX channels the channel becomes SELECTED without any effect on other FX channels. Multiple FX channels can be SELECTED at the same time.

If the cable associated with the channel is disconnected the channel becomes DISABLED.

**Channel is SELECTED**

Pressing the button sets the channel back to the ENABLED state. This may mean that no channels of the type are SELECTED.

If the cable associated with the channel is disconnected the channel becomes DISABLED

MIDI can be used to control the system. The following types of MIDI can be used

* **MIDI notes –** each channel has a fixed MIDI note that can be used to select it (see table below). The MIDI channel can be selected by the user and MIDI note control can be turned ON/OFF.
  + AMP and CAB channels will respond to MIDI NOTE ON messages. The last NOTE ON that matches a valid AMP or CAB channel will define the selected channel. NOTE OFF messages are ignored by AMP/CAB channels
  + FX channel responds to both NOTE ON and NOTE OFF message. While the note is held, the FX loop is SELECTED
  + If a channel is DISABLED the corresponding MIDI message is ignored
* **MIDI controller changes** - The MIDI channel can be selected by the user and MIDI CC control can be turned ON/OFF.
  + A CC number (user-selectable) will control AMP selection. The data value sent to the CC will select the active AMP channel
  + A CC number (user-selectable) will control CAB selection. The data value sent to the CC will select the active CAB channel
  + Each FX loop will have its own user selectable CC number. Sending data value 0 will turn the FX loop off, sending any non-zero data value will turn the FX loop on.
  + If a channel is DISABLED the corresponding MIDI message is ignored
* **MIDI program changes** - The MIDI channel can be selected by the user and PGM change control can be turned ON/OFF.
  + The user will be able to save any combination of channel selections as a “program” and assign it a MIDI program number which will select that program when matched
  + Eight programs can be accessed quickly from the front panel by using a “shifted” channel button
  + The system could support additional programs for access by MIDI (so more than 8 programs can be saved). We could also have “banks” so that any program could be selected via the front panel by paging through banks via the menu

MIDI note number assignments

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **AMP** | **Note** | **CAB** | **Note** | **FX Loop** | **Note** |
| 1 | 12 | 1 | 36 | 1 | 60 |
| 2 | 13 | 2 | 37 | 2 | 61 |
| 3 | 14 | 3 | 38 | 3 | 62 |
| 4 | 15 | 4 | 39 | 4 | 63 |
| 5 | 16 | 5 | 40 | 5 | 64 |
| 6 | 17 | 6 | 41 | 6 | 65 |
| 7 | 18 | 7 | 42 | 7 | 66 |
| 8 | 19 | 8 | 43 | 8 | 67 |
| 9 | 20 |  |  |  |  |
| 10 | 21 |  |  |  |  |
| 11 | 22 |  |  |  |  |
| 12 | 23 |  |  |  |  |
| 13 | 24 |  |  |  |  |
| 14 | 25 |  |  |  |  |
| 15 | 26 |  |  |  |  |
| 16 | 27 |  |  |  |  |
| NONE | 35 |  |  |  |  |

Patches

When saving a patch you can select a program number 000 – 127

If another patch is using the program number it will be overwritten

A maximum number of patches can be stored

Patch can also be assigned to one of the 8 channel buttons and recalled by selecting one of the 8 channel buttons

Patches 1,2,3,4,5,6,7,8

Each can be assigned to “listen to” a specific combination of MIDI channel / CC number

Save the current settings to a patch

SEL + (1-8) loads the selected patch if button released quickly

SEL + (1-8) saves current settings to the patch if button held for 2 seconds

In “patch save” mode can select MIDI channel and MIDI PC#

SEL switches between CHN/01 and PRG/123

INC and DEC change program

Press (1-8) to exit from patch save mode

SEL + INC and SEL + DEC select the MIDI channel for note/CC messages