

# Audiostorm Daughterboard **Draft** Specification

## ASDB v0.1

(13<sup>th</sup> July 2023)

### Overview

The ASDB specification standardises an internal connection system for adding modular effects board to effects pedals and similar equipment. The goal is to allow a player to add one or more effects of their choice to a given pedal, thus increasing creative options.

### Rights

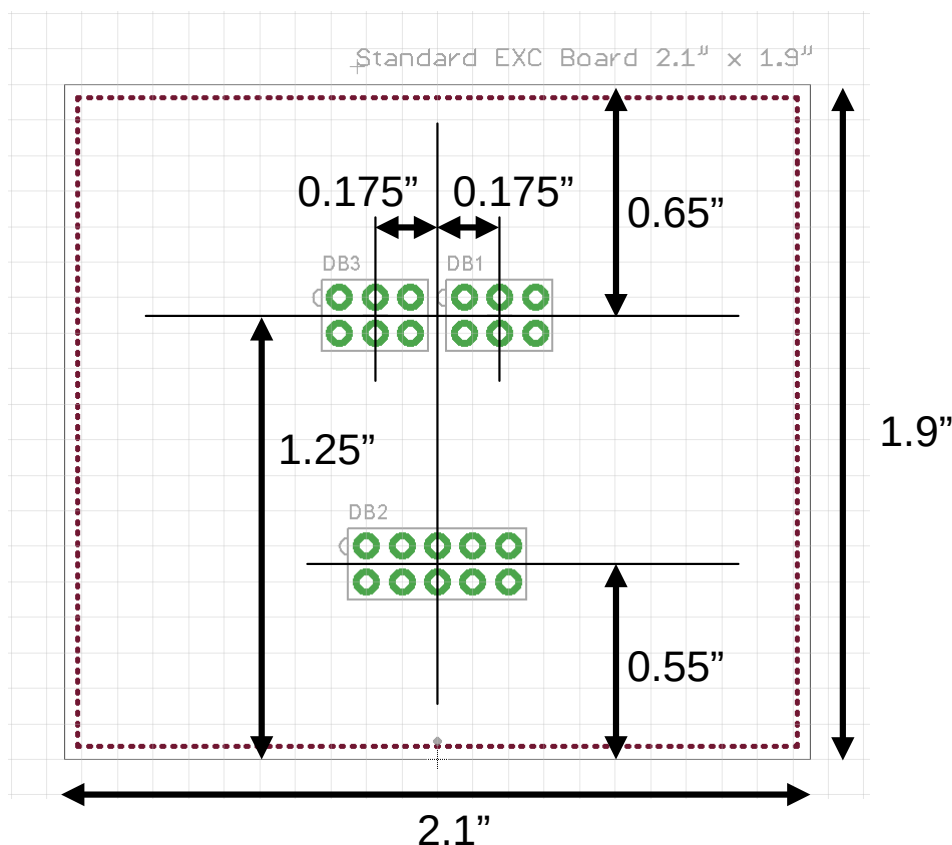
The ASDB specification may be used freely by anyone, for reward, for gain, for personal use or however they please. No licensing is required. No royalties will be due. WTFPL.

### Certification

The ASDB specification is determined only by Audiostorm and you must comply with the requirement of this technical document in order to use the ASDB compatible logo. You may optionally submit your design for evaluation in order to obtain the ASDB certified logo. You do not hand over any rights to your design by doing this, it is purely for verification.

### Standard Board Dimensions

The 'Standard' board is designed to fit into the maximum number of pedal enclosures possible and is thus fairly small. It must be no bigger than 1.9" tall and 2.1" wide.



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### Connectors

The connectors must be placed as shown and clearance from the edge of the board should be no bigger than shown.

Connector spacing is chosen to ensure the user cannot incorrectly rotate the board, however it is still possible to place the board one row up or down on the pins so smaller boards (whilst technically permissible) are not recommended.

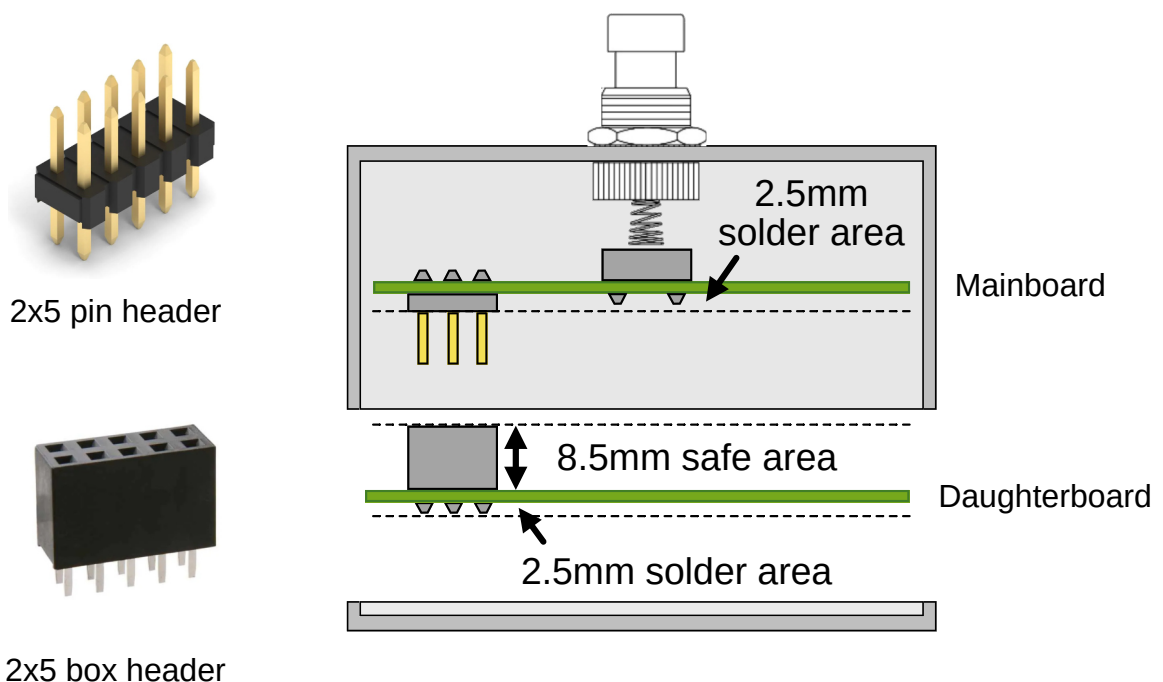
Pedal designers should ideally add 'stops' or ensure the daughterboards will be close enough to the pedal walls so that users can insert a standard board without concerning themselves over pin alignment.

The connectors are standard 0.1" spacing header pins and sockets. Pedals should always use pins and daughterboards should use sockets. There is no requirement for keying but should you choose keyed sockets or connectors the key should be placed upwards, towards the top of the board as it is shown in these documents

### Clearance

Pedal designers should ensure pins or components never protrude from the bottom of their board more than 0.1" or 2.5mm

Daughterboard designers should ensure no component protrudes more than 8.5mm above the board, and again that pins or components on the bottom never protrude more than 0.1"



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### Pinout

The three connectors are termed SIG (6 pin), EXC (6 pin) and PWR (10 pin)

Mainboard connectors are prefixed MB\_

Daughterboard connectors are prefixed DB\_

#### EXC (Expression Controller)

- |         |          |  |
|---------|----------|--|
| • SIG 1 | PRE_SND  | Audio from after the first mainboard buffer (unity gain) |
| • SIG 2 | PRE_RET  | Return from daughterboard (buffered)                     |
| • SIG 3 | POST_SND | Audio from after the last mainboard buffer               |
| • SIG 4 | POST_RET | Return from daughterboard (buffered)                     |
| • SIG 5 | CV1      | Reserved for future use                                  |
| • SIG 6 | CV2      | Reserved for future use                                  |

#### PWR (Power and data)

- |          |       |  |
|----------|-------|--|
| • PWR 1  | VCC   | Filtered audio supply from mainboard (Op-amp power)  |
| • PWR 2  | 5V    | Regulated 5V from mainboard. 70mA max drain.         |
| • EXC 3  | HALF  | Filtered virtual ground from mainboard (half supply) |
| • PWR 4  | RAW   | Direct connection to 2.1mm power socket              |
| • PWR 5  | AGND  | Audio ground (True 0V from 2.1mm socket)             |
| • PWR 6  | SDA   | Reserved for future use                              |
| • PWR 7  | SCL   | Reserved for future use                              |
| • PWR 8  | STATE | From mainboard. 5v when pedal is on, 0v when off.    |
| • PWR 9  | ON    | To mainboard: Active low for mainboard active.       |
| • PWR 10 | OFF   | To mainboard: Active high for mainboard bypass.      |

#### EXC (Expression Controller)

- |         |        |   |
|---------|--------|---|
| • EXC 1 | SW_T   | All connections here to TRS jack on mainboard |
| • EXC 2 | TIP    |   |
| • EXC 3 | SW_R   |   |
| • EXC 4 | RING   |   |
| • EXC 5 | SW_S   |   |
| • EXC 6 | SLEEVE |   |

The EXC socket is designed to serve multiple uses. It should be marked with a coloured ring or tab depending upon application, as follows:

- |          |   |
|----------|---|
| • Black  | Normal use of TRS expression pedal or CV control                        |
| • Red    | Analogue remote switching of pedal (Grounded Tip ON, Grounded Ring OFF) |
| • Yellow | RS485 remote control (Data spec TBC)                                    |
| • Blue   | Secondary output  |
| • Green  | Effects loop or insert (Tip send, ring return)                          |
| • White  | Custom protocol (Whatever the designer wants)                           |