**Slave**

Midi Extender

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# History

Table 1: History

|  |  |
| --- | --- |
| **Date/period** | **Actions** |
| Nov 8, 2017 | Initial Version |

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# Introduction

This document describes the MIDI extender. This slave does not connect to the Controller like other slaves, but connects to the MIDI device and is only used to accommodate extra MIDI inputs, MIDI outputs and MIDI thrus.

# Requirements

## Generic

Table : Requirements MG

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Base ID** | **Version** | **Category** | **Item** | **Description** |
|  |  |  |  |  |  |

## Hardware

Table : Requirements MH

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Base ID** | **Version** | **Category** | **Item** | **Description** |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

## Software

Table : Requirements MS

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Base ID** | **Version** | **Category** | **Item** | **Description** |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

# Inputs/Outputs

TODO

# Design

## Amount of MIDI Connectors

TODO

## EMC/EMI Performance

Since in a life situation EMI can result in problems, for all MIDI inputs/outputs inductor beads will be used. The advised are not to be found for a cheap price, however a test will be made with 3T 6\*10 R6H (six hole) magnetic beads which have similar stats (TODO) as the advised inductors from the MIDI protocol.

## Diagnostics LEDs

Table : Diagnostics LEDs

|  |  |  |
| --- | --- | --- |
| **Function** | **LED Color** | **Description** |
| Power | Blue (generic) | Off: Power off  On: Power on |
| RF | Yellow (generic) | Off: empty message transmitting/receiving  Slow blinking: contact with controller  Double fast blinking per second: no contact with slave  Triple fast blinking per second: problem with RF  On: non empty message transmitting/receiving |
| MIDI In | Green | Off: Not receiving MIDI data  On: Receiving MIDI data |
| MIDI Out | Green/Red (bicolor) | Off: Not transmitting MIDI data  Green: Transmitting unprocessed MIDI data  Red: Transmitting processed MIDI data |

## Note that if the GUI Device shows errors whenever possible.

## Breadboard Layout

## Proto Layout

TODO

## Component List

TODO

# Software

## Design

TODO

## Memory Usage

TODO

## Timing Performance

TODO

# Testing

## Unit Tests

TODO

## Integration Tests

TODO