SliderBAR

Technical REFERENCE

# Motorized fader-based keyboard slider with an advanced controller

**Features**

* **Motorized fader composed of a linear potentiometer and a belt and pulley system to move the fader**
* **Open hardware and source**
* **USB Powered (USB Mini B connector)**
* **Desktop configuration GUI**
* **Programmable plugins**
* **USB CDC Virtual Serial Port for plug-n-play on any PC**

**Hardware specifications**

* **USB Mini B connector**
* **STM32F072C8Tx MCU**
* **5-pin ST-Link V2 programming interface**
* **5V to 3.3V regulator (MIC5205-33)**
* **5V to 10V boost converter (MT3608) with trimmable potentiometer**
* **TB6612FNG motor driver (max 1.2 A)**
* **Pin headers for debug, motor out, and potentiometer in**

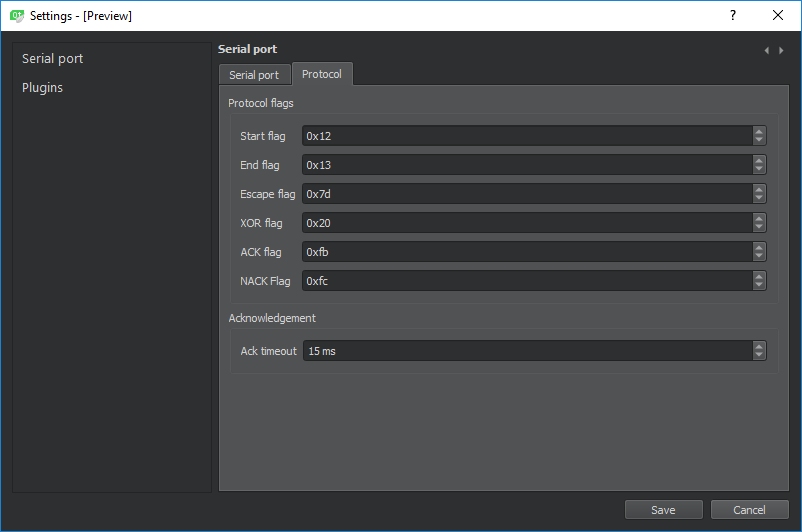


Figure 1. Configuration window



Figure 2. Motorized fader

**Software specifications**

* **Desktop side:**
  + **Written in C++ with Qt for the GUI**
  + **IDE: Qt Creator**
  + **Base application allows user to manage settings, connect, load plugins and set activators for each plugin**
  + **Base application does nothing, the plugins parse the slider’s input**
  + **Each plugin receives the SliderBar’s position and can use the app’s API to execute actions**
* **Embedded side:**
  + **Written in C++ with STM32CubeHal**
  + **IDE: Visual Studio Code with PlatformIO**
  + **Lightweight communication protocol composed of:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **startflag** | **command\_type** | **value** | **crc** | **endflag** |

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## Introduction

## Description