MiniSerial

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**Presented by** [**Matrix Robotics**](http://www.matrixrobotics.com)

**Discription**

**MiniSerial** is a prototype firmware for **Matrix MINI controller**. It provides means of communication between Arduino in MINI and other 3rd party controllers, such as Raspberry PI, NI myRIO, KNRm, or any serial communication available device. This architecture extends main controllers’ functionality by accessing MINI’s embedded ports and drives.

**Protocol**

Communication is based on **3-byte** messages. Each message starts with byte 255 (0xFF) to initialize connection. The remaining two bytes are ‘command’ and ‘value’. Command byte represents a function or variable to apply value to. Among default functions – control RC/DC motors, read sensors and ports. Any new function may be assigned to an available byte address.

Communication is bidirectional. Main controller can control functions at MINI, while MINI can send sensor data back to the controller.

**Protocol Table**

|  |  |  |
| --- | --- | --- |
| Start Byte | Command Byte | Value Byte |
| 0xFF (255) | Motor, RC, GPIO, Sensor, I2C... | 0 ~ 0xFE (254) |