Communication Protocol Manual

------Rev 0.2 Pride ES Controller
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Protocol Type: Single/One Wire **UART**

Bit Order: Least Significant Bit First (LSB-First)

Baud Rate: 38400

Voltage Level: 5.0V

Data Bits: 8

Parity Check: Even

Stop Bit: 1

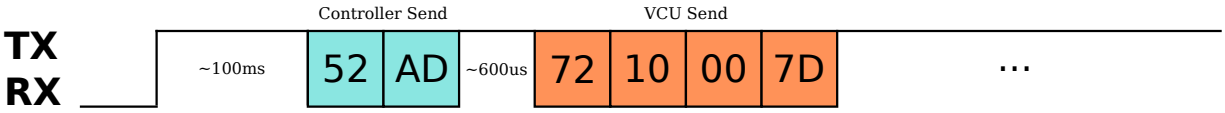
Yellow: Unused

White: TX/RX

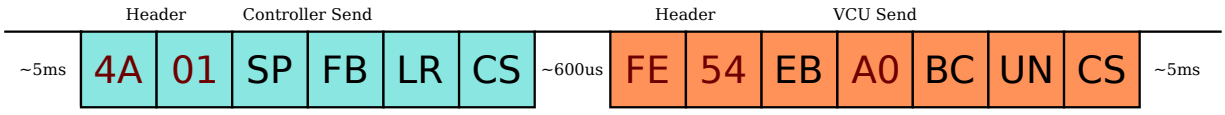
Black: GND 0V

Red: V_{SS} +24V

Power on Procedure:



Standard Messaging: (Every 5ms interval)



Headers are the identifiers of the message frames. **4A 01** for messages sent from the controller, **FE 54** for messages sent from the VCU.

SP: Speed Level Setting. Type: Unsigned Char Range: **0x00** (slowest) to **0x0E** (fastest).
FB: Go forward/backward. Type: Signed Char Range: **0x9C** (backward -100) to **0x64** (forward +100).
LR: Go left/right. Type: Signed Char Range: **0x9C** (left -100) to **0x64** (right +100).
EB: Error Byte. Type: Raw Byte Known Bytes: **0x82** Error | **0x02** Ready to Go.
BC: Battery Charge. Type: Unsigned Char Range: Unknown.
UN: Unknown Byte Type: Unknown Range: Unknown.
CS: Check Sum Byte Type: Raw Byte Range: **0x00-0xFF**

Check Sum Byte Calculation Rule:

1. Transform all preceeding bytes into signed char type.
2. Sum all signed chars.
3. Do a bitwise negation (~) on the sum to get **CS**.