Merge Board v1.4 Data Sheet

Description

The merge board contains the circuitry that combines the power of Tachyon's two or four battery pods, and distributes that to the actuator, thruster, sensor power, and CPU distribution board. The merge board is enabled to allow the hot-swap of battery pods as long as at least one battery pod is still connected to the vehicle. The other key feature of the merge board is its ability to transmit and receive data from the battery pods to the serial board on a clean RS-232 line, despite the fact that it is prone to interference from the high power of the battery pods.

Specifications

- Battery Pod Voltage (~22.5V)
- 5V Power for Voltage Isolator and Indicator LEDs
- Dimensions of Board: 5.25" x 3.75" x 0.1" (L x W x H)
- 4 10-pin connectors for the battery pods with Power, ON Signal, and RS-232
- 4 2-pin connectors to distribute power to the actuator, thruster, sensor power, and CPU distribution boards
- 1 2-pin connector for the ON signal
- 2 6-pin connectors for the serial board

Connector Pinouts

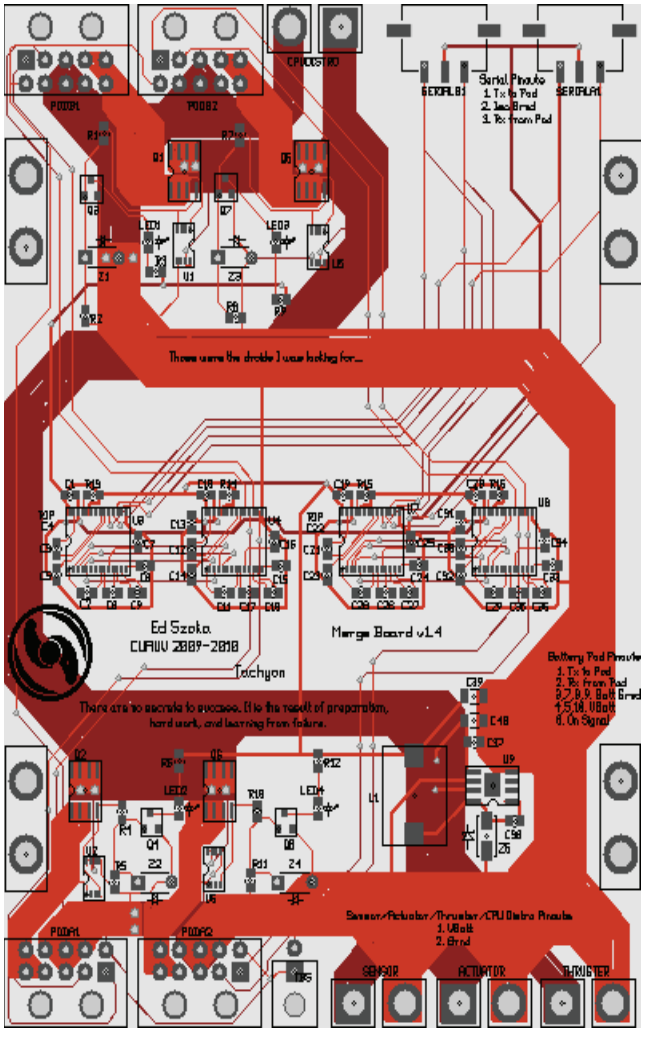
*Note that the pin with the square box around it represents pin 1

Battery Pods
1. Tx to Pod
2. Rx from Pod
3. Battery Ground
4. Battery Voltage
5. Battery Voltage
6. ON Signal
7. Battery Ground
8. Battery Ground
9. Battery Ground
10. Battery Voltage

Serial A/B Pinouts
1. Tx to PODA1/PODB1
2. Isolated Ground
3. Rx from PODA1/PODB1
4. Tx to PODA2/PODB2
5. Isolated Ground
6. Rx from PODA2/PODB2

Actuator
Thruster
CPU Distro
Sensor Power
1. Battery Voltage
2. Battery Ground

Thruster Board Signal
1. ON Signal
2. Ground



Unique Integrated Circuits

LTC4375 IC Ideal Diode
MAX3250 Voltage Isolator
LM22674 IC Regulator
Si4456DY NMOS Transistor