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| Test Writer | | Abbigail Caballero | | | | | |
| Test Case Name | | Merge Circuit Voltage/Current Integration Test | | | | Test ID# | MRG-IT-1 |
| Description | | Verify that the merge circuit is able to split the voltage correctly and supply each component with sufficient current | | | | Type | Whitebox |
| Test Information | | | | | | | |
| Name of Tester | |  | | | | Date |  |
| Hardware Version | | Merge Board 1.0 | | | | Time |  |
| Setup | | Attach two 14.8V 100A Lithium Ion Polymer batteries to Merge Circuit Board. Attach power load to each output being measured. Prepare multimeter for voltages up to 14.8V and currents up to 30A. Attach load to Motor 10. Plug in Teensy via USB to testing computer. Load ADC\_Merge.ini to Teensy. Reset Teensy to initialize. Open serial terminal on testing computer. Set kill switch to active mode. Turn on power load. | | | | | |
| Step | Action | Expected Results | Pass | Fail | N/A | Comments | |
| 1 | Measure voltage outputs to the current sensing resistors | Each output measures 14.8±0.4V |  |  |  |  | |
| 2 | Measure output of 5V switching regulator | Output measures 5±0.3V |  |  |  |  | |
| 3 | Observe terminal printout | UART Terminal receives serial data from Teensy, prints to screen |  |  |  |  | |
| 4 | Measure current through output of current sensing resistors with power load attached to individual outputs of the merge circuit to the motors | Motor 10 load measures 30A |  |  |  |  | |
| 5 | Move the load to Power Output Rail 2.Measure current through the output of current sensing resistor with power load attached to output of the the merge circuit to the conversion board | Power Output Rail 2 load measures 20A |  |  |  |  | |
| 6 | Move the load to Motor 5 output. Measure current through output of current sensing resistors with power load attached to output of the merge circuit to the backplane | Motor 5 load measures 10A |  |  |  |  | |
| Overall Results | | |  |  |  |  | |