Charge Current Test (5/21/2023)

Firmware Rev: 3

Purpose: This test makes sure there are no excessive currents while charging and quantifies other charging current parameters.

Description: The test battery pack is charged with the charger system for two short spurts. During each charging spurt, the output signal of the current sensor is logged with an oscilloscope. Like the initial charge test, the test battery pack is being cowboy charged, so the pack cannot be charged for long. The parameters are found by using the horizontal cursors on the oscilloscope.

Results:

Parameter	Current Sensor Signal (V)	Measured Current (A)
Spurt 1 Average	0.44	1.49
Spurt 1 Maximum	0.56	1.9
Spurt 2 Average	0.312	1.05
Spurt 2 Current Ripple	0.128	0.42
Spurt 2 Maximum	0.436	1.48
Spurt 2 Minimum	0.164	0.54

Analysis: As has previously been observed, the system acts more like a constant current source than a constant voltage source; however, the current does tend to fluctuate. Additionally, a large amount of higher frequency ripple current is observed. It is possible that some of this ripple amplitude is due to noise.