

Engineering Project VI

Test Plan

Group: Hayden F., Jessie R., Zach M., & Joshua D.

1. Wireless/Remote
 - i. Check remote access to the server by launching the main from:
 - i. TigerVNC
 - ii. puTTY
 - iii. SSH
 - ii. R-Pi main script is launched. Print/Display the following details:
 - i. Name of System
 - ii. Date
 - iii. IP Address
 - iv. Error Handling Messages
2. R-Pi (Supervisor) CAN Test
 - i. Since all the nodes will be listening to the R-Pi, send a command to instruct the node to write a message on the bus.
 - ii. Each node will write onto the bus with a unique message
 - iii. Wait for a reply from each node connected to the bus.
 - i. Front
 - ii. Rear
 - iii. Steering
 - iv. Accumulator
 - v. BMS
 - vi. Insulation Monitor
 - vii. Motor Controller
 - iv. When the R-Pi receives a message from a node, the following should be printed on the screen
 - i. Node Name
 - ii. CAN ID
 - iii. Data/Message
 - v. Print a Summary:
 - i. Successful
 - ii. Unsuccessful
 1. Node Name
 2. CAN ID
3. STM32 (Nodes) CAN Test
 - i. All nodes must, by default, be able to handle a test command from the R-Pi.
 - ii. All nodes must listen to the R-Pi, wait for their turn to write on the CAN bus, and let other nodes write onto the bus.
 - iii. Manual Test
 - i. Program one of the push buttons to write a test message to the CAN Bus.
 - ii. R-Pi prints the received message from the node.

5. Hardware Verification - CAN Bus

- i. Connect an Oscilloscope to the CAN Bus
- ii. Check the message from each node for:
 - i. Message ID
 - ii. Data
 - iii. Bit Rate

CAN Protocol Message Layout				
CAN ID (HEX)	Transmitter	Recipient	DLC	DATA
	R-pi	ALL	TBD	TBD
	Rear Node		TBD	TBD
	Front Node		TBD	TBD
	Steering		TBD	TBD
	Accumulator		TBD	TBD
	BMS		TBD	TBD
	Insulation Monitor		TBD	TBD
	Motor Controller		TBD	TBD