Engineering Project VI   
Test Plan  
Group: Hayden F., Jessie R., Zach M., & Joshua D.

1. Wireless/Remote
   1. Check remote access to the server by launching the main from:
      1. TigerVNC
      2. puTTY
      3. SSH
   2. R-Pi main script is launched. Print/Display the following details:
      1. Name of System
      2. Date
      3. IP Address
      4. Error Handling Messages
2. R-Pi (Supervisor) CAN Test
   1. 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.
   2. Each node will write onto the bus with a unique message
   3. Wait for a reply from each node connected to the bus.
      1. Front
      2. Rear
      3. Steering
      4. Accumulator
      5. BMS
      6. Insulation Monitor
      7. Motor Controller
   4. When the R-Pi receives a message from a node, the following should be printed on the screen
      1. Node Name
      2. CAN ID
      3. Data/Message
   5. Print a Summary:
      1. Successful
      2. Unsuccessful
         1. Node Name
         2. CAN ID
3. STM32 (Nodes) CAN Test
   1. All nodes must, by default, be able to handle a test command from the R-Pi.
   2. 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.
   3. Manual Test
      1. Program one of the push buttons to write a test message to the CAN Bus.
      2. R-Pi prints the received message from the node.
4. Hardware Verification - CAN Bus
   1. Connect an Oscilloscope to the CAN Bus
   2. Check the message from each node for:
      1. Message ID
      2. Data
      3. 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 |