

SS 1034670 Fault Code VRDU 524127/9 - Lost Communication with the MPC

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Applicable Vehicles

New Cascadia - built after 9/9/2019

Symptom

The following fault code is active:

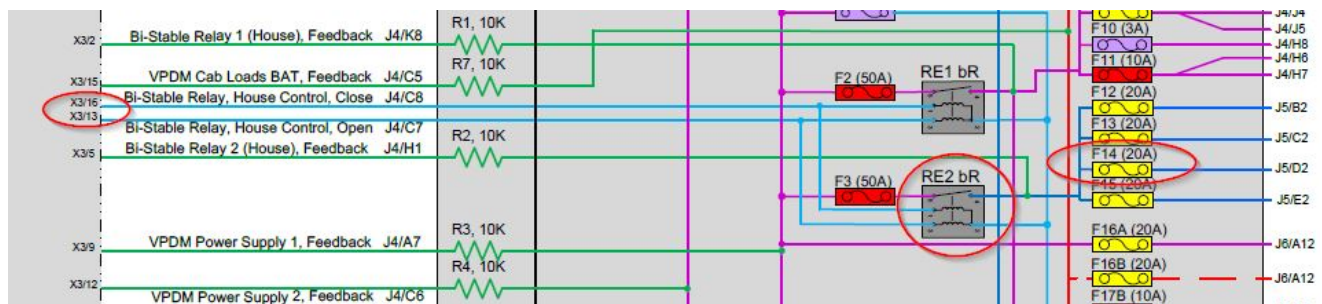
VRDU 524127/9 - Lost Communication with the MPC

Issue

VRDU fault code 524127/9 is often caused by lack of ignition supply to the MPC, which causes it to stop communicating. This usually occurs when voltage is low as outlined in the discussion below:

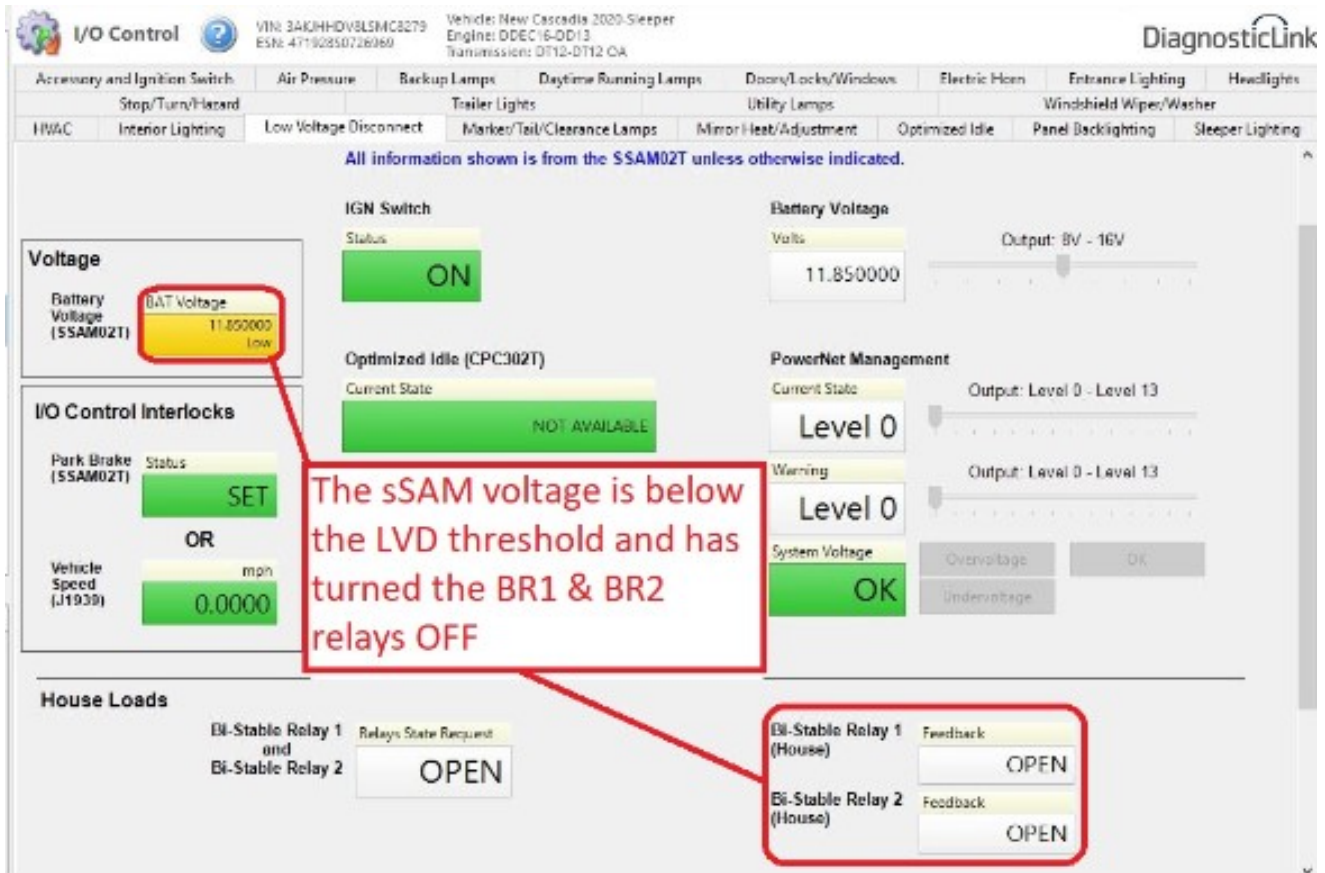
On New Cascadias built after 9/9/2019, there was a change to the ignition supply to the MPC. Prior to 9/9/2019, MPC ignition was supplied by VPDM fuse F63. On vehicles built after 9/9/2019, MPC ignition supply was changed to VPDM fuse F14. This new fuse location is subject to low voltage disconnect (LVD) via control of bi-stable relay BR2. This happens whenever the sSAM voltage drops below 12.4V. This will cause the fault code noted in this solution.

Note the sSAM controls both bi-stable relays BR1 and BR2 at the same time.



Note that it is possible for battery voltage to be acceptable, but the sSAM voltage still too low. This can happen if there is too much voltage drop between the batteries and sSAM - i.e. power or ground connection issues (loose, corroded, etc.)

The easiest way to determine if the if fuse F14 has no power due to the sSAM being in LVD mode is to use the Low Voltage Disconnect tab in I/O Controls in Diagnosticlink. See screenshot below.



Also refer to MPC wiring diagram G06-95288-000.

Solution

Start the vehicle and let it run for one minute and then verify that both bi-stable relays BR1 and BR2 are closed using the panel referenced above. This confirms the sSAM voltage is over 12.4V and no longer in LVD mode. Next, verify the MPC shows up in the connected ECU list in Diagnosticlink.

If so, and VRDU fault code 524127/9 is now inactive, shut off the engine and charge and test the batteries. Repair as necessary. If batteries test good, it is possible batteries were discharged from the vehicle sitting for a long period, or possibly due to sSAM power and ground connection issues as mentioned above.