

ATTENTION:

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PARTS MANAGER ☐

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SERVICE MANAGER ☐

IMPORTANT - All Service Personnel Should Read and Initial in the boxes provided, right.

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SUBARU

QUALITY DRIVEN® SERVICE

SERVICE BULLETIN

APPLICABILITY: Solterra, Trailseeker, and Uncharted

NUMBER: 19-04-26

SUBJECT: Diagnostic Procedures for 12-Volt Accessory

DATE: 08/14/26

Battery Depletion and Dark Current / Parasitic
on Telematics Systems

Draw Evaluation

INTRODUCTION & CRITICAL CONCEPTUAL CHANGES:

This Service Information Bulletin provided diagnostic procedure information to be followed when addressing Dark Current / Parasitic Draw concerns on Subaru EV vehicles.

CRITICAL: The DCM for EV models are “ALWAYS ON”

Unlike previous Subaru platforms, where modules shut down completely, the Data Communication Module (DCM) on EV platform vehicles (Solterra, Trailseeker, Uncharted) is designed to operate in an ALWAYS-ON state to maintain network readiness.

CRITICAL: DO NOT PULL THE DCM FUSE TO LOOK FOR A PARASITIC DRAW.

Removing the DCM fuse or disconnecting the DCM to observe a current drop is not a valid test procedure for EV vehicles. Since the module is designed to consume standby current continuously, removing power will always cause an amperage drop. This drop does not indicate a fault. The purpose of parasitic draw testing is to determine if the total average vehicle draw exceeds specifications and whether the DCM's contribution is excessive.

UNDERSTANDING DCM STANDBY PULSATION (METER CHATTER):

When inspecting standby current with a standard Digital Volt-Ohm Meter (DVOM), technicians often observe short current pulses peaking up to 1.0 A for less than one second.

THIS PULSATION IS NORMAL STANDBY OPERATION.

- Network Search (No Signal / Low Coverage): When the DCM cannot establish a strong cellular connection, it regularly attempts to attach to a network. This creates a repetitive, high-frequency current pulse.

CAUTION: VEHICLE SERVICING PERFORMED BY UNTRAINED PERSONS COULD RESULT IN SERIOUS INJURY TO THOSE PERSONS OR TO OTHERS.

Subaru Service Bulletins are intended for use by professional technicians ONLY. They are written to inform those technicians of conditions that may occur in some vehicles, or to provide information that could assist in the proper servicing of the vehicle. Properly trained technicians have the equipment, tools, safety instructions, and know-how to do the job correctly and safely. If a condition is described, DO NOT assume that this Service Bulletin applies to your vehicle, or that your vehicle will have that condition.

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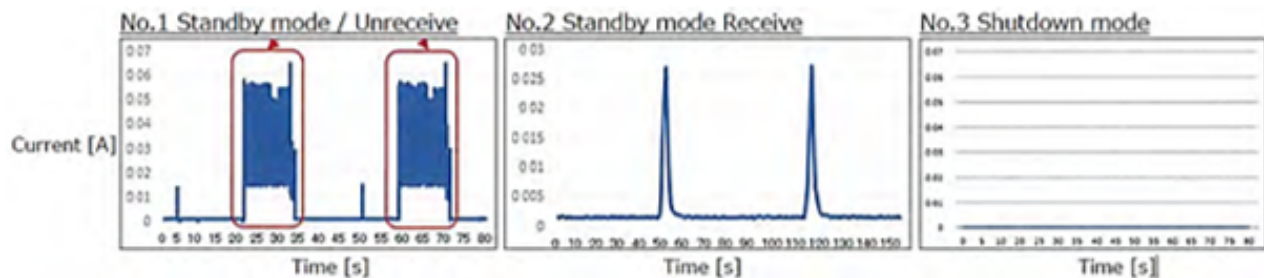
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- The Meter Trap: Standard DVOMs update their displays 2–4 times per second. Catching a momentary 1 Amp transmission spike causes “meter chatter” and leads technicians to incorrectly condemn a functional DCM.

CRITICAL: DCM voltage draws pulses between periods of low and higher usage as it attempts connection to the network. This pulsation **MUST NOT** be mistaken as dark/standby draw. When looking for DCM dark/standby current draw, a non-oscillating pull of higher than expected current. Using a DVOM with a graph function is the preferred method to identify this pulsation behavior and calculate the average dark/standby current draw. Refer to the figure below for reference to DCM pulsation characteristics. If there is doubt the total dark/standby current draw is caused solely by the DCM, isolate testing to just the DCM to determine how much the DCM contributes to the entire vehicle dark/standby current draw.

When the DCM cannot receive a radio wave signal, it will attempt to find a signal once a minute causing an increase in current draw (detailed in red below). Technicians must be aware that in some cases the shop environment can impede signal quality enough to force the DCM into Standby Unreceive mode, making pulsation appear worse that it would be in a better RF environment. It may be necessary to perform testing outside to get an accurate representation of pulsation effect on total parasitic draw.



- Required Diagnostic Equipment: Perform standby draw measurements on EV vehicles using a graphing multimeter (set to average or median reading), a DVOM with Min/Max/Avg record function, an oscilloscope with a current probe, or the fuse voltage drop method.

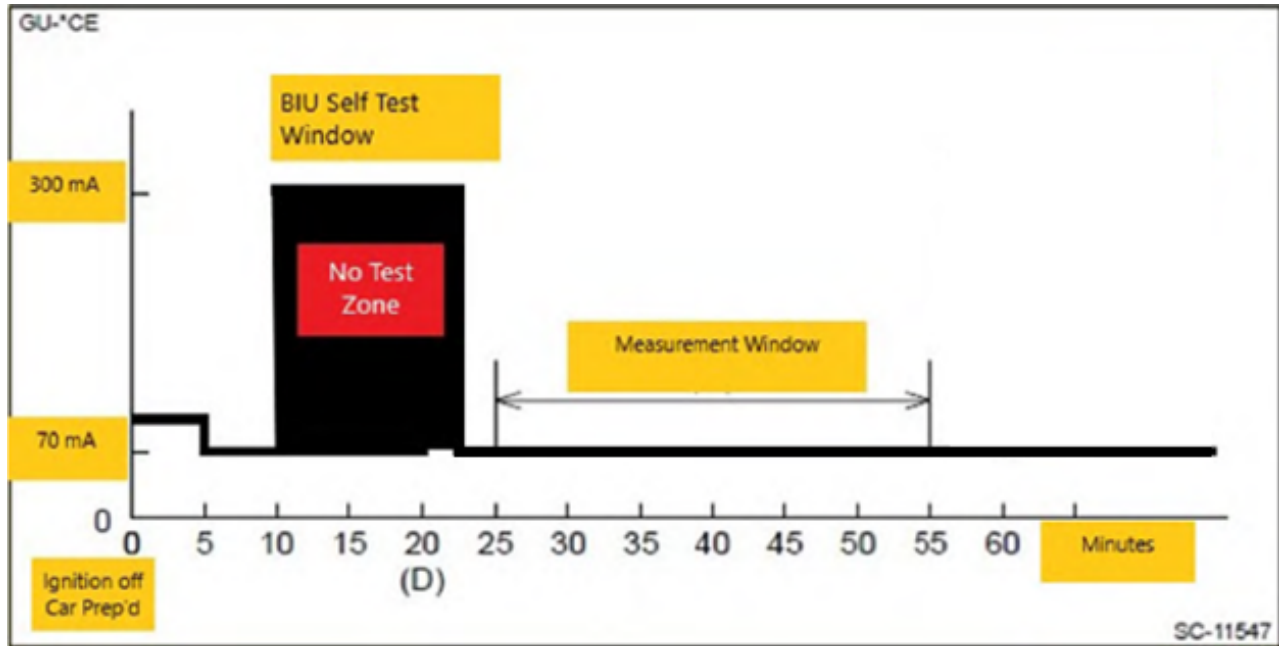
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APPLICABLE SPECIFICATIONS & THE 25-MINUTE WAIT TIME:

- EV Platform Maximum Allowable Average Draw: ≤ 120 mA
- NON-EV Subaru Platform Allowable Average Draw: ≤ 70 Ma

The 25-Minute Sleep Rule (Critical Testing Requirement)

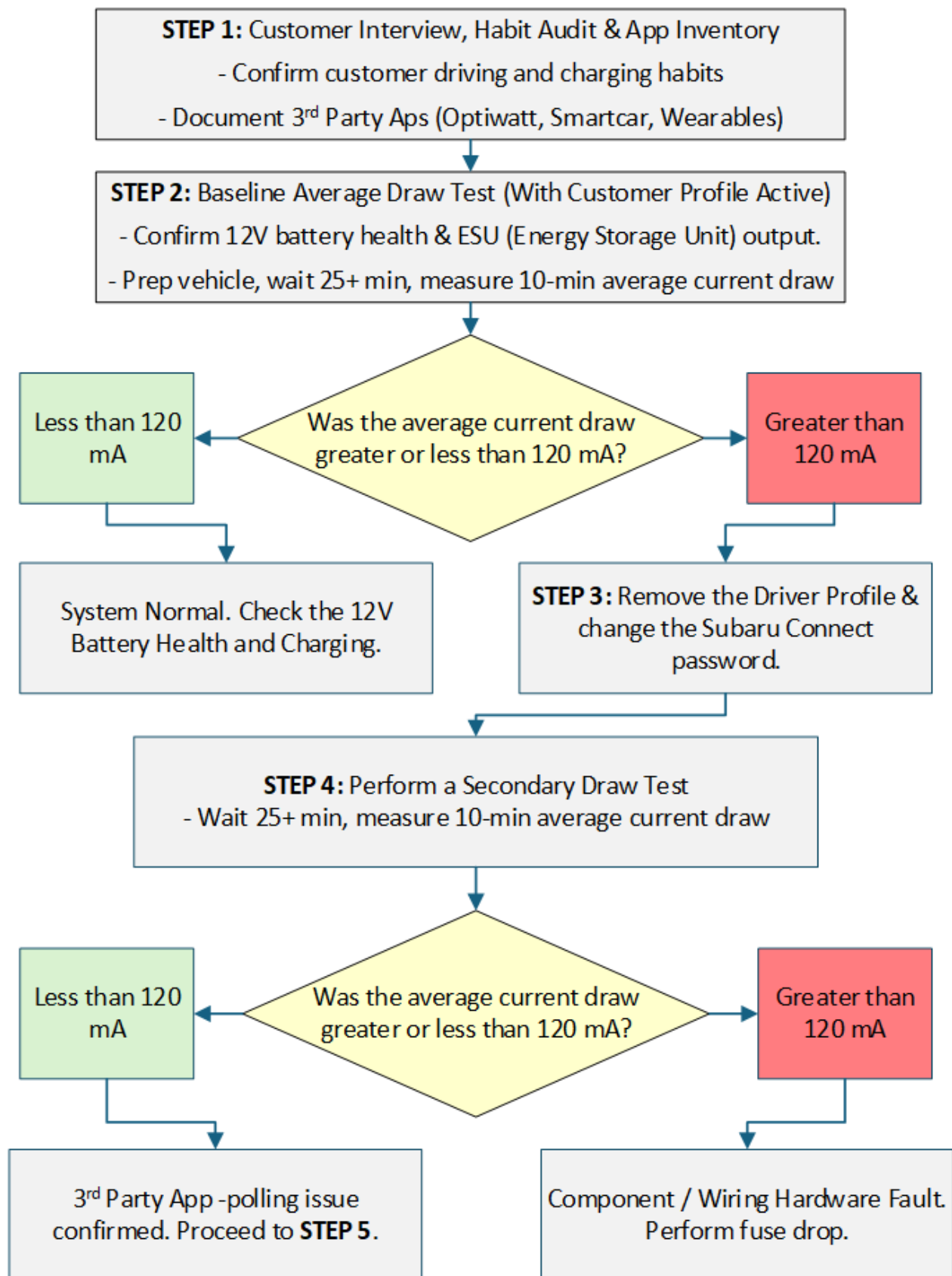
The Body Integrated Unit (BIU), Cockpit Control Unit (CCU), Central Gateway, and Telematics modules perform automated self-tests and network communications after the ignition is turned OFF.



- **Reason for Waiting:** During the first 20 minutes, current draw can naturally spike above >300 mA. Testing before 25 minutes has elapsed may result in false positives.
- **Key Fob Rule:** All access keys/fobs MUST be placed at least 15 feet away from the vehicle. Leaving a key fob near or inside the car forces the Keyless Access Module to constantly poll, keeping the CAN network active.

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DIAGNOSTIC WORKFLOW:



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SERVICE PROCEDURE / INFORMATION:

STEP 1: Customer Interview & App Inventory

Before connecting tools, the Service Advisor and Technician must determine if external applications are polling the vehicle via the Subaru Connect API.

A. Ask the Customer: Have login credentials (username/password) been shared with third-party services such as:

- EV Smart Charging Apps (e.g., Optiwatt, Smartcar, EV Passport).
- Utility/Energy Company monitoring programs.
- Smartwatch / Wearable companion applications set to background refresh.
- Customer driving and charging habits.

B. Why This Matters: Third-party servers use API calls to remotely wake the vehicle's DCM and retrieve battery SOC and location data. If an app polls the car every 3 minutes, the DCM never enters its low-power sleep mode, causing severe 12V battery drain. Parasitic draw in the abnormal range will degrade the battery in three days. Understanding if the customer is not driving the vehicle for weeks or leaving the car plugged into a charger, which does not charge the 12 V battery at regular intervals without reconnection, is also critical and understand the concern of dead batteries.

STEP 2: Vehicle Preparation & Baseline Draw Test

A. Ensure the 12-volt battery is fully charged and passes testing before beginning. Charge or replace the battery as needed before starting diagnostics.

B. Verify that Energy Storage Unit (ESU) DC/DC converter output is within specification per Step 6 of the On-Vehicle Inspection. Refer to the applicable Subaru Service Manual: Power Source/Network > BATTERY/CHARGING > CHARGING SYSTEM > ON-VEHICLE INSPECTION

C. Roll down the driver's window for tool access, manually latch the hood switch, and close and latch all doors and the tailgate. Ensure there is no foot traffic near the door handles or rear kick sensors, and that no phones with digital keys are near the vehicle.

D. Turn ignition OFF.

E. Move all key fobs at least 15 feet away from the vehicle.

F. Connect your graphing multimeter / current probe in series or set up for fuse voltage drop measurement.

G. Wait at least 25 minutes. Do not touch any switches, open any doors, or move any keys near the vehicle during this time.

H. Record Measurement: Measure total current draw over a 10-minute period and calculate the average (median) current draw.

- **Result A (= 120 mA):** System is functioning within specification. Proceed to standard 12V battery/charging system checks.
- **Result B ($> 120\text{ mA}$):** Excessive draw present. Proceed to Step 3.

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STEP 3: Isolating Third-Party App & Network Influence

When excessive average draw (>120 mA) is confirmed, technicians must eliminate software polling before condemning hardware.

- A. Access the vehicle's Multimedia /Head Unit display.
- B. **Unpair all customer mobile devices** (Bluetooth and Wi-Fi).
- C. **Delete all Customer Driver Profiles** from the vehicle.
- D. Ask the customer, or the Service Advisor with customer authorization, to **change the Subaru Connect App password online**.
 - *Why?* Deleting the profile stops in-car execution, but changing the password immediately breaks the connection to the cloud API token used by unauthorized third-party servers (e.g., Optiwatt) to wake the car remotely. Under the EULA, removing an app does not necessarily remove access to the vehicle, and the only way to ensure this is to change the password.

STEP 4: Secondary Verification Test

- A. Re-perform the vehicle setup and wait 25 minutes.
- B. Record the 10-minute average current draw.

Evaluating Results:

- **If Average Draw Drops Below 120 mA: The vehicle hardware and DCM are working properly.** The excessive draw was caused by the cloud API server polling triggered by third-party applications linked to the customer profile.
- **Action: DO NOT** replace the DCM. Educate the customer on third-party app polling and advise them to keep their profile clean and password updated.
- **If Average Draw Remains Above 120 mA:** The issue is physical (component or wiring fault). Proceed to Step 5.

STEP 5: Hardware Isolation (Non-Intrusive Fuse Voltage Drop)

DO NOT pull fuses while measuring series amperage, as pulling/replacing fuses re-wakens sleeping modules and corrupts data.

- A. Set DVOM to **mV** mode.
- B. Touch probe tips to the exposed test points on top of each mini-fuse.
- C. A reading above 0.0 mV indicates current flowing through that circuit.
- D. Cross-reference the measured mV reading with the **Mini-Fuse Amperage Conversion Chart** in **Appendix B** to identify the exact milliamp circuit load without disturbing the CAN network.

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SUMMARY OF TECHNICIAN DO'S AND DON'TS	
DO NOT (Incorrect Method)	DO (Correct Method)
Pull the DCM fuse to check if draw decreases.	Calculate the TOTAL VEHICLE AVERAGE DRAW over time.
Condemn a DCM due to 1-second 1.0" A" meter spikes.	Use a graphing meter/oscilloscope to average out normal network pulses.
Start taking measurements 5–10 minutes after key OFF.	Wait a full 25 minutes for all CAN modules to enter sleep mode.
Leave the key fob on the passenger seat or in your pocket near the car.	Move all key fobs at least 5 feet (1.5" m") away from the vehicle.
Replace DCM hardware for third-party app wake-ups.	Remove Customer Driver Profile & change Subaru Connect password.

IMPORTANT REMINDERS:

- SOA strongly discourages the printing and/or local storage of service information as previously released information and electronic publications may be updated at any time.
- Always check for any open recalls or campaigns anytime a vehicle is in for servicing.
- Always refer to STIS for the latest service information before performing any repairs.

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APPENDIX A:

NON-INTRUSIVE FUSE VOLTAGE DROP DIAGNOSIS & DCM CONTRIBUTION EVALUATION

1. WHY USE THE VOLTAGE DROP METHOD?

If you disconnect the battery or pull fuses, you break the circuit. This wakes up sleeping modules and resets failure modes. The Fuse Voltage Drop Method lets you measure current through fuses without waking the vehicle or resetting the Controller Area Network (CAN).

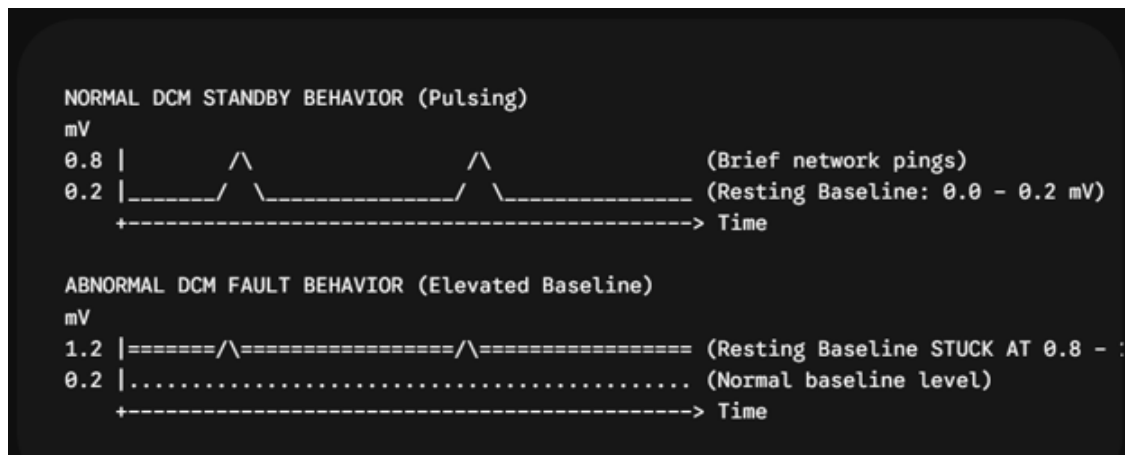
When current flows through a fuse, its internal resistance creates a small voltage drop, usually in the millivolt (mV) range. By measuring this drop, you can calculate the exact milliamp (mA) draw using Ohm's Law.

2. STEP-BY-STEP MEASUREMENT PROCEDURE

- A. Set your Digital Volt-Ohm Meter (DVOM) to DC Millivolts (mV).
- B. Make sure the vehicle meets all pre-test conditions: doors are latched, key fobs are at least 15 feet away, and the vehicle has been asleep for at least 25 minutes.
- C. Carefully place the fine meter probe tips onto the two exposed metal test points on top of the mini-fuse.
- D. Hold the probes steady on each fuse for at least 10 to 15 seconds to watch for any periodic pulsation.
- E. Write down the baseline mV reading and compare it to the Mini-Fuse Conversion Chart in Appendix B to find the equivalent current draw.

3. EVALUATING THE DCM FUSE: NORMAL VS. ABNORMAL READINGS

Because the Alliance DCM is an “ALWAYS ON” module, it will ALWAYS show a small millivolt reading. Technicians MUST distinguish between normal network standby and an internal module failure.



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A. Normal DCM Standby Characteristics (Pass):

- Resting Baseline: The meter should read between 0.0 mV and 0.2 mV, which means a normal standby load of about 15 to 35 mA.
- Pulsation Blip: Every 30 to 60 seconds, the meter briefly jumps to 0.4 to 0.8 mV for less than a second during cellular pings, then quickly returns to the 0.0 to 0.2 mV resting baseline.
- Conclusion: The DCM is working as it should. Do not replace the DCM.

B. RED FLAG: Abnormal DCM Internal Fault (Fail):

- Sustained Elevated Baseline: The resting baseline NEVER drops down to 0.0 – 0.2 mV. Instead, it sits continuously at => 0.6 mV on a 10 A fuse or => 0.5 mV on a 15A fuse (indicating a continuous, non-sleeping internal draw of => 80 – 140+ mA on this circuit alone).
- Conclusion: The DCM's internal power management has not entered low-power standby. Replace the DCM only if you confirm this elevated baseline after removing the customer profile or password.

4. SYSTEMATIC FUSE AUDIT (ISOLATING OTHER CIRCUITS)

If the total vehicle draw is high, for example 190 mA, but the DCM fuse shows a normal resting baseline of 0.1 mV (15 mA), then another system is causing the draw.

Technicians must test all fuses in the Under-Hood (Main) and Interior fuse blocks to calculate total draw:

Fuse Location	Fuse Rating	Measured Voltage Drop ("mV")	Calculated Draw ("mA")	Status / Action
Fuse #5 (DCM)	10A	0.2" mV" (Pulsing)	≈27" mA"	NORMAL (Always-On Standby)
Fuse #12 (Radio/CCU)	15A	0.1" mV"	≈15" mA"	NORMAL (Memory Maintain)
Fuse #18 (BIU / Gateway)	10A	1.1" mV" (Constant)	≈148" mA"	RED FLAG: EXCESSIVE DRAW
TOTAL CALCULATED VEHICLE DRAW:			190" mA"	Target Diagnosis to Fuse #18 Circuit

IMPORTANT DIAGNOSTIC RULE: If the DCM fuse only accounts for 30 mA out of a total 190 mA draw, replacing the DCM will not solve the problem. The remaining 160 mA from another circuit will still drain the battery. Technicians need to find and isolate the circuit with the highest current draw.

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APPENDIX B

Fuse Color	Grey	Violet	Pink	Tan	Brown	Red	Blue	Yellow	Clear	Green
Measurement mV	Mini 2 Amp	Mini 3 Amp	Mini 4 Amp	Mini 5 Amp	Mini 7.5 Amp	Mini 10 Amp	Mini 15 Amp	Mini 20 Amp	Mini 25 Amp	Mini 30 Amp
0.1	2	3	4	6	9	13	22	31	42	54
0.2	4	6	9	11	18	27	44	62	85	108
0.3	5	9	13	17	28	40	66	93	127	162
0.4	7	12	17	23	37	54	87	125	169	216
0.5	9	15	21	28	46	67	109	156	212	270
0.6	11	18	26	34	55	81	131	187	254	324
0.7	13	21	30	39	65	94	153	218	297	378
0.8	14	24	34	45	74	108	175	249	339	432
0.9	16	27	38	51	83	121	197	280	381	486
1	18	30	43	56	92	135	218	312	424	541
1.1	20	33	47	62	101	148	240	343	466	595
1.2	22	36	51	68	111	162	262	374	508	649
1.3	23	39	55	73	120	175	284	405	551	703
1.4	25	41	60	79	129	189	306	436	593	757
1.5	27	44	64	85	138	202	328	467	636	811
1.6	29	47	68	90	147	216	349	498	678	865
1.7	31	50	72	96	157	229	371	530	720	919
1.8	32	53	77	101	166	243	393	561	763	973
1.9	34	56	81	107	175	256	415	592	805	1027
2	36	59	85	113	184	270	437	623	847	1081

↑↑↑↑↑milliamp Equivalent draw value↑↑↑↑↑