



U0521

Invalid Data Received from Power Steering Control Module

U0521 means the vehicle's network gateway or a receiving module has received invalid or corrupted data from the Power Steering Control Module (PSCM) over the controller area network (CAN) bus. The computer detected a message from the PSCM that failed its internal checksum, contained out-of-range values, or arrived in an impossible sequence, so it flagged the data as untrustworthy rather than acting on it.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Network	Generic (all makes)	Medium	Professional	Network communication

Symptoms you may notice

- Power steering assist may feel heavy, intermittent, or completely absent, especially at low speeds
- A power steering warning light or a generic chassis control warning illuminates on the dashboard
- The steering wheel may return to center more slowly or feel numb on initial turn-in
- Stability control or lane-keeping features may deactivate because they rely on steering angle data
- Often no symptoms besides the warning light, with steering feel completely normal

Common causes, most likely first

- 1 Corroded, loose, or damaged CAN bus wiring or connectors at the PSCM or the gateway module
- 2 Failing PSCM internal circuitry that corrupts outgoing data frames before they reach the bus
- 3 Low or unstable battery voltage causing the PSCM to reboot mid-message and send invalid frames
- 4 A software or calibration mismatch in the PSCM after a battery replacement or module flash
- 5 Water intrusion into the PSCM connector or housing, common on underbody-mounted steering racks
- 6 A faulty gateway module that misinterprets valid PSCM data as invalid
- 7 Aftermarket accessories wired into the CAN bus that introduce electrical noise

How to diagnose and fix it

- 1 Scan all modules for stored and pending codes, then record freeze-frame data to see when U0521 sets
- 2 Perform a visual inspection of the PSCM connector and harness for corrosion, chafing, or water intrusion
- 3 Measure battery voltage and check charging system output, as low voltage corrupts CAN messages
- 4 Check CAN bus resistance and signal integrity with a multimeter or oscilloscope at the PSCM connector
- 5 Verify the PSCM has the latest software calibration and reflash if a known update exists
- 6 Substitute a known-good PSCM only after wiring and power checks pass, then clear codes and retest
- 7 Clear all codes and perform a road test to confirm U0521 does not return under steering load



What most technicians miss on U0521

- A weak battery or failing alternator is a top cause of invalid PSCM data because the module browns out and sends truncated CAN frames that the gateway rejects as invalid.
- The PSCM often shares a power feed with the ABS module, so a blown fuse or high-resistance ground on that circuit can set U0521 without any steering complaint.
- Aftermarket dash cams or alarm systems tapped into the CAN bus can inject noise that corrupts PSCM messages, and the code returns even after module replacement.
- U0521 does not always mean the PSCM is failing; a gateway module with outdated software can misread valid PSCM frames as invalid and set this code.
- Water intrusion at the PSCM connector on underbody steering racks is common after winter driving, and the corrosion often hides behind the connector seal.

Can I keep driving with U0521?

You can usually drive to a shop if the steering feels normal, but avoid high-speed maneuvers and be ready for a sudden loss of power assist. If the steering is heavy or intermittent, stop driving and have the vehicle towed because manual steering effort in a modern car is very high.

Tools that help

- OBD-II scan tool with full module access and live data
- Digital multimeter with CAN bus resistance and voltage measurement
- Oscilloscope for CAN bus signal integrity checks
- Factory service information for PSCM connector pinouts and CAN topology
- Battery load tester and charging system analyzer
- Terminal pick and contact cleaner for connector repair

Reading U0521

U	Network: communication between the vehicle's control modules.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
5	Network communication.
21	The exact fault within that area.

Often seen with

U0100 Lost Communication With ECM/PCM A · **U0126** Lost Communication With Steering Angle Sensor Module
 · **U0131** Lost Communication With Power Steering Control Module · **U0140** Lost Communication With Instrument Panel Cluster



See it working

Watch the animated explainer [How Drive-by-Wire Works: Electronic Throttle Body](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/u0521/>

