TRANSPORTATION COMMUNICATIONS

Reliable communications over existing vehicle wiring

APPLICATION BRIEF

Transportation systems need dependable data exchange across wiring designed to deliver power. Semitech combines adaptive PLC technology with PLC4TRUCKS, CEA 709.2, and SNET to connect truck, trailer, and train systems over DC power lines.

TRANSPORTATION COMMUNICATION CHALLENGES AND SEMITECH SOLUTIONS

Transportation communication challenges

- Electrical noise and switching loads disrupt communications
- Separate data wiring adds cost, weight, and installation work
- Trailers need dependable ABS, sensor, and lighting data
- Trains require robust links across distributed onboard equipment

Semitech solution

Semitech provides transportation-ready PLC options on the SM2400 platform. PLC4TRUCKS supports truck and trailer links, CEA 709.2 supports train networks, and SNET enables trailer sensor networks and lighting control.

- ✓ J2497, J1708, and J1587 compliant PLC4TRUCKS
- ✓ CEA 709.2 for train communications
- ✓ SNET for trailer sensors and lighting control

CUSTOMER BENEFITS

01 Reuse vehicle wiring
Carry power and data over existing vehicle harnesses.

02 Support truck and trailer links
Connect ABS, identification, telematics, and pairing.

03 Build trailer networks
Use SNET for distributed sensors and lighting control.

04 Enable train communications
Apply CEA 709.2 across onboard rail systems.

05 Choose an integration path
Use the SM2400 chip or compact P40 module.

06 Integrate with specialists
Access SDKs, evaluation tools, and direct engineering support.

SEMITECH ADVANTAGES

Reliable communication in challenging environments

- ✓ Noise-adaptive modes for vehicle power lines
- ✓ Validated by major transportation customers

Direct engineering support through integration

- ✓ Comprehensive evaluation tools, reference designs, and customer board reviews

Flexible technology and application tailored protocols

- ✓ Standard protocols and custom firmware on a common platform

COMPREHENSIVE EVALUATION TOOLS

FROM VEHICLE WIRING TO CONNECTED SYSTEMS

A common communications platform for trailers and trains

TRANSPORTATION COMMUNICATION ARCHITECTURE

Use one SM2400 platform for truck and trailer links, train communications, and networked trailer control.

ABS	ID	SENS	LGT	RAIL
Trailer ABS	Vehicle pairing	Trailer sensors	Lighting control	Train systems

SM2400
PLC platform

Truck and Trailer
PLC4TRUCKS • J2497 • J1708 • J1587

Train Networks
CEA 709.2

Trailer Network Control with SNET
Trailer sensors • lighting control

Existing DC Vehicle and Train Wiring
Communication over 8-32V trailer lines and train power networks

TYPICAL TRANSPORTATION USE CASES

ABS ABS status Braking status, diagnostics, and fault reporting	**TLM Trailer telematics** Identification, sensor data, and gateway connectivity	**PAIR Truck and trailer pairing** Automatic pairing and asset association
LGT Lighting control Distributed trailer lighting through SNET	**RAIL Rail communications** CEA 709.2 for train systems	**BLE Mobile connectivity** PLC-to-BLE relay for service and diagnostics

WHY SEMITECH AND HOW TO GET STARTED

Why transportation OEMs choose Semitech

- ✓ Adopted by major ABS trailer telematics suppliers
- ✓ Noise-adaptive modes for vehicle power lines
- ✓ Validated by major transportation customers
- ✓ Direct engineering support through integration

Integration path

1. Select PLC4TRUCKS, CEA 709.2, or SNET
2. Choose the SM2400 chip or P40 module
3. Evaluate communication on the target vehicle wiring
4. Validate performance and prepare for production

TRAILER AND TRAIN COMMUNICATIONS

One platform for two transportation networks

Semitech supports established train communications and flexible trailer networks over existing vehicle wiring.

- ✓ CEA 709.2 for train communications
- ✓ SNET for trailer sensor networks
- ✓ SNET lighting control over trailer wiring

Evaluate your Transportation application with Semitech

Start with the SM2400 chip or P40 module, evaluation tools, SDKs, and direct engineering support.

SM2400-P40 MODULE

LEARN MORE