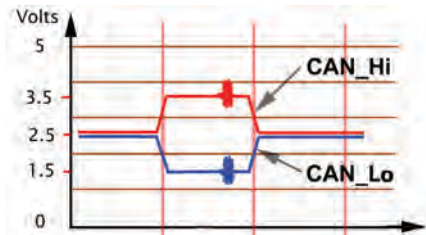
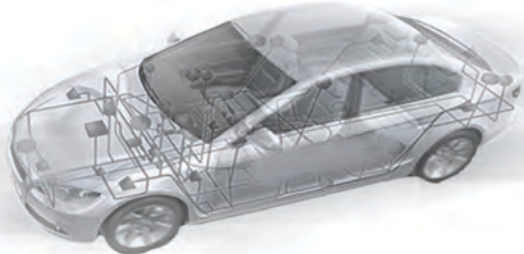


Vehicle Network Seminar Series

2015



CAN and Higher Layer Protocols

CAN (Controller Area Network) is today's worldwide standard for in-vehicle and factory floor automation networks. If you would like a fundamental background on CAN and some of the most popular messaging protocols layered on top of CAN, this will be the class to attend. Previous knowledge of network protocols is a plus, but not necessary.

The student will first gain a good familiarity of CAN network theory, application, and troubleshooting. The course then dives into the various message layers that have been written for CAN such as ISO15765 and J1979 (DiagnosticsOnCAN) and the heavy-duty industry standard called J1939. Amongst the training modules are introductions to the programming standards supporting the CAN protocols, SAE J2534 and TMC RP1210.

There are two hands-on laboratory sessions designed to solidify the classroom fundamentals. These examples will show how to request and decode data from the J1939 and ISO15765/J1979 networks.

Course Outline: (1 day)

(CAN, CAN FD, ISO15765, J1939, J1979, RP1210, J2534)

- o On-Vehicle Networking History
- o Computer Science Fundamentals Required for Vehicle Protocols
- o Introduction to CAN (ISO11898)
- o Physical and Data Link Layers
- o CAN Message Structure and Bus Arbitration
- o Network Troubleshooting
- o Next Generation CAN, CAN FD (CAN with Flexible Data Rate)
- o J1939 and Hands-on Lab Exercises
- o Introduction to TMC RP1210
- o J1979 Using CAN and Hands-on Lab Exercises
- o Introduction to SAE J2534

Course Cost: \$750; includes materials

Dates Offered:

Indianapolis: May 21, November 19

Farmington Hills: March 12, September 10



Diagnostics On CAN Basic OBD

Beginning in 2007, CARB and EPA require ISO 15765 DiagnosticsOnCAN for light vehicles. This course will prepare you to design, develop, test and work with this protocol.

This course examines ISO 15765 (DiagnosticsOnCAN) with a brief introduction to its predecessor, KWP2000 plus OBDII, J1979, J2012, J2190 and J2284. This information will also be useful for J1939 users who choose to use ISO 15765 for the upcoming legislated heavy duty vehicle emissions requirements.

SAE J1979 SID's along with their associated PID, MID, TID and INFOTYPES will be discussed and utilized.

You will learn how parts of these protocols are used to create DiagnosticsOnCAN. You will gain: A good overall knowledge of DiagnosticsOnCAN (OBD).

Who should attend: Engineers and technical personnel. An understanding of CAN is helpful but not necessary.

Course Outline: (1 day)

- In-vehicle network overview
- CAN protocol - physical and data link layers
- Overview of J2411, J2284, OBDII, UDS
- DiagnosticsOnCAN (ISO 15765), J1979
- On-site courses are available by request

Course Cost: \$750; includes materials

Dates Offered:

Indianapolis: May 21, November 19

Farmington Hills: March 12, September 10



Instructor-Ken DeGrant



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Flex-Ray

FlexRay is quickly becoming a worldwide standard for high-speed vehicle networks, and here is where you can learn all about the protocol, functionality and applications that use it.

Attendees learn about the FlexRay protocol and its specific layers using the latest version of FlexRay standards.

Additionally, we discuss applicable topology, regulations and implementation requirements. Details of device hardware and software interfaces are provided, as well as an update on FlexRay's use in global vehicle markets.

You will gain: An in-depth knowledge of FlexRay and how it functions, FlexRay specific development tools and an understanding of its global status of its use.

Who should attend: Engineers and technical personnel. Knowledge of in-vehicle networking is helpful, but not necessary.

Management personnel have also benefited from these courses to gain an overview of the protocols, techniques and acronyms used as well as some of the development, implementation, and engineering challenges experienced.

1 Day Course Cost: \$750; includes materials

Dates Offered:

Farmington Hills: March 17

Indianapolis: September 15



Instructor-Ken DeGrant



LIN (Local Interconnect Network)

LIN is a leading edge and relatively low cost network often used to augment a CAN network for body and chassis electronics. It is replacing older protocols such as J1850 and K line (ISO 9141), where the bandwidth and flexibility of CAN is not required.

You will learn the LIN protocol, configuration language and the API. The differences between the various versions of LIN and the SAE standard are also discussed.

A demonstration illustrating how LIN frames are constructed and their architecture is given.

Objective: To give students an in-depth knowledge of LIN and its different implementations.

Who should attend: Engineers and technical personnel. Knowledge of in-vehicle networking is helpful, but not necessary.

Course Outline: (1 day)

- Introduction: General LIN Overview
- Where LIN is used; hardware requirements
- LIN protocol - 1.2, 1.3, 2.0 and SAE J2602
- LDF - LIN Descriptor Files - Demystifying the LDF
- Schedule Tables: What is a Schedule Table?

Course Cost: \$750; includes materials

Dates Offered:

Farmington Hills: March 18

Indianapolis: September 16



Instructor-Mark Zachos



Register online at: www.dgtech.com/services/registration.php
or fax this page to 248.888.9977

Name: _____
Company: _____
Address: _____
City, State, Zip: _____
Phone: _____ Ext: _____ Cell: _____ Email: _____

Important:

Please make sure you receive a confirmation from us. Call if you do not receive one to be certain you are properly registered.

Via Mail

Credit Card (please circle one) VISA MC AMEX DISC
Credit Card Number: _____ Expires: _____
Customer Card ID Number (CCID), last 3 digits, back of card: _____

OR: My check is enclosed
 My purchase order is enclosed/attached

(Note: AMEX may have CCID on front of card, 4 digits)



Signature: _____

2015

Heavy Duty Truck & Bus 2 days (\$1,300)

- March 10-11 (FH)
- May 19-20 (Indianapolis)
- September 8-9 (FH)
- November 17-18 (Indianapolis)

Diagnostics On CAN-Basic OBD 1 Day (\$750)

- March 12 (FH)
- May 21 (Indianapolis)
- September 10 (FH)
- November 19 (Indianapolis)

Call for special 1 Day session availability

FlexRay 1 Day (\$750)

- March 17 (FH)
- September 15 (Indianapolis)

CAN and Higher Level Protocols 1 Day (\$750)

- March 12 (FH)
- May 21 (Indianapolis)
- September 10 (FH)
- November 19 (Indianapolis)

LIN (Local Interconnect Bus) 1 Day (\$750)

- March 18 (FH)
- September 16 (Indianapolis)

Registration and Class Information

- 1) Please register early. Space is limited to ensure personal attention.
- 2) Confirmation, discounted hotel information and directions to DG Technologies' office will be provided.
- 3) Make sure you receive confirmation from DG Technologies! If you do not, please contact us to ensure your reservation is made.
- 4) Seminars run from 9:00 AM to 4:30 PM. Lunch, snacks and beverages are included.
- 5) A 10% discount is offered for booking three or more attendees from the same company for the same class.
- 6) Cancellations or transfers must be made 14 days or more prior to the start of the seminar. Transfers can be made at any time. No refunds will be granted for cancellations made after this time period.
- 7) Classes not meeting minimum enrollment requirements are subject to cancellation. Attendees will be notified at least one week in advance of a cancellation.
- 8) Unless otherwise indicated, our seminars are held at DG's facilities, either in Farmington Hills, MI or Indianapolis, IN.
- 9) Contact DG Technologies for further information.

Venue: Unless otherwise indicated, our seminars are held at DG's facilities in Farmington Hills, Michigan or Indianapolis, Indiana. Please contact us at sales@dgtech.com for effective, economical on-site seminars.



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