

ANCIT



ANCIT

Automotive Protocols Training (2 Days)

Company Confidential **ANCIT**

Automotive Protocols Training (2 Days)

Agenda from ANCIT

| | | |
|--------------------------|---|--|
| Delivery Format | : | Classroom |
| Duration | : | 2 days |
| Target Audience | : | Automotive Protocol Users in vehicles |
| Learning Outcomes | : | By the end of this training on automotive communication protocols, participants will have an in-depth understanding of various automotive networking protocols such as I2C, SPI, LIN, CAN, CAN FD, Ethernet, A2B, DoIP, UDS, MOST, FlexRay, and KWP2000. |

Day 1.

1. Automotive Communication Protocols

- Automotive Networking
- Network architectures- comparison
- Role of Protocols in Automotive
- Classification of protocols

2. I2C

- Introduction to I2C
- Functional Description
- Mode Selection
- Master mode
- Slave Mode
- SDA/SCL line control
- Interrupts

3. SPI

- What is SPI
- SPI Interface
- Data Transmission
- SPI Mode: Polarity and clock Phase
- Multi-Sub node Configuration- Regular SPI Mode and Daisy Chain Mode

4. LIN

- LIN Introduction
- Frame Format
- Bus Timing
- Topology
- Error Detection and Confinement
- LIN Sleep and Wakeup

Automotive Protocols Training (2 Days)

Agenda from ANCIT

| | | |
|--------------------------|---|--|
| Delivery Format | : | Classroom |
| Duration | : | 2 days |
| Target Audience | : | Automotive Protocol Users in vehicles |
| Learning Outcomes | : | By the end of this training on automotive communication protocols, participants will have an in-depth understanding of various automotive networking protocols such as I2C, SPI, LIN, CAN, CAN FD, Ethernet, A2B, DoIP, UDS, MOST, FlexRay, and KWP2000. |

Day 1.

5. CAN

- Topology
- Frame Format
- Types of CAN messages
- Standard vs Extended CAN
- Bus Arbitration
- CAN controller and Transceiver
- CAN errors
- CAN Physical layer characteristics
- Bus Termination

6. CAN FD

- Why CAN FD
- What is CAN FD
- How CAN FD corks
- CAN vs CAN FD
- Frame Format
- Interoperability with CAN

7. Ethernet

- OSI / ISO model
- Physical and datalink layer - IEEE802.3
- ETH PHY
- MAC layer frame format
- TCP and UDP
- IP
- Socket adaptor role
- Ethernet switch

8. LVDS Protocol

- Basics of LVDS
- Applications in automotive systems, such as infotainment and camera systems

Automotive Protocols Training (2 Days)

Agenda from ANCIT

| | | |
|--------------------------|---|--|
| Delivery Format | : | Classroom |
| Duration | : | 2 days |
| Target Audience | : | Automotive Protocol Users in vehicles |
| Learning Outcomes | : | By the end of this training on automotive communication protocols, participants will have an in-depth understanding of various automotive networking protocols such as I2C, SPI, LIN, CAN, CAN FD, Ethernet, A2B, DoIP, UDS, MOST, FlexRay, and KWP2000. |

Day 1.

9. A2B (Audio Bus Protocols)

- A2B in Automotive applications
- How A2B Works

Day 2

10. DoIP

- DoIP and UDS
- What is the DoIP entity
- DoIP communication scenarios
- DoIP Header Structure
- How does DoIP work
- Activation phase
- Discovery
- Routing Activation
- Perform Diagnostics
- DoIP payload Types

11. UDS

- Vehicle Diagnostics
- UDS introduction
- Negative Response Codes
- Diagnostics Behavior
- UDS services

Automotive Protocols Training (2 Days)

Agenda from ANCIT

| | | |
|--------------------------|---|--|
| Delivery Format | : | Classroom |
| Duration | : | 2 days |
| Target Audience | : | Automotive Protocol Users in vehicles |
| Learning Outcomes | : | By the end of this training on automotive communication protocols, participants will have an in-depth understanding of various automotive networking protocols such as I2C, SPI, LIN, CAN, CAN FD, Ethernet, A2B, DoIP, UDS, MOST, FlexRay, and KWP2000. |

Day 2

12. MOST

- What is a MOST protocol?
- Architecture and Components of MOST Protocols
- Data Transmission Modes
- Topology
- Key features

13. FlexRay

- FlexRay basics
- Topology and Layout
- Protocol Frame Format
- Communication Cycle
- Clock Synchronization and Cold Start

14. KWP2000

- Introduction to KWP and OBD
- Introduction to ISO 14230
- KWP vs UDS
- Transport protocol
- Diagnostics Services

ANCIT

SNO : 37 Gurusamy Nagar,
Codissia Road, Peelamedu, Coimbatore,
Tamil Nadu, India- 641004

+91-9840378602/ 9483541953

info@ancitconsulting.com

www.ancitconsulting.com

www.ancitedutech.com