Bluetooth™ Technology Fundamentals

Course Overview

Course Numbers:
Agilent Training Center: H7216A #110
Onsite Training: H7216B #110

Learn the *Bluetooth* technology as a new technique for wireless communication

Agilent Technologies

Course Overview

Bluetooth is an open standard for speech and data transmission. Besides the applications for this new technology, e.g. the wireless connection between mobile station and terminal equipment, also the structure of the *Bluetooth* system architecture is presented. The set-up of so-called short-range ad hoc networks (piconets and scatternets) will be introduced.

The participant gets to know the used transmission principle over the air interface and the *Bluetooth* RF test requirements. Also, the used protocol architecture for *Bluetooth* will be discussed. Furthermore, basic procedures in this system, e.g. security functions (authentication, ciphering) access procedures (inquiry, paging) and connection set-up are presented.

What you will learn

- Short introduction to wireless communication
- Application fields for *Bluetooth*
- Development and standardization of *Bluetooth*
- *Bluetooth* system architecture
- Transmission over the air interface
- Air interface testing requirements (modular)
- Packet and channel definitions
- Protocols and profiles (modular)
- Short range ad hoc networks
- Security
- Access procedures
- Connection establishment
- An overview of *Bluetooth* qualification
- Advantages and limits of *Bluetooth* - a comparison

Specifications

Course Type
User Training

Audience
Managers and engineers with fundamental knowledge of RF and digital communications, who are new to *Bluetooth* and want to get a technical overview about the *Bluetooth* system.

Prerequisites
Basic knowledge of telecommunications

Course Length
1 day

Course Format
Lecture and open discussion

Delivery Method
Scheduled at Agilent locations, or

Dedicated at a customer site.

To save you time and travel, many Agilent courses can be delivered at your site. Agilent can provide required equipment, or you can save money by furnishing your own.

Detailed Course Agenda

- Short introduction of wireless communications
- Applications of *Bluetooth* technology
- Development and standardization
- *Bluetooth* system architecture
- Radio Unit
- Link Control Unit
- Link Management
- Software Functions

- Transmission via air interface
- Transmission principles
- Duplex methods (TDD, FDD)
- Multiplex methods
- *Bluetooth* air interface
- *Bluetooth* frequency hopping technique
- Modulation technique

- Air interface testing requirements

- Channel and packet definitions
- Speech / data
- Connection oriented (SCO) /connectionless (ALC)
- Coding schemes
- Synchronization

- Protocol structure
- Air interface
- Speech / data
- Signaling

- Access procedures
- Security functions
- Connection setup

- Ad hoc short-range networks
- Piconets
- Scatternets

- Overview of *Bluetooth* qualification

- Comparison with cables and other wireless communication system

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