Wireless LAN Technology Fundamentals

Course Overview

Course Number:
Agilent Training Center: H7216B #337

Course Overview

This technology course provides the student with an overview of the standards for Wireless Networking and their applications. It includes technical detail of the IEEE 802.11 standards and protocols. It ends with a discussion of RF design issues and interoperability of Wireless LAN (WLAN) devices and the concepts of OFDM being deployed in the newer generation of WLAN standards.

What you will learn

At the end of this course you will be able to:

- Know the trends and driving force behind wireless networking technology
- Recognize technical limitations and competing technologies.
- Describe the IEEE 802.11 (both a and b) System Level Architecture and understand the Physical and Medium Access Control protocols that support the architecture.
- Describe the timing, power management and security techniques for IEEE 802.11 WLAN systems.
- Understand the concept of OFDM used in IEEE 802.11a

Specifications

Course Type
Technology training

Audience
Engineers who need to understand the basic principles of Wireless LAN technology and in particular IEEE 802.11 a and b standards

Prerequisites
None

Course Length
1 day

Course Format
Lecture and demonstration

Delivery Method
Face to face, at customer site

Detailed Course Agenda

Overview of Wireless Networking Technologies

- Why use Wireless Networking?
- Trends
- Comparison of Types of WLAN

Understanding How Wireless LAN Works

- Advantages of Wireless LAN
- Applications
- Topologies
- Architecture (Physical and Medium Access Control Layer)
- Comparison of the Standards

Standardization of Wireless LAN

IEEE 802.11b Wireless LAN Standard

- IEEE 802.11 Wireless LAN Architecture
- IEEE 802.11b Physical Layer
- IEEE 802.11b Medium Access Control (MAC) Layer protocol
- IEEE 802.11b MAC Layer Services
- Data Transfer
- Association/Re-association
- Power Management
- Authentication
- Security and Privacy

Interoperability of IEEE 802.11 Devices

IEEE 802.11a Wireless LAN Standard

Orthogonal Frequency Division Multiplexing in IEEE 802.11a

Conclusions and Summary

References for Additional Information

www.agilent.com

Agilent Technologies' Test and Measurement Support, Services, and Assistance
Agilent Technologies aims to maximize the value you receive, while minimizing your risk and problems. We strive to ensure that you get the test and measurement capabilities you paid for and obtain the support you need. Our extensive support resources and services can help you choose the right Agilent products for your applications and apply them successfully. Every instrument and system we sell has a global warranty. Support is available for at least five years beyond the production life of the product. Two concepts underlie Agilent's overall support policy: "Our Promise" and "Your Advantage."

Our Promise
Our Promise means your Agilent test and measurement equipment will meet its advertised performance and functionality. When you are choosing new equipment, we will help you with product information, including realistic performance specifications and practical recommendations from experienced test engineers. When you use Agilent equipment, we can verify that it works properly, help with product operation, and provide basic measurement assistance for the use of specified capabilities, at no extra cost upon request. Many self-help tools are available.

Your Advantage
Your Advantage means that Agilent offers a wide range of additional expert test and measurement services, which you can purchase according to your unique technical and business needs. Solve problems efficiently and gain a competitive edge by contracting with us for calibration, extra-cost upgrades, out-of-warranty repairs, and on-site education and training, as well as design, system integration, project management, and other professional engineering services. Experienced Agilent engineers and technicians worldwide can help you maximize your productivity, optimize the return on investment of your Agilent instruments and systems, and obtain dependable measurement accuracy for the life of those products.

Agilent Email Updates

www.agilent.com/find/emailupdates
Get the latest information on the products and applications you select.

Agilent T&M Software and Connectivity
Agilent's Test and Measurement software and connectivity products, solutions and developer network allows you to take time out of connecting your instruments to your computer with tools based on PC standards, so you can focus on your tasks, not on your connections. Visit www.agilent.com/find/connectivity for more information.

By internet, phone, or fax, get assistance with all your test & measurement needs
Online assistance:
www.agilent.com/find/assist

Phone or Fax
United States:
(tel) 1 800 452 4844

Canada:
(tel) 1 877 894 4414
(fax) (905) 282 6495

China:
(tel) 800 810 0189
(fax) 1 800 820 2816

Europe:
(tel) (31 20) 547 2323
(fax) (31 20) 547 2390

Japan:
(tel) (81) 426 56 7832
(fax) (81) 426 56 7840

Korea:
(tel) (82 2) 2004 5004
(fax) (82 2) 2004 5115

Latin America:
(tel) (305) 269 7500
(fax) (305) 269 7599

Taiwan:
(tel) 0800 047 866
(fax) 0800 286 331

Other Asia Pacific Countries:
(tel) (65) 375 8100
(fax) (65) 6836 0252
(e-mail) tm_asia@agilent.com

Product specifications and descriptions in this document subject to change without notice.
© Agilent Technologies, Inc. 2002

Printed in the USA August 30, 2002
5988-7712EN

Agilent Technologies