Fundamentals of CDMA

Course Overview

Course Number: H7216X-312

Course Overview
CDMA systems have been around since the 50's but has remained a technology in military hands until the early 90's when it was adopted commercially as a viable alternative for wireless communication.

This course sheds light on CDMA technology. It brings out the advantages of this technology over the present TDMA technology as well as its limitations. The importance of enabling techniques such as power control, variable rate coding are brought out. The physical layers of forward link and reverse link channels are discussed. Multipath reception and rake receivers are described with examples. Different identities and security features in IS-95 are described. To sum up, call procedures are explained with ladder diagrams.

What you will learn

- CDMA concept as compared with TDMA and FDMA
- Diversity, rake receivers, different codes, channel coding, scrambling and modulation in IS-95 systems
- Physical layers and different logical channels used in the IS-95 system
- System Access and Call processing
- Power control, variable rate coding, soft handoff procedures
- Call processing and security procedures

Specifications

Course Type
Technology Training

Audience
All technical employees who need to have a background on CDMA technology

Prerequisites
Basic understanding of wireless communication technologies, analog mobile systems and radio systems

Course Length
1-2 days

Course Format
100% Lecture

Delivery Method
Scheduled (at Agilent training locations) or *Dedicated* (at customer site)
To save you time and travel, many Agilent courses can be delivered at your site. Agilent can provide required equipment, or save money by furnishing your own.

Detailed Course Agenda
Day 1

- Basic of CDMA Technology
- Correlative Codes
- Frequency Reuse Patterns
- CDMA Diversity
- Spatial Diversity
- Frequency Diversity
- Time Diversity
- Power Control
- Open Loop Power
- Control
- Open Loop Control
- Closed Loop Power
- Control
- CDMA Variable Rate Speech Coder
- Mobile Station
- Base Station
- Walsh Codes

Day 1 *Continued*

- CDMA Forward Link Physical Layer
- Long Code
- CDMA Forward Link Format
- Pilot Channel
- Sync Channel
- Paging Channel
- Traffic Channel
- CDMA Reverse Link Physical Layer
- System Access
- Soft Hand-off

Day 2

- Rake receivers
- Pilot sets
- Handoff thresholds
- Handoff Messages
- CDMA identities
- Registration types
- Overhead Messages
- Access parameters
- Access procedures
- Paging procedures
- Call processing states
- MS Initialisation
- MS Idle
- System Access
- MS control on traffic
- Security Procedures
- Authentication
- Ladder diagrams for
- MS originated call
- MS terminated call
- Soft handoff
- Hard handoff
- Call termination

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, while your instrument is under warranty or technical support contract. Many self-help tools are available on Agilent's web site.

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.

Customer Education Centers in Asia Field

Agilent's Customer Education Center can provide you with price, scheduling, and enrollment information as well as provide information about on-site delivery.

To inquire more about this course, please contact your nearest Agilent Customer Education Centers or visit us at **http://www.agilent.co.in**
Or contact –
Shyla H Ph. **080-51188723**
email: **Shyla_hanumaiah@agilent.com**

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) 800 452 4844

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

China:
(tel) 800 810 0189
(fax) 0800 650 0121

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) 080 004 7866
(fax) (886 2) 2545 6723

Other Asia Pacific Countries:
(tel) (65) 375 8100
(fax) (65) 836 0252
Email: tm_asia@agilent.com

Product specifications and descriptions in this document subject to change without notice.
© Agilent Technologies, Inc. 2004
Printed in the USA February 18, 2004
5989-0586EN

Agilent Technologies