



Course Number H7216A/B Opt. 305 Scheduled, Dedicated GSM: An Engineering Perspective Using the Agilent 8922

Overview

Course Overview

This 2-day course will teach engineers about the GSM cellular system, including the basic GSM technology and ETSI standards. It will discuss manufacturing test methods using the Agilent 8922 GSM test set. The class will provide insight into the various measurement specifications and how to interpret the results.

What you will learn

- GSM network, cells, and sectors
- Hand-offs
- Control channels
- Traffic channels
- Vocoder and error correction
- Bursted transmissions
- Camp and call set-up
- Agilent 8922 GSM test set operation
- Transmitter measurement
- Receiver measurement

Upon completion of this course, you will:

- Gain an in-depth knowledge of GSM technology
- Understand the detailed description of functional blocks of mobiles
- Understand how a mobile operates in a network and recognize the impact of faults on a network
- Make measurements on mobiles and interpret results
- Learn what measurements tell you about mobile design
- Learn operation of the Agilent 8922 GSM test set.

Specifications

Course Type

User / Application training

Audience

GSM Engineers working with the manufacture and testing of GSM mobile phones.

Prerequisites

Students should either complete the RF Measurement Basics and Analog & Digital Cellular Communications courses or have an understanding of RF and microwave measurements, analog and digital cellular systems. This will equip them with an understanding of the terms and theories that will be the building blocks of the GSM Mobile Station Measurements course.

Course Length

2 days

Course Format

The course is divided into instructor-led lessons and hands-on labs.

Delivery Method

“Scheduled” (at Agilent training locations) or
“Dedicated” (at customer site)

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

Detailed Course Agenda

Digital Fundamentals

Digital Modulation Basics

GSM Fundamentals

This instructor-led lesson looks at three areas of GSM: Network, Air Interface, and Signal Path.



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The GSM Network looks at:

- Network components
- Cells and sectors
- Frequency planning
- Hand-off techniques
- Power control.

The Air Interface explores:

- GSM implementation
- Power versus time
- Frames and data formatting
- Paging and call origination.

The Signal Path from the microphone to the antenna is explained:

- Vocoder
- Channel coder
- Interleaving
- Modulation
- Transmission.

GSM Measurements

Using the Agilent 8922 GSM test set, the instructor will demonstrate the theory covered in the first section of this course. Emphasis is not on learning to operate the equipment, but to reinforce the concepts of GSM. This is achieved using:

- Detailed mobile block diagrams
- Functional testing
- Transmitter measurements
- Receiver measurements
- What measurements tell us.

The student will also have hands-on time to reinforce concepts.

- GSM 11.10 Standard

Ordering Information

To order the *GSM: An Engineering Perspective* using the Agilent 8922 course (H7216 A/B Opt. 305), call:

US (800) 593-6632

Canada (800) 561-3276

The Agilent Technologies Customer Registration Center can provide you with price and enrollment information about scheduled courses or a dedicated course, which can be customized to meet your specific needs.

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