# PXA Signal Analyzer Operations

Course number H7215X-100

Data Sheet

## Learn how to operate the N9030A PXA Signal Analyzer

### Course Overview

This course is designed to provide a basic understanding of how spectrum analyzers work, how to use them to their fullest potential, and how to make them more effective for particular applications. The course includes labs which demonstration practical signal analysis measurements using the Agilent PXA analyzer.

### Audience

Engineers and technicians who are using the PXA Signal analyze

### Course Length

2 days

### Prerequisities

Basic RF measurement concepts and terminology

### Delevery 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.

### Course Format

Lecture and Lab

### What You Will Learn

After completing this course, you will be able to:

- Operate Agilent N9030A PXA Signal Analyzer
- Explain the fundamental block diagram and technical specifications of a Signal Analyzer
- Make use of the PXA's powerful measurement capabilities to perform basic spectrum analysis and advanced signal analysis measurements

### Agenda

- Spectrum analysis fundamentals
- Signal Analysis Block Diagram Architecture and Evolution
- PXA Block diagram
- Spectrum Analyzer Mode Measurements
- Analog and Digital Demodulation
- Phase noise mode
- Simplifying complex measurements

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## Detailed Course Agenda

- Spectrum analysis fundamentals
- Spectrum analyzer evolution
- Block diagram
- PXA advantages
  - Lower noise
    - Displayed average noise level
    - Low noise path
    - Noise floor extension
    - Phase noise
    - Switched preamps
  - Lower distortion
    - Improved front end performance
    - Understanding the TOI surface plot
  - Extensive measurement results
    - Marker functionality
    - On screen indicators and annotations
  - Faster measurements
    - Real time corrections vs. soft ware corrections
- PXA Operation – standard capabilities
  - Basic spectrum analyzer front panel tour
  - Spectrum analyzer mode basics
    - Tuning: Tune/Zoom/Boom!, Auto-tune
    - Markers, marker functions
    - Detector types for different
  - Types of traces
    - Limit lines, amplitude Corrections
  - Noise measurements
    - Signal to noise
    - Close-in phase noise
- Pulse measurements
- Spectrum analyzer mode
- Measurements
  - Power suite
    - CHP
    - OBW
    - Adjacent channel power
    - CCDF
    - Burst power
      - Spurious emissions
    - Spurious emissions mask
    - TOI
    - Harmonics
    - List sweep
- PXA operation - optional advanced
- Measurement capabilities
  - Analog demodulation using VXA for
    - AM
    - FM
    - PM
  - Digital demodulation using VXA and 89600 VSA software
    - Understanding error vector
    - Magnitude
    - VXA vector signal analyzer mode
    - 89601A vector signal analyzer Mode
  - Phase noise mode
  - PXA's optional IF outputs
    - Wideband IF out
    - Arbitrary IF out
    - Fast risetime video out
  - Remote language compatibility Mode
  - USB power sensor
  - Pulse measurements
    - Radar
  - Pulse mode N9051A
  - Noise figure mode
  - EMC measurements
  - Surveillance using wide IF

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