

# PAx Maintenance Training

For High Volume RF PA/FEM, 5G and Mobility Devices



Automotive



Mobility



IoT/IoV & Optoelectronics



Computing & Network



Industrial & Medical



Consumer

## Course Description

The PAx Maintenance training course provides a comprehensive overview of the hardware available in the test system. The course focuses on the preventative maintenance procedures and troubleshooting activities needed to ensure maximum system uptime. The attendees will become confident in navigating through the user interface and accessing the functions of SMC+ Tool which help in the calibration and maintenance. Execution of the instrument families associated checker, verification, and calibration programs will be explained. Attendees will also be provided with access to systems to ensure they are comfortable and confident in performing the preventative maintenance activities necessary to achieve the maximum reliability.

## Course Outline

- System Overview
- System Fundamentals
- Power Distribution and System Interfaces
- Overview of Calibration and Diagnostics
- DC Voltage and Current Modules
- Dual Sequenced Waveform Generator
- Dual Waveform Digitizer (DIGHSB)
- Digital Instruments
- FX Digital subsystem calibration and diagnostics
- RF Instruments
- System Diagnostics
- System Maintenance
- HMM and WDSP

## Course Length

- Four days, including classroom and practical exercises

## Recommended Skills

- English - written and spoken

## Who Should Attend

- Test system maintenance engineers and technician leads

## Prerequisites

- None

- Only ATE targeted specifically designed for RF FEM market
- Full range of WLAN, IoT, Cellular, Satellite Applications
- Small form factor
- Air cooled architecture and instruments
- Compact low power technology

# PAX Maintenance Training

## Course Modules

### 1 - System Overview

This unit will introduce the student to the course layout, documents used while in training, certification criteria, ESD awareness, general safety while under training instructions, and a test system overview. Upon completion of this unit, students will be familiar with the PAX tester functionality, purpose, capabilities, and bus structure

### 2 - System Fundamentals

This unit provides a brief introduction to Linux, and the Linux operating system. The student is introduced to Unison essentials, concepts and the skills necessary to operate SMC+ tools effectively in a maintenance environment including:

- Launching and exit the SMC+ Tool
- Familiarization with basic Linux commands, file structure and file manipulation
- Working within the Linux GUI
- Datalogging results

### 3 - Power Distribution and System Interfaces

This unit will introduce the power distribution, hardware interfaces, and various system configurations.

- Upon completion of this unit you will be able to:
- Recognize different tester configurations, major system subassemblies and the workstation
- Recognize the various system power supplies and power distribution
- Load and run maintenance related programs.
- Effectively use maintenance related tools
- Identify instrument Slot locations
- Understand the system bus structure
- Understand system configuration files
- Power up/down the PAX system

### 4 - Overview of Calibration and Diagnostics

This unit includes:

- Tester mainframe resource locations Tester head architecture
- Instruments location, calibration and diagnostics programs

### 5 - DC Voltage and Current Modules

This unit introduces the OVI, VI 16 and HCOVI instruments used by the PAX for source and measure functions. Upon completion of this unit the student will be familiar with the general concepts and the basic functions necessary to perform DC source and measure operations.

## DSP Instruments

### 6 - Dual Sequenced Waveform Generator

This unit will introduce the Sequenced Waveform Generator (SWG) sourcing instruments. Upon completion of this unit the student will:

- Understand the purpose and functions of the SWG
- Understand SWGs' impact on system configuration
- Be familiar with X-series waveform sourcing options

### 7 - Waveform Digitizer (DIGHSB)

This unit will introduce the Dual Sequenced Waveform Generator (SWG) sourcing instruments. Upon completion of this unit the student will:

- Understand the purpose and functions of the SWG
- Understand SWG's impact on system configuration
- Be familiar with X-series waveform sourcing options

### 8 - Digital Instruments

This unit will provide an overview of the Digital instruments including:

- Overview of the FX digital subsystem
- Location and functions of the FX digital subsystem instruments and associated cables

### 9 - FX Digital subsystem calibration and diagnostics

Upon completion of this unit the student will be able to:

- Perform digital subsystem operations
- Perform diagnostics on the digital subsystem
- Perform maintenance on the digital subsystem

- Only ATE targeted specifically designed for RF FEM market
- Full range of WLAN, IoT, Cellular, Satellite Applications
- Small form factor
- Air cooled architecture and instruments
- Compact low power technology

# PAX Maintenance Training

## Course Modules (cont. )

### 10 - RF Instruments

This unit will introduce the RF subsystem source and measure option to include: Upon completion of this unit the student will be able to:

- Be familiar with source and measure components of the RF subsystem
- Be aware of RF generation sources and subsystem interfaces
- Understand RF source and measure operations
- Be familiar with RF configuration options available for the PAX
- Be familiar with performing diagnostics on the RF subsystem
- Be familiar with removing/replacing RF subsystem components

### 11 - System Diagnostics

This unit provides an overview to system diagnostics that include:

- Subsystem Overview
- Calibration and Diagnostics
- RF Calibration and Diagnostic Kit

Upon completion of this unit, the student will be able to:

- Perform system diagnostics
- Analyze and interpret test results for accuracy and symptom indications

### 12 - System Maintenance

This unit introduces basic system maintenance and basic troubleshooting tips including:

- Basic System Maintenance
- Preventive Maintenance
- System Instrument Slot Locations
- FRU removal/replacement
- Troubleshooting Tips

Upon completion of this unit the student will be able to:

- Understand basic maintenance
- Be familiar with specific card cage slot locations

- Perform basic and preventive maintenance, and
- Be aware of symptom indications as an aid to system troubleshooting