



APX[®] Radio Technician (APX[®])

APX[®] Subscriber and Tools Technician certification
COMPETENCY REQUIREMENTS

Motorola Solutions[®] & ETA[®] International

The intent of this certification is to ensure technicians have the appropriate knowledge and skills necessary to install, maintain, tune, program, troubleshoot and repair an APX[®] Subscriber Radio. Additional certification information may be found at: www.eta-international.org/motorola_certifications.html.

The certification exam is comprised of an online theory exam and a practical element covering installation, tuning, troubleshooting and programming scenarios. Completion of the RDS1023 APX[®] SUBSCRIBER TRAINING Workshop, and if necessary other associated prerequisite courses, is required prior to attempting the certification exam. The online Trapeza only certification exam can be attempted by using an ETA[®] International certification administrator (C.A.) or an approved alternate facility to proctor. Contact ETA[®] International for additional information regarding acceptable testing locations.

Prior experience with an APX[®] radios is strongly recommended prior to attempting the certification examination. The written exam must be attempted within one year of completing the APX[®] workshop and is comprised of the following topics:

Auto Tune	19.5%
Audio Optimization	19.5%
RSSI MON	19.5%
Case Section	7.75%
Mobile Installation Best Practices	7.75%
Radio Manager	26.0%

The following is a listing of each topic considered necessary to be included in a course of study towards the education of technicians performing installation, maintenance, tuning, troubleshooting and repair, and programming of an APX[®] Radio. There are 6 categories. This COMPETENCY listing is the syllabus, or identification of each individual subject, in which the technician must be knowledgeable and skilled.

APX[®] Radio Technician (APX) Subscriber and Tools Competencies:

1. Autotune of APX[®] Subscribers

- 1.1. Describe the power requirements when testing/tuning APX[®] Subscribers:
 - 1.1.1. Power supply voltage requirement
 - 1.1.2. Power supply current requirement
 - 1.1.3. Test cables and hardware required
- 1.2. Describe test measurement best practices:
 - 1.2.1. Cable loss correction
 - 1.2.2. Use of 10MHz Frequency Standard

2. APX[®] Radio Test Setup and Test Equipment For Autotest/Autotune

- 2.1. Perform cable loss correction
- 2.2. Set configuration and thresholds in communications systems analyzer
- 2.3. Perform the steps in updating communications systems analyzer software
- 2.4. Perform the proper setup of the test power supply
- 2.5. Demonstrate the ability to connect all required radio equipment, test cables, and test equipment prior to autotest/autotune

3. Audio Optimization and Characteristics of a P25 Vocoder

- 3.1. Demonstrate P25 radio audio best practices
 - 3.1.1. Perform radio codeplug modifications for optimal audio performance in various customer environments
 - 3.1.2. Demonstrate best practices with and without radio accessories
- 3.2. Demonstrate radio profile usage
 - 3.2.1. Perform radio profile changes
 - 3.2.2. Explain the benefits and pitfalls of using different radio profiles
- 3.3. Describe audio quality considerations based on:
 - 3.3.1. environment
 - 3.3.2. usage
 - 3.3.3. accessories

4. Software Tools

- 4.1. Describe the purpose of RSSI MON (Relative Signal Strength Indicator MON) tool, RSSI Capture, RadioXtractor, and Radio Debugger
- 4.2. Describe under what circumstances RSSI MON, RSSI Capture, RadioXtractor, and Radio Debugger are used
- 4.3. Describe the functionality of RSSI MON, RSSI Capture, RadioXtractor, and Radio Debugger

5. Support Cases

- 5.1. Describe the purposes of support cases
- 5.2. Describe the processes of opening and updating cases
- 5.3. Explain under what circumstances it would / would not be appropriate to open a case:
 - 5.3.1. Steps to be taken prior to opening a case
 - 5.3.2. Information required for opening a case
 - 5.3.3. Escalating a customer case

6. Mobile Installations Best Practices

- 6.1. Describe what steps should be taken before the install:
 - 6.1.1. Identify the best placement of radio, antenna, and accessories per vehicle type/model
 - 6.1.2. Identify potential sources of interference with other devices in the vehicle
 - 6.1.3. Discuss with customer and document radio location in the vehicle
- 6.2. Describe pre- and post-installation testing and documentation:
 - 6.2.1. Verify and document the functionality of vehicle features, devices, and accessories (lights, windshield wipers, horn, other mobile devices, etc.)
 - 6.2.2. Perform external vehicle inspection
 - 6.2.3. Test and document radio functionality post-install
- 6.3. Explain installation troubleshooting best practices

7. Radio Management

- 7.1. Install radio management suite and components
 - 7.1.1. Describe radio management software components and their purposes
 - 7.1.2. Perform software and codeplug updates using radio management techniques
- 7.2. Describe the basic requirements and limitations for radio management components
- 7.3. Describe the radio management network requirements
 - 7.3.1. Explain the differences between Wi-Fi versus wired networks
 - 7.3.2. Explain security considerations of radio management
 - 7.3.3. Configure radio management for optimal performance

End of APX® Radio Technician Subscriber and Tools Certification Competencies

Find an ETA® Test Site <http://www.eta-i.org/testing.html>

Associated Suggested Study and Resource Materials:

Motorola Solutions Certification Program: ETA® APX® Subscriber and Tools Radio Technician Certification Preparation Guide

APX® Manuals and Radio Management® Manuals are available at the Motorola Solutions learning portal at <https://learning.motorolasolutions.com>.

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