

Competency Requirements MOTOROLA® & ETA® International ASTRO® 25 7.x Radio Network Administrator (RNA) 2011



The intent of this certification is to ensure technicians have the appropriate knowledge and skills necessary to administer and configure an ASTRO® 25 7.x radio system.

Students must register with the certifying agency, ETA® International, prior to attempting this certification. Additional registration information may be found at: www.eta-i.org/motorola_certifications.html.

Technicians seeking the ETA® ASTRO® 25 7.x Radio Network Administrator certification are required to also have a basic education in fundamental electronics. That basic knowledge is assessed in the ETA® Associate CET examination. Motorola Technicians who take the ASTRO® 25 Series as a Standalone certification are not required to take the Associate CET (CETa) exam. The Associate CET exam, plus the ASTRO® 25 7.x Radio Network Administrator and the WCM or USMSS wireless communications specialty examination go together to form a complete Journeyman CET exam.

Technicians who would like to use their ASTRO® Series certification to become a Journeyman CET must obtain the ASTRO® 25 7.x M Core Technician, ASTRO® 25 7.x GTR 8000 Repeater Site Technician, and ASTRO® 25 7.x Radio Network Administrator certifications in addition to the Associate CET (CETa).

The certification is comprised of a written exam and a practical element with procedural scenarios. Completion of the Radio System Administrator Workshop, and if necessary the associated prerequisite courses, is required prior to attempting the certification. The written assessment can be conducted at the conclusion of the course or can be completed at a later time using an ETA® International certified proctor, such as a local library. Contact ETA® International for additional information regarding acceptable testing locations. **The practical exam is typically administered at a later date.**

Prior experience with an ASTRO® 25 7.x radio system is strongly recommended as a prerequisite to the certification. The written exam is comprised of the following topics:

UCM Configuration	29%
UNC Operations	17%
Zone Watch / Affiliation Display	14%
UEM Usage and Management	12%
ATIA and RCM Usage	10%
Reports	9%
UCM / UNC Management	9%

The following is a listing of each topic considered necessary to be included in a course of study towards the education of technical managers performing network management of an ASTRO® 25 7.x system. There are 6 categories of training. This COMPETENCY listing is the syllabus, or identification of each individual subject, in which the technician must be knowledgeable and skilled.

ASTRO® 25 7.x RNA Competencies

1. ASTRO® 25 System Overview

- 1.1. Purpose of the ASTRO® 25 IV&D System.
- 1.2. ASTRO® 25 system features and capabilities.
- 1.3. ASTRO® 25 system subsystems and their respective functions.
- 1.4. ASTRO® 25 system and software tools.
- 1.5. ASTRO® 25 system compatible end-user devices.

2. ASTRO® 25 IV&D system management applications:

- 2.1. User Configuration Manager (UCM)
- 2.2. System Profile
- 2.3. Zone Watch – Default Profile
- 2.4. Zone Profile
- 2.5. ATIA Log Viewer
- 2.6. Zone Configuration Manager (ZCM)
- 2.7. Affiliation display
- 2.8. Customer Service Software (CSS)
- 2.9. Radio Control Manager (RCM) Basics
- 2.10. Introduction to Router Manager
- 2.11. Reports
 - 2.11.1. Historical
 - 2.11.2. Dynamic
 - 2.11.3. RCM
- 2.12. Introduction to Full Vision

3. Upgrading to a ASTRO® 25 System

- 3.1. Foundational Principle
- 3.2. Radio Frequency Subsystem
- 3.3. Control Subsystem
- 3.4. Audio Distribution Subsystem
- 3.5. Transport Subsystem
- 3.6. Management Subsystem
- 3.7. Modulation Overview
 - 3.7.1. Representation of Audio and DATA information
 - 3.7.2. SECURENET® Overview
 - 3.7.3. Pulse Code Modulation Overview
 - 3.7.4. ASTRO® Overview
 - 3.7.5. Frequency Modulation

- 3.8. Conventional Communications
 - 3.8.1. Radio to radio
 - 3.8.2. Repeater
 - 3.8.3. Base Station/Console
 - 3.8.4. Conventional System
 - 3.8.5. Trunking System Transition
- 3.9. SMARTNET II® Trunking Concepts
 - 3.9.1. Call Processing
 - 3.9.2. Features
 - 3.9.3. Transition Principles
- 3.10. Multiple Site Communication Principles
 - 3.10.1. Terminology Issues
 - 3.10.2. Conventional Multiple Site Systems
 - 3.10.3. Voting Systems
 - 3.10.4. Simulcast Systems
 - 3.10.5. Trunking
 - 3.10.6. Voting Systems
 - 3.10.7. Simulcast Systems
- 3.11. SmartZone System Principles
 - 3.11.1. Concepts
 - 3.11.2. Features
 - 3.11.3. Control Path
 - 3.11.4. Circuit-Switched-Based Audio Path
 - 3.11.5. Network-Based Management System
- 3.12. ASTRO® 25 System Principles
 - 3.12.1. Concepts
 - 3.12.2. Features
 - 3.12.3. Packet Switch Based Control Path
 - 3.12.4. Packet Switch Based Management System
 - 3.12.5. Network-Based Management System
- 3.13. Networking Fundamentals
 - 3.13.1. Computer Insights Applied to Networking
 - 3.13.2. Network Concepts and Hardware
 - 3.13.3. Network Addressing
 - 3.13.4. Basic Troubleshooting

4. Communications Networking

- 4.1. TCP/IP Basics
- 4.2. Types of Protocols
- 4.3. Addressing
- 4.4. Microsoft Windows® Client and Server
- 4.5. Constructing a network
- 4.6. Connecting Routers
- 4.7. Troubleshooting

5. Motorola® Communications Networking

- 5.1. Introduction to Motorola® Systems
- 5.2. Review of Basic Networking Concepts
- 5.3. Networking in Motorola® Systems
 - 5.3.1. ASTRO® SmartZone System 4.1
 - 5.3.2. ASTRO® 25 System 6.x / 7.x
- 5.4. Advanced Networking Concepts
- 5.5. Network Security Concepts
- 5.6. T1 and Frame Relay
- 5.7. Hands-on access to the components used in Motorola® Communications
- 5.8. System networks
- 5.9. Troubleshooting

6. ASTRO® 25 7.x Network Management

- 6.1. Planning
 - 6.1.1. Factors that Impact Communications System Planning
 - 6.1.2. Fleetmapping
- 6.2. Configuration
 - 6.2.1. Configuration Process and Tools
 - 6.2.2. User Configuration Manager (UCM)
 - 6.2.3. Zone Configuration Manager (ZCM)
 - 6.2.4. Configuration Service Software (CSS)
- 6.3. Operation and Optimization
 - 6.3.1. Live Monitoring of the System
 - 6.3.2. Report Generation
 - 6.3.3. License Sharing
 - 6.3.4. Performance Management

End of Motorola® ASTRO® 25 7.x Radio Network Administrator Competencies

