

Course overview:

RFID+ Certification

(S647eng)



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Overview and objectives

This 3-day course prepares students for the current CompTIA RFID+ certification exam. Students will learn how to set up and manage RFID systems to track inventory, goods, vehicles, and even people. They will also learn about the physics and radio principles that enable RFID solutions.

After completing this course, students will know how to:

- Explain the uses and benefits of RFID, and identify the components of an RFID system.
- Compare radio frequency with wavelength, discuss the factors affecting RF signals, and also discuss the communication methods; discuss antenna characteristics and identify reflective and absorptive materials; calculate ERP.
- Identify the types and functionalities of interrogators, and explain interrogator communication; discuss issues related to dense environment and anti-collision protocols; configure interrogation zones and interrogation commands, and optimize interrogation zones.
- Discuss power, frequency, and safety regulations and their impact on RFID systems; discuss air interface protocols and the impact of standards on business and IT infrastructure.
- Classify tags; discuss the types of antennas and their configuration, integrated circuit, and substrate configuration; discuss labels, inserts, and packing items.
- Explain the interaction between tags and interrogators; discuss the factors affecting tag performance and the effects of packaging materials on a tag; explain tag orientation and placement, the movement of tags, and the issues caused by tag stacking.
- Discuss the effects of signal interference on the RFID system; explain site obstructions that affect RFID system performance; discuss radiation patterns; Review the RF network architecture, site structures, and mechanical equipment.
- Determine the relation between virtual components and hardware components of RFID systems; discuss the hardware components of an RFID system and protection.
- Explain hardware installation and safety considerations in the RFID system; explain the installation of an RFID system in various enterprise applications

Who should attend?

Students taking this course should be familiar with personal computers and the use of a keyboard and a mouse. In addition, students should have completed *A+ Certification: Operating System Support Skills* or have equivalent knowledge and experience.

Before taking this course, students should have a foundational RFID knowledge together with 6-24 months of experience in the RFID industry. Students are expected to be able to:

- Install, configure and maintain RFID hardware and device software
 - Perform site surveys and analysis
 - Perform tag selection, placement and testing
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Introduction to RFID

- RFID basics

RF physics

- RF propagation • Antenna field performance • Radiated power output

Interrogation zone basics

- Interrogators • Dense environments • Configuring interrogation zones

Regulations and standards

- Regulations • RFID standards

Characteristics of tags

- Basics of tags • Components of tags • Packaging

Tag implementation

- Interaction between tags and interrogators • Factors affecting tag performance • Selection and placement of tags

Site analysis

- Electrical environmental conditions • Physical environmental conditions • Coverage area • Site blueprints

Design selection

- Virtual components of RFID systems • Hardware components of RFID

Installation

- Hardware installation • Installing RFID systems

Monitoring and troubleshooting

- Analyzing read rates • Troubleshooting tag failure • Troubleshooting software

RFID peripherals

- RFID printers • RFID enterprise systems

Appendix A: Certification exam objectives map

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