RFID Technical Specialist

1.0 Electronics Fundamentals

1.1 Basic Electricity Ohms Law and Kirchoffs Law:
1.2 Understanding DC Circuit basic concept of series, and parallel circuit.
1.3 Understanding AC Circuit basic concept of RLC circuits
1.4 Understanding Semiconductors diode and transistor circuitry
1.5 Understanding Basic Semiconductor Circuitry amplifier and oscillator
1.6 Principles of Radio Communication
1.7 Understanding ASK, FSK, PSK Modulation methods
1.8 Basic programming Techniques Basic C structure and XML namespace

2.0 Introduction To RFID

2.1 What is RFID: The basic operations of RFID
2.2 History of RFID Origin and early usages of RFID

3.0 RF Fundamentals

3.1 Basic RF fundamentals: Understanding the nature and properties of RF wave
3.2 Understanding RF spectrum and propagation
3.3 Understanding Antenna Characteristics
3.4 Understanding Antenna and wave propagation
3.5 Understanding Antenna field performance

4.0 Method of Communication

4.1 Understanding Inductive Coupling
4.2 Electromagnetic Backscatter Coupling
4.3 Close loop Coupling
4.4 Understanding Tag Collisions
4.5 Understanding Reader Collisions

5.0 Tag Characteristics

5.1 Understanding Passive Tags
5.2 Understanding Active Tags
5.3 Understanding Tags design
5.4 Understanding Smart Label

6.0 Fundamentals Of Interrogator communications

6.1 Tag Implementation
6.2 Various types of Tags
6.3 Readers (interrogators)
6.4 Understanding Interrogation Zone
6.5 Dense Interrogators Environment
6.6 Current RFID market awareness

7.0 Methods and Protocol

7.1 Tree-base protocol
7.2 Query Tree Protocol
7.3 Binary Tree Protocol

8.0 Standards and Regulations

8.1 GEN 1 and GEN 2 Standards
8.2 EPCglobal and GS1
8.3 Defined ISO Standard as it relates to RFID
8.4 Defined the various advantage and disadvantage of Class 0,1,2,3,4 tags
8.5 Define SSCC
8.6 Define ASN
8.7 International Standard and regulation as it relates to RDID

9.0 Physical Layers

9.1 Understand the advantages & disadvantages of passive and active RFID tag
9.2 Understand the advantages & disadvantages of various RFID Antennas
9.3 Understand Interrogator international power regulations
9.4 Understand RFID Deployment Environments
9.5 Host computer connected to Tag Reader

10.0 Software Layers

10.1 Understand the meaning of a Device Driver
10.2 Understanding the role Middleware and Edgeware in RFID architecture
10.3 Understand ONS and the role is plays in an enterprise RFID System.

11.0 Site Analysis

11.1 Electrical and Network infrastructure Analysis
11.2 Blueprints Symbols identification
11.3 Understanding RF site Survey
11.4 Understanding Physical site Survey
11.5 Understanding Coverage Area
11.6 Understanding TCP/IP

12.0 Design Selection

12.1 Understanding HF and UHF Frequency selection
12.2 Understanding Tag Type selection
12.3 Understanding Antenna Selection as it relates to RFID
12.4 Understanding Power Supply Selection as it relates to RFID
12.5 Understanding Cable Consideration as it relates to RFID
12.6 Understanding Selection of Interrogators in terms of the application

13.0 Installation

13.1 Enterprise Application
13.2 Installing and configuring RFID readers

13.3 Installing and configuring RFID Antenna
13.4 Power Distribution in RFID Technology
13.5 Understanding the Fundamentals of TCP/IP

14.0 Troubleshooting an RFID system

14.1 Tag Data Management
14.2 Readability and Reliability issues
14.3 Environmental Tag damage
14.4 Define RCN
14.5 Define SLRRP
14.6 Understanding RFID security

15. 0 Instrumentation

15.1 Understanding and using a real time spectrum analyzer.
15.2 Understanding and using Oscilloscope

Suggested Study Material:

RFID Essentials, Bill Glover/Himanshu Bhatt; ISBN 0596009445

The RF in RFID: Passive UHF RFID in Practice, Daniel M. Dobkin; ISBN 0750682094

RFID Radio Frequency Identification, Steven Shepard; ISBN 0071442995