

IP Encoders w/System Design/VRM Course

- Course Title:** IP Encoders and Cameras with System Design/VRM
- Duration:** 3 Days
- Target Audience:** Technicians, Project Managers, IT Professionals, Sales Engineers
- Total Attendees:** 8
- Objectives:** Upon successful completion of this course the participant should be able to:
- Identify IP networking principles and equipment
 - Install and configure various Bosch encoders and decoders
 - Understand basic RAID concepts
 - Understand how to design, implement and install
 - iSCSI
 - SCSI
 - Calculate retention time in relation to a storage project based on:
 - SCSI
 - iSCSI
 - Edge Recording
 - Perform Advanced Design of a CCTV System
 - Install and Configure Bosch's NVR (Network Video Recorder)
 - Install and Configure Bosch's VRM (Video Recording Manager)
 - Determine Network Loads and how to balance via NAS or DAS
 - Install and Configure various Bosch encoders and decoders
- Prerequisites:** **IP Encoders:** Read Bosch's Networking Essential Handbook.
- System Design/VRM:** Pass first day – IP Encoders and Cameras.

Course Content:

Module 1: Networking 101

- Basic Class IP Addressing
- Introduction to Unicast, IP Multicast
- Repeaters, Bridges and Switches, Routers (Base OSI Model)
- TCP, UDP Ports and Concepts

Module 2: Bosch Video IP Product Overview

- Encoders and Decoders CCTV Basic Concepts
 - CIF, 2 CIF, 4 CIF
 - Big Box, Enterprise, Direct Connect Concepts

- X Generation
- 1600
- Networking and Encoder Ports
- Web Interface (Basic Overview/Concept)

Module 3: Software Installation

- Installation of Configuration Manager Software and Prerequisites
 - MPEG Active X/Video SDK
 - Direct X 9 C
 - DOT NET Framework
 - Configuration Manager
 - Configuring IE Web Browser Security Settings (6 and 7)

Module 4: Encoder Detection and Configuration

- Scanning the Network via Configuration Manager
- Encoder IP Assignment
- Roles of Configuration Manager
- Encoder Webpage Basics (Live Viewer Page, JPEG Page)
- Encoder Service Settings Page
 - Loading Firmware
 - Camera Settings
 - Frame Rate and Resolution
 - Encoder/1600 Exercise 1
 - Recording Options
 - Com Settings
 - IP and Multicast Settings

Module 5: Encoder Exercises and Troubleshooting (1600 Manual)

- Encoder/1600 Exercise 2
- Alarm Settings
- RTC Images
- Tech Tools

Module 6: IP Encoder Tests

- Practical Exam
 - Detect and Configure IP of Assigned Encoder
 - Configure Encoder Profiles
 - Configure Encoder's Alarm Settings
 - Configure Encoder's Com Settings
- Written Exam

Module 7: Bosch Recording Options Overview

- Edge
- NVR
- iSCSI/NAS or DAS
- VRM: All, Restricted, Preferred, Failover

Module 9: PC and Servers

- NVR Requirements
- VRM Requirements
- Operating and Service Pack Requirements and Limitations

Module 9: RAID 101

- RAID Concepts
 - RAID 0
 - RAID 1
 - RAID 5

- SCSI Basics

Module 10: BASIC Retention Concepts

- Retention Time (Pipes and Buckets)
- Factors Affecting Retention Time
- Storage, Data Throughput, and Networking Together
- Designing Basic Systems (Calculator)
- Calculator Exercises

Module 11: NVR

- NVR Installation
- Attached Raid Devices and Configuration
- Service Startup Features
- Web Interface
- Encoder Association and Recording Schedules
- Alarm Schedules
- Status Page
 - Storage configuration
 - Time Synchronization
 - ANR

Module 12: iSCSI Concepts

- iSCSI Basics
- iSCSI Configuration
- DAS Connection and Configuration
- NAS and SAN Design Considerations
- Edge + NVR Design
- Calculator Exercise

Module 13: VRM Installation and Configuration

- VRM Overview
 - All
 - Restricted
 - Failover
 - Preferred
- Installation and Configuration
 - VRM Configurator
 - VRM Monitor
 - Users and Privileges
- Archive Player and Video Retrieval

Module 14: Advanced Design and Network Considerations

- When to use what Product
- Network Limitations vs. Equipment
- Real World Solutions
- Calculator and Design Exercises

Module 15: Review/Final Exam

- Course Review
- Final Exam

Final Exam: Passing grade is 75% or higher

Practical Content: At least 70% hands-on