

# GE MDS Communications

## Product Training & Certification

### 2019

#### Industrial Communications Training

A wide variety of classroom, virtual & e-learning courses at your fingertips



GE MDS Training / Technical Support

+1-585-242-9600

[training.mds@ge.com](mailto:training.mds@ge.com)

175 Science Parkway

Rochester, NY 14620

## Industrial Communications Courses

GE's Industrial Communications training is offered in two levels, a 2-day basic product training or a 5-day certification Training. Training can be held at our factory or on-site in your facility.

### Factory Training

GE MDS provides this training at our Rochester NY. Training center, GE's training provides customers with high-quality knowledge to be safe, efficient and successful in industrial wireless communications.

### Customer Site Training

To increase the number of employees who can benefit from training, GE MDS Technical Training offers the option of conducting training courses in person at customer facilities. These on-site courses can be customized to a specific product or a range of products.

All dates shown are for training at the GE MDS Training facility located in Rochester NY.



## Orbit MCR & ECR Product Training {no master station products}

- **Managed Connected Router (MCR - larger form factor)**
- **Edge Connected Router (ECR - smaller form factor)**
- **(Cellular & WiFi Emphasis)**



## MDS Orbit Platform (2 Days)

**Day 1** - Networking Basics, Wireless Basics, Introduction to MDS Orbit Platform

**Day 2** – XML “display set”, Orbit NICs, Orbit Bridging, MCR-900/LN Basics, Cell Interface, WiFi Interface, SIM Options, DNS, Firewall Basics, Basic Routing

## MDS Orbit Platform Advanced Certification (5 Days)

**Day 3** - Terminal Server/Serial Service, DDNS, VLANs, Creating VLANs, Configuring Interfaces, Configuring Firewall, Port Forwarding, Quality of Service (QoS), Prioritization, Fairness, Traffic Shaping, Dynamic Routing, RIPv2, OSPF

**Day 4** - Security: Firewall, Tamper Detection Configuration, Radius User Authentication, OTP and Admin/Tech/Operator Password, 802.1x Certificate Management, Securing Nx-900 and LN: PSK: AES-128/256, EAP: RADIUS w/ 802.1x Certificates, Securing Cell: IPSec VPN Tunnel, Dynamic VPN, Static NAT (1:1 NAT), GRE, IP/GRE, Ethernet/GRE

**Day 5** - Point to Multipoint Serial Over Cell, Interface Failover/Failback, Summary of Topics Covered throughout the Week, Written Exam, 80% Pass required for Certification.

## Master Station with Orbit Remote Product Training

- **Master Station (MPRL – Licensed Narrowband, MPRU – Unlicensed 900 MHz)**
- **Managed Connected Router (MCR – larger form factor)**
- **Edge Connected Router (ECR – smaller form factor)**
- **Emphasis on Licensed Narrowband (LN) and Unlicensed 900 MHz (NX915)**



## MDS Orbit Platform (2 Days)

**Day 1** - Networking Basics, Wireless Basics, Introduction to MDS Orbit Platform

**Day 2** – XML “display set”, Orbit NICs, Orbit Bridging, MCR-900/LN Basics, Cell Interface, SIM Options, DNS, Firewall Basics, Basic Routing

## MDS Orbit Platform Advanced Certification (5 Days)

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**Day 5** - Point to Multipoint Serial Over Cell, Interface Failover/Failback, Summary of Topics Covered throughout the Week, Written Exam, 80% Pass required for Certification.

## GE MDS SD Master and Remote Training



### Basic MDS SD and SD Master Station (2 Days)

**Day 1** – Installation and Maintenance, Configuration, Feature / Application Outline

**Day 2** – Network Topologies (How and why to choose), Pinouts and Types of Serial polling capability, Setup basic Pt to Point network, Basic serial polling (B and A Modems), IP Payload and polling (Transparent Mode), IP Payload polling in Packet w/ MAC mode Ethernet Bridging.

### MDS SD and SD Master Station advanced topics available:

Advanced Bridge Filter & LAN Filter), Terminal Server in SDx and SDMS (via Console and Web), Hands on lab covering Bridged IP data w/ terminal server Vs. IP payload data. Store and Forward, System ID, Peer to Peer, Encryption all modes, Security, VRC's, VLANS.

## Additional Products

### TransNET

- Key Features
- Network Topologies
- Network Management
- Store-and-Forward Operation
- Configuration Software
- Setup
- Maintenance



### Intrepid

- Hardware
- Software
- System Design
- Path calculation
- Grounding and Installation
- Understanding and Mitigating Interference



### iNET-II

- Features
- Interfacing
- System Configurations
- Unit Configuration
- Menus and Management
- Security Configuration



## Fundamentals of Radio Frequency Communications

Maximize the performance of your communications network by increasing your knowledge of RF and basic Data test equipment utilized in the wireless communications industry. This two-day Fundamentals course is an ideal refresher course and an excellent introductory course

### Day 1 - Radio Frequency (RF) Fundamentals

- Overview
- Units of Measurement and RF Terminology
- Wave and Signal Mechanics
- Antenna Basics
- RF Interconnections
- Link Mechanics
- Applications and Characteristics
- Evaluation Radio Paths
- Multipath
- Feed lines
- System Design
- Understanding and Mitigating Interference

### Day 2 - Radio Interfacing

- Serial interfacing overview
- Serial interfacing basics
- Data Terminal Equipment (DTE)
- Data Communications Equipment (DCE)
- Electrical Standards
- Short-haul Modems
- Fiber Interfaces and Fiber Modems
- Multi-drop Interfacing
- Interface Conversions
- Special Purpose Interface Devices
- RF Test Equipment
- Data Test Equipment
- Grounding and Installation
- Troubleshooting



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## 2019 Training schedule (Rochester NY)

### Orbit MCR & ECR Product Training {no master station products}

- **Managed Connected Router (MCR – larger form factor)**
- **Edge Connected Router (ECR – smaller form factor)**

### Basics

#### MDS Orbit MCR/ECR Product Training {no master station products} (Cellular & WiFi emphasis) (2 days)

- Basics – 2 days
  - February 11-12
  - May 13-14
  - August 12-13
  - November 4-5

### Certification

#### MDS Orbit MCR/ECR Product Training {no master station products} (Cellular & Wifi emphasis) (5 days)

- Certification – 5 days
  - February 11-15
  - May 13-17
  - August 12-16
  - November 4-8

### Master Station with Orbit Remote Product Training

- **Master Station (MPRL – Licensed Narrowband, MPRU – Unlicensed 900 MHz)**
- **Licensed Narrowband (LN)**
- **Unlicensed 900 MHz (NX915)**

### Basics

#### MDS Orbit MCR/ECR/MPRx (LN/MPRL & NX915/MPRU emphasis) (2 days)

- Basics - 2 days
  - February 25-26
  - June 3-4
  - August 19-20
  - November 18-19



## Certification

### MDS Orbit MCR/ECR/MPRx

#### (LN/MPRL & NX915/MPRU emphasis) (5 days)

➤ Certification – 5 days

- February 25, March 1
- June 3-7
- August 19-23
- November 18-22

## Radio Frequency Fundamentals (2 day)

- March 12-13
- June 11-12
- Sept 10-11
- December 10-11



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