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## WTM4000 Installation, Operation and Maintenance

### TRN-WTM4K-IOM-A/B/C/D

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### Course Specifics

Duration:	2 days
Class capacity:	10 students
Materials provided:	Instruction and User Manuals Student Handbook (e-Book) Datasheets



### Course Description

The WTM4000 is the industry's first all-outdoor microwave router. It is a fully integrated microwave networking solution, delivering a unique combination of high-capacity all-packet transport, Carrier Ethernet, IP/MPLS and PWE services, and comprehensive mission-critical microwave features.

The **WTM4000 Installation, Operation, and Maintenance course** teaches students key functions of the WTM4000 platform. The course includes an overview of all available modules and the chassis, initial setup, installation and login, basic configuration with the CLI and GUI, system commissioning, configuration, diagnostics, maintenance, and troubleshooting. Extensive hands-on labs (nearly 50% of the course duration) and case studies offer students scenarios they will face in real deployments in their networks.

Courses are conducted by **AVIAT expert trainers** in a mentoring environment backed by their deep technology expertise and experience in the implementation of microwave wireless and IP networks.

The WTM4000 Installation, Operation, and Maintenance course is conducted at the Aviat Training locations or can be arranged at customer sites.

### Target Audience

This course is intended for installation and service personnel responsible for installation, configuration, test, and maintenance procedures for the WTM4000 product.

### Prerequisites

- Participants must complete the WTM4000 System Overview E-Learning course.
- Participants should have a basic understanding of Microwave and IP Fundamentals and have basic computer skills.
- Each student must bring a laptop PC and must have administrator rights on the PC with the following minimum specifications:
  - Pentium 4 or later w/ 1GB of RAM and 250 MB of free hard drive space
  - Microsoft Windows 7, 8, or 10 and Google Chrome as web browser
  - USB Port / LAN Port

### Objectives

Upon completing this course, participants will be able to perform:

- Basic installation and configuration of WTM4000 equipment
- Provisioning of features such as Management, RF Links, Ethernet VLANs, QoS, and Link Aggregation
- Basic diagnostics, troubleshooting, and preventive maintenance for the WTM4000 radio

## Course Outline

### System Overview

- WTM4000 Features Overview
- Product variants
- Installation –  
PoE, External DC power
- Hardware architecture
- Deployment options
- Power supply
- Licensing
- Management

### Product Installation

- Unpacking
- Antenna installation
- ODU installation
- Ground cable
- DC power to the ODU (external)
- DC power to the ODU (POE)
- SFP and Fiber cable
- Power cable grounding
- Lightning protection
- Antenna alignment – RSL
- Antenna alignment – XPD
- Antenna alignment – Multiband

### Unit Basic Set-up and Management

- Connecting to the WTM4000
- Management option (GUI / CLI)
- Default login parameters
- Management VLAN
- Static Routing
- Date and Time
- SNMP and Wi-Fi configuration
- Admin Management –
- Configuration Management
- Restart / Reset to Factory Default
- Software Management
- User Management
- License Management

### RF Link Provisioning

- Radio Link Configuration -  
1+0, A2C, 2+0, XPIC
- Link Performance –  
Real-Time
- Performance History
- Modulation Time
- Antenna Alignment
- Spectrum Analyzer
- IDQ Optimization

### Switching and routing

- Interfaces
- Basic routing function
- Layer 2 Link Aggregation (LACP)
- L2 control protocol tunnel
- Vlan management

### Link Aggregation

- Layer 1 Link Aggregation
- L1LA on WTM
- L1LA Configuration

### Synchronization

- Synchronous Ethernet
- Synchronization States
- SyncE Configuration
- PTP Configuration

## Required Equipment for Training Sessions at Customer Sites

RADIO	<p>One equipment rack with 48VDC power supply.</p> <p>At least 1 radio link set up - 2 radios talking to each other. The path must have at least 60dB of attenuation. (For troubleshooting, variable attenuators are preferred but not mandatory.)</p> <p>Each WTM chassis should include as a minimum:</p> <ul style="list-style-type: none"><li>•Appropriate traffic cables (Ethernet/Optical cables)</li><li>•Electrical/Optical SFPs (Optional)</li><li>•Radio cables, attenuators, and transitions (WG-coax adapters)</li><li>•ODUs should be a matching pair, i.e., same sub-band and TR spacing with one being Tx High and the other Tx Low</li></ul>
OTHER EQUIPMENT	Ethernet tester, Digital Multimeter
CLASSROOM SET UP	<p>Sufficient in size to handle all participants, desks, chairs, and classroom equipment. The room must have enough 110 AC (220) AC power and air conditioning to operate all necessary equipment, including students' laptops.</p> <p><b>Classroom Equipment</b></p> <p>Multimedia projector and screen Whiteboard and markers</p> <p><b>Desk and Chairs</b></p> <p>Desks or workstations with enough room for each student's laptop and training materials</p> <p><b>Internet Access</b></p> <p>Strong Wi-Fi connection</p>

## Pricing & Scheduling

Please contact your Aviat local sales team for a quote or email [aviatcareeducate@aviatnet.com](mailto:aviatcareeducate@aviatnet.com) and request pricing for the following items:

TRN-WTM4K-IOM-A	WTM4000: INSTALLATION, OPERATION AND MAINTENANCE - ILT, 2 DAYS, AVIAT TRAINING CENTER - OPEN ENROLLMENT -PER STUDENT
TRN-WTM4K-IOM-B	WTM4000: INSTALLATION, OPERATION AND MAINTENANCE - ILT, 2 DAYS, AVIAT TRAINING CENTER- 10 STUDENTS MAX
TRN-WTM4K-IOM-C	WTM4000: INSTALLATION, OPERATION AND MAINTENANCE - ILT, 2 DAYS, CUSTOMER LOCATION- 10 STUDENTS MAX
TRN-WTM4K-IOM-D	WTM4000: INSTALLATION, OPERATION AND MAINTENANCE - ILT, 2 DAYS, CUSTOMER LOCATION-WITH EQUIPMENT- ONLY FOR US- 10 STUDENTS MAX