



**RFL Electronics Inc.**

# **TRAINING OUTLINE**

## **IMUX 4000 SONET**

### **1 INTRODUCTION**

- 1.1 Course Overview
  - 1.1.1 Day One
  - 1.1.2 Day Two

### **2 TRAINING OVERVIEW**

- 2.1 This training program provides installation and maintenance technicians with the information they need to install, configure, and use RFL'S IMUX 4000 systems in a SONET environment.
- 2.2 Training course period is from 3 to 5 days depending on customer network.
- 2.3 This program consists of 8 theory modules interspersed with hands-on labs as follows:
  - 2.3.1 Module 1: SONET protocol introduction
  - 2.3.2 Module 2: IMUX 4000 product line
  - 2.3.3 Module 3: Basic components and software
  - 2.3.4 Module 4: Interface components
  - 2.3.5 Module 5: Signal-mapping components
  - 2.3.6 Module 6: OSIRIS-VUE Software
  - 2.3.7 Module 7: Network applications
  - 2.3.8 Module 8: Miscellaneous topics

### **3 MODULE 1: SONET PROTOCOL INTRODUCTION**

- 3.1 This module introduces the SONET protocol. The following topics are discussed:
  - 3.1.1 SONET introduction
  - 3.1.2 SONET benefits

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- 3.1.3 SONET networks
- 3.1.4 Path Protection Switching
- 3.1.5 SONET protocol

## **4 MODULE 2: IMUX 4000 PRODUCT LINE**

- 4.1 This module introduces the IMUX 4000 product line as follows:
  - 4.1.1 Introduction
  - 4.1.2 The IMUX 4000 STD Shelf
  - 4.1.3 The IMUX 4000 XTS Shelf
  - 4.1.4 The IMUX 4000 XTD Shelf

## **5 MODULE 3: BASIC COMPONENTS AND SOFTWARE**

- 5.1 This module introduces the basic components common to all IMUX 4000 ADMs:

- 5.1.1 The Network Monitor & Control Unit (NMCU)
- 5.1.2 The Optical Access Unit (OAU)
- 5.1.3 The NE software that runs on the NMCU

## **6 MODULE 4: INTRODUCING ACIUs AND TIUs**

- 6.1 This module examines the interface components of the RFL IMUX 4000 product; the Alarm and Craftsperson Interface Units (ACIUs) and the Tributary Interface Units (TIUs). This module is organized as follows:
  - 6.1.1 Introducing ACIUs and TIUs
  - 6.1.2 IMUX 4000 STD Shelf ACIU
  - 6.1.3 IMUX 4000 STD Shelf TIU
  - 6.1.4 IMUX 4000 XTS Shelf ACIU
  - 6.1.5 IMUX 4000 XTS Shelf TIU
  - 6.1.6 IMUX 4000 XTD Shelf ACIU
  - 6.1.7 IMUX 4000 XTD Shelf TIU

## **7 MODULE 5: SIGNAL-MAPPING COMPONENTS**

- 7.1 This module examines the IMUX 4000 signal-mapping component as follows:
  - 7.1.1 Introducing IMUX 4000 Mappers
  - 7.1.2 The DS1 and DS-1 PM+ Mappers
  - 7.1.3 The DS3 Mapper
  - 7.1.4 The EC-1 Mapper
  - 7.1.5 The Ethernet Mapper

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- 7.1.6 The Fast Ethernet Mapper
- 7.1.7 MSE(Multi-Service Ethernet) Mapper
- 7.1.8 The OC-3c Mapper
- 7.1.9 The PacketPath Ethernet and ATM Mappers
- 7.1.10 The AUX2
- 7.1.11 The PSCU (Protection Switch Control Unit)

## **8 MODULE 6: OVERVIEW SOFTWARE**

- 8.1 This module introduces the OverView network element management software and describes its key functions.

## **9 MODULE 7: IMUX 4000 NETWORK APPLICATION**

- 9.1 IMUX 4000 networks can be configured in many ways. To get an understanding of the type of network applications possible, the following applications are discussed:

- 9.1.1 Point to Point Application
- 9.1.2 Broadcast Application
- 9.1.3 Logical Ring Application
- 9.1.4 Path Protected Interconnected Ring
- 9.1.5 Dual Homing Application
- 9.1.6 Bandwidth Reuse Application

## **10 MODULE 8: MISCELLANEOUS TOPICS**

- 10.1 This last module discusses these topics:
  - 10.1.1 Software upgrades with SND32
  - 10.1.2 Synchronization
  - 10.1.3 Data Communication Channel (DCC) considerations
  - 10.1.4 SONET: Beyond DS3/STS-1 rates

## **CONCLUSION**