

Publications and Training Solutions

Course Syllabus: 523-0807927

COURSE TITLE: FPI-933X
Level II Repair (Component Level)

PREREQUISITES: Students should have an avionics background in component level repair and a working knowledge of analog, digital, microprocessor, and radio frequency systems

PURPOSE: This course provides training to perform operational test, alignment, troubleshooting, and repair of the FPI-933X. The FPI-933X line replaceable units (LRU's) are identified in the section titled EQUIPMENT TYPE by nomenclature and part number.

OBJECTIVES: Upon completing this course, the student will be able to:

1. State equipment functions and operational characteristics.
2. Trace signal flow through the block diagrams/schematics.
3. Perform assembly/disassembly, testing, adjustment/alignment, and troubleshooting.

COURSE LENGTH: 3 Days

TRAINING DEVICES:

1. Equipment (LRU's):
 - a. FPI-933X
2. Special Test Equipment (as applicable):
 - a. ITS-701 822-0733-XXX
 - b. Photometer Hoffman BM7
 - c. Test Adapter 830-4640-001

TRAINING MATERIALS:

1. PowerPoint Presentation with LCD/Box Light projector
2. Student Guide – Flash drive (pdf) – FPI-933X Training Presentation
Information Sheets
Assignment Sheets

REFERENCES:

1. FPI-933X CMM 523-0810767

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COURSE OUTLINE

0. Welcome & Introductions

- A. Course Overview
 - i. Welcome
 - ii. Student Registration

1. Chapter 1 – Course Overview

- A. Introduction to Boeing 777 Instrument System
- B. Introduction to Back-up Instrument System
- C. Block Diagram Theory of Operation
- D. Maintenance
- E. Review/Critique

2. Chapter 2 – Introduction to FPI-933X

- A. Equipment Specifications
 - i. Mechanical
 - ii. Electrical
 - iii. Controls
 - iv. Major Assembly Locations
- B. Equipment Description
 - i. Modes of Operation
- C. Integration Aircraft System
 - i. ARINC Interface/Control (ARINC 429)

3. Chapter 3 – Block Diagram Theory of Operation

- A. Overall Block Diagram
- B. Simplified Block Diagram
- C. Functional Block Diagram
- D. ARINC Interface (IN/OUT Words)

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4. Chapter 4 – Subassembly Block/Schematic Diagram Theory of Operation

- A. Power Supply A1A2A1A1
 - i. Input Voltage Filtering/Protection Circuits
 - ii. PWM Operation
 - iii. Regulated DC Output Circuitry
- B. Input/Output A1A2A1A1
 - i. Digital I/O
 - ii. Analog I/O
- C. Micro Processor A1A2A1A1
 - i. AAMP3 Processor
 - ii. Stored Memory
- D. LCD Controller A1A2A1A1
 - i. Graphics Interface
 - ii. Graphics Store
 - iii. LCD Power
 - iv. Display Monitor
- E. Backlight Control A1A2A1A1
 - i. Filament Drive
 - ii. ARC Driver Stage

5. Chapter 5 – Maintenance

- A. Self-Test/Built-In Test Equipment
- B. Performance Testing
 - i. Verification of Operational Status
 - ii. Provides Functional Area Failures

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- C. Troubleshooting
 - i. Fault Isolation Diagrams
 - ii. Maintenance Aid Diagrams
 - iii. Alignment/Adjustment Procedures
- D. Assembly/Disassembly
 - i. Precautions and Techniques
 - ii. Procedures

6. Review/Critique

EQUIPMENT TYPE:

EQUIPMENT	NOMENCLATURE	PART NUMBER
Back-up Instrument System	FPI-9330	822-0408-201, 822-0409-201