

Publications and Training Solutions

Course Syllabus: 523-0809301

COURSE TITLE: Boeing 787 Familiarization

PREREQUISITES: Students should have basic knowledge of aircraft avionics systems and a working command of the English language (interpreters are available for special cases).

PURPOSE: This course provides maintenance personnel with familiarization training to operate and perform flightline maintenance for the Boeing 787 aircraft system.

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

1. Provide an overall understanding of 787 avionics principles and operation.
2. Identify system components and the functional / operational characteristics of each line replaceable unit (LRU).
3. Identify typical aircraft system interface / system architecture.
4. Perform fault isolation to a faulty LRU using built-in test diagnostics.

COURSE LENGTH: 5 Days

TRAINING DEVICES:

1. RIG (Cedar Rapids)

TRAINING MATERIALS:

1. 523-0809301 ILT, Training Guide
2. Pilot Controls Handout

REFERENCES:

1. None

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COURSE OUTLINE

0. **Welcome & Introductions**

- A. Training Overview (Customer Ambassador)
- B. Welcome
- C. Student Registration
- D. Student Policies and Procedures

1. **Chapter 1 – System Overview**

- A. Displays
- B. Communication
- C. Surveillance System
- D. Pilot Control
- E. Common Data Network (CDN)

2. **Chapter 2 – Data Buses**

- A. Overview
- B. Description
- C. Theory of Operation
- D. Maintenance and Troubleshooting

3. **Chapter 3 – Maintenance Diagnostics (MDC)**

- A. Why We Use Data Buses
- B. ARINC Data Buses
 - i. ARINC 429
 - ii. ARINC 453
 - iii. ARINC 708
- C. Commercial Standard Data Bus (CSDB) (RS-422)
- D. Ethernet (RS-232)

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- 4. Chapter 4 – Common Data Network (CDN)**
 - A. Theory of the Common Computing Resource (CCR)
 - B. Remote Data Concentrator (RDC)
 - C. System Architecture
 - D. Switching Units

- 5. Chapter 5 – Core Network Overview**
 - A. Common Core Network
 - B. Network Interface Unit
 - C. File Server Module
 - D. Ethernet Gateway Unit
 - E. Air Blocking Module

- 6. Chapter 6 – Displays**
 - A. Overview
 - B. Displays and Controls
 - C. Crew Alerting System
 - D. PFD / AOB
 - E. EICAS
 - F. HUD

- 7. Chapter 7 – Integrated Surveillance System (ISS)**
 - A. Description and Operation
 - B. WXR-2100
 - C. TTR-921
 - D. TPR-901
 - E. Core Module
 - F. TAWS

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8. Chapter 8 – Pilot Controls

- A. Overview
- B. Pilot Control Stand
- C. Pitch / Roll Column
- D. Yaw Brake Assembly
- E. Thrust Control Module
- F. Speed Brake Control Module
- G. Voltage Differential Transducer (VDT)
- H. Breakout Assembly

9. Chapter 9 – Tuning Control

- A. Tuning Control Module
- B. Operation and Menus

10. Chapter 10 – Maintenance Troubleshooting

- A. Access Aircraft Menus
- B. Operation of Maintenance Menus

11. Chapter 11 – Software Downloading

- A. Laptop Access
- B. Operation of the Menus

12. Chapter 12 – Laptop Maintenance

- A. Cockpit Effect
- B. Access to Laptop Maintenance
- C. Menu Navigation
- D. MultiScan Maintenance and Troubleshooting

13. Chapter 13 – Flight Data Download

- A. Flight Data Downloading

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- B. Access to Toolbox
- C. Menu Navigation

14. Chapter 14 – Summary

- A. Course Critique

15. Chapter 15 – Abbreviations and Acronyms

EQUIPMENT TYPE:

EQUIPMENT	NOMENCLATURE	PART NUMBER
NIM-2200	Network Interface Module	822-2279-101
FSM-2200	File Server Module (Linux)	822-2244-101
FSM-2200	File Server Module (VM Works)	822-2242-151
EGM-2200	External Gateway Module	822-2242-101
ABM-2100	Air Blocking Module, Qty 3	822-2016-102
MCA-2200	Modular Cabinet Assembly	822-2280-101
AFDX-2100	(ACS) Qty 4	822-2100-101
AFDX-2120	(ARS) Qty 6	822-2102-101
AFD-2100	Adaptive Fight Display, Qty 5	822-2148-101
DCP-2100	Display Control Panel	822-2154-101
DCP-2100	Display Control Panel	822-2154-201
GGM-2100	Graphics Generator Module, Qty 4	822-2149-101
MKP-2100	Multi-Function Key Pad, Qty 2	822-2153-101
RLS-2100	Remote Light Sensor, Qty 2	822-2290-101
HCU-2200	HUD Combiner Unit, Qty 2	1500-2890-101
HPU-2200	HUD Processor Unit, Qty 2	1500-2900-101
CCD-2100	Curser Control Device	822-2152-101
CCD-2100	Curser Control Device	822-2152-201
ACP-2100	Audio Control Panel, Qty 3	866-0077-101

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EQUIPMENT	NOMENCLATURE	PART NUMBER
AGU-2100	Audi Gateway Unit, Qty 4	866-0078-101
AJP-2100	Audio Jack Panel, Qty 2	866-0079-101
AJP-2101	Audio Jack Panel	866-0080-101
AJP-2102	Audio Jack Panel	866-0081-101
ATP-2100	Transponder Panel	866-0083-101
HDST-2100	Headset, Qty 4	866-5014-101
SPKR-2100	Speaker, Qty 2	866-5011-101
HMPJ-2100	Audio (Hand Mike) Jack Panel Qty 4	866-0115-101
TCP-2100	Tuning and Control Panel, Qty 3	822-2211-101
HFS-900D	High Frequency Data Radio, Qty 2	822-0990-120
CPL-920D	HF Coupler, Qty 2	822-0987-120
VHF-2100	VHF Com Radio, Qty 3	822-1287-101
SRT-2100	Satellite Receiver Transmitter	822-1287-101
DLNA-2100	Digital Low Noise Amplifier	866-5013-101
HGA-2100	High Gain Antenna	866-5015-101
TSA-2100	ATC / TCAS Antenna, Qty 2	866-0020-101
ISS-2100	Integrated Surveillance System, Qty 2	822-2120-001
DRV-2120	Weather Radar	822-2131-101
RTM-2100	Receiver Transmit Module, Qty 2	822-2127-101
WFA-701X	Antenna Pedestal and Flat Plate	822-2126-xxx
AMP-2100	Area Microphone Panel	866-0082-101
EAFR-2100	Enhanced Area flight Recorder, Qty 2	866-0084-101
RIPS-2100	Recorder Independent Power Supply	866-0085-101
TCM	Trust Control Module	4260-0029-2
SCM	Speed- Brake Control Module	4260-0031-1

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EQUIPMENT	NOMENCLATURE	PART NUMBER
FCM	Flap Control Module	4260-0030-1
AFCM	Alternate Flap Control Module	4260-0036-1
	Parking Brake / Alternate Pitch Trim Module	4260-0037-1