

# Publications and Training Solutions

## Course Syllabus: 523-0818061

**COURSE TITLE:** SATCOM Iridium Communications  
Level 1 Operations and Flight Line Maintenance

**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 training to perform operational checks, BITE test, and troubleshooting of the line replaceable units (LRUs) identified in the section titled EQUIPMENT TYPE by nomenclature and part number, including associated peripheral equipment identified as deliverable hardware.

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

1. Have an overall understanding of the Iridium equipment and the Iridium Network.
2. Identify system components and the operational characteristics of each LRU.
3. Have an overall understating of the Iridium System installation and service activation requirements.
4. Perform operations with components, display screens and menus, directory pages, voice operations, configuration, monitoring and operational tests.
5. Perform maintenance with components concerning configuration, BITE system status and menus, fault codes, logging screens and troubleshooting.

**COURSE LENGTH:** 2 Days

**TRAINING DEVICES:** Line Replaceable Units (LRUs)

1. As identified in the section titled EQUIPMENT TYPE by nomenclature and part number, including associated peripheral equipment

# Publications and Training Solutions

## Course Syllabus: 523-0818061

### TRAINING MATERIALS:

1. PowerPoint Presentation with LCD/Box Light projector
2. Student Guide – Flash drive (pdf) – Training Presentation
  - ARINC 600 Pin-Out Chart
  - File Download/Upload – Log Capture
  - Downloading Internal Log Capture
  - Troubleshooting Flow Charts
  - Appendix A - D

### REFERENCES:

1. IRT-2110/IRT-2120 Iridium Receiver Transmitter Installation and Operation Manual 523-0818093
2. IRT-2110/IRT-2120 Iridium Communications System Operator's Guide 523-0818115
3. ICS-120A/ICS-220A Iridium Communications System Installation and Operations Manual 523-0824093
4. ICS-120A/ICS-220A Iridium Communications System User's Guide 523-0824094

# Publications and Training Solutions

## Course Syllabus: 523-0818061

### COURSE OUTLINE

#### **0. Welcome & Introductions**

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

#### **1. Chapter 1 – Iridium Network Familiarization**

- A. Introduction to Iridium
  - i. Iridium Satellite Constellation
  - ii. Iridium Communications
- B. Iridium System Operations
- C. Advantages of an Iridium System
- D. Differences Between Iridium and INMARSAT

#### **2. Chapter 2 – ACARS via Iridium**

- A. ACARS Brief Overview
- B. ACARS via Iridium Short Burst Data (SBD)
- C. Service and Routing Options

#### **3. Chapter 3 – FANS, ADS-B, ADS-C, CPDLC**

- A. FANS – Brief Overview
- B. ADS-B – Brief Overview
- C. ADS-C – Brief Overview
- D. CPDLC – Brief Overview

#### **4. Chapter 4 – Iridium Theory of Operation**

- A. System Overview
- B. Equipment
- C. Features and Functions
- D. Station Features Summary
- E. I/O Features and Functions
- F. ARINC 429 Features and Functions

# Publications and Training Solutions

## Course Syllabus: 523-0818061

G. Directories

### 5. Chapter 5 – Installation and Service Activation

- A. Installation Requirements
- B. Pin-Out Configuration
- C. Antennas
- D. CIM Module
- E. Installing SIM cards into CIM/ICM Module
- F. Network Connectivity Requirements
- G. Installation System Requirements
- H. Service Activation – Voice/Data – SBD
  - i. MSISDN and IMEI
- I. Data Files

### 6. Chapter 6 – Unit Configuration and Monitoring

- A. Requirements
- B. Basic Configuration Requirements
- C. Configuring for ACARS/MCDU Dialing
- D. Call Routing
- E. Saving a Configuration
- F. Downloading Configuration
- G. Uploading Data Files
- H. Monitoring via Utility
- I. Configuring for SBD H/W Redundancy

### 7. Chapter 7 – User Interaction and Unit Configuration

#### **Training Notice:**

**The MCDU Screens Presented Are Representative Of What Can Be Displayed. Information Shown Can Vary, Dependent On The Configuration Installed.**

- A. Requirements and Navigating MCDU Screens
- B. MCDU Menu Layout
- C. MCDU Main Menu and SAT-Phone Page 1

## **Publications and Training Solutions Course Syllabus: 523-0818061**

- i. SAT-1
- ii. SAT-2
- iii. History
- iv. Directory
- D. SAT-Phone Page 2
  - i. Log
  - ii. Directory Detail
  - iii. BITE
  - iv. Config
- E. MCDU Calling
  - i. Making and Receiving Calls
  - ii. Conference Calls
  - iii. DTMF Calls
- F. Modifying Directories
- G. SAT NUM Entry
- H. User ORT
- I. Secure ORT
- J. System Monitoring
- K. Call Routing
- L. SBD H/W Redundancy
- M. Installation Examples

### **8. Chapter 8 – Troubleshooting**

- A. Troubleshooting Stages
  - i. Stage 1 – Exterior Indications
    - 1. ICS LED – CIM LED – Service Activation – Analog Handset – MCDU – ACARS
  - ii. Stage 2 – Utility Program

## Publications and Training Solutions Course Syllabus: 523-0818061

iii. Stage 3 – In-Depth

B. ARINC Rear Connector

### 9. Chapter 9 – Summary – Review - Critique

A. Test

B. Critiques

#### EQUIPMENT TYPE:

<b>EQUIPMENT</b>	<b>NOMENCLATURE</b>	<b>PART NUMBER</b>
Iridium Transceiver	ICS 120A/ IRT-2110	822-2834-002
Iridium Transceiver	ICS 220A/ IRT-2120	822-2835-002
External CIM Module	ICM 2100	822-2836-001
CIM Install Kit (Cable, CIM Interface)	ICM Install Kit	983-9629-001