

Publications and Training Solutions

Course Syllabus: 523-0824725

COURSE TITLE: ICS-300 Iridium SATCOM System
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: 3 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

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TRAINING MATERIALS:

1. PowerPoint Presentation with LCD/Box Light projector
2. Student Guide – Flash drive (pdf) – Training Presentation
 - ARINC 600 Pin-Out Charts
 - Troubleshooting Flow Charts
 - Appendix A - D

REFERENCES:

- | | |
|---|-------------|
| 1. ICS-300 Iridium SATCOM System Installation Manual | 523-0824511 |
| 2. ICS-300 Iridium SATCOM System User's Guide | 523-0824512 |
| 3. ICS-300 Iridium Transceiver/Satellite Data Unit and SCM-300
SDU Configuration Module Component Maintenance Manual | 523-0824510 |
| 4. ICS-300 Iridium SATCOM System ORT Configuration User's Guide | 523-0824513 |

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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

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- F. ARINC 429 Features and Functions
- G. Directories

5. Chapter 5 – Installation and Service Activation

- A. Installation Requirements
- B. Pin-Out Configuration
- C. Antennas
- D. SCM Module
- E. Network Connectivity Requirements
- F. Installation System Requirements
- G. Service Activation – Voice/Data – SBD
 - i. SAT-Phone and IMEI
- H. Data Files

6. Chapter 6 – Unit Configuration – ORT Tool

- A. ORT Tool
- B. Configuration Settings – User ORT
- C. Configuration Settings – Secure ORT
- D. ORT Tool Default Configuration
- E. ORT Tool File Management
- F. Dataload to ICS-300

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
 - i. SAT-1
 - ii. SAT-2

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- iii. Directory

- D. SAT-Phone Page 2

- i. Log

- ii. Part Number

- iii. Call History

- iv. BITE

- v. Config

- E. MCDU Calling

- i. Making and Receiving Calls

- ii. Conference Calls

- iii. DTMF Calls

- F. Modifying Directories

- G. User ORT

- H. Secure ORT

- I. System Monitoring

- J. Installation Examples

8. Chapter 8 – Troubleshooting

- A. Troubleshooting Stages

- i. Stage 1 – Exterior Indications

- 1. ICS LED – SCM LED – Service Activation – Analog Handset – MCDU – ACARS

- ii. Stage 2 – ORT Tool

- iii. Stage 3 – In-Depth

- B. ARINC Rear Connector

9. Chapter 9 – Summary – Review - Critique

- A. Test

- B. Critiques

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EQUIPMENT TYPE:

EQUIPMENT	NOMENCLATURE	PART NUMBER
Iridium Transceiver /Satellite Data Unit (SDU)	ICS-300	701-10300-00
SDU Configuration Module	SCM-300	701-10600-00