

Publications and Training Solutions

Course Syllabus: 523-0818350

COURSE TITLE: SRT-2000-X Satellite Data Unit (SDU)
Level II Repair (SRU 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 SRT-2000. The SRT-2000 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: 5 Days

TRAINING DEVICES:

1. Equipment (LRU's):
 - a. SRT-2000-X
2. Special Test Equipment (as applicable):
 - a. RFT-1000 Automated Test Set 822-0573-XXX
 - b. Test Unit Adapter (TUA) and various cables, etc. 830-7020-001

TRAINING MATERIALS:

1. PowerPoint Presentation with LCD/Box Light projector
2. Student Guide – Flash drive (pdf) – SRT-2000 Training Presentation
Information Sheets
Assignment Sheets

REFERENCES:

1. SRT-2000 CMMPL 523-0780123
2. SAT-2000 Satellite Communications System Operator's Guide 523-0780363

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COURSE OUTLINE

0. Welcome & Introductions

- A. Course Overview
 - i. Welcome
 - ii. Student Registration
 - iii. Student Policies and Procedures

1. Chapter 1 – Course Overview

- A. Introduction to SRT-2000 SATCOM Receiver/Transmitter
- B. Theory of Operation
- C. Overall Block Diagram
- D. Subassembly Block Diagram
- E. Maintenance
- F. Review/Critique

2. Chapter 2 – Introduction to SRT-2000

- A. Purpose of Equipment
- B. Equipment Specifications/Description
- C. Controls and Indicators
- D. Rear Connector Pin Functions
- E. SATCOM System Theory
 - i. Ground Earth Station (GES)
 - ii. Aircraft Earth Station (AES)
 - iii. INMARSAT Satellite Network
 - iv. System Block Diagram

3. Chapter 3 – SRT-2000 Block Diagram Theory of Operation

- A. Overall Block Diagram
- B. Simplified Block Diagram
- C. Functional Block Diagram

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

A. Interconnect	A1
B. Sideboard	A2
C. Voltage Controlled Oscillator (VCO)	A3
D. Up/Down Convertor	A4
E. Channel Modules	A5 – A10
F. System Processor	A11
G. CEPT-E1	A12
H. ARINC 429 Processor	A13
I. Power Supply	A14
J. High Stability Reference Phase Locked Loop (HSR PLL)	A15
K. High Power Amplifier (HPA)	A16

5. Chapter 5 – Maintenance

- A. Self-Test/Built-In Test Equipment
 - i. LRU Front Panel Self-Test Button
 - ii. BITE Testing using MCDU's
- B. Performance Testing
 - i. Verification of Operational Status
 - ii. Provides Functional Area Failures
- C. Data Loading Procedures
 - i. Operational Software
 - ii. Owner's Requirements Table (ORT) Software
- D. Troubleshooting
 - i. Fault Isolation Diagrams
 - ii. Maintenance Aid Diagrams
 - iii. Alignment/Adjustment Procedures (as required)

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- E. Assembly/Disassembly
 - i. Precautions and Techniques
 - ii. Procedures

6. Review/Critique

EQUIPMENT TYPE:

EQUIPMENT	NOMENCLATURE	PART NUMBER
SATCOM Receiver-Transmitter	SRT-2000-1	822-1404-001, -301/302/303, -401/402
	SRT-2000-2	822-1346-001, -301/302/303, -401/402
	SRT-2000-3	822-1405-001, -301/302/303, -401/402
	SRT-2000-4	822-1348-001, -301/302/303, -401/402
	SRT-2000-5	822-1406-001, -301/302/303, -401/402
	SRT-2000-6	822-1349-001, -002, -301/302/303, -401/402