

Radio Control & Audio Distribution System

RCADS

The Radio Control and Audio Distribution System (RCADS), is designed to assist in the management of the heavy communications workload found in aircraft environments. RCADS is an airborne system for the distribution of audio between mission crew and any radio transceivers attached to the system. RCADS provides facilities for the use of both secure (encrypted) and non-secure radio channels. Each user is provided with the ability to mix any of the received audio channels and to select one channel for transmission.



RCADS Features:

- Management of simultaneous RED/BLACK communications
- Control and Management of up to 12 radios
- Interface to Intercom Systems
- Low Power consumption
- Unit and system level Built-In-Test (BIT)
- Control and Databus Interfaces
 - Serial
 - Mil-Std-1553B
 - Ethernet
- Dual system redundancy
- MCRS LRU interchangeability
- System expandability giving growth for up to 30 users
- High level of system reliability
- Backup mode for emergency operation

RCADS contains two types of LRU the RCADS Control Unit (RCU) and the Mission Crew Radio Selector (MCRS). An RCADS system comprises one RCU, multiple MCRS units, and the interconnections between them.

The system provides Mil-Std-1553 and Ethernet 100Mbps high level data connections between the RCU and external equipment and has the ability to route data between these interfaces as required.



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RCADS Control Unit (RCU)



Mission Crew Radio Selector (MCRS)

Characteristic	Performance
Max No. of Transceiver Audio Channels	12
Single Transceiver Audio Channels	8
Dual Transceiver Audio Channels	4
Transceiver audio output levels	Maximum: 3V rms
Transceiver audio input levels	Maximum: 6V rms
Transceiver audio input impedances	150Ω, 300Ω, 600Ω
Discrete Inputs	Radio Present, Clear/Secure
Discrete Outputs	Press to Talk (PTT) to radio.
RCU to MCRS Data Communications	Two 64kbps HDLC Serial Data Channels
Headset MIC audio input level	Typical: 8mV rms
Headset TEL audio output level	Maximum: 3V rms into 600Ω
Number of MCRS Units per System	Up to 16, Typically >5.
Human Machine Interface	Dedicated switches for: <ol style="list-style-type: none"> 1. PTT 2. Transmit Transceiver Select 3. Normal Operation or MCRS Bypass (Normal/CCS) 4. Multiple Function Rotary Encoder 16-key keypad Four line LCD Display SECURE/ON-AIR/RING FAULT indicators Power On and Active Sub-System Indicators on RCU.
Survivability	Dual Redundant RCU Dual redundant TDM bus between RCADS LRUs Common MCRS with automatic configuration based on installation location.
Testability	Multiple built in test (BIT) modes: PBIT (Power ON BIT) CBIT (Continuous BIT) IBIT (Interruptive BIT) ABIT (Audio BIT) including user audio loop back.
Power Supply	RCU; 96-120Vac 46-440Hz 200W MCRS; 22-32Vdc 10W
Environmental	Def Stan 00-35
EMC	Def Stan 59-41

RCADS Functional Characteristics

