



Airborne Software Defined Radio (SDR)
for Network Centric Operation
ARC 840D



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ARC-840D is an advanced multiband, multimode Software Defined Radio (SDR) for airborne communications. It transfers data, voice and video, either in networked or point-to-point links. The system provides fully secure and immune communications between airborne, ground and naval platforms, and connects military and civil agencies. ARC-840D enables multidomain Network Centric Operations (NCO), achieving mission-critical situational awareness among multidomain forces. This includes high-bandwidth video via an embedded high-performance video module that interfaces directly with the pilot's multi-function displays (MFDs). The system fully complies with the Joint Tactical Networking Center's latest Software Communications Architecture (SCA) specification, supporting advanced network applications.

Designed to be highly adaptable and modular, ARC-840D is flexible in implementing new and customized waveforms, thereby supporting future-proof interoperability. The system fits into a standard 1/2 ATR slot, and is easily integrated into all aircraft types, including fighter jets, transport and special mission aircraft, helicopters and UAVs. It can replace legacy communication systems efficiently due to its compact chassis and flexible software architecture. ARC-840D is a member of ELTA's airborne communications system family. ELTA has delivered hundreds of secure and immune software defined radios with decades of proven reliability and operational experience.

KEY FEATURES

- Supports effective collaboration between diverse air, naval and ground forces
- Fully compliant with the latest SCA standard for maximal compatibility with current and future applications
- Supports legacy networks and applications provided by ELTA or third parties
- Modularity – equipped with two replaceable RF heads (any combination of V/UHF or L- BAND), directly accessible without the need to open the radio chassis
- Independent power supplies for digital core and RF heads for improved performance and redundancy
- Frequency-hopping master-less Mobile Ad-hoc Network (MANET) waveform



2-CH
Transceiver



Control
Box

TECHNICAL SPECIFICATIONS

General	• Power supply: +28VDC
Characteristics	• Form factor: Standard 1/2 ATR. W/L/H: 124/418/202mm • Power Consumption: Two RF Heads 250W (Tx mode), 120W (Rx mode) • Weight: 10kg max with 2 RF head configuration. 13 Kg max with full configuration • Standards compliance: MIL-STD-810G, MIL-STD-461F, MIL-STD-704D/E/F
Frequency Range	• VHF – 30-88MHz for AM/FM • VHF – 108-174MHz for AM/FM and networking • UHF – 225-512MHz for AM/FM and networking • L-Band – 960-1240MHz for networking
Channel BW	Up to 4/8MHz
Frequency Tuning	VHF/UHF: 25/12.5/8.33 (ATC only) kHz increments. Software programmable L-Band: 125kHz increments. Software programmable
Output Power	AM: 10W nominal, FM: 15W nominal, Data/Network: 50W, user adjustable
Waveforms & Network	• Legacy AM/FM for analog voice • $\pi/4$ DQPSK MANET (Master-less network) NB/WB for data, voice and video with QoS • Relay capabilities: Back to Back (inter-channel AM-FM/Data/IF), Multi-hop Network relay • IP Transparency networks • Ready for custom/sovereign WFs and SW applications
Data Rate	Up to 2Mb/s for digital modes
Video	Analog/Digital Video Processor with Video Codec
Security	• COMSEC: built-in AES-128/256 encryption; interoperable with external encryption • TRANSEC: frequency hopping support
Time and Navigation	Built-in multi standard GNSS with rubidium clock as backup in case of unavailable GNSS reception
Interfaces	MIL-STD-1553/ARINC, Up to 1G Fast Ethernet, USB, RS-232/422/485, Analog/Digital Video In/Out, Analog Audio In/Out, RF ports, GNSS Antenna

