

RT-1939(C)/ARC-210 – GENERATION 5

As communication necessities evolve, so do we.



In the field or in the midst of a crisis, reliable communication is a key to your success. The Rockwell Collins RT-1939(C) (ARC-210, Generation 5) is the most advanced Receiver-Transmitter (RT) in our proven ARC-210 communication system family. Rockwell Collins has supplied more than 22,000 AN/ARC-210 radios worldwide on over 180 platforms, making them the accepted choice for multiband, multimode communications. Specifically, the RT-1939(C) has been designed to better meet your needs and conform to Software Defined Radio (SDR) tenets and architectures.

Versatility is key in today's battlespace and the RT-1939(C) adapts by providing superior performance in the transfer of networked or point-to-point data, voice and imagery. In response to the world's constantly evolving transmission and communication security needs and to comply with the National Security Agency's (NSA) Cryptographic Modernization Initiative, the RT-1939(C) is the first military airborne transceiver to provide an embedded, fully programmable INFOSEC capability. In the air and on land, military forces stay connected and civil agencies supporting Homeland Security and disaster relief stay linked with the RT-1939(C).

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Building trust every day

The RT-1939(C) supplies full form, fit, function (F3) and integration replacement for existing ARC-210 RTs. In addition, warfighters and communicators will experience the following new capabilities.

- > Frequency extension to cover 30-941 MHz
- > MIL-STD-188-220D and MIL-STD-2045-47001D networking and data transfer
- > Enhanced SINCGARS Improvement Program (SINCGARS ESIP)
- > Second-generation Anti-jam Tactical UHF Radio for NATO (SATURN)
- > Joint Precision Approach Landing System (JPALS)
- > External Ethernet data connectivity via dedicated interface
- > LPC-10 and MELP vocoders
- > Growth for evolving capabilities, including MUOS (Mobile User Objective System), IW (Integrated Waveform) for UHF SATCOM, APCO 25, Intelligence Broadcast System (IBS), and Automated Identification Systems (AIS)

Key features

- > LOS data transfer rates up to 80 kb/s in a 25 kHz channel
- > Software reprogrammable in the field via Memory Loader/Verifier Software (MLVS)
- > Direct replacement for RT-1794(C)/RT-1824(C)/RT-1851A(C) and supports all ARC-210 legacy waveform/functions
- > Support structure including logistics, training, test sets, PC based loader and controller
- > Control via 1553, full size or half size remote control
- > Embedded software programmable cryptography
- > Multiwaveform software architecture
- > Extensible module interconnect for future scalability and growth
- > Interoperable with a variety of high power amplifiers, low noise amplifiers, tunable filters and interference cancellation systems
- > Fully compliant to ICAO Annex 10 and ED-23B, including FM immunity
 - 8.33 kHz operation

Technical specifications

Frequency range

- > Coverage: 30-941 MHz
- > VHF 30-88 MHz close air support
- > VHF 108-118 MHz navigation
- > VHF 118-137 MHz air traffic control
- > VHF 137-156 MHz land mobile
- > VHF 156-174 MHz maritime
- > UHF 225-512 MHz military/homeland defense
- > UHF 806-824, 851-869, 869-902, 935-941 MHz (public safety bands)

Channel spacing

5, 6.25, 8.33, 12.5, 25 kHz and software definable

Tuning

1.25 kHz increments

Transmit output power

- > AM: 10 W-15 W (30-400 MHz)
- > FM: 15 W-23 W (30-400 MHz)
- > FM: Not less than 5 W (400-512, 806-824, 851-869, 896-902, 935-941 MHz)

Carrier modulation

AM, ASK, FM, MSK, FSK, CPM, D8PSK, BPSK, SOQPSK, DEQPSK, QPSK, PM, BEAM

Frequency stability

0.03 PPM

Receive sensitivity (10 dB SINAD)

- > AM: -103 dBm (30-400 MHz)
- > FM: -108 dBm (30-400 MHz)
- > FM: -106 dBm (400-941 MHz, 12 dB SINAD))

Embedded COMSEC functionality

- > Embedded TRANSEC KGV-10
- > KY-58
- > KYV-5 (ANDVT)
- > KY-100
- > KG-84A/C
- > KGV-11
- > Thornton Smart Fill
- > Fascinator (FED-STD-1023)
- > MEDLEY
- > Advanced Encryption Standard (AES)
- > Programmable to meet future Cryptographic Modernization Initiative needs

Data ports

- > MIL-STD-1553B
- > MIL-STD-188-114A
- > RS-232
- > Ethernet

Audio ports

- > 150/600 ohm
- > High impedance

Control

- > MIL-STD-1553B
- > RS-422

Input power

28 VDC per MIL-STD-704D/E



Supported waveforms

SATCOM

- > MIL-STD-188-181B (dedicated)
- > MIL-STD-188-182A (5 kHz)
- > MIL-STD-188-183A (25 kHz)

Line-of-Sight (LOS)

- > Link 11 (with external audio interface)
- > SINCGARS & ESIP
- > HaveQuick
- > HaveQuick II
- > SATURN
- > Link 4A
- > JPALS
- > MIL-STD-188-220 B/C/D (Tactical Internet specification)
- > BEAM Line of Sight Technology (BLT)
- > Scan (4 channel)
- > LOS: AM voice/data, FM voice/data
- > ATC (8.33 kHz and 25 kHz channels) with embedded FM immunity
- > CASS/DICASS
- > Auxiliary receiver is tunable 30-512 MHz and provides standard 121.5 MHz and 243 MHz guard channels

Emergency beacon and GPS

- > GPS interface

Physical parameters

- > Size: 5.6 in H x 5.00 in W x 9.85 in D
- > Weight: 12.2 lbs (maximum)

Upgrades

Supports upgrades for:

- > Mobile User Objective System (MUOS)
 - FDWX capability
- > Integrated Waveform (IW)
- > Software Defined Radio (SDR) Waveforms
- > MELP-E
- > Subnet Relay (SNR) improvement
- > FDWX capability

Reliability

- > NLT 3400 hrs AIC
- > NLT 1050 hrs AUF

Environmental specifications

- > Temperature operating: -40 degrees C to +70 degrees C (intermittent to +86 degrees C)

- > Storage: -54 degrees C to +95 degrees C
- > MIL-STD-810F
- > Altitude up to 70,000 ft

EMI specifications

MIL-STD-461E

TEMPEST compliance

Per NSA requirements

General attributes

- > Initiated Built-In-Test (BIT) (over 100 discrete tests)
- > >95% fault detection and isolation
- > Continuous built-In-test (real time monitoring of critical functions)
- > Black single point fill (DS-101) of up to 10 radios from one fill port
- > Red single point fill (DS-101) of up to 10 radios from one fill port
- > Black fill data
 - HaveQuick & SATURN WOD/MWODS
 - SINCGARS & ESIP Hopsets, TRANSECS and Lockouts
 - Presets
 - 25 single channel
 - 25 ECCM
 - 10 DAMA SATCOM
 - 5 half-duplex
- > Red fill data
 - COMSEC and DAMA order wire keys

Ancillary equipment

Improvements to ancillary equipment are planned, but the RT-1939(C) will also operate with the currently fielded ARC-210 equipment.

- > Full size remote control: C-12561A
- > Half size remote control: C-12719
- > PC based 1553 controller
- > Link 11 mount: 994M-4/4A
- > Field reprogrammable load kit
- > Isolated and low profile mounts: MT-4935 and MT-6567
- > High power UHF amplifier: AM-7526/A
- > High power VHF amplifier: AM-7189A
- > LNA/diplexer: MX-11641
- > LNA/diplexer with HI/LO relay: MX-11745

Low Rate Initial Production (LRIP) in FY 2009 followed by Full Rate Production (FRP) in FY 2010.

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.



Building trust every day.

Rockwell Collins delivers smart communication and aviation electronics solutions to customers worldwide. Backed by a global network of service and support, we stand committed to putting technology and practical innovation to work for you whenever and wherever you need us. In this way, working together, we build trust. Every day.

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