

# VHF-2100 high speed Multi-mode Data Radio



## Fully digital voice and data, and analog capability.

Leading the industry in its class, the Rockwell Collins VHF-2100 is a multi-mode, very high frequency (VHF) data radio that is low in weight and high on reliability. Designed with tomorrow's airspace in mind, the VHF-2100 provides fully digital voice and data radio capabilities while still delivering traditional analog abilities. And we equipped the VHF-2100 with state-of-the-art technology, providing a path to future capabilities by enabling faster communications to meet next generation requirements.

## KEY FEATURES

- ▶ ARINC 750 and 716 compatible
- ▶ VDL Mode 3 Capability
- ▶ DO-160D Change 3 compliant
- ▶ DO-178B Level C compliant
- ▶ DO-281 and ED-92 VDL Mode 2 MOPS
- ▶ DO-271B VDL Mode 3 MOPS
- ▶ Meets ICAO Annex 10 requirements for FM immunity
- ▶ ARINC 604 OMS/BITE Interface
- ▶ ARINC-615-3 Data Load Capable
- ▶ Dual bandwidth IF filters for 25 kHz and 8.33 kHz operation
- ▶ Ultra low phase noise frequency synthesizer with 5 PPM stability
- ▶ Automatic alignment when used with RFT-1000 ATE
- ▶ Extended Frequency version available to 151.975 MHz

## EQUIPPED FOR A CHANGING ENVIRONMENT

Airspace frequency congestion, Controller-Pilot Data Link Communications (CPDLC) initiatives, VDL Mode 3 and VDL Mode 4 all contribute to uncertainty about tomorrow's airspace needs. Rockwell Collins has relieved that uncertainty with the VHF-2100. The system is designed to minimize those risks with the changing VHF environment. With additional memory, increased microprocessor power and advanced RF technology, the VHF-2100 is the multi-mode VHF mission-ready radio available today and ready for tomorrow.

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## EASILY INTEGRATES

Rockwell Collins' VHF-2100 combines well with the CMU-900 digital link router to create an integrated Communications, Navigation, Surveillance/Air Traffic Management (CNS/ATM) communication environment, featuring upgradeable CPDLC that includes Future Air Navigation Systems (FANS), ACARS, VDL Mode2 and growth to ATN. VHF-2100 also supports existing installations and is compatible with VHF-700/700B, VHF-900/900B and VHF-920. The system is compliant with ARINC 716 for 25 kHz and the European standardized 8.33 kHz AM-DSB voice operation from 118.000 to 136.992 MHz. Compliance with ARINC 750 ACARS digital data communications at 2,400 bps AM-MSK for Mode A is also provided.

## MODE 2 AND MODE 3 COMPLIANT

Rockwell Collins' VHF-2100 is VDL Mode 2 ARINC 750 compliant providing high-speed, air-to-ground digital data communications at 31,500 bps D8PSK CSMA modulation. VDL Mode 2 provides a significant capacity increase over the current Airborne Communications Addressing and Reporting System (ACARS).

With VDL Mode 3, VHF-2100 delivers simultaneous digital voice and data communications using Time Division Multiple Access (TDMA) at 31,500 bps D8PSK modulation. The necessary digital voice Vocoder, approved by ICAO, is integrated into the radio.

## SPECIFICATIONS

Size	3 MCU per ARINC 600
Weight	8.30 lbs (3.76 kg) maximum
Power	27.5 V dc, 7.5 A maximum transmit, 0.8 maximum receive
Frequency range	118.00 to 136.99167 MHz
Channel spacing	8.33 kHz or 25 kHz

## Operating modes

ARINC 716	Analog voice Analog data 2,400 bps AM MSK ACARS (using external modem)
ARINC 750	Mode A: analog data 2,400 bps AM MSK ACARS (using internal modem) Mode 2: 31.5 Kbps D8PSK Mode 3: 31.5 Kbps D8PSK TDMA Mode 4: 19.5 Kbps GFSK STDMA (future upgrade)
Cooling	ARINC 600 with cooling air 20% duty cycle without cooling air
Temperature	-55°C to +70°C operating
Altitude	50,000 ft

## Receiver characteristics

Sensitivity	-107 dBm for 6 dB (s+n)/n -98 dBm for 1 x 10 <sup>-3</sup> BER (Modes 2/3)*
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## Selectivity

25 kHz channels	6 dB maximum attenuation at ±8 kHz 60 dB minimum attenuation at ±16.67 kHz
8.33 kHz channels	6 dB maximum attenuation at ±2.75 kHz 60 dB minimum attenuation at ±7.35 kHz
Audio power output	Adjustable from 50 mW to less than 5 mW into 600 ±20% ohms, short circuit protected
SELCAL/data output	1 V RMS for 1,000 μV 80% modulation at 1,800 Hz adjustable

## Transmitter characteristics

Output power	25 W minimum DSB-AM operation 18 W minimum D8PSK operation
Frequency stability	±0.0005%
Modulation level	0.25 V RMS input at 1,000 Hz will modulate the transmitter at least 90% Data/SELCAL and microphone inputs are adjustable.
Speech processing	Greater than 20 dB of compression (automatic volume control)

\*Equivalent to 0.157 block failure rate For 249 bytes (Mode 2)

## 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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