RC8

ARQ Server & IP Controller

DATASHEET



Key Features

- **Embedded –** STANAG 5066 ARQ Server, JITC certified, Edition 3 compliant, support for Bypass Operation
- **Embedded –** IP & COSS Clients
- **Embedded –** STANAG 4538 Proxy
- **Email, Chat & Messaging –** via SIS Protocol
- **Deployment –** ship-borne & shore station (normal & split-site)
- **Operation –** Point-to-point and Broadcast
- **Data Modems –** SSB (≤9k6 bps), 2-ISB (≤19k2 bps)
- **ALE –** 2G & 3G with ALM
- **Menu-Driven control & configuration**
- **DTE port –** Synchronous / Asynchronous
- **Ethernet LAN interfaces –** for Control and IP-based Data services
- **Asynchronous Serial Port –** for ACP-127/COSS
- **Factory Presets –** lower integration effort

Data Interfaces

The *RC8* features serial and Ethernet interfaces for data and external GPS.

Various external *RapidM* or third party clients can bind with the 5066 server or the 4538 Proxy thus allowing multiple applications to concurrent access to the 'radio line' - ARQ Server / Encryptor / Modem / Transceiver. A *synchronous balanced DCE port* is built into the *RC8* unit to interface with a bulk encryption (COMSEC) unit.

RC8 Product Overview

The *RC8 ARQ Server & IP Controller* is a purpose-built platform for Automatic Repeat reQuest (ARQ) functions used in maritime and strategic long-range (BLOS) communications systems.

In conjunction with the *RM8* Software Defined Modem & ALE and external bulk/serial encryptor, the *RC8* provides robust, secure data and position communication capability over HF links even in severely degraded channels conditions. This fully integrated, qualified system ensures optimal performance and functionality and offers peace-of-mind stemming from *RapidM's* commitment to long-term product availability and support.

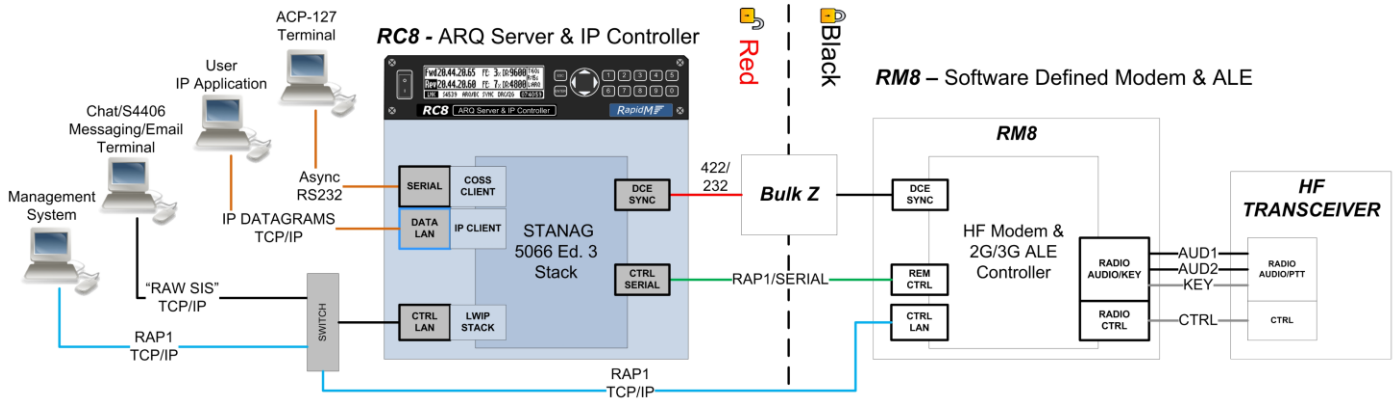
Services include Email, messaging, chat and IP data transfer.

Description

The *RC8* is designed for 19-inch rack installations with all standard interfaces necessary for maritime shore and ship-borne installations.

The *RC8* is capable of hosting a *STANAG 5066* (Edition 3 compliant) ARQ server for error-free data transfer. The STANAG 5066 IP and COSS Clients are embedded in the *RC8*. The *RC8* can be used in Bypass Mode for legacy (ACP-127/ COSS) operation. Alternatively the *RC8* can host a *STANAG 4538 Proxy* for secure data transfer using the STANAG 4538 xDL modes provided in the *RM8*.

The *RC8* can be used in Fixed Frequency or Multi Frequency networks. For the latter ALE 2G or 3G (Fast Link Setup/FLSU) channel access function is utilized for link establishment and link maintenance.



DIGITAL RADIO MODEM TECHNOLOGY

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STANAG 5066 ARQ	
Modes	○ ARQ, non-ARQ (Broadcast) & EMCON (Emission Control) Modes
Clients	○ Embedded STANAG 5066 COSS (for ACP-127 Messaging) and IP Clients ○ Compatible with STANAG 5066 CFTP, HMTP, HFPOP and COSS Clients ○ Compatible with POP3 & SMTP Servers (Email) – SMTP, RFC 2821, Outlook Email
Features	○ Complaint to STANAG 5066 Edition 3 ○ Non-ARQ Data Transfer: Data is sent out, without any form of acknowledgement. ○ Used for broadcasting and for sending data to single stations in EMCON. ○ ARQ Data Transfer: Used for sending data to a single radio that is not in EMCON mode. ○ SIS Protocol: The RC8 STANAG 5066 server supports the RAW SIS protocol via TCP/IP. ○ Multiplexing: The RC8 enables multiple applications to simultaneously send/receive data. ○ Data Priority: Each unit data has a priority value. Higher precedence data is sent first. ○ Collision avoidance and recovery: The RC8 provides a listen-before-transmit function. ○ Data Rate Change (DRC): The RC8 adjusts the transmitter data rate automatically. ○ Fixed Frequency network or Multi Frequency network support. ○ Interoperability: Other STANAG 5066 products, e.g. RC66, BFEM66, 4KMA, RIFAN, OMAR HD.
STANAG 4538 Proxy	
Modes	○ ARQ, non-ARQ (Broadcast) & EMCON (Emission Control) Modes
Clients	○ Embedded STANAG 5066 COSS (for ACP-127 Messaging) and IP Clients ○ Compatible with STANAG 5066 CFTP, HMTP, HFPOP and COSS Clients ○ Compatible with POP3 & SMTP Servers (Email) – SMTP, RFC 2821, Outlook Email
Features	○ Non-ARQ Data & ARQ Transfer ○ SIS Protocol: The RC8 STANAG 4538 server supports the RAW SIS protocol via TCP/IP

General Specifications			
Size & Weight	○ Width: 212.2 mm ○ Depth: 225.6 mm	○ Height: 41.1 mm (excl. front panel) ○ Height: 44.1 mm (incl. front panel)	○ Weight: 2.2 kg
Environmental Specifications	Climatic	○ Storage/Operation: -30 ˚C to +70 ˚C (MIL-STD-810F) ○ Humidity: 90% non-condensing at 30 ˚C (MIL-STD-810F)	
	Mechanical	○ Vibration: Surface Ship, Marine Vehicles, Aircraft, Min. Integrity (MIL-STD-810F) ○ Shock: 40 G, 11 ms (MIL-STD-810F	
	EMC	MIL-STD-461E, CE Marking -Directives 73/23/EEC and 89/336/EEC	
	MTBF	> 40,000 hours	
Installation	Compact design: The unit occupies a width less than ½ of an 1U 19” rack slot		
Power Consumption	Operational < 10 Watt (Apparent power)		
Presets	Factory and Custom Presets		

Interfaces	
DCE (Data) Port (DB25M)	RS-422 balanced, RS-423, RS-232 unbal., MIL-STD-188-114 (interoperable), EIA 530A compliant. Half & Full Duplex operation, Sync, Std. and High-speed Async modes. Connects to COMSEC.
Ethernet Data Port (RJ45)	IP Packet Data: 10/100 Base T (IEEE 802.3U compatible), embedded TCP/IP Stack Protocol: RAW SIS IP packet data. Connects to application PCs / servers / laptops.
Remote Control/ GPS Port (DE9M)	Remote Control Pins: RS-485 Multi-drop, RS-422 balanced or RS-232 Protocol: Control Protocol (RAP1 + RIPC, ASCII S5066 Annex E). Connects to *RM8 SDM*
	External GPS Control Pins: RS-232 (nominally input). Data Rate: 300 to 19200 bps. PPS line: RS 232/422 (NMEA) or TTL. Time reference, [position function]. Connects to external GPS.
GPS Antenna (MCX)	Optional Built-in GPS receiver: Time reference for time-based functions, [position function].
Serial Data (2) & Audio Ports (2) (DB25M)	Asynchronous Data (2 ports): RS-232, up to 115200 bps, 1/2 stop bits, 5/6/7/8 bit data Support for: ITA-2, ITA-5 for ACP-127 support. Connects to ACP 127 terminal.
	Input Audio: 600 ohm balanced, –20 to +10 dBm without adjustment or MIC input Output Audio: Balanced, –40 to +10 dBm adjustable into 600 ohm load. Connects to intercom or hand / headset.
Ethernet CTRL Port (RJ45)	Remote Control: 10/100 Base T (IEEE 802.3U compatible), embedded TCP/IP Stack Protocol: Control Protocol (RAP1 + RIPC). Connects to external management / control system.
User Interface for Unit Control	Local control via 32x202 pixel graphical LCD display and 16-key keypad. 3 bi-colour LED indicators Alphanumeric and digit keypad for fast data entry, 4-way navigation button.
Power Supply	Wide-range supply input: 90-264 VAC, 40–440 Hz, 2A & 100-370 VAC. Makes the unit suitable for use on military base stations, vessels and aircraft.

Ordering Information	Stock Number	Description	
RC8 ARQ Server & IP Controller	RME-Q1-RA-C11.1	SDC: RC8 C1 (S5066, IP Client)	V1.1
RC8X4 Quad ARQ Server & IP Controller	RME-Q4-RA-C11.1	SDC: RC8X4 C1 (S5066, IP Client)	V1.1

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