RC8 ARQ Server and IP Controller

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Designed as a 19-inch rack installation, the RC8 ARQ Server and IP Controller is a purpose-built platform for Automatic Repeat reQuest (ARQ) and Vocoder functions for maritime and strategic long-range (BLOS) communications systems.

When used with the RM8 Software Defined Modem and external link encryptor, the RC8 provides robust, secure voice, data and position communication capability over HF links even in severely degraded channels conditions. This fully integrated, qualified system ensures optimal performance and functionality including voice, position transfer, Email, messaging, ACP 127 chat and IP data transfer.

In its most basic configuration The RC8 provides a 'IP-to-sync' data converter function. The RC8 is capable of hosting a STANAG 5066 ARQ server for error-free data transfer. The STANAG 5066 IP and COSS Clients are embedded in the RC8. Alternatively the RC8 can host a STANAG 4538 Proxy for secure data transfer using the STANAG 4538 xDL modes provided in the RM8.

Additionally, the RC8 can operate with the AT Comms' low-rate Vocoder designed for HF channel conditions.

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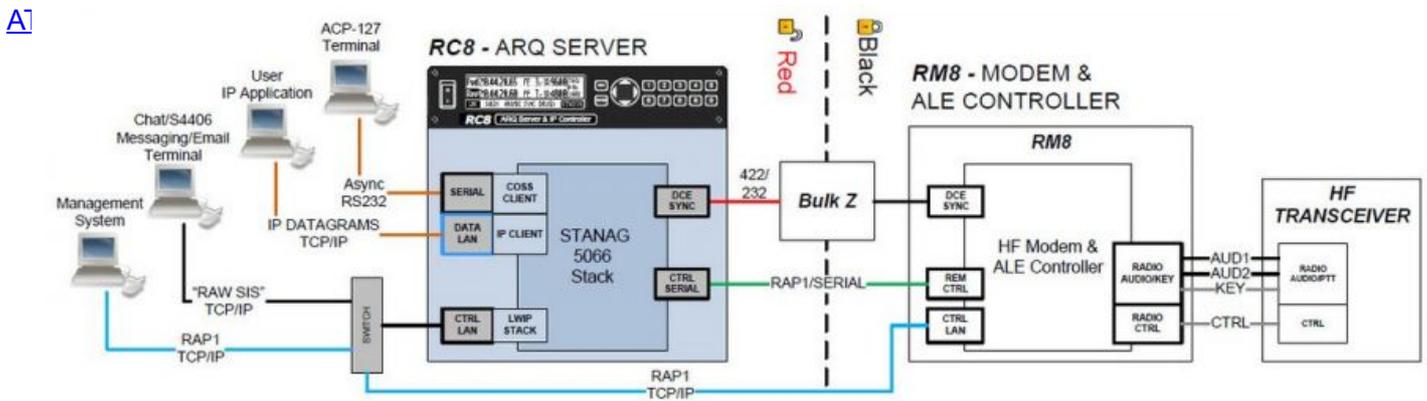
Features

- ✓ IP-to-sync converter function
- ✓ Embedded- STANAG 5066 ARQ Server, JITC certified, Edition 3 compliant, IP & COSS Clients, STANAG 4538 Proxy (future option)
- ✓ Email, Chat and Messaging
- ✓ Deployment – ship-borne and shore-station
- ✓ Operation – Point-to-point and broadcast
- ✓ Data Modems – SSB, ISB and WBHF

- ✓ ALE – 2G and 3G with ALM
- ✓ Menu-driven control and configuration
- ✓ DTE port –Synchronous/asynchronous
- ✓ Ethernet LAN interfaces for control and IP-Based data services
- ✓ Reduced integration efforts via factory preset

Concurrent access to the radio network

Various third party clients can bind with the 5066 server or the 4538 Proxy thus allowing multiple applications to concurre 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.

A

RC8 based data communication system

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	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, RFIAN.
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
AT Comms' Low-Rate Vocoder*	
Modes	Secure digital audio or PLAIN (SSB) analog voice (for interoperability)
Features	Automatic DRC based on voice quality. Late Entry

* Note: Future option

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.

RC8 ARQ Server and IP Controller - Stanag 5066 - ALE - 2G - 3G