

RC50 Government Communications Suite

HF & V/UHF Email



The **RC50** Government Communications Suite together with a *RapidM* modem offers users the ability to send and receive emails efficiently and reliably over HF and V/UHF radio links, utilizing their existing Radios.

The user uses well known and standard email clients such as Microsoft Outlook™ and Lotus Notes™ to compose and read emails.

Key features and benefits

Email over HF & V/UHF

- Error free data communication
- Compression
- Resumption
- Combining

Internet email

- Microsoft Outlook™ Compatible
- Support attachments
- SMTP, RFC 2821
- POP3, RFC 1939

ARQ Data Protocol

- Based upon STANAG 5066 V1.2
- Automatic Data Rate Change (DRC)
- Automatic Link Maintenance (ALM)

Platforms

- Windows™ 2000
- Windows XP
- Windows Vista

Compressed email

RC50 increases throughput by means of RFC 1952 standardized email compression. The compressed email client supports email prioritization where high priority emails are sent first.

Should the transmission of an email be interrupted or preempted by a higher priority email, the interrupted email will be automatically resumed at an appropriate time.

Effective Channel Usage

RC50 continually maximizes data throughput by monitoring the signal quality and adjusting the data rate in accordance with the link quality (DRC).

If the radio channel is no longer viable for communication the modem's ALE function is used to select a different channel for continued communication (ALM channel change).

Simplified Administration

- Easy network configuration
- Frequency planning
- Configuration of email addresses
- Deletion of queued Emails

The **RC50** graphical user interface (GUI) uses a simple pre-configured radio configuration that allows for easy configuration. The GUI structures status information to allow the administrator to pinpoint faults, failures and inefficiencies in network.

Operational Modes

- **Data Mode:** Robust and error-free email transmission
- **Voice Mode:** Allows the Radio to be used for voice at any time

RC50 gives the user complete control to use the radio for data or voice transmission as required by the user.

The **RM4** HF Data Modem has the ability to sense the PTT signal allowing the **RC50** to automatically stop data transmission when the user uses the radio for voice transmission.

Multi frequency support

RC50 uses the Automatic Link Establishment (ALE) function of the modem (such as the **RM4** HF Data Modem) to enable efficient multi-frequency operation. Radio network configuration is simplified using pre-configured network configurations.

The **RM4** ALE function provides MIL-STD-188-141B Automatic Link Establishment (ALE). The **RM4** ALE setup is automatically done by the **RC50** based upon a pre-configured HF network.

Sending email

Link Status												
Tx/Rx	Remote Address	Type	State	Throughput	Rx SNR	BER	DS	SWR	Channel	Frequency	Efficiency	Info
	10.44.0.2	SOFTLINK	ESTABLISHED	1168 bps	26	7	0.7 Hz	0	0	Hz	<div style="width: 36%; background-color: orange;">36%</div>	

Message Queue										
Stati	Prior	Atta	Tx/R	Progress	To / From	Message Subject	Start Date	Size	Elapsed Time	Remaining Time
				<div style="width: 2%; background-color: orange;">2%</div>	bob@vwater.example.com	Test 1	2008/02/08 03:1...	97 KB	00:01:29	~ 11 minutes

Receiving email

Link Status												
Tx/Rx	Remote Address	Type	State	Throughput	Rx SNR	BER	DS	SWR	Channel	Frequency	Efficiency	Info
	10.44.0.1	SOFTLINK	ESTABLISHED	2619 bps	54	7	1.7 Hz	0	0	Hz	<div style="width: 81%; background-color: orange;">81%</div>	

Message Queue										
Stati	Prior	Atta	Tx/R	Progress	To / From	Message Subject	Start Date	Size	Elapsed Time	Remaining Time
				<div style="width: 28%; background-color: orange;">28%</div>	tom@fire.example.com	Test 1	2008/02/08 03:1...	97 KB	00:01:35	~ 5 minutes

Fig 1: RC50 RapidM Government Communications Suite GUI

CATEGORY	CAPABILITY
DATA LINK PROTOCOLS	STANAG 5066 based data-link protocol
STANAG 5066 STACK	ALE (Automatic Link Establishment) ALM (Automatic Link Maintenance) DRC (Automatic Data Rate Change) ARQ Data (Automatic Repeat on Request) Collision Avoidance and Recovery
NETWORK PLANNING & CONFIGURATION	Network wide 5066/ALE Addressing HF frequency planning & selection Pre-configured HF Network
HF MESSAGING CLIENTS	Compressed Email Client (based upon CFTP)
EMAIL CLIENT INTERFACES	POP3 (RFC 1939, excluding APOP) SMTP (RFC 2821, excluding authentication)
HF MESSAGE MANAGEMENT	Message resumption Message grouping to destination Priority-based message queuing Message delivery failure notification Pull-messaging functionality
MODEM INTERFACES	Ethernet (Data + Modem Control)
HF MODEMS	RapidM RM4 HF Modem & ALE Controller <ul style="list-style-type: none"> o Supports MIL-STD-188-141A (ALE) & Occupancy Detection o Waveforms: <ul style="list-style-type: none"> o STANAG 4539
HF RADIOS	See RM4 User Manual

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