



## STANAG 5066 HF Email

### Key Features

- **HF Email standards**
  - STANAG 5066 Annex F (JITC Cert.)
  - CFTP Client (Compressed mail)
  - HMTP Client
- **Internet Email**
  - Microsoft Outlook™ Compatible
  - SMTP, RFC 2821
- **ARQ Data Protocol**
  - STANAG 5066 protocol V1.2 (JITC Cert.)
  - Automatic Data Rate Change
  - Automatic Link Maintenance
  - Interoperable with S5066 Compliant Implementations
- **Platforms**
  - Windows™ XP and Win7
- **Secure OTA Transmissions**
  - Crypto Support
  - 2G ALE & Linking Protection
  - 3G ALE & Linking Protection

### HF Email Communications

The *RC66 Synchronous Communications* Suite provides the ability to send and receive Emails efficiently and reliably over HF radio links and the Internet. *RC66* simplifies the task of setting up the HF Network, integrating Internet and HF Email seamlessly. *RC66* is compatible with standard Email applications like Microsoft Outlook™, which is used by the user to read and write Emails.

*RC66* contains a STANAG 5066 ARQ protocol stack that provides interoperable, error-free and efficient communication over HF radio links.

### Compressed mail via CFTP

*RC66* increases throughput by means of RFC 1952 standardized compression as mandated by STANAG 5066 Annex F (CFTP). The CFTP supports prioritization of Emails, sending higher priority Email first. Should the transmission of an Email be interrupted or preempted by a higher priority Email, the interrupted Email can be resumed at an appropriate time.

### ALM and DRC

*RC66* uses the optional ALE function of the RapidM RM8 modem to enable multi-frequency operation. *RC66* continually maximizes throughput by monitoring the signal quality and adjusting the data rate (DRC) in accordance with the link quality. If the radio channel is no longer viable for communication the ALE is used to select a different channel for continued communication (ALM channel change).

### RC66 GUI

- Assisted Network Configuration
- Message queue management
- Channel status (SNR, BER)

The *RC66* GUI assists the HF Network Administrator to define a hierarchical HF Network layout without complexities associated with ALE and STANAG 5066. *RC66* allows HF Network configuration to be updated when new nodes are added or removed.

### Operational Modes

- ARQ Mode
- Broadcast (Non-ARQ) Mode
- Radio Silence Mode
- Voice Mode

*RC66* gives the user complete control to use the radio for data or voice transmission as required by the user. Three data modes are supported: ARQ, non-ARQ and Radio Silence. The radio silence mode allows EMCON operations where nodes can pull messages.

### 2G & 3G ALE Function

The RM8 2G ALE function provides MIL-STD-188-141B App A and B compliant Automatic Link Establishment with Linking Protection. The RM8 3G ALE function provides STANAG 4538 Fast Link Establishment with Linking Protection. RM8 2G/3G ALE is utilized by *RC66* to provide the user with Multiple Frequency HF Network capabilities. The RM8 2G/3G ALE setup is automatically derived by the *RC66* from the HF Network configuration.

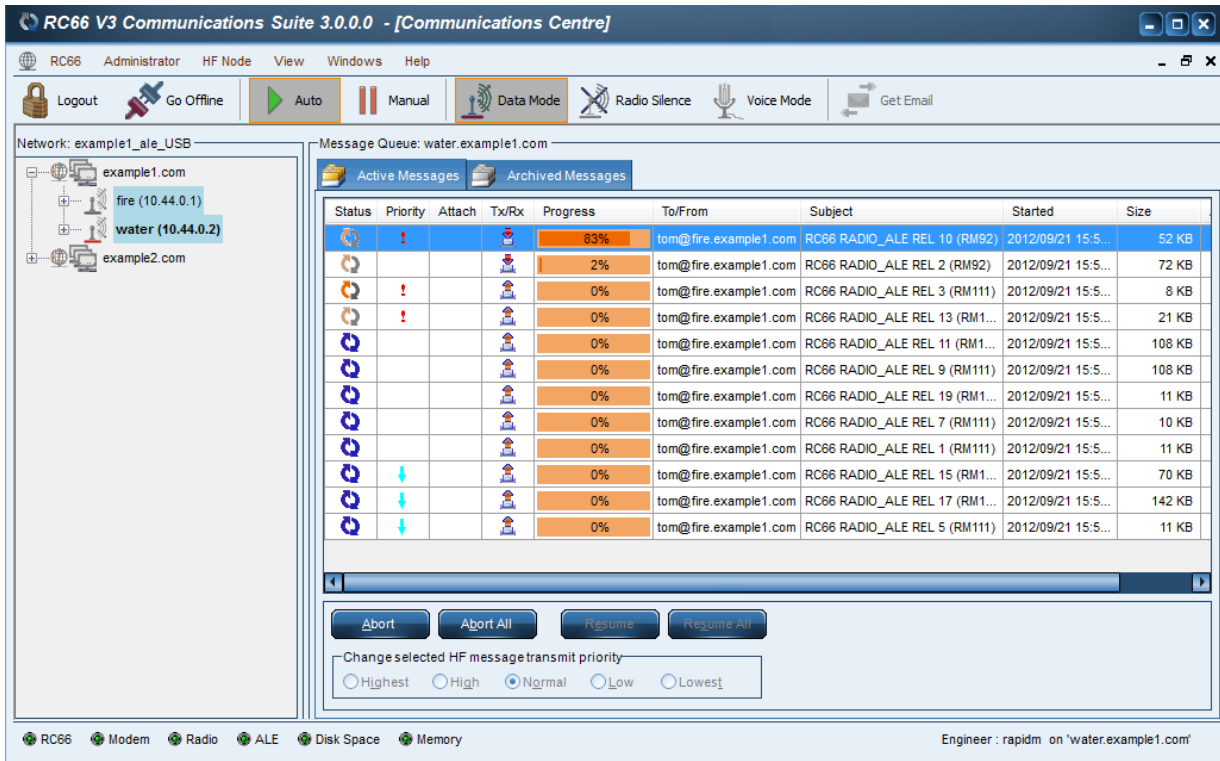


Figure 1: RC66 V3 Communications Suite GUI

CATEGORY	CAPABILITY
DATA LINK PROTOCOLS	STANAG 5066 (Annex A, B, C)
STANAG 5066 STACK (JITC CERTIFIED)	ALM (Automatic Link Maintenance) & DRC (Data Rate Change) ARQ (Automatic Repeat on Request) Mode & Non-ARQ (Broadcast) Mode Radio Silence mode Support for Hard-links, Voice Mode and 2-ISB (up to 19k2 data rates) data modem operation Collision Avoidance and Recovery
SECURITY	External Crypto support (Synchronous/Asynchronous, RS 232/422/423) End-end Email encryption support (S/MIME, PGP)
NETWORK PLANNING & CONFIGURATION	Network wide 5066/ALE Addressing HF frequency planning & selection per Domain Hardware configuration HF Network reconfiguration. Only authorized configuration changes via password protection. Split-site operation for both 2G and 3G ALE Networks
HF MESSAGING CLIENTS	CFTP: Compressed File Transfer Protocol (STANAG 5066, Annex F) + BCFTP/ PCFTP HMTP: HF Mail Transfer Protocol (STANAG 5066, Annex F) + BHMTMP BHMTMP: Broadcast HMTP
LAN EMAIL CLIENTS	POP3 (RFC 1939, excluding APOP) SMTP (RFC 2821, excluding authentication)
HF MESSAGE MANAGEMENT	Message resumption (CFTP) & Message grouping to destination Priority-based message queuing & Message filtering & Store & forward Message delivery status notification Broadcast Email content combining
MODEM INTERFACES	RM-SC RapidM Synchronous PCI Card o Data (DTE): Synchronous/Asynchronous, RS 232/422/423 o Modem control (REM CTRL): Asynchronous, RS 232/422
HF MODEMS	RapidM RM8 Software Defined Modem & ALE Controller o Link Establishment o 2G ALE based on MIL-STD-188-141A (ALE) o 3G ALE based STANAG 4538 Fast Link Setup (FLSU) o Waveforms: o MIL-STD-188-110A/B o MIL-STD-188-110 ACF (2-ISB) o STANAG 4539, STANAG 4285 & STANAG 4529 (only for non-ARQ)

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