

RM8 3G ALE HF High Speed Data Modem Strategic Maritime

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Offering a wide range of standards-based waveforms and protocols, the RM8 software defined modem with 3rd Generation (3G) Automatic Link Establishment (ALE) provides interoperable data modem and link setup in a standalone unit for strategic and maritime data communications. The 3G ALE Controller is a software option for the RM8, and can be combined with LF and HF modem software packages, selected by an activation key.



Faster Linking, Improved Channel Quality for HF Networks

3G ALE networks offer a much more advanced level of connectivity, allowing interoperability with HF data and voice services. Software options include Fast Link Setup (FLSU) and for packet data (xDL) modems.

Based on STANAG 4538, the international NATO standard, the RM8 3G Controller provides FLSU, a fast scanning link setup protocol for packet data, circuitry (legacy modem) and voice links, as a software option. Using robust HF burst waveforms; the RM8 3G Controller supports both synchronous and asynchronous link setups.

Other benefits of 3G over 2G ALE include:

- ✓ Linking at lower signal-to-noise ratios
- ✓ Improved network channel efficiency
- ✓ Higher throughput for data messages
- ✓ Improved management of traffic types
- ✓ Built-in Circuit link controller for STANAG 4539 modems

Error-free Data Delivery

Regardless of channel conditions, the RM8 3G ALE Controller will deliver error free data and superior throughput. For larger packets, the RM8 3G ALE Controller uses High Data Link protocol (HDL) to improve delivery under good to fair conditions, and Low-latency Data Link (LDL) protocols for fair to very poor conditions. LDL is also used to improve throughput for smaller packets.

Features

- ✓ HF modem operation
- ✓ MIL-STD and STANAG compliance
- ✓ Automatic radio control and channel selection
- ✓ Automatic hand-off to modem
- ✓ Built-in GPS with time updates
- ✓ Menu-driven configuration and control
- ✓ Listen before transmit
- ✓ Channel history
- ✓ Individual, Group & Net Calls
- ✓ Serial and Ethernet control and data input
- ✓ AC and DC power
- ✓ Operates with RC66

Options

- ✓ 2G ALE
- ✓ 3G packet data
- ✓ VHF/UHF modem

The RM8 offers 3G ALE configuration and control via the front panel menu interface.

		ALE scanning		LP	Off
Scan	3	2011/05/30	12:51:34	In	0
				Out	1

		HFMOBILE2		LP	Off
Tx		PTP	Anlg Voice	In	0
Tx'ing				Out	1

CHARACTERISTIC	DESCRIPTION
General	<ul style="list-style-type: none"> ✓ Compliance to STANAG 4538 standard ✓ Interoperability tested ✓ Integrated with 2G ALE and Data Waveforms ✓ Integrated with Tone Excision (TEX), some restrictions apply
ALE 3G Protocol	<ul style="list-style-type: none"> ✓

	<ul style="list-style-type: none"> ❑ Fast Link Setup (FLSU) for fast link set up times. ✓ Automatic channel selection. ✓ Synchronous and asynchronous link set up. ✓ Point-to-point, multicast and broadcast calls. ✓ Combined or separate calling and traffic channels. ✓ Reliable packet transfer by means of HDL and LDL. ✓ Channel quality estimation by means of LQA exchanges. ✓ Excellent performance in degraded HF channels by means of robust burst waveforms. ✓ Concurrent operation with other waveforms Concurrent operation with 2G ALE (MIL-STD-188-141C Appendix A ALE)
Linking Protection	<ul style="list-style-type: none"> ✓ LP key tables (56-bit) and key select function ✓ Automatic key management (Time of day based key selection) ✓ Time-of-day distribution by HF means, as a backup to GPS time-of-day distribution. ✓ Linking protection (SoDark 3 and 6).
ALE 3G Waveforms	<ul style="list-style-type: none"> ✓ BW1, BW2, BW3, BW4 and BW5 according to STANAG 4538 and MIL-STD-188-141C. ✓ Doppler lock and track (capture range up to ± 100 Hz, configurable) ✓ Adaptive multi-path tracking (up to 10 ms spread, for FLSU & LDL) ✓ Linking probability performance 2-3dB better than specification ✓ LDL: Low-Latency Data Link, reliable packet transfer ✓ HDL: High-rate Data Link, reliable packet transfer
Occupancy Detection (LBT)	<ul style="list-style-type: none"> ✓ Occupancy detection (listen before transmit (LBT)) in accordance with STANAG 4538 ✓ MS 110A/B, S4539 / MS 110B, MS 110A, S4415, S4285, FSK, 2G ALE (8-FSK), SSB voice
Remote Control	Configuration Protocol RAP1/RIPC, REMOTE Control Protocol RAP1/RIPC
RADIO Control Protocol	<ul style="list-style-type: none"> ✓ Integrated with Modem Controller ✓ Radio control protocol RAP1/RIPC or radio maker proprietary (with permission). ✓ The control protocols for various radios are embedded.
Configuration For Non-Volatile RAM	<ul style="list-style-type: none"> ✓ Network Table: Up to 100 Other IDs, 20 Self IDs ✓ Channel History Table continuous (compressed) Non-volatile storage. ✓ 20x 3G ALE Full Network Configuration Presets (MIB in Non-volatile storage)