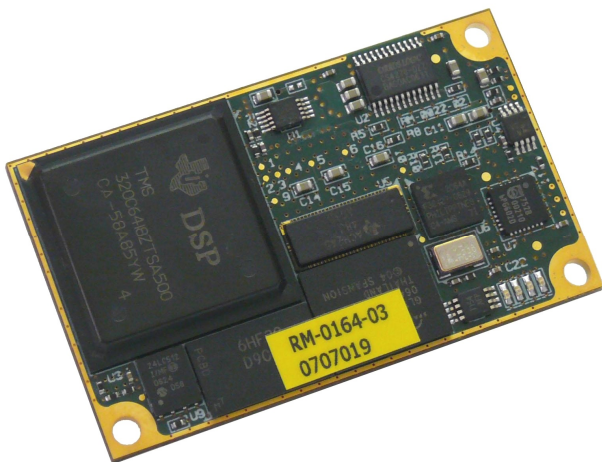


TC4: 2G ALE Option [Prelim.]

2G ALE Controller

The **2G ALE** controller is available as a software option for the **TC4** LF & HF Modem Module.



Key Features & Benefits

- 2G ALE Controller
- Software Option for TC4 software packs M1, M2, M3 and M4.

Automatic Link Establishment

- MIL-STD-188-141B App. A
- FED-STD 1045
- Individual, Group & Net Calls
- All, Any, Wildcard Call
- AMD, DTM, UUF
- Sounding
- LQA Polling
- Scanning (2 or 5 chan./sec)
- Automatic channel selection
- Emergency Operator break-in

Linking Protection

- MIL-STD-188-141B App. B
- FED-STD 1049
- Security Level (AL-1, AL-2)
- Time Exchange

2G Link Establishment

Embedded ALE allows linking with other HF stations without operator intervention. A number of frequencies can be used to overcome variable HF propagation conditions.

The ALE Controller performs all the basic protocol functions for individual calling, one-to-many calling, sounding and scanning up to 5 channels per second.

For link set-up the **2G ALE** Controller calls first on channels with the best LQA score. The LQA is obtained by continuously listening to sounds and calls from other stations.

MIL-STD-188-141B, Appendix A has mandatory requirements for Occupancy Detection and Listen before Transmit (2nd Generation ALE).

Linking Protection

MIL-STD-188-141B, App. B Linking Protection requires a Time Server in the network. The **TC4** unit has a dedicated interface to connect a standalone GPS unit. Upon connection, the date & time display will automatically update to UTC.

The **TC4** supports the standard Time Exchange protocol. This will raise the time quality of non-GPS capable Time Client stations.

Control Protocol

The **TC4** uses a sub-set of the RAP1/RIPC Control Protocol (available at RapidM). This covers the following:

- General Hardware commands
- Audio commands
- ALE control

The **TC4** Control Protocol also enables the user to log key communication parameters:

- Signal to noise ratio
- Others (tbd)

Radios Supported

The control protocols for various radios are embedded (selectable via remote control command).

The following radios are currently supported:

- Rohde & Schwarz XK2000 family
- Yaesu System 600
- Vertex Standard 600
- Barrett 950, 2050
- ICOM Amateur and Marine
- Kenwood TS-50, TS-480, TS-2000
- SGC 2000 Power Talk 150
- JRC JSB-196GM (High-sea)

New radio types are added from time to time on customer request.

ALE Network

Using an ALE network over a number of frequencies offers a much higher level of connectivity compared with using a single frequency. This is where ALE can substantially upgrade the availability of service.

When not otherwise committed, the ALE Controller continually scans the pre-selected set of channels, listening for calls.

When the self address is detected and a link is established voice communications can commence.

The ALE Controller can initiate a sounding signal at programmable intervals. Received sounding broadcasts are used to evaluate the connectivity and availability of links for later use.

STANDARD	CHARACTERISTICS
2G ALE <i>MIL-STD-188-141B</i> <i>APPENDIX A, B &</i> <i>FED-STD 1045</i> <i>FED-STD 1049</i>	Automatic Link Establishment 2 nd Generation (2G ALE) <i>Occupancy detection waveforms:</i> MS 110A/B, S 4539, S 4285, S 4415, S 4529, S 4481, 8-FSK and SSB Voice <i>Protocol:</i> Calling, AMD, DTM, <i>Excluding:</i> DBM, AQC-ALE <ul style="list-style-type: none">• Programmable Radio Selection• Link Quality Analysis (LOA)• Scanning (2 or 5 channels per second)• Automatic Sounding• Automatic Hand-Off to Internal Modem• Linking Protection up to AL-2 (Appendix B). Can use PPS interface for Time reference

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