



## TM8250 CONVENTIONAL MOBILE RADIO

The robust, high performance TM8250 mobile radio is the ideal choice for fast-moving mobile teams who rely on instant voice and data communications.

### Intuitive interface

- Large LCD display – 14 characters x 4 lines of alphanumeric text
- User-friendly menu structure for easy navigation
- Four programmable function keys
- Optional keypad microphone for enhanced dialing capability

### Flexible communications

- 1,500 conventional channels with built-in CTCSS and DCS
- Data capable – supports 1200/2400 baud FFSK data as standard
- Internal high speed data modem - software option
- 300 scanning/voting groups and 26 channel zones
- Full Selcall functionality
- Displays and supports short data messages via CCDI (Computer Controlled Data Interface)
- Voice inversion scrambling
- MDC 1200 Encode - software option
- Type 99 (2-tone) decode

### Advanced system integration capabilities

- Multiple auxiliary ports and expansive internal options area
- Direct Connect GPS and GPS display option

# TM8250

SPECIFICATIONS

### Control head options

The remote head option allows the user to mount the TM8250 control head away from the radio body, allowing greater vehicle installation flexibility. The TM8250 also supports a dual control head configuration, allowing the radio to be shared with other users.

### Engineered to be tough

The TM8250 exceeds stringent reliability specifications, including MIL-STD 810 C, D, E, F and IP54.

### Software feature upgrades

The Software Feature Enabler (SFE) allows users to upgrade with additional functionality at any stage by simply purchasing the appropriate software license key.

### Improved data integrity

The application of Digital Signal Processor (DSP) technology optimizes RF performance and ensures fast and reliable data processing.

### Ease of integration

The system integrator has maximum design flexibility with multiple ports for auxiliary connectors and a large options board area. The comprehensive third party developer's kit provides integrators with hardware and software tools to facilitate customization.

# TM8250 Specifications

## General

|                          | Band   | Operational Frequency | Transmit Power  |  |
|--------------------------|--|-----------------------|---|--|
| VHF                      | A4   | 66-88MHz              | 25W   |  |
|                          | B1   | 136-174MHz            | 25W   |  |
|                          | B1   | 136-174MHz            | 50W   |  |
|                          | D1   | 216-266MHz            | 25W   |  |
| UHF                      | G2   | 350-400MHz            | 40W   |  |
|                          | H5   | 400-470MHz            | 25W   |  |
|                          | H5   | 400-470MHz            | 40W   |  |
|                          | H6   | 450-530MHz            | 25W   |  |
|                          | H7   | 450-520MHz            | 40W   |  |
|                          | 700/800MHz   | K5                    | <b>Transmit</b><br>762-776MHz<br>792-825MHz<br>850-870MHz | <b>Receive</b><br>762-776MHz<br>850-870MHz |
|                          |  |                       |   | 30W (<806MHz)<br>35W (>806MHz)             |
| 900MHz <sup>†</sup>      | L3   | 896-941MHz            | 30W   |  |
| Frequency Stability      | ±1.5ppm  |                       |   |  |
| Channel/Network Capacity | 1500 Conventional Channels<br>300 Scan/Vote Groups |                       |   |  |
| Power Supply             | 10.8-16VDC   |                       |   |  |
| Channel Spacing          | 12.5/20/25kHz                                      |                       |   |  |
| Channel Increment        | 7.5/12.5/15/20/25/30kHz                            |                       |   |  |
| Dimensions (DxWxH)       | 7.3 x 7.2 x 2.9in (195 x 182 x 70mm)               |                       |   |  |
| 25W                      | 8.1 x 7.2 x 2.9in (205 x 182 x 70mm)               |                       |   |  |
| 30/35/40/50W             |  |                       |   |  |
| Weight                   | 49.4oz (1.4kg)                                     |                       |   |  |
| 25W                      | 56.4oz (1.6kg)                                     |                       |   |  |
| 30/35/40/50W             |  |                       |   |  |
| Operational Temperature  | -22°F to +140°F (-30°C to +60°C)                   |                       |   |  |
| Sealing                  | IP54   |                       |   |  |
| RF Connector             | 50 ohm BNC or Mini UHF                             |                       |   |  |
| Interface Connectors     | 3 Interface Connectors with Serial Ports           |                       |   |  |
| Internal Speaker Output  | >3W  |                       |   |  |

## Military Standards 810 F\*

| Applicable MIL-STD | Method | Procedure |
|--------------------|--------|-----------|
| Low Pressure       | 500.4  | 2         |
| High Temperature   | 501.4  | 1, 2      |
| Low Temperature    | 502.4  | 1, 2      |
| Temperature Shock  | 503.4  | 1         |
| Solar Radiation    | 505.4  | 1         |
| Rain               | 506.4  | 1, 3      |
| Humidity           | 507.4  | 1         |
| Salt Fog           | 509.4  | 1         |
| Dust               | 510.4  | 1         |
| Vibration          | 514.5  | 1         |
| Shock              | 516.5  | 1, 6      |

## Transmitter

|                              | VHF/UHF (TIA/EIA)                   | 700/800MHz (TIA/EIA)                 |
|------------------------------|-------------------------------------|--------------------------------------|
| Output Power                 | 25W, 12W, 5W, 1W                    | 30W, 15W, 5W, 2W<br>35W, 15W, 5W, 2W |
| 25W                          |                                     |                                      |
| 30W                          |                                     |                                      |
| 35W                          |                                     |                                      |
| 40W UHF                      | 40W, 20W, 15W, 10W                  |                                      |
| 50W VHF                      | 50W, 25W, 15W, 10W                  |                                      |
| Modulation Limiting          |                                     |                                      |
| 12.5kHz                      | ±2.5kHz                             | ±2.5kHz                              |
| 20kHz                        | ±4kHz                               | ±4kHz                                |
| 25kHz                        | ±5kHz                               | ±5kHz                                |
| FM Hum and Noise             |                                     |                                      |
| 12.5kHz                      | -38dB                               | -33dB                                |
| 20kHz                        | -41dB                               | -38dB                                |
| 25kHz                        | -43dB                               | -40dB                                |
| Conducted/Radiated Emissions | -36dBm to 1GHz<br>-30dBm above 1GHz | < -30dBm to 8GHz                     |
| Audio Response Bandwidth     | 300Hz-3kHz                          | 300Hz-3kHz                           |
| Audio Response               | Flat or pre-emphasised              | Flat or pre-emphasised               |
| Audio Distortion             | < 3% at 1kHz 60% deviation          | < 3% at 1kHz 60% deviation           |
| Transmit Rise Time           | 20ms                                | 20ms                                 |
| Duty Cycle                   |                                     |                                      |
| 25W                          | 33%                                 |                                      |
| 30/35W                       |                                     | 20%                                  |
| 40/50W                       | 20%                                 |                                      |

## Receiver\*\*

|                          | VHF/UHF (TIA/EIA)                 | 700/800MHz (TIA/EIA)  |
|--------------------------|-----------------------------------|---|
| Sensitivity              | 0.28 µV (<-118dBm) for 12dB SINAD | 0.22µV (-120dBm) for 12dB SINAD<br>0.35µV (<-116dBm) for 20dB SINAD |
| Intermodulation          | 75dB                              | 82dB  |
| Selectivity              |                                   |   |
| 12.5kHz                  | 65dB                              | 67dB  |
| 20kHz                    | 70dB                              | 75dB  |
| 25kHz                    | 75dB                              | 79dB  |
| Spurious Responses       | 75dB                              | > 90dB***   |
| Hum and Noise            |                                   |   |
| 12.5kHz                  | -40dB                             | -44dB   |
| 20kHz                    | -41dB                             | -47dB   |
| 25kHz                    | -43dB                             | -48dB   |
| Audio Response Bandwidth | 300Hz-3kHz                        | 300Hz-3kHz  |
| Audio Response           | Flat or de-emphasised             | Flat or de-emphasised   |
| Audio Distortion         | < 3% at 1kHz 60% deviation        | < 3% at 1kHz 60% deviation  |



## Regulatory Data

|     | Frequency | FCC Description | IC Description |
|-----|-----------|-----------------|----------------|
| 25W | 136-174   | CASTMAB1C       | 737A-TMAB1C    |
|     | 216-266   | CASTMAD1C       |                |
|     | 400-470   | CASTMAH5C       | 737A-TMAH5C    |
|     | 450-530   | CASTMAH6C       | 737A-TMAH6C    |
| 35W | 806-869   | CASTMAK5D       | 737A-TMAK5D    |
| 40W | 400-470   | CASTMAH5D       |                |
|     | 450-520   | CASTMAH7D       |                |
| 50W | 136-174   | CASTMAB1D       |                |



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\* Also meets equivalent superseded MIL-STD 810 C, D & E.

\*\* Meets class A except where indicated.

\*\*\* Meets class A except 1/2 IF at bottom 4MHz of 700MHz sub-band (69dB) and top 4MHz of 800MHz sub-band (66dB).

† Pending approval. Please contact Tait for further information.

All values quoted are typical. Tait is your complete supplier of radio communications equipment offering mobile, portable and infrastructure solutions. Tait is renowned for its flexibility, responsiveness and commitment to producing innovative world-class mobile radio communications products.

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