

# Flexible, reliable and user friendly.

The TM8255 is a dual mode MPT 1327 trunked radio with full conventional feature set, ideal for a wide range of voice and data applications where comprehensive trunked services are required.



## KEY FEATURES

- ▶ Large LCD display - 14 characters and four lines of alphanumeric text
- ▶ User-friendly menu structure for easy navigation
- ▶ Four programmable function keys
- ▶ Optional keypad microphone for enhanced dialing capability
- ▶ 1500 conventional channels with built-in CTCSS and DCS
- ▶ Data capable - supports 1200/2400 baud FFSK data as standard
- ▶ Internal high speed data modem (12 kbps on NB channels/19 kbps on WB channels) (software option)
- ▶ All MPT 1327 call types
- ▶ Multiple network capability - up to four different trunked networks
- ▶ Voice inversion scrambling
- ▶ Built-in MAP 27 interface as standard
- ▶ Supports short data messages and ANI
- ▶ Incoming calls can be queued for future reference and call back
- ▶ Lone Worker function to improve worker safety
- ▶ Multiple auxiliary ports and expansive internal options area
- ▶ Direct connect GPS and GPS display option



#### **Fast switch between modes**

Because the automated switch between trunked and conventional modes takes place in 1.5 seconds, precious time is saved in emergency situations.

#### **Control head options**

The remote head option allows the user to mount the TM8255 control head away from the radio body, allowing greater vehicle installation flexibility. The TM8255 also supports a dual control head configuration, allowing the radio to be shared with other users.

#### **Engineered to be tough**

The TM8255 exceeds stringent reliability specifications, including MIL-STD 810 C, D, E, F and IP54.

#### **Software feature upgrades**

The Software Feature Enabler (SFE) allows system operators 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.

#### **AVL support**

The TM8255 supports a standard polling vehicle location format and a direct connect port for an external GPS receiver, allowing for the development of a complete AVL solution.

## 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 | <b>Receive</b><br>762–776MHz | 30W (<806MHz)  |
|                          |                                                                                   | 792–825MHz                    |                              | 35W (>806MHz)  |
|                          |                                                                                   | 850–870MHz                    | 850–870MHz                   |                |
| 900MHz                   | L3                                                                                | 896–941MHz                    | 935–941MHz                   | 30W            |
| Frequency Stability      | ±1.5ppm                                                                           |                               |                              |                |
| Channel/Network Capacity | 1500 Conventional Channels<br>300 Scan/Vote Groups<br>4 MPT 1327 Trunked Networks |                               |                              |                |
| Power Supply             | 10.8–16VDC                                                                        |                               |                              |                |
| Channel Spacing          | 12.5/20/25kHz                                                                     |                               |                              |                |
| Channel Increment        | 7.5/12.5/15/20/25/30kHz                                                           |                               |                              |                |
| Dimensions (DxWxH)       |                                                                                   |                               |                              |                |
| 25W                      | 7.3 x 7.2 x 2.8in (185 x 182 x 70mm)                                              |                               |                              |                |
| 30/35/40/50W             | 8.1 x 7.2 x 2.8in (205 x 182 x 70mm)                                              |                               |                              |                |
| Weight                   |                                                                                   |                               |                              |                |
| 25W                      | 49.4oz (1.4kg)                                                                    |                               |                              |                |
| 30/35/40/50W             | 56.4oz (1.6kg)                                                                    |                               |                              |                |
| 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                                          |                               |                              |                |

## TRANSMITTER

|                              | VHF/UHF (TIA/EIA)              | 700/800MHz (TIA/EIA)       |
|------------------------------|--------------------------------|----------------------------|
| Output Power                 |                                |                            |
| 25W                          | 25W, 12W, 5W, 1W               |                            |
| 30W                          |                                |                            |
| 35W                          |                                | 30W, 15W, 5W, 2W           |
| 40W UHF                      | 40W, 20W, 15W, 10W             | 35W, 15W, 5W, 2W           |
| 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 < 1GHz<br>-30dBm > 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                       |                                |                            |
| 40/50W                       | 20%                            | 20%                        |

## RECEIVER\*\*

|                          | VHF/UHF (TIA/EIA)                | 700/800MHz (TIA/EIA)                                                 |
|--------------------------|----------------------------------|----------------------------------------------------------------------|
| Sensitivity              | 0.28µV (<-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-emphasized            | Flat or de-emphasized                                                |
| Audio Distortion         | < 3% at 1kHz 60% deviation       | < 3% at 1kHz 60% deviation                                           |

## 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      |

## 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       |                |

\* 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).

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.

Specifications are subject to change without notice and shall not form part of any contract. They are issued for guidance purposes only.

+Please note that not all frequency bands and power outputs are available in all markets. For further information please check with your nearest Tait office or authorized dealer.

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**professional wireless communications**

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