

# Interoperable, flexible, configurable.

With FIPS validated encryption, certified interoperability, digital audio clarity and superb build quality, the TM9135 is a tough, dependable and sophisticated mobile radio.



## KEY FEATURES

- ▶ Tested in a Department of Homeland Security-recognized P25 Compliance Assessment Program (P25 CAP) laboratory for interoperability and performance
- ▶ Radios can be used on analog, P25 conventional, trunked and simulcast networks
- ▶ FIPS 140-2 certified encryption
- ▶ Tested beyond MIL-STD-810 C, D, E and F
- ▶ A range of analog signaling features - MDC1200 encode/decode\* and Two Tone decode with the purchase of software licenses\*\*
- ▶ Comprehensive scanning features including P25 talk group, priority, dual priority and editable scanning
- ▶ High temperature display option optimizes screen visibility in hot environments.

\*MDC1200 decode includes calling identity display and inhibit/uninhibit functionality.

\*\*Software license option(s) available separately.





Standard control head



Hand-held control head (HHCH)



Dual head configuration



Remote head configuration

## FEATURES AND BENEFITS

### Secure communications

AES encryption certified by the US National Institute of Standards and Technology (NIST) or proven DES encryption can be incorporated into the TM9155 for highly secure communications.

These radios can be encrypted fast in-field with a Tait Key Fill Device (KFD) or via Over-the-air Rekeying (OTAR) with the Tait Key Management Facility (KMF).

### Interoperability assured

The TM9135 is tested on other vendors' networks as part of the P25 Compliance Assessment Program (P25 CAP). This offers Public Safety and Government agencies a multivendor environment.

### Analog mode for phased transition

Protect your current analog investment and migrate to P25 digital at your own pace. Analog mode allows communication between various partner agencies.

### Software licenses to suit your needs

Software licenses, such as Trunking, P25 CAI, encryption, location transmission/display\*, Application Programming Interfaces (APIs) and OTAR are just some of the options available that enable you to extend your solution according to your requirements.

### Flexible choices

Optional dual head configuration means the TM9155 can dynamically respond to vehicle and user needs.

### Standard control head

Tait mobiles have high and low temperature LCD options with adjustable screen contrast for optimized visibility in any environment. Our standard LCD is designed for temperatures -22°F to +140°F (-30°C to +60°C), and our high temperature LCD operates at +5°F to +185°F (-15°C to +85°C).

All TM9100s have a built-in integrated covert microphone. A mobile GPS display option integrates the location function into the radio, so there is no need for a separate "on dash" unit. Customizable options include the head and lens surrounds (color and logo) and the keymat has four custom keys available (some restrictions on colors, fonts and number of characters used).

### Hand-held control head (HHCH)

The TM9100 HHCH option is for vehicles with limited space and is perfect for covert operations in unmarked vehicles because it can be stowed out of sight in a glove compartment or under a seat.

This ideal surveillance solution has a powerful 10W external speaker, enabling remote cable kits, visor mounted microphones and gearshift PTT buttons.

### Weight: 6.2oz (175g). Dimensions

(HxWxD): 5.3 x 2.6 x 1.4in (135 x 66 x 35mm). **Cable Length:** 10.6in (270mm) coiled length with 15.8in (400mm) straight tail. 9.2ft (2.8m) when stretched. 5/10/20ft (1.5/3.1/6.2m) straight extensions for curly cable.

**Display:** 2 lines of text/14 characters or optional large display font: 1 line/12 characters. Full TM9100 display functionality. **Function Buttons:** 6 programmable function buttons (includes emergency button).

**Keypad:** 12 key alphanumeric.

### Remote head configuration

The remote-head configuration is designed for vehicles with limited space, allowing the radio body to be installed in the trunk of the car. The standard control head of the TM9100 series can be located up to 6m or 12m away with a single cable and up to 1,094 yards (1km) away with additional hardware.

## GENERAL

| Frequency ranges                         | Frequency band <sup>†</sup>   | Transmit power                                      | Transmit current (typical)                  |
|--|---|---|---|
| VHF                                      | 136–174MHz  | 25W   | <5.5A                                       |
|  | 136–174MHz*   | 50W   | <10.5A                                      |
|  | 136–174MHz  | 110W  | <30A  |
| UHF                                      | 350–400MHz*   | 40W   | <8.5A                                       |
|  | 380–420MHz*   | 40W   | <8.5A <6.5A <8.5A <6.5A                     |
|  | 400–470MHz  | 25W   | <8.5A                                       |
|  | 400–470MHz 450–530MHz   | 40W 25W   |   |
|  | 450–520MHz  | 40W   |   |
| 700/800MHz                               | <b>Transmit</b>   | <b>Receive</b>                                      |   |
|  | 762–776MHz  | 762–776MHz  |   |
|  | 792–825MHz  | 30W (<806MHz)                                       | <10A  |
|  | 850–870MHz  | 850–870MHz 35W (>806MHz)                            | <10A  |
| Frequency stability                      | ±1.5ppm (-22°F to 140°F/-30°C to 60°C)  |   |   |
| Channel/zones                            | 1,000 channels/30 zones   |   |   |
| Talk groups                              | 26 talk group lists comprised of up to 50 members each  |   |   |
| Scan groups                              | 300 with up to 50 members each, maximum of 2,000 members total  |   |   |
| Power supply                             | 10.8–16VDC  |   |   |
| Channel spacing                          | 12.5/15/20/25/30kHz   |   |   |
| Frequency increment/channel steps        | 2.5/5/6.25  |   |   |
| Dimensions (DxWxH) control head          | 1.38 x 7.24 x 2.8in (35 x 184 x 71mm)   |   |   |
| Dimensions (DxWxH) radio body            | <b>25W</b><br>6.9x6.3x2.1in (175x160x52mm)  | <b>30/35/40/50W</b><br>7.7x6.3x2.1in (195x160x52mm) | <b>110W</b><br>14.6x9.8x5in (370x250x121mm) |
| Weight control head                      | 11.6oz (330g)   |   |   |
| Weight radio body                        | <b>25W</b><br>42.3oz (1,200g)   | <b>30/35/40/50W</b><br>49.4oz (1,400g)              | <b>110W</b><br>296oz (8,400g)               |
| Operating temperature                    | -22°F to 140°F (-30°C to 60°C)  |   |   |
| Sealing                                  | IP54 dust and rain  |   |   |
| RF connector                             | 50 ohm BNC or Mini UHF  |   |   |
| Interface connectors                     | 3 Interface connectors with serial ports  |   |   |
| Analog signalling options                | MDC1200 encode/decode, Two Tone decode, PL (CTCSS), DPL (DCS)   |   |   |
| Remoted length – Standard control head   | <20ft or 40ft (6m or 12m) with a single cable <1,094 yards (<1km) with additional hardware                              |   |   |
| Remoted length – Hand-held control head  | <98ft (30m) - using multiple straight extension cables (Talk to Tait for distances beyond 30m)                          |   |   |
| Install options – Standard control head  | U-bracket, security cradle, slide-in bracket, Vehicle installation kit, 10W external speaker, BNC or mini-UHF connector |   |   |
| Install options – Hand-held control head | 10W external speaker  |   |   |

## TRANSMITTER

|                                    | VHF/UHF (TIA/EIA 102 and 603a) | 700/800MHz (TIA/EIA 102 and 603a) |
|------------------------------------|--------------------------------|-----------------------------------|
| Output power                       |                                |                                   |
| 25W                                | 25W, 12W, 5W, 1W               |                                   |
| 30W                                |                                | 30W, 15W, 5W, 2W                  |
| 35W                                |                                | 35W, 15W, 5W, 2W                  |
| 40W                                | 40W, 20W, 15W, 10W             |                                   |
| 50W                                | 50W, 25W, 15W, 10W             |                                   |
| 110W                               | 110W                           |                                   |
| Modulation limiting                |                                |                                   |
| 25/30kHz channel                   | ±5kHz                          | ±5kHz                             |
| 12.5kHz channel                    | ±2.5kHz                        | ±2.5kHz                           |
| FM hum and noise (typical)         |                                |                                   |
| 25/30kHz channel                   | -43dB                          | -40dB                             |
| 12.5kHz channel                    | -38dB                          | -33dB                             |
| Conducted emissions (typical)      | -85dBc                         | -75dBc                            |
| Audio response (analog)            | 300–3000Hz +1/-3dB             |                                   |
| Audio distortion (analog)          | < 3% at 1kHz 60% deviation     |                                   |
| Transmit attack time (TIA/EIA 102) | 50mS                           |                                   |

**RECEIVER (TYPICAL FIGURES SHOWN)**

|   | VHF/UHF                       | VHF 50W                        | VHF 110W                          | 700/800MHz                    |
|---|-------------------------------|--------------------------------|-----------------------------------|-------------------------------|
| Analog sensitivity                      |                               |                                |                                   |                               |
| 12dB SINAD                              | 0.28 <sub>μ</sub> V (-118dBm) | 0.315 <sub>μ</sub> V (-117dBm) | 0.25 <sub>μ</sub> V (-119dBm)     | 0.28 <sub>μ</sub> V (-118dBm) |
| Digital sensitivity (TIA/EIA-102)       |                               |                                |                                   |                               |
| 5%BER                                   | 0.22 <sub>μ</sub> V (-120dBm) | 0.233 <sub>μ</sub> V (-120dBm) | 0.18 <sub>μ</sub> V (-122dBm)**** | 0.18 <sub>μ</sub> V (-122dBm) |
| Intermodulation rejection (TIA/EIA 102) | -75dB                         | -75dB                          | -70dB                             | -75dB                         |
| Adjacent channel selectivity            |                               |                                |                                   |                               |
| 25/30kHz channel (TIA/EIA 603a)         | -75dB                         | -80dB                          | -75dB                             | -75dB                         |
| 12.5kHz channel (TIA/EIA 102)           | -65dB                         | -70dB                          | -65dB                             | -65dB                         |
| Spurious response rejection             | -75dB                         | -90dB                          | -70dB                             | -75dB                         |
| FM hum and noise                        |                               |                                |                                   |                               |
| 25/30kHz channel                        | -43dB                         | -43dB                          | -43dB                             | -43dB                         |
| 12.5kHz channel                         | -40dB                         | -40dB                          | -40dB                             | -40dB                         |
| Residual audio noise ratio              | 45dB                          | 45dB                           | 45dB                              | 45dB                          |
| Audio distortion @ rated audio (3W)     | 3% @ 1kHz 60% modulation      |                                |                                   |                               |
| Optional external speaker output        | 10W (into 4 ohm)              |                                |                                   |                               |

**MILITARY STANDARDS 810C, D, E, F AND G**

| Applicable MIL-STD Method | Method           | Procedure    | Procedure |
|---------------------------|------------------|--------------|-----------|
|                           | 25/30/35/50/110W | 25/30/35/50W | 110W      |
| Low pressure              | 500.4            | 2            | 2         |
| High temperature          | 501.4            | 1, 2         | 2         |
| Low temperature           | 502.4            | 1, 2         | 2         |
| Temperature shock         | 503.4            | 1            | 1         |
| Solar radiation           | 505.4            | 1            | -         |
| Rain                      | 506.4            | 1, 3         | 3         |
| Humidity                  | 507.4            | 1            | -         |
| Salt fog                  | 509.4            | 1            | 1         |
| Dust                      | 510.4            | 1            | 1         |
| Vibration                 | 514.5            | 1            | 1         |
| Shock                     | 516.5            | 1, 6         | 6         |

**REGULATORY DATA**

|                       |        |  |                         |               |
|-----------------------|--------|--|-------------------------|---------------|
| USA                   | VHF    | CFR 47 Parts 22, 74, 90, 95J, 90.210   |                         |               |
|                       | UHF    | CFR 47 Parts 22, 74, 90, 95A, 90.210   |                         |               |
|                       | 800MHz | CFR 47 Parts 22, 90  |                         |               |
| Canada                |        | RSS-119  |                         |               |
| Europe                |        | EN300 086, EN300 113, EN301 489, EN60950   |                         |               |
| Australia/New Zealand |        | AS/NZ54295   |                         |               |
| Type approval         |        | <b>FCC</b>   | <b>Industrie Canada</b> | <b>NTIA</b>   |
| <b>25W</b>            | VHF    | CASTMAB1E  | 737A-TMAB1E             |               |
|                       | UHF    | CASTMAH5E  | 737A-TMAH5E             |               |
|                       |        | CASTMAH6E  | 737A-TMAH6E             |               |
| <b>30/35W</b>         | UHF    | CASTMAK5F  | 737A-TMAK5F             |               |
|                       |        |  |                         |               |
| <b>40W</b>            | UHF    | CASTMAH5F  | n/a                     | 350-400MHz*** |
|                       |        | CASTMAH7F  | n/a                     | 380-420MHz*** |
| <b>50W</b>            | VHF    | CASTMAB1F  | n/a                     | 136-174MHz*** |
|                       |        |  |                         |               |
| <b>110W (ERFPA)</b>   | VHF    | CASTMAB1Z  | n/a                     |               |
|                       |        |  |                         |               |
| Emission designators  |        | 10K0F1D, 10K0F1E, 10K0F7D, 10K0F7E, 11K0F3E, 12K7F1D, 16K0F3E, 6K60F2D, 7K70F1D, 8K10F1D, 8K10F1E, 8K10F7D, 8K10F7E, 9K60F2D |                         |               |



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

\*Contact your local Tait representative for more information.

For further information please check with your nearest Tait office or authorized dealer.

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Tait Limited facilities are certified for ISO9001:2008 (Quality Management System), ISO14001:2004 (Environmental Management System) and ISO18001:2007 (Occupational Health and Safety Management System) for aspects associated with the design, manufacture and distribution of radio communications and control equipment, systems and services. In addition, all our Regional Head Offices are certified to ISO9001:2008.



Quality ISO 9001

Environment ISO 14001

BS 18001 Certified