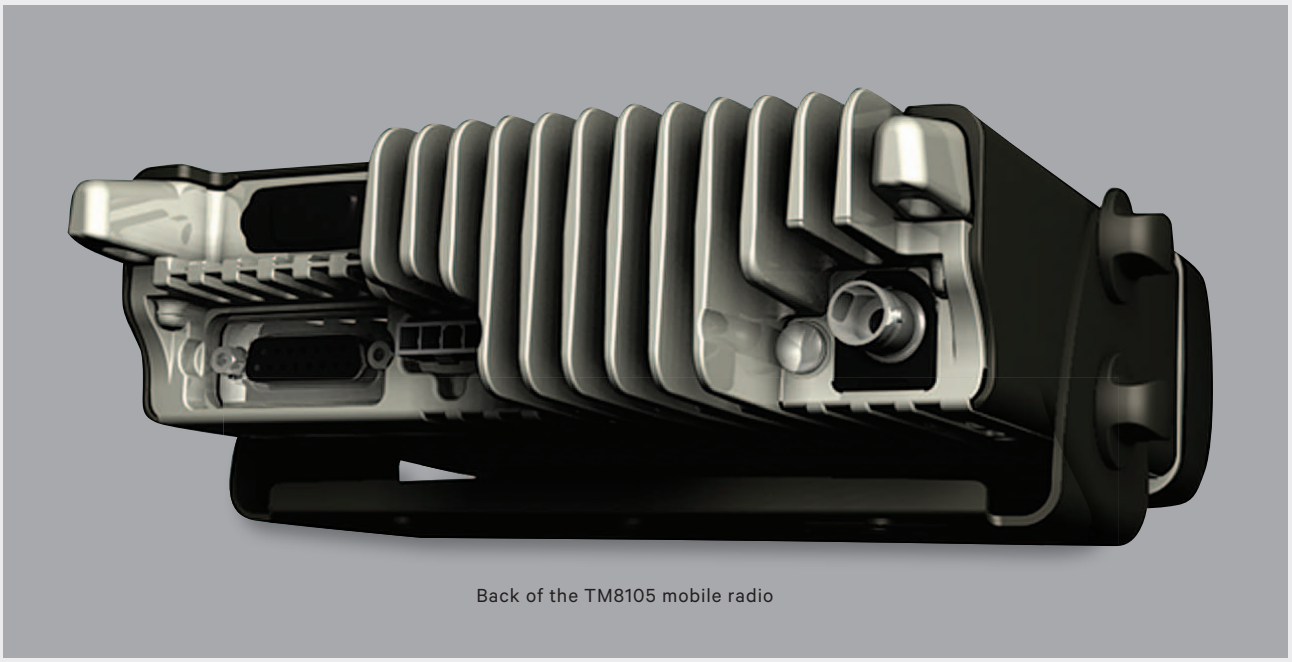
TM8105
SPECIFICATIONS

# Flexible, reliable and user friendly.

**The TM8105 provides ultimate flexibility for system integration. With an expansive internal options area, this data radio is one of the most customizable mobile radios available.**


## KEY FEATURES

- Flexible communications
- 100 conventional channels available via CCDI (Computer Controlled Data Interface)
- Data capable - supports 1200/2400 baud FFSK data as standard
- Type 99 (2-tone) decode
- Internal high speed data modem (12 kbps on NB channels/19.2 kbps on WB channels) (software option)
- Four RF power levels
- Full Selcall functionality
- DTMF encoder
- Low standby power consumption (<80mA)
- MDC 1200 encode (software option)
- Emergency mode, stun and revive
- Advanced system integration capabilities
- Multiple auxiliary ports
- Programmable inputs/outputs and audio tap points
- Third party control head capable
- Direct connect GPS
- Optional third party developers kit



Back of the TM8105 mobile radio

**Engineered to be tough**

The TM8105 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.

**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.

**AVL support**

The TM8105 supports a standard polling vehicle location format and a direc connect port for an external GPS receiver, allowing for the development of a complete AVL solution.

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## GENERAL

| | Band | Operational Frequency | | Transmit Power |
|---|---|---|---|---|
| VHF | A4 | 66–88MHz | | 25W |
| | B1 | 136–174MHz | | 25W |
| | B1 | 136–174MHz | | 50W |
| | D1 | 216–266MHz | | 25W |
| UHF | H5 | 400–470MHz | | 25W |
| | H5 | 400–470MHz | | 40W |
| | H6 | 450–530MHz | | 25W |
| | H7 | 450–520MHz | | 40W |
| | | **Transmit** | **Receive** | |
| 700/800MHz | K5 | 762–776MHz<br>792–825MHz<br>850–870MHz | 762–776MHz<br><br>850–870MHz | 30W (<806MHz)<br>35W (>806MHz) |
| 900MHz | L3 | 896–941MHz | 935–941MHz | 30W |

| | |
|---|---|
| Frequency Stability | ±1.5ppm |
| Channel/Network Capacity | 100 Channels (simplex or semi-duplex)<br>Up to 100 channels available via CCDI |
| Power Supply | 10.8–16VDC |
| Channel Spacing | 12.5/20/25kHz |
| Channel Increment | 7.5/12.5/15/20/25/30kHz |
| Dimensions (DxWxH) | |
| 25W | 6.9 x 6.3 x 2.0in (175 x 160 x 51mm) |
| 30/35/40/50W | 7.7 x 6.3 x 2.0in (195 x 160 x 51mm) |
| Weight | |
| 25W | 42.3oz (1.2kg) |
| 30/35/40/50W | 49.4oz (1.4kg) |
| Operational Temperature | -22°F to +140°F (-30°C to +60°C) |
| Sealing | IP54 |
| RF Connecter | 50 ohm BNC or Mini UHF |
| Interface Connecters | 3 Interface Connecters 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-emphasized | Flat or pre-emphasized |
| Audio Distortion | < 3% at 1kHz 60% deviation | < 3% at 1kHz 60% deviation |
| Transmit Rise Time | 10ms | 10ms |
| Duty Cycle | | |
| 25W | 33% | |
| 30/35W | | 20% |
| 40/50W | 20% | |

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## 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 | 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 | CASTMAB1A | 737A-TMAB1A |
| | 216-266 | CASTMAD1A | |
| | 400-470 | CASTMAH5A | 737A-TMAH5A |
| | 450-530 | CASTMAH6A | 737A-TMAH6A |
| 35W | 806-869 | CASTMAK5B | 737A-TMAK5B |
| 40W | 400-470 | CASTMAH5B | |
| | 450-520 | CASTMAH7B | |
| 50W | 136-174 | CASTMAB1B | |

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+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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