

TM9000

MOBILE RADIOS

BROADBAND | DMR | P25 | ANALOG



Exceptional audio and connectivity options.
Built Tait Tough for critical communications.

**TAIT
TOUGH**
The Toughest Radios in the Industry

JANUARY 2024 VERSION 2

Preface

PLEASE READ BEFORE USING THIS PRODUCT CATALOG.

COPYRIGHT:

All information in this document is the property of Tait International Limited. All rights are reserved. This document may not, in whole or in part, be copied, photocopied, reproduced, translated, stored or reduced to any electronic medium or machine readable form without the prior written permission of Tait International Limited.

SCOPE:

This catalog describes the TM9000 series mobile radios, options and accessories.

Custom product and non-standard equipment is not listed. Please contact your Tait representative if you require information on any product not listed within this book.

PRODUCT STATUS:

Every care has been taken to assure that the products meet the respective regulatory requirements. However, Tait does not warrant that all products meet specific country requirements.

If you have any questions regarding product suitability please contact your Tait representative.

TERMS AND CONDITIONS OF SALE:

All sales and quotations for Tait products and services are subject to the current version of the Tait Standard Terms and Conditions for Supply. For a copy of the Terms and Conditions please contact your Tait representative.

CONFIDENTIALITY:

This product catalog contains information which is confidential and is solely for the use of the intended recipient. If you are not the intended recipient, be aware that any review, disclosure, copying, distribution, or use of the contents of this catalog is strictly prohibited. If you have received this in error, please destroy it and notify us immediately notices@taitcommunications.com

TRADEMARKS:

The words "Tait", "Tait Unified", "TeamPTT" and the "Tait" logo are trademarks of Tait International Limited. Access to the Tait Websites does not confer on you any license in respect of any of Tait intellectual property.

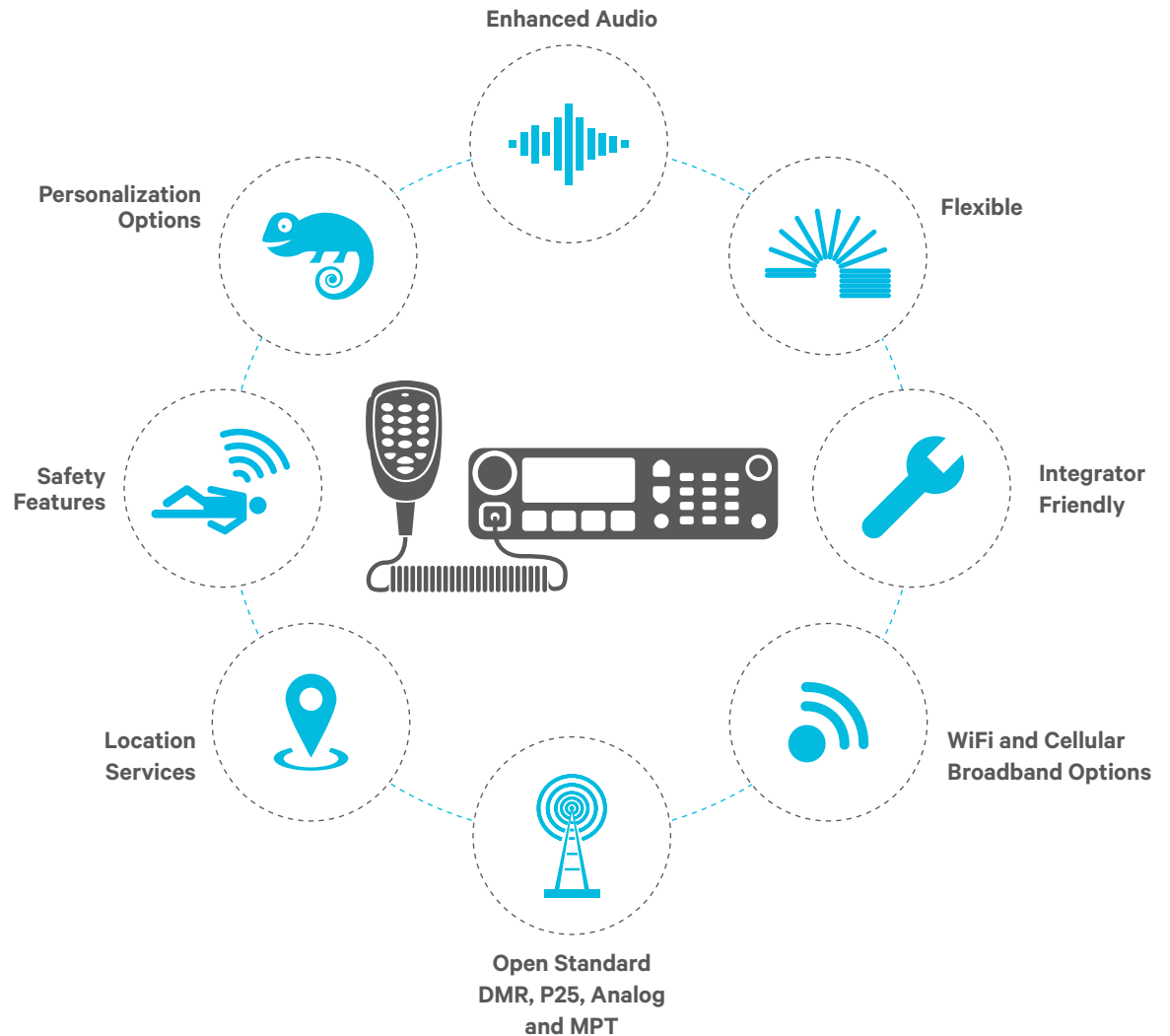
UPDATE AND CHANGES:

The information within the product catalog is subject to change without notice and shall not form part of any contract. This information is issued for guidance purposes only. Please note that not all frequency bands and power outputs are available in all markets.

The Tait TM9000 series features loud, clear audio, so teams can work safely in challenging conditions. Built Tait Tough, TM9000 mobile radios can survive harsh punishment.

These radios are highly capable and highly flexible for a wide range of voice and data applications.

Choose from DMR or P25 models, each supporting Analog mode and a host of safety and efficiency features.



Contents

Why Tait Tough?	3
Exceptional Audio Tailored to Your Needs	4
Location Services for DMR, P25 and Analog	5
Fleet Management Best Practice	6
TM9000 Family Tree	7
Tait DMR	8
DMR and Analog Selection Guide	9
DMR and Analog Frequency Bands	10
TM9700 25W Mobile	11
TM9355	12
TM9356	13
TM9315	14
TM9395	15
Software Feature Enabler (SFE) Descriptions	16
Detailed Feature Comparison	19
Tait P25	27
P25 and Analog Selection Guide	28
P25 and Analog Frequency Bands	29
TM9800	30
TM9455	31
TM9456	32
Software Feature Enabler (SFE) Descriptions	33
Detailed Feature Comparison	39
Control Head Color Options	45

WHY TAIT TOUGH?

The Toughest Radios in the Industry

Tait radio users have tough jobs. Police, Fire, Emergency services, Mining, Oil and Gas, and Utility workers face challenging conditions every day. They need communications equipment that is totally reliable. That's why Tait engineers our products to work together to create some of the toughest, mission critical communications solutions ever made.

Operating Temperature

- ▶ -22°F to +140°F (-30°C to +60°C)

High Performance Duty Cycle

- ▶ High performance at full power:
 - 33% duty cycle (25W radios)
 - 20% duty cycle (35W and 50W radios)

Means that these radios can perform reliably with heavy use. Making calls (transmissions) generates heat inside any radio that can affect performance. Tait mobiles are built to withstand heavy use to reliably communicate when you need it most.

Busy operations and emergency situations mean you'll be making a lot of calls. Our 25W mobiles can be transmitting 33% of the time, and our 35W and 50W mobiles can be transmitting 20% of the time without any degradation of performance, even if the ambient temperature is up to +140°F (+60°C)!

- 100% duty cycle at 5W power

At 5W power output can transmit continuously even if the ambient temperature is up to (+40°C).

Ingress Protection (IP)

- ▶ IP54 Dust and water protected



Military Standard MIL-STD-810G*

Designed and tested for protection against:

- ▶ Low pressure
- ▶ Low temperature
- ▶ High temperature
- ▶ Temperature shock
- ▶ Solar radiation
- ▶ Rain
- ▶ Humidity
- ▶ Salt fog
- ▶ Sand & dust
- ▶ Vibration
- ▶ Shock

*Supersedes MIL-STD-810C, D, E, F

Visit www.taittough.com to learn more about Tait Tough solutions and download our guide “10 Ways to Protect and Strengthen Your LMR System.”

Exceptional Audio Tailored to Your Needs

Your audio experience is vital to quality, critical communications. Hear each call first time, to keep the channel clear for other team members that need it to do their work. Hear that call for help, first time, for improved safety outcomes.



9 ways to tailor and optimize your audio experience

Available for...

1	DIGITAL VOCODER: Tait radios incorporate DMR and P25 standard compliant vocoders, which digitize human voice and can reduce many types of background noise.	Digital modes All TP3 & 9000 series radios
2	DIGITAL NOISE SUPPRESSION: Tait radios use additional software techniques to enhance clear speech and minimize background noise.	Digital modes All 9000 series radios
3	ACTIVE NOISE CANCELLATION: Voice and background noise are received with two separate microphones, to isolate and significantly reduce background noise.	Analog & digital modes TP9500 & TP9600 portables Custom solutions for mobiles
4	PROGRAMMABLE VARIABLES: A range of factors such as microphone sensitivity level, audio balance, and equalization, can all be tailored in the programming application.	Analog & digital modes All products
5	SPEAKER OPTIONS: Choose the model with the right speaker size, wattage and output for your needs.	Analog & digital modes
6	ACCESSORY SELECTION: Choose from a range of earpieces, headsets, microphones, and speakers appropriate for your role and environment.	Analog & digital modes All products
7	USER TRAINING: Following proper radio etiquette can make a big difference to received audio quality. Free online training is available at: www.taitradioacademy.com/courses/best-practice-radio-users/	Analog & digital modes All products
8	RF PERFORMANCE: Choose devices and network equipment that have the best RF performance. Aspects such as selectivity and sensitivity can maximize coverage, minimize interference so that you can make and receive calls in more places.	Analog & digital modes All products
9	TAIT SERVICES: Coverage Design and Verification Services helps you to make and receive calls in more places. The Tait Services team can advise on audio experience, product and accessory selection, configuration, and much more.	Analog & digital mode All products

Location Services for DMR, P25 and Analog

With the addition of a GNSS receiver, location data can be transmitted across analog and digital networks for more efficient operations and also can significantly enhance worker safety when combined with the Lone Worker feature that is standard in every TM9000 series mobile.

Some location services require optional software features to be enabled, as well as careful system design.

Not all features are available all of the time, and are dependent on other settings.

DMR SPECIFIC FEATURES

- ▶ Transmit location data during voice calls in DMR Tier 2 and Tier 3 modes
- ▶ DMR Tier 3 fast polling is ideal for large fleets to have the most accurate and timely updates to enhance the safety and efficiency of your operation
- ▶ If location polling is not configured on your DMR Tier 2 or Tier 3 networks, users can send their location data to other radios as a text message

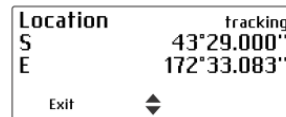
LOCATION DISPLAY

Location data can also be displayed on the radio screen. Vital information for radio users is available even if off the network, or if polling and transmission is not configured:

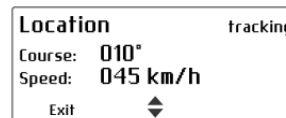
- ▶ Latitude / Longitude
- ▶ Latitude / Longitude with Decimal-Minutes
- ▶ Decimal Latitude / Longitude
- ▶ Altitude (in meters above or below mean sea level)
- ▶ Local Time
- ▶ UTM Coordinates / Relative Position / UTC Time
- ▶ Course/Speed
- ▶ Age



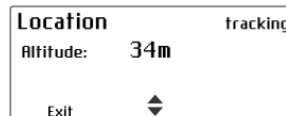
UTM Zone Number



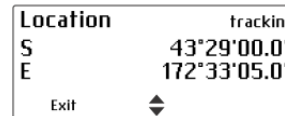
Latitude/Longitude with Decimal-Minutes (3 decimal places)



The radio's current course and speed



The radio's altitude in metres above sea-level



Latitude/Longitude with Decimal-Minutes



Latitude/Longitude in Decimal Degrees



UTC: Coordinated Universal Time 24 hour clock



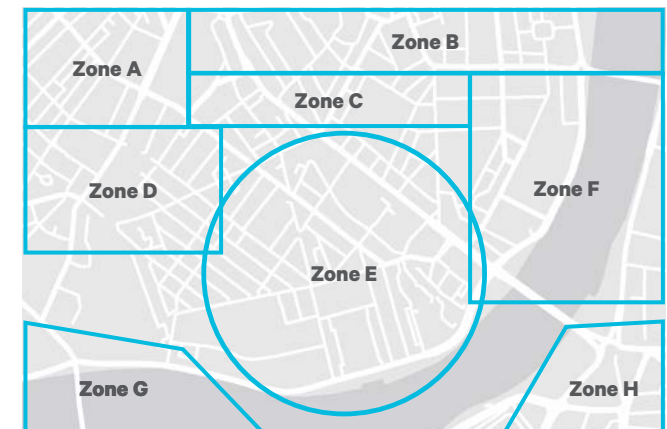
MGRS: Military Grid Reference System

TAIT GEOFENCING OPTION

Automated Location Controlled Radio Behavior

- ▶ GeoFencing is the process of creating a virtual geographic boundary, which triggers a programmed response when a radio enters or leave the area
- ▶ Tait offers control of a significant range of functions and features, as well as configurability options that can be tailored to customer specific needs
- ▶ Tait GeoFencing has the ability to operate independently of any such software application, and the real power of this feature is that the Tait radio uses its own location data to automatically perform actions that make the radio easier to use and enhance worker safety
- ▶ Tait GeoFencing is not constrained by system polling rate reporting limitations and therefore can utilize much higher polling rates within the radio (currently one poll per second)
- ▶ Tait GeoFencing is fully compatible with Tait EnableFleet

GeoFence zone examples



Fleet Management Best Practice

Tait EnableFleet provides total visibility and management of your radio fleet from a secure, central point of control.

It is a software tool that makes best practice configuration management easy, and can be hosted in the cloud or on customer premises.

With Tait EnableFleet you can connect to your devices and program both configuration updates as well as upgrade to new software versions in a number of ways:

- ▶ Wired connection
- ▶ OTAP (Over the Air Programming) via digital trunked radio networks
- ▶ OTAP (Over the Air Programming) via WiFi networks

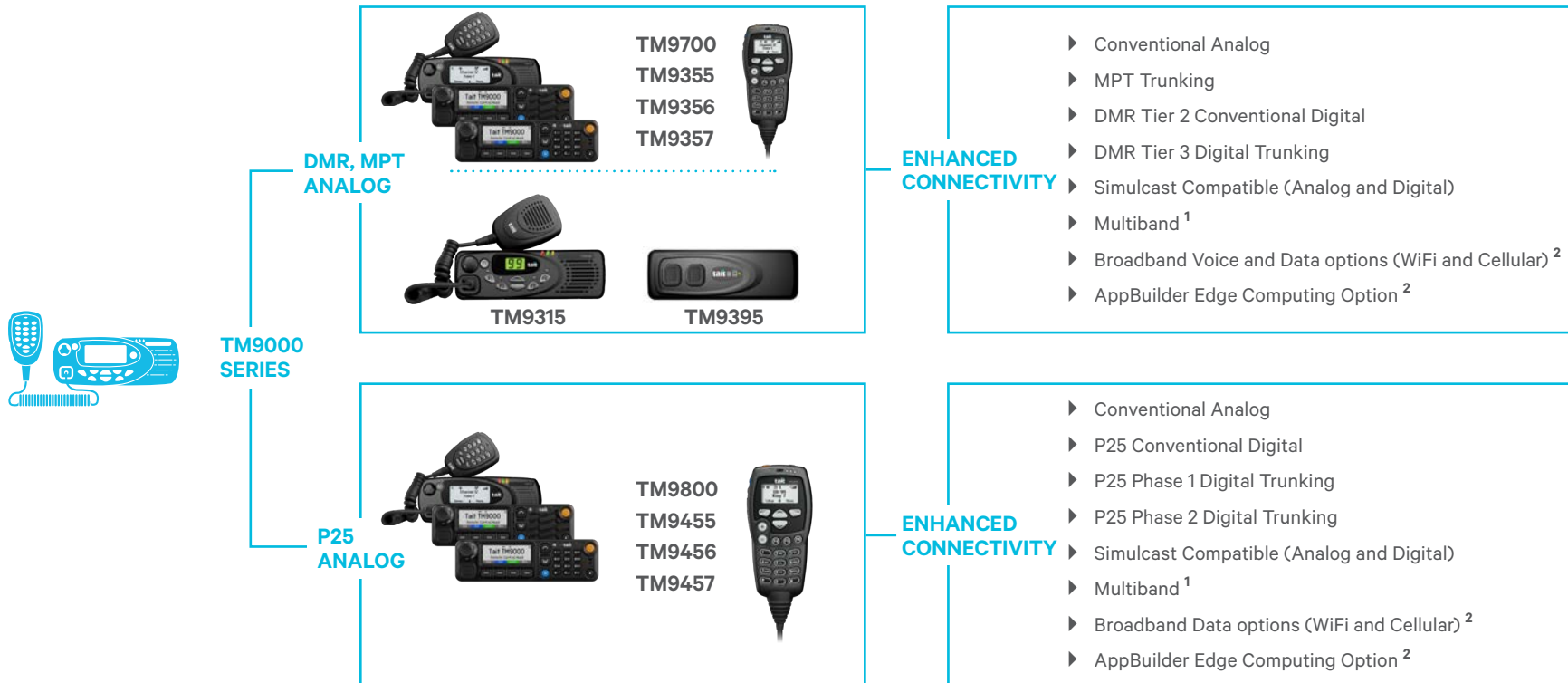


TAIT ENABLEFLEET OPTIONS AND COMPATIBILITY						
CONNECTION METHOD	CONVENTIONAL ANALOG	MPT	DMR TIER 2 CONVENTIONAL	DMR TIER 3 TRUNKED	P25 CONVENTIONAL	P25 TRUNKED
WIRED PROGRAMMING	TP9300/TP9400	TP9300	TP9300	TP9300	TP9400	TP9400
	TP9500/TP9600	TP9500	TP9500	TP9500	TP9600	TP9600
	TM9300/TM9400	TM9300	TM9300	TM9300	TM9400	TM9400
	TM9700/TM9800	TM9700	TM9700	TM9700	TM9800	TM9800
OTAP VIA DIGITAL TRUNKED NETWORKS				TP9300		TP9400
				TP9500		TP9600
				TM9300		TM9400
				TM9700		TM9800
OTAP VIA WIFI NETWORKS	TP9500/TP9600 and TM9300/TM9400*	TP9500 and TM9300*	TP9500 and TM9300*	TP9500 and TM9300*	TP9600 and TM9400*	TP9600 and TM9400*

* with Tait Unified Vehicle / TMX450 option or WiFi option board.

TM9000 Family Tree

Each radio in the TM9000 series is a highly flexible and configurable software platform that can be tailored to suit your current and future needs. There are a variety of models and options to meet a wide range of critical communications needs.



¹ Multiband capability with TM9700/TM9800/TM9356/TM9456

² Optional for TM9355 and TM9455 mobiles only.

SYMBOLS USED IN THIS DOCUMENT

● STANDARD

▲ OPTIONAL

■ ITEM CODE

Radio standards:



TAIT DMR

A smart investment, made to evolve

Tait DMR is a digital communications platform that delivers commercial and worker safety benefits for mission critical users. With the capability to carry both voice and data, Tait DMR gives you a powerful combination of flexibility, control, and resiliency. Tait DMR products support conventional analog and MPT operation, and the digital modes follow the DMR Association's open standard, ensuring interoperability with other compliant equipment.

Tait customers have tough jobs in industries that place challenges on users and equipment. That is why Tait engineered the TM9300 series to be flexible, high performing, and extremely reliable for safe and efficient operations.





DMR and Analog Selection Guide

TM9000 series feature overview

Many features and options are available across the range of TM9300 mobiles, and each model offers something unique to meet the needs of a variety of users and environments. This comparison table is a brief overview of the options available for your fleet. The frequency band guide on the following page is also an important reference. For detailed feature comparisons, refer to **page 19**.

● Standard feature

▲ Optional feature

¹ WiFi OTAP requires an option board and Tait EnableFleet

² Requires Tait Unified Vehicle / TMX450

³ Internal speaker available for TM9300 and TM9700 fitted with TCH3 (4W), TCH4 (4W), or LCH (3W). Not available with TCH6 or HHCH.

⁴ Standard for HHCH packages. Optional for LCH, TCH, TM9315 and TM9395.

⁵ Requires GNSS Receiver to be fitted

FEATURE		TM9700	TM9355	TM9356	TM9315	TM9395	
ENHANCED CONNECTIVITY	Conventional Analog	●	●	●	●	●	
	MPT1327 Trunking	●	●		●	●	
	DMR Tier 2 Conventional Digital	●	●	●	●	●	
	DMR Tier 3 Digital Trunking	●	▲		▲	▲	
	Dual Band (Dual Torso)			▲			
	Multiband (Single Torso)	▲					
	WiFi OTAP capability ¹		▲				
	Broadband (WiFi and Cellular) voice and data ²		▲				
USER INTERFACE OPTIONS	Display	TCH 422x154 pixels	▲	▲	▲		
		LCH 160x64 pixels	▲	▲	▲		
		HHCH 96x62 pixels	▲	▲	▲		
		2 Digits (7 Segments)	▲			●	
	Menu navigation keys	●	●	●			
	Full keypad (Keypad Mic, HHCH, or TCH6)	▲	▲	▲			
	Remote control head options	▲	▲	▲			
	Dual control head	▲	▲ TM9357				
EXCEPTIONAL AUDIO	Vocoder and Digital Noise Suppression	●	●	●	●	●	
	Internal Speaker Output	3W or 4W ³	3W or 4W ³	3W or 4W ³	3W ³		
	External Speaker Output	10W ⁴ or 15W	10W ⁴ or 15W	10W ⁴ or 15W	10W or 15W	10W or 15W	
SAFETY FEATURES	Lone Worker	●	●	●	●	●	
	Location Services ⁵	●	▲	▲	▲	▲	
	Tait GeoFencing automation ⁵	▲	▲	▲	▲	▲	
PERSONALIZATION	Control Head Color Options (See page 45)	▲	▲	▲			

DMR and Analog Frequency Bands

Tait has an extensive range of frequency band options available. Please refer to individual product specification sheets or contact your Tait representative for more detailed information about frequency options, RF performance, and regulatory compliance.

FREQUENCY CODE	FREQUENCY BAND	TM9300 25W	TM9300 HIGH POWER	TM9700 25W
B1	136-174MHz	•	• 50W	•
C0	174-225MHz	•		
HK ²	378-470MHz ^{1,2}		• 40W	•
H5 ²	400-470MHz ²	•		
H7 ²	450-520MHz ²	•	• 40W	•
K5	757-870MHz ³		• 35W	

¹ HK 378-470MHz hardware supersedes the H5 400-470MHz hardware previously available

² The UHF band radios are approved for use in Citizen Band (CB) in Australia and New Zealand when programmed to meet the requirements of AS/NZS4365. Tait cannot guarantee full performance to the published specifications when the HK or H5 radios are operating at the CB frequencies.

³ FCC and IC approved (ETSI approval not available)

TM9700 25W Mobile

Flexible, Rugged and Reliable Multiband Communications

Increase worker safety and productivity across multiple radio networks and frequency bands with the TM9700 Multiband Mobile, a highly reliable and versatile radio designed to adapt to a wide variety of operations.



FEATURES

▶ Seamless Multiband Performance

- Configurable to operate across 136-174MHz or 378-520MHz
- Flexible and simple ordering and deployment of single band or multiband operation at time of purchase, or subsequently over the air
- Bands are not locked and can be reconfigured

▶ Future proof multi-mode flexibility

- DMR Tier 3 digital trunking option
- DMR Tier 2 conventional digital
- MPT 1327 trunking
- Conventional analog FM

▶ DMR open standards provide choice and interoperability

▶ A variety of user interface options

- 4W speaker built in to TCH3 and TCH4 Control Heads
- 3W speaker built in to Large Control Head
- 10W and 15W External Speaker Options for TCH and LCH. External Speaker required for TCH6 and HHCH
- Clear audio with Digital Noise Suppression
- Four programmable function keys with LCH and TCH3, five programmable function keys with TCH4 and TCH6, six programmable function keys with HHCH
- Remote Control Head cable options available up to 30ft (9m)
- A range of installation options and accessories are available

▶ Safety and efficiency features

- Lone Worker
- Programmable emergency key
- Location Services option¹
- Tait GeoFencing^{1,2} option for Automated Location Controlled Radio Behavior
- Send and receive text and status messages
- Encryption options

▶ Tait EnableFleet configuration management options

- Wired connection for all operating modes
- Over the Air Programming for configuration changes and software upgrades over DMR Tier 3 networks

▶ Personalize your radio:

- HHCH available in black, yellow, red and green
- LCH available in black, yellow, and green

Note:

- ¹ Requires GNSS Receiver to be fitted
- ² Optional software feature

PERSONALIZATION

COLOR HHCH Only

TM9355

High Performance, Extremely Flexible

The TM9355 is a high-performing reliable radio for critical communications. Supporting multiple DMR and analog modes, safety-enhancing features and a rugged, robust design, the TM9355 is highly configurable to suit your current operation and can adapt to meet future needs.

FEATURES

► **Future proof multi-mode flexibility**

- DMR Tier 3 digital trunking option
- DMR Tier 2 conventional digital
- MPT 1327 trunking
- Conventional analog FM

► **DMR open standards provide choice and interoperability**

► **A variety of user interface options**

- 4W speaker built in to TCH3 and TCH4 Control Heads
- 3W speaker built in to Large Control Head
- 10W and 15W External Speaker Options for TCH and LCH. External Speaker required for TCH6 and HHCH
- Clear audio with Digital Noise Suppression
- Four programmable function keys with LCH and TCH3, five programmable function keys with TCH4 and TCH6, six programmable function keys with HHCH
- Remote Control Head cable options available up to 30ft (9m)
- Dual control head options (TM9357 – refer to Mobiles Options and Accessories Catalog for configuration details)
- A range of installation options and accessories are available

► **Safety and efficiency features**

- Lone Worker
- Programmable emergency key
- Location Services option¹

- Tait GeoFencing^{1,2} option for Automated Location Controlled Radio Behavior
- Send and receive text and status messages
- Encryption options
- **Tait Unified Vehicle option / TMX450 option**
 - Broadband WiFi and Cellular (Dual SIM)
 - On-board computing power
 - On-board data storage
 - Voice Recorder app
 - Application Builder
- **Tait EnableFleet configuration management options**
 - Wired connection for all operating modes
 - Over the Air Programming for configuration changes and software upgrades over DMR Tier 3 networks, or via WiFi or Cellular with optional Tait Unified Vehicle / TMX450
- **Personalize your radio:**
 - HHCH available in black, yellow, red and green
 - LCH available in black, yellow, and green

Note:

- ¹ Requires GNSS Receiver to be fitted
- ² Optional software feature

PERSONALIZATION



TM9356

Dual Band / Dual Body Mobile

The TM9356 mobile provides dual frequency band capability for DMR Tier 2 and conventional analog solutions. Make and receive calls on either VHF or UHF radios from a single control head.



TCH4



TCH6



LARGE CONTROL HEAD (LCH)



HAND HELD CONTROL HEAD (HHCH)

FEATURES

► Multi-mode flexibility

- DMR Tier 2 conventional digital
- Conventional analog FM
- Crossband Repeat (analog mode)

► A variety of user interface options

- 4W speaker built in to TCH4 Control Head
- 3W speaker built in to Large Control Head
- 10W and 15W External Speaker Options for TCH and LCH. External Speaker required for TCH6 and HHCH
- Clear audio with Digital Noise Suppression
- Four programmable function keys with LCH, five programmable function keys with TCH4 and TCH6, six programmable function keys with HHCH
- Remote Control Head cable options available up to 30ft (9m)
- A range of installation options and accessories are available

► Safety and efficiency features

- Lone Worker
- Programmable emergency key
- Location Services option¹
- Tait GeoFencing^{1,2} option for Automated Location Controlled Radio Behavior
- Send and receive text and status messages

- Encryption options
- **Tait EnableFleet configuration management options**
- **Personalize your radio:**
 - HHCH available in black, yellow, red and green
 - LCH available in black, yellow, and green

Note:

- ¹ Requires GNSS Receiver to be fitted
- ² Optional software feature

PERSONALIZATION



TM9315

High Performance, Extremely Flexible

The TM9315 is a high-performing, reliable radio for critical communications with a simple, easy to use interface. Supporting multiple DMR and analog modes, safety-enhancing features and a rugged, robust design, the TM9315 is highly configurable to suit your current operation and can adapt to meet future needs.



2 DIGIT CONTROL HEAD

FEATURES

- ▶ **Future proof multi-mode flexibility**
 - DMR Tier 3 digital trunking option
 - DMR Tier 2 conventional digital
 - MPT 1327 trunking
 - Conventional analog FM
- ▶ **DMR open standards provide choice and interoperability**
- ▶ **Usability**
 - 3W speaker built in to Control Head
 - 10W and 15W External Speaker Options
 - Clear audio with Digital Noise Suppression
 - Four programmable function keys
 - A range of installation options and accessories are available
- ▶ **Safety and efficiency features**
 - Lone Worker
 - Programmable emergency key
 - Location Services option¹
 - Tait GeoFencing^{1,2} option for Automated Location Controlled Radio Behavior
 - Encryption options
- ▶ **Tait EnableFleet configuration management options**

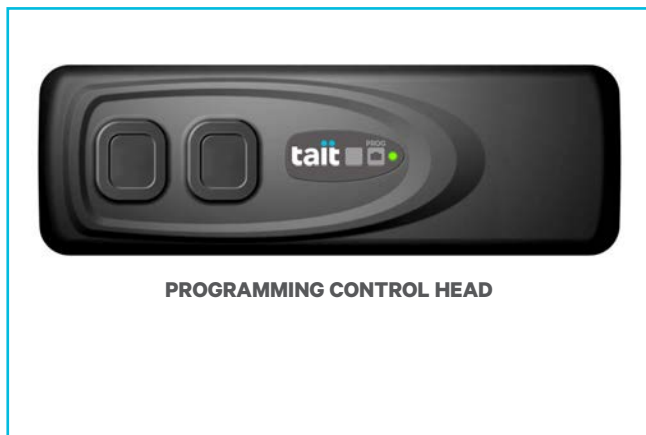
Note:

- ¹ Requires GNSS Receiver to be fitted
- ² Optional software feature

TM9395

High Performance, Extremely Flexible

The TM9395 is designed for custom integration solutions that do not require an interactive control head, such as integration to 3rd party user interface for voice and data operation, or for data only operation that does not require a user interface.



FEATURES

► Multi-mode flexibility

- DMR Tier 2 conventional digital
- Conventional analog FM
- Crossband Repeat (analog mode)

► Software control

- CCDI and RAP protocol support for radio control from internal options boards or external devices
- Software controls many aspects of the operating functionality of the terminal, including dialing and ringing
- Access to modems or data transport in both analog and digital modes
- Control of IO lines and voice services

► Hardware connectivity

- Auxiliary connector on the rear of the radio supports IO, serial control, audio lines including a microphone input
- Internal options boards space
- Internal options connector supports IO, serial control, audio and power
- Blanked off miniature "D" connector space in the options area

► Data features

- Data services on DMR include full packet data on DMR Tier 3 and the SDM service on DMR Tier 2
- 1200/2400 bps modem in Analog Conventional
- SST, MST and NPD data calls on MPT1327

- Status and text support on MPT1327 and DMR Tier 3
- Status support on DMR Tier 2
- Location Services option¹
- Tait GeoFencing^{1,2} option for Automated Location Controlled Radio Behavior
- Encryption options

► Voice access

- Unbalanced audio in and out via tap points (fixed level)
- Microphone input on auxiliary connector
- Audio Out at 10W maximum to drive an external loudspeaker
- A range of installation options and accessories are available

► Tait EnableFleet configuration management options

Note:

¹ Requires GNSS Receiver to be fitted

² Optional software feature

Software Feature Enabler (SFE) Descriptions

TM9000 series DMR and Analog

A number of Software Feature Enabler (SFEs) are available for TM9300 mobiles.

All SFEs are licenced per feature per radio.

When ordering a new radio:

- ▶ Some SFE licences are included by default in the baseline feature set of current production radios as described below.
- ▶ Optional SFE licences can be ordered to enhance the capability of your new radio from the start.

Upgrading existing fleets:

- ▶ The configuration file of each radio will show what SFEs are currently licenced or installed.
- ▶ Additional SFEs can be ordered and deployed to upgrade and enhance existing fleets.
- ▶ Adding software licences to existing fleets may require a radio firmware update as well as the feature licence.
- ▶ Please refer to Tait EnableFleet for best practice in radio configuration management to effectively deploy firmware and feature upgrades.

BASELINE SOFTWARE LICENCES (FOR NEW RADIO ORDERS)

Included by default in all current production TM9300, with exceptions for some models as noted *.
Can also be ordered to upgrade existing fleets that may not have these features deployed.

DMR TIER 2 CONVENTIONAL DIGITAL

TMAS097

MPT ANALOG TRUNKING

MPT1327 Analog Trunking mode enables the mobile radio to be used on MPT networks. The TM9300 can roam seamlessly between MPT and DMR Trunked systems, providing an easy migration path from MPT to a DMR trunked system.

** Not supported in TM9356.*

TMAS031

ALPHANUMERIC ID

Permits an alphanumeric label to be embedded in digital voice transmissions, for talking party identification.

** Not functional in TM9315 or TM9395.*

TMAS072

LOCATION SERVICES & DISPLAY

The radio supports GNSS (Global Navigation Satellite System). The radio's location information can be displayed on the radio screen or sent over a network for use with location reporting (polling and unsolicited) applications.

Mobile radios require a standalone GNSS receiver to be attached to the serial port.

** TM9315 and TM9395 do not have a screen to display location information on the control head.*

TMAS081

ENHANCED LOCATION REPORTING

Enables distance-based location reporting. Reports can be sent at a set distance, at different distances depending on the current speed or if the bearing, or altitude changes by a prescribed amount.

Mobile radios require a standalone GNSS receiver to be attached to the serial port.

TMAS089

MULTIBAND CAPABILITY

Enables TM9700 to operate seamlessly over VHF (136-174MHz) and UHF (378-520MHz) frequency bands

** Supported in TM9700 & TM9800 mobiles only*

TMAS113

Software Feature Enabler (SFE) Descriptions (continued)

TM9000 series DMR and Analog

A number of Software Feature Enabler (SFEs) are available for TM9300 mobiles.

All SFEs are licenced per feature per radio.

When ordering a new radio:

- ▶ Some SFE licences are included by default in the baseline feature set of current production radios as described below.
- ▶ Optional SFE licences can be ordered to enhance the capability of your new radio from the start.

Upgrading existing fleets:

- ▶ The configuration file of each radio will show what SFEs are currently licenced or installed.
- ▶ Additional SFEs can be ordered and deployed to upgrade and enhance existing fleets.
- ▶ Adding software licences to existing fleets may require a radio firmware update as well as the feature licence.
- ▶ Please refer to Tait EnableFleet for best practice in radio configuration management to effectively deploy firmware and feature upgrades.

BASELINE SOFTWARE LICENCES (FOR NEW RADIO ORDERS)

Included by default in all current production TM9000 DMR and Analog, with exceptions for some models as noted *. Can also be ordered to upgrade existing fleets that may not have these features deployed.

ARC4 ENCRYPTION

Enables ARC4 (40 Bit) encryption. ARC4 is a basic level of encryption that offers privacy from less sophisticated attacks. ARC4 encryption is supported in DMR Tier 2 mode only. The programming application configures the way the encryption keys are used, and loads the encryption keys into the radio (does not require Tait Enable Protect Key Management System or Key Fill Device).

TMS102

VOICE ANNUNCIATION

The radio can be set up to audibly announce radio ID, channel numbers, zones, network, battery level, and certain feature activation/deactivations such as Lone Worker.

TMS087

OTAP

OTAP (Over The Air Programming) makes it possible for Tait EnableFleet to update the configuration and upgrade the firmware of Tait radios via a DMR Tier 3 network's data services. OTAP is supported by Tait EnableFleet version 2.0 and above. This licence specifically enables OTAP via DMR Tier 3. WiFi OTAP is only available and enabled by default on TP9500 and Tait Unified Vehicle. *Requires TMS080 DMR Tier 3 optional SFE to be enabled.*

TMS075-DMR

20/25KHZ WIDEBAND

This licence enables 20/25kHz wideband operation on all frequencies. Local regulations on usage of wideband operation must be observed.

TMS083

Software Feature Enabler (SFE) Descriptions (continued)

TM9000 series DMR and Analog

A number of Software Feature Enabler (SFEs) are available for TM9300 mobiles.

All SFEs are licenced per feature per radio.

When ordering a new radio:

- ▶ Some SFE licences are included by default in the baseline feature set of current production radios as described below.
- ▶ Optional SFE licences can be ordered to enhance the capability of your new radio from the start.

Upgrading existing fleets:

- ▶ The configuration file of each radio will show what SFEs are currently licenced or installed.
- ▶ Additional SFEs can be ordered and deployed to upgrade and enhance existing fleets.
- ▶ Adding software licences to existing fleets may require a radio firmware update as well as the feature licence.
- ▶ Please refer to Tait EnableFleet for best practice in radio configuration management to effectively deploy firmware and feature upgrades.

OPTIONAL SOFTWARE LICENCES

Optional features may be licenced for each radio at the time of purchase, or can be ordered and deployed to existing fleets. Adding software licences to existing fleets may require a radio firmware update as well as the feature licence – please refer to Tait EnableFleet for best practice in radio configuration management to effectively deploy firmware and feature upgrades.

DMR TIER 3 DIGITAL TRUNKING

TMS080

Enables DMR Tier 3 trunking operation in TM9300 radios. The TM9300 can roam seamlessly between DMR Tier 3 networks and analog MPT trunked networks.

** Not supported in TM9356.*

GEOFENCING AUTOMATION

TMS105-DMR

Enables Automated Location Controlled Radio Behavior. Automatically change mode, change channel and send alert messages based on pre-programmed software boundaries. Multiple regions of various simple and/or complex shapes and sizes and overlays can be configured and a set of actions can be associated with entry/exit from these regions. Actions such as sending status messages, controlling GPIO, and activating features such as Lone Worker can be achieved.

Mobile radios require a standalone GNSS receiver to be attached to the serial port.

Refer to the Tait GeoFencing manual for detailed information.

EMBEDDED GPS DECODING

TMS107

Enables the forwarding of location information embedded in received voice frames to a CCDI serial port for further processing.

Supported for DMR Tier 2 operation.

ENCRYPTION - DES 56 BIT

TMS095

Enables the use of DES (56 Bit) encryption on DMR systems for voice communications. The Programming Application configures the way the encryption keys are used, and loads the encryption keys into the radio (Does not require Tait Enable Protect Key Management System or Key Fill Device).

** TM9315 or TM9395 are unable to display the status of encrypted or clear channels.*

ENCRYPTION - AES 128/256 BIT - SINGLE KEY

TMS058-DMR

Enables use of AES encryption (128-bit/256-bit) on DMR systems for voice communications. The Programming Application configures the way the encryption keys are used, and loads the encryption key into the radio (Does not require Tait Enable Protect Key Management System or Key Fill Device).

** TM9315 or TM9395 are unable to display the status of encrypted or clear channels.*

USER IP DATA

TMS056-DMR

Enables IP forwarding between a DMR Tier 3 bearer and a serially-connected data peripheral. This allows third party IP-based applications to send and receive packet data between a local data peripheral and a remote host, utilizing the traffic channels of the Tait DMR network.

Requires TMS080 DMR Tier 3 optional SFE to be enabled.

Detailed Feature Comparison

TM9000 series DMR and Analog features

FEATURE	TM9700	TM9355	TM9356	TM9315	TM9395
CONVENTIONAL FEATURES (ANALOG AND DIGITAL)					
Networks	26	26	26	1	26
Channels	1000 (2000) ¹	1500	1500	100	1500
Zones	50 (100) ¹	100	100	1	100
Scan groups (with up to 50 members per group)	300	300	300	300	300
Repeater talkaround	●	●	●	●	
Scanning	●	●	●	●	●
Dual priority scanning, editable scanning and groups	●	●	●		
Voting	●	●	●	●	●
Programmable group membership	●	●	●	●	
Nuisance channel delete from group	●	●	●		
Busy channel lockout (transmit inhibit)	●	●	●	●	●
Off Air Call Set Up (OACSU)	●	●	●	●	●
Radio check (DMR Tier 2 Conventional mode)	●	●	●	Rx Only	●
Push and Talk Call Setup (PATCS)	●	●	●	●	●
Computer Controlled Data Interface (CCDI)	●	●	●	●	●

● Standard feature

▲ Optional feature

¹ With zones/channel optional enhancement license

Detailed Feature Comparison (continued)

TM9000 series DMR and Analog features

FEATURE	TM9700	TM9355	TM9356	TM9315	TM9395
CONVENTIONAL ANALOG FEATURES					
Auto Quiet Timer	●	●	●	●	●
Deferred Calling	●	●	●	●	●
Squelch override	●	●	●	●	●
CTCSS (Continuous Tone Controlled Squelch System)	●	●	●	●	●
DCS (Digitally Coded Squelch)	●	●	●	●	●
MDC1200 (En/Decode)	●	●	●	●	●
SELCALL (Selective calling)	●	●	●	●	●
Multiple SELCALL Networks	●	●	●	●	●
Programmable User Defined SELCALL Tone Set	●	●	●	●	●
Programmable Group Tone	●	●	●	●	●
2-Tone Decode (Type-99)	●	●	●	●	●
Monitor function	●	●	●	●	●
FFSK	●	●	●	●	●
MPT1327 FEATURES					
CTCSS (Continuous Tone Controlled Squelch System) on traffic channel	●	●		●	●

● Standard feature

▲ Optional feature

Features continue on the next page

Detailed Feature Comparison (continued)

TM9000 series DMR and Analog features

FEATURE	TM9700	TM9355	TM9396	TM9315	TM9395
TRUNKED FEATURES (ANALOG AND DIGITAL)					
Multiple network capability	4	4		4	4
Talkgroups	1000 (2000) ¹	512 lists		32	512 lists
Zones	50 (100) ¹	1000		1	1000
Work groups	1000	1000			1000
Alphanumeric presets	100	100			
Network name display	●	●			
Channel display	●	●		●	
Call time limit display	●	●		●	
Advanced hunt routines	●	●		●	
Manual site select	●	●		●	
Broadcast group call	●	●		●	
Interfleet calls	●	●		●	
PABX calls (Private Automatic Branch Exchange)	●	●		Via preset	
PSTN calls (Public Switched Telephone Network)	●	●		Via preset	
Preset calls	●	●		●	
Priority call (3 Level Priority)	DMR Tier 3 Only	DMR Tier 3 Only		DMR Tier 3 Only	DMR Tier 3 Only
PTT redial	●	●		●	
Call in Absence indicator	●	●			
Dynamic regrouping	●	●		●	●
Radio Access Protocol (RAP) (Map27)	●	●		●	●

● Standard feature

▲ Optional feature

¹ With zones/channel optional enhancement license

Features continue on the next page

Detailed Feature Comparison (continued)

TM9000 series DMR and Analog features

FEATURE	TM9700	TM9355	TM9356	TM9315	TM9395
GENERAL FEATURES (ANALOG AND DIGITAL, CONVENTIONAL AND TRUNKED)					
Alphanumeric labels	●	●	●		
Status labels	●	●	●		
ANI (Automatic Number Identification) Conventional analog, and DMR modes – not supported in MPT mode.	●	●	●		
Caller / Talker ID	●	●	●		
Call queuing	●	●	●		
Channel presets Conventional analog, MPT and DMR Tier 3 modes – not supported in DMR Tier 2 mode	●	●	●	●	●
Priority call	●	●	●	●	●
Group calls	●	●	●	●	●
Conference group calls MPT and DMR modes, and via SELCALL in conventional analog mode	●	●	●	●	●
Individual calls MPT and DMR modes, and via SELCALL in conventional analog mode	●	●	●	●	●
All Identity Call MPT and DMR modes – not supported on conventional analog mode	●	●	●	●	●
Join busy group MPT and DMR modes – not supported on conventional analog mode	●	●	●	●	●

● Standard feature

▲ Optional feature

Features continue on the next page

Detailed Feature Comparison (continued)

TM9000 series DMR and Analog features

FEATURE	TM9700	TM9355	TM9356	TM9315	TM9395
GENERAL FEATURES (ANALOG AND DIGITAL, CONVENTIONAL AND TRUNKED) (continued)					
Call diversion Conventional analog, MPT and DMR Tier 3 modes – not supported on DMR Tier 2 mode	●	●	●	●	●
Automatic call back Conventional analog, MPT and DMR Tier 3 modes – not supported on DMR Tier 2 mode	●	●	●	●	●
DMR call alert	●	●	●	●	
Status messages TM9315 Only via CCDI (conventional) and RAP (trunked)	●	●	●	▲	▲
Short data messages TM9315 and TM9395 only via CCDI (conventional) and RAP (trunked)	●	●	●	▲	▲
Packet Data / User IP Data Supported in DMR Tier 2 and Tier 3 modes – not supported in conventional analog or MPT modes	▲	▲	▲	▲	▲
Transmit lockout	●	●	●	●	●
Transmit low power	●	●	●	●	●
Transmit timer	●	●	●	●	●
DTMF (Dual Tone Multi Frequency) encode using presets	●	●	●	●	●
DTMF dialing Only supported with Keypad Microphone or HHCH	▲	▲	▲		

● Standard feature

▲ Optional feature

Features continue on the next page

Detailed Feature Comparison (continued)

TM9000 series DMR and Analog features

FEATURE	TM9700	TM9355	TM9356	TM9315	TM9395
LOCATION AND SAFETY FEATURES					
GNSS receiver	▲	▲	▲	▲	▲
Transmit GPS during voice calls Digital modes only, when GNSS Receiver is fitted	●	●	●	●	●
GPS over SDM MPT modes only, when GNSS Receiver is fitted	●		●	●	●
Tait GeoFencing automation	▲	▲	▲	▲	●
Lone Worker	●	●	●	●	●
Programmable emergency key	●	●	●	●	●
Emergency call	●	●	●	●	●
SECURITY OPTIONS					
Voice Inversion Scrambler Supported in conventional analog and MPT modes	●	●	●	●	●
Encryption, ARC4 Supported in DMR Tier 2 mode	●	●	●	●	●
Encryption, DES 56 bit Supported in DMR Tier 2 and Tier 3 modes	▲	▲	▲	▲	▲
Encryption, AES 256 bit Supported in DMR Tier 2 and Tier 3 modes	▲	▲	▲	▲	▲
Security lock on power-up Requires a Personal Identification Number (PIN)	●	●			●
Radio inhibit and uninhibit (also known as stun and revive)	●	●	●	●	●
Remote monitor (enables microphone and transmitter remotely) Only supported in DMR Tier 2 mode	●	●	●	●	●
Programming Security Tait EnableProtect Advanced System Key	▲	▲	▲	▲	▲

● Standard feature

▲ Optional feature

Features continue on the next page

Detailed Feature Comparison (continued)

TM9000 series DMR and Analog features

FEATURE		TM9700	TM9355	TM9356	TM9315	TM9395
USER INTERFACE						
Display	TCH 422x154 pixels	▲	▲	▲		
	LCH 160x64 pixels	▲	▲	▲		
	HHCH 96x62 pixels	▲	▲	▲		
	2 Digits (7 Segments)	▲			●	
Contrast adjust (not applicable to TCH)		●	●	●		
Backlight control		●	●	●		
Remote control head (single)		●	▲	●		
Remote control head (dual) TM9357		▲	▲			
Received Signal Strength Indicator (RSSI)		●	●	●		
Shared menu structure Common with TP9000 portable radios		●	●	●		
Programmable channel selector		●	●	●	●	
Programmable function keys (including emergency key)		5 TCH4 & TCH6 4 LCH & TCH3 6 HHCH	5 TCH4 & TCH6 4 LCH & TCH3 6 HHCH	5 TCH4 & TCH6 4 LCH & TCH3 6 HHCH	4	0
Key lock		●	●	●		
Adjustable audible indicators (keypress tones / confidence tones)		●	●	●	●	●
Quiet mode & silent mode		●	●	●	●	●
Voice annunciations		●	●	●	●	

● Standard feature

▲ Optional feature

Features continue on the next page

Detailed Feature Comparison (continued)

TM9000 series DMR and Analog features

FEATURE	TM9700	TM9355	TM9356	TM9315	TM9395
Speaker output (internal) *Not available for Hand Held Control Head	3W with LCH 4W with TCH3 and TCH4	3W with LCH 4W with TCH3 and TCH4	3W with LCH 4W with TCH3 and TCH4	3W	
Speaker output (external)	▲ 10W ▲ 15W	▲ 10W ▲ 15W	▲ 10W ▲ 15W	▲ 10W ▲ 15W	▲ 10W ▲ 15W
Auto Noise Reduction (ANR) Conventional analog and MPT modes	●	●	●	●	●
Vocoder and Digital Noise Suppression DMR modes – not supported in conventional analog and MPT modes	●	●	●	●	●
Active Noise Cancellation (ANC) Custom option - contact Tait	▲	▲	▲	▲	▲
Broadband connectivity and computing WiFi, cellular, On-board data storage and processing with Tait Unified Vehicle / TMX450 option		▲			
Over the Air Programming (OTAP) Configuration change and software upgrade, requires Tait EnableFleet	▲ DMR Tier 3	▲ DMR Tier 3 ▲ WiFi with Tait Unified Vehicle / TMX450	▲ DMR Tier 3	▲ DMR Tier 3	▲ DMR Tier 3
Go Ahead Tone / Proceed to Talk Tone	●	●	●	●	●
Side-tone generation	●	●	●	●	●

● Standard feature

▲ Optional feature

Features continue on the next page

TAIT P25

Instant, reliable communications is just the beginning

First responders around the world trust Tait for multi-agency coordination in challenging situations. We are dedicated to designing and delivering proven P25 solutions that are robust, interoperable, and secure. With support for analog, P25 Phase 1 and P25 Phase 2 open standards, Tait can provide public safety agencies with complete end-to-end solutions to meet your unique organizational requirements.

Tait P25 and analog mobile radios are designed and built to withstand the challenging conditions public safety users operate in. Packed with a range of safety-enhancing features, our mobiles provide the clear audio, reliable connection, and interoperability that those serving our communities depend on.





P25 and Analog Selection Guide

TM9000 series feature overview

Many features and options are available across the range of TM9400 mobiles and each model offers something unique to meet the needs of users and environments. This comparison table is a quick guide to the models to take a closer look at to include in your fleet. For detailed feature comparisons, refer to **page 39**.

FEATURE		TM9800	TM9455	TM9456	
ENHANCED CONNECTIVITY	Conventional Analog	●	●	●	
	P25 Conventional Digital	●	●	●	
	P25 Phase 1 Digital Trunking	●	●	●	
	P25 Phase 2 Digital Trunking	●	▲	▲	
	Dual Band (Dual Torso)			▲	
	Multiband (Single Torso)	▲			
	WiFi OTAP capability ¹		▲		
	Broadband (WiFi and Cellular) voice and data ²		▲		
USER INTERFACE OPTIONS	Display	TCH 422x154 pixels	▲	▲	▲
		LCH 160x64 pixels	▲	▲	▲
		HHCH 96x62 pixels	▲	▲	▲
	Menu navigation keys	●	●	●	
	Full keypad (Keypad Mic, HHCH or TCH6)	▲	▲	▲	
	Remote control head options	▲	▲	▲	
	Dual control head	▲	▲ TM9457	▲	
	EXCEPTIONAL AUDIO	Vocoder and Digital Noise Suppression	●	●	●
Internal speaker output		3W or 4W ³	3W or 4W ³	3W or 4W ³	
External speaker output		10W ⁴ or 15W	10W ⁴ or 15W	10W ⁴ or 15W	
SAFETY FEATURES	Lone Worker	●	●	●	
	Location Services ⁵	●	▲	▲	
	Tait GeoFencing Automation ⁵	▲	▲	▲	
PERSONALIZATION	Color face plate options	▲	▲	▲	

● Standard feature

▲ Optional feature

¹ WiFi OTAP requires an option board and Tait EnableFleet

² Requires Tait Unified Vehicle / TMX450

³ Internal speaker available for TM9400 and TM9800 fitted with TCH3 (4W), TCH4 (4W), or LCH (3W). Not available with TCH6 or HHCH.

⁴ Standard for HHCH packages. Optional for LCH and TCH.

⁵ Requires GNSS Receiver to be fitted



P25 and Analog Frequency Bands

Tait has an extensive range of frequency band options available. Please refer to individual product specification sheets or contact your Tait representative for more detailed information about frequency options, RF performance, and regulatory compliance.

FREQUENCY CODE	FREQUENCY BAND	TM9400 25W	TM9400 HIGH POWER	TM9800 25W
B1	136-174MHz	•	• 50W	•
HK ²	378-470MHz ^{1,2}		• 40W	•
H5 ²	400-470MHz ²	•		
H7 ²	450-520MHz ²	•	• 40W	•
K5	757-870MHz ³		• 35W	

¹ HK 378-470MHz hardware supersedes the H5 400-470MHz hardware previously available

² The UHF band radios are approved for use in Citizen Band (CB) in Australia and New Zealand when programed to meet the requirements of AS/NZS4365. Tait cannot guarantee full performance to the published specifications when the HK and H5 radios are operating at the CB frequencies

³ FCC and IC approved (ETSI approval not available)

TM9800 25W Mobile

Flexible, Reliable, Multi-Agency Cooperation

The TM9800 is a high-performing, flexible and robust mobile, designed for use in challenging environments while delivering high quality audio and intuitive operation to first responders around the world.



FEATURES

▶ Seamless Multiband Performance

- Configurable to operate across 136-174MHz or 378-520MHz
- Flexible and simple ordering and deployment of single band or multiband operation at time of purchase, or subsequently over the air
- Bands are not locked and can be reconfigured

▶ Future proof multi-mode flexibility

- Conventional Analog
- P25 Conventional Digital
- P25 Phase 1 Digital Trunking
- P25 Phase 2 Digital Trunking

▶ P25 open standards provide choice and interoperability

▶ A variety of user interface options

- 4W speaker built in to TCH3 and TCH4 Control Heads
- 3W speaker built in to Large Control Head
- 10W and 15W External Speaker Options for TCH and LCH. External Speaker required for TCH6 and HHCH
- Clear audio with Digital Noise Suppression
- Four programmable function keys with LCH and TCH3, five programmable function keys with TCH4 and TCH6, six programmable function keys with HHCH
- Remote Control Head cable options available up to 30ft (9m)
- A range of installation options and accessories are available

▶ Safety and efficiency features

- Lone Worker
- Programmable emergency key
- Location Services option¹
- Tait GeoFencing^{1,2} option for Automated Location Controlled Radio Behavior
- Send and receive text and status messages
- End-to-end AES encryption support

▶ Tait EnableFleet configuration management options

- Wired connection for all operating modes
- Over the Air Programming for configuration changes and software upgrades over P25 Trunked networks

▶ Personalize your radio:

- HHCH available in black, yellow, red and green
- LCH available in black, yellow, and green

Note:

- ¹ Requires GNSS Receiver to be fitted
- ² Optional software feature

PERSONALIZATION

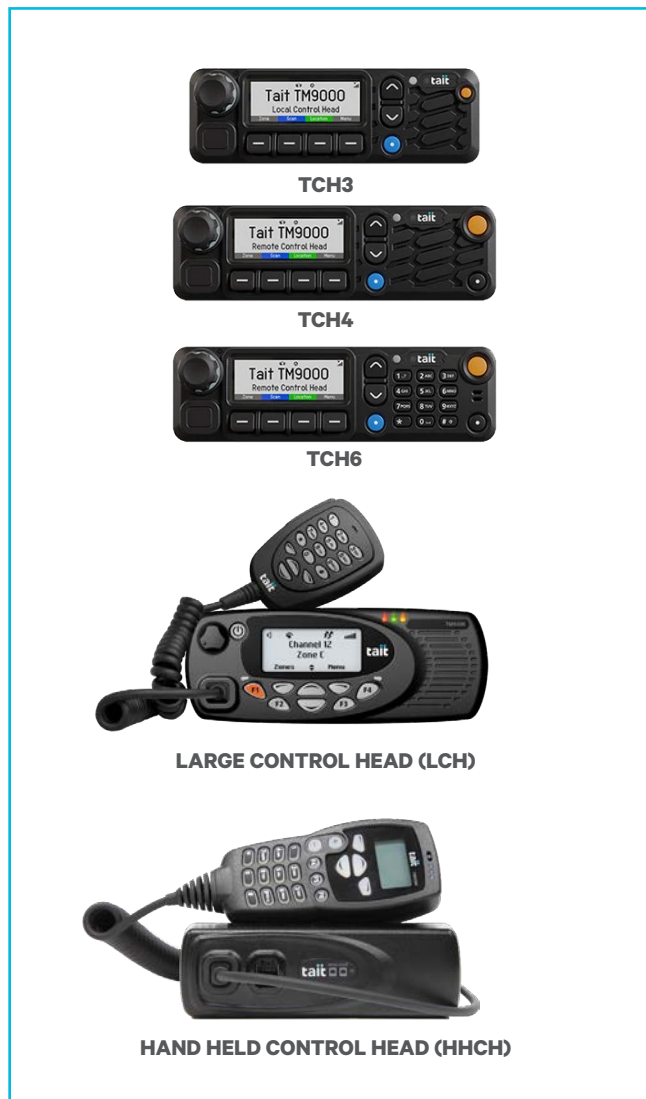
COLOR HHCH Only



TM9455

High Performance, Extremely Flexible

The TM9455 is a high performing reliable radio for critical communications. Supporting multiple P25 and analog modes, safety-enhancing features, and a rugged, robust design, the TM9455 is highly configurable to suit your current operation and can adapt to meet future needs.



FEATURES

► **Future proof multi-mode flexibility**

- Conventional Analog
- P25 Conventional Digital
- P25 Phase 1 Digital Trunking
- P25 Phase 2 Digital Trunking

► **P25 open standards provide choice and interoperability**

► **A variety of user interface options**

- 4W speaker built in to TCH3 and TCH4 Control Heads
- 3W speaker built in to Large Control Head
- 10W and 15W External Speaker Options for TCH and LCH. External Speaker required for TCH6 and HHCH
- Clear audio with Digital Noise Suppression
- Four programmable function keys with LCH and TCH3, five programmable function keys with TCH4 and TCH6, six programmable function keys with HHCH
- Remote Control Head cable options available up to 30ft (9m)
- Dual control head option with LCH and HHCH (refer to Mobiles Options and Accessories Catalog for configuration)
- A range of installation options and accessories are available

► **Safety and efficiency features**

- Lone Worker
- Programmable emergency key
- Location Services option¹
- Tait GeoFencing^{1,2} option for Automated Location Controlled Radio Behavior

- Send and receive text and status messages
- Encryption options, including Tait EnableProtect KeyFill Device, Key Management Facility, Advanced System Key and Over the Air Rekeying
- **Tait Unified Vehicle option / TMX450 option**
 - Broadband WiFi and Cellular (Dual SIM)
 - On-board computing power
 - On-board data storage
 - Voice Recorder app
 - Application Builder
- **Tait EnableFleet configuration management options**
 - Wired connection for all operating modes
 - Over the Air Programming for configuration changes and software upgrades over P25 Trunked networks, or via WiFi or Cellular with optional Tait Unified Vehicle / TMX450
- **Personalize your radio:**
 - HHCH available in black, yellow, red and green
 - LCH available in black, yellow, and green

Note:

- ¹ Requires GNSS Receiver to be fitted
- ² Optional software feature

PERSONALIZATION





TM9456

Dual Band Mobile

The TM9456 mobile provides dual frequency band capability for P25 and conventional analog solutions. Make and receive calls on either VHF or UHF radios from a single control head



TCH4



TCH6



LARGE CONTROL HEAD (LCH)



HAND HELD CONTROL HEAD (HHCH)

FEATURES

► Future proof multi-mode flexibility

- Conventional Analog
- P25 Conventional Digital
- P25 Phase 1 Digital Trunking
- P25 Phase 2 Digital Trunking

► P25 open standards provide choice and interoperability

► A variety of user interface options

- 4W speaker built in to TCH4 Control Head
- 3W speaker built in to Large Control Head
- 10W and 15W External Speaker Options for TCH and LCH. External Speaker required for TCH6 and HHCH
- Clear audio with Digital Noise Suppression
- Four programmable function keys with LCH, five programmable function keys with TCH4 and TCH6, six programmable function keys with HHCH
- Remote Control Head cable options available up to 30ft (9m)
- A range of installation options and accessories are available

► Safety and efficiency features

- Lone Worker
- Programmable emergency key
- Location Services option¹
- Tait GeoFencing^{1,2} option for Automated Location Controlled Radio Behavior

- Send and receive text and status messages
- Encryption options, including Tait EnableProtect KeyFill Device, Key Management Facility, Advanced System Key and Over the Air Rekeying
- **Tait EnableFleet configuration management options**
 - Wired connection for all operating modes
 - Over the Air Programming for configuration changes and software upgrades over P25 Trunked networks, or via WiFi or Cellular with optional Tait Unified Vehicle / TMX450
- **Personalize your radio:**
 - HHCH available in black, yellow, red and green
 - LCH available in black, yellow, and green

Note:

- ¹ Requires GNSS Receiver to be fitted
- ² Optional software feature

PERSONALIZATION





Software Feature Enabler (SFE) Descriptions

TM9000 series P25 and Analog

A number of Software Feature Enabler (SFEs) are available for TM9400 mobiles.

All SFEs are licenced per feature per radio.

When ordering a new radio:

- ▶ Some SFE licences are included by default in the baseline feature set of current production radios as described below.
- ▶ Optional SFE licences can be ordered to enhance the capability of your new radio from the start.

Upgrading existing fleets:

- ▶ The configuration file of each radio will show what SFEs are currently licenced or installed.
- ▶ Additional SFEs can be ordered and deployed to upgrade and enhance existing fleets.
- ▶ Adding software licences to existing fleets may require a radio firmware update as well as the feature licence.
- ▶ Please refer to Tait EnableFleet for best practice in radio configuration management to effectively deploy firmware and feature upgrades.

BASELINE SOFTWARE LICENCES (FOR NEW RADIO ORDERS)

Included by default in all current production TM9400, with exceptions for some models as noted *.
Can also be ordered to upgrade existing fleets that may not have these features deployed.

ENHANCED CHANNEL CAPACITY

Increases the maximum number of channels supported by the radio (across all zones) from 1000 channels to 2000 channels.

■ ■ TMS086

LOCATION DISPLAY

Enables the ability to display the radio's location information on the radio screen.

Mobile radios require a standalone GNSS receiver to be attached to the serial port.

■ ■ TMS015

ALPHANUMERIC ID

Permits an alphanumeric label to be embedded in digital voice transmissions, for talking party identification. This is a Tait-proprietary feature which does not interoperate with other vendor's radios.

Not functional in P25 Phase 2 Trunked operation.

■ ■ TMS072

VOICE ANNUNCIATION

The radio can be set up to audibly announce radio ID, channel numbers, zones, network, battery level and certain feature activation/deactivations such as Lone Worker.

■ ■ TMS087

P25 TRUNKED PSTN

This licence enables full keypad portables to utilize PSTN (Public Switch Telephone Network) dialing via P25 trunked networks. An example configuration is network PSTN gateway from a radio unit to a PSTN subscriber, and a PSTN subscriber to radio unit or radio group. Only available for use on some trunked networks - contact your Tait representative for advice.

Requires Keypad Microphone or Hand Held Control Head and TMS055 as a prerequisite to operate.

■ ■ TMS064

MULTIBAND CAPABILITY

Enables TM9700 to operate seamlessly over VHF (136-174MHz) and UHF (378-520MHz) frequency bands

** Supported in TM9700 & TM9800 mobiles only*

■ ■ TMS113



Software Feature Enabler (SFE) Descriptions (continued)

TM9000 series P25 and Analog

A number of Software Feature Enabler (SFEs) are available for TM9400 mobiles.

All SFEs are licenced per feature per radio.

When ordering a new radio:

- ▶ Some SFE licences are included by default in the baseline feature set of current production radios as described below.
- ▶ Optional SFE licences can be ordered to enhance the capability of your new radio from the start.

Upgrading existing fleets:

- ▶ The configuration file of each radio will show what SFEs are currently licenced or installed.
- ▶ Additional SFEs can be ordered and deployed to upgrade and enhance existing fleets.
- ▶ Adding software licences to existing fleets may require a radio firmware update as well as the feature licence.
- ▶ Please refer to Tait EnableFleet for best practice in radio configuration management to effectively deploy firmware and feature upgrades.

BASELINE SOFTWARE LICENCES (FOR NEW RADIO ORDERS)

Included by default in all current production TM9000 P25 and Analog, with exceptions for some models as noted *. Can also be ordered to upgrade existing fleets that may not have these features deployed.

MDC1200 ■ ■ TMAS059

Enables use of the MDC1200 Analog conventional signaling method (Motorola-proprietary). Features include push-to-talk identification, selective calling, and emergency alarm.

2-TONE DECODE ■ ■ TMAS065

Two-tone signaling (also known as Type-99) is in-band, two-tone sequential signaling. Two-tone signaling is used for selective calling of individual radios, groups of radios, or pagers.

5-TONE SELCALL ■ ■ TMAS092

Enables a 'selective calling' feature that uses sequences of audible tones to isolate calls intended for specific radios. Each radio operating on a Selcall network can have a unique identity assigned. Selcall is also known as multi-tone or five-tone.

OTAP ■ ■ TMAS075

OTAP (Over the Air Programming) allows the configuration and firmware of Tait Radios to be remotely and wirelessly updated by Tait EnableFleet using the radio network's data services. OTAP is supported by Tait EnableFleet version 2.0 and above. This licence specifically enables OTAP via P25 Trunked networks. WiFi OTAP is only available and enabled by default on Tait Unified Vehicle.
Requires TMAS055 to be enabled as a prerequisite.

20/25KHZ WIDEBAND ■ ■ TMAS083

This licence enables 20/25kHz wideband operation on all frequencies. Local regulations on usage of wideband operation must be observed.



Software Feature Enabler (SFE) Descriptions (continued)

TM9000 series P25 and Analog

A number of Software Feature Enabler (SFEs) are available for TM9400 mobiles.

All SFEs are licenced per feature per radio.

When ordering a new radio:

- ▶ Some SFE licences are included by default in the baseline feature set of current production radios as described below.
- ▶ Optional SFE licences can be ordered to enhance the capability of your new radio from the start.

Upgrading existing fleets:

- ▶ The configuration file of each radio will show what SFEs are currently licenced or installed.
- ▶ Additional SFEs can be ordered and deployed to upgrade and enhance existing fleets.
- ▶ Adding software licences to existing fleets may require a radio firmware update as well as the feature licence.
- ▶ Please refer to Tait EnableFleet for best practice in radio configuration management to effectively deploy firmware and feature upgrades.

OPTIONAL SOFTWARE LICENCES AND BUNDLES

Optional features may be licenced for each radio at the time of purchase, or can be ordered and deployed to existing fleets. An SFE key shown as part of a bundle can also be ordered individually if required.

P25 CAI AND CONVENTIONAL DIGITAL OPERATION

 **TMAS050**

Enables the P25 Standard CAI (Common Air Interface) and Conventional Digital Operation - FDMA 12.5kHz channel bandwidth.

P25 PHASE 1 TRUNKING BUNDLE

 **TMAS151**

Includes:

- **TMAS050 - P25 CAI and Conventional Digital Operation:** FDMA 12.5kHz channel bandwidth
- **TMAS055 - P25 Phase 1 Trunking Operation:** FDMA 12.5kHz channel bandwidth
- **TMAS100 - Link Layer Authentication:** allows a P25 Trunked network to authenticate the radio before granting it service. Authentication uses a cryptographically encoded (AES-128) challenge/response protocol in accordance with TIA-102.AACE.

P25 PHASE 2 TRUNKING BUNDLE

 **TMAS152**

Includes:

- **TMAS050 - P25 CAI and Conventional Digital Operation:** FDMA 12.5kHz channel bandwidth
- **TMAS055 - P25 Phase 1 Trunking Operation:** FDMA 12.5kHz channel bandwidth
- **TMAS091 - P25 Phase 2 Trunking Operation:** TDMA 2 channels per 12.5kHz channel (equivalent to 6.25kHz channel bandwidth)
- **TMAS100 - Link Layer Authentication:** allows a P25 Trunked network to authenticate the radio before granting it service. Authentication uses a cryptographically encoded (AES-128) challenge/response protocol in accordance with TIA-102.AACE.



Software Feature Enabler (SFE) Descriptions (continued)

TM9000 series P25 and Analog

A number of Software Feature Enabler (SFEs) are available for TM9400 mobiles.

All SFEs are licenced per feature per radio.

When ordering a new radio:

- ▶ Some SFE licences are included by default in the baseline feature set of current production radios as described below.
- ▶ Optional SFE licences can be ordered to enhance the capability of your new radio from the start.

Upgrading existing fleets:

- ▶ The configuration file of each radio will show what SFEs are currently licenced or installed.
- ▶ Additional SFEs can be ordered and deployed to upgrade and enhance existing fleets.
- ▶ Adding software licences to existing fleets may require a radio firmware update as well as the feature licence.
- ▶ Please refer to Tait EnableFleet for best practice in radio configuration management to effectively deploy firmware and feature upgrades.

OPTIONAL SOFTWARE LICENCES AND BUNDLES

Optional features may be licenced for each radio at the time of purchase, or can be ordered and deployed to existing fleets. An SFE key shown as part of a bundle can also be ordered individually if required.

P25 CAP ENCRYPTION AES (MULTIKEY) / DES BUNDLE

 TMAS153

Includes:

- **TMAS058 - AES Encryption:** Multikey
- **TMAS057 - DES Encryption**

P25 CAP (Compliance Assessment Program) requires AES 256 Bit Encryption. DES Encryption is provided only for backwards compatibility with and migration from older equipment. TMAS058 enables the device to utilize multiple encryption keys and is the highest level of encryption offered by Tait.

Requires Tait EnableProtect KFD (Key Fill Device) to load keys via wired interface. Optional Tait EnableProtect KMF (Key Management Facility) to manage encryption keys, and optional OTAR (Over The Air Rekeying) SFE to deploy encryption keys wirelessly.

P25 NON-CAP ENCRYPTION BUNDLE ARC4 / DES

 TMAS154

Includes:

- **TMAS057 - DES Encryption**
- **TMAS102 - ARC4 Encryption**

If P25 Compliance or if a higher level of encryption is not required, this bundle can provide a more affordable, basic level of encryption. DES is 56 Bit. DES and ARC4 are a basic level of encryption that offers privacy from less sophisticated attacks.

P25 OTAR (OVER THE AIR REKEYING)

 TMAS156

Includes:

- **TMAS054 - P25 Base OTAR:** Enables the ability for the radio to interact with a Key Management Facility over a P25 Conventional bearer, for the provisioning and management of encryption keys in the radio.
- **TMAS063 - P25 DLI/Trunked OTAR:** Enables the ability for the radio to interact with a Key Management Facility over a P25 Trunked bearer, for the provisioning and management of encryption keys in the radio.

P25 ADMINISTRATOR SERVICES

 TMAS051

Enables the ability to transmit certain Supplementary Service requests from the radio on conventional P25 systems, such as Transmit radio inhibits & uninhibits, Status requests, Call alert requests, Radio check requests, Radio unit monitoring, Messages. Such services are typically used by dispatchers.



Software Feature Enabler (SFE) Descriptions (continued)

TM9000 series P25 and Analog

A number of Software Feature Enabler (SFEs) are available for TM9400 mobiles.

All SFEs are licenced per feature per radio.

When ordering a new radio:

- ▶ Some SFE licences are included by default in the baseline feature set of current production radios as described below.
- ▶ Optional SFE licences can be ordered to enhance the capability of your new radio from the start.

Upgrading existing fleets:

- ▶ The configuration file of each radio will show what SFEs are currently licenced or installed.
- ▶ Additional SFEs can be ordered and deployed to upgrade and enhance existing fleets.
- ▶ Adding software licences to existing fleets may require a radio firmware update as well as the feature licence.
- ▶ Please refer to Tait EnableFleet for best practice in radio configuration management to effectively deploy firmware and feature upgrades.

OPTIONAL SOFTWARE LICENCES AND BUNDLES

Optional features may be licenced for each radio at the time of purchase, or can be ordered and deployed to existing fleets. An SFE key shown as part of a bundle can also be ordered individually if required.

P25 LOCATION SERVICES BUNDLE INCLUDING GEOFENCING AUTOMATION

 TMS155

Includes:

- **TMAS067 - GPS Transmission:** Enables the ability to transmit the radio's location on a Conventional radio bearer (Analog or P25). Multiple triggers can be configured for transmission of the location, for example a user stimulus (e.g. PTT press/release), Poll request from a remote host, activation of emergency. In the case of an Analog bearer, the GPS location is formatted as a Short Data Message. In the case of a P25 bearer, the GPS location is formatted as a Tier 1 AVL location packet in accordance with TIA-102.BAJB.
- **TMAS098 - Trunked GPS Transmission:** Enables the ability to transmit the radio's location on a P25 Trunked radio bearer. Multiple triggers can be configured for transmission of the location, for example a user stimulus (e.g. PTT press/release), Poll request from a remote host, activation of emergency). The payload format can be configured as either P25 NMEA (uncompressed NMEA sentences over UDP/IP) or P25 Tier 2 (compressed XML format over UDP/IP in accordance with TIA-102.BAJB).
- **TMAS089 - Enhanced Location Reporting:** Enables distance-based location reporting. Reports can be sent at a set distance, at different distances depending on the current speed or if the bearing, or altitude changes by a prescribed amount.
- **TMAS105 - GeoFencing Services:** Enables Automated Location Controlled Radio Behavior. Automatically change mode, change channel and send alert messages based on pre-programmed software boundaries. Multiple regions of various simple and/or complex shapes and sizes and overlays can be configured and a set of actions can be associated with entry/exit from these regions. Actions such as sending status messages, controlling GPIO, and activating features such as Lone Worker can be achieved.



Software Feature Enabler (SFE) Descriptions (continued)

TM9000 series P25 and Analog

A number of Software Feature Enabler (SFEs) are available for TM9400 mobiles.

All SFEs are licenced per feature per radio.

When ordering a new radio:

- ▶ Some SFE licences are included by default in the baseline feature set of current production radios as described below.
- ▶ Optional SFE licences can be ordered to enhance the capability of your new radio from the start.

Upgrading existing fleets:

- ▶ The configuration file of each radio will show what SFEs are currently licenced or installed.
- ▶ Additional SFEs can be ordered and deployed to upgrade and enhance existing fleets.
- ▶ Adding software licences to existing fleets may require a radio firmware update as well as the feature licence.
- ▶ Please refer to Tait EnableFleet for best practice in radio configuration management to effectively deploy firmware and feature upgrades.

OPTIONAL SOFTWARE LICENCES AND BUNDLES

Optional features may be licenced for each radio at the time of purchase, or can be ordered and deployed to existing fleets. An SFE key shown as part of a bundle can also be ordered individually if required.

DATA BUNDLE

 TMA158

Includes:

- **TMA056 - User IP Data:** Enables IP forwarding between a P25 bearer and a serially-connected data peripheral. This allows third party IP-based applications to transfer data between a local data peripheral and a remote host.
- **TMA060 - Tait Radio API:** Enables access to the CCDI/CCR Radio API. This API provides a wide range of control and monitoring of the radio. A user can make calls, transmit, change channels, monitor the state of the receive signal, etc. The SFE also permits use of 'transparent' data transfer between a peripheral connected to the ancillary port of the radio, and a conventional bearer. Capabilities may differ between modes of operation. See CCDI specification for details.

Requires TMA050, or 151, or 152 as a pre-requisite.



Detailed Feature Comparison

TM9000 series P25 and Analog features

FEATURE	TM9800	TM9455	TM9456
CONVENTIONAL FEATURES (ANALOG AND DIGITAL)			
Conventional networks	26	26	26
Channels	● 1000	● 1000	● 1000
Optional capacity requires TMAS086 SFE	▲ 2000	▲ 2000	▲ 2000
Zones	● 50	● 50	● 50
Optional capacity requires TMAS086 SFE	▲ 100	▲ 100	▲ 100
Scan groups	300	300	300
Up to 50 members per group, maximum of 2000 members total			
Dual Mode operation			
Automatically change mode to receive and respond to both analog and conventional digital calls	●	●	●
Repeater talkaround	●	●	●
Scanning			
Dual priority scanning, talkgroup scanning, in zone scanning, editable scanning and editable scan groups	●	●	●
Voting	●	●	●
Nuisance channel delete from group	●	●	●
Radio check (P25 Conventional mode)	●	●	●

● Standard feature

▲ Optional feature



Detailed Feature Comparison (continued)

TM9000 series P25 and Analog features

FEATURE	TM9800	TM9455	TM9456
CONVENTIONAL ANALOG FEATURES			
Squelch override	●	●	●
CTCSS (Continuous Tone Controlled Squelch System)	●	●	●
DCS (Digitally Coded Squelch)	●	●	●
DTMF (Dual Tone Multi Frequency) encode	●	●	●
DTMF Dialing Only supported on 16 key models	●	●	●
MDC1200 (En/Decode)	●	●	●
SELCALL (Selective calling)	●	●	●
Programmable Group Tone	●	●	●
2-Tone Decode (Type-99)	●	●	●
Monitor function	●	●	●
FFSK	●	●	●
TRUNKED FEATURES			
Talkgroups	50	50	50
Total talkgroup members Optional capacity requires TMAS086 SFE	● 1000 ▲ 2000	● 1000 ▲ 2000	● 1000 ▲ 2000
Broadcast group call	●	●	●
PSTN (Public Switched Telephone Network) dialing / presets	▲	▲	▲
Dynamic regrouping	●	●	●
Call queuing	●	●	●
Trunking Failsoft	●	●	●

● Standard feature

▲ Optional feature



Detailed Feature Comparison (continued)

TM9000 series P25 and Analog features

FEATURE	TM9800	TM9455	TM9456
GENERAL FEATURES			
Alphanumeric labels	●	●	●
Status labels	●	●	●
Digital Caller / Talker ID	●	●	●
P25 Priority call	●	●	●
Group calls	●	●	●
Individual calls	●	●	●
P25 call alert	●	●	●
P25 status messages	●	●	●
P25 Packet Data / User IP data	▲	▲	▲
Transmit low power	●	●	●
Transmit timer	●	●	●
Receives Linear Simulcast Modulation (LSM)	●	●	●
Computer Controlled Data Interface (CCDI)	▲	▲	▲
LOCATION AND SAFETY FEATURES			
GNSS receiver	▲	▲	▲
GPS receive and display	▲	▲	▲
GPS data transmission	▲	▲	▲
Tait GeoFencing automation	▲	▲	▲
Lone Worker	●	●	●
Programmable emergency key	●	●	●
Emergency call	●	●	●

● Standard feature

▲ Optional feature



Detailed Feature Comparison (continued)

TM9000 series P25 and Analog features

FEATURE	TM9800	TM9455	TM9456
SECURITY OPTIONS			
Voice Inversion Scrambler Supported in conventional analog mode	●	●	●
Encryption, ARC4	▲	▲	▲
P25 Encryption, DES 56 bit	▲	▲	▲
P25 Encryption, AES 256 bit	▲	▲	▲
P25 Over the Air Rekeying (OTAR) Requires Tait EnableProtect Key Management Facility	▲	▲	▲
P25 Administration Service	▲	▲	▲
Security lock on power-up Requires a Personal Identification Number (PIN)	●	●	●
Radio inhibit and uninhibit (also known as stun and revive)	●	●	●
Remote monitor (enables microphone and transmitter remotely) Only supported in P25 conventional mode. Only radios with P25 Admin Services enabled can monitor other radios in the fleet.	●	●	●
Simplified System Key P25 Trunked Networks	●	●	●
Programming Security Tait EnableProtect Advanced System Key	●	▲	▲
Link Layer Authentication	▲	▲	▲

● Standard feature

▲ Optional feature



Detailed Feature Comparison (continued)

TM9000 series P25 and Analog features

FEATURE		TM9800	TM9455	TM9456
USER INTERFACE				
Display	TCH 422x154 pixels	▲	▲	▲
	LCH 160x64 pixels	●	●	●
	HHCH 96x62 pixels	●	●	●
Contrast adjust (not applicable to TCH)		●	●	●
Backlight control		●	●	●
Remote control head (single)		●	▲	●
Remote control head (dual) TM9457		●	▲	
Received Signal Strength Indicator (RSSI)		●	●	●
Shared menu structure Common with TP9000 portable radios		●	●	●
Programmable channel selector		●	●	●
Programmable function keys (including emergency key)		5 TCH4 & TCH6 4 LCH & TCH3 6 HHCH	5 TCH4 & TCH6 4 LCH & TCH3 6 HHCH	5 TCH4 & TCH6 4 LCH & TCH3 6 HHCH
Key lock			●	●
Adjustable audible indicators (keypress tones / confidence tones)		●	●	●
Quiet mode and silent mode		●	●	●

● Standard feature

▲ Optional feature



Detailed Feature Comparison (continued)

TM9000 series P25 and Analog features

FEATURE	TM9800	TM9455	TM9456
USER INTERFACE (continued)			
Voice Annunciations	●	●	●
Speaker output (internal) *Not available for Hand Held Control Head	3W with LCH 4W with TCH3 and TCH4	3W with LCH 4W with TCH3 and TCH4	3W with LCH 4W with TCH3 and TCH4
Speaker output (external)	▲ 10W ▲ 15W	▲ 10W ▲ 15W	▲ 10W ▲ 15W
Auto Noise Reduction (ANR) Conventional analog mode	●	●	●
Vocoder and Digital Noise Suppression P25 modes - not supported in conventional analog mode	●	●	●
Active Noise Cancellation (ANC) Custom option - contact Tait	▲	▲	▲
Broadband connectivity and computing WiFi, cellular, On-board data storage and processing with Tait Unified Vehicle / TMX450 option		▲	
Over the Air Programming (OTAP) Configuration change and software upgrade requires Tait EnableFleet	▲ P25 Trunking	▲ P25 Trunking ▲ WiFi with Tait Unified Vehicle / TMX450	▲ P25 Trunking

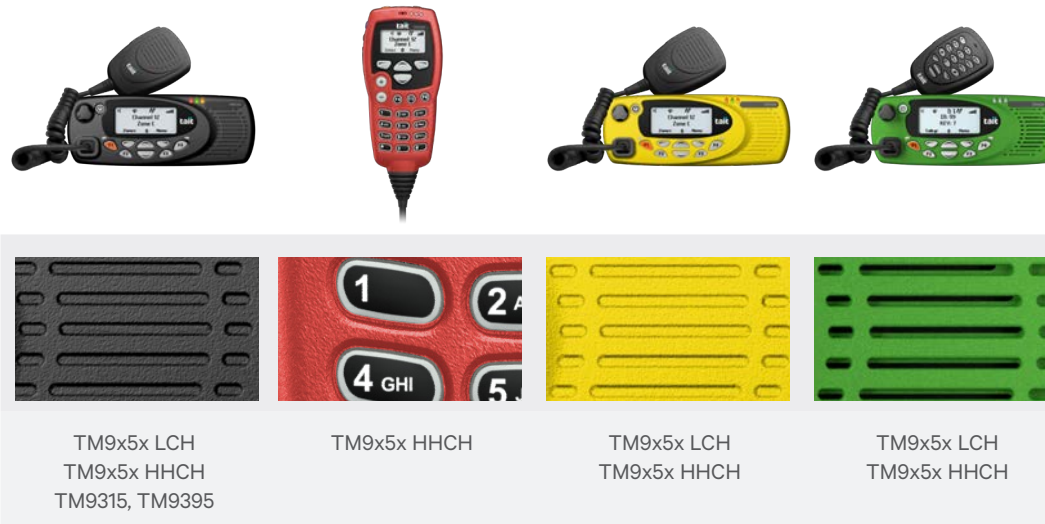
● Standard feature

▲ Optional feature

Control Head Color Options

The TM9000 Large Control Head (LCH) and Hand Held Control Head (HHCH) are available in a range of colors for easy identification.

Options are available to personalize colors for each user or group's needs. This table shows the models available in each color.



- ▶ Choose colors that are high-contrast to the environment they will be used in
- ▶ Use different colors to identify talkgroups or teams
- ▶ Select colors to match company branding
- ▶ Use a range of colors to identify radios with different access rights, encryption, broadcast rights, etc



www.taitcommunications.com