TP9000

PORTABLE RADIOS
DMR | P25 | ANALOG

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

TAIT TOUGH
The Toughest Radios in the Industry

DECEMBER 2020 VERSION 0.06

Preface

PLEASE READ BEFORE USING THIS PRODUCT CATALOG.

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SCOPE:

This catalog describes the TP9000 series portable 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.

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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 TP9000 series features loud, clear audio, so teams can work safely in challenging conditions. Built Tait Tough, TP9000 portables can survive harsh punishment. Choose from DMR or P25 models, each supporting Analog mode and a host of safety and efficiency features.

Enhanced Audio

Tait Tough

Dust and Water Proof

Bluetooth® Audio and WiFi OTAP Options

Open Standard DMR, P25, Analog and MPT

GPS, Man Down and Safety Features

Intrinsically Safe Options

Personalization Options

Contents

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.

Ingress Protection (IP)

▸ All TP9000 series radios are dustproof and waterproof. The catalog pages and specification sheets for each Tait portable radio display the IP rating for that product

▸ IP68: can be immersed in water:
At a depth of two meters for thirty minutes
At a depth of one meter for two hours

▸ IP67: Can be immersed in water:
At a depth of one meter for thirty minutes

▸ IP65: Tested against water jets, 12.5L per min, 30kPa from three meters for at least three minutes

Drop Protection by Design

▸ Dual shot moulded rubberised corners

▸ Strong battery attachment

▸ Screen recess

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

▸ Dust

▸ Vibration

▸ Shock

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

Visit **www.taittough.com** to see the TP9000 series survive a lot of punishment.

TAIT TOUGH

The Toughest Radios in the Industry

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...

#		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
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 Refer to product specifications
6	**ACCESSORY SELECTION**: Choose from a range of earpieces, headsets, and speaker microphones, 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

GPS capability is built in to every TP9000 series portable, and can support a number of location services in both analog and digital modes.

GPS 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 and Man Down features that are standard in every TP9000 series portable.

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

DMR SPECIFIC FEATURES

▶ Transmit GPS 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 GPS 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

GPS DISPLAY

GPS data can also be displayed on the radio screen. Vital information for radio users is available even if off the network, or GPS polling and transmission not configured:
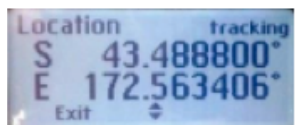
▶ Latitude / Longitude (as previously provided)

▶ Latitude / Longitude with Decimal-Minutes

▶ Decimal Latitude / Longitude

▶ Altitude (in meters above or below mean sea level)

▶ Local Time
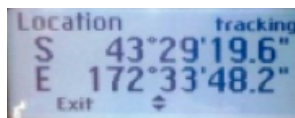
Display showing Latitude / Longitude
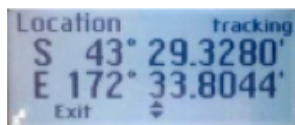
Latitude / Longitude with Decimal-Minutes

Decimal Latitude / Longitude
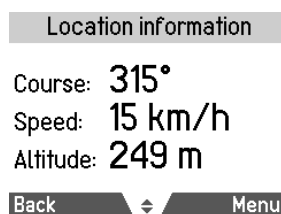
Location Information

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
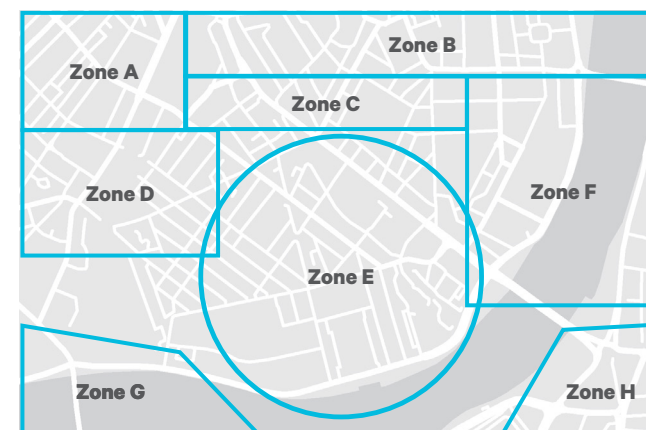
Fleet Management Best Practice

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 TP9500/TP9600 TM9300/TM9400	TP9300 TP9500 TM9300	TP9300 TP9500 TM9300	TP9300 TP9500 TM9300	TP9400 TP9600 TM9400	TP9400 TP9600 TM9400
OTAP VIA DIGITAL TRUNKED NETWORKS				TP9300 TP9500 TM9300		TP9400 TP9600 TM9400
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

TP9000 Family Tree

Each radio in the TP9000 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.

DMR, MPT ANALOG

TP9300 **TP9361 IS** **TP9500**

ENHANCED CONNECTIVITY

▶ Conventional Analog
▶ MPT Trunking
▶ DMR Tier 2 Conventional Digital
▶ DMR Tier 3 Digital Trunking
▶ Simulcast Compatible (Analog and Digital)
▶ Bluetooth® Audio*
▶ WiFi OTAP Capable**

TP9000 SERIES

P25 ANALOG

TP9400 **TP9461 IS** **TP9600**

ENHANCED CONNECTIVITY

▶ Conventional Analog
▶ P25 Conventional Digital
▶ P25 Phase 1 Digital Trunking
▶ P25 Phase 2 Digital Trunking
▶ Simulcast Compatible (Analog and Digital)
▶ Bluetooth® Audio*
▶ WiFi OTAP Capable**

* Bluetooth® Audio not available on TP9310, TP9361 or TP9461 portable radios

** TP9500 and TP9600 portable radios have WiFi OTAP capability and requires Tait EnableFleet

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SYMBOLS USED IN THIS DOCUMENT

● STANDARD   ▲ OPTIONAL   🟦🟨 **ITEM CODE**   **IS** Intrinsically Safe   Radio standards: **DMR** P25

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. A reliable communications solution is a critical safety tool. That is why Tait engineered the TP9000 series to be the toughest radios ever made.

DMR

DMR and Analog Selection Guide

TP9000 series feature overview

Many features and options are available across the range of TP9000 portables and each model offers something unique to meet the needs of a variety 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. The frequency band guide on the following page is also an important reference. For detailed feature comparisons, refer to page 16.

FEATURE		TP9300	TP9361	TP9500
ENHANCED CONNECTIVITY	Conventional Analog MPT1327 Trunking DMR Tier 2 Conventional Digital	●	●	●
	DMR Tier 3 Digital Trunking	▲	▲	▲
	Bluetooth® Audio	● [1]		●
	WiFi OTAP Capability			▲ [2]
KEYPAD AND DISPLAY OPTIONS	No display, No Keypad	●		
	Display with 4 Navigational Keys	Monochrome		Color
	Display with Full Keypad	Monochrome	Monochrome	Color
EXCEPTIONAL AUDIO	Speaker Output	2W	2W	3W
	Vocoder and Digital Noise Suppression	●	●	●
	Dual Mic Active Noise Cancellation			●
SAFETY FEATURES	GPS Man Down and Lone Worker	●	●	●
	GeoFencing	▲	▲	▲
	Intrinsically Safe Options		●	
ACCESSORIES	Standard (Shared) Tait Audio Accessories, Batteries and Chargers	▲		▲
	Intrinsically Safe Audio Accessories, Batteries and Chargers		▲	
PERSONALIZATION	Color Face Plate Options (See page 38 for more information.)	●		●
	Labeling Options (See page 39 for more information.)	▲		▲

● Standard feature

▲ Optional feature

[1] Bluetooth not supported on TP9310 or TP9361 models

[2] TP9500 is WiFi OTAP capable and requires Tait EnableFleet

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	TP9310 NO KEY	TP9355 TP9360 4KEY 16KEY		TP9361 IS 16 KEY	TP9555 TP9560 4 KEY 16 KEY	
B1	136-174MHz	●	●		●	●	
C0	174-225MHz	●	●				
G1	320-380MHz	●	●		●		
HK [1,2]	378-470MHz [1,2]	●	●			●	
HB [2]	380-470MHz [2]				●		
H7 [2]	450-520MHz [2]	●	●		● [4]	●	
K5 [3]	757-870MHz [3]		●		●	●	

[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 or HB radios are operating at the CB frequencies

[3] FCC and IC approved (ETSI approval not available)

[4] IECEx and ATEX only

TP9300

Tough Reputation

The TP9300 is a tough portable radio for critical communications. Supporting multiple DMR and analog modes, safety-enhancing features, and a rugged, robust design, the TP9300 is engineered to perform in challenging environments.

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**

- 2W speaker
- Clear audio with Digital Noise Suppression
- Bluetooth® connectivity for wireless audio accessories[1]
- Side mounted connector for choice of audio accessories
- Zone selector switch
- Four programmable function keys

▸ **A range of batteries, charging options and accessories are available** (refer to the accessories catalog)

▸ **Personalize your radio:**

- Available in Black, Yellow, Orange, Red and Hi-Vis Green
- Labeling Options

▸ **Safety and Efficiency Features**

- Lone Worker and Man Down functions
- Programmable emergency key
- Integrated GPS for Location Services[2]
- Tait GeoFencing option for Automated Location Controlled Radio Behavior

- Send and receive text and status messages
- Encryption options
- Intrinsically Safe options (Refer to TP9361 information)

▸ **Engineered Tait Tough for demanding environments**

- IP65 & IP68 Dustproof and Waterproof
- MIL-STD-810G
- Two-shot moulding for extra durability
- Water shedding speaker grille

▸ **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

Note:

[1] Bluetooth® Audio functionality not supported on TP9310 models

[2] GPS capability is a software option in some TP9310 packages, but is enabled by default in all other TP9300, TP9361 and TP9500 radios. TP9310 can transmit GPS data when enabled and can also utilize the GeoFencing option, but has no screen to display GPS information on the radio

TP9310
0 KEY

TP9355
4 KEY

TP9360
16 KEY

PERSONALIZATION

COLOR

LABEL

DMR

TP9361 (IS)

Intrinsically Safe

The TP9361 portable is designed and tested for operation in hazardous environments, meeting global IS standards (IECEx, ANZEx, ATEX, AEx). These Tait Tough radios are blue, an internationally recognized color for IS portables.

IIA MODEL
▶ 1-5W power output (VHF), 1-4W (UHF), 1-2.5W (700/800MHz)

IIC MODEL
▶ 1W power output

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**
- 1W speaker
- Clear audio with Digital Noise Suppression
- Side mounted connector for choice of IS audio accessories
- Zone selector switch
- Four programmable function keys

▶ **A range of IS accessories are available**

▶ **Safety and Efficiency Features**
- Lone Worker and Man Down functions
- Programmable emergency key
- Integrated GPS to improve efficiency and safety for Location Services
- Tait GeoFencing option for Automated Location Controlled Radio Behavior

- Send and receive text and status messages
- Encryption options

▶ **Engineered Tait Tough for demanding environments**
- IP65 & IP67 Dustproof and Waterproof
- MIL-STD-810G
- Two-shot moulding for extra durability
- Water shedding speaker grille

▶ **Tait EnableFleet Configuration Management options**

Note:

- Consult the TP9361 specification sheet for full compliance data
- Only approved IS accessories can be used with the TP9361 (Refer to the TP9000 series accessories catalog)
- Only a qualified person should attempt to categorize a hazardous location and advise the communication devices that may be used
- Tait staff and channel partners should all complete the Intrinsically Safe awareness training course on **partnerinfo.taitradio.com**

**TP9361 IIA
16 KEY**

**TP9361 IIC
16 KEY**

TP9500

Enhanced Usability

TP9500 portables enhances the user experience with color screen, louder, clearer audio, and more ergonomic controls, all built Tait Tough for critical communications. WiFi connectivity can be used for easy, advanced fleet management.

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**

▶ **Enhanced Usability**
- Large color screen
- 3W speaker
- Clear audio in analog and digital modes with Dual Mic Active Noise Cancellation
- Clearest audio with Digital Noise Suppression
- Increased voice usability with integrated Bluetooth® connectivity for wireless audio accessories
- Side mounted connector for choice of audio accessories
- Angled control for gloved use
- Zone selector switch
- Four programmable function keys

▶ **A range of batteries, charging options and accessories are available** (refer to the accessories catalog)

▶ **Personalize your radio:**
- Available in Black, Yellow, Orange, Red and Hi-Vis Green
- Labeling Options

▶ **Safety and Efficiency Features**
- Lone Worker and Man Down functions

- Programmable emergency key
- Integrated GPS to improve efficiency and safety for Location Services
- GPS information can be displayed on the radio screen
- Tait GeoFencing option for Automated Location Controlled Radio Behavior
- Send and receive text and status messages
- Encryption options

▶ **Engineered Tait Tough for demanding environments**
- IP65 & IP68 Dustproof and Waterproof
- MIL-STD-810G
- Two-shot moulding for extra durability
- Water shedding speaker grille

▶ **Tait EnableFleet Configuration Management options**
- Wired Connection for all operating modes
- OTAP for configuration changes and software upgrades over DMR Tier 3 networks
- WiFi OTAP capability for configuration changes and software upgrades independent of LMR mode, analog or digital, conventional or trunked

TP9555
4 KEY

TP9560
16 KEY

PERSONALIZATION

COLOR   LABEL

Software Feature Enabler (SFE) Descriptions

TP9000 series DMR and Analog

A number of Software Feature Enabler (SFEs) are available for TP9300 and TP9500 portables.

All SFEs are licenced per feature per radio.

When ordering a new portable 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 TP9300 and TP9500 radios, with some exceptions for TP9310 and TP9361 as noted ✱.
Can also be ordered to upgrade existing fleets that may not have these features deployed.

DMR TIER 2 CONVENTIONAL DIGITAL   TPAS097

MPT ANALOG TRUNKING   TPAS031
MPT1327 Analogue Trunking mode enables the portable radio to be used on MPT networks. The TP9300 and TP9500 can roam seamlessly between MPT and DMR Trunked systems, providing an easy migration path from MPT to a DMR trunked system.

ALPHANUMERIC ID   TPAS072
Permits an alphanumeric label to be embedded in digital voice transmissions, for talking party identification.
✱ *Not functional in TP9310 as it has no display.*

BLUETOOTH® AUDIO   TPAS082
Allows the radio to pair with approved Bluetooth® devices.
✱ *Not functional on TP9310 or TP9361. TP9310 has no display to facilitate Bluetooth® pairing.*
TP9361 Intrinsically Safe does not permit use of Bluetooth®.

LOCATION SERVICES & DISPLAY   TPAS081
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.

ENHANCED LOCATION REPORTING   TPAS089
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.

Software Feature Enabler (SFE) Descriptions (continued)

TP9000 series DMR and Analog

A number of Software Feature Enabler (SFEs) are available for TP9300 and TP9500 portables.

All SFEs are licenced per feature per radio.

When ordering a new portable 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 TP9300 and TP9500 radios, with some exceptions for TP9310 and TP9361 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).	**TPAS102**
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.	**TPAS087**
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 TPAS080 DMR Tier 3 optional SFE to be enabled.*	**TPAS075-DMR**
20/25KHZ WIDEBAND This licence enables 20/25kHz wideband operation on all frequencies. Local regulations on usage of wideband operation must be observed.	**TPAS083**

Software Feature Enabler (SFE) Descriptions (continued)

TP9000 series DMR and Analog

A number of Software Feature Enabler (SFEs) are available for TP9300 and TP9500 portables.

All SFEs are licenced per feature per radio.

When ordering a new portable 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　　　　　　　　　　　　**TPAS080**

Enables DMR Tier 3 trunking operation in TP9300 and TP9500 radios. The TP9300 can roam seamlessly between DMR Tier 3 networks and analog MPT trunked networks.

GEOFENCING AUTOMATION　　　　　　　　　　　　**TPAS105-DMR**

Enables automated location controlled radio behaviour. 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.

Refer to the Tait GeoFencing manual for detailed information.

ENCRYPTION - DES 56 BIT　　　　　　　　　　　　**TPAS095**

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).

＊ *Not available for TP9310 as that radio is unable to display the status of encrypted or clear channels.*

ENCRYPTION - AES 128/256 BIT - SINGLE KEY　　　　　　　**TPAS058-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).

＊ *Not available for TP9310 as that radio is unable to display the status of encrypted or clear channels.*

USER IP DATA　　　　　　　　　　　　　　　　　　**TPAS056-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, utilising the traffic channels of the Tait DMR network.

Requires TPAS080 DMR Tier 3 optional SFE to be enabled.

Detailed Feature Comparison

TP9000 series DMR and Analog features

FEATURE	TP9310	TP9355/60	TP9361	TP9555/60
CONVENTIONAL FEATURES (ANALOG AND DIGITAL)				
Networks	1	26	26	26
Channels	48	1500	1500	1500
Zones	3	26	26	26
Scan groups (with up to 50 members per group)	16	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)	Limited	●	●	●
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

Detailed Feature Comparison
(continued)

TP9000 series DMR and Analog features

FEATURE	TP9310	TP9355/60	TP9361	TP9555/60
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

Detailed Feature Comparison
(continued)

TP9000 series DMR and Analog features

FEATURE	TP9310	TP9355/60	TP9361	TP9555/60
TRUNKED FEATURES (ANALOG AND DIGITAL)				
Multiple Network Capability	4	4	4	4
Talkgroups	16	512 lists	512 lists	512 lists
Zones	3	1000	1000	1000
Work groups	48	1000	1000	1000
Alphanumeric Presets		100	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	DMR Tier 3	DMR Tier 3	DMR Tier 3
PTT redial	●	●	●	●
Call in Absence indicator		●	●	●
Dynamic regrouping	●	●	●	●
Radio Access Protocol (RAP) (Map27)	●	●	●	●

● Standard feature

▲ Optional feature

Detailed Feature Comparison
(continued)

TP9000 series DMR and Analog features

FEATURE	TP9310	TP9355/60	TP9361	TP9555/60
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	Trunked Only	●	●	●
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	Trunked Only	●	●	●

Features continue on the next page

● Standard feature

▲ Optional feature

Detailed Feature Comparison
(continued)

TP9000 series DMR and Analog features

FEATURE	TP9310	TP9355/60	TP9361	TP9555/60
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 TP9310 0nly via CCDI (conventional) and RAP (trunked)	▲	●	●	●
Short data messages TP9310 0nly 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		●	●	●
DTMF dialling		TP9360	●	TP9560

● Standard feature

▲ Optional feature

Detailed Feature Comparison
(continued)

TP9000 series DMR and Analog features

FEATURE	TP9310	TP9355/60	TP9361	TP9555/60
LOCATION AND SAFETY FEATURES				
Internal GPS Some TP9310 packages require a software licence to activate	●	●	●	●
Transmit GPS during voice calls Digital modes only. Some TP9310 packages require a software licence to activate.	●	●	●	●
GPS over SDM (MPT modes only)		●	●	●
GeoFencing	▲	▲	▲	▲
Lone Worker	●	●	●	●
Man Down	●	●	●	●
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

Detailed Feature Comparison
(continued)

TP9000 series DMR and Analog features

FEATURE	TP9310	TP9355/60	TP9361	TP9555/60
USER INTERFACE				
Display type Display size	None	Monochrome 32.2 x 15.1mm	Monochrome 32.2 x 15.1mm	Color 35.3mm x 26.5mm
Contrast adjust		●	●	●
Backlight control		●	●	●
Battery level indicator		●	●	●
Received Signal Strength Indicator (RSSI)		●	●	●
Shared Menu Structure Common with TM9000 mobile radios		●	●	●
Programmable channel selector	●	●	●	●
Programmable three way zone switch	●	●	●	●
Programmable function keys (including emergency key)	4	4	4	4
Key Lock		●	●	●
Adjustable audible indicators (keypress tones / confidence tones)	●	●	●	●
Quiet mode & silent mode	●	●	●	●
Audible indicators (key beeps / confidence tones)	●	●	●	●
Audible indicator control	●	●	●	●
Voice Annunciations	●	●	●	●
Speaker output	2W	2W	2W	3W
Auto Noise Reduction (ANR) Conventional analog and MPT modes	●	●	●	●
Vocoder and Digital Noise Suppression DMR modes - not supported in conventional analog and MPT modes	●	●	●	●
Dual mic active noise cancellation Supported in analog and digital modes				●

● Standard feature

▲ Optional feature

Features continue on the next page

Detailed Feature Comparison
(continued)

TP9000 series DMR and Analog features

FEATURE	TP9310	TP9355/60	TP9361	TP9555/60
USER INTERFACE (continued)				
Bluetooth® Audio		●		●
Over the Air Programming (OTAP) Configuration change and software upgrade, requires Tait EnableFleet	▲ DMR Tier 3	▲ DMR Tier 3	▲ DMR Tier 3	▲ DMR Tier 3 ▲ WiFi Capable
Go ahead tone MPT and DMR modes - not supported in conventional analog	●	●	●	●
Side-tone generation	●	●	●	●
TAIT TOUGH				
IP65 and IP68	●	●		●
IP65 and IP67			●	
MIL-STD-810G	●	●	●	●
Two-shot moulded construction	●	●	●	●
Water shedding grille	●	●	●	●
Battery Overcharge Protection	●	●	●	●

● Standard feature

▲ Optional feature

TAIT P25

Instant, reliable communications is just the beginning

First responders around the world trust Tait for multi-agency coordination in the most challenging environments. 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 portable radios are designed and built to withstand the challenging conditions public safety users operate in. Packed with a range of safety-enhancing features, our portables provide the clear audio, reliable connection, and interoperability that those serving our communities depend on.

P25 and Analog Selection Guide

TP9000 series feature overview

Many features and options are available across the range of TP9000 portables and each model offers something unique to meet the needs of a variety 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. The frequency band guide on the following page is also an important reference. For detailed feature comparisons, refer to page 32.

FEATURE		TP9400	TP9461	TP9600
ENHANCED CONNECTIVITY	Conventional Analog	●	●	●
	P25 Conventional Digital	▲	▲	▲
	P25 Phase 1 Digital Trunking	▲	▲	▲
	P25 Phase 2 Digital Trunking	▲	▲	▲
	Bluetooth® Audio	▲		▲
	WiFi OTAP Capability			▲[1]
KEYPAD AND DISPLAY OPTIONS	Display with four Navigational Keys	Monochrome		Color
	Display with Full Keypad	Monochrome	Monochrome	Color
EXCEPTIONAL AUDIO	Speaker Output	2W	2W	3W
	Vocoder and Digital Noise Suppression	●	●	●
	Dual Mic Active Noise Cancellation			●
SAFETY FEATURES	GPS (Refer to page 30 for GPS Software Options)	▲	▲	▲
	Man Down and Lone Worker	●	●	●
	GeoFencing	▲	▲	▲
	Intrinsically Safe Options		●	
ACCESSORIES	Standard (Shared) Tait Audio Accessories, Batteries and Chargers	▲		▲
	Intrinsically Safe Audio Accessories, Batteries and Chargers		▲	
PERSONALIZATION	Color Face Plate Options (See page 38 for more information.)	●		●
	Labeling Options (See page 39 for more information.)	▲		▲

● Standard feature

▲ Optional feature

[1] WiFi capability at first release supports OTAP and requires Tait EnableFleet

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	TP9455 4KEY	TP9460 16KEY	TP9461 IS 16 KEY	TP9655 4 KEY	TP9660 16 KEY
B1	136-174MHz	●		●	●	
G1	320-380MHz			●		
HK [1,2]	378-470MHz [1,2]	●			●	
HB [2]	380-470MHz [2]			●		
H7 [2]	450-520MHz [2]	●		● [4]	●	
K5 [3]	757-870MHz [3]	●		●	●	

[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 HB radios are operating at the CB frequencies

[3] FCC and IC approved (ETSI approval not available)

[4] IECEx and ATEX only

TP9400

Built to withstand challenging conditions

**TP9455
4 KEY**

**TP9460
16 KEY**

The TP9400 is a tough portable radio for mission critical communications. Supporting multiple P25 and analog modes, encryption options, safety-enhancing features, and a rugged, robust design, the TP9400 is engineered to meet the demanding needs of first responders.

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**

▸ **Usability**
- 2W speaker
- Clear audio with Digital Noise Suppression
- Increased voice usability with integrated Bluetooth® connectivity for wireless audio accessories
- Side mounted connector for choice of audio accessories
- Zone selector switch
- Four programmable function keys

▸ **A range of batteries, charging options and accessories are available** (refer to the accessories catalog)

▸ **Personalize your radio:**
- Available in Black, Yellow, Orange, Red and Hi-Vis Green
- Labeling options

▸ **Safety and efficiency features**
- Lone Worker and Man Down functions
- Programmable emergency key
- Integrated GPS option to improve efficiency and safety for Location Services
- Tait GeoFencing option for Automated Location Controlled Radio Behavior
- Send and receive text and status messages

▸ **Encryption options, including Tait EnableProtect KeyFill Device, Key Management Facility, and Over the Air Rekeying**

▸ **Engineered Tait Tough for demanding environments**
- IP65 & IP68 Dustproof and Waterproof
- MIL-STD-810G
- Two-shot moulding for extra durability
- Water shedding speaker grille

▸ **Tait EnableFleet Configuration Management options**
- Wired Connection for all operating modes
- OTAP for configuration changes and software upgrades over P25 trunked networks

PERSONALIZATION

COLOR   LABEL

TP9461 (IS)

Intrinsically Safe

The TP9461 portable is designed and tested for operation in hazardous environments, meeting global IS standards (IECEx, ANZEx, ATEX, AEx). These Tait Tough radios are blue, an internationally recognized color for IS portables.

IIA MODEL
▸ 1-5W power output (VHF), 1-4W (UHF), 1-2.5W (700/800MHz)

IIC MODEL
▸ 1W power output

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**

▸ **Engineered Tait Tough for demanding environments**
- IP65 & IP67 Dustproof and Waterproof
- MIL-STD-810G

▸ **Usability**
- 1W speaker
- Clear audio with Digital Noise Suppression
- Side mounted connector for choice of IS audio accessories
- Zone selector switch
- Four programmable function keys

▸ **A range of IS accessories are available**

▸ **Safety and efficiency features**
- Lone Worker and Man Down functions
- Programmable emergency key

- Integrated GPS to improve efficiency and safety for Location Services
- Tait GeoFencing option for Automated Location Controlled Radio Behavior
- Send and receive text and status messages

▸ **Encryption options, including Tait EnableProtect KeyFill Device, Key Management Facility, and Over the Air Rekeying**

▸ **Tait EnableFleet Configuration Management options**

Note:
- Consult the TP9461 specification sheet for full compliance data
- Only approved IS accessories can be used with the TP9361 (Refer to the TP9000 series accessories catalog)
- Only a qualified person should attempt to categorize a hazardous location and advise the communication devices that may be used
- Tait staff and channel partners should all complete the Intrinsically Safe awareness training course on **partnerinfo.taitradio.com**

**TP9461 IIA
16 KEY**

**TP9461 IIC
16 KEY**

**TP9655
4 KEY**

**TP9660
16 KEY**

TP9600

Enhanced Usability

TP9600 portables enhances the user experience with color screen, louder, clearer audio, and more ergonomic controls, all built Tait Tough for critical communications. WiFi connectivity can be used for easy, advanced fleet management.

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**

▶ **Enhanced Usability**
- Large color screen
- 3W speaker
- Clear audio in analog and digital modes with Dual Mic Active Noise Cancellation
- Clearest audio with Digital Noise Suppression
- Increased voice usability with integrated Bluetooth® connectivity for wireless audio accessories
- Side mounted connector for choice of audio accessories
- Angled controls for gloved use
- Zone selector switch
- Four programmable function keys

▶ **A range of batteries, charging options and accessories are available** (refer to the accessories catalog)

▶ **Personalize your radio:**
- Available in Black, Yellow, Orange, Red and Hi-Vis Green
- Labeling Options

▶ **Safety and Efficiency Features**
- Lone Worker and Man Down functions
- Programmable emergency key
- Integrated GPS option to improve efficiency and safety for Location Services
- Tait GeoFencing option for Automated Location Controlled Radio Behavior
- Send and receive text and status messages

▶ **Encryption options, including Tait EnableProtect KeyFill Device, Key Management Facility, and Over the Air Rekeying**

▶ **Engineered Tait Tough for demanding environments**
- IP65 & IP68 Dustproof and Waterproof
- MIL-STD-810G
- Two-shot moulding for extra durability
- Water shedding speaker grille

▶ **Tait EnableFleet Configuration Management options**
- Wired Connection for all operating modes
- OTAP for configuration changes and software upgrades over P25 trunked networks
- WiFi OTAP capability for configuration changes and software upgrades independent of LMR mode, analog or digital, conventional or trunked

PERSONALIZATION

COLOR   LABEL

Software Feature Enabler (SFE) Descriptions

TP9000 series P25 and Analog

A number of Software Feature Enabler (SFEs) are available for TP9400 and TP9600 portables.

All SFEs are licenced per feature per radio.

When ordering a new portable 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 TP9400 and TP9600 radios, with some exceptions for TP9461 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.	**TPAS086**
LOCATION DISPLAY Enables the ability to display the radio's location information on the radio screen.	**TPAS015**
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.*	**TPAS072**
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.	**TPAS087**
BLUETOOTH® AUDIO Allows the radio to pair with approved Bluetooth® devices. *∗ Not functional on TP9461. TP9461 Intrinsically Safe does not permit use of Bluetooth®.*	**TPAS082**
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 TP9440, TP9460 or TP9660 full keypad portables and TPAS055 as a prerequisite to operate.*	**TPAS064**

Software Feature Enabler (SFE) Descriptions (continued)

TP9000 series P25 and Analog

A number of Software Feature Enabler (SFEs) are available for TP9400 and TP9600 portables.

All SFEs are licenced per feature per radio.

When ordering a new portable 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 TP9400 and TP9600 radios, with some exceptions for TP9461 as noted ∗. Can also be ordered to upgrade existing fleets that may not have these features deployed.	
MDC1200 Enables use of the MDC1200 Analogue conventional signalling method (Motorola-proprietary). Features include push-to-talk identification, selective calling and emergency alarm.	TPAS059
2-TONE DECODE 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.	TPAS065
5-TONE SELCALL 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.	TPAS092
OTAP 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 TP9600 and Tait Unified Vehicle. *Requires TPAS055 to be enabled as a prerequisite.*	TPAS075
20/25KHZ WIDEBAND This licence enables 20/25kHz wideband operation on all frequencies. Local regulations on usage of wideband operation must be observed.	TPAS083

Software Feature Enabler (SFE) Descriptions (continued)

TP9000 series P25 and Analog

A number of Software Feature Enabler (SFEs) are available for TP9400 and TP9600 portables.

All SFEs are licenced per feature per radio.

When ordering a new portable 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   **TPAS050**
Enables the P25 Standard CAI (Common Air Interface) and Conventional Digital Operation - FDMA 12.5kHz channel bandwidth.

P25 PHASE 1 TRUNKING BUNDLE   **TPAS151**
Includes:

- TPAS050 - P25 CAI and Conventional Digital Operation - FDMA 12.5kHz channel bandwidth
- TPAS055 - P25 Phase 1 Trunking Operation - FDMA 12.5kHz channel bandwidth
- TPAS100 - 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   **TPAS152**
Includes:

- TPAS050 - P25 CAI and Conventional Digital Operation - FDMA 12.5kHz channel bandwidth
- TPAS055 - P25 Phase 1 Trunking Operation - FDMA 12.5kHz channel bandwidth
- TPAS091 - P25 Phase 2 Trunking Operation - TDMA 2 channels per 12.5kHz channel (equivalent to 6.25kHz channel bandwidth)
- TPAS100 - 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)

TP9000 series P25 and Analog

A number of Software Feature Enabler (SFEs) are available for TP9400 and TP9600 portables.

All SFEs are licenced per feature per radio.

When ordering a new portable 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   **TPAS153**
Includes:

- TPAS058 - AES Encryption - Multikey
- TPAS057 - DES Encryption

P25 CAP (Compliance Assessment Program) requires AES 256 Bit Encryption. DES 56 Bit Encryption is provided only for backwards compatibility with and migration from older equipment. TPAS058 enables the device to utilise 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   **TPAS154**
Includes:

- TPAS057 - DES Encryption
- TPAS102 - 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. ARC4 is a basic level of encryption that offers privacy from less sophisticated attacks.

P25 OTAR (OVER THE AIR REKEYING)   **TPAS156**
Includes:

- TPAS054 - 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.
- TPAS063 - 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   **TPAS051**
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)

TP9000 series P25 and Analog

A number of Software Feature Enabler (SFEs) are available for TP9400 and TP9600 portables.

All SFEs are licenced per feature per radio.

When ordering a new portable 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   **TPAS155**
Includes:

- TPAS067 - 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 Tier1 AVL location packet in accordance with TIA-102.BAJB.

- TPAS098 - 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).

- TPAS089 - 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.

- TPAS105 - GeoFencing Services - Enables automated location controlled radio behaviour. 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)

TP9000 series P25 and Analog

A number of Software Feature Enabler (SFEs) are available for TP9400 and TP9600 portables.

All SFEs are licenced per feature per radio.

When ordering a new portable 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   **TPAS158**

Includes:

- TPAS056 - 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.

- TPAS060 - 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 TPAS050 or 151 or 152 as a prerequisite.

Detailed Feature Comparison

TP9000 series P25 and Analog features

FEATURE	TP9400	TP9461	TP9600
CONVENTIONAL FEATURES (ANALOG AND DIGITAL)			
Conventional Networks	26	26	26
Channels Optional capacity requires TPAS086 SFE	● 1000 ▲ 2000	● 1000 ▲ 2000	● 1000 ▲ 2000
Zones Optional capacity requires TPAS086 SFE	● 50 ▲ 100	● 50 ▲ 100	● 50 ▲ 100
Scan groups Up to 50 members per group, maximum of 2000 members total	300	300	300
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)

TP9000 series P25 and Analog features

FEATURE	TP9400	TP9461	TP9600
CONVENTIONAL ANALOG FEATURES			
Squelch override	●	●	●
CTCSS (Continuous Tone Controlled Squelch System)	●	●	●
DCS (Digitally Coded Squelch)	●	●	●
DTMF (Dual Tone Multi Frequency) encode	●	●	●
DTMF Dialling	●	●	●
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 TPAS086 SFE	● 1000 ▲ 2000	● 1000 ▲ 2000	● 1000 ▲ 2000
Broadcast group call	●	●	●
PSTN (Public Switched Telephone Network) dialling / presets	▲	▲	▲
Dynamic regrouping	●	●	●
Call queuing	●	●	●
Trunking Failsoft	●	●	●

● Standard feature

▲ Optional feature

Detailed Feature Comparison
(continued)

FEATURE	TP9400	TP9461	TP9600
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			
Internal GPS	●	●	●
GPS receive and display	▲	▲	▲
GPS data transmission	▲	▲	▲
GeoFencing	▲	▲	▲
Lone Worker	●	●	●
Man Down	●	●	●
Programmable Emergency Key	●	●	●
Emergency Call	●	●	●

● Standard feature

▲ Optional feature

Detailed Feature Comparison
(continued)

FEATURE	TP9400	TP9461	TP9600
SECURITY OPTIONS			
Voice Inversion Scrambler Supported in conventional analog mode	●	●	●
Encryption, ARC4	▲	▲	▲
P25 Encryption, DES 56 bit	▲	▲	▲
P25 Encryption, AES 256 bit	▲	▲	▲
FIPS 140-2 certified encryption module			●
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)

FEATURE	TP9400	TP9461	TP9600
USER INTERFACE			
Display type **Display size**	Monochrome 32.2 x 15.1mm	Monochrome 32.2 x 15.1mm	Color 35.3mm x 26.5mm
Contrast adjust (automatic and manual)	●	●	●
Backlight control	●	●	●
Battery level indicator	●	●	●
Received Signal Strength Indicator	●	●	●
Shared Menu Structure Common with TM9000 mobile radios	●	●	●
Status Icons	●	●	●
Programmable channel selector	●	●	●
Programmable 3 way zone switch	●	●	●
Programmable function keys (including emergency key)	4	4	4
Programmable home group / channel button	●	●	●
Key Lock	●	●	●
Adjustable audible indicators (keypress tones / confidence tones)	●	●	●
Quiet mode and silent mode	●	●	●
Voice Annunciations	●	●	●

Features continue on the next page

● Standard feature

▲ Optional feature

Detailed Feature Comparison
(continued)

FEATURE	TP9400	TP9461	TP9600
USER INTERFACE (continued)			
Speaker output	2W	2W	3W
Auto Noise Reduction (ANR) Conventional analog and MPT modes	●	●	●
Vocoder and Digital Noise Suppression P25 modes - not supported in conventional analog mode.	●	●	●
Dual mic active noise cancellation Supported in analog and digital modes			●
Bluetooth® Audio	▲		▲
Over the Air Programming (OTAP) Configuration change and software upgrade requires Tait EnableFleet	▲ P25 Trunking	▲ P25 Trunking	▲ P25 Trunking ▲ WiFi Capable
TAIT TOUGH			
IP65 and IP68	●		●
IP65 and IP67		●	
MIL-STD-810G	●	●	●
Two-shot moulded construction	●	●	●
Water shedding grille	●	●	●
Protective power-down	●	●	●
Battery Overcharge Protection	●	●	●

● Standard feature

▲ Optional feature

Face Plate Color Options

The TP9000 series is 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.

TP9300, TP9400 TP9500, TP9600	TP9361 IS TP9461 IS	TP9300, TP9400 TP9500, TP9600	TP9300, TP9400 TP9500, TP9600	TP9300, TP9400 TP9500, TP9600	TP9300, TP9400 TP9500, TP9600

▸ Blue is reserved for instant identification of Intrinsically Safe hardware

▸ Use hi-vis colors for outdoor use

▸ 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

Labeling Options

Personalize your portable radio

The TP9000 series features a range of options for applying professional and durable labels to personalize and identify your radios. The front panel (indicated) of all TP9000 models can support permanent labelling applied during manufacturing, or the application of durable printed labels. The face plate of 4 key TP9500 and TP9600 models (indicated) also features a recess for printed labels.

Personalized labels have a number of applications

▸ Use labels to identify teams or talkgroups

▸ Identify an individual user's radio by name

▸ Apply your company branding to your radios

▸ Describe common operational procedures for users

▸ Describe channel groups for quick reference

LABEL RECESSES

1 Fits on all TP9000 series radios

W 30 mm (1.181 in), H 6.54 mm (0.257 in)

2 Fits on all TP9555 and TP9655 only

W 35 mm (1.377 in), H 22 mm (0.866 in)

Label Printing

Tait recommends the use of specific label stock and printer for the best results in custom label printing. This method is BS5609 approved (GHS), offering the highest visual fidelity and durability.

LABEL PROPERTIES

▶ Chemical Resistant: Tested resistant to chemicals (e.g. heptane, HCL 37%, pH3 buffer).

▶ Abrasion Resistant: Tested resistance to abrasion. Passes BS5609 Section 3.

▶ Temperature resistant: Apply at minimum 10°F (-12°C). Adhesive service temperature -20°F to 220°F (-28°C to 104°C).

▶ Waterproof: Passes BS5609 Section 2, 90-day sea water submersion adhesion test.

▶ UV Resistant: Two years outdoor UV life.

▶ Tear Resistant: Durable synthetic label material resists tearing.

Die cut labels. Roll of 500 label sets   **T03-00364-AAAA**

EPSON COLORWORKS TM-C3500 LABEL PRINTER

Labels die cut for Tait portables are specifically designed for this printer.

This is a high quality four color inkjet printer. It uses individual ink cartridges for efficient use of each ink.

The inks used are pigment based, not dye based, making the labels resistant to smudges and liquids.

The printer has both USB and Ethernet interfaces. It can handle both fan-fold and roll based media.

Tait can advise where to source printers. It is available globally from Amazon and other reputable vendors.