

# More efficient networks. More possibilities.

The Tait TM9400 has the means and flexibility to meet the operational needs of your organization today and tomorrow. The TM9400 provides analog, 12.5kHz P25 Phase 1 FDMA conventional/trunked, 6.25kHz equivalent P25 Phase 2 TDMA trunked and LSM (CQPSK) decode capability in a single device.

The TM9400 is capable of AES encryption, Over-the-air Rekeying (OTAR), various emergency modes and is IP54 rated to keep those relying on the mobiles safe and efficient. The TM9400 also has an options slot allowing extension of capabilities and a range of remote mounting and control head options.



## KEY FEATURES

- ▶ Manage migration risk with a multi-mode mobile – analog, P25 Phase 1 conventional/trunked and upgradable to P25 Phase 2 for enhanced interoperability
- ▶ Future proofed with software-upgradability to P25 Phase 2 TDMA for increased capacity
- ▶ Variety of options to suit your application – remote mount and control head
- ▶ Flexibility with an options slot for expansion and addition of future capabilities
- ▶ P25 standards compliance for greater choice and interoperability
- ▶ Engineered for demanding environments with IP54 rating and water-resistant control head
- ▶ AES encryption, voice and data, simulcast support and pre-set status messages for effective operations



## FEATURES AND BENEFITS

### Delivers on the P25 standards

Benefit from the spectral efficiency, multi-vendor interoperability, security, migration and data capability demanded by the P25 standards.

- ▶ TIA-102 P25 CAP tested and certified, providing multi-vendor interoperability
- ▶ 12.5kHz P25 Phase 1 FDMA and 6.25kHz equivalent P25 Phase 2 TDMA capable
- ▶ Product compliances satisfy FCC 2015 and 2017 ultra- narrowbanding mandates
- ▶ FCC and IC compliances include P25 Phase 2 emission designator (8K10F1W).

### Designed for demanding environments

Designed with users to ensure effective every-day operation

- ▶ IP54 rated: protected against dust and splashing water
- ▶ Exceeds MIL-STD-810G
- ▶ Large four-line LCD with icons to display key parameters
- ▶ Configurable to suit your needs: dual head and remote mount (6m and 12m options)
- ▶ Four programmable function keys on the standard mobile head
- ▶ Programmable orange emergency key

### High-performing, voice communications

Robust design delivers clear, mission-critical voice communications.

- ▶ Analog, P25 Phase 1 conventional/trunked and P25 Phase 2 trunked
- ▶ Automatic dual mode between analog and P25 Phase 1 conventional
- ▶ Programmable power level options
- ▶ Option to operate with dual band functionality
- ▶ AMBE+2 enhanced vocoder reduces background noise in demanding environments
- ▶ Voting ensures priority selection of the channel with optimum receive quality
- ▶ Dynamic regrouping and super-group operation for mission-critical workforce management
- ▶ Increased channel capacity with up to 2,000 channels
- ▶ Scanning modes include: priority, dual priority, editable, zone, background scan

### Keeping your people safe

- ▶ Supports end-to end encryption, including AES encryption
- ▶ Lone Worker, covert microphone and stealth emergency mode as standard
- ▶ Radio inhibit and uninhibit to allow management of radios during vehicle servicing
- ▶ Trunked failsoft reverts to conventional operation during trunked network failure

### Effective operations with voice and data

- ▶ Support for a variety of simulcast modes such as LSM and C4FM
- ▶ Pre-set status messages
- ▶ P25 data such as emergency GPS location
- ▶ Conventional and trunked IP data
- ▶ Location services over a conventional network
- ▶ Software configurable, including feature upgrades through software licenses

### Efficient, security-focused management

The TM9400 management facilities and applications allow you to efficiently manage your radio fleet.

- ▶ OTAR (Over-the-air Rekeying)
- ▶ EnableProtect Key Fill Device (KFD) for quick, reliable encryption key programming
- ▶ Programming application for efficient fleet programming
- ▶ EnableProtect Advanced System Key allows administrators to authorize and restrict subscriber units on their network

### TM9400 Accessories

Digital and analog interfaces allow a range of accessory options for the TM9400.

**GENERAL †**

Frequency stability	±0.5ppm (-22°F to +140°F/-30°C to +60°C)
Channel/zones	1,000 channels/50 zones (2,000 channels/100 zones optional enhancement with software license)
Talk groups	50 talk groups, up to 1,000 members total (2,000 members optional enhancement with software license)
Scan groups	300 with up to 50 members each, maximum of 2,000 members total
Power supply	10.8-16VDC
Active standby current	0.15A
Channel spacing	12.5/15/20/25/30kHz
Frequency increment	2.5/5/6.25
Dimensions (DxWxH) Control head Radio body - 25W Radio body - 30/35/50W	1.38 x 7.24 x 2.8in (35 x 184 x 71mm) 6.9 x 6.3 x 2.1in (175 x 160 x 52mm) 7.7 x 6.3 x 2.1in (195 x 160 x 52mm)
Weight Control head Radio body - 25W Radio body - 30/35/50W	0.73lb (0.33kg) 2.6lb (1.2kg) 3.1lb (1.4kg)
Operating temperature	-22°F to +140°F (-30°C to +60°C)
Water and dust protection	IP54
RF connector	50 ohm BNC or mini UHF
Interface connectors	3 interface connectors with serial ports
Signaling options (analog)	MDC1200 encode and decode, Two Tone decode, PL (CTCSS), DPL (DCS)

**TRANSMITTER †**

Frequency band	VHF	VHF	UHF	700/800MHz
Transmit power	25W, 12W, 5W, 1W	50W, 25W, 15W, 10W	25W, 12W, 5W, 1W 40W, 25W, 15W, 10W	<806MHz: 30W, 15W, 5W, 2W >806MHz: 35W, 15W, 5W, 2W
Transmit frequency ranges	136-174MHz	136-174MHz	400-470MHz: 450-520MHz	762-870MHz
Transmit current	5.5A max.	10.5A max	(25W, 12W, 5W, 1W) <6A (40W, 25W, 15W, 10W) <10.5A	10A max
Modulation limiting 12.5/15kHz channel 25/30kHz channel	±2.5kHz ±5kHz	2.5kHz ±5kHz	2.5kHz ±5kHz	±2.5kHz ±5kHz
FM hum and noise 12.5kHz channel 25kHz channel	-45dB -48dB	-45dB -48dB	-40dB -45dB	-40dB -45dB
Radiated and conducted emissions	-85dBc	-80dBc	-80dBc	-80dBc
Audio response (analog)	+1/-3dB	+1/-3dB	+1/-3dB	+1/-3dB
Audio distortion (analog)	1.5% @ 1kHz, 60% deviation			
Duty cycle	25W: 2min Tx, 4min Rx for 8 hrs @ +140°F (+60°C) 35/50W: 1min Tx, 4min Rx for 8 hrs @ +140°F (+60°C) 5W: continuous @ +104°F (+40°C)			

**RECEIVER †**

Frequency band	VHF	UHF	700/800MHz
Receive frequency ranges	136-174MHz	400-470MHz 450-520MHz	762-776MHz 850-870MHz
Sensitivity (analog) 12dB SINAD	0.22uV (-120dBm)	0.22uV (-120dBm)	0.28uV (-118dBm)
Sensitivity (P25) 5% BER	0.22uV (-120dBm)	0.22uV (-120dBm)	0.22uV (-120dBm)
Intermodulation rejection (P25 TIA-102)	76dB	75dB	75dB
Adjacent channel rejection 12.5kHz (P25) TIA-102 25kHz TIA-603 (2-tone)	60dB 73dB	60dB 70dB	60dB 70dB
Spurious response rejection (P25) TIA-102	80dB	80dB	80dB
Residual audio noise ratio (P25) TIA-102	45dB	45dB	45dB
FM hum and noise 12.5kHz channel 25kHz channel	-45dB -48dB	-40dB -45dB	-40dB -45dB
Audio distortion (3W rated audio)	1.5% at 1kHz 60% modulation		
Optional external speaker output	10W (into 4 ohm)		

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

Applicable MIL-STD Method	Method	Procedure
Low pressure	500.5	2
High temperature	501.5	1, 2
Low temperature	502.5	1, 2
Temperature shock	503.5	1
Solar radiation	505.5	1
Rain	506.5	1, 3
Humidity	507.5	2
Salt fog	509.5	1
Dust	510.5	1
Vibration	514.6	1
Shock	516.6	1, 5, 6

**TAIT P25 PHASE 2 SOLUTION**

Backed up by our proven radio network expertise, the TP9400 base station/repeater is part of our larger P25 Phase 2 offering. This solution consists of terminals, infrastructure, applications, services and integration with third party interfaces to ensure that your organization can reap all the benefits of the spectrally-efficient P25 standard.

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

\*Contact your local Tait representative for more information.

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

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

