

TM9456 DUAL BAND MOBILE

SPECIFICATIONS



Instant, reliable communications is just the beginning.

The TM9456 mobile provides dual frequency band capability for P25 conventional, P25 trunked and conventional analog solutions. The TM9456 enables you to make and receive calls on either VHF, UHF or 7/800MHz radios from a single control head.

First responders around the world trust Tait for multi-agency coordination in the most challenging environments. Improve workforce safety with smart features such as Location Services*, Tait GeoFencing, and Lone Worker functionality.

A range of control head options are available for TM9456 mobiles. ¹



Large Control Head (LCH): Built-in 3W Speaker



Hand Held Control Head



15W Rugged External Speaker



TCH4: High Resolution Color Display, Built-in 4W Speaker, Remote Mount



TCH6: High Resolution Color Display, Built-in Keypad, Remote Mount



P25 open standards

- Benefit from the spectral efficiency, multi-vendor interoperability, security, data and migration capabilities of 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
- FCC and IC compliances including P25 Phase 2 emission designator (8K10F1W)

Keeping your people safe

- Supports end-to-end encryption, including FIPS 140-2 Level 2 certified module for AES ([see NIST website for certificate](#)) and supports DES and ARC4 for interoperability
- Lone Worker, stealth emergency mode as standard with covert microphone in some control head options
- Tait GeoFencing option for automated location based behavior
- Radio inhibit and uninhibit to allow management of radios during vehicle servicing
- Trunked failsoft reverts to conventional operation during trunked network failure
- Blast Alarms and Audible Alerts on P25 conventional and Selcall channels

Highly flexible and designed for demanding environments

- Rugged design exceeds MIL-STD-810G tests for humidity, salt fog, vibration, shock and solar radiation and is IP54 rated for protection against dust and splashing water
- Control head options include high definition color screen and Hand Held Control Head
- Remote mount options 19ft and 40ft (6m and 12m) options
- [Refer to Control Head Options brochure for more information](#)

High-performance voice communications capabilities

- Future proof multi-mode flexibility offering analog, P25 Phase 1 conventional/trunked and P25 Phase 2 trunked
- Automatic dual mode between analog and P25 Phase 1 conventional
- Select between VHF and UHF networks
- Dual receive to monitor calls on either band
- Optional dual transmit on both bands
- Clear communication with P25 AMBE+2 enhanced digital vocoder and digital noise suppression
- Voting ensures priority selection of the channel with optimum receive quality
- Dynamic regrouping and supergroup operation for mission-critical workforce management
- Analog and P25 Two-Tone Paging can be used to trigger pre-programmed actions
- Large channel capacity with up to 4,000 channels per band
- Programmable power level options
- Scanning modes include: priority, dual priority, in-zone, Talkgroup scanning, and background scan

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 GNSS location
- Internal and external GNSS options available (refer to product catalog)
- Conventional and trunked IP data
- Location services options for conventional and trunked networks

Efficient, security-focused management

- Compatible with Tait Enable Protect Key Management Facility to deliver OTAR (Over-the-air Rekeying)
- Compatible with Tait EnableProtect Key Fill Device (KFD) for quick, reliable encryption key programming
- Compatible with Tait EnableProtect Advanced System Key to allow administrators to authorize and restrict subscriber units on their network
- Over-the-air-programming (OTAP) with the Tait EnableFleet configuration management system delivers software and firmware changes over Tait P25 Trunked radio networks, making it faster, easier and more affordable to update and optimize the performance of radios in your fleet

TM9400 Options and Accessories

- A range of audio accessories are available including microphones, speakers and installation options
- Options board space for Tait-developed or third-party options boards
- Digital and analog interfaces allow a range of accessory options for the TM9400
- Variety of vehicle installation kits for different mounting options
- [Refer to Tait Mobile Options and Accessories catalog for more information](#)

Color Options

- Hand Held Control heads are available in black, yellow, green and red; Large Control Heads are available in black, yellow, and green
- Different color options make it easier for workgroups to identify their equipment in the field

GENERAL	
Frequency stability	±0.5ppm (-22°F to +140°F/-30°C to +60°C)
Channels/zones (per frequency band / radio body)	4,000 channels/100 zones
Talk groups (per frequency band / radio body)	50 talk groups, up to 2,000 members total
Scan groups (per frequency band / radio body)	300 with up to 50 members each
P25 Encryption (via Key Fill Device or OTAR)	FIPS 140-2 Level 2 certified module for AES (see NIST website for certificate here). Legacy DES and ARC4 for interoperability. FIPS module dependent on TM9400 hardware version
Power supply	10.8-16VDC
Active standby current	0.15A
Channel spacing	12.5/15/20/25/30kHz
Frequency increment	2.5/3.125/5/6.25
Dimensions (DxWxH)	
Control head (TCH4/TCH6)	2.8 x 7.0 x 2.0in (72 x 178 x 52mm)
Radio body - 25W	6.9 x 6.3 x 2.1in (175 x 160 x 52mm)
Radio body - 30/35/50W	7.7 x 6.3 x 2.1in (195 x 160 x 52mm)
Weight	
Control head (TCH4/TCH6)	0.62lb (0.28kg)
Radio body - 25W	2.6lb (1.2kg)
Radio body - 30/35/50W	3.1lb (1.4kg)
Supported Languages	English (default), German, French, Spanish, Portuguese, Czech, Polish, Bulgarian
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 programmable interface connectors providing serial ports and GPIO lines for radio and accessory control, and audio connectivity
Signaling options (analog)	MDC1200 encode and decode, Two Tone decode, PL (CTCSS), DPL (DCS), Selcall

TRANSMITTER	VHF	UHF	700/800MHZ
Frequency range	136-174MHz	378-470MHz † 400-470MHz: 450-520MHz	762-870MHz
Transmit power			
25W Radio bodies	25W, 10W, 5W, 1W	25W, 10W, 5W, 1W	NA
High Power radio bodies	50W, 25W, 15W, 10W	40W, 20W, 15W, 10W >806MHz: 35W, 25W, 10W, 2W	<806MHz: 30W, 25W, 10W, 2W
Input current			
Standby Current	0.1A	0.1A	0.1A
25W Models	<5.5A	<6A	NA
High Power models	<10.5A	<10.5A	<10.5A
Modulation limiting			
12.5/15kHz channel	±2.5kHz	2.5kHz	2.5kHz
25/30kHz channel ²	±5kHz	±5kHz	±5kHz
FM Hum and noise (Analog)			
12.5kHz channel	-45dB	-40dB	-40dB
25kHz channel ²	-48dB	-45dB	-45dB
Radiated and conducted emissions			
25W Models	-85dBc	-80dBc	-80dBc
High Power Models	-80dBc	-80dBc	-80dBc
Audio response (Analog)	+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)		

† 40W model only

RECEIVER	VHF	UHF	700/800MHZ
Frequency range	136-174MHz	378-470MHz 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	60dB	60dB	60dB
25kHz TIA-603 (2-tone)	73dB	70dB	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	-45dB	-40dB	-40dB
25kHz channel ²	-48dB	-45dB	-45dB
Audio distortion (3W rated audio)	1.5% at 1kHz 60% modulation		
Optional external speaker output	15W		

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

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

REGULATORY DATA	USA (FCC)	CANADA (ISED)	EUROPE/UK (CE) ³	AUSTRALIA/NEW ZEALAND (AS/NZ) ³
VHF (136-174MHz)	✓	✓	✓	✓
UHF (378-470MHz & 400-470MHz)	✓	✓	✓	✓ ⁴
UHF (450-520MHz)	✓	✓	-	✓ ⁴
700/800MHz	✓	✓	-	-

Please note: Not all features are supported in all models or modes of operation - Contact your local Tait representative for more information.

¹ Please refer to the Mobile Control Heads brochure for more information

² Wideband operation is not available in the USA in some bands.

³ 25 Watt models only.

⁴ The 25W UHF band radios are approved for use in Citizen Band 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 400-470MHz band radios is operating at the CB frequencies.

TAIT P25 SOLUTIONS

Backed up by our proven radio network expertise, the TM9456 mobile radio 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.

Tait has taken every care in compiling this specification sheet, but we're always innovating and therefore changes to our models, designs, technical specification, visuals and other information included in this specification sheet could occur. For the most up-to-date information and for a copy of our terms and conditions please visit our website www.taitcommunications.com.

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

The words "Tait", "TAIT AXIOM", "Tait Unified", the "Tait" logo and are trademarks of Tait International Limited.

Tait International Limited facilities are certified for ISO 9001:2015 (Quality Management System), ISO 14001:2015 (Environmental Management System) and ISO 45001:2018 (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 ISO 9001.

