

**TAIT  
TOUGH**



**DMR**



## **TP9900 MULTIPROTOCOL MULTIBAND PORTABLE**

**RUGGED, LIGHTWEIGHT, MULTI-AGENCY COOPERATION**

**Multiple bands. P25 and DMR protocols. One portable.**

Significantly improve community safety outcomes with enhanced interoperability between first responders, schools, utilities and other public sector organizations with the TP9900, a compact, rugged, reliable portable radio able to access P25, DMR and analog channels in multiple frequency bands.

**taït**  
communications



3W speaker with water shedding grille and active noise cancellation.



Large color screen to keep you fully informed at a glance. Orange color future release.



Easy-grip controls for volume and channel selection. High-vis green color future release.

## **TP9900 MULTIPROTOCOL MULTIBAND PORTABLES RUGGED, LIGHTWEIGHT, MULTI-AGENCY COOPERATION**

### **P25 AND DMR OPERATION**

Significantly improve interoperability between first responders and other public sector organizations with the TP9900, a portable radio able to switch between P25 and DMR networks just by changing the channel. Reduce incident response time with more effective, immediate multi-agency communication.

### **SEAMLESS MULTIBAND PERFORMANCE**

The TP9900 is configurable to operate on any combination of VHF, UHF and 7/800MHz and 900MHz bands. Flexible and simple ordering and deployment of single, dual and multiband operation at time of purchase, or subsequently over the air. Bands are not locked and can be reconfigured.

### **EXCEPTIONAL AUDIO**

Hear and be heard, even in the most extreme environments, with a powerful 3W speaker, and dual microphone active noise cancellation that removes background noise in both analog and digital modes.

### **MAXIMUM CONNECTIVITY**

Connect to the range of networks in current operations or future technology migrations: Conventional Analog, P25 Conventional Digital, P25 Trunking Phase 1 and Phase 2, DMR Tier 2 and Tier 3. Integrated GNSS enables Location Services options, Bluetooth® for wireless voice accessories and WiFi OTAP are supported. Analog signaling includes Two Tone decode, MDC1200, PL (CTCSS), DPL (DCS), and Selcall.

### **ENHANCED WORKER SAFETY**

Man Down and Lone Worker features are included as standard to send automated safety alerts and can combine with location data and Tait GeoFencing software options to guide an effective response. The programmable Emergency key can also send these safety alerts manually. Enable eyes up operation with voice annunciation of radio settings and battery levels.

### **SECURE COMMUNICATION**

Ensure only authorized personnel can hear your communications with end-to-end encryption management options, FIPS 140-2 certified module, AES, DES and ARC4 algorithms, Tait EnableProtect Key Fill Device and Key Management Facility.

### **RUGGED, LIGHTWEIGHT DESIGN**

Experience the most compact multiprotocol, multiband portable radio on the market with up to 19 hours shift life in TDMA mode in a highly reliable Tait Tough design built to withstand rough treatment in harsh environments.

### **ERGONOMIC USER EXPERIENCE**

The TP9900 is designed for easy use in emergency situations, with ergonomic, easy-grip controls; four programmable function keys and a three way selector; and a range of accessories to tailor your experience.

### **COMPATIBLE BATTERIES & ACCESSORIES**

The TP9900 shares common batteries, chargers and audio accessories that are compatible with all current TP9000 series portables.

### **PROVEN P25 & DMR INTEROPERABILITY**

Enable multi-agency response and multi-vendor compatibility for voice, data and encryption methods – the TP9900 is designed to meet the TIA-102 P25 Compliance Assessment Program and the DMR ETSI standards for interoperability.

# TP9900 MULTIPROTOCOL MULTIBAND

## TECHNICAL SPECIFICATIONS

GENERAL	
Frequency stability	±0.5ppm (-22°F to +140°F/-30°C to +60°C)
Channels/zones	4,000 channels/100 zones shared between P25 and DMR modes
P25 talk groups	1000 talk groups, up to 2,000 members total
Scan groups (P25 and DMR)	300 with up to 50 members each, maximum of 2,000 members total
DMR Tier 2 conventional mode	supports 26 networks
DMR Tier 3 trunked mode	supports 4 networks, 512 talk group lists, 1,000 zones and 1,000 work groups
Bluetooth®	Supported
P25 encryption (via Key-Fill Device or OTAR)	FIPS Certified 256-bit AES, DES, ARC4
DMR encryption (via programming application)	ARC4, DES, AES (DMR Tier 2 and Tier 3)
OTAP	Supported (P25 Trunking, DMR Tier 3 Trunking, WiFi) – Requires Tait EnableFleet
Dimensions (with High Capacity battery)	1.77 x 2.56 x 5.71in / 45 x 65 x 145mm (DxWxH excluding knobs and antenna)
Weight (with High Capacity battery)	13.42oz / 382g (without antenna)
Supported Languages	English, German, French, Spanish, Portuguese, Czech, Polish, Bulgarian
Channel Spacing	6.25/12.5/15/20/25/30kHz <sup>2</sup>
Frequency increment	2.5/3.125/5/6.25kHz
Radio Operating temperature	-22°F to +140°F (-30°C to +60°C)
Vocoder type	AMBE +2™
Audio Output	3W
Signaling options (analog)	MDC1200 encode and decode, Two Tone decode, PL (CTCSS), DPL (DCS), Selcall
Water and dust protection	IP68 & IP65
Tait Infrastructure and Terminals are designed to these DMR Specifications:	ETSI TR 102 398 V1.5.1, ETSI TS 102 361-1 V2.6.1, ETSI TS 102 361-2 V2.5.1, ETSI TS 102 361-3 V1.3.1, ETSI TS 102 361-4 V1.12.1

MILITARY STANDARDS 810H <sup>6</sup>					
Applicable MIL-STD	Method	Procedure	Applicable MIL-STD	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	Immersion	512.5	1
Solar radiation	505.5	1	Vibration	514.6	1
Rain	506.5	1, 3	Shock	516.6	1, 4, 5, 6

SHIFT LIFE (5/5/90) <sup>3</sup> WITH HIGH CAPACITY BATTERY	6W VHF TRANSMIT <sup>1</sup>	5W VHF or UHF TRANSMIT
P25 Phase 2 / DMR / TDMA Mode	17 hours	19 hours
Analog and P25 Phase 1 / FDMA Mode	13 hours	14 hours

CHARGER	
Charger options (Li-Ion)	Fast desktop single charger, 6-way multi charger, vehicle charger and battery only vehicle charger

REGULATORY DATA	USA (FCC), Canada (ISED), Europe/UK (CE), Australia/New Zealand (AS/NZ) compliance for all stated bands except 900MHz compliance for FCC and ISED only.
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# TP9900 MULTIPROTOCOL MULTIBAND

## TECHNICAL SPECIFICATIONS continued

TRANSMITTER	VHF	UHF	700/800MHz	900MHz
<i>(Note – Radio can be configured to operate on any combination of the supported bands)</i>				
Frequency range	136-174MHz	378-520MHz	757-870MHz	896-941MHz
Output power (nom)	6W <sup>1</sup> , 5W, 3W, 2W, 1W	5W <sup>1</sup> , 4W, 2.5W, 2W, 1W	3W, 2.5W, 2W, 1W	3W, 2.5W, 2W, 1W
Modulation limiting				
12.5/15kHz channel	±2.5kHz	±2.5kHz	±2.5kHz	±2.5kHz
25/30kHz channel <sup>2</sup>	±5kHz	±5kHz	±5kHz	±5kHz
FM hum and noise				
12.5kHz channel	-45dB	-45dB	-40dB	-40dB
25kHz channel <sup>2</sup>	-48dB	-48dB	-45dB	-45dB
Radiated and conducted emissions	-75dBc	-72dBc	-75dBc	-75dBc
Audio response (analog)	+1/-3dB	+1/-3dB	+1/-3dB	+1/-3dB
Audio distortion (analog @1kHz, 60% mod) <sup>5</sup>	2%	2%	2%	2%
RECEIVER	VHF	UHF	700/800MHz	900MHz
<i>(Note – Radio can be configured to operate on any combination of the supported bands)</i>				
Frequency range	136-174MHz	378-520MHz	757-776MHz, 851-870MHz	935-941MHz
Sensitivity				
Analog 12dB SINAD (TIA-603)	0.22uV (-120dBm)	0.22uV (-120dBm)	0.22uV (-120dBm)	0.22uV (-120dBm)
DMR 1% BER (ETS300-113)	0.25µV (-119dBm)	0.25µV (-119dBm)	0.25µV (-119dBm)	0.25µV (-119dBm)
DMR 5% BER	0.16µV (-123dBm)	0.16µV (-123dBm)	0.16µV (-123dBm)	0.16µV (-123dBm)
P25 5% BER	0.2uV (-121dBm)	0.2uV (-121dBm)	0.2uV (-121dBm)	0.2uV (-121dBm)
Intermodulation rejection (Analog TIA-603E and P25 TIA-102)	75dB	75dB	70dB	70dB
Intermodulation rejection (DMR)	65dB	65dB	65dB	65dB
Adjacent channel rejection				
12.5kHz (P25) TIA-102	60dB	60dB	60dB	60dB
25kHz TIA-603 (2-tone) <sup>2</sup>	70dB	70dB	65dB	65dB
Spurious response rejection (P25) TIA-102	75dB	80dB	70dB	70dB
Residual audio noise ratio (P25) TIA-102	45dB	45dB	45dB	45dB
Audio distortion (rated audio)	1.5%	1.5%	1.5%	1.5%
FM hum and noise (Analog)				
12.5kHz channel <sup>2</sup>	-50dB	-50dB	-45dB	-40dB

### NOTE:

1. Very high power only available in USA/Canada.
2. Wideband operation is not available in the USA in some bands.
3. Battery performance is dependent on frequency, temperature, and operational configuration.
4. The UHF band radios are approved for use in Citizen Band in Australia and New Zealand when programmed to meet the requirements of AS/NZS4365.
5. Rated audio (for performance testing) 0.5W.
6. Designed to meet MIL Standards. Compliance pending.

Tait has taken every care in compiling this brochure, but we're always innovating and therefore changes to our models, designs, technical specifications, visuals and other information included in this brochure 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](http://www.taitcommunications.com)

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