TP**9358** & TP**9368** IS Division 1

SPECIFICATIONS

tait communications

Designed for maximum safety in the field and enhanced usability

Intrinsically Safe Division 1 Tait DMR portables are engineered to operate safely in hazardous environments, ensuring your people have communications they can depend on while they get the job done.

Built Tait Tough, the flexible TP9358 and TP9368 portables offer conventional and trunked DMR operation as well as full MPT 1327, and analog conventional FM in one device.

Improve workforce safety with smart features such as Location Services, Tait GeoFencing, and Man Down functionality.

TP9368

TP9358   TP9358   TP9368   TP9358   TP9368

DMR
DIGITAL MOBILE RADIO ASSOCIATION

FEATURES AND BENEFITS*

Flexible and Easy to Use

- Clear communication with DMR AMBE+2™ enhanced digital vocoder and digital noise suppression software

- Four programmable function keys and three-way selector

- Tailor your experience with wide range of accessory options

- Channel Authorization for DMR Tier 2 and Tier 3 gives users confidence their call will be heard

- Proceed to Talk Tone available in all modes, for consistent operation

DMR smart voice and data

Benefit from the spectral efficiency, multi-vendor interoperability, security, migration and data capability of DMR open standards

- Text messaging for enhanced and unambiguous communications

- Short data messages for location, status and text

- Packet data over traffic channels for work force management and customer specific applications

- IP data in digital trunked mode

- USBD Fast Polling – capable of 2000 polls per minute on compatible DMR Tier 3 systems

Tait Tough – Designed to perform

- Water-shedding grille maintains transmitted voice clarity and high audio volume in wet environments

- IP65 & IP68 dust and water proof

- Display screen protected by recess

- Drop test exceeds MIL-STD-810G

- Shock absorbing corner protection

- Supported by a range of Tait Tough audio and carry accessories

Complete package with accessories portfolio

- Intrinsically Safe audio accessories including speaker-microphones, headsets and earpieces.

- Intrinsically Safe Li-Ion battery.

- Intrinsically Safe compatible battery charger.

DMR specifications

Tait infrastructure and terminals are designed as per the following DMR Specifications:

- ETSI TR 102 398 V1.5.1 General System Design.

- ETSI TS 102 361-1 V2.6.1 DMR Air Interface (AI) protocol.

- ETSI TS 102 361-2 V2.5.1 DMR voice and generic services and facilities

- ETSI TS 102 361-3 V1.3.1 DMR data protocol.

- ETSI TS 102 361-4 V1.12.1 DMR trunking protocol

Extensive network capabilities

- Future proof quad mode portable radio offering Trunked DMR, Conventional DMR, MPT 1327 and analog conventional FM in one device

- Roaming between MPT 1327 and DMR Tier 3 trunked networks

- Roaming between Conventional FM and DMR Tier 2 Conventional networks

- Individual calls for private discussions

- A range of call types for individual and group communication with without the distraction of irrelevant traffic

- Increased channel capacity with up to 1,500 channels

- Scanning modes include: priority, dual priority, zone, and background scan – groups are editable

- PSTN dialling allows a user to make phone calls on DMR systems that support telephone interconnect

- Trunked operation allows for individual and private calls within designated groups

- Pre-set status messages

Personalization options

- Choose from 4-key (TP9358) and 16-key (TP9368) radios.

- Hi-visibility green, black, and yellow color options for easy identification in the field.

Improve workforce safety

- Programmable emergency key is easily accessible and highly visible

- Man Down and Lone Worker

- Integrated GPS option for Location Services

- Tait GeoFencing option for automated location based behavior

- Emergency calls have priority access to trunked networks

- Blast Alarms and Audible Alerts in DMR modes

- Designed and tested to meet relevant global IS standards:
    - The battery circuitry is fully encapsulated
    - The radio circuit has a stored energy limitation, which prevents internal sparking or overheating in the unlikely event of a circuit failure
    - Component and conductor spacing and protective coatings prevent short circuits caused by dust or atmospheric contamination

Tait GeoFencing Automation

- Radios can automatically take a range of actions based on location, such as change modes, send messages, hazardous area alert, or activate lone worker features

- Independent of the network, dispatch, or any other software applications

Tait EnableFleet industry leading configuration management system

- Total visibility of your fleet from a secure, central point of control

- Wired connection or Over-the-air-programming (OTAP) to update configuration and software files

- OTAP via DMR trunked networks

Secure communications

- Radio inhibit and uninhibit to allow management of misplaced or stolen radios

- Configurable DMR authentication to protect network access

- Supports end-to-end encryption, including DES, ARC4, or AES

- Tait EnableProtect Advanced System Key ensures only authorized personnel can access radio software and configuration

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SPECIFICATIONS

tait communications

GENERAL	
Conventional Mode	
Networks	26
Channels/zones	1,500 channels / 100 zones
Scan groups	300 with up to 50 members each
Trunked Mode	
Networks	4
Talk groups	512 talk group lists
Zones and work groups	1,000 zones, 1,000 work groups
Frequency stability	±0.5ppm (-22°F to 140°F / -30°C to 60°C)
Dimensions (DxWxH) - With Li-Ion 2300 mAh battery	1.77 x 2.56 x 5.35in (45 x 65 x 136mm) excluding knobs
Weight - With Li-Ion 2300 mAh battery	13.93oz (395g) – no antenna, 15.17oz (430g) with IS battery and antenna
Radio Operating temperature range	-20°C to 60°C (-4°F to 140°F) ᵀ
Water and dust protection	IP68 & IP65
ESD rating	+/- 4kV contact discharge and +/-8kV air discharge
Frequency increment/channel step	2.5/3.125/5/6.25kHz
Air interface standard	DMR: ETSI TS 102 361-1 V2.6.1, -2 V2.5.1, -3 V1.3.1, -4 V1.12.14
General system design standard	ETSI TR 102 398 V1.5.1
Signalling options (Analog)	MDC1200, encode and decode, Two tone decode, PL (CTCSS), DPL (DCS). Selcall (5 - tone)
Vocoder type	AMBE +2™
Packet Data	½ Rate, ¾ Rate, Full rate, Single Slot

ᵀ Subject to Compliance, Ambient Temperature: T4 -20°C < Ta < +50°C, T3 -20°C < Ta < +60°C

TRANSMITTER	VHF	UHF	700/800MHZ
Frequency range	136-174 MHz (B1) 174-225 MHz (C0)	380-470 MHz (HB) 450-520 MHz (H7)	762-870 MHz (K5)
Output power	5W, 3W, 2W, 1W	4W, 2.5W, 2W, 1W	2.5W, 2.5W, 2W, 1W
FM Transmit Deviation (12.5kHz / 25kHz channels) *	2.5 / 5kHz	2.5 / 5kHz	2.5 / 5kHz
FM hum and noise (analog)			
12.5kHz channel	-40dB	-40dB	-40dB
25kHz channel[1]	-45dB	-45dB	-45dB
Conducted/radiated emissions	-36dBm <1GHz, -30dBm >1GHz	-36dBm <1GHz, -30dBm >1GHz	-20dBm
Audio response	+1/-3dB	+1/-3dB	+1/-3dB
Audio distortion (Analog)	2.5%	2.5%	2.5%

RECEIVER	VHF	UHF	700/800MHZ
Frequency range	136-174MHz (B1) 174-225 MHz (C0)	380-470 MHz (HB) 450-520 MHz (H7)	762-776 & 850-870 MHz (K5)
Channel Spacing *	6.25/12.5/25kHz	6.25/12.5/25kHz	6.25/12.5/25kHz
Sensitivity (typical)			
Analog (12dB SINAD)	-120dBm(0.22μV)	-120dBm (0.22μV)	-120dBm (0.22μV)
DMR (1% BER (ETS300-113))	-119dBm (0.25μV)	-119dBm (0.25μV)	-119dBm (0.25μV)
DMR (5% BER)	-123dBm (0.16μV)	-123dBm (0.16μV)	-123dBm (0.16μV)
Intermodulation rejection (TIA603E)	75dB	75dB	75dB
Intermodulation rejection (ETS 300)	65dB	65dB	65dB
Selectivity (Analog)			
TIA603E (2 Tone)	12.5kHz: 50dB 25kHz: 70dB	12.5kHz: 50dB 25kHz: 70dB	12.5kHz: 50dB 25kHz: 70dB
ETS 3000-086 & TIA603E 1 Tone	12.5kHz: 52dB 25kHz: 73dB	12.5kHz: 50dB 25kHz: 70dB	12.5kHz: 60dB 25kHz: 70dB
FM hum and noise (Narrowband / Wideband)	-40dB / -45dB	-40dB / -45dB	-40dB / -45dB
Spurious Rejection (TIA603E)	70dB	70dB	70dB
Conducted Emissions (TIA603E)	70dB	70dB	70dB
Rated Audio (Internal)	0.5W	0.5W	0.5W
Audio Response (TIA603E)	+1/-3dB	+1/-3dB	+1/-3dB
Audio Distortion (Rated audio)	2%	2%	2%

* Wideband operation subject to FCC regulations

[1] Wideband operation is not available in the USA in some bands

CHARGER AND BATTERY

Charger options (Li-Ion)	IS compatible desktop and vehicle chargers
Battery shift life (DMR mode, standard config)	Li-Ion 2300 mAh 15 hours (5/5/90)*
Battery shift life (Analog mode, standard config)	Li-Ion 2300 mAh 11.5 hours (5/5/90)*

* Battery performance is dependent on frequency, temperature, and operational configuration.

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

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	516.5	1,4,5,6

REGULATORY DATA	USA (FCC)	CANADA (ISED)
VHF (136-174MHz)	✓	✓
VHF (174-225MHz)	✓	-
UHF (378-470MHz)	✓	✓
UHF (450-520MHz)	✓	✓
700/800MHz	✓	✓

HAZLOC / INTRINSICALLY SAFE COMPLIANCE

USA:

Class I Division I, Groups A, B, C, D. Class II Division I, Groups E, F, G. Class III Division I

T3 Tamb = -20degC to 60degC
T4 Tamb = -20degC to 50degC

Please note for Canada Hazloc details, please refer to the Canada Specification Sheet for TP9358 and TP9368

TAIT DMR SOLUTION

Backed up by our proven radio network expertise, the TP9300 is part of our larger DMR offering. The Tait DMR 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 DMR standard in a mission critical environment.

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 or check with your nearest Tait office or authorized dealer.

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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.

Quality Management ISO 9001

Environment Management ISO 14001:2015

Occupational Health & Safety Management ISO 45001:2018