



## MAXIMUM SAFETY, POWERFUL PERFORMANCE

### KEY FEATURES

User safety ensured with globally recognized Intrinsically Safe rating

Manages migration risks with analog, P25 Phase 1 conventional/trunked and P25 Phase 2 interoperability

P25 standards compliance for greater choice and interoperability

AES encryption, voice and data, pre-set status messages and internal GPS for safe and efficient operations

Engineered for demanding environments with IP67 rating and water-shedding grille

# TP9400 IS PORTABLE

## INTRINSICALLY SAFE (IS) P25 PHASE 2 CAPABLE RADIO

Harris TP9400 IS P25 Phase 2 portables are engineered for operation in hazardous environments, keeping first responders safe while they get the job done.

The TP9400 IS P25 portable radios' IP67 rating protects up to one meter immersion for up to 30 minutes and a water-shedding grille supports voice clarity and volume in wet environments.

Instantly recognized in-field by the IS trademark blue color, TP9400 IS technologies easily manage migration challenges with analog, P25 conventional/trunked and P25 Phase 2 interoperable capabilities. End-to-end encryption secures all communications and worker effectiveness is enhanced with voice and data capabilities, pre-set status message options and an internal GPS.

# FEATURES AND BENEFITS

## Delivers on P25 standards

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

The TP9400 IS provides:

- TIA-102 P25 CAP tested providing multi-vendor interoperability
- 12.5kHz P25 Phase 1 FDMA and 6.25kHz equivalent P25 Phase 2 TDMA capable
- P25 Phase 2 product compliances satisfy FCC 2015 and 2017 ultra narrowbanding mandates

## Designed for demanding environments

- Designed with users to ensure effective everyday operation
- Exceeds relevant MIL-STD-810G
- IP67 sealing protects to one meter of water for 30 minutes
- Water-shedding grille assists voice clarity and volume in wet environments
- Shock absorbing impact-protected corners
- Large four-line LCD with icons to display key parameters
- Four programmable function keys and three-way selector

## End user safety is ensured with globally recognized Intrinsically Safe ratings systems

The TP9400 IS portable is designed and tested to meet global IS standards, ensuring safe operation in hazardous environments

- 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

## Internationally recognized IS color

The TP9400 IS model is made in the internationally recognized blue color for Intrinsically Safe portables, ensuring instant recognition in the field.

## High-performing voice communications

Robust design delivers clear, mission-critical voice communications.

- Analog, P25 Phase 1 conventional/trunked and P25 Phase 2
- Automatic dual mode between analog and P25 Phase 1 conventional
- Unique microphone design coupled with 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 and background scan
- Range of analog signaling functionality, i.e., MDC1200 encode and decode, 2-tone decode, PL (CTCSS), DPL (DCS) and 5-tone Selcall

## Improve workforce safety

- Programmable emergency key is easily accessible and highly visible on the radio
- Man Down and Lone Worker as standard
- Inbuilt GPS transmits location over your conventional voice network

- Radio inhibit and uninhibit to allow management of misplaced or stolen radios
- Supports end-to-end encryption, including AES
- Trunked failsoft reverts to conventional operation during trunked network failure

## Effective operation with voice and data

- Support for a variety of simulcast modes such as LSM and C4FM
- Pre-set status messaging
- P25 data such as emergency GPS location
- Conventional and trunked IP data
- Location services over a conventional and trunked network

## Efficient, security-focused management

The TP9400 IS management facilities and applications allow you to efficiently manage your radio fleet.

- OTAR (Over-The-Air Rekeying)
- Key Fill Device (KFD) for quick, reliable encryption key programming
- Tait Advanced System Key (TASK) allows administrators to authorize and restrict subscriber units on their network

## Complete package with accessories portfolio

- Intrinsically Safe audio accessories including speaker-microphones, headsets and earpieces
- Intrinsically Safe Li-ion battery
- Intrinsically Safe compatible charger

SPECIFICATIONS FOR: TP9400 PORTABLE - INTRINSICALLY SAFE (IS) P25 PHASE 2 RADIO

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)
Talkgroups	50 talkgroups, 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
Dimensions (D X W X H): with Li-Ion 2300 mAh Battery	1.77in x 2.56in x 5.35in (45mm x 65 mm x 136mm) excluding knobs
Weight: with Li-Ion 2300 mAh Battery	15.16oz (430g) – no antenna (395)
Radio Operating Temperature Range	-20°C to 60°C (-4°F to 140°F) †
Water and Dust Protection	IP67
ESD Rating	+/- 4kV contact discharge and +/-8kV air discharge
Frequency Increment	2.5/5/6.25kHz
Channel Spacing	12.5/15/20/25/30kHz
Rated Audio (Internal)	0.5W
Signaling Options (Analog)	MDC1200 encode and decode, 2-tone decode, PL (CTCSS), DPL (DCS), 5-tone Selcall

TRANSMITTER			
Frequency Band:	VHF	UHF	700/800MHz
Transmit Frequency Ranges	136–174MHz	380–470MHz	762–870MHz
Output Power (IIA)	5W, 3W, 2W, 1W	4W, 2.5W, 2W, 1W	2.5W, 2W, 1W
Output Power (IIC)	1W	1W	1W
Modulation Limiting:			
12.5/15kHz channel	±2.5kHz	2.5kHz	±2.5kHz
25/30kHz channel	±5kHz	±5kHz	±5kHz
FM Hum and Noise (Analog):			
12.5kHz Channel	-45dB	-40dB	-40dB
25kHz Channel	-48dB	-45dB	-45dB
Radiated and Conducted Emissions	-75dBc	-72dBc	-70dBc
Audio Response (Analog)	+1/-3dB	+1/-3dB	+1/-3dB
Audio Distortion (Analog)	1.5% @ 1kHz, 60% deviation		

RECEIVER			
Frequency Band:	VHF	UHF	700/800MHz
Receive Frequency Ranges	136–174MHz	380–470MHz	762–776MHz 851–870MHz
Sensitivity (Analog): 12Db SINAD	0.22uV (-120dBm)	0.22uV (-120dBm)	0.22uV (-120dBm)
Sensitivity (P25): 5% BER	0.22uV (-120dBm)	0.22uV (-120dBm)	0.22uV (-120dBm)
Intermodulation Rejection (P25): TIA-102	75dB	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)	75dB	80dB	70dB
Residual Audio Noise Ratio (P25): TIA-102	45dB	45dB	45dB
Audio Distortion (Rated Audio)	1.5%	1.5%	1.5%
FM Hum and Noise:			
12.5kHz channel	-45dB	-40dB	-40dB
25kHz channel	-48dB	-45dB	-45dB

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

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

## MILITARY STANDARDS 810C, D, E, F AND G (CONTINUED)

Applicable MIL-STD Method:	Method	Procedure
Humidity	507.5	2
Salt Fog	509.5	1
Dust	510.5	1
Immersion	512.5	1
Vibration	514.6	1
Shock	516.6	1, 4, 5, 6

## BATTERY

	Analog / Phase 1	Phase 2
Li-Ion 2300 mAh Battery Shift Life (5/5/90)	11.5 hours	15 hours

## CHARGER

Charger Options (Li-Ion)	IS compatible desktop single charger
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## REGULATORY DATA

	USA	Canada	Europe	Australia/New Zealand
VHF (136-174MHz)	CFR 47	RSS-119	EN300-086, EN300-113, EN300-219, EN300-489, EN60950	AS/NZ4295
UHF (380-470MHz)	CFR 47	RSS-119	EN300-086, EN300-113, EN300-219, EN300-489, EN60950	AS/NZ4295
700/800MHz	CFR 47	RSS-119	NA	NA

## IS COMPLIANCE\*

	Output Power	USA	Brazil	Canada	Europe	Australia/NZ
VHF (136-174MHz)	1-5W	Class I Zone 1 AEx ib IIA T4... T3 Gb	—	Class I Zone 1 Ex ib IIA T4... T3 Gb Class I Div 2 Group A, B, C, D	II 2 G Ex ib IIA T4... T3 Gb	Ex ib IIA T4... T3 Gb
		Class I Div 2 Group D	—	—	—	—
	1W	Class I Zone 1 AEx ib IIC T4... T3 Gb	—	Class I Zone 1 Ex ib IIC T4... T3 Gb	II 2 G Ex ib IIC T4... T3 Gb	Ex ib IIC T4... T3 Gb
UHF (380-470MHz)	1-4W	Class I Zone 1 AEx ib IIA T4... T3 Gb	—	Class I Zone 1 Ex ib IIA T4... T3 Gb	II 2 G Ex ib IIA T4... T3 Gb	Ex ib IIA T4... T3 Gb
		Class I Div 2 Groups A, B, C, D	—	—	—	—
	1W	Class I Zone 1 AEx ib IIC T4... T3 Gb	—	Class I Zone 1 Ex ib IIC T4... T3 Gb Class I Div 2 Group A, B, C, D	II 2 G Ex ib IIC T4... T3 Gb	Ex ib IIC T4... T3 Gb
700/800MHz	1-2.5W	Class I Zone 1 AEx ib IIA T4... T3 Gb	Ex ib IIA T4... T3 Gb	Class I Zone 1 Ex ib IIA T4... T3 Gb	—	Ex ib IIA T4... T3 Gb
		Class I Div 2 Groups D	—	—	—	—
	1W	Class I Zone 1 AEx ib IIC T4... T3 Gb	Ex ib IIC T4... T3 Gb	Class I Zone 1 Ex ib IIC T4... T3 Gb	—	Ex ib IIC T4... T3 Gb
		Class I Div 2 Groups A, B, C, D	—	—	—	—

\* Ambient Temperature: T4 -20°C < Ta < +50°C, T3 -20°C < Ta +60°C. Level of compliance subject to approval.

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.

**About Harris Corporation:** Harris Corporation is a leading technology innovator that creates mission-critical solutions that connect, inform and protect the world. The company's advanced technology provides information and insight to customers operating in demanding environments—from ocean to orbit and everywhere in between. Harris has approximately \$7.5 billion in annualized revenue and supports customers in more than 100 countries through four customer-focused business segments: Critical Networks, Space and Intelligence Systems, Electronic Systems and Communication Systems.

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