



# TB9400 BASE STATION P25 PHASE 2 CAPABLE REPEATER

**MORE EFFICIENT,  
FLEXIBLE P25 AND  
ANALOG NETWORKING**

## KEY FEATURES

Operation in VHF, UHF and 700/800 MHz frequency bands

Scalable network design with IP connectivity

Advanced capacity and interoperability with adherence to P25 standards

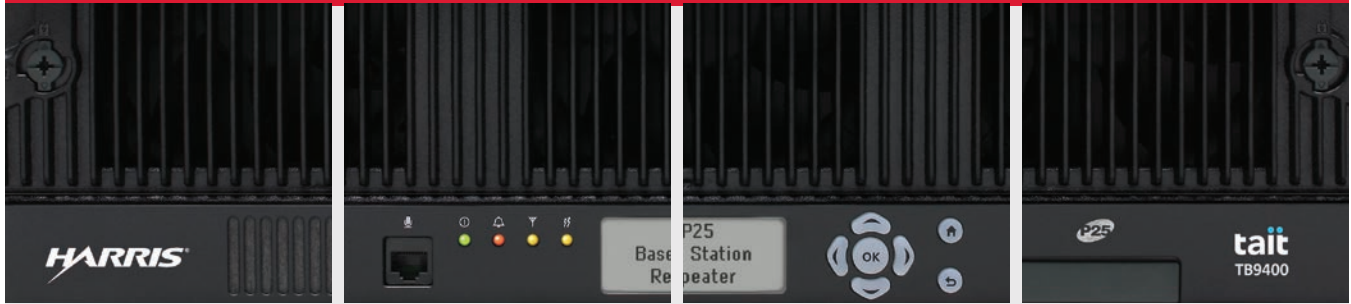
Extensive remote management and monitoring options with a focus on security

MIL-STD designed and tested for reliability to mitigate network outages

The Harris TB9400 is open-standards compliant, ensuring interoperability among agencies.

This Base Station/Repeater has made smooth migrations easier than ever before, and is capable of analog simulcast over IP, P25 Phase 1 and P25 Phase 2. The built-in software voter and simulcast controller reduces required hardware and saves rack space.

The TB9400 provides cost-effective deployment and improved operational performance. Modular by design, this secure and reliable Base Station/Repeater scales with each organization's needs as they change and grow. Remote management and monitoring options include built-in diagnostics and access level control, multiple user accounts, fault diagnosis, and detailed alarm monitoring and management via IP.



## FEATURES AND BENEFITS

### Cornerstone of a P25 Phase 2 software-upgradable system

The TB9400 base station contributes to keeping your people safe and to running an effective and efficient operation.

- Flexible network design through IP connectivity and linking
- Individual and group calls
- Supports end-to-end encryption, including highly secure AES
- Enable application suite includes: Monitor, Repeat, Secure, and Fleet Management

### Delivers on Public Safety

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

- Provides choice of vendor and equipment
- 12.5 kHz P25 Phase 1 and analog operation
- 6.25 kHz equivalent P25 Phase 2 TDMA operation

### Digital voice communications for operations

Robust design provides clear mission-critical voice communications.

- Transfer voice and data across a packet-switched infrastructure using standard IP communications
- Quality of service assignments for voice and signaling for optimal network packet routing

- Built-in optional central voting facility selects the best quality signal for transmission

### Designed for demanding environments

TB9400 network design services deliver the resilience, capacity and coverage required for your communications network.

- Rugged construction, efficient heat sinks and three-fan, front-to-rear cooling
- Continuously rated at full output power
- Meets MIL-STD-810F
- Continuous operation with smart AC/DC
- Ongoing communications during an outage with failsoft

### Supports cost effective deployment and operation

TB9400 applications and design elements make the TB9400 cost effective to deploy, minimizing individual site equipment and number of sites. It is a low cost of ownership solution, with upgrades, reconfigurations, and diagnostics.

- Integrated simulcast controller replaces the typical external controller and minimizes rack space
- LSM support means digital P25 simulcast networks require fewer sites
- C4FM simulcast operation
- Built-in continuous wave identification generation meets FCC call-sign requirements

- Identical 4U form-factor and module packaging to the P25 Phase 1 TB9100 base station

- Supports two base station software versions for swift rollback
- Rx only option for reduced deployment costs

### Future-proof to protect investment

Interfaces and functions ensure your P25 system can expand with the evolving needs of your organization and your regulatory environment.

- Modular design for cost effective deployment, maintenance and upgrade
- Software configurable
- Feature upgrades through software license

### Efficient, secure network management

The TB9400 management applications suite allows you to efficiently manage your network and its key functions.

- Remote management via web server and SNMPv3 support
- Alarm monitoring and management, via IP, with 12 remotely monitored digital inputs
- Detailed alarm reporting monitors over 50 key base station parameters
- Inbuilt diagnostics to remotely confirm optimal operation
- Password protection and access level control on web server

## FEATURES AND BENEFITS (CONTINUED)

- Multiple user accounts
- System logs retained for 30 days
- Remote fault diagnosis
- Remote software downloads
- Up to 1,000 configurable channels for efficient deployment
- Front panel LCD display and navigation buttons for on-screen menu (can be disabled)
- Supports authorization for remote authentication
- Users may be authorized as an Administrator, a Maintainer or a Guest

## SPECIFICATIONS FOR: TB9400 BASE STATION - P25 PHASE 2 CAPABLE REPEATER

### GENERAL

Frequency Bands	VHF	UHF	700/800MHz
Frequency Ranges			
Transmit (Tx)	136-156MHz, 148-174MHz	400-440MHz, 440-480MHz	762-776MHz, 850-870MHz
Receive (Rx)	136-156MHz, 148-174MHz	400-440MHz, 440-480MHz	792-824MHz
Frequency Stability	±0.5ppm		
Channels/Zones	1,000		
Dimensions (D x W x H)	15.8in x 19in x 7in (400.5mm x 482.6mm x 176.8mm) 4U rack space		
Weight - lb (kg)	<b>Single 50W</b> 43.2lb (19.6kg)	<b>Single 100W</b> 46.5lb (21.1kg)	<b>Dual 50W</b> 54.7lb (24.8kg)
Channel Spacing	12.5kHz Analog and P25 (Phase 1 - FDMA channel is 12.5kHz, Phase 2 - 2 TDMA voice channels are 6.25kHz equivalent)		
Frequency Increment	<b>VHF</b> 2.5kHz, 3.125kHz	<b>UHF</b> 5kHz, 6.25 kHz	<b>700/800MHz</b> 5 kHz, 6.25 kHz
Operating Temperature	-22°F to +140°F (-30°C to +60°C)		
External Frequency Reference	10MHz/12.8MHz (auto detect)		
Power Supply	<b>AC</b> 88-264V (with power factor correction)	<b>DC</b> 12V, 24V, 48V, PMU (+ve or -ve earth)	

### ANALOG, P25 CONFIGURATIONS

	50W	100W	Receive-only
136-156MHz, 148-174MHz	P25, Analog FM	P25, Analog FM	P25, Analog FM
400-440 MHz, 440-480MHz*	P25, Analog FM	P25, Analog FM	NA*
762MHz-870MHz**	P25, Analog FM	P25, Analog FM	P25, Analog FM

\* UHF Rx-only configuration is not available and in progress

\*\* The actual frequency coverage in this band is:  
Transmit: 762-776MHz and 850-870MHz  
Receive: 792-824MHz

## TRANSMITTER

Frequency Bands	VHF	UHF	700/800MHz
P25 Adjacent Channel Power	-60dBc (ETSI) -67dBc (TIA-102)	-60dBc (ETSI) -67dBc (TIA-102)	-67dBc (TIA-102)
Analog Adjacent Channel Power	—	-60dBc (EIA)	—
P25 Modulation Fidelity	2% (TIA-102)	2% (TIA-102)	2% (TIA-102)
Transmit Modulation Types	FM, C4FM, LSM, H-DQPSK	—	—
Transmit Power Rating	50W Programmable 5-50W (in 1W steps)	100W 50W Programmable 10-100W (in 1W steps)	—
Deviation Limiting (Narrowband FM)	—	2.5kHz	—
FM Hum and Noise	-50dB	-50dB	-45dB

## TX POWER CONSUMPTION

Power Source	120VAC	230VAC	12VDC	24VDC	48VDC
Tx Standby @ 50W	44VA (30W)	117VA (31W)	2A (24W)	975mA (23W)	480mA (23W)
Tx @ 50W	238VA (235W)	250VA (220W)	18A (216W)	9A (216W)	4.2A (202W)
Tx @ 100W	400VA (395W)	395VA (375W)	32A (385W)	15.5A (370W)	7.4A (355W)

## RECEIVER

Modulation Types	C4FM, H-CPM, Analog FM
P25 Sensitivity - (TIA-102)	0.22uV (-120dBm) @ 5%BER
Analog Sensitivity	-119dBm @ 12dB SINAD
Inter-modulation Rejection - (TIA-102)	85dB
P25 Selectivity - (TIA-102)	60dB
Analog Selectivity - (EIA)	85dB
Co-channel Rejection - (TIA-102)	9 dB
P25 Conducted Spurious Emissions	<-90dBm (9kHz to 2GHz) <-70dBm (2GHz to 12.75GHz)

## REGULATORY DATA

	USA	Canada	Europe	Australia/New Zealand
VHF (136-156MHz, 148-174MHz)	CFR 47	RSS-119	EN300-113, EN301-489, EN60950	AS/NZS4768
UHF (400-440MHz, 440-480MHz)	CFR 47	RSS-119	EN300-113, EN301-489, EN60950	AS/NZS4768
762-870MHz	CFR 47	RSS-119	NA	NA

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, solving customers' toughest mission-critical challenges by providing solutions that connect, inform and protect. Harris supports government and commercial customers around the world.

Learn more at [harris.com](http://harris.com).

### Non-Export Controlled Information

Harris is a registered trademark of Harris Corporation.  
© 2019 Harris Corporation 02/19 CS-PSPC DS1603D



The word "Tait" and the Tait logo are trademarks of Tait Limited.



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.