TB**9400**
SPECIFICATIONS

More efficient networks. More possibilities.

The TB9400 base station is the second generation P25 base station with IP connectivity from Tait. It is both 12.5 kHz P25 Phase 1 FDMA operational and 6.25 kHz equivalent P25 Phase 2 TDMA trunked software-upgradable, so customers can transition to a more spectrally efficient solution, with greater capacity and future proof their investment.

The TB9400 delivers on deployment and operational efficiency with Phase 2 upgradability, Linear Simulcast Modulation (LSM), and remote network management.

KEY FEATURES

- Future proof with software-upgradability to P25 Phase 2 TDMA for increased capacity
- P25 standards compliance for greater choice and interoperability
- IP connectivity allows efficient network design and scaling
- Linear Simulcast Modulation (LSM) means simulcast networks with fewer sites
- Extensive remote management and monitoring options with a focus on security
- MIL-STD designed and tested for reliability to mitigate network outages
- Built on the TB9100 pedigree

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FEATURES AND BENEFITS

Cornerstone of a Tait P25 Phase 2 software-upgradable system

A Tait P25 system 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 calling
- Supports end-to-end encryption, including highly secure AES
- Encryption management with the award-winning Tait P25 EnableProtect

Delivers on the P25 standards

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 FDMA operational
- Software-upgradable to 6.25 kHz equivalent P25 Phase 2 TDMA operation
- Pending TIA-102 testing for P25 CAP certification, providing multi-vendor interoperability
- Compliance platform for FCC 2015 and 2017 ultra-narrowbanding deadlines

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 (QoS) assignments for voice and signaling for optimal network packet routing
- Built-in optional centralized voting facility selects the best quality signal for transmission

Designed for demanding environments

The TB9400, with Tait network design services, can 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.

- 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 (CWID) generation meets FCC call-sign requirements
- Identical 4U form-factor and module packaging to the Tait P25 Phase 1 TB9100 base station
- Supports two base station software versions for swift roll-back
- 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 the regulatory environment in which you operate.

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

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FEATURES AND BENEFITS

Efficient, secure network management

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

- Remote management via web server and SNMP 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
- Multiple user accounts
- System logs retained for 30 days
- Remote fault diagnosis
- Integrated voice recorder
- 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)

GENERAL[1]

Frequency Bands	**700/800 MHz**	**VHF**
Transmit:	762-776 and 850-870 MHZ	148-174 MHz
Receive:	792-824 MHz	148-174 MHz
Frequency stability	±0.5 ppm	
Channels	1,000	
Dimensions (DxWxH)	15.8 x 19 x 7 in (400.5 x 482.6 x176.8 mm) 4U rack space	
Weight	Single 100 W: 46.5 lb (21.1 kg), Dual 50W : 54.7lb (24.8kg), Single 50W 43.2lb (19.6kg)	
Channel spacing	12.5 kHz (two TDMA voice channels – 6.25 kHz equivalent)	
Frequency increment	**700/800 MHz**	**VHF**
	5 kHz/6.25 kHz	2.5 kHz & 3.125 kHz
Operating temperature	-22ºF to +140ºF (-30ºC to +60ºC)	
External frequency reference	10 MHz/12.8 MHz (auto detect)	
Power supply		
DC	12V, 24V, 48V, PMU (+ve or -ve earth)	
AC	88-264V (with Power Factor Correction)	

FREQUENCY BAND

	50W	100W	Receive-only
148 MHz to 174MHz	Yes	Yes	Yes
762MHz to 870MHz*	No	Yes	No

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

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TRANSMITTER[‡]

Adjacent channel power (P25) TIA-102.CAAA-D	**700/800 MHz**	**VHF**		
APCO C4FM and LSM	<-67 dBc	-60 dBc ETSI		
Modulation fidelity (P25) TIA-102.CAAA-D	2%			
Transmit modulation types	C4FM, LSM			
Transmitter power rating	100 W: Programmable 10-100 W (in 1 W steps), 50 W: Programmable 10-50 W (in 1 W steps),			
Power consumption	**12 VDC**	**24 VDC**	**48 VDC**	**120 VAC**
Tx @100 W	32.0 A (385 W)	15.5 A (370 W)	7.4 A (355 W)	400 VA (395 W)
Emission designators	**Common name**	**Modulation scheme**	**Operating mode(s)**	
8K10F1E	P25 Phase 1	C4FM	Digital Voice	
8K10F1D	P25 Phase 1	C4FM	Data/Control Channel	
8K10F7W	P25 Phase 1	C4FM	Digital Voice/Data/ Control Channel	
8K70D1W	P25 Phase 1 Linear Simulcast Modulation (LSM)	CQPSK	Digital Voice	
8K70D7W	P25 Phase 1 LSM	CQPSK	Digital Voice/Data/ Control Channel	
9K80D7W	Future upgrade for P25 Phase 2 Standard. Currently test mode only.	H-DQPSK	Digital Voice/Data	

TX POWER CONSUMPTION

	120VAC	230VAC	12VDC	24VDC	48VDC
Standby	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
Sensitivity - (P25) TIA-102.CAAA-D	0.22 µV (-120 dBm) @ 5% BER
Intermodulation rejection - (P25) TIA-102.CAAA-D	85dB
Selectivity - (P25) TIA-102.CAAA-D	60dB
Co-channel rejection - (P25) TIA-102.CAAA-D	9 dB
Conducted spurious emissions	<-90 dBm (9 kHz to 2 GHz) <-70 dBm (2 GHz to 12.75 GHz)

TAIT P25 PHASE 2 SOLUTION

Backed up by our proven radio network expertise, the TB9400 base station/repeater 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.

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.

*Contact your local Tait representative for more information.

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

Quality ISO 9001
Environment ISO 14001
BS 18001 Certified

