TB**9400**

SPECIFICATIONS

tait
communications

More efficient P25 and Analog networks. More agile with new capabilities.

The TB9400 base station is the flexible second generation platform for both Tait P25 Digital and Tait AS-IP Analog Simulcast solutions with IP connectivity. It is both 12.5 kHz for Analog conventional, P25 Conventional, P25 Phase 1 FDMA operational and 6.25 kHz equivalent P25 Phase 2 TDMA trunked.

Tait customers are able to migrate from an analog network to a digital P25 system, and also from P25 Phase 1 to Phase 2, to a more spectrally efficient solution, with greater capacity and thus future proof their investment.

The TB9400 delivers on efficiency with Analog and Digital modes of operation, internal voter capability, Linear Simulcast Modulation (LSM) and remote network management.

KEY FEATURES

- P25 Conventional operations
- P25 Trunking Phase 1 and Phase 2 operations
- Analog conventional simulcast operations
- IP connectivity allows efficient network design and scaling
- Linear Simulcast Modulation (LSM) means P25 Trunked Phase 1 and P25 Conventional simulcast networks with fewer sites when compared to standard C4FM Simulcast
- DQPSK simulcast modulation for P25 Trunked Phase 2 also enhances delay spread performance
- Built in software voter and simulcast controller
- Built in Frequency Analyzer tool
- Extensive remote management and monitoring options with a focus on security
- P25 standards compliance for greater choice and interoperability
- Designed and MIL-STD-810G tested for reliability to mitigate network outages
- Built on the TB9100 pedigree

P25
DIGITAL WIRELESS · SANS FIL
NUMÉRIQUE · INALÁMBRICO DIGITAL

FEATURES AND BENEFITS

Cornerstone of a Tait 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

- Tait Enable application Suite: Monitor, Report, 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

- 12.5KHz P25 Trunked Phase 1 FDMA, P25 Conventional and Analog conventional 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 (QoS) 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

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 relevant MIL-STD-810G test methods

- 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 (CWID) generation meets FCC call-sign requirements

- Identical 4U form-factor and module packaging to the Tait Analog/P25 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

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 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

- 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.

TB**9400**
SPECIFICATIONS

tait communications

GENERAL

Frequency Bands	VHF	UHF		700/800MHz
Transmit:	148-174 MHz	400-440, 440-480, 470-520MHz		762-776 and 850-870 MHz
Receive:	148-174 MHz	400-440, 440-480, 470-520MHz		792-824 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 analog and P25 (Phase 1 - FDMA channel is 12.5KHz, and Phase 2 - 2 TDMA voice channels is 6.25 kHz equivalent)			
Frequency increment	VHF 2.5 kHz & 3.125 kHz	UHF 5kHz & 6.25 kHz		700/800 MHz 5 kHz/6.25 kHz
Operating temperature	-22°F to +140°F (-30°C to +60°C)			
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)			

ANALOG, P25 CONFIGURATIONS

ANALOG, P25 CONFIGURATIONS	50W	100W	RECEIVE-ONLY
148 MHz to 174MHz	P25, Analog FM	P25, Analog FM	P25, Analog FM
400-440, 440-480, 470-520MHz*	P25, Analog FM	P25, Analog FM	N/A *
762MHz to 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: 762MHz to 776MHz, and 850MHz to 870MHz
Receive: 792MHz to 824MHz

TRANSMITTER

TRANSMITTER	VHF	UHF	700/800MHZ
P25 Adjacent channel power	-60 dBc ETSI -67 dBc TIA-102	-60 dBc ETSI -67 dBc TIA-102	-67 dBc TIA-102
Analog Adjacent channel power (EIA)		-60 dBc	
P25 Modulation fidelity (TIA-102)	2%	2%	2%
Transmit modulation types	FM, C4FM, LSM, H-DQPSK		
Transmit power rating	100 W: Programmable 10-100 W (in 1 W steps), 50 W: Programmable 5-50 W (in 1 W steps)		
Deviation Limiting (Narrowband FM)		2.5kHz	
FM Hum and Noise	-50dB	-50dB	-45dB
Conducted / Radiated Emissions	-36dBm to 1 GHz	-36dBm to 1 GHz	-20 dBm to 9GHz

TX POWER CONSUMPTION

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, H-CPM, Analog FM
P25 Sensitivity - (TIA-102)	0.22uV (-120 dBm) @ 5% BER
Analog Sensitivity	-119 dBm @ 12 dB SINAD
Intermodulation rejection - (TIA-102)	85dB
P25 Selectivity - (TIA-102)	60dB
Analog Selectivity - (EIA)	85dB
Co-channel rejection - (TIA-102)	90 dB
P25 Conducted spurious emissions	<-90 dBm (9 kHz to 2 GHz) <-70 dBm (2 GHz to 12.75 GHz)

TB**9400**
SPECIFICATIONS

MILITARY STANDARDS 810G		
Applicable MIL-STD	**Method**	**Procedure**
Low pressure (Altitude)*	500.5	2
Humidity	507.5	2
Vibration	514.6	1
Shock	516.6	1

*15000ft (4572m)

REGULATORY DATA	USA	CANADA	EUROPE	AUSTRALIA/NEW ZEALAND
VHF (148-174MHz)	CFR 47	RSS-119	EN300-113, EN301-489, EN60950	AS/NZS4768
UHF (400-440MHz. 440-480, 470-520*MHz)	CFR 47	RSS-119	EN300-113, EN301-489, EN60950	AS/NZS4768
762-870MHz	CFR 47	RSS-119	N/A	N/A

*Note: For 470-520MHz USA/Canada only, not Europe/Australia/New-Zealand

Performance figures are typical figures with PMU fitted

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.taitradio.com.

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

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

Tait International Limited facilities are certified for ISO 9001:2015 (Quality Management System), ISO 14001:2015 (Environmental Management System) and BS OHSAS 18001:2007 (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 ISO 9001.

Authorized Partners

Quality
ISO 9001

Environment
ISO 14001

Health &
Safety
OHSAS
18001

© Tait International Limited 2018. Tait_SS_TB9400_v14.2