

# Intelligence, flexibility and high performance.

The TB9100 base station is intelligent and flexible, offering dual mode to ease migration with seamless FM or P25 switching.

The modular design combined with intuitive programming software make the Tait P25 TB9100 base station an ideal solution for conventional, trunked and simulcast.



## KEY FEATURES

- ▶ Ideal for P25 trunked, simulcast and conventional networks
- ▶ Tested in a Department of Homeland Security-recognized P25 Compliance Assessment Program lab
- ▶ Supports P25 open standard DES and AES encryption
- ▶ Dual mode operation for ease of analog-to-digital migration
- ▶ Remote programming and software licenses reduce the need for site visits and hardware upgrades
- ▶ Smart AC/DC switching to ensure continuity of service
- ▶ Built-in test equipment provides self-monitoring with local and remote logging of alarms
- ▶ Digital console interfaces are provided for IP-connected consoles (DFS1 for P25 conventional and CSS1 for P25 trunked)
- ▶ An analog line interface (4-wire + E&M) allows connection to legacy analog consoles.



**FEATURES**

**Interoperable and versatile**

Fully P25-compliant, the TB9100 can be configured as a repeater or as a base station in a digital P25, analog FM or mixed-mode radio network.

**Totally flexible Task Manager**

Routines and code can be written quickly and easily allowing fast development and delivery of value-adding custom applications.

**Convenient Windows-based software programming**

Change over 150 parameters with intuitive drop downs, tick boxes and other easy-to-master software commands. Tait Customer Service Software makes the TB9100 easy to configure and upgrade.

**IP connection for ease of diagnostics**

No special equipment will be needed to ensure total control of your base station. Connect and configure alerts and alarms, monitor performance and administer the site remotely.

**Integrated VoIP networking with voting**

Network your TB9100s using VoIP with built-in centralized voting while eliminating hardware.



**Comprehensive and intuitive software can be used to change configuration quickly and easily.**

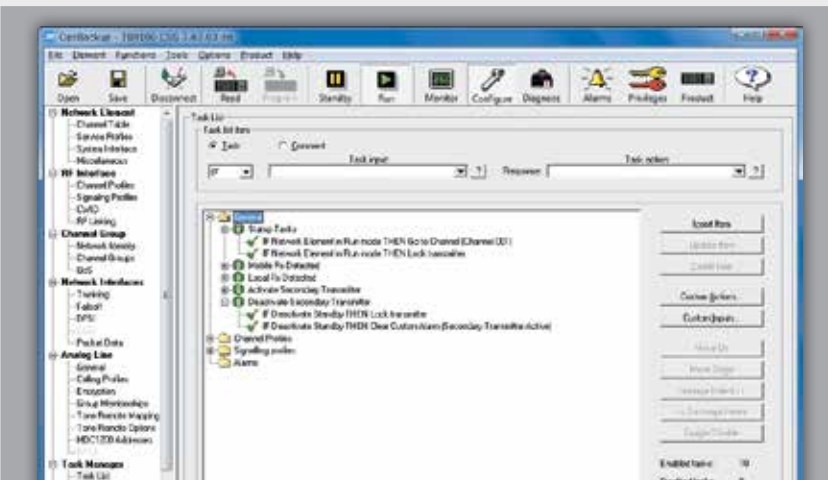


**Clean back panel design with industry-standard interface enables easy connectivity to the rest of the system and third party vendors.**

**Pictured: Dual 50W systems with AC/DC Power Management Unit.**

Front-loading modules slip into the 4U subrack, making building the system, replacing a module or accessing a system interface board fast and simple. TB9100 modules include:

- ▶ Reciter - contains the receiver and exciter
- ▶ Power Amplifier - available as 5W, 50W and 100W modules
- ▶ Power Management Unit - can be AC and/or DC powered, and includes an auxiliary power supply
- ▶ Network Board - provides access to multiple interfaces
- ▶ Subrack, front panel and control panel.



Showing a small sub-routine written into the TB9100 task manager to deliver customized behavior for a specific situation.

## GENERAL

Operational frequency+	<b>VHF</b> 136–174MHz	<b>UHF</b> 380–520MHz	<b>700/800MHz</b> 762–870MHz			
Electronic switching range	≥2% of the center frequency (e.g. 10MHz @ 500MHz)					
Channel/network capacity	255					
Channel spacing	12.5kHz, 20kHz, 25kHz					
Channel increment	0.125kHz					
Dimensions						
HxWxD (subrack only)	7in (177.8mm) x 19in (482.6mm) x 15.2in (386mm)					
HxWxD (including front panel)	7in (177.8mm) x 19in (482.6mm) x 16.1in (409mm)					
Weight (with AC and DC PMU)	47.0lb (21.5kg)					
5/50W base station system (single channel)	47.0lb (21.5kg)					
100W base station system	50.2lb (22.8kg)					
Operational temperature	-22°F to 140°F (-30°C to 60°C)					
Description	Modular base station/Repeater/Receiver					
Frequency stability	±0.5ppm (-22°F to 140°F/-30°C to 60°C)					
External Reference	10MHz or 12.8MHz					
Power Consumption	<b>12V PA</b>	<b>12V PMU</b>	<b>24V PMU</b>	<b>48V PMU</b>	<b>110VAC</b>	<b>240VAC</b>
Standby	0.81A	1.2A	0.63A	0.3A	-	-
Tx @ 5W	2.2A	2.7A	1.4A	0.65A	49VA	118VA
Tx @ 50W	9.2A	10.0A	5.4A	2.6A	138VA	177VA
Tx @ 100W	-	19.2A	10.3A	4.9A	239VA	262VA
Supply Requirements						
Mains	88 to 264V (PFC Power Factor Correction)					
DC	12V, 24V, 48V (Nominal +ve or -ve earth)					
Adjacent Channel Power						
Analog 20/25kHz	<-70dB (EIA)					
Analog 12.5kHz	<-60dB (EIA)					
Digital 12.5kHz	<-60dB (IS-102)					
Environmental Standards	Applicable MIL-STD-810C, D, E and F tests					

## AUDIO

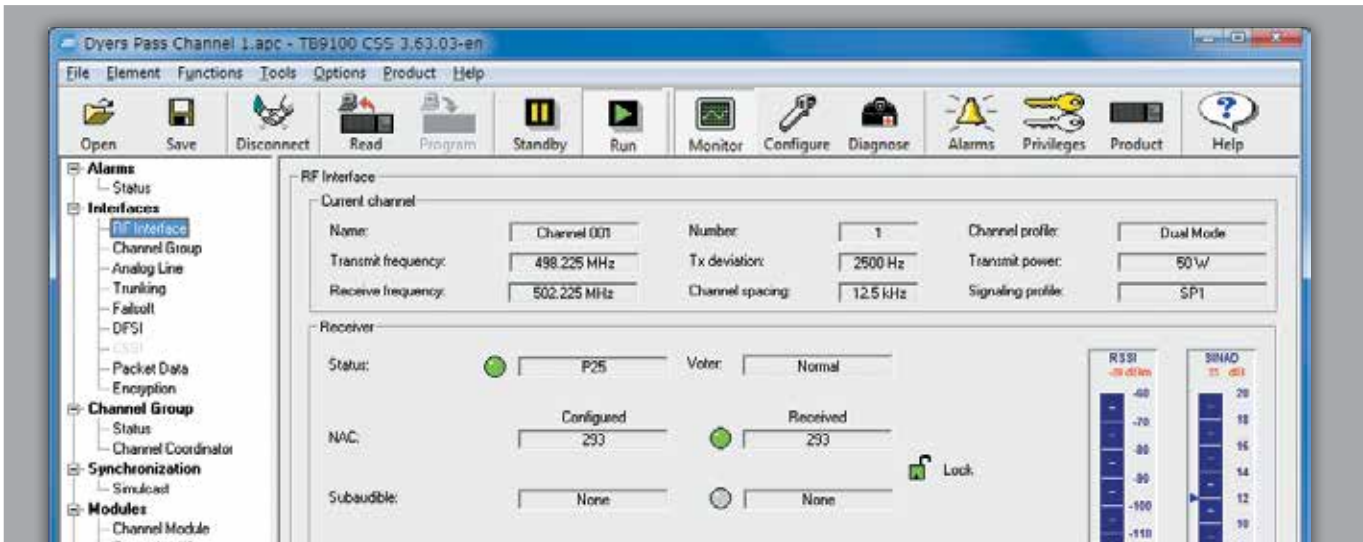
Audio Interfaces	<b>Input</b> 600Ω Balanced Microphone	<b>Output</b> 600Ω Balanced Monitor Speaker
Audio Interface Level	-20dBm to 0dBm nominal (300 to 3,400Hz)	-20dBm to 6dBm nominal (300 to 3,400Hz)
Frequency Response	-20dBm to -14dBm nominal (67 to 300Hz)	-20dBm to -14dBm nominal (67 to 300Hz)
Audio Distortion	+0.5/-2.0dB rel. 1kHz (300 to 3,000Hz)	
	<3% typical	

## RECEIVER

Analog Sensitivity (12dB SINAD)	<0.25μV (-119.0dBm)	
Digital Sensitivity (TIA/EIA-102)	0.21μV (-120.5dBm) @ 5% BER	
Spurious Emissions	<b>Radiated</b> <-57dBm EIRP to 1GHz <-47dBm EIRP above 1GHz	<b>Conducted</b> <-90dBm to 1GHz <-70dBm above 1GHz
Spurious Response	≥100dB [ANSI/TIA]	
Intermodulation	80dB [ETSI] 85dB [ANSI/TIA]	
Selectivity (EIA 603)	<b>VHF/UHF</b> 85dB (NB), 90dB (WB)	<b>700/800MHz</b> 79dB (NB), 84dB (WB)
Digital Adjacent Channel Rejection	60dB TIA 102A + ETSI 300 -113 (across all bands)	

**TRANSMITTER**

Modulation Limiting	12.5kHz channel	±2.5kHz
	20kHz channel	±4kHz
	25kHz channel	±5kHz
Modulation Fidelity	<3% (TIA-102A)	
Transmit Rise Time	≤2.5ms	
Transmitter Power Rating	Single 1/5W Base Station System Single 5/50W Base Station System Single 10/100W Base Station System	
FM Hum and Noise	12.5kHz and 20kHz channels	-49.0dB (300Hz–3kHz [ANSI/TIA])
	25kHz channel	-51.5dB (300Hz–3kHz [ANSI/TIA])
Conducted/Radiated Emissions	<b>VHF/UHF</b>	<b>700/800MHz</b>
	<-36dBm 9KHz to 1GHz <-30dBm 1GHz to 4GHz	<-20dBm to 9GHz
Emission Designators	11K0F3E, 16K0F3E, 6K60F2D, 9K60F2D 8K10F1E, 10K10F1E, 8K10F7E, 10K0F7E, 8K10F1D, 10K10F1D, 8K10F7D, 10K0F7D	



The customer service software (CSS) enables remote configuration and real time display of received and transmitted signals.

**REGULATORY DATA**

For complete regulatory information please refer to the TB9100 Specifications Manual.

Authorized Partners

Specifications are subject to change without notice and shall not form part of any contract. They are issued for guidance purposes only.

+Please note that not all frequency bands and power outputs are available in all markets. For further information please check with your nearest Tait office or authorized dealer.

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