



TB9100 P25 BASE STATION/REPEATER

The TB9100 P25 base station/repeater offers reliable continuous duty cycle operation at a range of temperatures and altitudes. Flexible, modular design combined with intuitive programming software make the TB9100 an ideal P25 solution for conventional, trunked and simulcast mission critical networks.

Intelligence, flexibility and high performance

- Outstanding RF performance including selectivity and fast key-up times is assured in adverse conditions due to intelligent radio design
- Dual mode operation for ease of analogue-to-digital migration - seamless per-call switching between FM and P25
- Remote programming and software feature enablers reduce the need for site visits and hardware upgrades
- Smart AC/DC switching to ensure continuity of service
- Modular design for convenient mix and match, ease of hook-up and adaptation in the field
- Supports P25 open standard DES and AES encryption
- Built-in test equipment provides self-monitoring with local and remote logging of alarms
- RF linking allows network coverage to be extended without the need for high capacity digital bearers

Interoperable and versatile

Fully P25-compliant, the TB9100 can be configured as a repeater or as a base station in a digital P25, analogue 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's Customer Service Software makes the TB9100 easy to configure and upgrade.

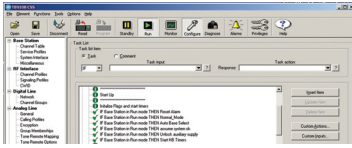
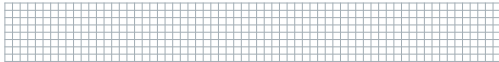
IP connection for ease of diagnostics

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.

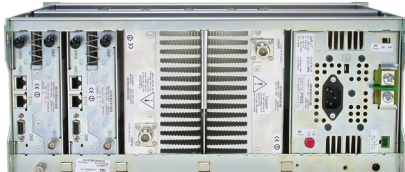
Integrated VoIP networking with voting

Network your TB9100s using VoIP with built-in distributed or centralised voting.





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



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.

Regulatory Data

USA	FCC CFR47, Part 20, 90 Part 15 Class B	
Canada	RSS-119	
Europe	EN301489-5	
Australia	AS/NZS 4295	
New Zealand	AS/NZS 4295	
Line Isolation		
USA	FCC CFR47 Part 68	
Canada	CS-03	
Type Approval	FCC	Industry Canada
VHF	CASTBA7B1 CASTBA8B1 CASTBA9B1	737A-TBAB1
UHF	CASTBA7H0 CASTBA8H0 CASTBA9H0	737A-TBAH0
700/800MHz	CASTBA7K2 CASTBA8K2 CASTBA9K2	



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.

Tait is your complete supplier of radio communications equipment offering mobile, portable and infrastructure solutions. Tait is renowned for its flexibility, responsiveness and commitment to producing innovative world-class mobile radio communications products.

The word Tait and the Tait logo are trademarks of Tait Electronics Ltd. Tait is an ISO9001: 2000 and ISO 14001: 2004 certified supplier.

AUTHORISED DEALER

TB9100 Specifications

General

Operational Frequency	VHF 136–174MHz	UHF 380–520MHz	700/800MHz 762–870MHz
Electronic Switching Range	≥2% of the centre frequency (e.g. 10MHz @ 500MHz)		
Channel/Network Capacity	255		
Channel Spacing	12.5kHz, 20kHz, 25kHz		
Channel Increment	0.125kHz		
Dimensions			
Height	177.8mm (7in)		
Width	482.6mm (19in)		
Depth			
Subrack only	386mm (15.2in)		
Including front panel	409mm (16.1in)		
Weight (with AC and DC PMU)			
5/50W Base Station System	20.6kg (45.4lb)		
100W Base Station System	21.5kg (47.4lb)		
Operational Temperature	-30°C to 60°C (-22°F to 140°F)		
Description	Modular Base Station/Repeater/Receiver		
Frequency Stability	±0.5ppm (-30°C to 60°C/-22°F to 140°F)		
External Reference	10MHz or 12.8MHz		
Power Consumption	12V PA	12V PMU	24V PMU
Standby	0.81A	1.2A	0.63A
Tx @ 5W	2.2A	2.7A	1.4A
Tx @ 50W	9.2A	10.0A	5.0A
Tx @ 100W	-	19.2A	10.3A
Supply Requirements			
Mains	88 to 264V (PFC Power Factor Correction)		
DC	12V, 24V, 48V (Nominal +ve or -ve earth)		
Adjacent Channel Power			
Analogue 20/25kHz	<-70dB (EIA)		
Analogue 12.5kHz	<-60dB (EIA)		
Digital 12.5kHz	<-60dB (IS-102)		
Environmental Standards	Applicable MIL-STD 810 C, D, E & F tests		

Audio

Audio Interfaces	Input 600Ω Balanced Microphone	Output 600Ω Balanced Monitor Speaker
Audio Interface Level	-20dBm to 0dBm nominal (300 to 3400Hz) -20dBm to -14dBm nominal (67 to 300Hz)	-20dBm to 6dBm nominal (300 to 3400Hz) -20dBm to -14dBm nominal (67 to 300Hz)
Frequency Response	+0.5/-2.0dB rel. 1kHz (300 to 3000Hz)	
Audio Distortion	<3% typical	

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 & Noise		
12.5kHz & 20kHz channel	-50dB (300Hz–3kHz [ANSI/TIA])	
25kHz channel	-55dB (300Hz–3kHz [ANSI/TIA])	
Conducted/Radiated Emissions	VHF/UHF <-36dBm 9KHz to 1GHz <-30dBm 1GHz to 4GHz	700/800MHz <-20dBm to 9GHz
Emission Designators	11K0F3E, 16K0F3E, 6K60F2D, 9K60F2D 8K10F1E, 10K10F1E, 8K10F7E, 10K0F7E, 8K10F1D, 10K10F1D, 8K10F7D, 10K0F7D	

Receiver

Analogue Sensitivity (12dB SINAD)	-119.5dBm (<0.25µV)	
Digital Sensitivity (TIA/EIA-102)	-120.5dBm (0.21µV) @ 5% BER	
Spurious Emissions	Radiated <-57dBm EIRP to 1GHz <-47dBm EIRP above 1GHz	Conducted <-90dBm to 1GHz <-70dBm above 1GHz
Spurious Response	>100dB [ANSI/TIA]	
Intermodulation	80dB [ETSI] 85dB [ANSI/TIA]	
Selectivity (EIA 603)	VHF/UHF 85dB NB, 90dB WB	700/800MHz 79dB NB, 84dB WB
Digital Adjacent Channel Rejection	60dB TIA 102A + ETSI 300 -113 (across all bands)	