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 (DFSI for P25 conventional and CSSI for P25 trunked)
- An analog line interface (4-wire E&M or/Tone remote) allows connection to legacy analog consoles
FEATURES AND BENEFITS

Interoperability 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 you TB9100s using VoIP with built-in centralized voting while eliminating hardware.

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

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
## GENERAL

<table>
<thead>
<tr>
<th>Parameter</th>
<th>VHF</th>
<th>UHF</th>
<th>700/800MHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operational frequency</td>
<td>146-156MHz</td>
<td>380-520MHz, 400-440MHz, 762-870MHz</td>
<td></td>
</tr>
<tr>
<td>Electronic switching range</td>
<td>×2% of the center frequency (e.g. 10MHz @ 500MHz)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Channel/network capacity</td>
<td>255</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Channel spacing</td>
<td>12.5kHz, 20kHz, 25kHz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Channel increment</td>
<td>0.125kHz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HxWxD (subrack only)</td>
<td>7in (177.8mm) x 19in (482.6mm) x 15.2in (388mm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight (with AC and DC PMU)</td>
<td>470lb (215kg)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5/50W base station system (single channel)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100W base station system</td>
<td>50.2lb (22.8kg)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operational temperature</td>
<td>-22°F to 140°F (-30°C to 60°C)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td>Modular base station/Repeater/Receiver</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency stability</td>
<td>±0.5ppm (-22°F to 140°F/-30°C to 60°C)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>External Reference</td>
<td>10MHz or 12.8MHz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Consumption</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standby Tx @ SW</td>
<td>88 to 764V (PFC Power Factor Correction)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tx @ 50W</td>
<td>12V, 24V, 48V (Nominal +ve or -ve earth)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tx @ 100W</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Supply Requirements
- Mains
- DC

### Adjacent Channel Power
- Analog 20/25MHz: +70dB (EIA)
- Analog 12.5kHz: +60dB (EIA)
- Digital 12.5kHz: +60dB (EIA-102)

### Environment Standards
- Applicable MIL-STD-810 C, D, E and F tests

## ANALOG LINE

### Audio Interfaces
- Input: 600Ω Balanced
- Microphone

### Audio Interface Level
- -20dBm to 0dBm 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

## RECEIVER

### Analog sensitivity (12dB SINAD)
- <0.25μV (-119.0dBm)

### Digital sensitivity (TIA/EIA-102)
- 0.2μV (-120.5dBm) @ 5% BER

### Spurious Emissions
- <57dBm EIRP to 10Hz
- <47dBm EIRP above 10Hz

### Spurious Response
- <100dBc [ANSI/TIA]

### Intermodulation
- 80dB [ETS1]
- 85dB [ANSI/TIA]

### Selectivity (EIA 603)

### Digital Adjacent Channel Rejection

### VHF/UHF
- 85dB (N3), 90dB (WB)
- 79dB (N3), 84dB (WB)
- 60dB TIA 102A + ETSI 300 -113 (across all bands)

### Radiated
- Conducted
- <90dBm to 10Hz
- <70dBm above 10Hz

### TB9100 SPECIFICATIONS

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TB9100
SPECIFICATIONS

TRANSMITTER

Modulation Limiting
12.5kHz channel +2.5kHz
20kHz channel +4kHz
25kHz +5kHz

Modulation Fidelity +3% (TIA/702A)

Transmit Rise Time 2.5ms

Transmitter Power Rating
Single UHF Base Station System
Single 5/50W Base Station System
Single 10/100W Base Station System

FM Hum and Noise 12.5kHz and 20kHz channels -49dB (30Hz-3kHz [ANSI/TIA])
25kHz channel 51.5dB (300Hz-3kHz [ANSI/TIA])

Conducted/Radiated Emissions VHF/UHF 700/800MHz
< -36dBm 9kHz to 1GHz
< -20dBm 9GHz to 30GHz

Emissions Designator 1K0F3E, 16K0F3E, 6K60F2D, 9K60F2D
8K10F1E, 10K10F1E, 8K10F7E, 10K0F7E,
8K10F1D, 10K10F1D, 8K10F7D, 10K0F7D

REGULATORY

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

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 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 Field Offices are certified to ISO 9001.