tait
communications

# High performing, tough, and resilient base stations for mission critical networks.

The Tait TB9300 is a base station that supports a variety of digital and analog air interfaces and system types, building on our proven TB8100 and MPT network platforms. The TB9300 provides a 6.25kHz equivalent operation in digital mode and is fully compliant with DMR Tier 2 and Tier 3 standards.

The TB9300 is a spectrally efficient solution, allowing you to gain greater capacity, and future-proof your investment. It also provides operational efficiencies through capabilities such as remote network management and IP connectivity.

KEY FEATURES

▶ Ultra-narrowband 6.25kHz equivalent technology (2 x TDMA channels in one 12.5kHz channel)

▶ Adherence to the DMR Tier 2 & Tier 3 standards

▶ Software options for DMR Tier 2 and Tier 3

▶ Extension of the TaitNet MPT-IP trunked network for a seamless migration to DMR

▶ 12.5kHz analog repeater operation offers simple analog repeat

▶ Efficient system infrastructure scalability based on IP network connectivity

▶ Extensive range of remote management and monitoring capabilities with a security focus

▶ Designed and MIL-STD tested for reliability, combined with features to mitigate network outages

▶ Built from the proven TB8100 base station/repeater pedigree

DMR

www.taitradio.com
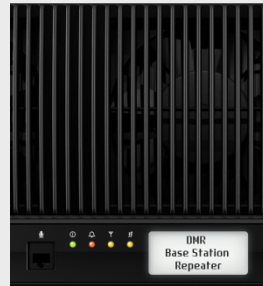
FEATURES AND BENEFITS

Digital communications delivering on operational needs

▶ Flexible network design through IP connectivity and linking

▶ Individual and group call to suit operational requirements

▶ Migration paths from analog networks to DMR with extensive re-use capabilities reducing cost

▶ Transfer data and voice across a packet-switched infrastructure using standard IP communications

▶ DMR Voice over IP (VoIP) support

▶ Quality of Service (QoS) assignments for voice and signalling to allow optimal network packet routing

Designed to support cost effective deployment and operation

▶ Compact module design minimizes rack space required

▶ Extensive re-use of existing analog modules when migrating from Tait TB8100/TB8200 equipment

▶ Runs in MPT-IP mode for smooth migration

Delivers on the goals driving the DMR standards

▶ Designed and tested with the DMR Tier2 and Tier 3 standard to provide customers with choice of vendor and equipment

▶ 6.25kHz equivalent 2-slot TDMA capability for both voice and data

▶ Tested using the IOP certification program developed by the DMR Association, providing confidence of multi-vendor interoperability

Resiliency to manage risk and enhance safety in challenging environments

▶ Rugged construction with efficient heatsinks and front-to-rear fan-forced cooling system

▶ Rated for continuous full output power

▶ Designed to exceed MIL-STD-810 F

▶ Continuity of operation with smart AC/DC management

▶ Shares the same proven 4U form-factor and module packaging as the Tait TB8100

▶ Re-uses the power management unit and power amplifier

▶ Support for up to two base station software releases giving the ability to roll-back software updates

▶ Network Design services are available to ensure delivery of a robust network with the capacity and coverage that you require

Future-proofed to protect your investment

▶ Modular design allows cost effective deployment, maintenance and upgrade

▶ Software configurable, including feature upgrades through software licenses

▶ Software upgradable to add new features and functionality to ensure that your DMR solution is maintained and updated with the ever-changing needs of your market and environment.

Wide range of configuration options available

▶ Configurable as a single channel 100W or 50W unit, or a dual channel 50W unit, with a range of DC and AC power supply options

Data Services

▶ Embedded data for location

▶ Short data messages for location, status and text

▶ Packet data for workforce Management, Telemetry, SCADA and customer specific applications

Efficient management with a focus on security

▶ Remote network management utilizing built-in secure https web server and SNMP V3 support

▶ Alarm monitoring and management, via IP, with 12 digital inputs that can be remotely monitored

▶ Detailed alarm reporting allows monitoring of key base station/repeater parameters

▶ Inbuilt diagnostics to allow technicians to remotely confirm optimal operation and identify network faults

▶ Enhanced security through password protection and access level control on web server

▶ Multiple user accounts

▶ Audit and system logs retained

▶ Remote software downloads

▶ Ability to configure up to 1,000 channels makes for efficient deployment

▶ The front panel includes LCD display and navigation buttons giving greater access through an on-screen menu.
Note – this can be disabled to meet your organizational security policies

GENERAL

Frequency Range	**Frequency Band**
VHF	136-174MHz
UHF	400-440MHz, 440-480MHz, 470-520MHz, 330-380MHz(50W only)
700/800MHz	Tx: 762-870MHz Rx: 794-824MHz
900MHz	Tx: 927-941MHz Rx: 898-902MHz(100W only)

Frequency Band (MHz)	Digital	Analog conventional, or MPT Trunking
136-174	Yes	Yes
400-440 / 440-480	Yes	Yes
470-520	Yes	Yes
762-870	Yes	No
850-941	Yes	No

Frequency stability	±0.5ppm
Channels/zones	1,000
Dimensions (DxWxH)	15.8 x 19 x 7in (400 x 483 x 177mm) 4U rack space
Weight lb (kg)	Single 50W: 47.4lb (21.5kg) Single 100W: 50.3lb (22.8kg) Dual 50W: 63.1lb (28.6kg)
Channel spacing	12.5kHz analog, DMR, 2 channels of TDMA 6.25kHz equivalent
Frequency increment/channel step	VHF-2.5/3.125kHz (or multiples of) , UHF-5/6.25kHz , 700/800/900mHz-5/6.25kHz
Operating temperature	-22°F to 140°F (-30°C to 60°C)
Power Supply	
DC	12V, 24V, 48V (+ve or –ve earth)
AC	88-264V (with power factor correction)
ESD rating	+/-4kV contact discharge and +/-8kV air discharge
External frequency reference	10MHz/12.8MHz (auto detect)
Packet Data	DMR: ½ Rate, ¾ Rate, Full rate, Single Slot

TRANSMITTER

Output power					
50W	Programmable 5-50W				
100W	Programmable 10-100W				
Power Source	120VAC	230VAC	12VDC	24VDC	48VDC
Tx current consumption* (UHF) Standby (Single 50 and 100 W)	0.355A, 27W	0.5A, 28W	1.8A, 22W	0.91A, 22W	0.438A, 21W
Tx @ 50W Single	1.6A, 187W	0.95A, 179W	14.5A, 174W	7.1A, 171W	3.5A, 168W
Tx @ 100W	2.8A, 341W	1.6A, 336W	28.5A, 342W	13.3A, 319W	6.6A, 315W
Adjacent channel power 12.5kHz static (DMR) ETS 300-113	60dB				
Transient adjacent channel power (DMR) ETS 300-113	Complies with EV300 113- v1.7.1 &EN300 113-2 v1.5.1				
Duty cycle	100%				

* Note Transmitter: These figures are specific to UHF, for other bands consult the product specification manual.

RECEIVER

	VHF	UHF	700/800/900MHz
Sensitivity* – static			
(DMR) ETS 300-113 Typical	-122dBm (0.18uV) @ 5% BER	-122dBm (0.18uV) @ 5% BER	-122dBm (0.18uV) @ 5% BER
Guaranteed	-120dBm (0.22uV) @ 5% BER	-120dBm (0.22uV) @ 5% BER	-120dBm (0.22uV) @ 5% BER
Intermodulation rejection (DMR) ETS 300-113	80dB @ 5% BER 78dB @ 1% BER	80dB @ 5% BER 78dB @ 1% BER	80dB @ 5% BER 78dB @ 1% BER
Spurious response rejection (DMR) EIA603D	90dB	90dB	90dB
Radiated spurious emissions EIA603D	<-57dBm EIRP to 1GHz	< -57dBm EIRP to 1GHz	<-57dBm EIRP to 1GHz
Conducted spurious emissions	<-90dBm to 1GHz	< -90dBm to 1GHz	<-90dBm to 1GHz
Selectivity		> = 85dB @ 5% BER	

(DMR) ETS 300-113	> = 85dB @ 5% BER		> = 80dB @ 5% BER
Blocking	> 113dB	> 113dB	> 110dB

* Typical Sensitivity is measured at the frequency on which the receiver is tuned. Contact your local Tait representative for more information

MILITARY STANDARDS 810C, D, E, F AND G

Applicable MIL-STD Method	Method
Low pressure	Altitude: 4570 meters (150000 feet): MIL-STD-810F 500.4, Proc2
High temperature	140°F (60°C) (Sea level) – Max temperature derated at 5.4°F (3°C)/1000m
Low temperature	-22°F (-30°C)
Humidity	95% Relative humidity thru temp Cycle: IEC 60068-2-30
Vibration	3 Axis, Sine sweep 10-60Hz: TIA_EIA 603B, 3.3.4.3
Shock	20g, 11ms pulse width, 3 Shocks in each principal axis: TIA_EIA 603B, 3.3.5.2

REGULATORY DATA

	USA	Canada	Europe	Australia/New Zealand
VHF (136-174MHz)	CFR 47☐	RSS-119 ☐	EN300-113, EN301-489, EN60950 Δ	AS/NZS4768 ☐
UHF (400-440MHz, 440-480MHz)	CFR 47 Δ	CFR 47 Δ	EN300-113, EN301-489, EN60950 ☐	AS/NZS4768 ☐
330-380MHz*	*	*	EN300-113, EN301-489, EN60950 ☐	*
470-520MHz	NA	NA	☐	AS/NZS4768 ☐
700/800MHz	CFR 47	RSS-119	NA	NA
900MHz	CFR 47	RSS-119	NA	NA

☐ Analog FM operation
Δ MPT operation
*330-380MHz conforms to ETSI compliance, not for commercial use in the EU states or in other regions.

TAIT DMR SOLUTION

Backed up by our proven radio network expertise, the TB9300 is part of our larger DMR offering. The Tait DMR 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 DMR standard in a mission critical environment.

Authorized Partners

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.

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

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

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

DMR

TELARC REGISTERED
Environment
ISO 14001

TELARC REGISTERED
Quality
ISO 9001

TELARC REGISTERED
HEALTH+SAFETY
OHSAS 18001