

TB7300 Transportable Repeater

SPECIFICATIONS



Tough transportable repeater easy to deploy in mission critical situation.

Natural disasters, crime scenes, firegrounds and tactical missions – when safety or security is threatened, this transportable repeater allows you to have a reliable communications system deployed rapidly.

Extend your current network coverage or set up a dedicated communications network at the scene.

The Tait TB7300 Base station is a multi-mode platform: Analog conventional, MPT and DMR. The TB7300 provides a 6.25kHz equivalent operation in digital mode and is fully compliant with DMR Tier 2 and Tier 3 standards.



KEY FEATURES

- Multi-mode platform supporting Analog Conventional, MPT, DMR Conventional and DMR Trunking modes
- Simple change of mode through the web interface
- Ultra-narrowband 6.25kHz equivalent technology for DMR modes (2 x TDMA channels in one 12.5kHz channel)
- Adherence to the DMR Tier 2 & Tier 3 standards
- Easy and rapid deployment of single repeater operation
- Tait DMR Access and Express solution compatible
- DMR fallback into single site operation
- Migration capability from Tait MPT to DMR Tier 3 trunked network
- MPT fallback into MPT single site operation or Analog conventional channel
- 12.5kHz analog repeater operation offers single site repeat
- Efficient system infrastructure scalability based on IP network connectivity
- Extensive range of remote management and monitoring capabilities with a security focus
- Built-in spectrum analyzer provides on-site diagnostics
- Design inside a rugged Pelican case
- AC/DC power supply inputs
- Internal SLA battery for rapid field deployment
- Options and accessories for better operational efficiency

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FEATURES AND BENEFITS

Delivering on operational needs

- Easy and rapid deployment of transportable repeater as a single conventional RF channel
- To better manage a temporary site with RF resources constraints, this equipment can be used as a single trunked site with a control channel and a traffic channel or more with another connected transportable units
- Also available as a trunked or linked conventional base station for a quick expansion of a private network
 - Flexible network design through IP connectivity and linking
 - 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
 - Remote software downloads with no impact to operations
- In a DMR network, the TB7300 Transportable is compatible with TB9300 and TB7300 bases

Integrated solution component

- The heart of single site trunking system with integrated node controller forming the Tait DMR Access solution
- Part of the Tait DMR Express solution with the TN9300 Node controller for DMR trunking networks
- Compatible with the Tait 9300 series to create mixed sites

Developed for transportable operations

- Designed in a rugged Pelican case
- Compact base station easy to transport and deploy
- Output power selection from 2W to the maximum transmit power 25W/30W depending on the frequency band
- Power supply per default configuration: AC and DC plus an internal battery with built in charging capability
- Duplexer integrated into the Pelican case
- Optional extra battery pack

Designed to support effective deployment

- When pre-configured, just plug the repeater on site to start operating
- Compatible with analog, MPT and DMR networks

Delivers on the benefits of the DMR standards

- Designed and tested with the DMR Tier 2 Conventional and Tier 3 Trunking standards to provide customers with choice of vendor and equipment
- 6.25kHz equivalent 2-slot TDMA for both voice and data offers spectral efficiency
- 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

- Dual software image support for fast rollback
- Integrated Web https secured application to monitor, diagnose and configure

Efficient management with a focus on security

- Remote network management utilizing built-in secure https web server and SNMP V3 support
- Detailed alarm monitoring and reporting of critical 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
- System logs to provide audit records
- Ability to configure 1,000 channels to allow single configuration across sites

Future-proofed to protect your investment

- Software configurable, including feature upgrades through software licenses
- Software upgradeable 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

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FREQUENCY BANDS

Frequency	Range	Tait Band	Configuration
VHF	148-174MHz	B3	Max 30W typical (Factory set to 15W*)
UHF	400-470MHz	H5	Max 25W typical (Factory set to 15W*)

* The output power of the transportable unit is reduced due to the duplexer loss. This improves the battery shift life. Furthermore the output power should be limited to 15W if the unit is operated at high duty cycle environment with the pelican case lid is kept closed.

REGULATORY

DMR, Analog, MPT

USA (CFR 47)	B3
Canada (RSS-119)	B3
Europe (EN300-113, EN300-086, EN301-489)	B3 planned in May 2019
Australia/New Zealand (AS/NZS4768)	B3 planned in May 2019

Contact Tait for H5 regulatory advice.

GENERAL

Radio specifications

Frequency stability	+/- 0.5 ppm
Channels	1,000
Channel spacing	12.5kHz in Analog, 2 channels of TDMA 6.25kHz equivalent in DMR
Frequency increment/channel step	VHF 2.5/3.125kHz (or multiples of), UHF 5/6.25kHz
External frequency reference	10MHz/12.8MHz (auto detect)
Packet data	1/2 Rate, 3/4 Rate, Full rate, Single Slot

Physical specifications

Pelican case	1550
Dimensions (HxWxD)	440 x 530 x 215 mm
Weight	Less than 23kg (50.7lb), or less than 19kg without battery assembly (41.9lb)
Operating temperature	-22° to +140°F (-30° to +60°C)**

Power specifications

Power Supply	AC Mains (100-240V AC) and DC 11-15V
ESD rating	+/-4kV contact discharge and +/-8kV air discharge

Battery specification

Internal battery	Panasonic 12Ah SLA battery with built in charging capability (the charging works when AC supply is connected)
Standalone battery life	With full power producing 25W for UHF at the antenna at 10% duty cycle, the shift life is 6 hours (if the power is set to 15W or the duty cycle is set to 5%, then the shift life may reach 8 hours)
Battery assembly weight	4.3 Kg (9.5lb)

Connectors

Antenna	N type female (both Rx and Tx connected to duplexer)
Network	Ethernet Port

** The output power should be limited to 15 Watt if the pelican case is kept closed in a high duty cycle environment.

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TRANSMITTER

Modulation types	4FSK, FM
Adjacent channel power 12.5kHz static	60dB, complies with EN 300 113 v2.2.1 (DMR)
Conducted spurious emissions	
VHF	<-36dBm 9kHz to 1GHz and <-30dBm 1GHz to 4GHz
UHF	<-36dBm 30MHz to 1GHz and <-30dBm 1GHz to 4GHz/12.75GHz
Output power	
VHF	Programmable 2-50W
UHF	Programmable 2-40W
Duty Cycle	100%

RECEIVER

VHF

UHF

Modulation types	4FSK, FM
Radiated spurious emissions EIA-603-D	<-57dBm EIRP to 1GHz
Conducted spurious emissions	<-90dBm to 2GHz

DMR

Unfaded sensitivity ETS 300 113	
Typical	-122dBm (0.18µV) @ 5% BER
Guaranteed	-120dBm (0.22µV) @ 5% BER
Selectivity ETS 300 113	
@ 1% BER	≥82dB (VHF), ≥79dB (UHF)
Intermodulation response attenuation	≥78dB @ 1% BER unfaded
Blocking rejection	
> 1MHz	100dB @ 1% BER

Analog

Sensitivity	<-119dBm (0.25µV) (12dB SINAD, centre of switching range) at 25°C (de-emphasized response)
Selectivity (EIA-603)	85dB (VHF & UHF)
Intermodulation	80dB (ETSI)
Spurious response attenuation	≥100dB (ANSI/TIA) and ≥90dB (ETSI)
FM hum and noise	
VHF/UHF	45dB (ANSI/TIA), 50dB (ETSI)

TAIT DMR SOLUTION

Backed up by our proven radio network expertise, the TB7300 is part of our larger 9300 Series Analog/DMR offering. The Tait Analog/DMR solution consists of radio units, 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.

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.

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