TD9300
SPECIFICATIONS

Wide Area, Unified Mission Critical Data

Designed for telemetry and data communications, Tait DMR offers a secure and reliable M2M data terminal based on the DMR Tier 3 trunking standard.

The TD9300 terminal has multiple data interfaces and the intelligence to simplify wide area DMR based connectivity, integrate quickly and transparently support data communications.

HIGHLIGHTS

- Designed for M2M SCADA communications
- Engineered for use in demanding environments
- Full adherence to DMR standards, providing choice and interoperability
- Native (SCADA protocol aware) or Transparent IP data services
- Flexible interfacing. Wide input voltage range, adjustable high power RF output, serial and Ethernet interfaces
- Architected for future multi-bearer connectivity (Wi-Fi, public/private cellular)*

The TD9300, in conjunction with a SCADA Gateway and DMR tier III network, offers advanced data communications services for wireless networks

FEATURES AND BENEFITS

Improve efficiency
- Monitor and control devices via long range DMR, reduce travel & site visits
- Centralised, standards based network management
- Design, manage and maintain a single voice & data radio network

Designed to perform in demanding environments
- Tough die-cast metal chassis protects in demanding environmental conditions
- Protection and fold back mechanisms limit hardware failures, automatically restore service after fault cleared
- Flexible mounting systems, DIN rail in both vertical and horizontal, on a 19 inch rack tray or wall mounted

Security
- AES-256 bit data encryption
- Key management via web page configuration
- Terminals must both register and be authenticated to access the network
- Stun and revive to disable devices

Remote site monitoring
- Extensive outstation diagnostics:
  - Temperature
  - Signal (RSSI & BER and MER)
  - Antenna fault
  - Input voltage
  - Telemetry equipment status
  - Digital I/O
- Over The Air (OTA) configuration of SCADA interface parameters

Standards based interface protocols
- Industry standard protocols:
  - DNP3 over IP/serial
  - IEC60870-5-101 and -104
- Network Time Protocol (NTP)
- Internet Control Message Protocol (ICMP)
- Eliminates costly proprietary protocol integration and support

Applications
- SCADA for distribution utilities
- SCADA for oil & gas utilities
- SCADA for control of irrigators

Data services
- Packet data over traffic channels for telemetry, SCADA and customer specific applications
- Native and Transparent IP data interface operation
- Control channel short data messages, location, status and text

Flexible interfaces
- Two RS232 / RS485 serial interfaces for legacy equipment connection
- 10/100 Mbps Ethernet connection
- 2 digital input and 2 digital outputs to monitor and control surrounding environment, fully isolated.

Multi-bearer expansion *
- Wi-Fi access point for local access, re-configuration or upgrades
- Internal PCI Express Mini (PEM) card support, enabling plug in private or public cellular standards

* Future product release

Backed up by our proven radio network expertise, the TD9300 is part of the Tait DMR solution portfolio that 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.

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GENERAL

Power	Input voltage: 9-36VDC Tx current (peak): 4.5A @ 24VDC for 25W RF output power (2A average for single slot Tx) Standby current: <125mA @ 24VDC		
Dimensions	180mm x 156mm x 61mm (W x D x H)		
Operating temperature	-22°F to 140°F (-30°C to 60°C)		
Water and dust protection	IP40 in all orientations or IP41 with connectors facing down		
Frequency stability	±0.5ppm (-22°F to 140°F/-30°C to 60°C)		
Channels	VHF, UHF, 700/800 MHz	12.5kHz spacing	2.5/3.125/5/6.25kHz increment/channel step
Weight lb (kg)	2.1 lb (1.9kg)		
Mounting	DIN rail clip or panel mount bracket		
ESD rating	+/-4kV contact discharge and +/-8kV air discharge		
Air interface standard	DMR: ETSI TS 102 361		
Altitude	15000 feet / 4570 meters	Mil-Std-810G 500.5, proc 2	
Humidity	95% Relative Humidity thru Temp cycle	Mil-Std 810G 507.5. proc 2	
Vibration	3 Axis, random vibration	Mil-Std 810G 514.6, proc 1	
Shock	3 Axis, 40g shock pulse	Mil-Std 810G 516.6, proc 1	
Indicators	5 status LEDs: PWR, RTU, DMR, 1, 2		
Packet Data	½ Rate, ¾ Rate, Full rate, Single Slot		
General Purpose digital I/O	Input: Opto-isolated, 50VDC max	Output: Isolated, 100mA@50VDC	

TRANSMITTER

	VHF 136-174MHz	UHF 400-470MHz	762-870MHz
Output power	25W: 25W, 12.5W, 5W, 1W	25W: 25W, 12W, 5W, 1W	30/35W
FM Hum and noise (Analog)	12.5kHz: -40dB	12.5kHz: 40dB	12.5kHz: 40dB
Adjacent channel power – static (DMR) ETS 300-113	12.5kHz: 60dB	12.5kHz: 60dB	12.5kHz: 60dB
Conducted/radiated emissions	25W: -36dBm 50W: -20dBm	25W: -36dBm 40W: -20dBm	25W: -36dBm 40W: -20dBm
Duty Cycle	5W: 80% @ 25ºC 12W: 75% @ 25ºC 25W: 65% @ 25ºC	25% @ 60ºC 20% @ 60ºC 15% @ 60ºC	

RECEIVER

	VHF 136-174MHz	UHF 400-470MHz	762-870MHz
Sensitivity (DMR) 5% BER	-119dBm (0.25µV)	-119dBm (0.25µV)	-119dBm (0.25µV)
Intermodulation rejection (EIA603D)	76dB	75dB	75dB
Intermodulation rejection (ETS 300)	70dB	70dB	70dB
Spurious response rejection (DMR) (ETS 300-113)	70dB	70dB	70dB
FM hum and noise (Analog)	12.5kHz: -40dB	12.5kHz: -40dB	12.5kHz: -40dB
Conducted spurious emissions	-57dBm	-57dBm	-57dBm
Selectivity (Analog) EIA603D (2 Tone)	12.5kHz: 52dB	12.5kHz: 50dB	12.5kHz: 50dB
Selectivity (Analog) ETS 300-086	12.5kHz: 62dB	12.5kHz: 60dB	12.5kHz: 60dB

REGULATORY DATA

	USA	Canada	Europe	Australia/New Zealand
VHF (136-174MHz)	CFR 47	RSS-119	EN300-113, EN301-489, EN60950	AS/NZS4768
UHF (400-470MHz)	CFR 47	RSS-119	EN300-113, EN301-489, EN60950	AS/NZS4768
700/800MHz	CFR 47	RSS-119	NA	NA

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.

TD9300_SSv14_A4

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

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HEALTH+SAFETY OHSAS 18001 Environment ISO 14001 Quality ISO 9001