

Tough and efficient DMR Tier 3 trunked node for mission critical networks.

The Tait TN9300-1 is at the heart of Tait Digital Mobile Radio (DMR) Tier 3 trunked solutions, rich in features and interfaces.

Tait TN9300-1 trunked networks are digital systems specifically designed to provide mission-critical communications over wide geographic areas.



KEY FEATURES

- ▶ Scalable and flexible for efficient and cost-effective network design
- ▶ Remote management for greater operational efficiency
- ▶ Efficient system infrastructure scalability based on IP network connectivity to the DMR node controller
- ▶ Robust design provides multiple levels of redundancy for reliable communications
- ▶ Secure communications
- ▶ Improved workforce safety and efficiency with flexible voice and data management
- ▶ Future proofed to protect your investment
- ▶ Multiple interfaces – DIP, AIS, SIP, PSTN/PABX, Voice Recorder

FEATURES AND BENEFITS

Tait DMR trunked networks

Complete Tait DMR trunked communications systems – including mobile and portable radios, base station/repeaters and a trunked core network – are designed, built and tested by Tait to the highest quality standards.

Our commitment to DMR open-standards ensure opportunities for multi-vendor solutions with standardized interfaces. A single-sourced DMR trunked network reduces the risk of network elements not interoperating, and also provides one point of call for network service and support.

Scalable and flexible for efficient and cost-effective network design

The TN9300-1 is responsible for establishing the calls for the radio fleet. The highly flexible and scalable design of the Tait TN9300-1 allows your organization to deploy a cost-effective infrastructure that meets your communication and operational needs both now and in the future. Large DMR networks are scalable up to 20 nodes and 1000RF channels.

The TN9300 ensures:

- ▶ Maximum spectrum use with trunking and 2 slot TDMA
- ▶ Connection to legacy analog consoles with a Network Gateway
- ▶ Communication with PSTN via a gateway
- ▶ Flexible network design with IP connectivity
- ▶ Different traffic load demands at each site are catered for

Secure communications

Network and information security ensures private communications.

The TN9300-1 ensures that access levels and controls are in place for network access and before network settings can be modified.

Network access logs are also available for history of changes that have been made, if required.

Terminals are authenticated on the network before they are given access.

Remote management for greater operational efficiency

The web-based user interface allows easy remote configuration and management of system elements, including:

- ▶ Channel management
- ▶ Control channel authorization
- ▶ Fleet management for greater control of resources
- ▶ Add/delete portable and mobile radios
- ▶ Create, modify and delete talk groups
- ▶ Software upgrades ensure your network runs in an optimal manner
- ▶ System/network configuration changes
- ▶ IP address changes
- ▶ Operating system SNMP V3
- ▶ Auditing capabilities, such as log files with selectable logging levels, and an audit trail to identify system changes

Robust design provides multiple levels of redundancy for reliable communications

A Tait DMR network has multiple levels of redundancy to ensure continuity of operation in the event of server failure, including system node controller redundancy and isolated site operation.

Highly available server clusters are constantly mirrored and changeover within seconds if there is a hardware or software failure. Fallback mode also ensures the network continues to operate even if a site is disconnected from the network.

Data Services

- ▶ Embedded data for location
- ▶ Short data messages for location, status and text
- ▶ Packet data over traffic channels for work force Management, Telemetry, SCADA and customer specific applications

Improved worker safety with both voice and data

DMR supports multiple call types, including group, system, emergency, announcement, and unit-to-unit calls, and data messaging, including status, short, radio inhibit/stun and authenticated registration, ensuring that users can communicate when and how they need to.

Future proofed to protect your investment

DMR is an efficient digital communications solution and a logical replacement for MPT Classic, MPT-IP and other analog networks. Tait DMR solutions are compliant with the European Telecommunications Standards Institute (ETSI) DMR standards and interfaces, ensuring network interoperability and easy future expansion.

Media Recording

Tait TN9300-1 DMR networks can be provided with the ability to record voice calls and metadata such as the PTT ID and group ID.

Media recorders can be connected to dispatch equipment (for recoding calls involving the dispatcher) or to the Tait DMR node (for recording all calls).

INTERFACES

DIP
AIS
SIP
PSTN /PABX
Voice Recorder

SUBSCRIBER MANAGEMENT

Add/remove subscriber
Add/remove multiple subscribers
Customise call type permissions
Add/remove multiple talkgroups
Add a broadcast call group
Add a system call group

AIR

Group call
Unit-to-unit call initiate
Unit-to-unit call receive
Emergency group call

SYSTEM MANAGEMENT

Transmission trunking
Subscriber unit (re-)affiliation with talk group
Subscriber unit registration/deregistration
Group call
Talk group ID
Group call late entry
Broadcast group call
Call queuing
Unit-to-unit call
Status message
Short message
Priority talk group monitor & override
Radio check
Radio inhibit/uninhibit
Roaming
Group location restrictions
Subscriber location/restrictions
Encrypted group call – not available

PSTN GATEWAY

Unit to PSTN call
PSTN to unit call
PSTN to group call

FAULT TOLERANCE

High availability failover from primary to secondary server (hardware failure)
High availability failover from primary to secondary server (network failure)
High availability failover from primary to secondary server (software failure)
Isolated site (network failure) Switch to single site trunking at that site
Backup control channel (base station failure). Control channel allocated to a different base station

GENERAL

Feature	Details
Voice call types	Group, individual, all call, broadcast, emergency
Non-voice calls	DMR supplementary services – status, inhibit/uninhibit, short data messages, group affiliation, authentication registration
Modes of operation	DMR Tier 3
Channel frequencies	Channel addressing supports the use of non-contiguous frequency allocations
Channels per site	20 Physical channels (40 logical channels). One or two control channels per site
Number of sites	Supports up to 200 physical sites
Number of talk groups	500,000
Number of radios supported	500,000
Tait repeaters supported	TB9300
Supported servers	Sun Netra X4270, Sun Netra X3-2
Environmental specification of server	+50°F to +95°F (+10°C to +35°C) operation
Maximum radios registered at a site	10,000 radios
Talk group scanning	Supported
Interfaces supported	DIP, AIS, SIP, PSTN/PABX, Voice Recorder
Redundancy	Node, site, geographic
DMR Association IOP tested	Passed
Late entry to group calls	Supported
Packet Data	½ Rate, ¼ Rate, Full rate, Single Slot

TAIT DMR SOLUTION

Backed up by our proven radio network expertise, the TN9300-1 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.

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 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

