

Reliable and multi-interfaced TN9500 Inter-Network Gateway to connect Tait systems

The Tait TN9500 Inter-Network Gateway is an infrastructure platform capable of seamlessly bridging a TaitNet MPT system with TaitNet MPT-IP and Tait DMR Tier3 trunked networks. Tait DMR Tier3 to PTTToX bridging is available as well.

This gateway includes software based transcoding, scalable functionality, as well as an optional E1/T1 connection board.

The TN9500 provides a proven way to migrate analog to digital systems and aggregate networks allowing multi-agency cooperation.



KEY FEATURES

- Unification of multiple LMR networks to create a new network of networks solution
- Paced migration, as it allows multiple systems to coexist simultaneously for the best operational and transparent effectiveness
- Solution compatible with TaitNet MPT (T1541), TaitNet MPT-IP (TN8291), Tait DMR trunked networks (TN9300) and Tait PTTToX service.
- Future-proofed connectivity to Tait P25 trunked systems, and other potential connectivity to LMR and cellular networks
- Scalable, flexible, and cost-effective network, bridging the same or mixed types of networks
- Software integration of the transcoder functionality allows expansion of the number of simultaneous calls going through the multiple networks
- Robust design provides multiple levels of redundancy for reliability
- Efficient system infrastructure based on IP or E1/T1 links
- Remote management and monitoring via a web user-interface for greater operational efficiency, with a security focus
- Based on the same Tait core network controller software, architecture and servers as DMR, MPT-IP, and TN9400 controllers.

TN9500 Inter-Network Gateway

SPECIFICATIONS

FEATURES AND BENEFITS

Tait Inter-Network Gateway

- The main function of the TN9500 is to bridge calls between trunked networks (either same or mixed types): Tait DMR Tier 3 trunked network, TaitNet MPT-IP trunked network and TaitNet MPT1327 trunked network
- Tait DMR Tier 3 to PTTToX bridging is available
- The gateway is capable of converting and switching the following audio types:
 - Audio, using E1/T1 ports to transport voice data to and from TaitNet MPT networks
 - VoIP with the following CODECs:
 - AMBE for Tait DMR
 - G711 μ -law for TaitNet MPT-IP
 - G711a-law for TaitNet MPT-IP
- Its innovative software architecture is composed of multiple functional layers: the Linux operating system, the Tait Inter-Network Gateway application, the transcoder application, the E1/T1 interface application, and the Tait administration application responsible for managing the hardware platform

Tait MPT Migration to Tait DMR

- The migration using the TN9500 is a multi-stage process, and a number of different migration scenarios are possible. The network will be functional after completion of each stage, which means that migration can be paused or ended after each stage
- This allows an existing analog network to be replaced with IP-based digital network technology with enhanced capacity, without losing connectivity during the migration process
- This migration solution is suitable for any size network, but in particular for large networks. Re-use of components is integrated

into the concept

- The TN9500 Inter-Network Gateway is capable of connecting multiple different networks (TaitNet MPT, TaitNet MPT-IP and TN9300 DMR) together, allowing calls to be made seamlessly between the different networks. Only one TN9500 is required for migration
- The TN9500 hardware can be re-purposed as a DMR or MPT-IP node after migration in many cases, saving on equipment costs

Scalable and flexible for efficient and cost-effective network design

- Highly flexible and scalable, the Tait TN9500 Inter-Network Gateway is tailored to market size requirements with one or multiple system connections and one or multiple simultaneous call capabilities
- The Tait TN9500 server options are also declined in 2 levels: Mid and High levels. These levels allow the hardware platform to match the system redundancy level desired
- The TN9500 software architecture is similar to the DMR and MPT-IP nodes, thus allowing operational synergy

Secure communications

- The TN9500 ensures that access levels and controls are in place for management access
- Access logs are also available for a history of changes that have been made

Cellular convergence

Tait PTTToX extends your radio functionality to LTE, WiFi and ethernet networks. Compatible devices can be configured to either be manually select a network or automatically select based on preferred network availability, or managed by preconfigured Tait GeoFencing triggers. By using multiple bearers for

communications, Tait PTTToX enables Tait Unified Vehicle users to expand areas of operations by keeping them connected in more areas

Remote management for greater operational efficiency

The web-based user interface allows easy remote configuration and monitoring of:

- Network connection
- Site adjacencies between networks for seamless radio unit roaming
- E1/T1 usage and status
- Registration, affiliation and call records
- Software upgrades to ensure your network runs in an optimal manner
- Backups
- IP address changes
- 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

- Highly available server clusters are constantly mirrored and change over within seconds if there is a hardware, software, or E1/T1 link failure
- In case of the gateway failure, the connected networks are not impacted and remain fully operational

Future-proofed to protect your investment

- The TN9500 is the gateway of choice for future expansion to other LMR or cellular network connections

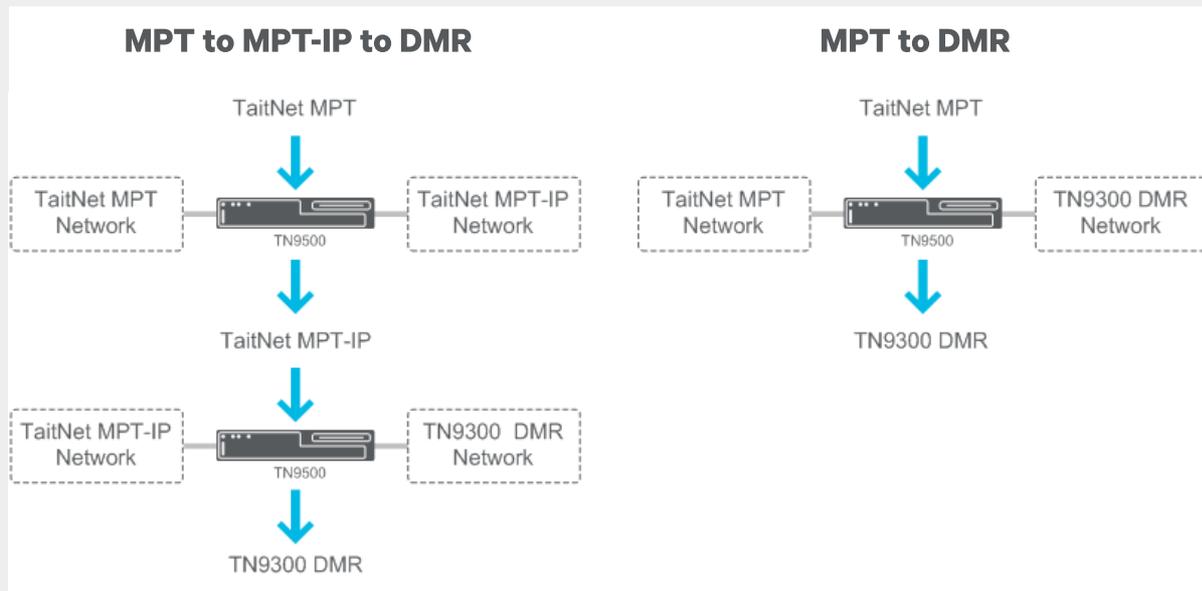
TN9500 Inter-Network Gateway

SPECIFICATIONS

The Tait migration solution, including the TN9500, allows you to move successfully from analog to digital technology by knowing your regulatory requirements, and by taking into account the previous product obsolescence and future growth.

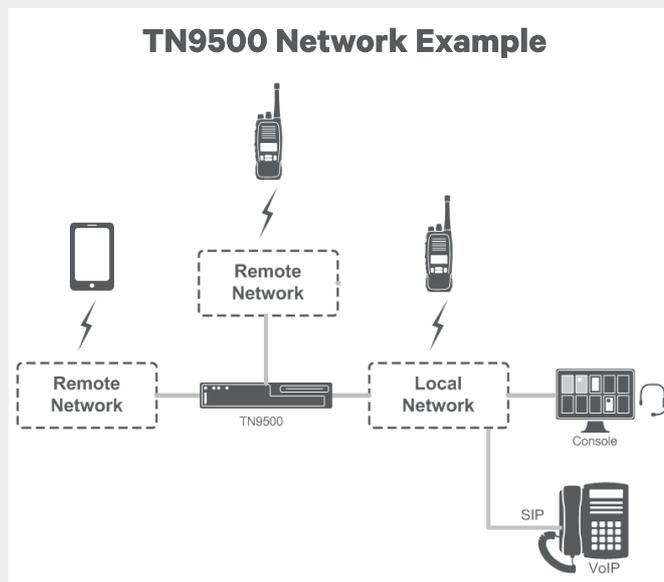
There are multiple ways of migrating to a new system: either by staging your investment infrastructure and end user devices or by enabling a faster network transition.

Tait can provide design services and work with you to provide and deliver an optimum network migration strategy.



The TN9500 is able to connect multiple Tait networks allowing you to regionalize a single system into many sub-networks for more efficiency. For example, your maintenance is managed locally and the network is adapted to the geography of your operations.

This Tait Inter-Network Gateway facilitates interoperability between agencies. Each of their networks are kept independent with their own dispatch and operations, but at the same time they can communicate on special talk-groups in case of a global emergency for a more efficient response.



TN9500 Inter-Network Gateway

SPECIFICATIONS

GENERAL

Feature	Details
Network type connectivity	TN9300 DMR Tier 3 trunked node controller TN8291 MPT-IP node controller T1541 MPT node controller and NMT (latest version required) Tait PTTToX (connection to TN9300 DMR Tier 3 only)
Number of networks	9 (same or mixed type with only 1 multi-node TaitNet MPT network)
Number of simultaneous calls	100 (concurrently transcoded or not)
Redundancy	High Availability option

LMR INTERFACES

TN9300 DMR Tier 3 trunked node controller	Tait proprietary INP (based on DMR AIS specifications)
TN8291 MPT-IP node controller	Tait proprietary INP (based on DMR AIS specifications)
T1541 MPT node controller and NMT	Tait proprietary INI, NMI and E1/T1

MANAGEMENT INTERFACES

Monitoring	SNMP, Syslog
Authentication	LDAP, RADIUS
Web interface	HTTPS
Synchronization	NTP

FACILITIES

Backup	Automatic or manual operation, manual download
Restore	Partial or entire database
Software download	Validity check for corruption or invalid software package
Log management	Manual download, automatic archiving and deletion
Audit	Login and configuration changes

PLATFORM OPTIONS

Server type	Mid-Level - Dell R230 (AC, single power supply) High-Level - Kontron CG2300 (AC or DC, dual redundant power supply, RAID)
E1/T1 Card	Digium TE435 quad-span T1/E1 PCI express
E1/T1 Switch for HA option	Valiant E1 Failover Switch (AC or DC) Order code TT0005-0001 Valiant T1 Failover Switch (AC or DC) Order code TT0005-0002

TAIT INTER-NETWORK SOLUTION

Backed up by our proven radio network expertise, the TN9500 is part of our larger DMR, MPT-IP offering. The Tait inter-network solution consists of multiple systems communicating together to create an inter-operable 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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