

# DMR Tier 2 conventional channel controller offers a reliable centralized architecture and multi-connectivity.

The Tait TN9300 channel controller allows an unique operation benefit: the total flexibility of TDMA logical channel assignment across the entire DMR Tier 2 conventional network.

Using its centralized architecture, the TN9300 provides global management of the network: monitoring of the base stations, operation configuration and consolidated call records.



The TN9300 delivers a robust connectivity solution to external interfaces with the high availability redundancy option.

## KEY FEATURES

- Centralized architecture to allow single point of connection to monitor and configure the DMR Tier 2 system
- This centralized architecture allows a scalable growth of the network
- Software support for single or multi-site services
- Support conventional simulcast operation
- Encryption option provides a secure communication
- Multiple talk groups support on a single slot
- Device presence notification via API
- Increased data capability with the revert data channel
- Step up from analog conventional network with multiple site connectivity allowing wide area sub-systems, and digital voice and data capabilities
- Easy migration to DMR Tier 3 trunked system by just a software upgrade without additional equipment
- Multiple interfaces for telephony, analog and digital console connectivity, voice recorder, data and system monitoring
- Flexible configuration of channel assignment for easy expansion
- Centralized audit of the network usage for an improved security
- Monitoring includes: health of the entire system including all the base stations, visualization of any alarms, status of the radio units, location information and statistical performance of the network
- Easy service accounting with centralized call and location records
- Robust design provides multiple levels of redundancies for reliable communications

### FEATURES AND BENEFITS

#### Tait DMR channel controller

- The TN9300 channel controller's main functions are to allow more flexibility of logical channel assignment, centralized call records and gateway function to external interfaces
- Its innovative software architecture is composed of multiple functional layers: the Linux operating system, the Tait DMR channel controller application, and the Tait Admin application responsible for managing the hardware platform
- Other core network applications can also be present, such as the channel group manager application, enabling DMR voting and simulcast as well as the G.711 connector for SIP/G.711 integrations
- Our commitment to DMR open-standards ensures opportunities for multi-vendor solutions with standardized interfaces. A single-sourced DMR conventional network reduces the risk of network elements not inter-operating, and also provides one point of call for network service and support

#### Scalable and flexible for efficient and cost-effective network design

- Highly flexible and scalable, the Tait DMR conventional systems are tailored to market size requirements with an optional channel controller
- The Tait TN9300 server options are also available in 2 levels: Low or Mid. These levels allow the hardware platform to match the system capacity desired
- The TN9300 channel controller architecture is inherited from the DMR trunked node controller, thus allowing a smooth migration from DMR conventional to DMR trunking if required

#### The TN9300 ensures:

- Maximum spectrum efficiency with 2 slot TDMA
- Connection to legacy analog consoles using a Network Gateway and also to digital consoles
- Connection to voice recorder equipment
- Communication with PSTN connections
- Flexible network design with IP connectivity

#### Secure communications

- Network and information security ensures private communications
- The TN9300 offers a range of access levels to protect against unauthorized network changes
- Network access logs provide a historical record of changes, should audit trailing be required
- The TN9300 channel controller provides control functions over the radio units like radio check and radio enable/disable

#### Remote management for greater operational efficiency

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

- Site and wide area group management
- Software upgrades to ensure your network runs in an optimal manner
- System/network configuration changes
- External interface configuration and monitoring
- IP address changes
- SNMP v2c
- Auditing capabilities, such as log files with selectable logging levels, and an audit trail to identify system changes
- Call records, system alarms, and event logs

#### Robust design provides multiple levels of redundancy for reliable communications

- A Tait DMR network has multiple levels of redundancy to ensure operations continue in the event of server failure. This includes system channel controller redundancy and isolated site operation
- High availability server clusters are constantly mirrored and changeover within seconds if there is a hardware or software failure. Fall-back mode also ensures the network continues to operate even if a site is disconnected from the network

#### Data Services

- Embedded signaling within voice for location and talker ID
- Short data messages for location, status, and text
- Packet data over traffic channels for work force Management, Telemetry, and customer-specific applications
- IP Data capabilities

#### Improved worker safety with both voice and data

- DMR supports multiple call types:
  - group calls
  - emergency
  - unit-to-unit
  - data messaging (status and text)
  - supplementary services:

Short data services and IP service, radio enable/disable, radio check

#### Future-proofed to protect your investment

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

#### Media Recording

- Tait TN9300 DMR networks can be provided with the ability to record voice calls and metadata such as user or group ID
- Media recorders can be connected to dispatch equipment (for recording calls involving the dispatcher) or to the Tait DMR channel controller (for recording all calls)

# TN9300 Conventional

## SPECIFICATIONS



### INTERFACES

Dispatch console (AIS)  
Telephone PSTN /PABX (SIP)  
Voice Recorder (AIS and Tait proprietary VRP)  
Conventional line (4 or 6-wire E&M via G.711 connector and TN9271 network gateway)  
Location server (Monitoring Services API)

### WIDE AREA GROUP MANAGEMENT

Add/remove wide area group  
Add/remove logical channel  
Assign wide area group to logical channels  
Customize hang time  
Multiple group support per logical channel

### OVER THE AIR CALL TYPES

Group call  
Individual call  
Emergency call  
Encrypted call  
Broadcast call

### PSTN CALL TYPES

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

### SERVICES

#### Data

IP data text message  
Status message  
Short data message  
Embedded signaling

#### Supplementary services

Radio check  
Radio enable/disable  
Emergency alarm  
Ambient listening/Remote monitor  
Call alert  
Channel change

#### Core features

Simulcast and voted channel group configuration  
High availability  
DES Encryption  
ARC4 Encryption  
Call records  
Network alarm collector

### LOCATION

Embedded signaling (during voice calls)  
Short data message (triggered from radio unit or unsolicited)

# TN9300 Conventional

## SPECIFICATIONS



### GENERAL

| Feature                     | Details                                                                                                                                                                     |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mode of operation           | DMR Tier 2 Conventional, with optional Simulcast                                                                                                                            |
| Channel frequencies         | Channel addressing supports the use of non-continuous frequency allocations                                                                                                 |
| Supported servers           | Dell R230, Sintrones SBOX-2620                                                                                                                                              |
| Wide area group             | 80                                                                                                                                                                          |
| Tait base station supported | TB9300, TB9400, TB7300                                                                                                                                                      |
| Redundancy                  | Channel controller, site, geographic                                                                                                                                        |
| Fault tolerance             | Automatic change over to a redundant server in the event of a hardware, software or network failure<br>Isolated site (network failure). Switch to single site repeater mode |
| DMR Association IOP tested  | Report available on request                                                                                                                                                 |

### PERFORMANCE/CAPACITY

| SYSTEM TYPE:                                        | Large area system | High capacity system |
|-----------------------------------------------------|-------------------|----------------------|
| PLATFORM:                                           | Mid/Low Level     | Mid/Low Level        |
| Physical Sites per Network                          | 100               | 20                   |
| Physical Channels per Network                       | 100               | 40                   |
| Physical Channels per Site                          | 1                 | 20                   |
| Channel controller per Network                      | 1                 | 1                    |
| Concurrent Audio Connections per channel            | 100               | 100                  |
| Concurrent Telephony/AIS<br>Connections per Network | 20                | 20                   |

NOTE: High: Kontron, Mid: Dell, Low: Sintrones

### TAIT DMR SOLUTION

Backed up by our proven radio network expertise, the TN9300 is part of our larger DMR offering. The Tait DMR solution consists of radio units, infrastructure, applications, services, and integration with third party interfaces. It ensures 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 so changes to our models, designs, technical specifications, 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.taitcommunications.com](http://www.taitcommunications.com).

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

The words "Tait", "TAIT AXIOM", "Tait Unified", and the "Tait" logo are trademarks of Tait International Limited.

Tait International Limited facilities are certified for ISO 9001:2015 (Quality Management System), ISO 14001:2015 (Environmental Management System) and ISO 45001:2018 (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 ISO 9001.

#### Authorized Partners



Quality  
Management  
ISO 9001



Environment  
Management  
ISO 14001:2015



Occupational  
Health & Safety  
Management  
ISO 45001:2018

