tait
communications

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
- 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: heath 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

DMR
DIGITAL MOBILE RADIO ASSOCIATION

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

- 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)

TN**9300 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 TN8271 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
Call records
Network alarm collector

LOCATION

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

TN**9300 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, 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
	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		
Connections per Network	20	20

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.taitradio.com.

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Tait International Limited facilities are certified for ISO 9001:2015 (Quality Management System), ISO 14001:2015 (Environmental Management System) and BS OHSAS 18001:2007 (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 ISO 9001.

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DMR