



TN9300-1 DMR

TIER 3 TRUNKED NETWORK NODE

COST-EFFECTIVE EFFICIENT TIER 3 NETWORKING

KEY FEATURES

Cost-effective, modular infrastructure scales to meet future organizational needs

Remote management for greater operational efficiency

Robust design provides multiple levels of redundancy for reliable communications

Improved workforce safety and efficiency with flexible voice and data management

The Harris TN-9300-1 DMR delivers secure and reliable communications over wide geographic areas. This IP-based scalable solution allows organizations to deploy a cost-effective infrastructure that meets communication and operational needs today and into the future.

Responsible for establishing calls to the entire radio fleet, the Harris DMR Trunked Network Node ensures maximum spectrum use with trunking, two slot TDMA and Network Gateway connection to legacy analog consoles. Multiple levels of redundancy are built into the Harris TN-9300-1 for reliable communications when and where they are needed.

Voice and data capabilities enhance worker safety with multiple call types, including data messaging to track locations and status. Operational efficiency is improved with the system's web-based interface, which supports fleet and resource management through user-friendly configuration tools.

The Harris DMR Tier 2 Conventional Network Node supports mission flexibility, with multiple interfaces for external applications, as well as software support for single and multisite services. Plus, it's open standards-based, ensuring opportunities for multi-vendor solutions through standardized interfaces.

FEATURES AND BENEFITS

Harris DMR trunked networks

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

Our commitment to DMR open standards ensures 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 calls for the radio fleet. The highly flexible and scalable design of the TN9300-1 allows organizations to deploy a cost-effective infrastructure to meet 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

The TN9300-1 ensures 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
- Creation, modification and deletion of talk groups
- Software upgrades ensure runs networks are at optimal performance
- System/network configuration changes
- IP address changes
- Operating system SNMP V3
- Auditing capabilities, including log files with selectable logging levels, and an audit trail to identify system changes

Robust design provides multiple levels of redundancy for reliable communications

Our DMR networks have multiple levels of redundancy to ensure continuity of operation in the event of server failure, including system node controller redundancy and isolated site operation.

High-availability server clusters are constantly mirrored within seconds if there is a hardware or software failure. Failback 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 workforce 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. Also, data messaging, including status, short, radio inhibit/stun and authenticated registration ensure users can communicate when and how they need to.

Future proofed to protect investments

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

Media recording

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

Media recorders can be connected to dispatch equipment—for recording calls involving the dispatcher, or to the DMR node—for recording all calls.

SPECIFICATIONS FOR: TN9300 DMR - TIER 3 TRUNKED NETWORK NODE

GENERAL

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 Talkgroups	500,000
Number of Radios Supported	500,000
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
Redundancy	Node, site, geographic
DMR Association IOP Tested	Passed
Late Entry to Group Calls	Supported
Packet Data	½ rate, ¾ rate, full rate, single slot

INTERFACES

DIP

AIS

SIP

PSTN/PABX

Voice Recorder

SUBSCRIBER MANAGEMENT

Add/Remove Subscriber

Add/remove Multiple Subscribers

Customize 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 Talkgroup

Subscriber Unit Registration/De-registration

Group Call

Talk Group ID

Group Call Late Entry

Broadcast Group Call

Call Queuing

Unit-to-Unit Call

Status Message

Short Message

Priority Talkgroup 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) with control channel allocated to a different base station

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.

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