The Harris TD9300 Machine-to-Machine DMR terminal provides secure and reliable telemetry and data communications. Equipped with multiple interfaces, this Tier 3 solution rapidly integrates into existing systems, providing businesses with a simplified path to wide-area connectivity.

The TD9300 supports advanced IP-based data services when used with a Supervisory Control and Data Acquisition Gateway (SCADA). Ideal for distribution, oil and gas utilities and controlling irrigation systems, the terminal delivers significant cost reductions and efficiencies. Users now have just one network to design, manage and maintain. Site visit travel is reduced and issues are identified faster through remote monitoring and control of devices via long-range DMR.

Engineered for continuous performance in demanding environments with a die-cast metal chassis, the terminal’s protection and failback mechanisms also limit hardware failure. Data security is assured through authentication and AES 256-bit encryption.

With full adherence to DMR standards, the TD9300 is interoperable with other radio systems and is designed for future multi-bearer connectivity through Wi-Fi and public or private cellular systems.
FEATURES AND BENEFITS

Improve efficiency
- Monitor and control devices via long range DMR, reduce travel and site visits
- Centralized, standards based network management
- Design, manage and maintain a single voice and data radio network

Designed to perform in demanding environments
- Tough die-cast metal chassis protects in demanding environmental conditions
- Protection and fold back mechanisms limit hardware failures, automatically restore service after fault cleared
- Flexible mounting systems, DIN rail in both vertical and horizontal, on a 19 inch rack tray or wall mounted

Security
- AES 256-bit data encryption
- Key management via web pages
- Terminals must both register and be authenticated to access the network
- Stun and revive to disable devices

Remote site monitoring
- Extensive outstation diagnostics:
  - Temperature
  - Signal (RSSI, BER and MER)
  - Antenna fault
  - Input voltage
  - Telemetry equipment status
- Over-the-Air (OTA) configuration of SCADA interface parameters

Standards based interface protocols
- Industry standard protocols:
  - DNP3 over IP/serial
  - IEC60870-5-101 and -104
- Network Time Protocol (NTP)
- Internet Control Message Protocol (ICMP)
- Eliminates costly proprietary protocol integration and support

Applications
- SCADA for distribution utilities
- SCADA for oil and gas utilities
- SCADA for control of irrigators

Data services
- Packet data over traffic channels for telemetry, SCADA and customer specific applications
- Native and Transparent IP data interface operation
- Control channel short data messages, location, status and text

Flexible interfaces
- Two RS232/RS485 serial interfaces for legacy equipment connection
- 10/100 Mbps Ethernet connection
- 2 digital input and 2 digital outputs to monitor and control surrounding environment, fully isolated

Multi-bearer expansion*
- Wi-Fi access point for local access, re-configuration or upgrades
- Internal PCI Express Mini (PEM) card support, enabling plug in private or public cellular standards

* Future product release.
The TD9300, in conjunction with a SCADA Gateway and DMR Tier 3 network, offers advanced data communications services for wireless networks.

**SPECIFICATIONS FOR: TD9300 DMR - TIER 3 CAPABLE DATA TERMINAL**

## GENERAL

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Stability</td>
<td>±0.5ppm (-22°F to 140°F/-30°C to 60°C)</td>
</tr>
<tr>
<td>Dimensions (H x W x D)</td>
<td>2.4in x 7.1in x 6.2in (61mm x 180mm x 156mm)</td>
</tr>
<tr>
<td>Weight - lb (kg)</td>
<td>2.1lb (1.9kg)</td>
</tr>
<tr>
<td>Channel Spacing</td>
<td>12.5kHz</td>
</tr>
<tr>
<td>Mounting</td>
<td>DIN rail clip or panel mount bracket</td>
</tr>
<tr>
<td>Frequency Increment/Channel Step</td>
<td>2.5/3.125/5/6.25kHz</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-22°F to 140°F (-30°C to 60°C)</td>
</tr>
<tr>
<td>Water and Dust Protection</td>
<td>IP40 (in all orientations) IP50 (connectors facing down)</td>
</tr>
<tr>
<td>ESD Rating</td>
<td>+/-4kV contact discharge and +/-8kV air discharge</td>
</tr>
<tr>
<td>Power Supply</td>
<td>DC: 9-36VDC</td>
</tr>
<tr>
<td>Air Interface Standard</td>
<td>DMR: ETSI TS 102 361</td>
</tr>
<tr>
<td>Packet Data</td>
<td>½ rate, ¾ rate, full rate, single slot</td>
</tr>
<tr>
<td>Indicators</td>
<td>5 status LEDs: PWR, RTU, DMR, 1, 2</td>
</tr>
<tr>
<td>General Purpose Input/Output (GPIO)</td>
<td>Input: Opto-isolated (50VDC max)/Output: Isolated (100mA @ 50VDC)</td>
</tr>
</tbody>
</table>

## TRANSMITTER

### VHF
- Frequency Ranges: 136-174MHz
- Output Power: 25W, 12.5W, 5W, 1W
- FM Hum and Noise (Analog): 12.5kHz: -40dB
- Adjacent Channel Power - Static (DMR): ETS 300-113: 12.5kHz: 60dB
- Conducted/Radiated Emissions: 25W: -6dBm, 50W: -20dBm
- Duty Cycle: 5W: 80% @ 77°F (+25°C), 12W: 75% @ 77°F (+25°C), 25W: 65% @ 77°F (+25°C)

### UHF
- Frequency Ranges: 400-470MHz
- Output Power: 25W, 12.5W, 5W, 1W
- FM Hum and Noise (Analog): 12.5kHz: -40dB
- Adjacent Channel Power - Static (DMR): ETS 300-113: 12.5kHz: 60dB
- Conducted/Radiated Emissions: 25W: -6dBm, 50W: -20dBm
- Duty Cycle: 5W: 25% @ 140°F (+60°C), 12W: 20% @ 140°F (+60°C), 25W: 15% @ 140°F (+60°C)

### 700/800MHz
- Frequency Ranges: 762-870MHz
- Output Power: 30W, 35W
- FM Hum and Noise (Analog): 12.5kHz: -40dB
- Adjacent Channel Power - Static (DMR): ETS 300-113: 12.5kHz: 60dB
- Conducted/Radiated Emissions: 25W: -6dBm, 50W: -20dBm
- Duty Cycle: 5W: 80% @ 140°F (+60°C), 12W: 75% @ 140°F (+60°C), 25W: 65% @ 140°F (+60°C)

## TX POWER CONSUMPTION

- 24VDC: Tx Standby <125mA, Tx @ 25W 4.5A (2A average for single slot Tx)

## RECEIVER

### VHF
- Frequency Ranges: 136-174MHz
- Sensitivity (DMR) 5% BER: -119dBm (0.25µV)
- Selectivity: Analog (EIA-603D) 2-Tone: 12.5kHz: 52dB, 12.5kHz: 50dB, 12.5kHz: 60dB
- Intermodulation Rejection: 76dB (EIA-603D), 70dB (ETS-300), 70dB (ETS-300-113)
- Spurious Response Rejection (DMR): 70dB (ETS-300-113), 70dB (ETS-300-113), 70dB (ETS-300-113)
- FM Hum and Noise (Analog): 12.5kHz: -40dB
- Conducted Spurious Emissions: -57dBm

### UHF
- Frequency Ranges: 400-470MHz
- Sensitivity (DMR) 5% BER: -119dBm (0.25µV)
- Selectivity: Analog (EIA-603D) 2-Tone: 12.5kHz: 52dB, 12.5kHz: 50dB, 12.5kHz: 60dB
- Intermodulation Rejection: 76dB (EIA-603D), 70dB (ETS-300), 70dB (ETS-300-113)
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- FM Hum and Noise (Analog): 12.5kHz: -40dB
- Conducted Spurious Emissions: -57dBm

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- Frequency Ranges: 762-870MHz
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- FM Hum and Noise (Analog): 12.5kHz: -40dB
- Conducted Spurious Emissions: -57dBm
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.

### MILITARY STANDARD 810G

<table>
<thead>
<tr>
<th>Applicable Mil-Std Method</th>
<th>Parameters</th>
<th>Method</th>
<th>Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Altitude</td>
<td>15000 feet (4570 meters)</td>
<td>500.5</td>
<td>2</td>
</tr>
<tr>
<td>Humidity</td>
<td>95% relative humidity through temperature cycle</td>
<td>507.5</td>
<td>2</td>
</tr>
<tr>
<td>Vibration</td>
<td>3 axis, random vibration</td>
<td>514.6</td>
<td>1</td>
</tr>
<tr>
<td>Shock</td>
<td>3 axis, 40g shock pulse</td>
<td>516.6</td>
<td>1</td>
</tr>
</tbody>
</table>

### REGULATORY DATA

<table>
<thead>
<tr>
<th></th>
<th>USA</th>
<th>Canada</th>
<th>Europe²</th>
<th>Australia/New Zealand²</th>
</tr>
</thead>
<tbody>
<tr>
<td>VHF (136-174MHz)</td>
<td>CFR 47</td>
<td>RSS-119</td>
<td>EN300-113, EN301-489, EN60950</td>
<td>AS/NZS4768</td>
</tr>
<tr>
<td>UHF (400-470MHz)</td>
<td>CFR 47</td>
<td>RSS-119</td>
<td>EN300-113, EN301-489, EN60950</td>
<td>AS/NZS4768</td>
</tr>
<tr>
<td>700/800MHz</td>
<td>CFR 47</td>
<td>RSS-119</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

About Harris Corporation: Harris Corporation is a leading technology innovator that creates mission-critical solutions that connect, inform and protect the world. The company’s advanced technology provides information and insight to customers operating in demanding environments—from ocean to orbit and everywhere in between. Harris has approximately $7.5 billion in annualized revenue and supports customers in more than 100 countries through four customer-focused business segments: Critical Networks, Space and Intelligence Systems, Electronic Systems and Communication Systems.

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