TD9300

DMR Tier 3 Capable Data Terminal

The L3Harris 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.

RUGGED, SECURE M2M SCADA DATA COMMUNICATIONS

KEY BENEFITS

- Delivers Machine-to-Machine (M2M) SCADA communications
- Integrates rapidly into existing systems
- Increases efficiencies while reducing cost with remote device monitoring and control
- Designed for reliable performance in harsh environments
- Full adherence to DMR standards

L3Harris.com
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, reconfiguration or upgrades
> Internal PCI Express Mini (PEM) card support, enabling plug in private or public cellular standards

* Future product release.
### SPECIFICATIONS FOR: TD9300 DMR TIER 3 CAPABLE DATA TERMINAL

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

#### TRANSMITTER
<table>
<thead>
<tr>
<th>VHF</th>
<th>UHF</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frequency Ranges</strong></td>
<td>136-174 MHz</td>
</tr>
<tr>
<td><strong>Output Power</strong></td>
<td>25 W, 12.5 W, 5 W, 1 W</td>
</tr>
<tr>
<td><strong>FM Hum and Noise (Analog):</strong></td>
<td>12.5 kHz: -40 dB</td>
</tr>
<tr>
<td><strong>Adjacent Channel Power - Static (DMR):</strong></td>
<td>12.5 kHz: 60 dB</td>
</tr>
<tr>
<td><strong>Conducted / Radiated Emissions</strong></td>
<td>25 W: -36 dBm, 50 W: -20 dBm</td>
</tr>
<tr>
<td><strong>Duty Cycle</strong></td>
<td>5 W: 80% @ 77°F (+25°C), 12 W: 75% @ 77°F (+25°C), 25 W: 65% @ 77°F (+25°C)</td>
</tr>
</tbody>
</table>

#### TX POWER CONSUMPTION
<table>
<thead>
<tr>
<th>24 VDC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tx Standby</strong></td>
</tr>
<tr>
<td><strong>Tx @ 25 W</strong></td>
</tr>
</tbody>
</table>

#### RECEIVER
<table>
<thead>
<tr>
<th>VHF</th>
<th>UHF</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frequency Ranges</strong></td>
<td>136-174 MHz</td>
</tr>
<tr>
<td><strong>Sensitivity (DMR) 5% BER</strong></td>
<td>-119 dBm (0.25 μV)</td>
</tr>
<tr>
<td><strong>Selectivity:</strong></td>
<td>12.5 kHz: 52 dB, 12.5 kHz: 62 dB</td>
</tr>
<tr>
<td><strong>Intermodulation Rejection</strong></td>
<td>76 dB (EIA-603D), 70 dB (ETS-300)</td>
</tr>
<tr>
<td><strong>Spurious Response Rejection (DMR)</strong></td>
<td>70 dB (ETS-300-113)</td>
</tr>
<tr>
<td><strong>FM Hum and Noise (Analog)</strong></td>
<td>12.5 kHz: -40 dB</td>
</tr>
<tr>
<td><strong>Conducted Spurious Emissions</strong></td>
<td>-57 dBm</td>
</tr>
</tbody>
</table>
**SPECIFICATIONS FOR: TD9300 DMR TIER 3 CAPABLE DATA TERMINAL**

### 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, 40 g 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>Europe 2</th>
<th>Australia/New Zealand 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>VHF (136-174 MHz)</td>
<td>CFR 47</td>
<td>RSS-119</td>
<td>EN300-113, EN301-489, EN60950</td>
<td>AS/NZS4768</td>
</tr>
<tr>
<td>UHF (400-470 MHz)</td>
<td>CFR 47</td>
<td>RSS-119</td>
<td>EN300-113, EN301-489, EN60950</td>
<td>AS/NZS4768</td>
</tr>
</tbody>
</table>

Technical specifications are subject to change without notice.  
Product sales are subject to applicable U.S. export control laws.

TD9300  Digital Mobile Radio (DMR)  
© 2019 L3Harris Technologies, Inc. | 08/2019 DS1612B