



# The Most Cost-Effective TSM-Enabled Radio



## TW-860 TSM SPIRIT RADIO-FCC

**TRELLISWARE'S TW-860 TSM SPIRIT IS IDEAL FOR DEPLOYMENT AT THE EDGE OF THE NETWORK, DESIGNED FOR NEXT-GENERATION SOLDIER SYSTEMS, PUBLIC SAFETY, AND FIRST RESPONDER REQUIREMENTS.**

The TW-860 TSM Spirit radio represents the most cost-effective TrellisWare radio available, making it easier to expand tactical networks to everyone who needs to be connected. Interoperable with all TrellisWare radios, the TW-860 TSM Spirit radio supports a true flat network with massive scalability in a single radio frequency (RF) channel, while still delivering rapid position location information (PLI) updates for every radio.

### PROVEN SCALABILITY AND PERFORMANCE

TrellisWare's patented Barrage Relay networking eliminates the need for routing protocols and allows for massive network scalability with low overhead. TrellisWare's TSM waveform facilitates secure mission critical voice and data delivery in the most severe conditions. The result is an exceptionally robust, flat network that supports hundreds of nodes, using less spectrum than any other Mobile Ad Hoc Networking (MANET) technology.

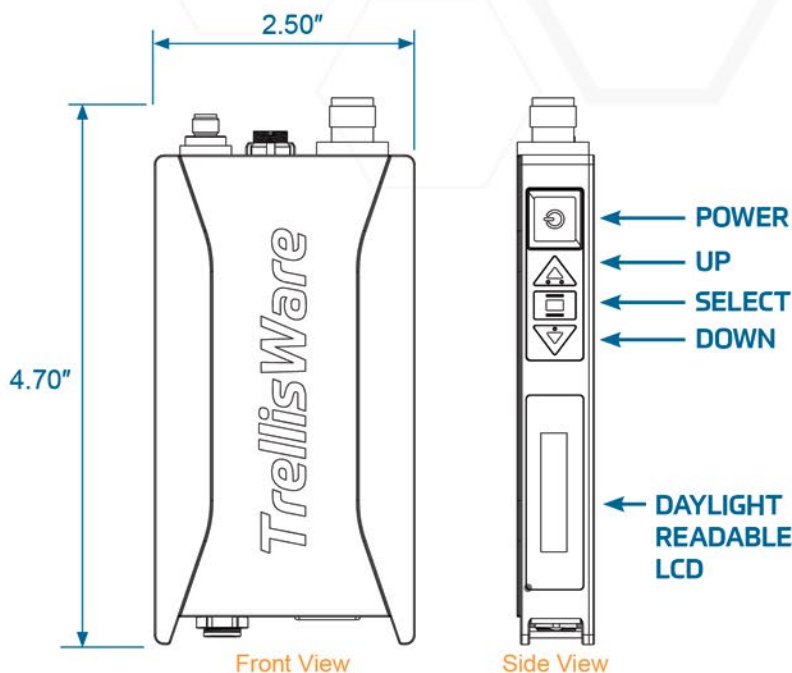
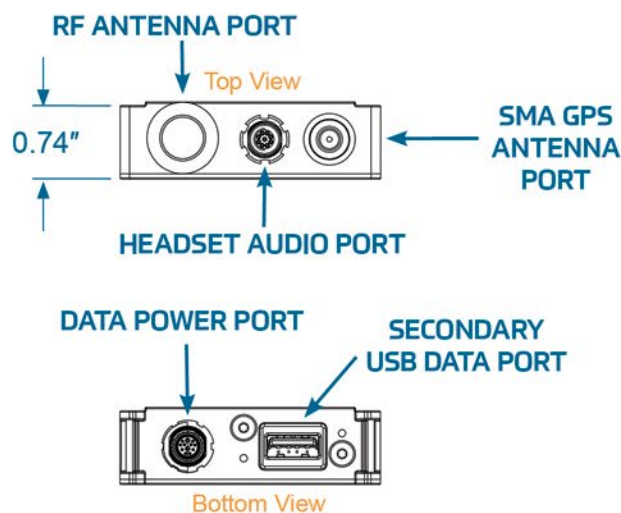
### KEY FEATURES

- Designed specifically for body-wearable applications with industry-leading size, weight, and power (SWaP) among body-worn mesh networking radio
  - Single data and power connector that supports IP data and USB-C power delivery (PD) to support soldier hub devices and conformal wearable batteries (CWB)
  - Ideal for use with body-worn wearable antennas, only requiring one antenna to achieve reliable performance (versus MIMO radios that require multiple antennas)
- Seamless data connectivity for all body-worn end-user equipment
  - Expansion port for Wi-Fi and Bluetooth wireless connectivity for audio and data
- Full TSM voice capability with dual push-to-talk (PTT) and up to 32 selectable talk groups





## COMPONENTS



## SPECIFICATIONS

| Physical                            |  |
|-------------------------------------|--|
| <b>Overall Size</b>                 | 4.70 L x 2.50 W x 0.74 H in (119.38 x 63.50 x 18.79 mm)                            |
| <b>Weight</b>                       | 8.81 oz (249 g)  |
| <b>FCC Frequency Range</b>          | L/S BANDS: 2400–2483.5 MHz   |
| <b>Configurable Bandwidth</b>       | 1.2, 3.6, 10, 20, 40 MHz   |
| <b>FCC Transmit Power</b>           | 100 mW, 250 mW, 500 mW, 1W   |
| <b>Operating Temperature Range*</b> | -20°C to +55°C (-4°F to +131°F)  |
| <b>Environmental</b>                | MIL-STD-810H   |
| <b>Water Resistant</b>              | IP67 without USB-A cap, IP68 with USB-A cap  |
| <b>MTBF</b>                         | 16,310 hours (MIL-HDBK-217 FN2)  |
| <b>RF Connector</b>                 | TNC  |
| <b>Commercial GPS Support</b>       | SMA connector, U-Blox EVA-7M Module  |
| <b>Headset Audio Port</b>           | 9-Pin Connector – Supports Dual Push-To-Talk (PTT) and Two Simultaneous Talkgroups |
| <b>Data/Power Port</b>              | 12-Pin ODU Connector – Supports USB-C Power Delivery and Data                      |
| <b>Secondary USB Port</b>           | USB-A Connector – Supports Data, Programming, WiFi, and Bluetooth Accessories      |
| <b>Input Power</b>                  | 5 V to 20 V  |

| Physical         |                                   |
|------------------|-----------------------------------|
| <b>Data Rate</b> | Pt. to Pt., up to 32 Mbps (1-hop) |
| <b>Waveform</b>  | TSM 6                             |

| Networking                    |  |
|-------------------------------|--|
| <b>Network Coverage</b>       | <ul style="list-style-type: none"> <li>• Mobile Ad Hoc Networking</li> <li>• Multi-hop – Up to 8 Hops</li> <li>• 800 Nodes in a Single RF Channel</li> <li>• Robust in Harsh RF Environments</li> <li>• Range – 26 Miles (40 Km) in a Single Hop</li> </ul>        |
| <b>Communication Services</b> | <ul style="list-style-type: none"> <li>• Simultaneous Data and PLI</li> <li>• Up to 32 Voice Talk Groups with Voice Option</li> <li>• Built-in GPS</li> <li>• IP Support – IPv4, IPv6; Unicast, Multicast, Broadcast; TCP, UDP</li> </ul>                          |
| <b>Security</b>               | <ul style="list-style-type: none"> <li>• AES-256</li> </ul>  |
| <b>Application Support</b>    | <ul style="list-style-type: none"> <li>• Built-in Web Applications</li> <li>• Over the Air Remote Control</li> <li>• APIs for 3<sup>rd</sup> Party Integration</li> <li>• PLI with CoT, KML, and JSON</li> <li>• Integration with Android™ applications</li> </ul> |

\*Expanded temperature range test results available.

Specifications subject to change without notice.

**Note:** For FCC radio options, please contact TrellisWare Customer Support at [support@trellisware.com](mailto:support@trellisware.com).

**When Nothing Else Works**

TRELLISWARE.COM

To place an order, please contact your account manager.

For more information, email [sales@trellisware.com](mailto:sales@trellisware.com)

Please access the most recent digital version of this datasheet on the TrellisWare Customer Support Site (site registration required).