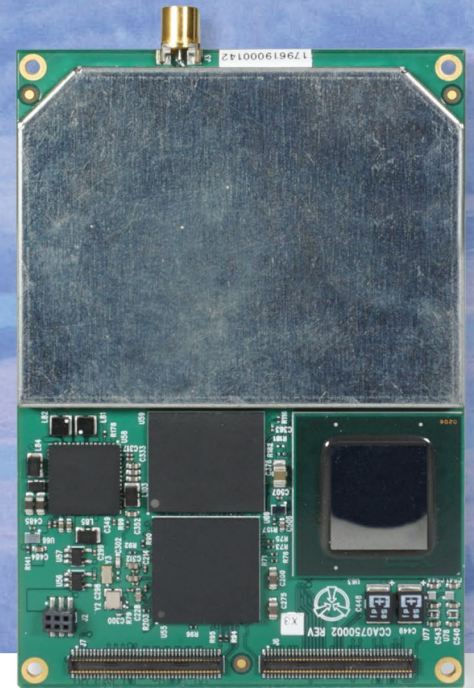**TrellisWare**
T E C H N O L O G I E S

The "CORE" Of All TrellisWare Radios Available For Embedded Integration

ALTIUS-700 Army Photo by Daniel Henke

TW-650 TSM SHADOW CORE BOARD MODULE
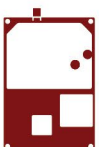
EMBEDDED INTEGRATION

The TW-650 TSM Shadow Core Board Module is a Software-Defined Radio (SDR) that is specifically designed to be embedded into a wide range of systems, including tactical communications platforms, network devices, and uncrewed systems.

KEY FEATURES

- Advanced SDR architecture designed for embedment into a wide range of systems

- Seamless interoperability with TrellisWare radios

- Designed for optimal size, weight, and power consumption (SWaP), allowing for embedment into small to large platforms

- Full software application programming interface (API) for status and control of the radio through an Internet Protocol (IP) interface

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. The TrellisWare TSM waveform is a highly scalable and robust Mobile Ad Hoc Networking (MANET) waveform designed from the ground up to support over 800 nodes with simultaneous voice, data, video, and Position Location Information (PLI) operating in a single radio frequency channel. The TrellisWare Katana waveform combines resilient narrowband fast frequency hopping with tactical MANET, operating in highly contested radio frequency (RF) communication environments.
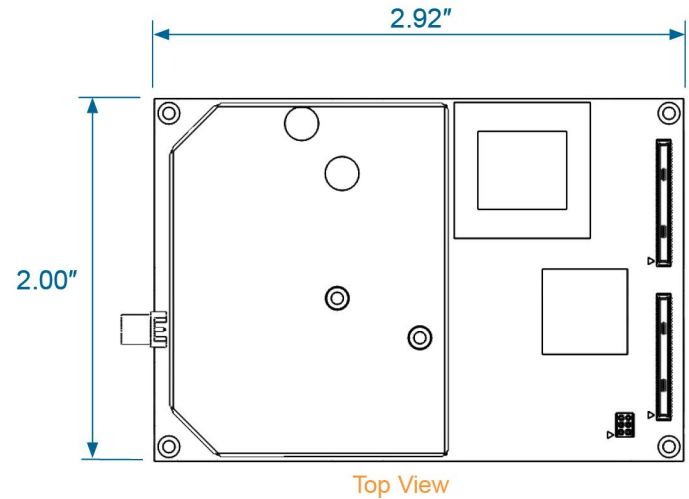
SCAN ME

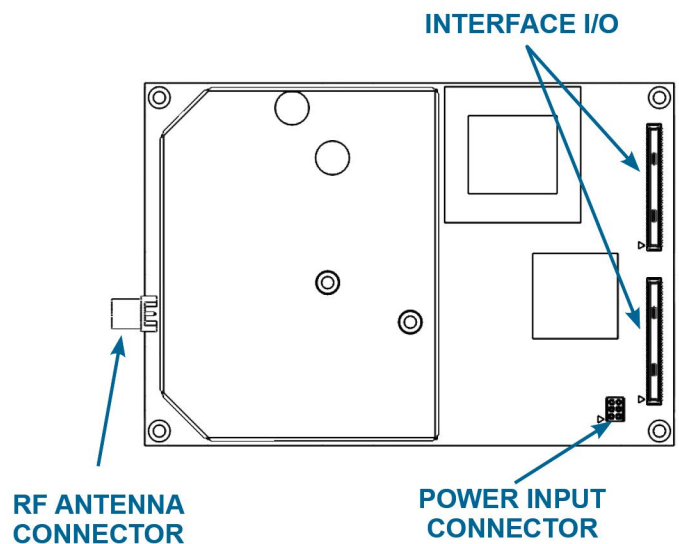**TRELLISWARE.COM**

TW-650

SPECIFICATIONS

Physical	
Overall Size	2.92 L x 2.00 W x 0.11 H in (74.17 x 50.80 x 2.79 mm)
Weight	1.2 oz (34.09 g) (core board with shielding)
Frequency Range	• LUHF: 225–450 MHz • U-UHF: 698–970 MHz • L/S Bands: 1250–2600 MHz
Configurable Bandwidth	1.2, 3.6, 10, 20 MHz
Spectrum Pipelining Bandwidth	User-Selectable Spacing with 20 or 40 MHz Occupied Bandwidth
Transmit Power	100 mW, 250 mW, 500 mW, 1W, 2W
Input Power	3.4–4.2 VDC
Interfaces	• Board Mount • Power and Control • Ethernet • USB 2.0 Ports (USB-OTG, USB-H1) • Serial to IP • I2C • RF Antenna (SMP jack)
Data Rate	Pt. to Pt., up to 32 Mbps
Security	• Built-in AES-256 COMSEC • TRANSEC
Waveform	TSM, Katana (Optional)

Networking	
Network Coverage	• Mobile Ad Hoc Networking • Multi-hop – Up to 8 Hops • 400+ Nodes in a Single Network • Robust in Harsh RF Environments
Communication Services	• Simultaneous Voice, Data, PLI • Up to 32 Voice Talk Groups • Built-in or External GPS • IP Support – IPv4, IPv6; Unicast, Multicast, Broadcast; TCP, UDP
Security	• AES-256
Application Support	• Built-in Web Applications • Over the Air Remote Control • APIs for 3rd Party Integration • PLI with CoT, KML, and JSON • Integration with Android™ applications

Specifications subject to change without notice.

2.92"

2.00"

Top View

COMPONENTS

INTERFACE I/O

RF ANTENNA CONNECTOR

POWER INPUT CONNECTOR

When Nothing Else Works

T R E L L I S W A R E . C O M

To place an order, please contact your account manager.
For more information, email sales@trellisware.com

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

This TrellisWare product is under the jurisdiction of the Department of Commerce and is subject to Export Administration Regulations (EAR)