

# TrellisWare TW-950 TSM Shadow Radio

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### TrellisWare TW-900/950 TSM Shadow Radio



### Wide Frequency Range, High Throughput

TrellisWare's TSM Shadow radio features unparalleled performance powered by the TSM™ waveform. The radio provides an expanded frequency range, higher throughputs for streaming multiple HD videos, and is interoperable with devices that run TSM-X™ waveform functionality. The TSM Shadow radio is redefining the edge of tactical networking.

### Reliable in the Harshest Conditions

The TSM waveform provides the only mobile ad-hoc networking (MANET) solution with field-proven, cutting edge Barrage Relay™ technology. This innovative technology uses unique digital signal processing and cooperative combining techniques to take advantage of multipath reflections and relays in harsh RF environments to enable massive scalability and fast network adaptability.

### TSM Shadow Radio Key Features

- ✓ Up to 16 Mbps
- ✓ Up to 16 Voice Channels
- ✓ SD and HD H.264 video encoding
- ✓ UHF, L-band, S-band in a single radio

### TSM Network Benefits

- ✓ Infrastructure-less MANET
- ✓ High-speed wireless IP networking

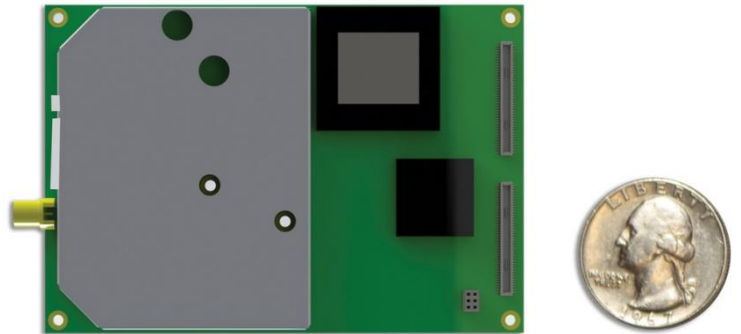
- ✓ Self-forming, self-healing
- ✓ Scalable to 200+ nodes
- ✓ Robust in harsh environments
- ✓ Fast, seamless network join/merge
- ✓ Instant adaptation to network topology change

### TW-650 TSM Shadow Module

TrellisWare's single-board software-defined (SDR) radio is built for integration into custom platforms, drones robotics and existing systems. This single radio module includes UHF, L-band, and S-band frequencies, and is low profile in design with optimal size, weight, and power.

The TSM Shadow module has fully-

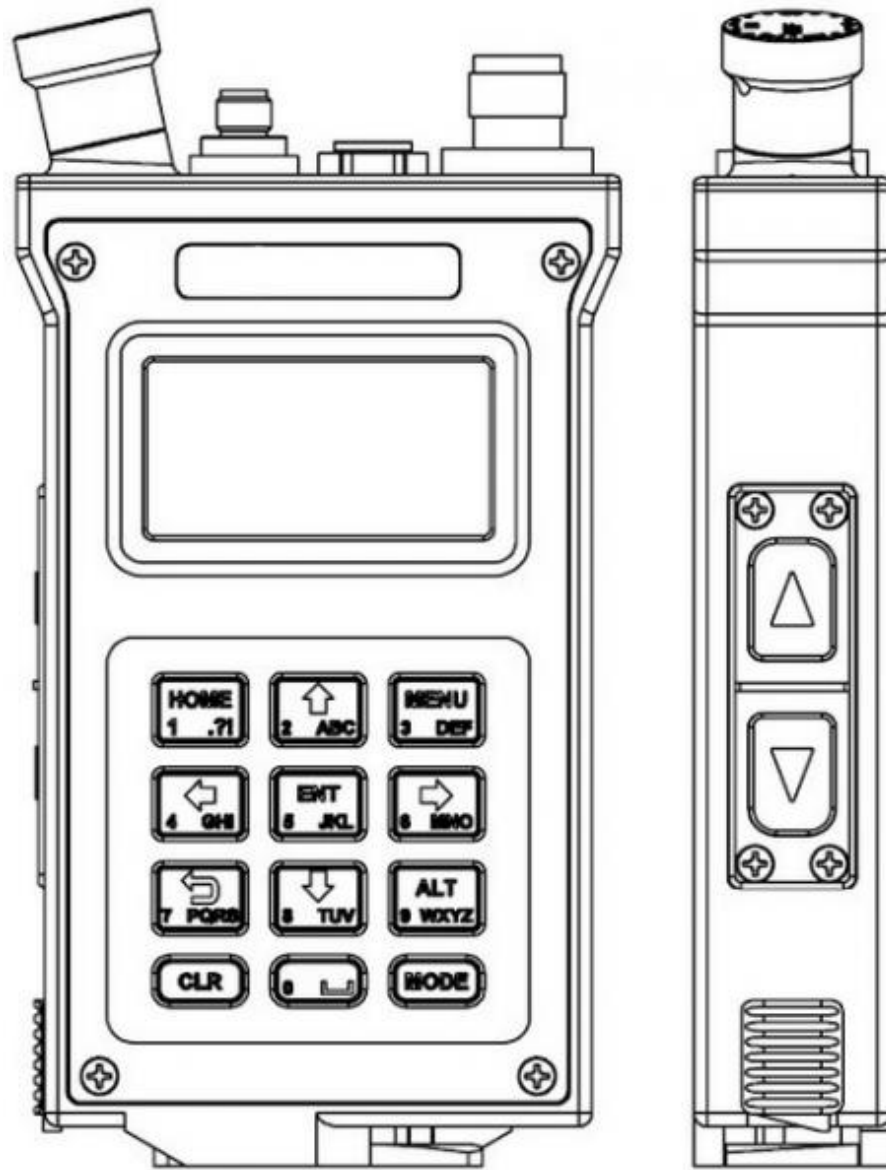
[AT-Communication](#) functionality with all current TrellisWare® radio products.



- ✓ Embedded Integration
- ✓ Extensive Feature Set
- ✓ TSM Waveform Release 6
- ✓ RF Spectrum Flexibility
- ✓ Interoperability

### TSM Shadow Radio Specifications

Size	4.54" (H) x 2.76" (W) x 0.90" (D)
Weight (R/T only)	11.3 oz
Frequency Range	L-UHF: 225–450 MHz U-UHF: 698–970 MHz, L/S Bands: 1250–2600 MHz
Configurable Bandwidth	1.2, 4, 10, 20, 40 MHz
Transmit Power	100 mW, 250 mW, 500 mW, 1 W, 2 W
Battery Life	8 Hours with 32 Wh Rechargeable Battery
Environmental	MIL-STD-810G
Operating Temperature Range	-20°C to +55°C
Water Resistant	IP68
Connectors	ODU Data/Audio, TNC RF, SMA GPS, 36-pin side connector
Data Rate	16 Mbps IP Throughput
Audio Encoding	AMR 5.9, MELPe, AAC Audio
Video Encoding	SD and HD H.264
Waveform	TSM Release 6
Routing	Barrage Relay™ networking



### TSM Networking Specifications

Network Coverage	Mobile Ad-hoc Networking
	Multi-hop – Up to 8 Hops
	200+ Nodes in a Single RF Channel
	Robust in Harsh RF Environments
Communication Services	Simultaneous Voice, Video, Data, PLI
	Up to 16 Voice Channels
	Up to 32 Voice Talk Groups
	Built-in GPS
Security	IP Support – IPv4, IPv6; Unicast, Multicast, Broadcast; TCP, UDP
	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

- ✓ Multi-cast HD video in highly dynamic, mobile operations
- ✓ Flexible bandwidth supporting a broad range of network capacities and spectrum availability worldwide
- ✓ Versatile waveform to support ground communication and ground to air communications
- ✓ Support indoor, shipboard, deep urban, tunnel and other challenging environments
- ✓ Robust RF connectivity in highly dynamic environments
- ✓ Interoperable with other TSM networking products

### **TW-900/950 TSM Shadow Radio**