



Lighter, Smaller, More Powerful—The New Standard for Unmanned Systems



TW-310 EMBEDDED DATALINK MODULE

The TrellisWare TW-310 is a gamechanger. The TW-310 embedded datalink module represents a fundamental shift in tactical networking for unmanned aerial systems (UAS) and embedded platforms, where SWaP (Size, Weight and Power) constraints directly impact mission performance. Weighing under 50 grams, the TW-310 sets a new standard for SWaP optimization without sacrificing capability.

Engineered for seamless integration, it enables robust, anti-jam communications for Intelligence, Surveillance, and Reconnaissance (ISR), real-time video, Command and Control (C2), and relay. Powered by TrellisWare waveforms, the TW-310 delivers high-throughput, low-latency connectivity in contested Radio Frequency (RF) environments, making it the ideal embeddable solution for next-generation UAS datalinks. The system packs more punch in a much smaller and lighter footprint, clearly redefining industry performance standards, expectations, and results.

KEY FEATURES

- Ultra-Lightweight, High-Performance Design—Sub-50 gram SDR optimized for SWaP-constrained unmanned aerial systems and embedded platforms.
- Extended Range and Resilient Connectivity—Up to 8 W transmit power enables long-range, robust performance at the network edge in contested RF environments.
- ISR, C2, and Relay Optimization—Supports real-time video, sensor data, C2, and relay to extend mission reach and operational effectiveness.
- Embeddable and Integration-Ready—Designed for plug-and-play integration into UAS and mission systems with minimal size, power, and interface overhead.

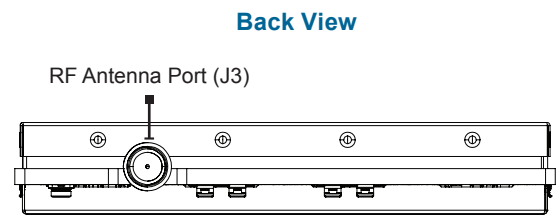
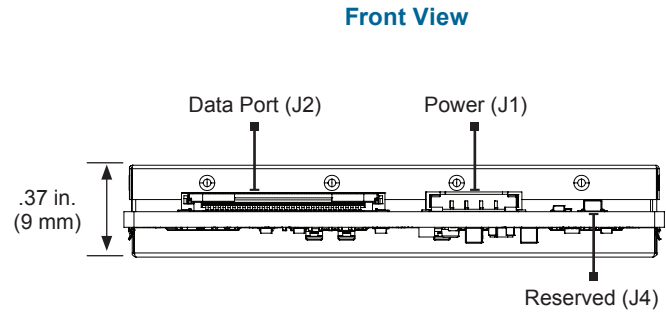
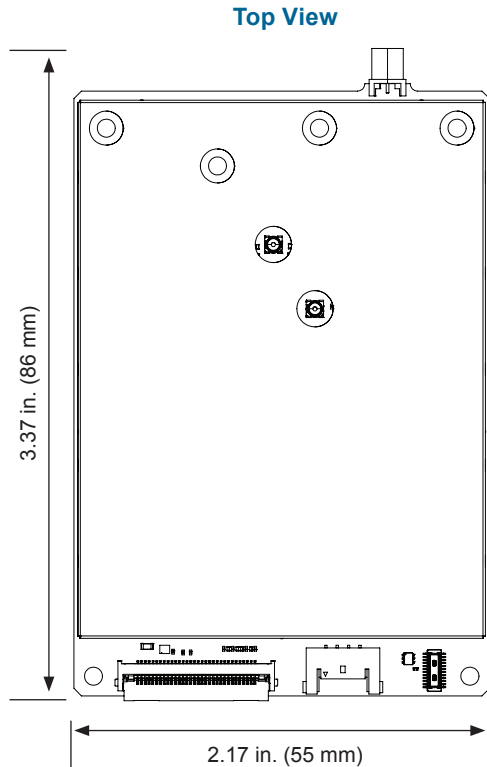
TRELLISWARE'S INDUSTRY-LEADING WAVEFORMS

TrellisWare's patented Barrage Relay technology delivers proven network scalability and performance, ensuring quality of service without compromising operational demands as they evolve – empowering users to stay connected when it matters most. TrellisWare's waveform portfolio is globally recognized for resilient communications, supporting a broad ecosystem of interoperable platforms across voice, video, data, and Position Location Information (PLI).

For UAS operations, the TW-310 is typically deployed with:

- TSM—A scalable, high-performance Mobile Ad Hoc Network (MANET) waveform supporting large networks in a single RF channel with simultaneous voice, data, video, and PLI. TSM serves as the universal language across a vast ecosystem of tactical Software Defined Radios (SDRs) and unmanned systems, enabling seamless interoperability at scale.
- Katana WB* Anti-Jam Connectivity (Optional)—Wideband frequency-hopping MANET delivering resilient voice, PLI, and high-throughput IP data, enabling seamless connectivity from permissive to highly contested RF environments and providing modern resiliency across this spectrum.

* Waveform to be supported at a later date.



Specifications	
Size	3.37 x 2.17 x .37 in (86 x 55 x 9 mm)
Weight	.10 lbs (48 g)
Frequency	L/S Bands: 1250 - 2600 MHz
Configurable Bandwidth	1.2, 3.6, 10, 20 MHz
Spectrum Pipelining Bandwidth	Dual-channel operation (2x10 MHz or 2x20 MHz) with user-selectable spacing; 20 MHz or 40 MHz total occupied bandwidth
Transmit Power	100 mW, 250 mW, 500 mW, 1W, 2W, 4W, 8W
Input Power	9 – 32 VDC
Interfaces	<ul style="list-style-type: none"> • USB On-the-Go • Ethernet • Serial Data • RF SMP
Data Rate	Throughputs of 50+ Mbps supported
Operating Temperature	-40°C to +55°C (-40°F to +131°F)
Security	Built-in AES-256 COMSEC/TRANSEC
Environmental	MIL-STD-810G, IP41
Waveforms	<ul style="list-style-type: none"> • TSM <ul style="list-style-type: none"> – Barrage Beamforming (optional) • Katana NB (optional) • Katana WB* (optional) • Seismic A/J* (optional) <p>* Will be supported upon release.</p>

Networking	
Network Coverage	<ul style="list-style-type: none"> • Barrage Relay • Multi-hop – 205 miles (330 km) per hop • Hosts multiple waveforms • Robust in Harsh RF Environments • Throughputs of 50+ Mbps supported
Communication Services	<ul style="list-style-type: none"> • Relay node for TSM services (Data, PLI) • External GPS • IP Support – IPv4, IPv6; Unicast, Multicast, Broadcast; TCP, UDP
Security	AES-256 Encryption (AES Standard – FIPS 197)
Application Support	<ul style="list-style-type: none"> • 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.

Globally Trusted. Mission Proven.

TRELLISWARE.COM

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).

