



Tactical Radio Module for Unmanned Systems

Bittium Tough SDR Unmanned™ connects unmanned land, air, and maritime systems seamlessly into Bittium's resilient, IP based tactical network.

Built on the proven Tough SDR platform, it enables secure command and control, real-time sensor data exchange, and MANET networking for reusable unmanned systems operating in high threat and electronically contested environments.

Designed for integration into unmanned platforms, Tough SDR Unmanned brings the same battle proven performance they expect from manned tactical radios—ensuring that unmanned assets are not isolated links, but fully participating nodes in the tactical network.

Tough SDR Unmanned is optimized for reusable, medium to large unmanned systems, enabling them to support maneuvering forces, extend network coverage, and act as mobile relay nodes between dismounted units, vehicles, sensors, and command posts.

For more information, please contact:
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Key Capabilities

Seamless integration into tactical MANET – unmanned systems operate as full network nodes within self-forming and self-healing IP networks

Secure command & control and sensor data links – supports remote control and real-time transmission of ISR and mission data across the network

Operation in contested and beyond line of sight environments – resilient connectivity designed for environments exposed to jamming and interference

Common waveforms and interoperability – compatible with tactical waveforms provided by Bittium, enabling unified communications across manned and unmanned assets

Features

- Frequency range 30 MHz to 2500 MHz
- Transmit power up to 5 W (PEP) ($f < 1$ GHz), 3 W (PEP) ($f > 1$ GHz), adjustable
- Channel bandwidth 25 kHz to 10 MHz
- Input voltage 9 V DC to 33 V DC with 10.8 V DC nominal operating voltage
- Environmental and EMC standards
 - MIL-STD-810H
 - MIL-STD-461G
- Control and configuration
 - REST API
 - Web-UI standalone control and configure

Waveforms and security

- Supported waveforms
 - Bittium TAC WIN,
 - ESSOR High Data Rate Waveform (STANAG 5651)
 - Bittium Narrowband Waveform
- Data rate Up to 36 Mbps with TAC WIN, waveform and link-condition dependent
- Latency with TAC WIN: end-to-end latency typical value < 12 ms (low latency mode) / < 20 ms (normal mode)
- Network integration: IP-based tactical communications environment; MANET / point-to-point / point-to-multipoint
- Relay capability: Supports mission concepts requiring coverage extension and beyond-line-of-sight communications support
- COMSEC (AES256) and TRANSEC
- Red/black separation
- Secured boot
- Tampering detection and response
- Emergency erase

As part of the Bittium Tough SDR™ product family, Tough SDR Unmanned complements handheld and vehicular radios, extending resilient tactical communications across all domains and platforms—manned and unmanned alike.

Interfaces

- RF TNC(f)
- GNSS SMA(f)
- WLAN SMA(f)
- System connector (customizable): DC power, USB PD, 10/100M Ethernet and USB 2.0
- Device and WF status LEDs
- Power button and two operating buttons

Mechanical

- Temperature range, Operating: -40 °C to $+55$ °C
- Temperature range, Storage: -40 °C to $+85$ °C
- Ingress protection class
 - IP67, for mated connectors
- Dimensions 160 x 92 x 44 mm
- Weight 730 g
- Material: surface treated aluminum alloy

Bittium product code S0000036411
NCAGE A850G

