



ITT

SpearNet Team Member Radio

The smallest combat proven wideband data radio providing advanced wireless, ad-hoc networking.



Photos courtesy of the U.S. D.O.D. and ITT Corporation.

Engineered for life

SpearNet Team Member Radio

ITT's next generation of UHF radio

Today's dismounted Soldier needs compact and secure networked communications that are not limited by traditional radio frequency line of sight. SpearNet is a 21st century communications system that brings voice, Situational Awareness (SA) and inter-networking access that surpasses traditional point-to-point communication system limitations on range and data rate.



Wireless Integration

SpearNet's mobile ad hoc network provides voice, integrated GPS with SA reporting, and data transfer (100 - 1500 kbps) across dismounted networks spanning 6 km. SpearNet maintains voice/data communications within difficult environments such as tunnels, ship cargo holds, fast moving vehicles and buildings.

SIP/VoIP Networks

SpearNet includes SIP/VoIP for interconnection with telephone networks. SIP provides the ability, when connected with a backhaul capability such as SATCOM and a SIP server, for the deployed Soldier to speak directly and securely with his in-country commanders. Also available are high speed data transfer (>1 Mbps for video surveillance or mission plans) and selectable GPS position reporting.

IP Infrastructure

Simple to use, lightweight and robust, this radio works using an IP infrastructure communication system. The radio can be configured as an IPv4 router connecting its RF, Ethernet, and USB interfaces to allow seamless interconnection of IP compliant computers, sensors, cameras, and other tactical networks. Each radio is AES256 encrypted, providing each individual soldier with secure communications from any potential enemy.

Mobile Ad-hoc Networking (MANET)

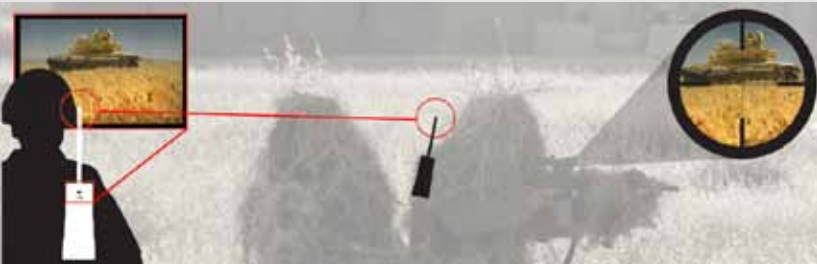
The SpearNet is a MANET radio which maximizes net coverage at all times, especially in urban environments and conditions where normal one-hop/point-to-point radios are unable to maintain coherent network coverage. Being a low latency multi-hop radio means that the range is only required to the next Soldier. Having multiple active SpearNet radios creates a network and consequently the range is extended. The Soldier does not need to manually update the radio; it is self-healing and rapidly updates the network as connectivity changes. This is transparent to the individual Soldier who can concentrate on his primary task without the worry of a 'no-comms' scenario.

Video Streaming

SpearNet has a proven high speed data capability which can provide near real-time video streaming and can even allow for satellite or aerial imagery to be sent to individuals. Connecting a PDA or laptop will allow the Soldier to view updated images supporting what he is actually seeing with his own eyes. This can assist with rapid tactical decision making when timing is critical.

Vehicular Mount

The radio system will have a vehicular adapter with 20W power amplifier available in 2010. This will significantly increase the point-to-point and the overall networking range of the radio system. System predictions have shown a minimum of 8 km point - point range should be expected when the system is available. A networking range of 30 - 40 km could be expected with properly placed relays. The vehicular adapter has two Ethernet, one USB, vehicular intercom, vehicular loudspeaker, and remote control unit interfaces.



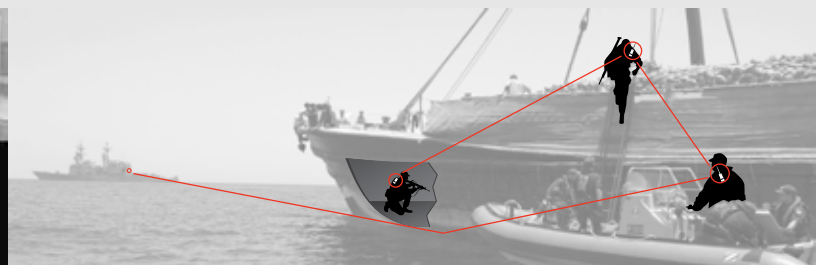
SNIPER



DISMOUNTED



SATCOM



MARITIME

Specifications

Key Features

Smallest wideband networking radio

- 19.61cm H x 7.59cm W x 4.75cm - 3.05cm D (7.72" H x 2.99" W x 1.87" - 1.20" D)
- < 700g (1.5 lbs) including battery
- Secure voice, data and video
- IPv4 for inter-networking with SATCOM and long-range radio systems
- SIP protocol for worldwide telephone access
- Superior performance to single channel radios in today's jamming environment

Vehicular Characteristics

- 2 - 20 W configurable
- Intercom, Ethernet(2), USB Loudspeaker
- Remote Control
- Battery charger

Functions

Embedded GPS (CA) with selectable reporting

- Standard interfaces (Ethernet, USB, RS-232)
- 8 channel pre-sets
 - Dual PTTs
 - 16 voice talk groups

Transmitter Characteristics

- Transmit power up to 600 mW transmit power
- Nominal 1.5 km range per hop; demonstrated at 6 km with 5 hops

Environmental

- Operating Temperature: -20°C to +55°C
- Meets MIL-STD-810F: humidity, rain, dust, drop, loose cargo, salt fog, immersion to 1 m (3'), altitude
- MIL-STD-461 EMI

Performance

- Operating bands
 - 1.2 - 1.4 GHz tunable
- Direct Sequence Spread Spectrum for optimal urban operation
- Maximum 6 Mbps transmission data burst rate, 1.5 Mbps sustained
 - Multi-channel CSMA/CA channel access algorithm
 - Adaptive Transmission Protocol (ATP) continuously adapts data rate and coding to link conditions
- Networking
 - Self-organizing, self-healing
 - Multi-hop inter-networking
 - Tactical LAN on the move (no server required)

Security

- Customer-specific, proven AES 256-bit encryption
- Customer selectable TRANSEC



Vehicular Mount

SpearNet Peripheral and Equipment Options



SpearNet Radio

Available in Green, Tan and Black



Pouches

A variety of colors and styles to fit every tactical situation

Batteries, Battery Chargers and Power Adapters

Rechargeable batteries, multibay chargers and adapter accessories available



Antennas

Options available to meet RF, GPS and vehicular needs



Headsets

Clear communications with acoustic or bone conduction technology. Mounting options include: helmet mounted, low profile, modular and headband styles

Radio Access Unit (RAU)

Controls radio functionality and allows connectivity to an array of useful devices





ITT

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