LAW-NR
LAW Tactical 802.16 Based Advanced Network Radio

Seamless communications for demanding digital voice, video, data needs.

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The LAW-NR radio provides a seamless, flexible, on-the-move, IP voice, video, and data wireless networking capability for vehicular and ground-to-air high-speed networks.

The LAW-NR software defined radio, external power amplifier, and antenna system is available in both C-Band and S-Band models.

With rack, vehicle, and pole mount options, the system can be configured for stationary tower and on-the-move vehicular applications. Optional directional, high-gain antenna solutions are available for extended range air-to-ground networking. Leveraging proven OFDM technology to deliver high-speed Ethernet throughput, the LAW-ANR utilizes the LAW Tactical 802.16 waveform software application. The LAW Tactical waveform provides support for TRANSEC security, high-speed mobility, operation in high-noise environments, and network robustness. It is interoperable with the Aeronix LAW-ANR software defined radio.

Features:

- Supports vehicular ground, air, and sea platforms with the capability to support 13 lbs payload and 80 W. input power.
- Provides up to 47 Mbps of user data throughput, burst data rate 72 Mbps
- TRANSEC: AES encryption with 256 bit key (no latency)
- Doppler correction for ground-to-air and air-mobile operation
- Implements the Point to Multi-point portion of the IEEE 802.16-2004 Specification
- Software field reprogrammable
- QoS over HAIPE support
- Configurable to 250 miles, tested to 100 miles.
- Available in single channel SISO configurations.

Applications

C^2, VoIP, Data, Video, including:

- **On-the-Move Vehicular** - Flexible, on-the-move voice, video, and data link
- **Backhaul** - Supports applications in which high bandwidth, long range throughput is required
- **Air Relay** - Over-the-hill communications link for VoIP voice, data, video, and imagery.
- **Long Distance Direct Distribution** Direct distribution of imagery and

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Networking

Waveform	LAW Tactical 802.16 Waveform with modulations for: BPSK, QPSK, QAM16, QAM64, 8PSK, 16PSK
Network: Point to Multipoint	Network includes one Base-Station with multiple Subscribers. A total of 20 subscribers are supported.
Network::Point-to-Point	High performance mode with reduced overhead . User configured mode via GUI.
Uplink / Down Link Ratio	Ratio is user configurable via GUI slide bar. Max = 70%, Min = 30% of aggregate throughout.
Network Routing	Routing configuration via automatic setup modes and user configuration
IP Support	IPv4 and IPv6 Support
Operating System	Linux general purpose processor operating system
Channel Tuning Steps	1 MHz channel tuning steps are user configurable via the GUI. Tuning is SW upgradeable to custom steps if required.
Uncoded Burst Rate (Mbps)	72 Mbps maximum radio burst transmission capability at maximum channel width

Management Features

Remote Management	Radios can be configured remotely over the network via USER login to the GUI
User Interface	Web Based GUI Serial Command IF SNMPv3 Capable
Software Selectable Base/ Subscriber Station	Radios can be configured via GUI selection as either a base-station or subscriber-station.
LED Status	LED status is available for BS/SS Configuration, Tx Status, Rx Status, and Alarm

Security

TRANSEC Cover	AES256 Cover for network management information. Configured on/off via user GUI.
Data Cover	AES256 Cover - Decover for data. Configured on/off with TRANSEC control above.
DSCP QoS Capability	Support for QoS over HAIPE via user GUI configuration
Pedigree	U.S. design and manufacture
FIPS 140-2	Ready

Radio Specifications

RF Freq.	C-Band: 4.6-4.8 GHz Unlicensed 5.8 GHz. S-Band
Channels Supported	9 / 12 (C-Band) 3 (S-Band)
Channel BW	10 and 20 MHz
Channel Tuning Steps	Configured in 1 MHz steps via GUI
RF Output Power	Radio 0 dB External power amplifier provided as option
Noise Figure	< 8.5dB (C-Band)

Connector Interfaces

Network I/O	Ethernet 10/100/1000
Low Speed I/O	RS232
Timing I/O	1PPS
Smart Antenna / PA Interface	Proprietary Interface
RF	Tx—TNC Male Rx—N-Male

Physical Characteristics

Size	8.0" x 8.5" x 2.75" Rack Mount 8.0" x 8.5" x 3.6" Vehicle Mount 8.0" x 8.5" x 3.6" Pole Mount
Weight	~ 10 lbs.
Power	< 80 Watts (includes PA), Power supply via POE or 10-52 VDC

Environmental

Chassis	Sealed, Weatherproof
Shock	Vehicular ready
Cooling	Conduction

Future Enhancements

Waveform	MESH / MANET Preliminary Avail. 4Q2014