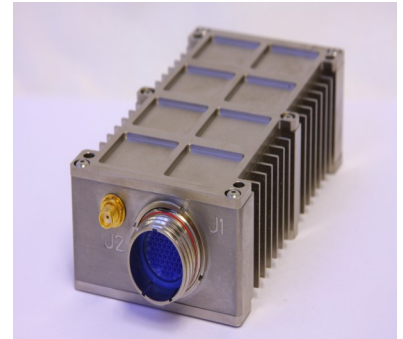


# EDL Digital Data Link

Small, Affordable, Lightweight, Modular

The Aeronix 802.16 UAV Data Link is a sealed, small, affordable, lightweight, modular, and scalable data link that enhances a mini UAV's security and range. Aeronix can customize the packaging and functionality to meet customers' requirements. The 802.16 UAV Data Link provides guaranteed UAV control, high quality video transmission, data security, and adaptive data rates with flexible bandwidths for extended range. The size, weight, and power consumption is perfect for small and mini unmanned vehicles.

At approximately 22 cubic inches, and less than 12 ounces, the 802.16 UAV Data Link currently provides the capability of inter-flight communications (command and control, video, etc.) to and from a UAV. Its software programmable architecture provides greater flexibility in waveform choice and allows users to easily upgrade to future waveforms without changing hardware.



## Tactical 802.16+

- AES TRANSEC with 256 bit key (no latency).
- Additional PSK modulation modes.
- Software Reprogrammable as needed for application specific requirements.
- Doppler correction for ground-to-air and air-to-air operation.
- Supports 1PPS Reference for enhanced timing performance.
- Implements the Point to Multi-point portion of the IEEE 802.16-2004 Specification.
- QOS built into 802.16 waveform.
- SCA Compatible architecture.
- Waveform supports distances to 250 miles.
- **Waveform of ARMY WIN-T LAW Radio**

## Applications

C<sup>2</sup>, VoIP, Data, Video, including:

- **Air Relay** - Over-the-hill communications link for VoIP voice, data, video, and imagery.
- **UAV Data Link** - High speed secure data link form UAV to ground collection station.
- **Long Distance Direct Distribution** Direct distribution of imagery and information to soldier soldiers on the move. Low speed backhaul to carry health and position information.



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Networking	
Network: Point to Multipoint	<ul style="list-style-type: none"> <li>• Network includes 1 Base with multiple subscribers</li> <li>• Total of 20 subscribers Supported / Tested</li> </ul>
Network: Point-to-Point	<ul style="list-style-type: none"> <li>• User configured mode for optimized performance</li> </ul>
Uplink / Down Link Ratio	<ul style="list-style-type: none"> <li>• Ratio is user configurable via GUI slide bar. Max = 70%, Min = 30% of aggregate throughput.</li> </ul>
Network Routing	<ul style="list-style-type: none"> <li>• Routing configuration via automatic setup modes and user configuration</li> </ul>
IP	<ul style="list-style-type: none"> <li>• IPv4 and IPv6 Support</li> </ul>
Operating System	<ul style="list-style-type: none"> <li>• Linux general purpose processor operating system</li> </ul>

Radio Characteristics	
Channel Tuning Steps (HMz)	<ul style="list-style-type: none"> <li>• Channel tuning steps are user configurable via the GUI, SW upgradeable to custom steps if required.</li> </ul>
Uncoded Burst Rate (Mbps)	<ul style="list-style-type: none"> <li>• Maximum radio burst transmission capability at maximum channel width (Mbps) of 28</li> </ul>
User Ethernet Rate (Mbps)	<ul style="list-style-type: none"> <li>• 17</li> </ul>
IF Frequency	<ul style="list-style-type: none"> <li>• Baseband</li> </ul>
Noise Figure (dB)	<ul style="list-style-type: none"> <li>• &lt; 4</li> </ul>

Security	
TRANSEC Cover	<ul style="list-style-type: none"> <li>• AES256 Cover - Discover for network management information. Configured on/off via user GUI.</li> </ul>
Data Cover	<ul style="list-style-type: none"> <li>• AES256 Cover - Discover for data. Configured on/off with TRANSEC control above.</li> </ul>
DSCP QoS Capability	<ul style="list-style-type: none"> <li>• 1Q12 Support for HAIPE Qos Descriptors via user GUI</li> </ul>
Pedigree	<ul style="list-style-type: none"> <li>• U.S. design and manufacture</li> </ul>

Management Features	
Remote Management	<ul style="list-style-type: none"> <li>• Radios can be configured remotely over the network via USER login via GUI</li> </ul>
SNMP Remote Management	<ul style="list-style-type: none"> <li>• SNMPv3 Capable</li> </ul>
Multi-Vendor Interoperable	<ul style="list-style-type: none"> <li>• Tactical 802.16 has been ported to radios for BAE, General Dynamics, and Aeronix</li> </ul>
Software Selectable BS /SS	<ul style="list-style-type: none"> <li>• Radios can be configured via GUI selection as either a base-station or subscriber-station.</li> </ul>

Physical Characteristics	
Size	5.2" x 2.75" x 1.48"
Weight	~ 12oz
Power	< 10 watts

Performance	
Data Throughput	<ul style="list-style-type: none"> <li>• 28 Mbps max Over the Air</li> <li>• 17 Mbps IP traffic</li> </ul>
Sensitivity	<ul style="list-style-type: none"> <li>• -95 dBm @ 3.5 MHz Bandwidth with BPSK (SNR of 6 dB)</li> </ul>
Compression	<ul style="list-style-type: none"> <li>• H.264, MPEG 2 Video</li> <li>• Adjustable Compression Rate</li> </ul>
User Interface	<ul style="list-style-type: none"> <li>• Serial Command IF</li> <li>• Web Based GUI</li> </ul>

Environmental	
Altitude	<ul style="list-style-type: none"> <li>• Up to 60,000 ft</li> </ul>
Shock	<ul style="list-style-type: none"> <li>• 150g (z axis), 50g (x,y)</li> </ul>
Chassis	<ul style="list-style-type: none"> <li>• Sealed</li> </ul>
Cooling	<ul style="list-style-type: none"> <li>• Conduction cooled</li> </ul>

Specifications	
RF Interface	<ul style="list-style-type: none"> <li>• Single RF connector</li> <li>• 2.4GHz wireless frequency</li> <li>• Supports 3.5, 7, 14 MHz BW</li> <li>• Supports 12 channels</li> <li>• 700mW RF output (2W peak PA)</li> </ul>
Media Interfaces	<ul style="list-style-type: none"> <li>• Ethernet 10/100</li> <li>• Telemetry RS232</li> <li>• 1PPS</li> <li>• RS170/NTSC video In/Out</li> <li>• Audio capable</li> </ul>
Modulations	<ul style="list-style-type: none"> <li>• BPSK, QPSK, QAM16, QAM64, 8PSK, 16PSK</li> </ul>
Processing Capabilities	<ul style="list-style-type: none"> <li>• 300 MHz Arm 9</li> <li>• 600 MHz DSP</li> <li>• 256 MB RAM</li> <li>• 128 MB Flash</li> </ul>

Enhancements	
Waveform	<ul style="list-style-type: none"> <li>• Relay option</li> <li>• Ad Hoc Mode in 2012</li> </ul>



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