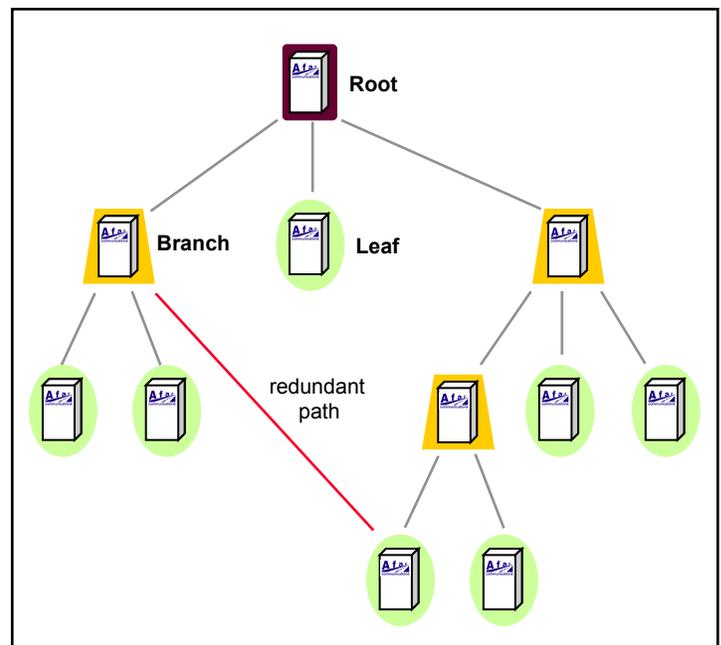- **900 MHz or 2.4 GHz ISM bands (license free)**

- **Distances in excess of 50 miles (80 km)**

- **Rugged waterproof outdoor enclosure (IP66) powered over Ethernet reduces RF coax cable losses and cost**

- **Industrial operating temperature range**

- **Flexible network topologies from simple point-to-point to complex mesh/tree networks**

- **Optional roaming supports mobile nodes**

- **Remote management through Telnet, SNMP or "Afar Ethernet Console"**

- **Outstanding performance even in crowded spectrum conditions**

- **Optional AES or triple DES encryption on all wireless data**

The Afar radios are designed from the ground-up to operate in industrial environments and provide reliable and dependable links in the most challenging conditions.

The design emphasizes link robustness and reliability over speed. Our radios occupy a much narrower RF bandwidth than other unlicensed devices. This allowed us to achieve outstanding receiver sensitivity, larger number of non-overlapping channels, and improved resilience to interference.

The network is scalable with the same device supporting simple point-to-point links, point-to-multipoint, and our versatile Mesh/Tree topology (see figure) where any radio can serve as the access point to radios downstream. You can also install radios in mobile platforms that will automatically roam and stay connected to the fixed network. Very simple to install and deploy, the radios find their place in the network and route packets through the minimum number of hops to reach their destination.

The various models allow you to choose between 2.4 GHz or 900 MHz bands (where allowed) with different RF occupied bandwidths that trade-off throughput for higher sensitivity and more non-overlapping channels.

RF Specifications	AR-9010E	AR-9027E	AR-24010E	AR-24027E	AR-24110E
RF Frequency Band (MHz)	902 to 928	902 to 928	2400 to 2483	2400 to 2483	2400 to 2483
Signal Bandwidth (-20 dBc)	1.6 MHz	4.6 MHz	1.6 MHz	4.6 MHz	17 MHz
RF Channels (non-overlap)	13	4	35	11	4
Transmitter Output Power:	0 to 27 dBm	0 to 27 dBm	0 to 27 dBm	0 to 27 dBm	0 to 27 dBm
Receiver Sensitivity (10^{-6} BER) and Data Rates	(dBm) (kbps) -103 @ 100 -100 @ 200 -98 @ 550 -95 @ 1100	(dBm) (kbps) -100 @ 250 -97 @ 500 -95 @ 1375 -92 @ 2750	(dBm) (kbps) -100 @ 100 -97 @ 200 -95 @ 550 -92 @ 1100	(dBm) (kbps) -98 @ 250 -95 @ 500 -93 @ 1375 -90 @ 2750	(dBm) (kbps) -94 @ 1000 -91 @ 2000 -89 @ 5500 -86 @ 11000
Maximum Receive Signal	-30 dBm (to stay in receiver linear region) +20 dBm (to avoid damage)				
Modulation Type	direct sequence spread spectrum				

Ethernet Port					
Speed	10/100 BaseT, full/half duplex, auto-negotiate				
Connector	8 pin circular (Lumberg 0321-08) - RJ45 at the power inserter				

Networked Operation					
Network topologies	Point-to-point, point-to-multipoint, Mesh/Tree, Linear Network, Loop, Roaming				
Management	Telnet, SNMP (MIB2), or Econsole reach any node over wireless				
Security	DES, Triple-DES, AES-128, AES-256 encryption, 32 bit network ID / password.				

Console / Diagnostic Port					
Interface	RS-232/V.24, asynchronous 9600 to 115 kbaud				
Connector	3 pin circular (Lumberg 0321-03) - cable adapter to DB9 available				

Power					
Input Voltage	DC: Power over Ethernet (IEEE 802.3af) or +10 to +58 VDC AC: 100 to 240 VAC (with external power inserter)				
Power Consumption	Idle (link up with little or no data): 1.5 W Rx: 2.8 W Tx: 5.0 to 7.5 W (depending on tx power)				
Transient Max. Peak Power	1500W (with 10/1000 us waveform)				
Transient Max. Peak Current	35 A (with 10/1000 us waveform as defined by R.E.A.)				

Environmental					
Temperature	-40 to +70 deg C (-40 to +158 deg F)				
Max. Humidity	Up to 95% non-condensing				
Water and dust protection	IP66 (Ingress Protection Rating per IEC 60529)				

Mechanical					
Dimensions	4.72" wide x 8.66" high x 2.20" deep (120mm W x 220 H x 56 D)				
Weight	3.4 lbs. (1.5 kg)				

Feb 2015 – Subject to change without notice