AvaLAN WIRELESS

# 2.4 GHz Outdoor Wireless Ethernet Radio

This robust and reliable product allows you to build non-line-of-sight, point-to-point and point-to-multipoint wireless Ethernet connections that connect "fringe" IP devices, including IP access control readers, remote printers, remote PCs, VoIP phones, point-of-sale devices, digital signage or industrial control devices.

Two versions are available: a preconfigured matched pair point-to-point Ethernet bridge — the AW2400xTR-PAIR and a single radio — the AW2400xTR, configurable as an access point or client in point-to-multipoint applications.
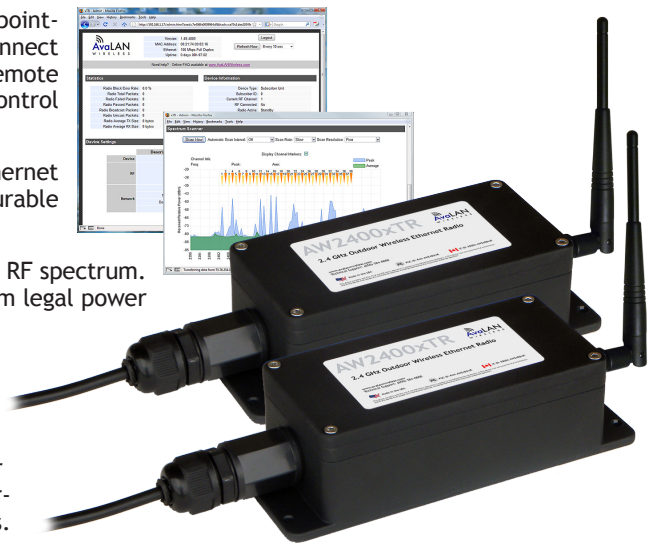
The 2.4 GHz band is the most globally accepted unlicensed portion of the RF spectrum. AvaLAN's unique solution offers 29 non-overlapping channels and maximum legal power to provide five times the range of Wi-Fi through walls or line-of-sight.

The AW2400xTR is packaged in a weatherproof rugged cast aluminum enclosure that meets the IP66 Standard for water and dust resistance. It is equally at home in a factory full of machinery or atop a power pole.

The AW2400xTR radios include a built-in web browser interface for remote configuration, status monitoring and firmware update. This interface also provides a spectrum analyzer to help diagnose interference issues.

This technology is also available in an OEM module for integration into your own system. See the AvaLAN AW2400mTR-EVAL Evaluation Kit and the AW2400mTR-10 Module 10-Pak.

AvaLAN's products offer the ideal combination of price, range, data rate, security, interference avoidance, quality-of-service, and a simple plug and play set up with minimal user programming required.
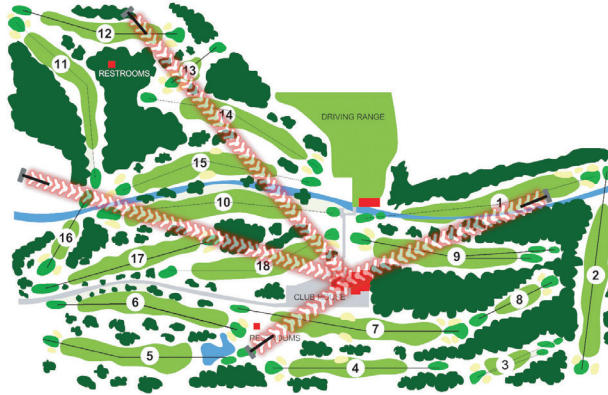
# Features

- Outdoor IP66 cast aluminum enclosure for industrially hardened applications

- 29 non-overlapping channels providing unique flexibility to avoid or penetrate interference

- Five times greater range than Wi-Fi, through walls or line-of-sight

- Up to 30 mile range to connect to difficult locations

- 128 bit AES encryption, FIPS 197 - NIST Certified

- Browser interface provides easy user-programming, remote diagnostics and link analysis including a graphical RF spectrum analyzer

- Can operate up to 29 access points, each on its own non-overlapping channel with up to 16 clients per access point

- 4 Watts EIRP, Maximum legal radiated power for long range penetration

- One Watt power consumption is ready for solar applications

- -40° to +75°C for extreme temperature operation

- Power over Ethernet for easy single cable installation

**Screen Captures:**
Web Browser Interface

# Application Example

Ultra-long-range, point-to-multipoint wireless system transmitting Ethernet data across golf course

# Technical specifications

| Characteristic | Specification/Description |
|---|---|
| RF transmission rate | 1.536 Mbps |
| Ethernet data rate | 935 Kbps |
| RF Output Power | +21 dBm (4 Watts EIRP with 15 dBi antenna) |
| Receiver Sensitivity | -97 dBm at $10^{-4}$ Bit Error Rate |
| Range | Up to 40 miles line-of-sight with 15 dBi antennas |
| RF channels/bandwidth | 29 non-overlapping with 2.0833 MHz spacing and 1.75 MHz bandwidth, automatic or manually selectable via web browser interface |
| Connector types | RF: RPTNC Female / 10/100 base T Ethernet: RJ-45 |
| Data Encryption | 128-bit AES, FIPS197, keys set through password-protected browser interface |
| Error correction technique | Sub-block error detection and retransmission |
| Adjacent band rejection | SAW receiver filter attenuates cellular and pager interference |
| Power regulation | Built-in switching regulator |
| Browser management tools | QoS Statistics, Network Settings, Spectrum Analyzer, Firmware Upgrade |
| Power consumption | Transmit: 1.7 Watts    Receive: 0.8 Watts |
| Voltage | 9 to 48 VDC via unused pins in RJ-45 jack - pins 4,5 positive, 7,8 ground |
| Power regulation | Switching regulator |
| Transmit current draw | 140 ma at 12 VDC |
| Operating Temperature Range | -40 °C to +75 °C |
| Enclosure | Die cast aluminum, powder-coated, gasket-sealed connectors and cover. Meets IP66 for water and dust resistance. |
| Size | 6 by 8 by 20 cm, 0.8 Kg, connectors included<br>Mounting holes on bottom flange, 52 by 190 mm, 4 mm dia. |

# Ordering Information

### AW2400xTR

2.4 GHz Outdoor Wireless Ethernet Radio
Contents:
- (1) AW2400xTR Radio
- (1) AW2-2400 Omnidirectional Antenna
- (1) AW-POE Power Over Ethernet Injector
- (1) 110 VAC to 12 VDC power adapter

### AW2400xTR-PAIR

2.4 GHz Outdoor Wireless Ethernet Bridge
Contents:
- (2) AW2400xTR Radios
- (2) AW2-2400 Omnidirectional Antennas
- (2) AW-POE Power Over Ethernet Injectors
- (2) 110 VAC to 12 VDC power adapters

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