EION WIRELESS

Street WiFi
Outdoor WiFi for Coverage of Urban Streetscapes

OPTIMIZED FOR STREET COVERAGE

STREET WIFI PRODUCT FEATURES

- Fully integrated for quick setup and installation

- Antenna design optimized for street coverage of urban corridors

- Enhanced sensitivity for superior performance

- Outdoor AP supports operation in 2.4 GHz or 5.8 GHz bands

- Support for IEEE802.11a/b/g/n client devices

- Up to 300 Mbps data rate per radio

- Operates as standalone AP, or as part of a managed Campus Network

- 2 x 2 Spatial Diversity MIMO (Multiple-In/ Multiple Out) antenna with high receive sensitivity

- Gigabit Ethernet interface

- Ruggedized outdoor enclosure, IP67 for operation in harsh environmental conditions

STREET WIFI OVERVIEW

EION Street WiFi is an outdoor 802.11 WiFi hotspot designed for optimal coverage of urban streetscapes. The innovative helical antenna signal pattern provides exceptional coverage along the street without wasting power. The circular polarization of the integrated antenna means that end user devices such as laptops, smart phones and tablets do not need to be 'aimed' at the Street WiFi access point.

Applications include outdoor WiFi coverage, municipal free-wifi zones, outdoor campus wifi for schools and hospitals, wifi hotspots in airports, trains stations and bus stations or when facing coverage design challenges with traditional omni-antenna based WiFi solutions.

The product is fully integrated for simple outdoor installation on a pole, wall or telephone pole or light standard. Street WiFi variants are available in 2.4 GHz, 5.8 GHz or dual-band operation.

EION's Street WiFi uses these multipath reflections to its advantage to boost the signal and improve reception and reach of the system.

ADVANTAGES

Antenna Pattern

The lobe of coverage from the Street WiFi is the ideal shape for covering a street or tunnel. This lends itself to several advantages such as the elimination of "deadzones", reduction of co-channel interference due to efficient placement of APs and minimal spill-over into side streets.

Lower TCO

When compared to omni-based WiFi systems, the number of Access Points required to cover a given length of street is very low. For operators this means fewer nodes to manage, fewer installation sites and less equipment to purchase. The CPAEX and OPEX savings both contribute to a significant reduction in the Total Cost of Ownership for a WiFisystem suited to this type of coverage.
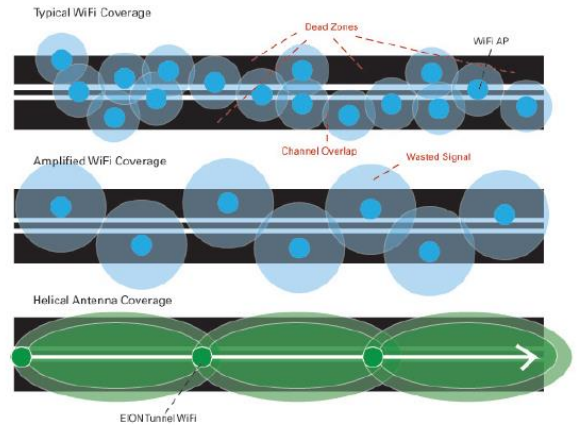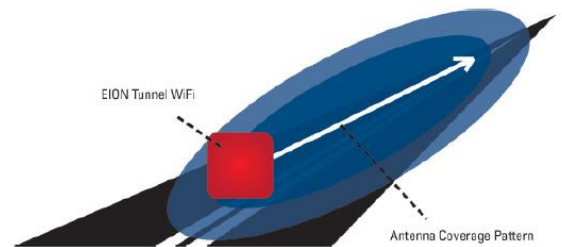
Circular Polarization

Street WiFi uses circular polarization which means that the device can be pointed in any orientation for best performance. End users are not required to aim the device at the AP to get a connection.

Multipath Reflection

The RF environment inside a confined tunnel or within an urban canyon created by rows of buildings on either side of the street is far different than an open air system. EION's Street WiFi uses these multipath reflections to its advantage to boost the signal and improve reception and reach of the system.

RANGE EXPECTATIONS

- Corridor up to 2 Km at -75 to -80 dBm predicted assuming 0-1 dBi antenna on cell phone

- No Coverage on side streets beyond 200 to 300 Meters is expected – rapid fall off

- Minimum Height of Base Antenna is 12 meters - lower too much clutter on street will block pattern

EION Tunnel WiFi

Antenna Coverage Pattern

Typical WiFi Coverage

Dead Zones

WiFi AP

Amplified WiFi Coverage

Channel Overlap

Wasted Signal

Helical Antenna Coverage

EION Tunnel WiFi

Street WiFi offers lower TCO.

The number of Access Points required to cover a given length of street is very low.

Street WiFi

Radio

Modes Supported	Access Point, Station, Station WDS, Repeater WDS, Wireless Adapter, Station + Router, Access Point + Router
Antennas	Integrated Twin-Helical Antennas, RHCP standard
Frequency	802.11, 2.4 GHz and 5.8 GHz
Channel Size	Normal 20 MHz; Turbo 40 MHz
Modulation	Standard 802.11 rates; MCS 0 to 15 (6.5 to 300 Mbps physical data rates); BPSK, QPSK, 16-QAM and 64-QAM
Output Power	up to +26 dB per Tx chain

Receiver Sensitivity (BER = 10^{-6}) +/- 2dB

Modulation	20 MHz	40 MHz
MCS0- BPSK	-95 dBm	-92 dBm
MCS1 - QPSK1/2	-93 dBm	-90 dBm
MCS2 - QPSK3/4	-90 dBm	-87 dBm
MCS3 - 16-QAM1/2	-89 dBm	-84 dBm
MCS4 - 16-QAM2/3	-85 dBm	-81 dBm
MCS5 - 64-QAM2/3	-81 dBm	-77 dBm
MCS6 - 64-QAM3/4	-79 dBm	-76 dBm
MCS7 - 64-QAM5/6	-75 dBm	-74 dBm

Duplexing Format	TDD, Half Duplex

Network Support

Medium Access Control	Standard 802.11 abgn
Network Connection	Auto MDI-X RJ45 10100/1000 Mbps Ethernet, Auto Negotiation
Traffic Management	WMM
MAC Filtering	Filtering through Standard MAC address
DHCP	DHCP server in AP controlling wireless side, NAT
IPv6	IPv6 pass through in bridge mode

Wireless Networking

Output Power Management	Manual
SSID	4 per radio

Security

Management Access	Username and Password
Encryption	WEP Open System, WEP Shared Key, WPA-PSK, WPA2-PSK, WPA-PSK/WPA2-PSK Mixed Mode

Management

Remote Management	Web-GUI, SNMPv2
Management Access	Over the Air & Wired
Backup Configuration	Download backup configuration files
Software Upgrade	via Web-GUI

Physical, Electrical & Environmental

Mounting Bracket	2-Axis ruggedized bracket for pole or wall mount
Enclosure	Outdoor Die Cast Metal Ruggedized NEMA 4x; IP67
Relative Humidity	0 to 100%, condensing
Operating Temperature	-30° C to +70° C
Dimensions	2.4 GHz: 230mm × 230mm × 373mm 5.8 GHz: 230mm x 230mm x 330mm
Weight	2.75 kg
Input Voltage	100-240V, 50/60 Hz AC with 48V PoE 802.3af
Power Consumption	<16 W
Lightning Protection	Built-in ESD
Environmental	RoHS and WEEE

Ordering Information

9150-0040	Street WiFi 2.4 GHz - Outdoor WiFi Access Point with integrated 2.4 GHz Helical Antenna for Coverage of Urban Streetscapes
9150-0050	Street WiFi 5.8 GHz - Outdoor WiFi Access Point with integrated 5.8 GHz Helical Antenna for Coverage of Urban Streetscapes
9150-0060	Street WiFi Dual Band - Outdoor WiFi Access Point with integrated 2.4/5.8 GHz Helical Antenna for Coverage of Urban Streetscapes

Box Contents

Each Box Contains the Following	1 x Outdoor WiFi Radio with Integrated Helical Antennas 1 x GB PoE Injector 1 x Pole mounting bracket 1 x Grounding Lug 1 x Ferrite Bead 1 x Quick Start Guide

EION WIRELESS

INTELLIGENCE IN THE AIR