AirMagnet Enterprise SmartEdge Series 4 Sensor

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Fluke Networks

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USA

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Special Notes

AirMagnet Enterprise SmartEdge Series 4 Sensor technical documentation (in PDF format) can be downloaded by registered customers from the "Documents / Downloads" section of their My AirMagnet account. See
http://airmagnet.flukenetworks.com/my_airmagnet/

Introduction

AirMagnet Enterprise SmartEdge Series 4 Sensor represents the next generation in 3X3 11n sensor technology.

AirMagnet Enterprise SmartEdge Series 4 Sensor is a new generation of the AirMagnet SmartEdge Sensor family. It features the new high performance 1.8 GHz ARM based processor, a 10/100/1000 MB Ethernet Base-T port with IEEE 802.3af Power over Ethernet (PoE) compliance, one or two 802.11n 3X3 3 stream 450mbps radios and a spectrum analyzer option.

Sensors that include the Wi-Fi spectrum analyzer option can identify and monitor virtually all sources of RF activity in the unlicensed bands that 802.11 networks share with other devices (such as cordless phones and headsets, Bluetooth devices, microwave ovens, etc.). This provides network engineers with remote visibility of the RF environment in which their WLANs operate so that they can proactively enhance their WLAN's performance and security in the face of interferers, network congestion, and security attacks.

Sensors that include the Cellular spectrum analyzer option identifies and monitors GSM, CDMA, UMTS and LTE. Scans frequencies between 698 MHz and 2690 MHz (with support for 2G/3G/4G). It can detect and identify the occurrence of GSM, CDMA, W-CDMA and LTE events as they occur in the networks; as well as classify interference sources such as RF jammers. Users are provided detailed information about the interference source, the frequencies it impacts, peak/average power levels and the status of the source.

This product is not intended for general consumer use. It is intended for commercial applications and use.

Product Package Content

The product package contains the following items:

- One (1) printed AirMagnet Sensor Information Sheet

- One (1) AirMagnet Sensor

- Removable antennas (based on model configuration, see Sensor Product Models)

- One mounting kit that includes (1) wall mounting bracket, two (2) wall mounting anchors and two (2) wall mounting screws.

In case any of these items is missing or damaged, contact your AirMagnet product reseller or AirMagnet technical support immediately.

AirMagnet Enterprise SmartEdge Series 4 Sensor

Product Models

Sensor Model	Item #	Features	Summary
SENSOR4-R1S0-E	4073283	AIRMAGNET SENSOR, 4TH GEN, 1 X 11N RADIO, EXTERNAL ANT.	One 802.11 a/b/g/n 3x3 radio;4 external antennas.
SENSOR4-R1S0-I	4073241	AIRMAGNET SENSOR, 4TH GEN, 1 X 11N RADIO, INTERNAL ANT.	One 802.11 a/b/g/n 3x3 radio; 3 internal antennas.
SENSOR4-R1S1-E	4073290	AIRMAGNET SPECTRUM SENSOR, 4TH GEN, 1 X 11N RADIO, EXTERNAL ANT.	One 802.11 a/b/g/n 3x3 radio; 1 Wi-Fi Spectrum Analyzer; 4 external antennas.
SENSOR4-R1S1-I	4073252	AIRMAGNET SPECTRUM SENSOR, 4TH GEN, 1 X 11N RADIO, INTERNAL ANT.	One 802.11 a/b/g/n 3x3 radio; 1 Wi-Fi Spectrum Analyzer; 4 internal antennas.
SENSOR4-R2S0-E	4073309	AIRMAGNET SENSOR, 4TH GEN, 2 X 11N RADIO, EXTERNAL ANT.	Two 802.11 a/b/g/n 3x3 radios; 8 external antennas.
SENSOR4-R2S0-I	4073265	AIRMAGNET SENSOR, 4TH GEN, 2 X 11N RADIO, INTERNAL ANT.	Two 802.11 a/b/g/n 3x3 radios; 6 internal antennas.
SENSOR4-R2S1-E	4073311	AIRMAGNET SPECTRUM SENSOR, 4TH GEN, 2 X 11N RADIO, EXTERNAL ANT.	Two 802.11 a/b/g/n 3x3 radios; 1 Wi-Fi Spectrum Analyzer; 8 antennas.
SENSOR4-R2S1-I	4073276	AIRMAGNET SPECTRUM SENSOR, 4TH GEN, 2 X 11N RADIO, INTERNAL ANT.	Two 802.11 a/b/g/n 3x3 radios; 1 Wi-Fi Spectrum Analyzer; 7 internal antennas.
SENSOR4-R1S1W1-E	4398582	AIRMAGNET SPECTRUM SENSOR, 4TH GEN, 1 X 11N RADIO, CELLULAR, EXTERNAL ANT.	One 802.11 a/b/g/n 3x3 radio; 1 Cellular Spectrum Analyzer; 5 antennas.

Accessories

Sold separately:

- AM/A5032 802.3af-compliant Power over Ethernet (PoE) adapter. PowerDsine PD-3501G/AC [PN 3536079]

- Cable Kit-Sensor 4: CD with USB to RS-232 driver 3; DB9 male/female right angle adapter; DB9 Null Modem Serial Cable; USB to DB9 Serial Adapter [PN 4221929]

Electrical Specifications

Note: The SENSOR4-R1S1W1-E model may have different specifications as indicated by [R1S1W1]

Specification	Detail
Operating Voltage	48V+/-10% (802.3af PoE)
Current Consumption	Max. 210mA(48V PoE) [R1S1W1] Max. 240mA(48VPOE)
Processor	Marvell 88F6282, 1.86 GHz
WiFi Silicon	Atheros 9380 Mini-PCIe, Dual-band 802.11 n/a/b/g 3 spatial stream. Commercial Temp
System Memory	256MB DDR3
Input Power Requirement	PoE 802.3af Compliant
Data Rates	802.11an/gn 3SS HT20 MCS 0-23 : 216.7 Mbps max HT40 MCS 0-23 : 450 Mbps max 802.11a : 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11g :6, 9, 12, 18, 24, 36, 48 & 54 Mbps 802.11b :1, 2, 5.5, 11 Mbps

Specification	Detail
Wi-Fi Frequency Band (for operating in US, frequency is fixed in US band, user cannot select other bands)	802.11n: dual band, same as 802.11a and 802.11b/g 802.11a: 5.15~5.25 GHz, 5.25~5.35 GHz, 5.47~5.725 GHz, 5.725~5.875 GHz 802.11b/g: 2.412~2.462 GHz(US) 2.412~2.472 GHz(Europe ETSI) 2.457~2.462 GHz(Spain) 2.457~2.472 GHz(France)
Cellular Frequency Band [R1S1W1]	698 MHz-2690 MHz

Specification	Detail
Wi-Fi Receive Sensitivity (Typical)	**802.11n: 5 GHz band** -63 dBm @ 135 Mbps -61 dBm @ 270 Mbps -59 dBm @ 450 Mbps **802.11n: 2.4 GHz band** -63 dBm @ 130 Mbps -61 dBm @ 270 Mbps -59 dBm @ 450 Mbps **802.11a:** -85 dBm @ 6 Mbps -86 dBm @ 9 Mbps -85 dBm @ 12 Mbps -83 dBm @ 18 Mbps -78 dBm @ 36 Mbps -73 dBm @ 48 Mbps -82 dBm @ 24 Mbps -72 dBm @ 54 Mbps **802.11b/g:** -81 dBm @ 2 Mbps -87 dBm @ 6 Mbps -85 dBm @ 9 Mbps -85 dBm @ 11 Mbps -85 dBm @ 12 Mbps -84 dBm @ 18 Mbps -84 dBm @ 24 Mbp -81 dBm @ 36 Mbps -73 dBm @ 48 Mbps -74 dBm @ 54 Mbps

Specification	Detail
Wi-Fi Transmit Output Power (Typical)	802.11n: 5 GHz band 14~15 dBm @ 135 Mbps 9~11 dBm @ 270 Mbps 7~10 dBm @ 450 Mbps 802.11n: 2.4 GHz band 17 dBm @ 135 Mbps 12 dBm @ 270 Mbps 11 dBm @ 450 Mbps 802.11a: 14~15 dBm @ 6-24 Mbps 14~15 dBm @ 36 Mbps 11~13 dBm @ 48 Mbps 11~12 dBm @ 54 Mbps 802.11g: 16 dBm for all rates 802.11b: 18 dBm for all rates
Cellular Receive Sensitivity [R1S1W1]	GSM 200 KHz: -114 dBm CDMA 1.25 MHz: -110 dBm UMTS 5 MHz: -105 dBm LTE 1.4 MHz: -105 dBm LTE 3 MHz: -102 dBm LTE 5 MHz: -101 dBm LTE 10 MHz: -97 dBm LTE 15 MHz: -95 dBm LTE 20 MHz: -93 dBm

Mechanical Specifications

Item	Detail
Mechanical	- Seismic vibration PCB/Daughter-card/antenna connector resiliency - Integrated mounting bracket on bottom cover of housing.

Item	Detail
Housing Size & Weight	Max. Dimensions: WxLxH = 7.5" x 7.5" x 1.5". [R1S1W1] WxLxH = 8" x 8" x 1.5" Weight: Internal Antenna model: 15.8 oz, External Antenna w/8 antennas attached: 29.5 oz [R1S1W1] External Antenna w/5 antennas 2.0 lbs.
Status LEDS	Qty. 5. POWER, WLAN1, WLAN2, SA and LAN
LAN Port	10/100/1000 Mbps RJ45 with Built-In 802.3 af POE Compliance
Serial Port	External Connector required, DB-9 male, RS-232 null modem
External Switch	Reset switch
DC in Connector	DC power input jack.
RF Connector	RP-TNC for external models only. [R1S1W1] RP-TNC and SMA for external models only.
Standard Antenna (Dual Band 2.4G/5G)	Internal models PCB antenna: Qty 3, 6, or 7 depending on internal antenna model. External models SWIVEL R-TNC PLUG omnidirectional dipole: Qty. 4 or 8 depending on external antenna model.
Cellular Antenna [R1S1W1] (698 MHz-2698 MHz)	External models: Swivel SMA omnidirectional dipole Qty 1.

Environmental Specifications

Item	Detail
Operating Temperature	32º to 131º F (0º to 55º C)
Storage Temperature	-40º to 158º F (-40º to 70º C)
Operating Humidity	10 to 90% humidity (non-condensing) (DC power adapter exclude)

Antennas

External Wi-Fi Antenna Model

Specification	Detail
Standard	IEEE 802.11 a/b/g/n wireless LAN
Length	143.5 mm (approximately 5.65 in.)
Color	White
Electrical	Operating Frequency: 2.4 ~ 2.4835 & 5.15 ~ 5.35 & 5.725 ~ 5.85 GHz Polarization Type: Linear Radiation Type: Toroidal Antenna gain: 2.0 dBi max (2.4 ~ 2.4835 GHz) 2.3 dBi max (5.15 ~ 5.35 GHz) 1.0 dBi max (5.725 ~ 5.85 GHz) Impedance: 50 Ohm nominal V.S.W.R.: 2.0:1 max.

Specification	Detail
Mechanical	Connector: RP-TNC(M)
	Core: N/A
Raw Material	Coaxial Cable: MIL-C-17 RG-178 B/U
	Housing: TPU
	Hinge: Polycarbonate

External Cellular Antenna Model [R1S1W1]

Specification	Detail
Standard	Cellular
Length	186mm (approximately 7.32 in.)
Color	White
Electrical	Operating frequency: 698MHz-2698 MHz
	Polarization Type: Linear
	Radiation Type: Omnidirectional
	Antenna gain:
	700~800 MHz 1.1dBi peak 824~960 MHz, .3dBi peak 1575.42 MHz, 1.1dBi peak 1710~1880 MHz, 1.9dBi peak 1860~1990 MHz, 2.7dBi peak 1710MHz~2170 MHz, 2.6dBi peak 2400~2800 MHz, 2.7dBi peak
	Impedance: 50 Ohm nominal
	V.S.W.R.: 2.0:1 max.
Mechanical	Connector: SMA (F)
	Core: N/A
Raw Material	Casing: UV resistant PC/ABS

Internal Antenna Model

Specification	Detail
Standard	IEEE 802.11 a/b/g/n wireless LAN
Length x Width	2" X 0.65"

Electrical	Operating Frequency: 2.4 ~ 2.4835 & 5.15 ~ 5.35 & 5.725 ~ 5.85 GHz
	
	Polarization Type:Vertical, Omni directional
	
	Antenna gain:
	
	     0.9 dBi max (2.4 ~ 2.4835 GHz)
	
	     3.1 dBi max (5.15 ~ 5.35 GHz)
	
	     4.8 dBi max (5.725 ~ 5.85 GHz)
	
	Impedance: 50 Ohm nominal
	
	V.S.W.R.: 2.0:1 max.

Sensor RF Connectors (External Antenna Models)

The sensor comes with 4 or 8 reversed polarity RP-TNC RF connectors (depending on model purchased). Cellular model comes with 4 RP-TNC RF connectors and 1 SMA RF connector.

Bottom Cover

The sensor has an integrated T-rail mounting clip. It also has an embedded safety nut for attaching extra safety cabling to conform to OSH PD standards

Installation

External Antenna Port Assignments

Use the following table and associated diagram to determine antenna port assignments for each external antenna sensor model.

WLAN1 = 1st radio
WLAN2 = 2nd radio
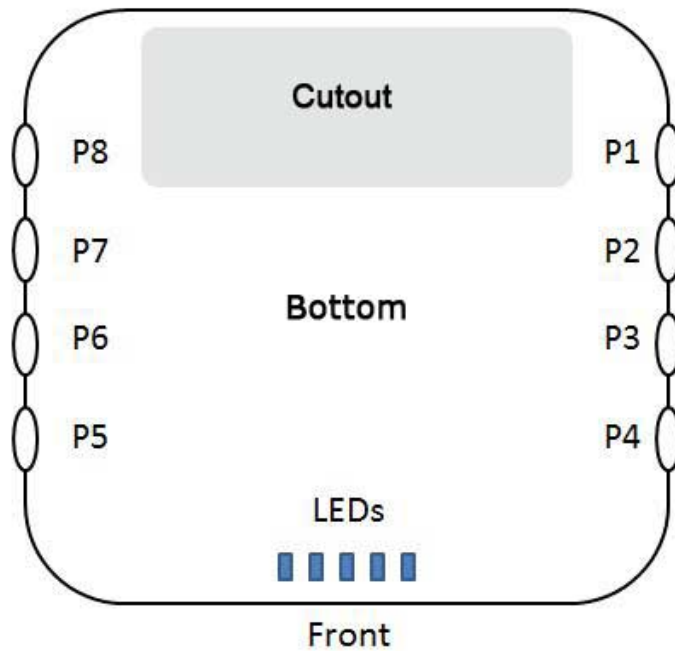
Sensor Model	Port Assignments
SENSOR4-R1S0-E	P1-WLAN1-Ch2, P5-WLAN1-Ch0, P7-WLAN1-Ch1
SENSOR4-R1S1-E	P1-WLAN1-Ch2, P3-Wifi Spectrum, P5-WLAN1-Ch0, P7-WLAN1-Ch1
SENSOR4-R2S0-E	P1-WLAN1-Ch2, P2-WLAN2-Ch1, P4-WLAN2-Ch2, P5-WLAN1-Ch0, P7-WLAN1-Ch1, P8-WLAN2-Ch0
SENSOR4-R2S1-E	P1-WLAN1-Ch2, P2-WLAN2-Ch1, P3-Wifi Spectrum, P4-WLAN2-Ch2, P5-WLAN1-Ch0, P7-WLAN1-Ch1, P8-WLAN2-Ch0
SENSOR4-R1S1W1-E	P1-No Connection, P2 – No Connection, P3 – No Connection, P4 –Cellular Spectrum, P5 – WLAN1-Ch0, P6 – WLAN1-Ch1, P7 – No Connection, P8 – WLAN1-Ch2

Installation

Sensor Zero Configuration

The sensor comes with a zero configuration feature that enables users to place the Sensor on their network and have it automatically find and connect to the AirMagnet Enterprise Server without having to configure the Sensor first. This concept simplifies the process of configuring and managing Sensors during deployment. It also reduces the overhead during regular maintenance cycles.

To take advantage of the Sensor zero configuration feature, the user must enable the zero configuration feature on the AirMagnet Enterprise Server. This feature also carries over to the Sensor properties screen on the AirMagnet Enterprise Console. The user can change the Sensor's shared secret key from the Console and have it automatically forwarded to the Sensor.

For more information on sensor zero configuration, see the AirMagnet Enterprise User Guide.

Note: For better performance, the sensor should be installed where maximum field of view (FOV) can be achieved. This means that it should be deployed in places where it can cover as large an area as possible with little or no obstruction. The instructions below show how to install the sensor using the mounting bracket.

Mounting the Sensor Using the Mounting Bracket

The sensor can be mounted on any surface, such as a wall or ceiling, using the AirMagnet Sensor Mounting Bracket kit.
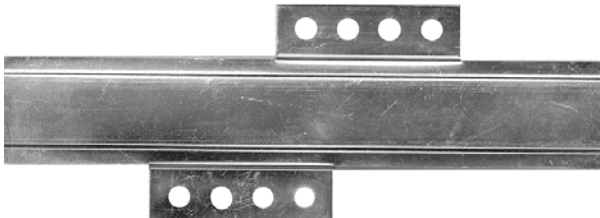
1. Place the bracket horizontally so the screw-hole panels are flush against the surface.
2. Attach the bracket to the surface using one screw anchor and one screw in the top screw-hole panel and one screw anchor and one screw in the bottom screw-hole panel.
3. Place the bottom side of the sensor over the bracket at a 45 degree angle between the two circular clips as shown.
4. Rotate the sensor until the sensor snaps into place.

To remove the sensor from the bracket, depress the flexible clip and rotate the sensor.
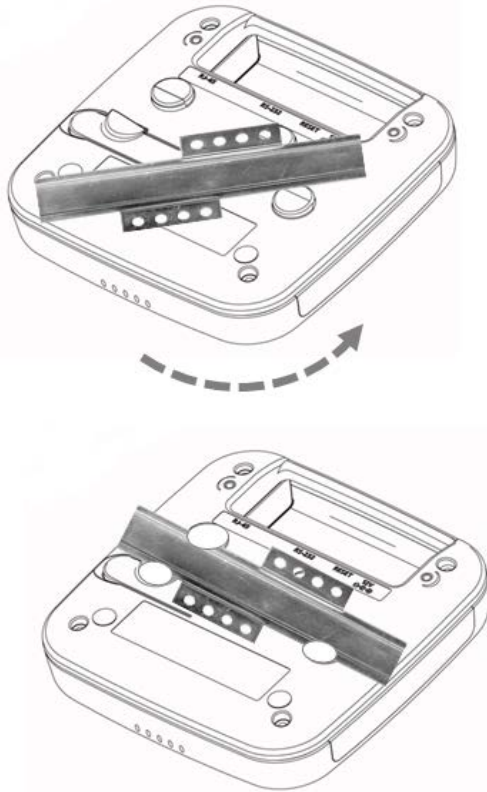
Installing the Sensor on a T-Rail

The ceiling of a building is an ideal place for installing the sensor in terms of FOV. You can place the Sensor anywhere on a T-rail on the ceiling using the integrated T-rail clip.

1. Place the bottom side of the sensor over the T-rail at a 45 degree angle between the two circular clips as shown.
2. Rotate the sensor until the sensor snaps into place.

To remove the sensor from the T-rail, depress the flexible clip and rotate the sensor.
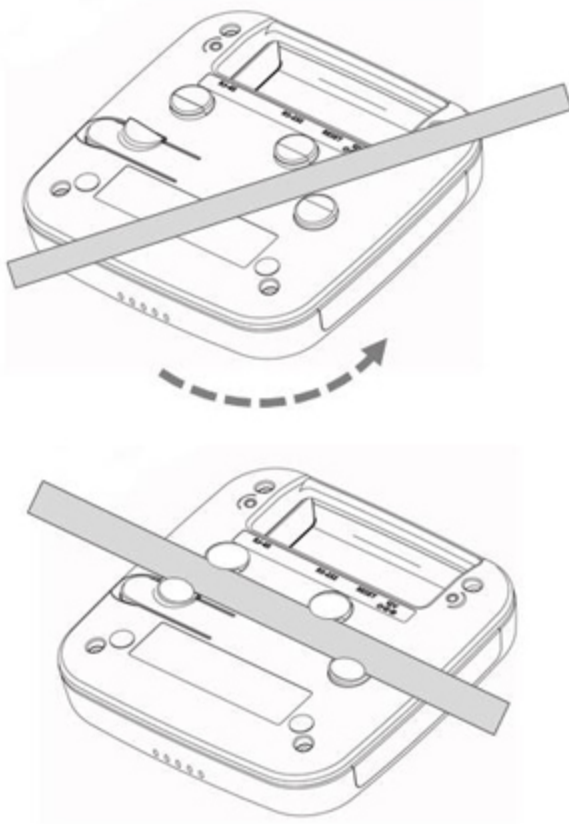
Antenna Installation

1. Screw on the supplied antennas to the RP-TNC connectors on the sensor side plates.

2. Position the antenna angles as shown in the following "Antenna Angle Positioning" section.

3. Hand tighten the antenna to the sensor while maintaining the angles depicted.

4. Apply a small amount of Loctite or similar adhesive in the antenna joint (elbow) to maintain antenna angle positioning during and after sensor installation.
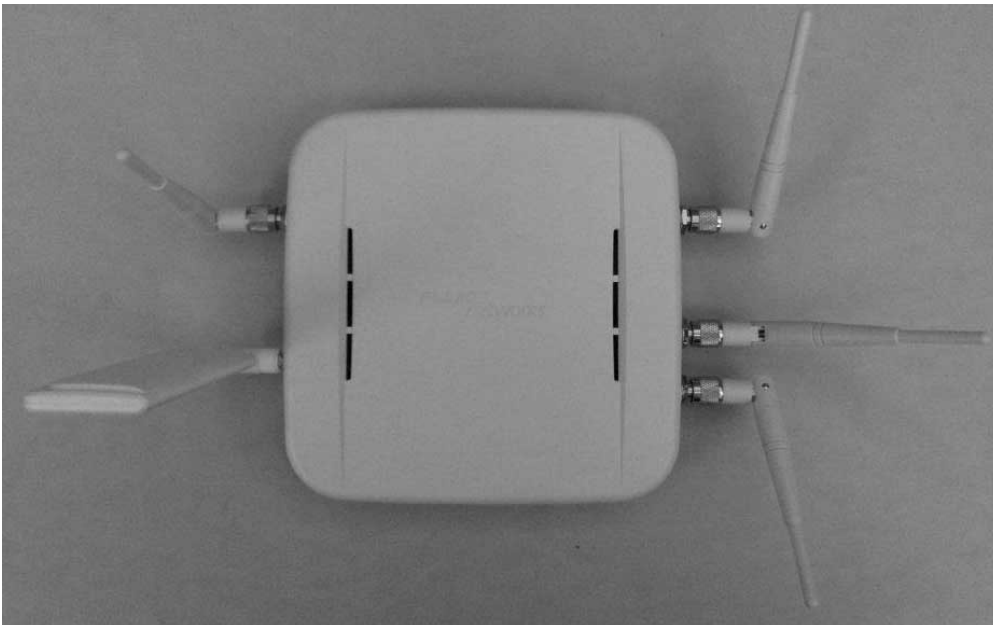
Antenna Angle Positioning

The following images indicate the recommended antenna positions for optimum performance.
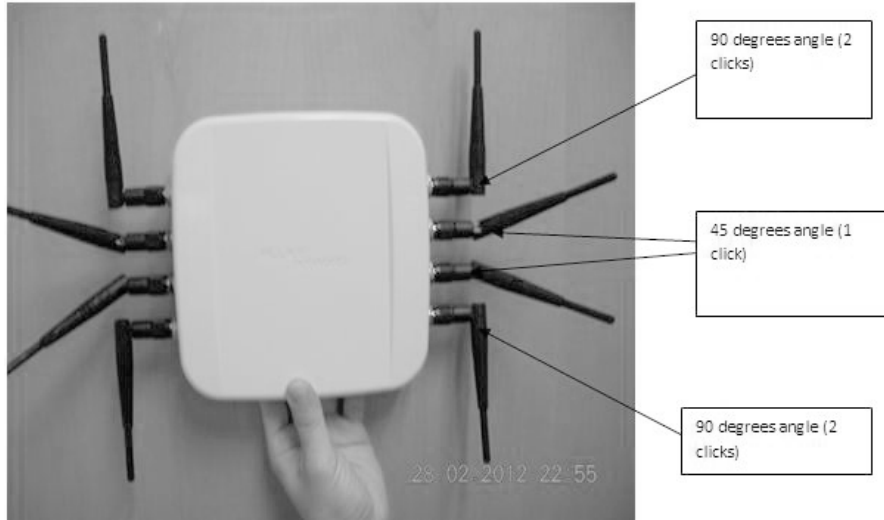
Antenna Angle Positioning for Cellular Model [R1S1W1-E]
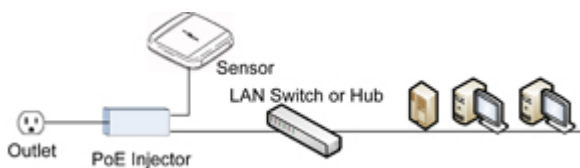
Powering Up Sensors

Power Options

Customers deploying AirMagnet Enterprise can power their AirMagnet sensors using a standard Ethernet cable, thus avoiding the need to run the standard electrical wiring to each and every individual sensor. AirMagnet offers two Power over Ethernet (PoE) options, and customers can typically make their own choice based on the quality of the switch to which their AirMagnet sensors will be connected.

### Powering Up via an 802.3af-Compliant PoE Injector

To power up sensor via an 802.3af-compliant PoE Injector:

1. Connect the PoE injector (via the Data Only port) to a network switch or hub, using a 10/100 Ethernet cable.

2. Connect the PoE injector (via the Power and Data port) to the sensor using another 10/100 Ethernet cable.

3. Plug the PoE power cord into an electrical outlet.

Powering Up Directly via an 802.3af-Compliant Switch

To power up the sensor directly via an 802.3af-compliant switch: Connect the sensor to an IEEE 802.3af-compliant network switch (e.g., a Cisco Catalyst 3560 Series PoE-24) using a 10/100 Ethernet cable.
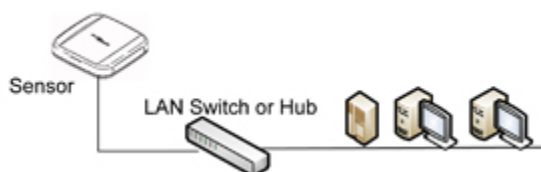
Powering Up via +12 volt Power Supply

Note: Contact Fluke Support if you wish to connect a 12V adapter to power the sensor.

Status LEDs

LED	Color	Description
Power	Blue	Solid – Power on Normal Flash – sensor on but not ready – configuration. OFF – no power
WLAN1	Green/Orange	Green Flashing – WiFi radio 1 RX mode Orange Flashing – WiFi radio 1 TX mode OFF – No WiFi 1 radio installed or sensor off
WLAN2	Green/Orange	Green Flashing – WiFi radio 2 RX mode Orange Flashing – WiFi radio 2 TX mode OFF – No WiFi 2 radio installed or sensor off
SA	Red	Flashing – spectrum not ready – configuration Solid – On ready. Off – no spectrum installed or sensor off
LAN	Yellow	Flashing – LAN is up and working. Off – No traffic or sensor off

Standards Compliance

Standards and Agency Compliance

All products to be certified or tested to the following:

Item	Detail
Compliance	RoHS lead free. CE (EN 300 328/ EN 301 489/ EN 301 893/ EN 60950) FCC Part 15B/C/E, ANSI/UL 60950 IC, CSA 60950, Including AMD1 CB Scheme report covering IEC 60950-1
⚠	Risk of danger. Important information. See manual.
CE	Conforms to European Union directives.
CSA	Conforms to relevant North American Safety Standards

FCC Interference Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

For operation within 5.15 ~ 5.25GHz frequency range, it is restricted to indoor environment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The availability of some specific channels and/or operational frequency bands are country dependent and are firmware programmed at the factory to match the intended destination. The firmware setting is not accessible by the end user.

Sensor4 with Embedded type antenna and maximum antenna gain is 4.8 dBi in 5 GHz and 2.0 dBi in 2.4 GHz.

Industry Canada Statement

This device complies with RSS-210 of the Industry Canada Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

IC Radiation Exposure Statement

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

Industry Canada Interference Statement

The device for the band 5150-5250 MHz is only for indoor usage to reduce potential for harmful interference to co-channel mobile satellite systems;The maximum antenna gain 3.1 dBi permitted (for devices in the bands 5250-5350 MHz and 5470-5725 MHz) to comply with the EIRP limit.

In addition, users should also be cautioned to take note that high- power radars are allocated as primary users (meaning they have priority) of the bands 5250-5350 MHz and 5650-5850 MHz and these radars could cause interference and/or damage to LE-LAN devices.

Industrie Déclaration de Canada

Cet artifice se plie à RSS-210 de l'Industrie les Règles du Canada. L'opération est soumise aux deux conditions suivantes : (1) Cet artifice peut ne pas provoquer l'interférence malfaisante et (2) cet artifice doit accepter n'importe quelle interférence reçue, en incluant l'interférence qui peut provoquer l'opération indésirable.

Déclaration d'Exposition de Radiation d'IC

Cet équipement se plie aux limites d'exposition IC de radiation présentées pour un environnement non maîtrisé. Cet équipement devrait être installé et fait marcher avec la distance minimale 20 centimètres entre le radiateur et votre corps.

Industrie Déclaration d'Interférence de Canada

L'artifice pour la bande 5150-5250 MHz est seulement pour l'usage en salle pour réduire le potentiel pour l'interférence malfaisante au radiotéléphone de co-canal les systèmes satellites; l'antenne maximum gagne 3.1 dBi permis (pour les artifices dans les bandes 5250-5350 MHz et 5470-5725 MHz) pour se plier à la limite d'EIRP.

En plus, on devrait aussi avertir des utilisateurs de prendre des notes que haut - les radars de pouvoir sont alloués comme les utilisateurs primaires (le sens ils ont la priorité) des bandes 5250-5350 MHz et 5650-5850 MHz et ces radars pourraient provoquer l'interférence et-ou nuire aux artifices LE-LAN.

Anatel Brazil Compliance Statement

[Note: except R1S1W1]

This product is not intended for general consumer use. It is intended for commercial applications and use.

EU Declaration of Conformity

This device complies with the essential requirements of the R&TTE Directive 1999/5/EC. The following test methods have been applied in order to prove presumption of conformity with the essential requirements of the R&TTE Directive 1999/5/EC:

EN60950-1

Safety of Information Technology Equipment.

EN63211

Product standard to demonstrate the compliance of radio base stations and fixed terminal stations for wireless telecommunication systems with the basic restrictions or the reference levels related to human exposure to radio frequency electromagnetic fields (110MHz -40 GHz) - General public.

EN 300 328 V1.7.1

Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband Transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using spread spectrum modulation techniques; Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive.

EN 301 893 V1.5.1

Broadband Radio Access Networks (BRAN);5 GHz high performance RLAN; Harmonized EN covering essential requirements of article 3.2 of the R&TTE Directive.

EN 301 489-17 V2.1.1

Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment; Part 17: Specific conditions for 2,4 GHz wideband transmission systems, 5 GHz high performance RLAN equipment and 5,8 GHz Broadband Data Transmitting Systems.

This device is a 2.4 GHz wideband transmission system (transceiver), intended for use in all EU member states and EFTA countries, except in France and Italy where restrictive use applies.

In Italy the end-user should apply for a license at the national spectrum authorities in order to obtain authorization to use the device for setting up outdoor radio links and/or for supplying public access to telecommunications and/or network services.

This device may not be used for setting up outdoor radio links in France and in some areas the RF output power may be limited to 10 mW EIRP in the frequency range of 2454 – 2483.5 MHz. For detailed information the end-user should contact the national spectrum authority in France.

Česky [Czech]	*[Jméno výrobce]* tímto prohlašuje, že tento *[typ zařízení]* je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.
Dansk [Danish]	Undertegnede *[fabrikantens navn]* erklærer herved, at følgende udstyr *[udstyrets typebetegnelse]* overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
Deutsch [German]	Hiermit erklärt *[Name des Herstellers]*, dass sich das Gerät *[Gerätetyp]* in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.
Eesti [Estonian]	Käesolevaga kinnitab *[tootja nimi = name of manufacturer]* seadme *[seadme tüüp = type of equipment]* vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
English	Hereby, *[name of manufacturer]*, declares that this *[type of equipment]* is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
Español [Spanish]	Por medio de la presente *[nombre del fabricante]* declara que el *[clase de equipo]* cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
Ελληνική [Greek]	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ *[name of manufacturer]* ΔΗΛΩΝΕΙ ΟΤΙ *[type of equipment]* ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.
Français [French]	Par la présente *[nom du fabricant]* déclare que l'appareil *[type d'appareil]* est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.
Italiano [Italian]	Con la presente *[nome del costruttore]* dichiara che questo *[tipo di apparecchio]* è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Latviski [Latvian]	Ar šo *[name of manufacturer / izgatavotāja nosaukums]* deklarē, ka *[type of equipment / iekārtas tips]* atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
Lietuvių [Lithuanian]	Šiuo *[manufacturer name]* deklaruoja, kad šis *[equipment type]* atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.
Nederlands [Dutch]	Hierbij verklaart *[naam van de fabrikant]* dat het toestel *[type van toestel]* in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.
Malti [Maltese]	Hawnhekk, *[isem tal-manifattur]*, jiddikjara li dan *[il-mudel tal-prodott]* jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 1999/5/EC.
Magyar [Hungarian]	Alulírott, *[gyártó neve]* nyilatkozom, hogy a *[... típus]* megfelel a vonatkozó alapvető követelményeknek és az 1999/5/EC irányelv egyéb előírásainak.
Polski [Polish]	Niniejszym *[nazwa producenta]* oświadcza, że *[nazwa wyrobu]* jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC.
Português [Portuguese]	*[Nome do fabricante]* declara que este *[tipo de equipamento]* está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.
Slovensko [Slovenian]	*[Ime proizvajalca]* izjavlja, da je ta *[tip opreme]* v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.
Slovensky	*[Meno výrobcu]* týmto vyhlasuje, že *[typ zariadenia]* spĺňa základné požiadavky a

Support

Hardware Warranty

LIMITED WARRANTY AND LIMITATION OF LIABILITY

Each fluke networks product is warranted to be free from defects in material and workmanship under normal use and service unless stated otherwise herein. The warranty period for the mainframe is one year and begins on the date of purchase. Parts, accessories, product repairs and services are warranted for 90 days, unless otherwise stated. Ni-Cad, Ni-MH and Li-Ion batteries, cables or other peripherals are all considered parts or accessories. The warranty extends only to the original buyer or end user customer of a Fluke networks authorized reseller, and does not apply to any product which, in Fluke Networks' opinion, has been misused, abused, altered, neglected, contaminated, or damaged by accident or abnormal conditions of operation or handling. Fluke Networks warrants that software will operate substantially in accordance with its functional specifications for 90 days and that it has been properly recorded on non-defective media. Fluke networks does not warrant that software will be error free or operate without interruption.

Tools and test sets and other identified products are subject to the different warranties in the matrix below or subject to other warranty terms and conditions that are provided with certain products. The Tools and test set and AirMagnet products are not field serviceable and customers should return them directly to Fluke Networks customer support services for all repairs. Certain products, because of their applications, can be supported for non-warranty maintenance by our customers. Some documentation and replacement components are available for purchase from Fluke Networks.

Product Warranty period

Impact Tools and D-Impactor™ Five Pair impact tools (blades excluded, Can Wrench, Probe Pic

Lifetime

TS®40 Series Test Sets

TS®52 Pro Test Sets

3 years

Butt-in telephone test sets (TS®40 Series excluded), Pro3000™ Analog Tone & Probe, ADSL Splitter, Modular Adapters, Coax Strippers, Cable Strippers, Modular Crimper, Need-L-Lock™ crimping pliers, TS®100 Cable Fault Finder, TS®90 Cable Fault Finder, TS®250 ISDN Test Set, TS®1200 ADSL/POTS Test Set, JackRapid™ Punchdown Tool (excludes bladehead), SpotCheck™ ADSL Presence Tester

18 months

Electrician's Snips, D-Snips™ Scissors, Cable Splicing Knife

90 days

AirMagnet Express Field Kit

90 days (netbook batteries not included)

Fluke Networks authorized resellers shall extend this warranty on new and unused products to end-user customers only but have no authority to extend a greater or different warranty on behalf of Fluke networks. Warranty support is available only if product is purchased through a Fluke Networks authorized sales outlet or Buyer has paid the applicable international price. To the extent permitted by law, Fluke Networks reserves the right to invoice Buyer for repair/ replacement when a product purchased in one country is submitted for repair in another country.

Fluke Networks warranty obligation is limited, at Fluke Networks option, to refund of the purchase price, free of charge repair, or replacement of a defective product which is returned to a Fluke Networks authorized service center within the warranty period.

To obtain warranty service, contact your nearest Fluke Networks authorized service center to obtain return authorization information, then send the product to that service center, with a description of the difficulty, postage and insurance prepaid (FOB destination). Fluke Networks assumes no risk for damage in transit. Following warranty repair, the product will be returned to Buyer, transportation prepaid (FOB destination). If Fluke Networks determines that failure was caused by neglect, misuse, contamination, alteration, accident or abnormal condition of operation or handling, or normal wear and tear of mechanical components, Fluke Networks will provide an estimate of repair costs and obtain authorization before commencing the work. Following repair, the product will be returned to the Buyer transportation prepaid and the Buyer will be billed for the repair and return transportation charges (FOB Shipping point).

THIS WARRANTY IS BUYER'S SOLE AND EXCLUSIVE REMEDY AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. FLUKE NETWORKS SHALL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OR LOSSES, INCLUDING LOSS OF DATA, ARISING FROM ANY CAUSE OR THEORY.

Since some countries or states do not allow limitation of the term of an implied warranty, or exclusion or limitation of incidental or consequential damages, the limitations and exclusions of this warranty may not apply to every buyer. If any provision of this Warranty is held invalid or unenforceable by a court or other decision-maker of competent jurisdiction, such holding will not affect the validity or enforceability of any other provision.

For Gold Support, see the Gold Support information page.

PO Box 777, Everett, WA 98206-0777, USA

Product Support

Fluke Networks' Gold Support is our comprehensive support and maintenance program that offers expanded coverage for all AirMagnet products.

Benefits of the Gold Support program include:

- Access to live 24 X 7 technical support.*

- Highly trained technical experts to help with product installation, configuration, best practices & troubleshooting on call 24 hrs a day including weekends and through the night.

- Multilingual technical support team.**

- Free software updates/upgrades (new features and product enhancements) when available.

- Hardware support, repair and replacement for AirMagnet products.***

- Free access to "AirMagnet Certified Professional" web-based training for certain AirMagnet products.

* Except United States holidays (New Years Day, Memorial Day, Labor Day, 4th of July, Thanksgiving, Christmas)

** Multilingual support not available on weekends

*** Must meet terms and conditions as defined in the hardware warranty

Contact Customer Support

- Navigate to http://airmagnet.flukenetworks.com/my_airmagnet/ and log in to My AirMagnet to access the "Exclusive" Gold- member only phone numbers for your region.

- Submit a support request: http://airmagnet.flukenetworks.com/support/submit-report.php

- Send email to support@AirMagnet.com.