Cisco AP-1540 Series Outdoor Access Points

Cisco AP-1540 Series Outdoor Access Points 2

Revised: September 14, 2017,

Cisco AP-1540 Series Outdoor Access Points

The 1540 Series Outdoor Access Point is being introduced with Cisco Wireless release version 8.5.

This guide will focus specifically on the 1540 Series.

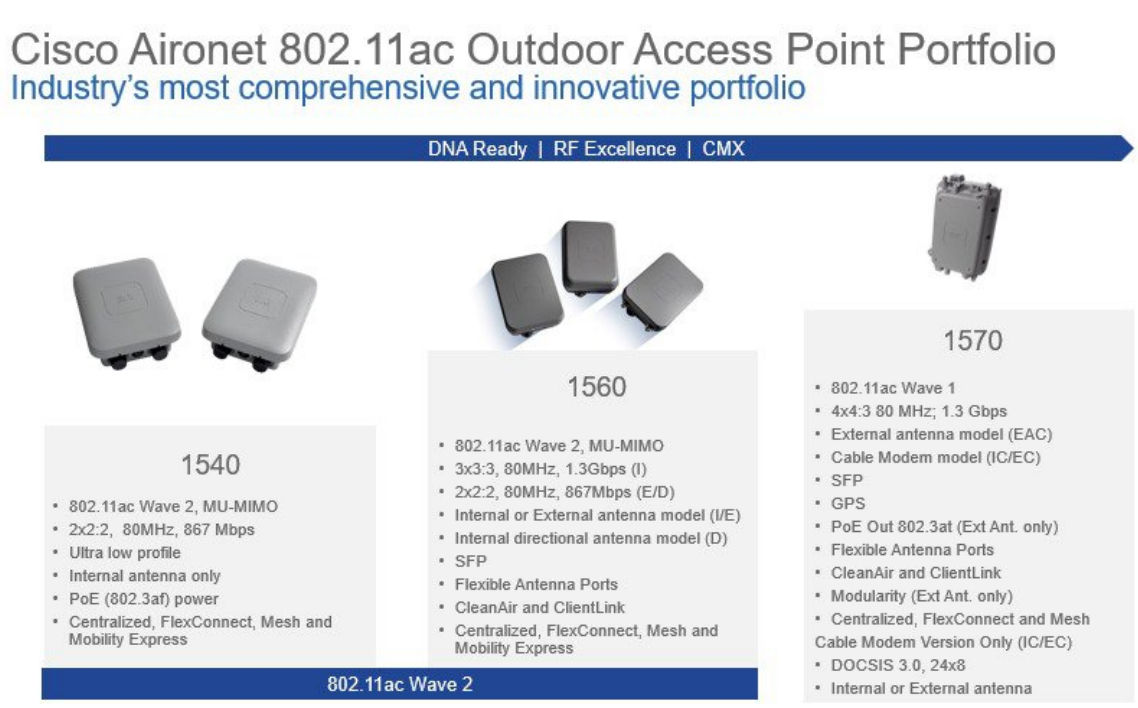
For a deeper dive on Mesh Access Point Design and Deployment. For example defining roles and configurations, See the following URL http://www.cisco.com/c/en/us/td/docs/wireless/technology/mesh/8-2/b_mesh_82/Connecting_the_Cisco_1500_Series_Mesh_Access_Points_to_the___.html

AP-1542i and AP-1542D

Cisco® Aironet® 1540 Series outdoor access points offer the latest 802.11ac Wave 2 functions in a rugged, ultra-low-profile housing that service providers and enterprises can deploy easily.

Features–Cisco Aironet AP-1540 Series

Figure 1: Features–Cisco Aironet AP-1540 Series



Comparing 1540 models

Differences in the integrated antenna

If the goal is to cover a mostly Omni-Directional coverage relative to the position the AP is pointing (roughly 120-130 degrees) the AP1542i is designed to do this using its integrated antenna.

Given the antenna is integrated within the device, a true Omni-directional pattern is not possible however, this AP was in such a way as to favor the direction it is pointed yet provide (radiate) in a good semi-omnidirectional pattern. If a true 360 degree Omni-directional pattern is required, the AP-1560 with external antennas can be used as this Access Point was designed for compact size and does not support external antennas.

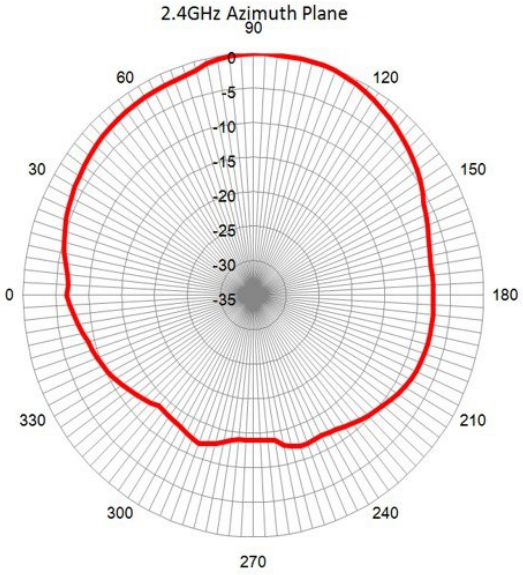
The AP-1542D has a more directional integrated antenna approximately 55 degrees and is designed where the goal is to achieve a greater distance in the direction that the Access Point is facing.

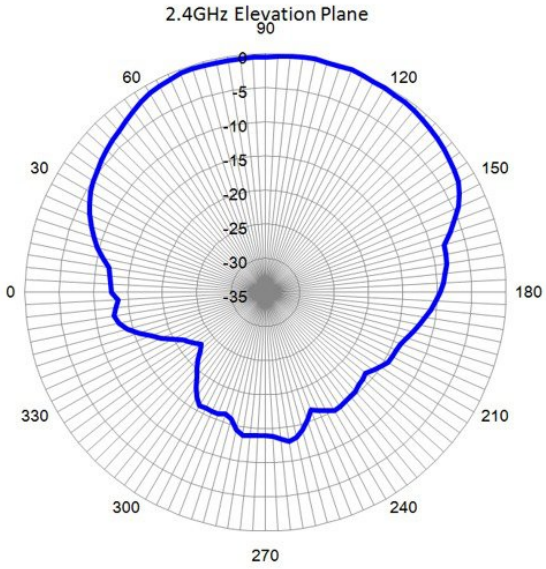
Let's examine the antenna specifications and patterns.

Parameter	**AP1542I**		**AP1542D**	
	2.4Ghz	5Ghz	2.4Ghz	5Ghz
Gain (dBi)	5	5	8	8
Azimuth Beamwidth (3dB)	110	120	55	55

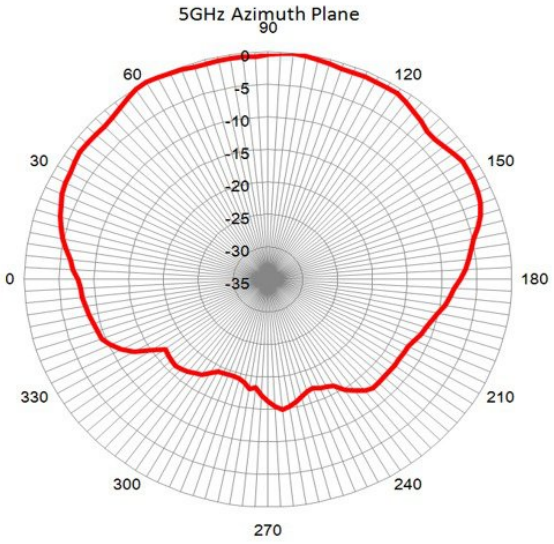
Elevation Beamwidth (3dB)	90	75	55	45
# of Elements	2		4	
Polarization	vertical		dual polarization	
Front-to-Back Ratio (dB, min)	12	20	23	25
Isolation (dB)	20	20	20	25

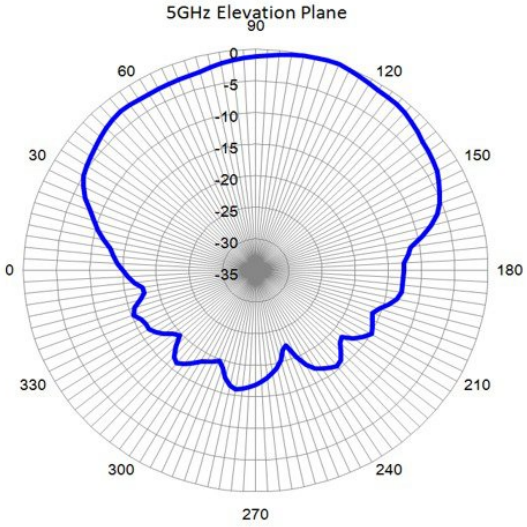
Antenna Specifications AP-1542I @ 2.4 GHz



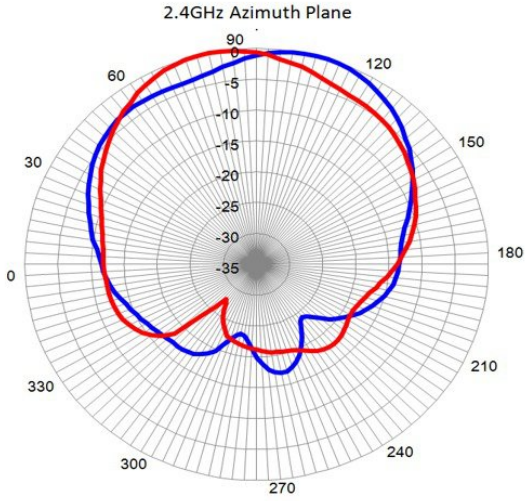


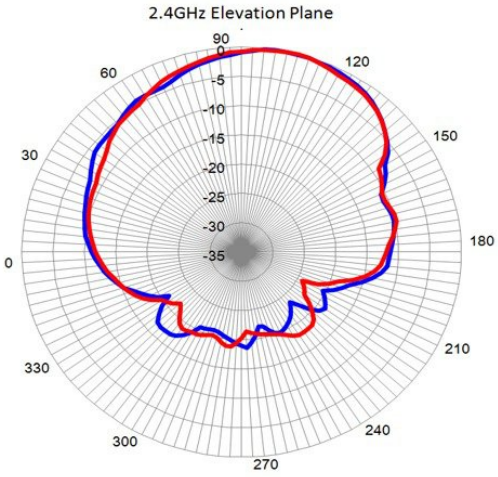
Antenna Specifications AP-1542I @ 5 GHz





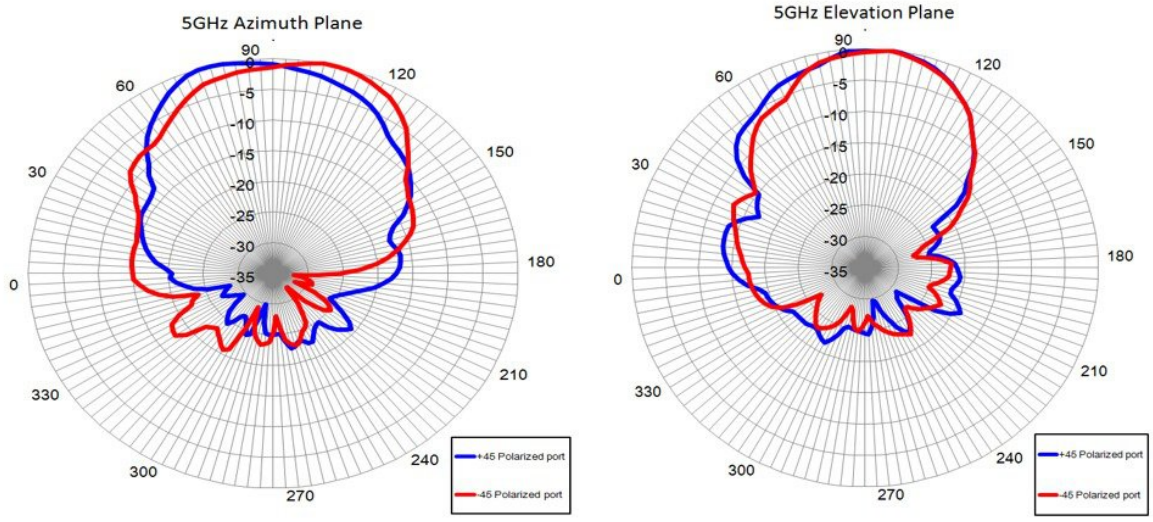
Antenna Specifications AP-1542D @ 2.4 GHz



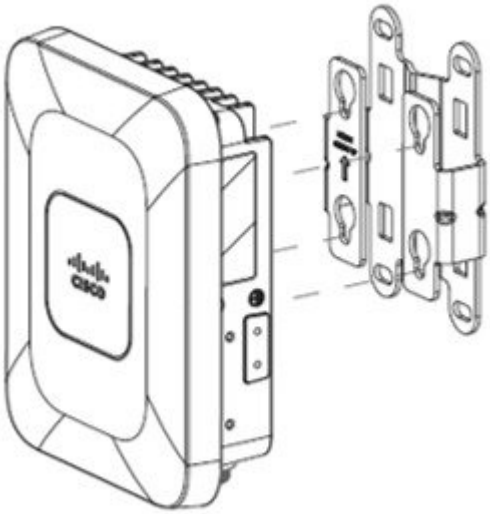


Note Two lines are shown "red and blue" as this unit as additional polarized antenna elements.

Antenna Specifications AP-1542I @ 5 GHz



Mounting Brackets



The AP-1540 is designed to take advantage of existing brackets used on the AP1530/1560 Series Access Points. This simplifies stocking (single part number) and allows for upgrades without having to replace the bracket.

AIR-ACC1530-PMK1=
Fixed vertical mount

AIR-ACC1530-PMK2=
Tilting mount

AP bracket allows for pole and flat surface mounting and optional bracket permits tilting.

AP-1540 Ports

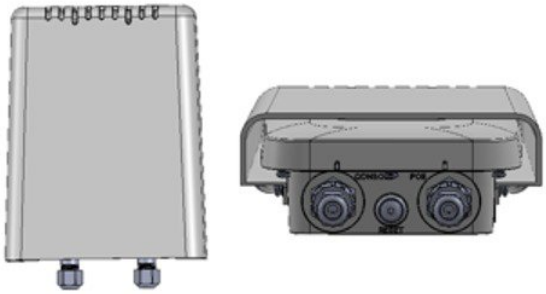
Simplified Ports consisting of Console, Reset and PoE. This AP is completely sealed and therefore the device does not need to be opened to install cabling eliminating the opportunity for water ingression from improperly sealed cable connections.

Ports on the bottom of the AP-1540 Series.

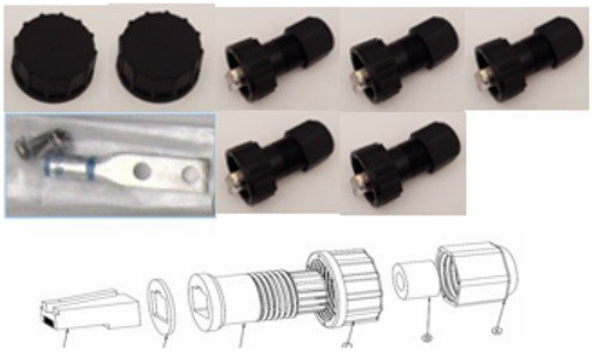
AP-1540 Accessories

The AP accessory kit Cisco Part Number AIR-ACC1540-KIT1= consists of a grounding lug, two dust caps (to cover Ethernet/Console ports) and five Ethernet termination connectors (plastic waterproof connectors that allow standard CAT-5 connectors to attach to the AP).

An optional "Paintable Cover" sometimes referred to as a "solar shield" is available Cisco Part Number AIR-ACC1540-CVR may be used should there be a desire to change the color or have the AP blend into the environment better.



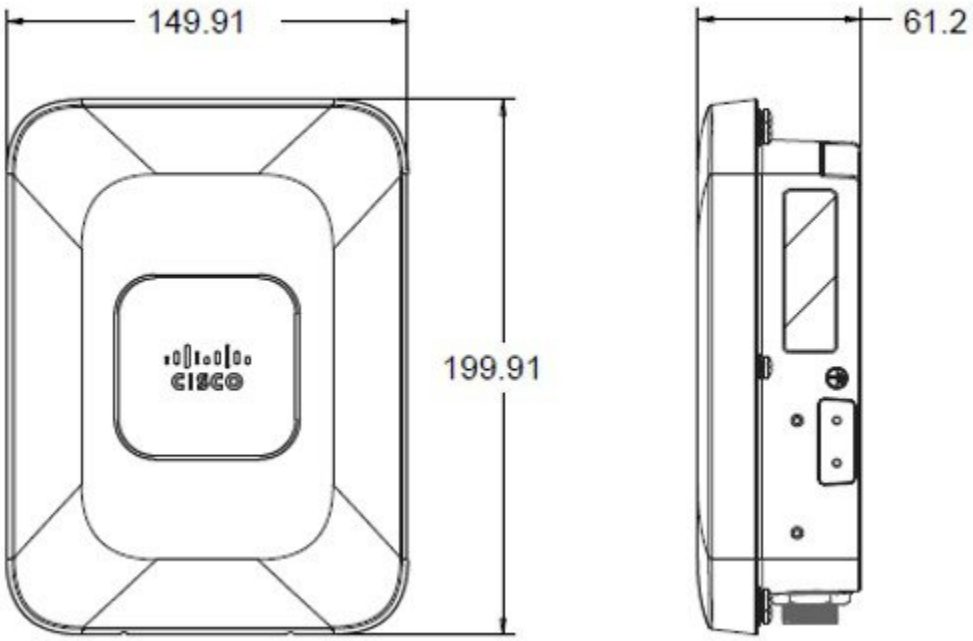
AIR-ACC1540-CVR=
Paintable cover



AIR-ACC1540-KIT1=
Accessory Kit

AP1540 Mounting Kits and Accessories	
PID	**Description**
AIR–ACC1530–PMK1	Standard Pole/Wall Mount Kit for AP 1530/1560 series Can be ordered as option under AP PID or as spare
AIR–ACC1530–PMK2=	Pole mount kit for AP 1530/1560 series with tilt adjustment.
AIR–ACC1540–CVR=	Cover and solar shield for AP1540 Series
AIR–ACC1540–KIT1=	Spares kit for AP1540

AP–1540 Mechanicals



Both Access Points have the same dimensions in mm and the device weighs 1.25 kg.

The AP-1540 (center) is Cisco's smallest most compact 802.11ac outdoor Access Point.

AP–1540 Powering Options

The AP–1540 is designed to run from standard IEEE 802.3af (15.4W power). There is no local power jack so when connecting to a source of AC power, a mid-span injector is recommended.

Powering Options	Power Budget*	Comments
802.3af, Standard PoE	13 W	Fully functional
Cisco Power Injector AIR–PWRINJ5=(15W)	13 W	AIR–PWRINJ5= is not outdoor–rated, must be indoors or in an enclosure
Cisco Power Injector AIR–PWRINJ–60RGD1=(60W)	13 W	Outdoor rated, North America AC plug
Cisco Power Injector AIR–PWRINJ–60RGD2=(60W)	13 W	Outdoor rated, International, unterminated AC input

This is the CDP/LLDP value the AP requests, typically the switch increments another 2–3W for typical cable loss at 100m

Q & A and Helpful URLs

- **Q1: Where can I find the Specifications for the AP-1540 Series?**

  A1: The 1540 Series specifications can be found at this URL http://www.cisco.com/c/en/us/products/collateral/wireless/aironet-1540-series/datasheet-c78-738585.html

- **Q2: Is there a model that supports external antennas?**

  A2: The 1540 Series is designed for small compact deployments, if external antennas are needed please take a look at the AP-1560 Series at this URL http://www.cisco.com/c/en/us/products/collateral/wireless/aironet-1560-series/datasheet-c78-737416.html

- **Q3: Does this product support WGB (Workgroup Bridge) mode or Point to Point Bridging?**

  A3: Not at this time, however it does support mobility express as a stand-alone Access Point.

- **Q4: Will the AIR-PWRINJ4, AIR-PWRINJ5 and AIR-PWERINJ6 work with the AP-1540?**

  A4: Yes but these are not outdoor rated, so you will need to use an enclosure or use indoors. Also avoid using older "metal box" power injectors like the INJ 1500 as they are not 802.3af compliant.

- **Q5: Is there a guide that explains terms such as RAP (Root AP) and MAP (Mesh AP) and how to configure in software?**

  A5: Yes please refer to the Mesh Design Guide at this URL: http://www.cisco.com/c/en/us/td/docs/wireless/technology/mesh/8-2/b_mesh_82/Connecting_the_Cisco_1500_Series_Mesh_Access_Points_to_the___.html

Americas Headquarters
Cisco Systems, Inc.
San Jose, CA 95134-1706
USA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV
Amsterdam, The Netherlands