

About Cisco Catalyst IW9167E Heavy Duty Access Point

- Cisco Catalyst IW9167E Heavy Duty Access Point, on page 1
- Cisco Catalyst IW9167E Heavy Duty Access Point Features, on page 1
- Connectors and Ports, on page 2
- Power Sources, on page 6
- Data Connectivity, on page 7
- Antennas and Radios, on page 9

Cisco Catalyst IW9167E Heavy Duty Access Point

The Cisco Catalyst IW9167E Heavy Duty Access Point is a tri-band 802.11ax (Wi-Fi 6) AP that provides reliable wireless connectivity for mission-critical applications as organizations automate processes and operations. It can operate as Wi-Fi 6 or Cisco Ultra-Reliable Wireless Backhaul (Cisco URWB). Wi-Fi 6 technology brings higher density, higher throughput, more channels, power efficiency, and improved security in industrial or outdoor locations. Cisco URWB provides ultra-reliable wireless connectivity for moving assets or to extend the network where running fiber isn't feasible or is too costly.

The Cisco Catalyst IW9167E Heavy Duty Access Point comes with three 4x4 radios, in a heavy-duty design that is IP67 rated, and packed with advanced features.

The Cisco Catalyst IW9167E Heavy Duty Access Point Series includes the following hardware model:

- Catalyst IW9167EH-x—Standard model featuring eight external antenna connections supporting AP, URWB, and WGB software options..

x denotes the regulatory domain: A, B, E, F, Q, Z, or ROW.

A full listing of the AP's features and specifications is provided in the Cisco Catalyst IW9167E Heavy Duty Access Point Data Sheet.

Cisco Catalyst IW9167E Heavy Duty Access Point Features

This Access Point is supported on Cisco Catalyst 9800 wireless controller-based products, and has the following features:

- 2 GB DDR4 memory, 1 GB NAND Flash
- Tri-radio, dual band support: 2.4-GHz Slot 0, 5-GHz Slot 1, and 5/6 GHz Slot 2
- 4 x 4 MIMO with up to four spatial streams
- 8 x N-type female connectors for Wi-Fi, 1x TNC female for GNSS, multi-protocol loT radio, Aux radio, Barometer
- Bluetooth Low Energy (BLE) radio enables IoT use cases such as location tracking and way finding.
- Operation mode—Cisco URWB, WGB, or AP
- 1 x multi-Gigabit (mGig) copper Ethernet port (supporting PoE, including IEEE 802.3at/bt, Cisco UPoE, 100 Mbps/1 Gbps/2.5 Gbps/5 Gbps)
- 1 x SFP interface—supports up to 10 Gbps

Note For 10G SFP fiber module, Cisco PID SFP-10G-LR10-I has guaranteed performance with the Catalyst IW9167E access point.

- Optional M12 adapter for network and power interfaces

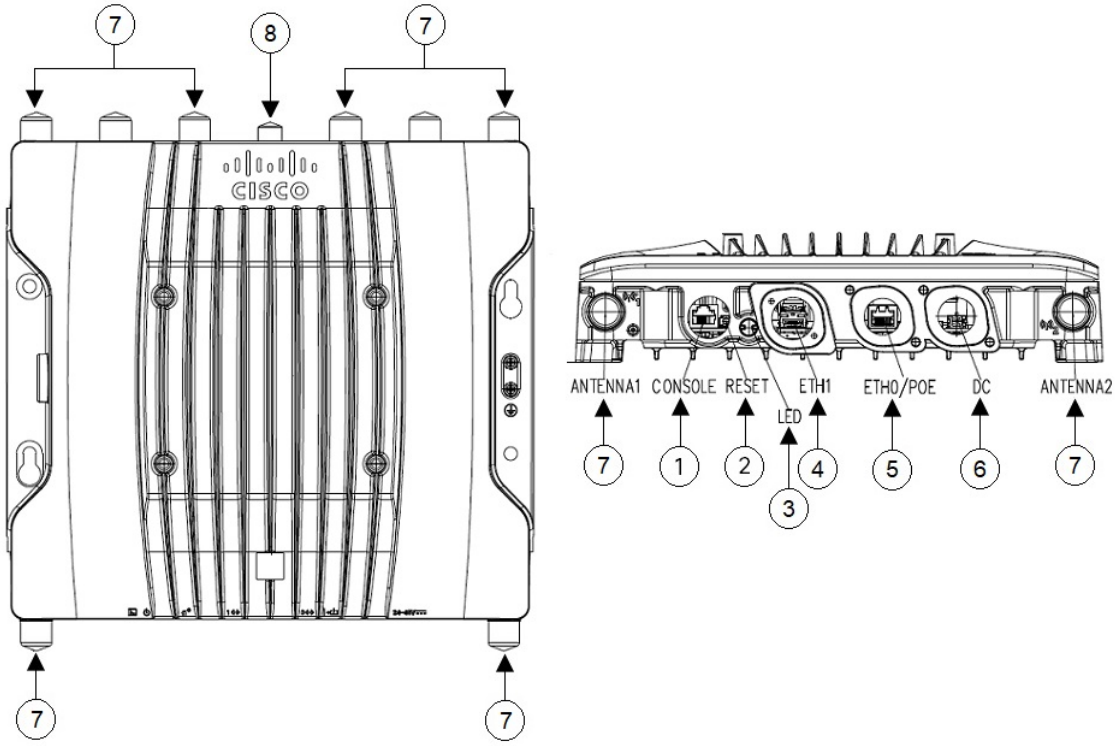
Note The M12 adapter is not compatible with Cisco Catalyst IW9167EH-HZ Access Point.

- Dual power input options—PoE-in and 24–48VDC
- Water and dust resistance—IP 66/67
- Hardened for shock, vibration, and extreme temperatures
- Operating temperature:
  - -40°C to 70°C without solar loading
  - Support cold start at -40°C and extend working at -50°C.

Connectors and Ports

The following figures show the available ports and connectors on the AP.

Figure 1: IW9167EH Connectors and Ports



1	Console port (RJ-45)	2	Reset button For information on how to use the Reset button, see Using the Reset Button.
3	Status LED	4	SFP (copper) 100M/1000M/10G Multigigabit Ethernet /M12 X-code or SFP (fiber) 1G/10G **Note** M12 X-code port by using M12-RJ45 adapter can support up to 2.5G rate.
5	100M/1000M/2.5G/5G Multigigabit Ethernet (RJ-45) /M12 X-code auto-sensing PoE+ in (802.3at/bt), UPOE-in **Note** M12 X-code port by using M12-RJ45 adapter can support up to 2.5G rate.	6	DC power input (micro-fit, or M12 4-pin A-code by using M12 adapter)
7	Antenna ports	8	GNSS port

4-Pin Micro-Fit Connector for DC Power

The following figures show the 4-pin Micro-Fit connector for DC power.

Figure 2: Mating Connector: Molex Micro-Fit 43025-0400

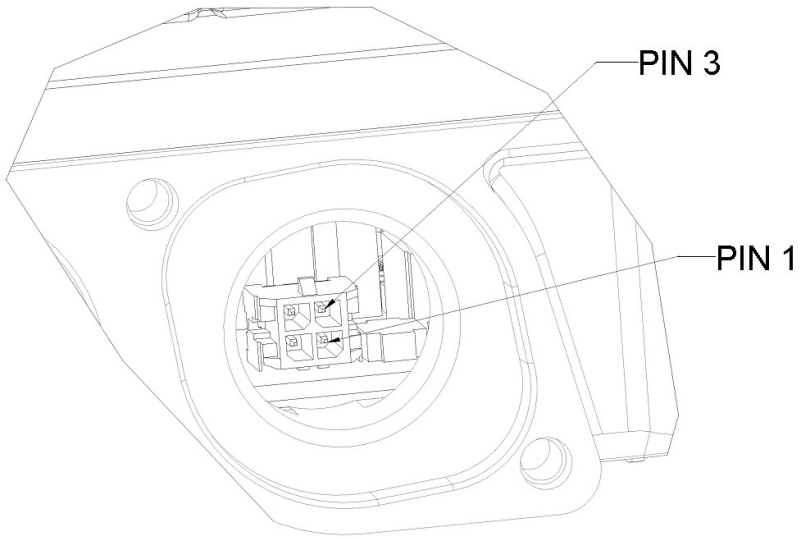
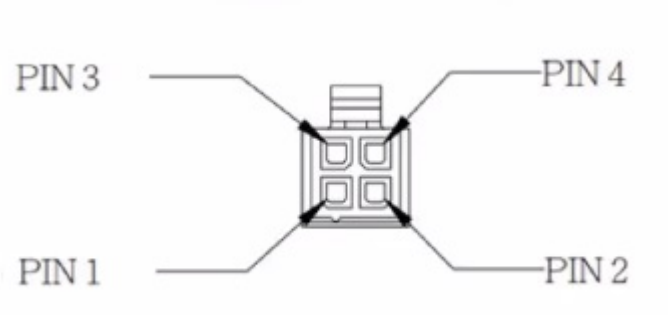


Figure 3: Mating Connector Front View



Molex Micro-Fit Pin	Assignment
Pin 1	Black (- Negative Terminal)
Pin 2	Not assigned
Pin 3	White (+ Positive Terminal)
Pin 4	Not assigned

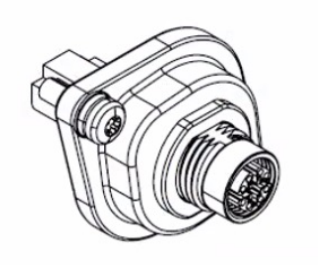
M12-RJ45 Adapter

M12-RJ45 adapter (Cisco PID: IW-ACC-M12ETH=) can be used to support M12 X-coded connector.

Note The M12 adapter is not compatible with Cisco Catalyst IW9167EH-HZ Access Point.

Note M12 X-code port by using M12-RJ45 adapter can support up to 2.5G rate.

Figure 4: M12-RJ45 Adapter (Cisco PID: IW-ACC-M12ETH=)



The following table shows the M12-RJ45 adapter pinouts.

Table 1: M12-RJ45 Pinouts

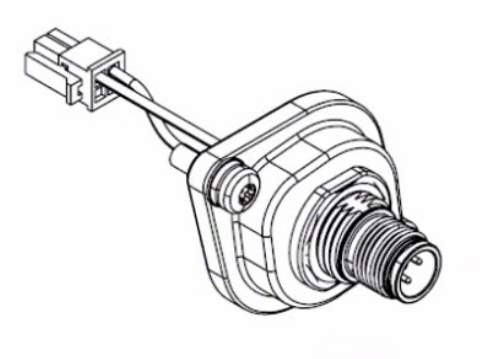
RJ45	Signal	M12 X-Code
1	B1_DA+	1
2	B1_DA-	2
3	B1_DB+	3
6	B1_DB-	4
7	B1_DD+	5
8	B1_DD-	6
5	B1_DC-	7
4	B1_DC+	8

M12-PWR Adapter

M12-PWR adapter (Cisco PID: IW-ACC-M12PWR=) can be used to support M12 A-coded DC power connector.

Note The M12 adapter is not compatible with Cisco Catalyst IW9167EH-HZ Access Point.

Figure 5: M12-PWR Adapter (Cisco PID: IW-ACC-M12PWR=)



The following table shows the M12-PWR adapter pinouts.

Table 2: M12-PWR Pinouts

Micro-FIT 4P	Wire	M12 A-Code
3	RED (22 AWG)	1
2	N/C	2
1	BLACK (22 AWG)	3
4	N/C	4

Power Sources

The Cisco Catalyst IW9167 Series Access Points supports the following power sources:

- DC power input: 24 to 48 Vdc, 2.0 to 0.9 A

Note Use DC cable with only No. 18 AWG or larger.

- Power over Ethernet (PoE) input: 42.5 to 57 Vdc, 1.0 to 0.7 A

  802.3at (PoE+), 802.3bt (PoE++), Cisco Universal PoE (Cisco UPOE). For more information, see Powering the Access Point.

Note Use CAT5e or better Ethernet cable with only No. 24 AWG or larger telecommunication line cord.

Warning **Statement 1033—**Safety Extra-Low Voltage (SELV)—IEC 60950/ES1–IEC 62368 DC Power Supply

To reduce the risk of electric shock, connect the unit *only* to a DC power source that complies with the SELV requirements in the IEC 60950-based safety standards or the ES1 requirements in the IEC 62368-based safety standards.

Power Adapters

The Cisco Catalyst IW9167E Heavy Duty Access Point supports the following DC power adapters:

- PID: IW-PWRADPT-MFIT4P=: Operating: -40°C to +65°C, 60W.
- PID: IW-PWRADPT-MFIT4IN=: Operating: -40°C to +65°C, 60W.

Power Injectors

The Cisco Catalyst IW9167E Heavy Duty Access Point supports the following power injectors:

- IW-PWRINJ-60RGDMG=: Operating: -40°C to +70°C. Power derating of 60W at 70°C, and 65W at 65°C. Supports 100M/1G/2.5G/5G/10G rates.
- AIR-PWRINJ-60RGD1=: Operation: -40°C to +50°C, 60W. Supports 10M/100M/1G rates.
- AIR-PWRINJ-60RGD2=: Operation: -40°C to +50°C, 60W. Supports 10M/100M/1G rates.

Caution When the AP is installed outdoors or in a wet or damp location, the AC branch circuit powering the AP should be provided with ground fault protection (GFCI), as required by Article 210 of the National Electrical Code (NEC).

Ethernet (PoE) Ports

The AP supports an Ethernet uplink port (also for PoE-IN). The Ethernet cable uses an RJ-45 connector (with weatherproofing) is used to send and receive Ethernet data and optionally supply inline power from the power injector or a suitably powered switch port.

Tip The AP senses the Ethernet and power signals, and automatically switch internal circuitry to match the cable connections.

Data Connectivity

Ethernet (PoE) Ports

The AP supports an Ethernet uplink port (also for PoE-IN). The Ethernet uplink port on the AP uses an RJ-45 connector (with weatherproofing) to link the AP to the 100BASE-T, 1000BASE-T, 2.5G BASE-T, or 5G BASE-T network.

The Ethernet cable must be a *shielded*, outdoor rated, Category 5e (CAT 5e) or better cable. Category 6A (CAT 6A) cable is needed for 5G rate.

Tip The AP senses the Ethernet and power signals, and automatically switch internal circuitry to match the cable connections.

SFP Option

Warning **Statement 1008—**Class 1 Laser Product

This product is a Class 1 laser product.

The factory-orderable fiber option provides a fiber input and output capability. Fiber data is transmitted and received over a single or dual-strand fiber cable, depending on the SFP, which is connected to the access point using these SFP modules:

Table 3: Supported SFP Modules

PID	Distance	Fiber/Cable	Operating Temperature Range
GLC-SX-MM-RGD=	220-550m	MMF	IND
GLC-LX-SM-RGD=	550m/10km	MMF/SMF	IND
GLC-T-RGD=[1]	100m	CAT 5e	IND
SFP-10G-LR10-I	10km	SMF	IND
SFP-10G-T-X[2]	30m@10Gbps	CAT 6A/CAT 7	EXT
SFP-10G-SR-I=	300m	OM3	IND

[1] GLC-T-RGD= supports only 1000BASE-T connection.
[2] SFP-10G-T-X is not in supported in Cisco IOS XE Release 17.9.3.

Note SFP modules are not hot-swappable. When you plug and unplug the SFP module, a manual reload of the AP is required.

Client data is passed to the network controller through the fiber connection via a fiber-capable switch or controller. Configuration information can be found in the controller configuration guide of the switch or controller you are using.

Antennas and Radios

The Catalyst IW9167EH access point has eight N-type female connectors to support multiple antenna options, such as the self-identifying antennas (SIA) on designated three SIA ports, dual-band antennas, and single-band antennas.

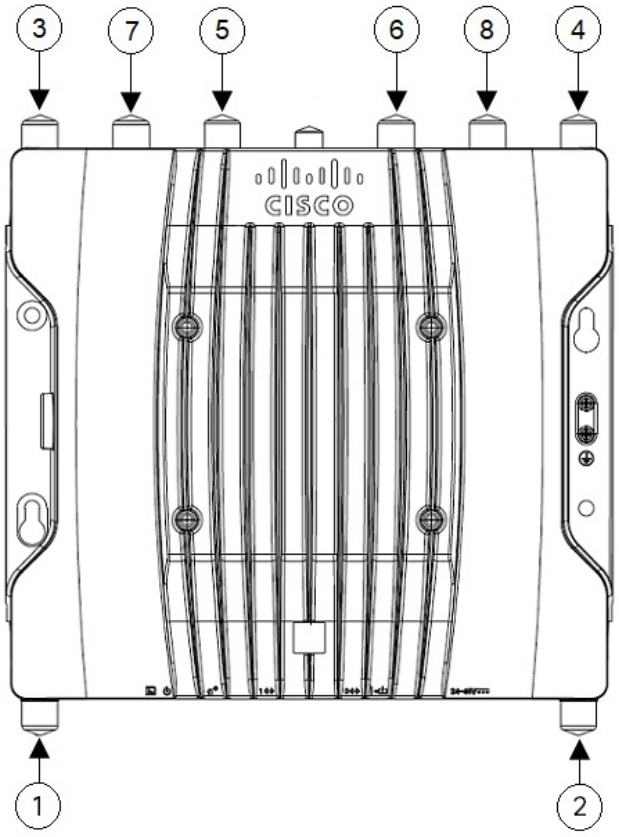
Supported External Antennas

The following figure shows the antenna ports of the Catalyst IW9167E access point.

Note

- Antenna caps must be installed when an antenna is not in use. Tighten with maximum torque range: 2.5 lbf.in.

Figure 6: Catalyst IW9167EH Access Point Antenna Ports



1	Port 1 Supports 2.4 GHz radio in 4x4, 2x2, or 1x1 mode. Supports 5 GHz radio in 4x4 mode. Supports SIA.	2	Port 2 Supports 2.4 GHz radio in 4x4, 2x2 mode. Supports 5 GHz radio in 4x4 mode.

3	Port 3 Supports 2.4 GHz radio in 4x4 mode. Supports 5 GHz radio in 4x4,2x2 mode.	4	Port 4 Supports 2.4 GHz radio in 4x4 mode. Supports 5 GHz radio in 4x4, 2x2, or 1x1 mode. Supports Bluetooth Low Energy (BLE) radio. Supports SIA.
5	Port 5 Supports 5/6 GHz radio in 4x4,2x2,1x1 mode. Supports SIA.	6	Port 6 Supports 5/6 GHz radio in 4x4,2x2 mode.
7	Port 7 Supports 5/6 GHz radio in 4x4 mode.	8	Port 8 Supports 5/6 GHz radio in 4x4 mode.

Note Do not connect omnidirectional antennas directly to both ports 1 - 4 and ports 5 - 8. To avoid interference between the 5 GHz and 5/6 GHz radios, use coaxial cables and mount one set of antennas at least 3 ft. (1 m) vertically away from the antennas attached directly to the chassis. Omnidirectional antennas may be connected to either ports 1 - 4 or 5 - 8, but not to any combination of both 5 GHz and 5/6 GHz radios' antenna ports simultaneously.

If you connect directional antennas to both 5 GHz and 5/6 GHz radios, space them at least 10 ft. (3 m) apart vertically, or at least 5 ft. (1.5 m) apart horizontally with their main beams aimed at least 90 degrees apart.

Supported Wi-Fi Antennas

The Catalyst IW9167EH access point supports the following external Wi-Fi antennas.

Table 4: Supported Wi-Fi and URWB Antennas

PID	Antenna Gain (dBi)				Connector	Antenna Name
	2.4 GHz	4.9 GHz	5 GHz	6 GHz		
IW-ANT-OMH-2567-N=	4	7	7	7	N male	2.4/5 GHz Tri-Band Omnidirectional Dipole Antenna, Horizontally Polarized, Self-Identifying
AIR-ANT2547V-N=	4	—	7	–	N male	Cisco Aironet Dual-Band Omnidirectional Dipole Antenna (White)
AIR-ANT2547VG-N=	4	—	7	–	N male	Cisco Aironet Dual-Band Omnidirectional Dipole Antenna (Gray)
AIR-ANT2547VG-NS=	4	—	7	–	N male	Cisco Aironet Dual-Band Omnidirectional Dipole Antenna (Gray), Self-Identifying

PID	Antenna Gain (dBi)				Connector	Antenna Name
AIR-ANT2568VG-N=	6	—	8	–	N male	Cisco Aironet Dual-Band Omnidirectional Dipole Antenna (Gray)
AIR-ANT2568VG-NS=	6	—	8	–	N male	Cisco Aironet Dual-Band Omnidirectional Dipole Antenna (Gray), Self-Identifying
AIR-ANT2480V-N=	8	—	—	–	N male	Cisco Aironet 2.4 GHz 8 dBi Omnidirectional Dipole Antenna
AIR-ANT5180V-N=	—	7	8	–	N male	Cisco Aironet 5 GHz 8 dBi Omnidirectional Dipole Antenna
AIR-ANT2413P2M-N=	13	—	—	–	N male (x2)	Cisco Aironet 2.4 GHz 13 dBi Dual-Port Dual-Polarized Directional Panel Antenna
AIR-ANT5114P2M-N=	—	—	13	–	N male (x2)	Cisco Aironet 5 GHz 13 dBi Dual-Port Dual-Polarized Directional Panel Antenna
AIR-ANT2513P4M-N=	13	—	13	–	N female (x4)	Cisco Aironet Four-Port Dual-Band Polarization-Diverse Directional Panel Antenna
IW-ANT-PNL25610-R=	8.65	—	8.35	9.25	RP-TNC jack (x8), TNC female (x1, GNSS)	Cisco Tri-Band 8-Element Dual-Slant +/-45 Degree Polarized Directional Stadium Antenna with GNSS, Self-Identifying
IW-ANT-PNL5615-NS	—	15	15	15	N-type female	Cisco Industrial High Gain Directional Antenna
IW-ANT-OMM-53-N=	—	3	3	—	N female	5 GHz Omnidirectional Multi-Polarized Antenna
IW-ANT-OMV-55-N=	—	—	5	—	N female	5 GHz Vertically Polarized Omnidirectional Dipole Antenna
IW-ANT-OMH-55-N=	—	—	5	—	N female	5 GHz Horizontally Polarized Omnidirectional Dipole Antenna
IW-ANT-PNL-59-N=	—	—	9	—	N female (x2)	5 GHz Dual-Port Dual-Slant +/-45 Degree Polarized Directional Panel Antenna
IW-ANT-SKS-514-Q=	—	14	14	—	QMA female (x2)	5 GHz Directional Shark Antenna, Dual-Slant +/-45 Degree Polarized

PID	Antenna Gain (dBi)				Connector	Antenna Name
IW-ANT-SKD-513-Q=	—	13	13	—	QMA female (x2)	5 GHz Bidirectional Shark Antenna, Dual-Slant +/-45 Degree Polarized
IW-ANT-PNL5615-NS	—	15	15	15	N-type female	Cisco Industrial High Gain Directional Antenna
IW-ANT-OMV-2567-N	4	7	7	7	N male	Tri-Band Omnidirectional Antenna, Self-Identifying

For installation instructions and detailed information on any of these antennas, refer to the antenna data sheet on Cisco.com, or see the antenna guides at:

- Cisco Industrial Routers and Industrial Wireless Access Points Antenna Guide
- http://www.cisco.com/c/en/us/support/wireless/aironet-antennas-accessories/products-installation-guides-list.html

Follow all safety precautions when installing the antennas. For information on safety, see Safety Precautions when Installing Antennas.

Supported GNSS Antenna

The following table shows the external GNSS antennas supported by the Catalyst IW9167EH access point.

Table 5: Supported GNSS Antenna

PID	Frequencies Supported	Connector	Description
ANT-GNSS-OUT-TNC=	1560 - 1608 MHz	TNC male	Outdoor Active GNSS Antenna with 15-ft. integrated cable