



HP 8 / 10.7 dBi Dual-Band Narrow Beamwidth 3-Element MIMO Sector Antenna (J9169A) Guide

SAFETY

The HP J9169A and all associated equipment should be installed in accordance with applicable local and national electrical code guidelines to ensure safe operation.

Before connecting an outdoor antenna to an HP Wireless Access Point, be sure that the access point radio power levels are set in accordance with local regulatory requirements. For information on setting radio power levels, see *Transmit power control* in the *MSM3xx/4xx Access Points Management and Configuration Guide*.

For mandatory antenna power settings by country/region, look for *Antenna Power-Level Setting Guide (for MSM products)* at www.hp.com/networking/support.

Please read all instructions carefully before attempting to install and use this product.

GROUNDING: System grounding and lightning protection are essential, especially for exterior-mounted antennas exposed to the elements. Never install an antenna where it may fall and contact electrical lines.

SPECIFICATIONS

Item	Specification
Frequency, GHz	2.4-2.5 & 5.1-5.9
Gain with 34" cable (dBi)	8.0 @ 2.4-2.5 GHz, 10.7 @ 5.1-5.9 GHz
VSWR Maximum	2.0:1
3 dB Beamwidth - Azimuth	75° @ 2.45 GHz / 55° @ 5.5 GHz
3 dB Beamwidth - Elevation	70° @ 2.45 GHz / 60° @ 5.5 GHz
Polarization	Linear, 2 Vertical, 1 Horizontal
Maximum Input Power	1 Watt
Cable Length	34 in. (860 mm) Plenum rated
Mechanical Size	10.2" x 10.2" x 1.3" (259.1 x 259.1 x 33.5 mm)
Weight	3.96 lb. (1.8 kg)
Antenna Connection	Type N (male) connector (3x)
Radome	Polycarbonate
Mount Style	Articulating for Mast / Wall
Operating Temperature	-30°C to +65°C
Wind Surface Area	@ 0°, 0.0067 m ² / @ 90°, 0.009 m ²
Wind Survival	200 km/h
Water / Dust Seal Rating	IP67

WARRANTY AND SUPPORT INFORMATION

See the warranty and support information included with this product. For the latest information, go to www.hp.com/networking/support.

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DESCRIPTION

The HP J9169A is a dual-band, narrow beamwidth directional sector antenna for use in 802.11n MIMO applications. Enclosed in a compact, low-profile radome, the antenna is mounted to a rugged, articulating mount. The mount can be affixed to a mast or anchored to a wall. Each of the three MIMO antenna elements are connected to the access point via low-loss, plenum-rated coaxial pigtailed. The radiation patterns are uniform and symmetrical, providing high-level signal density into defined coverage zones.

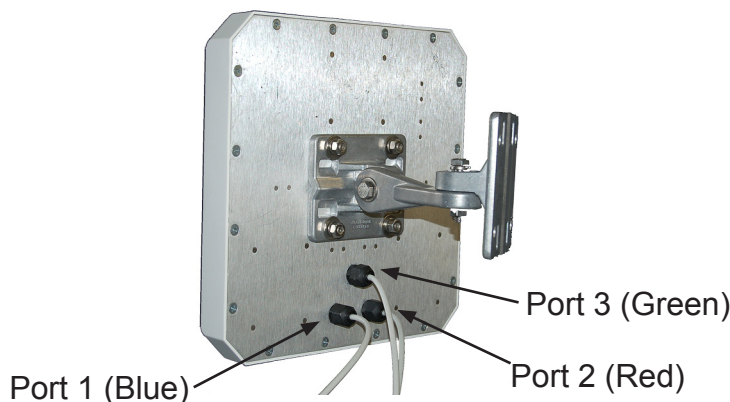
This antenna will greatly enhance the performance of 802.11n systems. The dual-band frequency coverage means that a single antenna can be deployed with any MIMO radio in the 2.4-2.5 GHz or 5.1-5.9 GHz bands.

ANTENNA PORTS

Antenna cable port identification and polarization is as follows:

- Port 1 (Blue), vertically polarized
- Port 2 (Red), vertically polarized
- Port 3 (Green), horizontally polarized

Respect color coding when connecting to the access point (AP).

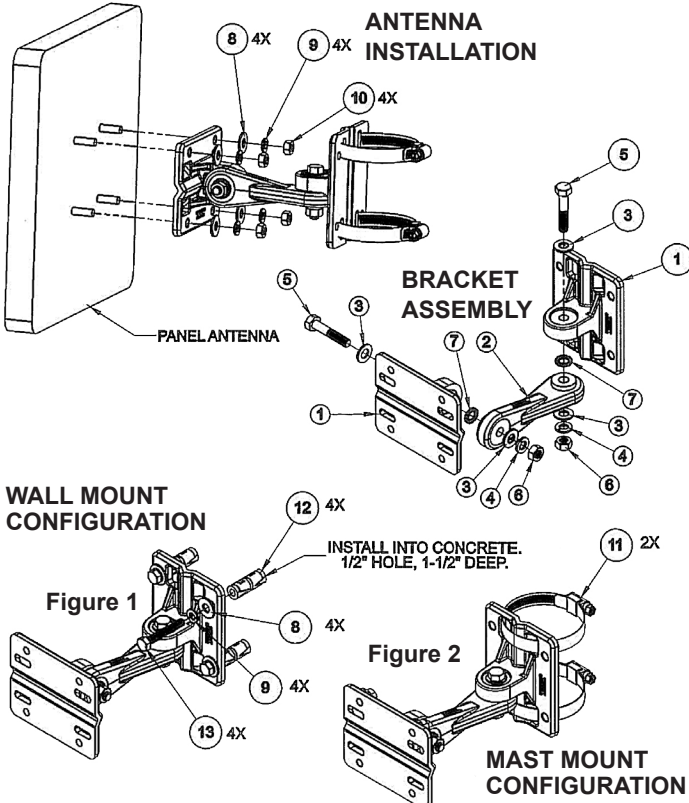


ANTENNA LOCATION

This is an outdoor antenna, but it may also be used indoors. For best results, mount the J9169A facing towards the center of the coverage area. A line-of-sight path between the antenna and active area works best. Avoid mounting next to a column or vertical support that could create a shadow zone and reduce coverage.

ASSEMBLY AND MOUNTING

The J9169A is shipped with a heavy duty articulating mounting kit (HP 5070-6360) that provides wide-range articulation in both the azimuth and elevation planes. The kit allows mounting on a mast (up to 2 inches or 5.1 cm), or on a wall using wall anchors.



MOUNTING HARDWARE

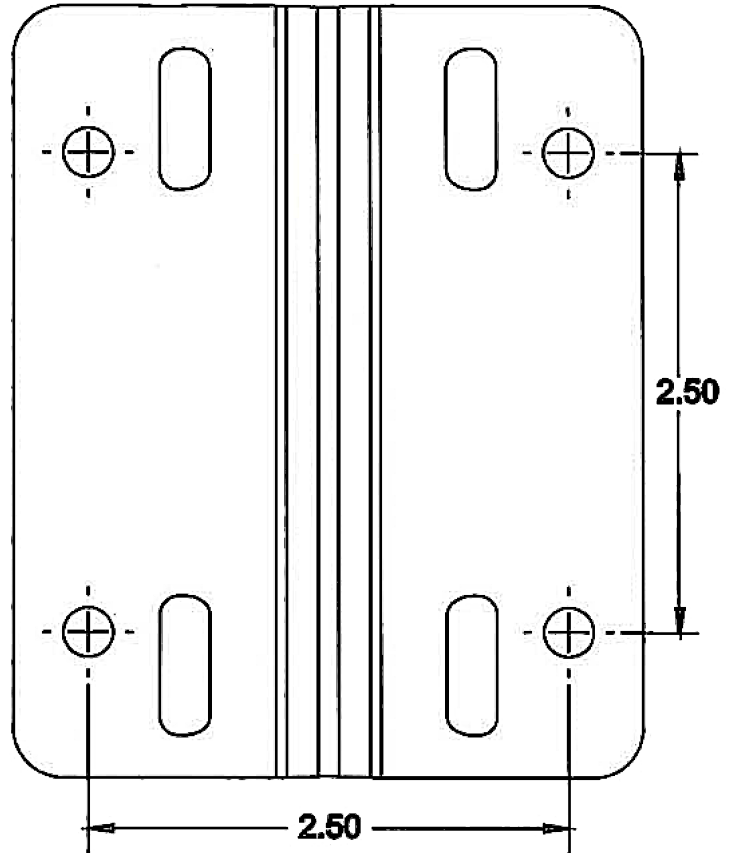
Item	Description	Qty
1	Bracket, Flange	2
2	Bracket, Linkage	1
3	5/16 Flat Washer	4
4	5/16 Lock Washer	2
5	5/16 x 1-5/8 Hex Head Bolt	2
6	5/16 Nut	2
7	Double Serrated Lock Washer	2
8	1/4 Flat Washer	8
9	1/4 Lock Washer	8
10	1/4 Nut	4
11	Clamp	2
12	Expansion Anchor	4
13	1/4 x 1-3/4 Hex Head Bolt	4

Assemble and mount the antenna as follows.

(See Figure 1 for wall mount and Figure 2 for pole/mast mount.)

- Attach the antenna mount (1) to the exposed studs on the back of the antenna using 4 SS 1/4"-20 hex nuts (10), 4 1/4"-20 SS flat washers (8) and 4 1/4"-20 SS lock washers (9)
- Secure one side of the articulating arm (2) with 1 SS [M8] washer external serrated (7), to the antenna mount (1) using 1 Bolt size SS 5/16"x 1-5/8"(5), 1 SS 5-16" split lock wash (4), 2 SS flat washer 5-16" (3) and 1 hex nut 5-16" (6) assemble as shown.
- For mounting on a wall:
 - Using the other supplied antenna mount bracket (1) as a template to mark holes locations, for drilling see wall diagram figure 3 for holes size.
 - Install 4 wall expansion anchors (12).
 - Install to wall the antenna mount bracket using four SS HEX 1/4"-20 screws (13), 4 SS 1/4"-20 flat washers (8), 4 1/4"-20 lock washer (9). Or, for mounting on a pole or mast, attach the two hose clamps (11) to antenna mount bracket (1) and encircle the pole with each clamp and tighten.
- Attach the pre-assembled antenna with both (1) and (2) to the other bracket (previously mounted) using 1 SS washer external serrated (7), using 1 Bolt size SS 5/16" 1-5/8" (5), 1 SS 5-16" split lock washer (4), 2 SS flat washer 5-16" (3) and 1 hex nut (6) 5-16" assemble as shown. Use the screw (5) to attach the free end of the articulating arm to the mount and then secure it in place with SS hex nut (6).
- Loosen the pivot screws (1-5/8" bolt screw (5)) as needed to position the antenna for desired azimuth and elevation. When the antenna is fully adjusted, tighten all hardware securely.

Figure 3



LIGHTNING ARRESTER

WARNING: PROFESSIONAL INSTALLATION REQUIRED: Prior to installing or using this device, consult with a professional installer trained in RF installation and knowledgeable in local regulations including building and wiring codes, safety, channel, power, indoor/outdoor restrictions, and license requirements for the intended country. It is the responsibility of the end user to ensure that installation and use comply with local safety and radio regulations.

Warning: Surge protection and grounding: When connecting an outdoor antenna, make sure that proper lightning surge protection and grounding precautions are taken in accordance with local electrical codes. Failure to do so may result in personal injury, fire, equipment damage, or a voided warranty. The HP hardware warranty does not cover damage caused by static discharge or lightning strike.

For outdoor applications, it is strongly recommended that you install a lightning arrester (HP J8996A or equivalent) for each port of the antenna. Lightning arresters must be purchased separately.

For best results, install the lightning arrester in close proximity to a low-resistance ground at a point where the coaxial cable enters the building or attaches to an AP. For exterior installations, use weatherproof coaxial connectors with a suitable mastic or rubberized tape to prevent water incursion. See Photo 2.

To connect the lightning arrester to the ground, use a very short and direct run of # 10 solid copper wire, or equivalent. Ensure that the other end of the grounding wire connects to a true earth ground according to the NFPA 70 National Electrical Code and/or all pertinent local codes.

Provide drip loops in cables to prevent water from entering the building. See Photo 3.

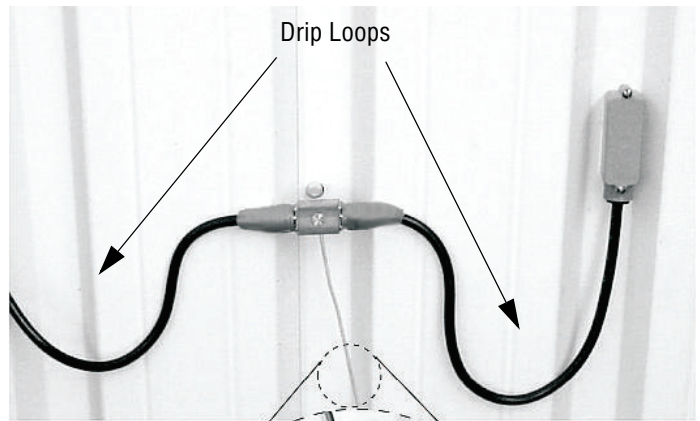


Photo 3

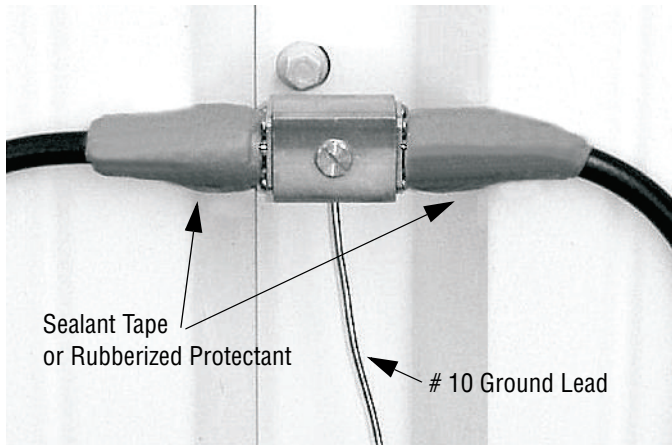
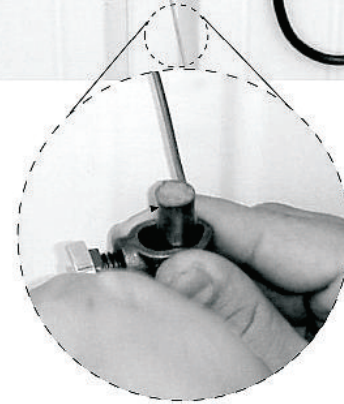
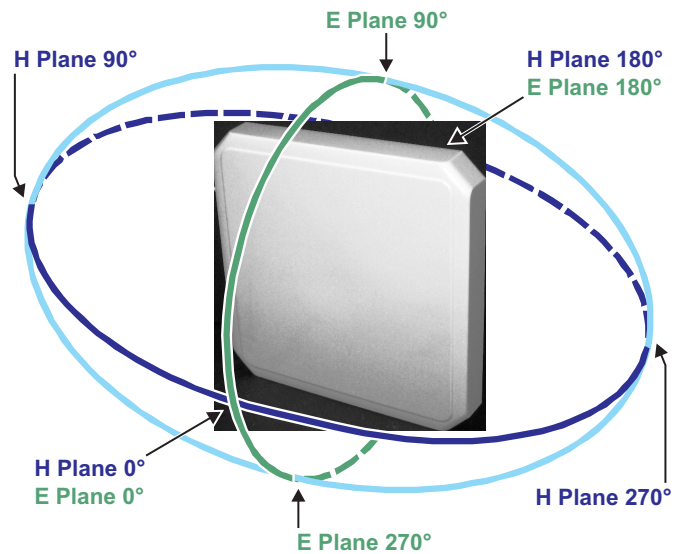


Photo 2

Be sure to install the lightning arrester in an accessible location that permits periodic inspection and replacement (as needed).

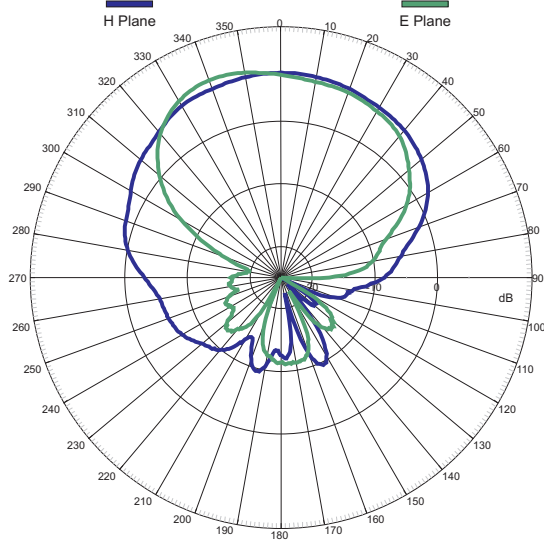
ANTENNA PATTERN PLOTS

The plots on the following pages are oriented as follows:

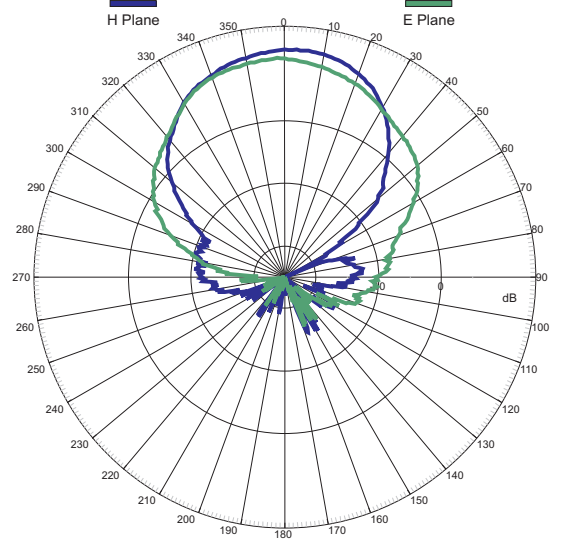


Plot Orientation Diagram

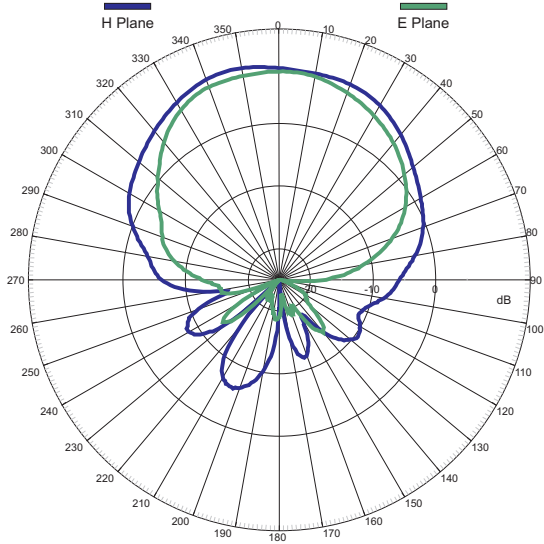
2.45 GHz (Port 1 Vertical Polarization)



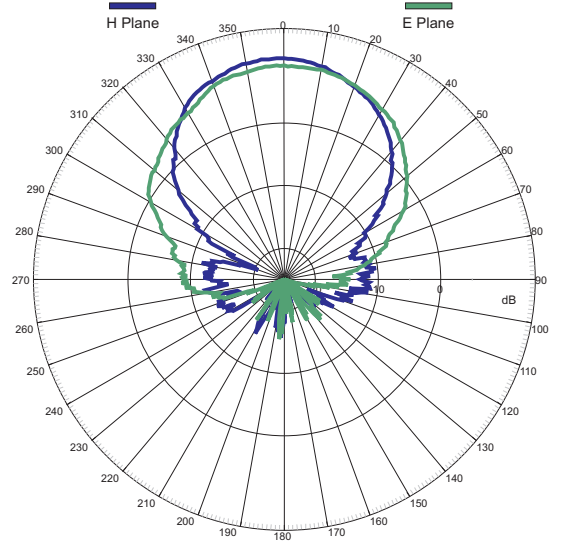
5.47 GHz (Port 1 Vertical Polarization)



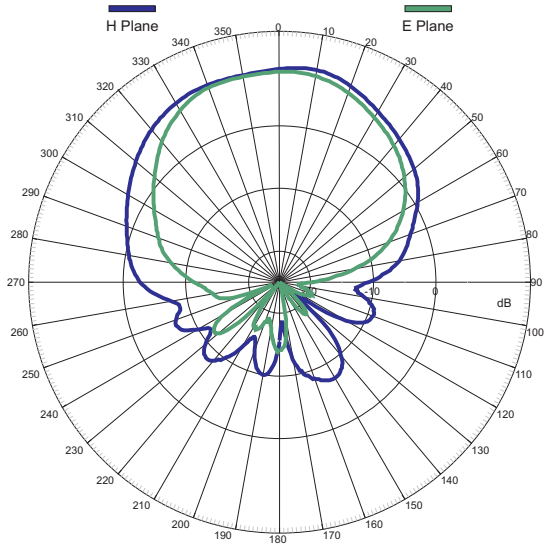
2.45 GHz (Port 2 Vertical Polarization)



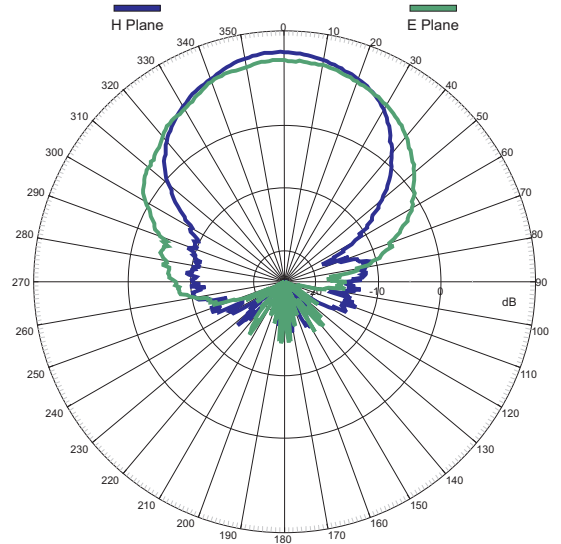
5.47 GHz (Port 2 Vertical Polarization)



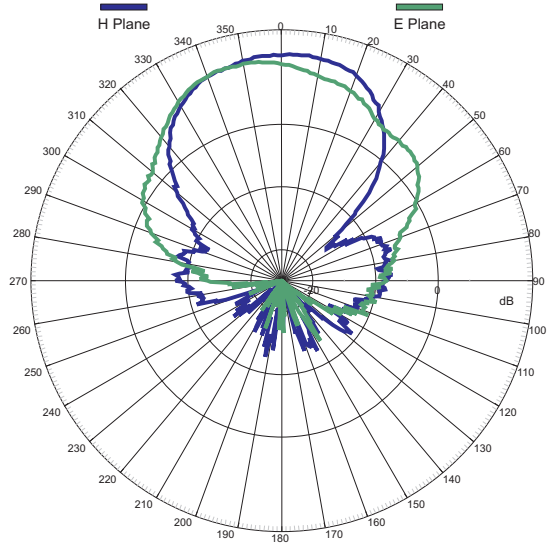
2.45 GHz (Port 3 Horizontal Polarization)



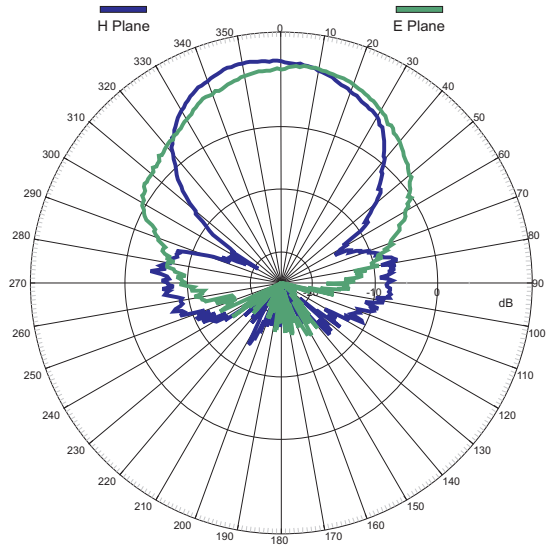
5.47 GHz (Port 3 Horizontal Polarization)



5.725 GHz (Port 1 Vertical Polarization)



5.725 GHz (Port 2 Vertical Polarization)



5.725 GHz (Port 3 Horizontal Polarization)

