



The MSM310-R is a Wi-Fi Alliance authorized Wi-Fi CERTIFIED 802.11a/b/g product. The Wi-Fi CERTIFIED Logo is a certification mark of the Wi-Fi Alliance. The MSM310-R is certified under the SpectraLink Voice Interoperability for Enterprise Wireless (VIEW) Certification Program when it operates in autonomous mode or in controlled mode in conjunction with an MSM7xx Controller.

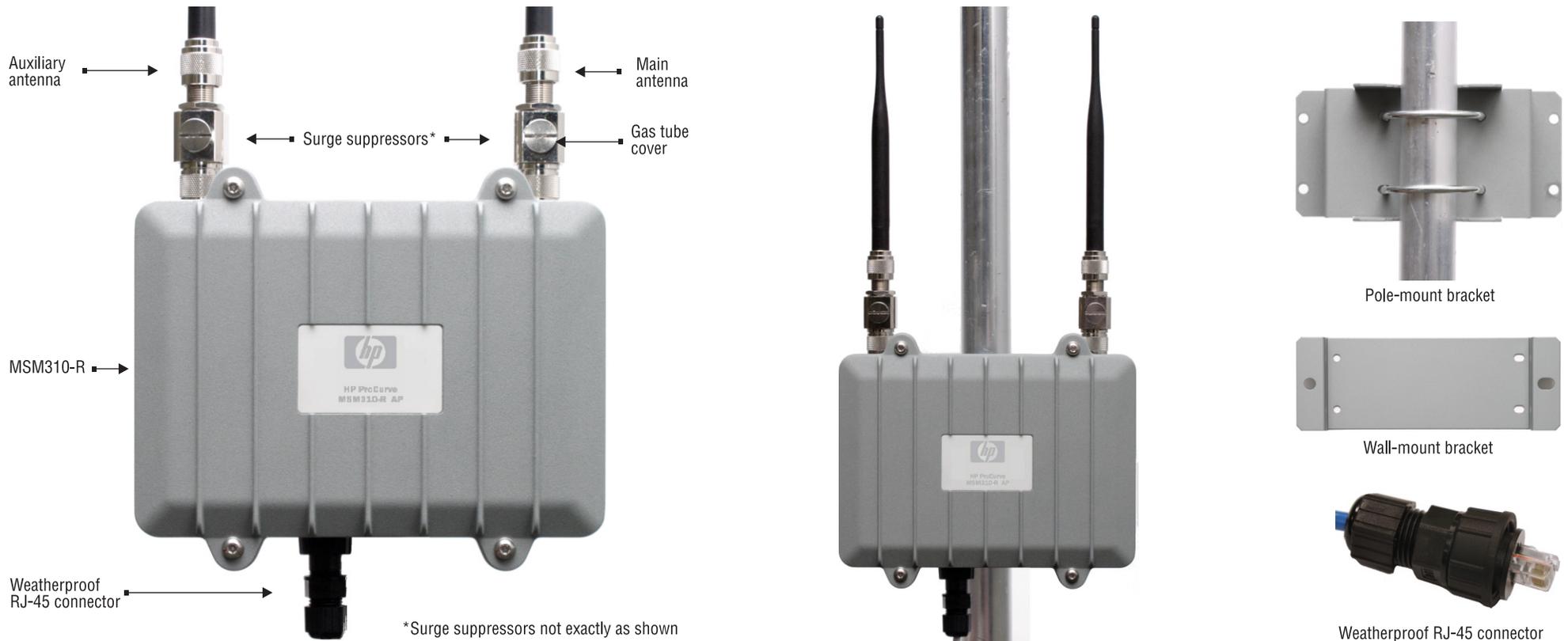


MSM310-R Access Point Quickstart

This Quickstart shows you how to get started using the MSM310-R Access Point (US J9380A/B, WW J9383A/B).

After reading this Quickstart, you can visit www.hp.com/go/procurve/manuals and download documents of particular interest such as the *MSM3xx / MSM4xx Access Points Management and Configuration Guide* and the *MSM7xx Controllers Management and Configuration Guide*.

Hardware overview



Package contents

MSM310-R featuring a die-cast aluminum enclosure with three-point silicone gasket, two 2.4 GHz (5.5 dBi) 802.11b/g omnidirectional antennas, weatherproof quick-disconnect RJ-45 Ethernet connector, wall-mount bracket, pole-mount bracket assembly, grounding lug, two antenna adapters (for use with optional external antennas only), documentation.

Radio and antennas

The MSM310-R has a single radio with two antennas. The antenna connectors are weatherproof straight-polarity N-type female bulkhead antenna connectors. Optional external antennas are available from HP ProCurve. On the HP ProCurve Website, see the *Accessories* section for the MSM310-R.

Ethernet port

The MSM310-R has a single 10/100 Mbps Ethernet port with weatherproof RJ-45 connector. Power over Ethernet (PoE) 802.3af is used to power the MSM310-R.

The MSM310-R is a ruggedized version of the MSM310 and shares the same feature set. However, due to its weatherproof enclosure, Ethernet Port 2, the status lights, and the reset button are not available. When using the management tool, ignore references to Port 2.

Resetting to factory defaults

The easiest way to reset an MSM310-R to its factory defaults is with its management tool. When management tool access is unavailable (forgotten password or IP address, for example), follow the procedure in *Resetting to factory defaults* in the *MSM3xx / MSM4xx Access Points Management and Configuration Guide*.

About controlled mode and autonomous mode

The MSM310-R can operate in one of two modes: controlled (the default) or autonomous. Switching modes resets all configuration settings to factory defaults.

- **Controlled mode:** To become operational, the MSM310-R must establish a management tunnel with an MSM7xx Controller. The controller manages the MSM310-R and provides all configuration settings. Discovery of the controller is automatic if default settings are used on the MSM310-R and the controller, and both devices are on the same subnet. See *Working with controlled APs* in the *MSM7xx Controllers Management and Configuration Guide*.
- **Autonomous mode:** Once switched to autonomous mode, the MSM310-R operates as a stand-alone AP. An autonomous MSM310-R is configured and managed via its web-based management tool as described in *Initial configuration (autonomous mode)* on page 4.

Important information to read before installing

Note: It is strongly recommended that you work with the MSM310-R and confirm its operation before installing it outdoors.

Warning: PROFESSIONAL INSTALLATION REQUIRED

Prior to installing or using the MSM310-R, 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.

Surge protection and grounding: Make sure that proper lightning surge protection and grounding precautions are taken according to local electrical code. Failure to do so may result in personal injury, fire, equipment damage, or a voided warranty. The HP ProCurve hardware warranty provides no protection against damage caused by static discharge or a lightning strike.

Cabling: You must use the appropriate cables, and where applicable, surge protection, for your given region. For compliance with EN55022 Class-B emissions requirements use shielded Ethernet cables.

Country of use: In some regions, you are prompted to select the country of use during setup. Once the country has been set, the MSM310-R will automatically limit the available wireless channels, ensuring compliant operation in the selected country. Entering the incorrect country may result in illegal operation and may cause harmful interference to other systems. See *Regulatory Notice for European Union and EFTA member countries* on page 6.

Caution: **External Antennas: When using an external antenna, depending on the country of use, the antenna selected, and your radio settings, it may be mandatory to reduce the radio transmission power level to maintain regulatory compliance. For specific power limits for your country, consult the Antenna Power-Level Setting Guide available on the HP ProCurve manuals page for the MSM3xx/4xx Access Points at www.hp.com/go/procurve/manuals.**

To set the radio transmission power level, for controlled access points see *Transmit power control* in the *MSM7xx Controllers Management and Configuration Guide*. For autonomous access points, see *Transmit power control* in the *MSM3xx / MSM4xx Access Points Management and Configuration Guide*.

Safety: Take note of the following safety information during installation:

- If your network covers an area served by more than one power distribution system, be sure all safety grounds are securely interconnected.
- Network cables may occasionally be subject to hazardous transient voltages (caused by lightning or disturbances in the electrical power grid).
- Handle exposed metal components of the network with caution.
- The MSM310-R is powered-on when the Ethernet port is plugged into a PoE power source.

Protection equipment needed

In addition to the items supplied with the MSM310-R, protection equipment will be required according to your electrical code. For example:

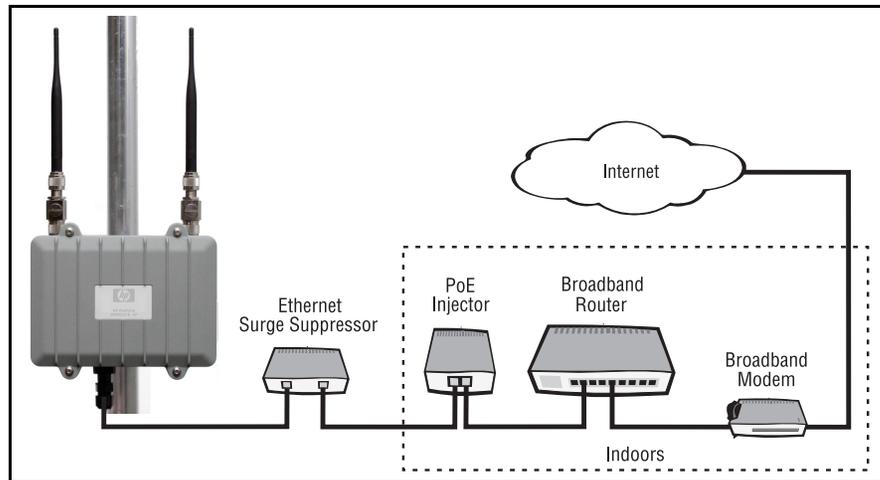
- **Antenna surge suppressor:** HP ProCurve Antenna Lightning Arrester, J8996A.
- **Ethernet surge suppressor:** Weatherproof PoE compatible 10/100 base-T CAT5 Lightning Protector.

Installation

Warning: **The MSM310-R must be installed with the antennas pointing straight up. Damage caused by water ingress through the RJ-45 connector as a result of the MSM310-R being improperly installed or the improper assembly or attachment of the weatherproof RJ-45 connector, is not covered by the warranty.**

Warning: Corrosive damage caused by salt fog is not covered by the warranty.

The MSM310-R is typically interconnected with other equipment as follows (only the antennas and weatherproof RJ-45 connector are supplied with the MSM310-R):

**Warning:** This is a general procedure. It is the installer's responsibility to perform all installation according to local electrical code and regulations.**Plan the installation**

Identify a suitable install location. The MSM310-R has a NEMA 4 rating and is unsuitable for installation in a salt fog environment. Local electrical and building codes and regional regulations will dictate many aspects of your installation. It is recommended that you perform transmission and reception tests at a proposed location before installing. In some cases it may be desirable to install remote antennas, off the body of the MSM310-R.

You will have to provide an effective earth ground for the MSM310-R, at least one of its antenna surge suppressors, and the Ethernet surge suppressor. It is rarely sufficient to use a metal pole for any equipment grounding. You will also need to decide how to route the Ethernet cable from the building to the MSM310-R.

Install cabling

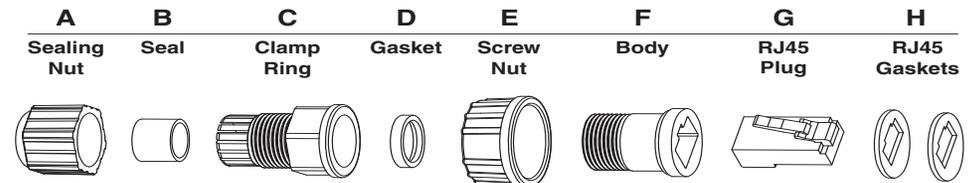
According to your needs and local electrical codes and regulations, run grounding wires and Ethernet cable to where the MSM310-R will be installed. For the Ethernet cable, allow for an extra .6 meters (two feet) for connector attachment and drip loops. In addition, allow for an extra 1.2 meters (four feet) of cable for the Ethernet surge suppressor.

Prepare the weatherproof Ethernet cable

To provide a weatherproof seal, the Ethernet port on the MSM310-R uses a custom weatherproof cable connector (supplied). You must terminate your Ethernet cable with this connector as described in the following procedure. Cable length should not exceed 91 meters (300 feet).

Caution: Ruggedized Ethernet cables must be used for outdoor cable runs.

1. Carefully unpack the nine quick-disconnect items from the plastic bag, identifying all parts as illustrated. If any parts are missing, DO NOT proceed until you get a replacement parts kit.

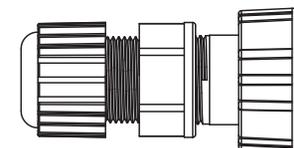
Weatherproof connector parts

2. If your Ethernet cable already has an RJ-45 connector on the end that will connect to the ProCurve equipment, remove the RJ-45 connector by cutting the cable at least 1.2 cm (.5 inch) before the RJ-45 connector.

Be sure to make a clean cut with a pair of sharp angle cutters. *The complete cut (through both the cable sheath and all wires) must occur in a single cutting motion.*

3. Hold Clamp Ring (C) horizontally, with its fingers to the left. Insert the Seal (B) into the fingers on the left end so that it is flush with the end of the fingers. Insert the Gasket (D) into the right end, pushing it against the ridge at the end of the threads. The Gasket is beveled on one side. The beveled side should face inwards away from the Screw Nut.
4. Thread the Sealing Nut (A) onto the left end of the Clamp Ring (C). Tighten it only enough for it to stay attached.
5. Hold the Screw Nut (E) vertically, with the open threads facing up, and drop the Body (F) into it, with the RJ-45 connector opening facing up.
6. Hold the Clamp Ring (C) vertically below the Screw Nut/Body items and screw the Body into the threads on the Clamp Ring (C). Tighten it only enough to stay attached. Note that the Screw Nut (E) remains loose on the Body (F).
7. Remove the white backing paper from one of the RJ-45 Gaskets (H) and press the glued side onto the Body (F) being **very careful** to align the gasket with the RJ-45 connector shape on the Body (F).
8. Remove the backing paper from the second RJ-45 Gasket (H) and press it over the first one, being sure to maintain alignment.
9. Tighten the threads between Body (F) and Clamp Ring (C) **by hand**. **DO NOT tighten between Clamp Ring (C) and Sealing Nut (A)**. **Do not over tighten. Do not tighten with tools.**

The quick-disconnect assembly should now look like this when held horizontally, with the Sealing Nut (A) at the left end, and the Screw Nut (E) over the Body (F) on the right.



10. Carefully thread the cleanly-cut end of the Ethernet cable through the Sealing Nut (A) end of the quick-disconnect assembly, and push through approximately 30 cm (1 foot) of cable.

Note: The next two steps should be performed by someone with experience building Ethernet cables.

11. Prepare the cable and attach it to the RJ-45 Plug (G) according to the directions included with your crimping tool.
12. Before continuing, test the cable with a portable Ethernet cable tester to ensure that the RJ-45 plug (G) is correctly connected.
13. Carefully pull the cable slack back through the quick-disconnect assembly until the RJ-45 Plug (G) is almost touching the Body (F). Adjust the cable position so that the RJ-45 Plug (G) fits precisely into the RJ-45 cutout in the Body (F), and press down the plastic tab so the plug fits correctly.
14. Tighten the threads between Sealing Nut (A) and Clamp Ring (C) **by hand**, until the cable is firmly anchored. **Do not over tighten. Do not tighten with tools.**

Install the MSM310-R

1. Mount the MSM310-R on a wall or pole using the supplied brackets so that the antennas are pointing up. Local electrical and building codes will dictate many installation aspects.
2. See photo “Grounded body (via grounding lug).” Attach the supplied grounding lug (through the bracket) to one of the lower screw holes on the MSM310-R body, and attach a grounding wire with the set screw.
3. (See photo on the left side of page 1.) Manually screw on antenna surge suppressors to the antenna connectors on top of the MSM310-R. Position the gas tube covers so that they can be removed for future tube replacement. Attach the two supplied antennas.

Note: If installing an optional HP antenna, first attach the lightning arrester to the MSM310-R, attach the antenna adapter to the arrester, then attach the antenna connector to the adapter. See also the antenna documentation.

4. (See photo “Grounded surge suppressor.”) Attach a grounding wire to at least one of the antenna surge suppressors. For the model shown, remove the crimp connector, crimp it to the wire, and then screw the crimp connector back onto the surge suppressor.

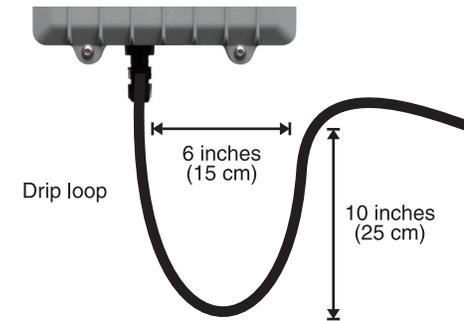


Grounded surge suppressor



Grounded body (via grounding lug)

5. Create a drip loop in the Ethernet cable below the MSM310-R. A drip loop provides additional protection against water running down the Ethernet cable and into the connector. Form the loop as shown here. Make sure that the distance between the loop start and end points is at least 15 cm (6 inches), and that the cable hangs down at least 25 cm (10 inches).



6. (See illustration “Weatherproof connector parts” on previous page.) Mate the RJ-45 Plug (G) with the socket on the MSM310-R, hold it firmly in place, and tighten the Screw Nut (E) **by hand**. **Do not over tighten. Do not tighten with tools.**
7. Install an Ethernet surge suppressor as close as possible to the MSM310-R, ideally within .6 meters (two feet). This helps reduce the effects of any charge carried by the cable to the MSM310-R. Install this Ethernet surge suppressor between the MSM310-R and the PoE power source.

The Ethernet cable will typically need to be cut and have the cable end coming from the PoE injector connected to the Ethernet surge suppressor input (Line) and have the cable end coming from the MSM310-R connected to the Ethernet surge suppressor output (Equipment). Follow the instructions included with the Ethernet surge suppressor. Include a drip loop for both the input and output cables. Connect a grounding wire to the Ethernet surge suppressor.

Powering the MSM310-R

The MSM310-R can be powered by:

- A PoE-enabled switch. A number of PoE-enabled switches are available from HP ProCurve.
- An HP ProCurve 1-Port Power Injector (J9407A).

Initial configuration (autonomous mode)

This procedure describes how to switch a factory-default MSM310-R to autonomous mode and then perform its initial configuration that enables you to establish a wireless connection through the MSM310-R to the Internet.

Note: For controlled mode configuration, instead see *Working with controlled APs* in the *MSM7xx Controllers Management and Configuration Guide*.

In autonomous mode, the MSM310-R is managed via its web-based management tool using at least Microsoft Internet Explorer 7/8 or Mozilla Firefox 3.x.

Caution: Wireless Security

For initial-configuration convenience, a factory-default MSM310-R that has been switched to autonomous mode has all wireless security options disabled. It is strongly recommended that after performing this procedure, you enable a wireless security option to properly safeguard the wireless network from intruders. See *Wireless protection* in the *MSM3xx / MSM4xx Access Points Management and Configuration Guide*.

Note: Do not power on the MSM310-R until directed.

A. Configure your computer

1. Disconnect your computer LAN port and configure it to use a static IP address in the range **192.168.1.2** to **192.168.1.254**, and a subnet mask of **255.255.255.0**. Set the default gateway to **192.168.1.1**, and DNS server to **192.168.1.1**. For example to do this in Windows Vista, use **Control Panel > Network and Sharing Center > Manage Network Connections > Local Area Connection**, right-click **Properties** then select **Internet Protocol Version 4 (TCP/IPv4) > Properties**.
2. Disable any wireless connection on your computer.

B. Connect the cables and power on the MSM310-R

1. Connect the cables:
 - If using a PoE switch, use standard Ethernet cables to connect your computer and the MSM310-R to an unused factory-default PoE switch.
 - If using a PoE injector, use a crossover Ethernet cable to connect your computer to the data in port of the PoE injector and a standard Ethernet cable to connect the MSM310-R to the data and power out port of the PoE injector.
2. Power on the MSM310-R by powering on the PoE switch or injector.
Wait approximately a minute for the MSM310-R to initialize before proceeding to the next step.

C. Switch the MSM310-R to autonomous mode

Note: A factory-default MSM310-R is assumed.

1. In a web browser, enter the address: **https://192.168.1.1**. If a security certificate prompt does not appear, click the **Refresh** button in the browser until it does.
2. A security certificate warning is displayed the first time you connect to the management tool. This is normal. Select whatever option is needed in your Web browser to continue to the management tool. The security warning will not appear again unless you change the IP address of the MSM310-R.
3. On the Login page, specify **admin** for both **Username** and **Password** and then select **Login**. The MSM310-R management tool home page opens.

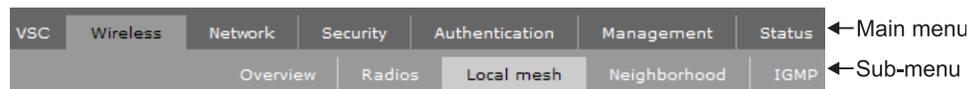
4. Select **Switch to Autonomous Mode** and confirm the change. The MSM310-R restarts in autonomous mode.

Note: To avoid a delay after switching modes, clear the ARP (address resolution protocol) cache on your computer. In Windows for example, from the **Windows Start** menu, select **Run** and enter “**arp -d**” (without the quotes). Select **OK**.

D. Log in

1. Wait until the login page appears, then specify **admin** for both **Username** and **Password**. Select **Login**.
2. On the License Agreement page, read the agreement and select **Accept License Agreement**.
3. The registration page appears. It is recommended that you register later by selecting **Maintenance > Registration**.
4. If a **Country** prompt appears, select the country in which the MSM310-R will operate.
Caution: The correct country must be selected. See *Country of use* on page 2.
5. At the password prompt it is recommended that you change the default password and select **Save**. Passwords must be at least six characters long and include four different characters.

The management tool is organized with menus and sub-menus. Instructions for making menu selections, such as “select **Wireless > Local mesh**” instruct you to select the **Wireless** menu and then the **Local mesh** sub-menu, as follows:



E. Assigning an IP address to the MSM310-R

By default the MSM310-R operates as a DHCP client. This means that if the network has a DHCP server, the MSM310-R will automatically receive a new IP address in place of its default address of 192.168.1.1 upon connecting to the network. Use one of the following methods to assign an IP address to the MSM310-R:

- **Pre-configure the DHCP server** to assign a specific IP address to the MSM310-R. To do this you need to specify the MSM310-R Ethernet MAC address and a reserved IP address on the DHCP server. The MSM310-R Ethernet MAC address is printed on the MSM310-R label identified as **Ethernet Base MAC**, and listed on the management tool Home page as **Ethernet base MAC address**.
- **Let the DHCP server automatically assign an IP address.** By default, the DHCP server will assign an IP address once the MSM310-R connects to the network. Once the DHCP server has assigned the MSM310-R an IP address, you can then find the IP address of the MSM310-R by looking for its Ethernet base MAC address in the DHCP server log.

For example after Step F.4 below, you could go to the DHCP server log to retrieve the IP address assigned to the MSM310-R.

- **Assign a static IP address to the MSM310-R.** The address must be on the same subnet as the network to which the MSM310-R will connect.
 1. Select **Network > DNS**, and set the DNS server address. Select **Save**.
 2. Select **Network > Ports > Bridge port**.
 3. Select **Static** and then **Configure**. Configure settings as follows:
 - **IP address:** Set an address that is on the same subnet as the network to which the MSM310-R will connect once installed. Respect any DHCP server-mandated static address ranges.
 - **Mask:** Set the corresponding mask for the IP address.
 - **Default gateway:** Set the IP address of the gateway on the network.
 4. Select **Save**. Connection to the management tool is lost.

F. Test the wireless network

For the purposes of this example, the network must have a DHCP server and an Internet connection. Broadband routers typically include a DHCP server.

1. Disconnect your computer from the PoE switch or PoE injector.
2. Power off the MSM310-R by disconnecting the Ethernet cable from the MSM310-R.
3. Use a standard Ethernet cable to connect the switch or the data in port of the injector to the network.
4. Reconnect and power on the MSM310-R. Use a standard Ethernet cable to reconnect the MSM310-R to the PoE switch or the data and power out port of the injector.
5. Enable the wireless network interface for your computer, and verify that it is set to obtain an IP address automatically.

For example, to do this in Windows Vista, use **Control Panel > Network and Sharing Center > Manage Network Connections > Wireless Network Connection**, right-click **Properties** and select **Internet Protocol Version 4 (TCP/IPv4) > Properties**, and make sure that **Obtain an IP address automatically** and **Obtain a DNS server address automatically** are both enabled.
6. By default, the MSM310-R creates a wireless network named *HP ProCurve*. Connect your computer to this wireless network. For example, in Windows Vista from the **Start** menu, select **Connect to**, and then *HP ProCurve* from the list of available wireless networks. You may have to wait a short time for this wireless network name to appear in the wireless networks list.
7. Confirm that you can browse the Internet using the wireless network.

G. Performing additional configuration

Configure your computer LAN port and connect it to the same network as the MSM310-R. Re-launch the MSM310-R management tool at <https://<IP address>> where *<IP address>* is the MSM310-R IP address from Step E above.

Note: See the **Caution regarding Wireless Security** on page 5.

Enabling access to other resources

By default, the MSM310-R only permits traffic that is addressed to the default gateway on the network (which enables you to connect to the Internet). To enable access to other resources:

1. Select **VSC > Profiles** and then select the **HP ProCurve** profile.
2. On the **Add/Edit Virtual Service Community** page clear the **Wireless security filters** checkbox.
3. Select **Save**.

Regulatory Notice for European Union and EFTA member countries

As of July 1st 2010, all wireless devices sold in EU countries and any countries that participate in the EU free market must meet stringent Dynamic Frequency Selection (DFS) requirements for radar detection and avoidance (EN 301.893 v1.5.1). The MSM310-R is compliant.

Compliance notes

- Software version 5.4.x is released for both rev A and rev B MSM310-R APs.
 - On the rev A MSM310-R, the 5 GHz DFS channels are enabled and can be used.
 - On the rev B MSM310-R, the following additional 5 GHz DFS channels are disabled and cannot be used:
 - Channels 52, 56, 60 and 64 in the 5250-5350 MHz band
 - Channels 100, 104, 108, 112, 116, 132, 136 and 140 in the 5470-5725 MHz band.
- Note:** Customers will not have to disable these 5 GHz DFS channels on rev A MSM310-R APs received prior to July 1st, 2010.

For non-EU/EFTA customers using the WW version of the MSM310-R, there is no change to the availability of DFS channels.

