



FHP Outdoor Unit Hardware Installation Guide

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Preliminary Draft

FCC Notice to Users and Operators

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 when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to correct the interference by using one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician.



Caution This Part 15 radio device operates on a non-interference basis with other devices operating at this frequency. Any changes or modification to said product not expressly approved by FHP Wireless could void the user's authority to operate this device.

Chapter One: Introduction

The *FHP Outdoor Unit Hardware Installation Guide* provides installation instructions for the various FHP outdoor units and is intended for a trained technical professional.

The installation instructions in this guide apply to the following outdoor units and model numbers listed in Table 1.

Table 1

Outdoor Unit	Model numbers
AC powered 0° to 50°C	RP-01-00C-E-N-00 or SP-01-00C-E-N-00
AC powered with heater -35° to 50°C	RP-01-00C-F-N-00 or SP-01-00C-F-N-00
AC powered with Street Lighting NEMA photo-electric control 120V AC receptacle 0° to 50°C	RP-01-00C-H-N-00 or SP-01-00C-H-N-00
AC powered with Street Lighting NEMA photo-electric control 120V AC receptacle -35° to 50°C	RP-01-00C-I-N-00 or SP-01-00C-I-N-00
Power over Ethernet option 0° to 50° C	RP-01-00C-D-N-00 or SP-01-00C-D-N-00
Fiber optic interface option (1310 nm single mode)	FI-1310SM-GL-3000

The Outdoor Unit may be configured with one of the following antenna options (ordered separately):

- AN-070-OM-UM-N-O One (1) Outdoor 7.0dBi omnidirectional unit-mounted antenna; N connector
- AN-074-OM-UM-N-O One (1) Outdoor 7.4dBi omnidirectional unit-mounted antenna; N connector
- AN-150-OM-MM-N-O One (1) Outdoor 15dBi omnidirectional mast-mounted antenna; N connector
- AN-120-PH-MM-N-O One (1) Outdoor 12dBi 90 degree sector mast-mounted antenna; N connector
- AN-135-YG-MM-N-O One (1) Outdoor 13.5dBi Yagi mast-mounted antenna; N connector



Note The FHP SmartPoint and RoutePoint wireless routers must be installed by a trained professional, value added reseller, or systems integrator who is familiar with RF cell planning issues and the regulatory limits defined by the FCC for RF exposure, specifically those limits outlined in sections 1.1307.

Chapter Two: Models

Types of Outdoor Unit

- AC powered 0° to 50° C
- AC powered with heater -35° to 50°C
- AC powered with Street Lighting NEMA photo-electric control 120V AC receptacle 0° to 50°C
- AC powered with Street Lighting NEMA photo-electric control 120V AC receptacle -35° to 50°C
- DC power over Ethernet (802.3af compliant)

Installation Kits

Description of the several of types of mounting hardware that comes with the outdoor unit.

Chapter Three: Options

Fiber optic interface option.

Chapter Four: Installing the SmartPoint or RoutePoint in the box

Procedures for mounting the SP or RP into the outdoor unit.

Chapter Five: Mounting Options

Wall Mounting

- Mount to wood structures, with 1/4 " lag bolts
- Mount to masonry with masonry anchors

Pole Mounting

- Telephone pole, with long brackets
- Streetlight side
- Streetlight top
- Tower mounting

Connecting Antennas

- Unit attached
- Cable attached

Connecting Power

- Fluke illustrations, and various categories of power.
- Connecting AC power
- Connecting DC power (power over Ethernet)

Appendix One: Safety Information

Safety Information for the Wireless Router

The Federal Communications Commission (FCC) with its action in ET Docket 96-8 has adopted a safety standard for human exposure to RF electromagnetic energy emitted by FCC certified equipment. The FHP SmartPoint and RoutePoint series products meet the uncontrolled environmental limits found in OET-65 and ANSI C95.1, 1991. Proper operation of this radio according to the instructions found in this manual and the hardware and software guides on the FHP Wireless SmartPoint and RoutePoint result in user exposure that is substantially below the FCC recommended limits.

The following are guidelines to insure safe operation of the FHP Wireless SmartPoint and RoutePoint:

- Do not touch or move the antenna(s) while the unit is transmitting or receiving.
- Do not hold any component containing a radio such that the antenna is very close to or touching any exposed parts of the body, especially the face or eyes, while transmitting.
- Do not operate the radio or attempt to transmit data unless the antenna is connected; otherwise, the radio may be damaged.

- Use in specific environments:
 - Do not operate a portable transmitter near unshielded blasting caps or in an explosive environment unless it is a type especially qualified for such use.
 - The use of wireless devices in hazardous locations is limited to the constraints posed by the safety directors of such environments.
 - The use of wireless devices on airplanes is governed by the Federal Aviation Administration (FAA).
 - The use of wireless devices in hospitals is restricted to the limits set forth by each hospital.
- Antenna use:
 - In order to comply with FCC RF exposure limits, dipole antennas should be located at a minimum distance of 7.9 inches (20 cm) or more from the body of all persons.
 - High-gain, wall-mount or mast-mount antennas are designed to be professionally installed and should be located at a minimum distance of 12 inches (30 cm) or more from the body of all persons. Please contact your professional installer, VAR, or antenna manufacturer for proper installation requirements.

Service Instructions

This section contains service information for the SmartPoint and RoutePoint wireless routers.



Note The SmartPoint and RoutePoint wireless routers have no user serviceable parts inside. The following information is intended for trained service personnel only.

The SmartPoint and RoutePoint wireless routers have a real-time clock which is powered by a small lithium rechargeable battery. If real-time clock should fail, return the unit to FHP Wireless for servicing.



Caution There is a danger of explosion if the battery is incorrectly replaced. Replace the battery with only the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Appendix Two: Fiber Optic option

A separate one-page guide to the Fiber Optic option connection for AC version. Contains connection instructions, illustrations and warnings. Crossover cable in installation kit.

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