

SILVERNET



MICRO 95/240



LITE 95/240/500



MAX 95/240/500/1000



BASE 500/ACCESS 1200



BASE 500 90/AP 1200 90



BASE 500 360/AP 1200 360

Pro Range Installation Guide

Version 1 (31/05/2017)

Radio frequency Interference

Requirements

The operation of this device in the 5.15 GHz to 5.25 GHz frequency range is restricted to indoor use. FCC regulations require this product to be used indoors while operating at 5.15 GHz to 5.25 GHz to reduce the potential for harmful interference. However, the operation of this device in the 5.25 GHz to 5.35 GHz frequency range is allowed for both indoor and outdoor use. High power radars are allocated as primary users of the 5.25 GHz to 5.35 GHz and 5.65 GHz to 5.85 GHz bands. These radar stations can cause interference with and/or damage to this device.

FCC Warning

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. No guarantee exists that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception (determined by turning the equipment off and on), the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the radio/TV receiving antenna.
- Increase the separation between the equipment and the radio/TV receiver.
- Connect the equipment into an outlet on a circuit different from that to which the radio/TV receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help. Modifications made to the product, unless expressly approved by SilverNet Limited, could void the user's authority to operate the equipment.

RF Exposure Requirements

To ensure compliance with FCC RF exposure requirements, the antenna used for this device must be installed to provide a separation distance of at least 30 cm from all persons and must not be co-located or operating in conjunction with any other antenna or radio transmitter. Installers and end-users must follow the installation instructions provided in this user guide.

CE Statement

The PRO RANGE system is intended to be used by suitably trained individuals or organisations who are familiar with the requirements of the R&TTE directive. In particular the client must ensure that appropriate antennas and transmit power levels are selected to ensure that all power limits are met. Hereby, SilverNet Limited declares that this device is in compliance with the essential requirements and other relevant provisions of the R&TTE Directive 1999/5/EC. However, the use of the following warning symbol



Means that this equipment is subject to restrictions of use in certain countries and selection of the correct country of operation (country code) will ensure that the device operates only on the frequencies permissible within that country. It is also the operator's responsibility to ensure that appropriate licenses have been sought when operating on licensed frequencies, for example UK Band C, 5725-5850 MHz

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Declaration of Conformity

SilverNet Limited declares the following:

Product Name: PRO RANGE

Model No: MICRO 95/LITE 95/MAX 95/MICRO 240/LITE 240/MAX 240/LITE 500/MAX 500/BASE 500/MAX 1000/AP 1200 conforms to the following Product Standards:

This device complies with the Electromagnetic Compatibility Directive (89/336/EEC) issued by the Commission of the European Community. Compliance with this directive implies conformity to the following European Norms (in brackets are the equivalent international standards.)

Electromagnetic Interference (Conduction and Radiation): EN 55022 (CISPR 22)

Electromagnetic Immunity: EN 55024 (IEC61000-4-2, 3, 4, 5, 6, 8, 11)

Low Voltage Directive: EN 60 950: 1992+A1: 1993+A2: 1993+A3: 1995+A4: 1996+A11: 1997.

Therefore, this product is in conformity with the following regional standards: FCC Class B: following the provisions of FCC Part 15 directive, **CE Mark:** following the provisions of the EC directive.

SilverNet Limited also declares that:

The wireless card in this product complies with the R&TTE Directive (1999/5/EC) issued by the Commission of the European Community. Compliance with this directive implies conformity to the following:

EMC Standards: FCC: 47 CFR Part 15, Subpart B, 47 CFR Part 15, Subpart C (Section 15.247); CE: EN 300 328-2, EN 300 826 (EN 301 489-17)

Therefore, this product is in conformity with the following regional standards: FCC Class B: following the provisions of FCC Part 15 directive, **CE Mark:** following the provisions of the EC directive.

Introduction

The high-performance PRO RANGE (AP) is designed for enterprise and public access applications. Embedded with the Atheros chipset, it boasts network robustness, stability and wider network coverage. Based on 802.11n/802.11ac specification, the PRO RANGE supports high-speed data transmission of up to 1167Mbps.

The access point is capable of operating in different modes, which makes it suitable for a wide variety of wireless applications, including long-distance deployments.

Designed with dual polarization high gain antenna it offers a compact, rugged design for outdoor installation and excellent performance.

Moreover, its integrated Power over Ethernet (PoE) allows the access point to be used in areas where power outlets are not readily available.

To protect your security and privacy, the PRO RANGE is armed with many enhanced and latest wireless security features such as IEEE 802.11i standards, MAC Address Filtering, IEEE 802.1x Authentication and AES/TKIP & 64/128-bit WEP (Wired Equivalent Privacy) to ensure privacy for the heterogeneous mix of users within the same wireless network.

The PRO RANGE also incorporates a unique set of advanced features such as: Virtual AP to deliver multiple services; Long-Range parameter fine-tuning which provide the access point with the ability to auto-calculate parameters such as slot time, ACK time-out and CTS time-out to achieve a longer range.

Features and Benefits

- Data rate 802.11ac up to 866Mbps
- Data rate 802.11n/a/b/g up to 300Mbps
- IEEE 802.11ac & IEEE 802.11n/a compatible
- MAC address control
- Easy to install and friendly to use, just plug and play
- Provides Web-based configuration utility
- Compact design with lightweight, compact size, and low power consumption
- Supports Power over Ethernet
- Built in Dual Polarized MIMO Antenna
- Weatherproof, can be used outdoors
- WPA/WPA2

Installation

Package list

PRO RANGE Radio
POE Power Adapter
Mains Power Cable
Mounting Kit

If any of the above items are not included or damaged, please contact your supplier immediately for support.

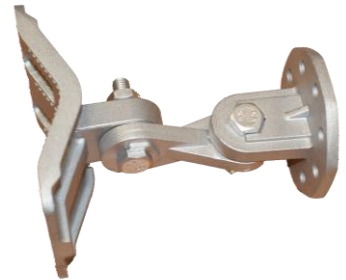
Prepare the radio unit to mount to a pole

Step 1

Unpack the mounting brackets from the box.

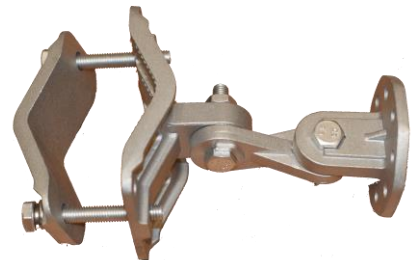
Step 2

Assemble the main part of the bracket using the 2 shortest bolts.



Step 3

Put the bracket round the pole, put the last part of the bracket round the pole and tighten the 2 longer bolts with a spanner to secure the bracket to the pole. **Bolt the unit onto the secure bracket.**



*Note

To mount the device to the wall you do not need the last part of the bracket and the 2 longer bolts.

Step 4

Connect one end of an RJ45 Ethernet cable to the **DATA + Power** port of the Injector and the other end of the cable to the Network port of the device.

Maximum length of the RJ45 Cat 5 cable is 100 meters.

Connect another RJ45 Ethernet cable to the **Network** port on the PoE Injector and the other end to a network device, such as a switch or to the PC you will use to configure the access point.

PoE power input: Passive PoE (48V DC)

Note: The radio can also be powered from a PoE network switch.



Step 5

Connect the power adapter in the PoE kit to the main electrical supply and the power plug into the socket of the injector.

Now, turn on your power supply. The **Ethernet** LED will light up. This indicates that the access point is receiving power through the PoE Injector and that connection between the access point and your network has been established.

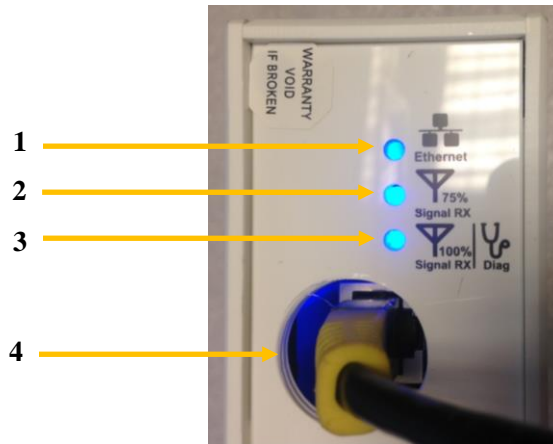


Using a power adapter with a different voltage rating to the specified recommendation will damage this product.



*NOTE: all the Pro Range products use the same mounting brackets

Device Panel Views and Descriptions



MICRO 95

*Note: This is also relevant for all the Pro Range equipment

	Features	Status and Indications
1	Ethernet Link LED	ON: A Network connection has been detected OFF: No Network connection has been detected
2	75% Signal RX LED	ON: Signal Strength is at 75% OFF: Signal Strength is not at 75%
3	100% Signal RX and Diagnostic LED	ON: Signal Strength is at 100% OFF: Signal Strength is not at 100% Slow constant Flashing: Device is in diagnostic mode
4	Ethernet Port	10/100Mbps (1000Mbps on 240 & 500 range) Ethernet port and PoE power input (48V DC)

Antenna Alignment

When aligning the antenna you should examine the physical environment where the equipment is being installed.

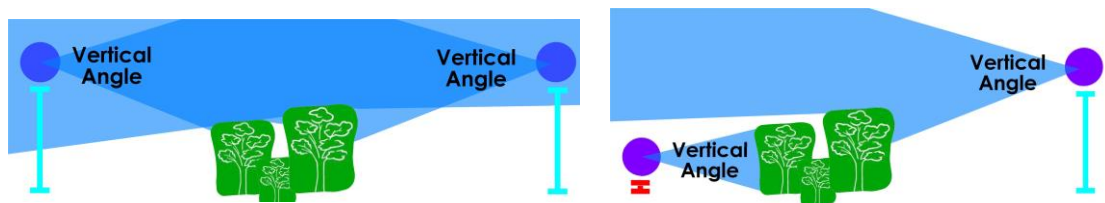
Check for obstructions, available mounting locations, and other factors.

Things such as trees, buildings, and hills, can obstruct the antenna, reducing the signal strength.

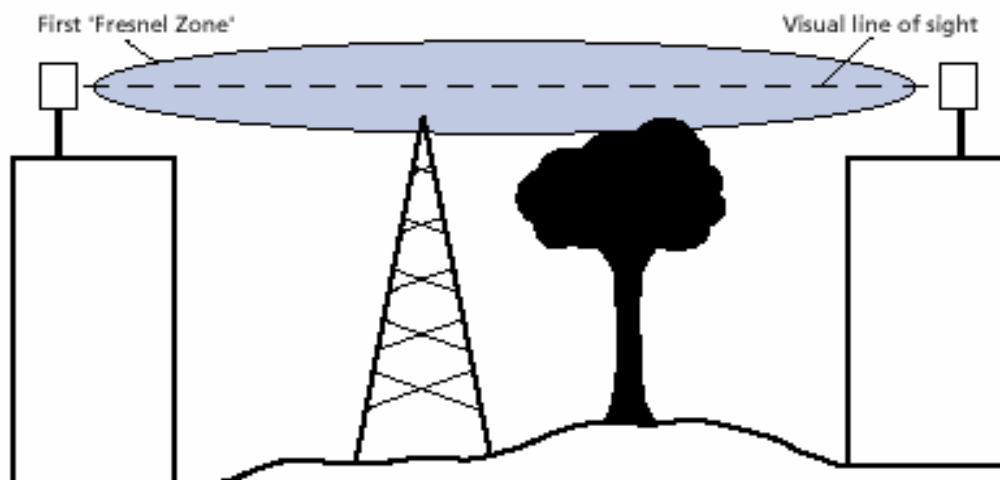
The antenna should be installed at a height above such obstructions, and aligned so that antennas are directed at each other by taking into account the horizontal angle and the vertical angle of the antenna signal.

When the antenna is at the optimum alignment, there is less possibility of encountering interference and of causing interference.

The radios work best when they have line-of-sight. If the radios do not have line-of-sight then you will get a very poor signal or no signal at all.

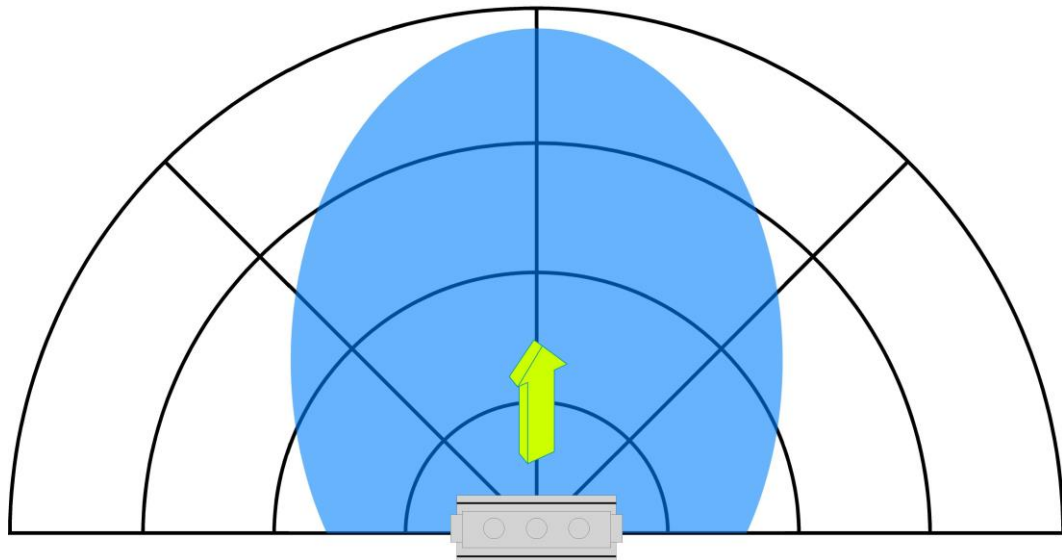


If the radios are not aligned correctly the signal quality of the radios will suffer and you may not receive the throughput you require.



Installation Direction

The directional antenna radiates the signal towards the front of the unit. The unit should be installed in a position whereby the front of the unit faces the direction you wish to send the signal to. Therefore the direction you wish to send the signal has to be considered before going on to the next step of starting to set up the access point.



Front Towards Desired Signal Direction

Mount the Unit on a Pole

The device is designed to mount to a pole.

The following guidelines will help you choose the best location for your wireless device:

- Try to place the device in an area where other engineers who may require access to it, can get to it easily. Consider where the PoE Injector will be.
- Choose an elevated location where trees, buildings and large steel structures will not obstruct the antenna signals and offers maximum line-of-sight to the other device.
- Select the appropriate antenna for your environment. You can fine-tune parameters such as the transmit power and rate aggressiveness to achieve the best results.



For more guidance please visit our
YouTube channel

[www.youtube.com/user/SilverNet
LTD](http://www.youtube.com/user/SilverNetLTD)

