



MicroRed

Radio Installation Manual





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NOTE: 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.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be 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 receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is needed.
- Consult the dealer or an experienced radio/TV technician for help.

(15.21)

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.

15.19 (a)(3)

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The user manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.



CAUTION

To comply with FCC RF exposure compliance requirements, a separation distance of at least 20 cm must be maintained between the antenna of this device and all persons.

This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter



WARNING

It is the responsibility of the installer to ensure that when using the outdoor antenna kits in the United States (or where FCC rules apply), only those antennas certified with the product are used. The use of any antenna other than those certified with the product is expressly forbidden in accordance to FCC rules CFR47 part 15.204.



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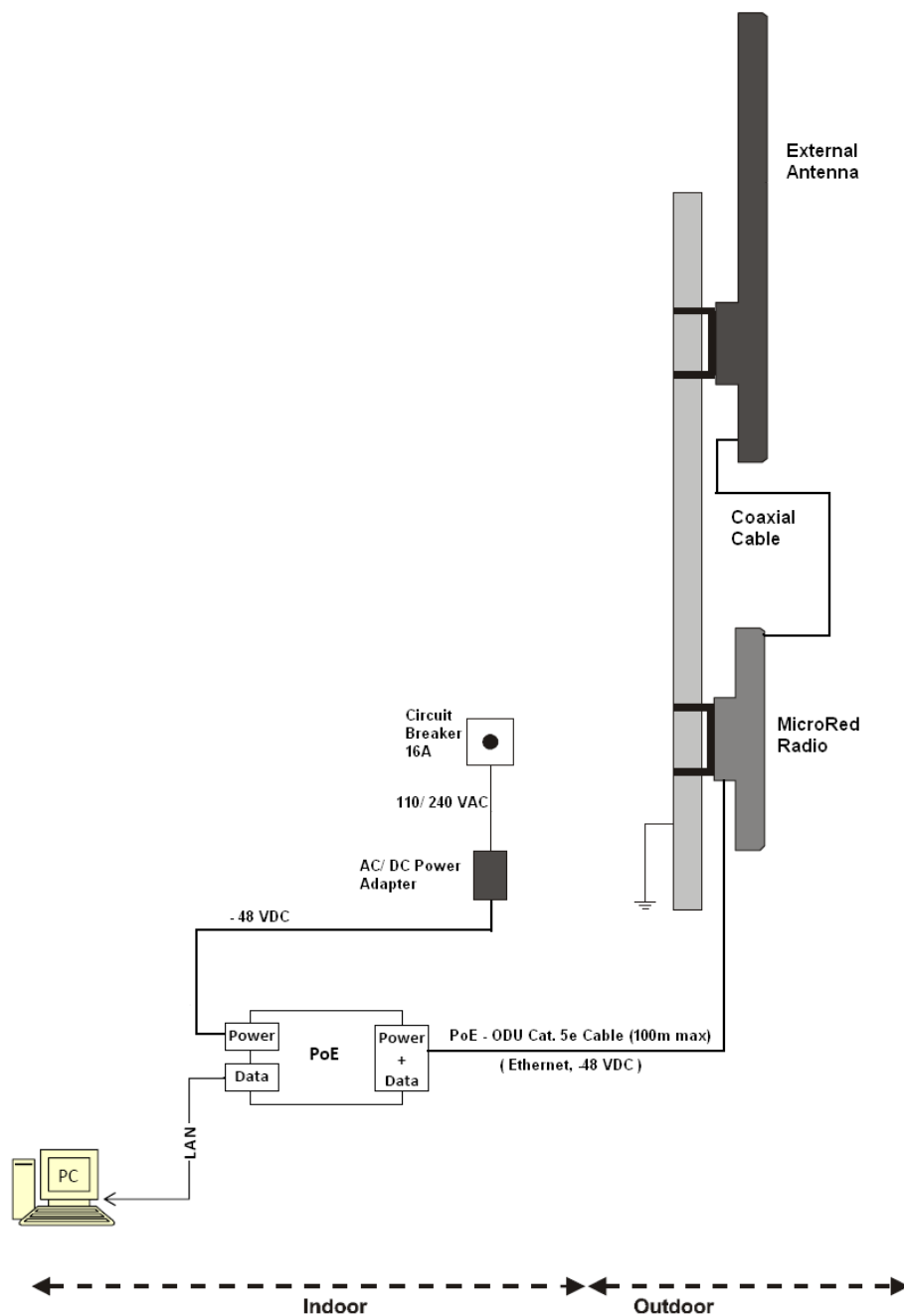
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1. MicroRed System Overview

The **MicroRed** systems operate on IEEE 802.11a, 802.11b & 802.11g modes. MicroRed has single radio AP, AP-Client with WDS support. The **MicroRed** radio operates either in 2.4 or in 5.8GHz frequency bands.

The below figure illustrates a typical installation of MicroRed radio with external antenna.



Typical Installation Diagram

1.1. MicroRed Radio

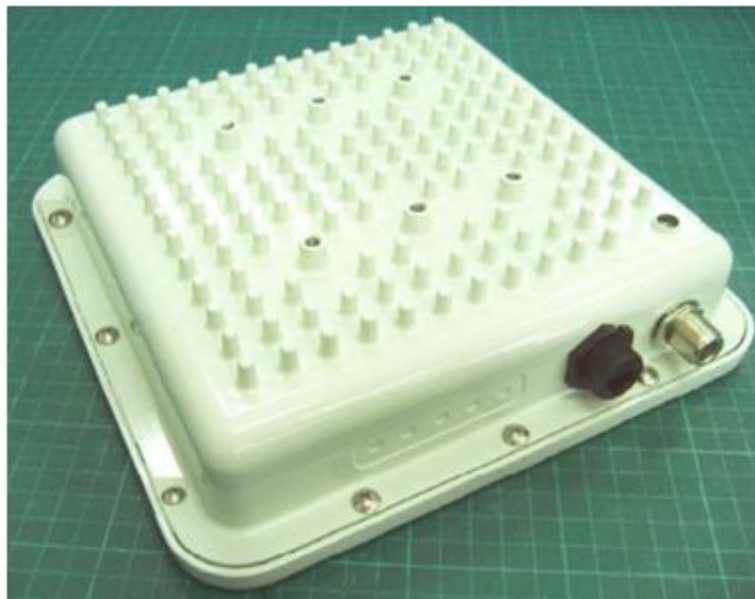
MicroRed System comprises the following units:

- MicroRed Outdoor Unit (ODU) with N-Type connector for connecting the external antenna and weatherproof RJ-45 connector to connect the Ethernet cable which comes from PoE.

The ODU is attached to a mast/ pole using a mounting kit, which is supplied with the unit.

- Passive PoE: This is an indoor device, and this is the interface unit between the ODU and the User.
- Power Adapter: This adapter converts 11-240VAC to -48VDC. This power adapter DC pin should be connected to the PoE to power up the ODU.

The MicroRed unit is a lightweight, robust ODU (Outdoor Unit) and is typically mounted on a structure or radio tower.





2. Installing the MicroRed System

2.1. Package Contents

The MicroRed packages include the following items:

- MicroRed Outdoor Radio
- Mast/ Pole Mounting Kit
- MicroView NMS Installation CD
- Weather-proof RJ45 boot connector for ODU
- 110/240V Power Adapter with 2-prong connector cable
- Passive PoE
- Antenna as per order (i.e., either 2.4GHz or 5.8GHz)

Component Inspection:

- Carefully unpack the MicroRed Radio package and inspect the unit for physical damage.
- Verify that all the components are present against the shipping information or purchase order.

Immediately contact PointRed Telecom (P) Ltd., if any portion of the system is missing or damaged.

2.2. Installation of the Radio

Physical installation of the MicroRed system installation includes the following steps:

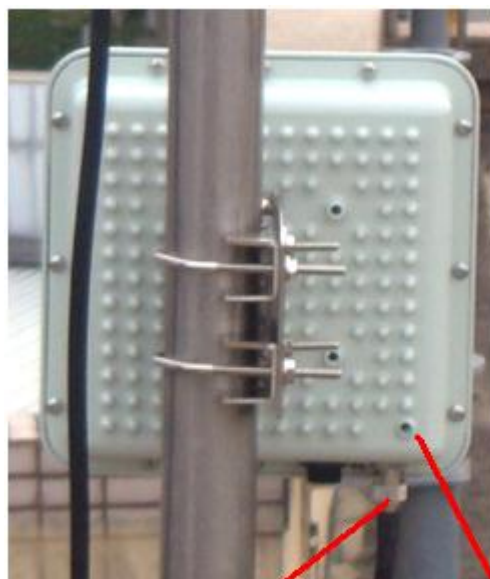
- Installing MicroRed Radio on mast/ pole.
- Installing the Ethernet cable and connecting the MicroRed Radio and PoE.
- Connecting power.
- Installing the NMS on the PC/ Laptop.
- Configuring MicroRed radio from the NMS.

2.2.1. Mounting the MicroRed Radio

Mount the MicroRed radio by using the supplied mounting hardware with N-Female Connector and RJ-45 connector downward.



Supplied Mounting Hardware



N-Female Connector

Grounding Point



Warning

Prior to connecting the cable to MicroRed radio, the protective earth terminal (screw) of the radio must be connected to an external protective ground conductor or to a grounded mast.

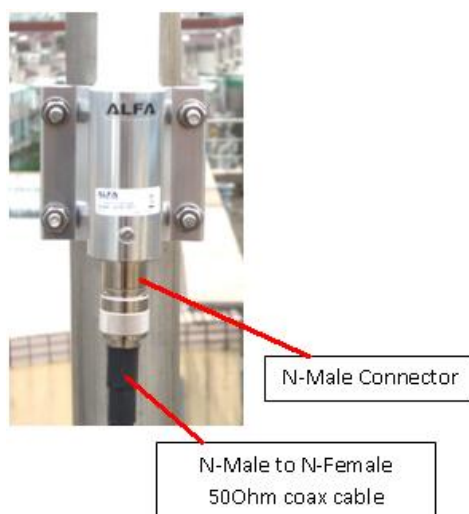
Only a qualified person using the proper safety equipment should climb the antenna mast/ pole. Only trained professional installer should be used when installing or dismantling radios and masts.

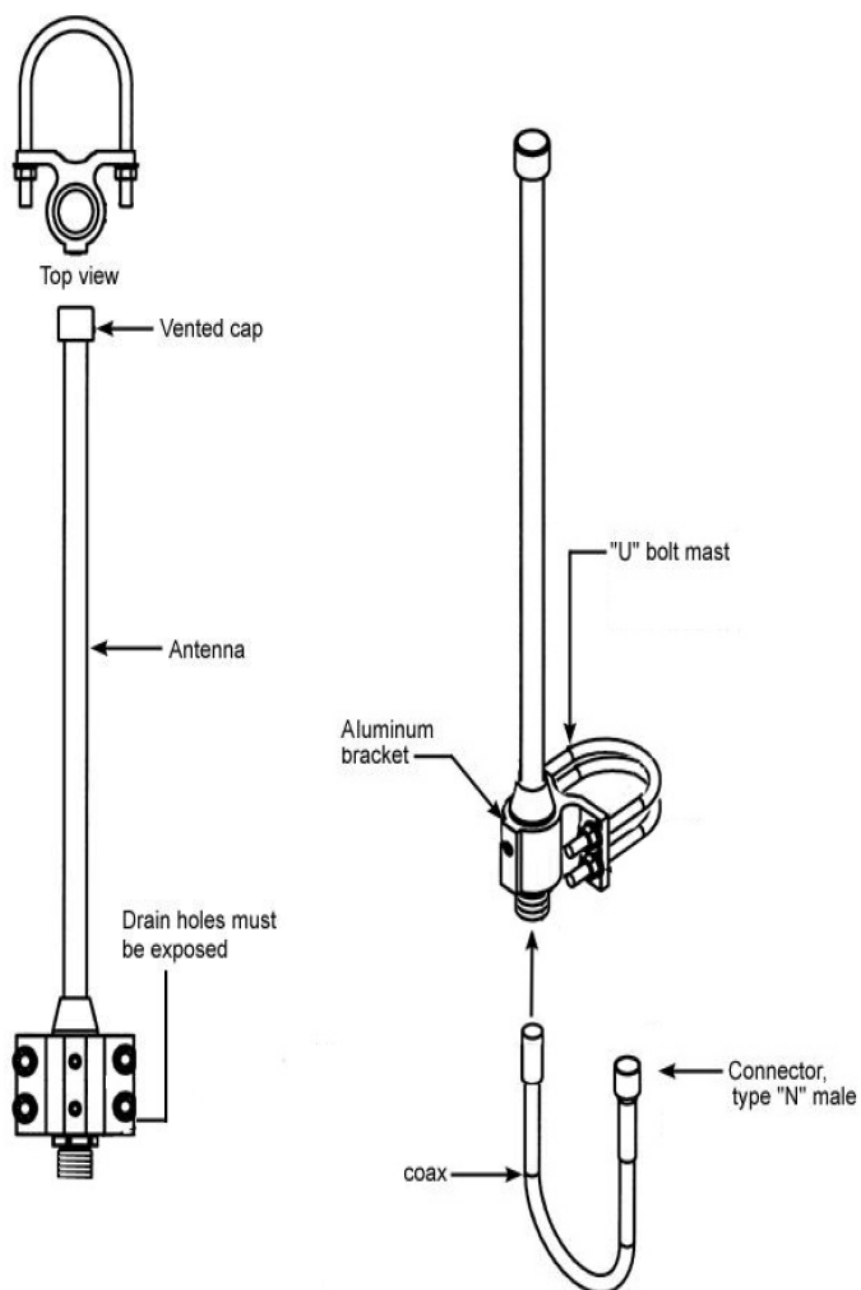
2.2.2. Antenna Specification and installation

Antenna Specifications:

2.4GHz Antenna	
Frequency Range	2400 – 2500MHz
VSWR	≤ 2.0
Antenna Type	Collinear
Gain	10dBi
Polarization	Vertical
Maximum Power	50W
Vertical Beam-width	15°
Horizontal Beam-width	360°
Impedance	50Ω
Connector	Fixed N-Female
Length	610mm
Diameter	20mm
Wind Survival	150 MPH
5.8GHz Antenna	
Frequency Range	5450 – 5835MHz
VSWR	≤ 2.0
Antenna Type	Collinear
Gain	8dBi
Polarization	Vertical
Maximum Power	50W
Vertical Beam-width	15°
Horizontal Beam-width	360°
Impedance	50Ω
Connector	Fixed N-Female
Length	610mm
Diameter	20mm
Wind Survival	150 MPH

Mount the Antenna by using the supplied mounting hardware with N-Male Connector downward.

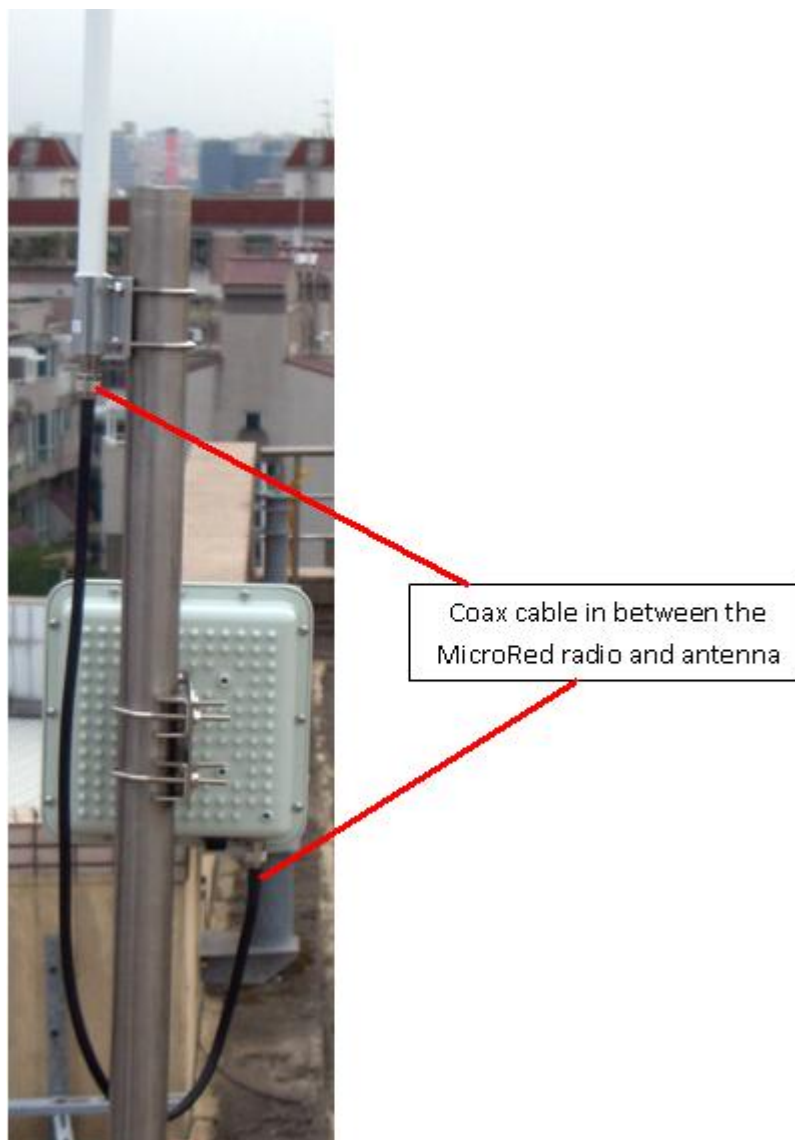




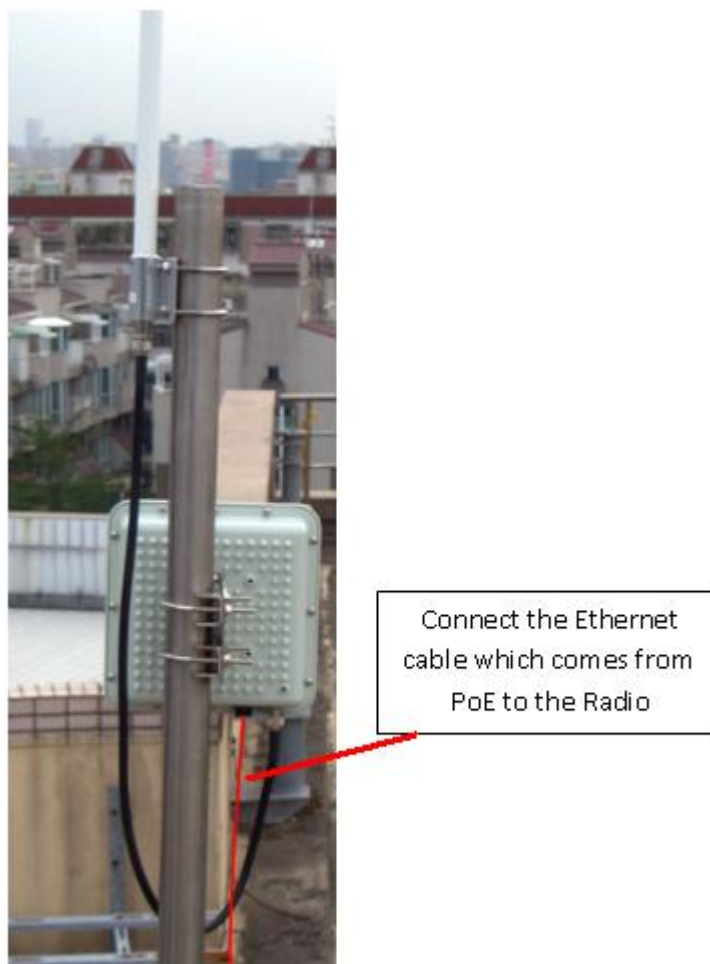
Typical Installation Diagram

2.2.3. Connecting the cables

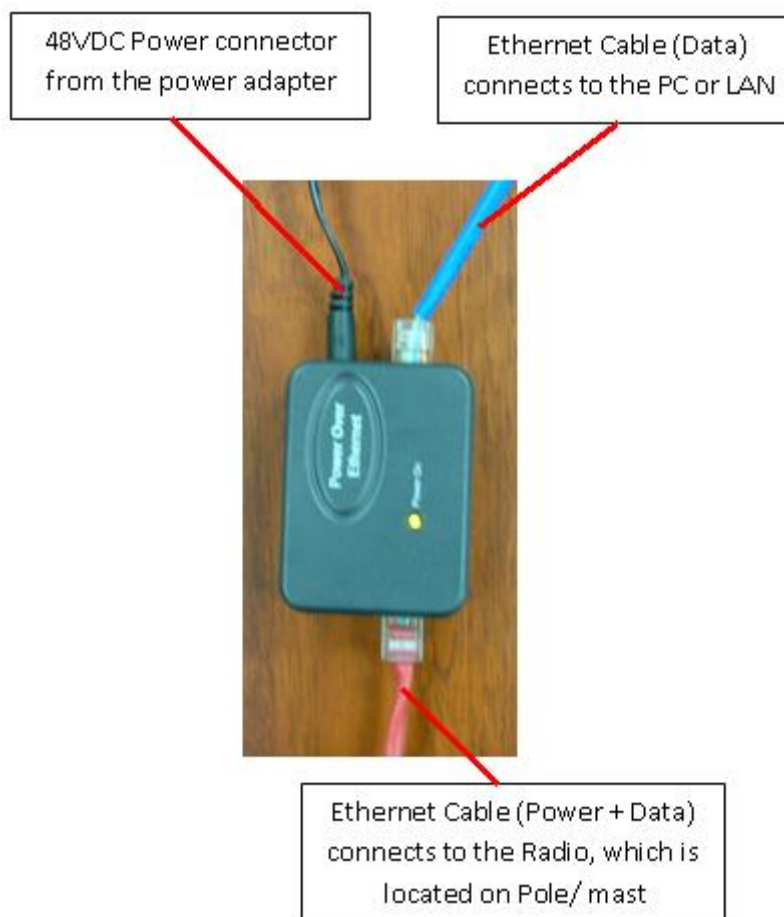
Connect the N-Male to N-Female 50 Ohm Coax cable in between the MicroRed radio and Antenna as shown in below figure.



Connect an Ethernet cable with standard RJ-45 connector to the MicroRed Radio as shown in below figure. The other end of the cable goes the PoE, which is located in NOC (Network Operations Centre).



2.2.4. Connecting the PoE



2.3. Radio Configuration

After installing the unit, refer to configuration manual for MicroRed radio configuration. Refer *Chapter-2* and *Chapter-3* for basic network configuration and *Chapter-5* for wireless configuration.