STAR MICROWAVE
Your Partner in Building and Extending the Life of Networks

SM Sygnus Hybrid

Quick Installation Guide

Version 1.0.4

2017

■ WARNINGS

Do not work on the system or connect or disconnect cables during periods of lightning activity.

This equipment must be grounded. Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available.

Ultimate disposal of this product should be handled according to all national laws and regulations.

Do not locate the antenna near overhead power lines or other electric light or power circuits, or where it can come into contact with such circuits. When installing the ODU, take extreme care not to come into contact with such circuits, as they may cause serious injury or death. For proper installation and grounding of the antenna, please refer to national and local codes (e.g. U.S.:NFPA 70, National Electrical Code, Article 810, in Canada: Canadian Electrical Code, Section 54).

The outdoor radio can be damaged by incorrect power application. Read and follow the installation instructions carefully before connecting the system to its power source.

Follow the guidelines in this installation guide to ensure correct operation and safe use of the radio.

■ PACKAGE CONTENTS

The package of 1 link PDH / Ethernet Convergent Radio you have received should contain the following items:

- Indoor Unit (IDU) ……x2
- Outdoor Unit (ODU) ……x2
- Mounting Kit of ODU ……x2
- 48V DC terminal block (DC Version) / AC Power cord (AC Version)……x2
- Button head socket cap screw 4*6 iso for reset button……x2
- Bracket of IDU ……x2
- Product CD ……x2
- Quick Installation Guide ……x2

If any item on the above list is not included or damaged, please contact your local vendor for support.

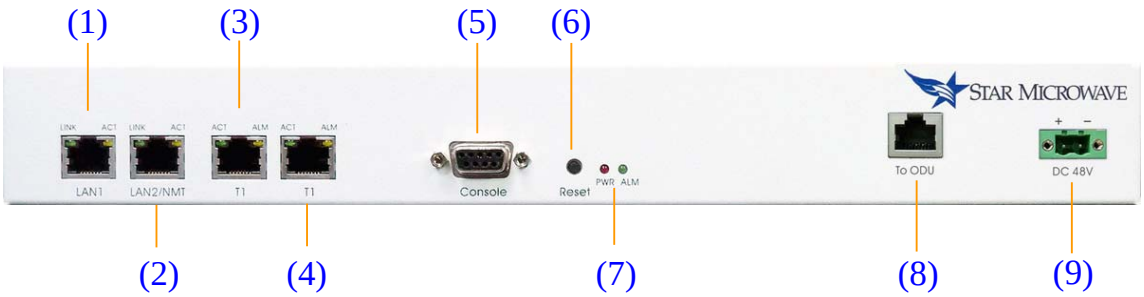
■ MECHANICAL DESCRIPTION

Please refer to the following description for the meaning of each mechanical feature.

IDU:

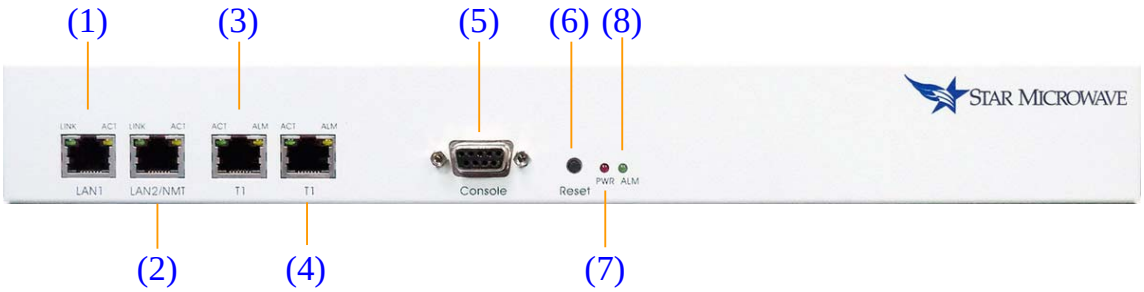
Front Panel Introduction

DC Version



PDH / Ethernet Convergent System Front Panel View –DC Version

AC Version



PDH / Ethernet Convergent System Front Panel View –AC Version

(1) LAN1 Port

The 10/100M Ethernet interface is a RJ-45 connector with LED, connect this port to Local Area Network for Ethernet data transmission.

There are two green LED indicators:

- Link: green LED (Link Up/Down Status)
- Act: orange LED (TX/RX Active Status)

(2) LAN2 / NMT Port

The 10/100M Ethernet interface is a RJ-45 connector with LED as network management port or 2nd LAN port. Customer can use Window Based GUI, Telnet, or SNMP-based Management system to configure the IDU and ODU.

(3) T1 Interface (port 1)

ACT: green LED (T1 Port Traffic)

ALM: orange LED (T1 Port Link Status)

The “Orange” LED indicates one of the following alarm occurred:

1. Local T1: LOS, AIS
2. Remote T1: L-bit
3. No received traffic from WAN port

(4) T1 Interface (port 2)

ACT: green LED (T1 Port Traffic)

ALM: orange LED (T1 Port Link Status)

The “Orange” LED indicates one of the following alarm occurred:

1. Local T1: LOS, AIS
2. Remote T1: L-bit
3. No received traffic from WAN port

(5) RS232 Connector

The RS232 interface with baud-rate 115200 bps via DB9 (female)-to-DB9 (male) cable is provided for diagnostic. The user commands (CLI command) are listed in the user manual.

(6) Reset Button

Provide the facility of rebooting the system.

(7) System Indicators

PWR (Power Exist LED)

ALM (for any of T1 Links or WAN port Status)

Off: Normal status

On: When the red LED lights, it indicates one of the following alarm occurred:

1. Local T1: LOS, AIS
2. Remote T1: L-bit
3. No received traffic from WAN port

(8) To ODU: (WAN port connect to the ODU) (DC version)

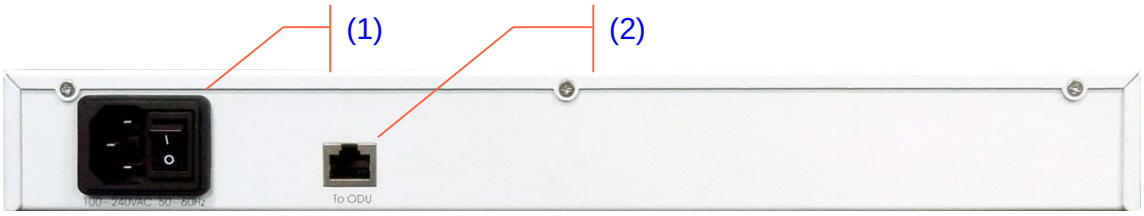
The 10/100M Ethernet interface is a RJ45 connector which can connect to the ODU with the SFTP cable, and provide the Ethernet signal and DC to the ODU.

(9) 48V DC Power Socket: (DC version)

The power module provides the power with 36~60V DC.

Rear Panel Introduction

AC version



PDH / Ethernet Convergent System Rear Panel View

(1) AC Power Socket and Switch (On/Off switch for AC):

The power module provides the power with 100 ~ 240V AC.

(2) WAN Interface: (Connect to the ODU)

The Ethernet interface is a RJ45 connector which can connect to the ODU with the SFTP cable, and provide the Ethernet signal and power (24VDC) to the ODU.

■ MECHANICAL DESCRIPTION

Please refer to the following table for the meaning of each feature.

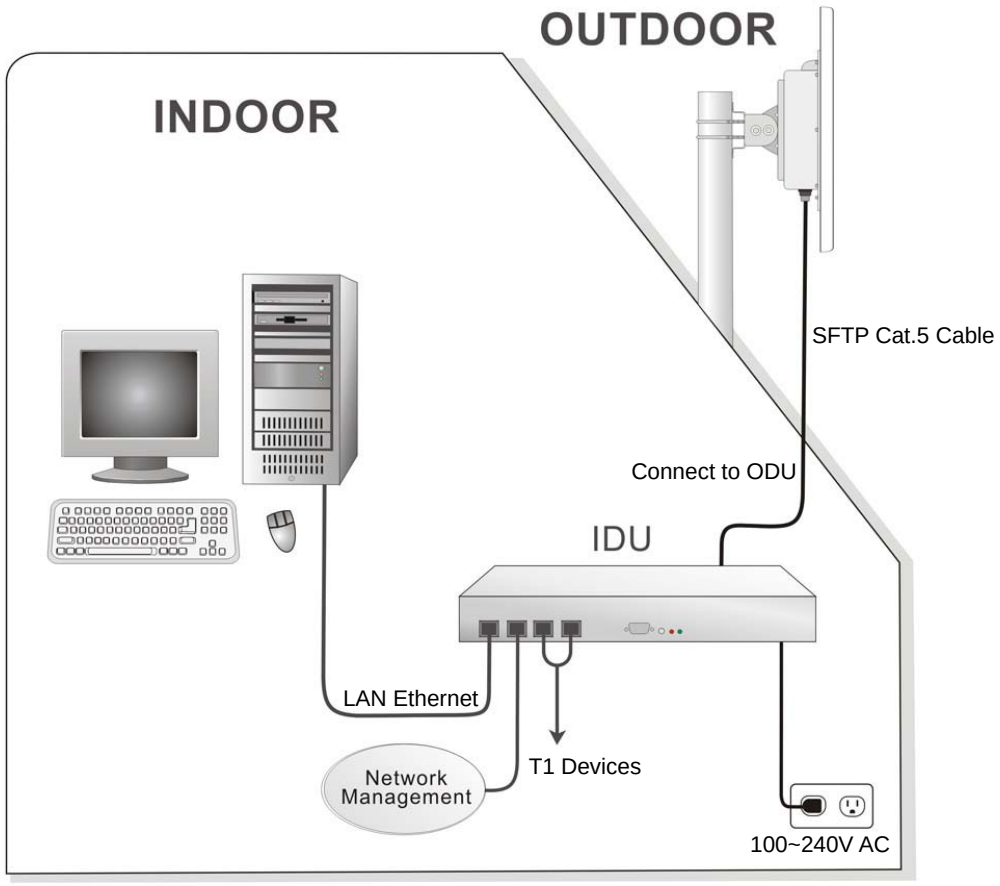
Outdoor Multi-function Radio Figure

1	**RJ-45 Port**	Use the SFTP cat.5 cable with weatherproof connector to connect to the "To ODU" side of the POE injector.
2	**N- Jack Antenna Connector**	Here you can attach the proper antenna with the outdoor radio to wirelessly connect to the networks. In order to improve the RF signal radiation of your antenna, proper antenna installation is necessary.
3	**Grounding stud**	Connect to the ground conductor with the ground wire.
4	**Reset button**	Revolve the screw and insert a stick to press in and hold the reset button for 5~10 seconds, the radio will back to factory default settings. PS. The spec of the screw is "Button head socket cap screw 4*6 iso".
5	**Membrane Vent**	1. Moisture vapor permeable to help aid in condensation and fogging reduction in the ODU. 2. High airflow allows pressure equalization to prevent stress on enclosure seals

This equipment must be grounded. Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available.

■ INSTALL THE CONVERGENT SYSTEM

This section show you how to mount the ODU, please read it carefully before you start to install the hardware. Be safe and step by step to finish the hardware installation.



Hardware Installation Figure

The Outdoor unit can be damaged by incorrect power application. Read and follow the installation instructions carefully before connecing the system to its power source.

1. Mounting the Outdoor Radio

There are two parts of the Mounting kit:

- Enclosure bracket – attached to the back of the outdoor radio.
- Pole bracket – mounted on the pole or tower with the U-bolts.

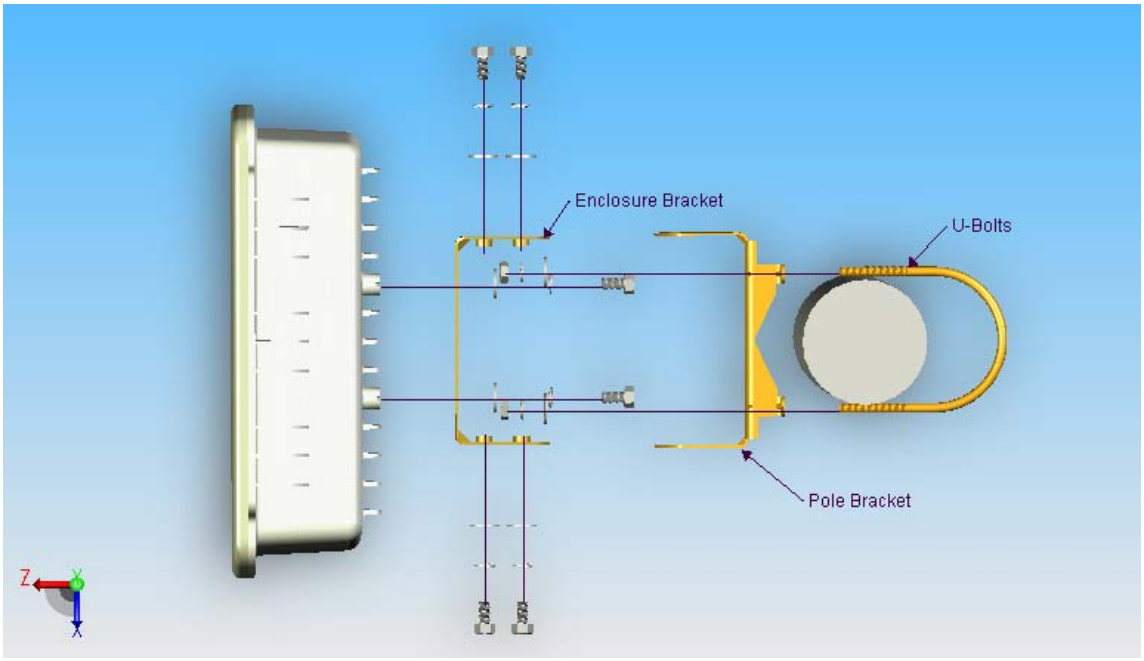
Follow the next steps to mount the Outdoor radio on the pole.

i. Mount the enclosure bracket to the back of the outdoor radio.

ii. Mount the pole bracket to the pole with the U-bolts.

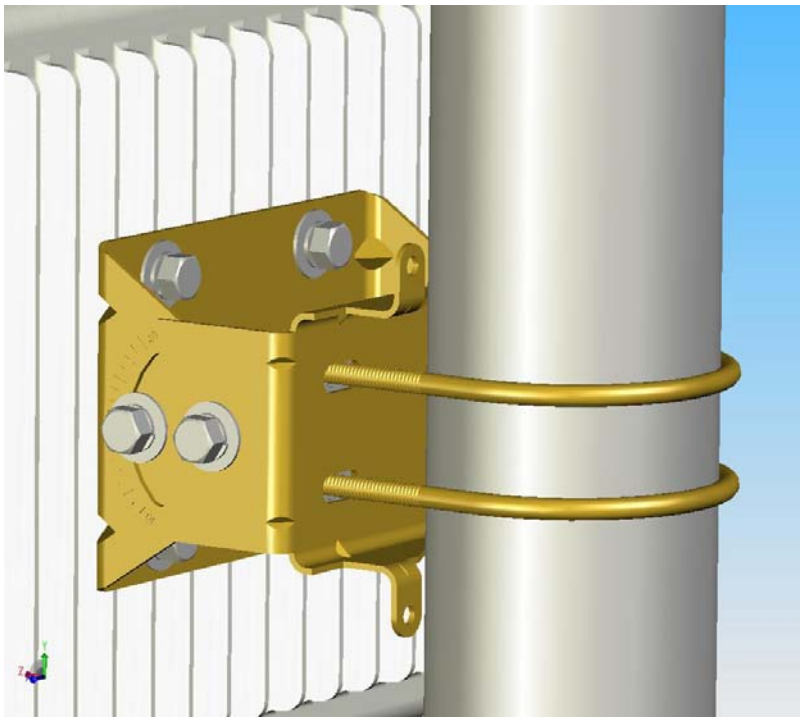
iii. Attach the radio with enclosure bracket to the pole bracket which was mounted on the pole with the supplied screws and U-bolts.

iv. Tighten the all the screws, U-bolts, washers and nuts with hand tools.



Mounting Explosion Assembly Figure

Only trained and qualified personnel should be allowed to install, replace, or service this equipment.



Mount the enclosure on the pole

2. Connect the ground stud

Connect the ground stud on the ODU enclosure with the ground wire.

This equipment must be grounded. Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available.

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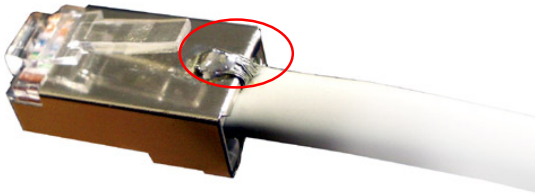
3. Connect the Ethernet Cable

The outdoor unit support 10/100M Ethernet connection. Attach your SFTP cat.5 Ethernet cable with waterproof connector to the RJ-45 connector on the ODU enclosure. Then connect the other end of the cable to the “WAN” port of the IDU.

Connect the SFTP cable to the ODU

Welding the shielding parts of the SFTP cable and the RJ-45 connector well to ensure the performance of the system and avoid the moisture leak into the radio.



Weld the RJ-45 connector with the SFTP cable

Weld the SFTP cable as the above figure, make sure the welding parts NOT bigger than the figure, or it will affect the function of waterproof RJ-45 connector.

4. Attached the antenna

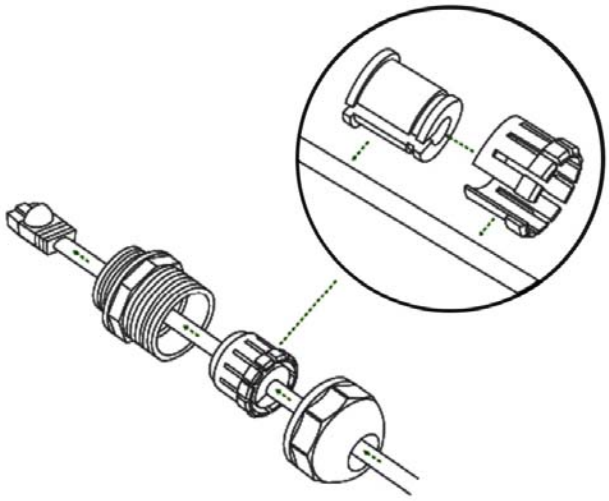
You can attach the proper antenna to the N-type connector on the Outdoor Radio.

To meet regulatory restrictions, the radio and the external antenna must be professionally installed.

Wind the water-resistant adhesive tape around the RJ-45 and N-type connector on the outdoor radio as the last step of the hardware installtion procedures.

Appendix 1 — How to make the SFTP cable with waterproof connector between the radio and POE injector.

The waterproof connector was formed by 8 pieces components as the following exploded view:



Blow is the complete figure for your reference.