IIOT-REPEATER
100-277VAC SimplySNAP Mesh Network Repeater
Operating Temperature: -40 to +55 C / Operating Humidity: 10 to 90%, non-condensing

WARNING AND CAUTIONS:

- **TO AVOID FIRE, SHOCK, OR DEATH; TURN OFF POWER** AT CIRCUIT BREAKER OR FUSE AND TEST THAT POWER IS OFF BEFORE WIRING!
- **Risk of Electric Shock -** More than one disconnect switch may be required to de-energize the equipment before servicing.
- To be installed and/or used in accordance with appropriate electrical codes and regulations.

WARNING AND CAUTIONS:

- **If you are unsure about any part of these instructions, consult an electrician.**
- Use this device with copper or copper clad wire only.
- Disconnect power at circuit breaker or fuse when servicing, installing or removing fixture or changing lamps.
- Mounting: It is critical to the performance of this device that the antenna be

INSTALLATION GUIDE

PART NUMBER: IIOT-REPEATER

DESCRIPTION

The IIOT-REPEATER works in conjunction with other Synapse-enabled devices to create a robust mesh network for use in a variety of IIoT solutions such as lighting controls, energy monitoring and air handling.

SPECIFICATIONS

- Voltage Input: 100-277VAC, (+/-10%), 50/60 Hz
- Max Current Draw: 3.6W, 30mA at 120VAC or 13mA at 277VAC
- Radio Frequency: 2.4 GHz (IEEE 802.15.4)
- RF Transmission Output Power: +15dBm
- Operating Temperature: -40 to +55 C
- Operating Humidity: 10 to 90%, non-condensing
- Configuration/Programming: Stored in non-volatile memory
- Enclosure Type: UL94-HB, ABS Plastic
- Dimensions: 7.87L x 3.93W X 2.75H in. (200 X 100 X 70 mm)

CAUTION

- The IIOT-REPEATER must be installed in accordance with national, state, and local electrical codes and requirements.
- All work must be performed by qualified personnel.
- Disconnect all power before installation or service.

NEEDED MATERIAL

- **Mounting Hardware:** Using Hardware appropriate for the installation, use all four (4) 0.197” diameter mounting holes to mount the unit.
- **Conduit:** To maintain the IP rating of the unit, it must be installed with the included cable gland OR with a weather-proof ¾” conduit fitting at the power entry point.

INSTALLATION

1. The IIOT-REPEATER must be mounted vertically with the power coming out the bottom of the unit, or the wireless signal may be compromised. DO NOT install the IIOT-REPEATER horizontally.

2. Select an installation location for the IIOT-REPEATER that provides line of sight to at least two other Synapse IIOT hardware devices. These devices can be another repeater, a lighting controller, or the site controller itself. It may be necessary to add more than one repeater to prevent a single point of failure in the RF network.
   (See Figure 1)

   Note: IIOT hardware that utilize sleep mode should not be considered part of the IIOT repeater network)

3. The antenna relies on free space around them for best RF performance so avoid installation near network cabling, AC power lines or within metal enclosures. Finally avoid installing the IIOT-REPEATER in direct sunlight.

4. Using Hardware appropriate for the installation, use all four (4) 0.197” diameter mounting holes to mount the unit.

5. With the IIOT-REPEATER mounted, you must have a licensed electrician pull power into the device according to national, state, and local electrical codes and requirements. The electrician is to connect the LINE and NEUTRAL through the power entry point inside the device. (See Figure 2)

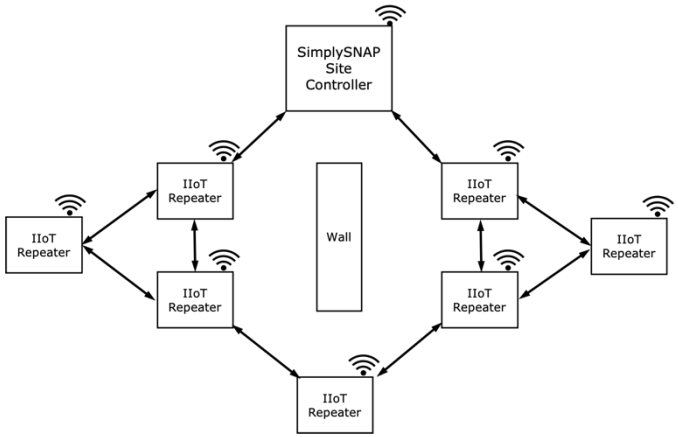

Figure 1 –Sample Mesh Network Layout

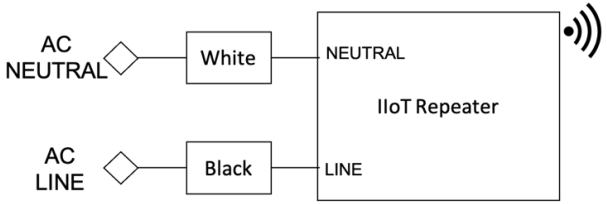

Figure 2 –Wiring Diagram

NOTE: A Power entry cable is not provided. The power entry point is ¾”. The provided cable gland or a sealed power entry connector and conduit is required in order to maintain the IP65 rating.

NOTE: If multiple conductors pass through the cable gland, they must be in a single sheath in order to maintain the IP65 rating. Recommended Cable diameter is 4-8 mm.

NOTE: The IIOT-REPEATER holds a IP65 rating when the door is latched and all entry points are properly sealed. Failure to do so will void the IP65 rating.

REGULATORY INFORMATION AND CERTIFICATIONS

RF Exposure Statement: This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Industry Canada (IC) certifications: This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.
Le present appareil numerique n'emet pas de bruits radioelectriques depassant les limites applicable aux appareils numeriques de la class B prescrites dans le Reglement sur le brouillage radioelectrique edicte par le ministere des Communications du Canada.

FCC certifications and regulatory information (USA only)

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

RADIO FREQUENCY INTERFERENCE (RFI) (FCC 15.105): 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: (1) Re-orient or relocate the receiving antenna; (2) Increase the separation between the equipment and the receiver; (3) Connect the equipment into an outlet on a circuit different from that to which the receiver is connected; (4) Consult the dealer or an experienced radio/TV technician for help.

Declaration of Conformity (FCC 96-208 & 95-19): Synapse Wireless, Inc. declares that the product name "IIOT-REPEATER" to which this declaration relates, meet the requirements specified by the Federal Communications Commission as detailed in the following specifications:

Part 15, Subpart B, for Class B equipment
FCC 96-208 as it applies to Class B personal computers and peripherals

This product has been tested at an External Test Laboratory certified per FCC rules and has been found to meet the FCC, Part 15, Emission Limits. Documentation is on file and available from Synapse Wireless, Inc.

If the FCC ID for the module inside this product enclosure is not visible when installed inside another device, then the outside of the device into which this product is installed must also display a label referring to the enclosed module FCC ID. Modifications (FCC 15.21): Changes or modifications to this equipment not expressly approved by Synapse Wireless, Inc., may void the user's authority to operate this equipment.

CERTIFICATIONS

MODEL	**:** IIOT-REPEATER
Contains FCC ID	**:** U9O-RF200
Contains IC	**:** 7084A-RF200
UL File No	**:** E346690

Contact Synapse for Support- (877) 982-7888