INSTALLATION INSTRUCTIONS

Original Issue Date: **1/21**
Model: **6-60 kW Residential Generator Sets equipped with RDC2 Controller**
Market: **Residential/Commercial**
Subject: **OnCue Plus Wireless Kit GM114539-KP1-QS**

Introduction

The OnCue® Plus Wireless Kit allows connection of residential/light commercial generator sets to the customer's Internet router without running a network cable from the customer's computer router to the generator set. Use this kit to connect the generator set to the Internet for the Kohler® OnCue® Plus Generator Management System.

The kit uses two wireless bridges that communicate with each other. One wireless bridge is installed inside the generator enclosure and powered by the generator's engine starting battery. The second wireless bridge is installed near the customer's router and connected to 120 VAC power. See Figure 1.

The bridges in the kit are identical; either one can be installed in the generator set enclosure or at the customer's router. See typical connection diagrams after the Installation Instructions section.

Note:
When choosing the locations for the wireless bridges, be aware that the signal strength may be affected by the distance and obstructions between the bridges.

For best results:

- Orient the bridges so that the fronts of the devices are facing each other.

- Minimize the number of walls and other obstacles between the bridges.

- Install the bridges within 60 meters (200 ft.) of each other.

The wireless bridges are factory-set and tested. No programming or setup is required in the field. Bridges in each kit have been paired and tested in the factory. Do not attempt to use a wireless bridge from one kit with one from a different kit.

The VHB tape provided with the kit allows installation of the kit components inside the generator set enclosure without drilling additional holes or using special tools. The ambient temperature must be warmer than 0°C (32°F) at the time of installation. Once installed, the tape is rated for - 35° to 110°C (- 31° to 230°F).
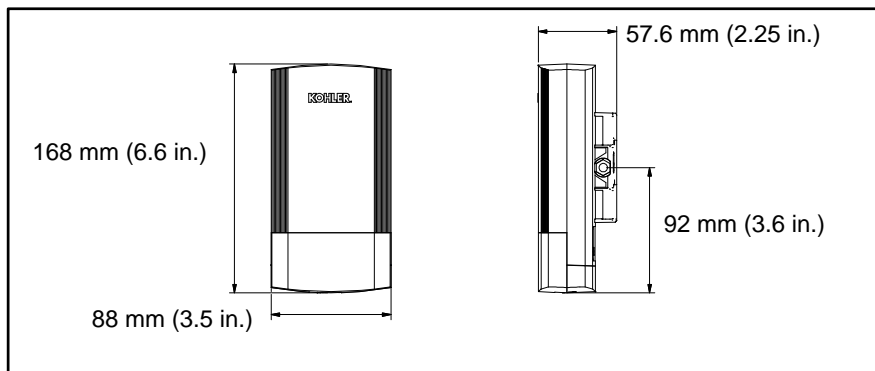

Figure 1   Wireless Bridge

Customer-Provided Equipment

The following customer-provided items are required for installation and operation.

- Router for Internet connection. (This is typically the router used to connect the customer's computer to the Internet.)

- Network cable for connection of one wireless bridge to the customer's router.

- A customer-supplied uninterruptible power supply (UPS) for the Internet router and the wireless bridge installed inside the customer's residence is suggested but not required.

Safety Precautions

Observe the following safety precautions while installing the kit.

⚠ WARNING	**Accidental starting.** **Can cause severe injury or death.** Disconnect the battery cables before working on the generator set. Remove the negative (–) lead first when disconnecting the battery. Reconnect the negative (–) lead last when reconnecting the battery.

Disabling the generator set. Accidental starting can cause severe injury or death. Before working on the generator set or equipment connected to the set, disable the generator set as follows: (1) Press the generator set off/reset button to shut down the generator set. (2) Disconnect the power to the battery charger, if equipped. (3) Remove the battery cables, negative (–) lead first. Reconnect the negative (–) lead last when reconnecting the battery. Follow these precautions to prevent the starting of the generator set by the remote start/stop switch.

⚠ DANGER	**Hazardous voltage. Moving parts.** **Will cause severe injury or death.** Operate the generator set only when all guards and electrical enclosures are in place.

⚠ DANGER	**Hazardous voltage.** **Will cause severe injury or death.** Disconnect all power sources before opening the enclosure.

1 Installation Procedure

1.1 At the Generator

1.1.1 Remove the Generator Set from Service

1. Press the OFF/RESET button on the generator set controller.

2. Press the Emergency Stop (E-Stop) button on the generator set, if equipped.

3. Disconnect utility power to the generator set by opening the upstream circuit breaker (typically located in the customer's distribution box).

4. Disconnect the generator set engine starting battery, negative (–) lead first.

5. Disconnect the generator set from load by opening the line circuit breaker.

1.1.2 Install the wireless bridge and Power over Ethernet (PoE) box.

1. Remove enclosure doors and/or panels as necessary to access the air intake area or the engine compartment (RCL models). See the installation diagrams in the next section.

2. See the drawings in the Installation Diagrams section for the recommended mounting locations on your generator set model. Make sure the surfaces where the PoE box and wireless bridge will be mounted are clean and dry.

3. Cut one piece of VHB tape GM94015 (provided in the kit) approximately 1 inch long. Use the tape to attach the Power over Ethernet (PoE) box GM114537-5 inside the enclosure as shown for your model.

4. Cut two or three pieces of the VHB tape approximately 2.5 inches long. Use the VHB tape to attach wireless bridge GM114537-1 to the inside of the enclosure as shown for your model.

5. Remove the access door on the bottom of the wireless bridge to expose the Ethernet port.

6. Connect one end of cable GM114537-2 to the WAN port on the wireless bridge. Connect the other end of the cable to the PoE port on the PoE box. See the Connection Diagrams section.

7. Connect DC power harness GM114538 to the DC port on the PoE box. See the connection diagram.

8. Connect the ring terminals on the DC power harness to the generator set battery cables. Follow the polarity shown in the table below. See Figure 2 for an illustration of the power cable.

Note:
Failure to follow proper polarity may result in damage to the wireless bridge.

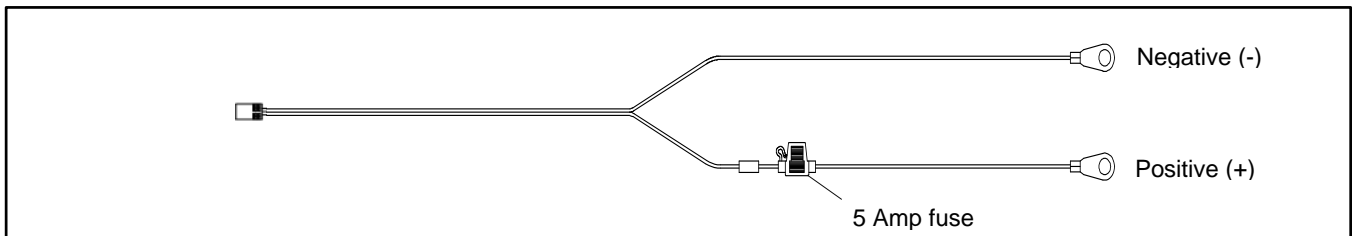| Cable	Battery Terminal
Red	Positive (+)
Black	Negative (-)

Figure 2   DC Cable GM114538

1.1.3 Connect the generator set's network cable to the LAN port on the PoE box.

1. A network cable is provided on the generator set and factory-connected to the generator controller. Connect the loose end of the network cable to the LAN port on the PoE box. See the Connection Diagrams section.

2. Replace the cover on the wireless bridge. Be careful to route the cable through the opening provided to avoid crushing the wires.

1.1.4 Restore the Generator Set to Service

1. Check that the Emergency Stop button is activated.

2. Reconnect the generator set engine starting battery, negative (–) lead last.

3. Reconnect the utility power to the generator set by closing the upstream circuit breaker (typically located in the customer's distribution box).

4. Reconnect the generator set to load by closing the line circuit breaker.

5. Reset the Emergency Stop button.

6. Clear the Emergency Stop fault on the controller.

7. Return the generator set to normal operation by pressing the generator set master control AUTO or RUN button, as required.

1.2 At the Internet Router

Follow this procedure to install the second wireless bridge near the customer's Internet router. Refer to the Connection Diagrams section during this procedure.

Install and connect the second wireless bridge.

1. Place the second wireless bridge GM114537-1 and PoE box GM114537-3 near the customer's Internet router. The location should also be near a standard 120 VAC power receptacle.

2. Use a customer-supplied CAT5 cable to connect the LAN port on the PoE box to the customer's Internet router.

3. Remove the access door on the bottom of the wireless bridge to expose the Ethernet port.

4. Use cable GM114537-2 to connect the WAN port on the wireless bridge GM114537-1 to the PoE port on the PoE box. See the connection diagrams.

5. Plug the PoE box GM114537-3 into a standard 120 VAC receptacle.

6. Replace the cover on the wireless bridge. Be careful to route the cables through the openings provided to avoid crushing the wires.

1.3 Start OnCue Plus

The wireless bridges have been factory-set to communicate with each other. No field setup is required. If the wireless bridges do not seem to communicate correctly, see the Troubleshooting section for instructions to check and test the pairing of the bridges.

Follow the instructions in the OnCue Plus manuals, TP-7006 and TP-7007, to connect the generator set to the Internet, set up an account, and activate your unit for use with OnCue Plus.

1.4 Installation Drawings

The drawings on the following pages show suggested locations for installation of the wireless bridge and POE on residential generator set models.
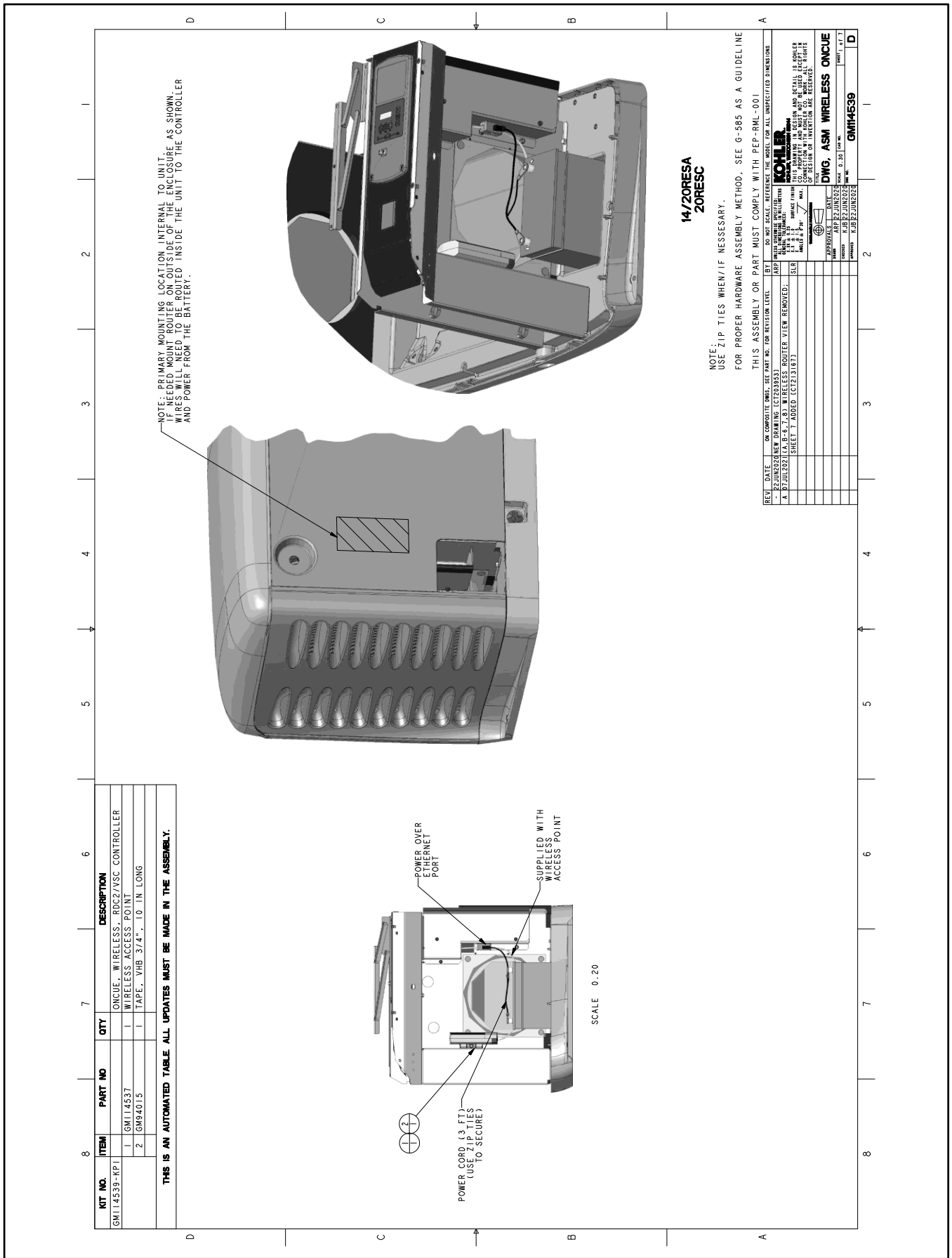
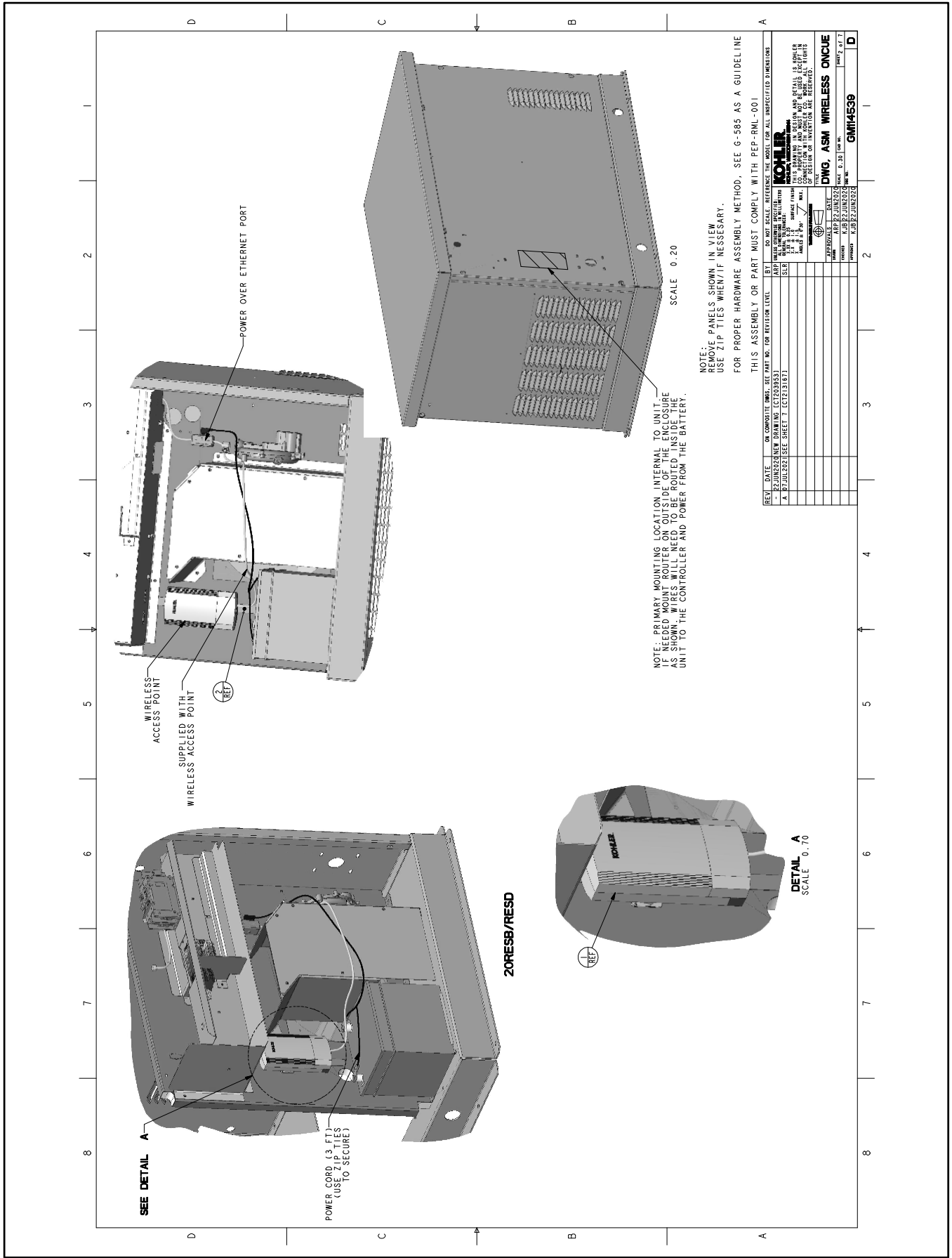Figure 3   Installation on 14/20RESA/C
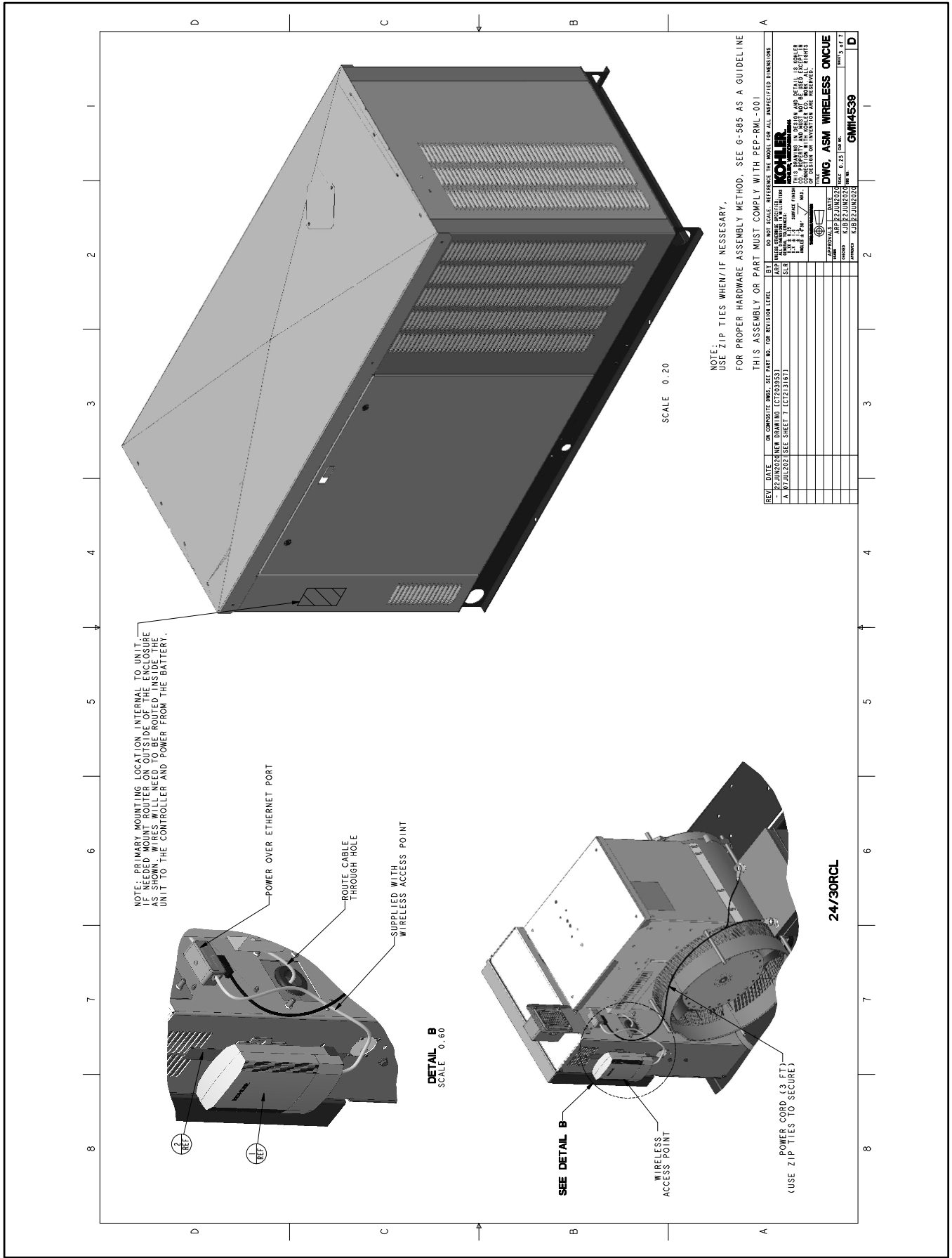
Figure 4　Installation on 20RESB/D

NOTE:
USE ZIP TIES WHEN/IF NESSESARY,

FOR PROPER HARDWARE ASSEMBLY METHOD, SEE G-585 AS A GUIDELINE

THIS ASSEMBLY OR PART MUST COMPLY WITH PEP-RML-001

SCALE 0.20

NOTE: PRIMARY MOUNTING LOCATION INTERNAL TO UNIT.
IF NEEDED MOUNT ROUTER ON OUTSIDE OF THE ENCLOSURE
AS SHOWN. WIRES WILL NEED TO BE ROUTED INSIDE THE
UNIT TO THE CONTROLLER AND POWER FROM THE BATTERY.

POWER OVER ETHERNET PORT

ROUTE CABLE
THROUGH HOLE

SUPPLIED WITH
WIRELESS ACCESS POINT

DETAIL B
SCALE 0.60

SEE DETAIL B

WIRELESS
ACCESS POINT

POWER CORD (3 FT)
(USE ZIP TIES TO SECURE)

24/30RCL

KOHLER.

DWG, ASM WIRELESS ONCUE

GMI4539

Figure 5   Installation on RCL Models

Figure 6   Installation on 8/10/12RESV

NOTE:
USE ZIP TIES WHEN/IF NESSESARY.

FOR PROPER HARDWARE ASSEMBLY METHOD, SEE G-585 AS A GUIDELINE

THIS ASSEMBLY OR PART MUST COMPLY WITH PEP-RML-001

SUPPLIED WITH WIRELESS ACCESS POINT

WIRELESS ACCESS POINT

POWER OVER ETHERNET PORT

6VSG

ROUTE POWER CORD THRU HOLES TO BATTERY

NOTE: PRIMARY MOUNTING LOCATION INTERNAL TO UNIT.
IF NEEDED MOUNT ROUTER ON OUTSIDE OF THE ENCLOSURE
AS SHOWN. WIRES WILL NEED TO BE ROUTED INSIDE THE
UNIT TO THE CONTROLLER AND POWER FROM THE BATTERY.

POWER CORD (3 FT)
(USE ZIP TIES TO SECURE)

SCALE 0.20

DWG, ASM WIRELESS ONCUE

GMM4539

Figure 7   Installation on 6VSG

SCALE 0.20

WIRELESS ACCESS
POINT

DETAIL C
SCALE 0.60

POWER OVER
ETHERNET
PORT

RCA

SUPPLIED WITH
WIRELESS ACCESS
POINT

SEE DETAIL C

POWER CORD (3 FT)
(USE ZIP TIES TO SECURE)

NOTE:
USE ZIP TIES WHEN/IF NESSESARY.

FOR PROPER HARDWARE ASSEMBLY METHOD, SEE G-585 AS A GUIDELINE

THIS ASSEMBLY OR PART MUST COMPLY WITH PEP-RML-001

DWG, ASM WIRELESS ONCUE

GM14539

Figure 8   Installation on 14/20RCA

Connect the PoE adapter's LAN to
PC, Router or Switch based on the
network topology

LAN

POE

Passive PoE Adapter supports up to 60 meter
(200 feet) Power over Ethernet deployment

Please prepare a long enough network cable to
connect the POE adapter and CPE. Recommend
to use a category 5 (or above) shielded network
cable with a ground wire.

Completed connection,
push up to restore
the CPE back cover

KOHLER

DO NOT SCALE. REFERENCE THE MODEL FOR ALL UNSPECIFIED DIMENSIONS

UNLESS OTHERWISE SPECIFIED:
ALL DIMENSIONS IN MILLIMETERS
GENERAL TOLERANCES

KOHLER

TITLE
DWG, ASM WIRELESS ONCUE

DWG NO.
GMM4539

REV	DATE	ON COMPOSITE DWGS. SEE PART NO. FOR REVISION LEVEL	BY
-	07JUL2021	NEW DRAWING [CT2039553]	ARP
A	07JUL2021	NEW VIEW ADDED [CT213167]	SLR

APPROVALS		DATE
DRAWN	ARP	07JUL2021
CHECKED	KJB	07JUL2021
APPROVED	KJB	07JUL2021

Figure 9   Installation of Wireless Bridge

2 Connection Diagrams

Switch must be in the C (client) position on the generator bridge

RDC2 Generator Set Controller

POE GM114537-5

LAN

POE   DC

RJ-45 cable (supplied with generator set)

Wireless Bridge GM114537-1

RJ-45 Cable GM114537-2

DC Power Harness GM114538

-   +

Generator Set Engine Starting Battery

Figure 10   Wireless Bridge Connection to Generator Set

Wireless Bridge GM114537-1

POE GM114537-3 plugs into 120VAC outlet

POWER OVER ETHERNET

Customer's Router

PoE   LAN

Switch must be in the H (host) position on the bridge that connects to the router

RJ-45 Cable GM114537-2

RJ-45 Cable (customer-provided)

Figure 11   Wireless Bridge Connection to Customer's Router

3 Troubleshooting

3.1 Basic Troubleshooting

Basic Troubleshooting: The purpose of the steps below is to ensure all connections are correct and the wireless bridges are set up for the strongest wireless connection.

Note:
Do NOT press the reset button on the wireless bridge. Resetting the bridge will disrupt the pairing and the bridges will not talk to each other.

1. Refer to the connection diagrams near the beginning of this document and check all connections.

2. For the strongest wireless connection, make sure the fronts of the devices are facing each other.

Channel Display
(host unit shown)
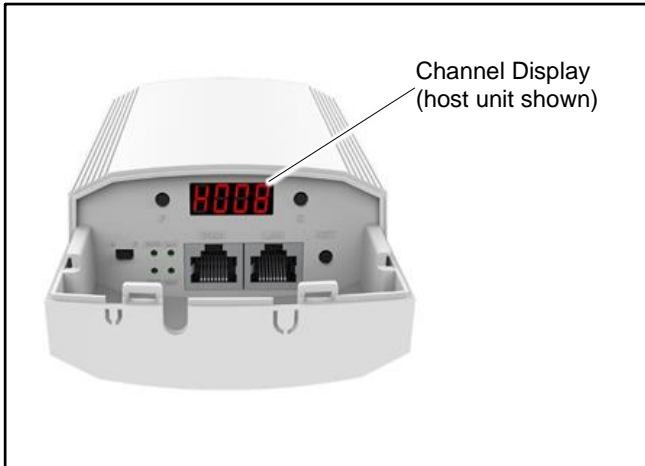
Figure 12   LED Display

3. Check the LED display on each wireless bridge.

   a. Make sure the Host display shows "HXXX" where XXX is a 3-digit number.

   b. Make sure the Client display shows "CXXX."

   c. The 3-digit channel numbers should be the same on both devices.

4. If the channel numbers do not match, try to pair the wireless bridges while they are closer together. Set up the in-home wireless bridge next to the router. Move the generator wireless bridge close to the in-home wireless bridge and power it up. This will ensure the two bridges are set to the same channel. Once the wireless bridges show they are on the same channel, unplug the generator wireless bridge and install again near the generator.

3.2 Advanced Troubleshooting

Advanced Troubleshooting

Note:
Do NOT press the reset button on the wireless bridge. Resetting the bridge will disrupt the pairing and the bridges will not talk to each other.

Perform these steps to ensure that the wireless bridge connected to your in-home router is online.

1. Use a network cable to connect a computer to the LAN port on the homeowner's wireless router.

2. On the computer, go into settings and select "Network & Internet."

3. In the "Network & Internet" settings click on "Change adapter options."
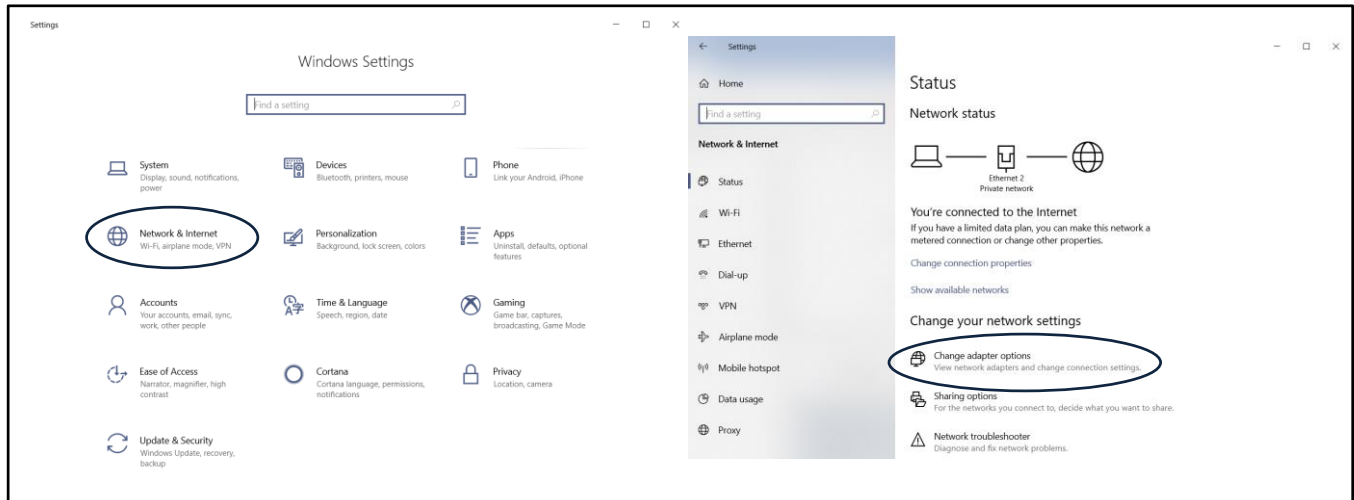
4. Several connections may be shown. Select "local area connection" or, if you know that your wireless bridge is on a different connection, chose that connection. Right click and select properties.
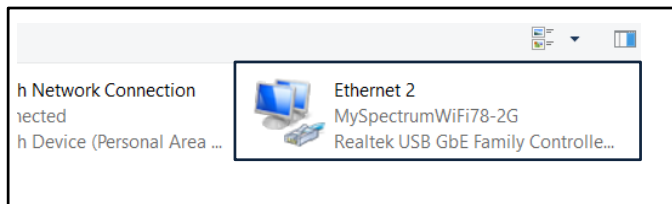
5. Double click "Internet Protocol Version 4 (TCP/IPv4)."
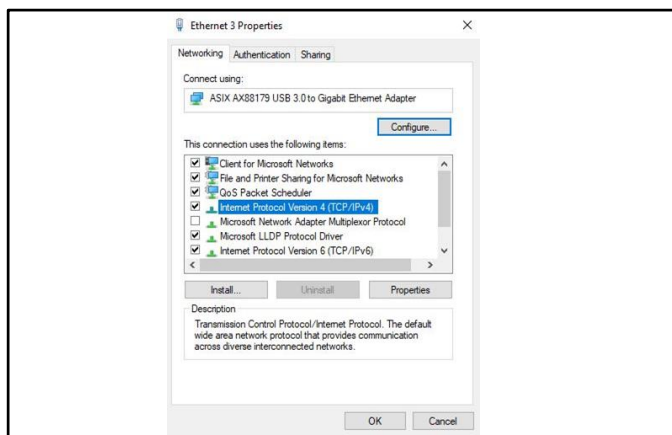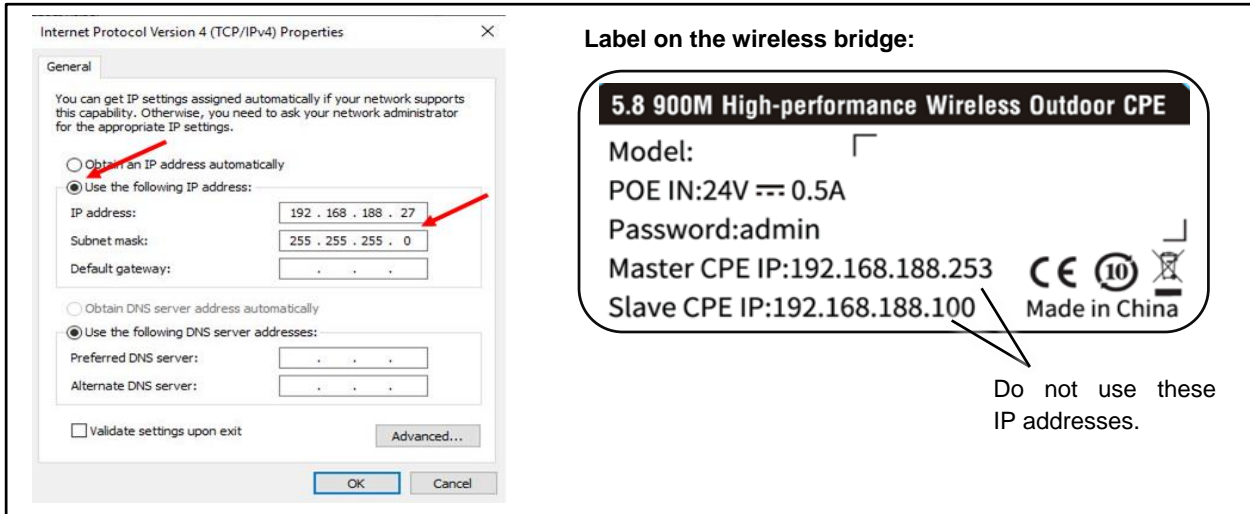
6. Select "Use the following IP address."

    a. Change the IP address to 192.168.188.XXX, where XXX is any number between 0 and 255, and different from the wireless bridge address.

    b. Change the subnet mask to 255.255.255.0

Note:
Find the IP address on the back of the wireless bridge in the house.

Label on the wireless bridge:

Do not use these IP addresses.

7. Search for the Host CPE IP address, 192.168.188.253 in the example above.
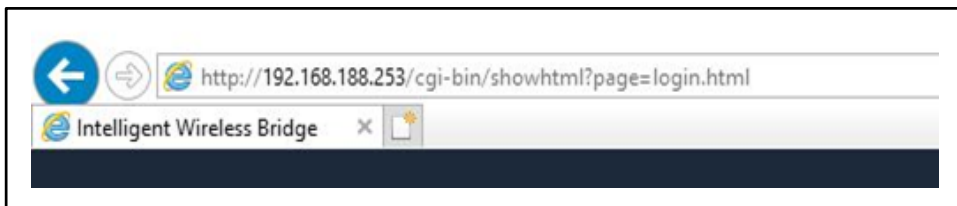
8. Log into the intelligent wireless bridge page by entering "admin" as the password.

admin
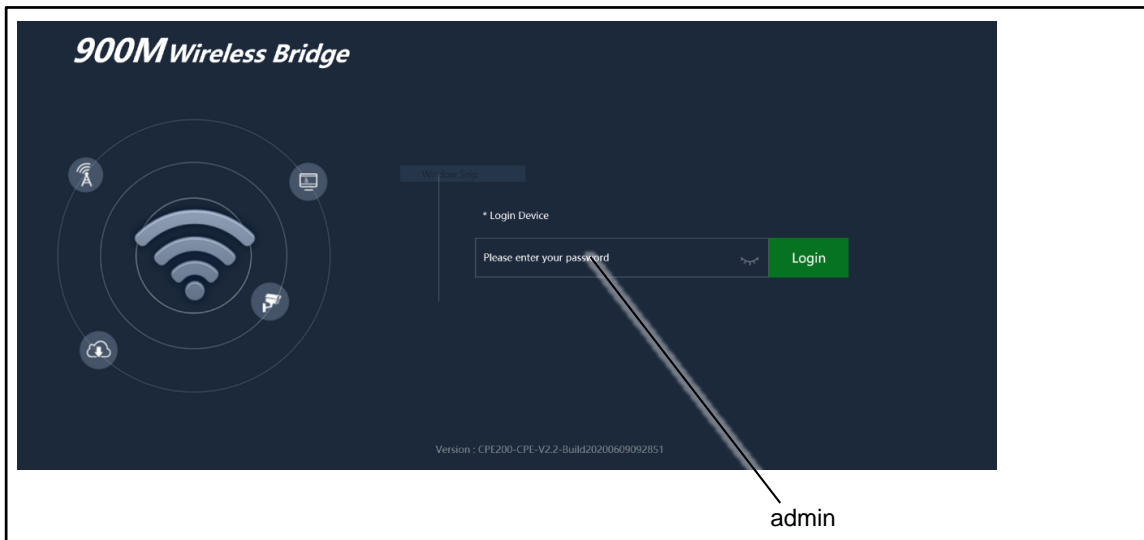
9. After logging into the host CPE you will be able to see a variety of information regarding the device. If the device is properly transmitting data you will see an active up and down stream. The information shown should match the client CPE installed near the generator. Under WiFi Information, click on the orange 1 to see the client list, which shows active connections.

Tap here to see active connections.
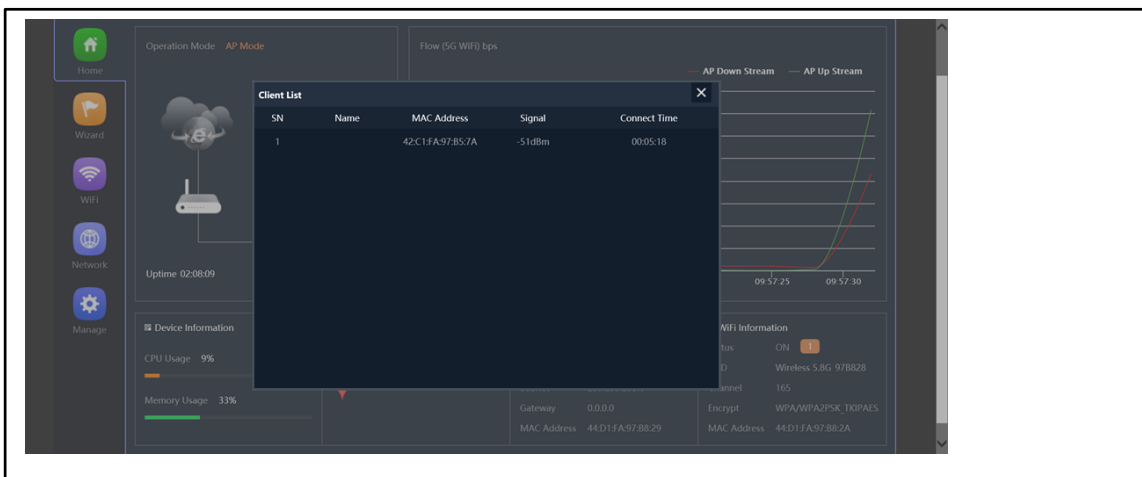
10. Search for the client device (192.168.188.100 in this example) in an internet browser. When logging into the client CPE you will be able to see various information regarding the device. If the device is properly transmitting data you will see an active up and down stream. The repeater information will match the SSID of the host CPE.

11. You must change your laptop IP address back to "Obtain an IP address automatically". Refollow the steps above to get back to the screen below and click "Obtain an IP address automatically", then click "ok".
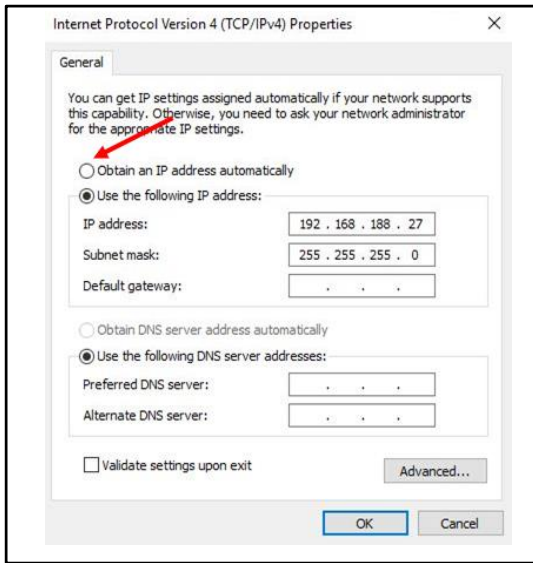
If all steps above are completed but there is no data transmitting or active clients, there may be an issue with the distance, orientation, or obstructions between the devices. If at all possible, install the devices closer to each other.

Advanced Troubleshooting (Phone)

The purpose of the following procedure is to ensure that the wireless bridge connected to your in-home router is online.

Note:
An iPhone was used for the following instructions. If an Android or other mobile device is used, the process will be similar. Please use this as a template for the procedure and consult the manufacturer's website for additional assistance, if needed.

Use an iPhone to check connectivity. The iPhone needs to be within range of the in-home wireless bridge.

1. Go into Settings on your iPhone®.

2. Tap the arrow for Wi-Fi. The wireless device will come up as Wireless 5.8G. Tap the ⓘ symbol to the right of the name.

iPhone is a trademark of Apple Inc., registered in the U.S. and other countries.
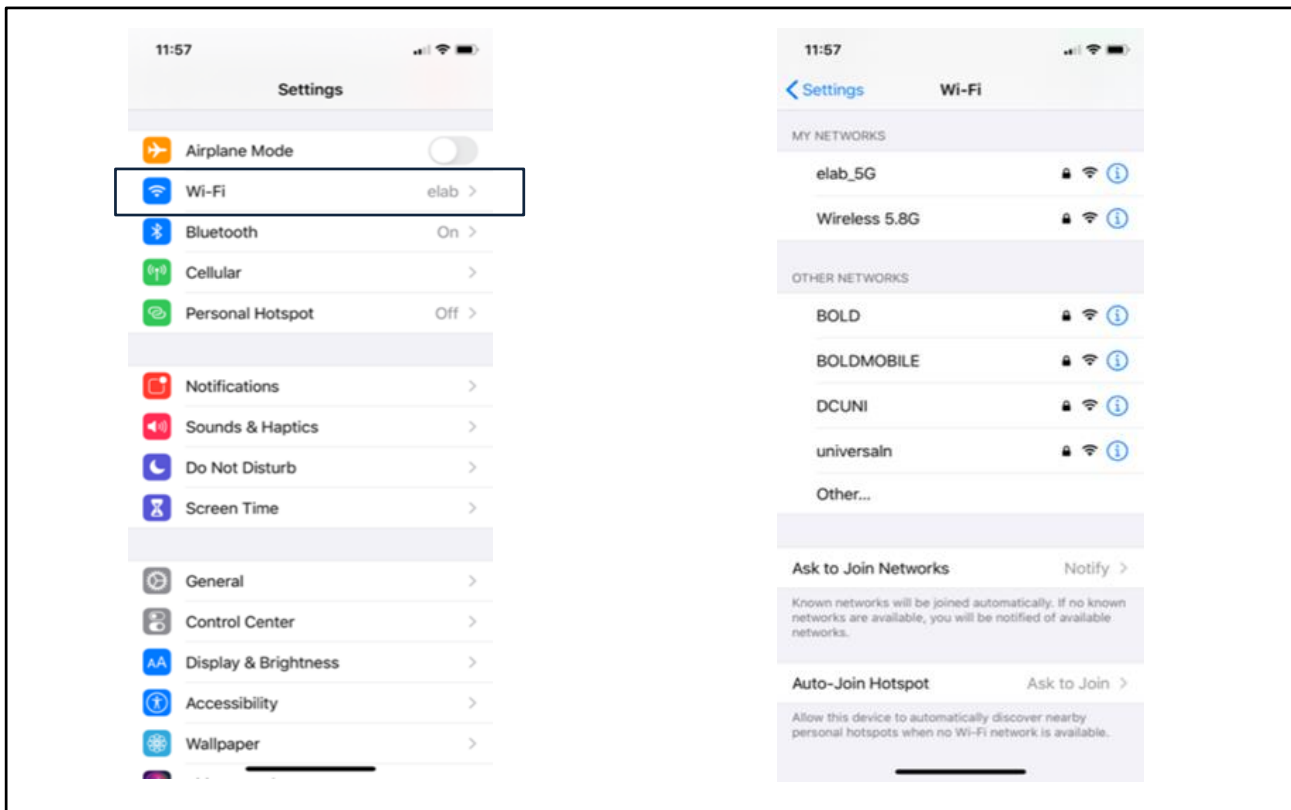
3. Tap Configure IP and change the setting to Manual.
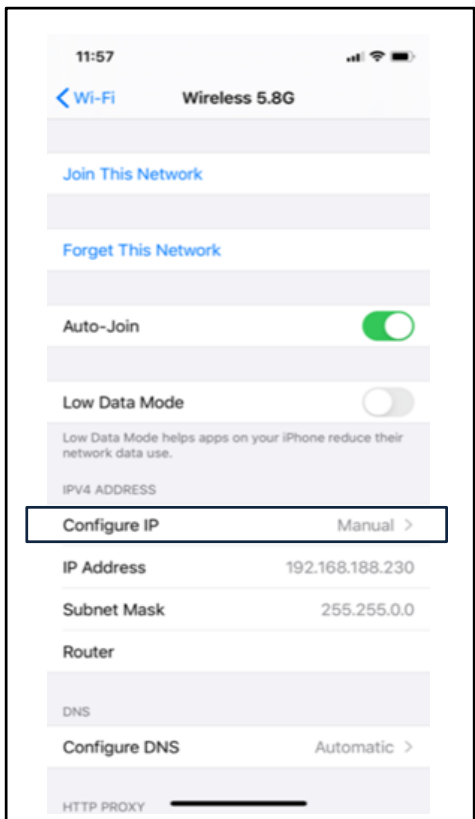
4. Change the IP Address to 192.168.188.XXX, where XXX can be any number between 0 and 255, and different from the wireless device's address.

5. Change the Subnet Mask to 255.255.0.0

6. Tap Save to ensure that your iPhone is on the same subnet as the wireless bridge.
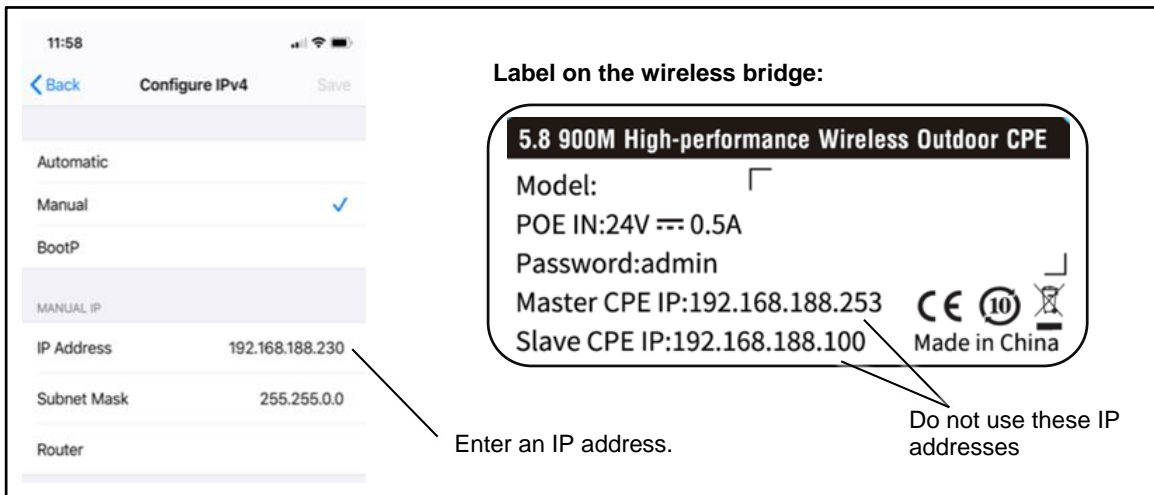
7. Tap Join and when prompted for a password enter 66666666 (Six, eight times).

8. In a browser, type the wireless bridge address into the address bar, 192.168.188.253 in this example. Tap More.

9. Tap System Status to see more device information.
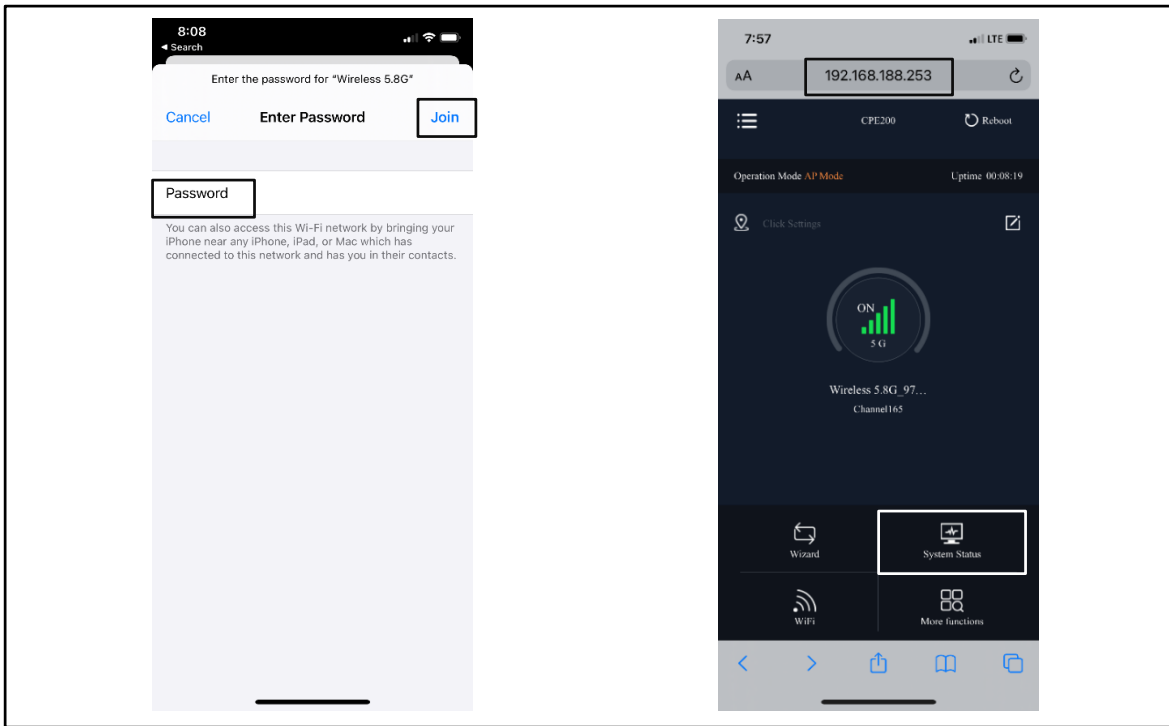
10. Tap Client List to see device connections. If properly connected you will see the client CPE MAC address and signal strength.
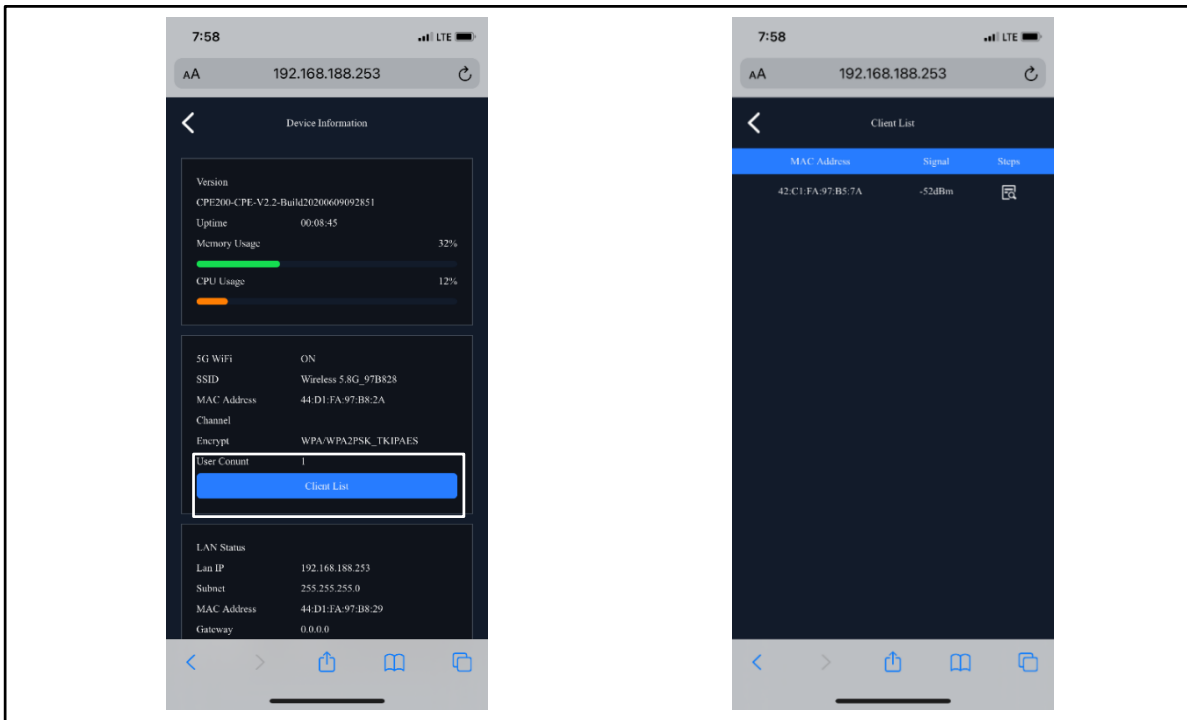
If all steps above are completed and there are no client connections, there may be an issue with the distance, orientation, or obstructions between the devices. If at all possible, install the devices closer to each other.

KOHLER®

Parts List

Kit: GM114539-KP1-QS		
Qty.	Description	Part Number
1	Tape, VHB ¾", 10 in. long	GM94015
2	Access Point	GM114537-1
2	Cable 3 ft, RJ-45	GM114537-2
1	Port, Power Over Ethernet	GM114537-3
4	Zip Tie	GM114537-4
1	Port, Power Over Ethernet	GM114537-5
1	DC Power Harness	GM114538
1	Installation Instructions	TT-1790

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