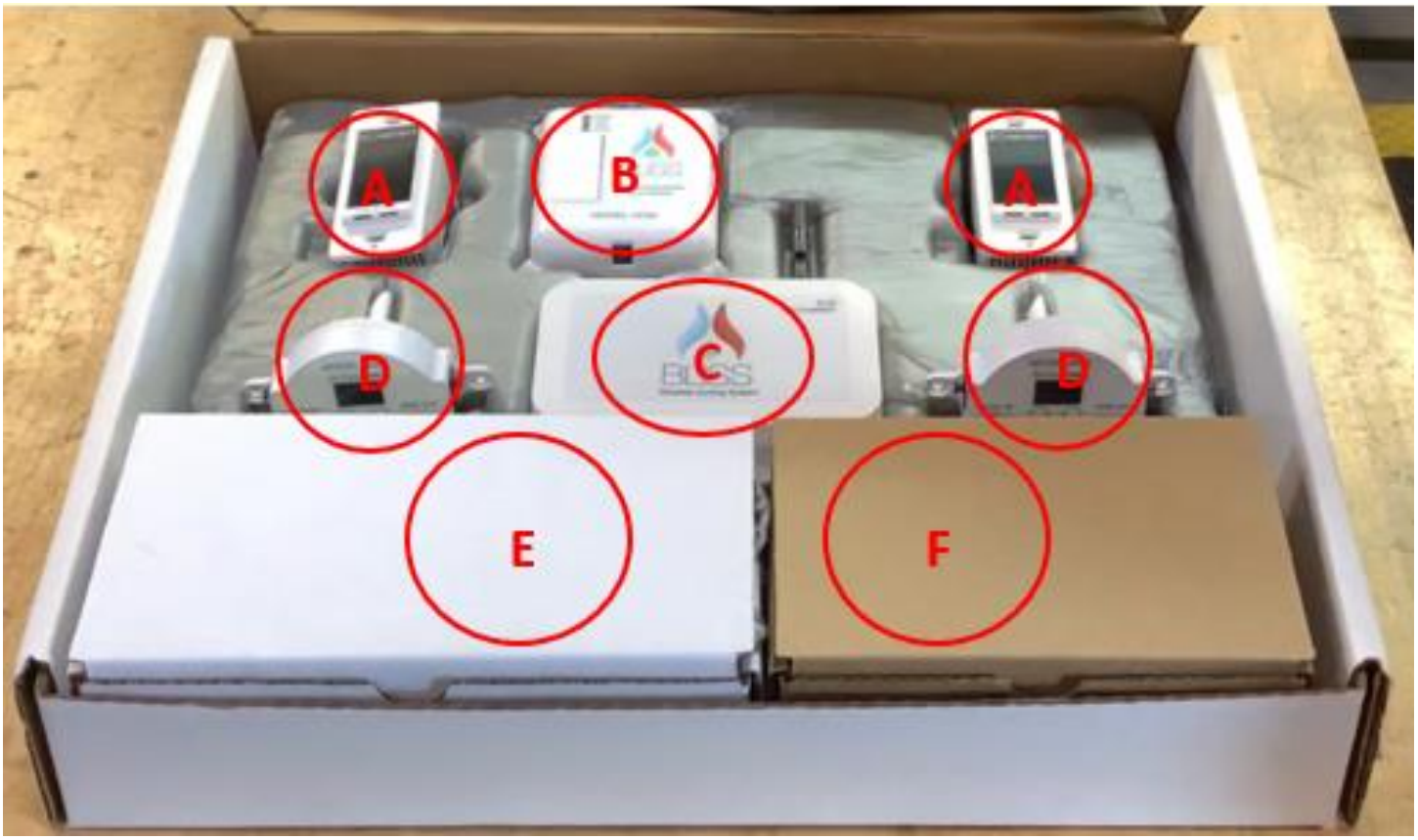
IoZ™ Installation Guide

An Internet of Zoning – IoZ™ Kit comes with equipment for either a 2-Zone or 3-Zone system. Orders with additional zones will have adder zone boxes delivered with the kit. See E below.

This installation guide will walk you through the necessary devices required for an IoZ system of any size, the functionality of each device, and a detailed step-by-step guide to how the system works and how to re-install the system. After following this guide, you should be comfortable with the functionality of the IoZ display and answer any questions that come your way.

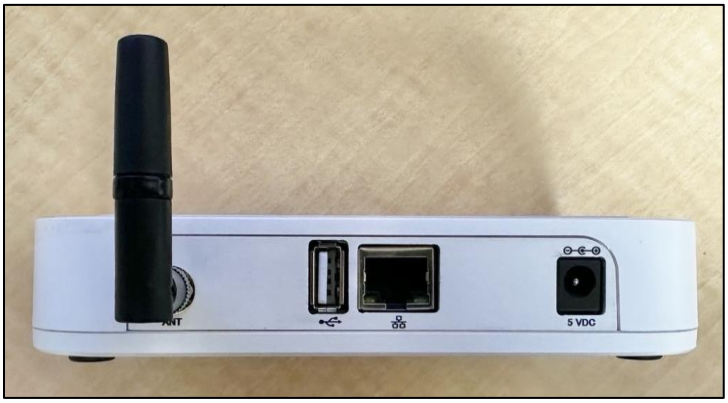


IoZ™ Kit Overview

A. Invis-A-Stat™ / Light Switch Thermostat (LST)
B. HVAC Control Module (HCM)
C. Zone Control Gateway (ZCG)
D. Wireless Damper Sensor (WDS)
E. Adder Zone (Additional LST & WDS)
F. Hardware (screws, wire nuts, cables, etc.)

ZONE CONTROL GATEWAY – ZCG

The ZCG or the Zone Control Gateway is responsible for connecting to all other devices, i.e. LST, WDS & HCM. Once the connections are established, the ZCG communicates via Wi-Fi or ethernet to the internet to allow accessibility from the mobile app.



<u>The ZCG has 3 LED light indicators:</u>

- **PWR:** Responsible for showing power to the ZCG, if power is active, the LED will turn a solid **GREEN** light.
- **LED1:** Responsible for showing the access point. During the install, you are required to establish a connection to the ZCG using a local access point. When active, not only will the LED turn a solid **GREEN** light, but there will also be a network along the lines of *ZCGxxxxxxxxxxx* available for connection. When the access point is disabled, the LED will turn a solid **RED** light and the network will no longer be available in your Wi-Fi settings.
- **LED2:** Responsible for showing connection to the internet. For the whole system to communicate to the mobile app, internet connection is required. When the LED is a solid **GREEN** light, there is an active connection to the internet. A connection can either be done through Ethernet (located on the back of the ZCG) or Wi-Fi (connected to your local Wi-Fi connection). When the LED is a solid **RED** light, there is no active connection to the internet.

<u>The ZCG has 2 push buttons:</u>

- **SW1:** When pushed for a duration of ***15 seconds***, the local access point will become available. This will also trigger LED1 to turn a solid GREEN light. **When held for *30 seconds, all of the components flash* and not only will the ZCG factory reset, but if there is an existing system already connected, the system will also be factory reset to its original state.**
- **SW2:** Will be used in the future.

On the back side of the ZCG you will find an antenna (used for Wi-Fi functionalities), an ethernet port and a 5VDC port. **It is crucial that the ZCG uses the supplied WHITE power supply or 5VDC equivalent. <u>Failure to do so will result in burning out the ZCG due to a higher voltage.</u>**

HVAC CONTROL MODULE – HCM

The HCM or HVAC Control Module is responsible for communicating to your HVAC equipment. Any heat or cool calls made from the thermostat (LST) or the mobile app will communicate directly to the HCM to send a signal to the HVAC equipment. Along with that are 3 plug-in ports only used for connections to the WDS.

The HCM has 4 LED light indicators:

- **POWER:** Responsible for showing power to the HCM, if power is active, the LED will turn a solid GREEN light.
- **MODE:** Responsible for showing the active mode. If there is an active call and an opposite call is made, there is 20 minute changeover time with a 2 minute purge between calls. If test mode is active, the changeover time is reduced to 30 seconds while the purge takes roughly 5 seconds.

WHITE: Flashing LED indicates the system is not configured or not connected to anything

GREEN: Solid LED indicates the system is idle.

ORANGE: Solid LED indicates a call for fan. Flashing LED indicates a purge. If a heat/cool limit is reached, the active call will stop and a solid light will turn on. Once there is a 10 degree drop from the limit, the orange LED will turn off and continue the current heat/cool call.

BLUE: Solid LED indicates a call for cool. Flashing LED indicates a second stage call. Based on the stage timer, a second stage call will trigger.

RED: Solid LED indicates a call for heat. Flashing LED indicates a second stage call. Based on the stage timer, a second stage call will trigger.

- **HUM:** Responsible for showing an active humidification status. This feature is currently unavailable and will be active in future updates.
- **DEHUM:** Responsible for showing an active dehumidification status. This feature is currently unavailable and will be active in future updates.

The HCM has 1 push button:

Located on the right side of the HCM is a small blue button. **Holding the push button down for a duration of 10 seconds or more will trigger a factory reset for the HCM.** This will also trigger the MODE LED to start flashing a WHITE light indicating an uninstalled HCM.

The right side of the HCM has 3 available RJ-11 ports to send power to each WDS.

On the bottom side of the HCM you will find a 12VDC port. **It is crucial that the HCM uses the supplied BLACK power supply or 12VDC equivalent.** Failure to do so will result in the HCM not powering up.

LIGHT SWITCH THERMOSTAT – LST

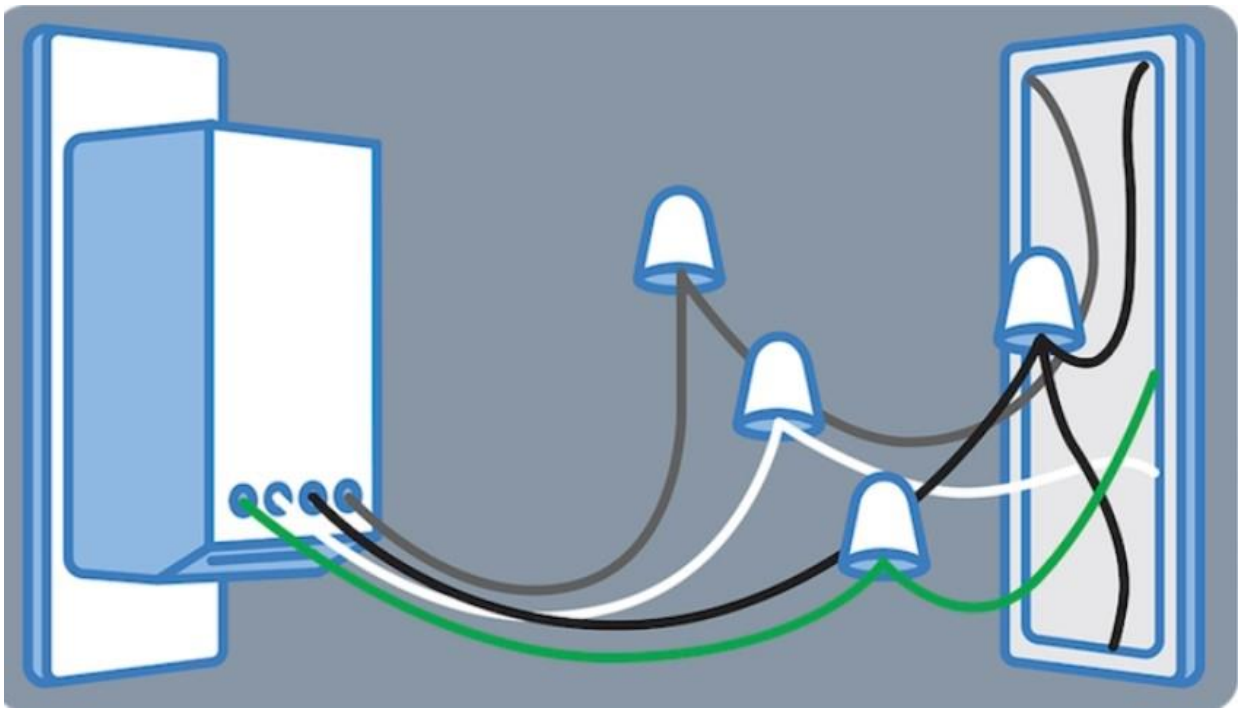
The LST or Light Switch Thermostat is responsible for monitoring and changing the temperature for each zone. Each LST is also capable of turning on or off the light for the specified zone.

Located on the front of the LST is the touch display capable of interacting with the temperature input. Below it is an icon of a light bulb used to turn on and off the connected light source. At the bottom there are a variety of venting holes to read accurate temperature and humidity of the current room. At the center of the vent holes is a slightly larger hole which has a small tactile push button behind it. Using a small pin or a paperclip, you can push the button. **Pushing the button for a duration of *10 seconds* will initiate a factory reset for the LST.**

Located on the back of the LST are the 4 wires used to connect to your power source.

Green Ground – Earth/Ground
White Neutral – Neutral
Black Line – Hot/Line
Gray Load – Load/Light

The ground, neutral and line wires are used to power the LST while the load wire is used primarily for connecting to the light source.



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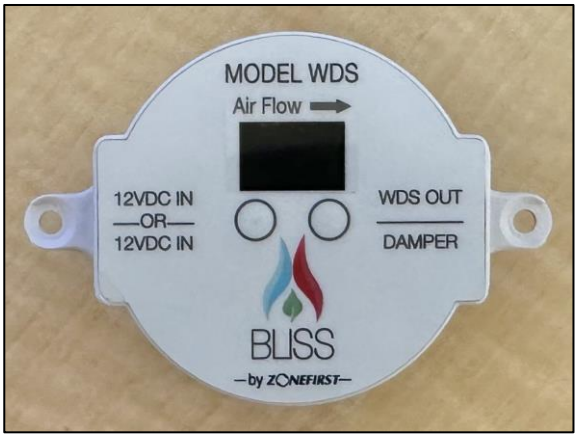
WIRELESS DAMPER SENSOR – WDS

The WDS or Wireless Damper Sensor is responsible for sensing the duct temperature and pressure. For every LST in the system, there is a corresponding WDS with it to monitor the zone's duct parameters. The WDS connects and powers the plug-in-play dampers to modulate for open/close as well as bypassing features.

Located on the left side of the WDS is the 12VDC IN. There are two ports that can be used:
RJ-11: Connects to the HCM or the "WDS OUT" port from a separate daisy-chained WDS.
DC Port: Connects to a separate 12VDC power supply in the event you can't connect to the RJ-11 port.
Only one of the two ports are allowed to be used at a time. Using both will result in a malfunction of the WDS's power.



On the center of the WDS you'll find the airflow indicator. The tube on the back has an angled cutout used to direct air into the WDS for temperature and pressure readings.
The screen below it showcases the designated zone.
The WDS has 2 push buttons:

- **Left:** During setup, this button will change the left number for zones larger than 10+.

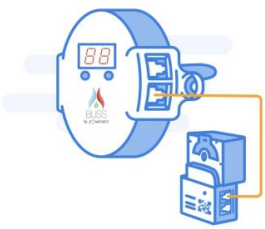
Holding the push button down for a duration of 10 seconds will factory reset the WDS. Once released, you will see a flashing dashed line on both segments.

- **Right:** During setup, this button will change the right number 0-9.

Located on the right side of the WDS are two RJ-11 ports:
WDS OUT: Connects to the 12VDC IN port on another WDS used to power adjacent WDS devices.
DAMPER: Connects to the plug-in-play dampers using a 25' RJ-11 cable provided with the damper. Zones with multiple dampers can be daisy-chained using the single port.

1. The WDS can be powered by two options. Choose between power from the HCM or a 12VDC power supply.

2. Wire the WDS to the MP12M on the damper as shown below. Use the jack labeled "DAMPER" for this connection.



3. Use the 12VDC OUT jack to power the next WDS as shown below. Repeat this process until all Zone Dampers are on.

* You can also power other WDS from the HCM or a 12VDC power supply!

(Optional) If you have multiple dampers in one zone you can daisy chain the MP12Ms as shown below.

QR CODES

Every IoZ display has a variety of QR codes associated with it. Each device has its own unique QR code which is tied to its unique MAC ID. For ease of install, we've implemented a Master QR Code which is responsible to coupling all devices into one dominant QR code for the entire system. Installs can be done by using either method.

ZCG: Located on the back is a single QR code that is mapped to the MAC WiFi ID. For installs, along with the QR code you also need the UNIQUE ID, which is a 6 digit letter/number combination. The Master QR code will already include the UNIQUE ID in its code.
HCM: Located on the back is a single QR code that is mapped to the IEEE ID.
LST: Located on the back is a single QR code that is mapped to the IEEE ID.
WDS: Located on the back and the bottom is a single QR code that is mapped to the IEEE ID.

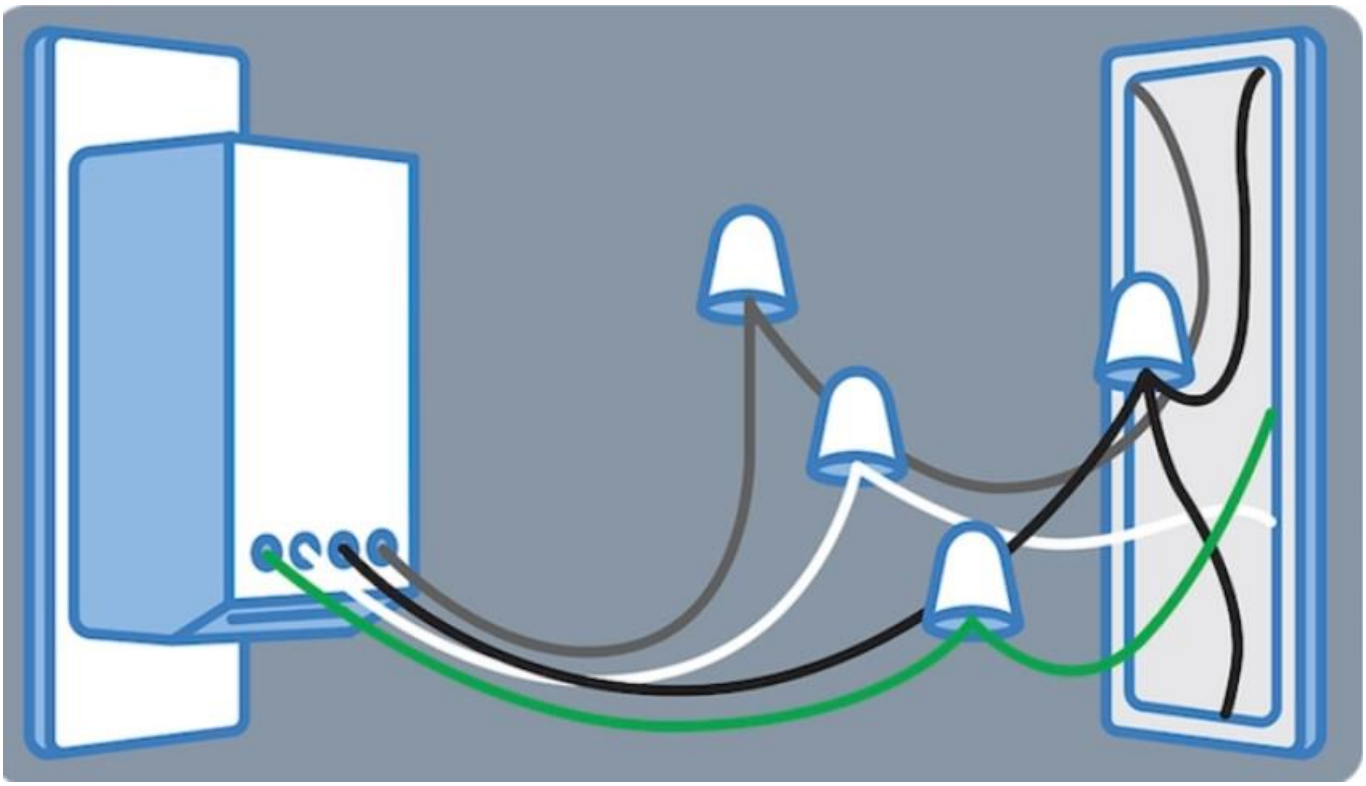
Every display will have a Master QR code located on the front as well as the individual QR codes printed on the back. For any fresh installation, you can use either method of QR codes to scan in all the devices.

IoZ Equipment Installation

The following step-by-step procedure will walk you through how to install a system from start to finish.

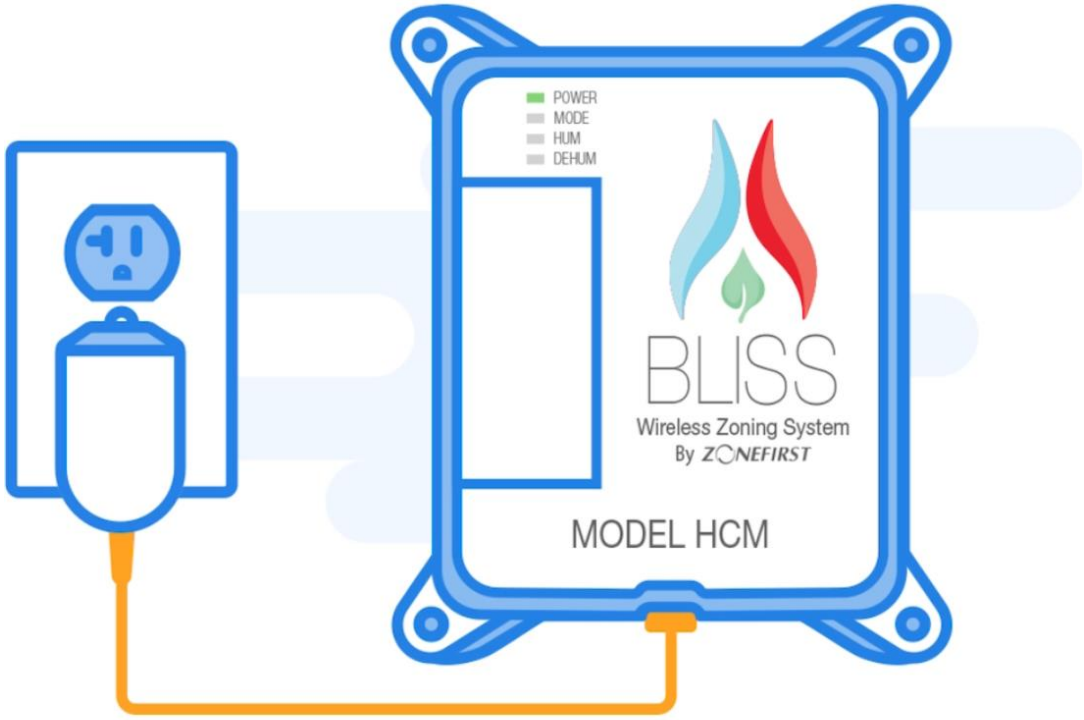
1 Install Invis-A-Stat™/ LST

a. Turn off the breaker to the room you're installing the LST into
b. Remove the light switch cover and existing light switch
c. Wire up the LST as seen below:
d. Reinstall the light switch with the two screws & four wire nuts provided
e. Repeat the process for each LST
f. Once all LSTs are installed, turn the circuit breaker back on and continue



2 Install the HCM

a. Take the four (4) screws provided and install the HCM near the indoor equipment
b. Plug in the 12VDC power supply, which is a **black** cord
   i. Be sure to only use the 12VDC power cord with the HCM
   ii. If you use it with the ZCG, it will damage your equipment
c. Once powered the Power LED will turn solid **green**



Power the HCM using the 12VDC power supply. The Power LED will turn on solid green.

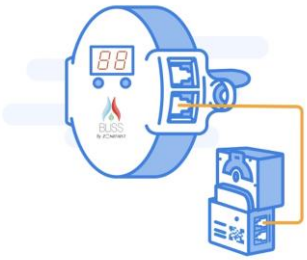
d. Wait to wire the HCM until you are setting up the type of equipment though the BLISS™ by ZONEFIRST® app

3 Install the WDS

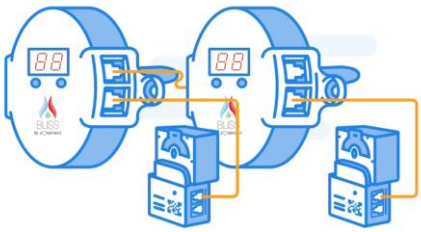
a. Drill a 3/8 hole into the duct work after the damper to insert the sensor
    i. Be sure to install it with the air flow arrows facing the same direction of the air flow
b. Mount the WDS with the two screws provided into the duct work
c. The WDS can be powered two ways, either Plug-In-Play™ wiring with RJ11 telephone cord, or with a 12VDC power supply
d. Wire the WDS to the Plug-In-Play damper motor using the jack labeled ‘DAMPER”
e. Use the 12VDC “OUT” jack to power the next WDS as shown below. Repeat this process until all of the zone dampers are installed
f. *Optional*
    i. You can also power the other WDS from the HCM or a separate 12VDC power supply
    ii. If you have multiple dampers in one zone you can daisy chain the motors as shown below

1. The WDS can be powered by two options. Choose between power from the HCM or a 12VDC power supply.

2. Wire the WDS to the MP12M on the damper as shown below. Use the jack labeled "DAMPER" for this connection.



3. Use the 12VDC OUT jack to power the next WDS as shown below. Repeat this process until all Zone Dampers are on.

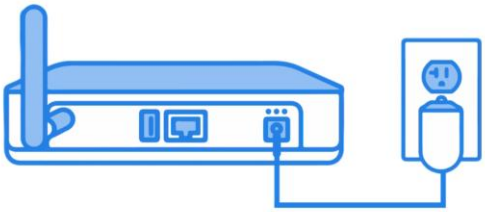


* You can also power other WDS from the HCM or a 12VDC power supply!

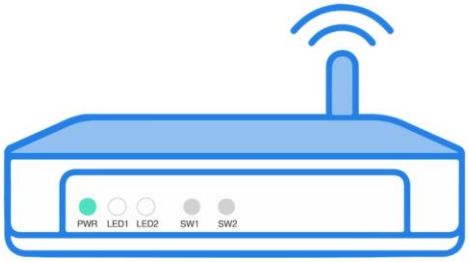
(Optional) If you have multiple dampers in one zone you can daisy chain the MP12Ms as shown below.

4 Install the ZCG

a. Install the ZGC near your home's wifi router
b. Take the **white** 5VDC power cord and plug it into the back of the ZGC
c. Then the PWR LED will turn solid **green**
d. Wait 15 seconds while the ZCG boots up indicated by LED1 & LED2 being solid **red**
e. If possible, we recommend installing the ZGC with an ethernet cable to your wifi router
f. We will finish the ZCG install using the Bliss™ by ZONEFIRST® app

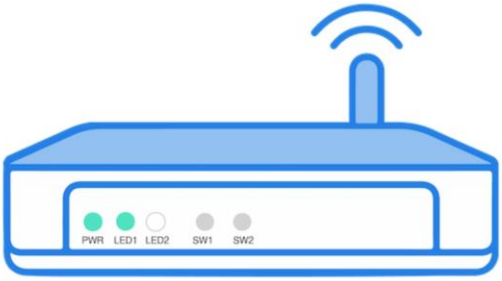


Please power the ZCG as shown in the diagram.



The Power LED will turn on solid green.

Wait for 15 seconds and the ZCG will begin to boot indicated by a solid red LED1 and LED2.



Once the ZCG is finished booting, wait for 10 seconds and LED1 will turn solid green.

BLISS™ by ZONEFIRST® App Install

1 Install BLISS by ZONEFIRST app from the App Store or Android Marketplace

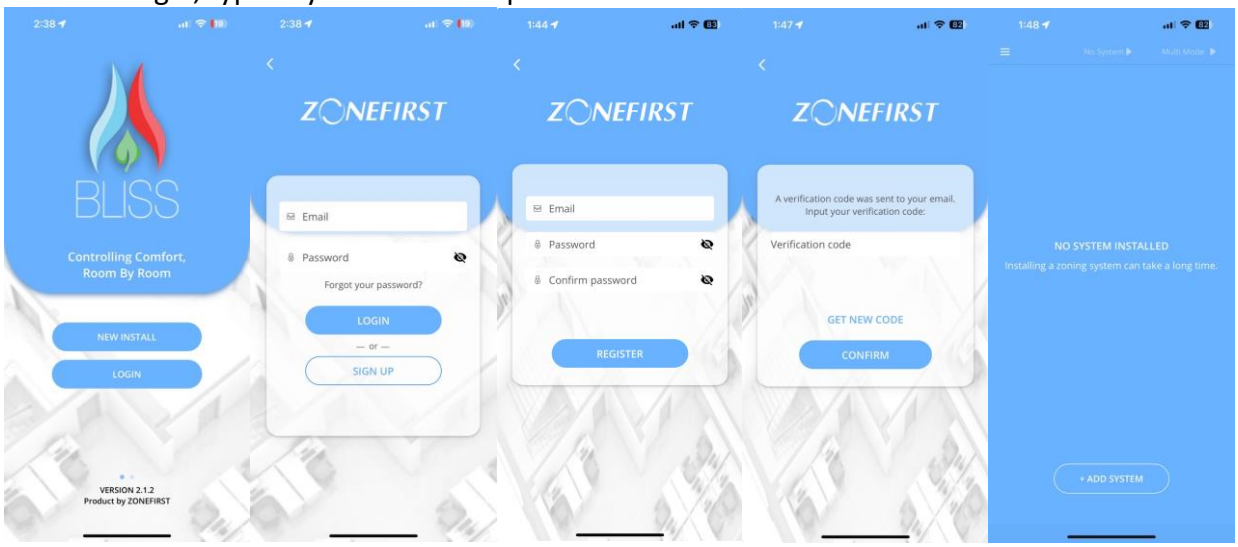
2 Open the IoZ App and start by creating an account

a. Select *"Login"*

i. If you have not created an account, select *"Sign Up"*, input all your credentials and select *"REGISTER"*

ii. A verification code will be sent to your email. Input the code and select *"CONFIRM"*

b. To login, type in your email and password and select *"LOGIN"*



3 To start the install, select *"+ADD SYSTEM"*

a. Add a Configured System

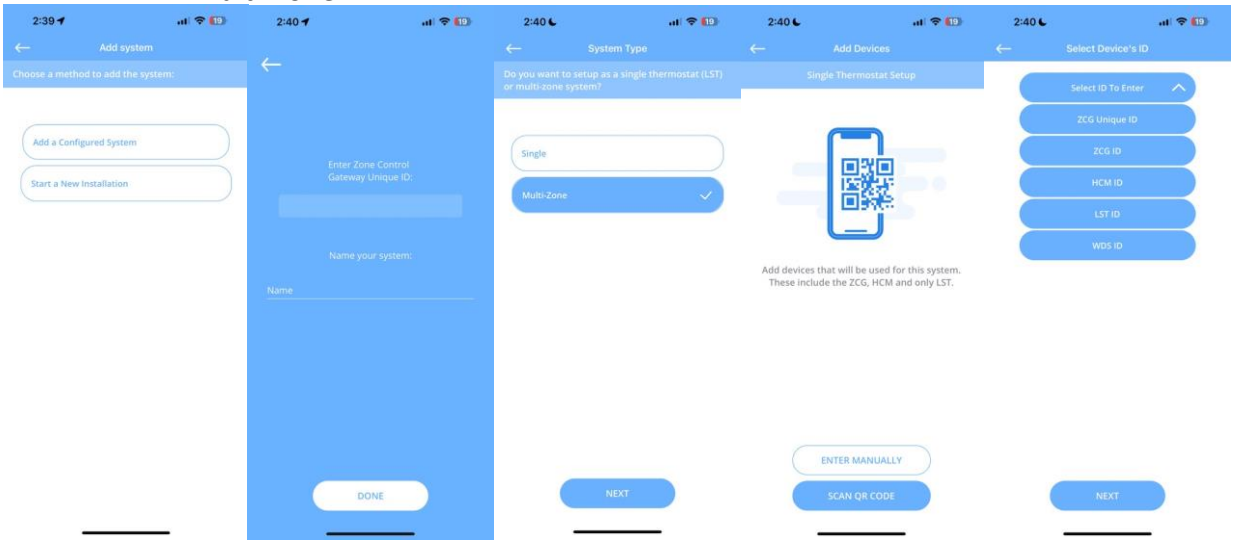
i. If there is a system already configured, enter the unique id

ii. Name your system

b. Start a New Installation

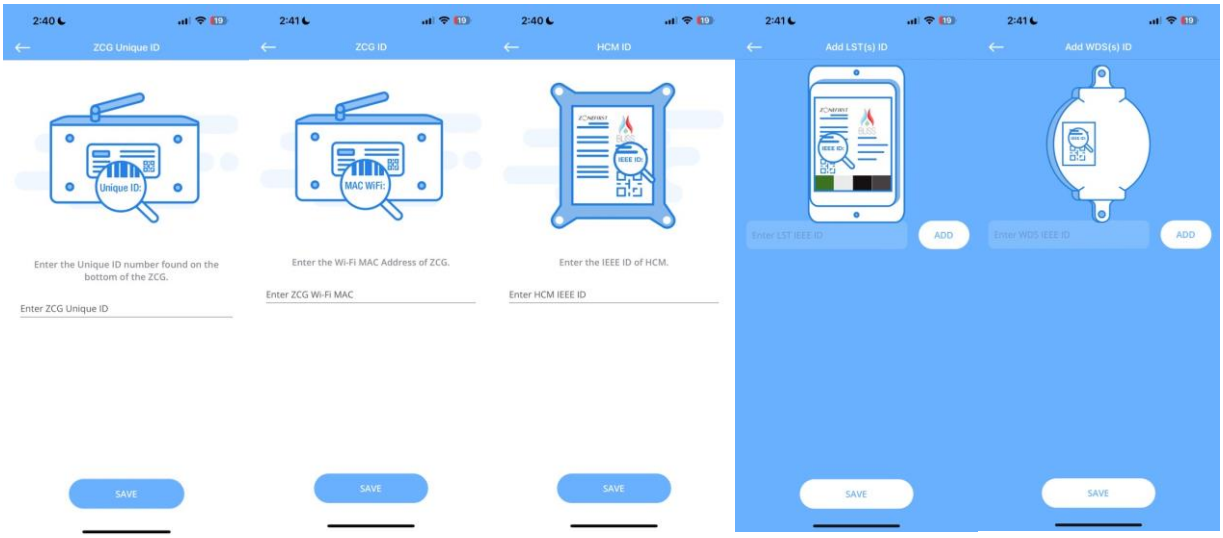
i. Single Zone

ii. Multi-Zone

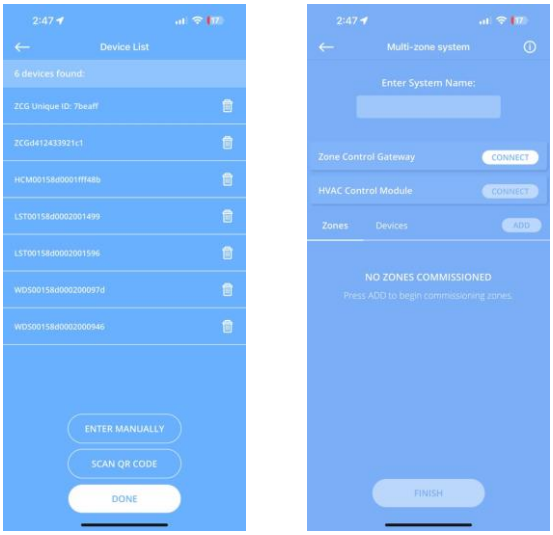


4 For any type of install (Single or Multi) the app will prompt you to either scan the master QR code or add each device individually

a. Scanning the Master QR code will automatically identify each device along with its own ID **(recommended)**
b. Entering each device manually will prompt you to type in the appropriate ID



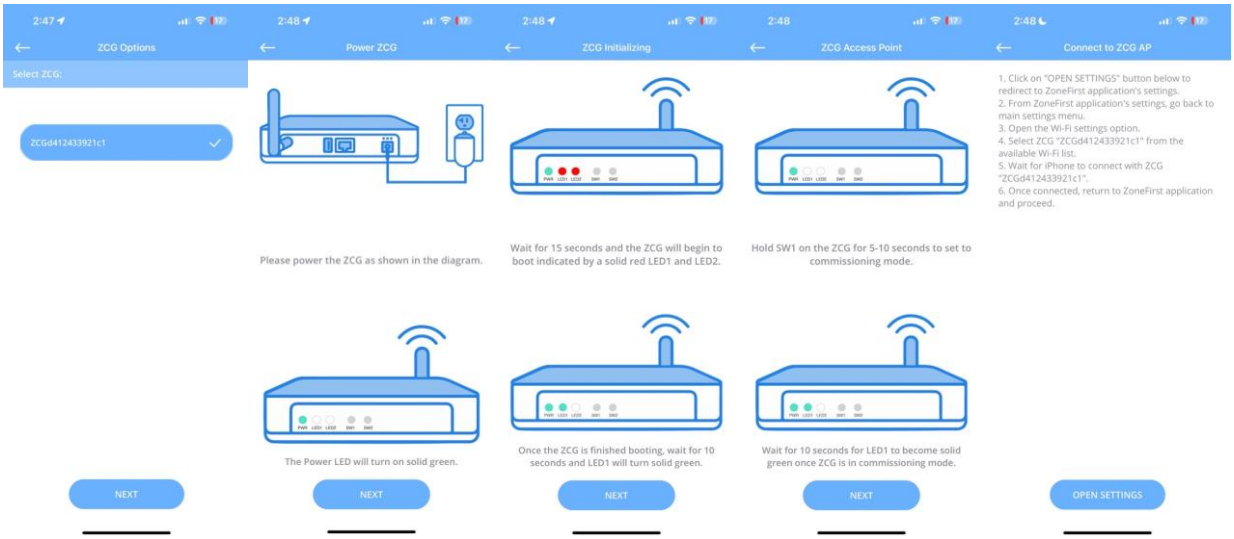
5 Check if all devices are present on the list and add any device that isn't showing up. **<u>When starting an install, you will always start with the ZCG.</u>**

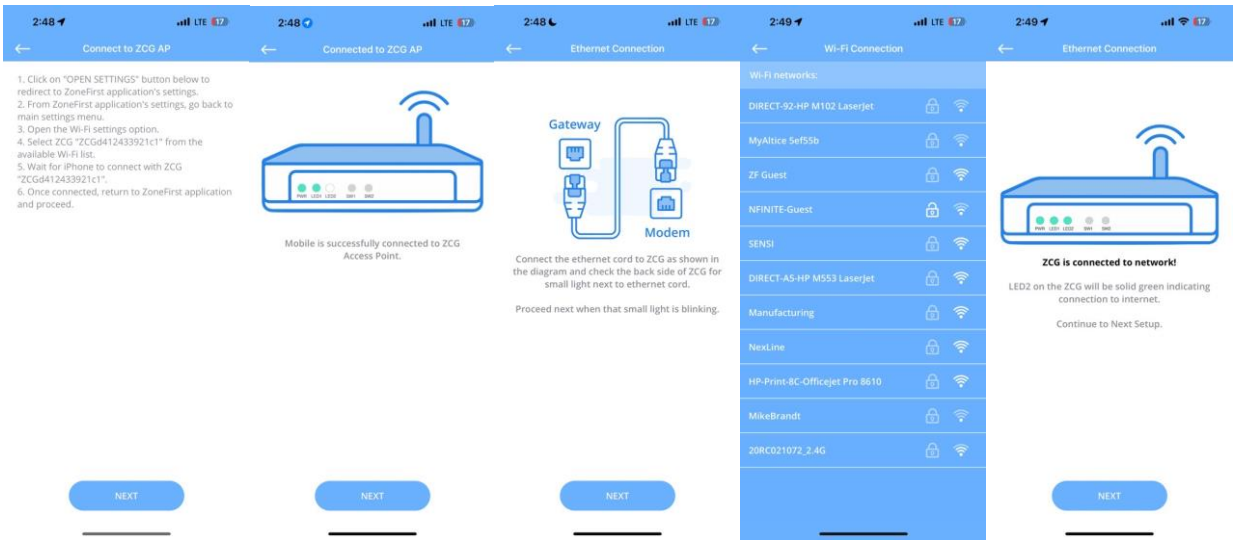


6 Installing the ZCG. On the main setup screen, select "CONNECT" next to Zone Control Gateway

a. Select the ZCG network
b. Make sure "LED1" on the ZCG is **green**; you can skip the initializing steps if it is
c. Click "OPEN SETTINGS" to allow the device to take you to your Wi-Fi settings
d. Select the ZCG network from your Wi-Fi settings
e. Navigate back to the app and click "NEXT"

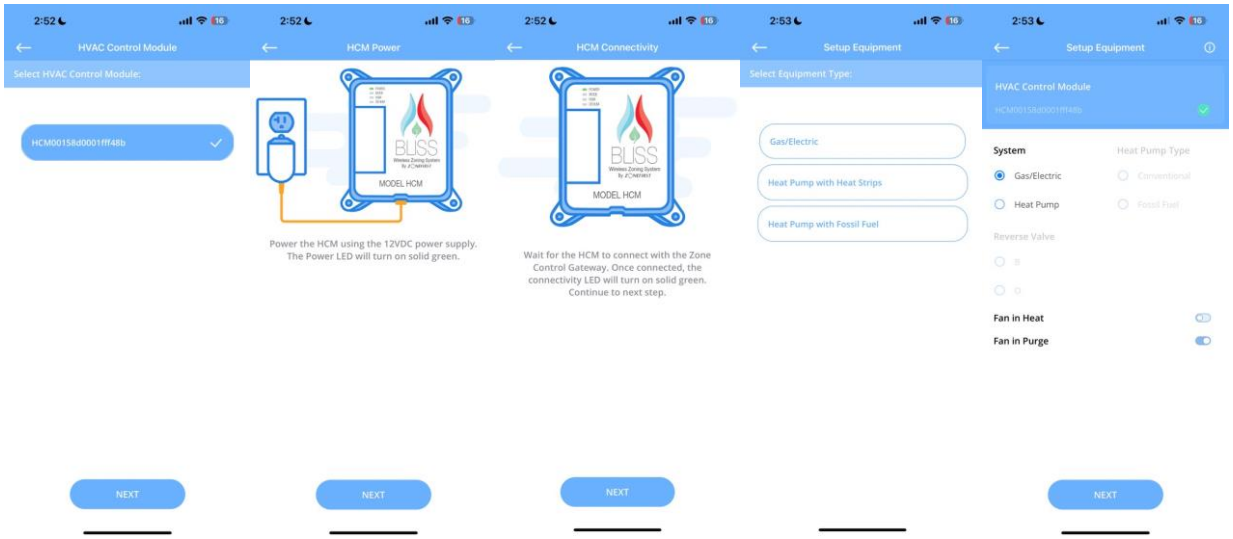
f. You will be prompted that the phone is successfully connected to the ZCG Access Point
g. You can connect the ZCG to internet by using either Ethernet **(recommended)** or Wi-Fi
h. Once all the steps are complete, the app will try to connect all the devices at once
i. A check mark will appear next to the ZCG indicating its connected

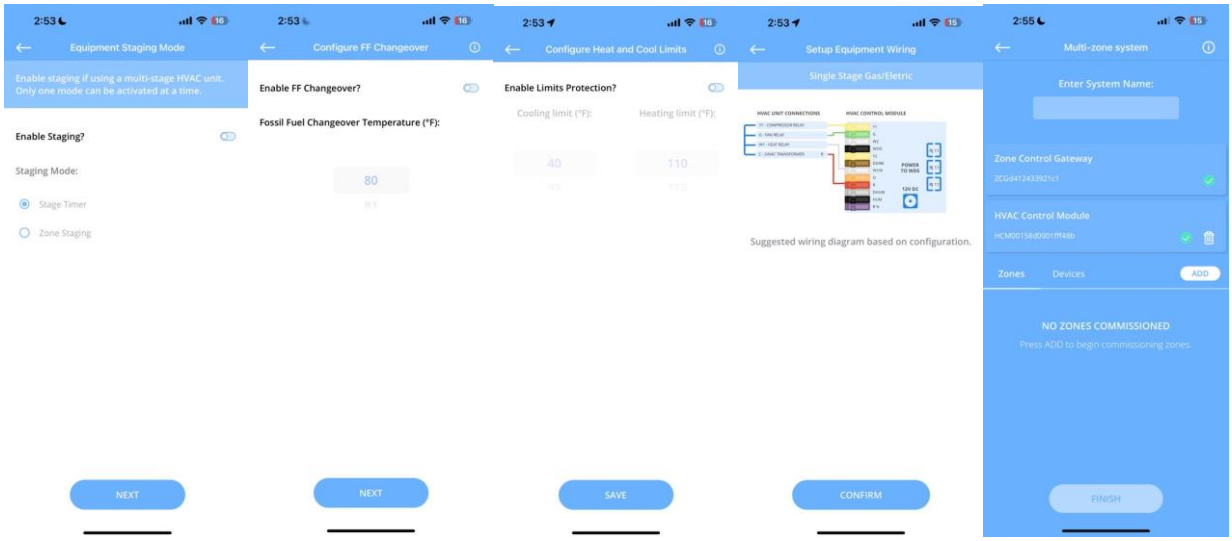




7 Once all devices are connected, you can now initialize the HCM
a. Select “CONNECT” next to HVAC Control Module
b. Select the HCM ID

c. Follow the directions to ensure the HCM is connected properly
d. Continue to set the equipment settings to match your equipment
    i. I.e. Heat pump, Gas/Electric, etc.
e. Once configured, the HCM will have a check mark next to it

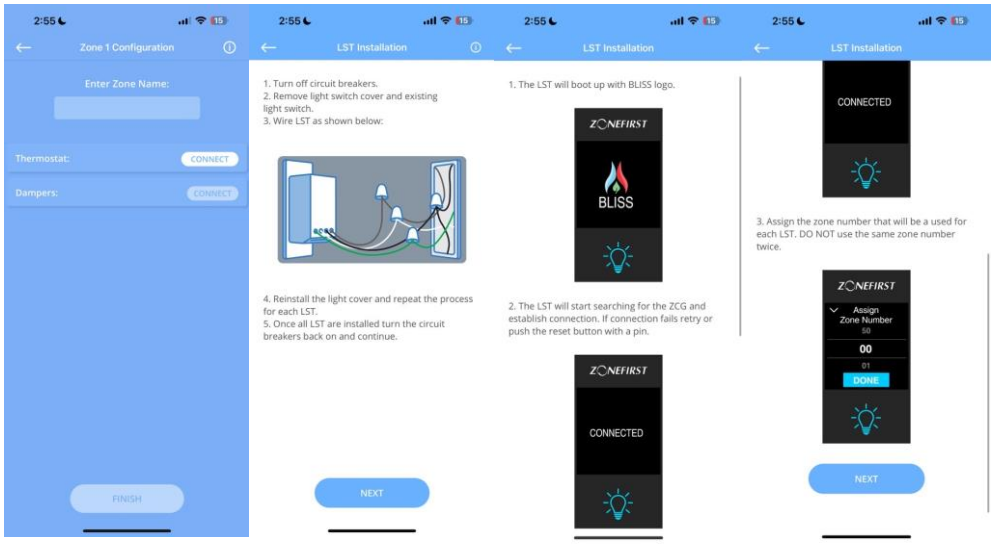


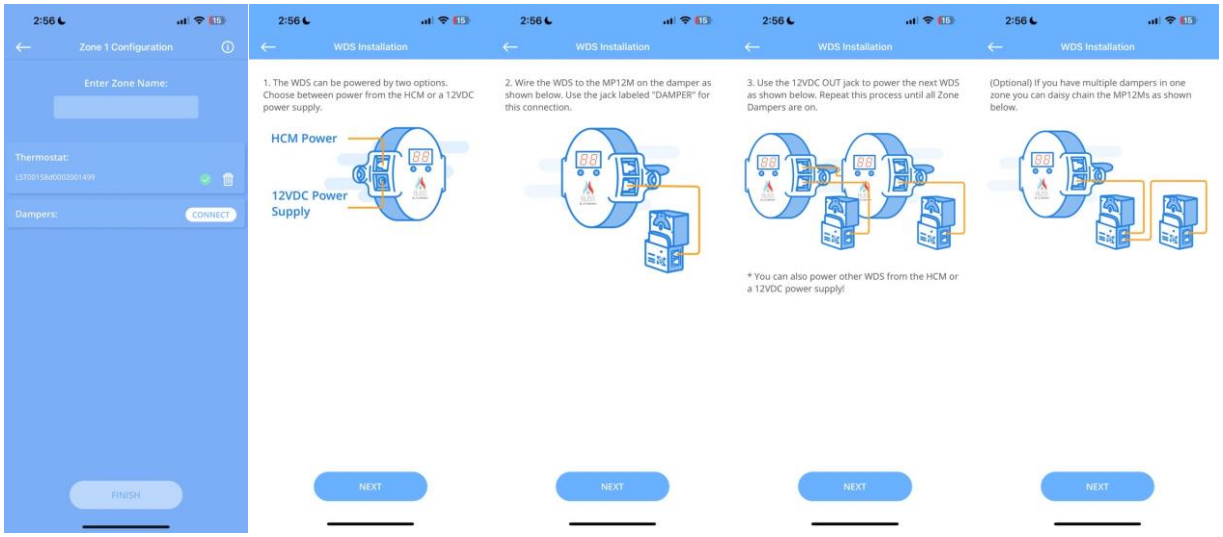


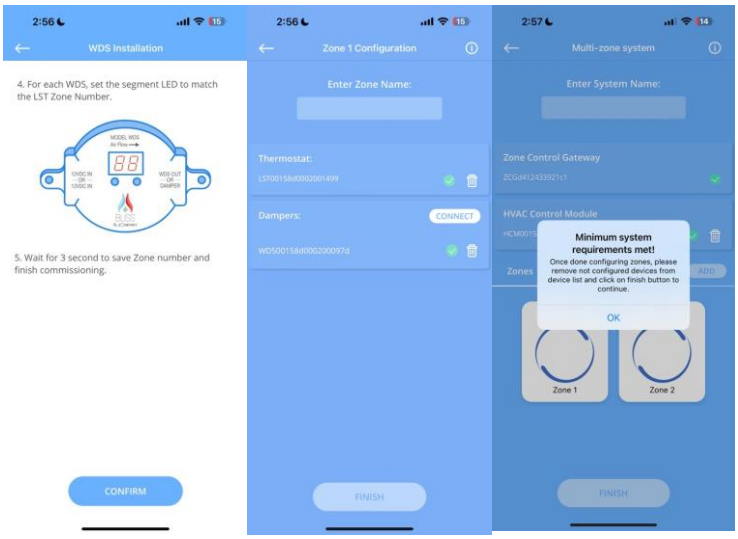
8 The final steps are to add each zone

a. On each LST device, set the correct zone number using the onboard screen
    i. Select the number for the zone and select Done, you will see a Success message
b. On each WDS device, set the correct zone number by using the two onboard buttons
    i. Press the right button to increase the number, left to decrease
    ii. Once you set the correct zone number, the display will flash and your zone has been set

c. On the App main setup screen, select “ADD”
d. Enter the Zone Name
e. Next to Thermostat, click “CONNECT” and run through the LST install instructions
    i. You will be prompted to test the connection by turning the light on and off
f. After installing the LST, click “CONNECT” next to Dampers to setup the WDS

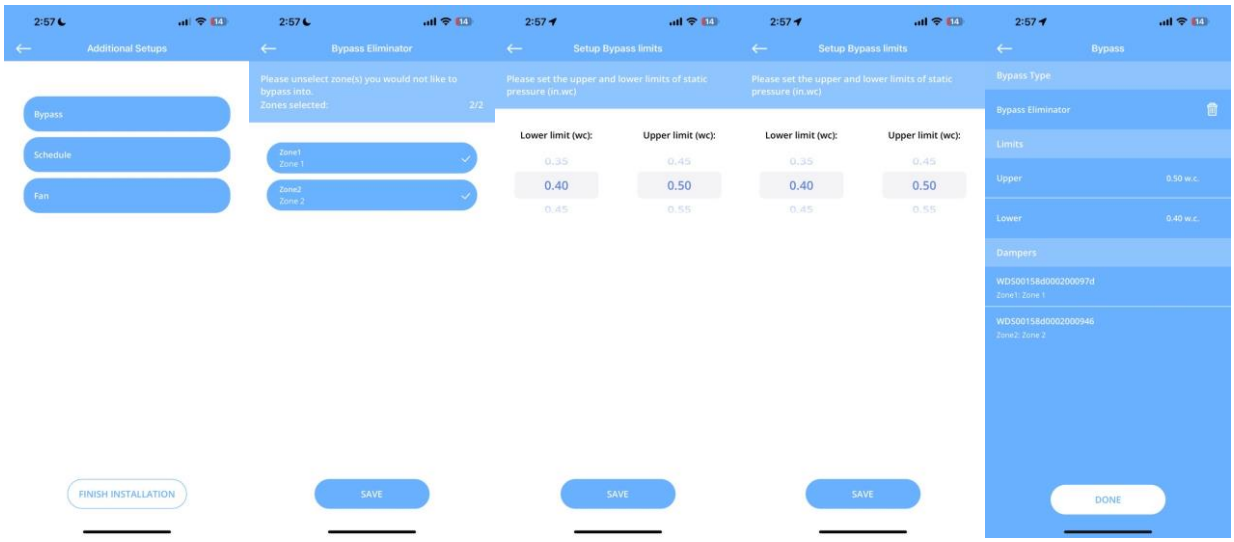


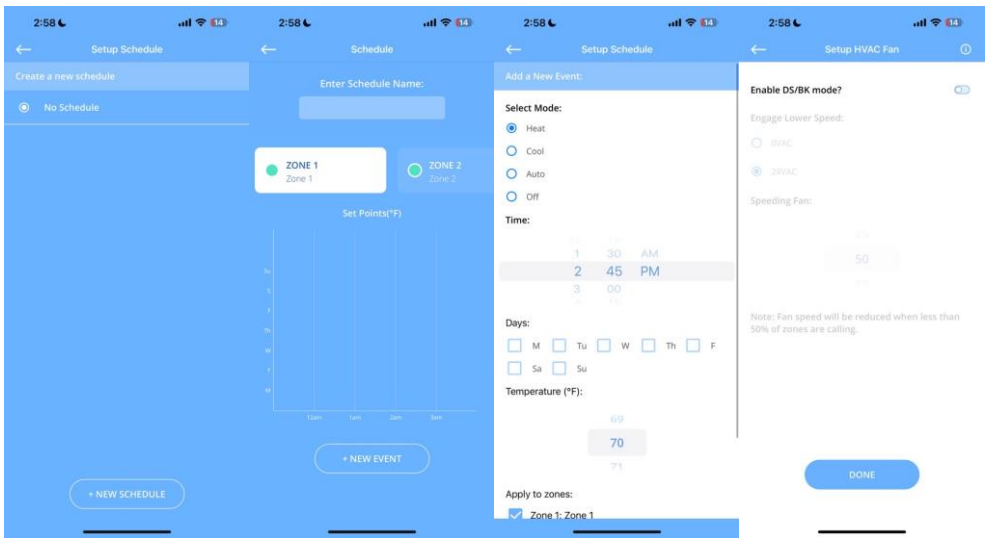




9 After all devices are successfully installed, there are optional system settings to finalize the entire system

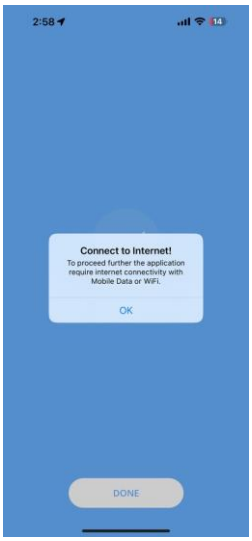
a. **Bypass Limits:** Depending on which zone will be used
b. **Scheduling:** Create a schedule that you can update to make any call at any time
c. Fan Settings: Allow you to set your variable fan speed
d. Once complete select Finish Installation





10 Once all settings are final, there is one last step that is needed to ensure the system is complete

a. You will be prompted with a message “Connect to Internet”. This means that the mobile device’s Wi-Fi now must turn off in order for the app to complete a connection with the internet.
b. Turn off the mobile device’s Wi-Fi connection and navigate back to the IoZ App
c. By clicking “DONE” you will now be able to return to the main screen that shows you your IoZ system.



App QR Codes