

Alloy SmartHome Hub+ SupportGuide

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| Before Installation

!!!Absolutely No Bench Pairing!!!

Required Tools

- Vacuum
- Impact or Standard Phillips Bit
- General Purpose Slotted Flathead Screwdriver
- General Purpose Slotted Phillips Screwdriver
- Electronics Screwdriver (for relay levers)
- Pencil
- Screws, Phillips Head

Installation Location and Best Practices

- Ensure the device is level using the bubble-level included on the backplate
- Installed on the wall only at the HVAC wiring location

Network Requirements

- Requires Port 443
- Requires DNS
- Requires NTP (Network Time Protocol)

Unboxing Package Contents:

- Alloy SmartHome Hub+
- Safety Manual
- 3 x Drywall Anchors (Self Tapping)
- 3 x Drywall Anchors (Standard)
- 3 x Drywall Screws



Requires DH1

Installation

Locating the Serial Number

The serial number is in 3 locations:

- The label on the outside of the packaging box.
- The rear of the wall plate
- Behind the front cover of the hub

Note the serial number, as it is required when registering your Hub in SmartRent Manager or Alloy Install.

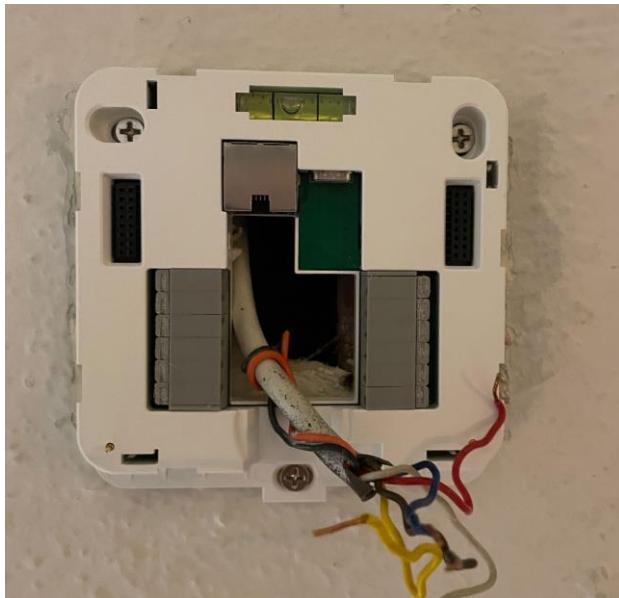


Removing the Cover

To remove the cover, place the index finger inside the cable ingress location and the thumb at the bottom where the small slotted opening is. Apply outward pressure to separate the two pieces.

Requires DH2

Mounting the Hub



1. Start by mounting the Hub+ on the wall. Use the wall plate as a guide to ensure a level installation. Use the included level bubble on the wall plate for reference.
2. Mark three (3) holes on the wall for mounting, using a pencil once the wall plate is level.
3. Using the appropriate drill bit size, drill into the wall at the marked locations to accommodate the wall anchors.
4. Insert the drywall anchors into the drilled holes. Place the wall plate on the wall and align the mounting holes with the drywall anchors. Secure the wall plate to the drywall by screwing in the provided screws. Ensure the anchors are flush with the wall.
5. With the wall plate securely mounted and level, proceed to wire the thermostat according to the wiring guide specific to your HVAC system.
6. After wiring the wall plate, attach the Hub+ to the wall plate by aligning it and pushing it in until it is securely fastened.
8. Ensure that the Hub+ is flush with the wall, leaving only a small even gap between the back of the Hub+ and the wall. Refer to the provided image for clarification.

7. Once the Hub+ is in place, it will undergo the initial boot-up process, allowing you to configure the HVAC settings. Follow the HVAC configuration guide for instructions on how to proceed.

Wiring Examples

Heat Pump - 1H/1C w/ O/B on Cool Relays

Relay	Function
R	Transformer
Y	Compressor contactor
C	24VAC common
O/B	Changeover valve
G	Fan relay



Conventional - 1H/1C System

Relay	Function
C	24VAC
Y	Cool
W	Heat
G	Fan Relay
R	Transformer (Rc + Rh jumping is auto detected)



Requires DH4

Alloy SmartHome Hub+ Initial Boot

When the Alloy Hub+ is booted for the first time, it will start in an installer workflow so the device can be configured for the proper HVAC system configuration.

All LEDs and icons will flash as it boots up and will show “system wait” until the device is ready to be configured. Once the device has been configured to the correct HVAC settings, the system can be switched to “user mode” for normal operation.

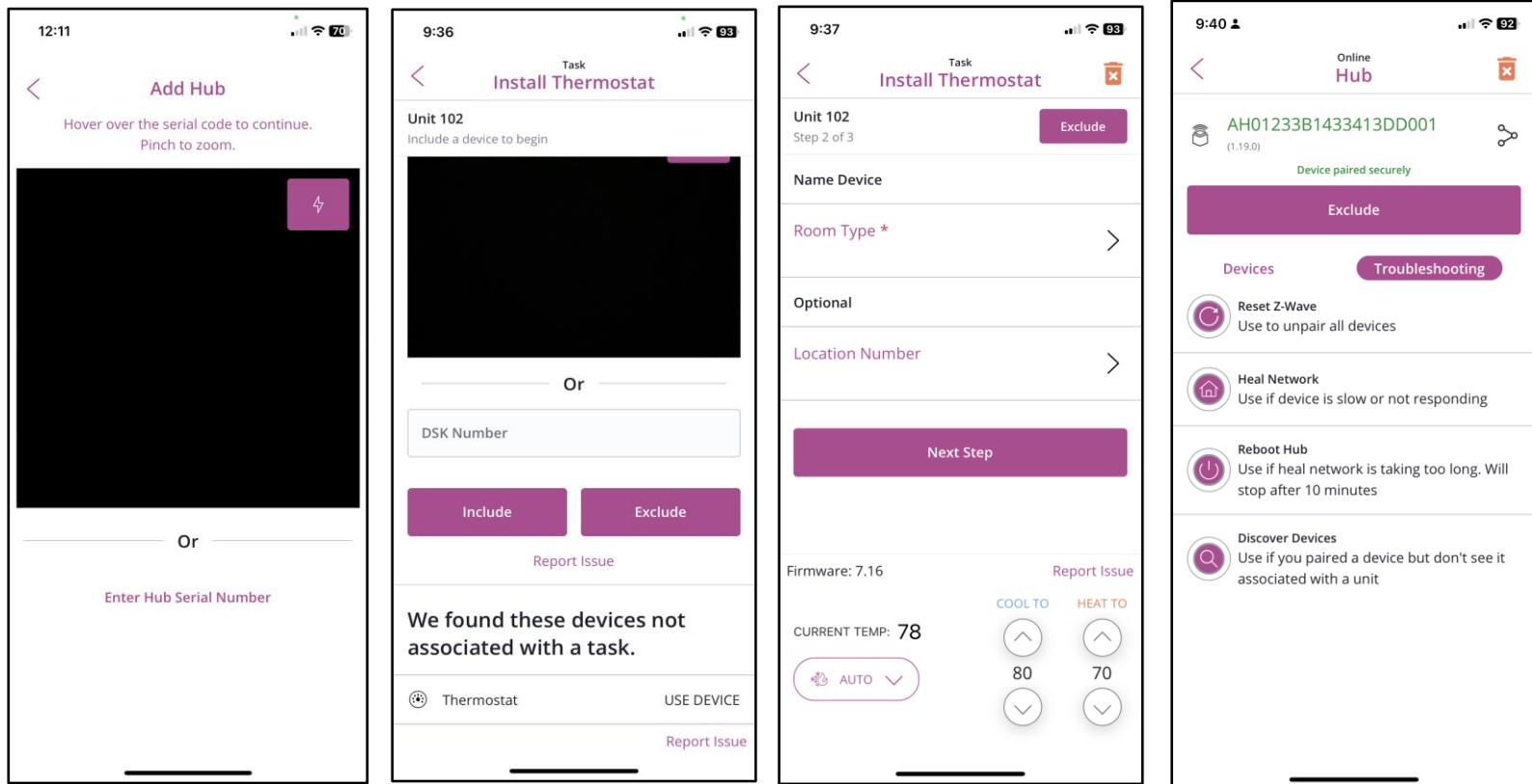
Alloy SmartHome Hub+ Installer Menu Tree

Installing with Alloy Install

Follow the step-by-step directions below to install through Alloy Install

1. Navigate to the respective job you are installing on
2. Select “Add Hub” to add your physical hub to the unit
3. Hover your camera over the hub barcode where the serial number is located
4. Once the hub is scanned or selected, it will be added to the unit
5. Next, navigate to the Thermostat install task. You will automatically see a thermostat you can use.
6. When selecting “Use Device”, you will be taken through the thermostat pairing workflow

7. If for any reason the thermostat is deleted from the unit, you can go to the hubs troubleshooting page and select “Discover Devices.” This will allow you to repair the thermostat to the unit.



Installing with SmartRent Manager

When installing the hub through SmartRent Manager

1. Select the respective Organization or Group to install and choose the desired unit.
2. From the unit page, navigate to the hub section.
3. Manually enter the hub serial number located on the back of the hub.
4. When the hub serial number appears as an option, select it

Requires DH6

- Once selected, the hub will be added to the unit

Unit 202 - Device Setup

[VIEW INSTALLER CODE](#)

Hub Serial Number

AH0123671A7483605501

[BACKUP CODES](#) required

AH0123671A7483605501

Support for Alloy SmartHome Hub+

Support Agents should post any issues related to the Alloy SmartHome Hub+ in the slack (**#proj-ahp-pilots**) channel during the beta pilot for now.

Please include specific thermostat behaviors that you are observing and include a link to the Zendesk ticket for tracking

When working with clients who are calling for support, please ask the following issues prior to escalation.

- Is the temperature in your home heating or cooling correctly?
 - = HVAC problem
- Is there a problem operating your paired devices i.e.Lock, lights, etc...
 - = Z-Wave problem

Unit 202 - Device Setup

Add New Device | Installed Devices (0)

[VIEW INSTALLER CODE](#)

AH0123671A7483605501 (1.13.2)

[BACKUP CODES](#)

[Include](#)

[Exclude](#)

Details [>](#)

Troubleshooting [>](#)

Requires DH7

You can view the following information within SupportRent when assisting a customer that has an Alloy SmartHome Hub+

1. View the hub serial number
 - a. You can identify it's an Alloy SmartHome Hub+ by looking at the first 2 letters of the serial number (AH)
 - b. You will also see a tag with "SmartRent" located next to the hub serial number
2. View hub messages
 - a. Allows you to view the hub's communication history
3. Installation date
4. Online Since
5. Last Heartbeat
6. Heal Network
7. Reboot Hub
8. Reset Z-Wave
9. Sync Cell Stats

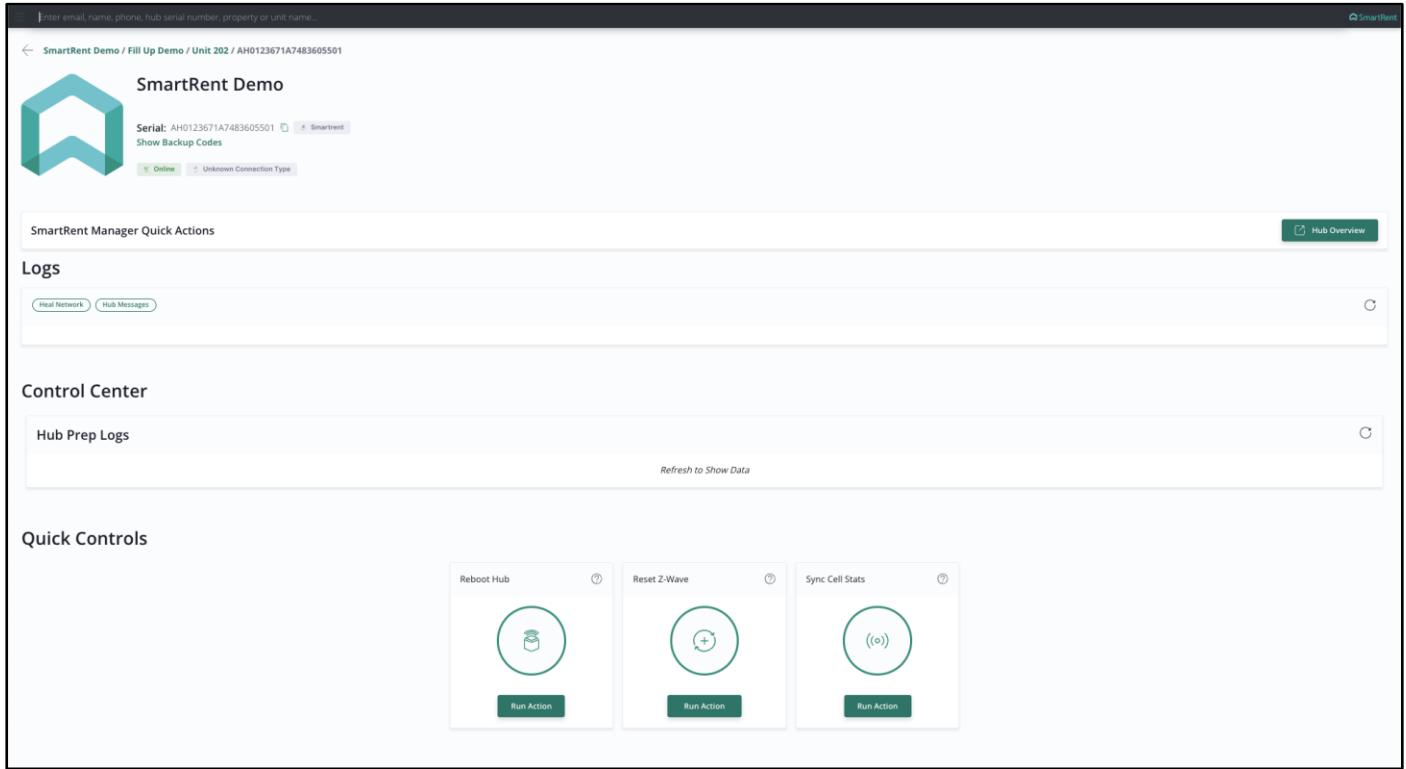
The screenshot shows a hub detail page in the SupportRent application. At the top, the hub's serial number is displayed: AH0123671A7483605501. The interface includes a "Smartrent" logo and a version number 1.13.2. The "Details" section shows the following information:

- Installation Date: 02/01/2023
- Last Heartbeat: —
- Online Since: 02/01/2023
- 3:55 PM

A "Hub Messages" button is located below this section. The "Deleted Hubs" section lists two entries:

- AH0123671A7483605501 | deleted at 02/01 03:55 pm. Reason: Would not connect to cell network
- AH0123671A7483605501 | deleted at 02/01 03:47 pm. Reason: Moving to a different unit

Requires DH8



| Error Messages

Error Message	Meaning	Solution
Protocol Failure	Out of range or device communication issue	Move the hub closer to the device(s) and exclude, then include once more.
Device Paired Insecurely	Insecure inclusion	Devices are not to be left in an "Insecure" status, exclude, then include the device again
Device Missing Manufacture Report (Bad Signal)	Hub is receiving a poor signal	Move the device closer to the hub if possible.

Requires DH9

Incorrect DSK	This will only happen with devices that require S2 Authentication. If this happens, you will see the error "Device Paired Insecurely"	Exclude the device, then include it again and enter the correct DSK number
Device Not Supported	Device paired is not compatible with SmartRent	Escalate this to the SmartRent Support team so they are able to diagnose the issue
Inclusion/Exclusion Timed out	Waited too long to pair the device OR the hub was unable to reach the device you are trying to pair. Once the inclusion/exclusion is initiated, you have 60 seconds to get the device you are working with into pairing mode	Attempt to include/exclude the device once again
Storage Busy or failed to start inclusion/exclusion	Hub overloaded attempting to process too many commands in a short period of time	Manually reboot the hub by pressing button 2 for 5 seconds or until the led lights turn off
No Z-Wave Network	Hub is not detecting z-wave network	Reach out to SmartRent Support team for assistance with hub troubleshooting

| Frequently Asked Questions

Q: How can I find the Serial Number of my Hub+?

A: The serial number of your hub+ is located on the box, as well as the back and front plates of every model (Pictured below)



Q: How can I find the Ethernet or Wifi MAC address of my hub+?

A: The MAC Address for each network interface can be found on the back side of the thermostat behind the backplate (Pictured below)

Q: Is a common wire required to use the Hub+?

A: Yes, HVAC installs will require the use of a common wire. There are no backup batteries in the Hub+

Q: What types of HVAC units does the Hub+ Support today?

A: The Hub+ hardware can support a wide variety of non-zoned HVAC units, ranging from multi-stage heat pumps to conventional air-to-air systems. However, as of today, we only officially support single stage heat-pump and conventional systems.

Q: Does the Hub+ Support Mini Split Heat Pump Units?

A: No. The Hub+ does not support mini-split systems that do not already support a traditional thermostat.

Q: How do we support HVAC issues?

Requires DH11

A: Post issues in the slack (#proj-ahp-pilots) channel during the beta pilot for now. Please try to be as detailed as possible and include specific thermostat behaviors that you are observing and include a link to the Zendesk ticket for tracking.

See the support section above for more information on pertinent questions to ask.

Q: Does the Hub+ thermostat ever need to be re-paired?

A: No, this is an internal device and not configured over the z-wave network.

| Updated Zendesk Articles

Decide if these ZD articles need an updated Hub+ version. If you're asked to sign in to view these articles, use Okta or your typical sign in information. You may have to select Agent Sign-In if prompted.

Site Team

- [How to troubleshoot an offline hub](#)
- How do I move-out a resident if their hub is offline

Support Team

- Populate information for this persona
- Soft reboot vs Hard reboot

Resident

!!!Please express that rebooting the HUB+ is not possible for an end user!!!

- [What is a hub?](#)
- [Where is my hub?](#)
- [How do I connect my hub to the internet?](#)
- [What do I do if my Hub is offline?](#)

- [How do I control my thermostat in the resident web portal?](#)
- [How do I control my thermostat in the SmartRent Mobile App?](#)
- How do I replace my batteries? (Need new article for this)
- How do I control my thermostat using the front panel?

All essential radio test suites have been carried out.

ASPECTS	STANDARD NUMBER
Health & Safety	EN IEC 62368-1:2020+A11:2020. EN 62368-1:2014+A11:2017
EMC	EN 301 489-1 V2.2.3 EN 301 489-3 V2.1.1 EN 301 489-17 V3.2.4 EN 301 489-52 V1.2.1 EN 55032:2015+A1:2020 EN 55035:2017+A11:2020 EN IEC 61000-3-2:2019 EN61000-3-3:2013+A1:2019
Effective Use of Spectrum	EN 300 328 V2.2.2 EN 301 893 V2.1.1 EN 300 440 V2.2.1 EN 301 908-1 V13.1.1 EN 301 908-13 V13.1.1 EN 300 220-1 V3.1.1 EN 300 220-2 V3.2.1



FCC Caution

- Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
- 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.
- This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

1. FCC ID: 2AAU7-AHP

Contains FCC ID: XMR201807EG91N

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.

2. 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 connected.
- Consult the dealer or an experienced radio/TV technician for help.

3. To maintain compliance with FCC's RF Exposure guidelines, this equipment should be installed and operated with minimum distance between 20cm the radiator your body: Use only the supplied antenna.

IC

IC Caution

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

- This device may not cause interference.
- This device must accept any interference, including interference that may cause undesired operation of the device.

FR

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes :

- L'appareil ne doit pas produire de brouillage;
- L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

IC: 11391A-AHP

Contains IC :10224A-2018EG91NA

5.1 SPECIFICATIONS

MODEL NUMBER

- ah+.zw8us.4G
- ah+.zw8eu.4G

SYSTEM

- ARM Cortex-A7 Quad-Core
- 1.3GHz CPU
- 256MB RAM
- 4GB FLASH

NETWORK

- Ethernet 100BASE-TX
- WiFi 802.11 a / c / b / g / n / ac
- Bluetooth 5
- Radio module (Z-Wave™)
- Cellular / 4G

OPERATING SYSTEM

- Linux

POWER

- Power input: 9-12VDC or 24 VAC
- Battery-backed RTC
- Power supply input: 100-240VAC, 50/60Hz
- Power usage: Idle: 1.2W, Max: 2.4W

ALLOY
SmartHome

Alloy Hub+



Safety Instruction v.3.

1. | IMPORTANT SAFETY INSTRUCTIONS

Disconnect the network cable and power adapter or any other connected peripherals if any of the following conditions exist:

- The power cord or connector is damaged or frayed.
- The Alloy Hub+ or cables are exposed to rain, water/fluids, or excessive moisture.
- The Alloy Hub+ power adapter is damaged and you suspect it needs to be serviced.
- Avoid installing the Alloy Hub+ near or inside sources of electromagnetic interference.
- Clean only with a dry cloth.
- Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produce heat.
- Only use attachments and accessories specified by the manufacturer.

2. | DISPOSING AND RECYCLING YOUR PRODUCT



(Applicable in countries with separate collection systems)

This marking on the product, accessories or literature indicates that the product and its electronic accessories (e.g. charger, headset, USB cable) should not be disposed of with other household waste. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources. Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take these items for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product and its electronic accessories should not be mixed with other commercial wastes for disposal. (Applicable in countries with separate collection systems).

At Alloy Home, we understand and are committed to reducing any impact our operations and products

may have on the environment. To minimize this impact Alloy Home designs and builds its products to be as environmentally friendly as possible, by using recyclable, low toxic materials in both products and packaging.

DISCLAIMER

Some content and services accessible through this device belong to third parties and are protected by copyright, patent, trademark and/or other intellectual property laws. Such content and services are provided solely for your personal non-commercial use. You may not use any content or services in a manner that has not been authorized by the content owner or service provider. Without limiting the foregoing, unless expressly authorized by the applicable content owner or service provider, you may not modify, copy, republish, upload, post, transmit, translate, sell, create derivative works, exploit, or distribute in any manner or medium any content or services displayed through this device.

EXCEPT FOR BODILY INJURY, ALLOY HOME SHALL NOT BE LIABLE FOR (I) ANY LOST PROFITS, COST

3. | ONE (1) YEAR LIMITED WARRANTY

Alloy Home, LLC warrants this product (the "Product") against defects in materials and/or workmanship under normal use for a period of ONE (1) YEAR from the date of purchase by the original purchaser ("Warranty Period"). If a defect arises and a valid claim is received within the Warranty Period, then as your sole remedy (and Alloy Home's sole liability), Alloy Home will at its option either 1) repair the defect at no charge, using new or refurbished replacement parts, or 2) replace the Product with a new product that is functionally equivalent to the original, in each case within 30 days following receipt of the returned Product. A replacement product or part assumes the remaining warranty of the original Product. When a Product or part is exchanged, any replacement item becomes your property and the replaced Product or part becomes Alloy Home's property. **Obtaining Service:** To obtain warranty service, visit <https://smartrent.com/contact-support>. Please be prepared to describe the Product that needs service and the nature of the problem. Any claim under this Limited Warranty must be submitted to Alloy Home before the end of the warranty period. **Exclusions:** This warranty does not apply to a) damage caused by failure to follow instructions relating to the Product's use or the installation of components; b) damage caused by accident, abuse, misuse, transport, neglect, fire, floods, earthquake or other external causes; c) damage caused by service performed by anyone who is not an authorized representative of Alloy Home; d) accessories used in conjunction with a covered Product; e) a Product or part that has been modified to alter functionality or capability; f) items intended to be periodically replaced by the purchaser during the normal life of the Product, including, without limitation, batteries, bulbs or cables; g) a Product that is used commercially or for a commercial purpose, in each case as determined by Alloy Home.

ALLOY HOME SHALL NOT BE LIABLE FOR (I) ANY LOST PROFITS, COST

OF PROCUREMENT OF SUBSTITUTE PRODUCTS, OR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, OR (II) ANY AMOUNTS IN EXCESS OF THE PURCHASE PRICE FOR THE PRODUCT, IN EACH CASE WHETHER RESULTING FROM THE USE OF OR INABILITY TO USE THIS PRODUCT, OR ARISING OUT OF ANY BREACH OF THIS WARRANTY, EVEN IF COMPANY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION AND EXCLUSIONS MAY NOT APPLY TO YOU. TO THE EXTENT PERMITTED BY APPLICABLE LAW, ALLOY HOME DISCLAIMS ANY AND ALL STATUTORY OR IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND WARRANTIES AGAINST HIDDEN OR LATENT DEFECTS. IF ALLOY HOME CANNOT LAWFULLY DISCLAIM STATUTORY OR IMPLIED WARRANTIES, THEN TO THE EXTENT PERMITTED BY LAW, ALL SUCH WARRANTIES SHALL BE LIMITED IN DURATION TO THE WARRANTY PERIOD. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.

This warranty gives you specific legal rights and you may also have other rights, which vary from country to country. To exercise your rights under this warranty, please follow the instructions above under the heading "Obtaining Service", or contact Alloy Home, LLC, 8665 E. Hartford Drive, Suite 200, Scottsdale, AZ 85255. Alloy Home is a registered trademark of Alloy Home, LLC.

The full text of the EU declaration DOC is available at the following: smartrent.com/hardware/docs.

Restrictions in the 5 GHz band:

According to Article 10 (10) of Directive 2014/53/EU, the packaging shows that this device will be subject to some restrictions when placed on the market in Belgium (BE), Bulgaria (BG), Czech Republic (CZ), Denmark (DK), Germany (DE), Estonia (EE), Ireland (IE), Greece (EL), Spain (ES), France (FR), Croatia (HR), Italy (IT), Cyprus (CY), Latvia (LV), Lithuania (LT), Luxembourg (LU), Hungary (HU), Malta (MT), Netherlands (NL), Austria (AT), Poland (PL), Portugal (PT), Romania (RO), Slovenia (SI), Slovakia (SK), Finland (FI), Sweden (SE), the United Kingdom (UK), Turkey (TR), Norway (NO), Switzerland (CH), Iceland (IS), and Liechtenstein (LI).

The WLAN function for this device is restricted to indoor use only when operating in the 5.0 to 5.150 MHz frequency range.

4. | DECLARATION OF CONFORMITY



We, Tri plus grupa d.o.o.(Banjavciceva 11, 10000 Zagreb, Croatia) declare that the product Alloy Hub + is in compliance with all the technical regulations applicable to the product within the scope of Council Directives 2014/53/EU. To access latest certification please follow the link: smartrent.com/hardware/docs.

Manufacturer's Name:

Tri plus grupa d.o.o.

Address: Banjavciceva 11, 10000 Zagreb, Croatia

Product name: Alloy Hub+

Model: ah+.zw8us.4G

Operating Temperature: -10° C to 40° C

LTE FDD B1	TX(Uplink):1920-1980MHz; RX(Downlink):2110-2170MHz	3.3 dBm	2(3dBm±2,3dB)
LTE FDD B3	TX(Uplink):1710-1785MHz; RX(Downlink):1805-1880MHz	2.44 dBm	2(3dBm±2,3dB)
LTE FDD B7	TX(Uplink):2500-2570MHz; RX(Downlink):2620-2690MHz	3.4 dBm	2(3dBm±2,3dB)
LTE FDD B8	TX(Uplink): 880MHz to 915 MHz RX(Downlink): 925 MHz to 960 MHz	2.89 dBm	2(3dBm±2,3dB)
LTE FDD B20	TX(Uplink): 832 MHz to 862 MHz RX(Downlink): 791 MHz to 821 MHz	2.05 dBm	2(3dBm±2,3dB)
LTE FDD B28	TX(Uplink): 703 MHz to 748MHz RX(Downlink): 758 MHz to 803 MHz	2.14 dBm	2(3dBm±2,3dB)
Z-Wave™	Tx(Uplink): 868.4MHz~869.85MHz	1.05 dBm	--

Tri plus grupa d.o.o. hereby declares that this Smart device is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU.

EU Declaration of Conformity

We, Alloy Home, LLC. (8665 E. Hartford Drive, Suite 200, Scottsdale, AZ 85255) hereby declare that this device is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU. According to Article 10(2) of Directive 2014/53/EU, Alloy Hub demo can be used in Europe without restriction.

The full text of the EU declaration DOC is available at the following: smartrent.com/hardware/docs.

FUNCTION	OPERATION FREQUENCY	MAX RF OUTPUT POWER:	LIMIT
BLE	2402MHz-2480MHz	1.58 dBm	20 dBm.
BT(BR+EDR)	2402MHz-2480MHz	2.95 dBm	20 dBm.
WIFI 802.11b/g/n(HT20,HT40)	802.11b/g/n(20MHz): 2412~2472MHz; 802.11n(40MHz):2422~2462MHz	15.68 dBm	20 dBm.
Wi-Fi 5.2G(802.11a/n20/n40/ac20/ac40/ac80)	802.11a/n20/ac20:5180MHz~5240MHz 802.11n40/ac40:5190MHz~5230MHz 802.11ac80:5210MHz	14.66dBm	23 dBm.
Wi-Fi 5.3G(802.11a/n20/n40/ac20/ac40/ac80)	802.11a/n20/ac20: 5260MHz~5320MHz 802.11n40/ac40: 5270MHz~5310MHz 802.11ac80: 5290MHz	14.35dBm	20 dBm.
Wi-Fi 5.6G(802.11a/n20/n40/ac20/ac40/ac80)	802.11a/n20/ac20: 5500MHz~5700MHz 802.11n40/ac40: 5510MHz~5670MHz 802.11ac80: 5775MHz	14.63dBm	20 dBm.
Wi-Fi 5.8G(802.11a/n20/n40/ac20/ac40/ac80)	802.11a/n20/ac20: 5745MHz~5825MHz 802.11n40/ac40: 5755MHz~5795MHz 802.11ac80: 5610MHz	12.84 dBm	13.98 dBm.