Alloy SmartHome Fusion (gen3) Support and Installation Guide

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| Before Installation

Required Tools

- Vacuum
- Wire strippers (18-20AWG)
- Impact or Standard Phillips Bit
- General Purpose Slotted Phillips Screwdriver
- Electronics Screwdriver or spudger (for terminal levers operation)

- Pencil (for marking drilling spot)
- Drill and 7/32" drill bit (if applicable for wall anchors)

Network Requirements

- Cellular connection
- WiFi requirements:
  - WPA2 or WPA3 security
  - No captive/login portal
    - Supports MAC Address Whitelist
  - If firewalled, ports UDP port 123 and TCP port 443 allowed

- Wired ethernet requirements:
- If firewalled, ports UDP port 123 and TCP port 443 allowed
  - No captive portal
    - Supports MAC Address Whitelist.

Unboxing Package Contents

- Alloy SmartHome Fusion (gen3) with attached wall plate
- 4 x Drywall Anchors (Self Tapping)
- 4 x Drywall Anchors (Standard)
- 4 x Drywall Screws

Pre-Installation Notes

- To get the correct temperature readouts from the device, it must be firmly installed level and flush with the wall, There should be no movement.

- Ensure **only** ¼" of the copper wire is exposed.

- Spirit (bubble) level must be appropriately aligned, and all screws must be added.

- The thermostat wiring should be free of cuts or gashes

| Installation

Locating the Serial Number

The serial number is in 3 locations:

- The label on the outside of the packaging box. The serial number is located both on the QR code and barcode label.
- The rear of the wall plate
- Behind the front cover of the Fusion (gen3). The serial number is located both on the QR code and barcode label.
- At the top of the Installer Menu. Tapping the serial number will display a scannable QR Code

Setup Menu	☀ 72° 9:15 am
Hub Serial Number	AH0123151827181DD9321
Firmware Version	1.25.21.2
HVAC Preset	Select Preset
Connection Details WIFI • ETHERNET • CELLULAR	>
Device Information	>

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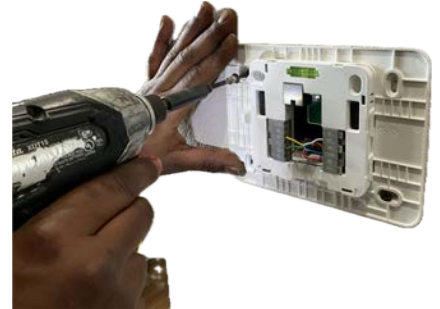
Removing the Wall Plate

To separate the Alloy Fusion (gen3) body from the wall plate, place the index finger inside the cable ingress location and place the thumb where the small slotted opening is at the bottom. Apply outward pressure to separate the two pieces. You may also use a flathead screwdriver to accomplish this step.

Mounting the Fusion (gen3)

Before mounting the Fusion (gen3), Remove the existing thermostat and inspect the wiring. Ensure each wire is free of cuts or breaks in the shielding. Ensure only ¼" to ⅜" of wire is exposed. Failure to do so may result in HVAC system and/or device damage.

1. Separate the attached wall plate from the Fusion (gen3). Take care to not pull on the front of the device as this can cause the chassis to separate.

2. Mount the Fusion (gen3) on the wall, using the wall plate as a guide to ensure the installation is level. There is a level bubble on the wall plate for reference.

3. Once the wall plate is level, use a pencil to mark three (3) holes on the wall for mounting.

4. Using the appropriate drill bit size (7/32), drill into the wall at the marked locations to accommodate the wall anchors (if applicable).

5. Insert the anchors into the drilled holes.

6. 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.

7. Once the wall plate is securely mounted and level, wire the thermostat according to the wiring guide specific to your HVAC system.

8. After wiring the wall plate, attach the Fusion (gen3) to the wall plate by aligning it and pushing it in until it is securely fastened.

9. Ensure that the Fusion (gen3) is flush with the wall, leaving only a small, even gap between the back of the Fusion (gen3) and the wall. Refer to the provided image for clarification.

10. Once the Fusion (gen3) 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. Leave the Resident QR code behind on the Fusion as shown.

Alloy SmartHome Fusion (gen3) Initial Boot

When the Alloy Fusion (gen3) 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.
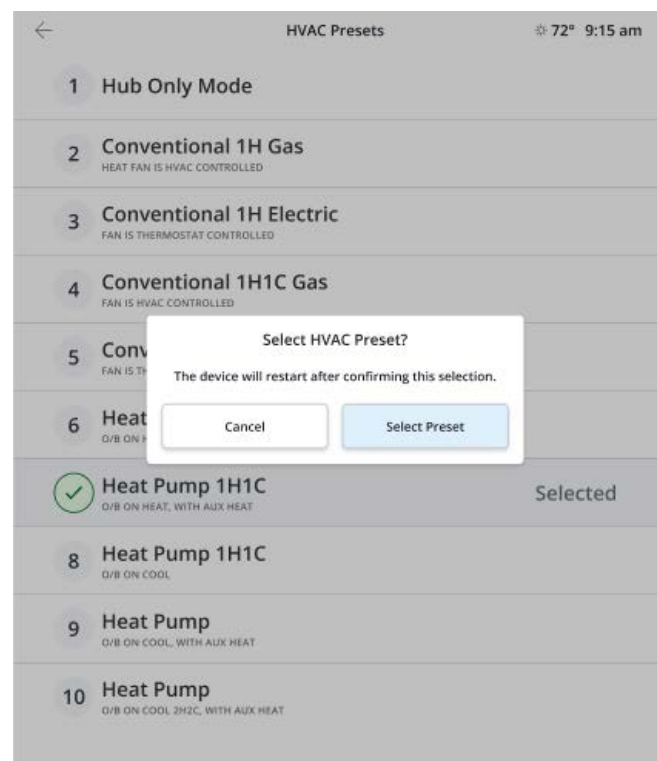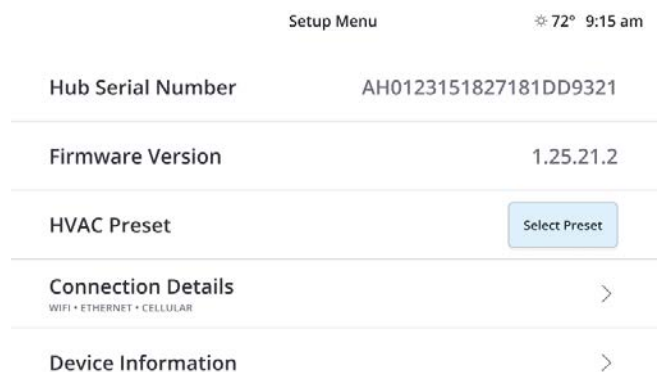
Installer Menu

Navigation Actions

- Use the touchscreen to navigate through the menu options.

Installation Workflow

1. Installer powers on the Fusion (gen3) for the first time
2. Installer navigates the options by using the touchscreen and selecting the appropriate preset option that matches the HVAC system.
3. After selecting the HVAC preset, the Hub will reboot and will be in User Mode to allow for testing to be done on the HVAC system.
   a. If nothing needs to be changed, the Installation is Complete!
   b. If changes need to be made, the Installer can reenter the Installer Menu by holding the Mode button and Up arrow button for 10 seconds.

Setup Menu	☀ 72° 9:15 am
Hub Serial Number	AH0123151827181DD9321
Firmware Version	1.25.21.2
HVAC Preset	Select Preset
Connection Details WIFI · ETHERNET · CELLULAR	>
Device Information	>

HVAC Presets ☀ 72° 9:15 am

1. Hub Only Mode
2. Conventional 1H Gas — HEAT FAN IS HVAC CONTROLLED
3. Conventional 1H Electric — FAN IS THERMOSTAT CONTROLLED
4. Conventional 1H1C Gas — FAN IS HVAC CONTROLLED
5. Conv — FAN IS TH
6. Heat — O/B ON

Select HVAC Preset?
The device will restart after confirming this selection.

Cancel   Select Preset

✓ Heat Pump 1H1C — O/B ON HEAT, WITH AUX HEAT   Selected
8. Heat Pump 1H1C — O/B ON COOL
9. Heat Pump — O/B ON COOL, WITH AUX HEAT
10. Heat Pump — O/B ON COOL 2H2C, WITH AUX HEAT

| Frequently Asked Questions/Troubleshooting

Q: How can I find the Serial Number of my Fusion (gen3)?
A: The serial number of your Fusion (gen3) is located on the box, wall backplate and the back of the front plates of every model. It can also be viewed in the Installer Mode Menu.

Q: How can I find the Ethernet or Wifi MAC address of my Fusion (gen3)?
A: The MAC Address for each network interface can be found on the back side of the thermostat behind the wall plate. Additionally this can be found on the installer menu of the Fusion (gen3).

Q: Is a common wire required to use the Fusion (gen3)?
A: Yes, HVAC installs will require using a common wire. There are no backup batteries in the Fusion (gen3).

Q: What types of HVAC units does the Fusion (gen3) Support today?
A: We only support single-stage heat pumps and conventional systems today.

Q: Does the Fusion (gen3) Support Mini Split Heat Pump Units?
A: No. The Fusion (gen3) does not support mini-split systems that do not already support a traditional thermostat.

Q: How do we support HVAC issues?
A: For now, post issues in the Slack (#eng-pilot-support) channel during the beta pilot. Please be as detailed as possible, include the serial number, specific thermostat behaviors you observe, and include a link to the Zendesk ticket for tracking.

Q: Does the Fusion (gen3) thermostat ever need to be re-paired?
A: No, this is an internal device not configured over the Z-wave network. If the HVAC system requires reconfiguration to accommodate a new setup after the initial configuration, it must be rediscovered in SmartRent Manager to access the necessary additional controls.

Q: Am I able to control my devices directly from the Fusion (gen3) screen?
A: You are able to control the thermostat but devices under the "Devices" tab are not interactive today. They will only show the current state of the device.

Q: Can I still control all my devices from the SmartRent app?
A: Yes! All devices are still controllable from within the mobile app or web portal.

Q: Can I create a thermostat schedule directly from the Fusion (gen3) screen?
A: No, today schedules can only be created and implemented from the mobile app.

Q: Can I create and use automations directly from the Fusion (gen3) screen?
A: No, today automations can only be created and implemented from the mobile app.

Q: How can I (the resident) change the screen brightness?
A: Swipe over to the settings screen on the Fusion (gen3). From there you will see Active and Inactive screen brightness. Use the slider to select the desired brightness level for inactive and active. Note: Inactive brightness cannot be higher than the active brightness.

Q: When I selected the HVAC mode in the installer menu, the Fusion (gen3) rebooted back into the installer screen.
A: Power cycle the hub by removing it from the wall and replacing it after a few seconds. The hub will reboot into the installer menu but should then allow you to correctly select the HVAC mode before rebooting into User mode.

All essential radio test suites have been carried out.

ASPECTS	STANDARD NUMBER
Health & Safety	EN IEC 62311:2020 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+A11:2020 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

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.

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.

- 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.
- 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.

FCC ID: 2AAU7-AF3

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-AF3

5. | SPECIFICATIONS

→ MODEL NUMBER
- af3.zw8us.4G

→ SYSTEM
- Quad-Core Cortex-A53 ARM CPU
- 1.1 GHz CPU
- Mali400 MP2 GPU
- 2GB RAM
- 4GB FLASH

→ GRAPHICAL INTERFACE
- 7" LCD 1024x600 with Touchscreen

→ NETWORK
- Ethernet 10/100/1000M EMAC
- Wifi IEEE802.11 a/b/g/n/ac
- Bluetooth 5/LE
- Radio module: Z-Wave™ 800 / Zigbee 3.0 / Thread
- Cellular / 4G with DIV antenna

→ OPERATING SYSTEM
- Linux

→ SENSORS
- Illuminance sensor
- Humidity sensor
- Temperature sensor

→ POWER
- Power supply input 12 VDC or 24 VAC
- Power supply (optional adapter); 100-240VAC 50/60 Hz
- Battery backed RTC
- Power usage: idle: <3W; Max: 11W

→ PHYSICAL DIMENSION
- 7.3(W) x 5.52(H) x 1.04(D) inches
- 186(W) x 140,36(H) x 26,52(D) milimeters

→ ENVIRONMENTAL
- Temperature range:
- Operating 0° - 40° (32°F to 104°F)
- Storage: -25° - 70° C (-13°F to 158°F)
- Humidity: 5% to 95% non condensing

→ I/O
- USB -C ; 2.0. downstream port
- HVAC wiring terminals

→ REGULATION
- FCC
- CE
- IC

Alloy Fusion v3

ALLOY

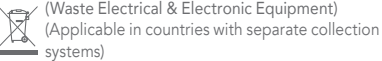Z-WAVE PLUS

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.
- Alloy Fusion v3 demo or cables are exposed to rain, water/fluids, or excessive moisture.
- Alloy Fusion v3 demo power adapter is damaged and you suspect it needs to be serviced.
- ! Avoid installing the Alloy Fusion v3 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

(Waste Electrical & Electronic Equipment) (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 authorised by the content owner or service provider. Without limiting the foregoing, unless expressly authorised 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.

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' 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' 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. EXCEPT FOR BODILY INJURY, 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.

Manufacturer / Importer: Alloy Home, LLC
8665 E. Hartford Drive, Suite 200, Scottsdale, AZ 85255

4. | DECLARATION OF CONFORMITY

$C \in$

We, Alloy Home, LLC, 8665 E. Hartford Drive, Suite 200, Scottsdale, AZ 85255, declare that the product Alloy Fusion v3 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:
Alloy Home, LLC
Address: 8665 E. Hartford Drive, Suite 200, Scottsdale, AZ 85255
Product name: Alloy Fusion v3
Model: af3.zw8us.4G
Operating Temperature: -10° C to 35° C

FUNCTION	OPERATION FREQUENCY	MAX RF OUTPUT POWER:	LIMIT
BLE	2402MHz~2480MHz	-1.5 dBm	20 dBm.
BT(BR+EDR)	2402MHz~2480MHz	4.7dBm	20 dBm.
WIFI 802.11b/g/n(HT20,HT40)	802.11b/g/n(20MHz): 2412~2472MHz; 802.11n(40MHz):2422~2462MHz	16.98 dBm	20 dBm.
Wi-Fi 5.2G(802.11a/ n20/n40/ac20/ ac40/ac80)	802.11a/ n20/ac20:5180MHz~5240MHz 802.11 n40/ac40:5190MHz~5230MHz 802.11ac80:5210MHz	17.88 dBm	23 dBm.
Wi-Fi 5.3G(802.11a/ n20/n40/ac20/ ac40/ac80)	802.11a/ n20/ac20: 5260MHz~5320MHz 802.11 n40/ac40: 5270MHz~5310MHz 802.11ac80: 5290MHz	17.84 dBm	20 dBm.
Wi-Fi 5.6G(802.11a/ n20/n40/ac20/ ac40/ac80)	802.11a/ n20/ac20: 5500MHz~5700MHz 802.11 n40/ac40: 5510MHz~5670MHz 802.11ac80: 5775MHz	14.2 dBm	20 dBm.
Wi-Fi 5.8G(802.11a/ n20/n40/ac20/ ac40/ac80)	802.11a/ n20/ac20:5745MHz~5825MHz 802.11 n40/ac40:5755MHz~5795MHz 802.11ac80: 5610MHz	13.32 dBm	13.98 dBm.

LTE FDD B1	TX(Uplink):1920-1980MHz; RX(Downlink):2110-2170MHz	22.96 dBm	23(dBm) ±2,7(dB)
LTE FDD B3	TX(Uplink) :1710-1785MHz; RX(Downlink):1805-1880MHz	24.2 dBm	23(dBm) ±2,7(dB)
LTE FDD B7	TX(Uplink) :2500-2570MHz; RX(Downlink):2620-2690MHz	22.74 dBm	23(dBm) ±2,7(dB)
LTE FDD B8	TX(Uplink): 880MHz to 915 MHz RX(Downlink): 925 MHz to 960 MHz	23.7 dBm	23(dBm) ±2,7(dB)
LTE FDD B20	TX(Uplink): 832 MHz to 862 MHz RX(Downlink): 791 MHz to 821 MHz	23.62 dBm	23(dBm) ±2,7(dB)
LTE FDD B28	TX(Uplink): 703 MHz to 748MHz RX(Downlink): 758 MHz to 803 MHz	23.63 dBm	23(dBm) ±2,7(dB)
Z-Wave™	Tx(Uplink): 868.4MHz~869.85MHz	9.36 dBm	--

Alloy Home, LLC 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 Fusion v3 can be used in Europe without restriction.
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 5150 to 5250 MHz frequency range.