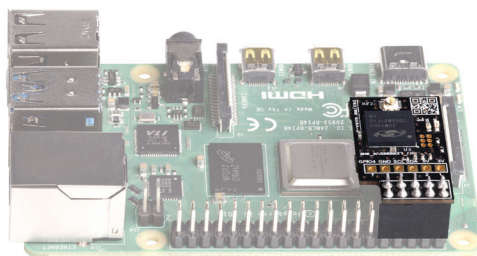


RAZBERRY 7 PRO

Z-WAVE SHIELD
WITH EXTERNAL ANTENNA

ZMEERAZBERRY7_ANT
ZMEURAZBERRY7_ANT



Razberry 7 Pro Z-Wave shield (Raspberry Pi not included)

Congratulations! You have got a modern Z-Wave shield
RaZberry 7 Pro with extended radio range. RaZberry 7 Pro
will transform your Raspberry Pi into a full featured smart
home gateway.

Installation steps:

1. Install the RaZberry 7 Pro shield on the Raspberry Pi GPIO
2. Install Z-Way software

The RaZberry 7 Pro shield is designed to work with the Raspberry Pi 4 Model B, but is fully compatible with all previous models, such as: A, A+, B, B+, 2B, Zero, Zero W, 3A+, 3B, 3B+. The maximum potential of the RaZberry 7 Pro is achieved together with Z-Way software.

There are several ways to install Z-Way:

1. Download a flash card image based on Raspberry Pi OS with pre-installed Z-Way (flash card minimum size is 4 GB)
https://storage.z-wave.me/z-way-server/raspberryPiOS_zway.img.zip
2. Install Z-Way on Raspberry Pi OS from an apt repository:
`wget -q -O - https://storage.z-wave.me/RaspbianInstall | sudo bash`
3. Install Z-Way on Raspberry Pi OS from a deb package:
<https://storage.z-wave.me/z-way-server/>

It is recommended to use the latest version of Raspberry Pi OS

NOTE: RaZberry 7 Pro is also compatible with other third party Z-Wave software supporting Silicon Labs Z-Wave Serial API.

After the successful installation of Z-Way, make sure that Raspberry Pi has Internet access. In the same local network go to <https://find.z-wave.me>, you will see the local IP address of your Raspberry Pi below the login form. Click on the IP to reach the Z-Way Web UI initial setup screen. The welcome screen shows the Remote ID and will prompt you to set the administrator password.

NOTE: If you are in the same local network with the Raspberry Pi, you can access Z-Way Web UI using a browser by typing in the address bar: http://RASPBERRY_IP:8083.

After setting the administrator password you can access the Z-Way Web UI from anywhere in the world, to do this go to <https://find.z-wave.me>, type ID/login (e.g. 12345/admin) and enter your password.

PRIVACY NOTE: Z-Way by default connects to the server find.z-wave.me in order to provide remote access. If you don't need this service, you can turn off this feature after logging into Z-Way (Main menu > Settings > Remote Access). All communications between Z-Way and the server find.z-wave.me are encrypted and protected by certificates.

LEARN MORE ABOUT RAZBERRY 7 PRO

Full documentation, training videos and technical support can be found on the website <https://z-wave.me/raz>.

You can change the radio frequency of the RaZberry 7 Pro shield at any time by going to the Expert UI http://RASPBERRY_IP:8083/expert, Network > Control and select the desired frequency from the list.

RaZberry 7 Pro shield constantly improves and adds new features. To use them, you need to update the firmware and activate the necessary functions. This is done from the Z-Way Expert UI under Network > Controller Information.

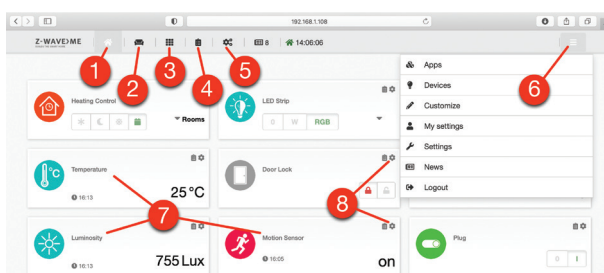


<https://z-wave.me/raz>

INTERFACE

The "SmartHome" user interface looks similar on different devices such as desktops, smartphones or tablets, but adapts to the screen size. The user interface is intuitive and simple:

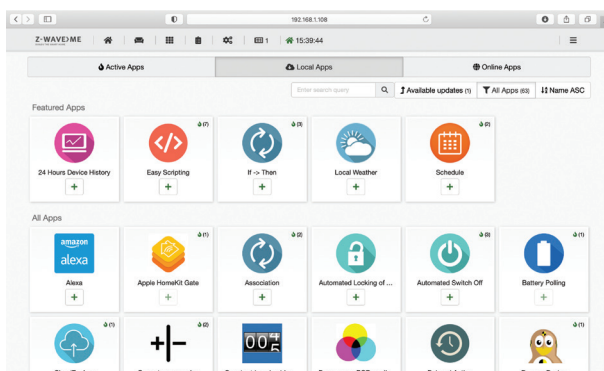
- | | | |
|---------------|----------------------|---------------------|
| Dashboard (1) | Events (4) | Device widgets (7) |
| Rooms (2) | Quick automation (5) | Widget settings (8) |
| Widgets (3) | Main menu (6) | |



1. Favourite devices are displayed on the Dashboard (1)
2. A device can be assigned to a Room (2)
3. The full list of all devices is in Widgets (3)
4. Every sensor or relay triggerings are displayed in Events (4)
5. Set up scenes, rules, schedules and alarms in Quick Automation (5)
6. Apps and system settings are in the Main menu (6)

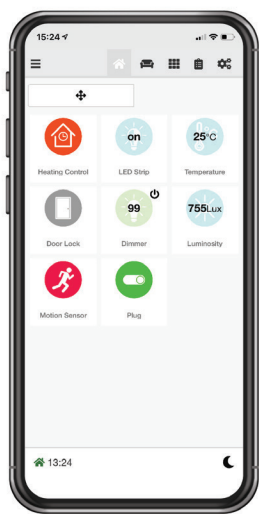
The device can provide several functions, for example a 3-in-1 Multisensor provides: motion sensor, light sensor and temperature sensor. In this case there will be three separate widgets (7) with individual settings (8).

Advanced automation can be configured using local and online Apps. Apps allow you to set up rules like "IF > THEN", to create scheduled scenes, set auto off timers. Using applications you can also add support for additional devices: IP cameras, Wi-Fi plugs, EnOcean sensors and set up integrations with Apple HomeKit, MQTT, IFTTT etc. More than 50 applications are built-in and more than 100 can be downloaded for free from the Online Store. Applications are managed in the Main menu > Apps.



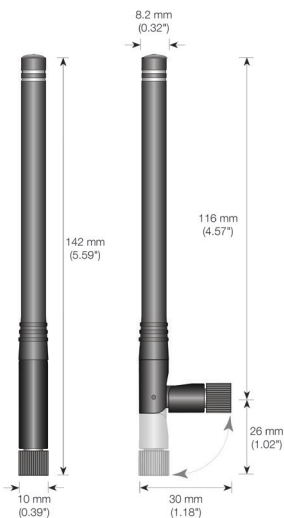
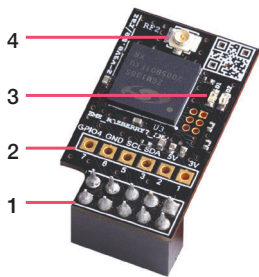
powered by
Z-WAVE>ME
BUILDS THE SMART HOME

MOBILE APP Z-WAVE.ME



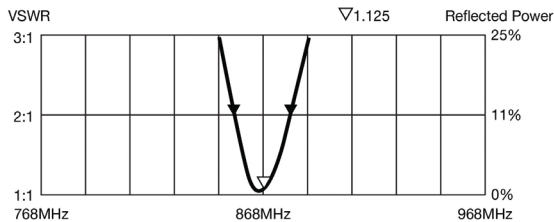
SHIELD DESCRIPTION

- 1. The connector sits on pins 1-10 on the Raspberry Pi
- 2. Duplicate connector
- 3. Two LEDs for operation indication
- 4. U.FL connector for external antenna connection

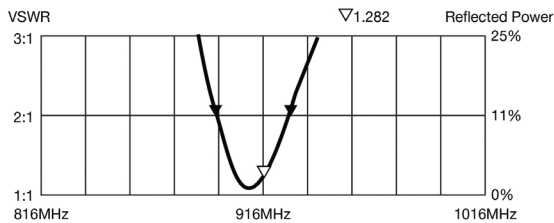


ANTENNA

The kit includes a 100 mm Linx SMA coaxial cable with a U.FL connector and a Linx antenna with a base that can rotate to 360° and tilt to 90°. The Linx antenna has a high radio signal transmission efficiency, which increases the range of the radio communication.



The Linx ANT-868-CW-HWR-SMA antenna is used for 865...869 MHz (ZMEERAZBERRY7_ANT)



The Linx ANT-916-CW-HWR-SMA antenna is used for 908...917, 919...921 MHz (ZMEURAZBERRY7_ANT)

Z-Wave Transceiver	Silicon Labs ZGM130S
Wireless Range	Min. 40 m indoor in direct line of sight
Self-Test	When powering on, both LEDs must shine for about 2 seconds and then go off. If they don't, the device is defective. If the LEDs do not shine for 2 seconds: hardware problem. If the LEDs are faintly shining constantly: hardware problems or bad firmware.
Dimensions/Weight	30 x 17 x 12 mm / 16 gr
LED indication	Red: Inclusion and Exclusion Mode Green: Send Data.
Interface	TTL UART (3.3 V) compatible with Raspberry Pi GPIO pins
Frequency range	ZMEERAZBERRY7_ANT: (865...869 MHz): Europe (EU), India (IN), Russia (RU) [default], China (CN), South Africa (EU), Middle East (EU) ZMEURAZBERRY7_ANT: (908...917 MHz): America, excluding Brazil and Peru (US) [default], Israel (IL) (919...921 MHz): Australia / New Zealand / Brazil / Peru (ANZ), Hong Kong (HK), Japan (JP), Taiwan (TW), Korea (KR)

FCC STATEMENT

FCC Device ID: ALIB2-ZMERAZBERRY7ANT

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.

NOTE: This equipment has been tested and found to comply with the limits for Class B digital devices, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- 1. Reorient or relocate the receiving antenna.
- 2. Increase the distance between the equipment and the receiver.
- 3. Connect the equipment into an outlet on a different circuit to which the receiver is connected.
- 4. Consult the dealer or an experienced radio/TV technician for assistance.

Use of the shielded cable is required to comply with Class B limits in Subpart B of Part 15 of the FCC rules. Do not make any changes or modifications to the equipment unless otherwise specified in the manual. If such changes or modifications should be made, it may be necessary to stop the operation of the equipment.

NOTE: If static electricity or electromagnetism causes data transfer to discontinue midway (fail), restart the application or disconnect and connect the communication cable (USB, etc.) again.

Radiation Exposure Statement: This equipment complies with the set out FCC radiation exposure limits for an uncontrolled environment.

Co-location warning: This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

OEM integration instructions: This module has a LIMITED MODULAR APPROVAL, and is intended only for OEM integrators under the following conditions: As a single, non-co-located transmitter, this module has no restrictions in relation to a safe distance from any user. The module shall be only used with the antenna(s) that has/have been originally tested and certified with this module. As long as these conditions above are met, further transmitter testing will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements necessary for this installed module (for example, digital device emissions, PC peripheral requirements, etc.).



2.2 List of applicable FCC rules

FCC Part15 Subpart C, Section 15.249

2.3 Summarize the specific operational use conditions

The information in this article, including the URL for reference, if there is any change, without prior notice. Documents are provided by the current version without any guarantee responsibility, including merchantability, suitable for any particular purpose or non-infringement guarantees, and any guarantees presented by any proposal, specification, or sample mentioned elsewhere. This document has no any responsibility, including the use of the information within this document produced by the infringement of any patent rights. This document in this, by estoppel or otherwise, grant any intellectual property licensing, whether express or implied license.

The Z-Wave marks shall be owned by the Z-Wave Alliance.

All the mentioned brand names, trademarks and registered trademarks presented in this document are the property of their respective owners, and hereby declare.

It is suggested not to place devices closer than 20 cm from other RF transmitters. Doing that might result in interference and decrease of radio range.

FCC regulatory information:

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.

Warning: changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

End Device Labeling

Please notice that if the FCC identification number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following: "Contains FCC ID: 2ALIB-ZMERAZBERRY7A" any similar wording that expresses the same meaning may be used.

RF Exposure Compliance

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

FCC Part 15B Compliance of End Device

The OEM integrator is responsible for ensuring that the host product which is installed and operating with the module is in compliant with Part 15B unintentional Radiator requirements, please note that For a Class B digital device or peripheral, the instructions

furnished the user manual of the end-user product shall include the following or similar statement, placed in a prominent location in the text of the manual:

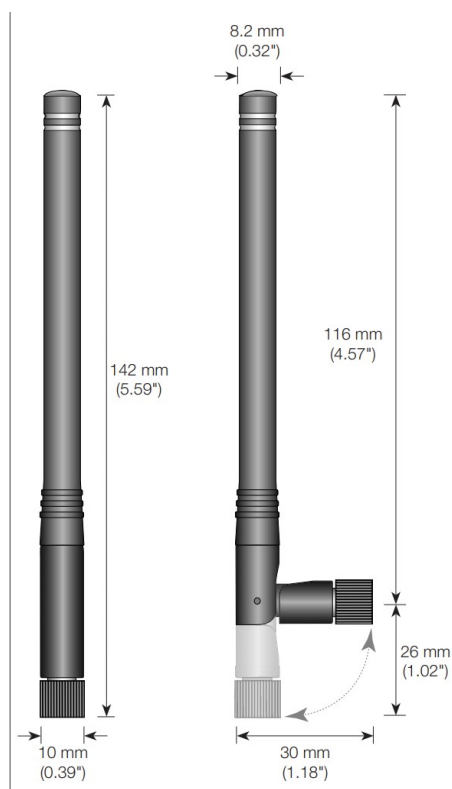
Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate 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.

2.4 Limited module procedures

This module is an unrestricted module

2.5 Trace antenna designs



2.6 RF exposure considerations

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

FCC INFORMATION (additional)

OEM INTEGRATION INSTRUCTIONS:

This device is intended only for OEM integrators under the following conditions: The module must be installed in the host equipment such that 20 cm is maintained between the antenna and users, and the transmitter module may not be co-located with any other transmitter or antenna. The module shall be only used with the internal antenna(s) that has been originally tested and certified with this module. As long as 3 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, etc.).

Validity of using the module certification:

In the event that these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization for this module in combination with the host equipment is no longer considered valid and the FCC ID of the module cannot be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

2.7 Antennas

The module has its own external antenna included and doesn't need a host's printed board microstrip trace antenna etc.

Antenna model:

Linx 916 MHz HWR Series Antenna with RP-SMA Connector ANT-916-CW-HWR-RPS
and Linx RP-SMA to U.FL Cable CSI-RGFB-100-UFFR

2.8 Label and compliance information

In case of usage as part of other product the final end product must be labeled in a visible area with the following: "Contains FCC ID:2ALIB-ZMERAZBERRY7A ". Information that must be placed in the end user manual:

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module. The end user manual shall include all required regulatory information/warning as show in this manual. The module not applicable Limited module procedures. The module is a Single module and complies with the requirement of FCC Part 15.249.

Warning: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to IC 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.

2.9 Information on test modes and additional testing requirements

Module test instructions are provided in the online manual in RF tests section.

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

RADIATED EMISSION TEST (BELOW 1GHz):

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports (if EUT with antenna diversity architecture). For the test results, only the worst case was shown in test report.

RADIATED EMISSION TEST (ABOVE 1GHz):

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports (if EUT with antenna diversity architecture).

2.10 Additional testing, Part 15 Subpart B disclaimer

The modular transmitter is **only** FCC authorized for the specific rule parts (i.e., FCC transmitter rules) listed on above. If used as part of other product, the host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification. The final host product requires Part 15 Subpart B compliance testing with the modular transmitter installed.