

One Raven Home Server

User Manual

Model: OR-HS100

FCC ID: 2BXG8-OR-HS100

One Raven, Inc.

Release 0.1 --- Draft for FCC certification testing

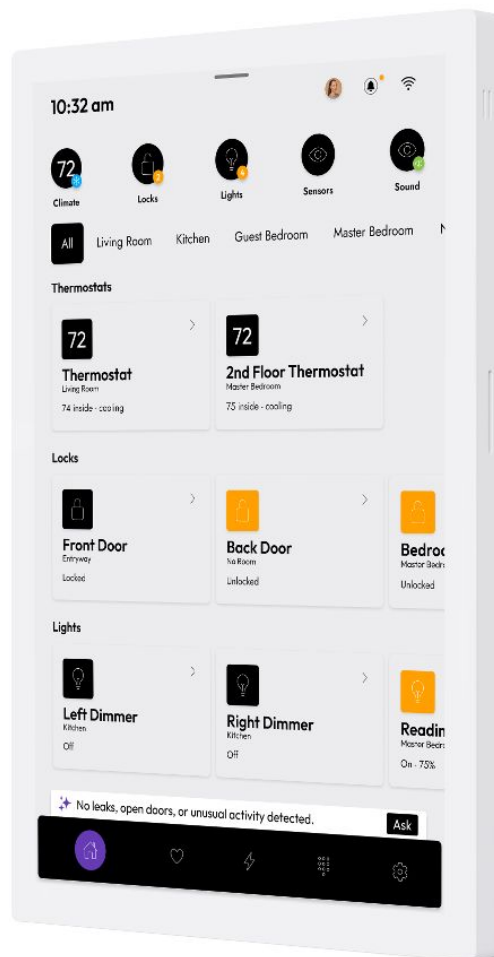
Bracketed [TBD: ...] items are placeholders pending final hardware and filing information.

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INTRODUCTION

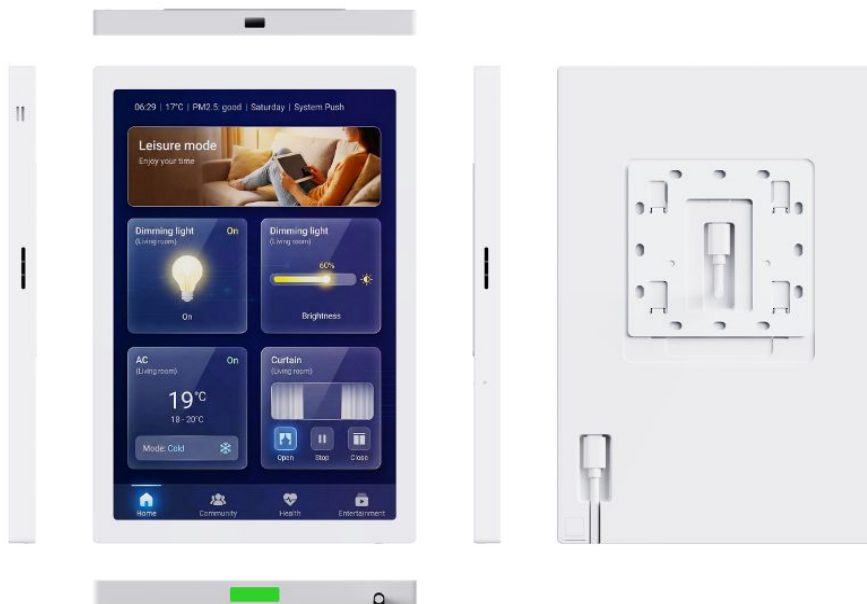
The One Raven Home Server is a wall-mounted smart home controller for residential use. It connects to your home network over Wi-Fi, acts as a Thread border router for compatible smart home accessories, and includes a cellular modem for backup connectivity. A built-in touchscreen provides local control of your home.



1.1 Package contents

- One Raven Home Server
- USB-C power adapter ([TBD: adapter model, output rating])
- USB-C power cable
- Wall-mounting bracket and hardware
- Quick start guide

1.2 Product overview



Feature	Description
Touchscreen display	Built-in portrait touchscreen (1200 × 1920)
USB-C (main)	Power input (USB Power Delivery)
USB-C (debug)	Service use only
Speaker and microphone	Built-in audio
Status LED	Indicates power and network state [TBD: LED legend]

The Home Server has no power button. It powers on automatically when connected to power and is designed to remain powered at all times.

IMPORTANT SAFETY INFORMATION

Read all safety information before installing or using the One Raven Home Server.

2.1 General

- Use only the supplied USB-C power adapter, or a USB Power Delivery adapter rated for at least 9 V / 2.22 A (19.98 W).
- Install indoors only. Do not expose the device to rain, moisture, or liquids of any kind.
- Do not install near heat sources or in direct sunlight.
- Do not open the enclosure. There are no user-serviceable parts inside. Refer all servicing to qualified service personnel.
- Do not use the device if the enclosure, cable, or power adapter is damaged.
- Mount the device securely using the supplied wall-mounting bracket and hardware appropriate to your wall construction.
- Clean only with a dry cloth. Disconnect power before cleaning.

2.2 Ventilation

Install the device with clearance on all sides per the mounting instructions. Do not cover the device or install it inside an enclosed cabinet.

2.3 Radio frequency

This device contains radio transmitters. To satisfy RF exposure requirements, install and operate the device with a minimum distance of 20 cm (8 inches) between the device and any person. See *Regulatory Compliance* for full compliance information.

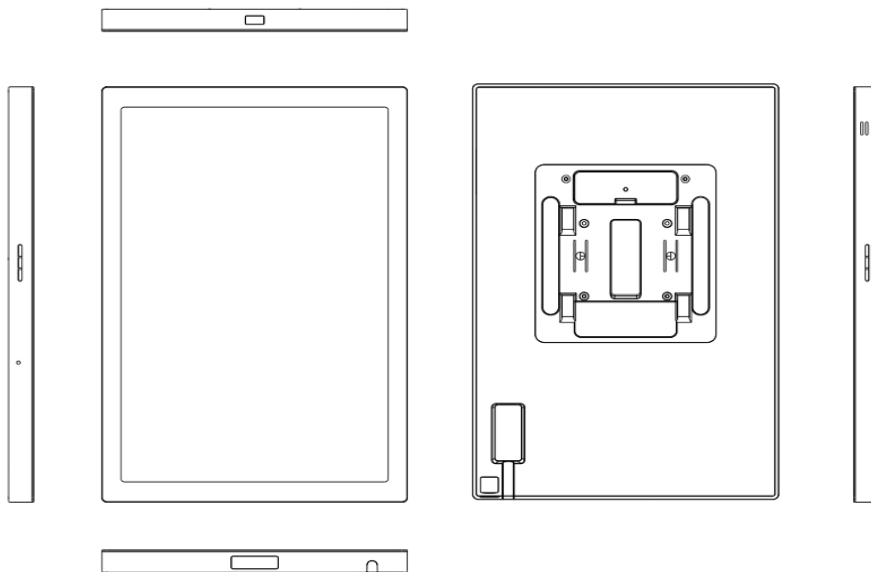
GETTING STARTED

3.1 Choose a location

Install the Home Server on an interior wall:

- within reach of a power outlet;
- with at least 20 cm (8 inches) between the device and where people normally sit or stand (see *Important Safety Information*);
- away from large metal surfaces, which can degrade wireless performance.

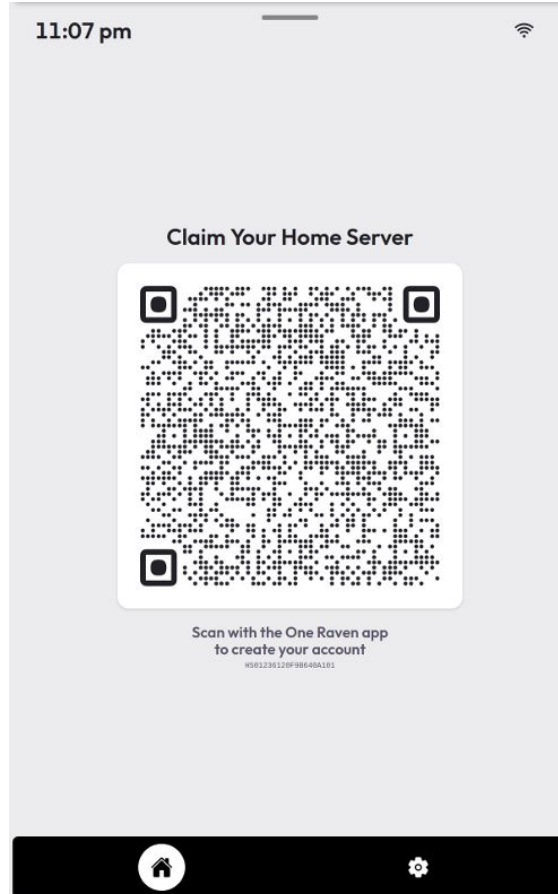
3.2 Mount the Home Server



1. Attach the mounting bracket to the wall using hardware appropriate to your wall construction ([TBD: bracket instructions — anchors, screw spec, height recommendation]).
2. Route the USB-C power cable to the bracket.
3. Connect the cable to the Home Server, then seat the Home Server on the bracket until it clicks into place.

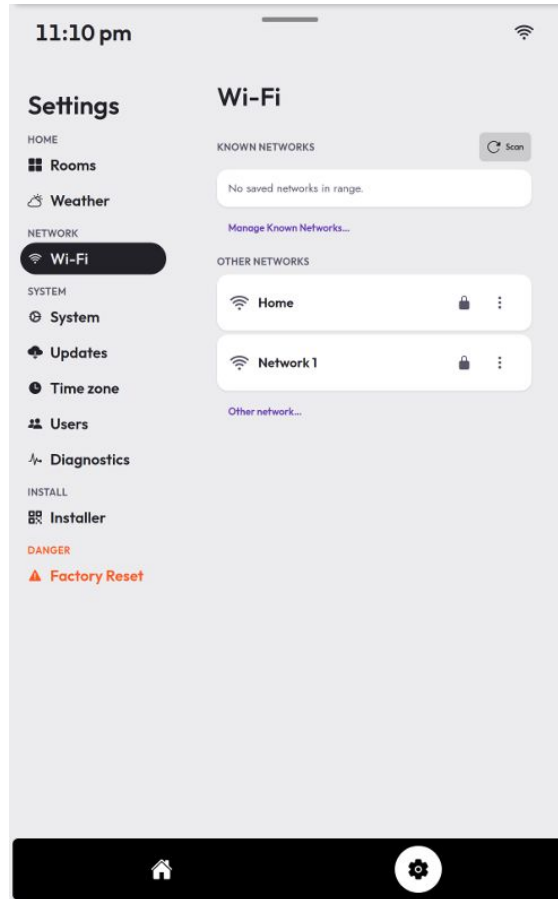
3.3 Power on

Connect the supplied power adapter to a wall outlet and connect the USB-C cable to the Home Server's main USB-C port. The Home Server powers on automatically; the display shows the startup screen within about a minute.



3.4 Connect to your network

Wi-Fi. On the Home Server's touchscreen, follow the on-screen setup to choose your Wi-Fi network and enter its password. The Home Server supports 2.4 GHz and 5 GHz Wi-Fi networks.



Cellular backup. The built-in cellular modem activates automatically as a backup when Wi-Fi is unavailable. No configuration is needed.

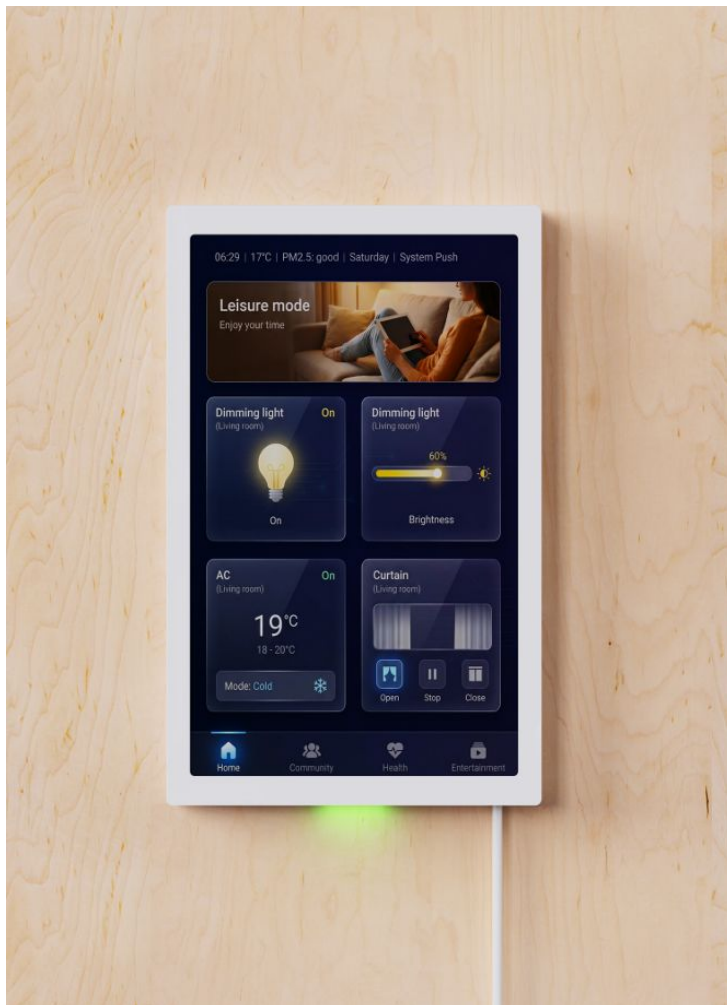
3.5 Set up with the One Raven app

Download the One Raven app on your phone and follow the in-app instructions to add the Home Server to your home. The app discovers the Home Server on your local network and walks you through account linking and accessory setup.

OPERATION

4.1 Touchscreen

The Home Server's touchscreen shows your home's status and provides controls for connected accessories. Tap a tile to control an accessory; swipe to move between screens.



4.2 Adding smart home accessories

The Home Server acts as a Thread border router. Thread-compatible accessories join the Home Server's Thread network during setup in the One Raven app. The Thread radio operates in the 2.4 GHz band (IEEE 802.15.4).

4.3 Volume and brightness

Adjust speaker volume and display brightness from the on-screen quick controls. The display also dims automatically based on ambient light.

4.4 Software updates

The Home Server keeps itself up to date automatically. During an update the screen may be briefly unavailable; do not disconnect power while an update is in progress.

4.5 Restarting

The Home Server has no power button. To restart it, disconnect the USB-C power cable, wait five seconds, and reconnect it.

4.6 Troubleshooting

Problem	What to try
Screen is blank	Check that the power adapter is connected and the outlet works. Restart the Home Server.
Server is offline in the app	Check your router. Move the Home Server closer to your Wi-Fi access point.
Accessory won't connect	Move the accessory closer to the Home Server during setup, then return it to its final location.

SPECIFICATIONS

5.1 General

Item	Specification
Product name	One Raven Home Server
Model	OR-HS100
Dimensions	264mm × 170mm × 15mm
Weight	[TBD: g]
Mounting	Wall-mounted (bracket included)
Display	Built-in portrait touchscreen, 1200 × 1920
Audio	Built-in speaker and microphone
Sensors	Ambient light/proximity, temperature/humidity, 24GHz mmWave radar occupancy/motion
Operating temperature	0-70 °C (indoor use only)

5.2 Power

Item	Specification
Power input	USB-C, USB Power Delivery
Required PD contract	9 V DC, 2.25 A minimum (19.98 W)
Power adapter	[TBD: adapter model and rating]

5.3 Wired interfaces

Item	Specification
USB-C (main)	Power input
USB-C (debug)	Service use only

5.4 Radios

Radio	Specification
Wi-Fi	SKI.WB800D80S.1, 2.4 GHz / 5 GHz IEEE 802.11 a/b/g/n/ac/ax
Bluetooth	SKI.WB800D80S.1 combo radio Bluetooth 2.1 +EDR/3.0/4.x/5.2/5.3
Thread (IEEE 802.15.4)	Quectel KGM133S module (Silicon Labs EFR32MG24), 2.4 GHz band, channels 11–26 (2405–2480 MHz), O-QPSK, 250 kb/s [TBD: max TX power]
mmWave radar	MoreSense MS24-36507F, 24~24.25 GHz
Cellular	Quectel EG800Q, LTE Cat 1 bis [TBD: LTE bands for the target SKU]
Antennas	[TBD: count, type, gain per radio; integral — no user-accessible antenna connectors]

REGULATORY COMPLIANCE

6.1 FCC compliance statement

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 One Raven, Inc. could void the user's authority to operate the equipment.

6.2 Class B interference statement

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.

6.3 RF exposure statement

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 20 cm between the radiator and any person. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter, except as authorized in the equipment's FCC grant.

6.4 Contained transmitter modules

This product contains the following separately authorized transmitter module(s):

Module	FCC ID
Quectel KGM133S (Thread)	XMR2026KGM133SP

FCC Caution.

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.

Any 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 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.

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator & your body.

CE Maintenance

- 1.The product shall only be connected to a USB interface of version Type-C.
- 2.Adapter shall be installed near the equipment and shall be easily accessible.
- 3.EUT Operating temperature range: 0° C to 40° C .
- 4.Adapter: The plug considered as disconnect device of adapter

Power supply and ADP(rating):

Input: AC 100-240V 50/60Hz 0.6A Max

Output: DC 5.0V 3.0A 15.0W, 9.0V 2.22A 19.98W, 12.0V 1.67A 20.0W Max

- 5.The device complies with RF specifications when the device used at 20cm you're your body.
- 6.Operations in the 5.15-5.35GHz band are restricted to indoor usage only.

This product may be used in the following European member states subject to the following restrictions. For products that operate in the frequency band 5.150 to 5.350 GHz, wireless access systems (WAS), including radio local area networks (RLANs), shall be restricted to indoor use.

	AT	BE	BG	CH	CY	CZ	DE	DK	EE	EL	ES
	FI	FR	HR	HU	IE	IS	IT	LI	LT	LU	LV
	MT	NL	NO	PL	PT	RO	SE	SI	SK	TR	

Declaration of Conformity

Shenzhen Pretech Industrial Co., Ltd hereby declares that this One Raven Home Server is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU. In accordance with Article 10(2) and Article 10(10), This product is allowed to be used in all EU member states.



Frequency Bands:

WLAN 802.11b/g/n/ax20: 2412 MHz to 2472MHz
WLAN 802.11n/ax40: 2422 MHz to 2462MHz
WLAN 802.11a/n/ac/ax20/n/ac/ax40/ac/ax80: 5150 MHz to 5250 MHz
WLAN 802.11a/n/ac/ax20/n/ac/ax40/ac/ax80: 5250 MHz to 5350 MHz
WLAN 802.11a/n/ac/ax20/n/ac/ax40/ac/ax80: 5470 MHz to 5725 MHz
WLAN 802.11a/n/ac/ax20/n/ac/ax40/ac/ax80: 5725 MHz to 5850 MHz
Bluetooth: 2402 MHz to 2480 MHz
24G: 24000 MHz to 24250MHz
802.15.4: 2405 MHz to 2480 MHz

Max power:

2.4GHz WLAN: 16.13dBm
5GHz WLAN: 16.73dBm
5.8GHz WLAN: 13.70dBm
Bluetooth: 5.77dBm
BLE1: 2.95dBm
BLE2: 8.51dBm
24G: -16.55dBm
802.15.4: 11.53dBm