https://navien.co.uk

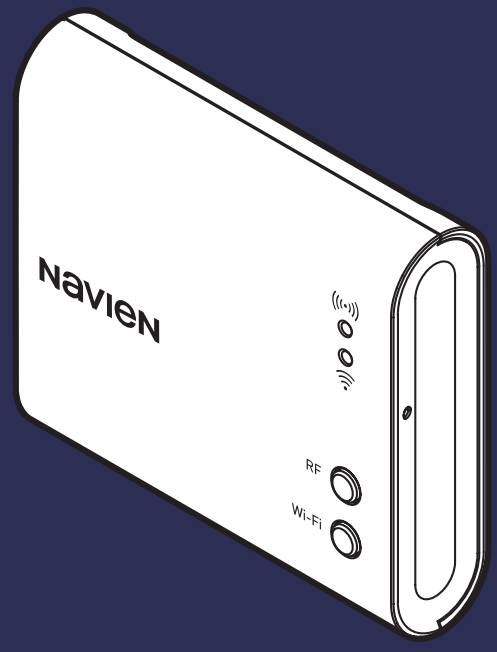
NAVIEN

THE LEADER IN CONDENSING TECHNOLOGY

NAVIEN

Installation & Operation Manual

Wireless Communication Module



Model

BCM-41RW
BCM-45RW

THE LEADER IN CONDENSING TECHNOLOGY

If your device requires service, you have several options for getting service, contact Technical Support at 0344 332 2323 or on the website: https://navien.co.uk

For warranty service, always contact Technical Support first.

TEL: 0344 332 2323
Add: Building 2, Guildford Business Park, Guildford, GU2 8XG.

Safety information

Read and follow all safety instructions in this manual to avoid unsafe operating conditions, property damage, personal injury, or death.

Safety messages used in this manual

DANGER

Indicates an imminently hazardous situation which, if not avoided, could result in severe injury or death.

WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in injury or death.

CAUTION

Indicates a potentially hazardous situation that, if not avoided, could result in property damage.

DANGER

- **Do not supply 230 VAC to this device.**
  - Doing so may result in fire, severe personal injury, or death.

⚠ WARNING

- **This device is designed for indoor use. Please install and use this device indoors.**
- **Do not disassemble or attempt to repair the device.**
  - You may damage the device.
  - Any attempt to disassemble or repair the device voids Navien's Limited Warranty. Navien is not responsible for damage or injuries caused by voiding the Navien's Limited Warranty.
- **Do not store flammable materials near the device.**
  - This may cause a fire or damage the device.
  - Keep all flammable products far away from the device and store them in approved containers. Keep the containers closed tightly and out of the reach of children and pets.
- **Avoid interference with other electronic devices.**
  - The device emits radio frequency (RF) signals that may interfere with unshielded or improperly shielded electronic equipment, such as pacemakers, hearing aids, medical devices, and other electronic devices. Consult the manufacturers of your electronic devices to solve any interference problems you experience.
- **When mounting the device on a wall, make sure that the wall is strong enough to support the device.**
  - The device could fall if the wall is not strong enough and this may damage the device or cause injury.

CAUTION

- **Use suitable tools and appropriate force to install the device.**
  - Using unsuitable tools or excessive force during installation may damage the device.
- **Do not expose the device to direct sunlight or high temperatures for an extended period of time.**
  - Prolonged exposure to sunlight or extreme temperature can cause permanent damage to the device's internal components.
- **Avoid water and wet areas.**
  - This may damage the device's internal components. Always keep the device dry.
- **Do not clean the device with water or a damp cloth.**
  - You may damage the device.
- **Do not install the device in very hot or very cold areas. The operating temperature of the device is 0°C–40°C.**
- **Do not use loose or damaged cables.**
  - This may result in a poor connection or cause the device to malfunction.
- **This device has been approved for use in the UK and EU only.**
  - Using the device in any other country will void the manufacturer's warranty.

Contents

Overview

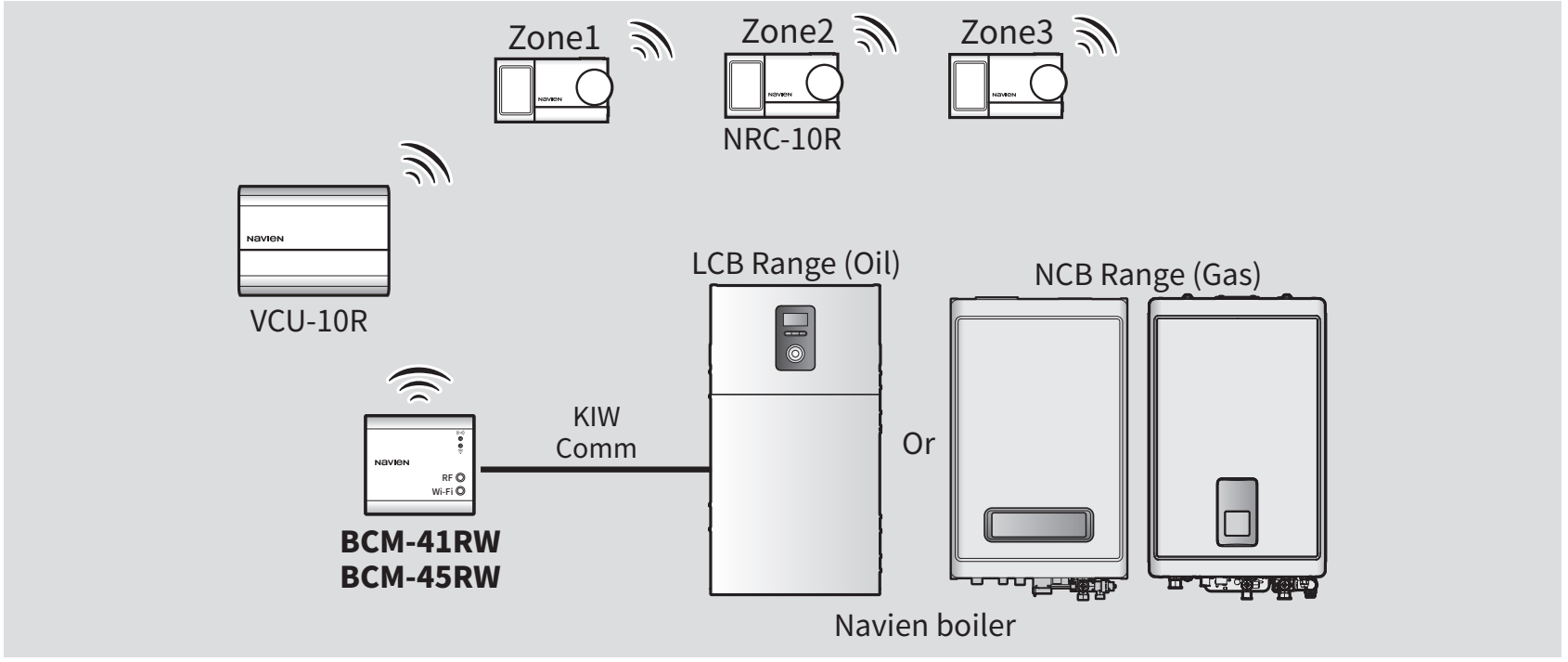
Navien Smart Plus uses 2-way communication on an 868 MHz radio frequency (RF) band to control the heating system. The wireless communication module (BCM-41RW or BCM-45RW) operates as the control centre of the system, and the Navien boilers (LCB Range or NCB Range) support 2-wire communication (KIW) technology.

Navien Smart Plus consists of the wireless thermostat (NRC-10R) and wireless communication module (BCM-41RW or BCM-45RW). The devices are already paired (completed RF pairing procedure), no additional initial pairing procedure is needed to use the devices.

Navien Smart Plus are multizone controls compatible with combi boilers employs S/S+ Plan, while system/regular boilers use S/S+/Y/W Plan with additional thermostat (NRC-10R) and wiring centre (VCU-10R). No separate pairing is required during installation.

Applicable devices with BCM-41RW and BCM-45RW	Specifications		
	Model name	Power input	Radio frequency (RF)
Thermostat	NRC-10R	AA batteries x 2	868 MHz
Wiring centre	VCU-10R	230 VAC, 50 Hz	868 MHz
Boiler	LCB Range (Oil) or NCB Range (Gas)	230 VAC, 50 Hz	-

Product	Supported models				
	LCB700	NCB-CE	NCB300	NCB500	NCB700
BCM-41RW (RF)	○	○	○		
BCM-45RW (RF&ON AI)				○	○

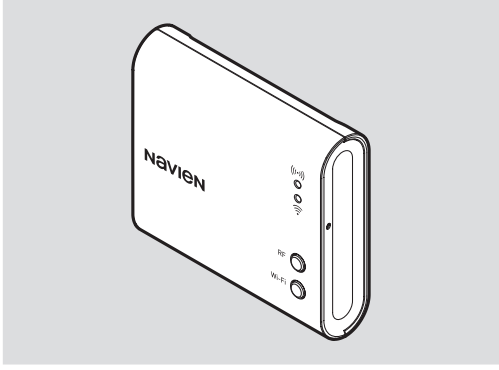


- This device specifications or contents of this manual may be changed without prior notice due to upgrade of device functions.
- The device functions can be limited by the operating environment.

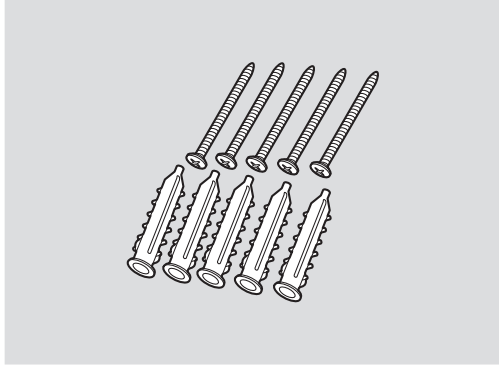
Product	Supported features						
	Smart Forecasting	Geofencing	Boiler Plus Compliance	Energy Usage Report	HEMS Report	Smart Diagnotics	FOTA Update
BCM-41RW (RF)	○	○	○	○			
BCM-45RW (RF&ON AI)	○	○	○	○	○	○	○

Included items

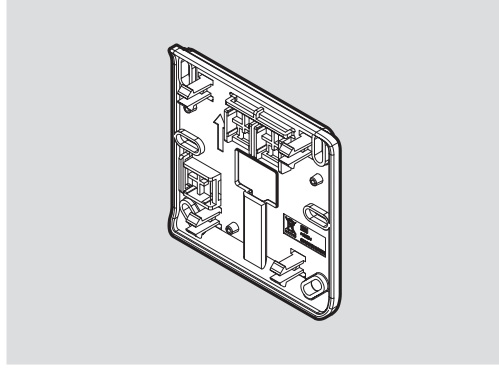
Open the packaging and ensure that the following items are provided.



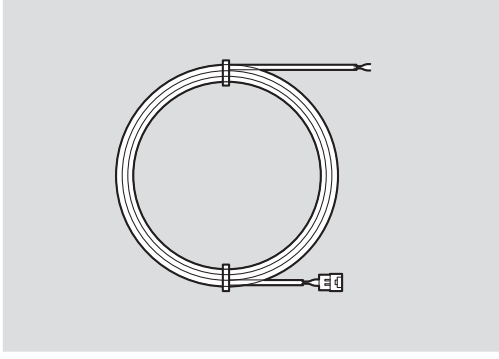
Wireless communication module



Screws and anchors



Wall mounting plate (with a magnet)

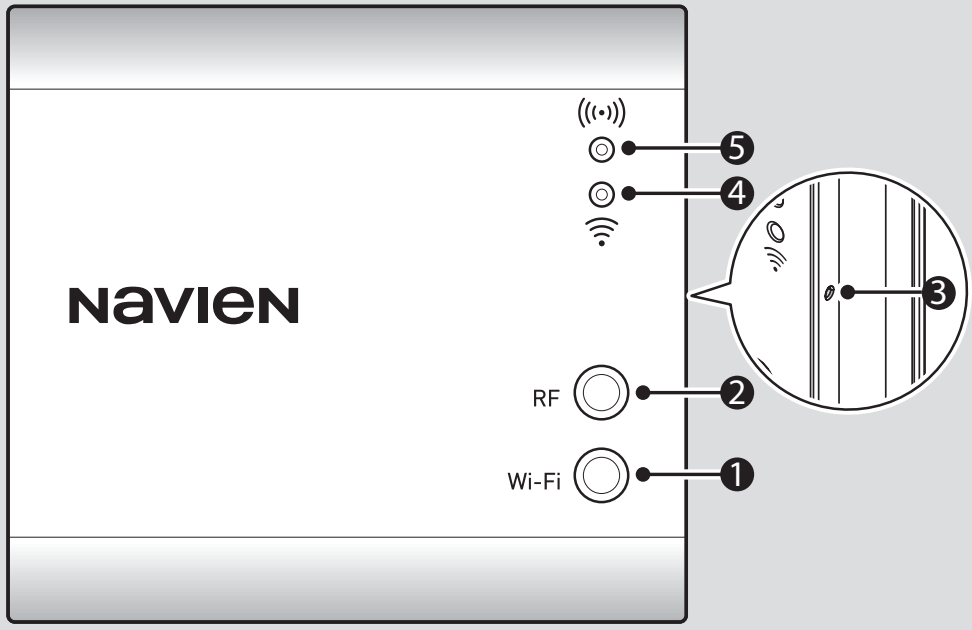


Extension cable (2.2 m)

Installation & Operation manual

Device layout

The following table provides the brief information on each part of the wireless communication module.



No	Name	Description
❶	**Wi-Fi button**	Press and hold to enter or exit Wi-Fi pairing mode.
❷	**RF button**	Press and hold to enter or exit RF pairing mode.
❸	**Reset button**	Insert the tip of a sharp object to reset the RF or Wi-Fi connection data. For more information about resetting the connection data, refer to "Resetting the connection data" on page 21.

<table>
<tr><th>No</th><th>Name</th><th>Description</th></tr>
<tr><td>❹</td><td>Wi-Fi LED status</td><td>Indicates the Wi-Fi operation (pairing mode) status.
<table>
<tr><th>LED Colour</th><th>Status</th><th>Description</th></tr>
<tr><td rowspan="3">Red</td><td>On</td><td>• The wireless communication module is booting for Wi-Fi communication.
• There is no Wi-Fi network connected to the wireless communication module.
• The Wi-Fi pairing mode is turned off.</td></tr>
<tr><td>Blinking (Slow: 0.5 sec)</td><td>The device is in Wi-Fi pairing mode.</td></tr>
<tr><td>Blinking (Quick: 0.2 sec)</td><td>The device is entering pairing mode.</td></tr>
<tr><td>Green</td><td>Blinking</td><td>Wi-Fi pairing (router) access trial is being performed.</td></tr>
<tr><td rowspan="2">Blue</td><td>On</td><td>The wireless communication module is properly connected to the server.</td></tr>
<tr><td>Blinking</td><td>• When the wireless communication module is connecting to the server, the Wi-Fi LED status will blink blue slowly.
• When the wireless communication module is transmitting and receiving server data, the Wi-Fi LED status will blink slowly or quickly depending on the size of the server data.</td></tr>
<tr><td>White (BCM-45RW Only)</td><td>On</td><td>When the wireless communication module is in smart diagnostic state (BCM-45RW Only).</td></tr>
</table></td></tr>
</table>

Smart diagnosis may be limited depending on the boiler model.

<table>
<tr><th>No</th><th>Name</th><th>Description</th></tr>
<tr><td>❺</td><td>RF LED status</td><td>Indicates the RF operation status between the wireless communication module and paired RF devices.
<table>
<tr><th>LED Colour</th><th>Status</th><th>Description</th></tr>
<tr><td rowspan="3">Red</td><td>On</td><td>• The wireless communication module is booting for RF communication.
• There are no devices paired with the wireless communication module.
• The RF pairing mode is turned off.</td></tr>
<tr><td>Blinking
(Slow: 0.5 sec)</td><td>The wireless communication module is in RF pairing mode.</td></tr>
<tr><td>Blinking
(Quick: 0.2 sec)</td><td>The wireless communication module is entering RF pairing mode.</td></tr>
<tr><td>Green</td><td>Blinking</td><td>There is a poor connection between the wireless communication module and paired devices.</td></tr>
<tr><td rowspan="2">Blue</td><td>On</td><td>The wireless communication module is properly paired with devices.</td></tr>
<tr><td>Blinking</td><td>When the wireless communication module is transmitting and receiving RF data, the RF LED status will blink slowly or quickly depending on the size of the RF data.</td></tr>
</table></td></tr>
</table>

Installing the wireless communication module

Connect the KIW (Orange) communication cable from the boiler to the wireless communication module and install it on a wall near the boiler as the boiler provides power for the communication module.

Also, for the best RF system performance, install the wireless communication module in an open area so that it can pair with the wiring centre and wireless thermostats.

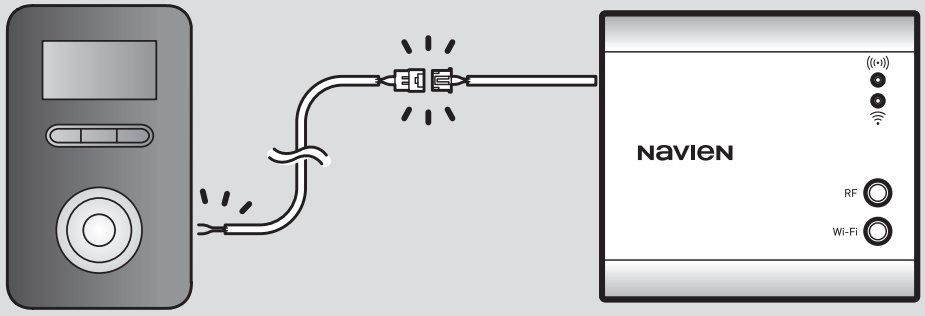
- Do not install the wireless communication module near heat sources, such as radiators, chimney walls, televisions, and direct sunlight. Doing so may damage the device.
- Install the wireless communication module at least 30 cm from any metal objects, including wall boxes, and at least 1 m from any other electrical equipment, such as radios, televisions, and PCs. Metal objects and electrical equipment may affect the RF communication between RF devices.

Connecting the KIW (Orange) communication cable

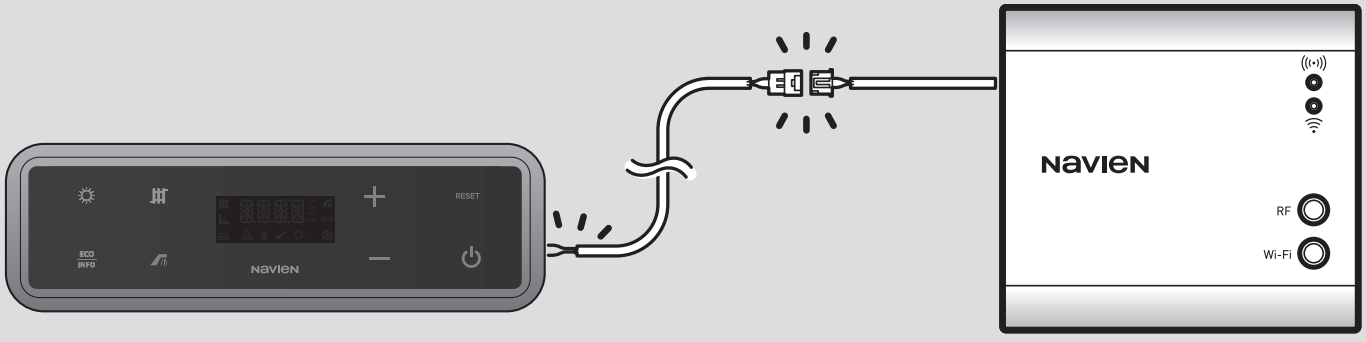
The KIW (Orange) communication cable from the boiler must be connected to the wireless communication module. Do not supply 230 VAC to the wireless communication module. Doing so may result in fire, severe personal injury, or death.

1 Connect one end of the extension cable to the port on the front control of the boiler and the end of the extension cable to one end of the KIW (Orange) communication cable from the wireless communication module.

<For NCB Range/LCB Range>



<For NCB-CE boilers>



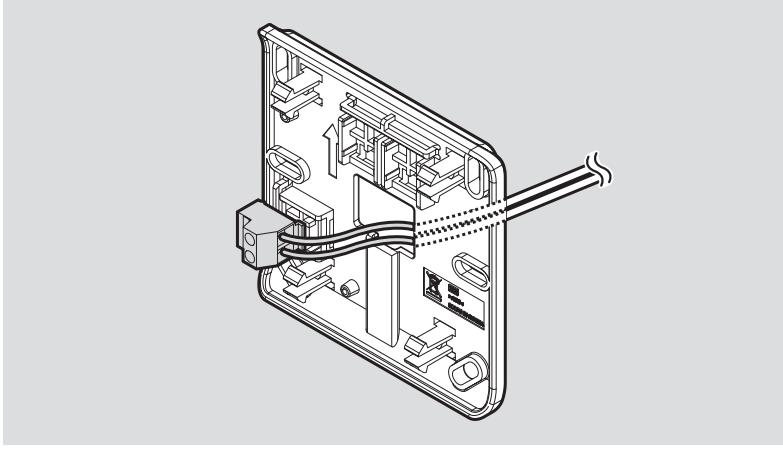
Set the DIP switches for NCB-CE and LCB700 boilers as follows.

- NCB-CE <Front Control> DIP SW: 4-OFF, 5-OFF
- LCB700 <Boiler PCB> DIP SW2: 6-OFF, 7-ON, 8-OFF

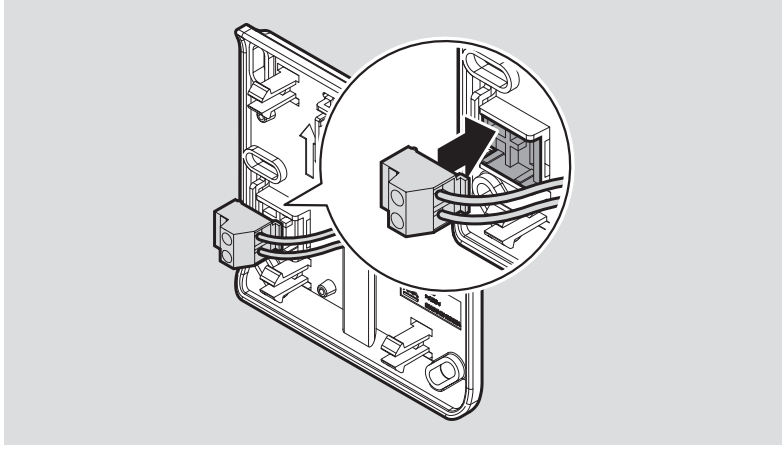
To set the CH demand mode from the front control for NCB Range, please follow below.

- Change the CH Demand setting to Navien Thermostat from the front control setting.

2 Pass one end of the KIW (Orange) communication cable from the boiler through the hole in the wall mounting plate.

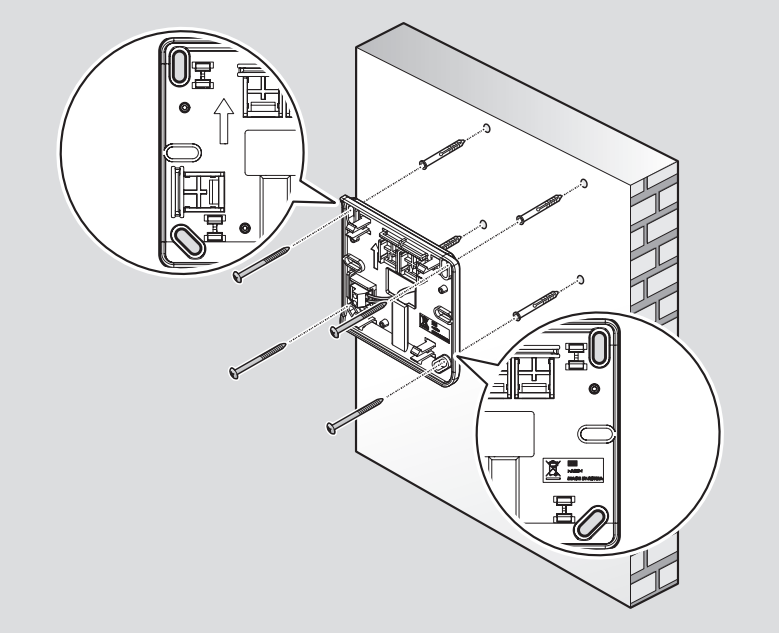


3 Connect the KIW (Orange) communication cable to the wireless communication module's power terminal block on the wall mounting plate.

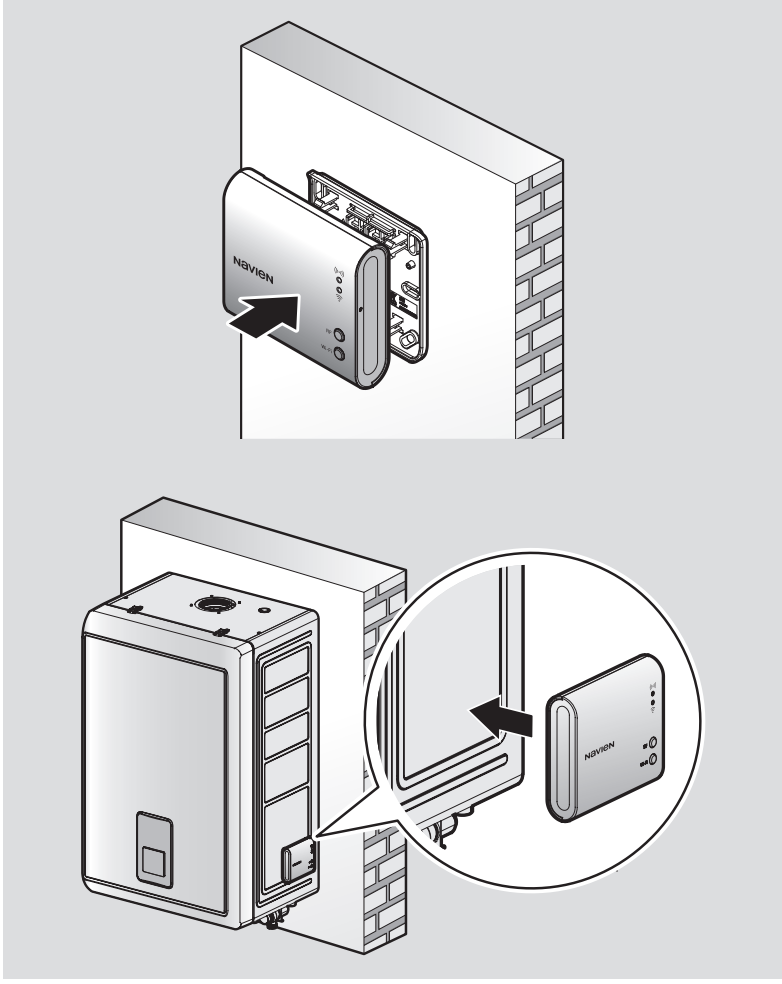


Attaching the wall mounting plate

1 Check the direction of the wall mounting plate and affix it to the wall using four screws. (Not required when attached to the Navien unit with the built-in magnet)



2 Hang the wireless communication module on the wall mounting plate by aligning the hooks.
You will hear a "click" sound when the wireless communication module is securely hung. (Can be attached to the Navien unit with a magnet)



Pairing with the RF receivers

When pairing the wireless communication module with the RF receivers, such as the wiring centre or wireless thermostat, the devices should be in pairing mode. Refer to the Wireless thermostat or Wiring centre Installation & Operation manual for information on entering pairing mode.

- For the best RF system performance, install the wireless communication module in an open area so that it can pair with the wiring centre and wireless thermostats.
- Only one wiring centre can be paired with the wireless communication module.

1 Turn on the power to the wireless communication module.

2 Press and hold the RF button to enter pairing mode. If the RF LED status blinks red slowly, pairing mode is turned on.

To cancel or exit pairing mode, press and hold the RF button.

3 On the RF devices being paired with the wireless communication module, enter pairing mode. The wireless communication module will automatically pair with the RF devices.

4 Press and hold the RF button to exit pairing mode, and then check if the RF devices are paired with the wireless communication module by monitoring the RF devices.

- Pairing mode automatically ends approximately 5 minutes after the wireless communication module enters pairing mode.
- If the wireless communication module does not exit pairing mode, it cannot communicate with the paired RF devices.
- Check if the RF signal antenna icon on the wireless thermostat LCD screen appears during pairing mode.

Connecting to a Wi-Fi network (For App use)

The wireless communication module allows your smartphone to control the wireless thermostats. Before using the wireless thermostats via the Navien Smart Plus app, connect your smartphone with the wireless communication module.

To connect your smartphone with the wireless communication module, download and install the Navien Smart Plus app on your smartphone. For more detailed information on using the app, refer to the Navien Smart Plus app User Manual.

GET IN ON Google Play

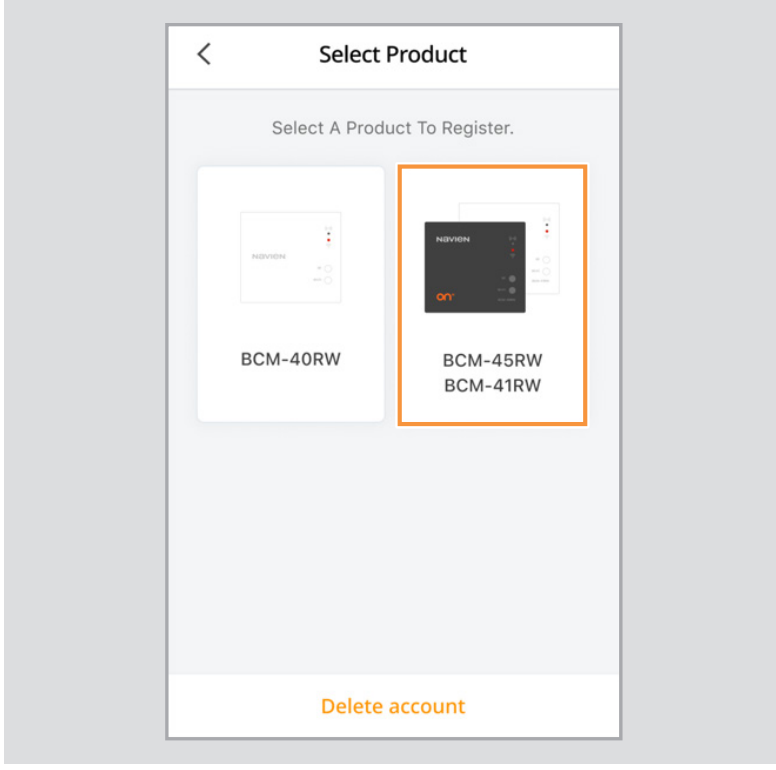
Download on the App Store

NAVIEN SMART PLUS

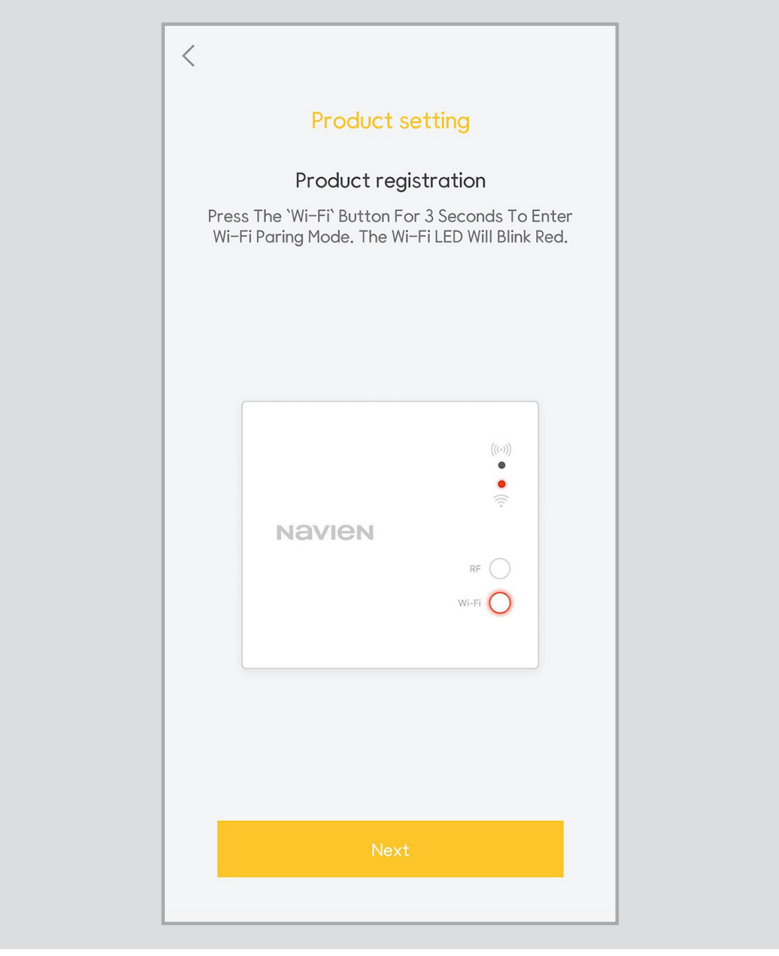
1 Turn on the power to the wireless communication module.

2 On your smartphone, log into the Navien Smart Plus app.

3 On the Select Product screen, check the model name of the communication module, and then select **BCM-45RW BCM-41RW**.

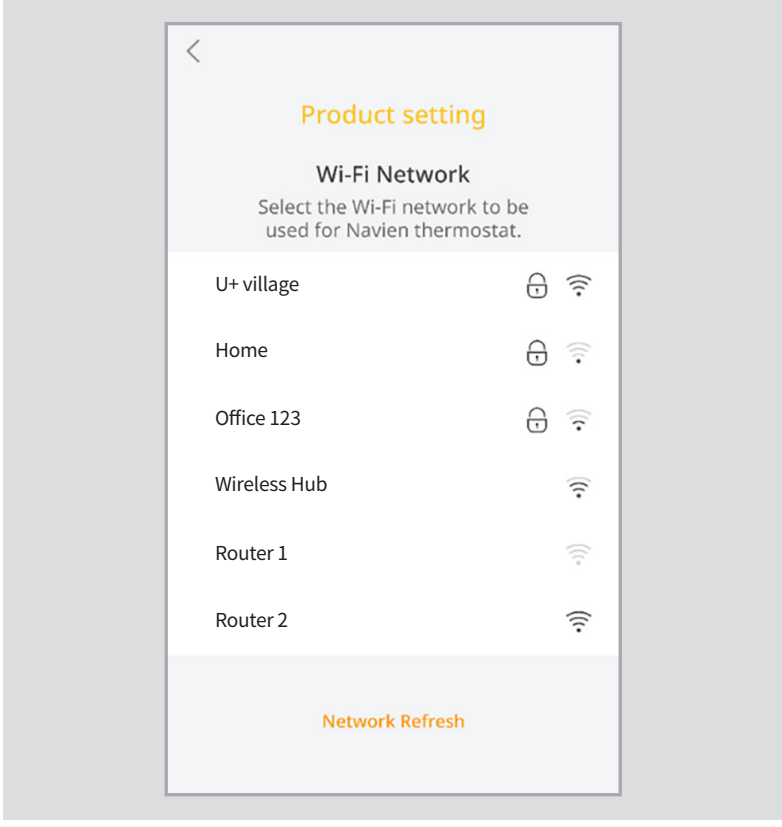


4 When the Product registration screen appears, press and hold the Wi-Fi button to enter pairing mode. If the Wi-Fi LED status blinks red slowly, the pairing mode is turned on.



- To cancel or end pairing mode, press and hold the Wi-Fi button.
- The Product registration screen also appears during app member registration.

5 From the Wi-Fi network list, select the available Wi-Fi network and enter the password.



If your smartphone has connected to the Wi-Fi network successfully, the wireless communication module will be connected to the selected Wi-Fi and the Wi-Fi LED status will turn blue.

Resetting the connection data

Resetting Wi-Fi connection data

To reset the Wi-Fi connection data, press and hold the Wi-Fi button and the Reset button at the same time.

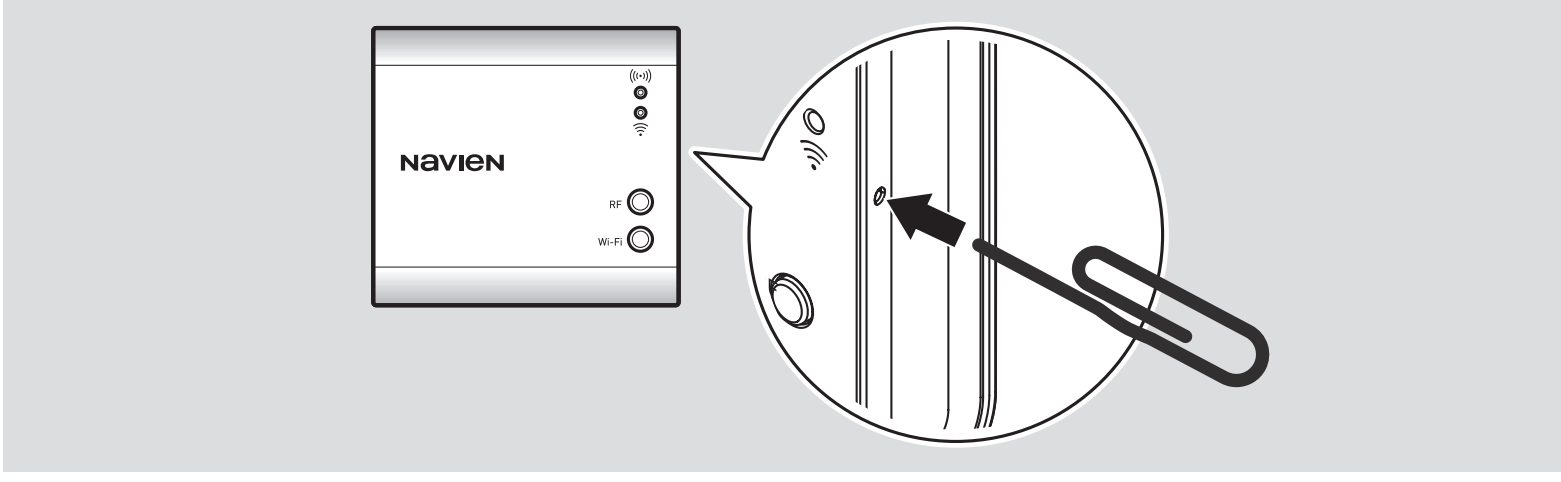
Resetting RF connection data

To reset the RF connection data, press and hold the RF button and Reset button at the same time.

Resetting the Wi-Fi and RF connection data simultaneously

To reset the Wi-Fi and RF connection data at the same time, press and hold the Reset button for more than 10 seconds.

To press the Reset button located on the right side of the device, insert the tip of a sharp object such as a clip.



Troubleshooting

Before reporting a malfunctioning device, refer to the following table and see if you can identify and fix the problem.

Fault situation	Suggested Remedies
The RF LED status is turned red.	No devices are paired with the wireless communication module. – Check if the RF devices to be paired with the wireless communication module operate properly. – Try to pair the devices with the wireless communication module again.
The RF LED status blinks green.	There is a poor connection between the wireless communication module and the paired devices. – Check if the wireless communication module is installed in an open area near the RF devices. – If the RF connection experiences interference from nearby electrical equipment or buildings, choose a different installation location. – Check the paired RF device's pairing status. – Check if the devices paired with the wiring centre are operating properly.
The Wi-Fi LED status is turned red.	There is no Wi-Fi network connection available near the wireless communication module. – Check if the Wi-Fi router near the wireless communication module is turned on. – Check the Wi-Fi router's network connection status.

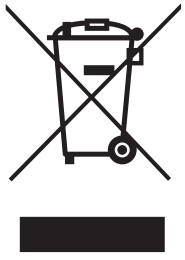
Fault situation	Suggested Remedies
The Wi-Fi LED status blinks green and red.	The Wi-Fi network you have selected from the Wi-Fi network list is providing a poor connection. – Try selecting the Wi-Fi network with an available connection again.
The Wi-Fi LED status blinks blue and red.	There is no Wi-Fi network connection available, or the Wi-Fi network near the communication module is providing a poor connection. – Check if the Wi-Fi router near the wireless communication module is operating properly.

Recycling and disposal

Recycling the package

Sort out the waste to separate that which can be recycled (cartons, plastics, etc.) from the various wastes that cannot be recycled (straps, etc.). Also recycle the product's packaging in accordance with all relevant local regulations.

WEEE: Recycling or disposing of the device and its parts



- The device must be recycled in compliance with the WEEE Directive (Waste Electrical and Electronic Equipment), which specifies the:
  - selective collection of waste electrical and electronic equipment.
  - selective systematic treatment of certain components and substances considered to be dangerous,
  - reuse, recycling, and recovery of the collected waste electrical and electronic equipment.
- Do not dispose of the device or any of its accessories with your regular household waste.
- Ensure that the old unit and any of its accessories are appropriately disposed of.
- Deposit the product at an appropriate collection point for evaluating, treating, and recycling waste electrical and electronic equipment.
- Observe all relevant regulations and laws.

Warranty

Manufacturer's warranty of 2 years is provided.

Specifications

The following table lists the specifications for the wireless communication module.

Items		Specifications
Power supply	Main supply	Navien boiler (power line along with communication line)
	Consumption	10 W
Radio frequency (RF)		865.15 MHz–867.95 MHz
Wi-Fi		2.4 GHz, IEEE Std. 802.11b/g/n (20 MHz, 40 MHz)
Bluetooth		2.4 GHz, BLE 5.0
Permissible operating temperature		0°C–40°C

Supplier's name: KDNA (KYUNGDONG NAVIEN CO., Ltd.)
Supplier's model identifier: BCM-41/45RW (Wireless communication module)

ErP control class	Space heating energy efficiency	Description
VI	+4%	Weather compensator and room sensor, for use with modulating heaters
VIII	+5%	Multi-sensor room temperature control, for use with modulating heaters

- Must be supplied from a power source of less than 8 A, 100 VA
- We suggest using only the accessories provided with the product. Using third-party accessories may result in signal interference or improper operation of the product or other nearby devices.
- The product's wireless power supply follows all related RF standards. If the product's voltage and temperature become too low or high or the product is subject to any abnormal operation, the product's power supply may become unstable and impact performance.
- We suggest using only the accessories provided with the product. The product's wireless power supply follows all related RF standards. Using third-party accessories, allowing the product's voltage and temperature to become too low or high, or subjecting the product to any abnormal operation may cause the product's wireless power supply to become unstable and impact performance.
- The product's short range wireless communication function is controlled via software or firmware to meet standards related to data transfer security. If the software or firmware is improperly modified or changed, the product's data transfer security may not function properly.
- This product's wireless communication antenna does not require SAR testing, because the operating distance is more than 20 cm and conforms to EN62311.
- This product’s safety/RF/EMC have already been tested by a qualified laboratory and received passing marks, but any abnormal operation method or conditions may make the product stop working or experience a malfunction.

Certification

Manufactured by KDNA (KYUNGDONG NAVIEN CO., Ltd.)
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