KD **Navien**®

Installation & Operation Manual

Wireless Communication Module

Model

BCM-40RW
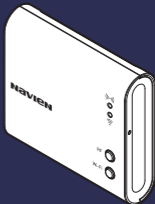
If your device requires service, you have several options for getting service, contact Technical Support at 0844 332 2323 or on the website: https://navienuk.com/
For warranty service, always contact Technical Support first.

TEL: 0844 332 2323
Add: Building 2, Ground Floor, Guilford Business Park, Guildford GU2 8XH.

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.
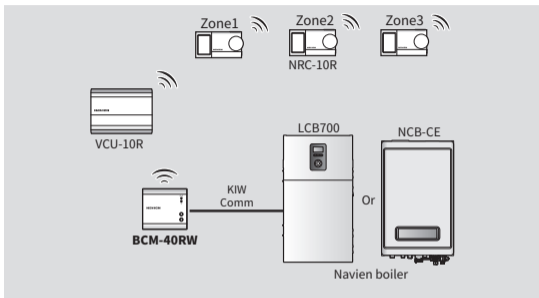
Contents

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-40RW) operates as the control centre of the system, and the Navien boilers (LCB700 or NCB-CE) support 2-wire communication (KIW) technology. It is possible to control it using a 2-wire connection from the BCM-40RW terminals.

Navien Smart Plus consists of the wireless thermostat (NRC-10R) and wireless communication module (BCM-40RW). The devices are already paired (completed RF pairing procedure). Therefore, when installing them, no additional initial pairing procedure is needed to use the devices.

Navien Smart Plus can be installed in combi/system and regular boilers. With an additional wireless thermostat (NRC-10R) and an additional wireless wiring centre (VCU-10R), multizone control can be implemented in a combi boiler environment via the S/S+ Plan and in a system/regular boiler environment with the S/S+/Y/W Plan.

Applicable devices with BCM-40RW	Specifications		
	Model name	Power input	Radio frequency (RF)
Thermostat	NRC-10R	AA batteries x 2	868 MHz
Wiring centre	VCU-10R	230 VAC, Hz	868 MHz
Main controller (boiler)	LCB700 or NCB-CE	230 VAC	-

Charge for App service is subject to be imposed after prior notice in accordance with the policy of the manufacturer.

Zone1 Zone2 Zone3

NRC-10R

VCU-10R

LCB700   NCB-CE

KIW
Comm

Or

BCM-40RW

Navien boiler

🔍 • This device specifications or contents of this manual may be changed without prior notice due to upgrade of device functions.

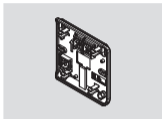• The device functions can be limited by the operating environment.

Supplied items

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

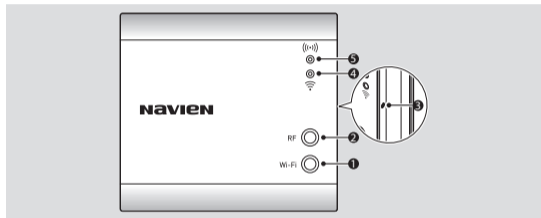Wireless communication module

Screws and anchors

Wall mounting plate

Extension cable

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 AP 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.

No	Name	Description		
④	**Wi-Fi LED status**	Indicates the Wi-Fi operation (AP mode) status.		
		LED Colour	**Status**	**Description**
		Red	On	• 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 AP mode is turned off.
			Blinking (Slow: 0.5 sec)	The device is in Wi-Fi AP mode.
			Blinking (Quick: 0.2 sec)	The device is entering AP mode.
		Green	Blinking	Wi-Fi AP (router) access trial is being performed.
		Blue	On	The wireless communication module is properly connected to the server.
			Blinking	• 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.

No	Name	Description			
❺	RF LED status	Indicates the RF operation status between the wireless communication module and paired RF devices.			
		LED Colour	Status	Description	
		Red	On	• 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.	
			Blinking (Slow: 0.5 sec)	The wireless communication module is in RF pairing mode.	
			Blinking (Quick: 0.2 sec)	The wireless communication module is entering RF pairing mode.	
		Green	Blinking	There is a poor connection between the wireless communication module and paired devices.	
		Blue	On	The wireless communication module is properly paired with devices.	
			Blinking	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.	

Installing the wireless communication module —

Connect the KIW 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 communication cable

⚠ The KIW 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 panel of the boiler and the end of the extension cable to one end of the KIW communication cable from the wireless communication module.

<For NCB-CE boilers>

<For LCB700 boilers>
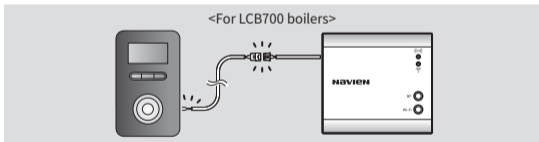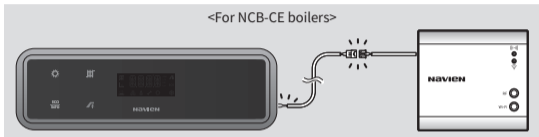
🔍 Set the DIP switches for NCB-CE and LCB700 boilers as follows.
- NCB-CE Panel DIP SW: 4-OFF, 5-OFF
- LCB700 Boiler DIP SW2: 6-OFF, 7-ON, 8-OFF

2 Pass one end of the KIW
   communication cable from the
   boiler through the hole in the wall
   mounting plate.
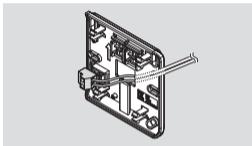
3 Connect the KIW communication
   cable to the wireless communication
   module's power terminal block on
   the wall mounting plate.
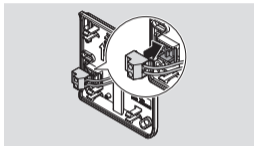
Attaching the wall mounting plate

1 Check the direction of the wall mounting plate and affix it to the wall using four screws.
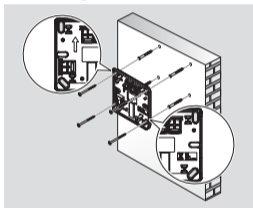
2 Hang the wireless communication module on the wall mounting plate by aligning the hooks.
You will hear a "click" sound when the wireless communication module is securely hung.
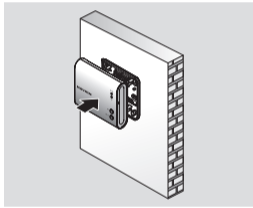
Pairing with the RF receivers

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.

1 Turn on the power to the wireless communication module.

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

3 When the Product registration screen appears, press and hold the Wi-Fi button to enter AP mode. If the Wi-Fi LED status blinks red slowly, the AP mode is turned on.
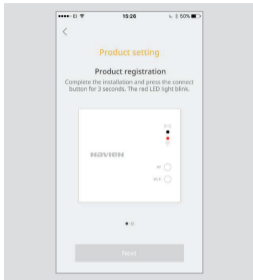
🔍 • To cancel or end AP mode, press and hold the Wi-Fi button.
• The Product registration screen also appears during app member registration.

4 Tap **Navien_Smart+_XXXX** in the Wi-Fi settings to connect, and then tap **Next**.
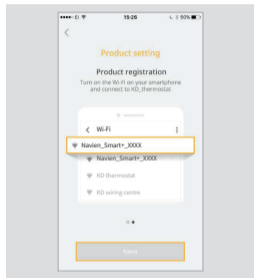
5 From the Wi-Fi network list, select the available Wi-Fi network and enter the password.
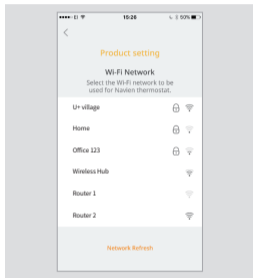
If your smartphone has connected to the Wi-Fi network successfully, the wireless communication module will be connected to the selected Wi-Fi and the Wi-Fi LED status will turn blue.

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)
Permissible operating temperature		0℃–40℃

Supplier's name: KDEL (KYUNGDONG ELECTRONICS CO., Ltd.)
Supplier's model identifier: BCM-40RW (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.

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