Navien IoT Module

Operation & Installation Manual

Model **NAC-10SM**

ENG Version

- Read and understand all instructions and precautions in this manual thoroughly for your safety.
- The appearance and specifications of the product are subject to change without prior notice for quality improvement.
- The illustrations used in this manual may differ from the product you have purchased, but this does not affect the performance and usage of the product.

English

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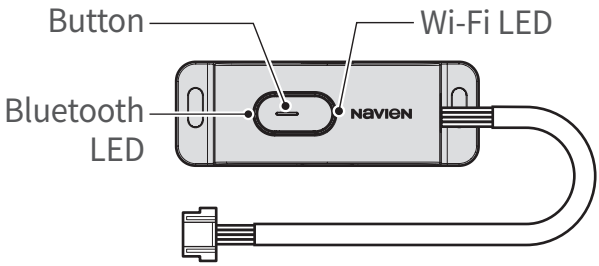
For User (NaviLink App)

Product Overview

Device Features



Modes

Mode	Description	Operation	LED (Bluetooth / Wi-Fi)
Boot Mode	Indicates product is on after initial power application	No button function	Both LEDs solid white
Standby Mode	Entering standby after initial power application	• No button function • Module automatically enters Standby Mode after Boot Mode.	Both LEDs off
NaviLink Pairing Mode	Pairing with app via Bluetooth, Wi-Fi communication action	• From Standby Mode, briefly press the button twice to enter NaviLink Pairing Mode. • Press and hold the button for 2 seconds to exit the NaviLink Pairing Mode and return to Standby Mode.	Wi-Fi LED blinking green

Mode	Description	Operation	LED (Bluetooth / Wi-Fi)
NaviLink Operation Mode	Wi-Fi communication with app	• When NaviLink connection information is detected, IoT module automatically enters NaviLink Operation Mode from Standby Mode. • Press and hold the button for 2 seconds to exit the NaviLink Operation Mode and return to Standby Mode. • From NaviLink Operation Mode, press the button twice briefly to enter NaviLink Pairing Mode.	Wi-Fi LED → Wi-Fi Status Indication* Bluetooth LED → Unit Connection Status • Red blinking: Disconnected • Off: Connected
Factory Reset Mode	Factory reset the IoT module	• No button function • From NaviLink Pairing Mode, press and hold the button for more than 10 seconds to enter Factory Reset Mode.	Both LEDs blinking white

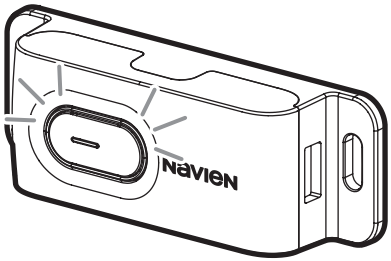
Mode	Description	Operation	LED (Bluetooth / Wi-Fi)
Abnormal Mode	Error occurred	Press and hold the button for 2 seconds to reset the error and return to Standby Mode.	Both LEDs solid red

* Wi-Fi Status Indication

Wi-Fi Status	Wi-Fi LED
IoT module disconnected from Wi-Fi	Red
-55 dBm or higher, indicating strong signal strength	Blue
-56 to -65 dBm, indicating sufficient signal strength	Green
-66 to -75 dBm, indicating insufficient signal strength	Yellow
-76 dBm or lower, indicating weak signal strength	Purple

IoT Module Error Indication

When an error occurs on the IoT module, the LEDs turn red, as shown below.



- Bluetooth LED blinks red when a communication error occurs the HVAC unit.

- Both LEDs turn solid red when an internal communication error occurs.

Starting the NaviLink App

Download the NaviLink app by searching “Navien NaviLink” in the Google Play Store or Apple App Store.

[Navien NaviLink App]

By using the IoT module’s Wi-Fi communication to connect the NaviLink app, you can monitor the system status and energy usage and receive notifications through the app.
For more information about the NaviLink app, check the manual inside the app.

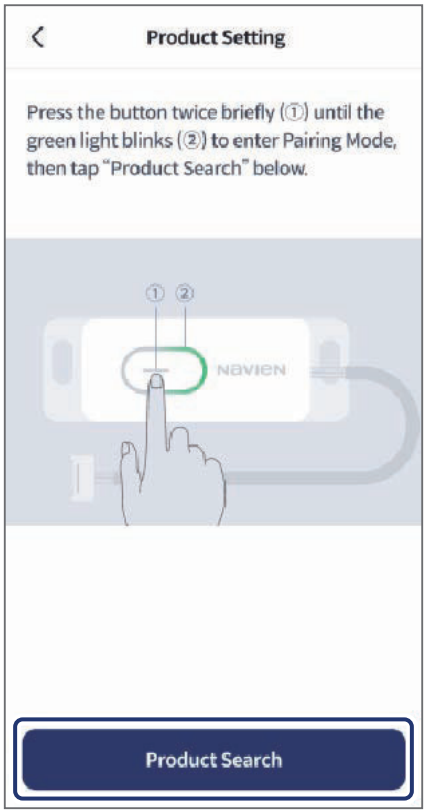
Connecting the IoT Module with the NaviLink App

1 Launch the NaviLink app.

2 Select the device type to add in the NaviLink app.

3 Press the button on the module twice briefly to enter NaviLink Pairing Mode. The Wi-Fi LED will begin blinking green when pairing mode is activated.

4 Tap [Product Search].



5 While in NaviLink Pairing Mode, follow the instructions in the NaviLink app to register the product.

6 If registration is successful, the IoT module automatically enters NaviLink Operation Mode.

To exit NaviLink Pairing Mode, press and hold the button for 2 seconds.

Troubleshooting

Items	Situation	Display LED	Solution
Module	The IoT module is in Abnormal Mode.	Both LEDs solid red	• Disconnect and reconnect the IoT module connector to reapply power. • If the issue persists after repeated attempts, replace the IoT module. – Optional: Press and hold the button until both LEDs turn off to reset the error.

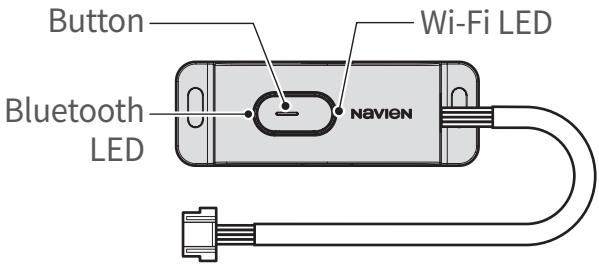
Items	Situation	Display LED	Solution
Module, App (NaviLink)	• IoT module cannot connect to Wi-Fi. • NaviLink app does not display status information.	• NaviLink Pairing Mode: No change in LED status • NaviLink Operation Mode: Wi-Fi LED solid red	• Verify that your home Wi-Fi is working by testing it with another device (e.g., a smartphone). If Wi-Fi is working, continue to the following steps. – Place the IoT module and the router closer together. If the router cannot be relocated closer to the IoT module location, an IoT module relocation with extension wire may be necessary. For details, refer to “Installing the IoT Module with Extension Wires” on page 28. – Change the channel settings of the router.

Items	Situation	Display LED	Solution
Module, App (NaviLink)	• IoT module cannot connect to Wi-Fi. • NaviLink app does not display status information.	• NaviLink Pairing Mode: No change in LED status • NaviLink Operation Mode: Wi-Fi LED solid red	• Authentication may have failed after the IoT module and the router have connected. – Check the WLAN security settings. – Reset the Wi-Fi settings in NaviLink Pairing Mode by pressing and holding the button for more than 10 seconds to enter Factory Reset Mode.
App (NaviLink)	NaviLink displays “Failed to connect to the router” error.	-	• Verify that your home Wi-Fi is working by testing it with another device (e.g., a smartphone). • Ensure that the SSID and password of the router are set correctly.
Module, Unit, App (NaviLink)	• When in NaviLink Operation Mode, the IoT module cannot communicate with the unit. • NaviLink app does not display status information.	Bluetooth LED blinking red	• If communication is restored, the error will reset automatically. • Check the connection status of the IoT module cable connected to the IoT module and the unit.

For Installer (Multikit App)

Product Overview

Device Features



Modes

Mode	Description	Operation	LED (Bluetooth / Wi-Fi)
Boot Mode	Indicates product is on after initial power application	No button function	Both LEDs solid white
Standby Mode	Entering standby after initial power application	No button function	Both LEDs off

Mode	Description	Operation	LED (Bluetooth / Wi-Fi)
Multikit Pairing Mode	Pairing with app via Bluetooth communication action	• From Standby Mode, briefly press the button once to enter Multikit Pairing Mode. • Press and hold the button for 2 seconds to exit the Multikit Pairing Mode and return to Standby Mode.	Bluetooth LED blinking blue
Multikit Operation Mode	Bluetooth communication with app	Press and hold the button for 2 seconds to exit the Multikit Operation Mode and return to Standby Mode.	Bluetooth LED solid blue
IoT module FOTA*	Performing a firmware update on the IoT module via FOTA.	No button function	• Bluetooth LED blinking blue • Wi-Fi LED blinking green
Unit FOTA*	Performing a firmware update on the unit via FOTA.		

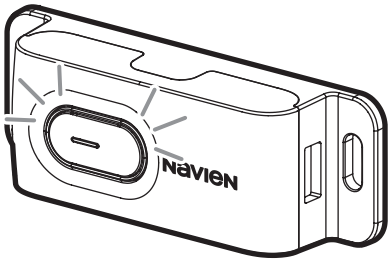
Mode	Description	Operation	LED (Bluetooth / Wi-Fi)
Abnormal Mode	Error occurred	Press and hold the button for 2 seconds to reset the error and return to Standby Mode.	Both LEDs solid red

* FOTA (Firmware Over-the-Air):
  Wireless delivery of firmware updates used to add new functions or update the operating system software.

FOTA List by Unit		
No.	IoT module FOTA	Unit FOTA
NAZ series HP	Yes	No
NAE series A/C	Yes	Yes

IoT Module Error Indication

When an error occurs on the IoT module, the LEDs turn red, as shown below.



- Both LEDs blink red when a FOTA error occurs.

- Both LEDs blink red when a communication error occurs with the HVAC unit.

- Both LEDs turn solid red when an internal communication error occurs.

Errors, except for FOTA errors, can be cleared by pressing and holding the button for 2 seconds.

Starting the Multikit App

Download the Multikit app by searching “Navien Multikit” in the Google Play Store or Apple App Store.

[Navien Multikit App]

Multikit app is used to interface with module. The Multikit app is designed to be used by contractors. It is not a consumer app. For contractors, please refer to the unit information that can be checked through the Multikit app, as shown in the table below.

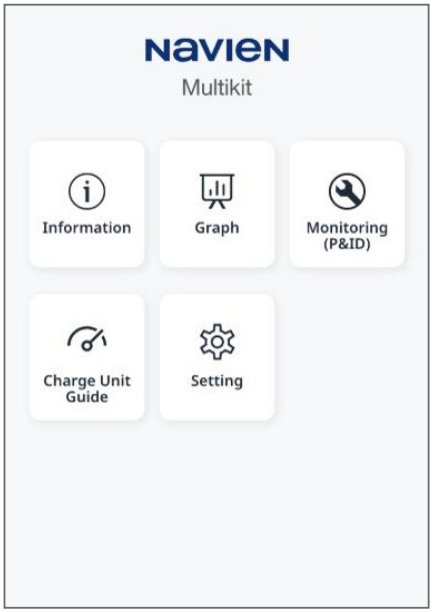
Multikit App Functions and Diagnostic Tools	
NAZ series HP	NAE series A/C
• Status values • Error history • Charge unit guide • Update to latest firmware	• Status values • Error history • Charge unit mode • Update to latest firmware • Smart diagnosis and report issuance

For more information about the Multikit app, check the manual inside the app.

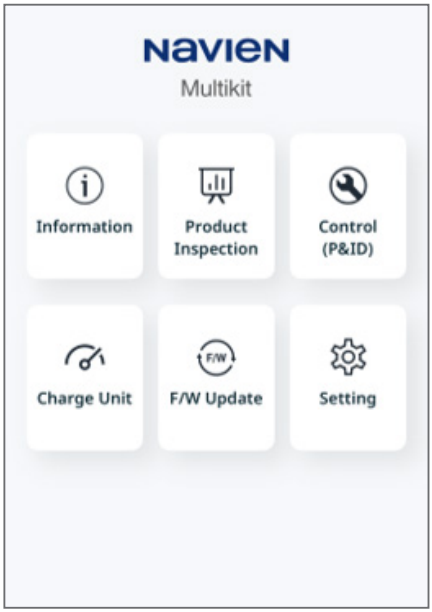
Connecting the IoT Module with the Multikit App

1. Launch the Multikit App.
2. Select the unit model to connect from the ‘Select a Model’ screen.
3. Press the button on the module once briefly to enter Multikit Pairing Mode. The Bluetooth LED will start blinking blue when pairing mode is activated.
4. Upon successful Bluetooth connection, the IoT module automatically enters Multikit Operation Mode.

After the connection has been successfully made, the connected model information can be found in the Information Tab. Detailed app screen images and menu items are provided in the app manual.



[Heatpump_Main page]



[Hydro A/C_Main page]

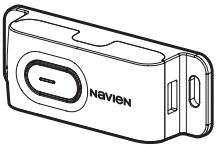
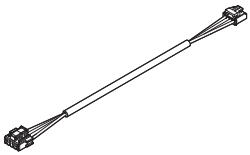
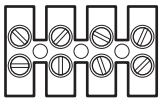
Troubleshooting

Items	Situation	Display LED	Solution
Module	The IoT module is not operating.	-	• Check the IoT module connector. If the connector is not connected properly, reconnect it. • If the issue persists after repeated attempts, replace the IoT module.
	The IoT module is in Abnormal Mode.	Both LEDs solid red	• Disconnect and reconnect the IoT module connector to reapply power. • If the issue persists after repeated attempts, replace the IoT module. – Optional: Press and hold the button until both LEDs turn off to reset the error.
Module, App (Multikit)	The IoT module and app are not connected properly.	-	• Restart Multikit Pairing Mode on the IoT module. • If the issue persists after repeated attempts, replace the IoT module.

Items	Situation	Display LED	Solution
Module, Unit, App (Multikit)	• When in Multikit Operation Mode, the IoT module cannot communicate with the unit. • Unit data is not displayed in the Multikit App.	Both LEDs blinking red	• If communication is restored, the error will reset automatically. • Check the IoT module connector. If the connector is not connected properly, reconnect it. • Check for cable damage. If the cable is damaged, replace it.

For Installer (Installing the IoT Module)

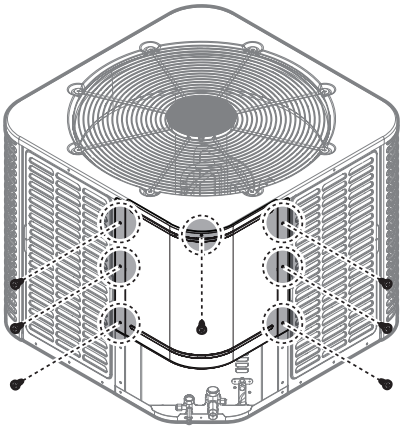
Included Items

			
IoT Module	4-Pin Cable	Screws	4-Pin Terminal Block (for extension install)

Installing on the NAZ Series HP

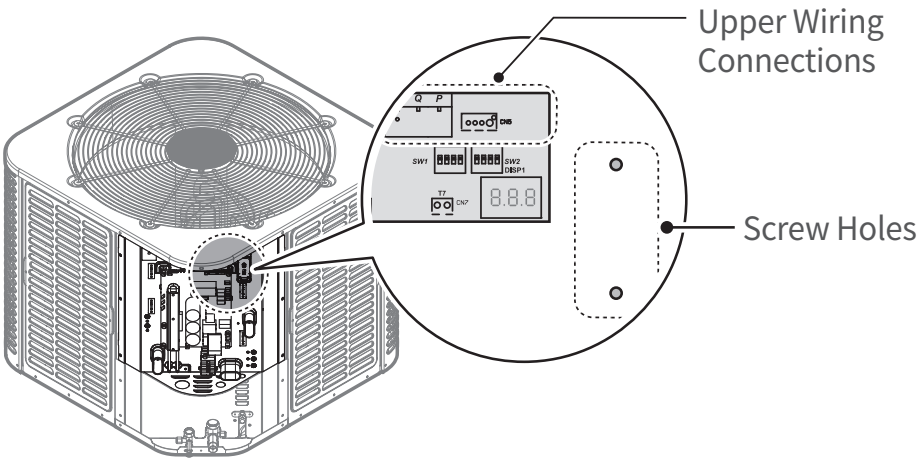
1 Disconnect power to the unit.

2 Remove the electrical access cover from the heat pump.

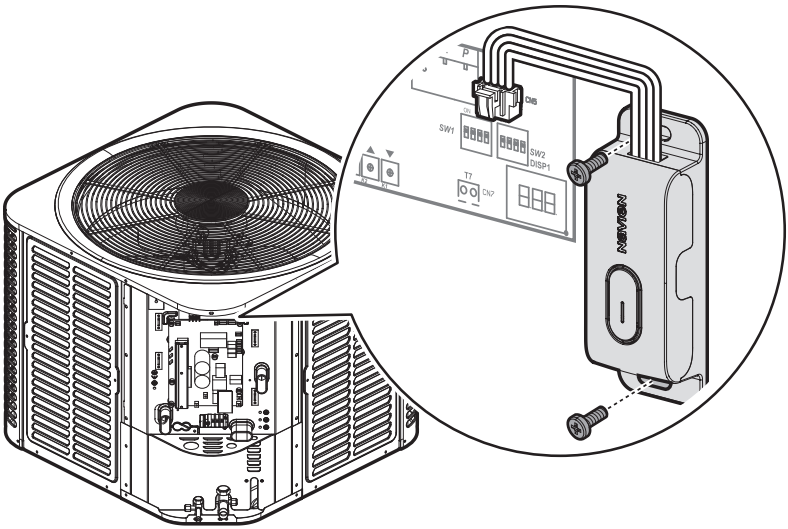


3 Locate the upper wiring connections on the heat pump PCB.

4 Locate the upper and lower screw holes next to the PCB.



5 Screw the IoT module into two provided mounting holes as shown below using the provided screws.



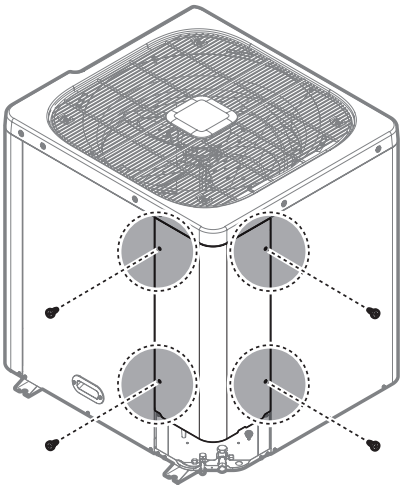
6 Connect the 4-Pin cable's connector attached to the IoT module to the CN5 port on the heat pump control board.

7 Place the electrical access cover back on the heat pump to enclose the PCB and IoT module.

Installing on the NAE Series A/C

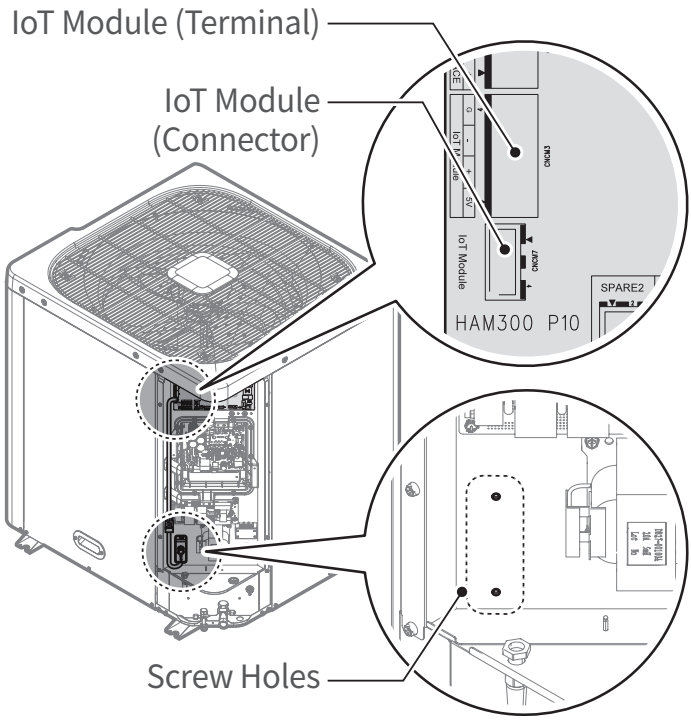
1 Disconnect power to the unit.

2 Remove the electrical access cover from the Hydro A/C.

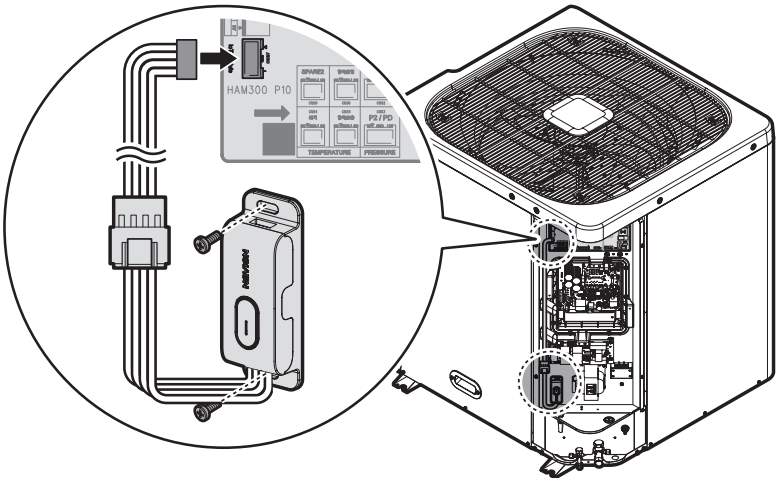


3 Locate the wiring connection on the left side of the air conditioner PCB.

4 Locate the screw holes at the bottom of the PCB on both sides.



5 Screw the IoT module into two provided mounting holes as shown below.



6 Connect the 4-Pin cable's connector attached to the IoT module to the extension wires connected to the CNCM7 port on the air conditioner control board.

7 Place the electrical access cover back on the air conditioner to enclose the PCB and IoT module.

Installing the IoT Module with Extension Wires

- To use the NaviLink app, the IoT module must be installed in a location with a stable Wi-Fi connection.
- Extension wires may be required if the HVAC unit is installed where Wi-Fi reception is weak.
- The IoT module is not waterproof. When using extension wires, it must be installed indoors in a location where wireless signals are strong.
- If the IoT module is installed indoors, the installer may need access to the installation location during service.

1 Obtain two twisted pairs (4 wires) of 24 AWG extension wire for communication cable extension.

The cable can be extended up to 50 m using 24 AWG wires.

2 Remove the electrical access cover from the Hydro A/C.

3 Remove the screws from the IoT module installed in the unit and disconnect its cable connector from PCB CNCM7.

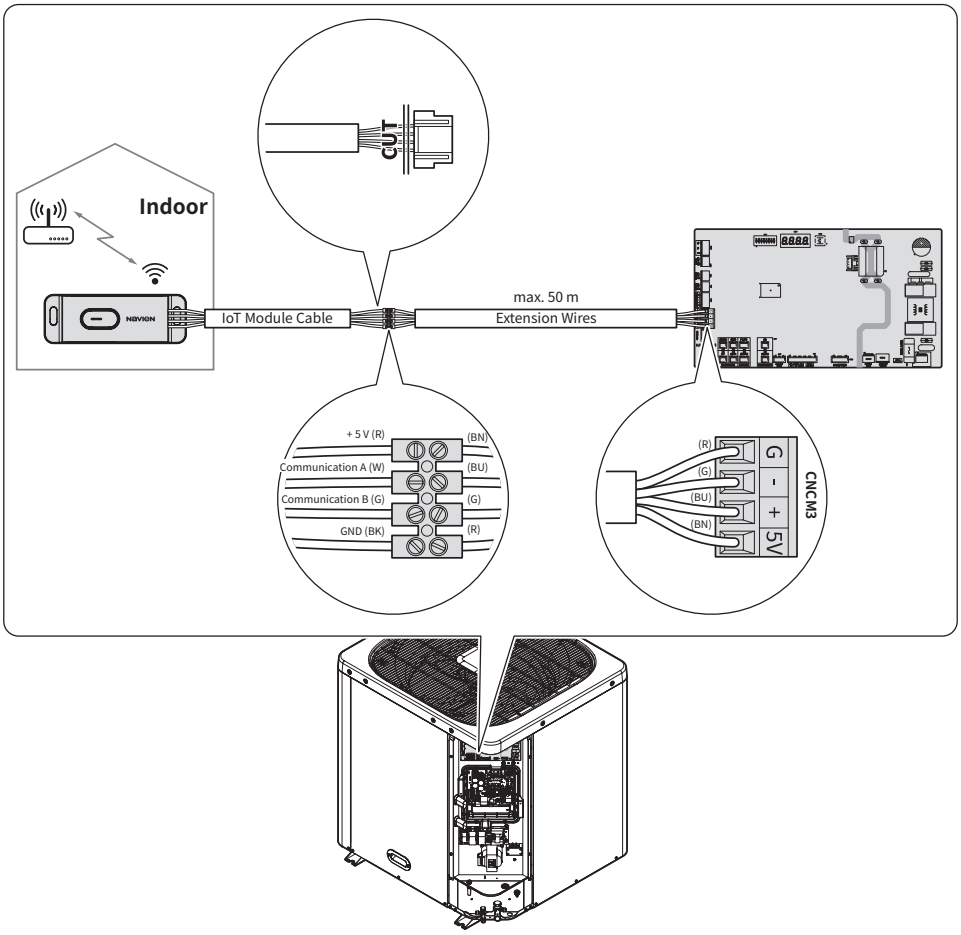
4 Connect the extension wires to the CNCM3 terminal block on the air conditioner control board.

5 Attach the extension wires to the 4-pin terminal block included in the product accessory box.

6 Cut the end of the IoT module cable, strip the insulation, and connect it to the 4-pin terminal block.

7 Connect the IoT module to the cable connector.

8 Install the IoT module indoors at an appropriate location and securely fasten it using screws.



Specifications

The following table lists the specifications for the IoT module.

Items	Description
Model	NAC-10SM
App	Navien NaviLink/Multikit App
Connection	RS-485, Bluetooth, Wi-Fi
Operation Ambient Temperature	–4 – 104°F
Wi-Fi	• 2.4/5GHz, IEEE802.11b/g/n(2.4G), 802.11a/n(5G) • Frequency Range - 2.4 GHz: 2,400–2,483 MHz - 5 GHz: 5,180–5,825 MHz • Modulation type - 802.11b: DSSS/CCK - 802.11g/a/n: OFDM
Bluetooth	• Bluetooth V 5.0 • Frequency Range: 2,402–2,480 MHz • Channel: 40 channels

Important safety information

The following safety symbols are used in this manual. Carefully read and follow all safety instructions in this manual to avoid unsafe operating conditions, fire, explosion, property damage, or personal injury.

Safety messages used in this manual

The following safety symbols are used in this manual.

WARNING

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

CAUTION

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

Used for emphasis or for providing useful information not directly connected with the surrounding text but of importance to the user.

⚠ WARNING

- **Anyone that is not a qualified professional should not install the product.**
  This may result in a malfunction, electric shock, fire, or injury.
- **Do not apply excessive force to the product or disassemble or modify the product.**
  This may result in a malfunction, electric shock, or fire.
- **Do not allow liquids to enter the product.**
  This may result in fire or electric shock.
- **Keep all flammable products far away from the device.**
- **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.

⚠ CAUTION

- **Do not allow foreign substances to enter the system.**
  This may cause malfunction or fire due to short circuit of parts.
- **If the IoT module cable is damaged, replace the cable. Do not attempt to repair.**
  This may result in a malfunction, electric shock, fire, or injury.
- **When extending the cable, use the provided terminal block.**
  Improper extension may result in fire or electric shock. The cable extension length must not exceed 50 m.
- **When cleaning the product, use a soft cloth.**
  Do not use volatile chemicals such as benzene or paint thinner, as they can damage the product.

If your device requires service, contact the original installing contractor, or contact Technical Support at 1-800-519-8794 or on the website: www.navieninc.com who can help you locate the nearest recognized servicer of Navien equipment.

TEL : 1-800-519-8794
FAX : 1-949-420-0430
Website : www.navieninc.com
Add: 20 Goodyear, Irvine, CA 92618

FCC and IC STATEMENT

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 distance 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 Part 15 Related Statement - Keep for Liability Purposes

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.

(2) This device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

⚠ WARNING

The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

FCC RF Radiation Exposure Statement

This equipment complies with FCC RF Radiation exposure limits set forth for an uncontrolled environment. This device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter.

"To comply with FCC FR exposure compliance requirements, this grant is applicable to only Mobile Configurations. The antennas used for this transmitter must be installed to provide a separation distance of at least 8 inches (20 cm) from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter."

FCC IDENTIFIER: P53-EMC3290

Canadian Compliance Statement

This device complies with industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

(1) This device may not cause interference.

(2) This device must accept any interference, including interference that may cause undesired operation of the device.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent is tropically radiated power (e.i.r.p) is not more than that permitted for successful communications.

Industry Canada Statement

Complies with the Canadian ICES-003 Class B specifications.

This device complies with RSS 210 of Industry Canada. This Class B device meets all the requirements of the Canadian interference-causing equipment regulations.

This radio transmitter (IC: 23507-EMC3290) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

For additional inquiries, please contact Navien by calling 1-800-519-8794.

260202002

- **TEL. 1-800-519-8794**
- **FAX. 1-949-420-0430**
- **Website:** www.navieninc.com
- **Navien, Inc.:** 20 Goodyear, Irvine, CA 92618

This product can be used in the following countries: USA, Canada

NAVIEN