# Building 36 ADC-T40K-HQ Smart Thermostat HQ Installation Guide

**Contents**

# Building

**Building 36 ADC-T40K-HQ Smart Thermostat HQ**

**Specifications**

- Model: ADC-T40K-HQ
- Included in the box: Trim plate, Thermostat, Display, Drywall anchors x2, Wall screws x2

## Product Information

### Installation Precautions

Before installing the Smart Thermostat HQ, please ensure you follow these precautions:

- For any questions or concerns, visit answers.alarm.com or contact your service provider.

### Recommended Tools for Installation

Make sure you have the following tools ready for installation:

- Drill
- 3/16 (#13) drill bit
- Screwdriver

### User Interface Overview

The Smart Thermostat HQ consists of the following components:

- Thermostat
- Status LED
- Button

- Display
- Settings menu

The display shows the current setpoint, indoor temperature, and current mode. You can change the setpoint and mode by tapping on the respective icons.

**Installation Considerations**

Before installing the Smart Thermostat HQ, consider the following:

- If you are replacing an existing thermostat, you can mount the new thermostat in its place if there is a C-Wire present. If there is no C-Wire, you will need the Power Plate accessory kit for Display Sync installation. Consult an HVAC professional for correct thermostat location in new construction installations.

**General Guidelines**

Follow these steps to prepare for installation:

1. Test the heating and/or cooling system with the existing thermostat. **CAUTION:** Do not test the system by shorting electric terminals and do not test the cooling system if it is cold outside.
2. Turn off power to the HVAC unit at the circuit breaker.
   **CAUTION:** Do not remove the existing thermostat until power has been turned off at the circuit breaker.
3. Take a picture of the wires while they are connected to the existing thermostat terminals. It is important to correctly identify the existing wires.
4. Remove the existing thermostat.

**Thermostat Installation**

Follow these steps to install the thermostat:

1. If needed, install the trim plate to cover holes or marks on the wall.
2. Level and mount the thermostat to the wall using the supplied hardware. If necessary, drill holes with a 3/16 (#13) drill bit and insert the drywall anchors.
3. Insert the wires into their designated wire terminals according to the table below:

| Terminal | Description |
|---|---|
| R.C. | Cooling power |
| HR* | Heat/aux stage 2 |
| W2 | Heat/aux stage 1 |
| W | Configurable: W3, humidify, dehumidify, wind |
| VS* | Configurable: W3, humidify, dehumidify, wind |
| Z1 | Cool/pump stage 1 |
| Z2 | Cool/pump stage 2 |
| Y | Fan |
| O | Heat pump reversing valve (Energized in COOL mode) |
| B | Heat pump reversing valve (Energized in HEAT mode) |

*Required wire

4. After all wires are inserted, restore power to the HVAC system. The Status LED will indicate if the thermostat has power. If the Status LED is off, the thermostat does not have 24 VAC power. Make sure there is 24 VAC between RH and C. Refer to the troubleshooting section for more information.

**Display Installation**

To ease the setup process, create an account for the Smart Thermostat HQ using the serial number found on the back of the display or the box before starting.

## FAQ (Frequently Asked Questions)

**Q: Where can I find additional settings?**

A: You can find all additional settings in the Settings menu on the display.

**Q: How do I change the setpoint?**

A: To change the setpoint, tap on the up or down arrow on the display.

**Q: How do I change the mode?**

A: To change the mode, tap on the current mode icon on the display.

**Q: What should I do if the thermostat does not have power?**

A: If the Status LED is off, make sure there is 24 VAC between RH and C. Refer to the troubleshooting section for more information.

## Installation precautions

- Before installing the Smart Thermostat HQ turn off power to the HVAC system and leave power off until installation is complete.
- Do not short the electric terminals at the control board on the heating or cooling system.
- Do not test the cooling system if it is cold outside.
- Follow all local codes and ordinances for wiring the HVAC system.
- It is recommended to use 18 AWG thermostat wire with the Smart Thermostat HQ.
- The Smart Thermostat HQ should only be powered by
- listed Class 2 power supply at 24 VAC.
- A current higher than 1 amp to each thermostat terminal may cause damage to the thermostat.
- The Smart Thermostat HQ can only be installed on 24 VAC systems. Do NOT install on a high voltage system. Contact a local HVAC professional for help.

**Questions?**
Visit **answers.alarm.com** or contact your service provider.

## In the box

1. Trim plate
2. Thermostat
3. Display
4. Drywall anchors x2
5. Wall screws x2
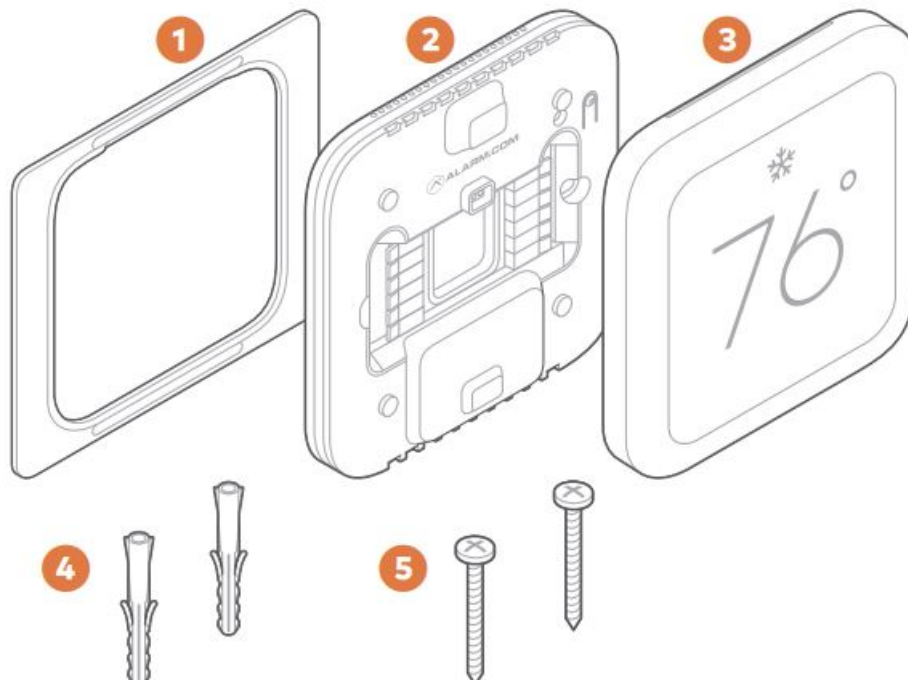


## Recommended tools for installation

1. Phillips screwdriver
2. Pencil to mark mounting location
3. Power drill – 3/16″ (#13) drill bit
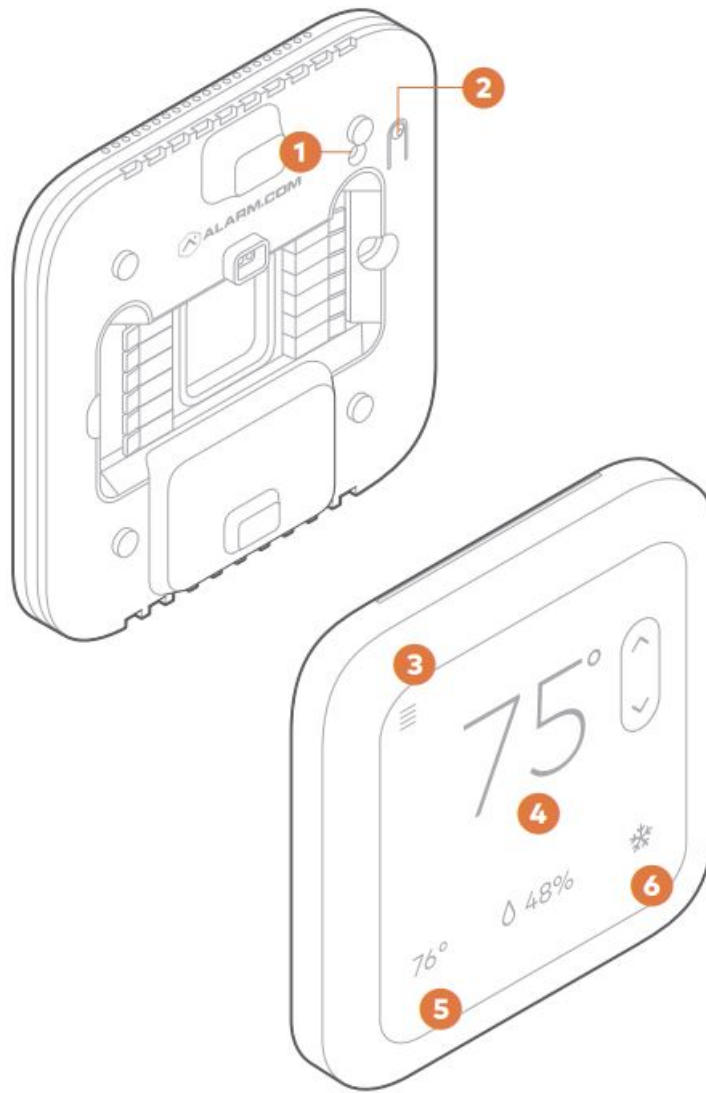4. Needle nose pliers

5. Camera



## User interface overview

**Thermostat**

1. Status LED
2. Button
3. splay
4. Settings menu

   Find all additional settings here.
5. Current setpoint

   a) To change the setpoint, tap on the up or down arrow.
6. Indoor temperature
7. Current mode

   To change the mode, tap on the current mode icon.

## Installation considerations

- The Smart Thermostat HQ requires 24 VAC power between RH and C wires.
- It is suggested to make an account for the Smart Thermostat HQ prior to starting setup.

**Location**

1. If replacing an existing thermostat the new Smart Thermostat HQ can be mounted in its place if there is a C-Wire present. If no C-Wire is present, Display Sync may be used for installation, which requires the Power Plate accessory kit.
2. Refer to an HVAC professional for correct thermostat location in new construction installations.

**General guidelines**

- Mount on an interior wall, approximately 5 ft. (1.5 m) above the floor in a frequently used room with good airflow.
- Do not install in areas near warm appliances such as televisions, lamps, or dryers; in areas with direct sunlight, near an AC unit or hot water pipes, near a stove, above or below heat sources and air vents, or in drafts from windows or exterior doors.
- Be aware of what is on the other side of the wall where the thermostat is installed. Do not install on an exterior

wall or in-front of unconditioned rooms.

- Avoid damp areas which can affect the humidity reading and can lead to corrosion and shorten the lifespan of the device.
- Avoid areas behind open doors, corners, and alcoves.
- Wait until construction and painting are finished before installing.

**Preparation Steps**

1. Test the heating and/or cooling system with the existing thermostat.
   - a) CAUTION: Do not test the system by shorting electric terminals.
   - b) CAUTION: Do not test the cooling system if it is cold outside.
2. Turn off power to the HVAC unit at the circuit breaker.
   - CAUTION: Do not remove the existing thermostat until power has been turned off at the circuit breaker.
3. Take a picture of the wires while they are connected to the existing thermostat terminals.
   
   IMPORTANT: Make sure the existing wires are correctly identified.
4. Remove the existing thermostat.
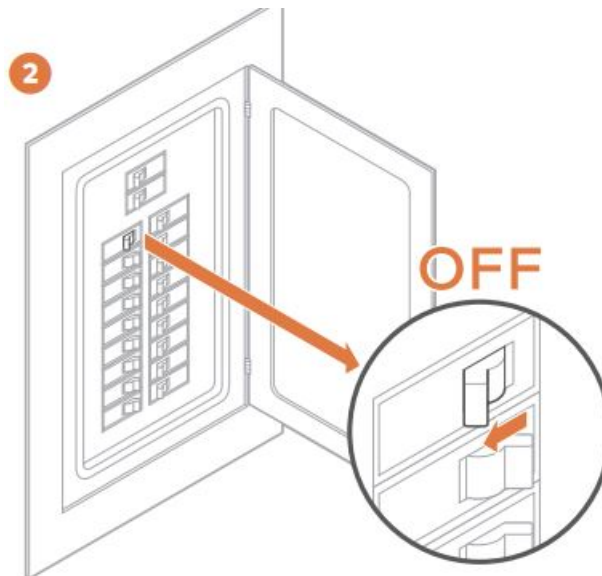


**Thermostat installation**

1. Install the trim plate if needed to cover holes/marks on the wall.
2. Level and mount the Thermostat to the wall with the supplied hardware
   - If necessary drill holes with a 3/16" (#13) drill bit and tap in the drywall anchors.
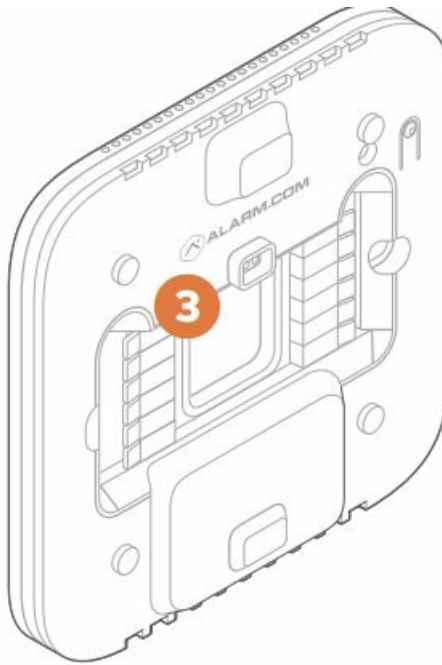
3. Insert the wires into their designated wire terminals. See the following table for details.
    1. a) IMPORTANT: RH is a required wire to power the thermostat. If there is only a single R wire, insert it into RH.
    2. b) CAUTION: Do not insert more than one wire into a single wire terminal.
    3. Do not jump RH and RC.

| Terminal | Description |
| --- | --- |
| RC | Cooling power |
| RH* | Heating power – Required to power on |
| W2 | Heat/aux stage 2 |
| W | Heat/aux stage 1 |
| C* | Common wire from transformer for RH – Required to power on |
| Z1 | Configurable: W3, humidifier, dehumidifier, vent |
| Z2 | Configurable: W3, humidifier, dehumidifier, vent |
| Y | Cool/pump stage 1 |
| Y2 | Cool/pump stage 2 |
| G | Fan |
| O | Heat pump reversing valve (Energized in COOL mode) |
| B | Heat pump reversing valve (Energized in HEAT mode) |

Required wire

4. After all wires are inserted restore power to the HVAC system.
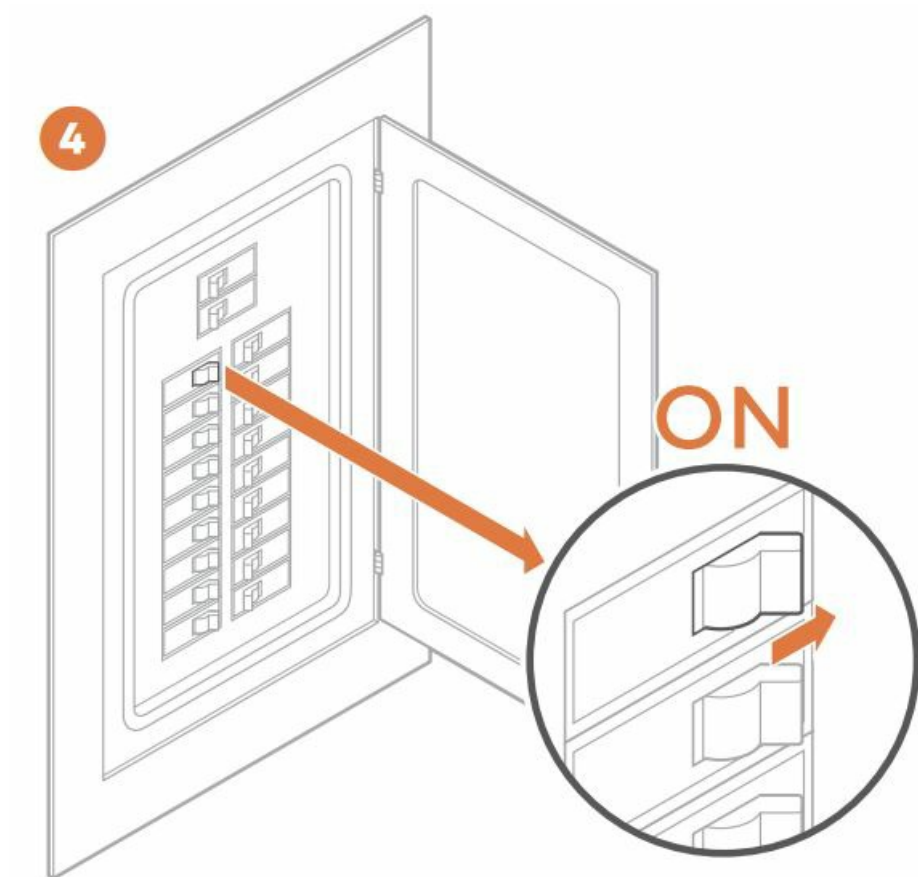


5. The Status LED will indicate the Thermostat has power.

   a) If the Status LED is off the Thermostat does not have 24 VAC power. Make sure there is 24 VAC between RH and C. See additional troubleshooting below for more information.

## Display installation

**Note:** For ease of setup make an account for the Smart Thermostat HQ using the serial number found on the back of the display or the box prior to starting.

1. Connect the Display to the Thermostat.
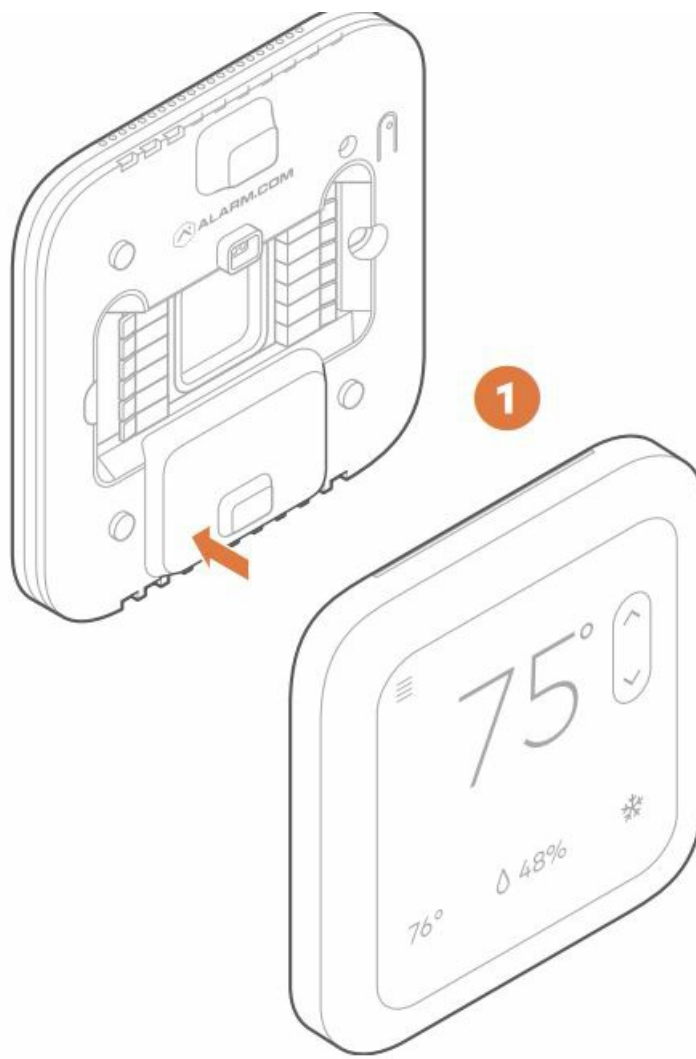
2. The Display will power on after being mounted.

   This takes approximately 30 seconds.

3. Once powered on the Smart Thermostat HQ will guide you on-screen through setup.

4. Setup is complete once the home screen of the thermostat is shown.

## Test the HVAC System

**CAUTION:** Do not test the cool mode during cold weather. Wait for mild weather to fully test the system.

- If the Smart Thermostat HQ will control a heating system, test the heating system by changing the mode to HEAT and adjusting the setpoint higher than the current room temperature. Verify the heating system turns on and that the room is starting to warm up.
- If the Smart Thermostat HQ will control a cooling system, test the cooling system by changing the mode to COOL and adjusting the setpoint lower than the current room temperature. Verify the cooling system turns on and that the room is starting to cool down.

## Additional configuration

- Although the default settings will be appropriate in most cases, several thermostat configuration settings can be changed via the Display. Open the menu and proceed to the relevant setting under Installer Settings.
- CAUTION: Be careful when changing advanced configuration settings. These configuration settings should

only be changed by those familiar with heating and cooling system parameters. Contact a local HVAC professional for help.

## Add devices to the Smart Thermostat HQ

- After installation of the Smart Thermostat HQ is completed and it is connected to an account proceed to unbox all devices which will be connected to the Smart Thermostat HQ.
- Z-Wave devices may be added to the Smart Thermostat HQ using one of the two following methods.

1. Using MobileTech scan the QR code on the device and power up the device. The device will automatically add to the Smart Thermostat HQ.
2. If the device does not have a QR code or you prefer to manually add the device:
    1. Find the "Add Device" workflow in the Smart Home menu on the Smart Thermostat HQ and follow the on screen prompts.
    2. Once the Smart Thermostat HQ is ready to add a device trigger

       Z- Wave pairing on the device and follow the onscreen prompts to confirm it is added.

       Confirm all desired devices have been added to the Smart Thermostat HQ by checking the Device List in the Smart Home menu on the screen of the Smart Thermostat HQ.

## Troubleshooting

| Problem | Cause | Tip |
|---|---|---|
| During installation the Status LED on the Thermostat does not turn on. | The Thermostat does not have 24 VAC. | • RH and C wires are required. If there is only a single R wire at the wall use RH.<br><br>• RC will not supply power to the thermostat.<br><br>• Verify RH and C are securely inserted into the appropriate terminal.<br><br>• Verify the HVAC system has power.<br><br>• Contact a local HVAC professional for help. |

| | | |
|---|---|---|
| The Display does not turn on when connected to the Thermostat. | The unit does not have 24 VAC power. | • See the previous troubleshooting section.<br><br>• RH and C are required wiresto power on the unit.<br><br>• Contact a local HVAC professional for help. |
| Heat pump is "cooling when it should be heating" or "heating when it should be cooling". | Some heat pumps use the O terminal while others use the B terminal for their reversing valve. | • Try physically swapping the O or B wire to the opposite terminal. Turn off power to the system before swapping the wire.<br><br>• If this does not fix the problem, contact a local HVAC professional for help. |
| Heating or Cooling does not turn on when the setpoint is above or below the room temperature. | To prevent damaging the compressor, the Smart Thermostat HQ inserts a several minute period after turning off the compressor before turning it on again. | • Change the setpoint to 2 degrees beyond the current temperature and wait 5 minutes, at which point the system should turn on.<br><br>• The screen will show "compressor delay" if the thermostat is protecting the compressor. Heating/ cooling will start after the delay period.<br><br>• If this does not fix the problem, contact a local HVAC professional for help. |
| The Smart Thermostat HQ indicates an account was not found. | An account is required prior to setting up the Smart Thermostat HQ. | • Create an account via MobileTech or the Partner Portal and press Retry on the screen.<br><br>• In MobileTech scan the QR code displayed on-screen for quick serial number entry. |

| | | |
|---|---|---|
| The Smart Thermostat HQ indicates it cannot connect. | Cell signal strength may be poor where the Smart Thermostat HQ is located. | • Add a Wi-Fi connection when prompted during setup. |
| How to delete Z-Wave devices from the Smart Thermostat HQ. | A device is behaving poorly and needs to be removed from the account. | • Put the Smart Thermostat HQ into delete mode by finding the appropriate option under the Smart Home section of the menu.<br><br>• Trigger the device to delete it from the account. |
| How to reset the Smart Thermostat HQ to factory settings. | | • Find the option to Factory Reset under Installer Settings in the menu.<br><br>• This action will restart setup of the Smart Thermostat HQ. |
| How to Reboot the Smart Thermostat HQ. | General troubleshooting. | • Select the Reboot Device option in the Installer Settings to fully Reboot the device. This will take ~1 minute. |
| The device does not seem to be communicating with the account. | | • Check the connection status under the Smart Home section of the menu. Run a Comms test to attempt to re-establish connection if it is disconnected. If necessary add a Wifi connection to enhance connection in areas with poor cell signal. |

## Regulatory information

### FCC

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 of the device.

**NOTE:** Changes and Modifications not expressly approved by Building 36 can void your authority to operate this equipment under Federal Communications Commission's rules. 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 instruction, may cause harmful interference to radio communication. 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.
- ncrease 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.

**IC Notice**
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, and
2. This device must accept any interference received, including interference that may cause undesired operation of the device.

**Radiation Exposure Statement**
The device has been found to be compliant to the requirements set forth in CFR 47 Sections 2.1091 and Industry Canada RSS-102 for an uncontrolled environment. The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

## Documents / Resources

# References

- [**User Manual**](#)