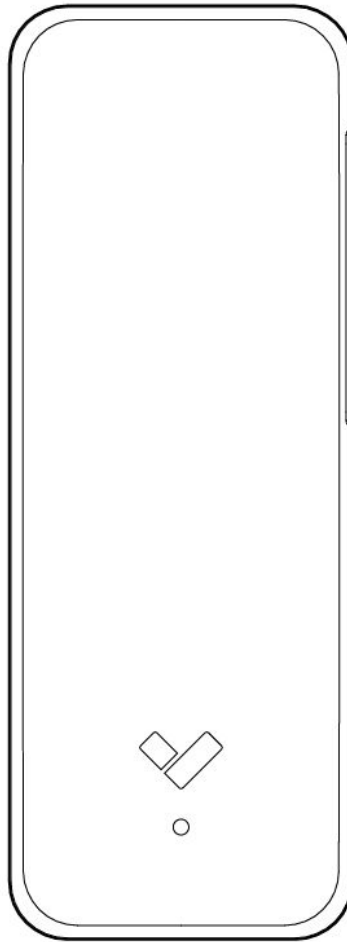Install Guide

B**X21** Wireless Relay

Document

Document Details
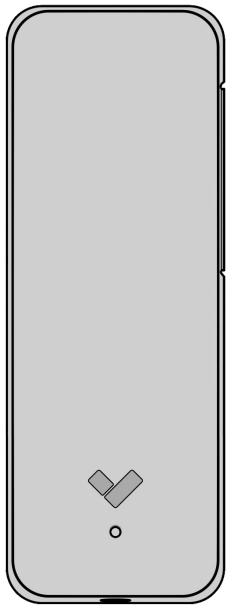
V1.0 (20221104)

(V1.0 first published 20221104)

Firmware

Firmware version can be verified on
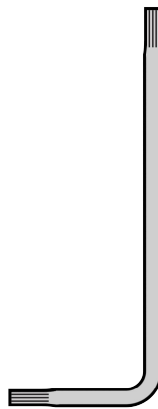Verkada Command command.verkada.com.
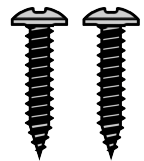
Introduction

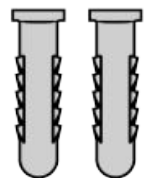# What's in the box

BX21 Wireless Relay

1x VHB Adhesive Mounting Strip

1x T10 Torx Wrench

2x Wall Screws
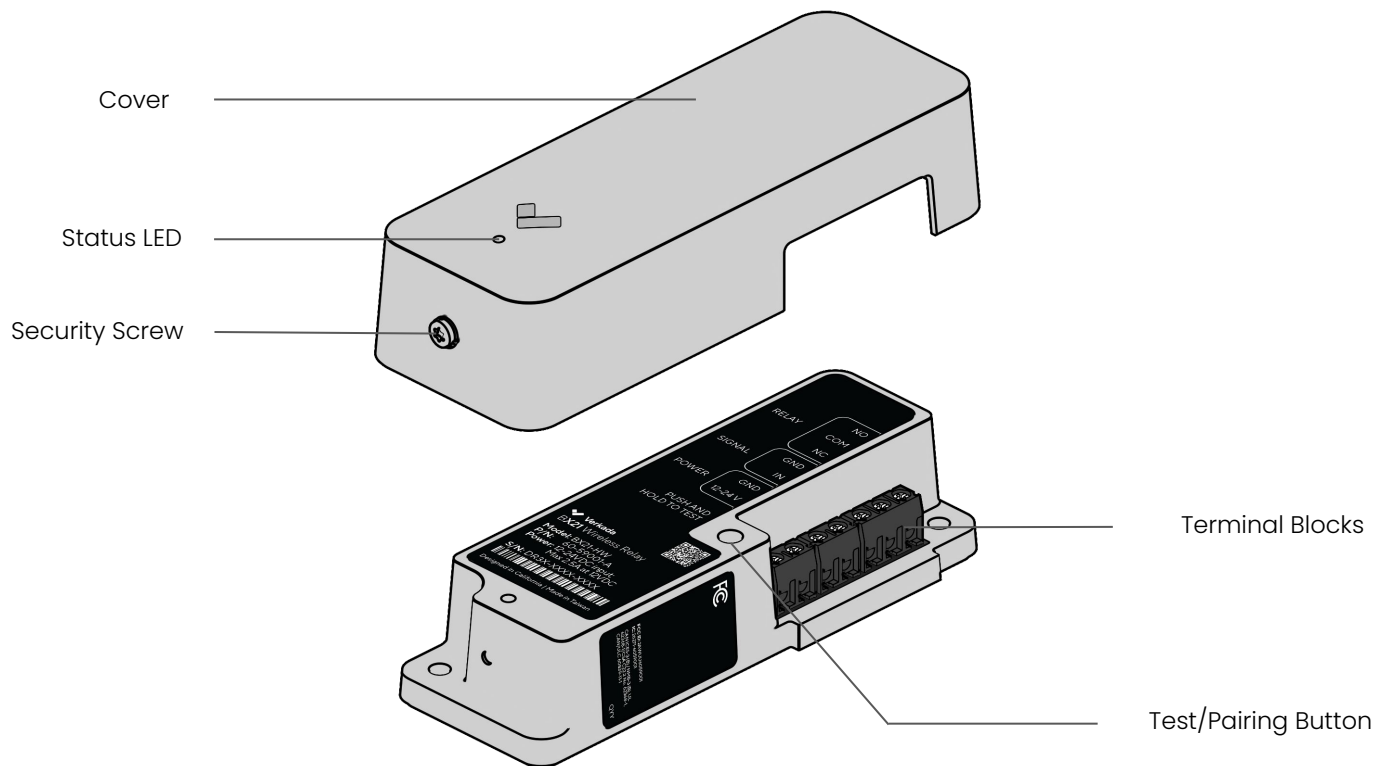
2x Wall Anchors

What you'll need

- BH61 Wireless Alarm Hub
- 12-24VDC power source:
    - 12VDC at 2.5A max
    - 24VDC at 1.25A max
- A smartphone or laptop
- A #2 Phillips driver (screwdriver or power drill)
- ⅛ inch (3mm) drill bit
- ¼ inch (6.35mm) drill bit, if using wall anchors

Relay Overview 1/2

Cover

Status LED

Security Screw

Terminal Blocks

Test/Pairing Button

Status LED Behavior

Flashing Orange
Relay is updating firmware

Flashing Blue
Relay is powered, but cannot reach the hub

Solid Blue
Relay is running, connected to the hub and receiving / transmitting events

Connect

Please note: Add your BH61 Wireless Alarm Hub to Command before setting up your Wireless Relay.

To add your Relay, please proceed to: verkada.com/start

Relay Overview 2/2

Interface/Connectors

1. Relay Output (NO, COM, NC)

   - 12VDC operates at 2.5A Max
   - 24VDC operates at 1.25A Max

2. *(Optional)* Wired Signal Input (GND, IN)

3. Relay Power Input (GND, 12-24VDC)
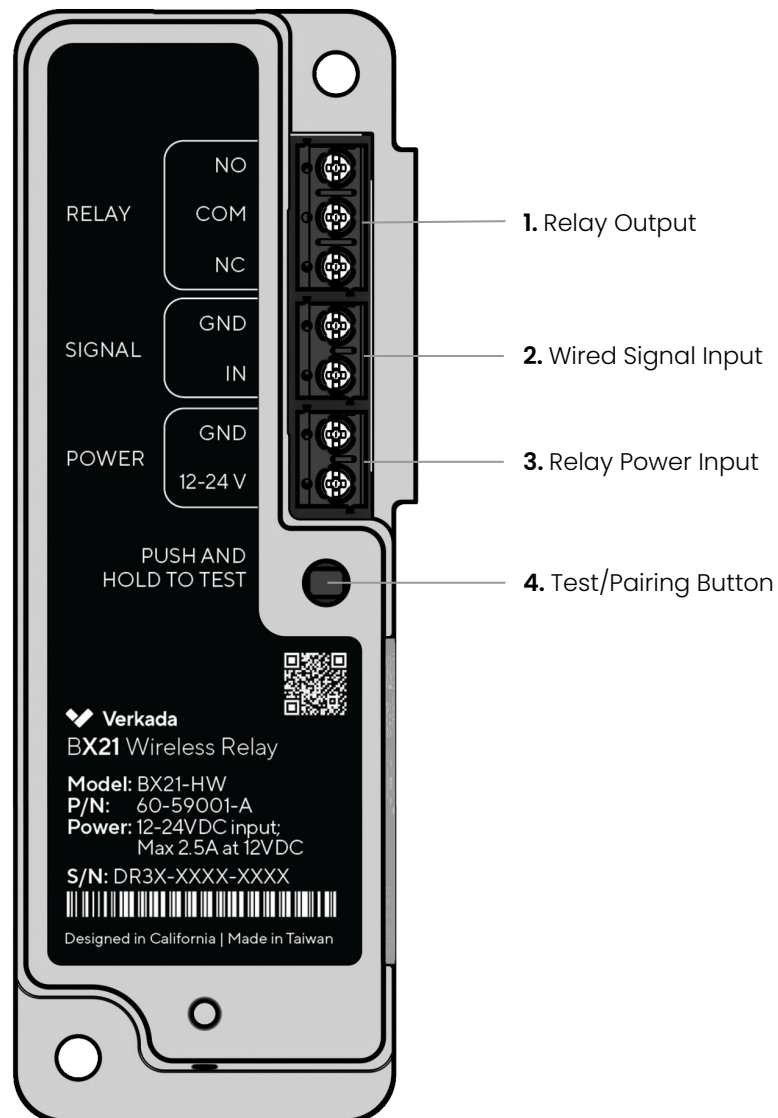
4. Test/Pairing Button

B**X21 Technical Specifications**

|	
Power Consumption	30W Maximum
DC Power Input	12-24VDC
Inputs	Wired Signal Input (Optional)
Relay Outputs	1 Wet Relay Relay Output Voltage ≡ Relay Input Voltage, e.g. • 12VDC Input, 12VDC Output 2.5A max • 24VDC Input, 24VDC Output 1.25A max
Wireless Communication	Proprietary 915 MHz (US, Canada) / 868 MHz (UK, Europe) / 916.8MHz (ANZ)
Wireless Range	1,000 ft (line-of-sight); 200 ft (typical environment)
Dimensions	44.00mm(W) x 119.60mm (L) x 30.30mm (H)
Weight	226g / 8oz
Operating Temperature	0°C - 50°C, 0- 90% Humidity (non condensing)
Relay Durability	100,000 Cycles at Max Load
Compliance	FCC, IC
Connectivity	Connects to Verkada's Wireless Alarm Hub (BH61)
Included Accessories	1x T10 Torx Wrench
Mounting Options	1x VHB Adhesive Strip, 2x Wall Anchors & Screws

Mounting 1/3

Using the provided T10 Torx Wrench, loosen the security screw at the base of the Relay.
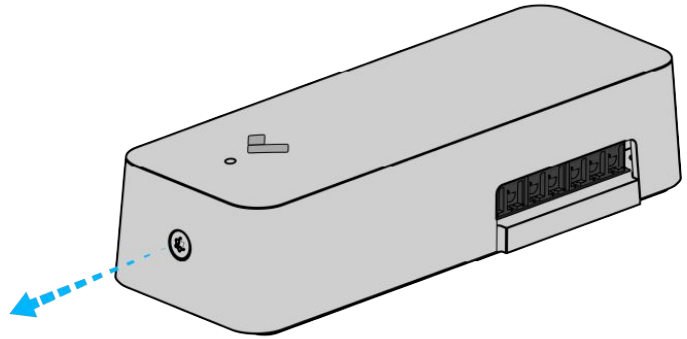
With the security screw fully loosened, lift the cover upwards to remove it entirely.

Verkada Inc. 405 E 4th Ave, San Mateo, CA 94401
sales@verkada.com
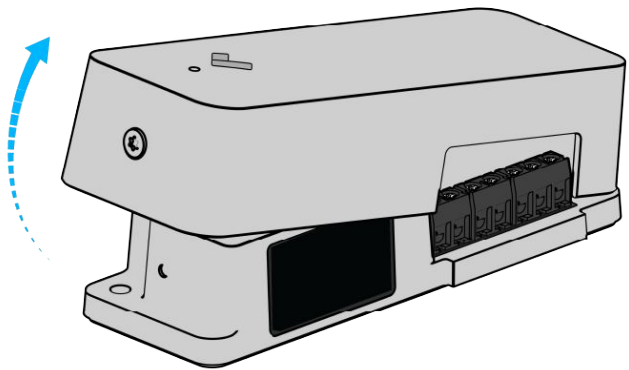
Mounting 2/3

Wall Mounting:

At the installation location, mark the mounting surface through the perforations in the top-right and bottom-left of the Relay, as shown.
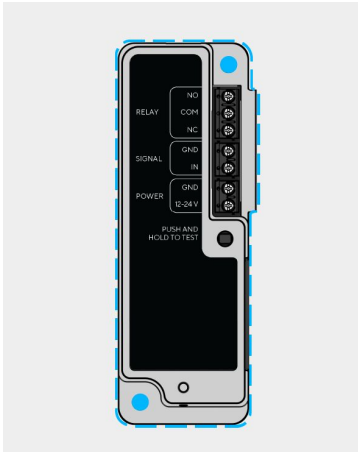
For a solid material like wood or metal, drill ⅛ inch pilot holes in the mounting surface at the marks.

For drywall, drill ¼ inch holes. Insert plastic Wall Anchors into the holes.

Secure the Relay to the surface using the provided Wall Screws.

VHB Mounting:

Peel the protective film from one side of the adhesive mounting strip. Adhere to the back side of the Relay.

Peel the remaining protective film and affix the Relay to the mounting surface.
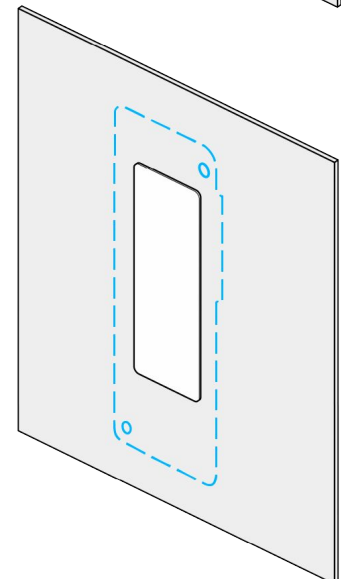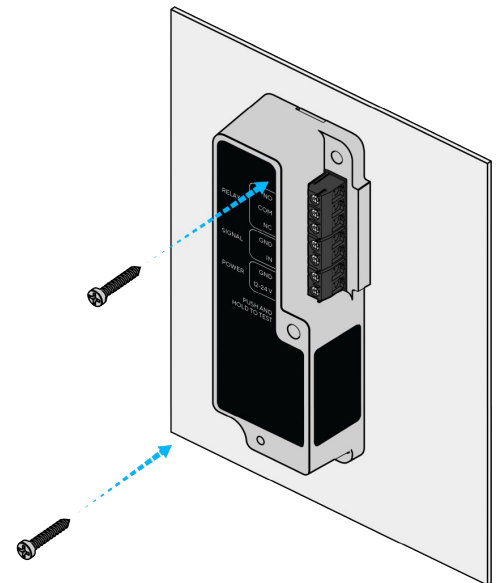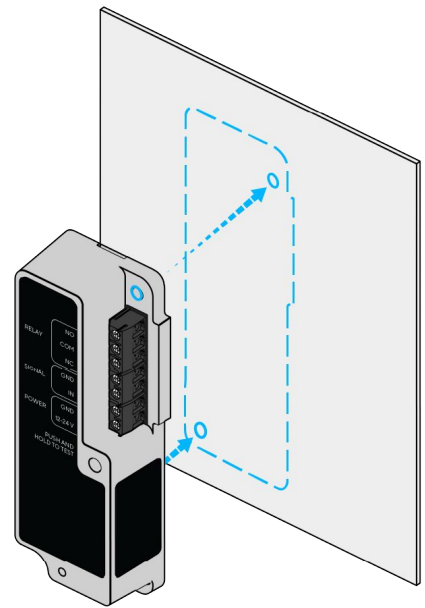
Installation

Mounting 3/3

Wire the Relay.

See Pages 10-13 for **Recommended Wiring** Instructions.
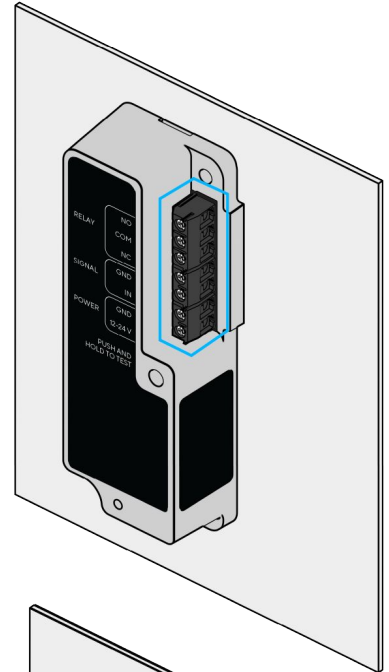
Once wiring has been completed, replace the device's cover.
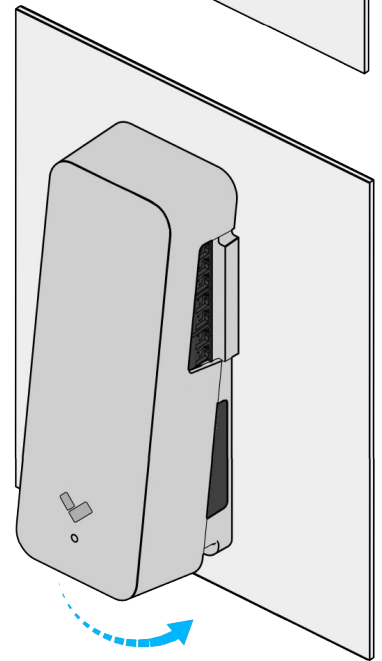
Tighten the security screw.
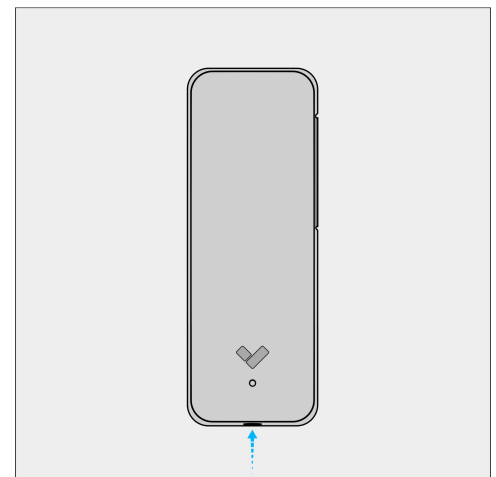
Recommended Wiring (1/4)

Verkada's BX21 Wireless Relay is capable of supporting output devices e.g. sirens, strobes, etc. that require 12-24V voltage and draw up to 2.5A for 12V or 1.25A for 24V (resistive).

Signal	AWG	Conductor	Shielded	Max Length
Power (22 Gauge)	22	Yes	Yes	600 ft
Power (18 Gauge)	18	Yes	Yes	1500 ft

Wiring methods shall be in accordance with National Electrical Code, ANSI/NFPA 70.

Shielded Wiring

With the BX21, you must use shielded wiring. Improper shielding may result in unintended product behavior.

The BX21 Wireless Relay sits in-line with DC-powered output devices which can be triggered wirelessly. The Relay can also transmit signals from a wired input.

The Relay enables output devices in a wet configuration, i.e. devices which do not draw power from external sources beyond the Relay itself.

According to the requirements of the output device, these should be wired to either the Normally Open (NO) or Normally Closed (NC) terminals in the terminal block denoted *Relay*.

The power source which supplies the Relay, and implicitly the output device, should be wired to the terminal block marked *Power*.

Installation

Recommended Wiring (2/4)

Wiring Steps:

1. Noting polarity, wire the output device to NO (Page 12) or NC (Page 13) and COM on the *Relay* terminal block.
2. *Optionally:* wire an additional input to the *Signal* terminal block e.g. a door sensor.
3. Noting polarity, wire a 12-24VDC power source to GND and COM on the *Power* terminal block.
4. Press and hold the *Test/Pairing* button to trigger the Relay (the button is recessed and is easily accessed using the provided Torx Wrench).

If wired correctly, the output device should exhibit its expected output behavior.

Upon output device failure, please confirm the device operates within power limitations and that the Relay is wired as per instructions.

The *Test/Pairing* button can also be pressed in the event that the Relay does not automatically pair with a BH61 Hub, however, this behaviour is not expected.

Do not hesitate to contact support: verkada.com/support
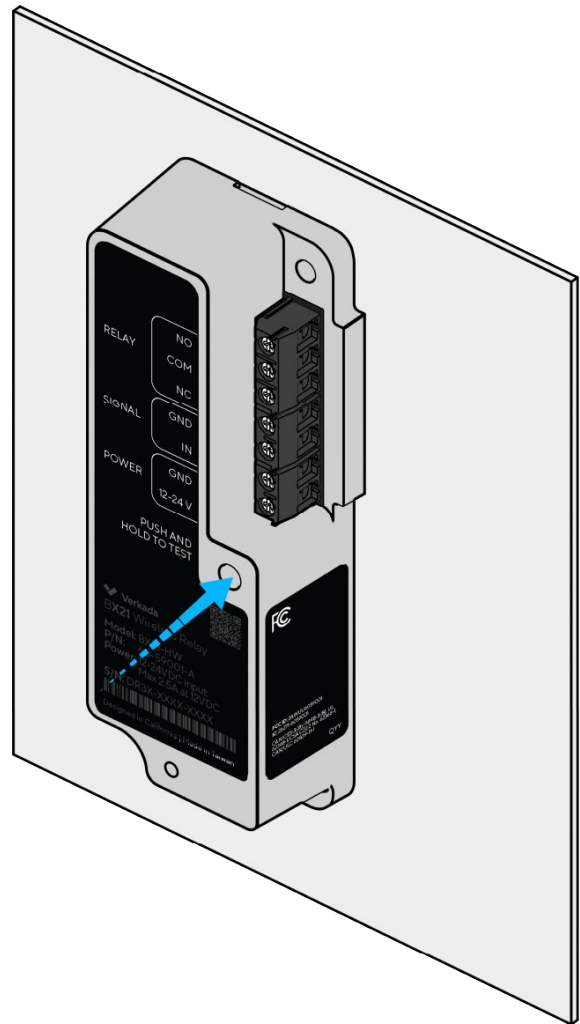
Recommended Wiring (3/4)

Normally Open (NO)

Normally Open (NO)

Relay

NO

COM

NC

Output Device
e.g. Strobe

+

−

Signal

GND

IN

Optional:
Wired Input
(Open/Short)

Power

GND

12-24 V

− Of 12-24V DC
Power Supply

+ Of 12-24V DC
Power Supply

RELAY

NO
COM
NC

SIGNAL

GND
IN

POWER

GND
12-24 V

PUSH AND
HOLD TO TEST

Verkada

B**X21** Wireless Relay

Model: BX21-HW
P/N: 60-59001-A
Power: 12-24VDC input;
        Max 2.5A at 12VDC

S/N: DR3X-XXXX-XXXX

Designed in California | Made in Taiwan

Recommended Wiring (4/4)

Normally Closed (NC)

Normally Closed (NC)

RELAY
NO
COM
NC

SIGNAL
GND
IN

POWER
GND
12-24 V

PUSH AND
HOLD TO TEST

❤️ **Verkada**
B**X21** Wireless Relay

Model: BX21-HW
P/N: 60-59001-A
Power: 12-24VDC input;
Max 2.5A at 12VDC

S/N: DR3X-XXXX-XXXX

Designed in California | Made in Taiwan

Relay
NO
COM
NC

Output Device
e.g. Strobe
−
+

Signal
GND
IN

Optional:
Wired Input
(Open/Short)

Power
GND
12-24 V

	Of 12-24V DC Power Supply
−	Of 12-24V DC Power Supply
+	Of 12-24V DC Power Supply

Appendix

B**X21 Compliance**

FCC 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. This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. **FCC Caution:** Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
IC Statement	This device complies with ISED's licence-exempt RSSs. 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. Le présent appareil est conforme aux CNR d' ISED applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.
Note	This equipment is for use in a restricted access area.

Appendix

Support

Thank you for purchasing this Verkada product. If for any reason things don't work right, or you need assistance, please contact us immediately.

verkada.com/support
Sincerely, The Verkada Team