

# Samsung 5G Indoor CPE

- Installation Process -

With 5G, The Future is Here

July. 13. 2020

# Terms and Conditions

Read this document before operating the mobile device, accessories, or software (defined collectively and individually as the "Product") and keep it for future reference. This document contains important Terms and Conditions. Electronic acceptance, opening the packaging, use, or retention of the Product constitutes acceptance of these Terms and Conditions.

Revised 06/2019

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## Important legal information

**Arbitration Agreement** - This Product is subject to a binding arbitration agreement between you and SAMSUNG ELECTRONICS AMERICA, INC. ("Samsung"). You can opt out of the agreement within 30 calendar days of the first consumer purchase by emailing [optout@sea.samsung.com](mailto:optout@sea.samsung.com) or calling 1-800-SAMSUNG (726-7864) and providing the applicable information.

The full Arbitration Agreement, Standard One-year Limited Warranty, End User License Agreement (EULA), and Health & Safety Information for your device are available online:

- English: [www.samsung.com/us/Legal/Tablet-HSGuide](http://www.samsung.com/us/Legal/Tablet-HSGuide)
- Spanish: [www.samsung.com/us/Legal/Tablet-HSGuide-SP](http://www.samsung.com/us/Legal/Tablet-HSGuide-SP)

## Health and Safety

**WARNING!** To avoid electric shock and damage to your device, do not charge device while it is wet or in an area where it could get wet. Do not handle device, charger or cords with wet hands while charging.

You have to keep more than 20 cm away from the installed device to use it.

## Samsung mobile products and recycling

**WARNING!** Never dispose of batteries in a fire because they may explode. Do not disassemble, crush, puncture, heat, burn or reuse.

For battery and cell phone recycling, go to [call2recycle.org](http://call2recycle.org) or call 1-800-822-8837. For more recycling information, go to our website: [www.samsung.com/recycling](http://www.samsung.com/recycling) or call 1-800-SAMSUNG.



## FCC Part 15 Information and Notices

This device complies with part 15 of the FCC Rules. Operation is subject to 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.

## Device temperature

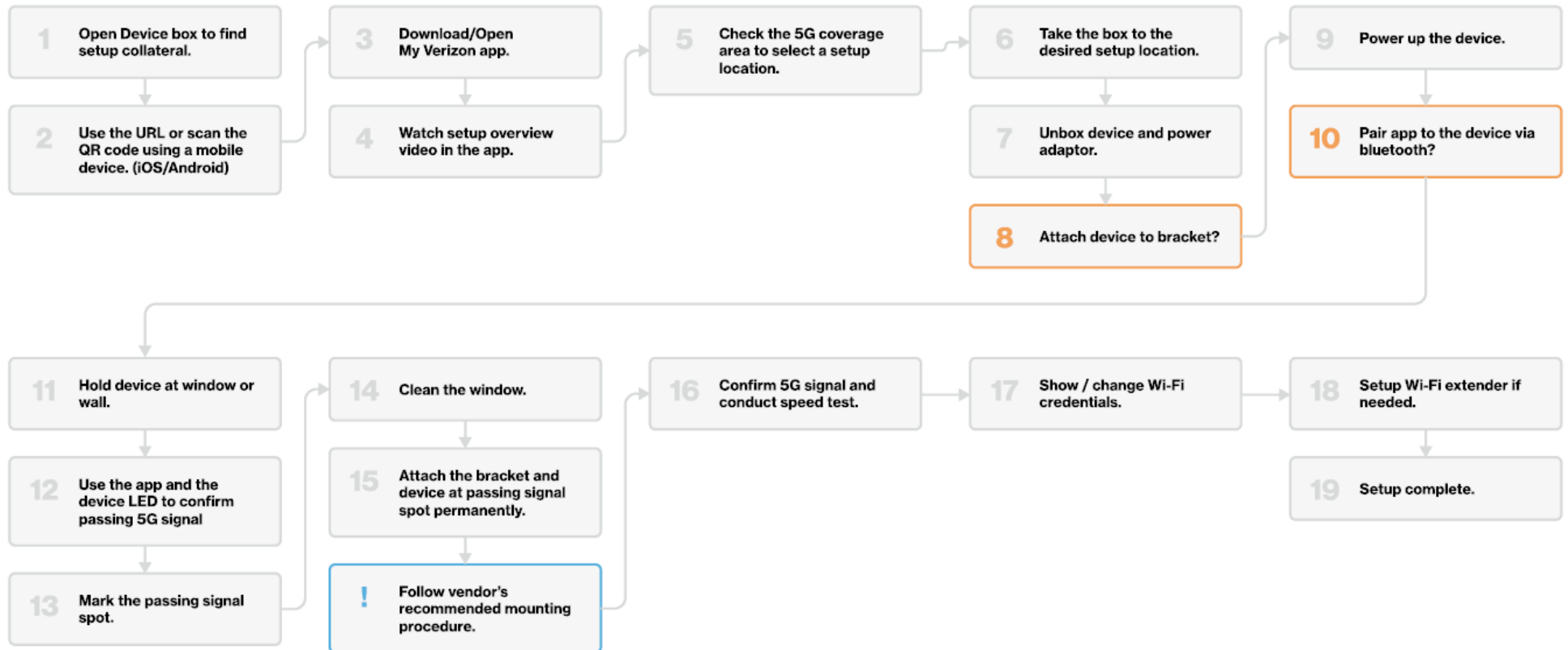
**Caution!** Some applications or prolonged usage may increase device temperature.

If the device feels hot to the touch, discontinue use and close all applications or turn off the device until it cools. Always ensure that the device has adequate ventilation and air flow. Covering the device can trap any dissipating heat and redirect it back to the device while it is active.

# Mounting on Window

# Guide from Verizon – Overall flow of installation

## 5G Home device setup flow (VZ Proposal 4.28.2020)



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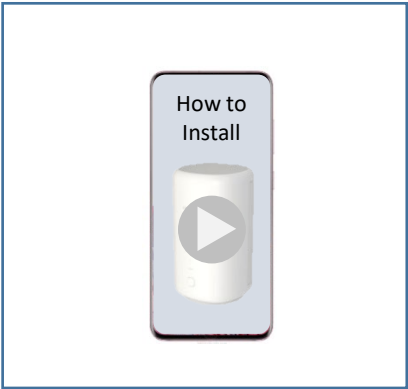
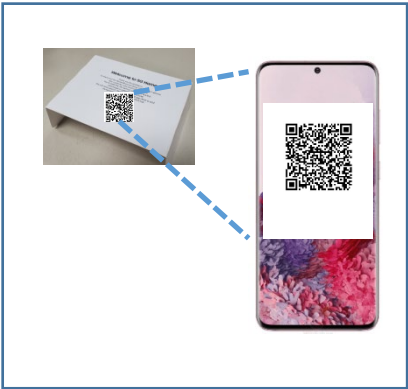
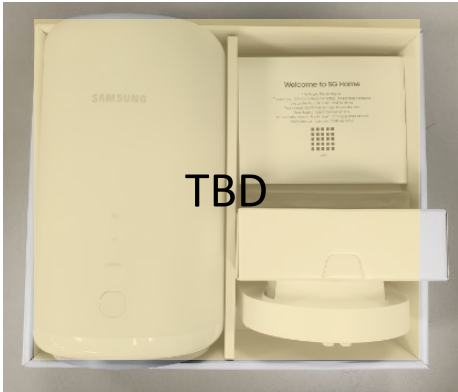
# 1-4. Open box and understand how to install

**1** Open Device box to find setup collateral.

**2** Use the URL or scan the QR code using a mobile device. (iOS/Android)

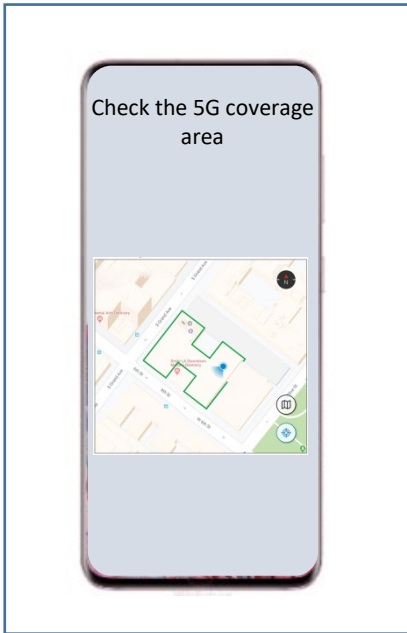
**3** Download/Open My Verizon app.

**4** Watch setup overview video in the app.

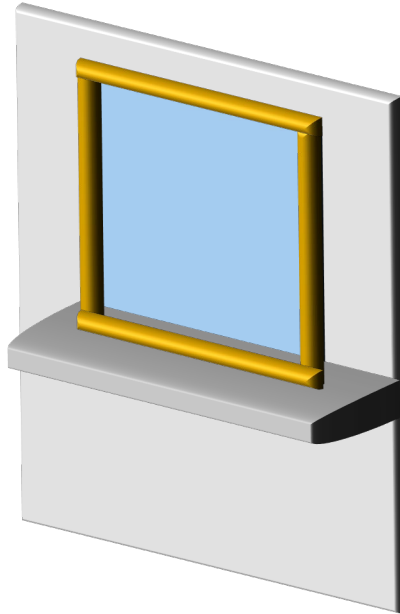


# 5-7. Unbox device at setup location

5 Check the 5G coverage area to select a setup location.



6 Take the box to the desired setup location.



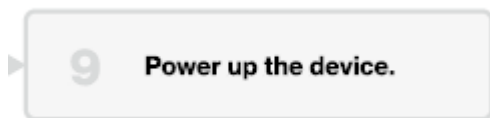
7 Unbox device and power adaptor.



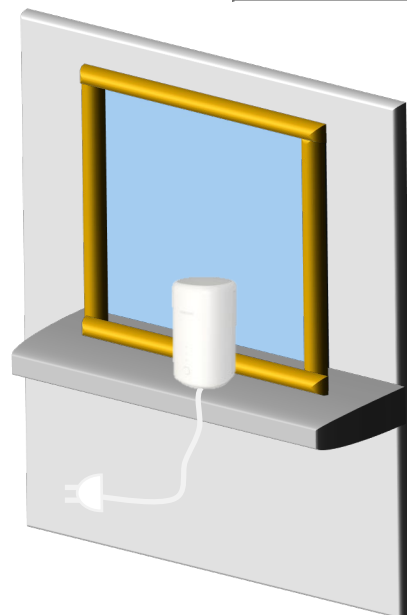
Choosing a window consider

- There must be an outlet nearby for a later step
- The inside of the window cannot be near water
- Do not attach to or block an emergency escape window
- Window with sill is preferred
- Window upstairs are preferred
- User may need to remove the screen to attach the CPE to the window

## 9. Power up the device



Status	LED1	Cycle	Detail
No Power	●		No LED indication
Power on	●	—	Solid Cyan, till system bootup
System booting / initializing / activating / FW update	●	~	Cyan blinking (600ms ON, 600ms OFF) till device is ready

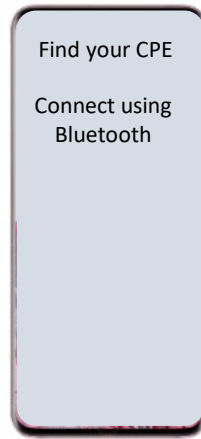


- Plug the USB C to CPE, and plug the adapter to outlet
- Place the CPE where user wants to test 5G signal
- When the power is connected, the CPE is automatically booted  
(This may take up to 2 min)

- CPE enters to "installation mode" automatically after booting is finished
- BLE pairing ready state in the installation mode (No Wi-Fi)
- If the activation failed, user can re-connect the power plug

# 10. Pairing app to the device via Bluetooth

**10** Pair app to the device via bluetooth?



Pairing BT (Shows for 60 seconds or until device is paired before 60 seconds)



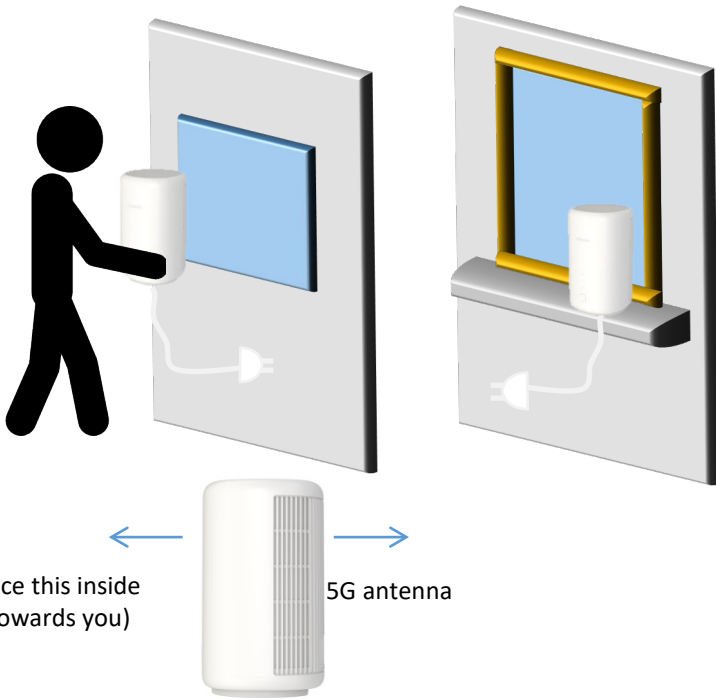
Cyan to OFF to Green to OFF (switch every 200ms)

- After booted up, LED indicates “Cyan and green color switch every 200 ms” before BT pairing is completed
- When BT pairing is completed, the LED indicates the signal strength of 5G.
- If the activation failed, user can re-connect the power plug

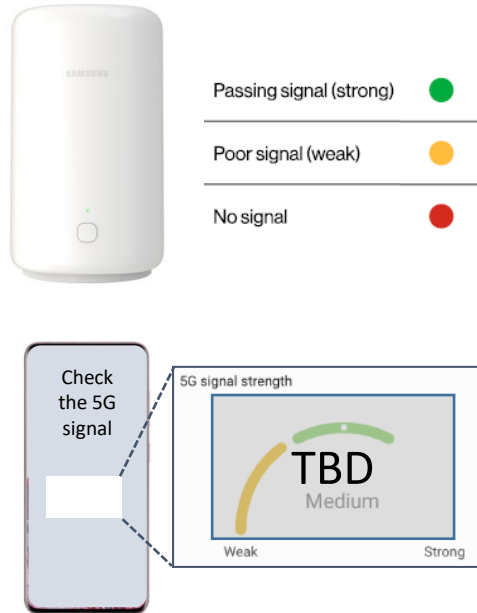


# 11-13. Find the best place for 5G communication

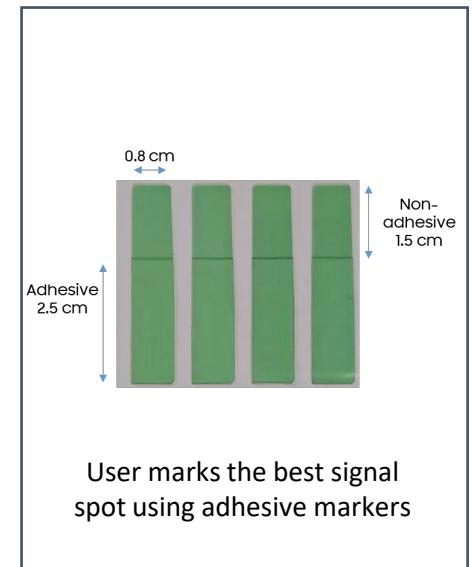
**11 Hold device at window or wall.**



**12 Use the app and the device LED to confirm passing 5G signal**



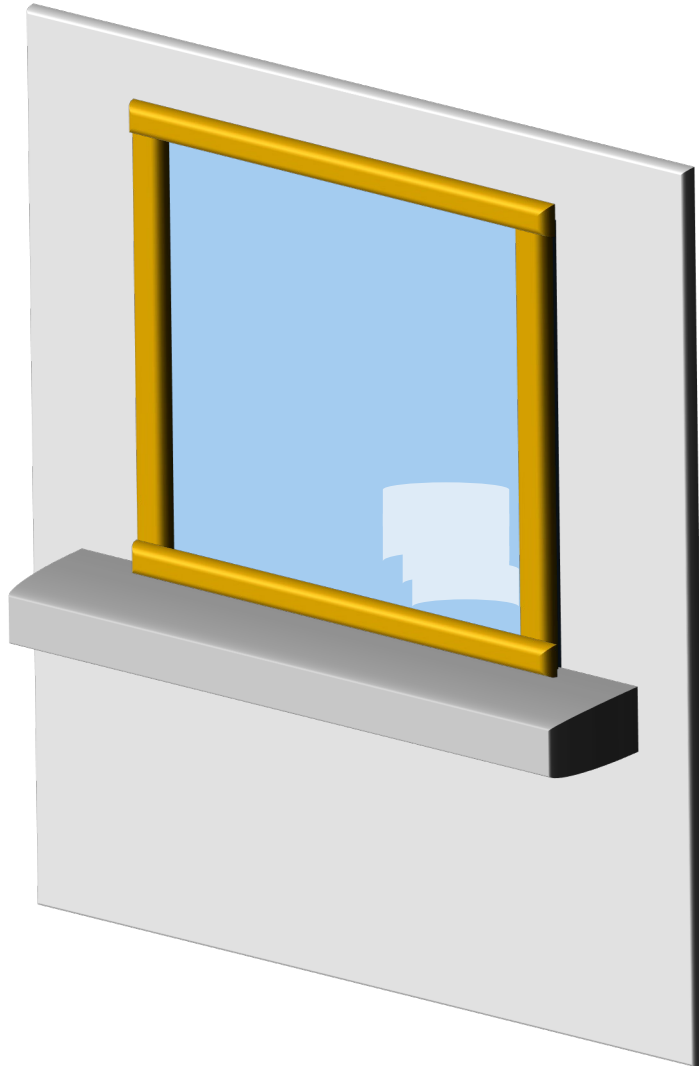
**13 Mark the passing signal spot.**



- If there is window sill- Place the CPE on to the window sill. User can check the signal from both CPE LED indication and App
- If there is no window sill- User holds the CPE by both hands, and check the signal quality through the CPE LED indication
- The weight of CPE is only 1 kg, so it is possible to hold by one hand, but it is not recommended due to the safety reason.
- LED indication for signal strength refreshes every 1 s
- App also shows 5G signal strength

# 14. Clean the window

## Preparation for installation



- User cleans the window with water and soft towels, then wipe with dry soft towels. Then dry the moisture on window thoroughly
- Oily fingerprints, moisture, etc can weaken the adhesion of the mount to the window
- The CPE can be installed by mount only, but mount stand helps more reliable installation



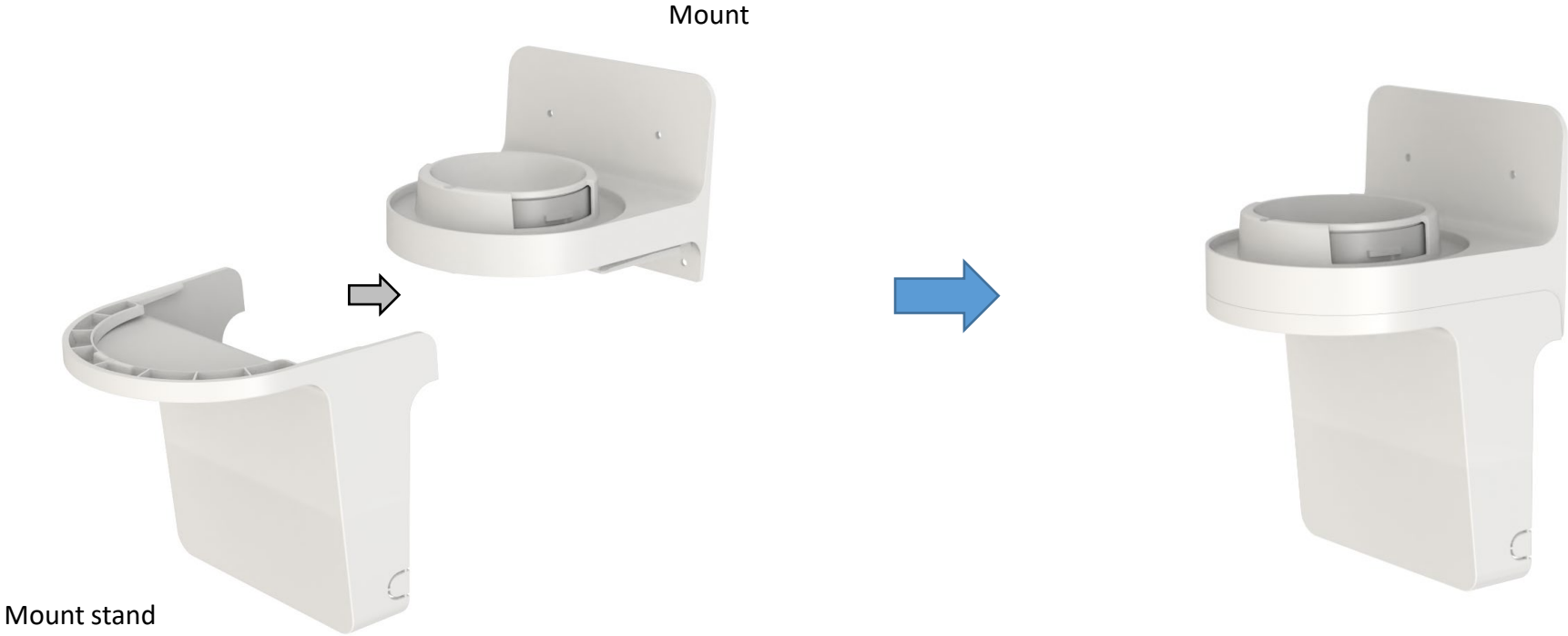
- For reliable installation, the temperature should be at room temperature or higher (23-38°C)
- Cannot be attached to rough glass or surface with special coating
- Please be careful not to momentarily shock the mount.
- Do not hang on to the mount. And don't put anything heavy other than the device.

# Installation on window with window sill

# 15. Mounting the CPE

**15** Attach the bracket and device at passing signal spot permanently.

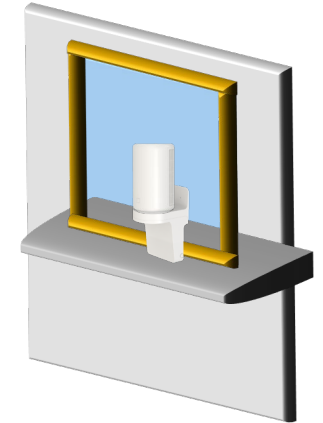
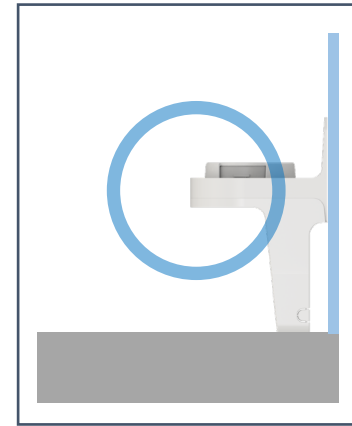
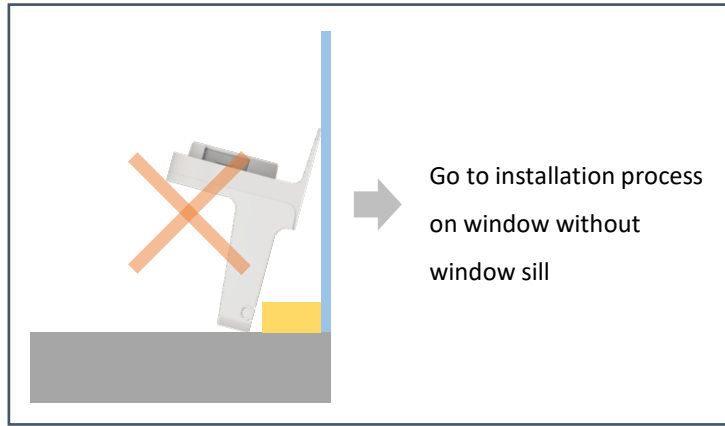
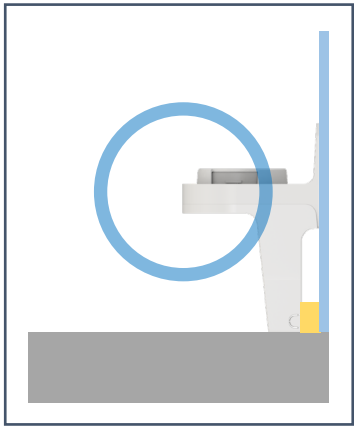
## 15.1 Assemble the mount and the mount stand



# 15. Mounting the CPE

15 Attach the bracket and device at passing signal spot permanently.

## 15.2 Check the exact position of the mount

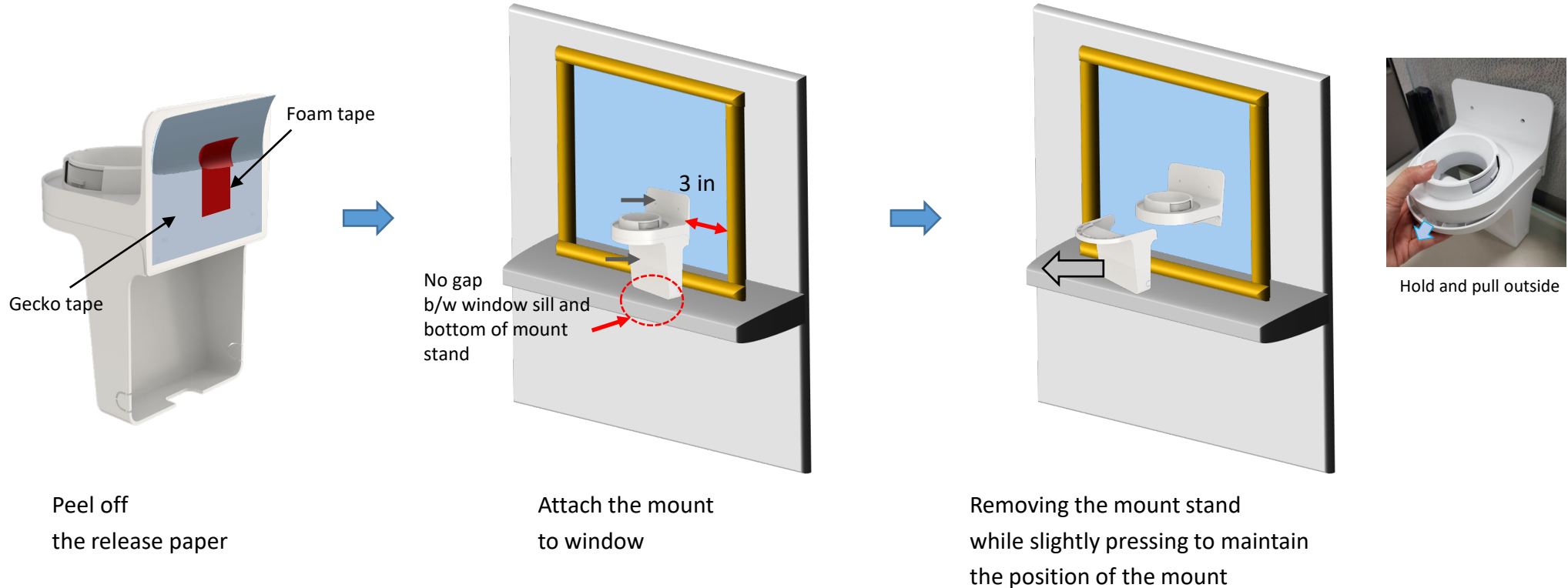


- User needs to check the compatibility of mount stand and the shape of window frame
- If the mount stand is not suitable for user's window frame, follow to the installation process on window without window sill
- During this step, do not remove the release paper of the tape backside of the mount

# 15. Mounting the CPE

15 Attach the bracket and device at passing signal spot permanently.

## 15.3 Attach the mount to window



- Peel off the release paper from the tape (both types of tape)
- When user fails to install, clean the Gecko tape by water, and dry thoroughly. Replace the foam tape to new one. Two extra foam tapes are provided
- There should be no gap between bottom side of mount stand and window sill
- It is important to attach the mount about 3 inches away from the window frame



# 15. Mounting the CPE

15 Attach the bracket and device at passing signal spot permanently.

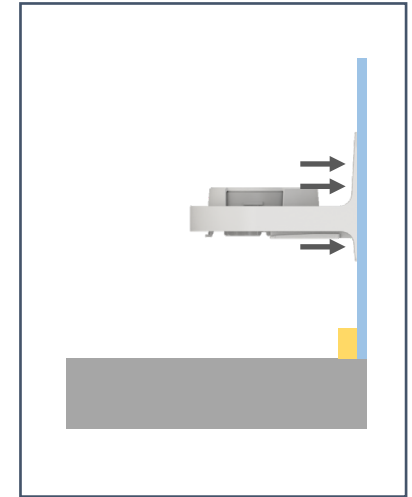
## 15.3 Attach the mount to window



Slightly press the mount against the window



Firmly press by sliding fingers on the mount surface against the window for 30 sec

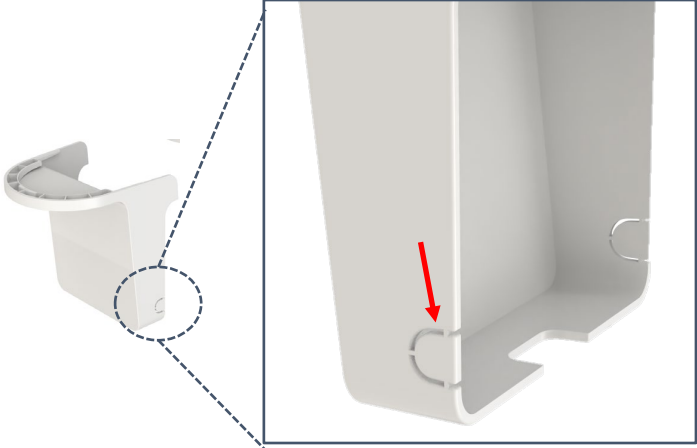


- Firmly press (more than 3 kgf) the entire surface of the backside of the mount against the inside glass for a full 30 seconds

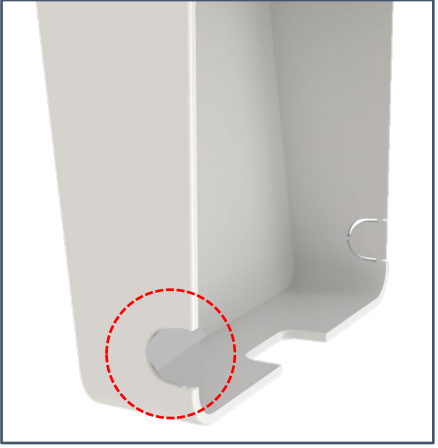
# 15. Mounting the CPE

## 15.4 Cable management

**15** Attach the bracket and device at passing signal spot permanently.



Choose which direction to manage the cable



Remove the piece to make a hole for the cable



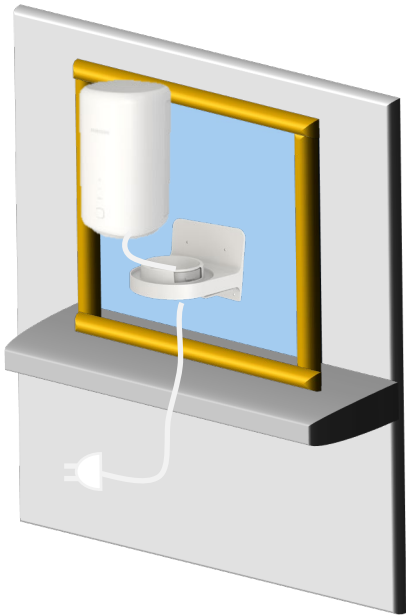
Pass the cable through the hole

# 15. Mounting the CPE

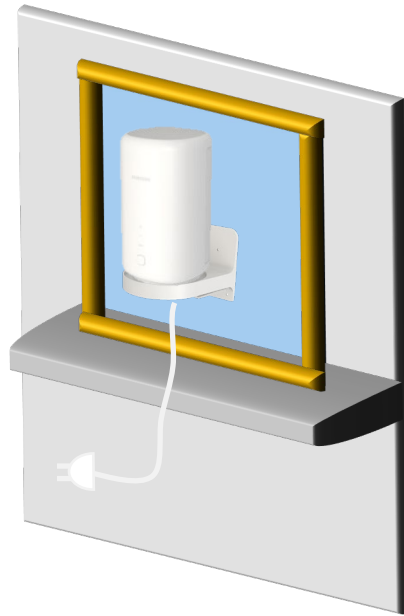
## 15.5 Install the CPE on the mount

### Simple Guide for mounting

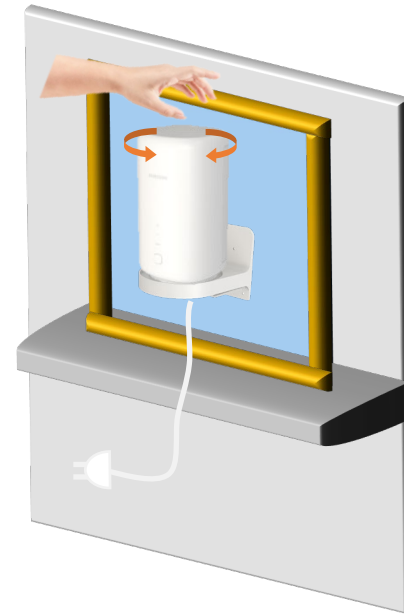
15 Attach the bracket and device at passing signal spot permanently.



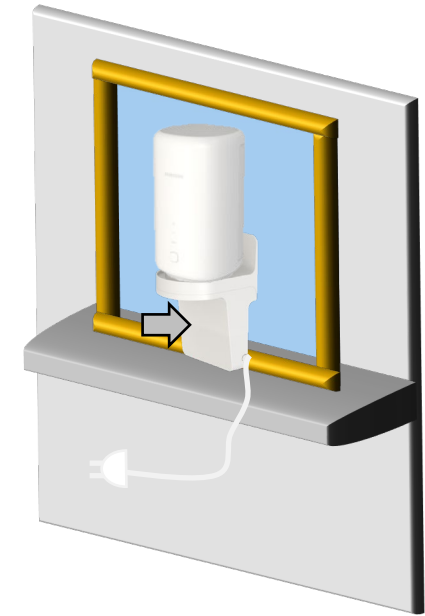
Power up the CPE  
Pass the power cable through  
the mount



Place the CPE on the mount



Rotate the CPE  $\pm 20^\circ$ , CPE is  
locked with the mount



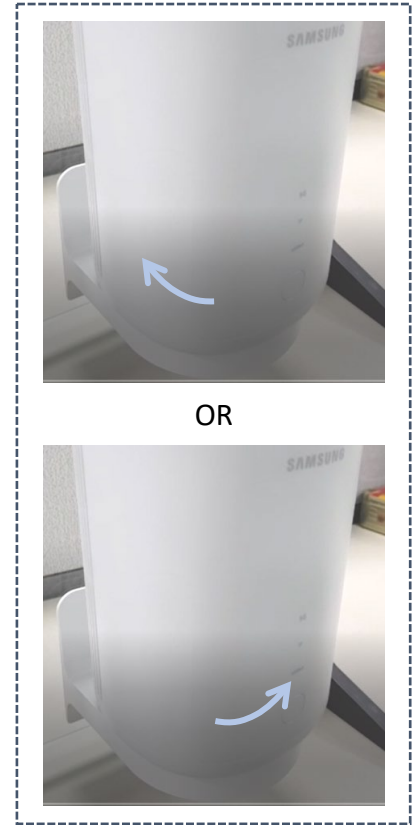
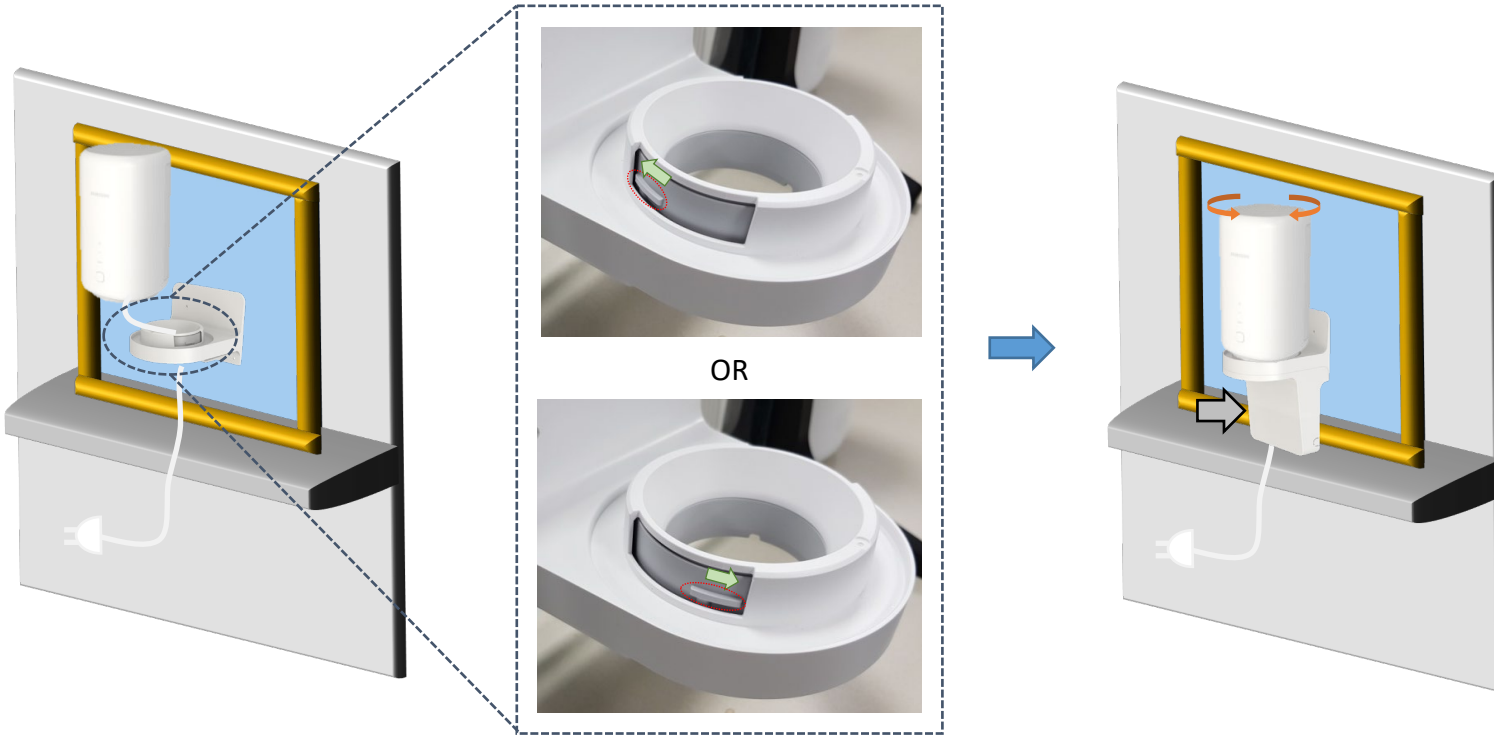
Assemble the mount stand to  
the mount

# 15. Mounting the CPE

## 15.5 Install the CPE on the mount

### Detail Guide for mounting

15 Attach the bracket and device at passing signal spot permanently.



Power up the CPE  
Pass the power cable through  
the mount

Check if the inside holder is located in  
the side direction

Place the CPE on the mount  
and assemble it into the  
mount

- Inside holder at left side  
→ Rotate the CPE with clockwise
- Inside holder at right side  
→ Rotate the CPE with counter-clockwise

# 15. Mounting the CPE

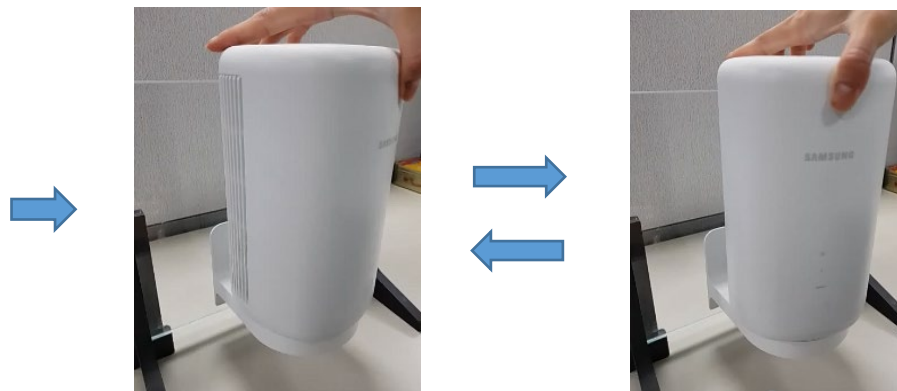
15 Attach the bracket and device at passing signal spot permanently.

## 15.5 Install the CPE on the mount

[Video]



Feel "Click" when CPE and mount is assembled



Rotational with  $\pm 20^\circ$

# 15. Mounting the CPE - Unmounting

1. Unmount device-Hold inner part



2. Disassemble device-Hold inner cover



Rotate the device while holding the internal parts to release the fastening. Then lift the device.

[Video]



3. Pull up from bottom side



4. Twist the top side



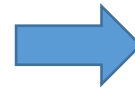
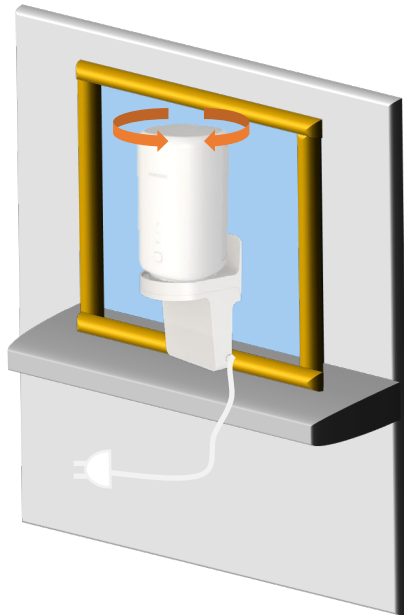
Make sure the bottom part is almost removed. Then grab the Mount and twist to remove it.



# 15. Mounting the CPE

## 15.6 Finishing the installation

15 Attach the bracket and device at passing signal spot permanently.



- Find the best direction to gNB by rotating the CPE ( $\pm 20^\circ$ )
- LED color indicates the 5G signal strength

Passing signal (strong)	●
Poor signal (weak)	●
No signal	●

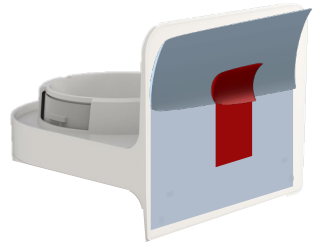
- Press the button longer than 3 sec to switch the mode from installation mode to regular mode
- User can click the “Mode change button” in the App

# Installation on window without window sill

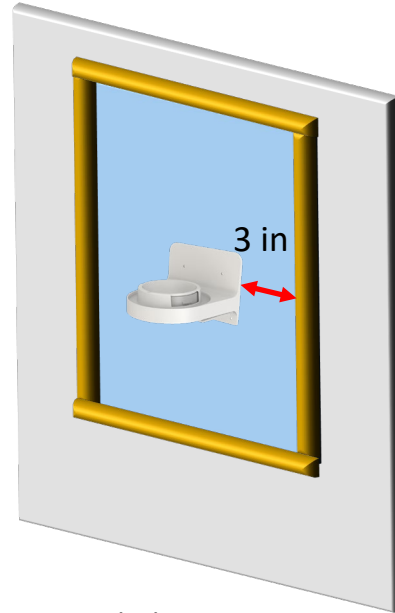
# 15. Mounting the CPE

15 Attach the bracket and device at passing signal spot permanently.

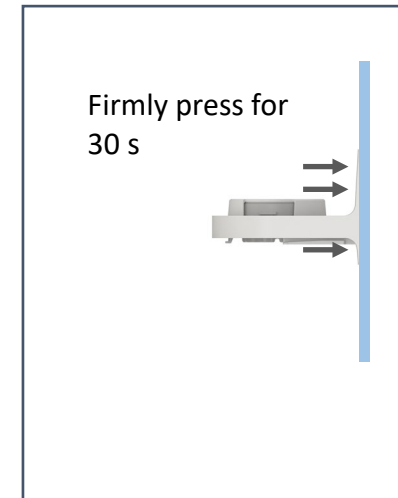
## 15.2 Attach the mount to window



Peel off the release paper



Attach the mount to window



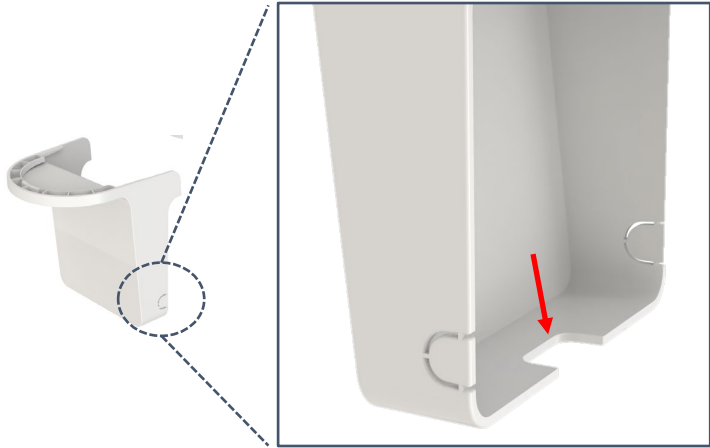
Firmly press the mount against the window for 30 sec

- Peel off the release paper from the tape
- When user fails to install, clean the Gecko tape by water, and dry thoroughly. Replace the foam tape to new one. Two extra foam tapes are provided
- Firmly press (more than 3 kgf) the entire surface of the backside of the mount against the inside glass for a full 30 seconds
- It is important to attach the mount about 3 inches from the window frame

# 15. Mounting the CPE

**15** Attach the bracket and device at passing signal spot permanently.

## 15.3 Cable management



Choose which direction to manage the cable

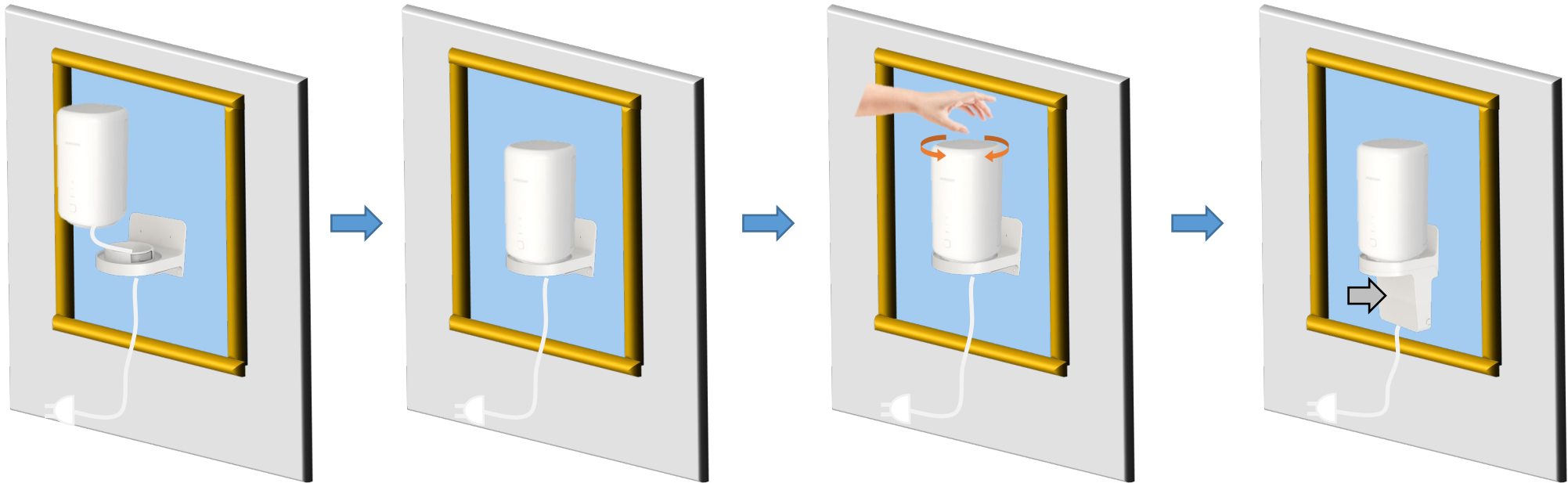


Pass the cable through the hole

# 15. Mounting the CPE

15 Attach the bracket and device at passing signal spot permanently.

## 15.4 Install the CPE on the mount



Power up the CPE  
Pass the power cable through  
the mount

Place the CPE on the mount

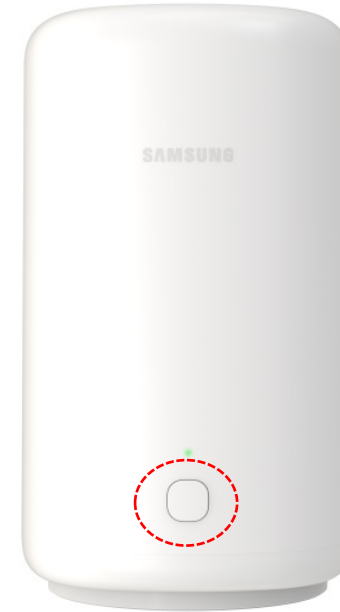
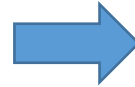
Rotate the CPE  $\pm 20^\circ$ , CPE is  
locked with the mount

Assemble the mount stand to  
the mount

# 15. Mounting the CPE

15 Attach the bracket and device at passing signal spot permanently.

## 15.5 Finishing the installation



- Find the best direction to gNB by rotating the CPE ( $\pm 20^\circ$ )
- LED color indicates the 5G signal strength

Passing signal (strong)	●
Poor signal (weak)	●
No signal	●

- Press the button longer than 3 sec to switch the mode from installation mode to regular mode
- User can click the “Mode change button” in the App



# Mounting on Wall

If the window is made of low-e glass

# 15. Mounting the CPE

15 Attach the bracket and device at passing signal spot permanently.

## 15.1 Preparation for wall mounting

- Screws and anchors are included in the void of the mount stand



Screw and anchor package  
in the mount stand

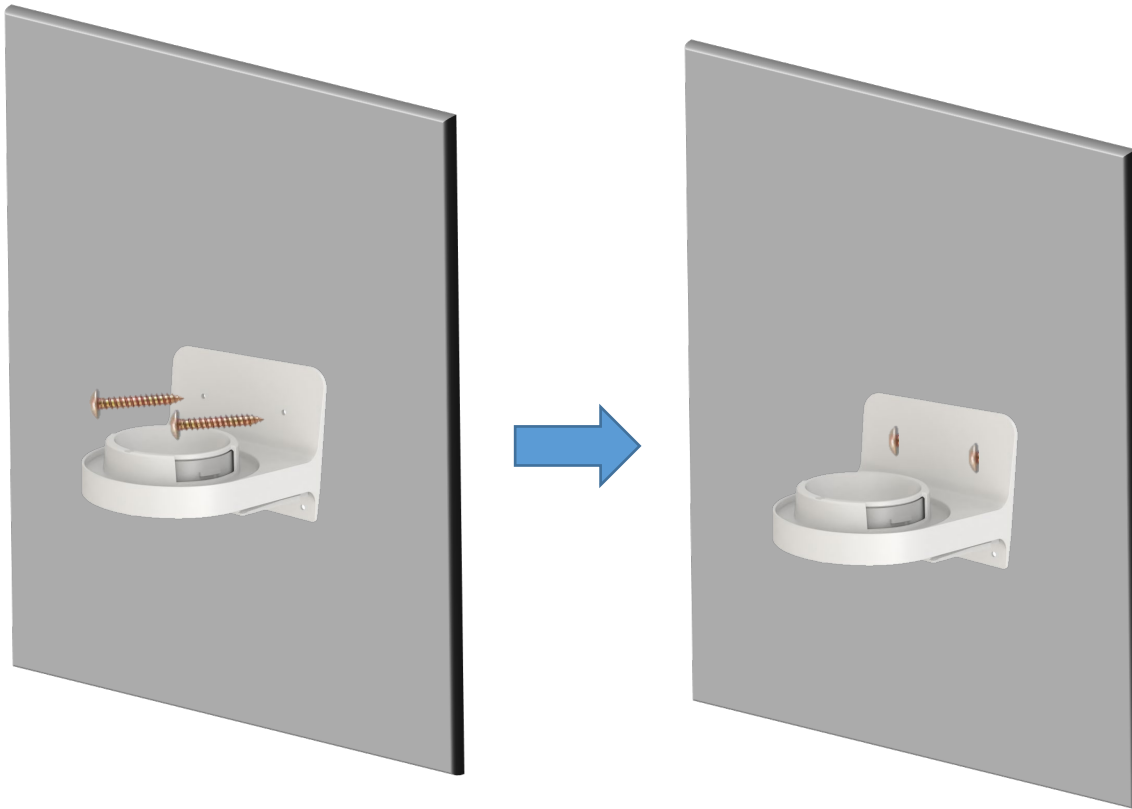
- Screws : M4, L: 40 mm, 2 ea (for 1 set)
- Anchor : M4 screw compatible, L: 12 mm, 3 ea (for 1 set)

# 15. Mounting the CPE

15 Attach the bracket and device at passing signal spot permanently.

## 15.2 Install the mount to the wall

- If the wall material is soft, user needs to use the anchor prior to the fix the mount by the screw



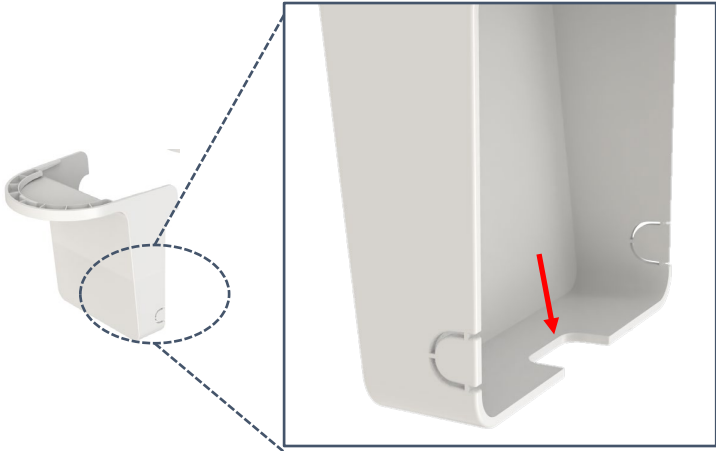
In case of soft wall

1. Mark the location of drilling hole
2. Drill the hole (D: 10 mm) to the wall
3. Insert the anchor into the hole
4. Place the mount stand on the anchor
5. Fix it using screws

# 15. Mounting the CPE

15 Attach the bracket and device at passing signal spot permanently.

## 15.3 Cable management



Choose which direction to manage the cable

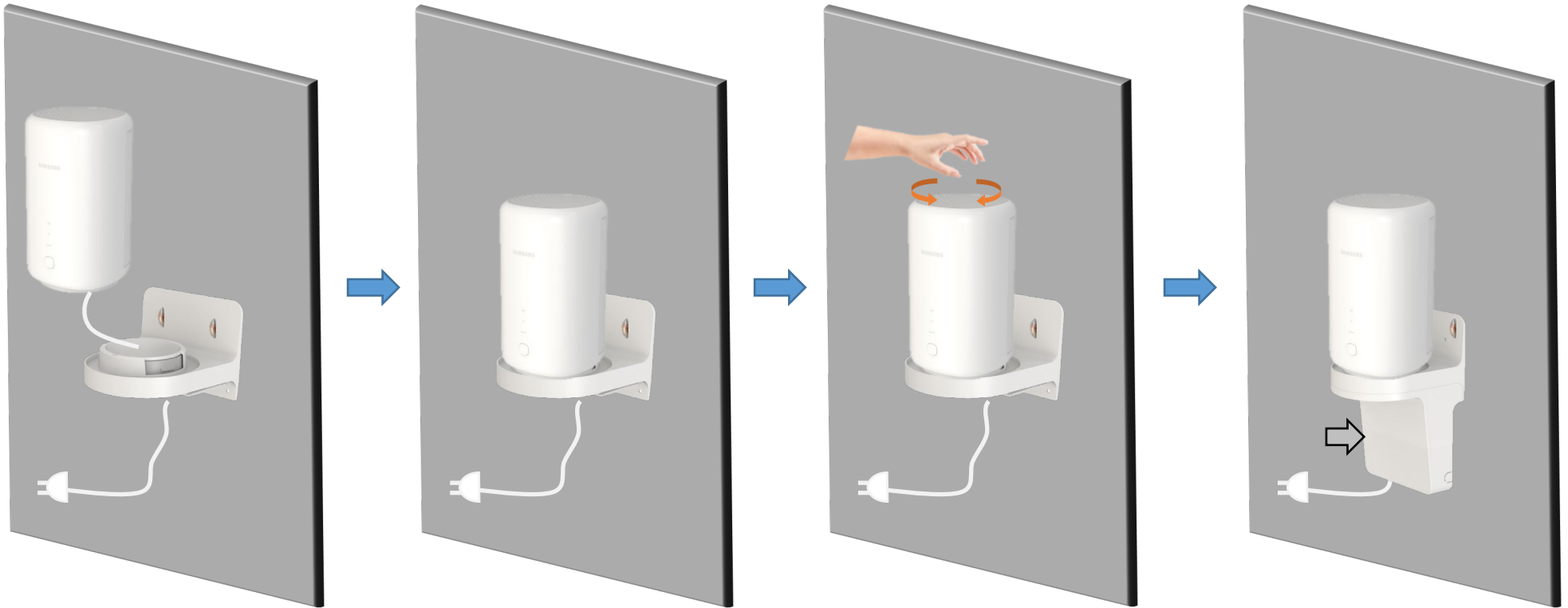


Pass the cable through the hole

# 15. Mounting the CPE

## 15.4 Install the CPE on the mount

15 Attach the bracket and device at passing signal spot permanently.



Power up the CPE  
Pass the power cable through  
the mount

Place the CPE on the mount

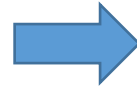
Rotate the CPE  $\pm 20^\circ$ , CPE is  
locked with the mount

Assemble the mount stand to  
the mount

# 15. Mounting the CPE

15 Attach the bracket and device at passing signal spot permanently.

## 15.5 Finishing the installation



- Find the best direction to gNB by rotating the CPE ( $\pm 20^\circ$ )
- LED color indicates the 5G signal strength

Passing signal (strong)	●
Poor signal (weak)	●
No signal	●

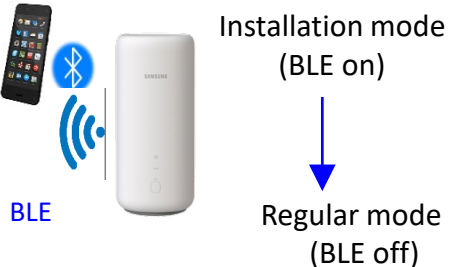
- Press the button longer than 3 sec to switch the mode from installation mode to regular mode
- User can click the “Mode change button” in the App



End of Document

# Appendix. Installation and regular mode

Not fully aligned with VZ yet

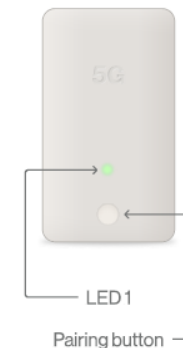


	Installation Mode	Regular Mode
Default	BLE = Enabled, WiFi = Disabled	BLE = Disabled, WiFi = Enabled
Action	BLE = Enabled/Disabled WiFi = Always Disabled	BLE = Always Disabled WiFi = Enabled/Disabled
Diag	continuously send IPv4/IPv6 ping to outofcredit.myvzw.com pings at 0.5 second intervals	-
Expire	in case of no additional command during 2 hours (Installation Mode : disabled, BLE : disabled)	-
Mode switching	Regular mode → installation mode	Installation mode → Regular mode
	<ol style="list-style-type: none"> <li>1) Initial power-up ( first install)</li> <li>2) Push button</li> <li>3) OMA-DM server</li> </ol>	<ol style="list-style-type: none"> <li>1) Push Button</li> <li>2) OMA-DM server</li> <li>3) Application app by BLE</li> <li>4) Expire of installation mode</li> </ol>

# Physical User Interface (Locked in 13<sup>th</sup> June 2020)

Key Name	Key Interaction	Functions
Reset	Short press	Reboot
	Long press (7sec)	Factory reset
WPS	Short press	WPS mode
	Long press (3sec)	Switch between Install mode and Regular usage mode

Process	Status	LED 1	Cycle	Detail
Bootup	No Power	●		No LED indication
	Power on	●	—	Solid Cyan, till system bootup
	System booting / initializing / activating / FW update	●	~	Cyan blinking (600ms ON, 600ms OFF) till device is ready
5G signal test (install mode)	Pairing BT (Shows for 60 seconds or until device is paired before 60 seconds)	●	AAA	Cyan to OFF to Green to OFF (switch every 200ms)
	Passing signal (strong)	●	—	Solid Green
	Poor signal (weak)	●	—	Solid Yellow
	No signal	●	—	Solid Red
Regular usage	Internet available (app confirms 5G signal test is done)	●	—	Solid Cyan dimmed to 50% brightness
	Internet disabled through device settings	●	~	Yellow blinking (600ms ON, 600ms OFF) till internet's available
	Pairing WPS (time-out after 2 minutes)	●	AAA	Cyan to OFF to Green to OFF (switch every 200ms)
Pairing result states	WPS or BT connection success	●	AAA	Cyan blinking (200ms ON, 200ms OFF) x 3
	WPS or BT connection failure	●	AAA	Red blinking (200ms ON, 200ms OFF) x 3
Change modes manually	Changing from install mode to regular usage mode (Hold WPS button for 3 seconds)	●	AAA	Cyan blinking (200ms ON, 200ms OFF) x 3
	Changing from regular usage mode to install mode (Hold WPS button for 3 seconds)	●	AAA	Yellow blinking (200ms ON, 200ms OFF) x 3
	Error / Lost connection to internet / No SIM / SIM card error or locked	●	~	Red blinking (600ms ON, 600ms OFF)



LED time cycle	
~	- 600ms ON - 600ms OFF
AAA	- 200ms ON - 200ms OFF
AAA	Switch color 1: - 200ms ON - 200ms OFF Switch color 2: - 200ms ON - 200ms OFF
—	ON (Solid)