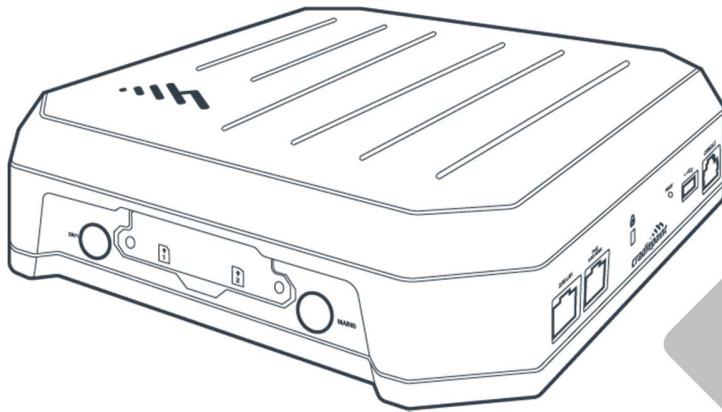


W2000 Series Indoor 5G Wideband Adapter Professional Installation Guide



Introduction

This document provides a brief overview of the W2000 indoor 5G Wideband adapter, discusses what's inside the box, and provides basic set up and install instructions.

Disclaimer

Cradlepoint, Inc. (“Cradlepoint”) does not warrant that the hardware will work properly in all environments or applications, and makes no warranty or representation, either implied or expressed, with respect to the quality, performance, merchantability, or fitness for a particular purpose of the W2000 indoor 5G Wideband adapter even when installed in accordance with this Professional Installation Guide.

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reserves the right to make improvements to this Professional Installation Guide and/or to the products described in this Professional Installation Guide, at any time without notice.

If you find information in this Professional Installation Guide that is incorrect, misleading, or incomplete, we would appreciate your comments and suggestions.

Intended Audience

This article is intended for professional networking hardware installers. It provides basic knowledge and should be used only as a reference guide for installing the W2000 indoor 5G Wideband adapter. Due to the unique nature of each installation, potential for RF exposure, and enhanced separation requirements, customers must have a professional install their 5G hardware. This document is a reference guide and is intended only to provide best practices.

Installer Responsibility

Cradlepoint hereby disclaims any liability for failure of the installer to install the hardware properly and for any other acts and omissions of the installer. By using this Professional Installation Guide, you agree to indemnify and hold Cradlepoint harmless from and against any and all, liabilities, losses, damages, costs and expenses (including without limitation attorneys' fees and costs) incurred by Cradlepoint arising out of or in connection with any installation work that is done other than in accordance with the instructions in this Professional Installation Guide.

Limitation of Liability

TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, IN NO EVENT WILL CRADLEPOINT BE LIABLE TO YOU OR TO ANYONE CLAIMING THROUGH OR UNDER YOU FOR ANY LOST PROFITS, EQUIPMENT DOWNTIME, OR LOSS OF DATA OR BUSINESS OPPORTUNITY, OR FOR ANY INDIRECT, SPECIAL, EXEMPLARY, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES, HOWEVER CAUSED AND UNDER ANY THEORY OF LIABILITY, ARISING IN ANY WAY IN CONNECTION WITH YOUR INSTALLATION ACTIVITIES, EVEN IF CRADLEPOINT HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. SOME JURISDICTIONS (SUCH AS THE STATE OF NEW JERSEY) DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE EXCLUSION OR LIMITATION MAY NOT APPLY TO YOU. IN NO EVENT SHALL THE AGGREGATE LIABILITY OF CRADLEPOINT AND/OR ITS AFFILIATES ARISING UNDER OR IN CONNECTION WITH THE PRODUCT, HOWEVER ARISING, REGARDLESS OF THE NUMBER OF EVENTS, OCCURRENCES, OR CLAIMS GIVING RISE TO LIABILITY, EXCEED THE PRICE PAID BY THE ORIGINAL PURCHASER OF THE PRODUCT. THE FOREGOING LIMITATIONS WILL APPLY EVEN IF THE ABOVE STATED REMEDY FAILS OF ITS ESSENTIAL PURPOSE.

Professional Installer Network

Email our Professional Installer Network for assistance in locating a professional installer in your service area at <TBD>@cradlepoint.com.

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W2000 Indoor 5G Wideband Adapter Models

This guide applies to the following products:

CRADLEPOINT W2000-5GA MODEL: S5A010A

CRADLEPOINT W2000-5GB MODEL: S5A103A

Before You Begin

Read the following before setting up your W2000 indoor 5G Wideband adapter.

Location Considerations

The W2000 Indoor 5G Wideband adapter is purpose-built for indoor mounting and should be installed by a professional. The following includes considerations when identifying a location for mounting.

- This endpoint must be installed at a location where the radiating antennas can be kept 38cm (for USA installations), 45cm (for Canada installations), or 23cm (Australia installations) in the normal operating condition to meet Radio Frequency (RF) Exposure requirements. Refer to the Regulatory Requirements section of this document for more information.
- Ensure that the mounting surface is flat and clear of any obstructions or objects that may interfere with the antennas, signal reception, or cables.
- Position the endpoint for optimal cellular and Wi-Fi signal reception.
- Avoid mounting in direct sunlight or in locations where it may be exposed to the weather.
- Ensure plenty of airflow for ventilation.
- Mount in locations compliant with the Safety, Regulatory, and Warranty guide, included in the product shipping box. Refer to the Regulatory Requirements section of this guide for quick reference.

IMPORTANT: The W2000 indoor 5G Wideband adapter requires increased separation distances in relation to other networking hardware. Therefore, Cradlepoint requires that all 5G adapters be installed by a professional. For assistance with installation or in locating a professional installer, contact Cradlepoint [Sales and Support](#).

Ethernet Cable Considerations

Cradlepoint recommends shielded, twisted-pair (S/FTP) Ethernet network cabling and connectors (Cat6a/Cat7a) for optimal wired network performance.

SIM Card Setup for Wireless Connectivity

A wireless broadband data plan must be added to your Cradlepoint W2000 for wireless broadband connectivity. Network providers, such as AT&T, Verizon, and Telstra, must provision a SIM to provide wireless broadband data plans compatible for use with the Cradlepoint W2000 indoor 5G Wideband adapter endpoints. Contact your network provider for further details.

Setup

The following instructions are intended for network hardware installers. Read through the following to set up your W2000 indoor 5G Wideband adapter or use the Verify mobile installation app.

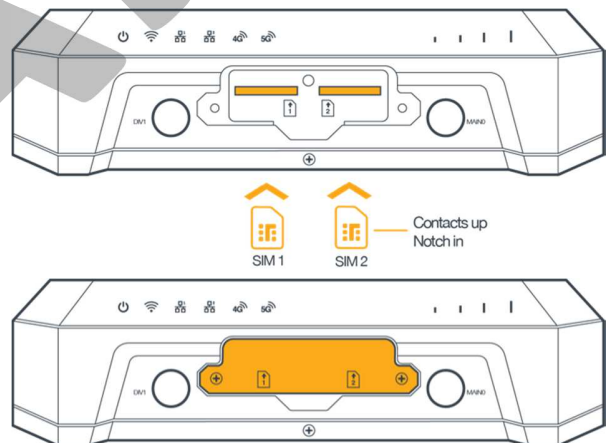
STEP 1: Check box contents.

The W2000 Indoor 5G Branch Adapter and required accessories are shipped in two boxes.

- Box 1 - Hardware Only:
 - [1] W2000 indoor 5G Wideband adapter hardware
- Box 2 - Accessories Kit:
 - [1] 90 W PoE Injector
 - [4] Cellular antennas
 - [1] Indoor mounting kit
 - [1] Screw pack
 - [1] Safety, Regulatory, and Warranty guide
 - [1] Quick Start reference sheet

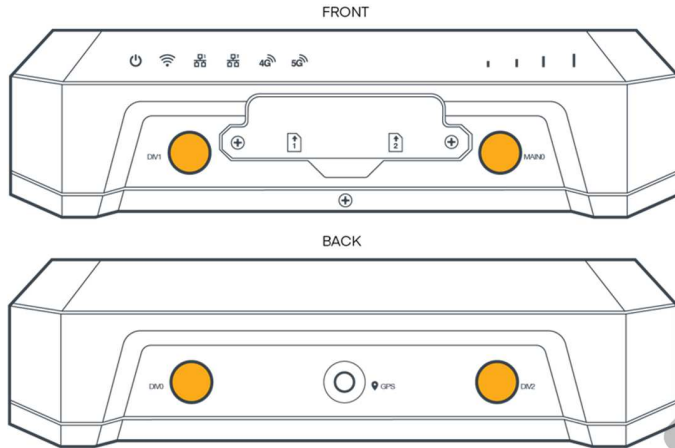
STEP 2: Insert an Activated 2FF-Sized SIM.

1. Unscrew and remove the modem door on the W2000 endpoint.
2. Insert an activated 2FF-sized SIM into the slot marked SIM1, with metal contacts up and notch in. It will click into place. To remove, depress again if necessary.
3. Use the SIM2 slot for a secondary/backup, as needed.
4. Replace the modem cover and secure with the modem door screw.

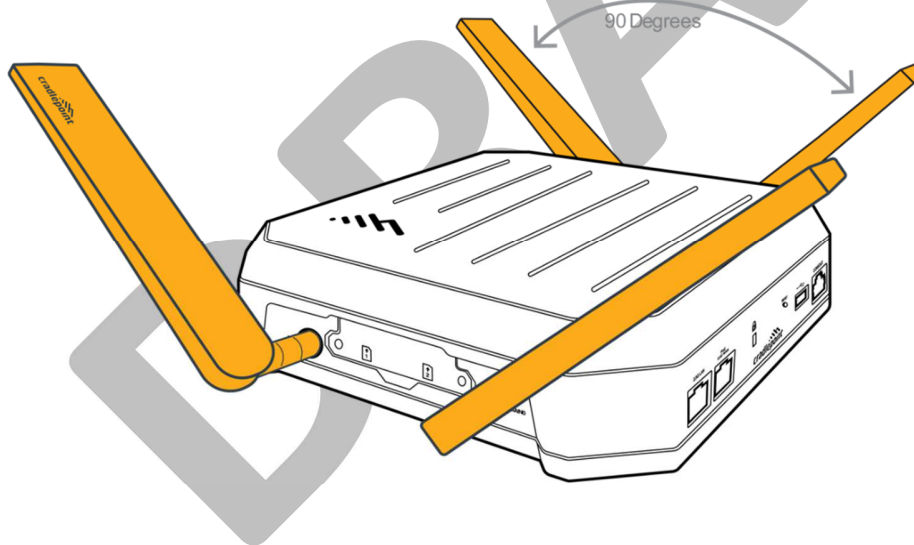


STEP 3: Attach the antennas.

Attach the four (4) included cellular antennas to the connectors marked MAIN0 and DIV0/1/2. If desired, attach an active GPS antenna (not included) to the SMA connector marked GPS.



- Hold the antenna straight and twist the base of the antenna to connect, folding the joint if needed.
- Antennas are jointed for optimal signal positioning.
 - NOTE: Ensure that the antennas are not near metal or other RF reflective surfaces.



STEP 4: Mount the adapter.

The W2000 includes a set of mounting plates that allow the adapter to be mounted in multiple locations.

REMINDER: This endpoint must be installed at a location where the radiating antennas can be kept 38cm (for USA installations), 45cm (for Canada installations), or 23cm (Australia installations) in the normal operating condition to meet Radio Frequency (RF) Exposure requirements. Refer to the Regulatory Requirements section of this document for more information.

For basic mounting best practices, refer to the following:

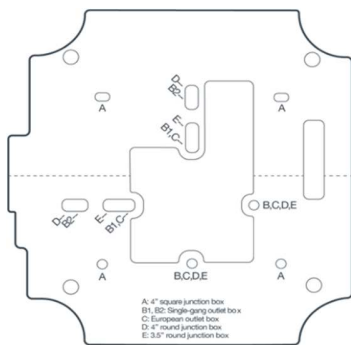


Figure 1. Mounting Template

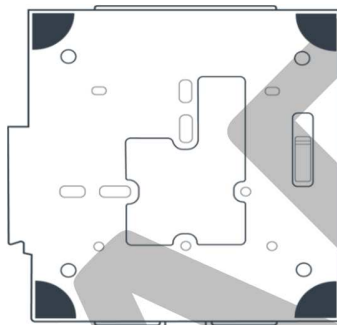


Figure 2. Wall & Ceiling Mounting Bracket

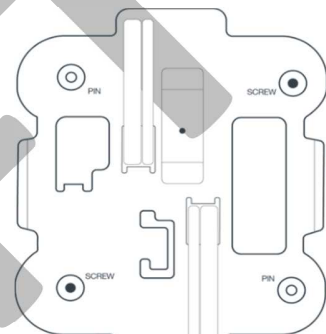
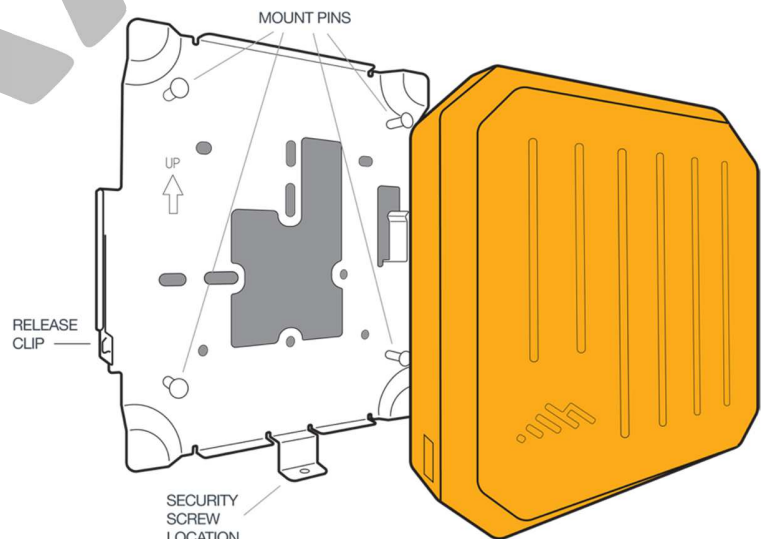


Figure 3. Drop Ceiling Mounting Bracket

WALL & CEILING

- Use the included mounting template (Fig.1) to mark the desired mounting location on the wall or ceiling with a marker or pen. There will be an arrow to indicate which direction is up.
- Pre-drill holes for the mounting screws.
- Attach the wall & ceiling mounting bracket (Fig. 2) to the wall or ceiling in the marked location, securing with M3 screws and anchors.
 - NOTE: Do not use power tools on the adapter or mounting plates. Use hand-held screw drivers to attach screws only.
- Align the W2000 keyholes on the back of the endpoint to the mounting pegs on the bracket.
- Slide the endpoint down until it clicks into place.

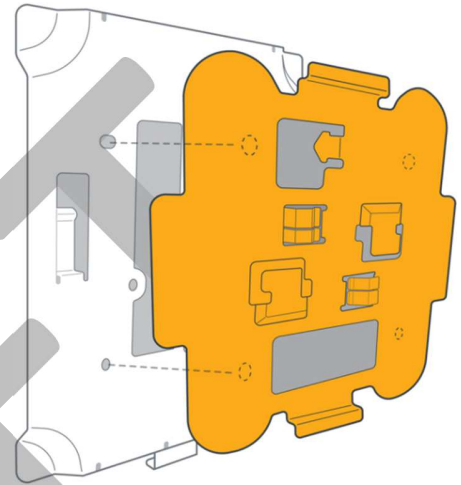


- NOTE: To remove the endpoint from the bracket, depress the latch on the left-hand side of the bracket and pull the endpoint up and off of the bracket pegs.
- Once the W2000 and brackets are securely connected, attach the M3 security screw to ensure the endpoint is immobile.

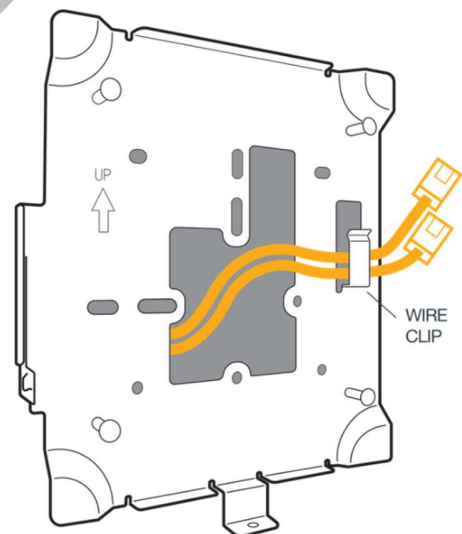
DROP CEILING

The ceiling mount assembly works for standard 9/16ths and 15/16ths drop ceilings. It is not designed for recessed drop ceilings. Do not use power tools on the adapter or mounting plates. Use hand-held screw drivers to attach screws only.

- Join the drop ceiling (Fig. 3) and wall & ceiling mounting (Fig. 2) brackets into the ceiling mount assembly.
 - Align the drop ceiling bracket to the flat back portion of the mounting bracket.
 - NOTE: There is only one position that will allow the two pieces to fit together.
 - Use the included M3 screws to secure the two bracket pieces together.



- Route the Ethernet cable(s) through the middle of the ceiling mount assembly and route through the cable clip. The clip will align the cables with the WAN and LAN ports on the side of the W2000.



- Attach the ceiling mount assembly to the desired location on the drop ceiling frame.
 - Lift up the ceiling panels to isolate the frame.
 - Align the frame to the top of the ceiling mount assembly so that the mounting clips are on either side of the frame.
 - Press the bracket against the frame and twist the bracket slightly to the right until the clips click onto the frame.
- Align the W2000 keyholes on the back to the mounting pegs on the bracket. Slide the endpoint along the pegs until it clicks into place.

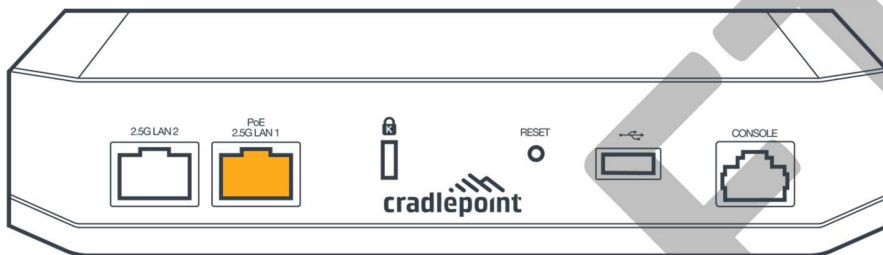
- Secure with the M3 security screw.

JUNCTION BOX

The mounting plate is designed to work with standard-sized junction boxes. Use the included template to fit the mounting plate to the junction box to attach the W2000. Refer to the Wall & Ceiling section in this document for more information.

STEP 5: Connect to a power source.

- Connect an Ethernet cable to the PoE 2.5G LAN1 port and plug the other end into the included 802.11bt (90W) PoE-injector, or a 802.11bt enabled port on an attached router or switch (not included).

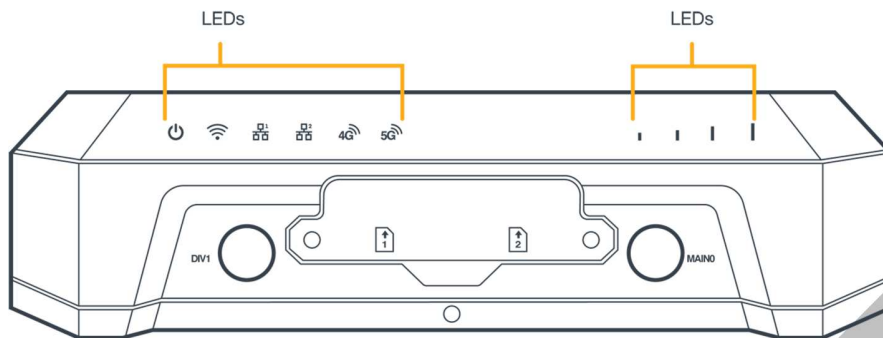


- Ensure the PoE injector, router, or switch port is powered on.
 - The power LEDs will begin to light up.

STEP 6: Activate the endpoint through NetCloud Manager.



Activate your endpoint through NetCloud Manager (NCM). Your endpoint is packaged with NetCloud services and activation requires that you log into your NetCloud account. Refer to [Getting Started with NetCloud Manager](#) for more information.










Understanding LEDs




Refer to the following for information about the LED indicators on the Cradlepoint W2000 indoor 5G Wideband adapter.

NOTE: The W2000 LEDs are only visible when the endpoint is powered on. They are located along the top edge of the adapter, above the SIM slot cover.

Status Indicator	Behavior
POWER	The Cradlepoint W2000 and W2005 must be powered using an approved 54 V DC power source.
	<ul style="list-style-type: none"> • No Light = Not receiving power. Check the power switch and source connection.
	<ul style="list-style-type: none"> • Green = Powered ON.
	<ul style="list-style-type: none"> • Yellow = Attention. Log into NCM and use the Remote Connect menu to access the router's NCOS to manage any alert. <ul style="list-style-type: none"> ○ NOTE: Upon initial installation, the light will be yellow until the endpoint is registered in NetCloud Manager (NCM).
SIGNAL STRENGTH	LED bars indicate the modem's signal strength.

		<ul style="list-style-type: none"> • 4 Solid Bars = Strongest signal
		<ul style="list-style-type: none"> • 1 Blinking Bar = Weakest signal (A blinking bar indicates half of a bar)
		<ul style="list-style-type: none"> • 4 Blinking Bars = SIM door is not installed, modem is off
MODEM	Indicates information about the modem.	
		<ul style="list-style-type: none"> • No Light = Modem not connected. <ul style="list-style-type: none"> ○ NOTE: You will not be able to see the icon when the modem is not connected.
		<ul style="list-style-type: none"> • Solid Green = Modem has established an active WAN connection.
		<ul style="list-style-type: none"> • Blinking Green = Modem is connecting.
		<ul style="list-style-type: none"> • Solid Yellow = Modem is not active.
		<ul style="list-style-type: none"> • Blinking Yellow = Data connection error. No modem connection possible.
		<ul style="list-style-type: none"> • Blinking Red = Modem is in the process of resetting. <ul style="list-style-type: none"> ○ NOTE: Blinking Red with Signal Strength LEDs = SIM door is not installed, modem is off.
Wi-Fi BROADCAST	Indicates activity on the Wi-Fi broadcast for both 2.4 and 5 GHz bands.	
		<ul style="list-style-type: none"> • No Light = Wi-Fi is not operating.
		<ul style="list-style-type: none"> • Blue = Wi-Fi is on and operating normally

LAN ACTIVITY	Indicates an active LAN connection. NOTE: Only one LAN connection will be active at a time.	
		<ul style="list-style-type: none"> • No Light = LAN is not connected or is not currently active.
		<ul style="list-style-type: none"> • Flashing Green = Active LAN connection.
OTHER	Additional LED Indications	
	The white Cradlepoint logo on the top face of the endpoint lights up when the endpoint is connected to a registered NCM account.	

Troubleshooting

If the endpoint takes longer than 5 minutes to connect to the Internet, you may need to log into the local UI of the endpoint to make configuration changes or start the troubleshooting process. You must be physically co-located with the endpoint in order to do this. Refer to [How to Troubleshoot Connection Issues](#) for additional information.

Once the endpoint connects to the Internet, it should then connect to your NetCloud Manager account and start its configuration download.

Resources

[W2000 Webpage](#)
[W2000 Data Sheet](#)

Help and Support

[Contact Us](#)
[Cradlepoint Customer Connect Community](#)
[Cradlepoint Support Services](#)

Terms of Service

[Cradlepoint Terms of Service & License Agreement](#)

[Privacy Policy](#)

[GDPR Privacy Policy](#)

Regulatory Requirements

To comply with FCC regulations limiting both maximum RF output power and human exposure to RF radiation, the maximum cellular antenna gain must not exceed as below:

Antenna Net Gain (dBi)	Frequency Range
2.5	700-960 MHz
2.2	1428-1600 MHz
4.3	1700-2700 MHz
4.6	3300-3700 MHz
6.1	5150-5925 MHz

Except when transmit operation in Band 30 is not disabled (see “FCC LTE Band 30 Notice for installers in the USA section in the online user manual at www.cradlepoint.com).

Professional installation instructions

1. Installation personnel: This product is designed for specific application and needs to be installed by a qualified personal who has RF and related rule knowledge. The general user shall not attempt to install or change the setting.
2. Installation location: The product shall be installed at a location where the radiating antenna can be kept 38cm (FOR FCC)/45cm (FOR IC) from nearby person in normal operation condition to meet regulatory RF exposure requirement.
3. External antenna: Use only the antennas which have been approved by the applicant. The non-approved antenna(s) may produce unwanted spurious or excessive RF transmitting power which may lead to the violation of FCC/ISED limit and is prohibited.
4. Installation procedure: Please refer to user’s manual for the detail.
5. Warning: Please carefully select the installation position and make sure that the final output power does not exceed the limit set force in relevant rules. The violation of the rule could lead to serious federal penalty.

Instructions d'installation professionnelle

1. Installation: Ce produit est destiné à un usage spécifique et doit être installé par un personnel qualifié maîtrisant les radiofréquences et les règles s'y rapportant. L'installation et les réglages ne doivent pas être modifiés par l'utilisateur final.
2. Emplacement d'installation: En usage normal, afin de respecter les exigences réglementaires concernant l'exposition aux radiofréquences, ce produit doit être installé de façon à respecter une distance de 38cm(FOR FCC)/45cm(FOR IC) entre l'antenne émettrice et les personnes.
3. Antenne externe: Utiliser uniquement les antennes approuvées par le fabricant. L'utilisation d'autres antennes peut conduire à un niveau de rayonnement essentiel ou non essentiel dépassant les niveaux limites définis par FCC/ISED, ce qui est interdit.
4. Procédure d'installation: Consulter le manuel d'utilisation.
5. Avertissement: Choisir avec soin la position d'installation et s'assurer que la puissance de sortie ne dépasse pas les limites en vigueur. La violation de cette règle peut conduire à de sérieuses pénalités fédérales.

INDUSTRY CANADA RADIATION EXPOSURE STATEMENT

This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 45cm between the radiator & your body.

NOTE IMPORTANTE (Pour l'utilisation de dispositifs mobiles): Déclaration d'exposition aux radiations

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 45 cm de distance entre la source de rayonnement et votre corps.

Déclaration d'Industrie Canada

(ii) pour les dispositifs munis d'antennes amovibles, le gain maximal d'antenne permis (pour les dispositifs utilisant la bande de 5 725 à 5 850 MHz) doit être conforme à la limite de la p.i.r.e. spécifiée, selon le cas;

(iii) lorsqu'il y a lieu, les types d'antennes (s'il y en a plusieurs), les numéros de modèle de l'antenne et les pires angles d'inclinaison nécessaires pour rester conforme à l'exigence de la p.i.r.e. applicable au masque d'élévation, énoncée à la section 6.2.2.3, doivent être clairement indiqués.

Le présent émetteur radio [IC: 6921A-S5A103A] a été approuvé par Innovation, Sciences et Développement économique Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal. Les types d'antenne non inclus dans cette liste, et

dont le gain est supérieur au gain maximal indiqué pour tout type figurant sur la liste, sont strictement interdits pour l'exploitation de l'émetteur.

For CRADLEPOINT W2000-5GB MODEL S5A103A				
Manufacturer	Model	Antenna Type	Max Gain (dBi)	Impedance (Ω)
Cradlepoint, Inc.	NA	Dipole (External)	WWAN: 700-960 MHz: 1.42 1428-1600 MHz: 0.88 1700-2700 MHz: 2.69 3300-3700 MHz: 4.13 5150-5925 MHz: 4.29	NA

For more information about the Safety, Regulatory, and Warranty guide for the W2000 Indoor 5G Wideband Adapter, refer to the inbox insert packaged with your product.

DRAFT