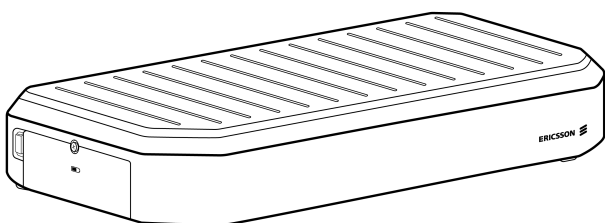


Overview

This document provides a brief overview of the Ericsson Cradlepoint X20 Branch Router, discusses what's inside the box, and provides basic setup and installation instructions.



In This Guide

This guide provides the following information:

1. Information to be considered before you begin, including the identification of all external components, where to place your product, and information about SIM cards and the battery.
2. A basic set of steps to follow for initial unboxing and setup of the product. Only hardware information is included. For information about NetCloud Manager connection and configuration, see [Getting Started with NetCloud Manager](#).
3. Information about how to interpret the LEDs.
4. Troubleshooting and support information.

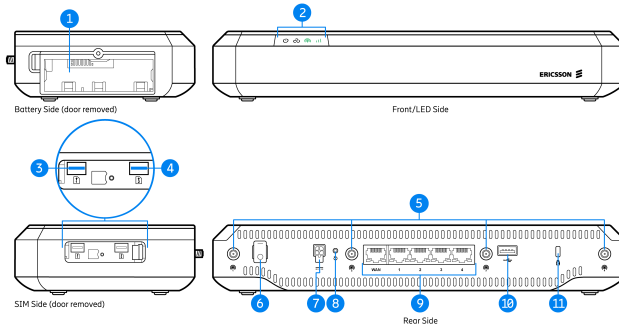
Ericsson Cradlepoint X20 Branch Router Models

X20	Model
X20-5GE-AM	S5A509A
X20-5GE-GL	S5A510A

Before You Begin

Read the following before setting up the router.

External Device Components



1	Battery Slot
2	LEDs
3	SIM Slot 1
4	SIM Slot 2
5	Cellular Antenna Connectors (Female SMA)
6	Power Switch
7	Power Port
8	Factory Reset Button
9	2.5GbE Ethernet Ports
10	USB-A 2.0 Port
11	Kensington Lock Port
Not shown: • [4] Internal Cellular Antennas (for a total of eight Cellular Antennas, 8RX capable) • [4] Internal Wi-Fi Antennas • [1] Internal GNSS Antenna	

Location Considerations

To ensure the router operates efficiently, the following is recommended:

- Ensure the device is placed to receive optimal signal. Avoid positioning the device near concrete walls, metal or reflective surfaces, or any other objects that may interfere with RF reception.
- Ensure plenty of ventilation. Avoid installing the device in enclosed spaces.
- Install the device indoors only. Do not install the device in direct exposure to the elements. Extreme heat or cold can and will impact the router's performance.
- Do not stack other items on top of the router. Items on top of the router can hinder Wi-Fi signal and may cause the router to overheat, affecting performance.

See the Safety, Regulatory, and Warranty Guide (included with your hardware) for more information about location considerations.

SIM Card for Wireless Connectivity

A wireless broadband data plan must be added to your router for wireless broadband connectivity. Wireless broadband data plans are available from network operators. The SIM card must be activated and provisioned by the network operator. Contact your network operator for details about selecting a data plan and about the process for provisioning your SIM. To configure the router for failover and failback functionality, see [Using Dual-SIM Modems](#).

Battery Backup

The optional battery (part number 170921-000) provides backup power for the router in the event AC power is lost. While the battery is delivered partially charged, be sure to fully charge the battery before expecting it to provide backup power.

Installing a battery is optional and not required to use the router. The router will operate without an installed battery as long as it is connected to an appropriate power source.

Only install or replace the battery when the router is powered down, and the power switch is in the off position.

Replacing the Battery



CAUTION

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

- Use only approved batteries and replacement batteries in Ericsson products as specified in the product ordering guides and data sheets.
- If the battery needs to be replaced, and the replacement is an incorrect or unsupported type, it could result in an explosion.
- Disposal of used batteries should be in compliance with local hazardous material disposal guidelines.

Setup

The following instructions walk you through basic setup of the router. For more advanced setups, contact a professional installer.

Required Tools for Setup

- #1 Phillips-head screwdriver (for SIM/battery door screws)

STEP 1: Checking Box Contents

Refer to the list to check that you received all of the following in the box:

- [1] Ericsson X20-5GE Router
- [1] AC Power Adapter (with regionally appropriate plugs)
- [4] Cellular Antennas
- [1] Ethernet Cable (1.5 m) (5 ft)
- [2] SIM/Battery Door Screws
- [1] Getting Started Insert Card
- [1] Safety, Regulatory, and Warranty Guide

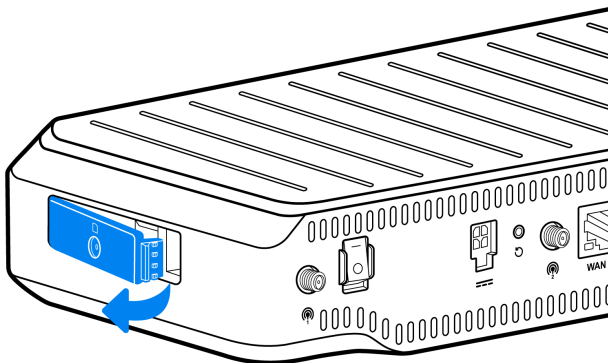
**NOTE**

The optional battery is not included with the X20 Router . It must be purchased separately, and ships separately.

DRAFT

STEP 2: Installing SIMs

1. Unclip and remove the SIM Door.

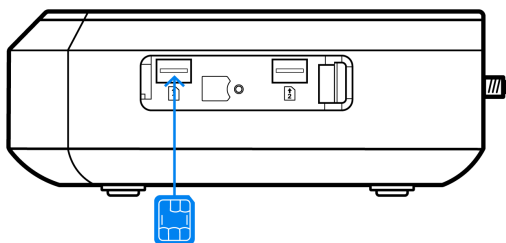


2. Insert a 4FF-sized activated SIM card into the SIM1 slot (contacts up, notch in). The SIM card will click into place.

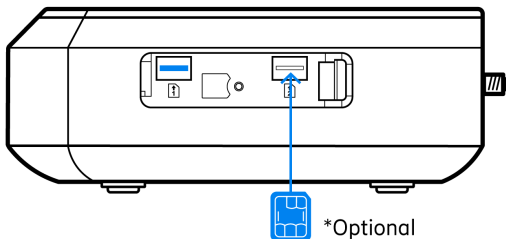


IMPORTANT

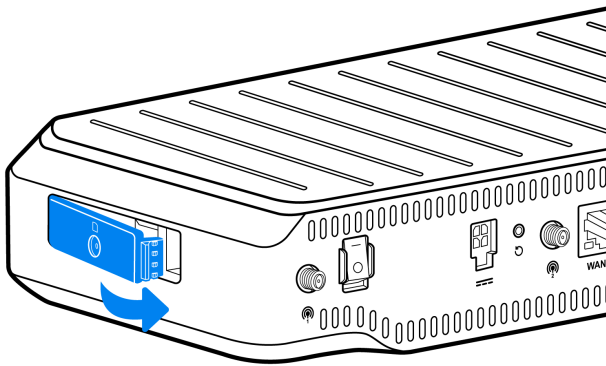
If the SIM card does not click into place, verify that you have the card oriented correctly. The card will only click into place if oriented correctly.



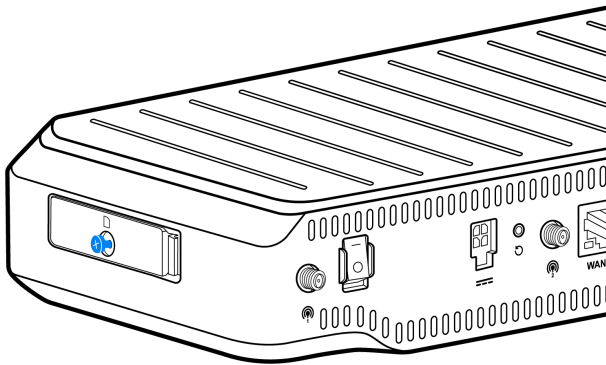
3. (Optional) Insert an activated SIM into SIM2 with the same orientation.



4. Replace the SIM Door, ensuring it clicks into place.



5. (Optional) Install a SIM Door Screw to secure the SIMs in place.



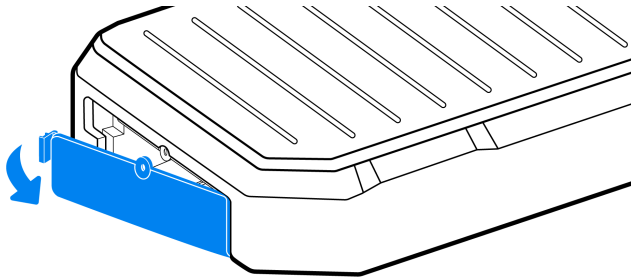
STEP 3 (Optional): Installing the Battery



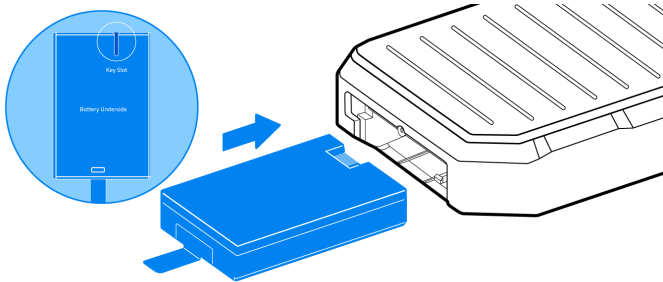
IMPORTANT

You can install the battery anytime prior to powering up the router. While the power cable can be attached and plugged in, the router power switch **MUST** be off before installing the battery.

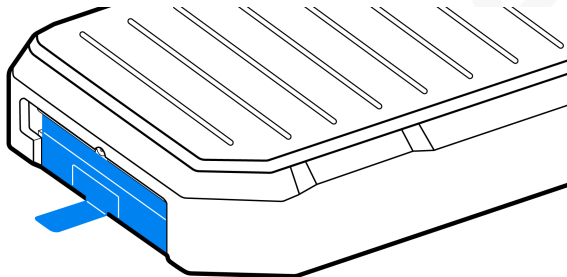
1. Unclip and remove the battery door.



2. Align the battery as shown.

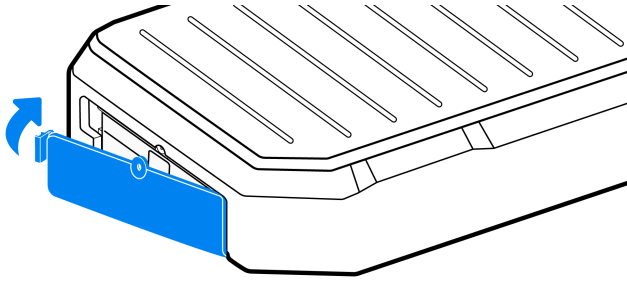


3. Slide the battery into the router until it stops. The key slot on the bottom of the battery engages a ridge at the rear of the battery compartment before the contacts are fully seated. If the battery cannot be inserted fully, check that you have aligned the battery properly and that your battery has the correct part number. The correct battery includes a key slot that allows installation in only E400 routers.

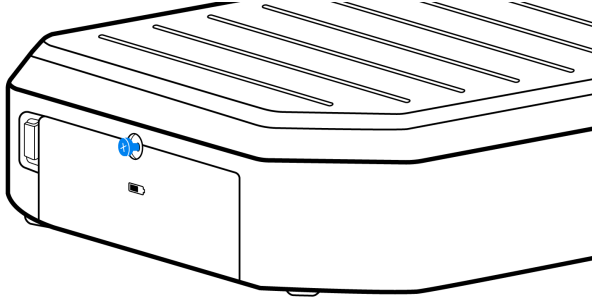
**NOTE**

The batteries for the E100 (part number 170848-000) are different from those for the E400 (part number 170921-000). The E100 battery does not meet the power requirements of the E400, and its constructed differently so it will not fit fully into the E400.

4. Replace the battery door, trapping the pull tab behind it.

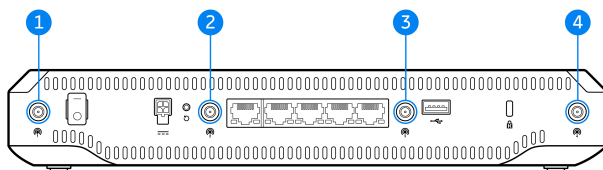


5. (Optional) Install a Battery Door Screw to secure the battery in place.



STEP 4: Attaching Cellular Antennas

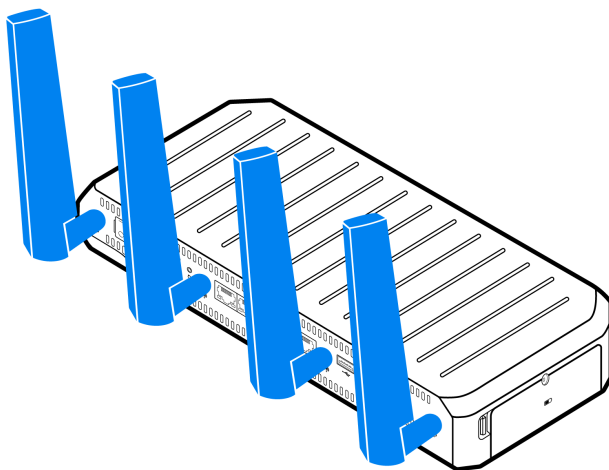
1. Install the cellular antennas on the indicated ports.



NOTE

The device does not include external Wi-Fi antenna ports since the Wi-Fi antennas are internal.

2. Screw the antenna connections into place, making them finger-tight. Position the antennas straight upward, as shown:



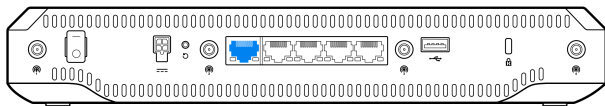
STEP 5: Placing the Router

Place the router on a flat surface, taking into account all location considerations, and checking that your chosen placement is within reach of a power source.

You can mount the router on a wall using the wall mounting holes on the underside. Use any screw with a screw-head size that fits in the wall mounting holes. Use appropriately sized wall anchors. The pre-installed rubber feet can be left in place or peeled off, based on your preference.

STEP 6: Connecting the Ethernet Cable

If using a wired, Ethernet WAN connection, connect the Ethernet cable to the port marked WAN on the back of the router. Connect the other end to the WAN source. Note that all WAN and LAN ports are programmable (WAN/LAN), to accommodate your particular setup as needed.



If using a wireless WAN (using cellular connectivity), power up the router first, and then access your NetCloud Manager account to complete the setup.

STEP 7: Powering Up the Router

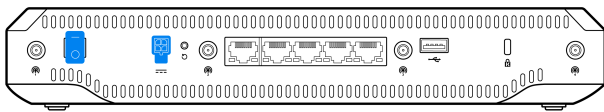
1. Connect the AC power adapter to an electrical outlet and then plug the other end into the router.
2. Toggle the device power switch to the ON position (O = Off, – = On).



IMPORTANT

Install the battery before toggling the switch to the ON position.

3. Allow up to two minutes for the router to run through its bootup sequence and establish a connection to NetCloud Manager.



See the [Understanding LEDs \[10\]](#) section of this guide for more information about LED indicator status.

STEP 8: Activating the Router in NetCloud Manager

Activating your Cradlepoint router requires logging into your NetCloud Manager account. See [Getting Started with NetCloud Manager](#) for more information.

Understanding LEDs



Refer to the following table for information about LED indicators.

Status Indicator	Behavior	
	POWER: Detects that the unit has power.	
		No Light = Not receiving power. Check the power switch and the power source connection.
		Solid White = Powered on.
		Flashing White = Powered by battery
		Solid Yellow = If powered by battery and battery is at less than 20%, then attention is needed.
		Flashing Yellow = If the battery needs to be replaced or the installed battery can only hold 60% or less of its original capacity, then this state takes highest priority over all Power LED states. For example, even if the device is plugged into a power source, this LED will blink yellow.
	NETCLOUD MANAGER STATE: Detects whether the device is able to connect to NCM	
		No Light = Unable to connect to Netcloud Manager.
		Solid White = Connected to NetCloud Manager.
	EMBEDDED MODEM STATE: Indicates information about the integrated modem.	
		No Light = Modem not detected
		Solid Green = Modem has established an active connection
		Flashing Green = Modem is connecting
		Solid Yellow = Data connection error.
		Flashing Yellow = Modem is in the process of resetting
		Solid Red = Carrier reject
	CELLULAR HEALTH: Indicates the health of the primary cellular modem's signal.	
		No Light = No cellular connection
		Solid Green = Cellular health is excellent/good
		Solid Yellow = Cellular health is fair
		Solid Red = Cellular Health is poor

Typical LED Sequence

You may notice the following during boot and powering off:

- Boot up sequence: The Power LED is solid white, stepping through the other LEDs while the router is actively booting. When boot up is complete, the LEDs flash once before displaying the status according to the table above.
- Shutdown sequence: The Power LED is solid white, and the other LEDs flash while the router is actively shutting down. When the shutdown is complete, the Power LED turns off.

Factory Reset Button LED Sequence

When the factory reset button is pressed you may notice the following.

For the first 10 seconds:

- Power LED stays on.
- NetCloud Manager LED flashes white.
- Embedded Modem and Cellular Health LEDs turn off.

After 10 seconds, until the modem reset is complete:

- Power LED remains on.
- NetCloud Manager LED is solid white.
- Embedded Modem and Cellular Health LEDs flash red.

When the factory reset is complete the LEDs return to showing the status according to the table above.

Troubleshooting

Once the device connects to the internet, it should then connect to your NetCloud Manager account and start its configuration download. If the device takes longer than five minutes to connect to the internet, log into the local UI of the device to make configuration changes or to start the troubleshooting process. You must be physically colocated with the device to do this. See [No Internet or Connection Issues](#) for more information.

For help improving signal quality, see [Troubleshooting and Improving Internet Signal Quality](#).

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