InTemp® CX5500 Cellular Gateway User Guide

The InTemp CX5500 Cellular Gateway uses Bluetooth® Low Energy to regularly configure and download data from InTemp CX series loggers and upload the data to the InTempConnect® website automatically using cellular connectivity. The gateway requires an InTempConnect website account with gateway privileges and a phone or tablet with the InTemp app installed to set up the gateway. The InTemp CX5500 Cellular Gateway is currently only available for use within the United States. For a global, Wi-Fi/Ethernet based option, please visit the CX5001 product page.

InTemp CX5500 Cellular Gateway

Included Items:

- Mounting kit
- AC adapter
- Cellular antenna (2)

Required Items:

- InTempConnect account
- InTemp app
- Device with iOS or Android™ and Bluetooth
- CX series loggers

Specifications

Transmission Range	Approximately 30.5 m (100 ft) line-of-sight
Wireless Data Standard	Bluetooth 4.2 (Bluetooth Low Energy)
Connectivity	Cellular Cat 1 LTE with 2G/3G fallback
Power Source	AC adapter
Dimensions	12.7 x 12.7 x 2.99 cm (5.0 x 5.0 x 1.18 inches)
	External Antennae: 3.81 x 19.58 cm (1.5 x 7.71 inches)
Weight	680 g (24 oz)
CE	The CE Marking identifies this product as complying with all relevant directives in the European Union (EU).
Product Availability	United States customers only

Setting up the Gateway

Follow these instructions to set up the gateway in your current location.

1. **Set up roles on the InTempConnect website for gateway privileges.**

   a. Go to the InTempConnect website and follow the prompts to set up an administrator account or skip to the next step if you already have an account.

   b. Log in to the account on the InTempConnect website.

   c. If you are an administrator or if you created the account and you are setting up the gateway, skip to step 2; you automatically have the required privileges. Otherwise, create a role or edit an existing role to add the privileges. Click System Setup and then Roles.

   d. Click Add Role and select an existing role or complete the Description field. **Note:** You must be an InTempConnect administrator or a user with Manage Users and Roles privileges to add a Role.

   e. Select privileges from the Available Privileges list on the left and click the right arrow to move them to the Assigned Privileges list on the right as shown in the example below.
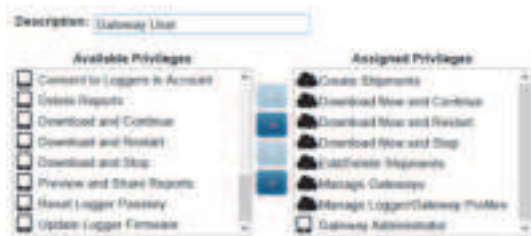
Gateway Privilege	Description
Create Shipments	Set up shipments of loggers using the gateway.
Download Now and Continue	Download data from the logger with a gateway immediately and then continue logging.
Download Now and Restart	Download data from the logger with a gateway immediately and then restart the logger.
Download Now and Stop	Download data from the logger with a gateway immediately and then stop logging.
Edit/Delete Shipments	Change or delete planned shipments of loggers using the gateway.
Manage Logger/ Gateway Profiles	Set up or edit a gateway profile in InTempConnect.
Manage Gateways	Monitor active gateways in InTempConnect and configure loggers with the gateway.
Gateway Administrator	Set up and configure a gateway with the InTemp app.

   Select any other privileges you want the user to have. Privileges for the InTempConnect website are noted with a cloud icon and privileges for the InTemp app are noted with a mobile device icon.

   f. Select a user for this role and click Save. Or, if you need to add a user, click Save and then click System Setup > Users. Click Add User and enter the email address and first and last name of the user. Select the role with the gateway privileges for the user and click Save.

   Tip: You can assign these roles to the same user or different users.

2. **Set up a gateway profile.**

   a. To start creating a profile:

   - On the InTempConnect website, click System Setup and then Gateway Profiles. Then click Add Gateway Profile.

   - In the InTemp app, tap Settings and then Gateway. Then tap the plus sign at the top right of the screen.

   b. Type a name for the gateway, up to thirty characters.

   c. Select the logger family that you will use with the gateway; you can select more than one.

   d. Select what you want the gateway to do with each logger when connected:

   - Download and Restart

   - Download and Continue

   - Download and Stop

   > **Important:** Make sure you select either Download and Restart (CX400, CX450, CX503, CX603, and CX703 loggers) or Download and Continue if you want all loggers to continue logging once the gateway connects to them. Otherwise, if you select Download and Stop, all logging stops once the gateway connects to the loggers and you will need to restart them with the InTemp app or using the gateway with InTempConnect. In addition, Download and Restart is not available for CX502, CX602, and CX702 loggers. These loggers stop logging upon download if you select this option.

   e. Choose how frequently the gateway connects to and downloads data from the logger: every 12 hours, day, week, or month.

   f. Select additional connection controls.

   - **Immediately connect to any <logger> not seen by this gateway. *** The gateway automatically connects to a new logger when it first recognizes it. If this option is disabled, the logger continues logging, regardless of what you select for the Download option in Step e. If you enable this option, the gateway follows the download setting you select. This means if you select Download and Restart or Download and Stop in Step e, the logger restarts or stops upon the first gateway connection.

     ***Note:** Not ideal for storage applications.

   - **Immediately connect to and download any <logger> with a new sensor alarm.** The gateway connects to and downloads data from any logger (as applicable) any time a new alarm trips on the logger.

ONSET

U.S. and International Sales: 1-508-743-3309
www.onsetcomp.com/intemp/contact/support

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- **Immediately connect to any <CX400 or CX450 logger> with a new low battery.** The gateway connects and downloads data from a CX400 or CX450 logger any time a new low battery alarm trips on the logger.

- **Immediately connect to and download any <loggers> that have been stopped and are no longer recording data.** The gateway connects and downloads data from a CX500, CX600, or CX700 logger when it stops logging instead of waiting for the next scheduled connection. This option is not available for CX400 loggers.

- **Enable reverse logistics for shipment loggers after <time>.** Select a time to activate this feature. When you select a time from the dropdown, you turn this feature on and tell the gateway to forget all logger serial numbers that have left the range of the gateway after the selected time. If a logger leaves the range of the gateway but returns before the specified time elapses, the gateway treats it as a previously seen logger and does not perform the download. For example, if the logger is set to purge serial numbers after 4 hours and leaves the range of the gateway but returns 3.5 hours later, the gateway does nothing with that logger because it returned before the gateway could purge that serial number from its memory. This allows you to monitor a shipment that goes from point A to point B and back to point B again, or to monitor a shipment in which point A is the origin and the destination.

   Note: Use this option only with gateways that you use exclusively for shipment or logistics; do not use it for gateways you use for product storage monitoring.

g. Click Save. The new profile is added to the list of gateway profiles.

3. **Download the InTemp app and log in.**

   a. Download the InTemp app to a phone or tablet if you have not already done so.
   b. Open the app and enable Bluetooth in the device settings if prompted.
   c. Log in with your InTempConnect user credentials.

4. **Set up and start loggers.**

Configure and start the loggers that the gateway will be downloading data from (requires privileges). You must configure all loggers with the same account used to configure the gateway. Refer to the logger documentation or go to InTemp Help for details on starting loggers. You can also set up the gateway to configure loggers. See *Configuring Loggers with a Gateway.*

5. **Power up the gateway.**

   a. Attach the two provided cellular antennas to the gateway by placing the antenna connector over the SMA connectors (located on the side of the gateway)

and twisting the connector screw until there is a firm connection.
   b. Insert the correct plug for your region into the AC adapter. Connect the AC adapter to the gateway and plug it in).

   c. Wait for it to completely power up before continuing. On the InTemp CX5500 Cellular Gateway, the LED on the gateway is solid yellow while it powers up and then will flash yellow while establishing connectivity. The LED will turn solid green once connectivity has been established indicating that the gateway is ready to be configured. This can take from 10 to 20 minutes.

6. **Configure the gateway.**

   a. In the InTemp app, tap the Devices icon and then tap Gateways at the top of the screen.

   b. Tap the gateway tile to connect to it.
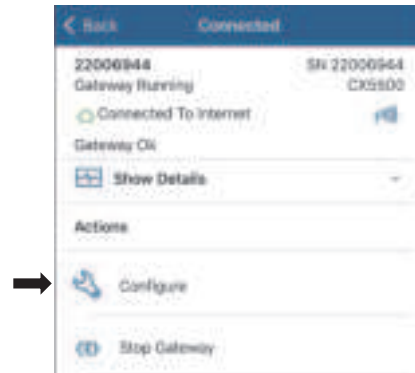
   c. Tap Configure.

   d. Select a gateway profile; swipe left or right if there are multiple profiles. (Don't see a profile? Set one up in the InTempConnect website as described in step 2. Log out of the InTemp app and back in to see any new configurations.)

   e. Type a name for the gateway. The gateway serial number is the name if you do not enter one.

   f. Tap Start. The status of the gateway changes to Running in the app.

Once a gateway has contacted InTempConnect for the first time, a user is created for the gateway in your InTempConnect account. The role assigned to this gateway user is the same role as the user who set up the gateway. Click System Setup and then Users to see the gateway added to the list of users in your account.

Notes:

CX5500 gateway users must have gateway privileges. If you edit the CX5500 gateway user role, make sure that role keeps gateway privileges.

If you disable a CX5500 gateway user, the gateway no longer downloads loggers or connects to InTempConnect.

After you start up a gateway, it connects to loggers within range and downloads data from them based on the settings in the profile. Data is uploaded to the InTempConnect website, where you can configure loggers, create shipments, search logger configurations, run reports, or schedule regular delivery of logged data and other logger information using email (see InTemp Help). **Note for CX400 loggers only:** If the gateway is downloading data from a CX400 logger in an alarm state, the gateway will download data from the logger every hour until the alarm is cleared.

A signal is sent to InTempConnect every 10 minutes to make sure the gateway is still active (see *Monitoring the Gateway with InTemp Connect).* The gateway LED is green during normal operation. See *Gateway LEDs* for more information*.*

Deployment and Mounting Guidelines

Follow these guidelines when selecting a location for the gateway:

- The gateway requires AC power. Select a location for the gateway that is near an AC outlet and has a strong cellular signal.

- The range for successful wireless communication between the gateway and the loggers is approximately 30.5 m (100 ft) with full line-of-sight. If there are obstacles between the gateway and the loggers, such as walls or metal objects, the connection may be intermittent and the range between loggers and the gateway is diminished.

- Use the enclosed mounting kit to mount the gateway to a flat surface. Use the self-tapping screws and anchors to affix the gateway mounting plate to a wall or ceiling.

Gateway mounting plate

If you are mounting the gateway on a wooden surface, use both the gateway mounting plate and the mounting bracket shown below. Place the gateway mounting plate over the mounting bracket so the holes are aligned. Use the machine screws to affix it to the surface (you may need to drill pilot holes in the surface first).

Mounting bracket; attach it to the mounting plate above.

Machine screws

Once the gateway mounting plate is in place on the wall or other flat surface, use the four holes on the back of the gateway to attach it to the four clips on the mounting plate.

Use these holes to attach the gateway to the clips on the mounting plate.

Connecting to the Gateway

To connect to the gateway with your phone or tablet:

1. In the InTemp app, tap the Devices icon and tap Gateways.

2. Tap the gateway tile in the list to connect to it.

If the gateway does not appear in the list or if it is having trouble connecting, follow these tips:

Make sure you have Gateway Administrator privileges in the InTempConnect website as described in *Setting up the Gateway.*

- Press the button on the gateway and then check the list again. If the gateway does not show up in the list after 30 seconds, press the button again.

- Make sure the gateway is within range of your phone or tablet when connecting to it. If your mobile device can connect to the gateway intermittently or loses its connection, move closer to the gateway, within sight if possible. Check the gateway signal strength icon 📶 in the app to make sure there is a strong signal between the phone and the gateway. The more blue bars, the stronger the signal.

- Change the orientation of your phone or tablet to ensure the antenna in your device is pointed toward the gateway (refer to your device's manual for the antenna location). Obstacles between the antenna in the device and the gateway may result in intermittent connections.

Once your phone or tablet is connected to the gateway, you can click Show Details to see the last time the gateway connected to a logger and to the InTempConnect website.

You can also select one of the following actions:

- **Configure.** Select a profile for the gateway. You can create a new gateway profile in the InTempConnect website under System Setup > Gateway Profiles.

- **Stop Gateway.** Stop a running gateway. Loggers are no longer downloaded until you configure or start the gateway again.

- **Start Gateway.** Start a gateway with the current configuration settings.

Monitoring the Gateway with InTempConnect

To monitor an active gateway in the InTempConnect website, select Gateways and then Gateway Configurations. All current

and previous gateway configurations are listed. Check the current configuration in the list for the status, last upload date/time, and last contact with InTempConnect.

The gateway sends a signal every 10 minutes to InTempConnect to make sure the gateway is still active. To view the status of the gateway in InTempConnect, select Gateways and then Gateway Configurations. When a gateway is unable to send a signal (e.g., there is an interruption in Internet service), it is listed as missing in InTempConnect. A missing gateway notification can be set up to send an email or text message indicating that the gateway is missing. To create or change the missing gateway notification settings (including whether to send an email or text and the amount of time to wait before sending a notification) or to create an additional notification, select System Setup and then Notifications in InTempConnect. The gateway continues downloading data from loggers even if it is not able to connect to InTempConnect. The data is stored temporarily in the gateway and uploaded the next time it can connect to InTempConnect.

The following is a list of all status messages that may appear for the gateway:

- **Gateway OK.** The gateway is functioning without error.
- **Missing.** The gateway has not sent a signal to InTempConnect.
- **Invalid gateway date, check network connection.** The gateway clock time is invalid (i.e., the gateway cannot set the clock time because there is no Internet connection).
- **Logger error, relaunch logger(s) with InTemp App.** The logger internal file is corrupt, and the gateway cannot retrieve data. Relaunch the logger with the InTemp app.
- **Unable to update data to cloud.** The gateway cannot upload logger data to InTempConnect.

Gateway LEDs

The following table describes the LED behaviors of the InTemp CX5500 Cellular Gateway.

InTemp CX5500 Cellular Gateway LED Behavior

LED Behavior	Description
Grey/Black	The gateway is off.
Yellow/amber	The gateway is powering up.
Blinking Yellow/amber	The gateway is booting.
Solid green	The gateway has network connectivity

Stopping and Resetting a Gateway

Follow these instructions to stop a gateway completely or reset a gateway.

- To stop a running gateway, connect to the gateway with the InTemp app and select Stop Gateway. The gateway no longer connects to and downloads data from loggers until you start it again or reconfigure it.
- If you need to reset a gateway, press the button on the gateway for at least 10 seconds. Anyone with Gateway Administrator privileges can then connect to the gateway with the InTemp app and reconfigure it. **Note:** It may take

up to 30 seconds for the gateway to appear unlocked in the InTemp app.

Grouping Gateways with InTempConnect

If you have more than one gateway using the same profile, you can combine those gateways into a single group. This allows any gateway in that group to configure or download a logger as defined by the shared profile settings. Groups are beneficial because if one gateway has a poor connection to a logger, another gateway in the group with a better connection can download data from the logger instead, thereby expanding the coverage area and reducing the risk of multiple gateways incorrectly affecting a logger. **Note:** If loggers are in the range of more than one gateway, group those gateways to ensure the system works correctly. If there is any risk of the Bluetooth range between devices overlapping within a facility (including gateways in different rooms, areas, or floors), group the gateways to reduce the risk of connection issues.

To create a gateway group:

1. In InTempConnect, click Gateways and then Groups.
2. Click Add Group.
3. Select a gateway profile.
4. Select a location (if applicable).
5. Under Description, type a name for the group.
6. Select the gateways you want to assign to this group from the Available Gateways list and use the right arrow to move them to the Assigned Gateways list.
7. Click Save.

See InTemp Help for details on groups.

Configuring Loggers with a Gateway

You can use a gateway to configure in-range loggers automatically instead of using the InTemp app.

To configure loggers with a gateway:

1. In InTempConnect, select Logger Controls and then Configure Logger.
2. Click Create Logger Configuration.
3. Type the serial number for the logger and then click Find Logger. **Note:** The selected logger cannot already be part of a scheduled configuration or shipment.
4. Enter a logger name.
5. Select a logger profile.
6. Complete the trip information fields (if applicable).
7. Click Save if you want to save this logger configuration but are not ready to release it (i.e., not ready for the gateway to configure the logger). Click Save and Release if you are ready for the gateway to configure the logger.

Alternatively, you can use a Microsoft® Excel® spreadsheet as a template for setting up multiple logger configurations at once. To import logger configurations with a template:

1. Click Logger Controls and then Configure Logger.
2. Click Import Logger Configurations.
3. Click to create a file using the template.

4. Complete all the fields for each logger to be configured by the gateway. The template includes columns for any trip information fields you have created. **Note:** The selected logger cannot already be part of a scheduled configuration or shipment.

5. Save the file.

6. Click Choose to select the file. Click [image] to remove that file and select another.

7. Click Upload.

8. Select the Release on Import checkbox to have the gateway configure the loggers in the file as soon as the import finishes.

9. Click Start Import. If you did not select the Release on Import checkbox, the loggers are added to the list with a Planned status.

Any loggers that are not immediately released have a Planned status. To release planned logger configurations:

1. Click Logger Controls and then Configure Logger.

2. To release one logger at a time, click the Release icon [image] at the end of the row in the Logger Configurations table for the logger you want the gateway to configure.

   To release multiple loggers at a time, select the check box next to each logger in the Logger Configurations table (or select the checkbox next to the Serial Number column heading to select all the loggers). Click [image] above the table for the gateway to configure all the selected loggers.

Note: You can also set up shipments whose loggers are configured and downloaded by specified gateways at their origin and destination points. Loggers that are part of a shipment cannot be configured separately.

See InTemp Help for other details on configuring loggers with a gateway or as part of shipments.

Downloading Loggers with a Gateway

You can use a gateway to download data from in-range loggers on demand instead of waiting for the regular download schedule defined by the gateway profile or going onsite to download data manually with the mobile app. **Note:** You must have the required privileges to download data from loggers with a gateway. You cannot download data from loggers on demand with a gateway if they are already part of a shipment.

To download data from loggers with a gateway:

1. In InTempConnect, click Logger Controls and then Download Loggers.

2. Select the gateway you want to use to download data from loggers. This displays loggers within range of that gateway.

3. Select the loggers whose data you want the gateway to download. Use the arrows next to a column heading to change the sort order of the column to help you locate the loggers you want to include. Choose a download option for all loggers you have selected:

   - **Download & Continue.** The logger continues logging once the download is complete.

   - **Download & Restart (CX400, CX450 CX503, CX603, and CX703 models only).** The logger starts a new

configuration using the same profile once the download is complete. Note that if the logger profile is set up to start with a button push, push the button on the logger to restart logging.

   - **Download & Stop.** The logger stops logging once the download is complete.

4. Click Download. The status of the download is displayed under Download Requests, where you can also cancel the download if necessary. The download occurs next time the gateway sends a signal to InTempConnect (every 10 minutes). Once the download is complete, the Configurations table in InTempConnect is updated with the latest logger configuration information. Any applicable notifications are sent once the download is complete.