

Connect a CTA-2045 Module to a Water Heater

For A.O. Smith, American, Reliance, State, Lochinvar, and U.S. Craftmaster Water Heaters

Follow this step-by-step guide to connect your A.O. Smith, American, Reliance, State, Lochinvar, or U.S. Craftmaster water heater to WatterSaver. If you have questions or need additional support, please contact support@watter-saver.com.

How to set up the CTA-2045/EcoPort™ Universal Communication Module (UCM) for WatterSaver participation

Step One: Gather required equipment

The UCM set up requires:

1. Compatible A.O. Smith, American, Reliance, State, Lochinvar, or U.S. Craftmaster water heater
2. eRadio UCM — provided
3. CTA-2045 port adapter
4. Screwdriver

Step Two: Turn Off Power to Your Water Heater

WARNING: Before continuing with UCM connection, turn off power to your water heater at the circuit breaker or fuse box by flipping the breaker supplying power to your water heater to the OFF position or by removing the fuse.

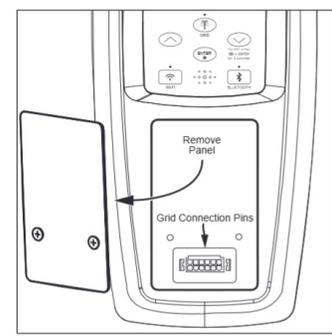
Step Three (if applicable): Install the CTA-2045 port adapter

The CTA-2045 port adapter provides the water heater with a CTA-2045 port/EcoPort™, enabling your water heater to participate in programs like WatterSaver. Installing a CTA-2045 port adapter will be required if your water heater does not include an integrated CTA-2045/EcoPort™ communications port. The program team will let you know if this step is required for your water heater. To install the CTA-2045 port adapter, skip to the instructions at the end of this document labeled “CTA-2045 port adapter Setup for WatterSaver Participation”.

If your water heater does not require CTA-2045 port adapter, continue to Step Four.

Step Four: Unscrew the CTA-2045/EcoPort™ Port Adapter Cover

Locate the CTA-2045 port cover located on the front of the water heater under the control panel. Unscrew to remove the cover over the grid connection pins.



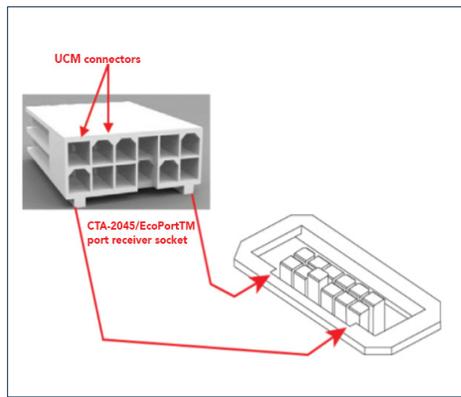
Step Five: Install the UCM



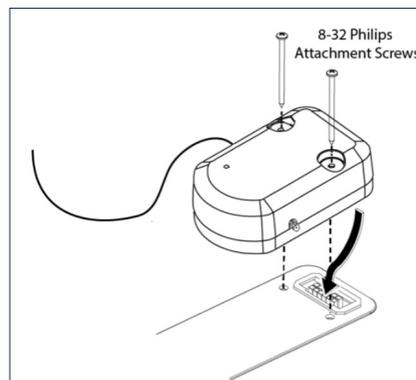
You will receive a UCM installation kit like the one shown here.



When assembled, the UCM looks like this.



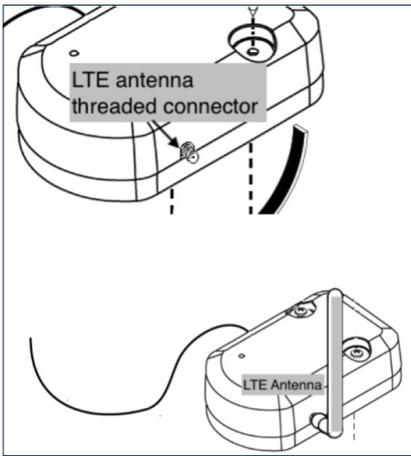
1. Plug the UCM into the CTA-2045/ EcoPort™ port receiver socket by aligning the UCM connectors with the connectors of the CTA-2045/EcoPort™. Gently push in the UCM until the bottom face of the UCM touches the flat face of the receiver.



2. In most cases, the screw sockets on the UCM will align with the screw sockets on the CTA-2045/EcoPort™. If this is the case, use the screws to secure the UCM to the receiver.



3. Attach the black LTE antenna to the small metal threaded connector on the side of the UCM by twisting it on until just finger tight. Make sure it is straight.



4. Point the LTE antenna up and away from the water heater. Based on your water heater configuration you may need to bend the antenna up or rotate it away from the water heater. Be careful when doing so.

**The black plastic antenna is an LTE cellular antenna and will be used for communications between WatterSaver and your water heater. The small black wire is an FM antenna. This is not necessary to participate in WatterSaver, so you can leave the black wire curled up.*

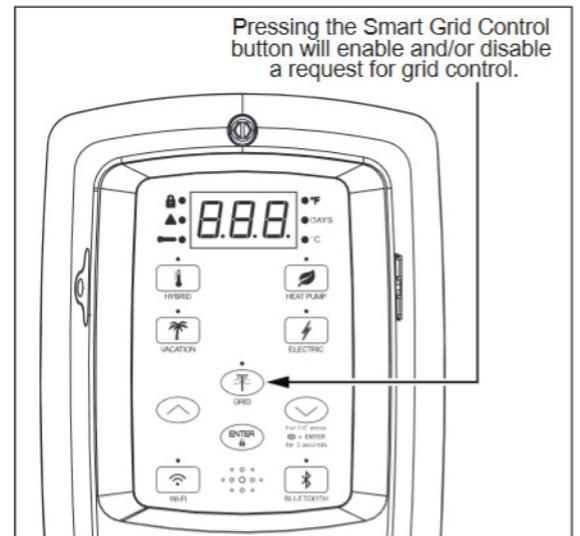
Step Six: Turn the Power Back On and Confirm UCM Operation

Turn on the power to your water heater at the circuit breaker or fuse box by flipping the breaker supplying power to your water heater to the ON position or by replacing the fuse.

After plugging in the UCM, it should be automatically enabled. Press the "ENTER" button on the water heater control panel to confirm UCM is present. This action will be followed by a solid LED from the "GRID" indicator on the water heater control panel.

If you would like to temporarily disable (override) WatterSaver's control of your water heater, press the "GRID" button on the water heater control panel. This will disable the UCM control of your water heater for 72 hours.

After installation, the UCM LED indicator light should turn on and be green when the power is turned on. After about 20 seconds, it will start flashing blue while connecting to the cellular network. After about 30 seconds, the LED should stop flashing and remain blue. The UCM is now successfully connected to the cellular network and transmitting and receiving data. If the UCM LED is not solid blue, try the troubleshooting steps below.



Troubleshooting UCM Error Codes

1. Blue flashing means there is a cellular connection issue.
 - a. Two blue flashes, then a five second delay: cellular network is congested. This should resolve automatically within 1-2 minutes.
 - b. More than 1 minute: Verify that the CTA-2045 UCM is firmly pushed in to the port. Try uninstalling and re-installing the UCM (Step Five) to confirm this. Shut off power to the water heater before proceeding with Step Five. Four blue flashes, then a five second delay: internal SIM card not detected. Contact WatterSaver to exchange the UCM.
 - c. Five blue flashes, then a five second delay: connected to cellular network but not getting responses. This should resolve automatically within 1-2 minutes.
 - d. Six blue flashes, then a five second delay: module has been rejected from cellular network. At the circuit breaker or fuse box, shut off the power to your water heater for about five minutes, then turn the power back on. This should solve the issue.
2. Red flashing means there is a communication issue with the water heater.
 - a. Less than 1 minute: temporary communication error.
 - b. More than 1 minute: Verify that the CTA-2045 UCM is firmly pushed in to the port. Try uninstalling and re-installing the UCM (Step Five) to confirm this. Shut off power to the water heater before proceeding with Step Five.
3. Please email support@watter-saver.com to let the support team know that your UCM is installed and that you are ready to connect to WatterSaver.
4. The WatterSaver team will send a link to your email to connect your device to the program.

If Applicable: CTA-2045 port adapter Setup for WatterSaver Participation

A. Gather Required Equipment

Communication module setup requires the following equipment.

- Compatible A.O. Smith water heater
- CTA-2045 port adapter
- Screws (provided)
- Screwdriver

WARNING! WORKING ON AN ENERGIZED CIRCUIT CAN RESULT IN SEVERE INJURY OR DEATH FROM ELECTRICAL SHOCK. TURN POWER OFF BEFORE PERFORMING THIS INSTALLATION. CHECK WIRE WITH A NON-CONTACT CIRCUIT TESTER TO MAKE SURE POWER IS OFF.



Figure 1



Figure 2



Figure 3

1. Remove access cover. Discard screws. Longer screws are provided. See figure 1 for the exposed access cover.
2. Plug the port adapter into the water heater at its connection pins. See figure 2.
3. Secure the port adapter with the new screws (2). The screws are provided. See figure 3.
4. While holding the port adapter firmly, remove the receptacle cover. This cover is labeled as follows: REMOVE COVER TO CONNECT COMMUNICATIONS MODULE.