

Installing Wireless Tag Sensors for Pest Control

By Humane Pest Control
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Wireless Tags (<http://wirelesstag.net/>, <http://store.wirelesstag.net/pages/support>) are powerful, compact devices that can be used to sense immediately and alert you if an animal has been caught in a trap. Each sensor in a pest control system can be individually configured, and you can connect up to 250 of them to a single Tag Manager. The Tag Manager, or communications hub for a Wireless Tag network, is directly connected to the internet via Ethernet cable, so it can communicate with you—via email or text—whenever a tag senses something, e.g. motion from a mouse caught in a trap. This guide will take you step-by-step through the basic process of configuring a Wireless Tag sensing network for pest control purposes, as well as using all the special settings, e.g. changing tag sensitivity, changing tag monitoring rate, and examining tag data over time. Specifically, we are envisioning a wireless motion sensor tag attached to a live trap used to catch an animal, so that a person can be immediately notified by email and text alerts when an animal is trapped, and can relocate the animal swiftly.

While the tutorial uses the Android App, all functionality for the iOS should remain the same; only the layout of the app should differ. Additionally, for web access on PC/Mac, you can create an account and login at <https://www.mytaglist.com/eth/>.

Materials needed:

1. A smartphone or tablet
2. Wireless Tag Manager & Manager serial number (on bottom of Manager)
3. Wireless Motion/Temperature sensor tags
4. Ethernet connection & Ethernet cable
5. Tag Manager/USB cable & USB/AC adapter



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1. **Setting up the Tag Manager**
 - a. Connect your Tag Manager to a wall socket via the USB cable and the USB/AC adapter. Then connect the Manager to the internet using the Ethernet cable.
 - b. **If the Wireless Tag logo and/or WiFi lights turn green, you are ready to move to the next step. If any other color of lights come on, then you do not have a good Ethernet connection (it may be password protected or license-limited) and you must correct the issue. If no lights come on, then something is wrong with your power connection.**



- c. Go to the Play Store and search “WirelessTag” to download the app. (If using iOS, go to the App Store and search “Wireless Tag List.”) The app author is CAO Gadgets LLC.
- d. Create an account. You will need the Tag Manager serial number, located on the bottom of your Tag Manager. The email you use to set up the account will be used to recover your password if you forget it.

- e. If you are successful, your screen will look like this. Name the “device”—i.e. the tablet or phone you are using.

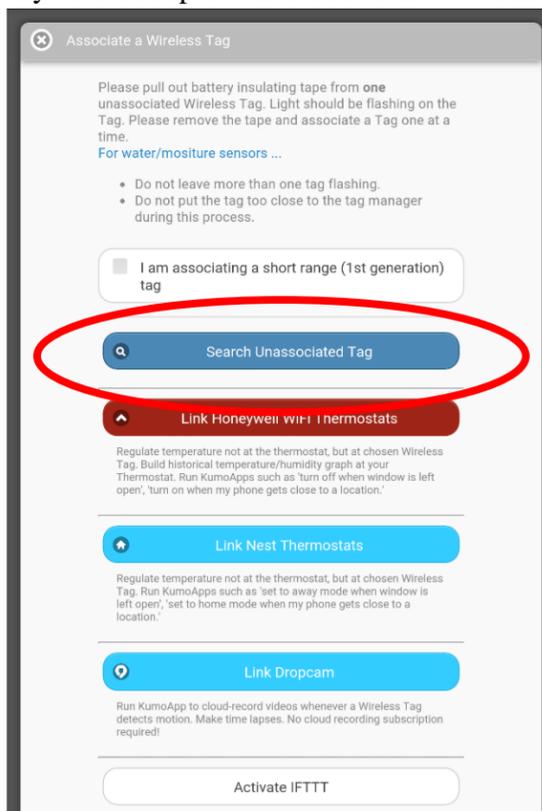
- f. To log into the Wireless Tag app in the future, simply use your email address and the password you created.

2. Associating your wireless tag sensor(s)

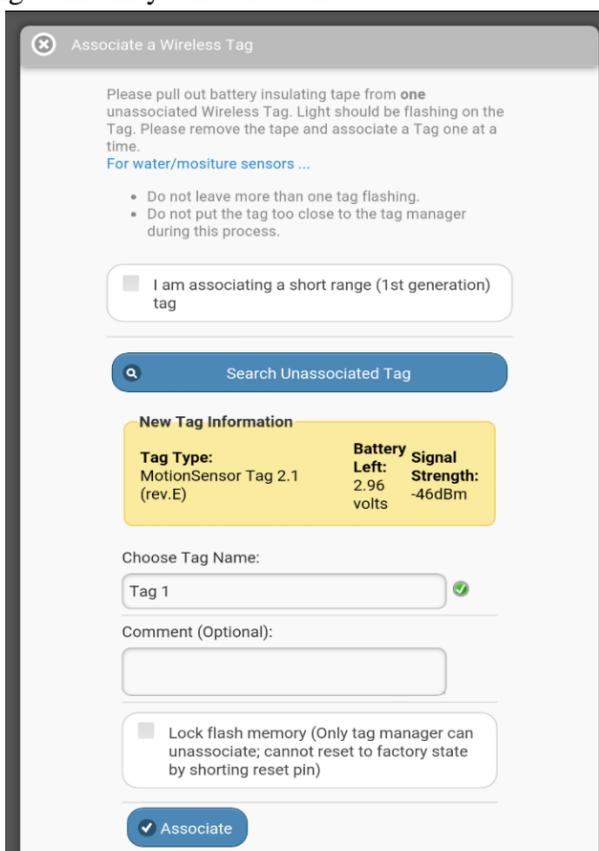
- a. Pull the white tab out of the sensor you wish to associate with the tag manager. (Only associate one at a time.) A red flashing light should appear next to the Wireless Tag logo on the sensor. This light will continue to flash until the sensor is successfully connected to the Manager.



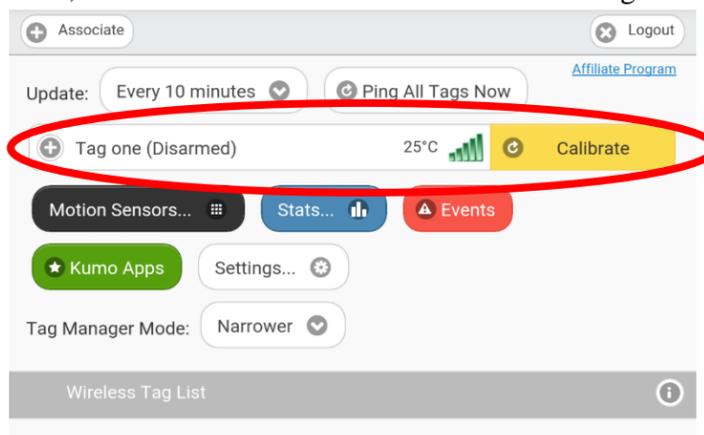
- b. Load the Wireless Tag app on your portable device. In the top left hand corner, tap on the “Associate” button.
- c. Your screen should now look like this. Tap on the “Search Unassociated Tag” button, making sure that the sensor tag is at least a foot away from the Manager. It may take a couple tries and/or a few minutes.



- d. When the tag is found, the screen will change to this. Name the tag, and tap associate. When this is successful, the tag will beep and the red light will stop flashing. This may take a few tries.



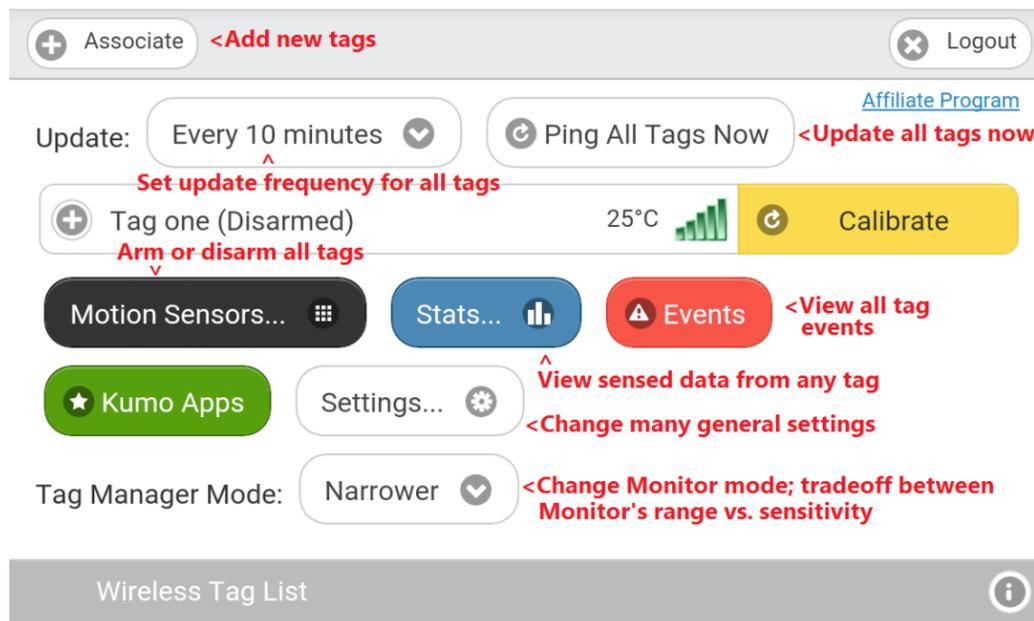
- e. When you go back to your home screen, it will now look like this. Notice the new tag listed on top.



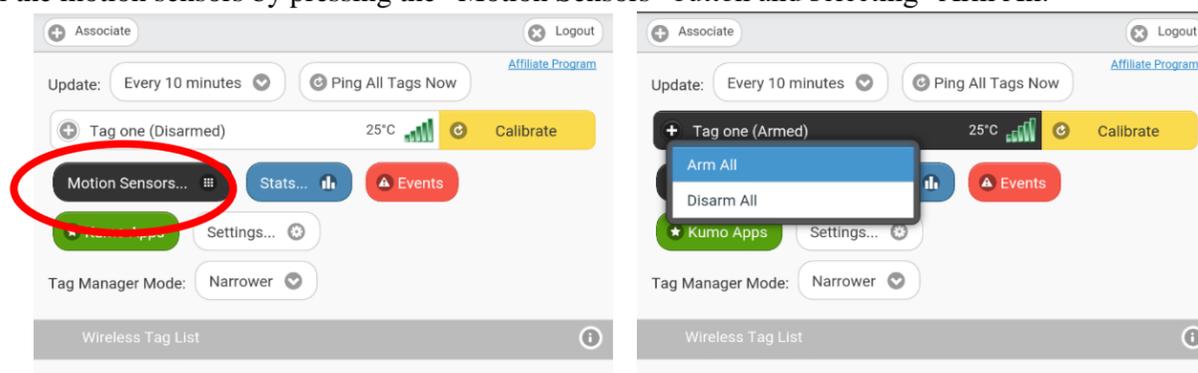
- f. Repeat this process until all your desired tag sensors are connected to the Tag Manager.

3. Configuring the sensor tags

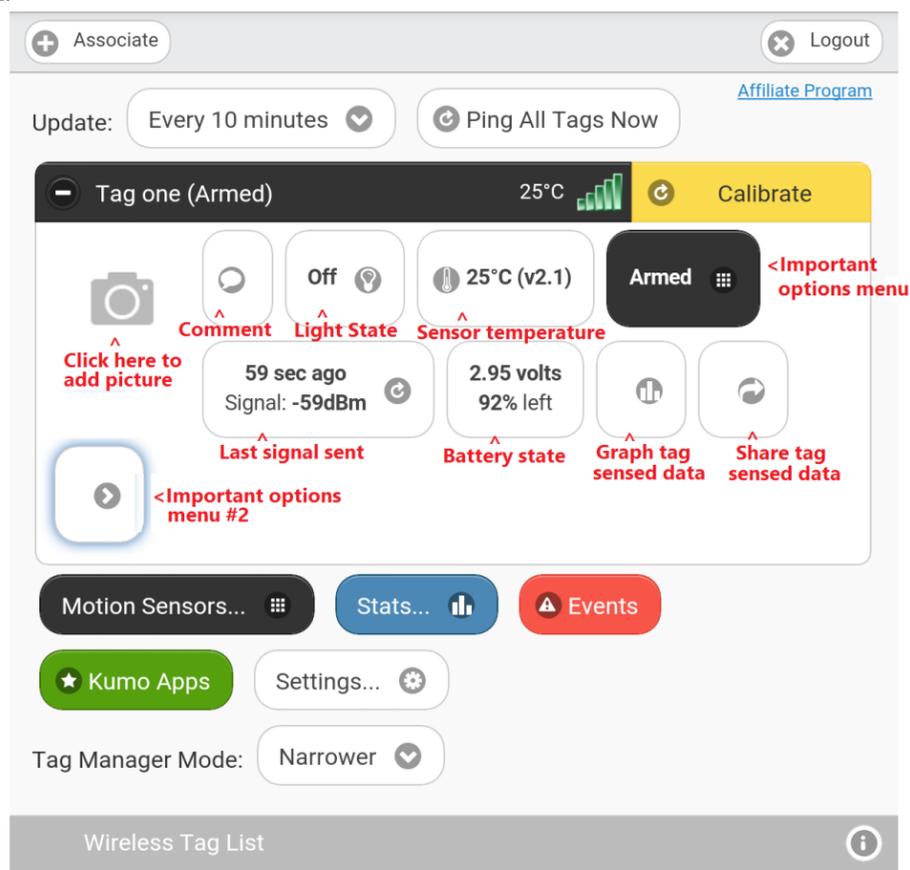
- a. Once you have all your tags associated, you can start configuring them! We will go over how to configure these tags for motion capture, since that is what we need for pest control purposes. Feel free to play around with the Wireless Tag app to discover more functionality; a general outline of the app home screen is shown below, along with some general notes on some of the options.



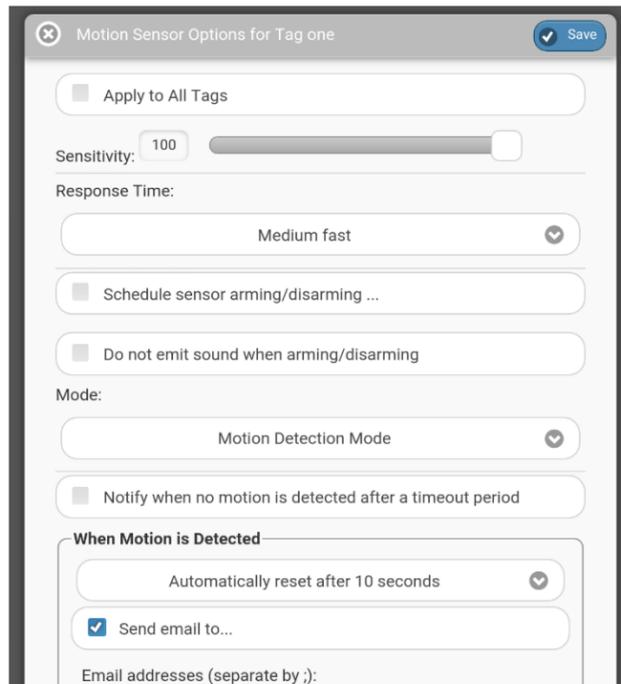
- i. The “Update Every . . . minutes” dropdown menu lets you choose the default amount of time before any tag will send a status update to the tag manager. A longer update interval means longer battery life, but fewer updates. We will tell you how to have an individual tag have a different update frequency later.
- ii. “Ping all tags now” forces all tags to update at once; this can be used to see if any tags are missing instantaneously.
- iii. Tag Manager Mode allows you to trade off range for robustness. The narrower the setting, the farther the range, but this means the Manger has to do more noise filtration. Thus, it is less likely to pick up all sensor events than when on a wider setting. The recommended setting is Medium; on this setting, the tag manager can still pick up movements of 0.5 cm if the tag is within approximately a 500ft radius.
- b. First, arm all the motion sensors by pressing the “Motion Sensors” button and selecting “Arm All.”



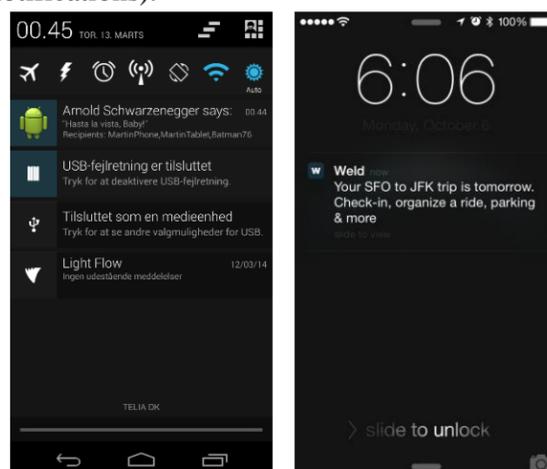
- c. Now tap on the first tag. A menu will expand (see below) that has a series of buttons beneath it, all of which are briefly explained in the diagram.



- d. Let’s go into more detail about the “Arm” options menu. Tap on the “Armed” button, then tap “Options.” Your screen will look like this. You can apply the changes you make to this first tag to all tags, saving time.

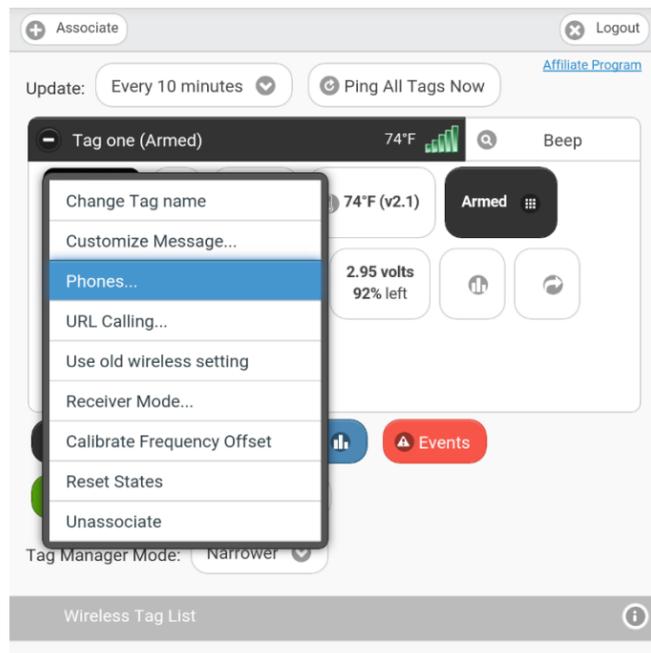


- e. For pest control, we recommend a sensitivity level between 20 (more motion required before an alert is sent) and 60 (less motion required before an alert is sent out) to remove false alarms while ensuring the tag does sense caught animals; make sure the tag is in “Motion Detection Mode.”
- f. **If you wish to receive a text message alert instead of just regular email alerts, the easiest way to do this is by locating your carrier in the list below and adding that email address to the “Send email to . . .” list.** For example, if I wanted to send a text message to 999-888-7777 and the carrier for that number was T-Mobile, I would use the email address 9998887777@tmomail.net.
- i. AT&T – cellnumber@txt.att.net
 - ii. Verizon – cellnumber@vtext.com
 - iii. T-Mobile – cellnumber@tmomail.net
 - iv. Sprint PCS - cellnumber@messaging.sprintpcs.com
 - v. Virgin Mobile – cellnumber@vmobl.com
 - vi. US Cellular – cellnumber@email.uscc.net
 - vii. Nextel - cellnumber@messaging.nextel.com
 - viii. Boost - cellnumber@myboostmobile.com
 - ix. Alltel – cellnumber@message.alltel.com
- g. The rest of the options can be set to your personal preference. Some brief descriptions of the other options:
- i. Response time: Response time is similar to Update frequency; slower response times mean better battery life but worse notification frequency.
 - ii. Schedule sensor arming/disarming: This allows you to automate when you want the sensor tag to be turned on, e.g. only on weekdays between 9:00 AM and 5:00 PM.
 - iii. Notify when no motion is detected after a timeout: See Option IV.
 - iv. Automatically reset after . . . : The time interval you select here determines the “timeout” period. If you select 1 minute, that is your timeout period. If the tag moves again during the timeout period after the initial movement is detected, you will not be notified. If you select Option III, if the tag is not moving at the end of the timeout period, you will be notified.
 - v. Send push notification: A push notification is a notification that shows up immediately on your portable device, generally with an icon and a short message. Examples of general Android (left) and iOS (right) push notifications are shown below. When you select this option, the suboptions “use speech,” “keep ringing until reset,” and “silent” appear. “Use speech” means that if you have the app open, a voice alert will tell you when a tag has moved. “Keep ringing until reset” means that you will continue receiving push notifications to your phone as long as the tag is not reset. “Silent” means that you will receive silent push notifications (this only matters if you have sound turned on when you receive push notifications).



- vi. Make tag beep:
- vii. **Below is a set of sample settings that could be used when a motion sensor tag is attached to a live catch trap.**
 1. Sensitivity: 40
 2. Response time: Medium Slow
 3. Do not schedule sensor arming/disarming; do not emit sound when arming/disarming.
 4. Mode: Motion Detection mode
 5. Turn on "Notify when no motion is detected after a timeout period" Doing that can help to identify false

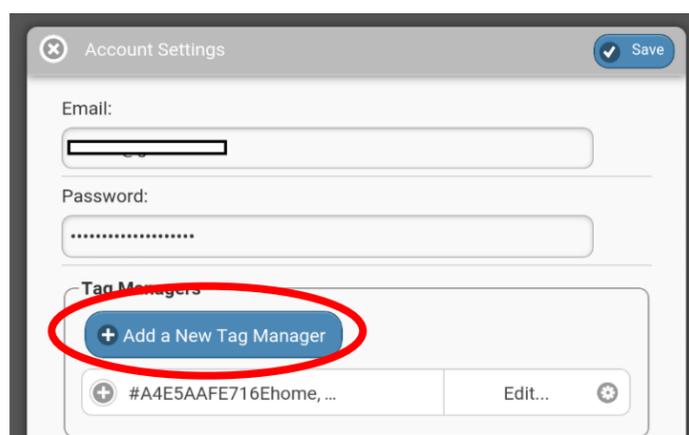
- alarms, e.g. if someone walked by the trap or bumped it.
- 6. Timeout after 1 minute.
- 7. Send email to your email and any phone that is not the phone used to control the Wireless Tag monitor.
- 8. Do not send Tweet.
- 9. Do not notify on door close and motion sensor timeout.
- 10. Send push notification with no additional sub-options selected.
- 11. Do not make tag beep.
- h.** In the Important Options Menu #2 (labelled in picture 3c), you can change higher-level settings, like the sensor tag name, the message sent when the tag is moved (e.g. “An animal has been caught in the garage”), and which device is notified when the tag senses an event.



- i.** We recommend testing all your tags to make sure that they are working as you intend, including tag behavior, portable device notifications, and sensitivity.
- j.** In the next section, we will go over adding additional tag managers and connecting multiple mobile devices.

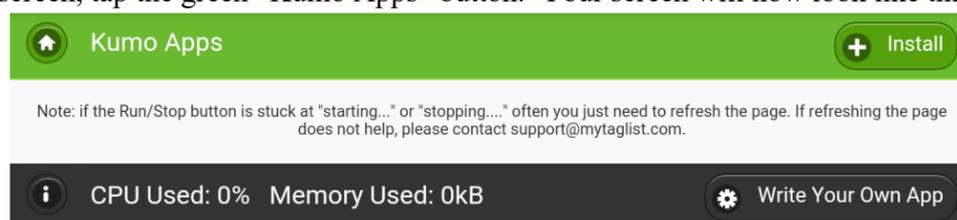
4. Configuring your home monitoring system

- a.** Setting up another mobile device is easy. Simply download the Wireless Tag app on another device, and sign in to the app using the same account information.
- b.** To add another Tag Manager, go to the Settings Menu, then press “Account.” Tap “Add a New Tag Manager,” and give the appropriate information.

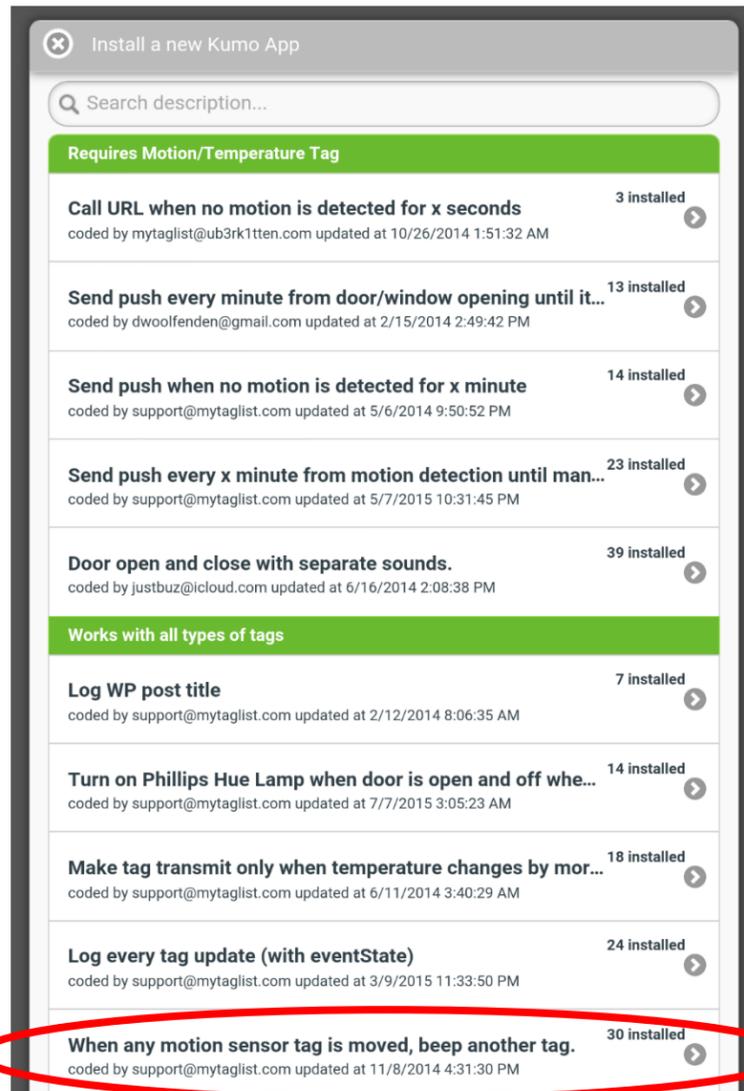


5. Using Kumo Apps to Improve Functionality

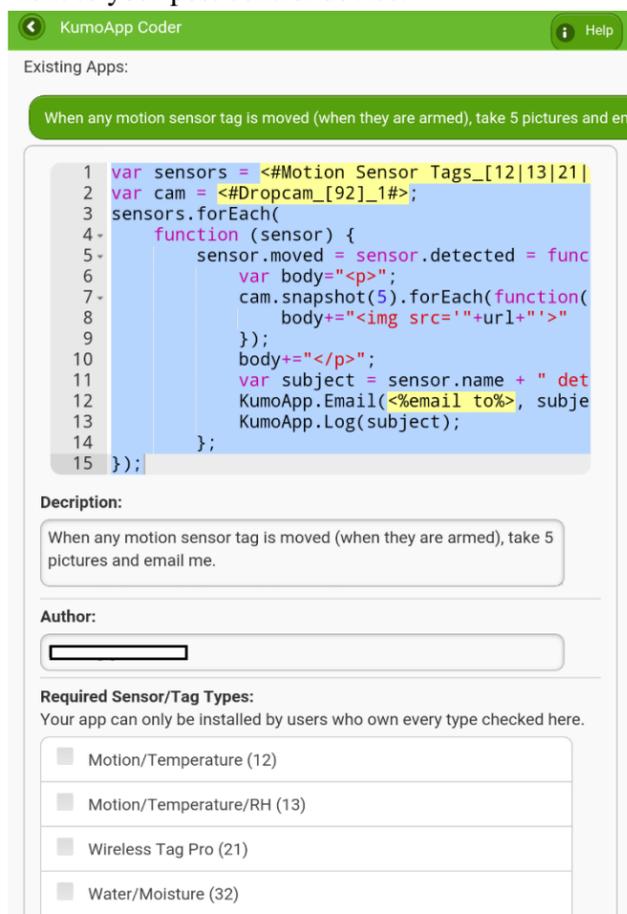
- a.** Kumo Apps allow you to do more than just have your tag email, text, or tweet you when it detects motion. Kumo Apps can tie your tag events to actions in the physical world (like having a specially configured camera snap a picture when motion is detected), or allow tags to talk to one another. We’ll give a brief overview of how to access and install Kumo Apps, as well as a few recommendations for ones to check out.
- b.** On your home screen, tap the green “Kumo Apps” button. Your screen will now look like this.



- c.** If you want to install a pre-programmed app, tap the “Install” button in the top right corner. If you want to code a new app or modify an existing one, tap the black “Write Your Own App” button.
- d.** For installing pre-programmed apps, your screen will now look like this. Select which app you want to install—we recommend checking out “When any motion sensor tag is moved, beep another tag,” so you can put a tag in your wallet that will let you know if another tag has sensed a caught animal.

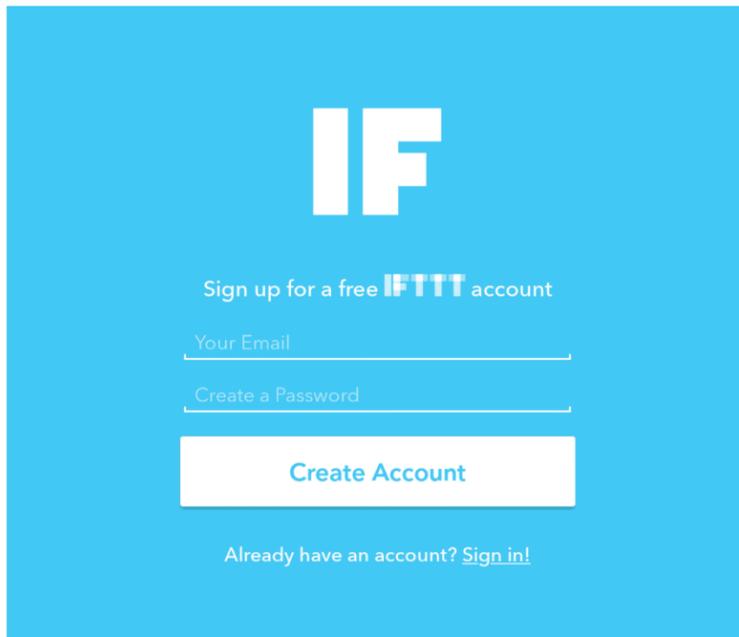


- e. Simply fill out the fields, and tap “Apply” to finish.
- f. For modifying an existing app or coding a new one, your screen will look like this. The top green bar gives you the existing apps that you can use as a template—the coding language is Javascript. When you’re done, press “Create/Update App.” Wireless Tag will tell you how to use your new app. We recommend checking out “When any motion sensor tag is moved, take 5 pictures and email me” (only available from the “Write Your Own App” top menu) if you want to install a Dropcam—an intelligent sensor camera—next to your pest control device.

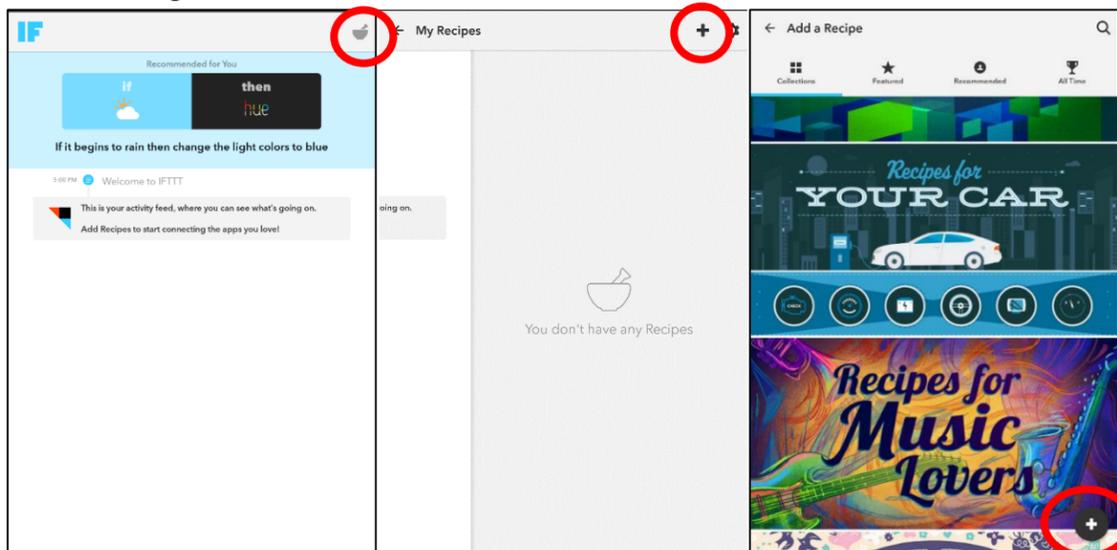


6. Using IFTTT with Wireless Tag

- a. While Kumo Apps is a great way to interconnect tags and tie together sensors and specific physical events, IFTTT (IF This Then That—as in, IF THIS happens, THEN I want THAT to happen) allows you to connect an even wider variety of things together, particularly involving other apps like Facebook or GroupMe. We’ll provide a very brief section on how to install and use IFTTT with Wireless Tag so you have more control over what happens when an animal is caught in a trap.
- b. To start, go to the App store and download the “IF” app by IFTTT.
- c. Create an account by filling in an email and a password. (You have to go through several screens first.) You will be able to confirm your email address by going to your email inbox later.



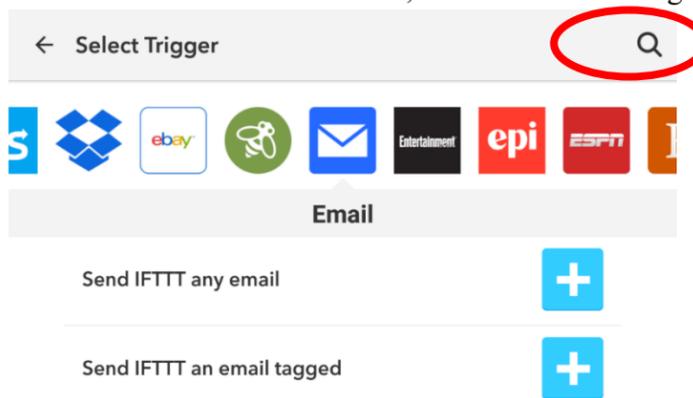
- d. To create a new recipe, swipe to the left to show your current recipes, then on the “+” button on the top right to create a new recipe, then on the “+” on the bottom right to make a new recipe from scratch. (If your device is in landscape orientation, the recipe list will already be displayed so you just need to tap the two plus buttons.) A recipe involves two things: a trigger—in our case, a Wireless Tag sensor event—and a result, or “action channel.”



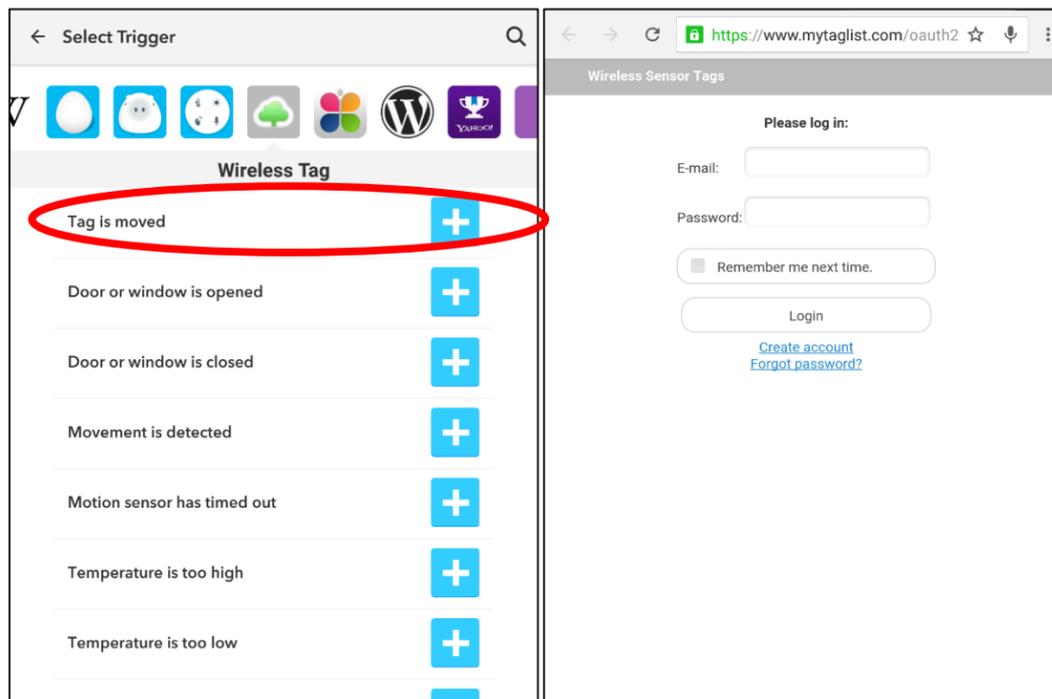
- e. Your screen will now look like this.



- f. To set up the trigger, tap on the blue “+” button. On the next screen, search “Wireless Tag” in the IFTTT search bar on top.



- g. Tap on the Wireless Tag icon, then select “Tag is moved.” The app will then ask you to log into Wireless Tag; tap “Continue” and it redirects you to the Wireless Tag site. Use your account information from Part 1 Step F to log in.



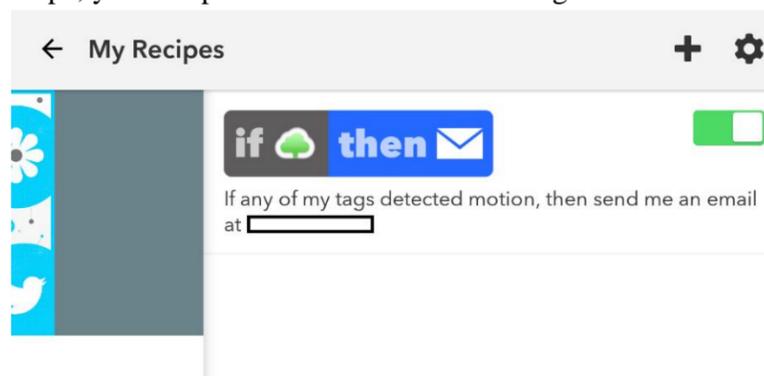
- h.** Next, grant IFTTT API access and press “Done.” Select the tag you want to act as the trigger (you can select all at once using the option “Any of my tags”), and press “Next.”



- i.** Now, complete the action channel by pressing on the red “+” button and searching through the options until you find the one you want. One to consider is sending a GroupMe message; you can use this to send a text to a group of individuals who are able to take care of the trapped animal if you are occupied or away. The GroupMe icon is shown below. (However, to use this, you must have the GroupMe app installed, or else have an account on their website.)



- j.** When you have a successful recipe, your recipe screen will look something like this.



- k.** You can deactivate any recipe by pushing the green slide button in the top right corner.