2GIG ADC-IS-100-GC Image Sensor Installation Guide

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Contents

PRODUCT SUMMARY

The Image Sensor is a pet immune PIR (passive infrared) motion detector with a builtin camera. The sensor is designed to capture images during an alarm or nonalarm events.
Users can also initiate image capture ondemand to Peek-In on their property. Images are stored locally and uploaded either automatically when motion is captured during alarm events or manually when requested by the user. Once uploaded, images are available for viewing on the Alarm.com Website or an Alarm.com Smartphone app. The sensor is battery-powered, all wireless, and simple to install and operate. A system with a 2GIG Cell Radio Module connected to an Alarm.com account with a service plan subscription is required. For additional information on product features, functionality, and service plan options, visit the Alarm.com Dealer Site **(www.alarm.com/dealer)**.

Highlighted Features

- Battery operated
- Communicates wirelessly to the security control panel
- 35 feet by 40 feet detection coverage area
- Configurable PIR sensitivity and pet immunity settings
- Image: QVGA 320×240 pixels
- Color Images (except in night vision)
- Night vision image capture with infrared flash (black & white)
- Tamper detection, walk test mode, supervision

HARDWARE COMPATIBILITY & REQUIREMENTS

- Security Control Panel: 2GIG GolControl with software 1.10 & up
- Communication Module: 2GIG Cell Radio Module
- Required Radio: 2GIG-XCVR2-345
- Available Zones: One zone per Image Sensor installed (Up to 3 Image Sensors per system)

HARDWARE INSTALLATION

IMPORTANT: For the smoothest installation, learn one Image Sensor at a time. Insert batteries only after initiating learn mode at the panel. (See 4-f)

1. **Create Alarm.com Customer Account.** Using the 2GIG Cell Radio Module serial number, create an **Alarm.com** customer account on the **Alarm.com** Dealer Site (**www.alarrn.com/dealer)** with an Image Sensor capable service plan.
2. **Verily module & XCVR2 radio installation-** Ensure that the communication module and XCVR2 radio are connected and installed properly inside the control panel.
3. **Register Module and Test-** Power up the panel and initiate a cell phone test to ensure the communication module is properly installed and communicating with **com**.
4. **Enroll Sensor In Panel-**
   a. Enter the ‘system configuration” menu in the Installer toolbox”.
   b. Under 01, select the RF sensor #. (Unused zone 01 to 48)
   c. Select the RF sensor type. (Recommended: 04- Interior Follower, 10-Interior w/ Delay, 23- No Response Type)
   d. Select RF sensor equipment type. ((2) Motion)
   e. Select RF sensor equipment code. (9999 ADC Image Sensor)

f. Register the RF Sensor Serial Number. Click learn" to initiate learn mode on the panel and XCVR2 radio. Power up the Image Sensor by inserting the batteries or using a paper clip to hold the sensors reset button for 3 seconds.

g. Select RF sensor equipment

h. Select RF sensor loop number. (Recommended: Loop 1)

i. Select RF sensor dialer delay.

j. Construct RF sensor voice descriptor. (Recommended shortcuts: 147-Motion Detector, 120- IS)

k. Select RF sensor reports. (Recommended: (1) Enabled)

l. Select RF sensor supervised. (Recommended: (1) Enabled)

m. Select RF sensor chime.

n. Continue to edit the next sensor or select skip, end, and exit to save

o. Perform a cell phone test to ensure that the updated equipment list is sent to **Alarm.com**.

The sensor is now learned into the panel. After enrollment, be sure to keep the sensor and panel powered so the sensor can complete an initialization process with the **Alarm.com** Network Operations Center. This process will take several minutes. Images cannot be captured until initialization is complete. To verify that this process is complete, enter the "Image Sensors" menu in the "installer toolbox". Select the Image Sensor of interest and verify "rules status: complete".

5. **Choose Sensor Location and Mount**

a. Determine sensor mounting location based on installation scenario and criteria noted in the "Installation Guidelines." For best image capture, the target capture areas should be centered in the frame. (e.g. If the customer wants to capture people coming through the door, the doorway should be centered in the camera/PIR view.)

b. Verify RF communication prior to mounting- To verify that the Image Sensor communicates with the control panel in its mounting location, enter "system test" through the "installer toolbox" and trigger the Image Sensor.

c. Determine desired mounting angle for customer scenario; attach the mounting arm to sensorback and re-attach sensor to sensorback. The mounting arm attaches to the back of the sensor enabling the sensor angle to vary based on the application. To obtain the full 35′ x 40′ coverage area, mount the sensor at a 6 downward angle. This corresponds to a "teeth up" orientation of the mounting arm. For most smaller areas in residential installations, mount the arm with the "teeth down" for a deeper angle (18). Secure the back of the sensor to the mounting arm with the provided screw. If the camera will be mounted perpendicular to the wall, the mount sensor without the mounting arm/bracket directly on the wall, at a 12° angle.

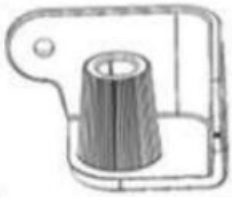
Mounting Arm Orientation (Top: Teeth Up, Bottom: Teeth Down) *Attach Mounting Arm to Sensor-Back* *Attach Sensor to Sensor-Back*

d. Choose applicable mounting bracket for customer scenario. The sensor hardware packet contains 2 mounting brackets for different mounting scenarios. Use the provided large screws and anchors to attach the bracket to the wall.

Mark location of bracket holes on the mounting surface at a height of 8 feet for maximum coverage area. (Leave at least 3 inches of clearance above the sensor to allow for battery replacement without uninstalling the

mounting bracket.)

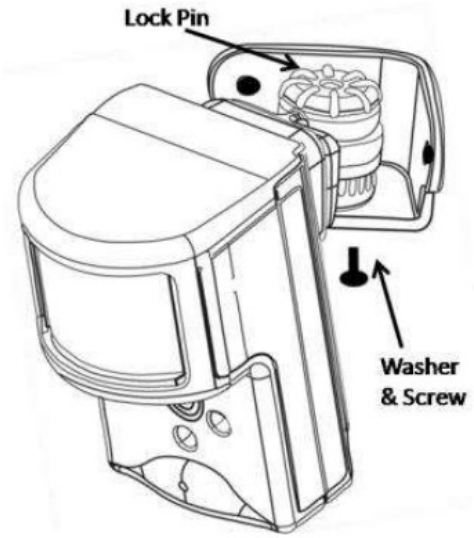
Flat Wall Mount



Corner Wall Mount

e. Place the sensor with an arm on the mounting bracket. Adjust the horizontal positioning of the sensor to point towards the desired coverage area. To adjust positioning, lift the mounting arm at least 1 /3 of the way of the bracket and rotate the arm.

f. Secure the mounting arm location by sliding the lock pin into the hole. Use the washer and remaining small screw to secure the lock pin by screwing upwards through the bottom of the hole in the mounting bracket. (Note: To make it easier to adjust the P/R/camera field of view in step 10, complete this step after horizontal sensor positioning is finalized.)



6. **Complete PIR Testing**

   Verify that PIR coverage adequately covers the area by performing a walk test. (See “Pro gramming” section for more details.)

7. **Test Image Capture**

   To conserve the customer’s monthly image upload quota, automatic alarm uploads are disabled for the first four hours after any new sensor (Image Sensor or other) is installed into the system. Installers can verify sensor positioning and test image captures on installed sensors on Alarm.com’s Mobile Tech website (**www.alarm.com/MobileTech**) without accessing the customer’s account or deducting from the customer’s monthly upload quota. If possible, installers should also test night vision captures to ensure sensor infrared flash is not reflecting off surfaces and washing out images.

Alarm.com Image Sensor

To access the Mobile Tech website, go to **www.alarm.com/Mobile** Tech and log in with an Alarm.com Dealer website login name and password. Select the customer’s account and navigate to the “Image Sensor” section. Images are requested and viewed through the “Image Testing” tab. For privacy reasons, a local comm. the test must be performed prior to requesting an image through Mobile Tech.
(**Note**: If the installer needs to continue testing beyond the 4-hour window, disable alarm auto-uploads first from the Alarm. com Dealer or Mobile Tech website or the image uploads will be deducted from the customer’s monthly quota.)

PIR Lens and Camera Coverage Diagrams

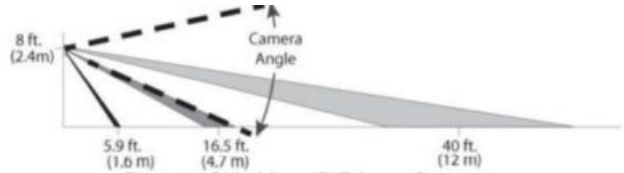


Figure 1.Side View: PIR Lens Coverage

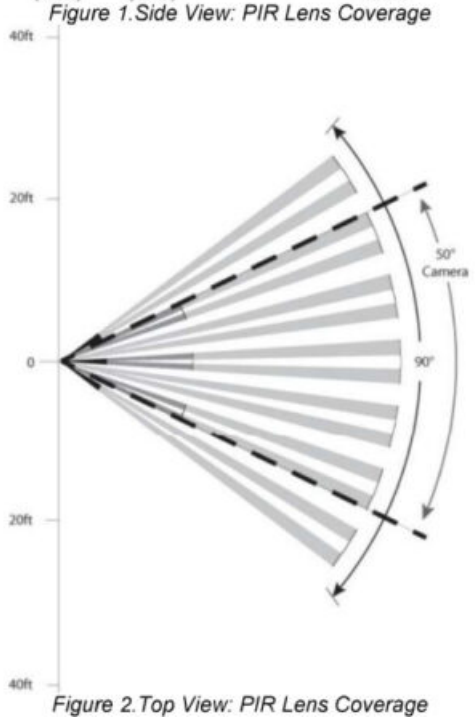


Figure 2.Top View: PIR Lens Coverage

As indicated in Figure 2, the camera coverage area is narrower than the PIR coverage area. When installing, mount sensor where subjects are likely to be centered in or across PIR and camera field of view.

INSTALLATION GUIDELINES

Before permanently mounting the Image Sensor, evaluate potential locations and consider the following factors to ensure optimal performance and false alarm protection: Range- Is the location close enough to the security panel to ensure adequate signal strength?
False Alarm Immunity- Is installation location false alarm prone? Reduce the risk of motion-triggered false alarms by making sure the location is free of vibration and the device does not face a local heat source, window, or areas with high pet activity. (Also, make sure the area is free of elevated surfaces where pets may climb.)
Capture Orientation- Is the location ideally suited for detecting motion and capturing images when there is an intruder or activity? Consider where the subject is likely to enter the area and whether or not they will be facing the sensor Lighting Conditions- How good is the artificial and natural light? Will daytime and nighttime lighting conditions ensure adequate image quality?

- If possible, locate the sensor within 100 ft of the panel especially if there are many walls between the sensor & panel, or if the panel and sensor are located on different floors.
- Avoid facing the sensor toward or close to areas that may affect communication such as metallic objects or electronics likely to produce interference. Verify sensor RF communication at the panel, even if within recommended distance.
- For optimal detection capabilities, mount the sensor where someone will most likely
  walk across the sensor coverage area as opposed to directly towards the sensor.
- By default, the Image Sensor is set to “Normal” sensitivity. A more sensitive motion profile (“High”) and a less sensitive profile providing pet immunity for pets up to 40 lbs (low’) can be selected at the control panel or

through the **Alarm.com** Dealer Website.

- The Image Sensor is designed for indoor use only and should not be installed outdoors. For proper operation in pet immune applications, the room should be kept between 60° and 110° F.
- To maximize night vision image quality, do not orient sensors towards surfaces that will create a glare when an infrared flash occurs. Avoid orienting the sensor such that the ceiling or adjacent walls are in the camera's field of view.
- Mount the sensor on a flat wall surface (do not set on the shelf) free of vibrations.

PROGRAMMING

The Image Sensor is enrolled into the control panel via the "system configuration".
Additional programming options available for configuring and testing include:

A. PIR Sensitivity Settings
By default, the Image Sensor is configured with a standard motion sensitivity profile ("Normal"). The sensor can also be set to a more sensitive motion profile ("High") and a less sensitive profile with pet immunity for pets up to 40 lbs ("Low"). The sensitivity can be configured through the control panel or **Alarm.com** Dealer Website.
From the panel, access the "image sensors" menu in the "installer toolbox". Select the sensor you want to configure and choose the new sensitivity level.
(Note: Using the high sensitivity profile increases the risk of false alarms, especially if the sensor is facing windows or sources of heat. When mounting the sensor near windows or heat sources use caution and select the "Low" PIR sensitivity setting.)

B. PIR Activation and Test Mode
During normal operation, the PIR can be activated at most once every three minutes while the system is disarmed. There is a 30-second delay after powering before PIR detection is active. For the first 3 minutes after a sensor is enrolled in a network, the sensor will enter PIR test mode and the sensor LED illuminates for 3 seconds upon each motion activation (at most every 8 seconds). For an additional testing time, the sensor into test mode by tampering it.

C. Tamper and Malfunction Reports
Tamper and malfunction reports are issued at the control panel. If subscribed, the customer will also receive notifications from Alarm.com.
A built-in accelerometer detects movement or repositioning of the Image Sensor and will initiate a tamper whenever a change in sensor orientation is detected. Reporting occurs even if the sensor backplate remains in place. The tamper automatically clears after the sensor is returned to the upright position and no movement has been detected for 5 minutes. A tamper can also be cleared by resetting the sensor.

D. Sensor LED
By default, the image sensor LED does not illuminate when activated by motion unless the sensor is in test mode. The LED can be enabled via the Alarm.com Dealer Website for each Image Sensor on a customer's account. When enabled, the LED illuminates for 3 seconds upon motion activations (at most every 3 minutes while disarmed).

E. Image Capture Settings
Capture settings are configured automatically for each sensor based upon the customer's Image Sensor service plan so it is important to subscribe the customer to a service plan before enrolling the sensor into a network.
For more information on the Image Sensor service plan options visit the Alarm.com Dealer Site (**www.alarm.com/dealer**).

SENSOR RESET BUTTON

Insert a paperclip into the hole on the front of the sensor to access the reset button. Press and hold for 3 seconds

to power cycle the sensor. Press and hold a full 10 seconds until the sensor LED flashes rapidly to reset the sensor and dear it from its network. The sensor must be reset prior to enrolling in a new network. (Note: The sensor can only be cleared from its network using the reset button if it is currently not communicating with its network. If the sensor is still communicating with its network, clear the sensor by deleting it from the system it is enrolled in.)

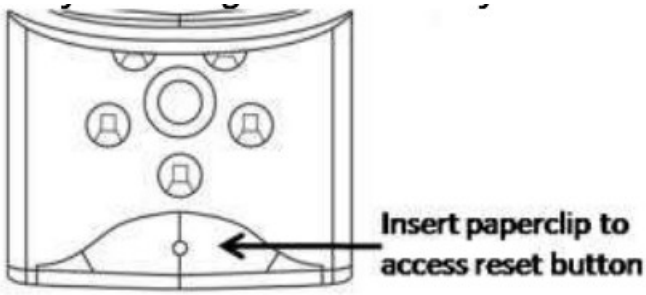


Figure 3.Sensor Reset Button

BATTERY REPLACEMENT

When a sensor's batteries are low, the panel will display a low battery alert for the sensor.
Notifications are also issued via the Alarm.com platform if the customer has subscribed to this notification type.
To replace the sensor batteries, slide the front of the sensor up off the sensor-back. (No need to remove or un-mount the entire sensor-back and mounting arm.) To maximize battery life, replace the sensor batteries with 2 AA 1.5v Energizer Ultimate Lithium batteries.
Dispose of used batteries according to the battery manufacturer's instructions and following local regulations.

Figure 4. Removing Sensor for Battery Replacement

The operation of the sensor with alkaline batteries has not been verified for compliance with UL standards.

OTHER FEATURE COMPATIBILITY

Two-Way Voice Compatibility
Images cannot be transmitted while a Two-Way Voice call is in session. When the Image Sensor is installed on a system with Two-Way Voice over the cellular network, image transmission during an alarm may be interrupted by the two-way session. Image transmission resumes once the call has terminated.
TS1 Compatibility
The Image Sensor uses the same RF radio (XCVR2) as the 2GIG TS1 touchscreen. Both the Image Sensor and TS1 may be used on the same system using the same radio.

TROUBLESHOOTING

Sensor Not Enrolling

- Verify Sensor is Receiving Power: After inserting batteries, the sensor LED should illuminate or flash within 1 O seconds.
- Verify Sensor is Not Communicating with Another Network: If the sensor has been previously enrolled in a different system, delete the sensor from the system and hold the sensor reset button for 1 o second to clear the sensor before attempting to enroll the sensor in a new network. The sensor cannot be cleared if it is currently communicating with its network. In this case, the sensor must be deleted from the system first through the control panel or remote command.

Sensor Non-Responsive

- Replace Batteries: Check battery level at the panel (under “Image Sensor” in the “installer toolbox”) and install fresh sensor batteries.

False Motion Activations

- Check Environmental Elements: Heating or cooling elements may adversely affect sensor performance. Test sensor with and without these elements to determine interference.
- Check Sensor Positioning: The sensor may not be properly positioned to capture the desired motion. Check horizontal positioning of sensor and re-mount as necessary.
- Check PIR Sensitivity Setting: Verify that the proper sensor motion profile has been selected through the setup menu or select a less sensitive profile.

Sensor Tamper

- The sensor detects changes in sensor orientation and can register a tamper regardless of the sensor-back being removed. A tamper automatically clears after the sensor has been returned to the upright position and has not detected any tamper activity for 5 minutes. With the sensor mounted, the tamper may also be cleared by holding the sensor reset button for 3 seconds to initiate a power cycle.

Images Not Captured

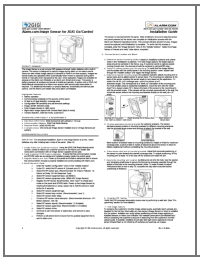
- Check Service Plan: Make sure the account has the proper Image Sensor add-on.
  Images cannot be captured without an Image Sensor service plan. For alarm functionality, add the “Image Sensor Alarms” plan. For alarms and enhanced functionality, add the “Image Sensor Plus” plan.
- Verify Sensor Rules: Make sure the sensor initialization process has been completed.
  On the Dealer Website, make sure that the sensor rules have been confirmed using the “Rules Confirmed” column.
- Enable Auto Uploads: During the first four hours after any sensor is enrolled onto the system, alarm images are not automatically uploaded to Alarm.com. Automatic uploads are automatically enabled after four hours. Enable uploads sooner from the Dealer Website. On the Image Sensor Plus plan, view and request captured images from any test alarms from the Customer Website.
- If the camera LED is blinking, refer to this chart for LED trouble diagnostics.

Image Sensor Red Status LED Activity Reference		
Device Status or Error	LED Pattern	Duration of LED Pattern
Sensor Power- Up	Solid for 5 Seconds	Approximately the first 5 seconds after powering.
Sensor Joins or Rejoins Network	Solid for 5 Seconds	The First 5 seconds after the sensor joins a new network (during enroll process) or rejoins its existing network.
Searching for a Network to Join	Fast Blink for 5 Seconds at a Time	Repeat the pattern for up to 60 seconds after powering until the sensor enrolls in a network.
Attempting to Rejoin Network	Slow Blink for 5 Seconds at a Time	Repeats the pattern for up to 60 seconds after the power cycle until the sensor reconnects to its network. (Note: This means the sensor has already been enrolled into a network and is trying to connect to it. If attempting to enroll a sensor in a new network, hold the reset button for a full 10 seconds (until LED blinks rapidly) to clear the old network before adding to the new network.)
Motion Test Mode	Solid for 3 Seconds at a Time	Repeats for each motion activation during the 3 minutes after the sensor joins the network, has been tampered or is placed in PIR test mode. (Note: In test mode, there is an 8-second “sleep” timeout between motion trips.)
Network Communication Problem	Fast Blink for 1 Second at a Time	The pattern begins after 60 seconds of searching for (and unsuccessfully joining) a network and repeats until RF communication is restored. The pattern persists as long as the sensor is not enrolled in a network or cannot connect to the current network.

TECHNICAL SPECIFICATIONS

Alarm.com Model Number ADC-IS-100-GC
2010 Part Number: 2GIG-IMAGES
Power Source: 2 AA 1.5v Energizer Ultimate Lithium Batteries
Expected Battery Life: Approximately 1 year. Battery life varies by use case depending on certain factors such as frequency of motion activations, image captures, and IR flashes.
Voltage Thresholds: Low battery alerts are issued at 3.05V. The sensor cannot operate when the voltage reads below 2.3V.
Operating Temperature Range: 32° to 110°F for non-pet applications, 60° to 110°F for pet applications
Weight: 3.1 oz. (with batteries, without mounting accessories)
Dimensions: 3.1″ h x 1.8″ w x 2.3″ d
Supervisory Interval: 1 hour
Color White
Recommended Mounting Height: 8 ft
Recommended Mounting Angle: 6° for large coverage area and rooms greater than 30 ft (“teeth up” on the mounting arm); 18° for rooms less than 30 ft (“teeth down” on the mounting arm)
Motion Profiles & Sensor Range: Normal (up to 30 ft, default), High (up to 35 ft), Low (up to 25 ft)

Documents / Resources

	2GIG ADC-IS-100-GC Image Sensor [pdf] Installation Guide ADC-IS-100-GC Image Sensor, ADC-IS-100-GC, Image Sensor