Installing the ADC Video Cameras

V520 Indoor Camera

V520IR Indoor Camera

V620 PT Indoor Pan & Tilt Camera

V721W Outdoor Camera

Cameras Mounted

V520

V520 IR

V620PT

V721W

ADC Camera Comparison

Attribute	V520	V520IR	V620PT	V721W
Uses	Indoor Base Camera	Indoor IR Camera	Indoor Pan and Tilt Camera	Outdoor IR Camera
Power Source	AC Adapter	AC Adapter	AC Adapter	AC Adapter
Communication	Wireless only	Wireless only	Wireless only	Wireless only
Communicates With	Broadband Router only	Broadband Router only	Broadband Router only	Broadband Router only
Setup Requires Ethernet Connection then Wireless Connection	Yes	Yes	Yes	No (no Ethernet connector)
Live Resolution Options	1280x800, 640x400, 320x200, 176x144	1280x800, 640x400, 320x200, 176x144	1280x800, 640x400, 320x200, 176x144	1280x800, 640x400, 320x200, 176x144
Recording Resolution Options	1280x800, 640x400, 320x200	1280x800, 640x400, 320x200	1280x800, 640x400, 320x200	1280x800, 640x400, 320x200
Live Quality	High, medium and low compression options	High, medium and low compression options	High, medium and low compression options	High, medium and low compression options
Recording Quality	High and medium compression options	High and medium compression options	High and medium compression options	High and medium compression options
Recording Compression	H.264, MPEG-4	H.264, MPEG-4	H.264, MPEG-4	H.264, MPEG-4
Image Sensor	1/4" CMOS, 1280x800	1/4" CMOS, 1280x800	1/4" CMOS, 1280x800	1/4" CMOS, 1280x800
Iris	Fixed at F2.4	Fixed at F1.8	Fixed at F1.8	Fixed at F1.8
Focal Length	NA	NA	NA	F=3.6mm
Field of View	37.8° (horizontal) 54.0° (vertical)	77.0° (horizontal) 54.0° (vertical)	77.0° (horizontal) 54.0° (vertical)	62.0° (horizontal) 38.0° (vertical)
Low-Light Sensitivity	0.5 lux at 1/5 sec.	0 lux with IR LEDs on	0.5 lux at 1/5 sec.	0 lux with IR LEDs on
IR LED Illumination Range	NA	6 meters (20 feet)	NA	12 meters (40 feet)

Attribute	V520	V520IR	V620PT	V721W
Available Image Adjustments	Brightness, Contrast, Saturation, Sharpness, Exposure	Brightness, Contrast, Saturation, Sharpness, Exposure	Brightness, Contrast, Saturation, Sharpness, Exposure	Brightness, Contrast, Saturation, Sharpness, Exposure
Pan and Tilt Range	NA	NA	Pan: 350° (-175° ~ +175°) Tilt: 125° (-35° ~ +90°)	NA
Video Motion Detection	3 windows, adjustable sensitivity and threshold	3 windows, adjustable sensitivity and threshold	3 windows, adjustable sensitivity and threshold	3 windows, adjustable sensitivity and threshold
Digital Input Trigger	Yes	Yes	No	Yes
Ethernet Connection	10/100 Mbps RJ-45	10/100 Mbps RJ-45	10/100 Mbps RJ-45	NA
Wireless Encryption	WEP, WPA or WPA2	WEP, WPA or WPA2	WEP, WPA or WPA2	WEP, WPA or WPA2
Wi-Fi 802.11 Support	B / G / N	B / G / N	B / G / N	B / G / N
Password Authentication	"Digest" authentication	"Digest" authentication	"Digest" authentication	"Digest" authentication
Simultaneous Viewers	Up to 10	Up to 10	Up to 10	Up to 10
Privacy Button	Yes (WPS Button)	Yes (WPS Button)	Yes (WPS Button)	No
Operating Temperature Range	32° ~ 104° F (0°C ~ +40°C)	32° ~ 104° F (0°C ~ +40°C)	32° ~ 104° F (0°C ~ +40°C)	~4° ~ 122° F (-20°C ~ +50°C)
Operating Humidity Range	20% ~ 80% RH	20% ~ 80% RH	20% ~ 80% RH	0% ~ 90% RH
Weather Proofing Rating	NA	NA	NA	Ingress Protection IP66 with UV protection
Maximum Power Consumption	12V DC, 2.3W	12V DC, 5.9W	12V DC, 5.1W	12V DC, 6.6W
Dimensions (LxWxH)	3.1", 1.2", 3.1"	3.1", 1.8", 3.1"	4.0", 4.3", 4.4"	Length 194mm Diameter 66mm
Weight	3.5 oz.	4.9 oz.	10 oz.	28.6 oz.

NOTE: See individual spec sheets and additional information at the end of this publication.

Installing Cameras

Process Overview

1. Site Survey
   a. Verify all parameters are satisfied
2. Information gathering
   a. Obtain network SSID and password
3. Camera setup
   a. Camera installation via EZ Install Camera Setup Wizard
4. Camera configuration
   a. Live Video
   b. Saved Video Clips
   c. Recording Schedules
   d. Camera Settings
5. Camera mounting
   a. In some cases camera settings will need to be changed to support mounted configurations.
6. Camera functionality check
   a. Live video check
      i. Camera image quality
   b. Camera settings check
      i. Wireless signal strength

Site Survey

1. Access to available Ethernet port on customer's broadband router.
   a. Access to available Ethernet port on a connected switch or hub acceptable as long as switch or hub is on the same network as the broadband router and does not require a unique password.
2. Wi-Fi network SSID and password.
3. Camera MAC address.
   a. The MAC address is indicated on the camera box and on the back of the camera.
4. Suitable mounting location.
   a. Location must have acceptable wireless signal strength.
      i. Wireless network repeater can be used to increase wireless signal strength.
   b. Location must be close to an electrical outlet.
      i. AC adapter extension cord(s) can be used to extend the mounting location.
5. Access to a computer on which the installation and configuration procedures can be completed. NOTE: Installed video cameras can be *deleted* from the customer's Reliant account on the ADC Dealer portal. However, new cameras can only be *installed* from the customer's Reliant account. Therefore, you will need access to the customer's computer (or) a laptop that is connected to the customer's network and logged in to the customer's Reliant account.

Camera LED Behavior

LED Behavior	V520	V520IR	V620PT	V721W
All LEDs off	Power off	Power off	Power off	Power off
Solid Red	Power on / camera booting up	Power on / camera booting up	Power on / camera booting up	Power on / camera booting up
Slow blinking Green	Local network connection with local IP address	Local network connection with local IP address	Local network connection with local IP address	Local network connection with local IP address
Solid Green	Full internet connection with ADC	Full internet connection with ADC	Full internet connection with ADC	Full internet connection with ADC
Fast blinking Blue	WPS connecting in progress (not used)	WPS connecting in progress (not used)	WPS connecting in progress (not used)	WPS connecting in progress (not used)
Solid Red with blinking Green	Wireless network connection failed	Wireless network connection failed	Wireless network connection failed	Wireless network connection failed
Solid Red after installation	No local or internet connection	No local or internet connection	No local or internet connection	No local or internet connection
Solid Blue	Privacy Mode enabled	Privacy Mode enabled	Privacy Mode enabled	Privacy Mode enabled
Fast blinking Red	Upgrading firmware	Upgrading firmware	Upgrading firmware	Upgrading firmware
Blinking red and green	Restoring factory default settings	Restoring factory default settings	Restoring factory default settings	Restoring factory default settings

Camera Installation Instructions

1) Installing and connecting the camera

> NOTE: The V721W Outdoor IR Camera does not require the Ethernet portion of the setup procedure. AFTER completing the Wi-Fi Access Point setup process, once the camera has a solid green LED, press the 'Find Video Devices' button below.

a. Place camera in close proximity to the internet router.
b. (V620PT only) Remove the protective lens cap from the camera lens. Do not manually rotate or elevate the camera armature.
c. From the Reliant website, click *Video.*
d. From the Camera Settings dialog box, select *Add Video Device.*
e. Follow the instructions in the *EZInstall™ Camera Setup Wizard.*

     i. The Ethernet cable must be connected to the camera before power is connected. It must also remain connected until the procedure calls for it to be removed.

     ii. At first the camera will display a blinking or solid red LED.

     iii. (V620PT only) The camera will pan and tilt during this process while it calibrates itself.

  f. Once the red LED on the camera stops blinking, changes from red to green, and remains illuminated, click *Find Video Devices.*

     i. The video camera will be listed as a new video device.

g. Select *the camera to be added* and click *Continue.*

NOTE: IF the camera being installed does not appear in the list, enter the MAC address in the text box above the list.

h. Enter a **name** for the camera and click *Continue.*

NOTE: Camera names default to the camera model designation.
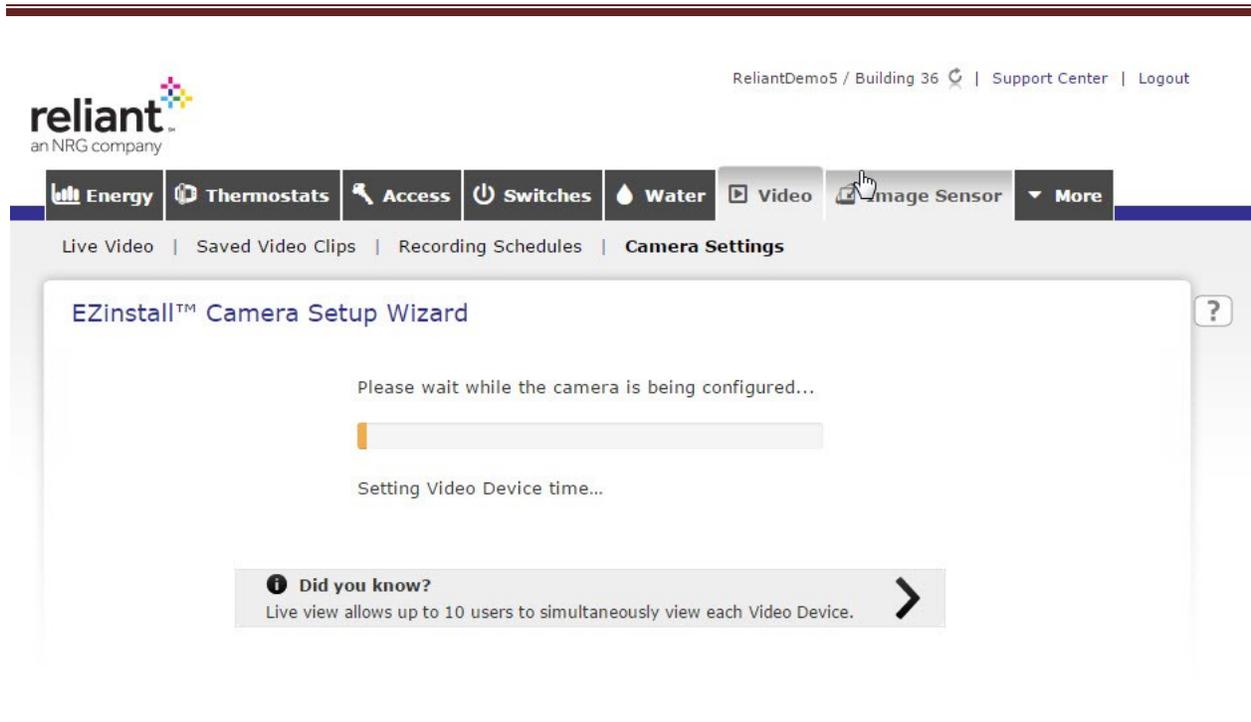
i. The automatic configuration process displays the message, "Please wait while the camera is being configured…"
ii. The automatic configuration process may take up to five (5) minutes.
i. When the question *Will this camera be installed on a network?* appears, Select *Set up the wireless connection now.*

NOTE: ADC and Reliant systems do not work with cameras connected directly to Ethernet after the initial setup phase.
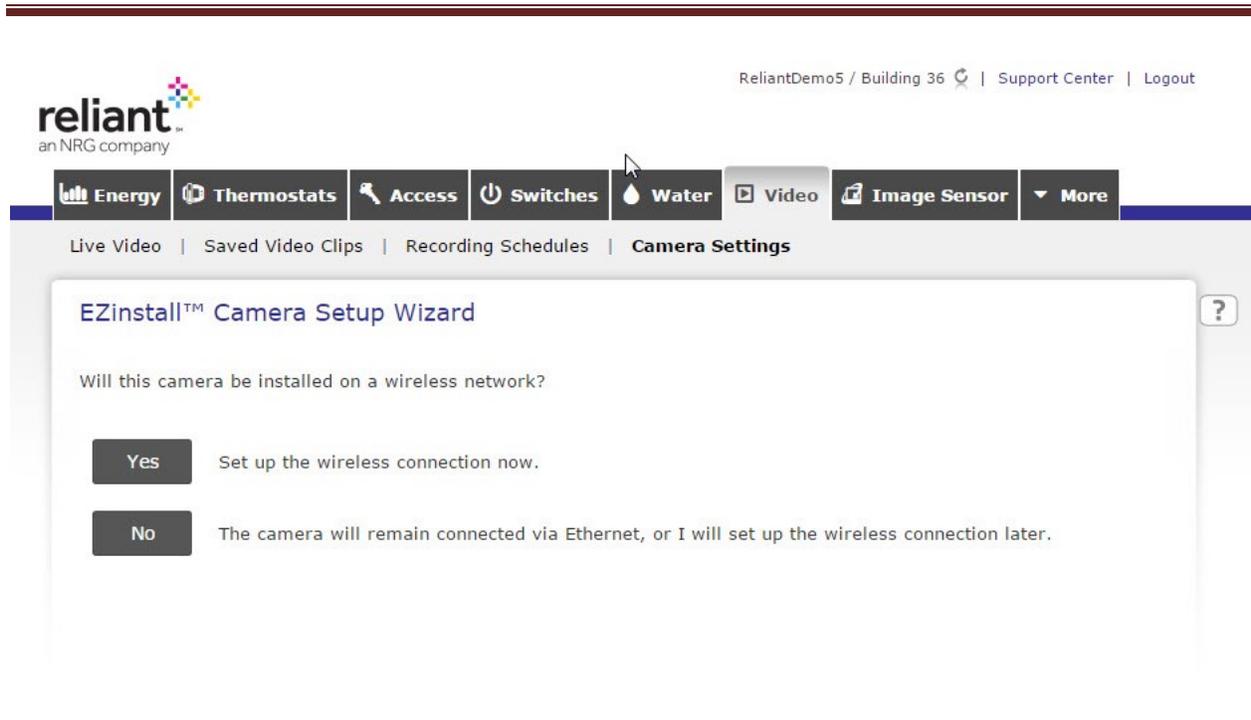
i. If the Setup Wizard displays a failure message, check the internet connection and repeat the wireless network configuration process.

j. (All except V721W) If not already done, mount the wireless antenna on the back of the camera.

k. From the *Wireless Network Settings* dialog box select *Scan for Wireless Networks.* NOTE: The other available options (Copy and Manual) are more trouble than they are worth. The best practice is to scan for networks, verify the information for the customer's network, and enter the information.

l. Select the *wireless network* to which the camera will be connected from the available networks listed by clicking the checkbox next to the desired network in the list.
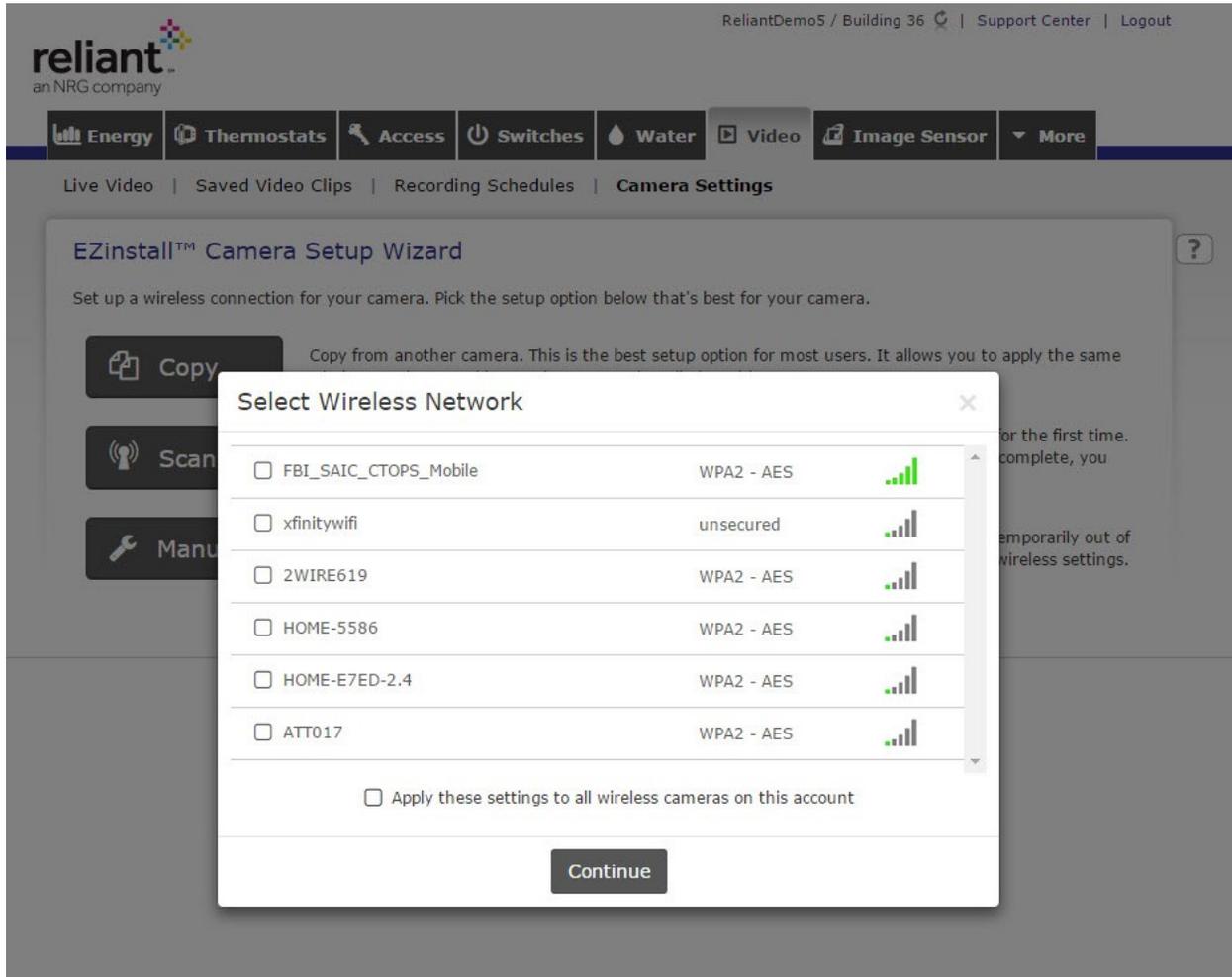
i. The Wireless Network Name (SSID), Encryption, and Algorithm fields will be prepopulated.

m. Enter the network **Wireless Network Key** in the *Wireless Network Settings* dialog box, ensure it is spelled correctly, then click *Continue.*

NOTE: A wireless network key is required. Setup cannot continue without it.
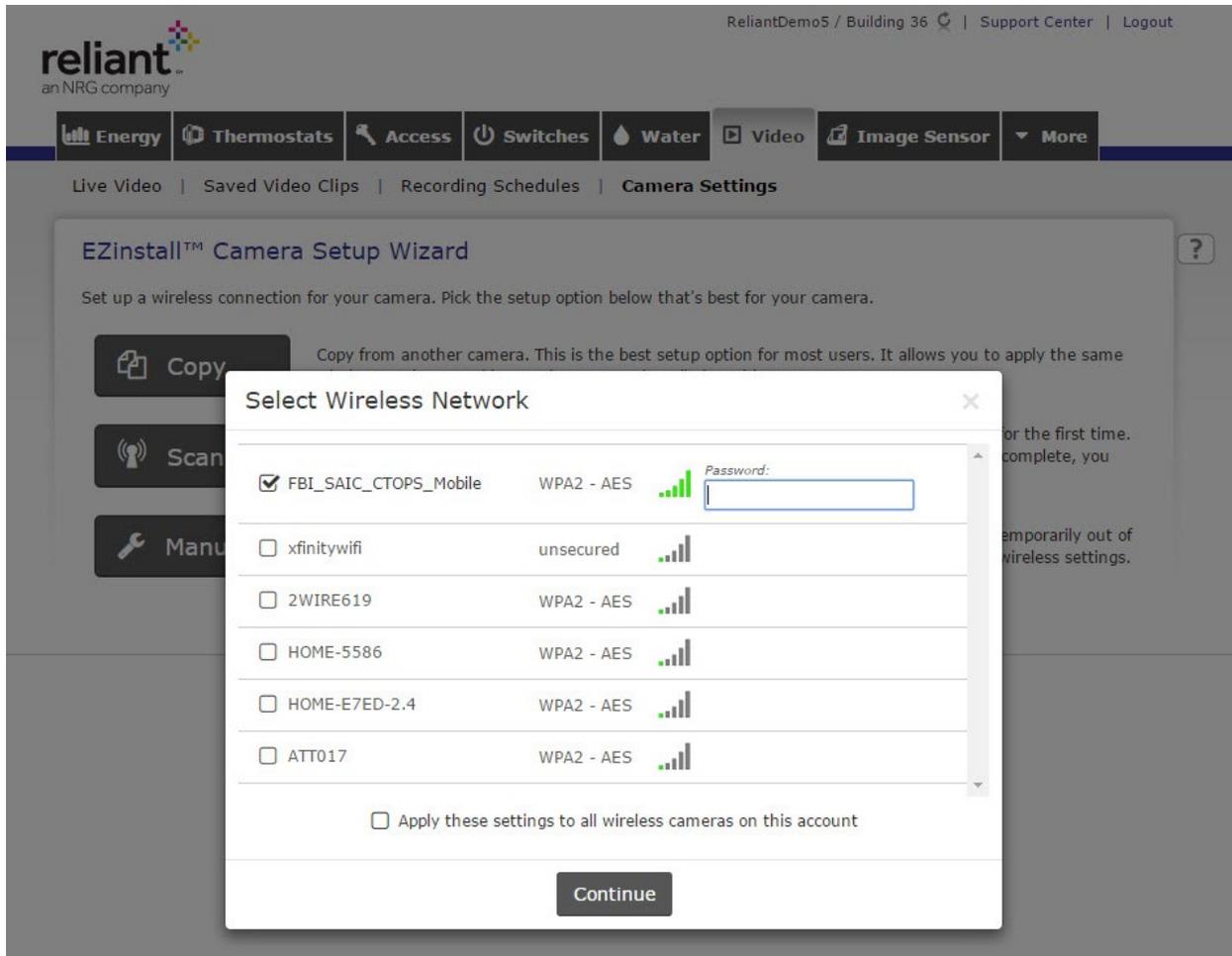
n. Click the *Above steps completed* box.
  i. The camera will search for and connect to the network.
o. Once the camera has connected to the network, the wizard will then connect wirelessly to the network.
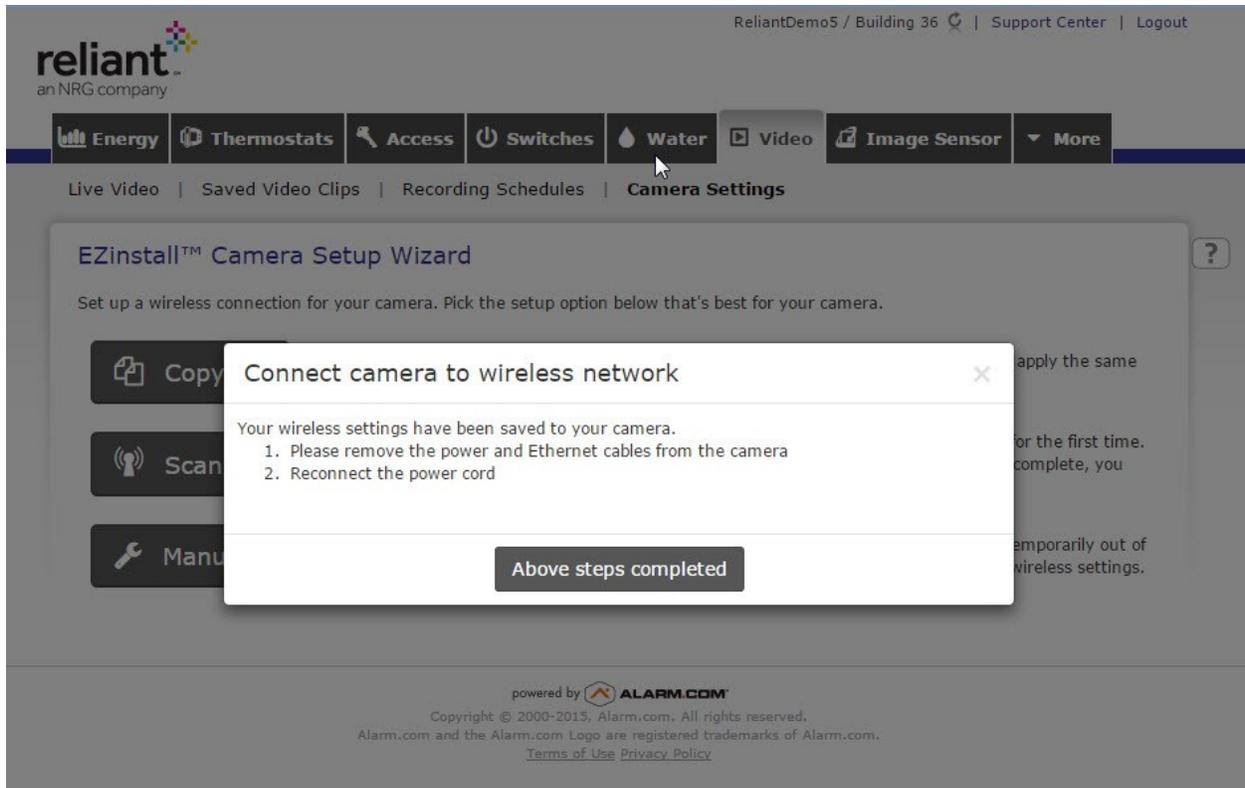
p. When the *Connect camera to wireless network* dialog box appears, remove the power and Ethernet cables from the camera.

q. Reconnect only the power cable.

r. Click the *Above steps completed* box.

    i. The camera will search for and connect wirelessly to the network.
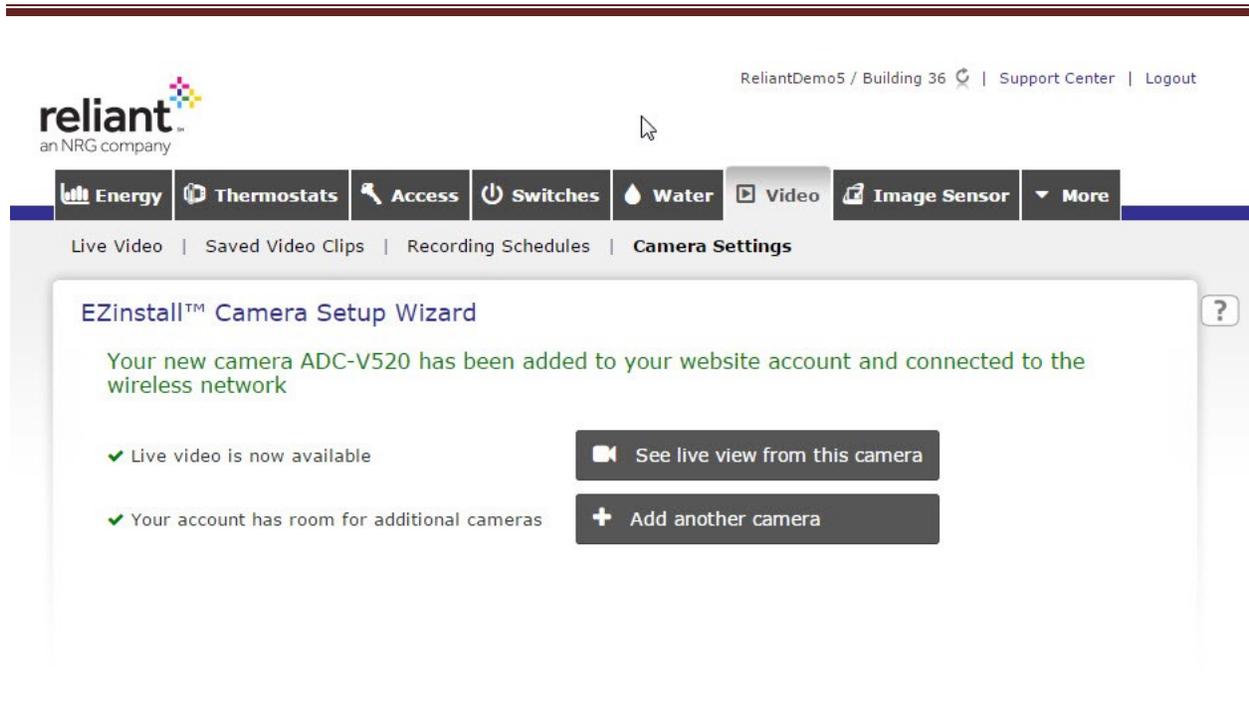
s. Once the camera has successfully connected to the wireless network a screen will appear confirming connection and offering Live View and a link back to the EZ Install Camera Setup Wizard.

2) Control, configure, and rename devices on the network from a computer or mobile device (iOS or Android) using the Reliant account.

Configuration Instructions

1. From the Reliant account, click on the *Video* tab.
2. Select *Live View.*
   a. A window will open displaying the current video image from the camera.
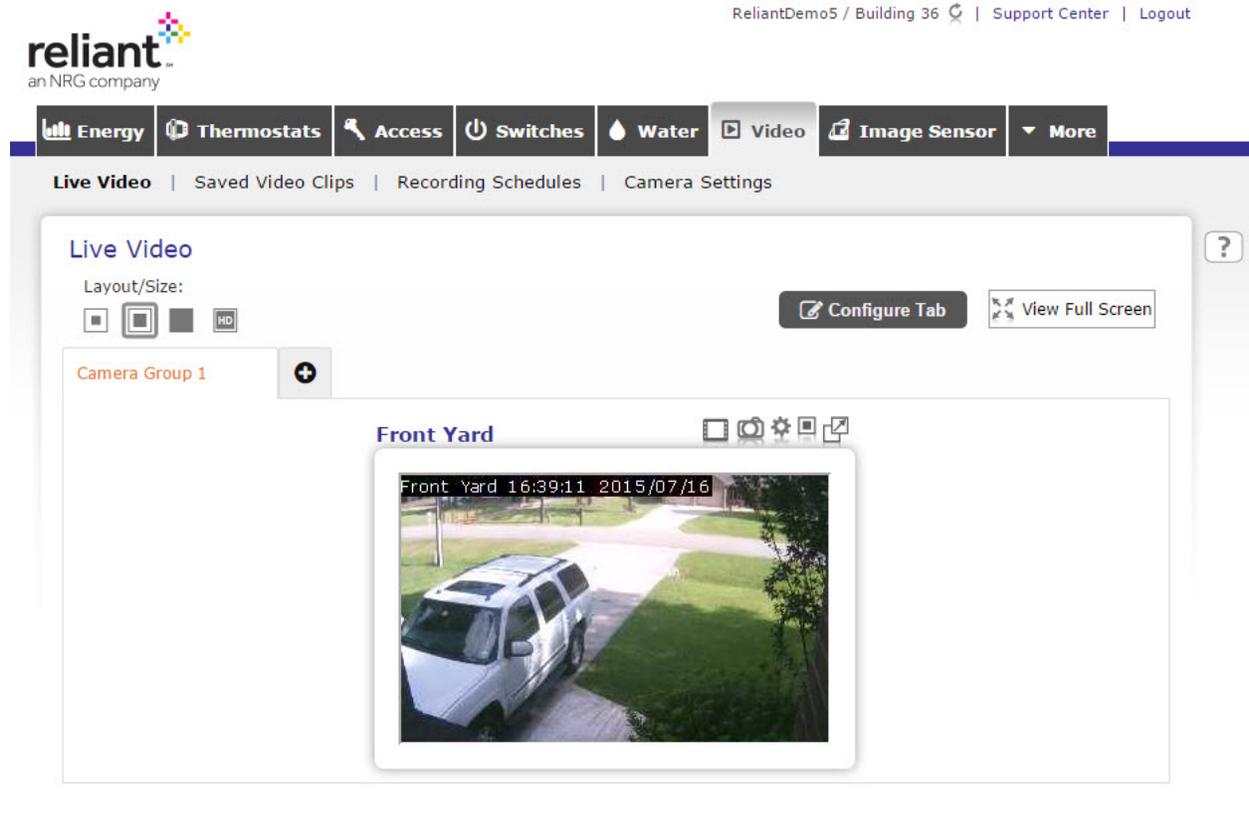
   i. NOTE: If multiple cameras are on the network a Live View window will open for each connected camera.
   ii. NOTE: The website may indicate that the Java or ActiveX applets need to be updated. If this occurs follow the on-screen prompts to update the applet(s).
   iii. NOTE: If at any point a blue box with a circular arrow appears, click the box to refresh the video image.
   iv. (V620PT only) Click the arrows on either side and the top and bottom of the playback window frame to pan and tilt the camera.
        1. The camera can also be tilted and panned by clicking the playback window and dragging the cursor.
        2. Clicking the playback window will cause the camera to pan and tilt until the clicked region is centered in the displayed image from the camera.

v. Click the orange box / arrows icon in the lower left corner of the playback window frame to set up preset camera viewpoints.

1. A drop down menu will appear listing the presets and (add preset).

a. The default position is the Home preset.

b. Select Add Preset to add a new preset or edit the default (home) preset.

i. Manipulate the pan and tilt controls until the camera is viewing the desired area.

ii. Enter a preset name in the field next to Preset name.

iii. Click Save to save the preset.

iv. In the Current Presets dialog box, click View to move the camera to the selected preset position, Edit to change the parameters for that preset, or the trash can icon to delete the desired preset.

1. NOTE: At least one preset (Home) must remain active.

2. NOTE: Up to twenty (20) viewpoint presets can be entered for the V620PT camera.

3. NOTE: The camera will return to the default Home preset viewpoint if not manipulated for a period of five (5) minutes.

c. Click View next to any preset to have the camera move to the selected preset.

vi. (All cameras) Click Live Video to return to the Live View dialog box.

vii. Click Back to Video Device Settings Overview to go to the Video Settings Overview homepage.

viii. Click one of the *Playback window* icons under Layout/Size to view the camera image in a small, medium, large, or HD window.

ix. Click the *View Full Screen* box on the right side of the display to view the camera image full screen.

1. Click *Exit Full Screen* to return to the previous view.

x. Click the *Manually Record a Clip* icon on the right side of the playback window to record a video clip from the camera.

1. It will take a few minutes for the clip to be recorded and saved to the cloud so it can be viewed.

2. Default clip length is approximately one (1) minute.

b. Click *Saved Video Clips* to view the saved clip.

c. Click the *Save Snapshot* icon on the right side of the playback window to capture a still image from the live video feed.

i. A new window will open displaying the captured still image.

1. Right-click the still image window to bring up the options for available options for the captured still image.

        2.   Select the *desired option* from the list.

   d. Click the *Camera Settings* icon to open the Video Settings Overview (Camera Settings) window.

   e. Click the *Open in a New Window* icon to view the live video feed in a separate display window.

      i. Opening the live video feed in a new window will allow closing, resizing, or moving of any other open browser windows on the desktop while leaving the live video feed window open.

3.   Select *Saved Video Clips.*

   a. Move the cursor over the thumbnail of the clip and then select either *Play* to view the clip or *Select* to view options.

      i. Click *Play* to start the playback of the video clip.

         1. To change the playback speed, click the desired playback speed from the options displayed in the lower right corner of the playback window.

         2. To pause the playback of the clip, click the *two bars (pause) icon* in the lower left corner of the playback window next to the time display.

             a. To restart playback of the clip, click the *arrow icon* in the lower left corner of the playback window next to the time display.

        b. To view the playback window full screen, click the *four arrows icon* in the lower right corner of the playback window.

            i. To return to a playback window, click the *two arrows icon* in the lower right corner of the playback window (or) press the *ESC* key.

        c. To select a starting point for playback, click on the *playback progress bar.*

  ii. Click *Select* to bring up the Toggle All Clips, Play Selected Clips, Download Selected Clips, Rename Selected Clips, Protect Selected Clips, or Delete Selected Clips icons in the gray boxes below Saved Video Clips.

     1. Click the *Toggle all clips* icon to apply any settings selected to all displayed clips.

       a. Toggling all clips will select all clips and enable playback, downloading, renaming, protection, and deletion of all selected clips.

     2. Click the *Play selected clips* icon to open a playback window for viewing of the selected clip(s).

     3. Click the *Download selected clips* icon to download the selected clip(s) to the computer.

       a. A dialog box will open with options for clip file format.

          i. Options are Windows Video File (AVI), Mac Video File (MOV), and Mobile Video File (MP4).

       b. Select the desired *video file format* and then click *Save*.

          i. A dialog box will open with options for opening or saving the file.

             1. Click *Save.*

               a. A Save As dialog box will open.

                  i. Select the location to which the file will be saved and click Save.

                  ii. The file will be saved to the selected location.

             2. To view the saved file, open the saved location and double click the file.

     4. Click the *Rename selected clips* icon to rename the selected clip(s).

       a. A dialog box will open with the number of clips selected and an input field for the New Description.

          i. Multiple selected clips will all be renamed to the specified description.

             1. In order to give each saved video clip a unique description, do not select more than one clip to rename each time.

5. Click the *Protect selected clips* icon to apply protection to the selected clip(s).
6. Click *Delete selected clips* to remove the selected clip(s) from the web account.
    a. Deleting clips from the web account does not affect clips that have been downloaded to the computer.
b. Click the *Upload Limit* icon to view the Video Usage Statistics.
    i. Monthly Uploads, Average Daily Upload, Projected Monthly Upload, and Online Storage Percentage are displayed.
        1. Click *Close* to return to the Saved Video Clips dialog box.
        2. NOTE: For most accounts the monthly limit for uploads is 1000 uploads.
c. Click the *List View* (or) *Gallery View* icons in the upper right corner of the screen to change the thumbnail display preferences.
    i. Gallery view includes not specific information about each clip.
        1. Click and drag the slider next to Clips per page from left to right to increase the number of clips that are displayed per page when in Gallery View.
    ii. List view includes the video device that captured the clip, the protection status, the clip description, the file size of the clip, and the date and time of recording for each individual clip.
d. Search for saved video clips.
    i. Select a video device from the drop down box below the gray option icons.
        1. If only one camera is in use on the network it will pre-fill in the drop down box.
        2. If multiple cameras are in use, select one of the cameras from the list.
    ii. Click the *Include protected clips* icon to include protected clips in the search for saved clips parameters.
    iii. Click the *Include unprotected clips* icon to include unprotected clips in the search for saved clips parameters.
    iv. Click the *Include camera-triggered clips* icon to include camera-triggered clips in the search for saved clips parameters.
    v. Click the *Include event-triggered clips* icon to include event-triggered clips in the search for saved clips parameters.
    vi. Click the *Include deleted clips* icon to include deleted clips in the search for saved clips parameters.
    vii. Enter a **clip description** in the Clip Description field to use a clip description in the search for saved clips parameters.
    viii. Click the *From:* and *To:* date fields to select a date range in the search for saved clips parameters.
        1. Calendar-based selection fields will pop up for date selection.
    ix. Click *Done* in both the *From:* and *To:* date selection fields.

x. When all search parameters are entered, click *Search* to launch the search for caved clips.

4. Select *Recording Schedules*.
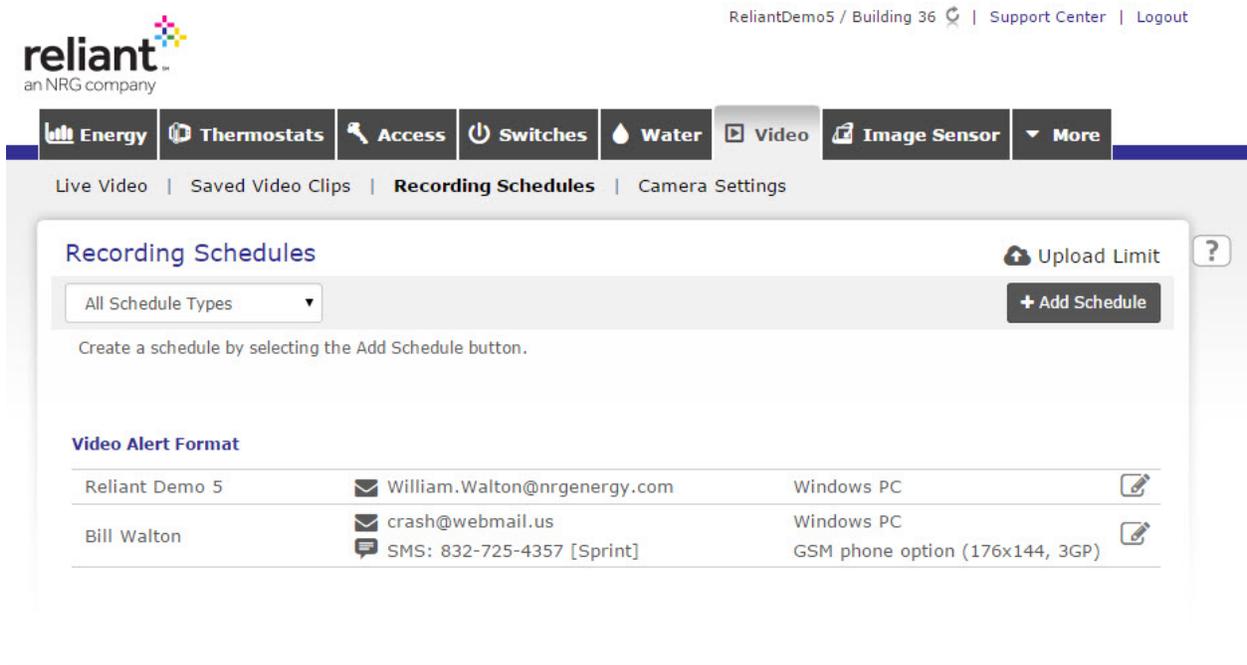
a. From the Schedule Types drop down box, select the desired *Schedule Type*.
   i. Options are All Schedule Types (default), Alarm, Video Motion Detection, Wired Input/Output, Lock Activity, Entry Delay, Sensor Opened or Closed, System Armed or Disarmed, Garage Door Opens or Closes.

NOTE: Schedule Types appear based on the customer's installed options for their account.

b. Click *+Add Schedule* to add a recording schedule.
   i. A dialog box will open with options for the trigger for video recording.

1. Select the appropriate option to record video.
2. NOTE: Not all parameters appear in all Schedule dialog boxes.
   a. Settings can be specified for each camera on the Camera Settings Page.
   b. Enter a new description for the Schedule if desired.
   c. Select a camera (or) cameras from which to record from the drop down box next to Record a clip when.
   d. Select a sensor or sensor(s) from the drop down list for alarm triggering.
   e. Select a *parameter* for During this time frame.
      i. Click the radio button next to At All Times or Select the specific times to record by clicking the radio button next to Only During the Following Times and selecting the day(s), Starting at times, and Ending at times.

   f. Select a *parameter* for minimum delay between camera-triggered clip uploads from the drop down box.

   g. Select a camera (or) cameras from which to record from the drop down box next to Record a clip when.

   h. Select the At home settings for recording when system is Disarmed (or) Armed Stay

   i. Select the *Users* to be notified from the listed Address book.

     i. To create a new contact, click the *New Contact box*.

       1. Enter the **first and last name**, Select a *Language Preference*, enter the **Mobile Number** (for SMS notifications), select the *Country* (for dialing prefix), select the *Provider*, and enter an **email address** for the User(s) to be notified.

       2. Click the *+Add Address box* to add multiple addresses for the same User.

     ii. Click *Add Contact* when all inputs and selections are complete.

   j. Click the *drop down box* next to each User address to specify content of the notifications.

     i. Options are Text Only (default), Attach a Video Clip, or Attach a Thumbnail.

       1. Selection of Attach a Video Clip will push the usage percentages.

   k. Click *Save Schedule* to activate the desired Video Motion Detection Schedule.

  3. NOTE: Wired Input / Output (I/O) is not a supported feature.

5. Select *Camera Settings*.

a. Select *the camera information to be displayed* from the Video Device drop down box.
   i. If only one camera is in use on the network it will pre-fill in the drop down box.
   ii. If multiple cameras are in use, select one of the cameras from the list.
b. Select the *specific information to be displayed* from the Settings drop down box.
   i. Select *Device Info* to view the camera information.

1. The Video Device Name field displays the default Video Device Name for the selected Video Device.
   a. Enter a **new video device name** for the selected Video Device in the Video Device Name Field if desired.
2. The Model field displays the Model for the selected Video Device.
3. The MAC field displays the MAC Address for the selected Video Device.
4. The Private IP Address field displays the Private IP Address for the selected Video Device.
5. The Public IP Address field displays the Public IP Address for the selected Video Device.

6. The Port field displays the Port used by the selected Video Device.
7. The Firmware Version field displays the Firmware installed on the selected Video Device.
    a. Click the *refresh icon* next to the Firmware Version to refresh the displayed data.
8. The Last DDNS update time field displays the date and time the selected Video Device last updated its Dynamic Domain Name System settings.
    a. With a video camera this data usually updates every time the camera is asked to upload or display an image by the Reliant user account.
9. The Wireless Signal Strength field displays the percentage of wireless network signal strength the selected Video Device is receiving from the wireless network.
    a. Click the *refresh icon* next to the Signal Strength percentage displayed to refresh the displayed data.
10. Click the *checkbox* next to Turn off the video Device's LED (light) to turn off the LED status light on the front of the selected Video Device.
    a. Turning the LED light off makes the selected video device less noticeable.
    b. The default setting for the LED light is on.
11. NOTE: Wired Input/Output (I/O) is not a supported feature.
12. Once the desired option(s) have been selected, click *Save* to send them to the camera.
13. Click *Advanced Network Setup and Testing* if port forwarding or direct connection for remote access to the video device(s) is required.
    a. Advanced Network Setup is exactly that- advanced.

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Live Video | Saved Video Clips | Recording Schedules | **Camera Settings**

Network Settings

Video Device: [Front Yard ▼]   Settings: [Overview ▼]

See the notes at the bottom of this page before making configuration changes to your video device or router.

Video Device Network Information

IP Address	192.168.1.4
Subnet Mask	255.255.255.0
Gateway Router	192.168.1.1
HTTP Port	40925
HTTPS Port	41925
Primary DNS	192.168.1.1
Secondary DNS	
UPnP	Inactive
Second Router Present	Unknown
WAN Address of Gateway Router	Unknown

[Refresh]

Edit Video Device Settings ⓘ

○ Get IP Address Automatically (DHCP)
○ Use Fixed IP Address (For networking experts only)

[Save]

Remote Access Status ⓘ

Remote Relay:
Public IP:

[Test Remote Access]

Network configuration notes and recommendations:
- This page is only for LAN administrators who manage the customer network. Customers unfamiliar with networking should not edit the video device settings.
- Never configure a port forwarding rule in your routers for a video device that is using DHCP. The video device must be assigned a fixed IP address for port forwarding to work correctly.
- If assigning a fixed IP address, the address and port of each video device on the network must be unique.
- The fixed IP address assigned to the video device must belong to the same LAN subnet as the video device's gateway router.
- Do not assign fixed IP addresses that are likely to be assigned to other devices by your DHCP server.
- Unless these IP addresses or ports are in use by other devices, recommended configurations for fixed IP and ports are:
  - Video Device 1: IP address ends in x.x.x.230, port = 40925
  - Video Device 2: IP address ends in x.x.x.229, port = 40926
  - Video Device 3: IP address ends in x.x.x.228, port = 40927
  - Etc.
- Make sure to port forward both HTTP and HTTPS ports to the same video device IP

Click here for help with router configuration. Use the "Default Guide" for your router.

← Back to Video Device Settings Overview

b. Normal installations do not require Advanced Network Setup.

14. Click the *garbage can* icon next to Delete this Video Device to remove the video device from the network.

a. Do this only in the event of having to start an installation over from scratch.

15. Click *+Add another Video Device* to launch the EZInstall™ Camera Setup Wizard.

16. Click *Back to Video Device Settings Overview* to return to the home Video Settings Overview screen.

ii. Select *Live Video*
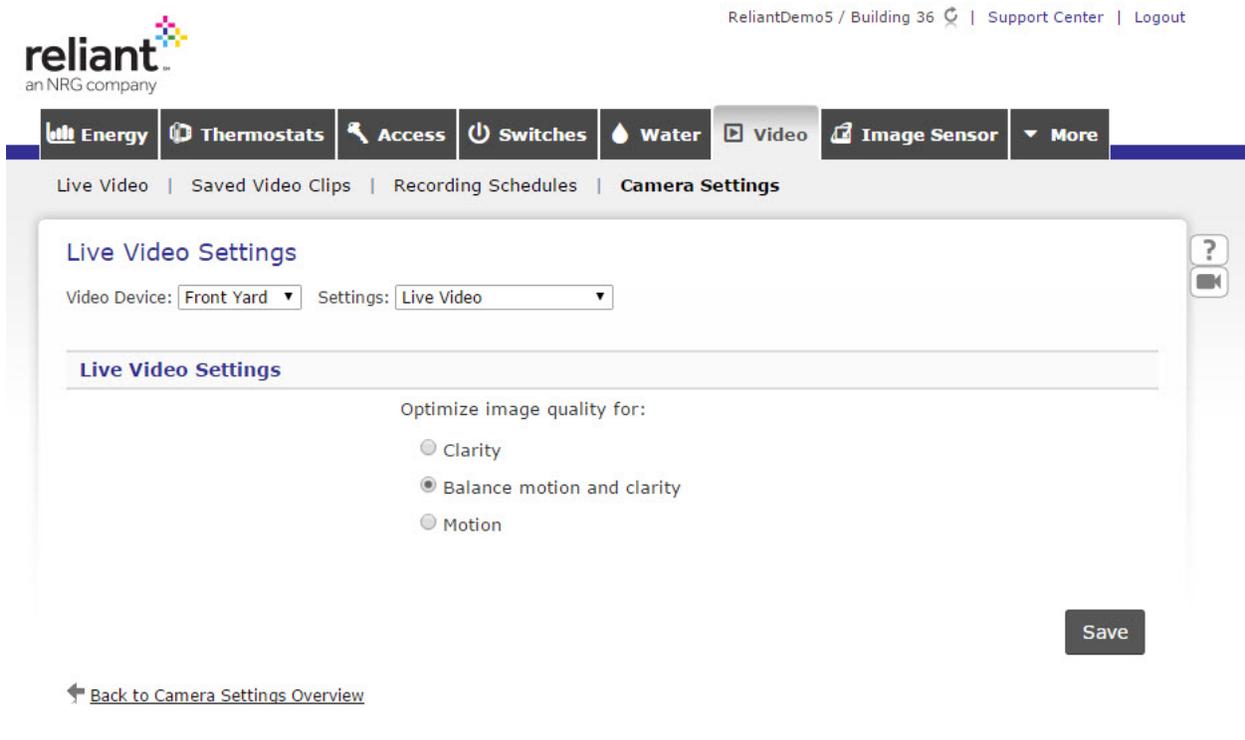
1. Select *the camera to which selected settings will apply* from the Video Device drop down box.

a. If only one camera is in use on the network it will pre-fill in the drop down box.

b. If multiple cameras are in use, select one of the cameras from the list.

2. Click the *radio button* next to Clarity, Balance motion and clarity, or Motion to optimize image quality for each option.

a. Selecting *Clarity* will make the images captured in the video clips clearer at the cost of frame rate.

b. Selecting *Motion* will make action captured in the video clips smoother at the cost of clarity.

c. Selecting *Balance* motion and clarity will provide the best balance between smooth motion and acceptable clarity.

d. The default setting for image quality is Balance motion and clarity.

3. Once the desired option has been selected, click *Save* to send it to the camera.

4. Click *Back to Camera Settings Overview* to return to the home Video Settings Overview screen.

iii. Select *Camera Image*

1. Select *the camera to which selected settings will apply* from the Video Device drop down box.
    a. If only one camera is in use on the network it will pre-fill in the drop down box.
    b. If multiple cameras are in use, select one of the cameras from the list.
2. Click and drag the slider next to *Brightness* to change the Brightness setting.
    a. The range of adjustment for Brightness is -5 to +5.
    b. The default setting for Brightness is 0 (neutral).

3. Click and drag the slider next to *Contrast* to change the Contrast setting.
    a. Contrast brings out the difference between light and dark in the captured images.
    b. The range of adjustment for Contrast is -5 to +5.
    c. The default setting for Contrast is 0 (neutral).
4. Click and drag the slider next to *Saturation* to change the Saturation setting.
    a. Saturation is the amount of color captured in the images.
    b. Higher saturation yields larger file sizes.
    c. The range of adjustment for Saturation is -5 to +5.
    d. The default setting for Saturation is 0 (neutral).
5. Click and drag the slider next to *Sharpness* to change the Sharpness setting.
    a. The Sharpness setting improves the overall quality of the images (similar to Selecting Clarity in Live Video Settings).
    b. The range of adjustment for Sharpness is -3 to +3.
    c. The default setting for Sharpness is 0 (neutral).
6. Select a setting for Max Exposure from the *drop down box* next to Max Exposure.
    a. Max Exposure is the length of time each individual image is exposed during capture.
    b. The shorter the exposure the darker each captured image will be.
    c. Exposure is also affected by natural / ambient light.
    d. The default setting for Max Exposure is Automatic.
7. Click the *check box* next to Flip Image to display the image from the video device upside down.
    a. Flip Image is provided to compensate for upside down camera mounting.
8. Click *Restore Defaults* to change all settings back their default values.
9. Click *Save* to send the updated settings to the camera.
10. Click *Back to Camera Settings Overview* to return to the home Video Settings Overview screen.

iv. Select *Saved Video*

1. Select *the camera to which selected settings will apply* from the Video Device drop down box.
   a. If only one camera is in use on the network it will pre-fill in the drop down box.
   b. If multiple cameras are in use, select one of the cameras from the list.
2. Select a setting for Resolution (pixels) from the Resolution *drop down box*.
   a. Higher resolution yields larger screen sizes for playback and larger file sizes.
   b. The default setting for Resolution is 640x400 pixels.
3. Select a setting for image quality from the Image quality *drop down box*.
   a. Higher Image quality yields larger file sizes.
   b. The default setting for Image Quality is Standard.
4. Select a setting for Frame rate from the Frame rate *drop down box*.

        a. Higher Frame rate yields smoother recorded action but larger file sizes.

        b. The default setting for Frame Rate is 5 frames per second.

5. Select a setting for Downloaded clip format from the Downloaded clip format *drop down box*.

        a. The default setting for downloaded clip format is Ask me every time.

        b. Options are Windows Video File (AVI), Mac Video File (MOV), and Mobile Video File (MP4).

        c. Selecting any one of these options will result in the chosen option becoming the default behavior.

6. Select a setting for Camera-triggered clip length from the Camera – triggered clip length drop down box.

        a. Camera-triggered clips result from video motion detection (VMD) or tamper-triggered events.

        b. NOTE: Wired Input/Output (I/O) is not a supported feature.

        c. The default setting for Camera-triggered clip length is 15 seconds.

7. Click the *check box* next to Enable Pre-Trigger Recording to enable Pre-Trigger Recording.

8. Once the desired options have been selected, click *Save* to send them to the camera.

9. Click *Back to Camera Settings Overview* to return to the home Video Settings Overview screen.

    v. Select *Video Motion Detection*

1. For effective Video Motion Detection the camera should be mounted as securely as possible, minimizing the chances of vibration or shock that might trigger a false VMD event. Other VMD best practices include:
   a. Avoid trees, foliage or any type of fabric that the wind or an air vent may blow.
   b. Avoid any windows that are not a security concern. When the sun rises and sets, these may cause false triggers.
   c. Any areas with numerous shadows, such as a window that people (not of concern) walk past or with shading from trees. Remember to think about how the lighting may change

throughout the day; an area that was not shaded may become shaded later in the day.

    d. Always be sure to use all 3 VMD windows in the place of one larger window. The smaller the box, the less prone to false-triggers the recordings will be.

2. Select *the camera to which selected settings will apply* from the Video Device drop down box.

    a. If only one camera is in use on the network it will pre-fill in the drop down box.

    b. If multiple cameras are in use, select V620PT from the list.

        i. The camera will move to the default (Home) position.

3. Click the number *1* under Choose a VMD window.

    a. VMD Window 1 will be selected for editing.

    b. In the dialog box next to the video window the VMD window currently being edited will appear.

    c. NOTE: VMD parameters can only be applied to the default (Home) viewpoint.

        i. Click the link under the playback window to go to the Pan/Tilt Preset Positions dialog box in order to change the default (Home) preset viewpoint.

4. Select a Sensitivity setting from the *drop down box* under Sensitivity.

    a. Higher sensitivity results in more motion detection by the camera as well as more video clips being captured.

    b. The range of Sensitivity settings is rom 1 (least sensitive) to 10 (most sensitive).

    c. The default setting is 5.

5. Select a Target Size from the *drop down box* under Target Size.

    a. Smaller Target Size percentage results in smaller items being able to trigger recordings and more motion-triggered clips being captured.

    b. The default Target Size is 10%

6. Click on the *video window* to enable the VMD window definition.

    a. Click the window and drag the VMD window boundaries so that the desired VMD window coverage is displayed in green on the video window.

    b. It is best to align VMD windows with obvious paths through a given space or entry / exit points.

7. Once the VMD window parameters are set, click *Save* to send the settings to the camera.

    a. A message will pop up indicating that the settings were sent to the camera.

       b.   When viewing the live video stream, when a target moves through the defined VMD window the window boundaries will change color from blue to orange.

8.   Click the *2* or *3* under Choose a VMD window to add additional VMD windows.

       a.   Use the same procedure for setting up VMD window 2 and 3 as used for VMD window 1.

       b.   It is best to align VMD windows with obvious paths through a given space or entry / exit points.

       c.   It is best not to overlap VMD windows.

       d.   Be sure to click *Save* to send the updated settings to the camera.

9.   To delete any of the VMD windows, click on *its number* under Choose a VMD window and click the *Delete this window* box.

       a.   VMD window 1 cannot be deleted if it is the only VMD window in use.

       b.   VMD window 1 will be automatically reset to full frame VMD.

10. Once the VMD window parameters are set or changes completed, click *Save* to send the new settings to the camera.

       a.   A message will pop up indicating that the settings were sent to the camera.

11. Click the *Go to Recording Schedules* box to go back to the Recording Schedules tab.

12. Click the *Back to Video Settings Overview* box to return to the home Video Settings Overview screen.

NOTE: See additional VMD information at the end of this publication.

vi.   Select *Wireless Network*

1. Select *the camera to which selected settings will apply* from the Video Device drop down box.
2. NOTE: If setup was already completed for the camera or cameras on the network this screen is not applicable.
   a. If only one camera is in use on the network it will pre-fill in the drop down box.
   b. If multiple cameras are in use, select one of the cameras from the list.
3. The Current Network to which the camera or cameras are connected is displayed under the Wireless Network Settings.
   a. Click *Refresh* to refresh the network connection.
4. Click the *Scan for wireless networks* box execute a wireless network scan.
   a. This functionality is essentially the same as the first step in the EZInstall™ Camera Setup Wizard.
5. Click the *Manually configure wireless network* box to launch the manual network parameter entry dialog box.
6. NOTE: If setup was already completed for the camera or cameras on the network this screen is not applicable.

     a. The network name, Encryption Type, and encryption Algorithm are displayed.

   vii. Select *Add Video Device*.

     1. Clicking *Add Video Device* launches the EZInstall™ Camera Setup Wizard.

3. Helpful Tips and Hints

Camera Placement-

The camera should be placed where it is close enough to an electrical outlet that the power adapter cord will reach the camera and not force it to move on its mount.

NOTE: Extension cords are available for the AC adapter cables.

(Except V721W) The camera must be placed indoors. The camera is not rated for outdoor use.

The camera should be placed in a location with a view of a security risk (such as a large window or group of windows) or an entry to the home. High-traffic areas or obvious paths from one area of the home to another also make good camera views.

The camera should be placed where it has a good wireless signal from the home wireless router. Check the wireless signal strength by navigating to https://www.reliant.com/connect/web/Video/SettingsMain.aspx. The wireless signal strength is indicated on this page. Click the refresh icon to update the data if the camera is being moved to get a better signal. Note that it is common for the wireless signal strength to fluctuate as much as 10% from one minute to the next.

For effective Video Motion Detection the camera should be mounted as securely as possible, minimizing the chances of vibration or shock that might trigger a false VMD event. Other VMD best practices include:

- Avoid trees, foliage or any type of fabric that the wind or an air vent may blow.
- Avoid any windows that are not a security concern. When the sun rises and sets, these may cause false triggers.
- Any areas with numerous shadows, such as a window that people (not of concern) walk past or with shading from trees. Remember to think about how the lighting may change throughout the day; an area that was not shaded may become shaded later in the day.
- Always be sure to use all 3 VMD windows in the place of one larger window. The smaller the box, the less prone to false-triggers the recordings will be.

NOTE: The glare shield for the V721W camera can be removed and mounted so it protects the lens from glare in normal or inverted mounting configurations. To remove the glare shield gently pull it away from the camera body housing. To re-mount the glare shield push it gently down onto the mounting ring on the camera body.

NOTE: Securing the V520 and V520IR cameras to the mounts provided for those cameras may require some extra effort to ensure that the cameras are mounted securely. Use some tape on the universal under the mounting clamp or some silicone if necessary to ensure cameras do not rotate or tilt after mounting.

Camera Images-

The default settings for the camera will be sufficient most of the time. However, each home is different and camera locations are not always well-lit or naturally lit. Camera settings can be optimized by navigating to https://www.reliant.com/connect/web/Video/SettingsImage.aspx as well as https://www.reliant.com/connect/web/Video/SettingsLiveView.aspx and changing the settings to the appropriate parameters. Changes can be viewed in real time (though with minimal lag) using the Live Video stream to observe how changes affect the quality of the images.

4. Using the Reliant Mobile App

1. The Reliant mobile app can be downloaded from
   https://www.reliant.com/connect/web/OtherApps/MobileSite.aspx
   a. iOS users can also download the iOS app from the App Store at iTunes.
   b. Android users can also download the Android app from the Google Play store.
2. Once the appropriate app is installed on the mobile device, tap the Reliant *app icon* and log in using the same credentials used to log in to the www.Reliant.com/connect website.
3. Tap the *History* icon in the upper right corner of the app to view activity on the network.
   a. NOTE: Activity includes logins.
4. Tap *Video* to open the video options.
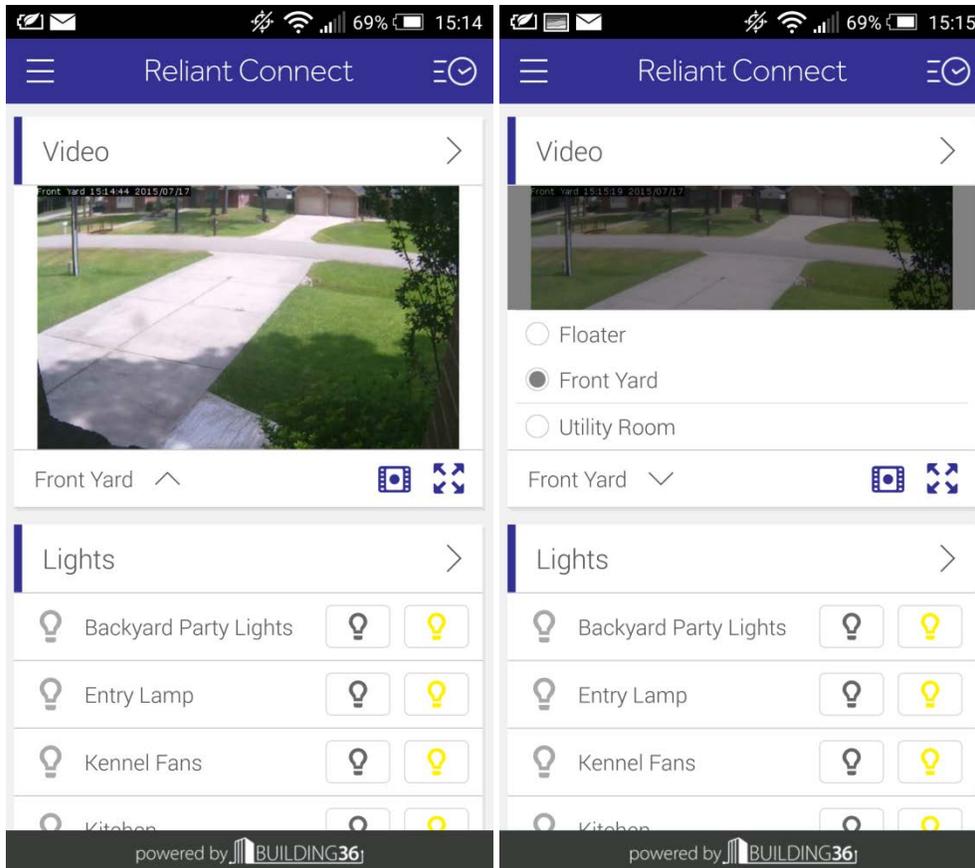
a. NOTE: If there are multiple cameras on the network, tap the **∧** symbol next to the currently listed camera under the live video image to pull up the list of connected cameras and tap the desired camera to view the feed from that camera.

   i. Tap the **∨** symbol to hide the list of cameras.

b. (V620PT only) Tap the playback window to manipulate the camera.

   i. Swipe horizontally to pan the camera and vertically to tilt the camera.

      1. A target icon will appear.

         2. The target icon is a reference point.

   ii. Tap the playback window in any location to slew the camera viewpoint to that location.

c. Tap the circle and arrows icon in the lower left of the playback window to reveal the list of preset viewpoints.

d. Tap the desired viewpoint to move the camera to that viewpoint.

5. Tap the film icon in the lower right corner of the Video dialog box to record a video clip from the camera.
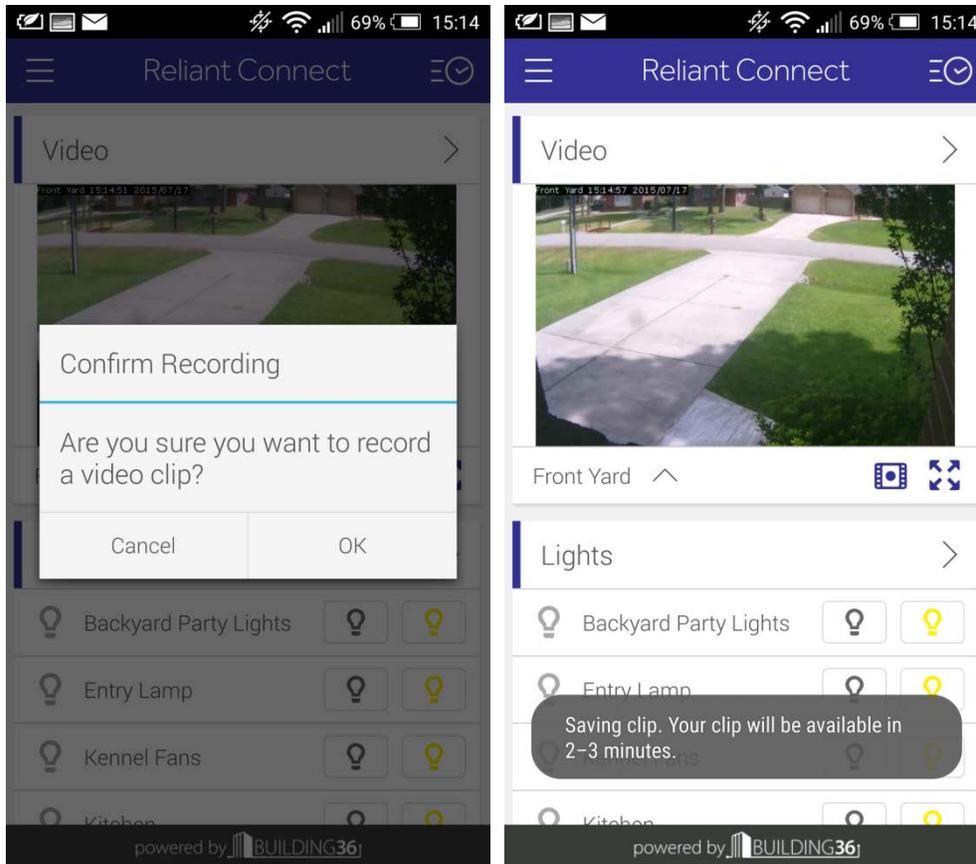
a. A confirmation message will appear. Tap *OK* to record a clip or *cancel* to return to the live video feed.
   i. NOTE: It will take approximately three (3) minutes to upload the clip.
6. Tap the Video toolbar to view the recorded clip.
   a. NOTE: The default clip length is approximately one (1) minute.
   b. The recorded clip(s) will be listed in order by recording date newest first.
   c. Tap the *most recent listed clip* to view it on the device.
      i. Playback controls will appear on the device screen.
         1. Tap the *Play* button to view the clip.
      ii. Tap the *Back* button to start playback of the previous listed clip.
         1. Tap the *back* button on the device to return to the playback screen.
            a. When the clip has finished playing the playback screen will be displayed.
      iii. Tap the *lock* icon to protect the clip.
      iv. Tap the *trash can* icon to delete the clip.
      v. Tap the *refresh* icon in the upper right corner of the screen to refresh the list of clips.
7. Tap *Settings* to view camera and video settings options that can be controlled from the mobile app.
   a. Tap *Video Settings*.
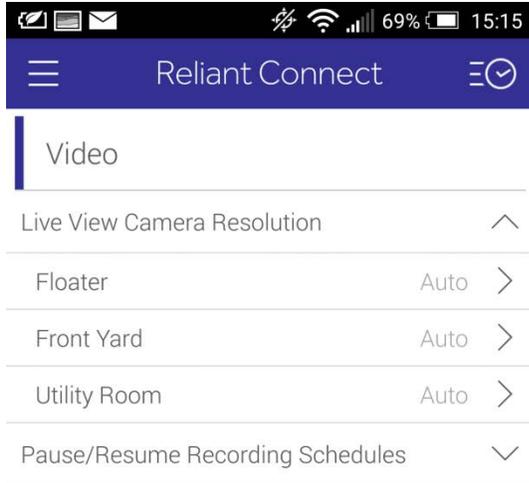
i. Tap *Live View Camera Resolution* to see a list of the cameras on the network.
  1. Tap a *camera* for which the settings will be viewed.
     a. The options for Image Quality for Live Stream will appear.
     b. Change settings as desired.
     c. NOTE: Settings for Live View changed in the mobile app will apply to the Live View stream when viewed on a computer as well.
ii. Tap *Recording Schedules* to view the list of recording schedules (if recording schedules have been set).
iii. Tap the device *back button once* to return to the settings main screen.
iv. Tap the device *back button twice* to return to the app main screen.

5. Frequently Asked Questions

Cameras-

Why does the camera need to be hooked up to my router with a cable during setup?

- At that point in the process the camera is being discovered by the home network. If the camera will not be used in a remote location (not requiring a wireless network connection), it can be left connected to the router using the Ethernet cable. However, if the camera is to be used on a wireless network it must "find" and be "found" by the wireless network as well.

What do the lights on the camera indicate?

- Red light: No network connection.
- Green light:
  - o Blinking-   Local internet connection only
  - o Not blinking-   Full internet connection

For what is the Ethernet port on the camera used?

- The Ethernet port is used during setup only unless the camera is to be directly connected to the home network router or a switch/hub that has direct access to the router. The V721W camera uses WAP setup and does not have an Ethernet port.

I have a Reliant Home Automation kit and I'm just adding the camera to it. Will it use the gateway from the Conserve Kit?

- The camera only connects to the home network router, either wired or wireless. It does not use the Reliant gateway.

(V620PT only) Why does the camera spin around and go up and down during the installation?

- That's just the camera's way of calibrating itself.

I had to change my password on my internet router and my camera dropped offline. How do I get it back?

- Navigate to https://www.reliant.com/connect/web/Video/SettingsWirelessNetwork.aspx and enter the new password for your wireless network. Then follow the remaining prompts. This procedure will get the camera back on the network.

How secure is my camera's signal?

- The camera uses the same wireless network as the other wireless devices in the home. Therefore it is no more or less secure than any other device on that network. If the home network uses WPA2-level encryption with an AES algorithm and an effective password the camera will be just as secure as the computers or other devices using the wireless network.

Is the camera able to be integrated into a home security system?

- Yes it is. There are several configuration options aimed at doing exactly that. Navigate to https://www.reliant.com/connect/web/Video/RecordingSchedules.aspx and https://www.reliant.com/connect/web/Video/SettingsVMD.aspx to get started with integrating the video camera into a home security system.

Can I set up recording schedules for the camera?

- Yes. Navigate to https://www.reliant.com/connect/web/Video/RecordingSchedules.aspx to set up recording schedules.

Can I turn off that green LED on the front of the camera?

- Yes. Navigate to https://www.reliant.com/connect/web/Video/SettingsMain.aspx and click the checkbox next to Turn off the video device's LED (light). Be sure to click Save to send the command to the camera.

I had to mount my camera on the ceiling. Can I invert the image from the camera?

- Yes. Navigate to https://www.reliant.com/connect/web/Video/SettingsImage.aspx and click the checkbox next to Flip Image.

Does the power adapter need to be used to power the camera all the time? Can batteries be used instead?

- The power adapter is required. The camera does not utilize batteries for power.

The power cable is too short to reach from the nearest unswitched electrical outlet to the location in which I want to mount the camera. Can I splice in more cable to make it longer?

- No. Improper splicing may damage the camera and void the warranty. Use a DC power adapter extension cable instead. Commonly available lengths are 3ft, 6ft, 12ft, and 25ft. Ensure that the extension cable uses 2.1mm x 5.5mm connectors, is rated for a 3 amp load or higher, and uses 18 AWG (or) 20 AWG two-conductor wire.

Is there a way to capture a still image from the video camera?

- Yes. Navigate to https://www.reliant.com/connect/web/Video/LiveView.aspx and click the camera icon above the upper right hand corner of the video window. A still image will be captured. To save it, right mouse click the still image window to bring up the available options.

Can I turn the camera off?

- (All except V721W) Yes. Press the WPS switch on the camera once. Each button press will turn the camera on or off. This will not affect the camera's network connectivity. The camera can also be set up to turn itself off when the home is occupied using Geo-Services to set up geo-fencing.

I can't get decent wi-fi signal strength where the customer wants the camera installed. What options do I have?

- Not many. A wireless network repeater may resolve a signal strength problem. You can try moving the customer's router around (turning it sideways or backwards) some or moving the antennae to see if that improves signal strength. Beyond that you'll probably have to find a compromise mounting location that offers the best mix of view, Wi-Fi single strength, and access to power for the AC adapter. A camera that isn't connecting to the customer's Wi-Fi network won't be anything more than recurring problems for the customer and for you.

Website-

What are the question mark and camera icons on the right side of some of the dialog boxes for?

- The question mark icons open help windows with support information applicable to the page being used. The camera icons are links to video tutorials about the page being used.

I'm getting a message saying my Java is out of date. Why do I need to update Java?

- The video playback windows use Java to display the information captured by the camera. Be sure to download the version of Java that supports the operating system on the computer in use.

Can I use a camera I already have with the Stream Kit?

- Yes and no. Any camera can be used when installed in conjunction with the Reliant video server. But the video features will only work with the Reliant cameras.

The video clips are jumpy. Can that be fixed?

- A workaround is to use camera settings that are biased toward small files. This will sacrifice some quality but clips should still be viewable. If there is not at least 250kbps of upload bandwidth on the home network, and in the broadband connection, then contact the internet service provider to find out how to increase upload bandwidth.

What is the limit for online storage of video clips?

- For most accounts the monthly limit for uploads is 1000 clips. Notifications are sent when 50% and 90% of the monthly bandwidth limit is used. Clicking the Upload Limit icon at https://www.reliant.com/connect/web/Video/ViewClips.aspx will open a dialog box with usage information.

What is a protected clip?

- A protected clip is flagged for persistent archiving. That is, protected clips(s) are not overwritten if / when the storage limit is met.

How long will unprotected clips last before they get overwritten?

- It depends on the recording frequency and video quality settings. The unprotected clips can remain for a few weeks or a few hours. Careful camera placement and VMD window configuration will reduce unwanted / unneeded recordings and optimize us of online storage capacity.

In what formats are snapshots and video clips saved?

- Snapshots are saved as JPEG files. Video clips can be saved as MOV files, AVI files, or MP4 files. To select settings for the video clip file formats navigate to https://www.reliant.com/connect/web/Video/SettingsSavedVideo.aspx and select a Downloaded clip format from the drop down box.

App and Mobile Devices-

Is there an app for a Windows phone? How about a Blackberry?

- Reliant supports iOS and Android devices. However, our partner Alarm.com also supports Blackberry and Windows Phone. Apps for Blackberry and Windows Phone can be downloaded from Alarm.com. Navigate to www.reliant.com/connect/web/OtherApps/MobileSite to download and install the iOS and Android apps. The apps are also available from the sites from which apps are normally downloaded for your device.

Can the app be used on a tablet?

- Yes. iPads and Android tablets will run the apps.

Does the app allow me to control everything I can control from the website on my mobile device too?

- Yes it does. But it does not allow any configuration. That has to be done from a computer.

Why doesn't the app seem to work when I'm in areas with weak signal?

- The app requires the same kind of connectivity to the cellular network that any other app on your mobile device does. The app can't exchange data with the home gateway if there is little or no signal.

Why does it seem as if my mobile device is in sync with my network?

- The network sends an update to the mobile device when the app is launched but does not automatically update at any other point. Tap the **Refresh icon** in the upper right corner of the display to send and receive an update to / from the network at any time.

When I look at clips on my mobile device the playback window is tiny. Is there a way to enlarge it?

- Not on the mobile device. The playback window size is configurable on the website.

6. Troubleshooting

Camera doesn't connect using the *EZInstall™ Camera Setup Wizard*: If the camera fails to connect during the automatic configuration process, first disconnect the power to the camera, then reconnect it, wait for the LED light to turn solid green, and then restart the *EZInstall™ Camera Setup Wizard.*

Camera wasn't found by the network: Be sure to have the camera's MAC address handy when beginning the *EZInstall™ Camera Setup Wizard.* It can be, and often is required to be, manually entered early in the process. The wireless network SSID and case-sensitive password need to be available for the wireless configuration portion of the *EZInstall™ Camera Setup Wizard*.

Video Motion Detection Best Practices

How Does Video Motion Detection Work?

Video Motion Detection in the Alarm.com cameras is the camera's ability to trigger recordings based on any detected motion. The camera identifies motion by measuring how the video's pixels change from one moment to the next. There is not a PIR motion detector built into our cameras, but when VMD is set up correctly, it can be an effective way to capture activity and generate notifications for the customer.

When editing Video Motion Detection windows identify your main areas of concern and draw narrow windows near those areas. For example, if there is a jewelry box on the desk, make sure to draw a VMD box either around, or along the path leading up to that area.

Drawing VMD Windows:

What to avoid In VMD windows
Some movement or pixel changes will cause false triggers. It is best to avoid these as much as possible:

- Trees, foliage or any type of fabric that the wind or an air vent may blow should be avoided.
- Avoid any windows that are not a security concern. When the sun rises and sets, these may cause false triggers.
- Any areas with numerous shadows, such as a window that people (not of concern) walk past or with shading from trees. Remember to think about how the lighting may change throughout the day; an area that was not shaded may become shaded later in the day.
- Always be sure to use all 3 VMD windows in the place of one larger window. The smaller the box, the less prone to false-triggers the recordings will be.

What if the customer wants the entire camera view to trigger recordings?
Rather than creating one large box that will not be precise, try creating lines or "barriers". The goal is to catch a person of interest as they cross through the window.

Example

You will notice that we:

- Avoided the windows due to sunlight changes.
- Created barriers that must be crossed when entering the area.
- Created another box that must be crossed when going through the room.
- Used all 3 windows.
- Kept all the windows as small/skinny as possible.

Selecting Target Size and Sensitivity:

What is Target Size?
Target size is what percentage of the window must have movement in it to trigger a clip. Too large of a target size and the camera may not trigger for anything less than an object the size of a car. Too small of a target size and leaves blowing in the wind may trigger recordings. You need to find the happy medium.

What percentage should I pick?

A great rule of thumb is to estimate the percentage of a window that a person would fill (if that fits the request) and then select one size larger. For example, in the image above, if one of the chairs was the same size as a person, that person would take up about 15% of the window. Therefore, when selecting the target size, we should select 20%. That percentage would pick up a person, but will most likely not pick up any stray shadows.
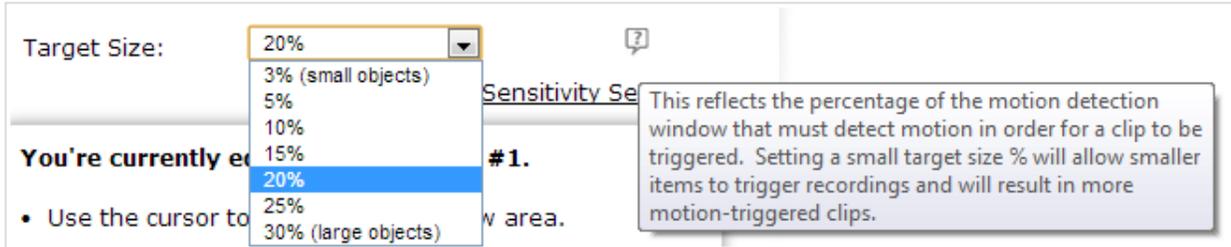
What is Sensitivity?
Sensitivity is a measure of how drastic a change is needed to trigger a clip. Higher sensitivity means a smaller shift in the video is needed to trigger a clip. But too high of a sensitivity and the camera may trigger constantly.

What level is the best?
Typically you should start with a sensitivity of 7 and fine-tune from there. If the sensitivity needs to be maxed at 10 then your window placement, size, and target size most likely need to be adjusted.
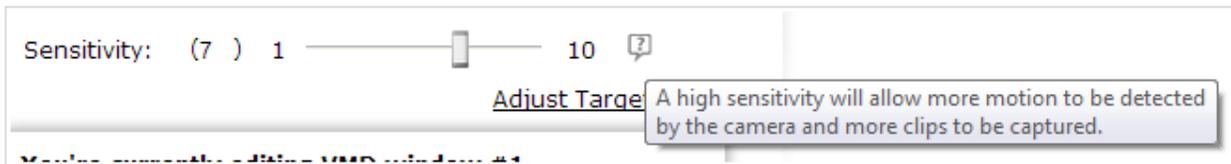
What if We Can't Make VMD Work?

At a certain point, you may find that VMD may not work in the customer's situation due to the surroundings such as flying insects or precipitation. This does not mean that the customer can't have reliable recordings.

A lot of our cameras have I/O Ports in them which will allow you to hardwire a sensor. You could even use a motion sensor! Cameras that have these ports are the ADC-V510, ADC-

V610PT, ADC-V700X, ADC-VS1, ADC-V520, ADC-V520IR, ADC-V720, ADC-V720W, and ADC-VS420.

You can find out more information about the I/O schedules and setup from the Digital input trigger guides. The guides can be found on the Dealer Site under Support Documents. Most of these guides are interchangeable across the cameras, so if your camera has an I/O port you can use just about any guide as reference.

Video Cameras	Fixed Lens - (ADC-V510)		
	Pan/Tilt - (ADC-V610PT)		Digital Input Trigger Guide
	Outdoor - (ADC-V700X)		
	1 Channel Video Server - (ADC-VS1)		
	Indoor Fixed - (ADC-V520)		
	Indoor Fixed w/IR - (ADC-V520IR)		Digital Input Trigger Guide
	Indoor Fixed Pan/Tilt - (ADC-V620PT)		
	Outdoor Wireless - (ADC-V720W)		Digital Input Trigger Guide
	Outdoor PoE - (ADC-V720)		
	Indoor Dome - (ADC-V820)		
	4 Channel Video Server - (ADC-VS420)		Digital Input Trigger Guide

Video Camera Troubleshooting Guide

This troubleshooting guide helps with many common camera installation and usage problems. Please direct any other technical questions you may have regarding Alarm.com cameras to our **Dealer Support Team at 866.834.0470.**

Installation Troubleshooting

Wireless Connectivity Troubleshooting

Video Usage Troubleshooting

Additional troubleshooting steps

Installation Troubleshooting

Video tab not present or an error message appears when navigating to www.alarm.com/addcamera

- If you receive an error message when navigating to www.alarm.com/addcamera, this probably means your login/password for the account does not include permission to add cameras. Confirm that:
  - You have enabled a Video service plan for this account.
  - You are using the primary account login or a login that includes full Video privileges to install cameras.

Camera's LED will not turn solid green during initial setup

- Verify:
  - If you are using WPS, make sure that your router has WPS enabled. Using an Ethernet cable to install the camera is always a good alternative installation method if WPS fails.
  - Ensure that the Ethernet cable is connected properly to the camera and the router before powering on the camera. Test that the Ethernet cable works by connecting the cable to a computer or another device and verifying the cable's ability to send and receive data.

Camera's LED's are various solid/blinking colors

- The following patterns constitute normal behavior of the LED's. Note that each different combination designates a different camera status.

  Models:

  |**ADC-V520** Indoor Wireless Camera
  |**ADC-V520IR** Indoor Wireless IR Camera
  |**ADC-V620** Wireless Pan/Tilt Camera
  |**ADC-V720W** Outdoor Wireless Camera
  |**ADC-V720** Outdoor PoE Camera
  |**ADC-VS120** 1-Channel video server
  |**ADC-VS420** 4-channel video server
  |**ADC-V820** Indoor Dome Camera

	LED Status	Description
Install	All off	Power off
	Solid **Red**[1]	Power on, system booting

		Green blink every second	The camera is connected to the local router. If this state persists for over 2 minutes, the camera cannot connect to the internet.
		Solid **Green**	Full internet connection with Alarm.com, and the camera is ready to be installed
		Blue blink every 0.15 seconds[2,3]	WPS connecting in progress (this process will end in a few minutes)
Trouble Conditions		Solid **Red** + **Green** intermittent flashing[3]	Wireless network connection failed, The Wi-Fi password entered may be incorrect.
		Solid **Red**[1]	No local or Internet connection
Privacy	Mode	Solid **Blue**[4]	Privacy Mode enabled. Press and hold the WPS button for one full second to clear.
Maintenance		**Red** blink every 0.15 seconds[1]	Upgrading firmware do not unplug
		Red blink every 0.15 seconds + **Green** blink every 0.15 seconds[1]	Restoring factory default settings

Notes	
1	This LED is **Orange** on the ADC-V820 Indoor Dome Camera
2	This LED is **Green** on the ADC-V720W Outdoor Wireless Camera
3	Wireless Mode not available on the ADC-V820 Indoor Dome Camera
4	Privacy Mode not available on the ADC-V820 and ADC-V720W models

Camera has a solid **Green** LED but cannot be found on the Find Cameras page

- If the camera is not found, try searching for the camera in the field above Find Cameras.

- First power down the camera, reapply power, and wait for a solid **Green** light to refresh the webpage.

- If the camera is still not found, try powering down the network adapter and/or router for 1 minute then reapplying power. After the internet has reconnected and the camera LED light is solid **Green**, refresh the webpage.

Camera is found, but the status column shows an error.

- Wait several minutes and refresh the webpage. This gives the camera an opportunity to properly connect to Alarm.com.
- If this does not work, try to factory reset the camera. After resetting the camera, power off the camera and reapply power. Once the camera's LED light is solid **Green**, refresh the page to see if the camera status has changed.
- If you are still not able to continue with the installation, try powering down the network adapter and/or router for 1 minute then reapplying power. After the internet has reconnected and the camera LED light is solid **Green**, refresh the webpage.

Wireless Connectivity Troubleshooting

Camera works with Ethernet, but not wireless mode.

- The wireless camera may be out of wireless router's range– please try moving the camera closer to the router and attempting to reconnect to the wireless network.
- Check the case sensitive SSID for misspellings, verify that the encryption type and encryption key matches the current settings of the wireless router.
- Alarm.com cameras must have the Ethernet cable removed and then be power-cycled before the camera will switch into wireless mode.
- If the wireless network does not give a strong enough signal at the desired camera location, it is possible to connect the camera using one of these approaches:
    - Relocate the existing wireless router to a more centralized location that provides better coverage.
    - Run a CAT5 Ethernet cable (up to 300 feet).
    - Use "Powerline bridge" devices like HomePlug.

Video Usage Troubleshooting

Customer is unable to view live video feed.

- Make sure the camera is connected. Try sending a command, such as turning off the camera's LED from the camera settings page. https://www.alarm.com/web/Video/SettingsMain.aspx
- If the user can view live video on other computers (or using another browser on the same computer), then he/she probably has a problem with the ActiveX or Java applets on this computer. If the video page prompts you to update Java or ActiveX, follow the on screen instructions to update the application.

User cannot view recorded clips from the Alarm.com website.

- Download the latest version of Adobe Flash (version 9 or higher is required).

The customer continues to exceed their monthly upload allocation. What options can he/she try?

- Watch saved clips that appear to be false. Notice anything moving or lighting changes that could cause the camera to think there is motion.
- Adjust the Video Motion Detection (VMD) settings (window sizes, locations, sensitivities and/or target sizes) for cameras that are uploading video clips too frequently. For VMD best practices and tips, view the page help by selecting the help button [?] (question mark on the top right edge of the page) while on the VMD configuration page.
- Change motion-triggered recording schedules to include a smaller time duration, or only record video clips during certain arming states.
- Adjust the Saved Video Clip recording parameters (resolution, quality or frame rate) for each camera to reduce the amount of storage used per uploaded clip.
- If the camera is a night vision model and the night mode appears to be turning on and off needlessly, try different sensitivity settings. The night vision sensitivity settings are located on the Camera Image page.
- Increase the "delay between uploads" variable on some or all motion-triggered recording schedules.
- Re-position the camera to move false-alarm triggers out of the scene's immediate foreground or background.

Customer can see live video feed, but no video clips are uploaded.

- Test the connectivity by pressing the record now button from the live view page or mobile app and wait several minutes for a clip to upload.
  - If no clips are uploaded after several minutes, power down the camera and reapply power. Press the record now button from the live view page or app again and wait several minutes for a clip to upload.
- Make sure the camera is actually configured correctly to record:
  - Ensure that the event configured to trigger the video clip is displayed in the customer's event history log.
  - The day/time schedule is currently active.
  - The recording schedule status is "Active" (the status is automatically "paused" if the monthly quota is exceeded).
  - Video Motion Detection is configured correctly.

Customer wants to avoid 3 minute timeout while viewing live video remotely.

- Alarm.com's EZinstall™ feature allows remote access to cameras regardless of network configuration, but the remote video streams time out after 3 minutes, if the networks are not configured for port forwarding.

- If the customer wants to eliminate the 3 minute timeout, his/her LAN administrator must configure the cameras and network for port forwarding.
    - To do this, go to the Camera Status page under the Camera Settings tab, and click the Advanced Network Setup and Testing link.
    - This will bring up a page that allows the cameras to be configured with a fixed IP address, which is required before configuring the router for port forwarding. This process is not part of a standard installation and should only be attempted by those with port forwarding experience.

Live video is not visible from the customer's work location, but is visible from other remote locations.

- This uncommon problem usually indicates that the network administrator at the customer's work place has set up a strong firewall that blocks communication with non-standard browser ports.
- The customer can find the port used by his/her cameras on the Camera Status page of the Camera Settings tab and ask the network administrator to allow those ports

Additional Troubleshooting Tips

Changes to wireless settings (in the camera or router) do not take effect until you power cycle the camera.

Power cycling the camera should never fix a problem, but it is a standard troubleshooting step. If all else fails, delete the camera from the account, factory reset the camera (by holding in the reset button for 10 seconds), and add the camera back to the account.

For any troubleshooting questions not answered in the section, please contact our **Dealer Support Team by calling 866.834.0470 or emailing support@alarm.com.**

Indoor Wireless Camera
ADC-V520 Data Sheet

Introduction

The ADC-V520 is Alarm.com's latest wireless IP camera. Designed specifically to work with the Alarm.com hosted video service, it provides a professional surveillance solution without the complexity of traditional CCTV systems. HD 720P live and recorded video are available to customers through web-enabled computers, cell phone web browsers and via our free downloadable apps compatible with all Alarm.com enabled mobile devices. Plus, wireless set-up is a breeze with push button wireless set-up using the WPS button.

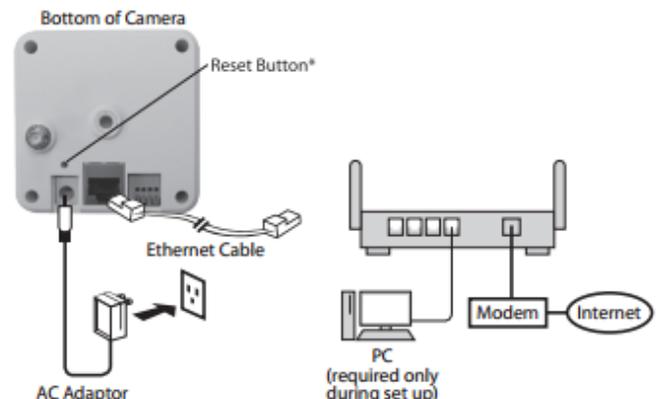## Included Accessories

- Camera Stand
- Wall Screws
- Power Adapter

Features

Live resolution options	1280x800, 640x400, 320x200, 176x144
Recording resolution options	1280x800, 640x400, 320x200
Live quality	High, medium and low compression options
Recording quality	High and medium compression options
Recording compression	H.264, MPEG-4
Image sensor	1/4" CMOS, 1280x800
Iris	Fixed Iris, F2.4
Field of view	37.8° (horizontal) 54° (vertical)
Low-light sensitivity	0.5 lux at 1/5 sec.
Image adjustments	Brightness, Contrast, Saturation, Sharpness, Exposure
Video motion detection	3 windows, adjustable sensitivity and threshold
Digital input trigger	Yes
Ethernet connection	10/100 Mbps RJ-45
Wireless encryption	WEP, WPA or WPA2
Wi-Fi 802.11 Support	b/g/n
Password authentication	"Digest" authentication
Simultaneous viewers	10
Privacy Button	Yes (Same as WPS button)
Operation temperature	32° ~ 104° F (0°C ~ +40°C)
Operating humidity	20% ~ 80% RH
Max power consumption	12V DC, 2.3W
Dimensions (LxWxH)	3.1", 1.2", 3.1"
Weight	3.5 oz

LED Guide

	LED Status	Description
Install	All off	Power off
	Solid **Red**	Power on, system booting
	Green blink every second	Local network connection with local IP address
	Solid **Green**	Full internet connection with Alarm.com IP
	Blue blink every 0.15 second	WPS connecting in progress
Trouble Conditions	Solid **Red** + **Green** intermittent flashing	Wireless network connection failed
	Solid **Red**	No local or Internet connection
Privacy Mode	Solid **Blue**	Privacy Mode enabled
Maintenance	**Red** blink every 0.15 second	Upgrading firmware
	Red blink every 0.15 second + **Green** blink every 0.15 second	Restoring factory default settings

Bottom of Camera
Reset Button*
Ethernet Cable
AC Adaptor
Modem
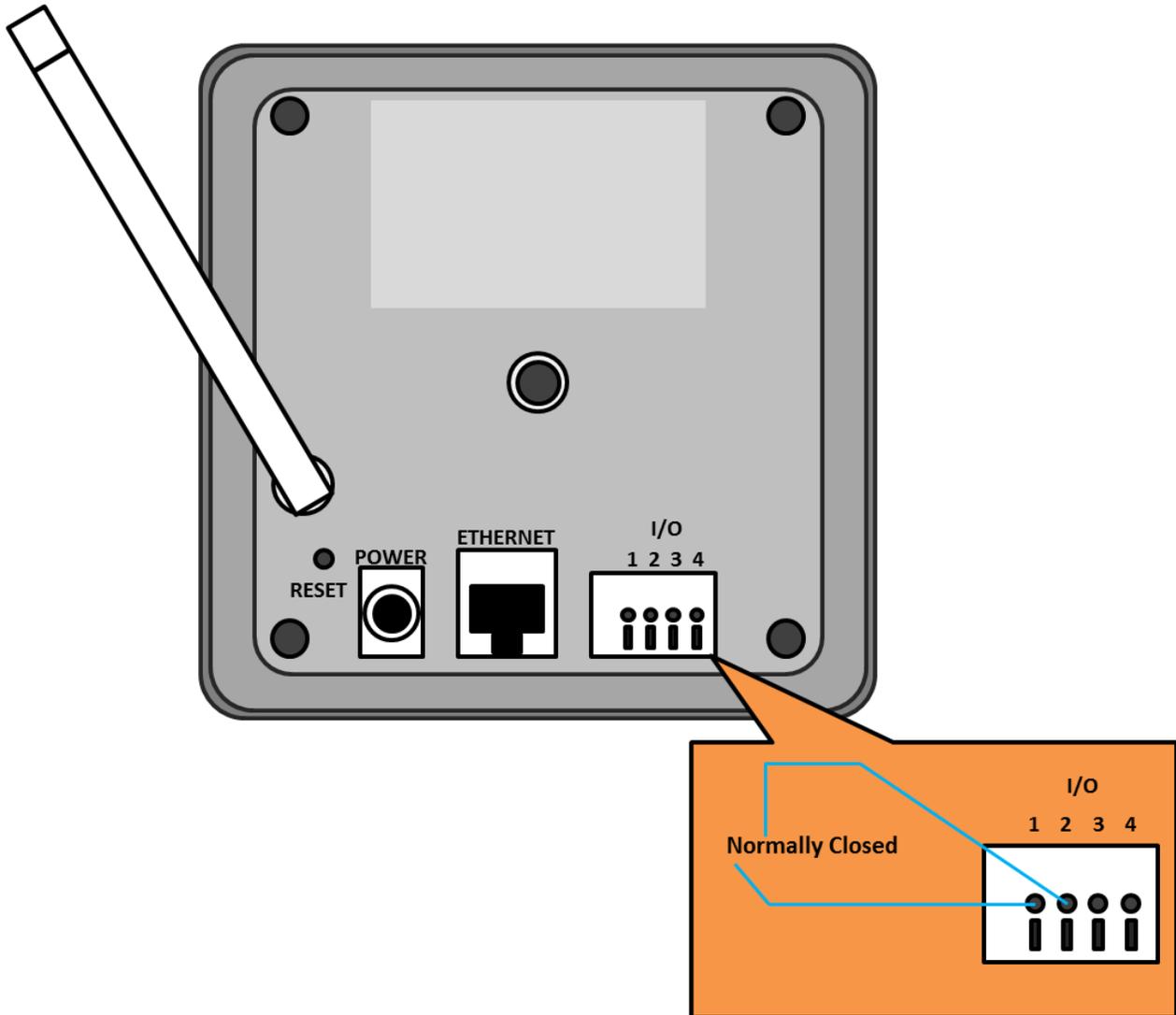Internet
PC (required only during set up)

Digital Input Camera Triggers User Guide

ADC-V520 /V520IR Cameras

The digital input camera triggers feature allows hard-wired sensor or security panel outputs to trigger video recordings. This feature is useful for customers who have a non-Alarm.com security panel, want to reduce false triggers, or who don't have a security panel at all. This feature must be enabled on the customer's account through the Alarm.com Dealer Website.

- **Overview**

    Camera is triggered by a door, motion, another sensor, or a security panel output which is hard-wired directly to the camera. For wiring purposes, pin "1" is the input pin and pin "2" is the ground pin.

- **Enabling I/O Triggered Video Recording**

  Alarm.com dealers have the option to enable this free feature on any account. If the feature is not enabled on an account, it will not be visible to the customer.

  - To enable this feature, log onto the Alarm.com Dealer Website and, from the Customer Support section of the Customers Tab, click on *Service Plan*. From the Customer Service Plan History & Details page, click *Change Service Plan* link. On the Available Service Plans page of the customer's account, check the *Digital Input Triggered Video Uploads* box. Be sure to save this by clicking *Change Plan* at the bottom of the page.

- **I/O Triggered Recording Schedules**

  After a customer's account has been enabled with the Digital Input Triggered Video Uploads feature, the customer will be able to create Recording Schedules to record when the connected device is triggered.

  - On the Customer Site, select I/O Wired Input when adding a new recording schedule of this type.

- The list of saved recording schedules will specify the trigger for these devices as "I/O Input", rather than "VMD" (Video Motion Detection), under the Camera-Triggered Recordings heading.

- The digital input can be configured on the main Camera Settings page to trigger when the input is "Open", "Closed", "Opening", "Closing", or "Opening and Closing".

- **Trigger Type Definitions**

  - **Open:** camera uploads clips continuously while the input is open (useful for alarm triggers).
  - **Closed:** camera uploads clips continuously while the input is closed.
  - **Opening:** camera uploads a single clip when the input changes from "closed" to "open."
  - **Closing:** camera uploads a single clip when the input changes from "open" to "closed."
  - **Opening and Closing:** camera uploads a single clip when the input changes from "closed" to "open" or from "open" to "closed."

- **Additional I/O Triggered Recording Information**

  - Only "ground" and "open circuit" signals should be applied to the digital input, as applying any voltage to the pin will not provide predictable results and may damage the camera.
  - The camera will trigger continuously if the connected sensor is left open and the input is set to trigger when "Open" or if the connected sensor is left closed and the input is set to trigger when "Closed" during an I/O triggered recording schedule.
  - The duration of I/O triggered recordings is the same as Video Motion Detection triggered recordings (15 seconds by default.

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Indoor Wireless IR Camera
ADC-V520IR Data Sheet

Introduction

The ADC-V520IR is Alarm.com's latest wireless IP night vision camera. Designed specifically to work with the Alarm.com hosted video service, it provides a professional surveillance solution. HD 720P live and recorded video are available to customers through web-enabled computers, cell phone web browsers and via our free downloadable apps compatible with all Alarm.com enabled mobile devices. This camera has been designed to see at a distance of over 20 feet in the dark while still delivering true daytime colors thanks to the mechanical IR cut filter. Plus, wireless set-up is a breeze with push button wireless set-up using the WPS button.

Included Accessories
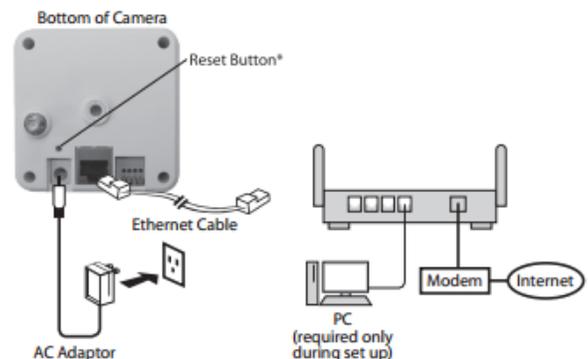
- Camera Stand
- Wall Screws
- Power Adapter

Features

Live resolution options	1280x800, 600x400, 300x200, 176x144
Recording resolution options	1280x800, 600x400, 300x200
Live quality	High, medium and low compression options
Recording quality	High and medium compression options
Recording compression	H.264, MPEG-4
Image sensor	1/4" CMOS, 1280x800
Iris	Fixed Iris, F1.8
Field of view	77° (horizontal) 54° (vertical)
Low-light sensitivity	0 lux with IR on
IR LED illumination	6 meters
Image adjustments	Brightness, Contrast, Saturation, Sharpness, Exposure
Video motion detection	3 windows, adjustable sensitivity and threshold
Digital input trigger	Yes
Ethernet connection	10/100 Mbps RJ-45
Wireless encryption	WEP, WPA or WPA2
Wi-Fi 802.11 Support	b/g/n
Password authentication	"Digest" authentication
Simultaneous viewers	10
Privacy Button	Yes (Same as WPS button)
Operation temperature	32° ~ 104° F (0°C ~ +40°C)
Operating humidity	20% ~ 80% RH
Max power consumption	12V DC, 5.9W
Dimensions (LxWxH)	3.1", 1.8", 3.1"
Weight	4.9 oz

LED Guide

	LED Status	Description
Install	All off	Power off
	Solid **Red**	Power on, system booting
	Green blink every second	Local network connection with local IP address
	Solid **Green**	Full internet connection with Alarm.com IP
	Blue blink every 0.15 second	WPS connecting in progress
Trouble Conditions	Solid **Red** + **Green** intermittent flashing	Wireless network connection failed
	Solid **Red**	No local or Internet connection
Privacy Mode	Solid **Blue**	Privacy Mode enabled
Maintenance	**Red** blink every 0.15 second	Upgrading firmware
	Red blink every 0.15 second + **Green** blink every 0.15 second	Restoring factory default settings

Pan/Tilt Wireless Camera
ADC-V620PT Data Sheet

Introduction

The ADC-V620PT is a wireless IP Pan/Tilt camera designed specifically to work with the Alarm.com hosted video service, which provides a professional surveillance solution without the complexity of traditional CCTV systems. HD 720P Live and Recorded video are available to customers through web-enabled computers, cell phone web browsers and via free downloadable apps for iPhone, Blackberry and Android devices. Users can set and recall 20 "preset" views as well as manually pan and tilt the camera through their web browser. Wireless set-up is a breeze: push button wireless set-up using the WPS button.

Included Accessories
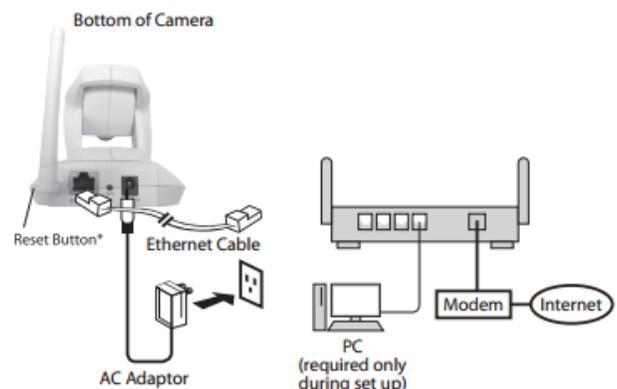
- Camera Wall Mount
- Wall Screws
- Power Adapter

Features

Live resolution options	1280x800, 640x400, 320x200, 176x144
Recording resolution options	1280x800, 640x400, 320x200
Live quality	High, medium and low compression options
Recording quality	High and medium compression options
Recording compression	H.264, MPEG-4
Image sensor	1/4" CMOS, 1280x800
Iris	Fixed Iris, F1.8
Field of view	77° (horizontal) 54° (vertical)
Low-light sensitivity	0.3 lux at 1/5 sec.
Image adjustments	Brightness, Contrast, Saturation, Sharpness, Exposure
Pan/Tilt range	Pan: 350° (-175° ~ +175°) Tilt: 125° (-35° ~ +90°)
Video motion detection	3 windows, adjustable sensitivity and threshold
Digital input trigger	No
Ethernet connection	10/100 Mbps RJ-45
Wireless encryption	WEP, WPA or WPA2
Wi-Fi 802.11 Support	b/g/n
Password authentication	"Digest" authentication
Simultaneous viewers	10
Privacy Button	Yes (Same as WPS button)
Operation temperature	32° ~ 104° F (0°C ~ +40°C)
Operating humidity	20% ~ 80% RH
Max power consumption	12V DC, 5.1W
Dimensions (LxWxH)	4.0", 4.3", 4.4"
Weight	10 Oz

LED Guide

	LED Status	Description
Install	All off	Power off
	Solid **Red**	Power on, system booting
	Green blink every second	Local network connection with local IP address
	Solid **Green**	Full internet connection with Alarm.com IP
	Blue blink every 0.15 second	WPS connecting in progress
Trouble Conditions	Solid **Red** + **Green** intermittent flashing	Wireless network connection failed
	Solid **Red**	No local or Internet connection
Privacy Mode	Solid **Blue**	Privacy Mode enabled
Maintenance	**Red** blink every 0.15 second	Upgrading firmware
	Red blink every 0.15 second + **Green** blink every 0.15 second	Restoring factory default settings

Bottom of Camera

Reset Button*

Ethernet Cable

AC Adaptor

Modem — Internet

PC (required only during set up)

Digital Input Camera Triggers User Guide

ADC-V610PT Cameras

The digital input camera triggers feature allows hard-wired sensor or security panel outputs to trigger video recordings. This feature is useful for customers who have a non-Alarm.com security panel, want to reduce false triggers, or who don't have a security panel at all. This feature must be enabled on the customer's account through the Alarm.com Dealer Website.

- **Overview**

  Camera is triggered by a door, motion, another sensor, or a security panel output which is hard-wired directly to the camera. For wiring purposes, pin "3" is the input pin and pin "4" is the output pin.
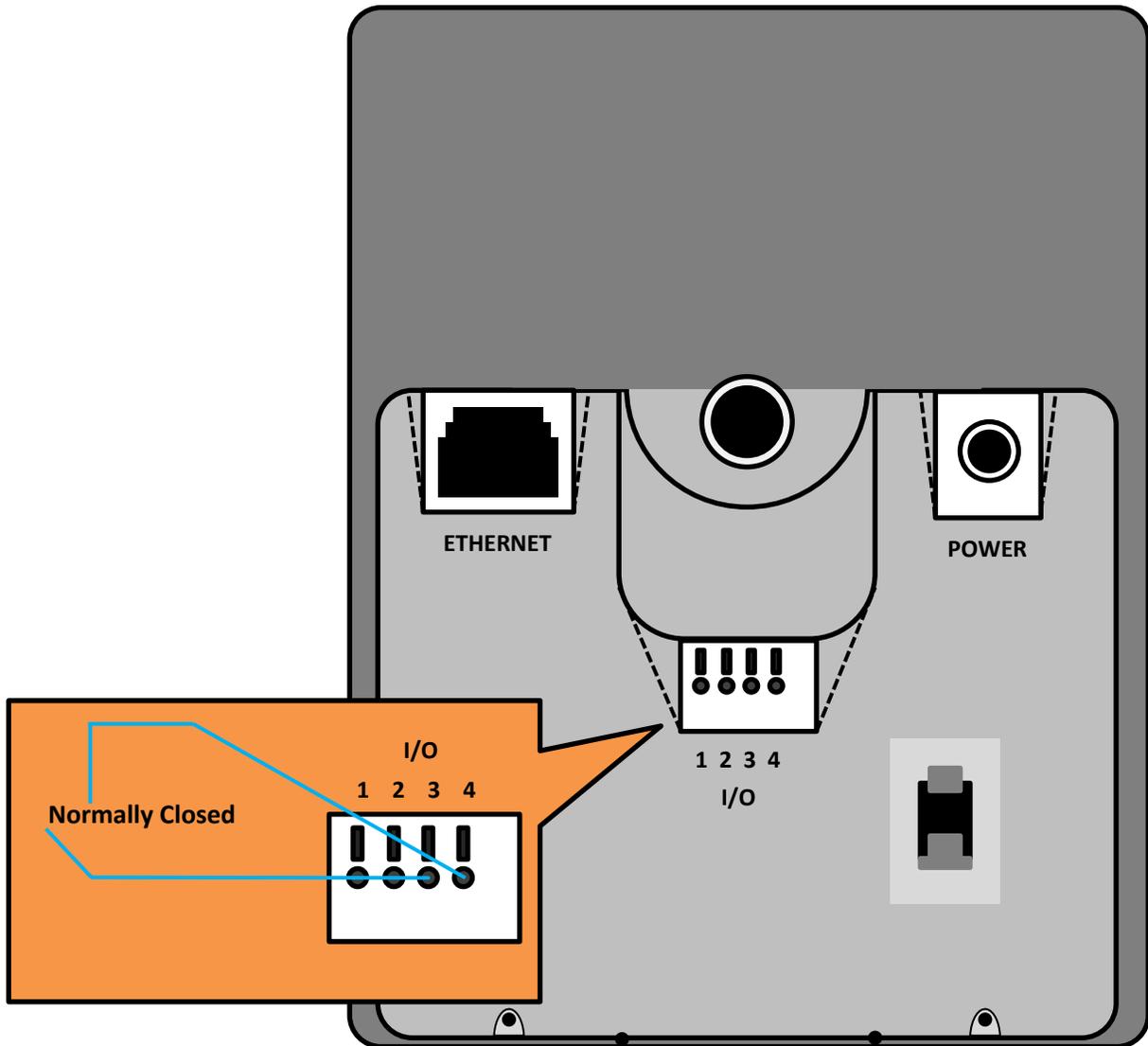
● **Enabling I/O Triggered Video Recording**

Alarm.com dealers have the option to enable this free feature on any account. If the feature is not enabled on an account, it will not be visible to the customer.

● To enable this feature, log onto the Alarm.com Dealer Website and, from the Customer Support section of the Customers Tab, click on *Service Plan*. From the Customer Service Plan History & Details page, click *Change Service Plan* link. On the Available Service Plans page of the customer's account, check the *Digital Input Triggered Video Uploads* box. Be sure to save this by clicking *Change Plan* at the bottom of the page.

Available Service Plans ⑦

Customer's Current Service Plan:

Package:	Interactive Gold
Included Features:	User Code Control Remote Arming Sensor Activity Monitoring for 10 sensors Image Sensor Plus
Selected Add-on Features:	Digital-input Triggered Videos emPower Energy Package (Lights + Thermostats) Enterprise Security Console Pro Video Plus emPower Smart Energy Plus 100 Extra Image Sensor Uploads 250 MB of extra video storage Voice Notifications for Alarms

New Service Plan:

Base Package:	Interactive Gold ▼
Included Features:	User Code Control Remote Arming Sensor Activity Monitoring for 10 sensors Image Sensor Plus
Free Add-on Features:	Wireless 2-Way Voice emPower Lights emPower Thermostats emPower Locks emPower Energy Package (Lights + Thermostats)
Video Monitoring:	Video Plan: Pro Video Plus ▼ Extra Storage: 250 MB ▼ ☑ Digital Input Triggered Video Uploads

● **I/O Triggered Recording Schedules**

After a customer's account has been enabled with the Digital Input Triggered Video Uploads feature, the customer will be able to create Recording Schedules to record when the connected device is triggered.

● On the Customer Site, select I/O Wired Input when adding a new recording schedule of this type.

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⌂ Security | ▶ Video | 🖼 Image Sensor | ♀ emPower | 🗓 History | 💬 Notifications | 📱 Mobile | 👤 Profile

Live Video | Saved Video Clips | **Recording Schedules** | Camera Settings

Add Video Recording Schedule

This Camera should record a clip:

Network Camera ▼

When the following camera trigger occurs:

→ ⦿ I/O Wired Input
○ Video Motion Detection (Configured on the Camera Settings pages)

During these time frames:

⦿ At All Times
○ Only During the Following Times:

Minimum delay between camera-triggered clip uploads:

None ▼

- The list of saved recording schedules will specify the trigger for these devices as "I/O Input", rather than "VMD" (Video Motion Detection), under the Camera-Triggered Recordings heading.

- The digital input can be configured on the main Camera Settings page to trigger when the input is "Open", "Closed", "Opening", "Closing", or "Opening and Closing".

- **Trigger Type Definitions**
  - **Open:** camera uploads clips continuously while the input is open (useful for alarm triggers).
  - **Closed:** camera uploads clips continuously while the input is closed.
  - **Opening:** camera uploads a single clip when the input changes from "closed" to "open."
  - **Closing:** camera uploads a single clip when the input changes from "open" to "closed."
  - **Opening and Closing:** camera uploads a single clip when the input changes from "closed" to "open" or from "open" to "closed."

- **Additional I/O Triggered Recording Information**
  - Only "ground" and "open circuit" signals should be applied to the digital input, as applying any voltage to the pin will not provide predictable results and may damage the camera.
  - The camera will trigger continuously if the connected sensor is left open and the input is set to trigger when "Open" or if the connected sensor is left closed and the input is set to trigger when "Closed" during an I/O triggered recording schedule.
  - The duration of I/O triggered recordings is the same as Video Motion Detection triggered recordings (15 seconds by default.

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Outdoor Wireless Camera
ADC-V721W Data Sheet

Introduction

The ADC-V721W is Alarm.com's latest wireless outdoor IP night vision camera. Designed specifically to work with the Alarm.com hosted video service, it provides a professional surveillance solution. HD 720P live and recorded video are available to customers through web-enabled computers, cell phone web browsers and via our free downloadable apps compatible with all Alarm.com enabled mobile devices. This camera has been designed to see at a distance of over 40 feet in the dark while still delivering true daytime colors thanks to the mechanical IR cut filter. Plus, wireless set-up is a breeze with push button wireless set-up using either wireless accesspoint mode or the WPS button.

Included Accessories

- Power Adapter
- Input/output connecters
- Wall screws

Features

Live resolution options	1280x800, 600x400, 300x200, 176x144
Recording resolution options	1280x800, 600x400, 300x200
Live quality	High, medium and low compression options
Recording quality	High and medium compression options
Recording compression	H.264, MPEG-4
Image sensor	1/4" CMOS, 1280x800
Iris	Fixed, F1.8
Focal Length	F=3.6mm
Field of View	62º (horizontal), 38º (vertical)
Low-light sensitivity	0 Lux with IR leds on
IR illuminating distance	40 Feet (12 meters)
Weatherproofing	IP-66, with UV protection
Image adjustments	Brightness, Contrast, Saturation, Sharpness, Exposure
Video motion detection	3 windows, adjustable sensitivity and threshold
Digital input trigger	Yes
Ethernet connection	10/100 Mbps RJ-45
Password authentication	"Digest" authentication
Simultaneous viewers	10
Operation temperature	-4° ~ 122° F (-20°C ~ +50°C)
Operating humidity	20% ~ 100% (non-condension) RH
Max power consumption	12V DC, 5W
Dimensions (D x L)	2.4" x 4.4"
Weight	7oz

LED Guide

	LED Status	**Description**
Install	All off	Power off
	Solid **Red**	Power on, system booting
	Green blink every second	Local network connection with local IP address
	Solid **Green**	Full internet connection with Alarm.com IP
	Blinking **Blue**	WPS learn-in mode
	Blinking **White**	Wi-Fi access point mode
Trouble Conditions	Solid **Red** No local or Internet connection	
Factory Reset	**Red** blink every 0.15 second + **Green** blink every 0.15 second	Restoring factory default settings