



MD-3025-IVS

**Vehicle Counting
Guide**

Version 1.0

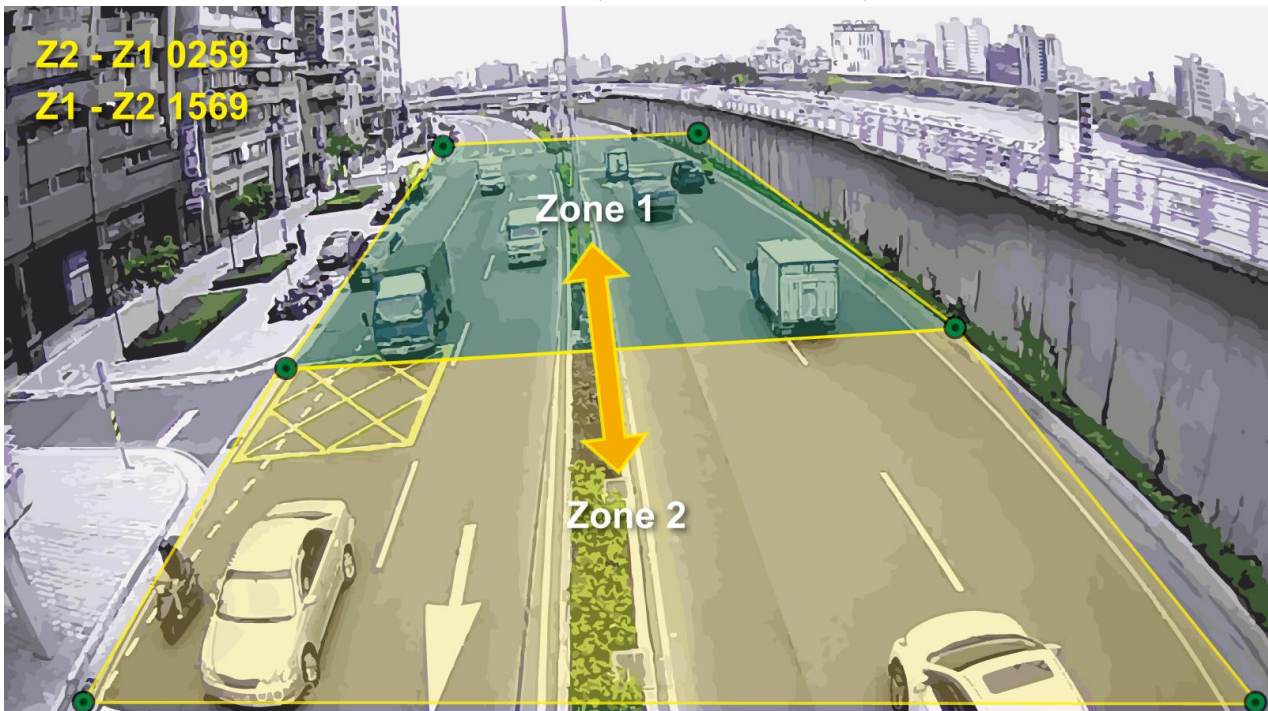


MD-3025-IVS Vehicle Counting Guide

1. Overview

The MD-3025-IVS has built-in video analytic function for object counting. It is a standalone function built into the camera's firmware without the need for external software or device. The object counting function can be used to count people or cars. This guide will focus on using MD-3025-IVS's "Object Counting" function to do vehicle counting in places like intersections, arteries, parking space and highways.

The Object Counting works by defining 2 zones on the video image. When a vehicle crosses the center border between 2 zones, the camera will register a count. The camera can count vehicles from "Zone1 to Zone2", "Zone2 to Zone1", or both directions.



The important factors for successful vehicle counting installations are:

- Choose the appropriate viewing angle and height.
- Choose the appropriate resolution and frame rate.
- Choose the appropriate installation location; avoid any obstacle like shadow of tree or building showing in the detecting area.
- Calibrate the maximum and minimum object size.
- *Make sure "counting result overlay" option is enabled and please remember to click on "Apply" button to save settings.*

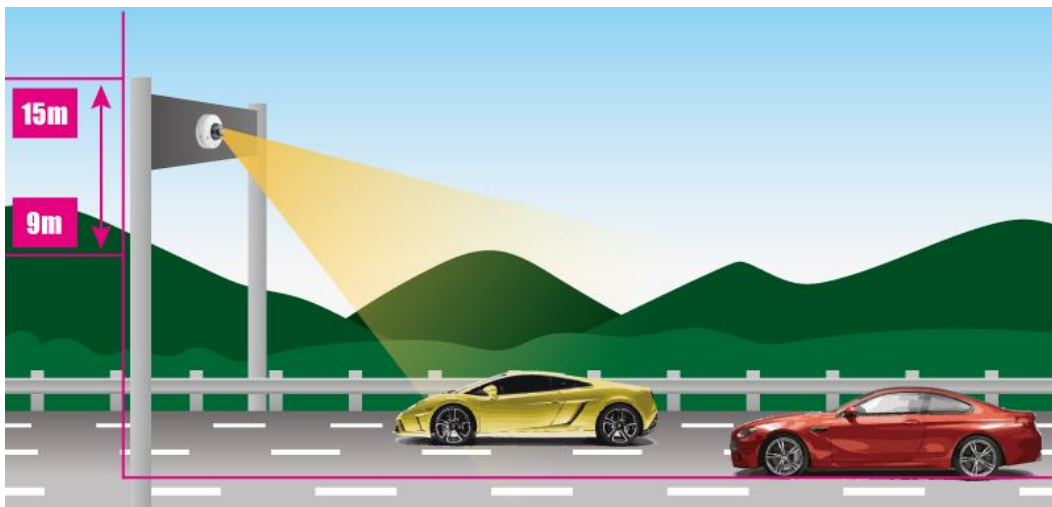
We will guide you through the procedure in the following articles.

2. Hardware Installation Guidelines

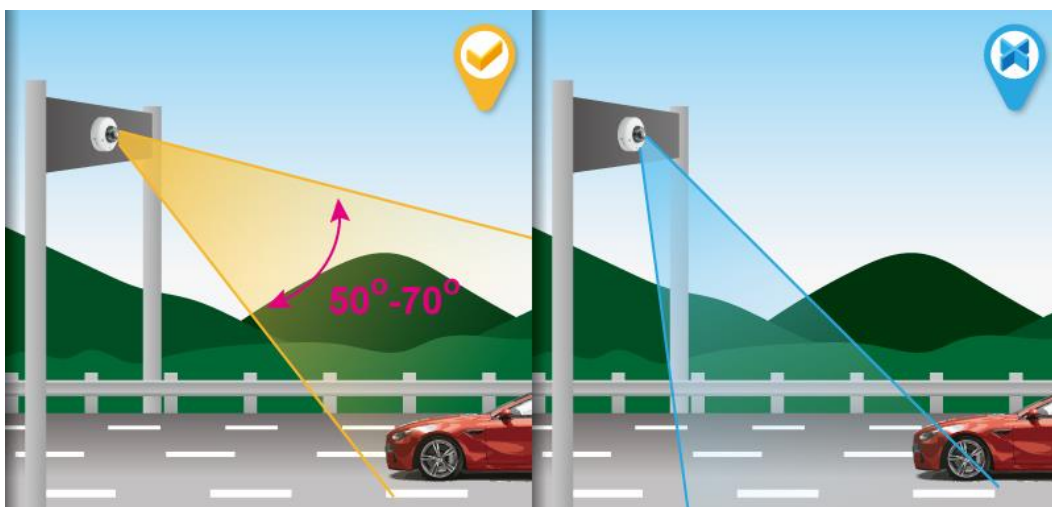
- It is recommended to have at least **9~15 meters** of vertical clearance (from surface to camera) for best performance.
- The followings are basic installation guidelines for best vehicle counting results. However, the vehicle counting function can still work in less than ideal conditions.

1. Avoid the camera position is too low or too high, the proper height will be **9~15 meters** based on different application environment.

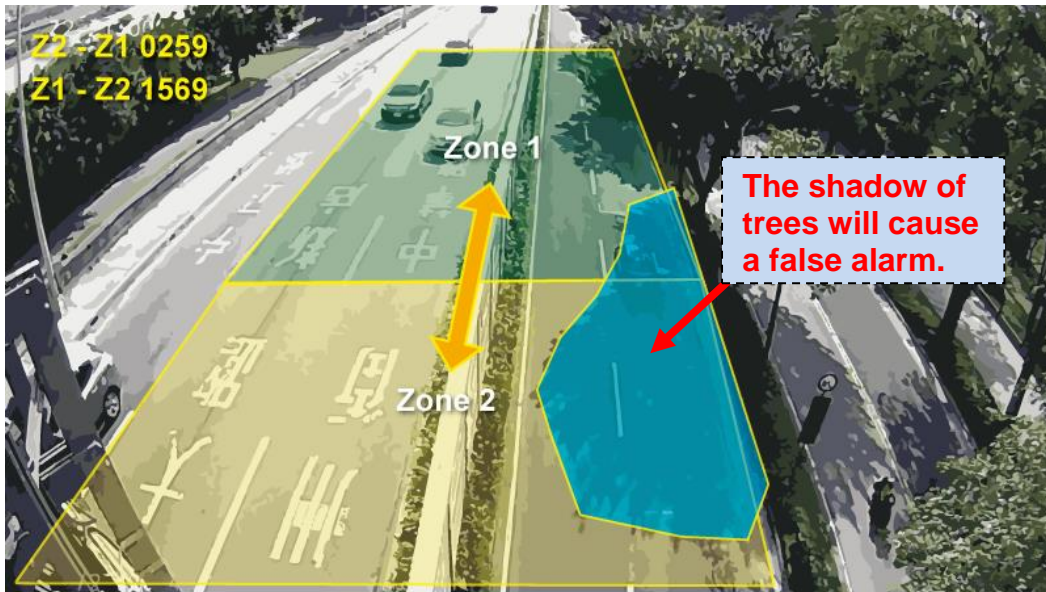
*Both directions detection needs higher camera position.



2. Make sure the appropriate viewing angle to have the best field of view.



3. Avoid any obstacle like shadow of tree, building and traffic light showing in the detecting area. It may cause false detection statistic and false alarm.



4. Make sure the camera position is right above the lane or detecting area.



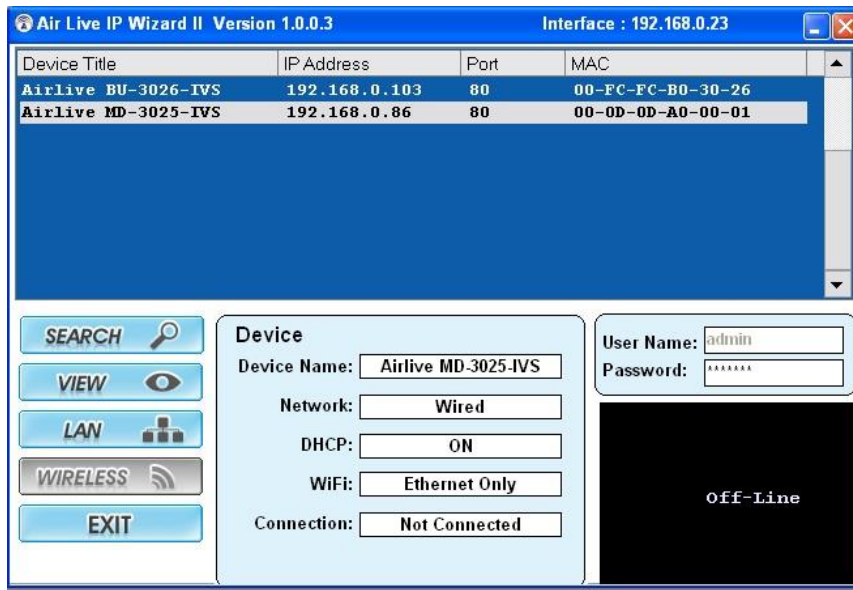
Attention: Lots vehicles in the screen will cause higher CPU loading.

3. Camera Configuration

3.1 Finding camera using AirLive IP Wizard

The IPCAM default IP address is 192.168.1.100, but this address can change when there is DHCP server(router) in your network. Therefore, please install AirLive IP wizard to find your camera.

1. Install the “AirLive IP Wizard” from the installation CD or download it from [this link](#).
2. Run the “setup.exe” and open the AirLive IP Wizard.
3. The IP Wizard will auto search and list out the camera found. Double click on the camera that you want to configure.



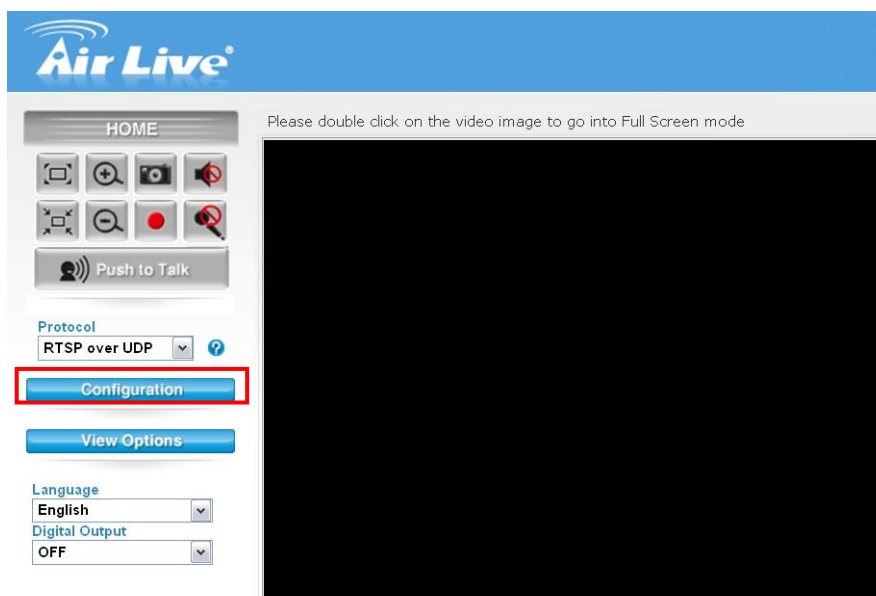
4. The IPCAM’s web configuration will open automatically after double click. Please enter the “admin” for username and “airlive” for password.
5. After entering the correct username and password. You will enter the camera’s web configuration page. When prompted to install “Media Control” from “OvisLink Corp”, please select “Yes” to install.

3.2 Enable Camera’s Video Analytic function

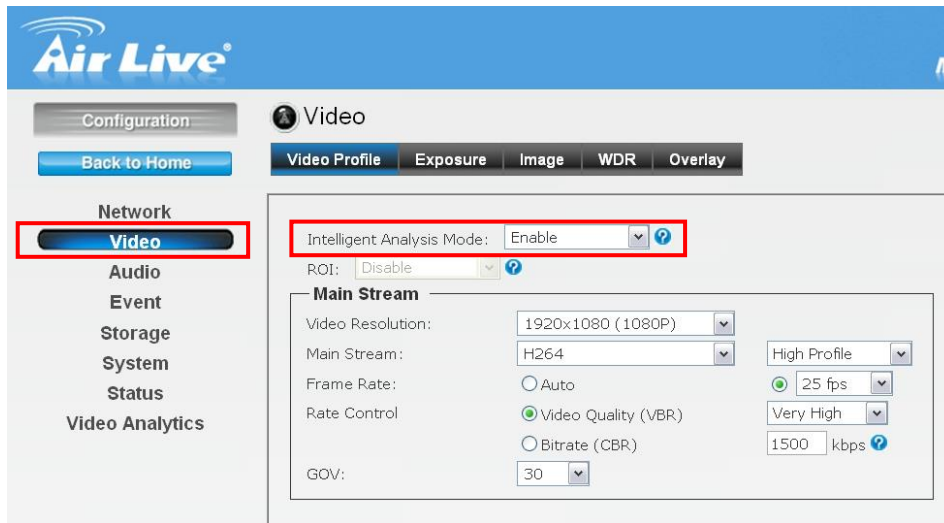
Please use Internet Explorer as the default browser. If you are using IE 11, please go to “Setup->Compatibility View Settings” and add the camera’s IP address to the list.

Please follow the steps below to enable camera’s video analytics function.

1. Click on “Configuration” on left menu bar



2. Click on “Video” on the left menu bar and select “Enable” Intelligent Video Analytics.

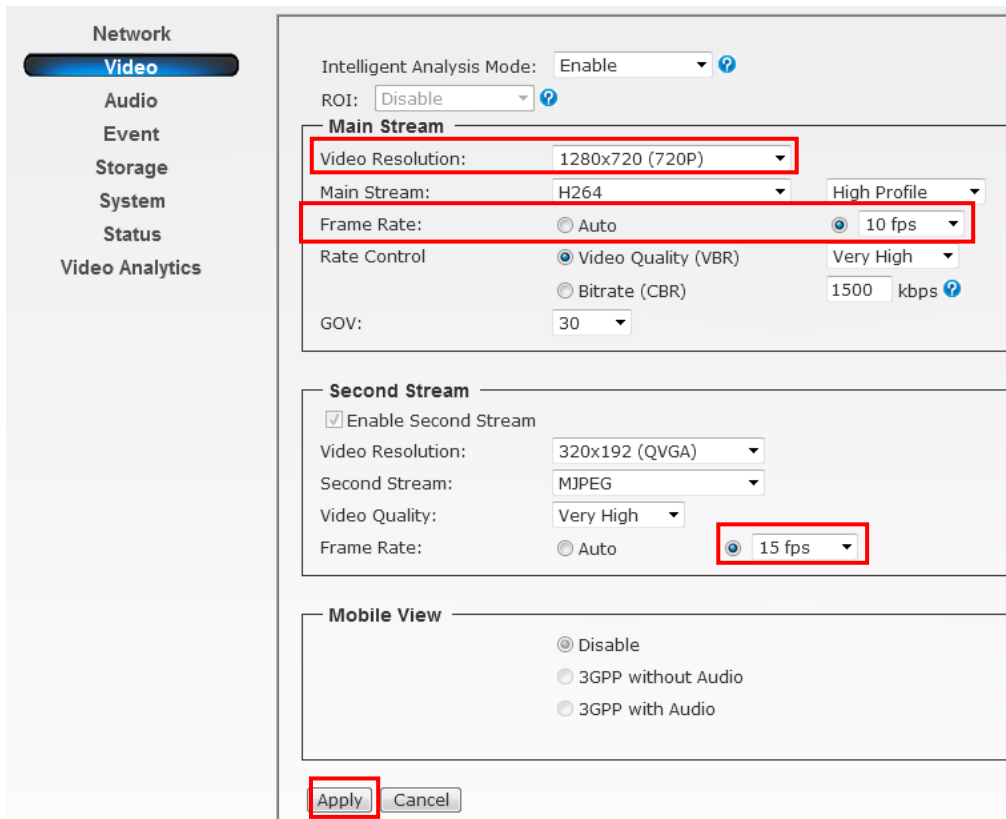


3.3 Setting Resolution and Frame Rate

On the video page, it is important to set the resolution and frame rate correctly.

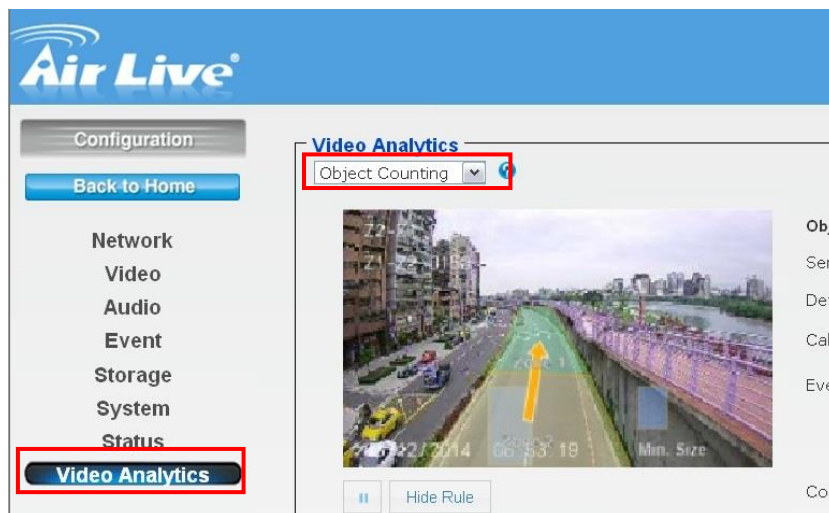
! Please remember to click on “Apply” button after finish settings.

Installation Site	Main Stream Resolution	Main Stream Frame Rate	Second Stream Frame Rate
Intersections, arteries, parking space and highway	1280x720	10FPS	15FPS



3.4 Configure Object Counting Function

Please go to “Video Analytics” menu and select “Object Counting”



Below is the main page of Object Counting.

Zone Area

Zone Settings

Please remember to press "Apply" after change settings, otherwise the settings won't take effect.

The first step is to set the zones according to your environment. The controls are separated in Zone Area and Zone Settings as indicated above.

Zone Settings

- Rotate Mode: this is the default mode. When you click inside the "Zone Area", you can rotate, move, and resize the zone by holding the "change points".

Click inside the zones to activate edit mode

Click and hold inside the zone to move the block

Click and hold the change points to rotate or resize the zones.

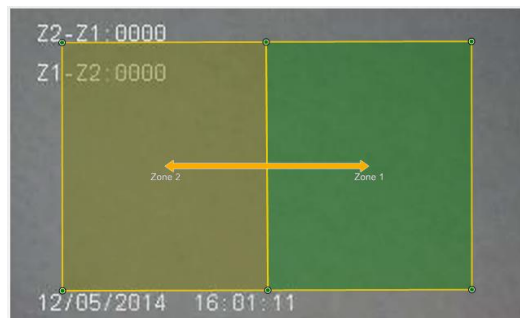
- Transform Mode: In this mode, you can freely change the shape of the zones to fit your installation site.



- Directionality: The camera's vehicle counting function register a count when a vehicle cross from one zone to another. You can choose to count from Zone1 to Zone2, Zone2 to Zone 1, or both directions. **You must first click on the zone block inside the Zone Area first before you are allowed to choose the direction.**

***Both directions detection needs higher camera position.**

- ※ **Please enlarge the Zone 1 and Zone 2 as big as possible. The bigger zone is more accuracy.**

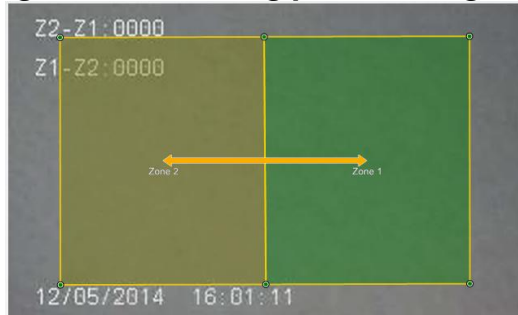


Zone size is big.

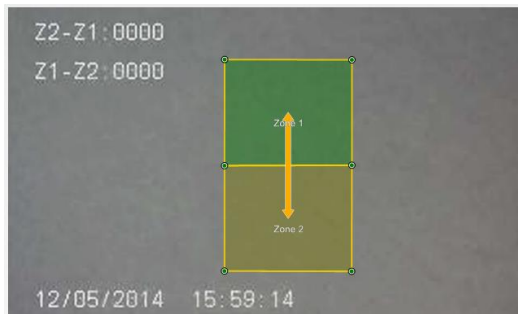


Zone size is too small.

※ **Please extend the length of the moving path as long as possible.**



The length of the moving path is longer.



The length of the moving path is too short.

※ **If the moving direction is from Zone 1 to Zone 2, user can set bigger Zone 1 to increase the accuracy.**



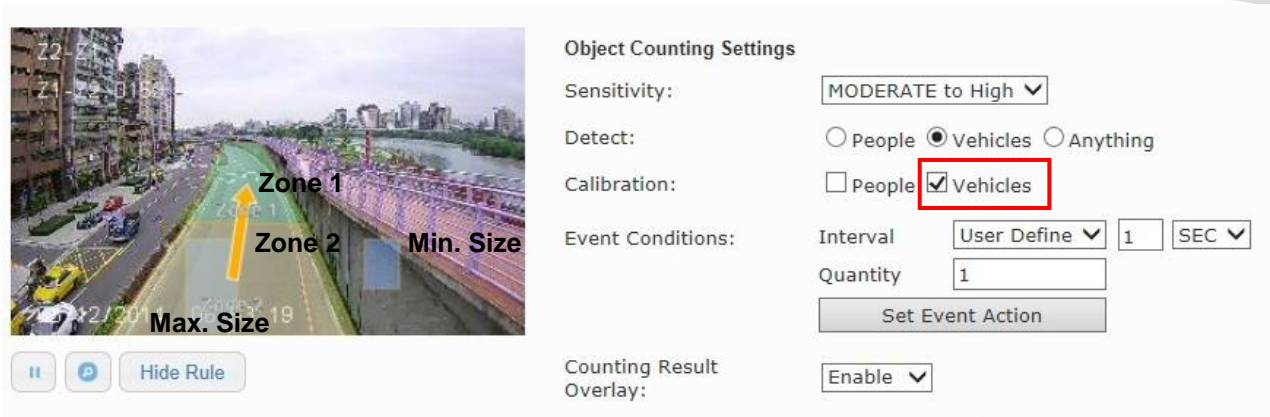
Zone 1 size is bigger

After you set the zone area correctly, the next step is to calibrate the object size according to your installation.

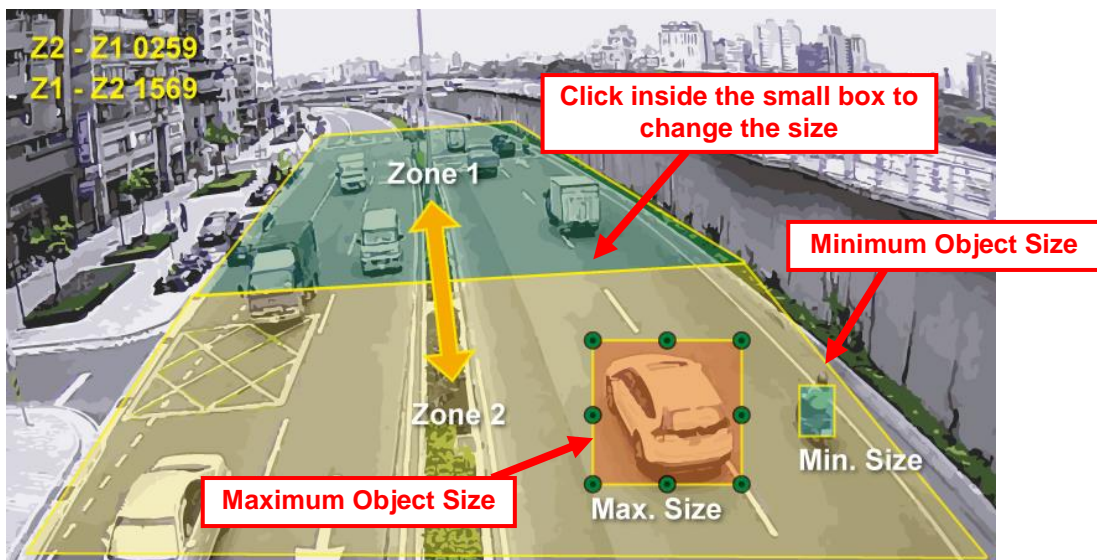
Calibration

Your installation height and location can change the size of a vehicle as perceived by the camera. It is important to calibrate the maximum and minimum vehicle size after installation.

You can perform calibration by checking the “Vehicles” in the calibration field.



On the Zone Area, two windows label “Max Size” and “Min Size” will appear.



Click on either “Min. Size” or “Max.Size” window to change the size of the maximum and minimum of objects.

- Max Size: Object larger than this size will be counted as more than one object. You should set it to the size of a car.
- Min Size: Object smaller than this size will not be counted. You should set it to the size of a motorbike.

Other Important Settings

- Detect: Please choose “Vehicle”
- Sensitivity: “Moderate to High” is the recommended settings
- Counting Result Overlay: Please “enable” this setting. Enable this setting will display

the counting result on screen.



- **Reset Counter:** the displayed counting result will reset to zero according to the choices
- **Statistic Records:** Please enable this item. We recommend choose “hourly” which can report the number of counting in each hour for up to 30 days. When you choose minutely, the camera will hold the per-minute data for 48 hours. Choosing daily will hold daily count for 30 days.
- **Statistic Chart Display:** When enabled, it will show the counting result in a statistic graph. It is not recommended to turn on this function as it might use a lot of CPU resource which can influence counting performance. If you use this function, please remember to **turn it off** after finish using it.



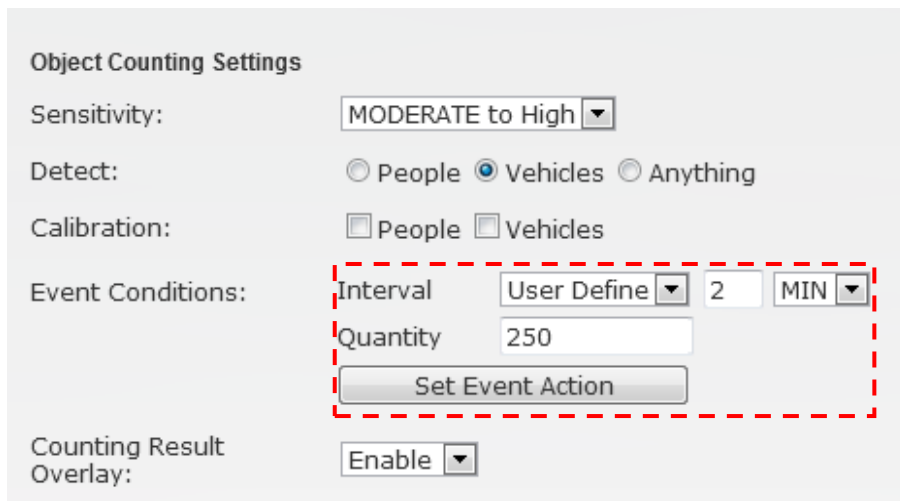
Event Action

The camera's objection counting function not only can do counting, it can also perform certain action when event conditions are met. For example; it can be set if the number of vehicles counted exceeds 250 in the last 2 minutes, it will send an email to the center or operator. This function can be used for traffic control.

Example:

Setting if the number exceeds 250 vehicles in 2 minutes between 7am to 9am, the camera will send an alarm email to control center with a subject message like "Heavy Traffic. Please monitor it and do proper traffic control".

1. Please make sure you have done the Mail Server setting and specific subject of email.
2. Go to "Video Analytics" and "Object Counting". Change Interval to 2 minutes and quantity to "250". Then press "Apply" button to save settings.



The screenshot shows the "Object Counting Settings" interface. It includes the following fields and options:

- Sensitivity:** A dropdown menu set to "MODERATE to High".
- Detect:** Radio buttons for "People", "Vehicles" (selected), and "Anything".
- Calibration:** Checkboxes for "People" and "Vehicles".
- Event Conditions:** A red dashed box highlights the "Interval" dropdown (set to "User Define"), a text input field with "2", a "MIN" dropdown, a "Quantity" text input field with "250", and a "Set Event Action" button.
- Counting Result Overlay:** A dropdown menu set to "Enable".

3. Now, please click on "Set Event Action". Click on "Add". Then the following screen will appear. Please enter the data as shown below. Please remember to click on "Save" after finish settings.

! *Note: The Event Name does not allow spaces in between words. Please enter the event name as one single word.*

Event List

	Event Name	Status
<input checked="" type="radio"/>	oc	Enable

! Please remember to save settings after you add or edit event.

Event Settings

Event Name: Enable

Schedule

Always
 From 07 : 00 To 09 : 00 hh:mm
 Sun Mon Tue Wed Thu Fri Sat

Trigger

Motion Detection Digital Input 1 Low Digital Input 2 Low Tamper Detection
 Video Analytics OC Periodically time 001 seconds

Action

Enable FTP Enable SD CARD Trigger digital output for 01 seconds
 Enable EMAIL Enable TCP Audio File Playback
 Enable Samba(Net Storage) Enable HTTP

4. Retrieve Counting Data

You can retrieve the counting results using one of the methods below:

- Export data from camera's web interface manually.
- Let camera send the daily, hourly or minutely report to remote FTP or Samba Server.
- Retrieve Data using CGI Commands. If you are a developer or system integration, you can use this method to get data for your CMS or management system.

Export Data from Camera's Web UI

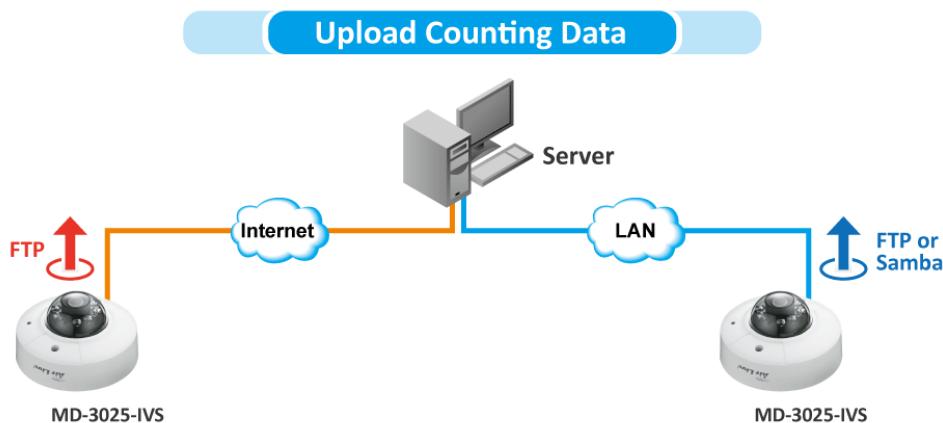
Please go to the Object Counting page (Configuration->Video Analytics->Object Counting). You can select the date, time, and format you want to export.

You can choose either Manual mode to export data whenever you want or Auto mode to export data on specific time automatically.

Camera Send Daily Report

The camera will automatically send statistic report to remote FTP or File Server (Samba). This function provides great advantage for large installations because data can be uploaded via internet to a centralized server. Please choose Auto mode and setup the periodic time and exporting method.

In addition, there is no need to configure the server when there is a new camera installation. This function is under development and will be available soon.



CGI Command to Export Statistic Records

Note: This requires administrator access (administrator authorization).

Method: Get

Syntax: [http://<servername>/cgi/admin/va_trigger.cgi?action=<value>\[&<parameter>=<value>...\]](http://<servername>/cgi/admin/va_trigger.cgi?action=<value>[&<parameter>=<value>...])

with the following parameters and value

<parameter>=<value>	Value	Description
action=<string>	export	
mode	fd oc	Which records of IVS function will be exported. fd=Face Detection oc=Object Counting
period	0~2	Which records of period will be selected. 0=Minutely 1=Hourly 2=Daily
begin	month-day%20hour:minute	search time begins, %20 is the HTML character code of space, ex: 10-21%2012:31
end	month-day%20hour:minute	search time ends, %20 is the HTML character code of space, ex: 10-21%2012:31

Example:

Export daily face detection statistics records from Jan.1 to Dec.

31 http://myserver/cgi/admin/va_trigger.cgi?action=export&mode=fd&period=2&begin=1-1%200:0&end=12-31%2023:59

return:

Succeed	HTTP/1.1 200 OK Content-Type: text/csv Content-Length: 40 Connection: keep-alive Content-Disposition: attachment; filename=fd_event_log.csv Set-Cookie: fileDownload=true; path=/ 2014-02-12 13:58,3 2014-02-12 13:59,3
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