Regulating People Flow with GV-SNVR0412 / 0812

Applied to

- GV-SNVR0412 (V1.06 or later) and GV-SNVR0812 (V1.11 or later) with GV-TDR2700 series (V1.03 or later)
- GV-SNVR0412 (V1.16 or later) and GV-SNVR0812 (V1.22 or later) with GV-TDR4803 series (V1.04 or later) and/or GV-EBD8800 (V1.05 or later)

Summary

Ideal for monitoring and regulating people flow at retail stores or similar settings in the face of the current pandemic, by integrating with GV-SNVR0412 / 0812, GV-IP cameras can be used to analyze the total people count of a vicinity, where the GV-SNVR can trigger output alarms and/or send e-mail alerts when the predefined limit is reached. Follow the steps below to install and configure GV-IP cameras and GV-SNVR0412 / 0812 for people flow control.

Note: For optimal accuracy, the GV-IP camera used for people counting can only be accessed by one device at a time.

Contents

1. Setting up GV-IP Camera
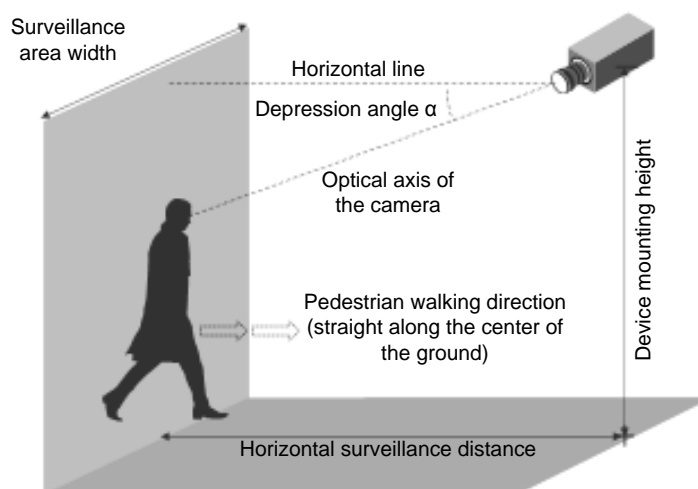
1.1 Installing the Camera

When installing the camera, please refer to the following recommended guidelines:

1.1.1 For GV-TDR2700

- The camera shall be installed at a site with uniform, sufficient lighting, where the persons to be counted are fully illuminated.

- The camera shall be installed at an entrance or exit with an ideal width of 1 ~ 4 m (3.28 ~ 13.1 ft), where the persons to be counted move toward the lens of the camera in single file.

Example of Recommended Scene	Example of Non-recommended Scene

- The camera shall be mounted at a recommended height of 3 ~ 5 m (9.84 ~ 16.4 ft) or 5 ~ 8 m (16.4 ~ 26.2 ft), respectively for -0F (2.8 mm lens) and -1F (4 mm lens).

- The camera shall be mounted with a recommended depression angle of 70 ~ 80°.

To install the camera, see *GV-IP Camera Quick Start Guide*.

1.1.2 For GV-TDR4803 and GV-EBD8800

- It is recommended to install the camera at a height of 4 ~ 9 meters (13.1 ~ 29.5 ft) when the overhead angle of the camera is 30°~60°, and the effective monitoring width is between 1 ~ 8 meters (3.3 ~ 26.2 ft).

- It is recommended to install the camera at a height of 3 ~ 5 meters (9.8 ~ 16.4 ft) when the overhead angle of the camera is 60°~90°, and the effective monitoring width is between 1 ~ 5 meters (3.3 ~ 16.4 ft).

- Avoid areas that may affect accuracy as far as possible, such as in the detection area there are leaf shaking interference, serious shadow shaking, glass floor tile reflective scenes.

- If the flow of people in the area is too dense and stagnant, if there is a block on the head, it will have an impact on the index. Such scenes should be avoided as far as possible in the detection area.

- The camera should be well fixed, unable to move or shake.

- Input image aspect ratio is required to be 16:9.

- It does not support infrared scenes, strong backlight, dim scenes and night light changing scenes, etc.

- The scene with reflection is not supported, which will cause more false detections. It is recommended to adjust the camera angle to eliminate the reflection.

- When there is unusual weather such as rain, snow and fog, the scene indicators will be greatly affected.

- All functions are not suitable for scenes with more occlusion and interference.

- When adjusting the monitoring range and setting business rules, attention should be paid to the pixel size of pedestrian head and shoulder. When the resolution is 1920 x 1080, the pixel size requirements of head and shoulder are: lower limit: 55 x 55; upper limit: 180 x 180; best: 65 x 65-160 x 160, and other dimensions are converted according to the proportion of single side length of the picture.

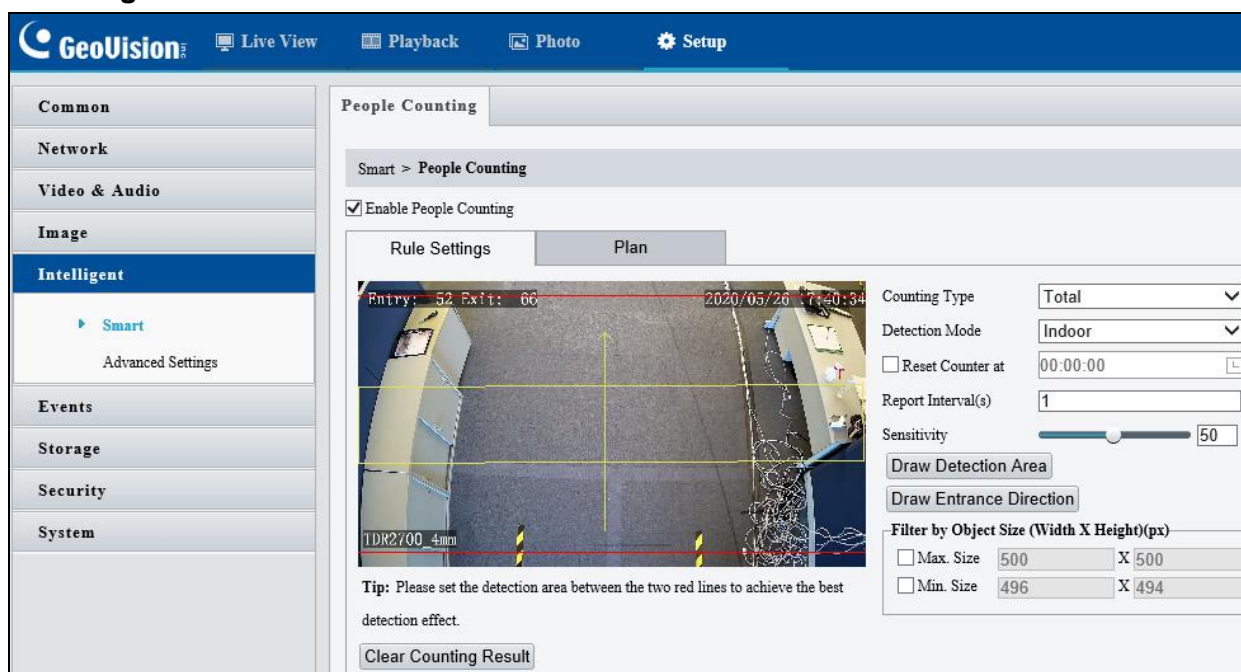| Resolution Ratio	Recommended Min. Pixel	Recommended Max Coverage (width x depth)
1920 x 1080	65 x 65	12m x 10m
2560 x 1440	90 x 90	12m x 10m
3840 x 2160	130 x 130	12m x 10m

1.2 Configuring the Camera

After installing, follow the steps below to configure the camera for People Counting.

1.2.1 For GV-TDR2700

1. Select **Setup** > **Intelligent** > **Smart** and click on the **Settings** button ⚙ next to **People Counting**.

2. Select **Enable People Counting**.

3. For **Detection Mode**, select *Indoor* or *Outdoor* according to the installation site.

4. Click **Draw Detection Area** to draw a detection area on the image.

5. Click **Draw Entrance Direction** to draw an entrance direction on the image. The direction in which the arrow is pointing is the entrance direction while its opposite direction is the exit direction.

6. Under **Filter by Object Size (Width x Height)**, select the checkbox next to **Max.** / **Min. Size** and configure its width / height pixel sizes by adjusting the rectangular box on the image.

Note:

1. For an automated calculation of the Max. and Min. Width/Height, download the .xls file from <u>here</u> and enter the camera, max. & min. person heights accordingly.

2. The Max. and Min. Width / Height cannot exceed 500 pixels.

Model	Max. Size	Min. Size
GV-TDR2700-0F **(2.8 mm)**	Width / Height = 643.5 / (<Camera Height in meters> – <Max. Person Height in meters> + 0.14)	Width / Height = 569.25 / (<Camera Height in meters> – <Min. Person Height in meters> + 0.14)
GV-TDR2700-1F **(4 mm)**	Width / Height = 898.3 / (<Camera Height in meters> – <Max. Person Height in meters> + 0.14)	Width / Height = 794.65 / (<Camera Height in meters> – <Min. Person Height in meters> + 0.14)

- o Example 1: The **Max. Width/Height** with a GV-TDR2700-0F installed at a height of 3 meters for a maximum person height of 1.8 meters = 643.5 / (3 – 1.8 + 0.14) = 480.

- o Example 2: The **Min. Width/Height** with a GV-TDR2700-1F installed at a height of 5 meters for a minimum person height of 1.5 meters = 794.65 / (5 – 1.4 + 0.14) = 212.

- o To adjust the **Max. / Min. Size**, select its checkbox and drag the rectangular box, shown on the image, until both its **Width** and **Height** equal the calculation result.

7. Set the **Report Interval (s)** and **Sensitivity** as 1 and 50, respectively.

8. Select *Total*, *People Entered* or *People Left* as the **Counting Type**:

- ⊙ **People Entered:** Counts and records the number of people entering the premises.

- ⊙ **People Left:** Counts and records the number of people exiting the premises.

- ⊙ **Total:** Counts and records both *People Entered* and *People Left*.

9. Optionally enable **Reset Counter at** to set a time within a day to reset the counting result every 24 hours.

10. Click **Save** for the settings to take effect.

11. Click **Clear Counting Result** for immediately clearing all counting results.

12. To see the counting data overlaid on the live view, select **Image** > **OSD** from the left menu, and enable **People Counting** Overlay OSD content.

1.2.2 For GV-TDR4803 and GV-EBD8800

1. Select **Setup** > **Intelligent** > **Smart** and click on the **Settings** button ⚙ next to **People Flow Counting**.

2. Select **Enable People Flow Counting**.

3. Draw a detection line and define the entrance direction. Select the entrance direction from the **Enter** drop-down list.

4. Select the desired **Counting Type**, from **Total**, **People Entered** or **People Exited**.

5. Select **Reset Counter at** to set a time within a day when to reset the counter.

6. After the above the settings, the people counting function starts working. To see the counting data overlaid on the live view, select **Image** > **OSD** from the left menu, and enable **People Counting** Overlay OSD content.

IMPORTANT: It is required to clear all counting data on GV-EBD8800 first before connecting to GV-SNVR.

For further details on the People Counting function, see *3.6.1.8 People Counting* in *GV-IP Camera User's Manual* from the GeoVision's website.

2. Setting up GV-SNVR

To install the GV-SNVR, see *3.6 GV-SNVR0412 / 0812* in *GV-SNVR Quick Start Guide*.

Note: GV-SNVR must be installed within the same LAN as GV-IP camera.

2.1 Connecting the Camera

After installing the GV-SNVR, follow the steps below to connect the camera:

1. Select **Setting** ⚒ > **Camera** 🔍 and click the **Start Search** button 🔄 to search for IP cameras within the same LAN.

2. Select the checkbox next to the GV-IP camera to add it to the GV-SNVR.

CH	Model	IP Address	Port	MAC Address	Resolution	Bandwidth	Status	Brand	
☑ 1	GV-TDR2700	192.168.10.102	ONVIF	00-13-E2-24-01-E4	H264:1920x1080 H264:640x360	2.4Mbps	Connected	GeoVision_2	⚒
☐ 2									
☐ 3									
☐ 4									

3. Optionally click the **Edit** button ⚒ to adjust the camera settings, such as its login credentaisl.

Users can also add the camera to GV-SNVR manually, see *2.3.2 Manually Connecting GV-IP Cameras* in *GV-SNVR User's Manual*.

2.2   Configuring GV-SNVR

Once connected, follow the steps below to enable the People Counter function of GV-SNVR:

1. Click **Setting** > **Service** and select the **PPL** tab. The following page appears.

Center V2	VSM	Mobile APP	Cloud Center	PPL
State	☑ Active			
Entry	CH 1			▼
Exit	CH 1			▼
Trigger Alarm	100			Person (s) (0~999999)
Stop Alarm	90			Person (s) (0~999999)
Auto Clear Counting	☐ Active			
Time	0 : 0 : 0			
Report Interval	5			sec. (1~60)
Sensitivity	5			1~100
✓ Connected			Clear Counting	Apply

2. Select **Active** to enable People Counter.

3. **Entry:** Select the camera channel counting the number of people entering the premises.

4. **Exit:** Select the camera channel counting the number of people exiting the premises.

5. **Trigger Alarm:** Triggers an output alarm once the number of people at the premises reaches or exceeds the number set.

6. **Stop Alarm:** Must be less than the Trigger Alarm value, stops triggering the output alarm when the number of people at the premises is equal to or less than the number set.

7. **Auto Clear Counting:** Optionally select **Active** to reset the people counter data daily, at the time set. Note that this function does not work on **GV-EBD8800**.

8. Click **Apply**.

IMPORTANT: Do not modify the values of **Report Interval** and **Sensitivity** unless you want to overwrite the related settings of the connected camera, as configured by Step 7 in *1.2.1 For GV-TDR2700*.

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9. Click **Setting** ![icon] > **Event** ![icon] and select **People Counter** from the **Type** dropdown list. The following page appears.

10. **Alarm Out:** Select the output to be triggered upon exceeding the **Trigger Alarm** number, as set by Step 5.

11. Optionally enable **E-mail** to send out an e-mail alert upon exceeding the **Trigger Alarm** number.

12. **Live View**: Enabled by default, display the live view of the camera, within its assigned camera channel on the main screen.

13. Click **Apply**.

2.3 Local Monitoring

Once set, users are able to monitor the total numbers of people entering, leaving and currently at the vicinity in realtime, which is overlaid on the camera channel. When the **Stay** number reaches or exceeds the *Trigger Alarm* number, as set by Step 5, it is indicated in red.

When the **Live View** option in Step 12 is disabled, the screen will display the following image.

[Entry Allowed]   **[No Entry]**
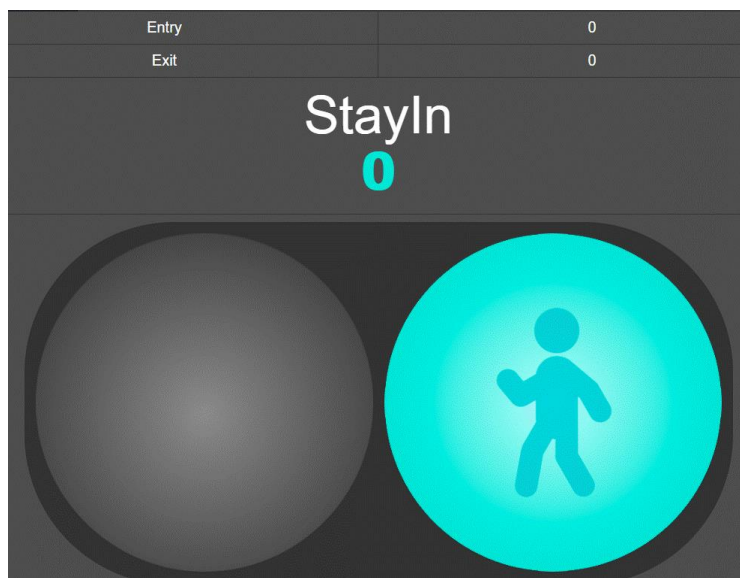

For details on connecting to an output device and setting up e-mail alerts, see *2.2 Connecting GV-SNVR* and *3.3.4 E-Mail*, respectively in *GV-SNVR User's Manual*.
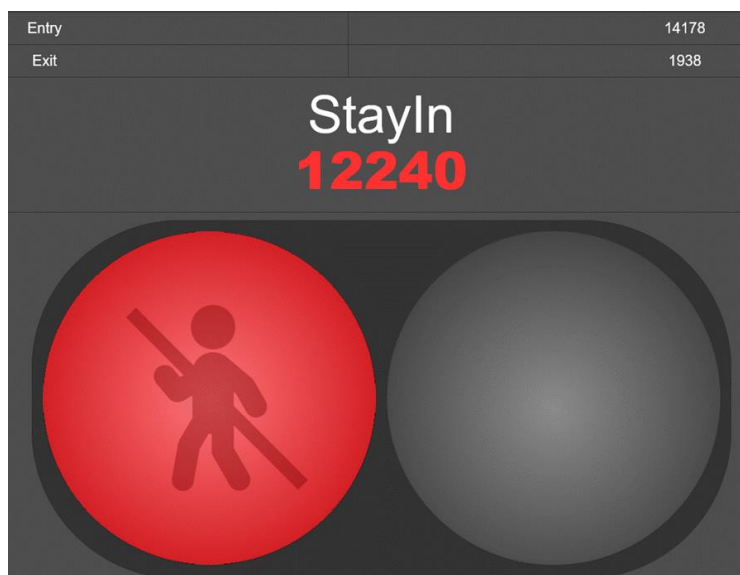
2.4 Remote Monitoring

Users can also monitor the People Counter of GV-SNVR remotely through a Web browser or GV-SNVR Viewer. To view People Counter on Web browser / GV-SNVR Viewer, select **Setting** 🔧 > **Analysis** 🖥. The following page appears.

When the **Stay Count** reaches or exceeds the *Trigger Alarm* number, as set by Step 5, it is indicated in red and the human figure is crossed out by a slash.

For details on viewing GV-SNVR remotely, see *8 Remotely Accessing Live View* in GV-SNVR Quick Start Guide.