

Brickcom

**Brickcom Internal Training Course
Intelligent Video Analytics**

FAE Team
2012.02.06

Preface

- IVA, Intelligence Video Analytics
- IVA feature supported model
 - 100Ap, 130Ap, and 130Np series
- IVA feature supported firmware version
 - v3.1.0.5 or later
- IVA only supports Microsoft Internet Explorer
 - Not including Microsoft Internet Explorer 64bit
 - Not support FireFox, Chrome, Safari browser etc.
- Limitation of the video configuration
 - Only support H.264 and MPEG4 codec.
 - Maximum FPS is 15 only.
even set higher than 15, it will go back to 15
- The accuracy is around 80%

Consideration before using IVA

- IVA should not be used in critical scenarios that may have life or death situations, nor should it be used to alert law enforcement.
- **Light condition**, Should be within the Brickcom cameras' specifications. Additional lighting should be added if it is necessary.
- **Various light phenomena**, Sweeping car headlights, shadows or reflections may consider as moving objects and can give the false detection.
- **Weather**, Heavy rain or snow may reduce the detect rate or false detection.
- **Height**, To get a better result, recommend to install camera at 3m height or higher
- **Speed**, Fast or too slow moving objects may not be detected
- **Size**, Too large or too small objects may not be detected

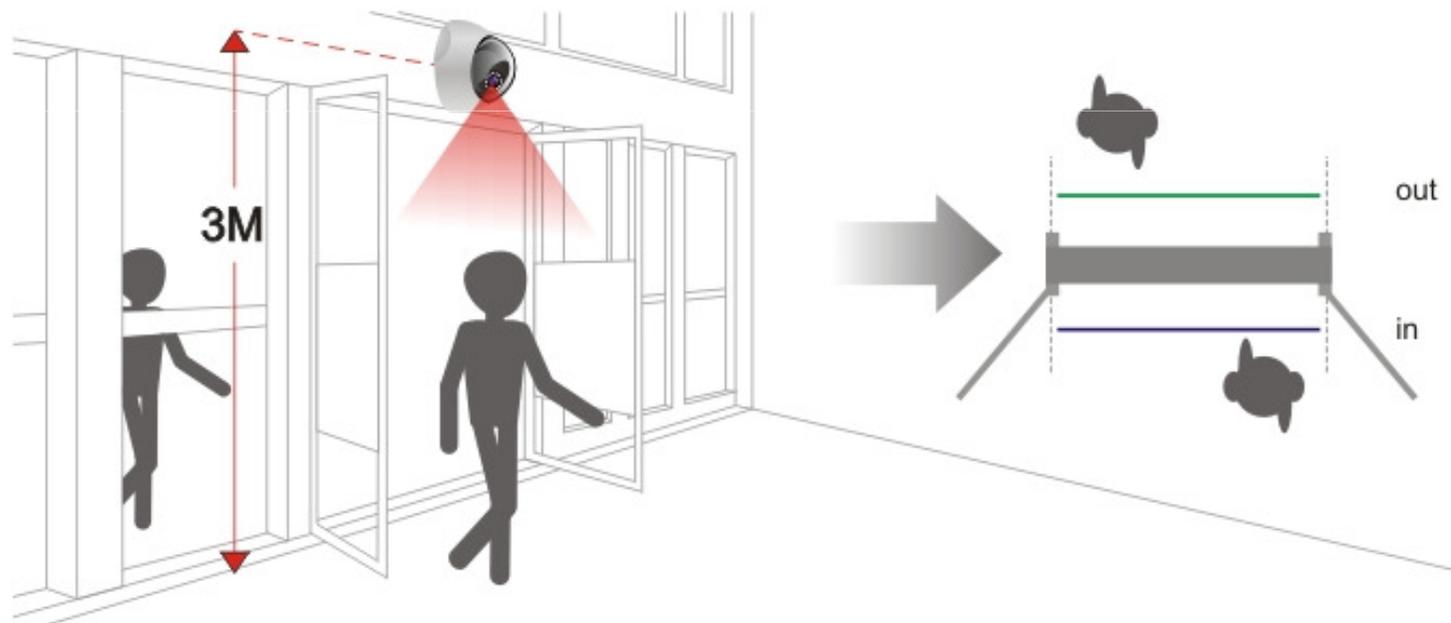
IVA Features

People Counting

To counts the number of people moving through a certain area.

People Counting

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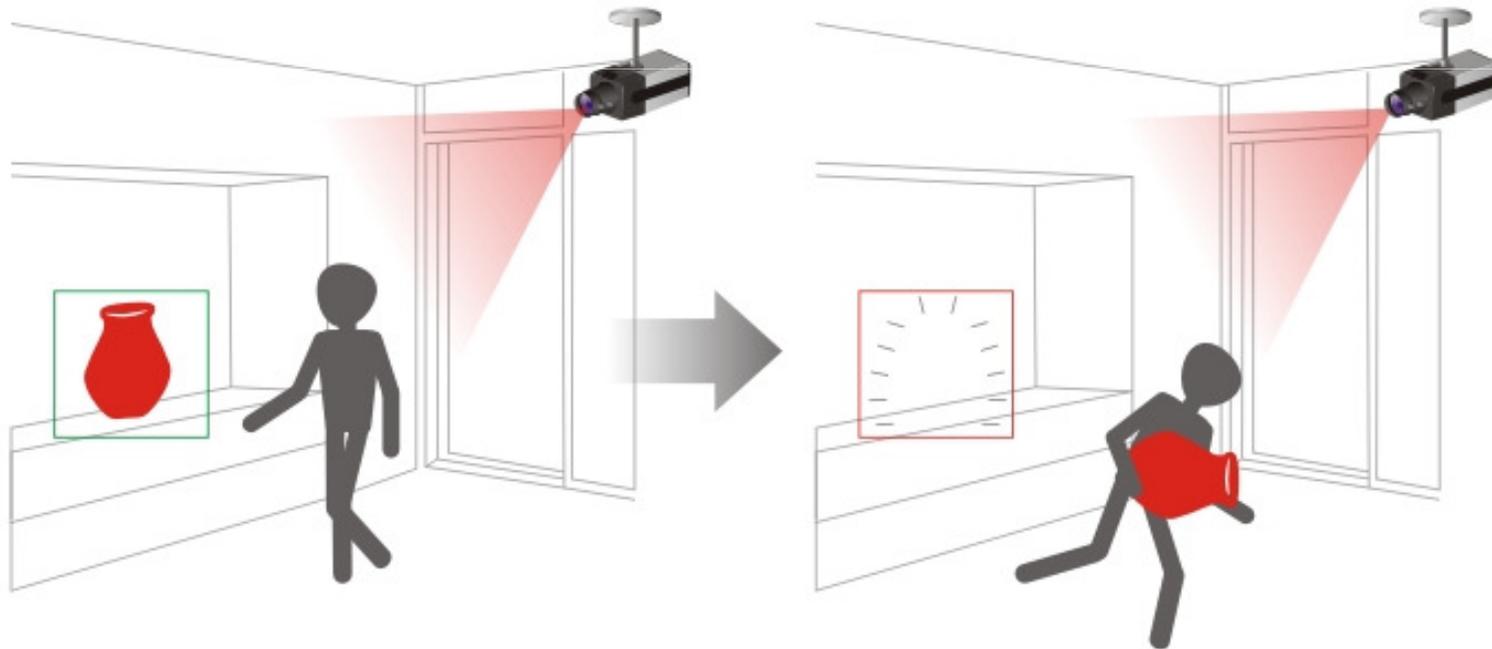
IVA Features

Adding/Missing Object

Allows the user to program the camera to track suspicious situations while protecting people, property and assets more efficiently.

Adding/Missing Object

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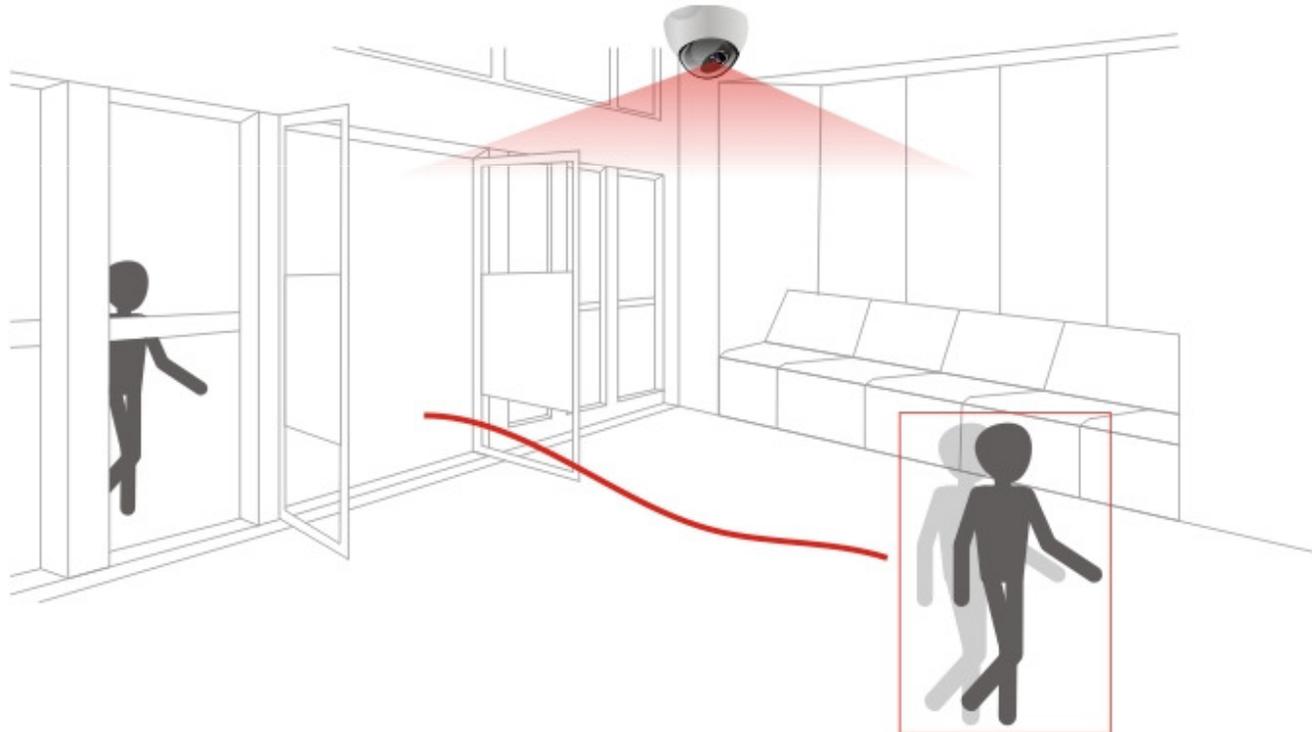
IVA Features

Object Tracking

Allows the user to program the camera to track suspicious situations.

Object Tracking

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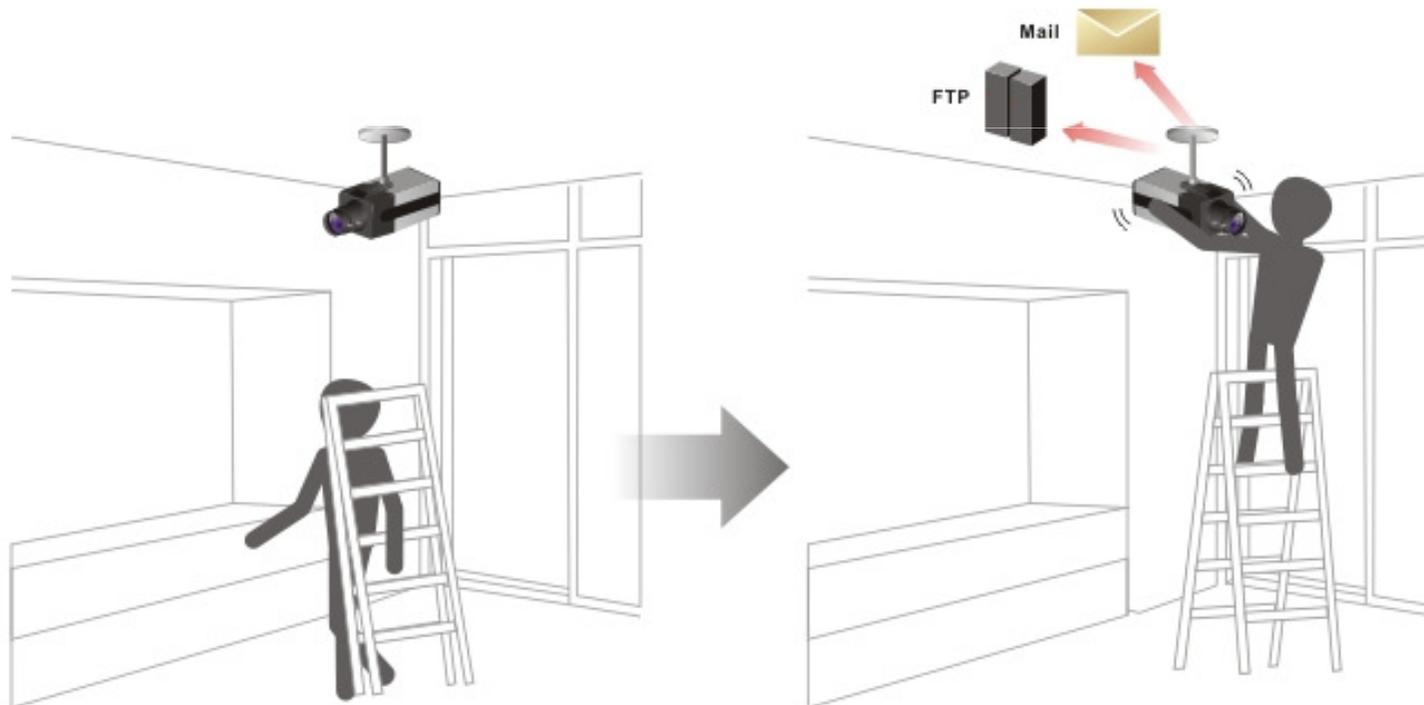
IVA Features

Tampering Alarm

enables security staff to detect disrupted camera operation, by automatically alerting the operator when a camera is re-directed, blocked or manipulated.

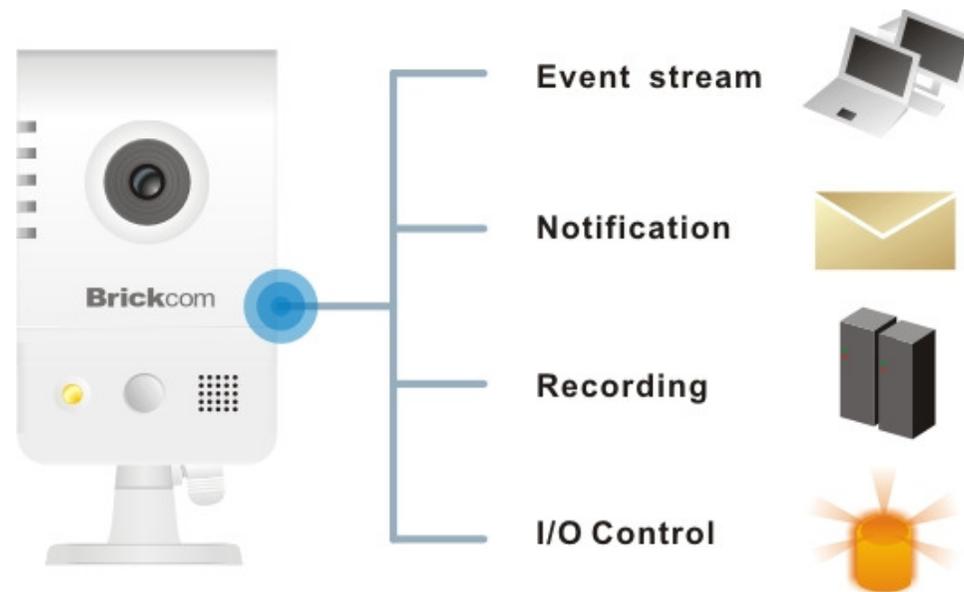
Tampering Alarm

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IVA Events and Actions

- IVA is the embedded feature in camera
- When the IVA event is triggered, there will be some actions
 - Save stream to SD card, email, Samba and FTP
 - Send snapshot to SD card, email, Samba and FTP
 - Activate Digital Output
 - Send HTTP Notification
 - Send Email with text message



Instruction

The IVA feature is Event Setting Page
Click Video Analytics to setup the IVA feature

The screenshot displays the 'Video Analytics' configuration page. On the left, a navigation menu is visible with the following categories and items:

- ▼ Camera/Video/Audio
 - > Camera
 - > Video
 - > Audio
 - > Multicast
- ▼ Network
 - > Network Settings
 - > UPnP
 - > DDNS
 - > EasyLink
 - > HTTP/HTTPS
- ▼ Event
 - > Event Settings
 - > Motion Detection
 - > Video Analytics (highlighted with a red circle)
 - > Digital Input
 - > Audio Detection
- ▼ Notifications
 - > FTP Settings
 - > Email Settings
 - > Samba Settings
 - > HTTP Settings

The main content area is titled 'Video Analytics' and features a video feed on the left and a settings panel on the right. The settings panel includes:

- Basic Settings**
 - Video Analytics Mode
 - Mode: Preview Mode Edit Mode
 - Cordon Information
 - Table with columns: Index, Name, Counter
 - Row 1: Index 1, Name 123, Counter [Clean]

Basic Settings- Preview Mode

Basic Settings

Preview Mode

Index and Name

Reset the counter to 0

Video Analytics

Basic Settings

Video Analytics Mode

Mode Preview Mode Edit Mode

Custom Information

Index	Name	Counter
1	123	<input type="button" value="Clean"/>

Basic Settings – Edit Mode

Edit Mode

Enable and choose the video source to configure IVA function.

Cordon Information. Max: 3

To Modify or Delete the object

The screenshot displays the 'Video Analytics' interface. On the left, a video feed shows a hallway with a green double-headed arrow indicating a cordon area between two points labeled '1' and '2'. On the right, the 'Basic Settings' panel is visible. The 'Video Analytics Mode' is set to 'Edit Mode'. The 'Enable' checkbox is checked, and the 'Channels' dropdown is set to 'Stream1'. Below this is a 'Cordon Information' table with three rows. The 'Edit Mode' radio button, 'Stream1' dropdown, and the 'Modify' and 'Delete' buttons for the first row are circled in red.

Index	Name	Enable	Modify	Delete
1	123	<input type="checkbox"/>	Modify	Delete
2	234	<input checked="" type="checkbox"/>	Modify	Delete
3	567	<input checked="" type="checkbox"/>	Modify	Delete

Icons



This will be showed when click any of icons above on edit mode



Line Mode: To draw the line(s), min 2 points, Max:10 points



Region Mode: To set the range of miss/left object,
(min 3 points, max 10 points)



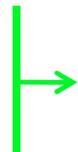
Head Mode: Max Head Circumference



Head Mode: Min Head Circumference



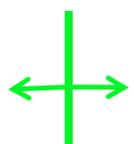
Clockwise Direction



Counterclockwise Direction



Dual Direction



Advanced Settings

Video Analytics

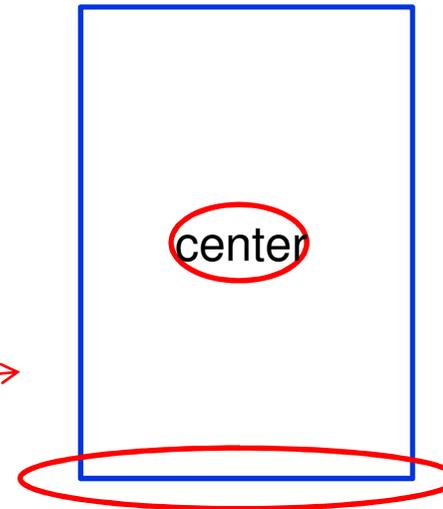
Mode	Head Circumference	Direction	
			<input type="button" value="Set"/> <input type="button" value="Cancel"/>



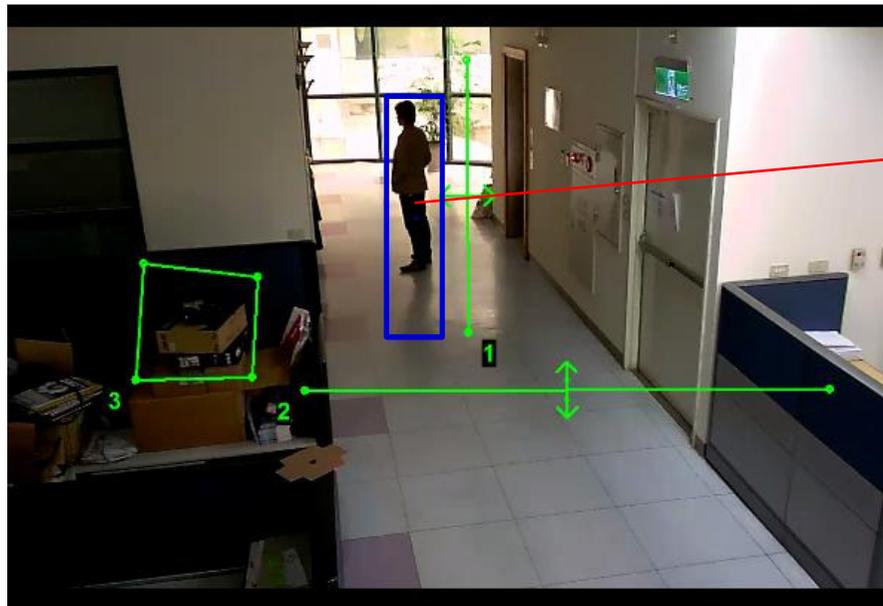
Basic Settings	Advanced Settings
Common Parameter	
Trigger Point	<input checked="" type="radio"/> Bottom <input type="radio"/> Center
Mini sampling frame	5 <input type="button" value="v"/>
Min pixels per object	25 <input type="button" value="v"/>
Trajectory Smoothness	4 <input type="button" value="v"/>
On Screen Display	
Cordon	<input checked="" type="checkbox"/> Enable
Moving Object	<input checked="" type="checkbox"/> Enable
Trajectory	<input checked="" type="checkbox"/> Enable
Counting	<input checked="" type="checkbox"/> Enable
People Counting Parameter	
Human Detection	<input type="checkbox"/> Enable
Min Head Circumference	144
Max Head Circumference	174
Sensitivity	9 <input type="button" value="v"/>
Tolerance	2 <input type="button" value="v"/>
Left/Miss Object Parameter	
Draw Abandon Object	<input type="checkbox"/> Enable
Abandon Start	100 Frame(s) (10-300)
Abandon End	170 Frame(s) (10-300)
<input type="button" value="Apply"/> <input type="button" value="Cancel"/>	

Advanced Settings - Common Parameter 1/2

Common Parameter	
Trigger Point	<input checked="" type="radio"/> Bottom <input type="radio"/> Center
Mini sampling frame	5
Min pixels per object	25
Trajectory Smoothness	4



Bottom



Advanced Settings - Common Parameter 2/2

Min sampling frame

An Object moves over the set value, then the system will determine the object is moving or an object. Range 1-15.

Min pixels per object

the minimum pixels of an object. Range 1-100.

Trajectory Smoothness

the smoothness of trajectory on the OSD. Range 1-32.

Common Parameter	
Trigger Point	<input checked="" type="radio"/> Bottom <input type="radio"/> Center
Mini sampling frame	5 
Min pixels per object	25 
Trajectory Smoothness	4 

Advanced Settings - On Screen Display

Cordon

enable to show the cordon on the screen

Moving Object

enable to show the moving objects on the screen

Trajectory

enable to show the trajectory of the moving objects on the screen

Counting

enable to show the number that how many objects been cross over set lines on the screen

On Screen Display	
Cordon	<input checked="" type="checkbox"/> Enable
Moving Object	<input checked="" type="checkbox"/> Enable
Trajectory	<input checked="" type="checkbox"/> Enable
Counting	<input checked="" type="checkbox"/> Enable

Advanced Settings - People Counting

Parameter 1/2

Human Detection

when enable the counter only counts when human cross over the line.

Min Head Circumference

set the parameter by click this icon drawing on the screen.

Max Head Circumference

set the parameter by click this icon drawing on the screen.

Sensitivity

the sensitivity of human detection.

Tolerance

the tolerance of the circle

People Counting Parameter	
Human Detection	<input type="checkbox"/> Enable
Min Head Circumference	144
Max Head Circumference	174
Sensitivity	9 
Tolerance	2 

Advanced Settings - People Counting Parameter 2/2

Min Head Circumference

set the parameter by click this icon drawing on the screen.

Max Head Circumference

set the parameter by click this icon drawing on the screen

The screenshot displays the 'Video Analytics' interface. The top control bar has tabs for 'Mode', 'Head Circumference', and 'Direction'. The 'Head Circumference' tab is circled in red. Below the control bar is a video feed showing a tiled floor with two green circles around people's heads, labeled '184' and '133'. To the right is a settings panel with 'Basic Settings' and 'Advanced Settings' tabs. The 'Advanced Settings' tab is active. Under 'Common Parameter', there are settings for 'Trigger Point', 'Mini sampling frame', 'Min pixels per object', and 'Trajectory Smoothness'. Under 'On Screen Display', there are checkboxes for 'Cordon', 'Moving Object', 'Trajectory', and 'Counting'. Under 'People Counting Parameter', there is a checkbox for 'Human Detection' and numerical fields for 'Min Head Circumference' (133) and 'Max Head Circumference' (184), which are circled in red. A 'Sensitivity' dropdown is set to '9'.

Advanced Settings - Left / Miss Object Parameter

Draw Abandon Object

Enable to enable left / miss object detection

Abandon Start

How many frames the system will trigger after the object been moved or missed

Abandon End

How many frames after the object been moved or missed, the system will set that certain screen as the basic frame.

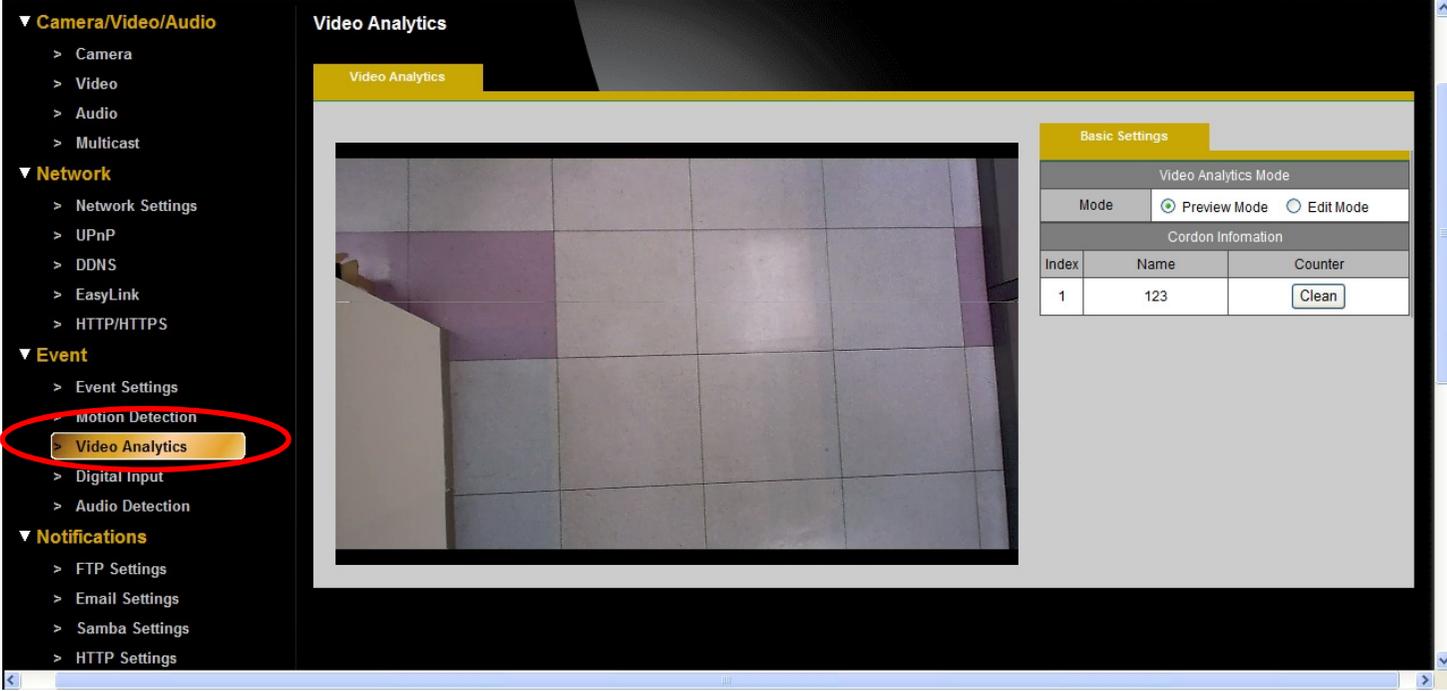
Left/Miss Object Parameter	
Draw Abandon Object	<input type="checkbox"/> Enable
Abandon Start	<input type="text" value="100"/> Frame(s) (10-300)
Abandon End	<input type="text" value="170"/> Frame(s) (10-300)

Scenario Tuition

- Scenario1 for People Counting
- Scenario2 for Missing Object

Scenario 1: People Counting 1/5

1. Select “Video Analytics” in the web GUI



The screenshot displays the Brickcom web GUI interface for Video Analytics. On the left, a navigation menu is visible with the following categories and items:

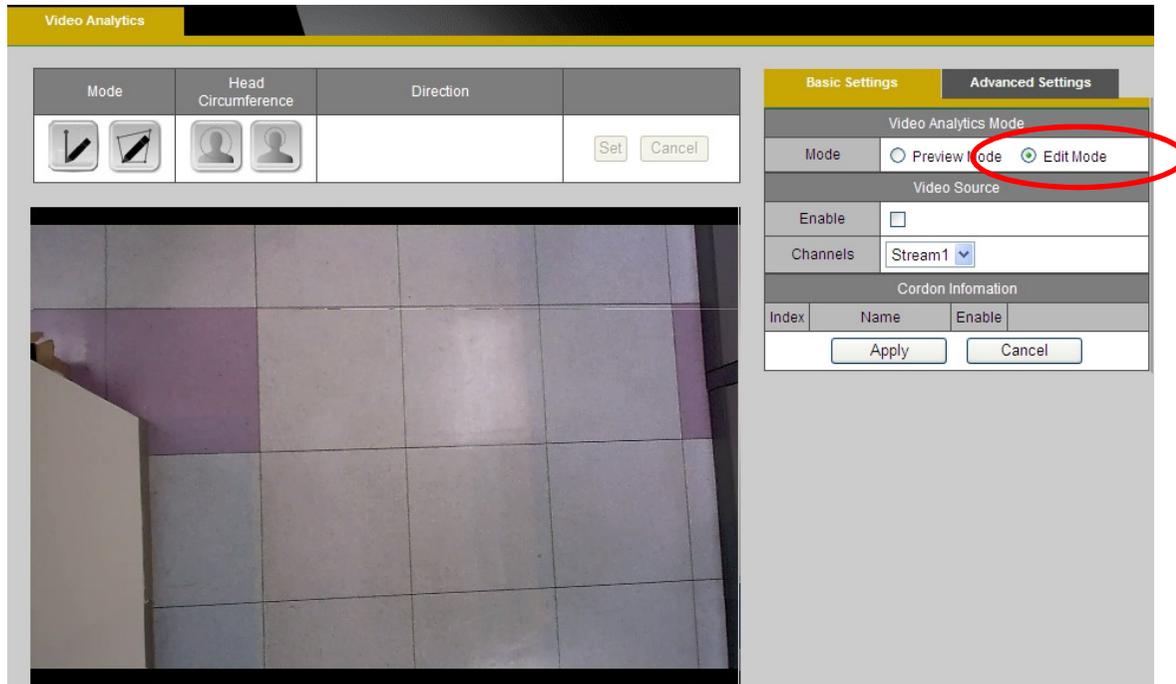
- ▼ Camera/Video/Audio
 - > Camera
 - > Video
 - > Audio
 - > Multicast
- ▼ Network
 - > Network Settings
 - > UPnP
 - > DDNS
 - > EasyLink
 - > HTTP/HTTPS
- ▼ Event
 - > Event Settings
 - > Motion Detection
 - ▶ Video Analytics
 - > Digital Input
 - > Audio Detection
- ▼ Notifications
 - > FTP Settings
 - > Email Settings
 - > Samba Settings
 - > HTTP Settings

The main content area is titled "Video Analytics" and features a video feed of a hallway. To the right of the video feed, there is a "Basic Settings" panel with the following configuration:

- Video Analytics Mode
 - Mode: Preview Mode Edit Mode
- Cordon Information
 - Table with columns: Index, Name, Counter
 - Row 1: Index 1, Name 123, Counter [Clean]

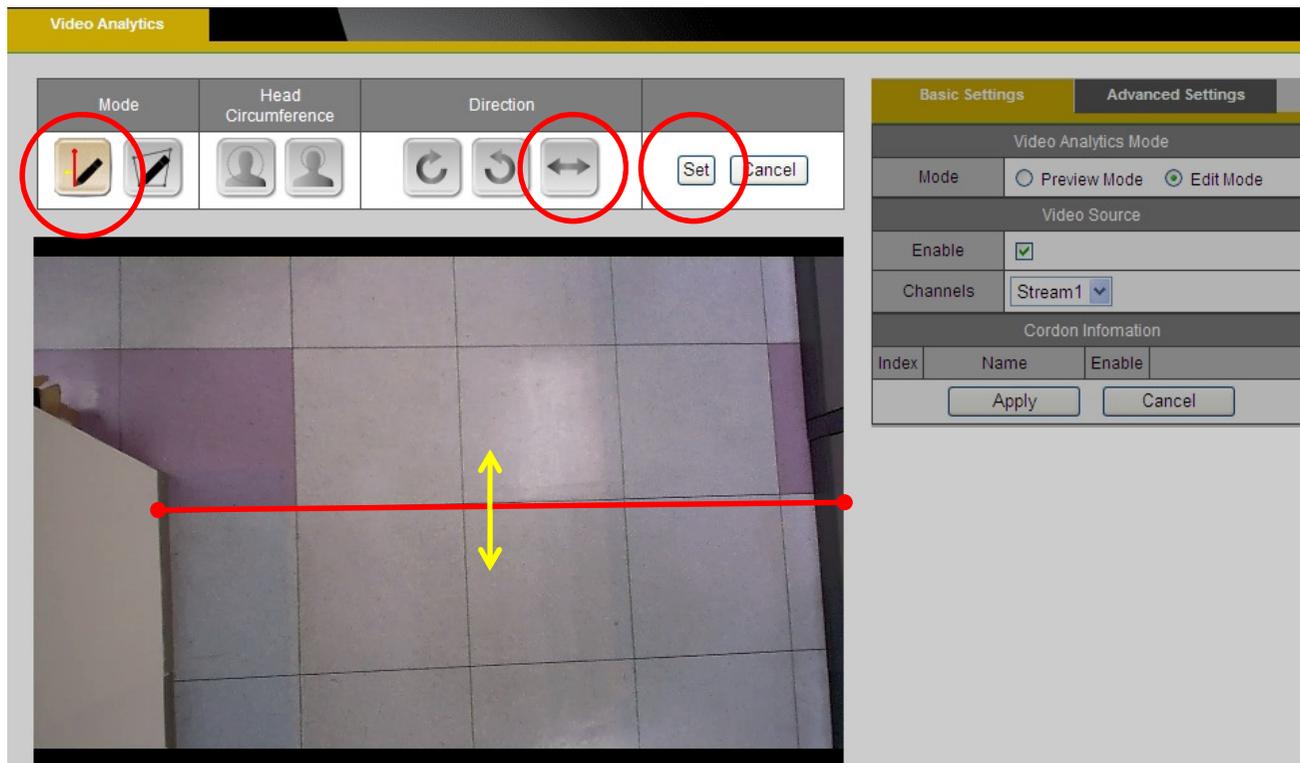
Scenario 1: People Counting 2/5

1. Select "Edit Mode"



Scenario 1: People Counting 3/5

1. Click “Line Mode”
2. Draw the line
3. Choose the direction
4. Click Set to save the settings



Scenario 1: People Counting 3/5

1. Click on Head Circumference to define the maximum and minimum parameter.
2. Click Set to save the settings

The screenshot displays the video analytics configuration interface. The top section contains a control bar with the following elements:

- Mode:** Two icons for drawing tools.
- Head Circumference:** Two icons representing head detection, one of which is circled in red.
- Direction:** A blank field.
- Buttons:** 'Set' and 'Cancel' buttons, with 'Set' circled in red.

The main video feed shows a person at a desk with a green bounding box around their head. The bounding box contains the numbers '239' and '183'.

The right-hand panel shows the configuration settings:

- Basic Settings:** Video Analytics Mode (Preview Mode, Edit Mode), Video Source (Stream1), Enable (checked).
- Advanced Settings:** Cordon Information table with one entry (Index 1, Name 123, Enable checked).

Index	Name	Enable	Modify	Delete
1	123	<input checked="" type="checkbox"/>	Modify	Delete

Scenario 1: People Counting 4/5

1. Put the name for this cordon
2. Enable the video source and choose the channel
3. Click on Apply

The screenshot displays the Brickcom People Counting interface. On the left, a video feed shows a tiled floor with a purple wall. The interface is divided into two main sections: a control panel on the left and a settings panel on the right.

The control panel includes a 'Mode' section with two icons (a pencil and a person), a 'Head Circumference' section with two person icons, and a 'Direction' section with a 'Set' and 'Cancel' button.

The settings panel is titled 'Basic Settings' and 'Advanced Settings'. It contains the following sections:

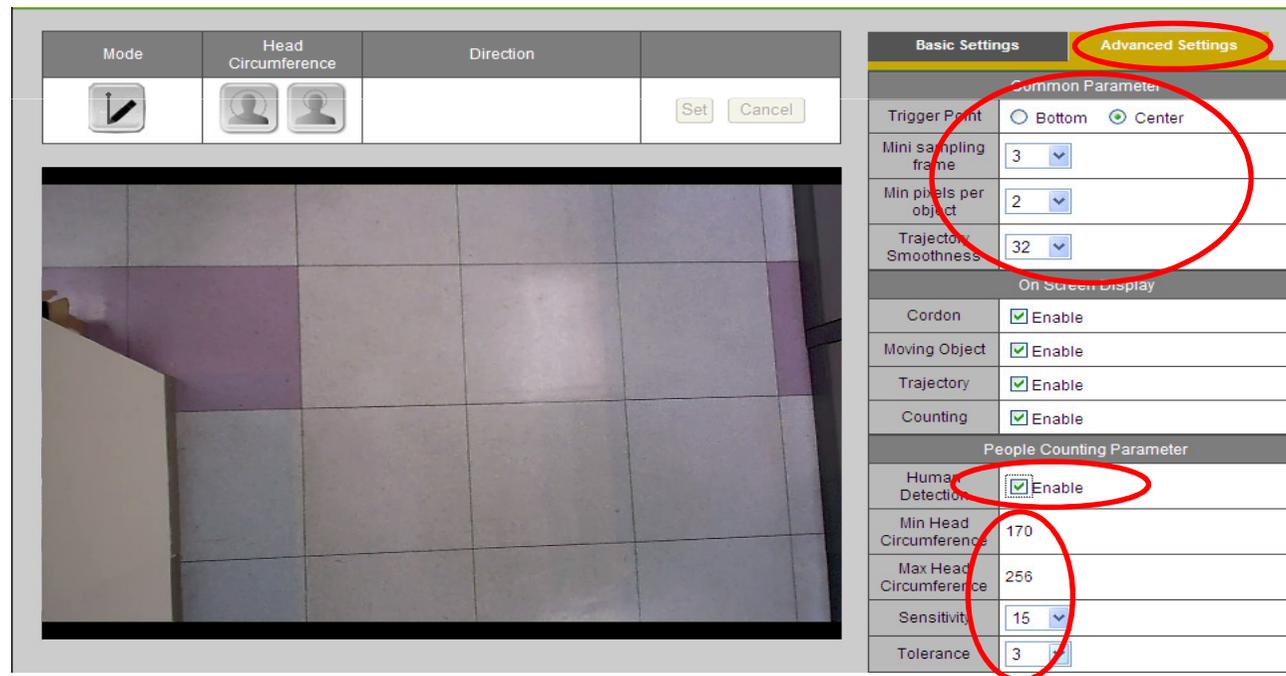
- Video Analytics Mode:** Mode is set to 'Edit Mode' (indicated by a green dot).
- Video Source:** 'Enable' checkbox is checked (circled in red). 'Channel' is set to 'Stream1' (circled in red).
- Cordon Information:** A table with the following data:

Index	Name	Enable	Modify	Delete
1	123	<input checked="" type="checkbox"/>	Modify	Delete

The 'Apply' button is circled in red.

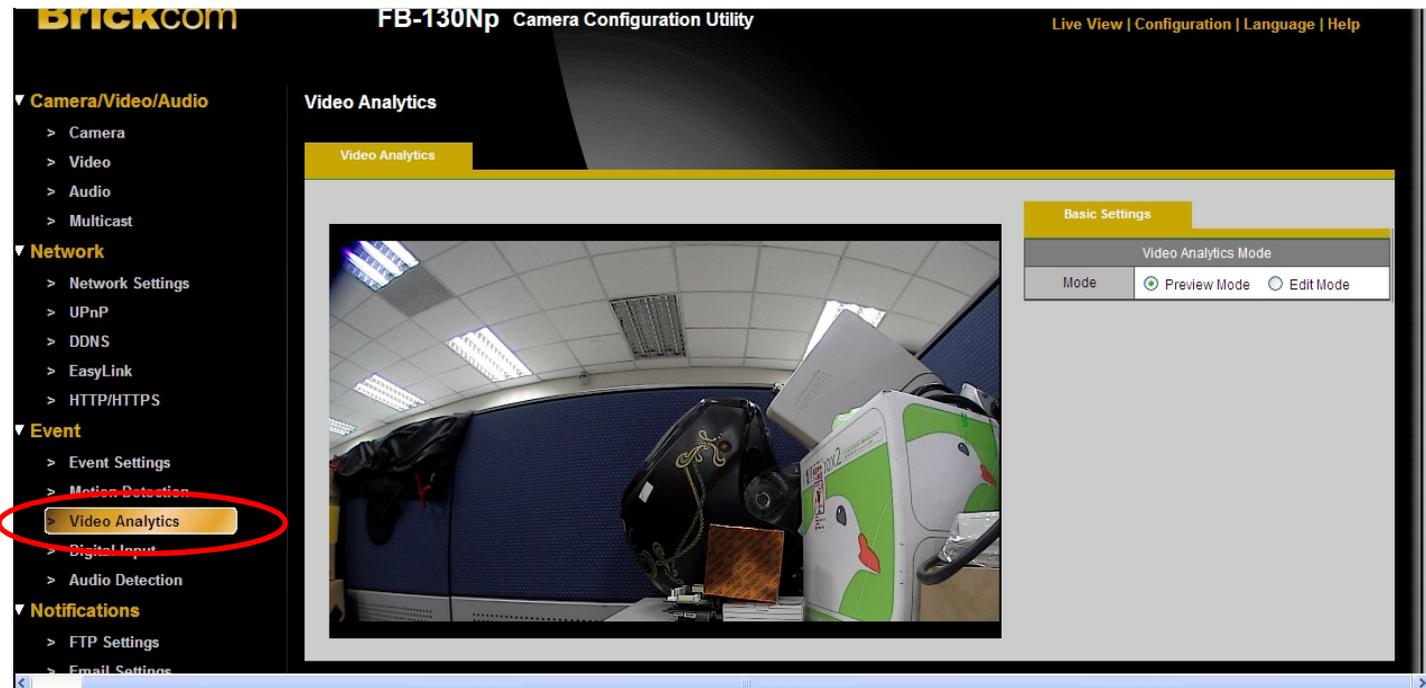
Scenario 1: People Counting - Advanced settings 5/5

1. Click on Edit Mode
2. Choose Advanced Settings
3. Enable the human detection
4. Adjust the common and people counting parameter basis of your scenarios.



Scenario 2: Missing Object 1/5

1. Select “Video Analytics” in the web GUI



Scenario 2: Missing Object 2/5

1. Select "Edit Mode"
2. Click on Region Mode

The screenshot displays the Video Analytics interface. On the left, a control panel includes a 'Mode' section with two icons: a pencil and a square with a pencil, the latter being circled in red. Below this is a video feed showing a room with a desk, a chair, and a green and white robot. To the right, the 'Basic Settings' tab is active, showing 'Video Analytics Mode' with 'Edit Mode' selected and circled in red. Other settings include 'Video Source' (Stream1), 'Enable' (unchecked), and 'Cordon Information' table.

Cordon Information		
Index	Name	Enable

Buttons: Apply, Cancel

Scenario 2: Missing Object 3/5

1. Draw the region
2. Click Set to save the settings

The screenshot displays the Video Analytics interface. The main video feed shows a room with a blue wall and a white ceiling. A red bounding box is drawn around a missing object in the video. The interface includes a settings panel with the following sections:

- Mode:** Includes icons for drawing and erasing.
- Head Circumference:** Includes icons for head detection.
- Direction:** Includes a 'Set' button (highlighted with a red circle) and a 'Cancel' button.

The right-hand settings panel includes:

- Basic Settings:** Video Analytics Mode (Preview Mode, Edit Mode), Video Source (Stream1), Enable checkbox, and Channels dropdown.
- Advanced Settings:** Cordon Information table with columns for Index, Name, and Enable, and Apply/Cancel buttons.

Scenario 2: Missing Object 4/5

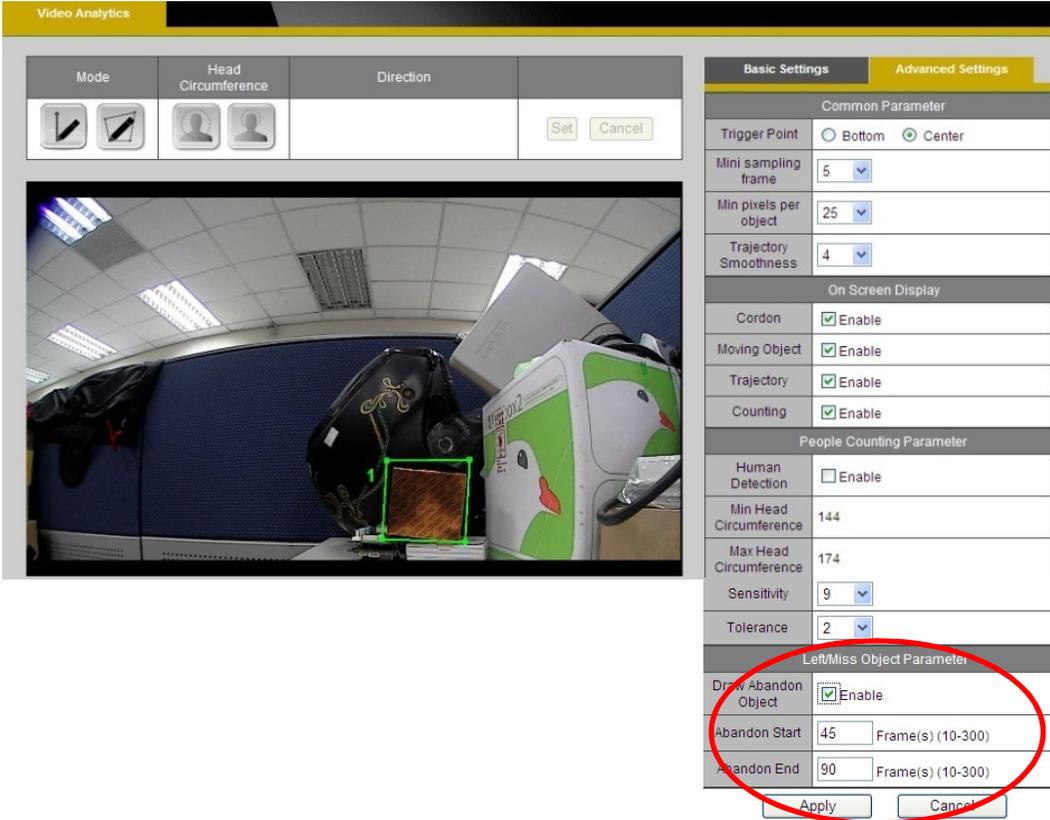
1. Put the name for this cordon
2. Enable the video source and choose the channel
3. Click on Apply

The screenshot displays the Video Analytics interface. On the left, a video feed shows a scene with a green and white robot and a black bag. A green bounding box is drawn around a wooden box on the floor. Above the video feed are controls for Mode, Head Circumference, and Direction, with 'Set' and 'Cancel' buttons. On the right, the 'Basic Settings' tab is active. Under 'Video Analytics Mode', 'Edit Mode' is selected. Under 'Video Source', the 'Enable' checkbox is checked and the 'Channels' dropdown is set to 'Stream1'. Under 'Cordon Information', a table lists a cordon with index 1 and name '123', which is enabled. The 'Apply' button is circled in red.

Index	Name	Enable	Modify	Delete
1	123	<input checked="" type="checkbox"/>	Modify	Delete

Scenario 2: Missing Object - Advanced settings 5/5

1. Click on Edit Mode
2. Choose Advanced Settings
3. Enable and adjust the parameter .

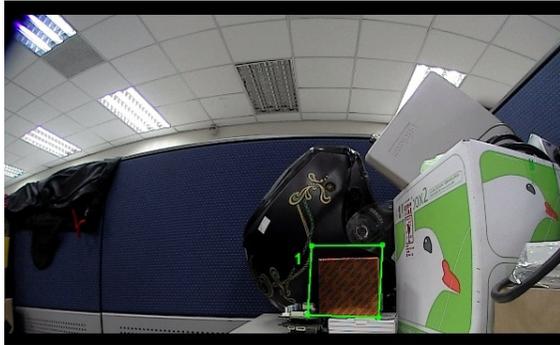


The screenshot displays the 'Video Analytics' software interface. On the left, a video feed shows a person's head and shoulders, with a green bounding box around the head. The interface includes a 'Mode' section with icons for edit and delete, and a 'Head Circumference' section with two person icons and 'Set' and 'Cancel' buttons. The main settings panel is divided into 'Basic Settings' and 'Advanced Settings'. The 'Advanced Settings' section is expanded, showing various parameters:

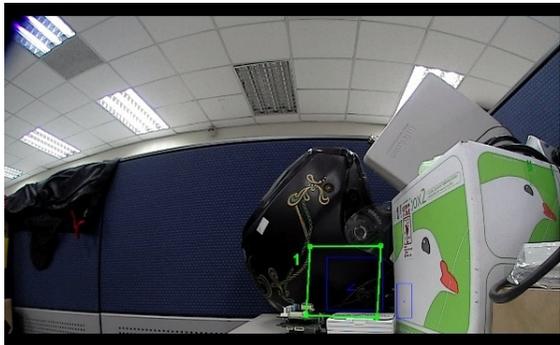
- Common Parameter:**
 - Trigger Point: Bottom Center
 - Mini sampling frame: 5
 - Min pixels per object: 25
 - Trajectory Smoothness: 4
- On Screen Display:**
 - Cordon: Enable
 - Moving Object: Enable
 - Trajectory: Enable
 - Counting: Enable
- People Counting Parameter:**
 - Human Detection: Enable
 - Min Head Circumference: 144
 - Max Head Circumference: 174
 - Sensitivity: 9
 - Tolerance: 2
- Left/Miss Object Parameter (circled in red):**
 - Draw Abandon Object: Enable
 - Abandon Start: 45 Frame(s) (10-300)
 - Abandon End: 90 Frame(s) (10-300)

At the bottom of the settings panel are 'Apply' and 'Cancel' buttons.

Scenario 2: Missing Object - trigger



Object is there



Object was moved



Triggered

Video Clips(option)

- People Counting
- Missing Object
- Object Tracking
- Tempering Alarm

Brickcom, your best partner.

Thank You



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