

# DHI-IVS-TB9000-3EA-TS2

## Dahua Event Detection Intelligent Server



- Supports one-click deployment, mainly used in traffic management and road operation and maintenance scenarios such as expressways, urban expressways, viaducts, tunnels, and cross-sea bridge.
- Supports analysis of 96 channels in 2 MP or 4 MP or 48 channels in 8 MP. 20 rules can be configured for each channel. You can configure detection of littering, smoke and heat for up to 48 channels in 2 MP, 4 MP or 8 MP.
- Supports traffic parameters collection: Lane number, traffic flow, small-sized vehicles, passenger vehicles, trucks, average speed, time occupancy ratio, space occupancy ratio, queue length, the distance between 2 vehicles, and the time between 2 vehicles passing the detection line, and the status of the traffic.

### Series Overview

Dahua Intelligent Analysis Server is a back-end intelligent video analysis and management device based on server platform. It can detect and analyze traffic events in the live videos from cameras, and output data including traffic flow, average speed, time occupancy, space occupancy, space headway, time headway, and queue length. The event types include parking, congestion, pedestrians, illegal lane change, crossing solid yellow lines, littering, smoke, fire, speeding, underspeed and intrusion (motor vehicles). It is mainly used in traffic management and road operation and maintenance scenarios such as expressways, urban expressways, viaducts, tunnels, and cross-sea bridges.

### Functions

#### Traffic Event Algorithms

1. Parking Detection
2. Pedestrian Detection
3. Non-motor Vehicle Detection
4. Traffic Congestion Detection
5. Traffic Flow Statistics
6. Intrusion Detection
7. Lane Change Detection
8. Wrong-way Driving Detection
9. Illegal Backing Detection
10. Construction Detection
11. Roadblock Detection
12. Traffic Accident Detection
13. Dense Fog Detection
14. Crossing Solid Line Detection
15. Speeding Detection
16. Driving Too Slow Detection
17. Truck Entered Prohibited Area
18. Hazardous Material Transport Vehicle Detection
19. Driving in Emergency Lane
20. Smoke Detection
21. Heat Detection
22. Road Debris Detection

## Technical Specification

### System

Main Processor	Two x86 CPUs with 12 cores and 24 thread, 2.1 Ghz
Operating System	Linux OS
Intelligence Analysis Card	3 × intelligent analysis cards
Memory	4 × 32 GB DDR4 memory, maximum 32 slots
Disk	Includes a built-in SSD system disk, 2 × 4 TB 3.5-inch HDDs with up to 12 slots and 7.2K RPM SATA 6Gbps 512n 3.5 inches.

### Traffic Event Detection

Multi-rules Application	Multiple rules can take effect at the same time.
Setting of Detection Area and Exclusion Area	Supports detection zones and exclusion zones for the server. The server only triggers alarms for events that occur in the detection zone or outside the exclusion zone.
Real-time Display	Displays the rules for the detection zone and the target tracking box in the live video. The rules and target tracking boxes flash on the screen when an alarm is triggered.
Parking Detection	<p>Detects when a vehicle moves and then stops for longer than the defined threshold.</p> <p>1. Intelligent Configuration</p> <ul style="list-style-type: none"> <li>• First alarm time. Range: 1–600 sec, 10 sec by default.</li> <li>• Parked vehicle threshold to trigger detection. Range: 1–128 sec, 3 sec by default.</li> <li>• Repeated alarm suppression. It supports on and off, and is off by default.</li> <li>• Detected priority. It supports on and off, and is off by default.</li> <li>• Only takes snapshots of moving vehicles. It supports on and off, and is on by default.</li> <li>• Takes multiple snapshots. It supports on and off, and is off by default.</li> <li>• Motor vehicle attributes: Regular vehicles, police vehicles, and construction aid vehicles. They are all selected by default, but at least one of them must be chosen.</li> <li>• Threshold for the length of time the target can disappear from the monitoring area and reappear, and still be considered the same target. Range: 1-65,535 sec, 20 sec by default.</li> </ul> <p>2. Alarm Details</p> <ul style="list-style-type: none"> <li>• Includes: Event type, rule name, channel, alarm start time, alarm end time, plate number, alarm images, and alarm videos.</li> <li>• Alarm images: 3 images, including 1 × parking image, 1 × image taken 1 second after the alarm, and 1 × image taken after the alarm ends.</li> </ul> <p>3. Intelligent Frame</p> <ul style="list-style-type: none"> <li>• Image overlay: Target ID, target box, and rule area.</li> <li>• The alarm videos on the client include intelligent frames, while the alarm videos on the webpage do not include intelligent frames.</li> </ul>
Pedestrian Detection	<p>Detects when a pedestrian walks onto the vehicle lane or into an area where pedestrians are prohibited from entering for longer than the defined threshold.</p> <p>1. Intelligent Configuration</p> <ul style="list-style-type: none"> <li>• Pedestrian alarms can be triggered based on the event and target. The default setting is alarm by event.</li> <li>• First alarm time. Range: 1–300 sec, 2 sec by default.</li> <li>• The attributes are pedestrian, staff and traffic police. They are all selected by default, but at least one of them must be chosen.</li> </ul>

	<ul style="list-style-type: none"> <li>• Threshold for the length of time the target can disappear from the monitoring area and reappear, and still be considered the same target. Range: 1-65,535 sec, 10 sec by default.</li> <li>• Sensitivity. Range: 1–10, 5 by default.</li> </ul> <p>1.2 Alarm by Target</p> <ul style="list-style-type: none"> <li>• First alarm time. Range: 1–300 sec, 2 sec by default.</li> <li>• The attributes are pedestrian, staff and traffic police. They are all selected by default, but at least one of them must be chosen.</li> </ul> <p>2. Alarm Details</p> <ul style="list-style-type: none"> <li>• Includes: Event type, rule name, channels, alarm time, alarm images, and alarm videos.</li> <li>• Alarm image: 1 image of the pedestrian.</li> <li>• Intelligent frame: Target box, target ID, and rule area.</li> </ul>
Non-motor Vehicle Detection	<p>Detects when non-motor vehicles drive into a restricted area, and remain there for longer than the defined threshold. Algorithms are used to configure parameters, and determine the detection range and optimal default values.</p> <p>1. Intelligent Configuration</p> <ul style="list-style-type: none"> <li>• First alarm time. Range: 1–300 sec, 1 sec by default.</li> <li>• The attributes are bicycle and motorcycle. They are all selected by default, but at least one of them must be chosen.</li> </ul> <p>2. Alarm Details</p> <ul style="list-style-type: none"> <li>• Includes: Event type, rule name, channels, alarm start time, alarm images, and alarm videos.</li> <li>• Alarm images: 1 image of the non-motor vehicles.</li> </ul> <p>3. Intelligent Frame</p> <ul style="list-style-type: none"> <li>• Image overlay: Target box and rule area. At least one target box will appear.</li> <li>• The alarm videos on the client include intelligent frames, while the alarm videos on the webpage do not include intelligent frames.</li> </ul>
Traffic Congestion Detection	<p>Detects when a lane is congested for longer than the defined threshold. Supports reporting on traffic congestions based on the lane and area they occur in.</p> <p>1. Intelligent Configuration</p> <p>There are 2 types of congestion: Area congestion and lane congestion. It is area congestion by default.</p> <p>1) Traffic Congestion in Area Settings:</p> <ul style="list-style-type: none"> <li>• First alarm time. Range: 1–300 sec, 10 sec by default.</li> <li>• Alarms in intervals. Range: 1–3,600 sec, 600 sec by default.</li> <li>• Sensitivity. Range: 1–10, 2 by default.</li> <li>• Number of vehicles in traffic congestion: There is no set range for this, but the default number is 20.</li> </ul> <p>2) Traffic Congestion in Lane Settings:</p> <ul style="list-style-type: none"> <li>• First alarm time. Range: 1–300 sec, 10 sec by default.</li> <li>• Alarms in intervals. Range: 1–3,600 sec, 600 sec by default.</li> <li>• Sensitivity. Range: 1–10, 2 by default.</li> <li>• The lane number is set as 1 by default, and the lane needs to be configured in global settings first.</li> <li>• Line occupancy ratio. Range: 1–100, 50 by default.</li> <li>• Discontinuation time threshold. Range: 1–255 sec, 1 sec by default.</li> </ul> <p>2. Alarm Details</p> <ul style="list-style-type: none"> <li>• Includes: event type, rule name, channels, alarm start time, alarm end time, alarm images, and alarm videos.</li> <li>• Alarm images: 3 types of images, including 1 × traffic congestion image, alarm images taken in intervals and 1 × image of the end of the traffic congestion.</li> </ul> <p>3. Intelligent Frame</p> <p>image overlay: traffic congestion in lane: Lane; the start and end point of the traffic congestion on the lane.</p> <ul style="list-style-type: none"> <li>• The alarm videos on the client include intelligent frames, while the alarm videos on the webpage do not include intelligent frames.</li> </ul>

<p>Traffic Flow Statistics</p>	<p>Generates statistics on the number of vehicles passing through a road section within a specified time. For armed channels, it only supports one direction (for approaching and departing traffic) and not specifying a direction (which allows the vehicle direction be determined by the lane direction).</p> <p>1. Intelligent Configuration For armed channels, the available options are approaching traffic, departing traffic, and not specifying a direction. Only one of them can be enabled at a time.</p> <p>1) Not Specifying a Direction Parameters:  <ul style="list-style-type: none"> <li>Lane number: It is set as 1 by default, and the lane lines need to be configured in advance.</li> <li>Traffic flow statistics detection line: It has no specific direction.</li> </ul> </p> <p>2) Specified Direction (Approaching and Departing Traffic) Approaching Traffic Parameters:  <ul style="list-style-type: none"> <li>No additional parameters required.</li> <li>Traffic flow statistics detection line: [A-&gt;B], with a directional arrow.</li> </ul> </p> <p>Departing Traffic Parameters:  <ul style="list-style-type: none"> <li>No additional parameters required.</li> <li>Traffic flow statistics detection line: [B-&gt;A], with a directional arrow.</li> </ul> </p> <p>2. Traffic Flow Calculation and Statistics Logic 1) Information on traffic flow continues to be accumulated from the last value when the device is restarted or an operator behaves abnormally. 2) Traffic flow data can be manually cleared, and requires second confirmation. 3. Traffic Flow Data Specified Direction: Lane number, traffic flow, small-sized vehicles, passenger vehicles, trucks, average speed, time occupancy ratio, space occupancy ratio, queue length, the distance between 2 vehicles, and the time between 2 vehicles passing the detection line, and the status of the traffic, which can be unknown, smooth or congested. Not specifying a direction: Approaching or departing traffic, traffic flow, passenger vehicles, trucks, average speed, and the status of the traffic, which can be unknown, smooth or congested.</p>	<ul style="list-style-type: none"> <li>The alarm videos on the client include intelligent frames, while the alarm videos on the webpage do not include intelligent frames.</li> </ul>
		<p>Road Debris Detection</p> <p>Detects when an object is littered by a pedestrian or a person from a vehicle and the litter disturbs traffic for longer than the defined threshold.</p> <p>1. Intelligent Configuration  <ul style="list-style-type: none"> <li>First alarm time. Range: 1–300 sec, 6 sec by default.</li> <li>Alarms in intervals. Range: 0–3,600 sec, 0 sec by default.</li> <li>Sensitivity. Range: 1–10, 10 by default.</li> <li>Rule area: Generates records on false alarms triggered for littering objects. This function is enabled by default.</li> </ul> </p> <p>2. Global Setting  <ul style="list-style-type: none"> <li>Detection area and exclusion area.</li> <li>Size filter, target type, and littering.</li> </ul> </p> <p>3. Alarm Details  <ul style="list-style-type: none"> <li>Includes: Event type, rule name, channels, start time, alarm images, and alarm videos.</li> <li>Alarm image: 1 image of the littered object.</li> </ul> </p> <p>4. Intelligent Frame  <ul style="list-style-type: none"> <li>Image overlay: Target box and rule area. At least one target box appears.</li> <li>The alarm videos on the client include intelligent frames, while the alarm videos on the webpage do not include intelligent frames.</li> </ul> </p>
		<p>Intrusion</p> <p>Detects when motor vehicles, non-motor vehicles, and pedestrians enter and remain in an area for longer than the defined threshold.</p> <p>1. Intelligent Configuration  <ul style="list-style-type: none"> <li>First alarm time. Range: 1–300 sec, 2 sec by default.</li> <li>Sensitivity: 1–10, 3 by default.</li> <li>The supported types of targets are pedestrians, motor vehicles and non-motor vehicles. Motor vehicle is selected by default.</li> <li>Repeated alarm suppression. Range: 0 to 1, 1 by default. 0 indicates the function is disabled, while 1 indicates it is enabled.</li> </ul> </p> <p>2. Alarm Details  <ul style="list-style-type: none"> <li>Includes: Event type, rule name, channels, start time, alarm images, and alarm videos.</li> <li>Alarm image: 1 image of the vehicle intruding.</li> </ul> </p> <p>3. Intelligent Frame  <ul style="list-style-type: none"> <li>Image overlay: Target box, and rule area. At least one target box appears.</li> <li>The alarm videos on the client include intelligent frames, while the alarm videos on the webpage do not include intelligent frames.</li> </ul> </p>
<p>Dense Fog Detection</p>	<p>Detects when dense fog appears in the area for longer than the defined threshold.</p> <p>1. Intelligent Configuration:  <ul style="list-style-type: none"> <li>First alarm time. Range: 1–300 sec, 60 sec by default.</li> <li>Alarms in intervals. Range: 1–65,535 sec. It is 1,800 sec by default.</li> <li>Alarm threshold. Range: 1–100, 90 by default.</li> <li>Sensitivity: 1–10, 3 by default.</li> <li>Threshold for the length of time the target can disappear from the monitoring area and reappear, and still be considered the same target. Range: 1–65,535 sec, 120 sec by default.</li> </ul> </p> <p>• Reports on events when the alarm starts, ends, and for the period it exists.</p> <p>2. Alarm Details  <ul style="list-style-type: none"> <li>Includes: Event type, rule name, channels, start time, the time the fog dissipates, the thickness of the fog, alarm images, and alarm videos.</li> <li>Alarm images: 3 types of images, including 1 × fog image, alarm images taken in intervals and 1 × image of the dissipation of the fog.</li> </ul> </p> <p>3. Intelligent Frame  <ul style="list-style-type: none"> <li>Image overlay: Target box and rule area. At least one target box appears.</li> </ul> </p>	<p>Lane Change</p> <p>Detects when a vehicle crosses the solid yellow or white lane line for longer than the defined threshold.</p> <p>1. Intelligent Configuration:  <ul style="list-style-type: none"> <li>Lane number is set as 1 by default, without range.</li> <li>Sensitivity. Range: 1–10, 10 by default.</li> </ul> </p> <p>2. Alarm Details:  <ul style="list-style-type: none"> <li>Includes: Event type, rule name, channels, event time, lane number, plate number, alarm images and alarm videos.</li> <li>Alarm images: 2 images, including 1 × image of the vehicle changing lanes and 1 × image of the vehicle after it changed the lane.</li> </ul> </p> <p>3. Intelligent Frame  <ul style="list-style-type: none"> <li>Image overlay: Target box, and rule area. At least one target box appears.</li> <li>The alarm videos on the client include intelligent frames, while the alarm videos on the webpage do not include intelligent frames.</li> </ul> </p>

<p>Wrong-way Driving Detection</p>	<p>Detects when a vehicle is driving in the wrong direction for longer than the defined threshold. Supports reporting on the event based on the lane and area they occur in.</p> <p>1. Intelligent Configuration:</p> <ul style="list-style-type: none"> <li>The types of wrong-way driving are wrong way driving in a restricted area and in a lane.</li> </ul> <p>1) Wrong way driving in a restricted area</p> <ul style="list-style-type: none"> <li>First alarm time. Range: 1–300 sec, 2 sec by default.</li> <li>Driving distance. Range: 0–1,023 pixels, 200 pixels by default.</li> <li>Driving direction line. Range: 2 coordinate points have to be connected to form the driving direction.</li> </ul> <p>2) Wrong way driving in a lane</p> <ul style="list-style-type: none"> <li>First alarm time. Range: 1–300 sec, 2 sec by default.</li> <li>Driving distance. Range: 0–1,023 pixels, 200 pixels by default.</li> <li>Lane number is set as 1 by default, which is related to the pre-configured lane.</li> </ul> <p>2. Alarm Details:</p> <ul style="list-style-type: none"> <li>Includes: Event type, rule name, channels, event time, lane number, plate number, alarm images and alarm videos.</li> <li>Alarm images: 2 images, including 1 × image of the vehicle driving in the wrong direction and 1 × image taken 1 second after the alarm.</li> </ul> <p>3. Intelligent Frame</p> <ul style="list-style-type: none"> <li>Image overlay: Target box, and rule area. At least one target box appears.</li> <li>The alarm videos on the client include intelligent frames, while the alarm videos on the webpage do not include intelligent frames.</li> </ul>	<ul style="list-style-type: none"> <li>Includes: Event type, rule name, channels, start time, end time, alarm images, and alarm videos.</li> <li>Alarm images: 3 types of images, including 1 × image of the construction sign, alarm images taken in intervals, and 1 × image after the sign has been removed.</li> </ul> <p>3. Intelligent Frame Display</p> <ul style="list-style-type: none"> <li>Image overlay: Target box, and rule area. At least one target box appears.</li> <li>The alarm videos on the client include intelligent frames, while the alarm videos on the webpage do not include intelligent frames.</li> </ul>
<p>Illegal Backing Detection</p>	<p>Detects when a vehicle is illegally backing for longer than the defined threshold. For example, when a vehicle illegally reverses on an intersection in an expressway.</p> <p>1. Intelligent Configuration</p> <ul style="list-style-type: none"> <li>First alarm time. Range: 1–300 sec, 2 sec by default.</li> <li>Driving distance. Range: 0–1,023. 200 by default.</li> <li>Driving direction line. Range: Two coordinate points have to be connected to form the driving direction.</li> </ul> <p>2. Alarm Details</p> <ul style="list-style-type: none"> <li>Includes: Event type, rule name, channels, event time, lane number, plate number, alarm images and alarm videos.</li> <li>Alarm images: 2 images, including 1 × image of the vehicle illegally reversing and 1 × image taken 1 second after the alarm.</li> </ul> <p>3. Intelligent Frame</p> <ul style="list-style-type: none"> <li>Image overlay: Target box, and rule area. At least one target box appears.</li> <li>The alarm videos on the client include intelligent frames, while the alarm videos on the webpage do not include intelligent frames.</li> </ul>	<p>Roadblock Detection</p> <p>Detects objects that act as obstacles, such as boxes, in the area for longer than the defined threshold. Algorithms are used to configure parameters, and determine the detection range and optimal default values.</p> <p>1. Intelligent Configuration</p> <ul style="list-style-type: none"> <li>First alarm time. Range: 1–300 sec, 5 sec by default.</li> <li>Alarms in intervals. Range: 1–65,535 sec, 600 sec by default.</li> <li>Sensitivity. Range: 1–10. 5 by default.</li> <li>Threshold for the length of time the target can disappear from the monitoring area and reappear, and still be considered the same target. Range: 1–65,535 sec, 600 sec by default.</li> <li>Reports on events when the alarm starts, ends, and for the period it exists.</li> </ul> <p>2. Alarm Details</p> <ul style="list-style-type: none"> <li>Includes: Event type, rule name, channels, start time, time object was removed, alarm images, and alarm videos.</li> <li>Alarm images: 3 types of images, including 1 × image of the object acting as an obstacle, alarm images taken in intervals and 1 × image after the object has been removed.</li> </ul> <p>3. Intelligent Frame Display</p> <ul style="list-style-type: none"> <li>Image overlay: Target box, and rule area. At least one target box appears.</li> <li>The alarm videos on the client include intelligent frames, while the alarm videos on the webpage do not include intelligent frames.</li> </ul>
<p>Construction Detection</p>	<p>Detects when construction signs are in the area for longer than the defined threshold.</p> <p>1. Intelligent Configuration</p> <ul style="list-style-type: none"> <li>First alarm time. Range: 1–300 sec, 5 sec by default.</li> <li>Alarms in intervals. Range: 1–65,535 sec, 1,800 sec by default.</li> <li>Sensitivity. Range: 1–10. 5 by default.</li> <li>Repeated alarm suppression. It supports on and off, and is on by default.</li> <li>Threshold for the length of time the target can disappear from the monitoring area and reappear, and still be considered the same target. Range: 1-65,535 sec, 600 sec by default.</li> <li>Reports on events when the alarm starts, ends, and for the period it exists.</li> </ul> <p>2. Alarm Details</p>	<p>Traffic Accident Detection</p> <p>Detect traffic accident in the detection area. Algorithms are used to configure parameters, and determine the detection range and optimal default values.</p> <p>1. Intelligent Configuration</p> <ul style="list-style-type: none"> <li>Parking duration. Range: 1–300 sec, 50 sec by default.</li> <li>Duration of pedestrian in area. Range: 1–300 sec, 3 sec by default.</li> <li>Maximum number of parked vehicles. Range: 1–300, 14 by default.</li> <li>Alarms in intervals. Range: 0–65,535 sec, 300 sec by default. 0 means to not repeat alarms.</li> </ul> <p>2. Alarm Details</p> <ul style="list-style-type: none"> <li>Includes: Event type, rule name, channels, start time, end time, alarm images, and alarm videos.</li> <li>Alarm images: 3 images, including 1 × image of the vehicle collision, 1 × image taken 1 second after the alarm, and 1 × image after the alarm ends.</li> </ul> <p>3. Intelligent Frame Display</p> <ul style="list-style-type: none"> <li>Image overlay: Target box, and rule area. At least one target box appears.</li> <li>The alarm videos on the client include intelligent frames, while the alarm videos on the webpage do not include intelligent frames.</li> </ul>

Heat Detection	<p>Detects when a fire breaks out in the area, and lasts longer than the defined threshold.</p> <ol style="list-style-type: none"> <li>1. Rule Configuration <ul style="list-style-type: none"> <li>• First alarm time. Range: 1–300 sec, 5 sec by default.</li> <li>• Alarms in intervals. Range: 1–300 sec, 10 sec by default.</li> <li>• Sensitivity. Range: 1–10, 5 by default.</li> <li>• Alarms in intervals, which is enabled by default.</li> <li>• Overlap threshold. Range: 0–100, 90 by default.</li> <li>• Rule area.</li> <li>• Without exclusion area.</li> </ul> </li> <li>2. Global Configuration <ul style="list-style-type: none"> <li>• Size filter.</li> </ul> </li> <li>3. Alarm Details <ol style="list-style-type: none"> <li>1) Includes: Event type, rule name, channels, event time, alarm images, and alarm videos.</li> <li>2) Alarm images: 1 × alarm image.</li> <li>3) Intelligent Frame Display <ul style="list-style-type: none"> <li>• Image overlay: Target box, and rule area. At least one target box appears.</li> <li>• The alarm videos on the client include intelligent frames, while the alarm videos on the webpage do not include intelligent frames.</li> </ul> </li> </ol> </li> </ol>	Speeding Detection	<ul style="list-style-type: none"> <li>• The alarm videos on the client include intelligent frames, while the alarm videos on the webpage do not include intelligent frames.</li> </ul> <p>Detects when the speed of a vehicle exceeds the defined threshold, and remains above the threshold for longer than the defined time. Algorithms are used to configure parameters, and determine the detection range and optimal default values.</p> <ol style="list-style-type: none"> <li>1. Intelligent Configuration <ul style="list-style-type: none"> <li>• First alarm time. Range: 1–10 sec, 1 sec by default.</li> <li>• Lane number: It does not have a range, and is 1 by default. The value to be entered depends on the pre-configuration of the lane.</li> <li>• Maximum speed. Range: 60 km/h–180 km/h. It is 120 km/h by default.</li> </ul> </li> <li>2. Alarm Details <ol style="list-style-type: none"> <li>1) Includes: Event type, rule name, channels, event time, lane number, plate number, maximum speed, driving speed, alarm images, and alarm videos.</li> <li>2) Alarm images: 2 images, including 1 × vehicle speeding image and 1 × image taken 1 second after the alarm.</li> <li>3) Intelligent Frame <ul style="list-style-type: none"> <li>• Image overlay: Target box, rule area and lane line. At least one target box appears.</li> <li>• The alarm videos on the client include intelligent frames, while the alarm videos on the webpage do not include intelligent frames.</li> </ul> </li> </ol> </li> </ol>
Smoke Detection	<p>Detects when smog appears and remains in the area for longer than the defined threshold.</p> <ol style="list-style-type: none"> <li>1. Rule Configuration <ul style="list-style-type: none"> <li>• First alarm time. Range: 1–300 sec, 5 sec by default.</li> <li>• Alarms in intervals. Range: 1–300 sec, 10 sec by default.</li> <li>• Sensitivity. Range: 1–10, 5 by default.</li> <li>• Alarms in intervals, which is enabled by default.</li> <li>• Overlap threshold. Range: 0–100, 90 by default.</li> <li>• Rule area.</li> <li>• Without exclusion area.</li> </ul> </li> <li>2. Global Configuration <ul style="list-style-type: none"> <li>• Size filter.</li> </ul> </li> <li>3. Alarm Details <ol style="list-style-type: none"> <li>1) Includes: Event type, rule name, channels, event time, alarm images, and alarm videos.</li> <li>2) Alarm images: 1 × alarm image.</li> <li>3) Intelligent Frame <ul style="list-style-type: none"> <li>• Image overlay: Target box and rule area. At least one target box appears.</li> <li>• The alarm videos on the client include intelligent frames, while the alarm videos on the webpage do not include intelligent frames.</li> </ul> </li> </ol> </li> </ol>	Driving Too Slow Detection	<p>Detects when the speed of a vehicle falls below the defined threshold, and remains below the threshold for longer than the defined time.</p> <ol style="list-style-type: none"> <li>1. Intelligent Configuration <ul style="list-style-type: none"> <li>• Lane number: 1 by default.</li> <li>• First alarm time. Range: 1–10 sec, 1 sec by default.</li> <li>• Minimum speed. Range: 30 km/h–120 km/h. It is 60 km/h by default.</li> </ul> </li> <li>2. Alarm Details <ol style="list-style-type: none"> <li>1) Includes: Event type, rule name, channels, event time, lane number, plate number, minimum speed, driving speed, alarm images, and alarm videos.</li> <li>2) Alarm images: 2 images, including 1 × image of the vehicle driving too slowly and 1 × image taken 1 second after the alarm.</li> <li>3) Intelligent Frame <ul style="list-style-type: none"> <li>• Image overlay: Target box, rule area and lane line. At least one target box appears.</li> <li>• The alarm videos on the client include intelligent frames, while the alarm videos on the webpage do not include intelligent frames.</li> </ul> </li> </ol> </li> </ol>
Crossing Solid Line Detection	<p>Detects when a vehicle crosses the solid yellow or white line for longer than the defined threshold.</p> <ol style="list-style-type: none"> <li>1. Intelligent Configuration <ul style="list-style-type: none"> <li>• First alarm time. Range: 0–300 sec, 1 sec by default.</li> <li>• Sensitivity. Range: 1–10, 1 by default.</li> <li>• Lane number: It does not have a range, and is 1 by default. The value to be entered depends on the pre-configuration of the lane.</li> <li>• Takes snapshots when a vehicle crosses the solid white line. It can be turned on and off, and is on by default.</li> </ul> </li> <li>2. Alarm Details <ol style="list-style-type: none"> <li>1) Includes: Event type, rule name, channels, event time, lane number, plate number, alarm images and alarm videos.</li> <li>2) Alarm images: 2 images, including 1 × image of the vehicle crossing the solid line and 1 × image taken 1 second after the alarm.</li> <li>3) Intelligent Frame <ul style="list-style-type: none"> <li>• Image overlay: Target box, rule area, lane line and target point. At least one target box appears.</li> </ul> </li> </ol> </li> </ol>	Truck Entered Prohibited Area	<p>Detects when a truck enters the detection zone.</p> <ol style="list-style-type: none"> <li>1. Intelligent Configuration: <ul style="list-style-type: none"> <li>• First alarm time. Range: 1–3,600 sec, 1 sec by default.</li> <li>• Sensitivity. Range: 1–10, 3 by default.</li> </ul> </li> <li>2. Alarm Details: <ol style="list-style-type: none"> <li>1) Includes: Event type, rule name, channels, event time, plate number, alarm images, and alarm videos.</li> <li>2) Alarm images: 1 × image of a truck entering the detection zone.</li> <li>3) Intelligent Frame <ul style="list-style-type: none"> <li>• Image overlay: Target box and rule area. At least one target box appears.</li> <li>• The alarm videos on the client include intelligent frames, while the alarm videos on the webpage do not include intelligent frames.</li> </ul> </li> </ol> </li> </ol>

Hazardous Material Transport Vehicle Detection	<p>Detects when a hazardous material transport vehicle crosses the detection line.</p> <p>1. Intelligent Configuration:</p> <ul style="list-style-type: none"> <li>The hazardous material transport vehicle is set as tank car by default.</li> </ul> <p>2. Alarm Details</p> <p>1) Includes: Event type, rule name, channels, event time, plate number, alarm images, and alarm videos.</p> <p>2) Alarm images: 1 × alarm image for when the alarm is first triggered.</p> <p>3) Intelligent Frame</p> <ul style="list-style-type: none"> <li>Image overlay: Target box and rule area. At least one target box appears.</li> <li>The alarm videos on the client include intelligent frames, while the alarm videos on the webpage do not include intelligent frames.</li> </ul>
Driving in Emergency Lane	<p>Detects when a vehicle enters the emergency lane.</p> <p>1. Intelligent Configuration:</p> <ul style="list-style-type: none"> <li>First alarm time. Range: 1–3,600 sec, 1 sec by default.</li> <li>Sensitivity. Range: 1–10, 3 by default.</li> </ul> <p>2. Alarm Details</p> <p>1) Includes: Event type, rule name, channels, event time, plate number, alarm images, and alarm videos.</p> <p>2) Alarm images: 1 × alarm image for when the alarm is first triggered.</p> <p>3) Intelligent Frame</p> <ul style="list-style-type: none"> <li>Image overlay: Target box and rule area. At least one target box appears.</li> <li>The alarm videos on the client include intelligent frames, while the alarm videos on the webpage do not include intelligent frames.</li> </ul>
Alarm Search	<p>Supports real-time search by event type, start and end time, and alarm result diagnosis using combination criteria.</p> <p>The options for the diagnosis of alarm results include: Untreated, true alarms, false alarms, repeated true alarms, repeated false alarms, and pending. Filter all the statuses in the experience database. Only one item can be selected at a time.</p> <p>Supports selection of one or multiple channels: Information can be entered and you can use fuzzy search. All the channels can be selected on the device at once.</p> <p>Channels can be expanded through the NVR device. You can also select one or multiple channels, or select all the channels at once.</p> <p>Supports selecting one event type at a time, or all at once.</p> <p>View event details and play recorded videos of events. Export Excel tables and video recordings of events.</p>

**Application of Traffic Event Detection**

Scenario Type	Widely used in traffic management, road operations and for maintenance in locations such as expressways, viaducts, tunnels, and cross-sea bridges.
Camera Installation Method	Front installation (recommended) and side installation
Camera Installation Height	6–12 meters recommended, two or three lanes can be captured
Camera Installation Angle	Recommended pitch angle is between 10°–15°, covering about 50 m–100 m (164.04 ft–328.08 ft) and lane inclination angle < 30° when side-mounted

**Traffic Event Detection Performance**

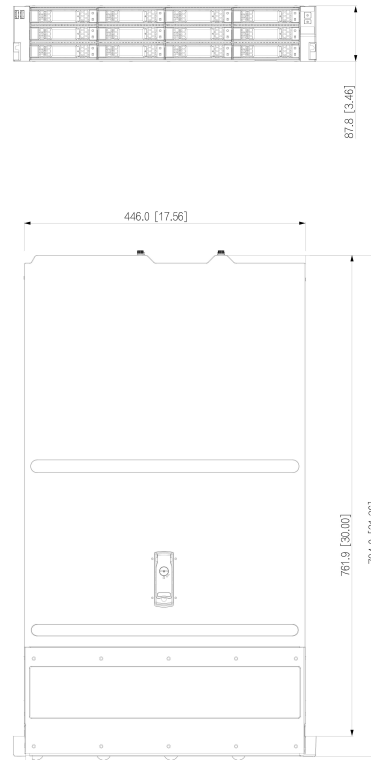
Video Resolution	2 MP or 4 MP
Camera Access	Supports analysis of 96 channels in 2 MP or 4 MP or 48 channels in 8 MP. 20 rules can be configured for each

	channel. You can configure detection of littering, smoke and heat for up to 48 channels in 2 MP, 4 MP or 8 MP.
Access Channel	256 channels
Network Bandwidth	Incoming bandwidth: 1,024 Mbps Recording bandwidth: 512 Mbps Outgoing bandwidth: 1,024 Mbps
Multi-channel Playback	Supports playing videos for a maximum of 16 channels at the same time.
Traffic Event Detection Type	Includes parking, pedestrian, non-motor vehicle, traffic congestion, traffic flow statistics, intrusion (vehicles), illegal lane change, wrong-way driving, illegal backing, construction, roadblock, traffic accident, dense fog, crossing solid line, speeding, driving too slow, truck entered prohibited area, hazardous material transport vehicle, vehicles drive in emergency lane, smoke, heat and road debris detection.
Parking Detection	According to test data (2 MP access), the detection rate is 90%, and the effective rate is 90%.
Pedestrian Detection	According to test data (2 MP access), the detection rate is 90%, and the effective rate is 90%.
Non-motor Vehicle Detection	According to test data (2 MP access), the detection rate is 90%, and the effective rate is 90%.
Traffic Congestion Detection	According to test data (2 MP access), the detection rate is 90%, and the effective rate is 90%.
Traffic Flow Statistics	According to test data (2 MP access), the traffic accuracy rate is over 90%.
Dense Fog Detection	Subject to actual testing
Road Debris Detection	According to test data (2 MP access), the detection rate is 80%, and the effective rate is 80%.
Intrusion	According to test data (2 MP access), the detection rate is 90%, and the effective rate is 90%.
Lane Change	According to test data (2 MP access), the detection rate is 90%, and the effective rate is 90%.
Wrong-way Driving Detection	According to test data (2 MP access), the detection rate is 90%, and the effective rate is 90%.
Illegal Backing Detection	According to test data (2 MP access), the detection rate is 90%, and the effective rate is 90%.
Construction Detection	According to test data (2 MP access), the detection rate is 90%, and the effective rate is 80%.
Roadblock Detection	According to test data (2 MP access), the detection rate is 90%, and the effective rate is 90%.
Traffic Accident Detection	Subject to actual testing
Heat Detection	Subject to actual testing
Smoke Detection	Subject to actual testing
Crossing Solid Line Detection	According to test data (2 MP access), the detection rate is 90%, and the effective rate is 90%.
Speeding Detection	Subject to actual testing
Driving Too Slow Detection	Subject to actual testing
Truck Entered Prohibited Area	Subject to actual testing
Hazardous Material Transport Vehicle Detection	Subject to actual testing

Driving in Emergency Lane	Subject to actual testing
<b>Port</b>	
Network Port	4 × 1,000 Mbps Ethernet ports
USB	2 front USB 2.0 ports and 2 rear USB 3.0 ports
VGA	1× VGA ports
Others	1 × BMC management network port
<b>General</b>	
Power Supply	100–127/200–240 VAC, 60/50 Hz, 12/8 A
Power Redundancy	Dual
Power Consumption	828 W (all HDDs connected, with 3 intelligent analysis cards)
Operating Temperature	+10 °C to +35 °C (+50 °F to +95 °F)
Operating Humidity	20%–80% (RH), non-condensing
Storage Temperature	–40 °C to +60 °C (–40 °F to +140 °F)
Storage Humidity	5%–95% (RH), non-condensing
Gross Weight	28.0 kg (61.73 lb)
Net Weight	21.8 kg (48.06 lb)
Product Dimensions	87.8 mm × 446.0 mm × 794.0 mm (3.46" × 17.56" × 31.26") (H × W × D)
Packaging Dimensions	260 mm × 600 mm × 1,000 mm (10.24" × 23.62" × 39.37") (H × W × D)
Installation	Standard 19" rack installation with guide rail
BTU	≤2826 Btu/h
Certifications	CE-LVD:EN IEC 62368-1,BS EN IEC 62368-1 CE-EMC:EN 55032,EN 55035,EN 61000-3-3,EN IEC 61000-3-2,IEC 61000-4-2,IEC 61000-4-3,IEC 61000-4-4,IEC 61000-4-5,IEC 61000-4-6,IEC 61000-4-8,IEC 61000-4-11
<b>Optional</b>	
Product Type	All-in-one server integrated software and hardware

## Dimensions (mm[inch])

mm [inch]



## Ordering Information

Type	Model	Description
Event Detection Intelligent Server	DHI-IVS-TB9000-3EA-TS2	Dahua Event Detection Intelligent Server