VISUALIZATION OF THE MOST POPULATED ZONES

Instek Digital VTrack HotZones video intelligent feature estimates and visualizes in false colors on the image and on a map of the zones with higher or lower presence of persons within a defined timeframe inside virtual areas.

VTrack OccupancyRate can be utilized for two general purposes:

• business intelligence
  more targeted and effective marketing actions, including increased the effectiveness of trade promotions by having a one shot information of the areas where the persons are more present. This helps to verify the ratio between the presence and the selling or the best placement of a product or the impact of a promotional campaign.
• optimize services and management activities
  increase the efficiency of personnel and facilities, significant reduce management costs and monitor the utilization of services and facilities.

Vertical market:

• commercial centers, chain stores, su
• banks
• ports, airports, railways, public trans
• theathers, cinemas, museums, sport
• urban areas
• beaches, lakes, parks, tourism faciliti

Key Features

• Full integration with Instek Digital VMS Command Center
• More targeted and effective marketing actions
• Reduce management costs
• Windows based software architecture
• Unlimited configurable virtual zones of any shape and size
• Filtering out false alarms due to atmospheric phenomena, variations in environmental condition, vegetation
• Enabling/disabling of the module by external input or time scheduling
• Specific algorithmes for filtering shadows and light changes
• Watchdog functionality: for automatic restart of the module in case of critical errors or hardware unit restart

Functional Specifications

- Integrate within Instek Digital VMS Command Center

- Modular, scalable and flexible software architecture, available for Windows/Linux o.s. 32/64bit

- Unlimited configurable virtual gates, of any shape and size

- Mono or bi-directional counting for each configured virtual gate

- Detection and tracking of unlimited subjects of interest in the scene

- Robust and reliable in filtering false alarms due to atmospheric phenomena, changing of environmental conditions, vegetation, thanks to the most advanced self-adaptive algorithms based on Self Learning Background Modelling, Foreground Filtering and Multitarget Tracking

- Specific algorithms for filtering shadows and lighting changes

- Filtering of subjects of interest by size and dynamics

- 3D perspective management by linear interpolation on image, or by image calibration

- Unlimited configurable no-processing virtual zones, to inhibit not-of-interest areas in the image

- Unlimited configurable crops of the image, each one processed as separate video source

- Enabling/disabling of the module by external input or time scheduling

- Ability to process at resolution and frame rate different from the source ones

- Function GateFlowAggregator for the collection and management of the counting of several virtual gates configured on one or more cameras, with automatic and real time signaling of counting exceeding a certain configured threshold

- Web-based graphical and numerical visualization of the on-line and off-line counting data

- Manual or configurable reset for each configured counting function

- Scheduling and sending of automatic counting reports

- Export of counting data in csv format

- Interface for the simulation of the processing results, to verify the correctness of the configuration

- VTClient interface for the real time visualization of live and alarms, with bounding boxes and trajectories overlays

- Watchdog function, for the automatic restart of the module in case of critical error or hw unit restart

- Counting data sending according to specific communication/protocol requirements customizable by project

- Automatic and real time GateFlowAggregator's alarms sending to:
  - VMS or NVR compatible platforms
  - I/O contacts, electrical devices, external DVR or NVR units, through Modbus I/O devices
  - e-mail
  - FTP server
  - serial port, PLC
  - unit connected in web through http/TCP call, customizable

- VTrack-Recorder function, for the storage in local directories of continuous or event-based videos

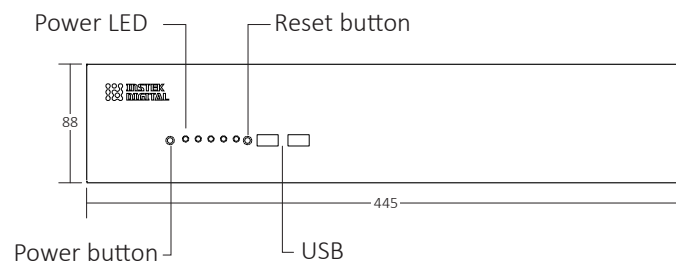|		
System	Operating system	Microsoft® Windows™ 10
	CPU	Intel® Core™ i7
	Resolution	CIF
	Frame rate	10
	Streaming protocol	RTSP / ONVIF
	CMS / NVR behavior	trigger, recording, live/map, popup, PTZ, DO
	Keyboard | mouse	PS/2 | USB
	Ethernet	1 x Gigabit
	USB	4 x USB3.0 + 4 x USB2.0
	Display port	1 x VGA / 1 x DVI-D / 1 x HDMI
Environmental	Operating temperature	0 ~ 40ºC
	Humidity	Max. 90%, non-condensing
Electrical	Power input	AC 100V ~ 240V
	PSU	300W
Mechanical	Form factor	2U
	Dimensions w / wo box (WxHxD mm)	570 x 535 x 245 / 445 x 402 x 88
	Weight w / wo box (kg)	12.2 / 8.6

a) The actual video display performance may vary according to type of camera(s) and lighting condition.
b) Product specifications and availability are subject to change without notice.
c) Instek Digital is a registered trademark of Good Will Instrument Co., Ltd.

Models:	Description:	Models:	Description:
HR-RV3900-2U	Turnkey	**HR-RV30C5-SW**	License, 1 channel + 5 rule
HR-RV30S1-SW	Standard software	**HR-RV30C6-SW**	License, 1 channel + 6 rule
HR-RV30C1-SW	License, 1 channel + 1 rule	**HR-RV30C7-SW**	License, 1 channel + 7 rule
HR-RV30C2-SW	License, 1 channel + 2 rule	**HR-RV30C8-SW**	License, 1 channel + 8 rule
HR-RV30C3-SW	License, 1 channel + 3 rule	**HR-RV30C9-SW**	License, 1 channel + 9 rule
HR-RV30C4-SW	License, 1 channel + 4 rule	**HR-RV30CA-SW**	License, 1 channel + unlimited rules

Technical requirements for VTrack Software solution:

• Video flow acquisition from:
 - IP cameras (optical or thermal), through standard protocols rtp/rtsp, mjpeg or ONVIF
 - analogue cameras (optical or thermal), by IP video encoders through standard protocols rtp/rtsp, mjpeg or ONVIF, or by compatible frame grabber cards
 - NVR compatible or through standard protocols rtp/rtsp, mjpeg or ONVIF
 - off-line videos in all standard formats (avi, asf, mpg, mov, …)
• Conditions of the subjects of interest in the image in order to be effectively detected:
 - clearly visible to the naked eye in the image, even in difficult environmental conditions (night, heavy rain, fog, glare from the sun or other sources of artificial light, snow, …)
 - entirely visible in the image for at least 10-15 continuous frames

 - minimum size: area of 100 pixels
 - maximum size: about 1/4 of the image
• Suggested camera set-up:
 - position: at least 3 meters height, the most possible vertical
 - lens: not longer than 2,8mm for camera positioned at 3 meters height
• Minimum frame rate: 8fps
• Suggested image resolution: CIF (352x288) or QVGA (320x240)
• Computational need:
 - CPU: up to 6 video flows in CIF/QVGA resolution at 8fps per single core 2.8GHz
 - RAM: about 80MB per single video flow
 - Intel® HD Graphics / NVIDIA® GT730 or higher graphics card
 - Windows (XP or next) or Linux, 64 bit operating system

Front View RV3900-2U

Power LED — Reset button

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Power button — USB

Rear View RV3900-2U

USB2.0   VGA   Ethernet

PS/2   HDMI   Audio
USB3.0
Power socket   DVI-D   USB2.0