



VIVOTEK

A Delta Group Company



Transportation Solution

Onboard, Wayside, and Stations Surveillance

2023 H2



Reliable Transportation Monitoring Systems

A high-quality video monitoring system is crucial for ensuring passenger safety in all modes of public transport. Onboard and wayside surveillance serve many purposes: they act as a deterrent preventing crime; allow security personnel to react swiftly to any irregularities; and provide recordings for post-event analysis to help identify culprits. Extended functionalities of a system may include operational awareness for maneuvering, object detection, and emergency video communication.

Fully cognizant of the complexity and specialized requirements of transportation projects, VIVOTEK offers a growing portfolio of certified products equipped with dedicated features and functionalities. VIVOTEK Transportation Solution portfolio allows users to build highly reliable, advanced systems perfectly suited for use in mass transportation.



Industry Standards and Certifications

VIVOTEK products designed for transport applications are compliant with the strictest norms and regulations required by international law and transportation authorities. This includes tests for fire and smoke, humidity and temperature, shock and vibrations, and electromagnetic interference. Devices designed for in-vehicle onboard use are certified to the EN50155 standard for electronic equipment for rolling stock, as well as other key vehicle-related norms.



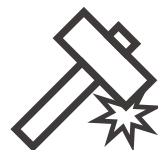
Specialized Functionalities

VIVOTEK Transportation Solution products are equipped with numerous advanced features specifically designed to address key challenges commonly faced in transport projects. Smart-edge devices boasting intelligent features such as **Object Detection** and **Tampering Detection** provide functionality beyond regular surveillance.



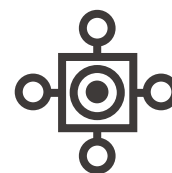
Extended Solution Portfolio

In addition to the numerous types of cameras and recording equipment required for a comprehensive monitoring system, VIVOTEK also offers a scalable, integration-ready software platform and advanced edge analytics. This helps transition everyday transportation surveillance systems into the smart IoT era.



Reliability and Rugged Design

VIVOTEK Transportation Solution equipment is built and tested to endure harsh environmental conditions, including extreme temperatures, heavy precipitation, mechanical impact, electro-magnetic interference, and vibrations. All models feature streamlined rugged metal housings with high IP and IK ratings to ensure maximum reliability for security monitoring.



Design Flexibility and Customizations

In order to meet the unique needs of our customers in the transportation sector, VIVOTEK offers extensive flexibility in product customizations. Whether combining various lens and cabling options or undertaking more complex firmware and hardware modifications, our project consultants are ready to provide solutions tailored to individual project requirements.



Long-term Product Support

With a long-term perspective on transportation deployments in mind, VIVOTEK meticulously plans product life cycles. We ensure compatibility of future product generations in terms of technical specifications and dimensions, facilitating streamlined project maintenance.

Get On Board with VIVOTEK Transportation Solution

P.6 Rolling Stock

Onboard Surveillance Systems
Dedicated for Rolling Stock

P.8 Motor Vehicles

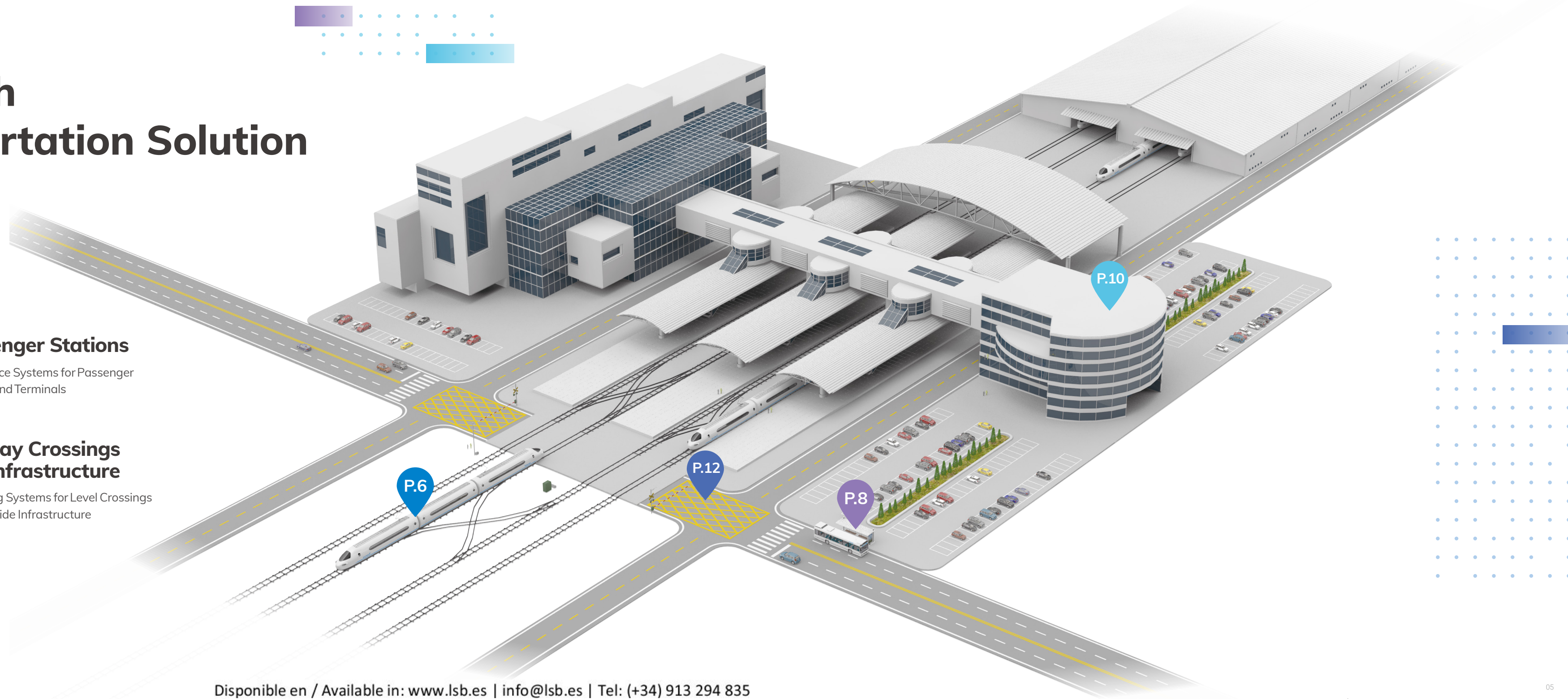
Onboard Surveillance Systems
Dedicated for Motor Vehicles

P.10 Passenger Stations

Surveillance Systems for Passenger
Stations and Terminals

P.12 Railway Crossings and Infrastructure

Monitoring Systems for Level Crossings
and Wayside Infrastructure



Enhanced Security Onboard Rolling Stock

Exterior and Interior Monitoring • Object Detection •
Operational Control • Object Analysis

Beyond the primary goal of security monitoring to ensure passenger safety, onboard video monitoring systems are invaluable for rolling stock operations and maneuvering. They provide drivers with direct views from both the front and rear of a vehicle and allow for status checks on doors, tracks, coupling mechanisms, and pantographs. Purpose-built VIVOTEK mobile models come equipped with functionalities specifically tailored for these applications, making them an ideal choice for railway scenarios.



Front and Rear
View

Track and
Coupling



MD9582-H

- 60 Fps
- WDR Pro
- IR Illumination



MD9582-H(DMS)

- Support ONVIF Event
- Event Snapshot
- Invisible IR illumination



Driver's Cabin



FE9391-EV-v2-M12

- 12MP Resolution
- 360 View
- Invisible IR



Pantograph View



Side View



MD9584-H

- Rugged Compact Design
- IR Illumination
- De-icing



MD8564-EH

- Extreme Durability
- IR Illumination
- De-icing



Pantograph Tracker

- Panto/Catenary Tracking
- Spark/Arcing Detection



Core System



VAST Security Station

- LiveView and Playback
- Events and Alarms
- Deep Search



NV9321P/NV9421P

- Dual bay and 8/16 channels
- LiveView and Recording
- RAID1 and Fisheye Dewarp



Carriage Interior



FE9391-EV-v2-M12

- 12MP Resolution
- 360 View
- IR Illumination



MD9560-H

- Full HD Resolution
- Tampering Detection



Object Detection



SC9133

- AI on Edge
- Video Stream
- Object Classification



Edge VCA



Invisible IR



EN50155
Certification



EN45545
Compliant



M12
Connectors



Wide
Temperature
Range

Effective Security for Buses and Trucks

Road and Interior Monitoring • Object Detection
• Route Tracking • Object Analysis

VIVOTEK Transportation Solution can be deployed onboard a wide range of vehicles, including buses, trolley buses used in mass transit, fleets of trucks, tankers, and special-purpose vehicles such as police cars, fire trucks, and ambulances. While high-quality video monitoring is primarily used for safety and overall situational awareness, its capabilities can be expanded with features like object detection or GPS tracking. This empowers users to enhance onboard security and gather invaluable passenger flow data for optimizing route schedules and ticketing.



Driver's Seat



MD9582-H(DMS)

- Support ONVIF Event
- Event Snapshot
- Invisible IR illumination



FE9391-EV-v2-M12

- 12MP Resolution
- 360 View
- IR Illumination



Front and Rear View



MD9582-H

- 60 Fps
- WDR Pro
- IR Illumination



Object Detection



SC9133

- AI on Edge
- Video Stream
- Object Classification



Side and Door View



MD9584-H

- Rugged Compact Design
- IR Illumination



MD8564-EH

- Extreme Durability
- IR Illumination
- De-icing



Vehicle Interior



MD9560-H/DH

- WDR Pro
- IR Illumination



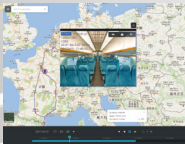
FE9391-EV-v2-M12

- 12MP Resolution
- 360 View
- IR Illumination



Occupancy Tracker

- Live Occupancy Count
- Up to 4CH Support



Core System



NV9321P/NV9421P

- Dual bay and 8/16 channels
- LiveView and Recording
- RAID1 and Fisheye Dewarp



Network and Power



AW Series PoE Switches

- M12 Connectors
- PoE Power



AN Series LTE Routers

- Wireless Connectivity
- Built-in GPS



VAST Security Station

- LiveView and Playback
- Events and Alarms
- Deep Search



Edge VCA



WDR Pro



E-Mark Certification



Weatherproof Design



Vandal-proof Design

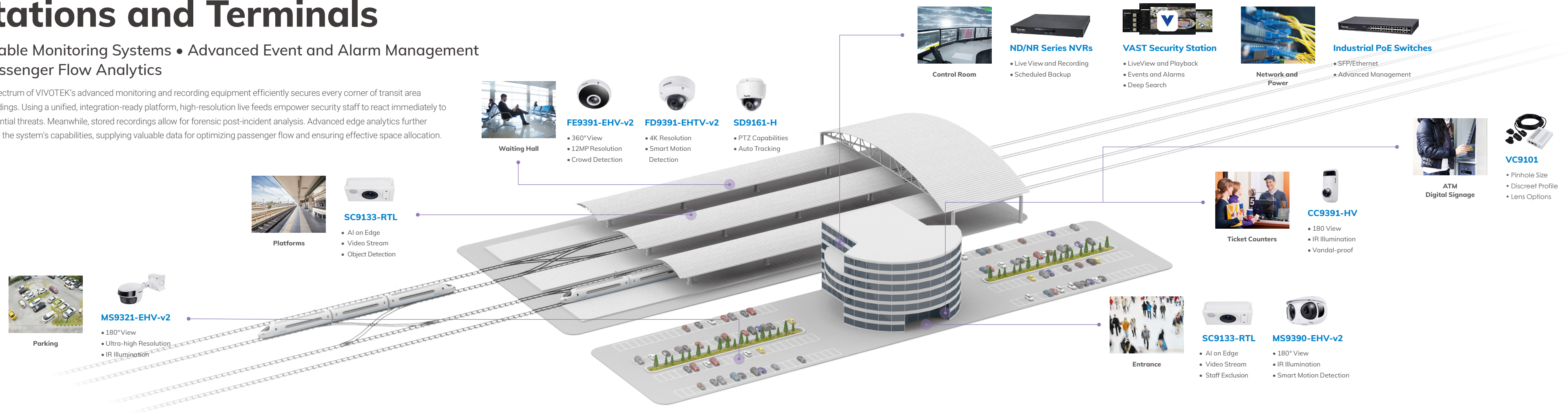


Tampering Detection

Ensuring Passenger Safety at Stations and Terminals

Scalable Monitoring Systems • Advanced Event and Alarm Management
• Passenger Flow Analytics

A full spectrum of VIVOTEK's advanced monitoring and recording equipment efficiently secures every corner of transit area surroundings. Using a unified, integration-ready platform, high-resolution live feeds empower security staff to react immediately to any potential threats. Meanwhile, stored recordings allow for forensic post-incident analysis. Advanced edge analytics further enhance the system's capabilities, supplying valuable data for optimizing passenger flow and ensuring effective space allocation.



Panoramic View
(180°/360°)



Smart Motion
Detection



VADP
Platform



Edge VCA



Smart
Stream III



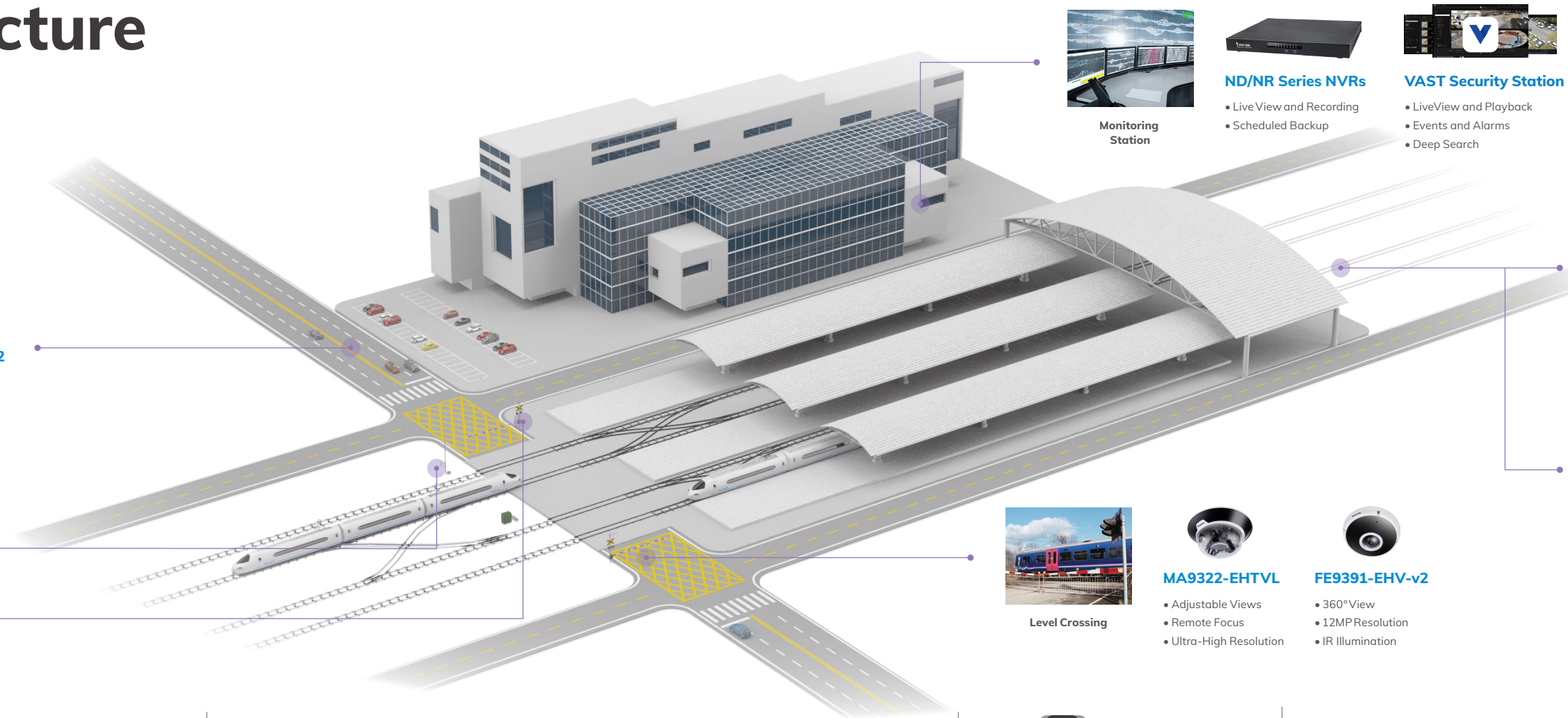
Video Wall



Keep a Keen Eye on Rail Crossings and Infrastructure

Wide Area Monitoring • Key Infrastructure Security • Smart Motion and Object Detection

VIVOTEK Transportation Solution portfolio offers the ideal equipment to safeguard crucial railway assets, secure level crossings, and ensure proper monitoring of wayside areas. Our robust, outdoor-ready models, equipped with long-range zoom and IR illumination capabilities and supported by industrial-grade network equipment, provide efficient and reliable surveillance for any transport application.



Network and Power



Industrial PoE Switches

- SFP/Ethernet
- Advanced Management



AT Series Cabinets

- High Durability
- Extension Modules



Road



IP9165-LPC-v2 Kit

- LPR Systems Integration
- Two-lanes Coverage



IB9387-LPR-v2

- Built-in Edge LPR
- Wiegand Protocol



Key Infrastructure



IB9391-EHTV-v2

- Remote Focus
- IR Illumination
- Smart Motion Detection



Vari-angle IR



Long-range Zoom



Supreme Night Visibility



Image Stabilization



Remote Focus



Digital Noise Reduction



Monitoring Station



ND/NR Series NVRs

- Live View and Recording
- Scheduled Backup



VAST Security Station

- LiveView and Playback
- Events and Alarms
- Deep Search



Perimeter



SD9384-EHL

- PTZ Capabilities
- IR Illumination
- Smart Tracking Advanced



Rails



IP9191-HT-v2

- 120 Fps
- Lens/Enclosure Options



Level Crossing



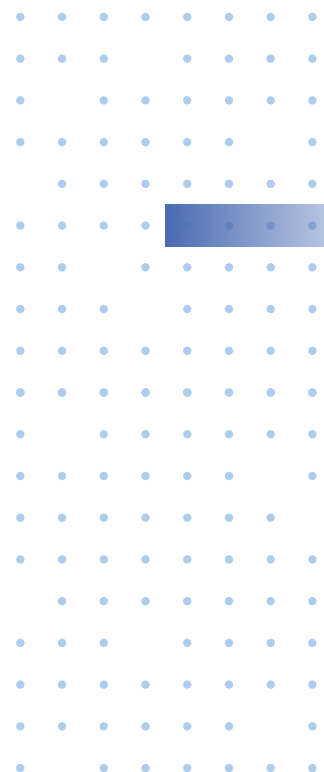
MA9322-EHTVL

- Adjustable Views
- Remote Focus
- Ultra-High Resolution



FE9391-EHV-v2

- 360° View
- 12MP Resolution
- IR Illumination






Onboard Systems

Product Lineup						
Mobile Dome			Fisheye		Object Detection	
						
Model	MD8564-EH	MD9584-H	MD9582-H/ H(DMS)	MD9560-H/ DH	FE9391-EV-v2-M12	SC9133
Camera Features						
Resolution	30 fps @ 1920x1080	60 fps @ 1920x1080 30 fps @ 2560x1920	60 fps @ 1920x1080 30 fps @ 2560x1920	30 fps @ 1920x1080	30 fps @ 2816x2816	30 fps @ 1792x1792
Max. Streams	4 Streams	3 Streams	3 Streams	3 Streams	3 Streams	3 Streams
Mode	Day&Night 30M IR	Day&Night, 50M IR	Day&Night 20M IR	Day&Night 20M IR	Day&Night 5M Invisible IR	Object Detection
WDR Technology	WDR Pro	WDR Pro	WDR Pro	WDR Pro	WDR Pro	WDR Pro
Housing	Metal, IK10+, IP6K9K, NEMA 4X	Metal, IK10+, IP6K9K, NEMA 4X	Metal, IK10, IP67, NEMA 4X	Metal, IK10, IP67, NEMA 4X	Metal, IK10, IP66, NEMA 4X	Metal, IK10, IP66
Certifications	CE, FCC, EN50155, EN50121-3-2, EN61373, EN45545-2, ECE R10, ECE R118*	CE, FCC, EN50155, EN50121-3-2, EN61373, EN45545-2, ECE R10, ECE R118*				
Operating Temperature	-40°C ~ 70°C	-40°C - 70°C	-40°C - 70°C (IR Off) -40°C - 65°C (R on)	-25°C - 55°C	40°C - 70°C (IR Off) -40°C - 65°C (IR on)	-30°C - 60°C
Power Input	PoE + DC (De-icing)	PoE + DC (De-icing)	PoE	PoE (+) DC (-DH)	PoE, DC	PoE, DC
Dimensions (mm)	242 x 162 x 82	120 x 180 x 59	98 x 54 x 110	98 x 54 x 110	Ø 160 x 62	140 x 76 x 42
Product Lineup						

			
Model	VAST Security Station	NV9321P/ 9421P	AN/ AW Network Series
Camera Features			
Description	<ul style="list-style-type: none">• Live View and Recording• Alarm and Event Management• GPS/Maps Integration• NV Series Integration	<ul style="list-style-type: none">• 8CH/16CH, RJ45/M12• Built-in GPS, G-sensor• Built-in PoE, Ignition Control• Optional WiFi/4G	<ul style="list-style-type: none">• Onboard Network Devices• Wired and Wireless Connection• DC/PoE Power Options• Ruggedized Design

* Extra conditions and limitations may apply. For details, please contact VIVOTEK.

Wayside and Station Systems

Product Lineup					
Speed Dome		Panoramic	Multi-adjustable	License Plate Capture	Object Detection
					
Model	SD9161-H/ SD9384-EHL	MS9390-EHV-v2/ MS9321-EHV-v2	MA9322-EHTVL	IP9165-LPC-v2 Kit	SC9133-RTL
Camera Features					
Resolution	30 fps @ 1920x1080 (-61) 30 fps @ 2560x1920 (-84)	30 fps@4864x1632 (MS9390) 30 fps@7680x2560 (MS9321)	30 fps @2560x1440 (each lens)	60 fps @ 1920x1080	30 fps@ 1792x1792
Max. Streams	4 Streams (-61) 3 Streams (-84)	3 Streams	2 Streams	3 Streams	3 Streams
Mode	Day&Night (-61) Day&Night, 200M IR (-84)	Day&Night, 20M IR (MS9390) Day&Mght, 30M IR (MS9321)	Day&Night	Day&Night	Object Detection
Zoom	10X (-61) 30X (-84)	-	-	-	-
WDR Technology	WDR Pro	WDR Pro	WDR Pro	WDR Pro II	WDR Pro
Housing	Metal (-61, -66) IK10, IP66, NEMA 4X (-84)	Metal, IK10, IP66	Metal, IK10, IP66	Metal, IK10, IP68	Metal, IK10, IP66
Operating Temperature	-10°C - 55°C (-61) -40°C - 60°C (-84)	-20°C - 55°C (-MS9390) -40°C - 55°C (-MS9321)	-40°C - 50°C	-40°C - 60°C (with heater)	-30°C - 60°C
Power Input	PoE, DC, AC	PoE (MS9390) PoE, AC (MS9321)	PoE, AC	DC, AC	PoE, DC
Dimensions (mm)	Ø 172 x 157 (-61) Ø 256 x 336 (-84)	165x 112x100 (MS9390) Ø 110x210 (MS9321)	Ø 267x114	503 x 170 x 400	140 x 76 x 42
Product Lineup					

				
Model	AT Cabinet Series	Industrial PoE Series	ND/ NR Series	Low Lux Series (-65 and -91)
Camera Features				
Description	<ul style="list-style-type: none">• Outdoor Ready• High Durability• Tampering Alert• Extension Modules	<ul style="list-style-type: none">• Full Range of PoE Switches• Managed and Unmanaged• Ethernet/SFP Connections• Unique Management Features	<ul style="list-style-type: none">• Full Range of Network Recorders• 8CH to 128CH, PoE Ports• Rack Mount, Hot Swappable• Integration with VAST Security Station Platform	<ul style="list-style-type: none">• Various Form Factors• Ultra Low Lux, 60 fps (-65-v2)• 4K Resolution, 120 fps (-91-v2)• Smart VCA• Vision Object Analytics• Trend Micro Security

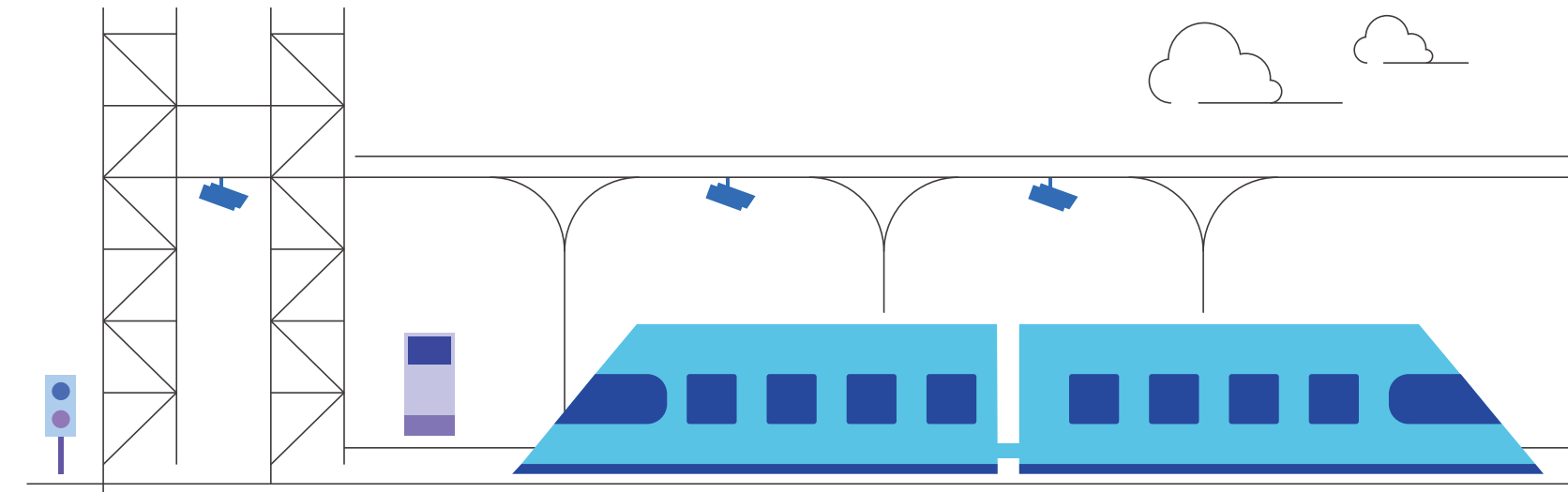
* For more detailed technical specifications, please refer to the general product brochure or visit VIVOTEK website. Specifications may change without notice.



A Trusted and Reliable Solution Provider of Transport Surveillance

VIVOTEK stands as a premium brand in the global security market, specializing in IP surveillance tailored for transportation applications. With offices and representatives globally, and robust partnerships with leading system integrators, VIVOTEK delivers timely project and technical support across a broad spectrum of transport-related applications.

VIVOTEK designs comprehensive security systems that encompass a specialized selection of onboard and wayside cameras, recording and network equipment, software platforms, and object detection. To date, a continually increasing number of global deployments underscore the aptness of VIVOTEK's solutions for applications such as rolling stock and motor vehicle onboard systems, passenger stations and terminals, level crossings, and wayside monitoring.



Indonesia
Commuter Line



Saudi Arabia
Metro Stations



Poland
Intercity Trains



Spain
High Speed Trains



Italy
Sicily Trains



Hungary
City Buses



Italy
Intercity Coaches



Malaysia
LRT Stations



South Korea
Metro Trains



France
City Trams



Australia
Train Stations



Turkey
Fire Trucks



India
Metro Trains



South Africa
Freight Trains



Mexico
Metro Trains



France
Metro Stations



Czech Republic
Municipal Trams



Taiwan
Airport Skytrain



Brazil
Light Rail



USA
Freight
Locomotives



Turkey
City Trams



Thailand
Metro Stations



Germany
Local Trains



Poland
Railway Crossings

VIVOTEK

A Delta Group Company



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