



***THERMAL DRIVER VISION
ENHANCEMENT
(DVE) SYSTEM***

***COVERT VEHICLE DRIVING
WITHOUT HEADLIGHTS
IN TOTAL DARKNESS***



ATRI TINDS DVE HELPS YOU SEE THE DANGER WHILE STAYING UNSEEN

ATRI TINDS DVE solution enhances a driver's viewing capabilities while operating during degraded visual conditions:

VISIBILITY IN EXTREME CONDITIONS:

- » Total darkness
- » Smoke screen
- » Dust
- » Dense fog
- » Heavy rain or snow

ATRI TINDS DVE is a flexible and scalable solution for various applications:

- » Land military tracked and wheeled armored vehicles
- » Border patrol vehicles
- » Homeland security vehicles
- » Police vehicles
- » Special forces vehicles
- » Fire trucks





KEY ASPECTS

ATRI TINDS DVE represents the unity of high-tech components and advanced functions:

- » Scalable complete solutions with cameras, switch, display and integration kit
- » Advanced day & night vision capabilities thanks to LWIR thermal cameras and low light cameras
- » Works without infrared illumination and other light sources
- » Ensures stealthy operation and clear view of the area
- » Dramatically increases vehicle efficiency and survivability
- » Facilitates covert search, rescue and evacuation
- » Locates vehicles and people regardless of the time of day

EASY INTEGRATION INTO EXISTING FLEETS

FEATURES AND ADVANTAGES

STEALTHY VEHICLE OPERATION

- » Completely passive system, no IR or other illumination
- » Night-time operation without headlights
- » High performance in the fog, dust, or smoke screen conditions
- » The green-hot color scheme reduces vehicle visibility caused by monitor glare reflections on the driver's face
- » Adjustable brightness of buttons backlight reduces de-masking while enabling the system control

SAFETY AND SECURITY

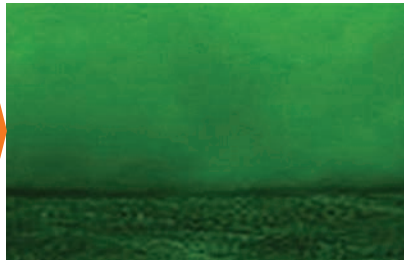
- » Excellent visibility of the terrain thanks to high-resolution sensors with the best sensitivity
- » Real-time imaging and wide FOV lenses give the drivers perfect situational awareness and enable them to maneuver with confidence
- » No dazzling by headlight glare, bright flashes or explosions
- » The green-hot color scheme reduces driver eye tiredness



UNMATCHED VISIBILITY



ATRI TINDS DVE



NIGHT VISION GOGGLES (NVG)

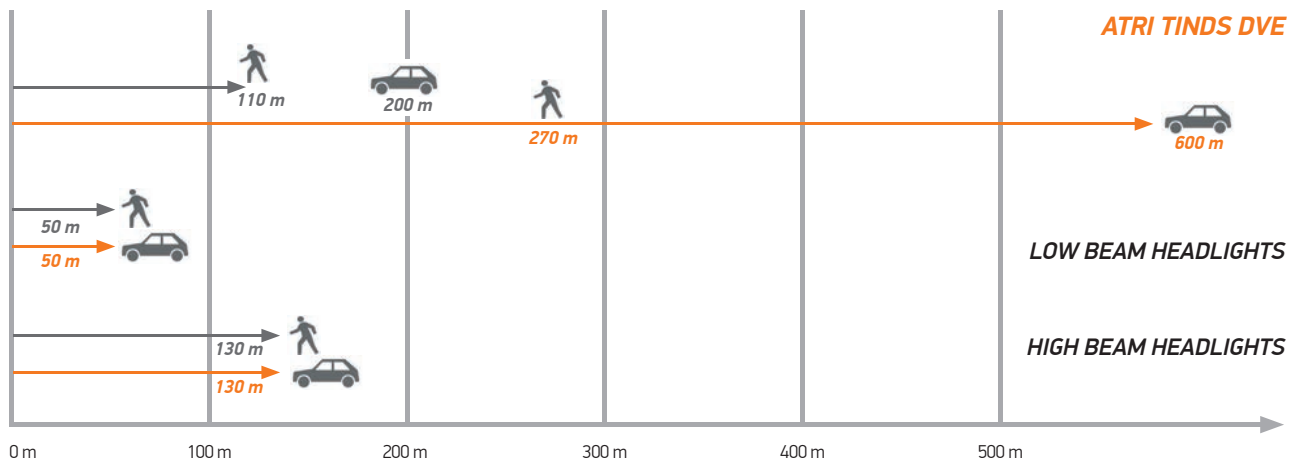


HUMAN VISION

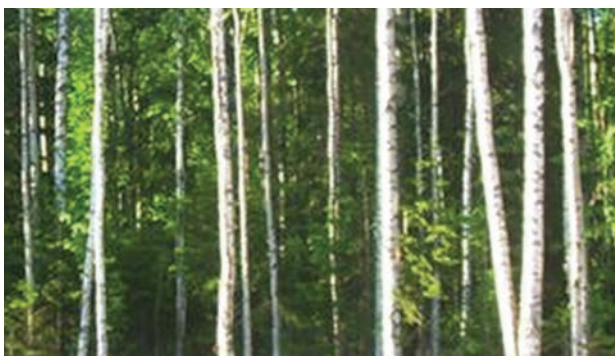
LONG VISIBILITY RANGE

Recognition (m)

Detection (m)



CAMOUFLAGED OBJECT DETECTION



SYSTEM COMPONENTS

ATRI TINDS includes a wide range of elements that can be combined into various configurations depending on the customer's needs, thus ensuring the flexible use of the system.

STANDARD COMPONENTS:

- » Front view LWIR thermal camera
- » Rear view video camera with IR illumination
- » 7" LCD monitor
- » Video processing and distribution unit
- » System control unit
- » Set of connecting cables
- » Transportation rugged case

ADDITIONAL COMPONENTS:

- » Up to 16 video channels and up to 3 driver's monitors
- » Rear and/or side view thermal imaging cameras
- » Rear and/or side view video cameras
- » Dual spectrum front, rear or side view 90° FOV or 180° FOV cameras
- » 7"/10"/12" monitors
- » Integrated Magnetic compass
- » Vehicle pitch and roll sensor
- » Magnetic mount for cameras
- » Camera lens cleaning system with a set of hoses

RELIABILITY AND ERGONOMICS

- » **ATRI TINDS DVE** is MIL-STD-810 qualified and battlefield-proven
- » Military qualified electronic components, materials and technologies enable **ATRI TINDS DVE** to meet the highest customer's requirement
- » All sealed housings are IP67 rated
- » All cameras are protected from high humidity and condensation
- » Easy operation thanks to the intuitive interface and backlit control buttons

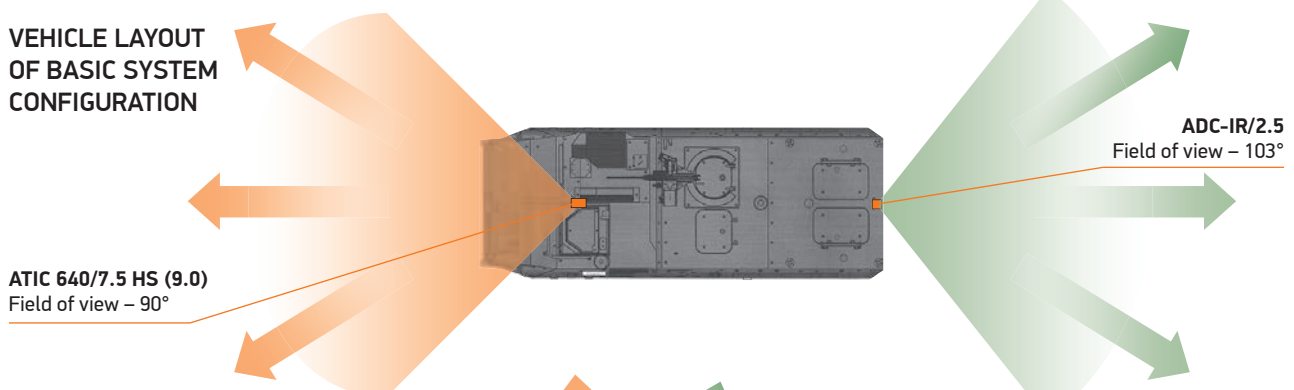
TURNKEY SOLUTION FROM ONE VENDOR

The fewer vendors are engaged, the more effective the performance is.

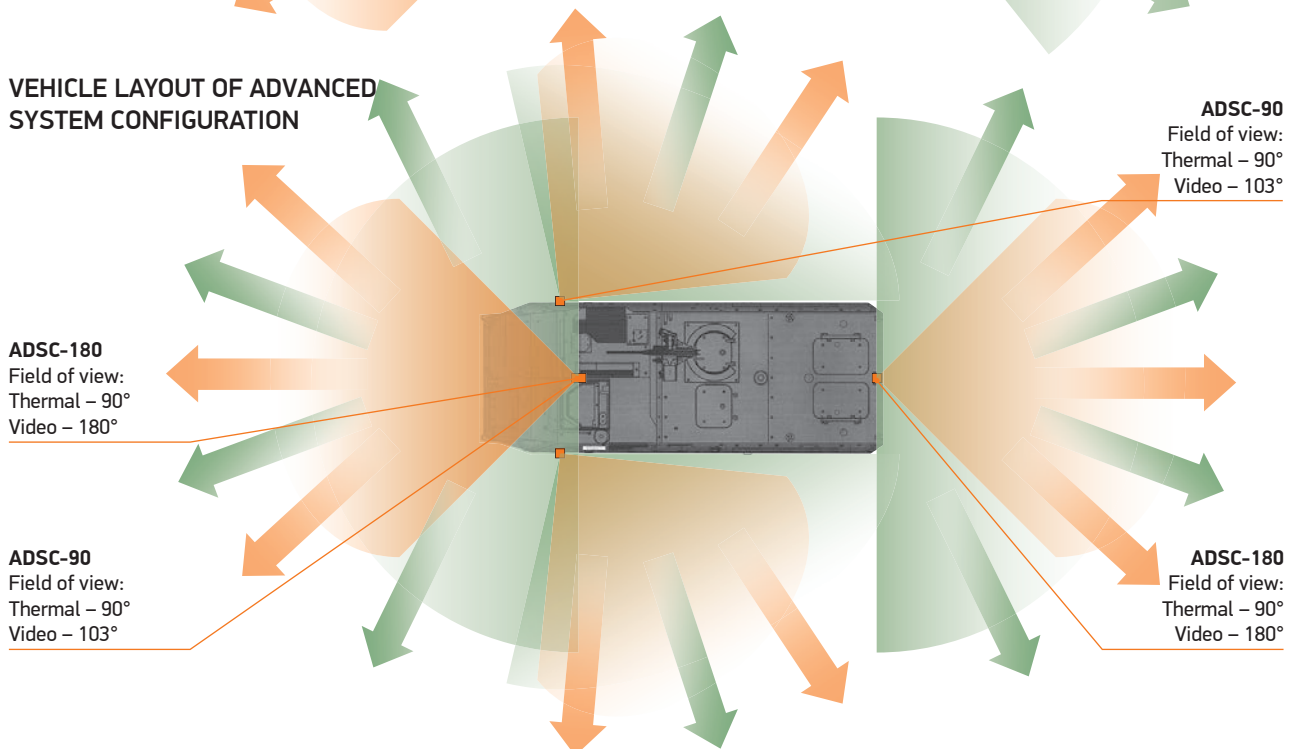
Choosing one vendor instead of a pack means:

- » Faster integration at lower costs
- » Prompt issue resolution with no blame games
- » Easier program management, upgrade and maintenance
- » System-level view of the comprehensive solution

VEHICLE LAYOUT OF BASIC SYSTEM CONFIGURATION



VEHICLE LAYOUT OF ADVANCED SYSTEM CONFIGURATION



CAMERAS

ATIC 640/7.5 HS (9.0)



Functions:

- » Enables stealthy driving in total darkness, thick fog, smoke screen or heavy precipitation

Features:

- » Based on a highly reliable uncooled long-wave detector
- » Wide viewing angles allow the driver to see the vehicle dimensions and maneuver confidently
- » Service life up to 10 years (no maintenance required)
- » Thermal sensitivity above 30 mK
- » The microbolometer is protected from sunburn thanks to VOx technology.
- » Germanium window protects the optics from damage
- » Integrated washer nozzles
- » Built-in heater for camera window deicing
- » IP67 rated camera housing purged with dry nitrogen protecting it from moisture condensation
- » Built-in desiccant plug with a humidity indicator
- » Durable vents reduce pressure differences with continuous airflow in and out of the enclosure, while blocking contaminants such as water, automotive fluids, salts, dirt and mud
- » Can be used for front, rear or side views
- » MIL STD 810 qualified
- » NSN code 5855-47-000-9211

ADC-IR/2.5S



ADC-IR/2.5SC



Functions:

- » Allows driving in the day or in the dark when reversing
- » Suitable for rear and side view

Features:

- » Wide field of view allow the driver to see the vehicle dimensions and maneuver with confidence
- » Built in switchable IR LED illumination ensures visibility in total darkness
- » Controls: Sharpness / Mirror / Flip / D-Zoom / ACE / Defog / Shading
- » Protection: IP67, sapphire camera lens protection window.
- » Operating temperature: - 40°C to +65°C
- » MIL STD 810 qualified

ADSC-180



ADSC-90



Functions:

- » Include one LWIR channel 90° FOV and one 103° FOV or three daytime camera channels with a total FOV of 180°
- » Image selection from a thermal imager or day camera(s) depending on the observation conditions

Features:

- » Wide field of view allows the driver to see the vehicle dimensions and maneuver with confidence
- » Operation time up to 10 years (no maintenance required)
- » Thermal imager sensitivity up to 30 mK
- » Low-light video camera. Minimum illumination 0 lx with switchable IR illumination
- » Protective germanium window for thermal camera
- » Protective sapphire window for video camera(s)
- » Integrated washer nozzles for fast and effective camera cleaning
- » Built-in heater for protective windows deicing
- » Sealed IP67 housing filled with dry nitrogen
- » Control of internal humidity by built-in desiccant plug and humidity indicator
- » Durable vents reduce pressure differences with a continuous airflow in and out of the enclosure, while blocking contaminants such as water, automotive fluids, salts, dirt and mud
- » Suitable for front, rear or side views
- » MIL STD 810 qualified



DVE MONITORS

AD-LCD/7



Features:

- » Wide viewing angles
- » Brightness and contrast controls
- » Backlight control buttons for easy operation in darkness
- » Built-in heater
- » IP67 rated
- » MIL STD 810 qualified

AD-LCD/10.1



AD-LCD/12.1



Features:

- » 1200NIT/1000NIT sunlight readable with long-life LED backlight
- » Wide viewing angle IPS (in-plane switching) LCD panel
- » Advanced image-scaling and shaping
- » Automatic backlight adjustment via the built-in ambient light sensor
- » Anti-reflective and anti-fingerprint coating
- » 1280x800 native resolution, 16x9 aspect ratio
- » High-performance image and video signal processor
- » Ruggedized aluminum casing
- » IP67 rated water and dust resistance
- » MTBF (Mean Time Between Failures): > 55,000 hours or > 6.2 years of continuous operation

OTHER SYSTEM COMPONENTS

BCU-1 VIDEO PROCESSING AND DISTRIBUTION UNIT



Functions:

- » Designed for video processing, power supply and serial control of all devices in the system

Features:

- » Supports up to 12 video inputs and up to 3 monitor outputs
- » Overlays adjustable distance mark lines on the video stream that helping the driver to estimate the distance to obstacles
- » Controls a split mode on the driver's monitor: full screen, quad, picture-in-picture, etc.
- » Wide range of input power: 9-36 VDC
- » Has a compact size and can be located in any place of the vehicle
- » Operating temperatures: - 40°C to +65°C
- » IP67 rated
- » MIL STD 810 qualified

CU-1 SYSTEM CONTROL UNIT



Functions:

Used to control ATRI TINDS DVE system functions:

Adjustable brightness of the control buttons backlight. Controls the camera display mode, color scheme of the image, digital zoom up to 8x, thermal imagers NUC, displaying of the scalable distance-marker grid and additional information on the screen, camera heating turning-on, and camera cleaning with liquid.

Features:

- » Control Unit backlight for easy operation in darkness
- » Has a compact size and can be easily installed in any suitable place inside the vehicle
- » Operating temperatures: - 40°C to +65°C
- » IP67 rated
- » MIL STD 810 qualified

JCK-01 CAMERA CLEANING SYSTEM

Fast and efficient high-pressure cleaning of any dirt on the camera lenses.

Features:

- » IP66 rated
- » Operating temperatures: -20°C to +65°C



MAGNETIC MOUNTING KIT

Brings the capability of easy and rapid system installation on any vehicles within 5-10 mins

Features:

- » A powerful neodymium magnet fixes the camera to any metal surface
- » Elevation and azimuth adjustment
- » Ensures the capability to operate the system on multiple vehicles by means of quick swapping



CUSTOMER FEEDBACK

COUNTER-TERRORISM OPERATIONS

'*ATRI TINDS DVE* enables us 'to see while staying unseen' and is very useful since we can operate at night totally stealthily and without any illumination. This system helps a lot in our offensive missions against terrorists and improves our protection during the operation. *ATRI TINDS DVE* greatly enhances our team's capacity both to attack and defend at night time.'

ABSENCE OF FAILURES

'No matter how rough the operating conditions were and how heavily we used *ATRI TINDS DVE* systems, we observed no failures of these.'

ESSENTIAL EQUIPMENT FOR ARMORED VEHICLES

'No one reasonably doubts the need for armored vehicle use in the modern military environment. I'm pretty sure soon *ATRI TINDS DVE* will also become an essential military equipment component for many armies since it drastically increases the efficiency of armored vehicles operation. This system is the best choice for driver vision enhancement in situations where a clear vision of the environment is critical for mission success and crew safety.'

SURPASSES OTHER SOLUTIONS

'According to our test results, *ATRI TINDS DVE* surpasses other vision enhancement solutions in terms of object detection and recognition ranges, thermal cameras sensitivity and resolution, video latency and IP protection index. The system has also received high evaluations in the categories of scalability, range of functions, user-friendly interface, as well as ease of installation, integration and use.'

CONSIDERABLY HIGHER DRIVING SPEED AT NIGHT

'We are looking forward to install *ATRI TINDS DVE* systems on our medium-lift fleet. I estimate *ATRI TINDS DVE* will enable us to drive at up to 80% of the full daytime speed. We also regard this solution as a great way to reduce driver eye tiredness during long-time operations under low ambient light conditions.'

NEED MORE OF THESE

'We regularly use *ATRI TINDS DVE* for patrolling and special operations. The only problem we have so far is that not all of our vehicles are equipped with these systems yet.'

GREAT ASSET FOR SUCCESS

'Now that we've had some experience of using *ATRI TINDS DVE*, I can say with certainty that this solution makes a huge difference in the operation of our mission. I am very glad to spread the word on the excellent products and customer service from your company. This is one of the most important pieces of equipment that we are using with our current mission. *ATRI TINDS DVE* has surely been a great asset to our mission success.'

INDISPENSABLE SAFETY COMPONENTS

'We are deployed at the moment and are using these amazing systems when going on missions at night. It's surprising how fast we've become accustomed to these devices and how indispensable they seem now. We entrust the safety of our crews to *ATRI TINDS DVE* with no hesitations. What estimate can be higher?'

'*ATRI TINDS DVE* has enabled us to drive while continuously monitoring the terrain which would otherwise be indiscernible.'



Kalvariju str. 98-42, 08211 Vilnius, Lithuania
Tel. +370 5 265 38 39 | info@atri.lt | www.atri.lt

ATRI USA

12344 E. Northwest Highway, Dallas, Texas 75228
Tel. +1.972.757.1138 | mn@atri-usa.com | www.atri-usa.com

