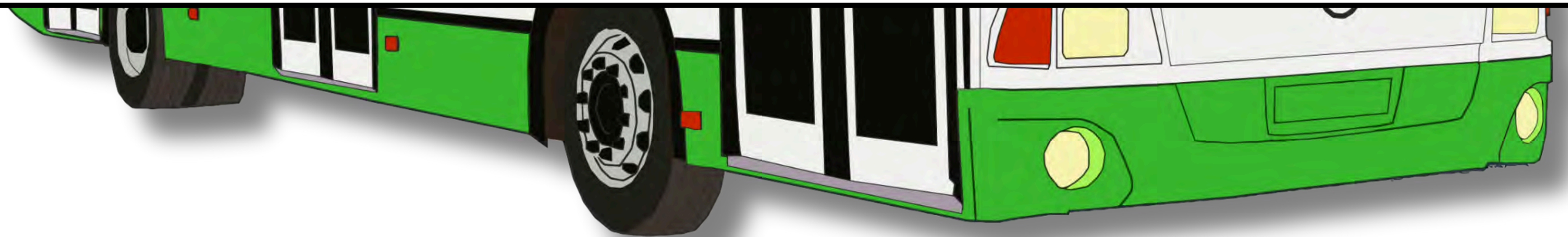


Masstrans

INTELLIGENT TRANSPORTATION SYSTEM



Welcome To MassTrans

Since establishment in 1991, Masstrans has consistently excelled in delivering top-tier solutions for public transportation. In a groundbreaking move in 2004, the company forged a strategic partnership with Hanover Displays, UK to spearhead the development of passenger information system for buses in India.

This innovative system has since gained widespread recognition and adoption within the transportation industry. With in-house design and manufacturing capabilities, our product line is certified by ARAI (UBS-II, IS:16833 & IS:16490), prioritizing the enhancement of fleet operations' efficiency and the creation of enduring passenger travel experiences.

Today, we offer a comprehensive range of solutions including:

- ▶ **Passenger Information System (PIS)**
- ▶ **Advanced Driver Assistance System (ADAS)**
- ▶ **Reverse Parking Assistance System (RPAS)**
- ▶ **ETA for Bus Stop and Stations**
- ▶ **Variable Message Display (VMD)**
- ▶ **Automatic Passenger Counting (APC)**
- ▶ **Tyre Pressure Monitoring System (TPMS)**
- ▶ **Mobile Network Video Recorder (MNVR/MDVR)**
- ▶ **Bespoke LED Bus Roof Lights**
- ▶ **Intelligent Transportation System (ITS)**
- ▶ **Automated Fare Collection System (AFCS)**
- ▶ **Passenger Information Display System (PIDS)**
- ▶ **Passenger Announcement System (PAS)**
- ▶ **Waste Collection Solutions**
- ▶ **Safe Warehouse Solutions**
- ▶ **Smart Transport Management System**
 - Automatic Vehicle Location System (AVLS)*
 - Smart Tracking*
 - Operations, Scheduling and Dispatch*
 - Crew Scheduling*
 - PIS Management System*
 - Bus Terminal Display*

Masstrans remains dedicated to revolutionizing the public transportation sector with its diverse and cutting-edge offerings.

Technology is key to our services...

Technology is the cornerstone of our modern world, serving as the driving force behind our services and progress. Whether its enhancing communication, streamlining processes or revolutionizing industries, technology plays an indispensable role.

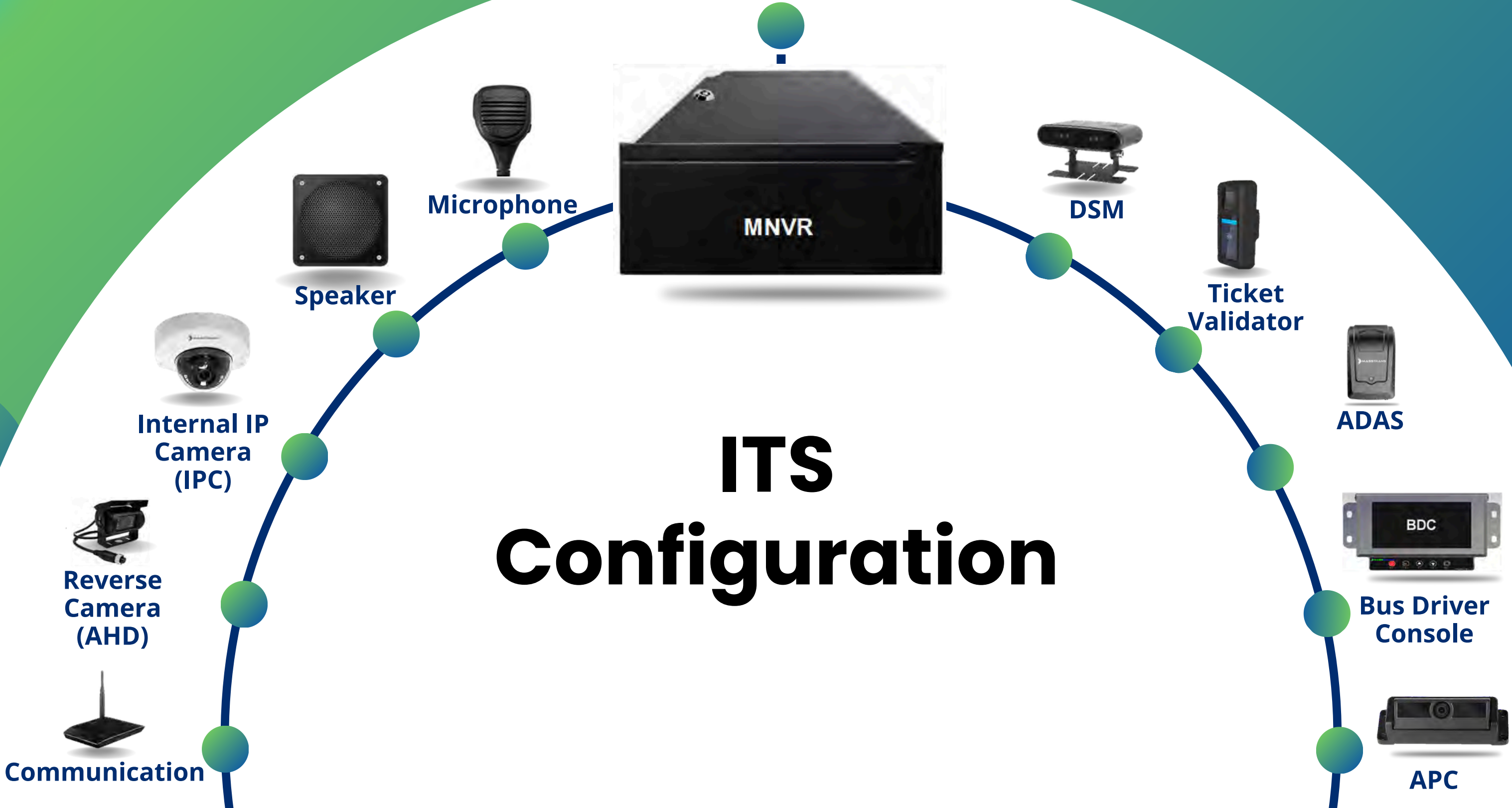
It empowers us to deliver faster, more efficient innovative solutions that shape the way we live and work.

As we continue to embrace and harness the power of technology, it remains a key enabler of our services, paving the way for a brighter and more connected future.

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LED Destination Boards



ITS Configuration

MNVR/MDVR

(Mobile Network Video Recorder / Mobile Digital Video Recorders)

Masstrans MNVR, All-in-one Device represents the forefront of technology, empowering real-time remote monitoring to significantly improve fleet management efficiency. This intelligent MNVR boasts a potent multi-core processor and a neural network inference engine, seamlessly integrating ADAS, DSM, BSD and AVS algorithms into a single, all-encompassing device. This convergence offers a plethora of driving assistance features across multiple systems, ensuring safer driving without the added time and expense of separate installations.

- Simultaneous support for 8 channels of recording in hybrid mode, combining 4 AHD and 4 IPC inputs.
- On-board video recording capabilities at a maximum resolution of 1080p and 25 FPS, with support for up to 30fps. It employs video compression in both H.264 and H.265 formats.
- The device comes equipped with built-in AI for ADAS, DSM, BSD, and Passenger Counting, enhancing safety and monitoring capabilities. Integrated GPS, 4G and Wi-Fi modules streamline connectivity and data transmission.
- The device supports storage capacities of up to 2 TB SSD, ensuring ample storage for recorded data.

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BDC (Bus Driver Console)

The Bus Driver Console (BDC) functions as a crucial central hub for overseeing and managing essential features, with the primary goal of ensuring improved accessibility and user-friendliness for the driver. This central control panel offers the essential interface for operating a variety of functions that are indispensable for a seamless and secure bus journey. From monitoring the vehicle's health through the Controller Area Network (CAN) to overseeing passenger information and safety protocols, the driver console places indispensable tools within easy reach, thereby enhancing their capacity to navigate and run the bus with efficiency. This user-friendly control center plays a pivotal role in streamlining the driver's responsibilities, thus contributing significantly to the overall comfort and safety of both passengers and the driver.

- 7-inch touchscreen LCD display
- Support for two video inputs
- Robust design to ensure IP 66 protection
- Choice of dash mount or flush mount installation options



In-Bus Video Surveillance (Camera Solution)

The Masstrans Bus Surveillance Systems offer a reliable security solution known as the In-Bus Video Surveillance System. This system serves multiple functions, such as deterring criminal activities, preventing accidents, ensuring accountability among personnel and safeguarding the well-being of passengers through continuous and vigilant monitoring.

- ▶ Accommodates up to 6-megapixel cameras
- ▶ Features an integrated microphone alongside the camera
- ▶ Boasts a durable design capable of providing IP 66 protection
- ▶ Equipped with 10 pieces of SMD LED Array, offering an infrared range of 10-15 meters
- ▶ Utilizes H.264/H.265 dual-stream media server technology
- ▶ Supports RTSP and is compatible with Onvif 2.4 standards

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PIS (Passenger Information System)

Masstrans provides a diverse range of customized solutions for onboard passenger information systems, specifically designed for buses, coaches and railway/metro carriages. These systems feature electronic panels that display important information like destinations, routes, and other details to benefit passengers who are either waiting for or using transportation services. These versatile panels can be seamlessly integrated, whether as standalone units or part of a larger onboard network within the vehicle. They can operate independently with the inclusion of an operation console, which can be either a standalone device for the driver's convenience or a unit seamlessly incorporated into the front panel. Our LED signboards (PIS) are engineered to deliver consistent performance, even in extreme weather conditions and challenging environments. They come equipped with automatic brightness adjustment to enhance visibility while minimizing power consumption. Notably, our PIS with Controller Solution stands out in the market, thanks to its discreetly positioned controller on the backside of the PIS LED Board in the D-Fit PIS boards. We offer several models, some conforming to standard sizes and shapes, while others are bespoke. The mechanical design and modular electronics ensure a straightforward setup, maintenance, and adaptability to various vehicle types.

- ▶ Certified according to IS 16490 standards
- ▶ Wide viewing angle LEDs
- ▶ Automatic brightness control based on ambient light conditions
- ▶ Built-in GPS and amplifier for stop announcements
- ▶ Microphone support for driver announcements
- ▶ Built-in Wi-Fi for remote route management

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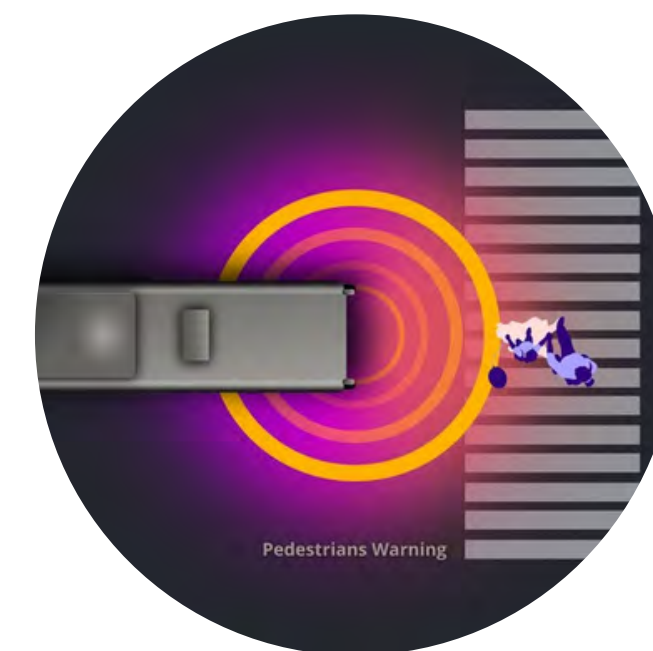
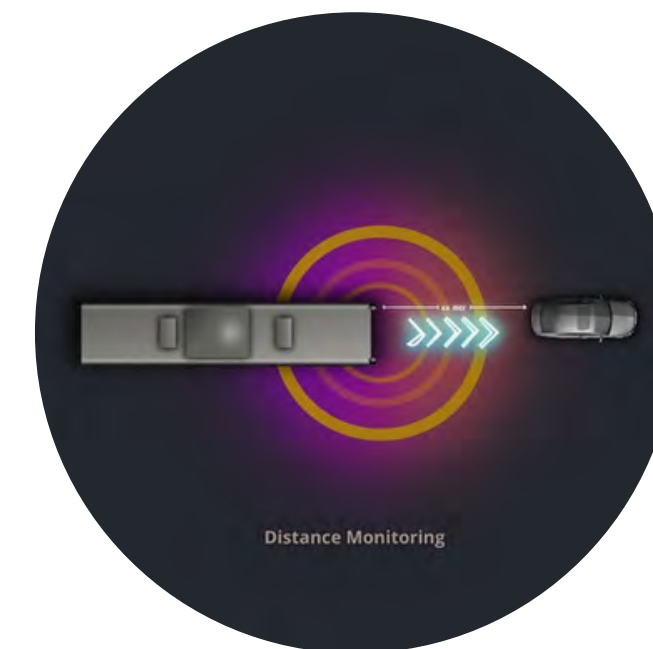
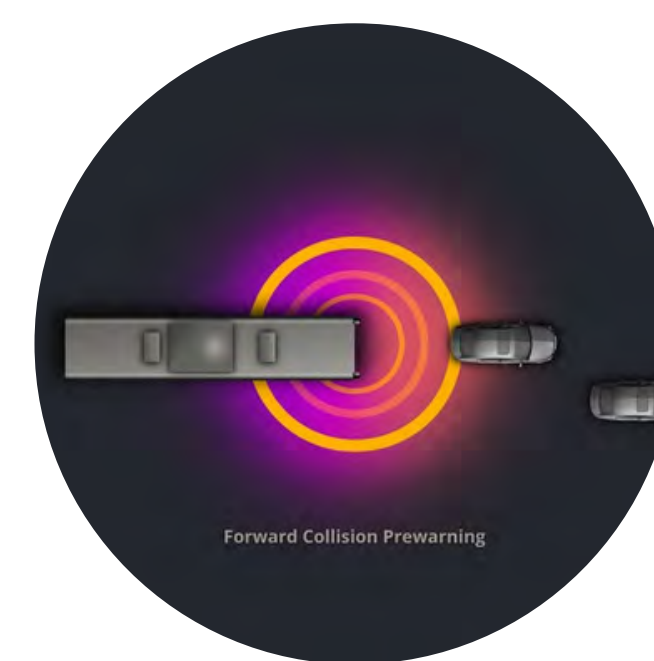
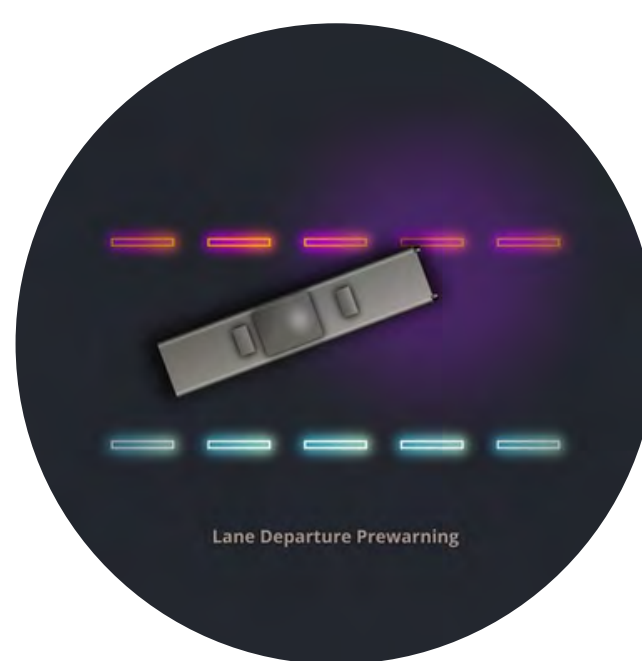
ADAS

(Advance Driver Assistance System)

In the rapidly evolving landscape of automotive technology, Advanced Driver Assistance Systems (ADAS) have emerged as a pivotal innovation that promises to revolutionize the way we drive. ADAS encompasses a wide array of advanced safety and convenience features designed to assist drivers and enhance overall road safety.

ADAS is a collective term for a range of technologies and systems integrated into modern vehicles to assist drivers in various driving tasks. These systems leverage sensors, cameras, radar and sophisticated software to provide real-time data and assistance.

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DSM

(Driver Status Monitoring)

Driver Status Monitoring (DSM) or Driver Fatigue Monitoring System (DFMS) is a highly vigilant system designed to proactively alert drivers in situations involving fatigue, drowsiness and distraction. Our Driver Fatigue Status Monitoring System utilizes advanced machine vision technology to detect deviations in a driver's behaviour. This system can effectively identify and raise alarms for various conditions, including driver distraction, phone usage, smoking and more.

- **Detection and alarm for driver phone usage and smoking**
- **Alert for driver fatigue and drowsy driving**
- **Warning for abnormal driver situations, such as the absence of a driver or incorrect seating position**
- **Reliable performance in diverse environmental conditions**

This comprehensive system enhances road safety by actively monitoring driver behaviour and promptly addressing potential safety concerns.

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APC

(Automatic Passenger Counting)

Automatic Passenger Counting (APC) provides a means to efficiently monitor passenger movements during embarkation and disembarkation from public transportation vehicles, streamlining operational planning. The APC sensor accurately registers passengers of various categories, including adults and children. This data collection occurs seamlessly, even during peak hours and offers comprehensive insights through visual representations, graphs and intuitive passenger flow information.

- Accuracy up to 95%
- Rugged design to support IP 66 protection
- Wide field of view Horizontal 140°, Vertical 120°
- Offline caching 90 days

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RPAS

(Reverse Parking Assistance System)

Where time is a precious commodity, advanced technologies continue to reshape the way we live and interact with our surroundings. One such technological marvel that has significantly improved our daily lives is the Reverse Parking Assistance System (RPAS).

RPAS, also known as a backup camera or rear-view camera, has transformed the way we park our vehicles, making parking safer, more convenient and more efficient.

- Detection range up to 2.5 meter
- Support visual and audible distance warning
- Underslung and flush-mount available
- Water and dust resistance
- Support external LCD for visual warning



TPMS (Tyre Pressure Monitoring System)

Tyre Pressure Monitoring System (TPMS) serves as a crucial safety feature by promptly notifying drivers of improperly inflated tyres, a common cause of road accidents. Our TPMS solutions offer a reliable means to prevent such accidents. This system incorporates a pressure sensor, a microcontroller, transmitters, working in unison to accurately measure your tire's air pressure. Additionally, the Tyre Pressure Monitor can be seamlessly integrated with wheel sensors and braking systems across various vehicle categories, further enhancing safety and control.

- ▶ Internal and external system
- ▶ Wide operating temperature
- ▶ Can support up to 22 wheels
- ▶ Visual and audible warning
- ▶ Intelligent sleeping mode for power saving
- ▶ Warning provided like high/low pressure, high tyre temp and leakage warning

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Alcohol Sensor



- 🚚 Ignition interlock technology
- 🚚 Blow before starting the vehicle



- 🚚 Low energy consumption
- 🚚 Secure data handling



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- 🚚 Emergency override
- 🚚 Fast warm up








- 🚚 Anti - circumvention
- 🚚 Programmable

The Alcohol Sensor plays a pivotal role in promoting safe vehicle operation by employing ignition interlock technology. It requires the driver to perform a breath test before starting the vehicle, ensuring alcohol detection and subsequently preventing the engine from starting. This system is designed with a focus on low energy consumption, secure data handling, an emergency override feature, rapid warm-up capability, anti-circumvention measures and programmable options, all contributing to enhanced safety and user flexibility.

AFCS (Automatic Fare Collection System)

Automatic Fare Collection System (AFCS) revolutionizes public transportation payments with convenient tap-and-go contactless options, e-wallet integration and barcode scanning. This system enables swift and secure cashless transactions, enhancing sales and reducing queue congestion. It boasts a generous scan area for seamless readability of various barcodes and QR codes, ensuring ease of use for passengers. Additionally, it supports eSIM technology, facilitating centralized data plan management for added convenience.

-  **RuPay-certified pole-mounted validator**
-  **Easy integration of any backend using device-level SDK**
-  **Dust and waterproof up to IP65**
-  **Vandal proof up to IK10**
-  **Support all types of payment systems - close loop and open loop**



Mobile Ticketing/ E-ticketing/ Web based ticketing

We offer web-based ticketing solutions, complementing our validators. Through mobile ticketing apps, commuters can conveniently access fare information, make payments and instantly receive digital tickets. This flexible option caters to various ticketing needs, including single or multiple tickets, as well as monthly passes.

- ▶ With Ticket Checker's app, the checker can verify these tickets



Handheld Ticketing

Masstrans provides handheld ticketing machines that can be used in e-ticketing. With a handheld ticketing device, your staff can efficiently process ticketing and reduce customers' waiting time.

When there is a high influx of passengers, ticketers with mobile ticketing devices can divert the influx and speed up the ticketing process.

Customers are able to purchase tickets in a short time, reduce frustrating waiting, speed up check-in or boarding time and enjoy a pleasurable frictionless experience.

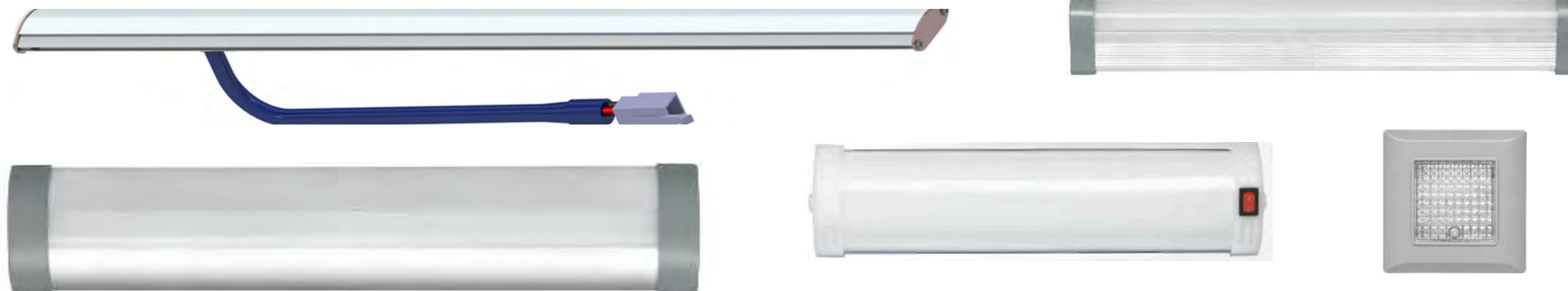


Bus Roof Lighting Systems

Masstrans Bus Roof Lights are versatile lighting solution, offering a range of internal light options for buses, trucks, metros and rail coaches with minimal power consumption.

These lighting solutions can be tailored to meet your specific needs, with the flexibility to choose from various shapes, sizes, lux levels and voltages, ensuring a customized and efficient lighting solution for your vehicles.

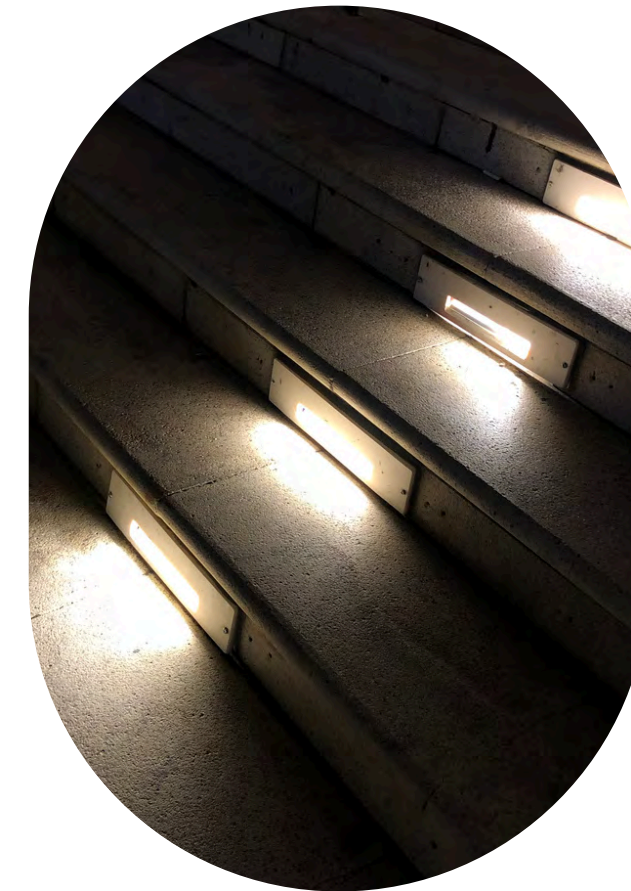
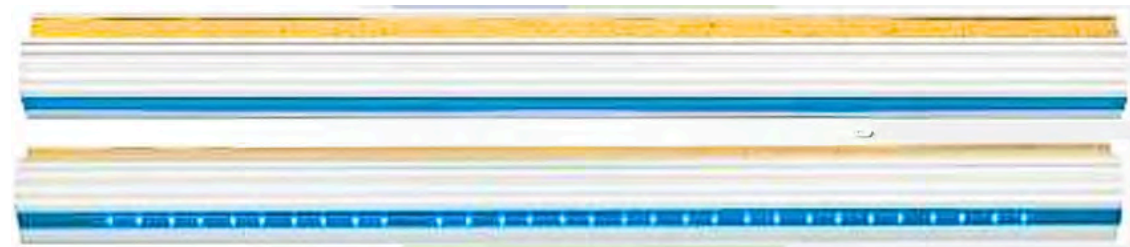
- **Customisation available as per customer requirements**
- **LED based light for minimal power consumption**
- **Operates at various voltages**
- **Option of dimmer available as per AIS153**



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Bus Gangway Lighting

Masstrans offers gangway lights designed for buses. These lights serve a crucial purpose in dimly lit conditions within the bus, aiding passengers in identifying steps and preventing potential accidents caused by tripping.



Stop board with inbuilt controller



This backlit static sign lights up when a commuter presses the stop switch while bus is approaching a designated stop or in case of emergency. Stop indicator remains active until the door closes after passengers de-board.

In Bus Wi-Fi System

In the era of uninterrupted connectivity, modern travelers now expect swift and dependable data access while on the go. Thanks to the widespread embrace of 4G technologies, it is now feasible for mobile users to stay connected virtually everywhere, including while traveling on trains, buses, metro and boats.

- **Rugged, weather-proof enclosure that can be easily mounted on any surface based on 802.11ac standard**
- **The router comes with dual-SIM and dual-modem configuration**
- **Frequency Range 2.4-2.4835GHz**
- **Provides flexibility of powering the access points using POE adapter, POE switch or DC power adapter.**

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USB Chargers

Our USB chargers provide high-performance advantages, along with extra safeguards for the unit's electronic circuitry. The electronic components are enclosed in a robust polyurethane compound, ensuring thorough protection against dust and liquid intrusion up to an IP65 rating.

This product is an excellent choice for scenarios where tampering is a concern or in environments that are prone to dirt and more challenging conditions. While it's important to note that the USB connector itself can still be intentionally damaged and may corrode with repeated exposure to liquids, all the electronic components within these units are safeguarded to meet the IP65 standard.

- **Designed for demanding environments including bus, coach, off road and railway applications**
- **Electronics protected to IP65**
- **Extra vibration protection to EN61373**
- **Approved to EN50498, ISO7637-2 and EN50155. E marked (Reg10) and CE marked**

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Estimated Time of Arrival

STARTING POINT	DESTINATION	ROUTE NO	ETA
Harsh Vihar	B-Block Yamuna Vihar	262	03 Min
Azadpur Terminal	Shakurpur JJ Colony	78	12 Min
Sultanpuri Terminal	New Multan Nagar	937 A	07 Min
Mori Gate Terminal	Pusta No-2	253	17 Min

In Public Transport industry, ETA sign boards indicate when a bus, train, metro or other mode of transportation will arrive at/depart from a particular stop.

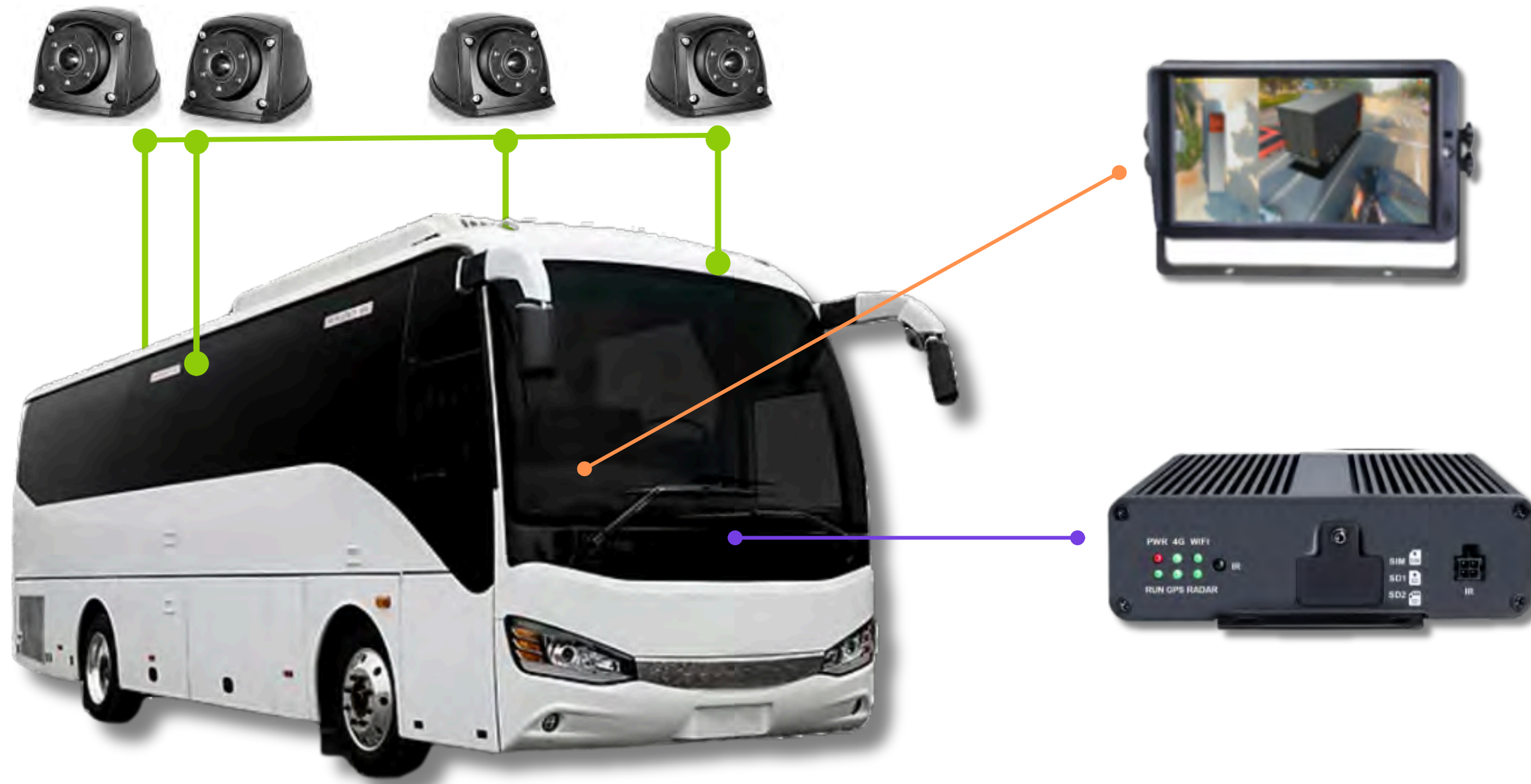
Arrival & departure estimates are used to give passengers/customers an approximation of when the vehicle will arrive to or depart from their location.

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360 degree camera solution

Our system provides a true 360° panoramic bird-view, monitoring with no blind spot to ensure driving safety. It has pedestrian detection and FCW (forward collision warning) functions. It is the best choice to assist vehicle driving for bus, truck, ambulance, etc.



Blind Spot Detection



left/right side
dual lens camera

Our Blind Spot Detection System supports a large viewing angle, high night vision sensitivity and is easy to adapt to complex weather conditions, which means broader and clearer side vision and more professional in safeguarding driving safety than traditional rear-view mirrors.

ROAD
CLOSED
AHEAD

DEFLECT

Variable Message Signs

Variable Message Signs (VMS) are designed to convey important public messages, speed limits and control the traffic in all lanes.

These aid in smoother traffic on highways and roads in cities.

Our VMS signs notify weather conditions, emergencies and destinations. The LED signs are monochromatic as well as polychromatic.

Timings can be set for messages and it has a good memory capacity for storing multiple messages.

An automatic brightness controller is an in-built feature of variable message signs.

The VMS allows text & graphic messages to be combined.

Our VMS signs come with aluminum or steel body and are equipped with a self-diagnosis tool that detects power failure, processor failure and LED cluster failure, ensuring optimal functionality at all times.

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PAS (Public Announcement System)

Masstrans offers a comprehensive Passenger Announcement System (PAS) designed to facilitate clear and timely communication in diverse transit environments, including airports, train stations, metro stations and bus depots.

Our PAS solutions are equipped with advanced audio technology and customizable messaging capabilities, ensuring that critical announcements reach passengers effectively.

With seamless integration into existing infrastructure, Masstrans' systems provide operators with the flexibility to broadcast essential information such as boarding announcements, service updates and safety instructions across various platforms.



Esteemed Clients





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MASSTRANS

Where Technology Meets Transit

Thank You



HAPPY TO ASSIST YOU AT ALL TIMES.
HOPE TO INTERACT SOON.

