

# LEISHEN INTELLIGENT SYSTEM CO., LTD.

## CORPORATE HQ & MANUFACTURER

**CORPORATE HQ** 4-5F, Yunhua Building, Shajing Street, Bao'an District, Shenzhen, China

**SHANGHAI OFFICE** 4F, No.5 Building, No.199 Fenghong Road, Minhang District, Shanghai, China

**MANUFACTURER** Building R, Shasi Dongbao Industrial Zone, Shajing Street, Baoan District, Shenzhen

**MANUFACTURER** S05 workshop, East of Anlan Avenue, North of Linkong Avenue, Xuzhou Airport Economic Development Zone, Juning County, Xuzhou City

## FRANCH OFFICE

60 Rue Saint Antoine, 75004, Paris, France

Eric Chen: 0033-(0)749044832



+86 755-2324-2821 MARKET@LSLIDAR.COM

YouTube Meta LinkedIn | LSLIDAR

FOLLOW LSLIDAR'S OFFICIAL ACCOUNTS TO KNOW MORE

WWW.LSLIDAR.COM

# CONTENTS

## 03 **AUTO-GRADE HYBRID SOLID-STATE LIDAR**

---

LS Series Hybrid Solid-State LiDAR (1550nm)

CX128S1, CH128S1 Hybrid Solid-State LiDAR (905nm)

CH128X1, LS256S1 Hybrid Solid-State LiDAR (905nm)

CB64S1 Blind Spot Detection LiDAR (905nm)

CH32/16 Hybrid Solid-State LiDAR (905nm)

## 13 **MULTI-LINE MECHANICAL LIDAR**

---

C16 Multi-Line Mechanical LiDAR

C16E Multi-Line Mechanical LiDAR

C32/32W Wide-Angle Mechanical LiDAR

## 19 **FAST SCANNING LIDAR**

---

HS Series Fast Scanning LiDAR

## 21 **LONG-RANGE LIDAR**

---

MS03 Long-Range LiDAR

LS30MVA Long-Range Bridge Collision Avoidance LiDAR System

## 23 **2D LIDAR**

---

W Series Obstacle Avoidance LiDAR

N301/401 2D Navigation LiDAR

M10, N10 2D LiDAR

LS01B 360° Triangle LiDAR

## 28 **OTHERS**

---

LS40 Phase Method Fixed-point Ranging Laser Sensor

## 29 **LIDAR INDUSTRY APPLICATION SOLUTIONS**

---

UAV 3D Modeling System

Flying Car Obstacle Avoidance

V2X Roadside Perception System

High-way ETC Activation System

Lidar 3D SLAM AMR SyStem

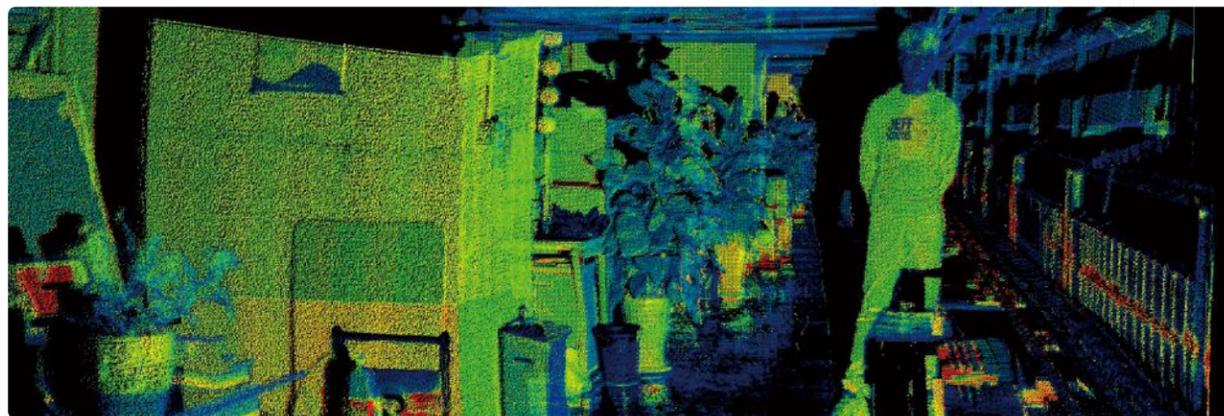
Railway Intrudment Inspection System

Bridge Anti-collision Intelligent Alert System



# AUTO-GRADE HYBRID SOLID-STATE LIDAR

## LS SERIES 1550nm



**1550**nm  
Fiber Laser

**500**m  
Range Detection

**6,400,000**pts/sec  
Data Point Generating Rate

**±3**cm  
Range Accuracy

**LS128S1 | LS256S1 | LS512S1**

<b>Laser</b>	Wavelength	1550nm	
	Laser Class	Class I (IEC-60825)	
<b>SPEC</b>	Channels	128   256   512	
	Detection Method	TOF	
	Detection Range	250m@10% (Max500m)	
	Range Accuracy	±3cm	
<b>FOV</b>	Horizontal	120°	
	Vertical	25° (-12.5°~12.5°)	
<b>Angular Resolution</b>	Horizontal	0.09°	
	Vertical	0.2°   0.1°   0.05°	
	FPS	10Hz	
<b>Point Cloud Export</b>	Echo Times	1~2	
	Data Point Generating Rate (pts/sec)	1,600,000   3,200,000   6,400,000	
	Communication Interface	Automotive Ethernet	
	Time Synchronization	gPTP	
<b>Electric</b>	Input Voltage	9V~36V DC	
	Power Consumption	40W	
<b>Environment</b>	Anti-interference	Laser Code	
	AUTOSAR	Support (A) / Not support (I)	
	IP Grade	IP6K9K	
	Operating Temperature	-45°C~85°C	
	Vibration Test	5Hz-2000Hz, 3G rms	
	Shock Test	500m/sec <sup>2</sup> , Lasting for 11ms	
<b>Machine</b>	Weight	1.5kg	
	Dimensions (LxWxH)	298x149x45 mm	



# AUTO-GRADE HYBRID SOLID-STATE LIDAR

## CX128S1 CH128S1



Mini Size



Perfectly Fit Car



Long Range

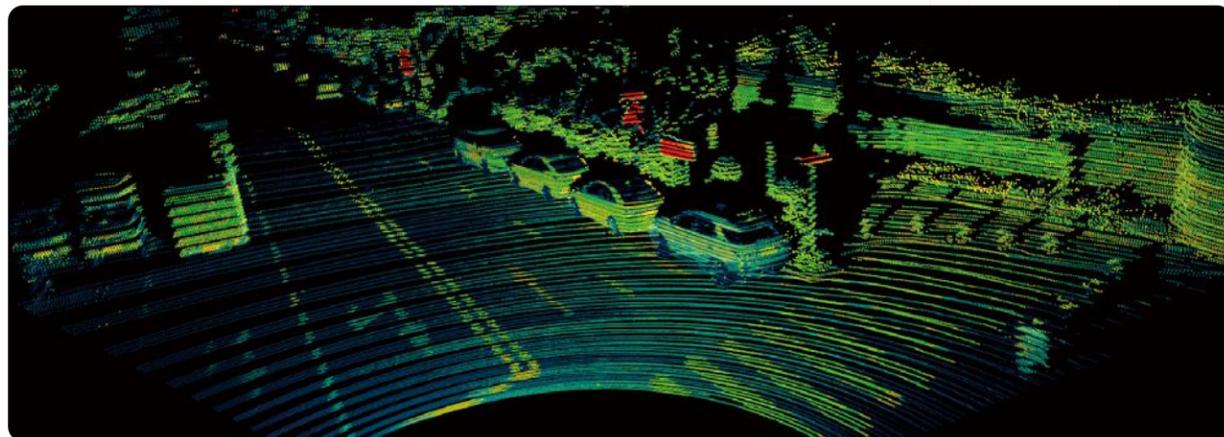
### CX128S1 | CH128S1

<b>Laser</b>	Wavelength	905nm
	Laser Class	Class I (IEC-60825)
<b>SPEC</b>	Channels	128
	Detection Method	TOF
	Detection Range	180m@10%   200m (160m@10%)
	Range Accuracy	±3cm
<b>FOV</b>	Horizontal	120°
	Vertical	25°(-12.5°~12.5°)
<b>Angular Resolution</b>	Horizontal	0.1°@10Hz   0.2°@10Hz
	Vertical	0.2°   0.125°@ROI, 0.25°@Non R
	FPS	10 Hz / 20   H5 Hz / 10 Hz / 20 Hzz
<b>Export</b>	Data Point Generating Rate (pts/sec)	1,560,000   760,000
	Communication Interface	Automotive Ethernet   Automotive Ethernet, Industrial Ethernet
<b>Electric</b>	Input Voltage	9V~36V DC
	Power Consumption	18W   15W
<b>Environment</b>	Anti-interference	Laser Code
	AUTOSAR	Support (A) / Not support (I)
	IP Grade	IP6K9K
	Operating Temperature	-40°C~85°C
	Vibration Test	5Hz-2000Hz, 3G rms
	Shock Test	500m/sec <sup>2</sup> , Lasting for 11ms
<b>Machine</b>	Weight	* 1kg
	Dimensions (LxWxH)	140x100x45 mm   118x90x75 mm



# AUTO-GRADE HYBRID SOLID-STATE LIDAR

# CH128X1



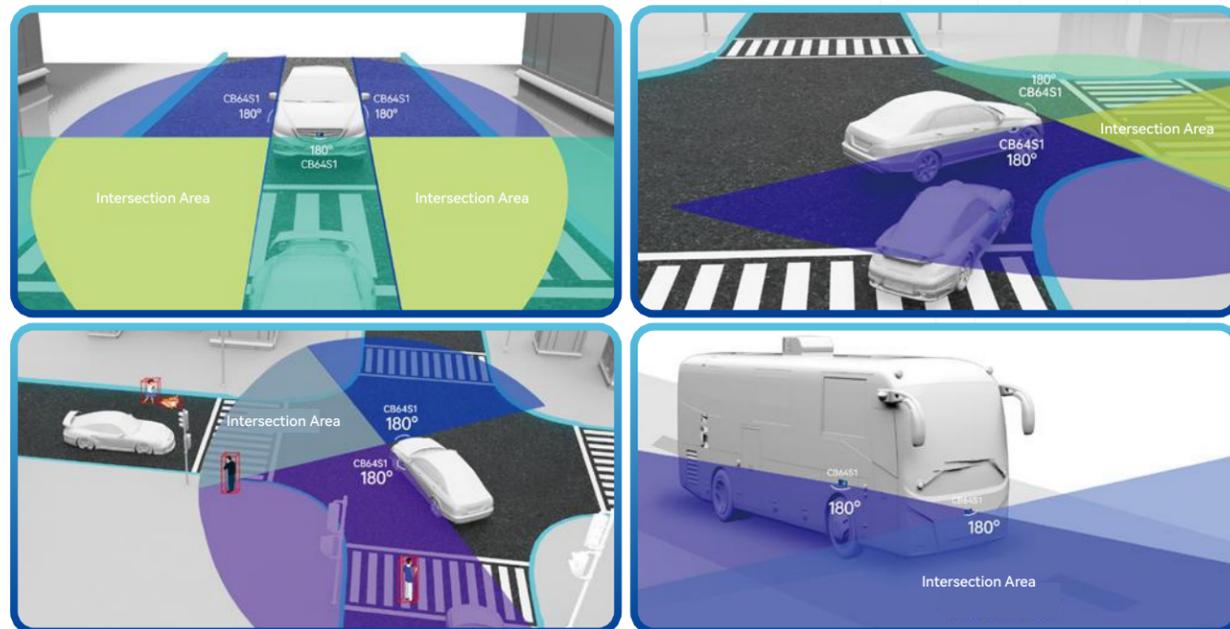
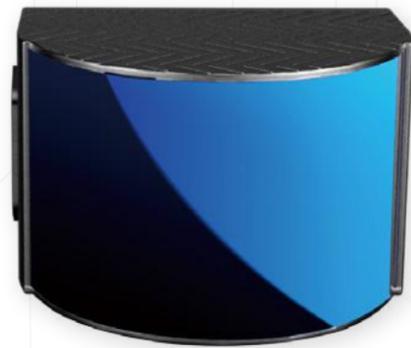
## CH128X1

<b>Laser</b>	Wavelength	905nm
	Laser Class	Class I (IEC-60825)
<b>SPEC</b>	Channels	128
	Detection Method	TOF
	Detection Range	200m (160m@10%)
	Range Accuracy	±3cm
<b>FOV</b>	Horizontal	120°
	Vertical	25°(-18°~7°)
<b>Angular Resolution</b>	Horizontal	0.2°@10Hz
	Vertical	0.125°@ROI, 0.25°@Non ROI
	FPS	5 Hz / 10 Hz / 20 Hz
<b>Export</b>	Data Point Generating Rate (pts/sec)	760,000
	Communication Interface	Automotive Ethernet、Industrial Ethernet
<b>Electric</b>	Input Voltage	9V~36V DC
	Power Consumption	15W
<b>Environment</b>	Anti-interference	Laser Code
	AUTOSAR	Support (A) / Not support (I)
	IP Grade	IP6K9K
	Operating Temperature	-40°C~85°C
	Vibration Test	5Hz-2000Hz, 3G rms
	Shock Test	500m/sec <sup>2</sup> , Lasting for 11ms
<b>Machine</b>	Weight	1kg
	Dimensions (LxWxH)	118x90x75 mm



# BLIND SPOT DETECTION LIDAR

# CB64S1



## CB64S1

<b>Laser</b>	Wavelength	905nm
	Laser Class	Class I (IEC-60825)
<b>SPEC</b>	Channels	64
	Detection Method	TOF
	Detection Range	100m(45m@10%)
	Range Accuracy	±3cm
<b>FOV</b>	Horizontal	180°
	Vertical	40°(-25°~15°)
<b>Angular Resolution</b>	Horizontal	0.12°:10Hz / 0.16°:10Hz / 0.24°:10Hz / 0.36°:10Hz
	Vertical	0.63°
	FPS	10Hz、20Hz
<b>Export</b>	Data Point Generating Rate (pts/sec)	1,010,000   760,000   500,000   330,000
	Communication Interface	Automotive Ethernet、Industrial Ethernet
<b>Electric</b>	Input Voltage	9V~36V DC
	Power Consumption	15W
<b>Environment</b>	Anti-interference	Laser Code
	AUTOSAR	Support (A) / Not support (I)
	IP Grade	IP6K9K
	Operating Temperature	-40°C~85°C
	Storage Temperature	-40°C~105°C
	Vibration Test	5Hz-2000Hz, 3G rms
	Shock Test	500m/sec <sup>2</sup> , Lasting for 11ms
<b>Machine</b>	Weight	1kg
	Dimensions (LxWxH)	116x90x76 mm

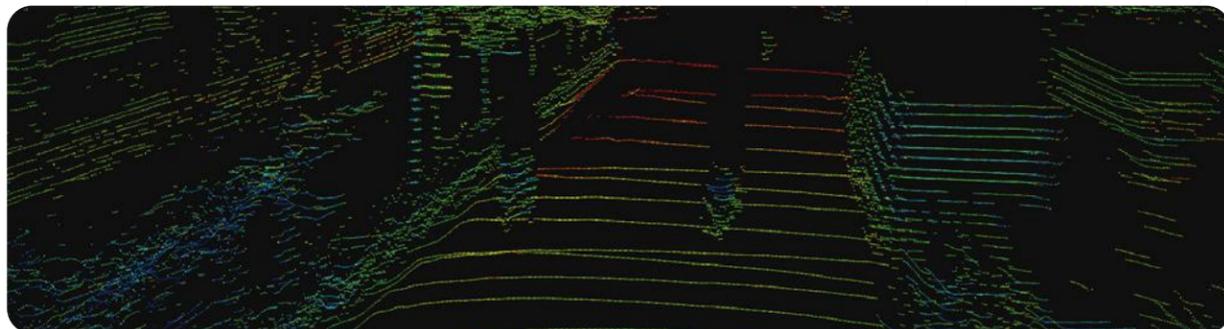


# AUTO-GRADE HYBRID SOLID-STATE LIDAR

## CH32/16



- Long detection range, high accuracy and high angular resolution
- Standard design, stable structure, lower power consumption
- Easier mass production, cost-effective



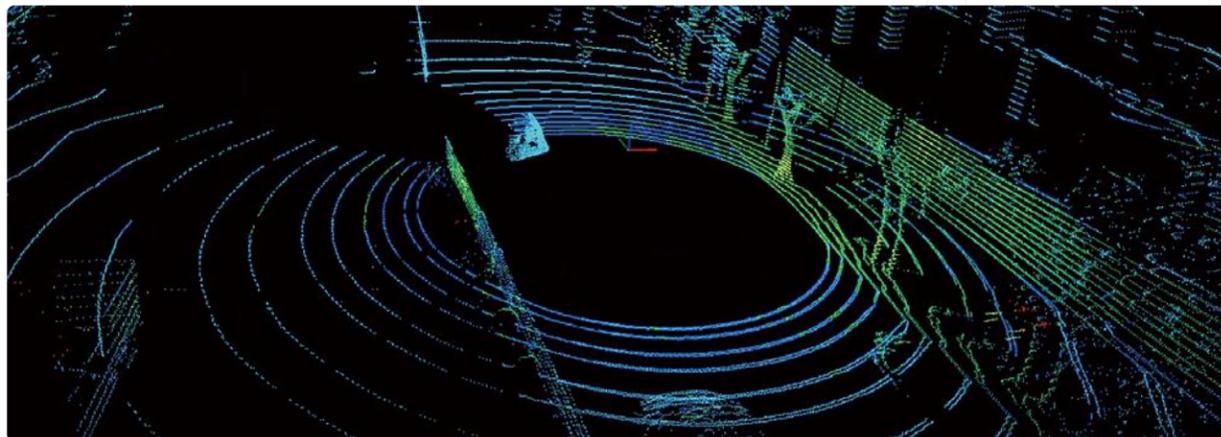
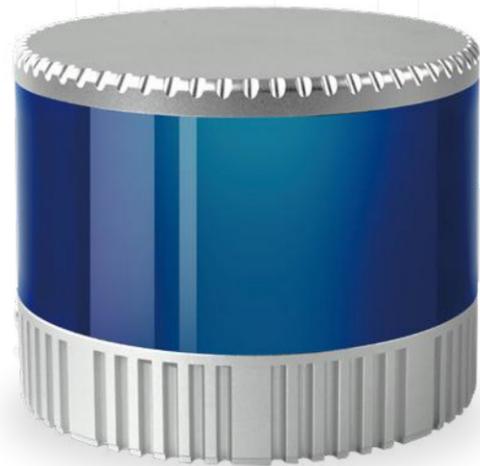
### CH32A | CH32B | CH16

<b>Laser</b>	Wavelength	905nm	
	Laser Class	Class I (IEC-60825)	
<b>SPEC</b>	Channels	32	16
	Detection Method	TOF	
	Detection Range	100m / 150m	
	Range Accuracy	±3cm	
<b>FOV</b>	Horizontal	120°	
	Vertical	21°(-14°~7°)	11.25°(-6.67°~4.58°)   6°(-4°~2°)
<b>Angular Resolution</b>	Horizontal	5Hz:0.045° / 10Hz:0.09° / 20Hz:0.18°	
	Vertical	0.33°(Nonlinear Distribution)	
	FPS	5Hz / 10Hz / 20Hz	
<b>Export</b>	Data Point Generating Rate (pts/sec)	Single Echo	426,000   213,000
		Dual Echo	852,000   426,000
	Communication Interface	Industrial Ethernet	
<b>Electric</b>	Input Voltage	9V~36V DC	
	Power Consumption	10W	9W
<b>Environment</b>	IP Grade	IP67	
	Operating Temperature	-20°C~65°C	
	Vibration Test	5Hz-2000Hz, 3G rms	
	Shock Test	500m/sec <sup>2</sup> , Lasting for 11ms	
<b>Machine</b>	Weight	1.5kg	
	Dimensions (LxWxH)	155x107.5x90 mm	



# MULTI-LINE MECHANICAL LIDAR

## C16



### C16

<b>Laser</b>	Wavelength	905nm
	Laser Class	Class I (IEC-60825)
<b>SPEC</b>	Channels	16
	Detection Method	TOF
	Detection Range	70m / 120m / 150m
	Range Accuracy	±3cm
<b>FOV</b>	Horizontal	360°
	Vertical	30°(-15°~15°)
<b>Angular Resolution</b>	Horizontal	5Hz:0.09° / 10Hz:0.18° / 20Hz:0.36°
	Vertical	2°
	FPS	5Hz / 10Hz / 20Hz
<b>Export</b>	Single Echo (pts/sec)	320,000
	Dual Echo (pts/sec)	640,000
	Communication Interface	Industrial Ethernet
	Source of Time	GPS
<b>Electric</b>	Input Voltage	9V~36V DC
<b>Environment</b>	IP Grade	IP67
	Operating Temperature	-20°C~60°C
	Vibration Test	5Hz-2000Hz, 3G rms
	Shock Test	500m/sec <sup>2</sup> , Lasting for 11ms
<b>Machine</b>	Weight	1050g
	Dimensions (LxWxH)	Φ102x77.9 mm



# EXPLOSION-PROOF

# C16E



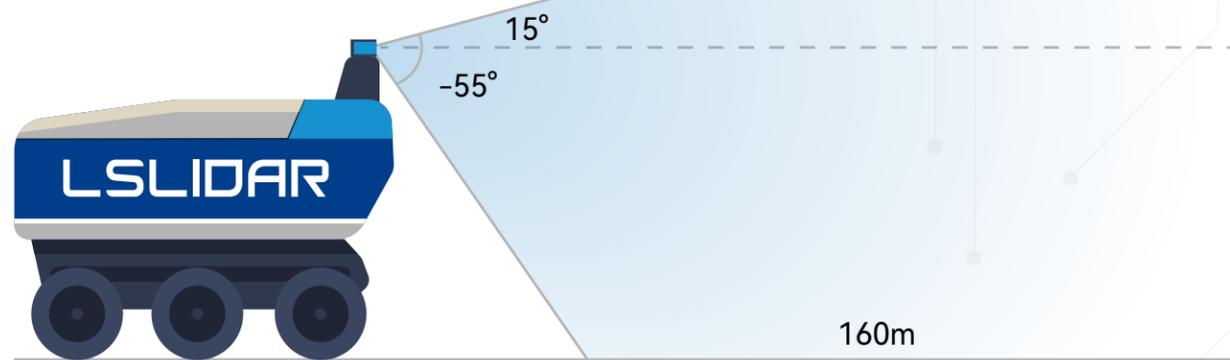
## C16E

<b>Laser</b>	Wavelength	905nm
	Laser Class	Class I (IEC-60825)
<b>SPEC</b>	Channels	16
	Detection Method	TOF
	Detection Range	100m(50m@10%)
	Range Accuracy	±3cm
<b>FOV</b>	Horizontal	360°
	Vertical	30°(-15°~15°)
<b>Angular Resolution</b>	Horizontal	5Hz:0.09° / 10Hz:0.18° / 20Hz:0.36°
	Vertical	2°
	FPS	5Hz / 10Hz / 20Hz
<b>Export</b>	Single Echo (pts/sec)	320,000
	Dual Echo (pts/sec)	640,000
	Communication Interface	Industrial Ethernet
	Source of Time	GPS
<b>Electric</b>	Input Voltage	9V~36V DC
<b>Environment</b>	IP Grade	IP67
	Operating Temperature	-20°C~60°C
	Vibration Test	5Hz-2000Hz, 3G rms
	Shock Test	500m/sec <sup>2</sup> , Lasting for 11ms
<b>Machine</b>	Weight	1500g
	Dimensions (LxWxH)	Φ176x100 mm



# WIDE-ANGLE MECHANICAL LIDAR

## C32/C32W



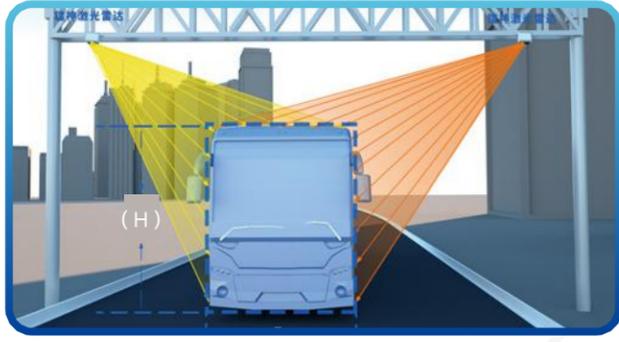
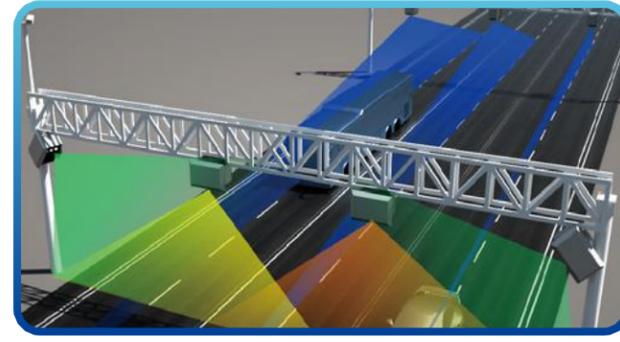
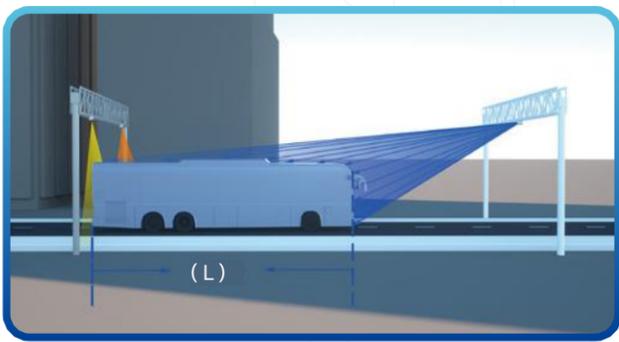
**C32 | C32W**

<b>Laser</b>	Wavelength	905nm
	Laser Class	Class I (IEC-60825)
<b>SPEC</b>	Channels	32
	Detection Method	TOF
	Detection Range	70m / 120m / 150m   160m
	Range Accuracy	±3cm
<b>FOV</b>	Horizontal	360°
	Vertical	31°(-16°~15°)   70°(-55°~15°)
<b>Angular Resolution</b>	Horizontal	5Hz:0.09° / 10Hz:0.18° / 20Hz:0.36°
	Vertical	1°   Min 1.33°
	FPS	5Hz / 10Hz / 20Hz
<b>Export</b>	Single Echo (pts/sec)	600,000   300,000
	Dual Echo (pts/sec)	1,200,000   *
	Communication Interface	Industrial Ethernet
	Source of Time	GPS   *
<b>Electric</b>	Input Voltage	9V~36V DC
	IP Grade	IP67
<b>Environment</b>	Operating Temperature	-20°C~60°C
	Vibration Test	5Hz-2000Hz, 3G rms
	Shock Test	500m/sec <sup>2</sup> , Lasting for 11ms
<b>Machine</b>	Weight	1050gg   ≤1500g
	Dimensions (LxWxH)	Φ102x77.9 mm   Φ102x105 mm



# FAST SCANNING LIDAR

# HS SERIES



## HS1

<b>Laser</b>	Wavelength	905nm
	Laser Class	Class I (IEC-60825)
<b>SPEC</b>	Channels	1
	Detection Method	TOF
	Detection Range	100m
	Range Accuracy	±2cm
<b>FOV Angular Resolution</b>	Horizontal	120°
	Horizontal	40Hz:0.09° / 80Hz: 0.18° / 120Hz:0.27° / 160Hz:0.36°
	FPS	40Hz / 80Hz / 120Hz / 160Hz
<b>Export</b>	Data Point Generating Rate (pts/sec)	53,000
	Communication Interface	Industrial Ethernet
<b>Electric</b>	Input Voltage	9V~36V DC
<b>Environment</b>	IP Grade	IP67
	Operating Temperature	-20°C~65°C
	Vibration Test	5Hz-2000Hz, 3G rms
	Shock Test	500m/sec <sup>2</sup> , Lasting for 11ms
<b>Machine</b>	Weight	1600g
	Dimensions (LxWxH)	155x107.5x90 mm



# LONG-RANGE LIDAR

# MS03



**High Frequency  
Recombination**



**High Accuracy**



**Long Range**



**High Speed  
Scanning**

## MS03

<b>Laser</b>	Wavelength	1550nm
	Laser Class	Class I (IEC-60825)
<b>SPEC</b>	Channels	4
	Detection Method	TOF
	Detection Range	Max 2000m
	Range Accuracy	±2cm
	Horizontal FOV	120°
<b>Export</b>	Echo Times	1~3
	Communication Interface	Industrial Ethernet
	GNSS Port	TTL Synchronization Pulse
<b>Electric</b>	Input Voltage	14V~36V DC
<b>Environment</b>	IP Grade	IP67
	Operating Temperature	-20°C~60°C
	Storage Temperature	-40°C~85°C
<b>Machine</b>	Weight	3kg
	Dimensions (LxWxH)	230x120x106 mm

Detection Range	2000m	1000m	500m	300m	200m
Angular Resolution	0.096°: 10Hz 0.192°: 20Hz	0.048°: 10Hz 0.096°: 20Hz	0.024°: 10Hz 0.048°: 20Hz	0.014°: 10Hz 0.028°: 20Hz	0.01°: 10Hz 0.02°: 20Hz
Laser Frequenc	75kHz	150kHz	300kHz	500kHz	750kHz
Data Point Generating Rate(pts/sec)	50,000	100,000	200,000	333,000	500,000



# LONG-RANGE BRIDGE COLLISION AVOIDANCE LIDAR SYSTEM

# LS30MVA



Self-regulation



Long Range Detection



Visualization

## LS30MVA

<b>Laser</b>	Wavelength	1550nm
<b>SPEC</b>	Max Range	2000m
	Min Range	10m
	Range Accuracy	±15cm
<b>FOV</b>	Horizontal	0.2°@2Hz
	Vertical	0.075°@2Hz
<b>Export</b>	Data Point Generating Rate (pts/sec)	1,000
	Accuracy of Laser Pitch Angle	0.01°
	Communication Interface	Industrial Ethernet
<b>Electric</b>	Input Voltage	AC/170-264V DC
	Power Consumption	50W(Max)
<b>Environment</b>	IP Grade	IP66(Customizable)
	Operating Temperature	-10°C~60°C
	Vibration Test	Able to withstand vibration shock with acceleration of 0.73 G
<b>Machine</b>	Weight	17.5kg
	Dimensions (LxWxH)	350x487x272.5 mm

LS30MVA long-range visually adjustable laser ranging system is composed of a long-distance fixed-point rangefinder independently developed by LeiShen Intelligent, an angular displacement platform, and a camera. When the rangefinder is displaced in the pitch direction due to various reasons, the system will automatically sense it and adjust the emitted laser of the rangefinder to the horizontal angle. The optical axis of the camera is parallel to the laser direction. Therefore, when the rangefinder detects a target ahead, the target situation can be directly confirmed.

LSLIDAR

2D LIDAR

W SERIES N301



The AGV SLAM autonomous navigation system of LeiShen Intelligent is a highly integrated automatic transportation scheduling system, which meets the transportation scheduling needs of complex scenarios such as factory workshops and express logistics, and realizes unsupervised AGV autonomous navigation, obstacle avoidance and scheduling control. It aims at solving the problem of inefficient and repetitive transportation work in large scenarios and improving enterprise work efficiency

NAVIGATION & OBSTACLE AVOIDANCE LIDAR

W Series

N301/401

<b>Wavelength</b>	905nm	905nm
<b>Laser Class</b>	Class I (IEC-60825)	Class I (IEC-60825)
<b>Output Data</b>	Switching Value、Data Value / Switching Value	Distance、Angle、High Anti-recognition(N401)
<b>Detection Range</b>	5m/10m/20m/30m	10m/30m
<b>Range Accuracy</b>	±3cm	±3cm
<b>FOV</b>	270°	360°
<b>Scanning Rate</b>	10Hz	10Hz / 20Hz
<b>Data Point Generating Rate (pts/sec)</b>	20,000	20,000
<b>Angular Resolution</b>	0.18°	20Hz:0.36° / 10Hz:0.18°
<b>Input Voltage</b>	9V~28V DC	9V~36V DC
<b>Operating Temperature</b>	-20°C~60°C	-20°C~60°C
<b>Communication Interface</b>	NPN、PNP interface	Industrial Ethernet
<b>Shock Test</b>	500m/sec <sup>2</sup> ,Lasting for 11ms	500m/sec <sup>2</sup> ,Lasting for 11ms
<b>Vibration Test</b>	5Hz-2000Hz,3G rms	5Hz-2000Hz,3G rms
<b>Weight</b>	397g	406g
<b>Dimensions (LxWxH)</b>	Φ80x79.1 mm	Φ80x79.1 mm
<b>Others</b>	IP Grade: IP67	IP Grade: IP67

Type of Detection Area: Associated / Independent



Autonomous Navigation



Work for Various Scenario



Improve Efficiency

## NAVIGATION & OBSTACLE AVOIDANCE LIDAR



**M10**



**N10**

<b>Wavelength</b>	905nm	905nm
<b>Laser Class</b>	Class I (IEC-60825)	Class I (IEC-60825)
<b>Data Content</b>	Distance, Angle	Distance, Angle, Intensity
<b>Detection Distance</b>	10m@10%	0~12m@70%
<b>Measurement Accuracy</b>	±3cm	±3cm(0~6m);±4.5cm(≥6m)
<b>Scan Angle</b>	360°	360°
<b>Scanning Frequency</b>	10Hz	10Hz
<b>Data Point Generating Rate (pts/sec)</b>	10,000	4,500
<b>Angular Resolution</b>	0.36°	0.8°
<b>Input Voltage</b>	4.75V~5.25V DC	4.75V~5.25V DC
<b>Operating Temperature</b>	-10°C~ 50°C	-10°C~40°C
<b>Communication Interface</b>	Serial Port, Network Port	Serial Port
<b>Vibration Test</b>	500m/sec <sup>2</sup> , Lasting for 11ms	*
<b>Shock Test</b>	5Hz-2000Hz, 3G rms	*
<b>Weight</b>	200g	80g
<b>Dimensions (LxWxH)</b>	Φ79.3x39 mm	Φ52x36.1 mm
<b>Others</b>		Anti-light Environment: 30K Lux

## 360° TRIANGLE LIDAR



**LS01B**

LS01 LiDAR is a two-dimensional detection and ranging product independently developed by LeiShen Intelligent. Adopting the triangulation measurement method, it performs 360° two-dimensional scanning within the detection range to generate plane point cloud map information of the surroundings.

- Using the principle of triangulation, cost-effective
- The maximum acceptable ambient light intensity is 20000 lux
- Small size, low power consumption, long life, safe to use

<b>Wavelength</b>	10Hz
<b>Laser Class</b>	8m / 12m / 16m
<b>Range Accuracy</b>	When the measuring object is within 1m < 18mm Within a range of 1m < 2.5% of the actual distance
<b>Data Point Generating Rate (pts/sec)</b>	14,400
<b>FOV</b>	360°
<b>Angular Resolution</b>	0.25°
<b>Ambient Light Intensity</b>	20000 lux
<b>Input Voltage</b>	4.75V~5.25V DC
<b>Communication Interface</b>	UART serial port
<b>Weight</b>	180g
<b>Dimensions (LxWxH)</b>	Φ75.54x40.37 mm

## PHASE METHOD FIXED-POINT RANGING LASER SENSOR



**LS40**

LS40 is a ranging laser sensor with high accuracy and frequency. Adopting phase method for ranging, it is applicable to short-mid range measurement with high precision and temperature stability.

<b>Wavelength</b>	635 / 780 / 792nm
<b>Laser Class</b>	Class IIIA
<b>Detection Range</b>	10m / 16m / 20m (The reflectivity is 30%, and the center point of the product is zero)
<b>Range Accuracy</b>	±1cm(0.1~10 m), ±2cm( 10~20 m)
<b>Data Point Generating Rate (pts/sec)</b>	4,000
<b>Ranging resolution</b>	±2mm(Sometimes it will vary with the actual detection distance)
<b>Black And White Gap</b>	±3mm
<b>Temperature Drift</b>	±3mm
<b>Light Condition</b>	Indoor operation, not strong sunlight
<b>Operating Temperature</b>	-20°C~50°C
<b>Vibration Test</b>	500m/sec <sup>2</sup> , Lasting for 11ms
<b>Shock Test</b>	5Hz-2000Hz, 3G rms
<b>IP Grade</b>	IP67
<b>Communication Interface</b>	TTL, RS422
<b>Input Voltage</b>	6V~24V DC
<b>Weight</b>	200g
<b>Dimensions (LxWxH)</b>	65x64x62 mm



# UAV 3D MODELING SYSTEM

LIDAR INDUSTRY APPLICATION SOLUTIONS

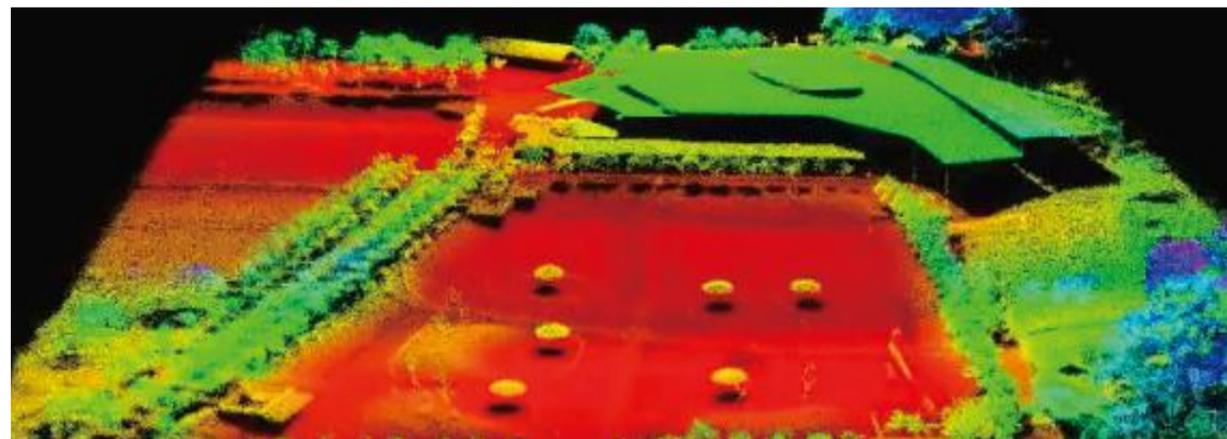
## PROPOSAL

The system is a LiDAR's point cloud data acquisition system, which is independently developed by LSLiDAR for geographic information collection and fast acquisition of 3D environment modelling, who response the request of forestry investigation, topographic mapping, smart city, power inspection, emergency disaster investigation and other surveying and mapping applications.



Falcon I

Falcon II

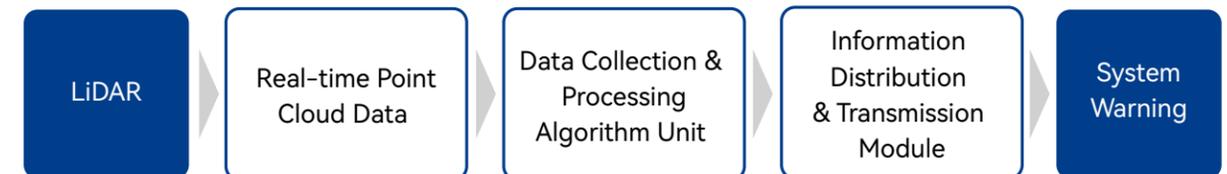


# FLYING CAR OBSTACLE AVOIDANCE

LIDAR INDUSTRY APPLICATION SOLUTIONS

## PROPOSAL

As the core sensor of this solution, LiDAR can quickly, accurately and massively obtain the position point cloud data of obstacles that appear in a certain protective area around the flying car. The size/volume and location information of obstacles are known by pre-processing the point cloud data, and the potential danger will be reported to the driver or ADAS in time through a warning system for effective obstacle avoidance.



Application Solution to Flying Cars(Maximum Design Speed:120km/h~200km/h)



MS03

(Long-distance Obstacle Detection)



LS128S1

(Close-range Obstacle Avoidance & Blind Spot Detection)



LS70B

(Monitor Terrain Clearance)

Application Solution to Flying Cars(Maximum Design Speed:below 120km/h)



CH128X1

(Long-distance Obstacle Detection)



CB64S1

(Close-range Obstacle Avoidance & Blind Spot Detection)



LS70B

(Monitor Terrain Clearance)



# V2X ROADSIDE PERCEPTION SYSTEM

LIDAR INDUSTRY APPLICATION SOLUTIONS

## PROPOSAL

LSLiDAR V2X Roadside Perception System is based on the data fusion of LiDAR and Camera, via leading neural networks algorithms to realize the precise localization and identification of the vehicles, non-motor vehicles, as well as pedestrians on the road, then by live transmission to traffic control authority and the permitted vehicles, which can realize early warning of road conditions and dangers, improve the safety and redundancy of autonomous driving, and bring a safe, efficient, and environmentally friendly road traffic system.

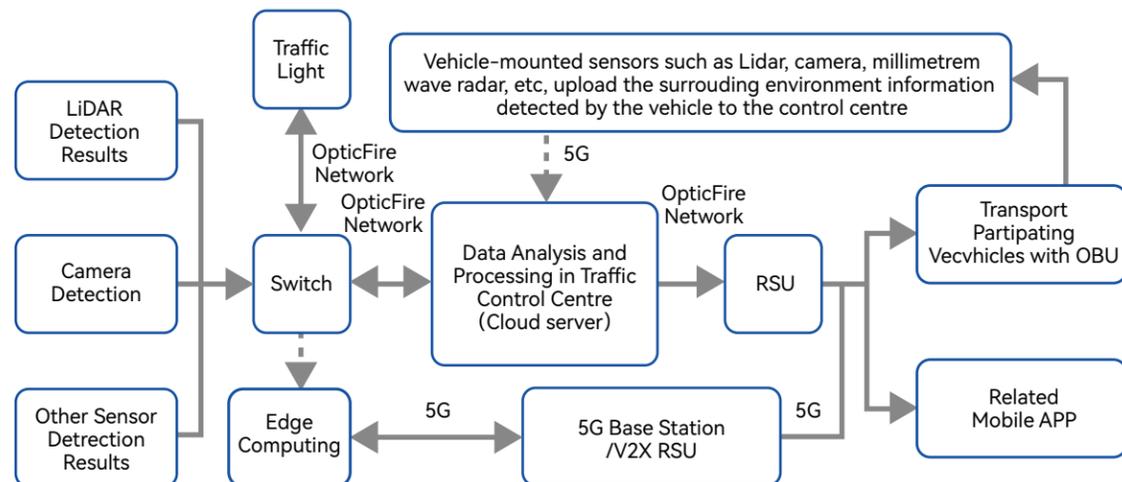


C32/C16



CH64/32/16

## SYSTEM FRAMEWORK



## CASE

Tianjin



Xi'an



Inner Mongolia



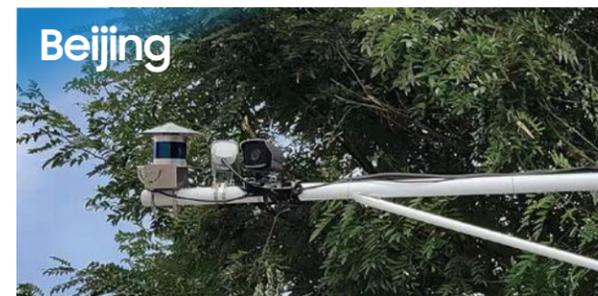
Nanjing



Guangzhou



Beijing



Shenzhen



The different landing projects were deployed in cities such as Beijing, Shanghai, Guangzhou, Shenzhen, Zhengzhou, Chongqing, Xian, Tianjin, Wuhan, Suzhou, Xuchang, Changzhou etc., which were covered on the traffic lights, accident blackspot, blind zones, the intersection of roads, the bridges and tunnels, the zones nearby the school etc.



# HIGH-WAY ETC ACTIVATION SYSTEM

LIDAR INDUSTRY APPLICATION SOLUTIONS

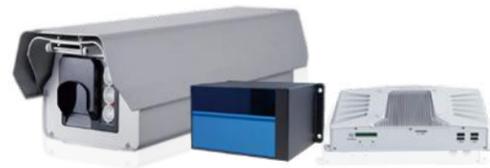
## PROPOSAL

The non-contact fixed ETC trigger system independently developed by LeiShen Intelligent adopts the most advanced laser scanning technology to accurately detect the arrival of vehicles. With excellent performance in detection accuracy, anti-interference and accuracy rate, as well as stable working ability under all-weather conditions, this safe and reliable system is suitable for ETC-triggered camera capture on highways.

LiDAR products required for high-speed ETC triggering



LeiShen CX series LiDAR fusion camera



LeiShen CH series LiDAR fusion camera

## ADVANTAGE

- 1 The system uses state-of-the-art laser scanning technology to accurately identify the arrival of vehicles. The vehicle capture rate of the camera is as high as 99%, and the license plate recognition rate is over 98%. (When the camera is properly focused and the license plate is not defaced or blocked.)
- 2 With stable performance under all-weather conditions and high measurement accuracy, the system is able to output the distance, orientation, size and other information of the vehicle
- 3 The same vehicle can be captured multiple times (3-4 times recommended) to ensure the accuracy of the image information.
- 4 It can be used for the detection of complex road conditions, such as large traffic flow, multi-vehicle parallelism, and cross-track driving.

## CASE

When a moving vehicle enters the set capture point, the LiDAR trigger system can send a trigger signal to instruct the corresponding camera to capture. According to the set number of snapshots, a corresponding number of snapshot images of the vehicle will be obtained. At the same time, one device in the system can detect multiple lanes, and the detection of each lane is independent and does not interfere with each other.





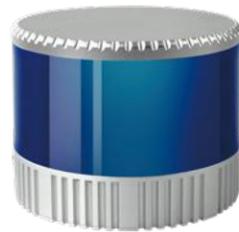
# LIDAR 3D SLAM AMR SYSTEM

LIDAR INDUSTRY APPLICATION SOLUTIONS



## PROPOSAL

LeiShen intelligent's LiDAR 3D SLAM AMR system solution is designed for automatic material handling operation scenarios such as airports, ports, factories, and logistics centers. It consists of a world-leading high-precision, high-flexibility, and high-stability AMR ontology system with an intelligent multi-machine scheduling system. Each AMR has a high-precision 360° three-dimensional environment perception capability, and its trackless navigation function can flexibly respond to complex indoor and outdoor environments. The flexibility and automation of the LiDAR 3D SLAM AMR system are far ahead of the second generation of reflector navigation technology solution.



C32/16



N301



Automated Guide & Navigation



AI Pallet Identification & Location



Sensors Integration & Motion Control



Automated Load & Unload



Intelligent Dispatching System



Multilayer Safety Protection



Energy Indicate & Auto Charge

## ADVANTAGE

### LEADING SENSIBILITIES OF ENVIRONMENT

Based on 3D SLAM algorithm, integrate with multi-lines LiDAR, anti-collision LiDAR, Camera, IMU to create stable, high accuracy mapping and locating results, suitable for 99% outdoor & indoor environment.

### HIGH PERFORMANCE SOLUTION

Apply 3D SLAM algorithm, make a high accuracy location and navigation in complicated environment, build-in self checking and protection strategy. Working with AI dispatching system and WMS, make a high efficiency automated storage management.

### HIGH EFFICIENCY MULTI DISPATCHING SYSTEM

No need other accessories, AMR build map by itself, one map can be shared with all other AMRs, flexible adjust for different scenarios, short implement time for multi AMRs.

### COST EFFECTIVE

3D SLAM turn key solutions costs much lower than previous standard AMRs solution, make high efficiency and low costs happen together.





# RAILWAY INTRUDMENT INSPECTION SYSTEM

LIDAR INDUSTRY APPLICATION SOLUTIONS

## PROPOSAL

LeiShen Intelligent has been empowering industrial upgrading with high-end, stable and reliable LiDAR environment perception technology. In response to the intelligent and automated development needs of rail transit, LeiShen Intelligent has independently developed a number of LiDAR rail transit application solutions.



CH128X1



Stable And Reliable



Remote Detection



Real-time Warning

## INSTALLATION SCHEME



Intelligent Monitoring Solution for Foreign Body Intrusion to Medium and Low Speed Train Tracks



Intelligent Monitoring Solution for Foreign Body Intrusion to High Speed Train Tracks



Fixed-point Intelligent Monitoring Solution for Track Foreign Body Intrusion



Subway Screen Door Foreign Body Detection Solution (Door End)



Subway Screen Door Foreign Body Detection Solution (Car End)



Platform Anti-drop Monitoring Solution



Intelligent Monitoring Solution for Shelters in High-speed Railway Stations



Tunnel Contour Detection Solution



Railway Turnout Deformation Detection Solution



# BRIDGE ANTI-COLLISION INTELLIGENT ALERT SYSTEM

LIDAR INDUSTRY APPLICATION SOLUTIONS

## PROPOSAL

During the flood season, ship drivers can only roughly judge whether they can pass the bridge based on their experience, which leads to many accidents of ships hitting the bridge due to superelevation. This solution uses lasers to scan and monitor ultra-high targets in navigable waters. The ultra-high vessel that threatens the safety of the bridge can be found within 2 km at the farthest, the position and distance of the vessel can be known, and the alarm information can be issued in time to effectively avoid the collision between the ultra-high vessel and the bridge.



MS03



LS30MVA



Active monitoring



Ultra-far Detection



Multi-Level Pre-warning



Linkage Carmeras



Stable and Reliable

## ADVANTAGE

1. Self-developed high-end long-distance LiDAR.
2. Scan and monitor all ships in navigable waters, and flexibly set navigable areas and non-navigable areas.
3. Real-time positioning of the ship's position, multi-level pre-warning of the ship's yaw.
4. Linkage cameras to conduct video forensics of yaw vessels.

## INSTALLATION SCHEME

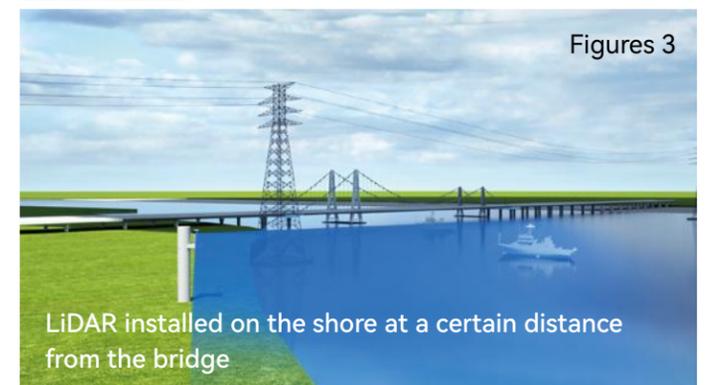
By installing the LiDAR at a specific position of the bridge (see Figures 1 and 2) or on the shore at a certain distance from the bridge (see Figure 3), the laser is used to identify whether the passing ship height exceeds a pre-set superelevation threshold. When the vessel is higher than the limit height of the bridge, the system outputs an alarm signal and releases the warning information in time - it can issue a warning to the ultra-high vessel through the tweeter and the large LED screen, and at the same time display the warning information in the monitoring hall. After receiving the warning, the maritime law enforcement department and bridge maintenance personnel will deal with the dangerous situation in a timely manner to effectively avoid the collision between the ultra-high ship and the bridge.



Figures 1



Figures 2



Figures 3