

**YDLIDAR** 激光雷达

# 国内领先的 智能传感器及解决方案提供商

A LEADING INTELLIGENT SENSOR AND SOLUTION PROVIDER



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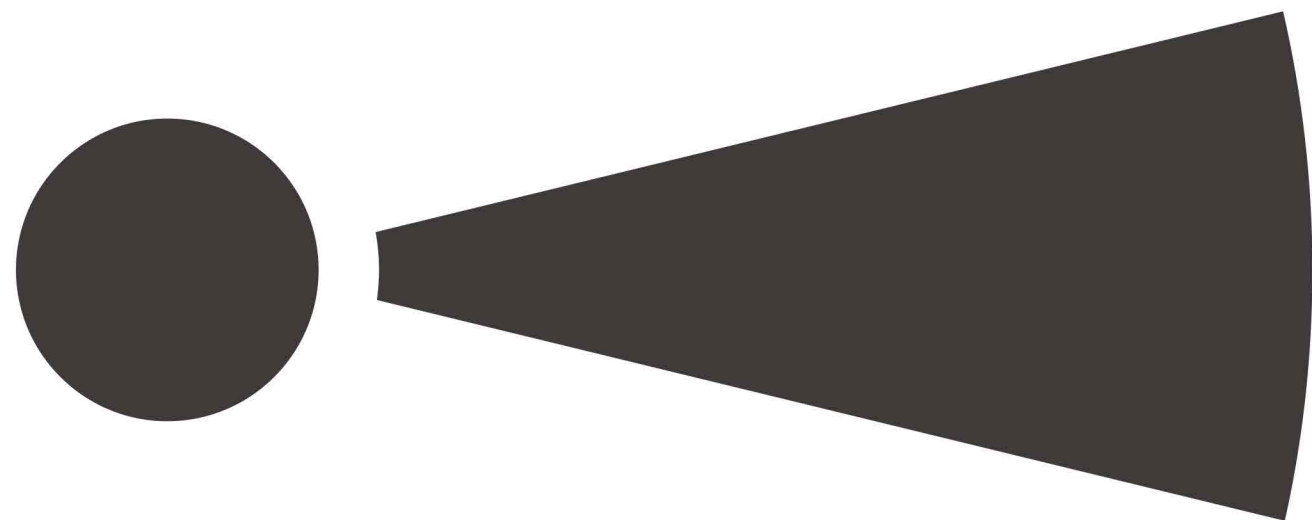
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## Company Introduction

### 企业介绍

深圳玩智商科技有限公司(简称“EAI科技”)成立于2015年,是一家专注于智能传感器及解决方案的国家高新技术企业、国家专精特新“小巨人”企业、广东省专精特新企业,旗下拥有4家全资子公司。EAI科技在深圳设立总部,在东莞设立自有智慧工厂,在武汉设立研究所,同时已与北理工光电学院成立联合实验室。

Shenzhen EAI technology co., ltd. ("EAI Technology" for short) was established in 2015. It is a national high-tech enterprise, national SPRI "Small Giant" enterprise and Guangdong SPRI Enterprise focusing on intelligent sensors and solutions,including 4 wholly-owned subsidiaries. EAI technology has set up R&D headquarter in Shenzhen, and established research institutes in Wuhan. And, the joint laboratory has been established with BEIJING INSTITUTE OF TECHNOLOGY School of Optics and Photonics.



EAI科技作为我国智能传感器发展的见证者、参与者与开拓者,经过7年的行业沉淀,已具备技术水平行业领先、规模化量产行业前列、服务系统完善健全、交付品控稳定可靠的优势,成为我国智能传感器领域的领军品牌。

As a witness, participant and pioneer of the development of smart sensors in China, EAI Technology has achieved the industry-leading technology level, the forefront of large-scale mass production, and the advantages of complete service system, stable and reliable delivery & quality control after 7 years of industry accumulation.

作为技术驱动型企业,EAI科技一直以来高度重视产品研发创新,一方面以“自研芯片+算法创新”为两翼,研制出专用芯片填补国内空白,独创皮秒级飞行时间测量、ToF光路收发同轴等技术,打破国外专利垄断,主导产品实现自主可控,性能国际先进,成功解决AI产业传感难题。现拥有超120项智能传感器和机器人技术核心知识产权专利;另一方面,EAI科技通过汇聚各方优秀人才,搭建了技术水平扎实,实践经验丰富的研发团队,并通过自有智慧工厂,引进自动化生产设备,搭建“数据中台管理系统”,以强大的智造能力为支撑,严格保障了生产工艺、品质管控及量产的高质高量。

As a technology-driven enterprise, EAI Technology has always attached great importance to product R&D and innovation. On the one hand, EAI based on "self-research chip+algorithmic innovation", EAI has developed a dedicated chip to achieve localization and has created unique technologies such as picosecond time-of-flight measurement, ToF optical path transceiver coaxial and other technologies, breaking the monopoly of foreign patents, leading products are independent and controllable, with internationally advanced performance, and successfully solve the AI industry sensing problem. To date, EAI has more than 120 patents on core intellectual property for smart sensors and robots; on the other hand, EAI Technology has R&D team with a solid technical level and rich practical experience by gathering outstanding talents from all parties, and through its own smart factories and automated production equipment, build a "data middle-end management system". EAI is supported by strong intelligent manufacturing capabilities, and strictly guarantees high quantity and high quality of production technology, quality control and mass production.

目前,EAI科技已根据不同行业的产品商业化落地需求打造了丰富多元的智能传感器产品矩阵和可持续升级的定制化解决方案,其自主品牌“YDLIDAR”涵盖了三角、ToF等多个原理品类的激光雷达产品,应用覆盖了扫地机器人、服务机器人、数字多媒体互动、工业自动化等多个领域,并在研发、工艺、品控、交付能力等维度都得到了标杆客户的大规模量产检验。2021年,EAI科技的激光雷达出货量已突破200万台,多次刷新我国消费级激光雷达的产销记录。

At present, EAI Technology has created a rich and diversified smart sensor product matrix and customized solutions with sustainable upgrade according to the product commercialization needs of different industries. Its own brand "YDLIDAR" covers multiple principle categories such as Triangle and ToF. These lidar products cover many fields such as robot vacuum cleaners, service robots, digital multimedia interaction, industrial automation, etc., and have been tested by benchmark customers for large-scale mass production in terms of R&D, process, quality control, and delivery capabilities. In 2021, EAI Technology' s lidar shipments have exceeded 2 million units, breaking Chinese consumer-grade lidar production and sales records many times.

如今,EAI科技已服务了国内外40+个国家及地区,1000+个企事业单位及院校,与云鲸、美的、三星、松下、KUKA等国内外知名品牌形成了优质合作伙伴关系,并凭借高效的产品迭代能力、丰富的产品矩阵布局及兼具性能与成本的优势,获得行业高度认可,荣获“深圳市十大关键零部件企业”、“机器人技术创新企业奖”、“深圳机器人十大快速成长企业奖”、“智能制造领域最具影响力创新企业”等多项荣誉。

Today, EAI Technology has served more than 40 countries and regions all over the world, and more than 1000 enterprises, institutions and universities. It has formed high-quality partnerships with well-known brands such as Narwal, Midea, Samsung, Panasonic, and KUKA. Relying on efficient product iteration ability, rich product matrix layout and both performance and cost advantages, it has been highly recognized by the industry and won the "Shenzhen Top Ten Key Components Enterprise", "Robot Technology Innovation Enterprise Awards", "Shenzhen Top Ten Fast-growing company award" and "The most influential innovative enterprise in the field of intelligent manufacturing" and many other honors.

未来,EAI科技将继续引领、探索、突破边界,深耕商业、工业等各垂直细分领域,持续推动技术革新与产品趋势预判,将技术创新与市场需求深度结合,践行“务实、精进、利他、合作共赢”的价值观,为人工智能产业生态圈不断赋能。

In future, EAI Technology will continue to lead, explore, and break through boundaries, deepen the business, industry and other vertical subdivisions, to promote technological innovation and product trend prediction, integrate technological innovation with market demand, to practice the values of pragmatic,diligent,altruism and win-win cooperation to empower the artificial intelligence industry ecosystem.

### 价值观 Values

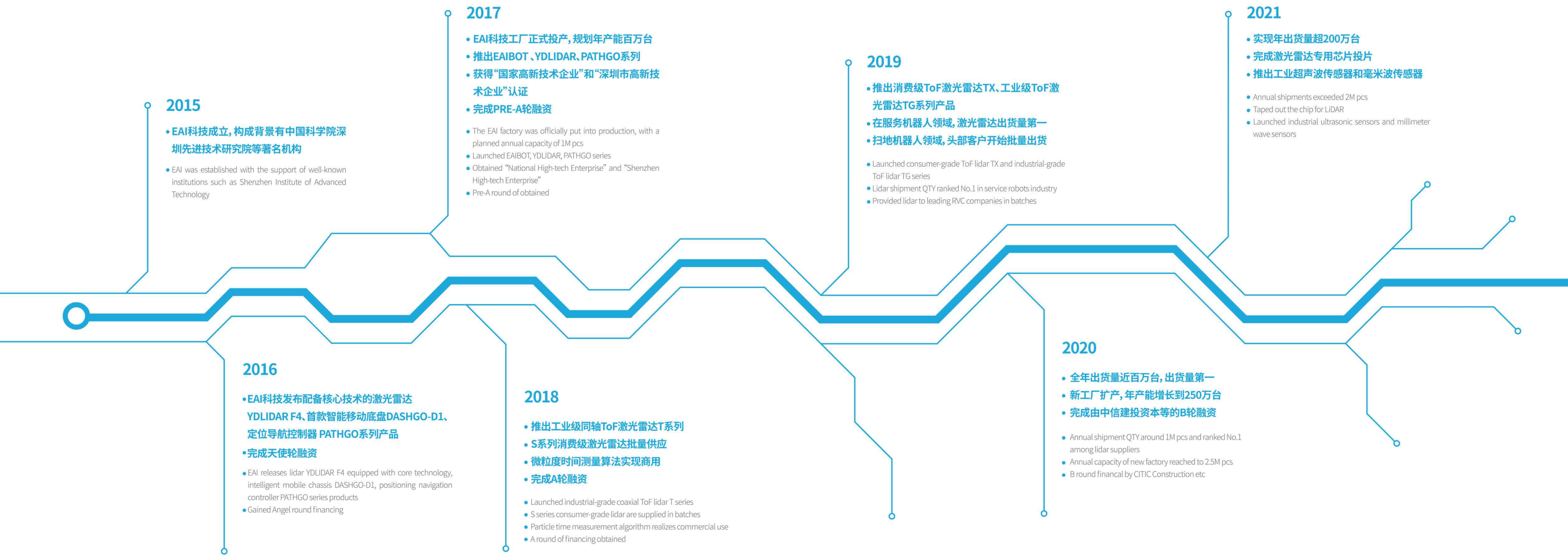
- 务实 Pragmatic
- 精进 Diligent
- 利他 Altruism
- 合作共赢 Win-win Cooperation

让机器更智能地服务于人  
Make Robots Serve People Better



# Development History

## 发展历程



# Certification And Technical Capacity

## 资质实力

### 技术领先 自研芯片

Cutting-edge technology with self-developed chip

### 自有工厂 品控保障

Self-developed factory with quality control guarantee

### 产品多元 量产前列

Diversified products with mass production advantage

### 解决方案 持续升级

Proven solutions with continuous optimization



120+ 专利  
Patents



10000+m<sup>2</sup> 智慧工厂  
Smart Factory



10+ 企业认证  
Enterprise Certifications



10+ 资质认证  
Quality Certifications

### 荣誉 Certificate Of Honor



国家高新技术企业认证  
National high-tech enterprise certification



广东省专精特新企业  
Guangdong SPRI Enterprise

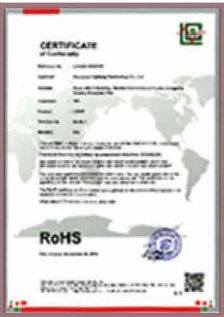


# Partners

## 合作伙伴



### 资质 Qualification



RoSH认证  
RoSH certification



FDA认证  
FDA certification



CE认证  
CE certification



智慧工厂质量管理体系  
评审ISO9001认证  
ISO9001 certification for smart factory  
quality management system



智慧工厂环境管理体系  
评审ISO14001认证  
ISO14001 certification for smart factory  
environmental management system

已服务欧洲、美洲、日本、韩国等国内外 **40+** 个国家及地区  
**1000+** 个企事业单位及院校

EAI has served more than 1000+ enterpies , institutions and colleges in 40+ countries and regions around the world such as Europe , America , Japan , South Korea , etc.



三角测距 G系列  
Triangulation G series



三角测距 X系列  
Triangulation X series



三角测距 S系列  
Triangulation S series



固态线激光雷达 GS系列  
Solid State Line LiDAR GS series



ToF TG系列  
ToF TG series



ToF TSA系列  
ToF TSA series



ToF T-mini 系列  
ToF T-mini series



超声波雷达 US系列  
Ultrasonic US series



产品技术能力领先  
Product with leading technology

EAI科技潜心专注于智能传感器及其解决方案的研发创新,以促进人工智能产品商业化落地应用为驱动,并进一步通过树立标杆案例,实现了解决方案纵横规模化复制至多种传感器及多类人工智能产品。



规模量产稳定可靠  
Stable and reliable mass production

EAI focuses on the R&D of intelligent sensors and related solutions, driven by the purpose of promoting the commercial application of artificial intelligence products.EAI has established many benchmark cases to realize the large-scale replication of solutions to a variety of sensors and a variety of artificial intelligence products.



用户痛点深入洞察  
Deep insight into customer's requirements

激光雷达是一种采用非接触激光测距技术的扫描式传感器。其通过在实际场景内进行激光扫描,产生扫描环境的平面点云地图信息,进而为智能移动设备实现导航、避障的功能。EAI科技旗下激光雷达旗舰品牌YDLIDAR,市场表现力佳,已广泛应用于消费级、商用级、工业级等应用场景。



“0”延时售后响应  
Prompt response in after-sale service

Lidar is a scanning sensor using non-contact laser ranging technology. Through laser scanning in the application scene, lidar generates plane point cloud map information of the scanned environment, and then realizes the functions of navigation and obstacle avoidance for intelligent mobile devices. YDLIDAR, the flagship brand of lidar from EAI, has wonderful market performance and has been widely used in consumer, commercial, and industrial application scenarios.



未来趋势敏锐预判  
Accurately industry forecast trends

品类 Category	三角测距 Triangulation Ranging			固态线激光雷达 Solid State Linear Lidar	ToF			超声波雷达 ultrasonic Lidar
系列 Series	G	X	S	GS	TG	TSA	T-mini	US
型号 Model	G1 / G2 / G4 G5 / G6 / G7	X2 / X2L X4	S2 S2PRO	GS2	TG15 / TG30 TG50	TSA	T-mini Pro	US5
最远量程(m) Max Range	16	10	8	0.3	50	8	12	0.06
测距频率(Hz) Ranging Frequency	9K / 5K / 9K 9K / 18K / 10K	3K / 4K / 5K	3K	7.5 - 28	20K	3K	4K	100
最高转速(Hz) Maximum Rotation Speed	12	12	8	/	12	8	12	/
扫描角度 Scanning Angle	360 °			100 °	360 °			/
最小角度分辨率 Minimum Angular Resolution	0.1 °	0.43 °	0.6	0.6	0.09 °	0.72 °	0.54 °	/
最小尺寸(mm) Minimum Size	φ63*38.5	φ60.5*47.8*100.9	φ60.5*40.8*96	立式:φ25.6*23.6*12.1 卧式:φ25.6*23.6*10.9	φ75.8*34.7	φ58.3*96*40.8	φ38.6*38.6*33.4	φ16*12
最小重量(g) Minimum Weight	140	126	110	4.2	140	94	45	1.1



# Triangulation Lidar

## 三角测距激光雷达

### G系列 G Series

YDLIDAR G系列是EAI科技自研的一系列360°扫描的二维测距激光雷达产品, 可达2cm的超高测距精度、16m的超远测距距离、测距频率最高可达18000次/s, 建图精细精准。该产品采用光磁无线融合技术, 极大地提高了激光雷达的使用寿命, 为服务机器人、工业机器人、家庭机器人、教育机器人等人工智能产品应用提供了可定制化、高性能的建图导航避障解决方案。

YDLIDAR G series is a 360°scanning two-dimensional ranging lidar product independently developed by EAI Tech. It can reach an ultra-high ranging accuracy of 2cm, an ultra-long ranging distance of 16m, and a ranging frequency of up to 18,000Hz with high precise and accurate mapping. The product adopts optical and magnetic wireless fusion technology, which greatly improves the service life of lidar, and provides customizable, high-performance and obstacle avoidance and mapping solutions for artificial intelligence product applications such as service robots, industrial robots, household robots, educational robots, etc.

#### 产品特性 Product Features

- 

**精度高、体积小、寿命长**  
High precision, small size and long life
- 

**工业级无刷电机、性能稳定**  
Industrial-grade brushless motor with stable performance
- 

**抗锐面干扰、抗强光干扰能力强**  
Strong ability to resist sharp surface interference and strong light interference
- 

**多种配置方案、可定制化**  
A variety of configuration schemes, which can be customized
- 

**光磁融合无线通信、无线供电**  
Optical and magnetic fusion wireless communication, wireless power supply
- 

**细小物体、低反材料检测能力强**  
Strong ability to detect small objects and low-reflection materials



#### 应用场景 Application

- 服务机器人建图、导航、避障**  
Service robots mapping, navigation, and obstacle avoidance
- 工业机器人建图、避障**  
Industrial robots mapping and obstacle avoidance
- 教育机器人建图、导航、避障**  
Educational robot mapping, navigation and obstacle avoidance
- 数字多媒体互动**  
Digital multimedia interaction
- 区域安防及入侵物定位**  
Regional security and intrusion localization
- 环境扫描及3D重建**  
Environmental scanning and 3D reconstruction

型号 Model	G1	G2	G4	G5	G6	G7
测距范围 Ranging Distance	0.26 - 8 m@80%	0.12 - 16m@80%	0.28 - 16m@80%	0.28 - 16m@80%	0.28 - 16m@80%	0.12 - 16m@80%
测距频率(Hz) Ranging Frequency	9000	5000	9000	9000	18000	10000
扫描频率(Hz) Scanning Frequency	7 (5 - 12)					
扫描角度 Ranging Angle	360 °					
尺寸(mm) Dimension	φ 63 * 38.5	φ 73.7 * 42.5	φ 72.3 * 41.2	φ 73.7 * 42.5	φ 72.3 * 41.2	φ 73.7 * 42.5
重量(g) Weight	140	185	214	185	214	185

# Triangulation Lidar

## 三角测距激光雷达

### X系列 X Series

YDLIDAR X系列是EAI科技自研的一系列可360°扫描, 高性价比的二维激光雷达产品, 不低于8m的测距半径及3000Hz的测距频率, 开发资料全面及快速响应的技术支持, 为扫地机器人、机器人小车、创客教育等不同行业的产品应用提供了高便捷、高性价比的建图导航避障解决方案。

YDLIDAR X series is a 360°scanning, cost-effective two-dimensional lidar product developed by EAI Tech. It has a ranging radius of no less than 8m and a ranging frequency of 3000Hz. With comprehensive secondary development documents and rapid response from technical support, EAI provides highly convenient and cost-effective solutions for navigation and obstacle avoidance in different industries, such as robot vaccum cleaner, robot car, and education robot.



#### 应用场景 Application

- 机器人小车建图、导航、避障**  
Robot car mapping, navigation, obstacle avoidance
- 机器人ROS教学、研究**  
Robot ROS teaching and research
- 区域安防及入侵物定位**  
Regional security and intrusion location
- 扫地机器人建图、导航、避障**  
Robot vacuum cleaner mapping, navigation and obstacle avoidance

#### 产品特性 Product Features

- 

**体积小、寿命长**  
small size and long life span
- 

**高性能、低成本**  
High performance, low cost
- 

**360°全方位扫描测距**  
360° full - scale scanning ranging
- 

**测距范围广: FOV360°、测距范围>8m**  
Wide ranging angle: FOV360°, ranging distance> 8m
- 

**功耗低、性能稳定**  
Low power consumption and stable performance
- 

**配套资料可操作性强、便于研究**  
Supporting materials are easy to follow and operate and friendly for research

# Triangulation Lidar

## 三角测距激光雷达

### S系列S Series

YDLIDAR S系列是EAI科技自研的一系列360°扫描的二维测距激光雷达产品。本系列产品基于三角测距原理,并配以相关光学、电学、算法设计,实现高频高精度的距离测量,从而实现了可汇聚360°的距离、角度及光强信息等环境点云数据。



型号 Model	S2	S2PRO
测距范围 Ranging Distance	0.12 - 8m@80%	
测距频率(Hz) Ranging Frequency	3000	
扫描频率(Hz) Scanning Frequency	5 - 8	
扫描角度 Ranging Angle	360 °	
尺寸(mm) Dimension	φ 60.5 * 50.3 *96	φ 60.5 * 40.8 * 96
重量(g) Weight	116	110

YDLIDAR S series is a 360° two-dimensional ranging lidar product developed by EAI Technology. This series of products are based on the principle of triangulation distance measurement, coupled with related optical, electrical, and algorithm design to achieve high-frequency and high-precision distance measurement, thereby output point cloud data with 360° distance, angle and light intensity information etc.

### 应用场景Application

机器人ROS教学、研究  
Robot ROS teaching and research

区域安防  
Regional security

机器人导航及避障  
Robot navigation and obstacle avoidance

环境扫描及3D重建  
Environmental scanning and 3D reconstruction

家用服务机器人、扫地机器人的导航及避障  
Navigation and obstacle avoidance of home service robots / robot vacuum cleaners

### 产品特性Product Features

- 360°全方位扫描测距**  
360° full - scale scanning ranging
- 测距误差小、测距稳定性好、精度高**  
Small ranging error, good ranging stability, high accuracy
- 测距范围广、不低于8m**  
Wide ranging distance, over 8m
- 抗环境光干扰能力强**  
Strong ability to resist ambient light interference
- 功耗低、体积小、性能稳定、寿命长**  
Low power consumption, small size, stable performance and long life
- 激光功率满足FDA CLASS I安全标准**  
Laser power meets FDA Class I safety standards
- 电机转速可调**  
Adjustable motor speed

# Solid State Linear Lidar

## 固态线激光雷达

### GS系列GS Series

YDLIDAR GS系列是EAI科技自研的一系列线阵固态激光雷达产品。本系列产品基于三角测距原理,并配以相关光学、电学、算法设计,实现100°的高精度激光距离测量,并输出扫描环境的点云数据,可广泛应用于机器人避障、路径规划等场景。



型号 Model	GS2
测距范围 Ranging Distance	25 - 300mm@80%
测距频率(Hz) Ranging Frequency	/
扫描频率(Hz) Scanning Frequency	/
扫描角度 Ranging Angle	100 °
尺寸(mm) Dimension	立式:φ 25.6 * 23.6 * 12.1 卧式:φ 25.6 * 23.6 * 10.9
重量(g) Weight	4.2

YDLIDAR GS series is a linear array solid-state lidar product developed by EAI Tech. This series of products are based on the principle of triangulation distance measurement, coupled with related optical, electrical, and algorithm design, to achieve 100° high-precision laser distance measurement, and output point cloud data of the scanning environment. It can be widely used in robot avoidance, path planning, etc.

### 应用场景Application

机器人避障  
Robot obstacle avoidance

智能设备避障  
Smart device obstacle avoidance

家用服务机器人、扫地机器人的导航及避障  
Navigation and obstacle avoidance of home service robots / robot vacuum cleaners

### 产品特性Product Features

- 使用寿命10,000H**  
10,000H life span
- 测距误差小、测距稳定性好**  
Small ranging error, good ranging stability
- 测距角度分辨率高、可达0.62°**  
Ranging angular resolution is high, up to 0.62°
- 激光功率满足FDA CLASS I安全标准**  
Laser power meets FDA Class I safety standards
- 探测距离盲区小、可探测距离为25mm~300mm**  
Narrow blind zone, and the detection range is 25mm~300mm
- 探测范围宽、组合无盲区、FOV高达100°**  
Wide detection range, no blind zone through combination, FOV up to 100°
- 避障效果好、最小可探测到直径3mm的物体**  
Good obstacle avoidance ,the smallest object with a diameter of 3mm can be detected



# ToF Lidar

## ToF激光雷达

### TG系列TG Series

YDLIDAR TG系列为EAI科技自研的一系列360°扫描的二维测距激光雷达产品,该系列基于脉冲ToF原理,配以相关光学、电学、算法设计,实现高频高精度的距离测量;抗强光干扰能力强,测量距离最远可达50m,防护等级为IP65,可有效应对室内外复杂环境,适用于各类机器人的建图、导航及避障。



型号 Model	TG50	TG30	TG15
测距范围 Ranging Distance	0.05 - 50 m@80%	0.05 - 30 m@80%	0.05 - 15 m@80%
测距频率(Hz) Ranging Frequency	20000		
扫描频率(Hz) Scanning Frequenccy	7( 5 - 12 )		
扫描角度 Ranging Angle	360 °		
尺寸(mm) Dimension	φ 75.8 * 34.7		
重量(g) Weight	140		

YDLIDAR TG series is a 360° two-dimensional ranging lidar product developed by EAI Tech. This series is based on the pulse ToF principle, coupled with related optical, electrical, and algorithm design, to achieve high-frequency and high-precision distance measurement. TG lidar has strong light interference resistance ability, the measurement distance can reach up to 50m, and the protection level is IP65. It can effectively deal with the indoor and outdoor complex environment, and is suitable for all kinds of robots mapping, navigation and obstacles avoidance.

### 应用场景Application

机器人建图、导航、避障  
Robot mapping, navigation, obstacle avoidance

数字多媒体互动  
Digital multimedia interaction

区域安防及入侵物定位  
Regional security and intrusion localization

智能交通  
smart transportation

环境扫描及3D重建  
Environmental scanning and 3D reconstruction

工业自动化测绘、建图、避障  
Industrial automation surveying and mapping , obstacle avoidance

### 产品特性Product Features

- |← 结构轻薄、便于空间利用  
Light and thin structure, save space effectively
- ✓ 封闭式外罩、IP65防护等级  
Enclosed outer cover, IP65 protection grade
- ↻ 360°全方位扫描测距  
360° full - scale scanning ranging
- Class1 激光功率满足FDA CLASS I安全标准  
Laser power meets FDA Class I safety standards
- 📶 光磁融合无线通信、无线供电  
Optical and magnetic fusion wireless communication and power supply
- ⚡ 20KHz 高速测距、测距频率可达20KHz  
High-speed ranging , ranging frequency up to 20kHz

# ToF Lidar

## ToF激光雷达

### TSA系列TSA Series

YDLIDAR TSA为EAI科技自研的一款二维脉冲式ToF激光雷达产品,其测距频率为3000Hz,测距半径不低于8m;在测距的同时,通过机械结构360°旋转,从而实现360°扫描测距,输出扫描环境的点云数据。该产品的特点为功耗低、尺寸小、性能稳定、寿命长、抗强光,适用于户外割草机器人、扫地机器人、无人机等领域。



型号 Model	TSA
测距范围 Ranging Distance	0.12 - 8m@80%
测距频率(Hz) Ranging Frequency	3000
扫描频率(Hz) Scanning Frequency	6 ( 5 - 8 )
扫描角度 Ranging Angle	360 °
尺寸(mm) Dimension	φ 58.3 *96 *40.8
重量(g) Weight	94

YDLIDAR TSA is a two-dimensional pulsed ToF lidar product developed by EAI Tech. Its ranging frequency is 3000Hz, and the ranging radius is not less than 8m. While ranging, it can be rotated through a 360° mechanical structure to achieve 360° scanning distance measurement, output point cloud data of the scanning environment. The product is characterized by low power consumption, small size, stable performance, long life, and strong light interference resistance. It is suitable for outdoor lawn mower robots, robot vacuum cleaner, unmanned aerial vehicles and other fields.

### 应用场景Application

机器人建图、导航、避障  
Robot mapping, navigation, obstacle avoidance

无人机测绘、建图、避障  
UAV mapping, mapping, obstacle avoidance

机器人ROS教学、研究  
Robot ROS teaching and research

区域安防及入侵物定位  
Regional security and intrusion localization

### 产品特性Product Features

- ↻ 360°全方位扫描测距  
360° full - scale scanning ranging
- ☀️ 抗环境光干扰能力强  
Strong ability to resist ambient light interference
- ✂️ 尺寸小、重量轻  
Small size and light weight
- 🔋 功耗低、寿命长  
Low power consumption and long life
- 📖 操作性强的指导资料  
Guidance materials with strong operability
- 📞 即时的技术支持  
Instant technical support

# ToF Lidar

## ToF激光雷达

### T-mini系列T-mini Series

YDLIDAR T-mini Pro激光雷达是EAI科技研发的一款轻型360°二维激光雷达,其测距频率为4000HZ,测距半径可达12米,可实现360°扫描测距,输出扫描环境的点云数据。该产品的特点为功耗低、尺寸小、精度高、寿命长、抗强光,适用于室内外服务机器人、扫地机、无人机等领域。



型号 Model	T-mini Pro
测距范围 Ranging Distance	0.02-12m@80%
测距频率(Hz) Ranging Frequency	4000
扫描频率(Hz) Scanning Frequencyy	6 ( 6 - 12 )
扫描角度 Ranging Angle	360 °
尺寸(mm) Dimension	φ 38.6 * 38.6 * 33.4
重量(g) Weight	45

YDLIDAR T-mini Pro lidar is a lightweight 360° 2D lidar developed by EAI Technology. Its ranging frequency is 4000Hz, ranging radius is up to 12 meters, and it can achieve 360° scanning ranging and output point cloud data of the scanning environment. The product is characterized by low power consumption, small dimension, high precision, long life and strong light resistance. It is suitable for indoor and outdoor service robots, robot vacuum cleaner, UAV and other fields.

### 应用场景Application

机器人导航及避障  
Robot navigation and obstacle avoidance

机器人ROS教学、研究  
Robot ROS teaching and research

区域安防  
Regional security

环境扫描及3D重建  
Environmental scanning and 3D reconstruction

家用服务机器人、扫地机器人的导航及避障  
Navigation and obstacle avoidance of home service robots / robot vacuum cleaners

### 产品特性Product Features

-  **防水防尘**  
Dustproof and waterproof
-  **360°全方位扫描、6-12Hz、可调扫描频率**  
360 degrees scanning and 6-12Hz adjustable scan frequency
-  **高速测距、测距频率4000Hz**  
Ranging frequency up to 4000Hz
-  **测距误差小、测距稳定性好**  
High accuracy, stable performance
-  **抗环境光干扰能力强**  
Strong ability to resist ambient light interference
-  **激光功率满足FDA CLASS I安全标准**  
Laser power meets FDA Class I safety standards

# Ultrasonic Lidar

## 超声波雷达

### US系列US Series

YDLIDAR US5 是深圳玩智商科技有限公司(EAI)研发的一款微型、超低功耗测距传感器。本产品基于超声飞行时间(ToF)原理,并配以相关声学、电学和算法设计,通过超声波在不同材质表面回波信号的能量差异来实现高精度距离测量,并输出毫米级的距离信息及其回波能量强度值,也可以输出标志位来区分软硬材质。可用于清洁机器人识别地面材质和一定范围内的测距,体积小且易于安装。



型号 Model	US5
测距范围 Ranging Distance	20-60mm
测距频率(Hz) Ranging Frequency	100
扫描频率(Hz) Scanning Frequency	/
扫描角度 Ranging Angle	/
尺寸(mm) Dimension	φ 16 * 12
重量(g) Weight	1.1

YDLIDAR US5 is a miniature, ultra-low power ranging sensor developed by Shenzhen EAI Technology Co., Ltd. (EAI). US5 is based on the ultrasonic time-of-flight (ToF) principle, and is designed with related acoustics, electricity and algorithms. High-precision distance measurement is achieved through the energy difference of ultrasonic echo signals on the surface of different materials, and output millimeter-level distance information and its echo energy intensity value, and can also output flag bits to distinguish soft and hard materials. Furthermore, it can be used for cleaning robots to identify ground materials and measure distances within a certain range. It is small size and easy to install.

### 应用场景Application

清洁机器人识别地面软硬材质  
The cleaning robot recognizes the soft and hard materials on the ground

家用服务机器人/扫地机器人获取地面信息  
Home service robot/ robot vacuum cleaner to obtain ground information

### 产品特性Product Features

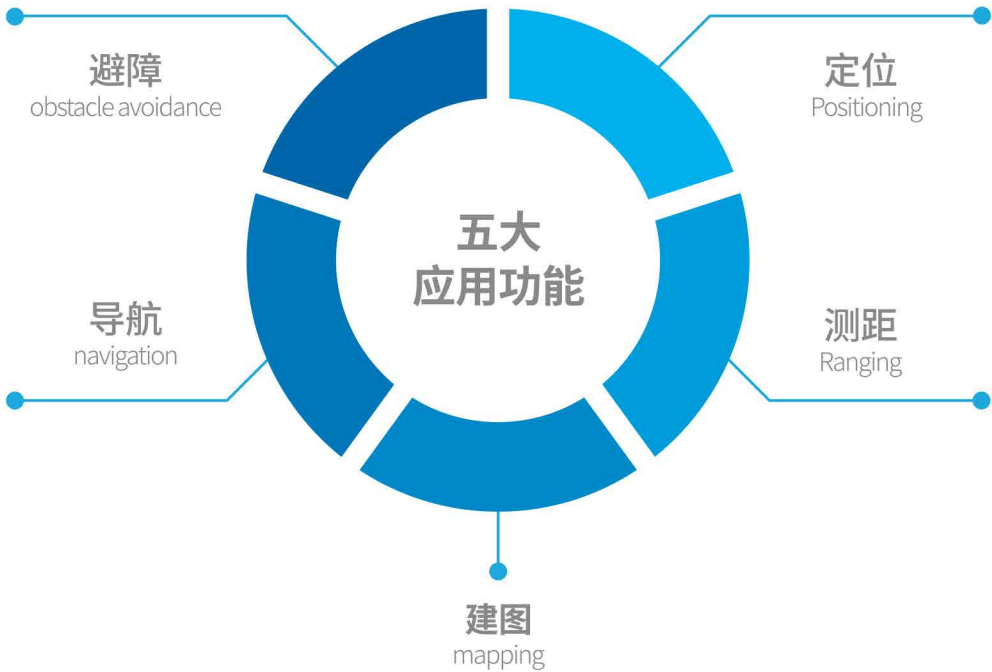
-  **毫米级测距误差、测距稳定性好**  
Millimeter-level ranging accuracy, great ranging stability
-  **可识别软硬材质、并输出 I/O 信息**  
Recognize soft and hard materials and output I/O information
-  **探测距离盲区小、可探测距离为 20~60mm**  
The detection distance up to 20-60mm and blind area is small
-  **使用寿命3,000H**  
3,000H life span



Application  
应用领域

EAI科技智能传感器产品通过即时性的地图采集信息及点云输出,可广泛应用于扫地机器人、服务机器人、数字多媒体互动、工业自动化、安防、智能交通等领域,并以其小体积、长寿命、低功耗、高频率的特点不断扩展其应用范围。

EAI lidar collects information through instant mapping and point cloud output, which can be widely used in robot vacuum cleaners, service robots, digital multimedia interaction, industrial automation, security, intelligent transportation and other fields, and continues to expand their application range with characteristics of small size, long life, low power consumption and high frequency.



家庭服务机器人 Household Service Robot

EAI科技以品质高、寿命长、体积小、成本低的激光雷达为核心,可为扫地机器人、陪伴机器人等多类家庭服务机器人定制一个集环境感知、定位建图、导航避障等功能于一体的应用解决方案。该方案识别精度高、反馈速度快、环境适应能力强,可实时监测周围环境,并通过SLAM算法对激光雷达获取的数据处理分析,进一步为家庭服务机器人构建精准的地图导航与全局路径规划,实现房间、办公室等小空间的自主导航和避障。

EAI technology, with high-quality, long-life, small-size and low-cost lidar as the core, can provide all-in-one application solution with functions such as environment perception, positioning and mapping, navigation and obstacle avoidance for the customization of many types of home service robots such as robot vacuum cleaners and companion robots. The solution has high recognition accuracy, fast feedback speed, and strong environmental adaptability. It can monitor the surrounding environment in real time, and analyze the data obtained by the lidar through the SLAM algorithm, and further build accurate map navigation for home-use service robots, thus to plan overall path, and realize autonomous navigation and obstacle avoidance in small spaces such as rooms and offices.

产品优势 Product Advantages

EAI科技激光雷达具备较强的细小物体检测能力与较高的刷新频率,可快速识别小空间内的细小障碍物,保障扫地机器人、陪伴机器人等多类家庭机器人在房间、客厅等室内场所移动过程中智能避障。

EAI lidar has strong detection capabilities for small objects and high refresh frequency, which can quickly identify small obstacles in small spaces, and ensure intelligent obstacle avoidance during the movement of many types of home-use robots such as robot vacuum and companion robots in bed rooms, living rooms and other indoor places.

适用产品:  
X系列、S系列、  
G系列、TG系列

Applicable products:  
X series, S series,  
G series, TG series

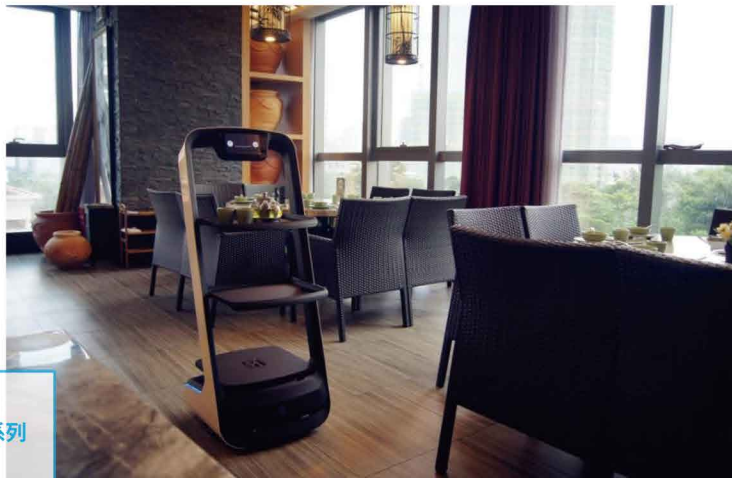




商用服务机器人 Commercial Service Robot

EAI科技的激光雷达稳定性佳,可在餐厅、酒店、商场、写字楼等面积大、障碍多的场景下通过扫描周围环境采集并生成实时点云数据,有效应对跌落、运动、高低温等多种复杂环境,还可根据不同类型的机器人特性,对测距、帧率、分辨率、精度等性能进行定制化设计,使机器人的适应性及灵活性有效提升,辅助清洁、配送、消毒、迎宾等多类商用服务机器人在多种场景实现智能避障,为商用服务机器人在室内或室外公共场所执行任务提供有效保障。

EAI lidar has good stability and can collect and generate real-time point cloud data by scanning the surrounding environment in scenes with large areas and many obstacles such as restaurants, hotels, shopping malls, office buildings, etc., effectively handling drops, sports, high and low temperatures, etc. in complex environments, we can customize the design of ranging, frame rate, resolution, accuracy and other performance according to the characteristics of different types of robots, so as to effectively improve the adaptability and flexibility of the robots, and assist various commercial-use service robots including cleaning, distribution, disinfection, and welcoming robots to realize intelligent obstacle avoidance in various scenarios, and provide effective guarantee for them to perform tasks indoor or outdoors.



适用产品：  
G系列、TG系列

Applicable products:  
G series, TG series

工业机器人 Industrial Robot

EAI科技以高精度高稳定性的激光雷达传感器作为核心,可为工业机器人提供定位、建图、导航、避障等多功能于一体的应用解决方案。该方案可在复杂环境下为仓储搬运机器人、无人叉车、轻量级AGV等多类工业机器人提供必要的路径规划及避障功能。

EAI Technology, with the core of high-precision and high-stability lidar sensors, provides industrial robots with multifunctional application solutions such as positioning, mapping, navigation, and obstacle avoidance. This solution can provide path planning and obstacle avoidance functions for many types of industrial robots such as warehouse handling robots, unmanned forklifts, and lightweight AGVs in complex environments.



产品优势 Product Advantages

- 产品性能高
  - 细小物体检测能力强、反应迅速
  - 产品稳定性强、使用寿命长
  - 开发资料丰富、技术支持响应快
- High performance  
Strong ability to detect small objects and quick response  
Good stability and long lifetime  
Abundant development documents, quick response for technical support

适用产品：  
G系列、TG系列

Applicable products:  
G series, TG series

产品优势 Product Advantages

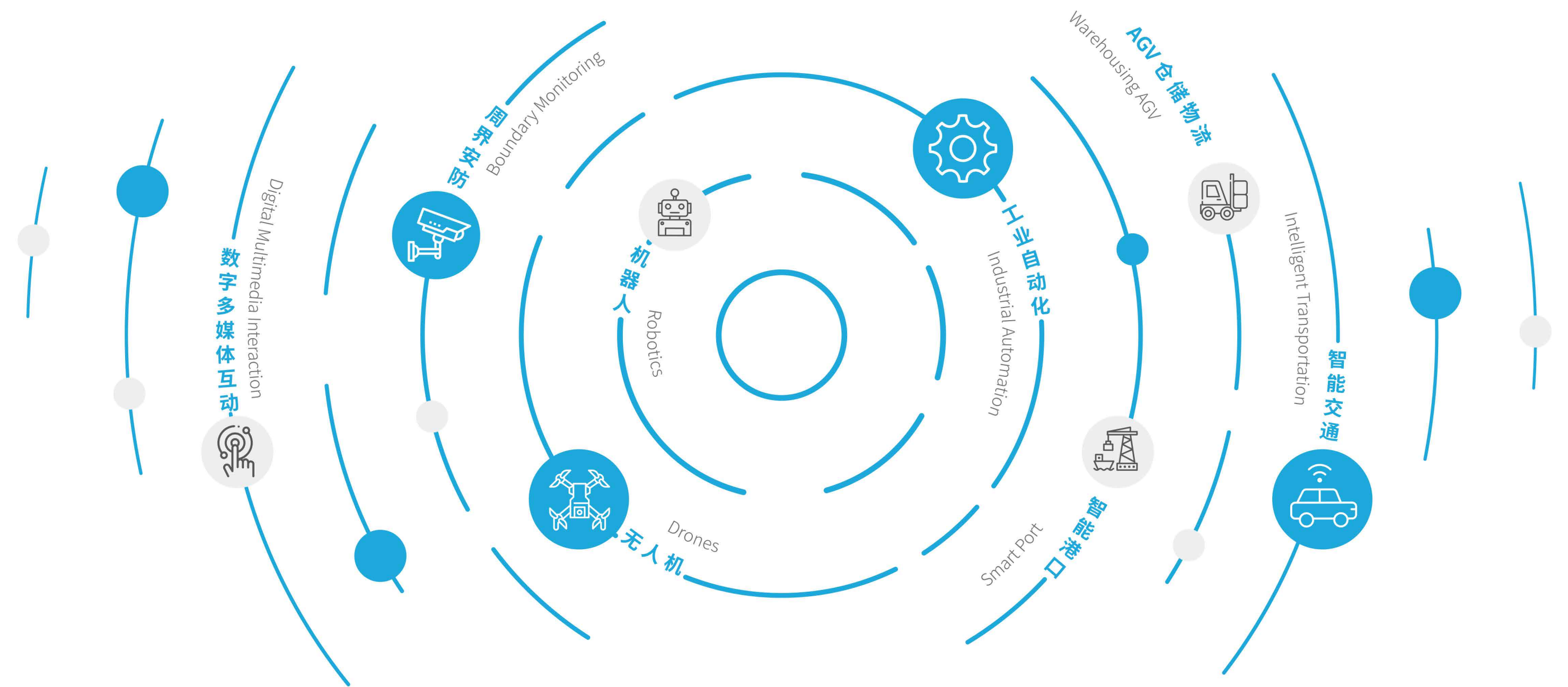
EAI科技的激光雷达具有抗环境光干扰性能好、高反材料识别能力高、障碍物检测能力强、地图细节构建精准的特点,在落地窗等强光照射场景以及电梯门等高反材料下,可准确地检测到餐厅、酒店等应用场所内的物体信息,准确勾画地图,智能避让顾客或其它障碍物。

The EAI lidar has the characteristics of good anti-interference from ambient light, high recognition ability of high-reflection materials, strong detection ability of obstacles, and precise mapping, which enable them accurately to detect object information in applications such as restaurants, hotels, etc., and draw maps, and intelligently avoid passersby or other obstacles.

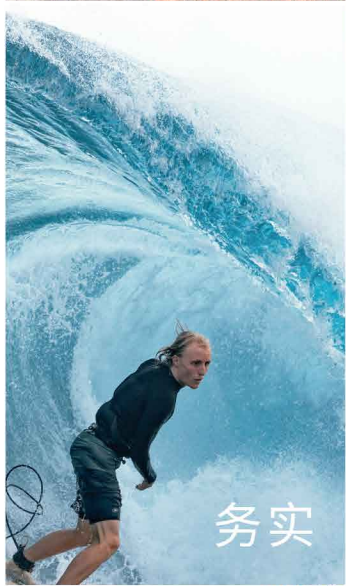
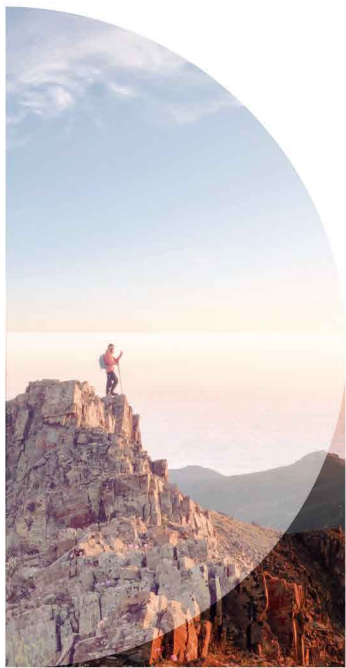


# 让机器更智能地服务于人

Make Robots Serve People Better







合作  
共赢



精进



利他



EAI