Milesight AIoT Indoor Parking Management Suite

LoRaWAN®

DATASHEET

AI | Ultrasonic | Supplement Light | Wiegand

INTRODUCTION

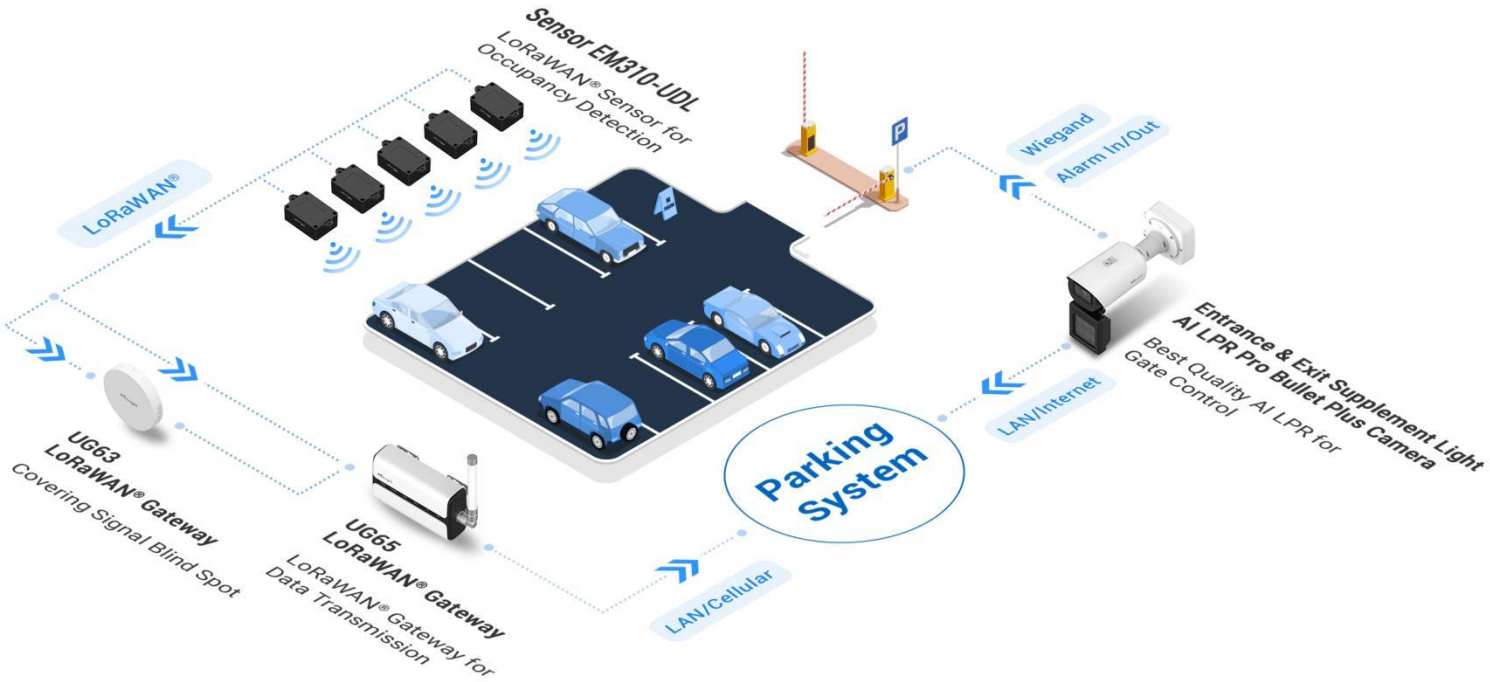
Milesight AIoT Indoor Parking Management Suite is designed for indoor parking management. Ultrasonic sensors are used to detect the occupancy of parking spaces, and the information is reported to the parking management system through the gateway, so as to guide users to quickly find free parking spaces and reduce congestion and additional emissions caused by searching for parking spaces. Besides, based on AI algorithm, the professional Supplement Light AI LPR Camera generates reliable traffic insights to improve safety and mobility. Make parking easy and smart with AIoT!

Entrance & Exit Supplement Light AI LPR Pro Bullet Plus Camera
Detect vehicle information and linkage with gate and the parking management system.

LoRaWAN® Ultrasonic Distance/Level Sensor
Detect the occupancy status of a single parking space

Semi-Industrial LoRaWAN® Gateway UG65
Receive the parking space occupation information detected by the sensor and transfer it to the parking management system

Mini LoRaWAN® Gateway UG63
Covering Signal Blind Spot



KEY FEATURES

Intelligent AI-powered LPR Algorithm

Superior image quality with the highest performance sensor and cutting-edge image processing technologies ensure the best performance of embedded AI analytics. Precise recognition results of number plate, vehicle type, vehicle color and plate color are all set to boost intelligent parking traffic solution right away.

LoRa Outstanding Performance

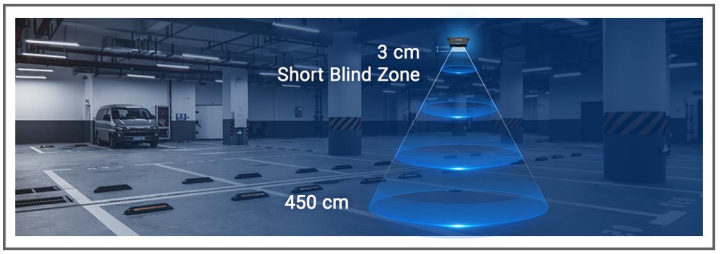
LoRa technology is a new wireless protocol designed for remote connectivity and low-power communication, eliminating the cumbersome wiring process for parking systems. With the latest Semtech LoRa Chip and a 64-bit quad-core CPU, the LoRaWAN® Gateway supports receiving data from up to 8 end-devices at the same time, handles more traffic with less power consumption, and has a line of sight of around 2km in the indoor open area, making it ideal for a variety of applications.

Low Power Consumption

The low power consumption of sensors and gateways greatly saves the users system maintenance costs and provides a cost-effective option for parking management.

Dual Ultrasonic Sensor

The advanced sensor EM310-UDL uses a dual ultrasonic beam with a measurement range from 3 cm to 450 cm, resulting in an ultra-short blind spot, which provides high-precision parking space occupancy information for parking management systems.



Flexible Compatibility

To maximize the usability and compatibility, the Entrance & Exit Supplement Light AI LPR Pro Bullet Plus Camera and LoRaWAN® Gateway provides CGI/APIs, which allows the easy open integration with third-party platforms. The Wiegand interface and network protocols such as MQTT, HTTP(s) and etc. offer a wide range of options for data processing, achieving a highly effecttive parking solution.

Easy Deployment

The low power consumption and integrated design and cellular support save a lot of tedious wiring process, making the product environment more adaptable and the overall deployment more simple and convenient.

Milesight AIoT Indoor Parking Management Suite

On-edge
AI LPR Camera

LoRaWAN® Ultrasonic
Distance Sensor

LoRaWAN® Gateway

Entrance & Exit Supplement Light AI LPR Pro Bullet Plus Camera

- AI-powered LPR Algorithm
- Integrated Supplement Light
- Clear Capture of Dynamic License Plates
- Superior Image Quality for 24/7 Traffic Monitoring
- Wiegand Protocol Supported
- Versatile Interfaces

Sensor EM310-UDL

- Dual Ultrasonic Sensor
- IP67 Waterproof
- LoRaWAN® Based
- Easy Configuration (via NFC)
- 3-Axis Accelerometer

UG65 LoRaWAN Gateway

- IP65 Rating
- Outstanding Performance
- New Generation of LoRa Chip
- Low Power Consumption
- Deep Penetration
- High Capacity
- Multiple Backhaul Connectivities
- Compatible with Multiple Network Servers
- Flexible Installation

UG63 LoRaWAN Gateway

- Eye-Catching Design
- Massive Connectivity
- Blind Spot Coverage
- Gateway Fleet
- Listen Before Talk
- Low Power Consumption
- High Compatibility

SCAN ME!

OBTAIN THE USER MANUAL

Milesight AIoT Indoor Parking Management Suite

Entrance & Exit Supplement Light AI LPR Pro Bullet Plus Camera

	Model	MS-C2966-RFLWPC (2MP)
Camera	Image Sensor	1/2.8" Progressive Scan CMOS
	Min. Illumination	Color: 0.005Lux@F1.4 B/W: 0Lux with IR on
	WDR	140dB Super WDR
	Shutter Time	1/100000s~1s
	Day/Night Mode	Day/Night/Auto/Customize/Schedule
	S/N	>55dB
Lens	Lens	Motorized 2.7~13.5mm@F1.4
	Field of View	H113°~H33°/D130°~D38°/V60°~V18°
	Mount	Φ14
	Focus Control	Auto/Manual
Entrance & Exit Management	Max. Vehicle Speed	200km/h
	Recognition Accuracy	>98%
	Coverage	Support simultaneous detection of 4 regions
	Country/Region Supported	More than 80 countries and regions
	Illumination Distance	Up to 20m
	Attributes Identification	Plate Color, Vehicle Type, Vehicle Color, Vehicle Brand, No-plate Vehicle Capture
	White/Black List	Up to 1000 records inside the camera
	LPR Smart Search	Support
Illuminator	Supplement Light	IR LED Light or White LED Light
	Light Beads	9 (For IR LED Light)/6 (For White LED Light)
	Light Control	Auto/Always On/Off/Customize
Interface	Ethernet	1*RJ45 10M/100M Ethernet Port
	Audio I/O	1/1
	Alarm I/O	1/1
	Wiegand	Standard Wiegand 26-bit
Video	Max. Image Resolution	1920x1080
	Primary Stream	60Hz: 60fps@(1920x1080, 1280x960, 1280x720, 704x576) 50Hz: 50fps@(1920x1080, 1280x960, 1280x720, 704x576)
	Secondary Stream	60Hz: 60fps@(704x576, 640x480, 640x360, 352x288, 320x240, 320x192, 320x180) 50Hz: 50fps@(704x576, 640x480, 640x360, 352x288, 320x240, 320x192, 320x180)
	Tertiary Stream	60Hz: 30fps@(1920x1080, 1280x720, 704x576, 640x480, 640x360, 320x240, 320x192, 320x180) 50Hz: 25fps@(1920x1080, 1280x720, 704x576, 640x480, 640x360, 320x240, 320x192, 320x180)
	Video Compression	H.265+/H.265(HEVC)/H.264+/H.264/MJPEG
	Video Bit Rate	16Kbps~16Mbps(CBR/VBR Adjustable)
	Privacy Masking	Up to 28 areas(24 mask areas and 4 mosaic areas)
	ROI	Up to 8 areas
	Image Setting	Brightness/Contrast/Saturation/Sharpness

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Supplement Light AI LPR Motorized Pro Bullet Plus Network Camera

Network	Network Storage	NAS(Support NFS, SMB/CIFS), ANR
	Protocol	IPv4/IPv6, ARP, TCP, UDP, RTCP, RTP, RTSP, RTMP, HTTP, HTTPS, DNS, DDNS, DHCP, FTP, NTP, SMTP, SNMP, UPnP, Bonjour, SIP, PPPoE, VLAN, 802.1x, QoS, IGMP, ICMP, SSL
Audio	Audio Compression	G.711/AAC/G.722/G.726
	Audio Sampling Rate	8/16/32/44.1/48KHz
	Audio Bit Rate	16~256kbps
	Two-way Audio	Support
System	System Compatibility	API, HTTP, TCP, Wiegand Protocol, ONVIF Profile G & Q & S & T
	Storage	microSD/SDHC/SDXC Card Local Storage, up to 256G
	Advanced Function	BLC, HLC, 2D DNR, 3D DNR, Defog, AWB, EIS, IP Address Filtering, AGC, Anti-flicker, Corridor Mode, Deblur, Watermark
	SIP/VoIP Support	Yes, Voice & Video-over-IP
	Event Trigger	Black/White List, Motion Detection, Network Disconnection, External Input, Audio Alarm, etc.
	Event Action	FTP Upload, SMTP Upload, SD Card Record, External Output, SIP Phone, HTTP Notification, etc.
General	Working Temperature	-40℃~60℃
	Working Humidity	0~90%(Non-condensing)
	Power Supply	PoE (802.3at) / DC 12V±10%
	Power Consumption	5W MAX 25W MAX (For IR LED Light) 25W MAX (For White LED Light)
	Weather Proof	Up to IP67-rated for Weather-resistant Performance
	Housing	Vandal-proof IK10-rated Metal Housing (Without Supplement Light)
	Surge Protection	4KV
	Weight	1630g 2075g (With Supplement Light)
	Dimensions	320mmX134mmX126mm 320mmX134mmX231mm (With Supplement Light)
	Warranty	3/5 Years

Milesight AIoT Indoor Parking Management Suite

Semi-Industrial LoRaWAN® Gateway UG65

Model		UG65
Hardware System	CPU	Quad-core 1.5 GHz, 64-bit ARM Cortex-A53
	Memory	512 MB DDR4 RAM
	Flash	8 GB eMMC
LoRaWAN®	Antenna	2 x Internal Antennas (Optional: 1 x 50 Ω N-Female External Connector)
	Channel	8 (Half/Full-duplex)
	Frequency Band	CN470/IN865/EU868/RU864/US915/AU915/KR920/AS923-1&2&3&4
	Sensitivity	-140dBm Sensitivity @292bps
	Output Power	27dBm Max
	Protocol	V1.0 Class A/Class B/Class C and V1.0.2 Class A/Class B/Class C
Ethernet Interface	Port	1 × RJ45 (PoE PD supported)
	Physical Layer	10/100/1000 Base-T (IEEE 802.3)
	Data Rate	10/100/1000 Mbps (Auto-Sensing)
	Interface	Auto MDI/MDIX
	Mode	Full or Half Duplex (Auto-Sensing)
Wi-Fi Interface	Antenna	Internal Antenna
	Standards	IEEE 802.11 b/g/n, 2.4GHz
	Mode	AP or Client mode
	Security	WPA/WPA2 authentication, WEP/TKIP/AES encryption
	Tx Power	802.11b: 18 dBm +/-2.0 dBm (11 Mbps) 802.11g: 15 dBm +/-2.0 dBm (6 Mbps) 802.11g: 15 dBm +/-2.0 dBm (54 Mbps) 802.11n@2.4 GHz: 14 dBm +/-2.0 dBm (MCS0_HT20) 802.11n@2.4 GHz: 14 dBm +/-2.0 dBm (MCS7_HT20) 802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS0_HT40) 802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS7_HT40)
Cellular Interface (Optional)	Antenna	Internal Antenna
	SIM Slot	1 (mini SIM-2FF)
Others	Reset Button	1 x RST
	Console Port	1 x Type-C
	LED Indicators	1 x POWER, 1 x STATUS, 1 x LoRa, 1 x Wi-Fi, 1 x LTE, 1 x ETH
	Built-in	Watchdog, RTC, Timer

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Semi-Industrial LoRaWAN® Gateway UG65

Software	Network Protocols	PPPoE, SNMP v1/v2c/v3, TCP, UDP, DHCP, DDNS, HTTP, HTTPS, DNS, ARP, SNTP, Telnet, SSH, MQTT, etc.
	VPN Tunnel	OpenVPN/IPsec/PPTP/L2TP/GRE/DMVPN
	Firewall	ACL/DMZ/Port Mapping/MAC Binding/URL Filter
	Management	Web, CLI, SMS, On-demand dial up, DeviceHub, Milesight IoT Cloud, Yeastar Workplace Platform
	Reliability	WAN Failover
	App	Python SDK, Node-RED
Power Supply and Consumption	Power Input	DC Jack Connector for 9-24 VDC power supply 1 x 802.3 af PoE input
	Power Consumption	Typical 2.9 W, Max 4.2 W
Physical Characteristics	Ingress Protection	IP65
	Dimensions	180 x 110 x 56.5 mm (7.09 x 4.33 x 2.22 in)
	Installation	Desktop, Wall or Pole Mounting
Environmental	Operating Temperature	-40°C to +70°C (-40°F to +158°F) Reduced Cellular Performance Above 60°C
	Storage Temperature	-40°C to +85°C (-40°F to +185°F)
	Ethernet Isolation	1.5 kV RMS
	Relative Humidity	0% to 95% (non-condensing) at 25°C/77°F
Approvals	Regulatory	CE, FCC, IC
	Environmental	RoHS

Milesight AIoT Indoor Parking Management Suite

Mini LoRaWAN® Gateway UG63

Model		UG63
Hardware System	CPU	528 MHz, ARM Cortex-A7
	Memory	256 MB DDR4 RAM
	Flash	4 GB eMMC
LoRaWAN®	Antenna	2 x Internal Antennas
	Channel	8 (Half/Full-duplex)
	Frequency Band	CN470/IN865/EU868/RU864/US915/AU915/KR920/AS923-1&2&3&4
	Sensitivity	-140dBm Sensitivity @292bps
	Output Power	27dBm Max
	Protocol	V1.0 Class A/Class B/Class C and V1.0.2 Class A/Class B/Class C
	LBT	Support
Ethernet Interface	Port	1 x RJ45 (PoE PD supported)
	Physical Layer	10/100 Base-T (IEEE 802.3)
	Data Rate	10/100 Mbps (Auto-Sensing)
	Interface	Auto MDI/MDIX
	Mode	Full or Half Duplex (Auto-Sensing)
Others	Reset Button	1 x RST
	Console Port	1 x Type-C
	LED Indicators	1 x SYS, 1 x LoRa
	Built-in	Watchdog, RTC, Timer
Software	Network Protocols	PPPoE, SNMP v1/v2c/v3, TCP, UDP, DHCP, DDNS, HTTP, HTTPS, DNS, ARP, SNTP, Telnet, SSH, MQTT, etc.
	VPN Tunnel	OpenVPN/IPsec/PPTP/L2TP/GRE/DMVPN
	Management	Web, CLI, DeviceHub, Milesight IoT Cloud
Power Supply and Consumption	Power Input	1 x 802.3af standard PoE input 5V by Type-C Port
	Power Consumption	Max 3.3 W
Physical Characteristics	Ingress Protection	IP30
	Dimensions	Φ115 x 21 mm (Φ4.52 x 0.83 in)
	Color & Material	White, PC + ABS
	Installation	Desktop, Wall or Ceiling Mounting
Environmental	Operating Temperature	-20°C to +50°C (-4°F to +122°F)
	Storage Temperature	-40°C to +85°C (-40°F to +185°F)
	Ethernet Isolation	1.5 kV RMS
	Relative Humidity	0% to 95% (non-condensing) at 25°C/77°F

Milesight AIoT Indoor Parking Management Suite

LoRaWAN® Ultrasonic Distance/Level Sensor

Model			EM310-UDL
Wireless Transmission	Technology		LoRaWAN®
	Frequency		CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923
	Tx Power		16 dBm (868 MHz)/22 dBm (915 MHz)/19 dBm (470 MHz)
	Sensitivity		-137 dBm@300bps
	Mode		OTAA/ABP Class A
Measurement	Distance	Detection Range	3 – 450 cm
		Detection Accuracy	± (1+0.3%*S) cm, S=distance
		Distance Resolution	1 mm
	Device Position	Status	Normal/Tilt
Operation	Configuration		NFC Configuration via Mobile App
Physical Characteristics	Power Supply		2 x 3500 mAh ER17505 Li-SOCl2 battery
	Battery Life*		Up to 10 years (10 min interval + 20 triggers per day)
	Operating Temperature		-15°C to +60°C
	Relative Humidity		≤90% (non-condensing)
	Ingress Protection		IP67
	Dimension		111 x 62 x 40 mm (4.37 x 2.44 x 1.57 in)
	Weight		168g
	Material & Color		ABS, Black
	Installation		On the flat surfaces with screws

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