



## Ultra High Frequency (UHF) Antenna Reader

# R90



**Genvict**  
SMARTER MOBILITY  
EASIER LIFE



R90 is a UHF RFID reader customized for traffic-related applications. Developed based on Impinj R2000 chip, with RF output power up to 33dBm, based on standard EPC Class 1 Gen 2 (ISO 18000-6C) protocol, can realize the rapid identification of vehicle electronic tags, and create "efficient and intelligent" Humanized Traffic Management Environment

## Feature

### 1. Accurate and Fast Identification

- Based on the international DSRC radio frequency identification technology, it can accurately & rapidly identified vehicle's information from a long distance.
- Antenna array design, effectively control the recognition area.
- Starlight camera module, high dynamic sensor, high definition to accommodate various site's lighting scenario.
- AI recognition algorithm based on deep learning, combined with RF array design to implement fast and accurate license plate recognition.

### 2. Highly Integrated

- Antenna, camera and controller are integrated, compact and lightweight, greatly simplifying the engineering installation.
- Configurable and memorable working parameters, convenient operation and humanized interaction design.



### 3. Efficient and Stable

- Adopts industrial-grade device selection, which is not affected by bad weather, and it's working efficiently 24 hours a day.
- Advanced shell waterproof design with high protection level, suitable for long-term outdoor operation.
- All interfaces are protected by lightning strike and photoelectric isolation to accommodate all kind of weather condition.

### 4. Safe and Reliable

- Support high-strength key protection algorithm and two-way security authentication to ensure high data security;
- Support equipment self-test and remote maintenance to detect the issue. Simple maintenance.

### 5. Perfectly Compatible

- RF and video algorithms can work independently or cooperate with each other to cope with various vehicle conditions.
- Standard interface protocol and supporting secondary development interface to achieve rapid product integration.



## Technical Specification

Parameter	Specification
<b>Mechanical</b>	
Dimension	Width: 211.4 +- 1 Heigt: 283.8 +- 1 Depth: 69.9 +- 1
Weight	<5KG (Exclude Bracket)
Material	Modified ABS engineering plastics and sheet metal
Color	Sky Blue
Installation Location	Column side mount wall bracket side mount ceiling mount
Accessory	POE coupler, 24V power supply
<b>RF Characteristics</b>	
Protocol	EPC Class 1 Gen 2 (ISO18000-6C)
Frequency	902-928MHz
Output Power	5-33dBm adjustable
Power Regulation	1dBm / Step
Band Stability	≤±10ppm
Antenna Gain	≤1.3:1
Reading Label Distance	0-5m (Subject on label performance and environment)
Write Label Distance	0-3m (Subject on label performance and environment)
<b>Electrical characteristics</b>	
Power supply	24VDC / 1.5A
Power consumption	≤5W
PSAM Card Specifications	conforming to ISO-7816, PBOC specifications
PSAM Card Interface Rate	38400bps
Communication Interface	10M / 100M adaptive Ethernet
<b>Environmental characteristics</b>	
Protection class	IP65
Operating temperature	-30 °C ~ + 55 °C
Storage temperature	-40 °C ~ + 85 °C
Relative operating humidity	≤95% (non-condensing)
Static	8KV
Vibration	Meets GB 2423.13
Impact	Meets GB 2423.5 Test Eb and Guidelines
Salt fog	Meets GB 2423.18
Lightning Strike	Meets GB / T 17626.5, communication interface: Lv3

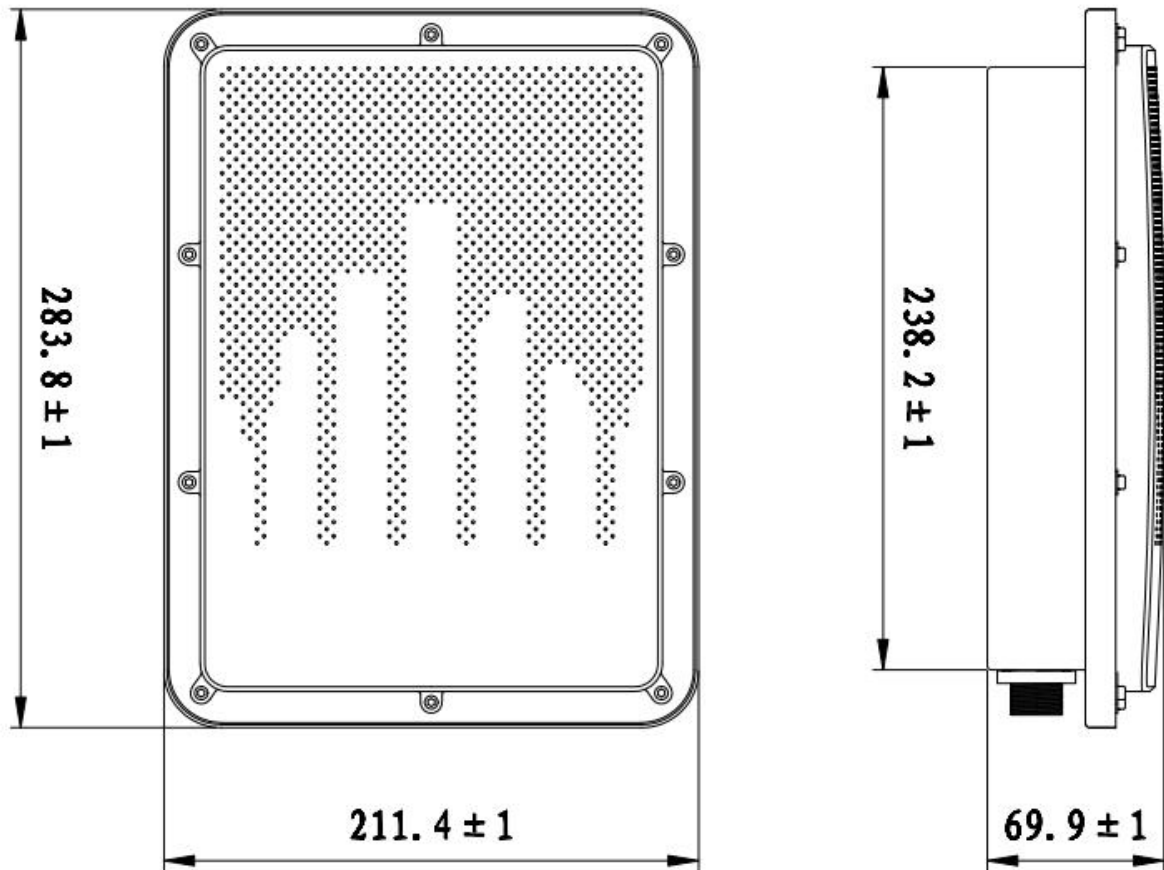


Figure 1 Dimension

# Installation Method

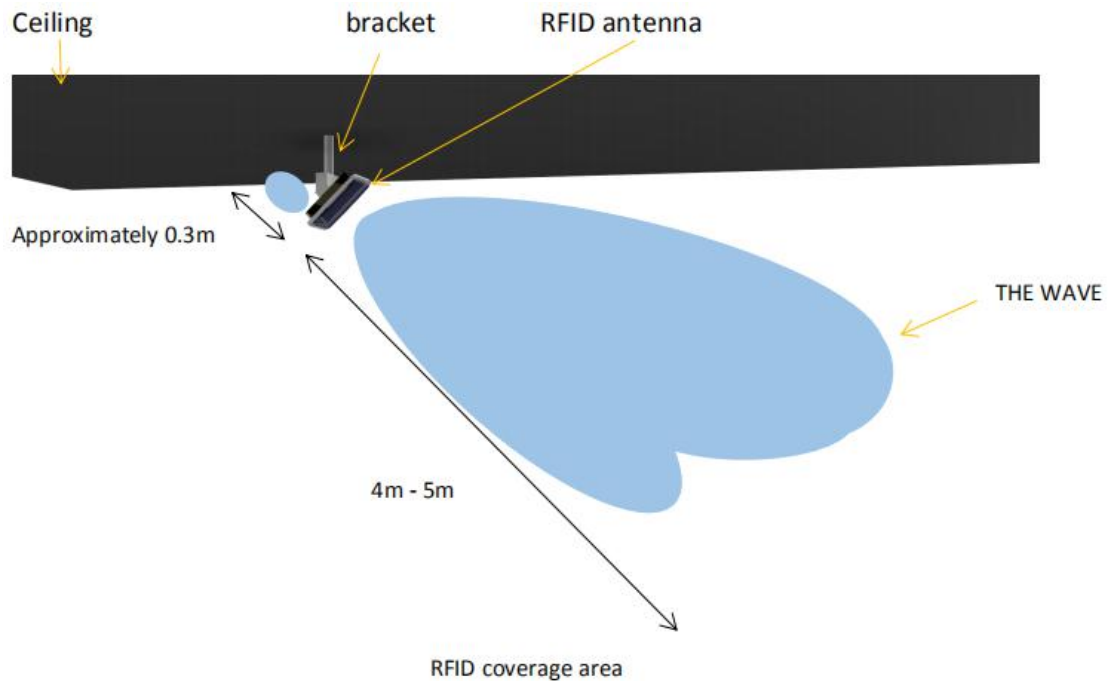


Figure 2 Antenna Location

## 1. Antenna Location (Figure 2)

The wave is bidirectional linear. The back of the antenna could only reach approximately 0.3m. No metal shield or equivalent material that is majority blocking the detection area.

## 2. Footprint (Figure 3)

Carrying a footprint matrix to verify the detection area. The read/write transmit power are recommend at 30 dBi. The antenna is recommended facing down at 135° to minimize the detection area for the first vehicle.

- Plotting symmetry matrix at 50mm\*50mm on the parking bay.
- Putting the RFID 900MHz RFID tag at each matrix. (Use test tag for fast laying)
- Use the provided software to do detection by confirming the receivable data packet.
- Adjust the antenna angle and transmit power if required.

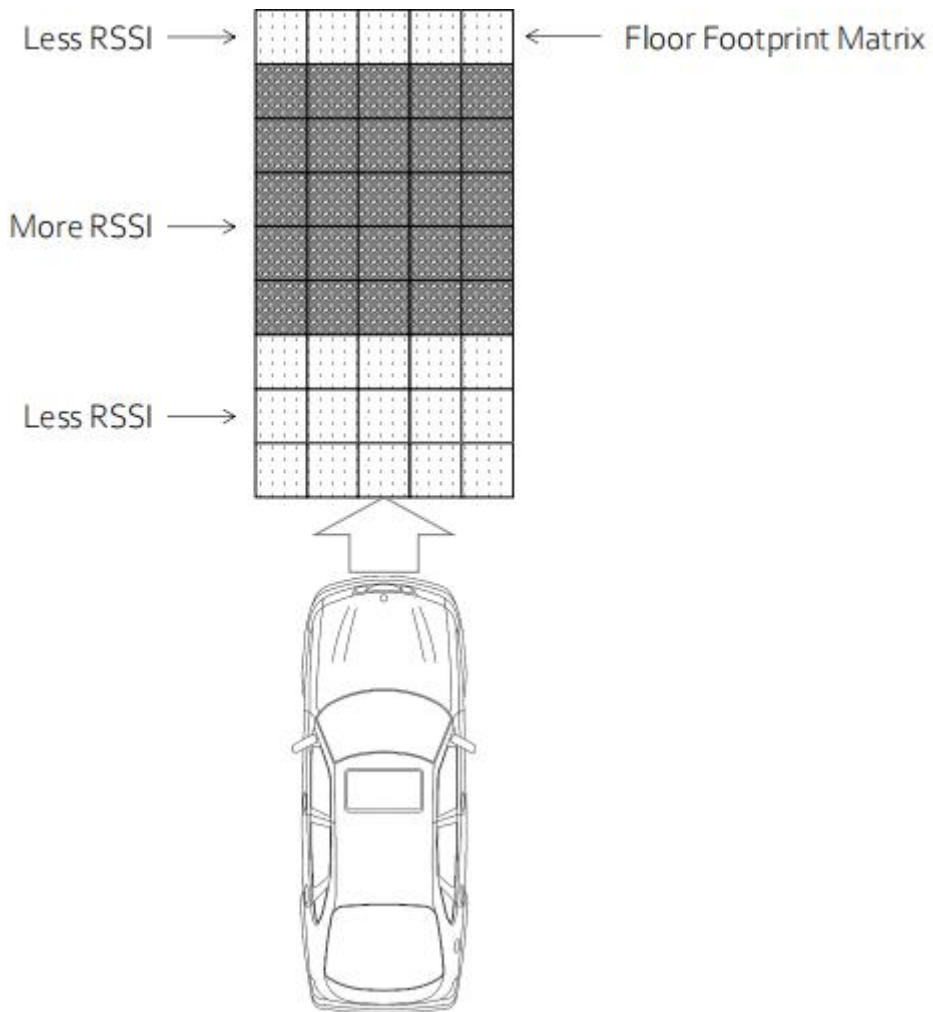


Figure 3 Footprint: Before

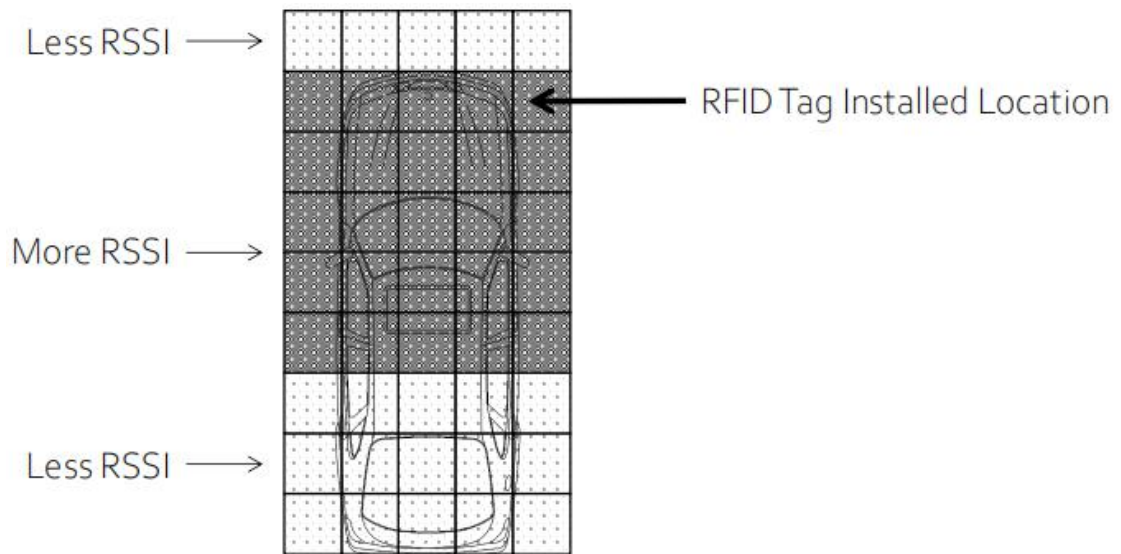


Figure 4 Footprint: After