UHF Reader

for Application Solution in Parking Lots

Version: 1.0
Date: March 2017

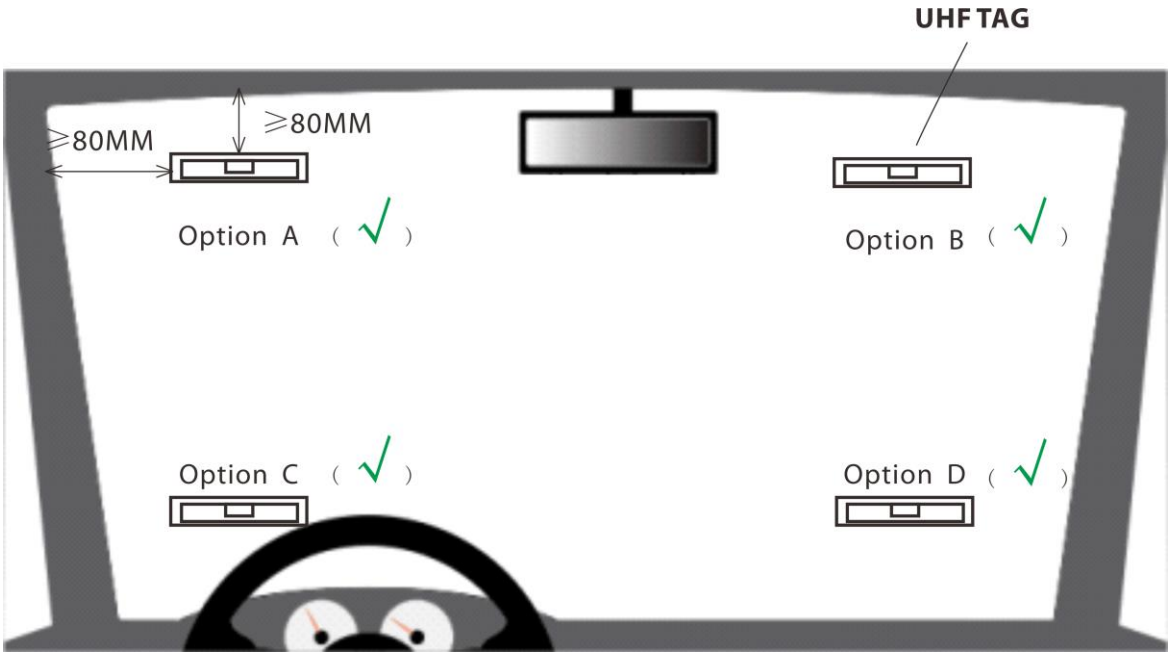
UHF RFID Reader

Solution

UHF RFID Reader is widely applied in parking lots due to its remote RFID features.

Install the UHF tag

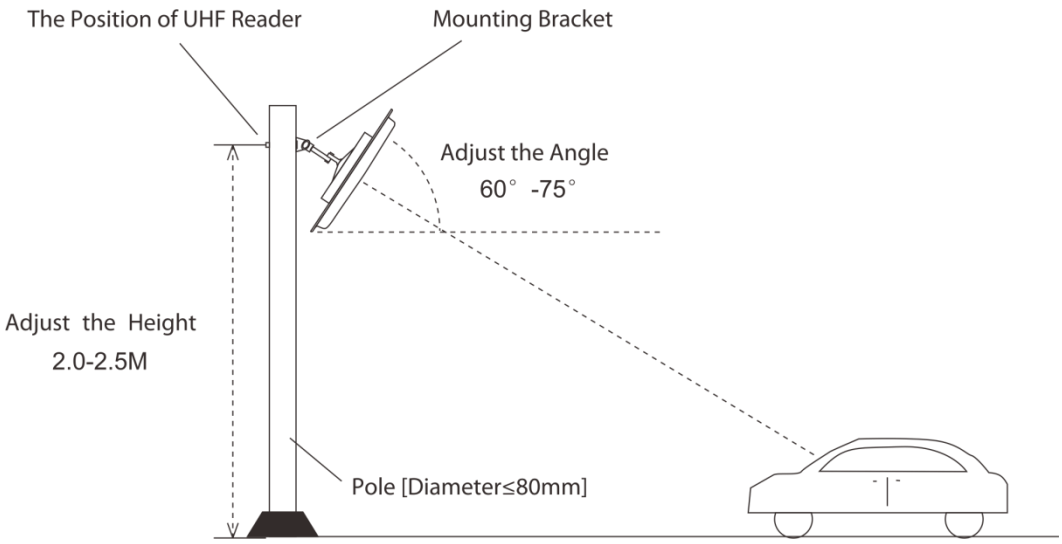
After registration, install the UHF tag in an appropriate place on the windshield inside the car, as shown in the figure below:



Note: The distance between the UHF tag and the metal frame shall be 80 mm at least. The checked options in the figure above are recommended.

Install the reader

Install the reader as illustrated in the following figure:



Note: The left and right angles of the reader shall be adjusted so that the reader faces the coming vehicles.

Application

The remote RFID system consists of a trigger, a detector, a controller, and a reader.

- **Trigger:** Ground sensing detector. When a vehicle drives into an area in which the ground induction coil is laid, the ground sensing detector is triggered and the UHF Reader reads the card. The ground sensing detector is optional as long as the card can be read within the effective distance.
- **Detector:** UHF RFID reader. When a vehicle enters the card reading distance, the reader reads the card and transmits the card information to the controller.
- **Controller:** ZKTeco controllers or other common controllers available in the market. The controller verifies the card information and outputs a relay signal for cards passing verification to the barrier gate of the parking lot.
- **Executor:** Upon receiving the relay signal from the controller, the barrier gate is opened, and the whole remote identification is finished.

Diagram: Simulated reading zone of UHF Reader

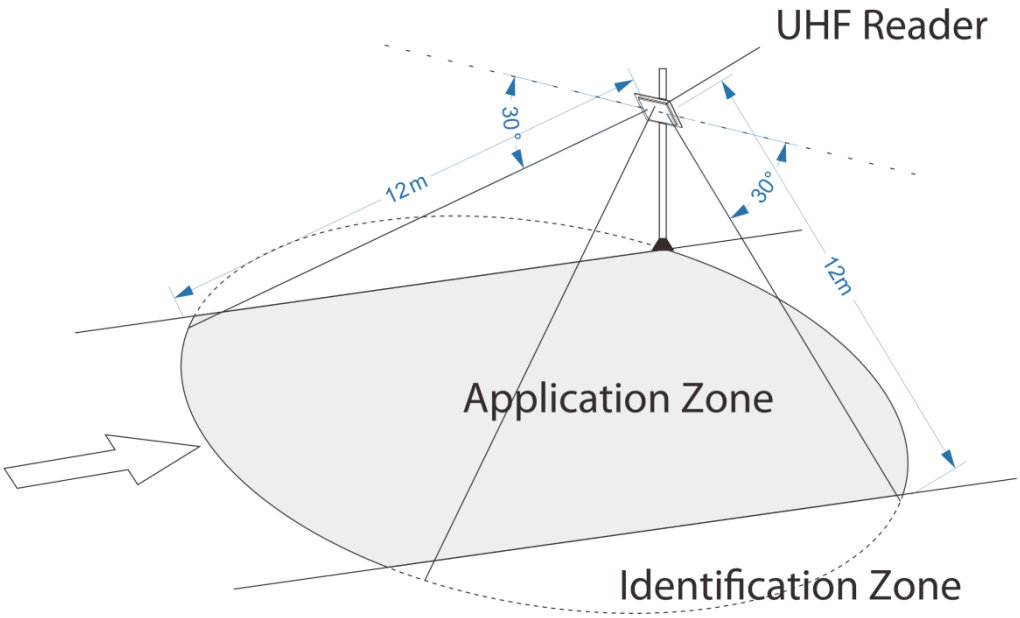


Diagram: Floor plan of installing and wiring UHF Reader in parking lots

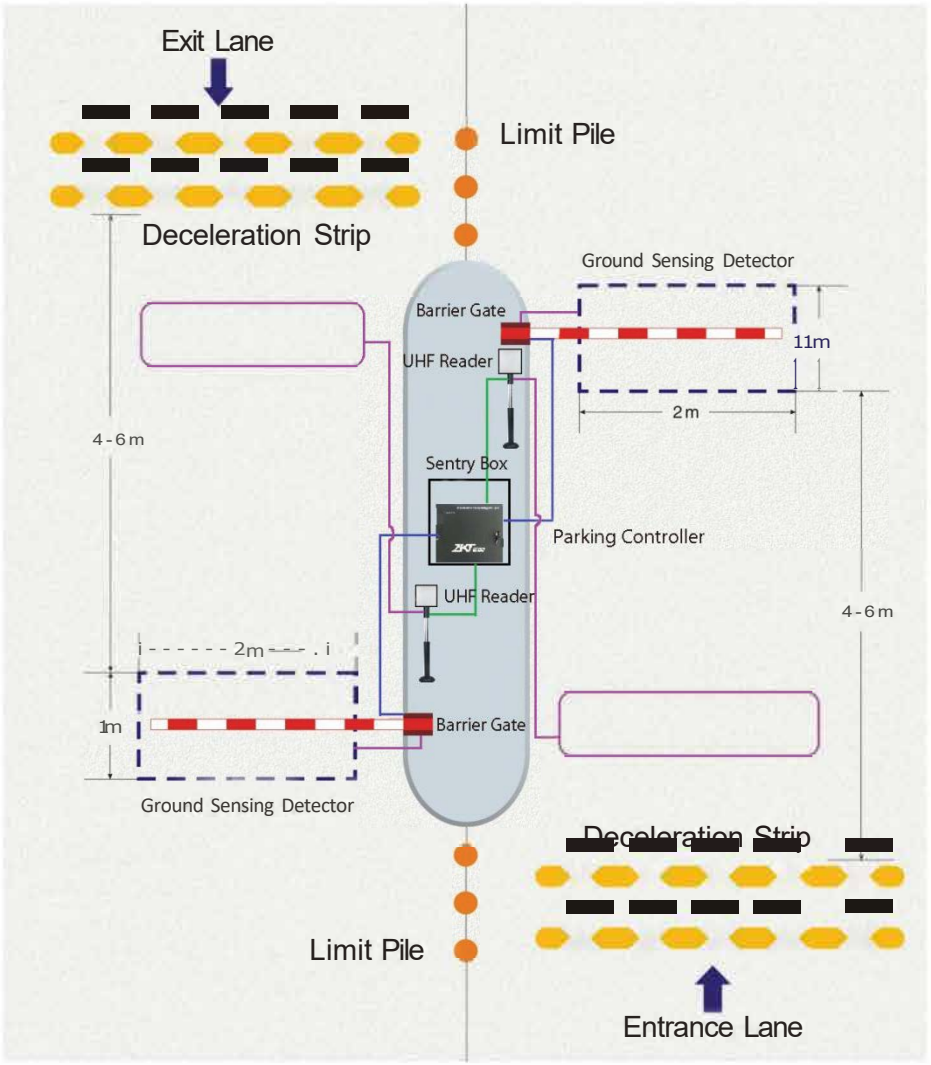
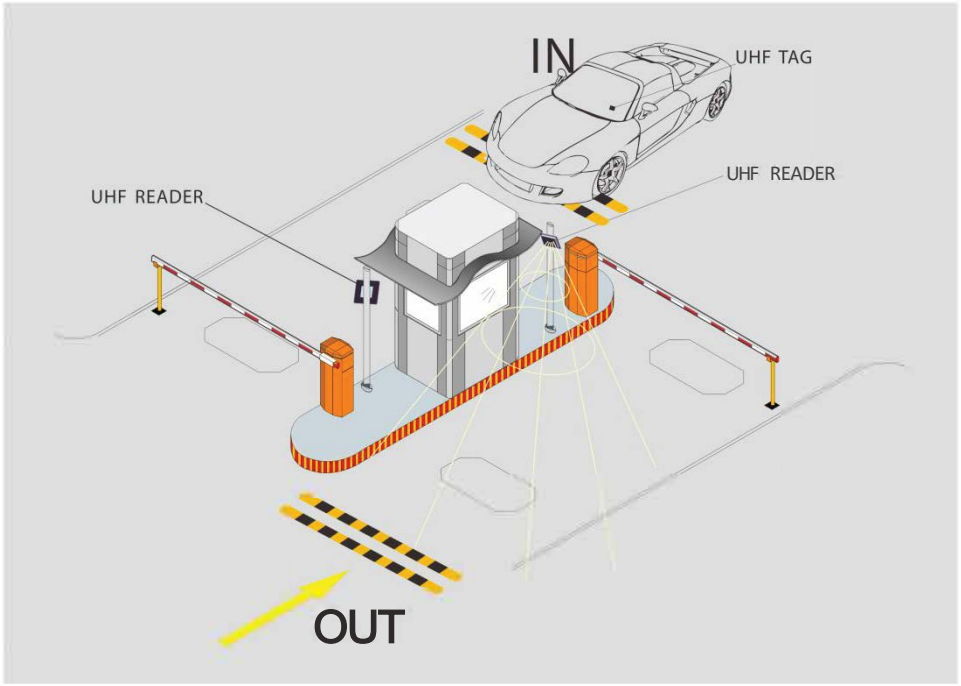


Diagram: Application of the UH Reader in parking lots



Note

- The reader cannot be installed in a high-voltage environment, for example, high tension wires and high-voltage transformers.
- The reader cannot be installed near metallic objects.
- If the reader is installed at a T-junction or a 90° corner or in other unfavorable environment, the reader may fail to read the card due to the overlarge reading angle. You can install an additional reader at the corner to solve the problem.
- For such terrains as slopes, adjust where the reader faces, turning it downwards within the effective range of card reading.
- Remote card reading by the UHF Reader is affected by the protective film (explosion-proof film) on car windows to some extent.
- Remote card reading by the UHF Reader is affected on rainy, snowy or windy days to some extent.

Segmented applications of remote RFID products

1) Vehicle access control

(1) Parking lot applications;
(2) Automatic toll management without parking for the toll stations in the highway, bridge or express way;

2) Personnel access control

(1) Remote personnel attendance management;
(2) Meetings sign-in management;
(3) Campus access control;
(4) Patrol attendance management;
(5) Remote personnel access control;

3) Goods access control

(1) Management of assets, documentations, and books;
(2) Automatic management of production processes;
(3) Materials in/out control in a warehouse
(4) Port container management
(5) Logistics management;