

AR500U

Long Range RFID Wiegand Reader



Introduction

Do you worry your hand get wet when winding down windows to flash card during heavy rain? Do you worry a robber will point a knife at your neck before you start winding up your windows? You always wanted a super long range reader that can automatically open barrier gate without requiring you to flash card for the premium prestige feeling?

AR500U is the ultimate best RFID long range reader that can effectively penetrate vehicle solar film to allow “truly hands-free” operation and no need to wind down windows.

Ideal for any parking access application. AR500U is the most highly affordable solution available in the market today.

Features

1) Absolute directional

AR500U uses Infrared rays to define its reading zone. Tag will only wake up when they are within the IR coverage. Tags that are outside the IR coverage will not be wake up for reading. IR is only emitted in front of the reader at 60° angle. Therefore only tag at the front will be read. Tags that are outside the IR range - behind reader, adjacent car lane or trailing cars queue will not be read. AR500U is the first in the world that offer absolute directional and accurately controlled reading range.

2) Extended battery life on tag/transponder

Tag/transponder remained in standby mode (sleeping) all the time with minima power consumption. When tag enters the infrared zone, it will be activated and power is turned on automatically to send out tag number. When tag leaves the IR zone, it will return back to standby mode. This greatly extends life time of battery. Battery can be purchased from any electronic store and changed easily.

3) Adjacent lane automatic differentiation

AR500U can be programmed with different address ID for entry and exit. AR500U will only respond to the tag activated by the same reader (same address ID). This allows AR500U to be installed side-by-side at the center of entry and exit lane. AR500U will automatically differentiate the tag read from entry or exit lane by checking address ID returned by tag. This greatly increases reading accuracy for adjacent multi-lane application.

4) Card number automatic validation

AR500U read cards' number continually. Same card number will not be send via our Wiegand interface again. Reader will wait 7 sec before the same card number is sent out again. Different card number is sent out every 2 sec continuously.

5) Standard Wiegand Interface Output

AR500U send out standard Wiegand26 (xxx,xxxxx) and Wiegand34 (xxxxx, xxxxx) format to access controller. Most controllers in market can support WG26/34 and therefore can be integrated with AR500U.

The numbers from tag/transponder will be sent out as it is without any alteration. Some controllers will perform alteration on tag number received. This will cause number displayed by controller to be different from number printed on tag. Please check with controller supplier to verify this issue before purchasing AR500U.

6) Variable tag / transponder to meet your budget

When AR500U support 2 types of tags

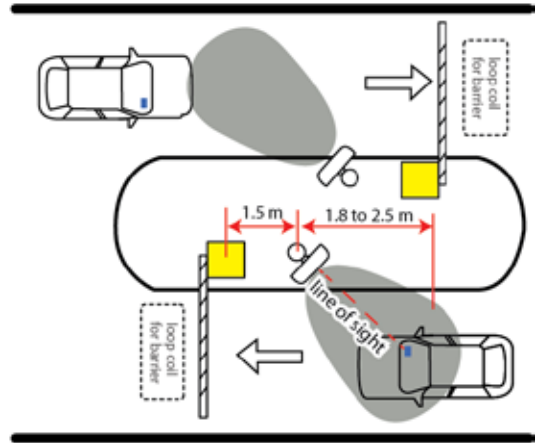
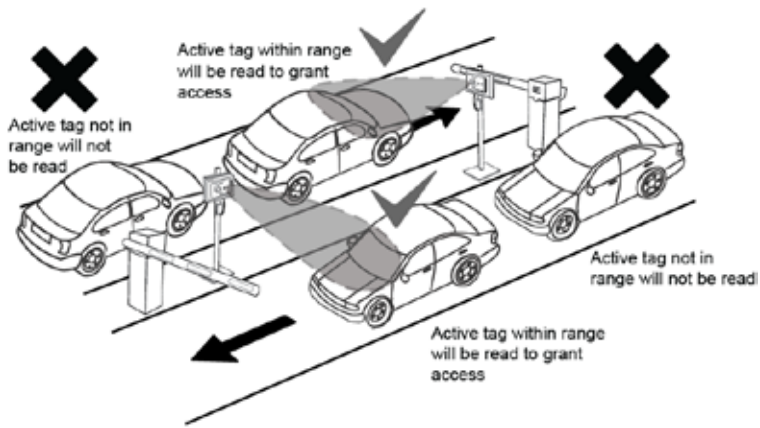
CCD200 - Transponder for standard application. Allow insert proximity card EM or Mifare type. Highest signal strength. Capable to penetrate medium to high end solar film (80-90%) penetration to achieve truly **HANDSFREE** access.

CCD100 - Mini tag for lower budget alternative. Medium signal strength for low end solar film (60-80% penetration). Require flash tag manually by hand.

You can choose which type of tag/transponder to suit your budget and need. If you are using high end solar film then CCD200 will be the best choice to achieve hands free operation. If you are using low end solar film, then CCD100 will be the lower budget solution for you.

CCD200 is tested to penetrate most type of commercial solar film available in the market. However CCD200 does not guarantee to be able to penetrate ALL type of solar film in the market.

Absolute directional reading range



Technical specification for reader

RF Receive frequency	433 MHZ
IR Sending Frequency	38 KHz
IR Read Angle	60°
Output Format	Wiegand26, Wiegand34
Data Rate	9600bps (RS232)
Power Consumption	DC 12V, Idling = 220 mA, scanning card = 290 mA
Read Range	Max 7 meters Depends on type tag/transponder, battery life and metal content intensity in solar film.
Address ID	6 unique Address ID to support maximum 6 multiple adjacent lanes
Operating Humidity	10% to 90% relative humidity
Operating Temperature	-10°C to 80°C
Dimension (mm)	250 x 260 x 65 (WxHxD)
Weight	4 Kg

Technical specification for tag and transponder

	CCD100 Mini Tag	CCD200 Transponder
RF sending frequency	433 Mhz	
RF sending power	< 1milli watt	
IR Receiving Angle	60° degree	
IR Receiving frequency	38 KHz	
Read/Write Speed	≥ 100kbit/Sec (8km/hr)	
Off air max reading range (no solar film)	4 meter	7 meter
Signal strength	Low	Highest – maximum penetration of solar film
Reading Card number	Internal tag number	External proximity card 125 khz E M or Mifare card
Standby Current	≤ 10uA	≤ 10uA
Working Current	≤ 2mA	
Working Voltage	2.5 to 3.6 VDC	2.5 to 3.6 VDC
Battery type	2 pcs x 2032/3V button cell	2 pcs x 2450 coin cell (universal battery)
Working temperature	-10°C to 75°C	
Dimension (mm)	58 x 45 x 6	81 x 46 x 16

Active transponder CCD200

Transponder will read card number from proximity card and send out to AR500U via RF. The card number send out by transponder will be the same as printed on the card. It is suggested to remove the proximity card from transponder when it is not used. Transponder will totally shutdown its power when there is no proximity card inserted to save battery life.

CCD200 is a good solution for "One-Card-Total" solution with door access. When get down from car, proximity card can be removed from transponder and used on doors access. When get onto car, card can be inserted back into transponder for long range reading. CCD200 can also be used to upgrade existing site that are already using normal card access - the same proximity card can be used back, just need to add AR500U and CCD200 transponder to achieve long range reading.

CCD200E support 125 KHz EM and CCD200M support 13.56 Mhz mifare proximity card. CCD200 is using standard coin battery that is readily available from any electronic store. If the range seemed like unusually short, please change the battery.



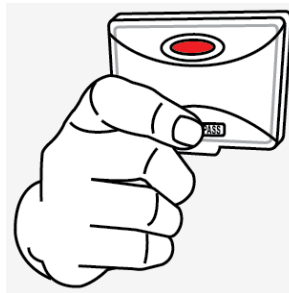
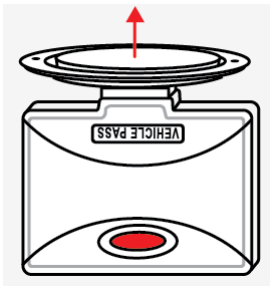
Replaceable battery



Proximity card can be slotted at the back

Top bracket of CCD200 has 2 sided adhesive. CCD200 can be stick onto windshield glass to achieve truly handsfree access.

Alternatively, CCD200 also can be flashed manually by hand for user that does not want to stick it permanently on to the windshield glass. Just need to remove the top bracket.

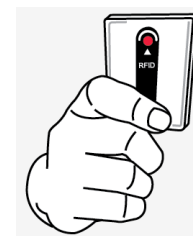


Active mini tag CCD100

CCD100 mini tag has shorter reading range compared to CCD200. It is used as lower budget alternative for cars that uses lower end solar film or site that requires shorter range reading. CCD100 can be flashed manually on front windshield or from side windows. CCD100 is using standard coin battery that is readily available from any electronic store. If the range seemed unusually short, please change the battery.



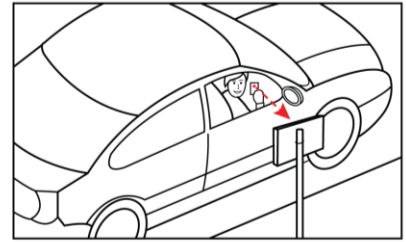
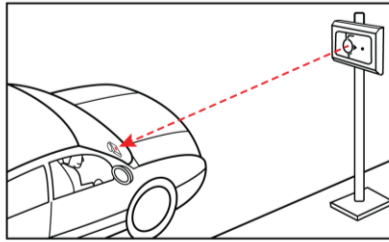
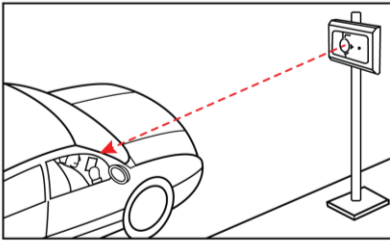
Replaceable battery



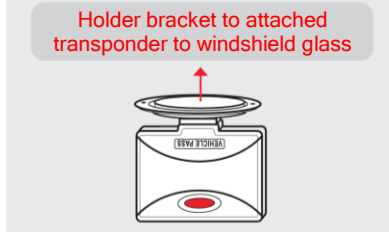
Flash by hand

Recommended installation

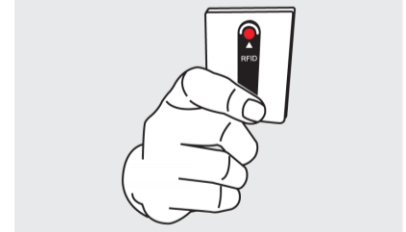
How to use AR500U transponder and mini tag?



Flash transponder by hand to achieve more flexible reading angle of long range access.



Transponder attached to vehicle front windshield to achieve hands free long range access.



Flash mini tag by hand to achieve more affordable mid range access

Ordering information

Model	Description
AR500U	Dual tech long range reader.
CCD100	Mini tag
CCD200E	Transponder to support EM 125Khz proximity card. Card not included.**
CCD200M	Transponder to support 13.56 Mhz proximity card. Card not included.**

** Transponder and mini tag comes with a demo battery. The purpose of demo battery is to prove the product is working fine at the point of purchase. Demo battery might not carry full life time of a new battery. Estimated demo battery can only last for 6 months. Please kindly change a new battery after demo battery becomes weak.

Accessories



Metallic pole to mount reader



Surge protection for data and 12V PD12/7.5, PSP12 and TP-LAN



Proximity card 125 KHz CDS084SH

Can withstand high temperature.



Mifare card 13.56Mhz CDM084SH

Can withstand high temperature.

Special note:

* Strongly recommended to install proper surge protection to protect 12V and data line output from damaged by outdoor lightning surge. Must have proper EARTH wiring in place for surge protector proper operation.

* Do not use normal low cost proximity card. Low cost proximity card unable to sustain high heat at front windshield and might bend or melt.