



3 IN 1 Split Ultrasonic Parking Guidance System

User Guide

1. Introduction.....	2
2. Working Principle.....	3
3. System Components.....	4-6
4. Power Supply.....	6
5. Project installation.....	7-8
6. Reference installation method.....	9
7. Wiring and Testing.....	9-12
8. Software.....	13



3 IN 1 Split Ultrasonic Parking Guidance System

1 、 Introduction

3 in 1 parking guidance means 3 units of ultrasonic detector share 1 unit of indicator base on treating 3 car bay as one group and as any cars in the group drive out the indicator will Be come green light ,whereas if the group(3 car bays)all have car parked in the indicator turn to red light.





2.Working Principle

>一. Parking Lot Detector (PD) constantly detects the presence vehicle

By using Ultrasonic wave, if any vehicle is parking on the space, PD will send command to Parking Lot Indicator

>二. In the same time PD will immediately transmit its status to Area Controller Module (ZCU) and processing the data and send to Parking Guidance Display Screen (Display).

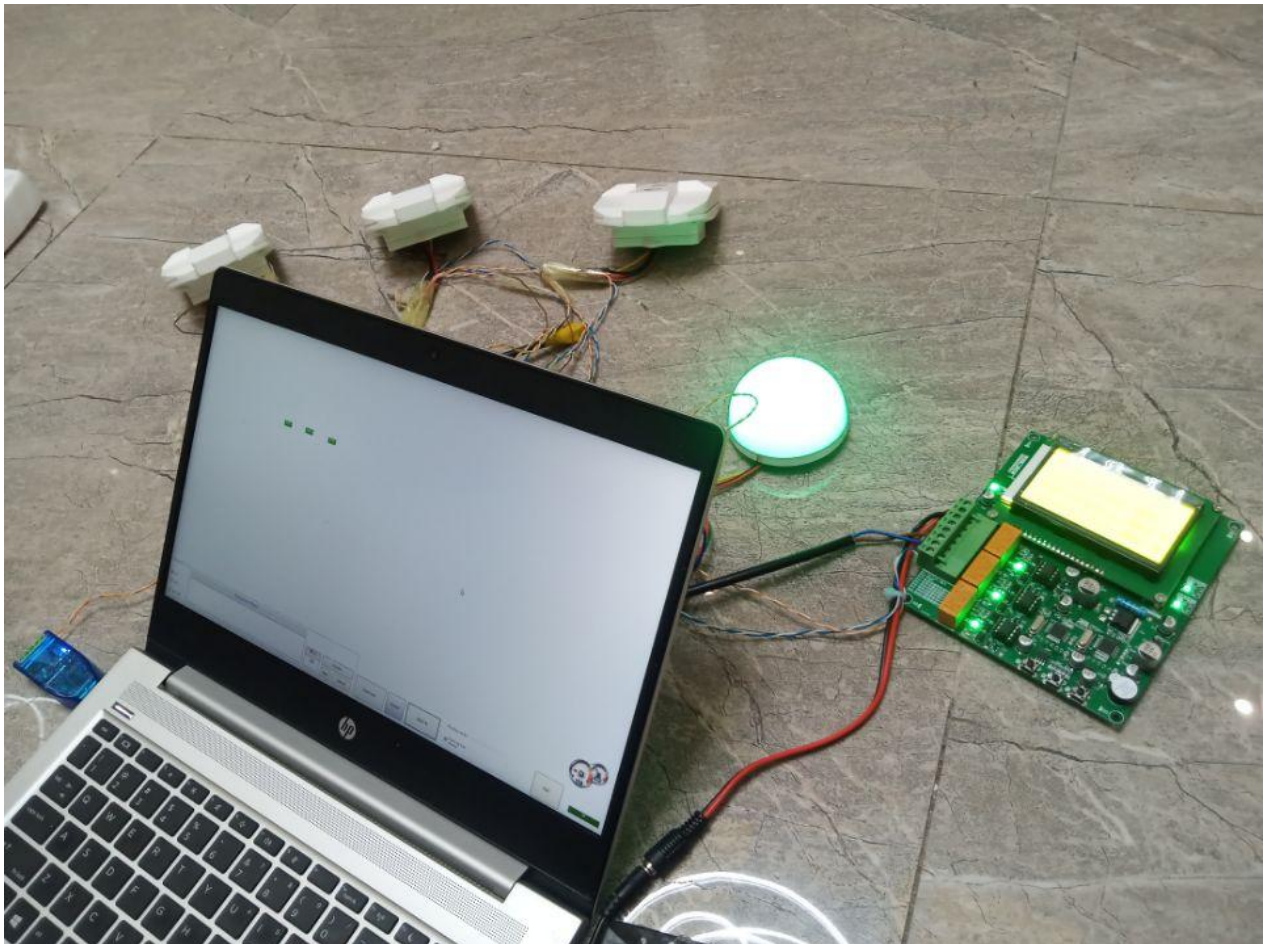
>三. Parking Lot Detector, Led Display Screen and Vehicle Detector to make the whole system which can run offline independently.

>四. The System Management Software have below functions:

1). Feedback the real time occupancy situation to the control room.

2). Parking spaces usage statistics

parking spaces number correction





3.System Components

一: Split type ultrasonic detector (Parking-Sps)



二: Indicator (Parking-Spsidc)





三: 3 detector share 1 indicator circuit board (Circuit-301)



四: Area Controller (Parking-40 Area)

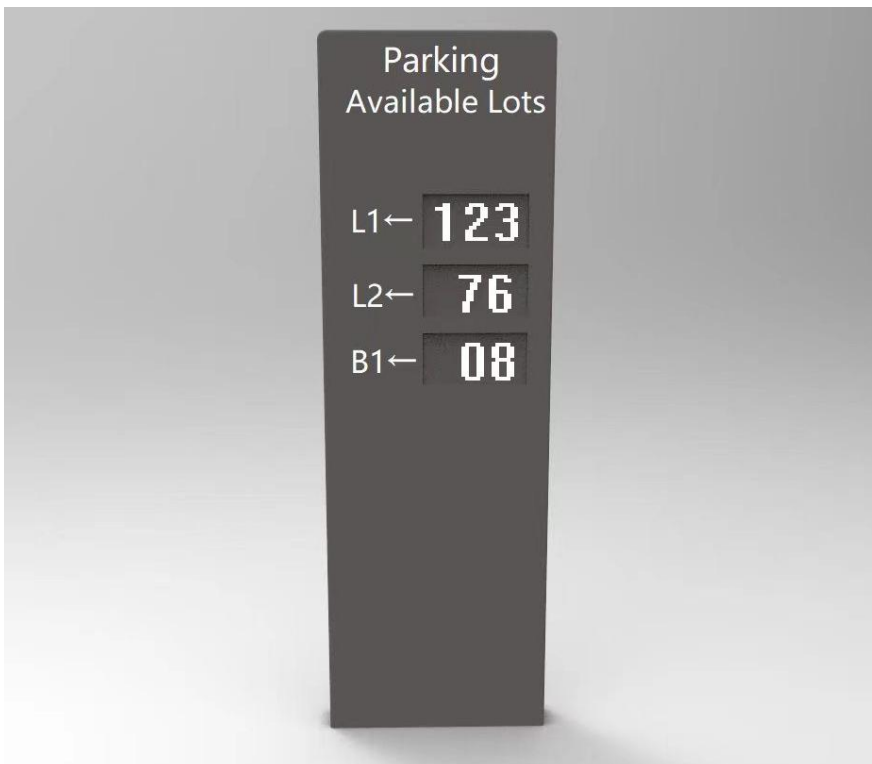




五: Led Display Screen (Parking-301Screen)



Outdoor display (Parking-303Screen)



4.Power supply

The system use 12V power supply



5. Project Installation Guide

Requirement:

1. The installation height of the parking space detector must not be lower than the parking lot limit;
2. There must be no other hanging objects around the parking space detector;
3. The parking space indicator is consistent with the projection of the projection and the parking space end, and there must be no obstacles in front;
4. In front of the guidance information screen, if there are obstacles such as air -conditioning ducts, water pipes, fire water pipes and other obstacles, the corresponding movement screen position should be moved according to the premise of ensuring the guidance effect, which can be determined according to the construction guidance.

Description

1. The power cord of the parking space detector adopts RVV2X1.5mm wire, and the parking space detector communication cable adopts RVSP2X0.75mm wire. The information screen adopts the power supply method concentrated 220V input, and the power cord adopts a wire with RVV3X1.5mm; the communication cable of the regional controller and the guidance information screen uses RVSP2X0.75mm wire. All wires must meet relevant national standards.
2. All communication cables in the system must adopt the bus wiring method. It is strictly forbidden to adopt a star or "T" forming method.
3. All strong and weak electricity are wiring. The wiring and installation of the parking space detector are installed in a wire groove. The specifications of galvanized wire grooves are 50mmx25mm and the thickness of 0.8-1mm;
4. This system's AC220V power supply should be set up with lightning protection and grounding measures. The system line must set up a leakage circuit breaker protection.
5. The electrical equipment of this system, metal shell, cabinet (frame), metal tube groove, shielding cable outer layer, anti -static grounding of information equipment, safety protection grounding, wave surge protector (SPD) grounding end, etc. The grounding terminal connection with the equal potential connection network.
6. The parking space detector should be installed above the center of the parking space. Except that there are restrictions on the top spot, it should be consistent (local limit height and the distance between the vehicle should not be less than 500mm)
7. The parking space detector and parking space indicator are installed at the same level. According to the situation at the scene, the best distance is 2.3 meters to 2.5 meters (where



the local area is not enough can be appropriately reduced); Other objects are blocked; vertical installation is directly above the parking space.

8. The parking space indicator can be localized when encountering obstacles such as air ducts. In case of obstacles such as the tube row, air duct, etc.

(1) If the upper obstacles are parallel to the indicator light, the height of the indicator light is used;

(2) If the obstacle of the upper obstacle is crossing the arm of the indicator light, the indicator lighting arm support is consistent with the height of the height of the indicator light after bypassing the obstacles. In order to ensure the overall aesthetics, more than two elevations should not occur at the same position.

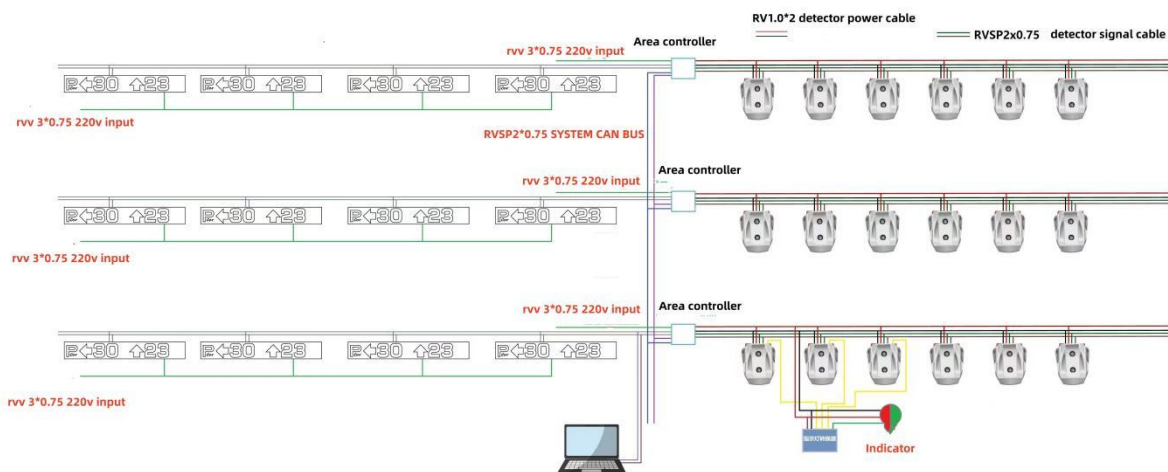
9. The parking space indicator is consistent with the projection of the projection and the end line of the parking space; in the case of a local decline area, the line tube of the parking indicator light should be unified with the standard high after 90 degrees.

10. Guide the information screen divided into the total screen and regional guidance information screen. The total screen is installed at the main entrance of the parking lot. It should avoid the sun and rain as much as possible. The lowest point of the height screen is higher than the limit of the parking lot. The stainless steel rope with a diameter of 3mm-4mm is hanging vertically above the intersection.

11. In order to avoid damage or failure caused by intentional or unintentional touch, the regional controller should install as much as possible on the wall with a height of no less than 2 meters from the ground.

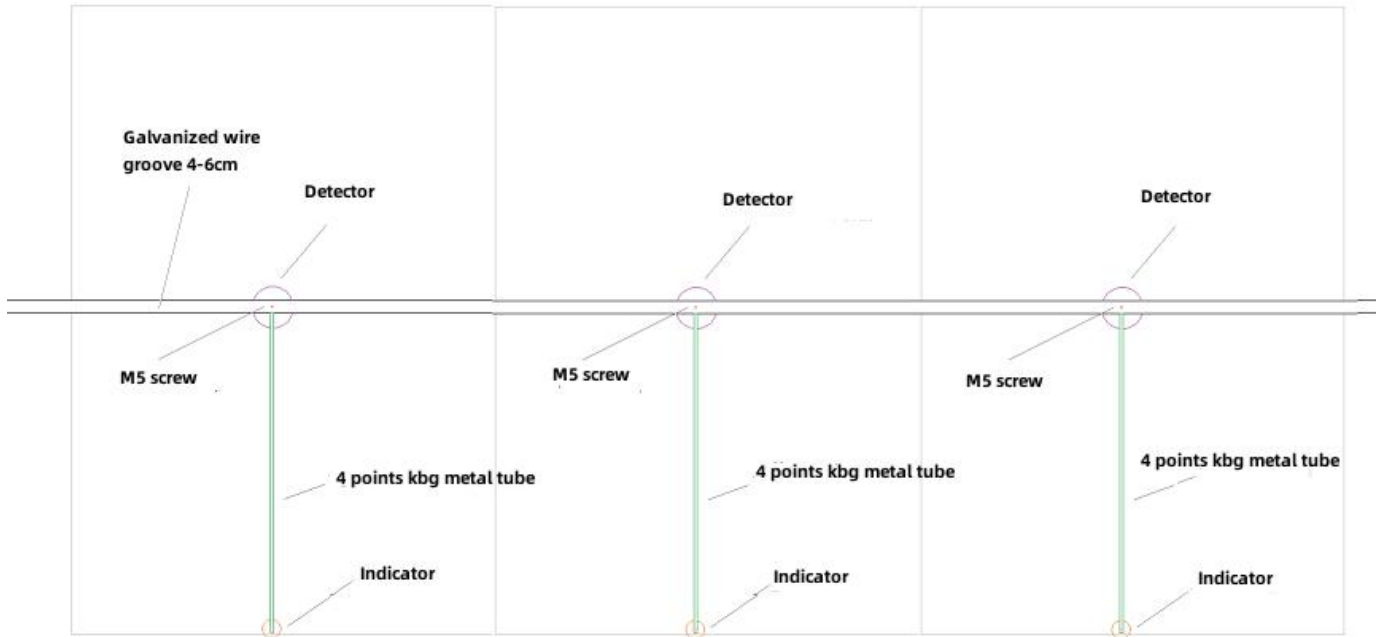
12. Other unruly places, refer to construction guidance or relevant industry standards.

System structure diagram





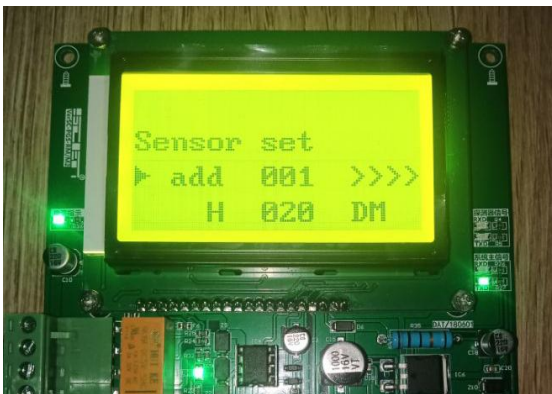
6.Reference installation method



7.Online test and setting method

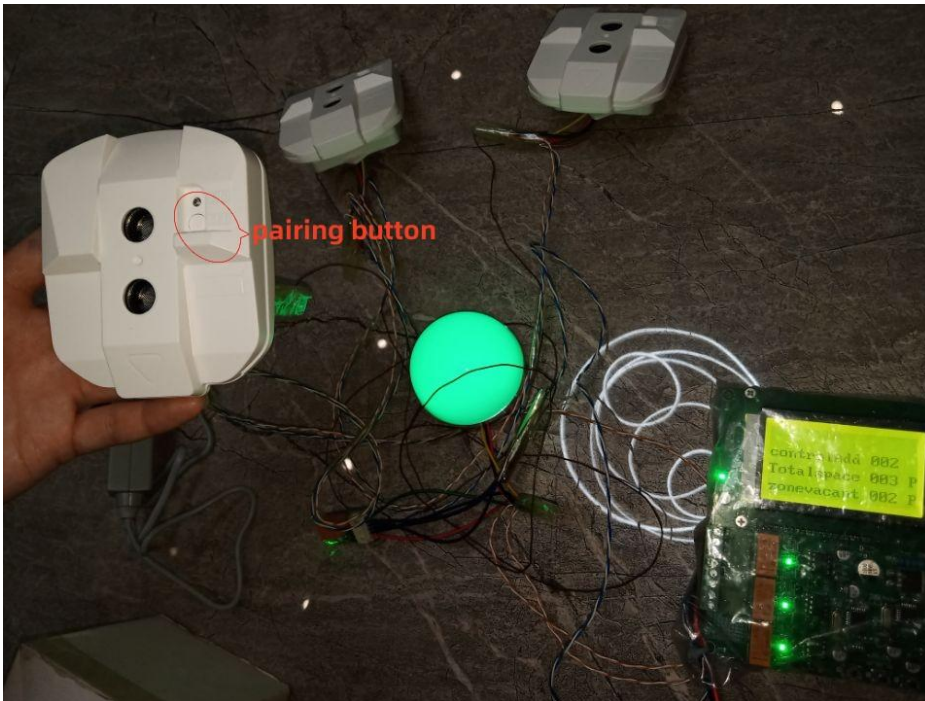
All settings of the parking detector and area controller can be set online through the area controller of the belonging. The simple operation method is as follows: Press the A key for 5 seconds to hear the "Beep" sound successfully in the normal running state. The area controller parameter interface, because the area controller has been set up before the factory, and no need to be set up, so only the height and address of each detector need to be set. Settings]

1.detector address set





a: Long press A button to enter the set up manual and pairing the detector to the belonging area controller by pushing the detector surface panel set button






For example in the above picture as refer area controller is 001 address ,detector set up address is 20
 After finish setting the detector address the area controller can feedback the address 20 detector parking bay status

B: Before setting ultrasonic detector, the power supply and line wiring must be guaranteed correctly, and you can also pairing to area controller by intending to get the detector have only 10cm distance to make it to detect the objects

Noted: If there is a "failure", please check the above requirements and try again;

1. When enter the setting mode, if need to return to the normal operating mode, it need to power off and then re -power. The full operation process only needs the A \ B \ C key to cooperate with . A button is confirm button just need to long or short pressing to implement the function; if enter to the engineering setting mode, it need to back to the normal running mode and re power)

2. When the area controller and the subordinate detector are successfully connection and is running , it can press the B key to check the status, As shown in the figure below, the detector of address 1  Test a car, Detector of address 17  Test no car, Others  No device, or the device of the address is not online





Computer setting and debugging method of the device

The computer needs to connect to the detector RS485 communication conversion interface to communicate with the device.

Detector

1. Detector, adopts the RS485 bus communication mode, 2 power lines, 2 data cables, and one hemispherical double -color LED signal indicator control line, a total of 5 cores, the color definition is as follows:

Red: DC12V+

Black: GND

Green: RS485+

Brown: RS485-

Yellow: LED indicator light control line

Area controller

1. The wiring terminal of the area controller is 8 digits, which are n1; n2; n2; n3; n4; n5; n6; n7; n8; terminal function definition as:

N1: DC12V+

N2: GND

N3: The total data line of system communication RS485+, connects the communication bus of the controller in each area in the system, is used to establish the communication between the area controller in the entire system;

N4: System communication total data line RS485-, connects the communication bus of the controller in each region in the system, is used to establish communication between the area controller in the entire system;

N5: The parking display bus RS485+, connected to any parking screen display in the system, the connected area is not limited, the connected display type is not limited, the geographical location of the connection is not limited;

N6: The parking space display bus RS485-, connected to any parking screen display in the system, the connected area is not limited, the connected display type type is not limited, the connected geographical location is not limited;

N7: The parking space detector bus bus connected to the area RS485+ is used to collect the parking space status of the area

N8: The parking space detector bus bus RS485- in the area is used to collect the parking space status in the area



Parking Display Screen

There are two groups of cables in the remaining display screen of the parking space, which are divided into AC220V power cord and RS485 communication cable. It is defined as:

AC220V three -core characters connect plug -in cable definition:

Brown: L fire line

Blue: N zero line

Yellow -green: ground line

The definition of the two -core shielding communication cable:

Brown: RS485+Communication

Blue: RS485-Communication

The display screen parameter settings :

(Any parameter settings of the display screen must be set up after pressing the buttons on the back of the display body before it can be effectively set)

The screenshot shows the configuration software for the LED display. The 'LED Display' menu item is selected. The 'VMS Type' section has 'Single' selected. The 'VMS and Corresponding Zone Controller Guidance Logic Setting' table is as follows:

Zone Controller	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
001Zone Controller	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
002Zone Controller	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
003Zone Controller	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
004Zone Controller	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
005Zone Controller	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
006Zone Controller	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
007Zone Controller	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
008Zone Controller	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
009Zone Controller	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
010Zone Controller	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
011Zone Controller	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
012Zone Controller	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
013Zone Controller	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
014Zone Controller	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The '001 Zone Controller controlled' status is shown at the bottom. The 'Arrow' section has 'Up ↑' selected. The 'VMS Brightness Setting' section has '3' selected.

Install and open the parking tool debug software choose the controller and the parking detector will display out for doing the linkage



8. Software

