

# Communication Protocol



## Motor

Order	{“N”:1,”D1”:Parameter1,”D2”:Parameter2 }
Function	Select the motor to set the speed.
Return	{ok}
Parameters Specification	<p><b>Parameter 1</b> (Select the corresponding motor) 0 : All Motor 1 : Left Motor 2 : Right Motor</p> <p><b>Parameter 2</b> (The speed of the selected motor) Speed Range: 0~255</p>

Order	{“N”:2,”D1”:Parameter1,”D2”:Parameter2, “T”:Parameter4}
Function	Set the direction and speed of the car for a period of time.
Return	{ok}
Parameters Specification	<p><b>Parameter 1</b> (The direction of the selected motor) 1: Turn left 2: Turn right 3: Forward 4: Backward</p> <p><b>Parameter 2</b> (The speed of the selected motor) Speed range: 0~255</p> <p><b>Parameter3</b> (The duration of the motor) User input a duration value between 0 second to 20 seconds.</p>

<b>Order</b>	{“N”:3,”D1”:Parameter1,”D2”:Parameter2 }
<b>Function</b>	Set the direction and speed of the car.
<b>Return</b>	{ok}
<b>Parameters Specification</b>	<p><b>Parameter 1</b> (The direction of the selected motor)            1: Turn left            2: Turn right            3: Go forward            4: Go backward</p> <p><b>Parameter2</b> (The speed of the selected motor)            Speed range: 0~255</p>

<b>Order</b>	{“N”:4,”D1”:Parameter1,”D2”:Parameter2 }
<b>Function</b>	Set the speed of the left and right motor respectively.
<b>Return</b>	{ok}
<b>Parameters Specification</b>	<p><b>Parameter 1</b>(Speed of left wheel)            Speed range: 0~255</p> <p><b>Parameter 2</b> (Speed of right wheel)            Speed range: 0~255</p>

## Servo

Order	{"N":5,"D1":Parameter1,"D2":Parameter2 , "D3":Parameter3}
Function	Set the direction and speed of the motor.
Return	{ok}
Parameters Specification	Parameter 1 (Port 1) Parameter 2 (Slot 1) Speed range: 0~255 Parameter 3 (The angle of the servo)

## Voice

Order	{"N":6,"D1":Parameter1,"T":Parameter2 }
Function	Play a sound at a certain beat.
Return	{ok}
Parameters Specification	Parameter 1 (Buzzer Frequency) Parameter 2 (Duration) The length of time for each sound of the buzzer.

# Lightz

Order	{“N”:7,”D1”:Parameter1,”D2”:Parameter2 , ”D3”:Parameter3 ,”D4”:Parameter4 ,”T”:Time}
Function	Set the switch and color of the RGB Light.
Return	{ok}
Parameters Specification	<p>Parameter 1 (The selected RGB light) 0: All RGB 1: Left RGB 2: Upper RGB 3: Right RGB 4: Lower RGB 5: Middle RGB</p> <p>Parameter 2 (Color value of R)</p> <p>Parameter 3 (Color value of G)</p> <p>Parameter 4 (Color value of B)</p> <p>Parameter T</p> <p>The lighting time of the selected RGB.</p>

Order	{“N”:8,”D1”:Parameter1,”D2”:Parameter2 , ”D3”:Parameter3 ,”D4”:Parameter4 }
Function	Set the switch and color of the RGB Light.
Return	{ok}

# Parameters Specification

Parameter 1 (The selected RGB light)

- 0: All RGB
- 1: Left RGB
- 2: Upper RGB
- 3: Right RGB
- 4: Lower RGB
- 5: Middle RGB

Parameter 2 (Color value of R)

Parameter 3 (Color value of G)

Parameter 4 (Color value of B)

Parameter T

The lighting time of the selected RGB.

## Matrix LED

Order

```
{"N":9,"D1":Parameter1,"D2": Parameter2",
 "D3":Parameter3 , "D4": Parameter4 ,
 "D5":Parameter5,"D6": Parameter6",
 "D7":Parameter7 , "D8": Parameter8 }
```

Function

Set Matrix LED to display expression.

Return

{ok}

# Parameters Specification

Parameter 1 (The first line)

- 1: Turn on the light
- 0: Turn off the light

Take row as unit, convert the number of 16 lit or not lights into decimal as a parameter.

For example, if the first line of lights is all lighten up: 1111111111111111, then convert it into decimal is 65535.

The follow-up parameters are the same as parameter 1.

Order	{“N”:10,”D1”:Parameter1 }
Function	Set Matrix LED display numbers.
Return	{ok}
Parameters Specification	Parameter 1 (The number to be displayed )

## Rocker clear function mode

Order	{“N”:100 }
Function	Clear all the executing modes.
Return	Not return

## Remote control mode switching command

Order	{“N”:101,”D1”:Parameter1}
Function	Switching the mode of the car.
Return	Not return
Parameters Specification	<p>Parameter 1</p> <p>1: Line-tracking Mode 2: Obstacle-avoidance Mode 3: Auto-follow Mode</p>

## Rocker movement command

Order	{"N":102,"D1":Parameter1,"D2":Parameter2}
Function	The car moves in a certain direction with the default maximum speed.
Return	Not return
Parameters Specification	Parameter 1 1: Forward 2: Backward 3: Turn left 4: Turn right 5: Turn left front 6: Turn left rear 7: Turn right front 8: Turn right rear Parameter 2: Speed value

## Remote control the function of Line-tracking mode

Order	{"N":103,"D1":Parameter1}
Function	Make the car move along the line.
Return	Not return
Parameters Specification	Parameter 1 Two-dimensional array of recorded coordinates with variable length.

## Remote control- Modulation threshold

Order	{“N”:104,”D1”:Parameter1}
Function	Adjust the sensitivity of the car’ s tracking sensor.
Return	Not return
Parameters Specification	Parameter 1:50-1000

## Remote control the brightness of the light

Order	{“N”:105,”D1”:Parameter1}
Function	Adjust the brightness of the car’ s light.
Return	Not return
Parameters Specification	Parameter 1 1: Turn up the light 2: Dim the light

## Camera Rotation

Order	{“N”:106,”D1”:Parameter1}
Function	Direction of camera rotation.
Return	Not return
Parameters Specification	Parameter 1 1: Turn up 2: Turn down 3: Turn left 4: Turn right

## Ultrasonic Mode

Order	{“N”:21, “D1”:Parameter1 }
Function	Check if obstacles are detected.
Return	{false} :No Obstacle are detected {true} :Obstacle detected  {Ultrasonic value}
Parameters Specification	1: Check if obstacles are detected. 2: Search for Ultrasonic value.

## Line-tracking Mode

Order	{“N”:22,”D1”:0 }
Function	Check if the tracking sensor detects black lines.
Return	{false} :No black line detected {true} :Black line detected
Parameters Specification	Parameter D1 0: Left tracking sensor 1: Middle tracking sensor 2: Right tracking sensor

Order	{“N”:23 }
Function	Check if the car is off the ground.
Return	{false} :On the ground {true} :Off the ground

## Clear status programming mode

Order	{“N”:110 }
Function	Clear all the executing function but do not enter the standby mode.
Return	Not return