WI-FI CONTROLLED UGV THROUGH THE ANDROID APPLICATION

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Contents

Abstract

This manual shows how to control the UGV through the android application using Wi-Fi and display on the seven segment according the controls in the android app.

1 Components

Components	Values	Quantity
Vaman Bord		1
JumperWires	M-F, F-F	15
Breadboard		1
UGV-kit		1
Seven-Segment display		1
Resistor	220	1
Motor Driver IC	L293	1
USB-UART		1

2 Implementation

1. Connect the USB-UART pins to the Vaman ESP32 pins according to Table

VAMAN LC PINS	UART PINS
GND	GND
ENB	ENB
TXD0	RXD
RXD0	TXD
0	IO0
5V	5V

2. Flash the following setup code through USB-UART using laptop

https://github.com/aruniot099/Wi-Fi-controlled-UGV/blob/main/code/src/main.ino

```
svn co https://github.com/aruniot099/Wi-Fi-controlled-UGV
cd codes
pio run
pio run -t upload
```

after entering your wifi username and password (in quotes below)

```
const char* ssid = "...."; // Add your network credentials
const char* password = "....";
```

in src/main.ino file

3. You can notice that vaman will be connnected to the network credentials provided above. You should be able to find the ip address of your vaman-esp on laptop using

```
screen /dev/ttyUSB0 115200
```

Now, Download the Wifi ToyCar apk and install it on the Android Mobile and give the necessary permissions.

4. On Android Mobile open the Wifi ToyCar application. Replace the IP address in the provided slot by IP address displayed on the Laptop screen during screen monitoring.

5. Now connect the Seven Segment to the Vaman board according to the given connection given in the table

VAMAN PINS	SEVEN SEGMENT PINS
IO-32	a
IO-33	b
IO-25	c
IO-26	d
IO-27	e
IO-14	f
IO-12	g

Now you can observe the changes on sevensegment display for every key pressed on the joystick on the android application