

DISPLAY CONTROL OVER BLUETOOTH IN DIGITAL MODE THROUGH THE ANDROID APPLICATION

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Abstract

This manual shows how to control the Display through the android application using Bluetooth in Digital mode 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/likhith1101/fwcassgn/tree/main/Bluetooth-controlled-Digitalmode/codes
```

```
svn co https://github.com/likhith1101/fwcassgn/tree/main/Bluetooth-controlled-Digitalmode
cd codes
pio run
pio run -t upload
```

3. After uploading the code in the vaman board as per the given instructions, then download the Dabble apk and install it on the Android Mobile and give the necessary permissions.
4. On Android Mobile, open the Dabble application. Select gamepad option in the app and then select Digital Mode. In this mode, joystick contains buttons.
5. Connect esp32 by clicking bluetooth icon in the app, which enables bluetooth and esp32 will get connected.
6. 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 seven segment display for every key pressed on the joystick on the android application