Introduction to ESP32 using Vaman

G V V Sharma*

Contents

Abstract—This document provides a simple introduction to programming the ESP32 on Vaman using the Arduino framework

1 Software

All codes used in this document are available at the following link

```
https://github.com/gadepall/vaman/
    tree/master/esp32/setup/codes/
```

2 Hardware Setup

2.1. Connect the USB-UART to raspberry pi through USB.

2.2. On the rpi

```
dmesg | tail
lsusb
```

you should see the USB-UART connector detected.

2.3. Connect the USB-UART pins to the Vaman ESP32 pins according to Table 2.3.1

2.4. Connect the Vaman-ESP pins to the seven segment display according to Table 2.4.1 The GPIO pins are listed in Table 2.4.2 Note that these pins can be used for several functions, refer to the ESP32 datasheet for details. The Vaman pin diagram is available in Fig. ??

*The author is with the Department of Electrical Engineering, IIT Hyderabad, 502285. email:gadepall@ee.iith.ac.in

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

TABLE 2.3.1

ESP	SEVEN SEGMENT DISPLAY
5V	COM
18	DOT

TABLE 2.4.1

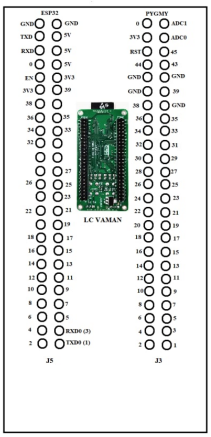

Fig. 2.4.1

3 Blink LED

3.1. On termux on your phone,

```
svn co https://github.com/
    gadepall/vaman/trunk/esp32/
    setup/codes/ide
cd ide
pio run
```

3.2. Transfer the ini and bin files to the rpi

GPIO	Input	Others
2	34	1
4	35	3
5	36	6
10	37	7
12	38	8
13	39	9
14		10
15		11
16		
17		
18		
19		
21		
22		
23		
25		
26		
27		
32		
33		

TABLE 2.4.2

```
scp platformio.ini pi@192
    .168.50.252:./hi/platformio.
    ini

scp .pio/build/esp32doit-devkit
    -v1/firmware.bin pi@192
    .168.50.252:./hi/.pio/build/
    esp32doit-devkit-v1/firmware
    .bin
```

3.3. On rpi,

```
cd /home/pi/hi
pio run -t nobuild -t upload
```

3.4. On your phone, open

```
src/main.cpp
```

and change the delay to

```
delay(2000);
```

and exectute the code by following the steps above.