PiTalk

Instruction Manual

- ## Getting started

Now that you got your PiTalk, follow these steps to get you phone up and ready to go.

1. Connect the SMA Antenna to the shield as shown
2. Insert the micro SIM card in the SIM slot to the bottom of the shield
3. Mount the shield to the Raspberry Pi via 40 Pin GPIO or through Micro USB.
   a. NOTE: USB mode needs two cables, one for power and the other for communication. Connect both of them to the Raspberry Pi.
4. Connect your Raspberry Pi to the Internet
5. Open the terminal, navigate to the directory inside which you have stored the PiTalk files. Give executable permission setup file by typing:

   ```
   sudo chmod +x setup.py
   ```

6. Run setup by typing:

   ```
   sudo ./setup.py
   ```

   This will download the necessary files needed for running the GUI and also enable your serial port. Your Raspberry Pi will reboot automatically after it is done executing.
7. When the Raspberry Pi is turned on, turn on the power by pressing the power button for 1 second. The red LED will start blinking and will stabilize, blinking once per second indicating that the network is registered.
8. Open the terminal, navigate to the directory inside which you have stored the PiTalk files. Start the GUI on HDMI screen (i.e. Computer Screen not 4"or 5" LCD) in Portrait or Landscape mode by typing:
   For Raspberry Pi 3 use ttyS0 -

   ```
   ./GUI5_Portrait.py ttyS0
   ```
   Or

   ```
   ./GUI5 _Landscape.py /dev/ttyS0
   ```

   For other models use ttyAMA0 -

   ```
   ./GUI5 _Portrait.py ttyAMA0
   ```
   Or

   ```
   ./GUI5 _Landscape.py /dev/ttyS0
   ```

Note: If PiTalk is connected through USB cable then port number is ttyUSB3 –

```
./GUI5 _Portrait.py ttyUSB3
```
Or

```
./GUI5 _Landscape.py ttyUSB3
```

This will show PiTalk GUI on your computer screen in Portrait or Landscape Mode.

9. If you want to play it on your 5" LCD, mount the LCD via GPIO pins on PiTalk or on Raspberry Pi (if PiTalk is connected to Raspberry Pi through USB).
Or If you want to play it on your 5" LCD, connect the power USB of the LCD to any USB port of Raspberry Pi and connect the HDMI cable to the HDMI output of the Raspberry Pi.

Start GUI on HDMI and navigate to "Menu1"-> "Settings"-> "Screen Orientation". You will see 4 buttons with different angles. Click on preferred angle and your system will reboot and now boot on 4" or 5" LCD.

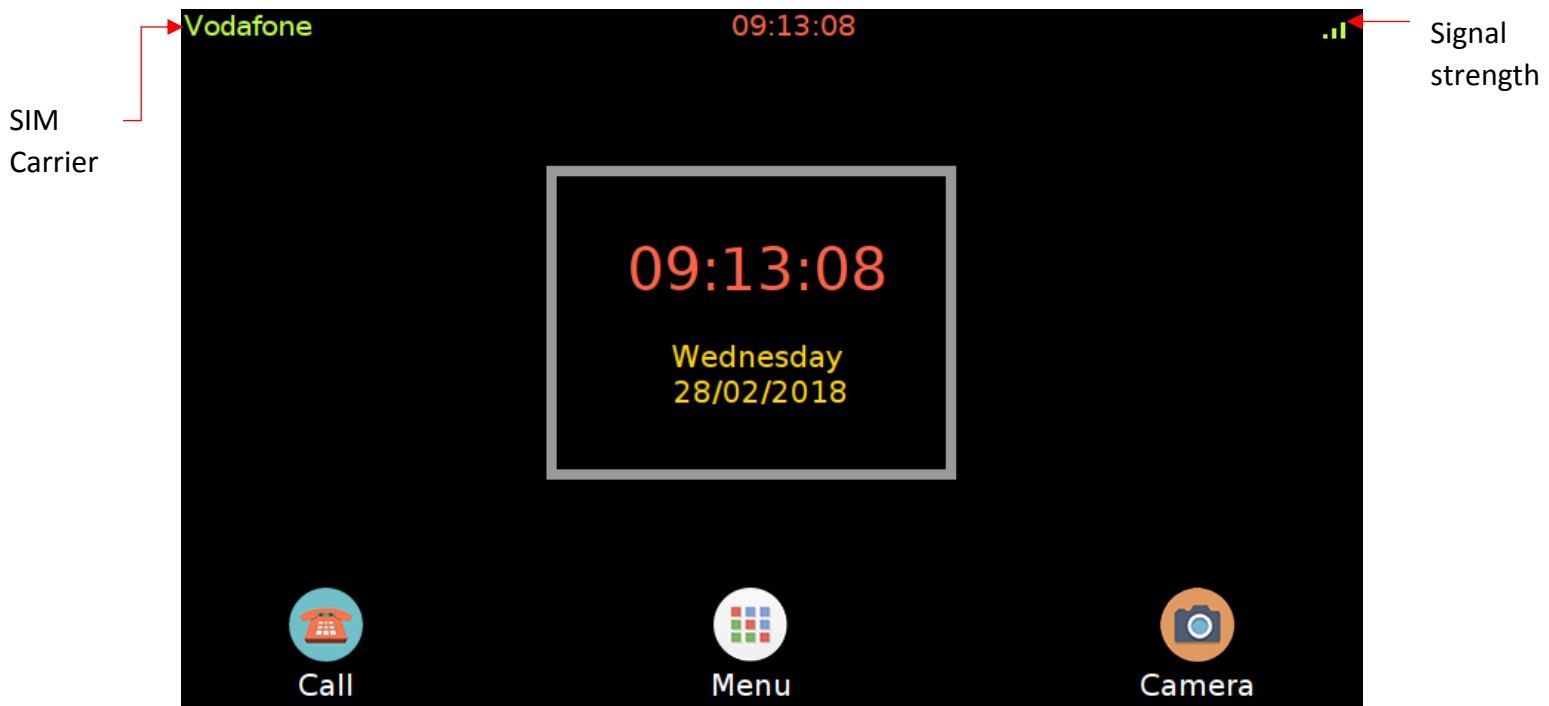Open terminal, go to PiTalk directory and repeat **STEP 8** to start PiTalk UI.

Note: Landscape.py works best with 0 and 180 Degree.
Portrait.py works best with 90 and 270 Degree.
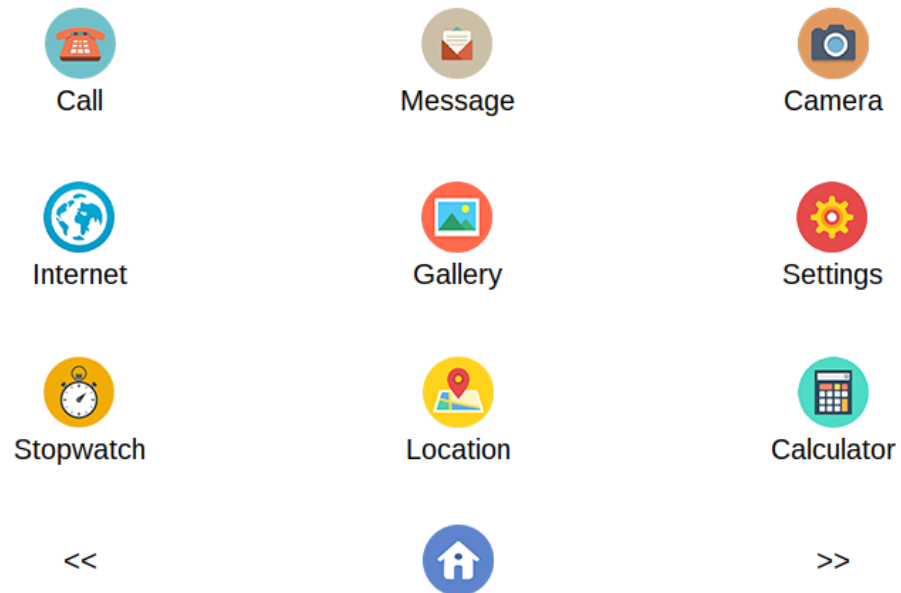
1. Home Screen and Menu

This section helps you navigate through your home screen and Menu pages
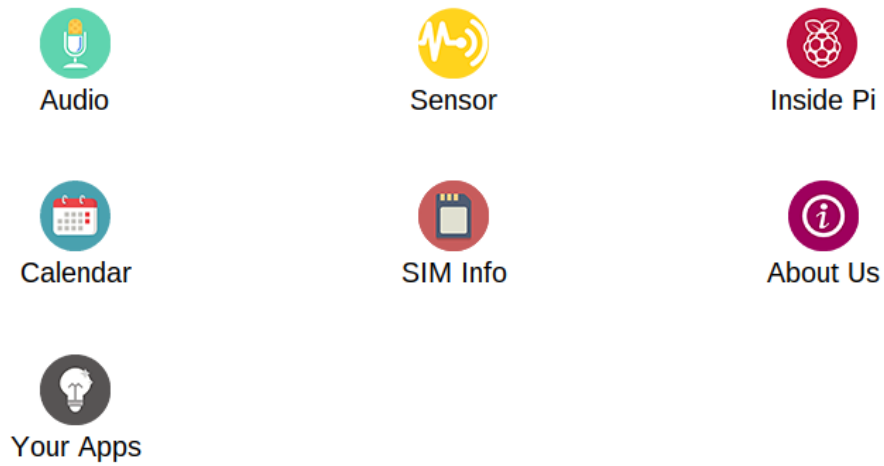
1. Home screen

2. Menu Screen

Vodafone	09:13:48	.ıl

Call	Message	Camera
Internet	Gallery	Settings
Stopwatch	Location	Calculator
<<	🏠	>>

Vodafone	09:13:51	.ıl

Audio	Sensor	Inside Pi
Calendar	SIM Info	About Us
Your Apps		

<<	🏠	>>

Back button   Home button   Next button

The Back and next button helps in navigating between the different menu screens. The home button takes back to the home screen.

In the following sections we'll go through the different buttons in the menu screen in the order of their arrangement

2. Call Screen

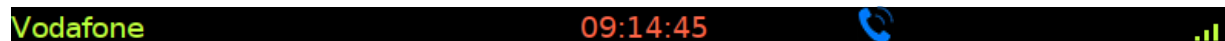Pressing the call Icon on either home screen on the menu screen takes you to this window.
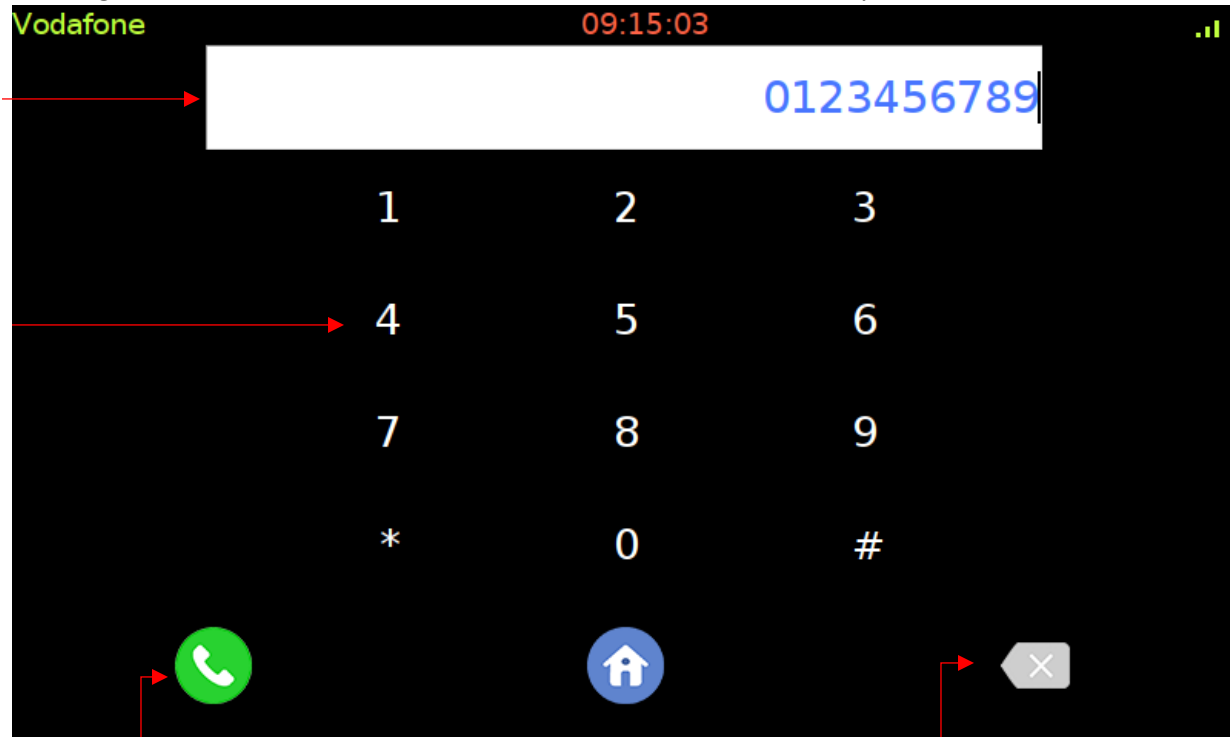
Dial Number: Dialed Number appears here.

Call Button: Pressing the Call button makes a call to the dialed number

Delete Button: Delete a single number at a time from Dial Number
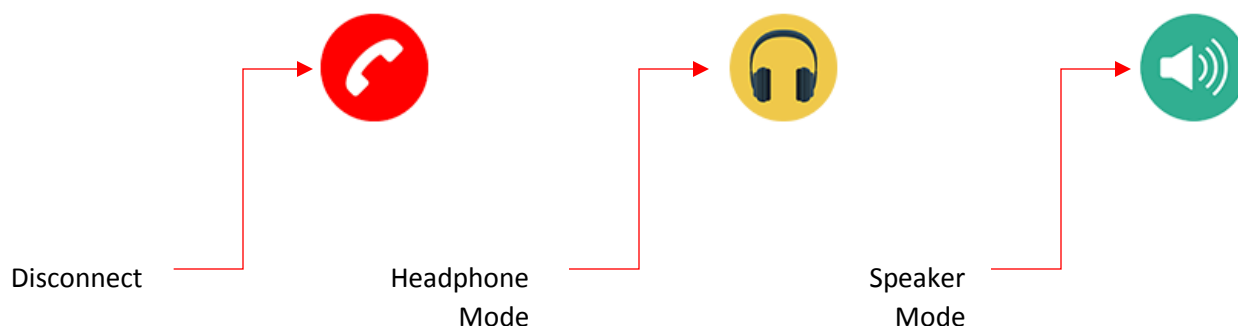
: Standard Dialpad used to dial numbers

Pressing the call button takes you to the next screen.

Outgoing Call

0123456789

Outgoing Call
Indicator

Disconnect   Headphone   Speaker
                              Mode   Mode

The dialed number is displayed above, the three buttons accompanying it are as follows.

Disconnect: Disconnects the outgoing call and takes you back to the home screen

**Headphone Mode**: Routes the audio to the Headphone Jack

NOTE: After this selection, the default audio for all functions is routed to the headphone jack

Speaker Mode: Routes the audio to the connected external speaker

NOTE: After this selection, the default audio for all functions is routed to the external speaker. The Label displays the current audio mode.
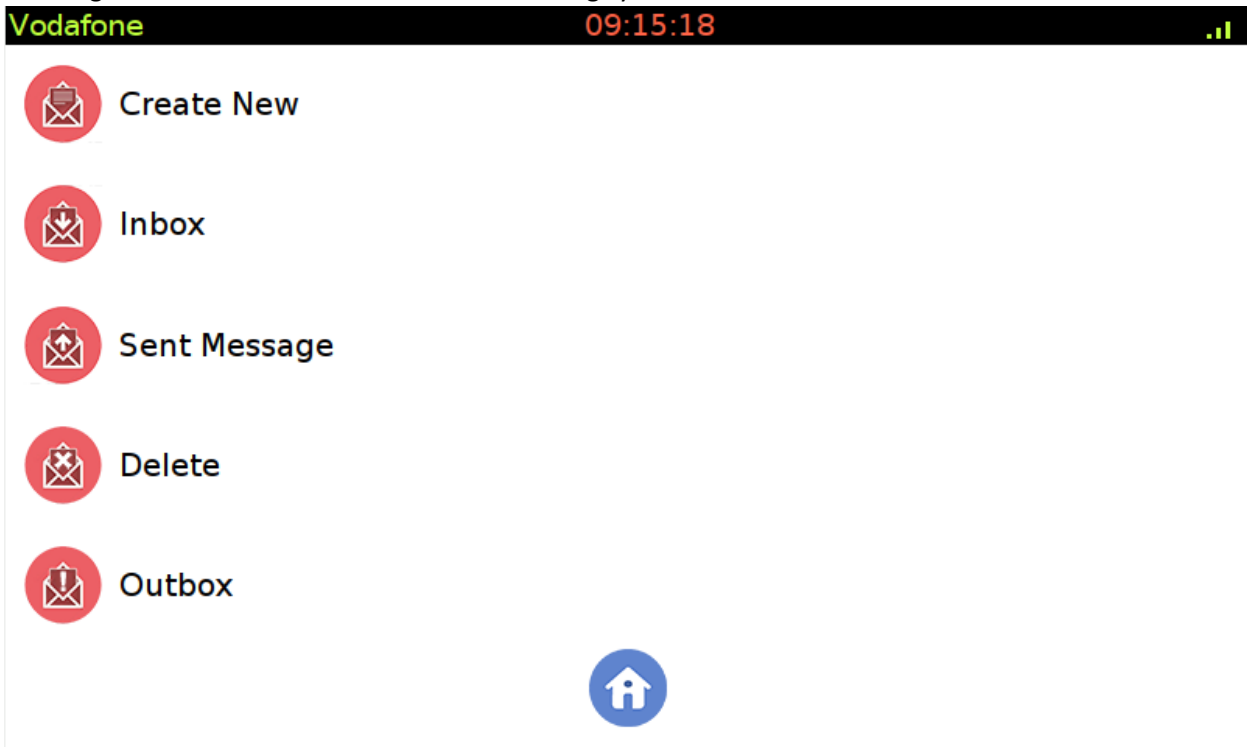
3. Incoming Call Screen

During an incoming call, the screen switches to the following screen:
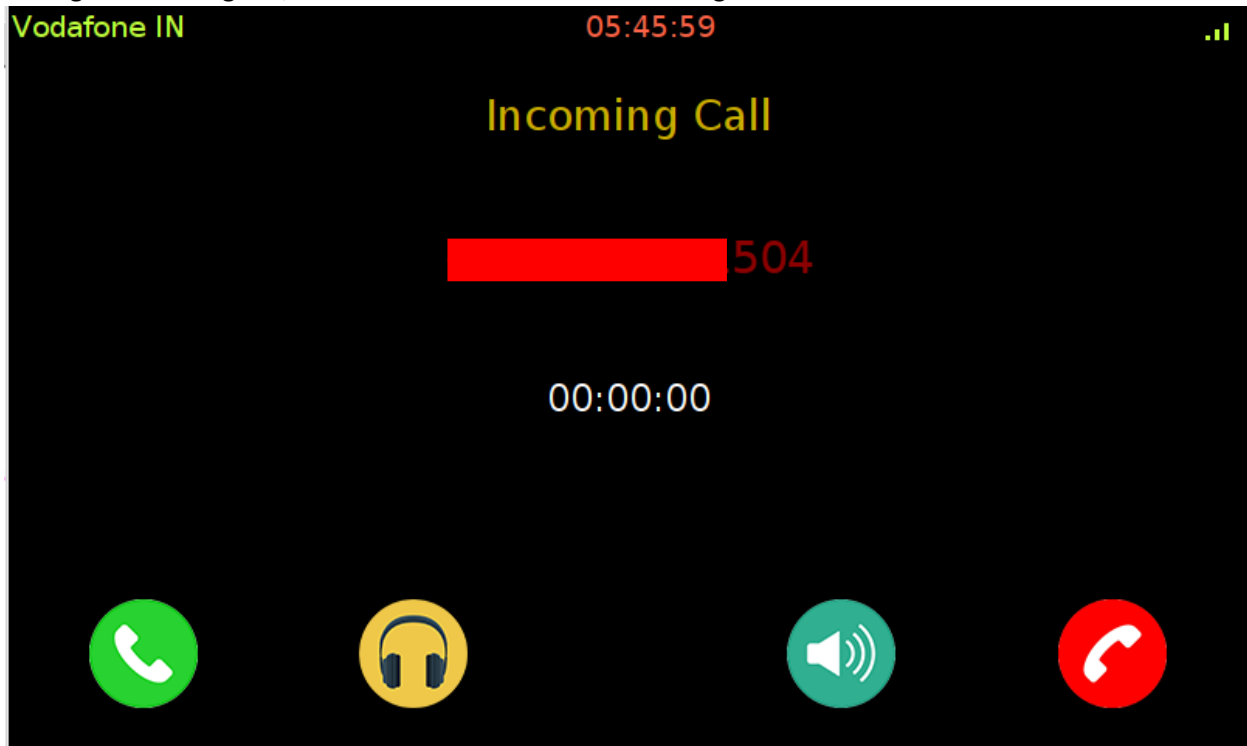
4. SMS Screen

Pressing the SMS button in the menu screen brings you to this screen

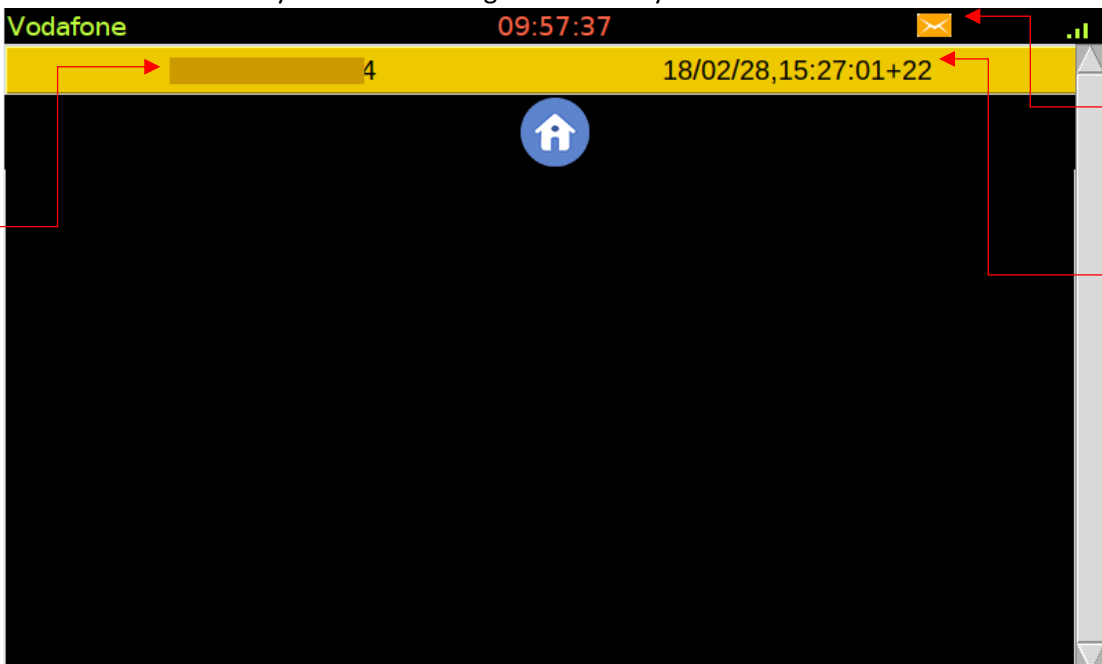Description of each button in this screen is as follows

1. **Create New**: This screen lets you send a regular SMS to the recipient number. Carrier charges apply.

Recipient →

Vodafone	09:15:43	.ıl
To:	0123456789	SEND

I am PiTalk

Text Body →

q	w	e	r	t	y	u	i	o	p
a	s	d	f	g	h	j	k	l	:
.	z	x	c	v	b	n	m	$	,
HOME	UP	space						SYM	DEL

2. **Inbox**: This screen lets you view incoming SMS sent to your SIM Card

Vodafone	09:57:37	✉	.ıl

4   18/02/28,15:27:01+22

🏠

New SMS indicator

Sender's Number

Date/Time of received SMS

3. Selecting a message from the list above brings you to the following screen, which has the body of the SMS along with the option to reply.

Sender number

Message Body

Back Button

Reply to sender

Home Button

The New SMS indicator is visible across all screens and only goes away if the user has read his unread messages. The unread SMS turns white from yellow in the message list. The scrollbar on the right helps navigate the list of received SMS.

4. **Delete**: Tapping on this button lets you delete all your received SMS from the MODULE or the memory in which the user is storing his SMS while maintaining their copies in Inbox and SMS log. It asks the user for a confirmation before deleting all SMS.
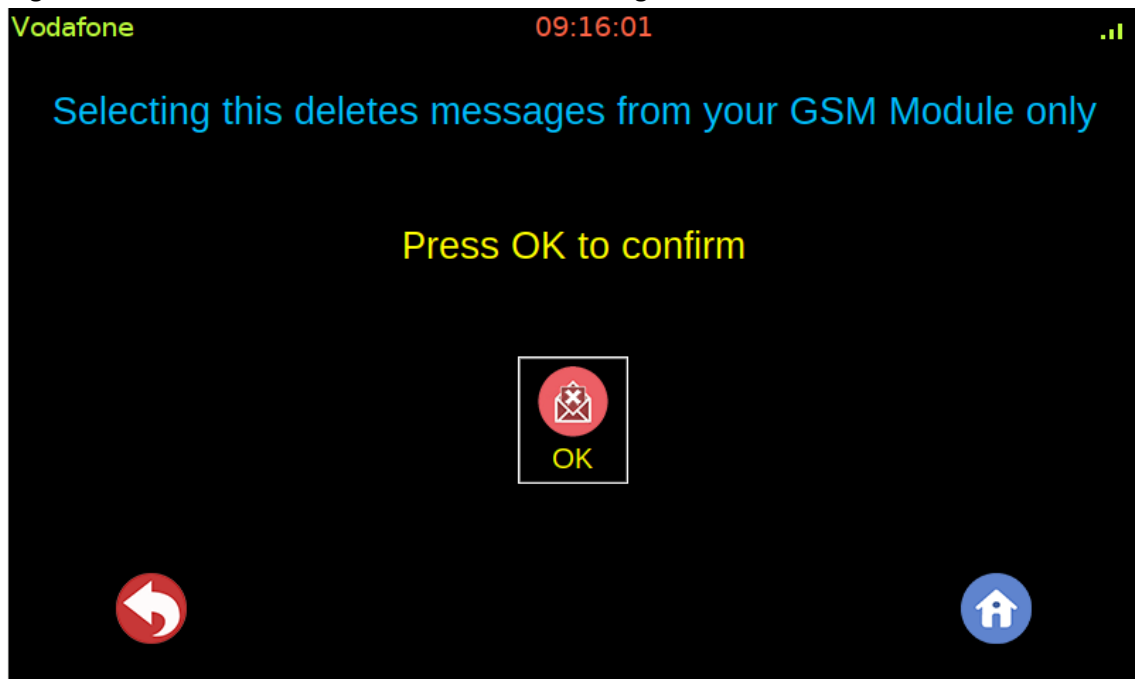
5. Camera Screen

Tapping the camera Icon on either the home screen or the menu screen brings you to this screen.
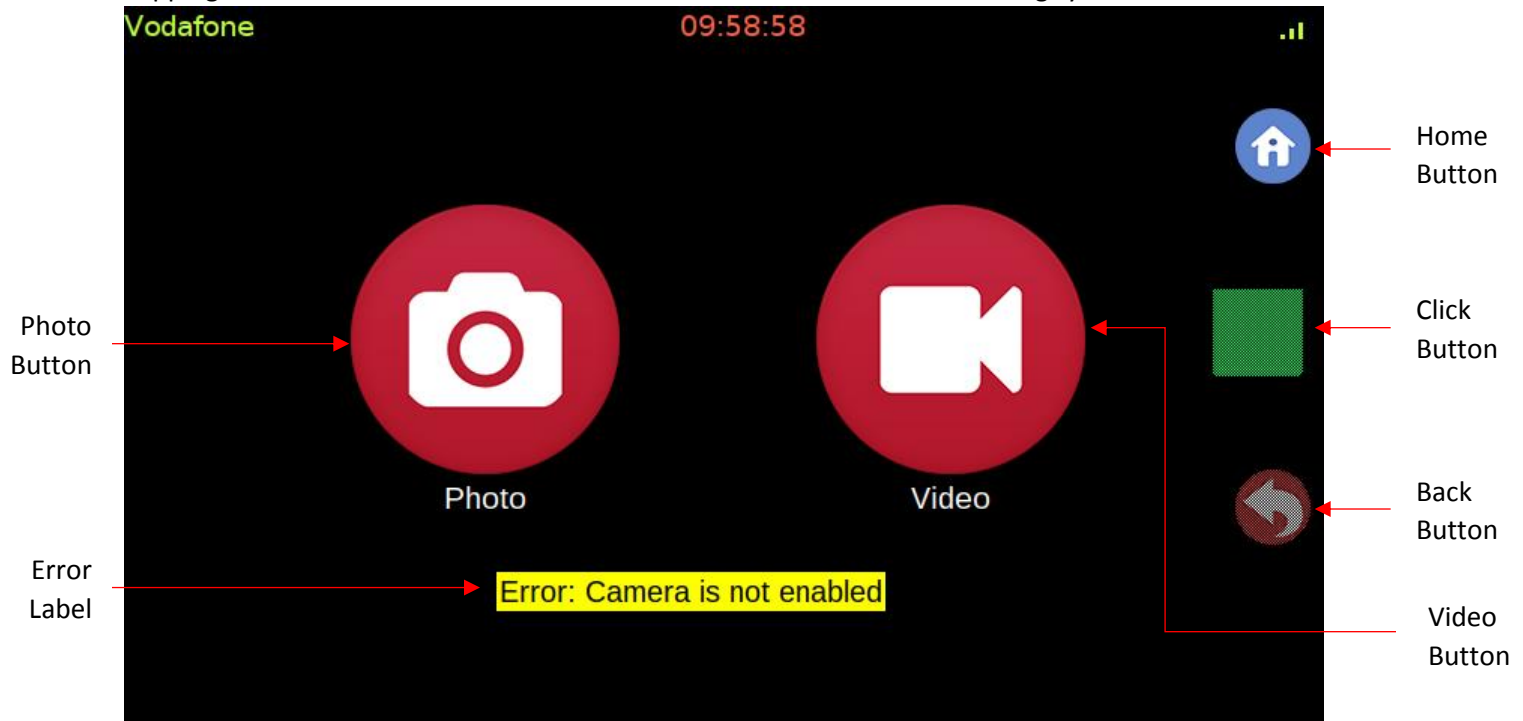
The different buttons and labels with their functions are described as follows:

1. **Photo Button**: This button lets you click photos from your camera attached with the raspberry pi.
2. **Video Button**: This button lets you record videos from your camera attached with the raspberry pi.
3. **Click Button**: This button remains disabled unless the camera is connected properly and either one of the modes is selected i.e., photo or video. It lets you click photos in photo mode and lets you record videos in video mode
4. **Error Label**: This error label pops up on the screen whenever the following scenario happens
    a. Camera is not enabled in the Raspberry Pi
    b. Camera is enabled but not connected to the Raspberry Pi
    c. Camera is connected but the connection is not proper
5. **Back Button**: This button lets you go back to the menu screen. It remains disabled unless the camera is connected.
6. **Home Button**: This button sends the user back to the home screen.

NOTE: To use the camera, you need to connect a Pi compatible camera (sold separately) and attach it to the raspberry pi via SUNNY connector

6. Internet Screen

Pressing this icon brings you to the following screen

The description of the labeled buttons and entries are as follows:

APN: This entry takes in the APN of your Network Carrier

Port: This entry takes in the Comm Port assigned to it by the raspberry Pi. The format is ttyxxx where x is the port assigned to it by the Raspberry Pi.

NOTE: It is recommended that the user connects the shield to the Pi along with mounting it over via GPIO pins and writing the port as 'ttyUSBx' where x is usually 3. This helps in uninterrupted AT communication of the shield with the GSM module via UART1 and internet is routed via UART2

Connect Button: This button connects the phone to the internet by taking the values from APN and Port. On successful connection it will pop a label with the text 'Connected' when the user presses the Status button.

Disconnect Button: This button allows the user to disconnect from the internet (if connected previously).

Status Button: This button checks the status of the internet connection. It pops a green 'connected' or a red 'disconnected' depending on the connection.

7. Gallery Screen

Tapping on the gallery icon in the menu brings you to this screen.
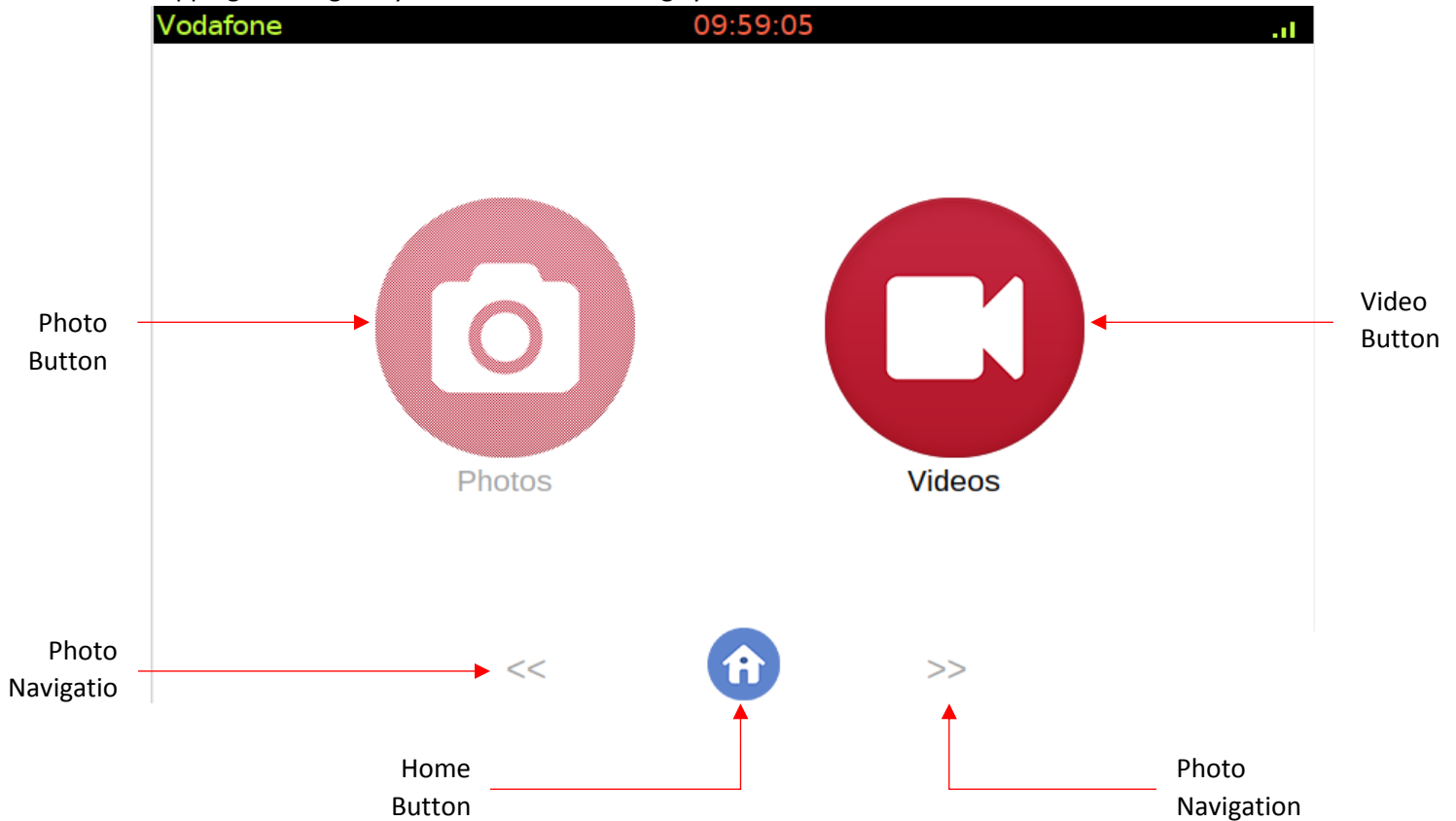
The function of the buttons and labels are as follows:

1. **Photo Button**: Views the photos stored in the memory. The photos are stored in ". /Gallery/Images" where "." Represents the directory in which PiTalk folder is located. It gets disabled when pressed and the error label shows "No Image" if the image folder is empty.
2. **Video Button**: Views the video stored in the memory. The videos are stored in ". /Gallery/Video" where "." Represents the directory in which PiTalk folder is located. It gets disabled when pressed and the error label shows "No Video" if the Video folder is empty.
3. **Photo Navigation Buttons**: The navigation buttons help navigating between different photos, and the photos are shown one at a time. They remain disabled until the user press the Photo Button AND there are images to be displayed.
4. **Error Label/ Image counter**: The error label shows the error mentioned above in case of no photo/video and shows the total Images in the photo section when viewing the photos.
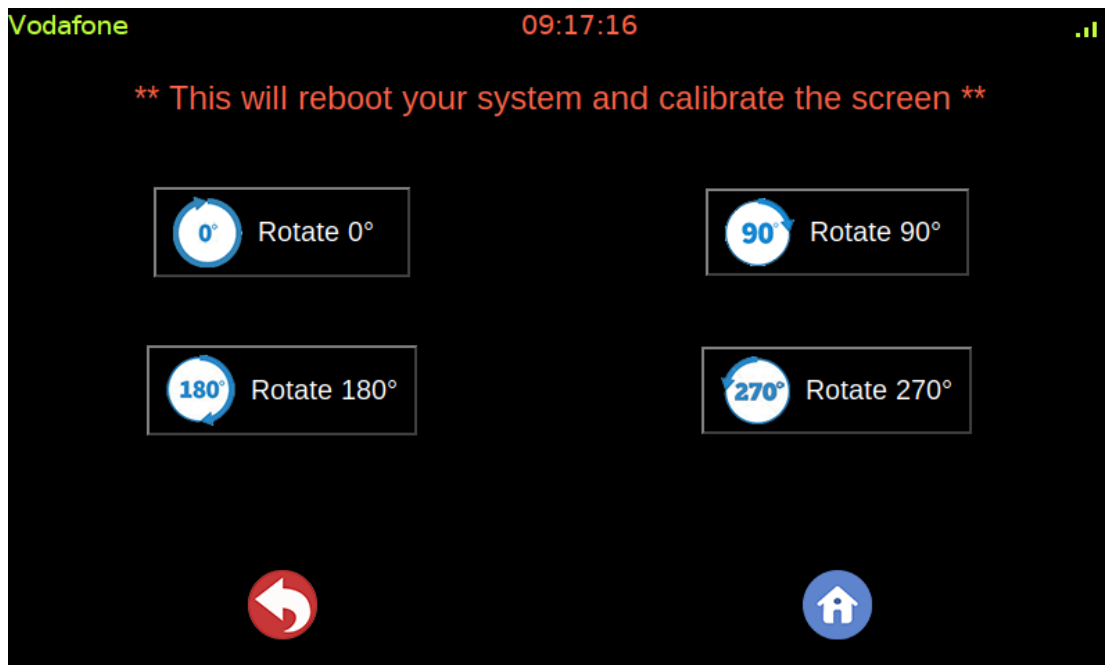5. **Home Button**: This button takes the user back to the home screen

8. Settings Screen

Tapping this icon in the menu screen lets you access the general settings of the PiTalk
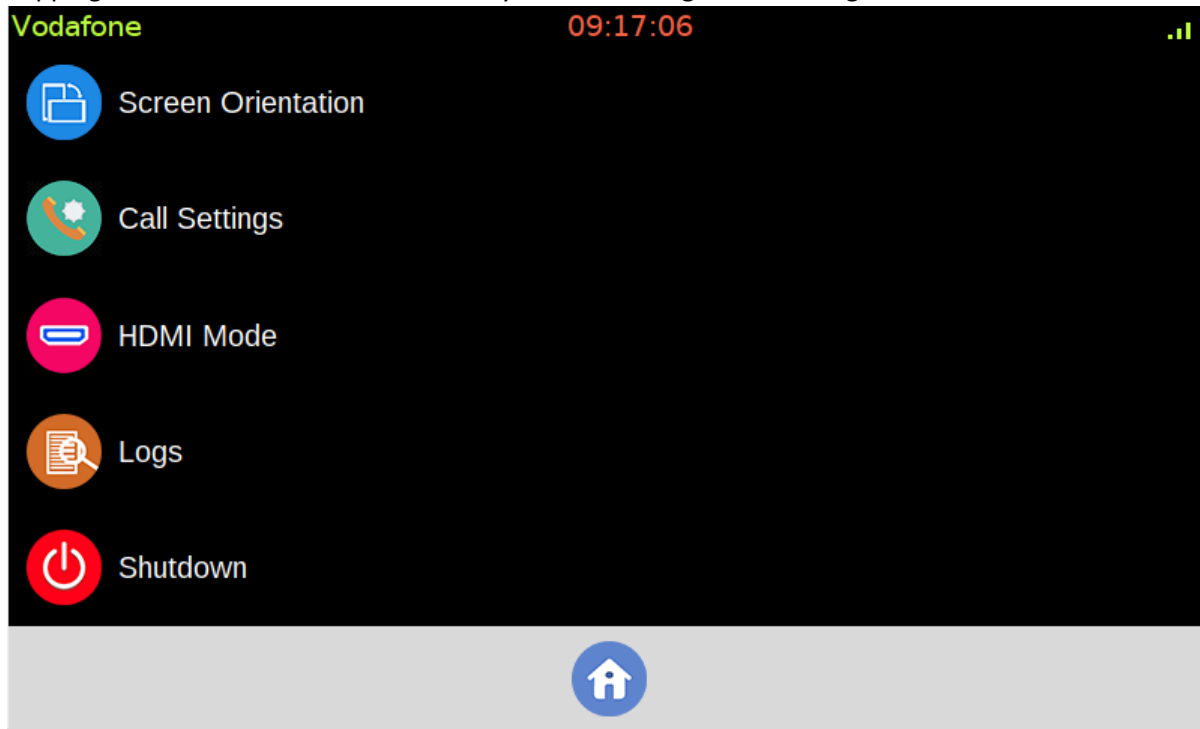
The description of the various settings are as follows:

1. Screen Orientation

The buttons are as follows:
1. **Rotate 0°:** Rotates the display output to the default position i.e., landscape mode.
2. **Rotate 90°:** Rotates the display output by 90 degrees. (Portrait Mode)

3. **Rotate 180°:** Rotates the display output by 180 degrees. (Landscape Mode)
4. **Rotate 270°:** Rotates the display output by 270 degrees.

NOTE: While the display output will still show on HDMI, it is recommended to view the rotated outputs on the respective LCD as the HDMI output will be zoomed in which might decrease the viewing aesthetics of the GUI

2. Call Settings
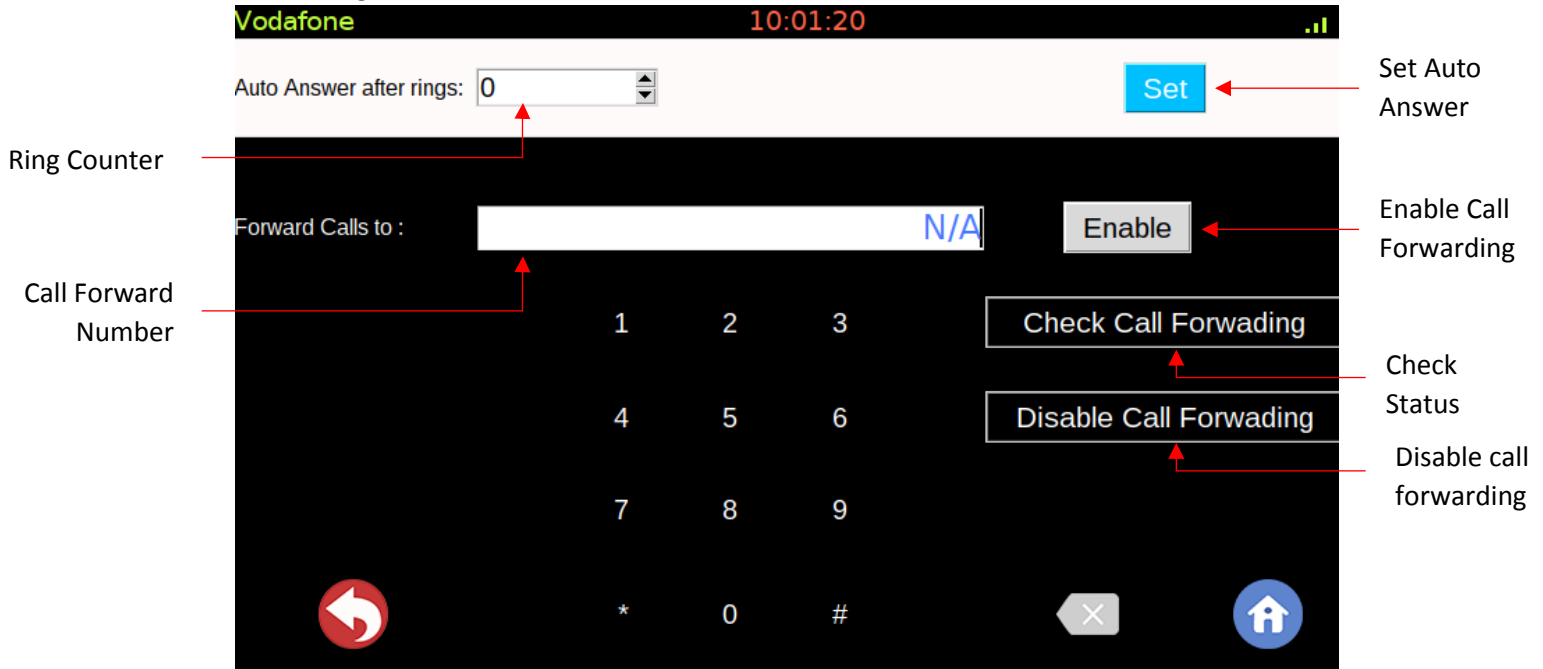
The description of the various buttons and labels are as follows:

1. **Ring Counter**: This counter goes from 0 to 10 and allows the user to set a fixed number of rings before automatically picking up an incoming call
2. **Call Forward Number**: User can type a number here with the help of the dialpad on which he needs his calls to be forwarded. The call forwarding is unconditional i.e., it will forward all calls until disabled. Carrier charges may apply.
3. **Set Button**: This button sets the number of rings displayed on the ring counter as the number of rings after which an incoming call is automatically connected
4. **Enable Button**: This button enables call forwarding and sets the number displayed on the entry as the default call forwarding destination. Invalid number or incorrect format (as shown) will result in a warning label popping up saying "Incorrect Format"
5. **Check Button**: This button checks the state of call forwarding and it returns the following
   a. The number to which calls are being forwarded, displayed in the entry box
   b. N/A if no number is set or if call forwarding is disabled
6. **Disable Button**: This button deletes the stored number for call forwarding and disables call forwarding. To enable call forwarding again, user needs to type in a number and press the enable button.
7. **Back**, **Delete**, **Home Buttons**: These buttons work the same as described on various occasions above.

3. HDMI Mode
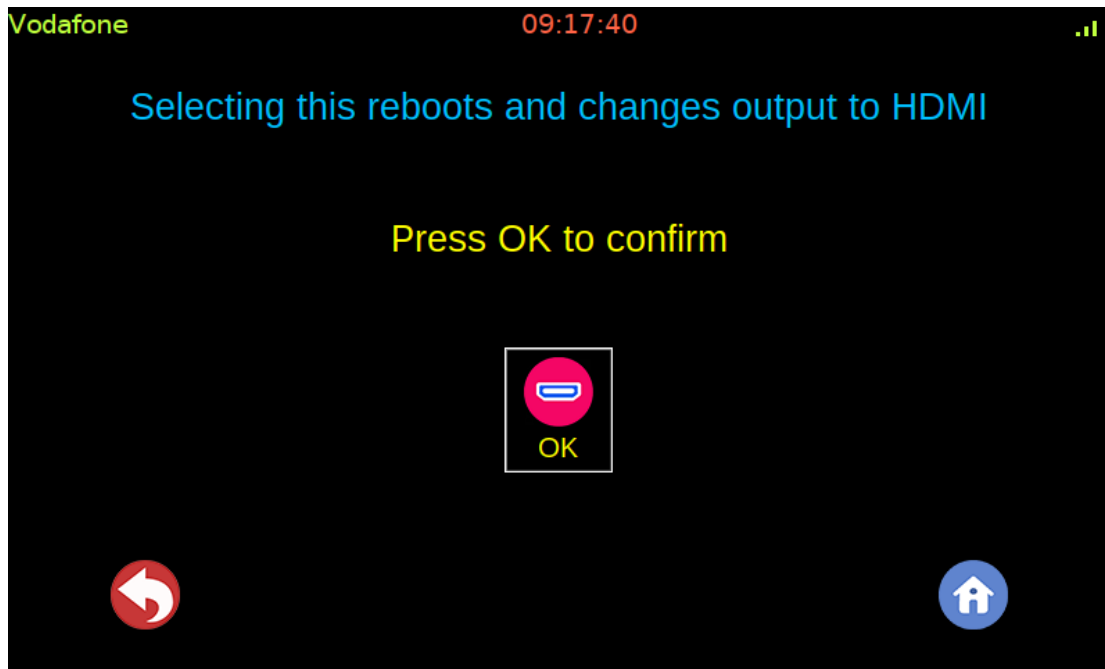
As described in the picture above, pressing OK will reboot the raspberry Pi and PiTalk and changes the default output to HDMI
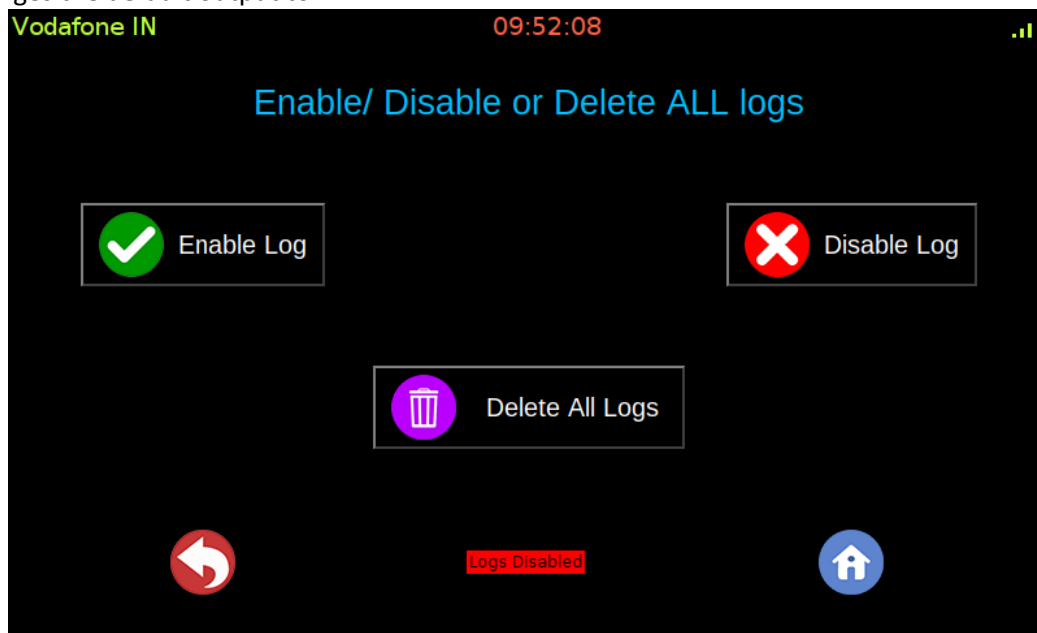
4. Logs

Logs of all the user's calls and SMS are stored in "./Logs" where "." Represents the current directory in which PiTalk folders are located. User can enable/disable or delete his logs with the help of the buttons displayed above
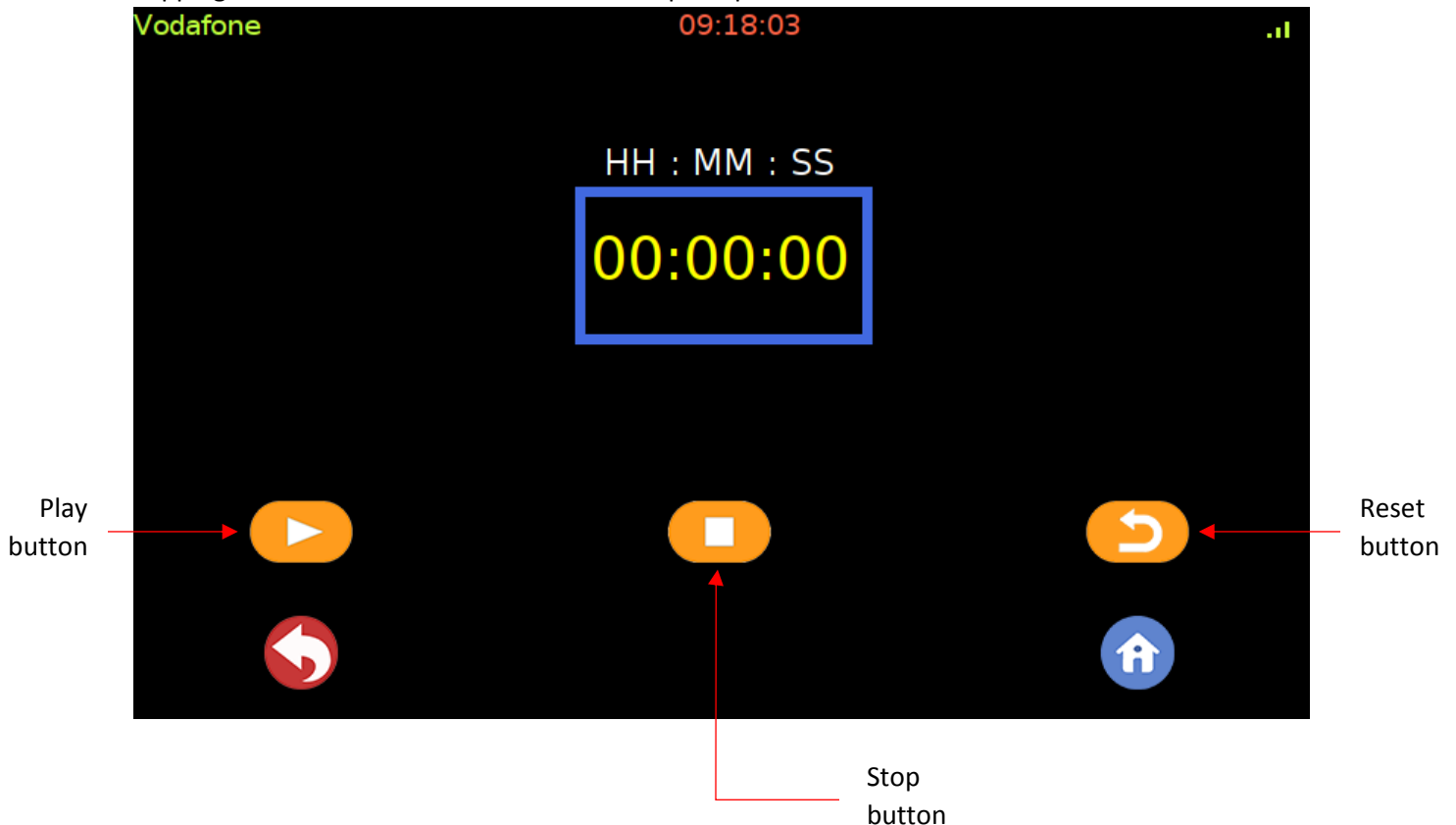
5. Shutdown
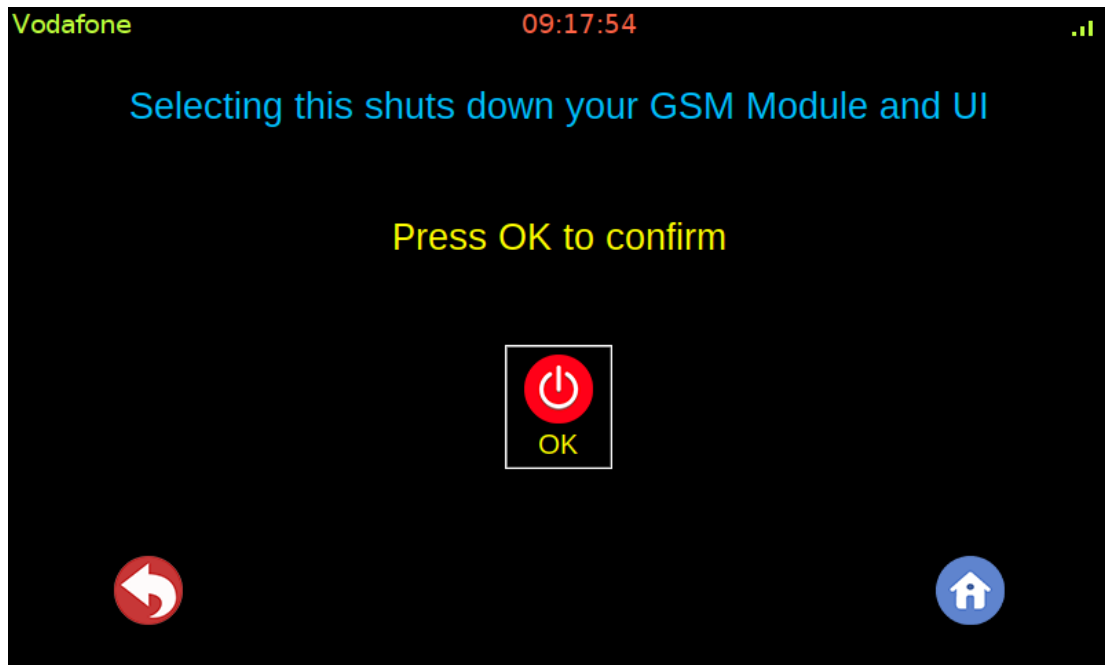
As written in the screenshot, pressing OK will shutdown your GUI and PiTalk, taking the user back to raspberry Pi's desktop

9. Stopwatch Screen

Tapping on this icon in the menu screen will open up this screen


Play button

Reset button

Stop button

The functionality of the various buttons are as follows:

1. **Play Button**: This button starts the stopwatch counter
2. **Stop Button**: This button pauses the stopwatch counter when pressed.
3. **Reset Button**: This button resets the stopwatch counter back to 00:00:00.

Back and Home buttons work the same way as described above

10.   Location Screen

Tapping on this icon in the menu screen brings this screen forward.
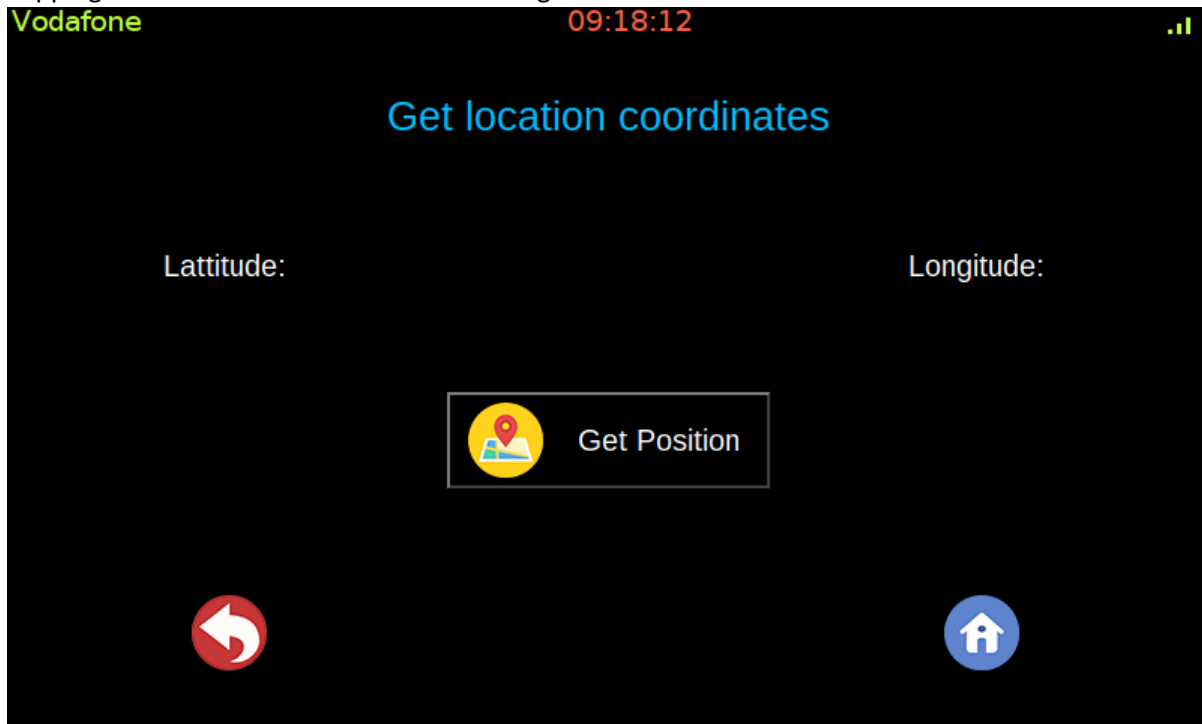
Pressing the "Get Position" button on this screen will display the current latitude and longitude of the shield.

11.   Calculator Screen

Pressing the calculator Icon brings the user to the following screen

Vodafone		09:18:38	.ıl
1265÷23			

x^2	√	AC	C
7	8	9	÷
4	5	6	X
1	2	3	-
.	0	%	+
Back	Home		=

It functions as a regular calculator with symbols representing their usual meaning. The back and home buttons take the user back to menu screen and back to home screen respectively.

12.   Audio Screen

Pressing this icon on the second page of the menu screen brings up this screen

Headphone Mode →

Speaker Mode →

Volume slider →

Set Volume →
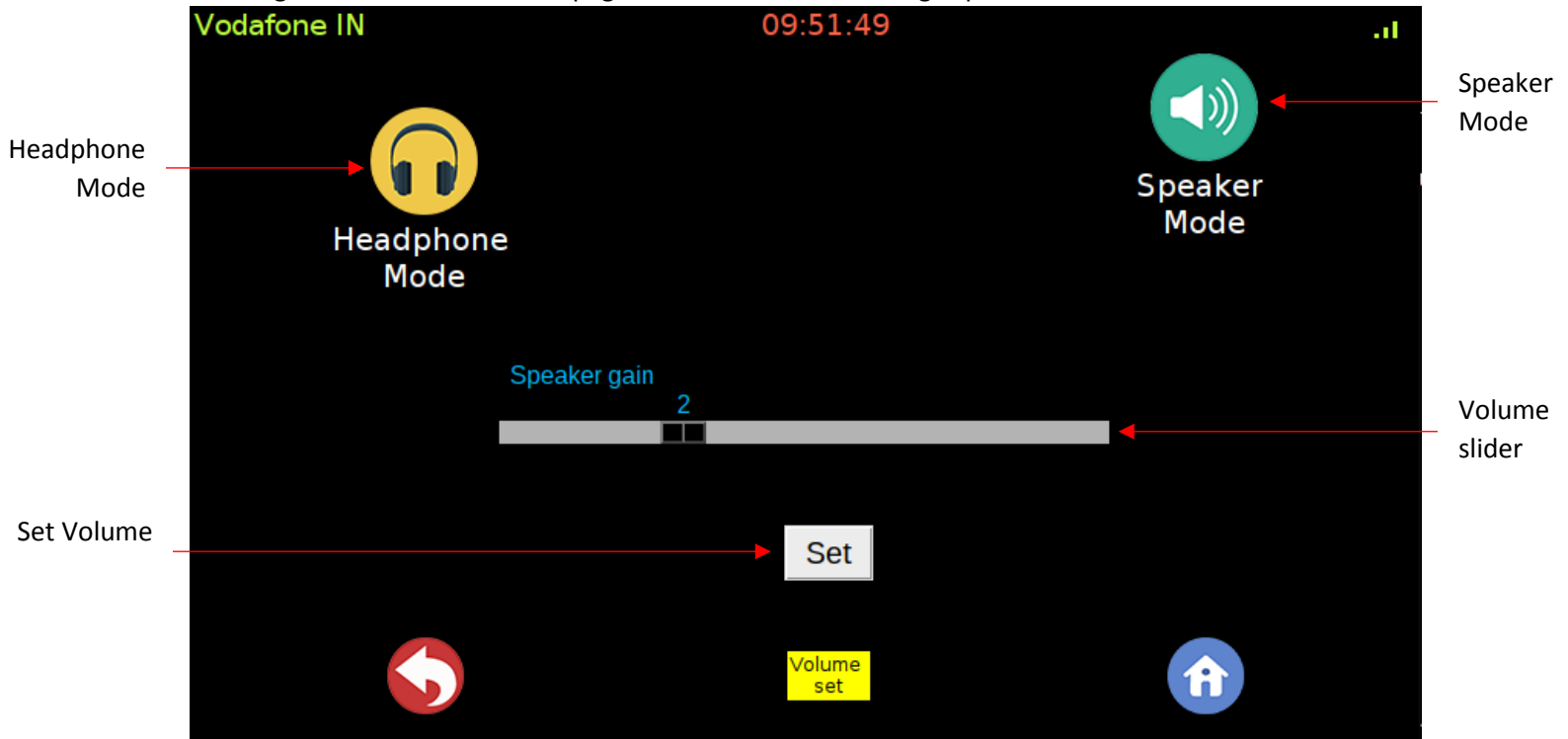
The description of various buttons with their functionalities are as follows:

1. **Headphone Mode**: This Button routes the audio of the phone towards the headphone Jack
2. **Speaker Mode**: This Button routes the audio of the phone towards speaker Jack
3. **Volume slider**: This slider lets you set the volume of the speaker output, it goes from 0 to a maximum of 7

   NOTE: The volume slider and the set button work for speaker mode only

4. **Set Button**: This button sets the volume shown on the slider to the speaker output.
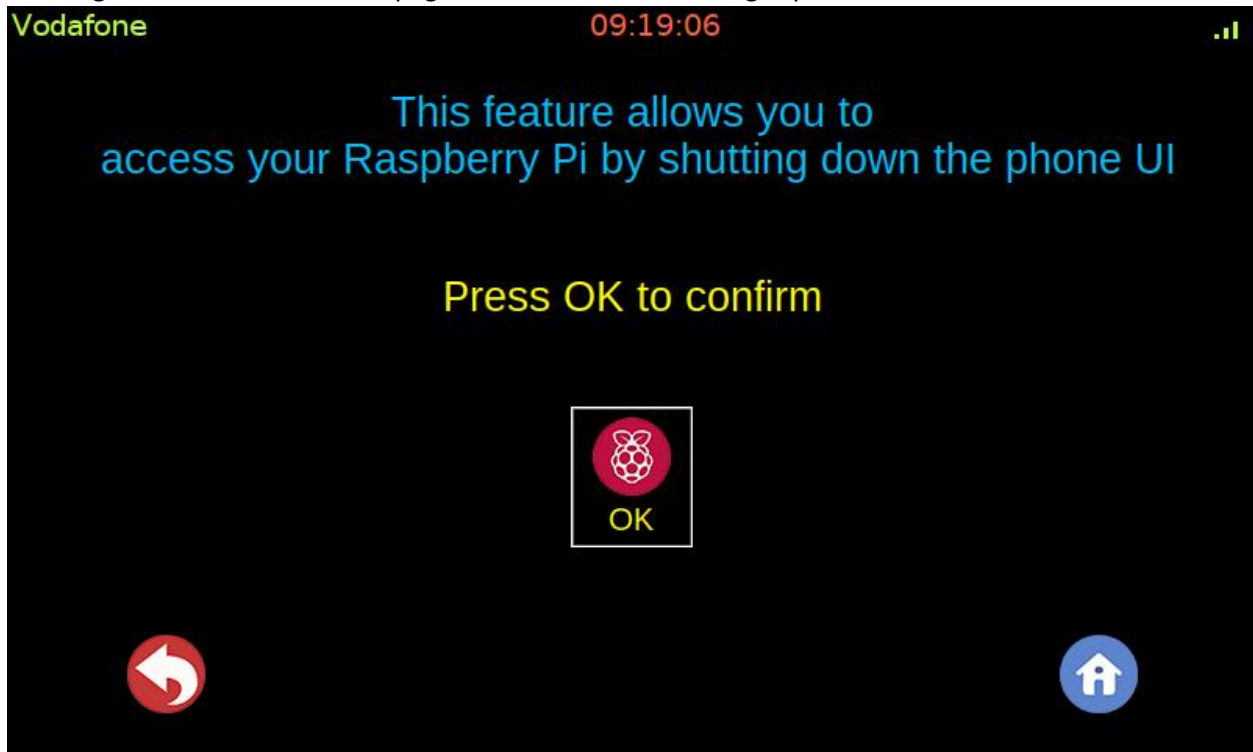
13.   Sensor Screen

Pressing this icon on the second page of the menu screen brings up this screen
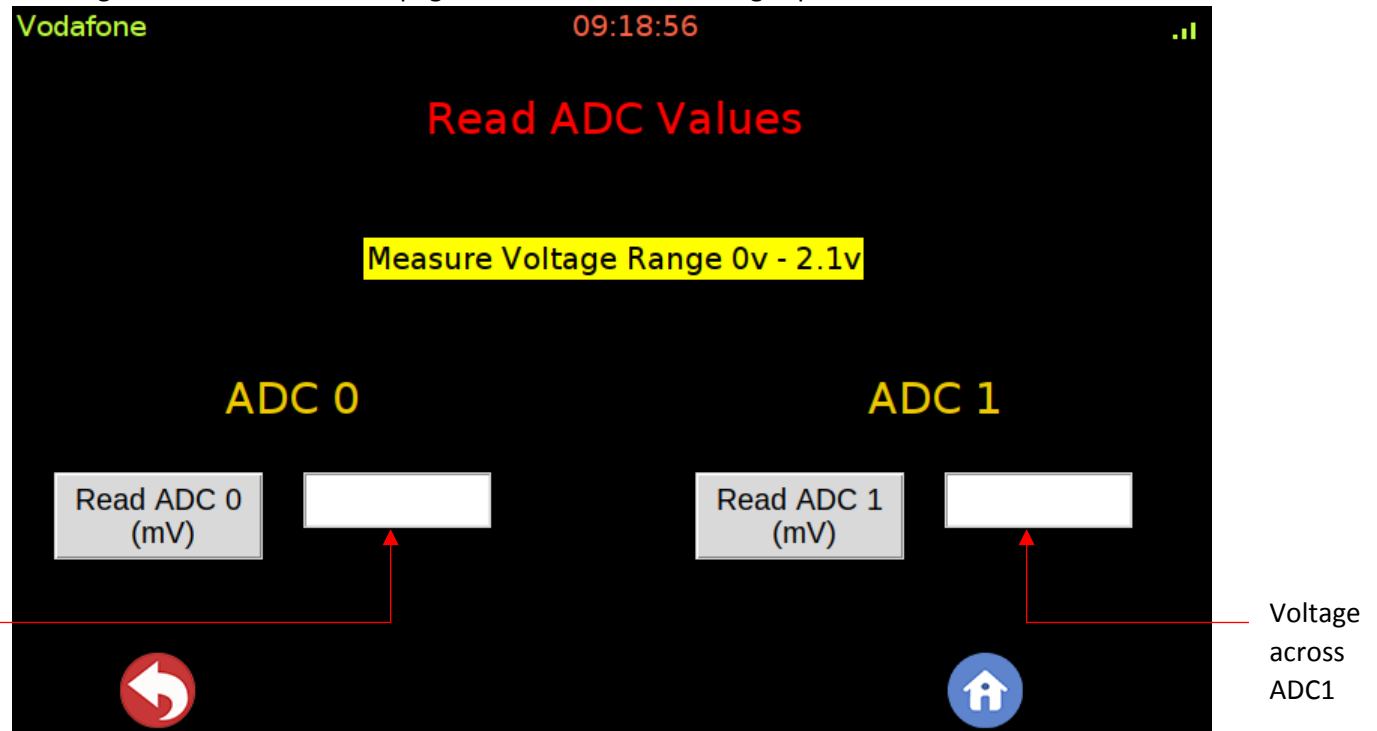
The two buttons "Read ADC0" and "READ ADC1" gives the voltage across the two ADC terminals given on the shield. Sensors can be connected to it.

14. InsidePi Screen

Pressing this icon on the second page of the menu screen brings up this screen
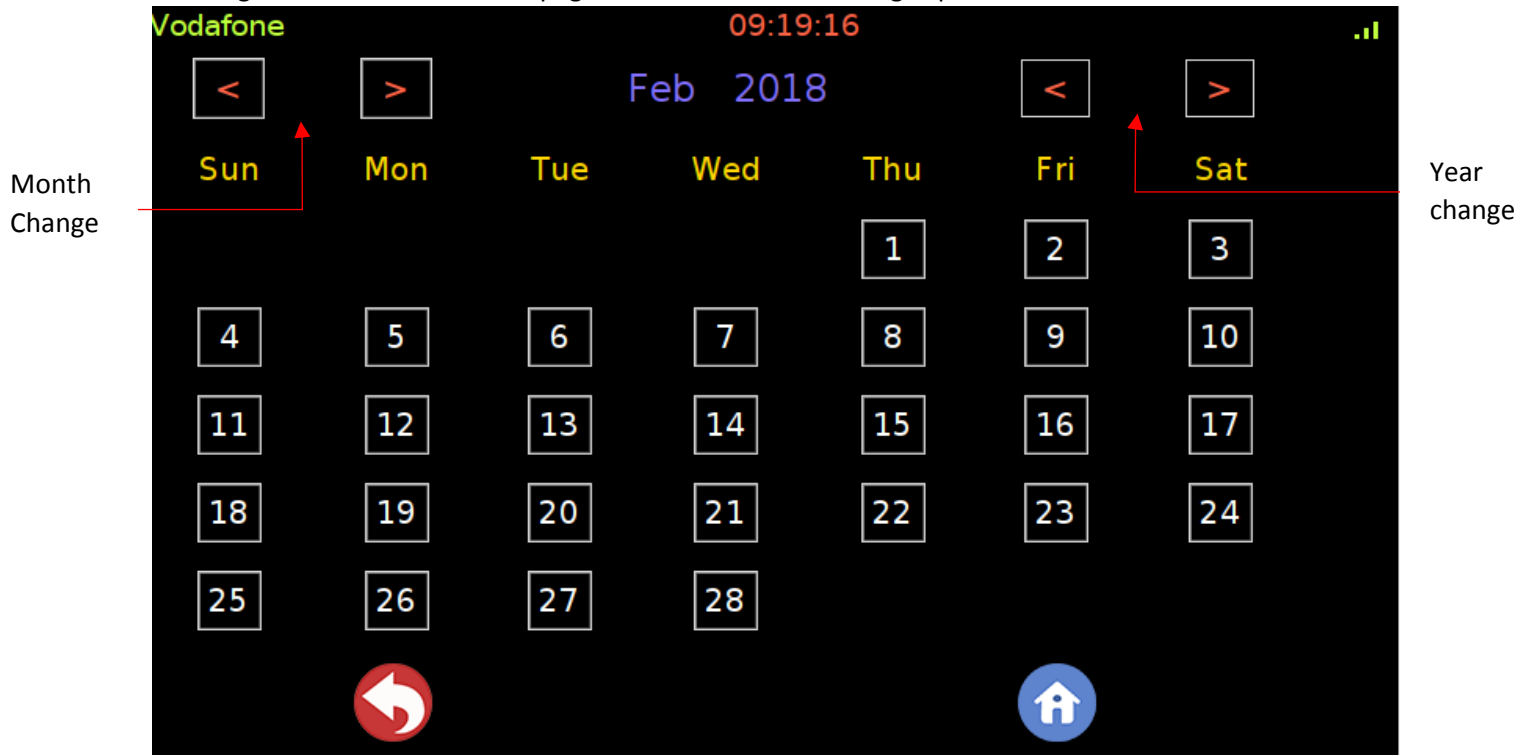

Pressing OK shuts down the GUI.

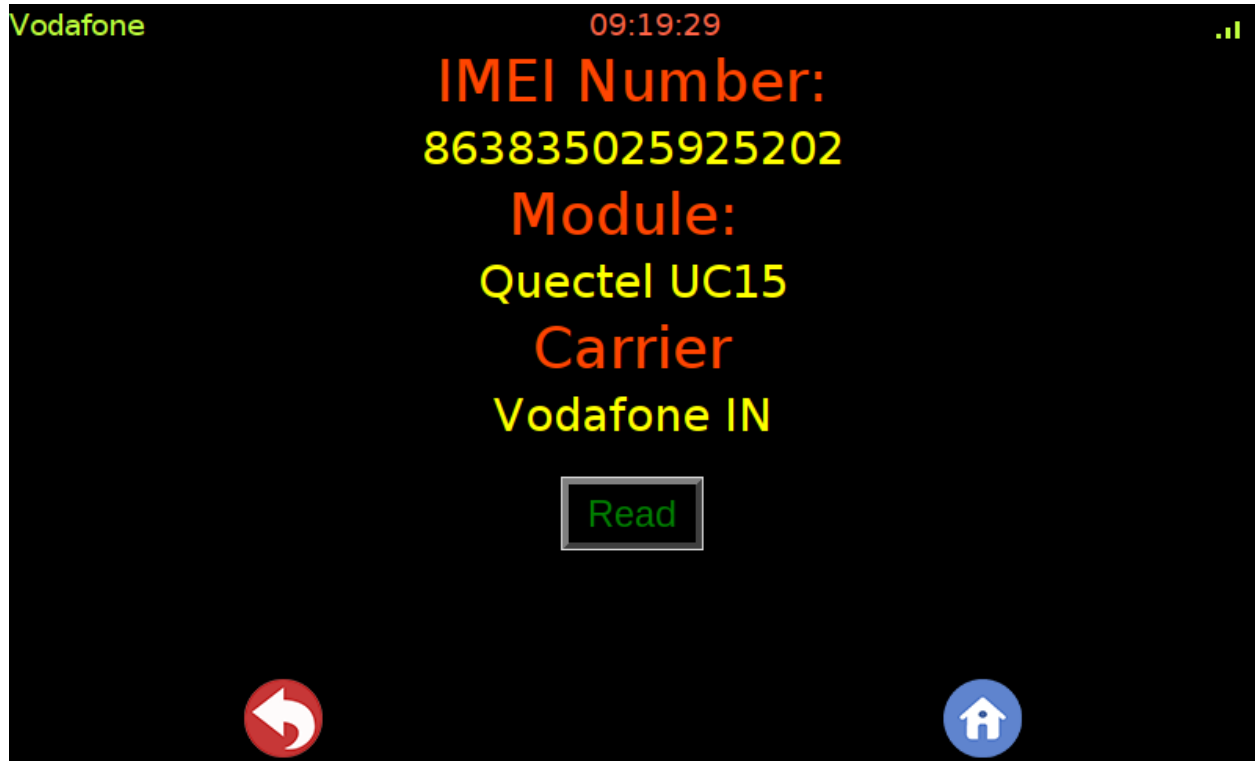**NOTE**: This feature doesn't close Module functionalities such as CALL, SMS or INTERNET

15.   Calendar screen

Pressing this icon on the second page of the menu screen brings up this screen

Month Change

Year change

16.   SIM Info Screen

Pressing this icon on the second page of the menu screen brings up this screen

Pressing the Read button brings carrier and IMEI info on screen as follows.
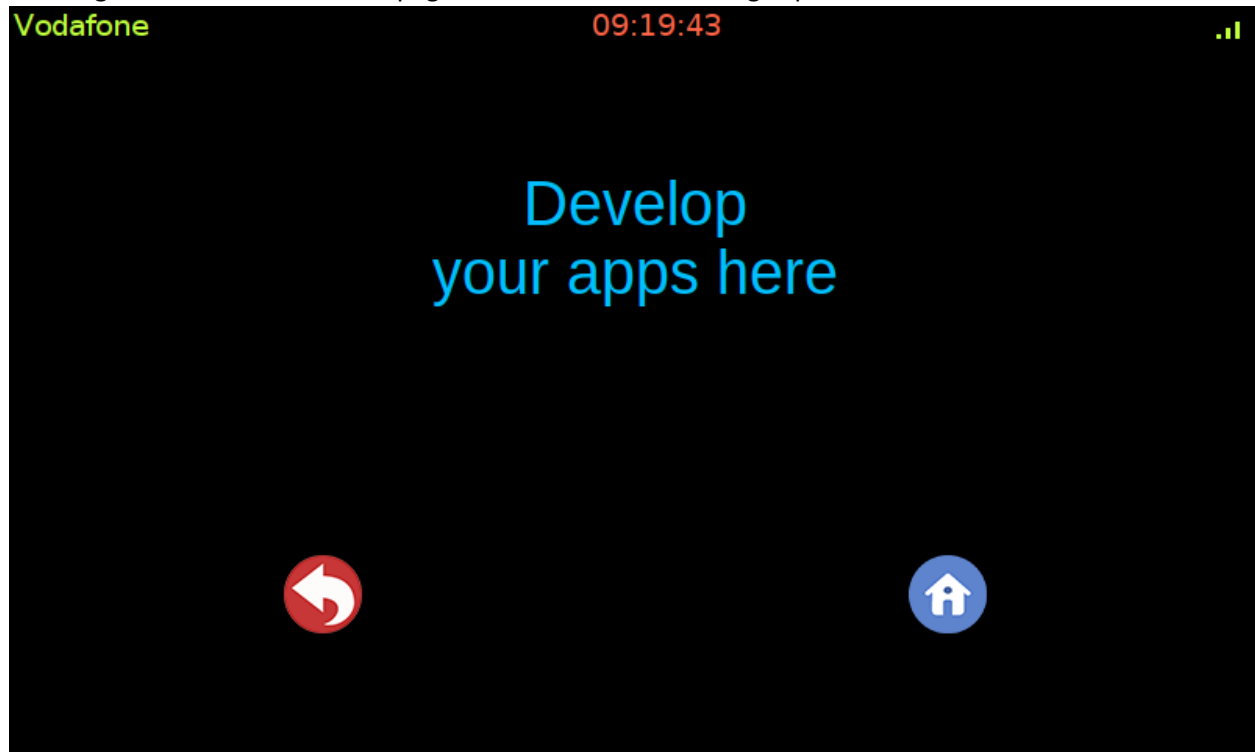
17.   About Screen

Pressing this icon on the second page of the menu screen brings up this screen

This screen shows the model, company and the developers information.

18.   Apps screen

Pressing this icon on the second page of the menu screen brings up this screen

This is a template screen. You can use this screen space to design your app by editing the code. Edit the template code however you want.