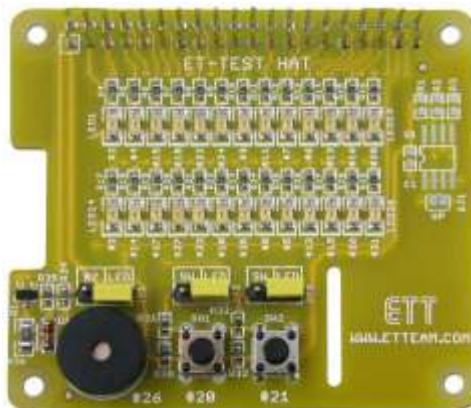# ET−TEST HAT

Board **ET-TEST HAT** is especially designed to test GPIO of Board Raspberry Pi or write program for initial GPIO.

SPECIFICATIONS of Board ET-TEST HAT

- Be compatible with Board Raspberry Pi Model A+, Raspberry Pi Model B+, Raspberry Pi 2 Model B
- Have connectible area of Circuit ID EEPROM (OPTION)
- Have 26-LED to test GPIO of Board Raspberry Pi
- Have 2-Switch to test GPIO of Board Raspberry Pi
- Have 1-Buzzer to test GPIO of Board Raspberry Pi
- Use Connector as long leg type, it piles boards up as required
- PCB size: 6.5 x 5.6 cm.

COMPOSITION of Board ET-TEST HAT
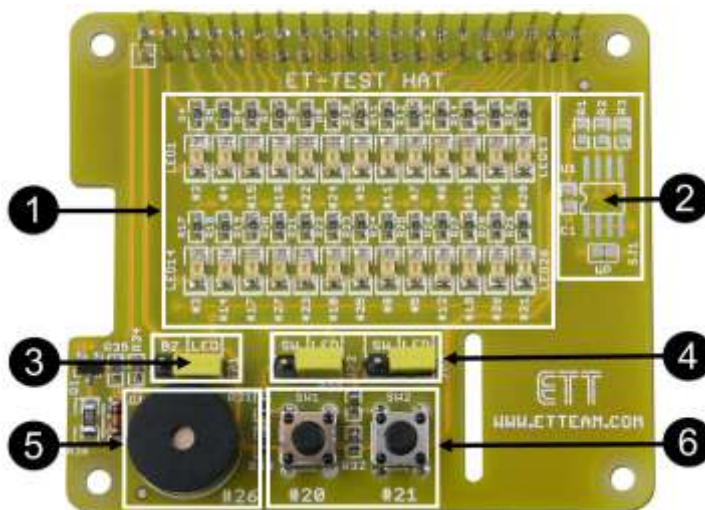
- ▪ **No.1:** These are 26-LEDs to test GPIO of Board Raspberry Pi; active Logic '1".
- ▪ **No.2:** It is connectible area of Circuit ID EEPROM (OPTION).
- ▪ **No.3:** This Jumper (JP1) chooses if GPIO26 is connected with LED or Buzzer.
- ▪ **No.4:** This Jumper (JP2,JP3) chooses if GPIO20 and GPIO21 is connected with LED or Switch.
- ▪ **No.5:** It is Buzzer; if supplied Logic "1" to Buzzer, it produces sound.
- ▪ **No.6:** It is Push-Button Switch. If pressed Switch, the state becomes Logic "0"; but, if released Switch, the state becomes Logic "1" instead.

How to connect Board ET-TEST HAT
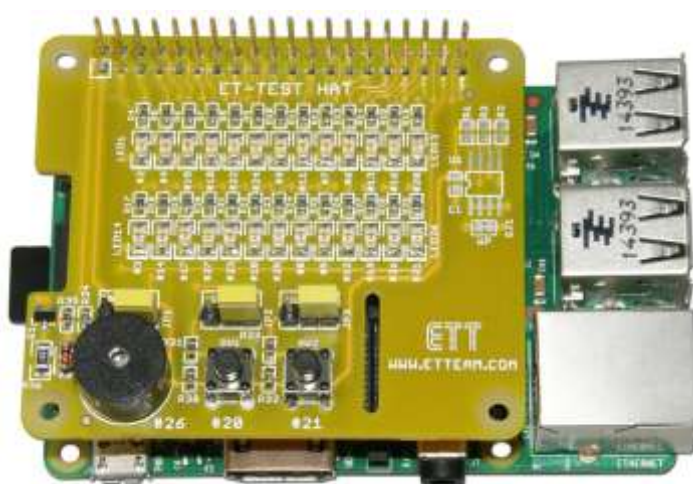
Example Program is written by Python Language

- **Example program tests Buzzer (bz.py)**

```
import RPi.GPIO as GPIO
import time
# Use GPIO references
GPIO.setmode(GPIO.BCM)
# Disable warnings
GPIO.setwarnings(False)
# Set up GPIO26 as output
GPIO.setup(26, GPIO.OUT)

print "Test Buzzer"
print "Press CTRL-C to exit"

try:
   while True:
          GPIO.output(26, True)
          time.sleep(1)
          GPIO.output(26, False)
          time.sleep(1)

except KeyboardInterrupt:
  # Reset GPIO settings
  GPIO.cleanup()
```

- **Example program tests Switch (sw.py)**

```
import RPi.GPIO as GPIO
import time
# Use GPIO references
GPIO.setmode(GPIO.BCM)
# Disable warnings
GPIO.setwarnings(False)
# Set up GPIO20,GPIO21 as input
GPIO.setup(20, GPIO.IN)
GPIO.setup(21, GPIO.IN)

print "Test Switch"
print "Press CTRL-C to exit"

try:
    while True:
        if(GPIO.input(20) == 0):
            time.sleep(0.5)
            print "SW1 pressed"
        if(GPIO.input(21) == 0):
            time.sleep(0.5)
            print "SW2 pressed"

except KeyboardInterrupt:
    # Reset GPIO settings
    GPIO.cleanup()
```

- **Example program tests LED (led.py)**

```
import RPi.GPIO as GPIO
import time
# Use GPIO references
GPIO.setmode(GPIO.BCM)
# Disable warnings
GPIO.setwarnings(False)

leds = [2,4,15,18,22,24,9,11,7,6,13,16,20,3,14,17,27,23,10,25,8,5,12,19,26,21]

for i in leds:
    GPIO.setup(i, GPIO.OUT)          # Set up all gpio as output
    GPIO.output(i, False)            # All gpio off

print "Test Led"
print "Press CTRL-C to exit"

try:
    while True:
        for i in leds:
            GPIO.output(i, True)
            time.sleep(0.1)
            GPIO.output(i, False)
            time.sleep(0.1)

except KeyboardInterrupt:
    # Reset GPIO settings
    GPIO.cleanup()
```
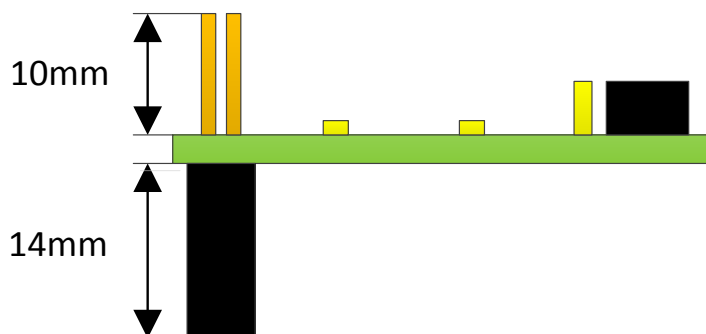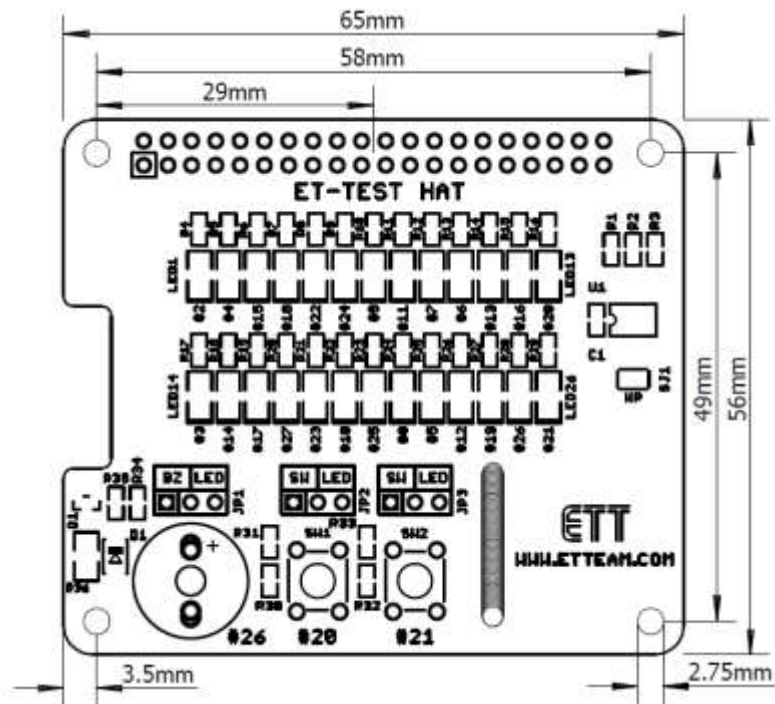
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DIMENSIONS of Board ET-PROTO HAT

Circuit Diagram of Board ET-TEST HAT