Group Name: GrupongPilantropo

Project Name: D.R.E.A.D. (Disaster Resilience Emergency Alerting Device)

Challenge: Disaster Resilience

Short Description: A Device that unifies emergency Alert Solution.

Long Description: A robust, easy to deploy and unified emergency alert solution that aims to notify different concern department or agency in any case of emergency such as Fire, Bank Robbery and Earthquake.

Flow Chart

IN CASE OF FIRE

SMOKE & FIRE SENSOR AND WIRED SWITCH TRIGGERED

PUSH WIRELESS BUTTON (NOT LIMITED TO ONLY USER)

SEND SMS TO ASSIGNED ALERT RECEPIENT E.G. BANK AREA MANAGER

Providing pre encoded info such as exact location (GPS Coordinate), Address and other vital information

SEND SMS TO NEAREST FIRE STATION

Providing pre encoded info such as exact location (GPS Coordinate), Address and other vital information

SEND SMS TO ASSIGNED ALERT HEAD OF ESTABLISHMENT SECURITY

Providing pre encoded info such as exact location (GPS Coordinate), Address and other vital information

SEND EMAIL WITH ACTUAL IMAGE TO ASSIGNED ALERT RECEPIENT E.G. BANK AREA MANAGER

Providing pre encoded info such as exact location (GPS Coordinate), Address and other vital information

SEND SMS TO 911

Providing pre encoded info such as exact location (GPS Coordinate), Address and other vital information

\*Possible upgrade

CALL TO 911

Providing digital prerecorded info such as exact location (GPS Coordinate), Address and other vital information

Live Video Streaming of the Establishment

IN CASE OF BANK ROBBERY

WIRED PANIC BUTTON

CALL TO 911

Providing digital prerecorded info such as exact location (GPS Coordinate), Address and other vital information

SEND SMS TO ASSIGNED ALERT RECEPIENT E.G. BANK AREA MANAGER

Providing pre encoded info such as exact location (GPS Coordinate), Address and other vital information

SEND SMS TO NEAREST FIRE STATION

Providing pre encoded info such as exact location (GPS Coordinate), Address and other vital information

SEND SMS TO ASSIGNED ALERT HEAD OF ESTABLISHMENT SECURITY

Providing pre encoded info such as exact location (GPS Coordinate), Address and other vital information

SEND EMAIL WITH ACTUAL IMAGE TO ASSIGNED ALERT RECEPIENT E.G. BANK AREA MANAGER

Providing pre encoded info such as exact location (GPS Coordinate), Address and other vital information

SEND SMS TO 911

Providing pre encoded info such as exact location (GPS Coordinate), Address and other vital information

PUSH WIRELESS BUTTON (NOT LIMITED TO ONLY USER)

\*Possible upgrade

Live Video Streaming of the Establishment

IN CASE OF EARTHQUAKE

EARTHQUAKE DETECTOR

CALL TO 911

Providing digital prerecorded info such as exact location (GPS Coordinate), Address and other vital information

SEND SMS TO ASSIGNED ALERT RECEPIENT E.G. BANK AREA MANAGER

Providing pre encoded info such as exact location (GPS Coordinate), Address and other vital information

SEND SMS TO NEAREST FIRE STATION

Providing pre encoded info such as exact location (GPS Coordinate), Address and other vital information

SEND SMS TO ASSIGNED ALERT HEAD OF ESTABLISHMENT SECURITY

Providing pre encoded info such as exact location (GPS Coordinate), Address and other vital information

SEND EMAIL WITH ACTUAL IMAGE TO ASSIGNED ALERT RECEPIENT E.G. BANK AREA MANAGER

Providing pre encoded info such as exact location (GPS Coordinate), Address and other vital information

SEND SMS TO 911

Providing pre encoded info such as exact location (GPS Coordinate), Address and other vital information

PUSH WIRELESS BUTTON (NOT LIMITED TO ONLY USER)

\*Possible upgrade

Live Video Streaming of the Establishment

TECHNICAL DETAILS

Materials used:

1. E-Gizmo Remote I/O Kit



1. Raspberry PI

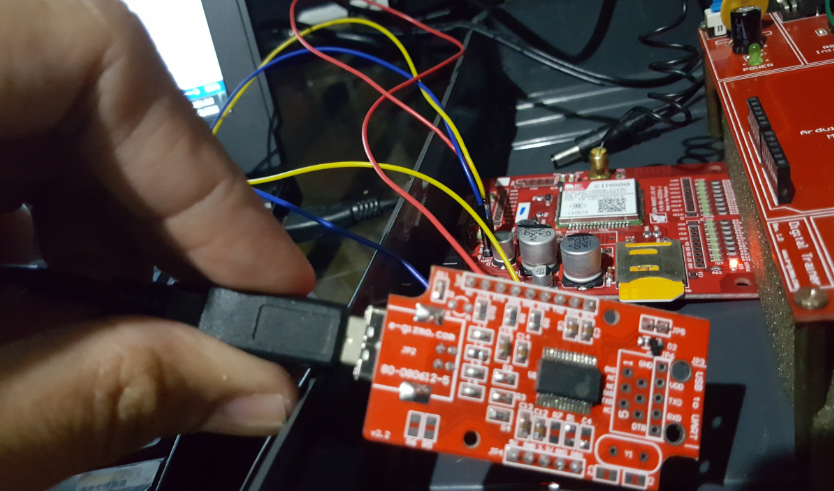


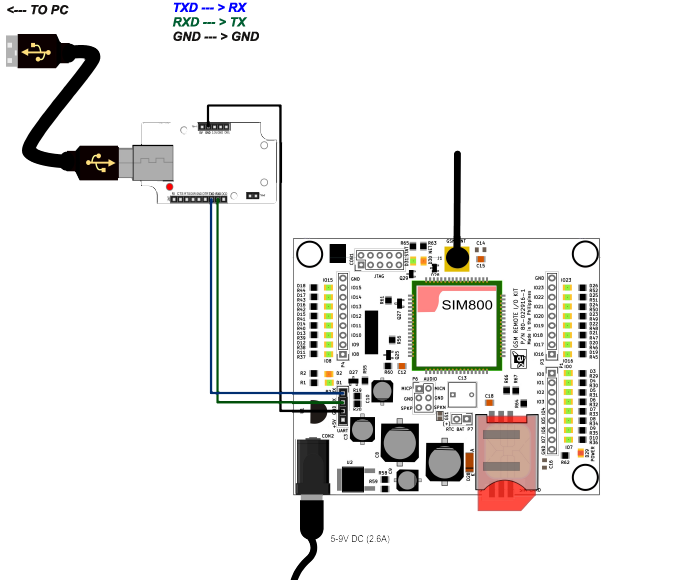
1. YK04 wireless remote switch



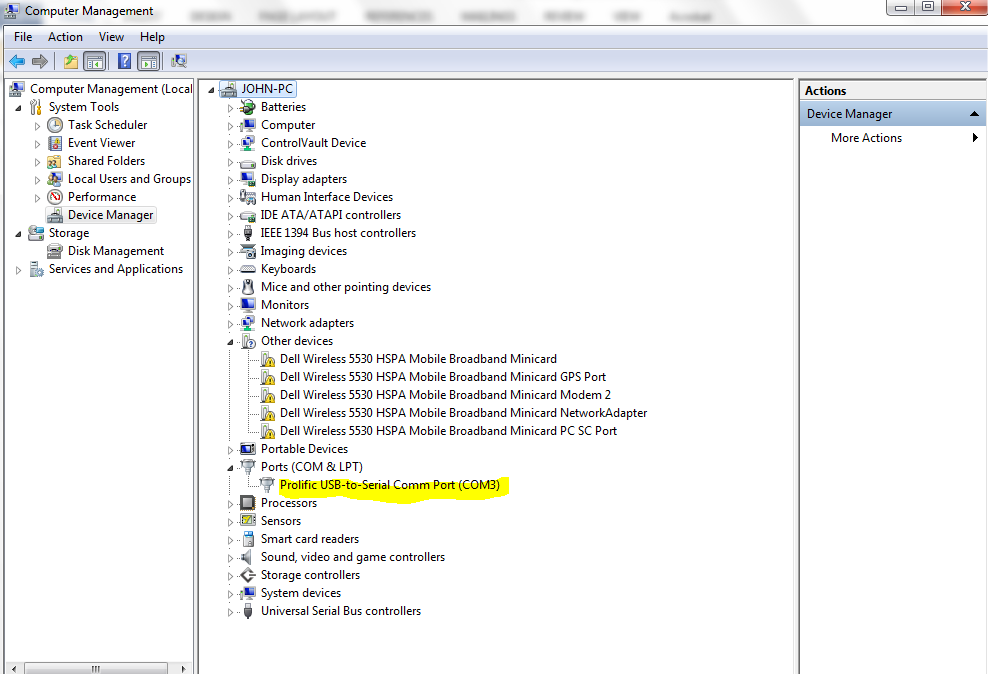
Configuring the E-Gizmo Remote I/O Kit

1. Connect the E-Gizmo USB to UART

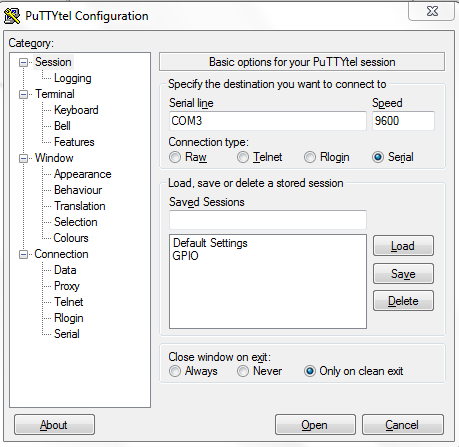
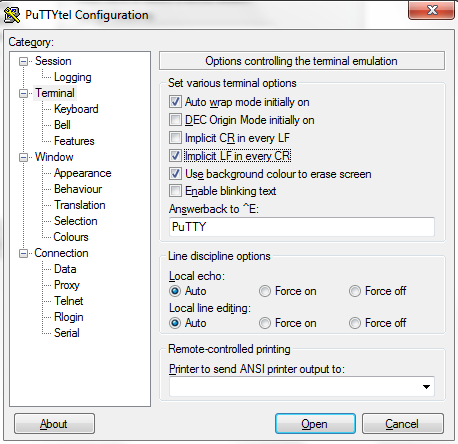


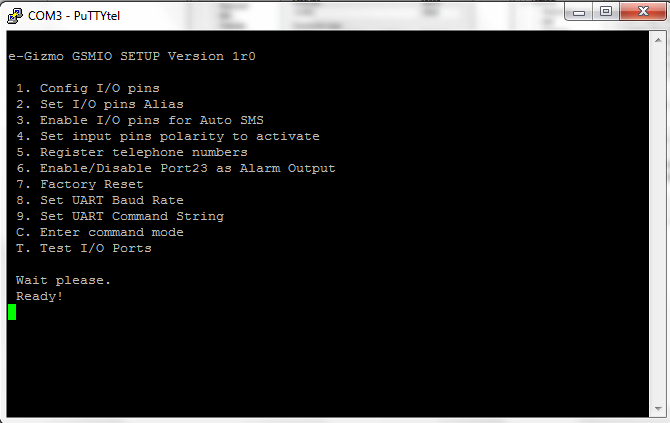


1. Check if Computer can detect the USB to UART connection

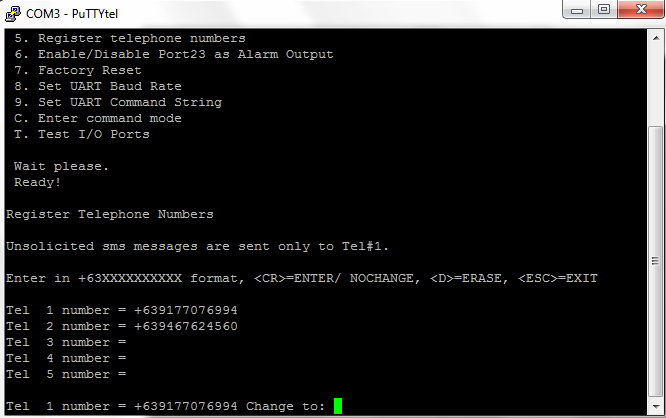


1. Open Putty.exe, adjust settings

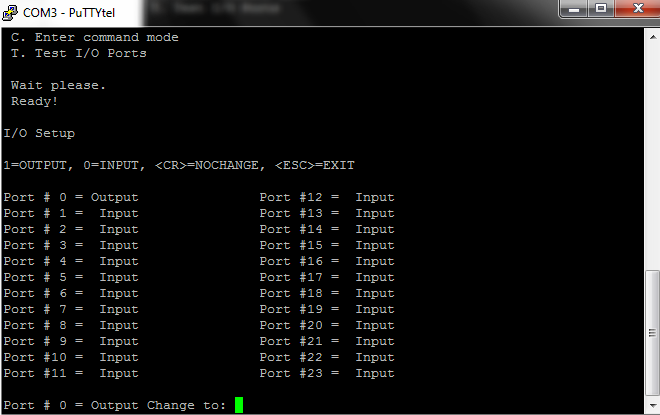




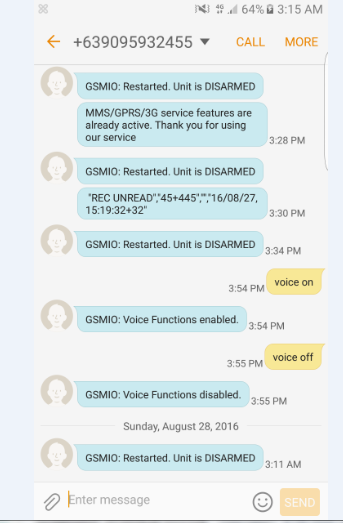
1. Configuring recipients mobile number thru firmware



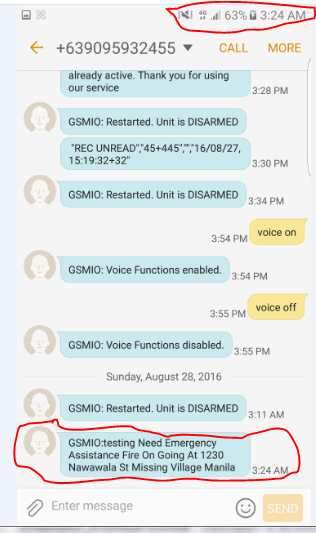
1. Assigning which pinis for input and output



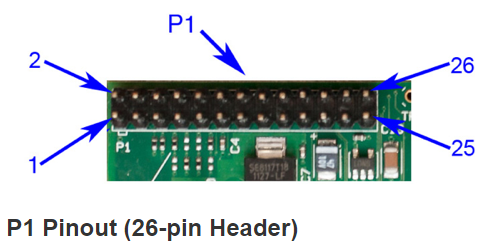
6. Test SMS was successfully sent from the device

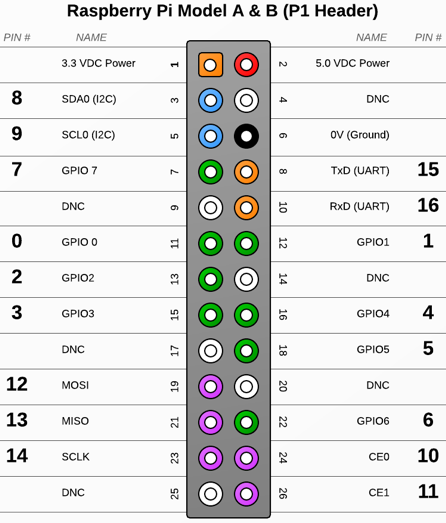


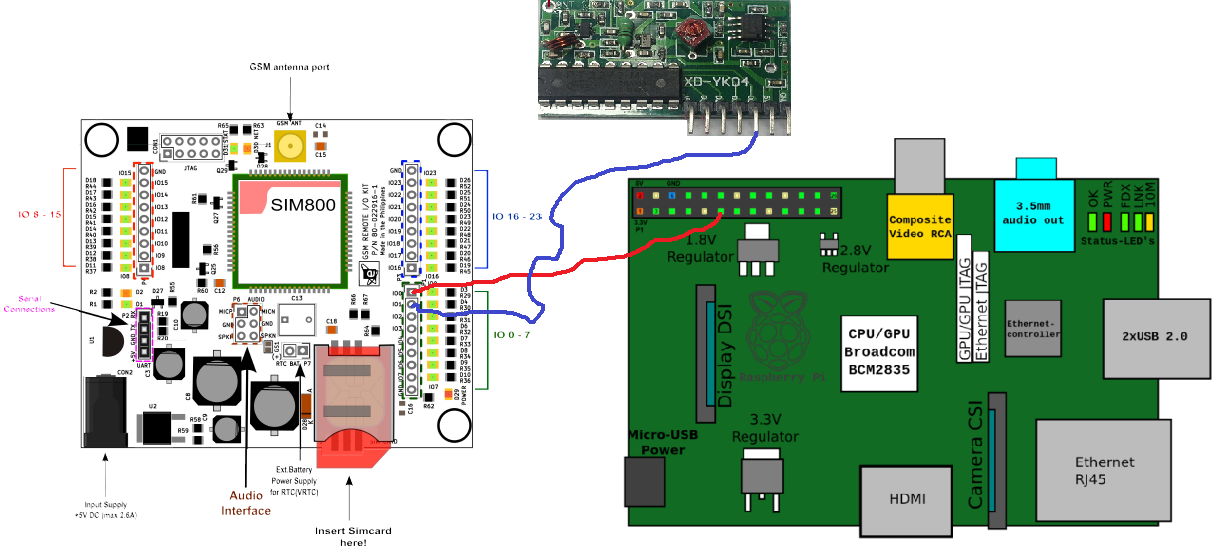
Testing after configuration, sent in real time



Connecting the E-Gizmo Remote I/O Kit to Raspberry PI and the wireless switch







Configuring Raspberry PI in Python to send email when wireless switch is pressed

|  |
| --- |
| try: |
| importpythoncom, pyHook |
| except: |
| print"Please Install pythoncom and pyHook modules" |
| exit(0) |
| importos |
| import sys |
| import threading |
| import urllib,urllib2 |
| importsmtplib |
| importftplib |
| importdatetime,time |
| import win32event, win32api, winerror |
| from \_winregimport\* |

|  |
| --- |
| #Hide Console |
| defhide(): |
| import win32console,win32gui |
| window = win32console.GetConsoleWindow() |
| win32gui.ShowWindow(window,0) |
| returnTrue |

|  |
| --- |
| #Email Logs |
| classTimerClass(threading.Thread): |
| def\_\_init\_\_(self): |
| threading.Thread.\_\_init\_\_(self) |
| self.event=threading.Event() |
| defrun(self): |
| whilenotself.event.is\_set(): |
| global data |
| iflen(data)>100: |
| ts=datetime.datetime.now() |
| SERVER="smtp.gmail.com"#Specify Server Here |
| PORT=587#Specify Port Here |
| USER="your\_email@gmail.com"#Specify Username Here |
| PASS="password\_here"#Specify Password Here |
| FROM=USER#From address is taken from username |
| TO= ["to\_address@gmail.com"] #Specify to address.Use comma if more than one to address is needed. |
| SUBJECT="EMERGENCY : "+str(ts) |
| MESSAGE= data |
| message ="""\ |
| From: %s |
| To: %s |
| Subject: %s |
|  |
| %s |
| """% (FROM, ", ".join(TO), SUBJECT, MESSAGE) |
| try: |
| server =smtplib.SMTP() |
| server.connect(SERVER,PORT) |
| server.starttls() |
| server.login(USER,PASS) |
| server.sendmail(FROM, TO, message) |
| data='' |
| server.quit() |
| exceptExceptionas e: |
| print e |
| self.event.wait(120) |

NOTE: You need first to have RPi.GPIO library pre-installed on Raspberry PI by running this command

sudo python  
import RPi.GPIO as GPIO  
GPIO.VERSION

Once done then you need to assign which PIN to use and communicate with the E-Gizmo Remote I/O Kit