Lidar

Setup:

Hardware:
Laser Scanner RPLiDAR A1M8-R6

Firmware:
1.29

Troubleshooting:

Python package installation:

1.Browsing internet for libraries.
https://github.com/Hyun-je/pyrplidar/tree/master
https://github.com/Roboticia/RPLidar
I've decided to choose the package from Hyun-je because it was newer and it had tests.

2.Testing Hyun-je package.

output:

```
PyRPlidar Info : device is connected
Traceback (most recent call last):
  File "c:\Users\Komfig\Desktop\projects\lidar\main.py", line 10, in <module>
    samplerate = lidar.get_samplerate()
                 ^^^^^^^^^^^^^^^^^^^^^
  File
"C:\Users\Komfig\AppData\Local\Packages\PythonSoftwareFoundation.Python.3.12_qbz5
n2kfra8p0\LocalCache\Local\pypoetry\Cache\virtualenvs\lidar-m99jlUfZ-py3.12\Lib\s
ite-packages\pyrplidar.py", line 85, in get_samplerate
    discriptor = self.receive_discriptor()
                 ^^^^^^^^^^^^^^^^^^^^^^^^^
  File
"C:\Users\Komfig\AppData\Local\Packages\PythonSoftwareFoundation.Python.3.12_qbz5
n2kfra8p0\LocalCache\Local\pypoetry\Cache\virtualenvs\lidar-m99jlUfZ-py3.12\Lib\s
ite-packages\pyrplidar.py", line 42, in receive_discriptor
    discriptor =
PyRPlidarResponse(self.lidar_serial.receive_data(RPLIDAR_DESCRIPTOR_LEN))

^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^
  File
"C:\Users\Komfig\AppData\Local\Packages\PythonSoftwareFoundation.Python.3.12_qbz5
```

```
n2kfra8p0\LocalCache\Local\pypoetry\Cache\virtualenvs\lidar-m99jlUfZ-py3.12\Lib\s
ite-packages\pyrplidar_protocol.py", line 110, in __init__
    self.sync_byte1 = raw_bytes[0]
                      ~~~~~~~~~~^^^
IndexError: index out of range
PyRPlidar Info : device is disconnected
```

3. Fixing the issue.
https://github.com/Hyun-je/pyrplidar/issues/1
Changed the Baudrate to 115200, however it still didn't work.

https://stackoverflow.com/questions/66867608/pyrplidar-indexerror-index-out-of-range
I've changed the library from pyrplidar to rplidar.

```
from rplidar import RPLidar
lidar = RPLidar('COM3')

info = lidar.get_info()
print(info)

health = lidar.get_health()
print(health)

for i, scan in enumerate(lidar.iter_scans()):
    print('%d: Got %d measures' % (i, len(scan)))
    if i > 10:
        break
lidar.stop()
lidar.stop_motor()
lidar.disconnect()
```

I've got the error:

```
{'model': 24, 'firmware': (1, 29), 'hardware': 7, 'serialnumber':
'93A9ED95C4E493CAA5E69EF002794B6E'}
('Good', 0)
Traceback (most recent call last):
  File "c:\Users\Komfig\Desktop\projects\lidar\main.py", line 10, in <module>
    for i, scan in enumerate(lidar.iter_scans()):
  File
"C:\Users\Komfig\AppData\Local\Packages\PythonSoftwareFoundation.Python.3.12_qbz5
n2kfra8p0\LocalCache\Local\pypoetry\Cache\virtualenvs\lidar-m99jlUfZ-py3.12\Lib\s
ite-packages\rplidar.py", line 357, in iter_scans
    for new_scan, quality, angle, distance in iterator:
  File
"C:\Users\Komfig\AppData\Local\Packages\PythonSoftwareFoundation.Python.3.12_qbz5
n2kfra8p0\LocalCache\Local\pypoetry\Cache\virtualenvs\lidar-m99jlUfZ-py3.12\Lib\s
ite-packages\rplidar.py", line 323, in iter_measurments
    raw = self._read_response(dsize)
```

```
          ^^^^^^^^^^^^^^^^^^^^^^^^^
  File
"C:\Users\Komfig\AppData\Local\Packages\PythonSoftwareFoundation.Python.3.12_qbz5
n2kfra8p0\LocalCache\Local\pypoetry\Cache\virtualenvs\lidar-m99jlUfZ-py3.12\Lib\s
ite-packages\rplidar.py", line 199, in _read_response
    raise RPLidarException('Wrong body size')
rplidar.RPLidarException: Wrong body size
```

https://github.com/adafruit/Adafruit_CircuitPython_RPLIDAR/issues/15

Reviewing the code i've added the port='COM3' and timeout=3 as the parameters

```
from rplidar import RPLidar
lidar = RPLidar(port='COM3',timeout=3)

info = lidar.get_info()
print(info)

health = lidar.get_health()
print(health)

for i, scan in enumerate(lidar.iter_scans()):
    print('%d: Got %d measures' % (i, len(scan)))
    if i > 10:
        break
lidar.stop()
lidar.stop_motor()
lidar.disconnect()
```

Running the code for the first time i’ve gotten the output:

```
Traceback (most recent call last):
  File "c:\Users\Komfig\Desktop\projects\lidar\main.py", line 4, in <module>
    info = lidar.get_info()
           ^^^^^^^^^^^^^^^^
  File
"C:\Users\Komfig\AppData\Local\Packages\PythonSoftwareFoundation.Python.3.12_qbz5
n2kfra8p0\LocalCache\Local\pypoetry\Cache\virtualenvs\lidar-m99jlUfZ-py3.12\Lib\s
ite-packages\rplidar.py", line 211, in get_info
    dsize, is_single, dtype = self._read_descriptor()
                              ^^^^^^^^^^^^^^^^^^^^^^^
  File
"C:\Users\Komfig\AppData\Local\Packages\PythonSoftwareFoundation.Python.3.12_qbz5
n2kfra8p0\LocalCache\Local\pypoetry\Cache\virtualenvs\lidar-m99jlUfZ-py3.12\Lib\s
ite-packages\rplidar.py", line 189, in _read_descriptor
    raise RPLidarException('Incorrect descriptor starting bytes')
rplidar.RPLidarException: Incorrect descriptor starting bytes
```

However, the second time i ran the code it ran correctly.

```
{'model': 24, 'firmware': (1, 29), 'hardware': 7, 'serialnumber':
'93A9ED95C4E493CAA5E69EF002794B6E'}
('Good', 0)
0: Got 127 measures
1: Got 165 measures
2: Got 169 measures
3: Got 167 measures
4: Got 171 measures
5: Got 172 measures
6: Got 164 measures
7: Got 171 measures
8: Got 169 measures
9: Got 173 measures
10: Got 163 measures
11: Got 162 measures
```

Depending on the position of the sensor the output was different.