

Explore the next sense



Getting Started Guide Acconeer XM112-XB112 Module Evaluation Kit

Dec 2018

Installation guide

The XM112 is delivered non-flashed. This installation quick guide will show you how to get the Acconeer XM112-XB112 Module Evaluation Kit (EVK) up and running. For a hands-on instruction video, please visit <https://www.youtube.com/watch?v=FjYTlySbLZk>

Preparing the HW Installation

To complete a successful installation of Acconeer EVK, the following HW components will be required:

XM 112 Module



+

XB 112 Breakout Board



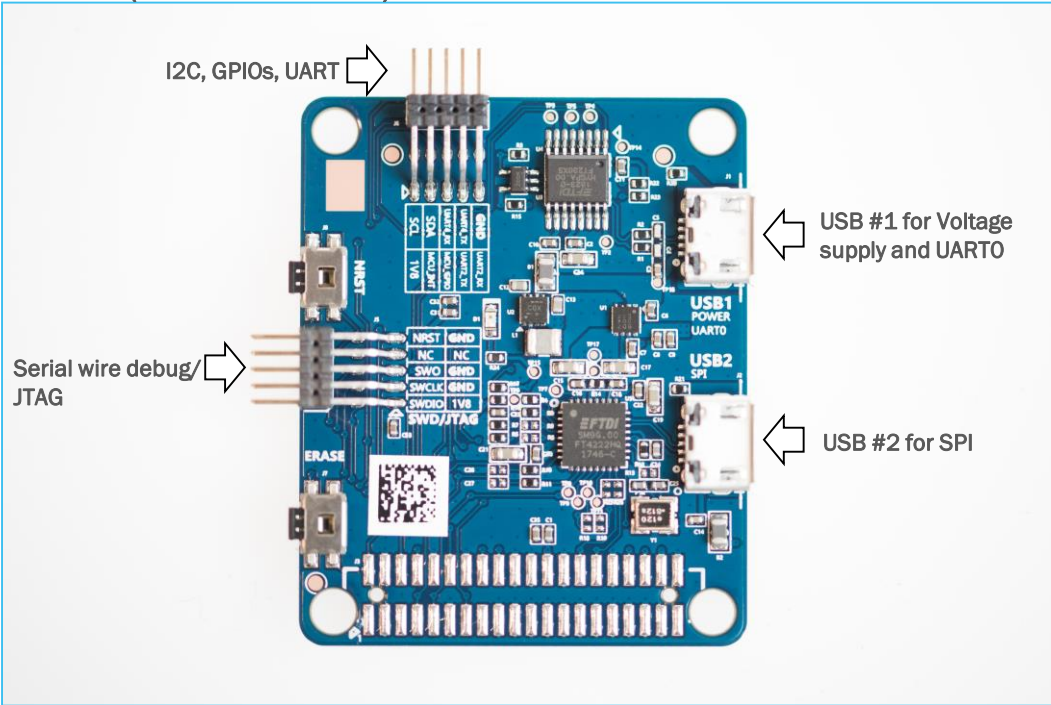
Additionally*:

- USB Micro Cable for connection to PC

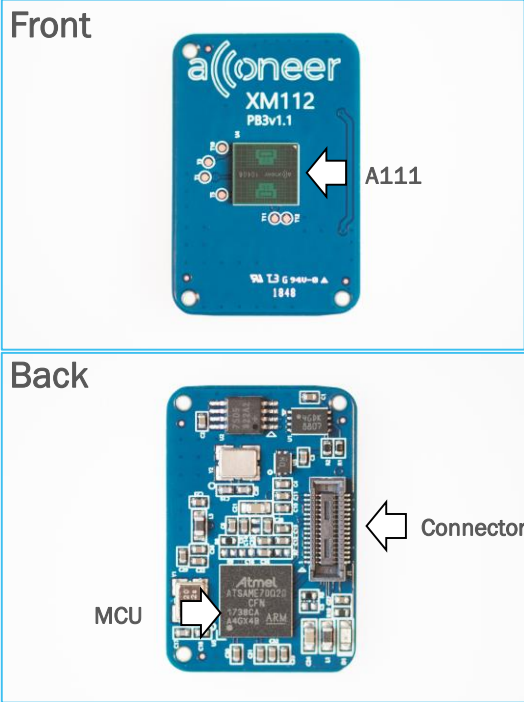
* Not provided by Acconeer.

HW Overview

XB112 (Breakout board)



XM112



Preparing the SW installation

The following applications will be required to complete an installation. Also, they will be very useful when working with the Radar Sensor EVK. Please download and install:

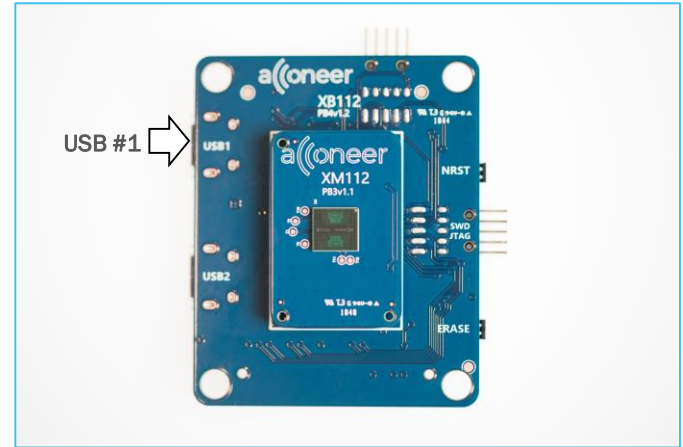
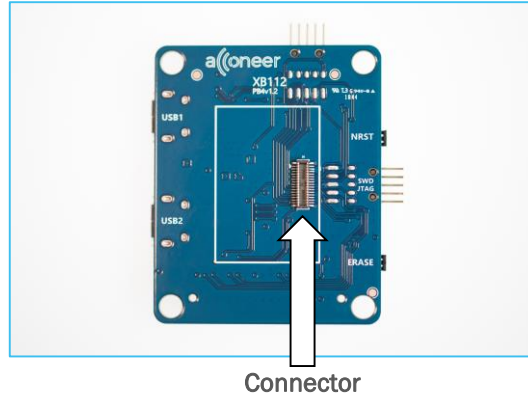
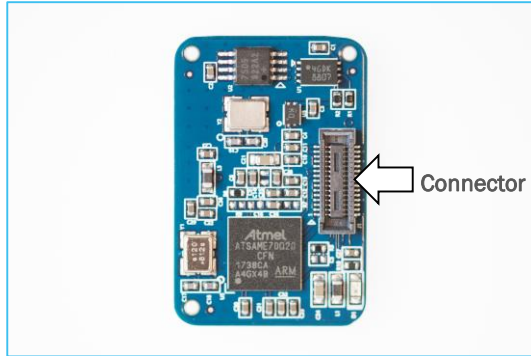
- Acconeer Module SW Image for XM112: Available from <https://developer.acconeer.com/>
- Acconeer Exploration tool: <https://github.com/acconeer/acconeer-python-exploration>

For all users (Windows, Linux):

- Bossa: Available from <https://github.com/shumatech/BOSSA/releases>
- Python: Available from <https://python.org/downloads>

Assemble the HW XM112/XB112

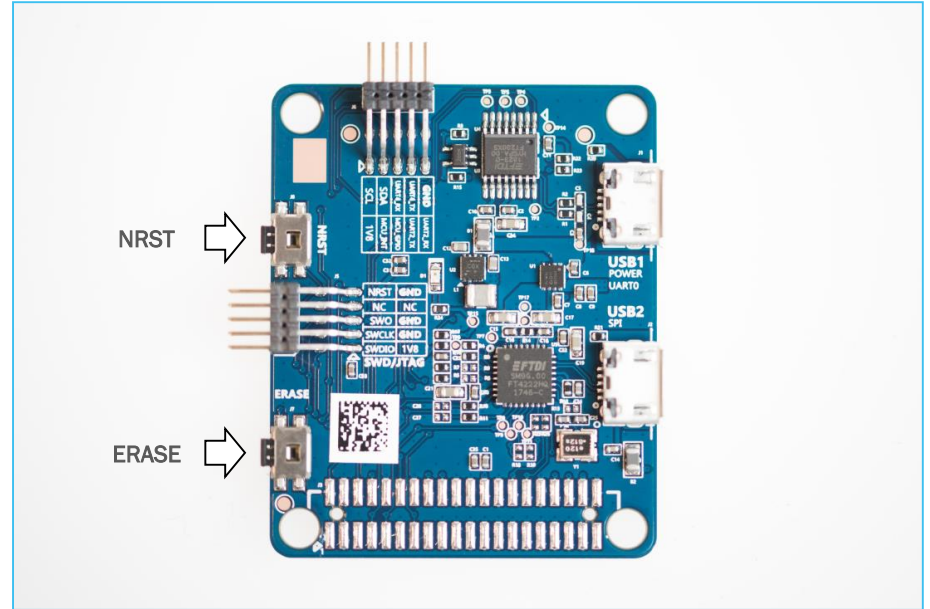
- Connect the XM112 Module to the XB112 Breakout Board.
- Connect the USB cable to USB slot #1
- End result in the rightmost picture



Start Boot Mode

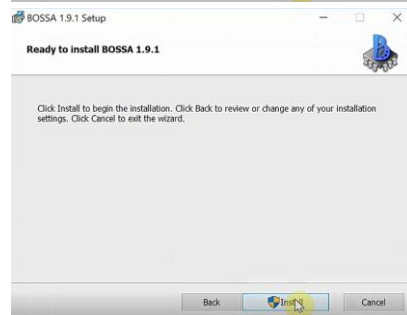
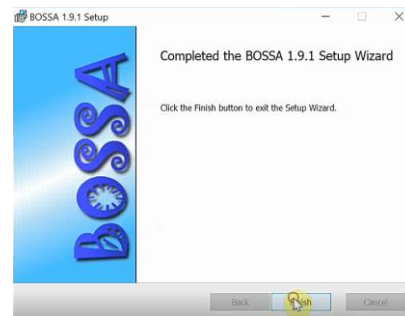
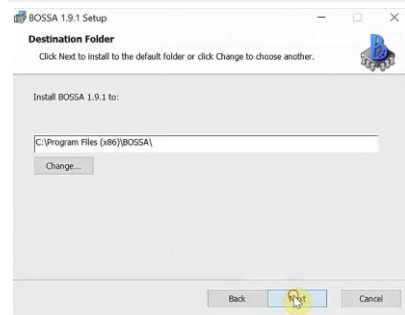
1. Press the ERASE-button and hold it.
2. Press the NRST-button and hold it.
3. Release the NRST-button.
4. Release the ERASE-button

Now the module is in boot mode



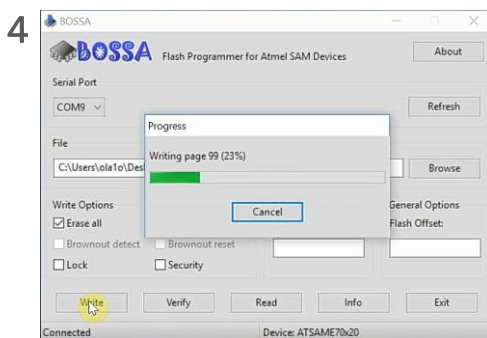
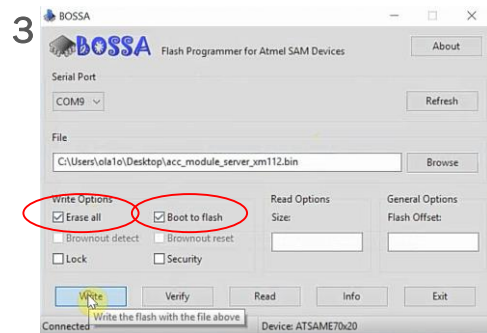
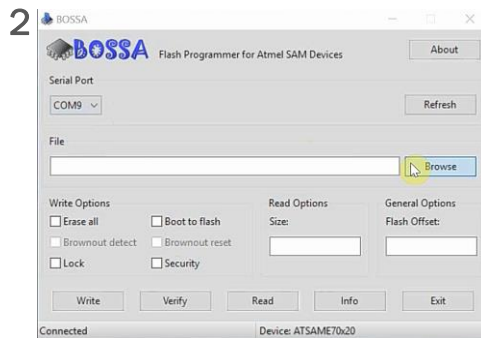
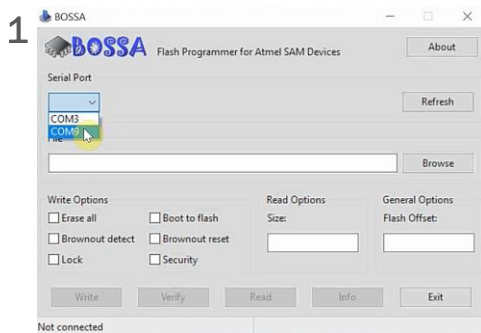
Installing BOSSA

1. Open the installer that you have downloaded.
2. Follow the instructions in the setup wizard and accept the license agreement. No changes needed.
3. Next – Next – Next – Install - Finish



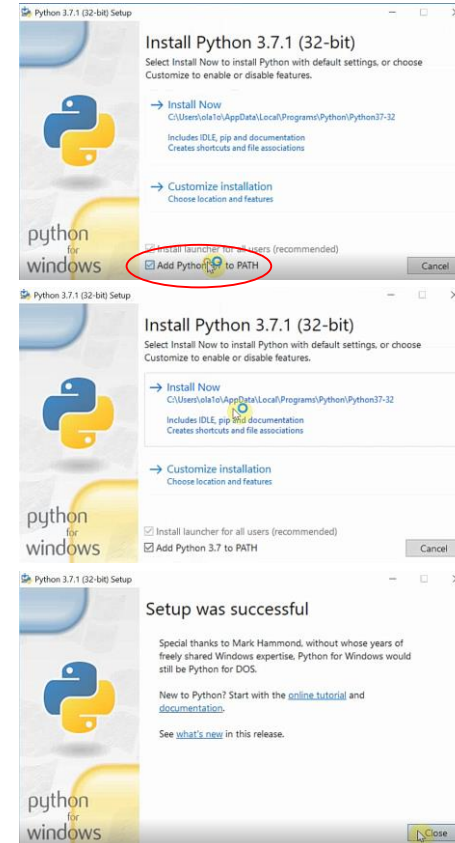
Flashing

1. Start Bossa
2. Choose serial port (Pic 1). The one you have plugged XM112 into.
3. Browse and select the module server SW image downloaded from the Acconeer web page. It is located in folder `xm112_module_software/bin/`. (Pic 2,3)
4. Make sure *Erase all* AND *Boot to flash* options are selected (Pic 3)
5. Click Write and flashing will begin. (Pic 4)



Installing python

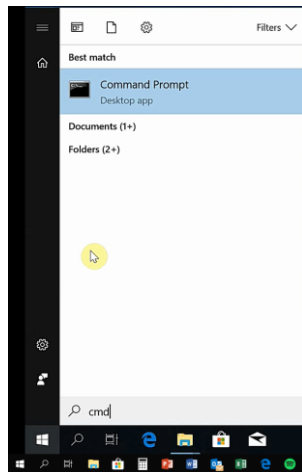
- Start the installer file that you downloaded from python.
- Make sure the Add Python to PATH option is selected. (Pic 1)
- Click Install Now. No need for a customized Installation. (Pic 2)
- Close once the installation is completed. (Pic 3)



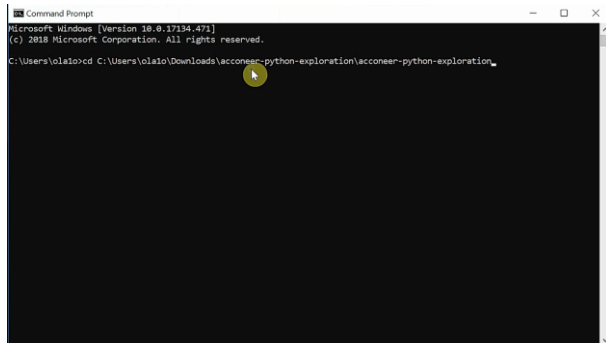
Installing Exploration tool

- Unzip the file downloaded from Acconeer.
Acconeer-python-exploration
- Start windows command prompt. (Pic 1)
You can always find it by searching for “cmd”.
- In the command prompt, change the directory to where you unzipped the exploration tool by typing the command `cd` followed by the path to the folder. (Pic 2)

1



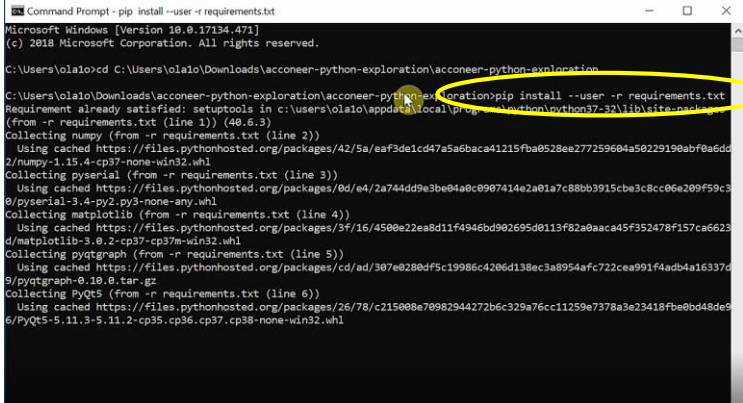
2



Installing Exploration tool

- Run the command: *pip install --user --r requirements.txt* (Pic 1)
- Wait until the installation has finished and run the next command: *python setup.py install --user* (Pic 2)

1



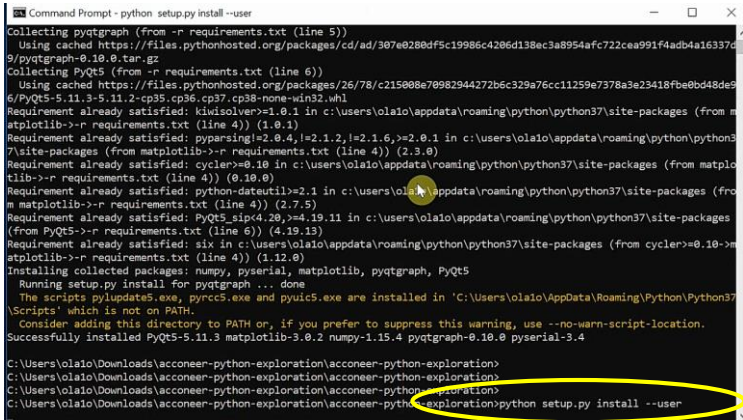
```

Microsoft Windows [Version 10.0.17134.471]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\olaio>cd C:\Users\olaio\Downloads\acconeer-python-exploration\acconeer-python-exploration
C:\Users\olaio\Downloads\acconeer-python-exploration\acconeer-python-exploration>pip install --user --r requirements.txt
Requirement already satisfied: setuptools in c:\users\olaio\appdata\local\programs\python\python37-32\lib\site-packages
(from -r requirements.txt (line 1)) (40.6.3)
Collecting numpy (from -r requirements.txt (line 2))
  Using cached https://files.pythonhosted.org/packages/42/5a/ef3de1cd47a5a6baca41215fba0528ee277259604a5022919abf8a6dd
2/numpy-1.15.4-cp37-none-win32.whl
Collecting pyparsing (from -r requirements.txt (line 3))
  Using cached https://files.pythonhosted.org/packages/0d/e4/2a744dd93be04a0c0907414e2a01a7c88bb3915cbe3c8cc06e209f59c3
0/pyparsing-3.4-py2.py3-none-any.whl
Collecting matplotlib (from -r requirements.txt (line 4))
  Using cached https://files.pythonhosted.org/packages/3f/16/4500e22ea8d11f4946bd9b2695d0113f82a0aaca45f352478f157ca6623
d/matplotlib-3.0.2-cp37-cp37m-win32.whl
Collecting pyqtgraph (from -r requirements.txt (line 5))
  Using cached https://files.pythonhosted.org/packages/cd/ad/307e0280df5c19986c4206d138ec3a8954afc722cea991f4ad4a16337d
9/pyqtgraph-0.10.0.tar.gz
Collecting PyQt5 (from -r requirements.txt (line 6))
  Using cached https://files.pythonhosted.org/packages/26/78/c215088e70982944272b6c329a76cc11259e7378a3e23418f8ebd48de9
6/PyQt5-5.11.3-5.11.2-cp35-cp36-cp37-cp38-none-win32.whl

```

2



```

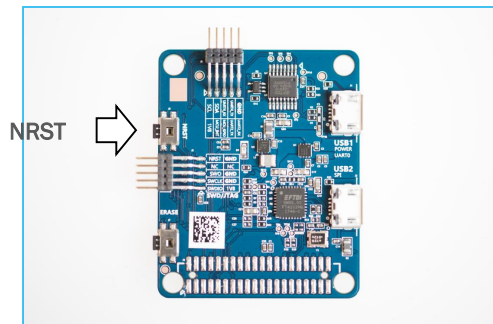
C:\Users\olaio\Downloads\acconeer-python-exploration\acconeer-python-exploration>python setup.py install --user
Collecting pyqtgraph (from -r requirements.txt (line 5))
  Using cached https://files.pythonhosted.org/packages/cd/ad/307e0280df5c19986c4206d138ec3a8954afc722cea991f4ad4a16337d
9/pyqtgraph-0.10.0.tar.gz
Collecting PyQt5 (from -r requirements.txt (line 6))
  Using cached https://files.pythonhosted.org/packages/26/78/c215088e70982944272b6c329a76cc11259e7378a3e23418f8ebd48de9
6/PyQt5-5.11.3-5.11.2-cp35-cp36-cp37-cp38-none-win32.whl
Requirement already satisfied: kimsolver==1.0.1 in c:\users\olaio\appdata\roaming\python\python37\site-packages (from m
atplotlib->-r requirements.txt (line 4)) (1.0.1)
Requirement already satisfied: pyparsing!=2.0.4,!=2.1.2,!=2.1.6,>=2.0.1 in c:\users\olaio\appdata\roaming\python\python3
7\site-packages (from matplotlib->-r requirements.txt (line 4)) (2.3.0)
Requirement already satisfied: cycler>=0.10 in c:\users\olaio\appdata\roaming\python\python37\site-packages (from matpl
otlib->-r requirements.txt (line 4)) (0.10.0)
Requirement already satisfied: python-dateutil>=2.1 in c:\users\olaio\appdata\roaming\python\python37\site-packages (fro
m matplotlib->-r requirements.txt (line 4)) (2.7.5)
Requirement already satisfied: PyQt5_sip<4.20,>=4.19.11 in c:\users\olaio\appdata\roaming\python\python37\site-packages
(from PyQt5->-r requirements.txt (line 6)) (4.19.13)
Requirement already satisfied: six in c:\users\olaio\appdata\roaming\python\python37\site-packages (from cycler>=0.10->
matplotlib->-r requirements.txt (line 4)) (1.12.0)
Installing collected packages: numpy, pyparsing, matplotlib, pyqtgraph, PyQt5
Running setup.py install for pyqtgraph ... done
The scripts pyupdate5.exe, pyrcc5.exe and pyuic5.exe are installed in 'C:\Users\olaio\AppData\Roaming\Python\Python37
\Scripts' which is not on PATH.
Consider adding this directory to PATH or, if you prefer to suppress this warning, use --no-warn-script-location.
Successfully installed PyQt5-5.11.3 matplotlib-3.0.2 numpy-1.15.4 pyqtgraph-0.10.0 pyparsing-3.4

C:\Users\olaio\Downloads\acconeer-python-exploration\acconeer-python-exploration>
C:\Users\olaio\Downloads\acconeer-python-exploration\acconeer-python-exploration>
C:\Users\olaio\Downloads\acconeer-python-exploration\acconeer-python-exploration>python setup.py install --user

```

Run the exploration tool

- You need to start by rebooting the XM112 module.
- Press the NRST button on the XM112 card and hold for 1s.
- Run the following command in the command prompt: `python examples/services/envelope.py -u [port id]` In our example we have used port13.
- The result should be a graph showing the envelope data output from the sensor. Shown in next page.



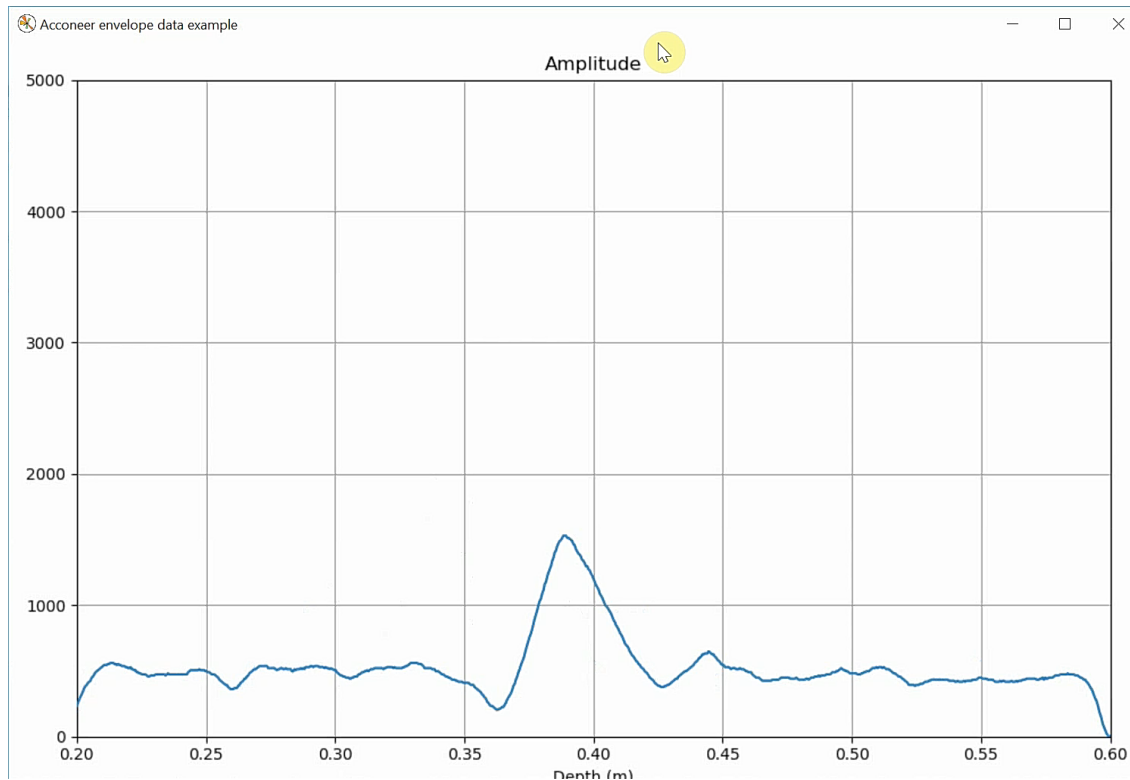
```

Command Prompt - python examples/services/envelope.py -u COM13
C:\Users\olalo\Downloads\acconeer-python-exploration\acconeer-python-exploration>python examples/services/envelope.py -u
Multiple serial ports are available:
COM3      (Intel(R) Active Management Technology - SOL (COM3))
COM13     (USB Serial Port (COM13))

Re-run the script with a given port

C:\Users\olalo\Downloads\acconeer-python-exploration\acconeer-python-exploration>python examples/services/envelope.py -u COM13
Press Ctrl-C to end session
  
```

Envelope graph



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