README Raspberry Pi

To view release notes use the following link: https://developer.acconeer.com/sw-release-notes/

1 Setup Raspberry Pi 2, 3 or 4

Follow the instructions on https://www.raspberrypi.org/downloads/ to install Raspberry Pi OS. Use of the 32-bit version of the OS is recommended, instructions for how to use the 64-bit version of the OS can be found below.

1.1 After starting up the Raspberry Pi:

Start a terminal window and type "sudo raspi-config" - In Localisation Options, select the appropriate timezone. - In Interfacing Options, enable SPI and I2C and the SSH interfaces.

Install libgpio2: sudo apt install libgpiod2

If you plan to use XC112 with newer kernels (v5.4 and later) the following line must be added to /boot/config.txt (i.e. sudo nano /boot/config.txt) and then reboot.

dtoverlay=spi0-1cs,cs0_pin=8

The reason for this is that the kernel spi driver controls and prevent any user application from controlling the SPI0 CS1 which is by default mapped to GPIO7. The above line will disable the usage of SPI0 CS1 and release the GPIO7 so that it can be controlled by the Acconeer SW.

1.2 Using Acconeer 32-bit binaries on 64-bit system (arm64)

Add 32-bit architecture: sudo dpkg –add-architecture armhf sudo apt update

Install 32-bit libraries: sudo apt install libc6:armhf libgpiod2:armhf

2 Development environment

The software can be built either on a standalone Linux system or directly on the Raspberry Pi. Both methods should work equally well.

2.1 Setup for development on Raspberry Pi

Make sure that the following packages are installed: gcc, make. Use "apt-get install [package]" if needed.

2.2 Setup for development on standalone Linux system

The instructions are verified for Debian-based Linux distributions (such as Ubuntu).

Make sure that the following packages are installed: gcc-arm-linux-gnueabihf, make Use “apt-get install [package]” if needed.

3 Distributed files

Extract the zip-file you got from Acconeer and look at the file structure.

- makefile and rule/ contain all makefiles to build the example programs.
- lib/*.a are pre-built Acconeer software.
- include/*.h are interface descriptions used by applications.
- source/example_*.c are applications to use the Acconeer API to communicate with the sensor.
- source/acc_board_*.c are board support files to handle target hardware differences. for reference.
- doc/ contains HTML documentation for all source files. Open doc/rss_api.html .
- out/ contains pre-built applications (same as executing “make” again).

4 Building the software

- Enter the directory that you extracted in section 3.
- To build the example programs, type “make” (the ZIP file already contains pre-built versions of them).
- All files created during build are stored in the out/ directory.
- “make clean” will delete the out/ directory.

5 Executing the software

First you need to transfer the executable to the Raspberry Pi (unless the zip-file was already extracted to the Raspberry Pi.).

Then start the application using:

- ./out/example_detector_distance