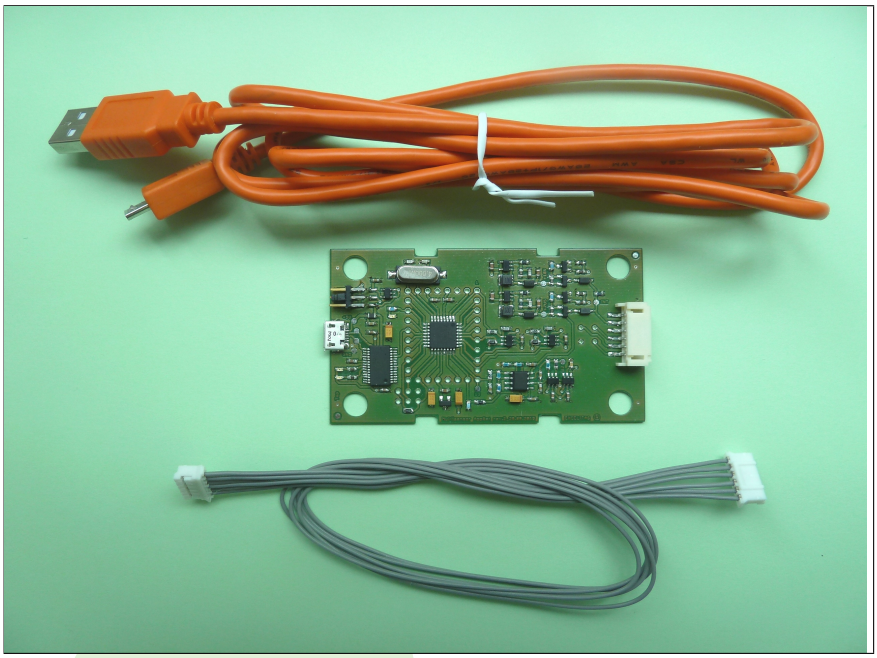
Demo Kit

Infrared Sensing Solutions

MultiSensor Demo Kit / 2170

Product Specification



Features

- USB Serial Interface to Excelitas digital sensors
- Powered from USB
- Evaluation Software for Windows PCs as download available
- Documented serial Interface for user specific software implementations

Applications

- Quick evaluation of digital sensor solutions
- Reference for own implementations
- Easy testing of user specific software

USB Serial Interface

The MultiSensor Demo Kit is the interface between Excelitas digital sensor solutions and a PC via USB serial interface. The corresponding evaluation software and drivers can be downloaded and installed on allmost any Windows PC. Moreover the serial communication protocol is provided for your own software implementation. Digital sensors and adapter boards must be ordered separately.

Contents

1 Schematics and Drawings **3**

2 Demo Kit Overview **3**

3 Software Instructions **3**

3.1 Multisensor Demo Kit 4

3.2 Simplified CaliPile Demo Kit 5

4 Hardware Setup **6**

4.1 Setting the Sensor Supply Voltage 6

4.2 Connection of Demo Kit and Adapter Boards 6

4.3 Connection of 3 Pin Sensors 7

4.4 Connection of 4 Pin Sensors 7

4.5 Connection of 6 Pin Sensors 8

4.6 Connection of Modules 8

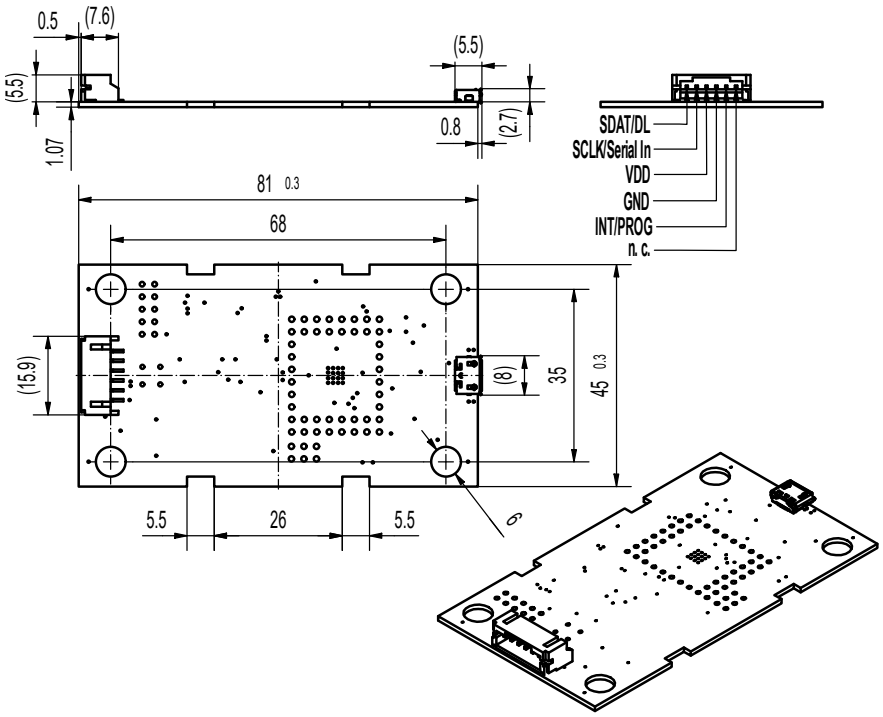
4.7 Verification of the correct hardware installation 9

5 Quality and Statements **10**

6 Packaging **10**

1 Schematics and Drawings

Figure 1: Part Drawing



2 Demo Kit Overview

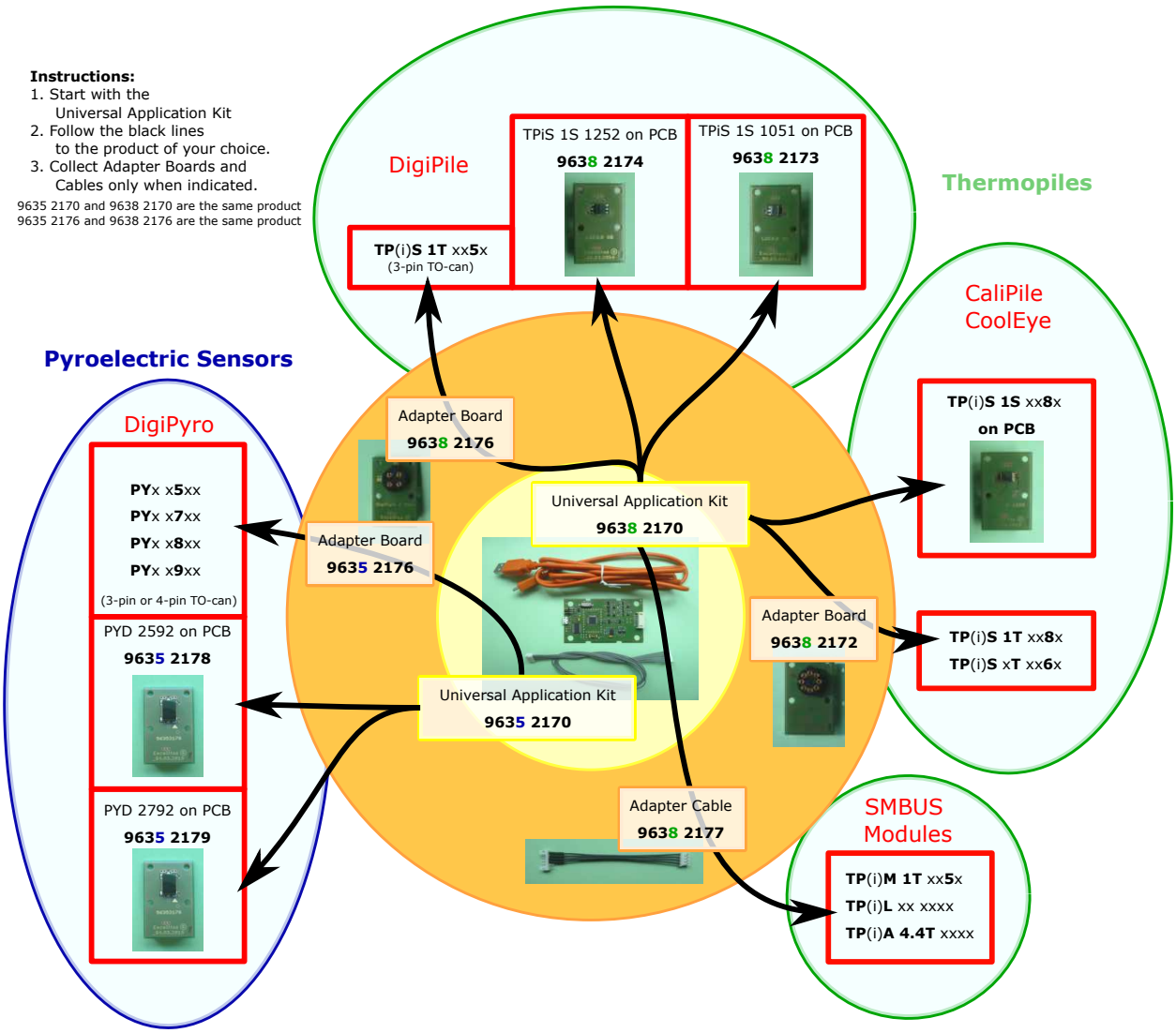
Excelitas Technologies offers a broad digital sensor portfolio. To evaluate those sensors a demonstration kit can be ordered. The core of the demonstration kit is a USB-to-sensor converter providing a serial interface to a PC. Each sensor can be evaluated with dedicated Windows software giving access to the basic sensor parameters. The serial interface protocol is provided on request.
Figure 2 illustrates the selection scheme for the Demo Kit.
The MultiSensor Demo Kit is the basis of the demonstration kit. Depending on the choice of technology (thermopile or pyroelectric sensor) two different so-called Excelitas-BAU (9635 2170 or 9638 2170) numbers were issued but the product is the same and works with both technologies. Sensors in a TO-can require Adapter Boards to be evaluated. Sensors and Adapter Boards need to be ordered separately. SMD sensors are shipped soldered to the PCB adapter board for your convenience. Please notice that the BAU numbers for unsoldered sensors are different from those which come with the adapter board. **Pyroelectric sensors require a lens for proper operation.** The lens design depends on the requirements and is crutial for the overall performance. For a first evaluation our PF17 lens may be used for dual sensors (PYD for horizontal/wall mounting) or the D37 lens for quad sensors in ceiling mounting applications. Please note that those lenses were optimized for a compact design and not for the maximal distance. Please contact us for further assistance. Sensor Modules are PCB Sensor assemblies, which are interfaced with the SMBUS Adapter Cable.

3 Software Instructions

To download the necessary software package for the Demo-Kit please go to:
`https://sftp.excelitas.com/login`
and enter the following account information:

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Tel.: +49 (0)611 492 430

Figure 2: Overview over the Demo Kit Options.



username : irdpub
password : !nfraRedSof1

To download the universal demonstration software for all sensor types, navigate to
`https://sftp.excelitas.com/file/d/MultisensorDemoKit/`

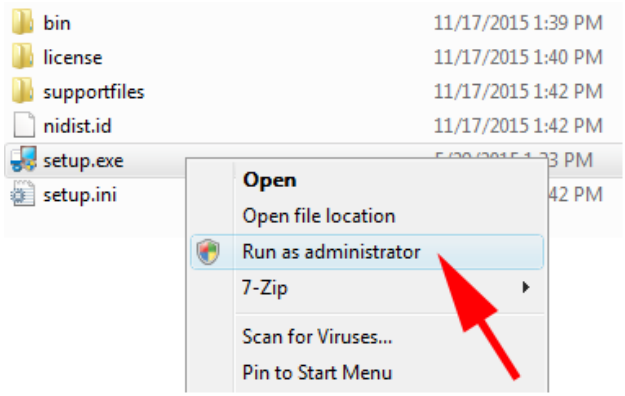
In case of the evaluation of a CaliPile, a separate simplified software package exists, which is not included in the Multisensor Demo Kit software:
`https://sftp.excelitas.com/file/d/Calipile_Demo_Kit/`
In case you are evaluating the CaliPile only, it is sufficient to download only the Calipile Demo Kit software. Please proceed to the corresponding subsection, in case you are using the simplified CaliPile software package.

3.1 Multisensor Demo Kit

Download and extract the containing ‘‘`Multisensor_Demo_Kit.zip`’’. Then start the containing “setup.exe” as administrator to install all necessary software components. The actual documentation on how to use the graphical user interface, troubleshooting and some additional information can be found in the folder

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Figure 3: It is recommended to execute the installation procedure as an administrator



`../Multisensor_Demo_Kit/documentation/`.
Once installation is completed, you can connect the Demo-Kit to your PC. Once your system has found the new hardware it will be visualized in the device manager as “USB serial port (COMxx)”. If the device is not recognized by the PC, the USB driver can be found in `../Multisensor_Demo_Kit/Driver/` for manual installation.
The folder `../Multisensor_Demo_Kit/additional_software/` contains additional software packages for manual installation of the necessary runtimes in case something went wrong during the automatic installation.
Finally you will find an entry called “App Launcher” in your “all programs/ all apps” menu which will allow you to select between the different software packages for the different Excelitas products.

3.2 Simplified CaliPile Demo Kit

In case you omit the installation of the universal Multisensor Demo Kit software, you must install the drivers for the Kit separately. A copy of the driver is contained in the CaliPile Demo Kit software package but in case you need an up-to-date copy please download the software drivers for the FTDI hardware from the following website:

`http://www.ftdichip.com/Drivers/VCP.htm`

The complete CaliPile software file (driver + executable + documentation) is found on the ftp server in `Calipile_Demo_Kit/CaliPile_App_v.51.zip` (or newer).
Unzip it to a folder of your choice and start the contained `CaliPile_App.exe`.

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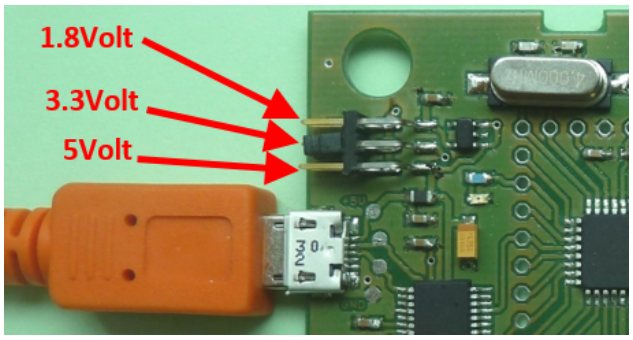
4 Hardware Setup

Do not plug the electronic interface to your PC before having the corresponding software installed.

4.1 Setting the Sensor Supply Voltage

Please check the correct supply voltage setting on the board (see fig. 4). It must match the voltage range of the sensor to be connected. If you are using a 5 V module you have to switch the power jumper to the 5 V position. Further the 1.8 V position is for sensors and modules with 1.8 V power requirements. The default position is 3.3 V.

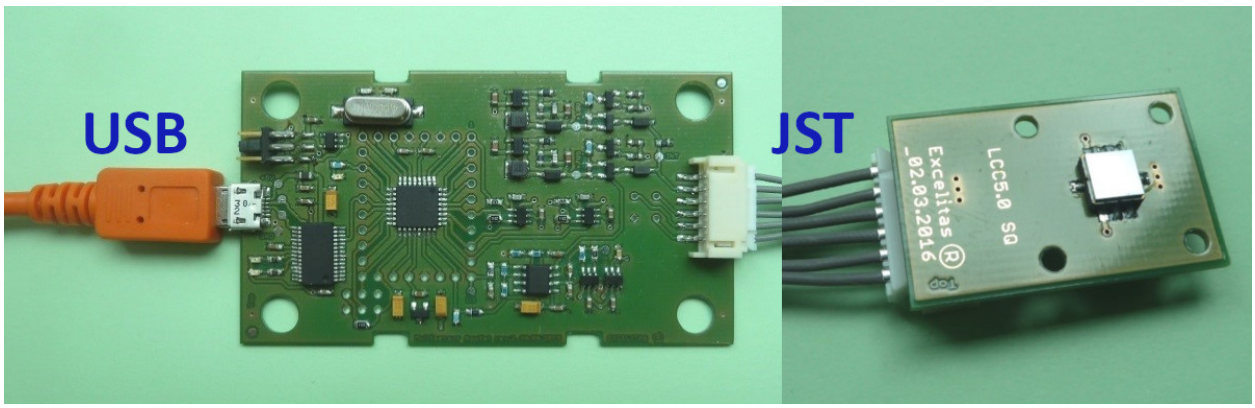
Figure 4: The supply voltage for sensors is selected via a jumper on the Demo Kit board.



4.2 Connection of Demo Kit and Adapter Boards

At first after unboxing the Demo Kit, plug the micro-usb connector to the female jack on the pcb as demonstrated in figure 5. The 6 way JST connector (S6B-PH-SM4-TB) is connected through the cable (PHR-6 with SPH-002T-P05S Crimp-contacts) with an external board which in turn houses a digital Excelitas sensor.

Figure 5: The board is equipped with a micro USB connector and a JST connectors to interface Excelitas boards with sensors.

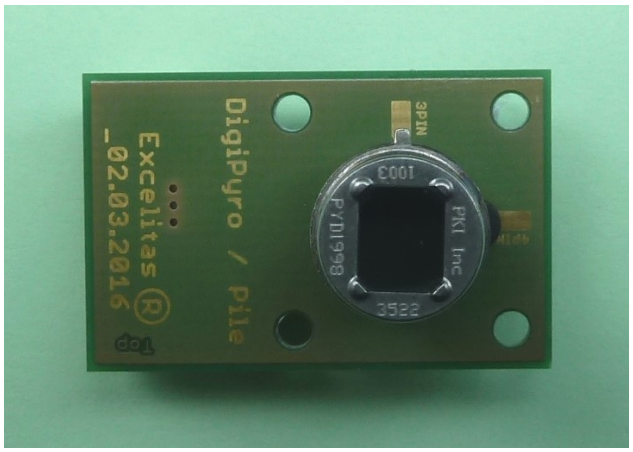


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4.3 Connection of 3 Pin Sensors

If you are using a 3 pin DigiPile sensor or a 3 pin DigiPyro sensor, plug the sensor into the socket on the board as shown in figure 6. The nose on sensor housing has to correspond with the 3PIN marks on the Adapter Board.

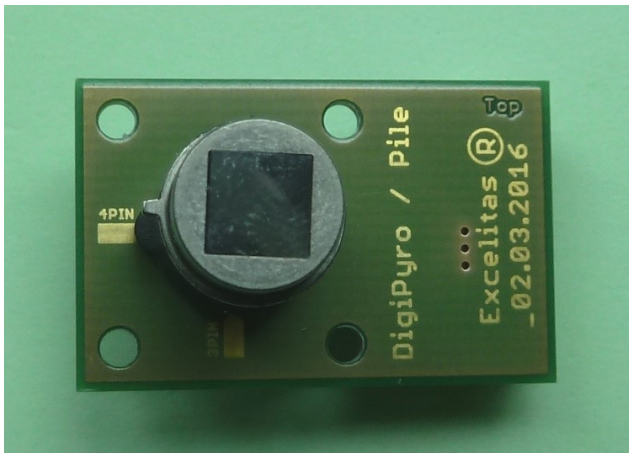
Figure 6: Alignment of TO housing nose with the marking on the board.



4.4 Connection of 4 Pin Sensors

If you are using a 4pin DigiPyro sensor, plug the sensor into the socket on the board as shown in figure 7. The nose on sensor housing has to correspond with the 4PIN marks on the AdapterBoard.

Figure 7: Alignment of TO housing nose with the marking on the board.



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4.5 Connection of 6 Pin Sensors

If you are using a 6pin Calipile sensor, plug the sensor into the socket on the board as shown in figure 8. The nose on sensor housing has to correspond with the copper mark on the AdapterBoard.

Figure 8: Alignment of TO housing nose with the marking on the board.



4.6 Connection of Modules

If you are using a Module with SMBUS interface use the additional Adapter Cable to connect the module to the Demo Kit. Plug the second white 6way JST-connector into the female jack on the Adapter Cable. Plug the white 4way JST connector on to the Module. For reference refer to figure 9. Please check the correct supply voltage setting.

Figure 9: Connection of 4 pin boards through the JST adapter cable.

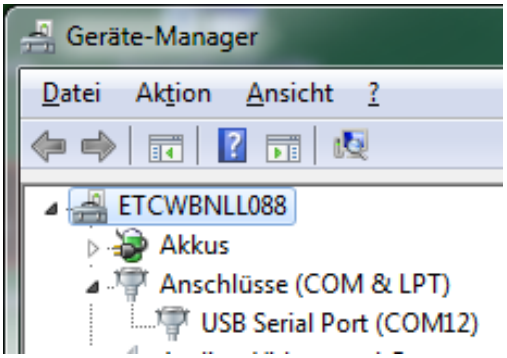


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4.7 Verification of the correct hardware installation

After driver installation (automatically in case of the Multisensor Demo or manually in case of the Simplified CaliPile Demo) you can connect the application set to the PC and the virtal COM port should be recognized by your system. You may check it in the device manager by pressing the *WindowsKey+R* and launching it by typing `devmgmt.msc` . A correctly installed device be displayed like in figure 10.

Figure 10: The Demo Kit must be visible as a virtual ComPort in the Windows device manager.



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5 Quality and Statements

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6 Packaging

The Excelitas Demo-Kit comes in an antistatic packaging in order to protect the device during shipment. During unboxing and handling please make sure to follow the common ESD guidelines to prevent electrostatic discharge on the device.

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