

Demo Kit

Infrared Sensing Solutions



Demo Kit Adapter Board/ 2171



Adapter Board with Sensor

The adapter board to the MultiSensor Demo Kit is a PCB equipped with the digital SMD TPiS 1S 1385 (BAU number 5029) thermopile sensor. The sensor does not need to be ordered separately. The adapter board was designed to be connected to the MultiSensor Demo Kit with the BAU number 2170.

Product Specification

Features

- Designed for the MultiSensor Demo Kit
- SMD TPiS 1S 1385 / 5029 included

Applications

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

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1 Schematics and Drawings

Figure 1: Part Drawing

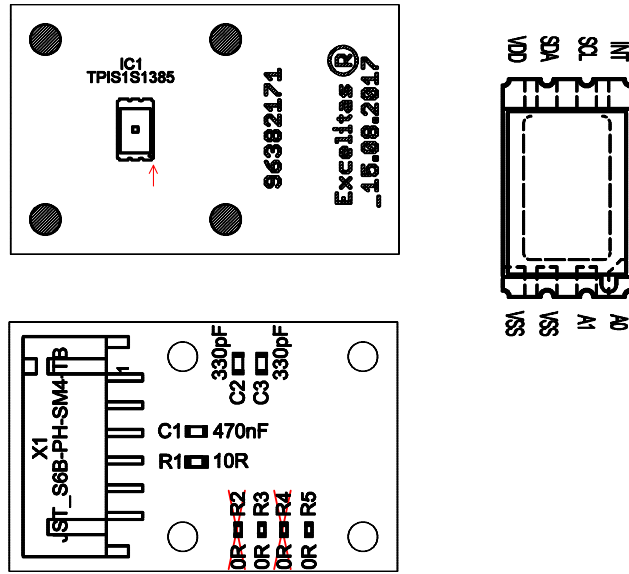
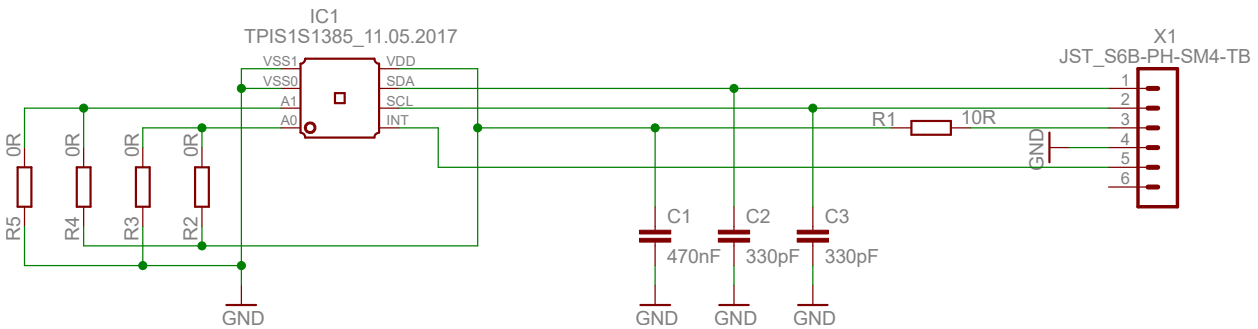


Figure 2: Part Schematics and Connections



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 3: Overview over the Demo Kit Options.

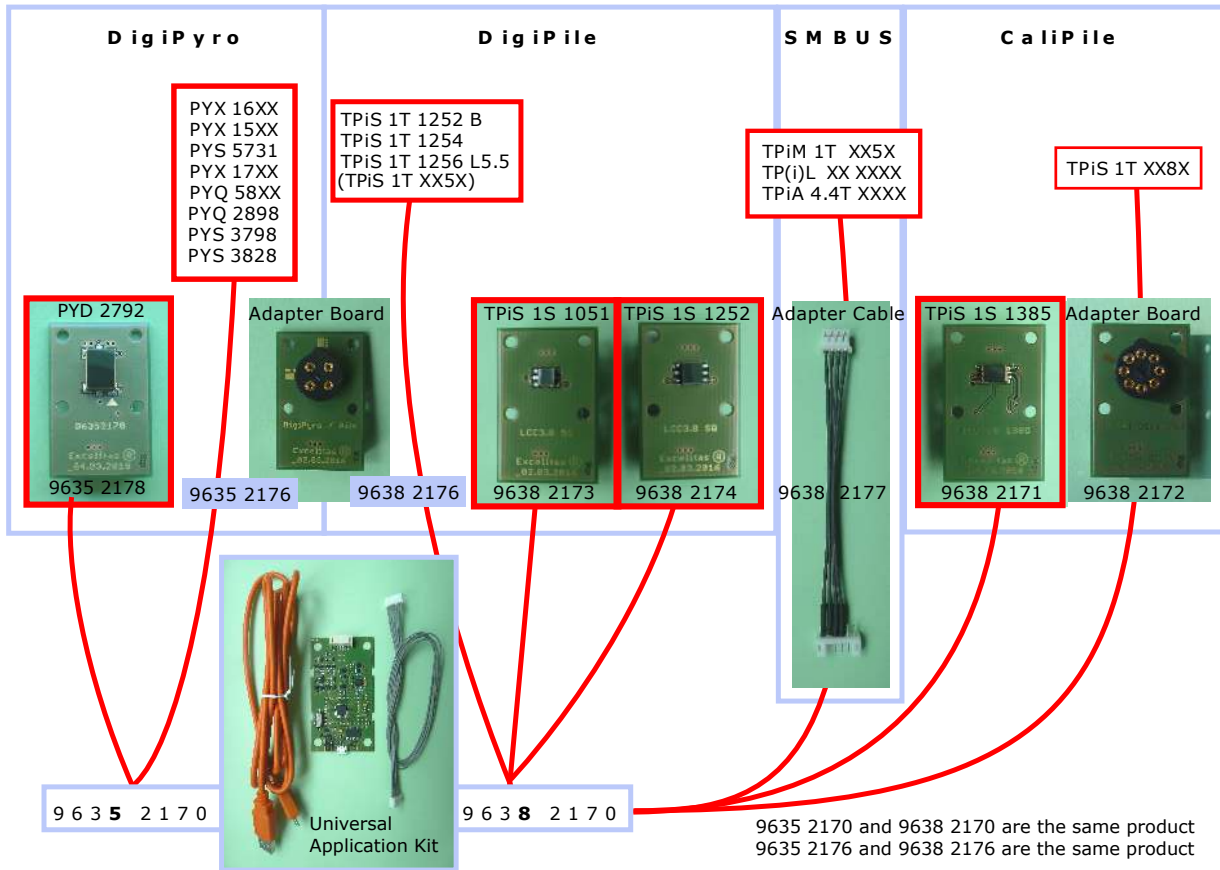


Figure 3 illustrates the selection scheme for the Demo Kit.

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 curtail 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:

username : irdpub

password : !nfraRedSof1

To download the universal demonstration software for all sensor types, navigate to

<https://sftp.excelitas.com/file/d/MultisensorDemoKit/>

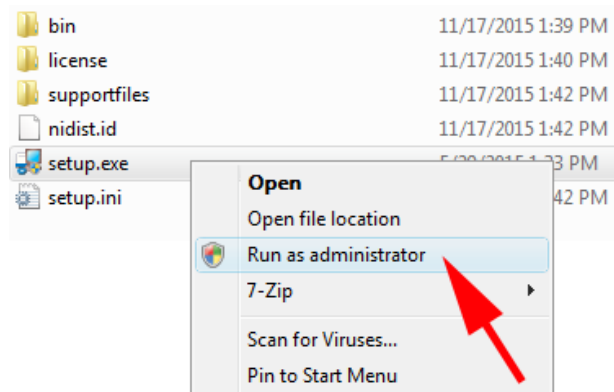
In case of the evaluation of a CaliPile, a separate simplified software package exists, which is not included in the Multisensor Demo Kit software:

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

Figure 4: It is recommended to execute the installation procedure as an administrator



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 `../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.

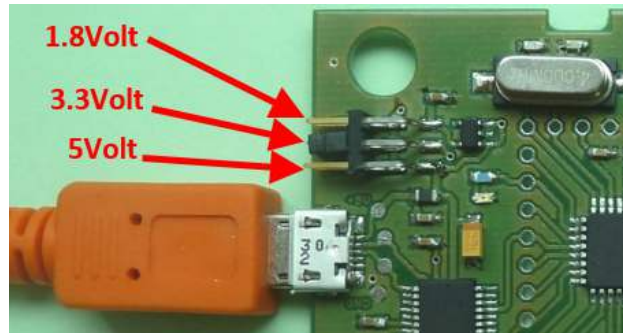
4 Hardware Setup

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. 5). It must match the voltage range of the sensor to be connected. If you are using a 5V module you have to switch the power jumper to the 5V position. Further the 1.8V position is for sensors and modules with 1.8V power requirements. The default position is 3.3V.

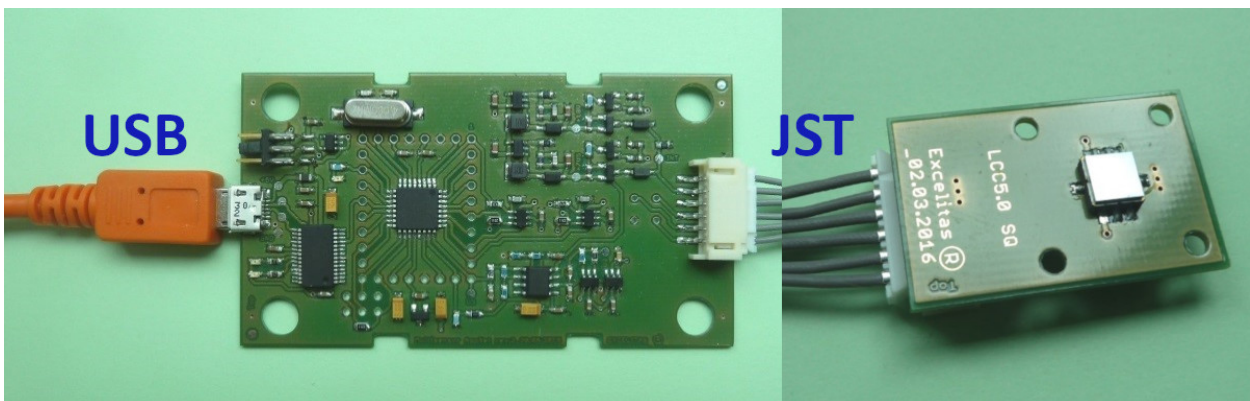
Figure 5: The supply voltage for sensors is selected via a jumper on the Demo Kit board.



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 6. 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.

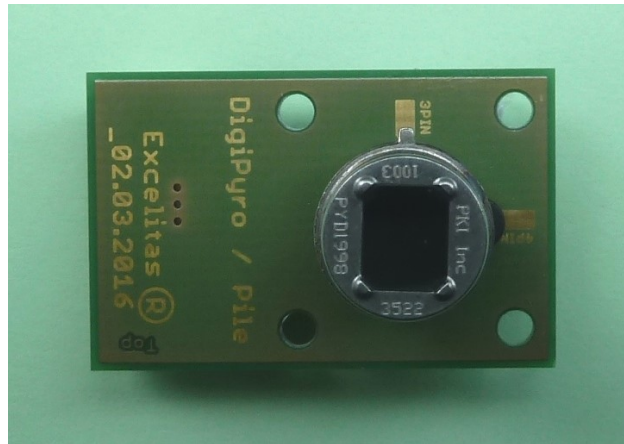
Figure 6: The board is equipped with a micro USB connector and a JST connectors to interface Excelitas boards with sensors.



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 7. The nose on sensor housing has to correspond with the 3PIN marks on the Adapter Board.

Figure 7: 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 8. The nose on sensor housing has to correspond with the 4PIN marks on the AdapterBoard.

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



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 9. The nose on sensor housing has to correspond with the copper mark on the AdapterBoard.

Figure 9: 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 10. Please check the correct supply voltage setting.

Figure 10: Connection of 4 pin boards through the JST adapter cable.



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 virtual 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 11.

Figure 11: The Demo Kit must be visible as a virtual ComPort in the Windows device manager.



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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.