Infineon´s XENSIV™-Pressure Sensor 2GO kit

June 2019

Content

- The KP2xx Pressure 2go is a budget-priced evaluation kit enabling the possibility to evaluate several derivatives of the Infineon KP2xx pressure sensor:
  - KP215F1701MAP: Analog Manifold Air Pressure
  - KP229E3518TurboMAP: Analog Manifold Air Pressure
  - KP236BAP: Analog Barometric Air Pressure
  - KP254dBAP: Digital Barometric Air Pressure (SPI)
  - KP275DigitalTurboTMAP Manifold Air Pressure (SENT)

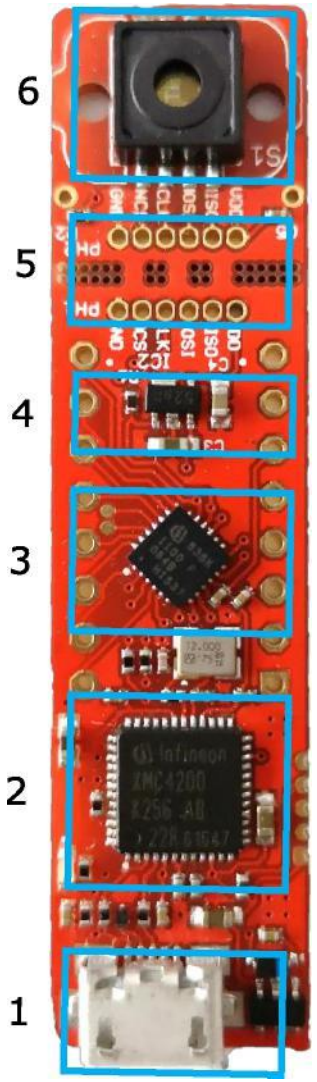
- The KP215, KP229 and KP236 variants provide an analog interface, the KP254 provides SPI and the KP275 provides SENT digital communication interface.
- The kit includes a pneumatic straight threaded-to-tube adapter mounted on top of the pressure sensor.
- The Evaluation Kit includes a GUI software application that can be downloaded at www.infineon.com/sensors2go

Assembly variants

- The content of the evaluation kit is signaled on the back of the delivery box with a check of one of the five boxes.
- The type of sensor may be also identified by checking the markings on the sensor package.

Hardware Description

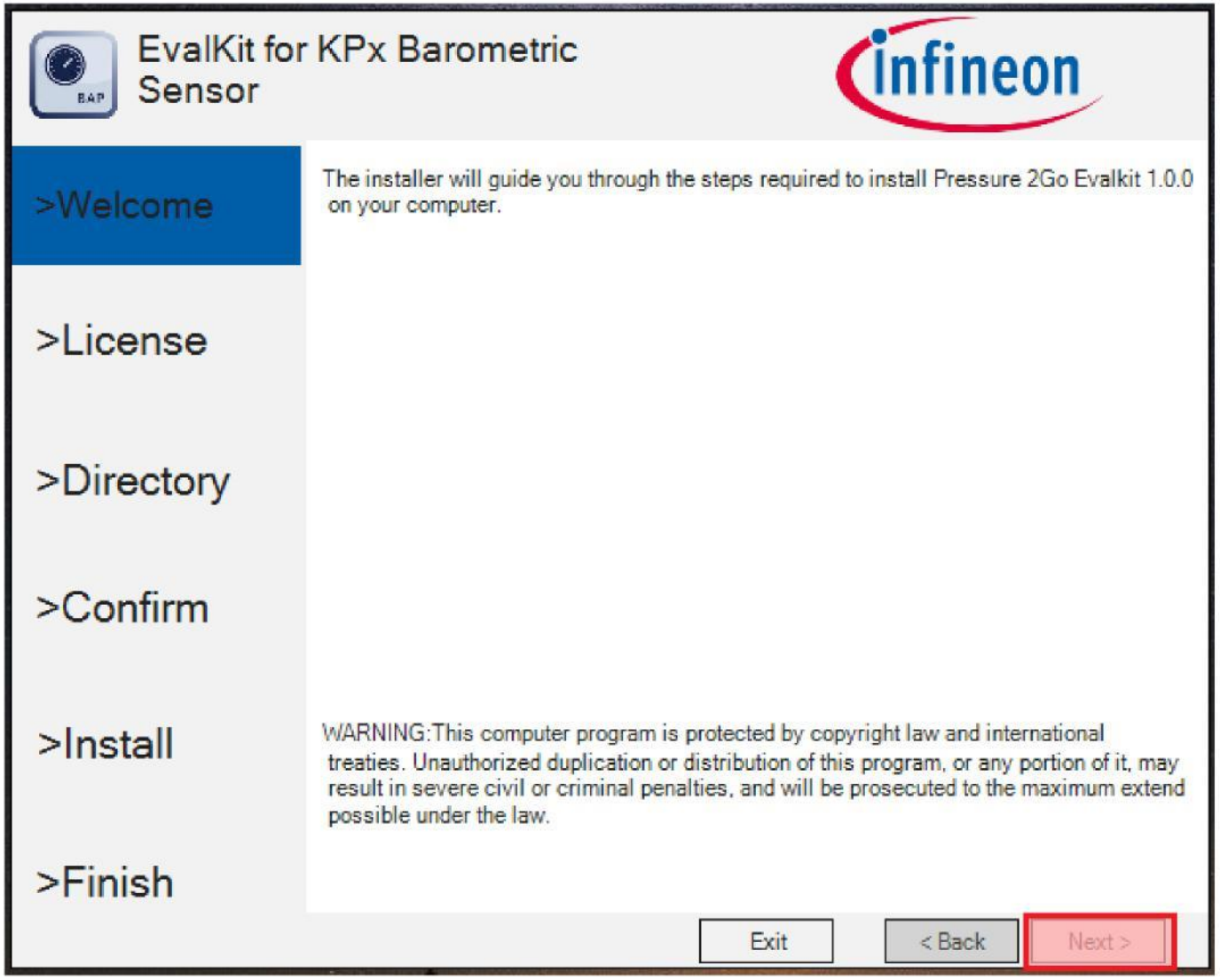
- The evaluation kit hardware is built around the XMC1100 Infineon target microcontroller(2), ARM M0 based. In addition, the hardware includes an on-board debugger microcontroller (3) implemented with the Infineon XMC4200 running a SEGGER Jlink debugger.
- The sensor (6) is placed on a break-apart region of the PCB so it can be removed an placed in a system.
- The sensor inputs/outputs are easily accessible (5).
- To connect to the PC, a micro-USB (1) to USB cable is required - not provided inside the package.
- The microcontroller half (1, 2, 3) is the same for all 3 PCB supports.



Software Installation

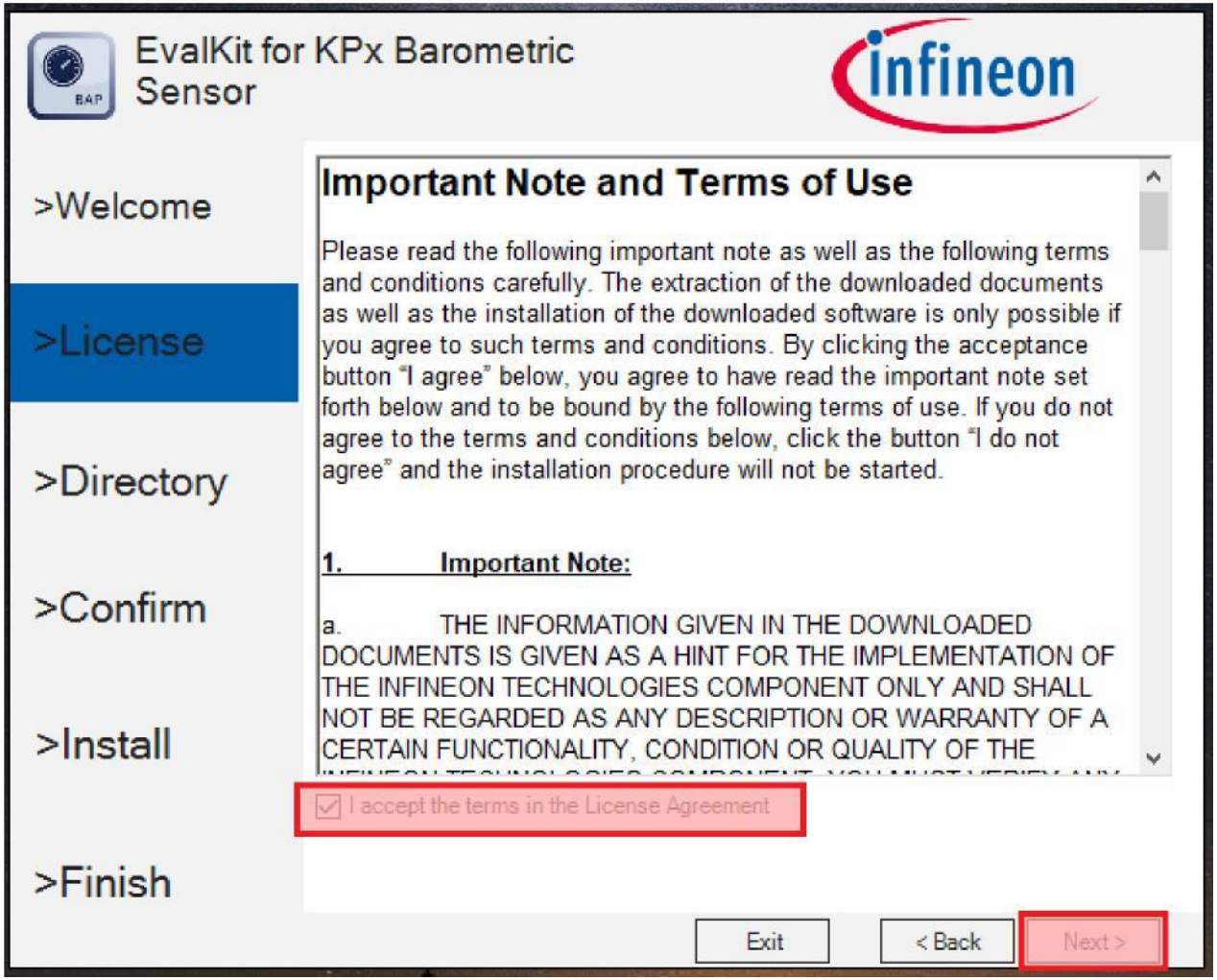
1. Download the Pressure2Go Evaluation kit software from Infineon Website.
2. Extract / Unzip the downloaded package from the Infineon website.
3. Install the Evaluation Kit software by double clicking on the installer file. Please notice that administration rights are mandatory for a clean installation process.

Software Installation – Step 1



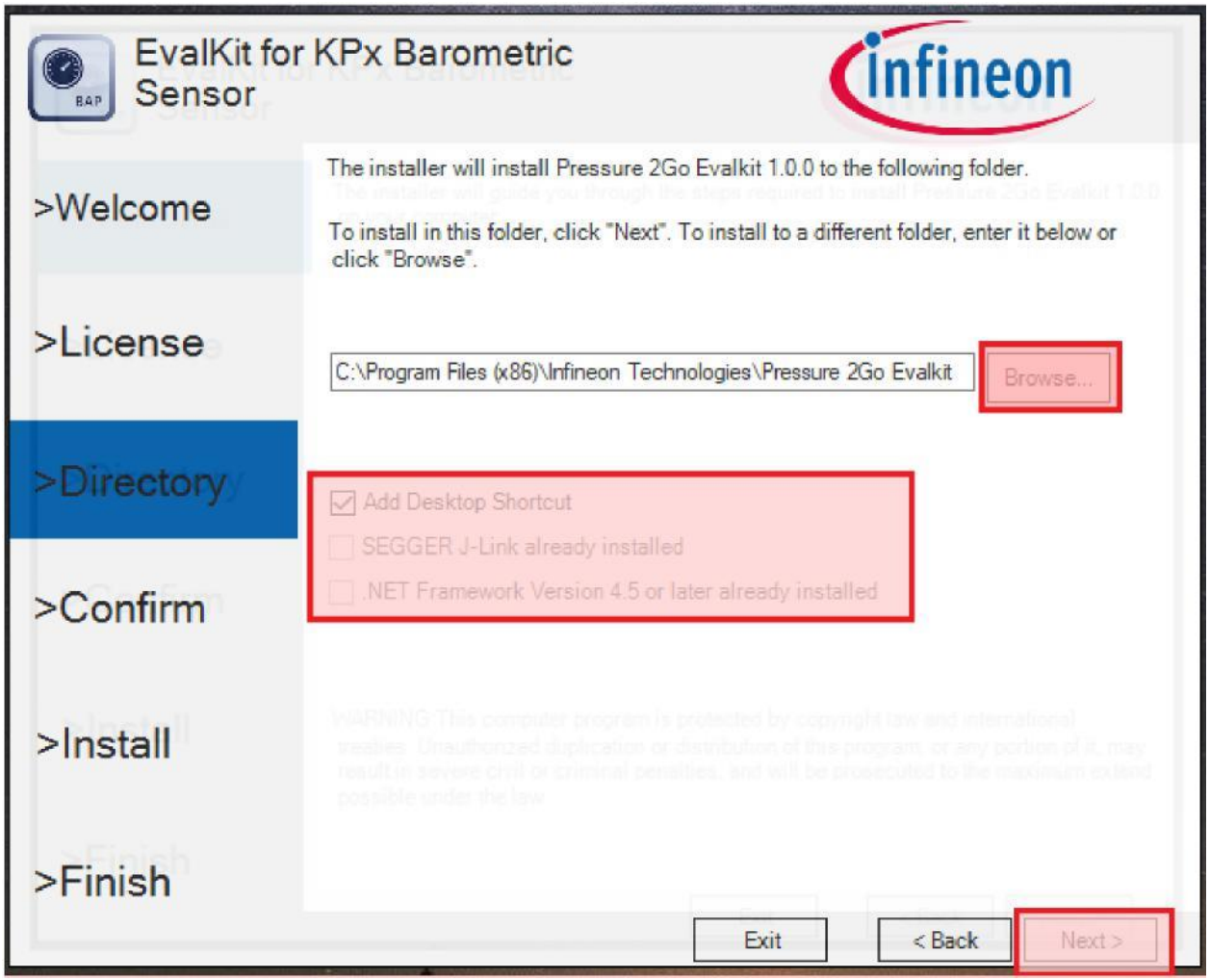
This is the installer entry point. Click Next to go forward with the process

Software Installation – Step 2



Please read the license agreement and check the *"I accept the terms in the License Agreement"* checkbox. The "Next" button activates only after agreeing with the terms.

Software Installation – Step 3



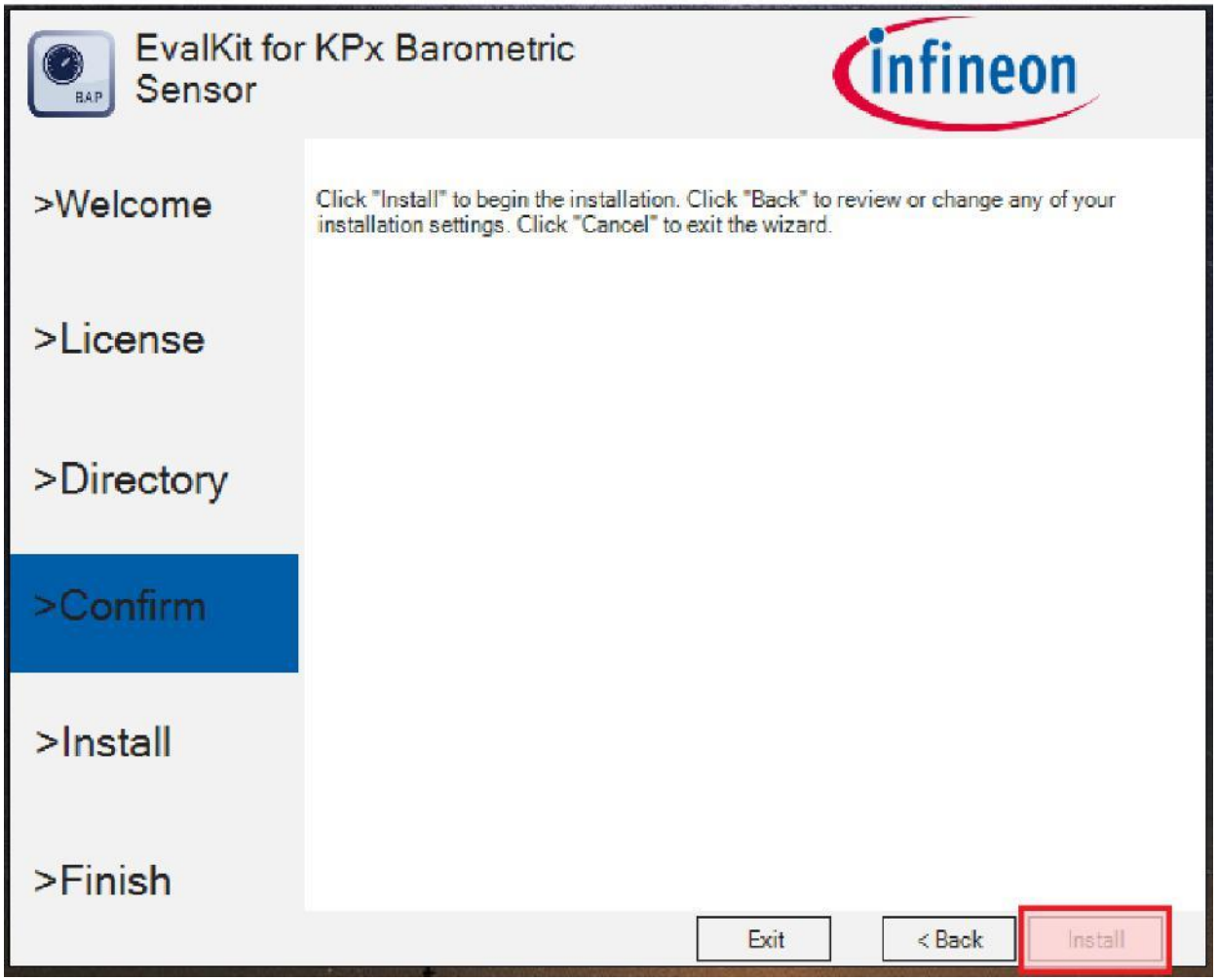
You may select the installation folder – recommended is to leave the default installation path.

You may select if a desktop icon is generated or not.

The hardware device may only operate on a computer that has the Segger Jlink driver installed. The installer operates a check and if no driver is found, you may choose to install Segger Jlink driver as well.

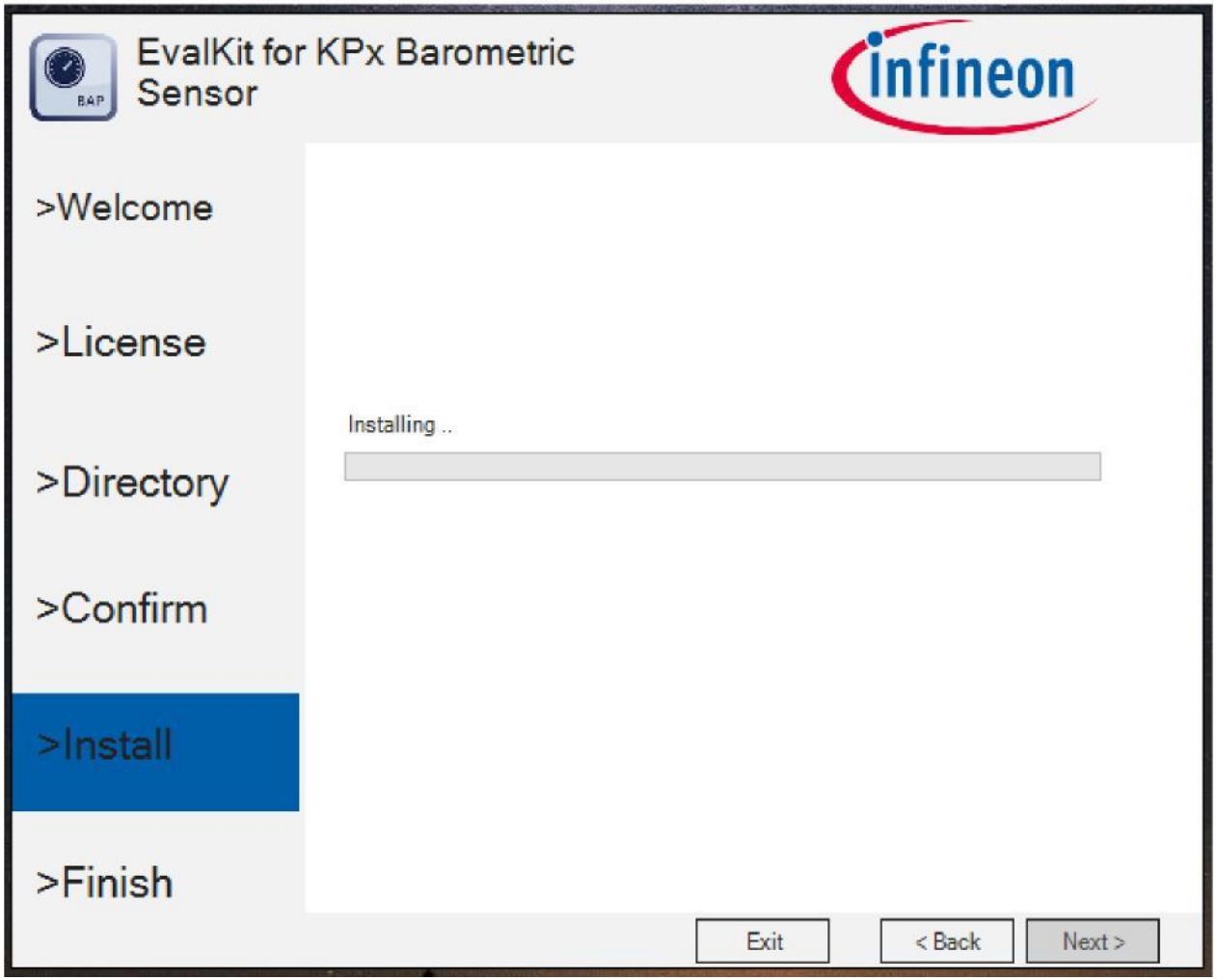
The Software GUI is built in .NET environment 4.5. A check is being done for compatibility and you may choose to install (if not already installed) the .NET framework 4.7 (web installer – requires connection to internet).

Software Installation – Step 4



Confirm the installation process.

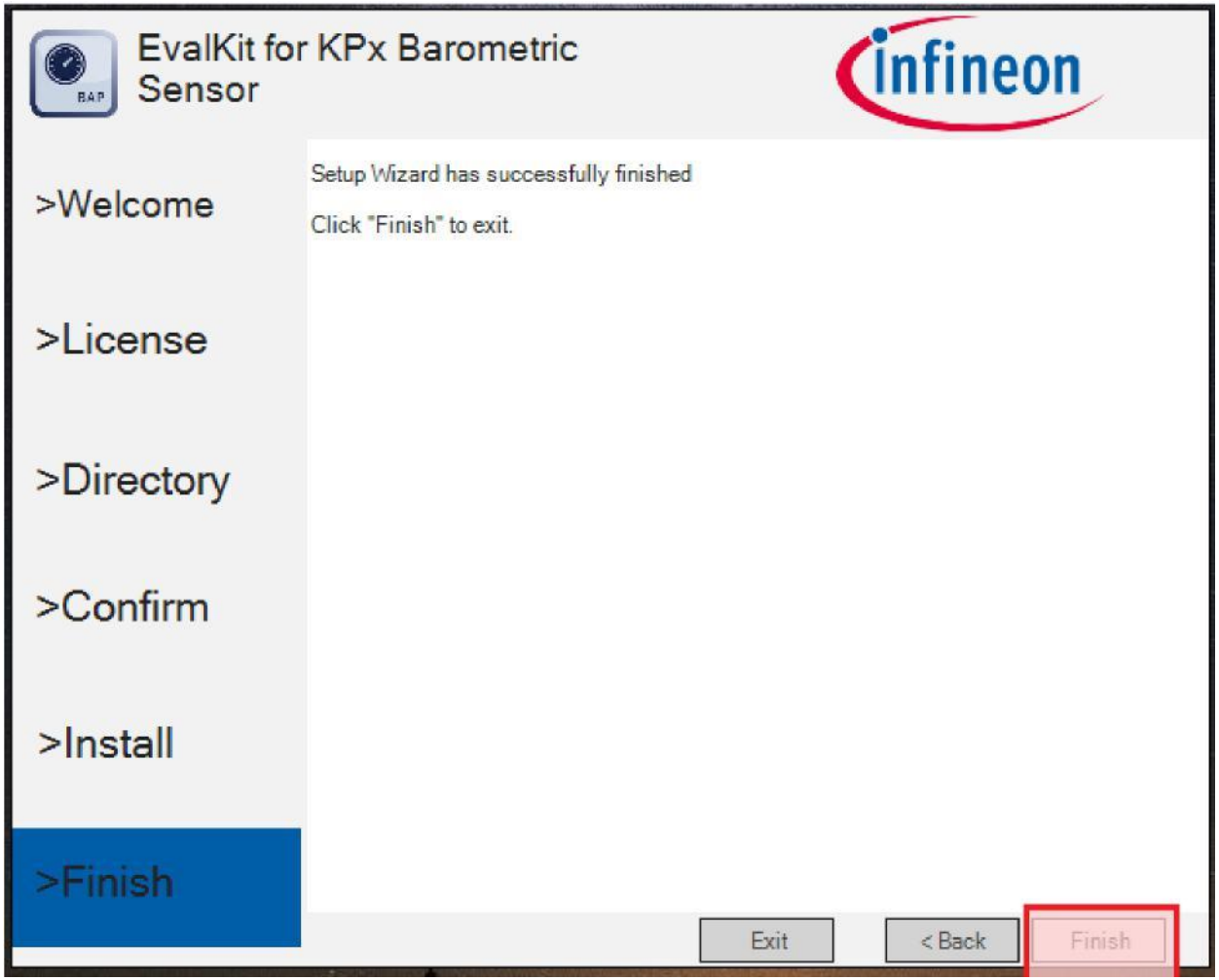
Software Installation – Step 5



Installation process began. Windows UAC (user access control) will prompt for access confirmation. Depending on the security settings, you may need administration rights on the installation machine.

Wait for the installation process to finish...

Software Installation – Step 6

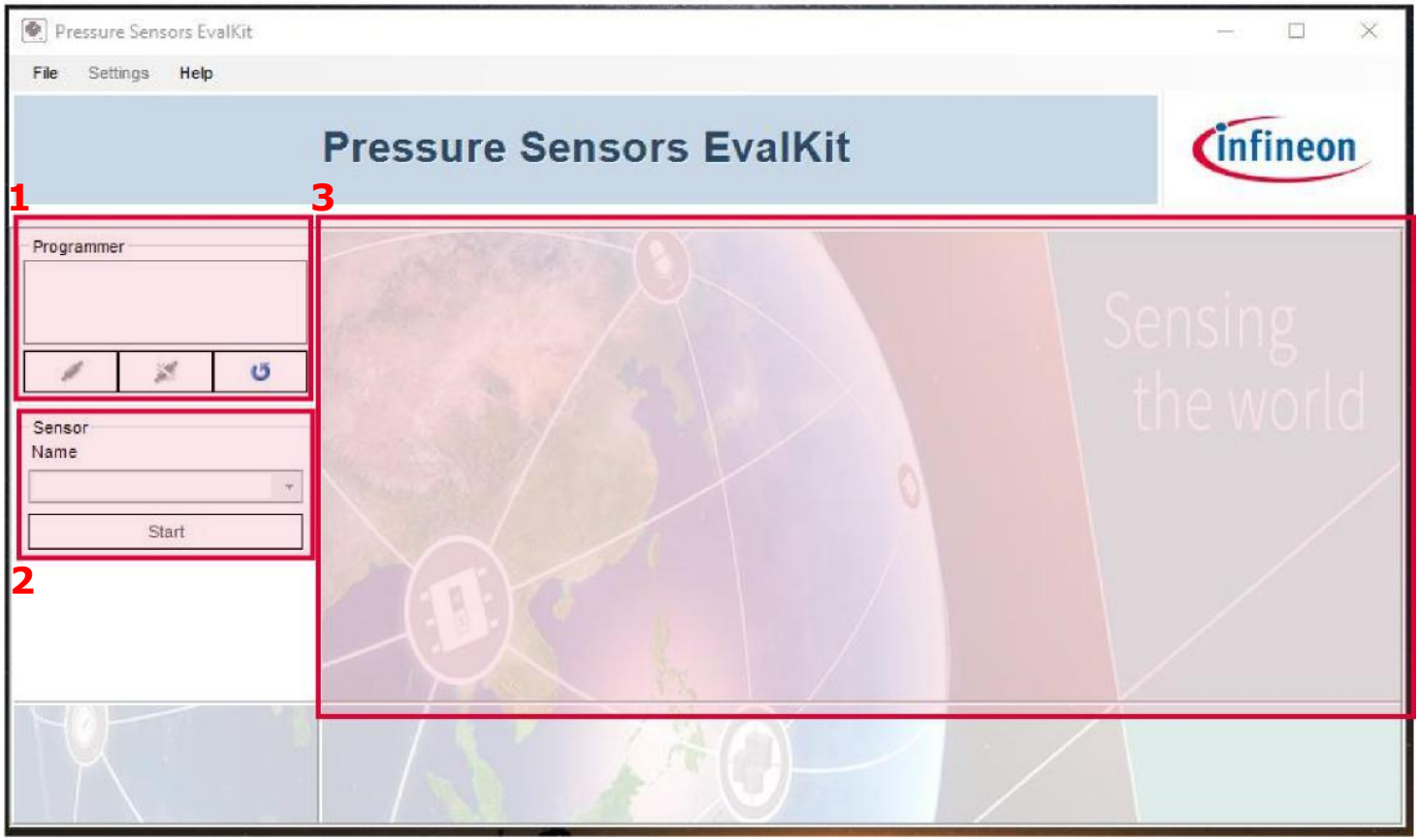


Finalize the installation by clicking Finish.

Check the message provided by the installer. In case of errors, the Software will not be available for running.

Connection to PC and starting the application

- Connect the hardware to PC using a USB to Micro-USB cable
- Start the application (via shortcut on desktop or Start-> All Programs -> Infineon Technologies -> Pressure 2Go

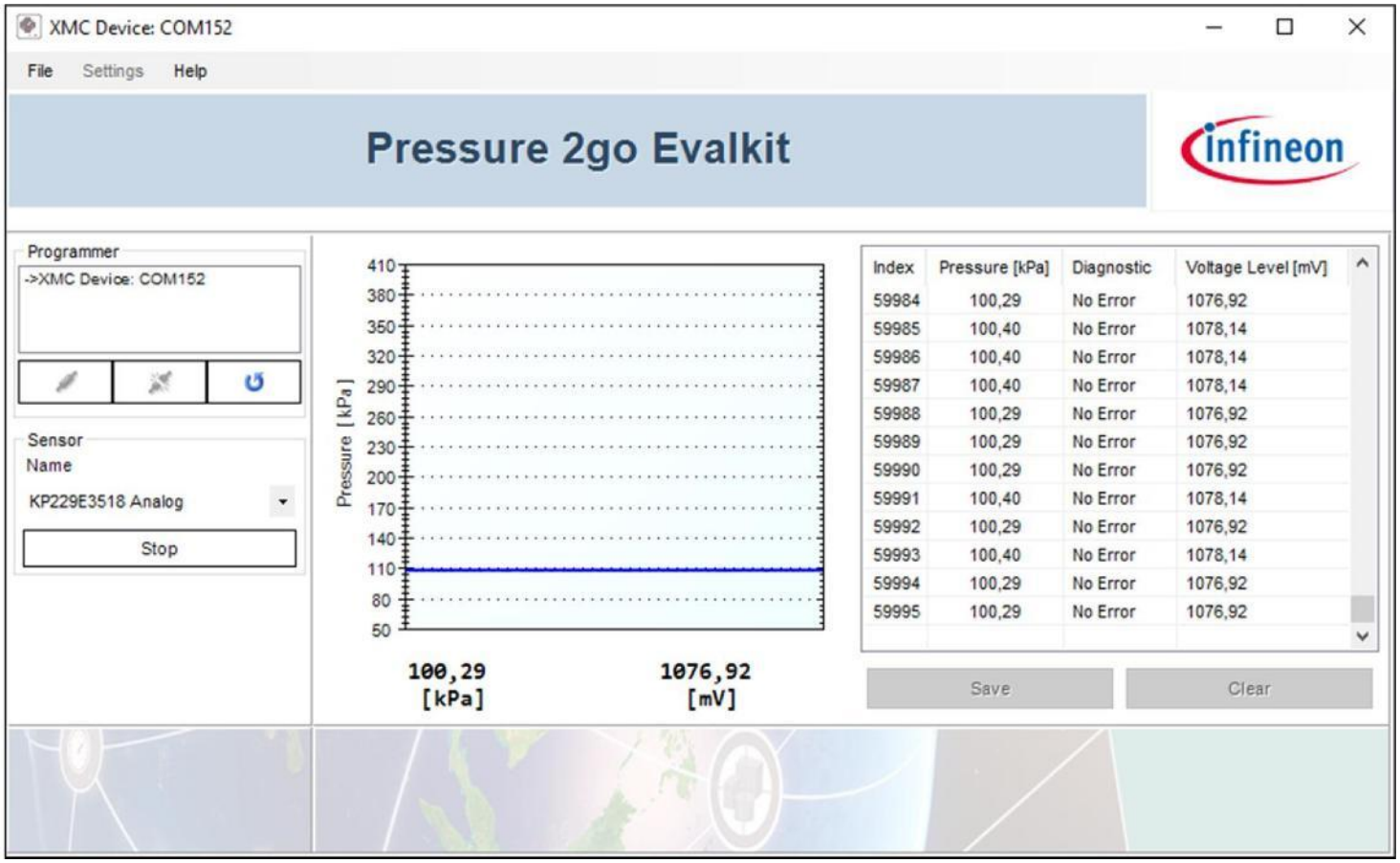


1. This GUI component will show any connected devices. You may select the device and open a connection / flash the device.

2. you may select the sensor type via the combo-box and start/stop acquisition.

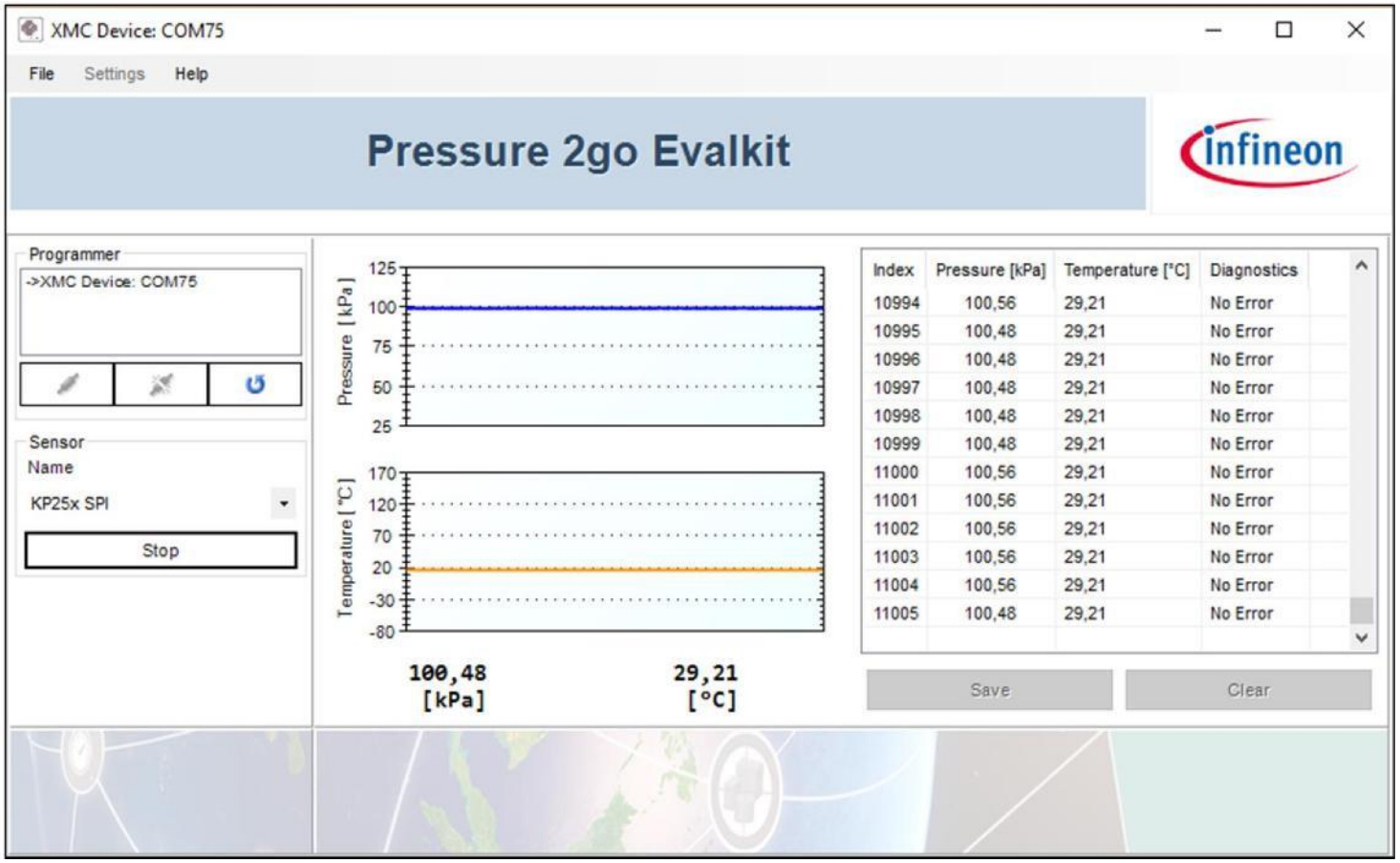
3:sensor acquisition panel – will be displayed after valid sensor is being selected by the user.

KP2xx Analog Display



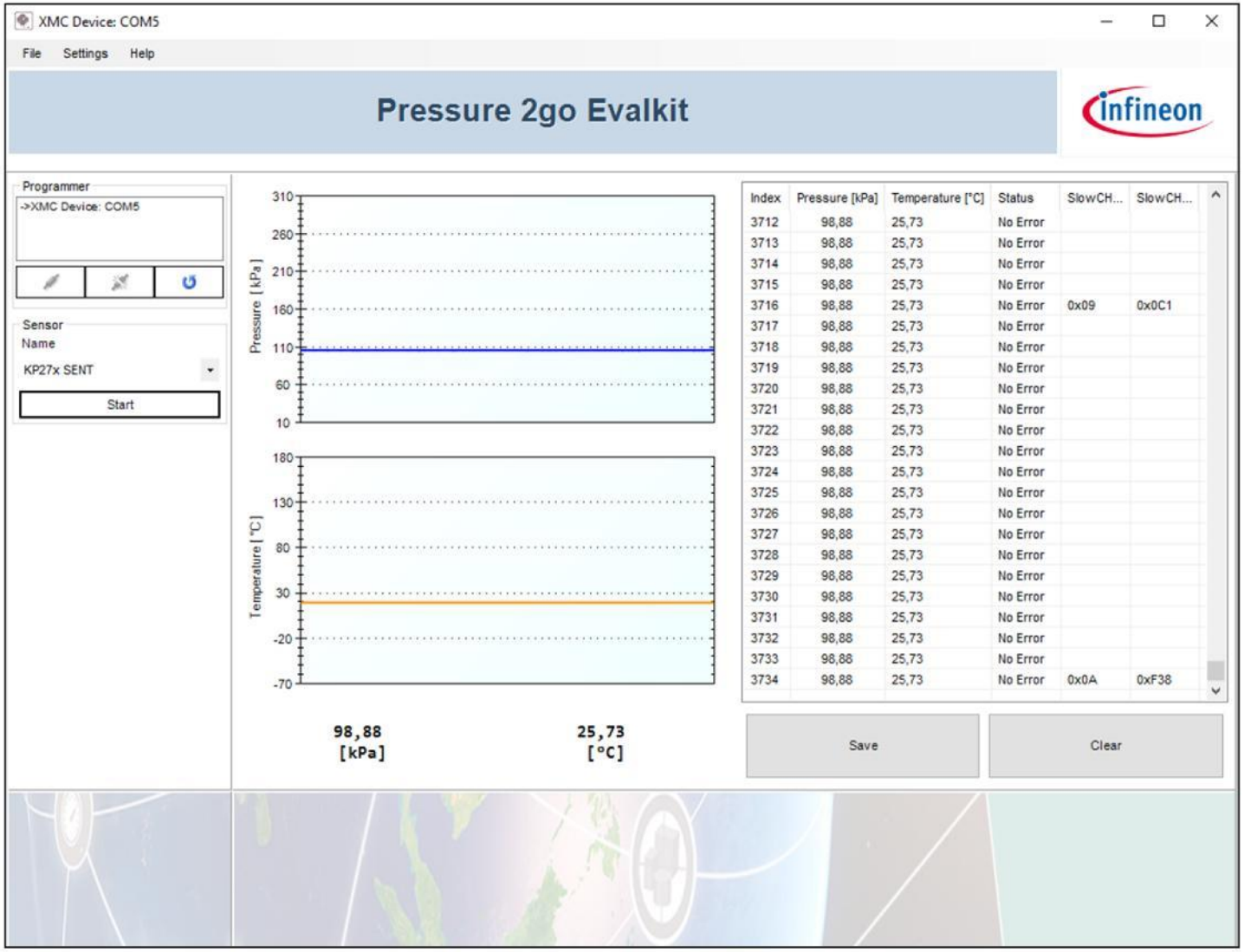
The sensor panel is configured for the corresponding sensor and you will see the specific controls.
Real time graph for plotting the pressure value.
Acquisition log to display all data received from sensor.
With the Save button (active only when the acquisition is stopped) you may export the acquired data in CSV format.

KP254 SPI Display



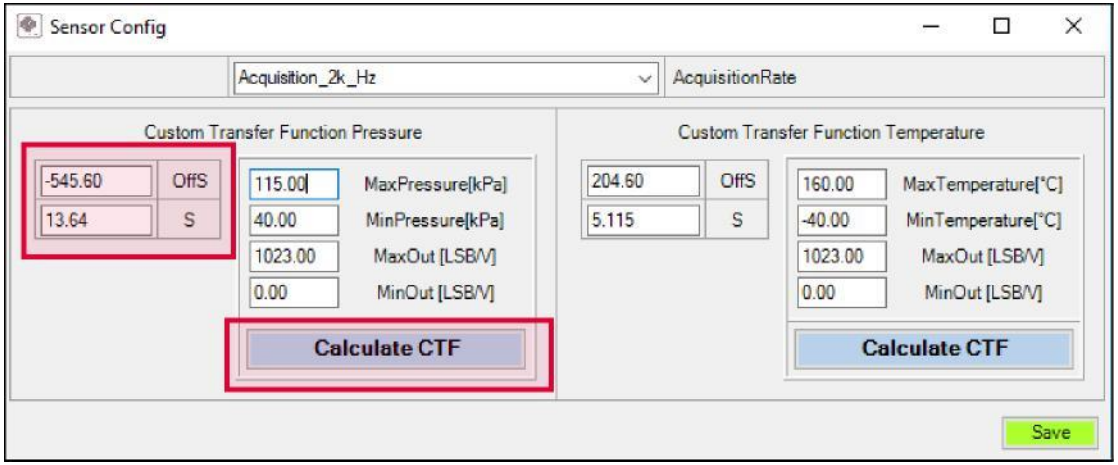
Real time graph for plotting pressure and temperature value.

KP275 SENT Display



Real time graph for plotting pressure and temperature value.

Custom Transfer Function



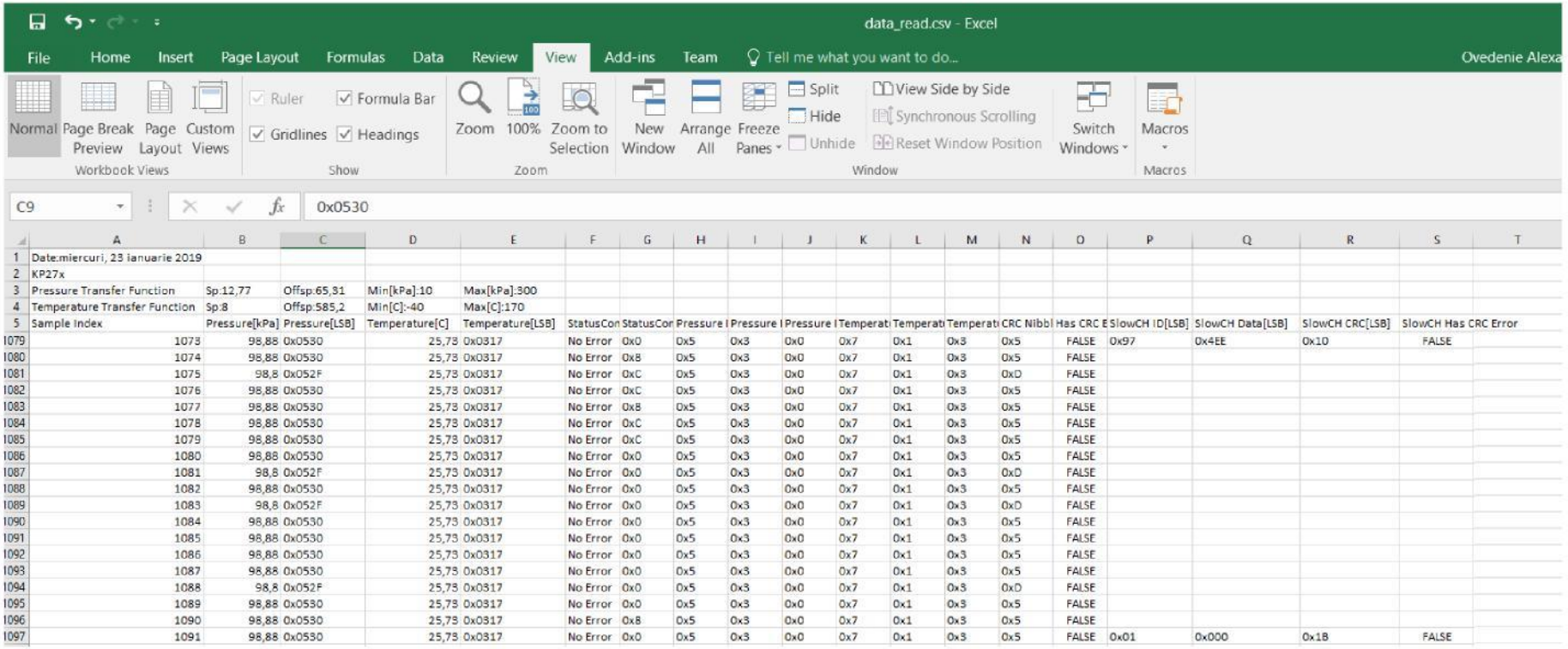
› The user can also configure the GUI to use a custom transfer function for pressure and temperature.

› The user can either:

- fill the boxes with OffS and S parameters and save.
- calculate OffS and S parameters by filling the MaxPressure, MinPressure, MaxOut, MinOut boxes and save.

Save File Feature

› The user has the option to save the acquired data by clicking the Save button in the sensor panel. A save menu will pop-up: enter the path & file name as .CSV and save your data. The .CSV file may be open in Microsoft Excel and post processing of data can be done.



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1	Date:miercuri, 23 ianuarie 2019																			
2	KP27x																			
3	Pressure Transfer Function	Sp:12,77	Offsp:65,31	Min[kPa]:10	Max[kPa]:300															
4	Temperature Transfer Function	Sp:8	Offsp:585,2	Min[C]:-40	Max[C]:170															
5	Sample Index	Pressure[kPa]	Pressure[LSB]	Temperature[C]	Temperature[LSB]	StatusCon	StatusCor	Pressure I	Pressure I	Pressure I	Temperati	Temperati	Temperati	CRC Nibbl	Has CRC E	SlowCH ID[LSB]	SlowCH Data[LSB]	SlowCH CRC[LSB]	SlowCH Has CRC Error	
1079	1073	98,88	0x0530	25,73	0x0317	No Error	0x0	0x5	0x3	0x0	0x7	0x1	0x3	0x5	FALSE	0x97	0x4EE	0x10	FALSE	
1080	1074	98,88	0x0530	25,73	0x0317	No Error	0x8	0x5	0x3	0x0	0x7	0x1	0x3	0x5	FALSE					
1081	1075	98,8	0x052F	25,73	0x0317	No Error	0xC	0x5	0x3	0x0	0x7	0x1	0x3	0xD	FALSE					
1082	1076	98,88	0x0530	25,73	0x0317	No Error	0xC	0x5	0x3	0x0	0x7	0x1	0x3	0x5	FALSE					
1083	1077	98,88	0x0530	25,73	0x0317	No Error	0x8	0x5	0x3	0x0	0x7	0x1	0x3	0x5	FALSE					
1084	1078	98,88	0x0530	25,73	0x0317	No Error	0xC	0x5	0x3	0x0	0x7	0x1	0x3	0x5	FALSE					
1085	1079	98,88	0x0530	25,73	0x0317	No Error	0xC	0x5	0x3	0x0	0x7	0x1	0x3	0x5	FALSE					
1086	1080	98,88	0x0530	25,73	0x0317	No Error	0x0	0x5	0x3	0x0	0x7	0x1	0x3	0x5	FALSE					
1087	1081	98,8	0x052F	25,73	0x0317	No Error	0x0	0x5	0x3	0x0	0x7	0x1	0x3	0xD	FALSE					
1088	1082	98,88	0x0530	25,73	0x0317	No Error	0x0	0x5	0x3	0x0	0x7	0x1	0x3	0x5	FALSE					
1089	1083	98,8	0x052F	25,73	0x0317	No Error	0x0	0x5	0x3	0x0	0x7	0x1	0x3	0xD	FALSE					
1090	1084	98,88	0x0530	25,73	0x0317	No Error	0x0	0x5	0x3	0x0	0x7	0x1	0x3	0x5	FALSE					
1091	1085	98,88	0x0530	25,73	0x0317	No Error	0x0	0x5	0x3	0x0	0x7	0x1	0x3	0x5	FALSE					
1092	1086	98,88	0x0530	25,73	0x0317	No Error	0x0	0x5	0x3	0x0	0x7	0x1	0x3	0x5	FALSE					
1093	1087	98,88	0x0530	25,73	0x0317	No Error	0x0	0x5	0x3	0x0	0x7	0x1	0x3	0x5	FALSE					
1094	1088	98,8	0x052F	25,73	0x0317	No Error	0x0	0x5	0x3	0x0	0x7	0x1	0x3	0xD	FALSE					
1095	1089	98,88	0x0530	25,73	0x0317	No Error	0x0	0x5	0x3	0x0	0x7	0x1	0x3	0x5	FALSE					
1096	1090	98,88	0x0530	25,73	0x0317	No Error	0x8	0x5	0x3	0x0	0x7	0x1	0x3	0x5	FALSE					
1097	1091	98,88	0x0530	25,73	0x0317	No Error	0x0	0x5	0x3	0x0	0x7	0x1	0x3	0x5	FALSE	0x01	0x000	0x1B	FALSE	

Software & Firmware revision

› By accessing the menu Help -> About the following versioning information will be displayed.