Infineon´s XENSIV™-Pressure Sensor 2GO kit



June 2019

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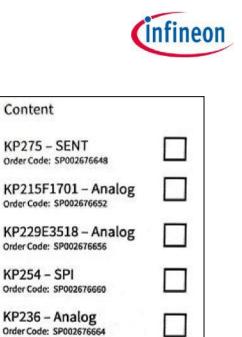


Content

- > 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 <u>www.infineon.com/sensors2go</u>

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.

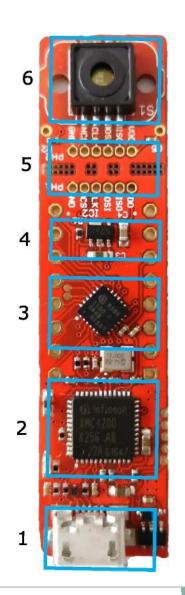


ISO26262 ready

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.





1. <u>Download the Pressure2Go Evaluation kit software from</u> 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

EvalKit for Sensor	r KPx Barometric
>Welcome	The installer will guide you through the steps required to install Pressure 2Go Evalkit 1.0.0 on your computer.
>License	
>Directory	
>Confirm	
>Install	WARNING: This computer program is protected by copyright law and international treaties. Unauthorized duplication or distribution of this program, or any portion of it, may result in severe civil or criminal penalties, and will be prosecuted to the maximum extend possible under the law.
>Finish	Exit < Back Next >

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



EvalKit fo Sensor	or KPx Barometric	P a "									
>Welcome	Important Note and Terms of Use	L C									
	Please read the following important note as well as the following terms and conditions carefully. The extraction of the downloaded documents	b a									
>License	as well as the installation of the downloaded software is only possible if you agree to such terms and conditions. By clicking the acceptance button "I agree" below, you agree to have read the important note set										
>Directory	forth below and to be bound by the following terms of use. If you do not agree to the terms and conditions below, click the button "I do not agree" and the installation procedure will not be started.										
	1. Important Note:										
>Confirm	a. THE INFORMATION GIVEN IN THE DOWNLOADED DOCUMENTS IS GIVEN AS A HINT FOR THE IMPLEMENTATION OF										
>Install	THE INFINEON TECHNOLOGIES COMPONENT ONLY AND SHALL NOT BE REGARDED AS ANY DESCRIPTION OR WARRANTY OF A CERTAIN FUNCTIONALITY, CONDITION OR QUALITY OF THE										
	☑ I accept the terms in the License Agreement										
>Finish											
	Exit < Back Next >										

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



EvalKit f	for KPx Barometric
>Welcome	The installer will install Pressure 2Go Evalkit 1.0.0 to the following folder. To install in this folder, click "Next". To install to a different folder, enter it below or click "Browse".
>License	C:\Program Files (x86)\Infineon Technologies\Pressure 2Go Evalkit Browse
>Directory	Add Desktop Shortcut
>Confirm	.NET Framework Version 4.5 or later already installed
>Install	
>Finish	

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).



Confirm the installation

process.

EvalKit for Sensor	KPx Barometric	
>Welcome	Click "Install" to begin the installation. Click "Back" to review or change any of your installation settings. Click "Cancel" to exit the wizard.	
>License		
>Directory		
>Confirm		
>Install		
>Finish	Exit < Back Install	

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EvalKit for Sensor	KPx Barometric	infineon							
>Welcome									
>License									
>Directory	Installing								
>Confirm									
>Install									
>Finish		Exit	< Back Next >						

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...



EvalKit fo Sensor	r KPx Barometric	(infine	on
>Welcome	Setup Wizard has successfully finished Click "Finish" to exit.			
>License				
>Directory				
>Confirm				
>Install				
>Finish		Exit	< Back	Finish

Finalize the installation by clicking Finish.

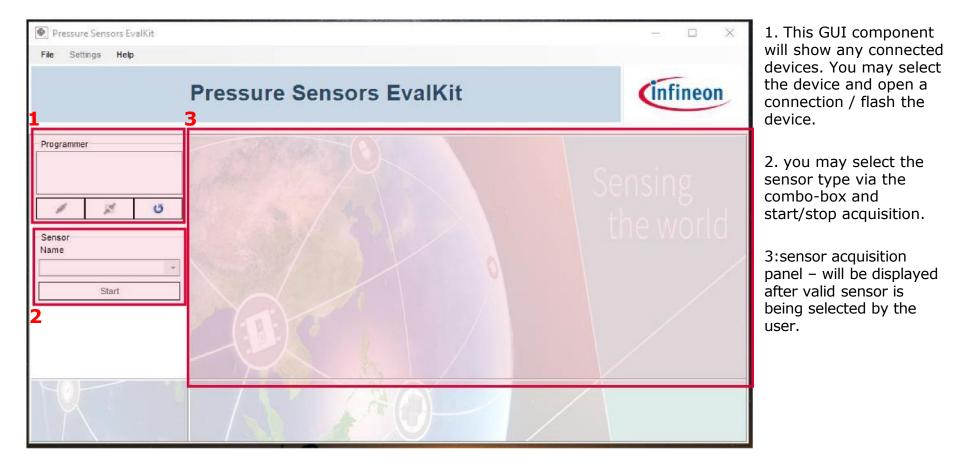
Check the message provided by the installer. In case of errors, the Software will not be available for running.

Connection to PC and starting the application



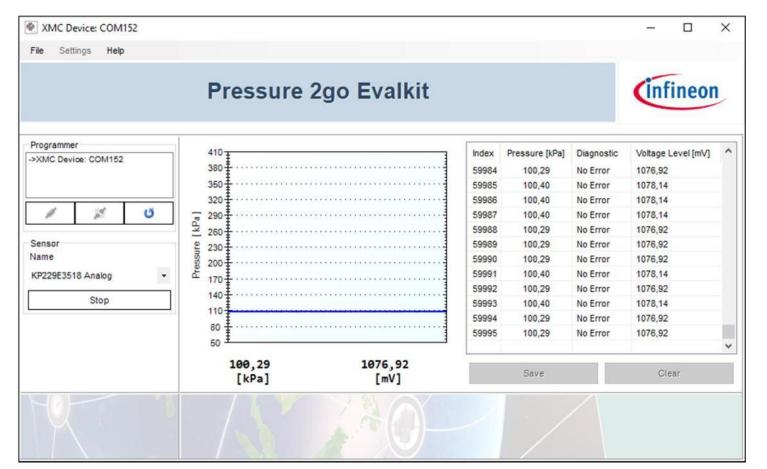
>Connect the hardware to PC using a USB to Micro-USB cable

>Start the application (via shortcut on desktop or Start-> All Programs -> Infineon Technologies -> Pressure 2Go



KP2xx Analog Display

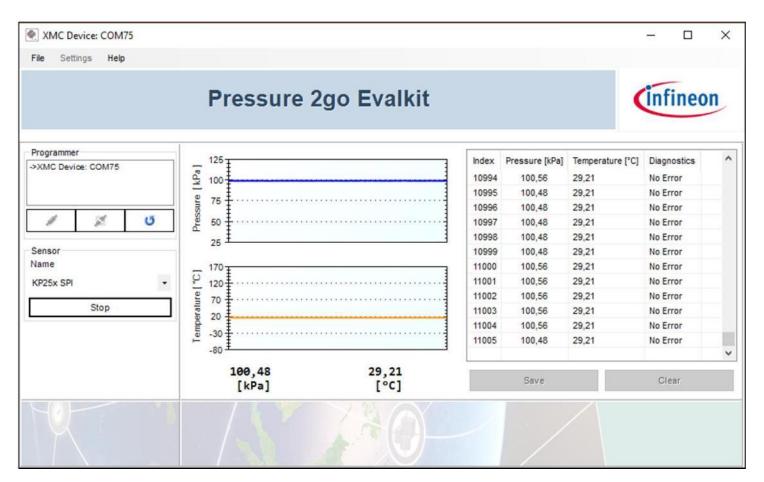




The sensor panel is configured for the corresponding sensor and you will see the specific controls. Real time graph for plotting the pressure value. Acquisition log to display all data received from sensor. With the Save button (active only when the acquisition is stopped) you may export the acquired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

KP254 SPI Display



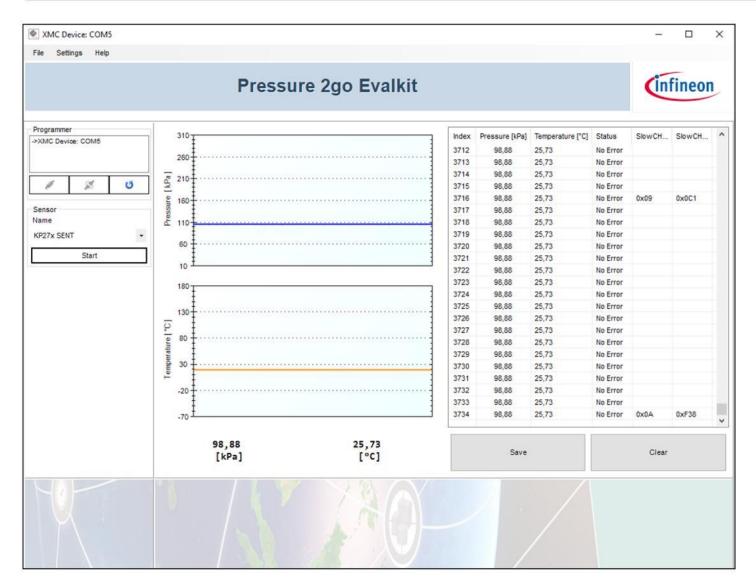


Real time graph for plotting pressure and temperature value.

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KP275 SENT Display





Real time graph for plotting pressure and temperature value.

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Custom Transfer Function



	Acquisition_2	k_Hz	~	AcquisitionRa	ste			
Custom	Transfer Function	n Pressure		Custom Tran	sfer Function	Temperature		
-545.60 Offs	115.00	MaxPressure[kPa]	204.60	OffS	160.00	MaxTemperature[*C]		
13.64 S	40.00	MinPressure[kPa]	5.115	S	-40.00	MinTemperature[°C]		
1	1023.00	MaxOut [LSB/V]			1023.00	MaxOut [LSB/V]		
	0.00	MinOut [LSB/V]			0.00	MinOut [LSB/V]		
	Ca	Iculate CTF	1		C	alculate CTF		
			J					

> 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.

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File	Home Insert	Page La	yout Form	nulas Data	Review N	/iew A	dd-ins	Team	Ç⊺	'ell me w	hat you	want to	do							Ovedenie Ale
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C9	- I X	~	fx 0x053	30																
31	4	В	·	D	F	F	G	н	1. 17	1.11	к	1.01	м	N	0	р	Q	R	s	т
1 Date	e:miercuri. 23 ianuarie 2019			-							n.				U		4	n	3	
2 KP2																				
and the second second	ssure Transfer Function	Sp:12.77	Offsp:65,31	Min[kPa]:10	Max[kPa]:300															
Tem	perature Transfer Function	Sp:8	Offsp:585,2	Min[C]:-40	Max[C]:170															
5 Sam	ple Index	Pressure[kP	a] Pressure[LSB]	Temperature[C]	Temperature[LSB] StatusCo	StatusCo	on Pressure	Pressure	Pressur	e l Tempera	at Temper	at Temper	at CRC Nib	bl Has CRC	E SlowCH ID[LS	B] SlowCH Data[L	SB] SlowCH CRC[LSB] SlowCH Ha	s CRC Error
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80	1074	98,8	8 0x0530	25,7	3 0x0317	No Error	Ox8	Ox5	0x3	0x0	Ox7	Ox1	Ox3	Ox5	FALSE					
31	1075	98	8 0x052F	25,7	3 0x0317	No Error	OxC	0x5	0x3	0x0	Ox7	0x1	0x3	OxD	FALSE					
32	1076	98,8	8 0x0530	25,7	3 0x0317	No Error	OxC	Ox5	0x3	0x0	0x7	0x1	Ox3	0x5	FALSE					
83	1072	98,8	8 0x0530	25,7	3 0x0317	No Error	Ox8	Ox5	0x3	OxO	Ox7	0x1	Ox3	0x5	FALSE					
84	1078	98,8	8 0x0530	25,7	3 0x0317	No Error	OxC	0x5	0x3	0x0	Ox7	0x1	Ox3	0x5	FALSE					
85	1075	98,8	8 0x0530	25,7	3 0x0317	No Error	OxC	0x5	0x3	0x0	Ox7	0x1	0x3	0x5	FALSE					
86	1080	98,80	8 0x0530	25,7	3 0x0317	No Error	0x0	0x5	0x3	0x0	Ox7	0x1	0x3	0x5	FALSE					
87	1083	98	8 0x052F	25,7	3 0x0317	No Error	0x0	0x5	0x3	0x0	Ox7	0x1	Ox3	0xD	FALSE					
88	1082	98,80	8 0x0530	25,7	3 0x0317	No Error	0x0	0x5	0x3	0×0	Ox7	0x1	0x3	0x5	FALSE					
89	108		8 0x052F		3 0x0317	No Error	0x0	0x5	0x3	0×0	0x7	0×1	Ox3	0xD	FALSE					
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91	108		8 0x0530		'3 0x0317	No Error		0x5	0x3	0×0	0x7	0x1	0x3	0x5	FALSE					
92	1086		8 0x0530		'3 0x0317	No Error	0x0	0x5	0x3	0×0	0x7	0×1	0x3	0x5	FALSE					
93	1087		8 0x0530		'S 0x0317	No Error		0x5	0x3	0×0	0x7	0×1	Ox3	0x5	FALSE					
94	1088		8 0x052F		'3 0x0317	No Error	10000	0x5	0x3	0×0	0x7	0×1	0x3	0xD	FALSE					
95	1089		8 0x0530		'S 0x0317	No Error	0x0	0x5	0×3	0x0	0x7	0×1	0x3	0x5	FALSE					
96	1090	98,80	8 0x0530	25,7	'S 0x0317	No Error	Ox8	0x5	0x3	0x0	0x7	0x1	Ox3	0x5	FALSE					
97	1093	98,80	8 0x0530	25,7	'S 0x0317	No Error	0x0	Ox5	0x3	0×0	Ox7	0x1	0x3	0x5	FALSE	0x01	0x000	0x1B	FALSE	

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



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