# 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 <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.





## 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.



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

## Software Installation – Step 1

EvalKit for Sensor	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 >



EvalKit for Sensor	KPx Barometric	Please read the license agreement and check the "I accept the terms in the
>Welcome	Important Note and Terms of Use       ^         Please read the following important note as well as the following terms and conditions carefully. The extraction of the downloaded documents	checkbox. The "Next" button activates only after
>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 forth below and to be bound by the following terms of use. If you do not	ugreenig with the terms.
>Directory	agree to the terms and conditions below, click the button "I do not agree" and the installation procedure will not be started.	
>Confirm	Important Note:     a. THE INFORMATION GIVEN IN THE DOWNLOADED     DOCUMENTS IS GIVEN AS A HINT FOR THE IMPLEMENTATION OF     THE INFINEON TECHNOLOGIES COMPONENT ONLY AND SHALL	
>Install	NOT BE REGARDED AS ANY DESCRIPTION OR WARRANTY OF A CERTAIN FUNCTIONALITY, CONDITION OR QUALITY OF THE	
>Finish	Exit < Back Next >	

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## Software Installation – Step 3



EvalKit f Sensor	or 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	Exit < Back Next >

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).



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

Confirm the installation process.



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...



Finalize the installation by

be available for running.

Check the message provided by the installer. In case of errors, the Software will not

clicking Finish.

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

# 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	✓ AcquisitionRate								
Custom	Transfer Functio	n Pressure	Custom Transfer 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] MaxOut [LSB/V]					
	1023.00	MaxOut [LSB/V]			1023.00						
	0.00	MinOut [LSB/V]			0.00	MinOut [LSB/V]					
	Ca	Iculate CTF	1		Ca	alculate CTF					
					1						

> 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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No	rmal Page Break Page Cu Preview Layout Vi Workbook Views	stom ews	Ruler 🗹 I Gridlines 🗹 I Show	Formula Bar Headings	Zoom 100%	Zoom to Selection	New Windo	Arrang w All	e Freezo Panes	] ⊟ Sp ⊟ Hi e • □ Ur	lit [ de [ hide ] Wind	℃ View S B‡ Synchi ⊡ Reset Iow	Side by S ronous S Window	ide crolling Position	Swite	h Macros Macros				
C	9 - I X	~	<i>fx</i> 0x053	0																
	A	в	С	D	E	F	G	н	i i	j j	к	L	М	N	0	Р	Q	R	s	т
1 2	Date:miercuri, 23 ianuarie 2019 KP27x																			
3 4	Pressure Transfer Function Temperature Transfer Function	Sp:12,77 Sp:8	Offsp:65,31 Offsp:585,2	Min[kPa]:10 Min[C]:-40	Max[kPa]:300 Max[C]:170															
5	Sample Index	Pressure[kP	a] Pressure[LSB]	Temperature[C]	Temperature[LSE	B] StatusCo	n StatusCo	r Pressure	Pressure	e   Pressur	e I Temper	ati Tempera	at Temper	ati CRC Nibb	Has CRC	SlowCH ID[LSB	SlowCH Data[LSB]	SlowCH CRC[LSB]	SlowCH Has	CRC Error
1079	1073	98,8	38 0x0530	25,73	3 0x0317	No Error	0x0	Ox5	0x3	0x0	Ox7	0x1	0x3	0x5	FALSE	0x97	Ox4EE	0x10	FALSE	
1080	1074	98,8	38 0x0530	25,73	3 0x0317	No Error	Ox8	Ox5	0x3	Ox0	Ox7	Ox1	Ox3	Ox5	FALSE		-			
1097	1075	90	R 0x0520	25,7	5 0x0317	No Error	OxC.	Ov5	UX3	Ox0	Ox7	Ox1	Dv3	OxD Ox5	EALSE					
1002	1078	00,0	28 0x0530	25,73	2 0x0317	No Error	Ove	Dy5	0x3	0x0	017	OV1	Ov 2	UX5	EALSE					
1084	1077	98.5	88 0x0530	25,7	3 0x0317	No Error	OxC	0x5	0x3	0x0	0x7	0x1	0x3	0x5	FALSE					
1085	1079	98.	38 0x0530	25.7	3 0x0317	No Error	0xC	0x5	0x3	0x0	0x7	Ox1	0x3	0x5	FALSE					
1086	1080	98.8	38 0x0530	25.7	3 0x0317	No Error	0x0	0x5	0x3	0x0	0x7	0x1	0x3	0x5	FALSE					
1087	1081	98	8 0x052F	25,73	3 0x0317	No Error	0x0	0x5	0x3	0x0	0x7	0x1	Ox3	0xD	FALSE					
1088	1082	98,8	38 0x0530	25,73	3 0x0317	No Error	0x0	0x5	0x3	0×0	0x7	0x1	0x3	0x5	FALSE					
1089	1083	98	,8 0x052F	25,7	3 0x0317	No Error	0x0	0x5	0x3	0x0	Ox7	0x1	0x3	OxD	FALSE					
1090	1084	98,8	38 0x0530	25,7	3 0x0317	No Error	0x0	0x5	0x3	0×0	Ox7	0x1	0x3	0x5	FALSE					
1091	1085	98,8	38 0x0530	25,7	3 0x0317	No Error	0x0	0x5	0x3	0×0	Ox7	0x1	0x3	0x5	FALSE					
1092	1086	98,8	38 0x0530	25,7	3 0x0317	No Error	0x0	0x5	0x3	0×0	Ox7	0x1	0x3	0x5	FALSE					
1093	1087	98,8	88 0x0530	25,7	3 0x0317	No Error	0x0	0x5	0x3	0×0	0x7	0x1	Ox3	0x5	FALSE					
1094	1088	98	,8 0x052F	25,7	3 0x0317	No Error	0x0	0x5	0x3	0×0	Ox7	0x1	0x3	OxD	FALSE					
1095	1089	98,8	88 0x0530	25,7	3 0x0317	No Error	0x0	Ox5	0x3	0x0	Ox7	0×1	Ox3	0x5	FALSE					
1096	1090	98,8	88 0x0530	25,7	3 0x0317	No Error	Ox8	Ox5	0x3	0x0	Ox7	0×1	Ox3	0x5	FALSE					
1097	1091	98,8	88 0x0530	25,7	3 0x0317	No Error	0x0	0x5	0x3	0×0	Ox7	0×1	0x3	0x5	FALSE	0x01	0x000	0x1B	FALSE	

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

