

Frequently Asked Questions

PTC04 Programmer

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PTC04

General

Question: What is the installation procedure of the PTC04?

Answer: for the installation procedure of the PTC04, please refer to the document: [Installation_Guide_PTC04.pdf](#)

This document can be found on the CD delivered with the PTC04 or at <http://www.melexis.com>

In a nutshell:

IMPORTANT: ALL INSTALLATIONS HAVE TO BE DONE WITH ADMINISTRATOR RIGHTS.
This means you need to have full access on your PC.

For the installation of the software, the PTC04 does NOT have to be connected to the PC. This is only necessary when you install the USB of the PTC04. If you want to use the USB of the PTC04, follow the procedure described in the chapter: [Hardware: Question: How do I install the USB?](#) You can install the USB before or after you install the software of the PTC04.

Installation from CD:

If you are installing the package from the CD, please follow the instructions

STEP 1: Start Autorun program from the CD.

STEP 2: Select the device you want to install. This will install the whole package. This means: if you select a MLX device, for example the MLX90251, all packages that are needed for the MLX90251 will be installed including the PTC04 modules. In this case it is not needed to select the PTC04 module afterwards.

STEP 3: Press Next > to install the module.

STEP 4: Select "I accept the agreement. And press

STEP 5: Next >

STEP 6: Press install.

STEP 7: Press Finish to complete the installation.

This procedure (step 3 – 6) is repeated for each module of the package automatically.

Installation from Package:

If you are not installing the package from the CD, please follow these instructions:

STEP 1: Put all software modules, except for the firmware, into one directory. The location of the directory on your PC is not important.

There are 6 software modules:

- 2 modules for the MLX product: (xxxxx = Melexis product number.)
 - MLXxxxxx user interface (UI_0xxxxxAAMLX.exe)
 - MLXxxxxx PSF (PSF0xxxxxAAMLX.exe)

For example:
MLX90251 user interface (UI_090251AAMLX.exe)
MLX90251 PSF (PSF090251AAMLX.exe)
- 2 modules for the PTC04:
 - PTC04 user interface (UI_OPTC04AAMLX.exe)
 - PTC04 PSF (PSF0PTC04AAMLX.exe)
- The MPT and the Melexis updater:
 - MPT application (MPTApp.exe)
 - Melexis Updater (MelexisUpdaterSetup.exe) - optional, the installation can be omitted. If this file is not in the directory, a warning is given and the installation is skipped.

STEP 2: Run the installation of the user interface (UI_0xxxxxAAMLX.exe).

For example: UI_090251AAMLX.exe.

This will install all other needed modules of the packages. The module is only installed if the previous installation has a lower revision number.

STEP 3: Press Next > to install the module.

STEP 4: Select "I accept the agreement. And press Next >

STEP 5: Press install.

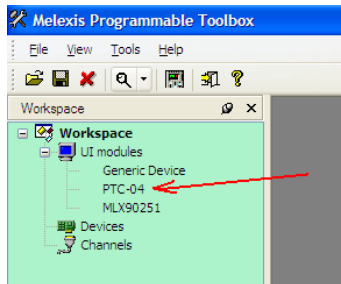
STEP 6: Press Finish to complete the installation.

This procedure (step 3 – 6) is repeated for each module of the package automatically.

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Question: PTC04 cannot be recognized using “Search All” button of MPT?

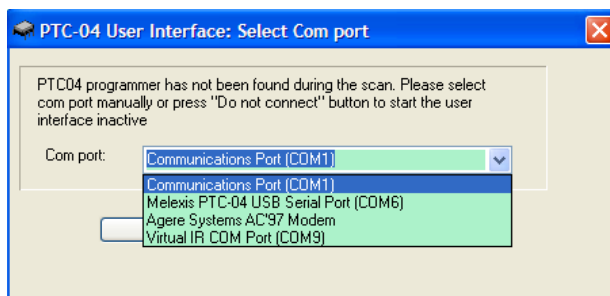
Answer: There are mainly two reasons: incompatible firmware or PTC04 main ID



STEP 1:

In order to run PTC04 user interface under MPT it is necessary to double-click on it under the workspace tree.

Figure 1: MPT



The software will search again the system for connected PTC04 programmer and will come up with a new dialog asking for manual selection of a serial port.

STEP 2:

Select the correct port and click on “OK” button. Then PTC04 user interface must be active.

Figure 2: Comport selection

There are mainly two reasons leading to a similar malfunction:

1. An incompatible firmware has been uploaded into the PTC04 programmer. In such a case, please follow the instructions for [Question: How do I upload the firmware of the PTC-04](#) starting from Step 2.
2. PTC04 main ID parameters have been overwritten. In such a case perform the following steps:
 - 2.1. Click on “Firmware Commander” button
 - 2.2. From the menu select System->MainID
 - 2.3. Click on “Load” button.
 - 2.4. Check if VID = 1001 and PID = 24832. If one of them is different correct it. Make sure that “HW Name” is “PTC04” as shown above.
 - 2.5. Click on “Save” button. Wait 1-2 seconds until the data is written to the device.
 - 2.6. Click again on “Load” button to ensure the data is correctly written.

Once both possible reasons are successfully fixed, you can try to do “Search All” again.

If the problem still exists, please contact the Melexis sales representative of your area.

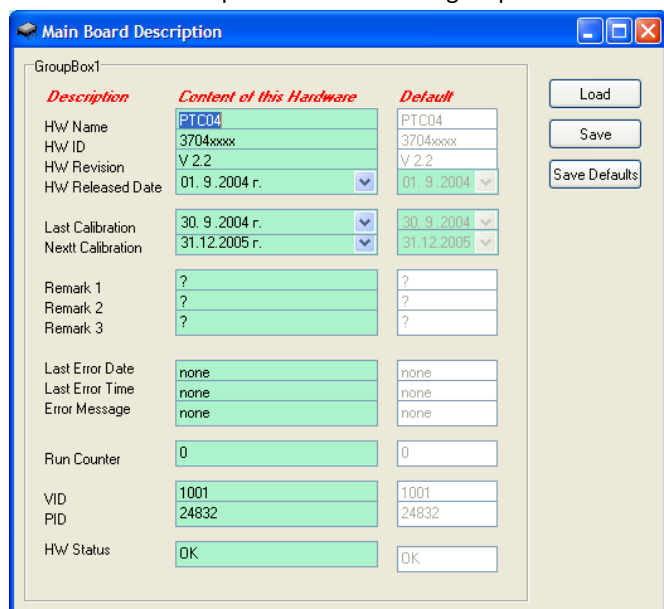


Figure 3: Main Board Description.

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Question: The green busy LED remains ON?

Answer: If the green busy LED remains ON the PTC04 is stuck in a task / command. To resolve this issue the firmware of the PTC04 needs to be reset.

The green busy LED indicates that the PTC04 is performing a task / command. Most commands take less than a few second to complete. There are a few exceptions like a data acquisition task, a firmware upload or when powered-ON where the LED remains ON for a longer period.

When the PTC04 programmer is powered ON it is normal that the busy green LED remains ON. But if the green busy LED remains ON after a (short) command is send to the PTC04 or after the communication is initialized¹, the PTC04 is stuck in a task / command. To resolve this issue the firmware of the PTC04 needs to be reset.

The procedure to reset the firmware is similar to the instructions on how to upload the firmware of the PTC04 described in the PTC04_UI.pdf document. This PTC04_UI.pdf document can be found on the CD delivered with the PTC04 or at:

<http://www.melexis.com>

Procedure to reset the PTC04 firmware:

STEP 1: Start the User Interface of the PTC-04

In order to run PTC04 user interface under MPT it is necessary to double-click on the “PTC-04” text under the workspace tree.

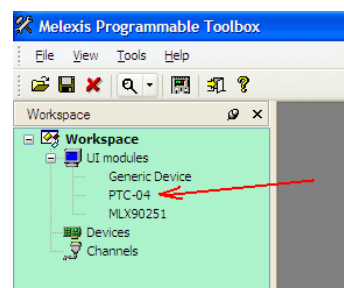


Figure 4: MPT

STEP 2: Serial Port selection

The software will search the system for connected PTC04 programmer and will come up with a new dialog asking for manual selection of a serial port. Select the correct port and click on “OK” button.² Then PTC04 user interface must be active.

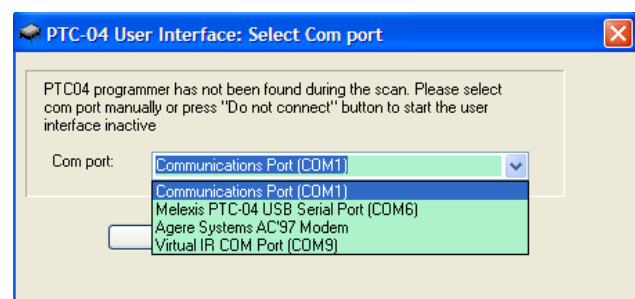


Figure 5: Comport selection

¹ Here we presume you have checked that all connections are done correctly and perhaps verified the setup with another working PTC04.

² If there is no COM port listed: check if all cables are correctly connected, that the red power LED is light up, that the USB driver installed, etc...

FAQ-PTC04

Frequently Asked Questions

STEP 3: Press the button Upload firmware

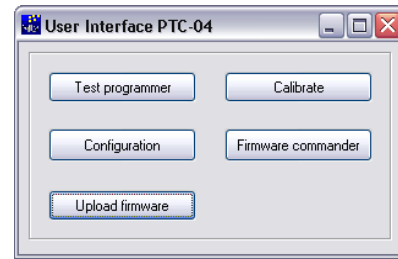


Figure 6: PTC04UI

STEP 4: Select the firmware needed for your MLX product.

The firmware filename is called
ptc04_mlx***_firmware.hex**
or
fir***aamlx.hex**.

The marks ***** stand for the MLX product name.

For ex.: ptc04_mlx90251_firmware.hex or
fir090365aamlx.hex.

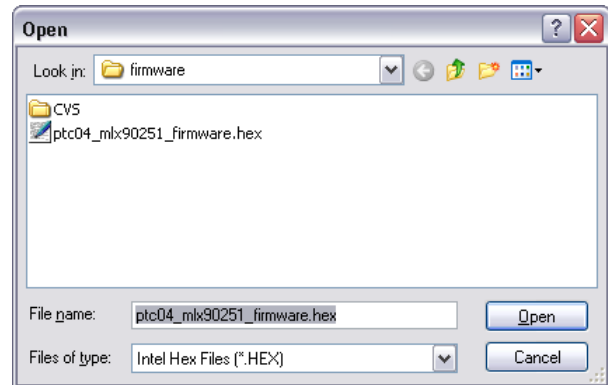


Figure 7: Open

Upload: Once the file is opened, the firmware upload to the PTC-04 programmer is started.

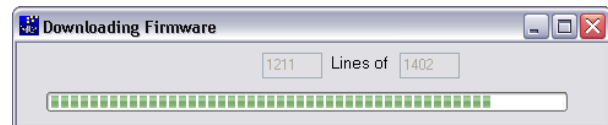


Figure 8: Loading firmware.

STEP 5: If the software requests to reset the PTC04, please press the small button next to the RS232 connector.

Do not use the power switch to reset the PTC04 programmer!

Front panel PTC04

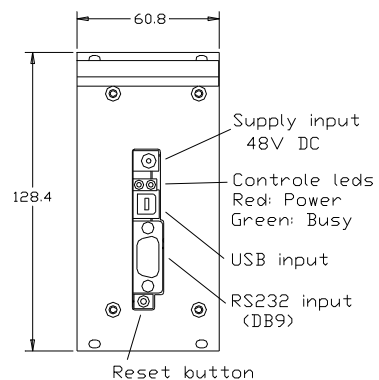


Figure 9: Reset button

Verification: Afterwards the software verifies if the upload was done correctly.

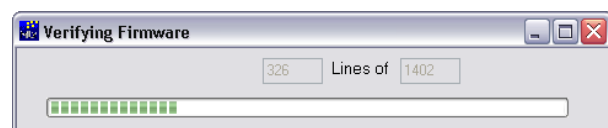


Figure 10: Verifying firmware.

STEP 6: Verify that the green busy LED is OFF.

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Question: When I try to connect with the PTC04 I get a warning message: “Daughter board is not recognized as PTC04-DB-xxxxxx. Do you wish to continue?”

Answer: It is not advised to continue without proper verification of the Daughter Board that is plugged in the PTC04 Main Board.

If the plugged in Daughter Board is not of the required type, the software will not work properly.

The name of the DB plugged in the PTC04 MB can be verified with the UI of the PTC04.

If the type of DB doesn't match with the required DB, it has to be replaced with the correct one.

STEP 1: Press on the “Configuration” Button in the User Interface PTC-04 window.

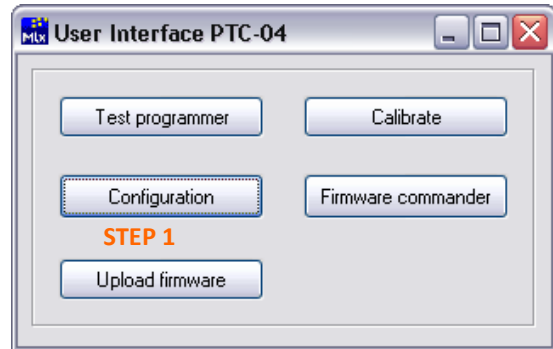


Figure 11: PTC04 UI

STEP 2: Press the “Load” Button on the Daughter Board Description window.

STEP 3: Verify if the HW Name matches with the requirements.

Description	Content of this Hardware	Default
HW Name	PTC04-DB-HALL01 STEP 3	PTC04-DB-xxxxxx
HW ID	15070133	WwYyxxxx
HW Revision	V 1.0	V 1.0
HW Released Date	20/08/2005	1/09/2004
Last Calibration	19/10/7641	30/09/2004
Nextt Calibration	19/10/7641	31/12/2999
Remark 1	?	?
Remark 2	?	?
Remark 3	?	?
Last Error Date	none	none
Last Error Time	none	none
Error Message	none	none
Run Counter	0	0
HW Status	OK	OK

Figure 12: Daughter Board Description.

IMPORTANT: Do not change any parameter of the Main Board or Daughter Board Description. They are used by the software to identify the PTC04 as valid HW.

[Question: PTC04 cannot be recognized using “Search All” button of MPT.](#)

In case the daughter board description does not match the printed hardware ID

The name of the daughter board plugged in the PTC04 main board is written in an EEPROM on the daughter board BUT it is also printed on the daughter board PCB itself.

If the name in the EEPROM of the daughter board does not match the name that is printed on the PCB of the daughter board, you can conclude that the EEPROM content is incorrect. In this case, and only in this case, it is allowed to modify the content of EEPROM on the daughter board.

STEP 1: Press on the “Configuration” Button in the User Interface PTC-04 window.

STEP 2: Press the “Load” Button on the Daughter Board Description window.

STEP 3: Verify if the HW Name matches with the requirements.

Description	Content of this Hardware	Default
HW Name	PTC04-DB-HALL01 STEP 4	PTC04-DB-xxxxx
HW ID	15070133	WwYyxxxx
HW Revision	V 1.0	V 1.0
HW Released Date	20/08/2005	1/09/2004
Last Calibration	19/10/7641	30/09/2004
Next Calibration	19/10/7641	31/12/2999
Remark 1	?	?
Remark 2	?	?
Remark 3	?	?
Last Error Date	none	none
Last Error Time	none	none
Error Message	none	none
Run Counter	0	0
HW Status	OK	OK

STEP 6

STEP 5

Figure 13: Change Daughter Board Description.

STEP 4: Modify:

- The HW Name to match the printed name on the PCB;
- If needed the HW ID to match the ID of the PTC04;
- The HW Revision to match the printed revision on the PCB.

All other parameters should match the default settings.

STEP 5: Press the “Save” Button on the Daughter Board Description window to write the changes in the EEPROM.

STEP 6: Press the “Load” Button again to verify if the modification is done successfully.

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Question: Can I use the MPT software under Windows 7 or Windows 8?

Answer: YES! But for 64-bit operating systems you might need an update of the USB driver and there are some restrictions on the use of the MPT/PSF type libraries.

For Windows 7 on **32-bit** operating systems there are no known issues for the USB driver, the **MPT**, Melexis Programmable Toolbox, and the **PSF**, Product Specific Function library's (type library's),

During the installations of the MPT, PSF or USB driver there might be some additional message boxes or windows shown which are not described in the installation document for Windows XP. Just follow the instructions, and the installation will be completed successful.

For **64-bit** operating systems the USB driver might require an update and there are some restrictions on the type libraries. This counts for all Windows 64-bit operating systems.

USB driver:

The older versions of the USB_VCP driver (Virtual COM Port Driver) only support 32 bit operating systems. When you install this driver on a 64-bit system, the installation of the USB driver will not be completed successfully. The PTC04 USB will not be operational.

During the installation of the USB driver you might get the request for the 64-bit version of the installation file.

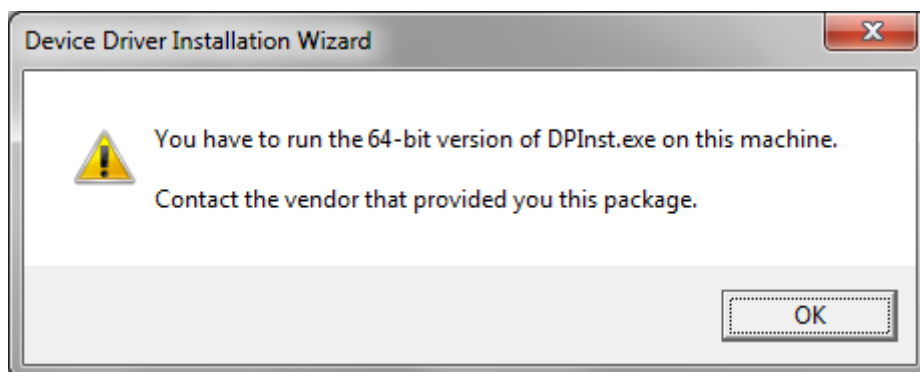


Figure 14: USB installation Windows 7, Request for 64-bit version.

64-bit operating systems are only supported by the latest 2 version of the USB_VCP driver:

- MlxFtdiUsbSetup.exe - Ver. 2.08.14 – Added support of Win7 x86 and x64
- MlxFtdiUsbSetup.exe - Ver. 2.08.30 – Added support of Win8 x86 and x64

The latest MlxFtdiUsbSetup installation file is available on softdist or at <http://www.melexis.com>.

MPT and PSF type libraries:

The MPT and PSF type libraries are 32-bit based. On the 64-bit operating systems, the MPT software runs under 32-bit compatibility mode. There are no known issues for the compatibility mode. **But** when you integrate the PSF libraries in your system you need a compiler that can handle 32-bit type libraries.

For more information, please contact the Melexis sales representative of your area.

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Hardware

Question: When I try to connect with the PTC04 I get a warning message: Low supply voltage is detected: x.xx (at least 18V is required).

Answer: The PTC04 requires an external supply between 24V and 48V. For more information, please refer to the document: PTC04_DataSheet.pdf

The PSF of the PTC04 has a method "CheckSetup". This method checks if the environment is supported by this object. This usually includes checking of communication channel validity, hardware revisions and specific parameters, software revisions as well as setting device specific parameters. Also the Internal supplies of the PTC04 are checked by this method. This method is described in the MPT_Development_Reference.HLP. You can find the help file and the PTC04 datasheet on the CD delivered with the PTC04, on softdist in the dir: "`..\PTC04_CD\Tools\MPT`" or on <http://www.melexis.com>

The external supply is the source to create all the internal required voltages. The PTC04 has 4 internal supplies:

- +35V (for the drivers or Programmable Power Supplies)
- +5V Digital (Digital core as interface between PTC and Host application)
- +5V Analog (measurement circuit with MUX and ADC)
- +3.3 V Digital (Supply for the FPGA and USB)

The 35V driver supply is ratio metric with the external supply. If the external supply equals 48V, the driver supply equals 35V. When the external supply equals 24V, the driver supply equals 18V.

18V is the minimum requirement for the drivers (Programmable Power Supplies) of the PTC04. BUT, for some product specific functions a higher driver supply might be required.

Question: How do I install the USB?

Answer: For the installation procedure of the USB, please refer to the document: Installation_Guide_USB.pdf.

The installation procedure of the USB is described in the "Installation_Guide_USB.pdf" document. This document can be found on the CD delivered with the PTC04 or at <http://www.melexis.com>

In a nutshell:

STEP 1: Run the installation file "MlxFtdiUSBSetup.exe"

STEP 2: User account Control: Do you want to allow the following program to make changes to this computer? → Click **yes** to start the installation;

STEP 3: Setup – Melexis FTDI-USB Driver Package Installer 2.08.30 → Click **install** to continue with the installation;

STEP 4: Melexis FTDI-USB Driver Package Installer → To continue, click **next**;

STEP 5: Melexis FTDI-USB Driver Package Installer → Select "**I accept this EULA**" and click **next** to continue;

STEP 6: Melexis FTDI-USB Driver Package Installer → Click on **finish** to complete the installation;

STEP 7: Connect the PTC04 or EVB to the USB port.

STEP 8: Both drivers are now being installed for the connected PTC04 automatically.

Note: If you do not have administrator rights on your PC, Windows might request for the administrator password.

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Firmware

Question: How do I upload the firmware of the PTC-04

Answer: for instructions on how to upload the firmware of the PTC04, please refer to the document: [PTC04_UI.pdf](#)

This PTC04_UI.pdf document can be found on the CD delivered with the PTC04 or at:
<http://www.melexis.com>

In a nutshell:

The firmware loader is needed in order to upload new or other firmware into the PTC-04 programmer.

For most MLX products there is a specific firmware, PSF and UI for the PTC-04 programmer. Therefore it is important to have the correct firmware loaded in the PTC-04 programmer.

At start-up the PSF layer checks the ID and revision of the firmware that is loaded in the PTC-04. If the firmware doesn't support the MLX product of the PSF, the PSF layer returns an error message.

In such a case you have to upload the correct firmware:

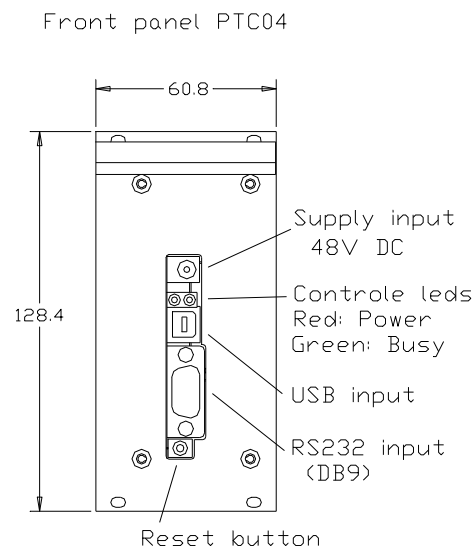
STEP 1: Start the User Interface of the PTC-04

STEP 2: Press the button Upload firmware

STEP 3: Select the firmware needed for your MLX product.
The firmware filename is called ***ptc04_mlx*****_firmware.hex*** or ***fir*****aamlx.hex***.
The marks ***** stand for the MLX product name.
For ex.: ptc04_mlx90251_firmware.hex or fir090264aamlx.hex.

Once the file is opened, the firmware is loaded in to the PTC-04 programmer. Afterwards the software verifies if the upload was done correctly.

If the software requests to reset the PTC04, please press the small button next to the RS232 connector.



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PSF

Question: Do I need a header file in order to use the DLL with C++?

Answer: In C++, the directive `#import` reads the specified type library and generates the header file with definitions.

Every DLL has a built-in type library, which fully describes the objects and their interfaces implemented by the DLL. Every compiler, which supports ActiveX, is able to read this type information. In C++, the directive `#import` reads the specified type library and generates the header file with definitions. This header file is also automatically included so you do not have to do `#include` for it.

Example:

```
#import "C:\Program Files\Melexis\MPT\MLX90316\MLX90316PSF.dll"
```

Imports MLX90316PSF type library and includes the generated header file.

Question: I found some methods and properties which are not documented in the PSFOPTC04AAMLX.pdf. Where can I find information about these methods and properties?

Answer: The functions are described in the MPT_DEVELOPER_REFERENCE.HLP

There are indeed some methods not described in the PTC04 PSF documentation. These methods are documented in the MPT help file: MPT_DEVELOPER_REFERENCE.HLP or MPT_DEVELOPER_REFERENCE_manual.pdf.

The MPT_DEVELOPER_REFERENCE documents a group of standard methods common to all libraries for the PTC04 programmer.

You can find the help file on the CD delivered with the PTC04, on softdist in the directory: "PTC04_CD\Tools\MPT" or on <http://www.melexis.com>.

Note: Windows 7 and Windows 8 do not support the HLP file format by default. To be able to open the HLP file you will need to install the tool "WinHlp32.exe" from Windows.

Question: Error on RUN of PTC04 VB example Code

I have set up the code (in VB6) provided on page 8 of the "MLX90251 Product Specific Functions Software Library" programming guide. However when I try to run the program it errors on the following line: `MsgBox (Dev.Name & " device found on " & Dev.Channel.Name)` with the following message: "Object doesn't support this property or method" I have also adapted the code to VB.net and it errors at the same line: `MsgBox(Dev.Name & " device found on " & Dev.Channel)` but gives the following error message: "Attempted to read or write protected memory."

Answer: Public Dev As MLXxxxxPSFDevice

The function should work, but you need to make sure that "Dev" is linked to the 90251PSF. "Dev" is not declared on page 8 of the PSF documentation, but it is mandatory: It should be a global variable:

Public Dev As MLX90251PSFDevice

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Question: Which error codes or HRESULT can the MPT/PSF report?

Answer: The HRESULT Facility used by the MPT/PSF is Facility-ITF. The common codes are listed below.

The error codes reported by the MPT/PSF libraries are of the data type "HRESULT", used in Windows operating systems to represent error conditions and warning conditions and commonly used in COM libraries.

HRESULTs are numerical error codes. Various bits within an HRESULT encode information about the nature of the error code, and where it came from.

An HRESULT value has 32 bits divided into three fields: a *severity* code, a *facility* code, and an *error* code. The severity code indicates whether the return value represents information, warning, or error. The facility code identifies the area of the system responsible for the error. The error code is a unique number that is assigned to represent the exception. Each exception is mapped to a distinct HRESULT.

The HRESULT value is laid out as follows:

Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Field	S	R	C	N	X	Facility											Code															

Where:

- S - Severity - indicates success/fail
 - 0 - Success
 - 1 - Failure
- R - Reserved portion of the facility code corresponds to NT's second severity bit.
 - 1 – Severe Failure
- C - Customer. This bit specifies if the value is customer-defined or Microsoft-defined.
 - 0 - Microsoft-defined
 - 1 - Customer-defined
- N - Reserved portion of the facility code. Used to indicate a mapped NT status value.
- X - Reserved portion of the facility code. Reserved for internal use. Used to indicate HRESULT values that are not status values, but are instead message ids for display strings.
- Facility - indicates the system service that is responsible for the error. The 2 facilities for COM libraries are listed below (for the full list see [link](#)).
 - FACILITY_DISPATCH - 2: The source of the error code is a COM Dispatch.
 - FACILITY_ITF – 4: The source of the error code is COM/OLE Interface management.
- Code - is the facility's status code
The ITF facility code has subsequently been recycled as the range in which COM components can define their own component-specific error code.

If the error returned by the software is of a FACILITY_DISPATCH, it usually indicates a declaration fault for the device object or that the DLL library supporting the object is not installed.

If the error returned by the software is of a FACILITY_ITF, the error is triggered by the MPT/PSF libraries. The MPT/PSF codes are listed in 4 categories: MPT ERROR, MPT CHANNEL ERROR, PTC04 PSF ERROR and DEVICE PSF ERROR. The last category is a relative new category and has a device specific error code list. Meaning they have a list of common error codes and a list of device or application specific error codes.

PSF device libraries for legacy Melexis products and older Melexis product families don't have a dedicated error list. Instead they return 0x80020009 DISP_E_EXCEPTION, with meaning "Exception occurred". In this case a text description of the error can be obtained using GetLastErrorInfo COM API function. This is a standard error handling function, more info see [link](#).

FAQ-PTC04

Frequently Asked Questions

PSF_E_PTCBADCRC

PSF_E_PTCBADCMD

PSF_E_PTCSHORTRESPONSE

8	0	0	4	4	0	1	4
8	0	0	4	4	0	1	5
8	0	0	4	4	0	1	6

DEVICE PSF ERROR legacy products and older product families (HEX)

DISP_E_EXCEPTION

8	0	0	2	0	0	0	9
---	---	---	---	---	---	---	---

Back to [Questions](#):

Calibration

Question: Warning message PTC04: Current calibration has expired

Answer: For instructions on how to calibrate the PTC04, please refer to the document: [User_Manual_Calibration_Software_PTC04.pdf](#)

The instructions on how to calibrate the PTC04 and what is needed for the calibration are described in the "User_Manual_Calibration_Software_PTC04.pdf" document. This document can be found on the CD delivered with the PTC04, on softdist or at <http://www.melexis.com>

To preserve the accuracy of the PTC04, Melexis recommends checking the tolerance of the PTC04 once a year.

The PSF of the PTC04 has a Method "CheckSetup". This method checks if the environment is supported by this object. This usually includes checking of communication channel validity, hardware revisions and specific parameters, software revisions as well as setting device specific parameters.

Also the calibration date of the PTC04 is checked by this method. If the calibration due date is exceeded, a warning message is given. This function is described in the MPT_Development_Reference.HLP. You can find the help file on the CD delivered with the PTC04, on softdist in the dir: "..\PTC04_CD\Tools\MPT" or on <http://www.melexis.com>

When you do not use the PTC04 for your analogue measurements or when the PTC04 is used for programming Melexis devices with a digital output: The accuracy of the PTC04 is less critical for the calibration of MLX device.

However: it can have an impact on the communication with the MLX device over the lifetime of the PTC04. The calibration of the PTC04 is not only done on the ADC. Also the DAC of the PTC04 is calibrated. The DAC is used to control the 4 PPS's, Programmable Power Supplies, of the PTC04 programmer.

Most of the PTC protocols use the PPS's to set the levels needed for the communication between the PTC04 and the MLX device. Some PTC protocols also use the ADC to read the response of the MLX device.

Although it is less critical: **These types of PTC protocols require a well maintained PTC04 programmer to ensure a good communication between the PTC04 and the MLX device over the lifetime of the PTC04 programmer.**

FAQ-PTC04

Frequently Asked Questions

Postpone the calibration due date:

To postpone the calibration check of the PTC04, one can move the Next calibration date to a later date. The Next Calibration date is stored in the EEPROM of the PTC04 and can be accessed with the configuration tool of the PTC04 UI.

STEP 1: Press on the “Configuration” Button in the User Interface PTC-04 window.

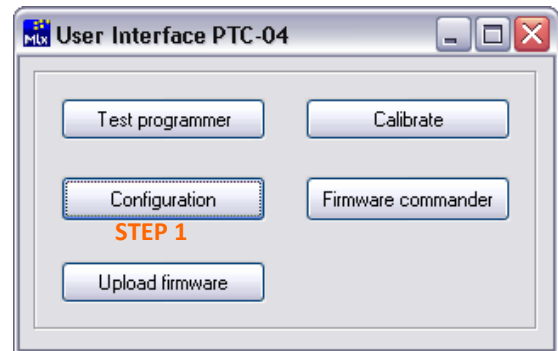


Figure 15: PTC04 UI

STEP 2: **First Press the “Load” Button** on the Main Board Description window.

STEP 3: Modify the next calibration date to a later date.

STEP 4: Press the “Save” button.

IMPORTANT: Do not change any other parameter of the Main Board Description. They are used by the software to identify the PTC04 as valid HW.

[Question: PTC04 cannot be recognized using “Search All” button of MPT.](#)

Description	Content of this Hardware	Default
HW Name	PTC04	PTC04
HW ID	38050028	WwYyxxxx
HW Revision	V 2.3	V 2.3
HW Released Date	10/10/2005	1/09/2004
Last Calibration	9/10/2008	30/09/2004
Next Calibration	9/10/2009	31/12/2005
Remark 1	?	?
Remark 2	?	?
Remark 3	?	?
Last Error Date	none	none
Last Error Time	none	none
Error Message	none	none
Run Counter	0	0
VID	1001	1001
PID	24832	24832
HW Status	OK	OK

Figure 16: Main Board Description.

[Back to Questions:](#)

Sensors

General

Question: How do I initialize the communication between the PTC04 and the MLX sensor product

Answer: The initialization of the communication between the PTC04 and the MLX sensor product is handled by the “DeviceReplace”, “NewDevice” or “ReadFullEepromToImg” method of the Product Specific Function library.



ONCE

Initialization of the PTC04:

The initialization of the communication between the computer and PTC04 programmer is done by the **ScanStandalone** or **ConnectChannel** method and the **CheckSetup** method of the PSF library.

The initialization of the PTC04 programmer is only needed ones at startup of the production setup.

These methods are not part of the sensor calibration / programming cycle.

The methods are described in the MPT DEVELOPER REFERENCE.

REPEATED

Initialization of the MLX sensor product:

The initialization of the communication between the PTC04 programmer and MLX sensor product is done by the **DeviceReplaced** or **NewDevice** method of the PSF library.

This method is the first step of the calibration / programming cycle of the sensor and it states / indicates to the PSF that a new device is connected to the PTC04 programmer.

In some older Product Specific Function libraries you will find different designations for the first calibration or programming step. For example: **SolverStep1**, **ReadBackAll**, **ReadbackFullEeprom** or **ReadFullEepromToImg**.

[Back to Questions:](#)

MLX90251

UI

Question: When I try to read back the device, a message comes “This device is not recognized. The Software is unable to program this device”.

Answer: An unrecognized device is usually caused by a bad connection between the PTC04 and the device.

When one performs a Read Back the software will determine the type of device (Old TC Table, New TC Table, LVA 0, LVA 1 ...). If the type of device can't be recognized, the software returns an error.

This can be caused by several things:

1. Bad Connection:

The Read Back of the device is done through the IDD. **It is important for the Read Back and the Programming to have a good connection with the device.** If the device is not well connected the Read Back can be disturbed. If some bits of the EEPROM are read wrong the checks on the EEPROM content of the device will fail. To verify that the connections are OK, verify Vout, Idd and Vdd with the “Measure by ROM” button of the UI. For new 90251 parts the Vout = 2.5V or 50%, Idd = 5-7mA, Vdd=5V.

2. The Read Back filter of the software:

The Software of the PTC04 is equipped with a Read Back filter. If the Read Back filter of the software is too low, the Read Back could fail with some devices.

Options ->Settings: in this window you can change the measuring filter, measuring delay, voltage settings and time settings.

Melexis advises to leave these settings at their default values.

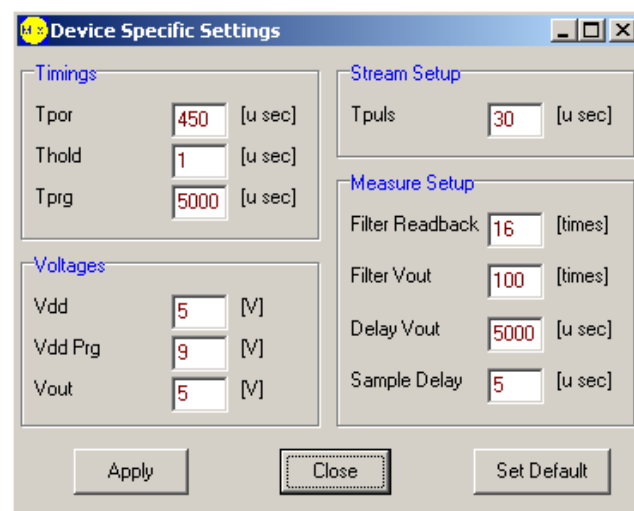


Figure 17: Device Specific Settings

3. Corrupted EEPROM:

This can occur with older samples or specific samples that are prepared for a specific evaluation. These samples will not be recognized as MLX90251 LVA 0 ... 3 or EVA0 ... 3 devices.

If there is no solid connection with the device during the programming of the device, the EEPROM of the device may also become corrupted. On the next Read Back the device is no longer recognized.

In theory these devices are not usable any more.

In case these are samples for your evaluations, please contact the Melexis sales representative of your area or your Melexis application engineer for help with recovering the devices.

You can also find some info on the messages, returned by the software, in the document “UI_090251AAMLX.pdf” in the chapter “handler error”. This document can be found on the CD of the PTC04 or on softdist.

[Back to Questions:](#)

Hardware

Question: The PTC04_DB_HALL01_DataSheet shows the possibility for double die connections. How does this work?

Answer: Please refer to the document: [AN_multi_die_MLX90251-77.pdf](#)

The double die function of the PTC04_DB_HALL01_DataSheet is intended for the 90277. But it can also be used for two 90251 devices under certain conditions.

The double die of the PTC04-DB-HALL01 can only be used with applications where the 2 die's or devices have a separate supply (VDD). It can not be used in applications with common VDD.

The second die function is activated by the UseDoubleDies Property in combination with the device selector. You can find more information on these properties in the documents PSF090251AAMLX.pdf, UI_090251AAMLX.pdf, UI_090277AAMLX.pdf. These documents can be found on the CD of the PTC04 or on softdist.

For more information on this topic this, please refer to the application note: [AN_multi_die_MLX90251-77.pdf](#) and [ANMultiPTC.pdf](#).

Back to [Questions](#):

MLX90316

UI

Question: I get this error when I try to read from the device: "PTC-04 received from the chip ACK/ERR=FFh while writing to address 0072h"

Answer: Please refer to the "Get_Started_With_MLX90316.pdf" document.

This error usually indicates that there is a problem with the connection between the MLX90316 device and the PTC04 device connector.

On the CD, delivered with the PTC04, there is a document called "Get_Started_With_MLX90316.pdf".

- STEP 1: Please check that all 4 requirements, described on page 1 of the document, are fulfilled.
- STEP 2: Check your connection with the diagram on page 2 of the document.
- STEP 3: To verify that the connections are OK: start the MPT UI of the 90316, go to the measurement screen of the UI and select Vout, Idd and Vdd.
For un-programmed 90316 parts the Vout = 7...8%, Idd = 6...10mA, Vdd=5V.

The "Get_Started_With_MLX90316" document can also be found on softdist, or on:

<http://www.melexis.com>

Contact

For the latest version of this document, go to our website at www.melexis.com.

For additional information, please contact our Direct Sales team and get help for your specific needs:

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