

**GET STARTED  
WITH  
PTC-04  
PROGRAMMER**

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## Introduction

This document is your guide through all documentation, tools, firmware, libraries, etc. ...  
The target of this document is that you will understand how the environment is created and how \ where you can find the correct information to answer your questions.

## Hardware

The PTC04 is developed in order to be compatible with most of our Melexis products. Actually, we target being able to test not only our current products but also all our future Products.

Due to the fact it's impossible to implement all needs for future products, we have chosen for a main board and daughterboard concept. The main cost is concentrated in the main board. For all tooling and software developments, this main board will not change and so it will stay compatible.

As well for Melexis as for our customer, the software development cost and the time for evaluating a new product on this programmer is limited to the specific needs for the new products. On hardware level, this might ask for a different daughterboard. This concept also allows Melexis to providing custom made variants by a cheap, easy and fast solution.

### **Main board**

The main board is a stand alone tester. If we talk about mini tester, we mean a PTC04 on its own (without Daughterboard).

For all specification and description, electrical and mechanical, we refer to the [Ptc04\\_DataSheet.pdf](#). This document is always applicable, independent of the tested product. This documentation does not specify any information about the daughterboard!

### **Daughter board**

The daughter board is the interface between the PTC04 mini tester and the application. The simplest Daughter board is a few wires only. Normally, there is a standard daughter board delivered with the programmer when you buy a PTC04.

Melexis tries to develop the daughter boards on such a way it can support a group of products. A daughter board can easily be ordered by Melexis. The order code mentions the devices name or group that it can handle.

A daughter board is delivered with:

- The Daughterboard itself;
- A Replacement rear panel (is in function of the required connections);
- Documentation on this Hardware;
- A DLL library for using the product (or group of products) specific commands;
- Documentation on this software;
- User interface software to evaluate the products (This is not always delivered);

For documentation about the hardware of a daughter board, we like to refer to the document [Ptc04\\_DB\\_XXXXXX\\_DataSheet.pdf](#), where XXXXXX stand for the name of the daughter board. In this documentation you will find all details about connecting your application to the Programmer.

## **Contents of a PTC04 Set**

What's in the box?

- PTC-04 with a default Daughterboard
- Power supply
- Power cables, with European and American connector.
- RS232 serial cable
- USB cable
- Installation CD or Floppy
- Calibration certificate

## **Software**

As you can see in appendix A, the software is always structured in 4 levels. The highest level is the MPT which is not more than a toolbox for the user to make his life easy. Below you have the layer of the User interfaces, the PSF level and finally the firmware layer.

### **Firmware Layer**

80 % of the firmware contains general function of the PTC04. Merged with this, there are module (product) specific commands. These commands are made to communicate with the specific MLX product.

It's important that the correct firmware is loaded in the PTC04 programmer. Software ID functions allow higher layers to check if the firmware can be used for that specific MLX product.

### **PSF Layer (DLL)**

All the interface items between host PC and Programmer are covered by the PSF layer. On this level a DLL makes all functions of the PTC04 and the MLX product available to the user.

The user can make a choice by using any programming language (Lab view, Visual C, Visual Basic, Excel, etc...) to communicate with the DLL (PDF layer). When the user uses the interface program as delivered by Melexis, this layer is of no importance.

We always recommend the customer to connect his application software to the PSF layer. On this layer, all commands of the firmware are accessible.

Again, two different parts can be found:

- The General Function Library  
PTC04PSF:  
Installation: [PSF0PTC04AAMLX.exe](#)  
Documentation: [PTC04\\_PSF\\_Object\\_Model.pdf](#) or [PSF0PTC04AAMLX.pdf](#)
- The Product Specific Function Library  
MLXxxxxxyPSF:  
Installation: [PSFxxxxxyMLX.exe](#)  
Documentation: [PTC04\\_PSF\\_MLXxxxx.pdf](#) or [PSFxxxxxyMLX.pdf](#)

Tip: Melexis can always provide example source codes in order to show how we program the interface between different instructions.

## **Requirements**

To install and use the MPT of the PTC04 on your system must have the following:

- NT 4.0, 2000, XP or Vista
- A free serial port or a free USB port
- 50 Megabytes of free disk space
- Screen must have minimal resolution of 1024 x 768 with 16 bit colour.

## **Installation of software**

Installing the package from the CD:

- Start Auto-run program
- Press on the MLXxxxxx button (xxxxxx stands for the name of the product). It will install the whole package.

For information about how to install the software of the PTC-04 programmer, we refer to: [Installation\\_Guide\\_PTC04.pdf](#) and [Installation\\_Guide\\_USB.pdf](#).

## **Tools**

Melexis provide several tools for free that will help you solving some questions or problems.

### **MPT Platform**

Melexis develops its software on a general platform (Melexis Programming Toolbox) that makes it easy to add new modules in the future. The MPT will guide and support the user in order to detect the correct programmers, the correct revision of firmware, to guide the user to the correct web update, to support the user using the correct tools like Calibration and firmware uploads. It also manages all delivered DLL.

Installation File: [MPTApp.exe](#)

Documentation: [MPT.pdf](#)

### **PTC04 User Interface**

The PTC04 User Interface groups all tooling of the PTC04. The UI is installed together with MPT and the PTC04PSF but it is not mandatory for using the product specific function library.

Installation: [UI0PTC04AAMLX.exe](#)

Documentation: [PTC04\\_UI.pdf](#)

### **Firmware loader**

The firmware loader is needed in order to store new firmware into the PTC.

For information about how to use this tool, we refer to the documentation of the PTC04 User Interface. [PTC04\\_UI.pdf](#)

### **Calibrator**

The Calibrator is a tool that allows our customer to check the calibration of their programmer. The tool will verify the deviation on measurements and supplies. Optional it allows the user to calibrate these parameters. This last item requires a good calibrated voltmeter.

For information about how to use this tool, we refer to the documentation of the calibrator tool. [User\\_Manuel\\_Calibration\\_Software\\_PTC04.pdf](#)

## **Firmware Commander**

The firmware commander is a tool that is internally used by Melexis. This tool provides you an interface to play with basic commands like setting the power supplies and performing measurements.

This tool contains also a lot of software samples about how to implement some functions in your own software code. Ask your rep to get access to this tool.

For information about how to use this tool, we refer to the documentation of the PTC04 User Interface.  
[PTC04\\_UI.pdf](#)

## **Test Program**

The test program is made to perform a quick check of the hardware of the programmer. It checks the functionality of the fixed power supplies, programmable power supplies, the internal voltmeter, etc...

For information about how to use this tool, we refer to the documentation of the PTC04 User Interface.  
[PTC04\\_UI.pdf](#)

## **Validity and updates**

Generally, Melexis provides all information on our Web Side. You can register yourself for free and you'll be able to get all updates and modification at any time.

Go to [www.melexis.com](http://www.melexis.com)

## CD PTC-04 directory structure

The above mentioned documents can be found on the CD of the PTC-04 in the following directories:

```

../
Get_Started_With_PTC04.pdf
FAQ.pdf
../Application_Notes
ANMultiPTC.pdf
AN_ActiveX_PSF_LabVIEW.pdf

../MLXxxxxx/Documentation
PSFxxxxxyyMLX.pdf
UI_xxxxxxyyMLX.pdf
../MLXxxxxx/Soft
HISxxxxxyyMLX.pdf

../PTC04/Daughter_Board/Documents
Ptc04_DB_xxxxxx_DataSheet.pdf
../PTC04/Documents
Get_Started_With_PTC04.pdf
PTC04_UI.pdf
PSF0PTC04AAMLX.pdf
User_Manuel_Calibration_Software_PTC04.pdf
Installation_Guide_PTC04.pdf
Ptc04_DataSheet.pdf
HIS0PTC04HWMLX.pdf
../PTC04/Soft
HIS0PTC04AAMLX.pdf

../PTC04/USB_Driver/Documents
Installation_Guide_USB.pdf

../Tools/MPT/Documentation
MPT.pdf
MPT_DEVELOPER_REFERENCE.HLP

../Tools/Test_Bench/Documentation
Ptc_Testbench_Magnetic_Datasheet.pdf
Ptc_Testbench_90316_Datasheet.pdf

```

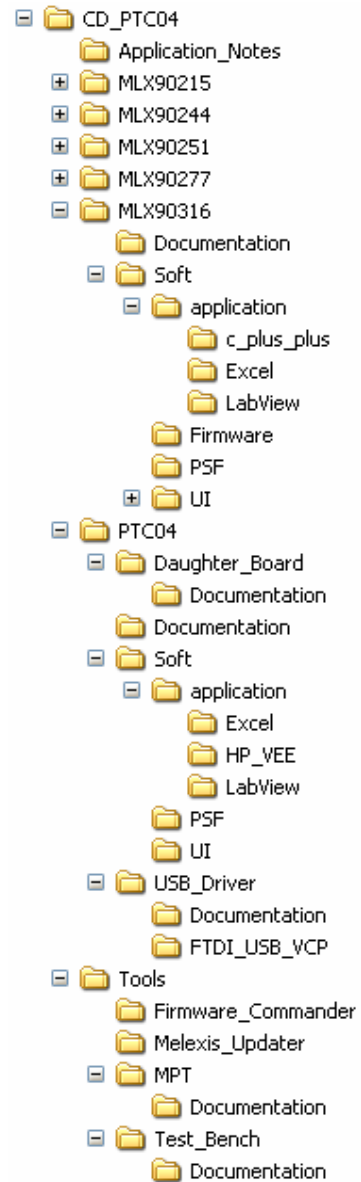
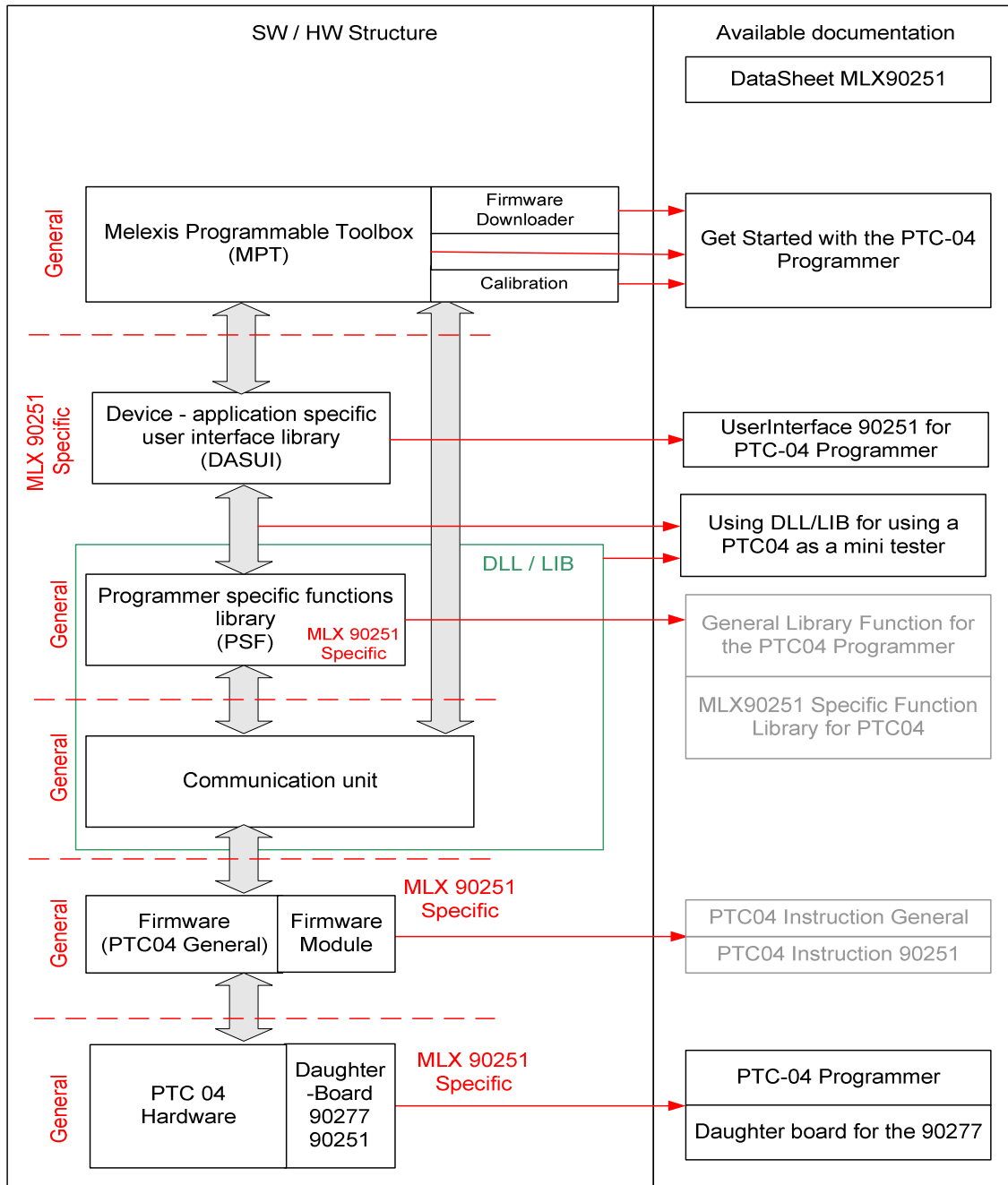


Figure 1: CD PTC-04

**Appendix A: Structure of Software and Documentation**

**MLX 90251 on PTC04**  
Software and documentation structure





## Disclaimer

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For additional information contact Melexis Direct:

**Europe, Africa, Asia:**  
Phone: +32 13 670 495  
E-mail: [sales\\_europe@melexis.com](mailto:sales_europe@melexis.com)

**America:**  
Phone: +1 603 223 2362  
E-mail: [sales\\_usa@melexis.com](mailto:sales_usa@melexis.com)

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