



TINY-Tiger[®] 2 Starter Kit (Pro)

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Welcome to the TINY-Tiger® 2 Starter Kit (Pro).

This short manual will give you a fast and easy start working with the TINY-Tiger® 2 Starter-Kit (Pro).

First of all, an overview of everything that has been delivered with the TINY-Tiger® 2 Starter-Kit:

- TINY-Tiger® 2 Prototyping Board
- TINY-Tiger® 2 Module (T2CI-8/16, 1MB SRAM, 2MB FLASH)
- Power supply unit
- serial DB9 connection cable
- RJ45 cable
- RJ45 cable (crossover)
- USB cable
- Jumper cable set
- CD “Tiger C” with serial number
- CD “Tiger BASIC 5.3 with Tiger 2 support” with serial number
- CD “Info-CD”

The TINY-Tiger® 2 Starter Kit Pro contains additionally:

- 5,7“ graphical display (320 x 240), together with the TINY-Tiger® 2 Prototyping Board mounted on ELAB.
- printed manual addendum for TINY-Tiger® 2.

Manuals

The manuals describe all instructions, functions and device-drivers with immediately comprehensible sample programs. These samples run directly on the different hardware platforms as described in the manuals. These are e.g. the “Plug & Play Lab” of the standard development environment or the prototyping boards of the different starter kits. For graphical output, the sample programs are written for the “Graphic-Toolkit” and the “Graphic-Demokit”.

In the TINY-Tiger® 2 Starter Kit the english manuals are contained as PDF files on CD-ROM. A set of manuals in printed, hardback form can be obtained separately. The manuals can be found on the “Info-CD” in the subdirectory “\English\Tiger_Basic_Manuals”.

Installation

Start with the installation of the development environment on the PC:

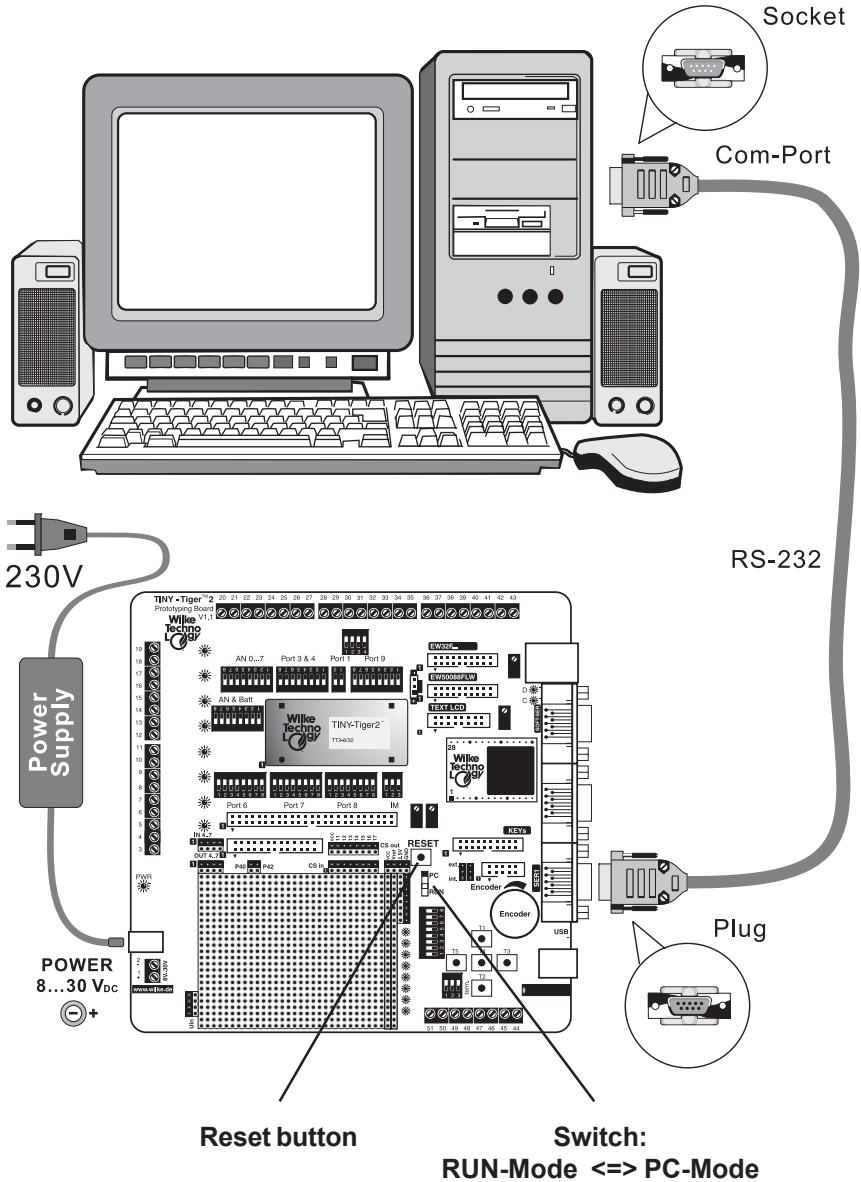
- Close all currently running Windows applications.
- Insert the CD “Tiger BASIC 5.3 with Tiger 2 support” into the CD-ROM-drive.
- Usually, the setup program starts automatically. If this is not the case, start the program “SETUP.EXE” on the CD.
- The setup program will open a welcome window. Follow the instructions on the screen from there.
- **IMPORTANT:** during the installation, you will be asked to enter the serial number. Please enter this number exactly as stated on the CD cover, i.e. with hyphens.

The installation of the hardware is also done in just a few steps:

- Plug the TINY-Tiger[®] 2 module into the socket of the Prototyping Board. Pin 1 is in the lower left corner (see picture).
- Connect port “SER1” of the TINY-Tiger[®] 2 Prototyping Board to a serial port of your PC, using the serial cable coming with the Starter Kit.
- Connect the Prototyping Board to the power supply, the power LED (PWR) should light up now.
- Start the development environment on your PC.
- Choose **Communication** from the menu **Options** and in the dialog box set the COM port to which the Prototyping Board is connected. The baud rate is 115,200 baud, parity is “None”.
- Put the mode switch on the right beside the patch area to “PC-Mode” and press the RESET button.
- Choose **Tiger status** from the menu **View** and you will get a detailed report containing type and status of the connected Tiger module on the screen.

Now a correct connection between the units has been established.

The following picture shows the connection of the TINY-Tiger[®] 2 Prototyping Boards to the PC and the power supply:



Connection Tiger 2 Prototyping Board

Quick Start / First Steps

Directly after installation of hardware and software you can try out the supplied applications and sample programs.

1. Sample for program run without LCD (TINY-Tiger® 2 Starter-Kit)

Many examples make use of a LC display for data output. When you do not have a LCD in your test environment, these sample programs will nevertheless run without modification. To make results visible, in that case you work with the facilities of the development environment to let show strings and numeric values, to set breakpoints and to single-step through programs.

As an example we use a program that calculates the products of an exponent **X** to a base of 2 in a loop. Open the program **EXP.TIG** in the subdirectory **Examples** by selecting **Open** from the menu **File**.

Start the program with the command **Trace into (in Task)** from the menu **Debug** or by pressing **F6**. The program is first compiled and then transmitted into the module where it is started automatically. But its execution is immediately stopped again. The next program line to be executed is highlighted in green.

Now open the window **Watches** by pressing **CTRL-F5**. In this window click the right mouse button and choose the menu item **Add expression**. Enter **X** and confirm with OK. Immediately the variable **X** and its value are shown in the window. Add as a second expression the variable **Y**. To have the values of **X** and **Y** refreshed automatically, activate under **Debugger** in the menu **Options** the item **Refresh watches every step**.

Now you can step through the program line by line by pressing **F6**. Each time you press **F6** the watched expressions (variables) **X** and **Y** are refreshed.

Note: When executing the command **WAIT_DURATION** pressing **F6** does not take you directly to the next program line, but waits for the duration set in the program (here: 1 second). After this time you have to press **F6** again to jump to the next command.

2. Sample for program run with Graphic-LCD (TINY-Tiger® 2 Starter-Kit Pro)

To make the text outputs created by the sample programs visible, the correct display driver has to be used. The programs mostly are written for usage of a 4 x 20 character text display and thus use the driver **LCD1.TDD**. For the 320 x 240 pixel graphic display of the TINY-Tiger® 2 Starter Kit Pro therefore the source

code has to be modified. Replace the line

```
INSTALL_DEVICE #1, "LCD1.TDD"
```

with the lines

```
DIR_PIN 8,5,0
OUT 8, 00100000b, 0
WAIT_DURATION 100
OUT 8, 00100000b, 00100000b
WAIT_DURATION 100
INSTALL_DEVICE #1, "LCD-S1D13700.TD2",0,0,0EEH,1,250,02H,0
```

The first 5 lines reset the display, the fifth invokes the driver suited for this display.

Start the program with the command **Run** from the menu **Start** or by pressing **F5**. The program is first compiled and then transmitted into the module, where it is started automatically.

After a short time you will see in the first line of the display the output of the first power: "2 power 0 = 1". In the distance of one second each in this line the further powers up to "2 power 7 = 128" are displayed.

This should give you a first impression on working with the TINY-Tiger® 2 Starter Kit. Detailed information about hardware, the development environment and many other topics can be found in the following PDF documents on the provided "Info-CD", i.e.:

- Tiger-BASIC manuals:
In subdirectory "\English\Tiger_Basic_Manuals"
- Description of new device drivers and/or functions:
In subdirectory "\English\Tiger_Basic_Manuals\new_driver_and_functions"
- Data sheet for TINY-Tiger® 2 Prototyping Board:
In subdirectory "\English\TINY-Tiger2_Prototyping_Board"
- Data sheet for TINY-Tiger® 2 module:
In subdirectory "\English\Tiger_Modules"

Have fun working with TINY-Tiger® 2!

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