

TINY, HIGH SPEED MULTITASKING COMPUTERS

TP1000

QUICK START



Wilke
Techno
LOGY

Your 7 steps for a quick start

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Welcome!

Thank you for choosing a TP1000 Touchpanel Computer from Wilke Technology GmbH.

The TP1000 Touchpanel Computer is not only a high-class User Interface for your devices, machines and instruments, but can also be used directly as a control unit or datalogger with numerous in- and outputs. The Touchpanel Computers of the TP1000 series are available with various, also customer specific front panels and in different stages of expansion.

This concise manual was written to enable you a quick start with the TP 1000.

Contact

We want you to be completely satisfied with our products.

Should you have questions or suggestions about hard- or software, or about the documentation, please let us know. Our technical support is happy to be at your disposal.

You can contact the Tiger Support Team:

by phone: +49 (241) 918 9032

by fax: +49 (241) 918 9044

by email: support@wilke.de

by callback: <http://www.wilke.de/callback.php>

Requirements

For operation of the TP1000 Touchpanel Computer and the Tiger-BASIC® development environment needed for programming additionally to the TP1000 Touchpanel Computer the following is required:

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- One or two free power sockets for
 1. the TP1000 Touchpanel Computer and
 2. the active speakers (* not included for all countries *)



- A Computer with following minimum components:
 - Pentium processor 500 MHz or faster
 - hard disk with at least 250 MByte free space
 - SVGA graphic (800 x 600) or higher resolution
 - mouse
 - Windows 2000 / ME or newer version
 - 1 free COM port (serial interface)
 - CD-ROM or DVD drive



Packing list

At the beginning here an overview what you have received with the TP1000 Starter Kit:

- TP1000 Touchpanel Computer, type TP1000-R-T2B-B



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- 220V Power Supply Unit (* not included for all countries *)



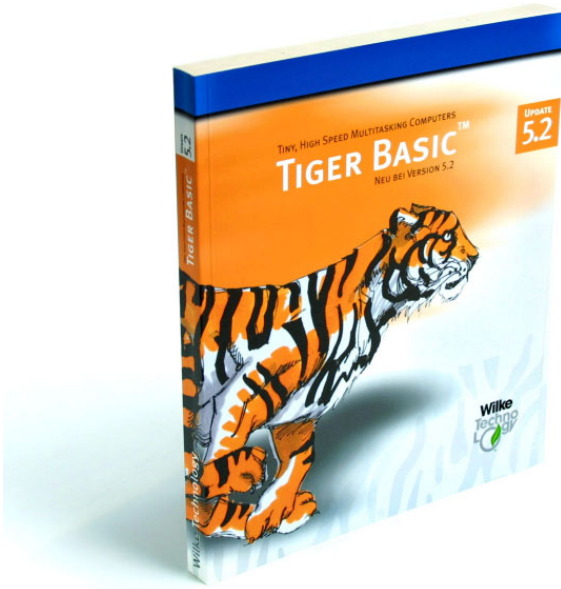
- robust carrying case



- Logitech active speakers (* not included for all countries *)



- printed manuals



3

- serial DB9 connection cable



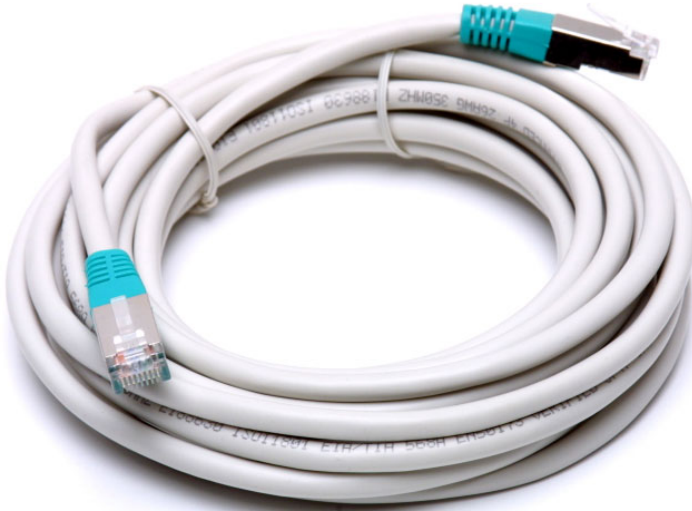
- USB cable



- RJ45 patch cable (blue)

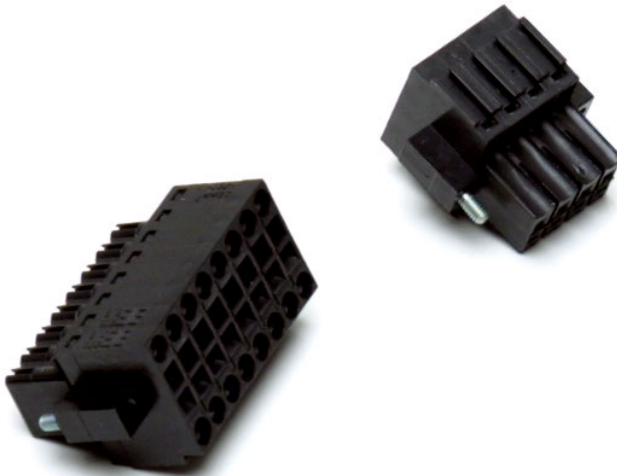


- RJ45 crossover cable (grey)



3

- 1 set of connectors for TP1000 (female multipoint connector)



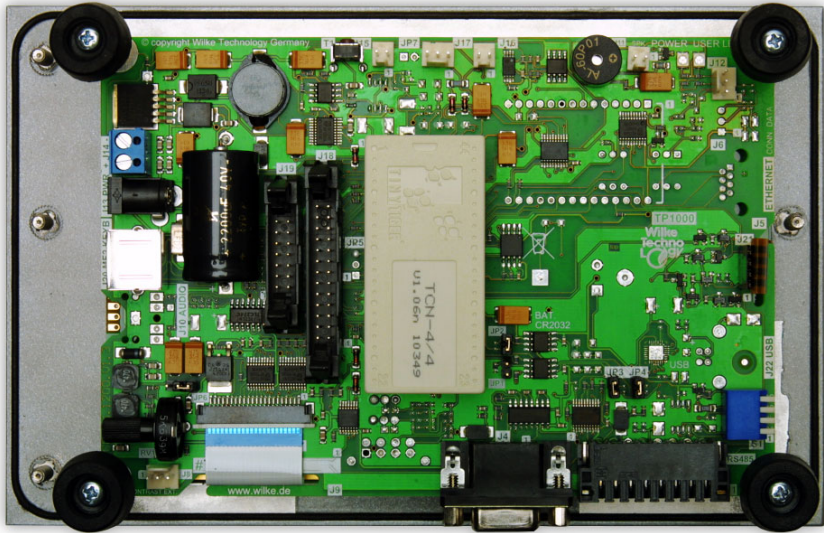
- CDs
 - “Tiger BASIC 5.3 with Tiger 2 support” with serial number
 - “Info-CD”



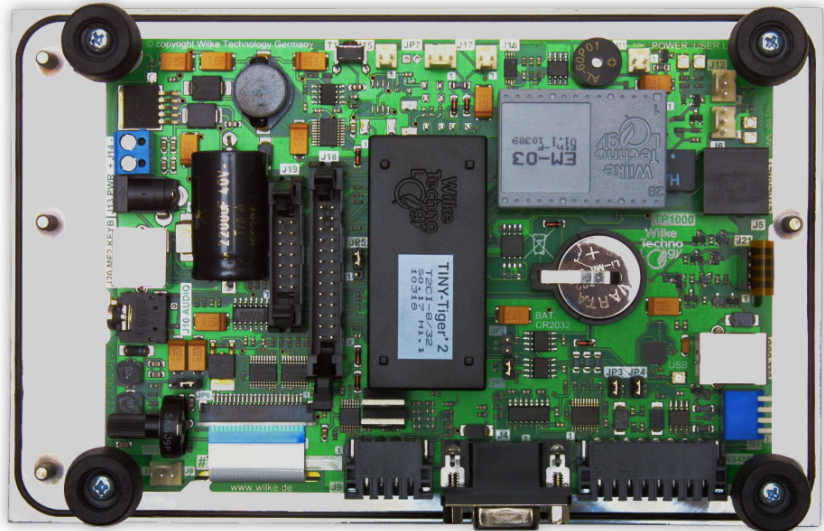
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The TP1000 Touchpanel Computer is available in two base versions that differ in assembly and with it in the look of the basis PCB:

1. with TINY-Tiger 1 CPU (TP1000-X-T1 or TP1000-F-T1)



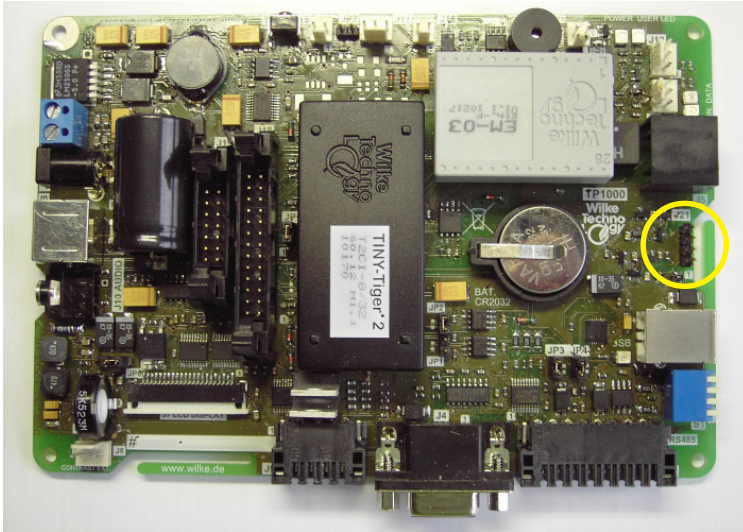
2. mit TINY-Tiger 2 CPU (TP1000-X-T2B or TP1000-R-T2B)



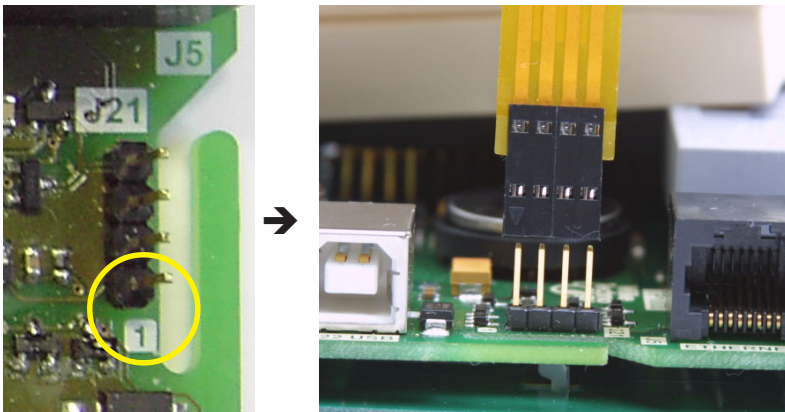
Installation of touchpanel (only TP1000-X-...)

For the circuit board version of the TP1000, the touchpanel is delivered separately from the circuit board/display unit. Therefore, the connection between touchpanel and the TP1000 board has to be established first:

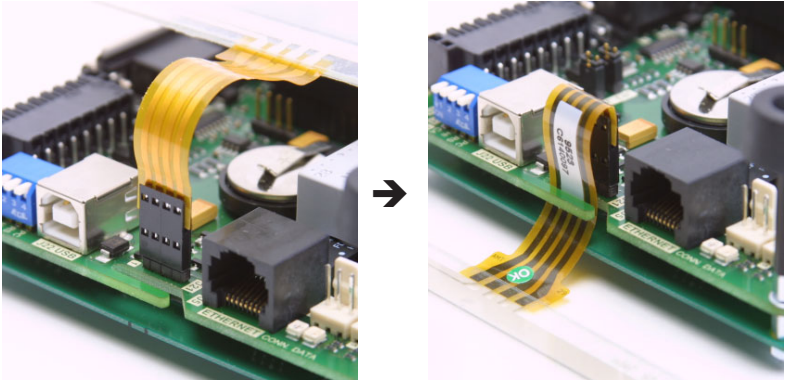
- Plug the connector of the touchpanels onto the multipin connector J21 of the TP1000 board:



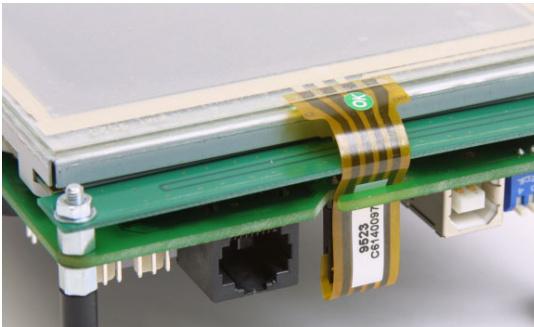
- Take care that pin 1 of the connector corresponds with pin 1 of the multipin connector. Pin 1 is labelled on the circuit board, on the connector it is marked with a triangle:



- When the cable is plugged in correctly, lead it through the therefore designated cable guide pocket:



- This is what the connection between the touchpanel and the TP1000 board should finally look like:



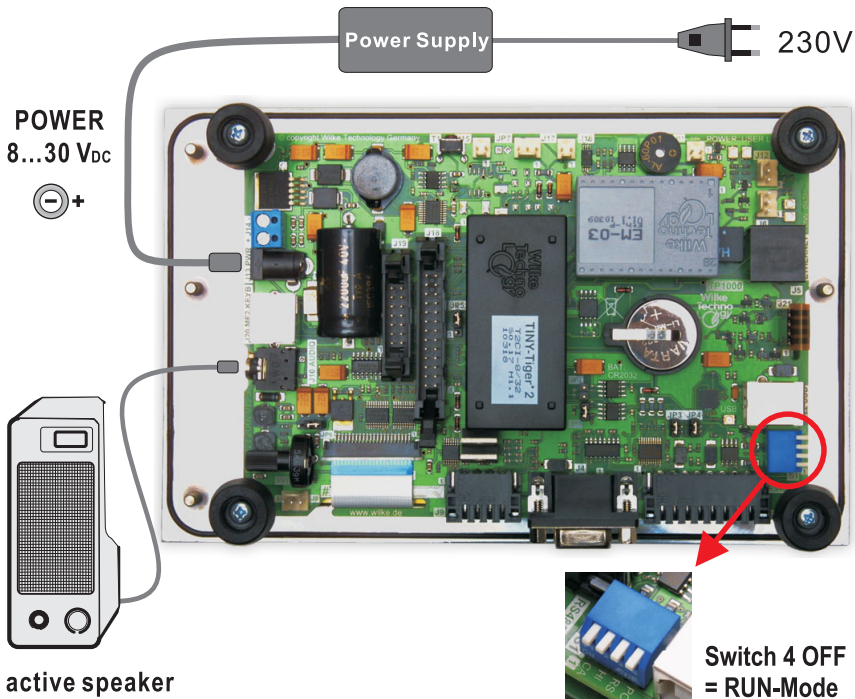
Startup with demo program

On delivery, the TP1000 Touchpanel Computer contains a sample program, which shows some of the many possibilities that the TP1000 and the touchpanel / LCD unit offers.

To start the sample program, the TP1000 must be in run mode and supplied with voltage:

- At the switch S1 of the TP1000, select the operation mode “Run Mode” (switch 4 to OFF).
- The TP1000 with TINY-Tiger 2 (TP1000-X-T2B or TP1000-R-T2B) has a speaker output which is used by the sample program. If you want to hear the sounds, connect an (active) speaker there.
- Connect the TP1000 with the power supply, using the delivered power supply unit. The Power-LED (PWR) should light up now. **IMPORTANT: take care of the correct polarity!**

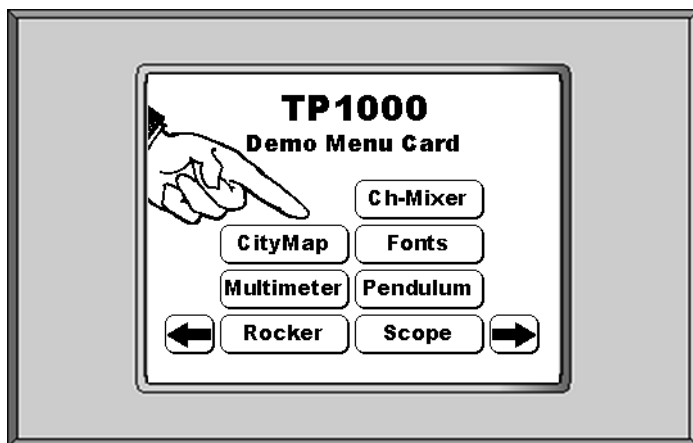
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Startup of TP1000 in Run Mode

After a short time you should see a selection menu on the display, in which you can start a sample application by touching the corresponding button.

The menu could look like this:

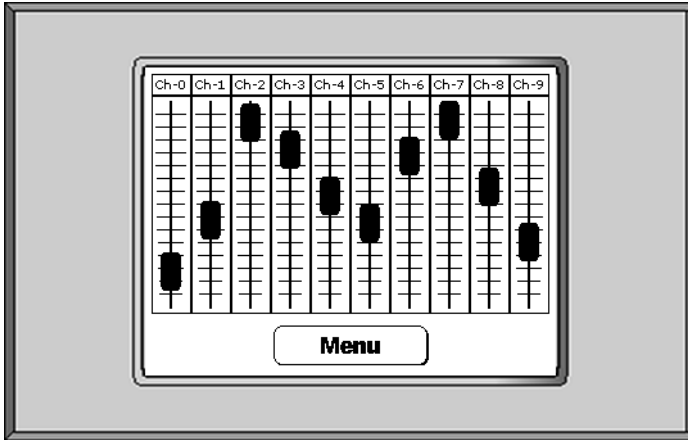


Depending on using either a TP1000 with a TINY Tiger 1 (TP1000-X-T1 or TP1000-F-T1) or with a TINY Tiger 2 (TP1000-X-T2B or TP1000-R-T2B), the structure and the availability of some menu items will differ. Other menu items, if available, can be reached using the arrow buttons.

On the next pages there is an overview of the different menu items (functions marked with an asterisk * are only available for models with TINY Tiger 2 (TP1000-X-T2B bzw. TP1000-R-T2B)).

Ch-Mixer

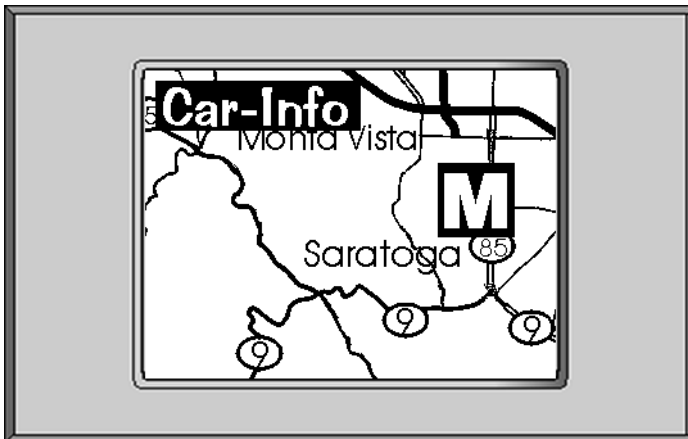
Shows a sort of mixer with 10 separate sliding controls:

**4**

You can shift the sliders by touching on the new position or by “dragging” the slider to its new position. Touching the button “Menu” will lead back to the selection menu.

CityMap

* Scrolls a map over the screen:

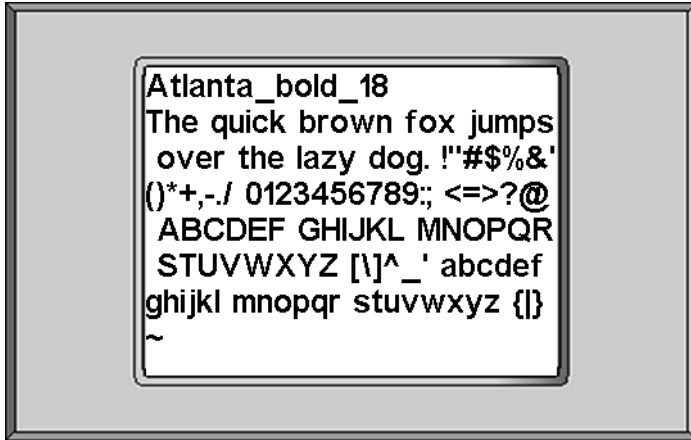


With one touch on the touchpanel you get back to the selection menu.

Fonts

*

Shows different fonts in different sizes:

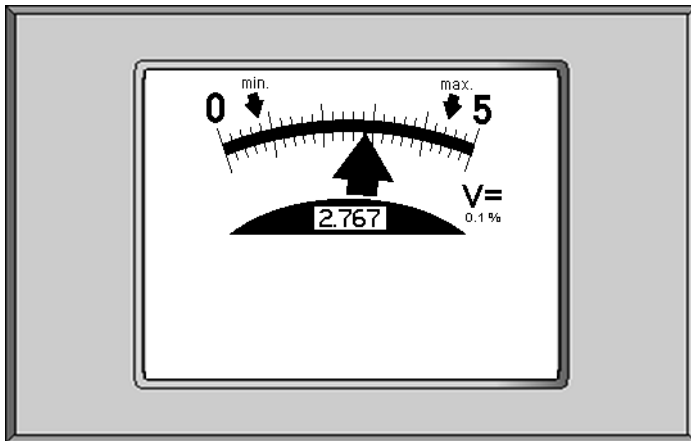


With one touch on the touchpanel you get back to the selection menu.

Multimeter

*

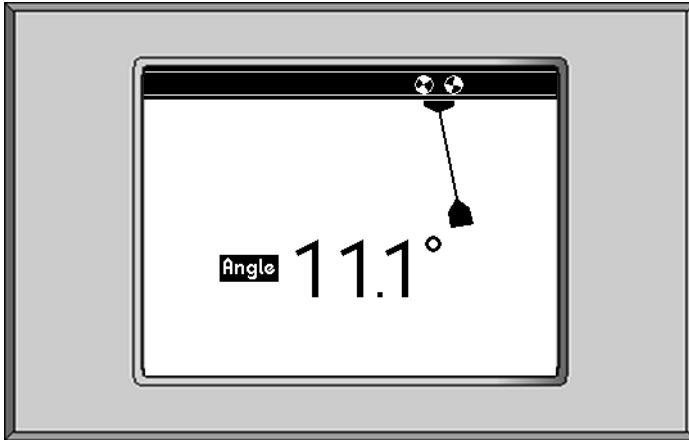
Shows a multimeter with movable hand:



With one touch on the touchpanel you get back to the selection menu.

Pendulum *

Shows a rolling, hanging pendulum with current angle:

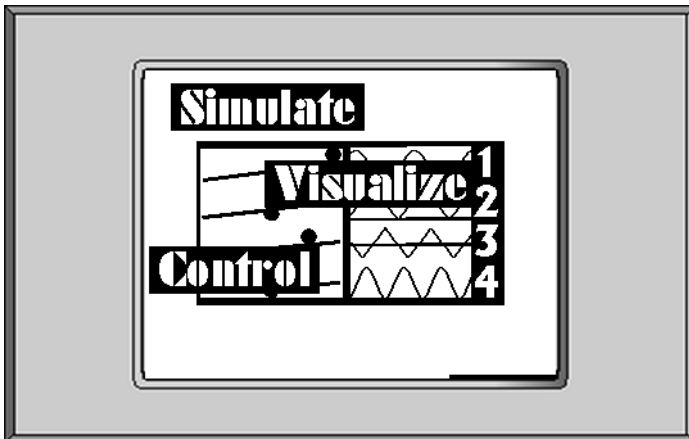


4

With one touch on the touchpanel you get back to the selection menu.

Rocker *

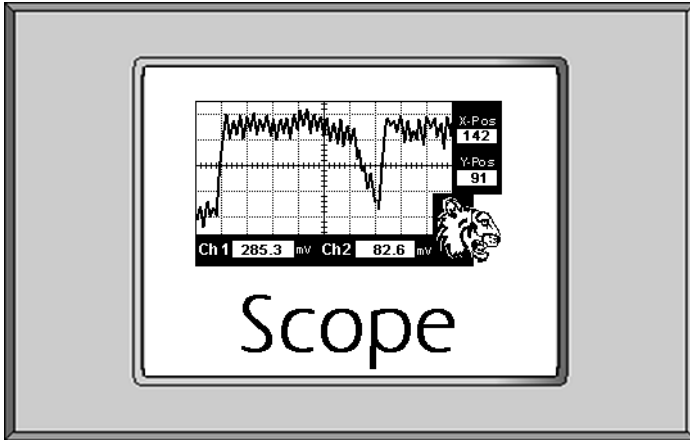
Shows various graphical effects (moving text, rocker):



With one touch on the touchpanel you get back to the selection menu.

Scope

* Shows an oscilloscope with simulated output:



With one touch on the touchpanel you get back to the selection menu.

Mission Impossible

about Tiger

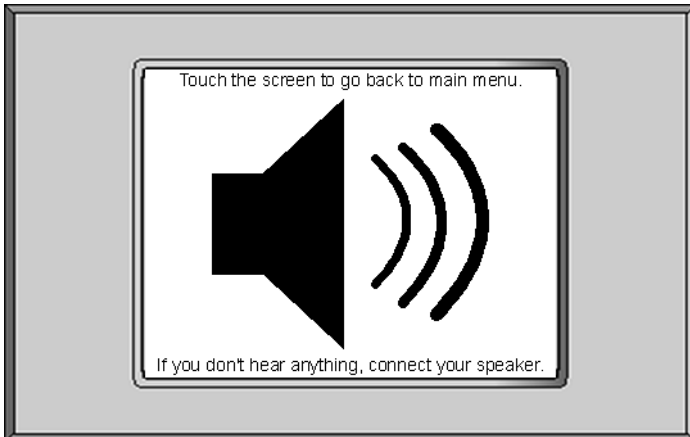
Cuckoo

Time

Shut Down

*

Plays different sounds (music, voice output, effects):



At the end of the sound output, you get back to the selection menu automatically. During the sound output, one touch on the touchpanel will get you back to the selection menu.

Digitype

Demonstrates an input with a numerical keyboard:

**4**





With the digit buttons and the decimal point a number can be entered, which will be shown immediately at the top of the screen. With the button **±** the sign can be changed. By pressing **DEL** the last digit can be deleted. With the button **OK** you get back to the selection menu.

Typewrite

Demonstrates an input with a PC-like keyboard:

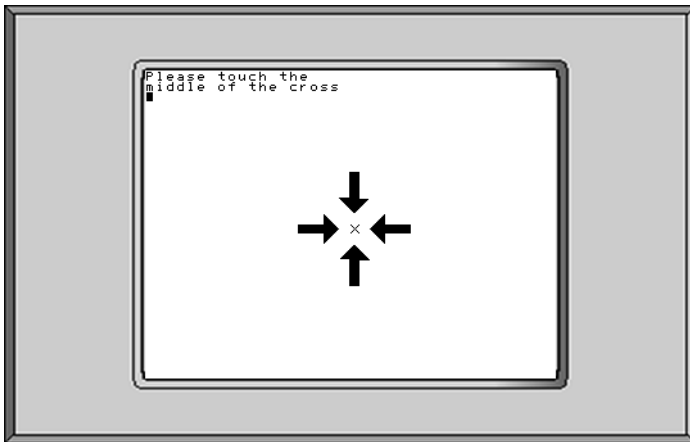


Every touch on a button of the alphanumerical keyboard will be shown in the two upper text lines. Some buttons have special functions:

- : Delete. Delete last character
- : Shift-Lock. Permanent switching between capital/small letters
- : Shift. Switching between capital/small letters for the next char only
- : Return. Immediate line break (carriage return + line feed)
- OK** **ESC**: Back to the selection menu

Calibrate

Function for calibrating the touchpanel:



With this function the threshold values for the touchpanel can be adjusted to the coordinates of the LC display, so that a touch on the touchpanel delivers exactly these coordinates that correspond to the coordinates of the pixel on the LC display.

First there will be an arrow pointing to a cross in the lower left corner of the screen. Press this cross as precisely as possible. After that the upper right corner follows, and finally the centre of the screen. If the calibration was successful, you will get back to the selection menu automatically. If the calibration failed, the procedure is repeated.

A detailed description about calibration can be found in chapter 6 “Further examples”.

Startup for programming

Installation of the software development environment

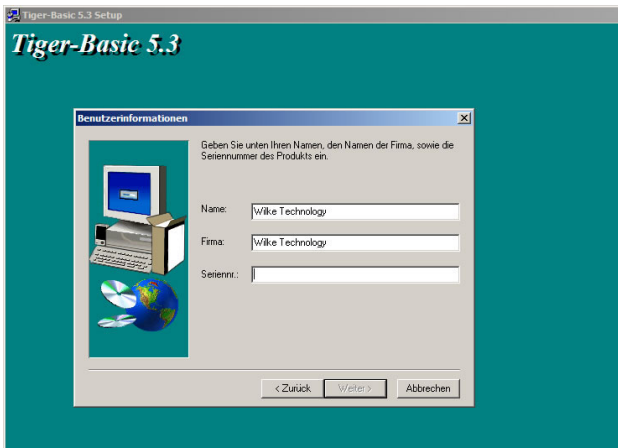
With the TP1000 Touchpanel Computer Starter Kit comes the latest version 5.3 of the Tiger-BASIC™ development environment.

This version is required to be able to use all functions of the TP1000, including the Tiger Graphic Library. Do install this version, even if you have already installed an older version of Tiger-BASIC™.

The installation takes place into a separate folder, so that this version can work parallel to your older version.

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 / DVD drive.
- Usually, the setup program starts automatically. If this is not the case, start the program “SETUP.EXE” on the CD manually.
- The setup program will open a welcome window. After that an input window for the registration informations appears:



Enter the serial number exactly as printed on the CD enclosure, i.e. with hyphens.

If you have not acquired a license or plan to acquire one later, enter a zero in place of the serial number. The software now runs in the “Lite” mode with full functionality, but with a restriction to compile a maximum of 2,000 code lines.

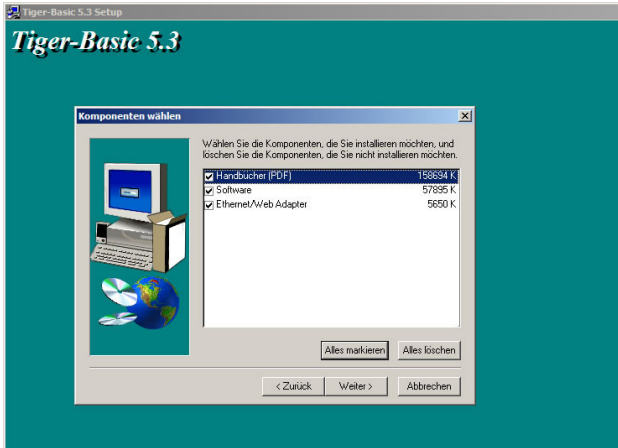
- Next choose the folder in which the development environment should be installed into. Normally the default settings can be confirmed here:



- Now determine the program group for the Windows Start menü. Here too the default setting should be kept:



- Finally you decide what to install. All components with a check mark will be installed.



To save hard disk space you could e.g. abandon the installation of the PDF manuals.

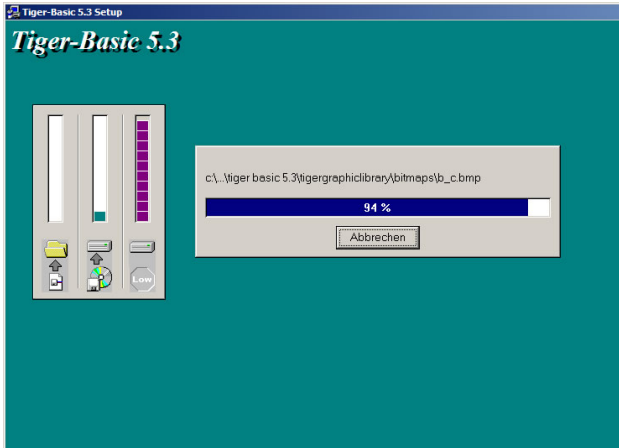
- When you have done all settings, these will be shown one more time summed up in an info window:



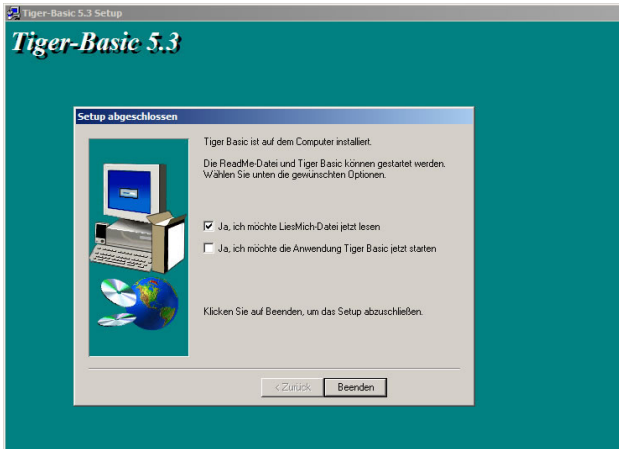
Verify all settings again. If everything is correct, start the installation procedure by confirming with “Next >”.

5

- The copying process for all files needed for the installation is now started. The current progress of the installation is constantly displayed:



- When installation is finished, click on “Finished” to exit the setup program:



With this Tiger-BASIC™ 5.3 is completely installed on your computer and so everything you need for programming your TP1000 Touchpanel Computer.

Updating the software development environment

As our software is constantly advanced, we highly suggest a periodical update of the system files, definition files, device drivers and the Tiger Graphic Library.

For this please load from our website under

<http://www.wilke.de/treiber.php>

the following components:

- 1) TAC_Tiger1 (Newest Version of TAC-Files for Tiger 1)
TAC_Tiger2 (Newest Version of TAC-Files for Tiger 2)
- 2) Updated System Definition Files for Tiger-BASIC (DEFINE_A.inc, TP_CALIBRATE.inc, UFUNC4.inc)
- 3) Device Driver Packages (Latest Complete Driver-Archive for Tiger BASIC 5.x)
- 4) Tiger Graphic Library

The updated files are published as packed files in ZIP file format and must be placed in the correct system folders of your Tiger-BASIC™ installation. To do so proceed like this:

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- 1) For updating the TAC files extract and update all loaded files in the folder
C:\Program Files\Wilke Technology\Tiger Basic 5.3\Bin
- 2) For updating the definition files extract and update all loaded files in the folder
C:\Program Files\Wilke Technology\Tiger Basic 5.3\Include
- 3) For updating the device drivers extract and update all loaded files in the folder
C:\Program Files\Wilke Technology\Tiger Basic 5.3\Bin
- 4) For updating the Tiger Graphic Library please erase first all no more needed folders and files. Doing so prevents accidentally working with outdated files.

Folder to be erased, if present (including all files):

C:\Program Files\Wilke Technology\Tiger Basic 5.3\Examples\TGL_Examples

C:\Program Files\Wilke Technology\Tiger Basic 5.3\Graphic_Fonts

C:\Program Files\Wilke Technology\Tiger Basic 5.3\Examples\TP1000_Demo

C:\Program Files\Wilke Technology\Tiger Basic 5.3\TigerGraphicLibrary

Extract the ZIP file with the downloaded Tiger Graphic Library into a folder of your choice. A folder with the name “Tiger Basic 5.3” will be created there.

Copy this folder (i.e. per drag & drop) in the higher-level folder of your Tiger-Basic installation, so e.g. “C:\Program Files\Wilke Technology“
When prompted for existing files, select “Replace all files”.

IMPORTANT: Before copying the files please close the Tiger-BASIC™ development environment!

Connecting the TP1000 for programming

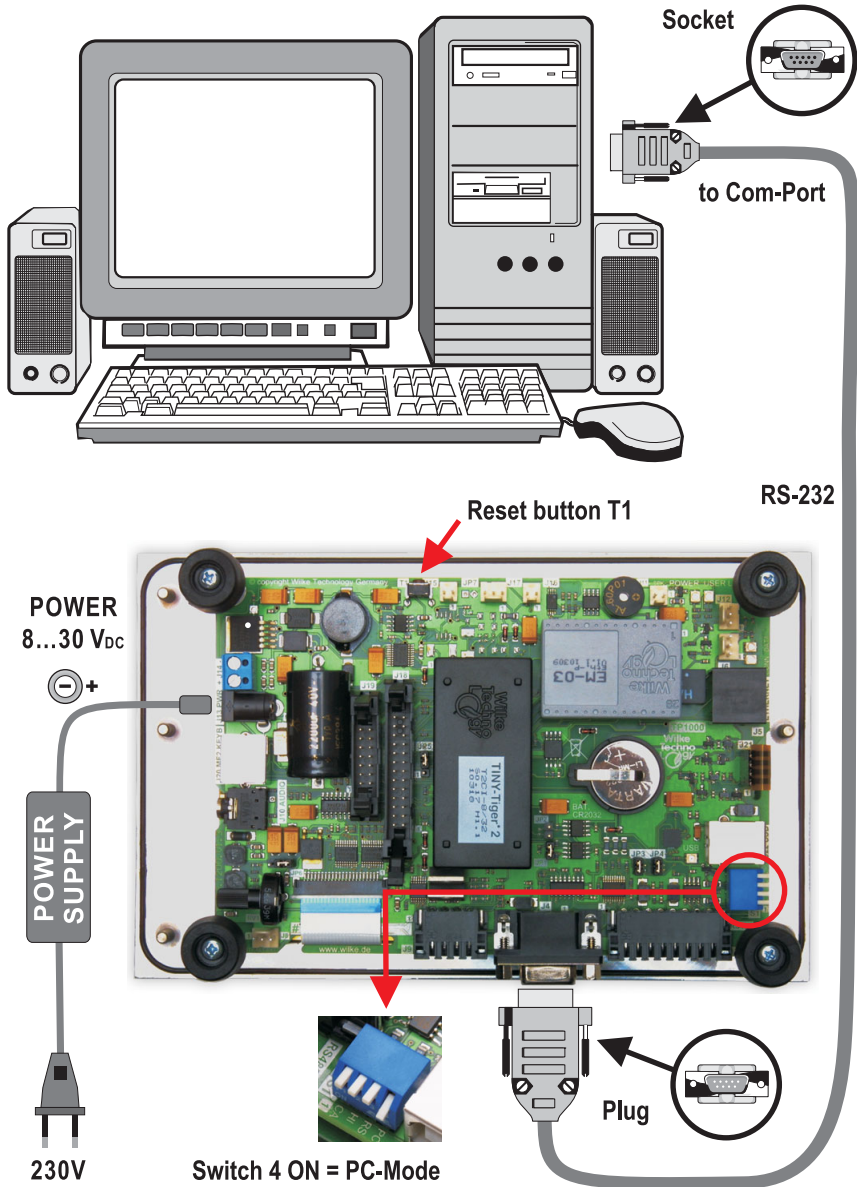
The TP1000 gets ready for programming quite easily:

- Connect the TP1000 with a serial port of your PC using the delivered serial cable.
- Connect the TP1000 with the power supply using the delivered power supply unit. The Power-LED (PWR) should light up now. **IMPORTANT: take care of the correct polarity!**
- Start the Tiger-BASIC™ development environment on your PC.
- Select from the menu **Options** the entry **Communication** and select in the dialog box the COM port, to which the TP1000 is connected to. For the models with TINY-Tiger™ 2 (...-T2B) the baud rate is 115,200 Bd, parity is “None”. For the models with TINY-Tiger™ 1 (...-T1) the baud rate is 38,400 Bd, parity is “Even”.
- At the switch block S1 of the TP1000, select the operation mode “PC-Mode” (switch 4 to ON) and press the RESET button T1.
- Select from the menu **View** the command **Tiger status** and you receive a status message on the screen about the type and state of the connected Tiger computer.

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Now there is a working connection between the units.

The picture below shows the connection of the TP1000 to the computer and the power supply:



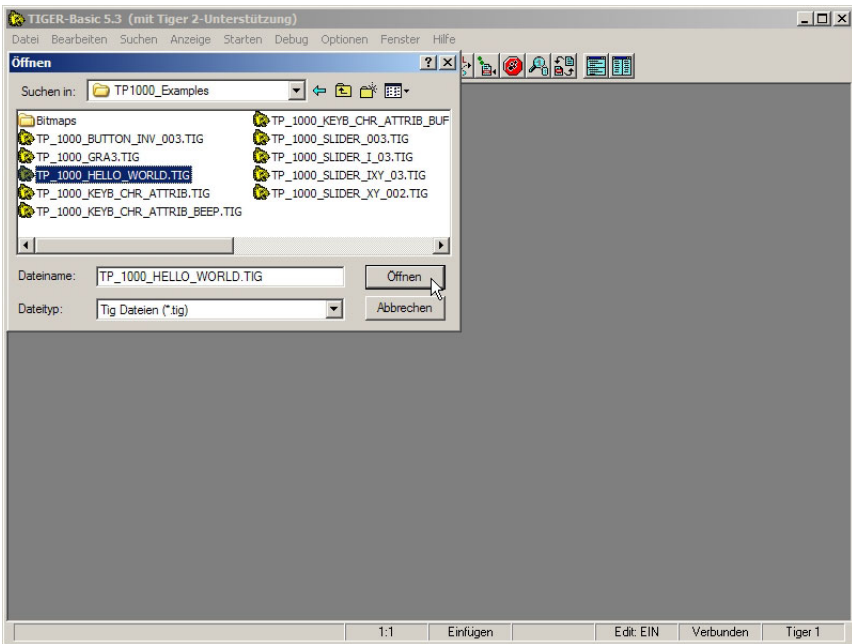
Connecting the TP1000 for programming

Quickstart / First steps with the development environment

Immediately after the installation of the hardware and the software you can try the applications and sample programs.

Some examples for the TP1000 can be found in the subfolder “..\Examples\TP1000_Examples” of your Tiger-BASIC™ 5.3 installation.

We start with a simple output on the Graphic-LCD. Start the Tiger-BASIC™ development environment and load the required source code in the editor with the command **Open** from menu **File**. The program is named **TP_1000_HELLO_WORLD.TIG** and resides in the subfolder **..\Examples\TP1000_Examples**.



After loading the program code you can directly transmit the program to the TP1000 and run it there. Use the command **Run** from the menu **Start** or alternatively press key **F5**. The program is first compiled and then transmitted to the TP1000, where it is automatically started.

At the TP1000, the LCD backlight should now be turned on and on the display the text “Hello World!” should appear - as plain text in the upper left corner of the LCD and also as graphic in the centre of the display:



What does the program do? First several presettings are done. These are typical for the TP1000 Touchpanel Computer and should be included like that or at least similar in every program, especially regarding the definition of pins (under “LCD pins”) and the initialization of the LCD (under “initialize LCD 1/4 VGA”).

In the section “settings for LCD output” presets for the output are done. Here you can directly influence the result of the output. Change the lines e.g. like this:

```
-----  
' settings for LCD output  
-----  
PUT #LCD, "<1Bh>T<0><F0h>"           ' set text mode OFF  
PUT #LCD, "<1Bh>G<1><F0h>"           ' set graphic mode ON  
PUT #LCD, #0, #UFCO_SET_INV, INV_MODE ' INV_MODE = 0 =normal  
WAIT_DURATION 10                       ' wait a little bit
```

With this the text mode of the LCD is deactivated and text outputs therefore are no longer displayed. Compile and start the program again with the command **Run** from the menu **Start** or alternatively with key **F5**. After transmission the output of the program looks like this:



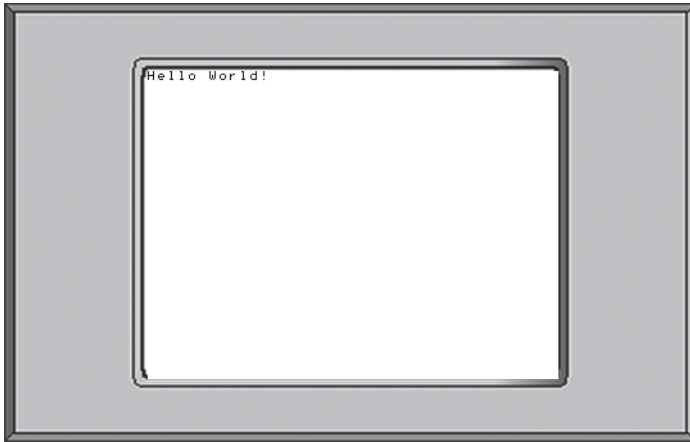
Although the text in the upper left corner is still put out by the program, the LCD does not display it anymore.

In the same way the graphic mode of the LCD can be turned off and with it the display of graphical outputs can be suppressed. To do so modify the lines in the section “settings for LCD output” like this:

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```
'-----  
' settings for LCD output  
'-----  
PUT #LCD, "<1Bh>T<1><F0h>"           ' set text mode ON  
PUT #LCD, "<1Bh>G<0><F0h>"           ' set graphic mode OFF  
PUT #LCD, #0, #UFCO_SET_INV, INV_MODE ' INV_MODE = 0 =normal  
WAIT_DURATION 10                     ' wait a little bit
```

The text mode of course is activated again, because otherwise nothing would be displayed at all. After another recompile and download of the program the output finally looks like this:



Remind that the output instructions were never changed, in all 3 cases the program did output as well text as graphic:

```

PUT #LCD, #0, "Hello World!"           ' Output to secondary
                                         '   addr 0: text mode
PUT #LCD, #1, HELLO_WORLD, 0, 0, 9600  ' Output to secondary
                                         '   addr 1: bitmap
                                         '   graphic from Flash

```

There is another basic setting then can be changed very easily: The output on the LCD can be done normal or inverted, according to this line:

```

PUT #LCD, #0, #UFCO_SET_INV, INV_MODE  ' INV_MODE = 0 = normal

```

The value of INV_MODE is 0 in the original program (for normal output). It can be set for inverted output by changing the corresponding definition in the section “LCD pins”:

```

-----
' LCD pins
-----
#define PORT_LCD           8   ' port for LCD control lines
#define PIN_LCD_RESET     5   ' pin no. for LCD reset line
#define PIN_LCD_BACKLIGHT 2   ' pin no. for LCD backlight setting

#define NO_INVERSION      0   ' normal output
#define INVERSION         1   ' inverted output
#define INV_MODE          INVERSION ' active output mode

```

With that the value of INV_MODE is changed to 1, so that with the above PUT instruction now the inverted output mode gets activated. Additionally edit the instructions for the modes so that again text and graphic mode are

activated. After the new compilation and download you now should have this output on your LC display:



This was just a first, simple example and shows how uncomplicated direct output to the LC display is.

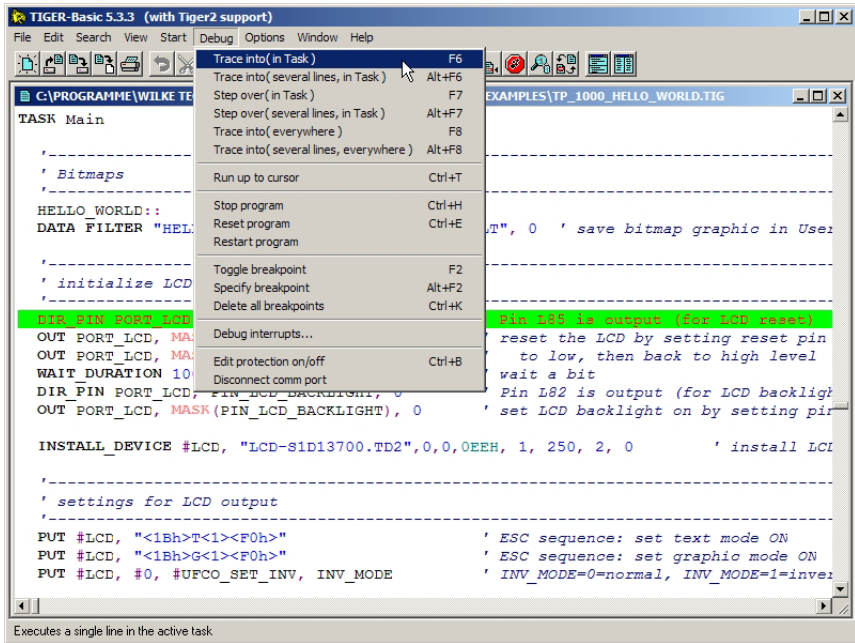
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Single-Stepping / Debugging:

In order to test a program you can, for better control which program line has what effect, let the program execute in single steps line for line. If the current version of the program is already in the TP1000, put it in its initial state with the command **Reset program** from the menu **Debug**, otherwise compile the program with the command **Compile** from the menu **Start** or alternatively key **F4**.

Now start the program with the command **Trace into (in Task)** from the menu **Debug** or with key **F6**. If necessary the program is first transmitted into the TP1000. The program is started, but the execution is immediately stopped again. The next line to be executed is highlighted in green.

Now you can step through the program line for line by repeatedly pressing **F6**. This way the effects of each line can exactly be checked (is s.th. turned on/off, is s.th. displayed as intended etc.).



Although in our example no variables are used: The values of variables can also be displayed. For this open the **Watches** window from menu **View** or by pressing **CTRL-F5**. In this window you can open a context menu with the right mouse button and make various settings, like add, edit or refresh expressions (variables). You can find detailed information on this topic in chapter 3 of the manual “Installation & Hardware”.

Run-Mode:

When the application is ready and runs satisfactory in PC mode, the program can also be started in Run mode. In Run mode the program stored in Flash memory is immediately started after each power-on or reset. To reach this mode set at DIP-switch block S1 of the TP1000 the switch for the operation mode to “Run-Mode” (switch 4 to OFF) and press the reset button T1. Now the program is immediately executed independent of the development environment.

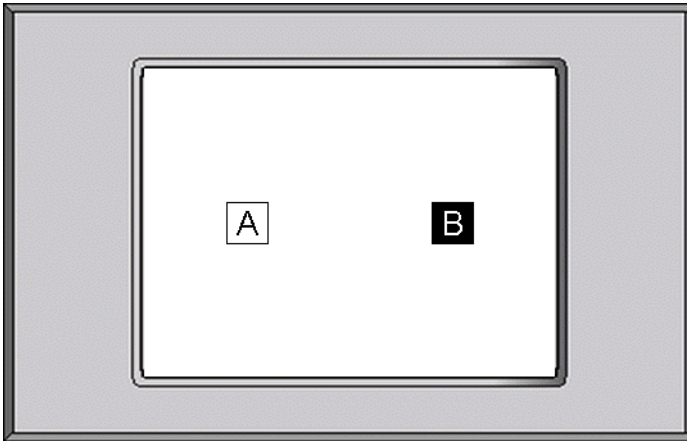
Further examples

Besides the first example for LCD output described in step 5 there are several other example programs for the TP1000 in the subfolder “..\Examples\TP1000_Examples” of your Tiger-BASIC™ 5.3 installation, which deal primarily with the touchpanel and demonstrate its possibilities.

These examples have a more complex structure and require that you have made yourself familiar with the Tiger-BASIC™ programming language and the functions of the touchpanel device driver to a certain degree.

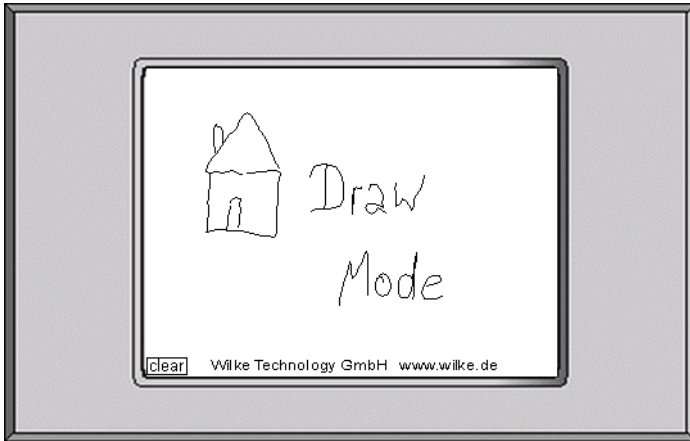
Following a list of the example programs and their functions:

- TP_1000_BUTTON_INV_003.TIG



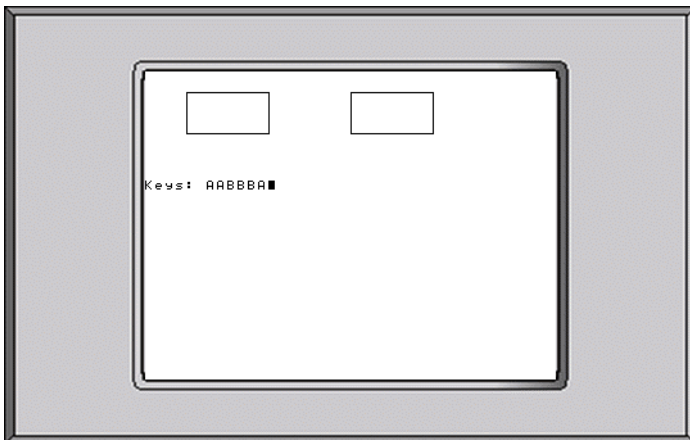
Shows two buttons on the screen after the automatical calibration (done only if required) that are inverted when being touched.

- TP_1000_GRA3.TIG



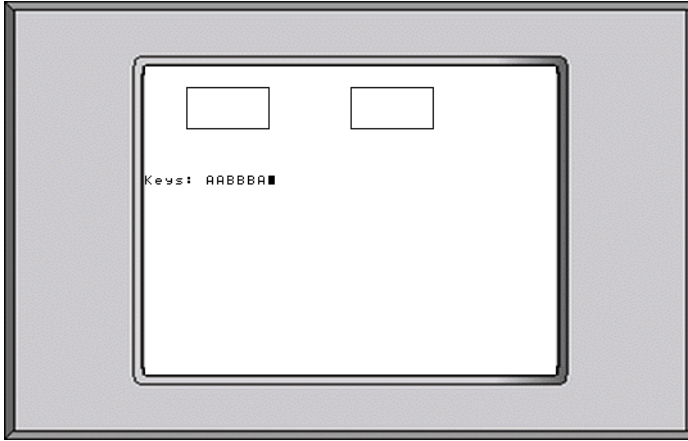
After the automatic calibration (done only if required) one can draw on the empty screen. Every movement on the touchpanel is shown as a line. Pushing the “clear” button will delete the drawings on the screen.

- TP_1000_KEYB_CHR_ATTRIB.TIG



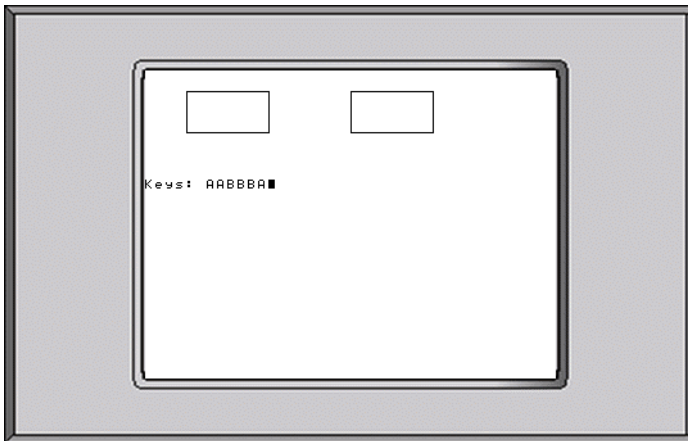
Shows 2 empty boxes after the automatic calibration (done only if required). One touch within the left box leads to the output of the letter “A”, touching the right box will output a “B”.

- TP_1000_KEYB_CHR_ATTRIB_BEEP.TIG



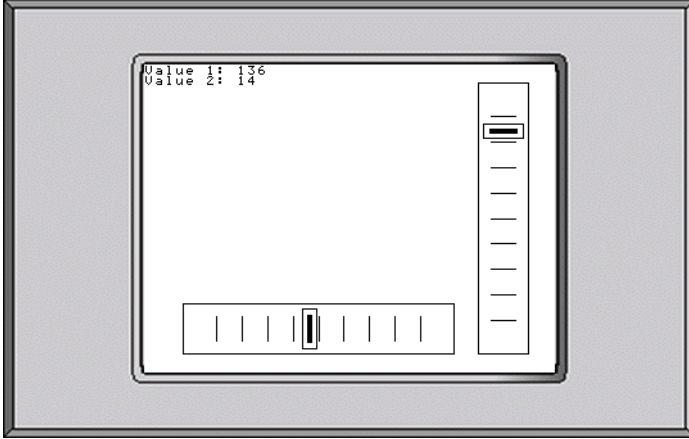
Shows 2 empty boxes after the automatical calibration (done only if required). One touch within the left box leads to the output of the letter "A", touching the right box will output a "B". Additionally for the right box a signal beep is output and the box has an autorepeat function, i.e. keeping the box pressed will create further "B"s continuously.

- TP_1000_KEYB_CHR_ATTRIB_BUF.TIG



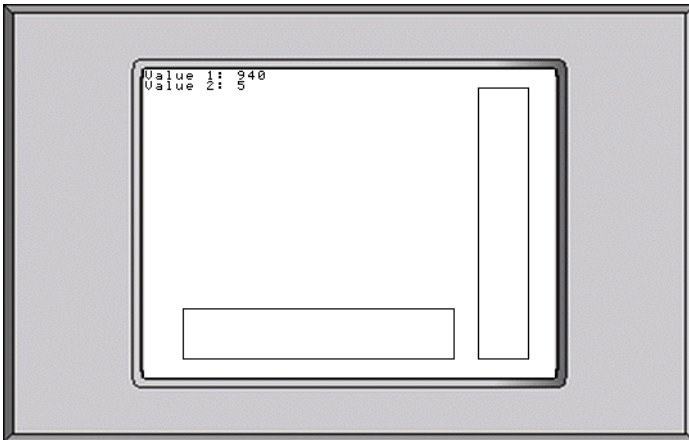
Shows 2 empty boxes after the automatical calibration (done only if required). One touch within the left box leads to the output of the letter "A", touching the right box will output a "B". Internally for each box a own buffer is used, which does not influence the user operation.

- TP_1000_SLIDER_003.TIG



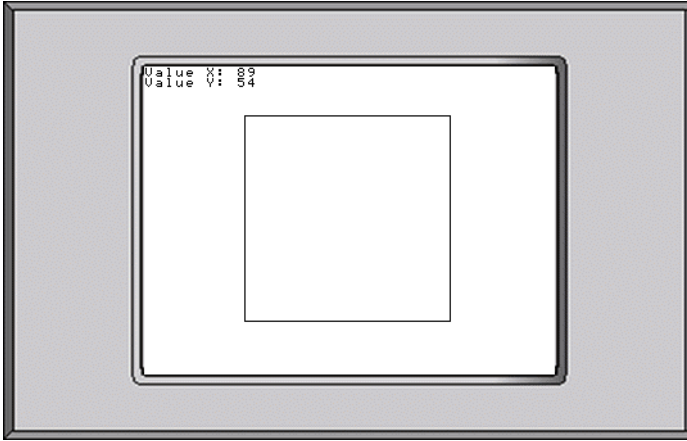
After the automatic calibration (only if required) two sliding controls are displayed, one in x-direction (horizontal) and one in y-direction (vertical). Touching any point inside a sliding control area will cause this position to be used as the current position of the slider. The current positions of the two sliders will also be shown as numerical values in the display.

- TP_1000_SLIDER_I_03.TIG



After the automatic calibration (only if required) two rectangular areas are displayed. These represent the boundaries for two incremental sliders, i.e. a movement over the touchpanel decreases or increases the initial values. So only direction and length of the movement are important, not the initial position. The horizontal slider creates a maximum difference of 2 over its entire length, the vertical a difference of 2000.

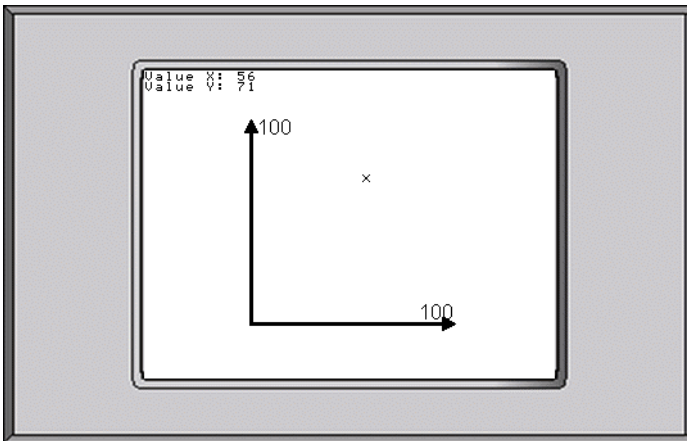
- TP_1000_SLIDER_IXY_03.TIG



After the automatical calibration (only if required) a square will appear on the screen. This represents the boundaries for a twodimensional, incremental sliding control. I.e. one movement over the touchpanel will decrease or increase the initial values in x- and y-direction. Therefore only the direction and length of the movement is important, not the initial position. The slider creates a maximum difference of 161 over its entire length in both directions (x and y).

- TP_1000_SLIDER_XY_002.TIG

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Shows a coordinate system in x- and y-direction after the automatical calibration (only if required). The twodimensional sliding control, when touched within the limits (arrow heads) produces two values for x and y.

Examples for Tiger Graphic Library

For easy and convenient development with the TP1000 Touchpanel Computer there exists a graphical library, the Tiger Graphic Library.

Special examples for the usage of the Tiger Graphic Library functions can be found in the folder “..\Examples\TGL_Examples” of the Tiger-BASIC™ installation.

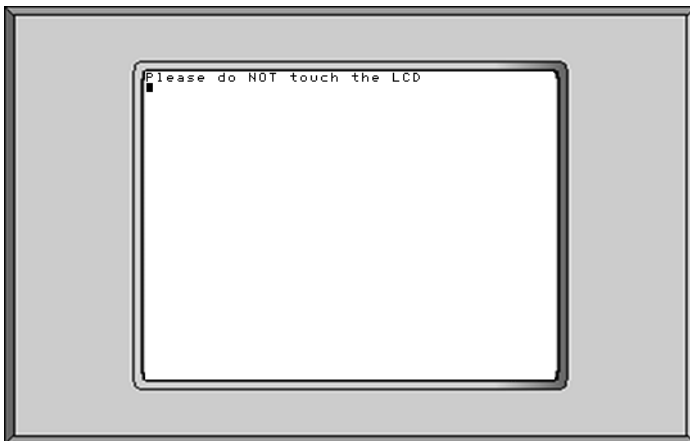
We strongly recommend using this library for the development of your own applications.

Calibration

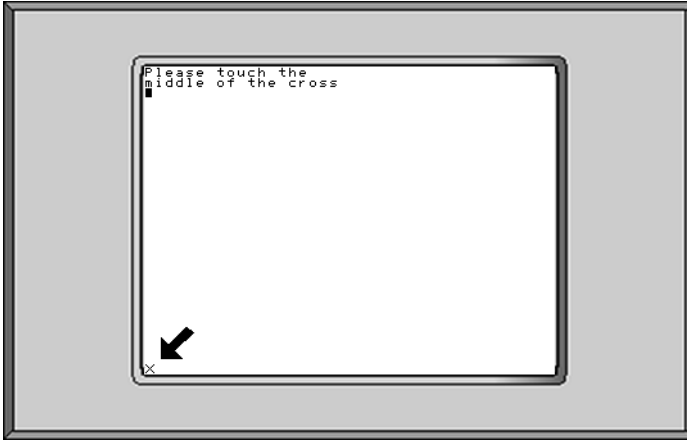
Several of the examples programs described before may prompt you to calibrate the touchpanel. With this function the boundary values for the touchpanel can be adjusted to the coordinates of the LC display, so that a touch on the touchpanel delivers exactly those coordinates of the corresponding pixel on the LC display.

There are different functions for the calibration. So a calibration can be initiated by force or only if there aren't any calibration data in the EEPROM yet. Detailed information about calibration can be found in the documentation for the touchpanel device driver.

First the calibration is prepared. During this time you should not touch the touchpanel:

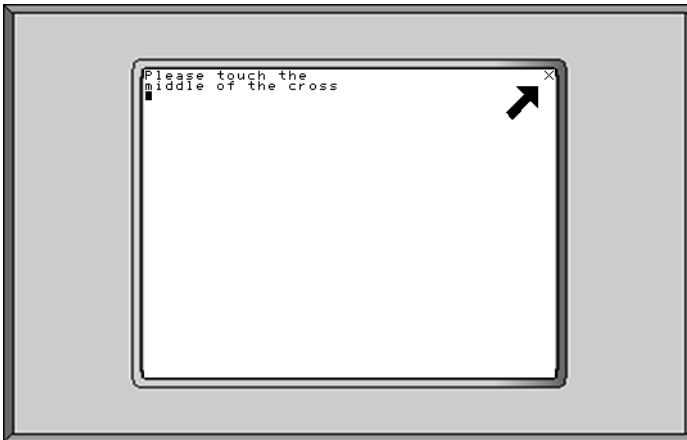


After a short time an arrow points to a cross in the lower left corner of the LC display:



Touch the centre of this cross as precisely as possible. If necessary, take a pen for assistance.

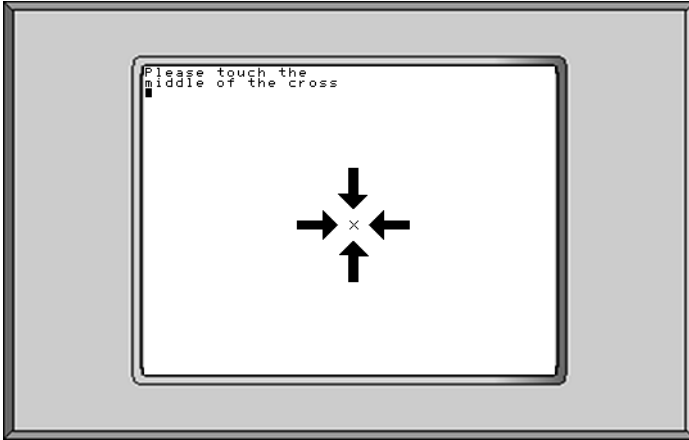
Next an arrow appears which points to the upper right corner of the display:



Again, press the centre of the cross as precisely as possible.

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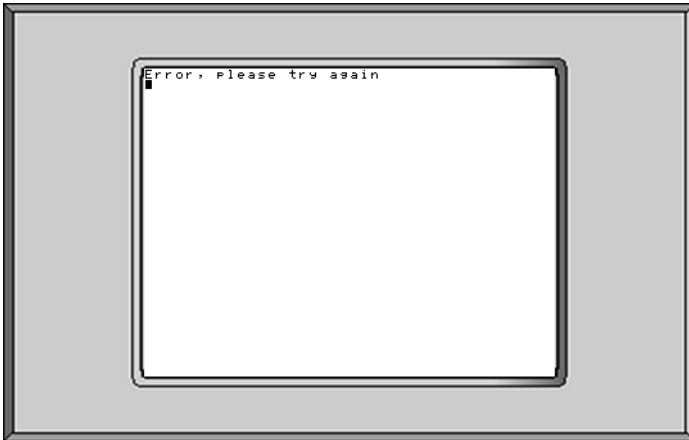
As last step for the calibration four arrows point to a cross exactly in the centre of the screen:



For the last time, press the center of the cross to finish the calibration.

If the calibration has been successful, the calibration routine is exited and the normal program sequence of the application is continued.

Did, however, the calibration fail (e.g. because the centres of the crosses were not pressed sufficiently exact) an accordant error message is displayed



and the complete calibration process is repeated.

Additional documentation

For working with the TP1000 Touchpanel Computer especially, but also for working with the Tiger Computers in general, there is a number of additional information like e.g. data sheets or manuals. In the following a list where these can be found.

Data sheets

- Data sheet for TP1000 Touchpanel Computer
Name: **DATA_Sheet_TP1000_Vxxx_EN.pdf**
Located:
 - on the “Info-CD” in folder “\English\TP1000”
 - on our website **www.wilke-technology.com** in section “Downloads”, there under “Datasheets”
- Data sheet for TINY-Tiger module
Name: **DATA_Sheet_TINY_Tiger_Module_Vxxx_en.pdf**
Located:
 - on the “Info-CD” in folder “\English\Tiger_Modules”
 - on our website **www.wilke-technology.com** in section “Downloads”, there under “Datasheets”
- Data sheet for TINY-Tiger 2 module
Name: **DATA_Sheet_T2CI_V1_0_Vxxx_EN.pdf**
Located:
 - on the “Info-CD” in folder “\English\Tiger_Modules”
 - on our website **www.wilke-technology.com** in section “Downloads”, there under “Datenblätter”
- Data sheet for Ethernet-Adapter EM03
Name: **DATA_Sheet_EM03_Eth_P_V1_1_Vxxx_EN.pdf**
Located:
 - on the “Info-CD” in folder “\English\Ethernet_Web_Adapter\Datasheet_Ethernet”
 - on our website **www.wilke-technology.com** in section “Downloads”, there under “Datenblätter”

Manuals

- Tiger-BASIC™ manuals

Names:

- Hardware manual: **TEH_50e.pdf**
- Programming manual: **TEP_50e.pdf**
- Device driver manual: **TED_50e.pdf**
- Supplement for software version 5.2:
Manual_Tiger-BASIC_Update_v5_2_englisch.pdf

Located:

- on the “Info-CD” in folder “\English\Tiger_Basic_Manuals”
- in the Tiger-BASIC™ installation in subfolder “..\Manual”
- on our website **www.wilke-technology.com** in section “Downloads”, there under “BASIC-Tiger™ Manuals”
- in printed form as manual set in our online shop

- Manual for Tiger Graphic Library

Name: **TigerGraphicLibrary_Vx.xx.pdf**

Located:

- on the “Info-CD” in folder “\English\TigerGraphicLibrary”
- in the Tiger-BASIC™ installation in subfolder “..\Manual\TigerGraphicLibrary”
- on our website **www.wilke-technology.com** in section “Downloads”, there under “BASIC-Tiger™ Manuals”

- Manual for Ethernet Programming Library

Name: **Ethernet_Web_Adapter__Programming_Guide_V_x_xx.pdf**

Located:

- on the “Info-CD” in folder “\English\Ethernet_Web_Adapter\Manuals”
- in the Tiger-BASIC™ installation in subfolder “..\Manual\Ethernet_Web_Manual”
- on our website **www.wilke-technology.com** in section “Downloads”, there under “BASIC-Tiger™ Manuals”

- Description of new device drivers and/or functions

Names: diverse, depending on driver and function

Located:

- on the “Info-CD” in folder “\English\Tiger_Basic_Manuals\new_driver_and_functions”
- in the Tiger-BASIC™ installation in subfolder “..\Manual\Extra_Manuals”
- on our website **www.wilke-technology.com** in section “Downloads”, there under “BASIC-Tiger™ Manuals”

Schematics

- Schematics for the TP1000 Touchpanel Computer

Name: **Schematics_TP1000_Vx_x.pdf**

Located:

- on the “Info-CD” in folder “\English\TP1000”
- on our website **www.wilke-technology.com** in section “Downloads”, there under “Schematics”

Current versions

Device drivers, examples, applications, libraries, data sheets and supplemental manuals in the most current versions are available for download on our website under **<http://www.wilke-technology.com/downloads.php>**.

Additionally you can receive the newest versions, when available, automatically per email newsletter (ca. 2 - 4 per year). Registration for the newsletter under **<http://www.wilke-technology.com/newsletter.php>**.

Thank you very much for your purchase at Wilke Technology - and please use our free of charge technical support when you have questions about hard- or software or we can assist you in any other way. Have fun working with the TP1000!

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TINY, HIGH SPEED MULTITASKING COMPUTERS



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