

User Manual

LPC1700-StickView V1.0

for

LPC1768-Stick

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1 What is the LPC1768-Stick?

The LPC1768-Stick is an easy to use development system designed to demonstrate the ARM/Cortex-core-based microcontroller features and peripheral usage like Ethernet and USB device.

The LPC1768-Stick features are implemented in a USB stick and controlled by an ARM/Cortex-core-based microcontroller from NXP.

When connecting the LPC1768-Stick to a PC's USB port, the microcontroller begins to run the default application which can be controlled with the **LPC1700-StickView** user interface.

2 System Components

The following components are provided:

- LPC1768-Stick hardware
- CD ROM including HiTOP53 IDE and debugger, GNU C Compiler, Tasking Compiler (evaluation version), LPC1768-Stick USB drivers and LPC1700-StickView user interface, user documentation (electronic version) and other documents and examples.

3 Installation

Before plugging in the LPC1768-Stick, insert the supplied autorun CD in your CD-ROM drive and follow the instructions on the screen to install the software.

The setup process performs the installation of the LPC1700-StickView software and a pre-installation of the drivers required for the USB device. In addition, the tool chain with debugger and compiler is installed.

Note

On Windows XP® and Windows Vista® operating systems, the driver installation has to be confirmed several times, as the drivers are not certified by Microsoft.

After successful installation, the LPC1768-Stick can be plugged into one of your PC's USB ports.

The pre-installed drivers will be selected automatically and the LPC-Stick comes up as a new device called **LPC1768-Stick**. On most Windows operating systems, the drivers for the device are found and installed automatically.

If the stick is plugged into the PC for the first time, the installed driver is assigned to the stick.

When the stick is powered by the USB port, the microcontroller begins to run the default application which can be controlled by the LPC1700-StickView user interface.

Manual Driver Installation

If the driver is to be installed manually, select the driver from the **Driver** subfolder located the installation folder.

Deinstallation

For deinstallation of the LPC1700-StickView software, select the **Uninstall** item from the LPC1768-Stick program menu.

4 Updates

The LPC1768-Stick demo application is under continuous development. Furthermore, the supported functionality of a specific LPC1768-Stick depends on the firmware stored in the flash memory of the stick device.

To be able using the newest features, we recommended to visit the [LPC-Stick WEB page](#) from time to time. Updates, FAQs and other information are provided there.

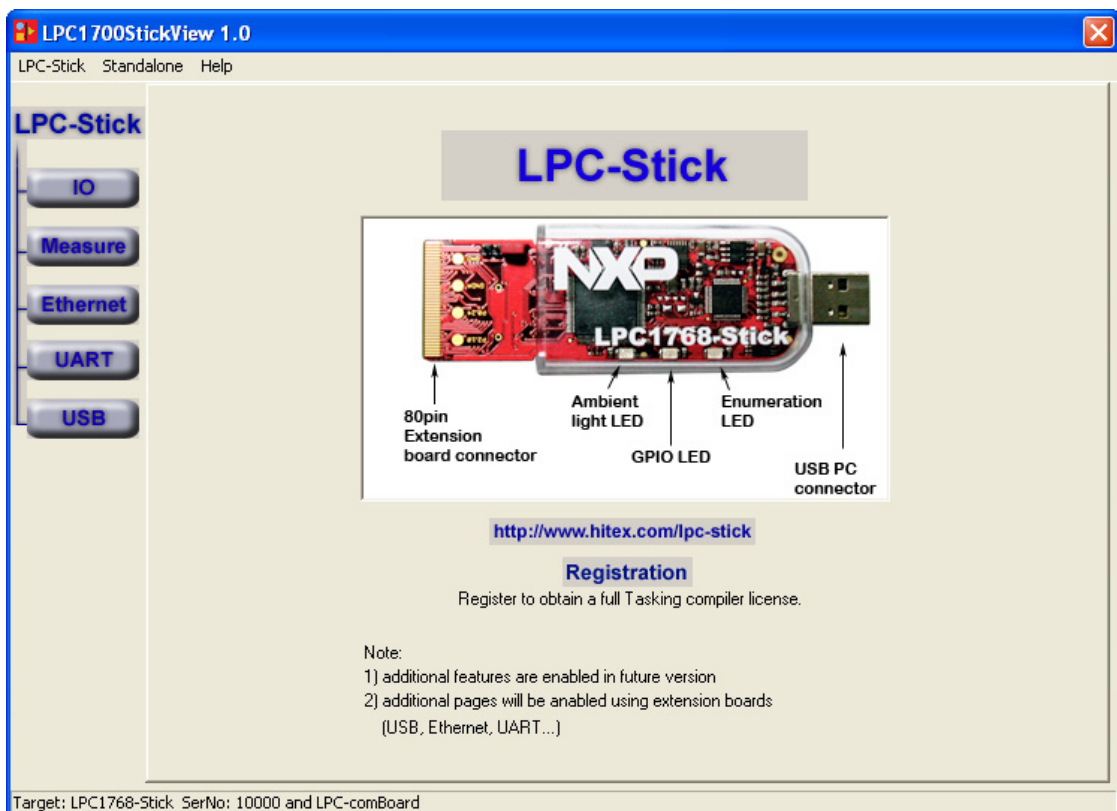
5 Starting the LPC-StickView Software

When starting **LPC1700-StickView** by double-clicking the following desktop icon:



LPC-StickView

the following window (start page) or similar is presented after the device is found:



The current state is displayed in the bottom status bar of the LPC1700-StickView window. Normal state is "Target: LPC1768-Stick SerNo: nnnnn" (see figure above).

The main window provides buttons for the implemented function and their controls. Tabs or menu entries which are currently not activated (either while an extension board is not connected or while a license file is missing or while the feature is not implemented in the current version) are greyed out and can not be selected.

For an overview of the buttons, refer to [p. 13](#).

For an overview of the menu commands, see [p. 14](#).

Notes

Reprogramming the Flash Memory

With delivery, the demo application supporting the LPC1700-StickView software features is located in the Flash memory. If you modify it by using HiTOP with another application, you will first have to reprogram with the demo application as follows:

- 1 Close LPC1700-StickView if running.
- 2 Start HiTOP53 for LPC1768-Stick.
- 3 In the following folder, open the project file "Demo.htp" using the **Project > Open** command:

```
..\Hitex\HiTOP53-LPC1768-Stick\Examples\GNU\Demo\DemoGNU.htp
```

This will reprogram the Flash memory.

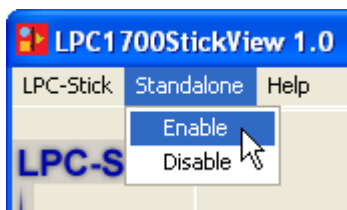
- 4 Reset the target with HiTOP and restart the application executing HiTOP's **Go** command and close HiTOP.
- 5 Restart the LPC1700-StickView software.

Debugging the Demo Application Example with HiTOP

When debugging the demo application example with HiTOP, you will have to note the following:

Start the LPCStickView software and keep it running while debugging the demo application in HiTOP.

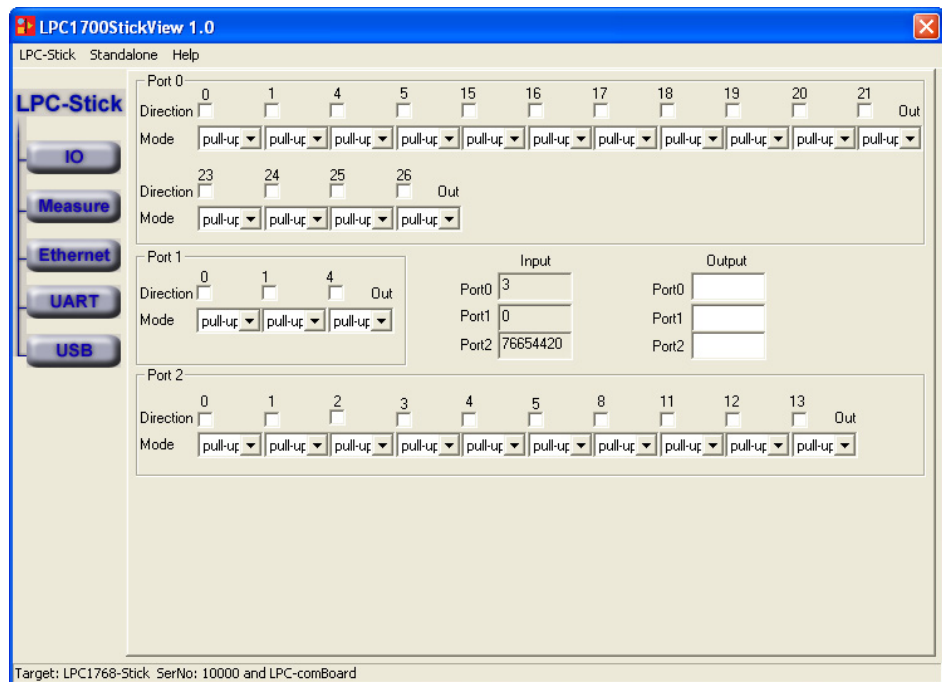
If you want to exit the LPCStickView software, make sure to enable the Standalone mode before exiting:



6 Operating the LPC1768-Stick

From the start page the main windows tab view is entered. Within the main window tab, different control features for the specific microcontroller and the peripherals can be selected and demonstrated.

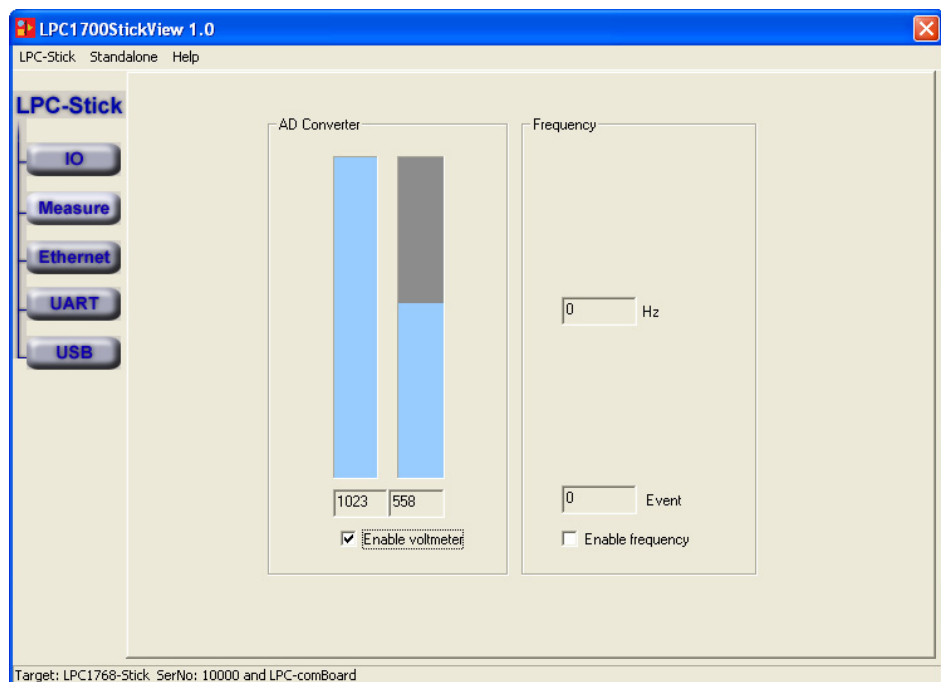
IO



This window gives a good impression on how the ports and pins of the controller can be configured. Direction and mode of all accessible pins can be monitored or changed. In case of connecting an extension board there are changes for fixed configurations like Ethernet or UART functions.

- Direction (default is input, if checked output)
- Mode
- Input and Output data

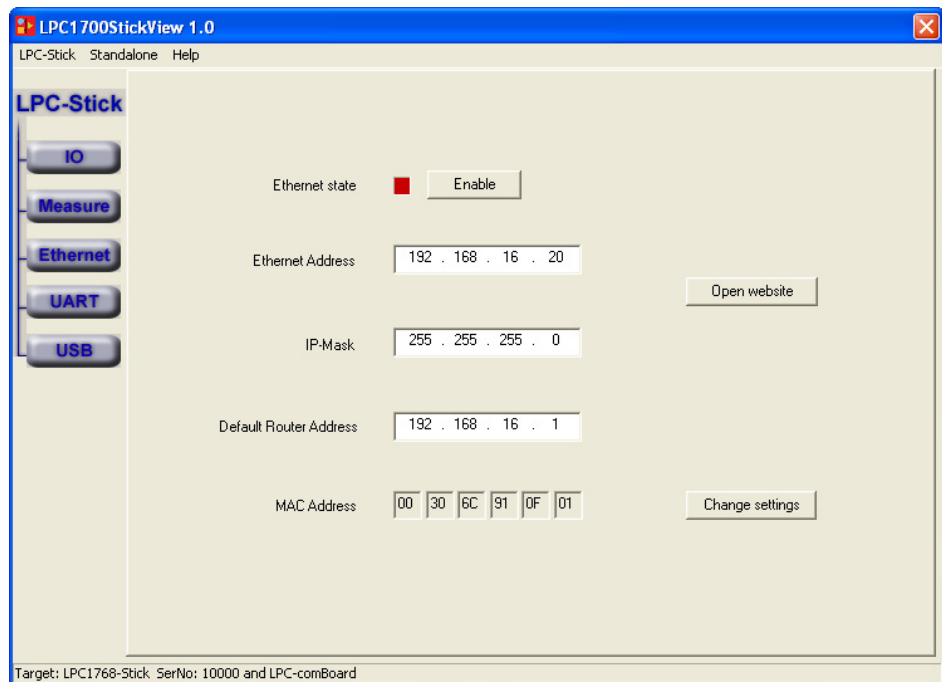
Measure



Two different methods of measurement are displayed.

1. The ADC1 connected to the measure pin of the stick (P0.24) is scanned as well as the ADC0 (LED), the second channel connected to the green user LED (used as ambient light sensor).
2. A Frequency and Event counter can be used simultaneously.

Ethernet



This window shows the current Ethernet settings of the LPC1768-Stick. Ethernet and Default Router Address and IP-Mask settings can be changed according to the local needs.

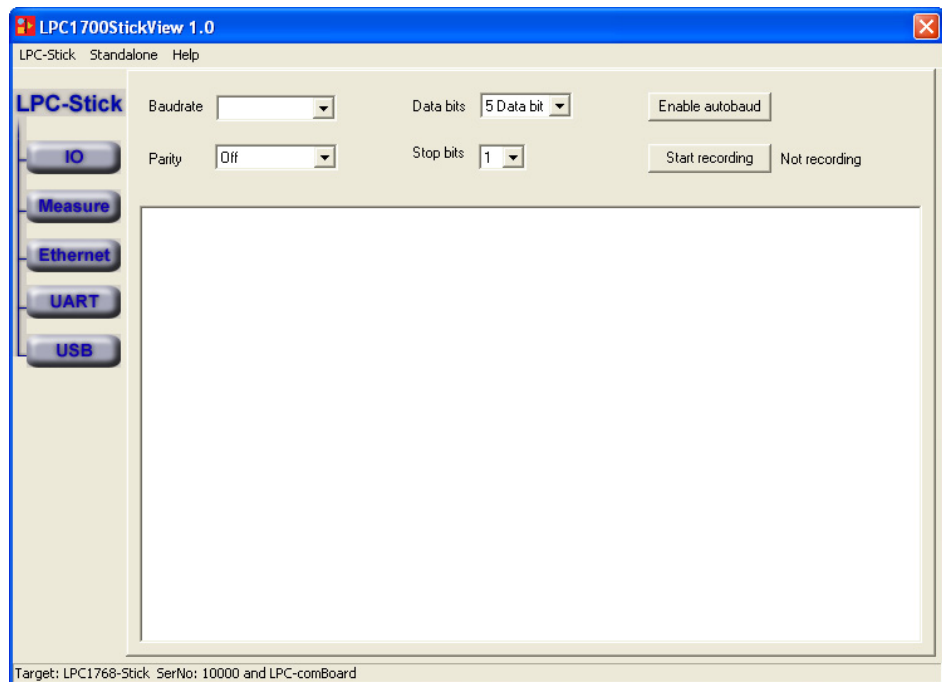
Confirm any changes using the **Change settings** button. After enabling the module, a web server is started using the new settings.

By clicking the **Open website** button, a web browser starts connecting to the web server.

Note

This tab is enabled when attaching the LPC-comBoard.

UART



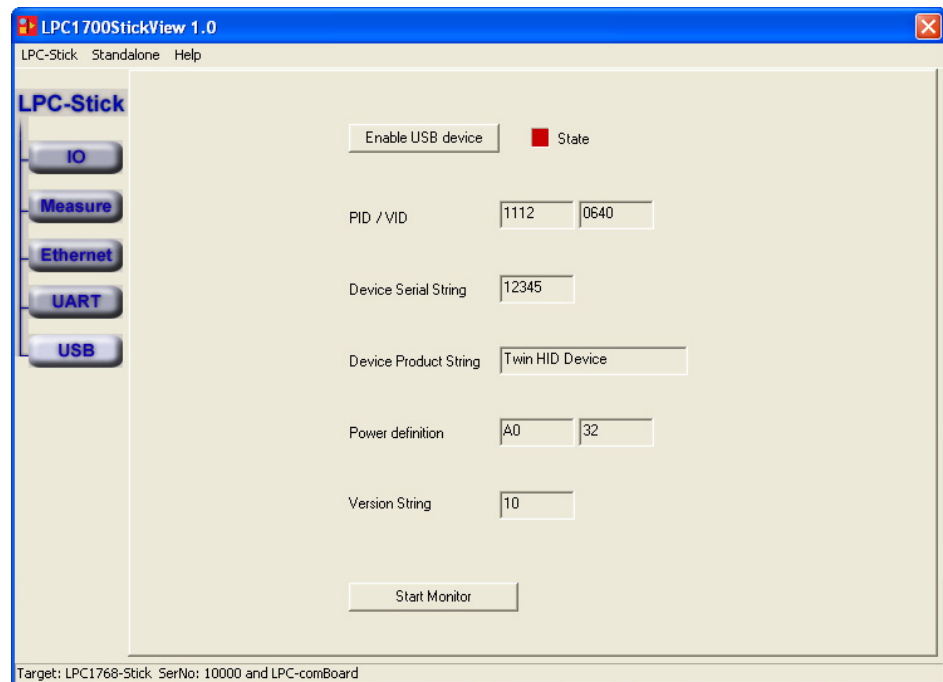
This window shows the UART communication using the extension board's UART connector. After selecting the baudrate, parity, data length and number of stop bits, the UART is initialized.

Clicking on the **Start recording** button or right-clicking into the display area, the data from the UART are scanned and displayed.

Note

This tab is enabled when attaching the LPC-comBoard.

USB



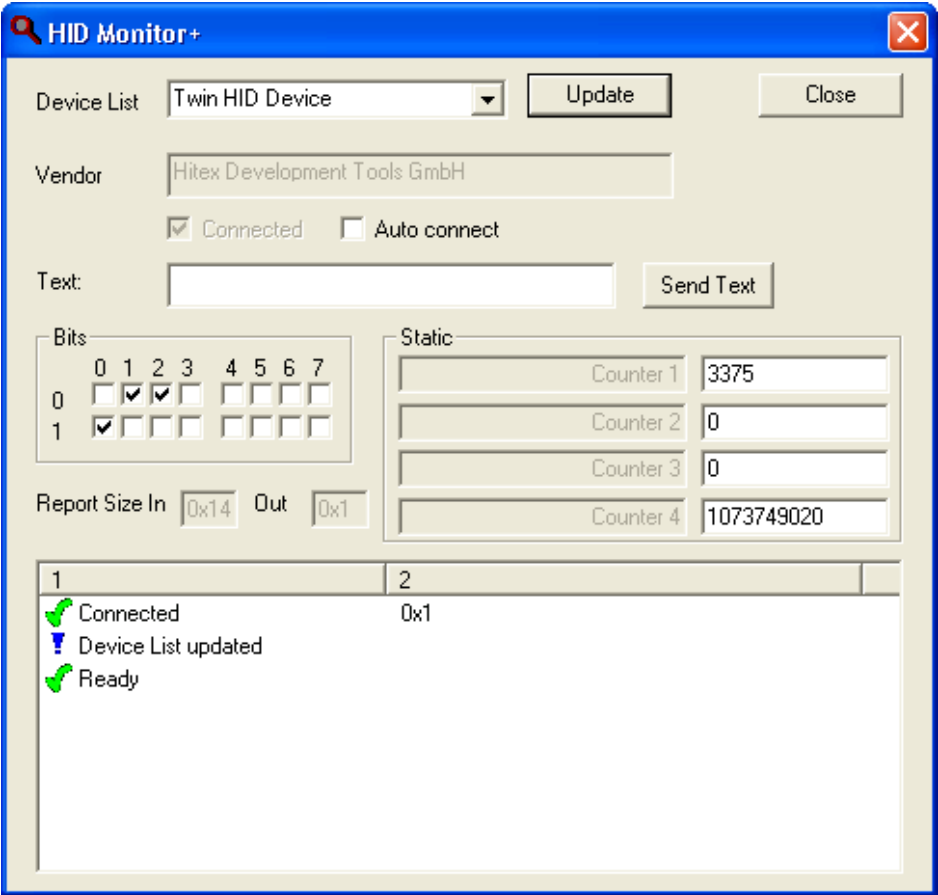
This window enables the user to use USB device on the LPC1768 device.

A **USB Device** configured as a Twin HID Device is implemented transmitting data to the Host PC.

Connection is performed via the USB device connector on the ComBoard extension. After enabling the USB device and connecting to a PC, the data can be monitored via the **Start Monitor** button.

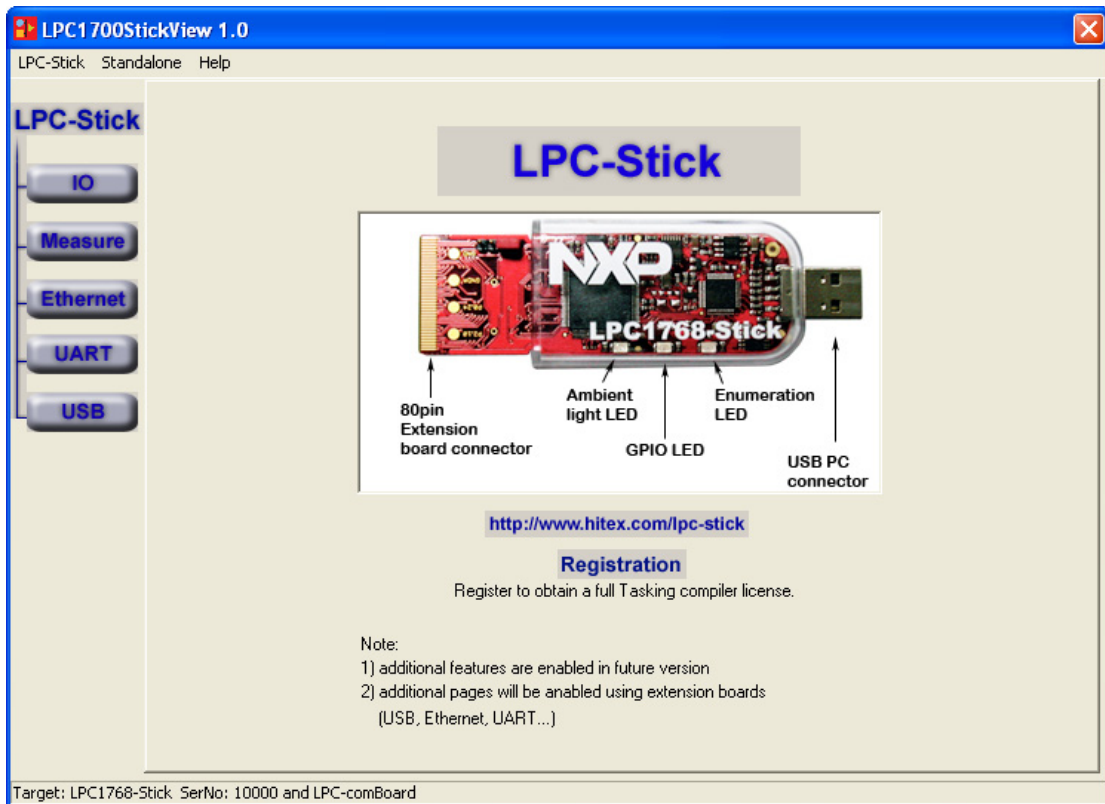
Note

This tab is enabled when attaching the LPC-comBoard.



Selecting the **Twin HID Device** from the Device List connects to the USB device and will start monitoring the data.

7 Start Page Buttons



IO	Changes into page view and opens the IO page.
Measure	Changes into page view and opens the Measurement page.
Ethernet	Setup and start Ethernet settings and WEB server.
UART	Setup comBoard UART port and sniffer.
USB	USB device and host control.

8 Menu Commands

LPC-Stick	
Hardware Reset	Executing this command, the LPC1700-StickView applies resets to the LPC1768-Stick device setting it into its initial state via the reset pin.
SoftReset Device	Executing this command, the LPC-1700StickView applies software reset of the LPC1768-Stick application to its initial state.
Show Start Page	Executing this command, the initial start page of the LPC-1700StickView is shown.
Exit	Exiting the LPC-1700StickView software.

Standalone	
Enable	Enabling standalone mode in combination with extension board.
Disable	Disabling standalone mode.

Help	
User Manual LPC1768-Stick	LPC1700-StickView user manual (this document).
Data Sheet LPC1768-Stick	LPC1768-Stick data sheet (Technical Data, Connections and Controls, Pin Assignment etc.).
Schematic LPC1768-Stick	LPC1768-Stick schematics.
Data Sheet LPC- comBoard	LPC-comBoard data sheet (Technical Data, Connections and Controls, Pin Assignment etc.).
Schematic LPC- comBoard	LPC-comBoard schematics.
Data Sheet LPC- Prototype-Board	LPC-Prototype-Board data sheet (Technical Data, Connections and Controls, Pin Assignment etc.).
Schematic LPC- Prototype-Board	LPC-Prototype-Board schematics.
Info	Displays the current version of the GUI and the firmware.
Visit ...	Link to external web page for the LPC1768-Stick.

9 Troubleshooting

Driver Installation		
	Possible Reason	Remedy
Installation process is not coming up	The CD autostart feature is disabled.	<ul style="list-style-type: none"> Start the installation process by executing the setup.exe file from the CD ROM drive.
No driver found after plugging in the LPC1768-Stick device	The installation process was not done.	<ul style="list-style-type: none"> Start the installation process by executing the setup.exe file from the CD ROM drive.
	The Windows XP dialog to confirm the driver installation, was rejected by the user.	<ul style="list-style-type: none"> If the installation was done successfully, the operating system asks for the according driver after plugging in the LPC1768-Stick device. In the installation directory, select the Driver subdirectory to find the required files. When prompted by the operating system, confirm to install the drivers. If the installation fails or was not done before, execute the setup.exe file from the CD ROM drive
	Wrong installation directory.	<ul style="list-style-type: none"> In the installation directory, select the Driver subdirectory.
Software Messages		
	Possible Reason	Remedy
Can not open port ... to communicate with the device	The LPC1768-Stick device is not connected to the USB port of the PC or the LPC1700-StickView software was not able to detect the LPC1768-Stick on the selected port.	<ul style="list-style-type: none"> Check if the device is connected to a functional USB port of the PC. Check if other devices on a USB port prevent the communication to the device. Check if the driver is installed, or reinstall the driver from the CD.
	<u>or</u> The driver was not installed properly	

