

Pocket PULSE RC User's Manual

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Overview

This product is a remote control and display for a Brüel & Kjaer PULSE Multi analyzer System on a Pocket PC.

The communication with the PULSE system uses a network connection to the PC with running PULSE LabShop. It is not relevant which physical connection is used as long as it supports a TCP/IP socket interface. But usually it will be a wireless LAN (WLAN) connection. Either the PC has its own wireless LAN interface or it is connected via cable to a network with a WLAN access point.

The Pocket PC's software part acts as a client („client software“) and the PULSE PC's software part as a server („server software“). The latter is implemented as an ActiveX component within PULSE LabShop. It is also used as an interface to the user to configure various parameters. Configuration of these parameters is also possible on the Pocket PC.

System requirements

Windows 2000 service pack 2 or Windows XP with service pack 1

PULSE 8 or 9 installed.

A WLAN interface or an access point connected via cable to the PULSE PC

PDA with Windows Mobile 2003 / 2003 SE Pocket PC operating system and a network connection to the PULSE PC

Microsoft ActiveSync 3.7.1 installed (only for re-installing the client software on the Pocket PC).

Installation

When you receive the product the software for the Pocket PC is usually pre-installed. However, the server software on the PULSE PC has to be installed by the user. If you want to update the software on the Pocket PC to a new version or if you need to recover your Pocket PC system it may be necessary to install the client software on the Pocket PC also.

The installation software guides you through the installation procedure. Only if necessary activate the option „Pocket PC Component“. If you activated this option you have to have your Pocket PC connected via ActiveSync the PC on which the installation software is running (For more information on using ActiveSync please see the manufacturer's instructions).

Please follow the instructions of the installation software.

Destination Location

The destination location is used to copy all software components including the Pocket PC's client software (if selected) and the server component for PULSE LabShop. This is a folder on the PC where the installation software is running. If the server software component is selected, this must be a PC with PULSE LabShop installed. If you later select the Pocket PC components the client software will be installed from this folder to the Pocket PC using Microsoft ActiveSync.

Select Components

Please select which component you want to install. Only the PULSE server component is pre-selected because usually your Pocket PC comes with the client software pre-installed.

PULSE Server Component

If selected all necessary server software files will be copied to the destination location and the software will be registered with the PULSE system.

Pocket PC Component

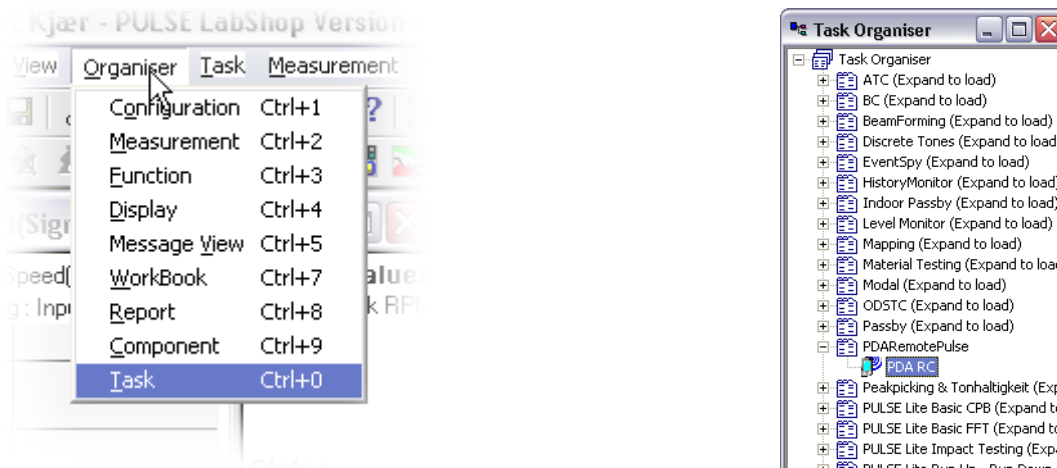
In case of the unlikely situation that you have to re-install the client software on the Pocket PC you can do this anytime by selecting this component. Please ensure that you have connected your Pocket PC via ActiveSync.

Start Installation

All necessary files will be copied to the PC's destination location. The server components will be registered with the PULSE system (if selected) and ActiveSync will go ahead with the Pocket PC client software installation (if selected).


Preparing the server software within PULSE LabShop

After the installation of PDARemotePulse on the PC a new component is available within PULSE LabShop. To activate this component within a PULSE project you need to perform the following



steps:

- Select the menu command “Organizer -> Task Organizer”
- Within the tree search for the node called “PDARemotePulse”.
- Load the component by expanding this node.

The configuration dialog box will be displayed automatically. Also, a new tool bar with the  PDARemotePulse icon is available within LabShop. Click on this icon to hide/un-hide the configuration dialog box. All configuration options will be stored along with this specific PULSE project.

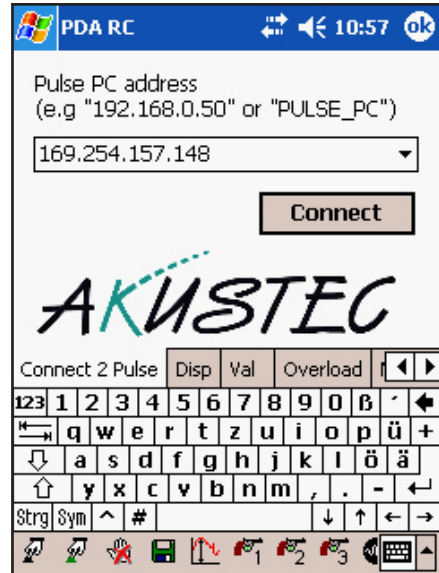
Basic Operations

Establishing a connection

From the Pocket PC's start menu select „Program Files“ and then tap on „PULSE Remote Control“. You will then see the „Connect2Pulse“ page. It is possible to connect to the PULSE system as soon as PULSE LabShop is running and the ActiveX component is loaded via the Task Manager. You need either the network name of the PC or its IP address. The network name cannot be used if you use a computer-to-computer (ad-hoc) connection.

NOTE: If you use an IP address be sure not to use unnecessary digits like leading zeros. This might freeze the OS. Wrong: 192.168.000.067; right: 192.168.0.67.

As soon as the connection is established the server starts to send data, which are then displayed on the Pocket PC's screen. All parameter settings are project dependent and are stored along with the PULSE project or template. So, if you re-use a project file or if you start with such a template, all settings are restored.

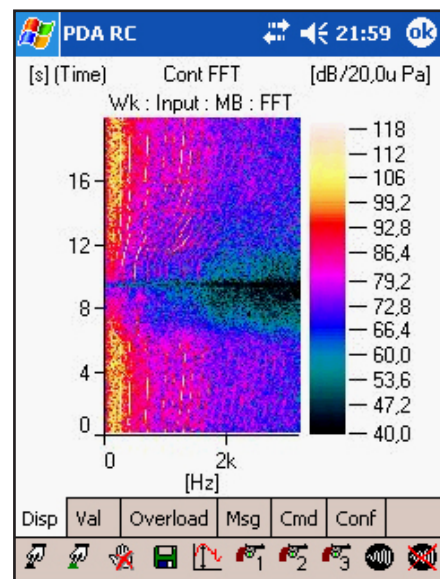


Displaying Measurement data

The following data can be displayed on the Pocket PC's screen using different pages:

- A classic or modern PULSE display
- PULSE Cursor Values from classic displays
- Overload status with history
- Level meter

To change the currently displayed page you can either tap on the appropriate tab control or use hardware keys (if accordingly pre-defined). Each page will offer different options like display orientation, Y-axis scaling, font sizes, font colors. These options are provided by context sensitive menus. To „pop-up“ such a menu use the „tap and hold“ function with the pencil on the screen.



Controlling PULSE

In addition to the display of measurement data it is also possible to control the measurements using the tool bar buttons on the bottom of the screen or use the special „Cmd“ page. You can configure command buttons for this page which can be operated by a touch on the screen.

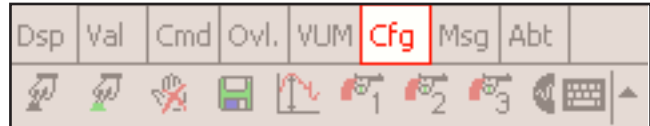
Hardware keys can also be configured to send command to PULSE.

Operation Reference

Configuration

To meet many user's needs the product can be tailored in many ways either using the user interface within PULSE LabShop or the configuration mode on the Pocket PC. All changes are reflected immediately at the other end of the communication channel.

To enter the Pocket PC's configuration mode tap on the „Cfg“ tab after the connection is established.

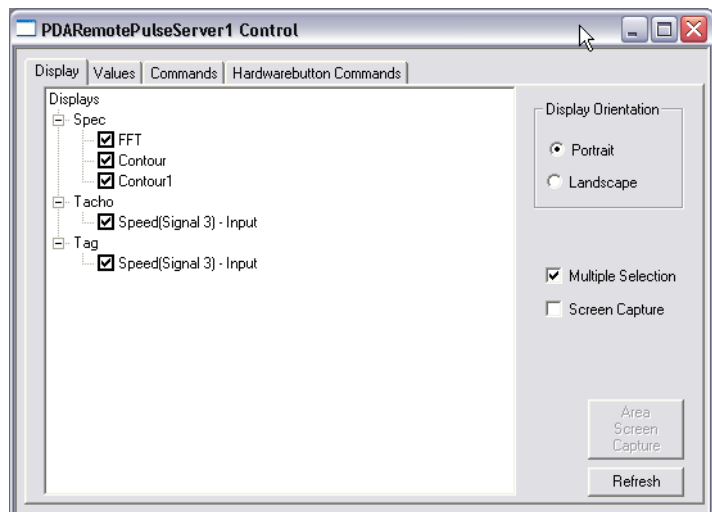
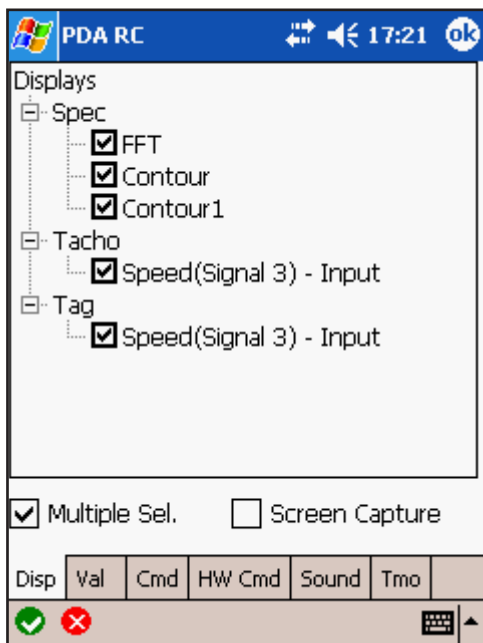


Within PULSE LabShop click on the PDA Remote Control Icon on the tool bar.



Display Setup

This page shows the currently available pulses displays in a tree structure. Here you can select the display to be displayed on the Pocket PC. If the display configuration of the pulses system has been changed, the tree structure can be updated with the „Refresh “ button. If you activated the „Multiple Selection“ option, more than one pulse displays can be selected at a time. The Pocket PC's hardware keys can then be used to switch between these displays (see also “Hardware key setup”).

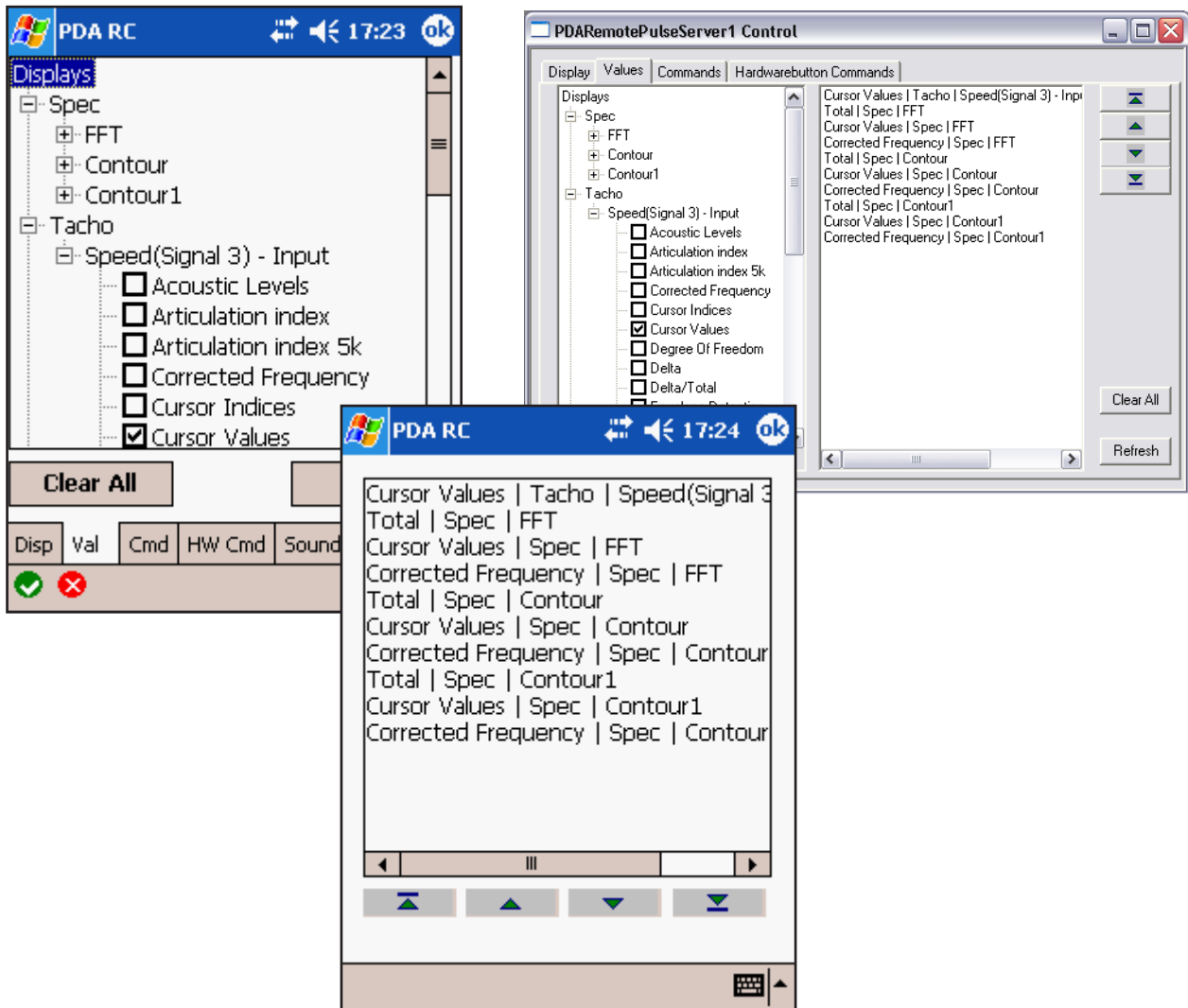


The option “Screen Capture” is useful if you wish a part of the desktop screen to be displayed on the Pocket PC instead of a Pulse display. With this option active, you can also indicate the capture area on the PC by using the “Area Screen Capture” button. Just use the mouse to move the area. The currently

selected orientation, „Portrait” or „Landscape” mode, will be reflected by the area. It is possible to use a hardware key on the Pocket PC to switch between Pulse display and captured screen.

Cursor Values Setup

This page shows the currently available pulses displays with their accompanying „Cursor Readings” in a tree structure. Unlike classic displays, modern displays don't expose cursor readings. All cursor values chosen here are displayed on the Pocket PC's „Val” page as text using the order of the list be-



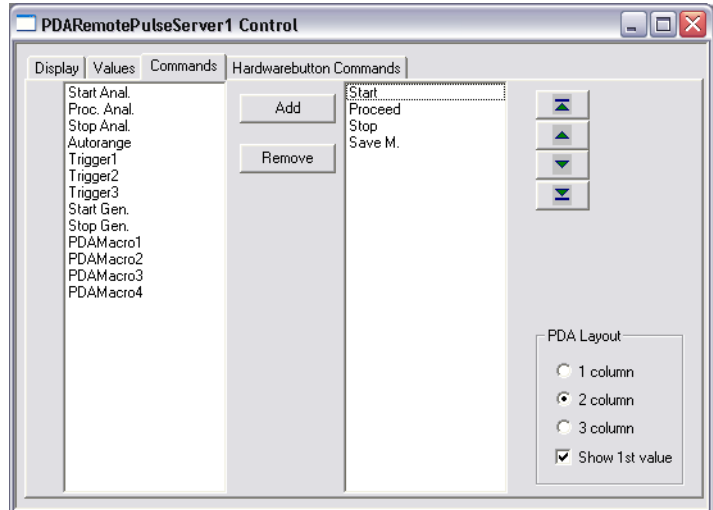
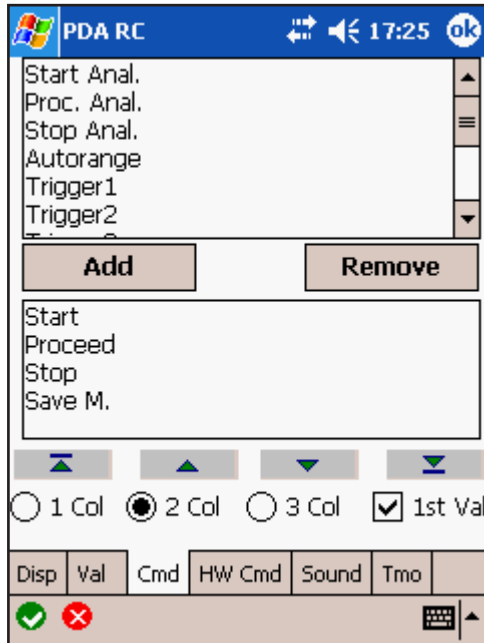
sides the tree. The sequence of the values can be changed by using the buttons on the right of the list. If you are using the Pocket PC to configure the values, only the tree is visible and the sequence can be changed using the sort button.

If the display configuration of the pulses system has been changed, the tree structure can be updated with the „Refresh” button.

The button „Clear All” de-activates all „Cursors Readings”.

Commands

This page is used to select the commands which should be available as big buttons on the touch screen. All further available commands are listed on the left side of the screen (Pocket PC: on top). Select



the commands you want to use and use the “Add” button to transfer the items to the list on the right (Pocket PC: on the bottom). This list contains all activated commands. You can adjust the sequence order by using the buttons to the right of this list (Pocket PC: below this list)

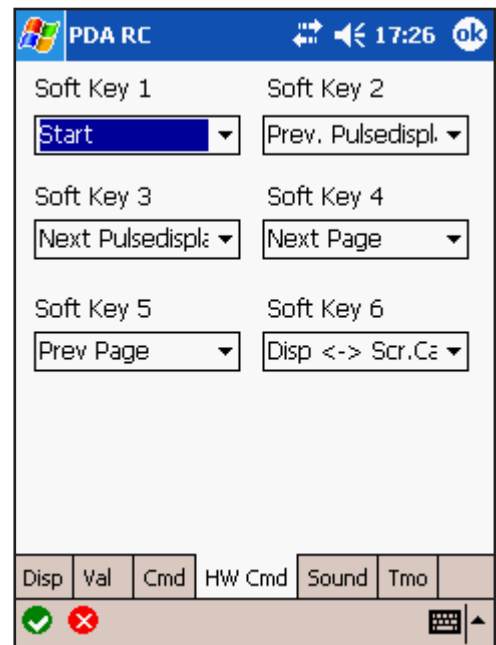
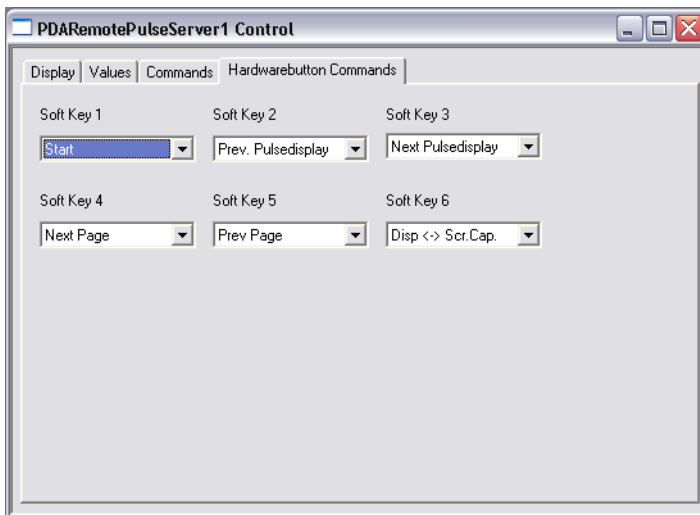
In the second list all active commands are listed. You can also remove selected items from the list by using the „Remove“ button. With the buttons beside (Pocket PC: below) the second list the sequence of the commands can be adapted.

Use the options „1 column“, „2 column“ and „3 column“ to arrange the commands on the touch screen. If the option „1st Value“ is activated the first cursor value in the is also displayed on the Pocket PC’s “Cmd” page.

The following commands are available.

Start	Starts a new measurement with PULSE
Proceed	Proceed a measurement
Stop	Stops a running measurement
Start Anal.	Starts Analyzers
Proc. Anal.	Proceeds Analyzers
Save M.	Saves the current measurement
Stop Anal.	Stops Analyzers
Autorange	Performs an autorange
Trigger1	Triggers "Manual Trigger 1"
Trigger2	Triggers "Manual Trigger 2"
Trigger3	Triggers "Manual Trigger 3"
Start Gen.	Starts generators
Stop Gen.	Stops generators
PDAMacro1	Executes a PULSE VBA Macro named "PDAMacro1"
PDAMacro2	Executes a PULSE VBA Macro named "PDAMacro2"
PDAMacro3	Executes a PULSE VBA Macro named "PDAMacro3"
PDAMacro4	Executes a PULSE VBA Macro named "PDAMacro4"

Hardware Keys



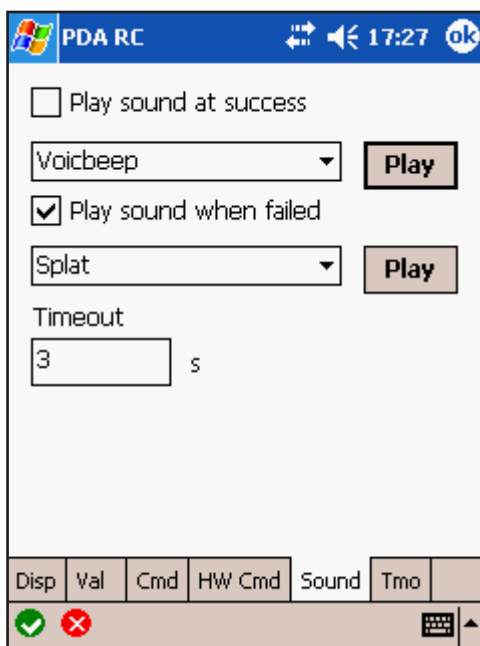
Assign Pocket PC commands to hardware keys so they work as soft keys. You can use either the same commands as described above with the Cmd page options or use additional commands such as

Next Page	Switches to the next Pocket PC page
Prev Page	Switches to the previous Pocket PC page
Disp Page	Switches to the Pocket PC's display page
Val Page	Switches to the Pocket PC's values page
Cmd Page	Switches to the Pocket PC's commands page
Ovl Page	Switches to the Pocket PC's overload status page
VUM Page	Switches to the Pocket PC's level meter page
Disp <-> Scr.Cap	Toggles between PULSE Display and screen capture
Next Pulse display	Switches to the next PULSE Display (if Multiple Selection is activated)
Prev Pulse display	Switches to the previous PULSE Display (if Multiple Selection is activated)

To assign a command to hardware key 1 for some devices it is necessary that it is not pre-assigned by the operation system. With a Dell X3i for example, usually voice recording is assigned to key 1. Before you can use this key with PDARemotePulse you have to set the assignment to <none> first using Start menu -> Settings.

Acoustical feedback

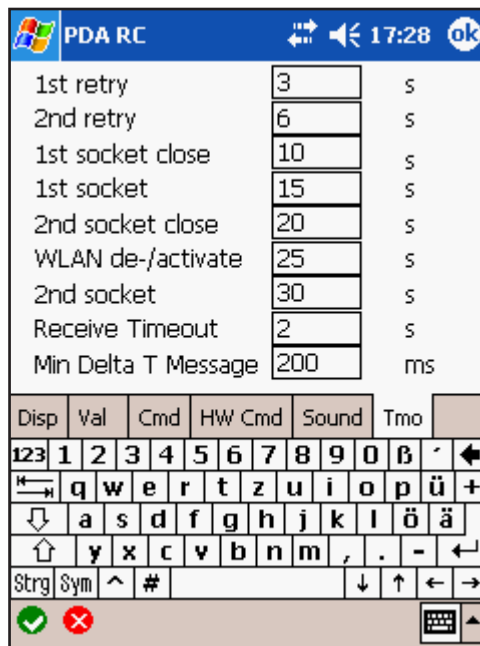
PDARemotePulse gives an acoustical feedback on each command used either by the command bar, the „Cmd“ page or the hardware keys. This is done by playing a wave file. Acoustical feedback can be configured separately for succeeded commands and for failed commands. For failed commands there is also a adjustable time-out.



With the options “Play sound when succeeded” and “Play sound when failed” you can select when a feedback should be given. With the two drop down list fields choose a sound file from the Pocket PC’s Windows folder.. The “Time-out” value represents the maximum time period for a command response. If the time expires, the result is interpreted as failed and if activated, the corresponding sound is played.

Time-out Values for the Network Connection

The software uses a multi-stage time-out scheme to deal with network transfer problems. Using wireless-LAN it may happen that the connection is lost because the Pocket-PC leaves the WLAN range. It may also be necessary to increase time-out values because of a slow connection (e.g. using a mobile phone to connect to a PULSE-PC via GSM and the internet).



1st retry	Data are requested again if the Pocket PC does not receive data from the server component within this time period. Default: 3 s
2nd retry	Data are requested a second time if the Pocket PC does not receive data from the server component within this time period. Default: 6 s
1st socket close	Network socket connection will be closed if the Pocket PC does not receive data from the server component within this time period. Default: 10 s
1st socket reopen	Network socket connection will be re-initialized after this time period. Default: 15 s
2nd socket close	Network socket connection will be closed again if the Pocket PC does not receive data from the server component within this time period. Default: 20 s
WLAN de-/activate	Wireless LAN will be de-activated and then re-activated if the Pocket PC does not receive data from the server component within this time period. Default: 25 s. This is tested only with a Dell Axim X3i.
2nd socket reopen	Network socket connection will be re-initialized again after this time period. Default: 30 s
Receive Time-out	Internal socket time-out. This is the time period within the transmission of a data packet must be completed. After this time the transmission is canceled and the data are requested again. Default: 2 s
Min. Delta T Message	The minimum time in milliseconds between two data packets. If the update rate is too fast for your application you can increase this value. Default: 200 ms.

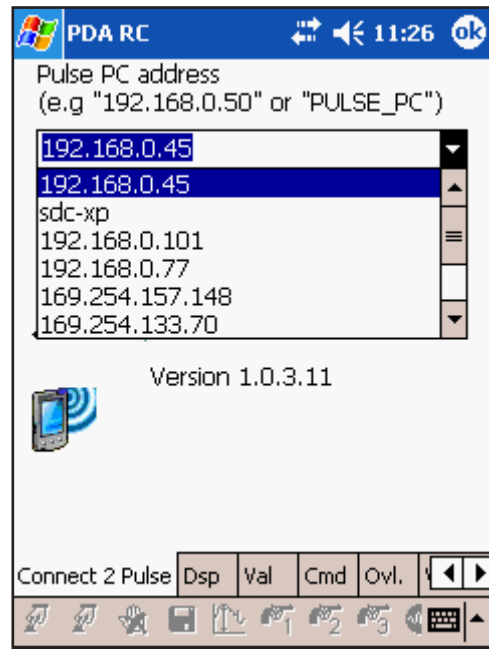
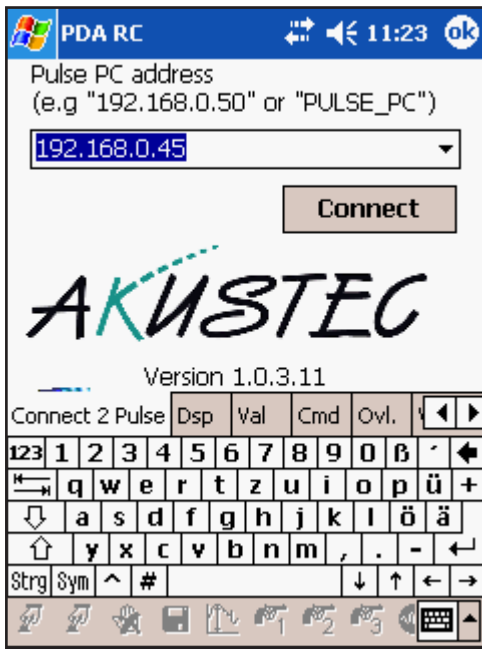
Pocket PC Pages

The concept of the Pocket PC client software is to use different pages to display information or to handle remote control commands. There is also a tool bar located at the bottom of the screen which can be operated independently from the currently selected page. Also the hardware keys may be operated independently.

This chapter describes the different pages of the client software.

Connect2Pulse

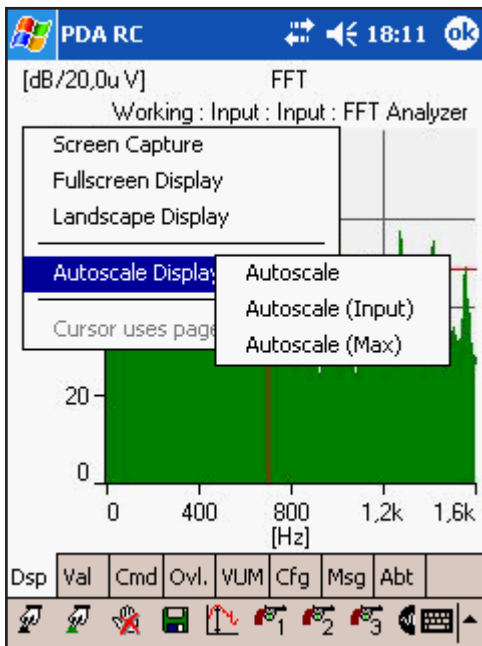
As described already this page shows up if you start the client software on the Pocket PC. Choose the PULSE computer's name or IP address from the combo box. If there was no connection before (usually after a fresh installation) you have to type in a new connection. Just tap on "Connect" to communicate with the server component embedded into PULSE LabShop. To add new network address to the list you will use the SIP keyboard which is located at the right bottom of your Pocket PC's display. As soon as the connection is established, you can use the other pages on the Pocket PC as described below.



NOTE: The communication uses TCP/IP ports 5823 and 5824. This is an important information if you have to configure a firewall or router to let these packets pass or to configure a inverse NAT table. For more information on this subject, please ask you network administrator.

Display Page (Disp)

The display page shows the currently selected PULSE classic display or, if Screen Capture is activated, the currently selected part of the PULSE PC's desktop screen. The update rate depends on the complexity of the graphics and the connection speed. It may be up to 4 or 5 frames per second.



If a PULSE display is selected, the hardware cursor keys of the Pocket PC may be used to move the cursor position within the PULSE display.

If Multiple Selection is active and if more than one PULSE display is selected you can use the hardware key commands "Next pulse display" and "Prev. Pulse display" to step through these displays. It is also possible to change between the current PULSE display and Screen Capture using a hardware key or the context menu command.

If Screen capture is selected you can use the Pen or the cursor keys to move the captured part of the PC's desktop. With the cursor keys it is also possible to move the area in page increments.

Using „Tap and Hold“ on the display a context menu shows up. The following menu commands are available:

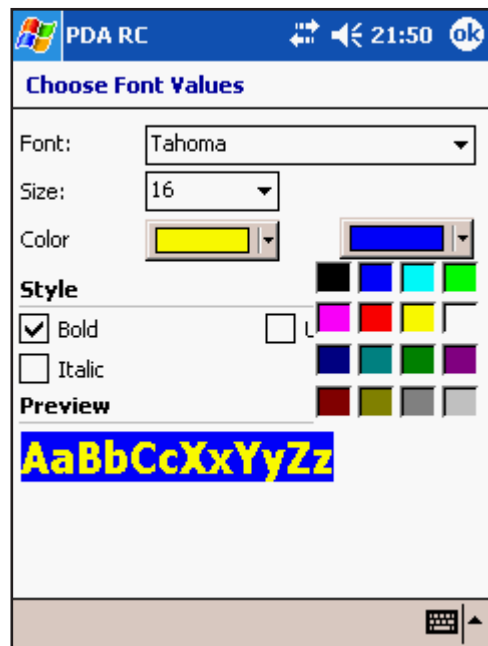
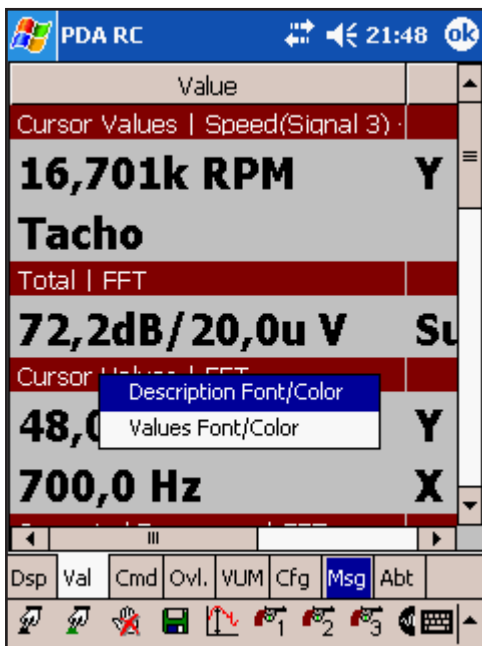
Screen Capture	Toggles between “PULSE Classic Display” and “Screen Capture” mode.
Fullscreen Display	Switches the display page to fullscreen mode an vice versa
Landscape Display	Turns the display to landscape mode an vice versa. This functionality is already available with Windows Mobile 2003 first edition.
Autoscale Display (Y-Axis)“	Autoscale the Y-axis of a PULSE display like you know it from PULSE LabShop: Autoscale, Autoscale (Input) and Autoscale (Max). This command is not available with in screen capture mode.
Cursor uses page incr.	If you are using screen capture mode this option causes the cursor key to move the display area by an increment of one page.

Value Page (Val)

This page shows cursors readings of selected PULSE display cursors. The presentation essentially consists of two columns „Value” and „Description“. A heading shows the identification of the value and the value itself may consist of one or more lines (depending on the cursor readout with PULSE). If available the second column „Description“ may display the unit of the value or other descriptive information (e.g. type of axis X, Y, Z. The width of the columns may be adjusted using the pen. Tap on the column boundary and move it to adjust the column size.

If you select a cursor value with the pen you can use the cursor keys to move the cursor within PULSE. If you use the cursor keys without having selected a cursor value there will be an error beep.

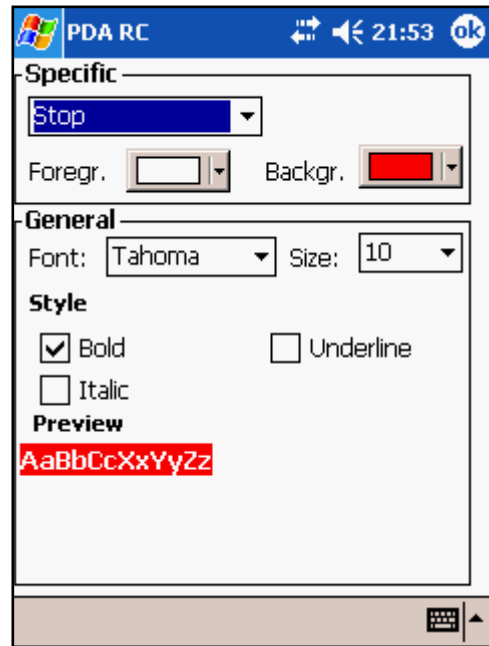
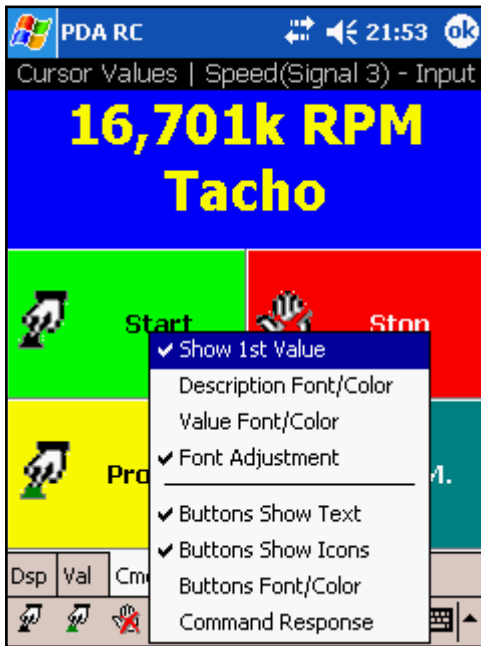
With the context menu on this page you can adjust the font sizes and colors. The dialogues can be called for adjusting the character font and the colors. The following characteristics are adjustable in each case.



Command Page (Cmd)

With this page you can operate the PULSE system with a fingertip. Just define some big touch screen command buttons and you are done. You can choose to have the buttons arranged in 1 to 3 columns. If you like you can also activate the option “Show 1st Value” which activates the display of the topmost cursor value of the Value Page also on the Command Page. If a button is pressed the color of the button changes and, if activated, also an acoustical feedback is given.

You can also change the appearance of the buttons and various font attributes. The option font adjustment is used adjust the cursor values font size so it will always fit on the display.



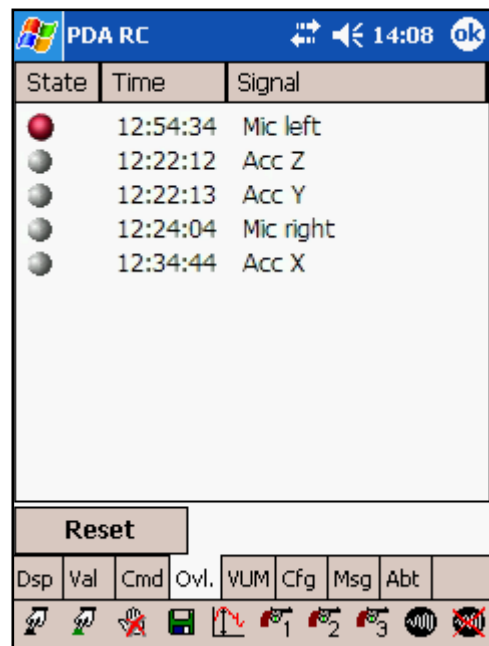
Overload Status Page (Ovl)

This page shows a list with current overload events and also a history of overload in the past. To clear the history events use the reset button. If an overload occurs and you are currently using another page the tab of the “Ovl” page will be colored blue.

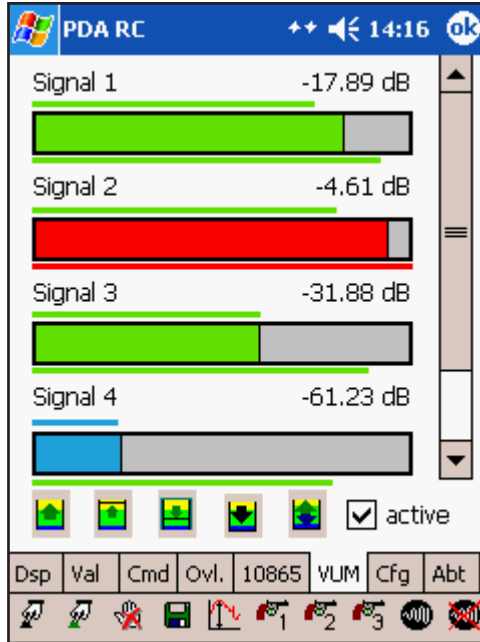
Level Monitor Page (VUM)

This page indicates the levels of the channels like it is available with the PULSE “Level Meter”. In order to prevent the PULSE system from unnecessary load you will have to activate the level meter by checking the option “active”.

Above and below the main bar for each channel min and max hold values are indicated by narrow bars. The levels are indicated in dB relative to the max



input configuration of each channel. If there are more than four active channels used by the PULSE project you can use the scroll bar on the right to scroll through the channels. Furthermore you may use the most important commands of the PULSE Level Meter directly with the Pocket PC using the small buttons at the bottom of the page. The following commands are available:



	Decrease Max Input	The input range of all signals is stepped down to the next lower value.
	Increase Max Input	The input range of all signals is stepped up to the next higher value.
	Reset Min/Max	The Min/Max indicators of all Signals are reset.
	Autorange to Input Level	Sets the input range related to the Min/Max indicators.
	Set to Max	All channels are set to maximum input level

In addition you can step up and down the input level of each channel separately by using “Tap and Hold” on a channel.

Configuration Pages (Cfg)

Configuration is described in the chapter “Configuration” and is implemented as a dialog box with a set of pages where you can change the settings. If you are finished use one of the two the OK buttons to accept the changes. If you want to discard the changes use the red cancel button instead.

About Page (Abt)

This page shows the version number of the client software. Usually the version numbers of the server and the client software should be the same.

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