Instruction Manual

VISAM TouchPanel

VTP-AX157 / VTP-AX 158 /

VTP –AX 216 / VTP-AX 218

A product of the

VBASE - HMI/SCADA – family

Document: **HB_VTP-AX157_158_216_218_v1.0e**

Version: 1.0, English

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1 Important Explanation

To ensure the user a fast installation and startup of the described devices it is essential to carefully read and note the following instructions and hints.

1.1 Legal Bases

1.1.1 Copyright

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1.1.2 Personnel Qualification

The construction of the following instruction and the usage of the VBASE-product family require basic knowledge about the used windows operating system and the used remote systems. (e.g. SPS)!

The in this document described product use is directed exclusively to professionals or trained personnel, who are also familiar with the valid standards.
The VISAM GmbH offers at request inexpensive training for the use of the here described products.

1.1.3 Intended Use

The systems are delivered from factory with the specific use case and with a dedicated hardware and software configuration. Alterations are only allowed in the context of the in the documentation featured possibilities. All other changes to the hardware or software and the non-conforming use of the systems nullify the liability of VISAM GmbH.

1.1.4 License Agreement

The usage of all in this documentation described programs and program parts are subject to the VBASE license agreement.

1.2 Range of validity

This document provides a general description, in conjunction with certain hardware and/or software. Note the latest and detailed descriptions accompanying the products!

1.3 Used symbols

	**Note** Information that should be noted to ensure a faultless and effective operation.
	**Hint** Tips and hints for the efficient use of the system respectively system optimization.
	**ESD** Warning of damage to the systems/components by electrostatic discharge. Precautions should be taken when handling electrostatically sensitive components.

2 Introduction

2.1 Regarding this document

This manual is intended to clarify the use of the VISAM TouchPanel devices („VTP"). In this document the device specific setting and possibilities are described.
The handling of the on this device installed VBASE HMI/SCADA software is described in a separate description.

3 Specification

Hint: The model variants VTP-AX___-**OS** are delivered without a VBASE runtime environment. This systems are pure TouchPanels with operating system. All descriptions that relate to the VBASE HMI/SCADA do not apply to these devices.

3.1 System data

3.1.1 VTP-AX 157:

Processor (CPU): Intel Atom D2550 Dual Core 1,8 GHz with 1 MB Cache
Graphic (VGA): Intel embedded graphic
RAM: 4 GB DDR3 1066 MHz SDRAM
Data memory: 64 GB SSD
LAN: Intel 82567V 1000 Mbps, Intel 82583V 1000 Mbps
Memory module-slot: Compact Flash Type I/II

3.1.2 VTP-AX 158:

Processor (CPU): Intel Core i3 3217UE 1,6GHz
Graphic (VGA): Intel embedded graphic
RAM: 4 GB DDR3 1600 MHz SDRAM (bis 8GB erweiterbar)
Data memory: 64 GB SSD
LAN: Intel 82567V 1000 Mbps, Intel 82583V 1000 Mbps
Memory module-slot: Compact Flash Type I/II

3.1.3 VTP-AX 216:

Processor (CPU): Intel Atom D2550 Dual Core 1,8GHz
Graphic (VGA): Intel embedded graphic
RAM: 4 GB DDR3 1066 MHz SDRAM
Data memory: 64 GB SSD
LAN: Intel 82567V 1000 Mbps, Intel 82583V 1000 Mbps
Memory module-slot: Compact Flash Type I/II

3.1.4 VTP-AX 218:

Processor (CPU): Intel Core i7 3517UE 1,7GHz
Graphic (VGA): Intel embedded graphic
RAM: 4 GB DDR3 1600 MHz SDRAM (bis 8GB erweiterbar)
Data memory: 64 GB SSD
LAN: Intel 82567V 1000 Mbps, Intel 82583V 1000 Mbps
Memory module-slot: Compact Flash Type I/II

3.2 Interfaces

3.2.1 VTP-AX 157:

Serial Interface: 3 x RS232/422/485
Other: 1 x VGA & HDMI, 1 x Audio Line-out , 1 x Mic-in
Network (LAN): 2 x RJ-45 Gigabit ethernet connections
USB: 4 x USB 2.0
Extensions: 1 x Mini PCIe/mSATA

3.2.2 VTP-AX 158:

Serial Interface: 2 x RS232 COM (RS-422/485)
Other: 1 x VGA & HDMI, 1 x Audio Line-out, 1 x Mic-in
Network (LAN): 2 x RJ-45 Gigabit ethernet connections
USB: 2 x USB 2.0, 2 x USB 3.0
Extensions: 1 x Mini PCIe/mSATA

3.2.3 VTP-AX 216:

Serial Interface: 3 x RS232 COM (RS-422/485)
Other: 1 x VGA & HDMI, 1 x Audio Line-out, 1 x Mic-in
Network (LAN): 2 x RJ-45 Gigabit ethernet connections
USB: 4 x USB 2.0
Extensions: 1 x Mini PCIe/mSATA

3.2.4 VTP-AX 218:

Serial Interface: 2 x RS232 COM (RS-422/485)
Other: 1 x VGA & HDMI, 1 x Audio Line-out, 1 x Mic-in
Network (LAN): 2 x RJ-45 Gigabit ethernet connections
USB: 2 x USB 2.0, 2 x USB 3.0
Extensions: 1 x Mini PCIe/mSATA

3.3 LCD Display

3.3.1 VTP-AX 157 & VTP-AX 158:

Display Type: TFT LCD
Size: 15,6"
Maximum resolution: 1366 x 768 Pixel
Maximum amount of colors: 262.000
Viewing angle (H/V): 170° / 160°
Brightness: 300 cd/m²

3.2.2 VTP-AX 216 & VTP-AX 218:

Display Type: TFT LCD with LED backlight
Size: 21,5"
Maximum resolution: 1920 x 1080 Pixel
Maximum amount of colors: 16,7 mio
Viewing angle (H/V): 178° / 178°
Brightness: 250 (optional 400) cd/m²

3.4 Touchscreen

3.4.1 VTP-AX 157 & VTP-AX 158:

Type: Analog resistive 5-wired / PCT
Controller: Penmount (USB)
Translucent: ca. 80% ± 5%
Lifespan: 36 Million touches (onto a single point) / 50 000 hours at PCT

3.4.2 VTP-AX 216 & VTP-AX 218:

Type: Analog Resistive 5-wired / PCT
Controller: Penmount (USB)
Translucent: ca. 80% ± 5%
Lifespan: 36 Million touches (onto a single point) / 50 000 hours at PCT

3.5 Power Supply

3.5.1 VTP-AX 157 & VTP-AX 216:

Supply Voltage: 12 VDC (provided by external 60 W power supply unit)
Electricity Demand : typically 32W (maximum of 40W)

3.5.2 VTP-AX 158 :

Supply Voltage: 12 VDC (provided by external 60 W power supply unit)
Electricity Demand : typically 40W (maximum of 50W)

3.5.3 VTP-AX 218 :

Supply Voltage: 12 VDC (provided by external 84 W power supply unit)
Electricity Demand : typically 45W (maximum of 65W)

3.6 Integrated Software

3.6.1 VTP-AX 157 & VTP-AX 216:

Operation system: Microsoft Windows 7
HMI/SCADA: VBASE runtime environment

The integrated software is embedded software that may be only operated on the delivered hardware system!

3.6.2 VTP-AX 158 & VTP-AX 218:

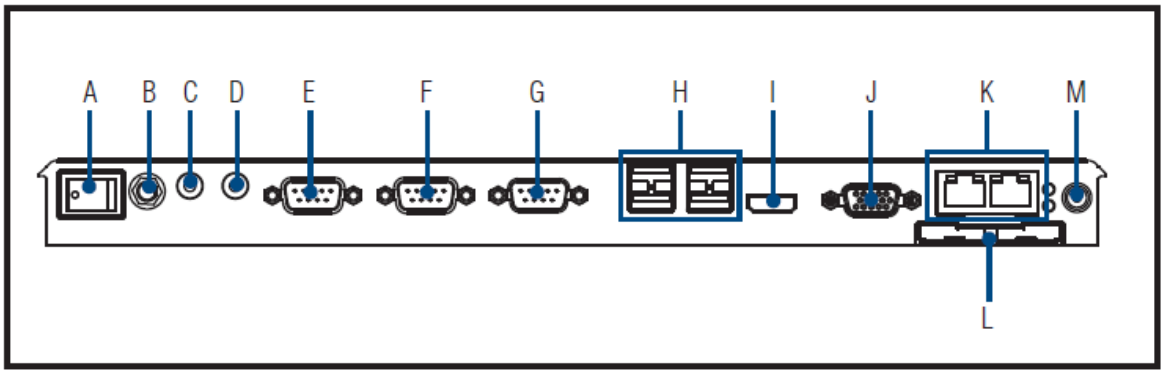
Operation system: Microsoft Windows 8 Pro (opt. also Win 7 possible)
HMI/SCADA: VBASE runtime environment

The integrated software is embedded software that may be only operated on the delivered hardware system!

3.7 Interface Arrangement

The arrangements of the interfaces are depicted in the following figure:

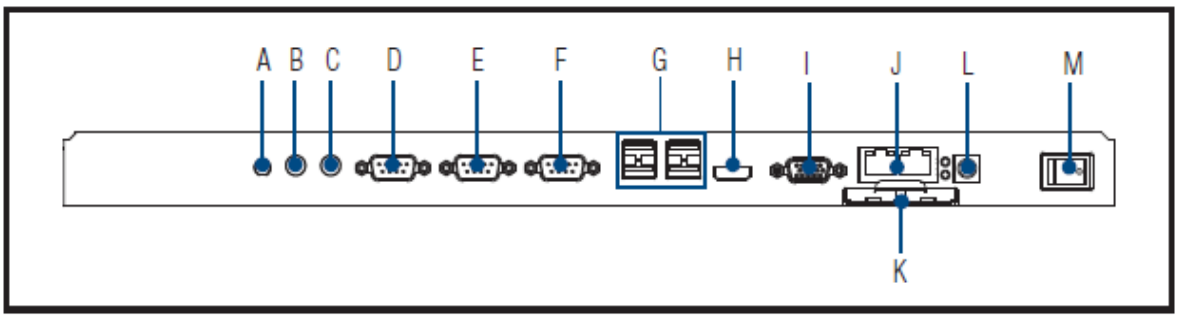
3.7.1 VTP-AX 157/158



A. Power Switch	H. USB 2.0 x 4
B. Antenna Port	(USB 2.0 x 2, USB 3.0 x 2 for VTP-AX 158)
C. Line-out	I. HDMI
D. Mic-in	J. VGA
E. COM3 (not at VTP-AX 158)	K. LAN Ports x 2
F. COM2	L. CFast (not at VTP-AX 158)
G. COM1	M. DC Input

Figure 1 Interface Arrangement VTP-AX 157/158

3.7.2 VTP-AX 216/218



A. Antenna Port
B. Line-out
C. Mic-in
D. COM3 (VTP-AX 216 only)
E. COM 2
F. COM 1
G. USB 2.0 x 4 (USB 2.0 x 2, USB 3.0 x 2 for VTP-AX 218)
H. HDMI
I. VGA
J. LAN Ports x 2
K. CFast (VTP-AX 216 only)
l: DC Input
M. Power Switch

Figure 2 Interface Arrangement VTP-AX 216/218

3.8 Connection assignment

3.8.1 Power Supply

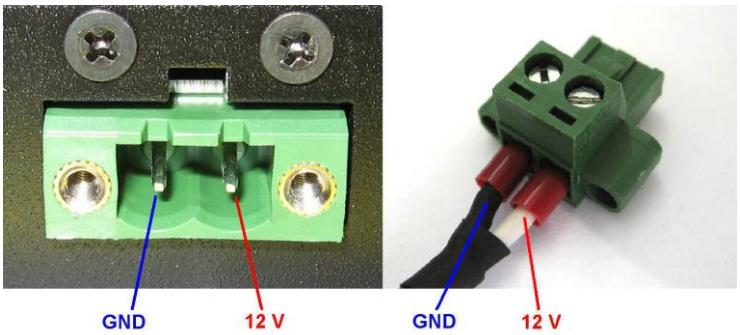


Figure 3 Plug Power Supply

3.9 Power Switch

The power switch (ATX-switch) is located at the backside at the very left (VTP-AX 157/158) respectively at the very right beside the connection for the power supply (VTP-AX 216/218) (see Figure 1/2).

3.10 Environmental Conditions

Environmental Temperature (while operating): 0 ~ 40°C
Storage Temperature: -20 ~ 60°C
Humidity: 10 ~ 95% at 40° C (non-condensing)
Vibration Resistance: 0,5 Grms (5 ~ 500 Hz)

3.11 Safety

Safety front side: IP65 / NEMA 4

4 Software-Settings

4.1 Setup / Changing of the network (IP)-address

Ensure that the write protection filter was disabled before changing the system settings. Alternatively, you must apply the changes manually. (Additional descriptions in chapter 4.2)

To change the network-address of the device, follow these instructions:
Open the windows start-menu >> Settings. Select the point "Network and Dial-Up Connections".

Figure 4 Windows Start-Menu

Figure 5 Network connections

By right-clicking the corresponding LAN-connection and by selecting the last entry in the context-menu („Properties") the properties of the network card can be opened and edited.

Figure 6 Properties of the network card

Search and select in the list of elements the entry „Internet Protocol (TCP/IP)" and open it with a double-click or by clicking the button properties.

Figure 7 Ethernet-Settings

In the now opened property-window, enter the desired „IP-address", the „subnetmask" and the „default gateway" (network-address of the „IP-router"). If needed, the IP-address of the „DNS-Server" can be entered as well. Confirm your inputs by clicking the "OK"-button and close the opened window.

4.2 Secure system settings against unintentional changes

4.2.1 General (only applies to models with XP embedded)

The devices of the VTP-AX-series are by default delivered with two partitions. The first partition ("system") contains the the operating system and the associated components (device driver as for example for the Touchscreen). The second partition contains the VisAM DotNet PRO runtime environment.

To secure the system partition against unintentional changes a write protection filter ("EWF-Manager") is integrated. This filter must be activated by the administrator after the setup of the system. The write protection filter should only be activated to protect the system partition, as the VBASE runtime environment requires the write access to the storage partition.

In the following lines the most important functions of the write protection filter are described.
The commands for the write protection filter must be entered via the commandline ("CMD.exe"). To invoke the commandline open the windows start-menu >> "execute" and enter the command **cmd** and confirm this command by clicking "OK".

4.2.2 Query the state of the write protection filter

By entering the command **ewfmgr c:** the state of the protection filter can be queried. In the depicted example (figure 8) the state is = deactivated ("DISABLED") and the command for the next boot is not defined ("NO_CMD").

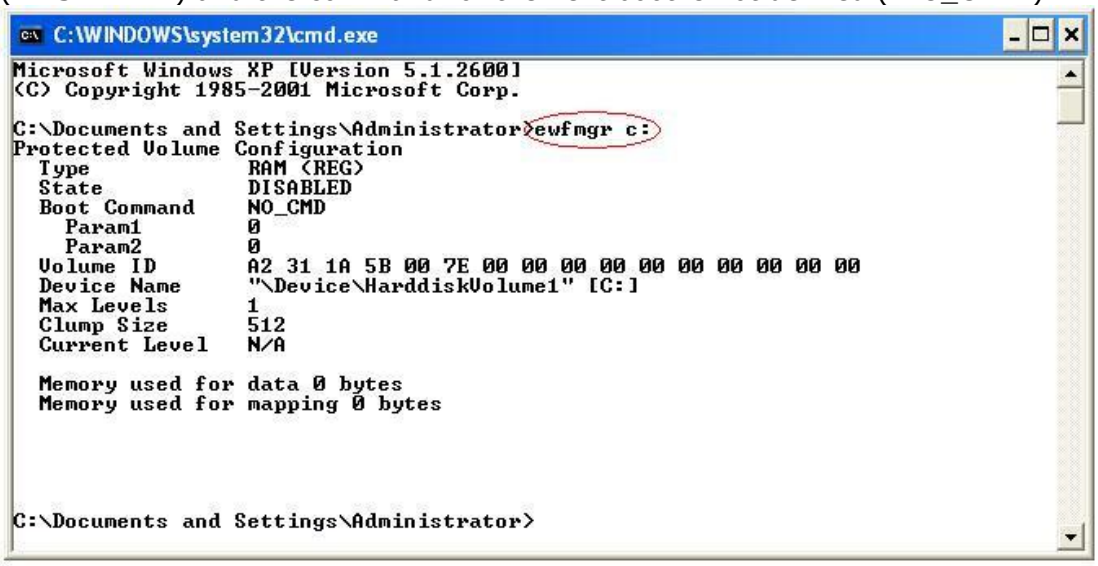


Figure 8 State of the write protection filter (EWF-Manager)

4.2.3 Activate write protection filter

To activate the write protection filter enter the command **ewfmgr c: -enable**.

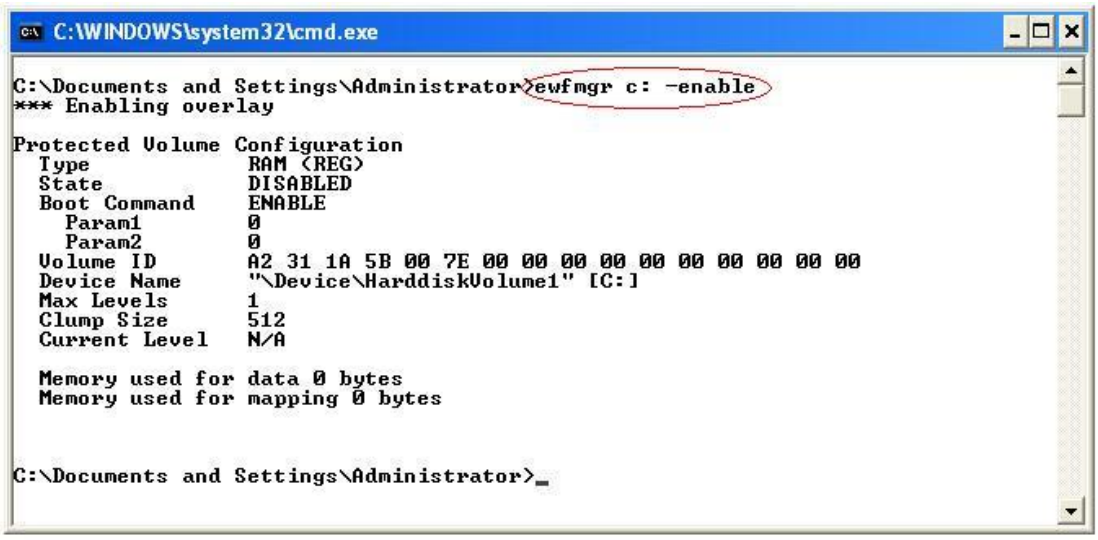


Figure 9 Activate write protection filter (EWF-Manager)

As depicted in figure 9 the current state is = deactivated ("DISABLED") and the command for the next reboot ("BOOT COMMAND") is set to "ENABLE". This means that the write protection filter is activated after the next reboot of the system.

4.2.4 Deactivate write protection filter and save changes

If you have to perform changes in the range of the operating system (e.g. network- or display settings) the write protection filter must be deactivated first or the changed settings must be performed manually. Otherwise all performed changes are lost when shutting down or restarting the device!
To perform changes to the system please perform as followed (see figure 9 and 10):

-Restart system
-Enter the command **ewfmgr c: -commitanddisable -live** into the commandline to deactivate the write protection filter
-Perform changes to system
-Restart system
-Enter the command **ewfmgr c: -enable** into the commandline to reactivate the write protection filter
-Restart system

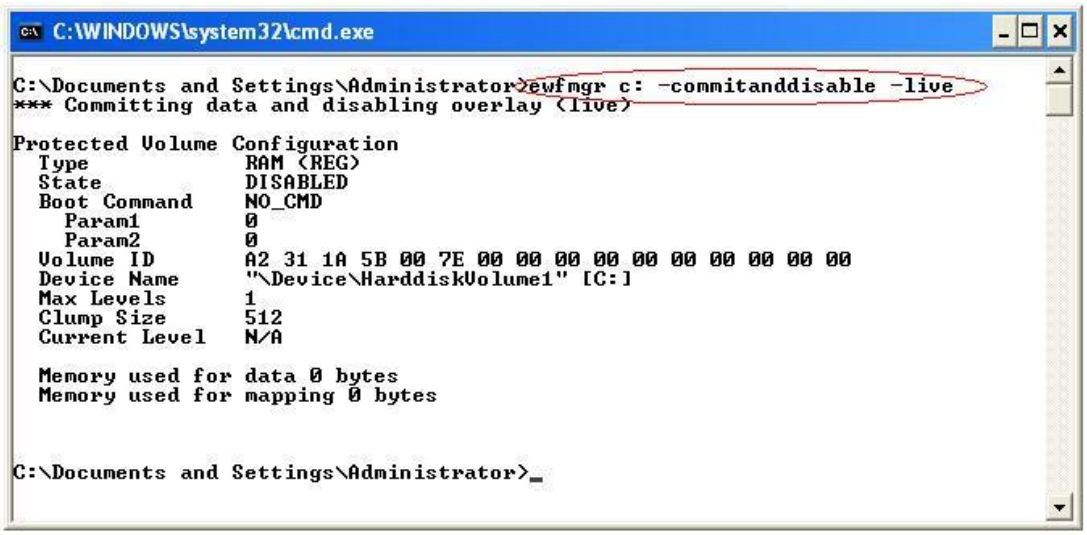


Figure 10 Deactivate write protection filter (EWF-Manager)

Another method to perform permanent changes to the system settings is available with the command **`ewfmgr c: -commit`**. With this command all changes that were performed since system start can be finalized and „manually" saved to the system without the need to deactivate the write protection filter or to restart the system.

4.3 Automatic starting of the HMI-application

Ensure that the write protection filter was disabled before changing the system settings. Alternatively, you must apply the changes manually. (Additional descriptions in chapter 4.2)

With the help of the autostart-function of the operating system, the VBASE runtime environment (VOK) can be started automatically when restarting the device.
The VTP-AX-modells are delivered ex factory in a state that the VBASE- runtime environment wont be registered into the autostart. You have to perfrom this setting by yourself.
At first you have to open the required VBASE-project in the VBASE-editor. Subsequently select in the menu bar "Project" the command "Test" or press the key "F5".

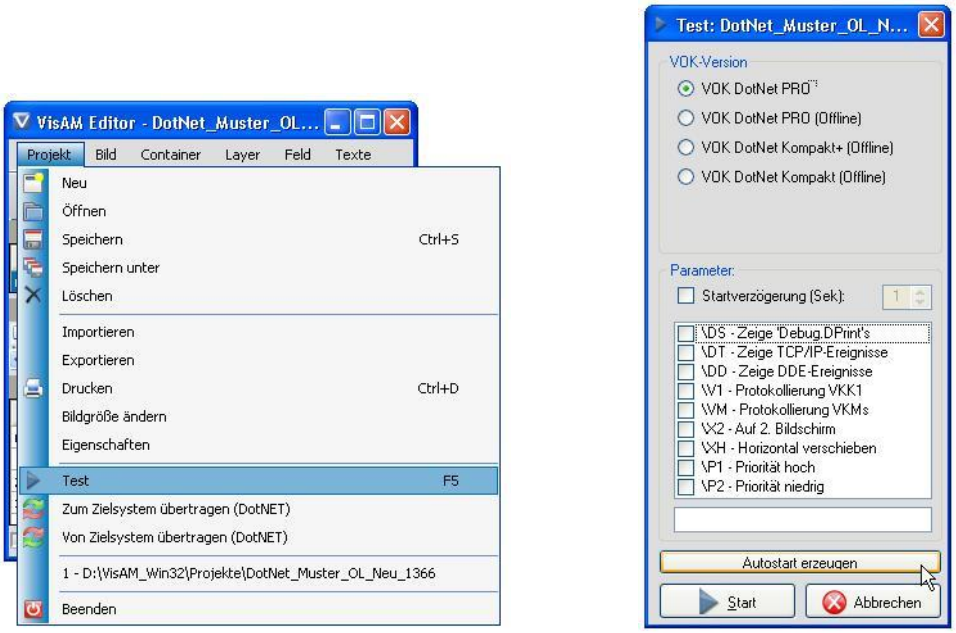


Figure 11 Creation of an autostart-entry of the VBASE-project

In the now opened window (right picture in figure 11) the VOK-version can be selected and – if needed- different start parameter for the VBASE-project can be determined. Subsequently click on „Create Autostart" and confirm the following message with „OK". At the next restart of the device the VBASE runtime environment and the corresponding project will be started automatically.

4.4 Touchscreen calibrating

4.4.1 Resistive TS "PenMount"

Ensure that the write protection filter was disabled before changing the system settings. Alternatively, you must apply the changes manually. (Additional descriptions in chapter 4.2)

It is possible to recalibrate the Touchscreen controller of the VTP from time to time. A recalibration is needed if the mouse cursor is not displayed at the touch point, but at a different position.

To calibrate select from the Start-Menu: „Programs" >> "PenMount Windows Universal Driver" >> "Utility" >> "PenMount Control Panel"

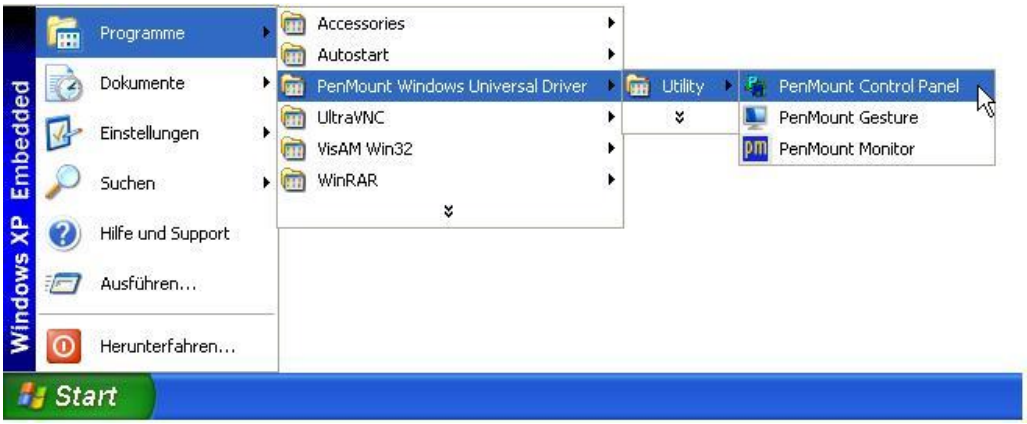


Figure 12 Opening of the PenMount Control Panel

A window opens with multiple register tabs: In the tab „Device" the connected, respectively recognized Touchscreen is displayed. Select the device and subsequently click on „configure".
In the next window you can choose a calibration method.

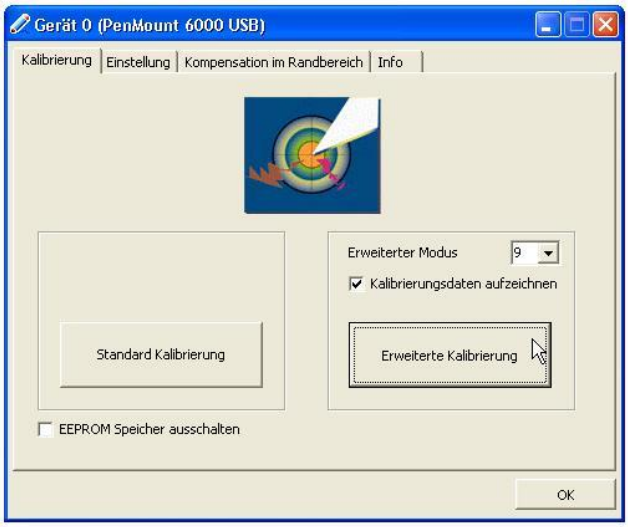


Figure 13 Touchscreen Calibration

You should select „Extended Calibration“. Prior you should select at least 9 from the field „Extended Mode“. This means that the program offers 9 plus 1 calibration points. The higher the number the more accurate the touchscreen can be calibrated. If the box before “Log calibration data” is checked, the calibration result will be displayed in a grid at the end of the calibration. The displayed lines of the calibration log should ideally run straight. To calibrate follow the instructions on the screen. At the end close all windows – by clicking “OK” at each.

4.4.2 PCT eGalax TS

Even with the PCT (eGalax) it is possible to recalibrate the Touchscreen controller of the VTP from time to time. A recalibration is needed if the mouse cursor is not displayed at the touch point, but at a different position.

To calibrate select from the Start-Menu: „Programs“ >> “eGalaxTouch” >> “Utility”

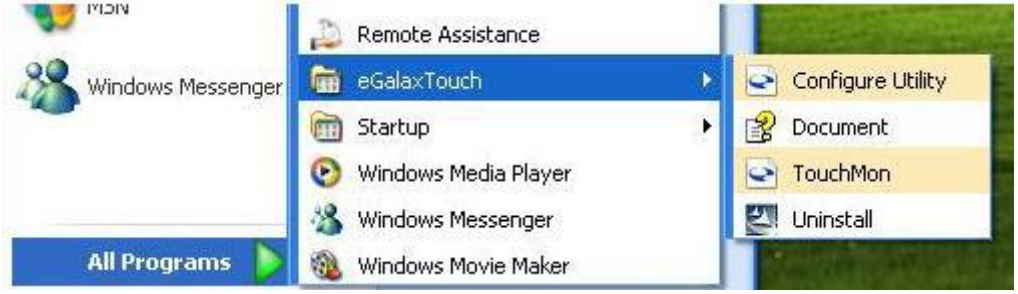


Figure 14 Touchscreen PCT Configure Utility

A window opens with multiple register tabs: In the tab „General“ the connected, respectively recognized Touchscreen is displayed. To select a calibration method switch to the tab “Tools”.

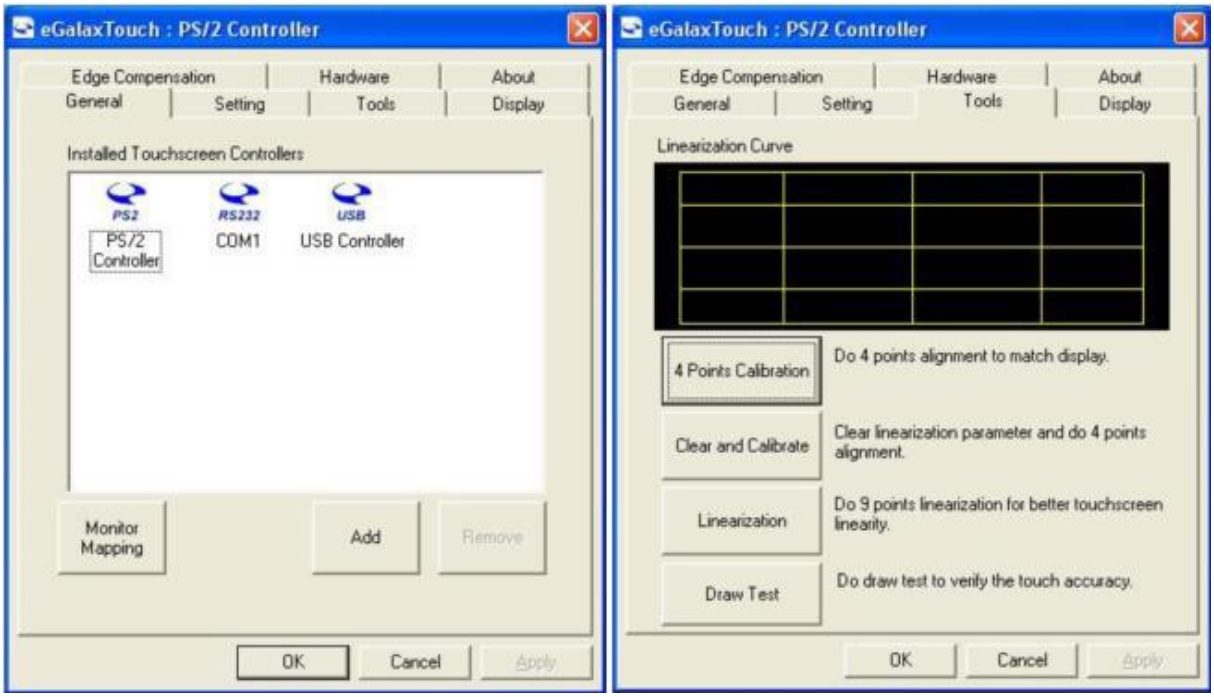


Figure 15 Touchscreen Calibration PCT

Her you can, among other things, select either the 4 point calibration or a 9 point linearization. In the 4 points calibration you will be prompted to click 4 points in succession on the display. Since the 9 point linearization offers more calibration points, this method provides a more accurate calibration as the 4 points calibration. In order to test the accuracy of the calibration a "draw test" can be performed where the touch inputs are displayed on the touchscreen.

4.5 Connect network drive

Ensure that the write protection filter was disabled before changing the system settings. Alternatively, you must apply the changes manually. (Additional descriptions in chapter 4.2)

A VTP can be connected to a PC-system respectively server in a network to transmit data (e.g. for logging) directly to it.

To connect the VTP to a shared drive respectively directory to one to the network connected system, proceed as follows:

Click with the right mouse button onto the „My Computer"-symbol on the desktop and select the command „Connect network drive…" from the context menu.

Figure 16 The command „Connect network drive…"

In the following window select a drive letter from the field „Drive" over which you want to reach the shared drive on the distant system. In the field "Directory" enter the computer name(\\server) and the share name (\share) of the distant system. The box before the "Restore connection at login" must be checked so that the connection is available after a restart of the device.

Figure 17 Connect network drive

Make sure that you create the connection for the user, that usually logs in to the system (see red highlight in figure 15).

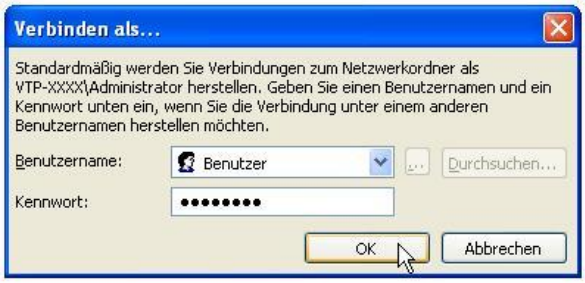


Figure 18 Enter user information for the network drive

If you performed all neccessary entries you can finalize the process by clicking „Complete". Subsequently windows tries to open the configured connection. In „My Computer" an according entry should be found.

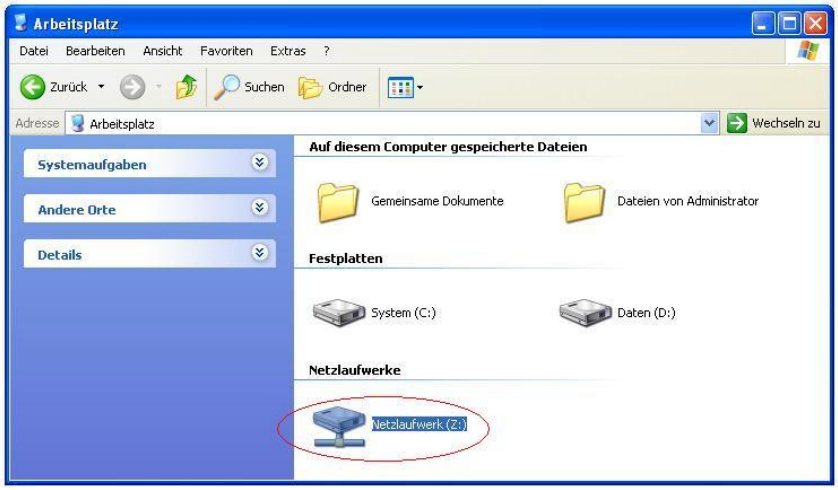


Figure 19 My Computer with network drive

4.6 Automatic user login

The devices of the VTP-AX-series are delievered with automatic user login. Hereby the user "Administrator" is logged in without a password. If you do not approve the automatic login or want to configure another user, please proceed as follows:

Open the windows start-menu >> "execute" and enter the command **`control userpasswords2`** and confirm the command by clicking „OK".

To deactivate the automatic user login the box before the „User must enter user name and password" must be checked and the following dialog confirmed by clicking „OK".

To configure the automatic login with another user the above mentioned box must be checked initially. Subsequently select a user name from the list below. Now uncheck the box again and confirm the settings by clicking "OK".

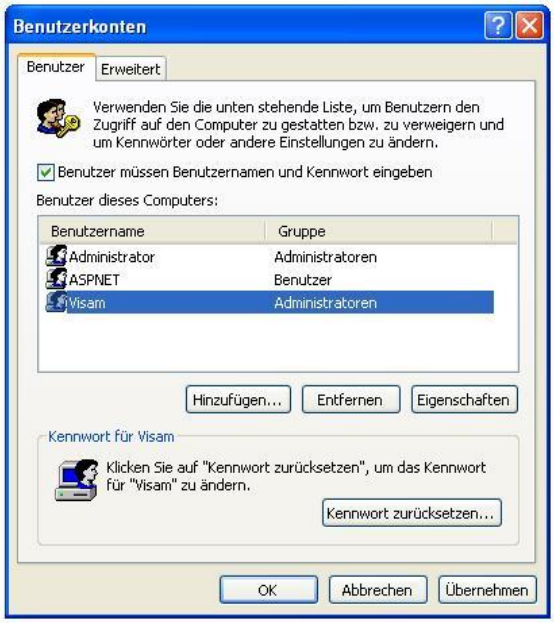


Figure 20 User accounts for the automatic login

In the following figure the user information of the newly configured user are queried. Confirm your data by clicking „OK".

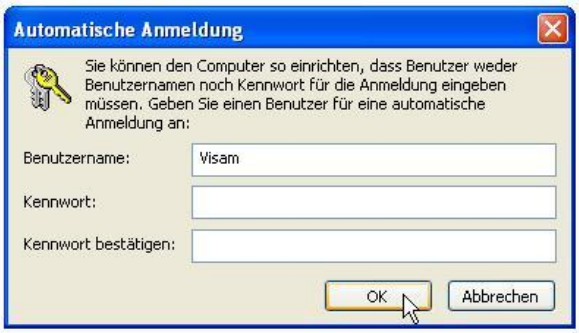


Figure 21 User information for the automatic login

At the next restart the now configured user information are used.

4.7 Additional settings in windows

The installed operating system allows a series of additional settings which are not considered in this description.

Ensure that the write protection filter was disabled before changing the system settings. Alternatively, you must apply the changes manually. (Additional descriptions in chapter 4.2)

5 Appendix

5.1 PIN-Assignment of the serial interface (COM1)

PIN No.	Description
Pin 1	DCD
Pin 2	RX
Pin 3	TX
Pin 4	DTR
Pin 5	GND
Pin 6	DSR
Pin 7	RTS
Pin 8	CTS
Pin 9	RI

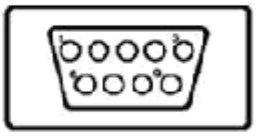


Figure 22 RS-232 (COM1)

5.2 Dimension and weight

5.2.1 Weight

Weight: 4,85 kg (VTP-AX 157/158) ; 8 kg (VTP-AX 216/218)

5.2.2 Dimension VTP-AX 157/158

Dimension: 389,81 x 240,12 x 45,20 mm (widht x height x depth)
Mounting: VESA MIS-D 75 x 75 mm

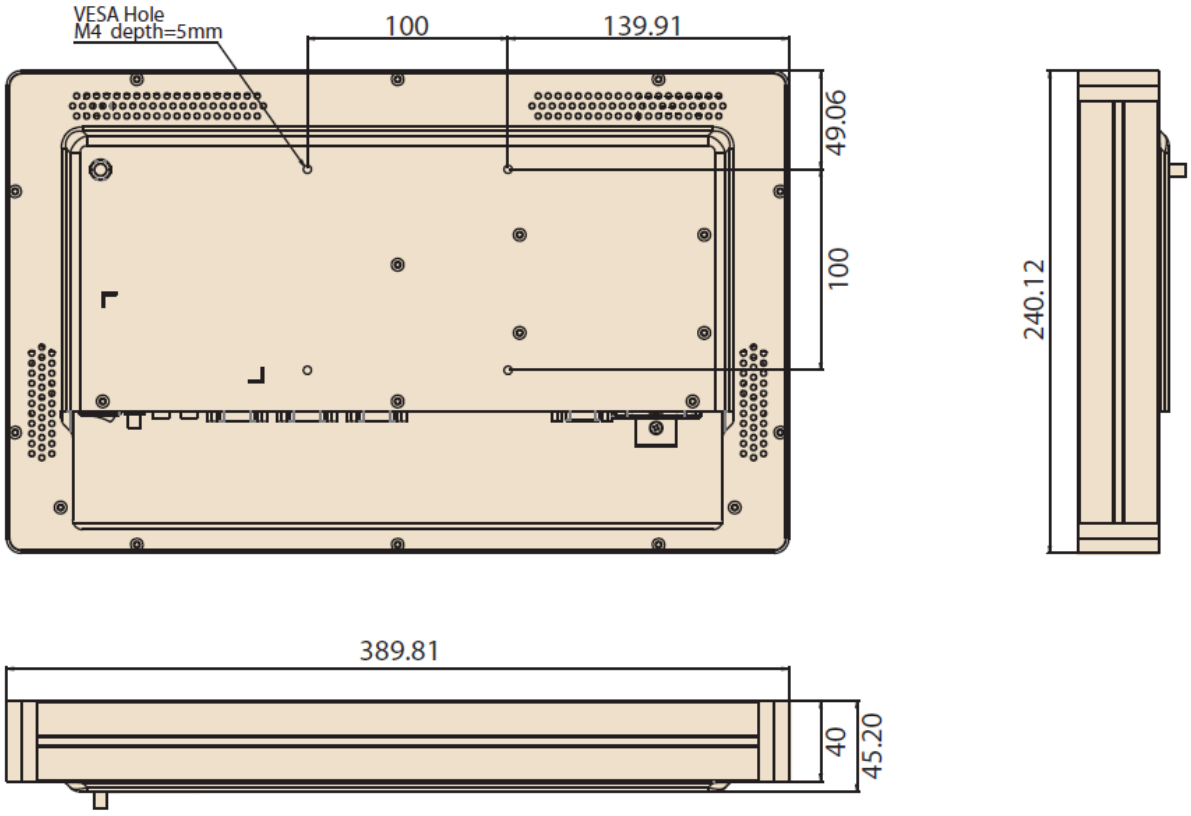


Figure 23 Dimension VTP-AX 157/158

5.2.3 Dimension VTP-AX 216/218

Dimension: 517,64x313,51x43,50 mm (width x height x depth)
Mounting: VESA 100 mm standard

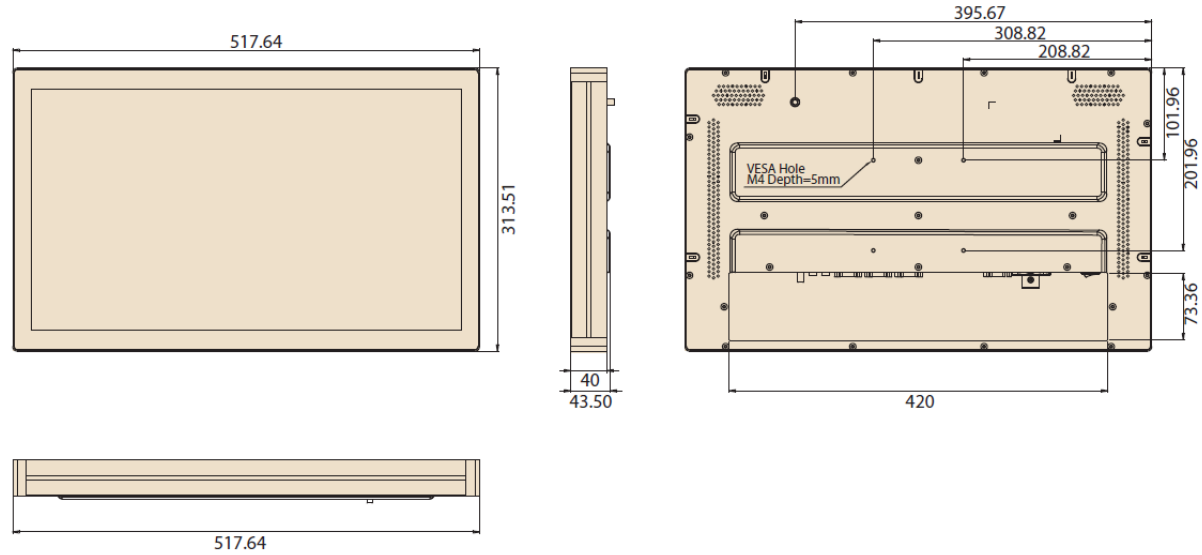


Figure 24 Dimension VTP-AX 216/218

5.5 Illustration directory