

Manual

DeltaVarioMon 8,4" LED Type 3

DMXX1130 (without TouchScreen)

DMXX1131 (with TouchScreen)

DMXX1132 (with Touch + Hub & Sound)





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1 User information

1.1 Revision History

Product version	Documentation version	Date	Modifications
V 3.0	V 3.0	April 2013	Production start

1.2 Preface

This document has been created for the users of the *DeltaVarioMon 8.4'' Type 3*. It contains Information about hardware and software that is supplied with the system. There is no guarantee for accuracy and completeness. DELTA COMPONENTS GmbH reserves "the right to make changes to this manual without notice. DELTA COMPONENTS GmbH assumes no liability for incidental or consequential damages incurred in connection with the use of the *DeltaVarioMon 8.4'' Type 3* or the described software in this manual.

1.3 Exclusion of liability

All information and products in this manual can be change. A possible modification does not require notification. Please read this manual and in particular the safety regulations and guidelines before using the system completely.

1.4 Copyright 2013

No part of this document may be reproduced, transmitted, transcribed, and stored in a retrieval system, in any form or by any means, electronic, mechanical, optical, manual, or otherwise, without the prior written permission of DELTA COMPONENTS GmbH.

The software described herein, together with this document, are furnished under a license agreement and may be used or copied only in accordance with the terms of that agreement.

1.5 Trademarks

DELTA COMPONENTS and the DELTA COMPONENTS Logo are registered trademarks of DELTA COMPONENTS GmbH. The data used in this manual are trademarks and registered trademarks of their respective owners.






1.6 Environmental standard

This product has been developed and produced in accordance with relevant environmental guidelines. Many of the components (housing parts, printed circuit boards, connector, batteries etc.) can be recycled. The final disposal of the equipment shall be performed in accordance with the applicable regulations of the country in which the disposal is made.

1.7 Signs and symbols

This manual is provided for better and faster understanding at the right edge of text with different characters. The following table contains the declarations of the characters:

Signs	Explanation
 Attention! Electricity! Danger by electrical shock	<p>This symbol and title warn of hazards due to electrical shocks when touching products or parts of them. Failure to observe the precautions indicated and/or prescribed by the law may endanger your life/health and/or result in damage to your material.</p>
 Attention! ESD sensitive device!	<p>Electronic boards and their components are sensitive to static electricity. Therefore, care must be taken during all handling operations and inspections of this product, in order to ensure product integrity at all times.</p>
 Note!	<p>This symbol and title emphasize aspects the reader should read through carefully for his or her own advantage.</p>



1.8 Safety regulations

Your new product of DELTA COMPONENTS GmbH has been carefully designed and tested to ensure a long and flawless work. The *DeltaVarioMon* is not a consumer product. The connection and commissioning must be performed by a trained professional.

Only a special purpose installation and connection of the *DeltaVarioMon* in specified use environments, enabling trouble-free operation. For your own safety and the proper work with the new DELTA COMPONENTS GmbH products following safety precautions have to be observed:

- **Precautions against electrostatic discharge**

Electronic circuit boards and components are protected against static electricity. Especially when unpacking and initial operation be aware of an unwanted static discharge (ESD). When working on the device, especially when connecting cables, always pay attention on an ESD-compliant work environment.



- **No use of faulty equipment**

Before commissioning of the device please check that everything is OK. The use of defect parts may endanger persons and property damage (electrical shock, short circuit). Therefore, defect or damaged equipment should never be used. In this case, our customer service will help you with any questions (support@delta-components.de).



- **Installation when the device is turned off.**

Before installation the device should be turned off.

- **Power supply.**

The nominal supply voltage of the device is 7.5 to 33VDC. The device is therefore suitable for use in vehicles, boats or trucks in addition to the use as a desktop solution. When the monitor is powered by a low voltage of 10VDC, the backlight automatically turns down to the minimum value. In the event of a power supply of 9VDC the monitor automatically turned off. Only a voltage of approximately 9.2VDC initiates the automatic restart of the monitor. The device is internally protected against reverse polarity by a diode voltage and current spikes.



– **Interface voltage.**

The following table shows the power- and voltage output of each plug.

Port		Value			Unit
		Min.	Nom.	Max.	
DVI	Voltage Analog RGB*	0	-	0,7	V@75Ω
	Voltage Digital (V di.ff)*	150	-	1.200	mV
VGA/CRT	Voltage RGB	0	-	0,7	V@75Ω
	Voltage Sync.	0,8	-	2,4	V
	Power RGB	0	-	5	mA
Power (power supply LEMO-port)	Voltage	7,5	-	33	V
USB-B (only DMXX1131/1132)	Voltage		5		V
	Power		0,5		A

– * see at general specification DVI Digital Visual Interface Rev. 1.0

1.9 Manufacturer warranty

DELTA COMPONENTS GmbH warrants for a period of one year, starting with the delivery of the goods to the customer, that the produced and exported hardware and software is free from defects and installation errors. This warranty is limited to the original purchaser of the product. The warranty is not transferable and tradeable.

During the warranty period, defect products or product parts will be repaired or replaced. Replaced parts become the property of DELTA COMPONENTS GmbH.

Before products are sent back for repair, it is necessary to contact DELTA COMPONENTS GmbH. The acceptance of unsolicited insufficiently prepaid shipments will be refused.

Not covered by warranty are:

- Prototypes in hardware and software
- Wear parts, connectors, batteries, etc.
- Damage caused by mishandling or wear
- All other claims of damage

There is no warranty, if the product has been modified or soldered by third parties.

1.10 Technical support

If you have problems with your product, please contact our support team. In some cases the problems can be solved easy and quick.

Support DELTA COMPONENTS GmbH

Tel.: +49/7751/8399-0

E-Mail: <mailto:Support@delta-components.de>

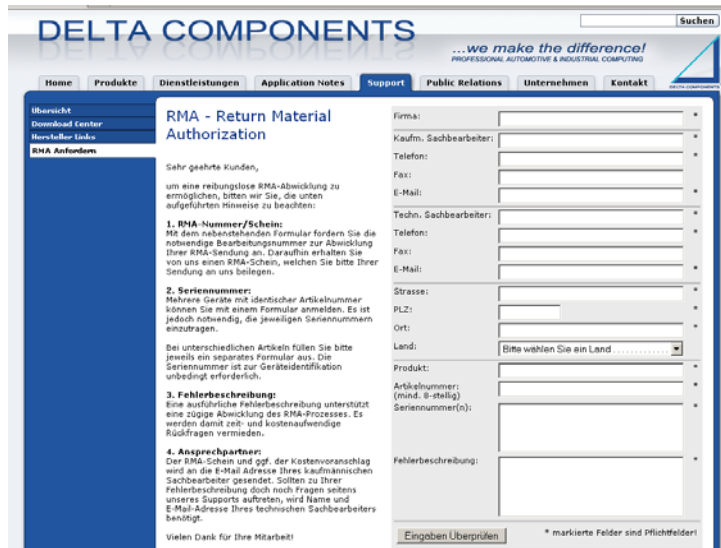
1.11 RMA settlement

If the problem could not be solved, the unit can send back for repair. Therefore you need a RMA (Return Material Authorization) number:

1. Step

On the website of DELTA COMPONENTS a RMA number must be requested:

<http://www.delta-components.com/support/rma.htm>



The screenshot shows the 'RMA - Return Material Authorization' form on the Delta Components website. The page header includes the company name 'DELTA COMPONENTS' and the slogan '...we make the difference! PROFESSIONAL AUTOMOTIVE & INDUSTRIAL COMPUTING'. The navigation menu contains 'Home', 'Produkte', 'Dienstleistungen', 'Application Notes', 'Support', 'Public Relations', 'Unternehmen', and 'Kontakt'. The left sidebar has links for 'Übersicht', 'Download Center', 'Hersteller Links', and 'RMA Anfordern'. The main content area is titled 'RMA - Return Material Authorization' and contains the following text:

Gahr geehrte Kunden,
um eine reibungslose RMA-Abwicklung zu ermöglichen, bitten wir Sie, die unten aufgeführten Hinweise zu beachten:

- 1. RMA-Nummer/Schein:** Mit dem nebenstehenden Formular fordern Sie die notwendige Bearbeitungsnummer zur Abwicklung Ihrer RMA-Sendung an. Daraus erhalten Sie von uns einen RMA-Schein, welchen Sie bitte Ihrer Sendung an uns beilegen.
- 2. Seriennummern:** Mehrere Geräte mit identischer Artikelnummer können Sie mit einem Formular anmelden. Es ist jedoch notwendig, die jeweiligen Seriennummern einzutragen.
Bei unterschiedlichen Artikeln füllen Sie bitte jeweils ein separates Formular aus. Die Seriennummer ist zur Geräteidentifikation unbedingt erforderlich.
- 3. Fehlerbeschreibung:** Eine ausführliche Fehlerbeschreibung unterstützt eine zügige Abwicklung des RMA-Prozesses. Es werden damit zeit- und kostenaufwendige Rückfragen vermieden.
- 4. Ansprechpartner:** Der RMA-Schein und ggf. der Kostenvorschlag wird an die E-Mail Adresse Ihres kaufmännischen Sachbearbeiters gesendet. Sollten zu Ihrer Fehlerbeschreibung doch noch Fragen seitens unseres Supports auftreten, wird Name und E-Mail-Adresse Ihres technischen Sachbearbeiters benötigt.

Vielen Dank für Ihre Mitarbeit!

The form includes the following fields:

- Firma: *
- Kaufm. Sachbearbeiter: *
- Telefon: *
- Fax: *
- E-Mail: *
- Techn. Sachbearbeiter: *
- Telefon: *
- Fax: *
- E-Mail: *
- Strasse: *
- PLZ: *
- Ort: *
- Land:
- Produkt: *
- Artikelnummer: *
- Seriennummer(n): *
- Fehlerbeschreibung: *

Buttons: 'Eingeben Überprüfen' and '* markierte Felder sind Pflichtfelder'



2. Step

The form should be completed as fully as possible and then sent. A detailed description of the defect accelerates the process.

3. Step

On the basis of the form DELTA COMPONENTS transmitted by e-mail a RMA document with RMA number.

4. Step

The RMA number must be sent together with the defect unit to DELTA COMPONENTS.

5. Step

When the unit arrives, it will be processed as soon as possible.



2 Start of operation

2.1 Contents of packaging

The following accessories should be packed with your new DeltaVarioMon; please make sure all are enclosed after opening the packaging:

- *DeltaVarioMon 8,4"*
- Power supply line, 2m, with Lemoso-Port
- CD with Driver and Manual *DeltaVarioMon 8,4"*

2.2 Preparation of the voltage supply

The *DeltaVarioMon* can be operated in a voltage range of 7.5 to 33VDC. The supply voltage is fed by a self-locking 2-pin Lemoso connector. A silicone cable including connectors with open ends is included. Further information concerning the power of the DeltaVarioMon contained in Section 2.2 "Power" (see page 7).

2.3 Assembling of the device

The DeltaVarioMon is a "built-on" monitor and it is suitable for applications in the vehicle as well as a desktop solution. On the rear panel there are four threads to reach VESA standard 75mm. Therefore different mounting system can be mounted. Various mounting systems are available.

2.4 System on and off

As soon as the monitor receives a VGA / DVI signal, it switches automatically on and off. In addition the device can be activate manually via the power button of the OSD-Menu. The button is located on the right side of the device.



Figure 1: On/off-button of the OSD Keyboard



2.5 DVI and VGA Display Setup

Image data can be transferred via DVI or VGA / CRT signals. If the VGA / CRT signal is used, the quality of the image may be optimized before startup. Following settings must be made manually on the device:



Device	Video settings	Value
PC-System	Resolution	800 x 600
	Frequency of repetition	60-75Hz
	Color depth	32 Bit

With these settings you get the optimal image quality and image disturbances will be avoided.

3 *DeltaVarioMon 8,4"*

3.1 Product description

The DeltaVarioMon 8,4" is an universal usable monitor for mobile and vehicle applications. As a high - brightness monitor it is also suitable for applications where high brightness is required and / or the rugged, small and lightweight housing is requested.



Figure 2: *DeltaVarioMon 8,4"* Front and Rear

The integrated LCD TFT graphic module has a resolution of 800 x 600 dot. The maximum brightness is 1.600cd / m², with an integrated microcontroller based control enables dimming the brightness from 0 to 100 %. The manual adjustment of the brightness can be done via the potentiometer, which can be easily reached by the operator. An additional integrated light sensor, automatically adjusts the screen brightness based by ambient light. The control is performed by a microcontroller, where the hysteresis-parameters are stored accordingly.

A high brightness is always connected with generation of heat. To save the lifetime of the high-brightness-monitor, it is necessary to control the temperature automatically. A temperature sensor inside of the monitor regulates via microcontroller the speed of the fans. These fans support the heat deduction of natural convection, only if the ambient temperature requires it.

The housing is made of aluminum and has therefore an EMC-compatible design. It provides a robust housing for the integrated electronics with as high-quality haptic. The DeltaVarioMon will be delivered with a powder-coated surface. The weight of the Monitor is 1.000g; therefore it is an "Ultralight-Monitor".

On the rear side there are four threads for the VESA-Standard with 75mm grid. Various mounting system, for example vehicle-specific mounts can be used.

Two data interfaces are available. A VGA/CRT with 15-pol HD-Sub and a DVI-D interface with 24-1 pins.

The TouchScreen surface (only DMXX1131 and DMXX1132) is connected by a USB interface.

The system can be adjusted via the OSD-Menu on the rear side of the device. Also a system LED is integrated.

3.2 Connections

The DeltaVarioMon have six standard connections with different functions. The Monitor will be connected to the PC-System with minimum two cables (alternative VGA/CRT or DVI and power supply).

Connection	Function
Power Vin: 7,5-33V	Power supply
USB-B 2.0	TouchScreen Controller and Audio (DMXX1132)
Mic IN (DMXX1132)	input analog audio signal
VGA/CRT	analog image transmission
DVI	digital image transmission
USB-A 2.0(DMXX1132)	free USB-interface

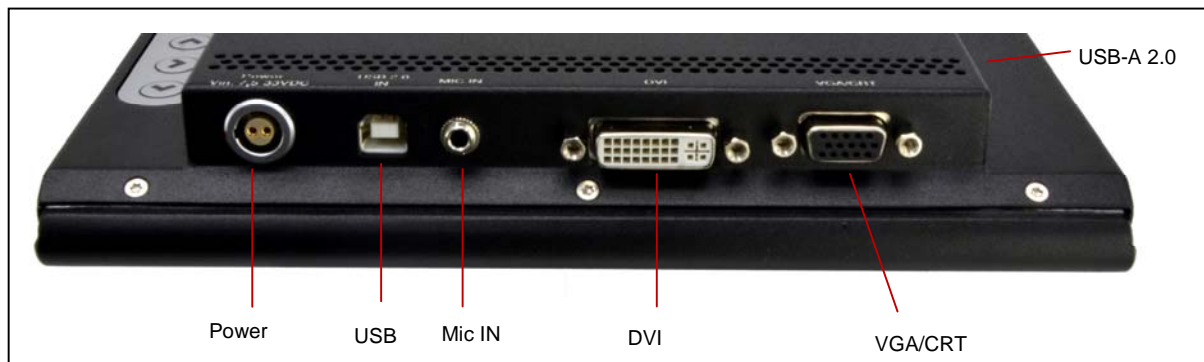


Figure 3: Connections *DeltaVarioMon 8,4"*

3.3 Functions

3.3.1 Manual brightness control

The manual brightness control on the right side of the device enables an individual adjustment from basic brightness of the monitor. Is the brightness control on the minimal position, the backlight brightness and the sensor will be disabled. In this way it is possible to switch the monitor manually complete dark, without turn-off.

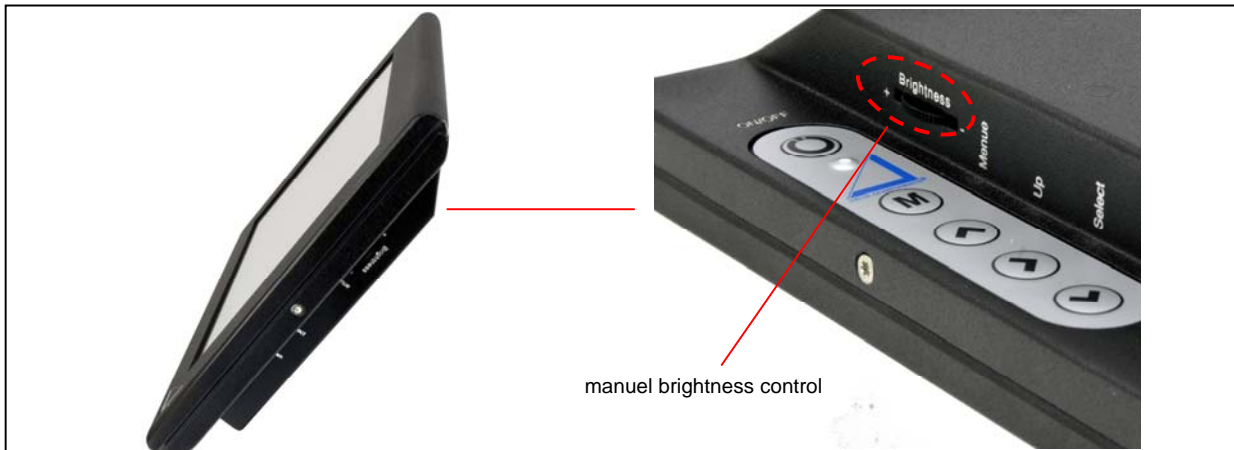


Figure 4: Manual brightness control on the right side of the Monitor

3.3.2 Light sensor

The light sensor is on the upper back of the device.

The light sensor measures the ambient lighting of the monitor permanently. On basis of this Information the integrated μ Controller adapts the brightness from the Display automatically to the ambient lighting, which occurs for example by twilight or tunnel entry or exit.

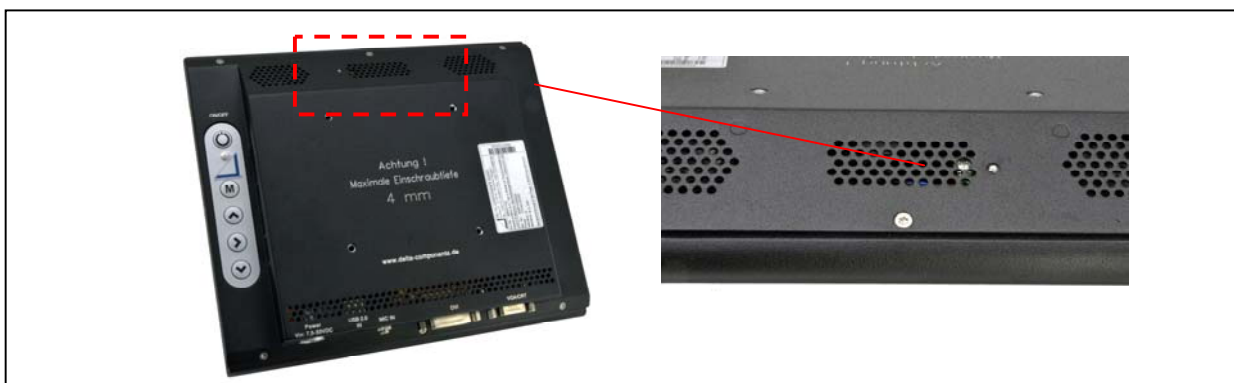


Figure 5: Light sensor for the automatic brightness control



3.3.3 Temperature sensor

If the temperature inside of the housing is 50°C or higher, the fans start operating. If the temperature dropped under 45°C, the fans turns off automatically. If the temperature reaches 70°C the monitor turns off, to protect the hardware. As soon as the monitor cools down to a temperature of 65°C or lower, the device will automatically start up.

3.3.4 Option USB-Hub / Audio Codec (DMXX1132)

The monitor has an internal optional 3-port USB Hub V2.0. The input is divided into an audio unit, the touch controller and a free USB port.

The USB-Hub is on the left backside of the Monitor (USB Type B socket)

The first port of the Hub is connected with the Audio unit.

The audio unit consisting of a USB audio codec (USB Sound card), 2 x 2,2W stereo audio amplifier, two integrated speakers and one microphone-connector.

By connecting the USB interface of the monitor with the PC, the USB audio codec will be registered as a "micronas USB headset" in the system. Under Windows XP and Windows 7 the standard driver of the system will be used, no separate installation of drivers is necessary. The sound card has also a microphone channel.

The volume controller potentiometer is located at the left backside. This enables an individual adaptation of the volume.

The second port is connected with the touch controller

The third port is an USB Interface V2.0 Typ A on the left side of the housing, together with to the volume-potentiometer.



Figure 6: Manual volume control on the left side of the monitor (DMXX1132)

3.3.5 VESA Mounting

On the rear panel there are four threads to reach VESA standard 75mm.

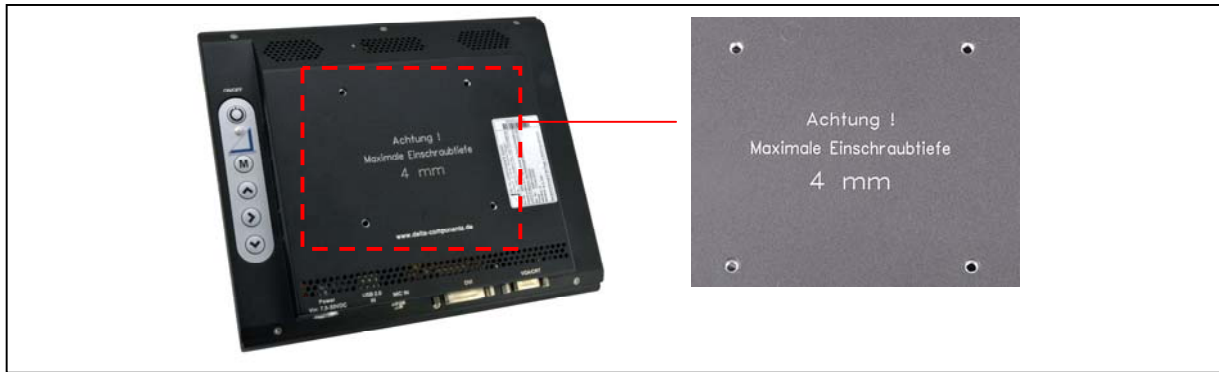


Figure 7: VESA Mounting on the rear side

The VESA-holes make it possible to mount different monitor mountings or swivel arms. Be noted, not to exceed the maximum screw depth of 4 mm.



3.3.6 OSD Menu

In this section you will find information about how to use OSD Menu (On Screen Display).

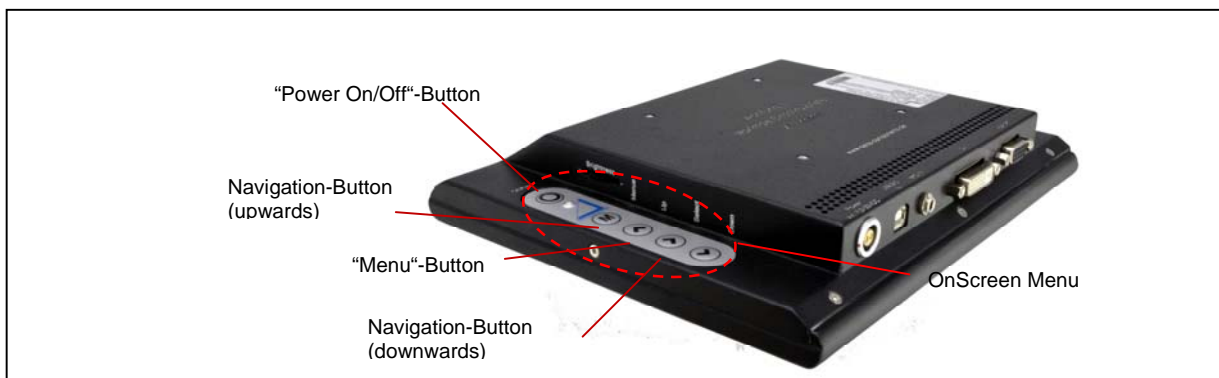
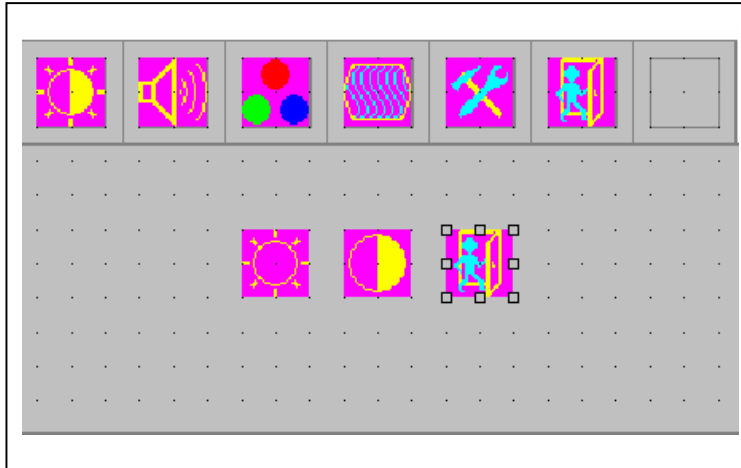


Figure 8: Keys of the OSD-Keybaord

When the "Menu" Button is pressed, you will see following:



This information is not changeable.

"Timing" shows information about the Resolution, H-Frequency and the V-Frequency of the Panel.

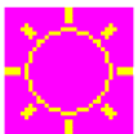
"Version" Gives tips for the firmware version of the OSD.

Within the OSD Manuals there are also six specified submenu:

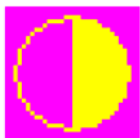
"Brightness", "Sound", "Color", "Image", "Tools" and "Exit".

By selecting the "Menu" button, the submenu "Brightness" turns up. You have to choose three of these selection criteria:

1. Brightness:



Brightness: This option will be replaced by the LDR-control (Poti). Therefore no function.



Contrast: To adapt the contrast (0 to 100) via the button "Left" and "Right" firstly you must press "Menu" and then "Right"



Exit: Leave the submenu and go back to the main menu.

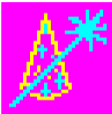
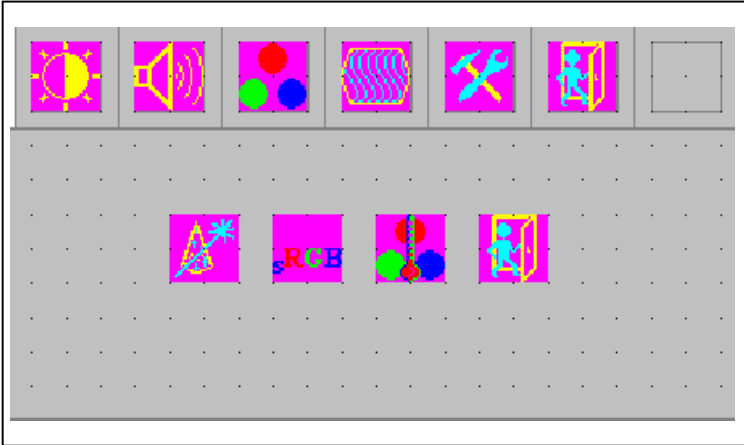


2. Sound

(no function).

3. Color

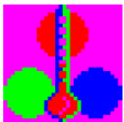
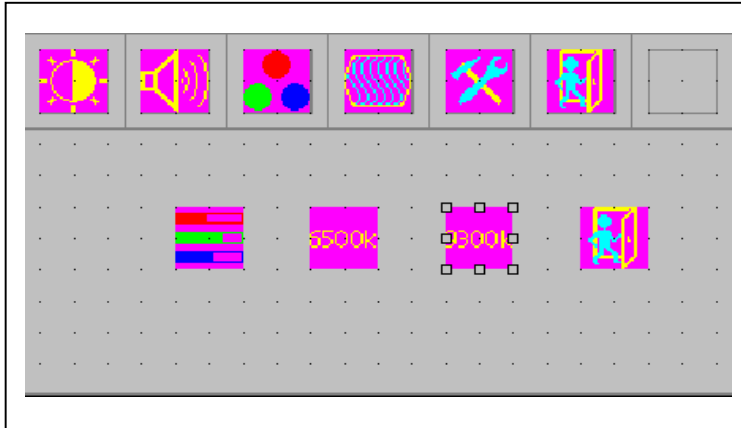
By selection "Menu" and "Right" button you reached at the submenu "Color"



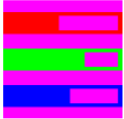
AutoColor: With this function you will get the optimal color setting.



SRGB: Windows standard color setting.



Color Temperature: In this selection criterion, three options are available:



ColorTemperature_User



ColorTemperature_6500K



ColorTemperature_9300K

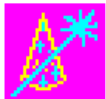
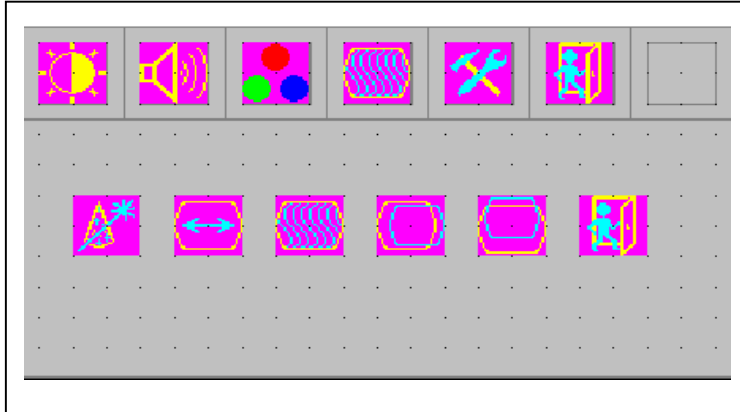
“User Mode“, “6500K“ (Warm Color scheme), “9300K“ (Cold color scheme).

Preset is the “User” Option with the setting “R”, “G” and “B” to “100“.



Exit: Leave the submenu and go back to the main menu.

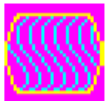
4. Image



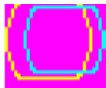
Autojust: By selection of this option the horizontal and vertical frequency will be adjusted automatically on the screen, turn up for 3 Sec. "Autotune".



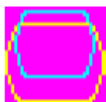
Clock: Do the "Autotune" reaches not the optimal result, this function allows to set the aspect ratio manual.



Phase: Are on the letters shades visible (Double Images), they can be removed by "Phase".



Hpos: Horizontal move of the picture



Vpos: Vertical move of the picture.

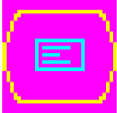
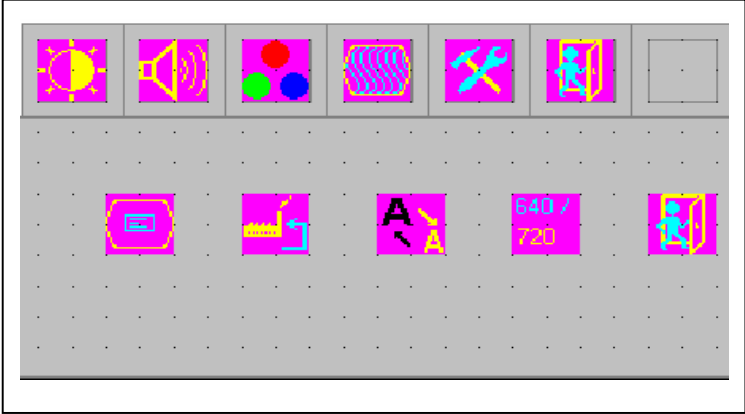


Exit: Leave the submenu and go back to the main menu.

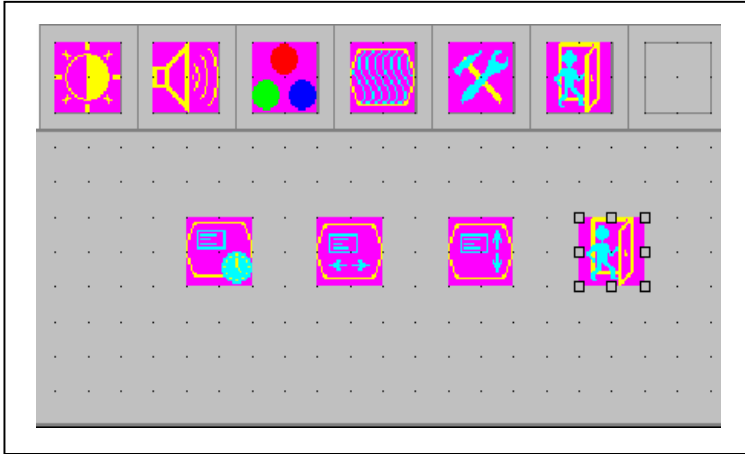


5. Tools

In the submenu "Tools" you will find five different symbols:



After Selection from this option there are four more symbols for choice:





Osd_time: The OSD can be set between 2 and 16 Seconds. Preset is 6 Seconds.



Osd_Hpos: Horizontal move of the OSD on the screen.

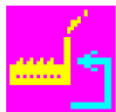


Osd_Vpos: Vertical move of the OSD on the screen.

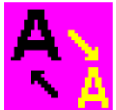


Exit: Leave the submenu and go back to the submenu "Tools".

In the following we will explain the four symbols of the submenu "Tools":



Factory_Reset: Reset to the factory setting all personally settings will be lost.



Sharpness: Control sharpness of the character.



Dos_mode/Gxf_mode: Some older program which runs via 640x400 and 720x400 (DOS Mode and graphics mode), require a manual switch to this Option.



Exit: Leave the submenu and go back to the main menu.

OSD Lock Function: All OSD buttons can be locked, to be protected from unwanted changes of the settings. You must press: "Menu" and "Right" at the same time. In the centre of the screen a note ("Lock") turn up for 3 seconds. After that, if any button is pressed a note will turn up with "Lock"



For remove the blocking, you must press "Menu" and "Right" at the same time. The following picture turns up on the center of the screen for 3 seconds. All OSD buttons are now activated!



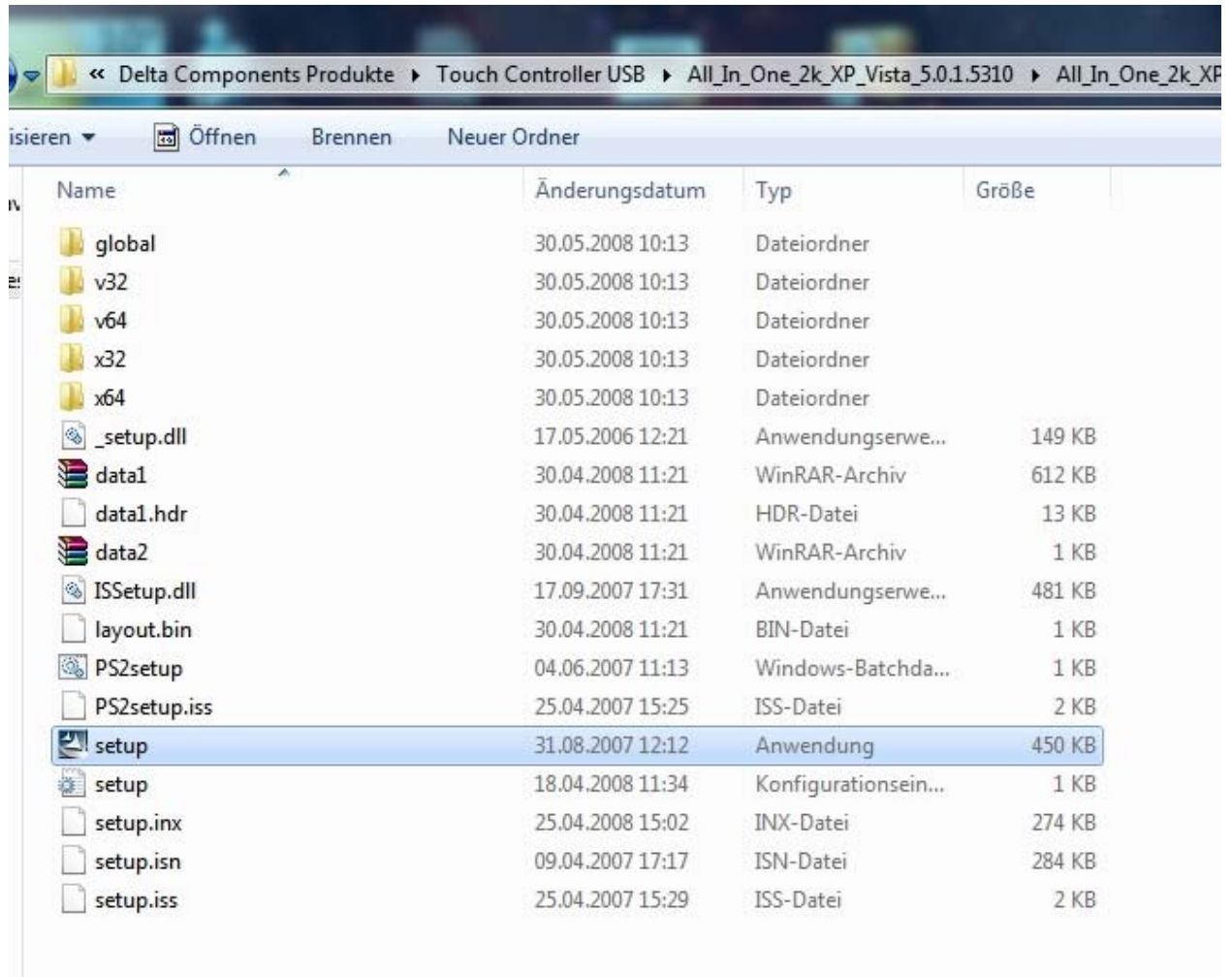


3.3.7 TouchScreen Surface: driver installation

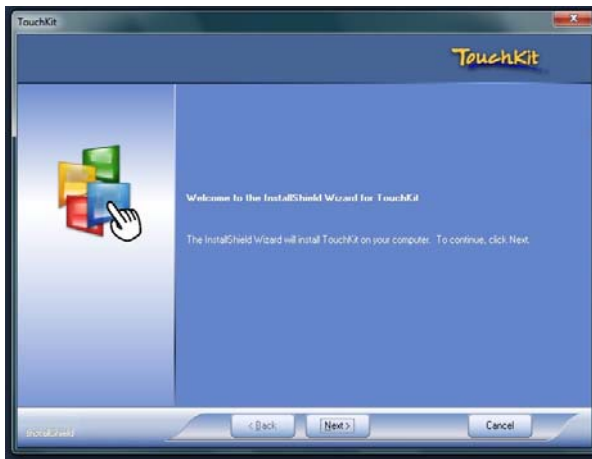
In order that the TouchScreen can be used with all functions, you should install the touch driver.



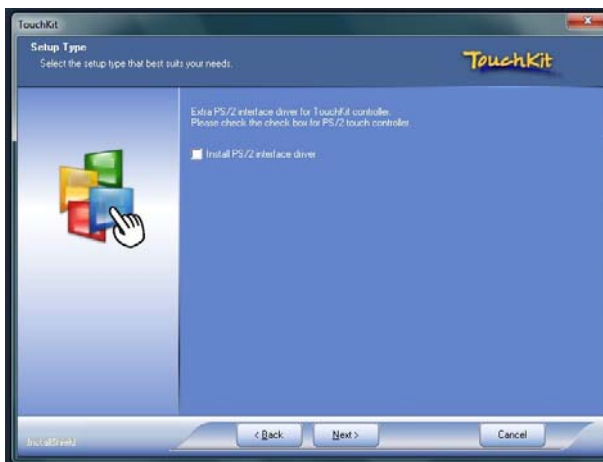
1. The file setup.exe from the enclosed software disk should be run. You will find it in the directory: "[CD-drive]\Touch Controller USB \All_In_One_2k_XP_Vista_5.0.1.5310\Setup. exe" and can be started with help from the Windows-Explorer "double-click" or also. Start->run-...> (Enter the path -> OK). The following window will open:



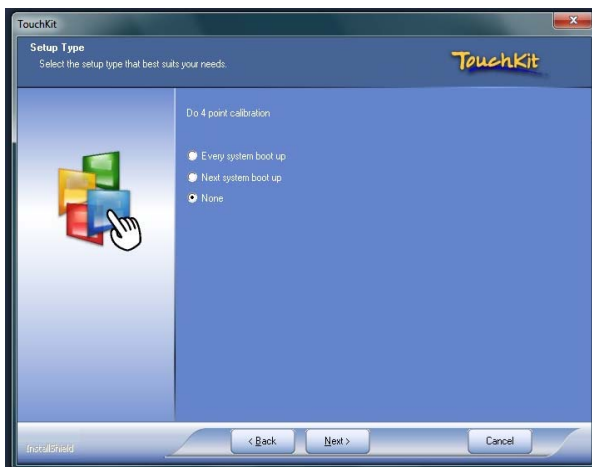
2. To start the installation press the "Next >"-Button.



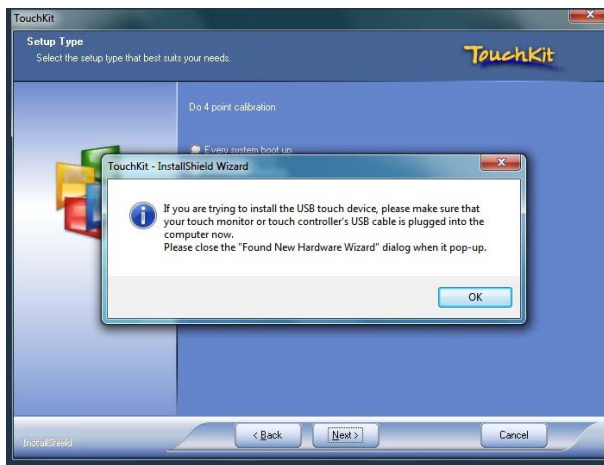
Following dialog will be showed: The selection box "Install PS/2 interface driver" should not be selected; otherwise the driver for PS/2 Touch will be installed. Complete the dialog with "Next>".



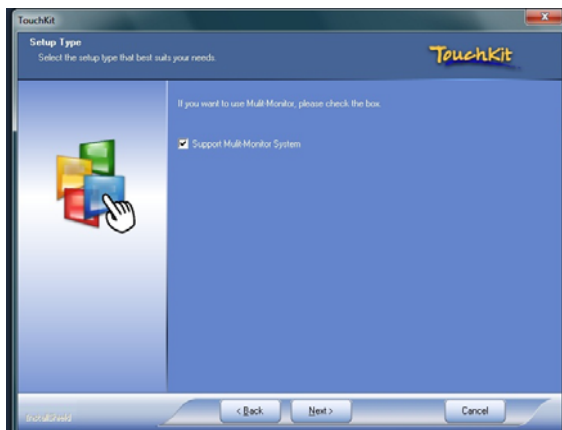
3. In the next window you can select the date for the calibration. There are three options:
1. At every start of the computer, the calibration tool will open.
 2. Only by the next start of the computer the calibration tool will open.
 3. The calibration tool will not open but it can be manual open after installation.
→ The third selection is the standard setting. The calibration can be done later manual.



4. In the next step, you will be asked to connect the monitor. Now connect the Computer with the USB port (B-connector) of the Monitor.

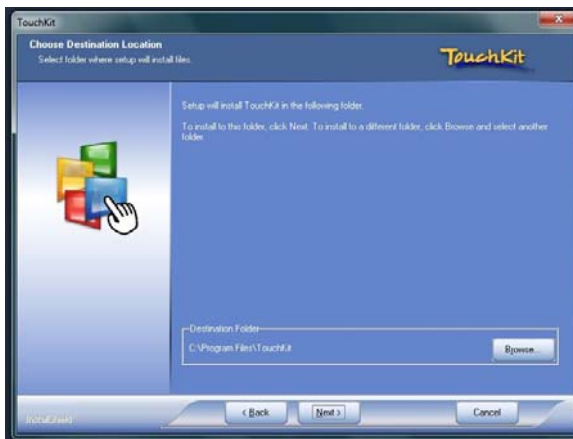


5. If you connect the USB cable, in the background the Windows Hardware installation wizard will be opened. In the foreground the installation will be continuing. You see following dialog box:

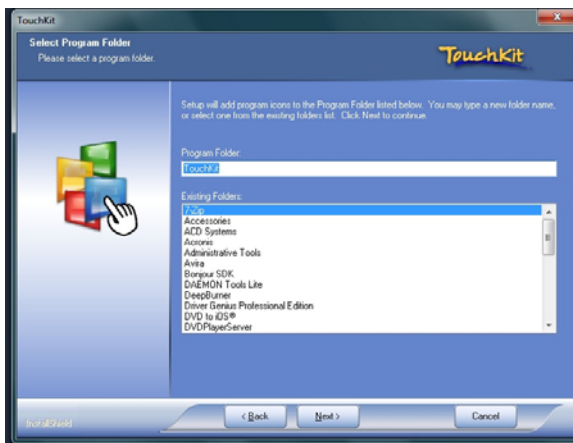


In this setup dialog the support for multiple screens can be installed. If you use the screen as primary screen, deselect the checkbox "support multi-monitor system" and go on with "Next >" to continue the installation.

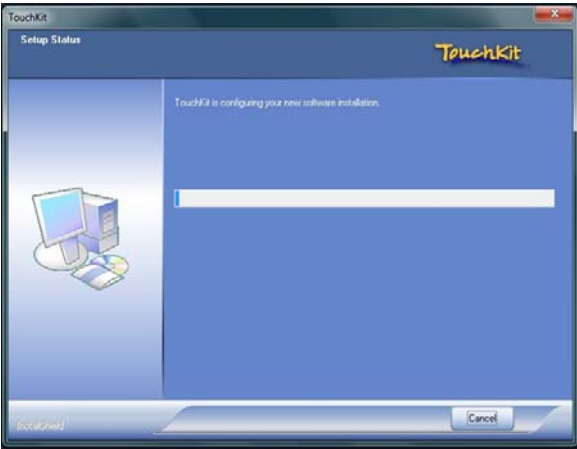
6. After that you can choose the installation location. Use the "Browse" button to select the local directory. Complete this dialogue with "Next >" button.



7. The next dialog is used to edit the entry in the startup folder. The default settings generate a new link "TouchKit". Click "Next >" button to continue the installation



8. The driver is now installed and configured.
Please wait until the installation is completed and then restart your PC.



With it the installation of the driver is finished.



3.4 Technical Specifications

Display features

- 8.4" LCD-TFT Monitor with VGA/CRT and DVI-D interface
- Display area: 170.496 x 127.872 mm
- Backlight: LED
- Resolution: 800 x 600 dot (SVGA)
- Brightness: 1.600 cd/m²
(dimmable over brightness-poti und light sensor)*
- Contrast: 600:1
- Response time: 35ms (Typ.)
- Farben: 16.2M
- Viewing angle: H: 160° V: 160°
- TouchScreen: analog-resistiv with USB interface (DMXX1131)

Operation

- Keys for OnScreen Menu
- ON/OFF and operational-LED

Housing, surface and color

- Housing: Aluminum housing
Mounting possible through 4 insert nuts M4 on the back according to VESA standard 75 mm
- Surface: Powder coating
- Color: Black

Power input

- 9.6 W
- max. brightness: 0.8A / 12V
- min. brightness: 0.32A / 12V
- Standby Modus: 64mA / 12V

Power supply and power supply cable

- Power supply:
7.5VDC-33VDC inclusive protection against reverse polarity and transients
- Power supply cable:
2-pol., inclusive LEMO-connector and open ends, Length: 2m



Dimension and weight

- 222.8 x 185.2 x 36 mm (L x H x T)
- 0.8 kg

Temperature range

- Operating temperature: -20°C to +70°C
- Storage temperature: -20°C to +70°C
- Relative humidity:

Certifications

- e1 03 5391
- IP30



4 Ordering Information

Item-Nr.	Description	
DMXX1130	DeltaVarioMon 8.4" Typ 3 SVGA w/o TouchScreen, LED	LCD-TFT Monitor Alu-housing, 1.600cd, VGA+DV
DMXX1131	DeltaVarioMon 8.4" Typ 3 SVGA w/TouchScreen, LED	LCD-TFT Monitor Alu-housing, 1.600 cd, VGA+DVI
DMXX1132	DeltaVarioMon 8.4" Typ 3 SVGA w/Touch, LED, Hub&Sound	LCD-TFT Monitor Alu-housing, 1.600 cd, VGA+DVI