# Instruction handbook

Language **English**

Document No. 5.12045.02
Part No. 442384
Status 23.10.2012

be in motion be in motion

BAUMÜLLER

## Control system
## PCC-03

CE

**BMP-PAN-03**
**BMP-BOX-03**

E | 5.12045.02

**Read the Instruction handbook before starting any work!**

Preliminary information

**Warning** Insofar as this document is identified as being preliminary information, the following applies:
this version is regarded as providing advance technical information to users of the described devices and their functions at an early enough time in order to adapt to any possible changes or expanded functionality.
This information must be regarded as being preliminary, as it has not yet passed through Baumüller's internal review process. In particular, this information is still subject to changes, thus no legal liability can be derived from this preliminary information. Baumüller assumes no liability for damages that might arise from this possibly faulty or incomplete version.
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The conditions stipulated in the following section under „Obligatory“ are invalid in case of preliminary information.

Obligatory

This Instruction handbook are a part of the equipment/machine. This Instruction handbook must be available to the operator at all times and must be in legible condition. If the equipment/machine is sold or moved another location, this Instruction handbook must be passed on by the owner together with the equipment/machine.
After any sale of the equipment/machine, this original and all copies must be handed over to the buyer. After disposal or any other end use, this original and all copies must be destroyed.

When the present Instruction handbook is handed over, corresponding sets of Instruction handbooks of a previous version are automatically invalidated.
Please note that the specifications/data/information **are current values according to the printing date**. These statements are **not legally binding** with regard to measurements, computation or calculations.
Baumüller Nürnberg GmbH reserves the right, in developing its products further, to change the technical specifications and handling of it products concerned without prior notice.

No liability can be accepted concerning the correctness of this Instruction handbook unless otherwise specified in the General Conditions of Sale and Delivery.

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# 1

# GENERAL

## 1.1 Information on this Instruction handbook

This Instruction handbook provides important information on handling the device. A prerequisite for safe work is compliance with all specified safety notes and procedural instructions.

Additionally, the valid accident prevention regulations and general safety regulations applicable to the scope of application the device must be complied with.

Read this Instruction handbook, particularly the safety notes chapter, completely before beginning any work on the device. This Instruction handbook is part of the product and must be kept accessible to personnel at all times in the immediate vicinity of the device.

## 1.2 Key to symbols

**Warning notes**

Warning notes are identified by symbols in this Instruction handbook. The notes are introduced by signal words that express the extent of the danger.

It is imperative that these notes be complied with and are conscientiously regarded in order to prevent accidents, personal injury and material damage.

**DANGER!**

....this indicates a hazardous situation which, if not avoided, will result in death or serious injury.

**WARNING!**

....this indicates a hazardous situation which, if not avoided, could result in death or serious injury.

**CAUTION!**

....this indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

**NOTICE!**

....indicates a hazardous situation which, if not avoided, may cause material damage.

**Recommendations**

**NOTE!**

....highlights useful hints and recommendations, as well as information for the efficient and trouble-free use.

## 1.3 Limitation of liability

All specifications and notes in this Instruction handbook were compiled taking into account the applicable standards and regulations, the state of the art and our knowledge and experience of many years.

The manufacturer assumes no liability for damages due to:

- noncompliance with the Instruction handbook
- usage for other than the intended purpose
- usage by untrained personnel

The actual scope of delivery can vary in case of optional equipment, laying claim to additional order options, or on account of the latest technical changes to the explanations and representations described herein.

The user bears the responsibility for performing service and commissioning in accordance with the safety regulations of the applicable standards and all other relevant governmental or local regulations referring to the dimensioning and protection of conductors, grounding, disconnectors, overcurrent protection, etc.

The person who carried out the mounting or installation is liable for any damage, which incurred when assembling or connecting the device.

## 1.4 Copyright protection

The Instruction handbook must be treated confidentially. It is to be used exclusively by personnel who work with the device. The consignment of the Instruction handbook to third persons without the written permission of the manufacturer is prohibited.

**NOTE!**

The specific contents, text, drawings, images and other representations are copyrighted and subject to industrial property rights. Any prohibited usage is punishable by law.

| | |
|---|---|
| **EnDat®** | is a registered trademark of Dr. Johannes Heidenhain GmbH, 83301 Traunreut, Germany |
| **EtherCAT®** | is a registered trademark of Beckhoff Automation GmbH, 33415 Verl, Germany |
| **Hiperface®** | is a registered trademark of SICK STEGMANN GmbH, 78166 Donaueschingen, Germany |

## 1.5 Applicable documents

Components of other manufacturers are integrated into the device. For these purchased parts, hazard assessments have been performed by the respective manufacturers. The compliance of the design construction with the applicable European and national regulations has been declared for the components by the respective manufacturers.

## 1.6 Spare parts

**WARNING!**

**False or flawed spare parts can lead to damage, malfunction or complete failure, thus endangering safety.**

Therefore:

- Only use original spare parts of the manufacturer.

Procure spare parts through an authorized dealer or directly from the manufacturer.

See also ▹Accessories and Spare parts◃ from page 81.

## 1.7 Disposal

Insofar as no take-back or disposal agreement has been made, please disassemble units correctly and properly recycle the constituent parts.

See also ▹Disposal◃ on page 83.

## 1.8 Guarantee provisions

The guarantee provisions are stated in a separate document of the sales documents.

The devices described herein may only be operated in accordance with the stipulated methods, procedures and conditions. Anything else not presented here, including the operation of devices in mounted positions, is not permitted and must be cleared with the plant on a case-by-case basis. If the devices are operated in any other manner than as described within this Instruction handbook, then all guarantee and warranty rights are rendered null and void.

## 1.9 Customer service

Our customer service is available to provide you with technical information.

Info on the responsible contact persons is available at all times via telephone, fax, mail or the Internet.

## 1.10 Terms used

The term „device“ is also used in this documentation for this Baumüller product „**Control system PCC-03**“.

## 1.11 List of associated documentations

| | Doc. No. | Part No. German | Part No. English |
|---|---|---|---|
| Application handbook Control system PCC-03 | 5.12062 | 442385 | 442386 |
| Application handbook EtherCAT | 5.10030 | 440084 | |

## 1.11 List of associated documentations

# 2

# SAFETY

This section provides an overview of all of the important safety aspects for optimum protection of personnel as well as for the safe and problem-free operation.

## 2.1 Contents of the Instruction handbook

Each person who is tasked with performing work on or with the device must have read and understood the Instruction handbook before working with the device. This also applies if the person involved with this kind of device or a similar one, or has been trained by the manufacturer.

## 2.2 Changes and modifications to the device

In order to prevent hazards and to ensure optimum performance, no changes, additions or modifications may be undertaken on the device that have not been explicitly approved by the manufacturer.

## 2.3 Appropriate Use

The device is conceived and constructed exclusively for usage compliant with its intended purpose described in this Instruction handbook.

**WARNING!**

**Danger arising from usage for an unintended purpose!**

Any usage that goes beyond the intended purpose and/or any non-compliant use of the device can lead to dangerous situations.

Therefore:

- Only use the device compliant with its intended purpose.
- Observe all specifications of this Instruction handbook.
- Ensure that only qualified personnel work with/on this device.
- When configuring, ensure that the device is always operated within its specifications.
- Ensure that the power supply complies with the stipulated specifications.
- The device may only be operated in a technically flawless condition.

## 2.4 Responsibility of the operating company

The device will be used in commercial areas. Thus, the proprietor of the device is subject to the legal work safety regulations.

Along with the notes on work safety in this Instruction handbook, the safety, accident prevention and environmental protection regulations valid for the area of application of this device must be complied with. Whereby:

- The operating company must inform himself about the applicable work health and safety regulations and ascertain, in a hazard assessment, any additional hazards that could arise from the special working conditions in the use area of the device. These must then be implemented in the form of operating instruction for operation of the device.
- This Instruction handbook must be kept accessible to personnel working with the device at all times in the immediate vicinity of the device.
- The specifications of the Instruction handbook must be adhered to completely and without exception.
- The device may only be operated in a technically faultless and operationally safe condition.

## 2.5 Protective equipment

| Protection classification | |
|---|---|
| front | IP 65 |
| back | IP 20 |

| UL type | |
|---|---|
| 12-, 15- and 17-inch displays without front-sided USB-port | 4 |

## 2.6 Training of the personnel

**WARNING!**

**Risk of injury due to insufficient qualifications!**

Improper handling can lead to significant personal injury and material damage.

In this Instruction handbook, the following qualifications are stipulated for various areas of activity:

- **Operating personnel**
  - The drive system may only be operated by persons who have been specially trained, instructed and authorized.
  - Troubleshooting, maintenance, cleaning, maintenance and replacement may only be performed by trained or instructed personnel. These persons must know the Instruction handbook and act accordingly.
  - Commissioning and training may only be performed by qualified personnel.

- **Qualified personnel**
  - Electrical engineers authorized by Baumüller Nürnberg GmbH, and qualified electricians of the customer or a third party who have learned to install and maintain Baumüller drive systems and are authorized to ground and identify electrical power circuits and devices in accordance with the safety engineering standards of the company.
  - Qualified personnel have had occupational training or instruction in accordance with the respective locally applicable safety engineering standards for the service and use of appropriate safety equipment.

## 2.7 Fire fighting

**DANGER!**

**Risk of fatal injury from electrical current!**

There is a risk of electric shock if an electrically-conductive, fire-extinguishing agent is used.

Therefore:

- Use the following fire-extinguishing agent:

ABC powder / $CO_2$

## 2.8 Safety equipment

**WARNING!**

**Risk of fatal injury due to non-functioning safety equipment!**

Safety equipment provides for the highest level of safety in a facility. Even if safety equipment makes work processes more awkward, under no circumstances may they be circumvented. Safety can only be ensured by intact safety equipment.

Therefore:

- Before starting to work, check whether the safety equipment in good working order and properly installed.

## 2.9 Behavior in hazardous situations or at accidents

**Preventive measures**

- Always be prepared for accidents or fire!
- Keep first-aid equipment (e.g. first-aid kits, blankets, etc.) and fire extinguishers readily accessible.
- Train personnel so that they can handle the accident signalling systems, first aid equipment and life saving equipment.

**And if something does happen: respond properly.**

- Stop operation of the device immediately with an EMERGENCY Stop.
- Initiate first aid measures.
- Evacuate persons from the danger zone.
- Notify the responsible persons of the site.
- Alarm medical personnel and/or the fire department.
- Keep access routes clear for rescue vehicles.

## 2.10 Signs and labels

The following symbols and information signs are located in the working area. They refer to the adjacencies, where they were affixed.

**WARNING!**

**Risk of injury due to illegible symbols!**

Over the course of time, stickers and symbols on the device can become dirty or otherwise unrecognizable.

Therefore:

- Maintain all safety, warning and operating labels on the device in easily readable condition.

**Electrical voltage**

Only qualified personnel may work in work areas that identified with this.

Unauthorized persons may not touch working materials marked correspondingly.

3

# TECHNICAL DATA

## 3.1 Dimensions / Weight

The following table shows the main device dimensions. In order to make the required cut-outs use the drawings in ▹Mounting◃ ab Seite 27.

| | Dimension (Width x Height x Depth) in mm | Weight |
|---|---|---|
| BMP-BOX-03, without display | 265 x 207x 49 | 3.40 kg |
| BMP-PAN-03-12R00, display 12 inch | 365 x 282 x 45 | 4.46 kg |

## 3.2 Operating conditions

### 3.2.1 Power supply requirements

A power supply of 24 $V_{DC}$ is required for the **PCC-03**. This may be either a standard power supply or an uninterruptible DC power supply.

In the following table the presumable current ratings for different configurations are listed.

| Processor | Display | Rated output current of power supply |
|---|---|---|
| Core2 Duo | BMP-BOX-03<br>without display | 5 A |
| | BMP-PAN-03-12R00<br>12-inch display | 5 A |

### 3.2.2 Required environmental conditions

| | |
|---|---|
| Transportation temperature range | - 40 °C to + 70 °C |
| Storage temperature range | - 40 °C to + 70 °C |
| Operation temperature range | - 20 °C to + 55 °C |
| Operation climatic class<br>EN 60721-3-3 | 3 K 3 |
| humidity (operation)<br>EN 60721-3-3 | relative humidity:<br>5 % to 95 %, no condensation |
| Ionizing and non-ionizing radiation | < measurable range |
| Shock test according to<br>IEC 60068-2-27 | 15g, 11 ms, pulse |
| Resistance to vibration<br>IEC 61131-2 | CompactFlash®: 1.0g |

## 3.3 Electrical data

| | |
|---|---|
| Rated voltage supply | 24 $V_{DC}$ |
| Voltage supply, range | 19.2 ... 28.8 V |
| Connection voltage supply | Combicon, screw terminal, removable |
| Conductor cross-section | 0.2 mm² … 2.5 mm² (24 … 12 AWG) |
| Torque | 5 Nm to 6 Nm |
| RTC | 5 years |

## 3.4 Computer data

| | |
|---|---|
| Operating system | Windows Embedded Standard 7 |
| Processor | 1,5 GHz Intel® Core™ 2 Duo,<br>667FSB, 4 MB L2 Cache |
| RAM | 2 GB |
| Memory | CompactFlash® |
| Number of CompactFlash® - slots | 2 at most |

**Interfaces**

| | |
|---|---|
| USB | Type A, USB 1.1/2.0 |
| Number of USB-slots | 4/5 |
| Serial, RS-232 | 9-pole male sub D socket |
| Video | VGA (15-pole D-SUB-15-socket)<br>DVI-D |
| NVRAM-connection | Mini-PCI (built-in) |
| Size NVRAM<br>(configuration option) | 128 kByte |
| Number of Ethernet-connections | 2 |
| Ethernet-connection | 10/100/1000 MBit/s |

## 3.5 Display

**BMP-BOX-03** no display

**BMP-PAN-03**

- BMP-PAN-03-12R00

| | |
|---|---|
| Screen size, diagonal | 307 mm |
| Screen size,<br>horizontal x vertical | 246 mm x 185 mm |
| Screen resolution | 800 x 600 |
| Type | Resistive touchscreen with serial/USB-interface |
| Brightness | 400 Cd/m² |
| Number of colours | 16.2 Mio. |
| Contrast ratio | 600:1 |
| Angle, horizontal/vertical<br>(CR = 10) | 70°/60° |
| Dimensions of installation cutout<br>(width x height) | 334.0mm x 253.0 mm |
| Outer measurement of front panel<br>(width x height x depth) | 365 mm x 282 mm x 10 mm |
| Minimum operating life of the back-ground lighting | 50000 h |
| Interface | USB 1.1/2.0, type A |

# 4

# DESIGN AND FUNCTION

The **Control system PCC-03** is an industrial PC with a modular design.

Standard hardware features are:

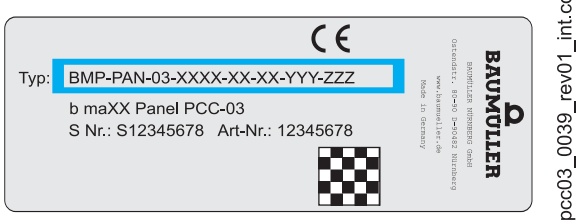
- 24-V DC-operation
- Operation without fans
- Uninterruptible power supply interface
- VGA output
- 4 USB connection
- 1 COM connection (RS-232, 9-pole D-SUB-connector)
- Two integrated 10/100/1000-Ethernet connections with independent MAC-addresses
- LEDs for the current supply (PWR), HDD, operation (RUN) and errors (ERROR)
- DVI-D video output
- 1 or 2 CompactFlash® slots

Configuration possibilities are:

- Display (BMP-PAN-03) or no display (BMP-BOX-03)
- Front panel with or without USB-slot
- Mounting possibilities
- NVRAM (non-volatile RAM - for certain configurations available only)

## 4.1 Type plate

On the type plate the type code of the device also can be found.




pcc03_0039_rev01_int.cdr

Figure 1: Type plate

**NOTE!**

At some mounting kinds it can happen, that the type plate covers the operating system. Take this information of the plates down before mounting. It is recommended to make an accordant note on the inside cover page of the Instruction handbook.

## 4.2 Type code

In the following table the type code is explained:

| | |
|---|---|
| BMP-XXX-XX-XXXXX-XX-XX-YYY-ZZZ | Device series<br>Baumüller PC-based control |
| BMP-XXX-XX-XXXXX-XX-XX-YYY-ZZZ | Device type / name<br>PAN: Baumüller PC-based control with panel ( „Panel-PC“ )<br>BOX: Baumüller PC-based control without panel („Box-PC“) |
| BMP-XXX-XX-XXXXX-XX-XX-YYY-ZZZ | Basic device version<br>03: PCC-03, industry PC on Phoenix basis + Intel Dual Core Processor |
| BMP-XXX-XX-XXXXX-XX-XX-YYY-ZZZ | Device hardware<br>12R00: 12“ Panel with resistive touchscreen, slim housing, without additional PCI slots |
| BMP-XXX-XX-XXXXX-XX-XX-YYY-ZZZ | Hardware type<br>dependent on device hardware<br>serial number / code for incompatible type of device hardware |
| BMP-XXX-XX-XXXXX-XX-XX-YYY-ZZZ | Software type<br>serial number / code for incompatible type of device software/firmware |
| BMP-XXX-XX-XXXX-XX-XX-YYY-ZZZ | Hardware version |
| BMP-XXX-XX-XXXX-XX-XX-YYY-ZZZ | Software version |

## 4.3 LEDs

There are four LEDs on the **PCC-03**.

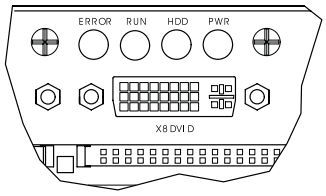



Figure 2: LED arrangement

| LED | Display | Description |
|---|---|---|
| ERROR | yellow | Displays that there is a reduced output due to the processor temperature. |
| | red | Displays that the processor was shut down, due to high temperature. |
| RUN | | Provided for future applications |
| HDD | green flashing | Displays an activity on the hard disk drive. |
| PWR | green | If 24 $V_{DC}$ are available and the main switch is on. |

# 5

# TRANSPORT AND PACKING

**Safety notes for the transport**

**NOTICE!**

**Damage due to unauthorized transport!**

Transport handled by untrained personnel can lead to a substantial amount of material damage.

- The unloading of the packages upon delivery as well as the in-house transport should only be done by trained personnel.
- Contact Baumüller Nürnberg GmbH sales office if necessary.

**WARNING!**

**Danger of physical impact!**

Secure devices against falling down.

Therefore:

- Use appropriate means of transport.

## 5.1 What to observe when transporting

For initial transport of a device, it is packed at the manufacturer's plant. If the device must be transported, ensure that the following conditions are met throughout the entire transport:

- Climate class 2 K 3 as per EN 60721-3-2
- Temperature range - 30 °C up to + 70 °C
- Vibration, shock, continuous shock class 2M1 as per EN 60721-3-2

## 5.2 Transport inspection

Upon receiving the delivered goods, immediately examine them for completeness and transport damage.

If there is visible transport damage on the outside, proceed as follows:

- Do not accept the delivery or conditionally accept it with reservations.
- Note the extent of the damage on the transport documents or on the delivery note of the shipping agent.
- Immediately file a complaint with the freight carrier. Have the complaint confirmed in writing and immediately contact the responsible representative of Baumüller Nürnberg GmbH.

**NOTE!**

The device may not be operated if there is visible transport damage!

## 5.3 Unpacking

After having received the packaged device:

- Avoid forceful transport agitation and hard jolts, e.g. when putting an item down.

If no transport damage is visible:

- Open the packaging of the device.
- Verify the delivery scope based on the delivery note.

File a claim with the responsible Baumüller representative if the delivery is incomplete.

**NOTE!**

Claim each individual deficiency as soon as it has been detected. Damage claims can only be validly asserted within the claim registration period.

## 5.4 Disposal of the packaging

The packaging consists of cardboard, plastic, metal parts, corrugated cardboard and/or wood.

- When disposing of the packaging, comply with the national regulations valid at the use area.

# 6

# MOUNTING

According to the ordered configuration there are different mounting possibilities for the **PCC-03**.

**Safety notes**

**NOTE!**

Mounting shall only be performed by employees of the manufacturer or by other qualified personnel.

**WARNING!**

**Danger as a result of mechanical effects!**

Secure devices against falling down.

Therefore:

- Use appropriate means of transport.

**NOTICE!**

**Danger due to electrostatic discharge.**

The connecting terminals of the device are partially at risk due from ESD.

Therefore:

- Please heed the respective notes.

## 6.1 Preparing the mounting

At the installation of the **PCC-03** in a control cabinet the following general provisions must be observed:

- Check the working clearance in the control cabinet. In general, keep at least 5 cm space on each side.

- Drill and cut the holes, before starting with the installation. Assure that components, which were installed, are protected against damages.

**CAUTION!**

**Eye injury due to flung particles.**

Metal particles are flung when making the drill holes and the cutout sections.

Therefore:

Wear safety goggles!

- Load-bearing parts must be at least 1.63 mm thick, in order to provide a proper stability.

- The space all-round the heatsink (on the rear of the **PCC-03**) must be adequate and the air inlets as well as the air outlets must provide adequate cooling.

**NOTICE!**

**PCC-03** must be installed with an adequate space around the heatsink, so that the environmental temperature of the operating limit values are not exceeded (see ▹Operating conditions◃ from page 17). Fans can be installed in the control cabinet if required.

Possibly, an exceeding of the system temperature limits can cause a power reduction of the single or of all components. Therefore, the temperature in the environment of the installation must be within the system temperature limits of the **PCC-03**.

## 6.2 Wall mounting BMP-BOX-03

Wall mount applies to the **PCC-03** without display. Use this kind of mounting to install the **PCC-03** in a control cabinet. The **PCC-03** can be either be mounted on the rear or on the side on an even surface. Both methods require that the device is attached via four drill holes. The mounting surface must be even and vibrations may not occur.

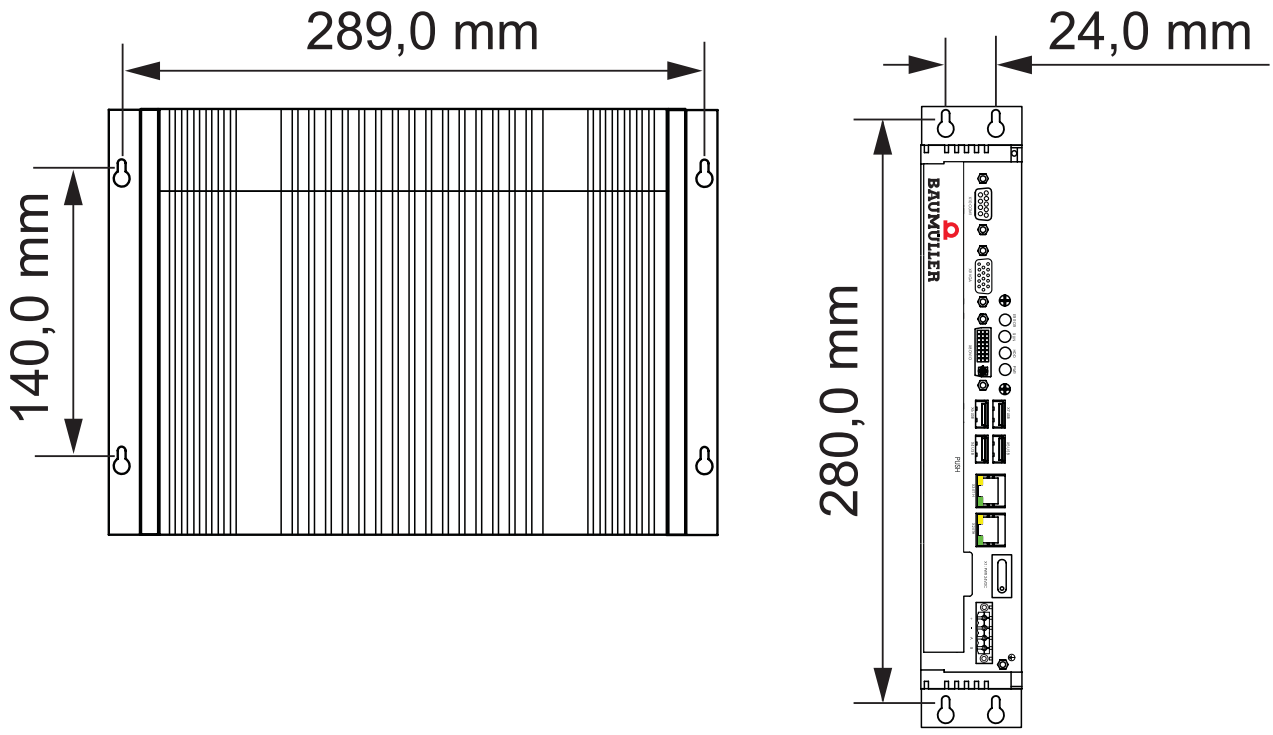



Figure 3: Wall mounting and mounting on the side

Proceed as follows for wall mounting a **BMP-BOX-03**:

1 Use the **BMP-BOX-03** as a pattern and mark the positions of the drilling holes on the mounting surface.

**NOTICE!**

While mounting the device the thin end of the hole must point upwards.

2 Use mounting material, which is adequate for the mounting surface and attach the **BMP-BOX-03** firmly to the wall. The size of the mounting material may not be greater than 6 mm. Assure, that the mounting material is at the thin end of the drilling holes.

3 Tighten the fastening screws, but do not tighten the mounting material too firmly.

## 6.3 Front panel mounting BMP-PAN-03

The front panel mounting is the only applicable mounting method for the **BMP-PAN-03** with display. With this mounting method the **BMP-PAN-03** is installed in the control cabinet, so that the display field is in full view from the outside.

**NOTE!**

The plug and the switch must be accessible from the rear. For a correct installation in the type of protection IP65 a wall thickness of at least 1.9 mm is required.

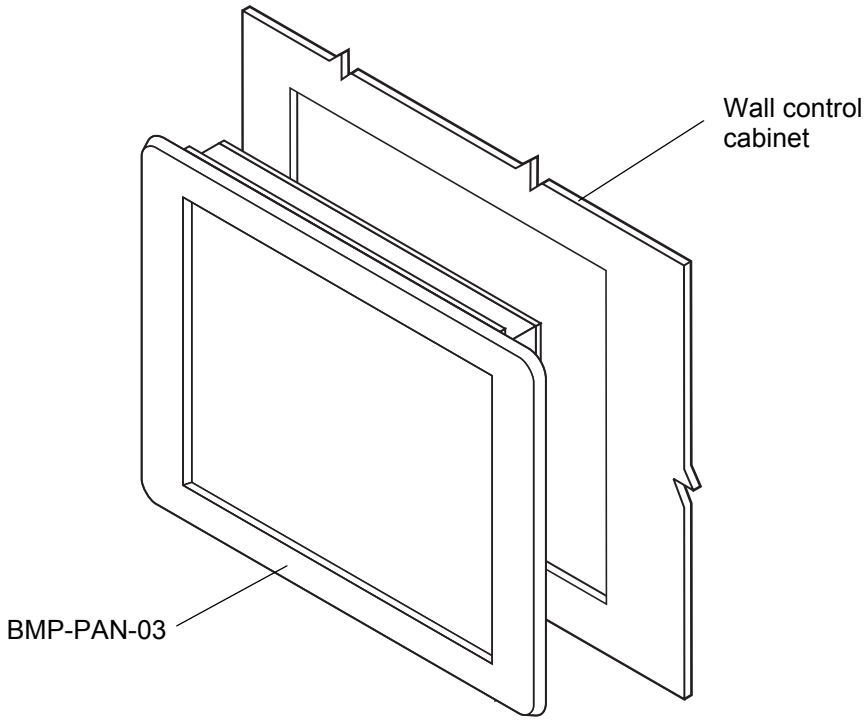



Figure 4: Front panel mounting

1 Cut a hole in the enclosure according to the dimensions for the selected display.

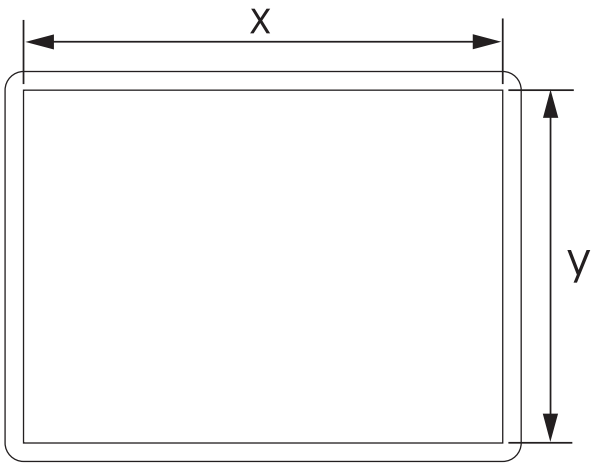



Figure 5: Dimensions of the cutout of the front plate for the displays

| Display size | X (mm) | Y (mm) |
|---|---|---|
| 12 inch | 334.0 | 253.0 |

2 Insert the **BMP-PAN-03** through the hole from the front side. Ensure the gasket is properly positioned in the groove.

3 From the rear, place the display clamps (1) in the slots (2), on the display and slide the clamp to the right. Clamps must be used in every slot.

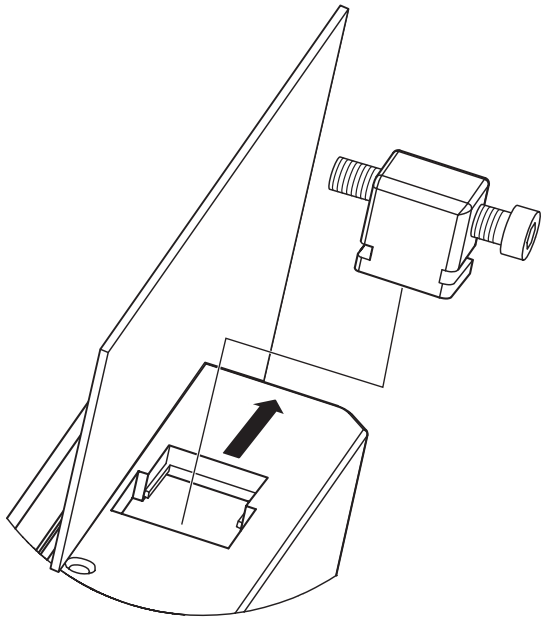


Figure 6: Clamps for the mounting of the front plate

4 The screws alternately must be tightened with a screw driver on all clamps until the front cover is tight-fitting to the front plate (torque of 1.2 Nm).

7

# INSTALLATION

After mounting the **PCC-03** the required cable connection must be installed. According to the mounting method the cables are connected on the rear or on the bottom of the **PCC-03**.

**Safety notes**

**NOTE!**

The installation may be performed by employees of the manufacturer or by other qualified personnel only.

## 7.1 Interfaces

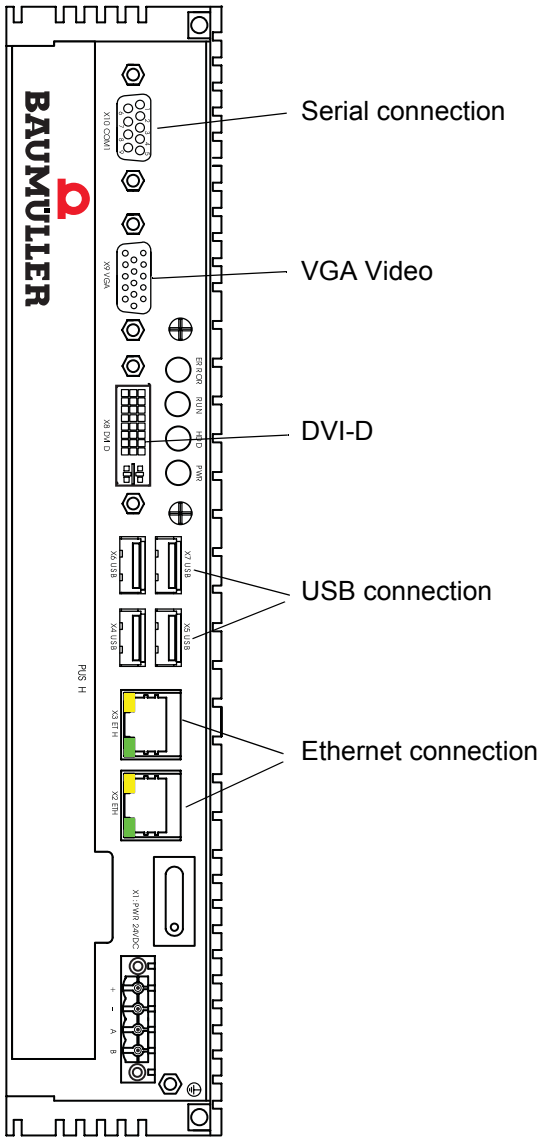



Figure 7: Interface connections

### 7.1.1 Communication interfaces

Various ports and connections allow the **PCC-03** to communicate with other devices. The connections available on the IPC module are:

- Two RJ45 connectors are located on the rear of the **PCC-03**. These allow the computer to communicate on a 10/100/1000 Base-T Ethernet network.
  X3: ETH: **Ethernet** interface
  X2: ETH: **EtherCAT** interface
- **Serial**: Serial devices connect to the 9-pin SUB-D RS-232 port.
- **USB**: USB devices connect using Type A connectors. The **PCC-03** has four USB ports.
- **VGA**: This port connects the to an external analog display with a corresponding VGA connector.
- **DVI-D**: This port connects the to an external digital display with a corresponding DVI-D connector.

### 7.1.2 External display

External displays can be connected to the **PCC-03** to function as a desktop extension or as an auxiliary display. Use the VGA port for analog displays and DVI-D port for digital displays (see ▹Figure 7◃ on page 34).

Extended Display Identification Data (EDID) displays will download its capabilities to the display driver while non-EDID displays will not. In either case, additional settings can be applied through the Intel® Graphics Media Accelerator (see ▹Intel® Graphics Media Accelerator user interface◃ from page 59).

**NOTE:**

The **PCC-03** DVI-D port only supplies digital signals; therefore, connecting an analog display to the DVI-D port using a VGA to DVI adapter will not work

## 7.2 Use of CompactFlash® cards

The cards in the CompactFlash® -slots of the **PCC-03** may not be changed in energized status. The eject button may be used only, if the **PCC-03** was switched off.

For installation of a CompactFlash®-card execute the following steps:

**NOTICE!**

CompactFlash®-cards in the **PCC-03** are treated like a hard disk drive. Therefore, they cannot be changed in the energized status. Data loss can occur if the Compact-Flash® -card is ejected before the **PCC-03** was switched off.

1 Switch off the **PCC-03**.

2 Open the panel on the back of the **PCC-03** (see below)

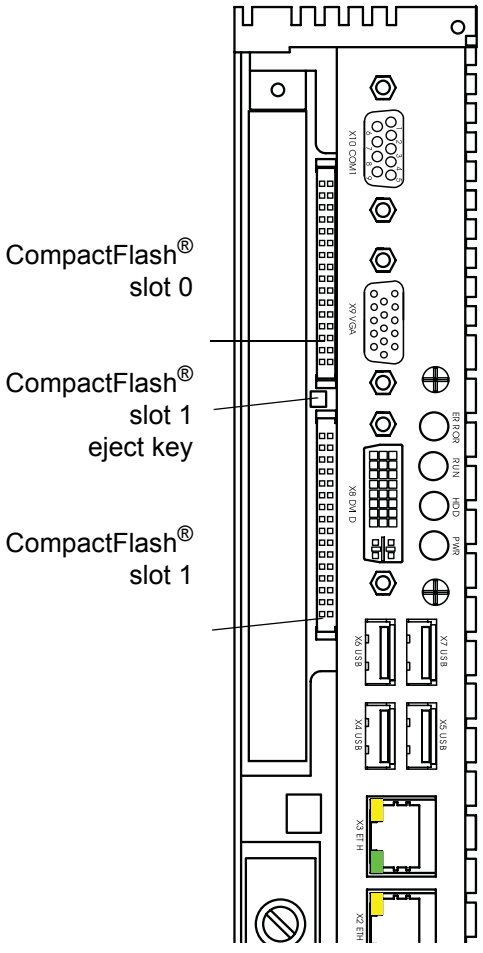



Figure 8: CompactFlash® slots

**NOTE!**

If necessary some cables must be removed In order to have an easier access to the CompactFlash®-slots.

**3** Insert CompactFlash®-card to the accordant slot. The card-lip must point towards the connector. The card must be inserted into the slot straightly until it fits correctly.

**NOTE!**

If **2** CompactFlash® -cards are used, slot 0 must be used for the bootable Compact-Flash®-cards and slot 1 for „Data-Only“- CompactFlash® -cards

If only **1** CompactFlash®-cards is used, slot 1 (with eject button) can be used.

**4** The BIOS must be configured accordantly so that a bootable CompactFlash® -card can be selected (see ▹BIOS configuration◃ on page 75).

To remove a card from slot 0 use a small pointed pliers and carefully pull the card straightly out of the slot. To remove the card from slot 1 use the eject mechanism by pressing the button next to the slot and straightly pulling the card out of it.

## 7.3 Power supply

### Power supply recommendations

The **PCC-03** requires a $24V_{DC}$ power source. This can be either a standard power supply or a DC UPS. The following table provides expected amperage requirements for different configurations.

| Processor | Display | Power supply output rating |
|---|---|---|
| Core2 Duo | no display | 5 A |
| | 12-inch display | 5 A |

**NOTE!**

The **PCC-03** is set to automatically power-up and boot after a valid power connection is made (default setting BIOS). To change this setting see ▹Boot options◃ on page 75.

Connect 24 V DC power (see below) to the included removable power connector. This connector supports wire sizes from 0.2 to 2.5 mm² (24 to 12 AWG). Tighten the wire retaining screws using 0.5 Nm torque.

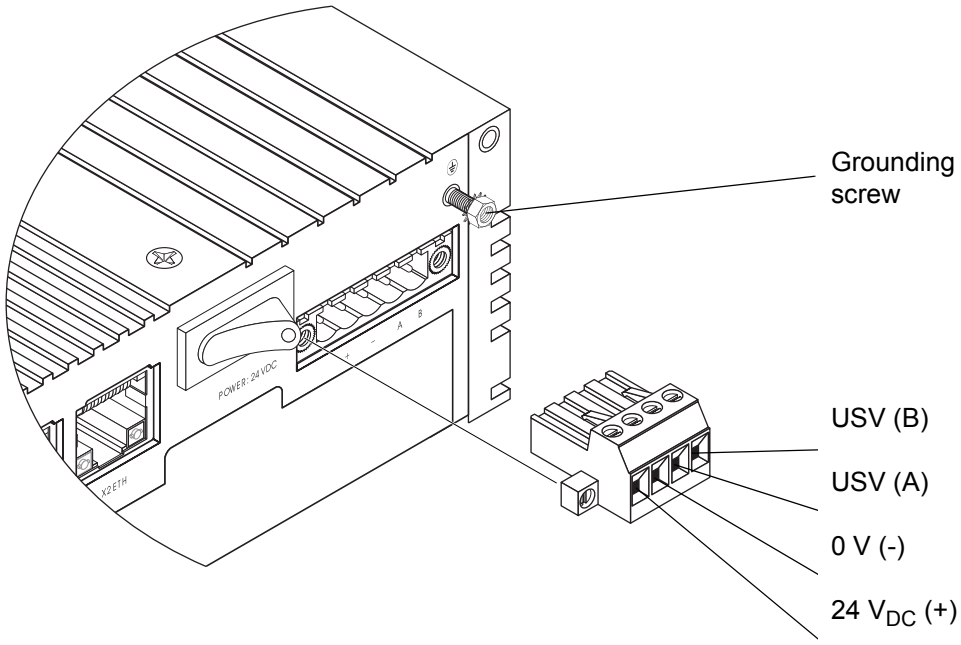



Figure 9: Power supply connection **PCC-03**

The power connector pins A-B are to be used with an uninterruptable power supply (see ▹Uninterruptable power supply◃ from page 40).

### Grounding screw

The ground screw provides an earth ground for the **PCC-03**.

**NOTICE!**

Circuit ground (0 V) and earth ground are tied together. This grounding scheme may not meet SELV and PELV European standards.

### 7.3.1 Uninterruptable power supply

A 24 V DC uninterruptable power supply is connected to the Alternating Current (AC). Output-sided 24 $V_{DC}$ are connected to the **PCC-03** (in this case). It is comprised of a power supply, switching unit and a rechargeable battery working together in one of two modes. The first mode a DC voltage is generated from the power supply so the **PCC-03** can operate when AC power is present (often referred to as normal mode). The second mode quickly switches to the battery and activates a “battery mode” signal (the name varies depending on the vendor) when the AC power is interrupted, thus providing uninterrupted power to the **PCC-03**. When fully charged, a battery should supply DC power long enough for the **PCC-03** to read the battery mode signal and execute a user-defined shutdown procedure.

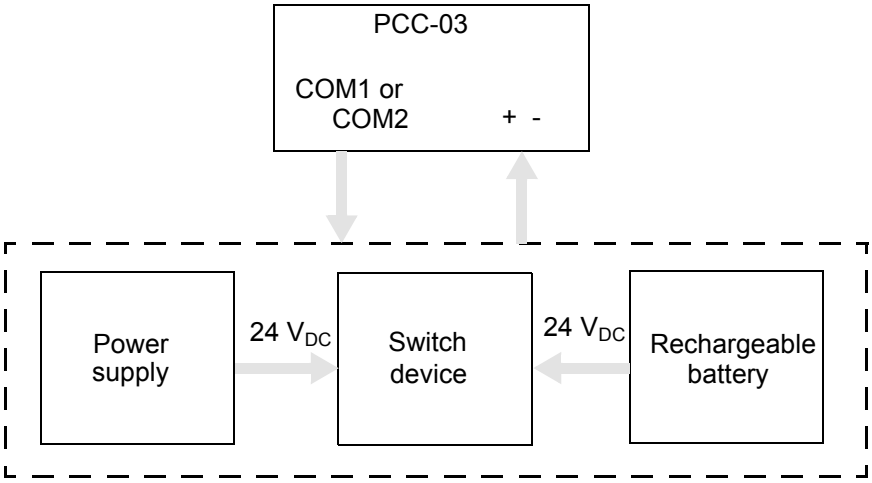



Figure 10: Function diagram 24 $V_{DC}$

**NOTE!**

The amount of time a battery can supply power is directly affected by battery capacity and the current draw of the device connected to the uninterruptable power supply.

**NOTE!**

Please contact Baumüller Nürnberg GmbH for further information referring to uninterruptable power supply.

8

# OPERATION

## General

**WARNING!**

**Risk of injury due to improper operation!**

Improper operation can result in severe personal injuries or material damage.

Therefore:

- Carry out all operating steps as per the details in this Instruction handbook.
- Before starting work assure that all covers and safety equipment is installed and operate properly.
- The control cabinet, where the device was placed, shall protect against touching of the conductive parts.
  Keep all doors of the control cabinet shut during operation.

**NOTICE!**

**The environmental conditions do not comply with the requirements.**

Unspecified environmental conditions can cause material damage.

Therefore:

- The environmental conditions must be complied to during operation (see ▹Required environmental conditions◃ on page 18).

## 8.1 Power switch

With all components and I/O properly connected, press the power switch in the direction of the dot and release it. It is a momentary switch and returns to its original position.

To turn power off, press and hold the switch for about one second and then release it to perform an orderly shutdown of the Windows operating system.

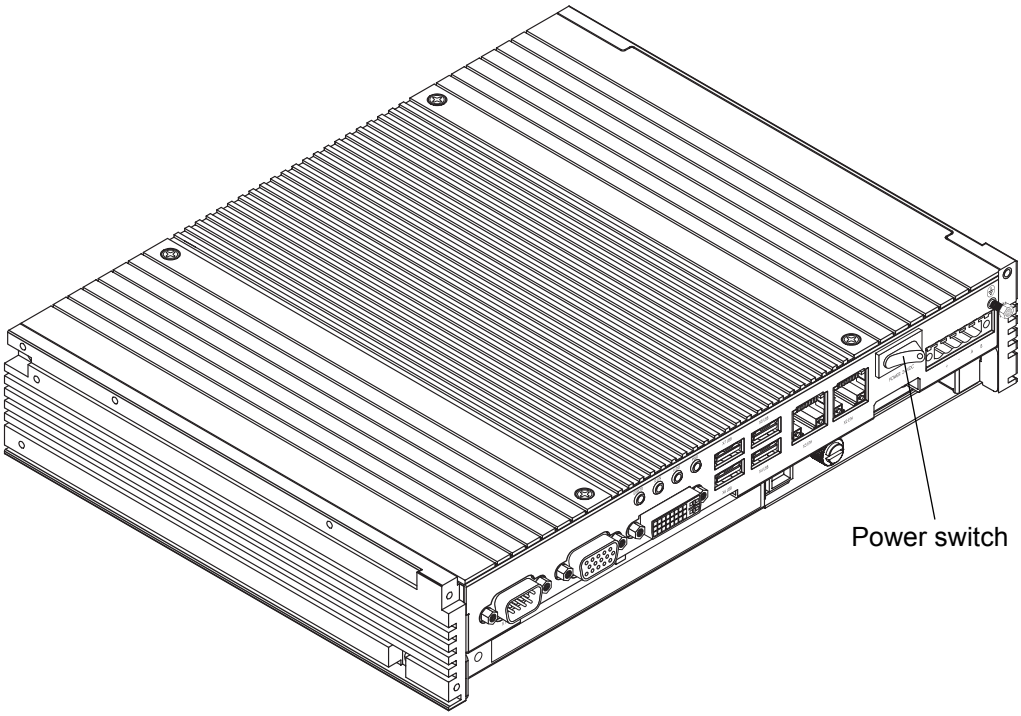



Figure 11: Power switch

The first time the **PCC-03** boots, the Windows operating system displays the software license and activation (see ▹Software license and activation◃ on page 43). Upon completion of boot-up, the **PCC-03** runs the Touchkit screen calibration (see ▹4 Points Calibration◃ on page 48).

**NOTE!**

For commissioning it is recommended to connect a USB keyboard, mouse and VGA screen to the **PCC-03** without display (BMP-BOX-03); in case of **PCC-03** panel (BMP-PAN-03) only connect a USB keyboard.

## 8.2 First start

### 8.2.1 Software license and activation

Use of the Microsoft® operating system **Windows 7** is subject to the licensing limitations specified by the Microsoft Software License.

Baumüller Nürnberg GmbH is not responsible and cannot be held liable for proper use of the operating system or any other software installed on the computer.

To reduce software piracy and provide customers with quality service, Microsoft includes a product activation requirement on some software, including some operating systems. Use of the software is limited to the first 30 days after first launching the software unless the product activation process is completed. A pop-up program prompts the user to begin the process when the software is first started. If activation is not completed, the software repeats the product activation pop-up on a pre-determined cycle. Once started, message boxes lead the user through the process to obtain proper product activation.

Additional details are included in the Microsoft Software License and are also available at www.Microsoft.com. The Windows product key is on a sticker that is affixed to the **PCC-03**.

The standard version of **PCC-03** is delivered with activated Windows® Embedded Standard 7.

### 8.2.2 Firmware and software updates

From time to time, Baumüller Nürnberg GmbH may make updates available for the firmware and software utilities used in the **PCC-03** -products.

These updates can be found at the Baumüller download center at www.baumueller.de.

### 8.2.3 Start screen

The **PCC-03** boots after switching on the 24 $V_{DC}$ power supply.

First of all the BIOS is displayed then Windows 7 Embedded is started from the system data storage (CompactFlash® card).

**BIOS start screen**

The BIOS-Start-Screen starts with „Phoenix-Award BIOS v6.00 .." and after a blank line is continued with „Phoenix Contact Value Line BIOS Rev.: R1.00.W8 02052010-C00.2“. These issues are eliminated after the following hardware test:

- The break key normally is on the top right side of the keyboard. It interrupts a procedure and the BIOS-version can be checked. Continue with any key.

**CompactFlash®-card**

A missing CompactFlash® -card appears in the BIOS-Start Screen after the „PCI device listing“ and „Verifying DMI Pool Data …..“ with „DISK **BOOT FAILURE**, INSERT SYSTEM DISK AND PRESS ENTER“.

The **PCC-03** has 2 CompactFlash® -card slots: The lower one (in the middle of the housing) is supported by the eject key (black, square plastic key between the slots). The upper one near the edge of the housing) is not supported.

If one CompactFlash®-card (with system- and data partition) is used, then insert into the lower slot.

If both slots are used, the System-CompactFlash® -card must be inserted in the upper slot. The Data-CompactFlash®-card into the lower one (with eject button support).

See Application Instruction Handbook **PCC-03** for further procedure.

## 8.3 Touchkit

**PCC-03** computers equipped with a display include Touchkit, a software utility to configure the operation of the touch screen. This utility provides multiple touch screen calibration methods as well as modes for pointer (mouse) operation and audio touch acknowledgement.

**1** To start Touchkit utility do one of the following:

- Double-click the “eGalaxTouch” icon ((see ▹Touchkit (eGalaxTouch) icon◃ on page 54).
- Click the “Start” key, navigate to the “All Programs, eGalaxTouch” folder and then click the “Configure Utility” icon

**2** The dialog „Touchkit USB Controller ... general“ is opened. All installed Touchscreen controller are displayed.

**NOTE!**

The default controller for the **PCC-03** is **USB Controller**.

**3** If multiple controllers are installed, click the icon of the controller to be modified before clicking the required tab.

### 8.3.1 Touchkit setting

The “Setting” tab allows modification of the audio acknowledgement and mouse mode features..

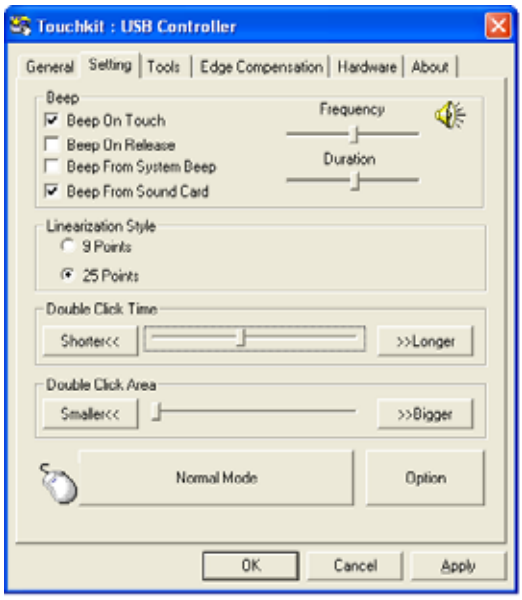



Figure 12: Dialog „Settings Touchkit“

**Audio acknowledgement**

For a **PCC-03** with audio capability, four different modes are available when an audio acknowledgement to a screen touch is desired. Click the desired check box to activate the desired mode.

- Beep On Touch: A beep is sounded when the screen is touched.
- Beep On Release: A beep is sounded when the screen touch is released

**NOTE!**

If Beep on Touch and Beep on Release are checked, every touch will generate two beeps.

- Beep From System Beep: Sound is generated from internal speaker (not applicable to **PCC-03**).
- Beep From Sound Card: Sound is generated from an external speaker.

The frequency and duration of the beep can be modified using the two sliders.

- Frequency: Move the slider to the left for a lower tone; to the right for a higher tone.
- Duration: This adjusts the time between beeps when Beep On Touch and Beep On Release are both checked. Move the slider to the left for the beep occur immediately upon the release. Move the slider to the right for the beep to be delayed to a maximum of 1 second after the release.

**Linearization Style**

Normal calibration uses four touch points to calibrate the screen. A greater accuracy of the calibration can be achieved if more touch points are used in the calibration. Chose a linearization style of either 9 or 25 points. To start the linearization function, click the “Tools” tab and then click the “Linearization” key.

**Double Click Time**

To adjust the time span that two touches are recognized as a double-click. This range is approximately 0.25 to 1 second.

**Double Click Area**

This adjusts the size of the area allowed for the second click relative to the first click.

**Mouse modes**

Mouse modes allow configuration of mouse (touch) behavior. One of five modes can be active (in ▹Figure 13◃ on page 47 shows the key with “Normal Mode” active). The available modes are:

- Normal Mode: emulates normal mouse key behavior
  - A touch and release acts as a click and release.
  - A touch, drag and release acts as a click, drag and release.
  - A constant touch behaves like a mouse button held down. If the Enable Auto Right Click function is checked, it will act as a right-click.
- Click on Touch: emulates a left mouse button click when the screen is touched
- Click On Release: emulates a left mouse button click when the screen is touched and released.
- Click On Touch Without Moving cursor: moves the cursor to the touched position and acts as a normal left click but will not perform a drag to another screen position.
- Click On Release Without Moving cursor: emulates a left mouse button click when a screen touch is released, but the cursor doesn't move to the touched point until the touch is released.

Although the modes are predefined, each mode can be manually modified by clicking the “Option” key.

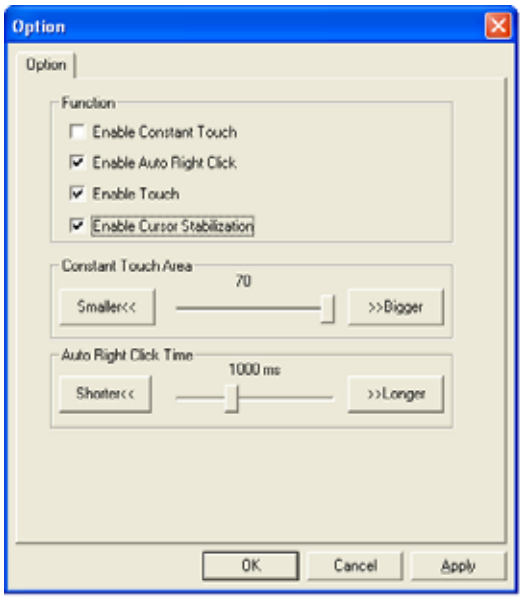



Figure 13: Mouse mode „Option dialog box“

Click the check box of the desired functionality.

- Enable **Constant Touch**: Enables the “Constant Touch Area” slider to increase/decrease movement granularity (values are displayed in pixels). Unchecked provides smooth movement while checked with the slider to the right provides the coarsest movement.
- Enable **Auto Right Click**: Enables the “Auto Right Click Time” slider to set the time required for the a touch to be held and recognized as a right click. This requires the “Auto Right Click” option to activated using Touchmon.
- Enable **Touch**: Enables or disables the touch feature of the touch screen.
- Enable **Cursor Stabilization**: When checked, this creates a slight lag in the cursor when following linear movement.
- **Constant Touch Area**: Sets the granularity of the Constant Touch function.
- Auto Right Click Time: Sets the required touch time span when using the Auto Right Click function is enabled.

### 8.3.2 Touchkit Tools

The “Tools” tab provides access to multiple tools for calibration and testing of the touch screen functionality.

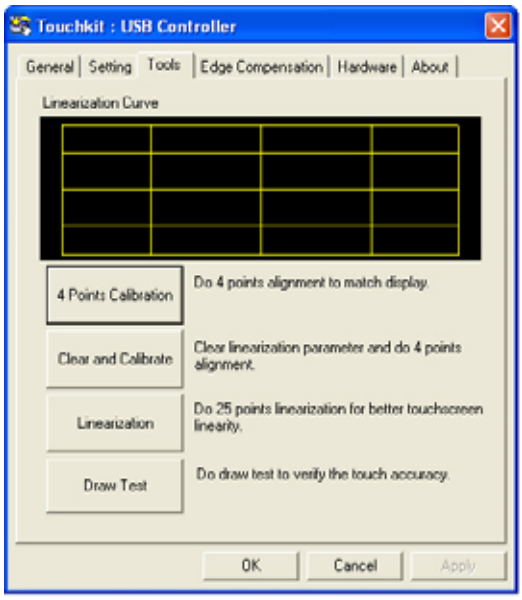



Figure 14: „Touchkit Tools“ dialog box

#### 4 Points Calibration

Basic calibration can be completed using this utility. Click the “4 Points Calibration” key to start. The display will change to a white screen with four blinking touch points..


Figure 15: 4 Points Calibration screen

Touch and hold each point until the point stops blinking. If a touch point is not touched within 30 seconds, the utility is closed, returning to the “Touchkit… Tools” dialog box. A progress bar at the bottom of the screen indicates the time remaining.

**Clear and Calibrate**

Click the “Clear and Calibrate” key to erase a linearization. This also starts the “4 Points Calibration” utility. Always use this key if changing from a linearization to a calibration to ensure the linearization doesn’t effect the calibration.

**Linearization**

Linearization is another method of calibrating a touch screen. It functions the same way as the 4 Points Calibration but uses more touch points for finer calibration.

Linearization can be performed using either 9 or 25 points. Select the number of points by clicking the “Setting” tab and clicking either the “9 Points” or “25 Points” radio key (see ▹Linearization Style◃ on page 46).

Click the “Linearization” key to start the utility. The display will change to a white screen with either 9 or 25 blinking touch points.

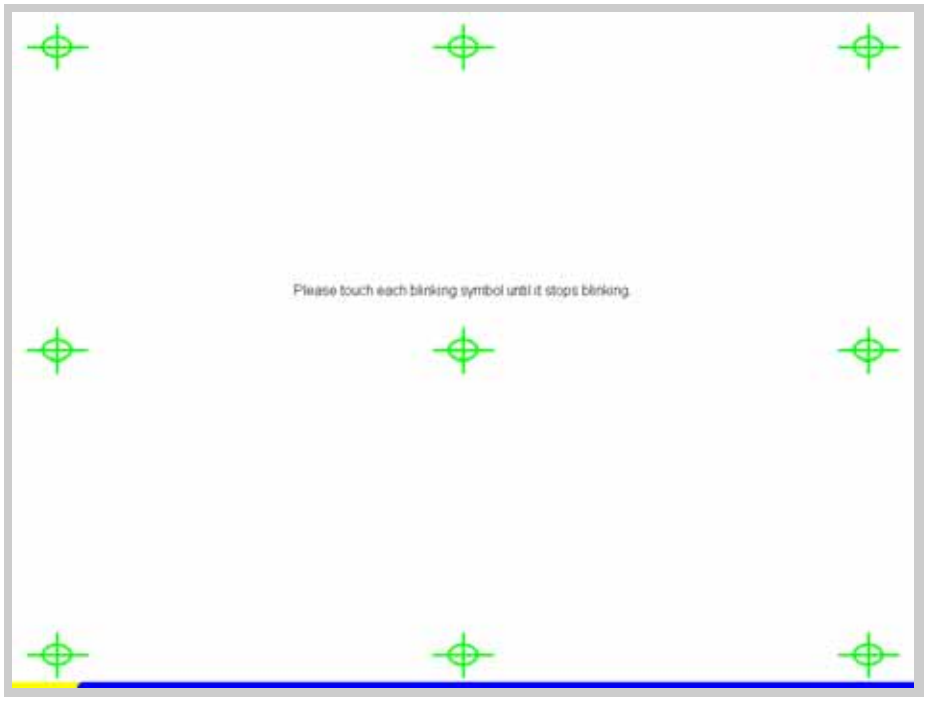



Figure 16: 9 Points Calibration screen

Touch and hold each point until the point stops blinking. If a touch point is not touched within 30 seconds, the utility is closed, returning to the “Touchkit… Tools” dialog box. A progress bar at the bottom of the screen indicates the time remaining.

### Draw Test

To verify the calibration and other settings of the touch screen, click the “Draw Test” key. This utility opens a scratch pad for testing purposes. Touch the screen and perform typical operations to evaluate the touch screen calibration and settings.

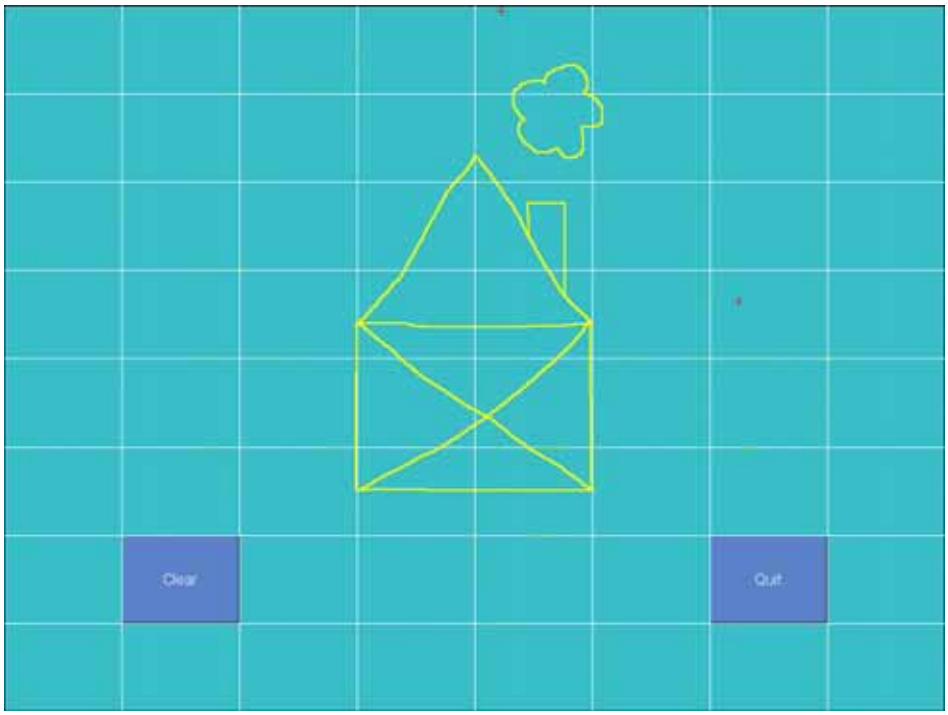



Figure 17: Draw Test screen

### 8.3.3 Touchkit Edge Compensation

The “Edge Compensation” tab sets the cursor overshoot and undershoot touch points along the edge of the screen. This helps to compensate for the difficulty sometimes experienced in touching the edge of a screen.

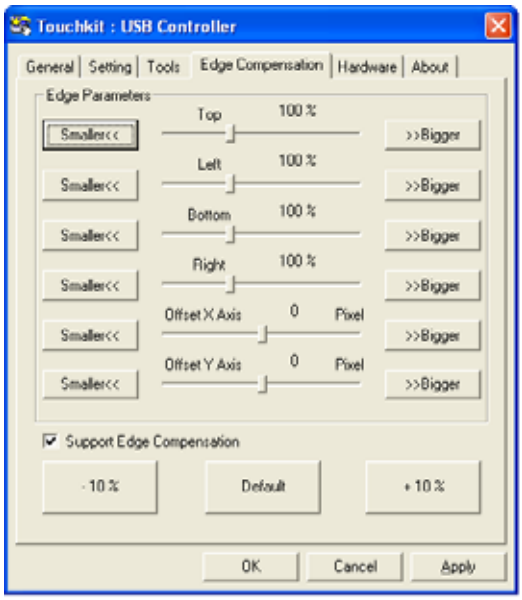



Figure 18: “Touchkit… Edge Compensation” dialog box

Individual adjustment can be made along each edge on a percentage basis. 100% is at the edge of the screen, 50% is approximately 0.5 in. before an edge (on the screen) and 200% past an edge where the cursor is not visible. In addition, the cursor display position can be shifted along either the X or Y axis, displayed by pixel.


Figure 19: Example Edge compensation

Click the “Support Edge Compensation” key to activate/deactivate the edge compensation utility.

To adjust all edges of the display “in,” click the “-10%” key. Each successive click brings the edge in 10%. To adjust all edges outward, click the “+10%” key. The relative position of each edge is shown on the sliders above. To return all sliders to 100%, click the “Default” key.

### 8.3.4 Touchkit Hardware

The “Hardware” tab displays controller and firmware information about the touch screen. This information may be required if problems occur.

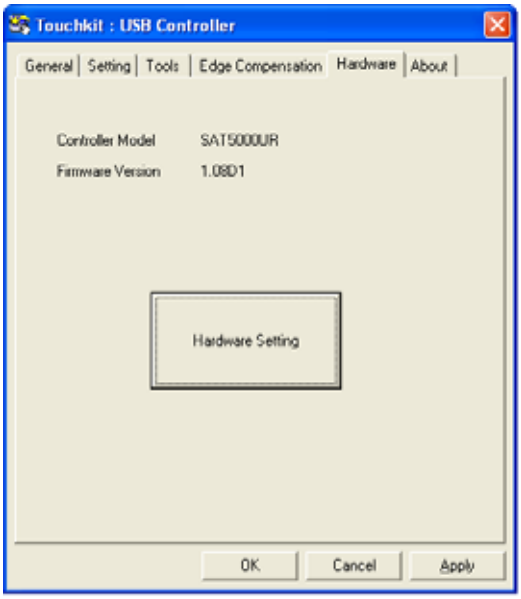



Figure 20: „Touchkit Hardware“ dialog box

Click the “Hardware Setting” key to open the “Saturn - Hardware Configuration” dialog box.

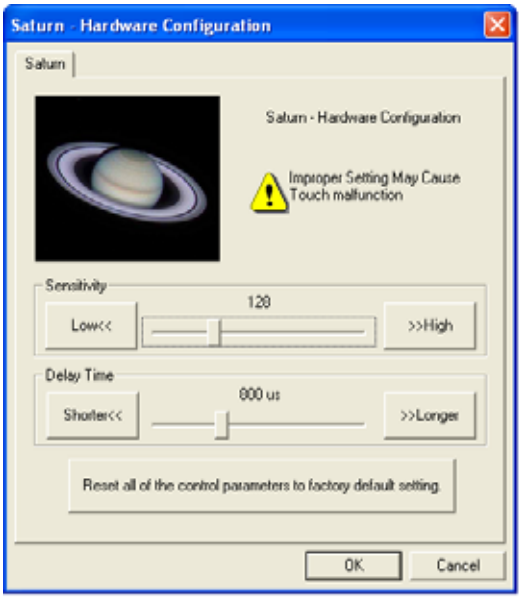



Figure 21: „Saturn - Hardware-Configuration“ dialog box

Sliders are available to adjust the sensitivity and delay time of touches. Lower sensitivity allows a lighter touch on the screen. Values range between 80 and 255.

Shorter delay time provides a quicker reaction to touches. Values range from 0 to 2550 µs. Click the “Reset …” key to return the sensitivity and delay time values to the factory defaults.

### 8.3.5 Touchkit „About“

The „About“ tab displays information concerning the touch screen driver.

### 8.3.6 Touchkit (eGalaxTouch) icon

Touchkit tools are also available as menu options from the notification area (system tray) icon.

- In Windows XP: right-click the Touchkit icon.
- In WIndows 7: right-click the eGalaxTouch icon.

If the icon is not in the notification area, click the “Start” key and:

- In Windows XP: navigate to the “All Programs, Touchkit” folder and then click the “TouchMon” icon.
- In Windows 7: navigate to the “All Programs, eGalaxTouch” folder and then click the “TouchMon” icon.

**NOTE!**

Multiple methods are available to emulate a right mouse click.

- Enable “Auto Right Click” in the Touchkit utility. This allows a constant touch to “call” a right click.
- Enable “Display key” in the Touchkit utility displays a mouse in the lower right corner of the screen. Click the mouse to alternate between right and left click of the mouse.
- Touch the “Right Click” key in the OnScreen tools palette (see ▷Figure 23◁ on page 56).

Right-click the icon in the notification area and to display the menu.

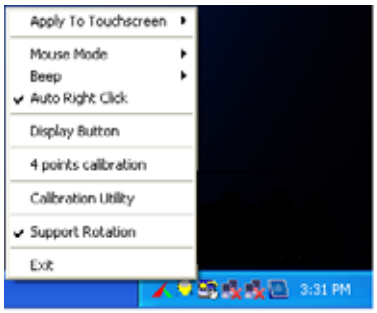



Figure 22: Touchkit-menu

### Touchkit menu functions

| Menu | Function |
|---|---|
| Apply to Touchscreen | Selects the touchscreen controller. The **PCC-03** uses a controller called “USB Controller. |
| Mouse Mode | Selects the mouse mode (see ▹Mouse modes◃ on page 46). |
| Beep | Selects the Beep mode (see ▹Audio acknowledgement◃ on page 45). |
| Auto Right Click | When checked, touch the screen for an extended time period simulates a right click (see ▹Mouse modes◃ on page 46). |
| Display key | When checked a mouse icon appears on the display screen showing the active mouse button in red. Touch the icon to change the active mouse key |
| 4 Points calibration | Launches the “4 Points Calibration” utility (see ▹4 Points Calibration◃ on page 48). |
| Calibration Utility | Opens the “Touchkit: USB Controller… Tools” dialog box (see ▹Touchkit Tools◃ on page 48). |
| Support Rotation | When checked, the touch screen orientation is corrected to match the display orientation. (Note that this must be active for the “Auto Right Click” function to work.) |
| Exit | Closes the Touchkit utility. |

## 8.4 On-screen Tools

With an optional touch screen display, additional tools are provided to aid usability.

### 8.4.1 Brightness Control

The “Brightness Control” icon in the notification area provides selections to control the brightness of a **PCC-03** touch screen display and launch the right-click tool.

To display the “Brightness Control” window, follow these steps:

**1** Touch the “Brightness Control” icon in the notification area.

**NOTE!**

If the “**PCC-03**Tools” icon isn’t in the task bar, from the “Start” menu, touch the “Start... **PCC-03** Tools“ menu.

**2** Touch the “Brightness Control” menu to display the “Brightness Control” window..


Figure 23: The „Brightness Control“ window

Move the slider in the “Brightness Control” window to adjust the brightness of the **PCC-03** display.

### 8.4.2 Right-Click tool

The floating “Right-Click” tool provides right-click functionality and a way to launch the on-screen keyboard. To perform a right click, touch the “Right-Click” key. The next touch is the same as clicking the right-mouse key.


Figure 24: Right-Click tool

To close the palette, follow these steps:

**1** Touch the “Right-Click” key.

**2** Touch the top (double-line) of the tools palette to display the palette pop-up menu.

**3** Touch the “Exit” menu.

**4** Touch “Yes” to confirm.

### 8.4.3 On-Screen Keyboard

To display the keyboard, touch the “On-Screen Keyboard” key. The “On-Screen Keyboard” dialog box may appear (see Figure 3-16). Touch the “OK” key to close the dialog box. To prevent the dialog box from appearing again, touch the “Don’t show this message again” check box before touching the “OK” key.

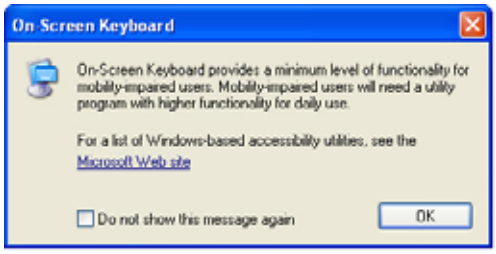



Figure 25: The „On-Screen Keyboard“ dialog box“

The “On-Screen Keyboard” window looks like ▹Figure 26◃ on page 58. To use the keyboard, touch the desired field or window. Then, touch the keys on the on-screen keyboard to type in the currently selected field.


Figure 26: “On-Screen Keyboard” window

## 8.5 Intel® Graphics Media Accelerator user interface

The **PCC-03** uses the Intel® Graphics Media Accelerator video driver and has a variety of customization features available, including multiple displays.

### 8.5.1 User interface

To access the video driver controls:

- right-click the desktop, move the pointer over “Graphics Options…” and navigate to the desired option. This provides a quick path to the required setting..

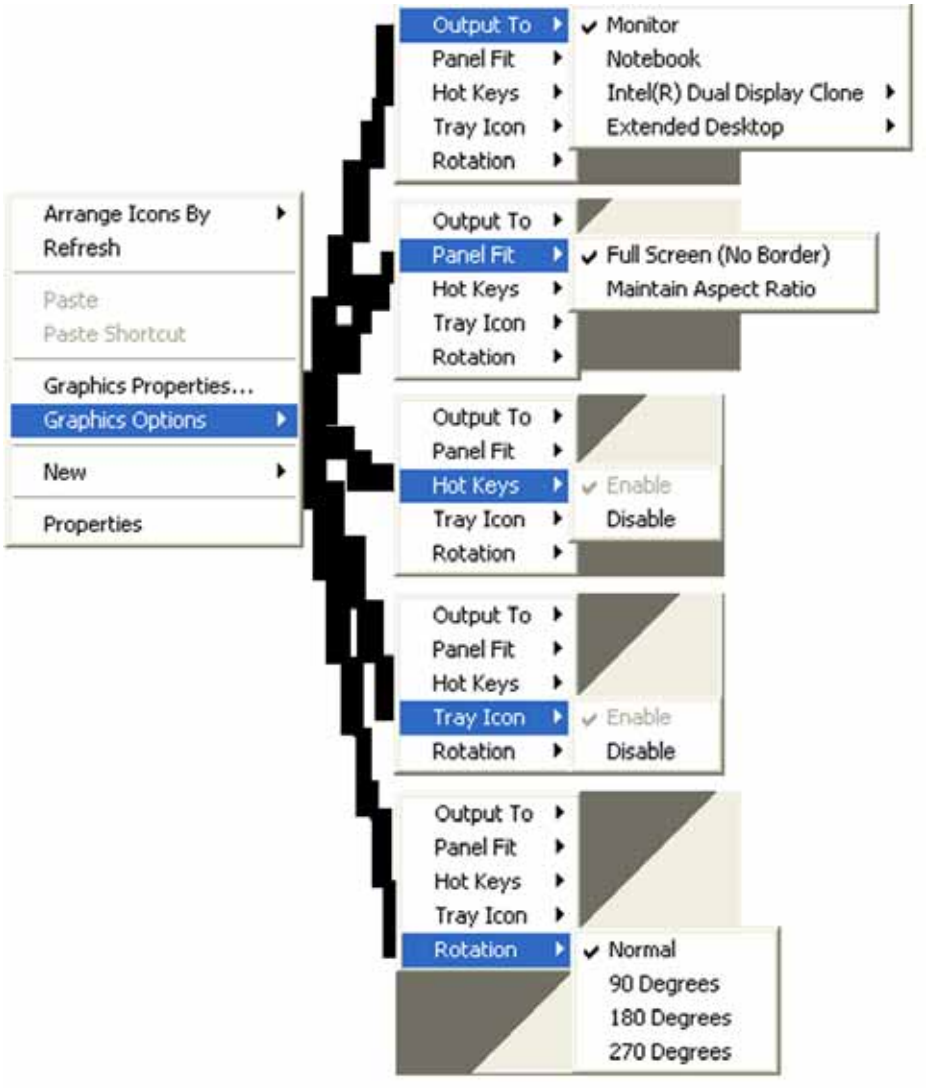



Figure 27: Graphic Media Accelerator direct select options

- **Output To** allows selection of the number and type of display (see ▹Single Display configuration◃ on page 61 and ▹Configuration of multiple displays◃ on page 63).
- **Panel Fit** Panel Fit selects either a border or no border.
- **Hot Keys** can be enabled or disabled (see ▹Hot Keys◃ on page 68).
- **Tray Icon** enables or disables the Intel video driver icon.
- **Rotation** allows selection of the display orientation (see "▹Single Display configuration◃ on page 61 and ▹Configuration of multiple displays◃ on page 63).
- right-click the desktop and click the "Graphics Properties" menu.
- right-click the "Intel video driver" icon in the notification area (system tray) and click the "Graphics Properties" menu.

- press the <Cntl>+<Alt>+<F12> keys (on-screen keyboard or external keyboard)

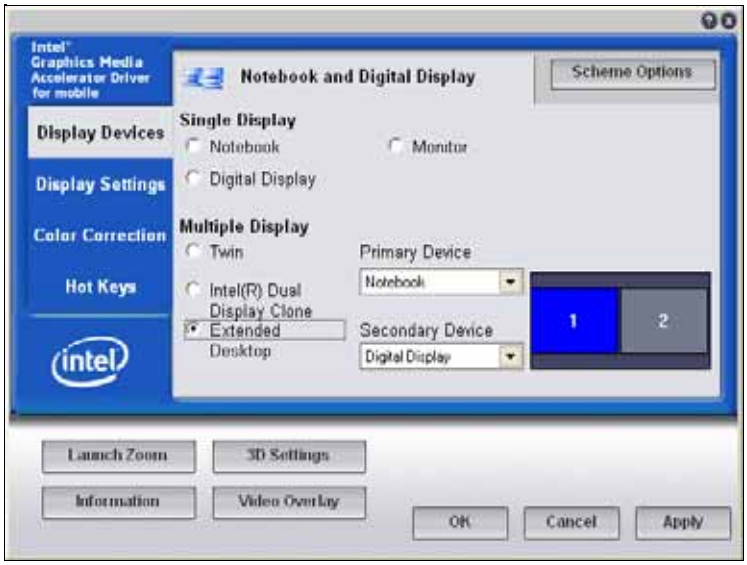



Figure 28: Graphics Media Accelerator main user interface screen

The user interface screen can be divided into a top and bottom sections. The top section provides configuration options, with the ability to save configurations as schemes. The schemes can be recalled for later use.

The bottom section of the screen provides some additional tools as well as the "OK", "Cancel" and "Apply" keys.

**NOTE!**

Context-sensitive help can be obtained with a right-click in the area in question.

The “Display Variables” dialog box allows selection of either a single display or multiple displays and the type of those displays. Once the devices have been selected, the text on the top tab indicates those devices. Additional tabs along the left side lead to additional configuration options

**NOTE!**

The video driver will not work with a PCI graphics adapter installed in an optional PCI slot

### 8.5.2 Single Display configuration

The **PCC-03** can be configured with or without a touch screen display and it can function with an auxiliary, external display (see ▹External display◃ on page 35). The single display options are:

- Notebook: the default for **PCC-03** touch screens.

**NOTE!**

The touch function of the touch screen will be active when Monitor or Digital Display is selected as the single Display Device. If the touch screen function is not desired, it can be disabled (see ▹Mouse modes◃ on page 46“)

- Monitor: Settings for an analog display, which is connected to the VGA-connection.
- Digital Display: Settings for an digital display, which is connected to the DVI-D-connection. If the **PCC-03** is without a digital display, then this option is not displayed.

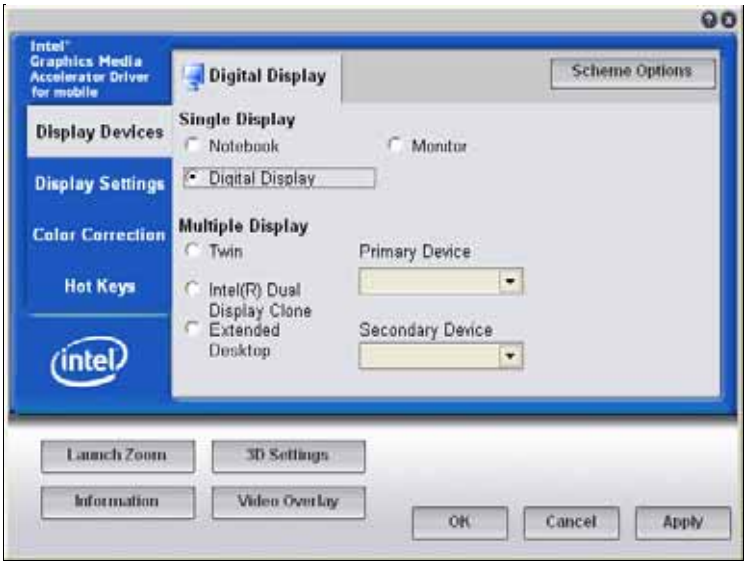



Figure 29: Selection for Single Digital Display

The currently selected options appear in the top tab of the dialog box.

### Display-settings

Click the “Display Settings” tab on the left side to access additional settings for color quality, screen resolution, refresh rate and rotation

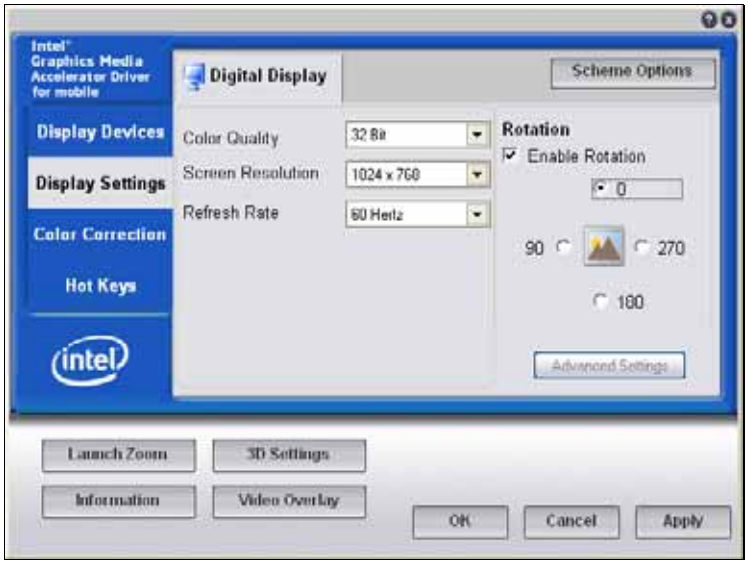



Figure 30: Display setting for one display of a multiple display setup

The drop-down boxes for each setting will only display items that are valid for the hardware configuration.

For rotation, the “Enable Rotation” check box must be checked and then click the radio key for the desired rotation.

After configuring the primary display, click the top tab to select the secondary display, if applicable.

Click the “Apply” key to apply the settings to the selected display.When configuring an external display the „Advanced Settings“ key is activated.

### Adjusting colors

Click the “Color Correction” tab on the left side to access color, gamma, brightness and contrast settings

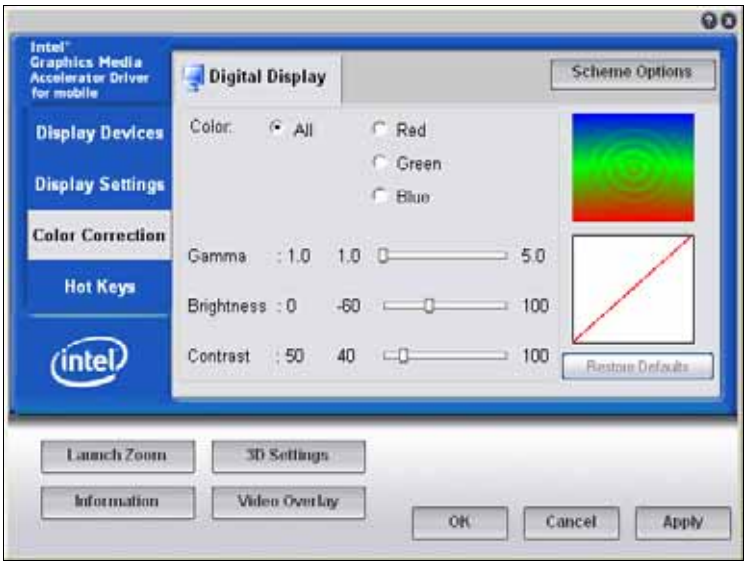



Figure 31: Color corrections

Click the “Apply” key to apply the settings to the selected display.

## 8.5.3 Configuration of multiple displays

The **PCC-03** can be connected to 2 displays at the same time. Thereby, the integrated Touchscreen-Display or displays, which are connected to a VGA- or DVI-D-connections, are possible (see ▹External display◃ on page 35).

**NOTE!**

Two external connections and one internal connection (to the touchscreen display) are available. However, two of them can be active simultaneously.

The configuration options for multiple displays are:

- Twin: outputs the same content with the same configuration settings to displays connected to the DVI-D and VGA ports. A digital display device must be connected to the DVI-D Port for the Digital Display selection to be available.
- Intel(R) Dual Display Clone: typically used for two display devices functioning at different resolutions and refresh rates, such as with a touch screen display and an analog projector.
- Extended Desktop: outputs two displays independently with different configurations for increased desktop space

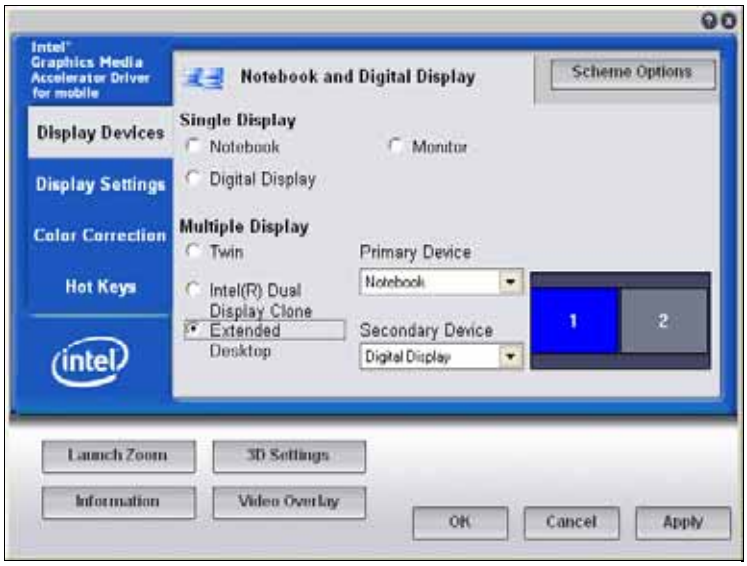



Figure 32: Extended Desktop selected for multiple displays

After clicking one of the Multiple Display radio keys, select which is the Primary Device and which is the Secondary Device using the drop-down menus. Note that the Primary-Device typically has more options. Also, some options require a digital device be connected to the DVI-D port before they become visible.

**NOTE!**

The touch function of the touch screen will be active when Monitor or Digital Display is selected as the single Display Device. If the touch screen function is not desired, it can be disabled (see ▹Mouse modes◃ from page 46)

The currently selected options appear in the top tab of the dialog box.

### Display Settings

Click the “Display Settings” tab on the left side to access additional settings for color quality, screen resolution, refresh rate and rotation.The top tab allows selection of the display if Dual Display Clone or Extended Desktop are selected.

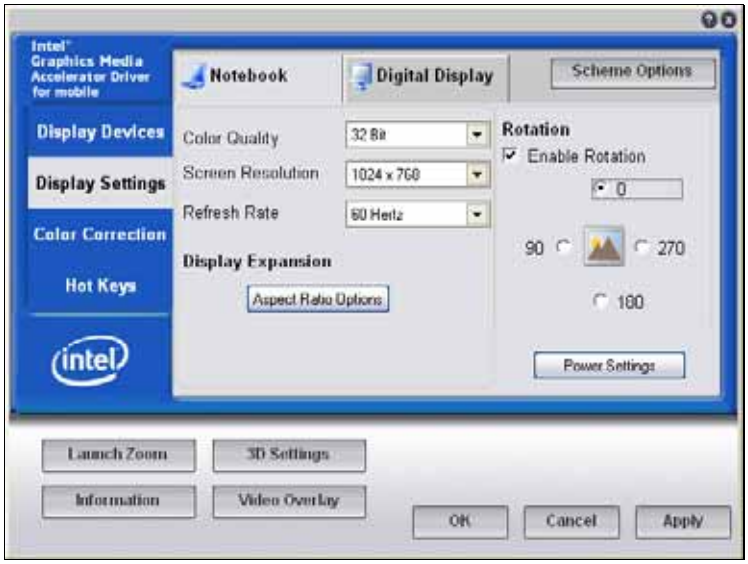



Figure 33: Display setting for one display of a multiple display setup

The drop-down boxes for each setting will only display items that are valid for the hardware configuration.

For rotation, the “Enable Rotation” check box must be checked and then click the radio key for the desired rotation.

After configuring the primary display, click the top tab to select the secondary display, if applicable.

Click the “Apply” key to apply the settings to the selected display.

When configuring a notebook display, the “Power Settings” key becomes available.

### Adjusting colors

Click the “Color Correction” tab on the left side to access color, gamma, brightness and contrast settings..

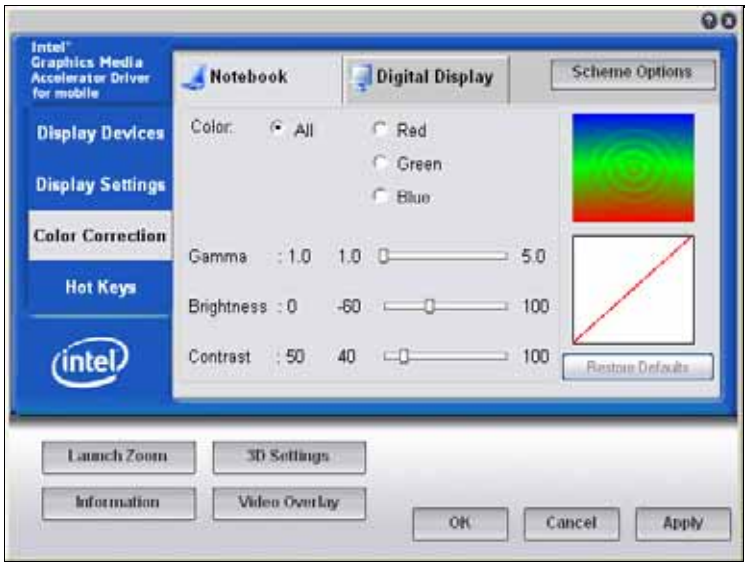



Figure 34: Adjusting colors

Click on the top tab to select the desired display for configuring Dual Display Clone or Extended Desktop selections.

Click the “Apply” key to apply the settings to the selected display.

## 8.5.4 Adjusting 3D-operation

Click the “3D Settings” key to configure OpenGL settings.

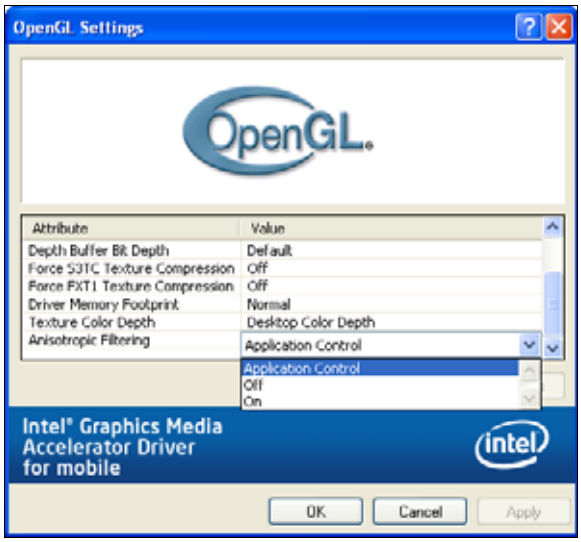



Figure 35: Dialog „OpenGL Settings“

### 8.5.5 Configuration video overlay

Click the “Video Overlay” key to open the “Overlay Settings” dialog box.

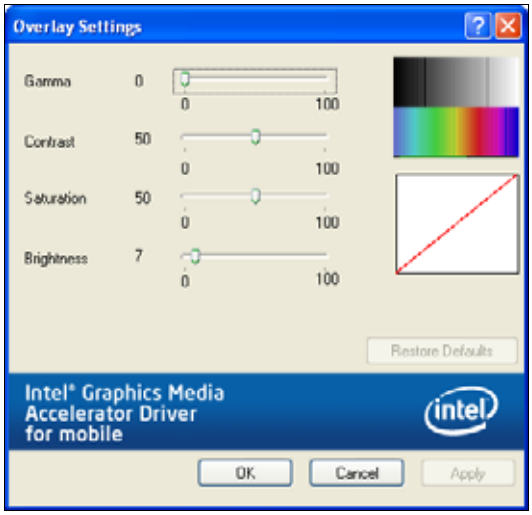



Figure 36: „Overlay Settings“ dialog box

Video overlay adjustments provide the ability to make changes to video running in a separate, pop-up window.

### 8.5.6 Schemes

Configuration selections can be saved as schemes. Schemes can be recalled when desired activating the saved settings without the need to individually set each parameter.

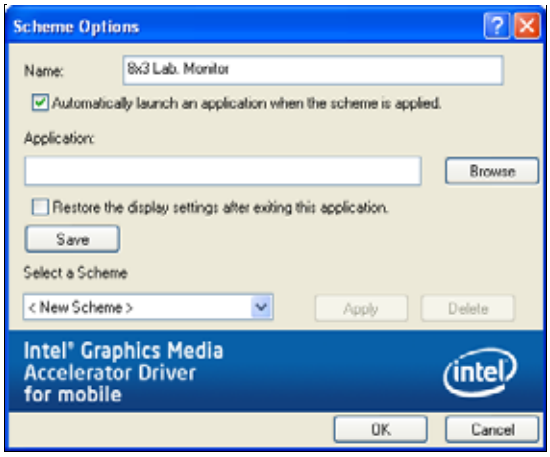



Figure 37: „Scheme Options“ dialog box

To save a display configuration as a scheme:

1 Make the desired configuration settings.

2 Press the “Scheme Options” key to open the “Scheme Options” dialog box.

3 Type a name in the “Name” field.

4 If desired, an application can automatically be launched when the scheme is called. Click the appropriate check boxes and browse to the desired application.

5 Click the “Save” key when finished.

To call a saved scheme do one of the following:

- click the icon in the notification area (system tray) of the tasteable, and then click the “Select Scheme” menu.
- right-click the desktop and then click the “Select Scheme” menu

### 8.5.7 Hot Keys

The Intel® graphics driver comes with pre-defined, assignable hot keys to initially select a single active display and degrees of rotation for that display. To change an assignment:

1 Click the “Hot Keys” tab on the left side of the screen..

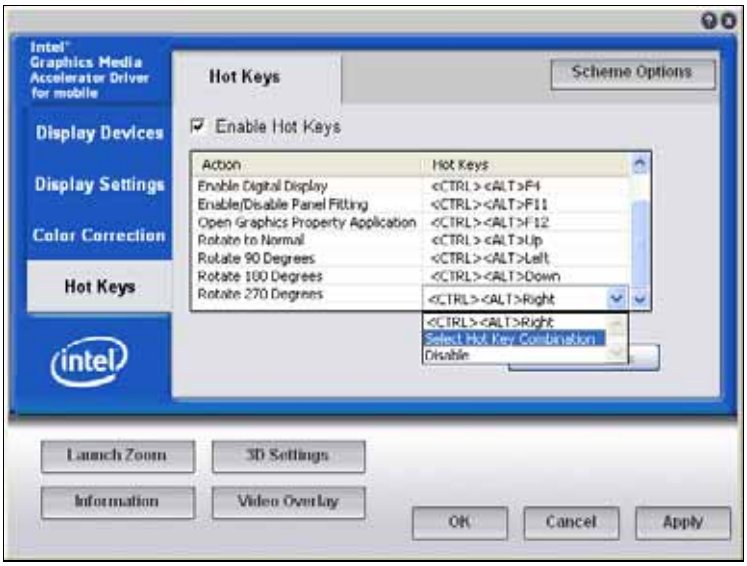



Figure 38: Modification of hot key shortcuts

**NOTE!**

Enable Digital Display <CTRL<ALT>F4 only appears in the list if a digital display is connected to the **PCC-03** DVI-D port.

**NOTE!**

If the system is waiting for a user to login, the hot keys will not work until after the login is completed.

2 Scroll down the list and locate the desired action. Note the current hot key combination for the selected action.

3 To change the hot key combination, click the drop-down menu and click “Select Hot Key Combination” on the menu. A dialog box appears.

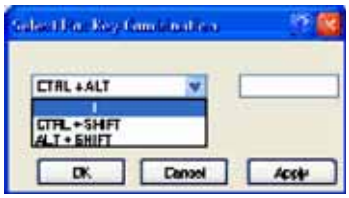



Figure 39: Hot key selection

4 Click the drop-down menu for the field on the left, and then click the desired combination of Ctrl, Alt and Shift keys. This combination selects the first two keys of the three-key combination.

5 Place the cursor in the blank field at the right and then press the desired third key to create the hot key combination for the selected action. The third key can be a letter, number, function or arrow key (up, down, left or right).

6 Click the “Enable Hot Keys” check box.

7 Click the “OK” key to store the new hot key combination and close the dialog box.

# 9

# MAINTENANCE

## General

**WARNING!**

**Risk of injury due to improper maintenance!**

Improper maintenance can result to serious personal injury and property damage.

Therefore:

- Before starting, ensure that there is sufficient room to carry out the work.
- Pay attention to order and cleanliness at the installation site! Components that are loosely stacked or lying around can cause accidents.

The **PCC-03** has several removable components.

**NOTE!**

To access components, it may be necessary to remove cables connected to the **PCC-03**

## 9.1 PCC-03 components

There is an access door under the connectors of the **PCC-03** system module (see Figure 4-1). Under the access door are two type II CompactFlash® slots (slot 0 and slot 1), a bay for an optional optical storage device, a removable hard disk bay, and the RTC battery.

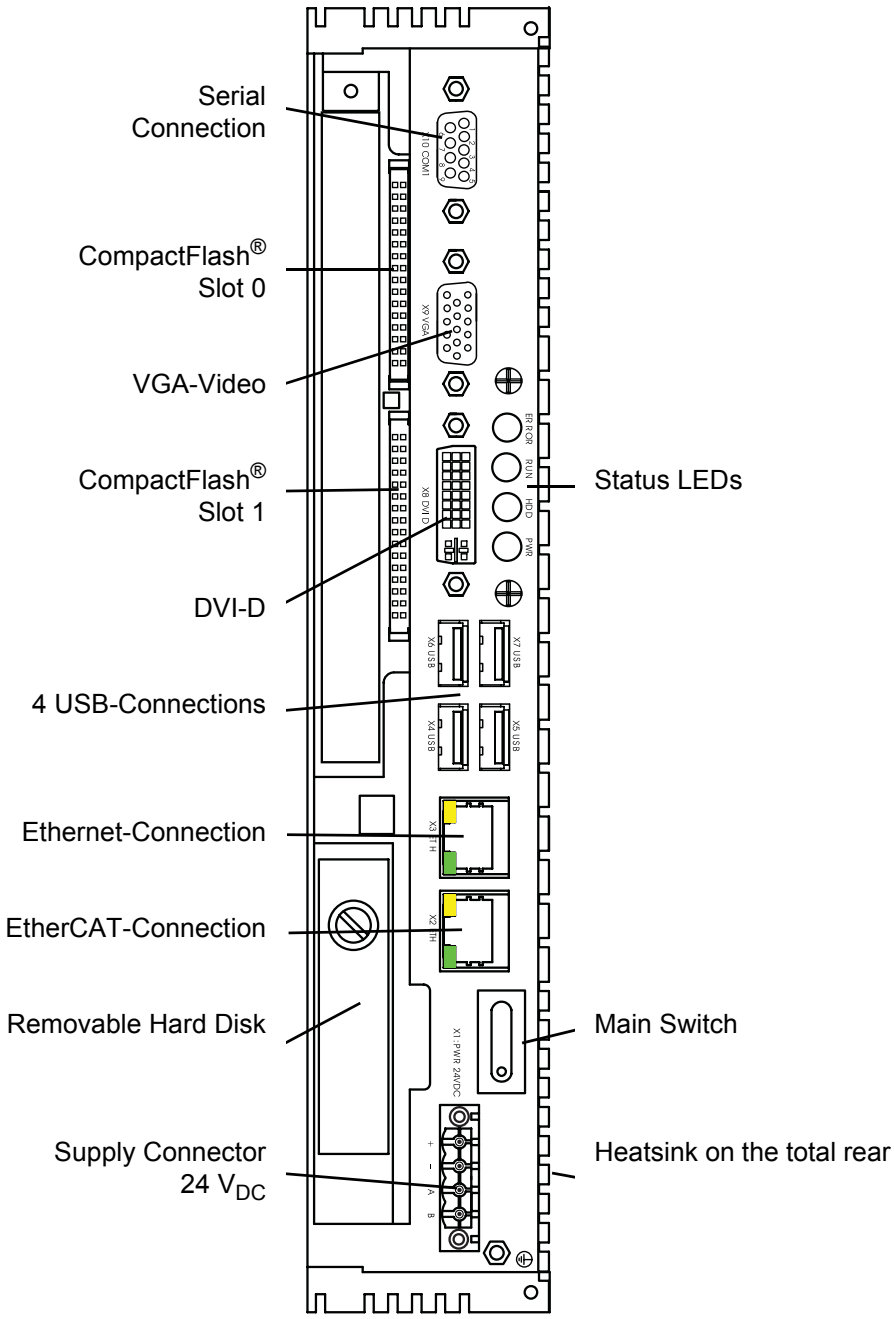



Figure 40: **PCC-03** with access door open

### 9.1.1 Real-time clock battery

There is a battery located under the access door. This battery supplies power to the Real -Time Clock (RTC) in the **PCC-03** when the system is not connected to a 24 V DC power source. The battery has a typical life of 5 years and requires replacement occasionally.

To replace the battery

1. Open the access door at the rear of the **PCC-03** module.
2. The RTC battery is above the hard disk slot. Use a needle nose pliers to carefully pull out the battery.
3. Be sure to replace the battery with the same type (CR2032 3V Lithium)

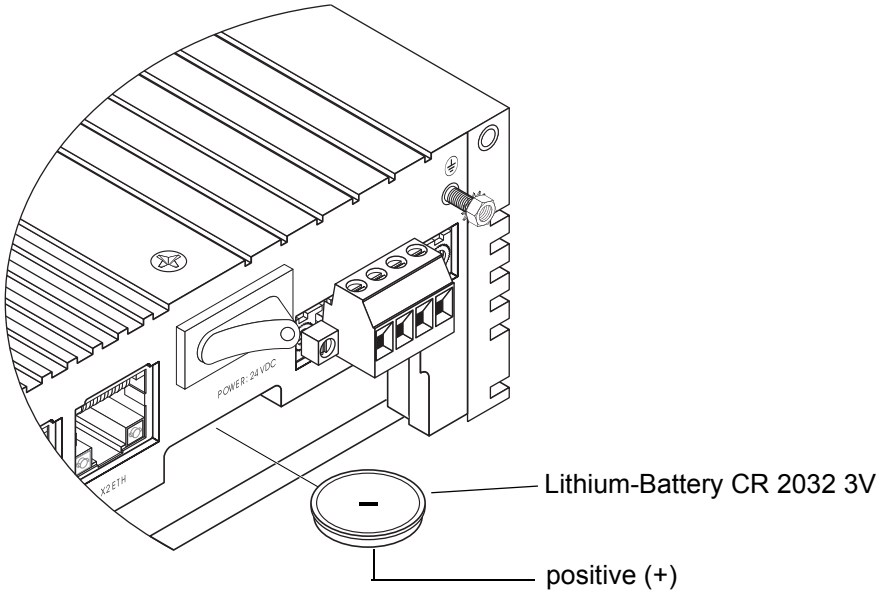



Figure 41: Insert RTC battery as shown

### 9.1.2 Hard disk drive

The hard drive installs in a tray that is easily removable. **PCC-03** systems without a hard drive come with a blank tray. To install a new hard drive or replace the current hard drive, follow these instructions:

**1** Remove power from the unit.

**NOTE!**

If necessary, move or disconnect any cables that interfere with accessing the hard drive.

**2** Open the access door.

**3** Turn the screw counterclockwise several turns. It is spring-loaded and, when it clears the threads, it pops out.

**4** Grasp the screw and swing the front lever out from the door:

**5** Pull the lever to slide the tray and hard drive assembly out of the bay.

**NOTICE!**

Keep the access door flat to ensure the tray clears as it is removed.

**6** If present, the hard drive can be removed from the tray by removing the four screws along the sides of the hard drive.

**7** If necessary, install the hard drive in a tray using the appropriate mounting hardware for the drive.

**NOTE!**

The **PCC-03** can be operated without a hard drive (booted from the CompactFlash® Master). For extended operating periods, it is recommended that an empty tray be installed in the drive bay and tightly locked.

**8** With the hard drive installed in the tray (or with a blank tray), orient the tray so the front lever is fully extended and toward the power connector. Slide the assembly straight into the slot until it clicks into place.

**9** Gently push the drive in so the connector is properly seated.

**10** Swing the front lever flat across the front of the drive assembly.

**11** Using a screw driver, push the screw in and turn clockwise to secure the front lever.

**12** Close the access door and return any removed cables to their proper connector.

**13** Restore power.

## 9.2 BIOS configuration

Although Baumüller Nürnberg doesn't recommend changing BIOS configuration settings without specific instruction from Baumüller Technical Services, this is something that may be necessary. To access the BIOS configuration, there must be an attached (physical) keyboard through one of the USB ports. During boot-up, the BIOS briefly displays the comment "Press DEL to enter Setup." Follow the on-screen instructions and be sure to save any changes.

### 9.2.1 Boot options

There are two boot modes in the **PCC-03**.

**Automatic boot mode**

Automatic mode checks for bootable devices in the order (first, second and third) specified in the BIOS. To view or change a boot device:

1 Power-up or restart the **PCC-03** and, when the first black screen with white text appears, press the <Delete> key about once every second to initiate the BIOS Setup Utility.

2 Use the arrow keys to highlight **Advanced BIOS Features** then press the <Enter> key.

3 Select a device boot order (first, second or third) then press the <Enter> key.

- Select a device:
  Hard Disk CDROM
  USB-FDD PXE Boot X3:ETH
  PXE Boot X2:ETH Disabled

**NOTE!**

If a bootable CompactFlash® card is installed, **CF Slot 0** and/or **CF Slot 1** will appear as selections.

Additional items will be listed if an expansion chassis is installed with one or two network cards that support network booting.

- Press the <Enter> key to accept the device or press the <Esc> key to abort the change.

4 **Boot Other Device** looks for any bootable device in case the first, second and third boot devices fail or are not available. To enable this feature:

- Use the arrow keys to highlight **Boot Other Device** and press the <Enter> key.
- Select Enabled then press the <Enter> key to accept the change.

5 When more than one hard disk device type or CDROM device type is connected to the **PCC-03**, they can be prioritized in the boot order. To do that:
   - From the Advanced BIOS Features menu, select either **Hard Disk Boot Priority** or **CD-ROM Boot Priority** from the **Advanced BIOS Features**.
   - Follow the Item Help directions on the right side to move (prioritize) a highlighted device up or down in the list.
   - Press the <Esc> key to save the change and exit the submenu.
6 When ready, press the <F10> key to save changes, exit and continue booting the **PCC-03**.

**Manual boot mode**

Manual boot mode overrides automatic boot mode and allows users to boot from external USB devices such as a memory stick, CompactFlash® card, CD-ROM, etc. To boot from an external device:

1 Connect a bootable USB device before booting. Otherwise, it will not be listed in the **Boot** menu.
2 Power-up or restart the **PCC-03** and, when the first black screen with white text appears, press the <F12> key about once every second to initiate the **Boot** menu
3 Power-up or restart the **PCC-03** and, when the first black screen with white text appears, press the <F12> key about once every second to initiate the **Boot** menu.
4 Use the arrow keys to highlight the desired device under Hard Disk or CDROM, then press the <Enter> key to boot from that device.

### 9.2.2 Power on after power fail options

The **PCC-03** provides three options for power-up behavior once power is applied. To change the setting:

1 Select „Integrated Peripherals“.
2 Select „SuperIO Device“.
3 Select „PWRON After PWR-Fail“.
4 Select:
   - OFF - for the **PCC-03** to remain OFF.
   - ON - for the **PCC-03** to power-up and reboot when power is restored (the default mode).
   - Former-Sts - for the **PCC-03** to maintain its on or off status before power was restored.
5 Press the <Enter> key to accept the change.
6 Save the change and confirm it.

## 9.3 Repair

If the device is out of order, please contact your sales agency or:

**Baumüller Nürnberg GmbH**

Ostendstr. 80 - 90
90482 Nürnberg
Germany

Tel. +49 9 11 54 32 - 0
Fax: +49 9 11 54 32 - 1 30

E-Mail: mail@baumueller.de
Internet: www.baumueller.de

10

# TROUBLESHOOTING

## General

**WARNING!**

**Risk of injury due to improper troubleshooting!**

Therefore:

- Only qualified personnel may work on this device!
- The personnel, working on the Industry PC must be familiar operating the device and of the safety instructions. The user must know how to react on error displays and error states, The user must have special knowledge of error displays reactions and of the error states.

Which is the correct CompactFlash®-memory type?

- Industrial fixed media CompactFlash® cards must be used in the **PCC-03** CompactFlash® slots. Though the brand does not matter, the type of card does. Therefore, as the Windows® operating system will not boot from consumer grade removable media CompactFlash cards in a **PCC-03**, they cannot be used.

Is the CompactFlash memory hot-swappable?

- Never hot-swap CompactFlash® cards as they are considered as hard drives in a **PCC-03**. Therefore, hot-swapping CompactFlash cards in a **PCC-03** could lead to data loss or a corrupted CompactFlash® card.

**PCC-03** will not start an operating system from a USB port.

- Contact technical support.

11

# ACCESSORIES AND SPARE PARTS

This chapter lists the accessories and spare parts for the **Industry PC**. Our Product Management is looking forward to inquiries and suggestions concerning spare parts.

# 12

# DISPOSAL

**NOTE!**

Baumüller products are not subject to the scope of the EU's Waste Electrical and Electronic Equipment Directive (WEEE, 2002/96/EC). Hence, Baumüller is not obligated to bear costs for return and disposal of waste electronic equipment.

**NOTE!**

**Avoid polluting the environment as a result of improper disposal.**

Therefore:

- Only dispose in compliance with the health and safety regulations.
- Take heed of any special local regulations. If you are unable to directly ensure safe disposal yourself, commission a suitable disposal contractor.
- In the event of a fire, hazardous substances could possibly be generated or released.
- Do not expose electronic components to high temperatures.
- Beryllium oxide is used as inner insulation, for example for various power semiconductors. The beryllium dust that is generated upon opening is injurious to the health.
  Do not open electronic components.
- Dispose of capacitors, semiconductor modules and electronic scrap as special waste.

**WARNING!**

Danger as a result of faulty deinstallation!

The deinstallation and disposal requires qualified personnel with adequate experience.

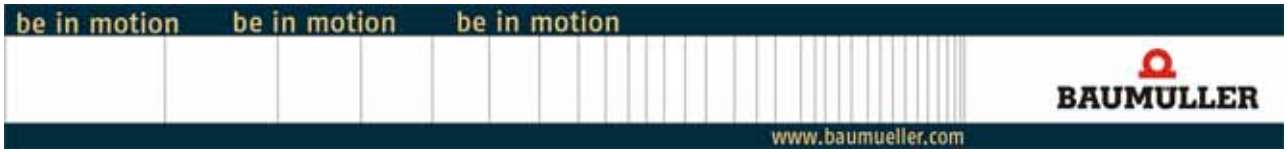
Therefore:

- Only allow deinstallation and disposal to be performed by qualified personnel.

## 12.1 Disposal facilities/authorities

Ensure that the disposal is handled in compliance with the disposal policies of your company, as well as with all national regulations of the responsible disposal facilities and authorities. In case of doubt, consult the bureau of commerce or environmental protection authority responsible for your company.

# APPENDIX A - DECLARATION OF CONFORMITY




# EC - Declaration of Conformity

**Doc.-No:** **5.12061.00**
**Date:** **25.10.2012**

# according to EMC Directive 2004/108/EG

The manufacturer:

Baumüller Nürnberg GmbH
Ostendstraße 80-90
90482 Nürnberg, Germany

declares that the product:

Designation: Industrial PC PCC-03
Type: BMP-PAN-03, BMP-BOX-03
Manufactured since: 01.11.2012

is developed, designed and manufactured in accordance with the EMC Directive 2004/108/EC.

Applied harmonized standards:

| Standard | Title |
|---|---|
| EN 55022: 2006<br>A1:2007 | Information technology equipment - Immunity characteristics - Limits and methods of measurement |
| EN 55024: 1998<br>A1:2001 / A2:2003 | Information technology equipment - Immunity characteristics - Limits and methods of measurement |
| EN 61000-6-2:2005 | Immunity for industrial environments |

The products must be installed correctly and all notes and safety notes of the referring instruction handbook must be complied with, to guarantee the compliance to the guidelines.

Nürnberg / 25.10.2012
Place / Date

The content of the Declaration of Conformity is subject to change. The current version can be obtained on request.

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# Table of Figures

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# Revision survey

| Version | Status | Changings |
|---|---|---|
| 5.12045.01 | 31.08.2012 | First release |
| 5.12045.02 | 23.10.2012 | Revision |
| | | |

**Notes:**

**be in motion**

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