

BEETLE /iPOS plus

All-in-one POS System

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Please send us a copy of this page if you have any constructive criticism.
We would like to thank you in advance for your comments.

With kind regards,

Your opinion:

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BEETLE /iPOS plus

All-in-one POS System

User Manual

Edition August 2013

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Manufacturer's Certification



The device complies with the requirements of the EEC directive 2004/108/EC with regard to 'Electromagnetic compatibility' and 2006/95/EC "Low Voltage Directive" and RoHS directive 2011/65/EU.

Therefore, you will find the CE mark on the device or packaging.



In addition, the BEETLE /iPOS plus has received the UL symbol and cUL symbol.

FCC-Class A Declaration

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Modifications not authorized by the manufacturer may void users authority to operate this device.

This class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Important Notes

The Wincor Nixdorf International GmbH is not responsible for any radio and television malfunctions which emerge from unauthorized changes in the device. Make sure that only cables and devices may be connected which are admitted by Wincor Nixdorf. The user is responsible for any malfunctions that emerge from the actions mentioned before.



The device may only be repaired by authorized qualified personnel. Unauthorized opening of the device and inexpertly carried-out repairs may not only seriously jeopardize the safety of the user, but also cancel all warranty and liability agreements.



Expansion cards with electrostatically sensitive devices (ESD) *may* be marked with this sticker.

When opening the device or handling modules fitted with ESD, please observe the following instructions, which pertain to all electrostatic sensitive devices (ESDs):

- Always use the antistatic kit.
- Statically discharge yourself, for example by touching an earthed object (such as a heat radiator) before beginning to work with ESD-labeled components.
- Likewise, all equipment and tools used in working with such components must be free of static charge.
- Pull the mains plug before inserting or removing such components.
- Only handle such components by their edges.
- Never touch any terminal pins of the strip conductors on such components.

Safety Notes

The BEETLE /iPOS plus conforms to the current safety standards for data processing equipment.

- If this device is taken from a cold environment into the operating room, moisture condensation may form. The device must be absolutely dry before being put into service; an acclimatization period of at least two hours must therefore be observed.
- This device is equipped with a safety-tested power cable and may be connected only to a prescribed grounded-contact power socket.

- When setting up the device, ensure that the power socket on the device and the grounded-contact power socket are easily accessible.
- Whenever work of any kind is done on the device, as well as when data cables are plugged and/or unplugged, the device must be completely disconnected from the line voltage. To do so, turn the device off and unplug the power cord.
- To disconnect the device from the supply voltage completely, switch off the device and disconnect the power plug of the system.
- Never plug in or unplug data communication lines during thunderstorms.
- Protect devices from vibrations, dust, moisture and heat.
- Always dispose of used parts, such as batteries, in an environmentally safe manner.
- In emergencies (e.g. damaged housing or damaged power cable, penetration by liquids or foreign bodies), the device must be switched off immediately, the power plug disconnected and the Customer Service of Wincor Nixdorf or your dealer must be notified.
- Your BEETLE system is the result of modern technical innovation. So please see for according structural and technical surroundings to guarantee a faultless and efficient work of your BEETLE. Therefore, you should connect your BEETLE or other IT-devices only to power supply systems with separately guided protective earth conductor (PE). This kind of electricity system is known as TN-S network. Do not use PEN conductors!
Please also observe the recommendations of the norm DIN VDE 0100, Part 540, Appendix C2 as well as EN50174-2, §5.4.3. Thus you can help to avoid possible mal functions.
- If you replace a storage medium, make sure that you only use the storage medium recommended or approved by Wincor Nixdorf.
- You can connect or disconnect USB devices during operation of your BEETLE, provided that these devices comply with the specifications according to *usb.org*. Other peripheral devices (such as PoweredUSB printer) should be connected to or disconnected from your BEETLE system only after the BEETLE has been switched off.

Introduction

The BEETLE /iPOS plus is an all-in-one POS system which combines an easy to maintain and modern design with multi-functionality. The powerful system fulfils all the modern technical and environment-friendly standards that are required today.

The open architecture of the system makes it possible to use different operating systems of Windows and Linux. So, whenever you want to expand your BEETLE /iPOS plus, please contact your Wincor Nixdorf International GmbH branch office or your dealer.

About This Manual

This documentation is intended to help you to work with the POS system and to serve as a reference work. The detailed table of contents help you find the desired information quickly and easily.



Notes in the manual are marked by this symbol.



This symbol is used for warnings.

The type and scope of application programs depend on the customer's own selection; therefore, software will not be discussed further in this manual.

You will find the description of the available peripherals on:

http://www.wincor-nixdorf.com/internet/site_EN/EN/Support/Downloads/POSLotterySystems/Manuals/manuals_node.html

Care of the BEETLE /iPOS plus

Clean your BEETLE /iPOS plus housing at regular intervals with a dry, lint-free cloth. If this does not suffice please use a suitable plastic-surface cleaner which you can order from Wincor Nixdorf International GmbH. For more information about cleaning read the chapter “Projective, Capacitive Touch Screen”. When cleaning always make sure that the power plug is disconnected and that no liquid finds its way into the device.

Recycling the BEETLE /iPOS plus

Environmental protection does not begin when the time has come to dispose of the BEETLE; it begins with the manufacturer. This product was designed according to our internal norm “Environmental conscious product design and development”.

The BEETLE /iPOS plus system is manufactured without the use of CFC and CHC and is produced mainly from reusable components and materials.

Please do not stick labels onto plastic case parts. This would help us to reuse components and material.

But there are still some parts that are not reusable. Wincor Nixdorf International GmbH guarantees the environmentally safe disposal of these parts in a Recycling Center, which is certified pursuant to ISO 9001 and ISO 14001.

You can protect our environment by only switching on your equipment when it is actually needed. If possible, even avoid the stand-by-mode as this wastes energy, too. Also switch your equipment off when you take a longer break or finish your work.

Please contact your competent branch or the Recycling Center Paderborn (for European countries) for information on how to return and reuse devices and disposable materials under the following mail address.

Email: info@wincor-nixdorf.com or on the internet.

We look forward to your mail.

Warranty

Wincor Nixdorf (WN) generally guarantees a warranty engagement for 12 months beginning with the date of delivery. This warranty engagement covers all damages which occur despite a normal use of the product.

Damages because of

- improper or insufficient maintenance,
- improper use of the product or unauthorized modifications of the product,
- inadequate location or surroundings

will not be covered by the warranty.

For further information on the stipulation consult your contract.

All parts of the product which are subject to wear and tear are not included in the warranty engagement. For detailed warranty arrangements please consult your contract documents.

Please order *spare parts* at the Wincor Nixdorf customer service.

Before Switching On the System

Unpacking and Checking the System

Unpack the components and verify that the scope of delivery is identical to the information on the delivery ticket.

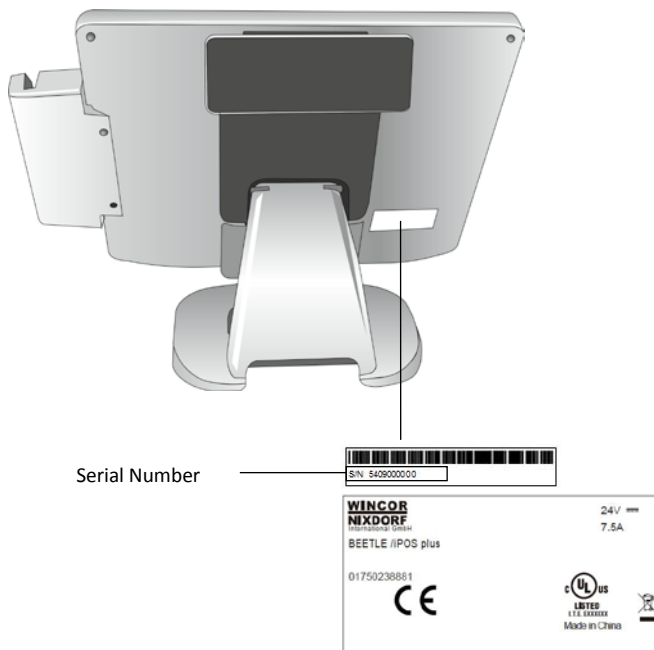
The carton contains the basic unit and a country-specific accessories kit.

Some ordered composition may be installed.

Should you notice any transport damages or discrepancies between package contents and delivery ticket or functional defects please inform your contracting parties or the branch office of Wincor Nixdorf immediately.

Please indicate the number of your delivery ticket and delivery ticket position and serial numbers of the respective devices.

The *serial number* can be found on the label above the type label located at the rear side of the system (see sample illustration).



Transport the device only in its original packaging (to protect it against impact and shock).

Basic Settings

Ex works, the BEETLE /iPOS plus is configured to your order. Additional peripheral devices are delivered separately, for example the swipe card reader. The modules must still be mounted to the system.

Components

The BEETLE /iPOS plus configuration can consist of the following components:

Processor Type

Atom Dual Core Processor

RAM

2GB or 4GB

Hard Disk Options

HDD SATA 2,5" 160GB or
SSD 2,5" 32GB, 64GB respective 128GB

Display

15,1" projected capacitive touch screen

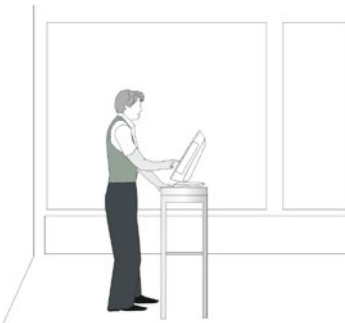
Setting Up the Device

The BEETLE /iPOS plus was developed for an in-house installation. The device has a pedestal, but can also be installed on the wall. If the system is installed on the wall, it is necessary to remove the pedestal and fix the device with a **VESA**-mounting.

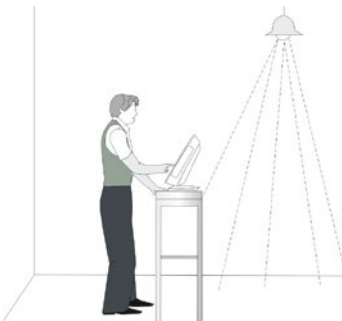
Set up the BEETLE /iPOS plus system where it will not be exposed to extreme environmental conditions. Protect the device from vibrations, dust, moisture, heat and strong magnetic fields.

Ergonomic Terminal Workplace

Please observe the following when setting up your terminal workplace:

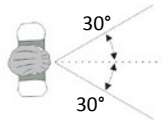


Avoid direct glaring and reflective glaring. Use the screen only in a controlled luminance surrounding. Install the device with a viewing direction that is parallel to the windows.



Avoid reflective glaring caused by electric light sources.

Permitted range of vision

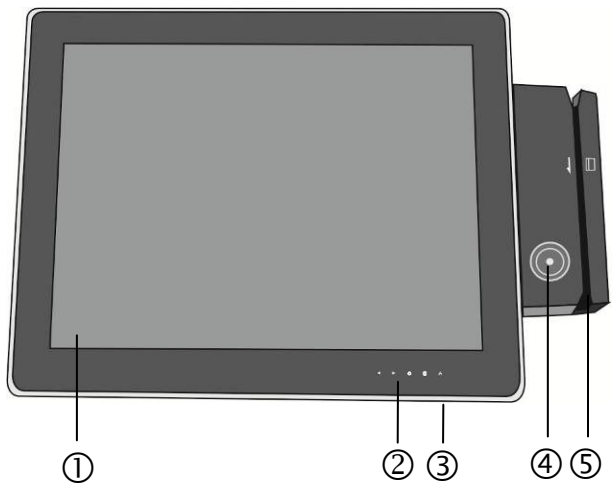


Preferred range of vision

Position the screen within a preferred and permitted range of vision, so that you can look onto the screen from above.

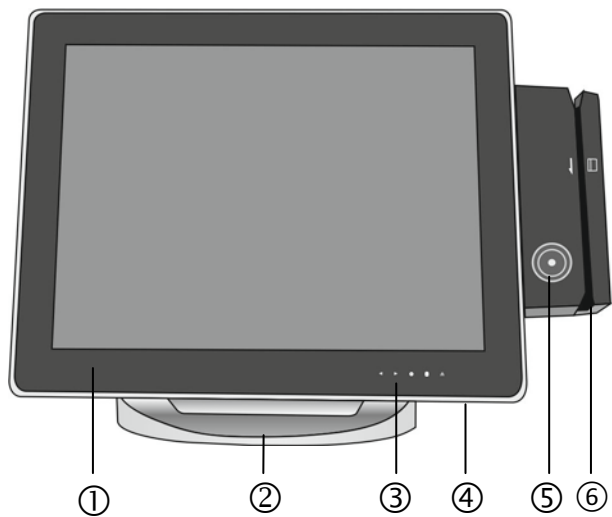
Overview

Front Side View: Wall Fastening



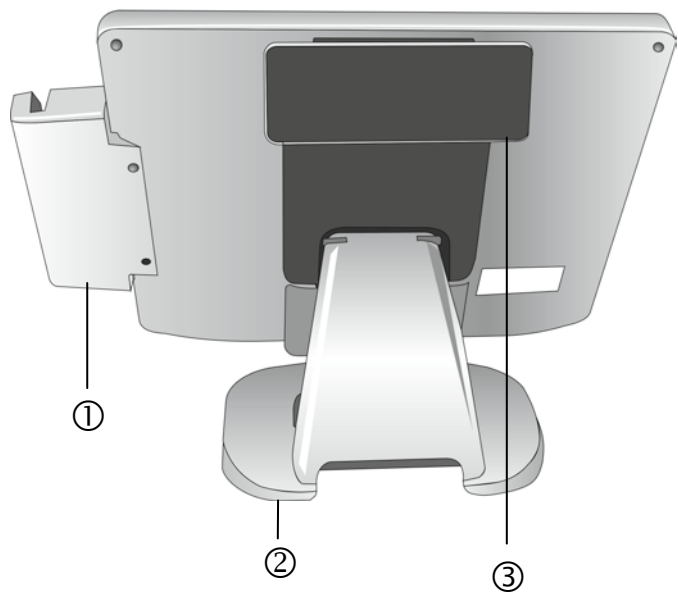
①	Display
②	Brightness adjustment, LEDs
③	Power button
④	Waiter lock (optional)
⑤	Swipecard reader (optional)

Front Side View: Device with Monitor Stand



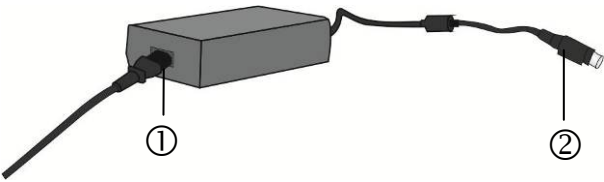
①	Display
②	Pedestal
③	Brightness adjustment, LEDs
④	Power button
⑤	Waiter lock (optional)
⑥	Swipecard reader (optional)

Back Side View



①	Module waiter lock/swipecard reader (optional)
②	Pedestal
③	Customer display (optional)

AC Power Adapter



①	Power Connector
②	DC Power Out, Current Supply to BEETLE /iPOS plus

The external power supply is applicable for common line voltage. It automatically adjusts itself to the particular voltage (for grid input voltage and power supply see appendix).

Projected Capacitive Touch Screen

General Information

The use of projected capacitive touch screens has all the benefits a normal capacitive touch screen has:

- fast processing of touch information
- high sensitivity (use with hands, conductive pencils and also with thin gloves)
- high resolution
- improved legibility and display brightness due to optimal light transmission
- Anti-glare-surface

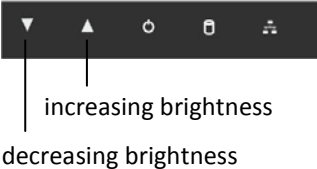
In addition the technology of projected capacitive touch screens is characterized by significant higher robustness and stability, because the active touch surface – different from common capacitive touch screens which were used until now - is located on the back side of the touch screen. Thus the active touch surface is not touched directly anymore and therefore will not wear off by normal use. As most of the surface contaminations do not cause an interference of the touch screen, this technology can be used in public or under severe environmental conditions.

Instructions for Using the Touch Screen

The touch screen responds to the lightest touches. The touch with only one finger is like the use of the left mouse button. The use of the touch screen with two fingers generates a zoom if the fingers are brought together or pulled apart. With a circular motion of the fingers the element on the display can be rotated. This function must be supported by either the operating system or by the application.

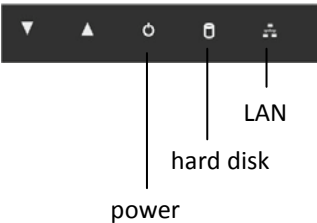
Brightness

You can adjust the brightness with the two arrows at the bottom of the display.



LEDs

The LEDs are at the bottom of the display with the following meaning:



LAN	LED lights white	Network connected
HDD/SSD	LED flashes white	read and write access to HDD/SSD
Power	LED lights white	The device is switched on

Cleaning Instructions

Always turn off the system before cleaning.



The glass surface of your Touch Screen should be cleaned with a mild, abrasive free, commercially available glass cleaning product. All pH neutral materials (pH 6 to 8) are good for cleaning. Cleaners with pH values 9 to 10 are not recommended. Cleaning with water and isopropyl alcohol is possible as well. Do not use solvents containing acetic acid. Use a soft, fine-meshed cloth to clean the surface. Dampen the cloth slightly and then clean the screen.



A wrong maintenance may cause damages to the screen, which are not covered by warranty.

Cabling the BEETLE /iPOS plus

All devices belonging to the modular BEETLE /iPOS plus that have a separate power cable must be connected to the same electric circuit.

Connect the system as described below:

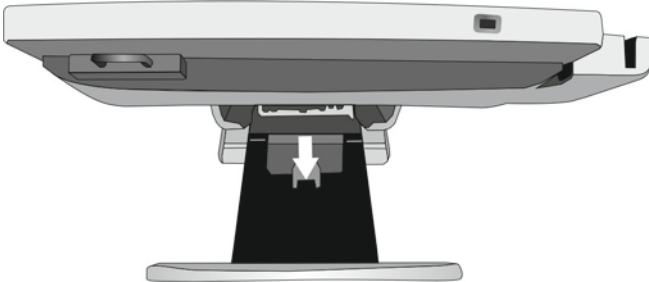
Tilt the system to the back.



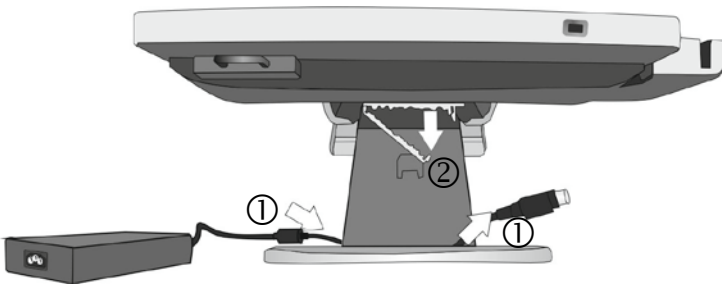
Pull the cable cover forwardly out of the guide (see arrows).



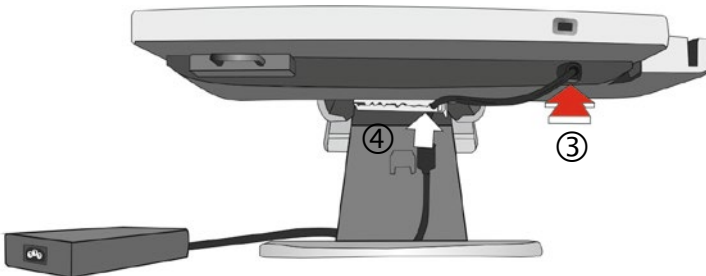
Remove the cover of the pedestal by pressing and thus releasing the locking (see arrow). Lift the cover out of the pedestal by lifting it upwards and slightly forwards.



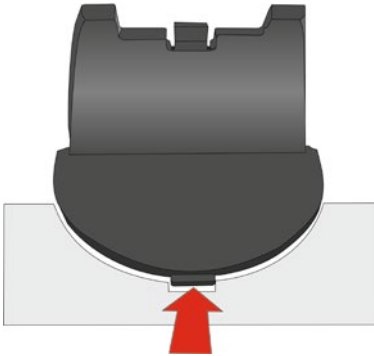
Guide the power cable from the power supply unit through the pedestal to the front (1) and open the cable duct (2).



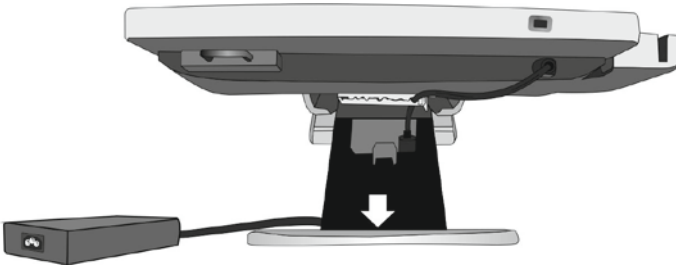
Connect the power cable with the dedicated socket (3). Lay the cable through the cable duct. Proceed the same way with all the other cable connections (LAN, Mouse etc.). Then, close the cable duct (4).



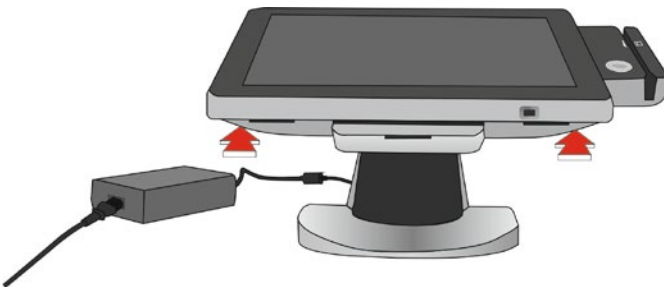
Reinsert the pedestal's cover. Make sure that the strip corresponds to the notch at the pedestal (see arrow).



The cover of the pedestal must engage and sit flush with the pedestal.

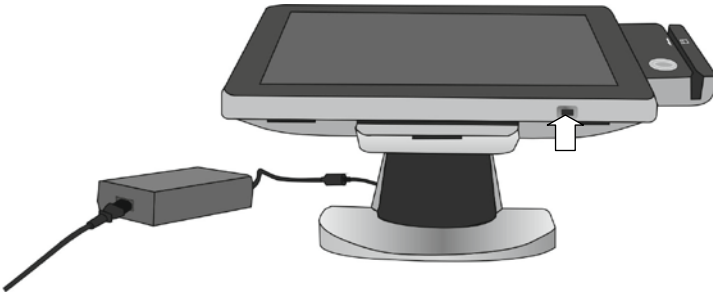


Push the cable cover backwards until it engages.



Connect the power cable to the socket at the rear side of the external power supply unit. Now, connect the power supply unit to the in-house grounded socket.

Then you can switch on the system (see white arrow). Shortly press the Power button at the front side to start the system.

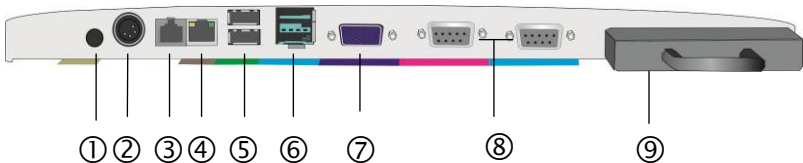


Never connect data cables when the system is switched on.

Connector Panels System Unit

Always make sure that the system is switched off and that the power connector is disconnected when you do cabling works.
Connecting peripherals with the system switched on is not allowed.

Example for a connector panel:



①	Audio Line Out
②	Connection to power supply (ext. power supply)
③	RJ12- socket (cash drawer)
④	RJ45- socket (LAN)
⑤	2 x USB- A (USB 2.0)
⑥	1 x USB powered 12V (2A max)
⑦	15-pin D-Sub-socket
⑧	2 x D-Sub (COM-interfaces), with power supply
⑨	Mass storage (HDD/SSD)



Make sure that all additional devices have an **CE certificate**.

Jack Plug 3.5 mm (OUT)

The OUT jack require a 3.5 mm phone jack for data transfer. You can connect loudspeaker to this jack.

RJ12 (CASHDR)

The power supply unit has one RJ12 socket for connecting a cash drawer. Make sure that the connector is plugged firmly into the socket to prevent malfunctioning. RJ12 plugs lock in when you insert them. Power is supplied to the cash drawer via this socket, P24V +5% / -15%.



Connecting daisy chained cash drawers and 12V OEM-drawers is prohibited!



Connect cash drawers only (no telephone).

RJ45 (LAN)

The system can be connected to a network (LAN) from the back panel.

LEDs

left LED	lights green	Network connected
	flashes green	Data transfer
right LED	off	10 MBit
	lights green	100 MBit
	lights orange	1000 MBit



Only connect shielded LAN cables (CAT5 or CAT5e for 1 GBit) as these offer a better protection in case of interferences in a network.

USB (Universal Serial Bus)- A

You can connect several USB peripheral devices e.g. scanner or scales to these USB.



Only connect devices and cables that comply with the valid USB specification.

P-USB (Powered USB) 12V

The P-USB interface is qualified for connections of peripheral devices such as printers, barcode scanners or customer displays. The power supply is 12V. This interface can also be used as a USB-A socket.

CRT

You can connect a monitor to the BEETLE /iPOS plus via the 15-pin D-sub jack. An LCD screen can be connected alternatively if a TFT adapter is installed.

D- Sub- Jack Power Supplied (COM1*/COM2*)

The interface connection is a 9-pin D-sub jack for scanner, user or customer displays without own power supply.

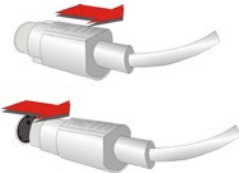


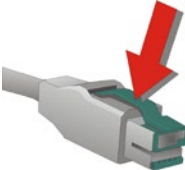
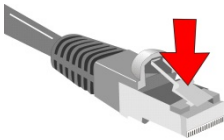
Make sure that the connector for a peripheral device is screwed firmly to the socket to prevent possible malfunctioning. Power is supplied via this jack.

Disconnecting Cables

Never unplug a cable by pulling on the cable; always take direct hold of the plug itself. Follow the procedure below when disconnecting cables:

- Turn off all power and equipment switches.
- Remove the cable cover, if present.
- Unplug all power plugs from the grounded-contact power sockets.
- Unplug all data communication cables from the sockets of the data networks.
- Unplug all cables from the devices.

	With MINI-DIN plugs (Wincor Nixdorf keyboards), the plug remains inserted until released. Pull the plastic covering from the connecting socket with your thumb. The lock is released. The metal of the plug is visible.
	To release a RJ12 plug push the latch under the plug to the top.
	You loosen the USB-A- connector by pushing the <i>covering</i> of the connector.

	The P- USB connector is disengaged by pressing the spring that is marked by an arrow.
	Manually loosen the knurled screws of the COM or DVI interface connector.
	To release a RJ45 plug push down the latch (see arrow).

Storage Media

Following storage media are available

- one 2.5" SATA hard disk or
- one 2.5" solid state drives (SSD).

A solid state disk drive is a data storage drive that uses memory elements in place of a rotating disk to store data. The SSD easily substitutes the hard disk and emulates a hard disk drive interface. The most SSDs are flash memory based.

Change Of the Hard Disk Drive

First ensure that the device is **switched off** and that the power connector is disconnected.

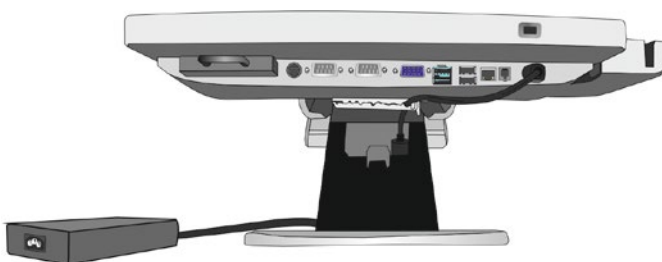
Tilt the system to the back.



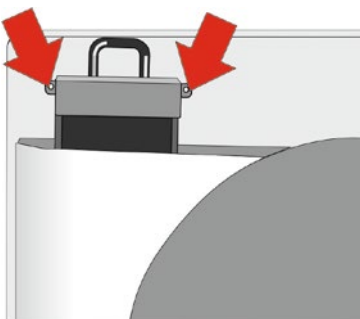
Pull the cable cover forward out of the guide (see arrows).



You find the HDD or SSD in the drive carrier (see arrow).

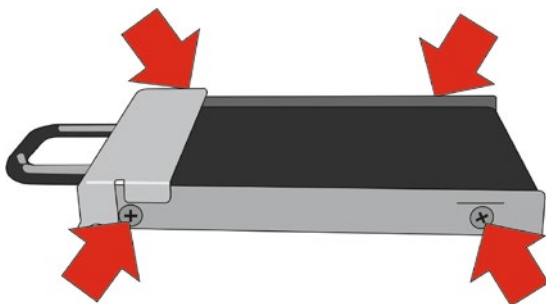


Remove both screws (M3 x 7) that fix the drive carrier to the housing...



... and pull out the drive carrier.

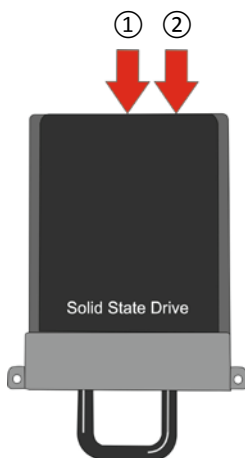
Loosen the four screws (M3 x 3) at the drive carrier (see arrows).



Take the HDD/SSD out of the carrier.

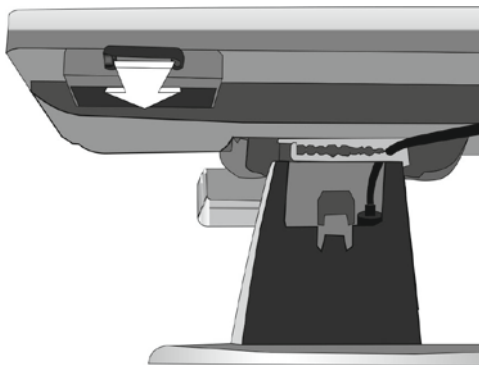
Handle the hard disk with care while removing or mounting it. Do not touch exposed electronics.

Install the new hard disk/SSD and fix it with the screws removed before. Mind the correct fitting position (see illustration).



①	Data transfer
②	Electrical connection

Insert the carrier (with new HDD or SSD) into the system again.



Fix the carrier to the housing with the two screws.
Push the cable cover into the guide until it engages.

Now connect the device to the mains voltage and switch it on by pressing the power button at the front side.

Magnetic Swipe Card Reader (option)

The optionally available Magnetic Swipe Card Reader (MSR) can read three ISO tracks simultaneously in a single swipe. The connection is made via an USB interface.

The MSR module is fitted on the right-hand side of display, in the figure below with a waiter lock.



How to Operate

Run the swipe card through the slit of the swipe card reader from top to bottom in a quick and steady movement. Make sure that the magnetic strip is to the right. When using swipe cards observe the following:

- Swipe cards should only be inserted in the top of the specially designed slit of the reading device. If the card is inserted in another place, this could damage the reading head.
- Swipe cards should never be allowed to come into contact with liquids.
- Swipe cards should not be bent or folded in any way.
- Swipe cards should not be allowed to come into close contact with a magnetic field.

Cleaning Instructions

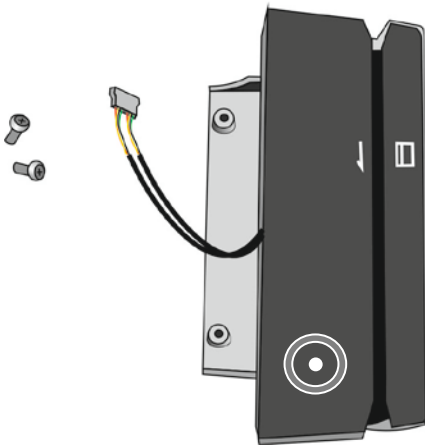
In order to guarantee good reading results over a longer period of time, the swipe card reader should be cleaned from time to time. This is carried out by using a special cleaning card that can be purchased from Wincor Nixdorf.

Magnetic Swipe Card Reader: Installation

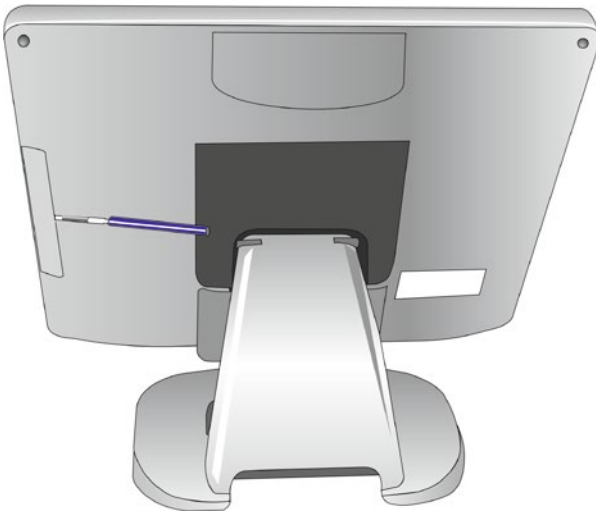
Always make sure that the display is **switched off** when you do cabling works. Connecting peripherals with the system switched on is not allowed.

Unpack the parts and check whether the delivery matches the details of the delivery note.

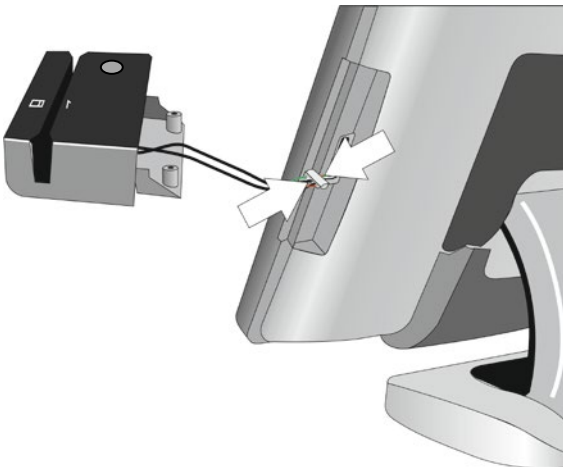
The delivery contains the Magnetic Swipe Card Reader (MSR) and two screws (M3 x 6).



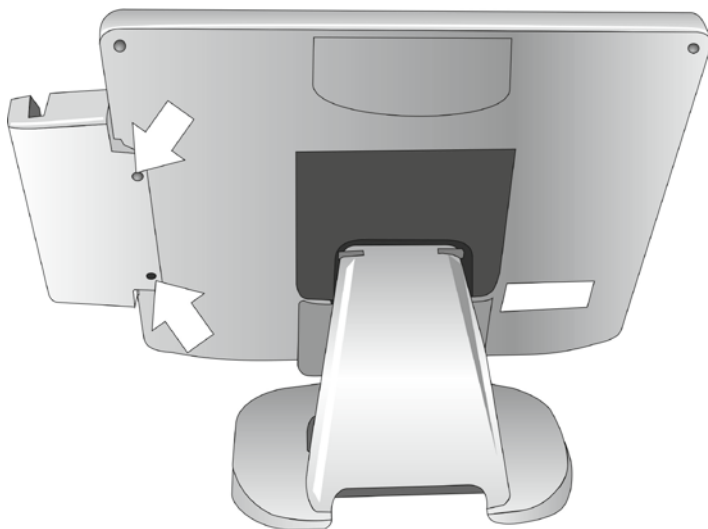
You will find a flap at the rear side of your system at the position for the SwipeCard Reader. Remove this flap using a small screw driver.



Connect the cable connectors and lay the cables into the openings provided.



Place the Swipe Card Reader and tighten it with the supplied screws.



Now connect the device to the mains voltage and switch it on by pressing the power button at the front side.

Fingerprint Reader (option)

An optical Scan technique identifies the finger print and assigns it to a person entitled to operate the terminal. This identification method is very efficient and reliable. Even with low light intensity the device will provide an excellent image quality.

Handling is very comfortable. Just put your finger on the blue glowing window. The reader quickly and automatically will scan your fingerprint.



For more information about function and handling contact Digital Persona www.digitalpersona.com

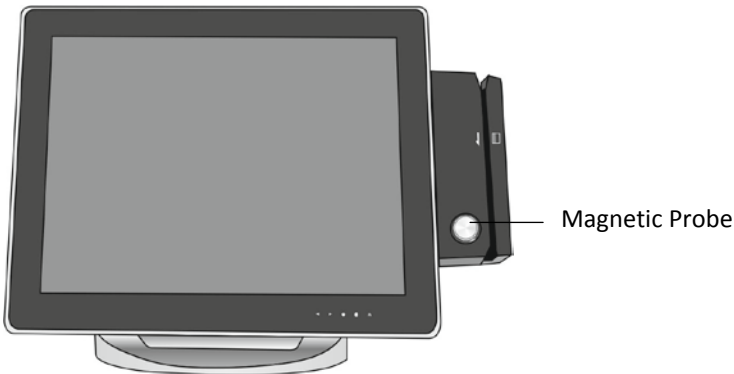
Waiter Lock (option)

Each transaction is correctly assigned to the personnel by using the magnetic key.

The magnetic keys are available in 10 different colors. The magnet keys are waterproof, shatterproof and by the 16-digit key number also safe for clear identification.

The operation of the system is very simple, the key is placed onto the magnetic probe (see figure). The key is held magnetically to the probe and transmits the data by an electrical USB interface.

The readout of the data may be integrated easily in a software application.



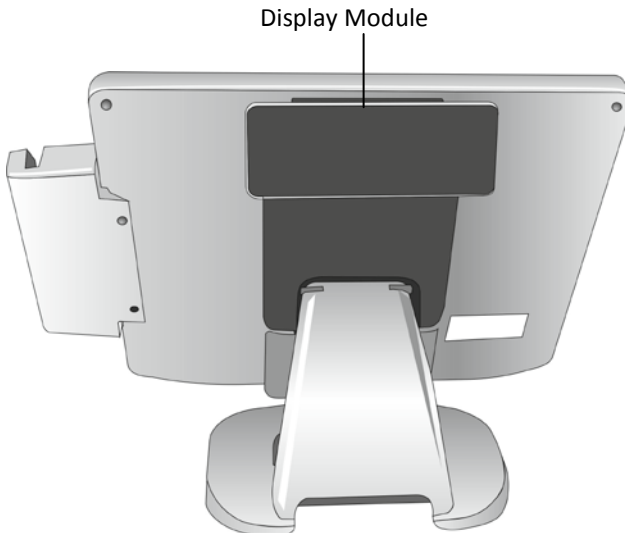
Programming the "*Electronic Key Controller*" for the Waiter's Lock is described in a separate "Programmers Guide".

Customer Display (option)

The display is connected to the system via a RS232 interface.

It is a vacuum florescent display (VFD) with two lines, each with 20 alpha-numeric characters. The standard character set and corresponding country code are implemented. Implementation of VFD technology ensures that the customer display is ergonomically designed to achieve a high degree of readability, irrespective of the cashier's angle of vision. The voltage (12 V DC) is also supplied via this interface.

The display module is installed at the rear side of the system.



Cleaning Instructions

Always turn off the system before cleaning.



The glass surface of your Touch Screen should be cleaned with a mild, abrasive free, commercially available glass cleaning product. All pH neutral materials (pH 6 to 8) are good for cleaning. Cleaners with pH values 9 to 10 are not recommended. Cleaning with water and isopropyl alcohol is possible as well. Do not use solvents containing acetic acid. Use a soft, fine-meshed cloth to clean the surface. Dampen the cloth slightly and then clean the screen.



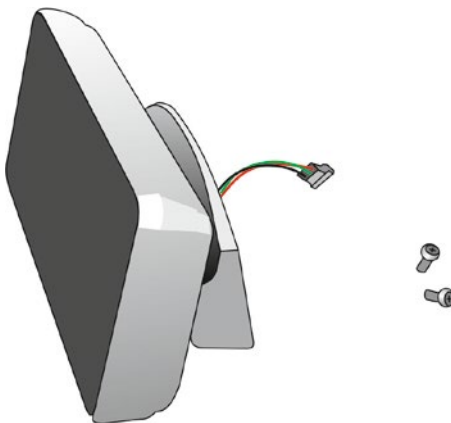
A wrong maintenance may cause damages to the screen, which are not covered by guarantee or warranty.

Customer Display Installation

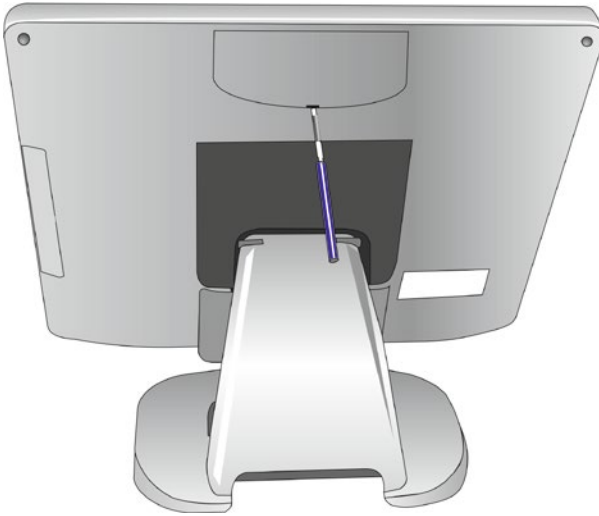
Always make sure that the display is **switched off** when you do cabling works. Connecting peripherals with the system switched on is not allowed.

Unpack the components and verify that the scope of delivery is identical to the information on the delivery ticket.

The delivery consists of the customer display and two screws (M3 x 6).



You will find a flap at the rear side of your system at the mounting position for the Customer Display. Remove this flap using a small screw driver.



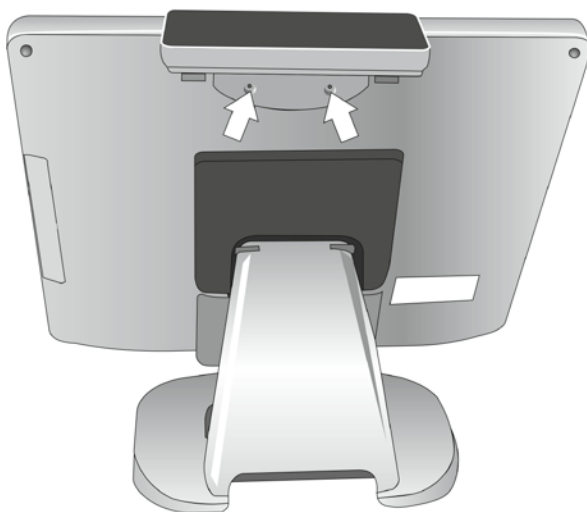
Connect the cable connectors and carefully lay the cables.



Insert the display into the opening until it engages.



Flap the display upwards and tighten it with the delivered screws.



Now connect the BEETLE /iPOS plus to the mains voltage and switch it on by pressing the power button at the front side.

Starting Up the System

After installing the BEETLE /iPOS plus, switch on the system by using the Power button on the front panel.

The system first performs an automatic self-test to test its basic functions. For example, you may see the following message (irrespective of processor type) on the monitor:

WN „ID xx/xx Date“

xx/xx is the *placeholder* of the BIOS version number.

The system then determines the medium from which the operating system and the application are to be booted. Each medium is assigned a logical drive according to the configuration of your BEETLE /iPOS plus.

The following media can be assigned a drive:

- Network
- Hard disk drive/solid state drive
- USB drive

The logical drives are designated C: and D:.

The network is always assigned to the C: drive during the runup procedure. The hard disk can be assigned to the C: or D: drive. The system can only be started from the hard disk if the disk has been configured as the C: drive.

Corresponding to the Setup configuration the modular BEETLE /iPOS plus can be booted from the following drives:

- Hard disk drive C:
- LAN module with BOOTROM
- USB drive

Please mind that the storage medium must be *system-boot-capable*.

If the operating system started up without an error, the application software is automatically booted, if necessary.

A message is displayed as soon as the BEETLE /iPOS plus is ready for operation. For more detailed information see the manual for your application program.

Appendix

Technical Data

Dimensions (incl. pedestal)	
Width	365 mm
Depth	194 mm
Height	315 mm
Weight	ca. 5.9 kg
Climatic Category	
Class 3K3	DIN IEC 721-3-3
Class 2K2	DIN IEC 721-3-2
Class 1K2	DIN IEC 721-3-1
Temperature	
Operating (3K3)	+ - 0 °C up to + 40 °C
Transport (2K2)	- 25 °C up to + 60 °C
Storage (1K2)	RT: - 15 °C up to - 60 °C; PCT: - 20 °C up to - 60 °C
Input Voltage	24 V
Max. Power Consumption	7.5 A

Interfaces (J2)

COM	COM1*, COM2* (with power supply)
USB	2 Standard USB-A 1 PoweredUSB
Graphics Adapter	1x VGA with resolution up to 1520 x 1200 pixel
Line Out	Ports for audio equipment like loudspeaker
RJ12	Cash drawer
RJ45/ LAN	10/100 and 1000 Mbit/s

AC Power Adapter

Only use power supply units (PSU) released or approved by Wincor Nixdorf. The PSU has to comply with the following minimal requirements and common standards:

Rated input voltage	110VAC-240VAC
Rated input current	2.5-1.25A
Input frequency range	47-63 Hz
Rated output voltage	24V $\pm$ 5%
Rated output current	7.5A
Max. output power	180W at ambient 25 degree C, 135W at ambient 40 degree C, 85W at ambient 50 degree C
Approvals and Certification	UL Listed, TÜV-GS, CE

Power Cable Selection

If the power connector is not delivered with the device the user has to ensure that an approved connector is used, which corresponds to the country specific safety requirements.

Country	Safety Requirement
USA	UL
Canada	CSA
Germany	VDE

For countries not listed in this register please contact the local authorities in charge of electrical safety requirements.

Capacity of External I/O Ports

The capacity of the I/O ports is determined by the used power supply unit.



The table next page shows a list of free external I/O ports and the corresponding power ratings. Before connecting additional peripherals to these ports the user must check and ensure that the power consumptions of the peripherals do not exceed the maximum output power of the ports and that the total power consumption does not exceed the total available power of the selected AC power adapter.

I/O Port Name	Volt (V)	Max. Current (A)	Max. Power (W)
COM1*	12	1	12
	5	1	5
USB1	5	0.5	2.5
USB2	5	0.5	2.5
USB3 (powered 12V)	5	0.5	2.5
	12	3	36
5/12V Output	12	1.5	18
	5	1.5	7.5

Total Current Consumption Of Interfaces

The total current consumption at 5V interfaces must not exceed 5A.

Each COM* = 300mA, in total 500mA

Each USB = 500mA, in total 2A

Max. 5A @ 5V

The total current consumption at 12V interfaces must not exceed 5A.

Each COM* = 600 mA, in total 900mA

Each USB = 1.5A, in total 2A

Max. 5A @ 12V

Wall-Mounting

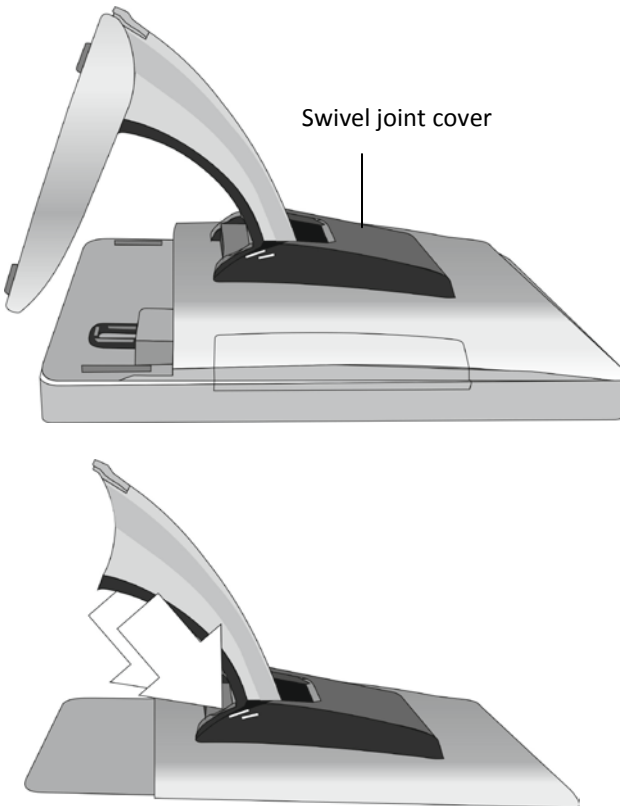
If you are going to wall- mount the system first remove the pedestal.

Proceed as follows:

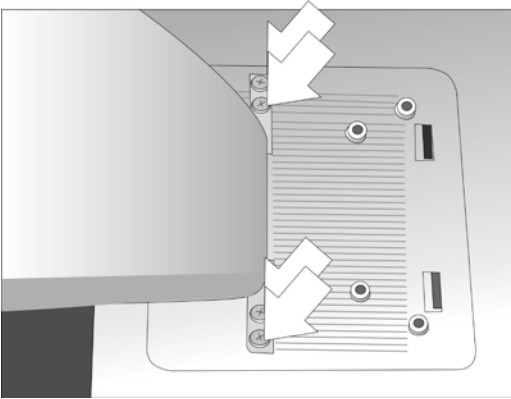
Make sure that all cables are unplugged and the system is disconnected from the main power supply.

Lay the BEETLE /iPOS plus screen-side-down on a scratch-free, soft work surface and remove the cable cover out of the guidance.

Flap the pedestal downwards and loosen the two screws (M4 x 6), that hold the swivel joint cover (see arrows below).



Remove the swivel joint cover. You see four screws (M4 x 8) tightening the pedestal. Loosen these four screws and remove the pedestal.



Now you can install the BEETLE /iPOS plus to a VESA standard wall mount.

Plug the cable connections and switch the system on by pressing the power button at the front side.



You need to contact us or suitable agency for correct wall mounting.

UEFI BIOS Setup

This section explains the information contained in the Setup program and tells you how to modify the settings according to your system configuration.

Even if you are not prompted to use the Setup program, you might want to change the configuration of your system in the future. For example, you may want to enable the Security Password Feature or make changes to the power management settings. It will then be necessary to reconfigure your system using the BIOS Setup program so that the system can recognize these changes and record them in the NVRAM. All setup data is stored in a non-volatile memory (NVRAM).

When you remove the battery, all parameters will be lost.

Standard UEFI BIOS Version

The UEFI BIOS ROM of the system holds the Setup utility. When you turn on the system, it will provide you with the opportunity to run this program. This appears during the Power-On Self-Test (POST). Press <F2> to call the Setup utility. If you missed the opportunity to press the mentioned key, POST will continue with its test routines, thus preventing you from calling Setup. If you still need to call Setup, reset the system by pressing <Ctrl> + <Alt> + . You can also restart by turning the system off and then on again. But do so only if the first method fails.

If you like to change the boot order only once, you can press the <F10> key during the POST is running. At the end you will see a Pop-Up window with all the devices the system has found. With the keys <UP> and <DOWN> you select the boot device.

The Setup program has been designed to make it as easy as possible. It is a menu-driven program, which means you can scroll through the various sub-menus and make your selections among the predetermined choices.

When you invoke Setup, the main program screen will appear. Read more about the Setup entries on the following pages.

Because the UEFI BIOS software is constantly being updated, the following UEFI BIOS screens and descriptions are for reference purposes only and may not reflect your UEFI BIOS screens exactly.

BIOS Menu Bar

The top of the screen has a menu bar with the following sections:

Main	Use this menu to make changes to the basic system configuration.
Advanced	Use this menu to enable and make changes to the advanced features.
Chipset	Use this menu to configure the used graphics memory size and set up LAN, audio, power loss behavior and wake up on USB.
Boot	Use this menu to configure the default system device used to locate and load the Operating System.
Security	Use this menu to enable a supervisor or user password and Intrusion Detection.
Save & Exit	Use this menu to exit the current menu or specify how to exit the Setup program.



To access the menu bar items, press the right or left arrow key on the keyboard until the desired item is highlighted.

Legend Screen

The right frame displays the key legend. The keys in the legend frame allow you to navigate through the various setup menus. The following table lists the keys found in the legend with their corresponding alternates and functions.

Navigation Key(s)	Description of Functions
← or → (keypad arrows)	Select the menu item to the left or right.
↑ or ↓ (keypad arrows)	Moves the highlight up or down between fields.

+ (plus key) - (minus key)	Change field contents.
<Tab>	Jumps from one field to the next.
<F1>	Opens a general Help Screen with extended information.
<F4>	Saves changes and exits Setup.
<Esc>	Opens a windows to select between exit and return to setup

General Help

In addition to the Item Specific Help window, the UEFI BIOS setup program also provides a General Help screen. This screen can be called from any menu by simply pressing <F1>. The General Help screen lists the legend keys with their corresponding alternates and functions.

Scroll Bar

When a scroll bar appears to the right of a help window, it indicates that there is more information to be displayed that will not fit in the window. Use <PgUp> and <PgDn> or the up and down keys to scroll through the entire help document.

Press <Home> to display the first page, press <End> to reach the last page. To exit the help window, press the <Enter> or <Esc> key.

Sub-Menu



Note that a right pointer symbol “>” appears left of certain fields. This pointer indicates that a sub-menu can be launched from this field. A sub-menu contains additional options for a field parameter.

To call a sub-menu, simply move the highlight to the field and press <Enter>. The sub-menu then will appear immediately. Use the legend keys to enter values and move from field to field within a sub-menu just as you would do within a menu. Use the <Esc> key to return to the main menu.

Take some time to familiarize yourself with each of the legend keys and their corresponding functions. Practice navigating through the various menus and sub-menus. If you accidentally make unwanted changes to any of the fields, use the set default hot key <F9>. While moving around

through the Setup program, note that explanations appear in the Item Specific Help window located to the right side of each menu. This window displays the help text for the currently highlighted field.

Main Menu

BIOS Information	
BIOS Vendor	American Megatrends
BIOS Version	WN STD 00/01
Build Date and Time	02/22/2013 09:44:52
System Date	[Mon 03/11/2013]
System Time	[14:55:01]

System Date [XX/XX/XXXX]

Sets your system to the date that you specify (usually the current date). The format is month, day, year. Valid values for month, day and year are: Month: (1 to 12), Day (1 to 31), Year: (up to 2079).

System Time [XX: XX: XX]

Sets your system to the time that you specify (usually the current time). The format is hour, minute, second. Valid values for hour, minute, and second are: Hour: (00 to 23), Minute: (00 to 59), Second: (00 to 59). Press <Enter> to terminate every entry value and reach the next position. On the upper right frame find the keys listed to modify the values.

Advanced Menu

- ACPI Settings
- RTC Wake Settings
- CPU Configuration
- IDE Configuration
- USB Configuration
- Super I/O Configuration
- H/W Monitor
- PPM Configuration
- BIOS Info Menu

Sub Menu ➤ ACPI Settings

ACPI Settings	
ACPI Sleep State	[S3 (Suspend to RAM)]
Wake Up By Ring	[Disabled]

ACPI Sleep State [S3 (Suspend to RAM)]

Sets the standby/sleep modes referring to Advanced Configuration and Power Interface operating states.

S3: The current status of the operating system and applications is written on the main storage which is the only powered component at this time. The power supply is in soft off mode. The system wake-up only needs a few seconds. No boot procedure.

S1: Sets the PC to an energy saving mode. A few functions are turned off. When a key is pressed all functions will be available again.

Configuration options: [S1 (CPU Stop Clock)] [S3 (Suspend to RAM)] [Suspend Disabled]

Wake Up By Ring [Disabled]

This allows enabling or disabling power up the BEETLE when the modem receives a call while the BEETLE is in Soft-Off or Hibernate mode.



The BEETLE cannot receive or transmit data until the system and applications are fully running, thus connection cannot be made on the first try. Turning an external modem off and then back on while the BEETLE is off causes an initialization string that will cause the system to power on.

Configuration options: [Disabled] [Enabled].

Sub Menu ➤ RTC Wake Settings

Wake system with Fixed Time	[Disabled]
-----------------------------	------------

This allows enabling or disabling power up the BEETLE on specific time while the BEETLE is in Soft-Off or Hibernate mode. If this option is enabled a wake time is programmable within next two lines. The first line is setting the hour in international format(0-23). The second line is setting the minutes(0-59). Configuration options: [Disabled] [Enabled].



Wake time is also adjustable from OS and can override this option. Configuration options: [Disabled] [Enabled].

Wake-on Modes

Please note that you have to shut down the system in power saving modes by OS before you can use Wake-on modes. Switching off the system by mainpower switch or frontbutton-override will not initialize system wakeup functions. See following table, which wakeup events are available from different power states:

	Standby (S3)
Front Button	Yes
LAN (Note1)	Yes
Modem (Note1)	Yes
Time (Note2)	Yes
USB	Yes



Note 1: “Yes” is valid only, if the option <Wake Up By Ring> is [Enabled].

Note 2: “Yes” is valid only if the option <Wake system with Fixed Time> is [Enabled].

Sub Menu ➤ CPU Configuration

CPU Configuration	
Processor Type	Intel® ATOM™ CPU
EMT64	Supported
Processor Speed	2xxx MHz
System Bus Speed	533 MHz
Processor Core	Dual
Hyper-Threading	Supported

The lines list information about the installed CPU. You can use this screen to select options for the CPU Configuration. The content of the

CPU configuration setup screen varies depending on the installed processor. On the upper right frame you can see a short description of each changeable setup point.

Sub Menu ➤ IDE Configuration

SATA Port 0	San Disk SSD U1 32.0 G
SATA Port 1	Not Present
SATA Controller(s)	[Enabled]
Configure SATA as	[IDE]

The onboard printed SATA port numbers have the following references to the setup entries:

SATA1	SATA Port 0
SATA2	SATA Port 1

SATA Controller(s) [Enabled]

This option handle the onboard SATA Controller.
The options are [Enabled] or [Disabled]

Configure SATA as [IDE]

Select a configuration mode for SATA Controller.
The options are [AHCI], [IDE] or [Hard Disk Pre-Delay]

Sub Menu ➤ USB Configuration

USB Configuration	
USB Devices :	
1 Keyboard, 1 Mouse	
Legacy USB Support	[Enabled]
Device power-up delay	[Auto]

Legacy USB Support [Enabled]

This motherboard supports Universal Serial Bus (USB) devices. Normally if this option is not enabled, any attached USB mouse or USB keyboard will not become available until a USB compatible operating system is fully booted with all USB drivers loaded. When this option is enabled, any attached USB mouse or USB keyboard can control the system even when there is no USB drivers loaded on the system. If you like to use a USB-Floppy disk or a USB CD-ROM device for booting, you have to enable this setup point and after detecting of this USB device from the UEFI BIOS, you have to switch the boot order to the appropriate device. In the AUTO mode is the USB support switched off, when no Legacy USB device was found.

Configuration Options: [Disabled] [Enabled] [Auto]

Device power up delay [Auto]

Some USB device uses longer time to initialize. Maximum time the device will take before it properly reports itself to the Host Controller.

Configuration Options: [Manual] [Auto]

Sub Menu ➤ Super I/O Configuration

Super I/O Configuration

- Serial Port 1 Configuration
- Serial Port 2 Configuration
- Serial Port 3 Configuration
- Serial Port 4 Configuration
- Serial Port 5 Configuration
- Serial Port 6 Configuration

This setup screen shows the 6 onboard legacy serial ports.

Sub Menu ➤ Super I/O Configuration ➤ Serial Port 1 Configuration

Serial Port 1 Configuration	
Serial Port 1	[Enabled]
Device Settings	IO=3F8H; IRQ=4;
Change Settings	[IO=3F8H; IRQ=4;]

Sub Menu ➤ Super I/O Configuration ➤ Serial Port 2 Configuration

Serial Port 2 Configuration	
Serial Port 2	[Enabled]
Device Settings	IO=2F8H; IRQ=3;
Change Settings	[IO=2F8H; IRQ=3;]

Sub Menu ➤ Super I/O Configuration ➤ Serial Port 3 Configuration

Serial Port 3 Configuration	
Serial Port 3	[Enabled]
Device Settings	IO=3E8h; IRQ=5;
Change Settings	[IO=3E8h; IRQ=5;]

Sub Menu ➤ Super I/O Configuration ➤ Serial Port 4 Configuration

Serial Port 4 Configuration	
Serial Port 4	[Enabled]
Device Settings	IO=2E8h; IRQ=6;
Change Settings	[IO=2E8h; IRQ=6;]

Sub Menu ➤ Super I/O Configuration ➤ Serial Port 5 Configuration

Serial Port 5 Configuration	
Serial Port 5	[Enabled]
Device Settings	IO=2E0h; IRQ=11;
Change Settings	[IO=2E0h; IRQ=11;]

Sub Menu ➤ Super I/O Configuration ➤ Serial Port 6 Configuration

Serial Port 6 Configuration	
Serial Port 6	[Enabled]
Device Settings	IO=2F0h; IRQ=10;
Change Settings	[IO=2F0h; IRQ=10;]

This setup screen shows the programmed values of the onboard legacy serial ports. Configuration options: [Enabled] [Disabled]

Sub Menu ➤ H/W Monitor

Pc Health Status	
CPU temperature	: +34 C
system temperature	: +27 C
CPU Voltage	: +1.184 V
DRAM Voltage	: +1.488 V
24 V	: +24.460 V
12 V	: +11.968 V
5 V	: +5.026 V
3.3 V	: +3.328 V
CPU GPU voltage	: +1.024 V
CMOS Bat	: +3.248 V

CPU/System Temperature Sensors [xx °C/xxx °F]

The onboard hardware monitor is able to detect the motherboard and CPU temperatures (for supported processors only).

Several Voltages [xx.x V]

The onboard hardware monitor is able to detect the voltage output by the onboard voltage regulators.

CMOS BAT

This Value shows the current state of CMOS Battery. A discharged battery will be reported during the POST.

Sub Menu ➤ PPM Configuration

PPM Configuration	
CPU C state Report	[Enabled]
Enhanced C state	[Enabled]
CPU C6 state	[Enabled]

These settings allow the configuration of different sleep modes used by the processor.

Sub Menu ➤ BIOS Info Menu

When the sub menu is accessed, the following info screen appears:

PRODUCT NAME:	J2.0-NM10-AiO
BIOS VERSION:	00/01 02/22/2013
Realtek LAN MAC	00 E0 4C 68 00 0E
SYSTEM:	
Serial Number	-----
Version	###-----
MAINBOARD:	
Serial Number	-----
Version	-----
POWER SUPPLY:	
Serial Number	-----
Device Name	-----

This screen is for information only. There is nothing that could be changed within Setup. All information is intended to facilitate the support of your system.

Product Name:

This text is fixed for your mainboard with standard UEFI BIOS. This board is also called “J2.0-NM10-AiO”.

BIOS Version:

The UEFI BIOS version is displayed in the WN release format xx/yy

System, Main board, Power Supply:

The default placeholders may be replaced by specific data from factory, describing configuration, serial number etc. for each device.

Chipset Menu

- Host Bridge

➤ South Bridge

Sub Menu ➤ Host Bridge

- Intel IGD Configuration

Sub Menu ➤ Host Bridge ➤ Intel IGD Configuration

Intel IGD Configuration	
IGFX – Boot Type	LCD
LCD Panel Type	1024x768 24Bit 1ch
Fixed Graphics Memory Size	[128MB]

Fixed Graphics Memory Size [128MB]

This option enable the fixed video memory technology. This allow the system to share fixed video memory with the system memory.
Configuration options: Choose shareable memory size [128MB] [256MB].

Sub Menu ➤ South Bridge

LAN1 Controller	[Enabled]
Azalia Controller	[Enabled]
Restore AC Power Loss	[Stay Off]
Wake on USB	[Enabled]
Deep S5 Support	[Disabled]

LAN1 Controller [Enabled]

This point switches physical ON or OFF the Onboard LAN Controller. The PXE Boot ROM will be loaded, when the option Launch PXE OpROM is enabled.

Configuration Options: [Disabled] [Enabled]

Azalia Controller [Enabled]

Setting item to Auto will allow the onboard audio to operate properly. Setting item to disabled will remove the onboard audio controller from PCI configuration space. Configuration options:[Disabled] [Enabled].

Restore AC Power Loss [Stay Off]

Select whether you want your system to be rebooted after power has been interrupted. [Stay off] leaves your system off and [Last State] reboots your system if it was active before power loss. Is the key [Follow AC/Power] selected, the system will start up anytime power is available.

Configuration options: [Stay off] [Last State] [Follow AC/Power].

In mode [Follow AC/Power] the front button is disabled. This means that there is no way to force down the system pressing the front button for more than 4 seconds, avoiding accidental shutdown.

Configuration options: [Follow AC/Power] [Stay Off] [Last State].

Wake On USB [Enabled]

This allows enabling or disabling power up the BEETLE when USB devices receives a call while the BEETLE is in Soft-Off or Hibernate mode.

Configuration options: [Disabled] [Enabled].

Deep S5 Support [Enabled]

This allows enabling the support of EuP specification to fulfil the low energy EC standard.

Configuration options: [Disabled] [Enabled].

Boot Menu

The Boot Menu enables you to set the order of bootable devices to a regular base. Pressing the function key <F10> while POST is running will change the boot order only once. You will see a Pop-Up window listing all devices the system is able to boot from. Select the boot device with keys <Up> and <Down>. Press <Enter> key to start the selected device booting.

Please select boot device:
SATA PM: San Disk SSD U100 32G
Enter Setup

Boot Configuration

Setup Prompt Timeout	3
Bootup NumLock State	[On]

Display POST Logo [Disabled]
Option ROM Messages [Force BIOS]
Launch PXE OpROM [Disabled]

Set Boot Priority

1st Boot	[Network]
2nd Boot	[Hard Disk]
3rd Boot	[CD/DVD]
4th Boot	[USB KEY]
5th Boot	[USB Hard Disk]
6th Boot	[USB Floppy]
7th Boot	[USB CD/DVD]
8th Boot	[UEFI]

BBS Priorities

Option ROM Messages 3

Number of seconds to wait for setup activation key.

Bootup NumLock State [On]

This option sets the NumLock during the system boot.
Configuration options: [On] [Off]

Display POST Logo [Disabled]

This menu entry can be used to display the hardware devices which are checked during the POST.

Configuration options: [Disabled] [Enabled]

Option ROM Messages [Force BIOS]

If the default option [Force BIOS] is used the BIOS itself decides whether it is necessary to change the display mode or not.

If the option [Keep current] is chosen the current display mode stays confirmed. Configuration options: [Force BIOS] [Keep current]

Launch Storage OpROM [Disabled]

Handle the boot option ROM for legacy mass storage devices.

Configuration Options: [Disabled] [Enabled]

‘#n’ Boot Device

These menu entries are used to specify the boot sequence from the available devices. Every entry (from #1 till #n) specifies a boot device that found during POST.

BBS Priorities

Specifies the priority sequence from available boot devices or even disables boot devices from BBS.

Security Menu

Password Description	
If ONLY the Administrator's password is set, then this only limits access to Setup and is only asked for when entering Setup.	
If ONLY the User's password is set, then this is a power on password and must be entered to boot or enter setup. In setup the user will Have administrator rights.	
The password length must be in the following range:	
Minimum length	3
Maximum length	20
Administrator Password	
User Password	

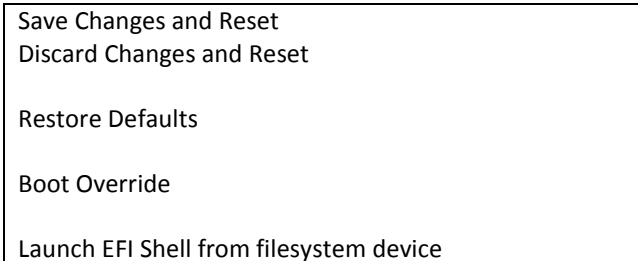
Administrator Password/User Password

This field allows you to set the password. Highlight the field and press <Enter>.

Type a password and press <Enter>, you can type from 3 to 20 alphanumeric characters. Symbols and other characters are ignored. To confirm the password, type the password again and press <Enter>. The password is now set to [Enabled]. This password allows full access to the UEFI BIOS Setup menu.

To clear the password, highlight this field and press <Enter>. The same dialog box as above will appear. Press <Enter> and the password will be set to [Disabled].

Save & Exit Menu



Once you have made all your selections from the various menus in the Setup program, you should save your changes and exit Setup. Select Exit from the menu bar to display the following menu.

Save Changes and Reset

Once you have finished making selections, choose this option from the Exit menu to ensure the values you selected are saved to the NVRAM. The NVRAM is sustained by an onboard backup battery and stays on even when the BEETLE is turned off. Once this option is selected, a confirmation is asked. Select [Ok] to save changes and reset the system.

Discard Changes and Reset

This option should only be used if you do not want to save the changes you have made to the Setup program. If you have made changes to fields other than system date, system time, and password, the system will ask for confirmation before exiting and reset the system.

Restore Defaults

This option allows you to load the default values for each of the parameters on the Setup menu. When this option is selected or if <F3> is pressed, a confirmation is requested. Select [Ok] to load default values. You can now select Exit Saving Changes or make other changes before saving the values to the non-volatile RAM.

Boot Override

With this option you can choose a boot device that is listed below this menu entry. Every entry specifies a boot device that is found during POST.

Launch EFI Shell from filesystem device

Attempts to launch EFI shell application from one of the available filesystem devices.

Test Points Codes

At the beginning of each POST routine, the UEFI BIOS outputs the test point error code to I/O port address 80h. Use this code during trouble shooting to establish where the system failed and what routine has been performed.

Checkpoint Ranges

Status Code Range	Description
0x01 – 0x0B	SEC execution
0x0C – 0x0F	SEC errors
0x10 – 0x2F	PEI execution up to and including memory detection
0x30 – 0x4F	PEI execution after memory detection
0x50 – 0x5F	PEI errors
0x60 – 0x8F	DXE execution up to BDS
0x90 – 0xCF	BDS execution
0xD0 – 0xDF	DXE errors
0xE0 – 0xE8	S3 Resume (PEI)
0xE9 – 0xEF	S3 Resume errors (PEI)
0xF0 – 0xF8	Recovery (PEI)
0xF9 – 0xFF	Recovery errors (PEI)

SEC Phase

Status Code	Description
0x00	Not used
Progress Codes	
0x01	Power on. Reset type detection (soft/hard).
0x02	AP initialization before microcode loading
0x03	North Bridge initialization before microcode loading
0x04	South Bridge initialization before microcode loading
0x05	OEM initialization before microcode loading
0x06	Microcode loading

0x07	AP initialization after microcode loading
0x08	North Bridge initialization after microcode loading
0x09	South Bridge initialization after microcode loading
0x0A	OEM initialization after microcode loading
0x0B	Cache initialization

SEC Error Codes	
0x0C – 0x0D	Reserved for future AMI SEC error codes
0x0E	Microcode not found
0x0F	Microcode not loaded

PEI Phase

Status Code Progress Codes	Description
0x10	PEI Core is started
0x11	Pre-memory CPU initialization is started
0x12	Pre-memory CPU initialization (CPU module specific)
0x13	Pre-memory CPU initialization (CPU module specific)
0x14	Pre-memory CPU initialization (CPU module specific)
0x15	Pre-memory North Bridge initialization is started
0x16	Pre-Memory North Bridge initialization (North Bridge module specific)
0x17	Pre-Memory North Bridge initialization (North Bridge module specific)
0x18	Pre-Memory North Bridge initialization (North Bridge module specific)
0x19	Pre-memory South Bridge initialization is started
0x1A	Pre-memory South Bridge initialization (South Bridge module specific)
0x1B	Pre-memory South Bridge initialization (South Bridge module specific)
0x1C	Pre-memory South Bridge initialization (South Bridge module specific)
0x1D – 0x2A	OEM pre-memory initialization codes
0x2B	Memory initialization. Serial Presence Detect (SPD) data reading
0x2C	Memory initialization. Memory presence detection
0x2D	Memory initialization. Programming memory timing information

0x2E	Memory initialization. Configuring memory
0x2F	Memory initialization (other).
0x30	Reserved for ASL (see ASL Status Codes section below)
0x31	Memory Installed
0x32	CPU post-memory initialization is started
0x33	CPU post-memory initialization. Cache initialization
0x34	CPU post-memory initialization. Application Processor(s) (AP) initialization
0x35	CPU post-memory initialization. Boot Strap Processor (BSP) selection
0x36	CPU post-memory initialization. System Management Mode (SMM) initialization
0x37	Post-Memory North Bridge initialization is started
0x38	Post-Memory North Bridge initialization (North Bridge module specific)
0x39	Post-Memory North Bridge initialization (North Bridge module specific)
0x3A	Post-Memory North Bridge initialization (North Bridge module specific)
0x3B	Post-Memory South Bridge initialization is started
0x3C	Post-Memory South Bridge initialization (South Bridge module specific)
0x3D	Post-Memory South Bridge initialization (South Bridge module specific)
0x3E	Post-Memory South Bridge initialization (South Bridge module specific)
0x3F-0x4E	OEM post memory initialization codes
0x4F	DXE IPL is started
PEI Error Codes	
0x50	Memory initialization error. Invalid memory type or incompatible memory speed
0x51	Memory initialization error. SPD reading has failed
0x52	Memory initialization error. Invalid memory size or memory modules do not match.
0x53	Memory initialization error. No usable memory detected
0x54	Unspecified memory initialization error.
0x55	Memory not installed
0x56	Invalid CPU type or Speed
0x57	CPU mismatch
0x58	CPU self test failed or possible CPU cache error
0x59	CPU micro-code is not found or micro-code update is failed
0x5A	Internal CPU error

0x5B	reset PPI is not available
0x5C-0x5F	Reserved for future AML error codes
S3 Resume Progress Codes	
0xE0	S3 Resume is started (S3 Resume PPI is called by the DXE IPL)
0xE1	S3 Boot Script execution
0xE2	Video repost
0xE3	OS S3 wake vector call
S3 Resume Error Codes	
0xE8	S3 Resume Failed
0xE9	S3 Resume PPI not Found
0xEA	S3 Resume Boot Script Error
0xEB	S3 OS Wake Error
0xEC-0xEF	Reserved for future AML error codes
Recovery Progress Codes	
0xF0	Recovery condition triggered by firmware (Auto recovery)
0xF1	Recovery condition triggered by user (Forced recovery)
0xF2	Recovery process started
0xF3	Recovery firmware image is found
0xF4	Recovery firmware image is loaded
0xF5-0xF7	Reserved for future AML progress codes
Recovery Error Codes	
0xF8	Recovery PPI is not available
0xF9	Recovery capsule is not found
0xFA	Invalid recovery capsule
0xFB – 0xFF	Reserved for future AML error codes

PEI Beep Codes

# of Beeps	Description
1	Memory not Installed
1	Memory was installed twice (InstallPeiMemory routine in PEI Core called twice)
2	Recovery started
3	DXE IPL was not found
3	DXE Core Firmware Volume was not found
4	Recovery failed
4	S3 Resume failed
7	Reset PPI is not available

DXE Phase

Status Code	Description
0x60	DXE Core is started
0x61	NVRAM initialization
0x62	Installation of the South Bridge Runtime Services
0x63	CPU DXE initialization is started
0x64	CPU DXE initialization (CPU module specific)
0x65	CPU DXE initialization (CPU module specific)
0x66	CPU DXE initialization (CPU module specific)
0x67	CPU DXE initialization (CPU module specific)
0x68	PCI host bridge initialization
0x69	North Bridge DXE initialization is started
0x6A	North Bridge DXE SMM initialization is started
0x6B	North Bridge DXE initialization (North Bridge module specific)
0x6C	North Bridge DXE initialization (North Bridge module specific)
0x6D	North Bridge DXE initialization (North Bridge module specific)
0x6E	North Bridge DXE initialization (North Bridge module specific)
0x6F	North Bridge DXE initialization (North Bridge module specific)
0x70	South Bridge DXE initialization is started
0x71	South Bridge DXE SMM initialization is started
0x72	South Bridge devices initialization
0x73	South Bridge DXE Initialization (South Bridge module specific)
0x74	South Bridge DXE Initialization (South Bridge module specific)
0x75	South Bridge DXE Initialization (South Bridge module specific)
0x76	South Bridge DXE Initialization (South Bridge module specific)
0x77	South Bridge DXE Initialization (South Bridge module specific)
0x78	ACPI module initialization
0x79	CSM initialization
0x7A – 0x7F	Reserved for future AMI DXE codes
0x80 – 0x8F	OEM DXE initialization codes
0x90	Boot Device Selection (BDS) phase is started
0x91	Driver connecting is started
0x92	PCI Bus initialization is started
0x93	PCI Bus Hot Plug Controller Initialization
0x94	PCI Bus Enumeration
0x95	PCI Bus Request Resources
0x96	PCI Bus Assign Resources
0x97	Console Output devices connect
0x98	Console input devices connect

0x99	Super IO Initialization
0x9A	USB initialization is started
0x9B	USB Reset
0x9C	USB Detect
0x9D	USB Enable
0x9E – 0x9F	Reserved for future AMI codes
0xA0	IDE initialization is started
0xA1	IDE Reset
0xA2	IDE Detect
0xA3	IDE Enable
0xA4	SCSI initialization is started
0xA5	SCSI Reset
0xA6	SCSI Detect
0xA7	SCSI Enable
0xA8	Setup Verifying Password
0xA9	Start of Setup
0xAA	Reserved for ASL (see ASL Status Codes section below)
0xAB	Setup Input Wait
0xAC	Reserved for ASL (see ASL Status Codes section below)
0xAD	Ready To Boot event
0xAE	Legacy Boot event
0xAF	Exit Boot Services event
0xB0	Runtime Set Virtual Address MAP Begin
0xB1	Runtime Set Virtual Address MAP End
0xB2	Legacy Option ROM Initialization
0xB3	System Reset
0xB4	USB hot plug
0xB5	PCI bus hot plug
0xB6	Clean-up of NVRAM
0xB7	Configuration Reset (reset of NVRAM settings)
0xB8 – 0xBF	Reserved for future AMI codes
0xC0 – 0xCF	OEM BDS initialization codes
DXE Error Codes	
0xD0	CPU initialization error
0xD1	North Bridge initialization error
0xD2	South Bridge initialization error
0xD3	Some of the Architectural Protocols are not available
0xD4	PCI resource allocation error. Out of Resources
0xD5	No Space for Legacy Option ROM
0xD6	No Console Output Devices are found
0xD7	No Console Input Devices are found
0xD8	Invalid password

0xD9	Error loading Boot Option (LoadImage returned error)
0xDA	Boot Option is failed (StartImage returned error)
0xDB	Flash update is failed
0xDC	Reset protocol is not available

DXE Beep Codes

# of Beeps	Description
1	Invalid password
4	Some of the Architectural Protocols are not available
5	No Console Output Devices are found
6	Flash update is failed
7	Reset protocol is not available
8	Platform PCI resource requirements cannot be met

Abbreviations

CE	European Symbol of Conformity
CFC	Chlorofluorocarbon
CHC	Chlorinated hydrocarbon
COMn*	Powered RS 232 Interface (Asterisk denotes Power)
cUL	Canadian Registration (Recognized by UL)
DIN	Deutsches Institut für Normen (German Institute for Standards)
D-Sub	D- Shaped Sub miniature
ESD	Electronically Sensitive Devices
HDD	Hard Disk Drive
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization,
LAN	Local Area Network
LED	Light Emitting Diode
PEN	Protective Earth Neutral Conductor
RAM	Random Access Memory
SSD	Solid State Disk (flash medium)
TN-S	Terre Neutre- Separé
UL	Underwriters Laboratory (standards)
USB	Universal Serial Bus
VGA	Video Graphics Adapter
VESA	Video Electronics Standards Association
WN	Wincor Nixdorf International GmbH

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