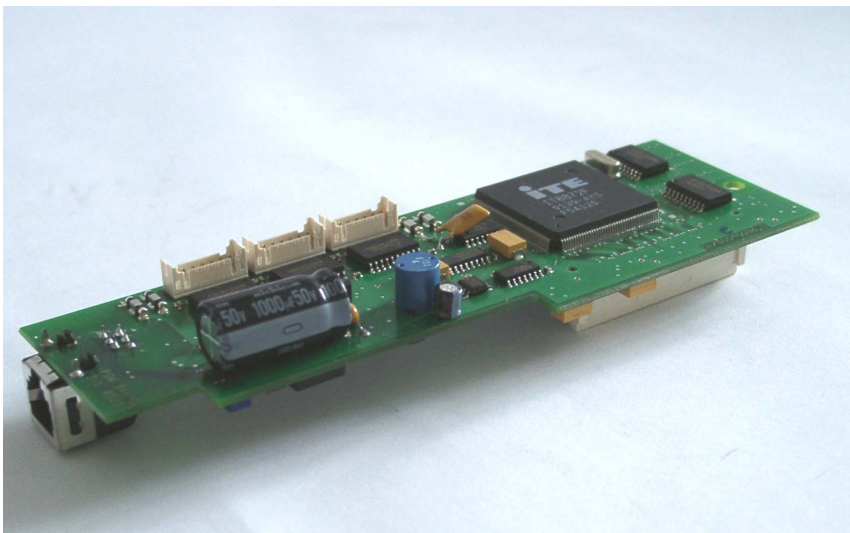




POS Board

For D2 Basic CPU

Product Manual

We would like to know your opinion on this publication.
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,

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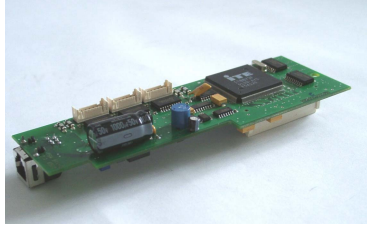
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POS Board

For D2 Basic CPU

Product Manual



Edition September 2002

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Introduction

The POS Board is designed for the motherboard “D2 Basic”, as additional COM ports and the cash drawer Interface were needed.

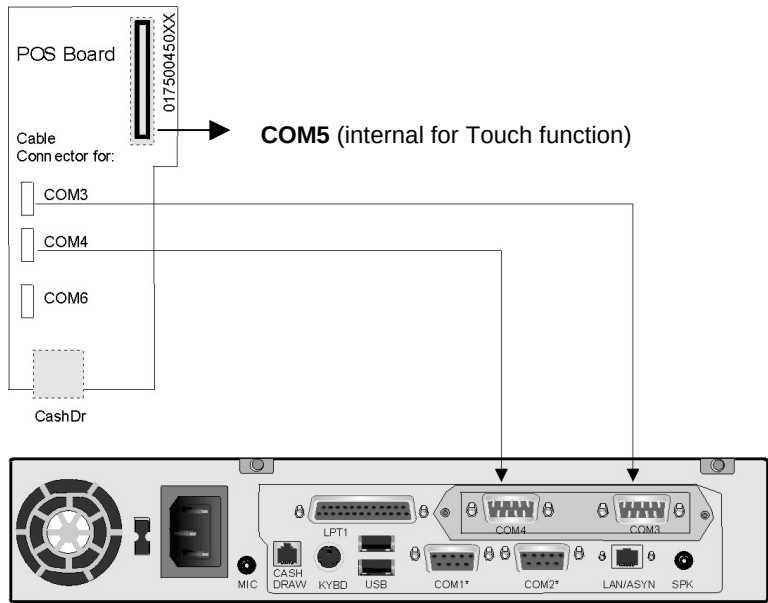
The POS Board has implemented the RS232 standard interfaces for COM3, COM4, COM6 and the reduced RS232 Interface (TxD and RxD only) COM5 for the touch functionality (COM6 is provided for future applications).

The POS Board integrates the Cash Drawer Logic as well as the power supply generation for the cash drawer.

In **this manual** you will find the description of the connector assignment, the touch screen installation and the installation of the COM ports.

This description is intended first and foremost for **technical service personnel**; substantial knowledge, sufficient experience and specialised skills in the handling of operating systems (MS-Windows; Linux), configuration and installation procedures are therefore assumed.

Introduction



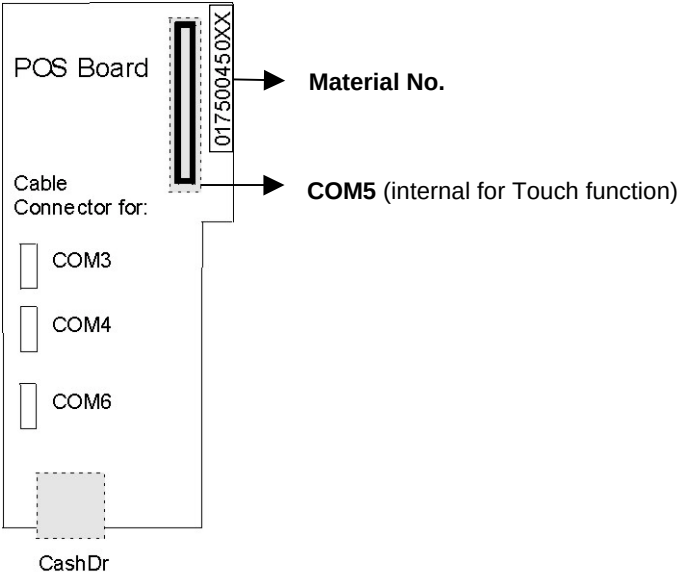
For COM3 and COM4 the Standard RS232 connectors are available at the bracket of the BEETLE /iPOS. Cables connect the POS Board and the RS232 Connectors at the bracket.

Depending on the type of POS board the COM Interfaces use the following I/O addresses and interrupts. The interrupt are activated by the BIOS set-up:

	POS Board Type I (01750045096, D) Requirement: WN BAS BIOS 40/11 or higher		POS Board Type II (01750056648, A) Requirement: WN BAS BIOS 41/12 or higher	
	I/O Address	IRQ	I/O Address	IRQ
COM3	3E8 - 3EF	10	3E8 - 3EF	10
COM4	270 - 277	10	210 - 217 (230 - 237) 250 - 257 270 - 277	10
COM5	2E0 - 2E7	(5) , 12	2E0 - 2E7	(5) , 12
COM6	328 - 32F	11	328 - 32F	11

() = Default

Locations for the COM cable connectors on the POS Board:



Connector Assignment

COM3, 4, 6 (INTERNAL CONNECTOR)

Each of the three interfaces is routed to a 2x7 pin connector, which could be equipped with a wired 9-pin DSUB male connector to have the PC-Standard Interface. The DSUB connector has to be mounted to the chassis of the BEETLE - Box.

Connector Type

2x7 Pin Header, JST B14B - PHSS,
WN-No: 5094707137

Connector Assignment:

PIN #	SIGNAL COM3,4,6
1	P5VF not used
2	GNDF not used
3	DCD
4	GND
5	CTS
6	DTR
7	RTS
8	TxD
9	DSR
10	RxD
11	RI
12	GND not used
13	P12VF not used
14	GNDF not used

Preparing the POSBOARD for the Touch Screen Installation

- Run the BIOS Setup utility.
Switch the system on and press «F2» key during the “Power-on-Self-Test”.
- Choose the “Advanced” menu.
Press right or left arrow-key until “Advanced” is highlighted and select «I/O Device Configuration» with arrow key.

Press «Enter» and select «Touch Screen Routing» with the arrow key.

Set «Route to COM5» by using the space bar to toggle.

- Choose the “Exit” menu.
Press «ESC» twice. Select «Exit Save Changes», press «Enter» and then choose the option «Yes» (use space bar to choose). Accept by pressing «Enter» to save and exit the Setup utility.
- Installation of the Touchware software.
Before you start the installation of the Touchware software make sure that previously the *COM5 port has been installed in BIOS and under Windows* operating system. See section “Installation of COM Ports” in this manual.

Install the Touchware software by using the CD delivered by Wincor Nixdorf. The installation software will automatically detect the Touch Controller at COM5.

Connector Assignment

BIOS Settings

I/O Device Configuration:

Touch Screen Routing to COM5

I/O for COM4 230 for Type II; 270 for Type I

IRQ for COM3, COM4 IRQ 10

IRQ for COM5 IRQ 5 (Default)

PCI / PNP ISA IRQ Resource Exclusion:

IRQ 10 Reserved

IRQ 5 (Default) Reserved

IRQ 5 is the default setting. Alternatively the IRQ 12 can be used when no PS/2 mouse is connected to the system!

Cash Drawer Interface

The POS Board has implemented the Cash Drawer Logic and the power supply generation 24V for the cash drawer. The Cash Drawer connector is located on the POS Board. It is a RJ12 (6 pin) connector type. The I/O assignments for cash drawer are compatible to the BEETLE motherboards.

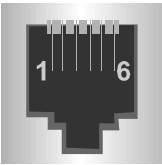
Input0310/ bit6	LAZU1N = 0	Cash drawer closed or not present
	LAZU1N = 1	Cash drawer open

The output bit KLA1 unlocks the cash drawers.

Output 0310/ bit6	KLA1 = 0	No activity
	KLA1 = 1	Unlock cash drawer

RJ12 Connector Pin Usage

PIN	Description
1	Frame Ground
2	Opening pulse for cash drawer
3	Status cash drawer
4	+24 V DC
5	n.c.
6	Signal Ground



The Wincor Nixdorf cash drawers KA16, KA17 and KA18 are connected by cash drawer cables (CR KB - 0930; CR KB - 0930; CR KB - 0941, cable lengths: 0.8m; 1.5m; 5.0m).

Connect cash drawers only!



Installation of COM Ports

With Windows or Linux operating systems pre-installed by Wincor Nixdorf, all COM interfaces have already been installed.



Please note the installation for the Touch Screen (see chapter "Preparing the POSBOARD for the Touch Screen Installation", page 5)

This section describes the installation of COM ports on BEETLE /iPOS systems, that were not pre-installed by Wincor Nixdorf.

Windows NT4



It is good practice to run BIOS setup and check for correct setting of port COM3: to COM5: (COM6:) before start of installation.



You can confirm all the following settings by (multiple) clicks on OK NEXT or FINISHED button.

- Install OEM Windows NT4 from CD.
- Then install: Network adapter (onboard), Intel graphics driver, audio.
- Run START → CONTROL PANEL → PORTS
- Select „ADD NEW“
- Set resources as indicated in table „BEETLE COM Port Resources“ (see below).

Even if the dialog box does not offer the required I/O setting, you can enter I/O port from the table in the corresponding field by keyboard.

Installation of COM Ports

- Confirm by a click on OK but **do not reboot** the BEETLE when prompted!
- Continue with „ADD NEW“ until you reach COM5: Then continue with next topic.
- **Reboot the BEETLE when prompted!**

Set the Windows registry key

HKLM\Software\Services\Serial\permit_share to 1 for correct function of OPOS - see also OPOS manual!

If your application runs in multiple windows and you want to avoid continuous close / open sessions of COM ports in your application, you need this feature, too.

Windows 2000



It is good practice to run BIOS setup and check for correct setting of port COM3: to COM5: (COM6:) before start of installation.



You can confirm all the following settings by (multiple) clicks on OK NEXT or FINISHED button.

Windows 2000 is a full-featured PnP operating system. Therefore, it is quiet sensitive for all resources configuration in the D2basic PnP BIOS resources and settings for the POSBOARD.

- Install OEM Windows 2000 from CD.
- Before any other action install at least the driver for Intel i815E chipset!
- Install all plug and play (PnP) devices now:

Network adapter (onboard), Intel graphics driver, audio ...

Installation of COM Ports



Do not install Intel's ultra ATA driver. Conflicts between the driver and COM4 might occur while following installation steps.

- Run START → SETTINGS → CONTROL PANEL and leave the window open until restart of Windows.
- Click SYSTEM in CONTROL PANEL window, change to tab HARDWARE and select ADD NEW HARDWARE and confirm the following dialogs.
You need to let Windows first search for new Plug and Play (PnP) devices.
Since PnP hardware is already installed, no new devices should be found.
- Next, confirm ADD NEW DEVICE - first topic of the offered list - and choose *Windows will search for new hardware* → confirm and wait...
Again, confirm when asked.
Now, COM3: and COM4: are found, but they are not installed correctly ! You would see this after a Windows restart, but ...
- DO NOT RESTART COMPUTER WHEN REQUESTED.
- Click SYSTEM in CONTROL PANEL window and select tab HARDWARE, start DEVICE MANAGER, select Ports (COM&LPT) and remove COM3: and COM4:
- Again, click ADD NEW HARDWARE in CONTROL PANEL window. Confirm the following dialogs. You need to let Windows first search for new Plug and Play (PnP) devices.
- Next, confirm ADD NEW DEVICE - first topic of the offered list - and select *NO, I want to select hardware from a list*.
Select *Ports (COM & LPT)* → *Communications Port* and confirm.
The *communications port resources dialog box* will be shown:
Set *Basic configuration* to number 8 to enable changing resources.
Set *Input / Output Range* and *Interrupt* to values of table POSBOARD COM port resources and confirm.

Installation of COM Ports

- DO NOT RESTART COMPUTER WHEN REQUESTED !
Repeat the last two steps for COM4: up to COM5: (COM6: if wanted)
- After all COM ports are installed, restart Windows.

Set the Windows registry key
HKLM\Software\Services\Serial\permit_share to 1 for correct function of OPOS (refer to OPOS manual).

If your application runs in multiple windows and you do want to avoid continuous close / open sessions of COM ports in your application, you need this feature too.

Windows 98SE



It is good practice to run BIOS setup and check for correct setting of port COM3: to COM5: (COM6:) before start of installation.



You can confirm all the following settings by (multiple) clicks on OK NEXT or FINISHED button.

- Install OEM Windows 98SE from CD.
- Before any other action install at least the driver for Intel i815E chipset!
- Install all plug and play (PnP) devices: Network adapter (onboard), Intel graphics driver, audio.
- Run START → SETTINGS → CONTROL PANEL and leave the window open until restart of Windows.
- Click SYSTEM in CONTROL PANEL window and select tab DEVICE MANAGER.

Installation of COM Ports

Open SYSTEM DEVICES → Plug and Play BIOS,
set *Disable NVRAM / ESCD updates* and confirm.

- Click ADD NEW HARDWARE in CONTROL PANEL window
Confirm following hints and select *NO, the device isn't in the list*.
Windows will offer to *search for new hardware* → confirm and wait...
Confirm, when asked. Now, *COM3: and COM4: are installed*.
- Again, click ADD NEW HARDWARE in CONTROL PANEL window.
Like before select *NO, the device isn't in the list*, but don't let
Windows search. Choose *NO, I want to select hardware from a list*,
select *Ports (COM & LPT)* → *Communications Port* and confirm.



Ignore the shown resource settings.

- DO NOT RESTART COMPUTER WHEN REQUESTED !
- Click SYSTEM in CONTROL PANEL window and select tab
DEVICE MANAGER.

Select *Ports (COM&LPT)* → COM5: → Properties → Resources and
set *Basic configuration* to number 8 to enable changing resources.
Set *Input / Output Range* and *Interrupt* to values of table
POSBOARD COM port resources and confirm.

- You can ignore the requested SHUTDOWN, but you need to restart
Windows.

Linux

- Install Linux from CD.
- Enter „man setserial“ and read general info about installation of COM ports.
- Add following lines to /etc/rc.d/rc.local:
COM3: "setserial /dev/ttyS2 port 0x3e8 irq 10 uart 16550A"
COM4: "setserial /dev/ttyS3 port 0x270 irq 10 uart 16550A"
COM5: "setserial /dev/ttyS4 port 0x2e0 irq 5 autoconfig ^fourport"
(**COM6:** "setserial /dev/ttyS5 port 0x328 irq 11 autoconfig ^fourport")

POSBOARD COM port resources

COM3:	I/O 3E8-3EF	IRQ 10
COM4:	I/O 270-277	IRQ 10, Type I
	I/O 230-237	IRQ 10, Type II
COM5:	I/O 2E0-2E7	IRQ 5 / 12
COM6:	I/O 328-32F	IRQ 11

IRQ5 is set by BIOS default.

Use IRQ12 only, if no PS/2 mouse is enabled!

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