

## Introduction

BEETLE systems with E1 motherboard may be delivered without a pre installed operating system and therefore do not include all needed drivers for WN hardware. For these customers we provide the drivers on our web sites. This document gives you some hints concerning the installation of E1 onboard video drivers. It gives you some basic technical information about driver installation and also about new features and differences to previous driver releases and other WN motherboards:

*This document is made for people with a technical background. Thus, we do not need to tell you how to install a Windows driver and select INF files ("install from a list"), overwrite existing, "recommended" Windows drivers, or how to install Red Hat rpm packages, etc... For basic information & education concerning operating systems and PC technology itself, please contact your favorite consultant.*

## Contents of DOWNLOAD.ZIP

*.rpm	Embedded video driver for Linux	release 4.1.704
README.PDF	This file	

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## Known problems and restrictions






- While boot up of BEETLE the display is used in simple VGA mode. Since the WN TFT displays **BA7xA do not support stretching**, you will see a small screen (640x480) area with a black surrounding only until driver is running.
- If old style display **BA73A (15" / non DDC)** is used with an old BIOS release, you may see the "VGA area" multiple times on screen.

Original 640 x 480 screen	Mirrored 640x480 screen
Colourful area up to 1024x768	Colourful area

Once the video driver is started, full screen display will be available.  
→ Update BIOS to actual release to avoid this "feature".

## Mechanical setup

### E1 onboard jumper for WN non DDC WN TFT displays:

PT321	WN type	Size	Mode	Resolution
	BA72A	12"	SVGA	800x600x <b>47Hz</b>
	BA73A	15"	XGA	1024x768x60Hz
	BA72A-1	12"	SVGA	800x600
	Banking PB	10"	VGA	640x480
	Plasma TFT		---	848x480

BA72A-2 + non DDC driver

← Projects only

← Projects only

### Wrong jumper setup causes corrupted screen output on BA7xA (non DDC).

Using a WN panel link display type BA7xA-2 (DDC support) and DDC cable (see WN configuration sheet), jumper setting is ignored!

All newer displays BA7xA-2 use 60Hz refresh rate, but will also run without hardware damage if the jumper setting and a non DDC cable forces 59Hz refreshing.

### DDC chain / plug and play

Display configuration based on a complete "DDC chain":



**IF** one of these components does not support the "display data channel" (DDC),  
**THEN** no "extended display identification data" (EDID) is transmitted  
**AND** therefore no "plug and play" (PnP) possible.

Even if all features are available, you can not change displays on the fly.

PnP is applied at Windows XP start up only.

The DDC cables usually are delivered with a sticker that shows the material number **0175006218x-PST,mm/yy ..... x may be 6, ..., 9 !!!**

## Intel embedded video driver for Linux

**Linux video driver is provided as rpm:** Use "--force" option to overwrite existing packet: „ **rpm -Uhv wn\_i845gv-4.1.704-3.i386.rpm --force** “

This WN display driver release is build for Linux kernel of Red Hat 9 distribution and is always needed. Do not run generic drivers!

Remarks for current driver release:

- Since old style (non DDC) 12" displays with 47Hz (interlaced) timing reached end of life, you will receive new "BA72A-2" (DDC type) with different refresh rate. If you observe a flickering screen running XFree GUI, you need to change onboard jumper to "BA72A-1" position. Next, adapt the configuration file **"`/etc/X11/XF86Config`"**. Edit **Section "Monitor"** (identifier "BA72") and insert **"#"** at front of each parameter line (**"HorizSync"**, **"VertRefresh"**, **"mode..."** e. t. c.)
- If your (non DDC) 12" BA72A display can not be found by XFree, you need to modify the configuration file **"`/etc/X11/XF86Config`"**. Add a new line inside the device section for onboard graphic controller (Section "Device" Identifier "i845gv"):  
Option "TwinDisplay" "No"

## Dual screen option for BEETLE with E1 motherboard

The common configuration for dual screen option is the **onboard video** installed together with a **PCI video controller**, plugged into sub module (PCI) connector on motherboard or PCI slot of riser card.

The chipset of old WN 2<sup>nd</sup> VGA video controllers based on Chips & Technology 69000 reached end of life. Thus, new WN video controllers were designed to provide dual screen options for BEETLE motherboards. These new controllers are based on **Silicon Motion SM712** (chipset is **LynxEM4+**)

See manual delivered with video controller and/or the README.PDF files provided with SM712 driver downloads from WN web site.