

## Contents of DOWNLOAD.ZIP

WinXP.5.01.2600.290\*.*	Windows driver for WN motherboard up to F2 (release 5.1.2600.0290)
README.PDF	This information

## Contents of this README file

CONTENTS OF DOWNLOAD.ZIP	1
CONTENTS OF THIS README FILE	1
INTRODUCTION	1
NEW FEATURES, IMPROVEMENTS, FIXED PROBLEMS	1
KNOWN PROBLEMS / RESTRICTIONS	1
INSTALLATION	3
HARDWARE	3
JUMPER SETTING FOR NON-DDC WN DISPLAYS	3
DDC CHAIN	3
TOUCH ROUTING	3
DOS INSTALLATION	4
WINDOWS XP DRIVER INSTALLATION	4
WINDOWS XP UNATTENDED DRIVER INSTALLATION	4
WN DISPLAY INSTALLATION RUNNING WINDOWS XP	5
HOW TO INSTALL A WN DISPLAY?	5

## Introduction

The driver package is made for WN video controllers based on “**Silicon Motion LynxEM4+**” chip SM712. They support all **WN BA7xA-2** (Panel link) TFT displays!

- **Panel link (PLINK) controller** standard PCI slot card (CRAF-PCI-DDC4). Provides a PLINK interface for WN TFT displays BA7x.
- **Second CRT controller** sub module (CRCL-0110). Provides VGA / RGB (DSUB15) interface for a standard VGA monitor; e.g. cathode ray tube (CRT) screen.
- **Second TFT controller** sub module (CRCL-0111 & CRCL-0120). Provides a PLINK interface for WN TFT displays BA7x, in case of all PCI slots are already in use.

The WN sub module connector of BEETLE motherboards provides a minimal PCI interface. Therefore the same driver as used for the PCI slot device can be installed.

## New features, improvements, fixed problems

- We could see in our labs very rarely that the **screen output was presented upside down or with wrong settings**. The 2<sup>nd</sup> “CRT” controller (RGB sub module; CRT) showed this strange behavior after driver was installed, the first time activated as 2<sup>nd</sup> Windows XP screen. This release solves it for all such configurations!

## Known problems / restrictions

- **This driver release is NOT valid for new WN motherboards! G1, H1 and follower do need a newer driver release! Go for our web site...**

The SM712 based controllers are basically designed to connect a second display to BEETLE systems, but the dual screen setup is to be handled with care:

- ***E1 (845GV) onboard drivers with release number 3.x.x.xxx (or older) sporadically do not work properly together with the 2<sup>nd</sup> video controller.***

Changes of color depth, resolution of 1<sup>st</sup> “onboard” screen... may cause colorful stripes, unreadable screen output or no video output at all (dark screen).

Once, display is setup to best fitting parameters, the screen output will remain stabile without trouble!

- You may want to hide the BIOS boot messages on onboard screen and select SM712 screen as BIOS boot display. ***Do not setup the BIOS “BOOT VIDEO DEVICE” to “PCI SLOT”.*** It dramatically increases the probability of the “dark screen behavior”. This is dependant to onboard video driver release!
- Windows XP provides a **generic display driver** for SM712 display controllers. They do not provide the special functionality for WN displays! ***Always download and install newest WN display drivers for WN displays.***
- The SM712 driver for Windows is not signed.
- If you do order WN TFT displays today, you will receive **new BA7xA-2 (DDC)** types. Older configurations and hard disk images may be based on previous, non DDC displays. You need to test these older systems with new displays before mass installation at the stores.
- If you use SM712 controller already for long time, you may received the very first hardware release of **controller based on LynxEM+ chip** (2MB onboard memory only), you may notice the restricted setup option 800 x 600 x 24bit or 1024 x 768 x 16bit only. The newer type is based on chip **LynxEM4+** (4MB video memory) and does not show this restriction!
- **Video streams** presented by Windows Media Player (and other players as well) are shown on 1<sup>st</sup> or 2<sup>nd</sup> screen – never on both of them.
- The SM712 based controller, provides a video BIOS extension ROM.

**For D2 motherboard it's needed to change UMB buffer in BIOS SETUP:  
Advanced → PCI/PNP ISA UMB... → “BIOS INTERNAL BUFFER: DC00-DFFF”**

- **Windows 2000** installations on D2 motherboard may cause a **BA7x screen to remain dark**, after the Windows start up. In this case remove the COM4: port before SM712 driver installation (use device manager) and afterwards re-install it.
  1. Run BIOS setup and note the resources related to COM4
  2. Boot up Windows 2000
  3. Run the “ADD NEW HARDWARE wizard”
  4. It will NOT find the COM4: port automatically
  5. Add new hardware → Ports (COM&LPT) → “communication port”
  6. We used “Basic configuration 0008”
  7. Setup resources: I/O 270 + IRQ10 or IRQ11 (BIOS SETUP)
  8. Its good practise to reboot the system afterwards

## Installation

### Hardware

#### Jumper setting for non-DDC WN displays

PT321	WN type	Size	Mode	Resolution
 <sup>1</sup>	BA72A	12"	SVGA	800 x 600 x 47Hz
 <sup>1</sup>	BA73A	15"	XGA	1024 x 768 x 60Hz
 <sup>1</sup>	BA72A-1	12"	SVGA	800 x 600 x 59Hz
 <sup>1</sup>	Banking PB	10"	VGA	640 x 480
 <sup>1</sup>	Plasma TFT		---	848 x 480

← Fits to BA72A-2 too

← Projects only

← Projects only

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

Using a WN BA7xA-2 (DDC support) with complete DDC chain (!) jumper setting is ignored by the driver. Since the displays do not provide stretching, the output will be presented in a small 640 x 480 window while boot up.

### DDC chain

For full plug and play functionality you do need a closed "DDC chain": DDC screen + DDC cable + DDC controller (the SM712 is one). **If you can not see any or unreadable display output on screen, a non DDC cable might be the reason.** You should set jumpers to the related position and the screen output will be shown!

### Touch routing

The WN PLINK controller provides the full WN PLINK interface (connector), including RS232 wires for **touch routing**. You may use the DSUB RS232 connector of the display controller or (if no BEETLE COM port is available for external touch connection) the piggy back solution: The WN PCI-COM (or old WN AT-COM board) connected to PLINK controller board by internal the cable, delivered with the multi RS232 board.

## **DOS installation**

There is no driver is needed for DOS. In case of onboard graphic chips of motherboards does not support **stretching** (needed for DOS based applications), this controller may be used instead. You will see the DOS standard resolution 640x480 as a full screen picture with a lower quality caused by the interpolation algorithm.

## **Windows XP driver installation**

At start up Windows will find new SM712 hardware and the generic Windows XP driver will be installed automatically. Therefore, the actual SiliconMotion driver (made for WN) needs to be reinstalled.

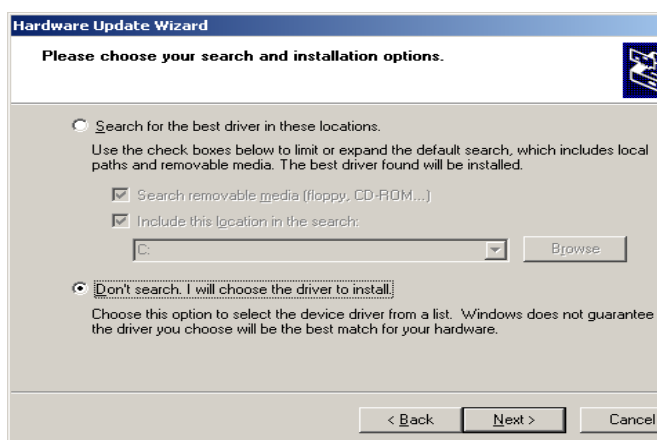
Start device manager and update driver. Choose “select from a list” option...

→ The **generic Windows XP driver (Microsoft) for Silicon Motion SM712** does not work properly with WN displays!

**Always download and install the newest one from the WM site.**

Select “Don’t search...” →

**And afterwards “HAVE DISK” ...**



## **Windows XP unattended driver installation**

If drivers are not correctly signed, they might not be installed by unattended installation tools. In the **answer file**, the DriverSigningPolicy key in the **[Unattended] section** specifies how nonsigned drivers are processed during installation.

Include “**DriverSigningPolicy = Ignore**” in this section, to force installation!

→ If you are using this option and you attempt to install a newer, unsigned copy of a driver that is protected by Windows XP Professional, the policy level is automatically updated to Warn.

## ***WN display installation running Windows XP***

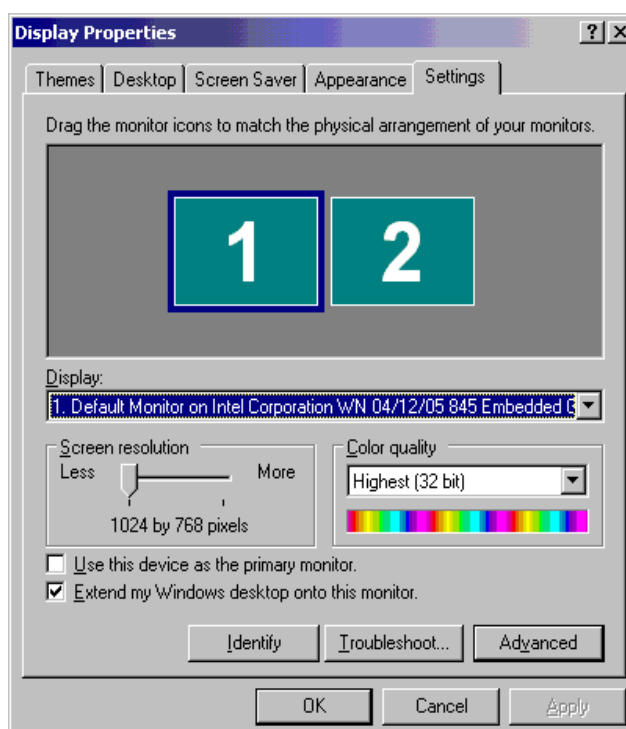
The i845GV package includes a file WN\*.INF, which is provided in DOWNLOAD.ZIP, but not only made for E1 motherboard onboard video. It sets up parameters for all WN displays connected to WN motherboards. Not really needed, but nice to have.

### ***How to install a WN display?***

1. Open **[display] [properties]** dialogue
2. If more than one display is connected, select the video controller the display is connected to.

*This (→) is an example of what you see if WN BA73A is to be installed at PLINK bridge of E1 motherboard with BA73A as 2<sup>nd</sup> screen at SM712 controller:*

3. Select **[Advanced]** options
4. Select the **[Monitor]** tab and click **[Properties]** of monitor.
5. Select **[Driver]** tab and next **[Update Driver]**
6. Enable **[Install from ... a specific location]**
7. Enable **[Don't search...]**



8. Disable **[Show compatible devices] !!!**
9. Select **Wincor-Nixdorf** related WN display and terminate it all by **[Next] ...**

