

# **Windows WinCE 5.0 O/S Support**

**886LCD-M/Flex**

**Board**

Ver. 1.0 – October 5<sup>th</sup> 2004.



**Document revision history.**

Revision	Date	By	Comment
1.0	October 5, 2004	JSE	First initial release

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- CPU Board
  1. Type.
  2. Part-number (Number starting with “53”).
  3. Serial Number.
- Configuration
  1. CPU Type, Clock speed.
  2. DRAM Type and Size.
  3. BIOS Revision (Find the Version Info in the BIOS Setup in the KONTRON Section).
  4. BIOS Settings different than *Default* Settings (Refer to the Software Manual).
- System
  1. O/S Make and Version.
  2. Driver Version numbers (Graphics, Network, and Audio).

Attached Hardware: Harddisks, Floppy, LCD Panels etc.

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## 1.1 Introduction

This manual is a brief introduction for installing and using the KONTRON Technology 886LCD-M/Flex Boards Support Package for Windows CE 5.0. This package can be used to generate Windows CE 5.0 Kernel images to be run on the 886LCD-M/Flex.

The use of the software supplied by KONTRON Technology requires that the User has already installed Microsoft Windows CE 5.0 Platform Builder software on the Development system. Contact Your Microsoft distribution channel to purchase a copy of this.

The 886LCD-M/Flex Board Support Package provided by KONTRON Technology will add a 886LCD-M/Flex Driver library to the Microsoft Windows CE 5.0 Platform Builder software environment. These drivers have been qualified to operate with the 886LCD-M/Flex board and should be added when building WinCE 5.0 image to be executed on 886LCD-M/Flex.

Currently most functions on the board have been qualified to operate however please read below for the current WinCE 5.0 support restriction for the 886LCD-M/Flex.

## 1.2 886LCD-M/Flex Windows CE 5.0 Support:

<b>Graphics</b>	
Direct X	Supported (Direct Draw only)
Display resolution	See platform.reg file for resolutions.
Dual Display	Not Supported
<b>Communication</b>	
Ethernet controller 1..3	Supported
Ethernet Download/Debug	Supported (Controller 1 only)
Wake on LAN	Not Supported
Serial ports 1+2	Supported
Serial ports 3+4	Supported
Parallel port	Supported
Floppy	Not Supported
USB Ports(1.0/1.1 only)	Port0,1,2,3 supported
<b>Sound</b>	
AC97/98	Supported
DirectSound	Supported
<b>Other</b>	
IDE Channel	
Primary	Supported
Secondary	Supported
IDE CDROM/DVD	Supported
Keyboard	Supported
PS/2	Supported
Power Management	Not Supported

## 1.3 886LCD-M/Flex Board Support Package Installation

Prior to installation of the KONTRON Technology Board Support the Microsoft Windows CE 5.0 Platform Builder must be installed on the Development platform.

The installation program will install all required files to create a Windows CE 5.0 platform OS based on KONTRON Technology 886LCD-M/Flex board hardware architecture. The setup creates an OAL platform within Windows CE 5.0 platform builder, and adds a hardware component group to the platform builder catalog tree. The developer can then add the desired components to a specific platform.

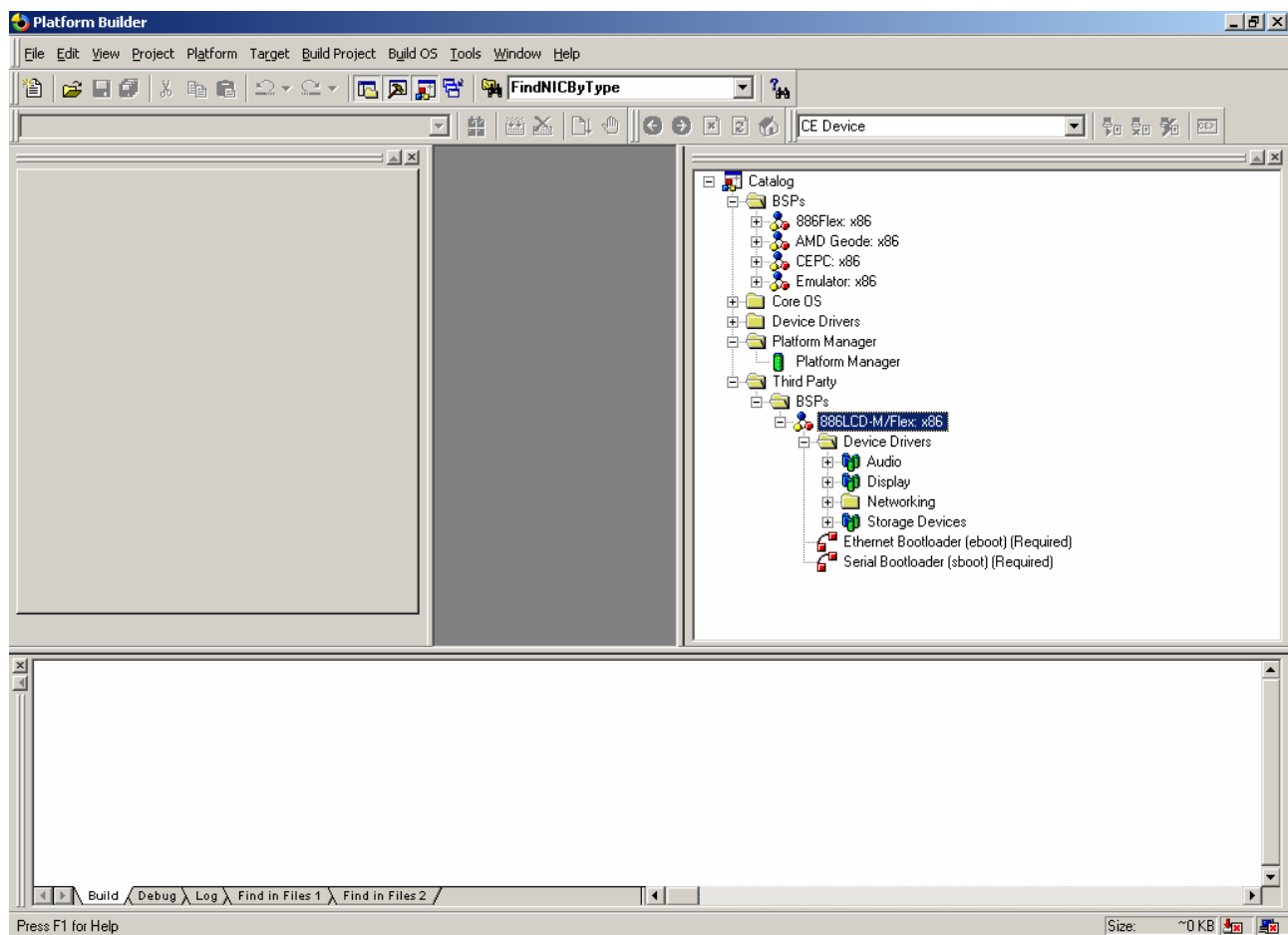
## 1.4 Installation:

The Setup.exe program file located on the CD must be executed to perform a complete installation. Make sure the Windows CE Platform Builder 5.0 is installed on your system before running the setup file. Setup will fail the installation if the Platform builder is not correctly installed.

Setup will copy all needed files to the Windows CE Platform 5.0 directory and will add a directory called 886LCD-M/Flex under Third Party BSPs. This directory contains several source and device driver files, to create a Windows CE 5.0 OS image based on the 886LCD-M/Flex hardware architecture.

The Setup.exe program also adds a “cec” file to the Platform builder containing information on the hardware components. If the package is already installed on your system the package will be removed and then reinstalled.

For future Board Support Package updates from KONTRON Technology including modification to source or device driver files, the latest files can be copied to the directories by re-running the Setup.exe.



## 1.5 Installing the WinCE 5.0 boot loader

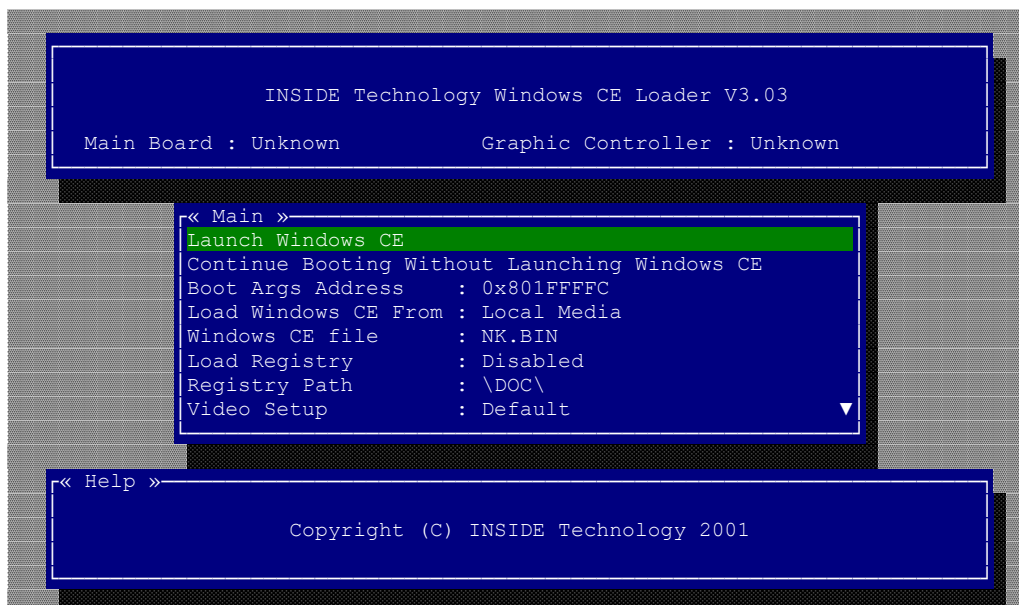
The Windows CE 5.0 Boot Loader is an utility offered by KONTRON Technology to allow to change various settings on a completed WinCE 5.0 image on the Target system. Settings like Graphics resolution, Base addresses for onboard devices etc. can be changed.

### Installation:

To install the loader on a HDD or flash disk follow the sequence below:

- 1.) First make a bootable DOS floppy disk, with FDISK and FORMAT
- 2.) Copy the loader.exe to the disk
- 3.) Use the disk to boot your Target Windows CE system.
- 4.) Use the FDISK and FORMAT to prepare the HDD / flash disk. Do not use SYS or FORMAT /s, the loader does not use DOS. The loader only supports FAT12 and FAT16. Not FAT32.
- 5.) Copy loader.exe to the root dir of the HDD / flash disk
- 6.) Change drive to HDD / flash disk
- 7.) Type "loader.exe /install bootsector" to install the loader.
- 8.) Remove the floppy disk and reboot the system.

Now the system will start the loader and show the menu:





## 1.6 Using the WinCE.Net boot loader

The following section described each Menu point displayed in the Loader.

### Launch Windows CE

Start Windows CE

### Continue Booting Without Launching Windows CE / Exit To DOS

Exit the loader

### Boot Args Address : 0x801FFFFC

Address for a pointer to the boot arguments

### Load Windows CE From : Local Media

Local Media

Load the image from a HDD / flash disk

Serial Port

Download the image over a serial port

Parallel Port

Download the image over a parallel port

Ethernet

Download the image over Ethernet

This function uses the eboot.bin file

### Windows CE file : NK.BIN

NK.BIN

File name for the Windows CE image

EBOOT.BIN

File name for Ethernet boot image file

### Load Registry : Disabled

INSIDE.REG

Use the last saved registry.

INSIDE.BAK

Use the pre registry, the backup is made the first time the  
Flushreg is called.

This function can be used as a last known good boot (registry)

Disabled

Do not load the registry

### Registry Path : \DOC\

The path for the boot drive inside Windows CE. To store the registry on  
a device you need a Windows CE driver for the device.

### Video Setup : Standard

Standard

0 320x200, 1 480x240 (640x480), 2 640x480, 3 800x600, 4 1024x768,  
5 480x240 (640x480), 6 320x240, 7 320x240-2 (640x480), 8 1280x1024

VESA

The loader scans the bios to see if the requested modes are available in 8,16,24 & 32 Bits colours modes 320x200, 320x240, 640x480, 800x600, 848x480, 852x480, 853x480, 1024x768 & 1280x1024x8

**Video Mode : 320x200x8**

Selected mode.

Note: Above listed video mode selection do not have impact on the actually video mode when Windows CE is booted. To change the video mode see Platform.reg file.

**Debug Port : Com2**

Disabled or address for serial debug port

**Debug Baud rate : 19200**

Speed for serial debug port, note that the standard eboot.bin only use 38400

**Parallel Port : LPT1: 0x3BC**

Base addresses for debug parallel port

**Ethernet Debug : Disabled**

Use an Ethernet card for debug

**Ethernet Card : NE 2000**

SMC 9000 SMC9000 base Ethernet card

NE 2000 : ne2000 based Ethernet card

RTL8029 (NE 2000 PCI)

The loader scans for a RTL8029 controller

The first found is used as debug card

**Ethernet IRQ : 10**

IRQ for debug Ethernet card

**Ethernet Base I/O : 0x0320**

Base address for debug Ethernet card

**Ethernet Debug IP : DHCP**

DHCP : use server to get Debug IP address

Static : use entered IP address

**EDBG Debug Zones : 0x0000**

Sets debug zones.

**Show loading picture : Disabled**

This function is not available in this version

**Menu popup : Always**

Always

Only if F1 Press during boot

Never

**Verbose : Disabled**

Disabled : no information under boot

Enable : display information about nk.bin under boot

**Store NK.BIN local : Disabled**

Enable

This function only works if serial or parallel is used to download.

**Install boot sector / Remove loader from boot sector**

For install or removing the boot sector

**Save menu options**

Save the menu settings to the loader.exe