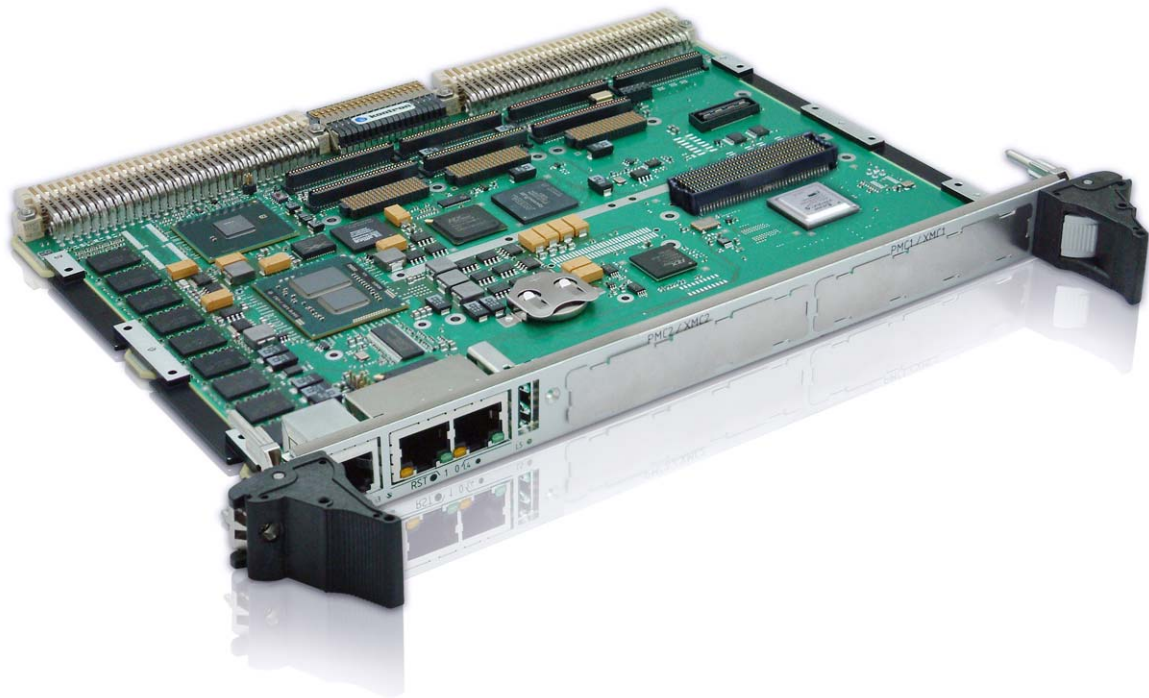


## » VM6050 «



### Release Note For Windows XP Embedded BSP For VM6050 Board

SD.DT.F93-1e - July 2012

## Revision History

Publication Title:		Release Note for Windows XP
Doc. ID:		SD.DT.F93-1e
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1e	Update of: - Chapter 5 - "Features Not Supported" - Chapter 7 - "Known Issues"	07/2012
0e	Initial Version	11/2011

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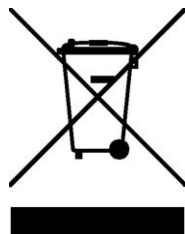
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## Environmental Protection Statement

This product has been manufactured to satisfy environmental protection requirements where possible. Many of the components used (structural parts, printed circuit boards, connectors, batteries, etc.) are capable of being recycled.

Final disposition of this product after its service life must be accomplished in accordance with applicable country, state, or local laws or regulations.



**Environmental protection is a high priority with Kontron.**

**Kontron follows the DEEE/WEEE directive.**

**You are encouraged to return our products for proper disposal.**

The Waste Electrical and Electronic Equipment (WEEE) Directive aims to:

- > reduce waste arising from electrical and electronic equipment (EEE)
- > make producers of EEE responsible for the environmental impact of their products, especially when they become waste
- > encourage separate collection and subsequent treatment, reuse, recovery, recycling and sound environmental disposal of EEE
- > improve the environmental performance of all those involved during the lifecycle of EEE

## Conventions

This guide uses several types of notice: Note, Caution, ESD.



Note: this notice calls attention to important features or instructions.



Caution: this notice alert you to system damage, loss of data, or risk of personal injury.



ESD: This banner indicates an Electrostatic Sensitive Device.

All numbers are expressed in decimal, except addresses and memory or register data, which are expressed in hexadecimal. The prefix `0x` shows a hexadecimal number, following the `C` programming language convention.

The multipliers `k`, `M` and `G` have their conventional scientific and engineering meanings of  $*10^3$ ,  $*10^6$  and  $*10^9$  respectively. The only exception to this is in the description of the size of memory areas, when `K`, `M` and `G` mean  $*2^{10}$ ,  $*2^{20}$  and  $*2^{30}$  respectively.



When describing transfer rates, `k` `M` and `G` mean  $*10^3$ ,  $*10^6$  and  $*10^9$  *not*  $*2^{10}$   $*2^{20}$  and  $*2^{30}$ .

In PowerPC terminology, multiple bit fields are numbered from 0 to n, where 0 is the MSB and n is the LSB. PCI and CompactPCI terminology follows the more familiar convention that bit 0 is the LSB and n is the MSB.

Signal names ending with an asterisk (\*) or a hash (#) denote active low signals; all other signals are active high.

Signal names follow the PICMG 2.0 R3.0 CompactPCI Specification and the PCI Local Bus 2.3 Specification.

## For Your Safety

Your new Kontron product was developed and tested carefully to provide all features necessary to ensure its compliance with electrical safety requirements. It was also designed for a long fault-free life. However, the life expectancy of your product can be drastically reduced by improper treatment during unpacking and installation. Therefore, in the interest of your own safety and of the correct operation of your new Kontron product, you are requested to conform with the following guidelines.

### High Voltage Safety Instructions



**Warning!**

All operations on this device must be carried out by sufficiently skilled personnel only.



**Caution, Electric Shock!**

Before installing a not hot-swappable Kontron product into a system always ensure that your mains power is switched off. This applies also to the installation of piggybacks. Serious electrical shock hazards can exist during all installation, repair and maintenance operations with this product. Therefore, always unplug the power cable and any other cables which provide external voltages before performing work.

## Special Handling and Unpacking Instructions



### ESD Sensitive Device!

Electronic boards and their components are sensitive to static electricity. Therefore, care must be taken during all handling operations and inspections of this product, in order to ensure product integrity at all times

Do not handle this product out of its protective enclosure while it is not used for operational purposes unless it is otherwise protected.

Whenever possible, unpack or pack this product only at EOS/ESD safe work stations. Where a safe work station is not guaranteed, it is important for the user to be electrically discharged before touching the product with his/her hands or tools. This is most easily done by touching a metal part of your system housing.

It is particularly important to observe standard anti-static precautions when changing piggybacks, ROM devices, jumper settings etc. If the product contains batteries for RTC or memory backup, ensure that the board is not placed on conductive surfaces, including anti-static plastics or sponges. They can cause short circuits and damage the batteries or conductive circuits on the board.

## General Instructions on Usage

In order to maintain Kontron's product warranty, this product must not be altered or modified in any way. Changes or modifications to the device, which are not explicitly approved by Kontron and described in this manual or received from Kontron's Technical Support as a special handling instruction, will void your warranty.

This device should only be installed in or connected to systems that fulfill all necessary technical and specific environmental requirements. This applies also to the operational temperature range of the specific board version, which must not be exceeded. If batteries are present, their temperature restrictions must be taken into account.

In performing all necessary installation and application operations, please follow only the instructions supplied by the present manual.

Keep all the original packaging material for future storage or warranty shipments. If it is necessary to store or ship the board, please re-pack it as nearly as possible in the manner in which it was delivered.

Special care is necessary when handling or unpacking the product. Please consult the special handling and unpacking instruction on the previous page of this manual.

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## Chapter 1 - Scope

This document describes VM6050 Board Support Package (BSP) for Microsoft Windows XP Embedded (XPE).

This document provides:

1. Summary of BSP features;
2. Lists of the release package contents.

## Chapter 2 - XPE Version

For this BSP the mandatory XPE version is Windows XP Embedded Standard 2009 (WES2009) updated with the "Windows XP Embedded Standard 2009 Monthly Updates and features" of June 2011 or later.

You must have an account access to <https://ece.partners.extranet.microsoft.com/ece/> to get these updates.

## Chapter 3 - BSP Contents

### 3.1 Windows XP Embedded Project Files

The VM6050\_base\_ID11264.slx file (ProjectFiles directory) provides all the required description and settings to build a kick-off Windows XP Embedded Image.



The “VM6050\_base\_ID11264.slx” is a kick-off for a XPE Image.

- > With this slx-file you can build an evaluation version image. The Lifetime: 120 days!
- > You can upgrade this eval to a full version with a XPE Product Key.
- > Example:
  - ▶ Target Designer > Settings > Run-time Licensing > Product identification key

The VM6050\_check\_11264.slx file is based on VM6050\_base\_ID11264.slx with dependency check run and solved.

### 3.2 Components

The components directory contains \*.sld files and repository folder with all out-of-box drivers and inf-files update.

The VM6050\_11264 HAL.sld file provides a set of components that describes all VM6050 hardware in XPE configuration and includes the driver for the CPLD VM6050 access (GPIO, LED, I2C EEPROM, NVFRAM, WATCHDOG, PBIT or POST result, Thermal, Voltage sensors, Vital Product Data);

VM6050\_11264 XPE image component.sld is used to add some basic component to build a useable WinXPE image (TCP/IP, login). It is referenced by VM6050\_base\_11264 HAL.slx project file.

### 3.3 Target Analyzer Files (TAP folder)

The VM6050.pmq file (in Tap directory) was created with the Target Analyzer to detect the hardware on the target device. By using the Component Designer, you can import the .pmq file and generate a macro component that contains the device drives and related resources that were identified by Target Analyzer. The log file indicates details of found devices.

### 3.4 Binaries (patch folder)

The Patch directory contains the driver for USB storage devices which permits to fix a system problem when XPE is loaded from a bootable USB flash device ([Windows XP Embedded SP3 USB Boot - Hangs on shutdown/restart](#)) and when a power off/ restart is ordered with an USB device connected.

### 3.5 Versions: Driver, SLD and SLX

Graphics	Version	Description
Network	Version	Description
Intel(R) 82580 Gigabit Backplane Connection	11.11.35.0,	Intel Network Adapter. It is Already included into WES2009 + June 2011 update
Chipset Driver	Version	Description
Intel(R) QM57 Express Chipset LPC Interface Controller - 3B07	Version 9.2.0.1022	This package contains the XPE support for Intel(R) 5 Series/3400 Series Chipset. It is already included into WES2009 + June 2011 update
SLD package	Version	Description
VM6050_11264 HAL.sld	11264	Components list to support basic hardware of the VM6050 board
VM6050_11264 XPE image component.sld	11264	Components list to build a VM6050 XPE image
SLX	Version	Description
VM6050_base_ID11264.slx	11264	Kick-off for a XPE image
Kontron KEAPI Driver	Version	Description
KEAPI system Driver	1.0.0.10	System Drivers for KEAPI
Kontron KEAPi	Version	Description
KEAPI components	1.0	GUI, shell tools, services and libraries for KEAPI
CPLD Drivers	Version	Description
CPLD system drivers	1.0	CPLD and Watchdog drivers

### 3.6 Norton Ghost Disk Snapshot

VM6050\_ID11264.GHO is a pre-deployed and pre-configured evaluation image.

### 3.7 Norton Ghost Distributive

The Norton Ghost program and its components are needed for deploying XPE image from disk snapshot.



- > DOS directory. Contains files for successful DOS loading (COMMAND.COM, IO.SYS, MSDOS.SYS). Used for bootable disk creation;
- > GHOST directory. Contains files for successful Norton Ghost loading (GHOST.EXE , MOUSE.COM). Used for deploying partition snapshot on disk;
- > HUSBFW.EXE This program creates bootable disk.

## 3.8 Windows XP Embedded Image Folder

This is a Windows XP Embedded image obtained after project compilation and that can be copied onto SATA or USB boot device. It will execute a First Boot Agent Configuration. This Windows XPE image version is 11264.

## 3.9 Sources Files Delivery

Source files of executable programs are delivered into the BSP to help fast development. One part of the source files are delivered with “KEAPI” component (these are all source files of .exe programs used for standard KEAPI features such as cpu, disk, eeprom, voltage, temperature ... etc). A second list of source files can be found in BSP delivery on DVDROM folder `BSP/WES2009_BSP_VM6050_11264/src/TestApplications`. This second list includes source files for test applications that are not yet part of KEAPI-GUI such as POST, VPD (Vital Product Data), LED, Watchdog Init and Interrupt management.

## Chapter 4 - Supported Features

System	Characteristic
Image Size	495 MB
HDD	Partition 1
<b>Onboard Hardware Support</b>	
VGA, DP Screen	
Four Intel® 82580 Gigabit backplane Ethernet	2 Ethernet on front and 2 Ethernet on rear
Two Serial ATA interfaces	IDE
Mezzanine On board SATA Flash	IDE
Two USB ports and one USB Flash mezzanine port	
Two Serial ports	COM1 on front and COM1/COM2 on rear
Kontron EAPI support	Accessible locally on by network
CPLD feature support	Driver and example for Watchdog, led, GPIO, Thermal sensors, NV-FRAM, Two EEPROM, Registers
PBIT or POST result analysis	Power On Self test result accessible in human readable form.
VPD (Vital Product Data) analysis	Serial number, Hardware Change level, Hardware option
Voltage sensors access	Board voltage sensors on SMBus
SPD access	Read Serial Presence Detect information for memory configuration.

## Chapter 5 - Features Not Supported

- 1. AHCI SATA Disk Installation (not validated)
- 2. VME device (ALMA chip)
- 3. Intel HD graphic driver (For Power management, Graphic Accelerator and Dual Screen handling)

## Chapter 6 - Tested BIOS Version

Core version	4.6.3.5
Project version	0ABPZ 0.20 x64
Date	07/19/2011
BIOS ID	11255EAR

## Chapter 7 - Known Issues

1. Shutdown/restart doesn't work when USB device is plugged. This is a WinXPE problem and is corrected using the provided `USBSTOR.SYS` device (see BSP User's Guide)
2. Intel Management Engine Interface device cannot start (Error code 10);
3. PCI Simple Communications Controller (VEN\_8086& DEV\_3B65) not found.
4. Intel HD graphics component driver is not supported. Using it will prevent Windows from booting. Do not use this WinXPE component. VGA and DP Port will work without it.
5. GPIO 1 and 5 are not accessible with current CPLD driver version. Only GPIO 0, 2, 3 and 4 are available from CPLD driver. It will be corrected in next version.
6. Onboard Temperature Sensors not available:  
VM6050 is equipped with 3 onboard I2C LM73 temperature sensors. The CPLD driver in BSP 11264 only proposes to access one of them (the first one at address I2C 0x90). This will be corrected in next version.
7. `VPD.exe` command:  
`VPD.exe` command allows to display board Vital Product Data and to interpret it. However VPD interpretation is partially incorrect. It will be corrected in next version.
8. `Register.exe` command:  
`Register.exe` command allows to display and interpret all CPLD registers. However register interpretation is partially incorrect. This will be corrected in next version.

## Chapter 8 - BSP Change Log

N. A.

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