

Windows SDK/BSP

The Windows® Software Development Kits (SDK) and Board Support Packages (BSP) provide software functions for the SBC's unique features

Features

- The GE Intelligent Platforms BSP/SDK add support for VME/CompactPCI® bus access, hardware timer support, NVRAM, and watchdog timers to the Windows® operating system
- Supports a wide range of VME/cPCI bus single board computers (SBC)
- The BSP/SDK driver provides an interface to the VMEbus via the Tundra TSI-148 PCI-VME bridge device
- An API interface is provided for accessing the backplane bus (VMEbus or cPCI), as well as the onboard timers, NVRAM, system watchdog timer, temperature and voltage sensors, so that applications can be written and debugged in user space
- Using the provided API, your applications can:
 - Access the VMEbus with standard transfers or DMA
 - Share SBC Memory with other boards on the VME/cPCI bus
- Register for and receive notification in user space of all SDK/BSP device interrupts including VME interrupt levels
- Control GE Intelligent Platforms' unique byte swapping hardware capabilities on SBCs so equipped.
- Use advanced VMEbus features such as location monitor interrupts, mailbox interrupts, read-modifywrite access and more
- Configure timer rates and respond to timer events
- Read and write non-volatile (NVRAM)
- Setup the watchdog timer to ensure system integrity
- A set of utility programs allows you to setup and verify that all of your hardware is configured properly and functioning without writing any code

Functional Characteristics

Introduction

GE Intelligent Platforms' SDKs and BSPs provide device drivers for easy access to GE Intelligent Platforms' unique devices. The SDK or BSP also provides simple and powerful tools to access the VMEbus or cPCI bus for select GE Intelligent Platforms SBCs. With the GE Intelligent Platforms SDKs and BSPs, you will spend less time and money getting your SBCs functioning to their fullest potential. With GE Intelligent Platforms Common API (CAPI) you will spend less time porting your applications between GE Intelligent Platforms SBCs and between supported operating systems.

NVRAM

The SDKs and BSPs provide easy access to nonvolatile memory through the API.

Timers

For boards with additional hardware timers, the SDKs and BSPs provide an API to access the timers, as well as respond to timer events.



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Watchdog Timers

For boards with watchdog timers, the SDKs and BSPs provide an API for accessing the watchdog timers.

Temperature Sensors

For boards with temperature sensors, the SDKs and BSPs provide an API for monitoring the temperature and reporting the alarm to the user.

Voltage Sensors

For boards with voltage sensors, the SDKs and BSPs provide an API for monitoring the voltage and reporting the alarm to the user.

NOSBIT

The SDKs and BSPs include the built in test for the peripherals which runs during boot or can be invoked during run time. NOSBIT is available only in the premium NOSBIT BSPs and SDKs.

Documentation

Documentation for all API calls and utilities is provided in HTML format. In addition, documented and commented source code samples are provided to help you get up and running quicker.

CAPI

GE Intelligent Platforms' Common API for Windows® and Linux®, which minimizes efforts when porting applications between supported SBCs or between supported operating systems.

X86 Single Board Computers

The GE Windows SDKs do not include support for devices on a PC that are typically supported by the operating system or chip vendors, such as video, Ethernet, disk interfaces. Many of these are included on a CD included with the SBC.

The table below provides the hardware supported by the x86 Windows SDKs:

	V7865 SDK	V7807 SDK	V7810 SDK	V7809 SDK
Operating System	Windows XP, Vista 32 bit	Windows XP 32 bit	Windows XP 32 bit	Windows XP 32 bit
Supported Board	VME-7865	VME-7807	VME-7810	VME-7809
Processor	Intel Core Duo	Intel Pentium M	Intel Pentium	Intel Pentium
Bus Interface	Tempe VME/PCI	Universe VME/PCI	Universe VME/PCI	Universe VME/PCI
Backplane Bus	CAPI	Non-CAPI	Non-CAPI	Non-CAPI
HiNT Bridge	x	x	x	x
Byte Swapping Logic	x	Supported	Supported	Supported
Timers	CAPI	Non-CAPI	Non-CAPI	Non-CAPI
Watchdog Timer	CAPI	Non-CAPI	Non-CAPI	Non-CAPI
Temperature Sensor	CAPI	x	x	x
Voltage Sensor	x	x	x	x
NVRAM	CAPI	Non-CAPI	Non-CAPI	Non-CAPI
Built In Test	x	x	x	x
GPIO	x	x	x	x
LED	x	x	x	x

About GE Intelligent Platforms

GE Intelligent Platforms, a General Electric Company (NYSE: GE), is an experienced high-performance technology company and a global provider of hardware, software, services, and expertise in automation and embedded computing. We offer a unique foundation of agile, advanced and ultra-reliable technology that provides customers a sustainable advantage in the industries they serve, including energy, water, consumer packaged goods, government and defense, and telecommunications. GE Intelligent Platforms is a worldwide company headquartered in Charlottesville, VA and is part of GE Home and Business Solutions. For more information, visit www.ge-ip.com.

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