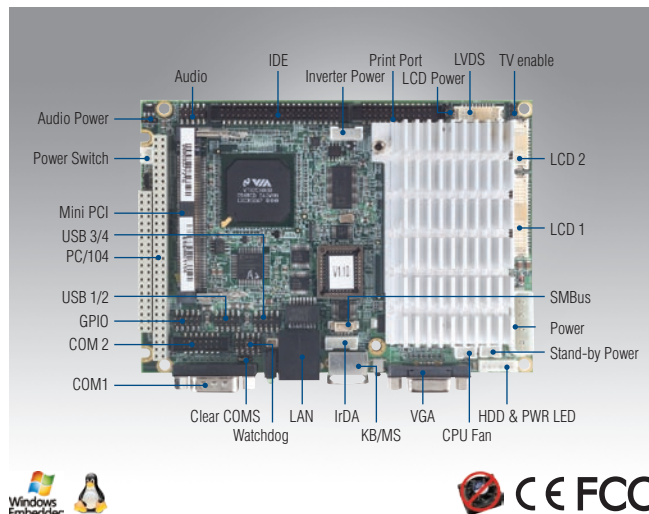


# PCM-9377

**3.5" SBC with VIA Mark,  
VGA/ LCD/ LVDS/ LAN/ USB**



## Features

- VIA® Mark 533/800 MHz Processor
- Supports 18-bit TTL/ 36-bit LVDS/VGA/TV-out
- Supports Mini PCI type III and PC/104 for expansion
- Supports up to 2 COM ports, 4 USB ports, 8-bit GPIO
- Supports Embedded Software API and Utility

### Software APIs:



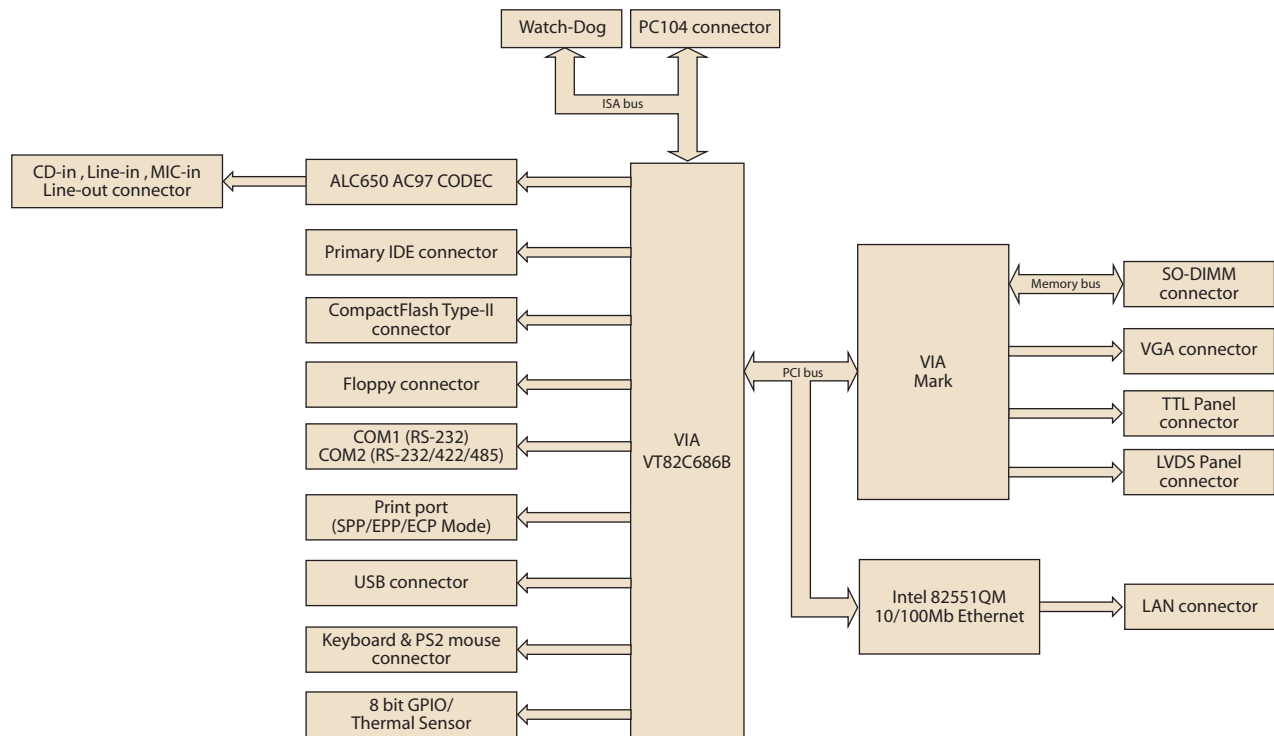
### Utility:



## Specifications

|                              |                           |                                                                                                                                              |
|------------------------------|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| General                      | CPU                       | Embedded VIA Mark CoreFusion 533/800 MHz processor, 128 MB L1 cache memory on die                                                            |
|                              | 2nd Cache Memory          | 64 KB on the processor                                                                                                                       |
|                              | System Chipset            | VIA Mark processor                                                                                                                           |
|                              | BIOS                      | AWARD 2 Mbit Flash BIOS                                                                                                                      |
|                              | System Memory             | SDRAM 144-pin SODIMM x1, Max. 512 MB with both PC100 and PC133 memory type                                                                   |
|                              | Power Management          | ACPI supported                                                                                                                               |
|                              | SSD                       | Supports CompactFlash Card Type I/II                                                                                                         |
|                              | WatchDog Timer            | 1 ~ 62 sec, 62-level time intervals system reset or IRQ11.                                                                                   |
|                              | Expansion Interface       | PC/104 & Mini PCI type III                                                                                                                   |
|                              | Battery                   | Lithium 3 V/196 mAh                                                                                                                          |
| Coastline I/O                | VGA                       | 1                                                                                                                                            |
|                              | COM                       | 1                                                                                                                                            |
|                              | RJ-45                     | 1                                                                                                                                            |
|                              | K/B, Mouse                | 1                                                                                                                                            |
| Internal I/O                 | LPT                       | 1                                                                                                                                            |
|                              | FDD                       | 1                                                                                                                                            |
|                              | RS-232                    | -                                                                                                                                            |
|                              | RS-232/422/485            | 1                                                                                                                                            |
|                              | K/B                       | -                                                                                                                                            |
|                              | Mouse                     | -                                                                                                                                            |
|                              | USB                       | 4 x USB1.1                                                                                                                                   |
|                              | Audio                     | AC97 CD-in, Line-in, Line-out, MIC-in                                                                                                        |
|                              | IrDA                      | 115 kbps, SIR, IrDA 1.0 compliant                                                                                                            |
|                              | GPIO                      | 8-bit general purpose input output                                                                                                           |
| Ethernet                     | SMBus                     | Supported                                                                                                                                    |
|                              | Chipset                   | Intel 82551QM                                                                                                                                |
|                              | Speed                     | 10/100 Mbps                                                                                                                                  |
|                              | Interface                 | RJ-45 connector                                                                                                                              |
| Display                      | Standard                  | IEEE 802.3u (100 Mbps) protocol compatible                                                                                                   |
|                              | Chipset                   | VIA Mark processor                                                                                                                           |
|                              | Memory Size               | 8/16/32 MB frame buffer using system memory                                                                                                  |
|                              | Resolution                | Support for all resolutions up to 1600 x 1200.                                                                                               |
|                              | Panel type                | CRT panel                                                                                                                                    |
|                              |                           | LCD panel Support for 18, 24, 36-bit TTL TFT LCD panels                                                                                      |
| Mechanical and Environmental | Panel type                | LVDS Interface 2-Channel (2 x 18-bit) LVDS interface                                                                                         |
|                              |                           | TV-Out (optional) Supports both NTSC/PAL, S-video and Composite Video via PCM-232 TV-out module (with optional BIOS)                         |
|                              | Dual Simultaneous Display | CRT+ LVDS, CRT+ TTL, CRT+TV-out (w/PCM-232)                                                                                                  |
|                              | Dimension (L x W)         | 146 mm x 105 mm (5.7" x 4")                                                                                                                  |
|                              | Weight                    | 0.85 kg (weight of total package)                                                                                                            |
|                              | Operating Temperature     | 0 ~ 60° C (32 ~ 140° F)                                                                                                                      |
| Power                        | Operating Humidity        | 10% ~ 90% Relative Humidity, non condensing                                                                                                  |
|                              | Power Supply Voltage      | AT/ATX, +5 V ±5%, +12V ±5%, or supports single +5 V power only                                                                               |
|                              | Power Consumption         | Max (Test in HCT): 3.0 A @ +5 V (with 256 MB DRAM, VIA Mark 800)<br>Typical (WinXP Idle Mode): 2.21A @ +5 V (with 256 MB DRAM, VIA Mark 800) |

## Board Diagram



## Ordering Information

| Part No.        | CPU          | CRT | LVDS | TTL | LAN  | USB | RS-232 | RS-232/422/485 | LPT | GPIO  | PC/104 | Thermal | Operating Temp. |
|-----------------|--------------|-----|------|-----|------|-----|--------|----------------|-----|-------|--------|---------|-----------------|
| PCM-9377F-M0A1E | VIA Mark 533 | 1   | 1    | 1   | 1 FE | 4   | 1      | 1              | 1   | 8-bit | 1      | Passive | 0 ~ 60° C       |
| PCM-9377F-Q0A1E | VIA Mark 800 | 1   | 1    | 1   | 1 FE | 4   | 1      | 1              | 1   | 8-bit | 1      | Passive | 0 ~ 60° C       |

## Packing List

| Description              | Part No.          |
|--------------------------|-------------------|
| 1 x PCM-9377 SBC         |                   |
| 1 x Mini jumper pack     | (p/n: 9689000002) |
| 1 x Startup manual       |                   |
| 1 x Utility CD           |                   |
| 1 x Audio cable          | (p/n: 1703100152) |
| 1 x IDE 44 pin cable     | (p/n: 1701440351) |
| 1 x USB 2 port cable     | (p/n: 1703100121) |
| 1 x Keyboard/mouse cable | (p/n: 1700060202) |
| 1 x Serial cable         | (p/n: 1701140201) |
| 1 x Printer port cable   | (p/n: 1700260250) |

## Optional Accessories

| Part No.             | Description                                          |
|----------------------|------------------------------------------------------|
| PCM-232-00A1E        | TV out module                                        |
| <b>FDD cable Kit</b> |                                                      |
| 9681000044           | 1 x 26-34 pin FDD adapter                            |
| 1701260125           | 1 x slim FDD cable                                   |
| 1701340700           | 1 x 34pin flat cable for FDD                         |
| <b>Embedded OS</b>   |                                                      |
| 2070000449           | Image Win CE 5.0 Core Eng V1.1 PCM-9373/72 (19 MB)   |
| 2070000450           | Image Win CE 5.0 Pro Eng V1.1 PCM-9373/72 (30 MB)    |
| 2070000451           | Image Win CE5.0 ProPlus Eng V1.1 PCM-9373/72 (32 MB) |
| 2070000607           | Image XPE SP2 V2.10 (ENG) (430 MB)                   |
| 2066002300           | SUSI Library V1.0                                    |

# Value-Added Software Services

**Software API:** An interface that defines the ways by which an application program may request services from libraries and/or operating systems. Provides not only the underlying drivers required but also a rich set of user-friendly, intelligent and integrated interfaces, which speeds development, enhances security and offers add-on value for Advantech platforms. It plays the role of catalyst between developer and solution, and makes Advantech embedded platforms easier and simpler to adopt and operate with customer applications.

## Software APIs

### Control



**GPIO**

General Purpose Input/Output is a flexible parallel interface that allows a variety of custom connections. It allows users to monitor the level of signal input or set the output status to switch on/off a device. Our API also provides Programmable GPIO, which allows developers to dynamically set the GPIO input or output status.



**SMBus**

SMBus is the System Management Bus defined by Intel® Corporation in 1995. It is used in personal computers and servers for low-speed system management communications. The SMBus API allows a developer to interface a embedded system environment and transfer serial messages using the SMBus protocols, allowing multiple simultaneous device control.



**I2C**

I2C is a bi-directional two wire bus that was developed by Philips for use in their televisions in the 1980s. The I2C API allows a developer to interface with an embedded system environment and transfer serial messages using the I2C protocols, allowing multiple simultaneous device control.

### Display



**Brightness Control**

The Brightness Control API allows a developer to interface with an embedded device to easily control brightness.



**Backlight**

The Backlight API allows a developer to control the backlight (screen) on/off in an embedded device.

### Monitor



**Watchdog**

A watchdog timer (WDT) is a device that performs a specific operation after a certain period of time if something goes wrong and the system does not recover on its own. A watchdog timer can be programmed to perform a warm boot (restarting the system) after a certain number of seconds.



**Hardware Monitor**

The Hardware Monitor (HWM) API is a system health supervision API that inspects certain condition indexes, such as fan speed, temperature and voltage.



**Hardware Control**

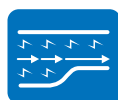
The Hardware Control API allows developers to set the PWM (Pulse Width Modulation) value to adjust fan speed or other devices; it can also be used to adjust the LCD brightness.

### Power Saving



**CPU Speed**

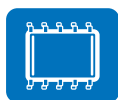
Make use of Intel SpeedStep technology to reduce power consumption. The system will automatically adjust the CPU Speed depending on system loading.



**System Throttling**

Refers to a series of methods for reducing power consumption in computers by lowering the clock frequency. These APIs allow the user to lower the clock from 87.5% to 12.5%.

## Software Utilities



**BIOS Flash**

The BIOS Flash utility allows customers to update the flash ROM BIOS version, or use it to back up current BIOS by copying it from the flash chip to a file on customers' disk. The BIOS Flash utility also provides a command line version and API for fast implementation into customized applications.



**Embedded Security ID**

The embedded application is the most important property of a system integrator. It contains valuable intellectual property, design knowledge and innovation, but it is easily copied! The Embedded Security ID utility provides reliable security functions for customers to secure their application data within embedded BIOS.



**Monitoring**

The Monitoring utility allows the customer to monitor system health, including voltage, CPU and system temperature and fan speed. These items are important to a device; if critical errors happen and are not solved immediately, permanent damage may be caused.



**eSOS**

The eSOS is a small OS stored in BIOS ROM. It will boot up in case of a main OS crash. It will diagnose the hardware status, and then send an e-mail to a designated administrator. The eSOS also provides remote connection: Telnet server and FTP server, allowing the administrator to rescue the system.



**Flash Lock**

Flash Lock is a mechanism that binds the board and CF card (SQFlash) together. The user can "Lock" SQFlash via the Flash Lock function and "Unlock" it via BIOS while booting. A locked SQFlash cannot be read by any card reader or boot from other platforms without a BIOS with the "Unlock" feature.