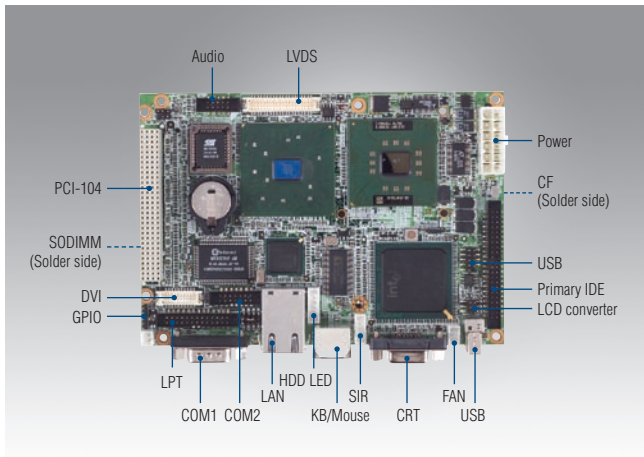


PCM-9381

3.5" SBC with Intel® Pentium® M, VGA, LVDS, DVI, LAN, USB



Features

- Embedded Intel® Pentium® M/Celeron® M processor
- Supports ECC DDR memory support
- Supports 36-bit LVDS (48-bit LVDS optional)/VGA
- +5 V and +12 V power; or single +5 V power
- Supports Embedded Software API and Utility

Software APIs:



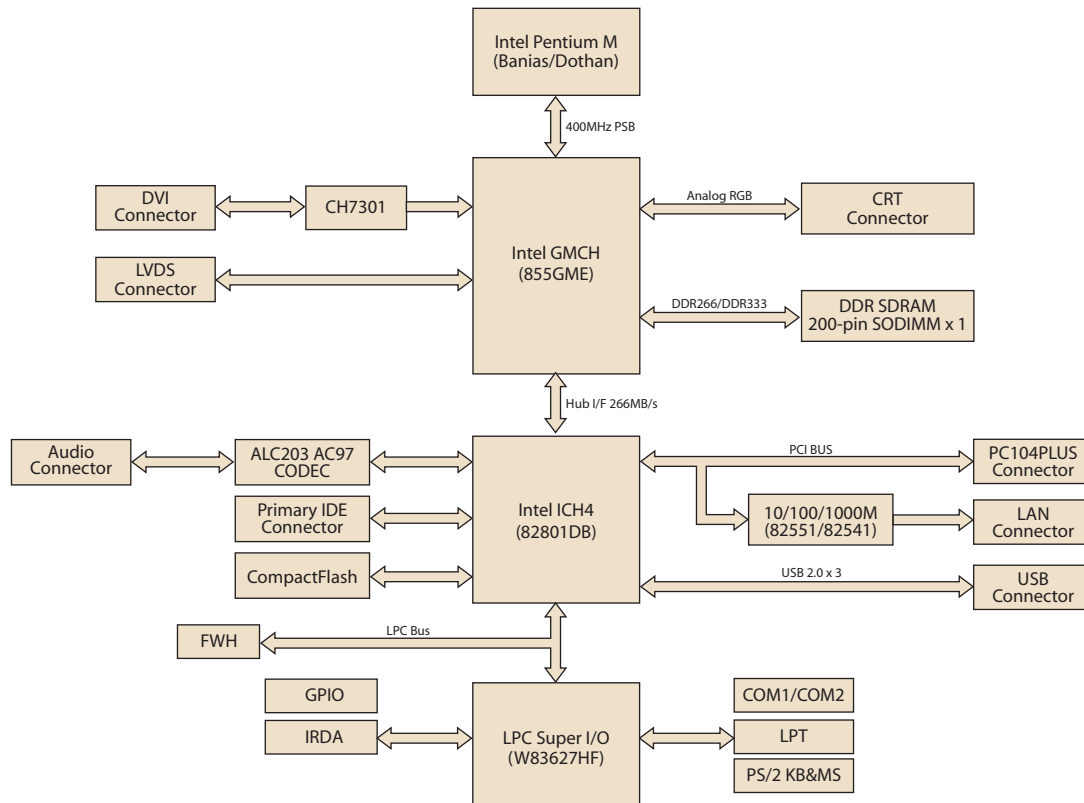
Utility:



Specifications

| | | | | |
|--------------------------|--------------------------|---|-------------------------|-----------------------|
| Processor System | CPU | Socket 478 | Intel Celeron M 600 MHz | Intel Celeron M 1 GHz |
| | Front Side Bus | 400 MHz | 400 MHz | 400 MHz |
| | L2 Cache | depends on CPU | 512 KB | 512 KB |
| | Chipset | Intel 855GME + ICH4 | Intel 855GME + ICH4 | Intel 855GME + ICH4 |
| | BIOS | Award 4 Mbit | Award 4 Mbit | Award 4 Mbit |
| Memory | Technology | DDR 200/266/333 MHz | | |
| | Max. Capacity | 1 GB | | |
| SSD | Socket | 1 x 200-pin SODIMM | | |
| | CompactFlash | Card Type I/II | | |
| Coastline I/O | VGA | 1 | | |
| | COM | 1 | | |
| | RJ-45 | 1 | | |
| | USB | 1 | | |
| | K/B, Mouse | 1 | | |
| Internal I/O | LPT | 1 | | |
| | RS-232 | - | | |
| | RS-232/422/485 | 1 | | |
| | K/B | - | | |
| | Mouse | - | | |
| | USB | 2 x USB 2.0 | | |
| | Audio | AC97, Line-in, Line-out, Mic-in | | |
| | IrDA | 115 kbps, SIR, IrDA 1.0 compliant (optional) | | |
| | GPIO | 4-bit general purpose Input/Output | | |
| EIDE | SMBus | Supported | | |
| | Mode | UDMA 33 | | |
| Expansion Slot | Channel | 1 | | |
| | PCI-104 | 1 | | |
| Ethernet | Speed | 10/100 Mbps 10/100/1000 Mbps (optional) | | |
| | Controller | Intel 82551QM (with wake on LAN) Intel 82541PI (Gigabit) | | |
| | Interface | 1 x RJ-45 | | |
| Display | Controller | Intel 855GME/GMCH | | |
| | VRAM | Optimized Shared Memory Architecture up to 64 MB system memory | | |
| | LVDS LCD | 1 x 36-bit LVDS (48-bit optional) | | |
| Environment | Dual Independent Display | CRT + LVDS, CRT + DVI, LVDS + DVI | | |
| | Operating Temperature | 0 ~ 60° C (32 ~ 140° F) | | |
| Power | Operating Humidity | 10% ~ 90% relative humidity, non-condensing | | |
| | Power Type | AT / ATX | | |
| | Power Supply Voltage | ATX: +5 V ± 5%, ±12 V ± 5% AT: 5V only to boot up (12 V is optional for LCD inverter and add on card) | | |
| | Power Consumption | Typical (WinXP Idle Mode): +5 V @ 3.0 A, +12 V @ 0.04 A Max (Test in HCT): +5 V @ 4.26 A, +12 V @ 0.13 A | | |
| | Power Management | APM1.2, ACPI2.0, wake on LAN, and modem ring-in functions | | |
| Watchdog Timer | Battery | Lithium 3 V / 196 mAH | | |
| | Output | System reset | | |
| Physical Characteristics | Interval | Programmable 1 ~ 255 sec | | |
| | Dimensions (L x W) | 146 x 102 mm (5.7" x 4") | | |
| | Weight | 0.85 kg (1.87 lb), weight of total package | | |

Board Diagram



Ordering Information

| Part No. | CPU | CRT | LVDS | DVI | LAN | USB | RS-232 | RS-232/422/485 | LPT | GPIO | IrDA | CF | PCI-104 |
|-----------------|-----------------------|-----|------|-----|--------------------|-----|--------|----------------|-----|-------------|----------|----|---------|
| PCM-9381F-00A2E | Socket | 1 | 1 | 1 | 1 FE, GbE (Option) | 3 | 1 | 1 | 1 | 2 in, 2 out | optional | 1 | 1 |
| PCM-9381F-M0A2E | Celeron M 600 MHz | 1 | 1 | 1 | 1 FE, GbE (Option) | 3 | 1 | 1 | 1 | 2 in, 2 out | optional | 1 | 1 |
| PCM-9381F-S0A2E | Celeron M 1 GHz (373) | 1 | 1 | 1 | 1 FE, GbE (Option) | 3 | 1 | 1 | 1 | 2 in, 2 out | optional | 1 | 1 |

Packing List

| Part No. | Description | Quantity |
|------------|-------------------------------|----------|
| 9689000002 | PCM-9381 SBC | 1 |
| | Mini jumper pack | 1 |
| | Startup manual | 1 |
| | Utility CD | 1 |
| 1703100152 | Audio cable | 1 |
| 1701440351 | IDE 44 pin | 1 |
| 1703100121 | USB 2 port cable | 1 |
| 1700260250 | Parallel port cable | 1 |
| 1700060202 | Keyboard/mouse cable | 1 |
| 1701140201 | Second serial port cable | 1 |
| 1700000265 | ATX power cable 20P-12P cable | 1 |

Optional

| Part No. | Description |
|------------|---|
| 1700000410 | CABLE DVI-26P/DF13-20-pin 20 cm |
| 1700002595 | cable 10-pin-1.27mm/4-pin-1.25 mm 20 cm for PCM-9381/9387 |
| 1700002532 | FLAT cable 14-pin / 5-pin for internal COM1 RS232 20 cm |

Embedded OS

| Part No. | Description |
|------------|--|
| 2070000584 | Win CE 4.2 P-M Core Image, PCM-938x, 2 COM, English, V 1.10 (17.2 MB) (Optional) |
| 2070000585 | Win CE 4.2 P-M Pro Image, PCM-938x, 2 COM, English, V 1.10 (29.1 MB) (Optional) |
| 2070000586 | Win CE 4.2 P-M Plus Image, PCM-938x, 2 COM, English, V 1.10 (29.9 MB) (Optional) |
| 2070000765 | Image CE 5.0 Pro Plus EN for P-M with 2COM |
| 2070000605 | Win XPE SP2 Image, PCM-938x, English, V2.10 (440 MB) (Optional) |
| 2066002300 | CD 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

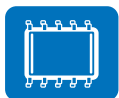
Make use of Intel SpeedStep technology to reduce power consumption. The system will automatically adjust the CPU Speed depending on system loading.



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.