AIMB-252

Intel® Pentium® M/Celeron® M Socket 478 Mini-ITX with Dual LVDS, 5 COM, and Dual LAN

Features

- Supports Intel® socket 478 Pentium® M/Celeron® M Processor
- Intel 910GMLE/915GME and ICH6M
- Two DIMM sockets support up to 2 GB DDR2 400/533 MHz SDRAM
- Supports 5 serial ports, 2 SATA, 8 USB and Dual LVDS display (optional)
- Supports embedded software APIs and utilities

Software APIs: SMBus, H/W Monitor, GPIO, Watchdog

Utilities: BIOS flash, Monitoring

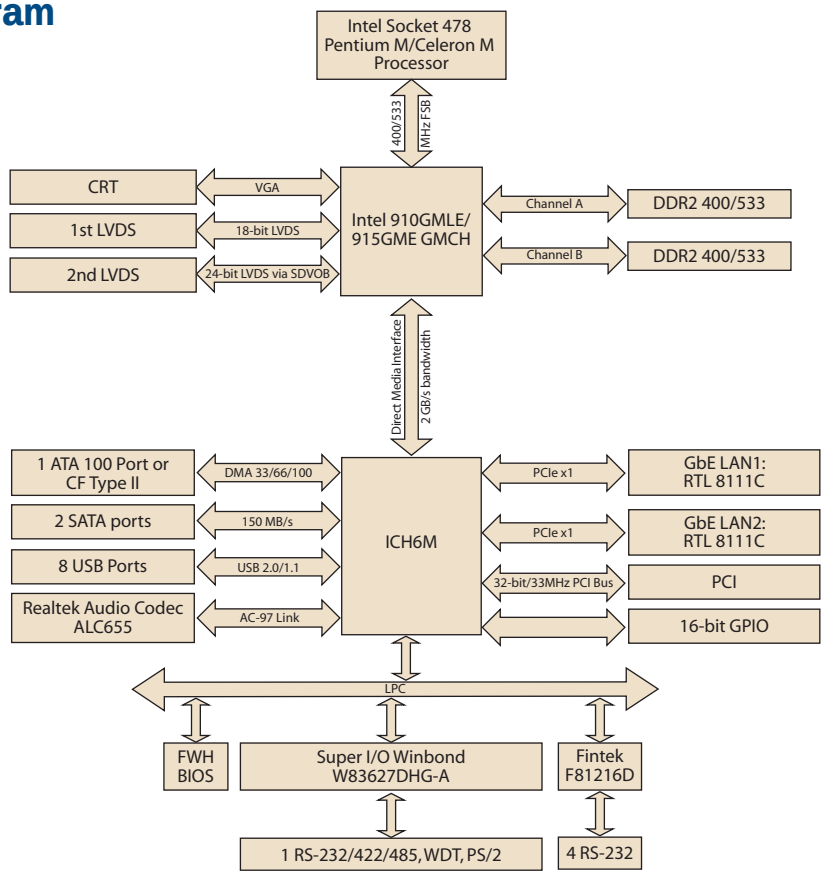
Specifications

Processor System	CPU (130/90 nm, µFC-PGA 478)	Intel Pentium M	Intel Celeron M	Intel ULV Celeron M	Intel ULV Celeron M
	Max. Speed	760 2.0 GHz	370 1.5 GHz	600 MHz on board	1 GHz on board
	Front Side Bus	400/533 MHz	400 MHz	400 MHz	400 MHz
	L2 Cache	2 MB	1 MB	512 KB	-
	Chipset	Intel 910GMLE*/915GME + ICH6M			
	BIOS	Award 4 Mbit, FWH			
Expansion Slot	PCI	32-bit/33 MHz, 1 slot			
	Mini-PCI	-			
	PCIe	-			
Memory	Technology	Dual channel DDR2 400/533 MHz SDRAM			
	Max. Capacity	2 GB			
	Socket	2 x 240-pin DIMM			
Graphics	Controller	Intel 910GMLE/915GME GMCH integrated Graphics Media Accelerator 900			
	VRAM	Intel DVMT 3.0 supports up to 128 MB video memory			
	1st LVDS	Single channel 18-bit/Dual channel 36-bit LVDS			
	2nd LVDS (optional)	Single channel 18/24-bit/Dual channel 36/48-bit LVDS, via Chrontel 7308B SDVO transmitter			
	DVI	None			
	Dual Display	CRT + LVDS, LVDS + LVDS			
Ethernet	Interface	10/100/1000 Mbps			
	Controller	GbE LAN1: Realtek RTL8111C; GbE LAN2: Realtek RTL8111C			
	Connector	RJ-45 x 2			
SATA	Max Data Transfer Rate	150 MB/s			
	Channel	2			
EIDE	Mode	EIDE (Ultra DMA 100)			
	Channel	1			
SSD	CompactFlash	Supports CompactFlash Type I/II			
Rear I/O	VGA	1			
	Ethernet	1 (for VG version); 2 (for G2 version)			
	USB	4 (USB 2.0 compliant)			
	Audio	3 (Mic-in, Line-out, Line-in)			
	Serial	1 (RS-232/422/485)			
	Parallel	1			
	PS/2	2 (1 x keyboard and 1 x mouse)			
Internal Connector	LVDS & Inverter	1			
	USB	4 (USB 2.0 compliant)			
	Serial	4 (RS-232)			
	IDE	1			
	SATA	2			
	CompactFlash	1			
	IrDA	-			
	DIO	16-bit GPIO			
Watchdog Timer	Output	System reset			
	Interval	Programmable 1 ~ 255 sec/min			
Power Requirements	Power On	Intel 915GME and Pentium M 760 2.0 GHz FSB 533 MHz, 2 GB DDR2 SDRAM			
		+5 V	+3.3 V	+12 V	+5 VSB
		2.61 A	0.71 A	1.93 A	0.59 A
Environment		Operating		Non-Operating	
	Temperature	0 ~ 60° C (32 ~ 140° F)		-20 ~ 70° C (-4 ~ 158° F)	
Physical Characteristics	Dimensions	170 mm x 170 mm (6.69" x 6.69")			

* Intel 910GMLE only supports FSB 400 processor and DDR2 400 SDRAM

Last updated : 9-May-2011

Board Diagram



Ordering Information

Part Number	CPU	Chipset	DDR2	GbE	COM	LVDS
AIMB-252VG-M0A1E	ULV Celeron M 600 MHz	910GMLE	400	1	5	1
AIMB-252VG-S0A1E	ULV Celeron M 1 GHz	910GMLE	400	1	5	1
AIMB-252G2-00A1E	-	915GME	400/533	2	5	1

Packing List

Description	Quantity
AIMB-252 SBC	1
IDE HDD cable (40-pin)	1
SATA HDD cable	2
SATA power cable	2
Serial port cable 1-to-2	2
CPU cooler	1
I/O port bracket	1
Startup manual	1
Driver CD	1

I/O View

AIMB-252VG-M0A1E
AIMB-252VG-S0A1E

AIMB-252G2-00A1E

Optional Accessories

Part Number	Description
1700003195	USB cable with two ports, 17.5 cm
1700002204	USB cable with two ports, 27 cm
1700008461	USB cable with four ports, 30.5 cm

Embedded OS / API

OS/API	Part No.	Description
Win XPE	2070006673	XPE FP2007 AIMB-252 V3.01 ENG
	2070003985	XPE FP2007 AIMB-252 V3.1 ENG
	2070005149	XPE FP2007 AIMB-252 V3.5 JPN_ENG
Software API	205E000021	SUSI 3.0 SW API for AIMB-252 XP

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.

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.

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.

Power Saving

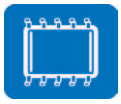
CPU Speed

Make use of Intel SpeedStep technology to reduce power 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.

Last updated : 9-May-2011