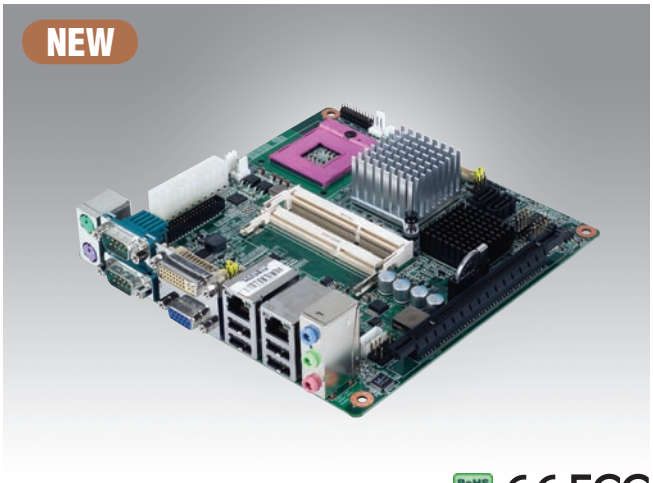
AIMB-258

Intel® Core™ 2 Duo Mini-ITX with VGA/DVI/LVDS, 6 COM,and Dual LAN



Features

- Supports Intel® uFC-PGA 478 Core™ 2 Duo mobile processor and max. 4 GB dual channel DDR3 800/1066 MHz SDRAM
- Intel® GM45 and ICH9M supports FSB 667/800/1066 MHz
- Supports dual display for VGA, LVDS, and DVI
- PCIe x16 expansion for add-on cards
- Supports Embedded Software API and Utility

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

Utility: BIOS flash, Monitoring

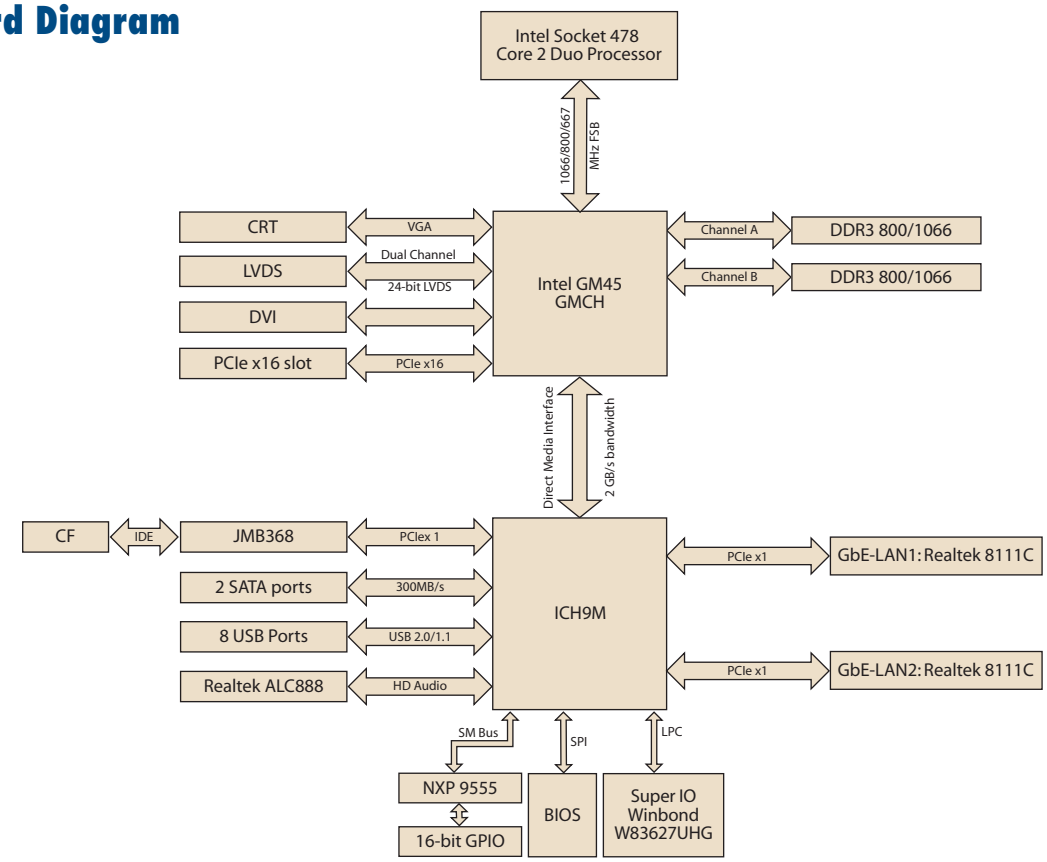
Specifications

Processor System	CPU (45 nm µFC-PGA 478)	Intel Core 2 Duo		Intel Celeron M		
	Max. Speed	T9400 2.53 GHz		575 2.0 GHz		
	Front Side Bus	667/800/1066 MHz		667		
	L2 Cache	6 MB		1 MB		
	Chipset	GM45 + ICH9M				
	BIOS	Award 16 Mbit, SPI				
Expansion Slot	PCI	-				
	Mini-PCI	-				
	PCIe x16	4 GB/s per direction, 1 slot (if PCIe x16 is used, DVI is automatically disabled)				
Memory	Technology	DDR3 800/1066 MHz SDRAM				
	Max. Capacity	4 GB				
	Socket	2 x 204-pin SODIMM				
Graphics	Controller	Intel GM45 GMCH integrated Graphics Media Accelerator X4500				
	VRAM	Shared system memory up to 384 MB video memory				
	LVDS	Single channel 18/24-bit/Dual channel 36/48-bit LVDS				
	TV-Out	-				
	DVI	Yes (if DVI is used, PCIex 16 is automatically disabled)				
	Dual Display	CRT + DVI; CRT + LVDS; DVI + 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	300 MB/s				
	Channel	2				
SSD	CompactFlash	Supports CompactFlash Type I/II				
Rear I/O	VGA	1				
	DVI	1				
	Ethernet	2				
	USB	4 (USB 2.0 compliant)				
	Audio	3 (Mic-in, Line-in, Line-out)				
	Serial	2 (1 of RS-232, 1 of RS-232/422/485)				
	PS/2	2 (1 x keyboard and 1 x mouse)				
Internal Connector	LVDS	1				
	USB	4 (USB 2.0 compliant)				
	Serial	4 (RS-232)				
	IDE	-				
	SATA	2				
	CompactFlash	1				
	Parallel	-				
	IrDA	-				
	FDD	-				
	DIO	16-bit General Purpose I/O for DI and DO				
Watchdog Timer	Output	System reset				
	Interval	Programmable 1 ~ 255 sec/min				
Power Requirement	Power On	5 V	3.3 V	12 V	5 Vsb	-12 V
		0.99 A	2.67 A	2.07 A	0.17 A	0.08 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")				

All product specifications are subject to change without notice

Last updated : 09-Nov-2009

Board Diagram



Ordering Information

	Display	GbE	SATA	Serial	CF
AIMB-258G2-00A1E	VGA/DVI/ LVDS	Dual	2	6	1

Riser Card

Part Number	Description
AIMB-R430P-03A2E	2U riser card with 3 PCI slot expansion

Bracket View



AIMB-258G2-00A1E

Packing List

Description	Quantity
AIMB-258 SBC	x 1
SATA HDD data cable	x 2
SATA HDD power cable	x 2
CPU cooler	x 1
I/O port bracket	x 1
Startup manual	x 1
Driver CD	x 1
Cable kits for 4 serial ports	x 1

Accessories

Part Number	Description
1700003195	USB cable with four ports, 17.5 cm
1700002204	USB cable with four ports, 27 cm
1700002314	USB cable with four ports, 30.5 cm

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.

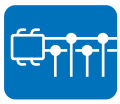
Software APIs

Control



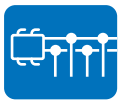
GPIO

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

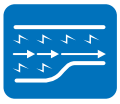
The Backlight API allows a developer to control the backlight (screen) on/off in an embedded device.

Power Saving



CPU Speed

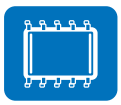
Make use of Intel SpeedStep technology to reduce power power consumption. The system will automatically adjust the CPU Speed depending on system loading.



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.

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