

Micro ATX Motherboard supports 45nm LGA775 Intel® Core™ 2 Quad CPU with a 1333/1066/800MHz FSB, PCI e x16, Two PCI, Ten COM, Dual PCI e GbE, SATA 3Gb/s and Audio, RoHS

IMB-G41A

Quick Installation Guide

Version 1.0

Jun. 23, 2010

Package Contents

IMB-G41A package includes the following items:

- 1 x IMB-G41A Single Board Computer
- 1 x Quad RS-232 Ports cable
- 1 x I/O shield
- 4 x SATA cable
- 1 x Mini Jumper Pack
- 1 x Utility CD
- 1 x QIG (Quick Installation Guide)



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Specifications

- CPU: LGA 775 Intel®Core™ 2 Quad/Duo/Extreme with 1333/1066/800MHz FSB support
- System Chipset: Intel® G41+ICH7
- BIOS: AMI BIOS
- System Memory: 2 x 240-pin dual-channel DDR3 1333/1066/800MHz SDRAM slot up to 4GB
- Ethernet: Dual Realtek RTL8111CP PCIe GbE controllers (PCIe x1 Interface)
- I/O Interface:
 - 9 x RS-232 (COM7-COM10 with 5V/12V jumper selection)
 - 1 x RS-232/422/485
 - 8 x USB2.0 (4 on rear side, 4 by pin-header)
 - 4 x SATA II
 - 1 x IDE
 - 1 x LPT
 - 2 x PS/2 for KB/MS
- Super I/O: ITE IT8783F
- Digital I/O: 8-bit Digital I/O (4-bit input / 4-bit output)
- Infrared Interface: 1 x 5-pin pin header
- Graphic:
 - Intel® Graphics Media Accelerator X4500(Intel®GMA X4500)
- Display:
 - Analog CRT
 - VGA display output resolution up to 2048 x 1536 @75MHz
- Audio:
 - Realtek ALC888 7.1 channel HD audio codec
- Watchdog timer: Software programmable 1-255 sec. by Super I/O:ITE IT8783F
- Power supply: ATX Power Support
- Power Consumption:
 - 5V@7.42A, 3.3V@0.15A, 12V@0.27A, Vcore_12@3.03A
 - (Intel®Core™2 Duo E8500 3.16GHz 1333MHz FSB CPU with 2*2GB 1066MHz DDR3 SDRAM)
- Operation Temperature: 0 ~ 60°C (32°F ~ 140°F)

- Operation Humidity: 5% ~ 95%, non-condensing
- FAN:
 - 1 x 4-pin CPU fan connector
 - 1 x 3-pin North Bridge fan connector
 - 1 x 3-pin System fan connector
- Dimensions: 244mm X 244mm
- Weight GW/NW: 1.2Kg / 0.7Kg

Ordering Information

IMB-G41A-R10:

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CB-USB02-RS: Dual Ports USB cable with bracket

32200-000063-RS: RS-232/442/485 cable

CF-520-RS-R11: High performance CPU cooler (115W)

CF-775A-RS: High performance CPU cooler (130W)

32100-088600-RS: SATA power cable

SDVO-100VGA-R10:

PCIe x16 VGA output SDVO card supports dual display (IEI board only)

SDVO-100DVI-R10:

PCIe x16 DVI output SDVO card supports dual display (IEI board only)

Jumpers setting

LABEL	FUNCTION
J_CMOS1	CMOS state setting
J_COM_F7 J_COM_F8 J_COM_F9 J_COM_F10 J_COM_V7 J_COM_V8 J_COM_V9 J_COM_V10	The COM RI Pin Setting Of UART (COM7~COM10)
JP1	COM2 Port Mode setting
JAUTO1	Power Mode Setting

J_CMOS1 : Clear CMOS setting Jumper	
PIN	DESCRIPTION
1-2 (Default)	Normal
2-3	Clear CMOS Data

<ul style="list-style-type: none"> ● J_COM_F7 : COM7 RI Pin Setting ● J_COM_F8 : COM8 RI Pin Setting ● J_COM_F9 : COM9 RI Pin Setting ● J_COM_F10 : COM10 RI Pin Setting 	
PIN	DESCRIPTION
1-2	COM RI Pin Use Voltage
2-3 (default)	COM RI Pin Use RI

<ul style="list-style-type: none"> ● J_COM_V7 : COM7 RI Pin Voltage Setting ● J_COM_V8 : COM8 RI Pin Voltage Setting ● J_COM_V9 : COM9 RI Pin Voltage Setting ● J_COM_V10 : COM10 RI Pin Voltage Setting 	
PIN	DESCRIPTION
1-2 (default)	COM RI Pin Use Voltage +5V
2-3	COM RI Pin Use Voltage +12V

JP1 : Configure COM2 Mode	
PIN	DESCRIPTION
Short 1-2 (default)	RS - 232
Short 3-4	RS - 422
Short 5-6	RS - 485
Short 5-6	RS485 with RTS Control

JAUTO1 : Power Mode Setting	
PIN	DESCRIPTION
Short (default)	ATX Power Mode (Please refer to Section 2.12)
Open	AT Power Mode

Connectors

LABEL	FUNCTION
3IN1_DSUB1	VGA and COM1 and LPT port
USB01 USB23	External 2 Port USB Connectors
USB45 USB67	Internal 2 Port USB Connectors
LAN1 LAN2	RJ45 LAN Connectors
KBMS1	PS/2 MOUSE & KEYBOARD Connectors
COM2	Internal Serial Port Connector
COM3-6 COM7-10	Internal Serial 4 Port Connectors
CD_IN1	Internal CD-in Connector
SPDIF1	Internal SPDIF Connector
AUDIO_CV1	Extend Audio Module Connector
FP_AUDIO1	Front Panel Audio Connector
PIDE1	IDE Connector
SATA1 SATA2 SATA3 SATA4	Serial ATA Connectors
PCIE_12V1	PCI-E Power Source Connectors
CPU_FAN1	CPU Fan Connector
NB_FAN1	NB Fan Connector
SYS_FAN1	System Fan Connector
IR1	IrDA Infrared Interface Port
PWR1	ATX Power Source Connector
CPU12V1	CPU Power Source Connector
DIO1	Digital I/O Connector
F_PANEL1	PWR & RST Buttons and Indicators

VGA: 15-pin Female Connector			
PIN	DESCRIPTION	PIN	DESCRIPTION
35	RED	36	GREEN
37	BLUE	38	NC
39	GND	40	GND
41	GND	42	GND
43	VCC / NC	44	GND
45	NC	46	DDC DAT
47	HSYNC	48	VSYNC
49	DDCCLK		

COM1: D-SUB Serial Port Connector			
PIN	DESCRIPTION	PIN	DESCRIPTION
26	DCD	31	DSR
27	RXD	32	RTS
28	TXD	33	CTS
29	DTR	34	RI
30	GND		

LPT : Parallel Port Connector			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	STROBE#	2	DATA 0
3	DATA 1	4	DATA 2
5	DATA 3	6	DATA 4
7	DATA 5	8	DATA 6
9	DATA 7	10	ACKNOWLEDGE
11	BUSY	12	PAPER EMPTY
13	PRINTER SELECT	14	AUTO FORM FEED #
15	ERROR#	16	INITIALIZE
17	PRINTER SELECT IN#	18	GND
19	GND	20	GND
21	GND	22	GND
23	GND	24	GND
25	GND		

USB01 and USB23: External USB Connector	
PIN	DESCRIPTION
1	VCC (+5V)
2	DATA-
3	DATA+
4	GND

USB45 and USB67: Internal USB Connector			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	VCC (+5V)	2	GND
3	DATA-	4	DATA+
5	DATA+	6	DATA-
7	GND	8	VCC (+5V)

LAN1_USB01 and LAN2_USB23: RJ45 LAN and USB Connector			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	RED	2	GREEN
3	BLUE	4	NC
5	GND	6	GND
7	GND	8	GND
9	VCC	10	GND
11	NC	12	DDCDAT
13	HSYNC	14	VSYNC
15	DDCCLK		

KBMS1A(B): 6-pin Mini-DIN Keyboard/Mouse Connector	
PIN	DESCRIPTION
1	Keyboard Data
2	NC
3	GND
4	+5V
5	Keyboard Clock
6	NC

COM2 : Internal Serial Port Connector			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	DCD	8	RI
2	DSR	9	GND
3	RXD	10	N/C
4	RTS	11	TXD485+
5	TXD	12	TXD485#
6	CTS	13	RXD485+
7	DTR	14	RXD485#

COM3-6 and COM7-10: 4 COM Ports Interface			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	DCD1	2	DSR1
3	RXD1	4	RTS1
5	TXD1	6	CTS1
7	DTR1	8	RI1
9	GND	10	GND
11	DCD2	12	DSR2
13	RXD2	14	RTS2
15	TXD2	16	CTS2
17	DTR2	18	RI2
19	GND	20	GND
21	DCD3	22	DSR3
23	RXD3	24	RTS3
25	TXD3	26	CTS3
27	DTR3	28	RI3
29	GND	30	GND
31	DCD4	32	DSR4
33	RXD4	34	RTS4
35	TXD4	36	CTS4
37	DTR4	38	RI4
39	GND	40	GND

CD_IN1: CD In Connector	
PIN	DESCRIPTION
1	LEFT
2	GND
3	GND
4	RIGHT

SPDIF1: SPDIF Connector	
PIN	DESCRIPTION
1	5V
2	N/C
3	SPDIFOUT
4	GND
5	SPDIFIN

AUDIO_CV1 : Audio Input and Output Connector	
PIN	DESCRIPTION
Line-in	CD/DVD or other audio source input port
Line-out	Connect this port to headphone or speaker
Microphone	Connect this port to microphone

PCIE_12V1: PCIe POWER Connector	
PIN	DESCRIPTION
1	+5V
2	GND
3	GND
4	+12V

FP_AUDIO1: Front Panel Audio Connector			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	MIC_L	2	GND
3	MIC_R	4	Audio Detect
5	LINE2-R	6	GND
7	Jack Detection	8	N/C
9	LINE2-L	10	GND

CPU12V1 : +12V MAIN POWER Connector			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	GND	2	GND
3	+12V	4	+12V

IDE Interface Connector			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	RESET#	2	GND
3	DATA 7	4	DATA 8
5	DATA 6	6	DATA 9
7	DATA 5	8	DATA 10
9	DATA 4	10	DATA 11
11	DATA 3	12	DATA 12
13	DATA 2	14	DATA 13
15	DATA 1	16	DATA 14
17	DATA 0	18	DATA 15
19	GND	20	N/C
21	IDE DRQ	22	GND
23	IOW#	24	GND
25	IOR#	26	GND
27	IDE CHRDY	28	BALE – DEFAULT
29	IDE DACK	30	GND
31	INTERRUPT	32	N/C
33	SA1	34	PDIAG#
35	SA0	36	SA2
37	HDC CS0#	38	HDC CS1#
39	HDD ACTIVE#	40	GND

SATA1 ~ SATA4 : Serial ATA Connector			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	GND	5	RX-
2	TX+	6	RX+
3	TX-	7	GND
4	GND	8	N/C

CPU_FAN1 : CPU Fan Connector	
PIN	DESCRIPTION
1	GND
2	+12V (PWM)
3	Sense
4	Speed control

NB_FAN1 and SYS_FAN1: NB/System Fan Connector	
PIN	DESCRIPTION
1	Sense
2	+12V (PWM)
3	GND

IR1: IrDA connector	
PIN	DESCRIPTION
1	+5V
2	NC
3	IR-RX
4	GND
5	IR-TX

CPU12V1 : +12V MAIN POWER Connector	
PIN	DESCRIPTION
1	GND
2	GND
3	+12V
4	+12V

PWR1: 20 Pin ATX Power Supply Connector			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	+3.3V	13	+3.3V
2	+3.3V	14	-12V
3	GND	15	GND
4	+5V	16	PS-ON
5	GND	17	GND
6	+5V	18	GND
7	GND	19	GND
8	N/C	20	N/C
9	+5VSB	21	+5V
10	+12V	22	+5V

DIO1 : Digital Input / Output Connector			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	Ground	2	VCC (+5V)
3	Output 3	4	Output 2
5	Output 1	6	Output 0
7	Input 3	8	Input 2
9	Input 1	10	Input 0

F_PANEL1 : PWR & RST Buttons and Indicators Panel					
	PIN	DESCRIPTION	PIN	DESCRIPTION	
Power LED	1	+5V	2	VCC	Speaker
	3	N/C	4	N/C	
	5	GND	6	N/C	
PWRBTN	7	PWRBTN-	8	Speaker	RESET
	9	GND	10	N/C	
HDDLED	11	+5V	12	Reset-	RESET
	13	HDLED-	14	GND	

Board Layout: Jumper and Connector Locations

