

**ATX Motherboard supports LGA775 Intel® Core™2  
Dual/Quad CPU with 1333/1066/800MHz FSB, DDR3, Dual  
PCIe GbE, ISA, PCI, PCIe x16, 6COM, LPT, SATA II, IDE,  
USB 2.0, Audio and RoHS**

# **IMBA-G412ISA**

## **Quick Installation Guide**

### **Version 1.0**

Oct. 21, 2010

### **Package Contents**

IMBA-G412ISA package includes the following items:

- 1 x IMBA-G412ISA Single Board Computer
- 1 x Dual Ports RS-232 cable with Bracket
- 4 x SATA cable
- 1 x I/O Shielding
- 1 x Mini Jumper Pack
- 1 x Utility CD
- 1 x QIG (Quick Installation Guide)
- 1 x One Key recovery CD



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## Specifications

- CPU: LGA775 45nm Intel® Core™2 Quad, Core™2 Duo, Pentium® D, Celeron® at FSB 800/1066/1333MHz processors
- System Chipset: Intel® G41+ ICH7
- BIOS: UEFI BIOS
- System Memory: Two 240-pin 800/1066MHz Dual-Channel DDR3 SDRAM DIMM slot supported (System max. 8GB)
- Ethernet:  
Dual Realtek RTL8111E PCIe GbE Controllers, LAN1 with ASF2.0 support
- I/O Interface:  
5 x RS-232  
1 x RS-232/RS-422/RS-485 with Auto Flow control  
8 x USB2.0  
4 x SATA II  
1 x IDE  
1 x LPT  
1 x KB/MS  
1 x CF Type II
- Infrared interface: 1 x 5-pin header
- Expansion: 1 x PCIe x16 Slot, with external power connector  
4 x PCI Slot  
1 x ISA Slot  
1 x PCI/ISA Slot
- Super I/O: Fintek F81865
- ISA Bridge: ITE IT8888
- Digital I/O: 8-bit Digital I/O ( 4-bit input / 4-bit output)
- Graphic Engine: Intel® GMA X4500
- Display: Analog CRT up to 2048x1536@75MHz,Support CRT Hot plug
- Audio: Realtek ALC888 HD Audio codec;  
Analog Front Audio supported by Realtek ALC888;
- TPM: 2 x 10-pin header
- SMBUS: 1 x 4-pin wafer
- Watchdog Timer:

Software programmable supports 1~255sec system reset.

- FAN connector:
  - 1 x 4 pin CPU fan connector, with smart FAN
  - 1 x 3 pin NB fan connector,
  - 2 x 3 pin system fan connector
- Power supply: ATX power supply, with CPU power connector
- Power Consumption: 12V@2.01A, -12V@0.05A, 3.3V@0.15A, 5V@5.06A (Intel® Core™ Duo CPU E7400@2.8GHz with 1GB DDR3 memory)
- Operating Temperature: -10 ~ 60°C
- Operating Humidity: 5%~95% non-condensing
- Dimension: 305mm x 244mm
- Weight: GW:1200g, NW:650g

## Ordering Information

### **IMBA-G412ISA-R10:**

ATX Motherboard supports LGA775 Intel® Core™2 Dual/Quad CPU with 1333/1066/800MHz FSB, DDR3, Dual PCIe GbE, ISA, PCI, PCIe x16, 6COM, LPT, SATAII, IDE, USB 2.0, Audio, RoHS

**32102-000100-200-RS:** SATA Power Cable

**32200-000052-RS:** IDE cable

**CB-USB02-RS:** Dual Ports USB Cable with bracket

**CF-775A-RS:** CPU Cooler for 130W

**CF-520-RS-R11:** CPU Cooler for 115W

**CF-775B-RS:** 1U CPU cooler for 90W

**SDVO-100VGA-R10:**

PCIex16 VGA output SDVO Card support dual display (IEI board only)

**SDVO-100DVI-R10:**

PCIex16 DVI output SDVO Card support dual display (IEI board only)

**TPM-IN01-R11:** Infineon 20 pin trusted platform module with S/W management tool, Firmware V3.17

## Jumpers setting and Connectors

<b>LABEL</b>	<b>FUNCTION</b>
JP1	CMOS state setting jumper
JP2	Compact Flash Card Master/Slave Select
JP4	RS-232/422/485 Select
JAUTO1/2	AT/ATX Power Select
USBPW12 USBP34	USB PWR Select
J_CF1	CF Voltage Choice
3IN1_DSUB1B	3 in 1 D-Sub-RS-232 COM Port
COM3~6	RS-232 Pin Header
COM2	RS-232/422/485 Pin Header
F_PANEL1	PWR · RST Buttons · Indicators and Speaker
3IN1_DSUB1C	3 in 1 D-Sub-VGA Connector
DIO1	Digital I/O Connector
FP_AUDIO1	Front Audio Connector
LAN1/USB1 LAN2/USB2	External LAN And USB Connectors
CPU12V1	ATX-12V CPU Power Source Connector
IR1	Infrared Interface Connector
CPU_FAN1	Smart Fan Connectors for CPU
NB_FAN1	System Fan Connector
PCN1	PCIe Power Source Connector
SMBUS1	SMBUS Connector
SYS_FAN1/2	System Fan Connector
BAT1	Coin Battery holder
USB3/USB4	USB 2x4 Pin Pin-header
TPM1	TPM Connector
SATA1/2/3/4	Serial ATA Connectors
PWR2	ATX POWER Connector
3IN1_DSUB1A	3 in 1 D-Sub-LPT connectors
KBMS2	PS/2 KB/MS Connector
JSPI1	SPI Connector
AUDIO1	External Audio Connector
IDE1	IDE Connector
CF1	CF Type II Slot

<b>JP1 : Clear CMOS Setup</b>	
<b>PIN</b>	<b>DESCRIPTION</b>
1-2 (default)	Keep CMOS Setup (Normal Operation)
Short 2-3	Clear CMOS Setup

<b>JP2 : Compact Flash Card Master/Slave</b>	
<b>PIN</b>	<b>DESCRIPTION</b>
Open	Slave
Short	Master (Default)

<b>JP4: RS-232/422/485 Select</b>	
<b>PIN</b>	<b>DESCRIPTION</b>
RS-232	Short 1-2
RS-422	Short 3-4
RS-485	Short 5-6

<b>JAUTO1/2: AT/ATX Power Select</b>	
<b>PIN</b>	<b>DESCRIPTION</b>
Open	ATX Mode
Short	AT Mode

<b>USBPW12/USBP34:USB Power Select</b>	
<b>PIN</b>	<b>DESCRIPTION</b>
1-2	+5V
2-3	+5VSB

<b>J_CF1: CF Voltage +VCC_CF Choice</b>	
<b>PIN</b>	<b>DESCRIPTION</b>
1-2	+3.3V
2-3	+5V

<b>3IN1_DSUB1B : COM1(RS232)</b>			
<b>PIN NO.</b>	<b>DESCRIPTION</b>	<b>PIN NO.</b>	<b>DESCRIPTION</b>
1	NDCD	6	NDSR
2	NRX	7	NRTS
3	NTX	8	NCTS
4	NDTR	9	NRI
5	GND		

<b>COM3-COM6: RS-232 Pin Header</b>			
<b>PIN NO.</b>	<b>DESCRIPTION</b>	<b>PIN NO.</b>	<b>DESCRIPTION</b>
1	NRLSD	2	NDSR
3	NRX	4	NRTS
5	NTX	6	NCTS
7	NDTR	8	NRI
9	GND	10	NC

<b>COM2(RS-232/422/485): RS-232/422/485 Pin Header</b>			
<b>PIN NO.</b>	<b>DESCRIPTION</b>	<b>PIN NO.</b>	<b>DESCRIPTION</b>
1	NDCD	2	NDSR
3	NRX	4	NRTS
5	NTX	6	NCTS
7	NDTR	8	NRI
9	GND	10	NC
11	TX+	12	TX-
13	RX-	14	RX-

<b>F_PANEL1 : PWR、RST Buttons、Indicators and Speaker</b>					
	<b>PIN</b>	<b>DESCRIPTION</b>	<b>PIN</b>	<b>DESCRIPTION</b>	
Power LED	1	Power LED	2	Beep Power	Speaker
	3	NC	4	NC	
	5	GND	6	NC	
PWRBTN	7	PWRBTSW#	8	PC Beep	RESET
	9	GND	10	NC	
HDDLED	11	HDDLED	12	EXTRST#	RESET
	13	HDDLED#	14	GND	

**3IN1\_DSUB1C: 3 in 1 D-Sub—VGA Connector**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	Red	9	VGAVCC
2	Green	10	GND
3	Blue	11	NC
4	CRT_PLUG#	12	DDCCDAT
5	GND	13	HSYNC
6	GND	14	VSYSNC
7	GND	15	DDCCCLK
8	GND		

**DI01 : 8Bit Digital Input / Output Connector**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	VCC5S
3	GPO0	4	GPO1
5	GPO2	6	GPO3
7	GPI0	8	GPI1
9	GPI2	10	GPI3

**FP\_AUDIO1: HD Audio Digital Pin Header**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	MIC_L	2	Audio GND
3	MIC_R	4	FP_AUO DETECT
5	LINE_R	6	PD
7	F_SENSE	8	NC
9	LINE_L	10	PD

**CPU12V1 : CPU POWER Source Connector**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	GND
3	+12V	4	+12V

<b>IR1 : IR Connector</b>			
<b>PIN NO.</b>	<b>DESCRIPTION</b>	<b>PIN NO.</b>	<b>DESCRIPTION</b>
1	+5V	2	NC
3	IR_RX	4	GND
5	IR_TX		

<b>CPU_FAN1: CPU FAN,1X4PIN HEADER,P=2.54</b>	
<b>PIN</b>	<b>DESCRIPTION</b>
1	GND
2	+12V
3	FANIN1
4	FANCTL1

<b>NB_FAN1: SYSTEM FAN, 1X3 PIN HEADER,P=2.54</b>	
<b>PIN</b>	<b>DESCRIPTION</b>
1	FANIN2
2	+12V
3	GND

<b>PCN1:PCIe Power Source Connector</b>	
<b>PIN</b>	<b>DESCRIPTION</b>
1	VCC +5V
2	GND
3	GND
4	VCC +12V

<b>SMBUS1:SMBUS Connector</b>	
<b>PIN</b>	<b>DESCRIPTION</b>
1	GND
2	SMBDATA
3	SMBCLK
4	VCC

<b>SYS_FAN1/2: System Fan CONN 1X3 PIN PINHEADER,P=2.54</b>	
<b>PIN</b>	<b>DESCRIPTION</b>
1	NC
2	+12V
3	GND

<b>BAT1 : Coin battery holder</b>	
<b>PIN</b>	<b>DESCRIPTION</b>
1	BAT+
2	BAT-(GND)

<b>USB3/USB4: 2x4 Pin Header</b>			
<b>PIN</b>	<b>DESCRIPTION</b>	<b>PIN</b>	<b>DESCRIPTION</b>
1	+5V	2	GND
3	USBP4/6#	4	USBP5/7
5	USBP4/6	6	USBP5/7#
7	GND	8	+5V



<b>TPM1: TPM Connector</b>			
<b>PIN NO.</b>	<b>DESCRIPTION</b>	<b>PIN NO.</b>	<b>DESCRIPTION</b>
1	TPMCLK	2	GND
3	LFRAME-	4	NC
5	PCIRST4-	6	+5V
7	LAD3	8	LAD2
9	LAD0	10	LAD1
11	GND	12	GND
13	SMBCLK_MAIN	14	SMBDATA_MAIN
15	+3.3V	16	SERIRQ
17	GND	18	CLKRUN-
19	+3.3V	20	LDRQ0-

<b>SATA1/2/3/4: SATA Connector</b>	
<b>PIN</b>	<b>DESCRIPTION</b>
1	GND
2	SATATXP
3	SATAXN
4	GND
5	SATARXN
6	SATARXP
7	GND

<b>LAN1/USB1A,LAN2/USB2A: RJ45 Connector</b>			
<b>PIN</b>	<b>DESCRIPTION</b>	<b>PIN</b>	<b>DESCRIPTION</b>
P1	3,3V	P8	LAN1/2_MDI3+
P2	LAN1/2_MDI0+	P9	LAN1/2_MDI3-
P3	LAN1/2_MDI0-	P10	GND
P4	LAN1/2_MDI1+	P11	LAN1/2_LINK100
P5	LAN1/2_MDI1-	P12	LAN1/2_LINK1000
P6	LAN1/2_MDI2+	P13	LAN1/2_LED0
P7	LAN1/2_MDI2-	P14	3.3V

<b>LAN1/USB1B,LAN2/USB2B: USB Port</b>			
<b>PIN</b>	<b>DESCRIPTION</b>	<b>PIN</b>	<b>DESCRIPTION</b>
1	USBPWR1	2	USBP0/2-
3	USBP0/2+	4	GND
5	USBPWR1	6	USBP1/3-
7	USBP1/3+	8	GND

<b>PWR2: ATX POWER Connector</b>			
<b>PIN</b>	<b>DESCRIPTION</b>	<b>PIN</b>	<b>DESCRIPTION</b>
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	NC	20	NC
9	+5V	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	+3.3V	24	GND

<b>3IN1_DSUB1A: LPT Connector</b>			
<b>PIN</b>	<b>DESCRIPTION</b>	<b>PIN</b>	<b>DESCRIPTION</b>
1	RSTB-	2	RPDR0
3	RPDR1	4	RPDR2
5	RPDR3	6	RPDR4
7	RPDR5	8	RPDR6
9	RPDR7	10	RACK-
11	RBUSY	12	RPE
13	RSLCT	14	RAFD-
15	ERR-	16	RINIY_P-
17	RSLIN-	18	GND
19	GND	20	GND
21	GND	22	GND
23	GND	24	GND
25	GND	26	GND

<b>KBMS2: KB/MS Connector</b>			
<b>PIN</b>	<b>DESCRIPTION</b>	<b>PIN</b>	<b>DESCRIPTION</b>
1	KB_DATA	2	NC
3	GND	4	KBPWR
5	KB_CLK	6	NC
7	MS_DATA	8	NC
9	GND	10	KBPWR
11	MS_CLK	12	NC
13	KB_GND	14	KB_GND

<b>JSPI1: SPI Connector.</b>			
<b>PIN HEADER2*4,8PIN, P:2.54MM</b>			
<b>PIN</b>	<b>DESCRIPTION</b>	<b>PIN</b>	<b>DESCRIPTION</b>
1	SPI_VCC	2	GND
3	SPI_CS	4	SPI_CLK
5	SPI_SO	6	SPI_S1
7	NC	8	NC

# Board Layout: Jumper and Connector Locations

(Unit: MM)

