

**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 2.0

Jan. 17, 2012

Package Contents

IMBA-G412ISA package includes the following items:

- 1 x IMBA-G412ISA-R20 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: AMI
- 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-R20:

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:

PClex16 VGA output SDVO Card support dual display (IEI board only)

SDVO-100DVI-R10:

PClex16 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

LABEL	FUNCTION
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

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

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

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

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

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

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

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

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

COM2(RS-232/422/485): RS-232/422/485 Pin Header			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
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-

F_PANEL1 : PWR、RST Buttons、Indicators and Speaker					
	PIN	DESCRIPTION	PIN	DESCRIPTION	
Power LED	1	Power LED	2	Beep Power	Speaker
	3	NC	4	NC	
	5	GND	6	NC	
PWRBTN	7	PWRBTW#	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	DDCDAT
5	GND	13	HSYNC
6	GND	14	VSYNC
7	GND	15	DDCCLK
8	GND		

DIO1 : 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

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

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

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

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

SMBUS1:SMBUS Connector	
PIN	DESCRIPTION
1	GND
2	SMBDATA
3	SMBCLK
4	VCC

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

BAT1 : Coin battery holder	
PIN	DESCRIPTION
1	BAT+
2	BAT-(GND)

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

TPM1: TPM Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
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-

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

LAN1/USB1A,LAN2/USB2A: RJ45 Connector			
PIN	DESCRIPTION	PIN	DESCRIPTION
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

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

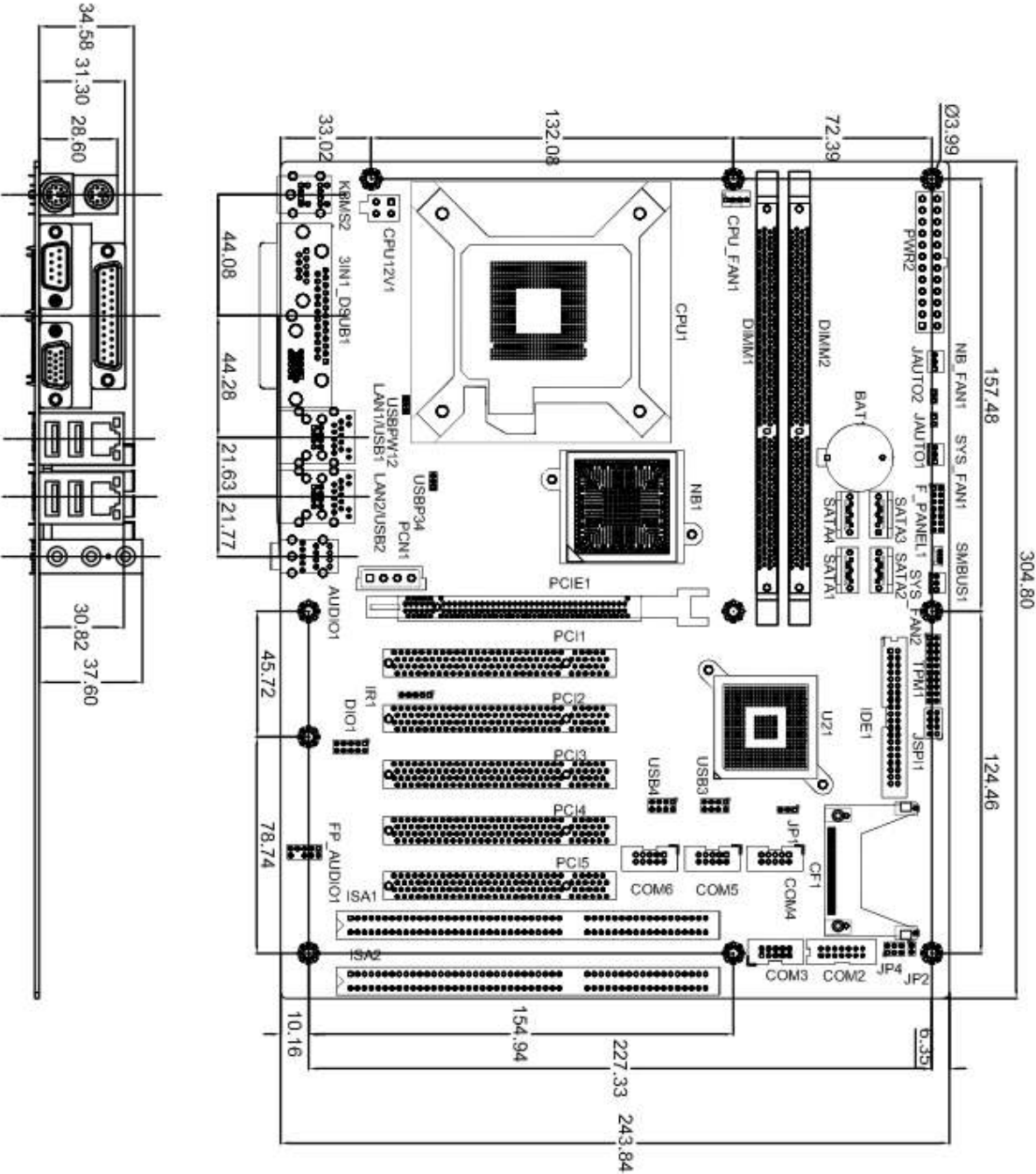
PWR2: ATX POWER Connector			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	+3.3V	13	+3.3V
2	+3.3V	14	-12V
3	GND	15	GND
4	+5V	16	PS_ON-
5	GND	17	GND
6	+5V	18	GND
7	GND	19	GND
8	NC	20	NC
9	+5V	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	+3.3V	24	GND

3IN1_DSUB1A: LPT Connector			
PIN	DESCRIPTION	PIN	DESCRIPTION
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

KBMS2: KB/MS Connector			
PIN	DESCRIPTION	PIN	DESCRIPTION
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

JSPI1: SPI Connector.			
PIN HEADER2*4,8PIN, P:2.54MM			
PIN	DESCRIPTION	PIN	DESCRIPTION
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)