

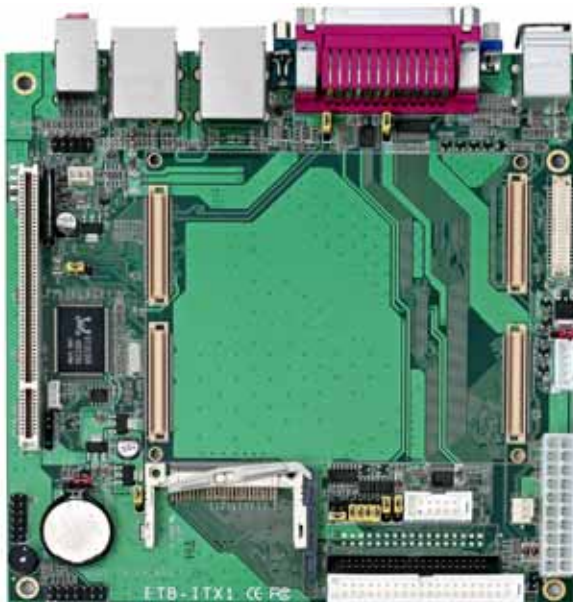
ETB-ITX1

ETX Baseboard

User's Manual

Edition 1.0

2006/5/30



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Packing List:

Please check the package content before you starting using the board.

Hardware:

ETB-ITX1 baseboard x 1

Cable Kit:



ATA100 IDE Cable x1



44-pin ATA33 IDE Cable x 1



COM port Cable x 1

Printed Matters:

User's Manual x 1

Index

Chapter 1 <Introduction> 7

 1.1 <Product Overview>..... 7

 1.2 <Product Specification>8

 1.3 <Mechanical Drawing>..... 10

 1.4 <Block Diagram>..... 11

Chapter 2 <Hardware Setup>..... 13

 2.1 <Connector Location> 13

 2.2 <Jumper Location & Reference> 14

 2.3 <Connector Reference> 15

 2.3.1 <Internal Connectors> 15

 2.3.2 <External Connectors> 15

 2.4 <Enhanced IDE Interface> 16

 2.5 <Ethernet Interface> 17

 2.6 <Display Interface> 18

 2.6.1 <Analog Display> 18

 2.6.2 <Digital Display>..... 19

 2.7 <Audio Interface>..... 22

 2.8 <Serial Port Jumper Setting>..... 23

 2.9 <GPIO Interface>..... 25

 2.10 <Power Supply> 26

 2.10.1 <Power Input> 26

 2.11 <Switch and Indicator> 27

Appendix A <I/O Port Pin Assignment> 29

 A.1 <IDE Port> 29

 A.2 <IrDA Port> 31

 A.3 <Serial Port> 31

 A.4 <VGA Port> 32

 A.5 <LAN Port> 32

 A.6< LPT Port >..... 33

Appendix B <Flash BIOS>.....34

 B.1 <Flash Tool> 34

 B.2 <Flash BIOS Procedure> 34

Contact Information..... **35**

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Chapter 1 <Introduction>

1.1 <Product Overview>

ETB-ITX1 is the ETX Module baseboard provide VGA, Audio, PCI slot , LVDS, Dual LAN, CF, IDE, Serial Port and LPT Port.

All in One multimedia solution

The baseboard provides 18/24-bit dual channel LVDS connector and 2 channels Audio, to meet the very requirement of the multimedia application.

Flexible Extension Interface

The baseboard provides one PCI slot supports up to 2 PCI devices.

1.2 <Product Specification>

General Specification

Form Factor	Mini-ITX Baseboard
Real Time Clock	RTC with lithium battery
Enhanced IDE	Provide UltraDMA100 IDE interface supports up to 4 ATAPI devices One 40-pin and one 44-pin IDE One Compact Flash Type II socket

Multi-I/O Port

Serial Port	One external DB9 male connector on rear I/O panel and one internal RS-232/422/485 serial port
USB Port	Four external Hi-Speed USB 2.0 ports with 480Mbps of transfer rate on rear I/O panel
Parallel Port	One external DB25 female connector on rear I/O panel
IrDA Port	One IrDA compliant Infrared interface supports SIR
K/B & Mouse	External PS/2 keyboard and mouse ports on rear I/O panel
GPIO	One 12-pin Digital I/O connector with 8-bit programmable I/O interface
Fan	Two fan connectors

VGA Display Interface

Connector	External DB15 female connector on rear I/O panel Onboard 40-pin LVDS connector
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Ethernet Interface

Chipset	Realtek RTL8100B
Type	10/100 Base-T auto-switching Fast Ethernet Full duplex, IEEE802.3U compliant
Connector	Two External RJ45 connectors with LED on rear I/O panel

Audio Interface

Interface	2 channels sound output
Connector	External Audio phone jack for Line-out, Line-in, MIC-in. Onboard audio connector with pin header (built-in amplifier for speaker out)

Expansive Interface

PCI	One PCI slot for supports up to 2 PCI bus master PCI devices. (32-bit, 33MHz) Power supply: +3.3V, +5V
-----	--

Power and Environment

Power Requirement	Standard ATX Power connector
Dimension	170(L) x 170 (H) mm
Temperature	Operating within 0 ~ 60 ^{°C} (32 ~ 140 ^{°F}) Storage within -20 ~ 85 ^{°C} (-4 ~ 185 ^{°F})

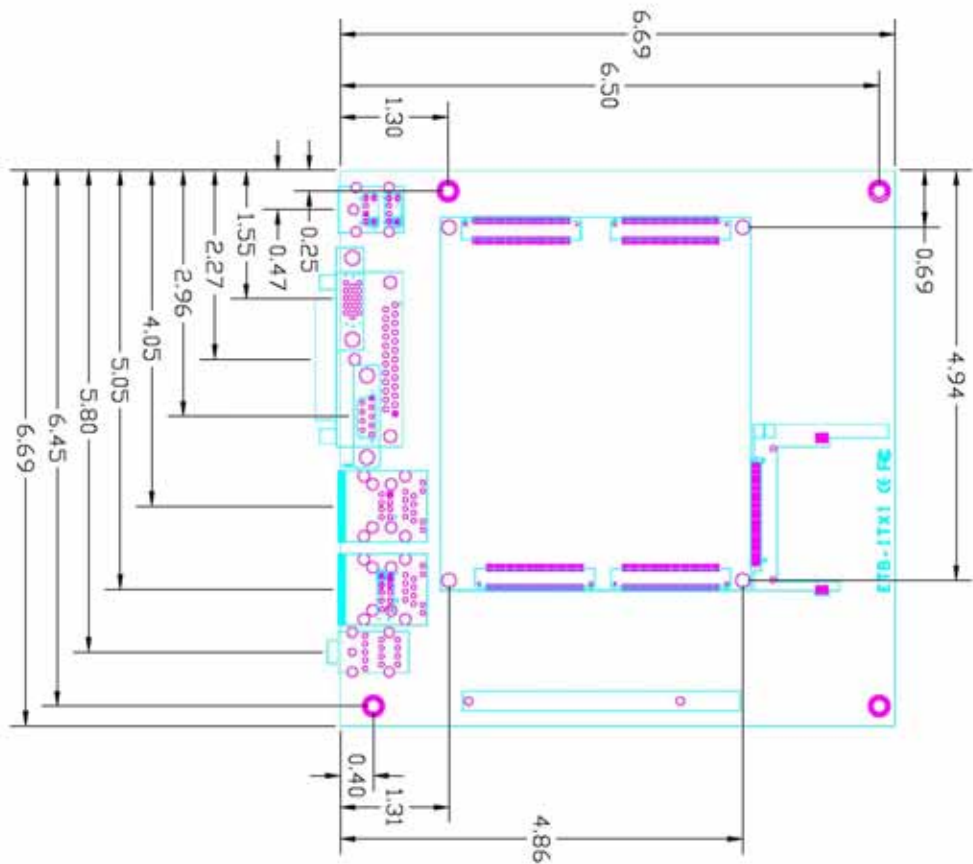
Ordering Code

ETB-ITX1	ETX Module baseboard
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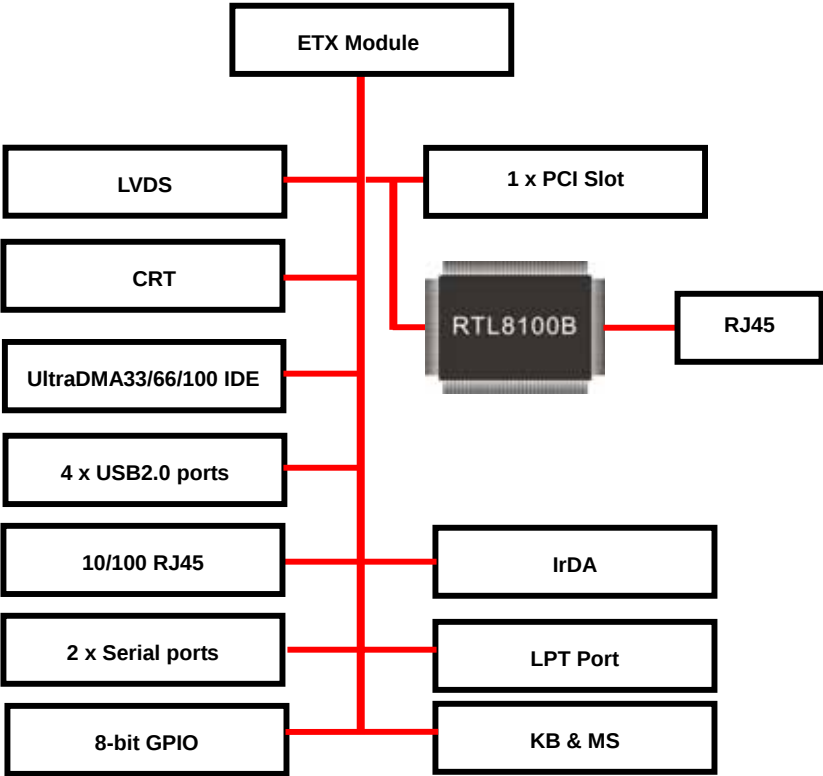
The specifications may be different as the actual production.

For further product information please visit the website at <http://www.comnell.com.tw>

1.3 <Mechanical Drawing>



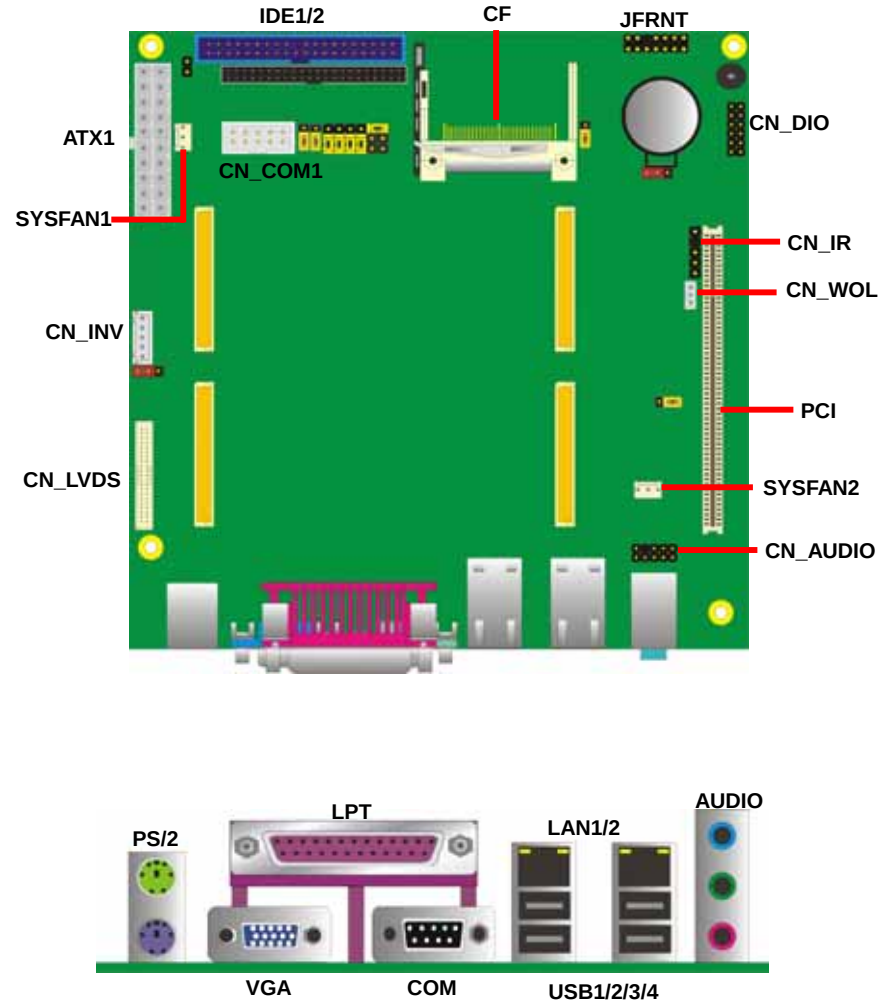
1.4 <Block Diagram>



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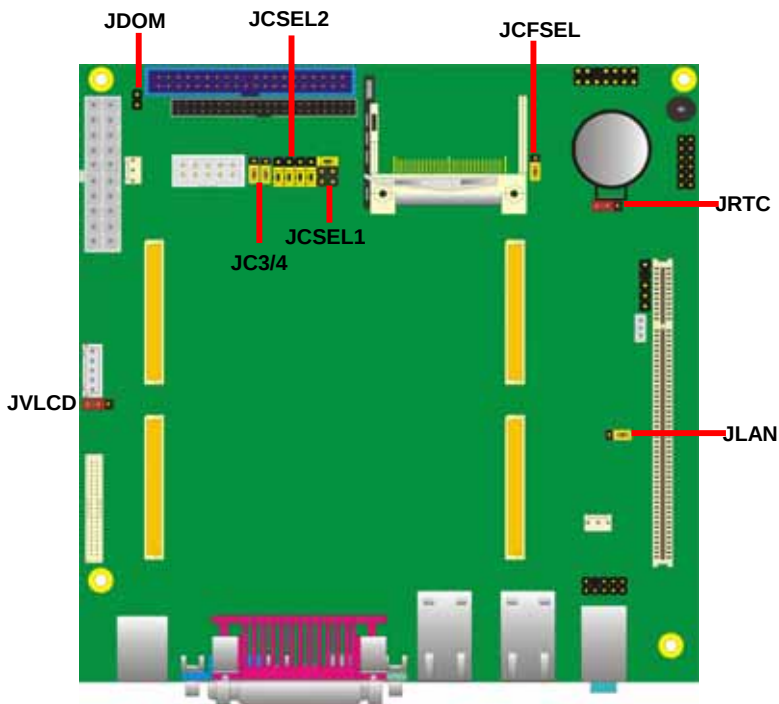
Chapter 2 <Hardware Setup>

2.1 <Connector Location>



2.2 <Jumper Location & Reference>

Jumper	Function
JVLCD	Panel Voltage Setting
JDOM	IDE Pin-20 voltage setting
JC3/4	Setting CN_COM1 power provide
JCSEL1	Setting RS232/422/485
JCSEL2	Setting RS232/422/485
JCFSEL	Setting CF Master/slave
JRTC	CMOS Operating/Clear Setting
JLAN	Enable/disable LAN



2.3 <Connector Reference>

2.3.1 <Internal Connectors>

Connector	Function	Remark
IDE1	40-pin IDE connector	Standard
IDE2	44-pin IDE connector	Slim
CF	Compact Flash Type II socket	Standard
ATX1	20-pin ATX power input connector	Standard
CN_AUDIO	5 x 2-pin audio connector	Standard
CN_DIO	6 x 2-pin digital I/O connector	Standard
CN_WOL	3-pin wake on LAN connector	Standard
SYSFAN1/2	3-pin system cooler fan connector	Standard
CN_LVDS	20 x 2-pin LVDS connector	Standard
CN_INV	5-pin LCD inverter connector	Standard
CN_IR	5-pin IrDA connector	Standard
CN_COM1	5 x 2-pin COM2 connector	Standard
JFRNT	14-pin front panel switch/indicator connector	Standard
PCI	Standard 32bit PCI slot	Slim

2.3.2 <External Connectors>

Connector	Function	Remark
PS2	PS/2 keyboard connector	Standard
LPT	DB25 female connector	Standard
VGA	DB15 analog VGA connector	Standard
COM	DB9 Serial port connector	Standard
USB_RJ451/2	Dual USB and RJ45 LAN connector	Standard
AUDIO	Audio phone jack	Standard

2.4 <Enhanced IDE Interface>

The baseboard has two UltraDMA33/66/100 IDE interface to support up to 4 ATAPI devices, with jumper **JDOM** for Disk on module.

The board also provides a Compact Flash Type II socket with jumper (**JCFSEL**) selectable Slave/Master mode on secondary IDE channel.

Jumper: **JCFSEL**

Type: onboard 3-pin header

JCFSEL	Mode
1-2	Master
2-3	Slave

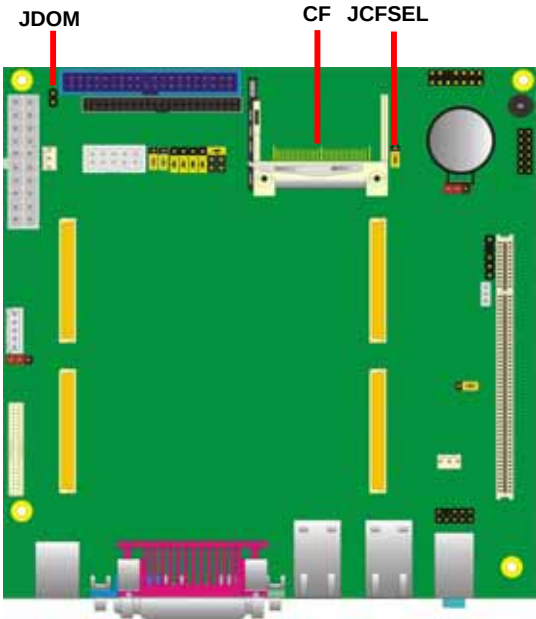
Default setting

Jumper: **JDOM**

Type: onboard 2-pin header

JDOM	Mode
1-2	Short
1-2	Open (default)

Default setting



2.5 <Ethernet Interface>

The baseboard provides two RJ45 connectors of 10/100Base-T, with IEEE802.3 compliance one for ETX module (LAN1) . The other for integrates Realtek RTL8100B (LAN2) Ethernet controller.



2.6 <Display Interface>

The baseboard provides one DB15 connector on rear external I/O port, and one 40-pin LVDS interface with 5-pin LCD backlight inverter connector.

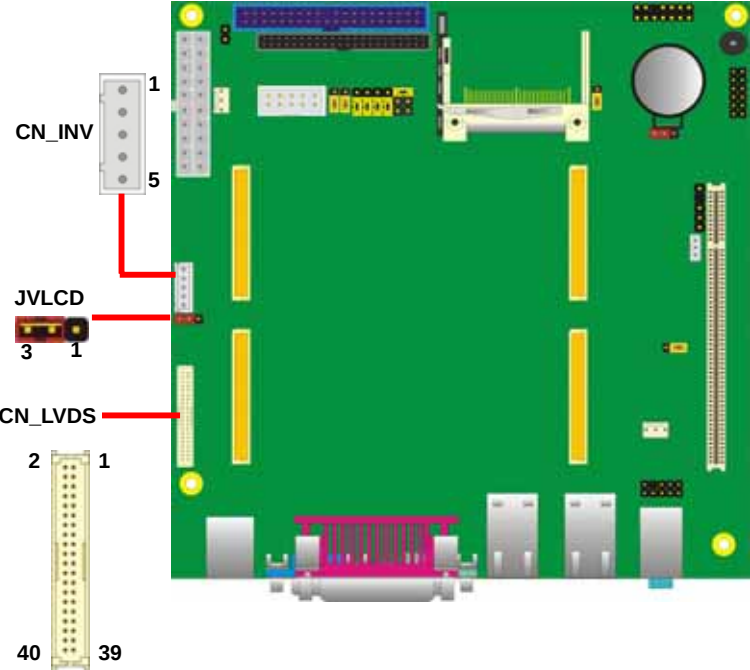
2.6.1 <Analog Display>

Please connect your CRT or LCD monitor with DB15 male connector to the onboard DB15 female connector on rear I/O port.



2.6.2 <Digital Display>

The baseboard provides one 40-pin LVDS connector for 18/24-bit single/dual channel panels, with one LCD backlight inverter connector and one jumper for panel voltage setting.



Connector: **CN_INV**
Type: 5-pin LVDS Power Header
Connector model: **JST B5B-XH-A**

Pin	Description
1	+12V
2	GND
3	GND
4	GND
5	ENABKL

Connector: **JVLCD**
Type: 3-pin Power select Header

Pin	Description
1	VCC(5V)
2	LCDVCC
3	VCC3(3.3)

Connector: **CN_LVDS**
Type: 40-pin connector
Connector model: **HIROSE DF13-40DP-1.25V**

Pin	Signal	Pin	Signal
2	LCDVCC	1	LCDVCC
4	GND	3	GND
6	ATX0-	5	BTX0-
8	ATX0+	7	BTX0+
10	GND	9	GND
12	ATX1-	11	BTX1-
14	ATX1+	13	BTX1+
16	GND	15	GND
18	ATX2-	17	BTX2-
20	ATX2+	19	BTX2+
22	GND	21	GND
24	ACLK-	23	BTX3-
26	ACLK+	25	BTX3+
28	GND	27	GND
30	ATX3-	29	BCLK-
32	ATX3+	31	BCLK+
34	GND	33	GND
36	N/C	35	N/C
38	N/C	37	N/C
40	N/C	39	N/C

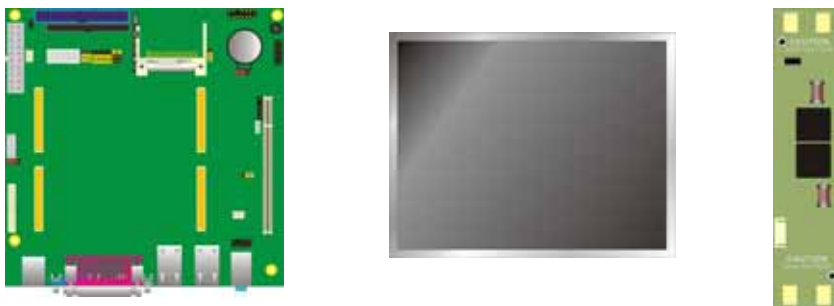
To setup the LCD, you need the component below:

1. A panel with LVDS interfaces.
2. An inverter for panel's backlight power.
3. A LCD cable and an inverter cable.

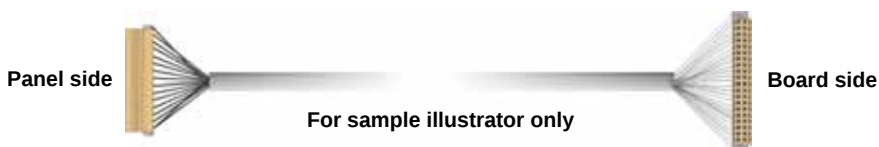
For the cables, please follow the pin assignment of the connector to make a cable, because every panel has its own pin assignment, so we do not provide a standard cable; please find a local cable manufacture to make cables.

LCD Installation Guide:

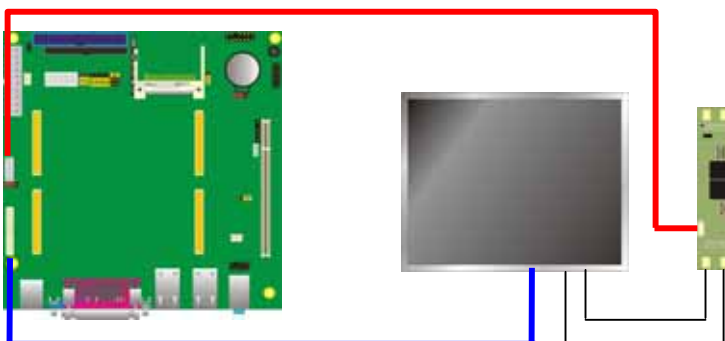
1. Preparing the **EXB-ITX1**, **LCD panel** and the **backlight inverter**.



2. Please check the datasheet of the panel to see the voltage of the panel, and set the jumper **JVLCD** to +5V or +3.3V.
3. You would need a LVDS type cable.



4. To connect all of the devices well.



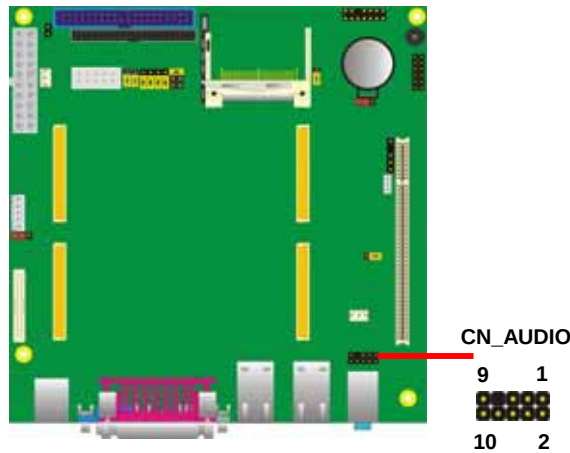
2.7 <Audio Interface>

The baseboard provide internal Audio connector and Phone jack on rear I/O.

Connector: CN_AUDIO

Type: 10-pin (2 x 5) 2.54-pitch header

Pin	Description	Pin	Description
1	Line – Right	2	Ground
3	Line – Left	4	MIC
5	N/C	6	Ground
7	N/C	8	Line Out – Left
9	Line Out – Right	10	Ground



Rear I/O phone jacks

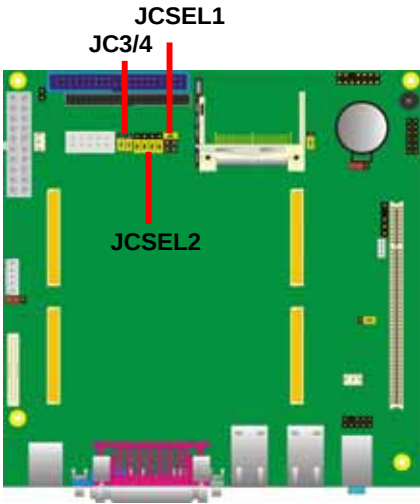
2.8 <Serial Port Jumper Setting >

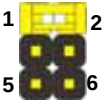
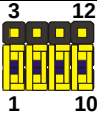
The board provides two RS232 serial ports, with jumper selectable +5V/+12V output and RS422/485 for CN_COM1.

Jumper: **JC3/4**
Type: onboard 6-pin header



Pin	Description	Pin	Description
1	+5V	2	+12V
3	CN_COM1 pin1	4	CN_COM1 pin9
5	DCD-	6	RI-



	JCSEL1	JCSEL2
RS-232		
RS-485		
RS-422		

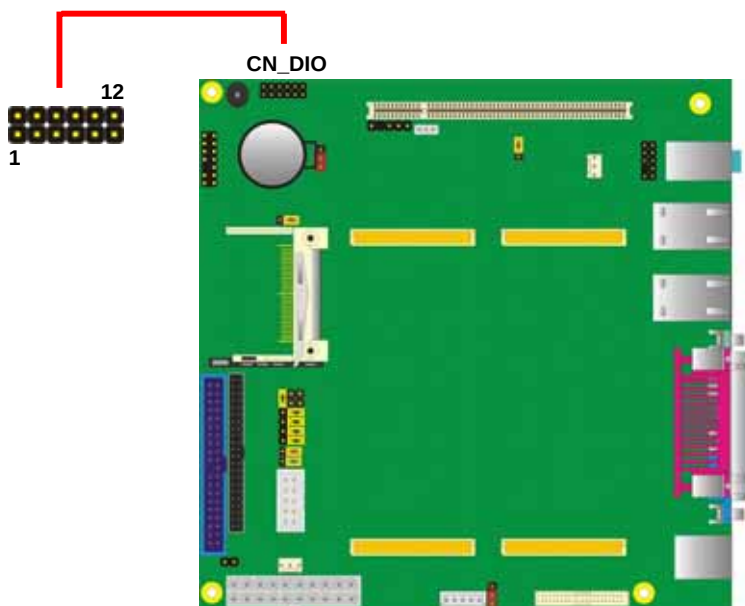
2.9 <GPIO Interface>

The baseboard provide a programmable 8-bit digital I/O interface; you can use this general purpose I/O port for system control like POS or KIOSK.

Connector: **CN_DIO**

Type: 12-pin (6 x 2) 2.54mm -pitch header

Pin	Description	Pin	Description
1	Ground	2	Ground
3	GP10	4	GP14
5	GP11	6	GP15
7	GP12	8	GP16
9	GP13	10	GP17
11	VCC	12	+12V



2.9 <Power Supply>

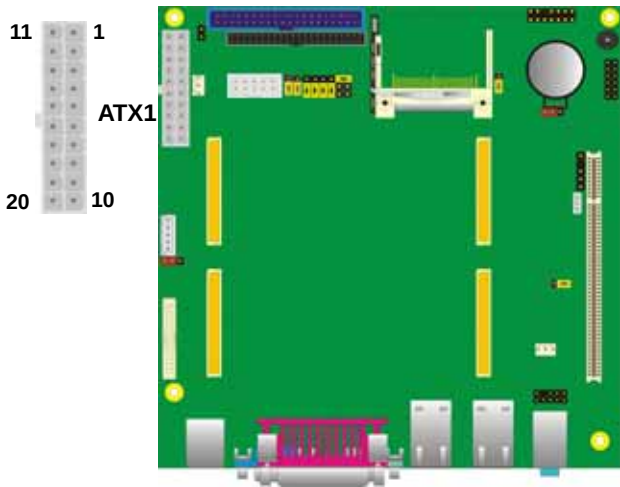
2.9.1 <Power Input>

The baseboard requires standard ATX Power input.

Connector: **ATX1**

Type: 20-pin ATX power connector

PIN assignment			
11	3.3V	1	3.3V
12	-12V	2	3.3V
13	GND	3	GND
14	PS_ON	4	5V
15	GND	5	GND
16	GND	6	5V
17	GND	7	GND
18	-5V	8	PW_OK
19	5V	9	5V_SB
20	5V	10	12V



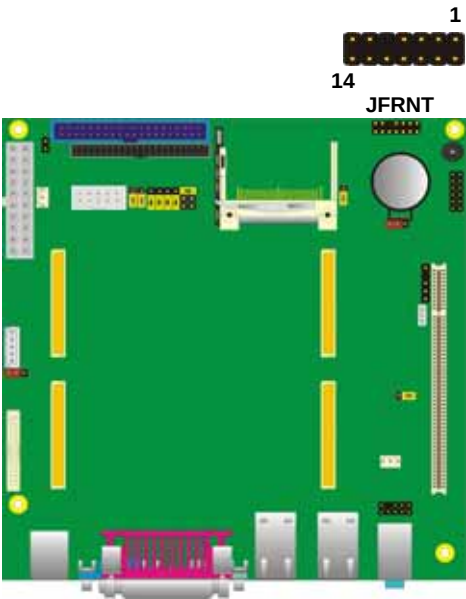
2.10 <Switch and Indicator>

The **JFRNT** provides front control panel of the board, such as power button, reset and beeper, etc. Please check well before you connecting the cables on the chassis.

Connector: **JFRNT**

Type: onboard 14-pin (2 x 7) 2.54-pitch header

Function	Signal	PIN		Signal	Function
IDE LED	HDLED+	1	2	PWRLED+	Power LED
	HDLED-	3	4	N/C	
Reset	Reset+	5	6	PWRLED-	Speaker
	Reset-	7	8	SPK+	
N/C		9	10	N/C	
Power Button	PWRBT+	11	12	N/C	
	PWRBT-	13	14	SPK-	



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Appendix A <I/O Port Pin Assignment>

A.1 <IDE Port>

Connector: **IDE1**

Type: 40-pin (20 x 2) box header



Pin	Description	Pin	Description
1	Reset	2	Ground
3	D7	4	D8
5	D6	6	D9
7	D5	8	D10
9	D4	10	D11
11	D3	12	D12
13	D2	14	D13
15	D1	16	D14
17	D0	18	D15
19	Ground	20	N/C
21	REQ	22	Ground
23	-IOW	24	Ground
25	-IOR	26	Ground
27	IORDY	28	Ground
29	DACK	30	Ground
31	IDEIRQ	32	IDE32
33	A1	34	P66DET
35	A0	36	A2
37	-CS1	38	-CS3
39	-HD LED1	40	Ground

Connector: IDE2

Type: 44-pin (22 x 2) box header



Pin	Description	Pin	Description
1	Reset	2	Ground
3	D7	4	D8
5	D6	6	D9
7	D5	8	D10
9	D4	10	D11
11	D3	12	D12
13	D2	14	D13
15	D1	16	D14
17	D0	18	D15
19	Ground	20	N/C
21	REQ	22	Ground
23	-IOW	24	Ground
25	-IOR	26	Ground
27	IORDY	28	Ground
29	DACK	30	Ground
31	IDEIRQ	32	IDE32
33	A1	34	P66DET
35	A0	36	A2
37	-CS1	38	-CS3
39	-HD LED1	40	Ground
41	+5V	42	+5V
43	Ground	44	Ground

A.2 <IrDA Port>

Connector: **CN_IR**

Type: 5-pin header for SIR Ports

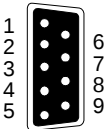


Pin	Description
1	VCC
2	N/C
3	IRRX
4	Ground
5	IRTX

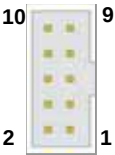
A.3 <Serial Port>

Connector: **COM**

Type: 9-pin D-sub male connector on rear I/O



Pin	Description	Pin	Description
1	DCD	6	DSR
2	SIN	7	RTS
3	SO	8	CTS
4	DTR	9	RI
5	Ground		



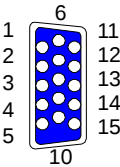
Connector: **CN_COM1**

Type: 5 x 2 box header

Pin	Description	Pin	Description
1	DCD- /485-	2	SIN- /485+
3	SO- /422+	4	DTR- /422-
5	Ground	6	DSR-
7	RTS-	8	CTS-
9	RI	10	N/C

A.4 <VGA Port>

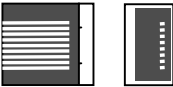
Connector: **VGA**
Type: 15-pin D-sub female connector on rear I/O



Pin	Description	Pin	Description	Pin	Description
1	RED	6	Ground	11	N/C
2	GREEN	7	Ground	12	VCC
3	BLUE	8	Ground	13	HSYNC
4	N/C	9	N/C	14	VSYNC
5	Ground	10	Ground	15	5VCLK

A.5 <LAN Port>

Connector: **RJ45**
Type: RJ45 connector with LED on rear I/O



Pin	1	2	3	4	5
Description	TRD0+	TRD0-	TRD1+	TRD1-	NC

Pin	6	7	8	9	10
Description	NC	TRD2+	TRD2-	TRD3+	TRD3-

A.6 < LPT Port >

Connector : LPT



Type :26-Pin D-Sub female Connector on rear I/O

Pin	Description	Pin	Description
1	-PSTB	2	PRO0
3	PRO1	4	PRO2
5	PRO3	6	PRO4
7	PRO5	8	PRO6
9	PRO7	10	ACK-
11	BUSY	12	PE
13	SLCT	14	AFD-
15	ERR-	16	INT-
17	SLIN-	18	Ground
19	Ground	20	I/O Ground
21	Ground	22	Ground
23	Ground	24	Ground
25	Ground	26	N/C

Appendix B <Flash BIOS>

B.1 <Flash Tool>

The board is based on Award BIOS and can be updated easily by the BIOS auto flash tool. You can download the tool online at the address below:

<http://www.phoenix.com/en/home/>

http://www.commell.com.tw/Support/Support_SBC.htm

File name of the tool is "awdflash.exe", it's the utility that can write the data into the BIOS flash ship and update the BIOS.

B.2 <Flash BIOS Procedure>

1. Please make a bootable floppy disk.
2. Get the last .bin files you want to update and copy it into the disk.
3. Copy awardflash.exe to the disk.
4. Power on the system and flash the BIOS. (Example: C:/ awardflash XXX.bin)
5. Restart the system.

Any question about the BIOS re-flash please contact your distributors or visit the web-site at below:

<http://www.commell.com.tw/support/support.htm>

Contact Information

Any advice or comment about our products and service, or anything we can help you please don't hesitate to contact with us. We will do our best to support you for your products, projects a business.

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