Quick Installation Guide

ECB-860

All-in-One Full-size Celeron / Pentium III Single Board with LCD, 10/100 Base-Tx Ethernet

4th Ed. – 12 March 2002

Part No. 2017860004

FCC STATEMENT

THIS DEVICE COMPLIES WITH PART 15 FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:

(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE.

(2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE

RECEIVED INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.

THIS EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS "A" DIGITAL DEVICE, PURSUANT TO PART 15 OF THE FCC RULES.

THESE LIMITS ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINTST HARMFUL INTERFERENCE WHEN THE EQUIPMENT IS OPERATED IN A COMMERCIAL ENVIRONMENT. THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGY AND, IF NOT INSTATLLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE HARMFUL INTERFERENCE TO RADIO COMMUNICATIONS.

OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE HARMFUL INTERFERENCE IN WHICH CASE THE USER WILL BE REQUIRED TO CORRECT THE INTERFERENCE AT HIS OWN EXPENSE.

Notice:

This guide is designed for experienced users to setup the system within the shortest time. For detailed information, please always refer to the electronic user's manual.

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In addition, free technical support is available from Evalue's engineers every business day. We are always ready to give advice on application requirements or specific information on the installation and operation of any of our products. Please do not hesitate to call or e-mail us.

Headquarters
Evalue Technology Inc.
5F~7, No.130, Chien Kang Road,
Chung Ho City, Taipei,
Taiwan
Tel : +886-2-2228-6111
Fax : +886-2-2228-6228
http://www.evalue-tech.com
E-mail: service@evalue-tech.com

Europe Branch Office
Evalue Europe A/S
Nordre Strandvej 119C,
3150 Hellebaek,
Denmark
Tel : +45-7025-0310
Fax : +45-4975-5026
http://www.evalue-tech.com
E-mail: service.europe@evalue-tech.com

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Evalue warrants to you, the original purchaser, that each of its products will be free from defects in materials and workmanship for two years from the date of purchase.

This warranty does not apply to any products which have been repaired or altered by persons other than repair personnel authorized by Evalue, or which have been subject to misuse, abuse, accident or improper installation. Evalue assumes no liability under the terms of this warranty as a consequence of such events. Because of Evalue's high quality-control standards and rigorous testing, most of our customers never need to use our repair service. If any of Evalue's products is defective, it will be repaired or replaced at no charge during the warranty period. For out-of-warranty repairs, you will be billed according to the cost of replacement materials, service time, and freight. Please consult your dealer for more details. If you think you have a defective product, follow these steps:

1. Collect all the information about the problem encountered. (For example, CPU type and speed, Evalue's products model name, hardware & BIOS revision number, other hardware and software used, etc.) Note anything abnormal and list any on-screen messages you get when the problem occurs.
2. Call your dealer and describe the problem. Please have your manual, product, and any helpful information available.
3. If your product is diagnosed as defective, obtain an RMA (return material authorization) number from your dealer. This allows us to process your good return more quickly.
4. Carefully pack the defective product, a complete Repair and Replacement Order Card and a photocopy proof of purchase date (such as your sales receipt) in a shippable container. A product returned without proof of the purchase date is not eligible for warranty service.
5. Write the RMA number visibly on the outside of the package and ship it prepaid to your dealer.

Packing List

Before you begin installing your single board, please make sure that the following materials have been shipped:

- 1 ECB-860 Full-size Celeron / Pentium III single board
- 1 Quick Installation Guide
- 1 CD-ROM contains the followings:
  - User's Manual (this manual in PDF file)
  - Ethernet driver and utilities
  - VGA drivers and utilities
  - Latest BIOS (as of the CD-ROM was made)
- Cable set includes the followings:
  - 1 IDE HDD cable (40-pin, pitch 2.54mm)
  - 1 FDD cable (34-pin, pitch 2.54mm)
  - 1 bracket with one Printer port cable (26-pin, pitch 2.54mm) and one Serial port cable (10-pin, pitch 2.0mm)
  - 1 bracket with two Serial port cable (10-pin, pitch 2.54mm)
  - 1 5-pin to 5-pin keyboard cable for passive backplane connection
  - 1 4-pin ATX power control cable for backplane connection

If any of these items are missing or damaged, please contact your distributor or sales representative immediately.

1. Safety Precautions

1.1 Warning!

Always completely disconnect the power cord from your chassis whenever you work with the hardware. Do not make connections while the power is on. Sensitive electronic components can be damaged by sudden power surges. Only experienced electronics personnel should open the PC chassis.

1.2 Caution!

Always ground yourself to remove any static charge before touching the CPU card. Modern electronic devices are very sensitive to static electric charges. As a safety precaution, use a grounding wrist strap at all times. Place all electronic components in a static-dissipative surface or static-shielded bag when they are not in the chassis.

2. Jumper & Connector

2.1 Jumper & Connector Layout

2.2 Jumper and Connector List

Connectors on the board are linked to external devices such as hard disk drives, a keyboard, or floppy drives. In addition, the board has a number of jumpers that allow you to configure your system to suit your application.

The following tables list the function of each of the board's jumpers and connectors.

Jumpers		
Label	**Function**	**Note**
SW1	CPU clock ratio select	
JP1	Clear CMOS	2 x 1 header, pitch 2.54mm
JP2	Enable / Disable onboard VGA	3 x 1 header, pitch 2.54mm
JP3	Enable / Disable onboard Ethernet	3 x 1 header, pitch 2.54mm
JP4, 5, 6, 7, 19	Watchdog timer select	2 x 1 header, pitch 2.54mm (JP4, JP5) 3 x 1 header, pitch 2.54mm (JP6, JP7) 3 x 2 header, pitch 2.54mm (JP19)
JP8~JP11, JP17 **JP12~JP15, JP16**	Serial port RS-232/422/485 select	3 x 1 header, pitch 2.54mm 3 x 2 header, pitch 2.54mm (JP16, JP17)
JP18	M-Systems DiskOnChip memory address select	4 x 2 header, pitch 2.54mm

Connectors		
Label	**Function**	**Note**
J1	System reset connector	2 x 1 header, pitch 2.54mm
J2	External speaker connector	4 x 1 header, pitch 2.54mm
J3	Keyboard lock and power indicator connector	4 x 1 header, pitch 2.54mm
J4	Primary IDE / Secondary IDE active indicator connector	2 x 1 header, pitch 2.54mm
J5	Primary IDE connector	20 x 2 header, pitch 2.54mm
J6	Floppy connector	17 x 2 header, pitch 2.54mm
J7	ATX power button connector	2 x 1 header, pitch 2.54mm
J8	Secondary IDE connector	20 x 2 header, pitch 2.54mm
J9	Parallel port connector	13 x 2 header, pitch 2.54mm
J10	Serial port 1 connector	5 x 2 header, pitch 2.54mm
J11	Serial port 2 connector	5 x 2 header, pitch 2.54mm
J12	ATX power control connector	4 x 1 wafer, pitch 2.54mm
J13	Fast and standard IrDA (Infrared) connector	6 x 1 header, pitch 2.54mm
J14	10/100Base-Tx Ethernet connector	RJ-45
J15	CRT connector	DB-15 female connector
J16	USB connector	5 x 2 header, pitch 2.54mm
J17	LCD panel connector	25 x 2 header, pitch 2.0mm
J18	PS/2 mouse connector	6-pin mini DIN
J19	Internal keyboard connector	5 x 1 wafer, pitch 2.54mm
J20	System fan 1 connector	3 x 1 wafer, pitch 2.54mm
J21	System fan 2 connector	3 x 1 wafer, pitch 2.54mm
J22	Proprietary PCI connector	
J23	PS/2 keyboard connector	6-pin mini DIN
J24	CPU fan connector	3 x 1 wafer, pitch 2.54mm
U19	M-Systems DiskOnChip socket	16 x 2 DIP socket

3. Hardware Configuration

3.1 Setting Jumpers

3.1.1 CPU Clock Ratio Select (SW1)

Core / Bus Ratio	SW1	SW2	SW3	SW4
1.5x	OFF	OFF	ON	OFF
2.0x	OFF	OFF	OFF	OFF
2.0x	ON	ON	ON	ON
2.5x	ON	OFF	ON	ON
3.0x	ON	ON	OFF	ON
3.5x	ON	OFF	OFF	ON
4.0x*	**ON**	**ON**	**ON**	**OFF**
4.5x	ON	OFF	ON	OFF
5.0x	ON	ON	OFF	OFF
5.5x	ON	OFF	OFF	OFF
6.0x	OFF	ON	ON	ON
6.5x	OFF	OFF	ON	ON
7.0x	OFF	ON	OFF	ON
7.5x	OFF	OFF	OFF	ON
8.0x	OFF	ON	ON	OFF
Reserved	OFF	ON	OFF	OFF

Note:

For system's stability, do not arbitrarily set CPU to run over speed unless you know exactly how to config BIOS parameters.

3.1.2 Clear CMOS (JP1)

You can use JP1 to clear the CMOS data if necessary. To reset the CMOS data, short JP1 for just a few seconds, and then remove the jumper back to open.

Clear CMOS (JP1)

	Protect*	Clear CMOS
JP1	1 2	1 2

* default

3.1.3 Enable / Disable Onboard VGA (JP2)

You can use JP2 to disable the onboard VGA function if necessary. To enable the onboard VGA, set JP2 to 1-2, to disable the onboard VGA set JP2 to 2-3.

Enable /Disable Onboard VGA (JP2)

	Enable*	Disable
JP2	1 2 3	1 2 3

* default

3.1.4 Enable / Disable Onboard Ethernet (JP3)

You can use JP3 to disable the onboard Ethernet function if necessary. To enable the onboard Ethernet, set JP3 to 1-2, to disable the onboard Ethernet set JP3 to 2-3.

Enable /Disable Onboard Ethernet (JP3)		
	Enable*	Disable
JP3	1 2 3	1 2 3

* default

3.1.5 Watchdog Timer

3.1.5.1 Enable / Disable Onboard Watchdog Timer (JP4)

You can use JP4 to enable / disable the onboard Watchdog timer function if necessary. To disable the onboard Watchdog timer function, short JP4, to enable the function of Watchdog timer, set JP4 to open.

Enable / Disable Onboard Watchdog Timer (JP4)		
	Enable*	Disable
JP4	1 2	1 2

* default

3.1.5.2 Watchdog Timer Programming I/O Address Select (JP5)

You can set JP5 to select the Watchdog timer programming I/O address. The choice is 0553H / 0033H and 0543H / 0343H.

Watchdog Timer Programming I/O Address Select (JP5)		
	0553H / 0033H*	0543H / 0343H
JP5	1 2	1 2

* default

3.1.5.3 Watchdog Timer Trigger Signal Select (JP6)

You can set JP6 to select the Watchdog timer trigger signal. The Selection is System Reset and NMI.

Watchdog Timer Trigger Signal Select (JP6)		
	System Reset*	NMI
JP6	1 2 3	1 2 3

* default

3.1.5.4 Watchdog Timer Time-Out Control Select (JP7)

You can set JP7 to select the Watchdog timer time-out control by either JP19 jumper setting or programming the Super I/O chip W83977TF-AW/TF.

Watchdog Timer Time-Out Control Select (JP7)		
	H/W*	S/W
JP7		

* default

3.1.5.5 Watchdog Timer Time-Out Interval Select (JP19)

You can set JP19 to select the Watchdog timer time-out interval to be 0.5, 1, 2, 4, 8, 16, 32, or 64 Sec.

Watchdog Timer Tim-Out Interval Select (JP19)				
	0.5 Sec.	1 Sec.	2 Sec.	4 Sec.
JP19				
	8 Sec.	16 Sec.	32 Sec.	64 Sec.

* default

3.1.6 COM1 RS-232/422/485 Select (JP17, JP8~JP11)

The ECB-860 COM1 serial port can be selected as RS-232, RS-422, or RS-485 by setting JP17 & JP8~JP11.

COM1 RS-232/422/485 Select (JP17, JP8~JP11)			
	RS-232*	RS-422	RS-485
JP17			
JP8			
JP9			
JP10			
JP11			

* default

3.1.7 COM2 RS-232/422/485 Select (JP16, JP12~JP15)

The ECB-860 COM2 serial port can be selected as RS-232, RS-422, or RS-485 by setting JP16 & JP12~JP15.

COM2 RS-232/422/485 Select (JP16, JP12~JP15)			
	RS-232*	RS-422	RS-485
JP16			
JP12			
JP13			
JP14			
JP15			

* default

3.1.8 M-Systems DiskOnChip Memory Address Select (JP18)

The M-systems DiskOnChip memory address can be selected by JP18. The choice is D0000~D1FFF, D2000~D3FFF, D4000~D5FFF, D6000~D7FFF.

M-systems DiskOnChip Memory Address Select (JP18)				
	D0000	D2000	D4000	D6000
JP18				

* default

3.2 Connector Definitions

3.2.1 System Reset Connector (J1)

Signal	PIN
Reset	1
GND	2

3.2.2 External Speaker Connector (J2)

Signal	PIN
SPK	1
NC	2
GND	3
VCC	4

3.2.3 Keyboard Lock & Power Indicator Connector (J3)

Signal	PIN
VCC	1
NC	2
GND	3
Keyboard Inhibit	4
GND	5

3.2.4 Primary IDE / Secondary IDE Active Indicator Connector (J4)

Signal	PIN
VCC	1
HDD Active#	2

3.2.5 ATX Power Button Connector (J7)

Signal	PIN
Power Button Control Signal	1
GND	2

3.2.6 Serial Port 1 / Serial Port 2 Connector (J10 & J11)

Signal	PIN		Signal
DCD	1	2	RxD
TxD	3	4	DTR
GND	5	6	DSR
RTS	7	8	CTS
RI	9	10	NC

3.2.7 ATX Power Control Connector (J12)

Signal	PIN
Power Good	1
5V Stand By	2
Power On Control	3
GND	4

3.2.8 Fast & Standard IrDA Connector (J13)

Signal	PIN
+5V	1
FIR	2
IRRX	3
GND	4
IRTX	5
Over Current Off	6

3.2.9 USB Connector (J16)

Signal	PIN CH2	PIN CH1	Signal
NC	9	10	VCC2
GND	7	8	D2-
D1+	5	6	D2+
D1-	3	4	GND
VCC1	1	2	NC

3.2.10 LCD Panel Connector (J17)

Signal	PIN		Signal
LP	2	1	FLM
M	4	3	GND
GND	6	5	SHFCLK
ENVEE	8	7	GND
P6	10	9	P0
P7	12	11	P1
P8	14	13	P2
P9	16	15	P3
P10	18	17	P4
P11	20	19	P5
P18	22	21	P12
P19	24	23	P13
P20	26	25	P14
P21	28	27	P15
P22	30	29	P16
P23	32	31	P17
P30	34	33	P24
P31	36	35	P25
P32	38	37	P26
P33	40	39	P27
P34	42	41	P28
P35	44	43	P29
+3.3V	46	45	+3.3V
+5V	48	47	+5V
+12V	50	49	+12V

3.2.11 Signal Description – LCD Panel Connector (J17)

P[35:30], P[29:24] P[23:18], P[17:12] P[11:6], P[5:0]	Flat panel data output for 9, 12, 18, 24, 12 x 2, or 18 x 2 bit TFT flat panels. Refer to table below for configurations for various panel types. The flat panel data and control outputs are all on-board controlled for secure power-on/off sequencing
SHFCLK	Shift Clock. Pixel clock for flat panel data
LP	Latch Pulse. Flat panel equivalent of HSYNC (horizontal synchronization)
FLM	First Line Marker. Flat panel equivalent of VSYNC (vertical synchronization)
M	Multipurpose signal, function depends on panel type. May be used as AC drive control signal or as BLANK# or Display Enable signal
ENVEE	Enable VEE. Signal to control the panel power-on/off sequencing. A high level may turn on the VEE (LCD bias voltage) supply to the panel

3.2.12 Signal Configuration – DSTN & TFT Panel Displays

	Mono SS	Mono DD	Mono DD	Color TFT	Color TFT	Color TFT	Color TFT-HR	Color STN-SS	Color STN-SS	Color STN-DD	Color STN-DD	Color STN-DD
Pin name	8-bit	8-bit	16-bit	9/12/ 16 bit	18/24 bit	36-bit	18/24 bit	8-bit (4bP)	16-bit (4bP)	8-bit (4bP)	16-bit (4bP)	24-bit
P35						SR5						
P34						SR4						
P33						SR3						
P32						SR2						
P31						SR1						
P30						SR0						
P29						FR5						
P28						FR4						
P27						FR3						
P26						FR2						
P25						FR1						
P24						FR0						
P23					R7	SG5	SR3					LB3
P22					R6	SG4	SR2					LG3
P21					R5	SG3	SR1					LR3
P20					R4	SG2	SR0					UB3
P19					R3	SG1	FR3					UG3
P18					R2	SG0	FR2					UR3
P17					R1	FG5	FR1					LB2
P16					R0	FG4	FR0					LG2
P15			LD0	R4	G7	FG3	SG3				LG2	LR2
P14			LD1	R3	G6	FG2	SG2		B5		LR2	UB2
P13			LD2	R2	G5	FG1	SG1		G5		LB1	UG2
P12			LD3	R1	G4	FG0	SG0		R5		LG1	UR2
P11			LD4	R0	G3	SB5	FG3		B4		UG2	LB1
P10			LD5	G5	G2	SB4	FG2		G4		UR2	LG1
P9			LD6	G4	G1	SB3	FG1		R4		UB1	LR1
P8			LD7	G3	G0	SB2	FG0		B3		UG1	UB1
P7	D7	LD0	UD0	G2	B7	SB1	SB3	B5	G3	LR2	LR1	UG1
P6	D6	LD1	UD1	G1	B6	SB0	SB2	R5	R3	LB1	LB0	UR1
P5	D5	LD2	UD2	G0	B5	FB5	SB1	G4	G2	LG1	LG0	LB0
P4	D4	LD3	UD3	B4	B4	FB4	SB0	B3	B2	LR1	LR0	LG0
P3	D3	UD0	UD4	B3	B3	FB3	FB3	R3	R2	UR2	UR1	LR0
P2	D2	UD1	UD5	B2	B2	FB2	FB2	G2	B1	UB1	UB0	UB0
P1	D1	UD2	UD6	B1	B1	FB1	FB1	B1	G1	UG1	UG0	UG0
P0	D0	UD3	UD7	B0	B0	FB0	FB0	R1	R1	UR1	UR0	UR0

Note:

The principle of attachment of TFT panels is that the bits for red, green, and blue use the most significant bits and skip the least significant bits if the display interface width of the TFT panel is insufficient.

3.2.13 Internal Keyboard Connector (J19)

Signal	PIN
KCLK	1
KDAT	2
NC	3
GND	4
VCC	5

3.2.14 Proprietary PCI Connector (J22)

Signal	PIN		Signal
+12V	1	2	AGND
+12V	3	4	AGND
VSYNC	5	6	RED
GND	7	8	GREEN
HSYNC	9	10	BLUE
CLK	11	12	GND
GND	13	14	PIRQ#
REQ#	15	16	GNT#
AD31	17	18	RST#
AD29	19	20	+3.3V
DEVSEL#	21	22	+3.3V
AD23	23	24	AD30
AD25	25	26	AD28
C/BE3#	27	28	GND
+3.3V	29	30	AD26
+3.3V	31	32	AD24
AD23	33	34	IDSEL
AD21	35	36	AD22
AD19	37	38	AD20
GND	39	40	GND
AD17	41	42	AD18
C/BE2#	43	44	AD16
IRDY#	45	46	FRAME#
PERR#	47	48	TRDY#
SERR#	49	50	PAR
C/BE1#	51	52	STOP#
AD14	53	54	AD15
AD12	55	56	AD13
GND	57	58	AD11
AD10	59	60	LOCK#
AD8	61	62	AD9
GND	63	64	C/BE0#
AD7	65	66	AD6
AD5	67	68	AD4
AD3	69	70	GND
AD1	71	72	AD2
+5V	73	74	AD0
+5V	75	76	GND
+5V	77	78	+3.3V
+5V	79	80	+3.3V