

# **Quick Installation Guide**

## **ECB-660**

**All-in-One Half-size Pentium III/Celeron Single Board with LCD,  
10/100 Base-Tx Ethernet, & AC97 Audio**

3<sup>rd</sup> Ed - 4 February 2002

## **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 UNDESIREDD 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 AGAINST HARMFUL INTERFERENCE WHEN THE EQUIPMENT IS OPERATED IN A COMMERCIAL ENVIRONMENT. THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGY AND, IF NOT INSTALLED 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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To receive the latest version of the user's manual, please visit our Web site at:

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In addition, free technical support is available from Evaluate'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

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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

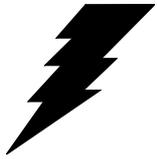
Before you begin installing your single board, please make sure that the following materials have been shipped:

- 1 ECB-660 All-in-One Half-size FC370 Pentium III/Celeron Single Board with LCD, 10/100 Base-Tx Ethernet, & AC97 Audio
- 1 Quick Installation Guide
- 1 Audio jacks, TV, and USB connector daughter board (AUX-001) with bracket
- 1 North Bridge Heat Sink (35\*35\*6mm, GRN. CM346)
- 1 CD-ROM contains the followings:
  - User's Manual (this manual in PDF file)
  - Ethernet driver and utilities
  - VGA drivers and utilities
  - Audio drivers and utilities
  - Latest BIOS (as of the CD-ROM was made)
- Cable set includes the followings:
  - 1 PS/2 keyboard and mouse Y cable (6-pin, Mini-DIN)
  - 1 IDE HDD cable (40-pin, pitch 2.54mm)
  - 1 FDD cable (34-pin, pitch 2.0mm)
  - 1 bracket with one Printer port cable (26-pin, pitch 2.0mm) and one Serial port cable (10-pin, pitch 2.0mm)
  - 1 IDC cable (16-pin, pitch 2.54mm) and 1 flat cable (10-pin, pitch 2.0mm) for connecting the Audio/USB daughter board (AUX-001) to the ECB-660

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

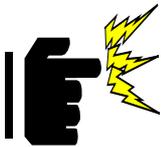
## 1. Safety Precautions

### 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.

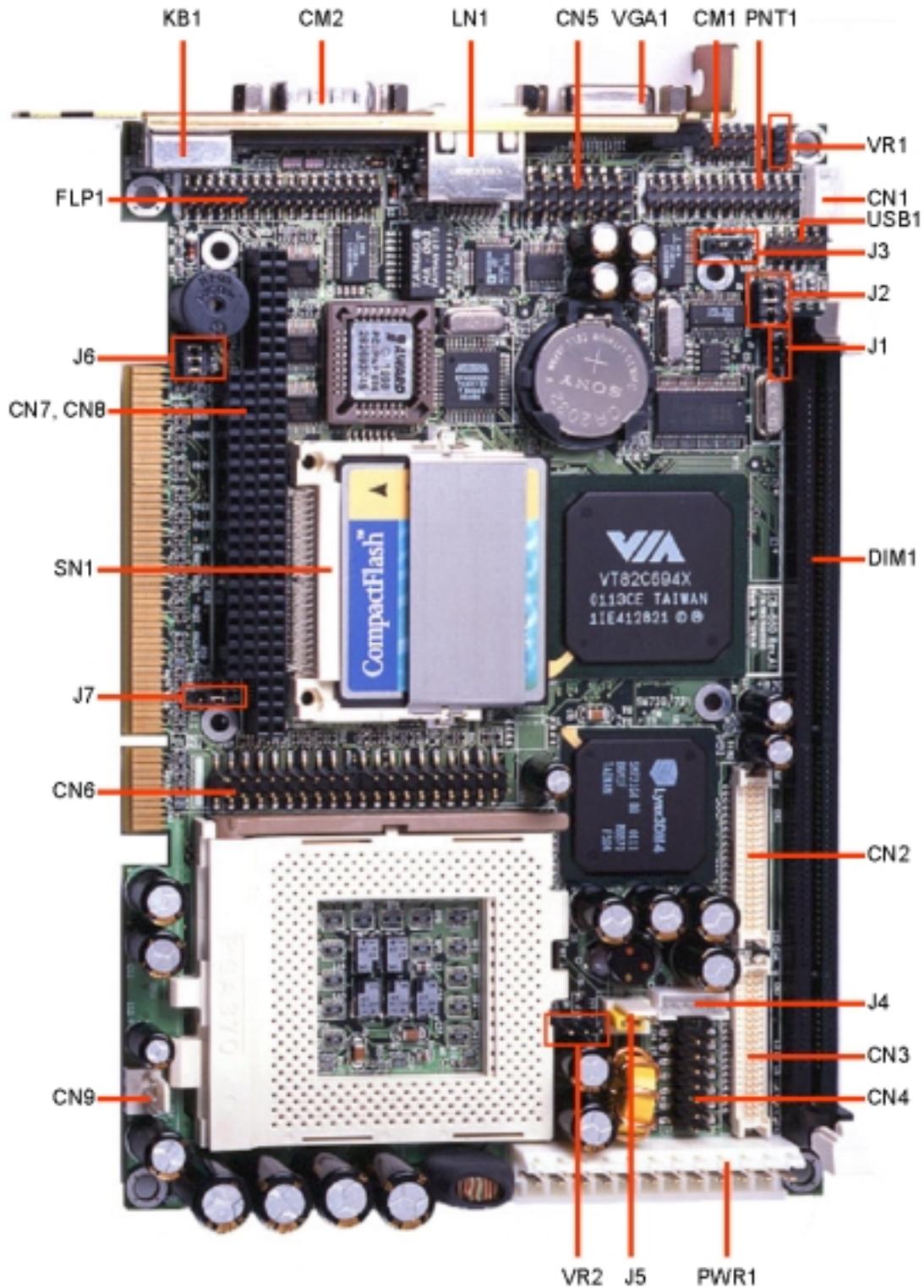
### 1.2 Caution!



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.

<b>Jumpers</b>		
<b>Label</b>	<b>Function</b>	<b>Note</b>
<b>J1, J2</b>	COM2 RS-232/422/485 select	
<b>J3</b>	Clear CMOS	
<b>J4</b>	LCD inverter connector	5 x 1 wafer, pitch 2.0mm
<b>J5</b>	Power connector	3 x 1 wafer, pitch 2.54mm
<b>J6</b>	Reserve for future use	3 x 3 header, pitch 2.0mm
<b>J7</b>	AT/ATX power select	3 x 1 header, pitch 2.0mm

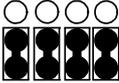
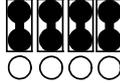
<b>Connectors</b>		
<b>Label</b>	<b>Function</b>	<b>Note</b>
<b>CN1</b>	CD-ROM audio input connector	4 x 1 wafer, pitch 2.0mm
<b>CN2</b>	Secondary LCD panel connector	HIROSE DF13-40DP-1.25V
<b>CN3</b>	Primary LCD panel connector	HIROSE DF13-40DP-1.25V
<b>CN4</b>	IrDA & front panel connector	7 x 2 header, pitch 2.54mm
<b>CN5</b>	Audio / TV output connector	8 x 2 header, pitch 2.54mm
<b>CN6</b>	IDE device connector	20 x 2 header, pitch 2.54mm
<b>CN7, 8</b>	PC/104 connector	
<b>CN9</b>	CPU fan connector	3 x 1 wafer, pitch 2.54mm
<b>CM1</b>	Serial port 2 connector	5 x 2 header, pitch 2.0mm
<b>CM2</b>	Serial port 1 connector	
<b>FLP1</b>	Floppy connector	17 x 2 header, pitch 2.0mm
<b>KB1</b>	Keyboard and PS/2 mouse connector	6-pin mini-DIN
<b>LN1</b>	10/100Base-Tx Ethernet connector	RJ-45
<b>PNT1</b>	Printer port connector	13 x 2 header, pitch 2.0mm
<b>PWR1</b>	Power connector	
<b>SN1</b>	Compact Flash connector	
<b>USB1</b>	USB connector	5 x 2 header, pitch 2.0mm
<b>VGA1</b>	CRT connector	
<b>VR1</b>	STN LCD contrast adjustment connector	3 x 1 header, pitch 2.54mm
<b>VR2</b>	LCD Backlight brightness adjustment connector	3 x 1 header, pitch 2.54mm
<b>DIM1</b>	168-pin DIMM socket	

### 3. Hardware Configuration

#### 3.1 Setting Jumpers

##### 3.1.1 COM2 RS-232/422/485 Select (J1, J2)

The ECB-660 COM2 serial port can be selected as RS-232, RS-422, or RS-485 by setting J1 & J2.

COM2 Select (J1, J2)			
	RS-232*	RS-422	RS-485
J1	1 3 5  2 4 6	1 3 5  2 4 6	1 3 5  2 4 6
	J2	12 9 6 3  10 7 4 1	12 9 6 3  10 7 4 1

\* default

##### 3.1.2 Clear CMOS (J3)

You can use J3 to clear the CMOS data if necessary. To reset the CMOS data, set J3 to 2-3 closed for just a few seconds, and then move the jumper back to 1-2 closed.

Clear CMOS (J3)	
	Protect*      Clear CMOS
J3	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>1 </p> <p>2 </p> <p>3 </p> </div> <div style="text-align: center;"> <p>1 </p> <p>2 </p> <p>3 </p> </div> </div>

\* default

### 3.1.3 AT/ATX Power Select (J7)

You can use J7 to select the power supply type. To use the AT power supply, set J7 to 1-2 closed. Set J7 to 2-3 closed, if ATX power supply is to be used.

AT/ATX Power Select (J7)		
	AT P/S*	ATX P/S
J7	1  2  3 	1  2  3 

\* default

**Note:**

Set J5 to 2-3 closed. If AT power supply is to be used.

### 3.2 Connector Definitions

#### 3.2.1 CD-ROM Audio Input Connector (CN1)

Signal	PIN
CD_R	4
CD_GND	3
CD_L	2
CD_GND	1

#### 3.2.2 Secondary LCD Panel Connector (CN2)

Signal	PIN		Signal
ENBKL	39	40	ENVEE
P15	37	38	P22
LVDSCLK	35	36	P23
GND	33	34	GND
P46	31	32	P47
P44	29	30	P45
P42	27	28	P43
P40	25	26	P41
P38	23	24	P39
P36	21	22	P37
P34	19	20	P35
P32	17	18	P33
P30	15	16	P31
P28	13	14	P29
P26	11	12	P27
P24	9	10	P25
Vcon	7	8	GND
3.3V	5	6	3.3V
GND	3	4	GND
5V	1	2	5V

### 3.2.3 Primary LCD Panel Connector (CN3)

Signal	PIN		Signal
ENBKL	39	40	ENVEE
M	37	38	LP
SHFCLK	35	36	FLM
GND	33	34	GND
P22	31	32	P23
P20	29	30	P21
P18	27	28	P19
P16	25	26	P17
P14	23	24	P15
P12	21	22	P13
P10	19	20	P11
P8	17	18	P9
P6	15	16	P7
P4	13	14	P5
P2	11	12	P3
P0	9	10	P1
Vcon	7	8	GND
3.3V	5	6	3.3V
GND	3	4	GND
5V	1	2	5V

### 3.2.4 Signal Description – Primary & Secondary LCD Panel Connector (CN3, CN2)

P47..0	<p>Flat Panel Data Bit 47 to Bit 0 for single panel implementation.</p> <p>For Dual Panel Implementation</p> <p>Panel 1: P21-16, P13-8, P5-0, panel1data</p> <p>Panel 2: P23, LP2 / HSYNC2</p> <p style="padding-left: 40px;">P22, FLM2 / VSYNC2</p> <p style="padding-left: 40px;">P15, M2</p> <p style="padding-left: 40px;">P47-P24, panel 2 data</p> <p>Note: P14, P7, P6 are not used for Dual Panel Implementation. LVDSCLK used as SHFCLK2.</p> <p>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</p>
SHFCLK	Shift Clock. Pixel clock for flat panel data
LVDSCLK	This pin is used as SHFCLK2 for dual panel configuration
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
ENBKL	Enable backlight signal. This signal is controlled as a part of the panel power sequencing
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

### 3.2.5 Signal Configuration – DSTN & TFT Panel Displays

Pin name	DSTN		TFT				
	16-bit	24-bit	9-bit	12-bit	18-bit	24-bit	12-bit x 2
P35							
P34							
P33							
P32							
P31							
P30							
P29							
P28							
P27							
P26							
P25							
P24							
P23		UD11				R7	RB3
P22		UD10				R6	RB2
P21		UD9			R5	R5	RB1
P20		UD8			R4	R4	RB0
P19	UD7	UD7		R3	R3	R3	RA3
P18	UD6	UD6	R2	R2	R2	R2	RA2
P17	UD5	UD5	R1	R1	R1	R1	RA1
P16	UD4	UD4	R0	R0	R0	R0	RA0
P15	UD3	UD3				G7	GB3
P14	UD2	UD2				G6	GB2
P13	UD1	UD1			G5	G5	GB1
P12	UD0	UD0			G4	G4	GB0
P11		LD11		G3	G3	G3	GA3
P10		LD10	G2	G2	G2	G2	GA2
P9		LD9	G1	G1	G1	G1	GA1
P8		LD8	G0	G0	G0	G0	GA0
P7	LD7	LD7				B7	BB3
P6	LD6	LD6				B6	BB2
P5	LD5	LD5			B5	B5	BB1
P4	LD4	LD4			B4	B4	BB0
P3	LD3	LD3		B3	B3	B3	BA3
P2	LD2	LD2	B2	B2	B2	B2	BA2
P1	LD1	LD1	B1	B1	B1	B1	BA1
P0	LD0	LD0	B0	B0	B0	B0	BA0

Pin name	24-bit x 2 TFT	TFTs: FP1 + FP2	18-bit x 2 TFT	24-bit TFT
P47	RB7	FP2_R7	RB5	
P46	RB6	FP2_R6	RB4	
P45	RA7	FP2_R5	RA5	
P44	RA6	FP2_R4	RA4	
P43	GB7	FP2_R3	GB5	
P42	GB6	FP2_R2	GB4	
P41	GA7	FP2_R1	GA5	
P40	GA6	FP2_R0	GA4	
P39	BB7	FP2_G7	BB5	
P38	BB6	FP2_G6	BB4	
P37	BA7	FP2_G5	BA5	
P36	BA6	FP2_G4	BA4	
P35	RB5	FP2_G3	RB3	
P34	RB4	FP2_G2	RB2	
P33	RA5	FP2_G1	RA3	
P32	RA4	FP2_G0	RA2	
P31	GB5	FP2_B7	GB3	
P30	GB4	FP2_B6	GB2	
P29	GA5	FP2_B5	GA3	
P28	GA4	FP2_B4	GA2	
P27	BB5	FP2_B3	BB3	
P26	BB4	FP2_B2	BB2	
P25	BA5	FP2_B1	BA3	
P24	BA4	FP2_B0	BA2	
P23	RB3	FP2_VSYNC	RB1	R7
P22	RB2	FP2_HSYNC	RB0	R6
P21	RB1	FP1_R5		R5
P20	RB0	FP1_R4		R4
P19	RA3	FP1_R3	RA1	R3
P18	RA2	FP1_R2	RA0	R2
P17	RA1	FP1_R1		R1
P16	RA0	FP1_R0		R0
P15	GB3	FP2_DE	GB1	G7
P14	GB2		GB0	G6
P13	GB1	FP1_G5		G5
P12	GB0	FP1_G4		G4
P11	GA3	FP1_G3	GA1	G3
P10	GA2	FP1_G2	GA0	G2

Pin name	24-bit x 2 TFT	TFTs: FP1 + FP2	18-bit x 2 TFT	24-bit TFT
P9	GA1	FP1_G1		G1
P8	GA0	FP1_G0		G0
P7	BB3		BB1	B7
P6	BB2		BB0	B6
P5	BB1	FP1_B5		B5
P4	BB0	FP1_B4		B4
P3	BA3	FP1_B3	BA1	B3
P2	BA2	FP1_B2	BA0	B2
P1	BA1	FP1_B1		B1
P0	BA0	FP1_B0		B0

**Note:**

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

**3.2.6 IrDA & Front Panel Connector (CN4)**

Signal	PIN		Signal
VCC	1	8	VCC
NC	2	9	SPK
IRRX	3	10	NC
GND	4	11	PWBTI
IRTX	5	12	GND
RSTIN	6	13	HDLED+
GND	7	14	HDLED-

**3.2.7 Audio / TV output Connector (CN5)**

Signal	PIN		Signal
COMP	16	15	GND
Cout	14	13	GND
Yout	12	11	AGND
Line-In R	10	9	Line-In L
SPK R	8	7	SPK L
Line-Out R	6	5	Line-Out L
AGND	4	3	AGND
Mic Bias	2	1	Mic

**3.2.8 Pin Header Serial Port 2 Connector in RS-232 Mode (CM1)**

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

**3.2.9 Serial Port 2 with External DB9 Connector (CM1)**

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

**3.2.10 Pin Header Serial Port 2 Connector in RS-422 Mode (CM1)**

Signal	PIN		Signal
NC	10	9	NC
NC	8	7	NC
NC	6	5	NC
Rx-	4	3	Tx+
Rx+	2	1	Tx-

**3.2.11 Pin Header Serial Port 2 Connector in RS-485 Mode (CM1)**

Signal	PIN		Signal
NC	10	9	NC
NC	8	7	NC
NC	6	5	NC
NC	4	3	DATA+
NC	2	1	DATA-

### 3.2.12 LCD Inverter Connector (J4)

Signal	PIN
+12V	1
GND	2
ENBKL	3
VR	4
VCC	5

**Note:**

For inverters with adjustable backlight function, it is possible to control the LCD brightness through the VR signal (pin 4) controlled by **VR2**. Please see the VR2 section for detailed circuitry information.

### 3.2.13 Power Connector (J5)

Signal	PIN
PSON#	1
VCC	2
VCCSB	3

**Note:**

Set J5 to 2-3 closed. If AT power supply is to be used.

**3.2.14 Power Connector 1 (PWR1)**

Signal	PIN
NC	1
VCC	2
+12V	3
-12V	4
GND	5
GND	6
GND	7
GND	8
-5V	9
VCC	10
VCC	11
VCC	12

**3.2.15 USB Connector (USB1)**

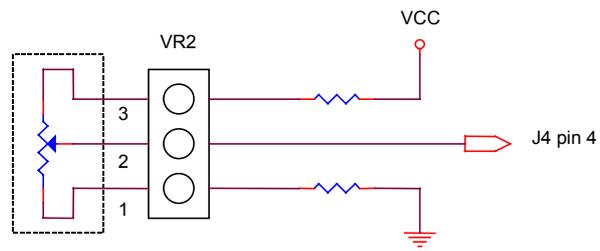
Signal	PIN		Signal
	CH2	CH1	
VCC2	10	9	GND
D2-	8	7	GND
D2+	6	5	D1+
GND	4	3	D1-
GND	2	1	VCC1

**3.2.16 STN LCD Contrast Adjustment Connector (VR1)**

Signal	PIN
VCC3	3
Vcon	2
GND	1

### 3.2.17 LCD Backlight Brightness Adjustment Connector (VR2)

Signal	PIN
GND	1
VBR	2
VCC	3



Variation Resistor (Recommended: 4.7K $\Omega$ , >1/16W)

