

# **Quick Installation Guide**

## **PCM-6892E**

**All-in-One FC 370 Pentium III/Celeron Single Board with LCD,  
AC97 Audio, Dual 10/100Base-Tx Ethernet Interfaces, & 4COMs**

1<sup>st</sup> Ed - 20 March 2001

## 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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In addition, free technical support is available from EMAC'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.

### **EMAC, Inc.**

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1. Collect all the information about the problem encountered. (For example, CPU type and speed, EMAC product 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

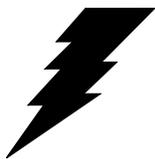
Before you begin installing your single board, please make sure that the following materials have been shipped:

- 1 PCM-6892E All-in-One FC370 Pentium III/Celeron Computing Module
- 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
  - Audio drivers and utilities
  - Latest BIOS (as of the CD-ROM was made)

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

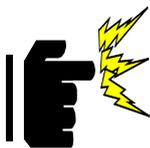
## 1. Safety Precautions

### 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.

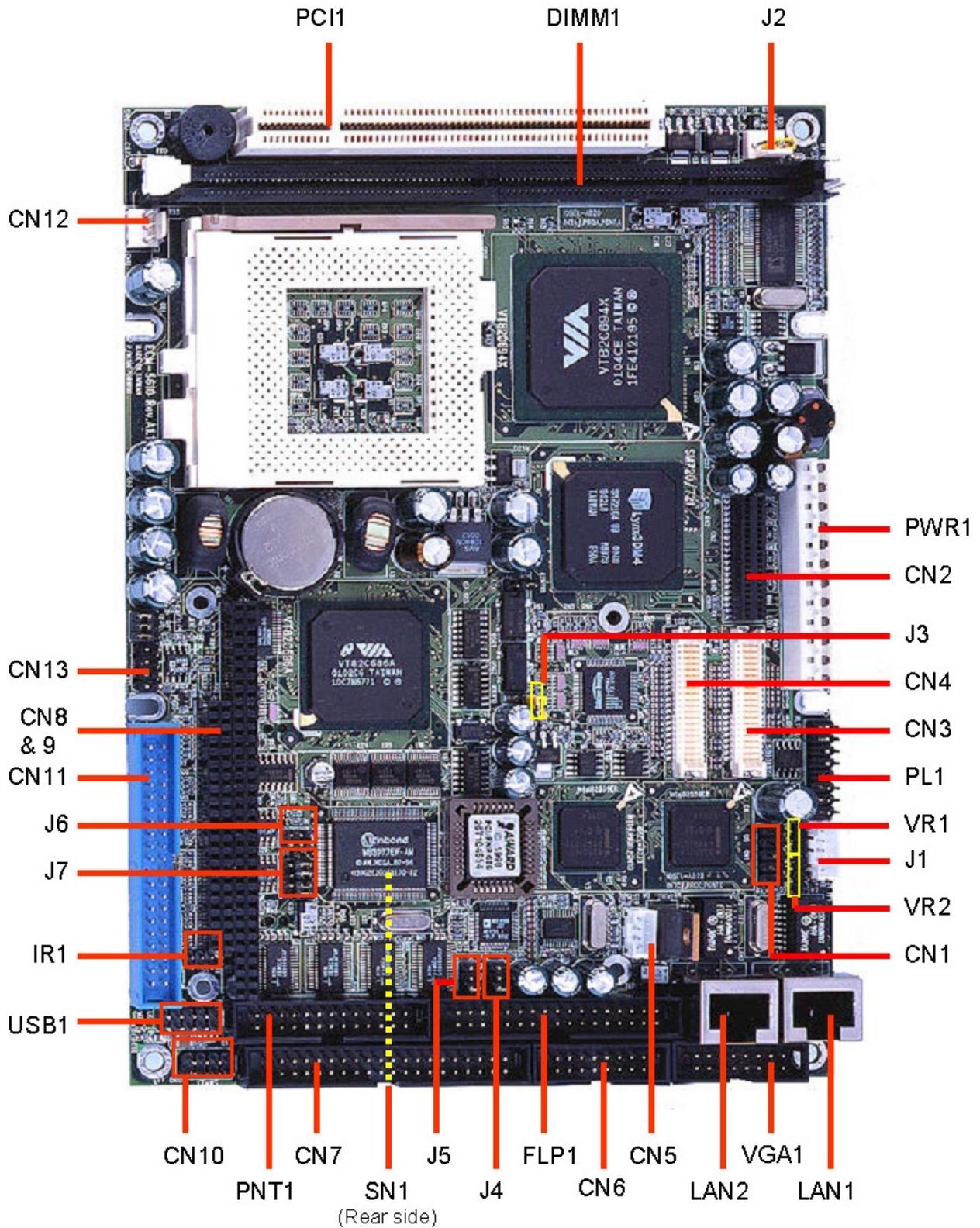
### 1.2 Caution!



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</b>	LCD inverter connector	5 x 1 wafer, pitch 2.0mm
<b>J2</b>	Power connector	3 x 1 wafer, pitch 2.54mm
<b>J3</b>	Clear CMOS	3 x 1 header, pitch 2.54mm
<b>J4</b>	COM4 pin 9 signal select	3 x 2 header, pitch 2.0mm
<b>J5</b>	COM3 pin 9 signal select	3 x 2 header, pitch 2.0mm
<b>J6, J7</b>	COM2 RS-232/422/485 select	3 x 2 header, pitch 2.0mm 4 x 3 header, pitch 2.0mm (J7)
<b>J8</b>	Reserve for future use	3 x 3 header, pitch 2.0mm

<b>Connectors</b>		
<b>Label</b>	<b>Function</b>	<b>Note</b>
<b>CN1</b>	Ethernet 1 / 2 LED connector	5 x 2 header, pitch 2.54mm
<b>CN2</b>	Zoom Video port connector	Samtec CLM-120-02-L-D
<b>CN3</b>	Primary LCD panel connector	HIROSE DF13-40DP-1.25V
<b>CN4</b>	Secondary LCD panel connector	HIROSE DF13-40DP-1.25V
<b>CN5</b>	CD-ROM audio input connector	4 x 1 wafer, pitch 2.0mm
<b>CN6</b>	Audio / TV output connector	8 x 2 header, pitch 2.54mm
<b>CN7</b>	Serial port 1 / 2 / 3 / 4 connector	20 x 2 header, pitch 2.54mm
<b>CN8, 9</b>	PC/104 connector	
<b>CN10</b>	Keyboard and PS/2 mouse connector	4 x 2 header, pitch 2.54mm
<b>CN11</b>	IDE device connector	20 x 2 header, pitch 2.54mm
<b>CN12</b>	CPU fan connector	3 x 1 wafer, pitch 2.54mm
<b>CN13</b>	Front panel connector	4 x 2 header, pitch 2.54mm
<b>FLP1</b>	Floppy connector	17 x 2 header, pitch 2.54mm
<b>IR1</b>	IrDA connector	3 x 2 header, pitch 2.0mm
<b>LAN1</b>	10/100Base-Tx Ethernet 1 connector	RJ-45
<b>LAN2</b>	10/100Base-Tx Ethernet 2 connector	RJ-45
<b>PL1</b>	Panel link connector (Optional)	8 x 2 header, pitch 2.54mm
<b>PNT1</b>	Printer port connector	13 x 2 header, pitch 2.54mm
<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	8 x 2 header, pitch 2.54mm
<b>VR1</b>	LCD Backlight brightness adjustment connector	3 x 1 header, pitch 2.54mm
<b>VR2</b>	STN LCD contrast adjustment connector	3 x 1 header, pitch 2.54mm
<b>DIM1</b>	168-pin DIMM socket	

### 3. Hardware Configuration

#### 3.1 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.

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Clear CMOS (J3)

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	Protect*	Clear CMOS
J3	<p>1 2 3</p> 	<p>1 2 3</p> 

---

\* default

### 3.2 COM3 / 4 Pin 9 Signal Select (J5 / J4)

The PCM-6892E COM3 / 4 pin 9 signal can be selected as +12V, +5V, or Ring by setting J5 / J4.

COM3 Select (J5)			
	+12V	+5V	Ring*
	1 3 5	1 3 5	1 3 5
J5			
	2 4 6	2 4 6	2 4 6

\* default

COM4 Select (J4)			
	+12V	+5V	Ring*
	1 3 5	1 3 5	1 3 5
J4			
	2 4 6	2 4 6	2 4 6

\* default

### 3.3 COM2 RS-232/422/485 Select (J6, J7)

The PCM-6892E COM2 serial port can be selected as RS-232, RS-422, or RS-485 by setting J6 & J7.

COM2 Select (J6, J7)		RS-232*	RS-422	RS-485
J6				
J7				

\* default

### 3.4 Connector Definitions

#### 3.4.1 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

#### 3.4.2 LCD Inverter Connector (J1)

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

### 3.4.3 Auxiliary Power Connector (J2)

Signal	PIN
VCCSB	3
VCC	2
PSON#	1

**Note:**

Set J2 to 2-3 closed if AT power supply is to be used.

### 3.4.4 Ethernet 1 / 2 LED Connector (CN1)

Signal	PIN		Signal
NC	10	9	NC
SPDLED2#	8	7	VCC3SB
LILED2#	6	5	ACTLED2#
SPDLED1#	4	3	VCC3SB
LILED1#	2	1	ACTLED1#

### 3.4.5 Zoom Video Port Connector (CN2)

Signal	PIN		Signal
GND	1	2	P0
GND	3	4	P1
GND	5	6	P2
GND	7	8	P3
GND	9	10	P4
GND	11	12	P5
GND	13	14	P6
GND	15	16	P7
GND	17	18	P8
GND	19	20	P9
NC	21	22	P10
NC	23	24	P11
NC	25	26	P12
NC	27	28	P13
NC	29	30	P14
NC	31	32	P15
DDCCLK	33	34	BLANK
DDCDAT	35	36	HREF
3.3V	37	38	PCLK
3.3V	39	40	VREF

### 3.4.6 Primary LCD Panel Connector (CN3)

Signal	PIN		Signal
VDDSAFE5	2	1	VDDSAFE5
GND	4	3	GND
VDDSAFE3	6	5	VDDSAFE3
GND	8	7	Vcon
P1	10	9	P0
P3	12	11	P2
P5	14	13	P4
P7	16	15	P6
P9	18	17	P8
P11	20	19	P10
P13	22	21	P12
P15	24	23	P14
P17	26	25	P16
P19	28	27	P18
P21	30	29	P20
P23	32	31	P22
GND	34	33	GND
FLM	36	35	SHFCLK
LP	38	37	M
ENVEE	40	39	ENBKL

**3.4.7 Secondary LCD Panel Connector (CN4)**

Signal	PIN		Signal
VDDSAFE5	2	1	VDDSAFE5
GND	4	3	GND
VDDSAFE3	6	5	VDDSAFE3
GND	8	7	Vcon
P25	10	9	P24
P27	12	11	P26
P29	14	13	P28
P31	16	15	P30
P33	18	17	P32
P35	20	19	P34
P37	22	21	P36
P39	24	23	P38
P41	26	25	P40
P43	28	27	P42
P45	30	29	P44
P47	32	31	P46
GND	34	33	GND
P23	36	35	LVDSCLK
P22	38	37	P15
ENVEE	40	39	ENBKL

### 3.4.8 Signal Description – Primary & Secondary LCD Panel Connector (CN3, CN4)

P [47:0]	<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

## 3.4.9 Signal Configuration – DSTN &amp; TFT Panel Displays

Pin name	DSTN				TFT			
	16-bit	24-bit	9-bit	12-bit	18-bit	24-bit	12-bit x 2	18-bit x 2
P35								RB5
P34								RB4
P33								RA5
P32								RA4
P31								GB5
P30								GB4
P29								GA5
P28								GA4
P27								BB5
P26								BB4
P25								BA5
P24								BA4
P23		UD11				R7	RB3	RB3
P22		UD10				R6	RB2	RB2
P21		UD9			R5	R5	RB1	RB1
P20		UD8			R4	R4	RB0	RB0
P19	UD7	UD7		R3	R3	R3	RA3	RA3
P18	UD6	UD6	R2	R2	R2	R2	RA2	RA2
P17	UD5	UD5	R1	R1	R1	R1	RA1	RA1
P16	UD4	UD4	R0	R0	R0	R0	RA0	RA0
P15	UD3	UD3				G7	GB3	GB3
P14	UD2	UD2				G6	GB2	GB2
P13	UD1	UD1			G5	G5	GB1	GB1
P12	UD0	UD0			G4	G4	GB0	GB0
P11		LD11		G3	G3	G3	GA3	GA3
P10		LD10	G2	G2	G2	G2	GA2	GA2
P9		LD9	G1	G1	G1	G1	GA1	GA1
P8		LD8	G0	G0	G0	G0	GA0	GA0
P7	LD7	LD7				B7	BB3	BB3
P6	LD6	LD6				B6	BB2	BB2
P5	LD5	LD5			B5	B5	BB1	BB1
P4	LD4	LD4			B4	B4	BB0	BB0
P3	LD3	LD3		B3	B3	B3	BA3	BA3
P2	LD2	LD2	B2	B2	B2	B2	BA2	BA2
P1	LD1	LD1	B1	B1	B1	B1	BA1	BA1
P0	LD0	LD0	B0	B0	B0	B0	BA0	BA0

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

## PCM-6892E

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

**3.4.10 CD-ROM Audio Input Connector (CN5)**

Signal	PIN
CD_R	4
CD_GND	3
CD_L	2
CD_GND	1

**3.4.11 Audio / TV Output Connector (CN6)**

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

**3.4.12 Pin Header Serial Port 1 / 2 / 3 / 4 Connector in RS-232 Mode (CN7)**

Signal	PIN		Signal
NC	40	39	RI4/5V/12V
CTS4	38	37	RTS4
DSR4	36	35	GND
DTR4	34	33	TxD4
RxD4	32	31	DCD4
NC	30	29	RI3/5V/12V
CTS3	28	27	RTS3
DSR3	26	25	GND
DTR3	24	23	TxD3
RxD3	22	21	DCD3
NC	20	19	RI2
CTS2	18	17	RTS2
DSR2	16	15	GND
DTR2	14	13	TxD2
RxD2	12	11	DCD2
NC	10	9	RI1
CTS1	8	7	RTS1
DSR1	6	5	GND
DTR1	4	3	TxD1
RxD1	2	1	DCD1

**3.4.13 Serial Port 1 / 2 / 3 / 4 with External DB9 Connector**

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

**3.4.14 Pin Header Serial Port 2 Connector (CN7 / Pin 11~20) in RS-422 Mode**

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

**3.4.15 Pin Header Serial Port 2 Connector (CN7 / Pin 11~20) in RS-485 Mode**

Signal	PIN		Signal
NC	10	9	CTS/RTS +
NC	8	7	CTS/RTS -
NC	6	5	GND
RxD/TxD +	4	3	RxD/TxD -
NC	2	1	NC

**3.4.16 Keyboard and PS/2 Mouse Connector (CN10)**

Signal	PIN		Signal
		4	NC
MCLK	7	3	MDAT
VCC	6	2	GND
KCLK	5	1	KDAT

**3.4.17 Front Panel Connector (CN13)**

Signal	PIN		Signal
RSTIN	4	8	GND
PWBTI	3	7	GND
GND	2	6	SPK
HD_LED	1	5	VCC

**3.4.18 IrDA Connector (IR1)**

Signal	PIN		Signal
NC	2	1	VCC
GND	4	3	IRX
NC	6	5	ITX

**3.4.19 Panel Link Connector (PL1, Optional)**

Signal	PIN		Signal
3.3V	16	15	5V
Txc-	14	13	Txc+
Tx0+	12	11	Tx0-
Tx1+	10	9	Tx1-
Tx2+	8	7	Tx2-
PEDGE	6	5	GND
GND	4	3	PDDCDAT
PDDCCLK	2	1	GND

**3.4.20 USB Connector (USB1)**

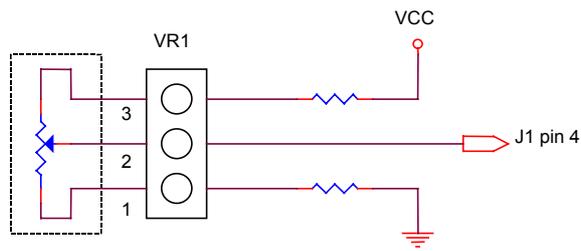
Signal	PIN		Signal
	CH2	CH1	
VCC2	10	9	GND
D2-	8	7	GND
D2+	6	5	D1+
GND	4	3	D1-
GND	2	1	VCC1

**3.4.21 CRT Connector (VGA1)**

Signal	PIN		Signal
NC	16	8	GND
DCLK	15	7	GND
VSYNC	14	6	GND
HSYNC	13	5	GND
DAT	12	4	NC
NC	11	3	BLUE
GND	10	2	GREEN
VCC	9	1	RED

### 3.4.22 LCD Backlight Brightness Adjustment Connector (VR1)

Signal	PIN
VCC	3
VBR	2
GND	1



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

### 3.4.23 STN LCD Contrast Adjustment Connector (VR2)

Signal	PIN
VCC	3
VCS	2
GND	1

