

# PCM-5864/5864L Pentium® SBC with VGA LCD/Ethernet/LVDS/Audio Start-up Manual

## Packing list

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

- 1 PCM-5864/5864L All-in-one single board computer
- 1 Start-up manual
- 1 CPU cooling fan
- CD-ROM or Disks for utility, drivers, and manual (in PDF format)

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

*Note: For detailed contents of the PCM-5864/5864L, please refer to the enclosed CD-ROM or Disk (in PDF format).-*

For more information on this and other Advantech products, please visit our website at:

<http://www.advantech.com>  
<http://www.advantech.com/epc>

For technical support and service, please visit our support website at:

<http://support.advantech.com>

This manual is for the PCM-5864/5864L Rev. A1 or higher.

Part No. 2006586410  
Printed in Taiwan

1st edition  
July 1999

## Specifications

### Standard SBC functions

- **CPU:** Socket 7 for Intel® Pentium®, Pentium® MMX, AMD K6-II processor
- **BIOS:** Award 256 KB Flash memory
- **System memory:** One 168-pin DIMM socket accepts 16 up to 128 MB SDRAM
- **Enhanced IDE interface:** One channel for two EIDE devices. BIOS auto-detect. PIO Mode 3 or Mode 4, UDMA/33 transfer. One channel for CFC
- **FDD interface:** Supports up to two FDDs
- **Serial ports:** Four serial RS-232 ports with +5 V or +12 V power capabilities. COM 1,3,4: RS-232, COM2: RS-232/422/485
- **Parallel port:** One parallel port, supports SPP/EPP/ECP mode

- **Infrared port:** Shared with COM2. Transfer rates up to 4 Mbps
- **Keyboard/mouse connector:** Supports standard PC/AT keyboard and a PS/2 mouse
- **Power management:** Supports power saving modes including Normal/Standby/Suspend modes. APM 1.1 compliant
- **Watchdog timer:** 63 level timer intervals
- **USB:** 2 Universal Serial Bus ports

### Solid state disk

- Supports one 50-pin socket for CompactFlash card

### VGA/LCD Interface

- **Chipset:** C&T 69000 2 MB SDRAM on chip
- **Interface:** PCI interface, 64-bit engine
- **Display mode:** Flat panel displays up to 800 x 600 @ 24 bpp, 1024 x 768 @ 16 bpp. CRT monitors up to 800 x 600 @ 24 bpp, 1024 x 768 @ 16 bpp

### LVDS interface (PCM-5864 only)

- **Chipset:** TI SN75LVDS81 or NS DS90CR5803
- **Interface:** 18 low-voltage TTL data channel meets ANSI EIA/TIA-644

### Audio function (PCM-5864 only)

- **AC97 compatible, integrated 3D audio**
- **Interface:** Mic in, Line in, CD audio in, Line out, Speaker out

### Video in/ Video out (PCM-5864 only)

- **Chipset:** Philips SDA 7111A for Video in; analog device AD725AR for TV out
- **Connectors:** Pin header via optional cable connects to RCA connector or S-video connector
- **Format:** NTSC or PAL , YUV 422 quality with RGB 16 format. Supports live video capture up to 10 ~ 15 fps at 320 x 240 resolution

### Mechanical and environmental

- **Dimension (L x W):** 203 mm x 146 mm (8" x 5.75")
- **Power supply voltage:** +5 V ± 5%
- **Power requirements:** 7 A @ +5 V
- **Operating temperature:** 0 ~ 60° C
- **Weight:** 0.7 kg (weight of total package)

# Jumpers and connectors

The board has a number of jumpers that allow you to configure your system to suit your application.

The table below lists the function of each of the board jumpers and connectors:

## Jumpers

Label	Function
J3	CPU voltage setting
J5	CPU frequency ratio setting
J6	Reserved
J7	Clear CMOS
J8	Backlight signal select
J9	System/PCI clock setting
J10	PCI clock setting
J11	COM4 RI pin setting
J12	COM3 RI pin setting
J13	CompactFlash enable/disable
J14	COM1 RI pin setting
J15	COM2 RI pin setting
J16	LCD power select
J17	Reserved
J18	Buzzer enable setting
J19	COM2 RS-232/422/485 setting
J20	COM2 RS-232/422/485 setting
J21	COM2 RS-232/422/485 setting
J22	Shift clock setting
J23	Audio power source setting
J25	TV out format select
JP1	ATX power switch
JP2	Watchdog timer action

## Connectors

Label	Function
CN1	CPU fan connector
CN2	Motherboard fan connector
CN3	Ethernet connector
CN4	Audio connector
CN5	PCI connector
CN6	CD Audio input connector
CN7	AUX Line in connector
CN8	Main power connector
CN9	Keyboard & PS/2 mouse connector
CN10	Floppy drive connector
CN11	PC/104 ISA-bus expansion
CN12	IDE hard drive connector
CN13	Reserved connector
CN14	Parallel port connector
CN15	Front panel connector
CN16	USB connector (channel 1 & 2)
CN17	IR connector
CN18	CRT display connector
CN19	Video out connector
CN20	Flat panel connector
CN21	Ext. flat panel connector
CN22	Peripheral power connector
CN23	COM port connector

CN30	Video in (capture)
CN501	CompactFlash connector
CN502	Speaker out connector (for video play back)
DIM1	DIMM socket
J1	ATX power feature connector
JP3	LVDS connector

## CPU voltage setting (J3)

J3 must be set to match the CPU type. The chart below shows the proper jumper settings for their respective  $V_{CC(CORE)}$ . The  $V_{CC(I/O)}$  for the CPU is fixed to be 3.3 V.

### J3: CPU voltage setting

$V_{CC(CORE)}$	1-2	3-4	5-6	7-8
NONE	open	open	open	open
2.10 V	closed	open	open	open
2.20 V	open	closed	open	open
2.30 V	closed	closed	open	open
2.40 V	open	open	closed	open
2.50 V	closed	open	closed	open
2.60 V	open	closed	closed	open
2.70 V	closed	closed	closed	open
2.80 V	open	open	open	closed
2.90 V	closed	open	open	closed
3.00 V	open	closed	open	closed
3.10 V	closed	closed	open	closed
3.20 V	open	open	closed	closed
3.30 V	closed	open	closed	closed
3.40 V	open	closed	closed	closed
3.50 V	closed	closed	closed	closed

## J5: CPU frequency ratio

1.5 /3.5	2*	2.5	3	4
4.5	5	5.5 (reserve)		

## J7: CMOS clear

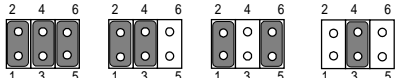
Closed Pins	Result
1-2	Normal (3 V battery on)*
2-3	Clear CMOS

## J8: Backlight signal select

Positive signal*	Negative signal

J9: System/PCI clock setting

System	50 MHz	60 MHz	*66 MHz	75 MHz
PCI	25 MHz	30 MHz	*33.3 MHz	37.5 MHz



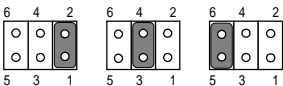
J10: PCI/clock setting

**\*33 MHz CPU CLK/2**



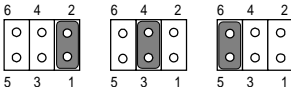
J11: COM4 RI pin setting

**+5 V +12 V \*RI**



J12: COM3 RI pin setting

**+5 V +12 V \*RI**

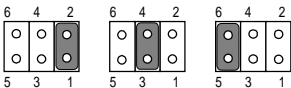


J13: CompactFlash enable/disable

Pins	Result
closed	enable*
open	disable

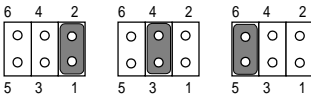
J14: COM1 RI pin setting

**+5 V +12 V \*RI**



J15: COM2 RI pin setting

**+5 v +12 V \*RI**



J16: LCD power setting

**\*5 V 3.3 V**

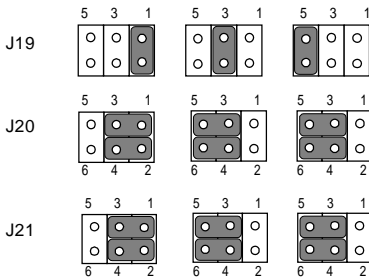


J18 Buzzer enable/disable

Closed pins	Result
Closed	Buzzer enable*
Open	Buzzer disable

J19 ~ J21: COM2 RS-232/422/485 setting

**\*RS-232 RS-422 RS-485**

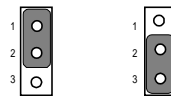


J22: LCD shift clock setting

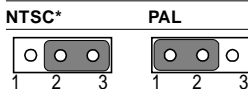
Closed pins	Result
1-2	shift clock*
2-3	# shift clock

J23: Audio power setting

**\*+5 V (V<sub>CC</sub>) +12 V (regulator)**



J25: TV out format select



JP1: ATX power switch

ATX power on/off toggle button

JP2: Watchdog timer action

Closed Pins	Result
1-2	system reset*
2-3	IRQ11

\*default setting

