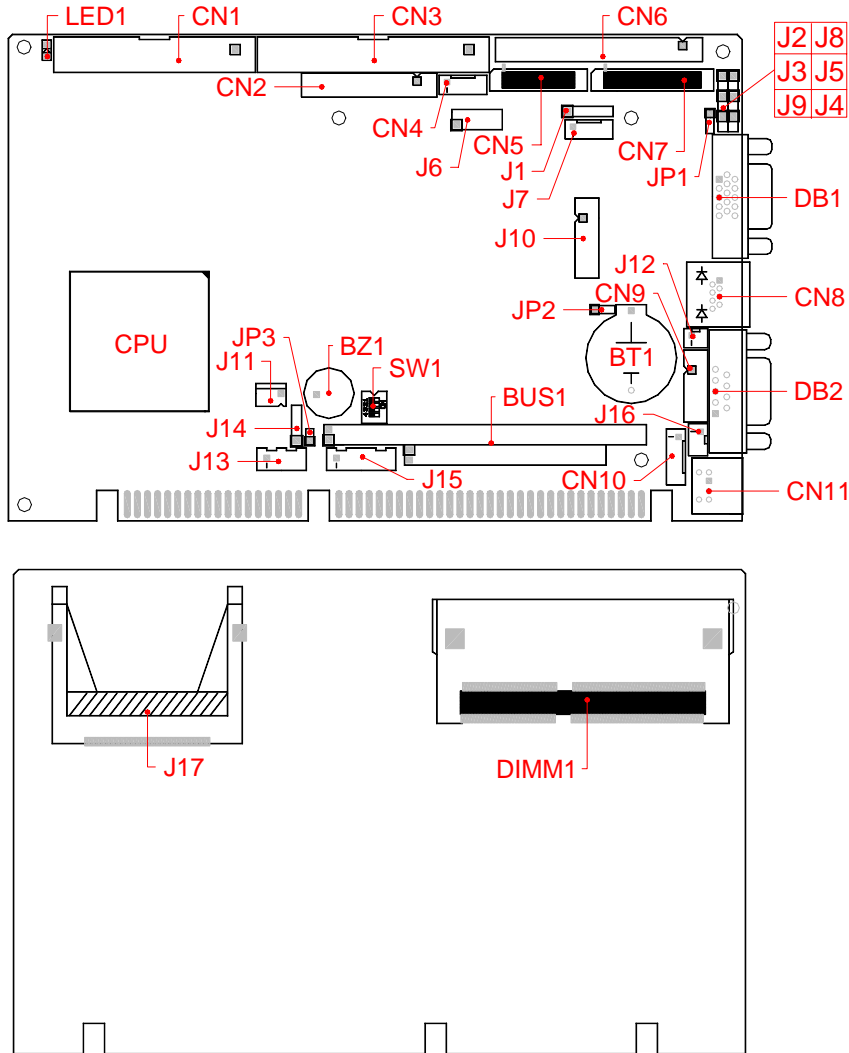


1. Brief

The FB2504 is a Low power PII Grade, all in one, half-size CPU card. This user's quick setting provides the jumper and switch settings, connector location, and their pin assignment.

2. Board Placement



3. Packing List

- 1 FB2504 all-in-one CPU board.
- 1 40-pin hard disk drive interface cable and 1 34-pin floppy drive interface cable.
- 1 serial port and parallel port interface cable with bracket.
- 1 PS/2 keyboard and mouse port adapter cable. (Optional)
- 1 USB cable, 1 Audio cable, and 1 FB4641x Audio adapter board. (All are optional items)
- 1 compact disc includes software utilities and manuals.

4. Features

- * On-board Intel ULV Celeron 400MHz CPU with heat sink only. (Fanless operation)
- * Compact size slot card with ISA and PC/104 bus.
- * VIA VT8601T+VT82C686B chipset and 256KB L2 cache inside the CPUs.
- * On-board 32MB SDRAM and 1 SoDIMM socket for up to 544MB maximum.
- * 2 USB ports, 10/100M-TX Ethernet with RJ-45 connector.
- * Supports CRT with up to 8MB shared memory.
- * 1 floppy, 2 PCI IDE, 1 parallel, 1 RS-232 and 1 RS-232/422/485/IrDA ports.
- * CompactFlash socket for 3.3V CompactFlash and MicroDrives.
- * PS/2 keyboard and mouse interface, 4-bit TTL I/O, On-board buzzer, and LED indicator.
- * Optional 1 CPU cooling fan connector with hardware monitoring functions.
- * Software programmable watchdog timer and Flash BIOS with easy upgrade utility.
- * Provides 1 AC97 connector for Audio functions. (Optional)
- * Compact size, 185 mm x 122 mm.

5. Connectors and Jumpers List

Name	Function	Name	Function
CN1	Floppy Connector (34-pin IDC)	J1	Infra Red Header (J1*5)
CN2	Parallel Port Connector (26-pin IDC)	J2	Hard Disk LED Header (J1*2)
CN3	40-pin IDE Connector (40-pin IDC)	J3	Reset Header (J1*2)
CN4	Reserved	J4	Power/WD LED Header (J1*2)
CN5	Reserved	J5	Temperature Sensor Header (J1*2)
CN6	44-pin IDE Connector (44-pin IDC)	J6	USB Connector (J2*5)
CN7	Reserved	J7	TTL I/O Connector (5-pin JST)
CN8	LAN Connector (RJ45 w/LEDs)	J8	Power Button Header (J1*2)
CN9	COM2 Connector (10-pin IDC)	J9	LAN LED Header (J1*2)
CN10	KB/MS Connector (6-pin JST)	J10	AC97 Connector (12-pin IDC)
CN11	KB/MS Connector (6-pin mini-Din)	J11	Cooling FAN Connector (3-pin)
DB1	CRT Connector (15-pin D-sub)	J12	External Battery Connector (2-pin JST)
DB2	COM1 Connector (9-pin D-sub)	J13	ATX Control Connector (4-pin JST)
BZ1	On-board Buzzer	J14	External Speaker Header (J1*4)
BUS1	PC/104 Connector (64 and 40 pin)	J15	Aux. Power Connector (6-pin JST)
BUS2	ISA Golden Finger (16-bit)	J16	Internal TXD/RXD Connector (3-pin JST)
BUS3	ISA Golden Finger (8-bit)	J17	CompactFlash Socket (50-pin)
DIMM1	SoDIMM Socket (144-pin)	JP1	CF Master/Slave Select Jumper (J1*3)
LED1	On-Board Power/Watchdog LED	JP2	Battery Select Jumper (J1*3)
SW1	COM2 and SRAM Select Switch	JP3	AT/ATX Power Select Jumper (J1*3)

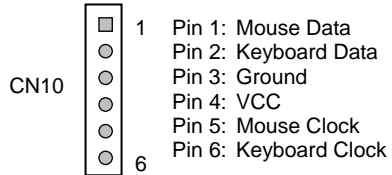
6. Connectors and Their Relative Jumpers

A. Reset Header (J3)

J3 is a 2-pin header for connecting to system reset bottom. Close these 2 pins to hardware reset FB2504 and restart system booting.

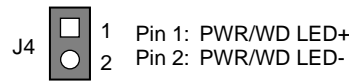
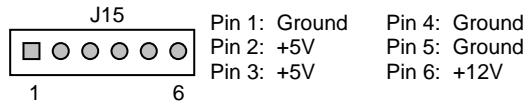
B. Keyboard and Mouse Connector (CN10 and CN11)

CN11 is a standard PS/2 type keyboard connector and any PS/2 type keyboard can plug into CN11 directly without extra adapter cable. CN10 provides PS/2 mouse interface, use optional mouse adapter cable to connect between CN11 and standard PS/2 mouse.



Note that CN10 and CN11 all support PS/2 keyboard and mouse signals and have to order 3-head cable from your supplier.

C. Auxiliary Power Connector and Power/WD LED (J15, LED1, and J4)

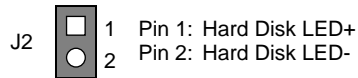


Note: LED1 is on-board power/watchdog LED and J15 is ideal for standalone applications.

D. Floppy Connector (CN1: 34-pin 2.54mm IDC)

Note that the included floppy cable supports only 720KB, 1.44MB, and 2.88MB disk drives.

E. Hard Disk Connectors and LED Header (CN3 - 40-pin IDC, CN6 - 44-pin IDC, and J2)



Use the included 40-pin hard disk cable, you can attach up to two 3.5" hard disk drives. The 44-pin HDD cable is optional

F. Parallel Port Connector (CN2: 26-pin 2.0mm IDC)

The included printer interface cable is used to transfer 26-pin connector into standard parallel port connector (D-sub 25-pin).

G. SoDIMM Socket (DIMM1)

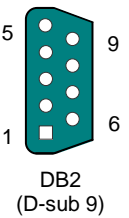
DIMM1 supports 144-pin, 3.3V, and PC-133 SDRAM with size of 32MB, 64MB, 128MB, 256MB, and 512MB.

H. Serial Port Connectors & Selector (DB2, CN9, J1, J16, SW1-2, SW1-3, and SW1-4)

There are 4 connectors and 1 switch that served for on-board 2 serial ports. The following table and figure list the combination and pin definition of them:

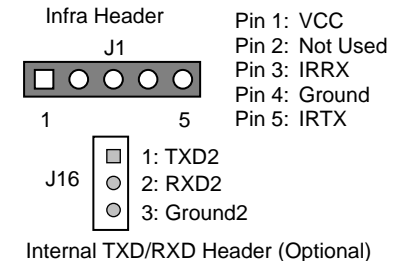
Functional connector, header, and jumper of serial ports	Serial Port 1	Serial Port 2
RS-232 Signals	DB2	CN9, SW1-2, and SW1-3
RS-422 Signals	-	CN9, SW1-2, and SW1-3
RS-485 Signals	-	CN9, SW1-2, and SW1-3
Terminator for RS-422/RS-485	-	SW1-4
Infrared Signals	-	J1
Internal TXD/RXD	-	J16 (Optional)

DB2	Signals	CN9	D-sub 9	RS-232	RS-422	RS-485
1	-DCD1	1	1	-DCD2		-
6	-DSR1	2	6	-DSR2		-
2	RXD1	3	2	RXD2	RX-	485-
7	-RTS1	4	7	-RTS2	TX-	-
3	TXD1	5	3	TXD2	RX+	485+
8	-CTS1	6	8	-CTS2	TX+	-
4	-DTR1	7	4	-DTR2		-
9	-RI1	8	9	-RI2		-
5	Ground1	9	5	Ground2		
Metal	Case Ground	10	Metal	Case Ground		

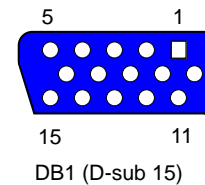


SW1-2	SW1-3	Mode
Off	Off	RS-232 (Factory Preset)
On	Off	RS-422
On	On	RS-485
Off	On	Reserved

SW1-4	Terminator (422/485)
Off	Off (Factory Preset)
On	On



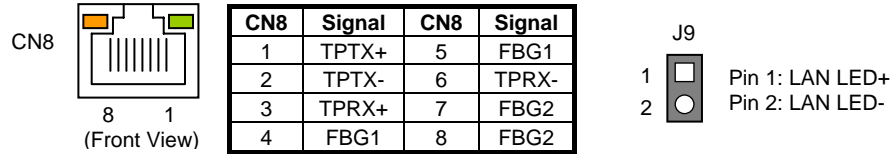
I. CRT Connector (DB1)



Pin 1: Red
 Pin 2: Green
 Pin 3: Blue
 Pin 13: Hsync
 Pin 14: Vsync
 Pin 12: DDC Data
 Pin 15: DDC Clock
 Pin 5 & 10: Digital Ground
 Pin 6,7,8: Analog Ground
 Others: Not Used

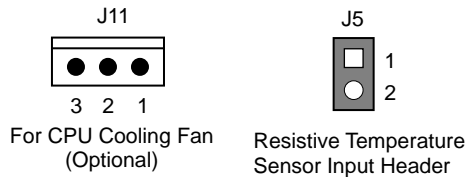
J. LAN Connector and LED Indicators (CN8: RJ45, and J9)

CN8 is a RJ45 connector with 2 LEDs. The up side LED (orange) indicates data is accessing and the down side LED (green) indicates on-line status. (When lighted indicates on-line and off indicates off-line) The following lists the pin assignment of CN8 and J9:



K. Cooling Fan Connectors and Temperature Sensor Header (J11 and J5)

J11 is a 3-pin Molex connector (optional) and which is use to drive CPU cooling fan for not low power CPUs. FB2504 provides one 2-pin header (J5) for connecting a temperature sensor anywhere the system case.



L. USB and Audio Connectors (J6 and J10), and Connectors on FB4641x Adapter Board

J6 supports 2 port USB signals and J10 provides AC97 signals for Audio function. Use the FB4641x (USB and Audio Adapter Board) and cables for your USB and Audio applications.



J9	Signal	J9	Signal
1	BITCLK	2	+12V
3	+5V	4	SYNC
5	Ground	6	Ground
7	+3.3V	8	ACRST#
9	SDOUT	10	SPKR
11	SDIN	12	SDIN2

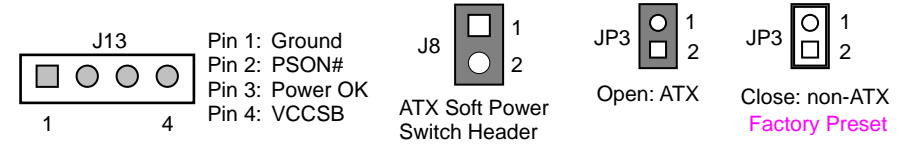
Audio connectors on the FB4641x adapter board



Note that the FB4641x and cables are optional items.

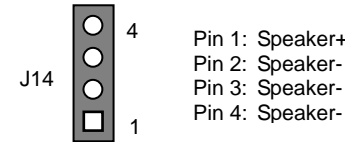
M. ATX Connectors and Jumper (J13, J8 and JP3) –All are Optional for ATX Power Supply Only

When ATX power supply is used, you can connect J13 to ATX control signals from the back plane, and connect J8 to a push bottom switch as soft power switch. If non-ATX power supply is used, please short JP3 with jumper and you don't need to connect J13 and J8.

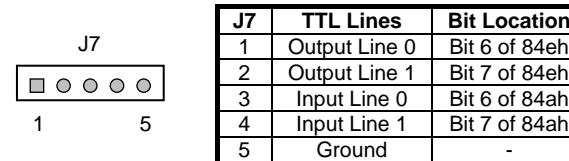


N. On-Board Buzzer and External Speaker Header (BZ1 and J14)

BZ1 is the on-board buzzer and you can use one 2-pin or 4-pin cable connects between an extra 8 ohms speaker with J14 header.



O. TTL I/O Connector (J7: 5-pin 2.0mm JST)



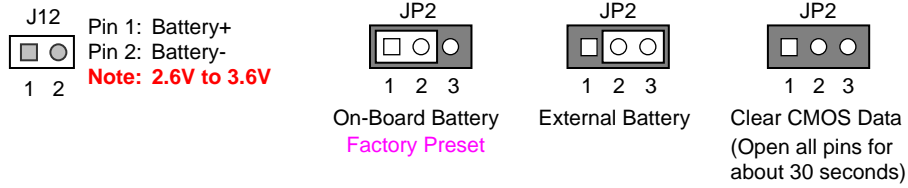
P. CompactFlash Socket and Master/Slave Select (J17 and JP1)

The CompactFlash socket J17 (on the solder side) supports 3.3V CompactFlash and MicroDrives. JP1 is used to select master/slave device of this socket. Be sure to avoid the same master/slave setting with which connects to IDE#2 (CN6) connector, if J17 and CN6 are used simultaneously.

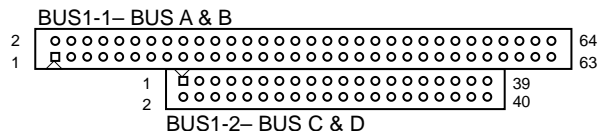


Q. External Battery Connector and Battery Select Jumper (J12 and JP2)

J12 is used to connect an external battery pack if on-board Lithium battery is too low to keep the CMOS data, and please setting JP2 properly of on-board battery or external battery. Note that JP2 also allow you to clear CMOS data if necessary.



R. PC/104 Connectors (BUS1: 64-pin IDC & 40-pin IDC)



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