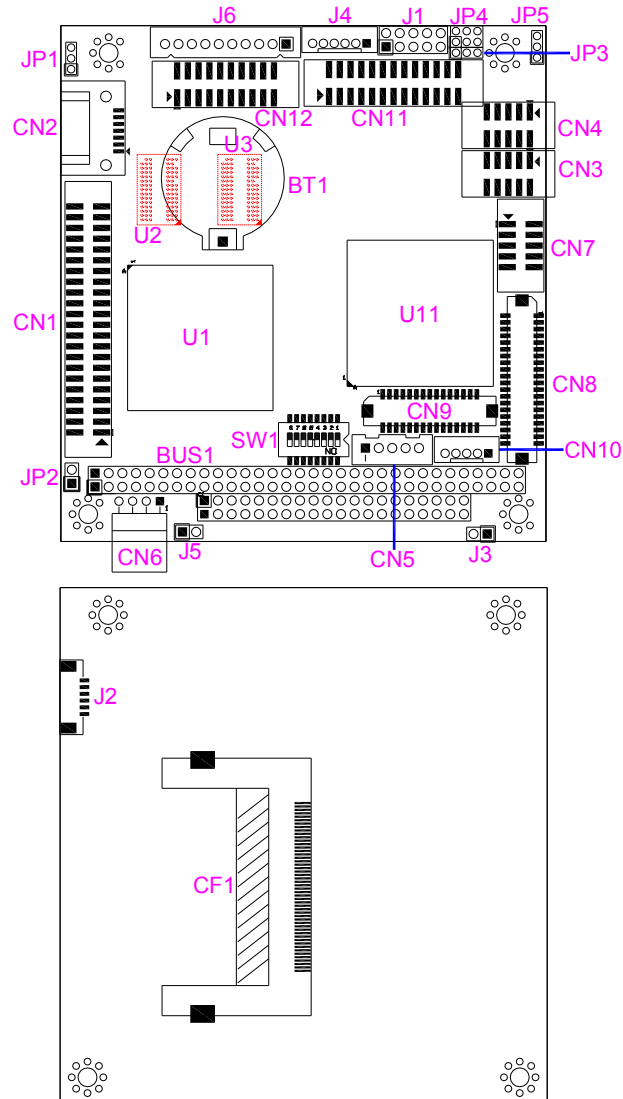


1. Brief

The FB2412 is an all-in-one, PC/104, DMP Vortex low power CPU module. This user's quick setting provides the jumper settings, connector location, and their pin assignment.

2. Board Placement



3. Packing List

- 1 FB2412x all-in-one PC/104 CPU board.
- 1 VGA (CRT interface) adapter cable.
- 1 44-pin hard disk drive interface cable. (Optional)
- 2 serial port adapter cables.
- 1 PS/2 keyboard and mouse port adapter cable.
- 1 10-pin LAN adapter cable with FB4605A transfer board.
- 1 compact disc includes software utilities and manual.

4. Features

- * On-board 800 MHz DMP Vortex CPU, fanless operation.
- * On-board 128MB DDR2 RAM.
- * One 10/100 base-TX Ethernet port.
- * Provides VGA and TTL/LVDS LCD (optional) with up to 4MB memory.
- * 2 RS-232, 2 USB ports, 1 CF socket, and 1 PCI IDE interface.
- * PS/2 compatible keyboard and mouse interface.
- * Provides header for external speaker and hard disk access LED.
- * Programmable watchdog timer and Flash BIOS with easy upgrade utility.
- * Power requires +5V only, 3A maximum.
- * PC/104 form factor, 90.2 mm x 95.9 mm (3.55" x 3.775")

5. Connectors and Jumpers List

Name	Function	Name	Function
CN1	44-pin IDE Connector (44-pin IDC)	J1	USB #1 & #2 Connector (J2*5)
CN2*	SATA Connector (optional)	J2	Reserved Header
CN3	COM1 Connector (10-pin IDC)	J3	External Speaker Header (J1*2)
CN4	COM2 Connector (10-pin IDC)	J4	KB/MS Connector (6-pin JST)
CN5	TTL I/O Connector (5-pin JST)	J5	Reset Header (J1*2)
CN6	Power Connector (4-pin)	J6	LAN Connector (10-pin JST)
CN7	VGA Connector (10-pin IDC)	JP1	CF Master/Slave Select (J1*3)
CN8*	TTL LCD Connector (40-pin DF-13)	JP2	External Hard Disk LED Header (J1*2)
CN9*	LVDS Connector (30-pin DF-13)	JP3/JP4	COM2 RS-232/485 Select (J3*3)
CN10*	LCD Power Connector (5-pin JST)	JP5	RS-485 Terminator Select (J1*3)
CN11*	LPT Connector (26-pin IDC)	BUS1	Stack-Through PC/104 Connector
CN12*	Floppy Connector (20-pin IDC)	LED1	On-board PW/WD LED (Green)
CF1	CompactFlash Socket	SW1*	Panel Rype Select Switch (Optional)

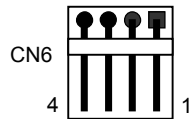
Note: Connectors with * mark are optional items.

6. Connectors, Headers and Their Relative Jumpers

A. Reset Header (J5)

J5 is a 2-pin header for connecting to system reset bottom. Close these 2 pins to hardware reset FB2412 and restart system booting.

B. Power Connector (CN6: 4-pin 2.5mm JST)

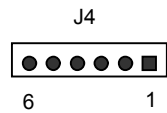


Pin 1: +5V
Pin 2: Ground
Pin 3: Ground
Pin 4: +12V

Note: FB2412 needs +5V only, +12V is not necessary.

C. Keyboard and Mouse Connector (J4)

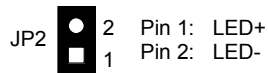
J4 provides PS/2 keyboard and mouse interface, use the included adapter cable to connect between J4 and standard PS/2 devices.



Pin 1: Mouse Data
Pin 2: Keyboard Data
Pin 3: Ground
Pin 4: +5V
Pin 5: Mouse Clock
Pin 6: Keyboard Clock

D. IDE Hard Disk Connector and Access LED Header (CN1 and JP2)

Use optional 44-pin hard disk cable, CN1 can attach up to two 2.5" hard disk drives.



Pin 1: LED+
Pin 2: LED-

E. SATA Connector (CN2: 7-pin SATA standard, Optional)

The optional SATA interface cable is used to connect a SATA device. Note that an extra power for SATA device is necessary.

F. Floppy Connector (CN12: 20-pin 2.0mm IDC, Optional)

The optional floppy drive interface cable is used to transfer 20-pin connector into standard 34-pin connector. Note that this floppy cable supports only 720KB, 1.44MB, and 2.88MB floppy disk drives, not for 360KB and 1.2MB.

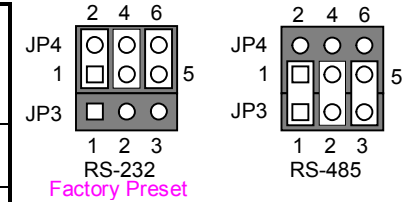
G. Parallel Port Connector (CN11: 26-pin 2.0mm IDC, Optional)

The optional printer interface cable is used to transfer 26-pin connector into standard 25-pin D-sub connector.

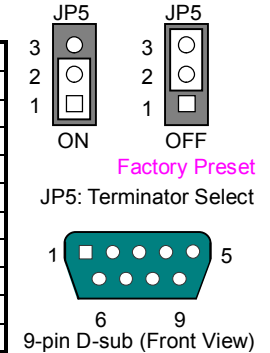
H. Serial Port Connectors and Select Jumpers (CN3, CN4, JP3, JP4, and JP5)

There are 2 connectors and 3 jumpers serve the on-board 2 serial ports. The following table lists the combination and pin definition of them. Use the included serial adapter cables for transferring to standard RS-232 connector (9-pin D-sub).

Functional connector and jumper of serial ports	Serial Port 1 (COM1)	Serial Port 2 (COM2)
RS-232 Signals	CN3	CN4, JP3/JP4
RS-485 Signals	-	CN4, JP3/JP4, JP5

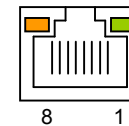


CN3	Signals	9-pin D-sub	CN4	RS-232	RS-485
1	-DCD1	1	1	-DCD2	-
2	-DSR1	6	2	-DSR2	-
3	RXD1	2	3	RXD2	485-
4	-RTS1	7	4	-RTS2	-
5	TXD1	3	5	TXD2	485+
6	-CTS1	8	6	-CTS2	-
7	-DTR1	4	7	-DTR2	-
8	-RI1	9	8	-RI2	-
9	Ground1	5	9	Ground2	-
10	Case Ground	Metal Case	10	Case Ground	Case Ground



I. LAN Connector and LED Indicators (J6: 10-pin 2.5mm JST)

J6 provides twist-pair signals of LAN port. Use the included adapter board (FB4605A) with cable to transfer to standard RJ45 connector. The left side LED (orange) indicates data is accessing and the right side LED (green) indicates on-line status. (When lighted indicates on-line and off indicates off-line). The following figure and table list the pin assignment of RJ45 connector on the FB4605A LAN adapter board:



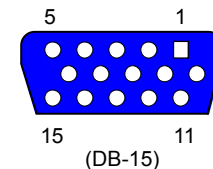
RJ45 connector on FB4605A

FB4605A	Signal	FB4605A	Signal
1	TPTX2+	5	FBG12
2	TPTX2-	6	TPRX2-
3	TPRX2+	7	FBG22
4	FBG12	8	FBG22

J. VGA Connector (CN7)

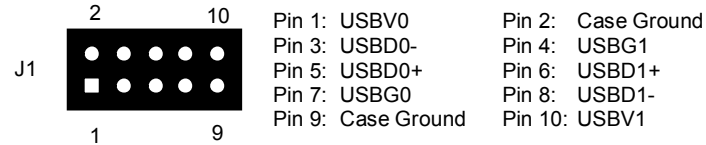
The following table and figure illustrate the pin definition of CN7 and 15-pin D-sub (DB-15) on the included VGA adapter cable:

CN7	Signal	DB-15	CN7	Signal	DB-15
1	RED	1	2	Case Ground	Case
3	GREEN	2	4	Digital Ground	5,10
5	BLUE	3	6	Analog Ground	6,7,8
7	VSYNC	14	8	DDC Data	12
9	HSYNC	13	10	DDC Clock	15



K. USB Connector (J1)

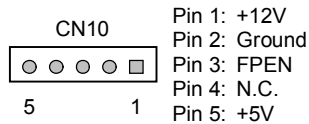
Use the USB adapter cable (optional), you can attach up to 2 USB devices.



L. LCD Connectors (CN8, CN9, and CN10, all are optional)

CN9	Signal	CN9	Signal
1	Ground	2	Y0+
3	Y0-	4	Ground
5	Y1+	6	Y1-
7	Ground	8	Y2+
9	Y2-	10	Ground
11	YCK+	12	YCK-
13	Ground	14	N.C.
15	N.C.	16	Ground
17	N.C.	18	N.C.
19	Ground	20	N.C.
21	N.C.	22	Ground
23	N.C.	24	N.C.
25	Ground	26	Ground
27	+3.3V	28	+3.3V
29	+5V	30	+5V

CN7 supports 24-bit TTL LCD signals, CN9 supports 24-bit LVDS LCD signals, and CN10 is the power connector for inverter board.



Note: If any question when connecting FB2412 with LCD panels, you could contact technical support division of FabiaTech Corporation.

CN8	Signal	CN8	Signal	CN8	Signal	CN8	Signal
1	+5V	21	FP12	2	+5V	22	FP13
3	Ground	23	FP14	4	Ground	24	FP15
5	+3.3V	25	FP16	6	+3.3V	26	FP17
7	N.C.	27	FP18	8	Ground	28	FP19
9	FP0	29	FP20	10	FP1	30	FP21
11	FP2	31	FP22	12	FP3	32	FP23
13	FP4	33	Ground	14	FP5	34	Ground
15	FP6	35	FPCLK	16	FP7	36	FPVS
17	FP8	37	FPDE	18	FP9	38	FPHS
19	FP10	39	ENVDD	20	FP11	40	ENAVEE

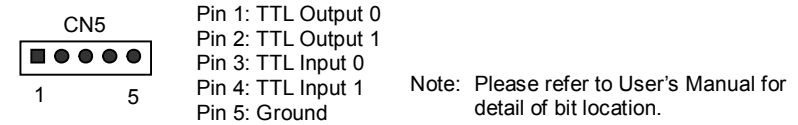
M. External Speaker Header (J3)



N. Power/Watchdog LED (LED1)

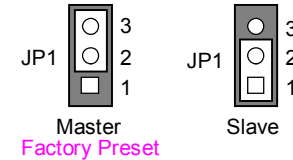
LED1 is used to indicate as powered-on when it lighted, and watchdog is enabled when it is blinking. The watchdog will be disabled and LED1 will always lighted after system reset.

O. TTL I/O Connector (CN5)

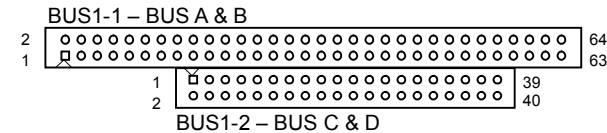


P. CompactFlash Socket and Master/Slave Select (CF1 and JP1)

The CompactFlash socket CF1 (on the solder side) supports 3.3V CompactFlash and MicroDrives. JP1 is used to select master/slave device of this socket.



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



R. Clear CMOS Data (BT1: Battery Socket)

To clear CMOS data, remove the battery from BT1 and last for 3 seconds when the power is OFF. Then return the battery to the battery socket (BT1) and turn on the power supply.

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