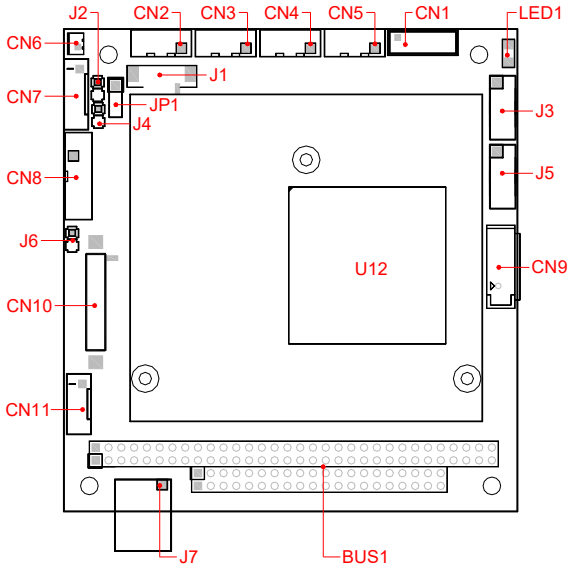
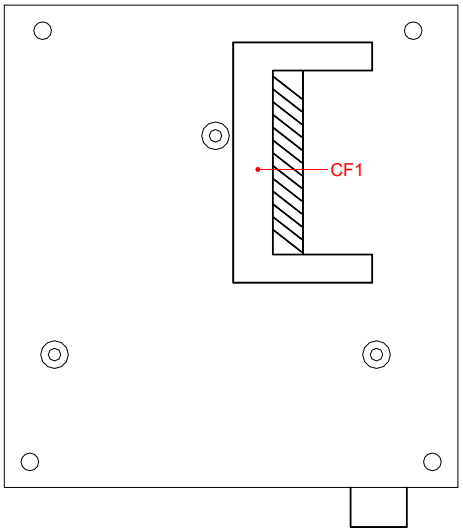
FB2413 Series User's Quick Setting

1. Brief

The FB2413 is an all-in-one, PC/104, Vortex86DX3 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 FB2413x all-in-one PC/104 CPU board.
1 VGA interface adapter cable.
4 serial port adapter cables.
1 PS/2 keyboard and mouse port adapter cable.
1 10-pin LAN adapter cable with FB4760 transfer board.
1 compact disc includes software utilities and manual.
1 or 2 USB interface cable. (Optional)
1 SATA interface cable. (Optional)

4. Features

* On-board Vortex86DX3 CPU (512KB L2, running at 1GHz) with heat sink only. (Fanless operation).
* On-board 512MB DDR3 RAM. (2GB maximum)
* 1 GbE port, 1 RS-232/422/485+3 RS-232 ports, and 4 V2.0 USB ports.
* Provides VGA and LVDS LCD (Optional) with UMA architecture.
* 1 CF socket and 1 SATA interface.
* PS/2 compatible keyboard and mouse interface.
* Provides header for external speaker and CF/hard disk access LED.
* Programmable watchdog timer and Flash BIOS with easy upgrade utility.
* Power requires +5V only, 2.5A typical (5.2A 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	LAN Connector (10-pin JST)	J1*	Reserved Connector (6-pin)
CN2	COM4 Connector (10-pin JAE)	J2	CF Access LED Header (2-pin)
CN3	COM3 Connector (10-pin JAE)	J3	USB #3 & #4 Connector (J2*5)
CN4	COM2 Connector (10-pin JAE)	J4	External Speaker Header (J1*2)
CN5	COM1 Connector (10-pin JAE)	J5	USB #1 & #2 Connector (J2*5)
CN6	Battery Connector (2-pin JST)	J6	Reset Header (J1*2)
CN7	PS/2 KB/MS Connector (6-pin JST)	J7	Power Connector (4-pin)
CN8	VGA Connector (10-pin mIDC)	JP1	Clear CMOS RAM Jumper (3-pin)
CN9	SATA Connector (7-pin)	BUS1	Stack-Through PC/104 Connector
CN10*	LVDS Connector (30-pin DF-13)	CF1	CompactFlash Socket
CN11*	LCD Power Connector (5-pin JST)	LED1	On-board PW/WD LED (Green)

Note: Connectors with * mark are optional items.

6. Connectors, Headers and Their Relative Jumpers

A. *Reset Header (J6)*

J6 is a 2-pin header for connecting to system reset bottom. Close these 2 pins to hardware reset FB2413 and restart system booting.

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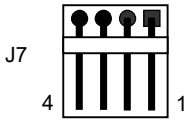
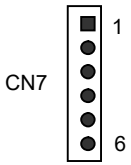
B. *Power Connector (J7: 4-pin 2.5mm JST)*



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

Note: FB2413 needs +5V only, +12V is not necessary without LCD panels.

C. *Keyboard and Mouse Connector (CN7)*



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

CN7 provides PS/2 keyboard and mouse interface, use the included adapter cable to connect between CN7 and standard PS/2 devices.

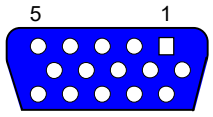
D. *SATA Connector (CN9)*

Use optional SATA cable, CN9 can attach 1 SATA drive. Note that an extra power for SATA device is necessary.

E. *VGA Connector (CN8)*

The following table and figure illustrate the pin definition of CN8 and 15-pin D-sub (DB-15) on the included VGA adapter cable:

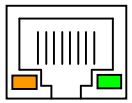
CN8	Signal	DB-15	CN8	Signal	DB-15
1	RED	1	2	Case Ground	Case
3	GREEN	2	4	Digital Ground	5,10
5	BLUE	3	6	Analog Ground	6,7,8
7	VSYNC	14	8	DDC Data	12
9	HSYNC	13	10	DDC Clock	15



(DB-15)

F. *LAN Connector and LED Indicators (CN1: 10-pin 2.0mm IDC)*

CN1 provides twist-pair signals of LAN port. Use the included adapter board (FB4760) 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. The following figure and table list the pin assignment of RJ45 connector on the FB4760 LAN adapter board:



RJ45 connector on FB4760

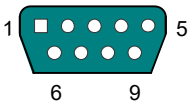
FB4760	Signal	FB4760	Signal
1	TPTX2+	5	FBG12
2	TPTX2-	6	TPRX2-
3	TPRX2+	7	FBG22
4	FBG12	8	FBG22

G. *Serial Port Connectors (CN5, CN4, CN3, and CN2)*

There are 4 connectors serve the on-board 4 serial ports. 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)	Serial Port 3 (COM3)	Serial Port 4 (COM4)
RS-232 Signals	CN5	CN4	CN3	CN2
RS-422 Signals	CN5	-	-	-
RS-485 Signals	CN5	-	-	-

CN5 / CN4 CN3 / CN2	RS-232 Signals	9-pin D-sub	RS-422 Signals	RS-485 Signals	CN5
1	-DCDx	1	RX-	485-	1
2	-DSRx	6	-	-	2
3	RXDx	2	RX+	485+	3
4	-RTSx	7	-	-	4
5	TXDx	3	TX+	-	5
6	-CTSx	8	-	-	6
7	-DTRx	4	TX-	-	7
8	-RIx	9	-	-	8
9	Groundx	5	-	-	9
10	Case Ground	Metal Case	-	-	10



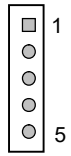
9-pin D-sub
(Front View)

H. *LCD Connectors (CN10 and CN11, all are optional)*

CN10	Signal	CN10	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	Y3+
15	Y3-	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	+3.3V	30	+3.3V

CN10 supports 24-bit LVDS LCD signals, and CN11 is the power connector and control signals for LCD panels.

CN11



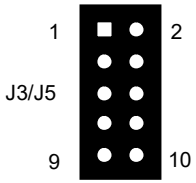
Pin 1: +12V
Pin 2: Ground
Pin 3: FPEN
Pin 4: N.C.
Pin 5: +5V

Note: If any question when connecting FB2413 with LCD panels, you could contact technical support division of FabiaTech Corporation.

I. 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.

J. USB Connector (J3 and J5)



Use the USB adapter cables (optional), J3 and J5 can attach up to 2 USB devices each.

K. External Speaker Header (J4)

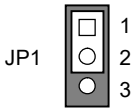
Pin 1: Speaker+
Pin 2: Speaker-

L. CompactFlash Socket and Access LED Header (CF1 and J2)

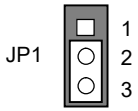
The CompactFlash socket CF1 (on the solder side) supports 3.3V CompactFlash and MicroDrives.

Pin 1: LED+
Pin 2: LED-

M. Clear CMOS RAM (JP1)

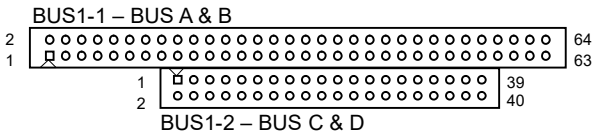


Normal Operation
Factory Preset



Clear CMOS Data
Short pin 2 & 3 for about 3 seconds

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



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