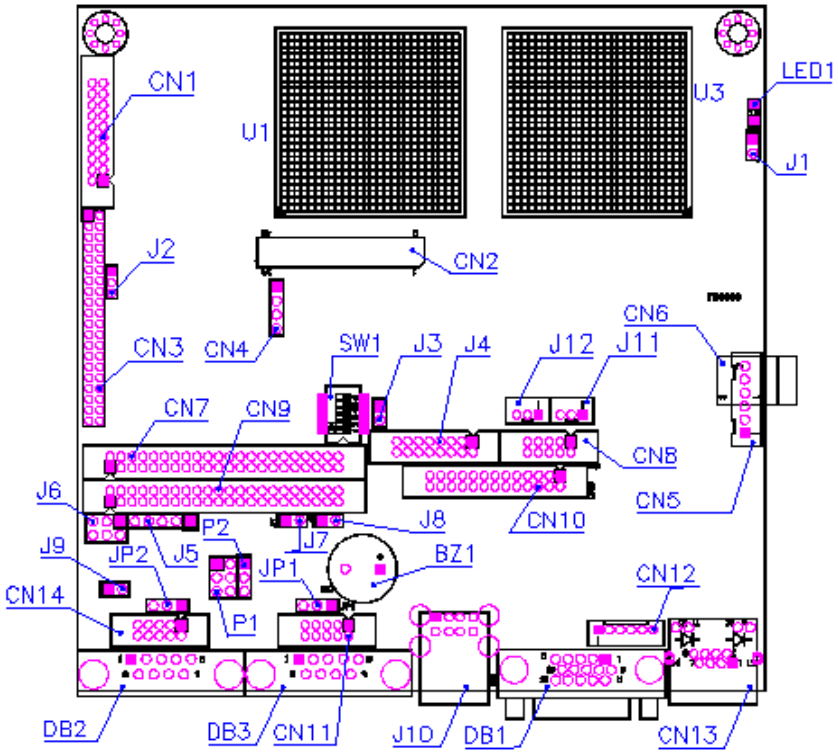
FB6500 Series User's Quick Setting

1. Brief

The FB6500 is an all-in-one, compact size, NS Geode low power CPU board. This user' s quick setting provides the jumper and switch settings, connector location, and their pin assignment.

2. Board Placement



3. Packing List

1 FB6500x all-in-one CPU board.
1 44-pin hard disk drive interface cable.
1 20-pin to 34-pin floppy drive interface cable.
1 parallel port interface cable.
2 serial port adapter cables. (10-pin IDC to DB-9, 4-serial-port version only)
1 keyboard and mouse port adapter cable.
1 audio adapter cable with FB4612B transfer board. (Audio version only)
1 power adapter cable.
1 compact disc includes software utility.
1 hard copies of this quick setup manual.

4. Features

* Supports 200MHz (300 MHz maximum) NS Geode GX1 CPU.
* NS CS5530A chipset with UMA architecture.
* 32MB or 64MB SDRAM onboard.
* 100M/10M Ethernet with RJ-45 connector.
* Provides CRT and LCD with 1.5MB to 4MB shared memory.
* Build-in LCD-LVDS interfaces. (Optional)
* 1 parallel port, 1 floppy port and 1 PCI IDE interfaces.
* 3 RS-232C and 1 RS-232C/RS-485 with infrared and touch screen interface.
* PS/2 compatible keyboard and mouse interface.
* On-board buzzer and LED indicator.
* Flash BIOS with easy upgrade utility.
* Software programmable watchdog timer.
* 2 USB ports.
* Audio function supports Line-In, Line-Out, and Mic-In.
* Single +5V operation. (Without LCD panel and LCD inverter)
* EMI Considered on every output signals.
* Compact size, 127 mm x 127 mm. (5.0" x 5.0")

5. Connectors, Headers and Their Relative Jumpers

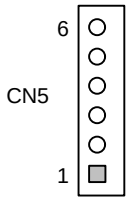
A. CPU Base Clock Select (SW1-4)

SW1-4	CPU Base Clock	PCI Clock	Remark
On	30.0 MHz	30.0 MHz	
Off	33.3 MHz	33.3 MHz	Default

B. CPU Internal Clock Multiplier Select (SW1-1, SW1-2, & SW1-3)

SW1-3	SW1-2	SW1-1	Multiplier	Remark
On	On	On	Reserved	
Off	On	On	10.0	
On	Off	On	9.0	300MHz Presetting
Off	Off	On	5.0	
On	On	Off	4.0	
Off	On	Off	6.0	200MHz Presetting
On	Off	Off	7.0	233MHz Presetting
Off	Off	Off	8.0	266MHz Presetting

C. Power Connector (CN5: 6-pin 2.5mm JST)

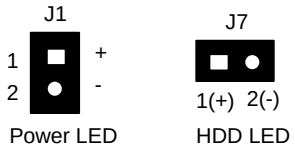


Pin 1: Ground
Pin 2: +5V
Pin 3: +5V
Pin 4: Ground
Pin 5: Ground
Pin 6: +12V
Note: If LCD function does not in use, +12V is no need.

D. Reset Header (J3)

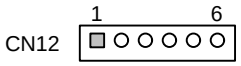
J3 is a 2-pin header for connecting to system reset bottom. Close these 2 pins to hardware reset FB6500 and restart system booting.

E. Power LED and HDD LED headers (J1 & J7)



F. Keyboard and Mouse Connector (CN12: 6-pin 2.0mm IDC)

CN12 is a 6-pin 2.0mm IDC connector, use the included adapter cable you can attach standard PS/2 type keyboard and mouse.



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

G. USB Connector (J10)

J10 is a standard double port USB connector. Any USB device can attach to J10 connector with plug-and-play supported. The up side port of J10 is USB #1 and the down side port is USB #2.

H. Floppy Connector (CN1: 20-pin 2.0mm IDC)

The included floppy drive interface cable (Supports 3.5" floppy disk drive only) is used to transfer 20-pin connector into standard 34-pin connector. The following table shows signal connections between 20-pin & 34-pin connectors:

CN1	Signal	34-pin
1	Drive Enable A	2
2	-Index	8
3	-Select A	12
4	Ground	11
5	-Motor A	16
6	- Select B	14
7	-Motor B	10
8	Ground	9
9	-Direction	18
10	-Step	20
-	-	-

CN1	Signal	34-pin
11	-Write Data	22
12	Ground	23
13	-Write Enable	24
14	-Track 0	26
15	-Write Protect	28
16	Ground	29
17	-Read Data	30
18	-Head	32
19	-Disk Change	34
20	Ground	31
-	No Connection	Others

I. IDE Hard Disk Connector (CN9)

CN9 are 44-pin 2.0mm IDC connectors. CN9 named IDE #0 . Use the included hard disk cable, you can attach up to two 2.5" hard disk drives

J. Parallel Port Connector (CN10: 26-pin 2.0mm IDC)

The included printer interface cable is used to transfer 26-pin connector into standard DB25 connector.

K. Serial Port Connectors & Jumpers

(1) RS-232C Pin Definitions (DB2, DB3, CN11, and CN14)

DB3 (COM1) and DB2 (COM2) are all standard serial port connectors, CN11 (COM3) and CN14 (COM4) are both 10-pin 2.0mm IDC connectors. The included serial port adapter cables are used to transfer 10-pin 2.0mm IDC into standard DB-9 connector. The following tables show the signal connections of these connectors and the included adapter cable for CN11 and CN14:

DB3	Signal (COM1)
1	-DCD1
6	-DSR1
2	RXD1
7	-RTS1
3	TXD1
8	-CTS1
4	-DTR1
9	-RI1
5	Ground

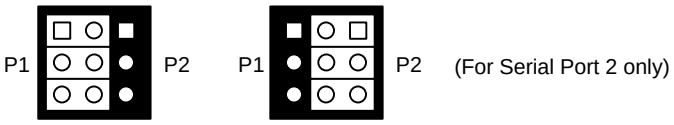
DB2	RS-232C (COM2)	RS-485 (COM2)
1	-DCD2	-
6	-DSR2	-
2	RXD2	485-
7	-RTS2	-
3	TXD2	485+
8	-CTS2	-
4	-DTR2	-
9	-RI2	-
5	Ground	-

CN11	Signal (COM3)	DB-9
1	-DCD3	1
2	-DSR3	6
3	RXD3	2
4	-RTS3	7
5	TXD3	3
6	-CTS3	8
7	-DTR3	4
8	-RI3	9
9	Ground	5
10	Case Ground	Shield

CN14	Signal (COM4)	DB-9
1	-DCD4	1
2	-DSR4	6
3	RXD4	2
4	-RTS4	7
5	TXD4	3
6	-CTS4	8
7	-DTR4	4
8	-RI4	9
9	Ground	5
10	Case Ground	Shield

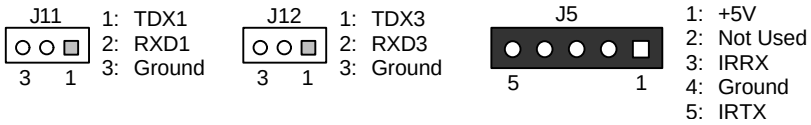
(2) RS-485 Jumper Select and Pin Definitions (P1/P2 & J9)

Serial port 2 provides RS-485 function by selecting P1/P2 jumper. When RS-485 mode is selected, the RS-485 signals use the same connector as RS-232C (see previous table of COM2). J9 is the terminator on/off jumper only when using RS-485 mode. The following figure will guide you how to setup RS-485 serial port.

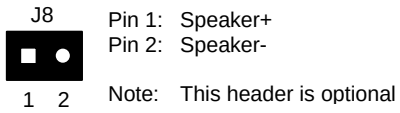


(3) Extra RS-232C Signals and Infrared Connector (J11, J12, and J5)

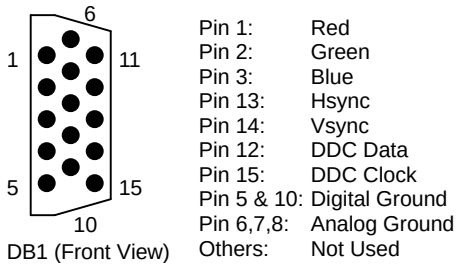
J11 and J12 provide basic RS-232C signals of serial port 1 and 3 respectively. J5 is the Infrared header of serial port 4. J11 and J12 are used to interface with touch screen controller internally and infrared signal is used to interface with Infrared modules. Note that J12 is valid for 4 serial port version only.



L. Buzzer (BZ1) and External Speaker Header (J8, Optional)



M. CRT Connector (DB1)

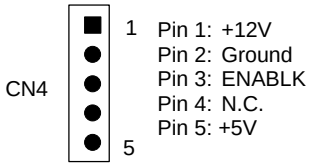


N. LCD Connector and LVDS Interface (CN2, CN4, & J4)

CN2 is 18-bit LCD interface connector and CN4 provides control signals and power source for LCD inverter. J4 is the LVDS-LCD interface connector for long distant LCD panel connection. Note that LVDS-LCD (J4) is optional item.

CN2	Signal	CN2	Signal	CN2	Signal	CN2	Signal
1	+5V	21	FPD8	2	+5V	22	FPD9
3	Ground	23	FPD10	4	Ground	24	FPD11
5	+3.3V	25	N.C.	6	+3.3V	26	N.C.
7	R/L	27	FPD12	8	Ground	28	FPD13
9	N.C.	29	FPD14	10	N.C.	30	FPD15
11	FPD0	31	FDP16	12	FPD1	32	FPD17
13	FPD2	33	Ground	14	FPD3	34	Ground
15	FPD4	35	FPCLK	16	FPD5	36	FPVSYNC
17	N.C.	37	FPDISP	18	N.C.	38	FPHYNC
19	FDP6	39	U/D	20	FPD7	40	FPVDDEN

Note: N.C. means not connected, it is reserved for upgraded signals.



Note: +12V is come from CN5 (power connector) only

J4	Signal	J4	Signal
1	+3.3V	2	+3.3V
3	Ground	4	Ground
5	LVDS0+	6	LVDS0-
7	LVDS1+	8	LVDS1-
9	LVDS2+	10	LVDS2-
11	LVDSCLK+	12	LVDSCLK-
13	Ground	14	Ground
15	+12V	16	FPBKLEN

Note: +12V is come from CN5 (power connector) only.

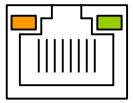
O. Audio Connector (CN8: 10-pin 2.0mm IDC)

CN8	Signal	CN8	Signal
1	CD-In-L	2	Line-In-L
3	CD-In-R	4	Line-In-R
5	Analog Ground	6	+5V
7	Line-Out-L	8	Mic-In
9	Line-Out-R	10	Ground

P. LAN Connector and LED Indicators (CN13: RJ45)

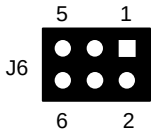
CN13 is a RJ45 connector with 2 LEDs. The left side LED (orange) indicates data is accessing and the right side LED (green) indicates on-line status. (When lighted indicates on-line and off indicates off-line) The following figure lists the pin assignment of CN13:

CN13
(Front View)



Pin 1:	TPTX+	Pin 5:	FBG1
Pin 2:	TPTX-	Pin 6:	TPRX-
Pin 3:	TPRX+	Pin 7:	FBG2
Pin 4:	FBG1	Pin 8:	FBG2

Q. TTL I/O Connector (J6)



J6	Signal	Bit Location	J6	Signal	Bit Location
1	Output 0	Bit 0 of I/O port 390H	2	Input 0	Bit 3 of I/O port 391H
3	Output 1	Bit 1 of I/O port 390H	4	Input 1	Bit 4 of I/O port 391H
5	+5V	-	6	Ground	-

R. Extension Bus Connector (CN3, Optional)

The CN3 connector supports a little ISA signals for easy debugging, testing, or plug-in a piggyback I/O module. It is reserved for board manufacture only.

CN3	Signal	CN3	Signal	CN3	Signal	CN3	Signal
1	SD7	21	IRQ9	2	Ground	22	SA4
3	SD6	23	IRQ5	4	RSTDRV	24	SA3
5	SD5	25	SA9	6	-IOW	26	SA2
7	SD4	27	SA8	8	-IOR	28	SA1
9	SD3	29	Ground	10	BUSCLK	30	SA0
11	SD2	31	IRQ10	12	+5V	32	-DACK1
13	SD1	33	IRQ11	14	TC	34	DRQ1
15	SD0	35	IRQ12	16	SA7	36	-DACK3
17	AEN	37	-ZWS	18	SA6	38	DRQ3
19	+5V	39	-IOCHRDY	20	SA5	40	Ground