CHAPTER 2

Hardware Configuration Setting

This chapter gives the definitions and shows the positions of jumpers, headers and connectors. All of the configuration jumpers on ROBO-505 are properly set. The factory default settings are marked with a star (★).

2-1 Jumpers

In general, jumpers on the single board computer are used to select options for certain features. Some of the jumpers are user-configurable, which allows system enhancement. The others are for testing purpose only and should not be altered. To select any option, cover the jumper cap over (Short) or remove (NC) it from the jumper pins according to the following instructions. Here NC stands for "Not Connected". (Please refer to Figure 2-1 for detail jumper positions)

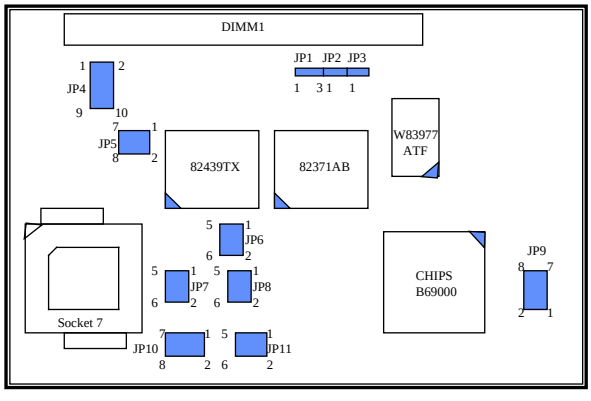


Figure 2-1 ROBO-505 Jumper Locations

CPU Jumper Setting Table (JP4, JP5, JP1, JP7, JP8)

(A) JP4, JP5 CPU Voltage Selection

JP4 : CPU Vcore/Vcc2

9 – 10	7 – 8	5 – 6	3 – 4	1 – 2	Vcore Voltage
NC	NC	NC	NC	NC	2.00 V
NC	NC	NC	NC	Short	2.10 V
NC	NC	NC	Short	NC	2.20 V ★
NC	NC	NC	Short	Short	2.30 V
NC	NC	Short	NC	NC	2.40 V
NC	NC	Short	NC	Short	2.50 V
NC	NC	Short	Short	NC	2.60 V
NC	NC	Short	Short	Short	2.70 V
NC	Short	NC	NC	NC	2.80 V
NC	Short	NC	NC	Short	2.90 V
NC	Short	NC	Short	NC	3.00 V
NC	Short	NC	Short	Short	3.10 V
NC	Short	Short	NC	NC	3.20 V
NC	Short	Short	NC	Short	3.30 V
NC	Short	Short	Short	NC	3.40 V
NC	Short	Short	Short	Short	3.50 V
Short	NC	NC	NC	NC	1.80 V
Short	NC	NC	NC	Short	1.90 V
Short	NC	NC	Short	NC	2.00 V
Short	NC	NC	Short	Short	2.10 V
Short	NC	Short	NC	NC	2.20 V
Short	NC	Short	NC	Short	2.30 V
Short	NC	Short	Short	NC	2.40 V
Short	NC	Short	Short	Short	2.50 V
Short	Short	NC	NC	NC	2.80 V
Short	Short	NC	NC	Short	2.90 V
Short	Short	NC	Short	NC	3.00 V
Short	Short	NC	Short	Short	3.10 V
Short	Short	Short	NC	NC	3.20 V
Short	Short	Short	NC	Short	3.30 V
Short	Short	Short	Short	NC	3.40 V
Short	Short	Short	Short	Short	3.50 V

JP5 : CPU Vio/Vcc3

Jumper Location	CPU Voltage Type
1 – 2 , 3 – 4	Dual Voltage ★
5 – 6 , 7 – 8	Single Voltage

NOTE : JP5 is used to choose single or dual voltage for CPU, you can easily see the right voltage label on CPU surface marking.

■ Reference Table for various CPU settings : **(Reference Only)**

CPU TYPE	JP4	JP5	Vcore	Vio
Single Voltage **INTEL** P54C/CQS/CT **Cyrix** 6x86 **AMD** K5	1-2 Short 3-4 Short 5-6 Short 7-8 Short	5-6 Short 7-8 Short	3.5V	3.5V
Dual Voltage **INTEL** P55C/MMX **Cyrix** 6x86L (M1L)	7-8 Short	1-2 Short 3-4 Short	2.8V	3.3V
AMD K6-166/200 **Cyrix** 6x86MX (M2)	1-2 Short 7-8 Short	1-2 Short 3-4 Short	2.9V	3.3V
AMD K6-233	5-6 Short 7-8 Short	1-2 Short 3-4 Short	3.2V	3.3V
AMD K6-2/3D ★	3-4 Short	1-2 Short 3-4 Short	2.2V	3.3V

(B) JP1, JP7, JP8 CPU Clock Selection

B-1. JP8 specifies system bus frequency

5-6	3-4	1-2	CPU Bus Clock	PCI Bus Clock	Remark
Short	Short	Short	50 MHz	25 MHz	
NC	Short	NC	75 MHz	37.5 MHz	
NC	NC	Short	60 MHz	30 MHz	
NC	NC	NC	66.8 MHz ★	33.4 MHz	

B-2. JP7 specifies CPU core/bus ratio

1-2	3-4	5-6	Core/Bus Ratio
Short	NC	NC	2.0X
Short	Short	NC	2.5X
NC	Short	NC	3.0X
NC	NC	NC	1.5X or 3.5X
Short	NC	Short	4.0X
Short	Short	Short	4.5X ★
NC	Short	Short	5.0X
NC	NC	Short	5.5X

NOTE :

(1) The currently foregoing JP8/JP9/JP10/JP12 settings are dedicated for AMD K6-2/3D 300MHz CPU.

(2) For system stability, don't arbitrarily over speed your CPU.

B-3. JP1 specifies bus frequency detection of Host Bridge MTXC

JP1	Bus Frequency
1 – 2	66 MHz , (75 MHz) ★
2 – 3	60 MHz , (50 MHz)

RTC CMOS Clear Jumper Setting (JP3)

JP3 NC : Normal operation ★
Short : Clear CMOS contents

NOTE : In general, CMOS clearing operation can be done under system power on if CMOS RAM CLEAR FUNCTION does not exist in the BIOS Advanced Chipset Setup. For certain RTC supports hardware Y2K, it also can be done under system power on or off. Here please make sure that the CMOS RAM clear option has been enabled in Advanced Chipset Setup before CMOS clearing happens.

Disk-On-Chip Jumper Setting (JP10)

Address mapping of memory window

1 – 2	3 – 4	5 – 6	7 – 8	Memory Address Space
Short	NC	NC	NC	C0000 – C7FFF
NC	Short	NC	NC	C8000 – CFFFF
NC	NC	Short	NC	D0000 – D7FFF ★
NC	NC	NC	Short	D8000 – DFFFF

Watch-Dog Timer Jumper Setting (JP6, JP11,JP2)

JP6 1 – 3 (or 3 – 4) : System reset will be triggered by H/W WDT timeout
2 – 4 (or 1 – 2): Disconnected WDT output to system reset
(i.e. WDT function is disabled) ★
3 – 5 : Connect H/W WDT output to NMI
4 – 6 : System reset will be triggered by S/W WDT (initiated and programmed by software from super I/O chipset)

JP2 NC : Allocate I/O port 0433h/0033h for H/W WDT programming ★
Short : Allocate I/O port 0443h/0343h for H/W WDT programming

JP11 WDT Time-out Interval

5-6	3-4	1-2	TIME-OUT INTERVAL
Short	Short	Short	0.5 sec.
Short	Short	NC	1 sec. ★
Short	NC	Short	2 sec.
Short	NC	NC	4 sec.
NC	Short	Short	8 sec.
NC	Short	NC	16 sec.
NC	NC	Short	32 sec.
NC	NC	NC	64 sec.

Optional LCD Panel Type Jumper Setting (JP9)

JP9 : Flat Panel Type

7 – 8	5 – 6	3 – 4	1 – 2	Flat Panel Type
Short	Short	Short	Short	1024x768 Dual Scan STN Color Panel →reserved
Short	Short	Short	NC	1280x1024 TFT Color Panel →reserved
Short	Short	NC	Short	640x480 Dual Scan STN Color Panel →reserved
Short	Short	NC	NC	800x600 Dual Scan STN Color Panel →reserved
Short	NC	Short	Short	640x480 Sharp TFT Color Panel →reserved
Short	NC	Short	NC	640x480 18-bit TFT Color Panel
Short	NC	NC	Short	1024x768 TFT Color Panel
Short	NC	NC	NC	800x600 TFT Color Panel
NC	Short	Short	Short	800x600 TFT Color Panel (L. BIOS) →reserved
NC	Short	Short	NC	800x600 TFT Color Panel (L. BIOS)
NC	Short	NC	Short	800x600 Dual Scan STN Color Panel (L. BIOS) →reserved
NC	Short	NC	NC	800x600 Dual Scan STN Color Panel (L. BIOS) →reserved
NC	NC	Short	Short	1024x768 TFT Color Panel (L. BIOS) →reserved
NC	NC	Short	NC	1280x1024 Dual Scan STN Color Panel (L. BIOS)→reserved
NC	NC	NC	Short	1024x600 Dual Scan STN Color Panel (L. BIOS) →reserved
NC	NC	NC	NC	1024x600 TFT Color Panel (Large BIOS)

NOTE : This jumper JP9 is available only for flat panel installation.

2-2 Connectors

I/O peripheral devices and Flash disk will be connected to these interface connectors or DOC socket located on this single board computer.

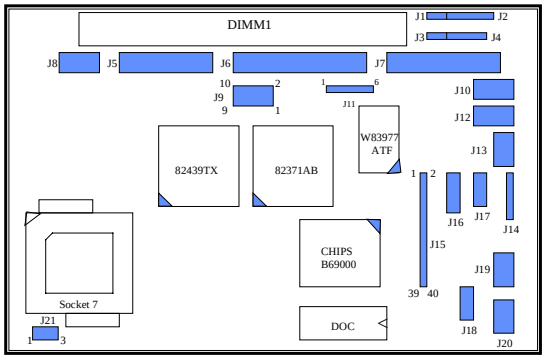


Figure 2-2 ROBO-505 Connector Locations

CONNECTOR	FUNCTION	REMARK
J1	System reset	
J2	Keyboard lock and power indicator	
J3	IDE1/IDE2 active LED interface	
J4	External speaker interface	
J5	Parallel port connector	
J6	IDE1 (Primary) interface	
J7	Floppy connector	
J8	Standard P8 power connector	
J9	External USB interface	Support two ports
J10	COM1 serial port	DSUB-9
J11	IrDA (infrared) port	Support FIR/SIR
J12	COM2 serial port	2 x 5 shrouded header
J13	LAN interface connector	RJ-45 port
J14	VGA connector	DSUB-15
J15	Flat Panel display module interface	2x20 pin header
J16	COM3 serial port	2x5 shrouded header
J17	COM4 serial port	2x5 shrouded header
J18	External keyboard interface	Connect to backplane
J19	PS/2 mouse connector	6-pin Mini-DIN
J20	PS/2 keyboard connector	6-pin Mini-DIN
J21	CPU cooling fan power connector	Support +12V
U13	On-board Flash disk (Disk-On-Chip)	32-pin DIP socket

Pin Assignments of Connectors

■ **J1 : Reset Header**

PIN No.	Signal Description
1	Reset
2	Ground

■ **J2 : Keyboard Lock Header**

PIN No.	Signal Description
1	+5V (330 ohm pull-up for power LED)
2	N/C
3	Ground
4	Keyboard inhibit
5	Ground

■ **J3 : IDE1/IDE2 Active LED Header**

PIN No.	Signal Description
1	+5V (470 ohm pull-up for HDD LED)
2	HDD Active # (LED cathode terminal)

■ **J4 : External Speaker Header**

PIN No.	Signal Description
1	Speaker signal
2	N/C
3	Ground
4	+5V

■ **J8 : Standard P8 Power Connector**

PIN No.	Signal Description
1	N/C
2	+5V
3	+12V
4	-12V
5	Ground
6	Ground

■ **J5 : Parallel Port Connector**

PIN No.	Signal Description	PIN No.	Signal Description
1	Strobe#	14	Auto Form Feed#
2	Data 0	15	Error#
3	Data 1	16	Initialization#
4	Data 2	17	Printer Select IN#
5	Data 3	18	Ground
6	Data 4	19	Ground
7	Data 5	20	Ground
8	Data 6	21	Ground
9	Data 7	22	Ground
10	Acknowledge#	23	Ground
11	Busy	24	Ground
12	Paper Empty	25	Ground
13	Printer Select	26	N/C

■ **J6 : IDE1 Interface Connector**

PIN No.	Signal Description	PIN No.	Signal Description
1	RESET#	2	Ground
3	Data 7	4	Data 8
5	Data 6	6	Data 9
7	Data 5	8	Data 10
9	Data 4	10	Data 11
11	Data 3	12	Data 12
13	Data 2	14	Data 13
15	Data 1	16	Data 14
17	Data 0	18	Data 15
19	Ground	20	N/C
21	DMA REQ	22	Ground
23	IOW#	24	Ground
25	IOR#	26	Ground
27	IOCHRDY	28	Pull-down
29	DMA ACK#	30	Ground
31	INT REQ	32	N/C
33	SA1	34	N/C
35	SA0	36	SA2
37	HDC CS0#	38	HDC CS1#
39	HDD Active#	40	Ground

■ **J7 : FDC Interface Connector**

PIN No.	Signal Description	PIN No.	Signal Description
1	Ground	2	Density Select
3	Ground	4	N/C
5	Ground	6	N/C
7	Ground	8	Index#
9	Ground	10	Motor ENA#
11	Ground	12	Drive Select B#
13	Ground	14	Drive Select A#
15	Ground	16	Motor ENB#
17	Ground	18	Direction#
19	Ground	20	Step#
21	Ground	22	Write Data#
23	Ground	24	Write Gate#
25	Ground	26	Track 0#
27	Ground	28	Write Protect#
29	Ground	30	Read Data#
31	Ground	32	Head Select#
33	Ground	34	Disk Change#

■ **J9 : External USB Interface Connector**

PIN No.	Signal Description	PIN No.	Signal Description
1	+5V	2	N/C
3	SBD0- (USBP0-)	4	Ground
5	SBD0+ (USBP0+)	6	SBD1+ (USBP1+)
7	Ground	8	SBD1- (USBP1-)
9	N/C	10	+5V

■ **J10/J12/J16/J17 : Serial Port-1/2/3/4 (2x5 Shrouded Connector)**

PIN	Signal Description	PIN	Signal Description
1	Data Carrier Detect (DCD)	6	Data Set Ready (DSR)
2	Receive Data (RXD)	7	Request to Send (RTS)
3	Transmit Data (TXD)	8	Clear to Send (CTS)
4	Data Terminal Ready (DTR)	9	Ring Indicator (RI)
5	Ground (GND)	10	N/C

■ **J11 : Fast & Standard IrDA Header**

PIN No.	Signal Description
1	VCC (+5V)
2	FIRRX
3	SIRRX
4	Ground
5	IRTX
6	CIRRX (Consumer IR Receiving I/P)

■ **J13 : Ethernet RJ-45 Interface Connector**

PIN No.	Signal Description
1	TX+
2	TX-
3	RX+
4	Termination to Ground
5	Termination to Ground
6	RX-
7	Termination to Ground
8	Termination to Ground

■ **J14 : VGA DSUB-15 Connector**

PIN No.	Signal Description
1	R
2	G
3	B
4	N/C
5	Ground
6	Ground
7	Ground
8	Ground
9	N/C
10	Ground
11	N/C
12	MONID1
13	HSYNC
14	VSYNC
15	MONID2

■ **J15 : Flat Panel Display Module Interface**

PIN No.	Signal Description	PIN No.	Signal Description
1	P0	2	P1
3	P2	4	P3
5	P4	6	P5
7	P6	8	P7
9	P8	10	P9
11	P10	12	P11
13	P12	14	P13
15	P14	16	P15
17	Ground	18	P16
19	SHFCLK	20	P17
21	Ground	22	Ground
23	P18	24	P19
25	P20	26	P21
27	P22	28	P23
29	FLM	30	ENAVEE
31	LP	32	PCLK
33	M	34	+5V
35	+12V	36	+5V
37	+12V	38	+5V
39	Ground	40	Ground

■ **J18 : External Keyboard Connector**

PIN No.	Signal Description
1	Keyboard Clock
2	Keyboard Data
3	N/C
4	Ground
5	+5V

■ **J19 : PS/2 Mouse Connector (6-pin Mini-DIN)**

PIN No.	Signal Description
1	Mouse Data
2	N/C
3	Ground
4	+5V
5	Mouse Clock
6	N/C

■ **J20 : PS/2 Keyboard Connector (6-pin Mini-DIN)**

PIN No.	Signal Description
1	Keyboard Data
2	N/C
3	GND
4	+5V
5	Keyboard Clock
6	N/C

■ **J21 : CPU Cooling FAN Power Connector**

PIN No.	Signal Description
1	+12V
2	Ground
3	N/C