XStend/XS95 Programmer's Model

XS95 Pins (J2)	Power/ GND	DIP Switch	Push-buttons	LEDs	VGA Interface	PS/2 Interface	RAMs	Stereo Codec	8051 Uc	PC Parallel Port	Oscillator	Function
1				LSB0			A4					Left LED segment; RAM address line
2				LSB1			A7					Left LED segment; RAM address line
3				LSB2			A5					Left LED segment; RAM address line
4												Uncommitted XS95 I/O pin
5		DIPSW4						SDOUT	P1.3			DIP switch; codec serial data output; uC I/O
6		DIPSW1					LCEB		P1.0			DIP switch; left RAM chip-enable, uC I/O port
7		DIPSW2					RCEB		P1.1			DIP switch; right RAM chip-enable, uC I/O port
9											CLK	XS Board oscillator
10			RESETB						XTAL1			Pushbutton; uC clock
11		DIPSW3						MCLK	P1.2			DIP switch; codec master clock; uC I/O port
12												Uncommitted XS95 I/O pin
13									PSENB			uC program store-enable
14				S5	RED1							XS Board LED segment; VGA color signal
15				S6	HSYNCB							XS Board LED segment; VGA horiz. sync.
17				S3	GREEN1							XS Board LED segment; VGA color signal
18				S4	RED0							XS Board LED segment; VGA color signal
19				S2	GREEN0							XS Board LED segment; VGA color signal
20									ALEB			uC address-latch-enable
21				S0	BLUE0							XS Board LED segment; VGA color signal
23				S1	BLUE1							XS Board LED segment; VGA color signal
25												Uncommitted XS95 I/O pin
26						KB_CLK			P3.4 (T0)			PS/2 keyboard clock; uC I/O port
28												JTAG TDI; DIN
29												JTAG TMS
30												JTAG TCK; CCLK
31									P3.0 (RXD)			uC I/O port
32									P3.7 (RD_)			uC I/O port
33									P3.5 (T1)			uC I/O port
34				RDPB					P2.7			Right LED decimal-point; RAM address line; uC I/O port
35				DB8			D7		P0.7			LED; RAM data line; uC muxed address/data line
36				DB7			D6		P0.6			LED; RAM data line; uC muxed address/data line
37				DB6			D5		P0.5			LED; RAM data line; uC muxed address/data line
39				DB5			D4		P0.4			LED; RAM data line; uC muxed address/data line
40				DB4			D3		P0.3			LED; RAM data line; uC muxed address/data line
41				DB3			D2		P0.2			LED; RAM data line; uC muxed address/data line
43				DB2			D1		P0.1			LED; RAM data line; uC muxed address/data line
44				DB1			D0		P0.0			LED; RAM data line; uC muxed address/data line
45									RST			uC reset
46								CCLK		PC_D0		Codec control line; PC parallel port data output
47								CDIN		PC_D1		Codec control line; PC parallel port data output
48								CSB		PC_D2		Codec control line; PC parallel port data output
49	GND											Power supply ground
50										PC_D3		PC parallel port data output
51										PC_D4		PC parallel port data output
52										PC_D5		PC parallel port data output
53				RSB4			A12		P2.4			Right LED segment; RAM address line; uC I/O port
54				RSB2			A10		P2.2			Right LED segment; RAM address line; uC I/O port
55				RSB3			A11		P2.3			Right LED segment; RAM address line; uC I/O port
56				RSB1			A9		P2.1			Right LED segment; RAM address line; uC I/O port
57				RSB5			A13		P2.5			Right LED segment; RAM address line; uC I/O port
58				RSB0			A8		P2.0			Right LED segment; RAM address line; uC I/O port
59												JTAG TDO; DOUT
61				RSB6			A14		P2.6			Right LED segment; RAM address line; uC I/O port
62							OEB					RAM output-enable
63							WEB		P3.6 (WR_)			RAM write-enable; uC I/O port
65							CEB					XS Board RAM chip-enable
66		DIPSW7						LRCK	P1.6	PC_S5		DIP switch; codec left-right channel select; uC I/O port; PC parallel port status in
68									P3.3 (INT1_)			uC I/O port
69									P3.2 (INT0_)			uC I/O port
70		DIPSW8				KB_DATA			P3.1 (TXD)	PC_S6		DIP switch; PS/2 keyboard serial data; uC I/O port; PC parallel port status input
71		DIPSW6						SDIN	P1.5	PC_S3		DIP switch; codec serial input data; uC I/O port; PC parallel port status input
72		DIPSW5						SCLK	P1.4	PC_S4		DIP switch; codec serial clock; uC I/O port; PC parallel port status input
74												Uncommitted XS95 I/O pin
75				LSB3			A0					Left LED segment; RAM address line
76												Uncommitted XS95 I/O pin
77												Uncommitted XS95 I/O pin
78	+5V											+5V power source
79				LSB4			A1					Left LED segment; RAM address line
80										PC_D7		PC parallel port data output
81										PC_D6		PC parallel port data output
82				LSB5			A2					Left LED segment; RAM address line
83				LSB6			A6					Left LED segment; RAM address line
84				LDPB			A3					Left LED decimal-point; RAM address line
24,67			SPAREB	DP	VSYNCB				P1.7			Pushbutton; XS Board LED decimal-point; VGA horiz. sync.; uC I/O port

VGA Connector   SPARE   RESET   PROGRAM

DIPSW1 DIPSW2 DIPSW3 DIPSW4 DIPSW5 DIPSW6 DIPSW7 DIPSW8

0
1

PS/2 Port

KB_DATA
KB_CLK

PC Parallel Port Status Inputs

PC_S6
PC_S5
PC_S4
PC_S3

Stereo Audio Input

LRCK
SDIN
SCLK
SDOUT
MCLK

Stereo Codec

Stereo Audio Output

VGA Inputs

VSYNC
HSYNC
RED1
RED0
GREEN1
GREEN0
BLUE1
BLUE0

10
45
20
13
67
66
71
72
11
7
6

21 XTAL1
10 RST
33 ALE
32 PSEN
9   P1.7
8   P1.6
7   P1.5
6   P1.4
5   P1.3
4   P1.2
3   P1.1
2   P1.0

8051 uC

7-Segment LED

S6 DP
S5 S6
    S5
S3 S4
    S3
S2 S2
S0 S1
    S0

24
15
14
18
17
19
23
21

32

19 P3.7 (RD)
18 P3.6 (WR)
17 P3.5 (T1)
16 P3.4 (T0)
15 P3.3 (INT1)
14 P3.2 (INT0)
13 P3.1 (TXD)
11 P3.0 (RXD)

33
26
68
69
70
31

36 P0.7 (A7/D7)
37 P0.6 (A6/D6)
38 P0.5 (A5/D5)
39 P0.4 (A4/D4)
40 P0.3 (A3/D3)
41 P0.2 (A2/D2)
42 P0.1 (A1/D1)
43 P0.0 (A0/D0)

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36
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43
44

12 MHz Osc.

9

34
61
57
53
55
54
56
58

30 P2.7 (A15)
29 P2.6 (A14)
28 P2.5 (A13)
27 P2.4 (A12)
26 P2.3 (A11)
25 P2.2 (A10)
24 P2.1 (A9)
    P2.0 (A8)

CPLD

PC Parallel Port Data Outputs

PC_D7
PC_D6
PC_D5
PC_D4
PC_D3
PC_D2
PC_D1
PC_D0

80
81
52
51
50
48
47
46

11 D7
12 D6
13 D5
19 D4
18 D3
17 D2
16 D1
15 D0

11 D7
12 D6
13 D5
19 D4
18 D3
17 D2
16 D1
15 D0

11 D7
12 D6
13 D5
19 D4
18 D3
17 D2
16 D1
15 D0

4   A14
25 A13
2   A12
3   A11
1   A10
26 A9
24 A8
23 A7
21 A6
5   A5
6   A4
7   A3
8   A2
9   A1
10 A0

4   A14
25 A13
2   A12
3   A11
1   A10
26 A9
24 A8
23 A7
21 A6
5   A5
6   A4
7   A3
8   A2
9   A1
10 A0

4   A14
25 A13
2   A12
3   A11
1   A10
26 A9
24 A8
23 A7
21 A6
5   A5
6   A4
7   A3
8   A2
9   A1
10 A0

Free Pins

77
76
74
25
12
4

32K x 8 SRAM

Left 32K x 8 SRAM

Right 32K x 8 SRAM

2
83
3
1
84
82
79
75

7   A7
8   A6
9   A5
10 A4
23 A3
6   A2
    A1
    A0

63
62
65

27 WE
22 OE
20 CE

27 WE
22 OE
20 CE

27 WE
22 OE
20 CE

XS95 Board

XStend Board

Left 7-Segment LED

S6 DP
S5 S6
    S5
S3 S4
    S3
S2 S2
S0 S1
    S0

Right 7-Segment LED

S6 DP
S5 S6
    S5
S3 S4
    S3
S2 S2
S0 S1
    S0

Bar LED

D1 D2 D3 D4 D5 D6 D7 D8