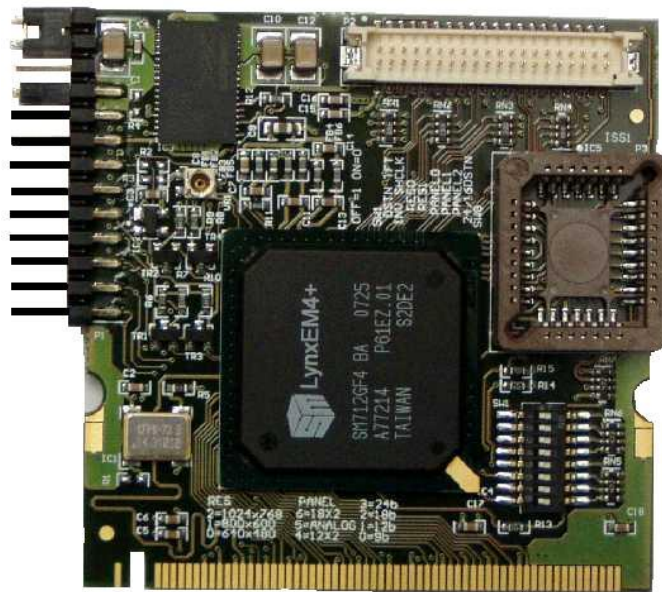


Blue Chip Technology



Lynx

Mini PCI Video Module

Document Ref: User Guide

Version: 1.0

Introduction

The Lynx Video module provides CRT and LCD output modes in a mini-PCI type III format. The module has the capability of having its own Video BIOS, or can operate directly from a suitable Video BIOS built into the System BIOS into which it is attached.

Connectors and Jumpers

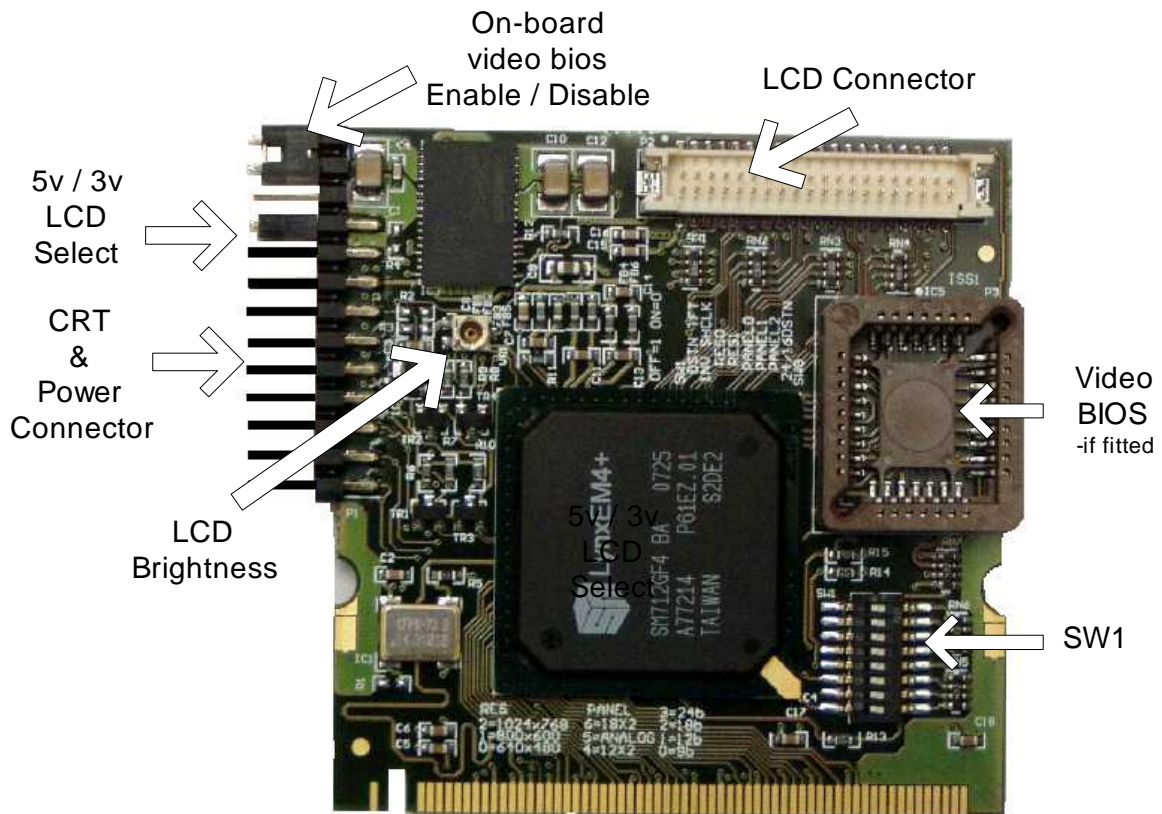


Figure 1: Connector and Jumper Locations

Jumpers

The jumper locations are Pins 19 – 26 as shown in Figure 2 below

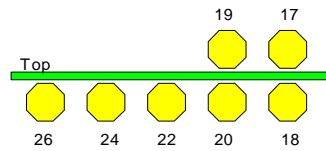
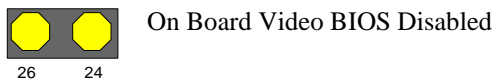
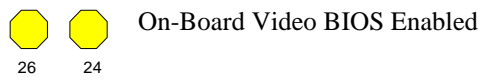
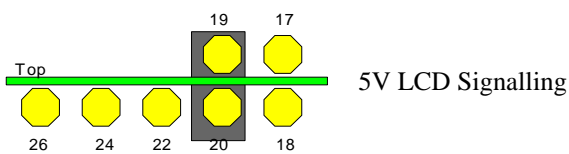
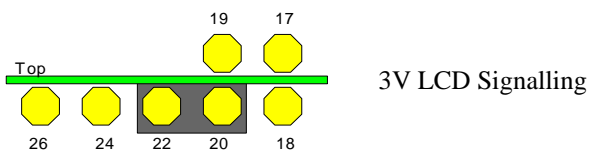


Figure 2: Jumpers

Video BIOS Enable Pins 24 - 26



LCD DISPVCC Select



LCD Brightness Control

The LCD Display brightness can be altered via a potentiometer shown in Figure 1

CRT / Power Connector – P1

The edge connector combines the VGA output to CRT connection as well as power input for LCD circuitry

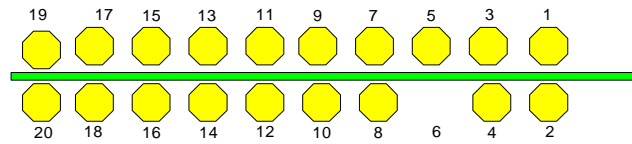
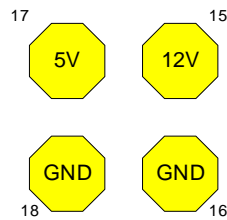


Figure 3: Edge Connector

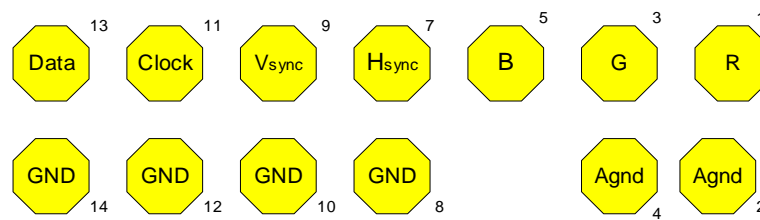
LCD Power Input Pins 15-18

Power Input is required for LCD operation only. AUX5V is required for the LCD signalling. +12V is required for the LCD inverter.



The AUX5V input is converted to DISPVCC for the LCD as required by selecting jumpers 19-20 or 20-22 as shown in the section [LCD DISPVCC Select](#) on the previous page.

CRT VGA Output Pins 1- 14



Pin 6 is used as Polarising key.

For basic CRT operation, Pins 1 to 10 are sufficient. However for full VGA operation, including DDC support, all pins must be used

Switch SW1 – Panel Display Settings

Switch	Reset State	Setting
1	0	TFT
	1	DSTN
2	0	FPCLK Normal
	1	FPCLK Inverted
4:3	00	640 x 480
	01	800 x 600
	10	1024 x 768
	11	1280 x 1024
7:6:5	000	9-BIT TFT
	001	12-BIT TFT
	010	18-BIT TFT
	011	24-BIT TFT
	100	12X2-BIT TFT
	101	ANALOGTFT
8	0	16-BIT DSTN
	1	24-BIT DSTN

Note: with SW1, “0” denotes ON, and “1” denotes OFF.

The default pin positions are all OFF i.e. 11111111 which denotes 24-Bit DSTN, 1280x1024 with FPCLK inverted. Switches 7:6:5 in this instance are not relevant

LCD Connector – P2

LCD connectivity is via a Hirose DF13-40DP-1.25V connector as show in Figure 1.

The connections for this connector are as follows

Pin	Description		Pin	Description
1	12V		2	12V
3	GND		4	GND
5	VDD		6	VDD
7	Vcon		8	GND
9	P0(B7)		10	P1(B6)
11	P2(B5)		12	P3(B4)
13	P4(B3)		14	P5(B2)
15	P6 (B1)		16	P7 (B0)
17	P8(G7)		18	P9(G6)
19	P10(G5)		20	P11(G4)
21	P12(G3)		22	P13(G2)
23	P14 (G1)		24	P15 (G0)
25	P16(R7)		26	P17(R6)
27	P18(R5)		28	P19(R4)
29	P20(R3)		30	P21(R2)
31	P22 (R1)		32	P23 (R0)
33	GND		34	GND
35	PCLK		36	FLM(VS)
37	DE(MOD)		38	LP(HS)
39	BLON		40	LCDON

Pin Listing for Interfacing to colour DSTN and colour TFT LCD

The following table shows pin combinations for different panels

Lynx Pin Name	DSTN			LCD				
	16-bit	24-bit	9-bit	12-bit	18-bit	24-bit	12-bit x2	18-bit x2
P0	LD7	LD7				B7	BB3	BB3
P1	LD6	LD6				B6	BB2	BB2
P2	LD5	LD5			B5	B5	BB1	BB1
P3	LD4	LD4			B4	B4	BB0	BB0
P4	LD3	LD3		B3	B3	B3	BA3	BA3
P5	LD2	LD2	B2	B2	B2	B2	BA2	BA2
P6	LD1	LD1	B1	B1	B1	B1	BA1	BA1
P7	LD0	LD0	B0	B0	B0	B0	BA0 ¹	BA0
P8	UD3	UD3				G7	GB3	GB3
P9	UD2	UD2				G6	GB2	GB2
P10	UD1	UD1			G5	G5	GB1	GB1
P11	UD0	UD0			G4	G4	GB0	GB0
P12		LD11		G3	G3	G3	GA3	GA3
P13		LD10	G2	G2	G2	G2	GA2	GA2
P14		LD9	G1	G1	G1	G1	GA1	GA1
P15		LD8	G0	G0	G0	G0	GA0 ¹	GA0
P16		UD11				G7	RB3	RB3
P17		UD10				G6	RB2	RB2
P18		UD9			R5	R5	RB1	RB1
P19		UD8			R4	R4	RB0	RB0
P20	UD7	UD7		R3	R3	R3	RA3	RA3
P21	UD6	UD6	R2	R2	R2	R2	RA2	RA2
P22	UD5	UD5	R1	R1	R1	R1	RA1	RA1
P23	UD4	UD4	R0	R0	R0	R0	RA0	RA0

¹ RA0 denotes first pixel of R0 for 2 pixels/clock interface. RB0 denotes second pixel of R0 for 2 pixels/clock interface

Care should be taken when matching the Signals from connector P2 to the particular LCD in use.

The following pages show wiring pin-outs for LCD's tested by Blue Chip Technology

NEC NL6448BC20-08 LCD

Lynx DF13-40DS-1.25		NEC NL6448BC20-08 LCD DF9-31S-1		Inverter Mlx 51021-0800	
				7	BRTH
				5	EN
				8	AM
1	12V			1	12V
2	12V			2	12V
3	GND			3	Gnd
4	GND			4	Gnd
5	VDD	28	VCC Power supply		
6	VDD	29	VCC Power supply		
7	Vcon			6	BRTL
8	GND	26	GND Ground		
9	P0(B7)				
10	P1(B6)				
11	P2(B5)	25	B5 Blue data (MSB)		
12	P3(B4)	24	B4 Blue data		
13	P4(B3)	23	B3 Blue data		
14	P5(B2)	22	B2 Blue data		
15	P6 (B1)	21	B1 Blue data		
16	P7(B0)	20	B0 Blue data (LSB)		
17	P8(G7)				
18	P9(G6)				
19	P10(G5)	18	G5 Green data (MSB)		
20	P11(G4)	17	G4 Green data		
21	P12(G3)	16	G3 Green data		
22	P13(G2)	15	G2 Green data		
23	P14 (G1)	14	G1 Green data		
24	P15(G0)	13	G0 Green data (LSB)		
25	P16(R7)				
26	P17(R6)				
27	P18(R5)	11	R5 Red data (MSB)		
28	P19(R4)	10	R4 Red data		
29	P20(R3)	9	R3 Red data		
30	P21(R2)	8	R2 Red data		
31	P22 (R1)	7	R1 Red data		
32	P23(R0)	6	R0 Red data (LSB)		
33	GND	12,5	GND Ground		
34	GND	19,1	GND Ground		
35	PCLK	2	CLK Dot clock		
36	FLM(VS)	4	Vsync Vertical synch		
37	DE(MOD)	27	DE Data enable		
38	LP(HS)	3	Hsync Horizontal synch		
39	BLON				
40	LCDON				
		30	N.C. Non-connection (Open)		
		31	DPS Scan Direction select		

The NEC NL6448BC20-08 is a 640x480 18-bit TFT. The SW1 switch settings for this are

SW1 ON



