

PC104VGA-UNI
PC/104 VGA/LCD Module
User's Manual

(Version 1.0)

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Chapter 0

Packing List

Function	Function	Package
COP-PC104VGA-UNI	VGA/LCD Module	COP-PC104VGA-UNI PC/104 VGA Module Utility and Drivers x 1

Chapter 1

Specifications

Features	COP-PC104VGA-UNI
Chipset	TOPRO (HMC) TP6508IQ
Bus Interface	PC/104 standard compliant
Video Memory	1MB
Resolution	Up to 1024X768 @ 256 colors or 1280X1024 @ 16 colors
VGA BIOS Socket	1
Display Connector	15-Pin D-type VGA, 10-Pin box-header VGA 44-pin box-header LCD)
Power Requirement	+5V @ 200mA
Board Weight	75 g
Board Size	96mm X 90 mm
Storage Temperature	0 ~ +60°C

Description

The TP6508IQ is an advanced single-chip flat panel VGA controller. It's used for small-size computer or notebook computer system with simple operation and powerful features. Also it contains all of the functions and supports logic required to implement the IBM VGA display standards and enhanced display modes on LCD, PLASMA, EL panel and TV display at register and BIOS level compatible. A simultaneous display technology is implemented in TP6508IQ to be used for CRT/Flat panel, LCD/TV display.

For minimum chip-count or board-space, it can design to complete a video subsystem with only one 256kx16 DRAM (512k Bytes). This video subsystem can support all panel type without any glue logic or external frame buffer.

Display memory

With 1 MB memory, the VGA controller can drive CRT displays with resolutions up to 1024 x 768 at 256 colors (or 1280 X 1024 at 16 colors).

Resolution

1280x1024 @ 16 colors

1024x768 @ 256 colors

800x600 @ 64K colors

640x480 @ 16.7M colors

Software Support/Application Drivers:

Windows 3.1/ 95/ 98/ NT

Interface

PC/104 standard compliant

Connector:

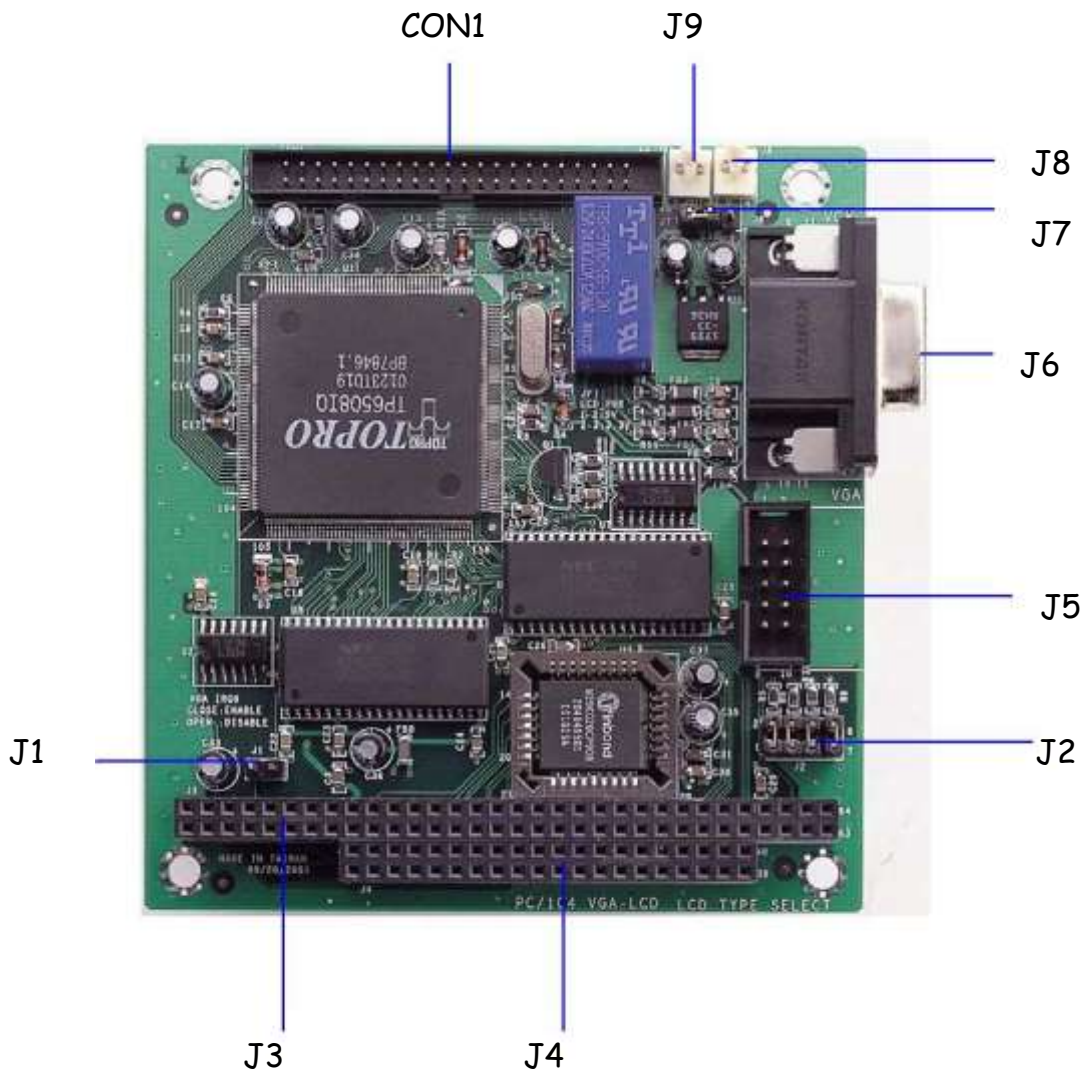
15-pin D-Type VGA external connector

10-pin box header VGA connector

44-pin box header for LCD connector



Component Location



Chapter 2

Jumper Setting

IRQ 9 Select (J1)

Close: ENABLE

Open: DISABLE

LCD Type Select (J2)

	Type of Display	1-2	3-4	5-6	7-8	Address of VGA BIOS
1	Standard CRT	C	C	C	C	00000~07FFF Hex
2	Mono DSTN 640x480	C	C	C	O	08000~0FFFF Hex
3	Color DSTN 640x480	C	C	O	C	10000~17FFF Hex
4	16-bit TFT 640x480	C	C	O	O	18000~1FFFF Hex
5	18/24-bit TFT 640x480	C	O	C	C	20000~27FFF Hex
6	16-bit TFT 800x600	C	O	C	O	28000~2FFFF Hex
7	18/24-bit TFT 800x600	C	O	O	C	30000~37FFF Hex
8	EL 640x480	C	O	O	O	38000~3FFFF Hex

* Note: "C" means "close"; "O" means "open"

LCD Voltage Select (J7)

1-2: 5V

2-3: 3.3V

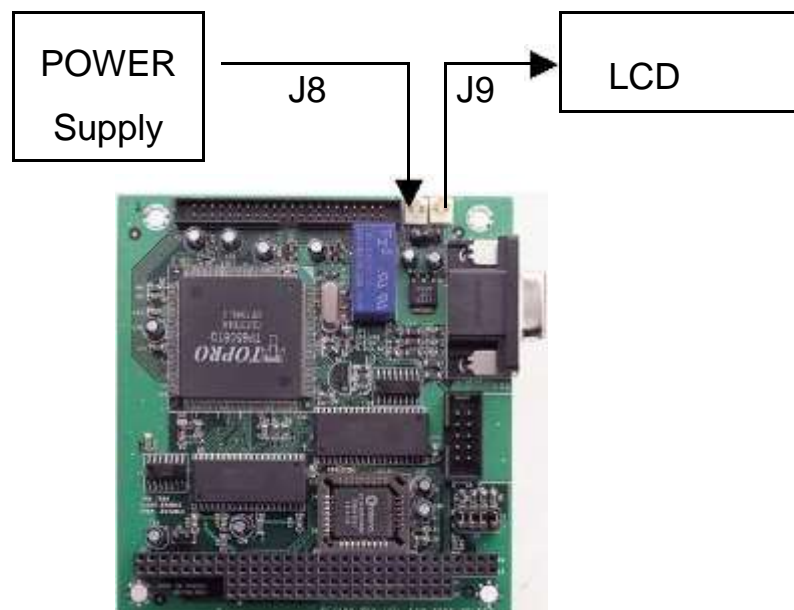
Chapter 3

Connectors

- J1** IRQ 9 Enable / Disable
- J2** LCD type select
- J3** 64-pin PC/104 bus
- J4** 40-pin PC/104 bus
- J5** 10-pin box-header VGA connector
- J6** 15-pin D-Type VGA connector
- J7** LCD Voltage Select
- J8** Power In **(Note)**
- J9** Power Out **(Note)**
- CON1** 44-pin LCD connector

Note: J8 and J9 are for “Voltage to LCD after H-Sync signal output”

To avoid the frame flickering when power on the LCD, please use J8 (Power In) and J9 (Power out) between power supply and LCD, then the power will get in the LCD after the H-Sync appears. This is an extra function, you can use it or not.



This is an extra function, you can use it or not.

Chapter 4

SVGA Setup

4.1 Introduction

The COP-PC104VGA-UNI has an on-board VGA interface. The specifications and features are described as follows:

4.1.1 Chipset

The COP-PC104VGA-UNI uses a TOPRO TP6508IQ for its SVGA controller, which supports conventional analog CRT monitor or flat panel. In addition, it also supports interlaced and non-interlaced analog monitors (color and monochrome VGA) in high-resolution modes while maintaining complete IBM VGA compatibility. Multiple frequency (multisync) monitors are handled as if they were analog monitors.

4.1.2 Display Memory

With 1 MB memory, the VGA controller can drive CRT displays or color panel displays with resolutions up to 1024 x 768 at 256 colors.

4.2 Flat Panel BIOS and Wiring

Below is a list of optional Flat Panel SVGA BIOS. The VGA BIOS is combined with the system BIOS in a single. To change to another BIOS please contact your local dealer.

MLCD.dat - Data File for MONO DSTN640*480 (**Default**)

- example :
- (1) HOSIDEN HLM6667
 - (2) HITACHI LMG5160XUFC
 - (3) CASIO MD650TS00-01
 - (4) OPTREX DMF_50260NFU-FW-8

DSTN.dat - Data file for Color DSTN640*480

- example :
- (1) Sanyo LCM-5331-22NTK
 - (2) SHARP LM64C35P

TFT_S1.dat - Data File for TFT640*480-Sync (16 BIT)



TFT_S2.dat - Data File for TFT640*480-Sync (18/24 BIT)

example : (1) HITACHI TX26D60/TX24D55

(2) TOSHIBA LTM09C015A

(3) SHARP LQ10D321

TFT_LP1.dat - Data File For TFT640*480-LP (16 BIT)

TFT_LP2.dat - Data File For TFT640*480-LP (18/24 BIT)

example : (1) Toshiba LTM09c015A)

TFT86_S1.dat - Data File for TFT800*600_sync (16 BIT)

TFT86_S2.dat Data File for TFT800*600_sync (18/24 BIT)

example : (1) NEC NL8060AC26-05

(2) NEC NL8060AC26-04

(3) NEC NL8060BC31-02

EL.dat - Data File for EL640*480

example : (1) PLANAR EL640.480-A

PLASMA.dat - Data File for PLASMA640*480

example : (1) PANASONIC S817

CRT/Flat Panel Mode

All the above BIOS support either CRT only, Flat Panel only or CRT/Flat Panel simultaneously. To set the mode a Panel Switching Utility is used.

USAGE:

At DOS prompt type >**SW508** then Screen will show

1. CRT Only
2. Panel Only
3. CRT/Panel Simutaneous

NEC NL6448AC33-18 wiring

NEC NL6448AC33-18		COP-PC104VGA-UNI CON1	
Pin	Pin Name	Pin	Pin Name
CN1-1	GND	3	GND

CN1-2	CLK	35	SHFCLK
CN1-3	Hsync	38	LP
CN1-4	Vsync	36	FLM
CN1-5	GND	4	-
CN1-6	R0	27	P18
CN1-7	R1	28	P19
CN1-8	R2	29	P20
CN1-9	R3	30	P21
CN1-10	R4	31	P22
CN1-11	R5	32	P23
CN1-12	GND	33	-
CN1-13	G0	19	P10
CN1-14	G1	20	P11
CN1-15	G2	21	P12
CN1-16	G3	22	P13
CN1-17	G4	23	P14
CN1-18	G5	24	P15
CN1-19	GND	34	-
CN1-20	B0	11	P2
CN1-21	B1	12	P3
CN1-22	B2	13	P4
CN1-23	B3	14	P5
CN1-24	B4	15	P6
CN1-25	B5	16	P7
CN1-26	GND	39	-
CN1-27	ENAB	37	MDE
CN1-28	Vcc	43	Vcc



CN1-29	Vcc	44	Vcc
CN1-30	NC	-	-
CN1-31	NC	-	-

NEC NL6448AC30-10 wiring

NEC NL6448AC30-10		COP-PC104VGA-UNI CON1	
Pin	Pin Name	Pin	Pin Name
CN1-1	CLK	42	SHFCLK
CN1-2	Hsync	38	LP
CN1-3	Vsync	36	FLM
CN1-4	DE	37	MDE
CN1-5	-	-	P0
CN1-6	B0	10	P1
CN1-7	B1	11	P2
CN1-8	B2	12	P3
CN1-9	B3	13	P4
CN1-10	-	14	P5
CN1-11	-	15	P6
CN1-12	G0	16	P7
CN1-13	G1	17	P8
CN1-14	G2	18	P9
CN1-15	G3	19	P10
CN1-16	-	20	P11
CN1-17	R0	21	P12
CN1-18	R1	22	P13

CN1-19	R2	23	P14
CN1-20	R3	24	P15
CN1-21	-	-	P16
CN1-22	-	-	P17
CN1-23	-	27	P18
CN1-24	-	28	P19
CN1-25	-	29	P20
CN1-26	-	30	P21
CN1-27	-	31	P22
CN1-28	-	32	P23
CN1-29	PVcc	5	LCD Vdd
CN1-30	Vcc	43	Vcc
CN1-31	MODE	44	Vcc
CN1-32	GND	3	GND
CN1-33	GND	4	GND
CN1-34	Vdd +12	1	+12
CN1-35	ENABKL	40	ENABKL
CN1-36	GND	39	GND

LJ32H028 wiring

LJ32H028		COP-PC104VGA-UNI CON1	
Pin	Pin Name	Pin	Pin Name
CN1-1	D1	11	P2
CN1-2	D0	12	P3
CN1-3	D3	9	P0
CN1-4	D2	10	P1
CN1-5	CP2	35	SHF_CLK

CN1-6	GND	3,4	GND
CN1-7	CP1	38	LP
CN1-8	GND	33,34	GND
CN1-9	S	36	FLM
CN1-10	-	-	-
CN1-11	-	-	-
CN1-12	-	-	-
CN1-13	+5V	43,44	+5V(Vdd)
CN1-14	-	-	-
CN1-15	+12V	1,2	+12V

SHARP LQ10D42 wiring

(640 X 480 TFT Color)

SHARP LQ10D42		COP-PC104VGA-UNI CON1	
Pin	Pin Name	Pin	Pin Name
CN1-1	GND	3,4	GND
CN1-2	CLK	42	SHFCLK
CN1-3	Hsync	38	LP
CN1-4	Vsync	36	FLM
CN1-5	GND	3,4	GND
CN1-6	R0	21	P12
CN1-7	R1	22	P13
CN1-8	R2	23	P14
CN1-9	R3	24	P15
CN1-10	R4	25	P16
CN1-11	R5	26	P17

CN1-12	GND	3,4	GND
CN1-13	G0	15	P6
CN1-14	G1	16	P7
CN1-15	G2	17	P8
CN1-16	G3	18	P9
CN1-17	G4	19	P10
CN1-18	G5	20	P11
CN1-19	GND	3,4	GND
CN1-20	B0	9	P0
CN1-21	B1	10	P1
CN1-22	B2	11	P2
CN1-23	B3	12	P3
CN1-24	B4	13	P4
CN1-25	B5	14	P5
CN1-26	GND	3,4	GND
CN1-27	ENAB	40	M
CN1-28	Vcc	43,44	Vcc +5V
CN1-29	Vcc	43,44	Vcc +5V
CN1-30	R/L	-	-
CN1-31	U/D	-	-

SHARP LQ12S31 wiring

(800 X 600 TFT Color)

SHARP LQ12S31		COP-6052V CON1	
Pin	Pin Name	Pin	Pin Name
CN1-1	GND	3	GND

CN1-2	CLK	35	SHFCLK
CN1-3	GND	4	GND
CN1-4	Hsync	38	LP
CN1-5	Vsync	36	FLM
CN1-6	GND	8	GND
CN1-7	GND	8	GND
CN1-8	GND	8	GND
CN1-9	R0	27	P18
CN1-10	R1	28	P19
CN1-11	R2	29	P20
CN1-12	GND	8	GND
CN1-13	R3	30	P21
CN1-14	R4	31	P22
CN1-15	R5	32	P23
CN1-16	GND	39	GND
CN1-17	GND	39	GND
CN1-18	GND	39	GND
CN1-19	G0	19	P10
CN1-20	G1	20	P11
CN1-21	G2	21	P12
CN1-22	GND	39	
CN1-23	G3	22	P13
CN1-24	G4	23	P14
CN1-25	G5	24	P15
CN1-26	GND	41	GND
CN1-27	GND	41	GND

CN1-28	GND	41	GND
CN1-29	B0	11	P2
CN1-30	B1	12	P3
CN1-31	B2	13	P4
CN1-32	GND	41	GND
CN1-33	B3	14	P5
CN1-34	B4	15	P6
CN1-35	B5	16	P7
CN1-36	GND	41	GND
CN1-37	ENAR	37	M
CN1-38	TST	-	-
CN1-39	Vcc	43	+5Vcc
CN1-40	Vcc	44	+5Vcc
CN1-41	TST	-	-

Warranty

This product is warranted to be in good working order for a period of one year from the date of purchase. Should this product fail to be in good working order at any time during this period, we will, at our option, replace or repair it at no additional charge except as set forth in the following terms. This warranty does not apply to products damaged by misuse, modifications, accident or disaster. Vendor assumes no liability for any damages, lost profits, lost savings or any other incidental or consequential damage resulting from the use, misuse of, or inability to use this product. Vendor will not be liable for any claim made by any other related party. Return authorization must be obtained from the vendor before returned merchandise will be accepted. Authorization can be obtained by calling or faxing the vendor and requesting a Return Merchandise Authorization (RMA) number. Returned goods should always be accompanied by a clear problem description.