

ICOP-2720
VGA/LCD Development Kit
for Tiny Module
User's Manual

(Version 1.0)

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Chapter 0

Packing List

FUNCTION	FUNCTION	PACKAGE
ICOP-2720	VGA/LCD Development kit for Tiny Module	<ul style="list-style-type: none">● ICOP-2720 VGA/LCD Development kit for Tiny Module

Chapter 1

Specifications

FEATURES	ICOP-2810
Chipset	TOPRO (HMC) TP6508IQ
Bus Interface	Specific ISA Bus (for Tiny Module only)
Video Memory	1MB
Resolution	Up to 1024X768 @ 256 colors or 1280X1024 @ 16 colors
VGA BIOS Socket	1
Display Connector	<ul style="list-style-type: none">· 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	100mm X 66 mm
Storage Temperature	-20 ~ +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

Specific ISA Bus (For Tiny Module Only)

Connector:

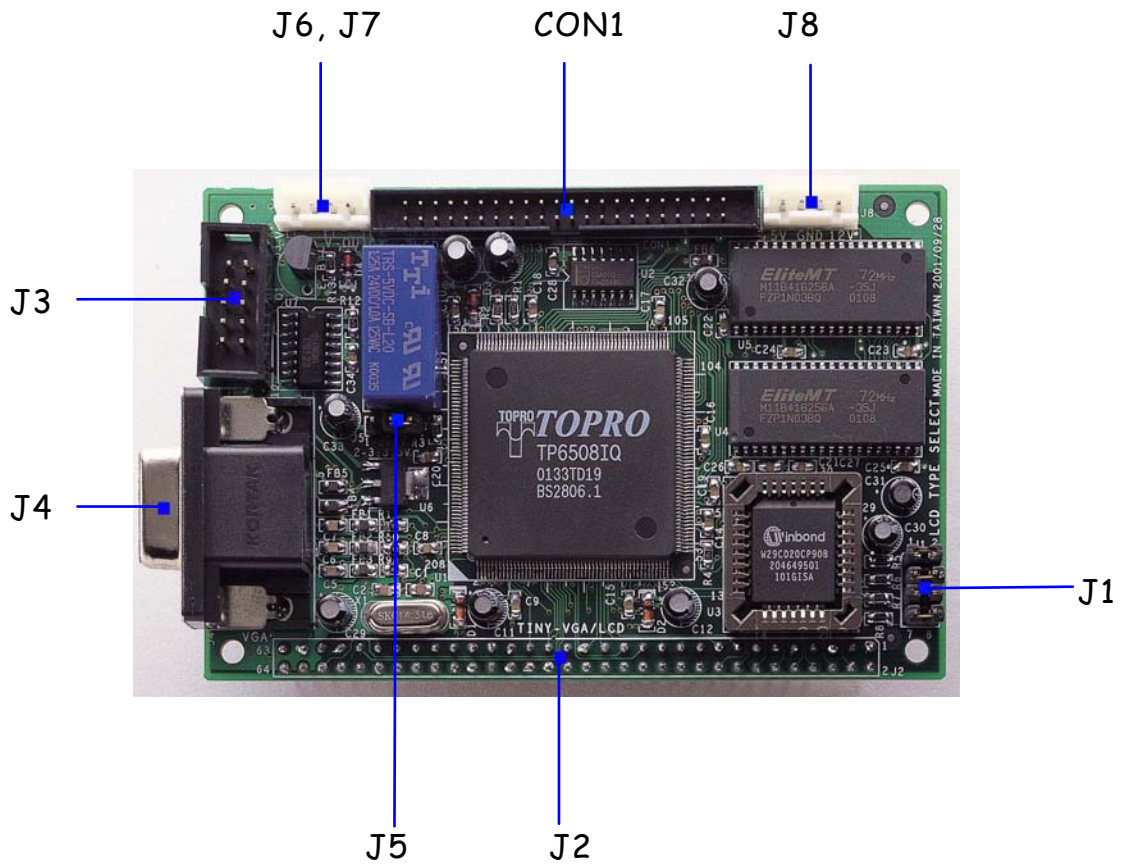
15-pin D-Type VGA external connector

10-pin box header VGA connector

44-pin box header for LCD connector

1 socket reserve for extended VGA BIOS

Component Location



J1: LCD Type Select

J2: Specific ISA bus

J3: 10 pin box header for VGA

J4: D-type 15 pin VGA connector

J5: LCD voltage select

J6,J7: Reserved for internal relay

(J6:Power in,J7:Power out)

J8: +5V, +12V Power input

1	2	3	4
Vcc	Ground	Ground	+12V

Cont1: 44 pin LCD connector

Chapter 2

Jumper Setting

J1: LCD Type Select

	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”

J5: LCD voltage select

Voltage	Pin 1-2	Pin 2-3
5V	close	
3.3V		close

Chapter 3

SVGA Setup

3.1 Introduction

The ICOP-2720 has an on-board VGA interface. The specifications and features are described as follows:

3.1.1 Chipset

The ICOP-2720 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.

3.1.2 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.

3.2 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		ICOP-2720 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		ICOP-2720 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		ICOP-2720 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		ICOP-2720 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		ICOP-2720 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.