

# MBC-2690

# MBC-2693

## User's Manual

Version 1.0

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## **Packing List**

Before you begin installing your card, please make sure that the following materials have been shipped:

- 1 MBC-2690 OR MBC-2693 VGA Board
- 1 CD-ROM for manual and Driver
- 1 Quick Installation Guide
- 1 Screws bag

If any of these items are missing or damaged, contact your distributor or sales representative immediately.

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## 1.1 Introduction

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This section describes the essential components of which the card consists. Basically the card integrates a high-performing flat-panel/CRT controller, a 32K bytes BIOS EEPROM, 2MB/4MB high performance video memory embedded on chipset, and a clock synthesizer. Thus integrated the card can almost support, by employing the standard or a customized BIOS EPROM, any of the currently most popular LCDs and traditional CRT monitors in high resolution modes.

The Chipset of flat-panel/CRT controller is C&T 69000/69030. It is VGA-compatible and highly integrated, supporting a wide variety of LCD, EL, Gas plasma panels as well as the traditional CRT monitors. It also supports simultaneous flat-panel/CRT operation. It can support the standard, super VGA, XGA, SXGA and UXGA (MBC-2693 Only) resolution modes.

In addition to a 36-bit universal panel interface built on the cards, via which you can quickly set up most of the popular LCDs. Via the 36-bit universal interface you can also have two connectors 18-bit and 36-bit ( two channels ) ones built on the LVDS board (option) piggybacked onto the card.

## 1.2 Features

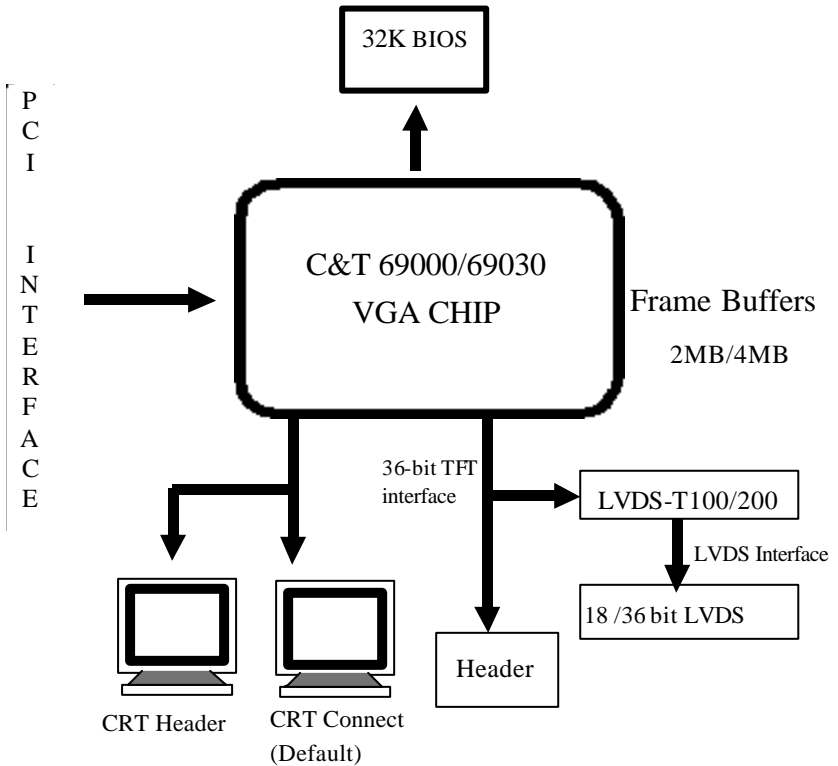
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- C&T 69000/69030 flat-panel/CRT controller
- PCI bus
- External CRT interface (D\_SUB 15-pin)
- 36-bit universal and LVDS panel interface
- 18 or 36-bit TFT panel interface
- Internal CRT interface (10-pin)
- Supports the CRT display resolutions:
  - A. MBC-2690: up to 1024x768 65K colors, 800x600 & 640x480 true color, non-interlace
  - B. MBC-2693: up to 1600x1200 65K colors, 1280x1024 & 1024x768 & 800x600 & 640x480 true color, non-interlace.
- 2MB/4MB SD-RAM on chip
- LVDS external LCD interface (option)
- Emulate EGA, CGA and Hercules display adapters
- Supports simultaneous flat-panel/CRT operation
- Advanced power management features minimizing power consumption during :
  - A. Normal operation
  - B. Stand by (sleep) mode
  - C. Panel-off power saving mode

### 1.3 Locating Components

This section shows you the basic layout of the card and the location of each of the essential components on it. You can easily obtain that by looking into the following three diagrams. This will further strengthen your understanding about the basic integration of the card.

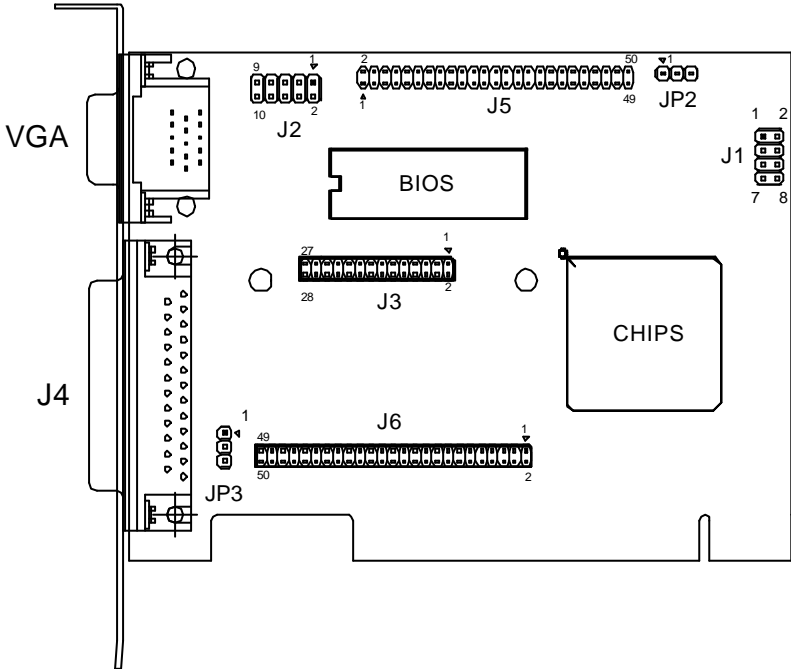
#### MBC-2690/2693 Flat Panel/CRT control card system block



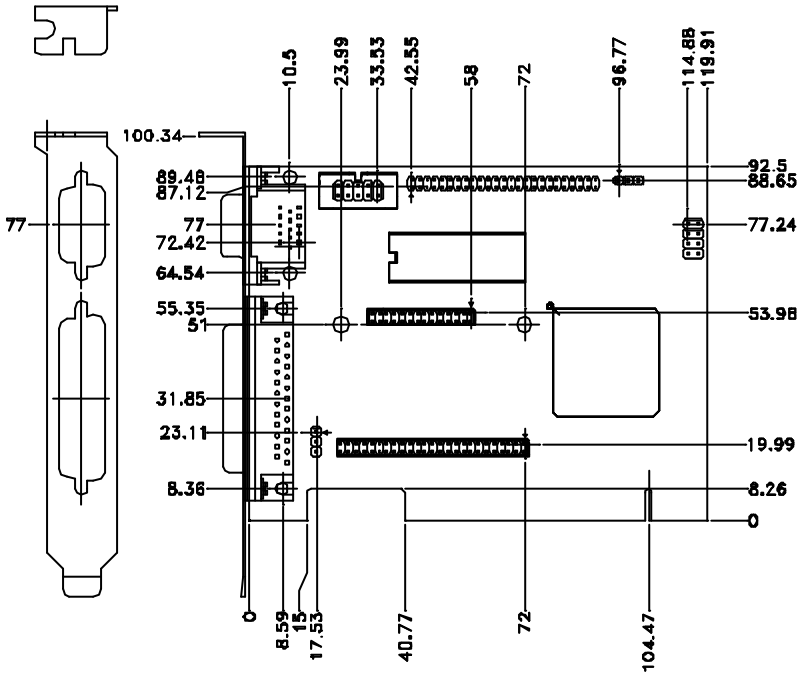
\*\*Only supports one CRT signal. CRT header is optional function.



### Location of Connectors and Jumpers



Mechanical Drawing



## 1.4 Jumpers and Connectors

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### Jumper Settings

Jumpers allow users to manually customize system configurations to their suitable application needs.

J1: Panel Type Select

J1: C&T 69000 / 69030 Support Panel		
Type	Support Panel	Short
1	1024 x 768 TFT Color	1-2,3-4,5-6,7-8
2	1280 x 1024 TFT Color	1-2,3-4,5-6
3	648 x 480 DSTN Color	1-2,3-4,7-8
4	800 x 600 DSTN Color	1-2,3-4
5	800 x 600 TFT Color	1-2,5-6,7-8
6	640 x 480 18 bit TFT Color	1-2,5-6
7	1024 x 768 TFT Color	1-2,7-8
8	800 x 600 TFT Color	1-2

**Note:** LCD Supporting Reference List

LCD Size	Model Name		Corresponding type
15"	Fujitsu	FLC38XGC6V	Type 7
12"	Toshiba	LTM12C289	Type 8
10.4"	Jilin Chijing	CJM10C011A	Type 6
10.4"	SAMSUNG	LTN104S2-L01	Type 5

\*\* You have to prepare the interface (connecting cable) of the LCD and the VGA card.

## JP2: Panel Voltage Select

Panel Voltage	JP2	Default
+3.3V	1-2	
+5V	2-3	

## JP3: Backlight Control Select

Panel Voltage	JP3	Default
VDD	1-2	
VEE	2-3	

**Note:**

**VDD: Power sequencing control for panel driver electronics voltage VDD**

**VEE: Power sequencing control for panel bias voltage VEE may also be configured as (Inverter Backlight control) ENABKL**

## Connector Pin Assignment

VGA: CRT DB15 Connector					
PIN	NAME	PIN	NAME	PIN	NAME
1	R	6	GND	11	N/A
2	G	7	GND	12	DDCDATA
3	B	8	GND	13	HSYNC
4	N/A	9	N/A	14	VSYNC
5	GND	10	GND	15	DDCLK

J2: Internal VGA Signal Connector			
PIN	NAME	PIN	NAME
1	RED	2	DDCDATA
3	GREEN	4	DDCLK
5	BLUE	6	GND
7	HSYNC	8	GND
9	VSYNC	10	GND

J3: Internal LVDS Daughter Board/ PIN Header (1)			
PIN	NAME	PIN	NAME
1	E1	2	E2
3	E3	4	E4
5	E5	6	E6
7	E7	8	E8
9	E9	10	E10
11	E11	12	E12
13	E13	14	E14
15	E15	16	E16
17	E17	18	E18
19	E19	20	E20
21	E21	22	E22
23	E23	24	E24
25	E25	26	12V SAFE
27	5V SAFE	28	GND

J4: External LVDS Outlet DB-25 Connector			
PIN	NAME	PIN	NAME
1	E1	14	E2
2	E3	15	E4
3	E5	16	E6
4	E7	17	E8
5	E9	18	E10
6	E11	19	E12
7	E13	20	E14
8	E15	21	E16
9	E17	22	E18
10	E19	23	E20
11	E21	24	E22
12	E23	25	E24
13	E25		

J5: Flat Panel Digital Signal			
PIN	NAME	PIN	NAME
1	+12V	2	+12V
3	GND	4	GND
5	+3.3V/ +5V	6	+3.3V/ +5V
7	ENVEE	8	GND
9	FPD0	10	FPD1
11	FPD2	12	FPD3
13	FPD4	14	FPD5
15	FPD6	16	FPD7
17	FPD8	18	FPD9
19	FPD10	20	FPD11
21	FPD12	22	FPD13
23	FPD14	24	FPD15
25	FPD16	26	FPD17
27	FPD18	28	FPD19
29	FPD20	30	FPD21
31	FPD22	32	FPD23
33	FPD24	34	FPD25
35	CLK	36	VSYNC
37	DE	38	HSYNC
39	GND	40	ENABKL
41	FPD26	42	FPD27
43	FPD28	44	FPD29
45	FPD30	46	FPD31
47	FPD32	48	FPD33
49	FPD34	50	FPD35

J6: Internal LVDS Daughter Board/ PIN Header (2)			
PIN	NAME	PIN	NAME
1	LVDS CLK	2	FPD
3	FPD34	4	FPD
5	FPD35	6	FPD
7	FPD30	8	FPD
9	FPD29	10	FPD
11	FPD25	12	FPD
13	FPD24	14	FPD
15	FPD23	16	FPD
17	FPD16	18	FPD
19	FPD17	20	FPD
21	FPD19	22	FPD
23	FPD13	24	FPD
25	FPD15	26	FPD
27	FPD7	28	FPD
29	+3.3V/ +5V	30	+3.3V/ +5V
31	FPD9	32	FPD
33	FPD4	34	FPD
35	FPD3	36	FPD
37	FPD2	38	FPD
39	DE	40	FPD
41	CLK	42	ENABKL
43	ENVDD	44	VSYNC
45	ENVEE	46	HSYNC
47	GND	48	GND
49	+12V	50	+12V



## 1.5 Software Installation

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This PCI VGA card supports Microsoft® Windows® Version 9x/2000/NT/XP operating system (OS).

### Window 98

1. Install OS as you normally would for a VGA display. Run OS to make sure that it is working correctly.
2. Place the supporting CD-ROM into your CD-ROM drive. In Windows Program Manager, choose File from the Options Menu. Then from the pull-down menu, choose Run.
3. Execute the installation wizard “setup.exe” in the following path:

**“cd-rom”**: \ Driver\ VGA card\ **“model name”**\ Win98

**“cd-rom”**: the drive letter of your CD-ROM drive

**“model name”**: the model number of your product

Press the <Enter> key or click OK to begin the installation.

4. Simply follow the instruction to complete the installation. Shut down and restart your system.

## Windows NT4.0

1. Install Windows NT4.0 as you normally would for a VGA display. Click the **Start** button, go to **Settings** and click on **Control Panel** icon. Then choose the **Display** and double click on the icon. In the **Display Properties** window, click the **Setting** button, then click the **Display Type** button into the **Display Type** windows, then click on **Change** button from the **Adapter Type** icon. And click on **Have Disk** button in the change display windows.
2. Place the Supporting CD-ROM into your CD-ROM drive. In the **Select Device** window, click on **Have Disk**, select "**Browse**" and find the NT4.0 driver from:

**"cd-rom"** \ Driver \ VGA card \ **"model name"** \ WinNT4

**"cd-rom"**: the drive letter of your CD-ROM drive

**"model name"**: the model number of your product

and then click OK. The name of the **Chips and Technologies, Inc. Video Controller** driver will appear highlighted in the Modules list box. Select Chips and Tech. 69000 and Click **OK**. Click **OK** to start the driver installation.

3. Once the installation is complete, the **Chang Display Type** window will reappear. Click on close to close the window. Then the **Display Properties** window will reappear. Click on **Apply**. Restart the system for the new settings to take effect.