

Block Diagram

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Product System (PS)

Subject:	Circuit Operation Theory	Part No.:	99.L0572.201	Rev.:	0
Project Code:	99.L0572.001	Doc. No.	318-C01	Page 1 of 7	
Model Name:	Belinea 101520 (FP501 for OEM)				

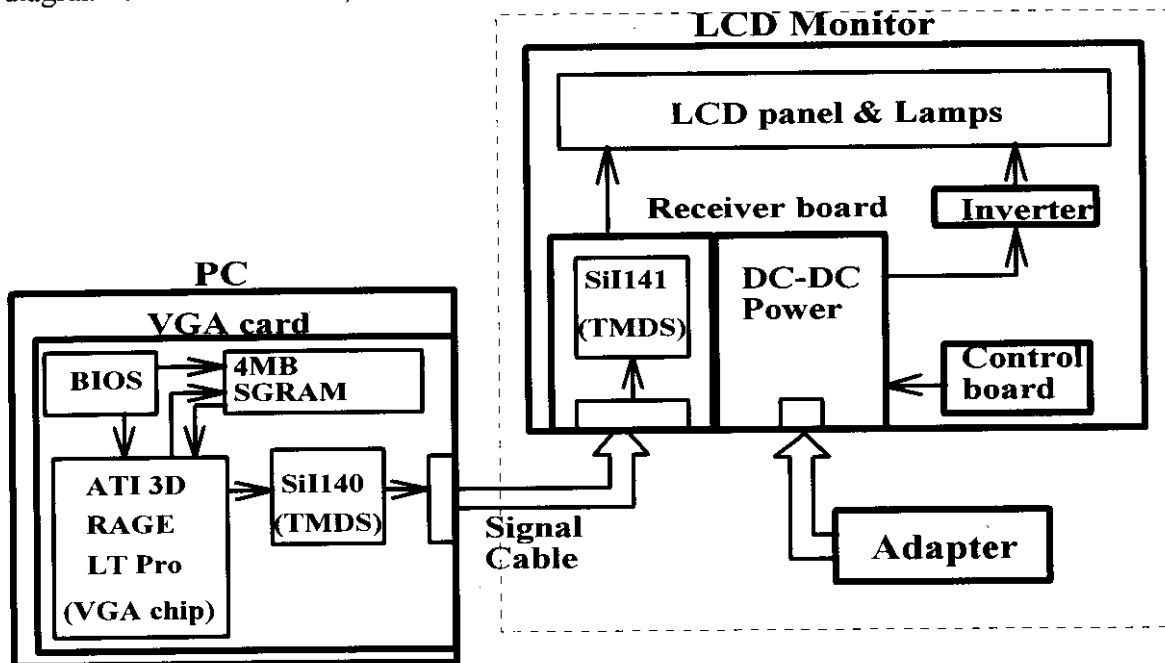
Belinea LCD MONITOR CIRCUIT OPERATION THEORY**1. Introduction :**

The Belinea is a 15.1" XGA(1024 by 768) TFT LCD monitor, it's designed as digital interface with a optional VGA card, which designed by ATI and uses the a ATI 3D RAGE LT Pro AGP VGA chip with 4MB SGRAM to make the Belinea display 16.3M colors(by dithering), and this VGA card also can support CRT/LCD /TV simulate display.

The Belinea supports DPMS function which is compliant with VESA proposal to supply a smart power management and power saving function to users.

2. Block diagram :

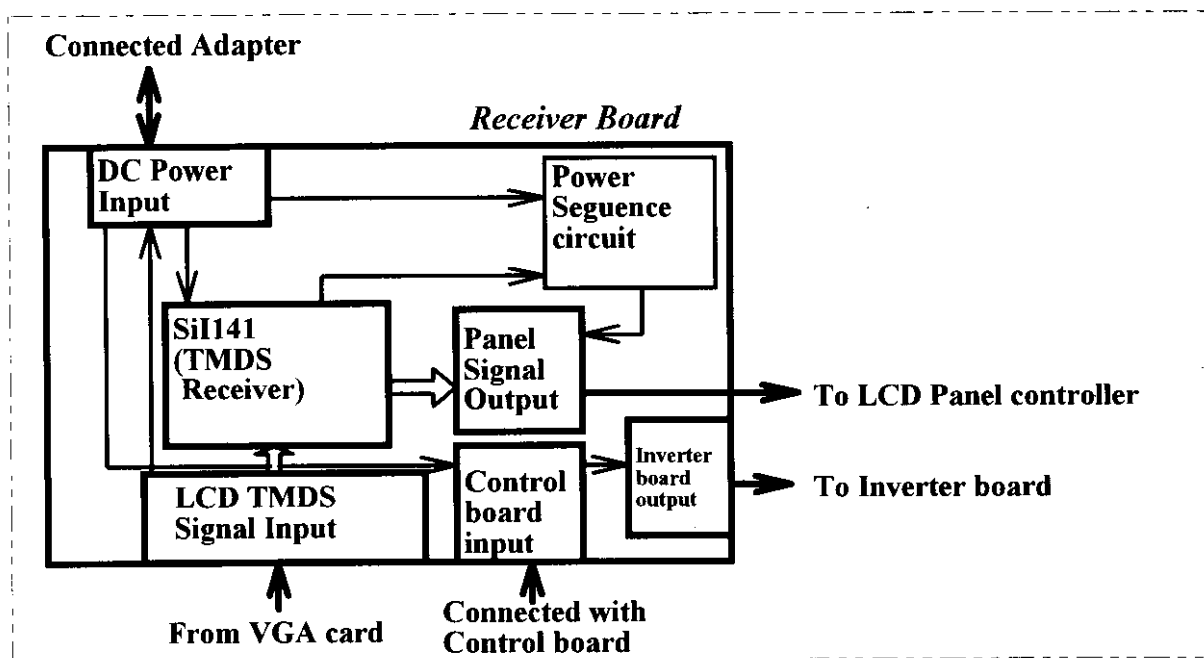
The Belinea is consist of a LCD monitor ,a power adapter and a optional VGA card. The block diagram is shown as below,



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3-2.Receiver board in the LCD monitor:

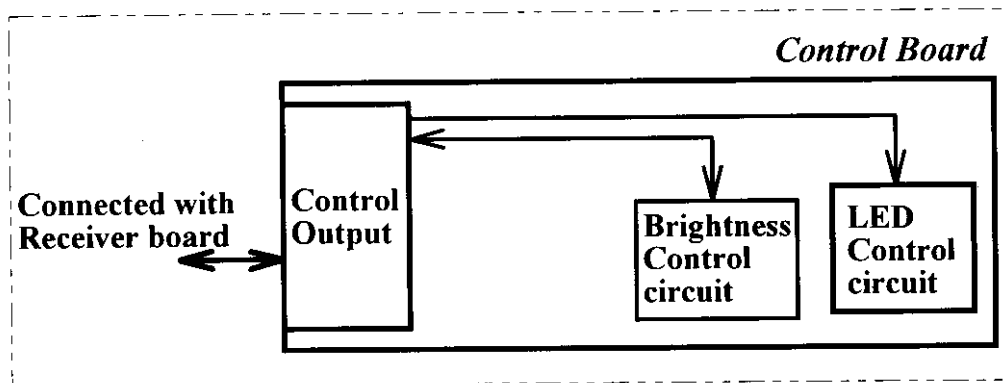
The most important job of the receiver board is to receive TMDS signals transmitted from the TMDS transmitter IC, SiI140, on the VGA card and to transfer these signals to CMOS/TTL level signals and send to LCD panel controllers. As following the specification of the LCD power sequence to protect LCD panel from DC charge and damaged.

- (A) **LCD TMDS Signal Input:** A DFP connector connects receiver board and VGA card, it carries TMDS signals transmitted from SiI140 on the VGA card to SiI141 on the receiver board.
- (B) **DC Power Input:** Supply 12V to be VCC source voltage for circuits on the receiver BD and supply 3.3V to SiI141 IC to decode TMDS signals.
- (C) **SiI141:** A TMDS receiver IC receive TMDS signals from SiI140 (TMDS transmitter IC) on the VGA card and decode these signals and transfer to CMOS/TTL level to LCD panel controller.
- (D) **Panel Signal input :** A 60 pins connector connects receiver board and LCD panel signal connector, it carries data and clock signals from receiver board to LCD panel controller.
- (E) **Control board output :** A 6 pins connector connects receiver board and control board. It carries +3.3V, +5V, and control signals to control inverter board.
- (F) **Power Sequence circuit:** Protect LCD panel from DC charge and damaged and blank

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3-3. Control board in the LCD monitor:

The jobs of the control board are to output brightness control voltage to the inverter board and to drive the LED to display the LCD monitor operating status.

- (A) **Brightness Control circuit** : Output brightness control voltages to the inverter board to control the backlight of the LCD panel.
- (B) **LED Control circuit**: Receive +3.3V and +5V from Receiver board to control LED display color and display the LCD monitor operating status.
- (C) **Control Output** : Connect the control board and the receiver board , it carries source voltages from the receiver board to the control board and outputs control voltage from the control board to the inverter board through the receiver board.