

Brief Description of Circuit Functions

1. General Description

This 15" LCD monitor TV support analog PC VGA signal up to 1024X768 75HZ XGA, and TV, YC, CVBS signal input.

It can also support to HDTV (from PC D-sub), including 480I, 480P, 720P, 1080i 60Hz input and 576I, 576P, 720P, 1080I 50Hz.

This LCD monitor TV use Scaler engine that built in MCU for controlling PC and TV signal. MCU code size is 96K and communication via I2C.

PC video is into an ADC chip AD9883 then connected to scaler W8801TR, and also work for HDTV input.

Video decoder SAA7115 is used for TV video processing and convert it with CCIR 656 8bits digital format, tri-state to AD9883 (8bits of Green), send to scaler for picture scaling process. Finally, Scaler W8801TR will output RSDS (20)+TCON (7) signals to LCD panel for picture display.

One audio decoder MSP34XXG is used for TV sound processing.

Followings are the key function that scaler built-in MCU:

1. Size and phase clock auto adjustment.
2. Back light brightness and on-off control.
4. VGA mode detection and IC register setting.
5. De-interlace the video signal.
6. Panel power on/off.
7. Factory alignment command receiver.
8. Control AD9883 A/D converter for HDTV input.
9. RC remote control
10. Keyboard control :
Up , Down , Left , Right , Enter , Source and Power
11. Source select and small signal process control.
12. Power LED control.
13. Power management for PC and TV
14. Multimedia tuner control (Philips MK3 family)
15. TV sound decoder (Micronas MSP34X5G family) for TV sound process.
16. Sound mute, volume and sound effect control

2. COLOR ADJUSTMENT

VGA mode :

Set AD9883 R,G,B gain and R,G,B CUT-OFF as preset color 9300/6500.
Control Scaler for user Contrast, Brightness adjustment.

TV / Video mode / HDTV :

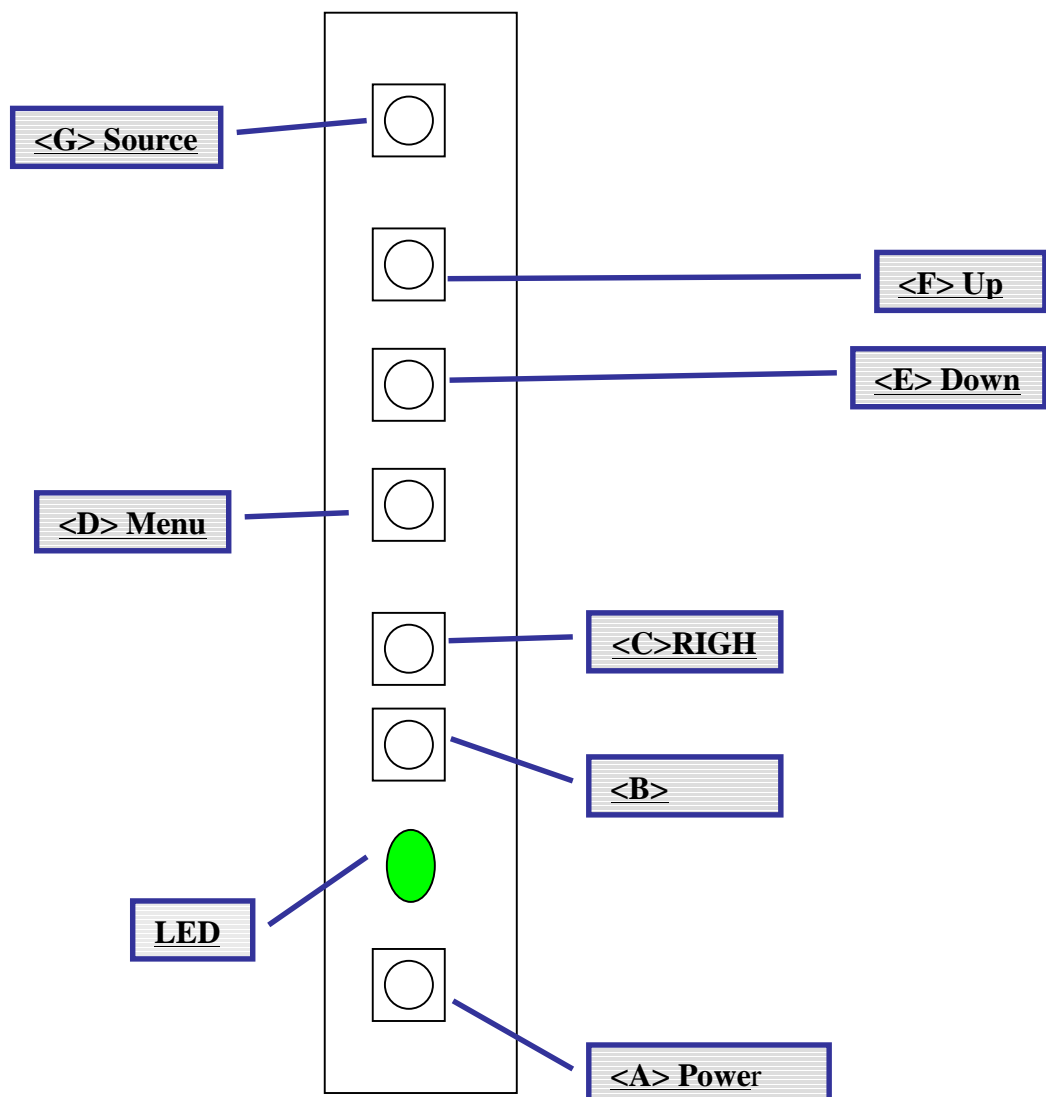
For normal, warm, cool color setup is done by scaler color look up table.
Normal set to original panel color, Warm set to 6500, Cool set to 9300.
User Brightness and contrast, color, tint, are adjusted by scaler also.

3. Factory alignment and DDC data

VGA and TV factory alignment use PC interface cable.

4. Keyboard definition

4.1 Control Board touch control keys



4.2 Control Key Definition

Key	Function	VGA mode	TV/video mode
<A>	Power	Soft Power	Soft Power
	Left	Left/Volume down	Left/Volume down
<C>	Right	Right/Volume up	Right/Volume up
<D>	Menu	Call OSD menu	Call OSD menu
<E>	Down/channel down	Down	Down/Channel Down
<F>	Up/Channel up	Up	Up/Channel up
<G>	Source	Source (PC/TV/S-V /AV/HDTV)	Source (PC/TV/S-V /AV/HDTV)

PC mode Auto adjustment hot key: Press <D> and <E> at the same time and hold for 2 seconds.

5. Power Management:

Power LED:

Normal working: Green

Power saving: Amber. Power consumption <1W (100Vac)
<2W (230Vac)

6. HDTV input

HD input connector:

One VGA 15 pin D-sub connector is used for HDTV video input.

PIN No.	SIGNAL
1	Pr
2	Y
3	Pb
4	Gnd
5	Gnd
6	Red/Pr GND
7	Green/Y GND
8	Blue/Pb GND
9	NA
10	NA
11	NA
12	NA
13	NA
14	NA
15	NA

Block Diagram

