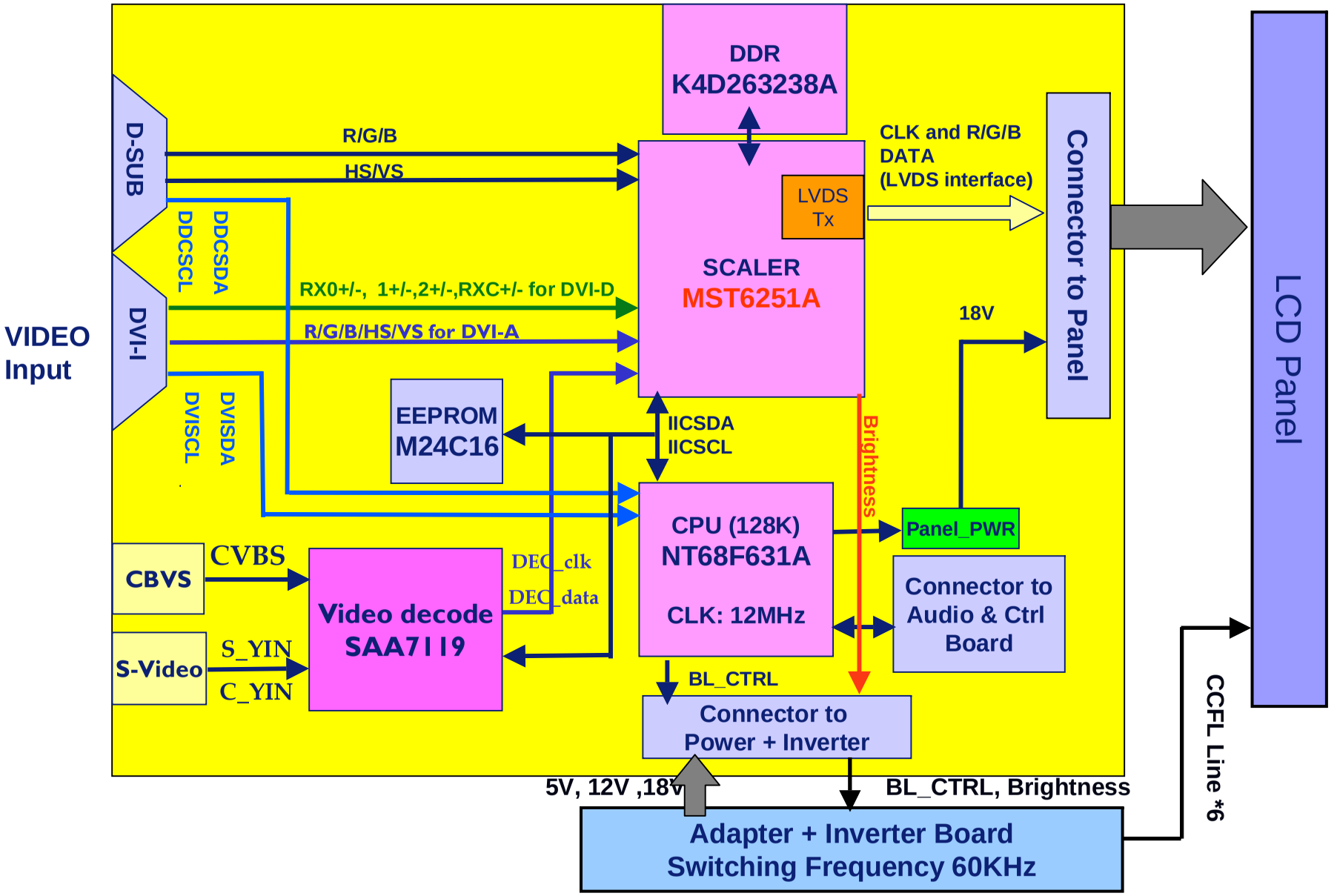
PHILIPS 200P6 (with Video) Functional Block Diagram



Circuit Description

General

200P6 is the 6th generation of Hudson series Flat Panel Display Monitor. It designed with LVDS interface feature. The monitor featured with DVI-I and analog signal input interface, and modularized as a display unit with embedded universal AC power supplies inside monitor main body. The monitor comes with super ergo base (SEB), the base is featured with tilt, swivel, height adjustment and portrait functionality. The power button and display control buttons (tact switch type) are on the front of the monitor. The monitor will be TCO03/TCO99 and Energy Star compliant and incorporate energy saving features described further in this document. The monitor shall support an internal scalar to automatically enable the monitor to display lower resolution video modes into 1600x1200 full screen display. The monitor shall communicate display data to the host computer using DDC2B and shall support EDID structure 1.3 for analog and digital signal input.

1. Power supply

Main Voltage:	AC 90 - 135 Vrms and 170 – 264 Vrms, 50/60±2 Hz
Power consumption:	Operating < 60W (Max. w/o audio), Standby < 1.5W.
	DC power switch off < 1.5W.
Power cord length:	1.8M
Power cord type:	3 lead with earth plug
Power indicator:	LED (ON: blue, Standby: amber)
Auto power saving:	EPA, Nutek, VESA, DPMS, E2000

3. Input signal

Horizontal scan: 30 - 97 KHz

Vertical scan: 56 -85 Hz

Input signals

1. Signal input level

Video : 0.7 Vp-p linear / 75 ohms

Sync : H/H+V, V TTL level, composite sync, sync on green

Impedance

Video : Terminated with 75 ohms

Sync : Terminated with 2K2 ohms
2. CVBS Video :1Vp-p,75 Ohm

3. S-Video :Y-1Vp-p,75 ohms
C-0.3Vp-p,75 ohms

4. Audio Signal : For S-terminal/ CVBS L/R audio input
PC line audio in

4. OSD (On Screen Display) function

Software control function via OSD/ Control as below:

Analog Signal Input

1. Main Menu	2.1 Sub Menu	2.2 Sub Menu 2
MONITOR SETUP		
Exit		
Brightness & Contrast	Brightness, Contrast	
Color	Original Color, 9300K,6500K, sRGB	
	User Define	Red, Green, Blue
Position	Horizontal, Vertical	
Input Selection	Analog (D-sub), Analog (DVI-A), Digital, CVBS, S-video	
More Settings	Language	English, Spanish, French, German, Italian, S. Chinese
	Phase/ Clock	Phase, Clock
	OSD Setting	Horizontal, Vertical
	Audio Option	Stand-alone (On, Off)
		Mute (On, Off)
Reset	No, Yes	
Serial No.:		
(Serial No.)		
(Timing Mode)		
Move Selection Then ok		

Digital Signal Input

1. Main Menu	2.1 Sub Menu	2.2 Sub Menu 2
MONITOR SETUP		
Exit		
Brightness & Contrast	Brightness, Contrast	
Color	Original Color, 9300K,6500K, sRGB	
	User Define	Red, Green, Blue
Size	Full screen, Native mode, Fill with Aspect	
Input Selection	Analog (D-sub), Analog (DVI-A), Digital, CVBS, S-video	
More Settings	Language,	English, Spanish, French, German, Italian, S.Chinese
	Phase/ Clock (Gray out)	Phase, Clock (Gray out)
	OSD Setting	Horizontal, Vertical
	Audio Option	Stand-alone (On, Off)
		Mute (On, Off)
Reset	No, Yes	
Serial No.:		
(Serial No.)		
(Timing Mode)		
Move Selection Then ok		

Remark: Audio Selection - Stand-alone – On: Isolate video and audio control input
Stand-alone – Off: Integrate video and audio control input
Mute – On: Turn off Audio input
Mute – Off: Turn on Audio input

Reset - No: Exit.
Yes: Auto adjustment for displaying timing mode and recall factory preset

5. LCD panel

Type NR.	: LM201U04 (LG.PHILIPS)
Outside dimensions	: 432.0(H)∗331.5(V)∗25(D) (Typ) mm
Pixel Pitch (mm)	: 0.255 mm x 0255mm
Color pixel arrangement	: RGB vertical stripes
Display surface	: low reflection, antiglare with hard coating
Color depth	: 16.7M colors (8 bits)
Backlight	: Six CCFL‘s
Active area(WxH)	: 408x306mm (20.1 diagonal)
View angle	: Horizontal & Vertical 160 degree (CR>=10)
Contrast ratio	: 400 :1
White luminance	: Panel original color >200nits (min), 250 nits (Typ)

6. Function block

6.1 Scaler board

Scaling (MST6251A (with video)/MST9251A (w/o video) including ADC, Scaler, OSD, LVDS)

Analog

- Monitor the input horizontal and vertical sync signal to judge input video mode
- Sample the input video signal according to its pixel rate to form a digital data for panel.
- Auto-adjustment for sampling phase and frequency, picture alignment and color alignment.
- Send the parameters to format scaler IC according to the input mode.
- Process the control data listed in OSD section.

Digital

- Monitor DVI input with internal TMDS receiver to judge input video mode
- Sample the input video signal according to its pixel rate to form a digital data for panel.
- Send the parameters to format scaler IC according to the input mode.
- Process the control data listed in OSD section.

MCU NT68F631A

- Control Scaling and all I/Os port of monitor including audio.
- Store the source code into internal Flash ROM and capable of down loading program via ISP.

SAA7119

- Monitor CVBS and S-video input with internal multistandard video decoder
  to judge input video signal.
- Sample the input video signal according to its pixel rate to form a digital data for scaler.
- Send the parameters to format scaler IC according to the input mode.
- Process the control data listed in OSD section.

6.2 Front panel switch control board

- Used for OSD function and power on/off
  7 push buttons (left, ok, right, up, down, auto, power switch)
- Power on/off LED indicator

6.3 AC to DC Inverter Board board

The AC power input from 90 VAC to 264 VAC, can generate 12V ,5Vand 18 VDC power to supply to inverter function and scaler board.