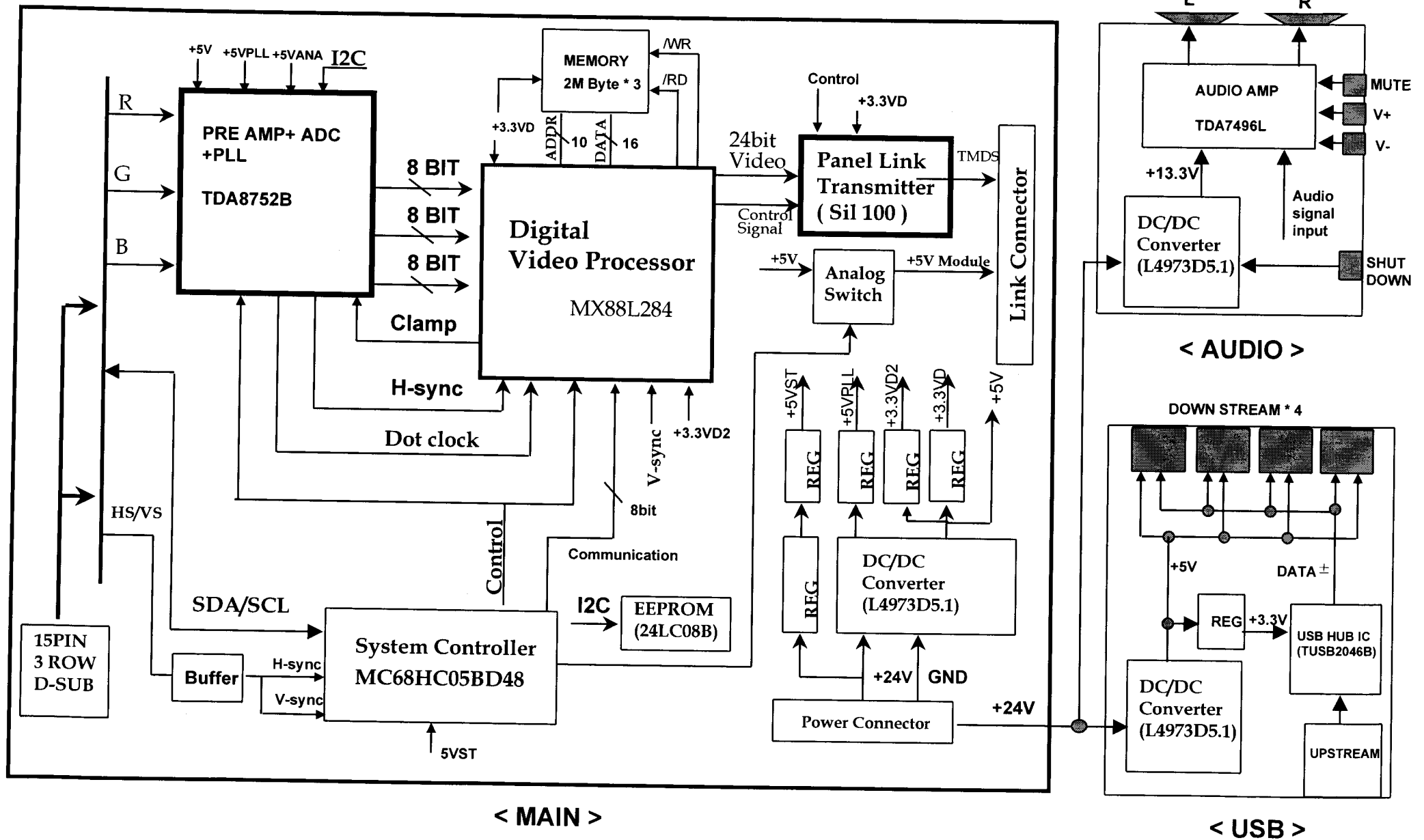


LM577B Block Diagram



DESCRIPTION OF BLOCK DIAGRAM (LM577B)

1. Video Amp & PLL & A/D Converter Circuit

TDA8752 (U1) is one chip IC which it supports three function block of Video Amp, PLL and A/D converter. Video signal (0.7Vp.p) clamped through C6, 7, 16 inputs to U1's R, G, and B pins. The signal level is 0.7Vac added 3Vdc. This signal is processed as a proper 8 bit digital signal for input of MX88L284 (U5) by U1's amplifying, phase locking, and A/D converting operation. U1 generates clock and horizontal sync for MX88L284 (U5) with D-sub (J1)'s input horizontal sync signal. MX88L284 (U5)'s clamp output makes U1 keep video signal's black level constantly regardless of various input video signals.

2. Macronix Circuit (Scaler chip)

The MX88L284 (U5) gets the video signal converted analog to digital from U1, and carries out four function of image processing that interpolates input signal less than 1024*768 resolution to that of 1024*768 resolution, displays one to one image without interpolation, mixes OSD(On Screen Display) signal by interfacing with internal OSD IC, and controls two memories(U6, 7) as frame converter. U5 outputs signals of HSYNC-OUT, VSYNC-OUT, DEN, CLKA-ODD, and each 8 bit R, G, B to transmitter IC (U16).

3. Memory Circuit

2M byte SDRAM(U6, 7) is used as a frame converter for supporting up to 85 Hz frame rate and controlled by MX88L284(U5). The control signals are CKA, CLK, UDOM, LDOM, /WE, /CAS, /RAS, /CS, /BA.

4. Panel-Link Circuit

Panel link transmitter (U16) delivers digital signal to the receiver inside LCD module by method of abstraction. The abstracted signals are pairs of TX0+/-, TX1+/-, TX2+/-, TXC+/- of which voltage swing is 0.5V each. Its swing is similar to LVDS (Low Voltage Differential Signal). Transmitter (U16) gets signals of HSYNC-OUT, VSYNC-OUT, DEN, CLKA-ODD from U5, and outputs TMDS (Transition Minimized Differential Signal) through TX pins. When PD pin's input is low, transmitter goes to power down mode.

5. System Controller (Microprocessor) Circuit

- 1) Microprocessor (U4) distinguishes polarity and frequency by calculating horizontal and vertical sync input from signal source.
- 2) Microprocessor (U4) carries out power control by sending power-down trigger signal to each IC. U1, U5, U16, and U13 has PD(Power-down) pin which operates at active-low or high. It also outputs signal to turn inverter on and off for lamp control.
- 3) Microprocessor (U4) communicates with EEPROM (U3), TDA8752 (U1), and MX88L284 (U5) through IIC(2 lines) or 8 bit bus line. It makes all devices operated properly with communication channel.
- 4) Microprocessor (U4) let User adjust screen by each OSD function.

6. DC/ DC Converter

This circuit supplies DC power for each device needing DC voltage of +3.3VD, +3.3VD2, +5V, 5VPLL, and 5VST. L4973D5.1(U13), the DC/DC controller IC converts input 24Vdc into +5Vdc and +3.3Vdc with peripheral circuit composed of Transformer (TRANS1), condensing components (ZD5, D6, C201, C26, C72, C73) and Regulators (U17, U2, U24). 5VST is supplied for Microprocessor through regulators (U11, U22). +5VMOD for LCD module power are switched by U12, switching FET, controlled by Microprocessor.

7. USB(Universal Serial Bus) Circuit

This circuit consists of DC to DC converter(L4973D5.1) for self power supply, USB hub IC(TUSB2046B), and over voltage protector IC(TPS2044).

This circuit is used to expand four ports of down stream for your easy using of keyboard, mouse and etc.

8. Audio circuit

This circuit supports speaker output of 1W+1W(Right, Left).

Main amp(TDA7496L) amplifies input audio signal and has function of volume control and mute.

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