

Brief Description of Circuit Functions

Function Description for Hudson3-170W4P

1. General

The 17" Wide XGA TFT LCD monitor is specified as a display peripheral with analog ,digital(DVI). Horizontal scan range is 30KHz-64KHz and the refresh range is 56Hz-75Hz in normal mode. This scan range allows it to display resolution up to 1280x768@75Hz non-interlace input.

The image can be adjusted by OSD control. These adjustments can be stored in an onboard memory.

2. Power supply

Main voltage : AC 90-264Vrms, 50-60Hz

Power consumption : 45W Max.

Power indicator : LED(ON: green, standby: amber)

Auto power saving : VESA DPMS

3. Input signal

Horizontal scan : 30-64KHz

Vertical scan : 56-75Hz(from VGA to XGA for analog/digital),
60-75Hz(for wide XGA analog/digital),

Input signals :

A. D-sub /DVI-analog signal input level

Video : 0.7Vp-p linear/75 ohms

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

B. Analog signal impedance

Video : Terminated with 75 ohms

Sync : Terminated with 2K2 ohms

C. Intel DVI- digital Single channel TMDS signal

4. OSD(On Screen Display) function

Software control function via OSD

-Main controls:

Language----- 6 Languages

Adjust position-----Horizontal,Vertical

Adjust Size----- Full screen,Native mode,Fill with aspect

Brightness & Contrast-- Brightness, Contrast

Video Noise----- Phase, Clock
Adjust color----- Original panel color, 9300K, 6500K, User preset
OSD Settings----- Horizontal, Vertical
Product information----- Serial No, Resolution, Signal input
Input selection----- Analog(D-SUB), Digital(DVI),
Reset to factory setting-- No/Yes
Exit Main controls

5. LCD Panel

Type : 17" Wide LCD flat panel
Dimensions : 17"(417 x 374 x 18 mm)
Pitch : 0.291mmx0.291mm
Color pixel arrangement : RGB vertical stripes
Number of color : 64 gray level (6 bits)
Backlight : 4 CCFL's
Active area (W*H) : 372.5 x 223.5mm

6. Function block

Scaler GM5020 (contains following functions) :

(1) ADC

- Included video switch, support 2-channel RGB input.
- Sample the input video signal according to its pixel rate to form a digital data for format converter IC.

(2) TMDSRx

- Convert serial digital signal to parallel digital RGB signal, it can reduce EMI.

(3) Format converter

- Built in GPIO port, mode detection.
- Convert the image data from ADC, TMDSRx or Video Decoder to LCD panel data format.
- Zoom the input video to full screen display.

LVDSTx

- Convert digital image signal to serial LVDS signal.

Inverter

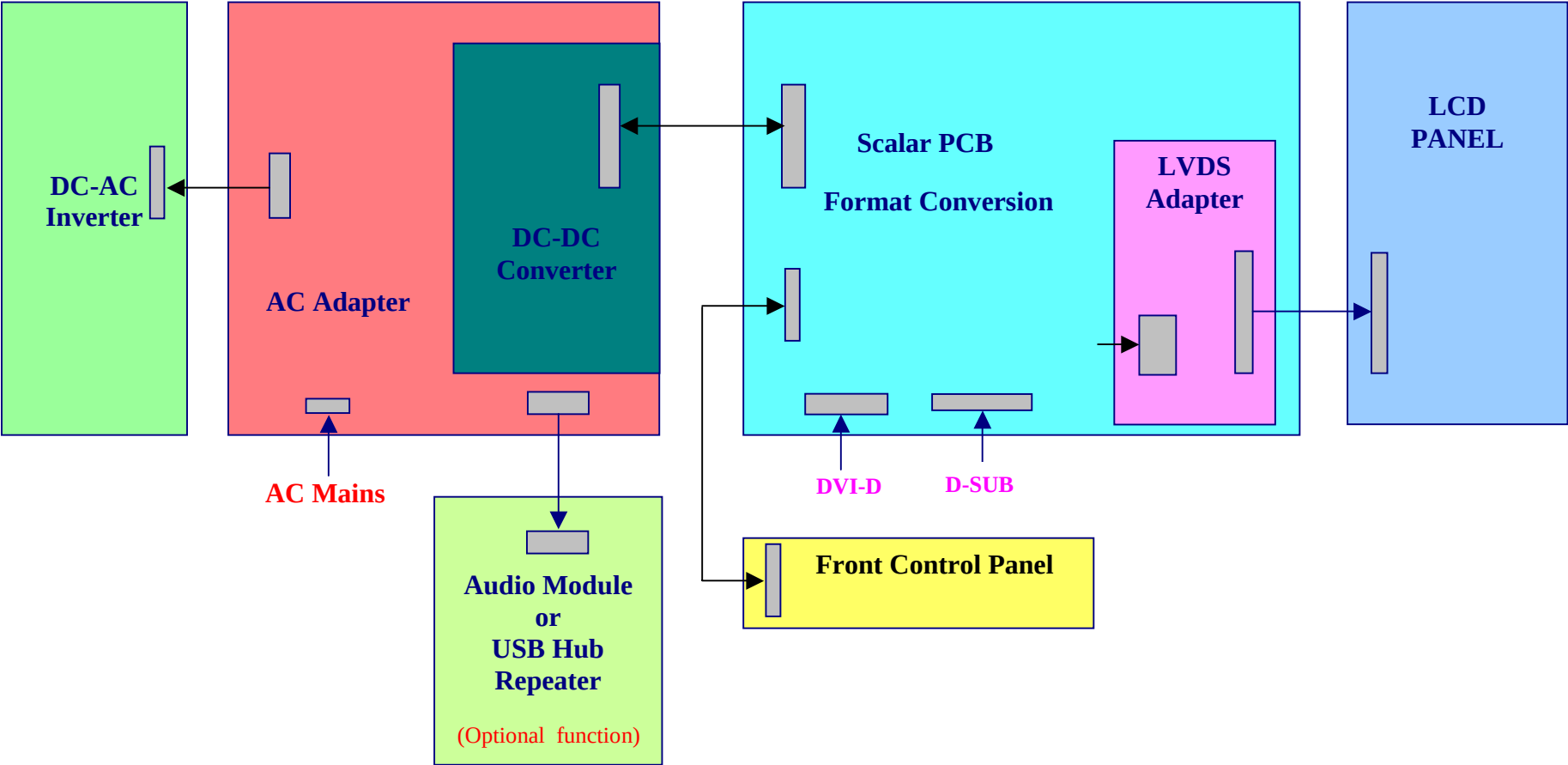
- Accept +12VDC voltage.
- Provide 720Vrms voltage for CCFL.

Power supply

- AC adapter : AC power input (from 90VAC to 264VAC) can generate +12VDC, and +5VDC power
- DC to DC converter : Convert +12V to +3.3VDC power.

Block Diagram

HUDSON 170W4 ARCHITECTURE AND INTERCONNECTION



CIRCUIT ARCHITECTURE OF SXGA LCD MONITOR

