

## Brief Description of Circuit Functions

### Function Description for Hudson -170B4

#### 1. General

The Hudson 170B4 SXGA TFT LCD monitor is specified as a display peripheral with analog (DSUB) and digital (DVI\_D). Horizontal scan range is 30KHz-82KHz and the refresh range is 56Hz-76Hz in normal mode. This scan range allows it to display resolution up to 1280x1024x75Hz 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.(with audio)

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

Auto power saving : VESA DPMS

#### 3. Input signal

Horizontal scan : 30-82KHz

Vertical scan : 56-76Hz(from VGA to SXGA for analog/digital),

Input signals :

##### A. D-SUB signal input level

Video : 0.7Vp-p linear/75 ohms

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

##### B. Intel DVI-D digital Single channel TMDS signal

#### 4. OSD( On Screen Display) function

Software control function via OSD

-Main controls:

Language----- 6 languages.

Brightness & Contrast-- Brightness, Contrast

Adjust color----- Original panel color, 9300K, 6500K, sRGB, User preset

OSD Settings----- Horizontal, Vertical

Product information----- Serial No, Resolution, Signal input

Input selection----- Analog(D-SUB), Digital(DVI-D),

Reset to factory setting-- No/Yes

Exit Main controls

#### 5. LCD Panel

Type : 17" TFT LCD flat panel

Dimensions : 17"(358.5 x 296.5 x 19 mm)

Pitch : 0.264mmx0.264mm

Color pixel arrangement : RGB vertical stripes

Number of color : 64 gray level (6 bits)

Backlight : 4 CCFL's

Active area (W\*H) : 337.92 x 270.5mm

## 6. Function block

Scaler GM5126 (contains following functions):

### (1) Analog RGB input

- Support up to SXGA 75Hz
- On chip high-performance PLLs
- High speed triple ADC

### (2) TMDSRx input

- 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.
- High quality zoom and shrink scaling engine

### (4) RXDS

- Convert digital image signal to RSDS signal, it can reduce EMI.

### (5) On-Screen display (OSD) controller

### (6) On-chip microcontroller (OCM)

### (7) Programmable OnPanel timing Controller (TCON)

### Inverter

- Accept +12VDC voltage.
- Provide 680Vrms 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.

Hudson 170B4 CIRCUIT ARCHITETURE

