

Brief Description of Circuit Functions

Circuit Description

1. General

The Philips 15" TFT flat panel monitor is specified as a display peripheral with analog video signal input. Horizontal scan range is 31 - 61 K Hz and the refresh range is 56 - 75 Hz. This scan range allows it to display resolution up to 1024*768 non-interlaces at 75 Hz refresh rate. The image can be adjusted through OSD control. These adjustments can be stored in an onboard memory including 14 factory pre-set modes and 16 user definable modes.

2. Power supply

Main voltage : AC 90 - 264 V rms, 50 - 60 Hz

Power consumption: 20 W Max

Power indicator : LED (on: green, active off: amber)

Auto power Saving : EPA, Nutek, VESA DPMS, E2000

3. Input signal

Horizontal scan : 31 - 61 K Hz

Vertical scan : 56 - 75 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

2. Impedance

Video : Terminated with 75 ohms

Sync : Terminated with 4K7 ohms

4. OSD (On Screen Display) function

Software control function via OSD/ Control

-Main Controls:

Language- 6 Languages

Adjust position- Horizontal, Vertical

Brightness & Contrast-	Brightness, Contrast
Video Noise-	Phase, Clock
Adjust Color-	Original Panel Color, 9300K, 6500K, User Preset
OSD Setting-	Horizontal, Vertical

Reset to Factory Settings- No, Yes

Exit Main Controls

5. LCD panel

Type	: 15" LCD flat panel
Dimensions	: 15"
Pitch	: 0.279 mm
Color pixel arrangement	: R.G.B. vertical stripes
Display surface	: antiglare with hard coating
Number of color	: : 6 bits with FRC, 16M colors
Backlight	: CCFL edge light system
Active area (W*H)	: 304.1*228.1 mm

6. Function block

6.1 Scaler board

Scaling (gmZAN3L including ADC, Scaler, OSD, LVDS)

- 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

CPU NT68F633L

- Store the source code and capable of down loading program via ISP

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

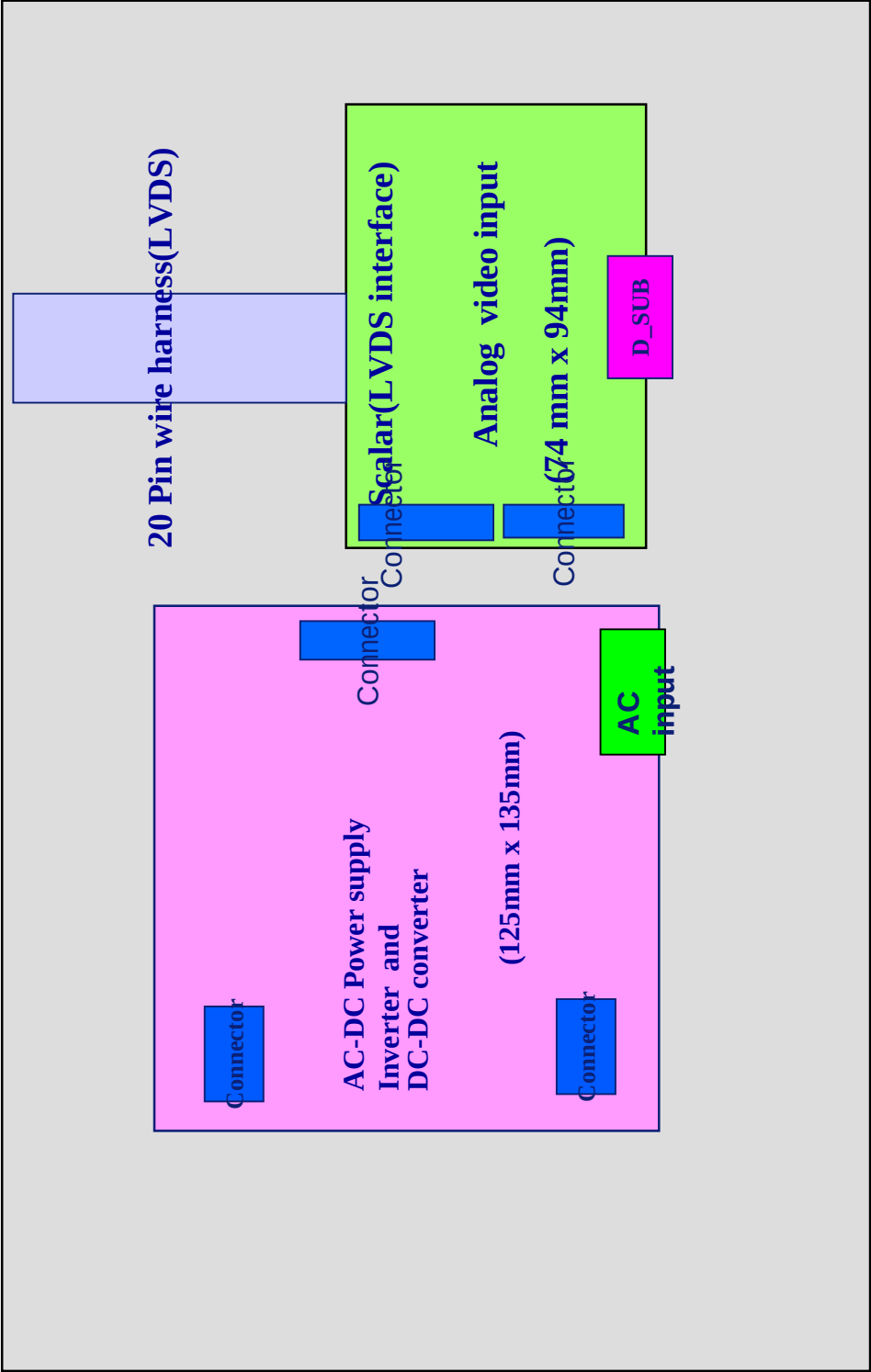
6.3 AC to DC power supply board including inverter function

The AC power input from 90 VAC to 264 VAC, can generate 12V and 3.3 VDC power to supply to inverter function and scaler board.

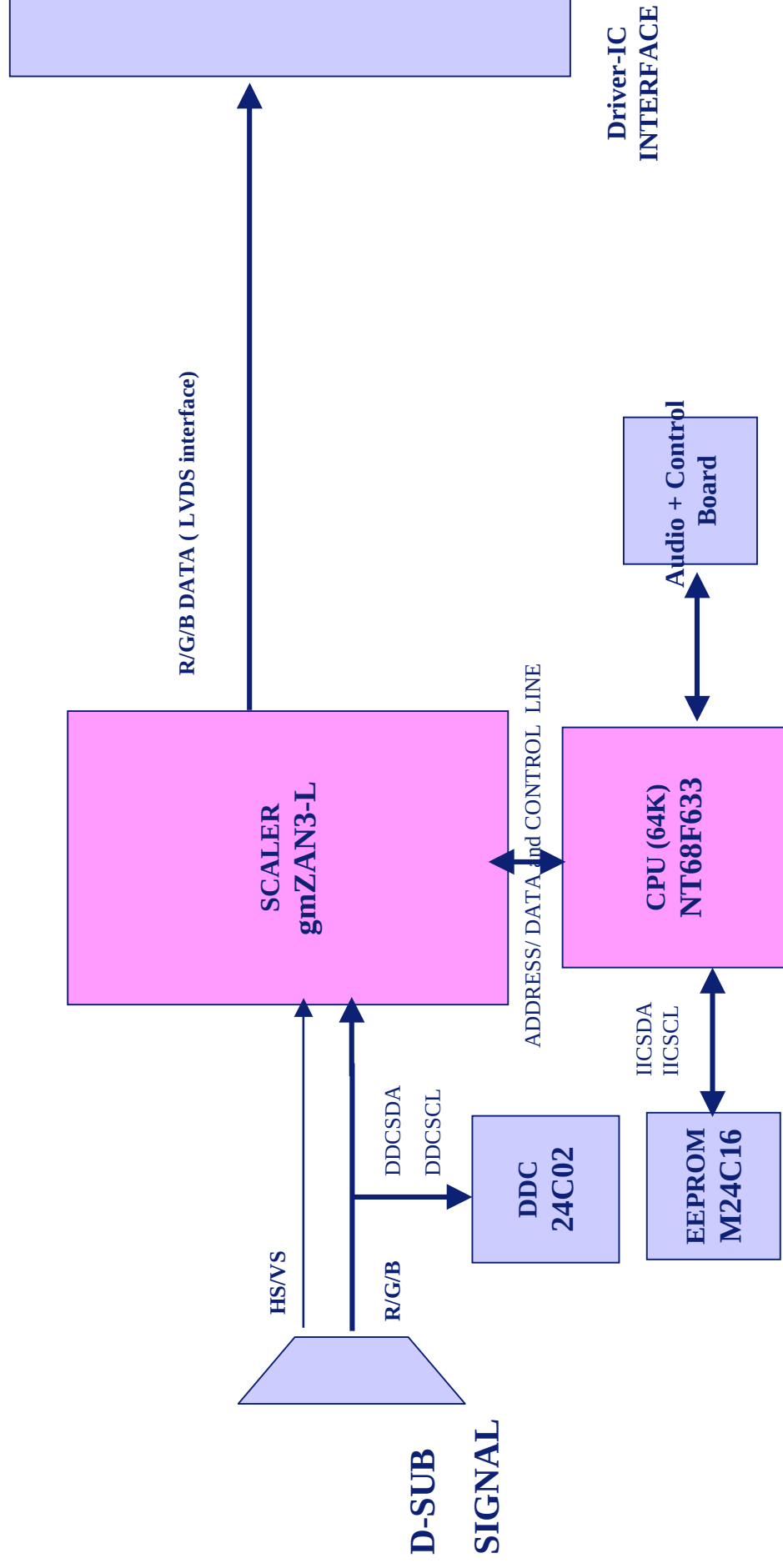
PHILIPS

- PCB Architecture of 150S5 Chassis

Block Diagram



- 150S5 Scaler Board Block Diagram



- gmZAN3L Function Block Diagram

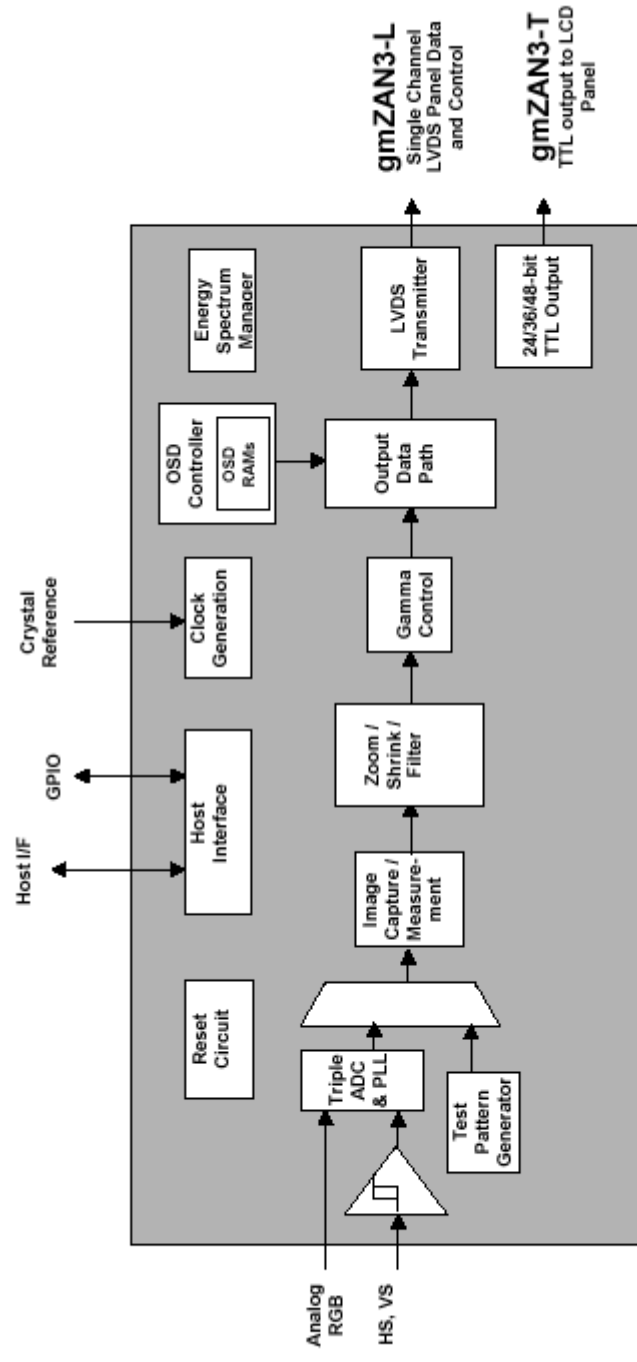


Figure 4. gmZAN3 Functional Block Diagram