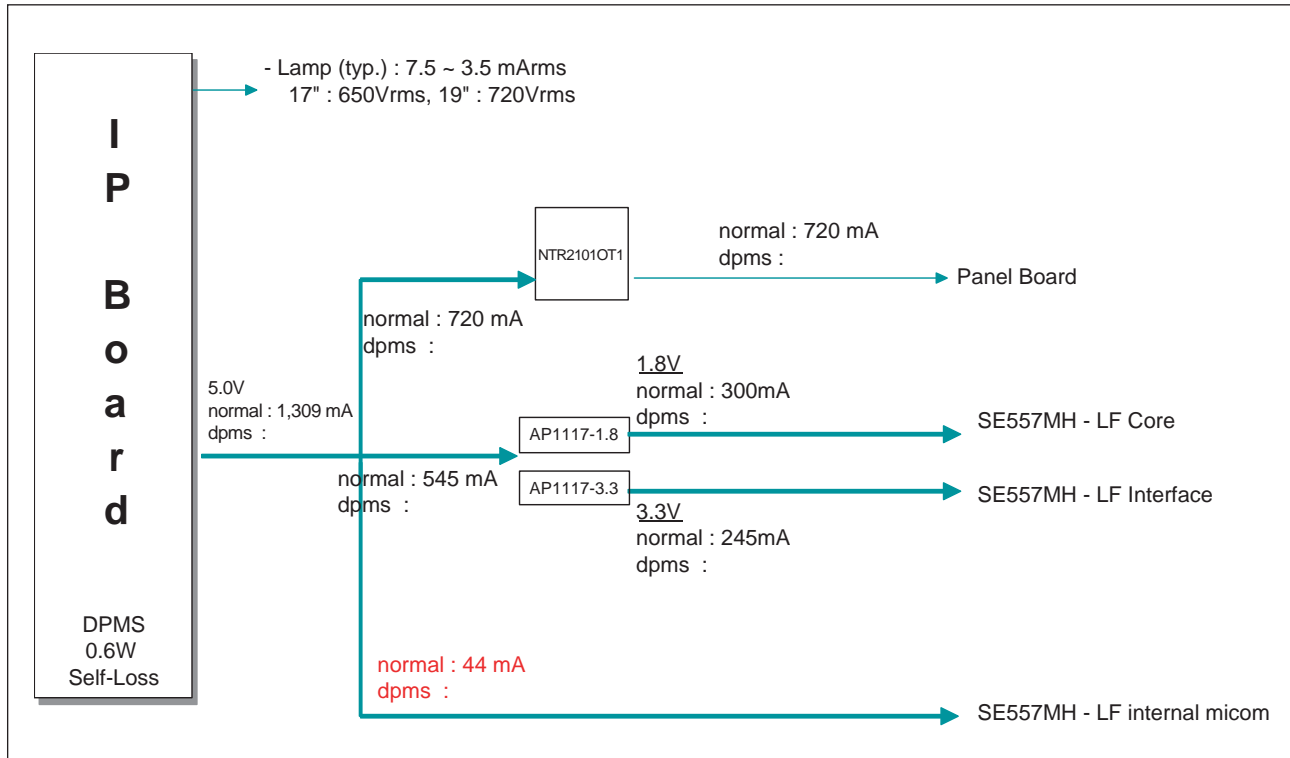


13 Circuit Descriptions

13-1 Overall Block Structure

13-1-1 Power Tree



1. When the AD board is in DPMS state:

- 1.1 The IP has been designed so that it operates with a power consumption of less than 0.6W of.
- 1.2 The Scaler consumes power up to 37mA
- 1.3 The power to the panel is switched off

2. When the AD board is operating normally:

- 2.1 The maximum power consumption of the panel lamps is described below (It may vary depending on the panel manufacturer)

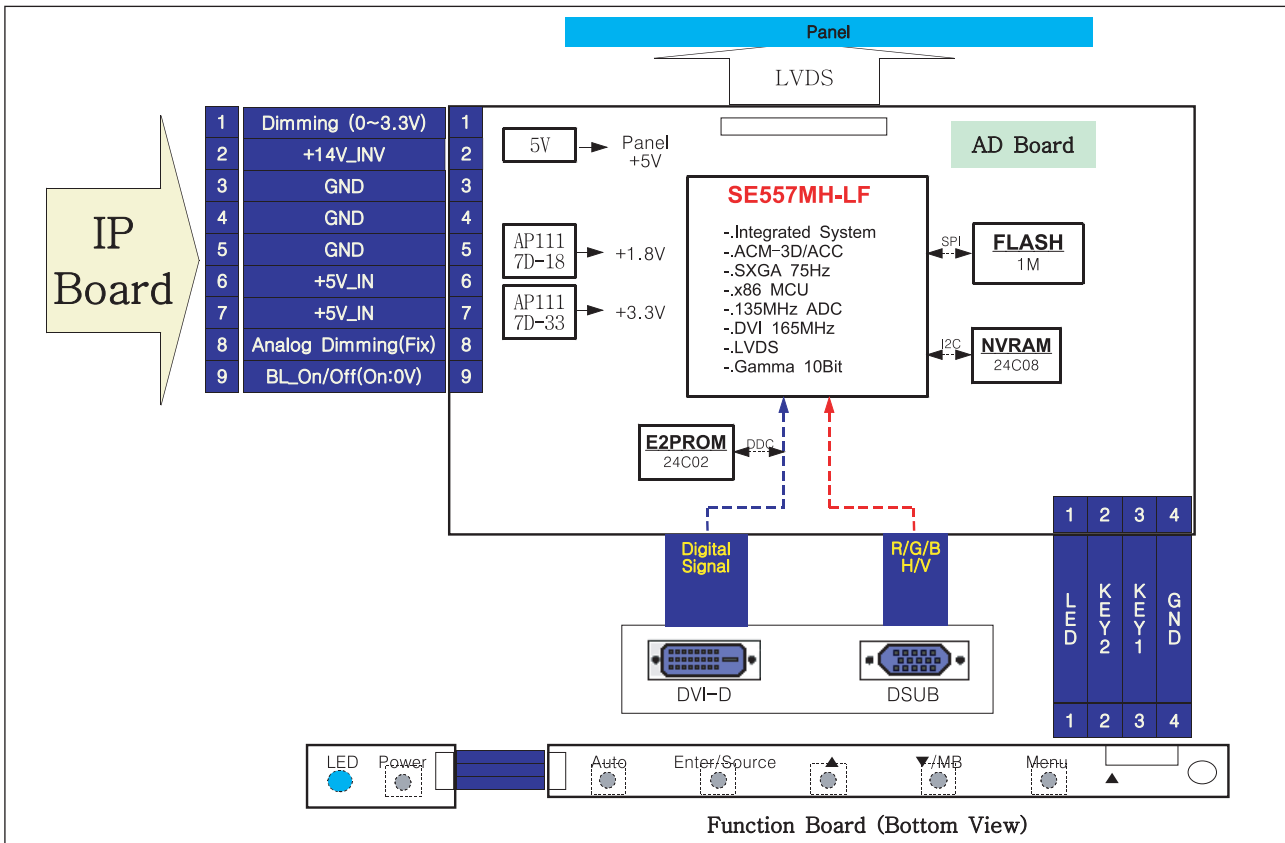
$$17" : 4 * (7.5\text{mA} * 650\text{mVrms}) = 4 * 4.9 = 19.6\text{W}$$

$$19" : 4 * (7.5\text{mA} * 720\text{mVrms}) = 4 * 5.4 = 21.6\text{W}$$

- 2.2 The power consumption of the Panel Control board is as follows: $5\text{V} * 720\text{mA} = 3.6\text{W}$

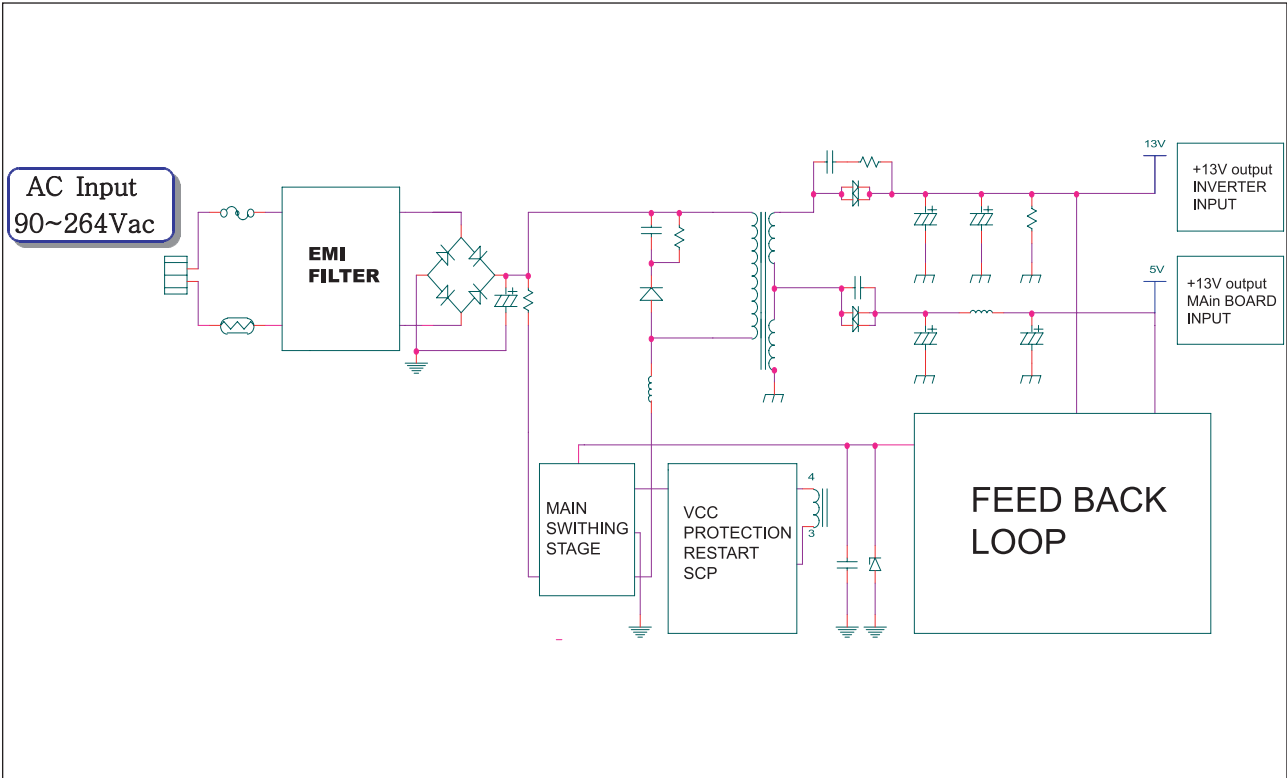
- 2.3 The power consumption of the Scaler is as follows: $3.3\text{V} * 245\text{mA} + 1.8\text{V} * 300\text{mA} = 1.35\text{W}$

13-1-2 Main Board Parts

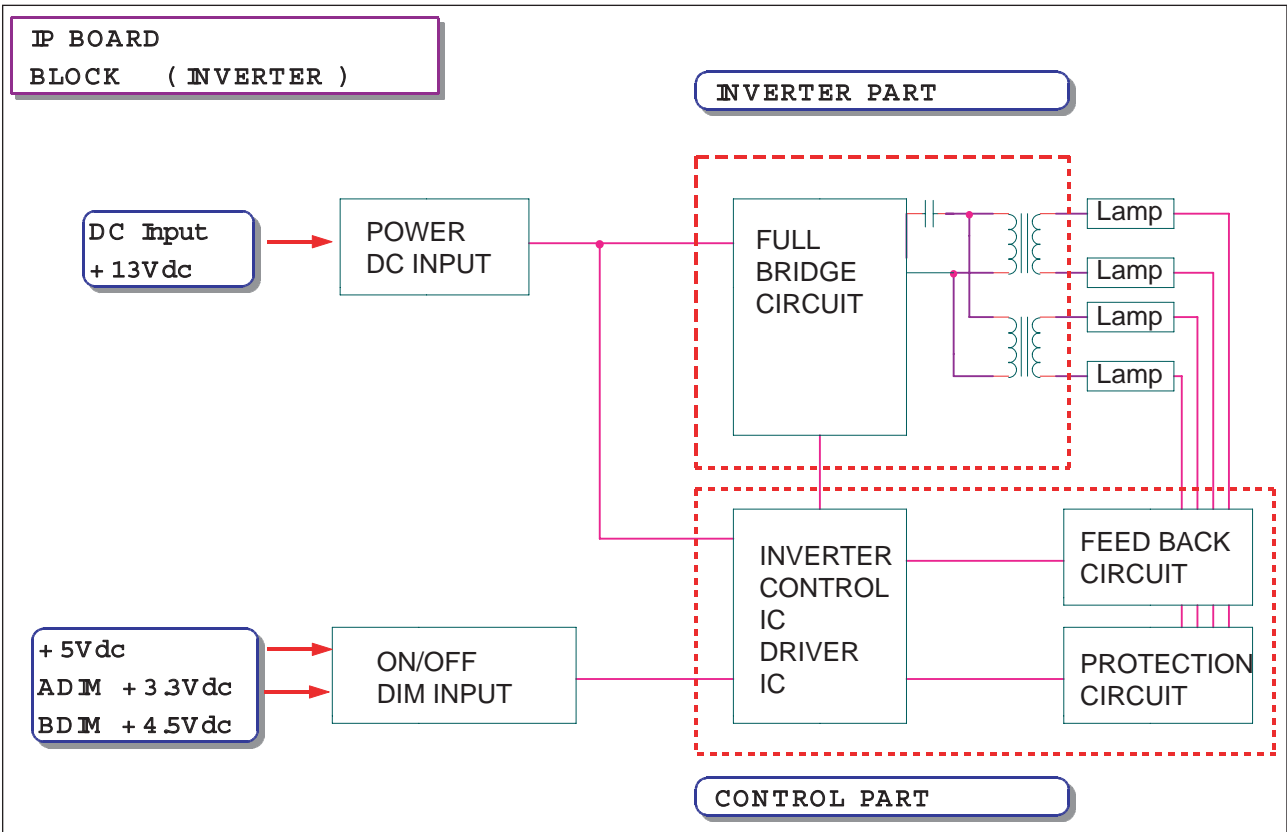


- Inverter:** A conversion device that converts DC rated voltage/current to high ones necessary for the panel lamp.
- DC/DC(Regulator):** General term for DC to DC converting devices.
The IP board receives 5V and outputs 1.8 or 3.3V that is supplied to the scaler (SE557MH-LF).
- Power MosFET:** The IP board receives 5V and outputs a lower voltage in DPMS mode and supplies the whole 5V for the panel operating board in normal conditions. In that case, the switching of Power MosFET is controlled by Micom.
- Scaler:** Receives the digital TMDS and analog R,G,B signals and convert them to proper resolutions using up- or down- scaling that are transferred to the panel in the LDVS formats.
- Crystal(Oscillator):** Use one 14.318MHz oscillator externally to supply power to both MCU and Scaler at the same time.
- Scaler & EEPROM:** I2C is a two-way serial bus of two lines that supports communications across the integrated circuits as well as between FLASH and EEPROM.
In particular, MCU(SE557MH-LF) and use the SDR direct bus for mutual communications, which is an effective, speedy system because it allows 4 additional address/data lines compared to the old serial systems.
- Function Key:** A certain keystroke generates a certain electrical potential, which is transferred into ADC input port of the MCU and then converted to a digital value by the A/D converter of the chip. The digital value (data) is a clue to which key is entered. In practical, the voltage levels are set as below.

13-1-3 IP BOARD BLOCK(POWER) Parts



13-1-4 IP BOARD BLOCK(INVERTER) Parts



13-1-5 IP BOARD (inverter) PROTECTION Parts

BIZET INVERTER CONTROLER FAN7310 have 2-way of the PROTECTION MODE.

1. **OVP[Over Voltage Protection]** : If the Voltage of the series capacitors C10 & C15 is over the 2.0V, the Inverter latched-off.[See the Picture1]
2. **OLP[Over Load Protection]** : If the inverter output harness is opened(No-output current), the base of the Q1 turns on and charge the C9 over 2V and then, the Inverter latched-off[See the Picture2]

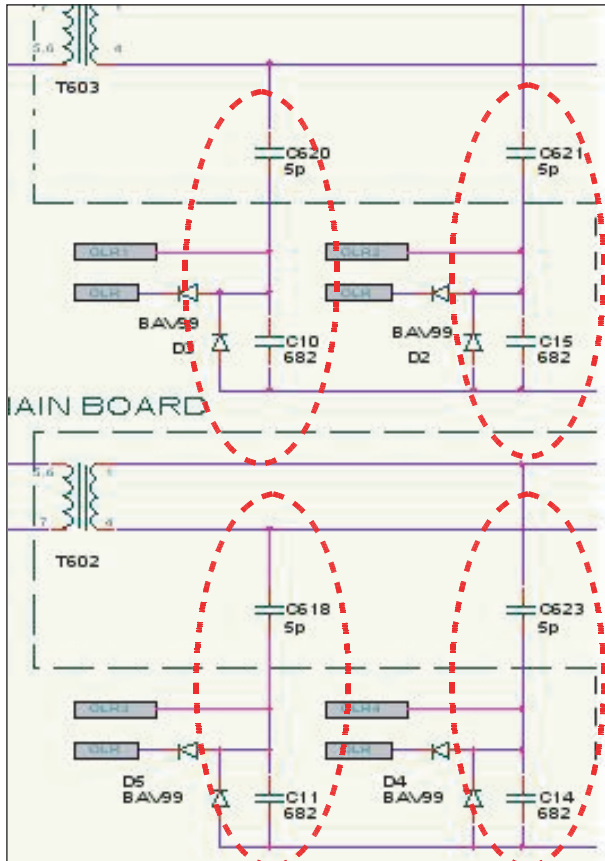


Figure 1.

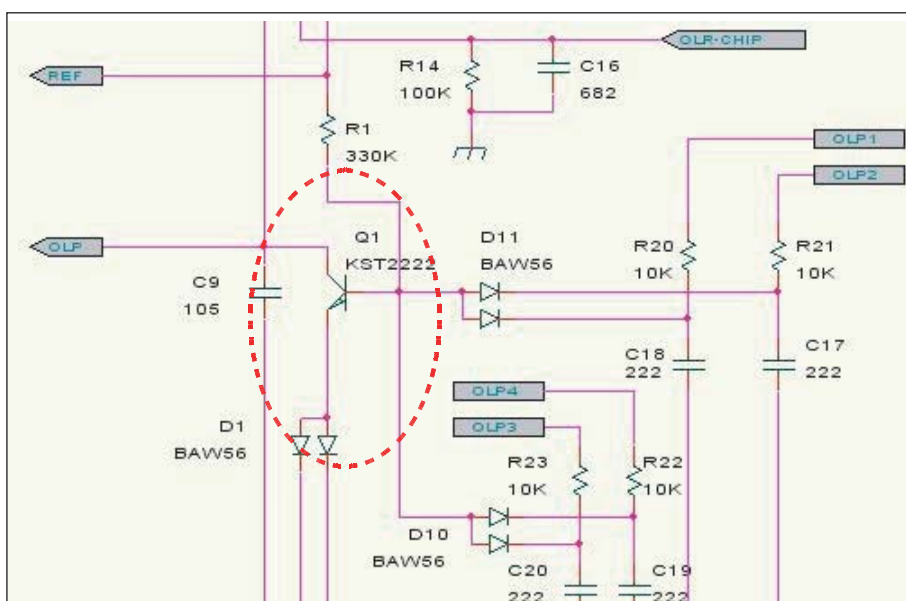
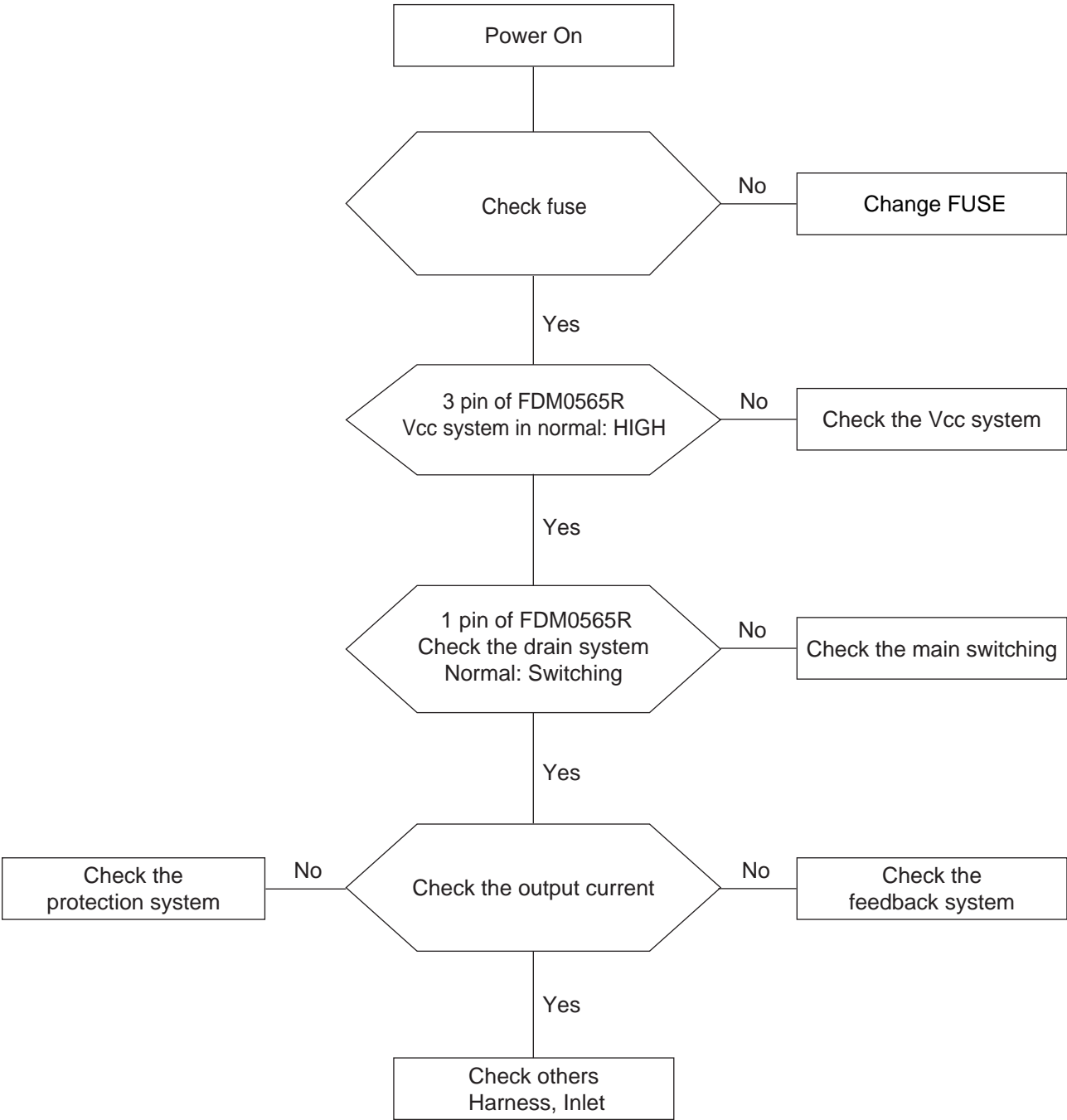


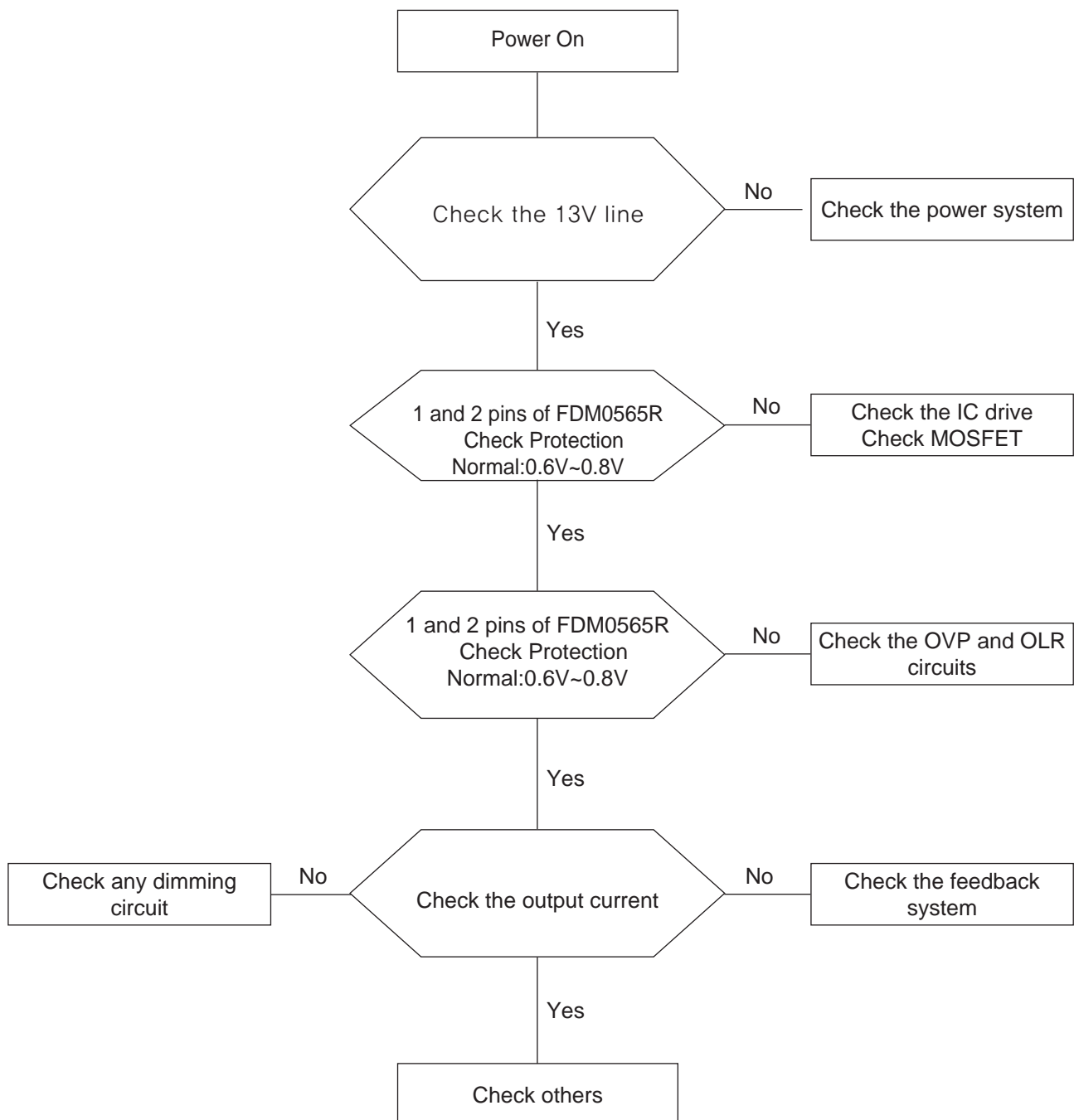
Figure 2.

13-2 Trouble Shooting

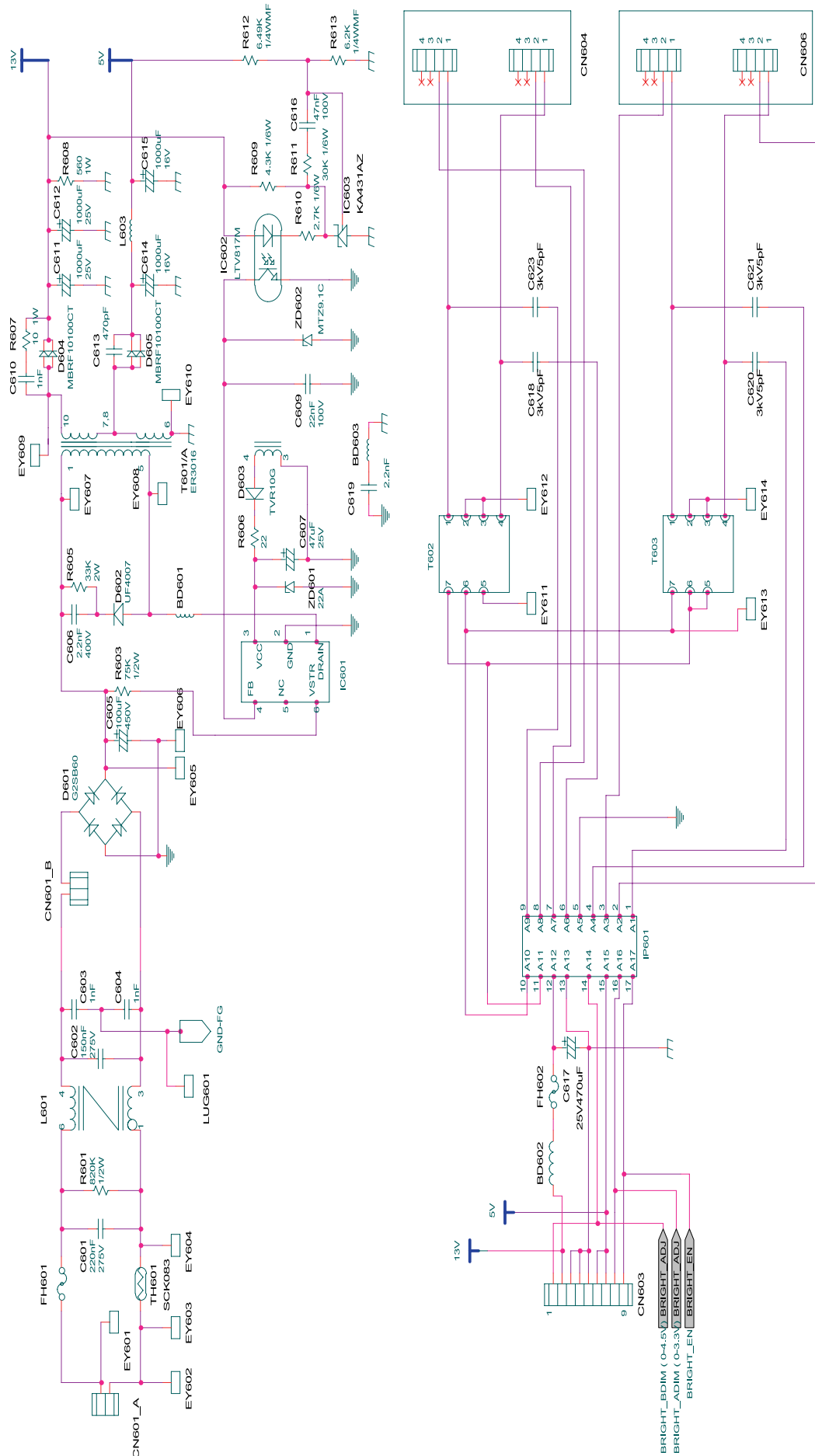
13-2-1 IP BOARD(Power)



13-2-1 IP BOARD(Inverter)



13-3 IP BOARD(Power) Schematic Diagrams



13-4 IP BOARD(Inverter) Schematic Diagrams

