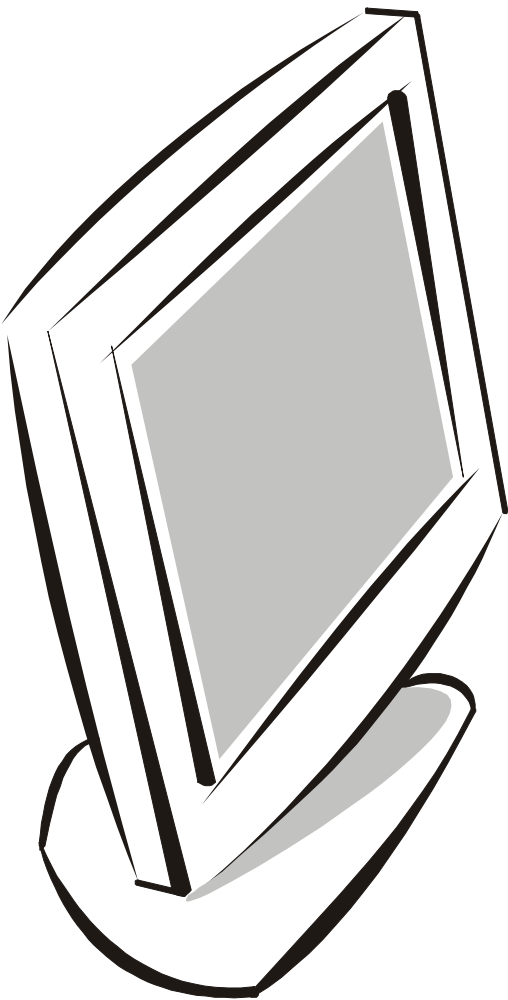


SERVICE MANUAL

17" LCD Monitor
786LS



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MANUFACTURE DATA : Aug 28 2002
REVISE: Mar 17 2003

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1. SPECIFICATIONS FOR LCD MONITOR

1-1 General specifications

1. LCD-Panel :
Active display area 17 inches diagonal
Pixel pitch 0.264 mm x 0.264 mm
Pixel format 1280 x 1024 RGB vertical stripe arrangement
2. Display Color :
6-bit, 16.2 million colors
3. External Controls :
Power On/Off, Menu-key, Auto key, Left key, Right key
OSD menu Controls
Contrast, Brightness, Auto Center, Focus, Clock, H/V-position, DOS mode select, R/G/B, Color-(7200K,6500K), Languages, Reset
4. Input Video Signal :
Analog-signal 0.7Vpp
Video signal termination impedance 75 OHM
5. Scanning Frequencies :
Horizontal: 30 KHz - 83 KHz
Vertical: 55 Hz – 75 Hz
Pixel clock: 135 MHz
6. Factory Preset Timing : 17
User Timings : 13
Input signal tolerance : H tolerance ± 1 K, V tolerance ± 0.5 Hz
7. Input Power Source :
Switching Mode Power Supply
AC 100 – 240 V, 50/60 Hz Universal Type
8. Operating Temperature : 5°C - 40°C Ambient
Non-operating Temperature : 5°C - 40°C
9. Humidity :
Operating : 10% to 85% RH (non-condensing)
Non Operating : 5% to 85%RH (38.7°C maximum wet bulb temperature)
10. Weight : 7.6 kg
11. External Connection : 15Pin D-type Connector, AC power-Cord
12. View Angle : x-axis right/left = 70, y-axis up/down = 45, 65
13. Outside dimension : Width x Height x Thickness = 407x 434 x 173 mm
14. Plug and Play : VESA DDC1/DDC2B
15. Power saving : VESA DPMS

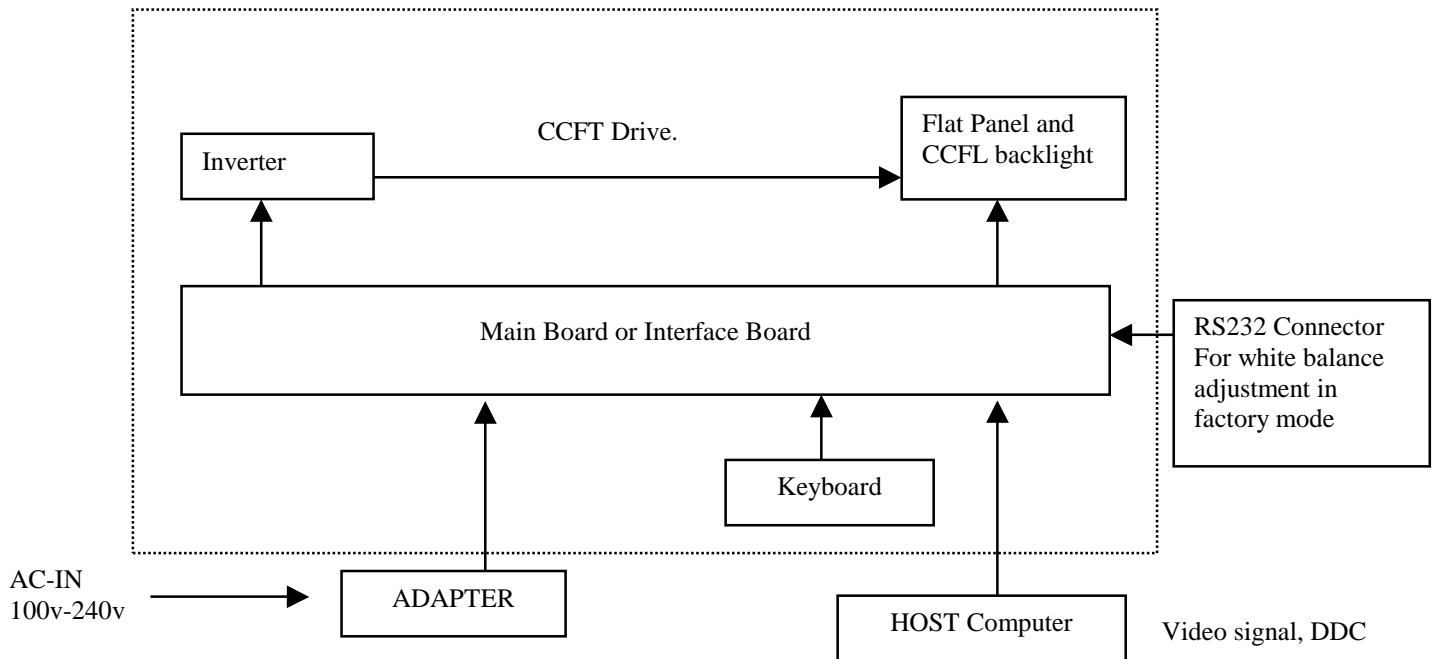
LCD MONITOR DESCRIPTION

The LCD MONITOR will contain an main board, an Inverter module, keyboard, External Adapter which house the flat panel control logic, brightness control logic, DDC and DC-DC conversion

The Inverter module will drive the backlight of panel .

The Adapter will provides the 12V DC-power 4.16 Amp to Main-board,and Inverter module .

Monitor Block Diagram



1-2 Interface Connectors

- (A) AC-Power Cable
- (B) Video Signal Connectors and Cable
- (C) External Adapter

2. PRECAUTIONS AND NOTICES

2-1 ASSEMBLY PRECAUTION

- (1) Please do not press or scratch LCD panel surface with anything hard. And do not soil LCD panel surface by touching with bare hands (Polarizer film, surface of LCD panel is easy to be flawed)
In the LCD panel, the gap between two glass plates is kept perfectly even to maintain display characteristic and reliability. If this panel is subject to hard pressing, the following occurs :
(a) Uniform color (b) Orientation of liquid crystal becomes disorder
- (2) Please wipe out LCD panel surface with absorbent cotton or soft cloth in case of it being soiled.
- (3) Please wipe out drops of adhesive like saliva and water in LCD panel surface immediately.
They might damage to cause panel surface variation and color change.
- (4) Do not apply any strong mechanical shock to the LCD panel.

2-2 OPERATING PRECAUTIONS

- (1) Please be sure to unplug the power cord before remove the back-cover. (be sure the power is turn-off)
- (2) Please do not change variable resistance settings in MAIN-BOARD, they are adjusted to the most suitable value. If they are changed, it might happen LUMINANCE does not satisfy the white balance spec.
- (3) Please consider that LCD backlight takes longer time to become stable of radiation characteristic in low temperature than in room temperature.
- (4) Please pay attention to displaying the same pattern for very long-time. Image might stick on LCD.

2-3 STORAGE PRECAUTIONS

- (1) When you store LCD for a long time, it is recommended to keep the temperature between 5°C -40°C without the exposure of sunlight and to keep the humidity less than 85% RH.
- (2) Please do not leave the LCD in the environment of high humidity and high temperature such as 60°C 90%RH.
- (3) Please do not leave the LCD in the environment of low temperature; below -15°C.

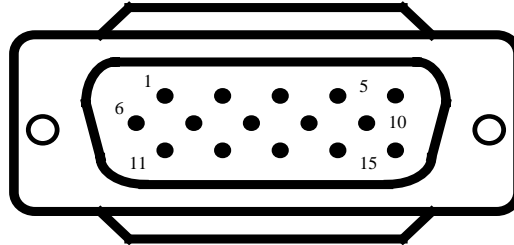
2-4 HIGH VOLTAGE WARNING

The high voltage was only generated by INVERTER module, if carelessly contacted the transformer on this module, can cause a serious shock. (the lamp voltage after stable around 600V, with lamp current around 6.5mA, and the lamp starting voltage was around 1650V, at Ta=25°C)

3. OPERATING INSTRUCTIONS

This procedure gives you instructions for installing and using the LCD monitor display.

1. Position the display on the desired operation and plug-in the power cord into External Adapter AC outlet. Three-wire power cord must be shielded and is provided as a safety precaution as it connects the chassis and cabinet to the electrical conduct ground. If the AC outlet in your location does not have provisions for the grounded type plug, the installer should attach the proper adapter to ensure a safe ground potential.
2. Connect the 15-pin color display shielded signal cable to your signal system device and lock both screws on the connector to ensure firm grounding. The connector information is as follow:



15 - Pin Color Display Signal Cable

| PIN NO. | DESCRIPTION | PIN NO. | DESCRIPTION |
|---------|-------------|---------|------------------------|
| 1. | RED | 9. | 5V power from VGA-card |
| 2. | GREEN | 10. | GND |
| 3. | BLUE | 11. | SYNC. GND |
| 4. | GND | 12. | SDA |
| 5. | GND | 13. | HORIZ. SYNC |
| 6. | GND-R | 14. | VERT. SYNC |
| 7. | GND-G | 15. | SCL |
| 8. | GND-B | | |

3. Apply power to the display by turning the power switch to the "ON" position and allow about thirty seconds for Panel warm-up. The Power-On indicator lights when the display is on.
4. With proper signals feed to the display, a pattern or data should appear on the screen, adjust the brightness and contrast to the most pleasing display, or press auto-key to get the best picture-quality.
5. This monitor has power saving function following the VESA DPMS. Be sure to connect the signal cable to the PC.
6. If your LCD monitor requires service, it must be returned with the power cord & Adapter.

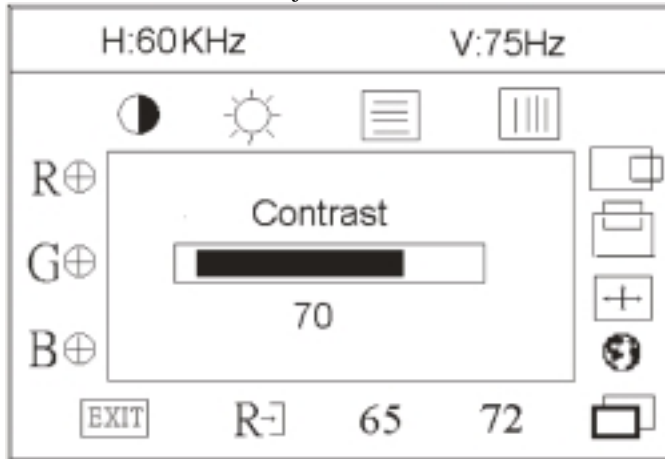
4. ADJUSTMENT

4-1 ADJUSTMENT CONDITIONS AND PRECAUTIONS

Adjustments should be undertaken only on following function : Contrasts , Brightness, Black level, Phase, Clock , H/V-position , Languages, Color-(7200,6500,User), Auto level, OSD-position, Languages, Reset

4-2 ADJUSTMENT METHOD

Press MENU button to activate OSD Menu or make a confirmation on desired function, Press Left/Right button to select the function or done the adjustment.



1. White-Balance, Luminance adjustment

Approximately 30 minutes should be allowed for warm up before proceeding white balance adjustment.

Before started adjust white balance ,please setting the Chroma-7120 **MEM. Channel 1 to 7200** color and **MEM. channel 2 to 6500** color, (our 7200 parameter is $x = 302 \pm 20$, $y = 319 \pm 20$, $Y = 200 \pm 20 \text{cd/m}^2$ and 6500 parameter is $x = 313 \pm 20$, $y = 329 \pm 20$, $Y = 200 \pm 20 \text{cd/m}^2$)

How to setting MEM.channel you can reference to chroma 7120 user guide or simple use “**SC**” key and “**NEXT**” key to modify x,yY value and use “**ID**” key to modify the TEXT description

Following is the procedure to do white-balance adjust

Press MENU button during 1 seconds along with plug in the DC-power cord will activate the factory mode, and the OSD screen will located at **left top of panel**.

I. Bias (Low luminance) adjustment :

1. Press “**AUTO**” button , and wait for message “**Pass**”
2. Set the contrast on OSD window to the value=45 , color (user)R,G,B set to “**50**”
3. adjust the **brightness** on OSD until chroma 7120 measurement reach the value $Y=240 \text{cd/m}^2 \pm 10 \text{cd/m}^2$

II. Gain adjustment :

a. adjust 7200 color-temperature

1. Set the Contrast of OSD function to 45 and Adjust Brightness to chroma 7120 $Y=240 \pm 5 \text{ cd/m}^2$
2. Switch the chroma-7120 to **RGB-mode** (with press “MODE” button)
3. Switch the MEM.channel to Channel 01 (with up or down arrow on chroma 7120)
4. The lcd-indicator on chroma 7120 will show $x = 302 \pm 10, y = 319 \pm 10, Y = 200 \pm 5 \text{ cd/m}^2$
5. Adjust the Color(user)Mode: RED on OSD window, until chroma 7120 indicator reached the value $R=100$
6. Adjust the Color(user)Mode: GREEN on OSD window, until chroma 7120 indicator reached the value $G=100$
7. Adjust the Color(user)Mode: BLUE on OSD window, until chroma 7120 indicator reached the value $B=100$
8. repeat above procedure (item 5,6,7) until chroma 7120 RGB value meet the tolerance $=100 \pm 2$
9. switch the chroma-7120 to **xyY mode** With press “MODE” button
10. Press Color (7800) on OSD window to save the adjustment result

b. adjust 6500 color-temperature

- 1 Set the Contrast of OSD function to 45 and Adjust Brightness to chroma 7120 $Y=240 \pm 5 \text{ cd/m}^2$
- 2 Switch the chroma-7120 to **RGB-mode** (with press “MODE” button)
- 3 switch the MEM.channel to Channel 02 (with up or down arrow on chroma 7120)
- 4 The lcd-indicator on chroma 7120 will show $x = 313 \pm 10, y = 329 \pm 10, Y = 200 \pm 5 \text{ cd/m}^2$
- 5 Adjust the Color(user)Mode: RED on OSD window, until chroma 7120 indicator reached the value $R=100$
- 6 Adjust the Color(user)Mode: GREEN on OSD window, until chroma 7120 indicator reached the value $G=100$
- 7 Adjust the Color(user)Mode: BLUE on OSD window, until chroma 7120 indicator reached the value $B=100$
- 8 repeat above procedure (item 5,6,7) until chroma 7120 RGB value meet the tolerance $=100 \pm 2$
- 9 switch the chroma-7120 to **xyY mode** With press “MODE” button
- 10 Press Color(6500) on OSD window to save the adjustment result

Turn the POWER-button off to on to quit from factory mode (in USER-mode, the OSD window location was placed at middle of screen)

2. Clock adjustment
 Set the Chroma at pattern 63 (cross-talk pattern) or WIN98/95 shut-down mode (dot-pattern).
 Adjust until the vertical-Stripe-shadow as wide as possible or no visible.
 This function is adjust the PLL divider of ADC to generate an accurate pixel clock
 Example : Hsyn = 31.5KHz Pixel freq. = 25.175MHz (from VESA spec)
 The Divider number is (N) = (Pixel freq. x 1000)/Hsyn
 From this formula, we get the Divider number, if we fill this number in ADC register (divider register), the PLL of ADC will generate a clock which have same period with above Pixel freq.(25.175MHz) the accuracy of this clock will effect the size of screen.(this clock was called PIXEL-CLOCK)
3. Focus adjustment
 Set the Chroma at pattern 63 (cross talk pattern) or WIN98/95 shut down mode (dot-pattern).
 Adjust the horizontal interference as less as possible
 This function is adjust the phase shift of PIXEL-CLOCK to acquire the right pixel data .
 If the relationship of pixel data and pixel clock not so match, we will see the horizontal interference on screen ,we only find this phenomena in crosstalk pattern or dot pattern , other pattern the affect is very light
4. H/V-Position adjustment
 Set the Chroma to pattern 1 (crosshatch pattern) or WIN98/95 full-white pattern confirm above item 2 & 3 functions (clock & focus) was done well, if that 2 functions failed, the H/V position will be failed too.
 Adjust the four edge until all four-edges are visible at the edge of screen.
5. LANGUAGE function
 There have 5 language for selection, press “MENU” to selected and confirm , press “ LEFT” or “ RIGHT” to change the kind of language (English , Deutch , Francais, Espanol, Italian)
6. Reset function
 Clear each old status of auto-configuration and re-do auto-configuration (for all mode)
 This function also recall 7200 color-temperature , if the monitor status was in “ Factory-mode” this reset function will clear Power-on counter (backlight counter) too.
7. OSD-LOCK function
 Press Left & Right key during switching on the monitor, the access to the OSD is locked, user only has access to “ Contrast, Brightness, Auto-key “.
 If the operator pressed the Left & Right during switching on the monitor again , the OSD is unlocked.

4-3 FRONT PANEL CONTROL KNOBS

Power button : Press to switch on or switch off the monitor.

Auto button : to perform the automatic adjustment from CLOCK, FOCUS, H/V POSITION, but no affect the color-temperature

Left/Right button : select function or do an adjustment.

MENU button : to activate the OSD window or to confirm the desired function

5. CIRCUIT-DESCRIPTION

5-1 SPECIAL FUNCTION WITH PRESS-KEY

- A). press **Menu** button during 2 seconds along with **plug-in the DC Power cord**:
That operation will set the monitor into “Factory- mode”, in Factory mode we can do the White balance adjustment with RS232
In Factory mode, OSD-screen will locate in left top of screen.
Press POWER-button off to on once will quit from factory mode and back to user-mode.
- B). Press **both Left & Right button along with Power button** off to on once will activate the OSD-LOCK function, repeat this procedure will disable OSD-LOCK
In OSD-LOCK function, all OSD function will be lock , except Contrast and Brightness

OSD-INDEX EXPLANATION

1. **CABLE NOT CONNECTED**: Signal-cable not connected.
2. **INPUT NOT SUPPORT**:
 - a. INPUT frequency out of range: $H > 83\text{kHz}$, $v > 75\text{Hz}$ or $H < 28\text{kHz}$, $v < 55\text{Hz}$
 - b. INPUT frequency out of VESA-spec. (out of tolerance too far)

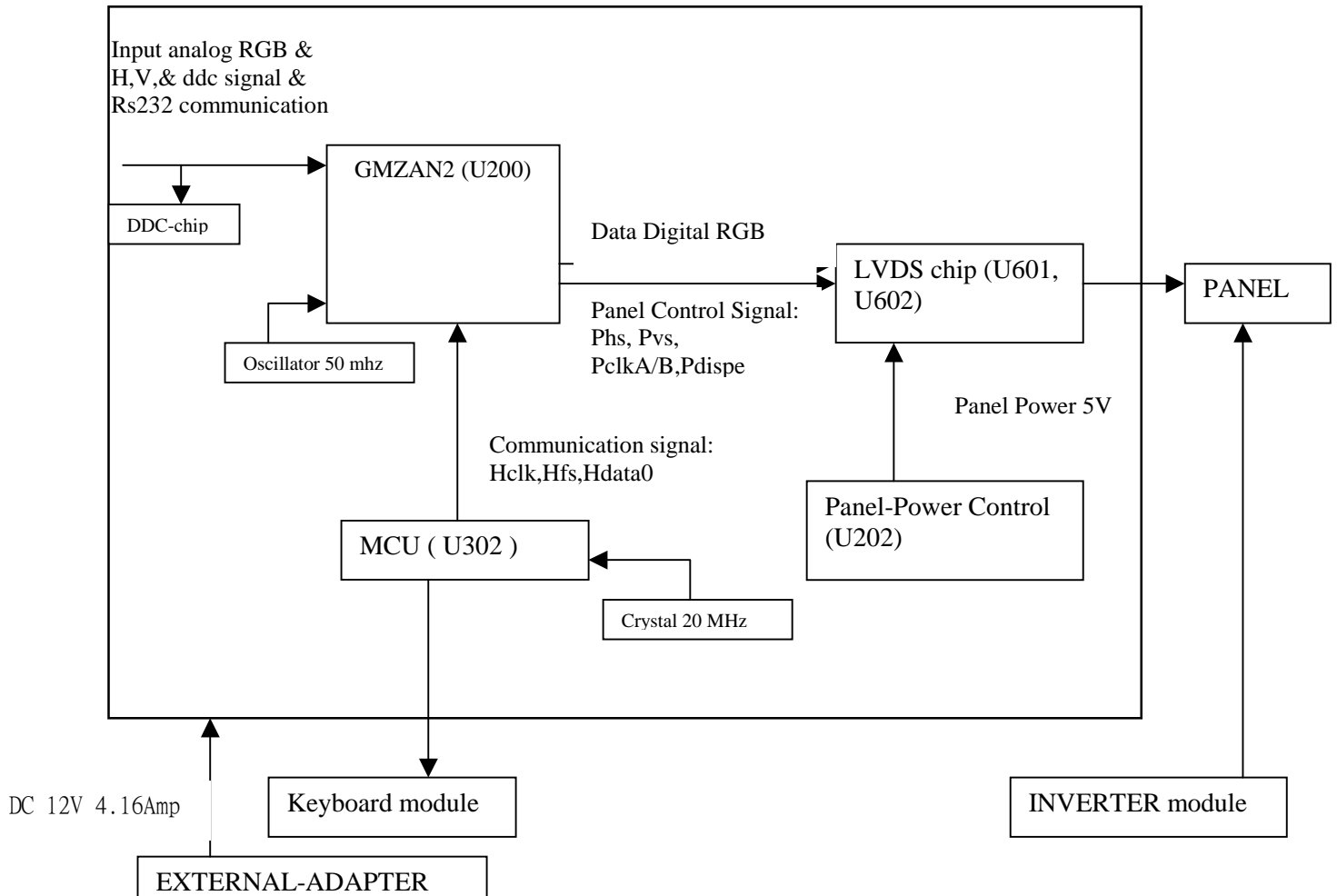
5-2 CIRCUIT FUNCTION DESCRIPTION

1. U200,GMZAN2 (all-in-one chip solution for ADC, OSD, scalar and interpolation) :
USE for computer graphics images to convert analog RGB data to digital data with interpolation process, zooming, generated the OSD font , perform overlay function and generate drive-timing for LCD-PANEL.
2. U302,89C51RD2 (PHILIPS- MCU, type 8052 series with 64k Rom-size and 512 byte ram) :
Use for calculate frequency, pixel-dot , detect change mode, rs232-communication, power-consumption control, OSD-index warning , ...etc.
3. U203,24LC21 (MicroChip IC) :
EEPROM type, 1K ROM-SIZE, for saving DDC-CONTENT.
4. U300,24C16 (ATMEL IC) :
EEPROM type, 16K ROM-SIZE, for saving AUTO-config data, White-balance data, and Power-key status and Backlight-counter data.
5. U304,LM2569S(NS brand switching regulator 12V to 5V with 3A load current) .
6. U305,AIC 1084-33CM (AIC brand linear regulator 5V to 3.3V)
7. U905,RT9164(Linear regulator 5V to 2.5V)
8. U600,U601,LVDS (use NOVATEK NT7181F)
Convert the TTL signal to LVDS signal , the advantage of LVDS signal is : the wire can be lengthen and eliminate wire number , low EMI .LVDS signal is high frequency but low voltage, only 0.35 VPP ,the frequency is seven times higher than TTL
9. U401, 74F14D(Schmitt trigger)
The 74F14 contains six logic inverters which accept standard TTL input signals and provide standard TTL Output levels

MODULE-TYPE COMPONENT:

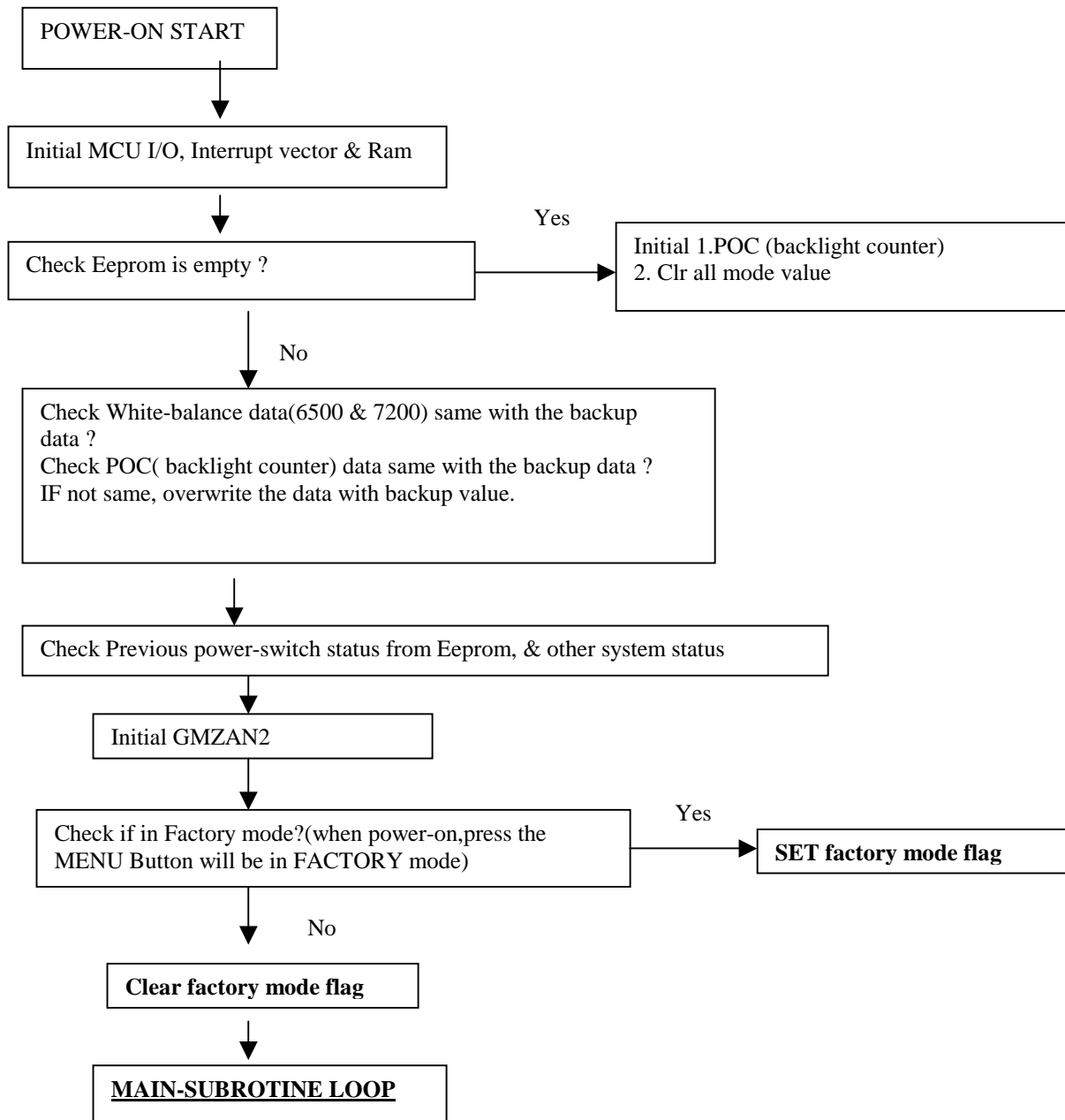
1. ADAPTER : CONVERSION-module to convert AC 110V-240V to 12VDC, with 4.16 AMP
2. INVERTER : CONVERSION-module to convert DC 12V to High-Voltage around 1650V, with frequency 30K-80Khz, 5.6mA-13mA

Main-board Block diagram

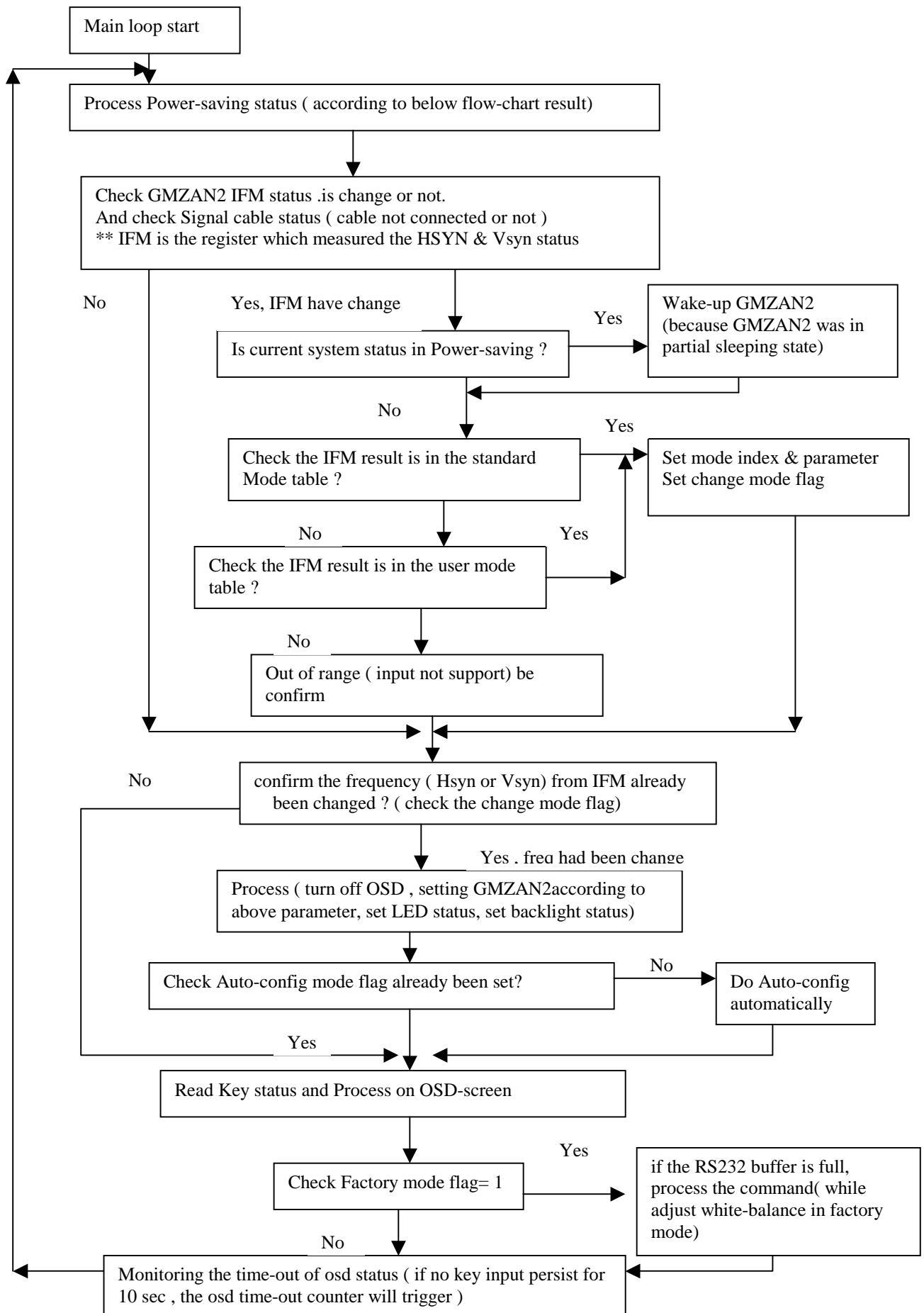


5-3 SOFTWARE FLOW CHART

I. Power-On Subroutine CHART



II. MAIN SUBROUTINE LOOP



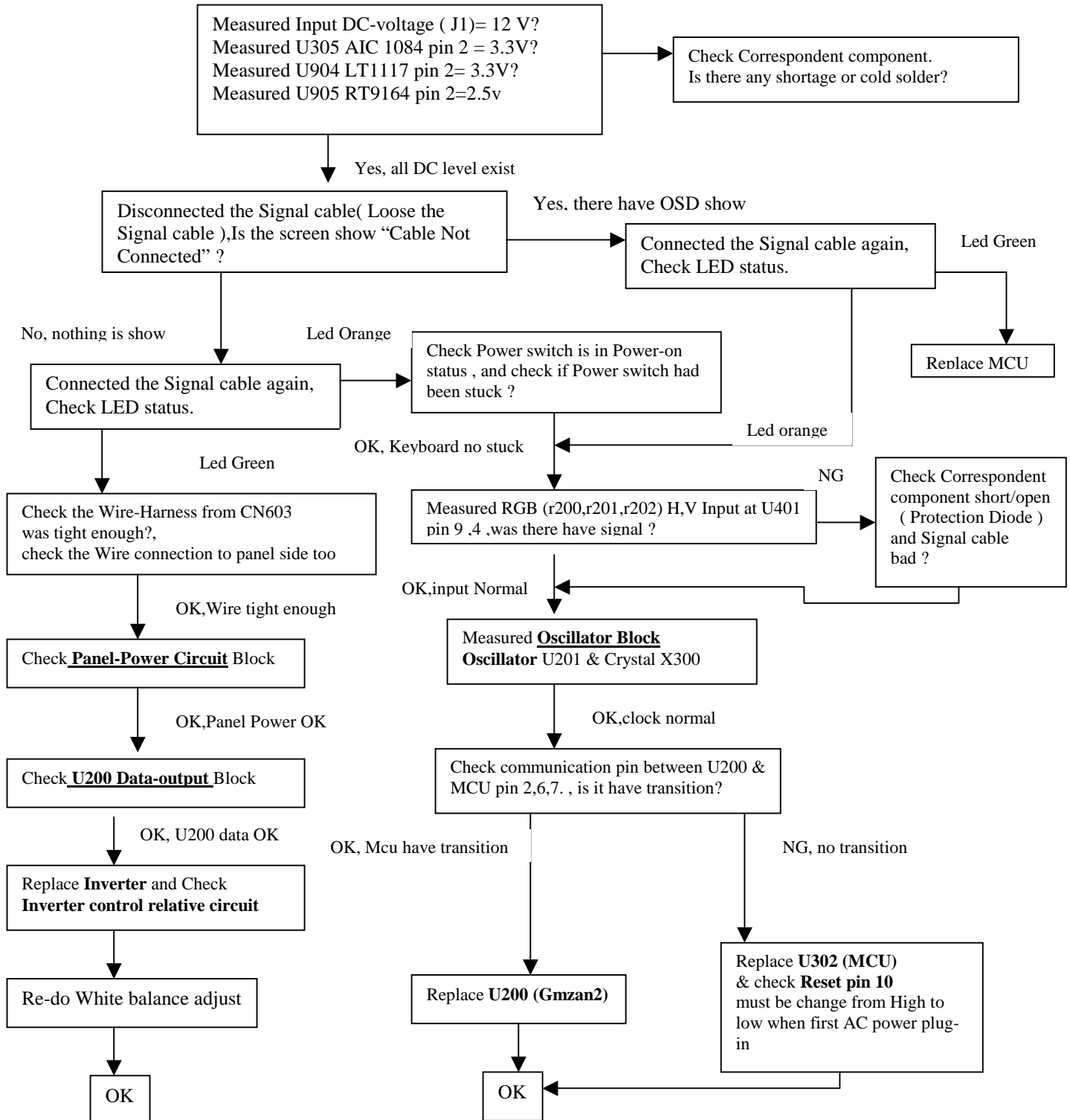
6 A). INTERFACE-BOARD TROUBLE-SHOOTING CHART

*Use the PC Win 98 white pattern, with some icon on it, and Change the Resolution to 640x480 60 Hz / 31 KHz

**NOTICE : The free-running freq. of our system is 48 KHz / 60 Hz, so we recommend to use another resolution to do trouble shooting, this trouble shooting is proceed with 640x480 @60Hz 31Khz

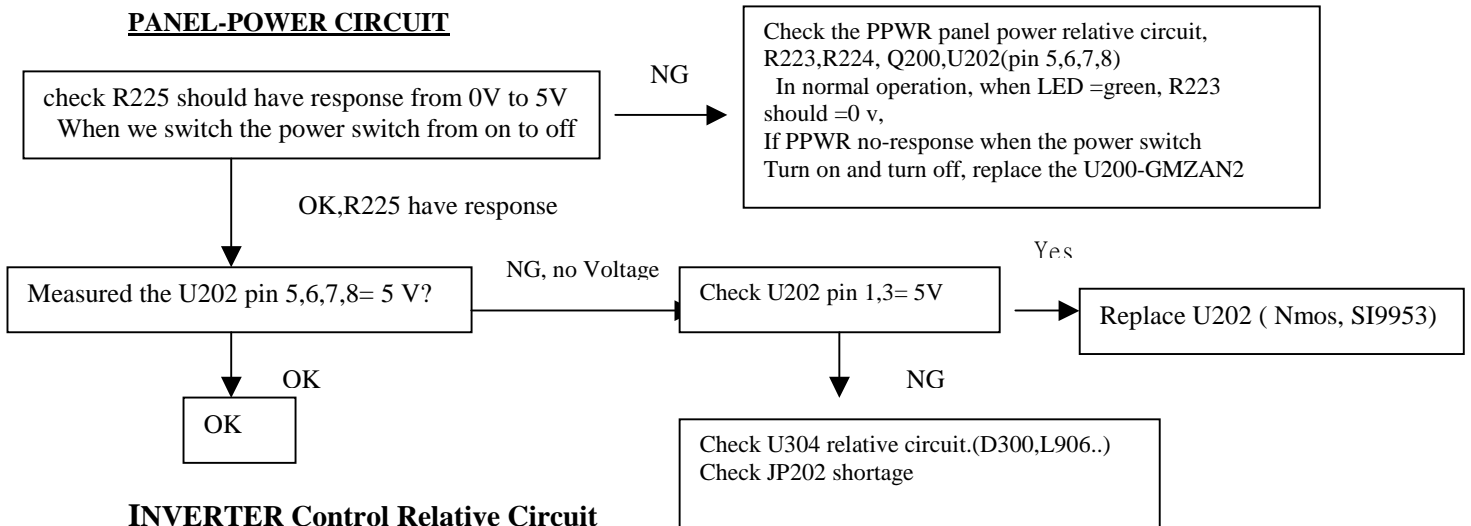
I. NO SCREEN APPEAR

DC-Power Part

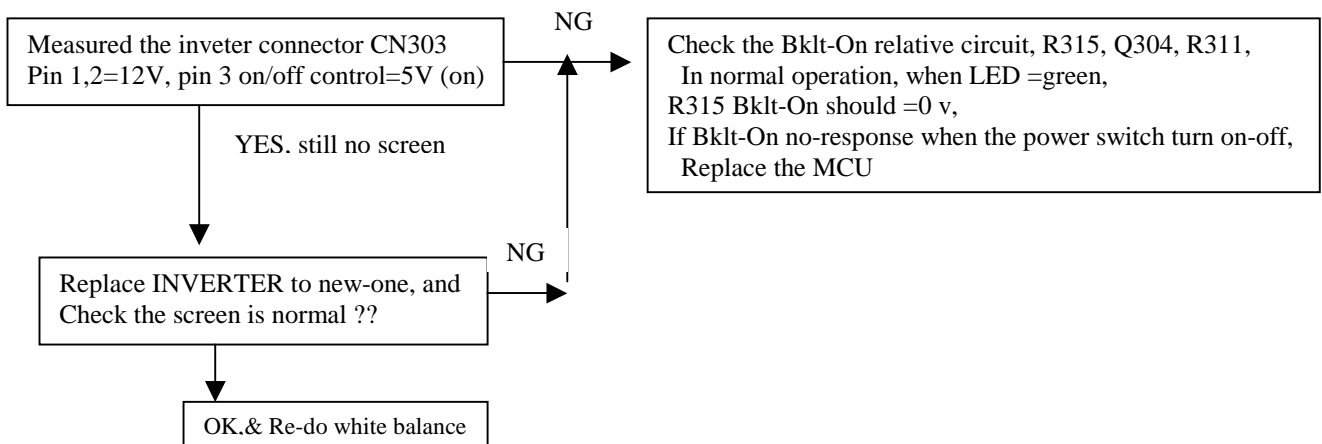


Note: 1. if Replace “**MAIN-BOARD**”, Please re-do “DDC-content” programmed & “WHITE-Balance”.
2. if Replace “**INVERTER**” only, Please re-do “ WHITE-Balance”

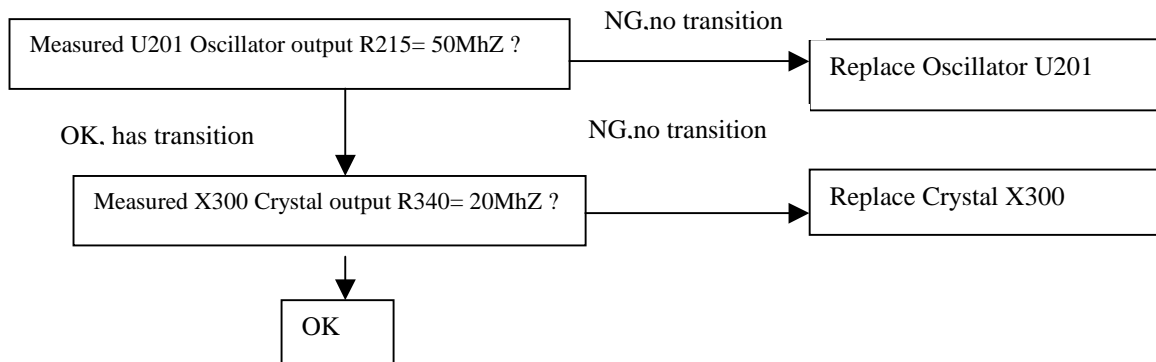
PANEL-POWER CIRCUIT



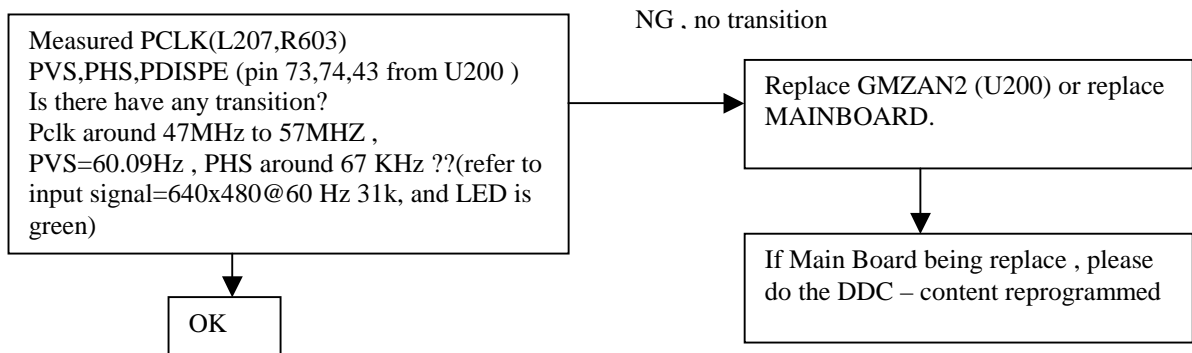
INVERTER Control Relative Circuit



OSCILLATOR BLOCK

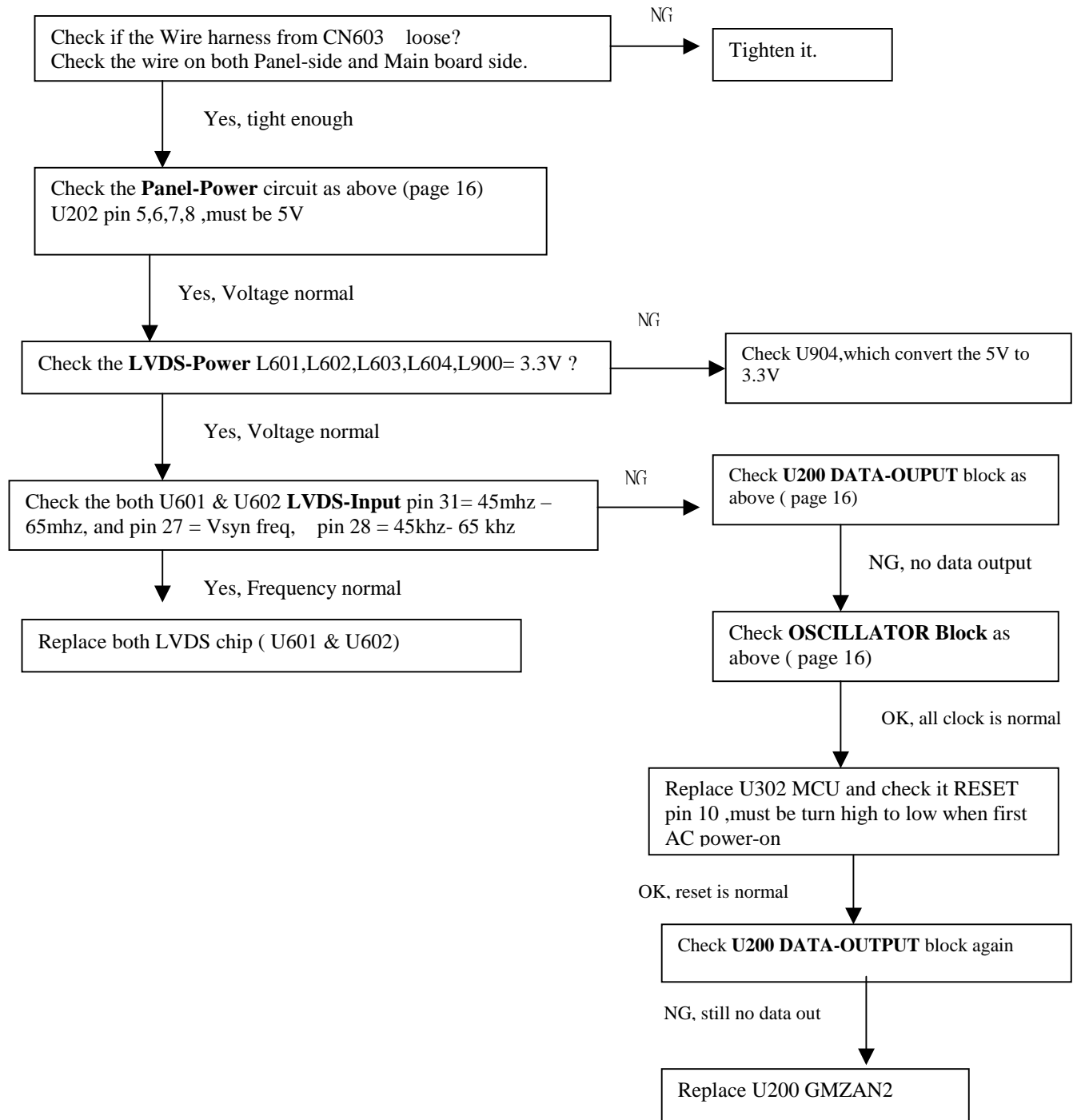


U200-DATA OUTPUT



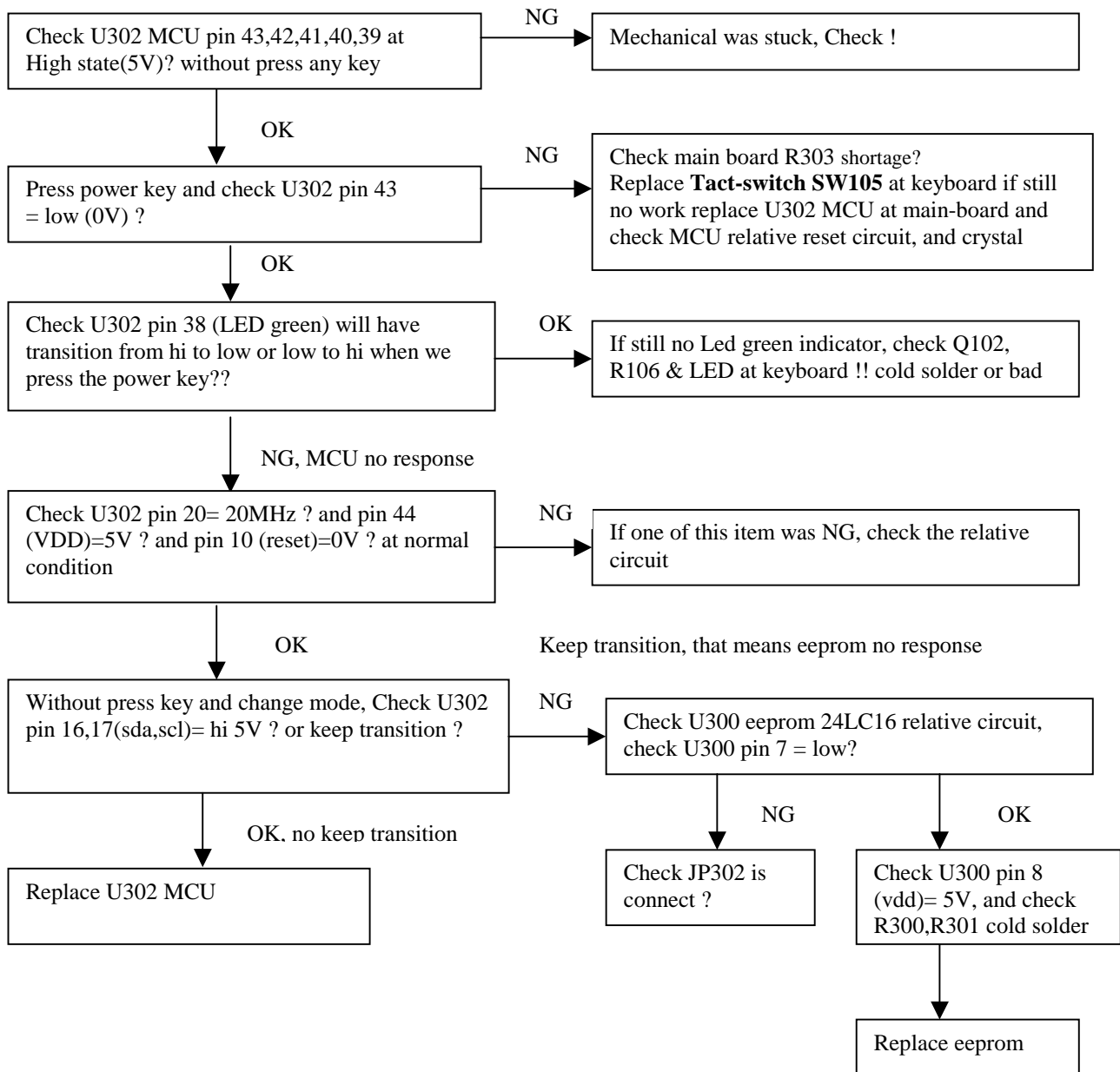
II (a) THE SCREEN is Abnormal , stuck at white screen, OSD window can't appear, but keyboard & LED was normal operation.

At general, this symptom is cause by missing panel data or panel power, so we must check our wire-harness which connected to panel or the panel power controller (U202)



II. (b)The screen had the Vertical Straight Line, might be stuck in Red, Green, Blue
That symptom is cause by bad Panel issue (might be the Source IC from Panel is cold solder or open loop) so REPLACE THE PANEL TO NEW ONE.

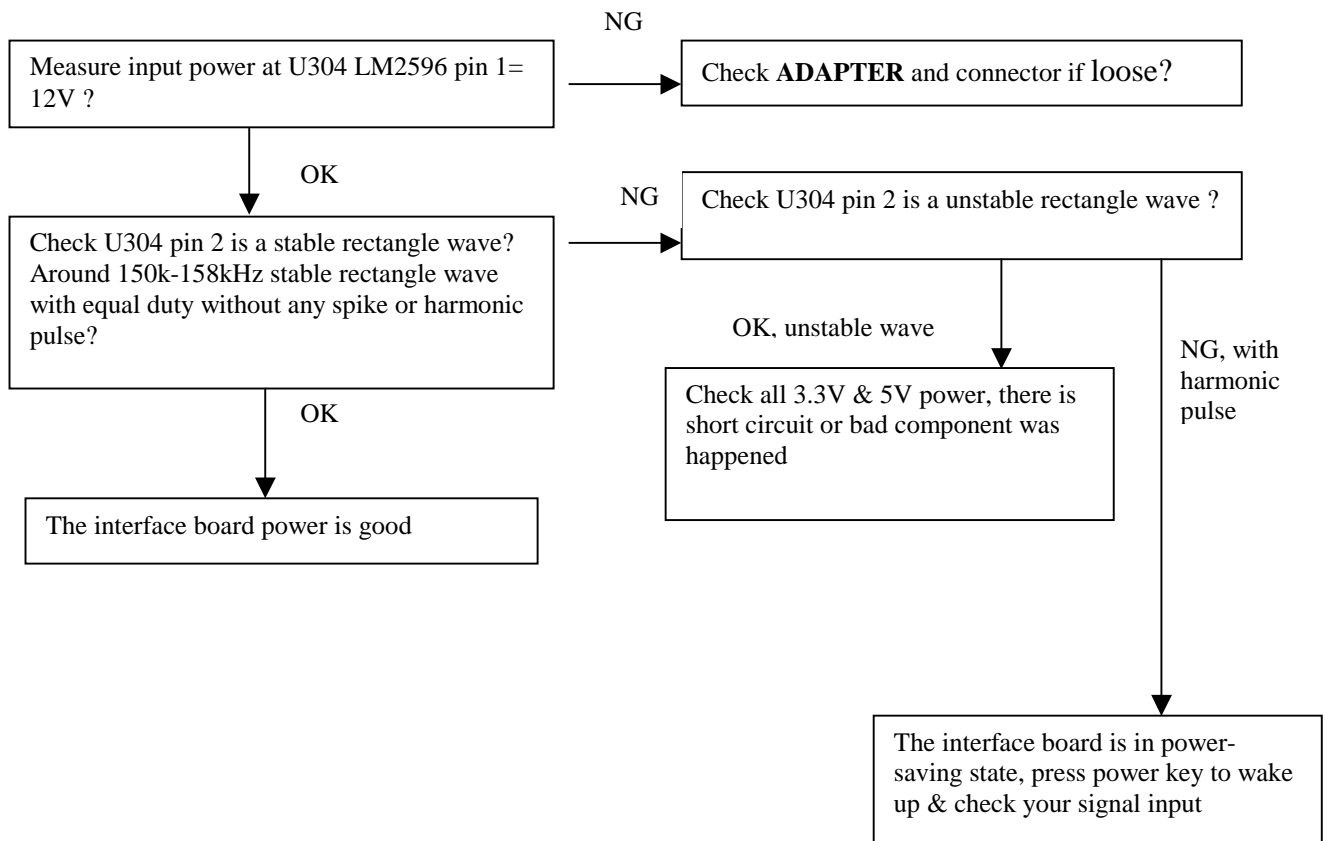
KEYBOARD BLOCK check



POWER-BLOCK check

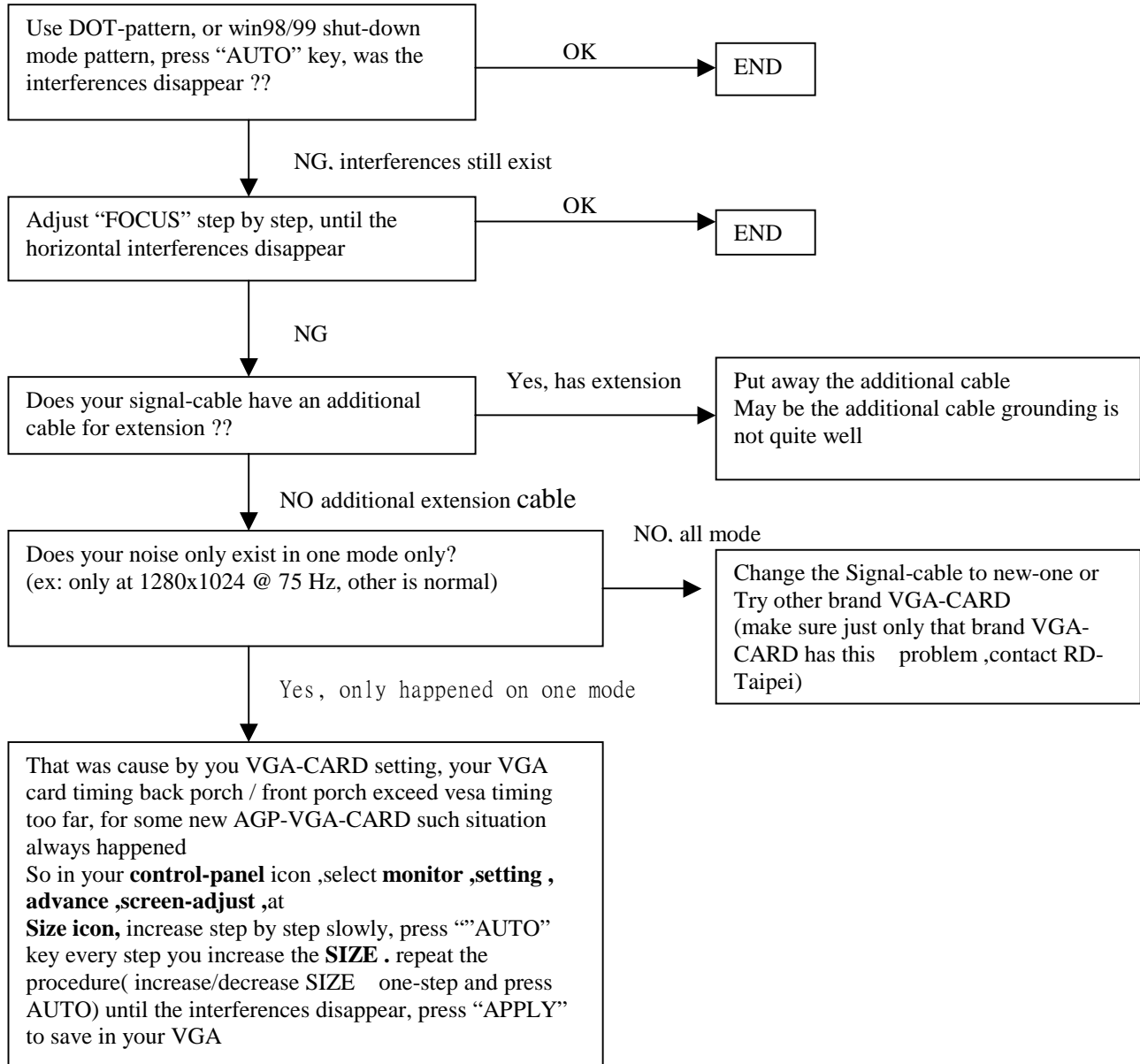
**Note : the Waveform of U304 pin 2 can determined the power situation

1. stable rectangle waveform with equal duty, freq around 150K-158KHz
that means all power of this interface board is in normal operation
,and all status of 5V & 3.3V is working well
2. unstable or uneven rectangle waveform without same duty, that means ABNORMAL operation was
happened, check 3.3V or 5V ,if short-circuit or bad component
3. rectangle waveform with large spike & harmonic pulse on front side , means all 3.3v is no load, U200
Gmzan2 was shut-down, and only U302 **MCU** still working , that means the monitor is in power saving
status , all power system is working well .



III.ALL SCREEN HAS INTERFERENCES OR NOISE, CAN'T BE FIXED BY AUTO KEY

**** NOTE:** There is so many kind of interferences, 1). One is cause by some VGA-CARD that not meet VESA spec or power grounding too bad that influence our circuit
2).other is cause by external interferences, move the monitor far from electronic equipment.(rarely happened)

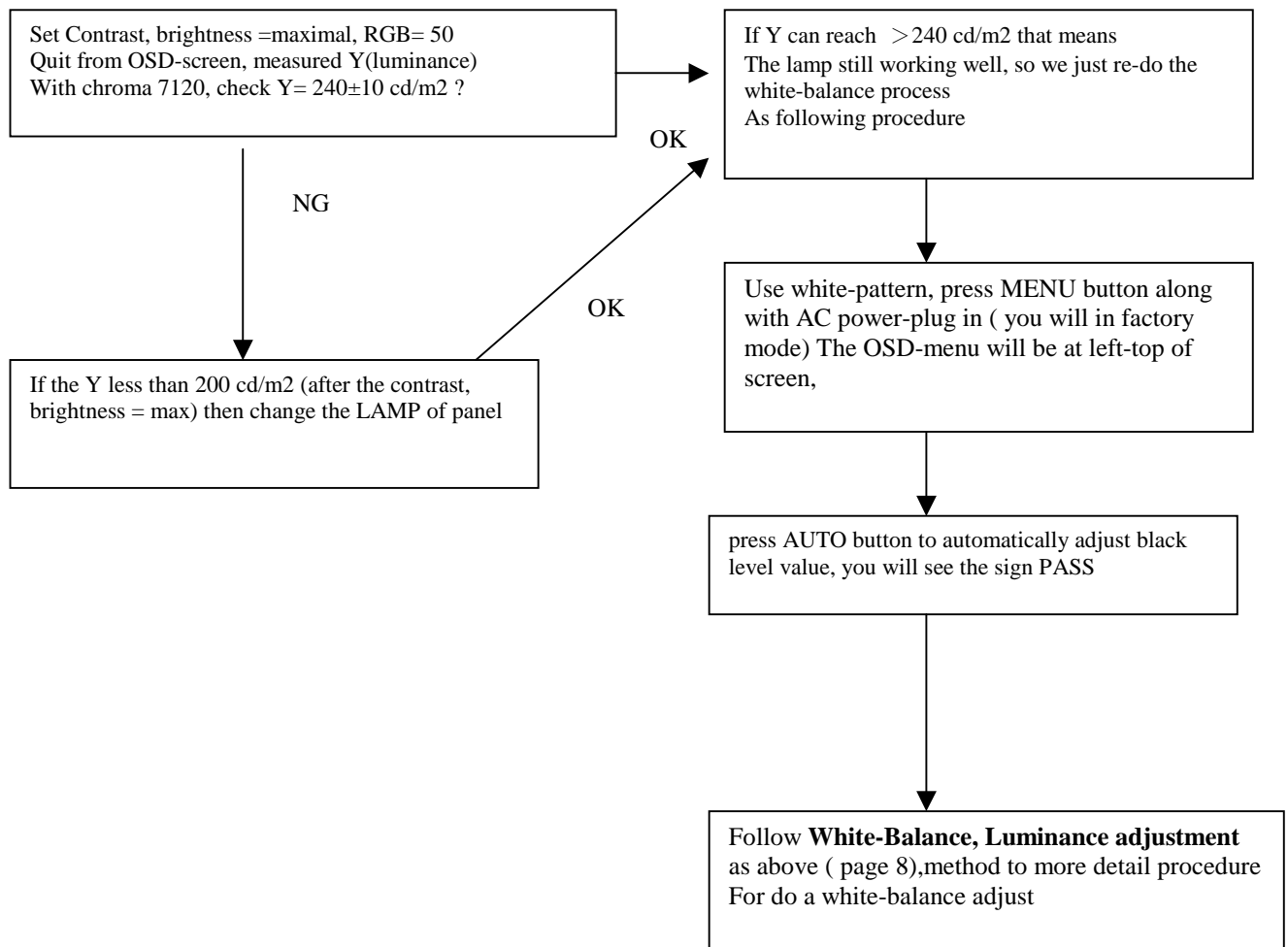


There is interferences in DOS MODE

NOTE :the criteria of doing AUTO-CONFIGURATION : must be a full-size screen, if the screen not full , the auto-configuration will fail. So in dos mode ,just set your “CLOCK” in OSD-MENU to zero or use some EDITOR software which can full fill the whole screen (ex: PE2, HE) and then press “AUTO”
Or you can use “DOS1.EXE” which attached in your Driver disk to optimize DOS mode performance

V.THE PANEL LUMINANCE WAS DOWN

Use white pattern and resolution 1280x1024 @ 60Hz , CHROMA 7120 measured the center of panel



6 B). INVERTER –MODULE SPEC &TROUBLE SHOOTING CHART

For 786LS model , use Hydis panel, and the INVERTER is made by SAMPO

SAMPO Parts No: DIVTL0085-D42 AOC Parts No.: 79LL17-3-S

I. CONNECTOR PIN ASSIGMENT:

A) CON1: INPUT

MODEL NO.: S5B-PH-SM3-TB

| PIN | SYMBOL | DESCRIPTION |
|-----|---------|--------------------------|
| 1 | Vin | Input voltage: 12V |
| 2 | Vin | Input voltage: 12V |
| 3 | ON/OFF | ON: 3V OFF:0V |
| 4 | Dimming | Dimming range (0V~+5.0V) |
| 5 | GND | GND |

B) CON2,CON3,CON4,CON5: OUTPUT

MODEL NO.: SM02B-BHSS-1-TB

| PIN | SYMBOL | DESCRIPTION |
|-----|-----------|--------------------|
| 1 | HV OUTPUT | Input H.V to lamps |
| 2 | RETURN | Return to control |

C) FUNCTION SPECIFICATIONS:

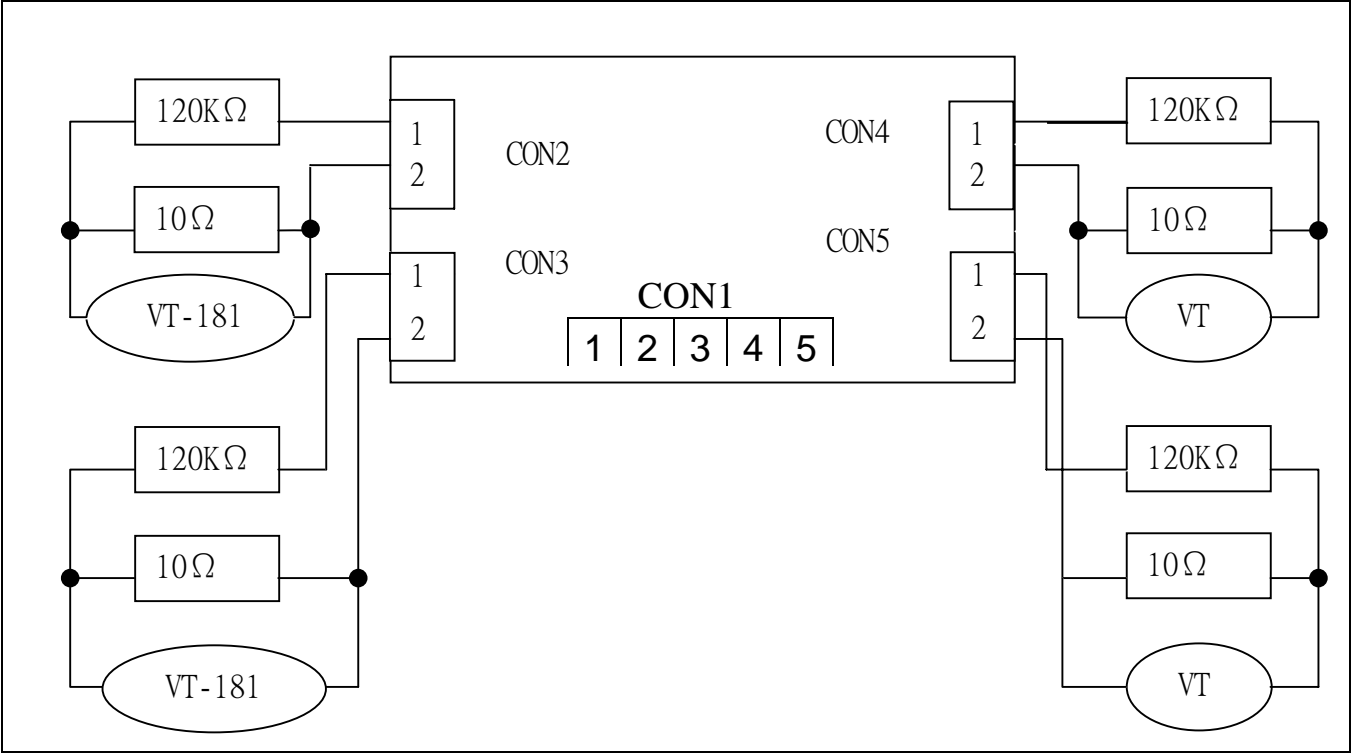
The data test with the set of SAMPO

DC TO DC CONVERTER

(ROOM TEMPERATURE 25°C \pm 4°C)

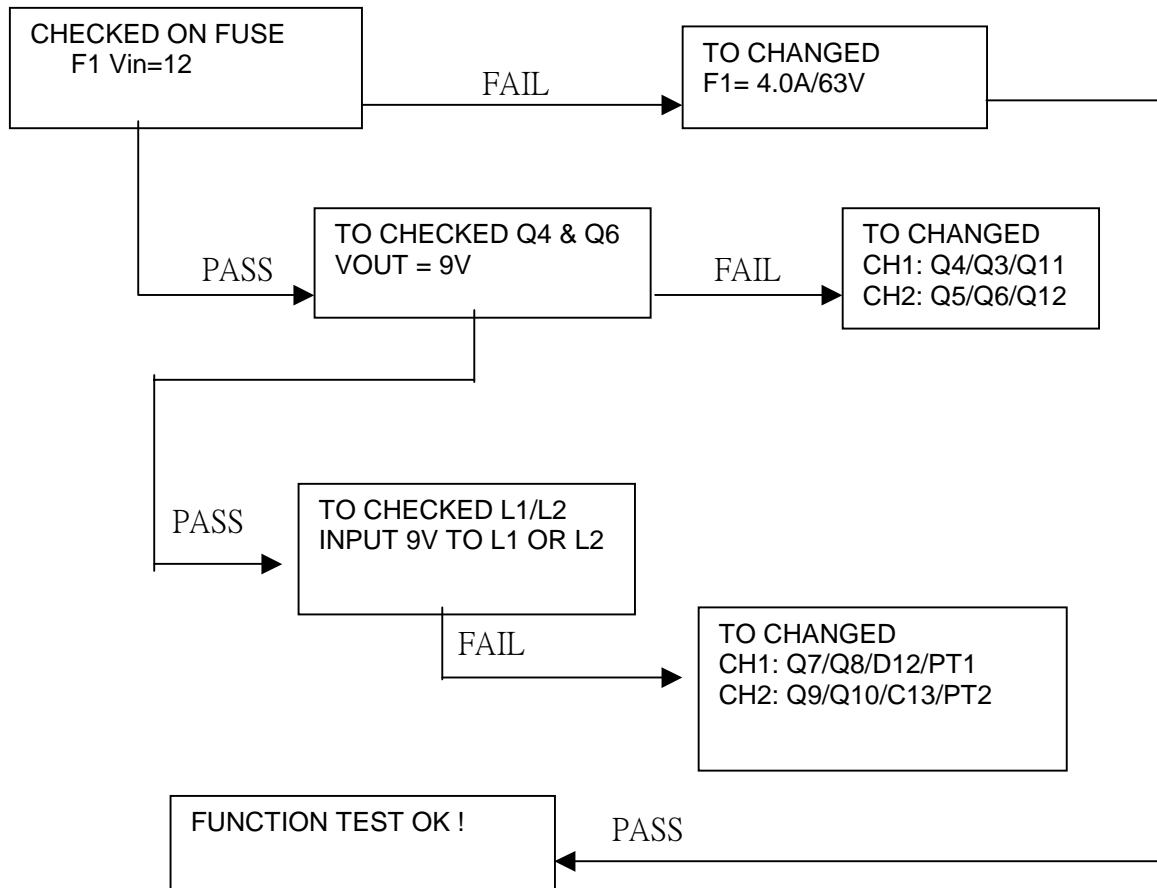
| ITEM | SYMBOL | MIN. | TYP. | MAX. | UNIT | REMARK |
|----------------------------------|---------------|------|------|------|------|----------------------------------|
| Input voltage | Vin | 10.8 | 12 | 13.2 | V | |
| Input current | Iin | -- | 2100 | 2500 | mA | |
| output current adj.:0v(min.) | Iout (min) | 2.3 | 2.6 | 3.3 | mA | FOR 1 CCFL LOAD:120K Ω |
| Output current adj.:5 v(max.) | Iout (max) | 5.5 | 6.0 | 6.5 | mA | FOR 1 CCFL LOAD:120K Ω |
| Frequency | F | 40 | 50 | 60 | KHZ | |
| H.V open | Vopen | 1550 | 1700 | 1850 | Vrms | NO LOAD |
| H.V Load | Vload | 600 | 700 | 800 | Vrms | RL=120K Ω |

D) FUNCTION TEST CIRCUIT:

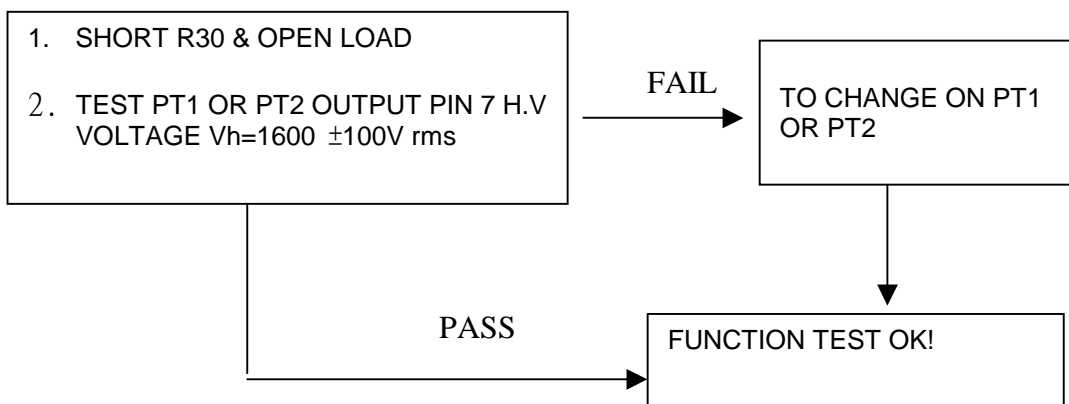


II. TROUBLE SHOOTING BLOCK DIAGRAM

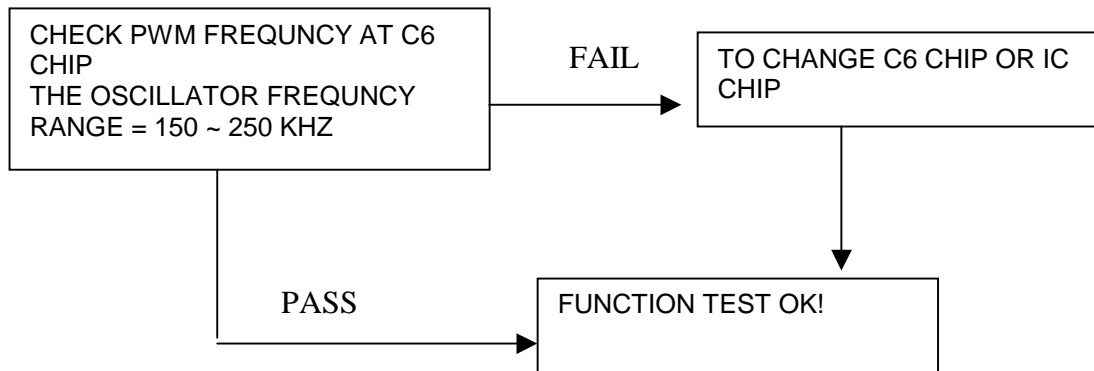
A) NO POWER:



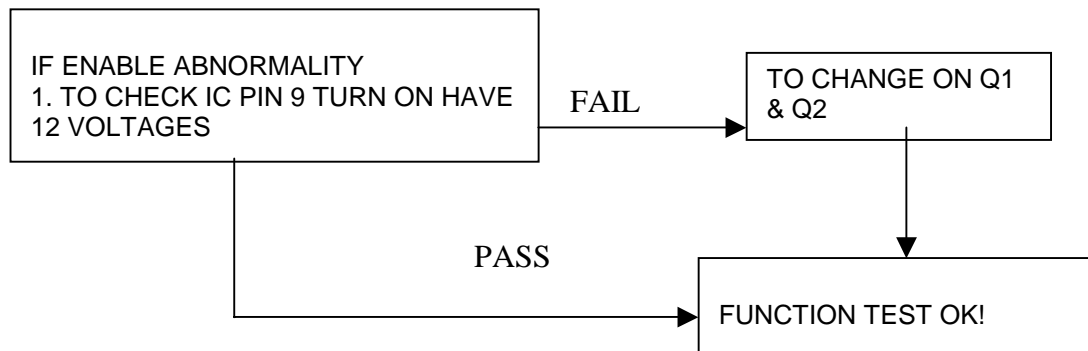
B) HIGHT VOLTAGE PROTECTION:



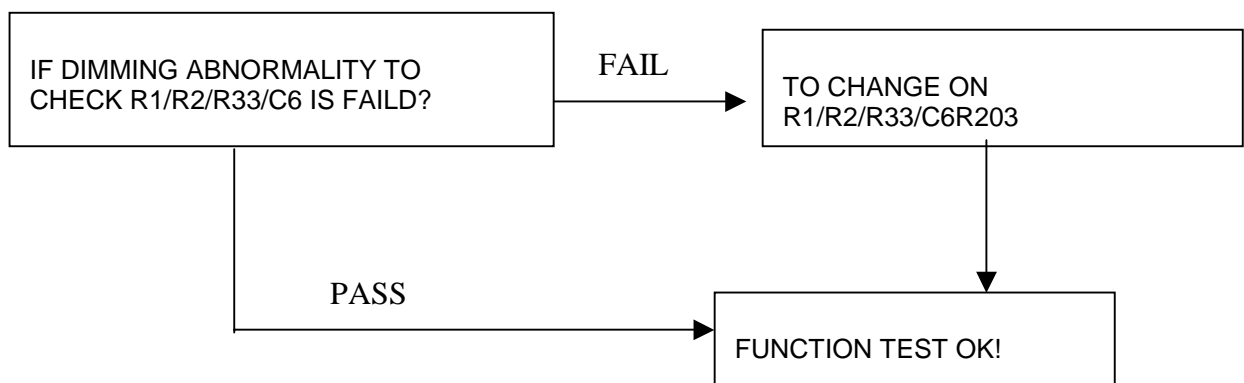
C) OUTPUT CURRENT ABNORMALITY:



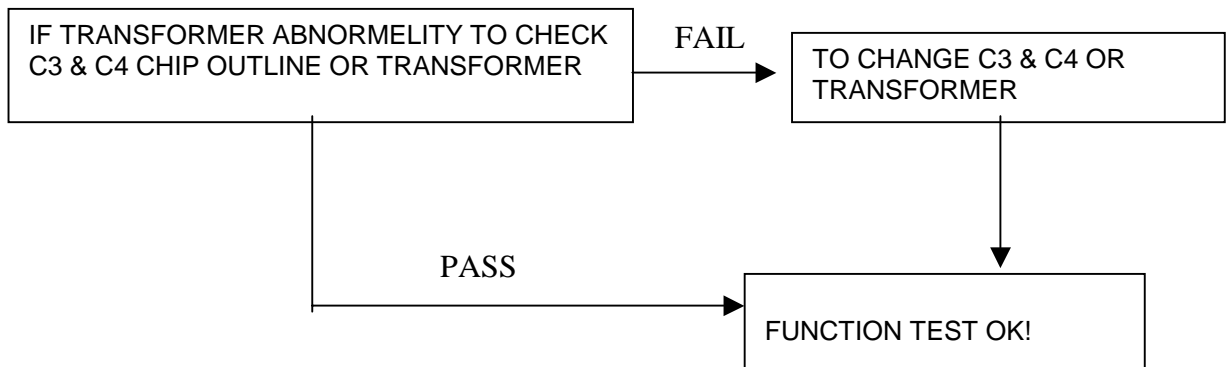
D) ENBALE ABNORMALITY:



E) DIMMING CONTROL ABNORMALITY:



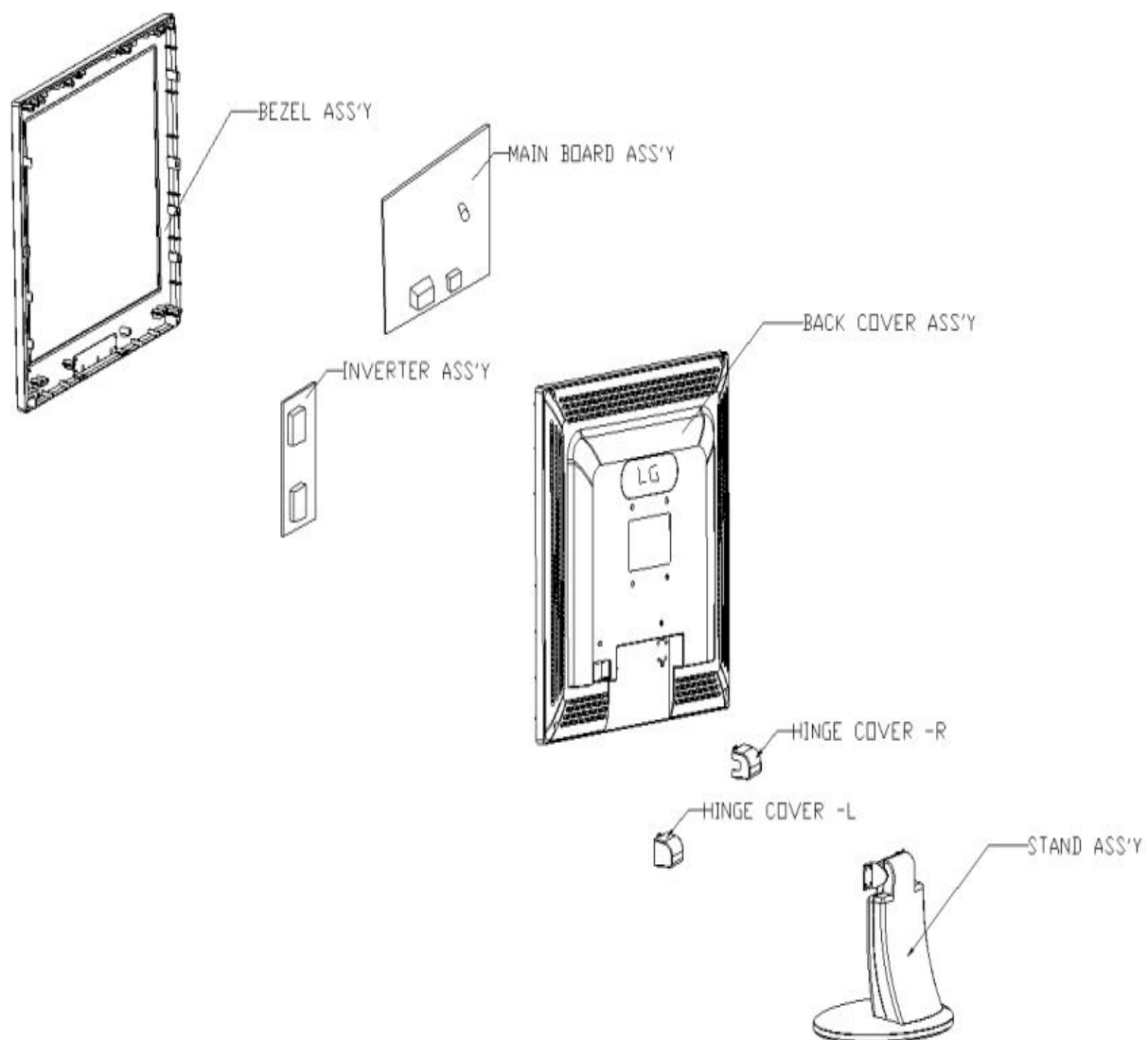
F) TRANSFORMER ABNORMALITY:



G) INSTRUMENTS FOR TEST:

| | | |
|----|--------------------|--------------|
| 1. | DC POWER SUPPLY | GPS-3030D |
| 2. | AC VTVM | VT:-181E |
| 3. | DIGITAL MULTIMETER | MODEL-34401 |
| 4. | HIGHTVOLT PROB | MODEL-1137A |
| 5. | SCOPE | MODEL-V-6545 |

7. MECHANICAL OF CABINET FRONT DIS-ASSEMBLY



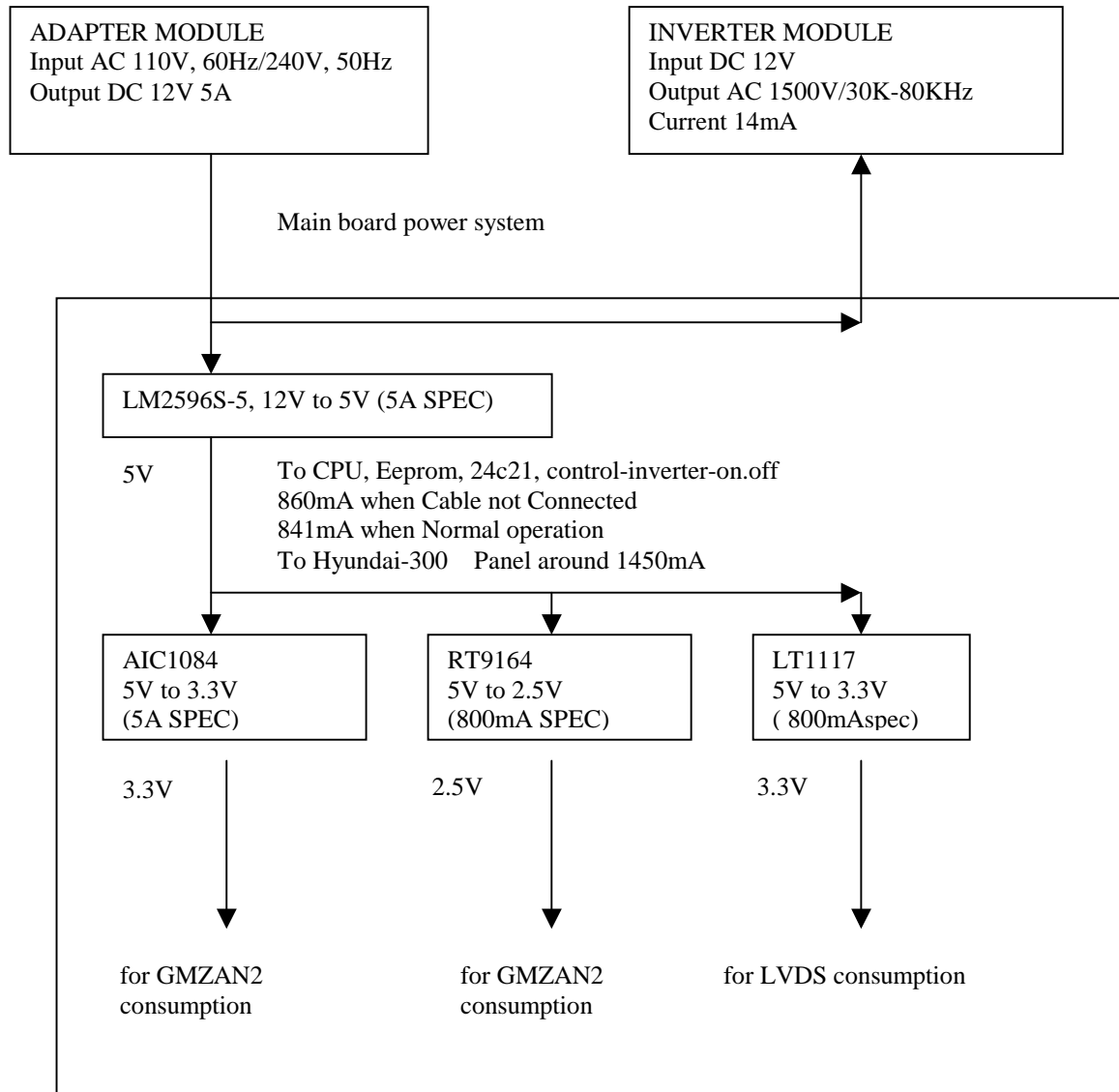
8 SVC_BOM LISTING FOR LGE PART NO

786LS SVC BOM

| No. | LG Part No. | Desc. | AOC Part No. | Desc. | Q'TY |
|-----|-------------|---------------------|-----------------|--|------|
| 1 | 3911TKK425B | Main Board Ass'y | CBPC782KKGLM | Main Board Ass'y (= Conversion Board) | 1 |
| 2 | 3911TKK425C | Control Board Ass'y | KEPC782KA3 | Key Board Ass'y | 1 |
| 3 | 3911TKK425E | Power Board Ass'y | DCPC780A7 | Power Board Ass'y | 1 |
| 4 | 3911TKK425D | Adapter Ass'y | ADPC12416AL | LCD Adapter Ass'y | 1 |
| 5 | 3911TKK425F | Inverter | 79LL17-3-S | Inverter | 1 |
| 6 | 3911TKK426A | Front Bezel | 705I782KF34-01 | Bezel Assy | 1 |
| | | | 34L1001-AAL-4B | Bezel | 1 |
| | | | 33L4530-AL-L | Key | 1 |
| | | | 33L4531-1 | ORNAMENT | 1 |
| 7 | 3911TKK426B | Back Cover | 705L782KB34008 | Back Assy | 1 |
| | | | 34L916-AM-2B | Back Cover | 1 |
| | | | 15L5791-1 | Kensington Metal | 1 |
| | | | 33L4532-AAM-L | LG Logo | 1 |
| | | | Q1L1030-12-128 | | 4 |
| 8 | 3911TKK426C | Stand | 705L782KB34008 | Stand Assy | 1 |
| | | | 34L919-AM-B | Stand | 1 |
| | | | 15L5711-1 | Plate | 1 |
| | | | Q1L1030-10-47 | Screw | 2 |
| | | | 12L381-1 | Foot Pad | 4 |
| | | | 37L448-1 | Hinge | 1 |
| | | | 33L4345-AM-L | Dust Cover (PE) | 1 |
| | | | 34L918-AM-B | Dust Cover (Stand Back) | 1 |
| | | | 34L917-AM-B | Dust Cover (Front) | 1 |
| | | | Q1L140-10-47 | Screw | 6 |
| | 3911TKK426E | Hinge Cover | 33L4344-AM-1/2L | Hinge Dust Cover (Back)(L) | 1 |
| 9 | 3911TKK426F | Hinge Cover | 33L4344-AM-1/3L | Hinge Dust Cover (Back)® | 1 |
| 10 | | Power Cord | | Korea | 1 |
| | | Power Cord | 89L401A18NISA | Japan | 1 |
| | | Power Cord | 89L404A18N YH | Europe | 1 |
| | | Power Cord | 89L404A18N YH | Russia | 1 |
| | | Power Cord | 89L410A18N IS | UK | 1 |
| | | Power Cord | 89L402A18N YH | USA | 1 |
| 11 | 3911TKK425G | Signal Cable | 89L 174L17-10D | 786LS Signal cable | 1 |
| | 3911TKK426D | | 33L4345 | Signal Duster cover | 1 |
| 12 | | Fuse | NA | | 1 |
| 13 | | Carton Box | | Korea | 1 |
| | | Carton Box | 44L3265-689-3A | Janpan | 1 |
| | | Carton Box | 44L3265-689-1A | Europe/UK/USA | 1 |
| | | Carton Box | 44L3265-689-2A | Russia | 1 |

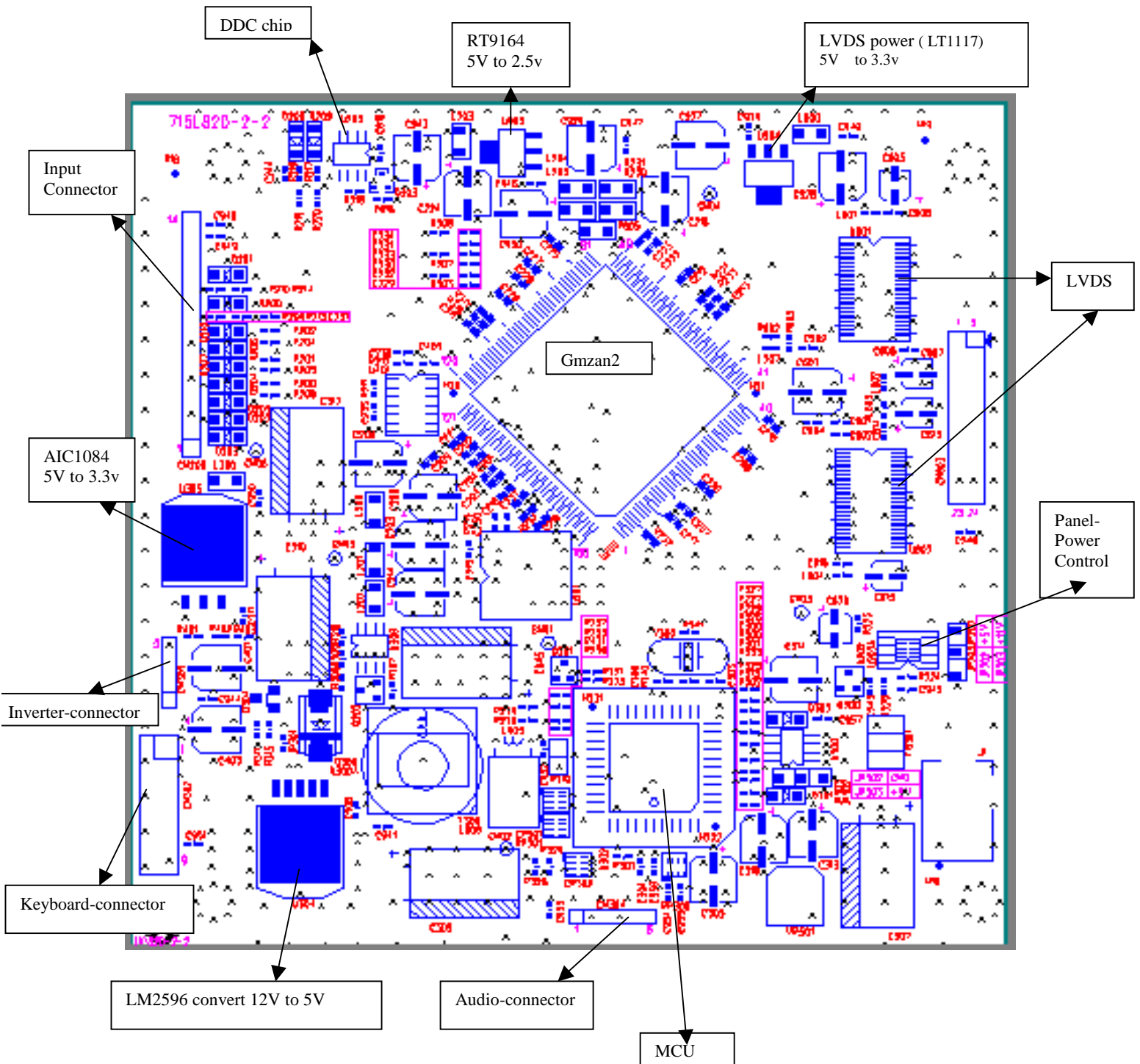
| | | | | | |
|----|-------------|-----------|------------------------|-----------------------|----|
| 14 | 3911TKK425A | LCD Panel | 750LLK70-300 | LCD PANEL HT17E11-300 | 1 |
| 15 | 3911TKK425H | J1 | 95L 900 31(Harness) | Connector (Power) | 1 |
| 16 | 3911TKK425J | P980 | 95L8018-30-5(harness) | Connector (Panel) | 1 |
| | | CN603 | 33L801724A H | | 1 |
| 17 | 3911TKK425K | CN302 | 33L3802 9H | Connector (Key) | 1 |
| 18 | 3911TKK425L | Cn303 | 33L3802 5H | Connector (Inverter) | 1 |
| 19 | | Screw | | Screw Assy | |
| | | | M1L330-6-128 | Screw | 10 |
| | | | M1L1030-10-128 | Screw | 4 |
| | | | M1L1740-12-128 | Screw | 4 |
| | | | Q1L340-12-128 | Screw | 8 |
| | | | Q1L340-16-47 | Screw | 4 |
| | | | Q1L1030-10-128 | Screw | 3 |

9. POWER SYSTEM AND CONSUMPTION CURRENT



10. PCB LAYOUT

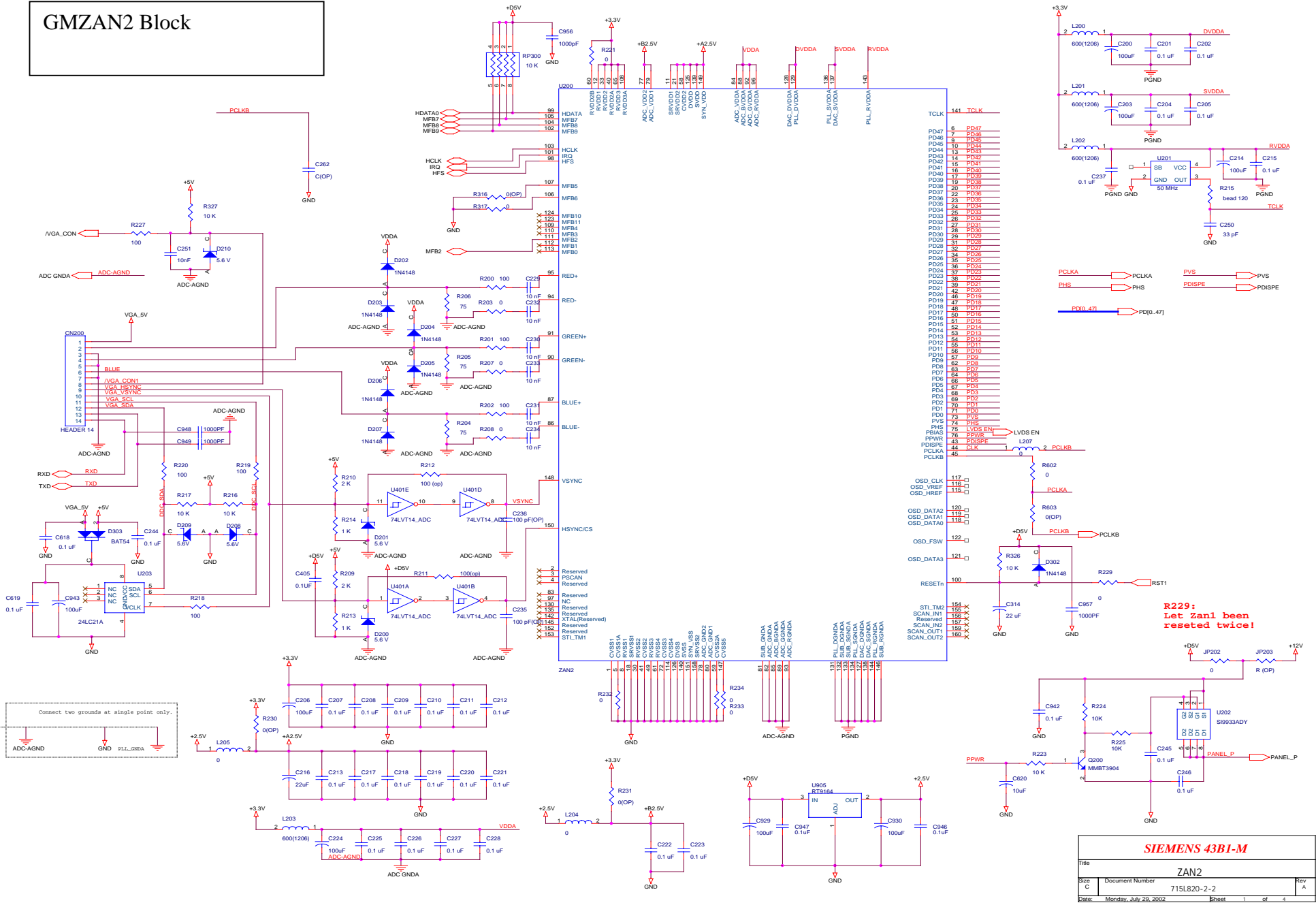
MAIN PCB LAYOUT



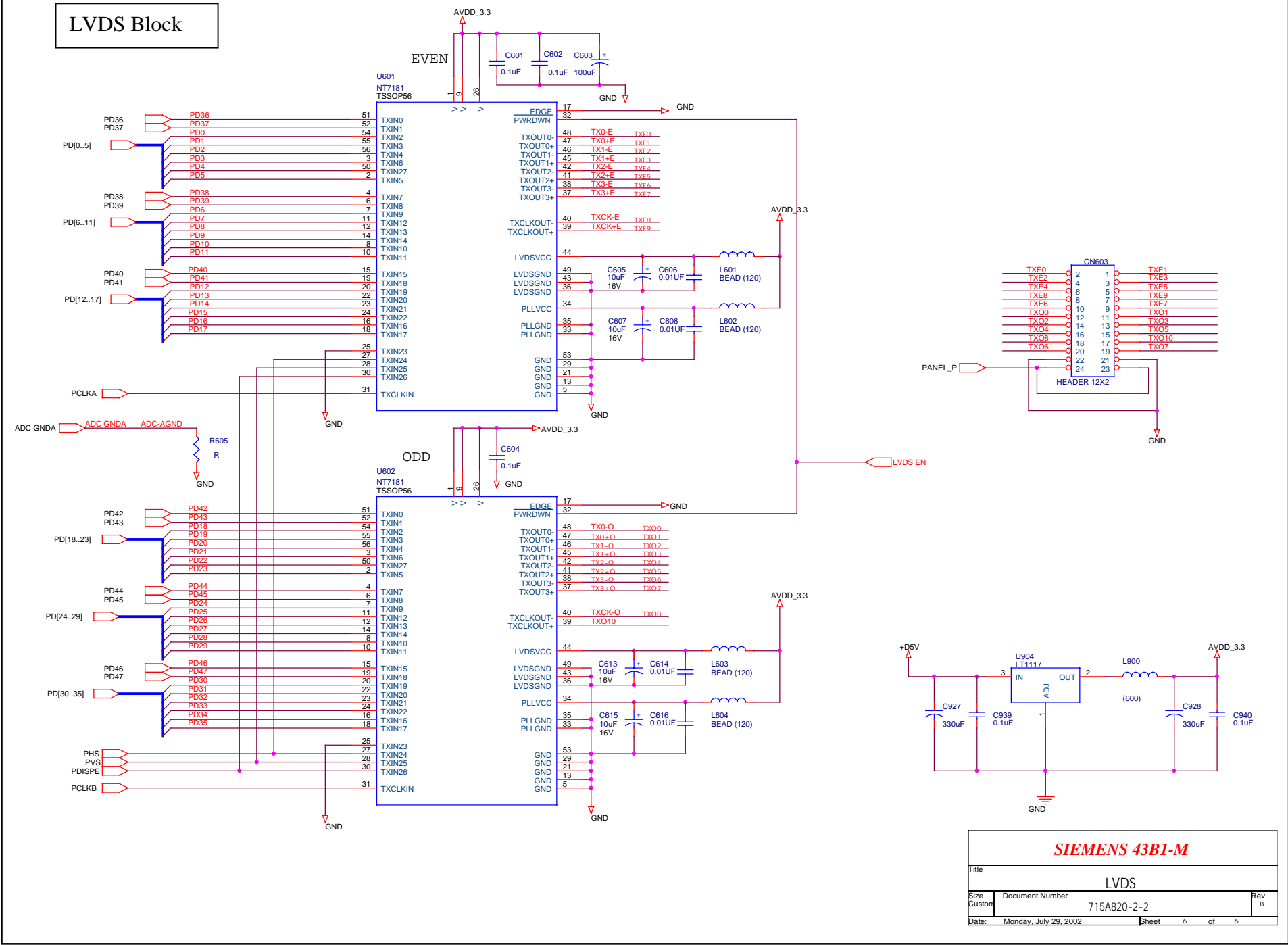
TOP-LEVEL FLOW



GMZAN2 Block



LVDS Block



MCU Block

