Service Manual

LCD Monitor Acer
AL2017

Service Manual Versions and Revision

No.	Version	Release Date	Revision
1	1.0	2007/01/18	Initial Release

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Acer AL2017 Service Manual

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Chapter 1- PRECAUTIONS & SAFETY NOTICES

1. SAFETY PRECAUTIONS

This monitor is manufactured and tested on a ground principle that a user's safety comes first. However, improper used or installation may cause damage to the monitor as well as to the user.

WARNINGS:

- This monitor should be operated only at the correct power sources indicated on the label on the rear of the monitor. If you're unsure of the power supply in you residence, consult your local dealer or Power Company.
- Do not try to repair the monitor by yourself, as it contains no user-serviceable parts. This monitor should only be repaired by a qualified technician.
- Do not remove the monitor cabinet. There are high-voltage parts inside that may cause electric shock to human bodies.
- Stop using the monitor if the cabinet is damaged. Have it checked by a service technician.
- Put your monitor only in a lean, cool, dry environment. If it gets wet, unplug the power cable immediately and consult your closed dealer.
- Always unplug the monitor before cleaning it. Clean the cabinet with a clean, dry cloth. Apply non-ammonia based cleaner onto the cloth, not directly onto the class screen.
- Do not place heavy objects on the monitor or power cord.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety visual inspections and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Before replacing any of these components read the parts list in this manual carefully. The use of substitute replacement parts, which do not have the same safety characteristics as specified in the parts list, may create shock, fire, or other hazards.

3. SERVICE NOTES

- When replacing parts or circuit boards, clamp the lead wires around terminals before soldering.
- Keep wires away from high voltage, high temperature components and sharp edges.
- Keep wires in their original position so as to reduce interference.
- Adjustment of this product please refers to the user' manual.

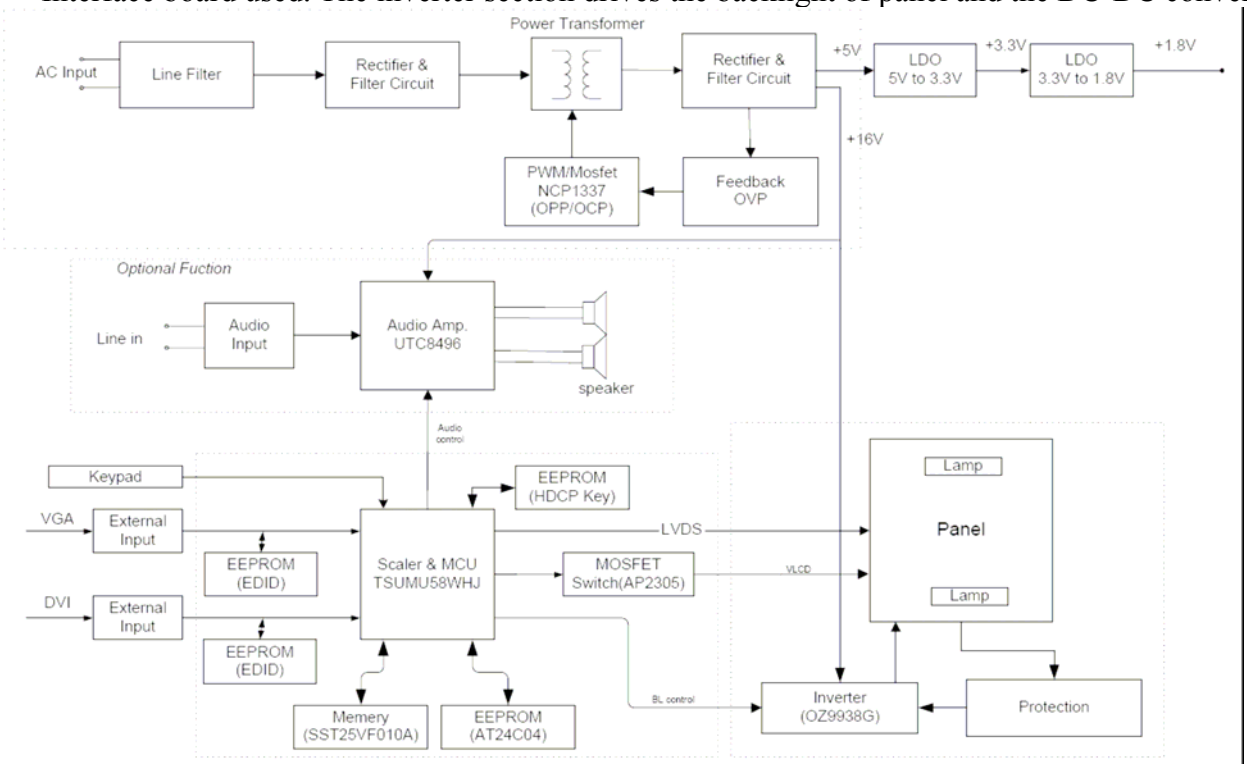
Chapter 2- SERVICE TOOLS & EQUIPMENT REQUIRED

1. SIGNAL GENERATOR
2. MULTIMETER
3. SCREW DRIVER
4. OSCILLOSCOPE
5. Soldering IRON
6. SOLDER
7. VGA Cable (15pins point to point)
8. Color Analyzer
9. Myson412 ISP Board
10. EDID Board
11. EDID program file

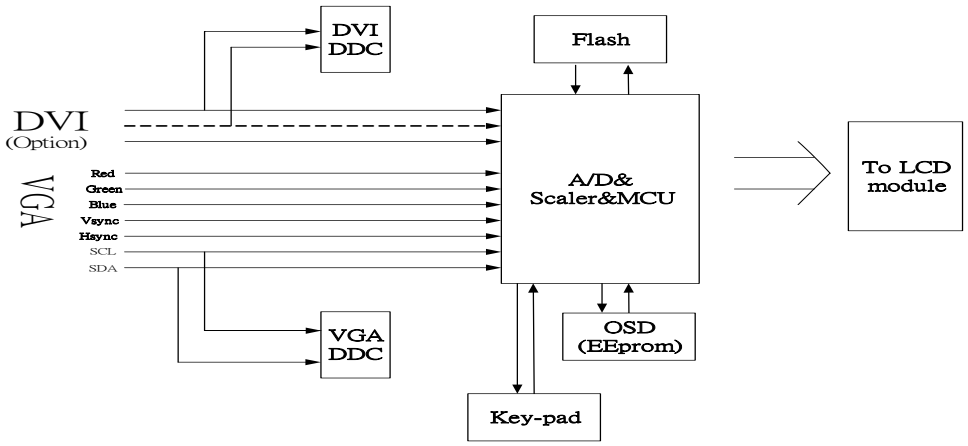
Chapter 3- CIRCUIT THEORY

1. Monitor Block Diagram

The LCD Monitor contains an interface board, and inverter/power/Audio board, keypad board and flat panel. In Inverter/power/Audio board, power section supplies +14V & +5V for Inverter/Audio and Interface board used. The inverter section drives the backlight of panel and the DC-DC conversion.



2. Interface BOARD DIAGRAM



3. Electronic Circuit Theory

1.1 Switching Mode Power Supply

1.1.1 AC Current Input Circuit

P801 is a connector for connecting AC Power. F801 is a fuse to protect all the circuit. AC input voltage is from 90v to 264V. R801 and R802 joined between two inputting main circuit to prevent man from shock. L801 is used to clear up low frequency wave. C801 and C802 are used to discharge the waves that L801 produced. High frequency waves are damped by C801 and C802. D801 is a rectifier which composed of 4 build-in diodes, it inverts AC to DC.

1.1.2 High Voltage to Low Voltage Control Circuit

C804 is used to smooth the wave from rectifier. IC802 is a highly integrated PWM controller. When rectified DC high voltage is applied to the HV pin during start-up, the MOSFET Q804 is

initially off, and the Vcc pin capacitor is charged. When the Vcc pin voltage reaches approximately 14V, the control circuitry is activated and the soft-start begins. The soft-start circuit gradually increases the duty cycle of the MOSFET from zero to the maximum value over approximately 4ms. If no external feedback/supply current is fed into the FB pin by the end of the soft-start, the current Setpoint will be above the fault level, FAULT flag is raised, if the FAULT duration exceeds 80ms, the output controller disable resistor R808, R809, R810, R811 are for line over voltage shutdown(OVP)

When PWM is turned off, the main current flow will be consumed through R804 and D802, This will prevent MOSFET Q804 from being damaged under large current impulse and voltage spike.

D803 and C807 to provide internal Auxiliary voltage to Vcc pin during normal operation. Otherwise, error amplifier and feedback current input the FB pin for duty cycle control.

1.1.3 DC_5V and DC_16V Output Circuit

For DC 5V, D805 is used to rectify the inducted current. R828 and C814 are used to store energy when current is reversed. The parts including C818, C822, C820,L803 are used to smooth the current waves.

For DC 16V, D803 is used to rectify the inducted current. R827 and C813 are used to store energy when current is reversed. The parts including C815, C817 and L802 are used to smooth the current waves.

1.1.4 Feedback and OVP Protect Circuit

Pin R of IC803 is supplied 2.5-v stable voltage. It connects to 5V and 16V output through R822, R823 and R824. R822, R823 and R824 are output sampling resistor. When the sampling voltage more than 2.5V or less than 2.5V, current of FB IC802 will change, this can change the voltage from T801.

OVP Protect Circuit: When output is overvoltage, the auxiliary winding voltage will be increased, when it reaches about 14V. Q803 is triggered . It makes the IC802 Pin 1 exceed 5V, then the IC802 output will be disabled.

Q801, R816, R817 and ZD803 make up of dummy loading circuit. For start-up sequence, during 5V output take place high loading first, this dummy loading circuit operated to insure 16V not be increased.

1.2 Interface Board Circuit

1.2.1 RGB CAPTURE

- Signal RED,GREEN,BLUE input through CN103 #1,#2,#3, via R105,FB101, R101,R106, FB102 ,R102, R107,FB103,R103, Stop DC via C101, C102 and C103, and then enter into U104 (TSUM56AWHK) analog input terminal #59,#56,#54, and then TSUM56AWHK deals with signal internally. D101, D102, D103 are ESD protector to prevent U104 from ESD.
- Signal DDC_SCL (series clock) inputs via CN103#15, and then passes through ZD104 Zener for ESD protection, via R121, goes into EDID EEPROM IC U102 #6.
- Signal DDC_SDA (series data) inputs via CN102 #12, and then passes through ZD105 Zener for ESD protection, via R122, goes into EDID EEPROM IC U102 #5.
- Signal TTL vertical sync. (Vsync) inputs via CN103 #14, and then clamped by D103 Zener, passes through R116, and then goes into IC U104 #64.
- Signal TTL horizontal sync. (Hsync) inputs via CN103 #13, and then clamped by D102 Zener, passes through FB104,R115, and then goes into IC U104 #63.
- CN103#5 is defined as cable detect pin, this detector realize passes through R113 ,go into U104#26, and ZD109 is ESD protector.
- U102 +5V is supplied by PC via CN103#9 with ZD101 for ESD protection, or supplied by Monitor self via D104.
- U102 is an EEPROM IC which is memory and EDID data saved in it.

1.2.2 DVI CAPTURE

- Differential Signal input RX0+,RX0-,RX1+,RX1-,RX2+,RX2-,RXC+,RXC- through CN102 #18,#17,#10,#9,#2,#1,#23,#24 via R130, R131, R132, R133, R134, R135, R137, R138 enter into U104 Digital input terminal #45,#46,#42,#43,#39,#40,#48,#49, and then TSUM56AWHK deals with signal internally.
- Signal DDC_SCL (series clock) inputs via CN102#6, and then passes through ZD106 Zener for ESD protection, via R126, goes into EDID EEPROM IC U101 #6.
- Signal DDC_SDA (series data) inputs via CN102 #7, and then passes through ZD107 Zener for ESD protection, via R127, goes into EDID EEPROM IC U101 #5.
- CN102 #16 is defined as cable detect pin, this detector realize passes through R125 ,go into U104#27, and D106 is ESD protector.
- U101 +5V is supplied by PC via CN102#14 with ZD108 for ESD protection, or supplied by Monitor self via D107.
- U102 is an EEPROM IC which is memory and EDID data saved in it.

1.2.3 Buttons Control

- Button “Power” on front of bezel connects to scaler TSUMU58WHJ pin #4 through R159, via CN102#8.

- Button “MENU” on front of bezel connects to scaler TSUMU58WHJ pin #119 through R153,via CN102#1; Button “>” (Rihgt) on front bezel connects to scaler TSUMU58WHJ pin #120 through R154,via CN102#2; Button “<” (Left) on front bezel connects to scaler TSUMU58WHJ pin #121 through R155,via CN102#3;Button “AUTO” on front bezel connects to scaler TSUMU58WHJ pin #122 through R156,via CN102#4;

- U107 is an EEPROM IC which memory OSD setting and save the value adjusted by user.

- LED Indicator

When monitor normally working, scaler TSUMU58WHJ pin #124 sends out a low potential, via R107, switch on Q105, then flows to CN102 #7, LED Green ON.

When in “Suspend” mode, scaler TSUMU58WHJ pin #123 sends out a low potential, via R102, switch on Q102, then flows to CN102 #5, LED Amber ON.

1.2.4 Scaling IC (U104 tsum56AWHK)

- U104 #105~#114 output 8 bit even LVDS digital data to panel control circuit through CN106.
- U104 #118~#127 output 8 bit odd LVDS digital data to panel control circuit through CN106.
- U104 #75 output ”H” potential to make Q106 conducted, and then make Q103 conducted, +5V flow to CN106#1~#3 as Panel Vdd .
- U104 #20 output,”L” ”H” potential to control Inverter on/off.
- U104 #21 outputs Brightness “PWM” signals to control CCFL brightness.
- TCLK by Crystal 14.318MHz input to U104 #32.

Please refer to tsum56AWHK Pin Assignments table in page

1.2.5 Regulator Circuit

- +5V is from powerboard CN103 #1 and CN102
- +3.3V generates from +5V through D116 and C168 filtering and U103 which is output +3.3V LDO
- +1.8V generates from +3.3V through C143 filtering and U108 which is output +1.8V LDO, for U104 used.

1.3 Inverter circuit

Power supply 5V then pass through R517 to IC501. The extra PWM pulse signal (BRIGHTNESS signal) input to control IC through R512, R514, C510, The LCT pin is set to a DC voltage of 0.7V by using a resistor divider(R507, R516), change the duty of PWM pulse, will regulate the lamp current. The ON/OFF voltage connect to pin10 of IC501 through D501, R501,

A voltage of 2V to pin10 of IC501 enables the IC and activates the striking timer. The SSTCMP pin of IC501 performs the soft function, the C511 set the time of SST. The operation frequency determined by external capacitor C512, C521 and resistor R508 connected at CT pin of IC501. C515 connect the TIMER pin of IC501, the capacitor to set striking time and shunt down delay time. DRV!, DRV2 output for power MOSFET U501, U502.

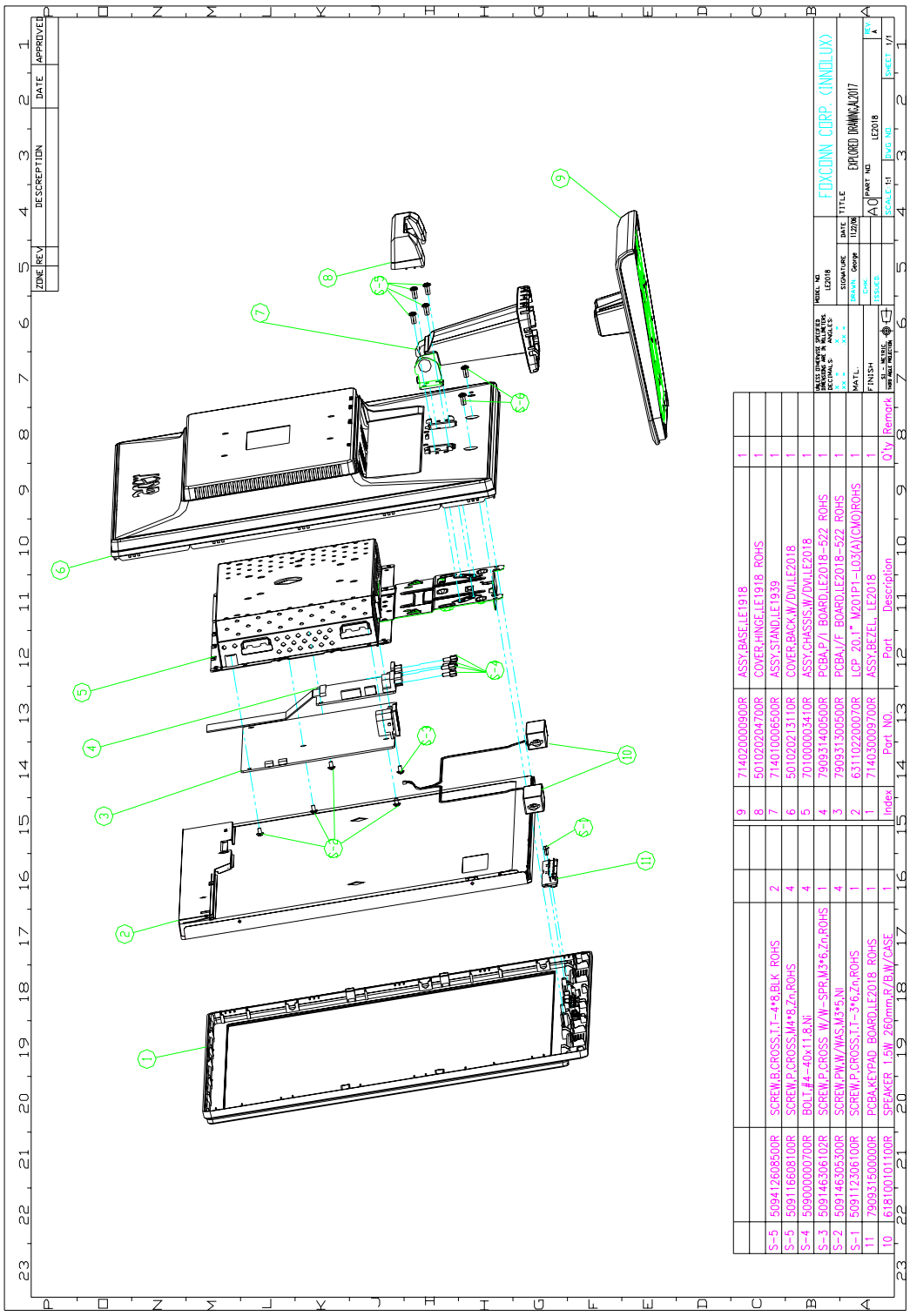
OZ9938 provides two drive signals for U501, U502, and they work in push pull topology driving, two transformers are connected in parallel with each transformer driving two lamps in series. Turning each N-Channel MOSFET “on/off” complementarily, produces an alternating current through the transformer primary and secondary. The “on” duration of the switches determines the amount of energy delivered to the CCFLs. R504, C504, R505, C505, R532, C529, R530, C522 are snubber networks, they suppress Voltage transient spike in drain of power MOSFET.

R506, R510, C509, C513, C514, R525, R531, C528, C525, and C527 are connected between high voltage output connector and ground, the divided AC voltage is inverted DC voltage through D502, D503, D508, and D509. The sense voltage feed back to VSEN (pin 6 of IC501) for an over voltage/over current condition during normal operation. R528, R533,R523,R536 are current sense resistor, current sense signal feed back to Isense (pin 5 of IC501) for lamp “ON” detection.

Chapter 4- Disassembly & Assembly

1. Exploded Diagram

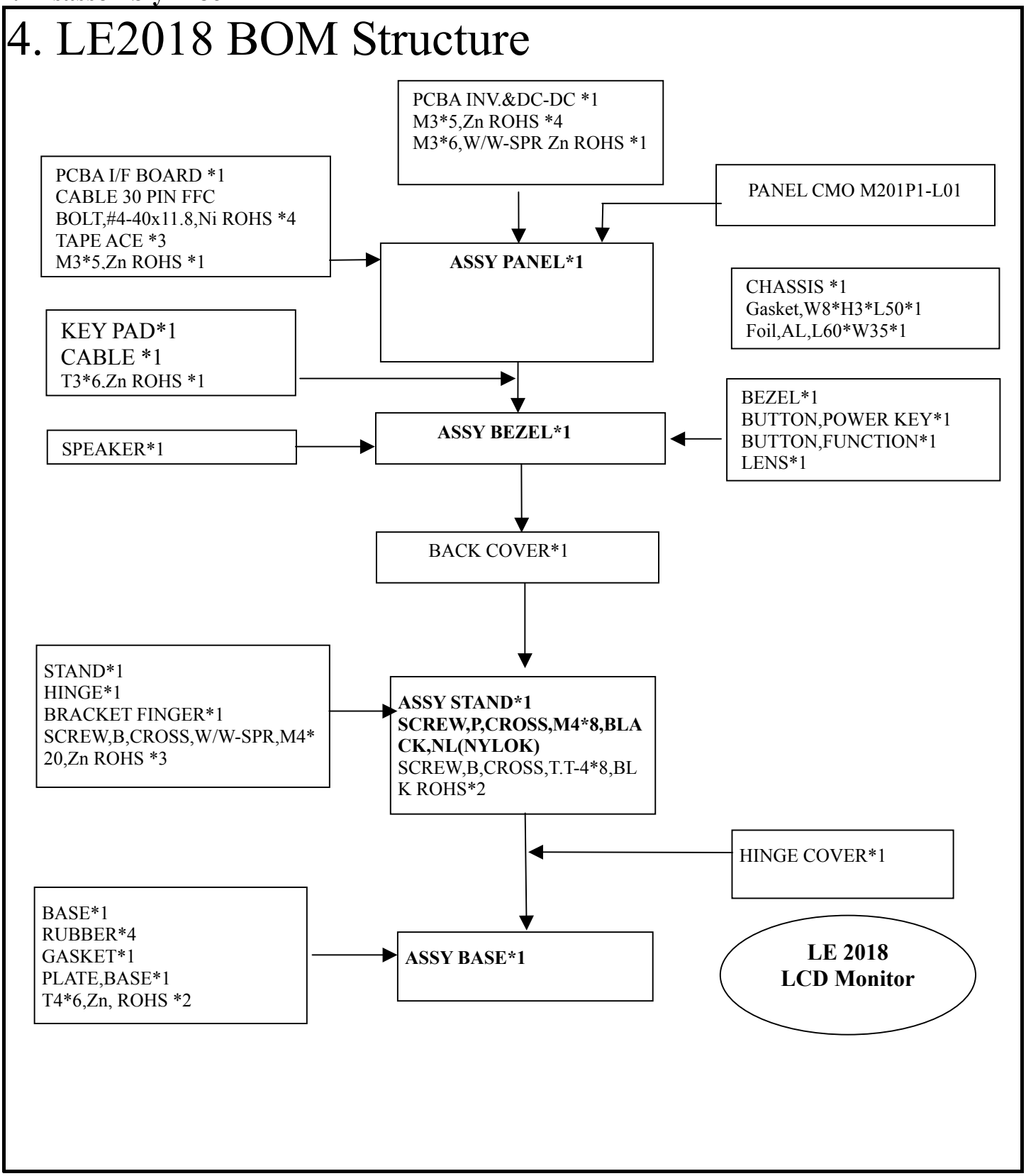
Exploded drawing(With DVI)



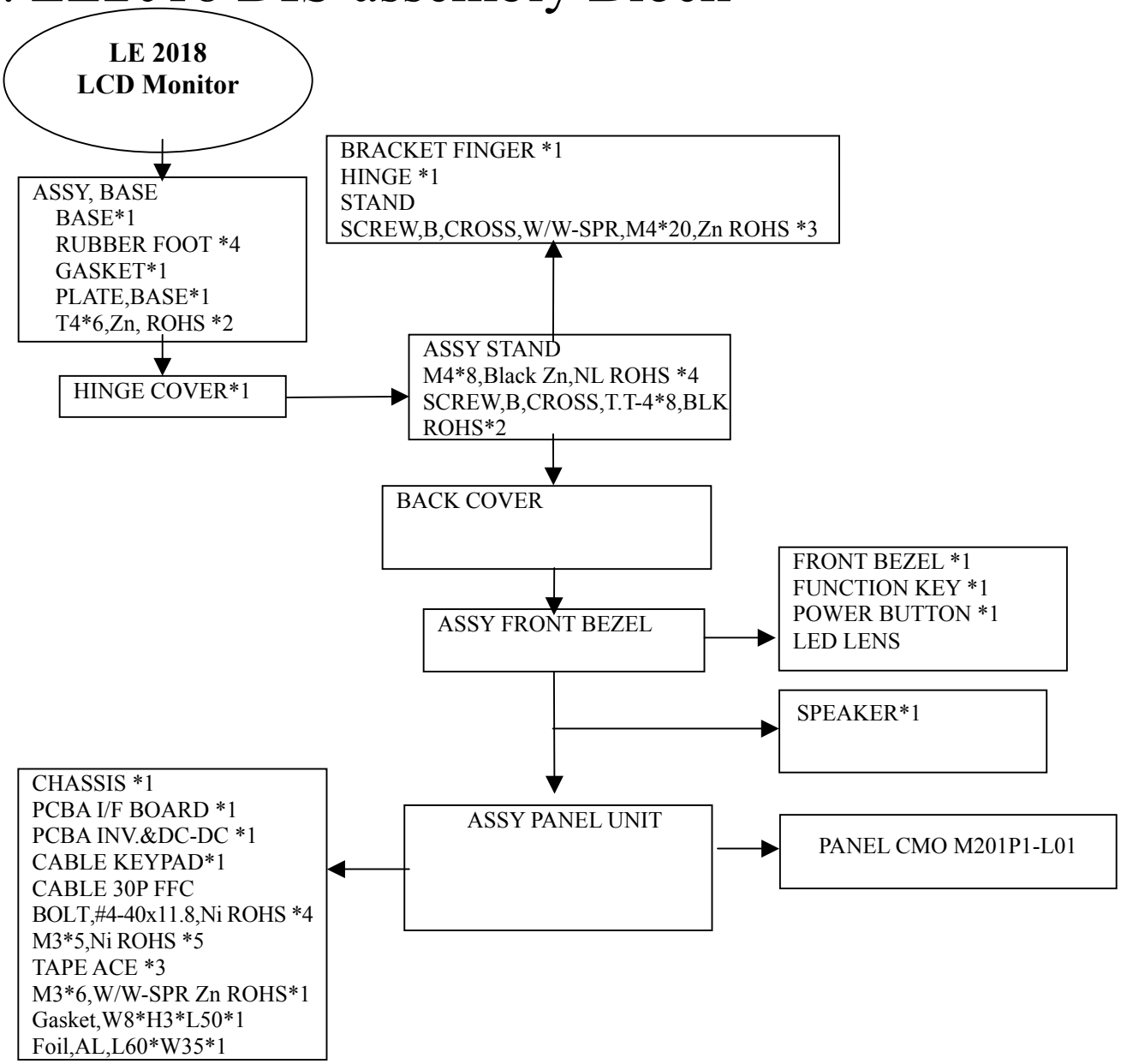
Exploded drawing(W/O DVI)

(We will update later)

2. Disassembly Block



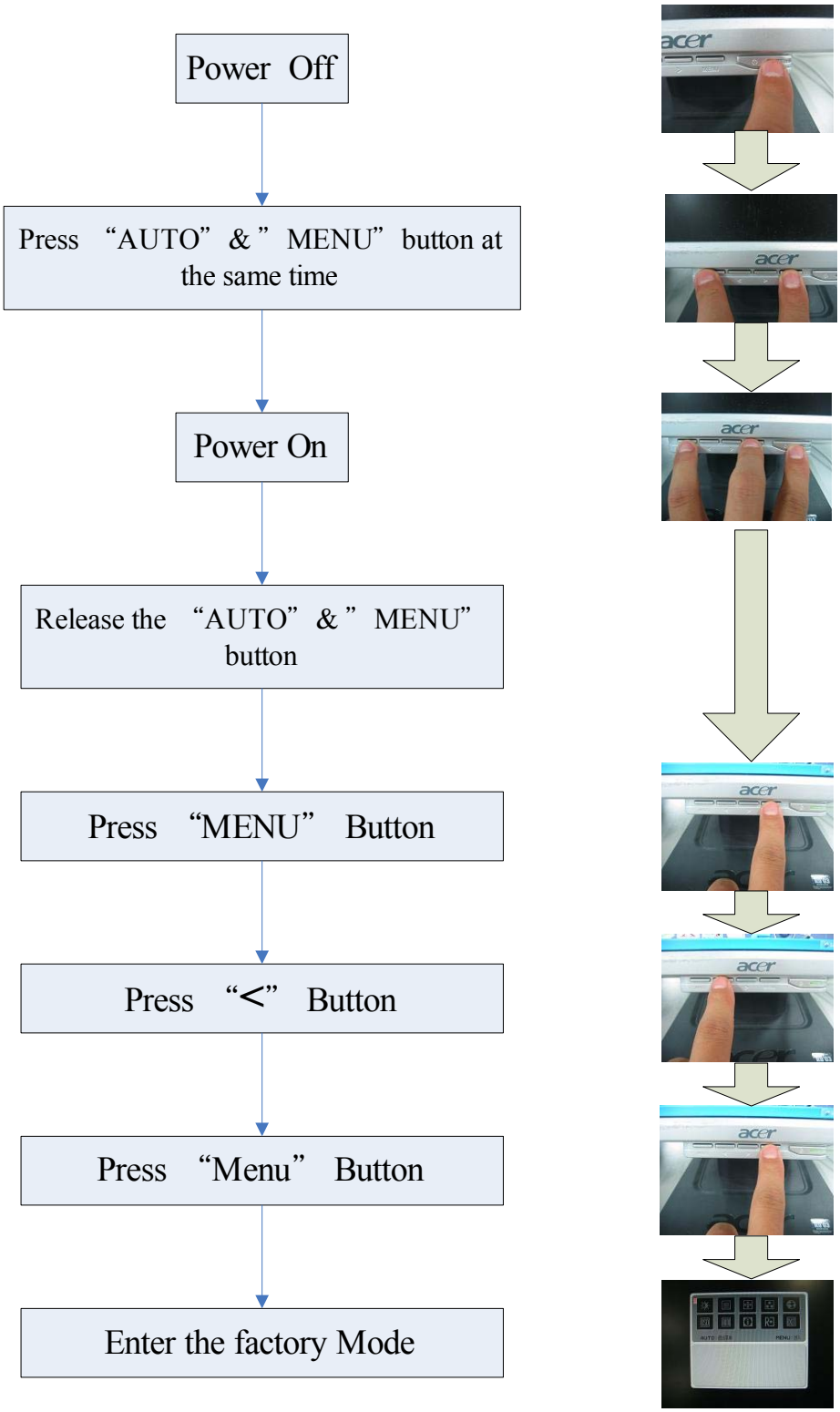
5. LE2018 DIS-assembly Block



Note:

The DIS assembly direction please following direction of arrowhead

Process To Access Factory Mode



Chapter 5- TEST AND ADJUSTMENT

1. GENERAL POINTS

1.1 Test Equipment or Tool

1.1.1 Test pattern generator: PC or video pattern generator (Chroma-2326/2160/2130)
1.1.2 Color analyzer: Chroma-7120
1.1.3 Power meter: AC Source Chroma-6408
1.1.4 Electrical safety tester: Chroma (Zentech) 9032A
1.1.5 Stereo source: Music or signal generator input
1.1.6 Auto shock fixture
1.1.7 Temperature and humidity sensor
1.1.8 DDC interface card and EDID file

1.2 Preset Test Pattern

1.2.1 Crosshatch (General-1)
1.2.2 Gray Bar (16 & 32 levels)
1.2.3 Full White
1.2.4 Aging (Burn-in) Pattern: Full Red, Green, Blue, White, and Black

1.3 AC input

All measurements mentioned hereafter are carried out at a normal mains voltage (90 - 264 V_{AC} for the model with full range power supply, unless otherwise stated)

1.4 Observation Distance

1.4.1 Observation distance from eyes to panel is defined as 50cm
1.4.2 Visual distance from instrument to panel is defined as 20cm

1.5 Key Function Description

1.5.1 Control buttons on the front bezel

CONTROL KEY	KEYS FUNCTION
[AUTO]	A. When OSD un-displays, press [AUTO] to perform auto-adjustment B. When OSD displays, press [AUTO] to return to previous level menu
[MENU]	A. When OSD isn't shown on screen, press [MENU] to enter OSD interface B. When OSD displays, press [MENU] to perform function of menu icon that is highlight or enter next level menu
[►], [◄]	A. When "MENU OSD" displays, press these keys to change the contents of an adjustment item, or change an adjustment value B. When "MENU OSD" un-displays, press [►],adjust volume high; press [◄]adjust volume low
[POWER]	Power on or power off the monitor

1.5.2 Hot Key Operation

FUNCTION	HOT KEY OPERATION					DESCRIPTION
	AUTO	◄	►	MENU	POWER	
FACTORY MODE	●			●	ON	Press [AUTO] & [MENU] at the same time, and then press [POWER] for DC power on. OSD menu will be shown with "F" on the left top. Select "F" for entering factory mode.

1.6 Burn-in (Aging) Pattern

1.6.1 Burn-in patterns are: full Red, Green, Blue, White and Blac
1.6.2 Stop burn-in pattern by providing with video signal from D-sub connector
1.6.3 Enter or exit burn-in mode by setting “burn-in” to be “on” or “off” in the factory mode

1.7 Warm Up

All test units have to be done warm up after at least 2 hours in a room with temperature of 40±5°C. (Except particular requirement)

2. INPUT SIGNAL

2.1 Video Signal Input

2.1.1 VESA Analog

The video input consists of red, green, and blue signals. The video signals are analog levels, where 0V corresponds to black and 700mV is the maximum signal amplitude. Input impedance of video pins is 75 ohm ±1%.

Sync signal input

The capability of sync signal inputs shall include separate sync. Input impedance: 2k2 ohms the signals are defined as follow:

Separate sync TTL level, Positive/Negative

2.1.2 Input signal mode

PRESET TEST MODE TIMING

Resolution	H-Freq. (kHz)	V-Freq. (Hz)	Dot Clock (MHz)	Mode
640 x 480	31.5	60.0	25.175	VESA Standard
	37.9	72.0	31.500	
	37.5	75.0	31.500	
800 x 600	35.1	56.0	36.000	
	37.9	60.0	40.000	
	48.1	72.0	50.000	
	46.9	75.0	49.500	
1024 x 768	48.4	60.0	65.000	
	56.5	70.0	75.000	
	60.0	75.0	78.750	
1152 x 864	67.5	75.0	108.000	
1280 x 960	60.0	60.0	108.000	
1280 x 1024	64.0	60.0	108.000	
	80.0	75.0	135.000	
1400 x 1050	65.371	59.978	121.75	
	82.28	74.87	156.0	
640 x 480	35.0	66.7	30.200	Power Macintosh series
832 x 624	49.7	74.6	57.300	
1152 x 870	68.7	75.0	100.000	

2.1.3 VGA signal cable

15 pin D-sub VGA connector of signal cable.

2.1.4 Interface

Analog signal: The input signals are applied to display through D-sub cable.

Length: 1.8 m +/- 50 mm (fixed)
Connector type: D-sub male.
With DDC_2B pin assignments.
Blue connector thumb-operated jack screws

Pin Assignment:

PIN No.	SIGNAL	PIN No.	SIGNAL
1	Red video input	9	VGA +5V
2	Green video input	10	GND
3	Blue video input	11	GND
4	GND	12	Serial data line (SDA)
5	Cable detect	13	H. Sync / H+V
6	Red video GND	14	V. Sync
7	Green video GND	15	Data clock line (SCL)
8	Blue video GND		

3. FUNCTION CHECK

3.1 OSD Function Test

3.1.1 Test mode: 1400x1050@ 60 Hz
3.1.2 Test pattern: pattern #1 of crosshatch (GENERAL-1)
3.1.3 Check single key function and hot key function about key “Power”, “Menu”,” ►”, “◄ “, “Exit/Auto”, it should operate normally

3.2 Screen Picture Check

3.2.1 Test mode: 1400x1050 @ 60 Hz
3.2.2 Test pattern: pattern #1 of crosshatch (GENERAL-1)
3.2.3 Select OSD menu to execute ‘Auto’ function, screen picture shouldn’t appear abnormal phenomenon and picture on screen should fit in with active display screen.

3.3 Auto Color Balance

3.3.1 Test mode: 1400x1050 @ 60 Hz
3.3.2 Test pattern: pattern #42 of 5-MOSAIC
3.3.3 Enter "Factory Mode" pressing "Auto color" key, and execute "AUTO".

3.4 Timing Check

3.4.1 Test mode: Refer to preset timing table and power saving mode
3.4.2 Test pattern: pattern #1 of crosshatch (GENERAL-1)
3.4.3 After change above timing and execute “Auto” function automatically, picture should fit in with active display screen.
3.4.4 Under power saving mode, LED lamp on the key board should be orange

3.5 Power Consumption Function Test

3.5.1 Test mode: 1400x1050 @ 60 Hz
3.5.2 Test pattern: pattern #41 of “WHITE”
3.5.3 Adjusting both brightness value to maximum,
3.5.4 Measure power consumption as the following

Status	Power Consumption	LED Display
Normal	< 42W(with audio)	Green
Standby (No H/V sync)	< 1W	Orange
Power off	< 1W	No display

3.6 VGA Cable Detect Test

If VGA cable of LCD monitor isn't connected to video pattern generator or PC, "NO SIGNAL" should be shown on screen.

3.7 Hi-Pot test

Test condition:

a. high voltage 2.3KV(DC)
b. leakage current 10mA
c. rising time 1 sec.
d. test time 3 sec.

3.8 Grounding Test

Test condition:

a. test current 30A / 2 sec
b. impedance < 0.1Ω

3.9 Bumping Test

3.9.1 Test mode: 1400x1050 @ 60 Hz;

3.9.2 Test pattern: pattern #1 of crosshatch (GENERAL-1)

3.9.3 To shock LCD monitor lightly at the center of rear cover and edges with 1~2kg/cm2 force for three times, no abnormal phenomenon is found on panel screen.

4. DISPLAY CHECK

4.1 Panel Flicker Check

Connect LCD monitor to PC, set LCD monitor to be timing of 14400x1050@60 Hz, adjust brightness to be default value (brightness at maximum), execute "Auto" function, and then check picture of shut down under windows 98 operating system, or flicker-pattern of pixel on-off. It should be that no flicker be found on panel screen.

4.2 Panel Defect Inspection

4.2.1 Test mode: 1400 x 1050@60Hz

4.2.2 Test pattern: Crosshatch/Full white/Red/Green/Blue/Black/16 color bar/64 gray bars

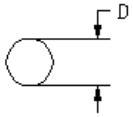
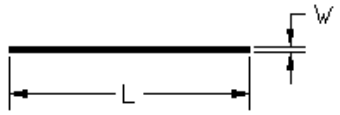
4.2.3 Display quality must be (according to DIN 13406-2 pixel fault class II)

Defect Type	Specification	Major	Minor
Bright dot defect	THD		•
Dark dot defect	THD		•
Total bright and dark dots	THD		•
Bright Dots – 2 Adjacent B	THD		•
Bright Dots – 3 or more Adjacent	THD		•
Black Dots – 2 Adjacent B	THD		•
Black Dots – 3 or more Adjacent	THD		•
Distance between defect dots	THD		•
Distance between Dark dots	THD		•

Note 1: Dot defect is defined as the defective area is not larger than 50% of the dot area. Bright Dot is

defined 5% transmission ND filter.

Note 2: Light Leakage: There shall not be visible light around the customer's bezel after assembly in normal View angle.

Defect Type		Specification Size	Count (N)	Majo	Minor
Dot Shape(Particle、Scratch and Bubbles in Display area or on The Polarizer) 		Black spots which appear when B/L operating 0.15mm ≤ D ≤ 0. 5 mm	N ≤ 3		●
Line Shape (Particles、Scratch、Fiber and Bubbles in display area or on The Polarizer) 		L ≤ 0.5mm and W ≤ 0.05 mm	Ignored		●
		0.5mm < L ≤ 5mm and 0.05mm < W ≤ 0.1mm	N ≤4		
		L > 5mm or W > 0.1mm	N = 0		
Display non-uniformity		There should be non-uniformity through 5% transparency of filter or judge by limit sample if necessary.			●
Bezel	Scratch	No harm			●
	Dirt				●
	Wrap	No harm			●
	Sunken	No harm			●
Label	No label	No			●
	Invert label				●
	Broken				●
	Dirt	Word can be read.			●
	Not clear				●
	Word out of				●
	Mistake	No			●
	Position	Be attached on right position			●
Screw	Not enough	No			●
	Limp	No			●
Connecto	Connection	No bend on pins and damage			●
FPC/FFC	Broken	No			●

5. PICTURE CHECK

5.1 Check brightness uniformity

5.1.1 Test mode: 1400x1050 @ 60 Hz

5.1.2 Test pattern: pattern #41 of "WHITE"

5.1.3 Test tool: Color Analyzer Chroma7120

5.1.4 Set brightness and contrast to be maximum, apply pattern as Fig.3, it should be the following requirement:

$$\frac{\text{Min. luminance of nine points (backlight)}}{\text{Max. luminance of nine points (backlight)}} \geq 75\%$$

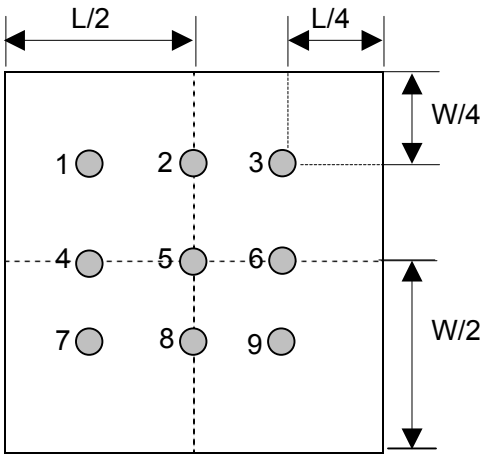


Fig. 3

5.2 Color Temperature Check

5.2.1 Test mode: 1400x1050 @ 60 Hz
5.2.2 Test pattern: pattern #41 of "WHITE"
5.2.3 Test tool: Color Analyzer Chroma7120
5.2.4 Set brightness to be maximum and contrast to be 50%, measure color coordinate and luminance by color analyzer as the following:

Mode	Chromaticity Coordinate	
	x	y
9300K	0.283 ± 0.030	0.298 ± 0.030
USER	/	/
6500K	0.313 ± 0.030	0.329 ± 0.030

5.3 Brightness Out (Video signal input 700mV ± 2%)

5.3.1 Test mode: 1400x1050 @ 60 Hz
5.3.2 Test pattern: pattern #41 of "WHITE"
5.3.3 Test tool: Color Analyzer Chroma7120
Set brightness and contrast to be maximum with white pattern, to measure the screen center, the light output shall be >= BL cd/m^2

Mode	BL (cd/cm^2)	Remark
CMO M201P1-L03	220	

5.4 DDC Data Check

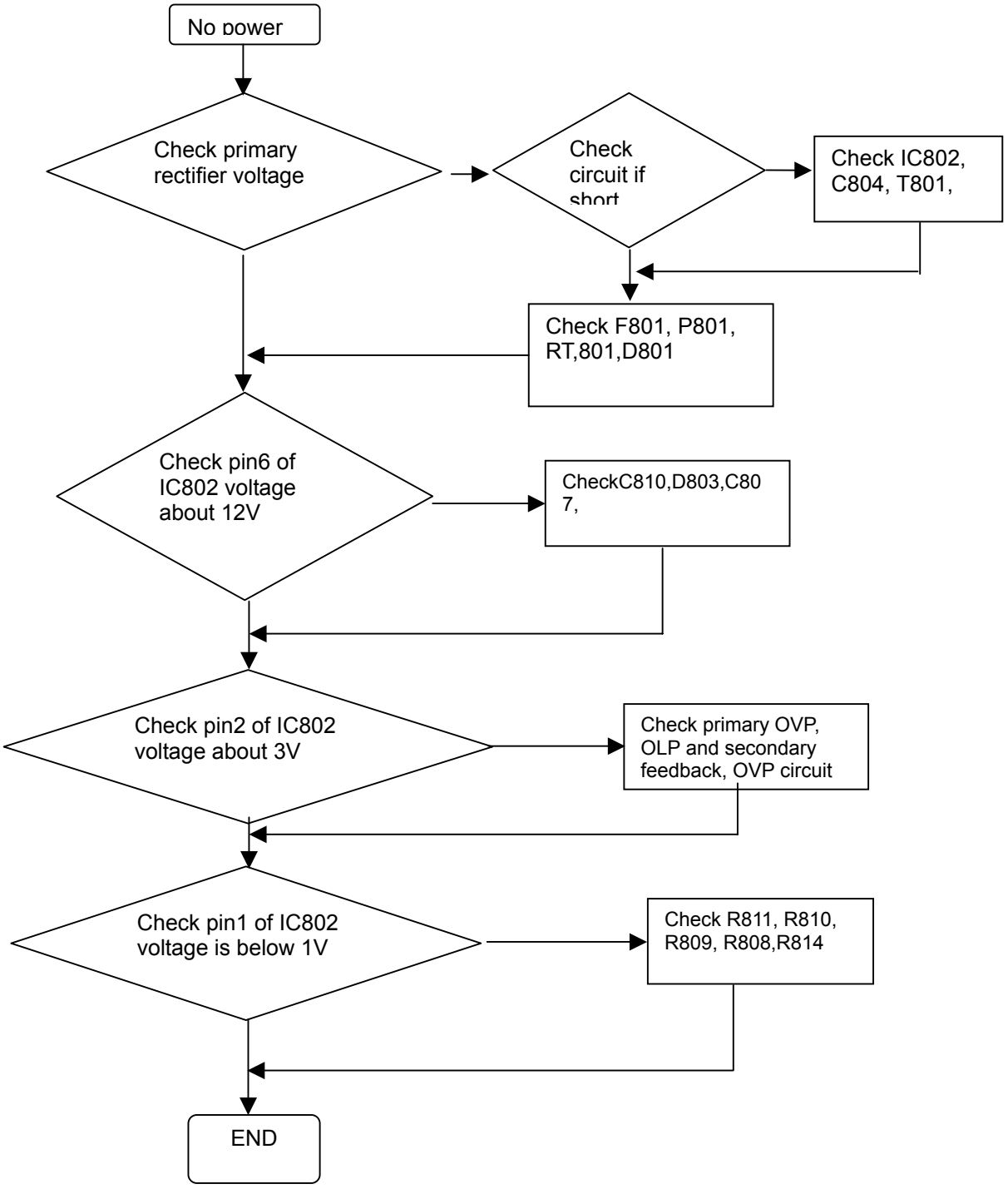
5.4.1 EDID program
5.4.2 Execute main program for EDID writing (refer to model type), using scanner for barcode

download.

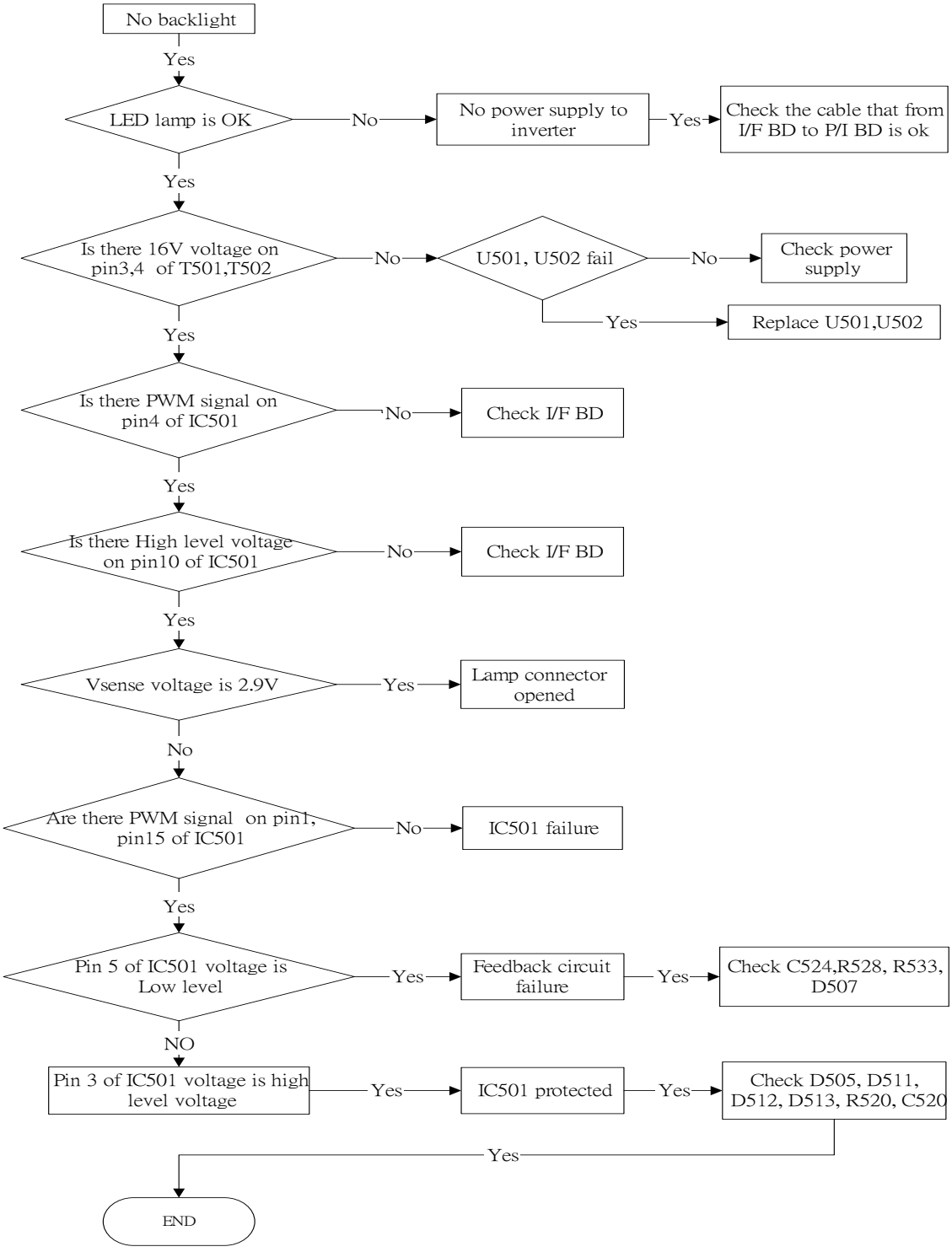
5.4.3 If writing EEPROM is successful, and then shows text "PASS" on screen; if writing EEPROM is failure, then shows text "FAIL".

Chapter 6- TROUBLE SHOOTING

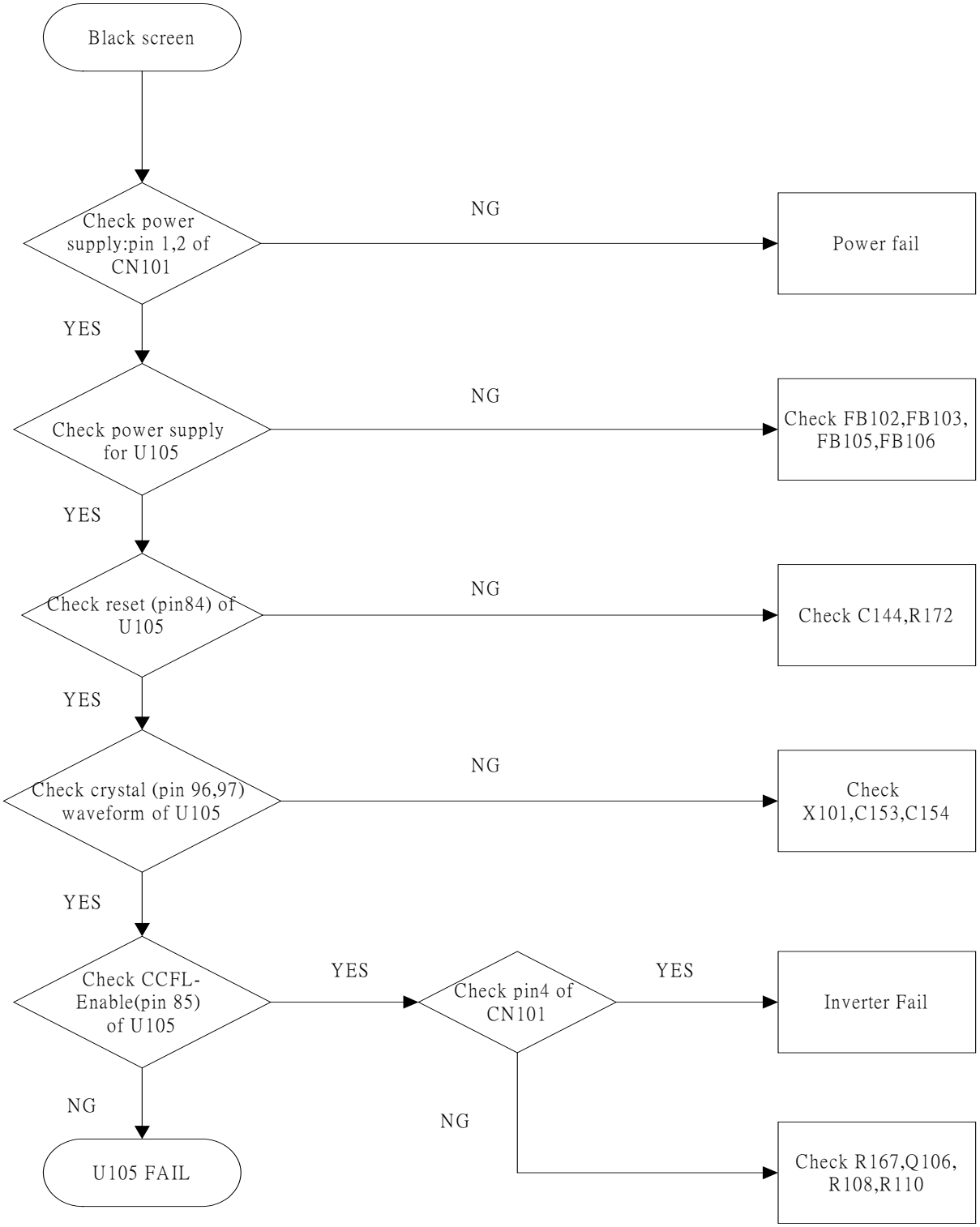
1. No Power & LED Off



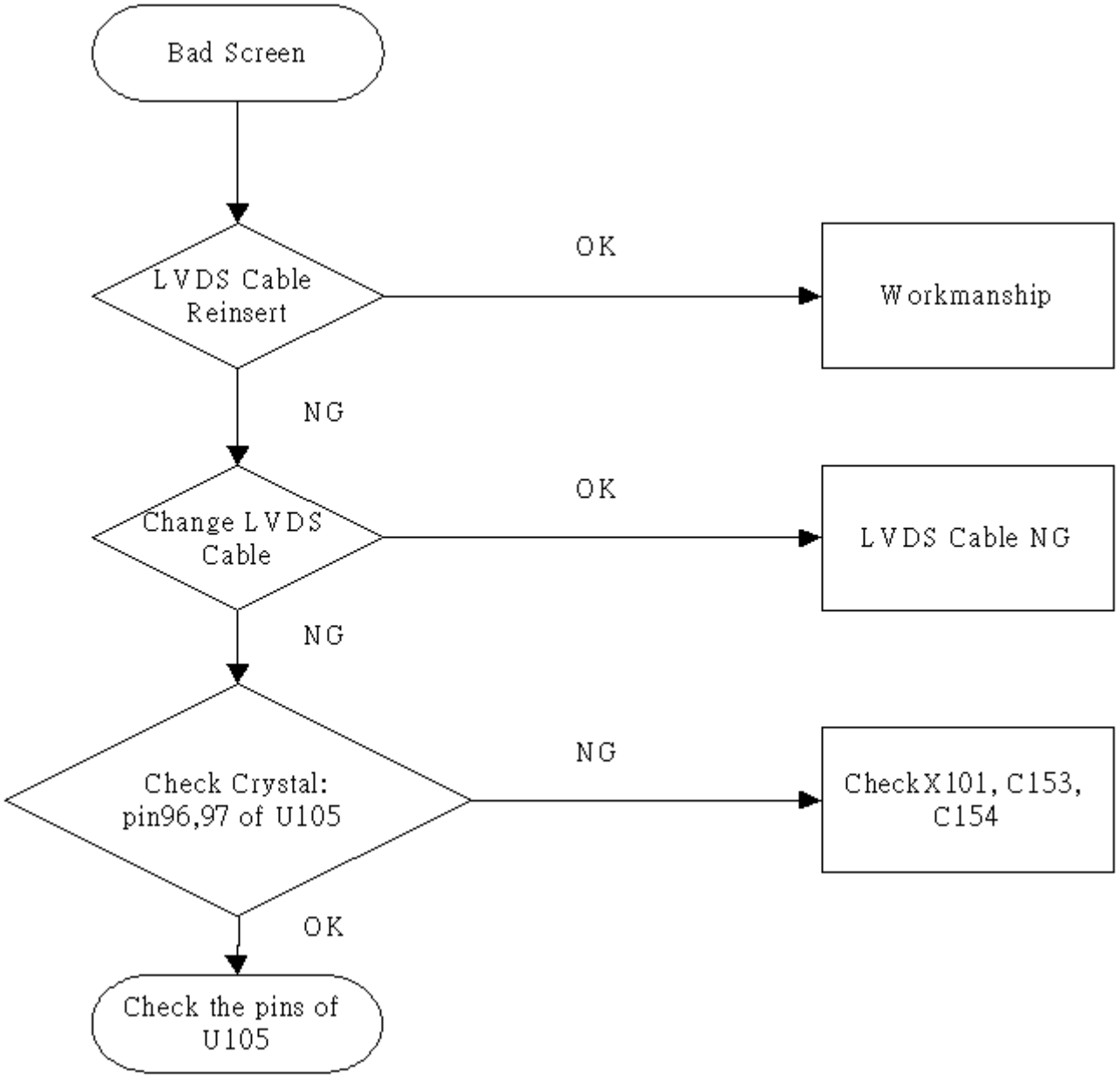
2. No raster


No backlight
Yes
LED lamp is OK
No
No power supply to inverter
Yes
Check the cable that from I/F BD to P/I BD is ok
Yes
Is there 16V voltage on pin3,4 of T501,T502
No
U501, U502 fail
No
Check power supply
Yes
Replace U501,U502
Yes
Is there PWM signal on pin4 of IC501
No
Check I/F BD
Yes
Is there High level voltage on pin10 of IC501
No
Check I/F BD
Yes
Vsense voltage is 2.9V
Yes
Lamp connector opened
No
Are there PWM signal on pin1, pin15 of IC501
No
IC501 failure
Yes
Pin 5 of IC501 voltage is Low level
Yes
Feedback circuit failure
Yes
Check C524,R528, R533, D507
NO
Pin 3 of IC501 voltage is high level voltage
Yes
IC501 protected
Yes
Check D505, D511, D512, D513, R520, C520
Yes
END

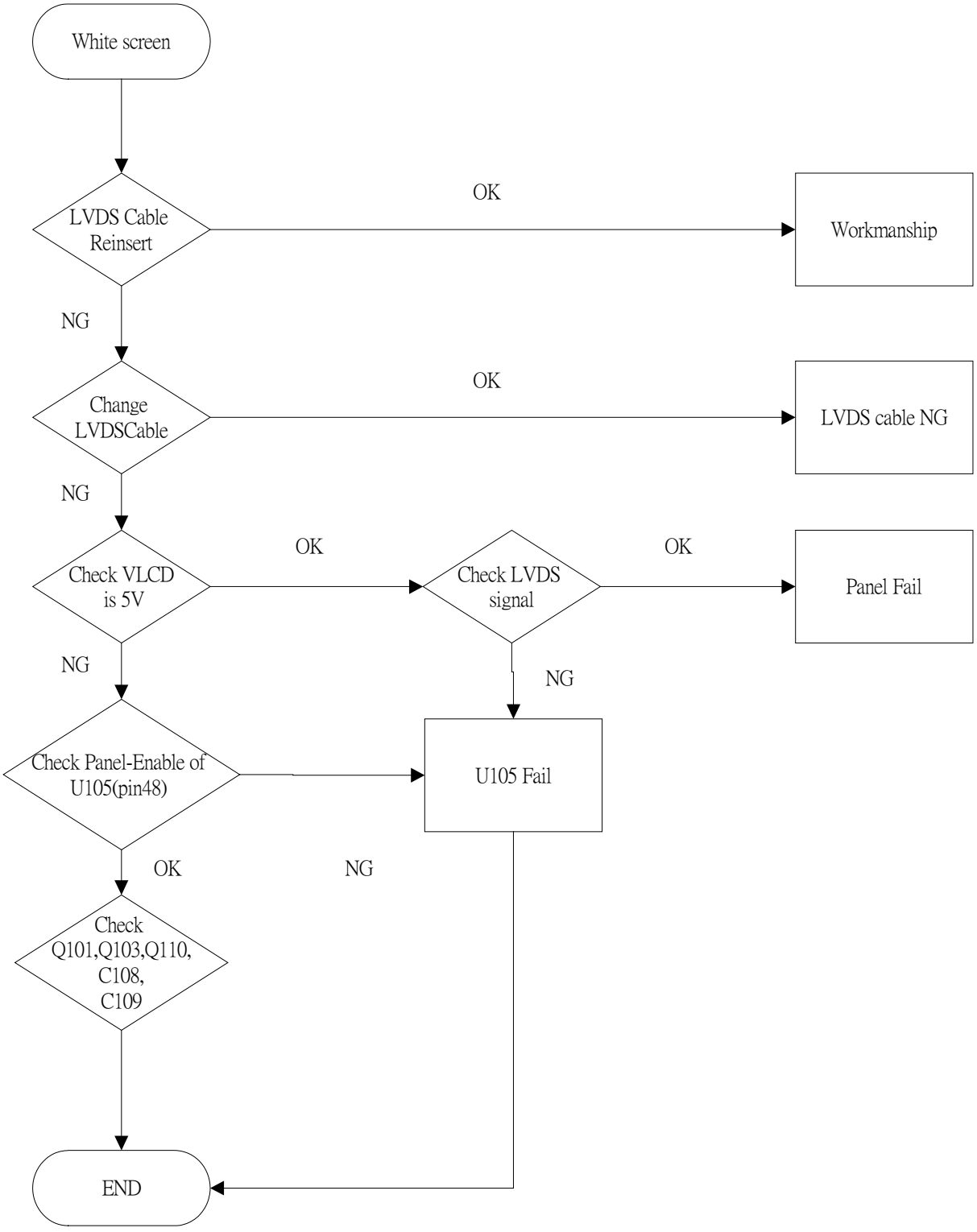
3.Black screen



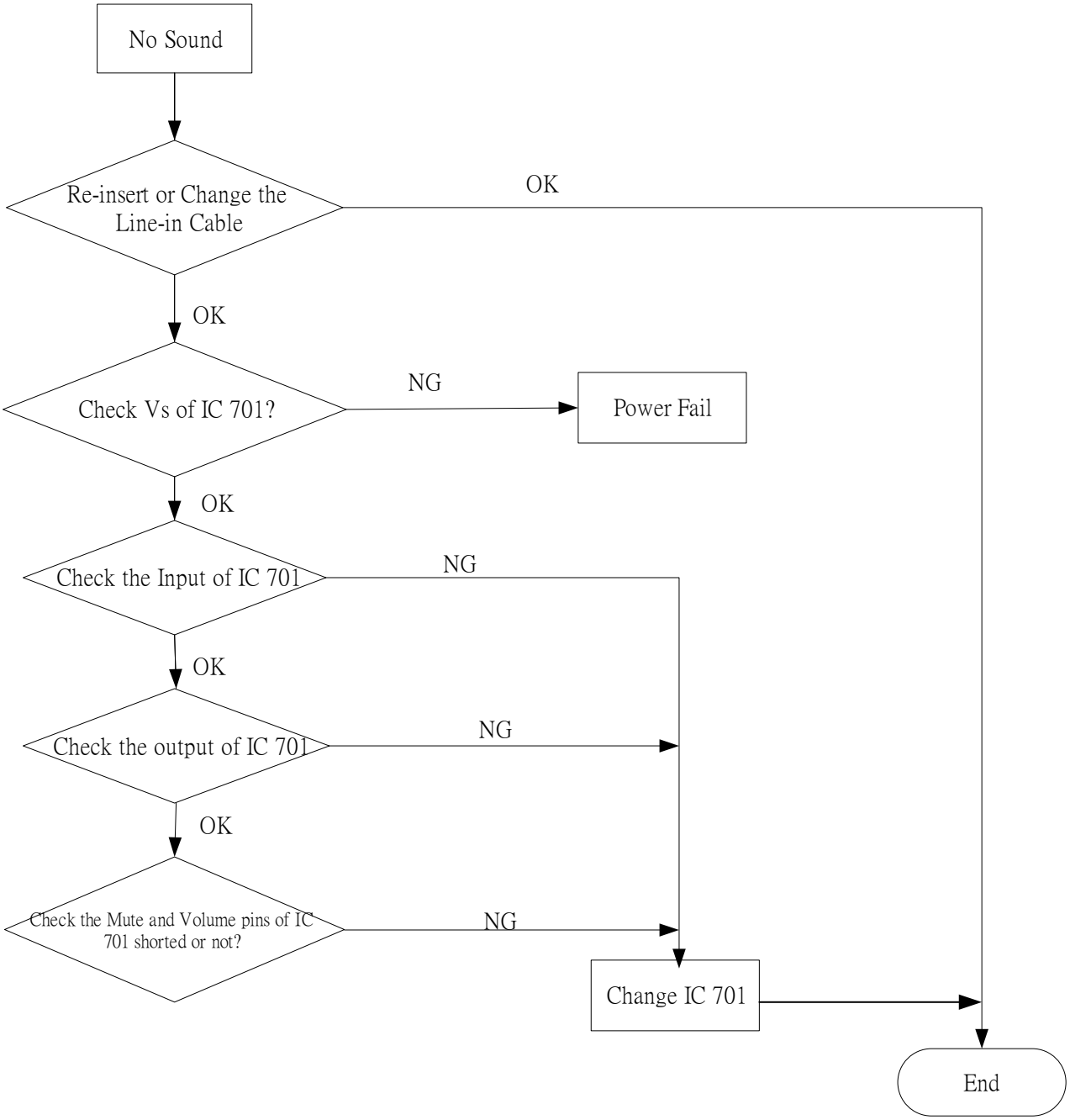
4.Bad Screen


Bad Screen
LVDS Cable Reinsert
OK
Workmanship
NG
Change LVDS Cable
OK
LVDS Cable NG
NG
Check Crystal: pin96,97 of U105
NG
CheckX101, C153, C154
OK
Check the pins of U105

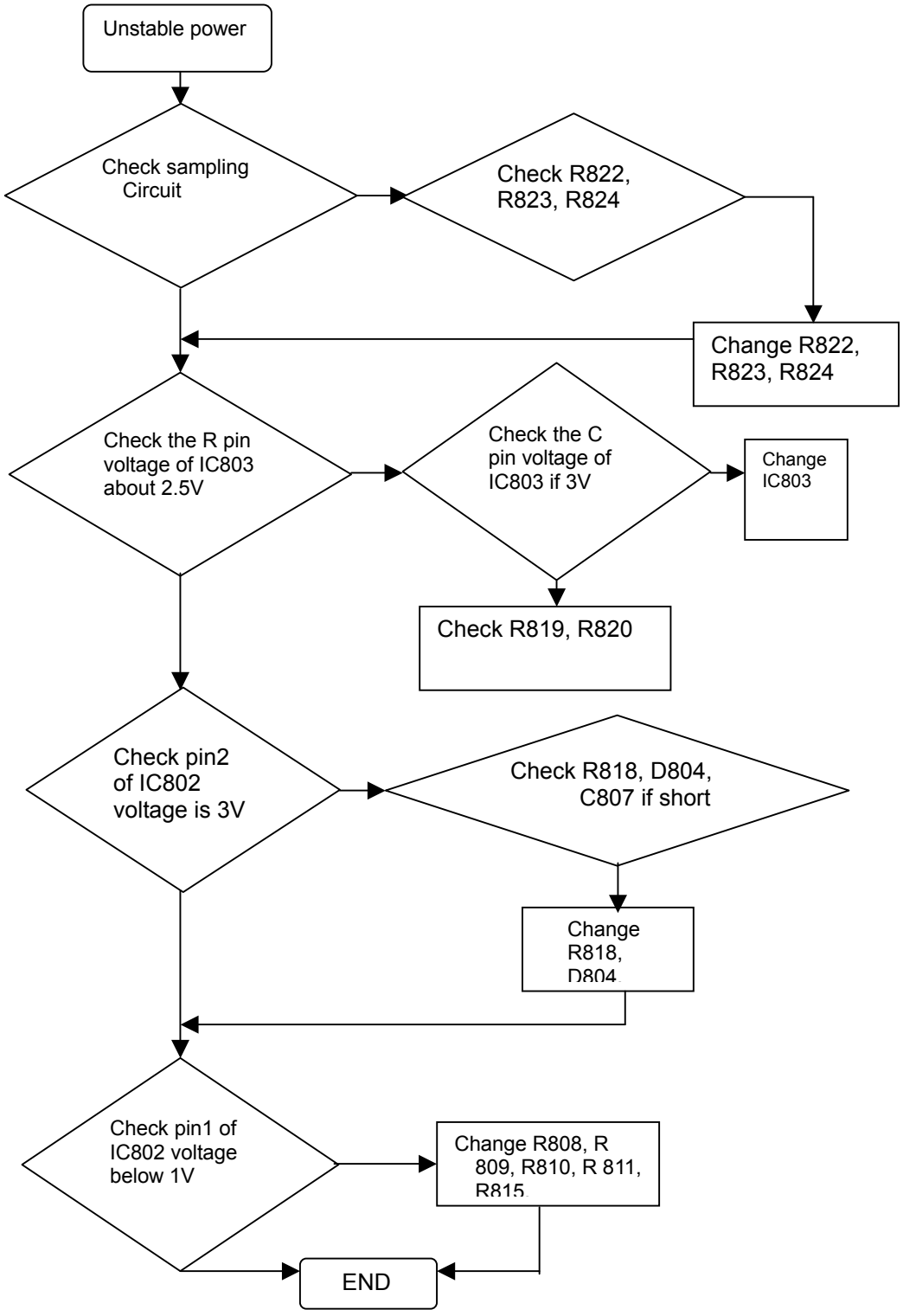
5. White screen



6.No Sound


No Sound
Re-insert or Change the Line-in Cable
OK
OK
Check Vs of IC 701?
NG
Power Fail
OK
Check the Input of IC 701
NG
OK
Check the output of IC 701
NG
OK
Check the Mute and Volume pins of IC 701 shorted or not?
NG
Change IC 701
End

7. Unstable Power



Attachment 1- Bill of Material

PCBA IF

ITEM	P/N	Description	Location
	790771300000R	PCBA,I/F BOARD,W/SPK,LE1753-012 ROHS	
10	629030009100R	PROGRAM,W/SPK,LE1753-012 ROHS	
20	790771340600R	PCBA,I/F BOARD,SMD,LE1753-612	
30	790771320600R	PCBA,I/F BOARD,OTHERS,LE1753-612	
40	511130001200R	SOLDER BAR,Sn96.5/Ag3.0/Cu0.5/Ni0.06/Ge0	
	790771320600R	PCBA,I/F BOARD,OTHERS,LE1753-612	
10	440819015030R	CON,D-SUB,FEM.15P RA W/O SCREW DZ11AA1-H	CN101,
20	443842024060R	CON,DVI-D RA 24+1P FEM.W/O SCR EW,QH1112	CN102,
30	430631080070R	WFR 2.0mm 8P 180°4500-08 RoHS	CN103,
40	430631080130R	WAFER 2x4P 2.0mm,200PHD-2*4ST RoHS	CN104,
50	420271010460R	CAP SE 100uF 16V M,105℃ ST,6.3*11 ROHS	C130,
60	420274790560R	CAP SE 4.7uF 50V M,105℃ ST,5X11 ROHS	C132,
70	420432200460R	CAP EC 22uF 16V M,105℃ ST, 5x11,RoHS	C144,
80	432008010270R	XTAL 14.31818MHz HC-49US DIP 16pF 30PPM	X101,
90	420431010460R	CAP EC 100uF 16V M,105℃ ST 5x11,RoHS	C135, C152, C138,
	790771340600R	PCBA,I/F BOARD,SMD,LE1753-612	
10	444099030030R	CON, SMD 1.0mm 30PIN RoHS AL2309-A0G1Z	CN106,
20	419301010560R	C SMD(0603) NPO 100PF/50V J RoHS	C163,C164,C165,C166,C167,
30	419351044010R	C SMD(0402) X5R 0.1uF/16V K,RoHS	C139,C140,C141,C142,C145,C146,C147,C148,C149,C153,C154,C155,C156,C157,
40	419311040060R	C SMD(0603) X7R 0.1uF/50V K RoHS	C117,C120,C121,C131,C133,C134,C136,C143,C151,C161,C162,C168,
50	419341054670R	C SMD(0805) Y5V 1uF/16V Z RoHS REV:A	C160,C137,
60	419301000560R	C SMD(0603) NPO 10PF/50V J RoHS	C158,C159,
70	419302210560R	C SMD(0603) NPO 220PF/50V J RoHS	C116,
80	419303300560R	C SMD(0603) NPO 33PF/50V J RoHS	C115,
90	419314734010R	C SMD(0402) X7R 0.047uF/16V K,RoHS	C101,C102,C103,C106,C108,C110,
110	414918010050R	RES SMD (0402) 10Ω J,RT,RoHS	R130,R131,R132,R133,R134,R135,R137,R138,
120	414918560910R	RES SMD (0402) 56Ω F,RT,RoHS	R101,R102,R103,
130	414916010150R	RES SMD (0603) 100Ω J,RT RoHS REV:A	R185,R186,
140	414916010250R	RES SMD (0603) 1KΩ J,RT RoHS REV:A	R113,R115,R116,R125,R143,R155,R156,R167,R168,R175,R177,
150	414916010350R	RES SMD (0603) 10KΩ J,RT RoHS	R111,R123,R124,R136,R141,R152,R153,R157,R158,R160,R161,R162,R163,R164,R172,R173,R174,R178,R179,R180,R181,R182,R183,R184,R119,R120,R128,R129,
160	414916010450R	RES SMD (0603) 100KΩ J,RT REV:A RoHS	R147,
190	414916047350R	RES SMD (0603) 47KΩ J,RT RoHS	R150,
200	414916022250R	RES SMD (0603) 2.2KΩ J,RT RoHS	R118,R117,
210	414918390010R	RES SMD (0402) 390Ω F,RT,RoHS	R154,
220	414916047050R	RES SMD (0603) 47Ω J,RT RoHS	R121,R122,R126,R127,
230	414916047250R	RES SMD (0603) 4.7KΩ J,RT RoHS	R139,R142,R149,R176,
240	414916022050R	RES SMD (0603) 22Ω J,RT RoHS	R146,
250	414916750910R	RES SMD (0603) 75Ω F,RT RoHS REV:A	R105,R106,R107,

260	411020026210R	DIO BAV99 350mW 70V SOT-23(PHI RoHS	D101,D102,D103,
260	411020026390R	DIO BAV99,SOT-23(INFINEON)RoHS	
260	411020026020R	DIO BAV99-LF 350mW 70V SOT-23 (FEC)RoHS	
260	411020026090R	DIO BAV99 350mW 75V SOT-23(PEC RoHS	
270	411020047210R	DIO BAV70 85V SOT23 (PHILIPS) RoHS	D104,D107,
270	411020047020R	DIO BAV70-LF, 70V SOT-23(FEC) ROHS	
280	411090005011R	SCHTKY SK24A 40V/2A SMA(TSC) DO-214AC Ro	D116,
280	411090005311R	SCHTKY B240A 40V/2A SMA(DIODES RoHS	
310	432002312144R	BEAD CORE SMD(0603)120Ω 300mA SBK160808	FB104,
320	432002360012R	BEAD CORE SMD(0805)60Ω 800mA GBK201209T	FB105,FB106,FB107,
330	410500045210R	XSTR PMBT3904 NPN 200MA,40V SOT23(PHILIP	Q102,Q106,
330	410500045140R	XSTR MMBT3904LT1G NPN 200MA 40V SOT23(ON	
330	410500045130R	XSTR MMBT3904 NPN SOT-23(INFIN EON)RoHS	
330	410500045090R	XSTR MMBT3904 NPN SOT-23(PANJIT)RoHS	
340	410500068290R	XSTR AP2305GN P-CH SOT23(APEC) RoHS	Q103,
340	410500075270R	XSTR AO3415 P-CH,SOT23(AOS) RoHS	
340	410500044270R	XSTR AO3401L P-CH(ALPHA-OMEGA) SOT23 RoH	
360	410500050210R	XSTR 2N7002,N-CH FET SOT-23 (PHILIPS)RoH	Q105,
360	410500050130R	XSTR SN7002N N-CH SOT-23(INFINEON),RoHS	
360	410500050090R	XSTR 2N7002 N-CH SOT-23(PANJIT)RoHS	
370	410500046210R	XSTR PMBT3906 PNP 200MA,40V SOT23(PHILIP	Q109,Q108,Q101,
370	410500046130R	XSTR MMBT3906 PNP SOT-23(INFIN EON)RoHS	
370	410500046180R	XSTR MMBT3906LT1G PNP 200mA 40V SOT23(ON	
370	410500046090R	XSTR MMBT3906 PNP SOT-23(PANJIT)RoHS	
380	412000435480R	IC AT24C02BN-10SU-1.8 SOIC8 2K (ATMEL)Ro	U101,U102,
380	412000480280R	IC M24C02-RMN6TP SO8(ST)RoHS	
380	412000480990R	IC CAT24C02WI-TE13 SOIC-8(CATALYST)RoHS	
390	412000372020R	IC LD1117AL-3.3V-A SOT-223(UTC RoHS	U103,
390	412000372830R	IC AS1117L-3.3TR-LF,SOT223(A1S EMI)RoHS	
390	412000372070R	IC AZ1117H-3.3 SOT-223(AAC)RoHS	
400	412000553060R	IC TSUM56AWHK-LF-1 PQFP128(MSTAR)RoHS	U104,
410	412000486310R	IC PM25LV010A-100SCE SOIC8(PMC)RoHS	U105,
410	412000373190R	IC SST25VF010A-33-4C-SAE,SOIC- 8(SST)RoH	
410	412000486190R	IC PS25LV010A-100SCE SOIC8(MSTAR)RoHS	
420	412000279480R	IC AT24C04N-10SU-2.7 SOP8 4K(A TMEL)RoHS	U107,
420	412000279280R	IC M24C04-WMN6TP4K SOP8 (ST) RoHS	
420	412000479990R	IC CAT24C04WI-TE13 SOIC-8(CATALYST)RoHS	
430	411131562950R	ZENER 6.2V BZT52C6V2-7-F SOD-123(DIODES)	ZD101,ZD102,ZD103,ZD104,ZD105,ZD106,ZD107,ZD108,ZD109,
430	411121462950R	ZENER 6.2V BZT52-C6V2 SOD-123(WILLAS)ROH	
430	411130962950R	ZENER 6.2V MMSZ5234B SOD-123(PANJIT)RoH	
440	506140005700R	LABEL,BARCODE,BLANK,33x7mm, ROHS,FOR PCB	
460	432002330040R	BEAD CORE SMD(0603) 30Ω 500mA HB-1H1608	FB101,FB102,FB103,
470	412000330020R	IC LD1117AL-1.8V-A SOT223(UTC) RoHS	U108,
470	412000330070R	IC AZ1117H-1.8 SOT223(AAC)RoHS	
470	412000330830R	IC AS1117L-1.8/TR-LF,SOT223(A1 SEMI)RoHS	
480	414916033150R	RES SMD (0603) 330Ω J,RT RoHS	R187,R188,
490	414916010050R	RES SMD (0603) 10Ω J,RT RoHS	R159,R165,
500	490481300600R	PCB,I/F BOARD,LE1753-X12	
510	412000531061R	IC CAT24C08WI-H-RECV SOIC-8(Mstar)RoHS	U106,
510	412000531060R	IC CAT24WC08W-H-RECV for HDCP(Mstar) R	

520	414918010150R	RES SMD (0402) 100Ω J,RT,RoHS	R108,R109,R110,
530	419341054660R	C SMD(0603) Y5V 1uF/16V Z,RoHS	C150,
540	414916020350R	RES SMD (0603) 20KΩ J,RT RoHS REV:A	R151,
550	511130002200R	SOLDER PASTE,Sn96.5-Ag3.0-Cu0.5 ROHS	
550	511130002201R	SOLDER PASTE,Sn96.5%Ag3.0%Cu0.5%	
550	511130002202R	SOLDER PASTE,Sn95.5%Ag3.9%Cu0.6%	

PCBA PI

ITEM	P/N	Description	Location
	790931400500R	PCBA,P/I BOARD,LE2018-522 ROHS	
10	430300800660R	HRN ASS'Y 8P 80mm UL1007#24,RoHS	CN801,
20	430637020030R	WFR. 2P P=3.5mm 90°W/LOCK,RoHS	CN501,CN502,CN503,CN504,
30	430631040080R	WFR. 4P 2.0mm R/A HF5604E RoHS	CN701,
40	426000090800R	XFMR SW DIP 142uH EEL19 SPW-080,ROHS	T501,T502,
50	416202223610R	CAP MEY 2200pF 250V M Y2 Y5V P=7.5mm RoH	C801,C802,
60	416194743011R	CAP MEX 0.47uF 275V K X2,F15 RoHS	C803,
70	420431514280R	CAP SEK 150uF/420V M,105℃ CF 18x40,RoHS	C804,
80	416202224610R	CAP MEY 2200pF 400V M Y,F10mm RoHS	C805,
100	418247233020R	CAP CD X7R 4700pF 1KV K,W/O FO RMING,RoH	C806,
110	418110058560R	CAP CD SL 10pF 3KV J,ST,RoHS CC45SL3FD10	C506,C523,
120	418103051910R	CAP CD NPO 3pF 3KV D,F7.5, RoHS	C528,C509,
130	420421020211R	CAP SD 1000uF 25V M,105℃ F 13x20 RoHS	C815,
140	420424710260R	CAP SD 470uF/25V M 105℃ ST 10x16,RoHS	C501,C817,C702,
150	420421020102R	CAP EC 1000uF/10V M,105℃ N-F 10x16(L-ES	C818,
160	430613420290R	FUSE SLOW 2,250,Axial Lead,3.6 x10mm RoH	F801,
170	412140001390R	IC EL817M-B(EVERLIGHT)RoHS	IC801,
170	412140002380R	IC LTV817M-PR VDE (LITE-ON) P=10mm RoHS	
180	425000010670R	COIL CHK 20mH UU16 CHK-067,RoH S,UF2324S	L801,
190	425000010530R	COIL CHK 5uH 7.8X10 CHK-053 0 181085R0L	L802,L803,
200	440149000220R	SKT AC 10A/250V U/C/V,G/Y=45mm TU-301-SP	P801,
210	442299001130R	CON PHONE JACK GREEN R/A 1P PB J303-2-A	P701,
220	432009400701R	NTC 5Ω 4A 10φ P=5mm, F RoHS	RT801,
230	415350208550R	RES MOF 2W 0.2Ω J,MINI,HK15 RoHS	R805,
240	426000090790R	XFMR SW DIP 550uH SPW-079,ROHS	T801,
250	411050005020R	DIO BRDG BL4-06-BF52-LF 600V/4A(FRONTIER	D801,
250	411050005090R	DIO BRDG FL406 600V/4A(PEC)RoH S	
250	411050007010R	DIO BRDG KBL405G 600V/4A(TSC) RoHS	
260	502040604500R	SHIELD EMI LE1915 ROHS	H501,
270	735100008600R	ASSY,H/S,TDA8496L-J-15-B-T,LE1753	
280	790911440500R	PCBA,P/I BOARD SMD,LE2041-510 ROHS	
290	735100008800R	ASSY,H/S,SRF10100/SRF1050,LE2041 ROHS	
300	735100007900R	ASSY,H/S,AP2761I-A,LE1936	
310	410050062330R	XSTR AF4971NN N-CH PDIP8(ANACH IP)RoHS	U501,U502,
310	410500071290R	XSTR AP9971GD,N-CH,PDIP-8(APEC RoHS	
320	511130001200R	SOLDER BAR,Sn96.5/Ag3.0/Cu0.5/Ni0.06/Ge0	
330	511110000101R	HOT-MELT ADHESIVES (#526)	
340	511110000501R	SILICONE RTV RUBBER,UB-511(EURO)	
350	416204724610R	CAP MEY 4700pF 400V M Y,F10mm RoHS	C823-1,
360	418210133030R	CAP CD X7R 100pF 1KV K VT RoHS	C808,
	735100007900R	ASSY,H/S,AP2761I-A,LE1936	
10	410500059290R	XSTR AP2761I-A N-CH TO-220CFM ADVANCED P	Q804,
10	410050060130R	XSTR SPA06N80C3 N-CH PG-TO220- 3-31(INFI	
10	410050059240R	XSTR FQPF7N80C N-CH TO220F(FAI RCHILD)Ro	
20	507200003700R	HEATSINK,46x20xt10mm LE1704/05	
30	509112306100R	SCREW,P,CROSS,T.T-3*6,ZnROHS	
	735100008600R	ASSY,H/S,TDA8496L-J-15-B-T,LE1753	
10	412000526020R	IC TDA8496L-J-15-B-T HZIP-15B(UTC)RoHS	U701,
20	507200004900R	HEATSINK,35x20xt10mm, LE1753	
30	509142308101R	SCREW,P,CROSS,W/WAS(8mm),T.T-3*8,Zn ROHS	
	735100008800R	ASSY,H/S,SRF10100/SRF1050,LE2041 ROHS	
10	411090023040R	SCHTKY SRF10150C 150V/10A ITO2 20(MOSPEC	D804,
10	411090023020R	SCHTKY SRF10-15CT-LF 150V/10A(FEC)RoHS	

10	411090023090R	SCHTKY SB10150FCT 150V/10A ITO 220AB(PAN	
20	411090024480R	SCHTKY SP1040C 40V/10A ITO220(WILLAS)RoH	D805,
20	411090040010R	SCHTKY SRF1050 50V/10A ITO220AB(TSC)RoHS	
30	507200005300R	HEATSINK,75x25xt15mm, LP2610	
40	509112306100R	SCREW,P,CROSS,T.T-3*6,ZnROHS	
	790911440500R	PCBA,P/I BOARD SMD,LE2041-510 ROHS	
10	412000495840R	IC NCP1337DR2G SOIC-7(ON)RoHS	IC802,
20	414904010050R	RES SMD (1206) 10Ω J,RT RoHS	R827,R828,
30	414916010150R	RES SMD (0603) 100Ω J,RT RoHS REV:A	R713,
40	414916010250R	RES SMD (0603) 1KΩ J,RT RoHS REV:A	R706,R707,
50	414908010250R	RES SMD (0805) 1KΩ J,RT RoHS REV:A	R813,R819,R820,R821,
60	414916100210R	RES SMD (0603) 10KΩ F,RT RoHS	R513,R537,R538,R702,R701,R703,
70	414908010350R	RES SMD (0805) 10KΩ J,RT RoHS REV:A	R812,R829,R830,
80	414916100310R	RES SMD (0603) 100KΩ F,RT RoHS	R501,R520,
90	414916010550R	RES SMD (0603) 1MΩ J,RT RoHS REV:A	R526,R519,
100	414916110310R	RES SMD (0603) 110KΩ F,RT RoHS REV:A	R512,
110	414908120210R	RES SMD (0805) 12K F RT RoHS REV:A	R815,
120	414916015050R	RES SMD (0603) 15Ω J,RT RoHS REV:A	R534,R535,
130	414916020150R	RES SMD (0603) 200Ω J,RT RoHS	R527,R524,
140	414908020150R	RES SMD (0805) 200Ω J,RT RoHS	R817,
150	414916020250R	RES SMD (0603) 2KΩ J,RT RoHS	R710,R709,
160	414908033050R	RES SMD (0805) 33Ω J,RT RoHS	R504,R505,R530,R532,
170	414908300110R	RES SMD (0805) 3KΩ F,RT RoHS REV	R824,
180	414916030350R	RES SMT(0603)30KΩ J,RT RoHS	R714,R705,
190	414916750110R	RES SMD (0603) 7.5KΩ F,RT RoHS	R533,R536,
200	414916330410R	RES SMD (0603) 3.3M F RT RoHS	R507,
210	414916470010R	RES SMD (0603) 470Ω F,RT RoHS	R528,R523,R521,R529,
230	414916047250R	RES SMD (0603) 4.7KΩ J,RT RoHS	R708,
240	414908510110R	RES SMD (0805) 5.1KΩ F,RT RoHS	R822,
250	414916470210R	RES SMD (0603) 47KΩ F,RT RoHS	R514,R704,
260	414908470210R	RES SMD (0805)47KΩ F,RT,RoHS	R823,
270	414916470310R	RES SMD (0603) 470KΩ F,RT ROHS	R518,
280	414916510110R	RES SMD (0603) 5.1KΩ F,RT RoHS	R539,
290	414916430210R	RES SMD (0603) 43KΩ F,RT,RoHS	R508,
300	414908047450R	RES SMD (0805) 470KΩ J,RT RoHS	R808,R809,R810,R811,
310	414916056250R	RES SMD (0603) 5.6KΩ J,RT ROHS REV:A	R712,R711,
320	414916604310R	RES SMD (0603) 604KΩ F,RT RoHS	R516,
340	414908750010R	RES SMD (0805)750Ω F,RT,RoHS	R807,R831,R832,
350	419311040060R	C SMD(0603) X7R 0.1uF/50V K RoHS	C503,C518,C519,C520,C825,C709, C703,
360	419311020060R	C SMD(0603) X7R 1000PF/50V K RoHS	C510,C516,
370	419311020070R	C SMD(0805) X7R 1000PF/50V K RoHS	C504,C505,C522,C529,
380	419302210360R	C SMD(0603) NPO 220PF/50V G RoHS	C812,
390	419312220060R	C SMD(0603) X7R 2200PF/50V K RoHS	C517,C524,C530,
400	419312220070R	C SMD(0805) X7R 2200PF/50V K RoHS	C525,C513,
410	419312233060R	C SMD(0603) X7R 0.022uF/25V K RoHS	C511,
420	419342254670R	C SMD(0805) Y5V 2.2uF/16V Z RoHS	C507,C515,
420	419352254070R	C SMD(0805) X5R 2.2uF/16V K, RoHS	
430	419342253670R	C SMD(0805) Y5V 2.2uF/25V Z RoHS	C502,
440	419312720070R	C SMD (0805) X7R 2700pF 50V K ROHS	C514,C527,
450	419303310560R	C SMD(0603) NPO 330PF/50V J RoHS	C512,
460	419314720060R	C SMD(0603) X7R 4700PF/50V K RoHS	C710,C711,
470	419314744060R	C SMD(0603) X7R 0.47uF/16V K,RoHS	C704,C706,
480	419301510560R	C SMD(0603) NPO 150PF/50V J RoHS	C521,
490	411100912020R	ZENER 12V MMSZ5242A SOD123(PEC RoHS	ZD803,
490	411131512052R	ZENER 12V 0.5W DDZ12C-F,SOD123 (DIODES)R	
490	411131412020R	ZENER 12V MMSZ5242A SOD-123(WILLAS)ROHS	
500	412000455630R	IC OZ9938GN SOIC16(O2 MICRO)RoHS	IC501,
510	411023004021R	DIO SN4148-LF 75V/0.15A SMD 1206 (FEC)Ro	D501,D505,D511,D512,
510	411020046090R	DIO 1N4148W 75V/0.15A(PEC)RoHS SOD-123	
510	411020046310R	DIO 1N4148W-F 75V/0.15A(DIODES RoHS,SOD-	
520	411020026210R	DIO BAV99 350mW 70V SOT-23(PHI RoHS	D502,D503,D504,D507,D508,D509,
520	411020026390R	DIO BAV99,SOT-23(INFINEON)RoHS	

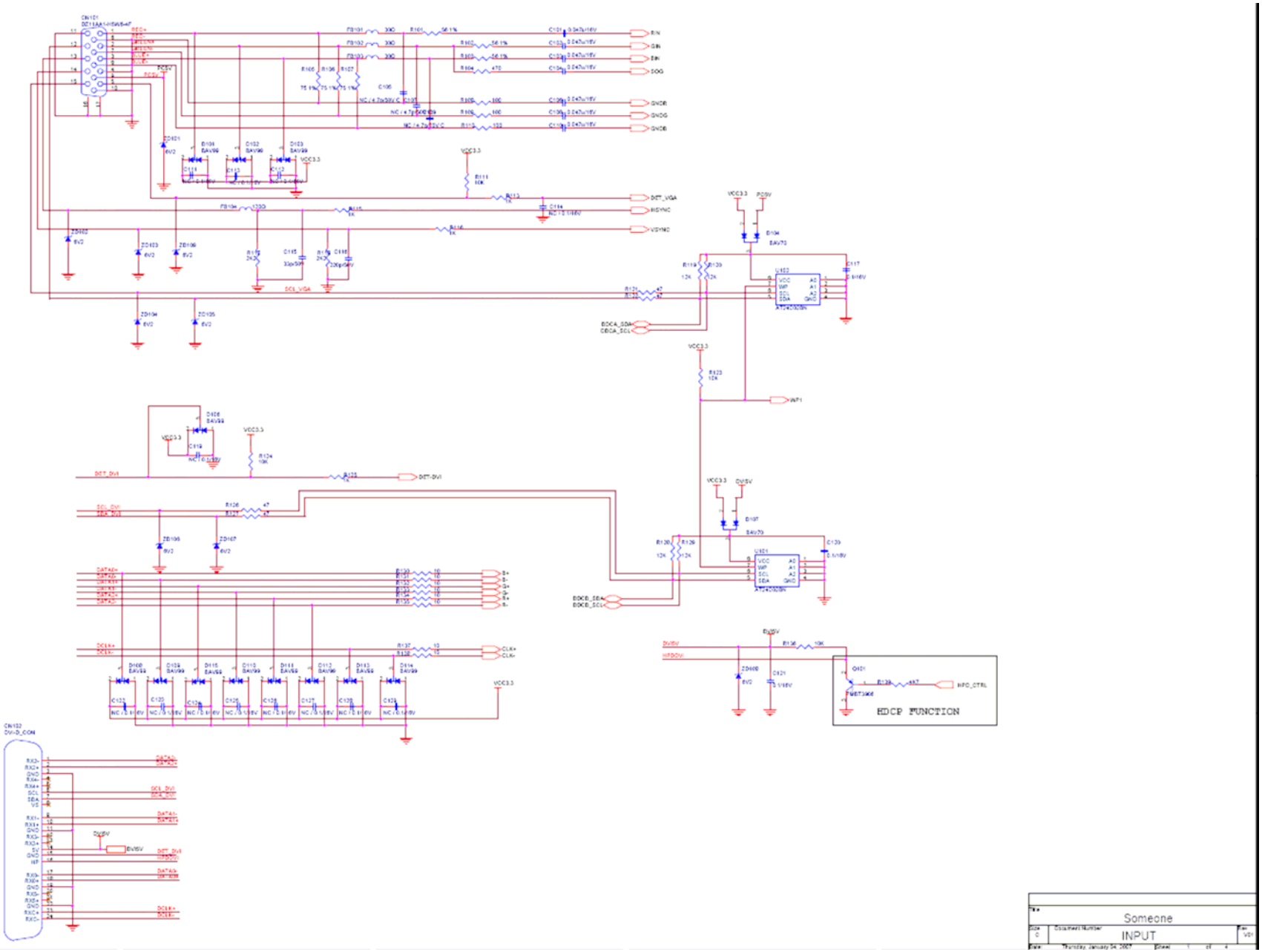
520	411020026020R	DIO BAV99-LF 350mW 70V SOT-23 (FEC)RoHS	
520	411020026090R	DIO BAV99 350mW 75V SOT-23(PEC RoHS	
530	411020068020R	DIO BAW56 70V SOT-23(FRONTIER)RoHS	D506,
530	411020068090R	DIO BAW56 75V SOT-23(PANJIT)RoHS	
530	411020068210R	DIO BAW56 85V SOT-23(PHILIPS)RoHS	
540	410500045210R	XSTR PMBT3904 NPN 200MA,40V SOT23(PHILIP	Q701,Q702,Q703,
540	410500045140R	XSTR MMBT3904LT1G NPN 200MA 40V SOT23(ON	
540	410500045130R	XSTR MMBT3904 NPN SOT-23(INFIN EON)RoHS	
540	410500045090R	XSTR MMBT3904 NPN SOT-23(PANJIT)RoHS	
560	790911410500R	PCBA,P/I BOARD AI,LE2041-510 ROHS	
570	414908160110R	RES SMD (0805) 1.6KΩ F,RT,RoHS	R531,R510,
	790911410500R	PCBA,P/I BOARD AI,LE2041-510 ROHS	
10	790911450500R	PCBA,P/I BOARD AI/A,LE2041-510 ROHS	
20	790911460500R	PCBA,P/I BOARD AI/R,LE2041-510 ROHS	
	790911450500R	PCBA,P/I BOARD AI/A,LE2041-510 ROHS	
10	411020053090R	DIO PS1010R 1000V/1A DO-41(PAN JIT)RoHS	D802,
10	411032006020R	DIO FR10-10-LF 1000V/1A AT(FRO NTIER)RoH	
10	411020055330R	DIO MUR1100ERL AXIAL LEAD(ON) RoHS	
20	411022010010R	DIO 1N4003 200V/1A DO-41(TSC)	D803,
20	411020052020R	DIO A02-LF 200V/1A R1(FEC)RoHS	
30	411022003020R	DIO 1N4148-LF 75V/0.15A AT (FEC)RoHS	D806,
30	411022003210R	DIO 1N4148 75V/0.2A AT (PHIL) RoHS	
40	415030105540R	RES CF 1/2W 1MΩ J,AT MINI RoHS	R801,R802,
50	415130183540R	RES CF 1/2W 18KΩ J,AT,RoHS	R803,
60	414880155540R	RES MG HV 1Ws 1.5MΩ 2KV J,AT RoHS	R525,R506,
70	415020330540R	RES CF 1/4W 33Ω J,AT MINI RoHS	R517,
80	415320100540R	RES MOF 1/4W 10Ω J,AT MINI RoHS	R806,
90	415340101540R	RES MOF 1W 100Ω J,AT MINI RoHS	R816,
100	430405000000R	JMPR ROLL/KG D=0.6mm,AT,RoHS 7.5MM	J506,J511,J514,J515,J701,J706,J803,J807,J702,J703,J810,J715,J716,
100	430405000000R	JMPR ROLL/KG D=0.6mm,AT,RoHS 7.5MM	
110	430405000000R	JMPR ROLL/KG D=0.6mm,AT,RoHS 10MM	J503,J509,J809,J804,J805,J806,
110	430405000000R	JMPR ROLL/KG D=0.6mm,AT,RoHS 10MM	
120	430405000000R	JMPR ROLL/KG D=0.6mm,AT,RoHS 12.5MM	J505,J516,J801,J802,R804,
120	430405000000R	JMPR ROLL/KG D=0.6mm,AT,RoHS 12.5MM	
130	430405000000R	JMPR ROLL/KG D=0.6mm,AT,RoHS 15MM	J504,J502,J513,
130	430405000000R	JMPR ROLL/KG D=0.6mm,AT,RoHS 15MM	
140	430405000000R	JMPR ROLL/KG D=0.6mm,AT,RoHS 17.5MM	J507,J508,J512,J808,J704,J705,
140	430405000000R	JMPR ROLL/KG D=0.6mm,AT,RoHS 17.5MM	
150	430405000000R	JMPR ROLL/KG D=0.6mm,AT,RoHS 20MM	J510,J501,J811,
150	430405000000R	JMPR ROLL/KG D=0.6mm,AT,RoHS 20MM	
160	411020050090R	DIO P6KE150A,DO-15,AT(PANJIT)RoHS	ZD802,
160	411020050020R	DIO P6KE150A-LF AT(FRONTIER) RoHS	
160	411020050010R	DIO P6KE150A,DO-15AT,(TSC)RoHS	
170	430613040100R	FUSE SLOW PICO II 4A/125V U/C,AT,RoHS	F802,
180	490901400100R	PCB,P/I BOARD,LE2239-X32 ROHS	
190	506140005700R	LABEL,BARCODE,BLANK,33x7mm, ROHS,FOR PCB	
	790911460500R	PCBA,P/I BOARD AI/R,LE2041-510 ROHS	
10	420264700230R	CAP SH 47uF 25V M,125℃,VT, 6.3x11,RoHS	C807,C820,C827,
20	418147038530R	CAP CD NPO 47pF 1KV J,VT RoHS	C809,
40	419111040030R	CAP MTL X7R 0.1uF 50V K,VT, RoHS	C810,C811,C822,
50	418210227030R	CAP CD X7R 1000pF 500V K VT RoHS	C813,C814,
60	416231041530R	CAP MEB 0.1uF 100V J,(RSB),VT RSBEC3100D	C821,
60	416141041531R	CAP MKT 0.1uF 100V J,VT(ARCO) RoHS,R82EC	
70	418112031530R	CAP CD NPO 12pF 1KV J,VT,RoHS	C826,
80	412022002240R	IC KA431AZ 1%,VT (FAIRCHILD) RoHS	IC803,
80	412022002300R	IC AP431VL TO-92 1% VT (ATC) RoHS	
80	412022002840R	IC TL431ACLPG TO-92 1%,VT(ON)RoHS	
80	412022002830R	IC AS431 TO-92 VT(A1SEMI)RoHS	
90	410072013370R	XSTR 2SC1815-GR (T2SPF.T) VT (TOSHIBA)Ro	Q801,
90	410072013150R	XSTR UTC2SC1815L-GR NPN TO92 (UTC)RoHS	
90	410072013210R	XSTR 2PC1815GR*I VT (PHILIPS) RoHS REV:	
100	420271000230R	CAP SE 10uF 25V M,105℃ VT,5X11 ROHS	C701,
110	420424710260R	CAP SD 470uF/25V M 105℃ ST 10x16,RoHS	C712,
120	420434710431R	CAP EC 470uF 16V M,105℃ VT 8x12,RoHS	C707,C705,

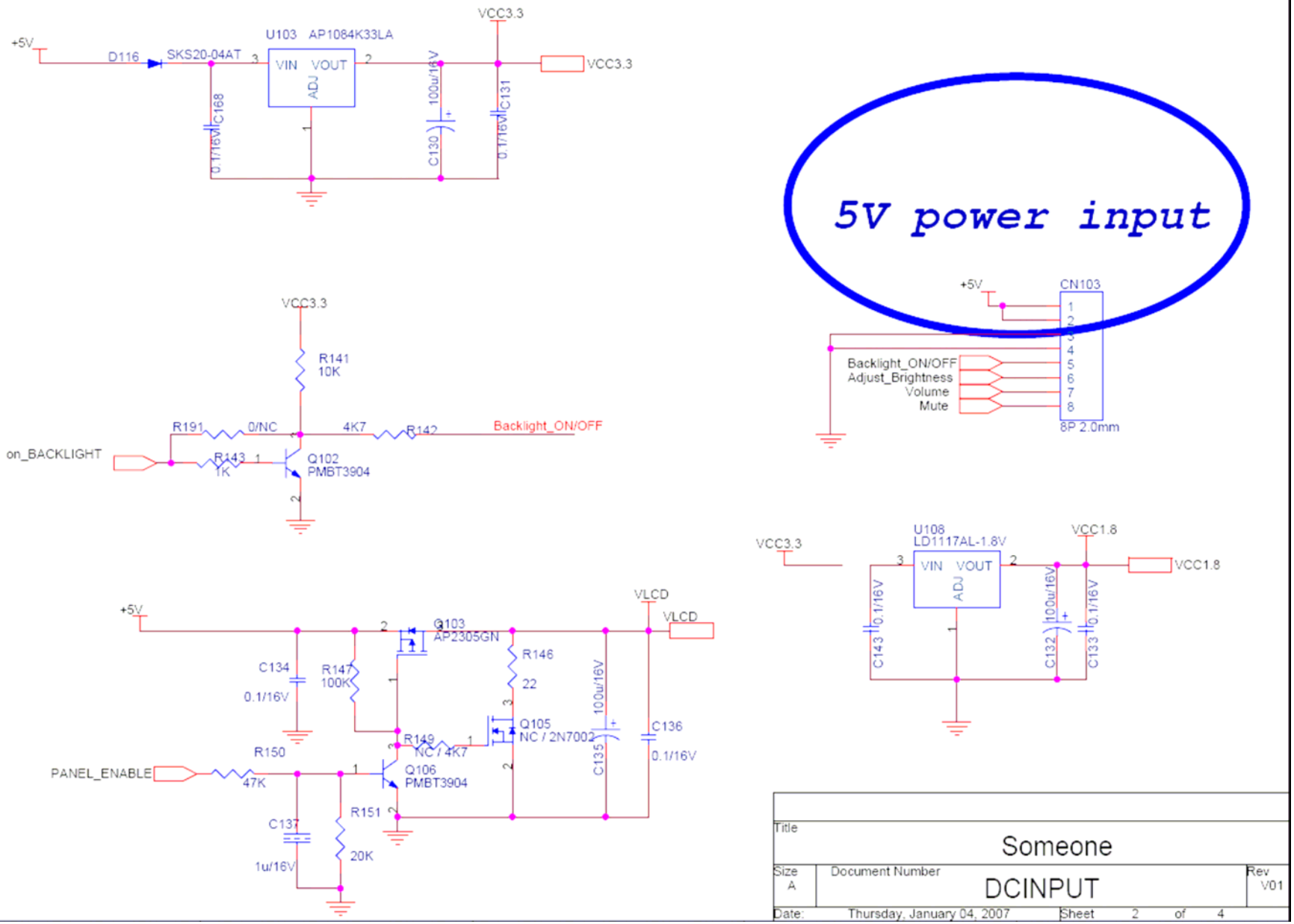
130	420262210460R	CAP SH 220uF 16V M,125℃,ST,10x13,RoHS	C708,
140	432002200200R	FERR BEAD 3.5x6x0.65,VT,RoHS	FB801,

PCBA KEY PAD

ITEM	P/N	Description	Location
	790931500000R	PCBA,KEYPAD BOARD,LE2018 ROHS	
10	430638080020R	WFR. 8P 1.5mm R/A S8B-ZR RoHS JST	CN107,
20	411070054990R	LED G/Y § 3x5mm L-115VCGKSYKW-L 5.33-SZ(K	LED101,
20	411070053990R	LED G/Y § 3x5mm 1259-7SYGUYW/S5 30-A3/F14	
30	430602980120R	SW TACT 160gf 1P,H=4.3mm,DIP SFKHHAL2420	SW101,SW102,SW103,SW104,SW105,
40	415020222540R	RES CF 1/4W 2.2KΩ J,AT MINI REV:A RoHS	R901,R902,
50	490931500000R	PCB,KEYPAD BOARD,LE2018 ROHS	
60	511130001200R	SOLDER BAR,Sn96.5/Ag3.0/Cu0.5/Ni0.06/Ge0	

Attachment 2- Schematic

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+5V
D116
SKS20-04AT
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VOUT
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VCC3.3
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C130
100u/16V
C131
0.1/16V
R141
10K
R191
0/NC
4K7
R142
Backlight_ON/OFF
on_BACKLIGHT
R143
1K
Q102
PMBT3904
CN103
Backlight_ON/OFF
Adjust_Brightness
Volume
Mute
8P 2.0mm
U108
LD1117AL-1.8V
VCC1.8
C143
C132
C133
Q103
AP2305GN
VLCD
C134
R147
100K
R146
22
Q105
NC / 2N7002
C135
C136
R149
NC / 4K7
R150
PANEL_ENABLE
47K
Q106
PMBT3904
R151
20K
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Someone
Size
A
Document Number
DCINPUT
Rev
V01
Date:
Thursday, January 04, 2007
Sheet
2
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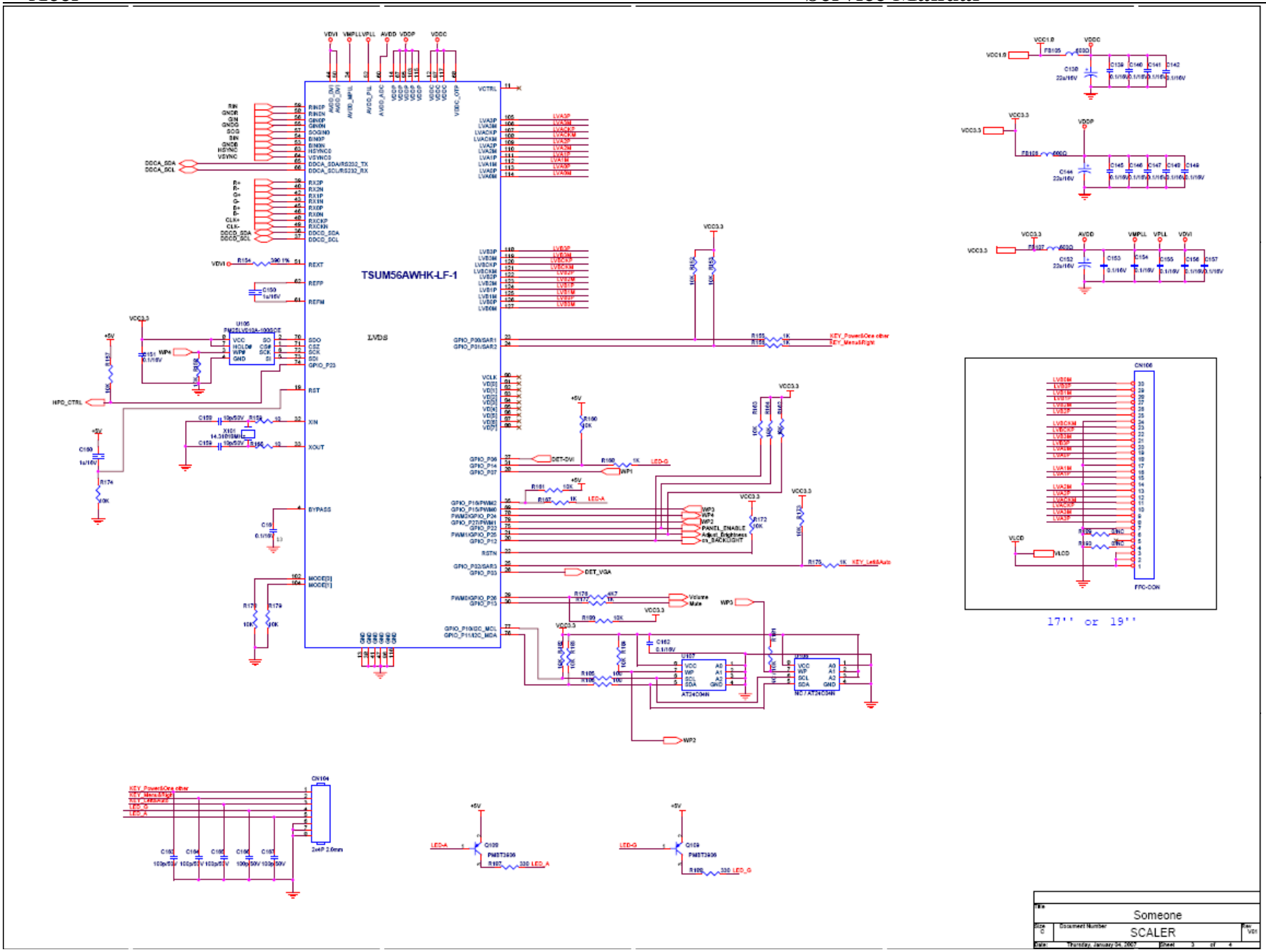
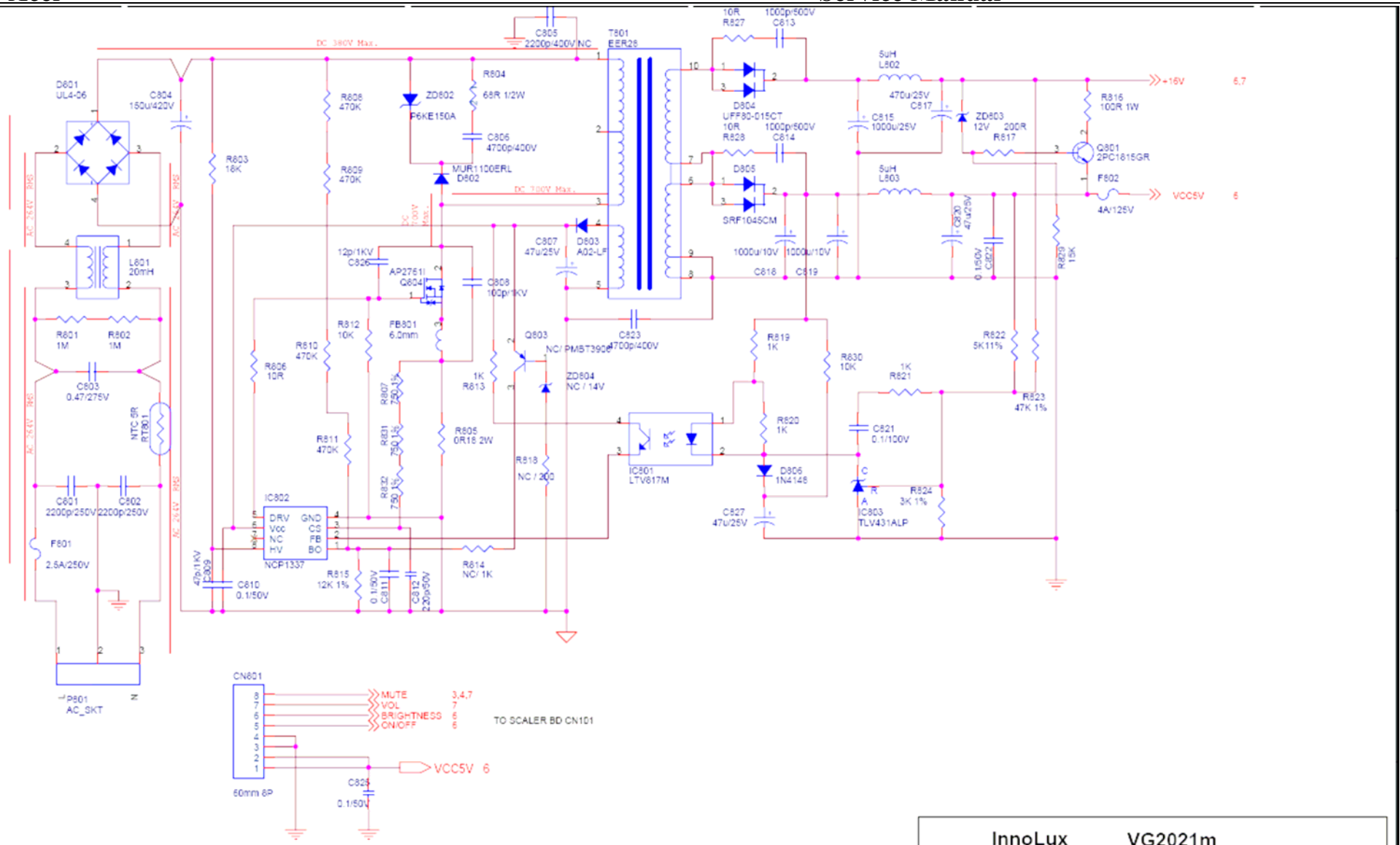
4


TSUM56AWHK-LF-1
LVDS
17'' or 19''
Someone
SCALER



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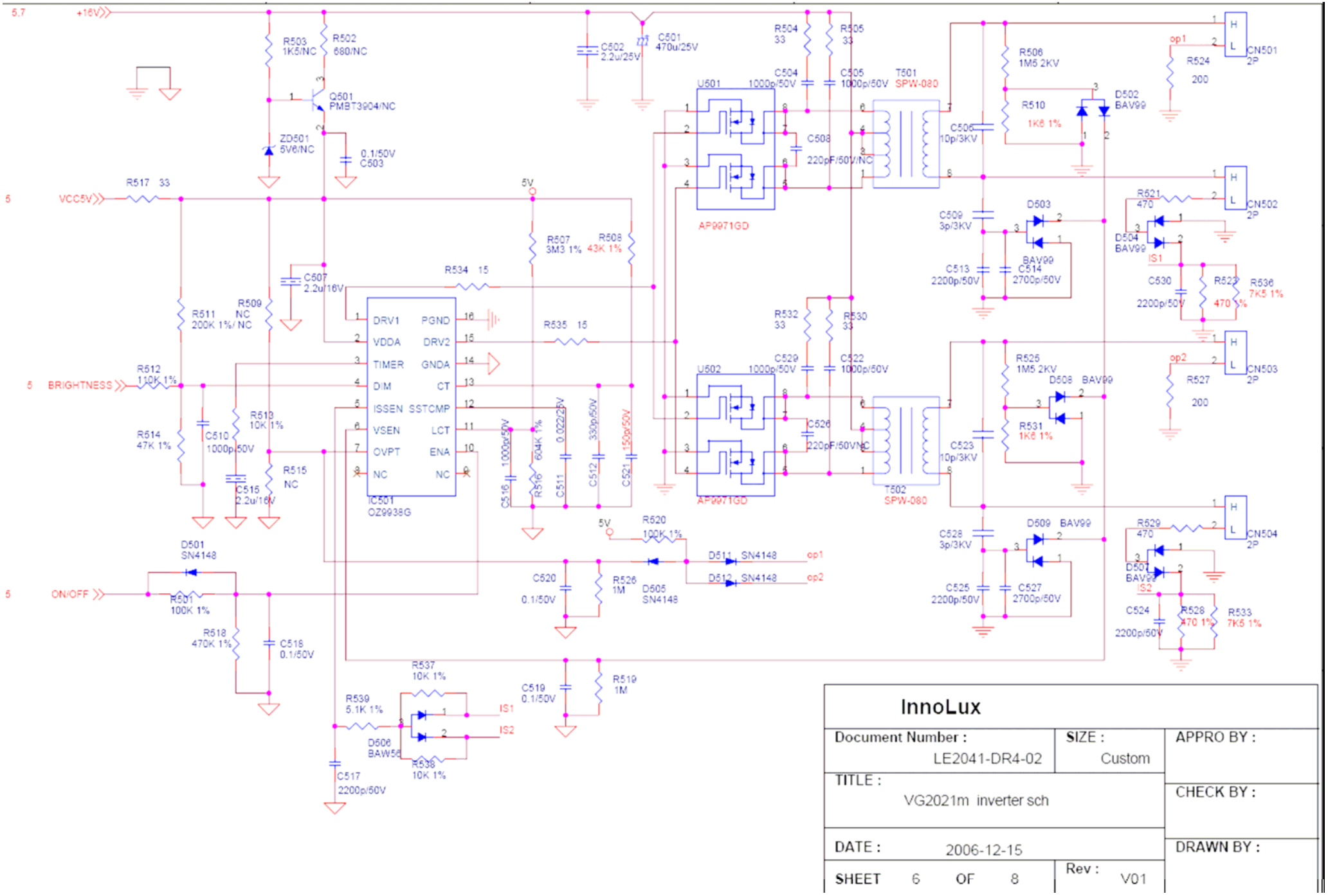

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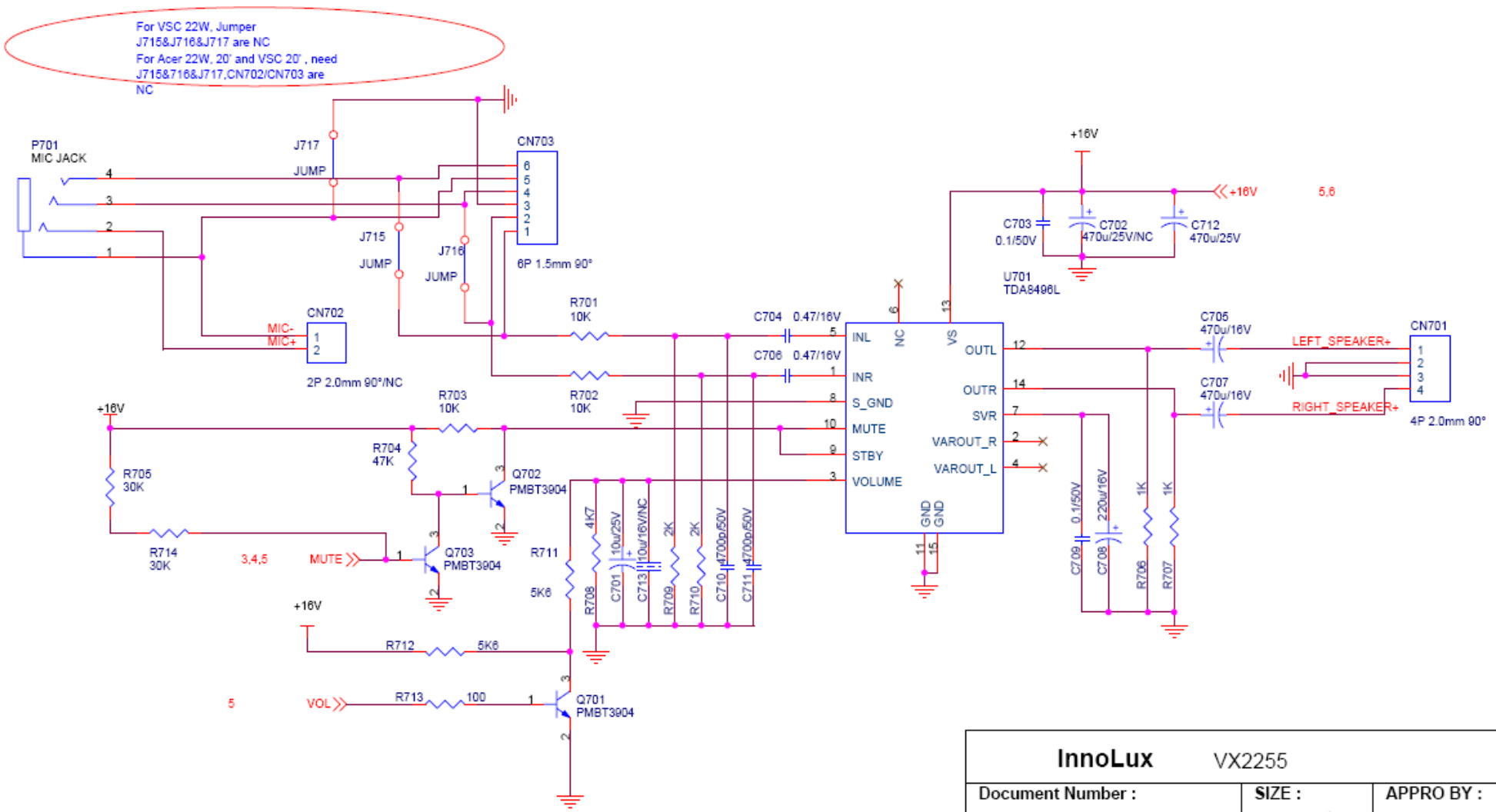

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