

LCD TV SERVICE MANUAL

Modle list

KL26AS21Q, KL26AS23Q, KL26AS25Q

KL27BS23Q, KL32AS21Q, KL32AS22Q

KL32BS23Q, KL32AS25Q, KL32BS28Q

KL37BS21Q, KL37AS22Q, KL37AS23Q

KL40BS21Q, KL42AS23Q

KONKA GROUP CO,LTD.

Digital Flat Display Division

IMPORTANT SERVICE SAFETY INFORMATION

Operating the receiver outside of its cabinet or with its back removed involves a shock hazard. Work on these models should only be performed by those who are thoroughly familiar with precautions necessary when working on high voltage equipment.

Exercise care when servicing this chassis with power applied. If carelessly contacted, it can cause serious shock or result in damage to the chassis. Maintain interconnecting ground lead connections between chassis, escutcheon, picture tube base and tuner when operating chassis.

When it is necessary to make measurements or tests with AC power applied to the receiver chassis, an Isolation Transformer must be used as a safety precaution and to prevent possible damage to transistors. The Isolation Transformer should be connected between the TV line cord plug and the AC power outlet.

It is important to maintain specified values of all components and anywhere else in the receiver that could cause a rise in operating supply voltages. No changes should be made to the original design of the receiver.

Components shown in the shaded areas on the schematic diagram and/or identified by in the replacement parts list should be replaced only with exact factory recommended replacement parts. The use of unauthorized substitute parts may create shock, fire, or other hazards.

Before returning the receiver to the user, perform the following safety checks:

1. Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the receiver.
2. Replace all protective devices such as non-metallic control knobs, insulating fish papers, cabinet backs, adjustment and compartment covers of shields, isolation resistor-capacitor networks, mechanical insulators etc.
3. To be sure that no shock hazard exists, a check for the presence of leakage current should be made at each exposed metal part having a return path to the chassis (antenna, cabinet metal, screw heads knobs and/or shafts, escutcheon, etc.) in the following manner.

Plug the AC line cord directly into a 110V/220V/240V, AC receptacle. (Do not use an Isolation Transformer during these checks.) All checks must be repeated with the AC line cord plug connection reversed. (If necessary, a non-polarized adapter plug must be used only for the purpose of completing these checks.)

PLEASE READ BEFORE ATTEMPTING SERVICE

1. Use an Isolation Transformer when performing any service on this chassis.
2. Never disconnect any leads while receiver is in operation.
3. Disconnect all power before attempting any repairs.
4. Do not short any position of the circuit while the power is on.
5. For safety reasons, replace components only with identical replacement parts (SEE PARTS LIST).
6. Before alignment, warm up the TV for at least 30 minutes.
7. When removing a PCB or related component, after unfastening or changing a wire, be sure to put the wire back in its original position.
8. Inferior silicon grease can damage IC's and transistors. When replacing IC's and transistors, use only specified silicon grease. Remove all old silicon when applying new silicon.
9. Before removing the anode cap, discharge electricity because it contains high voltage.

A. SPECIFICATION

System : PAL I D/K B/G, SECAM D/K B/G L/L'

Channel :

VHF~ Low BAND : 0 CH (46.25MHz) ~ S9 CH (161.25MHz)

VHF~ High BAND : S10 CH (168.25MHz) ~ S41 CH (463.25MHz)

UHF BAND : E21CH (471.25MHz) ~ E69 CH (855.25MHz)

Antenna Impedance : 75 Ω (Unbalance)

Audio Output Power :

| | | | | | |
|----------|-------|-------|-------|-------|-------|
| Size | 26/27 | 32 | 37 | 40 | 42 |
| Power(W) | 4 W*2 | 4 W*2 | 5 W*2 | 5 W*2 | 5 W*2 |

Power Supply : ~110—240V, 50/60Hz

Power Consumption :

| | | | | | |
|----------------------|-------|-----|-----|-----|-----|
| Size | 26/27 | 32 | 37 | 40 | 42 |
| Power Consumption(W) | 160 | 180 | 195 | 270 | 270 |

| Item | Port List |
|------|-----------------------|
| 1 | RF Cable |
| 2 | SCART RGB & Composite |
| 3 | SCART Y/C & Composite |
| 4 | PC VGA Input |
| 5 | Video Input |
| 6 | HDMI Input |
| 7 | Y、Pb/Cb、Pr/Cr Input |
| 8 | Earphone Audio Output |
| 9 | Audio Input |

B. ADJUSTMENT MANUAL

TEST NOTE

1. Please follow the pointed test steps and choose the right test equipment to conduct adjustment, otherwise good effect of Unit could not be obtained. The unit should be warmed up for 30 minutes before adjustment and every parameter should be adjusted repeatedly till the optimum value obtained, the pointed voltage value should be ensured during test to get satisfied test result.

2. Test environment

- 1) Temperature 15°C~35°C
- 2) Relative Humidity 45%~75%
- 3) Air pressure 86KPa~106KPa

3. Test equipments (The following equipment should be calibrated before testing)

- 1) Computer 1 set
- 2) Multi-meter (VICTOR VC9801) 1 set
- 3) VideoSignalGenerator (ChromaModel2227/2327/VG859/SFU) 1 set
- 4) Color Analyzer (Chroma Model 7120) 1 set
- 5) DDC card (DYNACOLOR, INC D8330) 1 slice
- 6) TV Video Signal Generator (FLUKE PM54200) 1 set
- 7) Remote controller with factory keys 1 set
- 8) AV,VGA, YPbPR/YCbCr,HDMI Signal line etc 1 set

4. Test item and method

| Program Menu | | Equipments | Requirements | Procedure and SPEC |
|--------------|--------------------------------|--|--------------------------|--|
| 1 | M/B Voltage confirmation | Digital Multimeter | JSK3178-006 Min Board | 1. Connect Power to check if Power LED displays the green light. 2. Please refer to appendix 5.1/5.2/5.3 if there is abnormal phenomenon. |
| 2 | Update NVRAM | PC Debug Tool | | 1. Please refer to appendix 5.6 if there is abnormal phenomenon. |
| 3 | Update HDMI EEPROM | PC,ALL-11 Debug Tool、 HDMI Cable | | 1. Please refer to appendix 5.6 if there is abnormal phenomenon. |

| | | | | |
|---|--|--|---|--|
| 4 | Update HDCP KEY | PC,ALL-11 Debug Tool | | 1. Please refer to appendix 5.6 if there is abnormal phenomenon. |
| 5 | Enter factory menu | | | 1. Enter factory menu : Press MENU button on the remote control, then Press PRE button per 5 times. |
| 6 | Update NVRAM explain | | | 1. Enter factory menu, Select “VGA IIC SELECT” IIC: From VGA Update UOCIII NVRAM TXRX: From VGA Update MCU NVRAM; DDC: From VGA Update DDCNVRAM; |
| 7 | enactment factory (default) | | | 1. Enter factory menu, Select “RESET”, turn off the power, after be over then supply the power again. |
| 8 | Auto color | TV Signal Generator (FLUKE PM54200 PM5418) | AV : interlaced output PAL and NTSC Mode, black and white signal; YPbPr: interlaced output COLOR signal; VGA: interlaced output COLOR signal. | 1. Enter factory menu, Select “Auto color”, (NOT: after 10 seconds, factory appear “PASS” Auto color adjustment OK; appear “FAIL” Auto color adjustment be defeated, then again adjustment.) |
| 9 | Color Temp. adjust white-balance calibrate | | | 1. After Color Temp adjustment OK, Can't "Auto Color" again. |
| | a. AV : Color Temp and white-balance calibrate adjust | TV Signal Generator Color Signal Generator | Enter black and white signal | 1. Enter factory menu, Select “USER RGB”, Adjustment B-R/G/B, chromaticity coordinates of white to fit the 12000 Adjustment C-R/G/B, if black calibration. |
| | b. YPbPr: Color Temp and white-balance calibrate adjust | HDTV Video Signal Generator VG848 Color Signal Generator | Enter black and white signal | 1. Enter factory menu, Select “USER RGB”, Adjustment B-R/G/B, chromaticity coordinates of white to fit the 12000 Adjustment C-R/G/B, if black calibration. |

| | | | | |
|-----|---|--|--|--|
| | c.VGA Color Temp and white-balance calibrate adjust | HDTV Video Signal Generator VG848 Color Signal Generator | Enter black and white signal, Enter User menu, Select “Color Temp. | 1. Enter factory menu, Select “Color Temp” , Select”7500”, chromaticity coordinates of white to fit the7500; Select”Memory” chromaticity coordinates of white to fit the12000. |
| 10 | TV parameter enactment | | | |
| | a.AFC Setup | TV Signal Generator | | 1. Enter User menu , Select “CHANNEL”, Setup AFC for “ON” |
| | b.AGC adjust | TV Signal Generator | TV Enter 60dB-90dB “half Color BAR”, ”GREY” Picture | 1. Press button to display factory menu on TV and select “RF AGC”, press volume +/- button to adjust 。 2. pledge 60dB to 90dB Screen is clear and fluent。 |
| 11 | DDC function examination | PC or Pattern Generator | 1024*768@75Hz ; Picture | 1. DDC Tester connects with the platform then read or writes data in EEPROM. 2. Affirm DDC2 content is right or not. |
| 12. | TV mode check | Factory TV Signal or TV Signal Generator | Output PAL Signal | 1.Enter User menu, Check if the pictures normal, no Signal background the snowflake points are come forth , no Signal is would several minutes enter standby state. 2. Check Auto Search/Management, etc is right or not. |
| 13. | VIDEO check | DVD Video Cable | Play DVD Set DVD to interlaced output | 1.Screen is clear and fluent, Audio checks if the output is normal。 |
| 14 | SCART check | FLUKE54200 | SCART output R.G.B、 Y/C and CVBS Signal | 1Screen is clear and fluent, Audio checks if the output is normal。 2.check SCART output RGB.Y/C and CVBS, can automatic switch Screen is clear and fluent. |
| 15 | SCART output check | Input TV Signal or input CVBS Signal | SCART output TV Signal or CVBS Signal to else one TV | 1.Screen is clear and fluent, Audio checks if the output is normal。 |
| 16 | Y,Cb,Cr(480 I/576I) | DVD Component Cable 720p/1080i DVD Player | Play DVD Set DVD to interlaced output (Y,Cb,Cr) | 1.Screen is clear and fluent, Audio checks if the output is normal。 |

| | | | | |
|-----|--|---|--|--|
| 17 | Y,Pb,Pr SDTV: 576P/480P HDTV: 720p/1080i | HDTV Receiver ATSC HDTV Tuner Component Cable | Play DVD SDTV/HDTV (Y,Pr,Pb) | 1.Screen is clear and fluent, Audio checks if the output is normal。 |
| 18 | VGA INPUT | PC VGA Cable TV BOX D-SUB Cable | PC Mode Please refer to appendix 5.5 | 1.Apiece Mode. Screen is clear and fluent. 2. Play TV BOX Screen is clear and fluent, Audio checks if the output is normal。 |
| 19 | HDMI check | SAMSUNG DVD-HD948 Gdbbk DVD (or HDMIofDVD) HDMI Cable | HDMI Mode Please refer to appendix 5.6 | 1.Select “SOURCE” and Select “HDMI” 2.Apiece Mode: Screen is clear and fluent, Audio checks if the output is normal. |
| 20 | HDCP check | Gdbbk DVD (or HDMIofDVD) HDMI Cabl VGA859 | | 1.Select “SOURCE” and Select “HDMI” check Signal Generator output HDMI/HDCP Signal, checks if the output is ”PASS” |
| 21. | Teletext function check | FLUKE54200 | Output 55dB Teletext Signal | 1.Select “SOURCE” and Select “TV”. 2.Please “Teletext” button on the remote control. 3.Check if the Teletext pictures normal. 4.Check if the Teletext function normal. 5..Check if the Teletext chaos phenomena. |
| 22 | . NICAM function check | GENERATOR”FL UKE 54200 | TV MODE setup NICAM(BG/DK/ I) Signal | 1 Please “NICAM” button on the remote control. 2. Check if the NICAM function normal. |
| 23 | Earphone Output function check | Earphone、DVD | TV or play DVD IN | 1. plug into Earphone , speaker aponia, Earphone Audio is normal, Press VOL+- Key Set the sound volume., Audio checks if the output is normal. 2. pull out Earphone, speaker Audio is normal. |
| 24 | Remote control function check | PC、DVDPattern Generator TV Signal Generator HDTV Player | V or play DVD IN | 1. Check if the apiece mode function normal. |

5. Appendix

5.1 Power Supply Board/ M/B Voltage confirmation

5.1.1 The input and output characteristic test of power

5.1.2 Intention of test: Check input and output to find if short circuit.

5.2 Checking Method:

Use Multimeter (VICTOR VC9801) of resistor to check No/Yes short circuit.

| Number | Item | Test Point | Standard |
|--------------|---|---|------------------|
| Power Supply | | | |
| 1 | The resistor of AC input | AC Input Connector CON1 | No short circuit |
| 2 | The resistor of 24V output | 24V output of connector CON3 | No short circuit |
| 3 | The resistor of 12V output | 24V output of connector CON3 | No short circuit |
| M/B | | | |
| 1 | The resistor of 24V output | 24V output of connector XS801 | No short circuit |
| 2 | The resistor of 12V output | 12V output of connector F800 | No short circuit |
| 3 | The resistor of 5V output | 5V output of connector L804 | No short circuit |
| 4 | The resistor of 3.3V output | 3.3V output of connector N803 | No short circuit |
| 5 | The resistor of 2.5V output | 2.5V output of connector N808 | No short circuit |
| 6 | The resistor of 1.8V output | 1.8V output of connector N804 | No short circuit |
| 7 | A: The resistor of PANEL 5V output B: The resistor of PANEL 12V output | A: PANEL 5V output of connector L814 B: PANEL 12V output of connector L813 | No short circuit |

Please check short circuit point on the PCB board if you find short circuit.

5.3 Signal Board

5.3.1 Verify the state of TV set

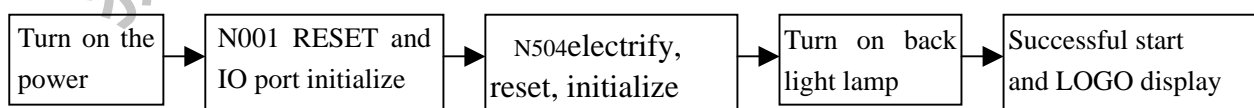
Please switch the TV on by "Power on/off" switch, Then verify the LED color of touch button. Red is standby state and blue is working state.

5.3.2 Checking Supply Power.

If the color of LED is green, the power supply for signal board. F801 supply 5V, N804、N803 supply 3.3V power(Test the PIN 2). N808 supply 2.5V(Test the PIN 2), D806 supply 8V, N804 supply 1.8V. All these are for main IC N001, N401, N504.

5.3.3 Digital signal part

start order:



5.3.4 After turning on the power, if blank screen appears (no back light lamp), just press POWER button one times, if blank screen still there.

5.3.5 Check if the voltage of every power supply is normal.

5.3.6 Check if the crystal oscillator Z001(22.1184MHz) Z501(14.318MHz) Z400(24.576MHZ) oscillate or not, and oscillate frequency is right or not.

5.3.7 Back light control signal (BK LON) of XS806 has high level (above 3V) or not, if not, check whether fault soldered or short circuit happened.

5.3.8 If back light lamp is on while there is no display, check N001 and N504's reset circuit and the output of the oscillator to confirm the CPU and SCALER are working or not. If RGB is abnormal, check N504; If RGB is working correctly and the other channel is abnormal, please check N504.

5.4 White calibration adjustment

5.4.1 Receive black or white signal under AV or PC mode, adjusting brightness and contrast to set the brightness to 5 Nit in dark area and 90 Nit in bright area.

5.4.2 Adjust white balance. Enter factory menu, select User RGB Menu,

| | | | |
|--------|-----|-------|--------------|
| Adjust | B-R | 0-63 | default: 32 |
| | B-G | 0-63 | default: 32 |
| | B-B | 0-63 | default: 32 |
| | C-R | 0-205 | default: 128 |
| | C-G | 0-205 | default: 128 |
| | C-B | 0-205 | default: 128 |

5.4.3 Adjusting chromaticity coordinates of black and white to fit the requirement (X=0.285, Y=0.293), or plug automatic calibration system to adjust white calibration automatically.

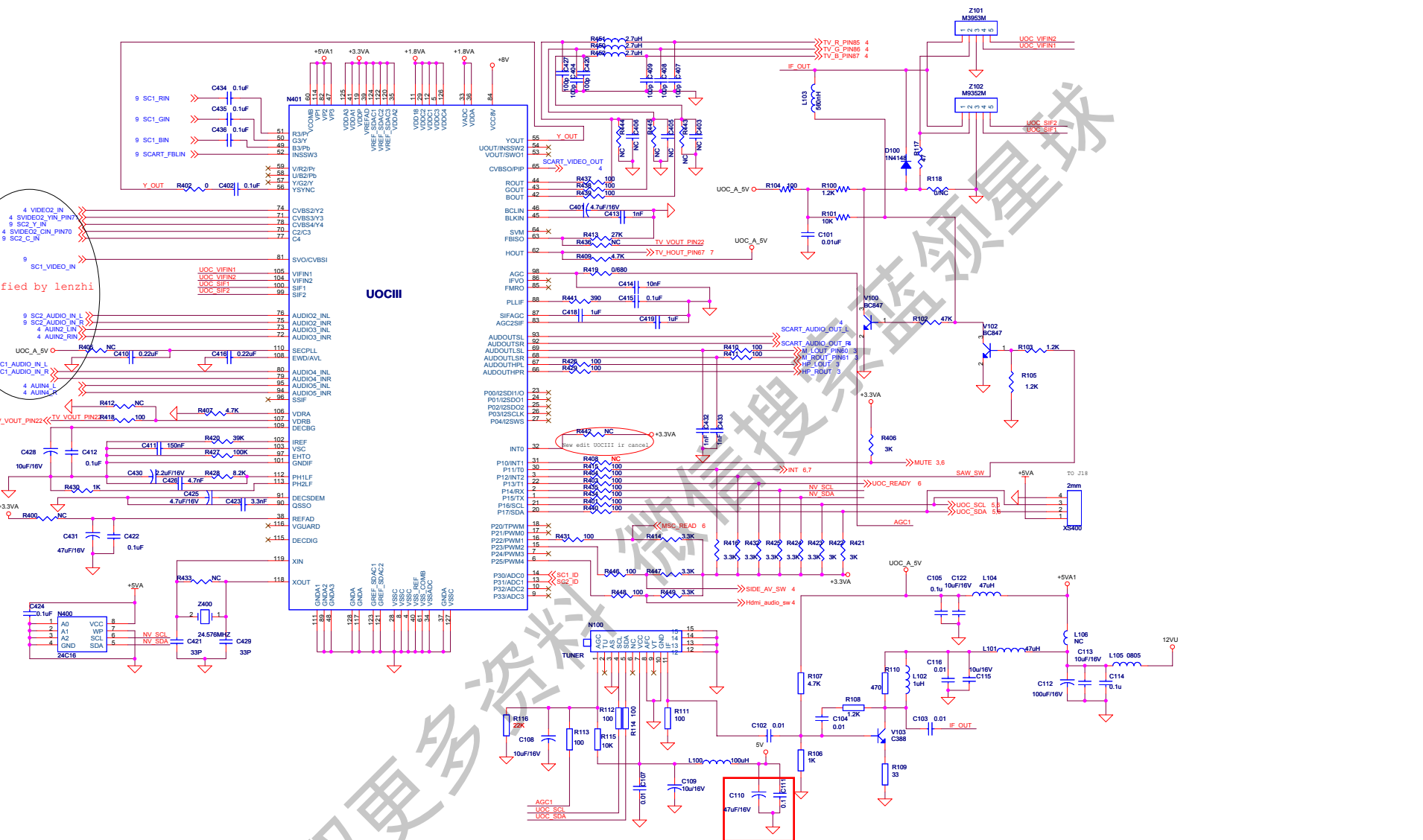
Key IC list

| Item | P/N | Type | Circuit No. | Qty. |
|------|----------|----------------------------------|------------------------|------|
| 1 | 19004890 | W79E632A40PL-PLCC44-Winbond/# | N001 | 1 |
| 2 | 19004329 | TDA1308-SO8-PHILIP/# | N201 | 1 |
| 3 | 19006219 | HY5DU281622FTP-5-TSOPII-HYNIX/# | N507, N508 | 2 |
| 4 | 19006110 | MST6151DA-LF-PQFP208-MSTAR/# | N504 | 1 |
| 5 | 19003437 | MP1410ES-LF-SOIC-8-MPS/# | N801 | 1 |
| 6 | 19005010 | AZ1117H-3.3TRE1-SOT223-BCD/# | N803, N806, N805, N809 | 4 |
| 7 | 19005235 | AZ1117H-1.8TR-SOT223-AAC/# | N804, N807 | 2 |
| 8 | 19005236 | AZ1117H-2.5TR-SOT223-AAC/# | N808, N811 | 2 |
| 9 | 19005432 | TDA15021H1/N1C80-QFP128-PHILIP/# | N401 | 1 |
| 10 | 19005532 | CS4344-10LD TSSOP-CirrusLogic/# | N500 | 1 |

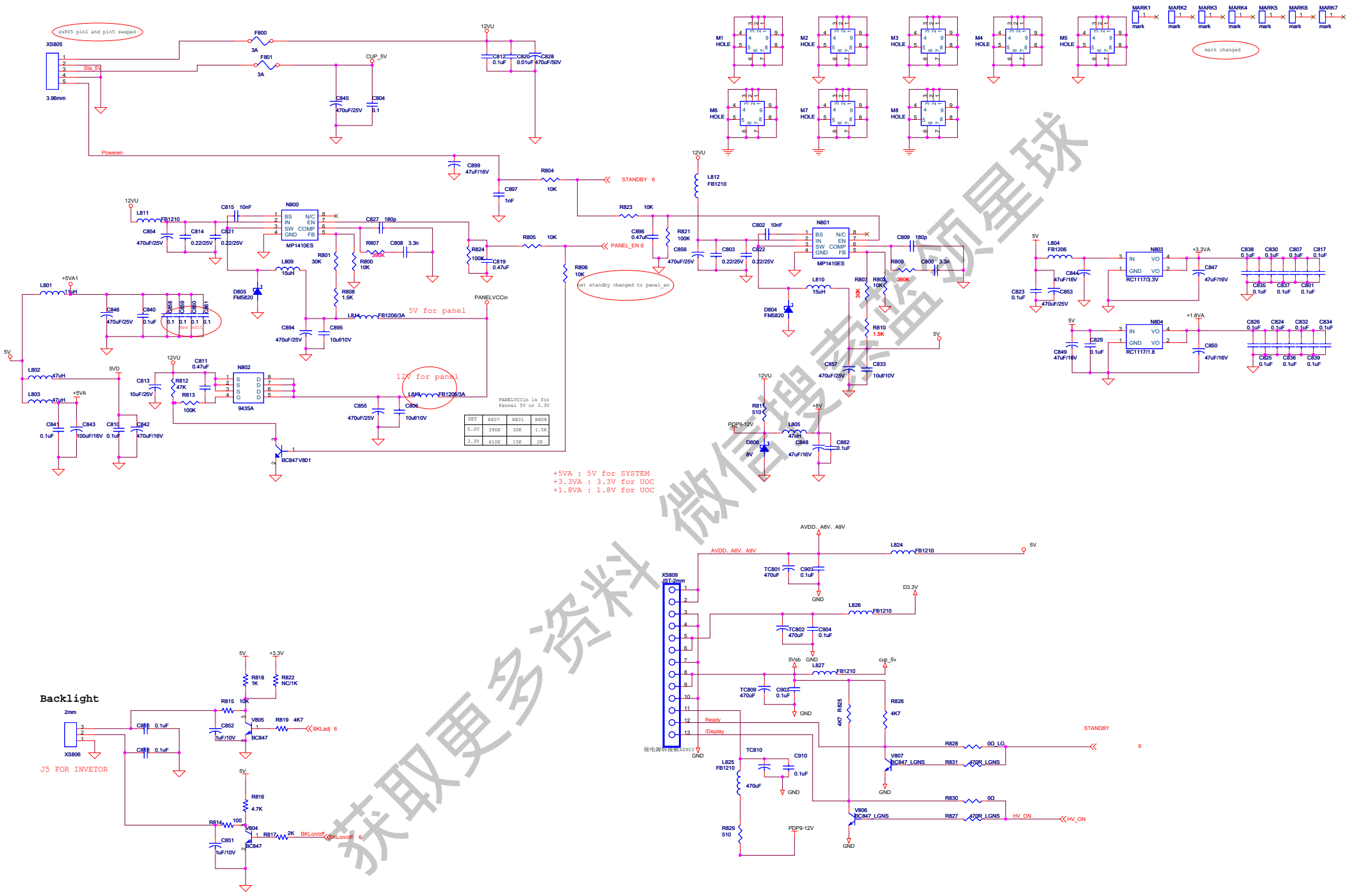
Video1 pin74-pin81
 AU1_R pin75-pin79
 AU2_L pin79-pin80
 Video2 pin78-pin74
 SV_Y pin71-pin78
 SV_C pin70-pin77

modified by lenzhi

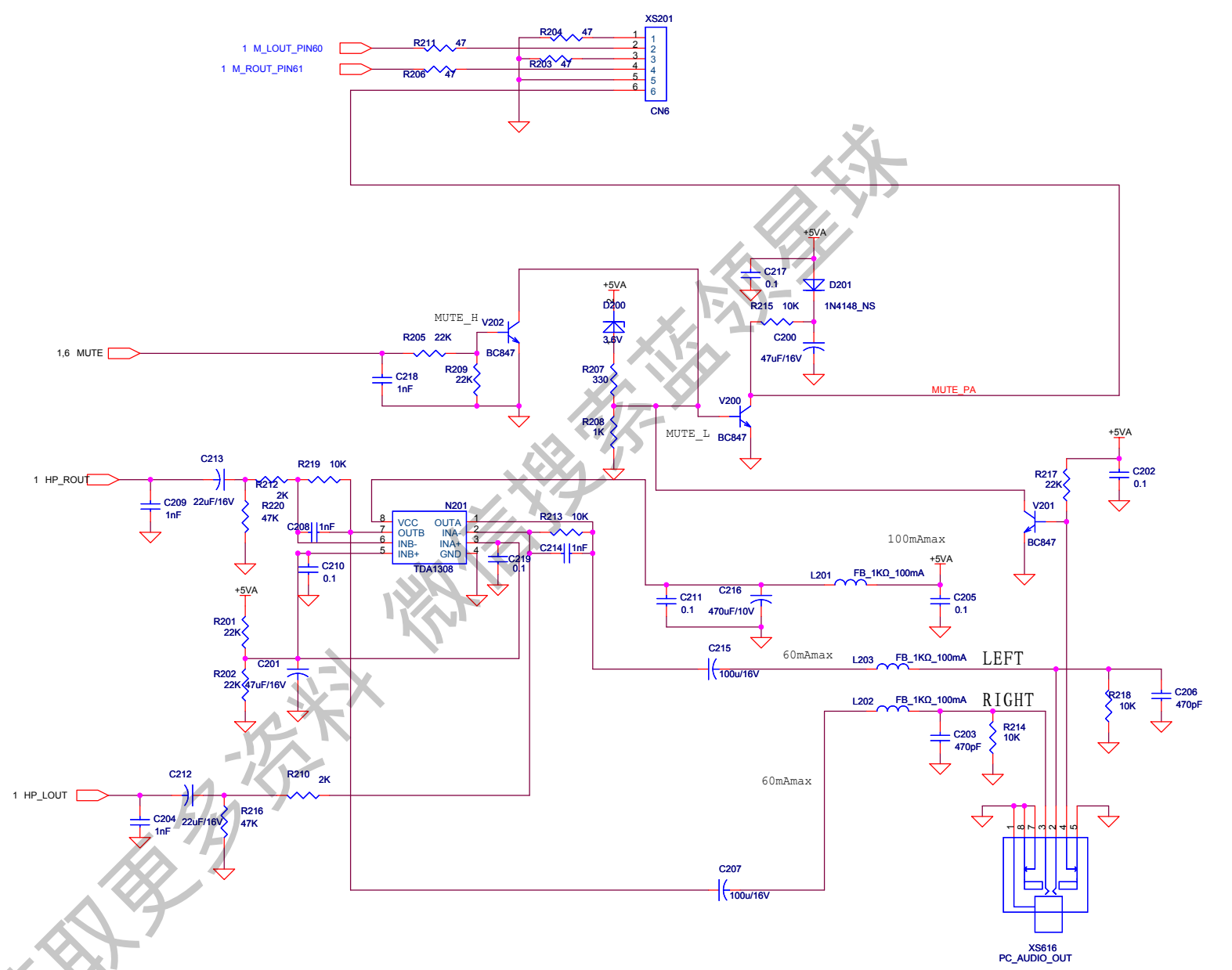
UOCIII



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| Size | 2.UOC3 | 1 |
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| Date | Thursday, April 05, 2007 | Sheet 1 of 0 |

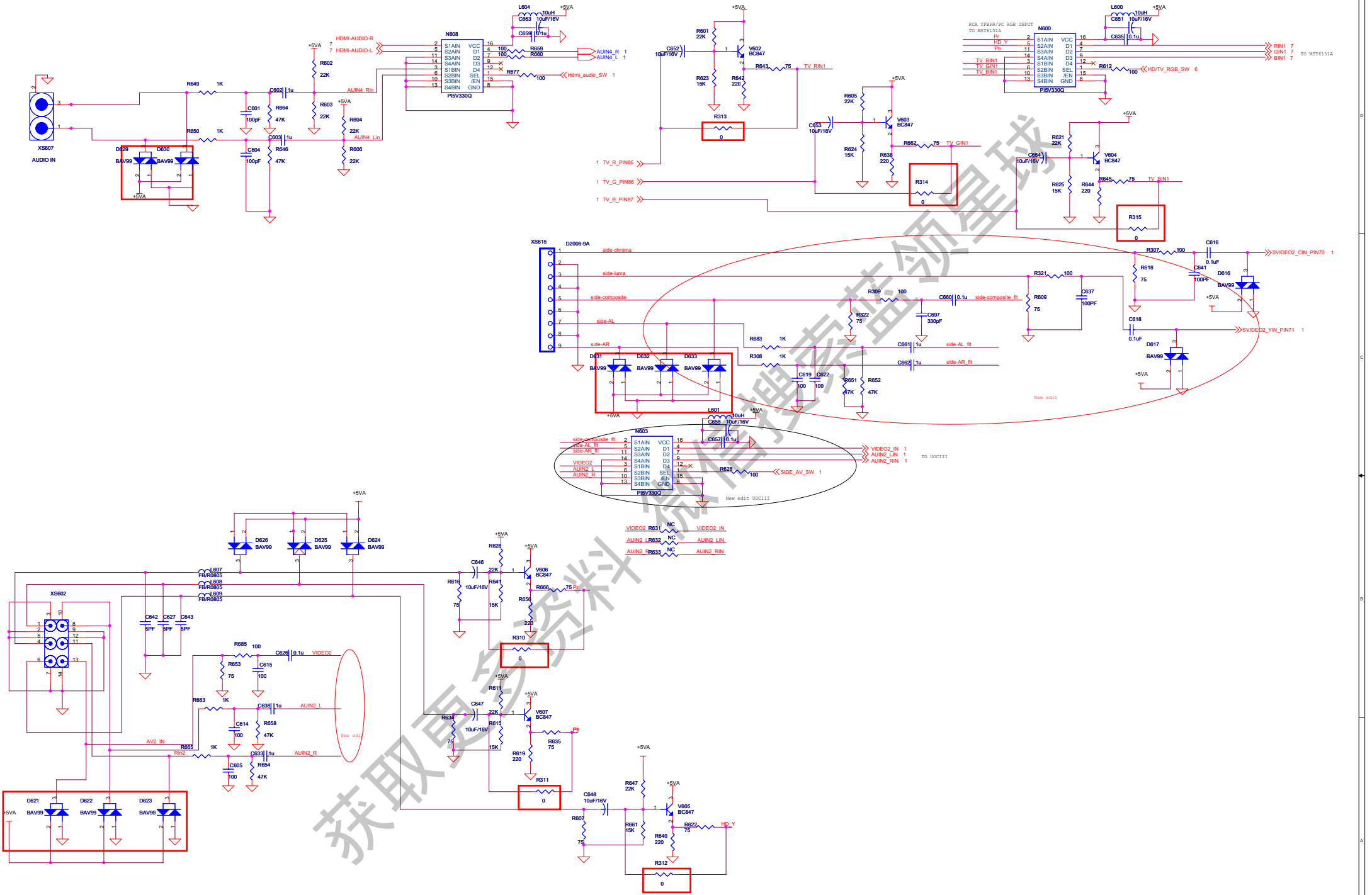


| 8801 | 8807 | 8801 | 8808 |
|------|------|------|------|
| 3.0V | 390K | 30K | 1.5K |
| 3.3V | 410K | 15K | 2K |



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| Size A3 | Document Number 4.AUDIO | Rev 1 |
| Date: Thursday, April 05, 2007 | Sheet 3 | of 9 |



S1A VBEPR/PC RGB INPUT TO MST6151A

| Pin | Signal | Pin | Signal |
|-----|---------|-----|-----------|
| 2 | HD_Y | 16 | S1AIN VCC |
| 3 | HD_Y | 4 | S2AIN D1 |
| 4 | HD_Y | 7 | S3AIN D2 |
| 5 | HD_Y | 9 | S4AIN D3 |
| 6 | HD_Y | 12 | S1BIN D4 |
| 7 | HD_Y | 15 | S2BIN SEL |
| 8 | HD_Y | 18 | S3BIN /EN |
| 9 | HD_Y | 21 | S4BIN GND |
| 10 | TV_RIN1 | 24 | PI5V330Q |
| 11 | TV_GIN1 | | |
| 12 | TV_BIN1 | | |

side-chroma

side-luma

side-composite

side-AL

side-AR

side-AL_II

side-AR_II

side-composite_II

side-AL_II

side-AR_II

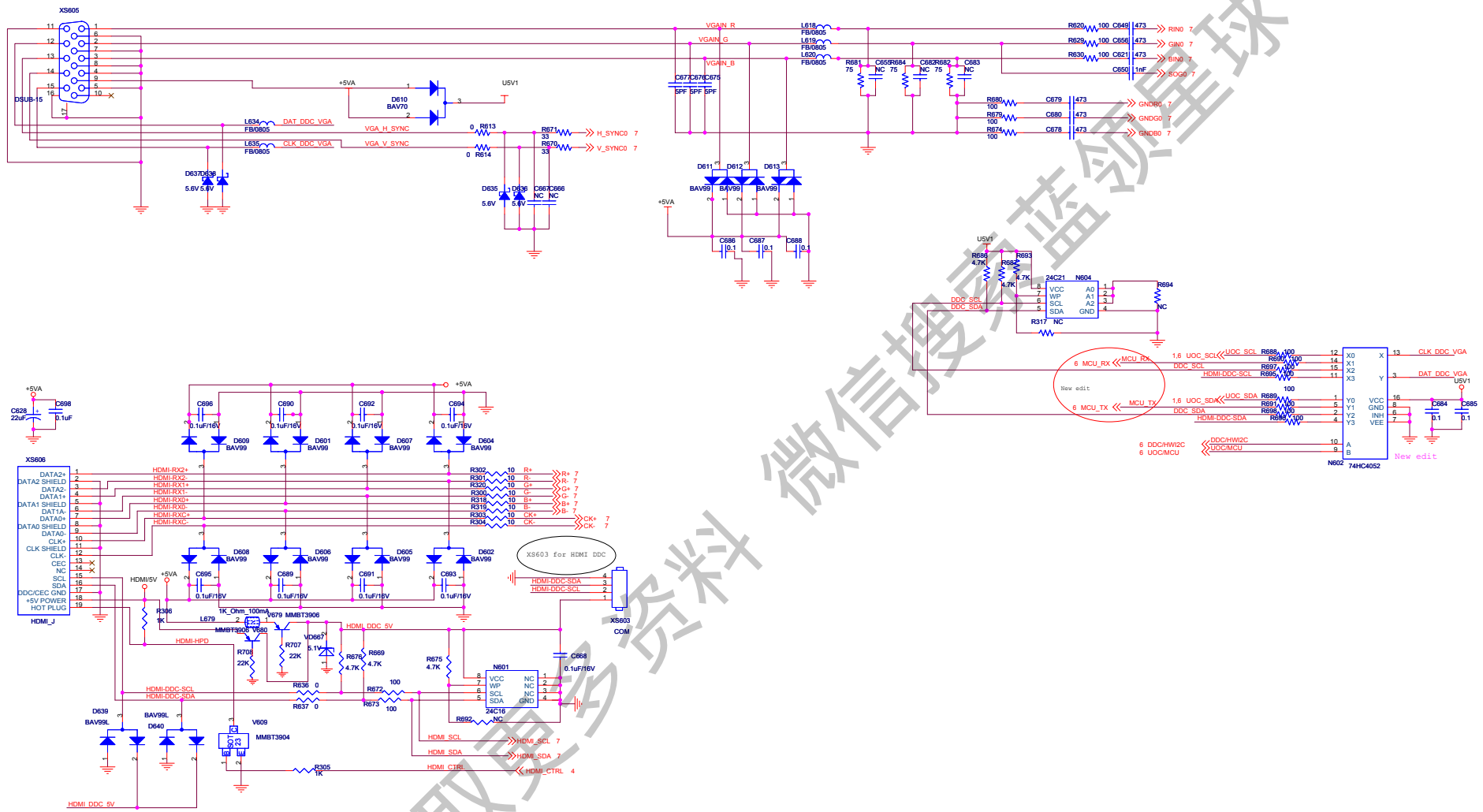
| Pin | Signal | Pin | Signal |
|-----|-------------------|-----|----------------|
| 2 | side-composite_II | 16 | N603 S1AIN VCC |
| 3 | side-AL_II | 4 | S2AIN D1 |
| 4 | side-AR_II | 7 | S3AIN D2 |
| 5 | side-composite_II | 9 | S4AIN D3 |
| 6 | side-AL_II | 12 | S1BIN D4 |
| 7 | side-AR_II | 15 | S2BIN SEL |
| 8 | side-composite_II | 18 | S3BIN /EN |
| 9 | side-AL_II | 21 | S4BIN GND |

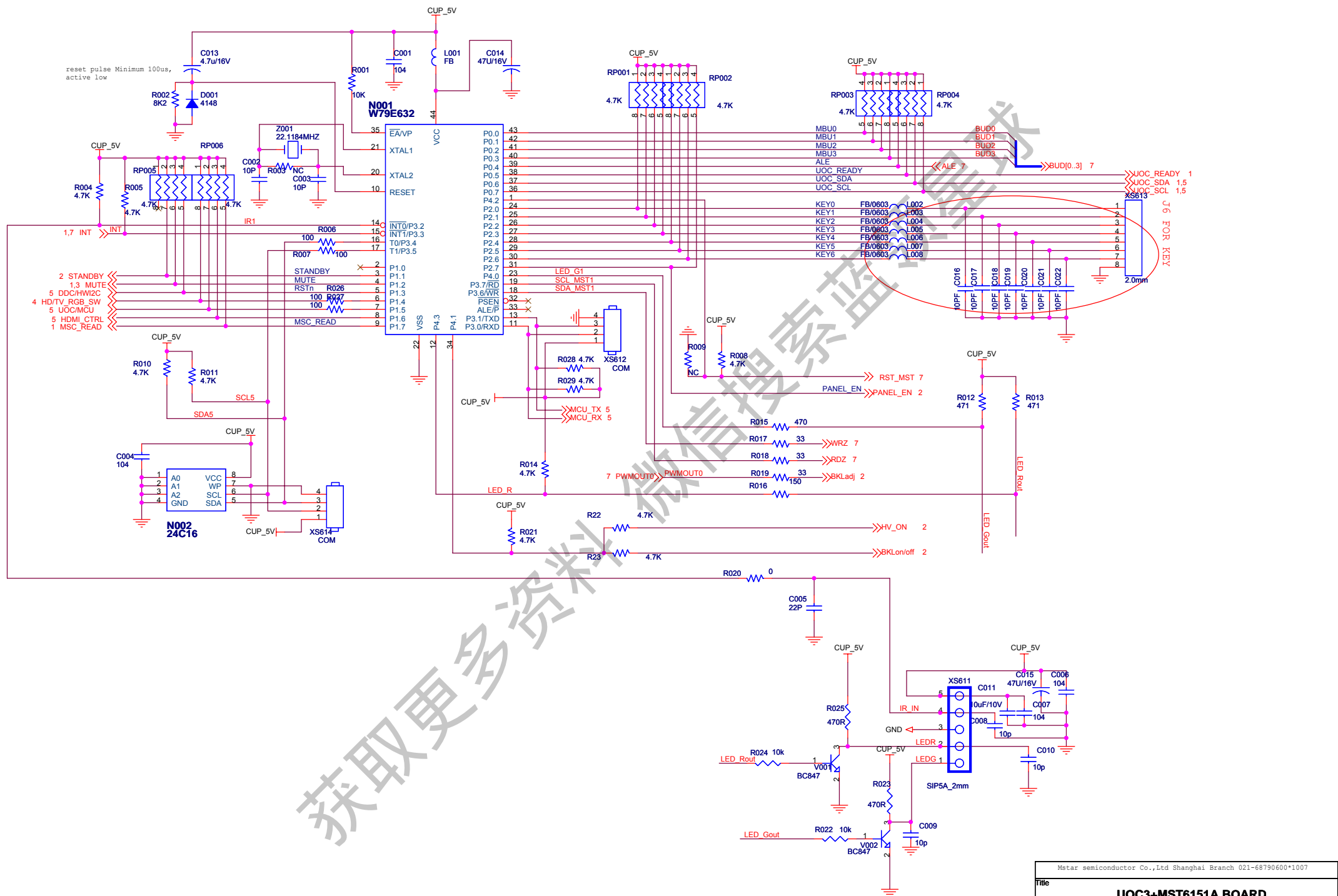
VIDEO2_1

AUIN2_LIN_1

AUIN2_RIN_1

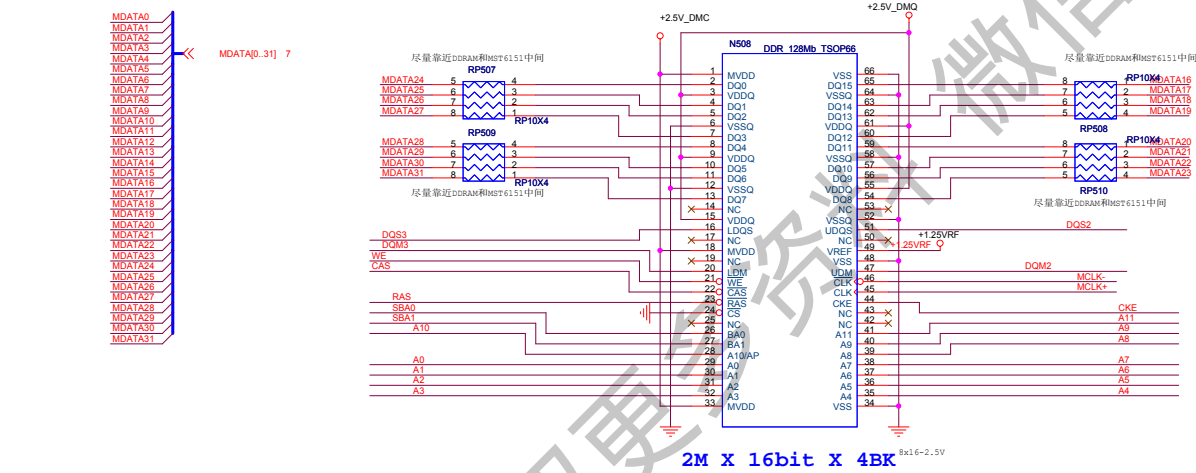
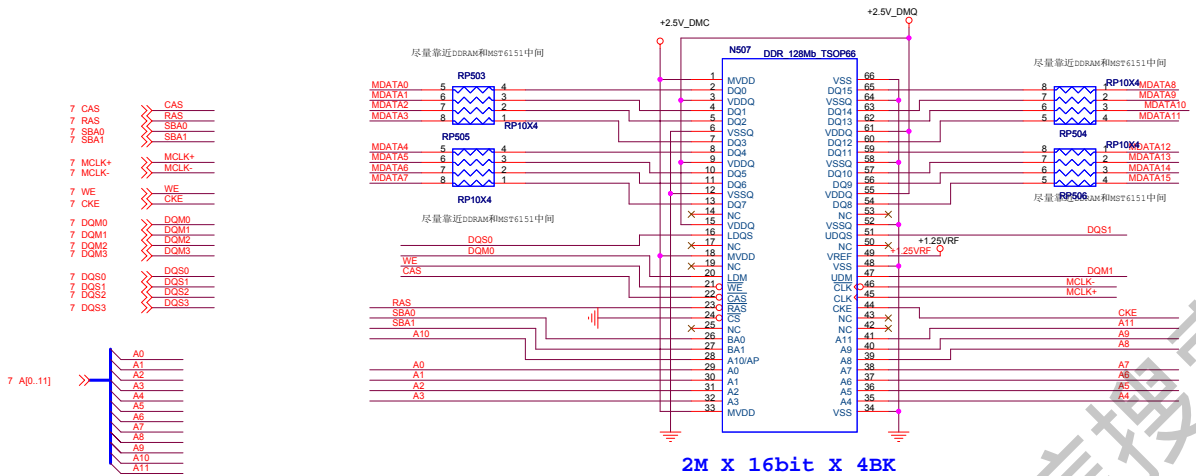
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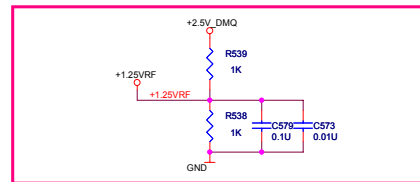
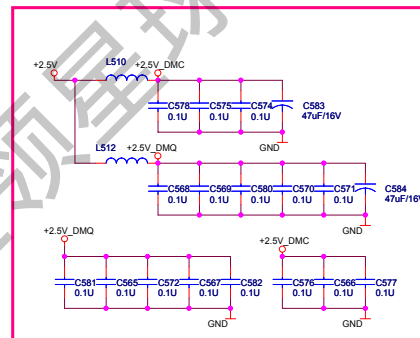


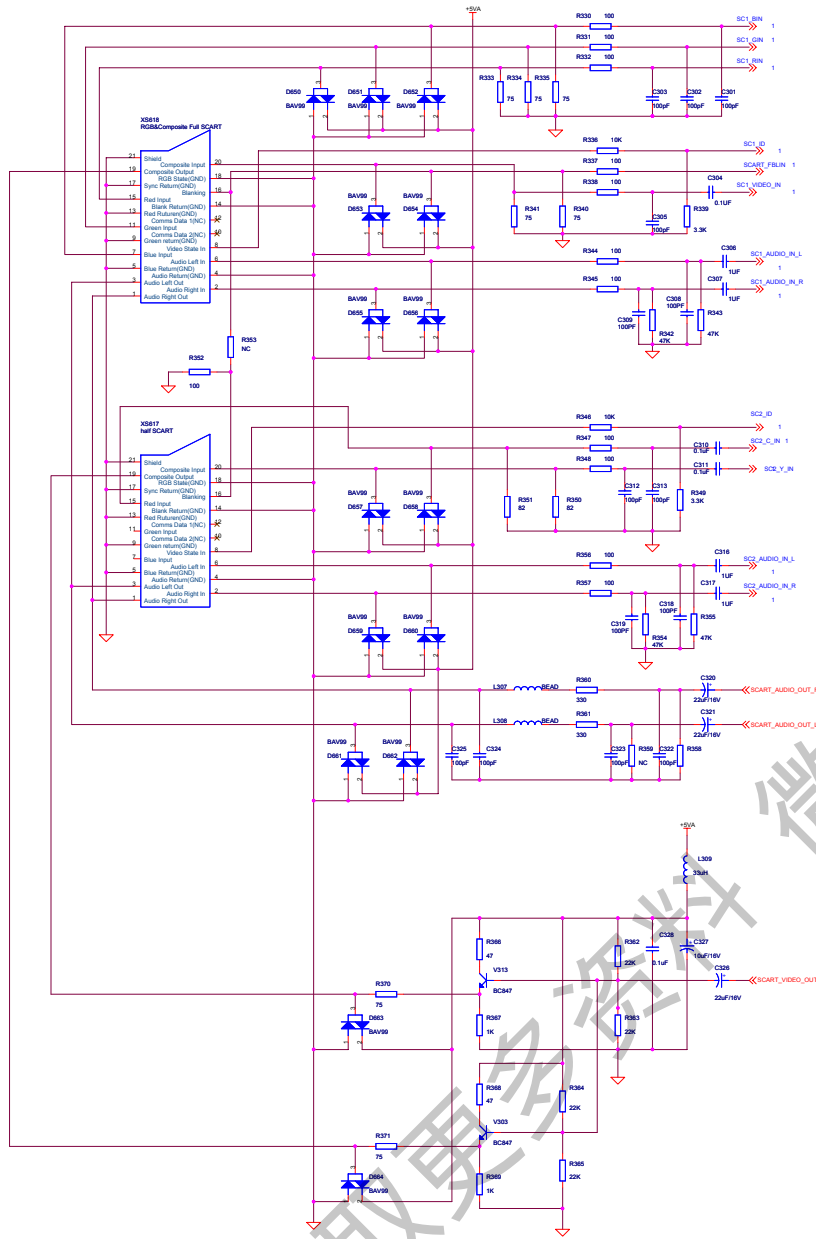
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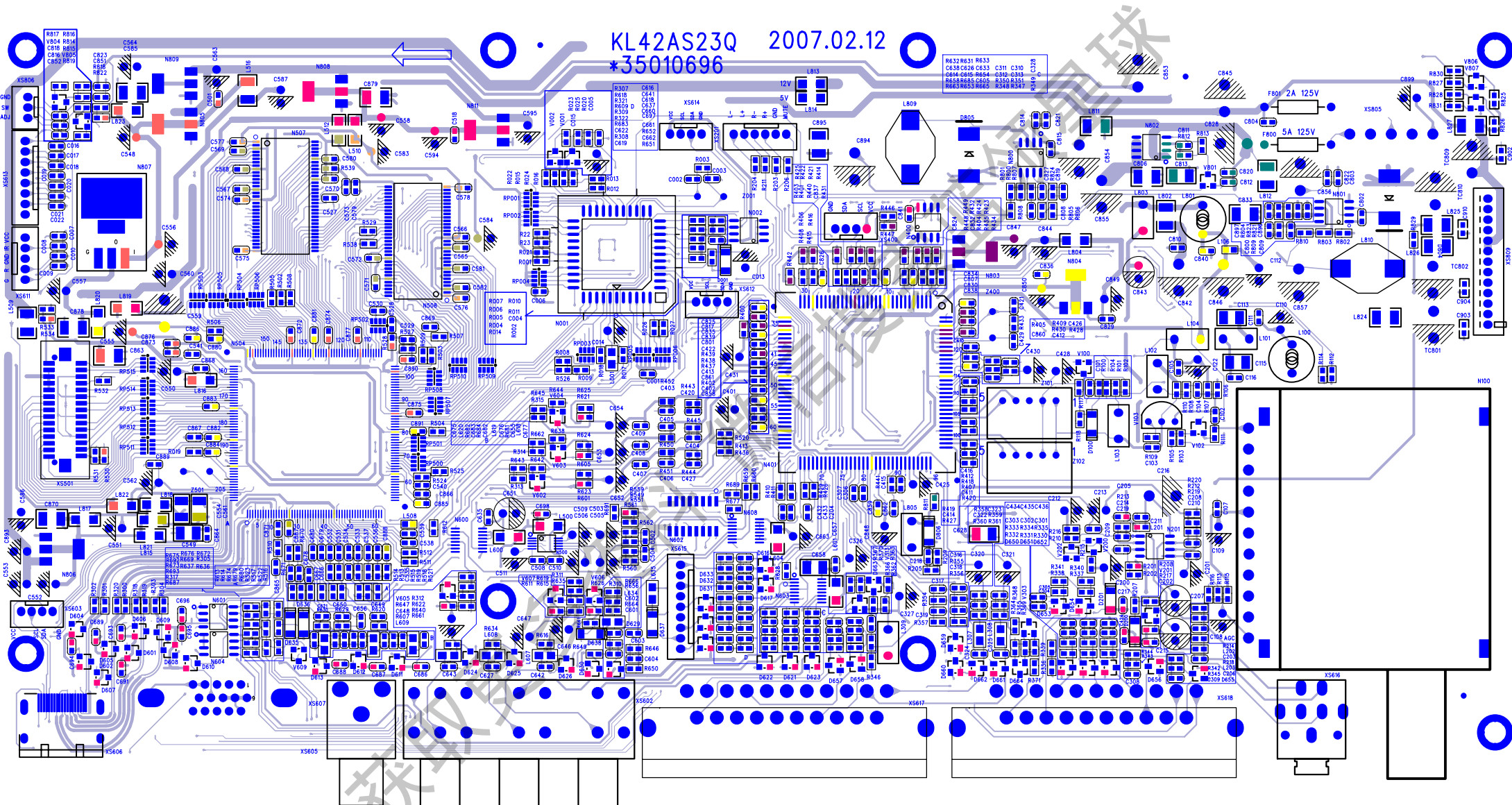




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R632 R631 R633
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C844 C816 C819
C846 C816 C844 C310 C311
R663 R663 R665 R348 R347
R419 C128

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