# Daewoo **DN-W552** Service manual

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# 1. General Section

## 1.1. Cautions/Warnings

### 1.1.1. Product Safety Notice

Parts marked with the symbol ⚠ in the schematic diagram have critical characteristics.

Use ONLY replacement pares recommended by the manufacturer. It is recommended that the unit be operated from a suitable DC supply or batteries during initial check out procedures.


### 1.1.2. Leakage Current Check/Resistance Check

Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to insulated resistance check.

If the leakage current exceeds 0.5 milliamps, or if the resistance from chassis to either side of the power cord is less than 240 K ohms, the unit is defective.

**WARNING: DO NOT return the unit to the customer until the problem or located and corrected.**

## 1.2. Safe Warnings

### 1.2.1. Protection of Eyes from Laser Beam

To protect eyes from invisible laser beam during servicing

**DO NOT LOOK AT THE LASER BEAM**

1.2.2. Laser Caution

**CAUTION**

Adjusting the knobs, switches, and controls, etc. or taking actions not specified herein may result in a harmful emission of laser beams. This CD Changer must be adjusted and repaired only by qualified service personnel.

**Laser symbol**:

CAUTION- INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED AVOID EXPOSURE TO BEAM.
VORSICHTI-UNSICHTBARE LASERSTRAHLUNG TRITT AUS.WENN DECKEL GEOFFNET UND WENN SICHERHEITSVERRIEGELUNG uBERBRuCKT IST. NICHT DEM STRAHL AUSSETZENI
VARNING- OSYNLIG LASERSTRALNING NAR DENNA DEL AR OPPNAD OCH SPARR AR URKOPPLAD STRALEN AR FARLIG.
ADVARSEL- USYNLIG LASERSTRALING VED ABNING NAR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION.UNDGA UDSAETTELSE FOR STRALING.


**THIS IS COMPACT DISC PLAYER IS CLASSIFIED AS A CLASS 1 LASER PRODUCT.**
**THE LASS 1 LASER PRODUCT LABEL IS LOCATED ON THE REAR EXTERIOR.**

## 1.3. Precautions

1.3.1. ESD Precautions in Repairing

1.3.1.1. Do not apply excessive pressure on the mechanical parts (moving pares), including the Pickup Block, as extremely high mechanical precision or required in these parts.

1.3.1.2. When soldering the microprocessor and signal processing IC's, use a ceramic soldering iron or a soldering iron whose metal part is grounded since they are not resistant to static electricity.

1.3.1.3. When removing the solder or soldering the laser shorting lands for the Pickup Block, use a ceramic soldering iron or a soldering iron whose metal part is grounded since the laser diode or not resistant to static electricity.

1.3.2. DVD Loading Unit Precautions when handling the Mechanism Block

1.3.2.1. Do not loosen any screws in the Pickup Block.

1.3.2.2. Do not adjust any screws in the Mechanism Block except for "Tilt

Adjust Screws", as they are adjusted precisely at the factory.

1.3.2.3. Replacement of the Pickup Block is impossible. Always replace the Traverse Ass'y when the Pickup Block needed to be replaced. Do not touch the lens or lens holder of the Pickup Block.

1.3.2.4. The Guide Rails of the Pickup Block are greased. Take care when handing.

1.3.2.5. When you try to slide the Pickup Block, do not press or pull it directly. Always turn the dive gears with your fingers.

1.3.2.6. Be sure that the anti-slipping rubber on the turntable or clean. If there is dust or it is greasy, clean the part with the liquid that contains 50% each of alcohol and water.

1.3.2.7. When removing the Mechanism P.C.B. Ass'y, you need to short-circuit the laser diode shorting lands beforehand.

## 1.4. Software Upgrade

You can upgrade DVD Player using the software we provide as following step:

— Creating a software upgrade CD
— Use only a new CD-R/CD-RW(not an erased one).
— Give the CD a name of your choice(e.g. version and unit name).
— Burn the unpacked documents on the CD-R/CD-RW.
— The root directory(uppermost level) of the software upgrade CD

Attention: If a failure should occur during the software upgrade (e.g. a mains failure), it may happen that the units function and a restart of the upgrade function are no longer possible. If this should be the case, you must replace the intergraded FLASH ICs with preprogrammed ICs (see corresponding spare parts list).

– Insert the upgrade CD (see corresponding spare parts list) and observe the hints on the display and on the screen of the TV set.
– Carry out an initialization of the set.

**Displaying the Software Version Number**

— Press one after the other the "STOP" and "EJECT" buttons on the unit.
— Press the"OSD" with the remote control.
— Using the cursor buttons on the remote control, select the software version "MICRO Version" or "CUSTOMER VERSION" .The respective software version number then is displayed

# 2. Circuit Diagram and Component Layout

## 2.1. MPEG IC Block Diagrams

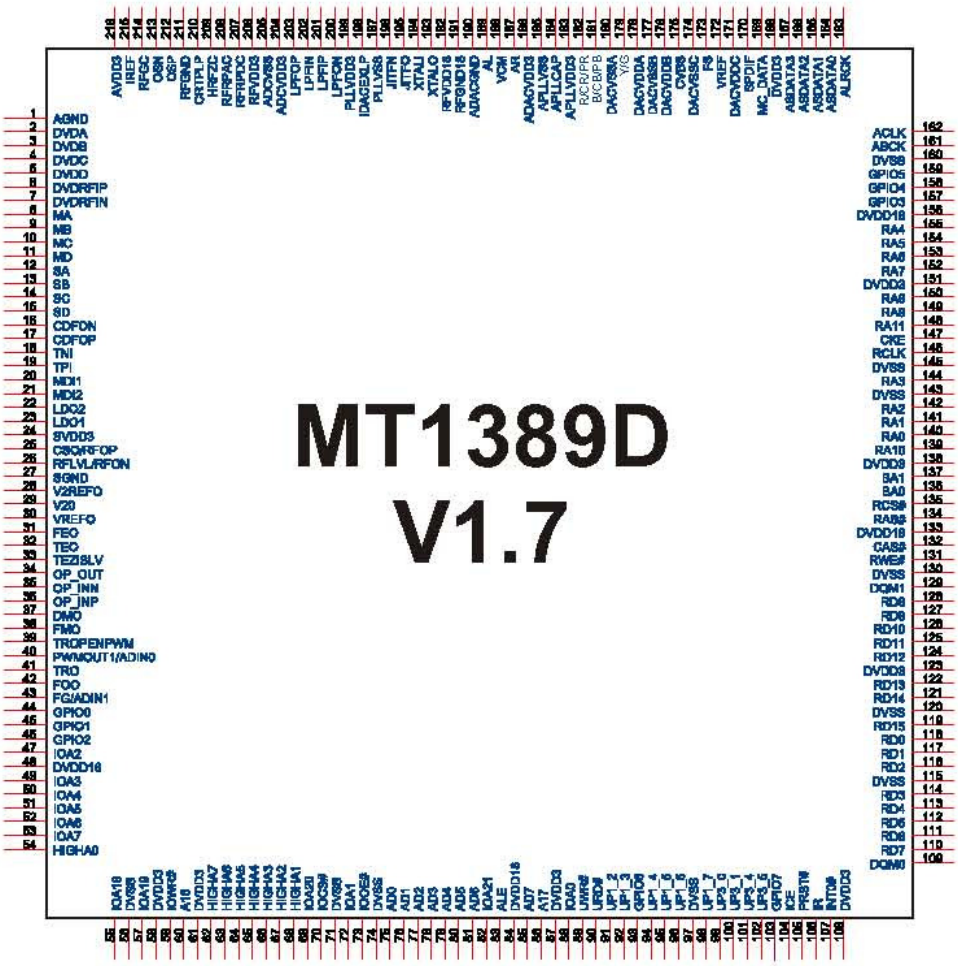



**Fig.2-1 Vaddis MTK1389QE/D**

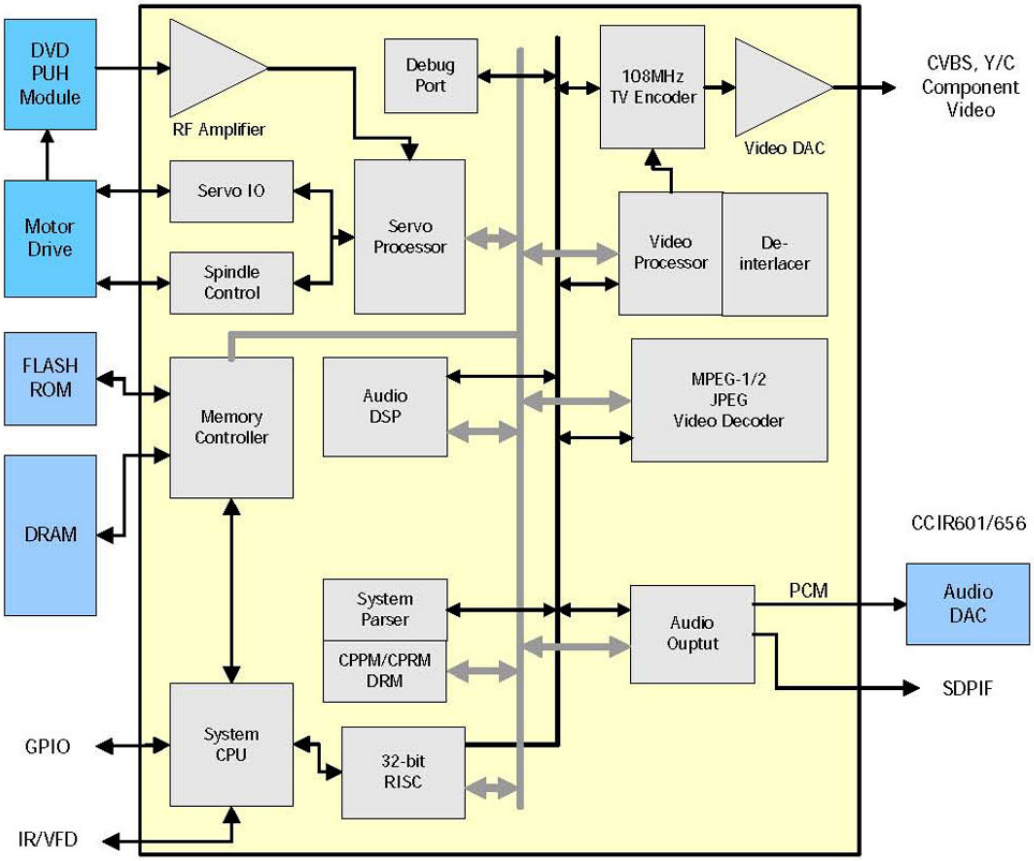



**Fig.2-2 Vaddis MTK1389QE/D block diagram**

## Table1. Vaddis MTK1389QE/D Pin`s operational function description

| Pin | Main | Alt. | Type | Description |
|---|---|---|---|---|
| **RF Interface ( 26 )** | | | | |
| 191 | RFGND18 | | Ground | Analog ground |
| 192 | RFVDD18 | | Power | Analog power 1.8V |
| 212 | OSP | | Analog output | RF Offset cancellation capacitor connecting |
| 213 | OSN | | Analog output | RF Offset cancellation capacitor connecting |
| 214 | RFGC | | Analog output | RF AGC loop capacitor connecting for DVD-ROM |
| 215 | IREF | | Analog Input | Current reference input. It generates reference current for RF path. Connect an external 15K resistor to this pin and AVSS. |
| 216 | AVDD3 | | Power | Analog power 3.3V |
| 1 | AGND | | Ground | Analog ground |
| 2 | DVDA | | Analog Input | AC coupled input path A |
| 3 | DVDB | | Analog Input | AC coupled input path B |
| 4 | DVDC | | Analog Input | AC coupled input path C |
| 5 | DVDD | | Analog Input | AC coupled input path D |
| 6 | DVDRFIP | | Analog Input | AC coupled DVD RF signal input RFIP |
| 7 | DVDRFIN | | Analog Input | AC coupled DVD RF signal input RFIN |
| 8 | MA | | Analog Input | DC coupled main-beam RF signal input A |
| 9 | MB | | Analog Input | DC coupled main-beam RF signal input B |
| 10 | MC | | Analog Input | DC coupled main-beam RF signal input C |
| 11 | MD | | Analog Input | DC coupled main-beam RF signal input D |
| 12 | SA | | Analog Input | DC coupled sub-beam RF signal input A |
| 13 | SB | | Analog Input | DC coupled sub-beam RF signal input B |
| 14 | SC | | Analog Input | DC coupled sub-beam RF signal input C |
| 15 | SD | | Analog Input | DC coupled sub-beam RF signal input D |
| 16 | CDFON | | Analog Input | CD focusing error negative input |
| 17 | CDFOP | | Analog Input | CD focusing error positive input |
| 18 | TNI | | Analog Input | 3 beam satellite PD signal negative input |
| 19 | TPI | | Analog Input | 3 beam satellite PD signal positive input |
| **ALPC ( 4 )** | | | | |

| Pin | Main | Alt. | Type | Description |
|---|---|---|---|---|
| 20 | MDI1 | | Analog Input | Laser power monitor input |
| 21 | MDI2 | | Analog Input | Laser power monitor input |
| 22 | LDO2 | | Analog Output | Laser driver output |
| 23 | LDO1 | | Analog Output | Laser driver output |
| **Reference Voltage ( 3 )** | | | | |
| 28 | V2REFO | | Analog output | Reference voltage 2.8V |
| 29 | V20 | | Analog output | Reference voltage 2.0V |
| 30 | VREFO | | Analog output | Reference voltage 1.4V |
| **Analog Monitor Output ( 7 )** | | | | |
| 24 | SVDD3 | | Power | Analog power 3.3V |
| 25 | CSO | RFOP | Analog output | 1) Central servo<br>2) Positive main beam summing output |
| 26 | RFLVL | RFON | Analog output | 1) RFRP low pass, or<br>2) Negative main beam summing output |
| 27 | SGND | | Ground | Analog ground |
| 31 | FEO | | Analog output | Focus error monitor output |
| 32 | TEO | | Analog output | Tracking error monitor output |
| 33 | TEZISLV | | Analog output | TE Slicing Level |
| **Analog Servo Interface ( 8 )** | | | | |
| 204 | ADCVDD3 | | Power | Analog 3.3V Power for ADC |
| 205 | ADCVSS | | Ground | Analog ground for ADC |
| 206 | RFVDD3 | | Power | Analog Power |
| 207 | RFRPDC | | Analog output | RF ripple detect output |
| 208 | RFRPAC | | Analog Input | RF ripple detect input(through AC-coupling) |
| 209 | HRFZC | | Analog Input | High frequency RF ripple zero crossing |
| 210 | CRTPLP | | Analog output | Defect level filter capacitor connecting |
| 211 | RFGND | | Ground | Analog Power |
| **RF Data PLL Interface ( 9 )** | | | | |
| 195 | JITFO | | Analog output | The output terminal of RF jitter meter. |
| 196 | JITFN | | Analog Input | The input terminal of RF jitter meter. |
| 197 | PLLVSS | | Ground | Ground pin for data PLL and related analog circuitry. |
| 198 | IDACEXLP | | Analog output | Data PLL DAC Low-pass filter |
| 199 | PLLVDD3 | | Power | Power pin for data PLL and related analog circuitry. |
| 200 | LPFON | | Analog Output | The negative output of loop filter amplifier |
| 201 | LPFIP | | Analog Input | The positive input terminal of loop filter amplifier. |
| 202 | LPFIN | | Analog Input | The negative input terminal of loop filter amplifier. |
| 203 | LPFOP | | Analog Output | The positive output of loop filter amplifier |

| Pin | Main | Alt. | Type | Description |
|---|---|---|---|---|
| **Motor and Actuator Driver Interface ( 10 )** | | | | |
| 34 | OP_OUT | | Analog output | Op amp output. |
| 35 | OP_INN | | Analog input | Op amp negative input |
| 36 | OP_INP | | Analog input | Op amp positive input |
| 37 | DMO | | Analog Output | Disk motor control output. PWM output. |
| 38 | FMO | | Analog Output | Feed motor control. PWM output. |
| 39 | TROPENPWM | | Analog Output | Tray PWM output / Tray open output. |
| 40 | PWMOUT1 | ADIN0 | Analog Output | 1) 1st General PWM output, or<br>2) AD input 0 |
| 41 | TRO | | Analog Output | Tracking servo output. PDM output of tracking servo compensator. |
| 42 | FOO | | Analog Output | Focus servo output. PDM output of focus servo compensator |
| 43 | FG (Diogital pin) | ADIN1 GPIO | LVTTL 3.3V Input, Schmitt Input, pull up , with analog input path for ADIN1 | 1) Motor Hall sensor input, or<br>2) AD input 1, or<br>3) GPIO |
| **General Power/Ground ( 27 )** | | | | |
| 48,84, 103,133,156 | DVDD18 | | Power | 1.8V power pin for internal digital circuitry |
| 71,93,120, 143 | DVSS | | Ground | 1.8V Ground pin for internal digital circuitry |
| 58,61,87, 108,123,138, 151,168 | DVDD3 | | Power | 3.3V power pin for internal digital circuitry |
| 56,74,97, 115,130,145, 160 | DVSS | | Ground | 3.3V Ground pin for internal digital circuitry |
| 184 | APLLCAP | | Analog Inout | APLL External Capacitance connection |
| 185 | APLLVSS | | Ground | Ground pin for audio clock circuitry |
| 183 | APLLVDD3 | | Power | 3.3V Power pin for audio clock circuitry |
| **Micro Controller and Flash Interface ( 48 )** | | | | |
| 54 | HIGHA0 | | Inout 4~16MA, SR PU | Microcontroller address 8 |
| 68 | HIGHA1 | | Inout 4~16MA, SR PU | Microcontroller address 9 |
| 67 | HIGHA2 | | Inout 4~16MA, SR PU | Microcontroller address 10 |

| Pin | Main | Alt. | Type | Description |
|---|---|---|---|---|
| 66 | HIGHA3 | | Inout 4~16MA, SR PU | Microcontroller address 11 |
| 65 | HIGHA4 | | Inout 4~16MA, SR PU | Microcontroller address 12 |
| 64 | HIGHA5 | | Inout 4~16MA, SR PU | Microcontroller address 13 |
| 63 | HIGHA6 | | Inout 4~16MA, SR PU | Microcontroller address 14 |
| 62 | HIGHA7 | | Inout 4~16MA, SR PU | Microcontroller address 15 |
| 85 | AD7 | | Inout 4~16MA, SR | Microcontroller address/data 7 |
| 81 | AD6 | | Inout 4~16MA, SR | Microcontroller address/data 6 |
| 80 | AD5 | | Inout 4~16MA, SR | Microcontroller address/data 5 |
| 79 | AD4 | | Inout 4~16MA, SR | Microcontroller address/data 4 |
| 78 | AD3 | | Inout 4~16MA, SR | Microcontroller address/data 3 |
| 77 | AD2 | | Inout 4~16MA, SR | Microcontroller address/data 2 |
| 76 | AD1 | | Inout 4~16MA, SR | Microcontroller address/data 1 |
| 75 | AD0 | | Inout 4~16MA, SR | Microcontroller address/data 0 |
| 88 | IOA0 | | Inout 4~16MA, SR PU | Microcontroller address 0 / IO |
| 72 | IOA1 | | Inout 4~16MA, SR PU | Microcontroller address 1 / IO |
| 47 | IOA2 | | Inout 4~16MA, SR PU | Microcontroller address 2 / IO |
| 49 | IOA3 | | Inout 4~16MA, SR PU | Microcontroller address 3 / IO |
| 50 | IOA4 | | Inout 4~16MA, SR PU | Microcontroller address 4 / IO |

| Pin | Main | Alt. | Type | Description |
|---|---|---|---|---|
| 51 | IOA5 | | Inout<br>4~16MA, SR<br>PU | Microcontroller address 5 / IO |
| 52 | IOA6 | | Inout<br>4~16MA, SR<br>PU | Microcontroller address 6 / IO |
| 53 | IOA7 | | Inout<br>4~16MA, SR<br>PU | Microcontroller address 7 / IO |
| 60 | A16 | | Output<br>4~16MA, SR<br>PU | Flash address 16 |
| 86 | A17 | | Output<br>4~16MA, SR<br>PU | Flash address 17 |
| 55 | IOA18 | | Inout<br>4~16MA, SR<br>PD, SMT | Flash address 18 / IO |
| 57 | IOA19 | | Inout<br>4~16MA, SR<br>PD, SMT | Flash address 19 / IO |
| 69 | IOA20 | | Inout<br>4~16MA, SR<br>PD, SMT | Flash address 20 / IO |
| 82 | IOA21 | GPIO | Inout<br>4~16MA, SR<br>PD, SMT | 1) Flash address 21 / IO<br>2) While External FLASH size <= 2MB: GPIO |
| 83 | ALE | | Inout<br>4~16MA, SR<br>PU, SMT | Microcontroller address latch enable |
| 73 | IOOE# | | Inout<br>4~16MA, SR<br>SMT | Flash output enable, active low / IO |
| 59 | IOWR# | | Inout<br>4~16MA, SR<br>PU, SMT | Flash write enable, active low / IO |
| 70 | IOCS# | | Inout<br>4~16MA, SR<br>SMT | Flash chip select, active low / IO |
| 89 | UWR# | | Inout<br>4~16MA, SR<br>PU, SMT | Microcontroller write strobe, active low |
| 90 | URD# | | Inout<br>4~16MA, SR<br>PU, SMT | Microcontroller read strobe, active low |

| Pin | Main | Alt. | Type | Description |
|---|---|---|---|---|
| 91 | UP1_2 | | Inout<br>4MA, SR<br>PU, SMT | Microcontroller port 1-2 |
| 92 | UP1_3 | | Inout<br>4MA, SR<br>PU, SMT | Microcontroller port 1-3 |
| 94 | UP1_4 | | Inout<br>4MA, SR<br>PU, SMT | Microcontroller port 1-4 |
| 95 | UP1_5 | | Inout<br>4MA, SR<br>PU, SMT | Microcontroller port 1-5 |
| 96 | UP1_6 | SCL | Inout<br>4MA, SR<br>PU, SMT | 1) Microcontroller port 1-6<br>2) $I^2C$ clock pin |
| 98 | UP1_7 | SDA | Inout<br>4MA, SR<br>PU, SMT | 1) Microcontroller port 1-7<br>2) $I^2C$ data pin |
| 99 | UP3_0 | RXD | Inout<br>4MA, SR<br>PU, SMT | 1) Microcontroller port 3-0<br>2) 8032 RS232 RXD |
| 100 | UP3_1 | TXD | Inout<br>4MA, SR<br>PU, SMT | 1) Microcontroller port 3-1<br>2) 8032 RS232 TXD |
| 101 | UP3_4 | RXD<br>SCL | Inout<br>4MA, SR<br>PU, SMT | 1) Microcontroller port 3-4<br>2) Hardwired RD232 RXD<br>3) $I^2C$ clock pin |
| 102 | UP3_5 | TXD<br>SDA | Inout<br>4MA, SR<br>PU, SMT | 1) Microcontroller port 3-5<br>2) Hardwired RD232 TXD<br>3) $I^2C$ data pin |
| 106 | IR | | Input<br>SMT | IR control signal input |
| 107 | INT0# | | Inout<br>4~16MA, SR<br>PU, SMT | Microcontroller external interrupt 0, active low |
| **Audio interface ( 14 )** | | | | |
| 163 | ALRCK | GPO | Inout<br>4MA,<br>PD, SMT | 1) Audio left/right channel clock<br>2) Trap value in power-on reset:<br>I) 1 : use external 373<br>II) 0: use internal 373<br>3) While internal AUDIO DAC used: GPO |
| 161 | ABCK | GPIO | Inout<br>4MA | 1) Audio bit clock<br>2) While internal AUDIO DAC used: GPIO |

| Pin | Main | Alt. | Type | Description |
|---|---|---|---|---|
| 162 | ACLK | GPIO | Inout<br>4MA<br>SMT | 1) Audio DAC master clock<br>2) While internal AUDIO DAC used: GPIO |
| 164 | ASDATA0 | GPO | Inout<br>4MA<br>PD SMT | 1) Audio serial data 0 (Front-Left/Front-Right)<br>2) Trap value in power-on reset :<br>I) 1 : manufactory test mode<br>II) 0 : normal operation<br>3) While internal AUDIO DAC used: GPO |
| 165 | ASDATA1 | GPO | Inout<br>4MA<br>PD SMT | 1) Audio serial data 1 (Left-Surround/Right-Surround)<br>2) Trap value in power-on reset :<br>I) 1 : manufactory test mode<br>II) 0 : normal operation<br>3) While only 2 channels output: GPO |
| 166 | ASDATA2 | GPO | Inout<br>4MA<br>PD SMT | 1) Audio serial data 2 (Center/LFE)<br>2) Trap value in power-on reset :<br>I) 1 : manufactory test mode<br>II) 0 : normal operation<br>3) While only 2 channels output: GPO |
| 167 | ASDATA3 | GPIO | Inout<br>4MA<br>PD SMT | 1) Audio serial data 3 (Center-back/ Center-left-back/Center-right-back, in 6.1 or 7.1 mode)<br>2) While only 2 channels output: GPIO |
| 169 | MC_DATA | INT2#<br>GPIO | Inout<br>2MA | 1) Microphone serial input<br>2) While not support Microphone:<br>I) Microcontroller external interrupt 2<br>II) GPIO |
| 170 | SPDIF | | Output<br>4~16MA,<br>SR : ON/OFF | SPDIF output |
| 186 | ADACVDD3 | | Power | 3.3V power pin for AUDIO DAC circuitry |
| 187 | AR | GPO | Output | 1) AUDIO DAC right channel output<br>2) While internal AUDIO DAC not used: GPO |
| 188 | VCM | | Analog | AUDIO DAC reference voltage |
| 189 | AL | GPO | Output | 1) AUDIO DAC left channel output<br>2) While internal AUDIO DAC not used: GPO |
| 190 | ADACGND | | Ground | Ground pin for AUDIO DAC circuitry |
| **Video Interface ( 12 )** | | | | |
| 171 | DACVDDC | | Power | 3.3V power pin for VIDEO DAC circuitry |
| 172 | VREF | | Analog | Bandgap reference voltage |
| 173 | FS | | Analog | Full scale adjustment |
| 174 | DACVSSC | | Ground | Ground pin for VIDEO DAC circuitry |
| 175 | CVBS | | Output<br>4MA, SR | Analog composite output |
| 176 | DACVDDB | | Power | 3.3V power pin for VIDEO DAC circuitry |
| 177 | DACVSSB | | Ground | Ground pin for VIDEO DAC circuitry |
| 178 | DACVDDA | | Power | 3.3V power pin for VIDEO DAC circuitry |

| Pin | Main | Alt. | Type | Description |
|---|---|---|---|---|
| 179 | Y/G | | Output<br>4MA, SR | Green or Y or SY or CVBS |
| 180 | DACVSSA | | Ground | Ground pin for VIDEO DAC circuitry |
| 181 | B/CB/PB | | Output<br>4MA, SR | Blue or CB/PB or SC |
| 182 | R/CR/PR | | Output<br>4MA, SR | Red or CR/PR or CVBS or SY |
| **MISC ( 10 )** | | | | |
| 105 | PRST# | | Input<br>PU, SMT | Power on reset input, active low |
| 104 | ICE | | Input<br>PD, SMT | Microcontroller ICE mode enable |
| 193 | XTALO | | Output | 27M crystal out |
| 194 | XTALI | | Input | 27M crystal in |
| 44 | GPIO0 | | Inout<br>4MA, SR<br>SMT | General purpose IO 0 |
| 45 | GPIO1 | INT4# | Inout<br>4MA, SR<br>SMT | 1) General purpose IO 1<br>2) Microcontroller external interrupt 4 |
| 46 | GPIO2 | | Inout<br>2MA | General purpose IO 2 |
| 157 | GPIO3 | INT1# | Inout<br>2MA | 1) General purpose IO 3<br>2) Microcontroller external interrupt 1 |
| 158 | GPIO4 | | Inout<br>2MA | General purpose IO 4 |
| 159 | GPIO5 | INT3# | Inout<br>2MA | 1) General purpose IO 5<br>2) Microcontroller external interrupt 3 |
| **Dram Interface ( 38 ) ( Sorted by position )** | | | | |
| 155 | RA4 | | Inout | DRAM address 4 |
| 154 | RA5 | | Inout | DRAM address 5 |
| 153 | RA6 | | Inout | DRAM address 6 |
| 152 | RA7 | | Inout | DRAM address 7 |
| 150 | RA8 | | Inout | DRAM address 8 |
| 149 | RA9 | | Inout | DRAM address 9 |
| 148 | RA11 | | Inout<br>Pull-Down | DRAM address bit 11 |
| 147 | CKE | | output | DRAM clock enable |
| 146 | RCLK | | Inout | Dram clock |
| 144 | RA3 | | Inout | DRAM address 3 |
| 142 | RA2 | | Inout | DRAM address 2 |
| 141 | RA1 | | Inout | DRAM address 1 |

| Pin | Main | Alt. | Type | Description |
|---|---|---|---|---|
| 140 | RA0 | | Inout | DRAM address 0 |
| 139 | RA10 | | Inout | DRAM address 10 |
| 137 | BA1 | | Inout | DRAM bank address 1 |
| 136 | BA0 | | Inout | DRAM bank address 0 |
| 135 | RCS# | | output | DRAM chip select, active low |
| 134 | RAS# | | output | DRAM row address strobe, active low |
| 132 | CAS# | | output | DRAM column address strobe, active low |
| 131 | RWE# | | output | DRAM Write enable, active low |
| 129 | DQM1 | | Inout | Data mask 1 |
| 128 | RD8 | | Inout | DRAM data 8 |
| 127 | RD9 | | Inout | DRAM data 9 |
| 126 | RD10 | | Inout | DRAM data 10 |
| 125 | RD11 | | Inout | DRAM data 11 |
| 124 | RD12 | | Inout | DRAM data 12 |
| 122 | RD13 | | Inout | DRAM data 13 |
| 121 | RD14 | | Inout | DRAM data 14 |
| 119 | RD15 | | Inout | DRAM data 15 |
| 118 | RD0 | | Inout | DRAM data 0 |
| 117 | RD1 | | Inout | DRAM data 1 |
| 116 | RD2 | | Inout | DRAM data 2 |
| 114 | RD3 | | Inout | DRAM data 3 |
| 113 | RD4 | | Inout | DRAM data 4 |
| 112 | RD5 | | Inout | DRAM data 5 |
| 111 | RD6 | | Inout | DRAM data 6 |
| 110 | RD7 | | Inout | DRAM data 7 |
| 109 | DQM0 | | Inout | Data mask 0 |

## 2.2.1Power supply Circuit Diagram and Component Layout (Infinoen)

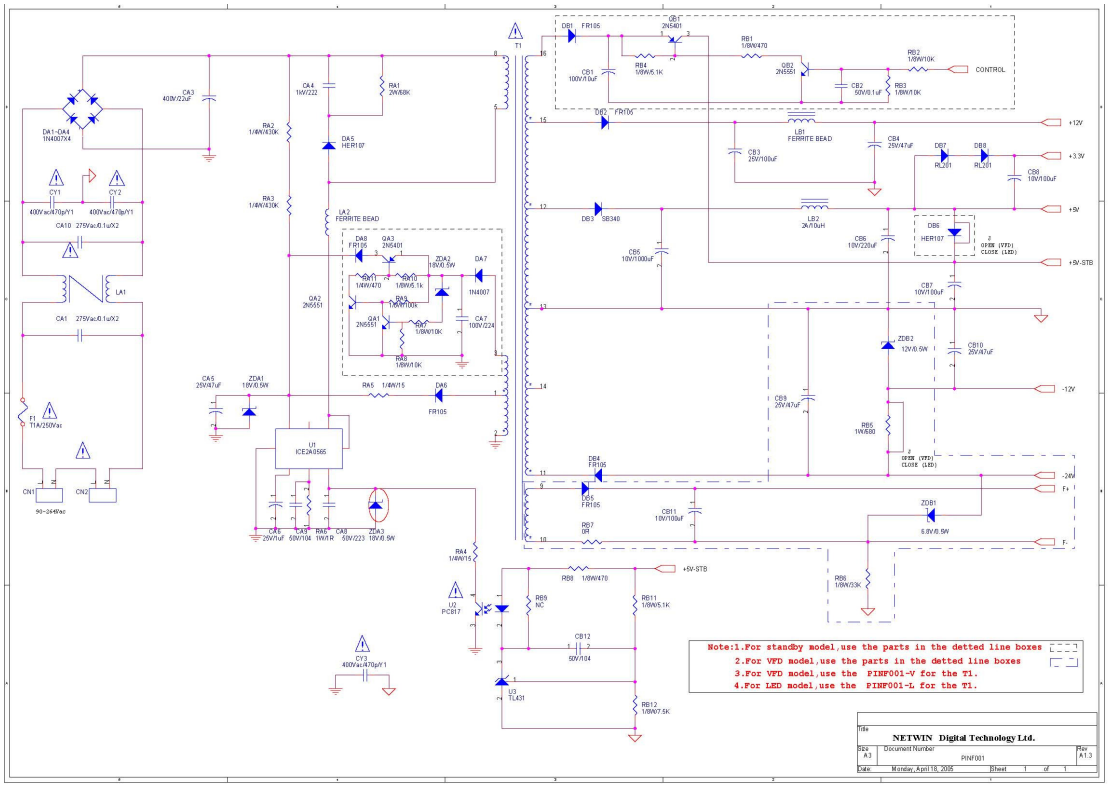



**Fig 2-1 Power Supply Circuit Diagram**

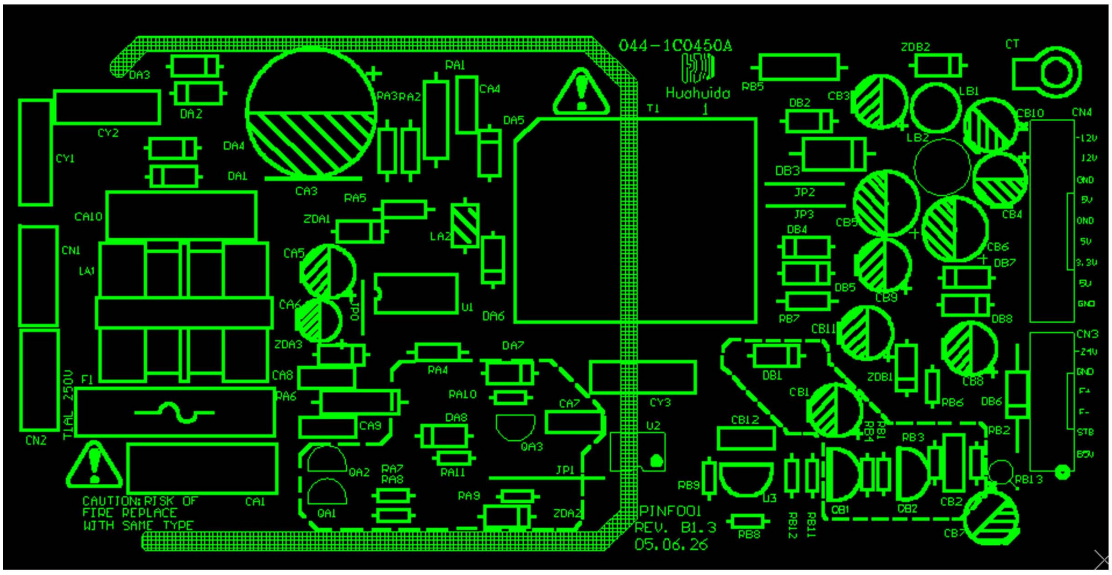



**Fig2-2 Power Supply Assembly Drawing**

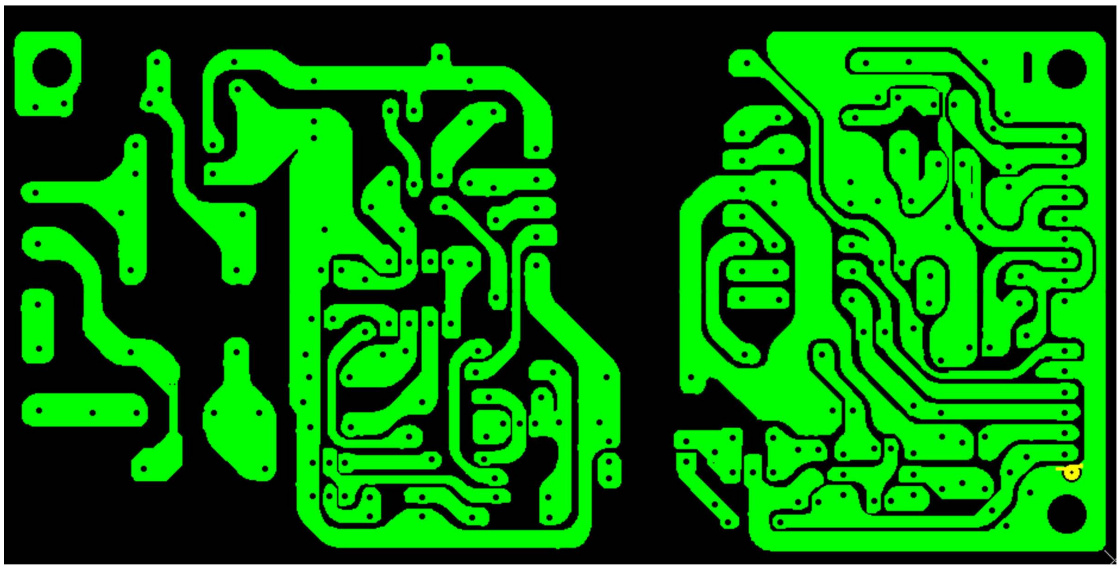


**Fig 2-3 Power Supply Composite**

## 2.3.MPEG Circuit Diagram and Component Layout

### 2.3.1MPEG Circuit Diagram

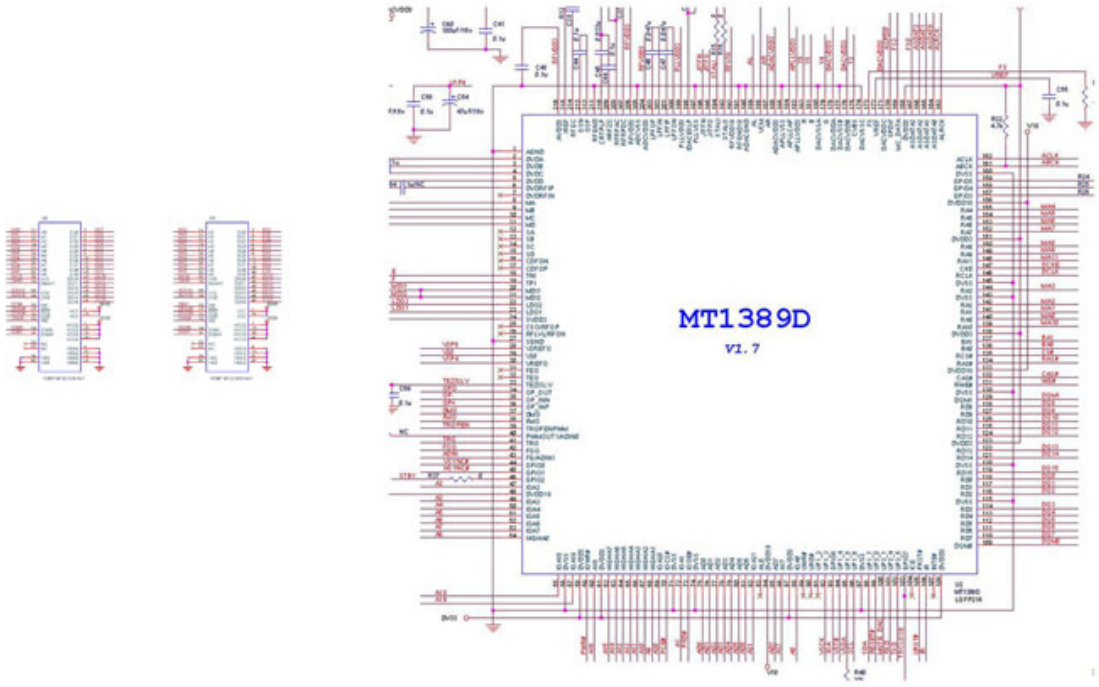



**Fig 2-4 MTK1389QE/D&SDRAM**

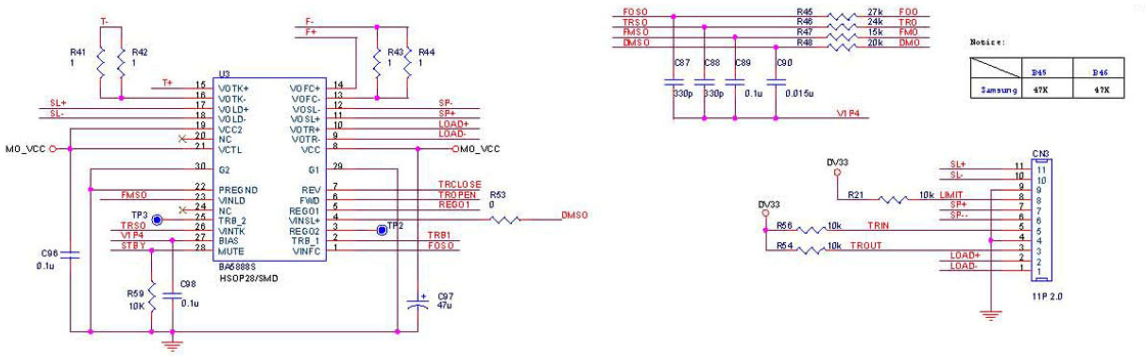



**Fig 2-5RF AMPLIFIER&DRIVER**

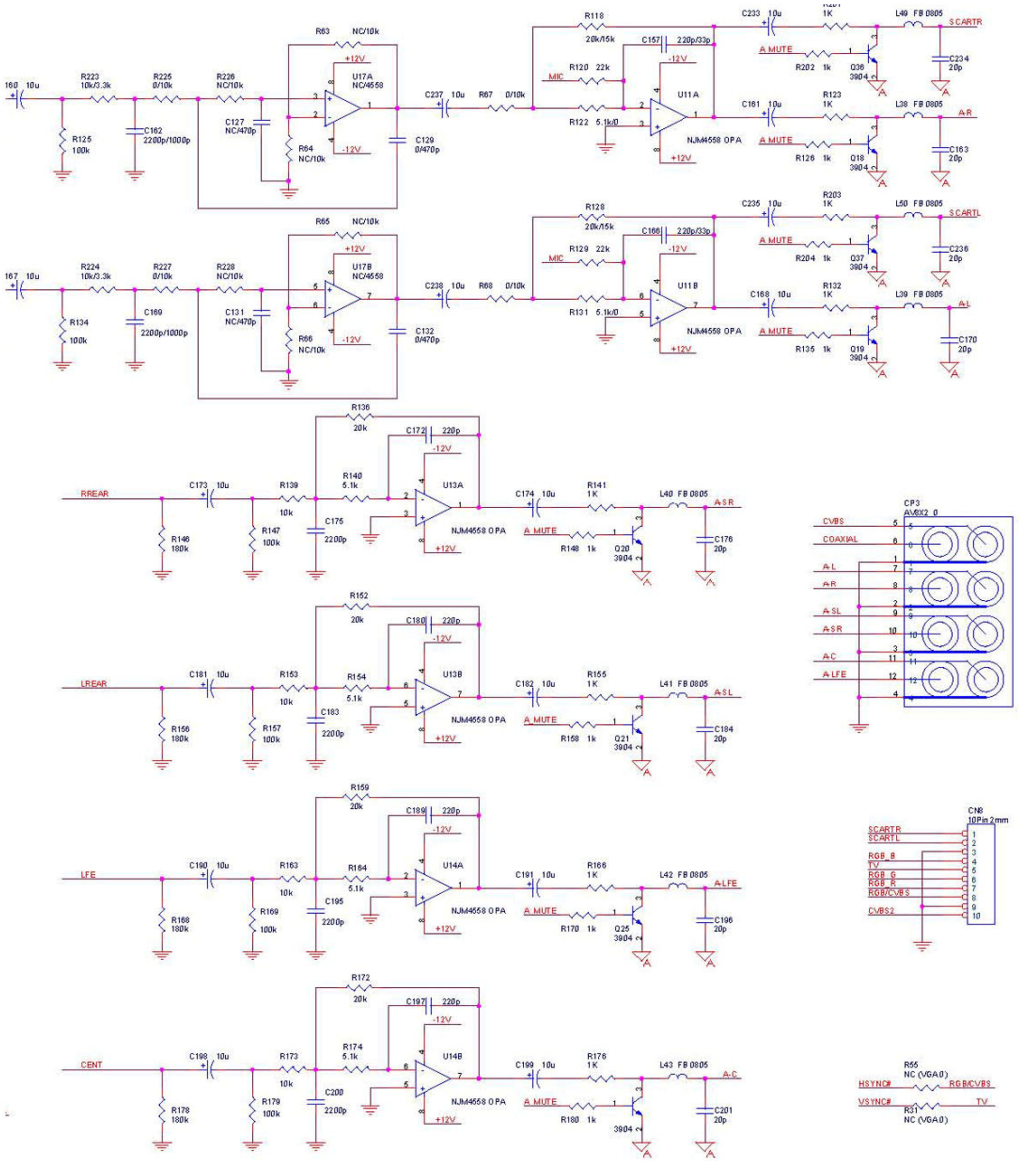



**Fig 2-6 AUDIO&VIDEO FILTER**

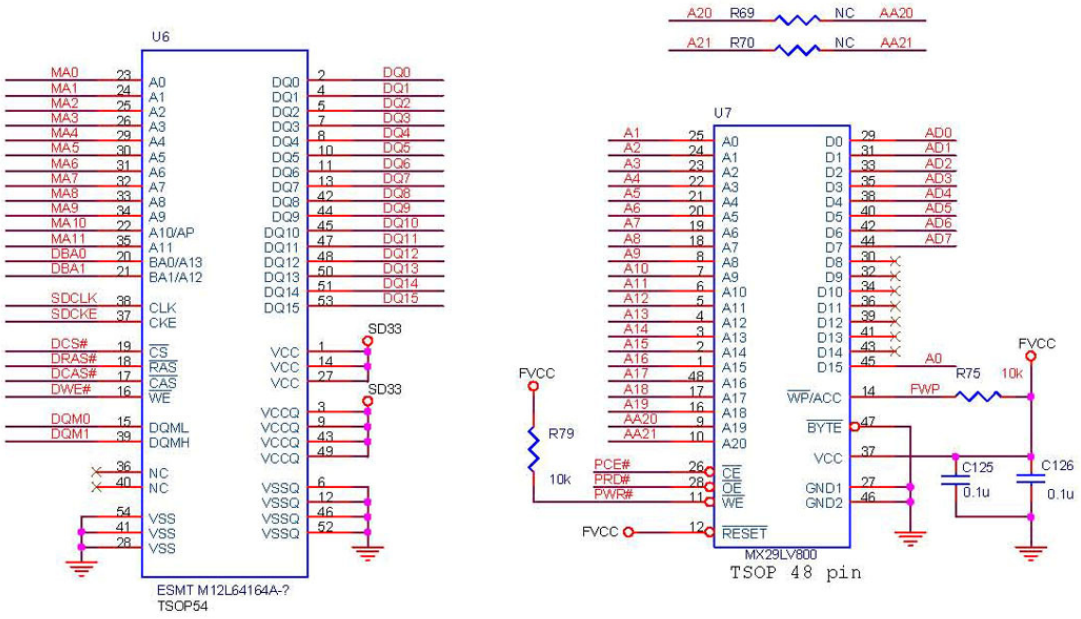



**Fig 2-7 MEMORY**

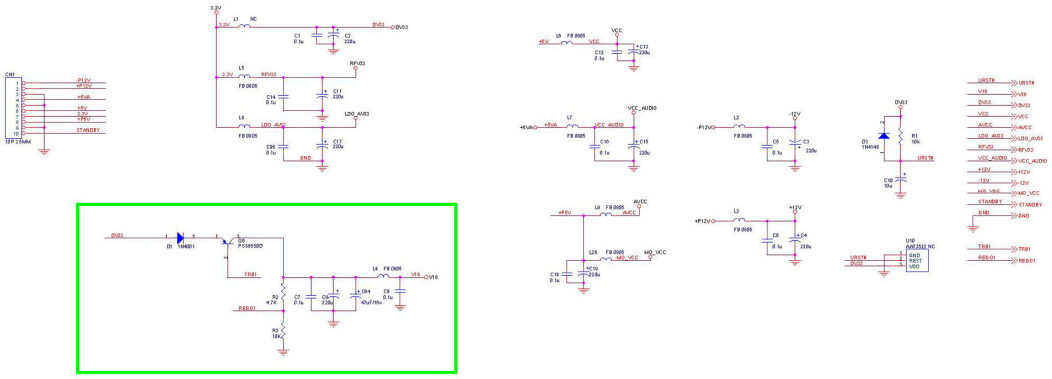
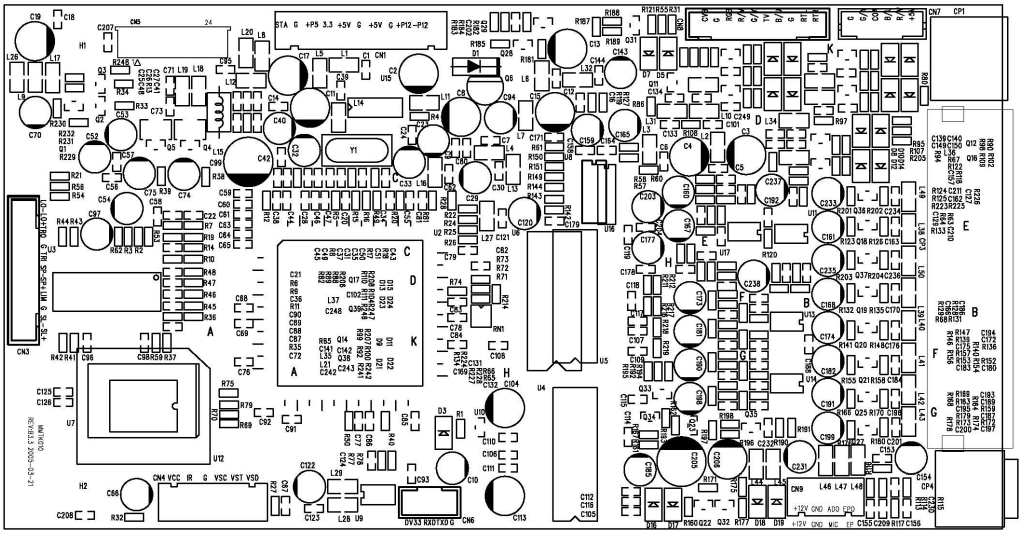


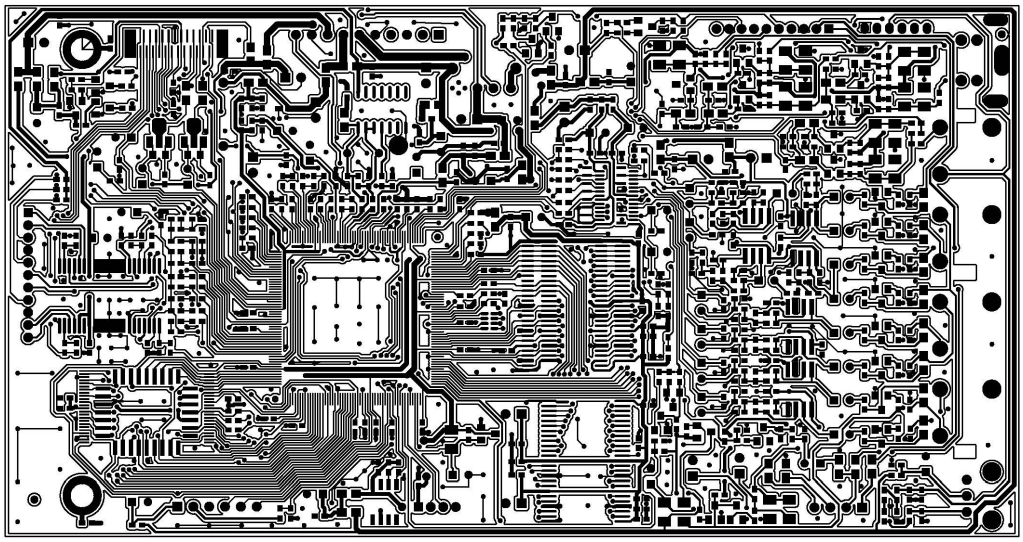
**Fig2-8 POWER PORT**

## 2.3.2.MPEG Assembly Drawing(Fig 2-99)



sst001026.pho – Fri Mar 10 09:22:50 2006

## 2.3.3.MPEG Composite (Fig 2-10)



art001.pho – Fri Mar 10 09:21:36 2006

## 2.4. Front panel Circuit Diagram and Component Layout

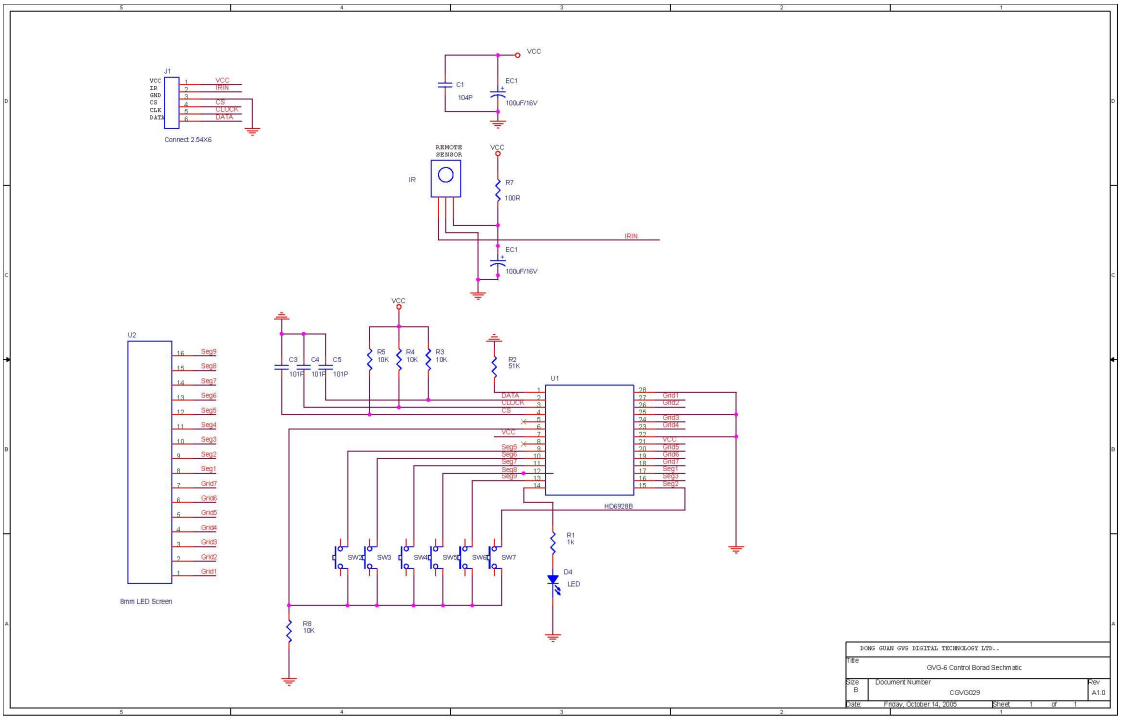



**Fig 2-11 Front Panel Circuit Diagram**

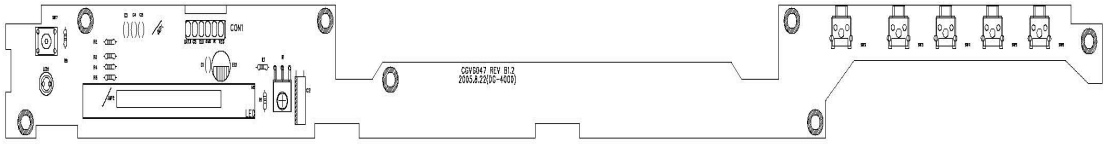
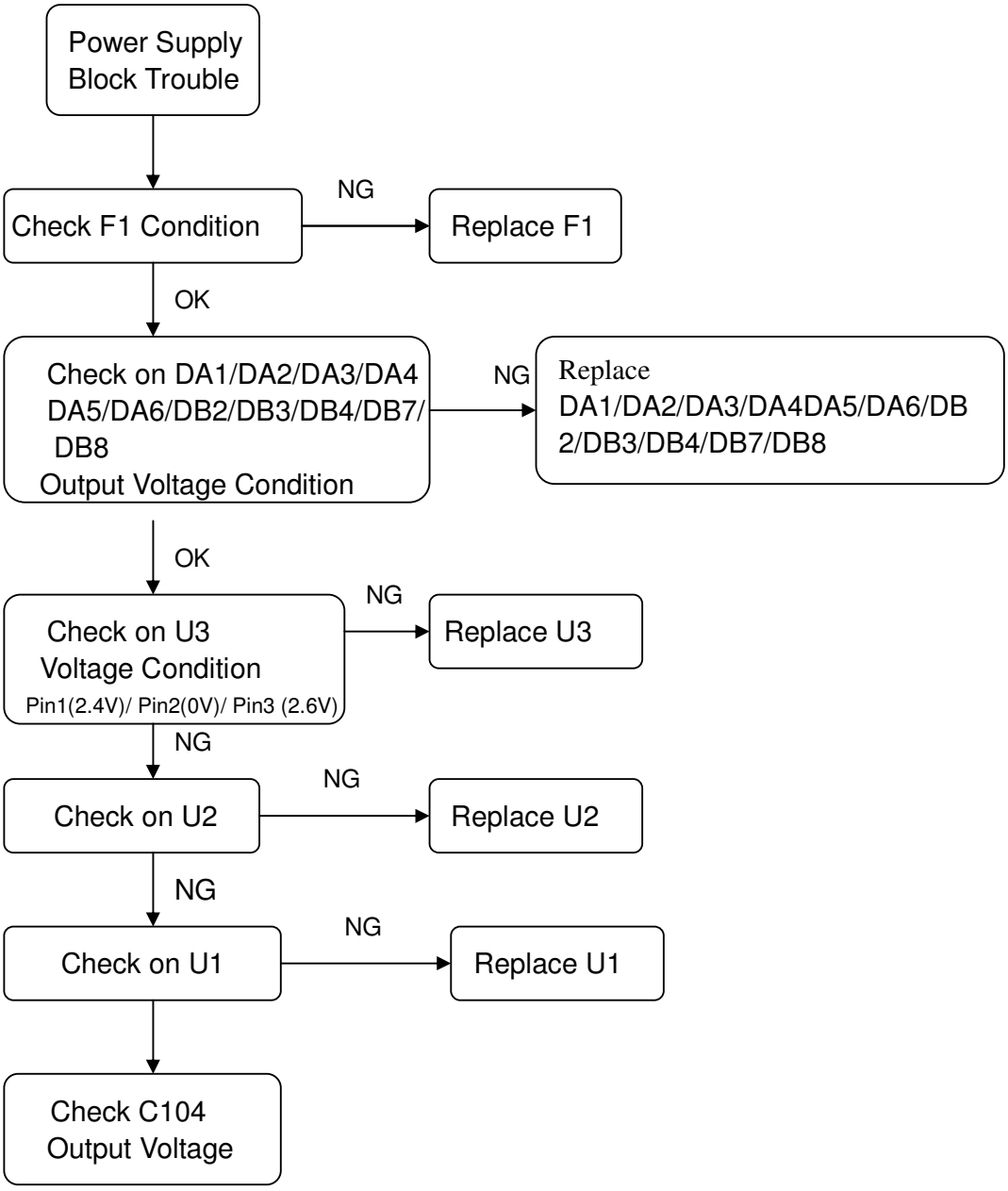


**Fig 2-12 Front Panel Assembly Drawing**

**Fig 2-13 Front Panel Composite**

# 3. Servicing Procedures

### 3.1.1 Power Supply Trouble Service Flow Chart（Infineon）



### 3.2. Read Disc Trouble Service Flow Chart

Read disc problem in a DVD player is a very complicated issue that may involve complex issues. This problem is not only relation to the electronic circuit, but also very much relation to the operation environment.

DVD loading unit is a very complicate part that contains big number of ESD components, which require specific equipment, tools and technique to repair; in general, service technician is not suggested to disassemble the DVD loading unit. It is suggest proving the trouble and replacing the complete DVD loading unit, instead of repairing the DVD loading unit in local workshop.

It is suggested to prove the faulty of a DVD loading unit by replacement by a good DVD loading unit.

Before checking the "NO Disc" Trouble, ensure excluding the following possibilities:

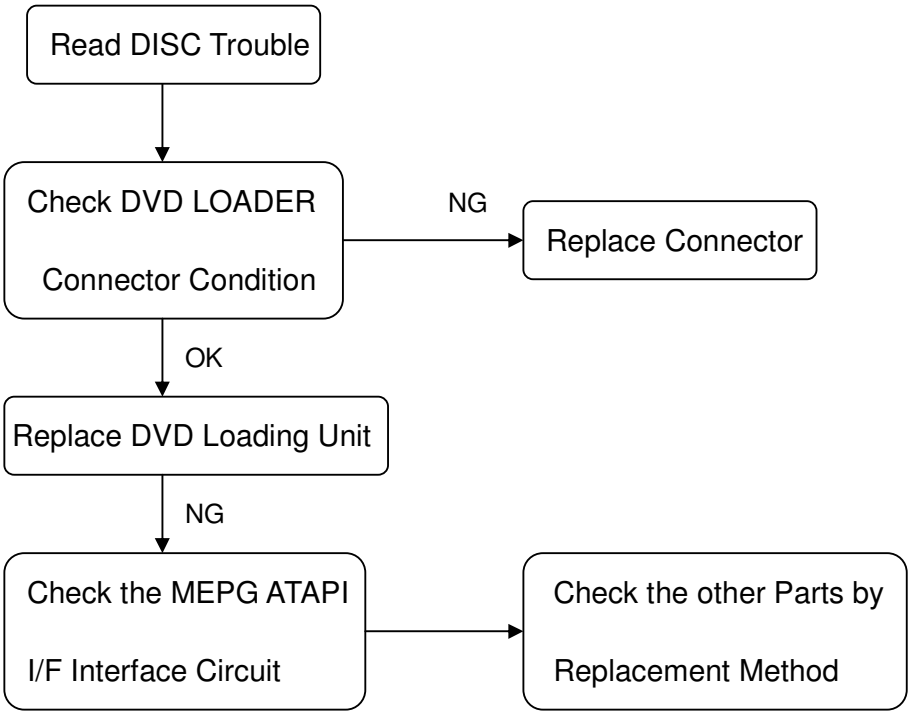
The test disc is damage.

AC power supply voltage dropped below the minimum required level.

DVD disc region code and color system is not matching to the DVD player or system setting.

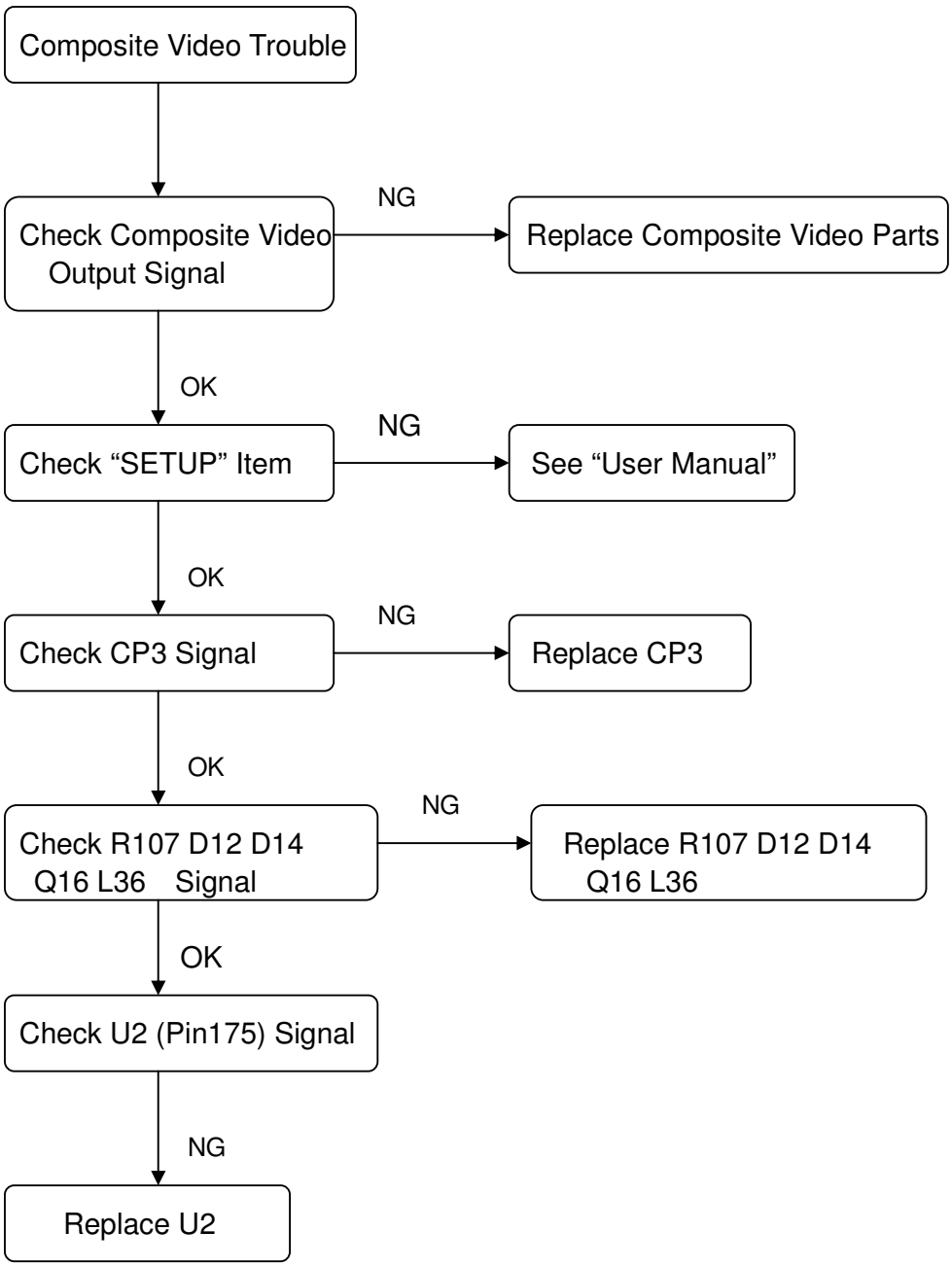
Moisture condensed inside the unit. (Power on the unit, without disc loaded, for 1/2 to 2 hours).

Service Flow Chart

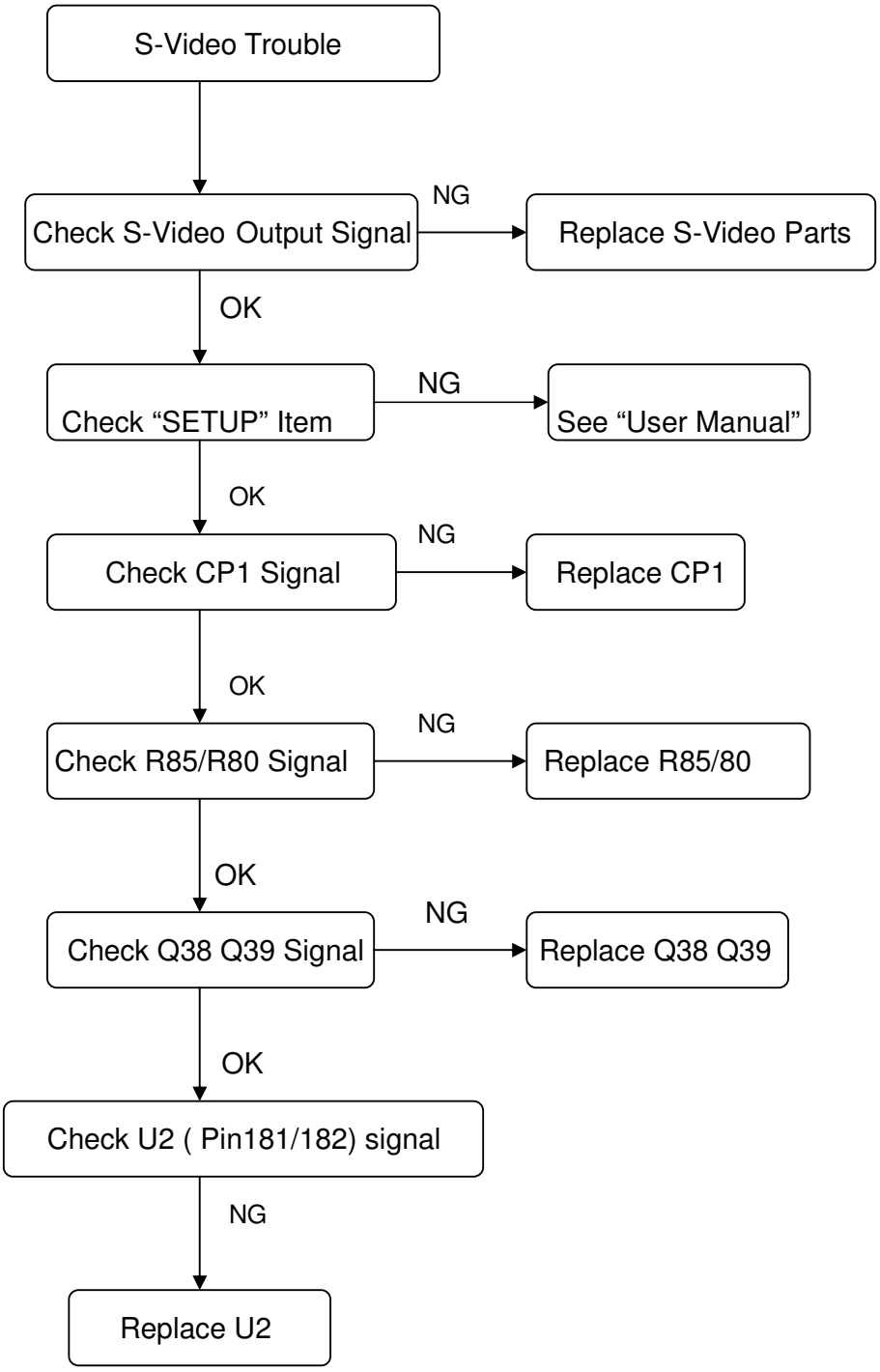


### 3.3. Video Trouble Service Flow Chart

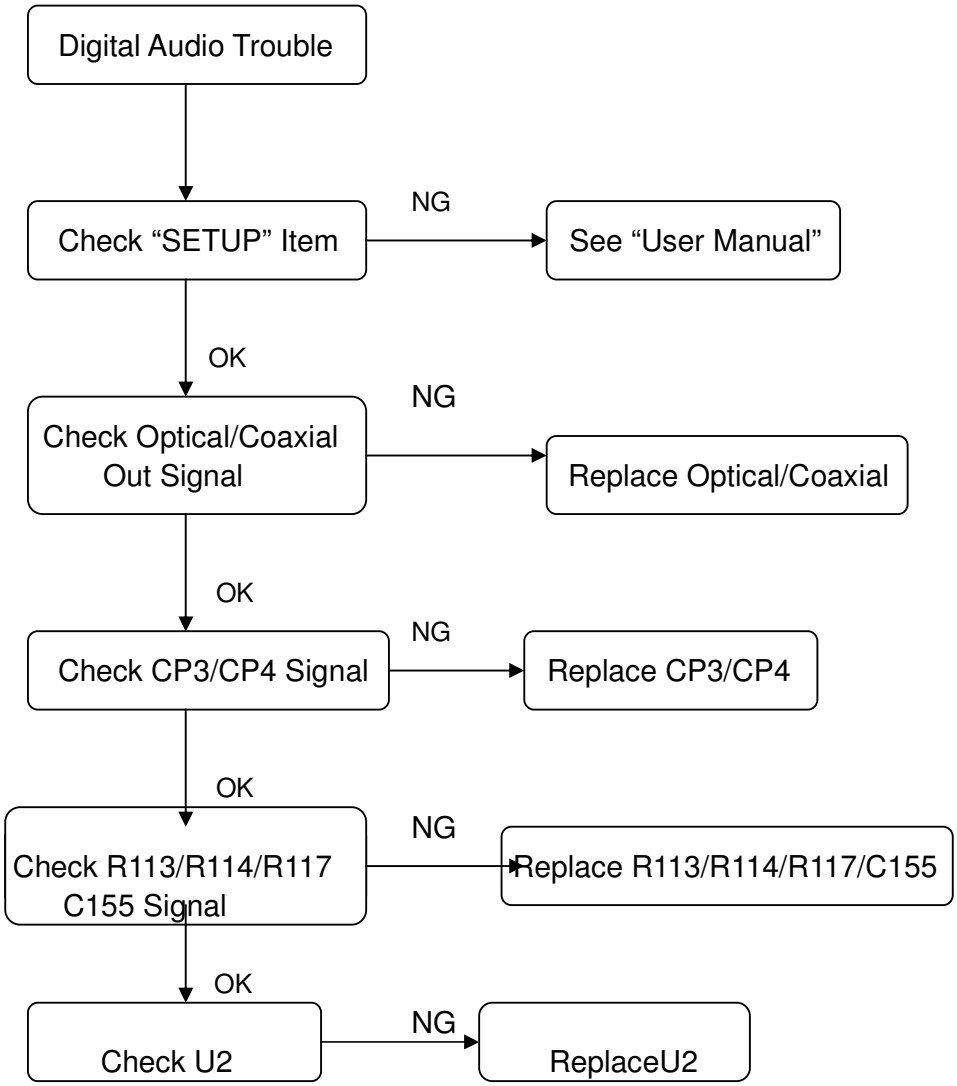
3.3.1. Composite Video Trouble Service Flow Chart



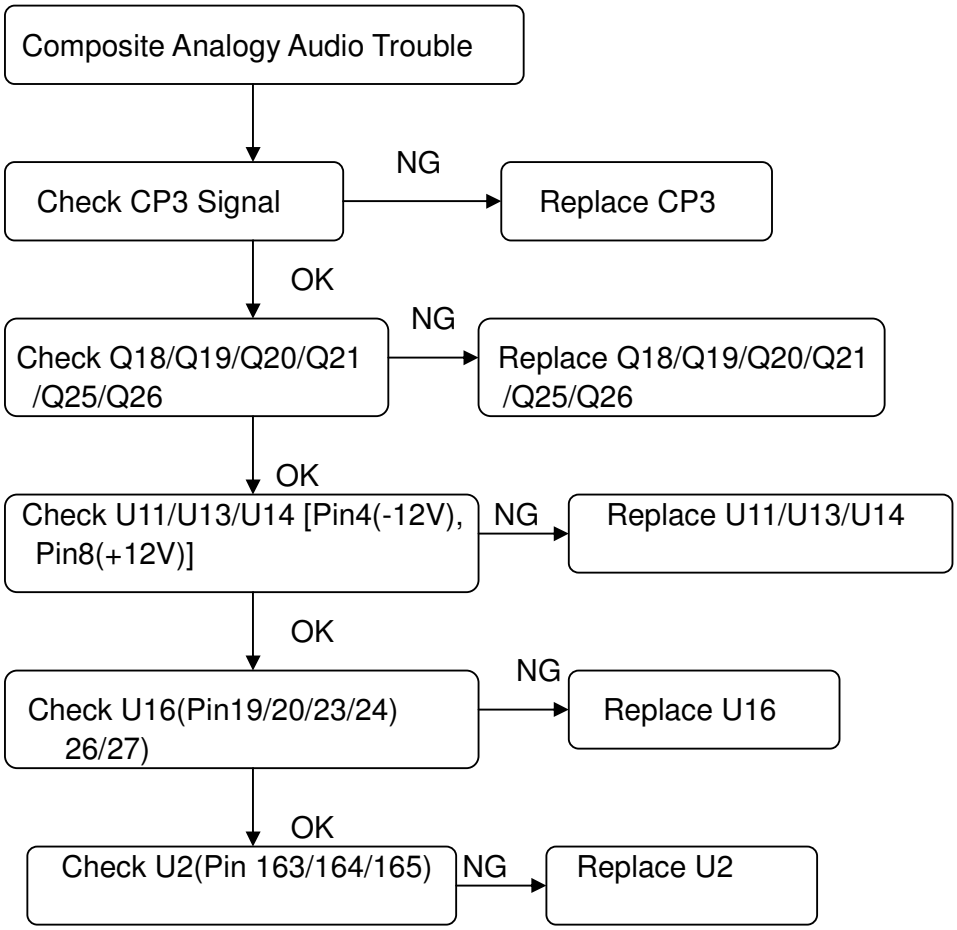
### 3.3.2. S-Video Trouble Service Flow Chart



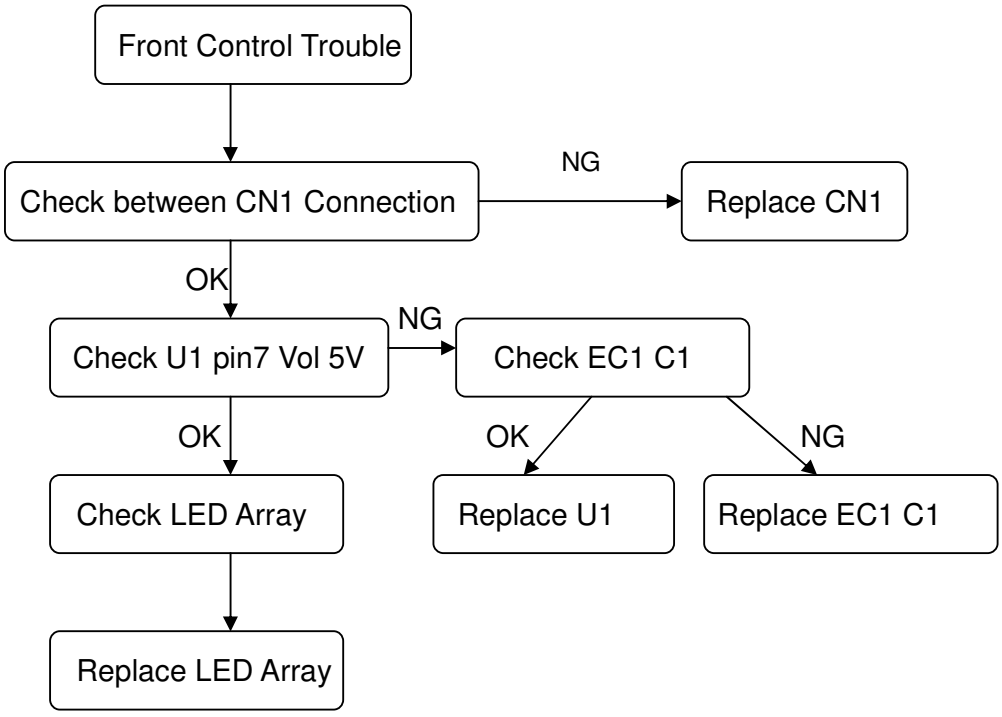
### 3.4. Digital Audio Trouble Service Flow Chart



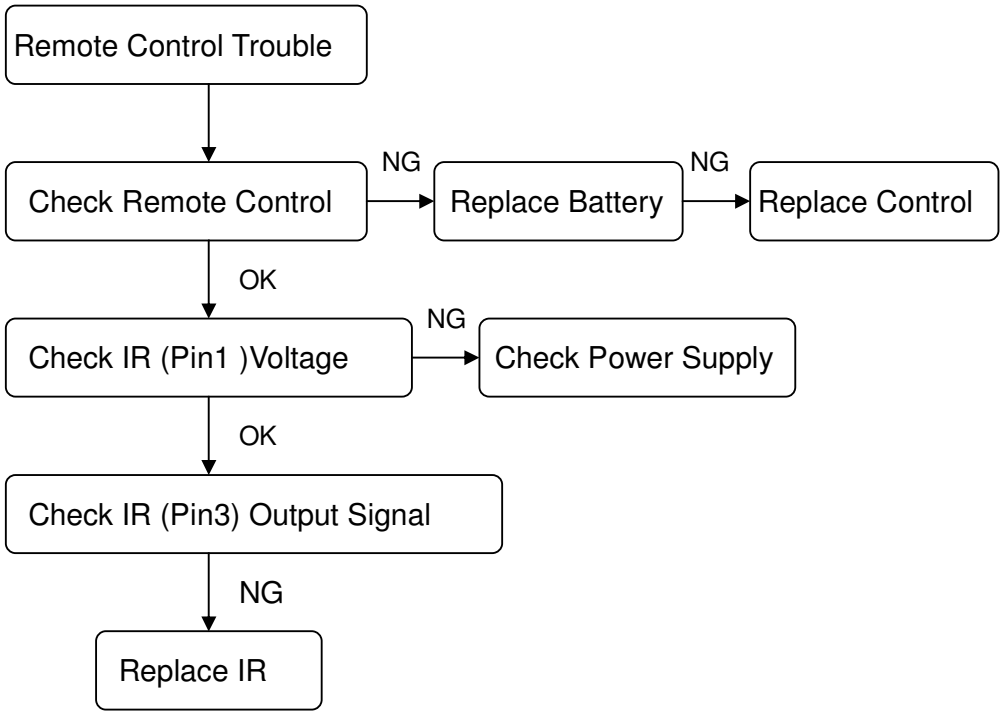
### 3.5 Composite Analogy Audio Trouble Service Flow Chart



### 3.6. Front Control Trouble Service Flow Chart



### 3.7. Remote Control Trouble Service Flow Chart



# 4. Parts List

## 4.1. 1Power parts list（Infinoen）

| NO. | PART NO. | DESCRIPTION | QTY | LOCATION |
|---|---|---|---|---|
| | | Carbon Resistor | | |
| 1 | 20-200132-03100 | 1/6W 1K±5% | 1 | RB9 |
| 2 | 20-204712-03100 | 1/6W 470Ω ±5% | 1 | RB8 |
| 3 | 20-243032-04100 | 1/4W 430K±5% | 2 | RA2,RA3 |
| 4 | 20-201502-04100 | 1/4W 15Ω ±5% | 2 | RA4,RA5 |
| 5 | 20-251012-03100 | 1/6W 5.1K±5% | 2 | RB11,RB12 |
| 6 | 20-200102-06100 | 1W 1Ω ±5% | 1 | RA6 |
| 7 | 20-206832-06100 | 1W 68K±5% | 1 | RA1 |
| | | Porcelain Capacitor | | |
| 8 | 32-302233-05100 | 223 50V ±10% | 1 | CA8 |
| 9 | 32-322014-17100 | 1KV 2200PF±10% Y5P | 1 | CA4 |
| 10 | 32-301044-05101 | 104 50V ±20% D7,F5 | 2 | CB12,CA9 |
| | | Electrolytic Capacitor | | |
| 11 | 30-422034-01110 | 10V 220UF±20% | 1 | CB6 |
| 12 | 30-422034-03110 | 25V 220UF±20% D8 | 1 | CB9 |
| 13 | 30-404734-03100 | 25V 47UF±20% D6 | 3 | CB4,CB10,CA5 |
| 14 | 30-410034-02100 | 16V 100UF±20% D6×12 | 1 | CB7 |
| 15 | 30-400164-01110 | 10V 1000U P3.5 ± 20% Φ8*12MM | 2 | CB5,CB8 |
| 16 | 30-402234-14100 | 400V 22UF±20% D16×22 | 1 | CA3 |
| 17 | 30-410034-03100 | 25V 100UF±20% D8 | 1 | CB3 |
| 18 | 30-400134-05100 | 50V 1UF±20% D5 | 1 | CA6 |
| | | High Voltage Capacitor | | |
| 19 | 33-310004-12100 | 275V 0.1UF±20% X2 | 2 | CA1,CA10 |
| 20 | 33-347003-25100 | 400VAC 470PF ±10% Y1 | 3 | CY1,CY2,CY3 |
| | | Diode | | |
| 21 | 11-1N4007-26000 | IN4007 | 4 | DA1~DA4 |
| 22 | 11-0RL201-26000 | RL201 2A 50V | 2 | DB7,DB8 |
| 23 | 11-00DO35-25000 | 12V 1/2W DO-35 | 1 | ZDA3 |
| 24 | 11-00DO35-25001 | 18V 1/2W D0-35 | 1 | ZDA1 |

| | | | | |
|---|---|---|---|---|
| 25 | 11-1N5822-29000 | 1N5822 | 1 | DB3 |
| 26 | 11-0FR105-29000 | FR105 1A 600V | 4 | DB4,DA5,DA6,DB2 |
| | | IC | | |
| 27 | 10-0TL431-2TF00 | TL431 TO-92 | 1 | U3 |
| 28 | 10-FOD817-3FA00 | COSMO 1010 817 UL VDE | 1 | U1 |
| 29 | 10-2A0565-3IC00 | ICE2A0565 | 1 | U2 |
| | | Fixed Inductance | | |
| 30 | 41-130103-13201 | 10uH/3～4A ±10% | 2 | LB1,LB2 |
| | | Transformer | | |
| 31 | 42-022112-02000 | PINF001-L EEL19 | 1 | T1 |
| 32 | 42-032014-01000 | UT-20 25mH | 1 | LA1 |
| | | Fuse Tube | | |
| 33 | 52-001311-11200 | 1A 250V 20*5MM (UL) | 1 | F1 |
| | | Jack | | |
| 34 | 48-111031-20100 | 3.96*3P | 1 | CN1 |
| | | Jumper | | |
| 35 | 51-110009-10800 | L=5.8MM Φ=0.5MM | 3 | JP2,JP3,CN2 |
| 36 | 51-110014-10800 | L=14MM Φ=0.5MM | 3 | JP1,RB5,DB6 |
| | | PCB | | |
| 37 | 46-0W552H-12400 | PINF001 REV:B1.3 | 1 | |
| | | Bead | | |
| 38 | 41-530000-50100 | RH3.5*4.7*0.8 | 1 | LA2 |

## 4.2. Front panel parts list

| NO. | PART NO. | DESCRIPTION | QTY | LOCATION |
|---|---|---|---|---|
| | | Carbon Resistor | | |
| 1 | 20-200132-03100 | 1/6W 1K±4% | 1 | R1 |
| 2 | 20-201012-03100 | 1/6W 100Ω±5% | 4 | R3,R4,R5,R8 |
| 3 | 20-201032-03100 | 1/6W 10K±5% | 1 | R2 |
| 4 | 20-205132-03100 | 1/6W 51K±5% | 1 | R7 |
| | | Electrolytic Capacitor | | |
| 5 | 30-410034-02110 | 16V 100UF ±20% D6*12 | 2 | C2 EC1 |
| | | Porcelain Capacitor | | |
| 6 | 32-301013-05100 | 101 50V ±10% | 3 | C6 C4 C5 |
| 7 | 32-301045-05100 | 104 50V -20/+80% F5 D6 | 1 | C1 |
| | | Diode | | |
| 8 | 11-02SD10-21100 | Round Φ3 red | 1 | D1 |
| | | Receiver | | |
| 9 | 44-001838-22100 | 5V BTM-1838 | 1 | IR |
| | | Jumper | | |
| 10 | 51-110005-10800 | L=5MM Φ=0.5MM | 2 | JMP2,JMP4 |
| 11 | 51-110007-10801 | L=7.5MM Φ=0.5MM | 1 | JMP1 |
| 12 | 51-110009-10800 | L=8.5MM Φ=0.5MM | 1 | JMP3 |
| | | Jiggle Switch | | |
| 13 | 55-002202-22000 | 6*6*6MM (250g) | 6 | SW2~ SW6 |
| 14 | 55-002204-21000 | 6*6*5 （250gf） | 1 | SW7 |
| | | IC | | |
| 15 | 10-SC6928-3SU00 | SC6928B | 1 | U1 |
| | | LED | | |
| 16 | 57-MR6659-56608 | MR-6659 | 1 | U2 |
| | | PCB | | |
| 17 | 46-00W551-13400 | CGVG046 REV:B1.3（DG-3000） | 1 | |
| | | Connecter | | |
| 18 | 49-106056-20701 | 6P*560mm | 1 | CON1 |
| | | Magnetic ring | | |

| | | | | |
|---|---|---|---|---|
| 19 | 54-221464-30000 | OUT Diameter:22.5mm/INNER Diameter:13.8mm/Height:6.4mm | 1 | |

## 4.3 Mpeg parts list（MTK1389QE/D）

| NO. | PART NO. | DESCRIPTION | QTY | LOCATION |
|---|---|---|---|---|
| | | Chip Capacitor | | |
| 1 | 13410225140 | 22P 50V ±10% 0603 | 1 | C232 |
| 2 | 13412213140 | 220P 50V ±10% 0603 | 4 | C172 ,C180,C189,C197 |
| 3 | 13411023140 | 1000P 50V ±10% 0603 | 10 | C175,C183,C195,C200,C37,C207,C208,C39,C162,C169 |
| 4 | 13413323140 | 3300P 50V ±10% 0603 | 4 | C176,C184,C196,C201 |
| 5 | 13410275140 | 27P 50V±5% 0603 | 1 | C156 |
| 6 | 13411013140 | 101 50V±10% 0603 | 5 | C67,C209,C230,C157,C166 |
| 7 | 13411533140 | 153 50V±10% 0603 | 1 | C90 |
| 8 | 13413333140 | 333 50V±10% 0603 | 1 | C45 |
| 9 | 13411033141 | 103 50V±10% 0603 | 1 | C26 |
| 10 | 13411057140 | 1U 10V+80%-20% 0603 | 5 | C59,C60,C61,C63,C64 |
| 11 | 13414737140 | 473 50V+80%-20% 0603 | 2 | C47,C46 |
| 12 | 13412223140 | 222 50V±10% 0603 | 3 | C21,C27,C36, |
| 13 | 13411523140 | 152 50V±10% 0603 | 1 | C34 |
| 14 | 13413913140 | 391 50V±10% 0603 | 1 | C20 |
| 15 | 13410205140 | 20P 50V±5% 0603 | 5 | C31,C163,C170,C234,C236 |
| 16 | 13413313140 | 331 50V±10% 0603 | 2 | C88,C87 |
| 17 | 13410335140 | 33P 50V±5% 0603 | 4 | C51,C50 |
| 18 | 13416823140 | 682 50V±10% 0603 | 1 | C42 |
| 19 | 13410475140 | 47P 50V±5% 0603 | 12 | C133,C134,C141,C142,C149,C150,C242,C243,C248,C249,C139,C140 |
| 20 | 13411047140 | 0.1U 50V +80%-20% 0603 | 82 | C1,C5,C6,C7,C9,C12,C14,C18,C24,C25,C28,C30,C38,C158,C41,C44,C48,C49,C55,C56,C57,C58,C62,C68,C69,C71,C73,C164,C76,C77,C78,C79,C80,C81,C82,C83,C84,C85,C86,C |

| | | | | |
|---|---|---|---|---|
| | | | | 89,C91,C92,C93,C95,C96,C98,C105,C106,C107,C108,C109,C110,C111,C112,C114,C115,C116,C117,C118,C119,C121,C123,C124,C125,C126,C144,C153,C155,C16,C171,C179,C204,C178,C194,C202,C186,C187,C188,C192,C193,C210,C211 |
| | | Chip Resistor | | |
| 21 | | 11310005010 | 1/16W 0Ω±5% 0603 | 28 | R4,R7,R15,R16,R24,R25,R26,R37,R50,R53,C129,C132,R49,R33,R34,R32,R88,R99,R110 R60 R248 ,R206,R207,R208,R225,R227,R68,R67, |
| 22 | | 11310105010 | 1/16W 10Ω±5% 0603 | 5 | R27,R190 R119 R117,R127 |
| 23 | | 11310335010 | 1/16W 33Ω±5% 0603 | 10 | R71,R72,R73,R74 R151 R150 R149 R144 R143 R142 |
| 24 | | 11310755010 | 1/16W 75Ω±5% 0603 | 4 | R114,R182,R189,R95, |
| 25 | | 11311015010 | 1/16W 100Ω±5% 0603 | 1 | R113 |
| 26 | | 11311115010 | 1/16W 110Ω±5% 0603 | 1 | R115 |
| 27 | | 11311615010 | 1/16W 160Ω±5% 0603 | 14 | R82,R89,R92,R100,R102,R104,R109,R111,R241,R242,R246,R247,R98,R90 |
| 28 | | 11312215010 | 1/16W 220Ω±5% 0603 | 1 | R121 |
| 29 | | 11311025010 | 1/16W 1K±5% 0603 | 16 | R28,R123,R126,R132,R201,R202,R203,R204,R141,R155,R166,R176,R148,R158,R180,R170 |
| 30 | | 11312225010 | 1/16W 2.2K±5% 0603 | 6 | R177,R183,R184,R185,R181,R188 |
| 31 | | 11314725010 | 1/16W 4.7K±5% 0603 | 4 | R22,R161,R187,R2 |
| 32 | | 11315125010 | 1/16W 5.1K±5% 0603 | 6 | R140,R154,R164,R174,R122,R131 |
| 33 | | 11311035010 | 1/16W 10K±5% 0603 | 19 | R1,R21,R230,R231,R40,R54,R56,R59,R62,R75,R223, |

| | | | | |
|---|---|---|---|---|
| | | | | R224,R79,R160,R167,R139,R153,R163,R173 |
| 34 | 11311535010 | 1/16W 15K±5% 0603 | 1 | R12 |
| 35 | 11311835010 | 1/16W 18K±5% 0603 | 1 | R47 |
| 36 | 11312035010 | 1/16W 20K±5% 0603 | 6 | R48<br>R136 ,R135,R152,R159,R172 |
| 37 | 11312235010 | 1/16W 22K±5% 0603 | 2 | R120 R129 |
| 38 | 11311045010 | 1/16W 100K±5% 0603 | 13 | R8,R17,R125,R134,R162,R171,R229,R232,R191,R147,R157,R169,R179 |
| 39 | 11316825010 | 1/16W 6.8K±5% 0603 | 1 | R175 |
| 40 | 11316885010 | 1/16W 6.8Ω±5% 0603 | 1 | R13 |
| 41 | 11310225010 | 1/16W 22Ω±5% 0603 | 1 | R116 |
| 42 | 11310015010 | 1/16W 1Ω±5% 0603 | 5 | R19,R41,R42,R43,R44 |
| 43 | 11313335010 | 1/16W 33K±5% 0603 | 1 | R45 |
| 44 | 11314785010 | 1/16W 4.7Ω±5% 0603 | 2 | R38,R39 |
| 45 | 11317545010 | 1/16W 750K±5% 0603 | 1 | R5 |
| 46 | 11318225010 | 1/16W 8.2K±5% 0603 | 1 | R3 |
| 47 | 11316815010 | 1/16W 680Ω±5% 0603 | 2 | R77,R78 |
| | | Electrolytic Capacitor | | |
| 48 | 12247126120 | 25V 470UF±20% D8 | 1 | C205 |
| 49 | 12233826110 | 50V 3.3UF±20% D5 | 2 | C203,C177 |
| 50 | 12201026110 | 16V 10UF±20% D5 | 8 | C173,C181,C190,C198,C174,C182,C191,C199 |
| 51 | 12222126110 | 16V 220UF±20% D6 | 9 | C2,C8,C11,C13,C17,C19,C104,C113 C15 |
| 52 | 12204726110 | 16V 47UF±20% D5 | 10 | C52,C53,C54,C74,C97,C75,C120,C122,C143,C94 |
| 53 | 12210126110 | 16V 100UF±20% D5 | 6 | C40,C66,C70,C185 C159 C165 |
| 54 | 12201026120 | 25V 10UF±20% D5 | 14 | C10,C33,C23,C29,C32,C154,C160,C161,C167,C168,C233,C235,C231,C321 |
| 55 | 12210226190 | 10V 1000UF±20% D8 | 1 | C99 |
| 56 | 13122126123 | 25V 220UF±20% D6.3*14 | 3 | C3,C4,C206 |
| | | Chip Inductance | | |
| 57 | 14221000000 | 0805-10UH | 2 | L18,L19 |
| 58 | 14220180009 | 0805-1.8UH | 7 | L10,L21,L31,L35,L36,L37,L34 |
| 59 | 14240805000 | 0805 FB | 28 | L1,L2,L3,L4,L5,L6,L8,L9,L11,L12,L13,L16,L17, |

| | | | | |
|---|---|---|---|---|
| | | | | L26,L27, L29,L32,L38,L39,L49,L50,L44,L45,L46,L40,L41, L42,L43 |
| 60 | 14220270000 | 0805-2.7UH | 1 | L14 |
| 61 | R000603123116 | 330UH ±10% | 1 | L15 |
| | | Diode | | |
| 62 | 15404001000 | 1N4001 | 1 | D1 |
| 63 | 15504148000 | 1N4148 | 19 | D3,D5,D7,D9,D11,D12,D13,D14,D15,D16,D17,D18, D19,D21,D22,D23,D24,D8,D10 |
| | | Chip Audion | | |
| 64 | 14908550000 | S8550 (DIP EBC) | 1 | Q6 |
| 65 | 15003904000 | 2N3904 | 9 | Q1,Q18,Q19,Q36,Q37,Q20,Q25,Q21,Q27 |
| 66 | 15008550000 | SS8550(SOT23) | 3 | Q5,Q4,Q31 |
| 67 | 15003906000 | 2N3906(SOT23) | 10 | Q11,Q14,Q16,Q17,Q22,Q23,Q32,Q38,Q39,Q12 |
| 68 | 15008050000 | SS8050(SOT23) | 2 | Q29,Q28 |
| 69 | 15003018000 | 2SK3018(SOT23) | 2 | Q2,Q3 |
| | | Chip Ic | | |
| 70 | 14802416080 | AT24C16+5V(SOP) | | |
| 71 | 14804558012 | CF4558CB | 1 | U9 |
| 72 | 14804360000 | CS4360 | 3 | U11,U13,U14 |
| 73 | 148S642B010 | K4S641632H-TC60 | 1 | U16 |
| 74 | 148F082B032 | A29L800UV-70 | 1 | U6 |
| 75 | 148M892QD00 | MT1389QE REV:D | 1 | U12 |
| 76 | 14805888001 | AM5888S HSOP28 | 1 | U2 |
| | | Crystal | | |
| 77 | 16102271060 | 27MHZ 27P (基频 HC-49/S) | 1 | Y1 |
| | | Jack | | |
| 78 | 22804254190 | 4PIN 2.54mm | 1 | CN9 |
| 79 | 22806254190 | 6PIN 2.54mm | 1 | CN4 |
| 80 | 22811200190 | 11PIN 2.0mm | 1 | CN3 |
| 81 | 22809254190 | 9PIN 2.54mm | 1 | CN1 |
| 82 | 22806200190 | 6PIN 2.0mm | 1 | CN7 |
| 83 | 23401101781 | Optical TX179AFT | 1 | CP4 |
| 84 | 23412400290 | AV8-8.4-13D | 1 | CP3 （up：white/white/white/yellow down：red/red/red/orange） |

| | | | | |
|---|---|---|---|---|
| 85 | 23471100083 | S exitrimity DSW-007 | 1 | CP1 |
| 86 | 22824050180 | FPC /-24PIN 0.5mm | 1 | CN5 |
| 87 | 22804254190 | 4PIN 2.54mm | 1 | CN9 |
| 88 | 22806254190 | 6PIN 2.54mm | 1 | CN4 |
| | | Jumper | | |
| 89 | 23000250500 | Φ0.5mm*2.5mm<br>PBC | 2 | C237,C23 |
| 90 | 11800010430 | MMTK010 REV:B3.3 | | |