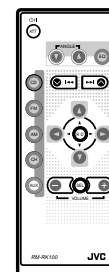
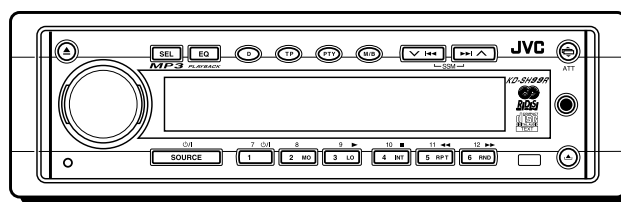
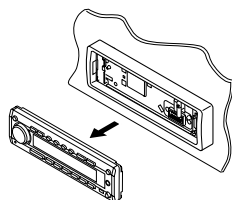


# JVC

# SERVICE MANUAL

## CD RECEIVER

### KD-SH99R



**MP3** PLAYBACK



#### Area Suffix

E ----- Continental Europe  
EX ----- Central Europe

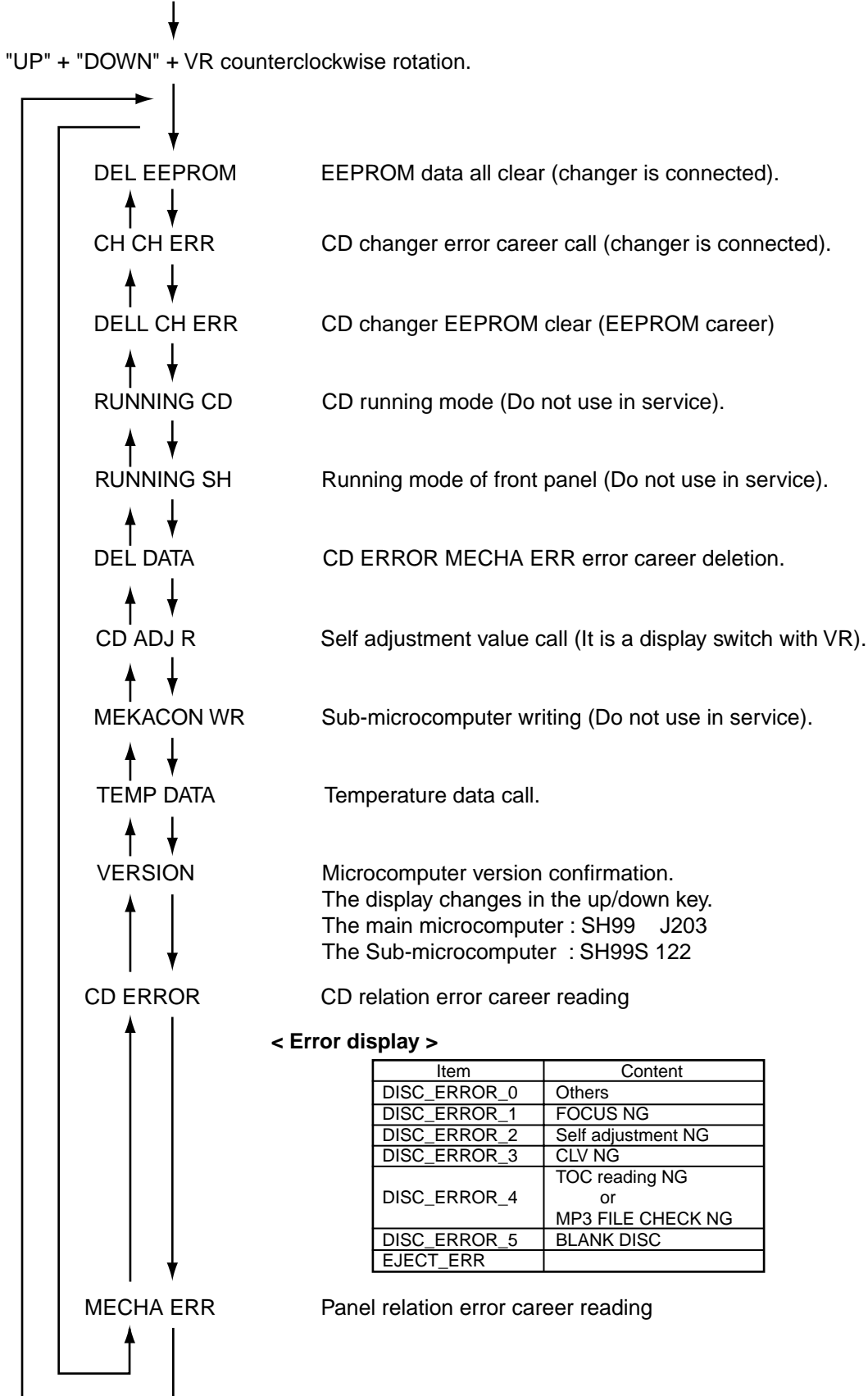
### Contents

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**< Service mode >**

The menu in the service mode can be switched with UP/DOWN.  
 The menu selected by the SEL button input is executed.

The ordinary mode



**< Error display >**

| Item         | Content                                   |
|--------------|---|
| DISC_ERROR_0 | Others                                    |
| DISC_ERROR_1 | FOCUS NG                                  |
| DISC_ERROR_2 | Self adjustment NG                        |
| DISC_ERROR_3 | CLV NG                                    |
| DISC_ERROR_4 | TOC reading NG<br>or<br>MP3 FILE CHECK NG |
| DISC_ERROR_5 | BLANK DISC                                |
| EJECT_ERR    |   |

## <ERROR CODE of Panel mechanism>

Memory to EEPROM of 6 digits, 1st and 2nd digit are indicate the operation mode when occur the error, 3rd to 6th digit are indicate details of error.

LCD indication time is use lower 2digits of details of error.

This series is indicate **ERR XX** (XX is error code).

<ex.> When details of error is 0A0001 , it is indicate **ERR 01**, details of error is 0E0031 , it is **ERR 31**.

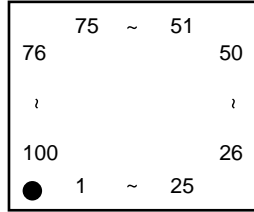
Switch is from this side sequentially PSW1, PSW2,.....PSW6.

| Details of error  | Error code |
|---|------------|
| 1. Error of door open (fault of PSW1)   |            |
| (1) Time out by PSW1 not changed  | 0A0001     |
| (2) PSW1 change during waiting 300ms after open position detected   | 0A0002     |
| 2. Error of door close (fault of PSW6)  |            |
| (1) Time out by PSW6 not changed  | 0B0006     |
| (2) PSW6 change during waiting 300ms after close position detected  | 0B0007     |
| 3. Error of shift to DETACH position (fault of PSW5)  |            |
| (1) Time out by PSW5 not changed to open side   | 0C0011     |
| (2) Shift to open side, pass the DETACH position then detect ANGLE1   | 0C0012     |
| (3) Time out by PSW5 not changed to close side  | 0C0013     |
| (4) Shift to close side, pass the DETACH position then detect close position  | 0C0014     |
| 4. Error of angle adjustment  |            |
| 4-1 Shift to ANGLE1 (fault of PSW4)   |            |
| (1) Time out by PSW4 not changed to shift for open side   | 0D0021     |
| (2) Shift to open side, pass the ANGLE1 then detect ANGLE2  | 0D0022     |
| (3) Time out by PSW4 not changed to shift for close side  | 0D0023     |
| (4) Shift to close side, pass the ANGLE1 then detect DETACH position  | 0D0024     |
| 4-2 Shift to ANGLE2 (fault PSW3)  |            |
| (1) Time out by PSW3 not change to shift for open side  | 0E0031     |
| (2) Shift to open side, pass the ANGLE2 then detect ANGLE3  | 0E0032     |
| (3) Time out by PSW3 not changed to shift for close side  | 0E0033     |
| (4) Shift to close side, pass the ANGLE2 then detect ANGLE1   | 0E0034     |
| 4-3 Shift to ANGLE3 (fault PSW2)  |            |
| (1) Time out by PSW2 not changed to shift for open side   | 0F0041     |
| (2) Shift to open side, pass the ANGLE3 then detect OPEN position   | 0F0042     |
| (3) Time out by PSW2 not changed for shift for close side   | 0F0043     |
| (4) Shift to close side, pass the ANGLE3 then detect ANGLE2   | 0F0044     |
| 5. PSW fault condition at initialize  |            |
| When all PSW is checked immediately after RESET, and the state of SWITCH which cannot be originally is detected, it is displayed as ERR 00. | 000000     |

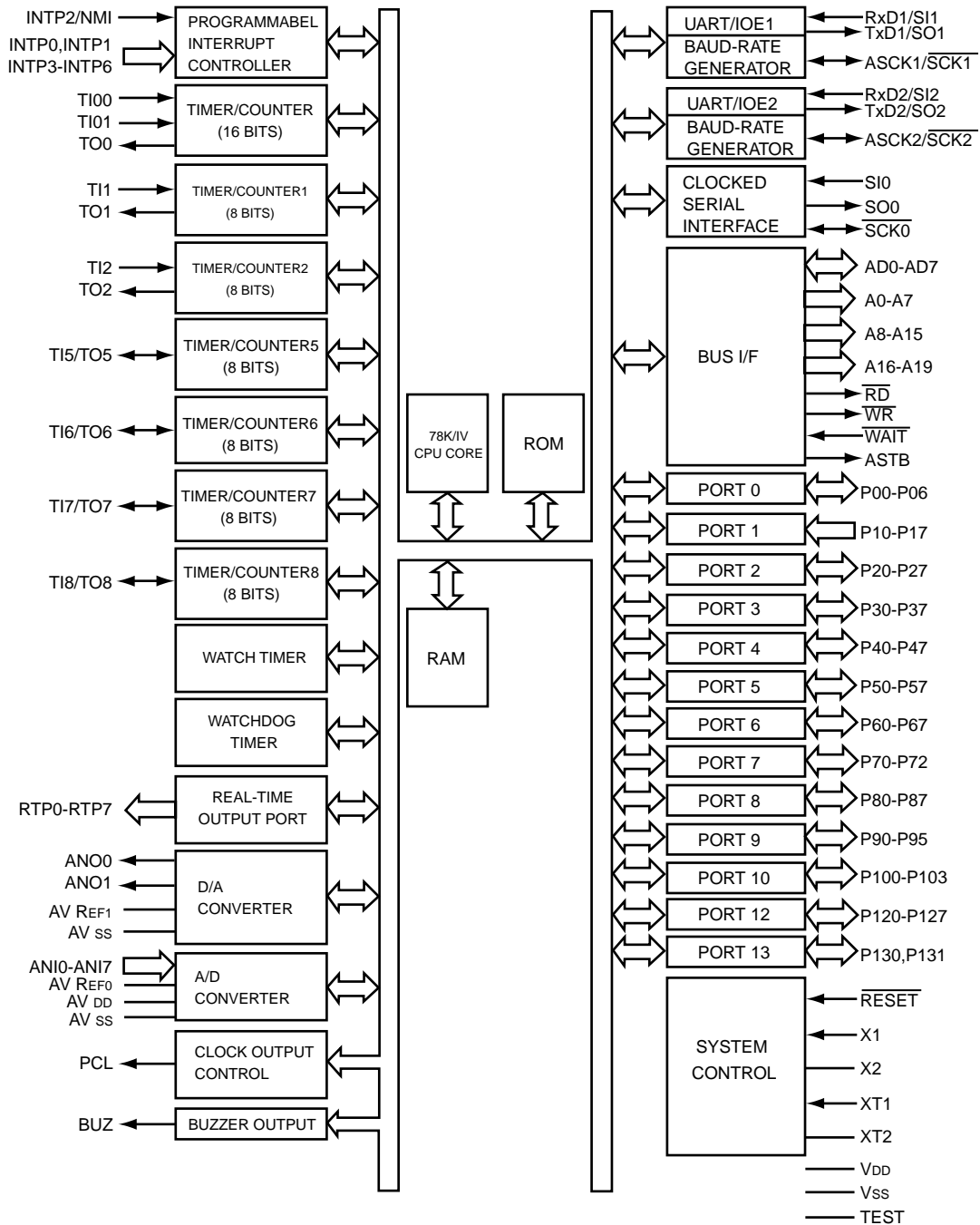
# Description of major ICs

## ■ UPD784215AGC146(IC701):MAIN CPU

### 1.Pin layout



### 2.Block diagram



| Pin No. | Symbol     | I/O | Function   |
|---------|------------|-----|--|
| 1       | PREQ       | O   | Mechanism power supply ON/OFFdemand output("L":On demand)  |
| 2       | AMUTE      | O   | Audio output MUTE control signal output ("L" :MUTE ON)   |
| 3       |            | O   | Non connected  |
| 4       |            | O   | Non connected  |
| 5       |            | O   | Non connected  |
| 6       |            | O   | Non connected  |
| 7       | DIMMER-OUT | O   | Unused output port   |
| 8       | ANT PEM    | O   | Antenna remote output  |
| 9       | VDD        | -   | 5V connection  |
| 10      | X2         |     | Sub-clock 32.738MHz  |
| 11      | X1         | I   | Sub-clock 32.738MHz  |
| 12      | VSS        | -   | GND connection   |
| 13      | XT2        |     | Sub-clock 12.5MHz  |
| 14      | XT1        | I   | Sub-clock 12.5MHz  |
| 15      | RESET      |     | Reset detection terminal   |
| 16      |            | I   | Non connected  |
| 17      | BUS-INT    | O   | J-BUS signal interrupt input   |
| 18      | PS2        | I   | POWER SAVE2 BACK UP synchronization. It is H input and stop mode.  |
| 19      |            | I   | Unused input port  |
| 20      | RDS-SCK    | I   | RDS clock input  |
| 21      | RDS-DA     | I   | RDS data input   |
| 22      | REMOCON    | I   | Remote control signal input  |
| 23      | AVDD       | -   | 5V connction   |
| 24      | AVREF0     | -   | 5V connection  |
| 25      | SD-ST      | I   | Station detector, stereo signal input.<br>It is H and broadcasting station havingBroadcasting station,L:stereo |
| 26      | MRC DATA   | I   | MRC DATA input   |
| 27      | KEY0       | I   | Key input 0  |
| 28      | KEY1       | I   | Key input1   |
| 29      | TEMP       | I   | Temperature data input for contrast correction   |
| 30      | LEVEL      | I   | Level meter input  |
| 31      | SQ         | I   | S.QUALITY level input  |
| 32      | S.METER    | I   | S.METER level input  |
| 33      | AVSS       | -   | GND connection   |
| 34      | INLOCK     | O   | The LOCK detection output. At LOCK:H   |
| 35      | NC         | O   | Unused output port   |
| 36      | AVREF      | -   | 5V connection  |
| 37      | BUS-SI     | I   | J-BUS data input   |
| 38      | BUS-SO     | O   | J-BUS data output  |
| 39      | BUS-SCK    | I/O | J-BUS clock I/O  |
| 40      | (STAGE)    | I   | H:L:Initialization port  |
| 41      | LCD-DA     | O   | Data output to LCD driver  |
| 42      | LCD-CL     | O   | Clock output to LCD driver   |
| 43      | LCD-CE     | O   | Chipenable output to LCD driver  |
| 44      | BUZZER     | O   | Buzzer output  |
| 45      | EPDAI      | I   | Communication data input of 12C  |
| 46      | EPDAD      | O   | Communication data input of 12C  |
| 47      | EPCLK      | O   | Communication data input of 12C  |
| 48      | BUS-I/O    | O   | The J-BUS I/O switch output. When outputting :H,When inputting :L  |
| 49      | PM0        | O   | Panel close side motor control signal output   |
| 50      | PM1        | O   | Panel opening side motor control signal output   |

| Pin No. | Symbol     | I/O | Function  |
|---------|------------|-----|---|
| 51      |            | O   | Non connected   |
| 52      |            | O   | Non connected   |
| 53      |            | O   | Non connected   |
| 54      | DETACH     | I   | The detach signal input. It is L of 200ms or more and operation mode. It is H and POWER SAVE. |
| 55      | VCR CONT   | O   | Signal output for VCR control   |
| 56      | PNL SW1    | I   | Panel position detection switch one signal input.   |
| 57      | PNL SW2    | I   | Panel position detection switch two signal input.   |
| 58      | PNL SW3    | I   | Panel position detection switch three signal input.   |
| 59      | PNL SW4    | I   | Panel position detection switch four signal input.  |
| 60      | PNL SW5    | I   | Panel position detection switch five signal input.  |
| 61      | PNL SW6    | I   | Panel position detection switch six signal input  |
| 62      | AFCK       | O   | The Af check output. When you check AF:L.   |
| 63      | SEEK/STOP  | O   | The auto seek stop switch output. At SEEK:H, STOP:L.  |
| 64      | S MUTE     | O   | Software mute output for CF switch noise.   |
| 65      | FM/AM      | O   | FM and the AM switch output. At FM:H,At AM:L  |
| 66      | PLL-CE     | O   | CE output for IC control for PLL.   |
| 67      | PLL-DO     | O   | Data output for IC control for PLL.   |
| 68      | PLL-CLK    | O   | Clock output for IC control for PLL.  |
| 69      | PLL-DI     | I   | Data input for IC control for PLL.  |
| 70      | TEL-MUTE   | I   | Telephone ,ute detection input.   |
| 71      | AMP KILL   | O   | POWER-AMP, ON/OFF switch output. H:OFF  |
| 72      | VSS        |     | GND connection  |
| 73      | DIMMER-IN  | I   | Dimmer detection input. L:Dimmer ON   |
| 74      | PS1        | I   | At POWER SAVE of POWER SAVE1.ACC and synchronization:L. When operating :H.                    |
| 75      | POWER      | O   | The POWER ON/OFF switch output. At the time of the POWER ON:H.                                |
| 76      | CD-ON      | O   | The CD power supply control signal output. At CD:H.   |
| 77      | MUTE       | O   | The mute output. At the time of the MUTE ON:L.  |
| 78      | W-LPF1     | O   | Sub woofer cutoff frequency control output 1  |
| 79      | W-LPF2     | O   | Sub woofer cutoff frequency control output 2  |
| 80      | W-MUTE     | O   | The mute output for the sub woofer. At the time of the MUTE ON:H.                             |
| 81      | VDD        | O   | 5V connection.  |
| 82      | VOL-DA     | O   | Data output for IC control for electronic volume.   |
| 83      | VOL-CLK    | O   | Clock output for IC control electronic volume.  |
| 84      | CF-SEL     | O   | Signal output for FM belt region filter switch.   |
| 85      | PMKICK     | O   | Signal output for panel motor kick  |
| 86      | EMPH       | O   | The CD emphasis output. When turning.At On:H.   |
| 87      |            | O   | Non connected   |
| 88      | VOL-1      | I   | Pulse which rotation volume pulse signal inputs, and becomes judgment of change actually.     |
| 89      | VOL-2      | I   | rotation volume pulse signal input  |
| 90      | (J/R)      | I   | H:J version and L:R version   |
| 91      | BUCK       | O   | Non connected   |
| 92      | CCE        | O   | Non connected   |
| 93      | LSI RST    | O   | CDLSI reset signal output   |
| 94      | TEST       |     | GND connection  |
| 95      |            | O   | Non connected   |
| 96      |            | O   | Non connected   |
| 97      |            | O   | Non connected   |
| 98      |            | O   | Non connected   |
| 99      | (DISC SEL) | O   | Non connected   |
| 100     | SW1        | I   | Panel SW1   |

## ■UPD63711AGC(IC603):RF Servo amp

### 1.Pin layout

|            |     |
|------------|-----|
| ○144 ~ 109 |     |
| 1          | 108 |
| ⋮          | ⋮   |
| 36         | 73  |
| 37 ~ 72    |     |

### 2.Pin function

UPD63711AGC(1/3)

| Pin No. | Symbol | I/O | Function   |
|---------|--------|-----|--|
| 1       | VSSO   | -   | It is GND of the logic circuit.  |
| 2       | ZRASO  | O   | It is RFOK signal output terminal.   |
| 3       | ZCASO  | I   | Reset signal input terminal. (Active row)  |
| 4       | ZCAS1  | I   | Command/parameter identification signal input terminal<br>A0=L:STB active=Address register set. A0=H:STB active= Parameter set.  |
| 5       | VSSO   | I   | The data strove signal input terminal. It is signal to de the latch in LSI as for the cereal data.   |
| 6       | ZOE    | I   | The clock signal input terminal to input and output the cereal data. Input data from terminal SI is taken by standing up about this signal, and the cereal data from the terminal SO is output with go down.   |
| 7       | ZUWE   | O   | The cereal data and the status signal are output.  |
| 8       | ZLWE   | I   | Cereal data input terminal.  |
| 9       | VSSO   | I   | The crystal oscillation control terminal. Please input the reset signal before stopping the crystal oscillation. Moreover, the crystal oscillation is steady and input the reset signal, please when moves from the state of the crystal oscillation stop to the ordinary mode.<br>XTALEN=L:ordinary mode XTALEN=H:Crystal oscillation stop. |
| 10      | RA0    | -   | Positive power supply supply terminal to logic circuit.  |
| 11      | RA1    | -   | Positive power supply supply terminal to D/A converter.  |
| 12      | RA2    | O   | R-ch audio signal output terminal.   |
| 13      | RA3    | -   | It is D/A converter GND.   |
| 14      | RA4    | -   | The outside credit capacitor connection terminal for SCF regulator.  |
| 15      | RA5    | -   | It is D/A converter GND.   |
| 16      | RA6    | O   | L-ch audio signal output terminal.   |
| 17      | RA7    | -   | Positive power supply supply terminal to D/A converter.  |
| 18      | VDD0   | O   | Output terminal of right channel voice data. PWM output.   |
| 19      | VSS0   |     |  |
| 20      | RA8    | O   | Left channel voice data audio output terminal. PWM output.   |
| 21      | IO0    |     |  |
| 22      | IO1    | -   | Positive power supply supply terminal to crystal oscillation circuit.  |
| 23      | IO2    | O   | Crystal departure pendulum connection terminal (Output)  |
| 24      | IO3    | I   | Crystal departure pendulum connection terminal (Input)   |
| 25      | IO4    | -   | It is GND of the crystal oscillation circuit.  |
| 26      | IO5    | -   | Positive power supply supply terminal to logic circuit.  |
| 27      | VSSO   | O   | The output terminal of priemphasis information in sub code Q.<br>When the emphasis is added, high level is output. Polarity can be switched by the command.<br>F6H LSB EP=0:Normal output EP=1:Reversing output.   |
| 28      | IO6    | O   | Flag output terminal which shows that data under output is composed by data which cannot be corrected.(active high)  |
| 29      | IO7    | I   | The cereal data input terminal to building DAC into. When DSP etc. are not connected with latter part, it should be short with the terminal DOUT.  |
| 30      | IO8    | O   | It is an output terminal of the cereal voice data.   |
| 31      | IO9    | I   | Cereal clock input terminal to building DAC into.<br>The output voice data changes from DOUT by standing up about this clock. The system connected with latter part must take data by standing up about this signal.   |
| 32      | IO10   | O   | The output voice data changes from DOUT by standing up about this clock.The system connected with latter part must take data by standing up about this signal.   |

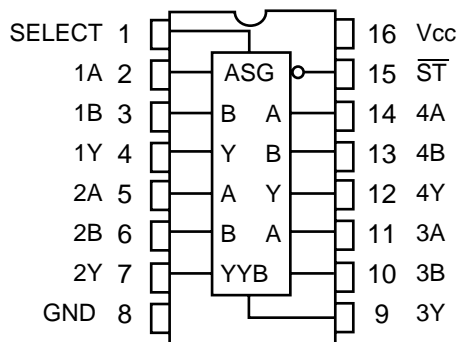
| Pin No. | Symbol | I/O | Function   |
|---------|--------|-----|--|
| 33      | IO11   | I   | LRCK signal input terminal to building DAC into.   |
| 34      | IO12   | O   | Signal which distinguishes left channel/right channel of voice data output from DOUT.  |
| 35      | IO13   | O   | Terminal (88.2kHz)(WDCK)of the output of the frequency signal twice defect detection output terminal(HOLD) LRCK HOLD/WDCK can be switched with the microcomputer.  |
| 36      | VSSO   | O   | Terminal of output of data of Digital audio interface.   |
| 37      | VDD1   | -   | It is GND of the logic circuit.  |
| 38      | IO14   | O   | Buffer ring output terminal of oscillation.  |
| 39      | IO15   | I   | The state of this terminal is output to Bit5 of the status output.   |
| 40      | DREQ   | -   | Positive power supply supply terminal to logic circuit.  |
| 41      | DRESP  | O   | It is EFM-synchronous detection signal.becomes high-level when the   |
| 42      | IOP7   | O   | output of the synchronous pattern detection signal and the frame counter is corresponding by the EFM recovery part, and becomes a row level at the disagreement.   |
| 43      | IOP6   | O   | Mirror output terminal. (MIRR).It is a frame synchronous signal of PLL system. The one that a basic frequency (44.1kHz)of the reading signal obtained in PLL system was divided makes almost equally to the synchronization(7.35kHz) of one frame. (WFCK)MIRR/WFCK can be switched with the microcomputer. |
| 44      | IOP5   | O   | the terminal for the monitor of the bit clock. When PLL is locked, the go down edge of the EFM signal and this signal locks.   |
| 45      | IOP4   | -   | it is GND of the logic circuit.  |
| 46      | IOP3   | O   | The output terminal which shows the C1 error correction result. Even   |
| 47      | IOP2   | O   | go down of RFCK is fixed.  |
| 48      | IOP1   |     | It is an output terminal which shows the C2 error correction result. Even  |
| 49      | IOP0   |     | of RFCK is fixed.  |
| 50      | HDBDIR |     |  |
| 51      | DVDD   | -   | Positive power supply supply terminal to logic circuit.  |
| 52      | PACK   | O   | It is PACK synchronous signal shows the head of packing.   |
| 53      | TSO    | O   | It is a cereal output terminal of the CD-TEXT data.  |
| 54      | TSI    | I   | It is a serial input terminal of the CD-TEXT control parameter.  |
| 55      | TSCK_B | I   | Cereal clock input terminal of CD-TEXT.  |
| 56      | TSTB_B | I   | Terminal of input of parameter strove signal of CD-TEXT.   |
| 57      | DGND   | -   | It is GND of the logic circuit.  |
| 58      | TEST0  | I   | It is a test terminal. Please connect with GND usually.  |
| 59      | TEST1  |     |  |
| 60      | ATEST  | O   | It is a test terminal. Please make to the opening usually.   |
| 61      | AGND   | -   | It is GND of an analog circuit.  |
| 62      | FD     | O   | Focus drive output terminal.   |
| 63      | TD     | O   | Tracking drive output terminal.  |
| 64      | SD     | O   | Thread drive output terminal.  |
| 65      | MD     | O   | Spindle drive output terminal.   |
| 66      | DACO   | O   | It is DAC output terminal for the adjustment. A set value of CRAM7FH is output.  |
| 67      | FBAL   | O   | It is DAC output terminal for the adjustment. A set value of CRAM7CH is output (built-in RF FE amplifier offset).  |
| 68      | TBAL   | O   | It is DAC output terminal for the adjustment. A set value of CRAM7DH is output.  |
| 69      | TEVCA  | O   | It is DAC output terminal for the adjustment. A set value of CRAM7EH is output (built-in RF TE amplifier offset).  |
| 70      | AVDD   | -   | It is a positive power supply supply terminal to an analog circuit.  |
| 71      | EFM    | O   | EFM signal output terminal.  |
| 72      | ASY    | I   | It is a standard voltage input terminal of the EFM comparator.   |
| 73      | C3T    | -   | Capacitor connection terminal for 3T detection.  |
| 74      | RFI    | I   | RF signal input terminal for EFM data generation.  |
| 75      | AGCO   | O   | RF signal output terminal after gain is adjusted.  |
| 76      | AGCI   | I   | Input terminal of RF-AGC amplifier.  |
| 77      | RFO    | O   | Output terminal of RF saming amplifier.  |



| Pin No. | Symbol | I/O | Function   |
|---------|--------|-----|--|
| 78      | EQ2    | -   | Equalizer part connection terminal of RF amplifier.  |
| 79      | EQ1    |     |  |
| 80      | RF     | I   | Reversing input terminal of RF saming amplifier.   |
| 81      | AGND   | -   | It is GND of an analog circuit.  |
| 82      | A      | I   | Photo detector A input terminal.   |
| 83      | C      | I   | Photo detector B input terminal.   |
| 84      | B      | I   | Photo detector C input terminal.   |
| 85      | D      | I   | Photo detector D input terminal.   |
| 86      | F      | I   | Photo detector F input terminal.   |
| 87      | E      | I   | Photo detector E input terminal.   |
| 88      | AVDD   | -   | Positive power supply supply terminal to analog circuit.   |
| 89      | REFOUT | O   | reference potential output terminal.   |
| 90      | FE     | I   | Focus make an error amplifier reversing input terminal.  |
| 91      | FEO    | O   | Focus Allah amplifier output terminal.   |
| 92      | TE     | I   | Tracking make an error amplifier reversing input terminal.   |
| 93      | TEO    | O   | Tracking error amplifier output terminal.  |
| 94      | TE2    | O   | Terminal to which tracking error after amplifies is output.  |
| 95      | TEC    | I   | The tracking comparator input terminal. The tracking error signal which cuts the DC element is input. The tracking 0 crossing is detected by using this signal in LSI. |
| 96      | AGND   | -   | it is GND of an analog circuit.  |
| 97      | PD     | I   | It is a terminal of the input of the detection signal of PD for the LD output monitor.   |
| 98      | LD     | O   | LD control current output terminal.  |
| 99      | PN     | I   | It is a control polarity set value of the APC circuit.   |
| 100     | AVDD   | -   | Positive power supply supply terminal to analog circuit.   |

■ TC74VHC157FT-X(IC803):DAC SW

1.Pin lauout



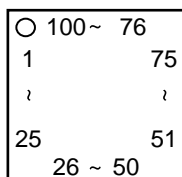
2.Pin function

| INPUTS          |        |   |   | OUTPUT |
|-----------------|--------|---|---|--------|
| $\overline{ST}$ | SELECT | A | B |        |
| H               | X      | X | X | L      |
| L               | L      | L | X | L      |
| L               | L      | H | X | H      |
| L               | H      | X | L | L      |
| L               | H      | X | H | H      |

X:Don't Care

## ■UPD70F3033AC015(IC606):SUB CPU

### 1.Pin layout



### 2.Pin function

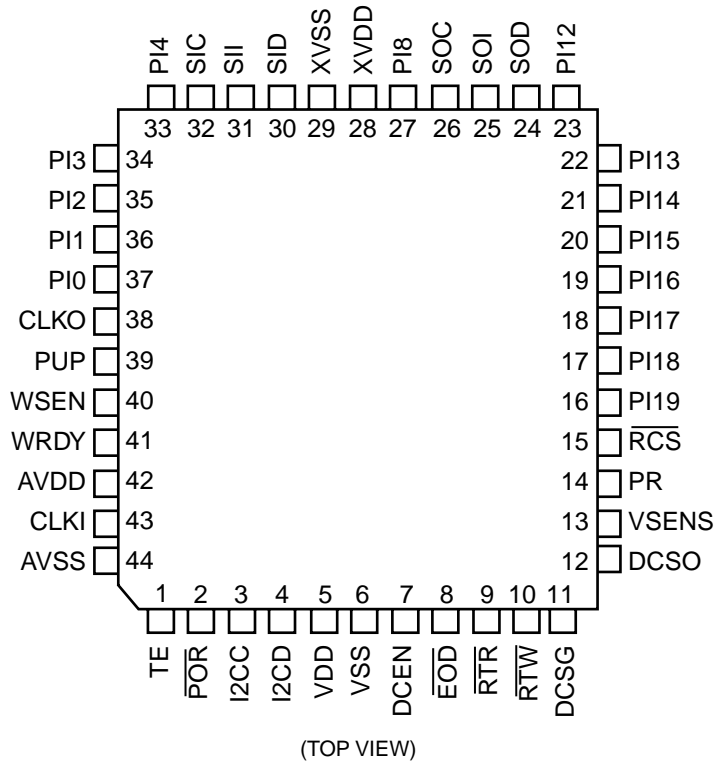
UPD70F3033AC015(1/2)

| Pin No. | Symbol  | I/O | Function   |
|---------|---------|-----|--|
| 1       | TSI     | O   | CD TEXT control parameter cereal output.               |
| 2       | TSCK    | O   | CD TEXT control cereal clock output.                   |
| 3       | JBSO    | O   | JBUS cereal data output.                               |
| 4       | JBSI    | I   | JBUS cereal data input.                                |
| 5       | JBCK    | I/O | Cereal clock I/O.                                      |
| 6       | EVDD    | -   | 5V(power supply for port for I/O).                     |
| 7       | EVSS    | -   | GND(GND for port for I/O).                             |
| 8       | TSTB    | O   | CD TEXT parameter strobe signal output.                |
| 9       | XRESET  | O   | LSI reset output.                                      |
| 10      | MIRR    | I   | MIRR signal input(H:Speculer).                         |
| 11      | AO      | O   | Command:/parameter:H switch signal output.             |
| 12      | SO      | I   | DSP cereal data input.                                 |
| 13      | SI      | O   | DSP cereal data input.                                 |
| 14      | SCK     | O   | DSP cereal data clock output.                          |
| 15      | WSEN    | O   | Internal CD/DC operation of MP3 operation & beginning. |
| 16      | DSPRST  | O   | DSP RESET:L.   |
| 17      | SWAIT   | I   | WAIT signal input from DECODER.                        |
| 18      | VPP     | -   | FLASH writing power supply.                            |
| 19      | SA4     | O   | DECODER address passing output.                        |
| 20      | SA5     | O   | DECODER address passing output.                        |
| 21      | SA6     | O   | DECODER address passing output.                        |
| 22      |         |     | (Non connected)  |
| 23      | STB     | O   | DSP cereal data latch output.                          |
| 24      | DRVMUTE | O   | Servo deriver MUTE control signal output(L:MUTE:ON)    |
| 25      | LOAD1   | O   | Loading drive.   |
| 26      | LOAD2   | O   | Loading drive.   |
| 27      | SA0     | O   | DECODER address passing output.                        |
| 28      | SA1     | O   | DECODER address passing output.                        |
| 29      | SA2     | O   | DECODER address passing output.                        |
| 30      | SA3     | O   | DECODER address passing output.                        |
| 31      | RESET   | I   | Microcomputer reset terminal(L:Reset)                  |
| 32      | XT1     | I   | Sub-clock  |
| 33      | XT2     | -   | Sub-clock  |
| 34      |         | -   |  |
| 35      |         | -   | The main clock crystal oscillation machine.            |
| 36      |         | I   | The main clock crystal oscillation machine(20MHz).     |
| 37      | VSS     | -   | 5V   |
| 38      | VDD     | -   | GND  |
| 39      | CLKOUT  | O   | Internal system clock output(Non connecte)             |
| 40      | WR      | O   | DECODER data writing.                                  |
| 41      | ---     | O   | (Non connected)  |
| 42      | ---     | O   | (Non connected)  |
| 43      | RD      | O   | DECODER data reading.                                  |
| 44      | ---     | O   | Address bus enable.                                    |
| 45      | JBCONT  | O   | JBUS I/O switch.                                       |
| 46      | PON     | I   | Mechanism power supply ON:L.                           |
| 47      | AD0     | I/O | DECODER I/O data bus                                   |
| 48      | AD1     | I/O | DECODER I/O data bus                                   |
| 49      | AD2     | I/O | DECODER I/O data bus                                   |
| 50      | AD3     | I/O | DECODER I/O data bus                                   |

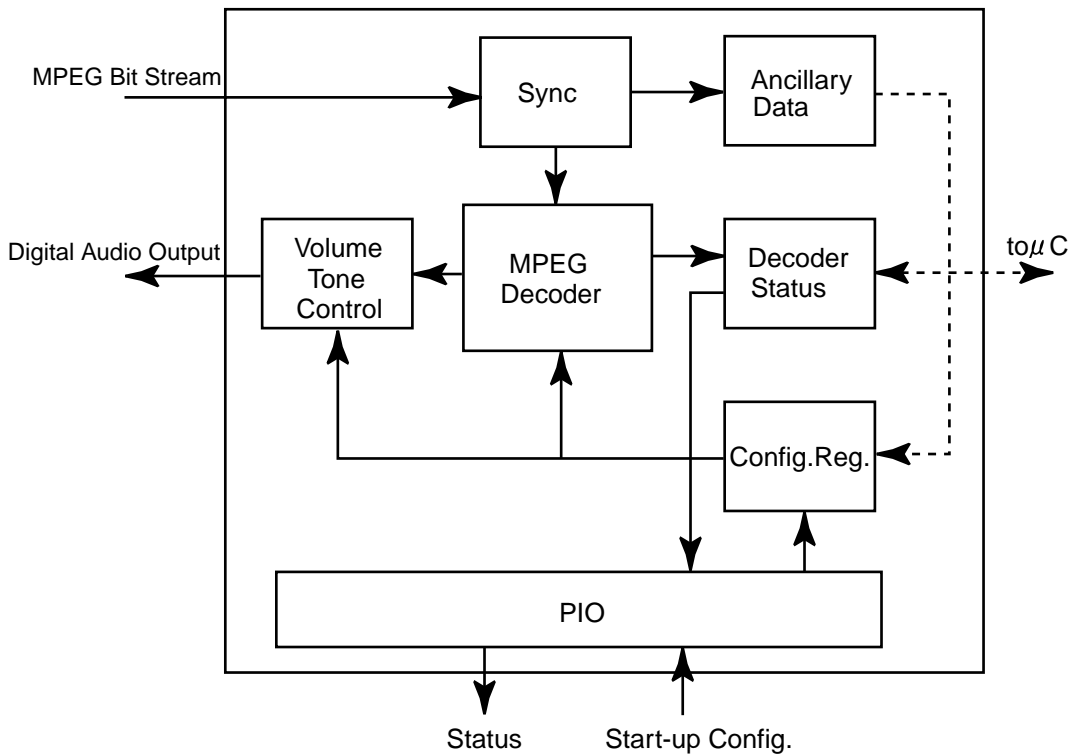
| Pin No. | Symbol   | I/O | Function  |
|---------|----------|-----|---|
| 51      | AD4      | I/O | DECODER I/O data bus.   |
| 52      | AD5      | I/O | DECODER I/O data bus.   |
| 53      | AD6      | I/O | DECODER I/O data bus.   |
| 54      | AD7      | I/O | DECODER I/O data bus.   |
| 55      | BVDD     | -   | 5V  |
| 56      | BVSS     | -   | GND   |
| 57      | ---      | O   | (Non connected)   |
| 58      | ---      | O   | (Non connected)   |
| 59      | ---      | O   | (Non connected)   |
| 60      | ---      | O   | (Non connected)   |
| 61      | ---      | O   | (Non connected)   |
| 62      | ---      | O   | (Non connected)   |
| 63      | ---      | O   | (Non connected)   |
| 64      | ---      | O   | (Non connected)   |
| 65      | MD       | O   | DAC mode control data.  |
| 66      | MC       | O   | DAV mode control clock.   |
| 67      | ML       | O   | DAC mode control latch.   |
| 68      | MP3SEL   | O   | MP3/CD-DA switch SW L: Cd H: MP3                                    |
| 69      | PREQ     | O   | Mechanism power supply ON/OFF demand output(L: ON demand)           |
| 70      | AMUTE    | O   | Audio output MUTE control signal output(L: MUTE ON)                 |
| 71      | AVDD     | -   | 5V(Power supply for AD converter)                                   |
| 72      | AVSS     | -   | GND(GND for AD converter)   |
| 73      | AVREF    | -   | 5V(Standard voltage for AD converter)                               |
| 74      | PDET     | I   | BACKUP power supply detection(L: BACKUP power supply ON)            |
| 75      | SW2      | I   | SW2 mechanism switch.   |
| 76      | SW3      | I   | SW3 mechanism switch.   |
| 77      | SW4      | I   | SW4 mechanism switch.   |
| 78      | REST     | I   | Surroundings position detection switch(L: Surroundings)             |
| 79      | RFOK     | I   | RFOK signal input.  |
| 80      | REQ      | I/O | Data demand.  |
| 81      | EXP      | I   | H: Export L: For country 8cm CD.                                    |
| 82      | ADIN0    | I   | Test key input 0 (A/D input)  |
| 83      | ADIN1    | I   | Test key input (A/D input of one)                                   |
| 84      | ADIN2    | I   | Test key input (A/D input of two)                                   |
| 85      | ADIN3    | I   | Test key input (A/D input of three)                                 |
| 86      | ---      | O   | (Non connected)   |
| 87      | CONT+B   | I   | LSI5V ON power supply control signal and JBUS control signal input. |
| 88      | SW1      | I   | SW1 mechanism switch.   |
| 89      | PACK     | I   | PACK synchronous signal of CD-TEXT.                                 |
| 90      | INT0     | I   | DECODER interrupt request.  |
| 91      | INT1     | I   | DECODER interrupt request.  |
| 92      | JBINT    | I   | J-BUS interrupt signal input.                                       |
| 93      | TESTMODE | I   | L: test mode shift.   |
| 94      | 12CD     | I/O | 12C data line.  |
| 95      | ---      | O   | (Non connected)   |
| 96      | 12CC     | I/O | 12C clock line.   |
| 97      | RXDO     | I   | FLASH writing cereal data input.                                    |
| 98      | SID      | O   | MP3 cereal data output and FLASH writing cereal data output.        |
| 99      | SIC      | O   | MP3 cereal clock output and FLASH writing cereal clock output.      |
| 100     | TSO      | I   | CD-TEXT data serial input.  |

■ MAS3507D-QG-G10 (IC806) :MP3 decoder

1.Pin layout



2.Block diagram



## 3.Pin function

MAS3507D-QG-G10(1/2)

| Pin no. | Symbol | I/O    | Function   |
|---------|--------|--------|--|
| 1       | TE     | I      | Test Enable  |
| 2       | POR    | I      | Reset, Active Low  |
| 3       | I2CC   | I/O    | I <sup>2</sup> C Clock Line  |
| 4       | I2CD   | I/O    | I <sup>2</sup> C Data Line   |
| 5       | VDD    | Supply | Positive Supply for Digital Parts  |
| 6       | VSS    | Supply | Ground Supply for Digital Parts  |
| 7       | DCEN   | I      | Enable DC/DC Converter or Voltage Supervision  |
| 8       | EOD    | OUT    | PIO End of DMA, Active Low   |
| 9       | RTR    | OUT    | PIO Ready to Read, Active Low  |
| 10      | RTW    | OUT    | PIO Ready to Write, Active Low   |
| 11      | DCSG   | Supply | DC Converter Transistor Ground   |
| 12      | DCSO   | O      | DC Converter Transistor Open Drain   |
| 13      | VSENS  | I      | DC Converter Voltage Sense   |
| 14      | PR     | IN     | PIO DMA Request Read/Write   |
| 15      | PCS    | IN     | PIO Chip Select, Active Low  |
| 16      | PI19   | IN/OUT | PIO Data(19)<br>i)Demand Pin in SDI mode<br>ii)data bit(7),MSB in PIO DMA input mode                                     |
| 17      | PI18   | IN/OUT | PIO Data(18)<br>i)MPEG header bit11-MPEG ID(SDI mode)<br>ii)data bit(6) in PIO DMA input mode                            |
| 18      | PI17   | IN/OUT | PIO Data (17)<br>i)MPEG header bit 12-MPEG ID(SDI mode)<br>ii)data bit(5) in PIO DMA input mode                          |
| 19      | PI16   | IN/OUT | PIO Data(16)<br>i)SIC,alternative input for SIC(SDI mode)<br>ii)data bit(4) in PIO DMA input mode                        |
| 20      | PI15   | IN/OUT | PIO Data(15)<br>i)SII, alternative input for SII(SDI mode)<br>ii)data bit(3) in PIO DMA input mode                       |
| 21      | PI14   | IN/OUT | PIO Data(14)<br>i)SID, alternative input for SID (SDI mode)<br>ii)data bit(2) in PIO DMA input mode                      |
| 22      | PI13   | IN/OUT | PIO data(13)<br>i)MPEG header bit 13-Layer ID (SDI mode)<br>ii)data bit(1) in PIO DMA input mode                         |
| 23      | PI12   | IN/OUT | PIO Data (12)<br>i)MPEG header bit 14-Layer ID (SDI mode)<br>ii)data bit(0) in PIO DMA input mode                        |
| 24      | SOD    | O      | Serial Output Data   |
| 25      | SOI    | O      | Serial Output Frame Identification   |
| 26      | SOC    | O      | Serial Output Clock  |
| 27      | PI18   | IN/OUT | Start-up <sup>1)</sup> : Clock output scaler on/off<br>Operation : MPEG CRC error  |
| 28      | XVDD   | Supply | Positive Supply of Output Buffers  |
| 29      | XVSS   | Supply | Ground of Output Buffers   |
| 30      | SID    | I      | Serial Input Data  |
| 31      | SII    | I      | Serial Input Frame Identification  |
| 32      | SIC    | I      | Serial Input Clock   |
| 33      | PI4    | IN/OUT | Start-up <sup>1)</sup> : Select SDI/PIODMA input mode<br>Operation : MPEG-Frame Sync                                     |
| 34      | PI3    | IN/OUT | Start-up <sup>1)</sup> : Enable Layer 3 / Disable Layer 3 decoding<br>Operation : MPE Gheader bit 20(Sampling Frequency) |
| 35      | PI2    | IN/OUT | Start-up <sup>1)</sup> : Enable Layer 2 / Disable Layer 2 decoding<br>Operation : MPEG header bit 21(Sampling Frequency) |

3.Pin function

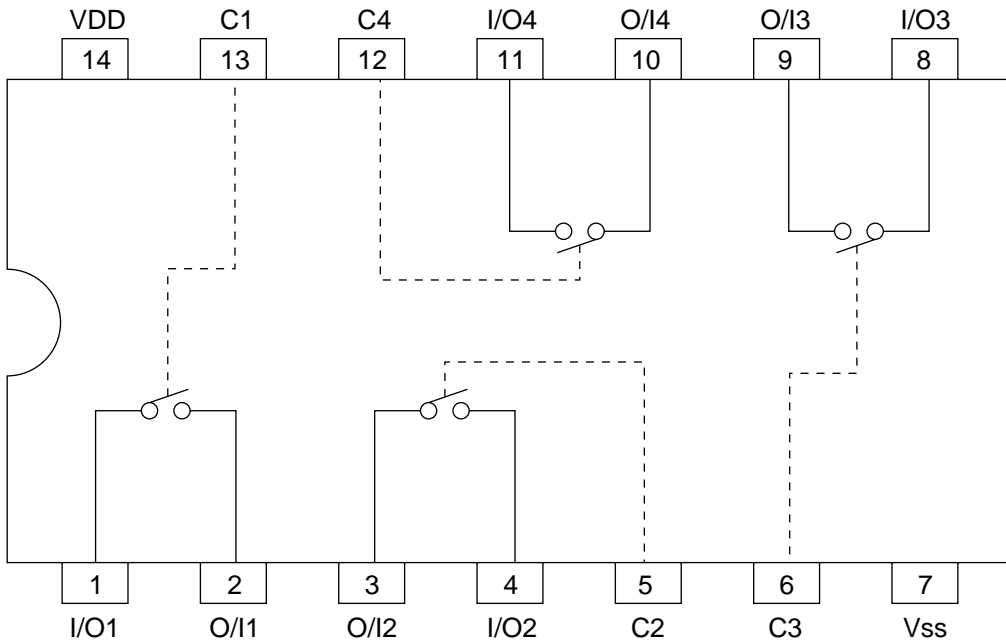
MAS3507D-QG-G10(2/2)

| Pin no. | Symbol | I/O    | Function   |
|---------|--------|--------|--|
| 36      | PI1    | IN/OUT | Start-up <sup>1)</sup> : SDO Select 32 bit mode / 16 bit I <sup>2</sup> S mode<br>Operation : MPEG header bit 30(Emphasis) |
| 37      | P0     | IN/OUT | Start-up <sup>1)</sup> : Select Multimedia mode / Broadcast mode<br>Operation MPEG header bit 31 (Emphasis)                |
| 38      | CLKO   | O      | Clock Output (normal 24.576 MHz)   |
| 39      | PUP    | O      | Power Up, i.e.Status of Voltage Supervision  |
| 40      | WSEN   | I      | WS Enable : Enable DSP   |
| 41      | ERDY   | O      | WSEN=0 : Valid clock input at CLKI<br>WSEN=1 : Clock synthesizer PLL locked  |
| 42      | AVDD   | Supply | Supply for Analog Circuits   |
| 43      | CLKI   | I      | Clock Input  |
| 44      | AVSS   | Supply | Ground Supply for Analog Circuits  |

<sup>1)</sup> Start-up configuration see Table 2.7.3. in (1)

■ BU4066BCFV-X (IC322) : Quad analog switch

1. Pin layout & Block diagram



## ■ LC895199K-ND2(IC601):CD-ROM decoder

### 1.Pin layout

|            |     |
|------------|-----|
| ○144 ~ 109 |     |
| 1          | 108 |
| ⋮          | ⋮   |
| 36         | 73  |
| 37 ~ 72    |     |

### 2.Pin function

LC895199K-ND2(1/3)

| Pin No. | Symbol | Function  |   |
|---------|--------|---|---|
| 1       | VSSO   |   |   |
| 2       | ZRASO  | RAS signal output terminal to buffer DRAM                             |   |
| 3       | ZCASO  | CAS signal output 0 terminal to buffer DRAM(0 is used usually)        |   |
| 4       | ZCAS1  | CAS signal output terminal 1 to buffer DRAM                           |   |
| 5       | VSSO   |   |   |
| 6       | ZOE    | Buffer DRAM output enable   |   |
| 7       | ZUWE   | Buffer DRAM upper write enable  |   |
| 8       | ZLWE   | Buffer DRAM lower write enable  |   |
| 9       | VSSO   |   |   |
| 10      | RA0    | Address signal output terminal to data buffer DRAM                    |   |
| 11      | RA1    |   |   |
| 12      | RA2    |   |   |
| 13      | RA3    |   |   |
| 14      | RA4    |   |   |
| 15      | RA5    |   |   |
| 16      | RA6    |   |   |
| 17      | RA7    |   |   |
| 18      | VDD0   | 5.0V  |   |
| 19      | VSS0   |   |   |
| 20      | RA8    | Address signal output terminal to data buffer DRAM                    |   |
| 21      | IO0    |   | Data I/O terminal to data buffer DRAM. With built-in pull-up resistor |
| 22      | IO1    |   |   |
| 23      | IO2    |   |   |
| 24      | IO3    |   |   |
| 25      | IO4    |   |   |
| 26      | IO5    |   |   |
| 27      | VSSO   |   |   |
| 28      | IO6    | Data I/O terminal to data buffer DRAM. With built-in pull-up resistor |   |
| 29      | IO7    |   |   |
| 30      | IO8    |   |   |
| 31      | IO9    |   |   |
| 32      | IO10   |   |   |
| 33      | IO11   |   |   |
| 34      | IO12   |   |   |
| 35      | IO13   |   |   |
| 36      | VSSO   |   |   |
| 37      | VDD1   | 3.3V  |   |
| 38      | IO14   | Data I/O terminal to data buffer DRAM. With buolt-in pull-up resistor |   |
| 39      | IO15   |   |   |
| 40      | DREQ   |   |   |
| 41      | DRESP  |   |   |
| 42      | IOP7   | General-purpose I/O port  |   |
| 43      | IOP6   |   |   |
| 44      | IOP5   |   |   |
| 45      | IOP4   |   |   |
| 46      | IOP3   |   |   |
| 47      | IOP2   |   |   |
| 48      | IOP1   |   |   |
| 49      | IOP0   |   |   |
| 50      | HDBDIR |   |   |

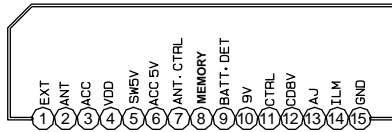
| Pin No. | Symbol   | Function  |
|---------|----------|---|
| 51      | TEST0    | The terminal TEST. Please connect with VSS                                |
| 52      | XTALCK   | X'tal oscillation circuit input terminal                                  |
| 53      | XTAL     | X'tal oscillation circuit output terminal                                 |
| 54      | VDD0     | 5.0V  |
| 55      | VSS0     |   |
| 56      | MCK      | 1/1,2/2,STOP output terminal of XTALCK                                    |
| 57      | TEST1    | The terminal TEST. Please connect with VSS                                |
| 58      | DSDATA   | DAC output terminal   |
| 59      | DLRCK    |   |
| 60      | DBCK     |   |
| 61      | C2PO     | Terminal for CD-DSP I/F   |
| 62      | SDATA    |   |
| 63      | BCK      |   |
| 64      | LRCK     |   |
| 65      | EXCK     | SUB-CODE I/O terminal   |
| 66      | WFCK     |   |
| 67      | SBSO     |   |
| 68      | SCOR     |   |
| 69      | PLL1     | Relation connection of PLL terminal                                       |
| 70      | PLL2     |   |
| 71      | PLL3     |   |
| 72      | VSS0     | (It is analog VSS in version LC895199 with built-in PLL)                  |
| 73      | VDD1     | 3.3V (It is analog VDD in version LC895199 with built-in PLL)             |
| 74      | ZRESET   | LSI reset terminal  |
| 75      | MCK3     | 1/1, 1/5, 2/5, 1/512, and STOP output terminal of XTALCK                  |
| 76      | CSCTRL   | Active Lo and Hi selection terminal on MC(microcontroller) side CS        |
| 77      | ZRO      | Reading data of MC(microcontroller) signal input terminal                 |
| 78      | ZWR      | Writing data of MC(microcontroller) signal input terminal                 |
| 79      | ZCS      | Register chip selection signal input terminal from MC(microcontroller)    |
| 80      | SUA0     | MC(microcontroller) register selection signal terminal                    |
| 81      | SUA1     |   |
| 82      | SUA2     |   |
| 83      | SUA3     |   |
| 84      | SUA4     |   |
| 85      | SUA5     |   |
| 86      | SUA6     |   |
| 87      | D0       | MC(microcontroller) data signal terminal. With built-in pull-up resistor. |
| 88      | D1       |   |
| 89      | D2       |   |
| 90      | VDD0     | 5.0V  |
| 91      | VSS0     |   |
| 92      | D3       | MC(microcontroller) data signal terminal. With built-in pull-up resistor. |
| 93      | D4       |   |
| 94      | D5       |   |
| 95      | D6       |   |
| 96      | D7       |   |
| 97      | ZINT0    | Interrupt request signal output terminal to MC(microcontroller)           |
| 98      | ZINT1    |   |
| 99      | ZSMAIT   | WAIT signal to MC(microcontroller)  |
| 100     | ZRSTCPU  | Reset signal to CPU   |
| 101     | CSEL     | ATAPI control signal  |
| 102     | ZHRST    | ATAPI data bus  |
| 103     | ATPINSEL | Terminal ATAPI arrangement select terminal. Connects with VDD0            |
| 104     | ZDASP    | ATAPI data bus  |
| 105     | ZCS3FX   |   |
| 106     | ZCS1FX   |   |
| 107     | DA2      |   |
| 108     | VSS1     |   |
| 109     | VDD1     | 3.3V  |



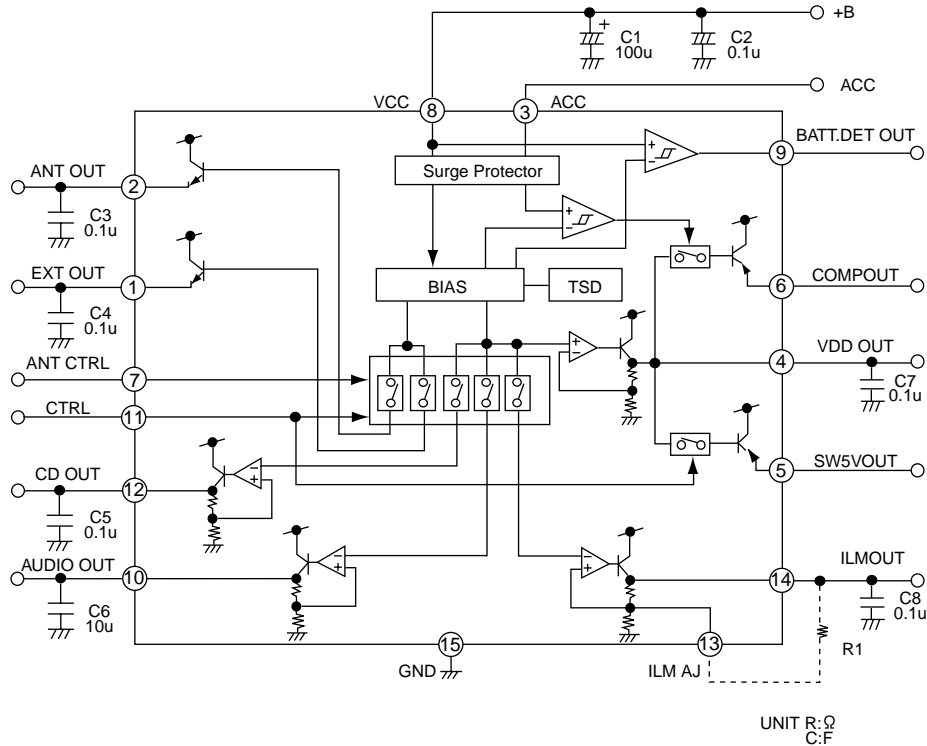
| Pin No. | Symbol  | Function             |
|---------|---------|----------------------|
| 110     | DAO     | ATAPI data bus       |
| 111     | ZPDIAG  |                      |
| 112     | DA1     |                      |
| 113     | ZIOCS16 |                      |
| 114     | HITRQ   |                      |
| 115     | ZDMACK  |                      |
| 116     | VSS1    |                      |
| 117     | IORDY   | ATAPI data bus       |
| 118     | ZDIOR   |                      |
| 119     | ZDIOR   |                      |
| 120     | DMARQ   |                      |
| 121     | VSS1    |                      |
| 122     | DD15    | ATAPI data bus       |
| 123     | DDO     | ATAPI control signal |
| 124     | DD14    | ATAPI control signal |
| 125     | DD1     |                      |
| 126     | VDDO    | 5.0V                 |
| 127     | VSS1    |                      |
| 128     | DD13    | ATAPI control signal |
| 129     | DD2     |                      |
| 130     | DD12    |                      |
| 131     | DD3     |                      |
| 132     | VSS1    |                      |
| 133     | DD11    | ATAPI control signal |
| 134     | DD4     |                      |
| 135     | DD10    |                      |
| 136     | VSS1    |                      |
| 137     | VDD0    | 5.0V                 |
| 138     | DD5     | ATAPI control signal |
| 139     | DD9     |                      |
| 140     | DD6     |                      |
| 141     | VSS1    |                      |
| 142     | DD8     |                      |
| 143     | DD7     |                      |
| 144     | VDD1    | 3.3V                 |

## HA13164 (IC961) : Regulator

### 1.Pin layout



### 2.Block diagram



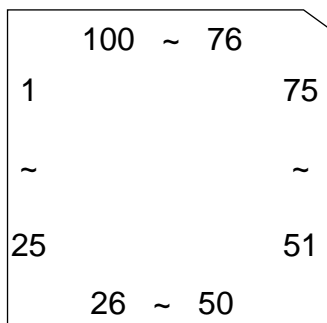
note1) TAB (header of IC)  
connected to GND

### 3.Pin function

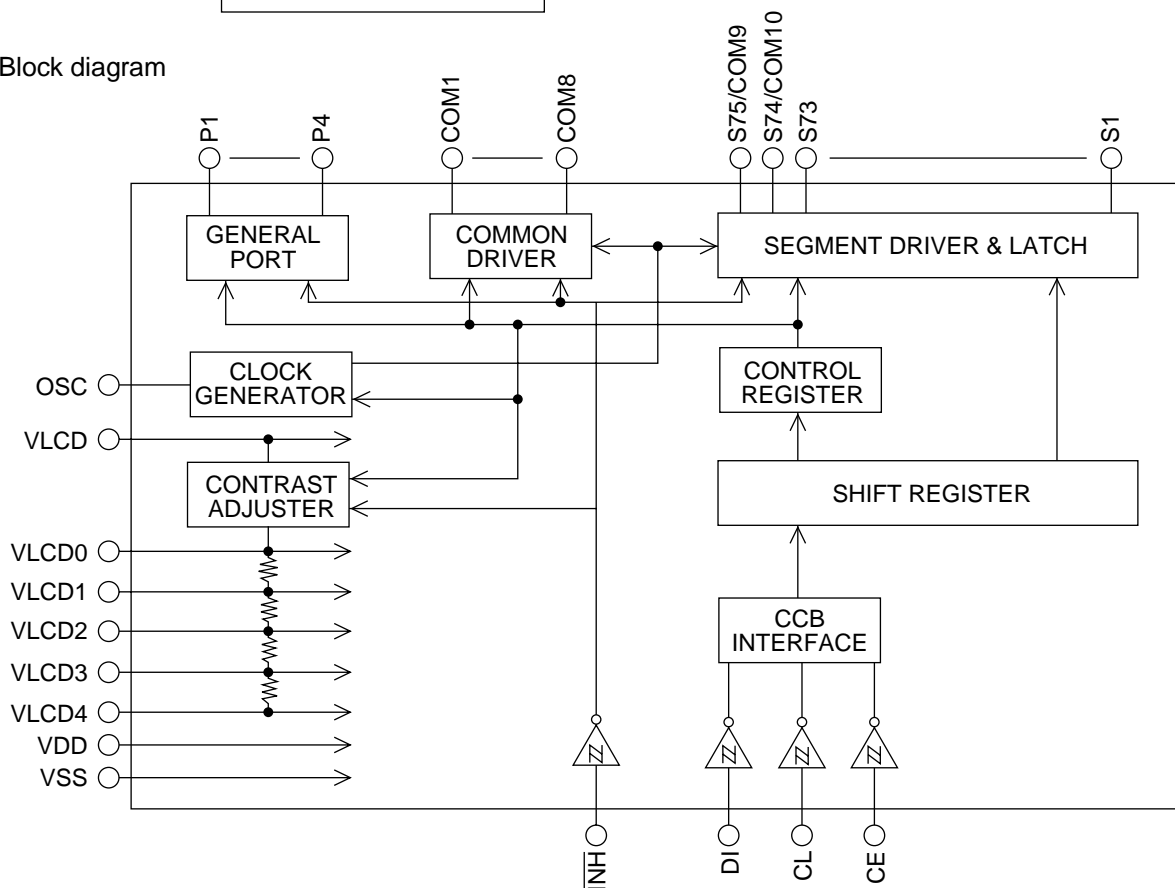
| Pin No. | Symbol   | Function   |
|---------|----------|--|
| 1       | EXT      | Output voltage is VCC-1 V when M or H level applied to CTRL pin.                 |
| 2       | ANT      | Output voltage is VCC-1 V when M or H level to CTRL pin and H level to ANT-CTRL. |
| 3       | ACC      | Connected to ACC.  |
| 4       | VDD      | Regular 5.7V.  |
| 5       | SW5V     | Output voltage is 5V when M or H level applies to CTRL pin.                      |
| 6       | ACC5V    | Output for ACC detector.   |
| 7       | ANT CTRL | L:ANT output OFF , H:ANT output ON   |
| 8       | MEMORY   | Connected to VCC.  |
| 9       | BATT DET | Low battery detect.  |
| 10      | 9V       | Output voltage is 9V when M or H level applied to CTRL pin.                      |
| 11      | CTRL     | L:BIAS OFF, M:BIAS ON, H:CD ON   |
| 12      | CD8V     | Output voltage is 8V when H level applied to CTRL pin.                           |
| 13      | AJ       | Adjustment pin for ILM output voltage.   |
| 14      | ILMI     | Output voltage is 10V when M or H level applies to CTRL pin.                     |
| 15      | GND      | Connected to GND.  |

■ LC75878W (IC501) : LCD driver

1. Pin layout



2. Block diagram

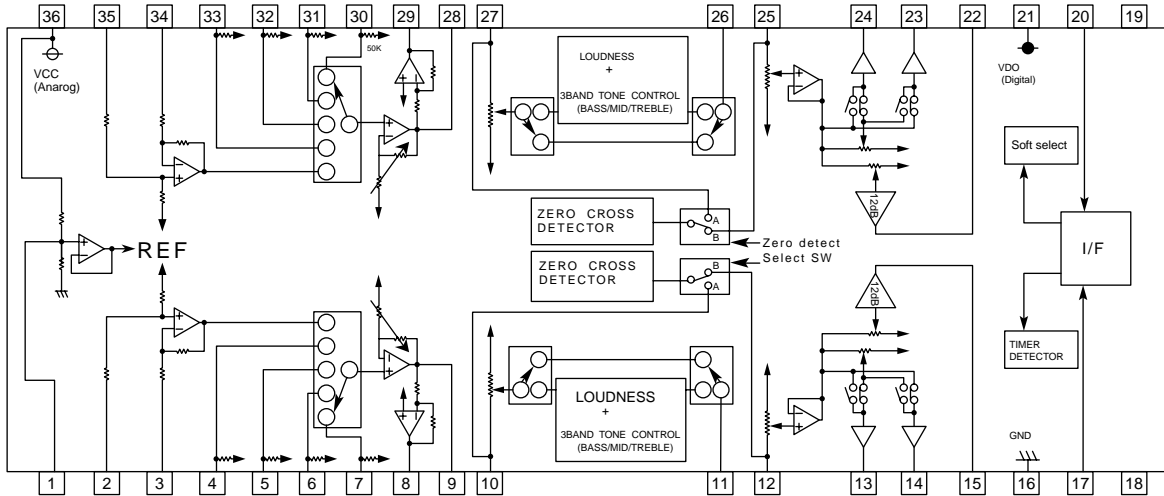


3. Pin function

| No.   | Symbol     | I/O | Function  |
|-------|------------|-----|---|
| 1~73  | SEG1~SEG73 | O   | Segment driver output pin.                                    |
| 74    | SEG74      | O   | Segment driver output pin.                                    |
| 75    | SEG75      | O   | Segment driver output pin.                                    |
| 76~83 | COM8~COM1  | O   | Common driver output pin.                                     |
| 84~87 | P1~P4      | O   | General-purpose output pin.                                   |
| 88    | VDD        | -   | Logic block power supply pin.                                 |
| 89    | VLCD       | -   | LCD driver power supply pin.                                  |
| 90    | VLCD0      | O   | LCD driver bias 4/4 voltage (H-level) power pin.              |
| 91    | VLCD1      | I   | LCD driver bias 3/4 voltage (intermediate level) power pin.   |
| 92    | VLCD2      | I   | LCD driver bias 2/4 voltage (intermediate level) power pin.   |
| 93    | VLCD3      | I   | LCD driver bias 1/4 voltage (intermediate level) power pin.   |
| 94    | VLCD4      | I   | LCD driver bias 0/4 voltage (L-level) power pin.              |
| 95    | VSS        | -   | Power supply pin to connect to ground.                        |
| 96    | OSC        | I/O | Oscillator pin.   |
| 97    | LCD RESET  | I   | Display off, general-purpose output port 「L」 fixed input pin. |
| 98    | CE         | I   | Chip enable   |
| 99    | CL         | I   | Synchronization clock   |
| 100   | DI         | I   | Transfer data   |

■ M61508FP-X (IC911) : E. volume

1. Pin layout & Block diagram

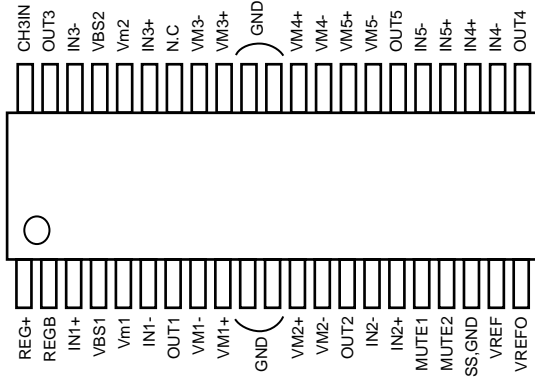


2. Pin function

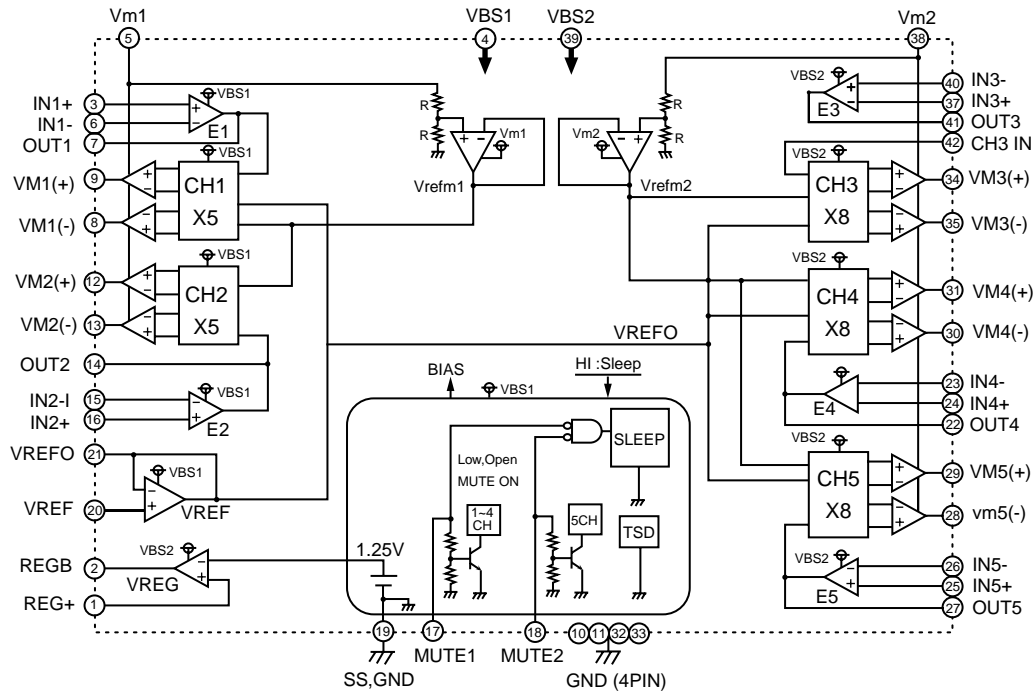
| Pin No. | Symbol        | Function  |
|---------|---------------|---|
| 1       | REF           | Grand for IC signal                               |
| 2       | DEFP IN1      | Differential motion amp. Positive terminal        |
| 3       | DEFN IN1      | Differential motion amp. Negative terminal        |
| 4       | INA1          | Input terminal of input selector switch channel 1 |
| 5       | INB1          | Input terminal of input selector switch channel 1 |
| 6       | INC1          | Input terminal of input selector switch channel 1 |
| 7       | IND1          | Input terminal of input selector switch channel 1 |
| 8       | DEFN OUT1     | Differential output terminal (-)                  |
| 9       | SEL OUT1      | Input selector output terminal                    |
| 10      | VOL IN1       | Volume 1 input terminal                           |
| 11      | TONE OUT1     | Tone output terminal                              |
| 12      | FADER IN1     | Volume 2 input terminal                           |
| 13      | REAR OUT1     | Fader volume control (Rear) output terminal       |
| 14      | FRONT OUT1    | Fader volume control (Front) output terminal      |
| 15      | NonFader OUT1 | Non fader volume output terminal                  |
| 16      | GND           | GND terminal                                      |
| 17      | DATA          | Control data input terminal                       |
| 18      | VDDOUT1       | Test terminal                                     |
| 19      | VDDOUT2       | Test terminal                                     |
| 20      | CLOCK         | Clock input terminal for serial data transport    |
| 21      | VDD           | Power supply terminal for digital                 |
| 22      | NonFader OUT2 | Non fader volume control output terminal          |
| 23      | FRONT OUT2    | Fader volume (Front) output terminal              |
| 24      | REAR OUT2     | Fader volume (Rear) output terminal               |
| 25      | FADER IN2     | Volume 2 input terminal                           |
| 26      | TONE OUT2     | Tone output terminal                              |
| 27      | VOL IN2       | Volume 1 input terminal                           |
| 28      | SEL OUT2      | Input selector output terminal                    |
| 29      | DEFN OUT1     | Differential output terminal (-)                  |
| 30      | IND2          | Input terminal of input selector switch channel 2 |
| 31      | INC2          | Input terminal of input selector switch channel 2 |
| 32      | INB2          | Input terminal of input selector switch channel 2 |
| 33      | INA2          | Input terminal of input selector switch channel 2 |
| 34      | DEFN IN1      | Differential motion amp negative input terminal   |
| 35      | DEFP IN1      | Differential motion amp positive input terminal   |
| 36      | VCC           | Power supply terminal                             |

■ M63008FP-X (IC604) : 5ch Actuator driver

1.Pin layout

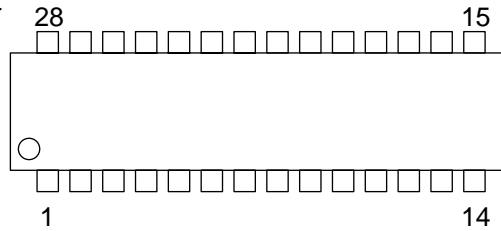


2.Block diagram

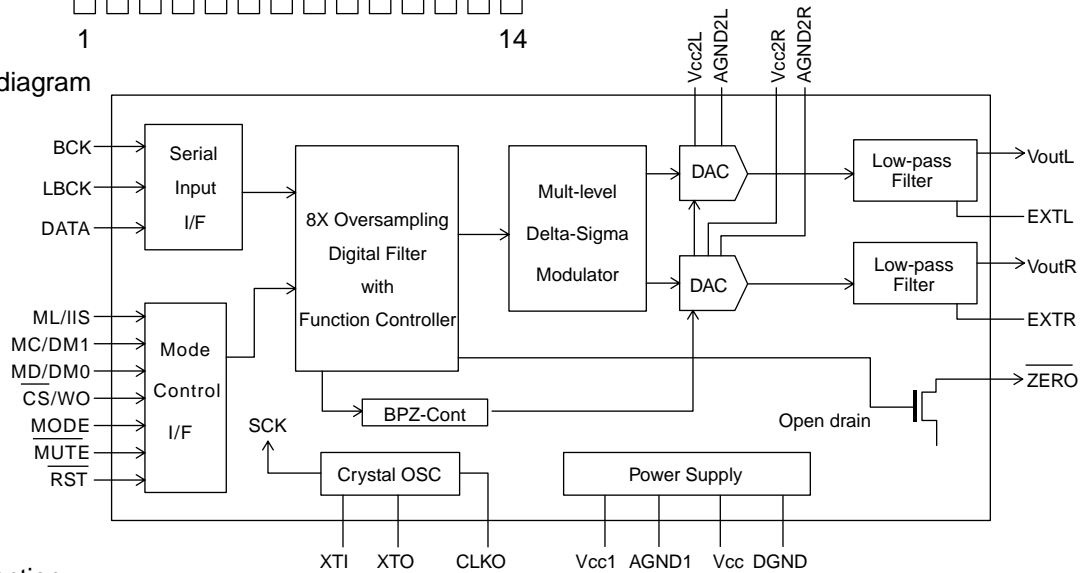


■ PCM1716E-X (IC802) : D/A converter

1. Pin layout



2. Block diagram

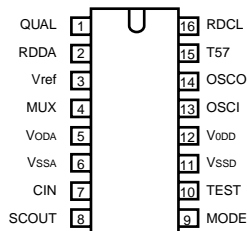


3. Pin function

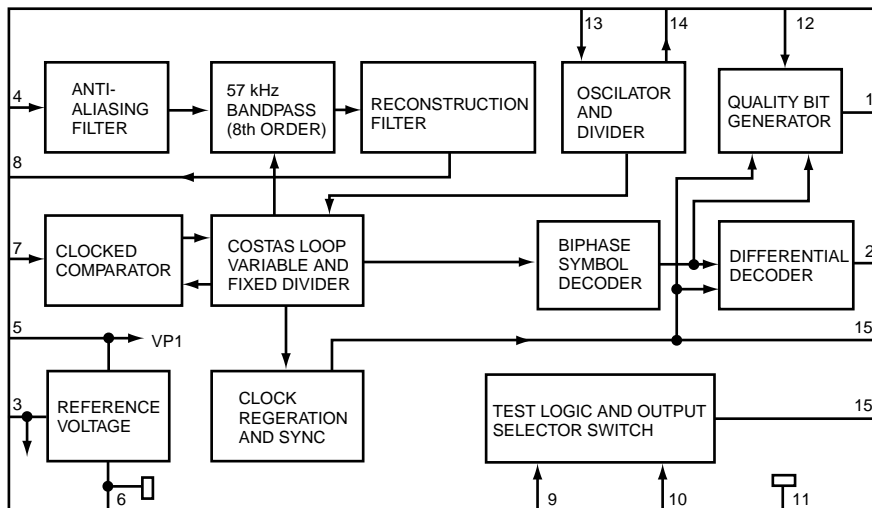
| Pin No. | Symbol | I/O | Function                                     |
|---------|--------|-----|--|
| 1       | LRCK   | I   | LRCK clock input                             |
| 2       | DATA   | I   | Serial audio data input                      |
| 3       | BCK    | I   | Bit clock input for serial audio data        |
| 4       | CLKO   | O   | Buffered output of system clock              |
| 5       | XTI    | I   | Oscillator input / External clock input      |
| 6       | XTO    | O   | Oscillator output                            |
| 7       | DGND   | -   | Digital ground                               |
| 8       | VDD    | -   | Digital power +5V                            |
| 9       | VDD2R  | -   | Analog power +5V                             |
| 10      | AGND2R | -   | Analog ground                                |
| 11      | EXTR   | O   | Rch common pin of analog output amp          |
| 12      | NC     | -   | Non connection                               |
| 13      | VOUTR  | O   | Rch analog voltage output of audio signal    |
| 14      | AGND1  | -   | Analog ground                                |
| 15      | Vcc1   | -   | Analog power +5V                             |
| 16      | VOUTL  | O   | Lch analog voltage output of audio signal    |
| 17      | NC     | -   | Non connection                               |
| 18      | EXTL   | O   | Lch common pin of analog output amp          |
| 19      | AGND2L | -   | Analog ground                                |
| 20      | Vcc2L  | -   | Analog power +5V                             |
| 21      | ZERO   | O   | Zero data flag                               |
| 22      | RST    | I   | Reset  |
| 23      | CS/IWO | I   | Chip select / Input format selection         |
| 24      | MODE   | I   | Mode control select                          |
| 25      | MUTE   | I   | Mute control                                 |
| 26      | MD/DM0 | I   | Mode control, Data / De-emphasis selection 1 |
| 27      | MC/DM1 | I   | Mode control, BCK / De-emphasis selection 2  |
| 28      | ML/IIS | I   | Mode control, WDCK / Input format selection  |

■ SAA6579T-X(IC51):RDS

1.Pin layout



2.Block diagram

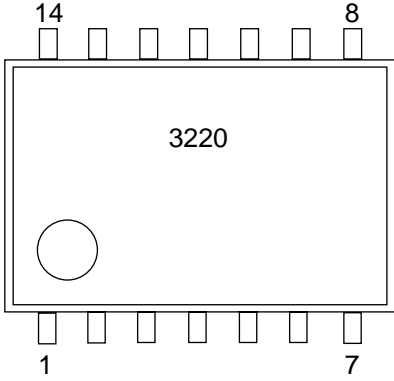


3.Pin function

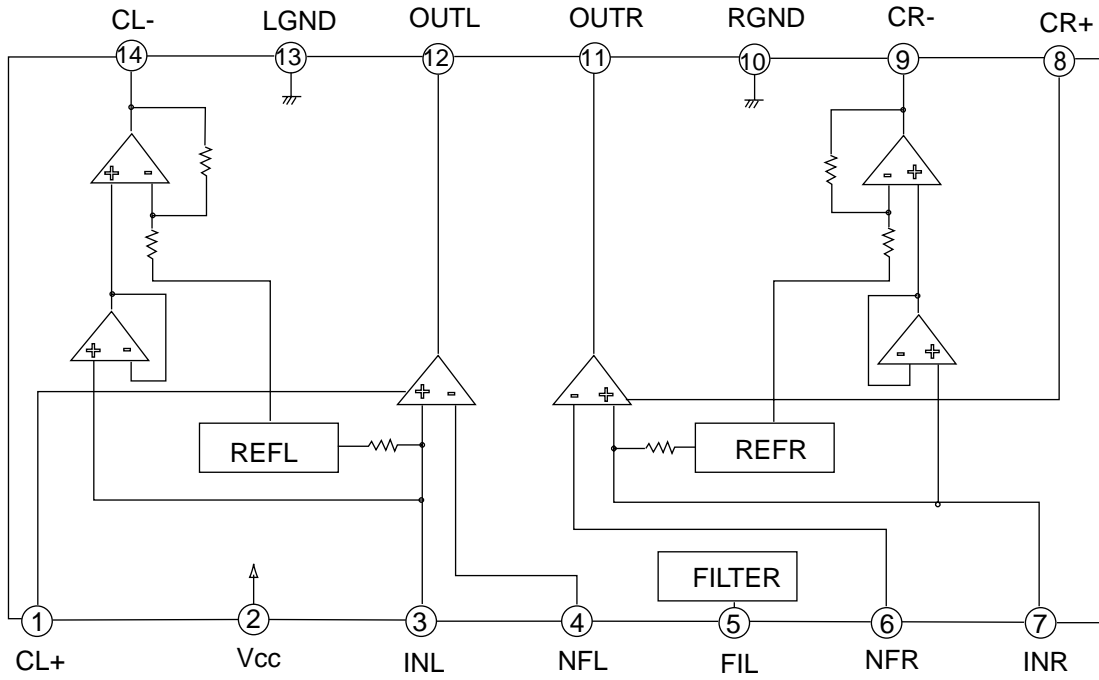
| Pin No. | Symbol | Description                                |
|---------|--------|--|
| 1       | QUAL   | Quality indication output                  |
| 2       | RDDA   | RDS data output                            |
| 3       | Vref   | Reference voltage output (0.5VDDA)         |
| 4       | MUX    | Multiolex signal input                     |
| 5       | VDDA   | +5V supply voltage for analog part         |
| 6       | VSSA   | Ground for analog part (0V)                |
| 7       | CIN    | Subcarrier input to comparator             |
| 8       | SCOUT  | Subcarrier output of reconstruction filter |
| 9       | MODE   | Oscillator mode / test control input       |
| 10      | TEST   | Test enable input                          |
| 11      | VSSD   | Ground for digital part (0V)               |
| 12      | VDDD   | +5V supply voltage for digital part        |
| 13      | OSCI   | Oscillator input                           |
| 14      | OSCO   | Oscillator output                          |
| 15      | T57    | 57 kHz clock signal output                 |
| 16      | RDCL   | RDS clock output                           |

■ BA3220FV-X (IC301,IC401) : Line out amp

1.Pin layout



2.Block diagram



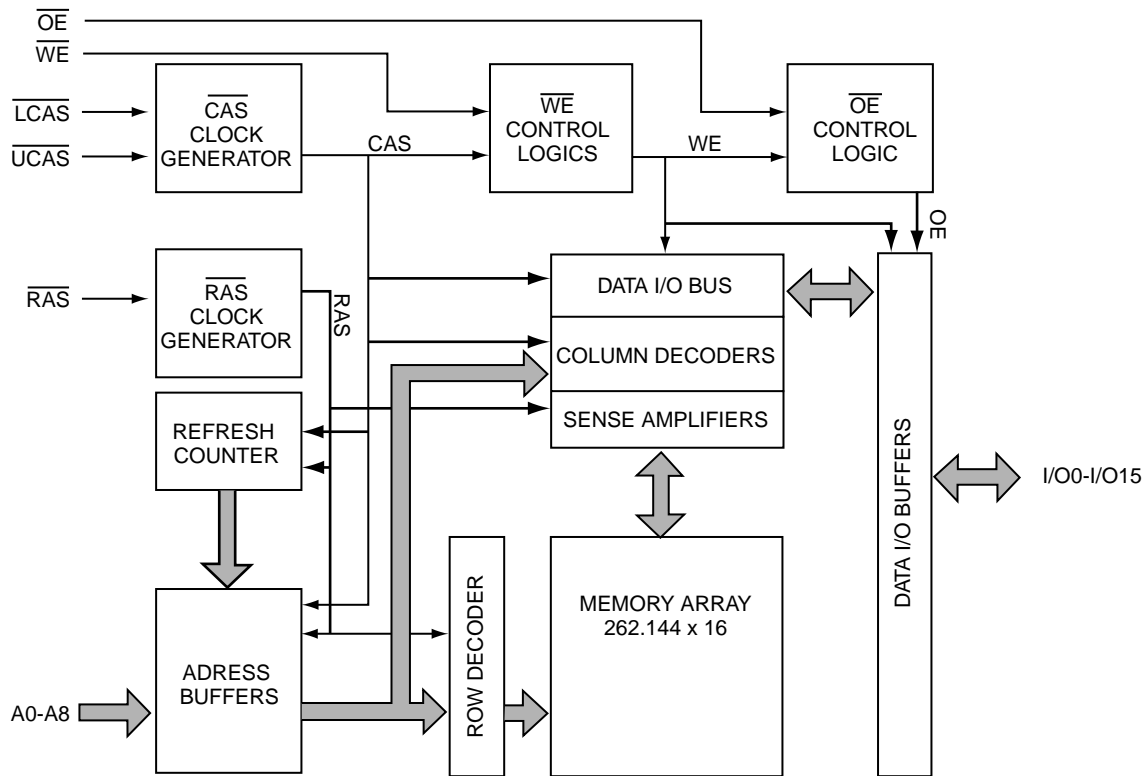


■ IS41C16256-35T(IC602):RAM

1.Pin layout

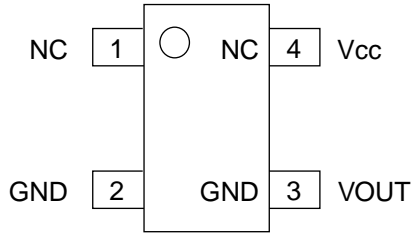


2.Block diagram

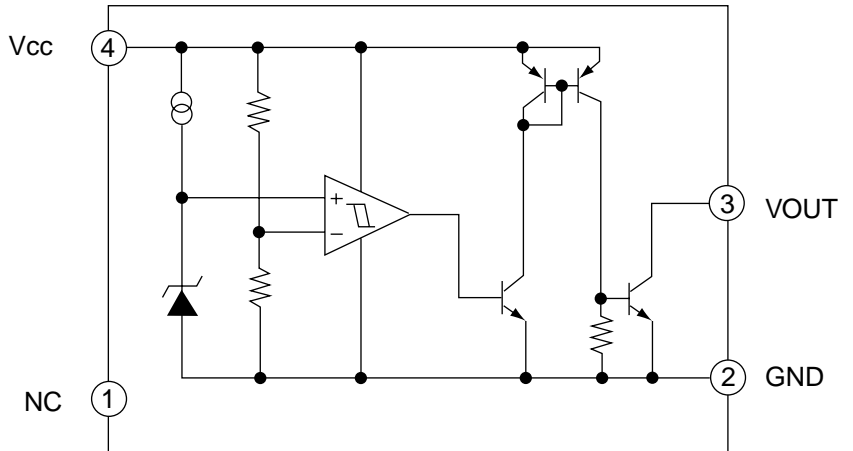


■ IC-PST9333U-X (IC702) : Reset IC

1. Pin layout



2. Block diagram

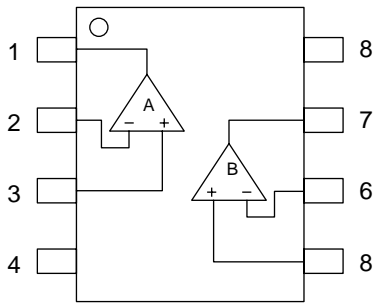


3. Pin function

| Pin No. | Symbol | Function                     |
|---------|--------|------------------------------|
| 1       | NC     | Non connect                  |
| 2       | GND    | GND terminal                 |
| 3       | VOUT   | Reset signal output terminal |
| 4       | Vcc    | Power supply terminal        |

■ **NJM4565V-X (IC171,IC951,IC323) : Ope amp**

1. Pin layout & Block diagram

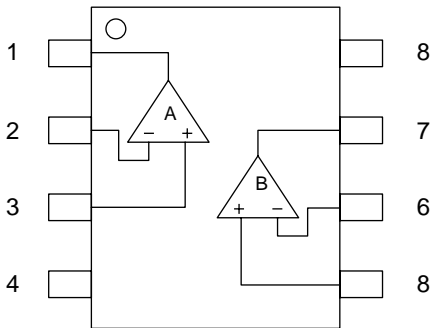


2. Pin function

| Pin No. | Function |
|---------|----------|
| 1       | A output |
| 2       | A-input  |
| 3       | A+input  |
| 4       | V-       |
| 5       | B+input  |
| 6       | B-input  |
| 7       | B output |
| 8       | V+       |

■ **NJM4580V-X (IC801) : CD LPF**

1. Pin layout & Block diagram

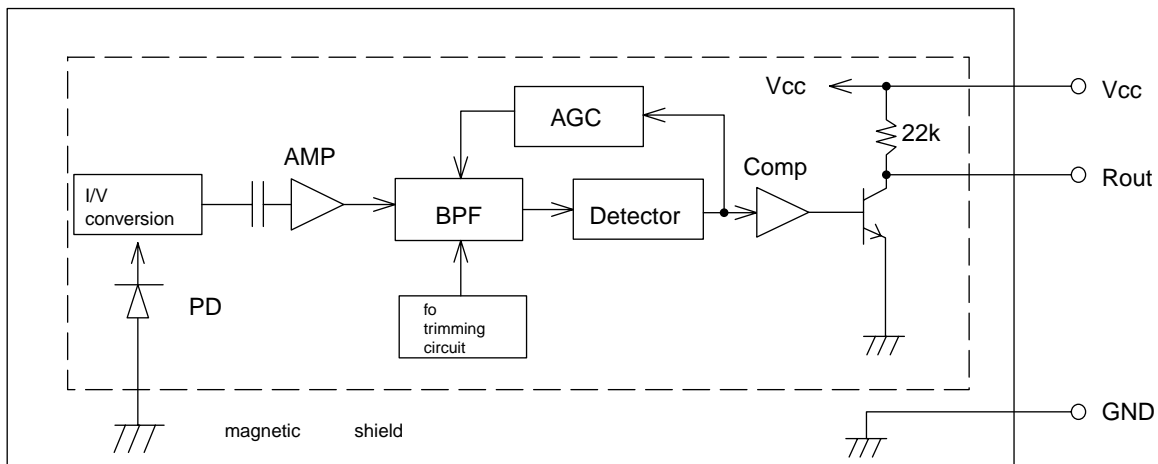


2. Pin function

| Pin No. | Function |
|---------|----------|
| 1       | A output |
| 2       | A -input |
| 3       | A +input |
| 4       | V-       |
| 5       | B +input |
| 6       | B -input |
| 7       | B output |
| 8       | V+       |

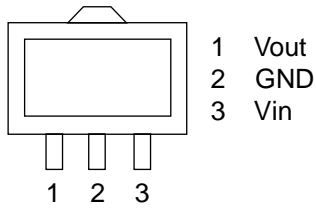
■ **RPM6938-SV4 (IC561) : Remote sensor**

1. Block diagram

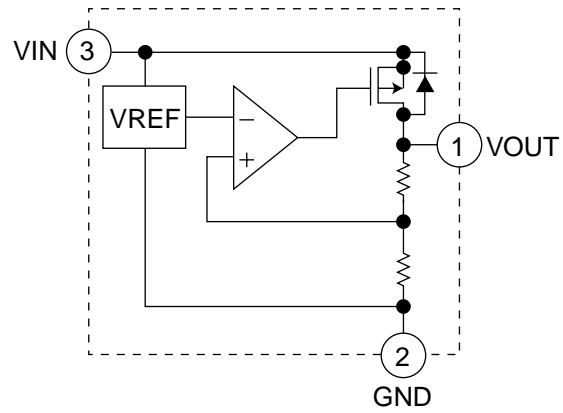


■ S-81332HG-KC-X (IC804) : Regulator

1. Pin layout

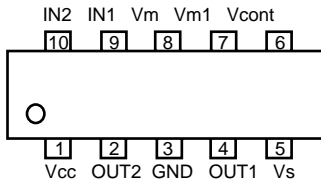


2. Block diagram

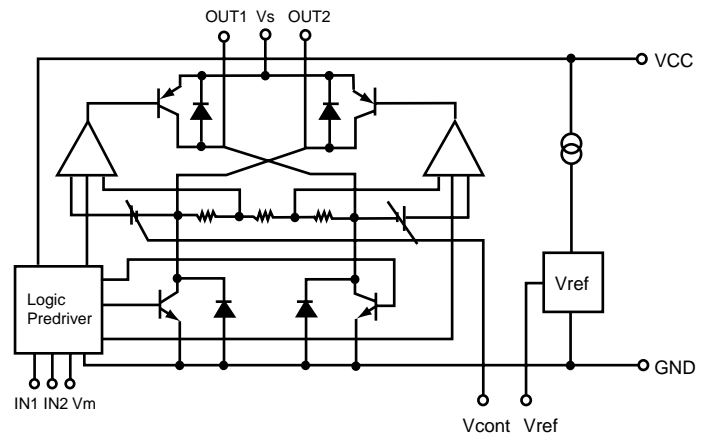


■ LB1830M-X(IC608):Regulator

1.Pin layout

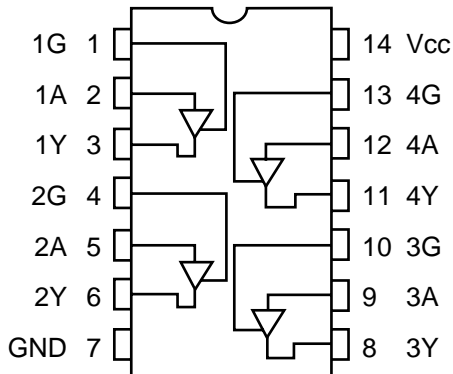


2.Block diagram



■ TC74VHC126FT-X(IC605):Buffer

1.Pin layout



2.Function

| INPUTS |   | OUTPUT |
|--------|---|--------|
| G      | A | Y      |
| L      | X | Z      |
| H      | L | L      |
| H      | H | H      |

X: Don't Care  
Z: High impedance

■ Electrical parts list (Main board)

Block No. 01

| △ | Item  | Parts number | Parts name  | Remarks        | Area |
|---|-------|--------------|-------------|----------------|------|
|   | BZ791 | QAN0009-001Z | BUZZER      |                |      |
|   | C 1   | NCB31EK-473X | C CAPACITOR |                |      |
|   | C 2   | QERF1CM-476Z | E CAPACITOR | 47MF 20% 16V   |      |
|   | C 3   | NCB31HK-103X | C CAPACITOR |                |      |
|   | C 4   | QERF1CM-476Z | E CAPACITOR | 47MF 20% 16V   |      |
|   | C 5   | QERF1AM-107Z | E CAPACITOR | 100MF 20% 10V  |      |
|   | C 7   | QERF1AM-227Z | E CAPACITOR | 220MF 20% 10V  |      |
|   | C 8   | NCB31HK-103X | C CAPACITOR |                |      |
|   | C 9   | QERF1AM-107Z | E CAPACITOR | 100MF 20% 10V  |      |
|   | C 10  | NCB31EK-473X | C CAPACITOR |                |      |
|   | C 21  | NCS31HJ-331X | C CAPACITOR |                |      |
|   | C 22  | NCB31HK-103X | C CAPACITOR |                |      |
|   | C 23  | NCB31HK-472X | C CAPACITOR |                |      |
|   | C 24  | NCB31CK-104X | C CAPACITOR |                |      |
|   | C 25  | QERF1HM-474Z | E CAPACITOR | 0.47MF 20% 50V |      |
|   | C 32  | QERF1HM-104Z | E CAPACITOR | 0.1MF 20% 50V  |      |
|   | C 34  | NCB31CK-104X | C CAPACITOR |                |      |
|   | C 47  | NCS31HJ-101X | C CAPACITOR |                |      |
|   | C 51  | NDC31HJ-820X | C CAPACITOR |                |      |
|   | C 52  | NDC31HJ-470X | C CAPACITOR |                |      |
|   | C 53  | QERF0JM-476Z | E CAPACITOR | 47MF 20% 6.3V  |      |
|   | C 54  | NCB31HK-103X | C CAPACITOR |                |      |
|   | C 55  | NCS31HJ-561X | C CAPACITOR |                |      |
|   | C 56  | NCB31EK-223X | C CAPACITOR |                |      |
|   | C 57  | QERF1HM-225Z | E CAPACITOR | 2.2MF 20% 50V  |      |
|   | C 81  | QERF1EM-475Z | E CAPACITOR | 4.7MF 20% 25V  |      |
|   | C 82  | NCS31HJ-821X | C CAPACITOR |                |      |
|   | C 84  | NCB31HK-153X | C CAPACITOR |                |      |
|   | C 91  | QERF1EM-475Z | E CAPACITOR | 4.7MF 20% 25V  |      |
|   | C 92  | NCS31HJ-821X | C CAPACITOR |                |      |
|   | C 94  | NCB31HK-153X | C CAPACITOR |                |      |
|   | C 103 | QERF1EM-475Z | E CAPACITOR | 4.7MF 20% 25V  |      |
|   | C 110 | NBE21CM-105X | C CAPACITOR |                |      |
|   | C 112 | NBE21CM-105X | C CAPACITOR |                |      |
|   | C 118 | QCB31HK-101Y | C CAPACITOR | 100PF 10% 50V  |      |
|   | C 120 | NCB31CK-104X | C CAPACITOR |                |      |
|   | C 141 | QERF1HM-105Z | E CAPACITOR | 1.0MF 20% 50V  |      |
|   | C 142 | QERF1HM-105Z | E CAPACITOR | 1.0MF 20% 50V  |      |
|   | C 143 | NCS31HJ-101X | C CAPACITOR |                |      |
|   | C 144 | NCS31HJ-101X | C CAPACITOR |                |      |
|   | C 161 | QERF1HM-105Z | E CAPACITOR | 1.0MF 20% 50V  |      |
|   | C 162 | QERF1CM-226Z | E CAPACITOR | 22MF 20% 16V   |      |
|   | C 163 | NCB21EK-473X | C CAPACITOR |                |      |
|   | C 164 | QERF1HM-224Z | E CAPACITOR | 0.22MF 20% 50V |      |
|   | C 172 | QERF1CM-106Z | E CAPACITOR | 10MF 20% 16V   |      |
|   | C 173 | QERF0JM-226Z | E CAPACITOR | 22MF 20% 6.3V  |      |
|   | C 174 | NCB21EK-223X | C CAPACITOR |                |      |
|   | C 175 | QERF0JM-476Z | E CAPACITOR | 47MF 20% 6.3V  |      |
|   | C 203 | QERF1EM-475Z | E CAPACITOR | 4.7MF 20% 25V  |      |
|   | C 210 | NBE21CM-105X | C CAPACITOR |                |      |
|   | C 212 | NBE21CM-105X | C CAPACITOR |                |      |
|   | C 220 | NCB31CK-104X | C CAPACITOR |                |      |
|   | C 241 | QERF1HM-105Z | E CAPACITOR | 1.0MF 20% 50V  |      |
|   | C 242 | QERF1HM-105Z | E CAPACITOR | 1.0MF 20% 50V  |      |
|   | C 243 | NCS31HJ-101X | C CAPACITOR |                |      |
|   | C 244 | NCS31HJ-101X | C CAPACITOR |                |      |
|   | C 272 | QERF1CM-106Z | E CAPACITOR | 10MF 20% 16V   |      |
|   | C 273 | QERF0JM-226Z | E CAPACITOR | 22MF 20% 6.3V  |      |
|   | C 301 | QERF1EM-475Z | E CAPACITOR | 4.7MF 20% 25V  |      |
|   | C 302 | QERF1EM-475Z | E CAPACITOR | 4.7MF 20% 25V  |      |
|   | C 303 | QERF1CM-476Z | E CAPACITOR | 47MF 20% 16V   |      |
|   | C 304 | NCB31HK-103X | C CAPACITOR |                |      |
|   | C 305 | QERF1EM-475Z | E CAPACITOR | 4.7MF 20% 25V  |      |

| △ | Item  | Parts number | Parts name  | Remarks       | Area |
|---|-------|--------------|-------------|---------------|------|
|   | C 306 | QERF1EM-475Z | E CAPACITOR | 4.7MF 20% 25V |      |
|   | C 307 | QERF1AM-107Z | E CAPACITOR | 100MF 20% 10V |      |
|   | C 308 | QERF1EM-475Z | E CAPACITOR | 4.7MF 20% 25V |      |
|   | C 309 | QERF1EM-475Z | E CAPACITOR | 4.7MF 20% 25V |      |
|   | C 310 | QERF1AM-107Z | E CAPACITOR | 100MF 20% 10V |      |
|   | C 321 | QERF1CM-106Z | E CAPACITOR | 10MF 20% 16V  |      |
|   | C 323 | QERF1CM-476Z | E CAPACITOR | 47MF 20% 16V  |      |
|   | C 325 | QERF1HM-225Z | E CAPACITOR | 2.2MF 20% 50V |      |
|   | C 327 | NCB31CK-823X | C CAPACITOR |               |      |
|   | C 328 | NCB31HK-682X | C CAPACITOR |               |      |
|   | C 329 | QERF1HM-225Z | E CAPACITOR | 2.2MF 20% 50V |      |
|   | C 330 | NCB31HK-123X | C CAPACITOR |               |      |
|   | C 331 | NCB31HK-562X | C CAPACITOR |               |      |
|   | C 332 | NCB31EK-273X | C CAPACITOR |               |      |
|   | C 333 | NCB31EK-273X | C CAPACITOR |               |      |
|   | C 334 | NCB31EK-333X | C CAPACITOR |               |      |
|   | C 336 | NCB31EK-473X | C CAPACITOR |               |      |
|   | C 337 | NCB31EK-473X | C CAPACITOR |               |      |
|   | C 350 | QERF1HM-225Z | E CAPACITOR | 2.2MF 20% 50V |      |
|   | C 351 | QERF1HM-225Z | E CAPACITOR | 2.2MF 20% 50V |      |
|   | C 401 | QERF1EM-475Z | E CAPACITOR | 4.7MF 20% 25V |      |
|   | C 402 | QERF1EM-475Z | E CAPACITOR | 4.7MF 20% 25V |      |
|   | C 403 | QERF1CM-476Z | E CAPACITOR | 47MF 20% 16V  |      |
|   | C 404 | NCB31HK-103X | C CAPACITOR |               |      |
|   | C 405 | QERF1EM-475Z | E CAPACITOR | 4.7MF 20% 25V |      |
|   | C 406 | QERF1EM-475Z | E CAPACITOR | 4.7MF 20% 25V |      |
|   | C 407 | QERF1AM-107Z | E CAPACITOR | 100MF 20% 10V |      |
|   | C 408 | QERF1EM-475Z | E CAPACITOR | 4.7MF 20% 25V |      |
|   | C 409 | QERF1EM-475Z | E CAPACITOR | 4.7MF 20% 25V |      |
|   | C 410 | QERF1AM-107Z | E CAPACITOR | 100MF 20% 10V |      |
|   | C 450 | QERF1HM-225Z | E CAPACITOR | 2.2MF 20% 50V |      |
|   | C 451 | QERF1HM-225Z | E CAPACITOR | 2.2MF 20% 50V |      |
|   | C 601 | NCS31HJ-7R0X | C CAPACITOR |               |      |
|   | C 602 | NCS31HJ-7R0X | C CAPACITOR |               |      |
|   | C 603 | NCF31CZ-104X | C CAPACITOR |               |      |
|   | C 604 | NCB31CK-104X | C CAPACITOR |               |      |
|   | C 605 | NCF31CZ-104X | C CAPACITOR |               |      |
|   | C 606 | NCB31HK-103X | C CAPACITOR |               |      |
|   | C 609 | NBE21AM-106X | E CAPACITOR |               |      |
|   | C 610 | NCF31CZ-104X | C CAPACITOR |               |      |
|   | C 611 | NCF31CZ-104X | C CAPACITOR |               |      |
|   | C 612 | NCF31CZ-104X | C CAPACITOR |               |      |
|   | C 613 | NCF31CZ-104X | C CAPACITOR |               |      |
|   | C 614 | NCF31CZ-104X | C CAPACITOR |               |      |
|   | C 615 | NCF31CZ-104X | C CAPACITOR |               |      |
|   | C 616 | NCF31CZ-104X | C CAPACITOR |               |      |
|   | C 617 | NCF31CZ-104X | C CAPACITOR |               |      |
|   | C 618 | NCF31CZ-104X | C CAPACITOR |               |      |
|   | C 619 | NCF31CZ-104X | C CAPACITOR |               |      |
|   | C 620 | NCB31HK-103X | C CAPACITOR |               |      |
|   | C 621 | NCB31CK-104X | C CAPACITOR |               |      |
|   | C 622 | NCF31CZ-104X | C CAPACITOR |               |      |
|   | C 623 | NCB31CK-104X | C CAPACITOR |               |      |
|   | C 624 | NCB31HK-102X | C CAPACITOR |               |      |
|   | C 625 | NBE41AM-226X | E CAPACITOR |               |      |
|   | C 626 | NCB31HK-103X | C CAPACITOR |               |      |
|   | C 627 | NCB31CK-104X | C CAPACITOR |               |      |
|   | C 628 | NCS31HJ-4R0X | C CAPACITOR |               |      |
|   | C 629 | NCS31HJ-120X | C CAPACITOR |               |      |
|   | C 630 | NCS31HJ-220X | C CAPACITOR |               |      |
|   | C 631 | NCS31HJ-560X | C CAPACITOR |               |      |
|   | C 632 | NCS31HJ-270X | C CAPACITOR |               |      |
|   | C 633 | NCB31CK-104X | C CAPACITOR |               |      |

■ Electrical parts list (Main board)

Block No. 01

| △ | Item  | Parts number  | Parts name     | Remarks       | Area | △ | Item  | Parts number | Parts name     | Remarks       | Area |
|---|-------|---------------|----------------|---------------|------|---|-------|--------------|----------------|---------------|------|
|   | C 634 | NBE41AM-226X  | E CAPACITOR    |               |      |   | C 817 | NCS31HJ-101X | C CAPACITOR    |               |      |
|   | C 635 | NCB31HK-103X  | C CAPACITOR    |               |      |   | C 818 | NCS31HJ-101X | C CAPACITOR    |               |      |
|   | C 636 | NEA70JM-107X  | E CAPACITOR    |               |      |   | C 819 | NCS31HJ-101X | C CAPACITOR    |               |      |
|   | C 637 | NCB31HK-103X  | C CAPACITOR    |               |      |   | C 820 | QERF0JM-476Z | E CAPACITOR    | 47MF 20% 6.3V |      |
|   | C 638 | NCB31HK-103X  | C CAPACITOR    |               |      |   | C 821 | NCS31HJ-121X | C CAPACITOR    |               |      |
|   | C 639 | NCB31HK-103X  | C CAPACITOR    |               |      |   | C 822 | NCS31HJ-821X | C CAPACITOR    |               |      |
|   | C 640 | NCF31CZ-104X  | C CAPACITOR    |               |      |   | C 824 | NBE21AM-475X | TS E CAPACITOR |               |      |
|   | C 641 | NBE41AM-226X  | E CAPACITOR    |               |      |   | C 825 | NCB31HK-103X | C CAPACITOR    |               |      |
|   | C 642 | NCB31HK-103X  | C CAPACITOR    |               |      |   | C 826 | QERF1CM-106Z | E CAPACITOR    | 10MF 20% 16V  |      |
|   | C 643 | NCB31HK-103X  | C CAPACITOR    |               |      |   | C 841 | NCF31CZ-104X | C CAPACITOR    |               |      |
|   | C 644 | NDC31HJ-200X  | C CAPACITOR    |               |      |   | C 852 | NCF21CZ-105X | C CAPACITOR    |               |      |
|   | C 645 | NDC31HJ-120X  | C CAPACITOR    |               |      |   | C 853 | NCF21CZ-105X | C CAPACITOR    |               |      |
|   | C 646 | NCB31HK-682X  | C CAPACITOR    |               |      |   | C 860 | NCF31CZ-104X | C CAPACITOR    |               |      |
|   | C 647 | NCB31HK-102X  | C CAPACITOR    |               |      |   | C 861 | NDC31HJ-150X | C CAPACITOR    |               |      |
|   | C 650 | NCF31AZ-105X  | C CAPACITOR    |               |      |   | C 862 | NDC31HJ-150X | C CAPACITOR    |               |      |
|   | C 651 | NCF31AZ-105X  | C CAPACITOR    |               |      |   | C 863 | NCB31HK-103X | C CAPACITOR    |               |      |
|   | C 652 | NCF31CZ-104X  | C CAPACITOR    |               |      |   | C 864 | NCF31CZ-104X | C CAPACITOR    |               |      |
|   | C 653 | QERF1AM-227Z  | E CAPACITOR    | 220MF 20% 10V |      |   | C 866 | NCF31CZ-104X | C CAPACITOR    |               |      |
|   | C 654 | NBE41AM-226X  | E CAPACITOR    |               |      |   | C 876 | NCB31HK-103X | C CAPACITOR    |               |      |
|   | C 655 | NCB31HK-103X  | C CAPACITOR    |               |      |   | C 878 | NBE21AM-475X | TS E CAPACITOR |               |      |
|   | C 656 | NBE41AM-226X  | E CAPACITOR    |               |      |   | C 901 | NCB31CK-104X | C CAPACITOR    |               |      |
|   | C 660 | NCF31CZ-104X  | C CAPACITOR    |               |      |   | C 910 | QERF1CM-476Z | E CAPACITOR    | 47MF 20% 16V  |      |
|   | C 669 | NCF31CZ-104X  | C CAPACITOR    |               |      |   | C 911 | NCB31EK-473X | C CAPACITOR    |               |      |
|   | C 676 | NCB31HK-223X  | C CAPACITOR    |               |      |   | C 912 | QERF1AM-107Z | E CAPACITOR    | 100MF 20% 10V |      |
|   | C 677 | NDC31HJ-100X  | C CAPACITOR    |               |      |   | C 913 | QERF1CM-106Z | E CAPACITOR    | 10MF 20% 16V  |      |
|   | C 678 | NDC31HJ-150X  | C CAPACITOR    |               |      |   | C 914 | NCB31HK-103X | C CAPACITOR    |               |      |
|   | C 679 | NCF31AZ-105X  | C CAPACITOR    |               |      |   | C 915 | QERF1HM-105Z | E CAPACITOR    | 1.0MF 20% 50V |      |
|   | C 680 | NBE21AM-106X  | E CAPACITOR    |               |      |   | C 916 | QERF1HM-105Z | E CAPACITOR    | 1.0MF 20% 50V |      |
|   | C 686 | NBE21AM-106X  | E CAPACITOR    |               |      |   | C 917 | NCB31AK-224X | C CAPACITOR    |               |      |
|   | C 687 | NCF31CZ-104X  | C CAPACITOR    |               |      |   | C 921 | NCB31HK-223X | C CAPACITOR    |               |      |
|   | C 701 | NDC31HJ-220X  | C CAPACITOR    |               |      |   | C 922 | NCB31HK-223X | C CAPACITOR    |               |      |
|   | C 702 | NDC31HJ-270X  | C CAPACITOR    |               |      |   | C 923 | NCB31HK-223X | C CAPACITOR    |               |      |
|   | C 703 | NDC31HJ-270X  | C CAPACITOR    |               |      |   | C 924 | NCB31HK-223X | C CAPACITOR    |               |      |
|   | C 704 | NCS31HJ-8R0X  | C CAPACITOR    |               |      |   | C 925 | NCB31HK-223X | C CAPACITOR    |               |      |
|   | C 705 | NCS31HJ-471X  | C CAPACITOR    |               |      |   | C 926 | NCB31HK-223X | C CAPACITOR    |               |      |
|   | C 707 | NCB31HK-223X  | C CAPACITOR    |               |      |   | C 927 | NCB31HK-223X | C CAPACITOR    |               |      |
|   | C 708 | QERF0JM-476Z  | E CAPACITOR    | 47MF 20% 6.3V |      |   | C 928 | NCB31HK-223X | C CAPACITOR    |               |      |
|   | C 710 | QERF1AM-227Z  | E CAPACITOR    | 220MF 20% 10V |      |   | C 931 | NCB21HK-103X | C CAPACITOR    |               |      |
|   | C 711 | NCS31HJ-471X  | C CAPACITOR    |               |      |   | C 941 | QERF1CM-106Z | E CAPACITOR    | 10MF 20% 16V  |      |
|   | C 712 | NCB31EK-473X  | C CAPACITOR    |               |      |   | C 942 | NCB31AK-224X | C CAPACITOR    |               |      |
|   | C 713 | QERF1AM-227Z  | E CAPACITOR    | 220MF 20% 10V |      |   | C 943 | QERF1CM-106Z | E CAPACITOR    | 10MF 20% 16V  |      |
|   | C 719 | NCS21HJ-471X  | C CAPACITOR    |               |      |   | C 944 | QERF1HM-225Z | E CAPACITOR    | 2.2MF 20% 50V |      |
|   | C 721 | NCB31CK-104X  | C CAPACITOR    |               |      |   | C 945 | QERF1CM-226Z | E CAPACITOR    | 22MF 20% 16V  |      |
|   | C 722 | NCB31CK-104X  | C CAPACITOR    |               |      |   | C 946 | NCB31CK-104X | C CAPACITOR    |               |      |
|   | C 723 | NCB31HK-103AY | C CAPACITOR    |               |      |   | C 947 | NCB31CK-104X | C CAPACITOR    |               |      |
|   | C 724 | NCB31HK-103AY | C CAPACITOR    |               |      |   | C 948 | NCB31CK-104X | C CAPACITOR    |               |      |
|   | C 725 | NCB31EK-473X  | C CAPACITOR    |               |      |   | C 949 | NCB31CK-104X | C CAPACITOR    |               |      |
|   | C 754 | NCB31CK-104X  | C CAPACITOR    |               |      |   | C 951 | NCB31CK-104X | C CAPACITOR    |               |      |
|   | C 755 | NCB31EK-473X  | C CAPACITOR    |               |      |   | C 952 | QERF1CM-106Z | E CAPACITOR    | 10MF 20% 16V  |      |
|   | C 771 | NCB21EK-473X  | C CAPACITOR    |               |      |   | C 961 | QE20337-228  | E CAPACITOR    | 2200MF        |      |
|   | C 791 | QERF1HM-104Z  | E CAPACITOR    | 0.1MF 20% 50V |      |   | C 962 | QERF1HM-225Z | E CAPACITOR    | 2.2MF 20% 50V |      |
|   | C 803 | QERF0JM-476Z  | E CAPACITOR    | 47MF 20% 6.3V |      |   | C 964 | QERF1AM-227Z | E CAPACITOR    | 220MF 20% 10V |      |
|   | C 804 | QERF1AM-107Z  | E CAPACITOR    | 100MF 20% 10V |      |   | C 965 | QERF1AM-227Z | E CAPACITOR    | 220MF 20% 10V |      |
|   | C 805 | NCB31HK-103X  | C CAPACITOR    |               |      |   | C 966 | NCB31HK-103X | C CAPACITOR    |               |      |
|   | C 806 | NCB31HK-103X  | C CAPACITOR    |               |      |   | C 967 | QERF1CM-226Z | E CAPACITOR    | 22MF 20% 16V  |      |
|   | C 807 | NCB31HK-103X  | C CAPACITOR    |               |      |   | C 968 | NCB31CK-104X | C CAPACITOR    |               |      |
|   | C 808 | QERF0JM-476Z  | E CAPACITOR    | 47MF 20% 6.3V |      |   | C 969 | QERF1CM-106Z | E CAPACITOR    | 10MF 20% 16V  |      |
|   | C 809 | QERF0JM-476Z  | E CAPACITOR    | 47MF 20% 6.3V |      |   | C 971 | QERF1CM-226Z | E CAPACITOR    | 22MF 20% 16V  |      |
|   | C 811 | NCS31HJ-121X  | C CAPACITOR    |               |      |   | C 972 | NCB31CK-104X | C CAPACITOR    |               |      |
|   | C 812 | NCS31HJ-821X  | C CAPACITOR    |               |      |   | C 973 | NCB31CK-104X | C CAPACITOR    |               |      |
|   | C 814 | NBE21AM-475X  | TS E CAPACITOR |               |      |   | C 977 | QERF1CM-476Z | E CAPACITOR    | 47MF 20% 16V  |      |
|   | C 815 | NCB31HK-103X  | C CAPACITOR    |               |      |   | C 978 | QERF0JM-476Z | E CAPACITOR    | 47MF 20% 6.3V |      |
|   | C 816 | QERF1CM-106Z  | E CAPACITOR    | 10MF 20% 16V  |      |   | C 982 | QERF1CM-106Z | E CAPACITOR    | 10MF 20% 16V  |      |

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| △ | Item  | Parts number    | Parts name    | Remarks | Area |
|---|-------|-----------------|---------------|---------|------|
|   | C 986 | NCB21EK-104X    | C CAPACITOR   |         |      |
|   | C 990 | NCS31HJ-101X    | C CAPACITOR   |         |      |
|   | C 991 | NCS31HJ-101X    | C CAPACITOR   |         |      |
|   | C 992 | NCS31HJ-101X    | C CAPACITOR   |         |      |
|   | C 993 | NCS31HJ-101X    | C CAPACITOR   |         |      |
|   | C 994 | NCB31HK-102X    | C CAPACITOR   |         |      |
|   | C 995 | NCB31HK-102X    | C CAPACITOR   |         |      |
|   | C 996 | NCS31HJ-101X    | C CAPACITOR   |         |      |
|   | C 997 | NCS31HJ-101X    | C CAPACITOR   |         |      |
|   | C 998 | NCS31HJ-101X    | C CAPACITOR   |         |      |
|   | CN301 | QGA2501C1-07    | 7P CONNECTOR  |         |      |
|   | CN302 | QGA2501C1-06    | 6P CONNECTOR  |         |      |
|   | CN601 | QGB2027M2-26X   | CONNECTOR     |         |      |
|   | CN701 | QGF0503F3-07X   | CONNECTOR     |         |      |
|   | CN702 | QGF1034C1-20X   | CONNECTOR     |         |      |
|   | CN703 | QGA2501F1-02    | CONNECTOR     |         |      |
|   | CN705 | QGA2006C1-02    | CONNECTOR     |         |      |
|   | CN771 | QNZ0095-001     | CONNECTOR     |         |      |
|   | CN901 | QNZ0090-001     | CAR CONNECTOR |         |      |
|   | D 1   | 1SS355-X        | DIODE         |         |      |
|   | D 2   | 1SS355-X        | DIODE         |         |      |
|   | D 11  | MA152WK-X       | SI DIODE      |         |      |
|   | D 111 | MA152WK-X       | SI DIODE      |         |      |
|   | D 131 | MA152WA-X       | DIODE         |         |      |
|   | D 161 | 1SS355-X        | DIODE         |         |      |
|   | D 162 | 1SS355-X        | DIODE         |         |      |
|   | D 231 | MA152WA-X       | DIODE         |         |      |
|   | D 332 | MA152WK-X       | SI DIODE      |         |      |
|   | D 701 | CRS03-W         | SB DIODE      |         |      |
|   | D 702 | 1SS355-X        | DIODE         |         |      |
|   | D 711 | 1SS355-X        | DIODE         |         |      |
|   | D 721 | UDZS6.2B-X      | SI DIODE      |         |      |
|   | D 722 | UDZS6.2B-X      | SI DIODE      |         |      |
|   | D 723 | UDZS6.2B-X      | SI DIODE      |         |      |
|   | D 724 | UDZS6.2B-X      | SI DIODE      |         |      |
|   | D 725 | UDZS6.2B-X      | SI DIODE      |         |      |
|   | D 726 | UDZS6.2B-X      | SI DIODE      |         |      |
|   | D 727 | UDZS6.2B-X      | SI DIODE      |         |      |
|   | D 728 | UDZS6.2B-X      | SI DIODE      |         |      |
|   | D 729 | UDZS6.2B-X      | SI DIODE      |         |      |
|   | D 730 | UDZS6.2B-X      | SI DIODE      |         |      |
|   | D 754 | UDZS6.2B-X      | SI DIODE      |         |      |
|   | D 795 | SML-310FT/JKL/X | LED           |         |      |
|   | D 796 | SML-310FT/JKL/X | LED           |         |      |
|   | D 941 | 1SS355-X        | DIODE         |         |      |
|   | D 942 | 1SS355-X        | DIODE         |         |      |
| △ | D 961 | 1N5404-TU-15    | DIODE         |         |      |
|   | D 962 | CRS03-W         | SB DIODE      |         |      |
|   | D 963 | 1SS355-X        | DIODE         |         |      |
|   | D 964 | CRS03-W         | SB DIODE      |         |      |
|   | D 967 | CRS03-W         | SB DIODE      |         |      |
|   | D 978 | UDZ11B-X        | ZENER DIODE   |         |      |
|   | D 980 | 1SS355-X        | DIODE         |         |      |
|   | D 986 | MA152WA-X       | DIODE         |         |      |
|   | IC 51 | SAA6579T-X      | IC            |         |      |
|   | IC171 | NJM4565V-X      | IC            |         |      |
|   | IC301 | BA3220FV-X      | IC            |         |      |
|   | IC322 | BU4066BCFV-X    | IC            |         |      |
|   | IC323 | NJM4565V-X      | IC            |         |      |
|   | IC401 | BA3220FV-X      | IC            |         |      |
| △ | IC601 | LC895199K-ND2   | IC            |         |      |
|   | IC602 | IS41C16256-35T  | IC            |         |      |
|   | IC603 | UPD63711AGC     | IC            |         |      |

| △ | Item  | Parts number    | Parts name    | Remarks | Area |
|---|-------|-----------------|---------------|---------|------|
| △ | IC604 | M63008FP-X      | IC            |         |      |
|   | IC605 | TC74VHC126FT-X  | IC            |         |      |
|   | IC606 | UPD703031AGC014 | IC            |         |      |
|   | IC608 | LB1830M-X       | IC            |         |      |
|   | IC701 | UPD784215AGC160 | IC            |         |      |
|   | IC702 | IC-PST9333U-X   | IC            |         |      |
|   | IC703 | BR24C32F-X      | IC            |         |      |
|   | IC771 | TC74VHC126FT-X  | IC            |         |      |
| △ | IC801 | NJM4580V-X      | IC            |         |      |
|   | IC802 | PCM1716E-X      | IC            |         |      |
|   | IC803 | TC74VHC157FT-X  | IC            |         |      |
|   | IC804 | S-81332HG-KC-X  | IC            |         |      |
|   | IC805 | TC7WU04FU-X     | IC            |         |      |
|   | IC806 | MAS3507D-QG-G10 | IC            |         |      |
|   | IC911 | M61508FP-X      | IC            |         |      |
| △ | IC941 | TA8273H         | IC            |         |      |
|   | IC951 | NJM4565V-X      | IC            |         |      |
|   | IC961 | HA13164         | IC            |         |      |
|   | J 1   | QAM0105-002     | CAR CABLE     |         |      |
|   | L 1   | NQL334J-4R7X    | INDUCTOR      |         |      |
|   | L 601 | NQR0007-003X    | FERRITE BEADS |         |      |
|   | L 606 | NQL114K-470X    | INDUCTOR      |         |      |
|   | L 622 | NQL56CK-220X    | INDUCTOR      |         |      |
|   | L 701 | NQL114K-470X    | INDUCTOR      |         |      |
|   | L 783 | NQL013K-1R8X    | CHIP INDUCTOR |         |      |
|   | L 784 | NQL013K-1R8X    | CHIP INDUCTOR |         |      |
|   | L 851 | NQR0007-003X    | FERRITE BEADS |         |      |
|   | L 852 | NQR0007-003X    | FERRITE BEADS |         |      |
|   | L 961 | QQR1198-001     | CHOKE COIL    |         |      |
|   | PP 1  | QZW0010-001     | STYLE PIN     |         |      |
|   | PP 2  | QZW0010-001     | STYLE PIN     |         |      |
|   | Q 1   | DTA114ESA-T     | TRANSISTOR    |         |      |
|   | Q 11  | 2SB815/7/-X     | TRANSISTOR    |         |      |
|   | Q 12  | UN2211-X        | TRANSISTOR    |         |      |
|   | Q 13  | 2SB709A/R/-X    | TRANSISTOR    |         |      |
|   | Q 22  | 2SC2412K/R/-X   | TRANSISTOR    |         |      |
|   | Q 23  | 2SC2412K/R/-X   | TRANSISTOR    |         |      |
|   | Q 24  | UN2211-X        | TRANSISTOR    |         |      |
|   | Q 32  | UN2111-X        | TRANSISTOR    |         |      |
|   | Q 33  | 2SD601A/R/-X    | TRANSISTOR    |         |      |
|   | Q 34  | UN2111-X        | TRANSISTOR    |         |      |
|   | Q 35  | UN2111-X        | TRANSISTOR    |         |      |
|   | Q 51  | 2SB709A/R/-X    | TRANSISTOR    |         |      |
|   | Q 52  | UN2211-X        | TRANSISTOR    |         |      |
|   | Q 81  | 2SD601A/R/-X    | TRANSISTOR    |         |      |
|   | Q 91  | 2SD601A/R/-X    | TRANSISTOR    |         |      |
|   | Q 131 | 2SD1048/6-7/-X  | TRANSISTOR    |         |      |
|   | Q 132 | 2SD1048/6-7/-X  | TRANSISTOR    |         |      |
|   | Q 161 | 2SD601A/R/-X    | TRANSISTOR    |         |      |
|   | Q 231 | 2SD1048/6-7/-X  | TRANSISTOR    |         |      |
|   | Q 232 | 2SD1048/6-7/-X  | TRANSISTOR    |         |      |
|   | Q 321 | UN2211-X        | TRANSISTOR    |         |      |
|   | Q 322 | UN2211-X        | TRANSISTOR    |         |      |
|   | Q 323 | 2SD1048/6-7/-X  | TRANSISTOR    |         |      |
|   | Q 636 | 2SB1197K/QR/-X  | TRANSISTOR    |         |      |
|   | Q 641 | 2SB1184/QR/-X   | TRANSISTOR    |         |      |
|   | Q 683 | 2SC4081/QR/-X   | TRANSISTOR    |         |      |
|   | Q 701 | UN2211-X        | TRANSISTOR    |         |      |
|   | Q 755 | UN2211-X        | TRANSISTOR    |         |      |
|   | Q 791 | UN2211-X        | TRANSISTOR    |         |      |
|   | Q 941 | UN2211-X        | TRANSISTOR    |         |      |
|   | Q 942 | UN2215-X        | TRANSISTOR    |         |      |
|   | Q 965 | UN2213-X        | TRANSISTOR    |         |      |

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| △ | Item  | Parts number | Parts name  | Remarks | Area |
|---|-------|--------------|-------------|---------|------|
|   | Q 966 | 2SB709A/R/-X | TRANSISTOR  |         |      |
|   | Q 977 | UN2111-X     | TRANSISTOR  |         |      |
|   | Q 979 | UN2111-X     | TRANSISTOR  |         |      |
|   | Q 983 | 2SD601A/R/-X | TRANSISTOR  |         |      |
|   | Q 986 | UN2211-X     | TRANSISTOR  |         |      |
|   | R 1   | NRSA63J-473X | MG RESISTOR |         |      |
|   | R 2   | NRSA63J-393X | MG RESISTOR |         |      |
|   | R 4   | NRSA63J-330X | MG RESISTOR |         |      |
|   | R 10  | NRSA63J-220X | MG RESISTOR |         |      |
|   | R 11  | NRSA63J-220X | MG RESISTOR |         |      |
|   | R 12  | NRSA63J-473X | MG RESISTOR |         |      |
|   | R 13  | NRSA63J-472X | MG RESISTOR |         |      |
|   | R 14  | NRSA63J-473X | MG RESISTOR |         |      |
|   | R 15  | NRSA63J-332X | MG RESISTOR |         |      |
|   | R 21  | NRSA63J-473X | MG RESISTOR |         |      |
|   | R 22  | NRSA63J-393X | MG RESISTOR |         |      |
|   | R 23  | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 24  | NRSA63J-222X | MG RESISTOR |         |      |
|   | R 25  | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 26  | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 27  | NRSA63J-471X | MG RESISTOR |         |      |
|   | R 28  | NRSA63J-473X | MG RESISTOR |         |      |
|   | R 33  | NRSA63J-472X | MG RESISTOR |         |      |
|   | R 34  | NRSA63J-4R7X | MG RESISTOR |         |      |
|   | R 51  | NRSA63J-0R0X | MG RESISTOR |         |      |
|   | R 52  | NRSA63J-222X | MG RESISTOR |         |      |
|   | R 53  | NRSA63J-222X | MG RESISTOR |         |      |
|   | R 54  | NRSA63J-222X | MG RESISTOR |         |      |
|   | R 55  | NRSA63J-473X | MG RESISTOR |         |      |
|   | R 56  | NRSA63J-472X | MG RESISTOR |         |      |
|   | R 81  | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 82  | NRSA63J-273X | MG RESISTOR |         |      |
|   | R 83  | NRSA63J-472X | MG RESISTOR |         |      |
|   | R 91  | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 92  | NRSA63J-273X | MG RESISTOR |         |      |
|   | R 93  | NRSA63J-472X | MG RESISTOR |         |      |
|   | R 111 | NRSA63J-224X | MG RESISTOR |         |      |
|   | R 118 | NRSA63J-332X | MG RESISTOR |         |      |
|   | R 119 | NRSA63J-473X | MG RESISTOR |         |      |
|   | R 120 | NRSA63J-104X | MG RESISTOR |         |      |
|   | R 131 | NRSA63J-222X | MG RESISTOR |         |      |
|   | R 132 | NRSA63J-222X | MG RESISTOR |         |      |
|   | R 133 | NRSA63J-0R0X | MG RESISTOR |         |      |
|   | R 134 | NRSA63J-0R0X | MG RESISTOR |         |      |
|   | R 135 | NRSA63J-101X | MG RESISTOR |         |      |
|   | R 136 | NRSA63J-101X | MG RESISTOR |         |      |
|   | R 137 | NRSA63J-102X | MG RESISTOR |         |      |
|   | R 138 | NRSA63J-102X | MG RESISTOR |         |      |
|   | R 141 | NRSA63J-473X | MG RESISTOR |         |      |
|   | R 142 | NRSA63J-473X | MG RESISTOR |         |      |
|   | R 143 | NRSA63J-103X | MG RESISTOR |         | E    |
|   | R 143 | NRSA63J-823X | MG RESISTOR |         | EX   |
|   | R 144 | NRSA63J-823X | MG RESISTOR |         | EX   |
|   | R 144 | NRSA63J-103X | MG RESISTOR |         | E    |
|   | R 145 | NRSA63J-124X | MG RESISTOR |         | EX   |
|   | R 145 | NRSA63J-392X | MG RESISTOR |         | E    |
|   | R 146 | NRSA63J-392X | MG RESISTOR |         | E    |
|   | R 146 | NRSA63J-124X | MG RESISTOR |         | EX   |
|   | R 161 | NRSA63J-473X | MG RESISTOR |         |      |
|   | R 162 | NRSA63J-123X | MG RESISTOR |         |      |
|   | R 163 | NRSA63J-184X | MG RESISTOR |         |      |
|   | R 164 | NRSA63J-223X | MG RESISTOR |         |      |
|   | R 165 | NRSA63J-391X | MG RESISTOR |         |      |

| △ | Item  | Parts number | Parts name  | Remarks | Area |
|---|-------|--------------|-------------|---------|------|
|   | R 166 | NRSA63J-102X | MG RESISTOR |         |      |
|   | R 167 | NRSA63J-274X | MG RESISTOR |         |      |
|   | R 172 | NRSA63J-104X | MG RESISTOR |         |      |
|   | R 173 | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 174 | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 175 | NRSA63J-822X | MG RESISTOR |         |      |
|   | R 176 | NRSA63J-822X | MG RESISTOR |         |      |
|   | R 177 | NRSA63J-102X | MG RESISTOR |         |      |
|   | R 178 | NRSA63J-471X | MG RESISTOR |         |      |
|   | R 211 | NRSA63J-224X | MG RESISTOR |         |      |
|   | R 218 | NRSA63J-332X | MG RESISTOR |         |      |
|   | R 219 | NRSA63J-473X | MG RESISTOR |         |      |
|   | R 220 | NRSA63J-104X | MG RESISTOR |         |      |
|   | R 231 | NRSA63J-222X | MG RESISTOR |         |      |
|   | R 232 | NRSA63J-222X | MG RESISTOR |         |      |
|   | R 233 | NRSA63J-0R0X | MG RESISTOR |         |      |
|   | R 234 | NRSA63J-0R0X | MG RESISTOR |         |      |
|   | R 235 | NRSA63J-101X | MG RESISTOR |         |      |
|   | R 236 | NRSA63J-101X | MG RESISTOR |         |      |
|   | R 237 | NRSA63J-102X | MG RESISTOR |         |      |
|   | R 238 | NRSA63J-102X | MG RESISTOR |         |      |
|   | R 241 | NRSA63J-473X | MG RESISTOR |         |      |
|   | R 242 | NRSA63J-473X | MG RESISTOR |         |      |
|   | R 243 | NRSA63J-103X | MG RESISTOR |         | E    |
|   | R 243 | NRSA63J-823X | MG RESISTOR |         | EX   |
|   | R 244 | NRSA63J-823X | MG RESISTOR |         | EX   |
|   | R 244 | NRSA63J-103X | MG RESISTOR |         | E    |
|   | R 245 | NRSA63J-124X | MG RESISTOR |         | EX   |
|   | R 245 | NRSA63J-392X | MG RESISTOR |         | E    |
|   | R 246 | NRSA63J-392X | MG RESISTOR |         | E    |
|   | R 246 | NRSA63J-124X | MG RESISTOR |         | EX   |
|   | R 272 | NRSA63J-104X | MG RESISTOR |         |      |
|   | R 273 | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 274 | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 275 | NRSA63J-822X | MG RESISTOR |         |      |
|   | R 276 | NRSA63J-822X | MG RESISTOR |         |      |
|   | R 277 | NRSA63J-102X | MG RESISTOR |         |      |
|   | R 301 | NRSA63J-183X | MG RESISTOR |         |      |
|   | R 302 | NRSA63J-183X | MG RESISTOR |         |      |
|   | R 303 | NRSA63J-333X | MG RESISTOR |         |      |
|   | R 304 | NRSA63J-333X | MG RESISTOR |         |      |
|   | R 305 | NRSA63J-154X | MG RESISTOR |         |      |
|   | R 325 | NRSA63J-104X | MG RESISTOR |         |      |
|   | R 327 | NRSA63J-562X | MG RESISTOR |         |      |
|   | R 328 | NRSA63J-153X | MG RESISTOR |         |      |
|   | R 329 | NRSA63J-0R0X | MG RESISTOR |         |      |
|   | R 330 | NRSA63J-473X | MG RESISTOR |         |      |
|   | R 331 | NRSA63J-104X | MG RESISTOR |         |      |
|   | R 332 | NRSA63J-104X | MG RESISTOR |         |      |
|   | R 333 | NRSA63J-473X | MG RESISTOR |         |      |
|   | R 334 | NRSA63J-473X | MG RESISTOR |         |      |
|   | R 335 | NRSA63J-821X | MG RESISTOR |         |      |
|   | R 336 | NRSA63J-473X | MG RESISTOR |         |      |
|   | R 337 | NRSA63J-472X | MG RESISTOR |         |      |
|   | R 338 | NRSA63J-101X | MG RESISTOR |         |      |
|   | R 339 | NRSA63J-101X | MG RESISTOR |         |      |
|   | R 340 | NRSA63J-0R0X | MG RESISTOR |         |      |
|   | R 341 | NRSA63J-105X | MG RESISTOR |         |      |
|   | R 342 | NRSA63J-105X | MG RESISTOR |         |      |
|   | R 343 | NRSA63J-105X | MG RESISTOR |         |      |
|   | R 344 | NRSA63J-105X | MG RESISTOR |         |      |
|   | R 351 | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 352 | NRSA63J-103X | MG RESISTOR |         |      |



■ Electrical parts list (Main board)

Block No. 01

| △ | Item  | Parts number  | Parts name  | Remarks | Area |
|---|-------|---------------|-------------|---------|------|
|   | R 401 | NRSA63J-183X  | MG RESISTOR |         |      |
|   | R 402 | NRSA63J-183X  | MG RESISTOR |         |      |
|   | R 403 | NRSA63J-333X  | MG RESISTOR |         |      |
|   | R 404 | NRSA63J-333X  | MG RESISTOR |         |      |
|   | R 405 | NRSA63J-154X  | MG RESISTOR |         |      |
|   | R 436 | NRSA63J-473X  | MG RESISTOR |         | E    |
|   | R 601 | NRSA63J-332X  | MG RESISTOR |         |      |
|   | R 602 | NRSA63J-151X  | MG RESISTOR |         |      |
|   | R 603 | NRSA63J-103X  | MG RESISTOR |         |      |
|   | R 604 | NRSA63J-103X  | MG RESISTOR |         |      |
|   | R 605 | NRSA63J-201X  | MG RESISTOR |         |      |
|   | R 606 | NRSA63J-752X  | MG RESISTOR |         |      |
|   | R 607 | NRSA63J-100X  | MG RESISTOR |         |      |
|   | R 608 | NRSA63J-100X  | MG RESISTOR |         |      |
|   | R 609 | NRSA63J-100X  | MG RESISTOR |         |      |
|   | R 610 | NRSA63J-100X  | MG RESISTOR |         |      |
|   | R 611 | NRSA63J-100X  | MG RESISTOR |         |      |
|   | R 612 | NRSA63J-100X  | MG RESISTOR |         |      |
|   | R 613 | NRSA63J-100X  | MG RESISTOR |         |      |
|   | R 615 | NRSA63J-0R0X  | MG RESISTOR |         |      |
|   | R 618 | NRSA63J-0R0X  | MG RESISTOR |         |      |
|   | R 619 | NRSA63J-103X  | MG RESISTOR |         |      |
|   | R 620 | NRSA63J-103X  | MG RESISTOR |         |      |
|   | R 621 | NRSA63J-393X  | MG RESISTOR |         |      |
|   | R 623 | NRSA63J-0R0X  | MG RESISTOR |         |      |
|   | R 624 | NRSA63J-153X  | MG RESISTOR |         |      |
|   | R 625 | NRSA63J-622X  | MG RESISTOR |         |      |
|   | R 626 | NRSA63J-683NY | MG RESISTOR |         |      |
|   | R 627 | NRSA63J-223X  | MG RESISTOR |         |      |
|   | R 628 | NRSA63J-683NY | MG RESISTOR |         |      |
|   | R 629 | NRSA63J-752X  | MG RESISTOR |         |      |
|   | R 630 | NRSA63J-752X  | MG RESISTOR |         |      |
|   | R 631 | NRSA63J-104X  | MG RESISTOR |         |      |
|   | R 632 | NRSA63J-0R0X  | MG RESISTOR |         |      |
|   | R 633 | NRSA63J-103X  | MG RESISTOR |         |      |
|   | R 634 | NRSA63J-333X  | MG RESISTOR |         |      |
|   | R 635 | NRSA63J-105X  | MG RESISTOR |         |      |
|   | R 636 | NRSA63J-220X  | MG RESISTOR |         |      |
|   | R 637 | NRSA63J-220X  | MG RESISTOR |         |      |
|   | R 638 | NRSA63J-0R0X  | MG RESISTOR |         |      |
|   | R 639 | NRSA63J-123X  | MG RESISTOR |         |      |
|   | R 640 | NRSA63J-0R0X  | MG RESISTOR |         |      |
|   | R 641 | NRSA63J-103X  | MG RESISTOR |         |      |
|   | R 642 | NRSA63J-303X  | MG RESISTOR |         |      |
|   | R 643 | NRSA63J-0R0X  | MG RESISTOR |         |      |
|   | R 644 | NRSA63J-103X  | MG RESISTOR |         |      |
|   | R 645 | NRSA63J-103X  | MG RESISTOR |         |      |
|   | R 646 | NRSA63J-103X  | MG RESISTOR |         |      |
|   | R 647 | NRSA63J-103X  | MG RESISTOR |         |      |
|   | R 648 | NRSA63J-103X  | MG RESISTOR |         |      |
|   | R 649 | NRSA63J-103X  | MG RESISTOR |         |      |
|   | R 650 | NRSA63J-223X  | MG RESISTOR |         |      |
|   | R 651 | NRSA63J-104X  | MG RESISTOR |         |      |
|   | R 652 | NRSA63J-334X  | MG RESISTOR |         |      |
|   | R 653 | NRSA63J-101X  | MG RESISTOR |         |      |
|   | R 654 | NRSA63J-223X  | MG RESISTOR |         |      |
|   | R 655 | NRSA63J-104X  | MG RESISTOR |         |      |
|   | R 656 | NRSA63J-101X  | MG RESISTOR |         |      |
|   | R 657 | NRSA63J-334X  | MG RESISTOR |         |      |
|   | R 658 | NRSA63J-223X  | MG RESISTOR |         |      |
|   | R 659 | NRSA63J-103X  | MG RESISTOR |         |      |
|   | R 660 | NRSA63J-331X  | MG RESISTOR |         |      |
|   | R 661 | NRSA63J-104X  | MG RESISTOR |         |      |

| △ | Item  | Parts number | Parts name  | Remarks | Area |
|---|-------|--------------|-------------|---------|------|
|   | R 662 | NRSA63J-473X | MG RESISTOR |         |      |
|   | R 663 | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 664 | NRSA63J-473X | MG RESISTOR |         |      |
|   | R 670 | NRSA63J-104X | MG RESISTOR |         |      |
|   | R 676 | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 677 | NRSA63J-0R0X | MG RESISTOR |         |      |
|   | R 678 | NRSA63J-105X | MG RESISTOR |         |      |
|   | R 679 | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 680 | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 681 | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 682 | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 683 | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 684 | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 685 | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 686 | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 687 | NRSA63J-223X | MG RESISTOR |         |      |
|   | R 688 | NRSA63J-223X | MG RESISTOR |         |      |
|   | R 689 | NRSA63J-223X | MG RESISTOR |         |      |
|   | R 690 | NRSA63J-104X | MG RESISTOR |         |      |
|   | R 691 | NRSA63J-473X | MG RESISTOR |         |      |
|   | R 693 | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 694 | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 695 | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 696 | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 701 | NRSA63J-473X | MG RESISTOR |         |      |
|   | R 703 | NRSA63J-104X | MG RESISTOR |         |      |
|   | R 705 | NRSA63J-473X | MG RESISTOR |         |      |
|   | R 706 | NRSA63J-222X | MG RESISTOR |         |      |
|   | R 707 | NRSA63J-472X | MG RESISTOR |         |      |
|   | R 708 | NRSA63J-472X | MG RESISTOR |         |      |
|   | R 709 | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 710 | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 711 | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 713 | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 714 | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 715 | NRSA63J-472X | MG RESISTOR |         |      |
|   | R 716 | NRSA63J-472X | MG RESISTOR |         |      |
|   | R 717 | NRSA63J-472X | MG RESISTOR |         |      |
|   | R 718 | NRSA63J-222X | MG RESISTOR |         |      |
|   | R 719 | NRSA63J-222X | MG RESISTOR |         |      |
|   | R 720 | NRSA63J-222X | MG RESISTOR |         |      |
|   | R 721 | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 722 | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 723 | NRSA63J-102X | MG RESISTOR |         |      |
|   | R 724 | NRSA63J-271X | MG RESISTOR |         |      |
|   | R 725 | NRSA63J-271X | MG RESISTOR |         |      |
|   | R 728 | NRSA63J-104X | MG RESISTOR |         |      |
|   | R 729 | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 730 | NRSA63J-104X | MG RESISTOR |         |      |
|   | R 731 | NRSA63J-104X | MG RESISTOR |         |      |
|   | R 732 | NRSA63J-104X | MG RESISTOR |         |      |
|   | R 733 | NRSA63J-104X | MG RESISTOR |         |      |
|   | R 734 | NRSA63J-104X | MG RESISTOR |         |      |
|   | R 735 | NRSA63J-104X | MG RESISTOR |         |      |
|   | R 736 | NRSA63J-102X | MG RESISTOR |         |      |
|   | R 738 | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 739 | NRSA63J-473X | MG RESISTOR |         |      |
|   | R 745 | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 746 | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 751 | NRSA63J-106X | MG RESISTOR |         |      |
|   | R 754 | NRSA63J-102X | MG RESISTOR |         |      |
|   | R 755 | NRSA63J-821X | MG RESISTOR |         |      |
|   | R 757 | NRSA63J-103X | MG RESISTOR |         |      |

■ Electrical parts list (Main board)

Block No. 01

| △ | Item  | Parts number | Parts name  | Remarks | Area |
|---|-------|--------------|-------------|---------|------|
|   | R 758 | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 761 | NRSA63J-222X | MG RESISTOR |         |      |
|   | R 762 | NRSA63J-222X | MG RESISTOR |         |      |
|   | R 763 | NRSA63J-222X | MG RESISTOR |         |      |
|   | R 764 | NRSA63J-222X | MG RESISTOR |         |      |
|   | R 765 | NRSA63J-222X | MG RESISTOR |         |      |
|   | R 766 | NRSA63J-222X | MG RESISTOR |         |      |
|   | R 767 | NRSA63J-473X | MG RESISTOR |         |      |
|   | R 768 | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 770 | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 772 | NRSA63J-473X | MG RESISTOR |         |      |
|   | R 773 | NRSA63J-223X | MG RESISTOR |         |      |
|   | R 774 | NRSA63J-101X | MG RESISTOR |         |      |
|   | R 775 | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 776 | NRSA63J-104X | MG RESISTOR |         |      |
|   | R 777 | NRSA63J-223X | MG RESISTOR |         |      |
|   | R 778 | NRSA63J-101X | MG RESISTOR |         |      |
|   | R 779 | NRSA63J-473X | MG RESISTOR |         |      |
|   | R 780 | NRSA63J-223X | MG RESISTOR |         |      |
|   | R 781 | NRSA63J-331X | MG RESISTOR |         |      |
|   | R 782 | NRSA63J-104X | MG RESISTOR |         |      |
|   | R 791 | NRSA02J-392X | MG RESISTOR |         |      |
|   | R 792 | NRSA02J-392X | MG RESISTOR |         |      |
|   | R 793 | NRSA02J-392X | MG RESISTOR |         |      |
|   | R 794 | NRSA02J-392X | MG RESISTOR |         |      |
|   | R 795 | NRSA02J-562X | MG RESISTOR |         |      |
|   | R 796 | NRSA02J-472X | MG RESISTOR |         |      |
|   | R 797 | NRSA02J-102X | MG RESISTOR |         |      |
|   | R 798 | NRSA02J-102X | MG RESISTOR |         |      |
|   | R 811 | NRSA63J-333X | MG RESISTOR |         |      |
|   | R 812 | NRSA63J-123X | MG RESISTOR |         |      |
|   | R 813 | NRSA63J-272X | MG RESISTOR |         |      |
|   | R 814 | NRSA63J-223X | MG RESISTOR |         |      |
|   | R 815 | NRSA63J-223X | MG RESISTOR |         |      |
|   | R 816 | NRSA63J-223X | MG RESISTOR |         |      |
|   | R 817 | NRSA63J-153X | MG RESISTOR |         |      |
|   | R 821 | NRSA63J-333X | MG RESISTOR |         |      |
|   | R 822 | NRSA63J-123X | MG RESISTOR |         |      |
|   | R 823 | NRSA63J-272X | MG RESISTOR |         |      |
|   | R 824 | NRSA63J-223X | MG RESISTOR |         |      |
|   | R 825 | NRSA63J-223X | MG RESISTOR |         |      |
|   | R 826 | NRSA63J-223X | MG RESISTOR |         |      |
|   | R 827 | NRSA63J-153X | MG RESISTOR |         |      |
|   | R 830 | NRSA63J-470X | MG RESISTOR |         |      |
|   | R 831 | NRSA63J-470X | MG RESISTOR |         |      |
|   | R 832 | NRSA63J-470X | MG RESISTOR |         |      |
|   | R 833 | NRSA63J-101X | MG RESISTOR |         |      |
|   | R 834 | NRSA63J-101X | MG RESISTOR |         |      |
|   | R 835 | NRSA63J-101X | MG RESISTOR |         |      |
|   | R 836 | NRSA63J-332X | MG RESISTOR |         |      |
|   | R 837 | NRSA63J-332X | MG RESISTOR |         |      |
|   | R 838 | NRSA63J-0R0X | MG RESISTOR |         |      |
|   | R 839 | NRSA63J-0R0X | MG RESISTOR |         |      |
|   | R 840 | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 841 | NRSA63J-0R0X | MG RESISTOR |         |      |
|   | R 842 | NRSA63J-0R0X | MG RESISTOR |         |      |
|   | R 843 | NRSA63J-0R0X | MG RESISTOR |         |      |
|   | R 844 | NRSA63J-0R0X | MG RESISTOR |         |      |
|   | R 852 | NRSA63J-100X | MG RESISTOR |         |      |
|   | R 853 | NRSA63J-100X | MG RESISTOR |         |      |
|   | R 859 | NRSA63J-471X | MG RESISTOR |         |      |
|   | R 860 | NRSA63J-105X | MG RESISTOR |         |      |
|   | R 861 | NRSA63J-103X | MG RESISTOR |         |      |

| △ | Item  | Parts number | Parts name  | Remarks      | Area |
|---|-------|--------------|-------------|--------------|------|
|   | R 862 | NRSA63J-103X | MG RESISTOR |              |      |
|   | R 863 | NRSA63J-103X | MG RESISTOR |              |      |
|   | R 864 | NRSA63J-103X | MG RESISTOR |              |      |
|   | R 865 | NRSA63J-103X | MG RESISTOR |              |      |
|   | R 866 | NRSA63J-103X | MG RESISTOR |              |      |
|   | R 867 | NRSA63J-103X | MG RESISTOR |              |      |
|   | R 868 | NRSA63J-103X | MG RESISTOR |              |      |
|   | R 869 | NRSA63J-103X | MG RESISTOR |              |      |
|   | R 870 | NRSA63J-103X | MG RESISTOR |              |      |
|   | R 871 | NRSA63J-103X | MG RESISTOR |              |      |
|   | R 872 | NRSA63J-103X | MG RESISTOR |              |      |
|   | R 874 | NRSA63J-103X | MG RESISTOR |              |      |
|   | R 876 | NRSA63J-100X | MG RESISTOR |              |      |
|   | R 911 | NRSA63J-222X | MG RESISTOR |              |      |
|   | R 912 | NRSA63J-222X | MG RESISTOR |              |      |
|   | R 913 | NRSA63J-100X | MG RESISTOR |              |      |
|   | R 922 | NRSA63J-271X | MG RESISTOR |              |      |
|   | R 923 | NRSA63J-271X | MG RESISTOR |              |      |
|   | R 924 | NRSA63J-271X | MG RESISTOR |              |      |
|   | R 925 | NRSA63J-271X | MG RESISTOR |              |      |
|   | R 926 | NRSA63J-271X | MG RESISTOR |              |      |
|   | R 927 | NRSA63J-271X | MG RESISTOR |              |      |
|   | R 928 | NRSA63J-271X | MG RESISTOR |              |      |
|   | R 929 | NRSA63J-271X | MG RESISTOR |              |      |
|   | R 930 | NRSA63J-271X | MG RESISTOR |              |      |
|   | R 931 | NRSA63J-102X | MG RESISTOR |              |      |
|   | R 932 | NRSA63J-102X | MG RESISTOR |              |      |
|   | R 933 | NRSA63J-102X | MG RESISTOR |              |      |
|   | R 941 | NRSA63J-222X | MG RESISTOR |              |      |
|   | R 942 | NRSA63J-273X | MG RESISTOR |              | E    |
|   | R 943 | NRSA63J-102X | MG RESISTOR |              |      |
|   | R 944 | NRSA63J-273X | MG RESISTOR |              |      |
|   | R 951 | NRSA63J-103X | MG RESISTOR |              |      |
|   | R 954 | NRSA63J-103X | MG RESISTOR |              |      |
|   | R 961 | QRE142J-102X | C RESISTOR  | 1.0K 5% 1/4W |      |
|   | R 962 | NRSA63J-912X | MG RESISTOR |              |      |
|   | R 963 | NRSA63J-472X | MG RESISTOR |              |      |
|   | R 964 | NRSA63J-103X | MG RESISTOR |              |      |
|   | R 965 | NRSA63J-0R0X | MG RESISTOR |              |      |
|   | R 968 | NRSA63J-102X | MG RESISTOR |              |      |
|   | R 970 | NRSA63J-333X | MG RESISTOR |              |      |
|   | R 971 | NRSA63J-104X | MG RESISTOR |              |      |
|   | R 975 | NRSA63J-562X | MG RESISTOR |              |      |
|   | R 976 | NRS181J-222X | MG RESISTOR |              |      |
|   | R 977 | NRS181J-222X | MG RESISTOR |              |      |
|   | R 978 | NRSA63J-104X | MG RESISTOR |              |      |
|   | R 984 | NRSA63J-473X | MG RESISTOR |              |      |
|   | R 985 | NRSA63J-103X | MG RESISTOR |              |      |
|   | R 986 | NRSA63J-102X | MG RESISTOR |              |      |
|   | R 987 | NRSA63J-473X | MG RESISTOR |              |      |
|   | R 999 | NRSA63J-102X | MG RESISTOR |              |      |
|   | TH951 | NAD0028-103X | THERMISTOR  |              |      |
| △ | TU 1  | QAU0203-001  | TUNER PACK  |              |      |
|   | X 51  | QAX0263-001Z | CRYSTAL     |              |      |
|   | X 601 | QAX0599-002Z | CRYSTAL     |              |      |
|   | X 602 | QAX0659-001Z | CRYSTAL     |              |      |
|   | X 603 | QAX0413-001Z | CRYSTAL     |              |      |
|   | X 701 | QAX0617-001Z | CRYSTAL     |              |      |
|   | X 702 | QAX0401-001  | CRYSTAL     |              |      |
|   | X 801 | QAX0660-001Z | CRYSTAL     |              |      |

■ Electrical parts list (Front board)

Block No. 02

| △ | Item  | Parts number    | Parts name     | Remarks | Area |
|---|-------|-----------------|----------------|---------|------|
|   | C 561 | NBE20JM-475X    | TS E CAPACITOR |         |      |
|   | C 571 | NCB31CK-104X    | C CAPACITOR    |         |      |
|   | C 582 | NCB31CK-104X    | C CAPACITOR    |         |      |
|   | C 583 | NCB31CK-104X    | C CAPACITOR    |         |      |
|   | C 584 | NCB31CK-104X    | C CAPACITOR    |         |      |
|   | C 585 | NBE21CM-475X    | E CAPACITOR    |         |      |
|   | C 586 | NCB31HK-681X    | C CAPACITOR    |         |      |
|   | C 587 | NBE20JM-475X    | TS E CAPACITOR |         |      |
|   | C 588 | NBE20JM-475X    | TS E CAPACITOR |         |      |
|   | C 595 | NCB31HK-472X    | C CAPACITOR    |         |      |
|   | C 596 | NCB31HK-472X    | C CAPACITOR    |         |      |
|   | C 597 | NCB31CK-473X    | C CAPACITOR    |         |      |
|   | CN501 | QGZ2201L1-16    | CONNECTOR      |         |      |
|   | CN503 | QGA1501F2-03W   | CONNECTOR      |         |      |
|   | CN504 | QGF0503F3-07X   | CONNECTOR      |         |      |
|   | CN505 | QGF1013F1-20X   | CONNECTOR      |         |      |
|   | CN511 | QGZ2201M1-16    | CONNECTOR      |         |      |
|   | CN512 | WJT0056-001A    | E-CARD WIRE    |         |      |
|   | CN513 | WJK0017-001A    | ASSY WIRE      |         |      |
|   | D 501 | SML-310LT/MN/-X | LED            |         |      |
|   | D 502 | SML-310LT/MN/-X | LED            |         |      |
|   | D 503 | SML-310LT/MN/-X | LED            |         |      |
|   | D 504 | SML-310LT/MN/-X | LED            |         |      |
|   | D 505 | SML-310LT/MN/-X | LED            |         |      |
|   | D 506 | SML-310LT/MN/-X | LED            |         |      |
|   | D 507 | SML-310LT/MN/-X | LED            |         |      |
|   | D 508 | SML-310LT/MN/-X | LED            |         |      |
|   | D 510 | SML-310LT/MN/-X | LED            |         |      |
|   | D 511 | SML-310LT/MN/-X | LED            |         |      |
|   | D 512 | SML-310LT/MN/-X | LED            |         |      |
|   | D 513 | SML-310LT/MN/-X | LED            |         |      |
|   | D 514 | SML-310LT/MN/-X | LED            |         |      |
|   | D 515 | SML-310LT/MN/-X | LED            |         |      |
|   | D 516 | SML-310LT/MN/-X | LED            |         |      |
|   | D 517 | SML-310LT/MN/-X | LED            |         |      |
|   | D 518 | CL-190UB-X-X    | LED            |         |      |
|   | D 519 | CL-190UB-X-X    | LED            |         |      |
|   | D 520 | SML-310LT/MN/-X | LED            |         |      |
|   | D 540 | MA152WK-X       | SI DIODE       |         |      |
|   | D 541 | NSPW310BS/BRS/  | LED            |         |      |
|   | D 542 | NSPW310BS/BRS/  | LED            |         |      |
|   | D 543 | NSPW310BS/BRS/  | LED            |         |      |
|   | D 571 | 1PS226-X        | CHIP DIODE     |         |      |
|   | D 572 | 1PS226-X        | CHIP DIODE     |         |      |
|   | D 573 | 1PS226-X        | CHIP DIODE     |         |      |
|   | D 574 | 1SS355-X        | DIODE          |         |      |
|   | D 575 | UDZS5.1B-X      | ZENER DIODE    |         |      |
|   | D 581 | RSA6.1EN-W      | ZENER DIODE    |         |      |
|   | D 582 | RSA6.1EN-W      | ZENER DIODE    |         |      |
|   | D 583 | UDZS6.2B-X      | SI DIODE       |         |      |
|   | D 592 | UDZS6.2B-X      | SI DIODE       |         |      |
|   | EN591 | QSW0915-001     | ROTARY ENCODER |         |      |
|   | IC501 | LC75878W        | IC             |         |      |
|   | IC561 | RPM6938-SV4     | IC             |         |      |
|   | PJ501 | QNS0145-001     | 3.5 JACK       |         |      |
|   | Q 541 | DTC114EKA-X     | TRANSISTOR     |         |      |
|   | Q 542 | 2SB815/7/-X     | TRANSISTOR     |         |      |
|   | R 501 | NRSA63J-561X    | MG RESISTOR    |         |      |
|   | R 502 | NRSA63J-681X    | MG RESISTOR    |         |      |
|   | R 503 | NRSA63J-102X    | MG RESISTOR    |         |      |
|   | R 504 | NRSA63J-122X    | MG RESISTOR    |         |      |
|   | R 505 | NRSA63J-182X    | MG RESISTOR    |         |      |
|   | R 506 | NRSA63J-272X    | MG RESISTOR    |         |      |

| △ | Item  | Parts number | Parts name  | Remarks | Area |
|---|-------|--------------|-------------|---------|------|
|   | R 507 | NRSA63J-472X | MG RESISTOR |         |      |
|   | R 508 | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 509 | NRSA63J-561X | MG RESISTOR |         |      |
|   | R 510 | NRSA63J-681X | MG RESISTOR |         |      |
|   | R 511 | NRSA63J-102X | MG RESISTOR |         |      |
|   | R 512 | NRSA63J-122X | MG RESISTOR |         |      |
|   | R 513 | NRSA63J-182X | MG RESISTOR |         |      |
|   | R 514 | NRSA63J-272X | MG RESISTOR |         |      |
|   | R 515 | NRSA63J-472X | MG RESISTOR |         |      |
|   | R 521 | NRSA63J-222X | MG RESISTOR |         |      |
|   | R 522 | NRSA63J-122X | MG RESISTOR |         |      |
|   | R 523 | NRSA63J-122X | MG RESISTOR |         |      |
|   | R 524 | NRSA63J-122X | MG RESISTOR |         |      |
|   | R 525 | NRSA63J-182X | MG RESISTOR |         |      |
|   | R 526 | NRSA63J-122X | MG RESISTOR |         |      |
|   | R 527 | NRSA63J-122X | MG RESISTOR |         |      |
|   | R 528 | NRSA63J-821X | MG RESISTOR |         |      |
|   | R 529 | NRSA63J-222X | MG RESISTOR |         |      |
|   | R 531 | NRSA63J-222X | MG RESISTOR |         |      |
|   | R 532 | NRSA63J-122X | MG RESISTOR |         |      |
|   | R 533 | NRSA63J-122X | MG RESISTOR |         |      |
|   | R 534 | NRSA63J-122X | MG RESISTOR |         |      |
|   | R 535 | NRSA63J-182X | MG RESISTOR |         |      |
|   | R 536 | NRSA63J-122X | MG RESISTOR |         |      |
|   | R 537 | NRSA63J-122X | MG RESISTOR |         |      |
|   | R 538 | NRSA63J-821X | MG RESISTOR |         |      |
|   | R 539 | NRSA63J-222X | MG RESISTOR |         |      |
|   | R 540 | NRSA63J-332X | MG RESISTOR |         |      |
|   | R 541 | NRSA63J-821X | MG RESISTOR |         |      |
|   | R 542 | NRSA63J-821X | MG RESISTOR |         |      |
|   | R 543 | NRSA63J-821X | MG RESISTOR |         |      |
|   | R 544 | NRSA63J-561X | MG RESISTOR |         |      |
|   | R 545 | NRSA63J-223X | MG RESISTOR |         |      |
|   | R 546 | NRSA63J-222X | MG RESISTOR |         |      |
|   | R 547 | NRSA63J-561X | MG RESISTOR |         |      |
|   | R 551 | NRSA63J-821X | MG RESISTOR |         |      |
|   | R 552 | NRSA63J-821X | MG RESISTOR |         |      |
|   | R 553 | NRSA63J-821X | MG RESISTOR |         |      |
|   | R 561 | NRSA63J-103X | MG RESISTOR |         |      |
|   | R 562 | NRSA63J-470X | MG RESISTOR |         |      |
|   | R 563 | NRSA63J-332X | MG RESISTOR |         |      |
|   | R 564 | NRSA63J-332X | MG RESISTOR |         |      |
|   | R 565 | NRSA63J-332X | MG RESISTOR |         |      |
|   | R 571 | NRSA63J-471X | MG RESISTOR |         |      |
|   | R 572 | NRSA63J-471X | MG RESISTOR |         |      |
|   | R 581 | NRSA63J-0R0X | MG RESISTOR |         |      |
|   | R 582 | NRSA63J-0R0X | MG RESISTOR |         |      |
|   | R 583 | NRSA63J-0R0X | MG RESISTOR |         |      |
|   | R 586 | NRSA63J-823X | MG RESISTOR |         |      |
|   | R 592 | NRSA63J-473X | MG RESISTOR |         |      |
|   | R 593 | NRSA63J-473X | MG RESISTOR |         |      |
|   | R 595 | NRSA63J-473X | MG RESISTOR |         |      |
|   | R 596 | NRSA63J-473X | MG RESISTOR |         |      |
|   | R 597 | NRSA63J-471X | MG RESISTOR |         |      |
|   | S 501 | NSW0066-001X | TACT SWITCH |         |      |
|   | S 502 | NSW0066-001X | TACT SWITCH |         |      |
|   | S 503 | NSW0066-001X | TACT SWITCH |         |      |
|   | S 504 | NSW0066-001X | TACT SWITCH |         |      |
|   | S 505 | NSW0066-001X | TACT SWITCH |         |      |
|   | S 506 | NSW0066-001X | TACT SWITCH |         |      |
|   | S 507 | NSW0066-001X | TACT SWITCH |         |      |
|   | S 508 | NSW0066-001X | TACT SWITCH |         |      |
|   | S 509 | NSW0066-001X | TACT SWITCH |         |      |

## ■ Electrical parts list (Front board)

Block No. 02

| △ | Item  | Parts number | Parts name    | Remarks | Area |
|---|-------|--------------|---------------|---------|------|
|   | S 510 | NSW0066-001X | TACT SWITCH   |         |      |
|   | S 511 | NSW0066-001X | TACT SWITCH   |         |      |
|   | S 512 | NSW0066-001X | TACT SWITCH   |         |      |
|   | S 513 | NSW0066-001X | TACT SWITCH   |         |      |
|   | S 514 | NSW0066-001X | TACT SWITCH   |         |      |
|   | S 515 | NSW0066-001X | TACT SWITCH   |         |      |
|   | S 516 | NSW0066-001X | TACT SWITCH   |         |      |
|   | S 517 | NSW0066-001X | TACT SWITCH   |         |      |
|   | S 518 | NSW0066-001X | TACT SWITCH   |         |      |
|   | S 591 | NSW0146-001X | DETECT SWITCH |         |      |
|   | S 592 | NSW0146-001X | DETECT SWITCH |         |      |
|   | S 593 | NSW0146-001X | DETECT SWITCH |         |      |
|   | S 594 | NSW0146-001X | DETECT SWITCH |         |      |
|   | S 595 | NSW0146-001X | DETECT SWITCH |         |      |
|   | S 596 | NSW0146-001X | DETECT SWITCH |         |      |



# Standard schematic diagrams

## Main amp section

KD-SH99R

KD-SH99R

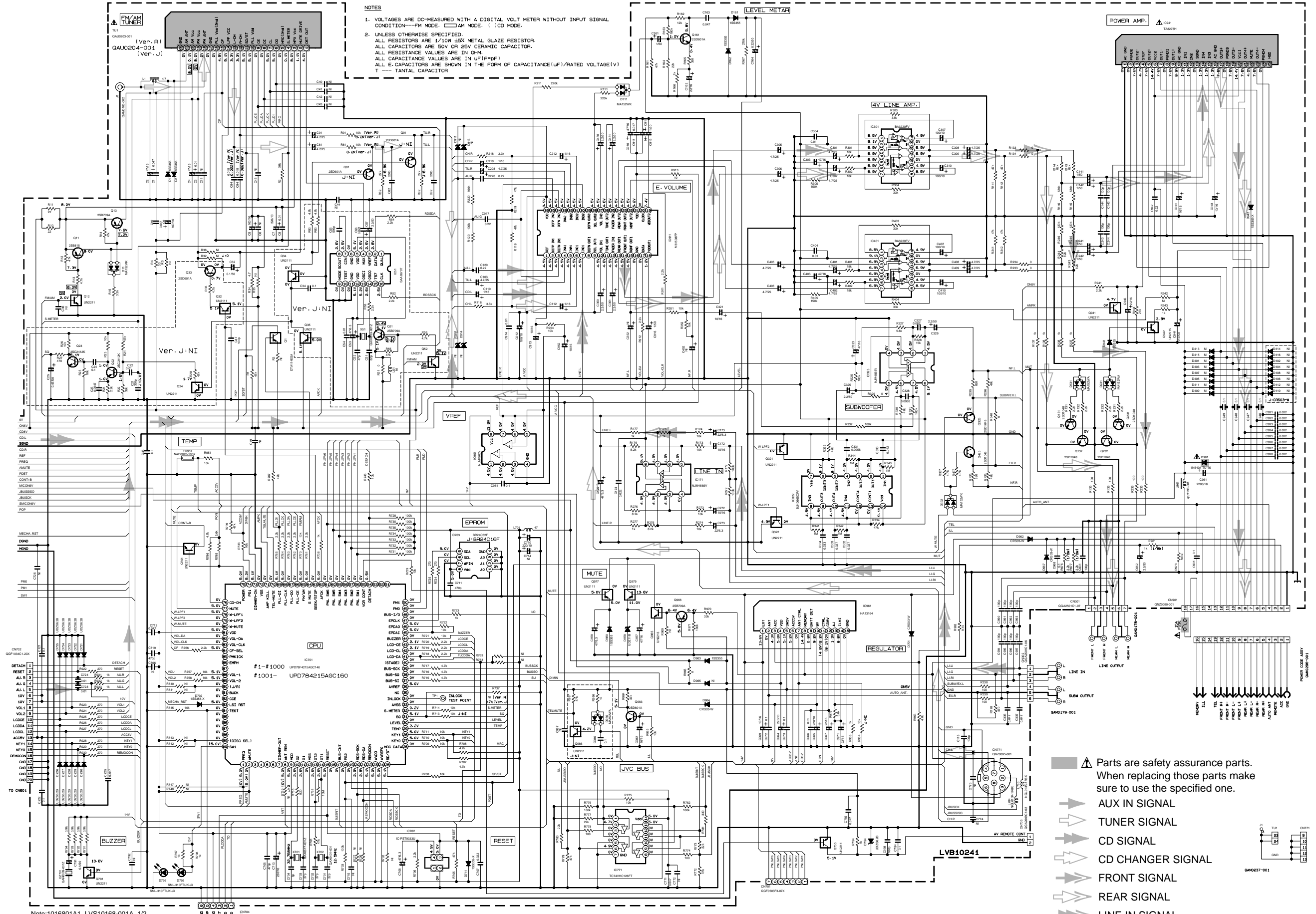
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**NOTES**

- VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER WITHOUT INPUT SIGNAL CONDITION—FM MODE. □ AM MODE. | □ CD MODE.
- UNLESS OTHERWISE SPECIFIED, ALL RESISTORS ARE 1/10W 5% METAL GLAZE RESISTOR. ALL CAPACITORS ARE 50V OR 25V CERAMIC CAPACITOR. ALL RESISTANCE VALUES ARE IN OHM. ALL CAPACITANCE VALUES ARE IN uF (P=PF) ALL E-CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE(uF)/RATED VOLTAGE(V) T = TANTALUM CAPACITOR

- ▲ Parts are safety assurance parts. When replacing those parts make sure to use the specified one.
- AUX IN SIGNAL
- TUNER SIGNAL
- CD SIGNAL
- CD CHANGER SIGNAL
- FRONT SIGNAL
- REAR SIGNAL
- LINE IN SIGNAL

CD servo control section

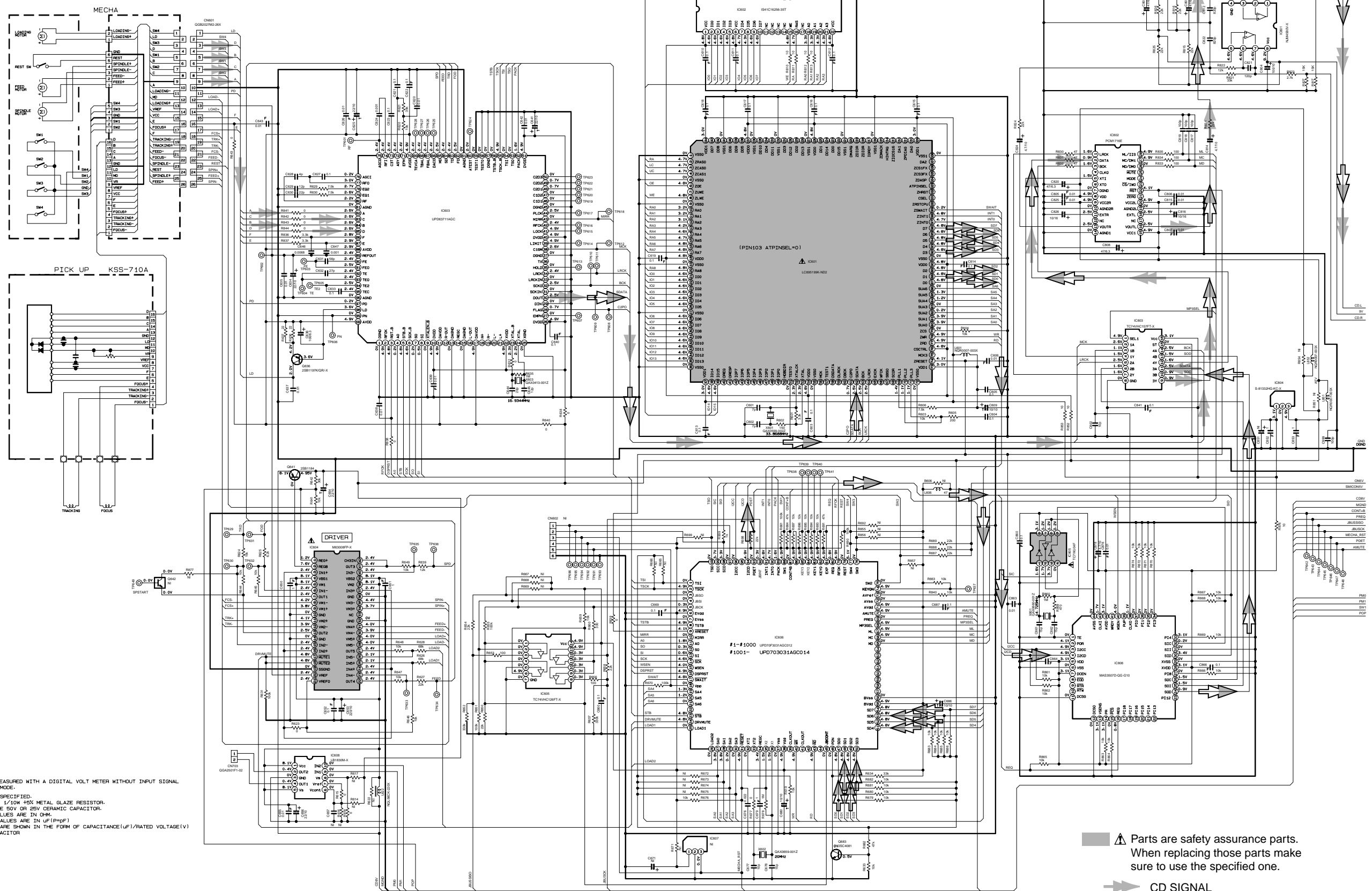
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NOTES

- VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER WITHOUT INPUT SIGNAL CONDITION --- CD MODE.
- UNLESS OTHERWISE SPECIFIED:  
 ALL RESISTORS ARE 1/16W HDS METAL GLAZE RESISTOR.  
 ALL CAPACITORS ARE 50V OR 25V CERAMIC CAPACITOR.  
 ALL RESISTANCE VALUES ARE IN OHM.  
 ALL CAPACITANCE VALUES ARE IN UF (PnpF).  
 ALL E-CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE(UF)/RATED VOLTAGE(V)  
 T --- TANTALUM CAPACITOR

▲ Parts are safety assurance parts.  
 When replacing those parts make sure to use the specified one.

➡ CD SIGNAL  
 ⇨ MP3 SIGNAL

LCD driver section

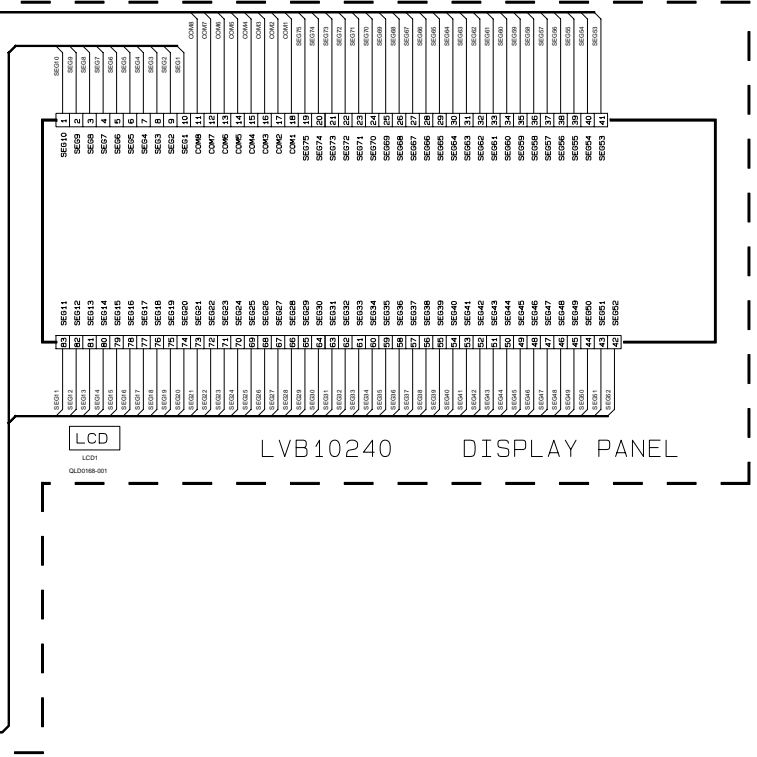
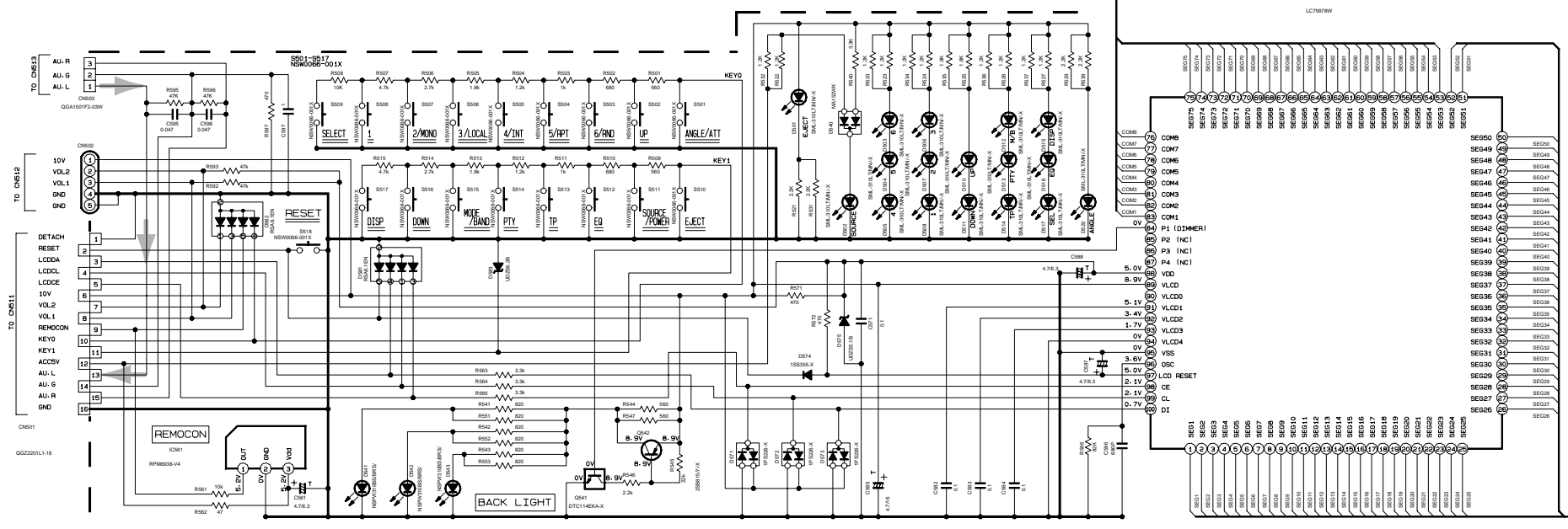
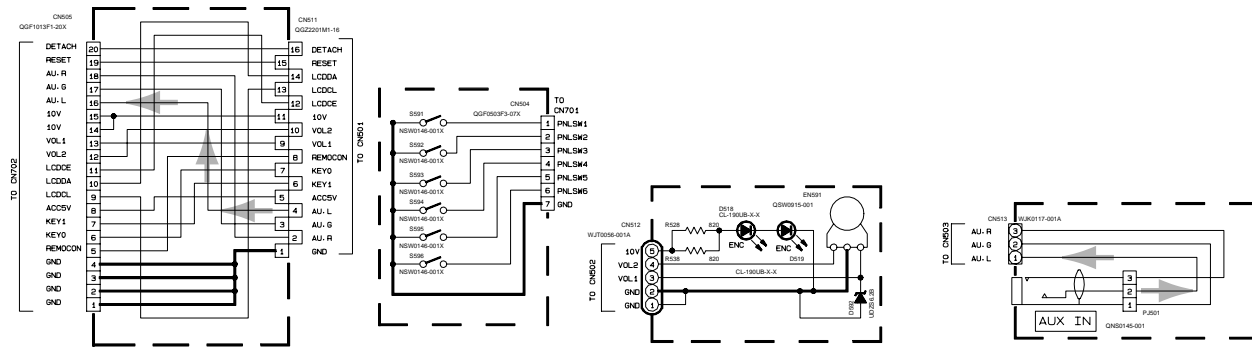
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AUX IN SIGNAL

- NOTES
- VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER WITHOUT INPUT SIGNAL CONDITION --- CD MODE.
  - UNLESS OTHERWISE SPECIFIED, ALL RESISTORS ARE 1/10W ±5% METAL GLAZE RESISTOR. ALL CAPACITORS ARE 50V OR 25V CERAMIC CAPACITOR. ALL RESISTANCE VALUES ARE IN Ω. ALL CAPACITANCE VALUES ARE IN μF (P=PF) ALL E-CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE(μF)/RATED VOLTAGE(V) T --- TANTAL CAPACITOR



Tuner pack section

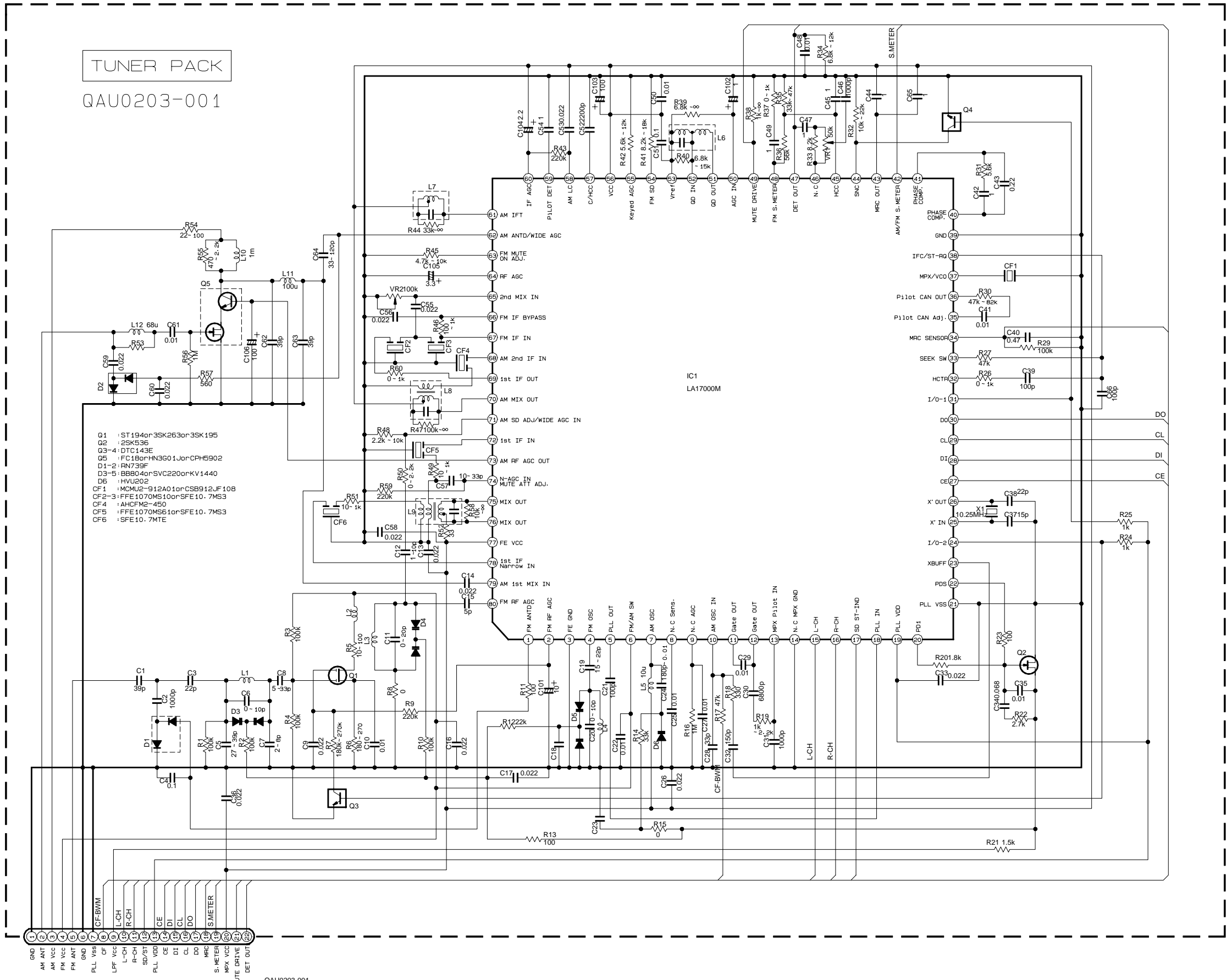
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Note:1016803A1\_LVS10168-003A\_1/1

A

B

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