2005 MAR.

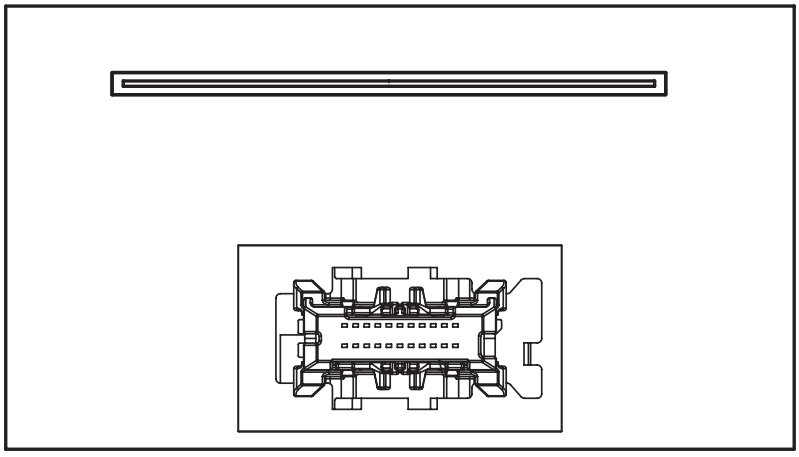
MITSUBISHI

SERVICE MANUAL

AM/FM-ST ELECTRONIC TUNING RADIO
with CD CHANGER

Model : DY-3A66U-AL

PART No. MN141332



CONTENTS

FEATURES AND SPECIFICATIONS

FEATURES

Radio

- AM can preset the 6 station and FM (FM1/FM2) can preset the 12 station.
- It is able to memory by keep pushing the preset memory button.
- TUNE control by Rotary SW.
- ATC function to control BASS/TREBLE sound quality according to electric field strength when AM is received.
- AM noise killer function.
- SCAN function : Seeking receivable stations and receiving 5 seconds in each station.

CD Player

- In-dash CD auto changer (6disc) function.
- Power Loading / Power Eject function.
- Equipped with the shock proof memory.
  (16M-DRAM)(CD-DA:10.4sec)
- Skip recovered function.
  (Recovered the condition before skip.)
- Protected function of laser pickup stopping at high temperature.
- Quick truck selection function.
- Any time Eject function. (Eject at the all mode included ACC OFF.)
- Scan function : 10 sec
- Reload function.
- Available for loading 12cm disc only.
- MP3 play function.
  (MPEG1 AUDIO LAYER3, MPEG2 AUDIO LAYER3)
- Repeat function. (One tune)
- Random play function.
- Fast-forwarding and fast-reversing function.

MP3

- Folder Up/Down function by TUNE knob.

Audio Part

- High power, 4 channel output. (4Ω load)
- Adjustment of BASS,TREBLE,BALANCE,and FADER by Rotary SW.
- ITM (Independent Tone Memory) function to memorize amount of BASS/TREBLE adjustment according to mode.
- Fixed EQ matched to car room sound filed characteristic.
- Auto loudness function varies a frequency characteristic by volume.
- The function that controls the amount of change in the low / high frequency tone (BASS / TREBLE) adjustment with the maximum volume.

Others

- M-BUS is used the method of communication with CD changer.
- The beep sounds, to check an operation, by using a button with hold-pushing operation function.
- Rheostat function. (The intensity of buttons, panel and LCD can adjust to link with the intensity of vehicle's instrument panel lighting).
- The connection of speaker wiring can check by test mode of the beep in the vehicle's assembly line.
- Steering Remote control.
- Hands free function.
- VES (Video Entertainment System) function.

SPECIFICATIONS

AM Radio

- Frequency Range : 531 ~ 1,710kHz
- Sensitivity : Less than 28dB
- Signal/Noise Ratio (60dBμV) : More than 45dB

FM Stereo Radio

- Frequency Range : 87.5 ~ 108.0MHz
- Limiting Sensitivity : Less than 10dB
- Signal/Noise Ratio (40dBμV) : More than 55dB

CD Player

- Laser : Semiconductor Laser
- DA Convertor : 1bit
- Dynamic Range : More than 65dB
- Signal/Noise Ratio : More than 65dB
- Channel Separation : More than 50dB (1kHz)

Others

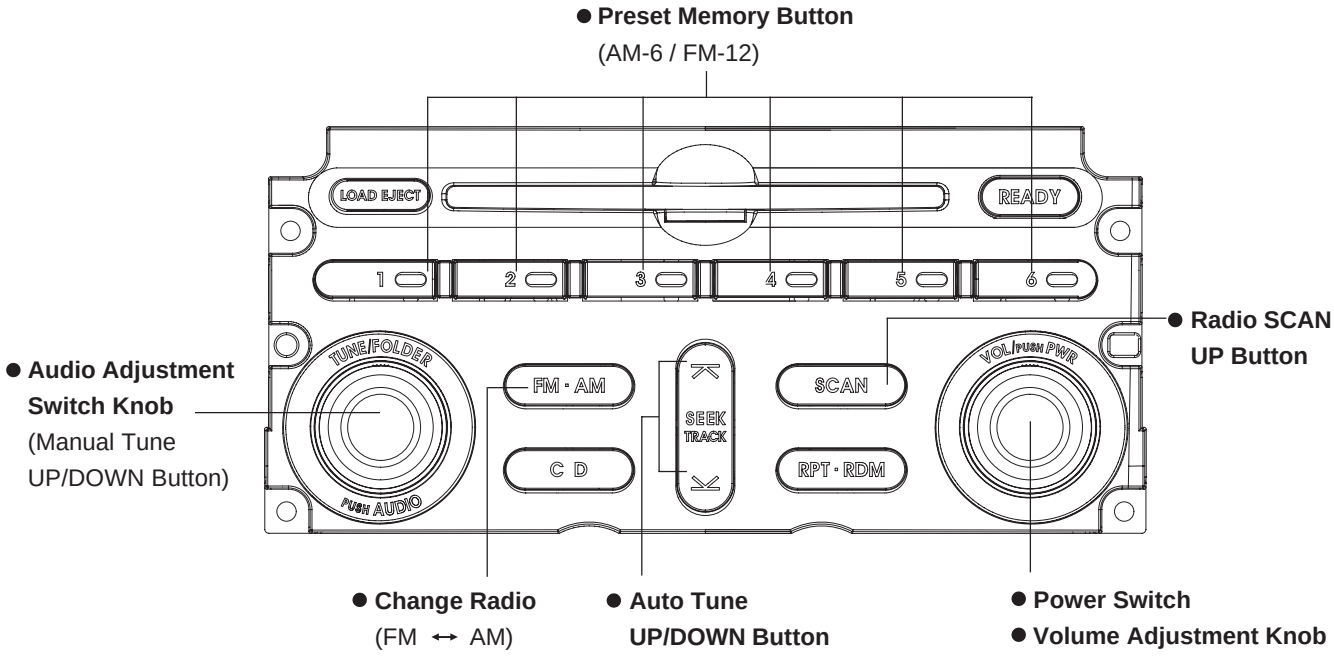
- Power Supply : DC 13.2V (11~16V)
  Test Voltage 13.2V
  Negative ground
- Battery Back Up Current : Less than1.0mA
- Current Consumption : ACC 2.1A ± 20% (Output 1W)

- Maximum Power Output : 45W x 4 (SP output)
- Output Impedance : 4 Ω(SP Output)
- Dimensions : 178mm x 151.3mm x 100mm
  (W x D x H)
- Weight : 2.0kg

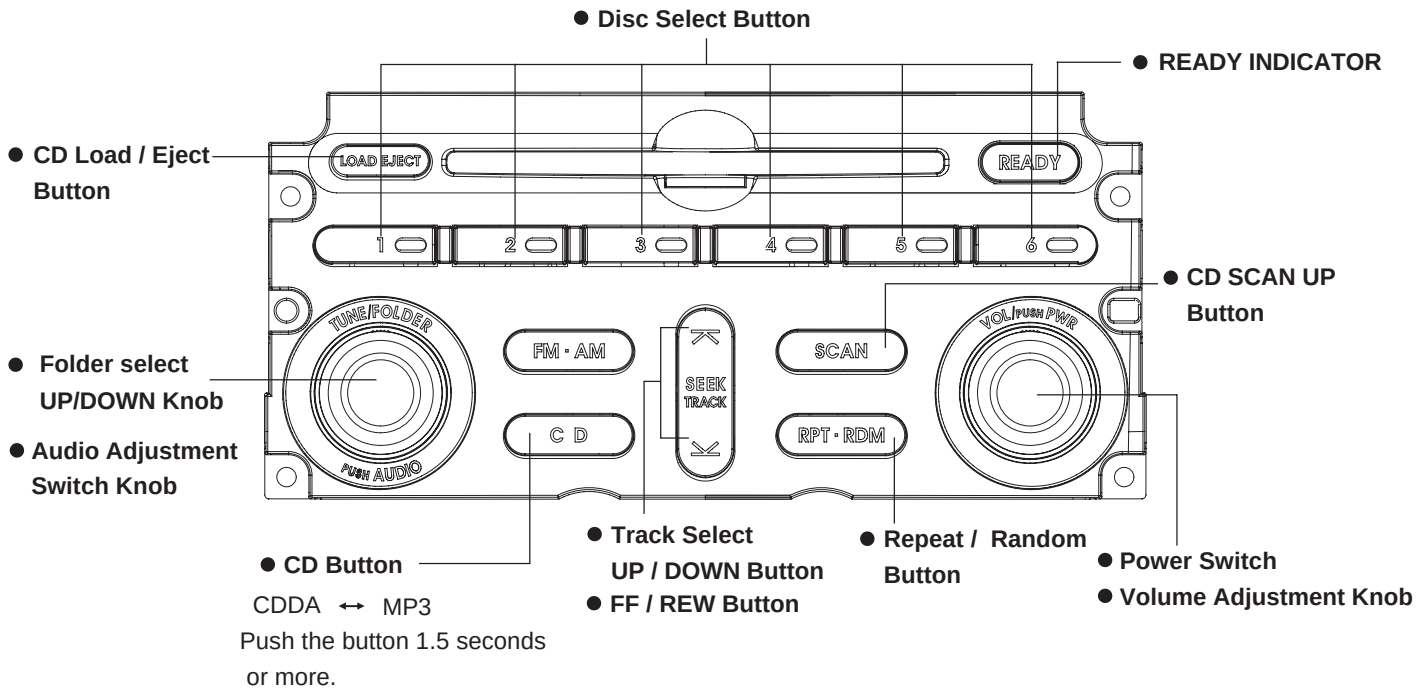
OPERATION

<< UNIQUE PANEL : SW-744, SW-745 >>

RADIO & AUDIO PART

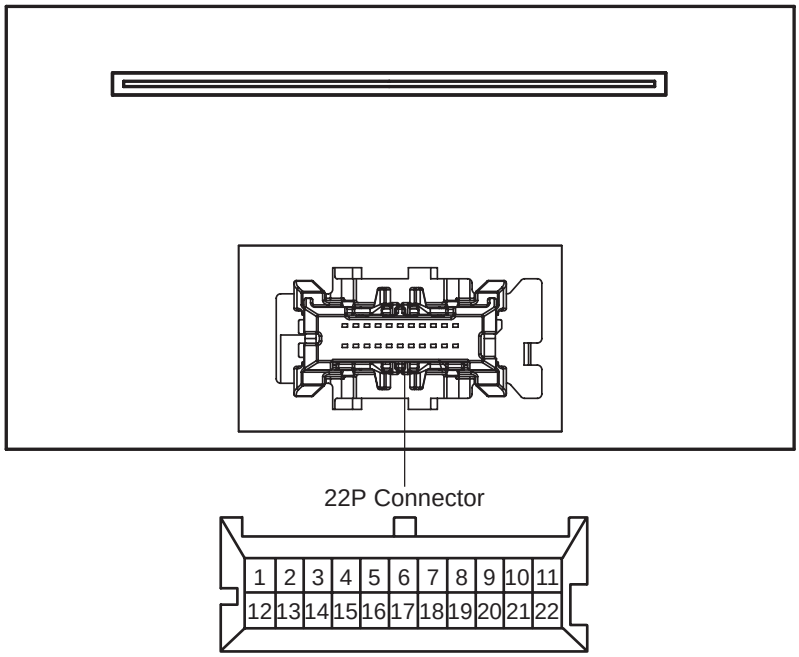


CD CHANGER PART



CONNECTORS

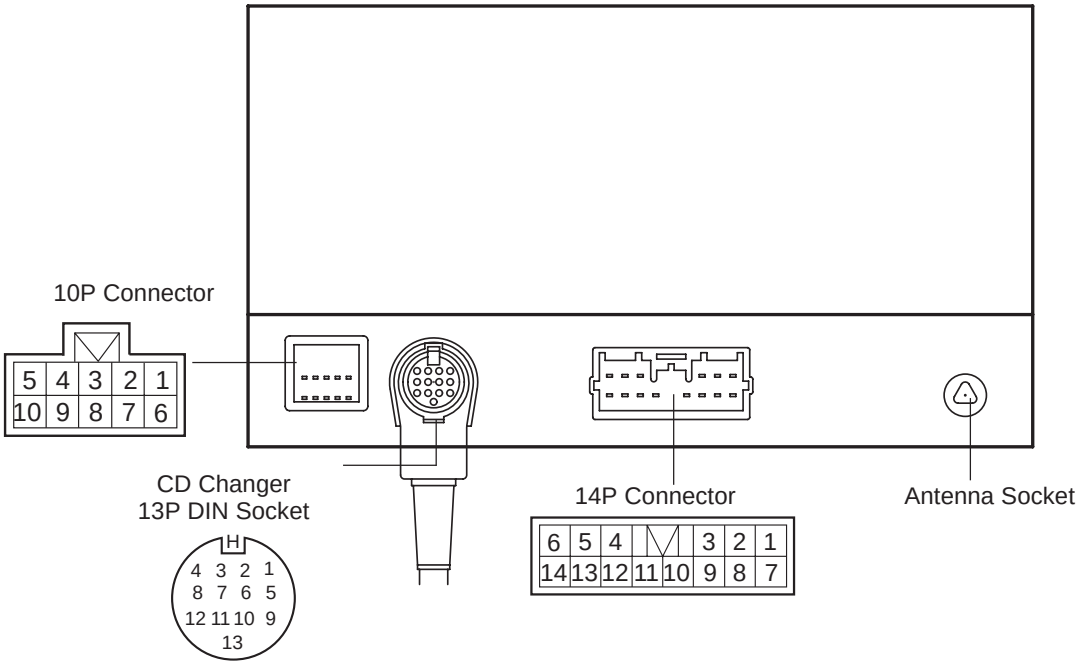
< FRONT SIDE VIEW >



22P Connector

Pin No.	Name	Pin No.	Name	Pin No.	Name
1	LATCH(LED)	9	AD2	17	LAMP
2	CLOCK(LED)	10	AD1	18	LAMP
3	——	11	GND	19	SENCE CAR
4	AUDIO-SW	12	ENABLE(LED)	20	VDD
5	VOL2	13	DATA(LED)	21	TUNE2
6	VOL1	14	LAMP GND	22	TUNE1
7	EJECT-SW	15	LAMP GND		
8	POWER-SW	16	——		

< REAR SIDE VIEW >



Remote control 10P Connector

Pin No.	Name	Pin No.	Name
1	REMO-IN	6	REMO-OUT
2	——	7	Telephone Mute
3	Telephone Signal	8	Telephone GND
4	M-SCK	9	M-BUSY
5	M-DATA	10	Shield Earth(M-BUS)

Power supply 14P Connector

Pin No.	Name		Pin No.	Name	
1	Speaker FR	(+)	8	Speaker FL	(-)
2	Speaker FL	(+)	9	Illumination	(-)
3	Illumination	(+)	10	Battery	(+)
4	Antenna + B		11	Accessory	(+)
5	Speaker RL	(+)	12	——	
6	Speaker RR	(+)	13	Speaker RL	(-)
7	Speaker FR	(-)	14	Speaker RR	(-)

CD Changer 13P DIN Socket

Pin No.	Name	Pin No.	Name
1	Signal GND	8	——
2	Lch	9	Battery (+)
3	——	10	Illumination Level
4	Rch	11	M-BUSY
5	——	12	M-SCK
6	——	13	M-DATA
7	ACC (+)	H	Shield Earth

DISASSEMBLING PROCEDURES

1. Removal of COVER (See Fig.1)

1) Unscrew the four screws ((①)) .
2) Remove the COVER.

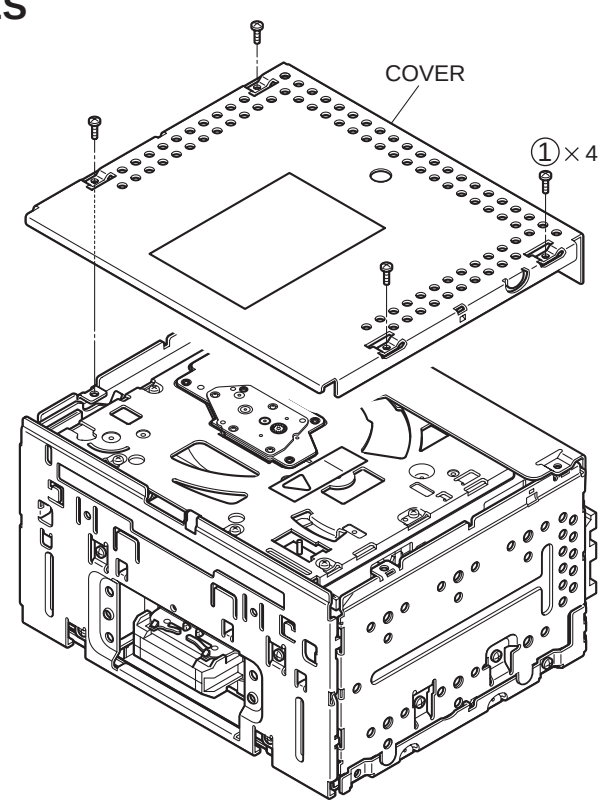


Fig.1

2. Removal of CDX2 (See Fig.2)

1) Unscrew the six screws ((②)) .
2) Remove the HEAT-SINK.
3) Unscrew the four screws ((③)) .
4) Remove the BRACKET-CDX and FLAT-CABLE.
5) Remove the CDX2.

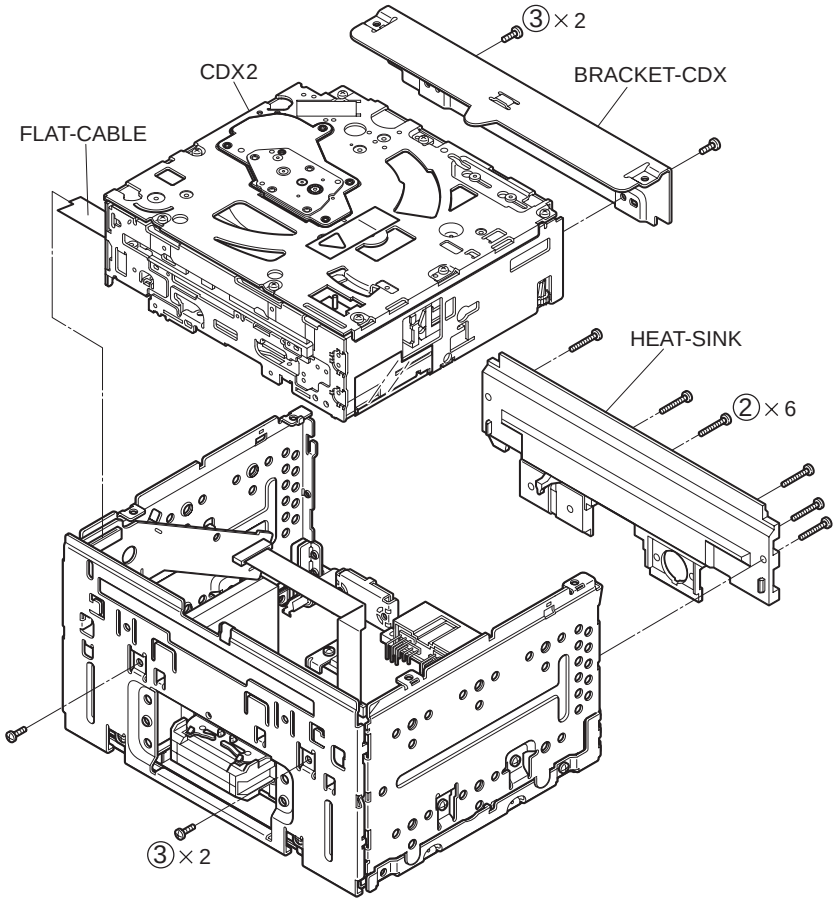


Fig.2

3. Removal of LEAD-CONNECTOR (See Fig.3)

1) Unscrew the four screws (④) .
2) Remove the CHASSIS-F and HOLDER-CON.
5) Remove the LEAD-CONNECTOR.

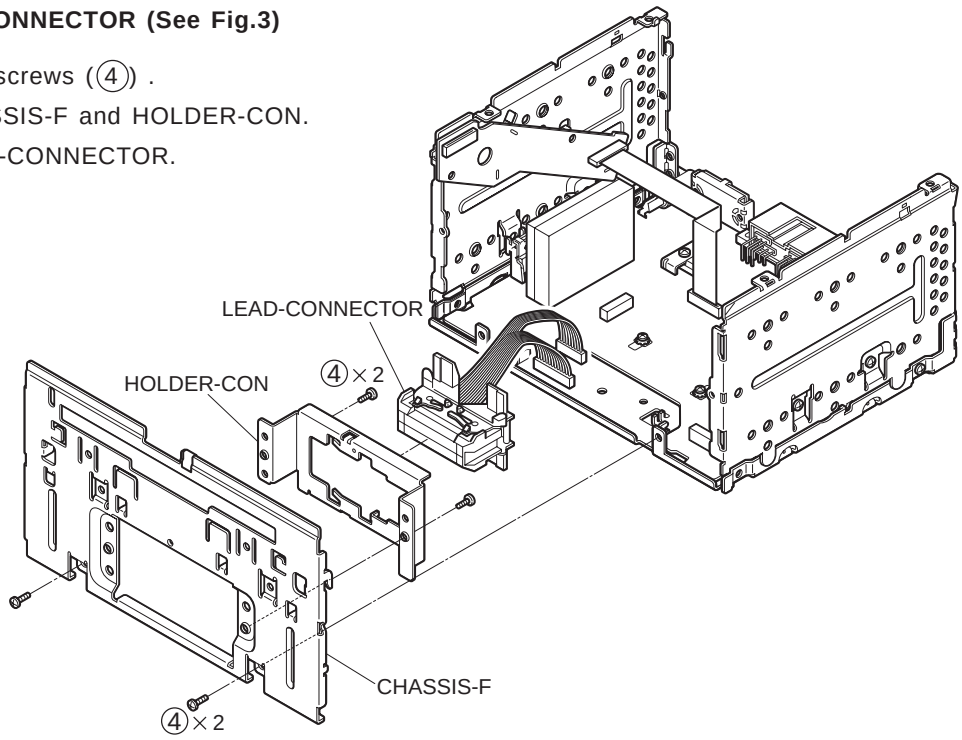


Fig.3

4. Removal of PCB-MAIN and PCB-SUB (See Fig.4)

1) Unscrew the two screws (⑤), and three screws (⑥) .
2) Remove the FLAT-CABLE.
3) Remove the CHASSIS-L and the CHASSIS-R and PCB-SUB.
4) Unscrew the one screw (⑦) and two screws (⑧) and three screws (⑨).
5) Remove the PCB-MAIN.

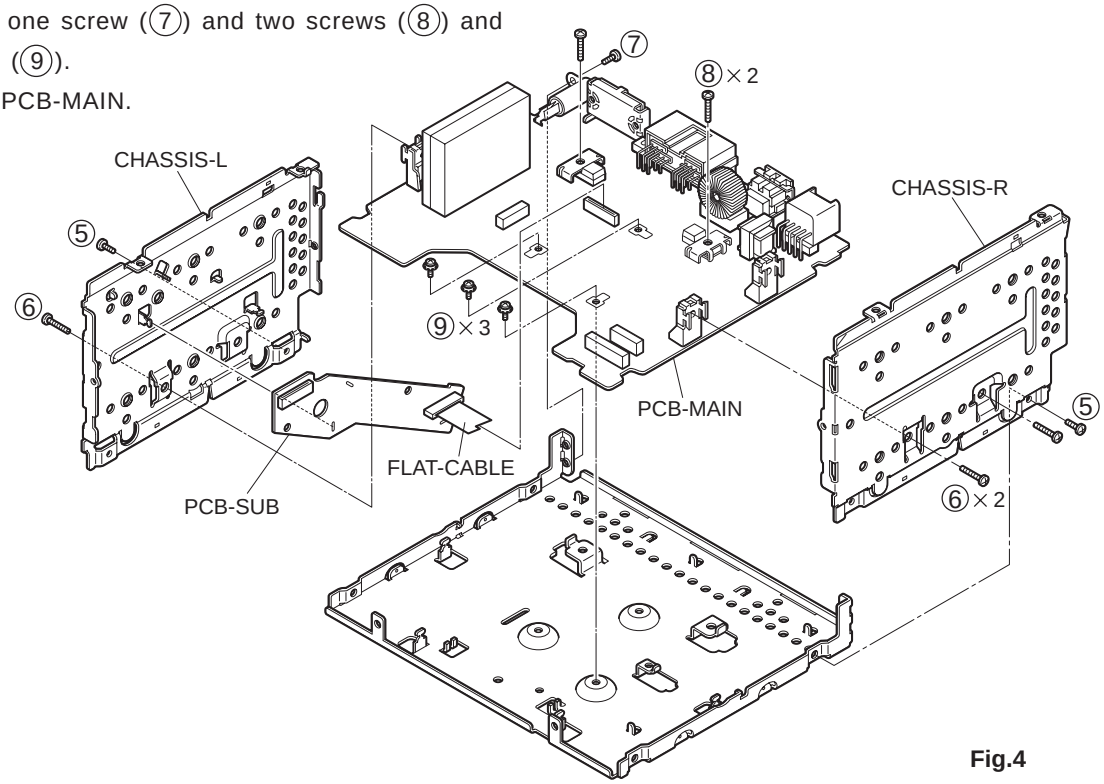
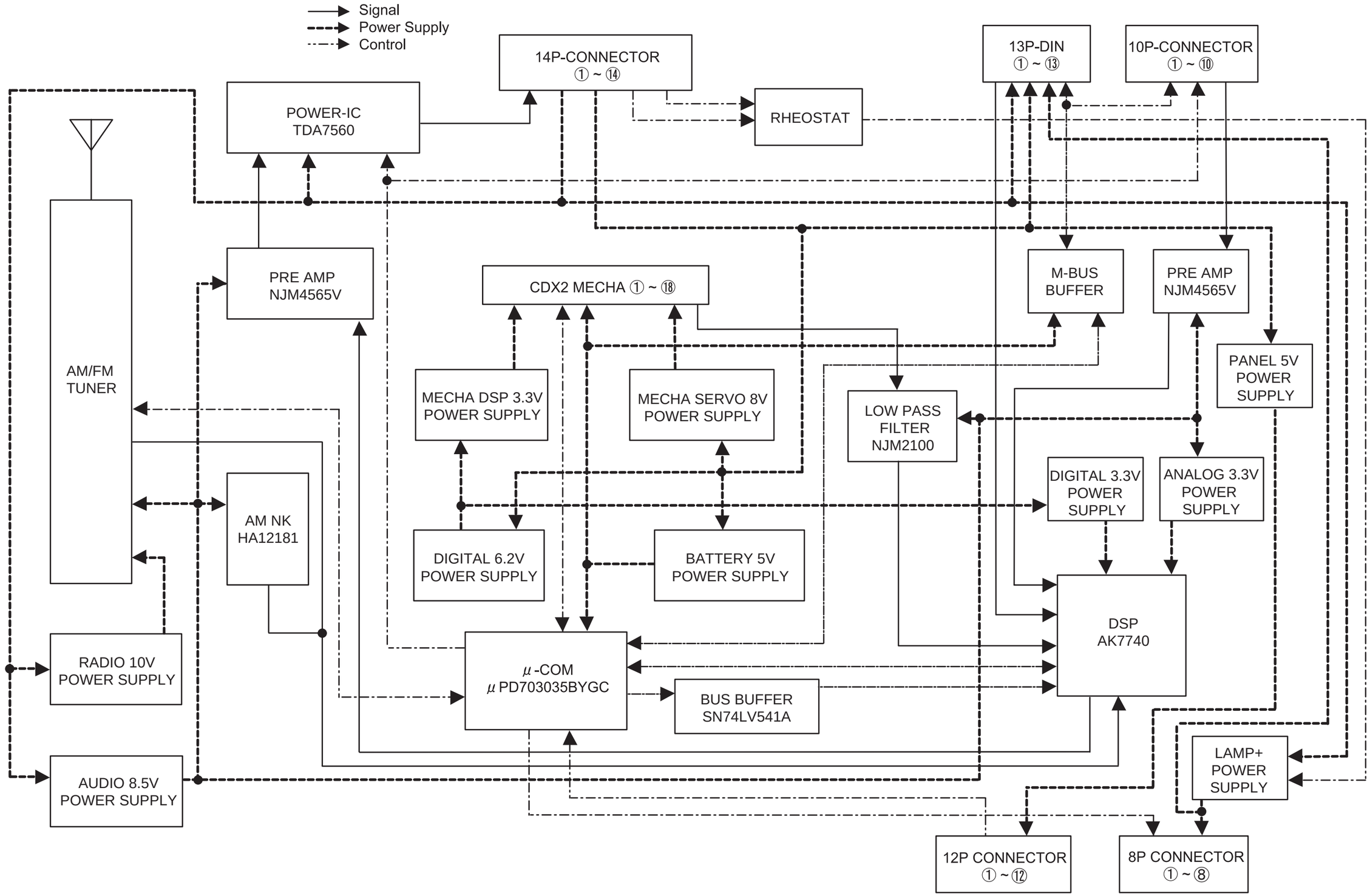
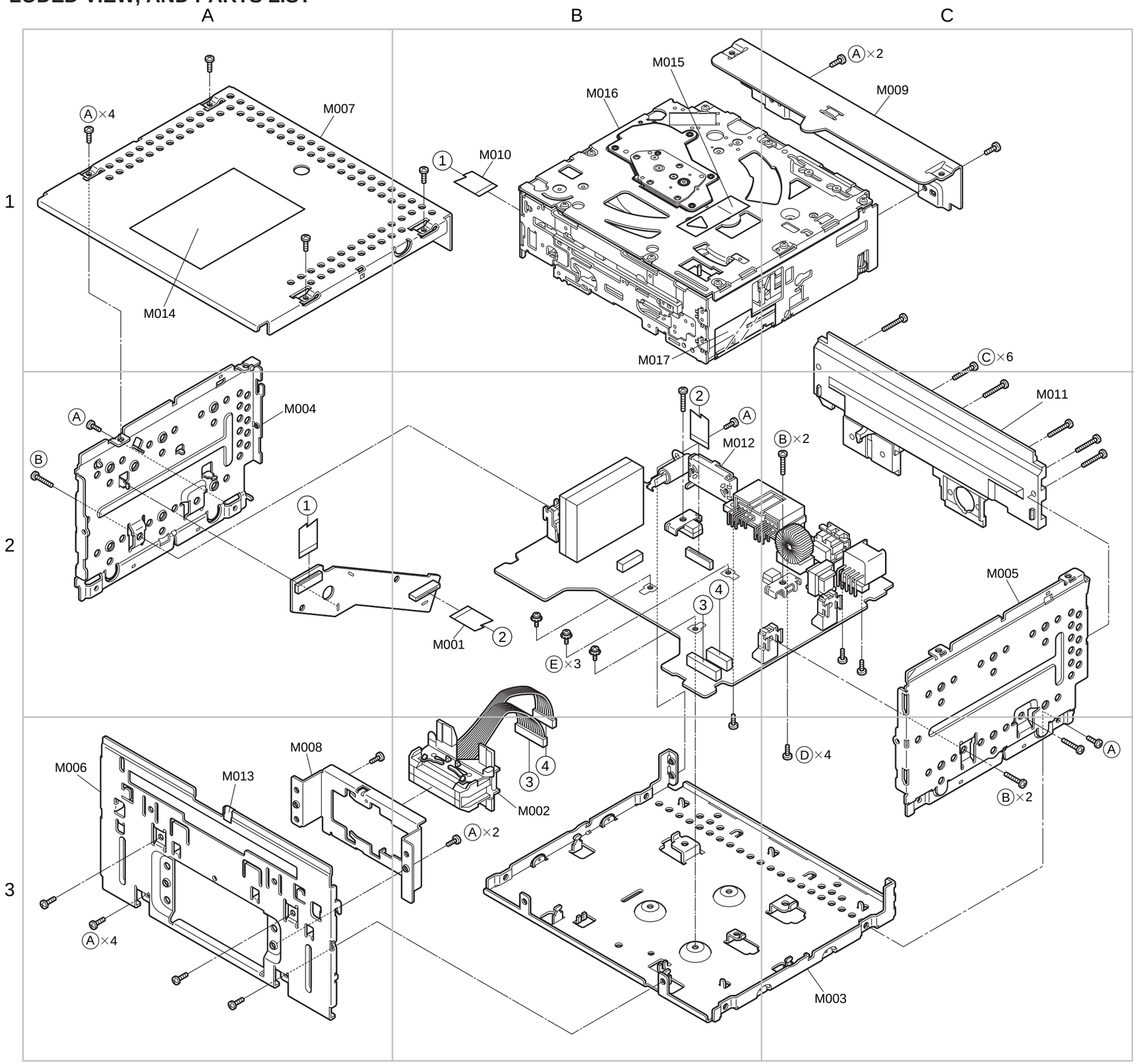


Fig.4

BLOCK DIAGRAM



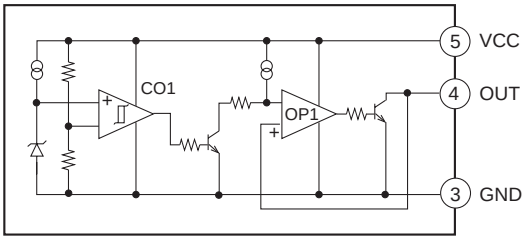
EXPLODED VIEW, AND PARTS LIST



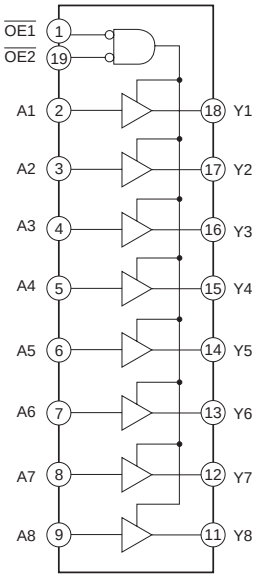
Ref.No.	Part No.	Description	Index
M001	246L341O5	FLAT-CABLE 18P	B-2
M002	246L43311	LEAD-CONNECTOR-22P	B-3
M003	560J30110	CHASSIS-B	C-3
M004	560J30310	CHASSIS-L	A-2
M005	560J30311	CHASSIS-R	C-2
M006	560J30210	CHASSIS-F	A-3
M007	591K38610	COVER	A-1
M008	591K50410	HOLDER-CON	A-3
M009	591K49410	BRACKET-CDX	C-1
M010	246L346O7	FLAT-CABLE 18P	B-1
M011	635J08310	HEAT-SINK	C-2
M012	592L966O2	HOLDER-IC	B-2
M013	643L015O3	SHEET	A-3
M014	943M179O5	NAME-CARD	A-1
M015	851L262O4	LABEL-CAUT	B-1
M016	941L73813	CDX2(533)	B-1
M017	643L13911	SHEET-M-BASE	B-1
A	653P11046	SCREW-S-PAN 3X6	-
B	653P11048	SCREW-S-PAN 3X10	-
C	653P11049	SCREW-S-PAN 3X12	-
D	669L057O1	SCREW-TAP 3X6	-
E	669L077O2	SCREW-TAP 3X6	-

IC EXPLANATION

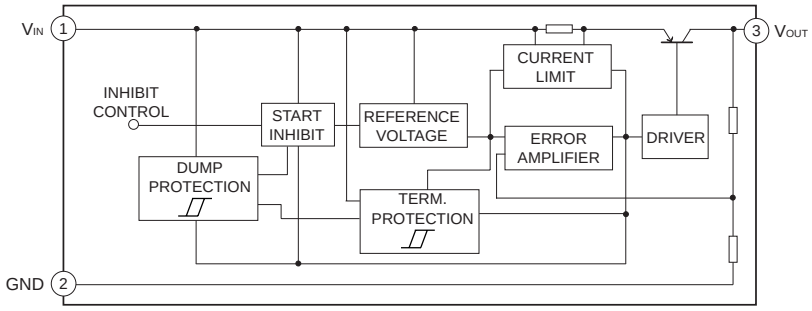
IC802 PST9136



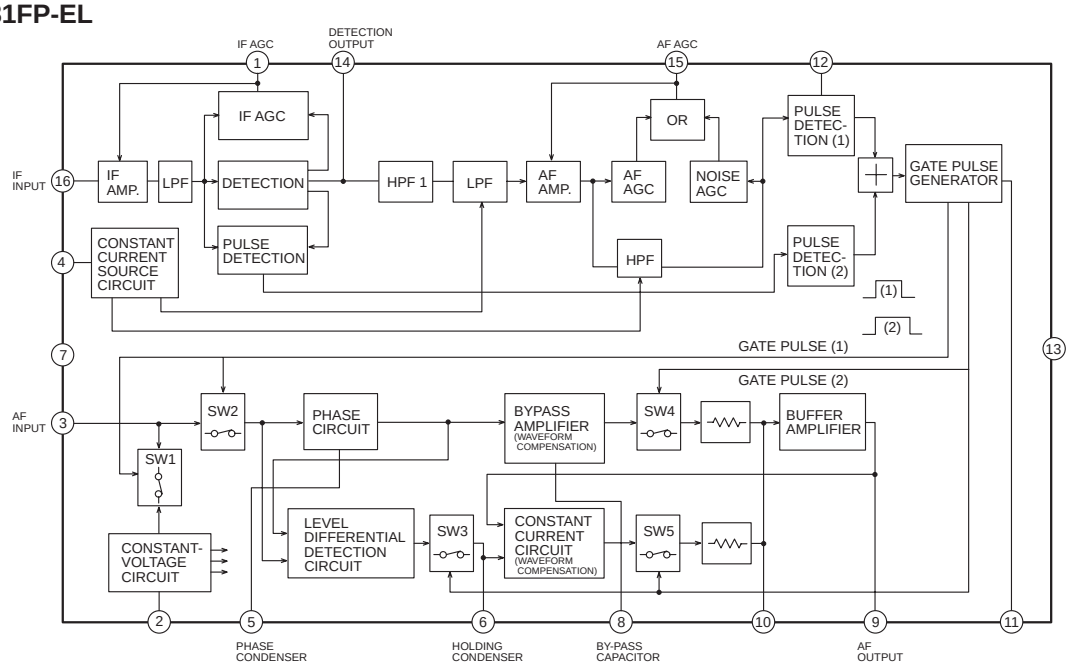
IC302 SN74LV541APW



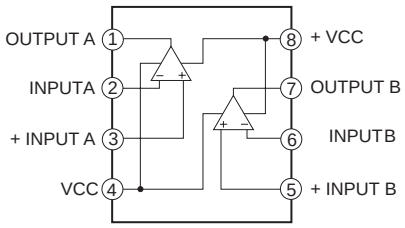
IC201,960,961 LF33ABPT



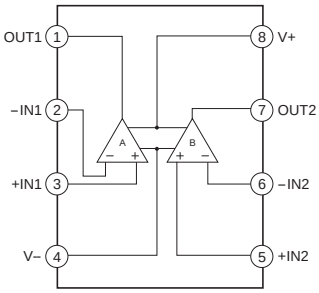
IC1 HA12181FP-EL



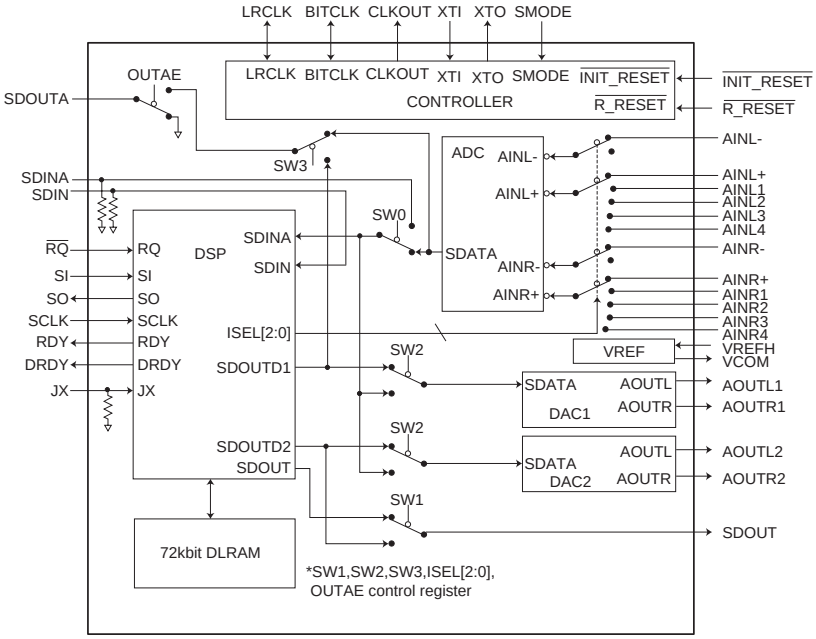
IC380 RC2100M/NJM2100M



IC321,390,421 NJM4565V-TE1

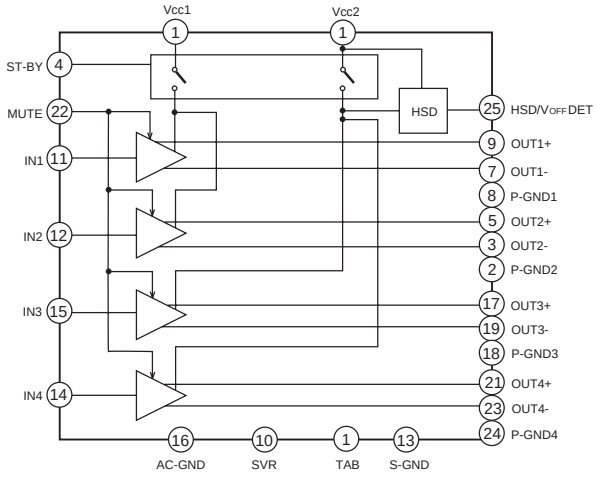


IC301 AK7740

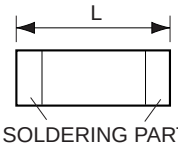


Pin No.	Pin Name	Pin No.	Pin Name	Pin No.	Pin Name	Pin No.	Pin Name	Pin No.	Pin Name
1	AINL3	11	XTI	21	SDOUT	31	INIT_RESET	41	AVSS
2	AINR2	12	XTO	22	DRDY	32	DVDD	42	AINR-
3	AINL2	13	CLKO	23	DVSS	33	DVSS	43	AINR+
4	AINR1	14	JX	24	DVDD	34	BVSS	44	AINL-
5	AINL1	15	SMODE	25	RDY	35	AOUTR2	45	AINL+
6	VREFH	16	LRCLK	26	SO	36	AOUTL2	46	AINR4
7	AVDD	17	BITCLK	27	SI	37	AOUTR1	47	AINL4
8	AVSS	18	SDIN	28	SCLK	38	AOUTL1	48	AINR3
9	DVSS	19	SDINA	29	RQ	39	AVDD		
10	DVDD	20	SDOUTA	30	S_RESET	40	VCOM		

IC330 TDA7560



ELECTRICAL PARTS LIST



< Chip Parts (Resistors & Capacitors) >

Part No.	L
103L19xOx	2.0mm
103L24xOx	3.2mm
103L29xOx	1.6mm
103P50xOx	1.6mm

Part No.	L
141L06xOx	2.0mm
141L16xOx	1.6mm
141L18xOx	1.6mm

Ref. No.	Part No.	Description	
CHIP PARTS (RESISTORS)			
	103L199O9	R-CHIP	0Ω
	103L299O9	R-CHIP	0Ω
	103L249O9	R-CHIP	0Ω
	103L290O5	R-CHIP	22Ω
	103L290O9	R-CHIP	47Ω
	103L291O1	R-CHIP	68Ω
	103L291O3	R-CHIP	100Ω
	103L291O9	R-CHIP	330Ω
	103L241O9	R-CHIP	330Ω
	103L292O1	R-CHIP	470Ω
	103L292O2	R-CHIP	560Ω
	103L292O5	R-CHIP	1kΩ
	103P502O5	R-CHIP	1kΩ
	103L292O6	R-CHIP	1.2kΩ
	103L292O7	R-CHIP	1.5kΩ
	103L292O8	R-CHIP	1.8kΩ
	103L292O9	R-CHIP	2.2kΩ
	103L192O9	R-CHIP	2.2kΩ
	103L293O0	R-CHIP	2.7kΩ
	103L193O0	R-CHIP	2.7kΩ
	103L293O1	R-CHIP	3.3kΩ
	103L193O1	R-CHIP	3.3kΩ
	103L193O2	R-CHIP	3.9kΩ
	103L293O2	R-CHIP	3.9kΩ
	103L293O3	R-CHIP	4.7kΩ
	103P503O3	R-CHIP	4.7kΩ
	103L293O4	R-CHIP	5.6kΩ
	103L293O5	R-CHIP	6.8kΩ
	103L293O6	R-CHIP	8.2kΩ
	103L293O7	R-CHIP	10kΩ
	103L293O8	R-CHIP	12kΩ
	103P503O8	R-CHIP	12kΩ
	103P503O9	R-CHIP	15kΩ
	103L293O9	R-CHIP	15kΩ
	103L294O0	R-CHIP	18kΩ
	103L294O1	R-CHIP	22kΩ
	103L294O3	R-CHIP	33kΩ
	103L294O5	R-CHIP	47kΩ
	103L294O7	R-CHIP	68kΩ
	103L294O9	R-CHIP	100kΩ
	103P504O9	R-CHIP	100kΩ
	103L295O1	R-CHIP	150kΩ
	103L295O2	R-CHIP	180kΩ
	103L295O3	R-CHIP	220kΩ
	103L295O6	R-CHIP	390kΩ
R8N1,8N2,8N8	109P01218	R-NETWORK-CHIP	1kΩ
R3N1	109P01219	R-NETWORK-CHIP	4.7kΩ
R8N4,8N7	109P01213	R-NETWORK-CHIP	10kΩ
R8N5	109P01216	R-NETWORK-CHIP	47kΩ
R8N6	109P01225	R-NETWORK-CHIP	100kΩ
CHIP PARTS (CAPACITORS)			
	141L180O6	C-CERAMIC-CHIP	5pF
	141L181O3	C-CERAMIC-CHIP	12pF
	141L181O9	C-CERAMIC-CHIP	22pF
	141L182O7	C-CERAMIC-CHIP	47pF
	141L183O5	C-CERAMIC-CHIP	100pF
	141L160O5	C-CERAMIC-CHIP	470pF
	141L160O9	C-CERAMIC-CHIP	1000pF
	141L185O9	C-CERAMIC-CHIP	1000pF
	141L161O1	C-CERAMIC-CHIP	1500pF
	141L161O3	C-CERAMIC-CHIP	2200pF
	141L161O5	C-CERAMIC-CHIP	3300pF
	141L161O7	C-CERAMIC-CHIP	4700pF
	141L162O1	C-CERAMIC-CHIP	0.01µF
	141L162O3	C-CERAMIC-CHIP	0.015µF
	141L164O3	C-CERAMIC-CHIP	0.033µF
	141L164O5	C-CERAMIC-CHIP	0.068µF
	141L164O6	C-CERAMIC-CHIP	0.1µF
	141L063O2	C-CERAMIC-CHIP	0.1µF
	141L164O8	C-CERAMIC-CHIP	0.22µF
	141L069O5	C-CERAMIC-CHIP	1µF
C951	181P73110	C-ELE-CHIP	100uF/10V
C326,954	181P73111	C-ELE-CHIP	220µF/10V
C302,304,etc.	181P73123	C-ELE-CHIP	10µF/16V
C322,323,etc.	181P73149	C-ELE-CHIP	4.7µF/35V
C370,390,etc.	181P73162	C-ELE-CHIP	2.2µF/50V
TRANSISTOR			
Q927	260L020O9	TR 2SB1240Q	
Q980	260P11410	TR 2SB1561Q	
Q201,205,etc.	260P68210	TR 2SD2375OP	
Q762,772,etc.	260M061O6	TR-CHIP 2SA1037AR	
Q31	260P11710	TR-CHIP 2SA1364	
Q1,2,etc.	260M061O5	TR-CHIP 2SC2412S	
Q940	260P102O1	TR-CHIP 2SD2318	
Q941	260P12510	TR-CHIP 2SD2537	

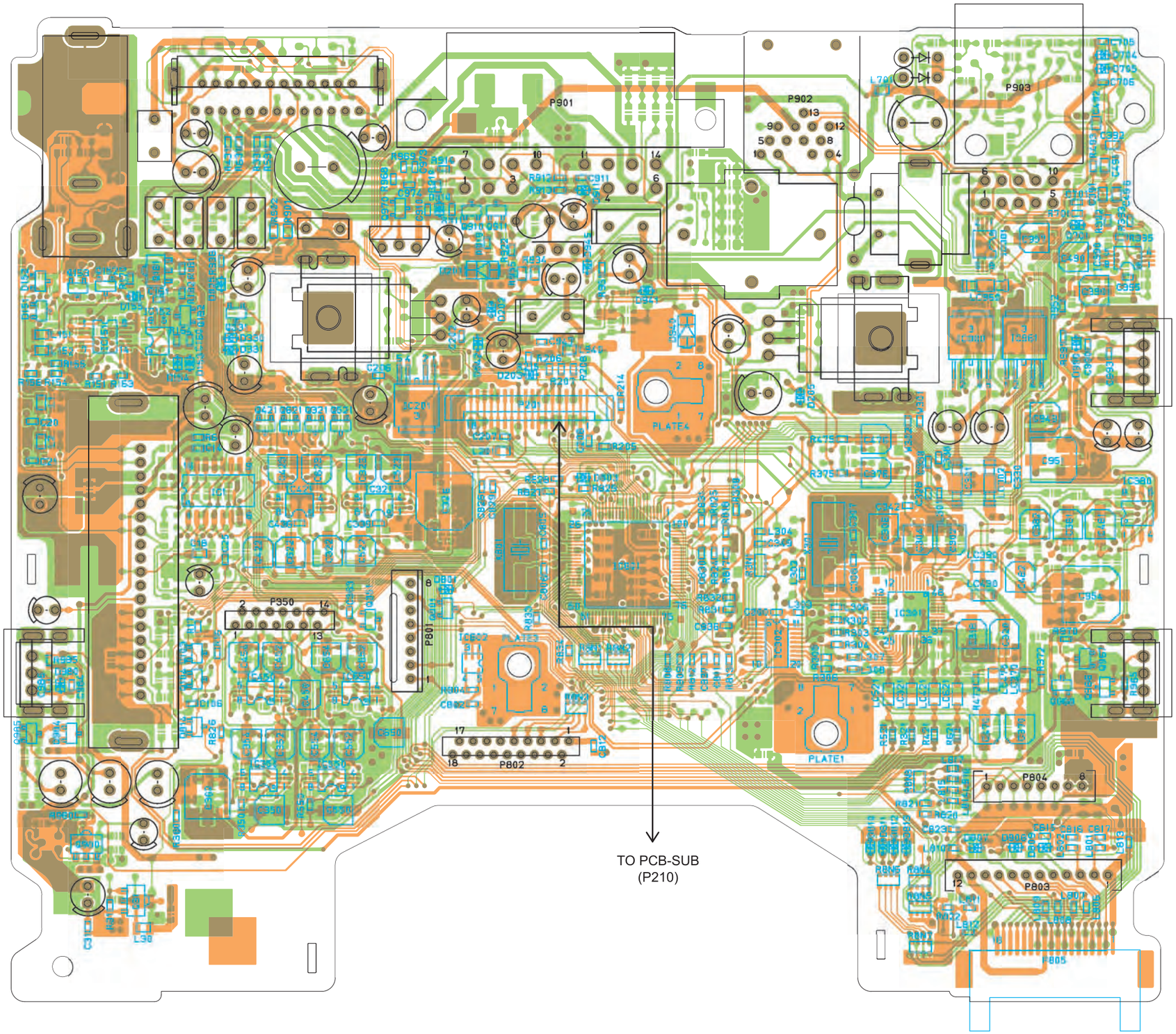
Ref. No.	Part No.	Description
Q750,760,770	260L010O1	TR-CHIP 2SD601AS
Q752	260L042O4	TR-CHIP DTA114T
Q333,942	260M061O1	TR-CHIP DTA124E
Q202,207,991	260L030O5	TR-CHIP DTA143E
Q967	260L030O3	TR-CHIP DTA144E
Q332	260L042O2	TR-CHIP DTA144T
Q944	260L057O1	TR-CHIP DTB123Y
Q928	260M061O9	TR-CHIP DTC114E
Q801,943	260L042O7	TR-CHIP DTC114T
Q301~303	260L014O8	TR-CHIP DTC123E
Q3,103,etc.	260M061O2	TR-CHIP DTC124E
Q32,203,etc.	260L014O2	TR-CHIP DTC143E
Q802	260L030O2	TR-CHIP DTC144E
Q321,421,etc.	260L033O1	TR-CHIP DTC323T
DIODE		
D901,903	264L042O1	DIODE ERA15-02
D201,940	264P607O1	DIODE-CHIP 1SR154-400
D203,204,etc.	264L060O1	DIODE-CHIP 1SS355
D944	264P617O1	DIODE-CHIP MC2836-T50-1
D943	264P618O1	DIODE-CHIP MC2838-T50-1
D902	264P516O1	DIODE-CHIP S3D6600
D205	264L067O3	DIODE-Z-CHIP MA8051M
D941,990	264L067O2	DIODE-Z-CHIP MA8056H
D202,802	264P584O1	DIODE-Z-CHIP MA8068M
D807~813	264P584O5	DIODE-Z-CHIP MA8075H
D801,942	264P584O7	DIODE-Z-CHIP MA8082M
D980	264P584O9	DIODE-Z-CHIP MA8091L
D910,911	264P585O6	DIODE-Z-CHIP MA8110M
D375,475.etc.	264P588O6	DIODE-Z-CHIP MA8270M
IC		
IC301	263P22010	IC AK7740
IC1	266L067O1	IC HA12181FP-EL
IC201,960,961	266P61410	IC LF33ABPT
IC321,390,421	266L065O9	IC NJM4565V-TE1
IC802	266L064O5	IC PST9136
IC380	266L034O9	IC RC2100M/NJM2100M
IC302	263P99010	IC SN74LV541APW

Ref. No.	Part No.	Description
IC330	266P62810	IC TDA7560
IC801	262P51710	IC µPD70F3035BYGC-8EU
RESISTOR		
RF901	103L390O2	R-FUSE
COIL		
L801~811,etc.	351P091O8	COIL-CHIP
L901	351P11310	COIL-CHOKE
L902	351P048O1	COIL-CHOKE
L1	351P082O6	COIL-CHOKE-CHIP
L201	351P081O6	COIL-CHOKE-CHIP
L3	351P083O6	COIL-CHOKE-CHIP
L301,302,etc.	351P095O4	COIL-CHOKE-CHIP
L940	351P082O0	COIL-CHOKE-CHIP
CONNECTORS		
P804	452L083O8	CONNECTOR 8P
P903	452P23210	CONNECTOR 10P
P803	452L094O2	CONNECTOR 12P
P901	452L34211	CONNECTOR 14P
P201,210	452P136O8	CONNECTOR 18P
P211	452L274O8	CONNECTOR 18P
P801	452L218O8	CONNECTOR
ANT1	449L076O3	SOCKET-ANT
P902	449L098O3	SOCKET-DIN
OTHERS		
X301	285P11422	CRYSTAL
X801	285P093O1	CRYSTAL
H-TR-1,4	593L34010	HOLDER TR
H-TR-2,3,5	593L29210	HOLDER-TR
LC301,302	409P047O1	LC-MULTIPLE-CHIP
LC321,370,etc.	409P023O1	LC-MULTIPLE-CHIP
F925	299P128O3	PROTECTOR
Z2,701	299P136O2	PROTECTOR
PLATE1,3,4	443P01012	TERMINAL
FE1	295P21613	TUNER

Parts Layout on Printed Circuit Board

MODEL : DY-3A66U-AL (PARTS SIDE)

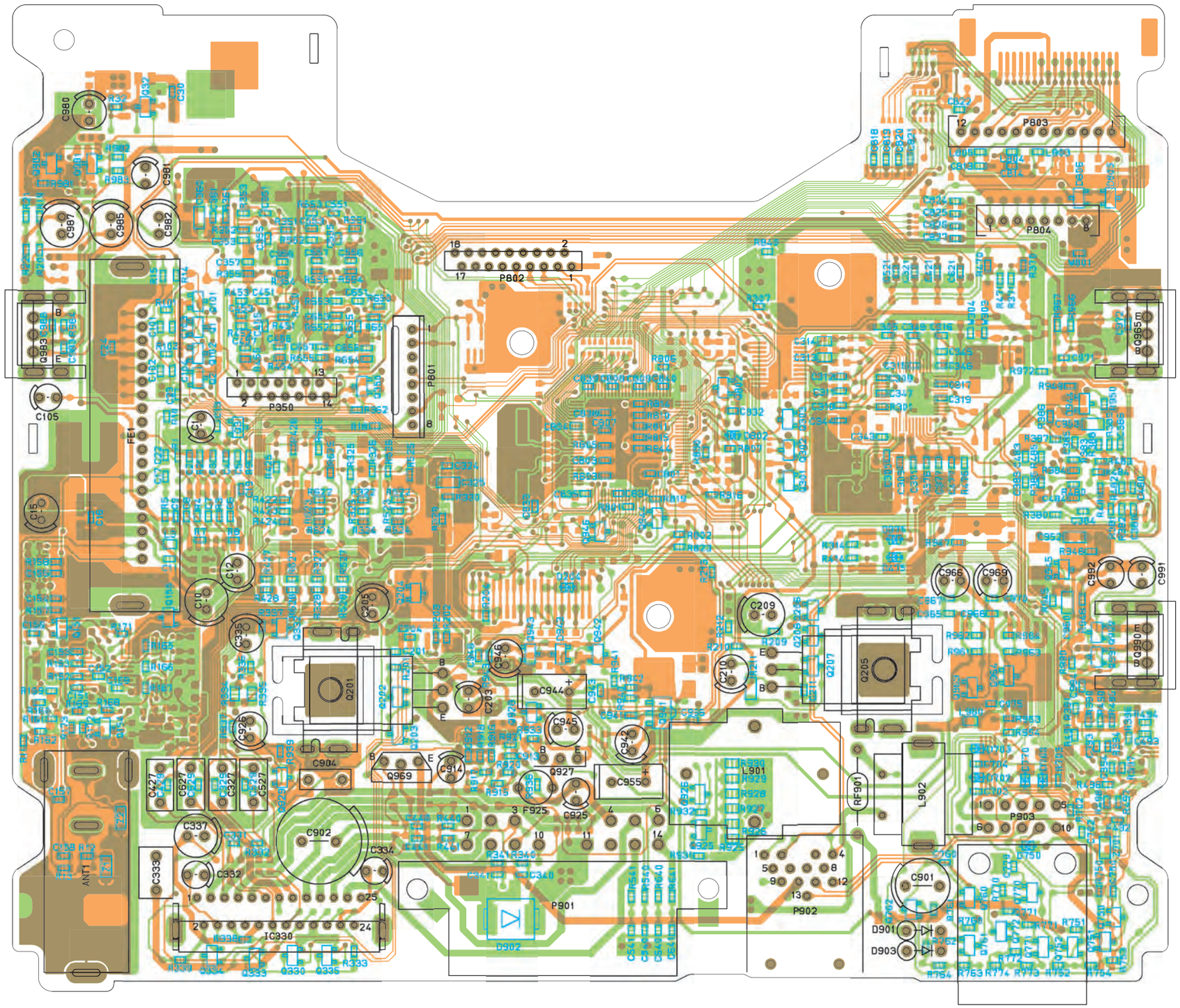
PCB-MAIN



Parts Layout on Printed Circuit Board

MODEL : DY-3A66U-AL (PATTERN SIDE)

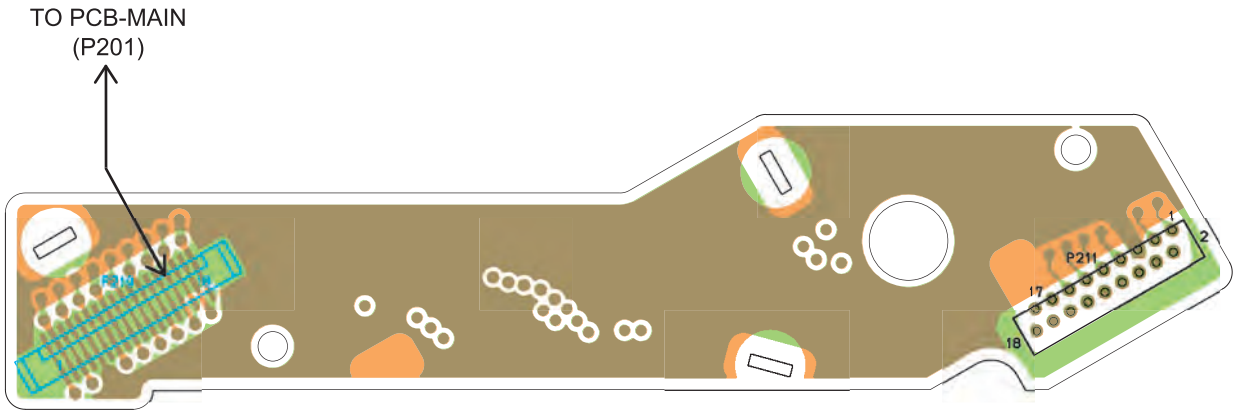
PCB-MAIN



Parts Layout on Printed Circuit Board

Model : DY-3A66U-AL

PCB-SUB

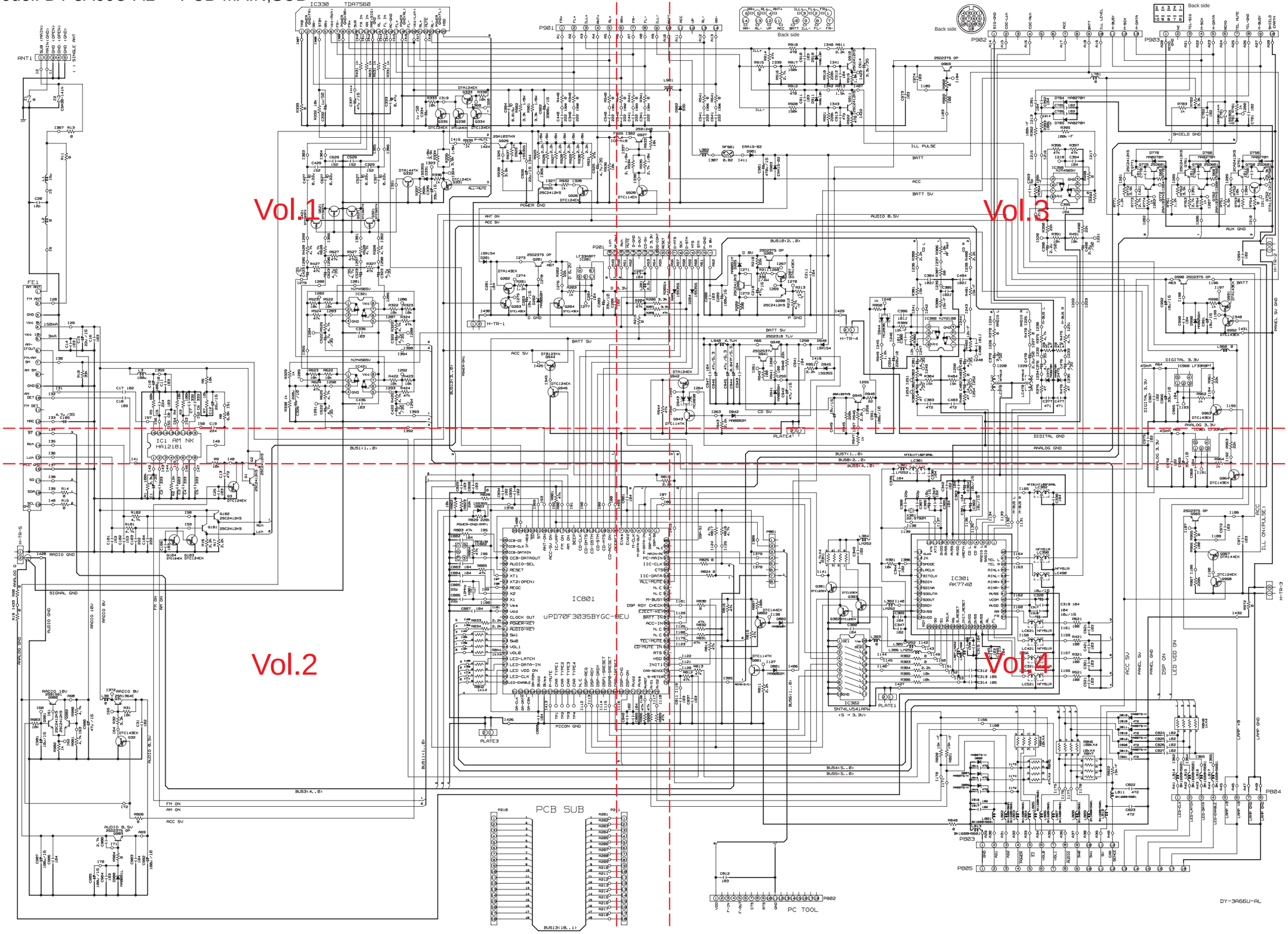


(PARTS SIDE)

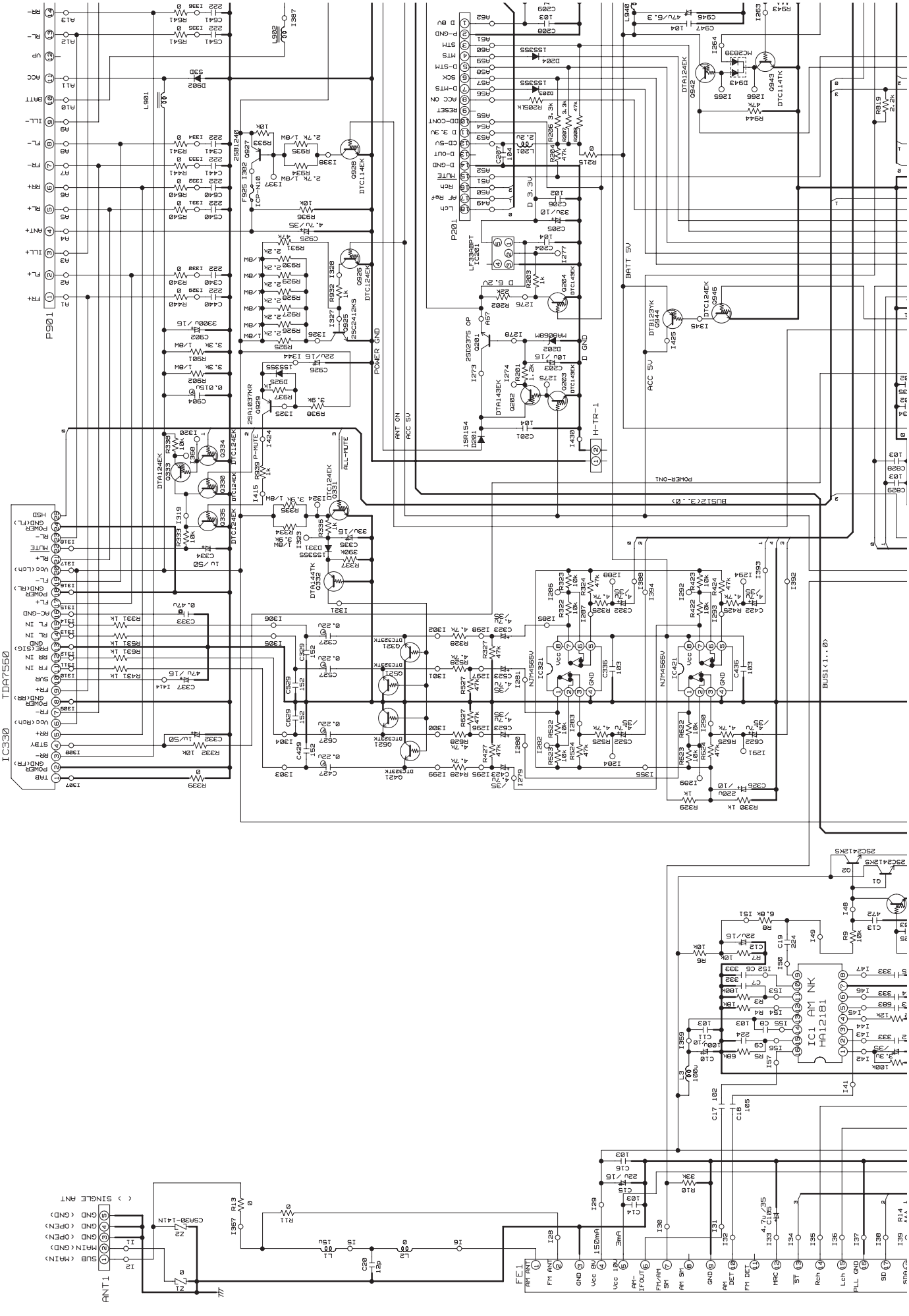
(PATTERN SIDE)

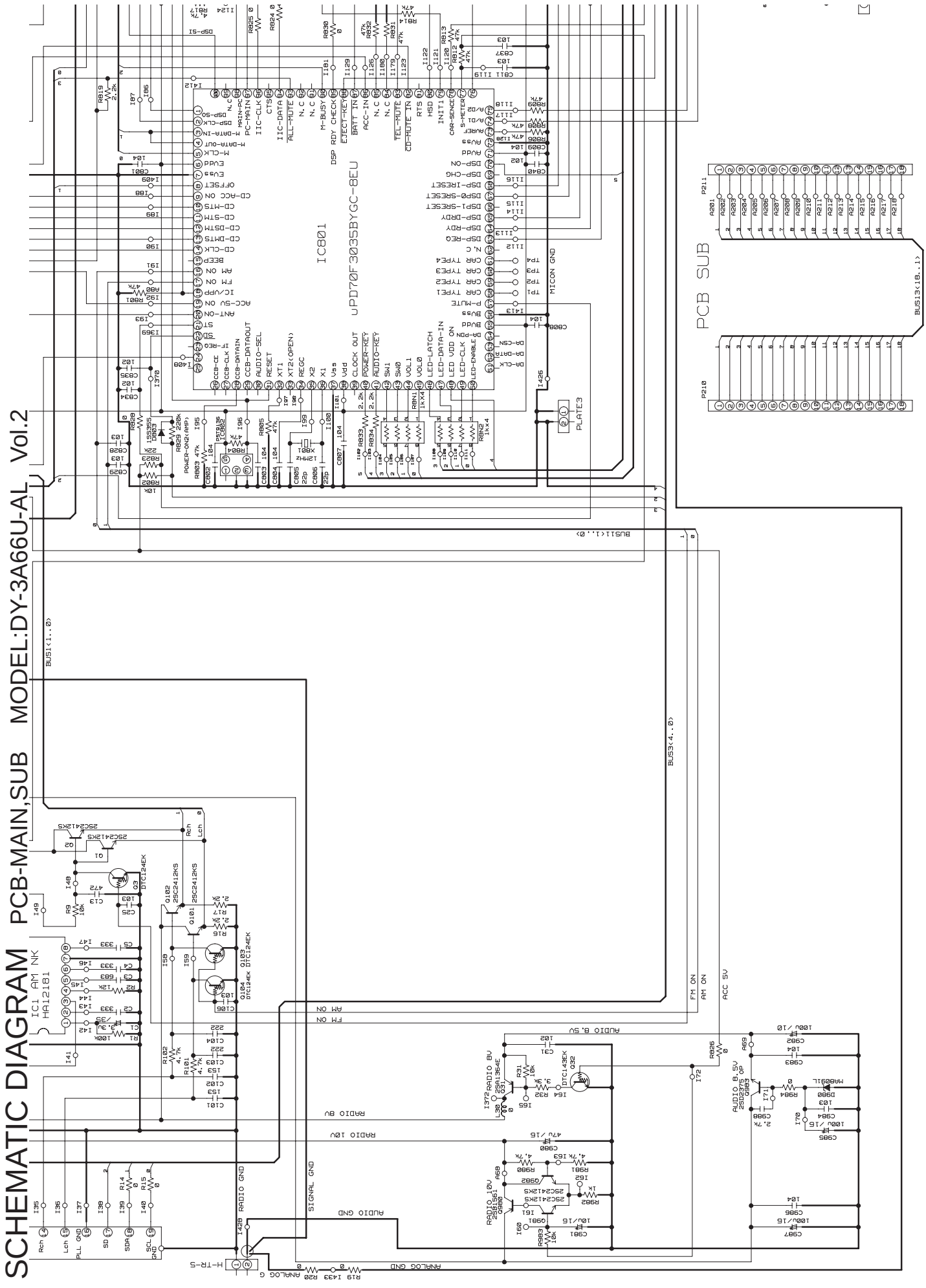
SCHEMATIC DIAGRAM

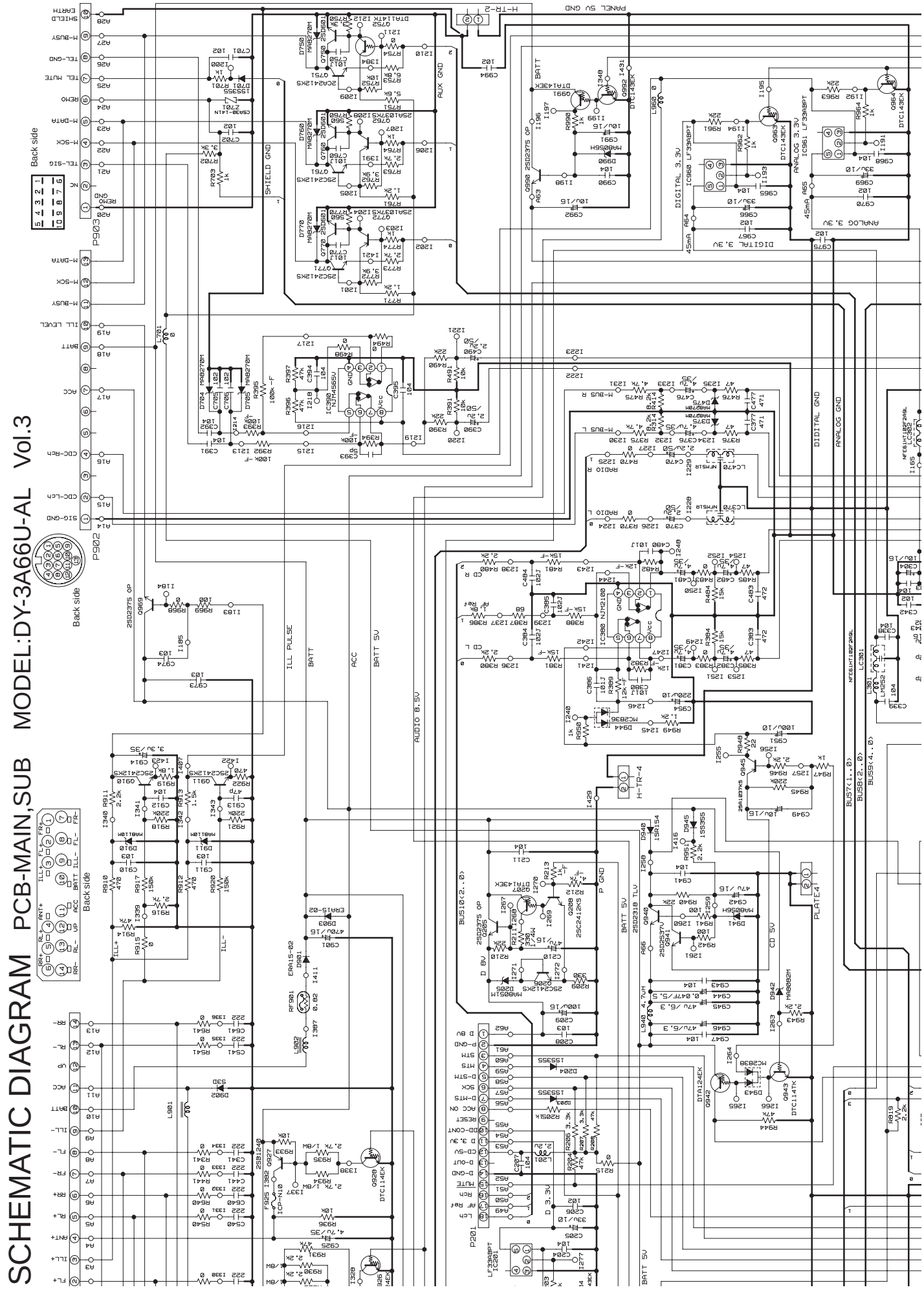
Model: DY-3A66U-AL PCB-MAIN,SUB

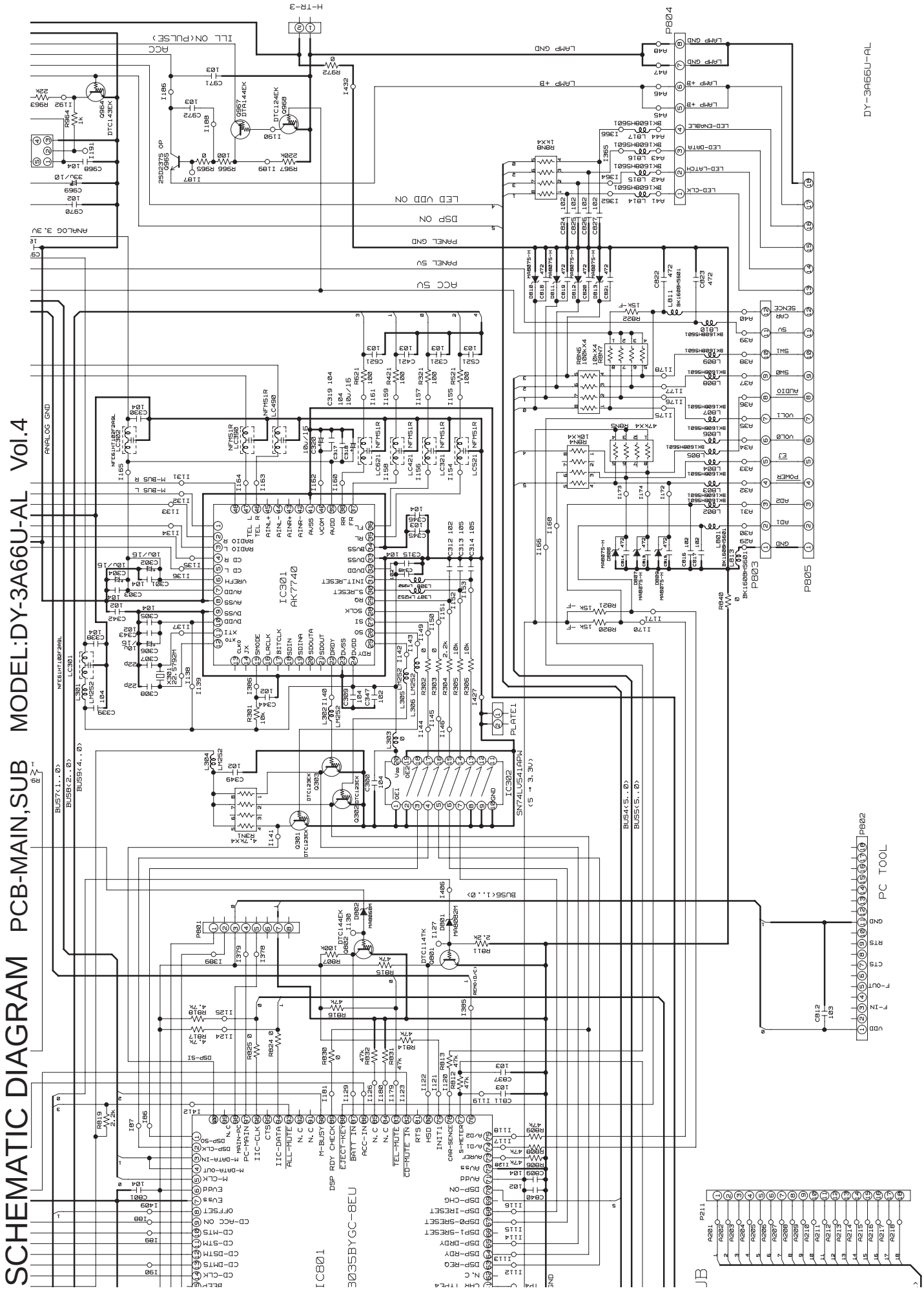


SCHEMATIC DIAGRAM PCB-MAIN,SUB MODEL:DY-3A66U-AL Vol.1




SCHEMATIC DIAGRAM
PCB-MAIN,SUB MODEL:DY-3A66U-AL Vol.2
IC1 AM NK
HA12181
IC801
μPD70F3035BYGC-8EU
PCB SUB
P211
P210
PLATE3
BUS1<1..0>
BUS3<4..0>
BUS11<1..0>
FM ON
AM ON
ACC 5V
AUDIO 8.5V
RADIO 8V
RADIO 10V
AUDIO GND
SIGNAL GND
ANALOG GND
RADIO GND
H-TR-S
Rch
Lch
PLL GND
SD
SDA
SCL
GND


SCHEMATIC DIAGRAM PCB-MAIN,SUB MODEL:DY-3A66U-AL Vol.3


SCHEMATIC DIAGRAM PCB-MAIN,SUB MODEL:DY-3A66U-AL Vol.4
DY-3A66U-AL
ANALOG GND
IC301 AK7740
IC801
SN74LV541APW
PC TOOL
P803
P804
P805
P802
P211
JB

VOLTAGE
Model : DY-3A66U-AL

1. μ-COM
IC801 PCB-MAIN

AM 1000kHz 74dBμV, FM 98.1MHz 68dBμV
BATT,ACC 13.2V

Pin No.	Pin Name	Function	I/O	ACT	Voltage [V]			Remark
					AM	FM	CD	
1	DISP-SO	Serial data output to DSP	O	L	0	0	0	
2	DSP-CLK	Serial clock output to DSP	O	L	0	0	0	
3	M-DATA-IN	M-BUS serial data input	I	L	5	5	5	
4	M-DATA-OUT	M-BUS serial data output	O	L	5	5	5	
5	M-CLK	M-BUS clock output	I/O	L	5	5	5	
6	Evdd	VDD5V	-	-	5	5	5	
7	Evss	GND	-	-	0	0	0	
8	OFFSET	Offset detection mode change output	O	H	0	0	0	
9	CD-ACC ON	CDX2 ACCON output	O	H	0	0	0	
10	CD-MTS	communication request output to CDX2	O	L	5	5	5	
11	CD-STM	communication request input from CDX2	I	L	5	5	5	
12	CD-DSTM	Serial data input from CDX2	I	L	5	5	5	
13	CD-DMTS	Serial data output to CDX2	O	L	0	0	0	
14	CD-CLK	Serial clock input from CDX2	I	L	5	5	5	
15	N.C.	Not used	O	L	-	-	-	
16	AM-ON	AM power supply output	O	H	5	0	0	
17	FM-ON	FM power supply output	O	H	0	5	0	
18	IC/VPP	GND	-	-	0	0	0	
19	ACC-5V ON	ACC 5V output	O	H	5	5	5	
20	ANT-ON	ANT +B output	O	H	5	5	5	
21	ST	Stereo input	I	L	5	5	5	
22	SD	Stop level input	I	L	5	5	5	
23	IF-REQ	IF output request	O	H	5	5	5	
24	POWER-ON1	Power ON	O	H	5	5	5	
25	POWER-ON2	Power ON	O	H	5	5	5	
26	N.C.	Not used	O	L	-	-	-	
27	N.C.	Not used	O	L	-	-	-	
28	N.C.	Not used	I	L	0	0	0	
29	N.C.	Not used	O	L	-	-	-	
30	N.C.	Not used	O	L	-	-	-	
31	RESET	System reset input	-	-	5	5	5	
32	XT1	Sub clock (Not used)	-	-	0	0	0	
33	XT2	Sub clock (Not used)	-	-	-	-	-	
34	REGC	Regulator output smoothly capacitor	-	-	3	3	3	
35	X2	Main clock - 12MHz	-	-	-	-	-	*1
36	X1	Main clock - 12MHz	-	-	-	-	-	*1
37	Vss	GND	-	-	0	0	0	
38	Vdd	VDD 5V	-	-	5	5	5	
39	CLOCKOUT	Clock output (Not used)	O	-	-	-	-	
40	POWER-KEY	Power-KEY input	I	L	5	5	5	
41	AUDIO-KEY	Audio-KEY input	I	L	5	5	5	
42	SW1	Encoder KEY2 input	I	-	5/0	5/0	5/0	*2
43	SW2	Encoder KEY1 input	I	-	5/0	5/0	5/0	*2
44	VOL1	VOL pulse signal1 input	I	-	5/0	5/0	5/0	*2
45	VOL2	VOL pulse signal2 input	I	-	5/0	5/0	5/0	*2
46	LED-LATCH	LED driver-IC communication latch output	O	H	0	0	0	
47	LED-DATA-IN	LED driver-IC communication serial data output	O	L	0	0	0	
48	LED VDD ON	Panel ON output	O	L	5	5	5	
49	LED-CLK	LED driver-IC communication serial clock output	O	L	0	0	0	
50	LED-ENABLE	LED driver-IC movement request output	O	L	0	0	0	

Pin No.	Pin Name	Function	I/O	ACT	Voltage [V]			Remark
					AM	FM	CD	
51	N.C.	Not used	O	L	-	-	-	
52	N.C.	Not used	O	L	-	-	-	
53	N.C.	Not used	O	L	-	-	-	
54	N.C.	Not used	O	L	-	-	-	
55	BVdd	VDD 5V	-	-	5	5	5	
56	BVss	GND	-	-	0	0	0	
57	P-MUTE	Power IC mute control output	O	H	5	5	5	
58	CAR-TYPE1	Switching car type check terminal	I	L	0	0	0	
59	CAR-TYPE2	Switching car type check terminal	I	L	0	0	0	
60	CAR-TYPE3	Switching car type check terminal	I	L	0	0	0	
61	CAR-TYPE4	Switching car type check terminal	I	L	0	0	0	
62	N.C.	Not used	O	L	-	-	-	
63	DSP-REQ	Communication request output to DSP	O	H	5	5	5	
64	DSP-RDY	Communication possibility input from DSP	I	H	0	0	0	
65	DSP-DRDY	Communication possibility input from DSP	I	H	5	5	5	
66	N.C.	Not used	O	L	-	-	-	
67	DSPO-SRESET	DSPO system reset output	O	L	5	5	5	
68	DSP-IRESET	DSPO, DSPI initial reset output	O	L	5	5	5	
69	N.C.	Not used	O	L	-	-	-	
70	DSP-ON	DSP-IC power control output	O	H	5	5	5	
71	Avdd	A/D converter analog power supply	-	-	5	5	5	
72	Avss	A/D converter ground power supply	-	-	0	0	0	
73	AVREF	VDD 5V	-	-	5	5	5	
74	A/D KEY1	A/D key1 input	I	-	5	5	5	
75	A/D KEY2	A/D key2 input	I	-	5	5	5	
76	REMO(D/C)	Remote controller code input	I	-	5	5	5	
77	S-METER	Electric field level input	I	-	3.6	4.3	0	
78	CAR-SENCE	Car type change input	I	-	2.5	2.5	2.5	*3
79	INIT1	Initialization change input	I	-	5	5	5	
80	HSD	Offset detection input	I	L	0	0	0	
81	RTS	PC communication request input	I	L	0	0	0	
82	CD-MUTEIN	CDX2 mute input	I	L	0	0	0	
83	TEL-MUTE	Telephone mute input	I	H	5	5	5	
84	N.C.	Not used	O	L	-	-	-	
85	N.C.	Not used	O	L	-	-	-	
86	ACC-IN	ACC detection input	I	H	5	5	5	
87	BATT-IN	BATT detection input	I	L	0	0	0	
88	EJECT-KEY	Eject key input	I	L	5	5	5	
89	DSP RDY CHECK	DSP rdy terminal check input	I	L	5	5	5	
90	M-BUSY	M-BUS busy output	I/O	L	5	5	5	
91	N.C.	Not used	O	L	-	-	-	
92	N.C.	Not used	O	L	-	-	-	
93	ALL-MUTE	All mute output	O	L	5	5	5	
94	IIC-DATA	IIC-data output (TUNER, EEPROM)	O	L	5	5	5	
95	CTS	PC communication request output	O	L	0	0	0	
96	IIC-CLK	IIC clock output (TUNER, EEPROM)	O	L	5	5	5	
97	PC-MAIN	PC communication serial data input	I	L	0	0	0	
98	MAIN-PC	PC communication serial data output	O	L	0	0	0	
99	N.C.	Not used	O	L	-	-	-	
100	DSP-SI	DSP serial data input	I	L	0	0	0	

Note:
*1 : The port is oscillation port. Do not touch it.
*2 : The value is alternated by volume control knob.
*3 : Using PS24 panel

2. ELECTRIC VOL IC
IC301 PCB-MAIN

FM 98.1MHz, VOL MIN
BATT, ACC 13.2V

Pin No.	Pin Name	Voltage [V]			Remark
		AM	FM	CD	
1	AINL3	1.5	1.5	1.5	
2	AINR2	1.5	1.5	1.5	
3	AINL2	1.5	1.5	1.5	
4	AINR1	1.5	1.5	1.5	
5	AINL1	1.5	1.5	1.5	
6	VREFH	3.3	3.3	3.3	
7	AVDD	3.3	3.3	3.3	
8	AVSS	0	0	0	
9	DVSS	0	0	0	
10	DVDD	3.3	3.3	3.3	
11	XTI	-	-	-	*1
12	XTO	-	-	-	*1
13	CLKO	0	0	0	
14	JX	3.3	3.3	3.3	
15	SMODE	3.3	3.3	3.3	
16	LRCLK	-	-	-	
17	BITCLK	-	-	-	
18	SDIN	-	-	-	
19	SDINA	-	-	-	
20	SDOUTA	-	-	-	
21	SDOUT	-	-	-	
22	DRDY	3.3/0	3.3/0	3.3/0	
23	DVSS	0	0	0	
24	DVDD	3.3	3.3	3.3	
25	RDY	3.3	3.3	3.3	
26	SO	3.3	3.3	3.3	
27	SI	3.3/0	3.3/0	3.3/0	
28	SCLK	3.3	3.3	3.3	
29	$\overline{RQ}$	3.3/0	3.3/0	3.3/0	
30	$\overline{S\_RESET}$	3.3	3.3	3.3	
31	$\overline{INIT\_RESET}$	3.3	3.3	3.3	
32	DVDD	3.3	3.3	3.3	
33	DVSS	0	0	0	
34	BVSS	0	0	0	
35	AOUTR2	1.5	1.5	1.5	
36	AOUTL2	1.5	1.5	1.5	
37	AOUTR1	1.5	1.5	1.5	
38	AOUTL1	1.5	1.5	1.5	
39	AVDD	3.3	3.3	3.3	
40	VCOM	1.7	1.7	1.7	
41	AVSS	0	0	0	
42	AINR-	-	-	-	
43	AINR+	-	-	-	
44	AINL-	-	-	-	
45	AINL+	-	-	-	
46	AINR4	1.5	1.5	1.5	
47	AINL4	1.5	1.5	1.5	
48	AINR3	1.5	1.5	1.5	

Note:
*1 : The port is oscillation port. Do not touch it.

3. POWER IC
IC330 PCB-AF

FM 98.1MHz, VOL MIN
BATT, ACC 13.2V

Pin No.	Pin Name	Voltage [V]
1	TAB	0
2	POWER-GND(FR)	0
3	RR-	6.3
4	STBY	5.2
5	RR+	6.3
6	VCC(Rch)	13.2
7	FR-	6.3
8	POWER GND(RR)	0
9	FR+	6.3
10	SVR	6.2
11	FR IN	6.2
12	RR IN	6.2
13	PRE(SIG) GND	0
14	RL IN	6.2
15	FL IN	6.2
16	AC-GND	0
17	FL+	6.2
18	POWER GND(RL)	0
19	FL-	6.2
20	VCC(Lch)	13.2
21	RL+	6.2
22	MUTE	4.3
23	RL-	6.2
24	POWER GND(FL)	0.0
25	HSD	13.2

4. POWER SOURCE

BATT, ACC 13.2V
(E): Emitter, (C): Collector
Unit: V

BATT 5V	
Q940 (E)	5.3
Q941(E)	5.3

ACC 5V	
Q944 (C)	5.2

RADIO 10V	
Q980 (C)	10.5

RADIO 8V	
Q31 (C)	8.3

AUDIO 8.5V	
Q983 (E)	8.4

BATT 6.2V	
Q201 (E)	6.4

BATT 3.3V	
IC201 (5)	3.3

MECHA 8V	
Q205 (E)	7.6

PANEL 5V	
Q990 (E)	5.6

DSP 3.3V	
IC960 (5)	3.3
IC961(5)	3.3

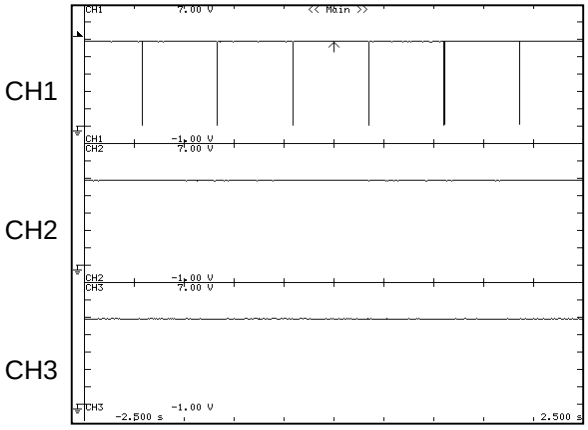
ILL ON	
Q965 (E)	10

WAVEFORM
Model: DY-3A66U-AL

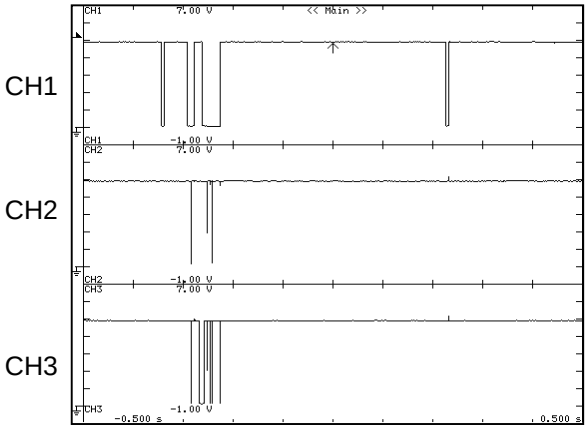
(1) M-Bus Communication Waveform

	P902	
	Pin No.	Pin Name
CH1	11	M-BUSY
CH2	12	M-SCK
CH3	13	M-DATA

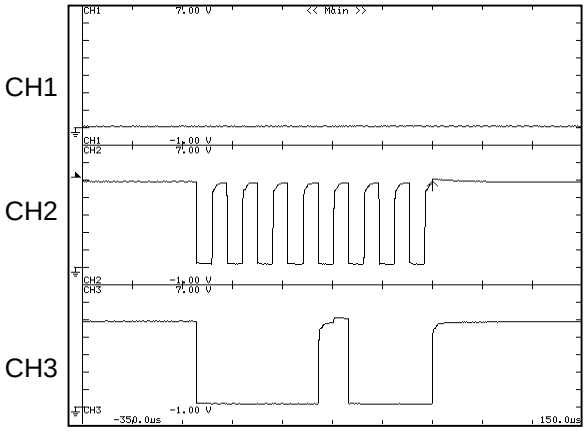
*** No connection with M-Bus units (500ms/div)**



*** Connection with M-Bus units (100ms/div)**



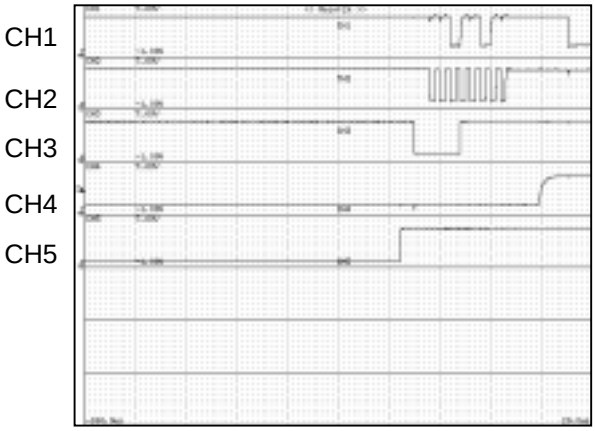
*** Connection with M-Bus units (50µs/div)**



(2) CD Communication Waveform

	P201	
	Pin No.	Pin Name
CH1	12	D-MTS
CH2	13	SCK
CH3	14	D-STM
CH4	15	MTS
CH5	16	STM

*** 20µs/div**



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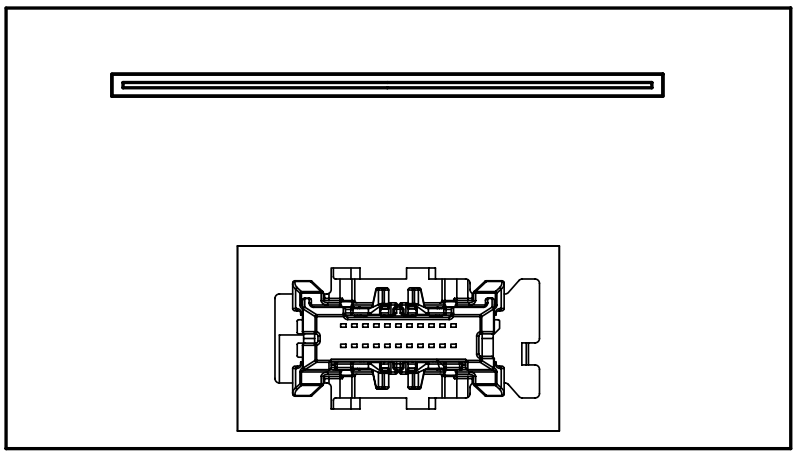
MITSUBISHI MOTORS

SERVICE MANUAL

AM/FM-ST ELECTRONIC TUNING RADIO
with CD CHANGER

Model : DY-3A66U-AL-2-T

PART No. MN141332



CONTENTS

MITSUBISHI ELECTRIC CORP. SANDA WORKS

SE012906123E

FEATURES and SPECIFICATIONS

FEATURES

Radio

- AM can preset the 6 stations and FM (FM1/FM2) can preset the 12 stations.
- It is able to memory by keep pushing the preset memory button.
- TUNE control by Rotary SW.
- ATC function to control BASS/TREBLE sound quality according to electric field strength when AM is received.
- AM noise killer function.
- SCAN function : Seeking receivable stations and receiving 5 seconds in each station.

CD Player

- In-dash CD auto changer (6disc) function.
- Power Loading / Power Eject function.
- Equipped with the shock proof memory.
  (16M-DRAM)(CD-DA:10.4sec)
- Skip recovered function.
  (Recovered the condition before skip.)
- Protected function of laser pickup stopping at high temperature.
- Quick truck selection function.
- Any time Eject function. (Eject at the all mode included ACC OFF.)
- Scan function : 10sec
- Reload function.
- Available for loading 12cm disc only.
- MP3 play function.
  (MPEG1 AUDIO LAYER3, MPEG2 AUDIO LAYER3)
- Repeat function. (One tune)
- Random play function.
- Fast-forwarding and fast-reversing function.

MP3

- Folder Up/Down function by TUNE knob.

Audio Part

- High power, 4 channel output. (4Ω load)
- Adjustment of BASS, TREBLE, BALANCE and FADER by Rotary SW.
- ITM (Independent Tone Memory) function to memorize amount of BASS/TREBLE adjustment according to mode.
- Fixed EQ matched to car room sound filed characteristic.
- Auto loudness function varies a frequency characteristic by volume.
- The function that controls the amount of change in the low / high frequency tone (BASS / TREBLE) adjustment with the maximum volume.

Others

- M-BUS is used the method of communication with CD changer.
- The beep sounds, to check an operation, by using a button with hold-pushing operation function.
- Rheostat function. (The intensity of buttons, panel and LCD can adjust to link with the intensity of vehicle's instrument panel lighting.)
- The connection of speaker wiring can check by test mode of the beep in the vehicle's assembly line.
- Steering Remote control.
- Hands free function.
- VES (Video Entertainment System) function.

SPECIFICATIONS

AM Radio

- Frequency Range : 531 ~ 1710kHz (9kHz step)
- Sensitivity : Less than 28dB
- Signal/Noise Ratio (60dBμV) : More than 45dB

FM Stereo Radio

- Frequency Range : 87.5 ~ 108.0MHz (100kHz step)
- Limiting Sensitivity : Less than 10dB
- Signal/Noise Ratio (40dBμV) : More than 55dB

CD Player

- Laser : Semiconductor Laser
- DA Convertor : 1bit
- Dynamic Range : More than 65dB
- Signal/Noise Ratio : More than 65dB
- Channel Separation : More than 50dB (1kHz)

Others

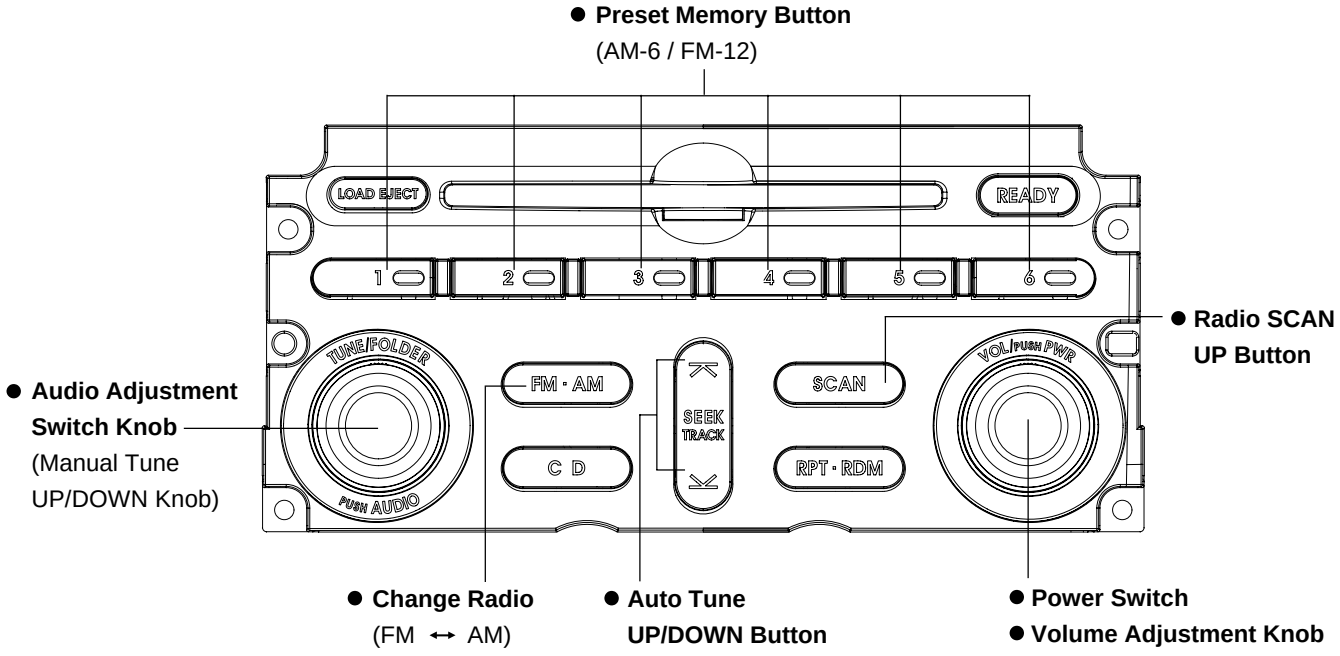
- Power Supply : DC 13.2V (11~16V)
  Test Voltage 13.2V
  Negative ground
- Battery Back Up Current : Less than 1.0mA
- Current Consumption : ACC 2.1A ± 20% (Output 1W)

- Maximum Power Output : 45W x 4 (SP output)
- Output Impedance : 4Ω (SP Output)
- Dimensions : 178mm x 151.3mm x 100mm
  (W x D x H)
- Weight : 2.0kg

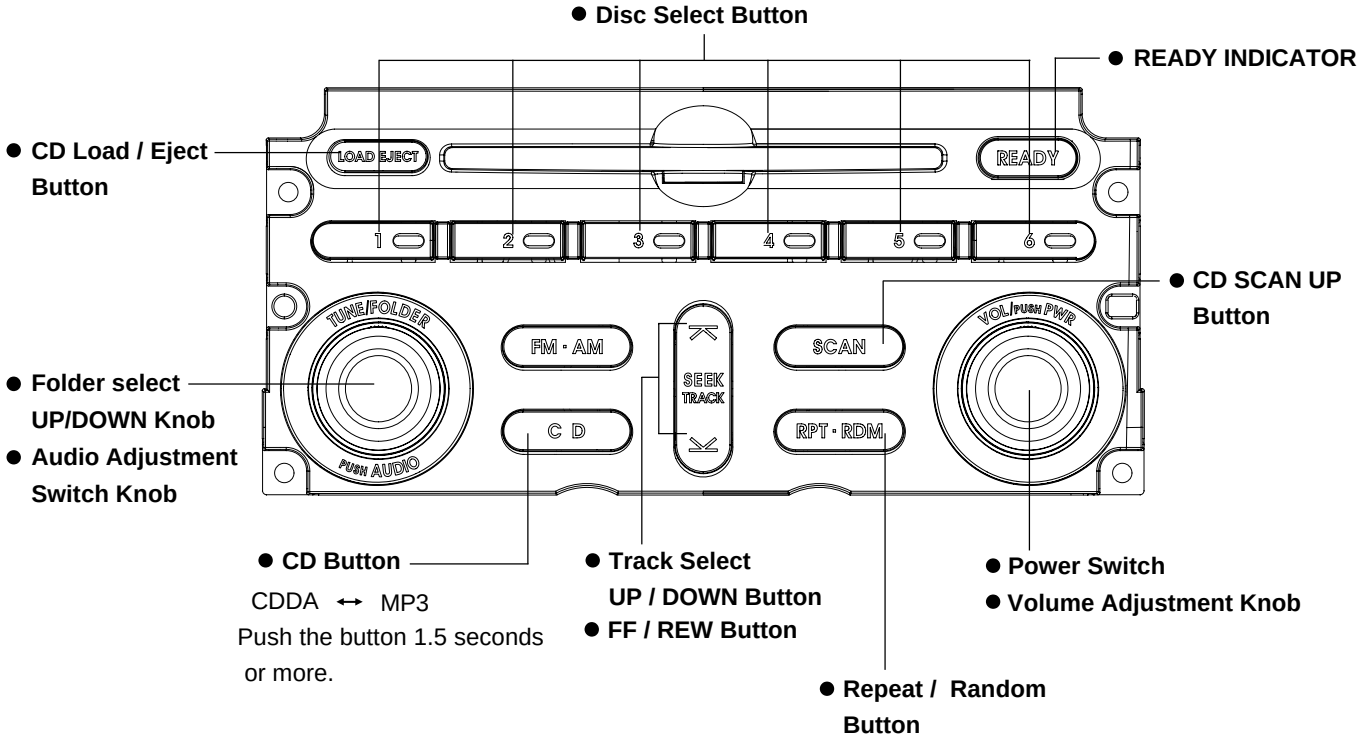
OPERATION

<< UNIQUE PANEL : SW-744, SW-745 >>

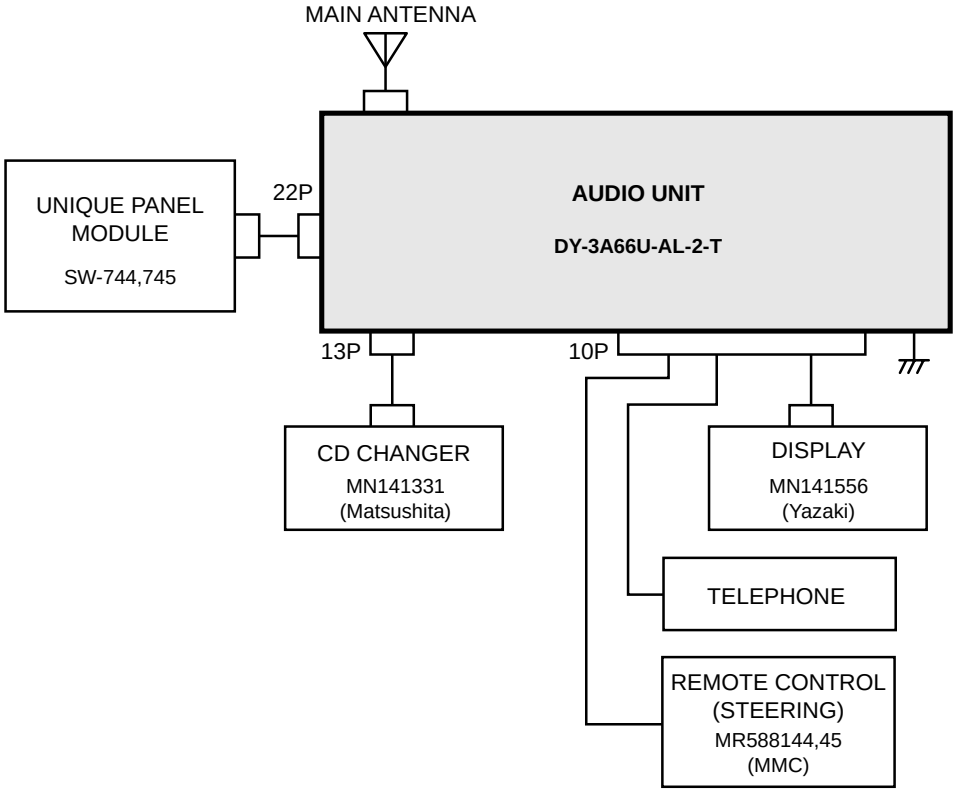
RADIO & AUDIO PART



CD CHANGER PART

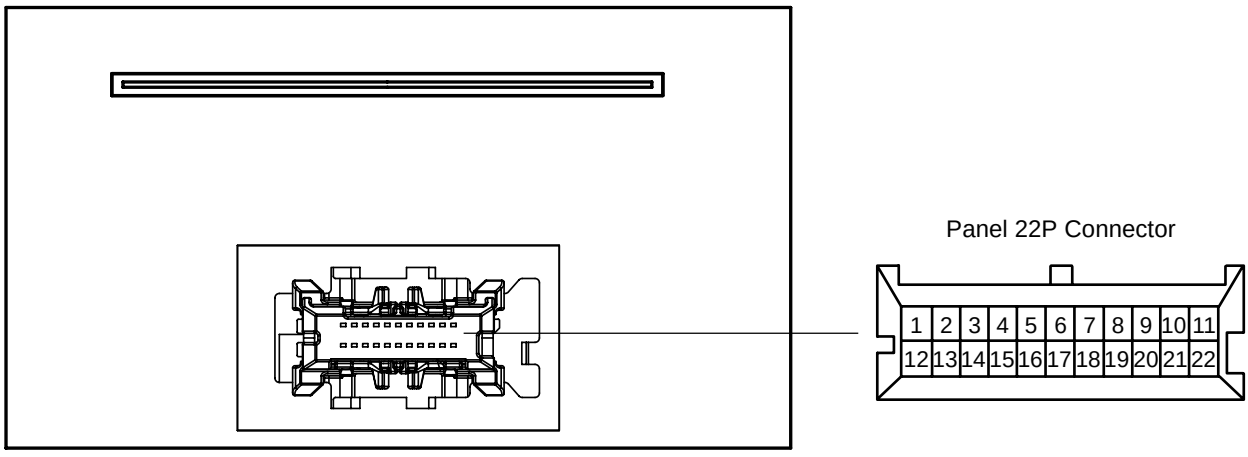


SYSTEM CONFIGURATION



CONNECTORS

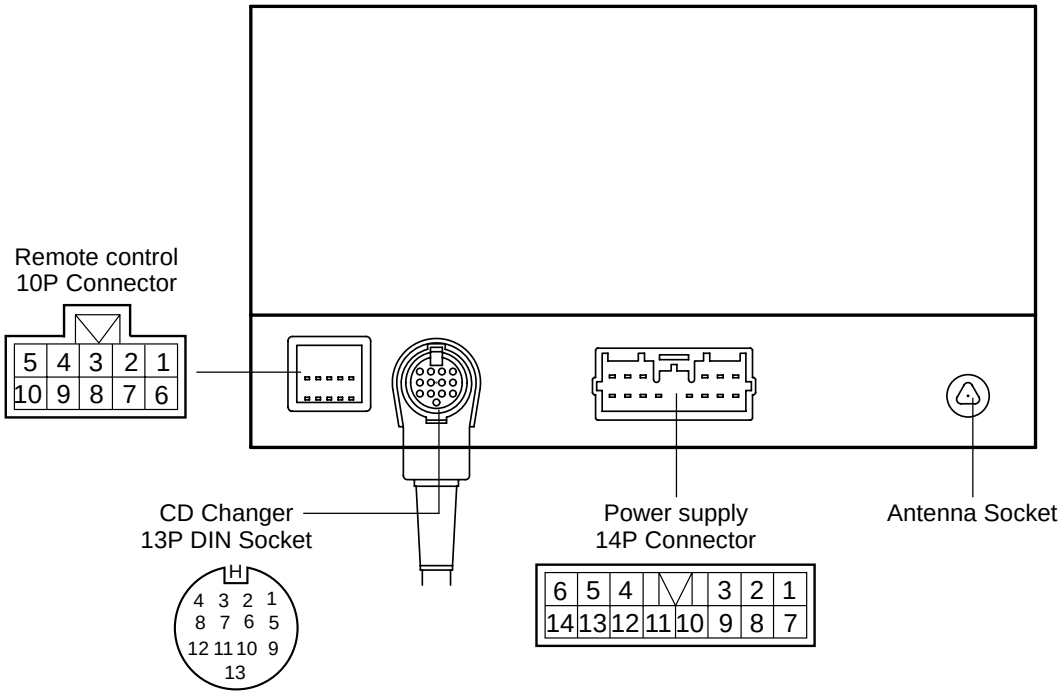
< FRONT SIDE VIEW >



Panel 22P Connector

Pin No.	Name	Pin No.	Name	Pin No.	Name
1	LATCH(LED)	9	AD2	17	LAMP
2	CLOCK(LED)	10	AD1	18	LAMP
3	——	11	GND	19	SENCE CAR
4	AUDIO-SW	12	ENABLE(LED)	20	VDD
5	VOL2	13	DATA(LED)	21	TUNE2
6	VOL1	14	LAMP GND	22	TUNE1
7	EJECT-SW	15	LAMP GND		
8	POWER-SW	16	——		

< REAR SIDE VIEW >



Remote control 10P Connector

Pin No.	Name	Pin No.	Name
1	REMO-IN	6	REMO-OUT
2	——	7	Telephone Mute
3	Telephone Signal	8	Telephone GND
4	M-SCK	9	M-BUSY
5	M-DATA	10	Shield Earth(M-BUS)

Power supply 14P Connector

Pin No.	Name		Pin No.	Name	
1	Speaker FR	(+)	8	Speaker FL	(-)
2	Speaker FL	(+)	9	Illumination	(-)
3	Illumination	(+)	10	Battery	(+)
4	Antenna + B		11	Accessory	(+)
5	Speaker RL	(+)	12	——	
6	Speaker RR	(+)	13	Speaker RL	(-)
7	Speaker FR	(-)	14	Speaker RR	(-)

CD Changer 13P DIN Socket

Pin No.	Name	Pin No.	Name
1	Signal GND	8	——
2	Lch	9	Battery (+)
3	——	10	Illumination Level
4	Rch	11	M-BUSY
5	——	12	M-SCK
6	——	13	M-DATA
7	ACC (+)	H	Shield Earth

DISASSEMBLING PROCEDURES

1. Removal of COVER (See Fig.1)

1) Unscrew the four screws (ⓘ).
2) Remove the COVER.

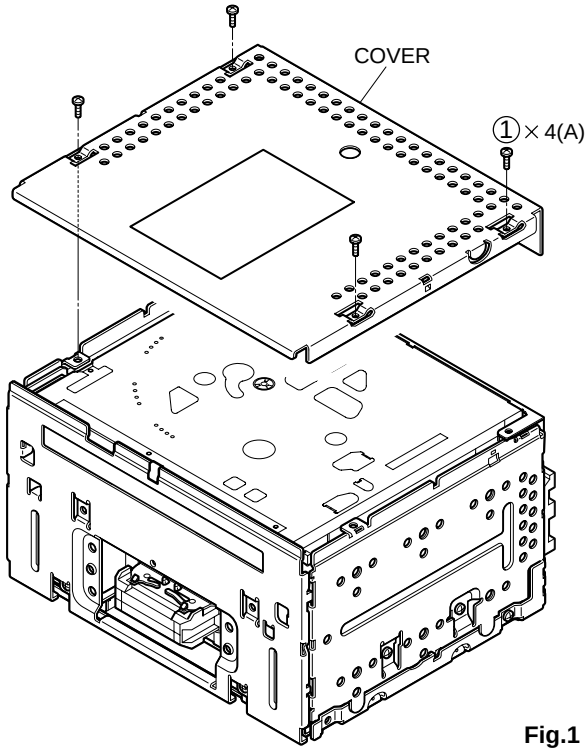


Fig.1

2. Removal of CDX3 (See Fig.2)

1) Unscrew the six screws (ⓙ).
2) Remove the HEAT-SINK.
3) Unscrew the four screws (ⓚ).
4) Remove the BRACKET-CDX3 and FLAT-CABLE 18P.
5) Remove the CDX3.

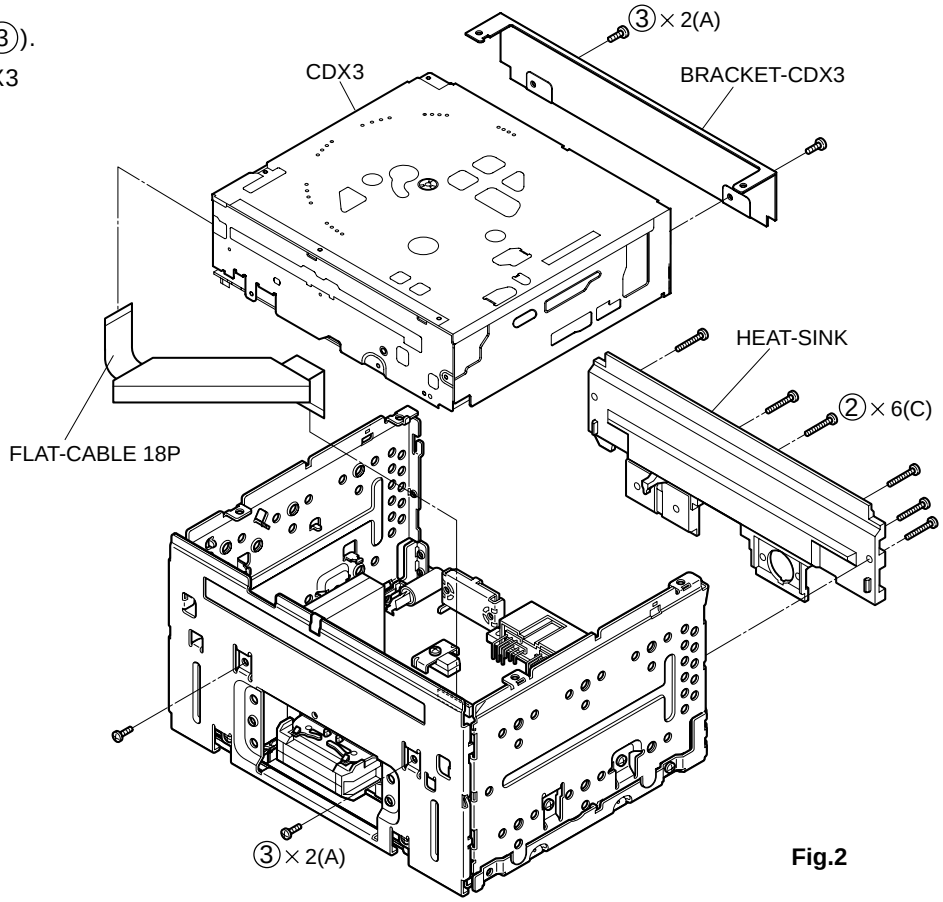


Fig.2

3. Removal of LEAD-CONNECTOR-22P (See Fig.3)

1) Unscrew the four screws (④).
2) Remove the CHASSIS-F and HOLDER-CON.
3) Remove the LEAD-CONNECTOR-22P.

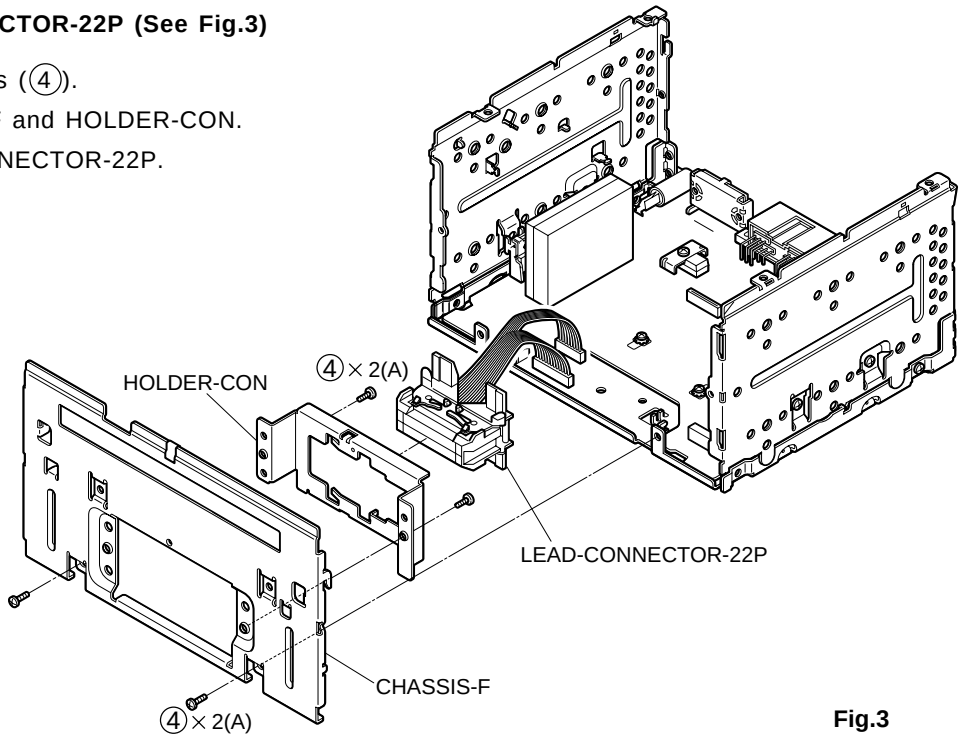


Fig.3

4. Removal of PCB-MAIN (See Fig.4)

1) Unscrew the two screws (⑤) and three screws (⑥).
2) Remove the CHASSIS-L and the CHASSIS-R.
3) Unscrew the one screw (⑦), two screws (⑧) and three screws (⑨).
4) Remove the PCB-MAIN.

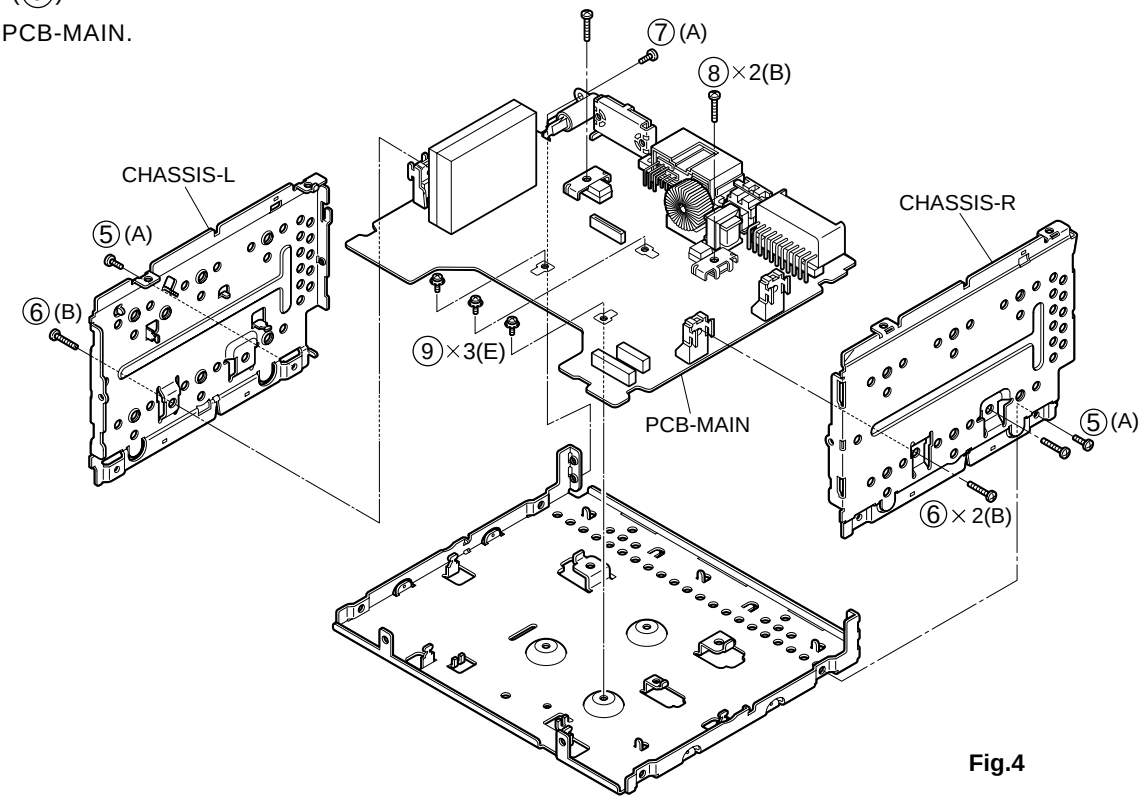
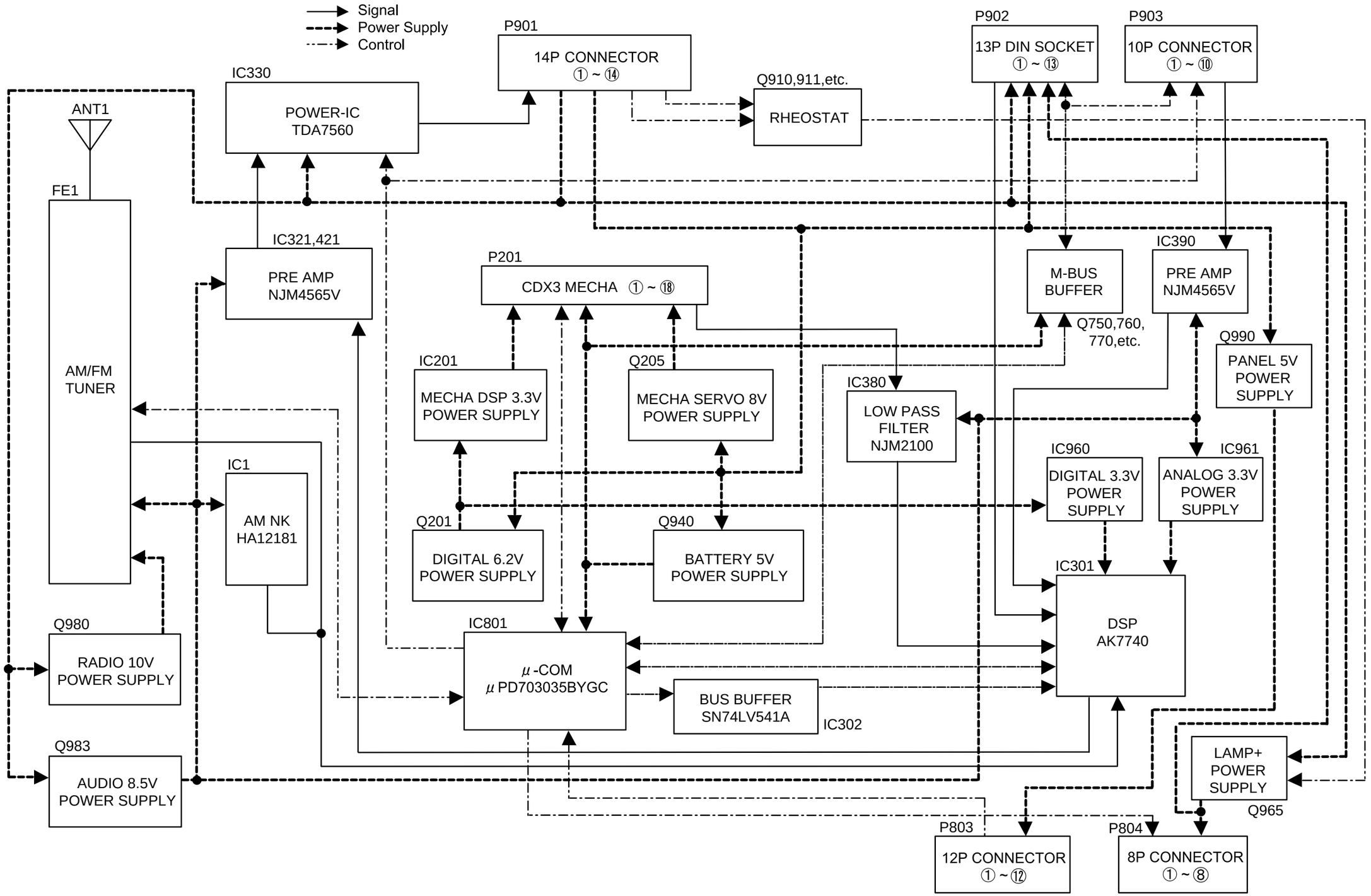
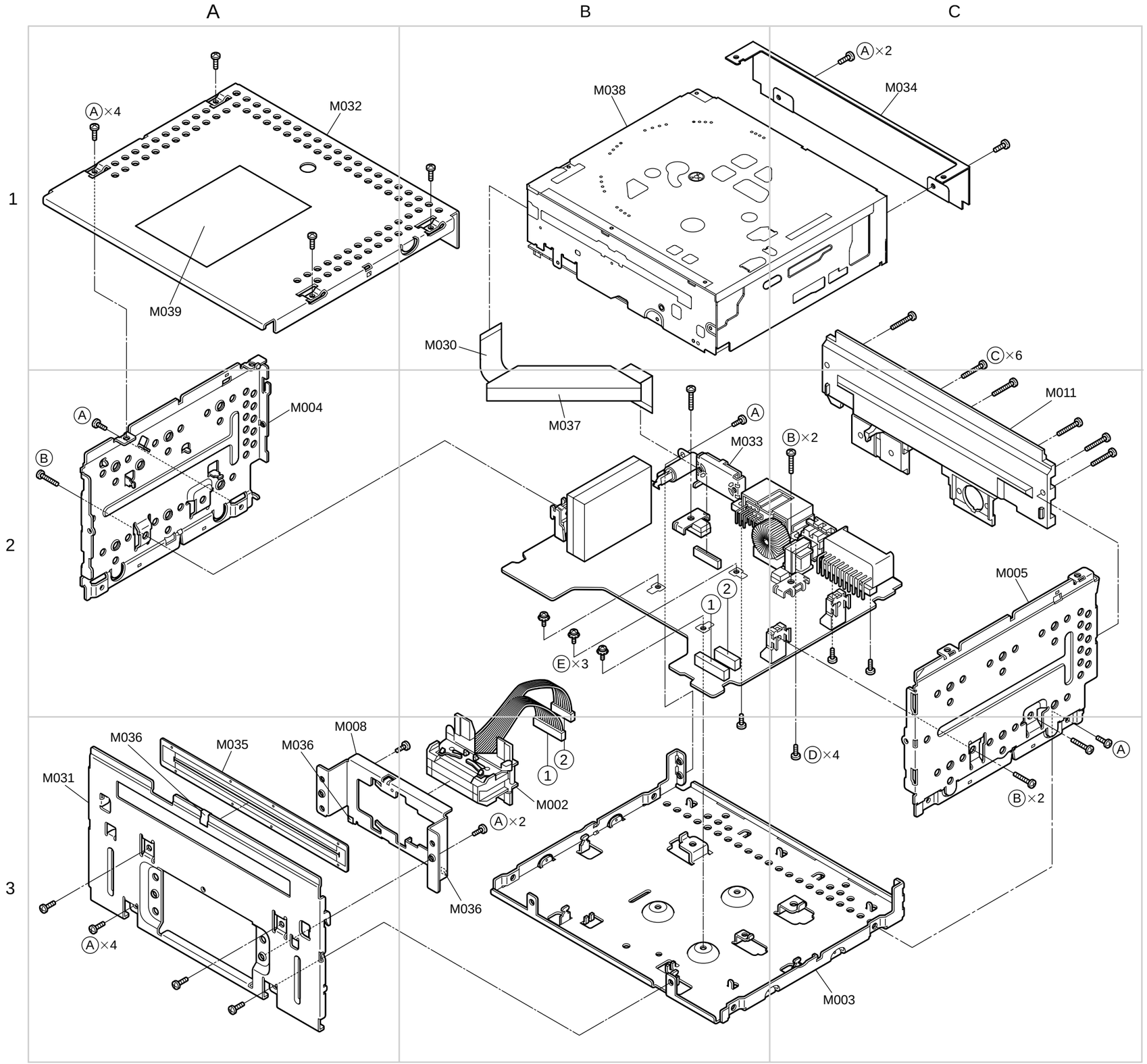


Fig.4

BLOCK DIAGRAM



EXPLODED VIEW and PARTS LIST

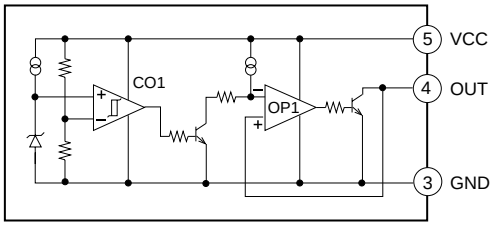


* : Marked parts are unregistered.

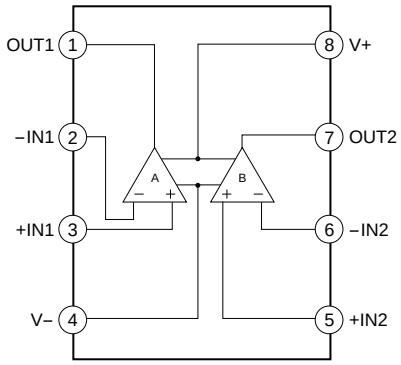
Ref. No.	Part No.	Description	Index
M002	246L43311	LEAD-CONNECTOR-22P	B-3
M003	*560J30111	CHASSIS-B	C-3
M004	560J30314	CHASSIS-L	A-2
M005	560J30315	CHASSIS-R	C-2
M008	*591K50411	HOLDER-CON	A-3
M011	635J08311	HEAT-SINK	C-2
M030	246L222O0	FLAT-CABLE 18P	B-1
M031	*560J35111	CHASSIS-F	A-3
M032	591K55310	COVER	A-1
M033	593L69911	HOLDER-IC	B-2
M034	*593L80911	BRACKET-CDX3	C-1
M035	642K14611	SHEET-CD	A-3
M036	*643L49311	SHEET	A-3,B-3
M037	*643L56610	CUSHION	B-2
M038	940L10114	CDX3(955050)	B-1
M039	943M215O2	NAME-CARD(DY-3A66U-AL-2-T)	A-1
A	653P11046	SCREW-S-PAN 3X6	-
B	653P11048	SCREW-S-PAN 3X10	-
C	653P11049	SCREW-S-PAN 3X12	-
D	669L057O1	SCREW-TAP 3X6	-
E	669L077O2	SCREW-TAP 3X6	-

IC EXPLANATION

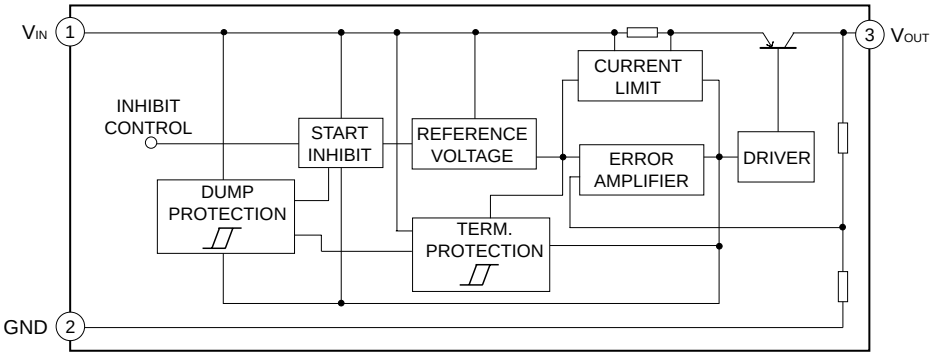
IC802 PST9136



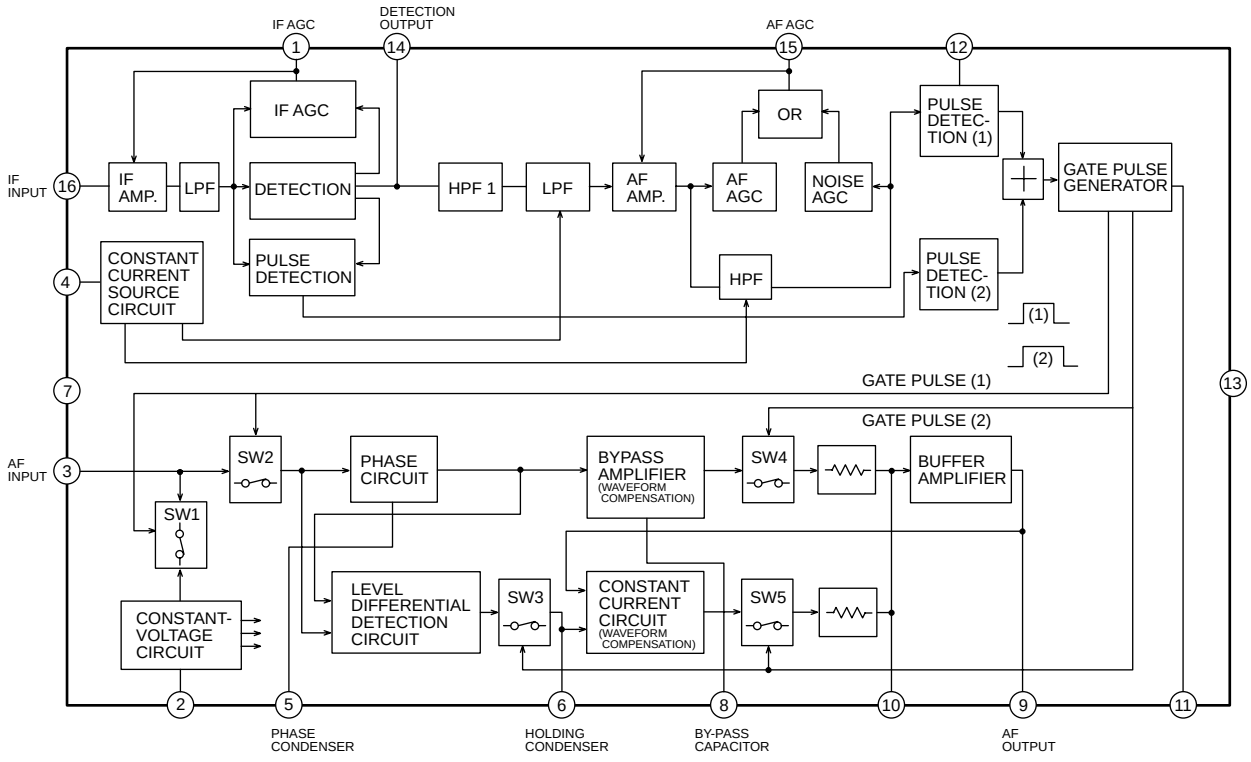
IC321,390,421 NJM4565V-TE1



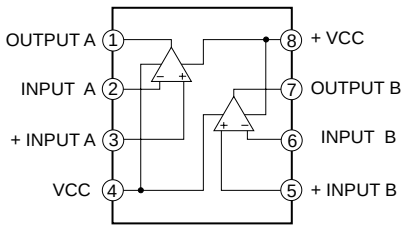
IC201,960,961 LF33ABPT



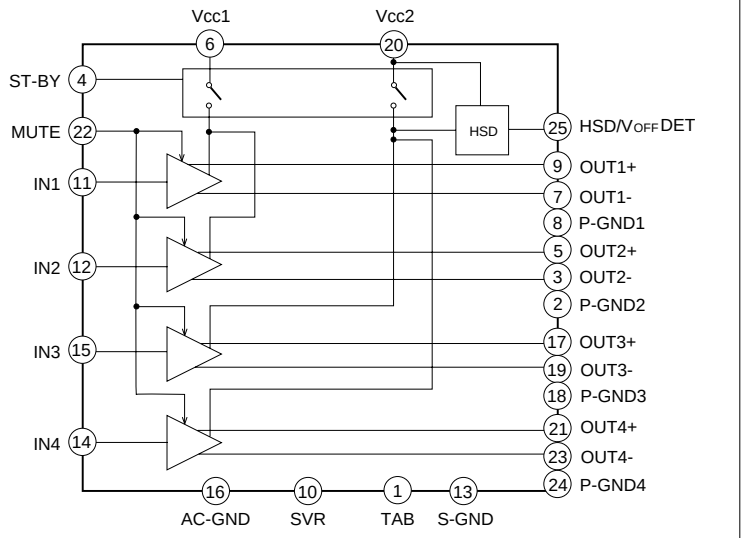
IC1 HA12181FP-EL



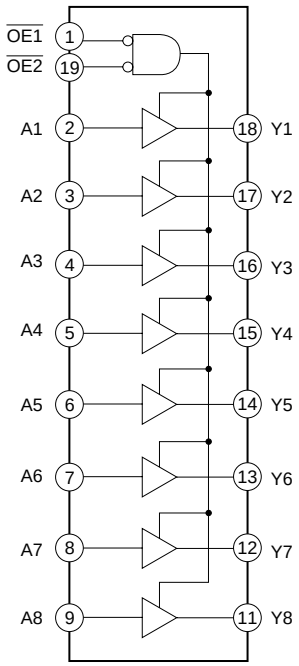
IC380 RC2100M/NJM2100M



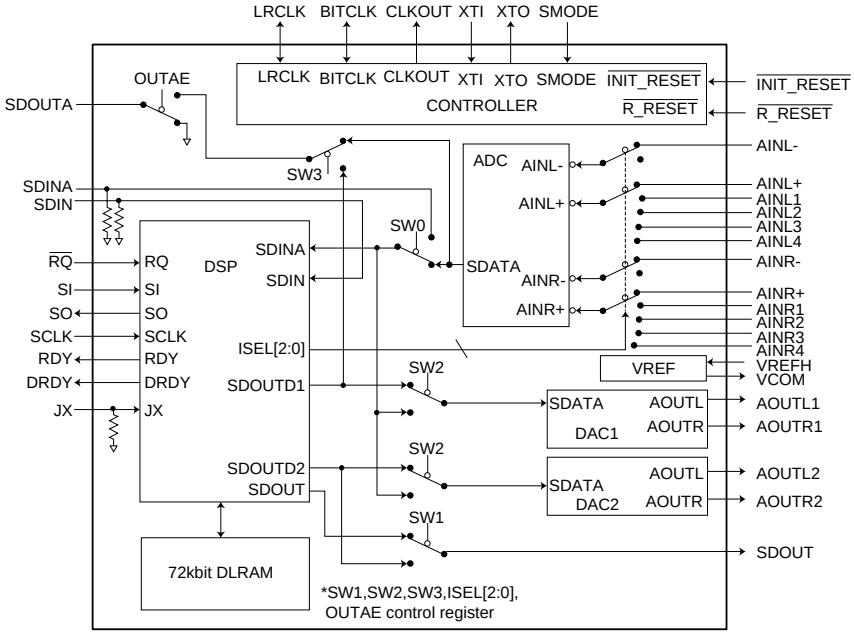
IC330 TDA7560



IC302 SN74LV541APW



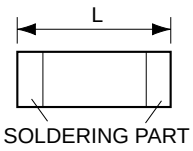
IC301 AK7740



Pin No.	Pin Name	Pin No.	Pin Name	Pin No.	Pin Name	Pin No.	Pin Name	Pin No.	Pin Name
1	AINL3	11	XTI	21	SDOUT	31	$\overline{\text{INIT\_RESET}}$	41	AVSS
2	AINR2	12	XTO	22	DRDY	32	DVDD	42	AINR-
3	AINL2	13	CLKO	23	DVSS	33	DVSS	43	AINR+
4	AINR1	14	JX	24	DVDD	34	BVSS	44	AINL-
5	AINL1	15	SMODE	25	RDY	35	AOUTR2	45	AINL+
6	VREFH	16	LRCLK	26	SO	36	AOUTL2	46	AINR4
7	AVDD	17	BITCLK	27	SI	37	AOUTR1	47	AINL4
8	AVSS	18	SDIN	28	SCLK	38	AOUTL1	48	AINR3
9	DVSS	19	SDINA	29	$\overline{\text{RQ}}$	39	AVDD		
10	DVDD	20	SDOUTA	30	$\overline{\text{S\_RESET}}$	40	VCOM		

ELECTRICAL PARTS LIST

< CHIP PARTS (RESISTORS & CAPACITORS) >



Part No.	L
103L19xOx	2.0mm
103L24xOx	3.2mm
103L29xOx	1.6mm
103P50xOx	1.6mm

Part No.	L
141L06xOx	2.0mm
141L16xOx	1.6mm
141L18xOx	1.6mm

Ref. No.	Part No.	Description	
CHIP PARTS (RESISTORS)			
L2,30,etc.	103L199O9	R-CHIP	0Ω
L303,R11,etc.	103L299O9	R-CHIP	0Ω
R948	103L290O5	R-CHIP	22Ω
R376,385,etc.	103L290O9	R-CHIP	47Ω
R387	103L291O1	R-CHIP	68Ω
R321,421,etc.	103L291O3	R-CHIP	100Ω
R211	103L241O9	R-CHIP	330Ω
R209	103L291O9	R-CHIP	330Ω
R910,912,922	103L292O1	R-CHIP	470Ω
R760,770	103L292O2	R-CHIP	560Ω
R203,205,etc.	103L292O5	R-CHIP	1kΩ
R213	103P502O5	R-CHIP	1kΩ
R201,761,etc.	103L292O6	R-CHIP	1.2kΩ
R913	103L292O7	R-CHIP	1.5kΩ
R386,919	103L292O8	R-CHIP	1.8kΩ
R925~930	103L192O9	R-CHIP	2.2kΩ
R16,17,etc.	103L292O9	R-CHIP	2.2kΩ
R934,935	103L193O0	R-CHIP	2.7kΩ
C988,R763,etc.	103L293O0	R-CHIP	2.7kΩ
R901,902	103L193O1	R-CHIP	3.3kΩ
R32,206,etc.	103L293O1	R-CHIP	3.3kΩ
R334,335	103L193O2	R-CHIP	3.9kΩ
R762,772,938	103L293O2	R-CHIP	3.9kΩ
R101,102,etc.	103L293O3	R-CHIP	4.7kΩ
R212	103P503O3	R-CHIP	4.7kΩ
R751	103L293O4	R-CHIP	5.6kΩ
R8,753	103L293O5	R-CHIP	6.8kΩ
R314,414	103L293O6	R-CHIP	8.2kΩ
R6,7,etc.	103L293O7	R-CHIP	10kΩ
R2	103L293O8	R-CHIP	12kΩ
R382,389,482	103P503O8	R-CHIP	12kΩ
R384,484	103L293O9	R-CHIP	15kΩ
R381,388,etc.	103P503O9	R-CHIP	15kΩ
R4	103L294O0	R-CHIP	18kΩ
R202,210,etc.	103L294O1	R-CHIP	22kΩ
R10	103L294O3	R-CHIP	33kΩ
R204,208,etc.	103L294O5	R-CHIP	47kΩ
R5	103L294O7	R-CHIP	68kΩ
R1,807	103L294O9	R-CHIP	100kΩ
R392~395	103P504O9	R-CHIP	100kΩ
R917,920	103L295O1	R-CHIP	150kΩ
R3	103L295O2	R-CHIP	180kΩ
R829,918,etc.	103L295O3	R-CHIP	220kΩ
R337	103L295O6	R-CHIP	390kΩ
R8N1,8N2,8N8	109P01218	R-NETWORK-CHIP	1kΩ
R3N1	109P01219	R-NETWORK-CHIP	4.7kΩ
R8N4,8N7	109P01213	R-NETWORK-CHIP	10kΩ
R8N5	109P01216	R-NETWORK-CHIP	47kΩ
R8N6	109P01225	R-NETWORK-CHIP	100kΩ
CHIP PARTS (CAPACITORS)			
C393	141L180O6	C-CERAMIC-CHIP	5pF
C20	141L181O3	C-CERAMIC-CHIP	12pF
C307,308,etc.	141L181O9	C-CERAMIC-CHIP	22pF
C913	141L182O7	C-CERAMIC-CHIP	47pF
C380,386,etc.	141L183O5	C-CERAMIC-CHIP	100pF
C377,477	141L160O5	C-CERAMIC-CHIP	470pF
C17,31,etc.	141L160O9	C-CERAMIC-CHIP	1000pF
C384,385,484	141L185O9	C-CERAMIC-CHIP	1000pF
C329,429,etc.	141L161O1	C-CERAMIC-CHIP	1500pF
C103,104,etc.	141L161O3	C-CERAMIC-CHIP	2200pF
C7	141L161O5	C-CERAMIC-CHIP	3300pF
C13,383,etc.	141L161O7	C-CERAMIC-CHIP	4700pF
C8,11,etc.	141L162O1	C-CERAMIC-CHIP	0.01µF
C101,102	141L162O3	C-CERAMIC-CHIP	0.015µF
C2,4~6	141L164O3	C-CERAMIC-CHIP	0.033µF
C3	141L164O5	C-CERAMIC-CHIP	0.068µF
C391,392	141L063O2	C-CERAMIC-CHIP	0.1µF
C201,204,etc.	141L164O6	C-CERAMIC-CHIP	0.1µF
C9,19	141L164O8	C-CERAMIC-CHIP	0.22µF
C18,313,314	141L069O5	C-CERAMIC-CHIP	1µF
C370,390,etc.	181P73162	C-ELE-CHIP	2.2µF/50V
C322,323,etc.	181P73149	C-ELE-CHIP	4.7µF/35V
C302,304,etc.	181P73123	C-ELE-CHIP	10µF/16V
C951	181P73110	C-ELE-CHIP	100µF/10V
C326,954	181P73111	C-ELE-CHIP	220µF/10V
TRANSISTORS			
Q927	260L020O9	TR 2SB1240Q	
Q980	260P11410	TR 2SB1561Q	
Q201,205,etc.	260P68210	TR 2SD2375OP	
Q762,772,etc.	260M061O6	TR-CHIP 2SA1037AR	
Q31	260P11710	TR-CHIP 2SA1364	
Q1,2,etc.	260M061O5	TR-CHIP 2SC2412S	
Q940	260P102O1	TR-CHIP 2SD2318	

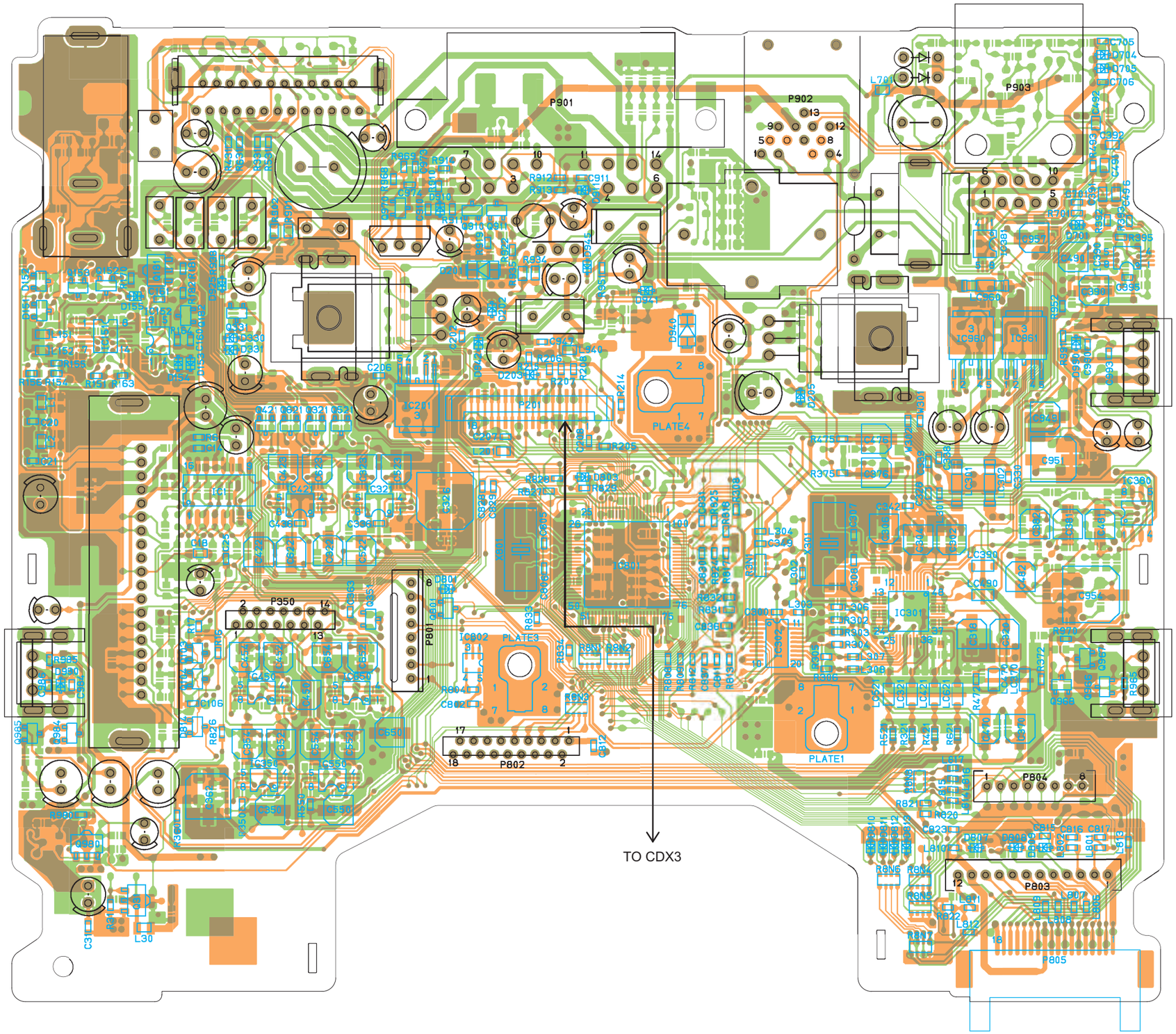
Ref. No.	Part No.	Description
Q941	260P12510	TR-CHIP 2SD2537
Q750,760,770	260L010O1	TR-CHIP 2SD601AS
Q752	260L042O4	TR-CHIP DTA114T
Q333,942	260M061O1	TR-CHIP DTA124E
Q202,207,991	260L030O5	TR-CHIP DTA143E
Q967	260L030O3	TR-CHIP DTA144E
Q332	260L042O2	TR-CHIP DTA144T
Q944	260L057O1	TR-CHIP DTB123Y
Q928	260M061O9	TR-CHIP DTC114E
Q801,943	260L042O7	TR-CHIP DTC114T
Q301~303	260L014O8	TR-CHIP DTC123E
Q3,103,etc.	260M061O2	TR-CHIP DTC124E
Q32,203,etc.	260L014O2	TR-CHIP DTC143E
Q802	260L030O2	TR-CHIP DTC144E
Q321,421,etc.	260L033O1	TR-CHIP DTC323T
DIODES		
D901,903	264L042O1	DIODE ERA15-02
D201,940	264P607O2	DIODE-CHIP 1SR154-400
D203,204,etc.	264L060O1	DIODE-CHIP 1SS355
D944	264P617O1	DIODE-CHIP MC2836
D943	264P618O1	DIODE-CHIP MC2838
D902	264P516O1	DIODE-CHIP S3D6600
D205	264L067O3	DIODE-Z-CHIP MA8051M
D941,990	264L067O2	DIODE-Z-CHIP MA8056H
D202,802	264P584O1	DIODE-Z-CHIP MA8068M
D807~813	264P584O5	DIODE-Z-CHIP MA8075H
D801,942	264P584O7	DIODE-Z-CHIP MA8082M
D980	264P584O9	DIODE-Z-CHIP MA8091L
D910,911	264P585O6	DIODE-Z-CHIP MA8110M
D375,475,etc.	264P588O6	DIODE-Z-CHIP MA8270M
IC		
IC301	263P22010	IC AK7740
IC1	266L067O1	IC HA12181FP-EL
IC201,960,961	266P61410	IC LF33ABPT
IC321,390,421	266L065O9	IC NJM4565V-TE1
IC802	266L064O5	IC PST9136
IC380	266L034O9	IC RC2100M/NJM2100M

Ref. No.	Part No.	Description
IC302	263P99010	IC SN74LV541APW
IC330	266P62810	IC TDA7560
IC801	262P54422	IC µPD703035BYGC-J18-8EU
RESISTORS		
RF901	103L390O2	R-FUSE
COILS		
L801~811,etc.	351P091O8	COIL-CHIP
L902	351P048O1	COIL-CHOKE
L901	351P11310	COIL-CHOKE
L201	351P081O6	COIL-CHOKE-CHIP
L940	351P082O0	COIL-CHOKE-CHIP
L1	351P082O6	COIL-CHOKE-CHIP
L3	351P083O6	COIL-CHOKE-CHIP
L301,302,etc.	351P095O4	COIL-CHOKE-CHIP
CONNECTORS		
P804	452L083O8	CONNECTOR 8P
P903	452P23210	CONNECTOR 10P
P803	452L094O2	CONNECTOR 12P
P901	452L34211	CONNECTOR 14P
P201	452P136O8	CONNECTOR 18P
ANT1	449L076O3	SOCKET-ANT
P902	449L098O3	SOCKET-DIN
OTHERS		
X801	285P093O1	CRYSTAL
X301	285P11422	CRYSTAL
FE1	295P21620	TUNER
F925	299P128O3	PROTECTOR
Z21	299P135O2	PROTECTOR-CHIP
Z701	299P136O2	PROTECTOR-CHIP
LC321,370,etc.	409P023O1	LC-MULTIPLE-CHIP
LC301,302	409P047O1	LC-MULTIPLE-CHIP
PLATE1,3,4	443P01012	TERMINAL
H-TR-2,3,5	593L29212	HOLDER-TR
H-TR-1,4	593L70010	HOLDER-TR

PARTS LAYOUT ON PRINTED CIRCUIT BOARD

MODEL : DY-3A66U-AL-2-T (PARTS SIDE)

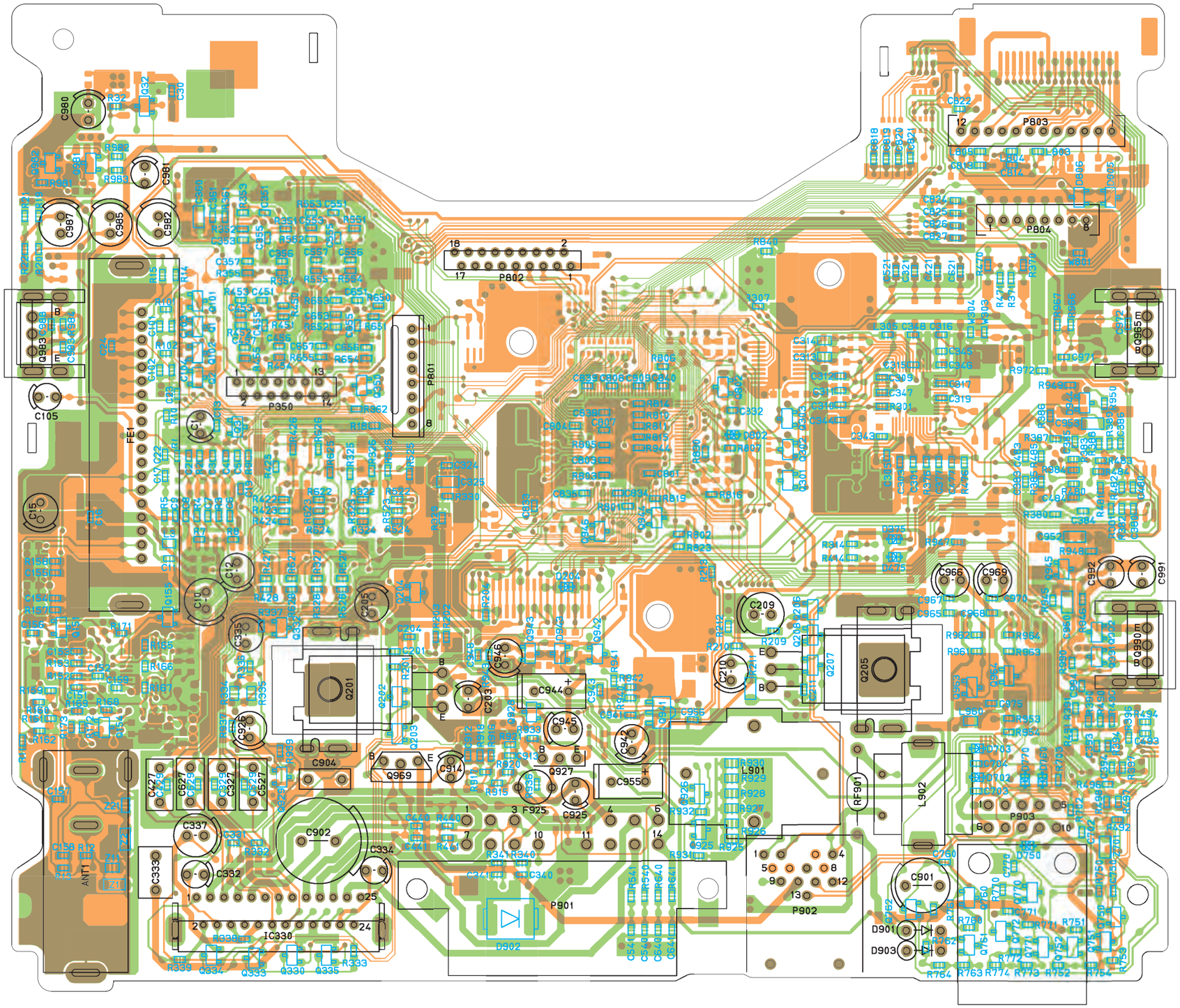
PCB-MAIN



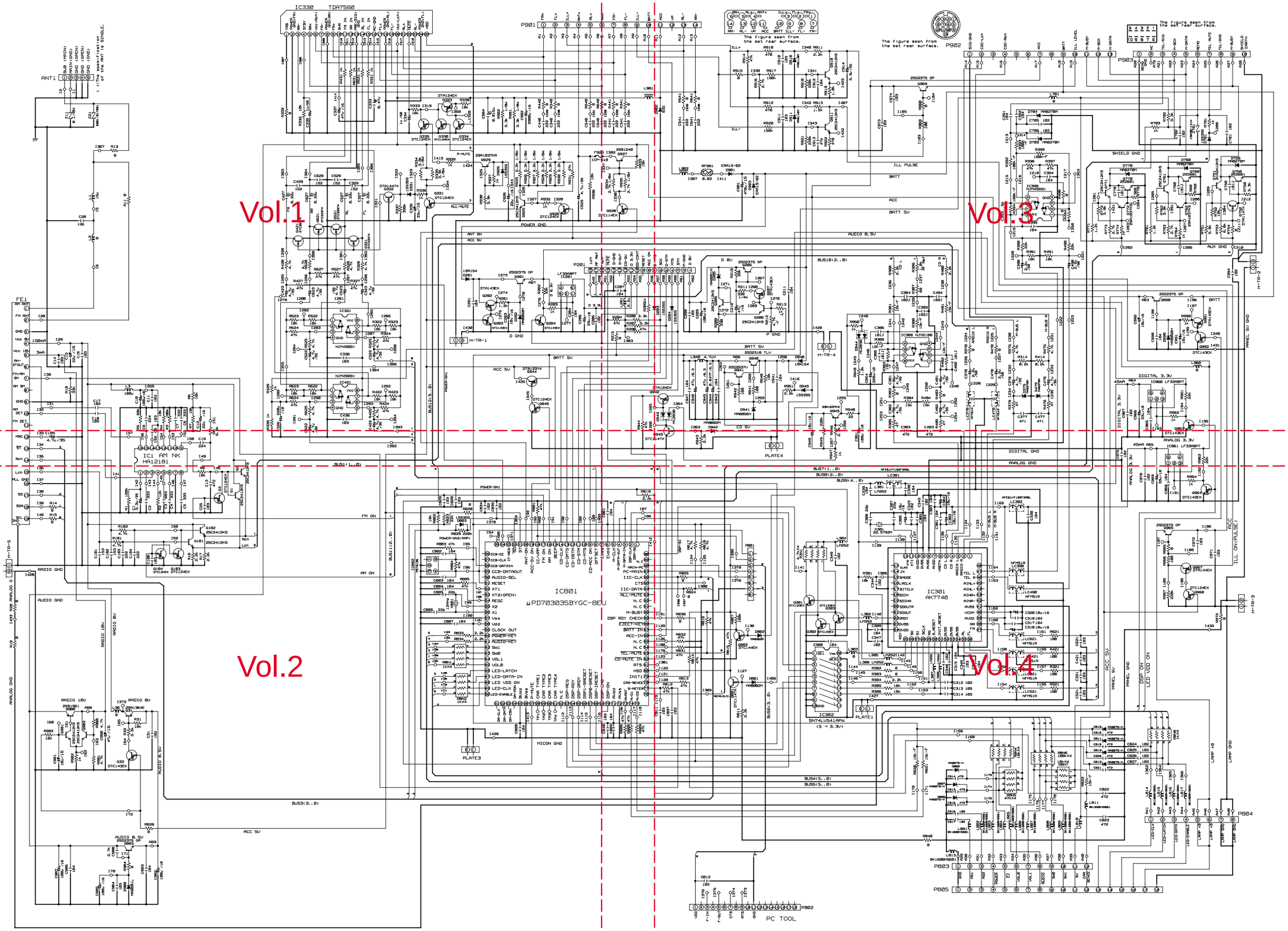
PARTS LAYOUT ON PRINTED CIRCUIT BOARD

MODEL : DY-3A66U-AL-2-T (PATTERN SIDE)

PCB-MAIN



SCHEMATIC DIAGRAM PCB-MAIN MODEL : DY-3A66U-AL-2-T



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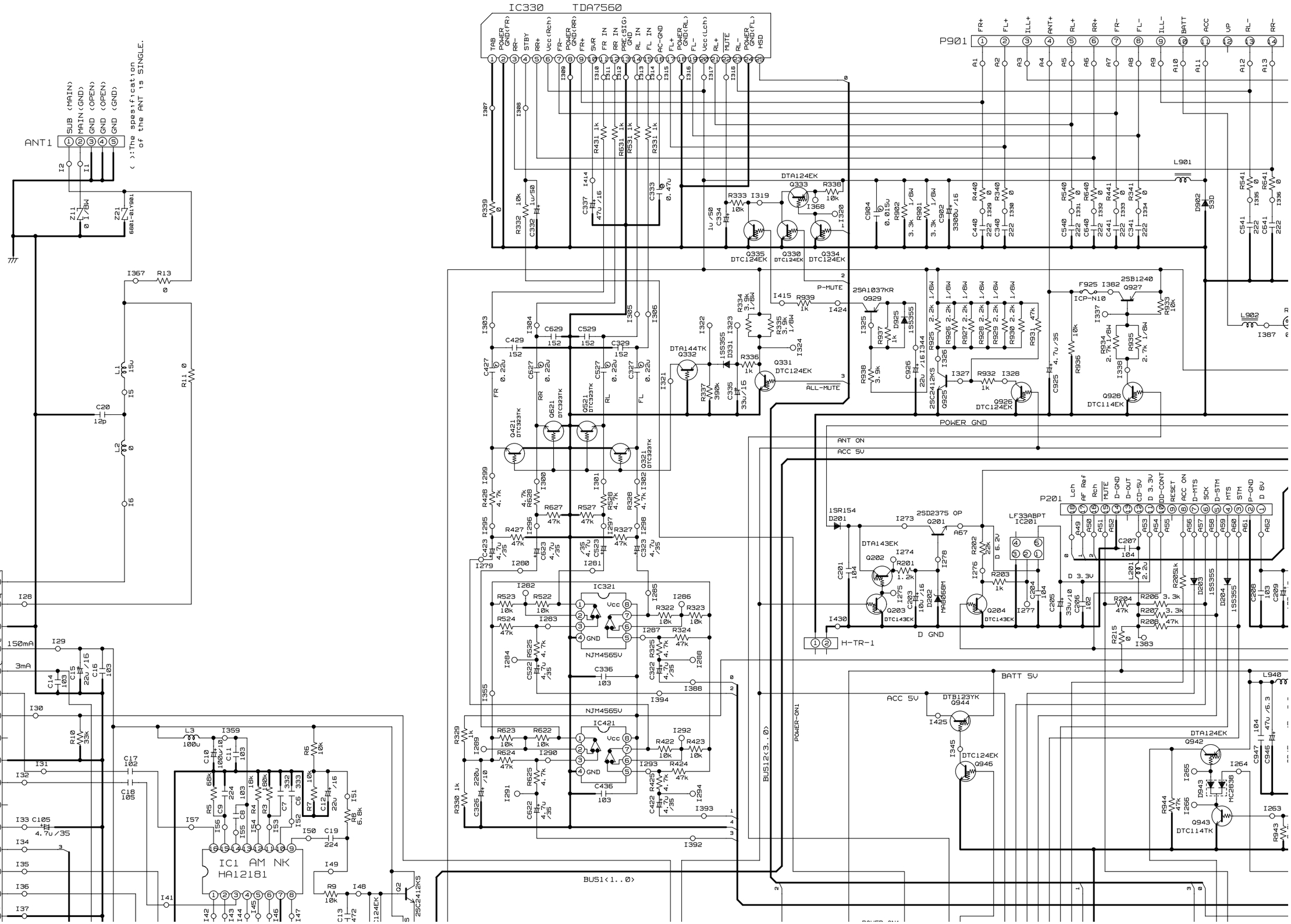

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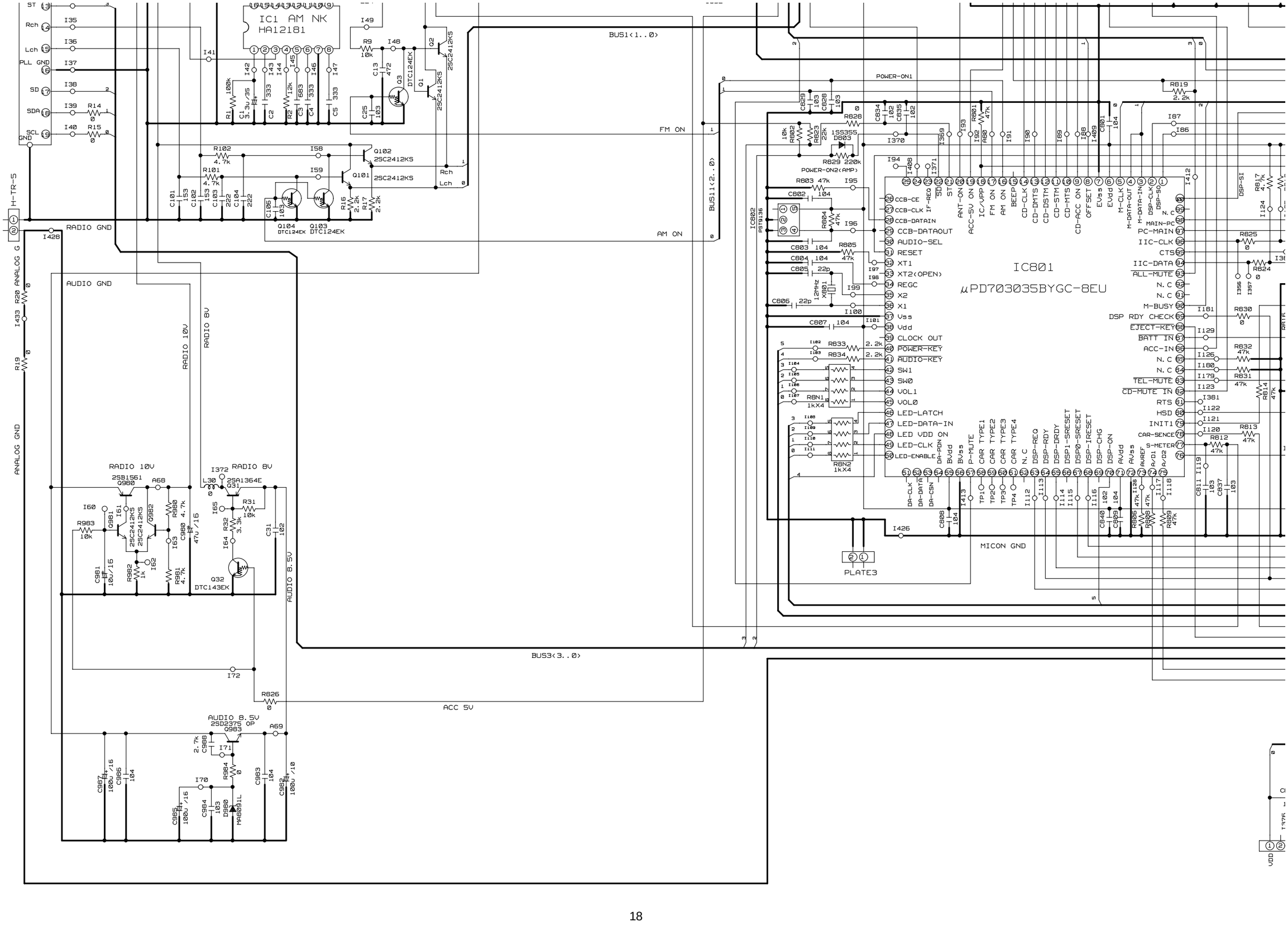

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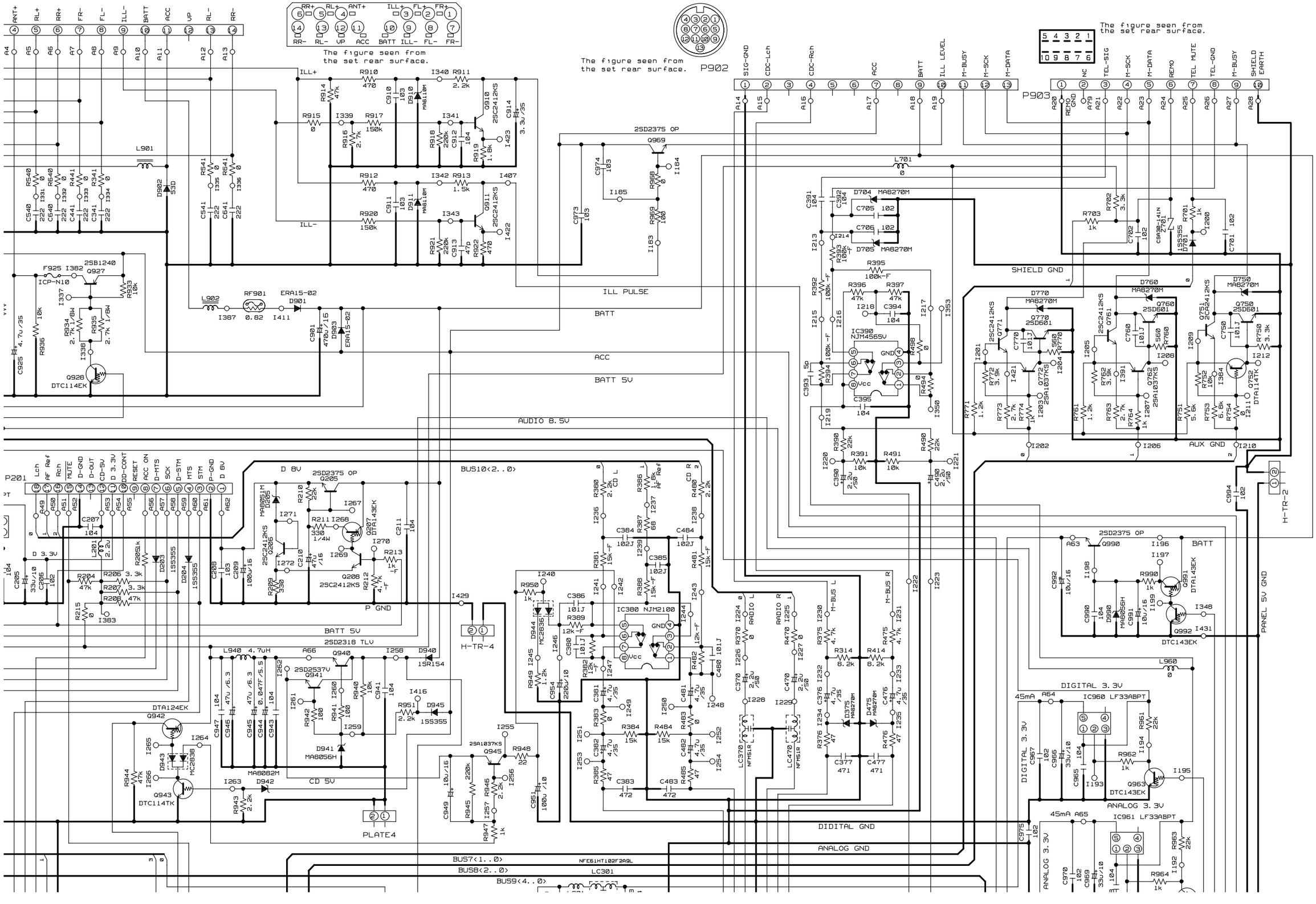
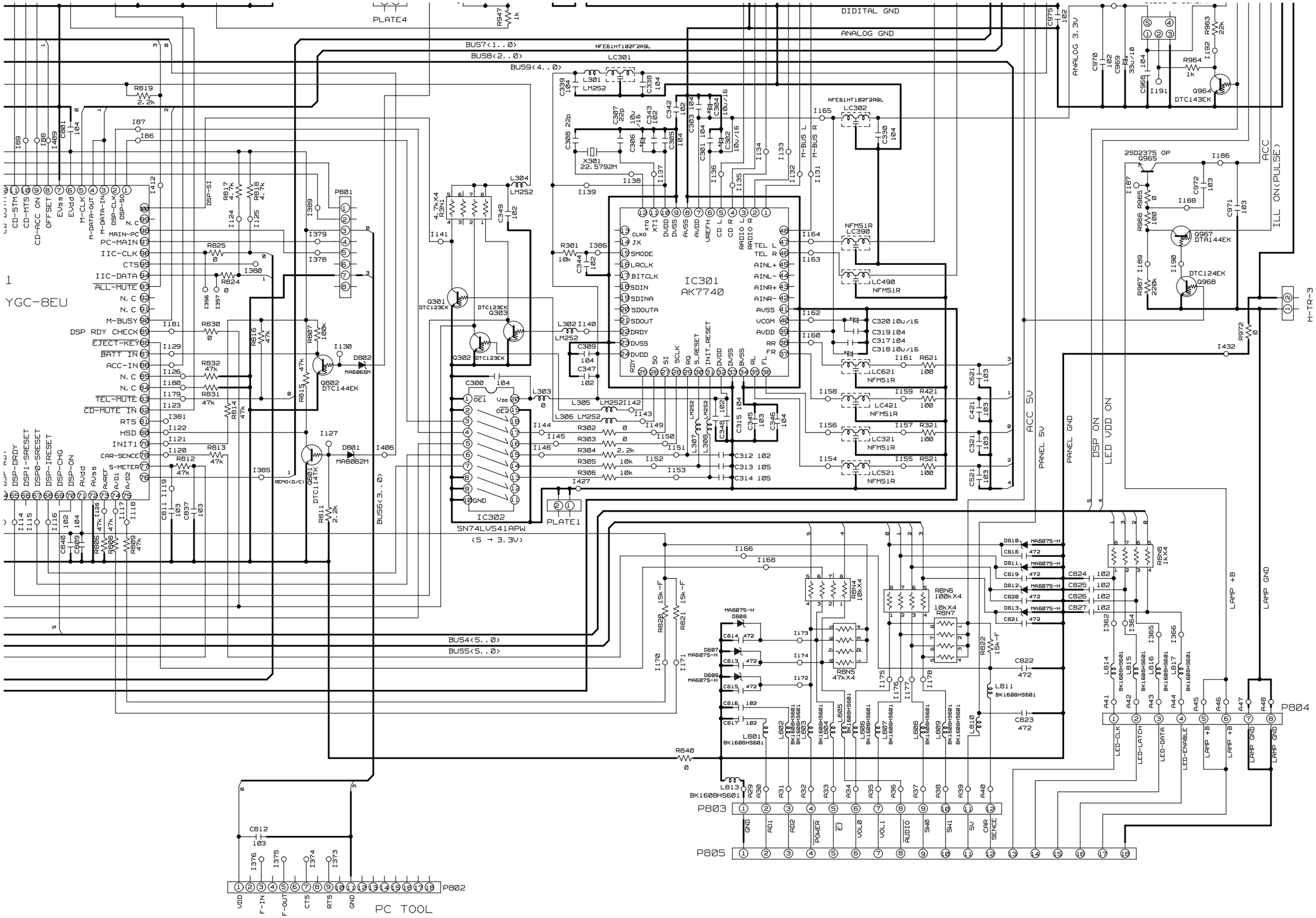


SCHEMATIC DIAGRAM PCB-MAIN MODEL : DY-3A66U-AL-2-T Vol.4



VOLTAGE
MODEL : DY-3A66U-AL-2-T

(Pin numbers are as measurement points.)

1. μ-COM
IC801 PCB-MAIN

AM 999kHz 74dBμV, FM 98.1MHz 68dBμV
BATT, ACC 13.2V

Pin No.	Pin Name	Function	I/O	ACT	Voltage [V]			Remark
					AM	FM	CD	
1	DISP-SO	Serial data output to DSP	O	L	0	0	0	
2	DSP-CLK	Serial clock output to DSP	O	L	0	0	0	
3	M-DATA-IN	M-BUS serial data input	I	L	5	5	5	
4	M-DATA-OUT	M-BUS serial data output	O	L	5	5	5	
5	M-CLK	M-BUS clock output	I/O	L	5	5	5	
6	Evdd	VDD5V	-	-	5	5	5	
7	Evss	GND	-	-	0	0	0	
8	OFFSET	Offset detection mode change output	O	H	0	0	0	
9	CD-ACC ON	CDX2 ACCON output	O	H	0	0	0	
10	CD-MTS	communication request output to CDX2	O	L	5	5	5	
11	CD-STM	communication request input from CDX2	I	L	5	5	5	
12	CD-DSTM	Serial data input from CDX2	I	L	5	5	5	
13	CD-DMTS	Serial data output to CDX2	O	L	0	0	0	
14	CD-CLK	Serial clock input from CDX2	I	L	5	5	5	
15	-	Not used	O	L	-	-	-	
16	AM-ON	AM power supply output	O	H	5	0	0	
17	FM-ON	FM power supply output	O	H	0	5	0	
18	IC/VPP	GND	-	-	0	0	0	
19	ACC-5V ON	ACC 5V output	O	H	5	5	5	
20	ANT-ON	ANT +B output	O	H	5	5	5	
21	ST	Stereo input	I	L	5	5	5	
22	SD	Stop level input	I	L	5	5	5	
23	IF-REQ	IF output request	O	H	5	5	5	
24	POWER-ON1	Power ON	O	H	5	5	5	
25	POWER-ON2	Power ON	O	H	5	5	5	
26	-	Not used	O	L	-	-	-	
27	-	Not used	O	L	-	-	-	
28	-	Not used	I	L	0	0	0	
29	-	Not used	O	L	-	-	-	
30	-	Not used	O	L	-	-	-	
31	RESET	System reset input	-	-	5	5	5	
32	XT1	Sub clock (Not used)	-	-	0	0	0	
33	XT2	Sub clock (Not used)	-	-	-	-	-	
34	REGC	Regulator output smoothly capacitor	-	-	3	3	3	
35	X2	Main clock - 12MHz	-	-	-	-	-	*1
36	X1	Main clock - 12MHz	-	-	-	-	-	*1
37	Vss	GND	-	-	0	0	0	
38	Vdd	VDD 5V	-	-	5	5	5	
39	CLOCKOUT	Clock output (Not used)	O	-	-	-	-	
40	POWER-KEY	Power-KEY input	I	L	5	5	5	
41	AUDIO-KEY	Audio-KEY input	I	L	5	5	5	
42	SW1	Encoder KEY2 input	I	-	5/0	5/0	5/0	*2
43	SW2	Encoder KEY1 input	I	-	5/0	5/0	5/0	*2
44	VOL1	VOL pulse signal1 input	I	-	5/0	5/0	5/0	*2
45	VOL2	VOL pulse signal2 input	I	-	5/0	5/0	5/0	*2
46	LED-LATCH	LED driver-IC communication latch output	O	H	0	0	0	
47	LED-DATA-IN	LED driver-IC communication serial data output	O	L	0	0	0	
48	LED VDD ON	Panel ON output	O	L	5	5	5	
49	LED-CLK	LED driver-IC communication serial clock output	O	L	0	0	0	
50	LED-ENABLE	LED driver-IC movement request output	O	L	0	0	0	

Pin No.	Pin Name	Function	I/O	ACT	Voltage [V]			Remark
					AM	FM	CD	
51	-	Not used	O	L	-	-	-	
52	-	Not used	O	L	-	-	-	
53	-	Not used	O	L	-	-	-	
54	-	Not used	O	L	-	-	-	
55	BVdd	VDD 5V	-	-	5	5	5	
56	BVss	GND	-	-	0	0	0	
57	P-MUTE	Power IC mute control output	O	H	5	5	5	
58	CAR-TYPE1	Switching car type check terminal	I	L	0	0	0	
59	CAR-TYPE2	Switching car type check terminal	I	L	0	0	0	
60	CAR-TYPE3	Switching car type check terminal	I	L	0	0	0	
61	CAR-TYPE4	Switching car type check terminal	I	L	0	0	0	
62	-	Not used	O	L	-	-	-	
63	DSP-REQ	Communication request output to DSP	O	H	5	5	5	
64	DSP-RDY	Communication possibility input from DSP	I	H	0	0	0	
65	DSP-DRDY	Communication possibility input from DSP	I	H	5	5	5	
66	-	Not used	O	L	-	-	-	
67	DSPO-SRESET	DSPO system reset output	O	L	5	5	5	
68	DSP-IRESET	DSPO, DSPI initial reset output	O	L	5	5	5	
69	-	Not used	O	L	-	-	-	
70	DSP-ON	DSP-IC power control output	O	H	5	5	5	
71	Avdd	A/D converter analog power supply	-	-	5	5	5	
72	Avss	A/D converter ground power supply	-	-	0	0	0	
73	AVREF	VDD 5V	-	-	5	5	5	
74	A/D KEY1	A/D key1 input	I	-	5	5	5	
75	A/D KEY2	A/D key2 input	I	-	5	5	5	
76	REMO(D/C)	Remote controller code input	I	-	5	5	5	
77	S-METER	Electric field level input	I	-	3.6	4.3	0	
78	CAR-SENCE	Car type change input	I	-	2.5	2.5	2.5	*3
79	INIT1	Initialization change input	I	-	5	5	5	
80	HSD	Offset detection input	I	L	0	0	0	
81	RTS	PC communication request input	I	L	0	0	0	
82	CD-MUTEIN	CDX2 mute input	I	L	0	0	0	
83	TEL-MUTE	Telephone mute input	I	H	5	5	5	
84	-	Not used	O	L	-	-	-	
85	-	Not used	O	L	-	-	-	
86	ACC-IN	ACC detection input	I	H	5	5	5	
87	BATT-IN	BATT detection input	I	L	0	0	0	
88	EJECT-KEY	Eject key input	I	L	5	5	5	
89	DSP RDY CHECK	DSP rdy terminal check input	I	L	5	5	5	
90	M-BUSY	M-BUS busy output	I/O	L	5	5	5	
91	-	Not used	O	L	-	-	-	
92	-	Not used	O	L	-	-	-	
93	ALL-MUTE	All mute output	O	L	5	5	5	
94	IIC-DATA	IIC-data output (TUNER, EEPROM)	O	L	5	5	5	
95	CTS	PC communication request output	O	L	0	0	0	
96	IIC-CLK	IIC clock output (TUNER, EEPROM)	O	L	5	5	5	
97	PC-MAIN	PC communication serial data input	I	L	0	0	0	
98	MAIN-PC	PC communication serial data output	O	L	0	0	0	
99	-	Not used	O	L	-	-	-	
100	DSP-SI	DSP serial data input	I	L	0	0	0	

Note:
*1 : The port is oscillation port. Do not touch it.
*2 : The value is alternated by volume control knob.
*3 : Using PS24 panel.

2. ELECTRIC VOL IC
IC301 PCB-MAIN

FM 98.1MHz, VOL MIN
BATT, ACC 13.2V

Pin No.	Pin Name	Voltage [V]			Remark
		AM	FM	CD	
1	AINL3	1.5	1.5	1.5	
2	AINR2	1.5	1.5	1.5	
3	AINL2	1.5	1.5	1.5	
4	AINR1	1.5	1.5	1.5	
5	AINL1	1.5	1.5	1.5	
6	VREFH	3.3	3.3	3.3	
7	AVDD	3.3	3.3	3.3	
8	AVSS	0	0	0	
9	DVSS	0	0	0	
10	DVDD	3.3	3.3	3.3	
11	XTI	-	-	-	*1
12	XTO	-	-	-	*1
13	CLKO	0	0	0	
14	JX	3.3	3.3	3.3	
15	SMODE	3.3	3.3	3.3	
16	LRCLK	-	-	-	
17	BITCLK	-	-	-	
18	SDIN	-	-	-	
19	SDINA	-	-	-	
20	SDOUTA	-	-	-	
21	SDOUT	-	-	-	
22	DRDY	3.3/0	3.3/0	3.3/0	
23	DVSS	0	0	0	
24	DVDD	3.3	3.3	3.3	
25	RDY	3.3	3.3	3.3	
26	SO	3.3	3.3	3.3	
27	SI	3.3/0	3.3/0	3.3/0	
28	SCLK	3.3	3.3	3.3	
29	$\overline{RQ}$	3.3/0	3.3/0	3.3/0	
30	$\overline{S\_RESET}$	3.3	3.3	3.3	
31	$\overline{INIT\_RESET}$	3.3	3.3	3.3	
32	DVDD	3.3	3.3	3.3	
33	DVSS	0	0	0	
34	BVSS	0	0	0	
35	AOUTR2	1.5	1.5	1.5	
36	AOUTL2	1.5	1.5	1.5	
37	AOUTR1	1.5	1.5	1.5	
38	AOUTL1	1.5	1.5	1.5	
39	AVDD	3.3	3.3	3.3	
40	VCOM	1.7	1.7	1.7	
41	AVSS	0	0	0	
42	AINR-	-	-	-	
43	AINR+	-	-	-	
44	AINL-	-	-	-	
45	AINL+	-	-	-	
46	AINR4	1.5	1.5	1.5	
47	AINL4	1.5	1.5	1.5	
48	AINR3	1.5	1.5	1.5	

Note:
*1 : The port is oscillation port. Do not touch it.

3. POWER IC
IC330 PCB-AF

FM 98.1MHz, VOL MIN
BATT, ACC 13.2V

Pin No.	Pin Name	Voltage [V]
1	TAB	0
2	POWER-GND(FR)	0
3	RR-	6.3
4	STBY	5.2
5	RR+	6.3
6	VCC(Rch)	13.2
7	FR-	6.3
8	POWER GND(RR)	0
9	FR+	6.3
10	SVR	6.2
11	FR IN	6.2
12	RR IN	6.2
13	PRE(SIG) GND	0
14	RL IN	6.2
15	FL IN	6.2
16	AC-GND	0
17	FL+	6.2
18	POWER GND(RL)	0
19	FL-	6.2
20	VCC(Lch)	13.2
21	RL+	6.2
22	MUTE	4.3
23	RL-	6.2
24	POWER GND(FL)	0.0
25	HSD	13.2

4. POWER SOURCE

BATT, ACC 13.2V
(E): Emitter, (C): Collector
Unit: V

BATT 5V	
Q940 (E)	5.3
Q941(E)	5.3

ACC 5V	
Q944 (C)	5.2

RADIO 10V	
Q980 (C)	10.5

RADIO 8V	
Q31 (C)	8.3

AUDIO 8.5V	
Q983 (E)	8.4

BATT 6.2V	
Q201 (E)	6.4

BATT 3.3V	
IC201 (5)	3.3

MECHA 8V	
Q205 (E)	7.6

PANEL 5V	
Q990 (E)	5.6

DSP 3.3V	
IC960 (5)	3.3
IC961(5)	3.3

ILL ON	
Q965 (E)	10

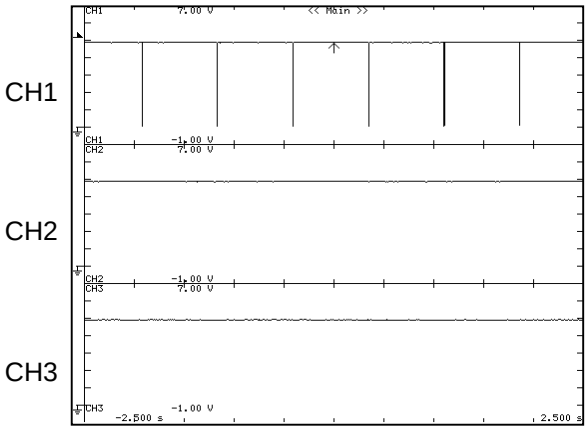
WAVEFORM
MODEL : DY-3A66U-AL-2-T

(Pin numbers are as measurement points.)

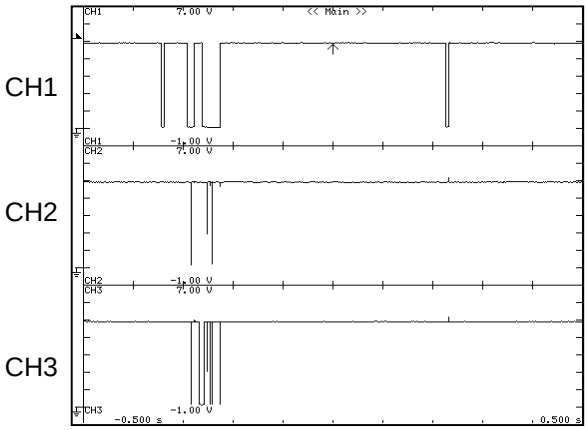
(1) M-Bus Communication Waveform

	P902	
	Pin No.	Pin Name
CH1	11	M-BUSY
CH2	12	M-SCK
CH3	13	M-DATA

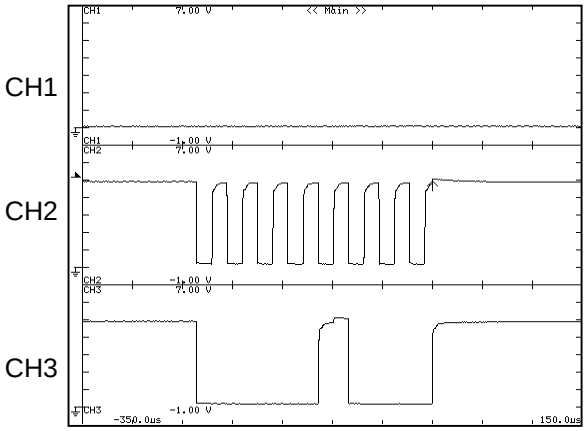
No connection with M-Bus units (500ms/div)



Connection with M-Bus units (100ms/div)



Connection with M-Bus units (50µs/div)



(2) CD Communication Waveform

	P201	
	Pin No.	Pin Name
CH1	12	D-MTS
CH2	13	SCK
CH3	14	D-STM
CH4	15	MTS
CH5	16	STM

20µs/div