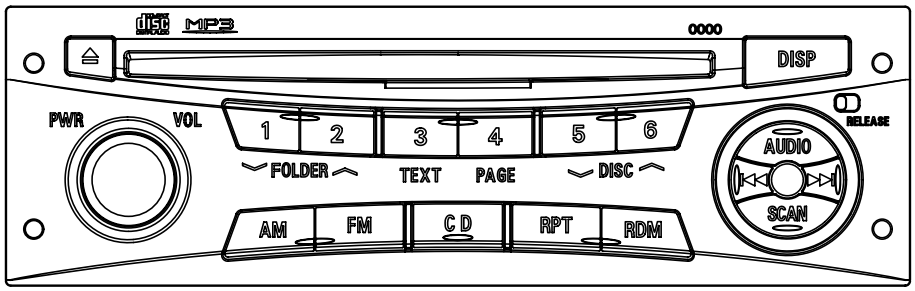
MITSUBISHI MORTORS

SERVICE MANUAL

FM / AM ELECTRONIC TUNING RADIO, CD PLAYER with CD CHANGER CONTROL

Model : DY-2X64WT-2-TH

PART No **: 8701A053**



For the mecha part, please refer to the service manual of **CD7WMA(211)** (2006 JUL.).

CONTENTS

MITSUBISHI ELECTRIC CORP. SANDA WORKS

SE011306093E

FEATURES / SPECIFICATIONS

FEATURES

Audio Amp

- Including high power 4CH Amp.
- Adjustment of BASS,TREBLE, FADER and BALANCE by the audio adjustment button.
- Sound preset function. (Sound adjustment state can preset the 6 sorts.)
- 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.
- ATC (Auto Tone Control) function that controls the low / high frequency tone (BASS / TREBLE) by radio-field strength at the receipt of AM.

Radio

- FM and AM can preset the 6 stations.
- Improvement in the tuning operationality by the Auto store function.
- TUNE button is a double function button operating of automatic tuning and manual tuning.

CD Player

- Power Loading / Power Eject function.
- Skip recovered function.
  (Recovered the condition before skip.)
- Protected function of laser pick-up stopping at high temperature.
- Quick track selection function.
- Fast-forward / fast-rewind replay function.
- Repeat function. (One tune)
- Scan function : 10 sec
- Available for loading both 8cm and 12cm disc.
- Random play function.
- Any time Eject function. (Eject at the all mode included ACC OFF.)
- CD-MP3 reproduction function.
  (CD-DA/MP3 coexistence disc, TITLE/ID3tag display, MPEG-1 AUDIO Layer3, MPEG-2 AUDIO Layer3)

Others

- CD auto changer / in-dash CD changer operating function.
- M-BUS is used the method of communication with CD auto changer, in dash CD changer, MD player and LCD monitor.
- The connection of speaker wiring can check by test mode of the beep in the vehicle's assembly line.
- Each mode is display on the connected LCD monitor (audio display).
- Control of panel buttons illumination and the connected LCD illumination brightness by rheostat.
- Telephone mute function.
- Telephone voice interrupt function.
- Stereo AUX input terminal equipnment.
- Even during BATT OFF, the channel preset memory is retained (usage of EEPROM).
- The beep sounds, to check an operation, by using a button with hold-pushing operation function (using the buzzer on the vehicle side).
- Theft prevention security function by PANEL OUT. (Blink alarm-flash LED at ACC OFF.)
- Put out lights of the lamp by PANEL OUT at ILL ON.

SPECIFICATIONS

FM Radio

- Frequency Range : 87.5 ~ 108.0MHz
  (SEEK:50kHz / STEP:25kHz)
- Intermediate Frequency : 10.7MHz
- Sensitivity (-3dB Limiting) : Less than 14dB(μV)

AM Radio

- Frequency Range : 531 ~ 1629kHz
  (SEEK:9kHz,1kHz / STEP:1kHz)
- Intermediate Frequency : 450kHz
- Sensitivity (20dB S/N) : Less than 32dB(μV)

CD Player

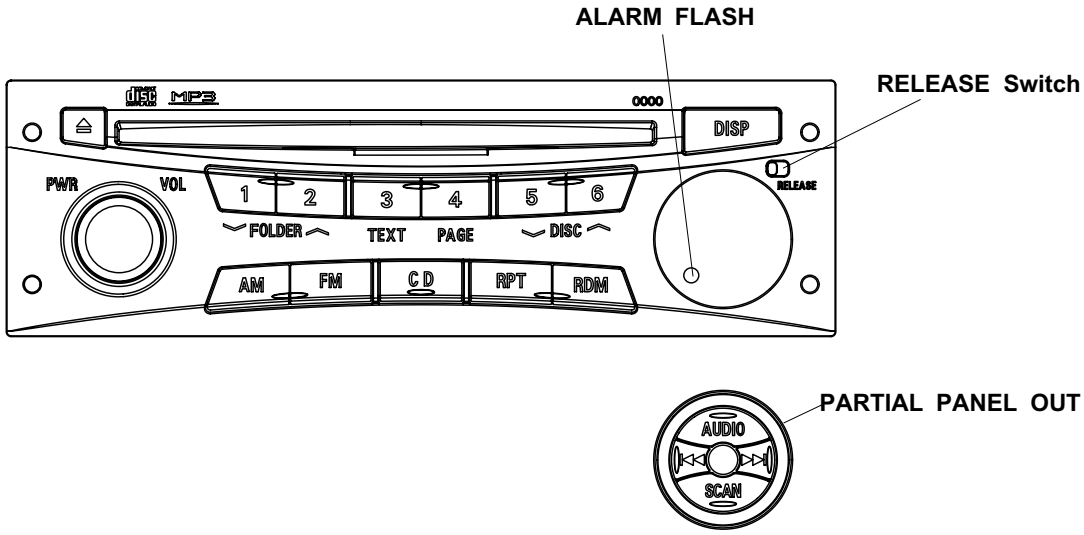
- Laser : Semiconductor Laser
- DA Convertor : 16bit
- Dynamic Range : More than 65dB
- Signal/Noise Ratio : More than 65dB
- Channel Separation : More than 40dB

Others

- Power Supply : DC 12V (11~16V)
  Test Voltage 13.2V
  Negative ground
- Battery Back Up Current : Less than1.0mA
- Current Consumption : ACC 2.4A ± 20%
  (Output 1W)
  : ACC 10A ± 20%
  (MAX.Output)
- Maximum Power Output : 25W x 4
- Output Impedance : 4 Ω
- Dimensions : 178(W) x 169(D) x 50(H)mm
- Weight : 1.3kg

OPERATION

DETACHABLE KEY BOARD (DKB) PART



Detachable Key Board (DKB)

To effectively prevent theft of the car stereo, the Control Key Board can be removed rendering the set absolute useless.

- How to remove the Key Board:
  Slide the **RELEASE switch** rightward, and take the Key Board out of panel when it comes lose. (When the Key Board is removed, the power is turned off.)
- How to reinstall the Key Board:
  Side it in its original position and push it in slightly until it is locked. (At that time, the power is automatically switched on.)

Always keep the surface of electric contacts of the Key Board clean to prevent malfunctions due to the dust or rust.

Alarmed Flash

When switching off the ignition key, the set flashes the red ALARMED light to indicate the set under armed condition against the theft.

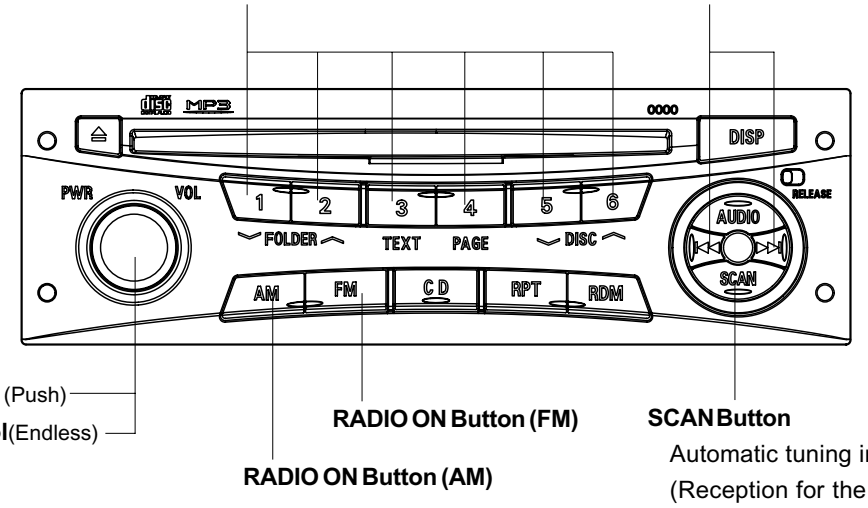
RADIO PART

Memory and Preset Channel Button

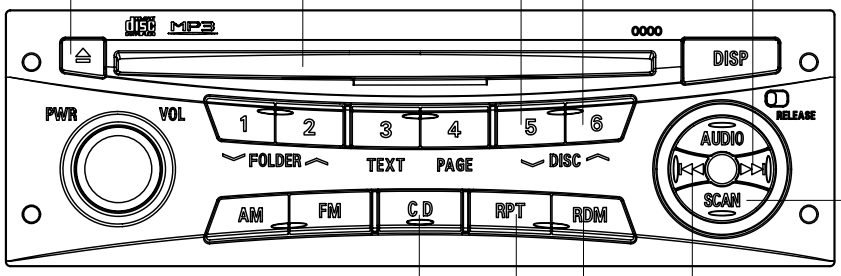
- Memory : Push the button 1.5 seconds or more.
- Preset : Push the button less than 1.5 seconds.

Tuning Up/Down Button

- Step : Push the button less than 0.5 seconds.
- Seek : Push the button 0.5 seconds or more.



CD, CD CHANGER PART



CD Changer Disc Selection Up Button

CD Changer Disc Selection Down Button

EJECT Button

CD SLOT

Track Selection Up Button
(Push the button less than 0.5 seconds)

Fast-forward Button
(Push the button 0.5 seconds or more)

Track(File) Selection Up Button (MP3)
(Push the button 0.5 seconds or more)

CD Scan Button

CD Mode Button
CD → CD-X → CD Changer

<Coexistence Disc Operation Transition>
(Push the button less than 1.5 seconds, and the operation sound is generated.)
CD-DA → MP3 → AUX

Repeat Play Button

Random Play Button

Track Selection Down Button
(Push the button less than 0.5 seconds)

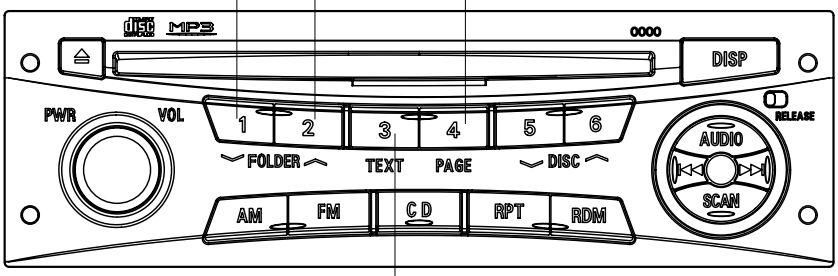
Fast-rewind Button
(Push the button 0.5 seconds or more)

Track(File) Selection Down Button(MP3)
(Push the button less than 0.5 seconds)

FOLDER Selection Up Button(MP3)

FOLDER Selection Down Button(MP3)

PAGE Sender Button(MP3)



TEXT Selection Button(MP3)

<For CD-TEXT>
Display usually(Track and elapsed time) → Disc Name → Track Name

<For MP3>

- [Title display usually]
  Display usually(FOLDER, Track and elapsed time) → FOLDER Name → File Name

- [ID3-TAG Title display]
  Display usually(FOLDER, Track and elapsed time) ⇒ Album(assistance display) → (in two seconds)Album Title ⇒ Track(assistance display) → (in two seconds)FileName-Folder Name ⇒ Artist(assistance display) → (in two seconds)Artist ⇒ • • •

- The display mode is changed by the pushing the botton long press.
  [Title display usually] ⟷ [ID3-TAG Title display]

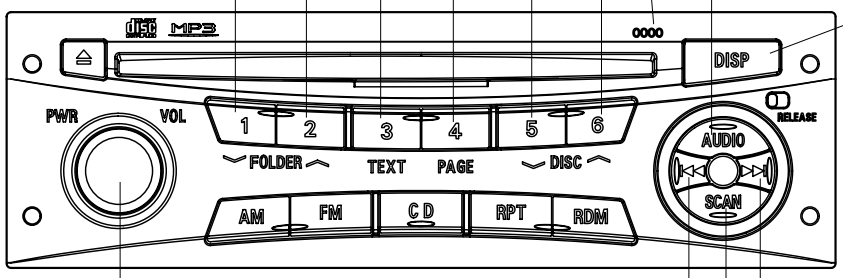
AUDIO & OTHERS PART

AUDIO Control
Mode Selection Button

BASS →TREBLE → FADER→ BALANCE
Cancel ←

AUDIO Control Memory and Preset Channel Button

- Memory : Push the button 1.5 seconds or more.
- Preset : Push the button less than 1.5 seconds.



DISPLAY Button

Power ON/OFF (Push)

Volume Control (Endless)

AUDIO Control Down Button

Function Setting OFF Button

AUDIO Control Up Button

Function Setting ON Button

SCAN Button

When the scan operation reaches the first track of which first 10 seconds was played, it is automatically and normal playback starts.

1) Level Control BASS/TREBLE/FADER/BALANCE

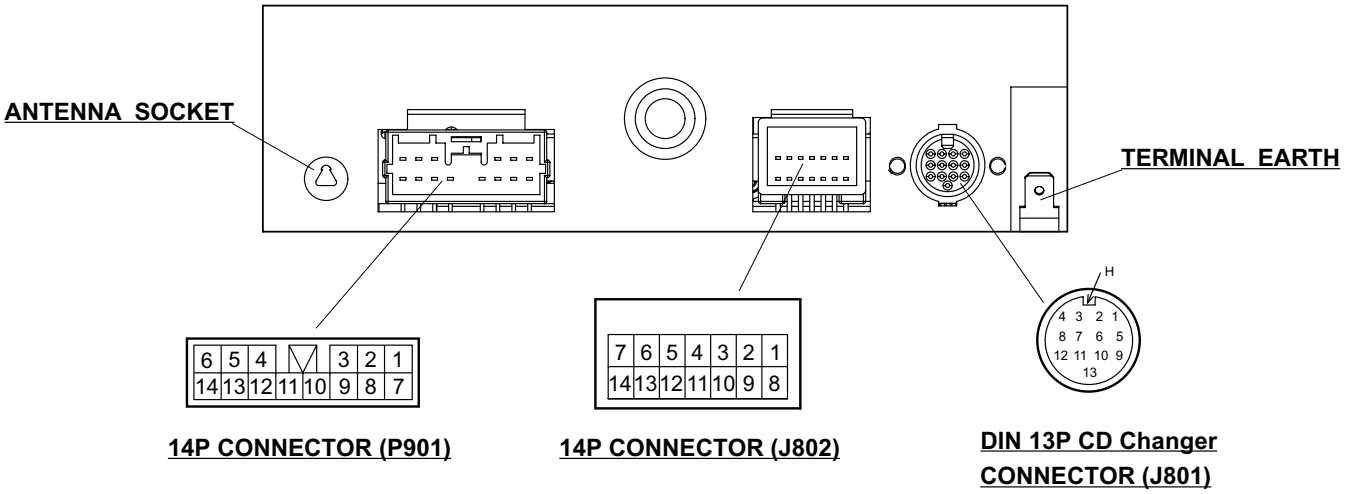
Push the **AUDIO Button** to select function among BASS/ TREBLE/FADER/BALANCE.

At the each AUDIO mode, push **AUDIO Control Up/Down Button** to change its level according to the indication as the right or below display.

After 7 seconds, the previous screen will be automatically resumed.

AUDIO Control Button	Down ◁◁	Up ▷▷
BASS	−	+
TREBLE	−	+
FADER	R	F
BALANCE	L	R

REAR VIEW and CONNECTORS



14P CONNECTOR (P901) **14P CONNECTOR (J802)** **DIN 13P CD Changer CONNECTOR (J801)**

14P CONNECTOR (P901)

1:	Speaker FR	(+)	6:	Speaker RR	(+)	11:	Accessory	(+)
2:	Speaker FL	(+)	7:	Speaker FR	(−)	12:	−	
3:	Illumination	(+)	8:	Speaker FL	(−)	13:	Speaker RL	(−)
4:	Antenna	+B	9:	Illumination	(−)	14:	Speaker RR	(−)
5:	Speaker RL	(+)	10:	Battery	(+)			

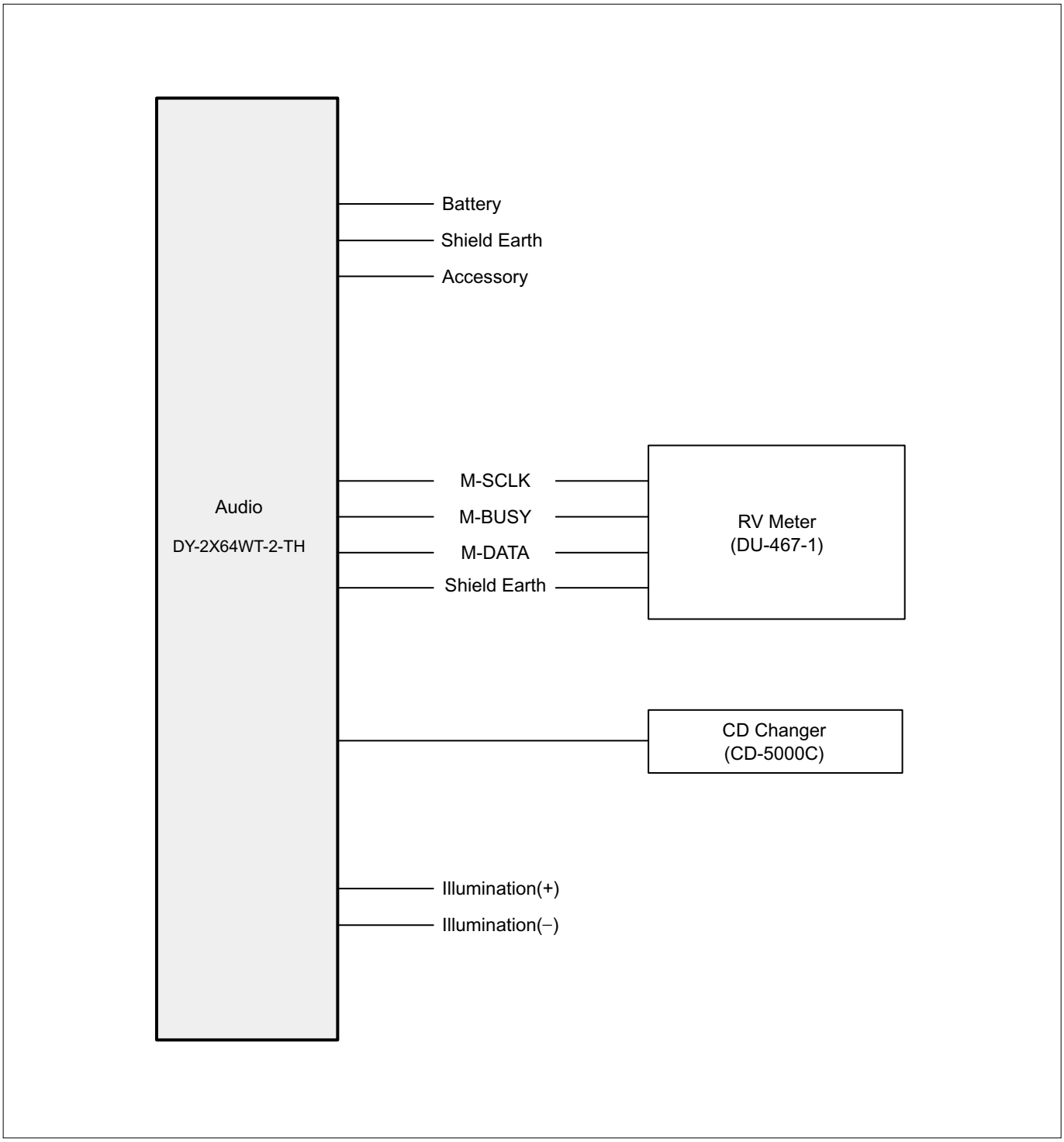
14P CONNECTOR (J802)

1:	M-BUSY	8:	M-SCK
2:	M-DATA	9:	Shield Earth
3:	REMO SIG 1	10:	REMO SIG 2
4:	−	11:	−
5:	TEL MUTE 1	12:	Aux L
6:	TEL SIG 1	13:	Aux R
7:	TEL GND 1	14:	Aux GND

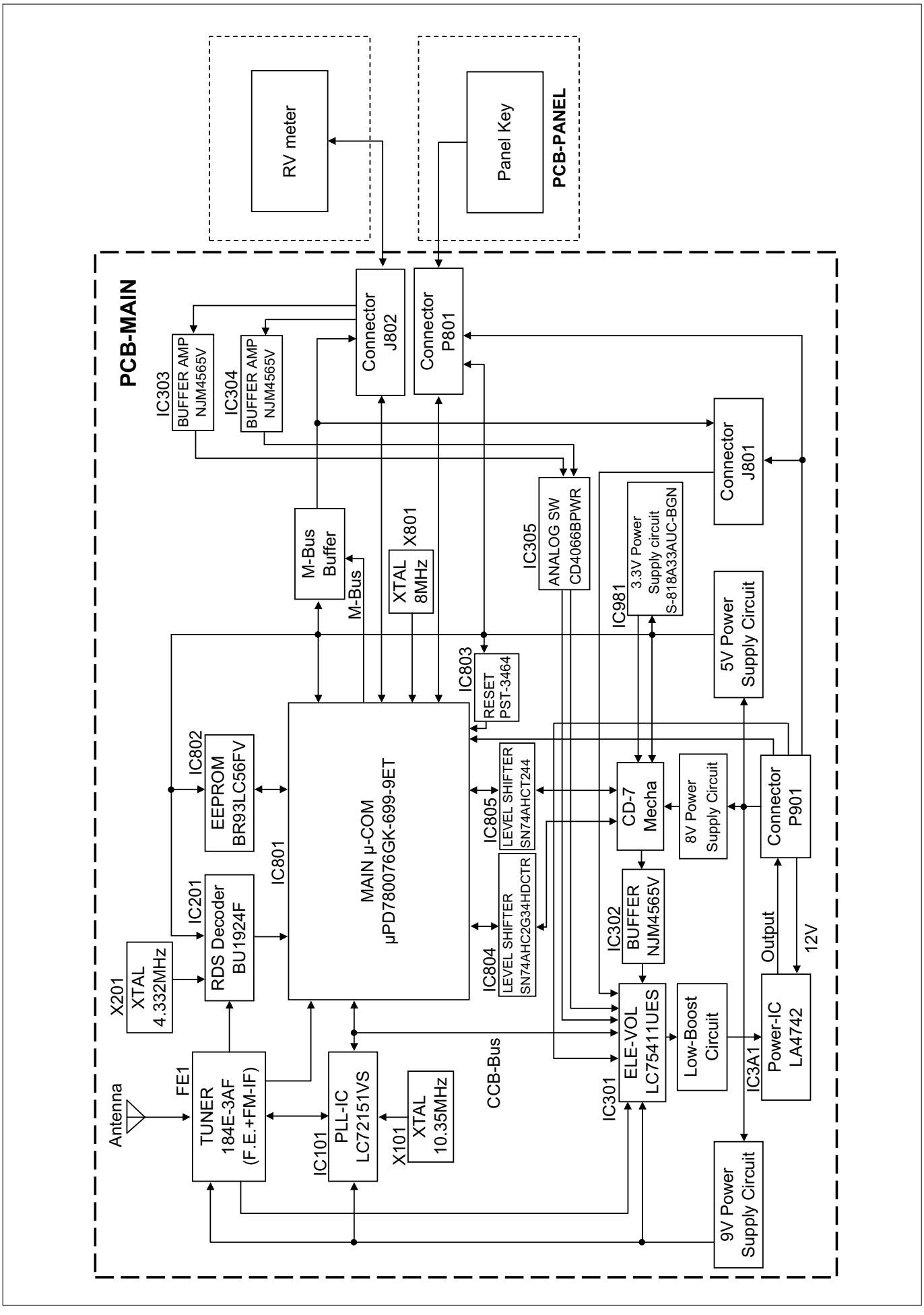
DIN 13P CD Changer CONNECTOR (J801)

1:	Signal GND		8:	−	
2:	BUS L		9:	Battery	(+)
3:	−		10:	Illumination	(+)
4:	BUS R		11:	M-BUSY	
5:	−		12:	M-SCK	
6:	−		13:	M-DATA	
7:	Accessory	(+)	H:	Shield Earth	

SYSTEM CONFIGURATION



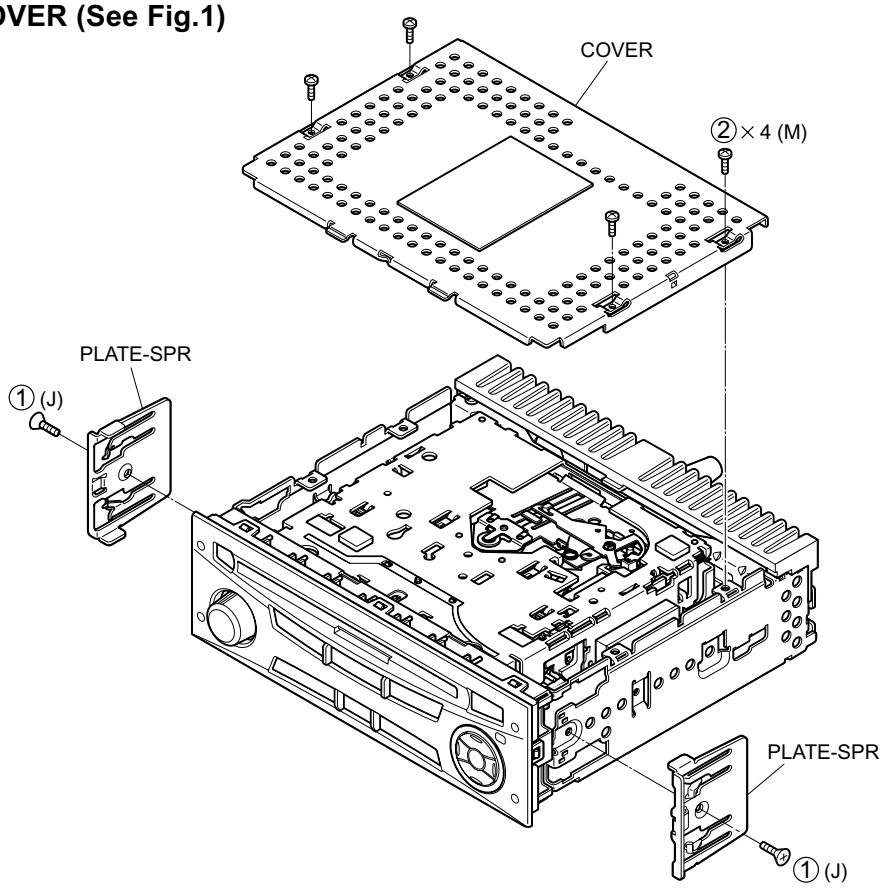
BLOCK DIAGRAM



DISASSEMBLING PROCEDURES

1. Removal of PLATE-SPR and COVER (See Fig.1)

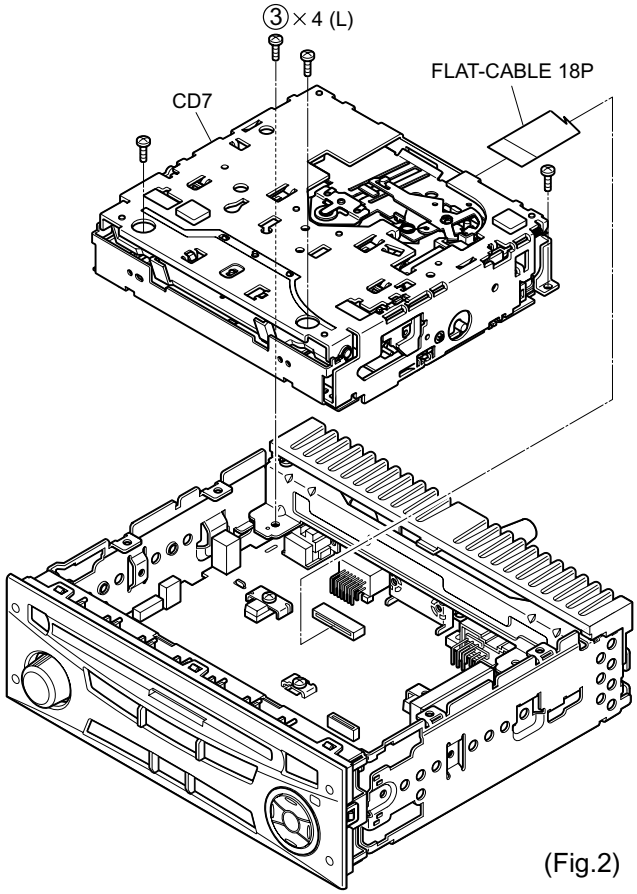
1) Unscrew the two screws (①).
2) Remove the two PLATE-SPR.
3) Unscrew the four screws (②).
4) Remove the COVER.



(Fig.1)

2. Removal of CD7 (See Fig.2)

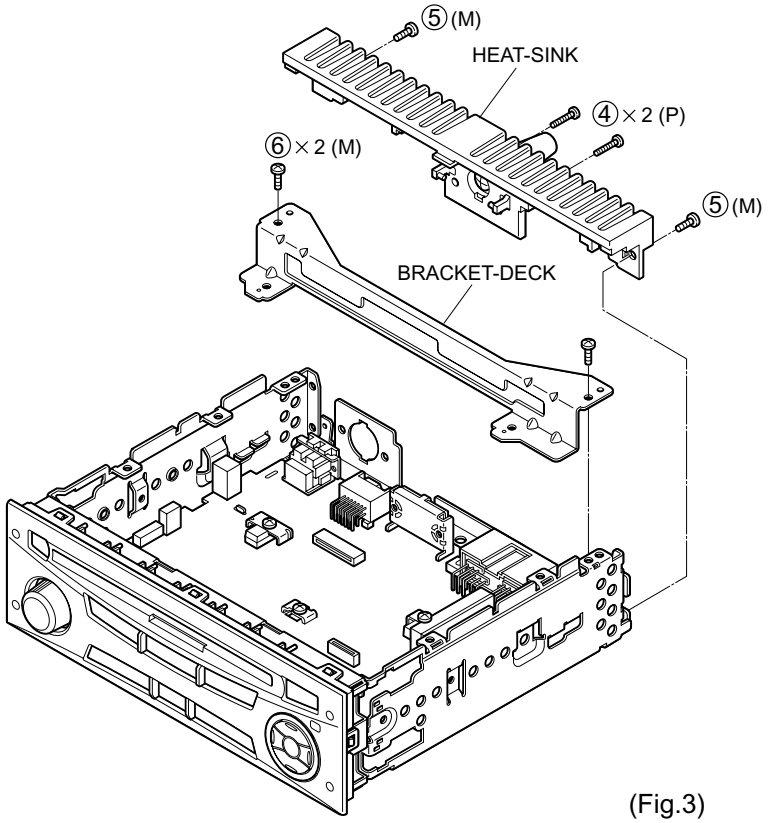
1) Unscrew the four screws (③).
2) Remove the FLAT-CABLE 18P.
3) Remove the CD7.



(Fig.2)

3. Removal of HEAT-SINK and BRACKET-DECK (See Fig.3)

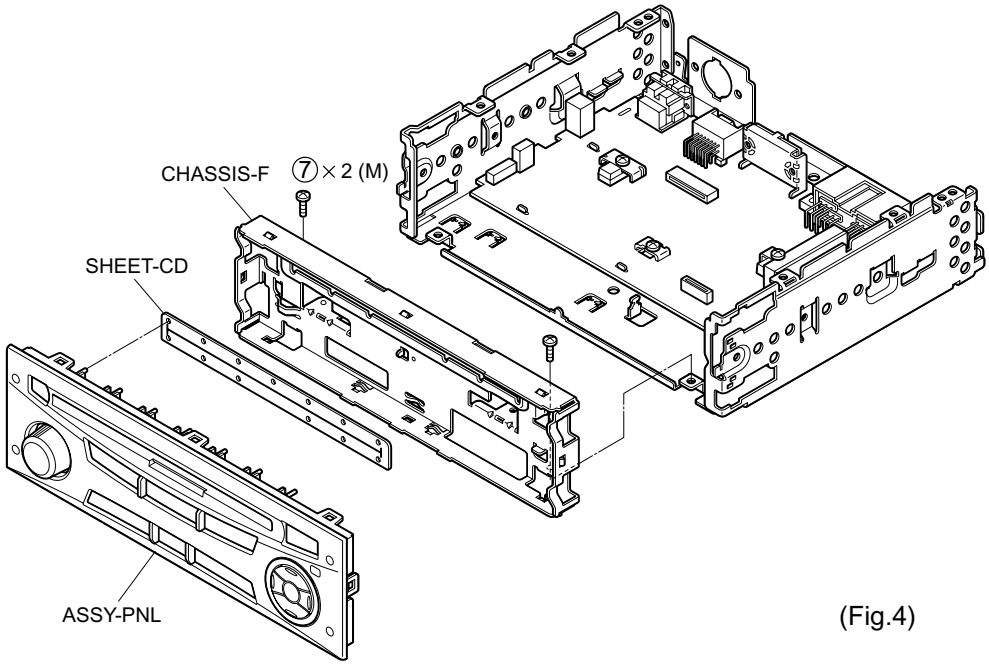
1) Unscrew the two screws (④) and the two screws (⑤).
2) Remove the HEAT-SINK.
3) Remove the two screws (⑥).
4) Remove the BRACKET-DECK.



(Fig.3)

4. Removal of ASSY-PNL and CHASSIS-F (See Fig.4)

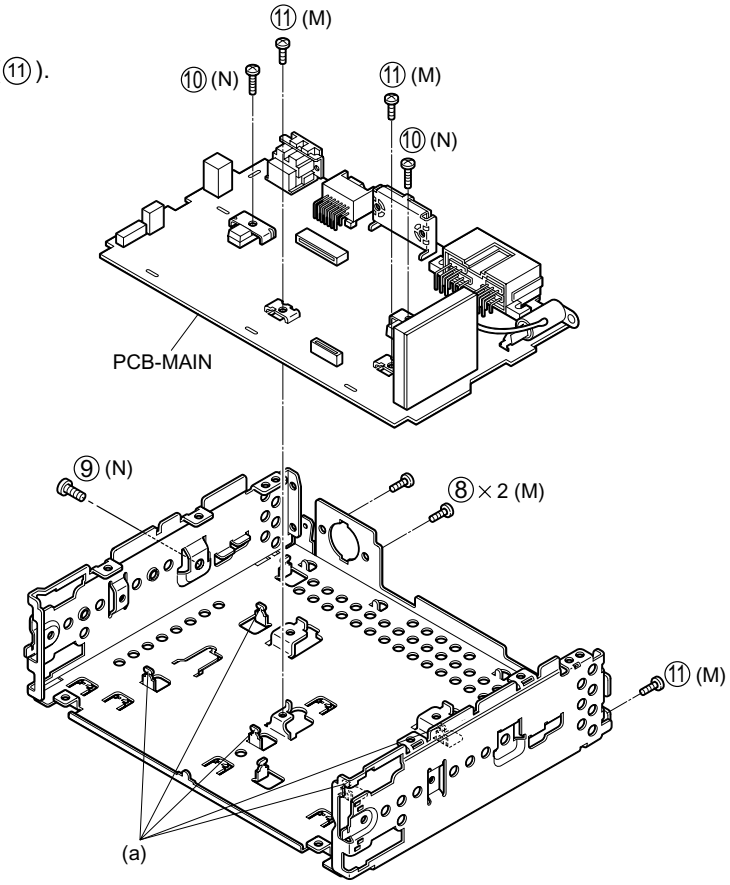
1) Remove the ASSY-PNL and SHEET-CD.
2) Remove the two screws (⑦).
3) Remove the CHASSIS-F.



(Fig.4)

5. Removal of PCB-MAIN (See Fig.5)

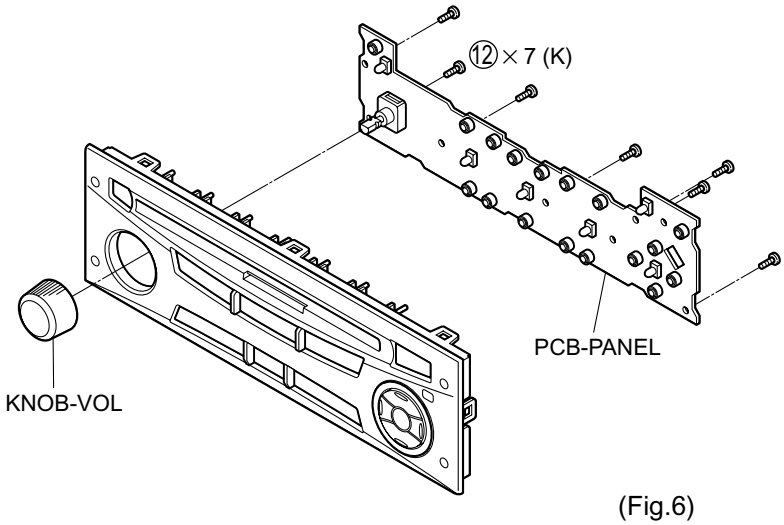
1) Unscrew the two screws (⑧).
2) Unscrew the one screw (⑨).
3) Unscrew the two screws (⑩) and the three screws (⑪).
4) Unlatch the five hooks (a).
5) Remove the PCB-MAIN.



(Fig.5)

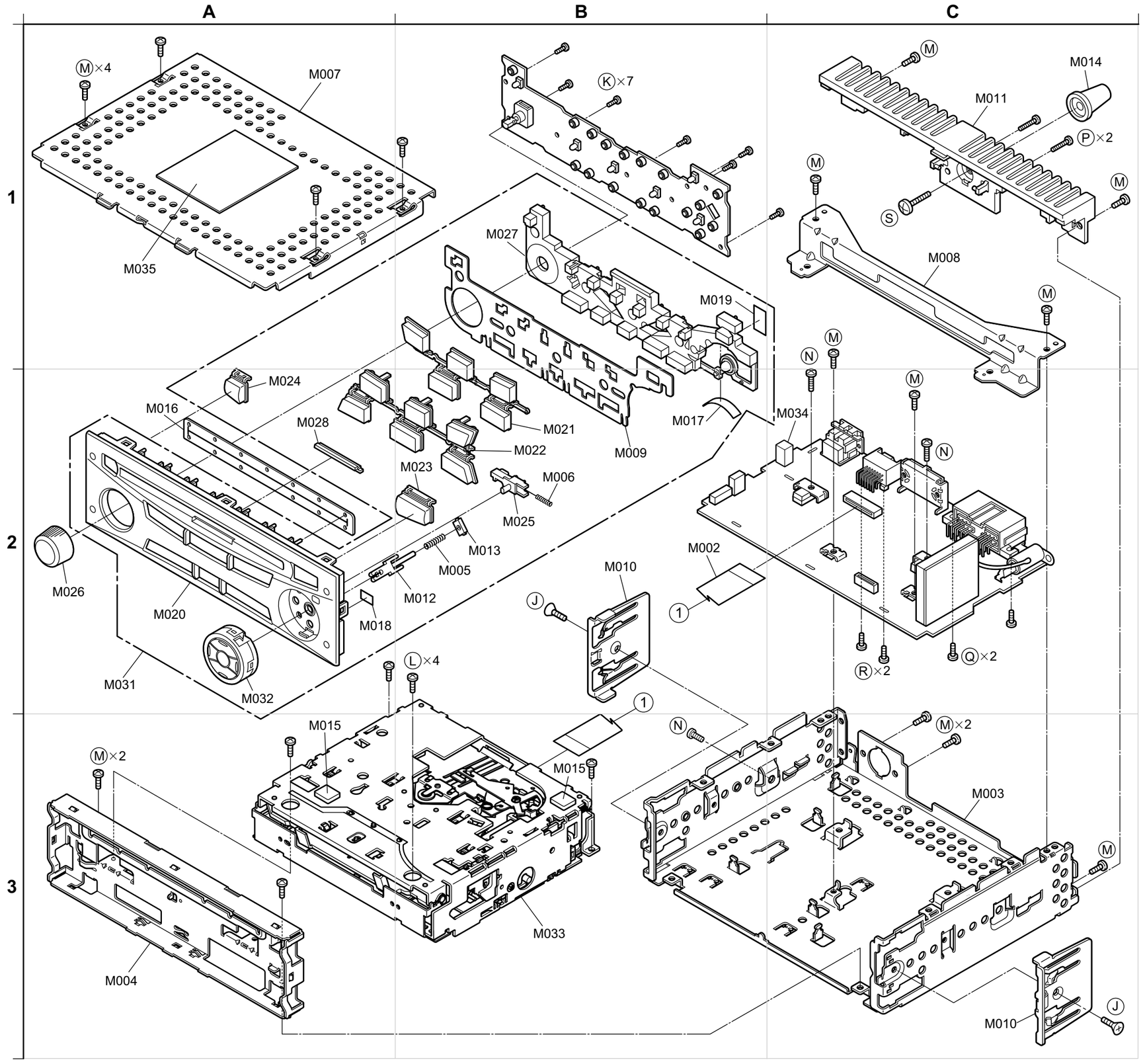
6. Removal of PCB-PANEL (See Fig.6)

1) Remove the KNOB-VOL.
2) Remove the seven screws (⑫).
3) Remove the PCB-PANEL.



(Fig.6)

EXPLODED VIEW and PARTS LIST

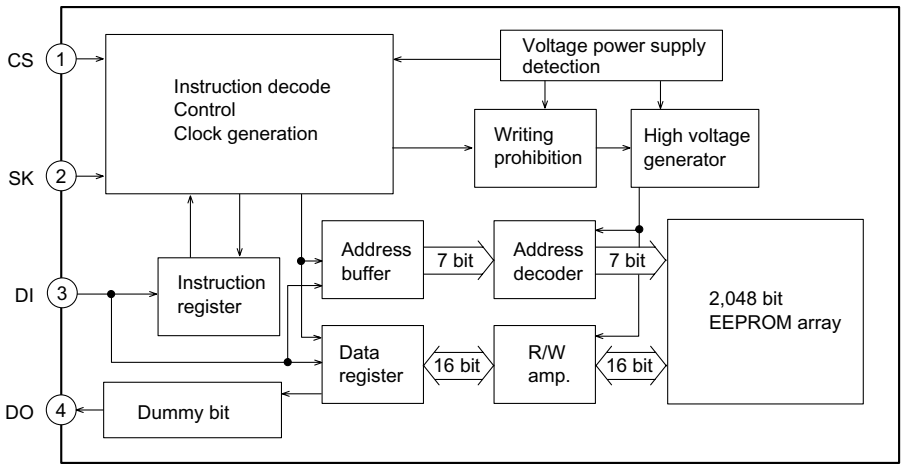


* : Marked parts are unregistered.

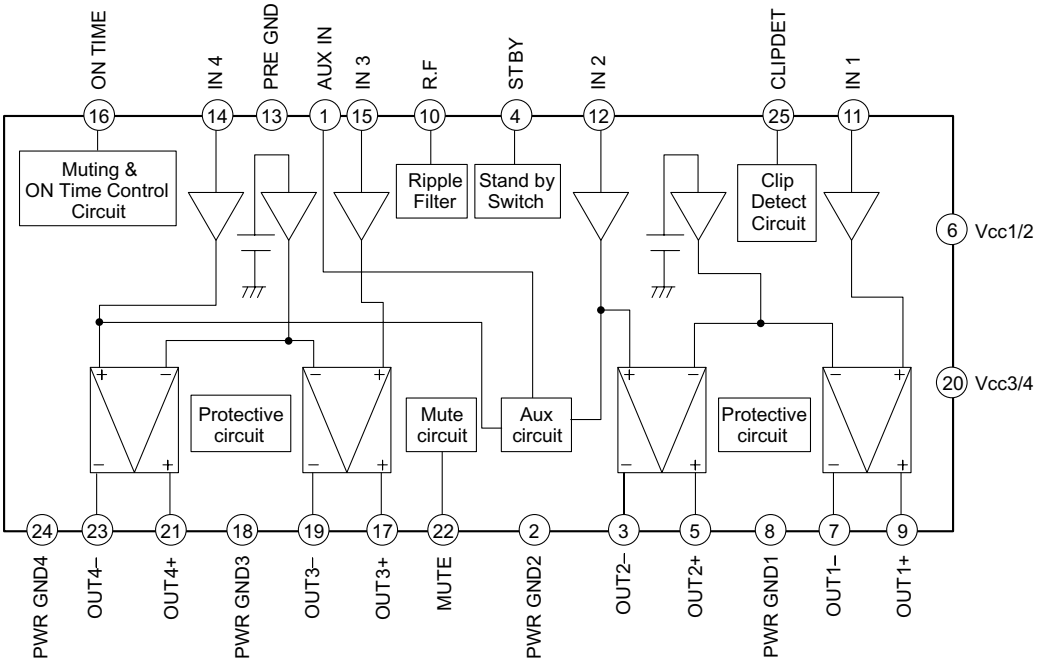
Ref. No.	Part No.	Description	Index
M002	246L48229	FLAT-CABLE 18P	B-2
M003	560J26213	CHASSIS-B	C-3
M004	560J28711	CHASSIS-F	A-3
M005	*570L46110	SPRING-REL	B-2
M006	*570L46010	SPRING-REL	B-2
M007	591K53610	COVER	A-1
M008	591K40711	BRACKET-DECK	C-1
M009	*591K47311	PLATE-E	B-2
M010	592L763O1	PLATE-SPR	B-2,C-3
M011	635J07410	HEAT-SINK	C-1
M012	641J031O5	CLAMP	B-2
M013	641J031O6	CLAMP	B-2
M014	645L02210	BUSH-DIN	C-1
M015	643L06710	CUSHION	A-3,B-3
M016	643L30310	SHEET-CD	A-2
M017	*643L44810	SHEET	B-2
M018	*643L44811	SHEET	A-2
M019	*643L44812	SHEET	B-1
M020	*702J67513	PANEL-2E54	A-2
M021	*704K83513	BUTTON-CH1	B-2
M022	*704K83613	BUTTON-CH2	B-2
M023	*704K83713	BUTTON-DISP	B-2
M024	*704K83813	BUTTON-EJECT	A-2
M025	*704K84015	BUTTON-RELEASE	B-2
M026	734L468O6	KNOB-VOL	A-2
M027	*761J15711	PRISM-MAIN	B-1
M028	*761K34111	PRISM-CD	A-2
M031	*892L38019	ASSY-PNL	A-2
M032	*892L38113	ASSY-SUB	A-2
M033	*942K46011	CD7WMA(955211)	B-3
M034	593L29210	HOLDER-TR	C-2
M035	943M208O6	NAME-CARD	A-1
J	653P02046	SCREW-MC-FLAT M3X6	-
K	653P33014	SCREW-P-BIND 2X6	-
L	653P13028	SCREW-S-BIND 2.6X6S	-
M	653P11046	SCREW-S-PAN 3X6	-
N	653P11048	SCREW-S-PAN 3X10	-
P	653P11052	SCREW-S-PAN 3X16	-
Q	669L057O1	SCREW-TAP 3X6	-
R	669L057O2	SCREW-TAP 2.6X6	-
S	653P03085	SCREW-MC-BIND M5X16	-

IC EXPLANATION

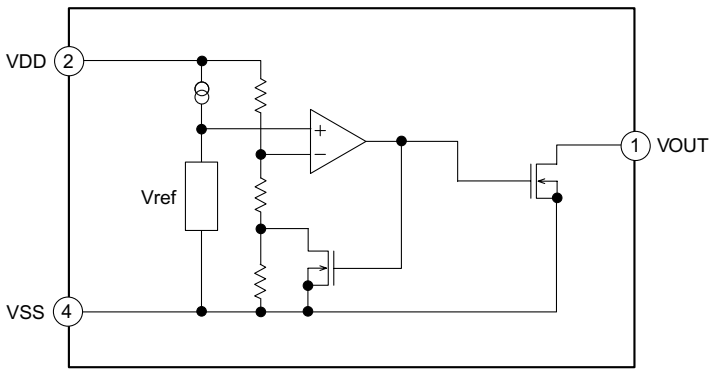
IC802 BR93LC56FV



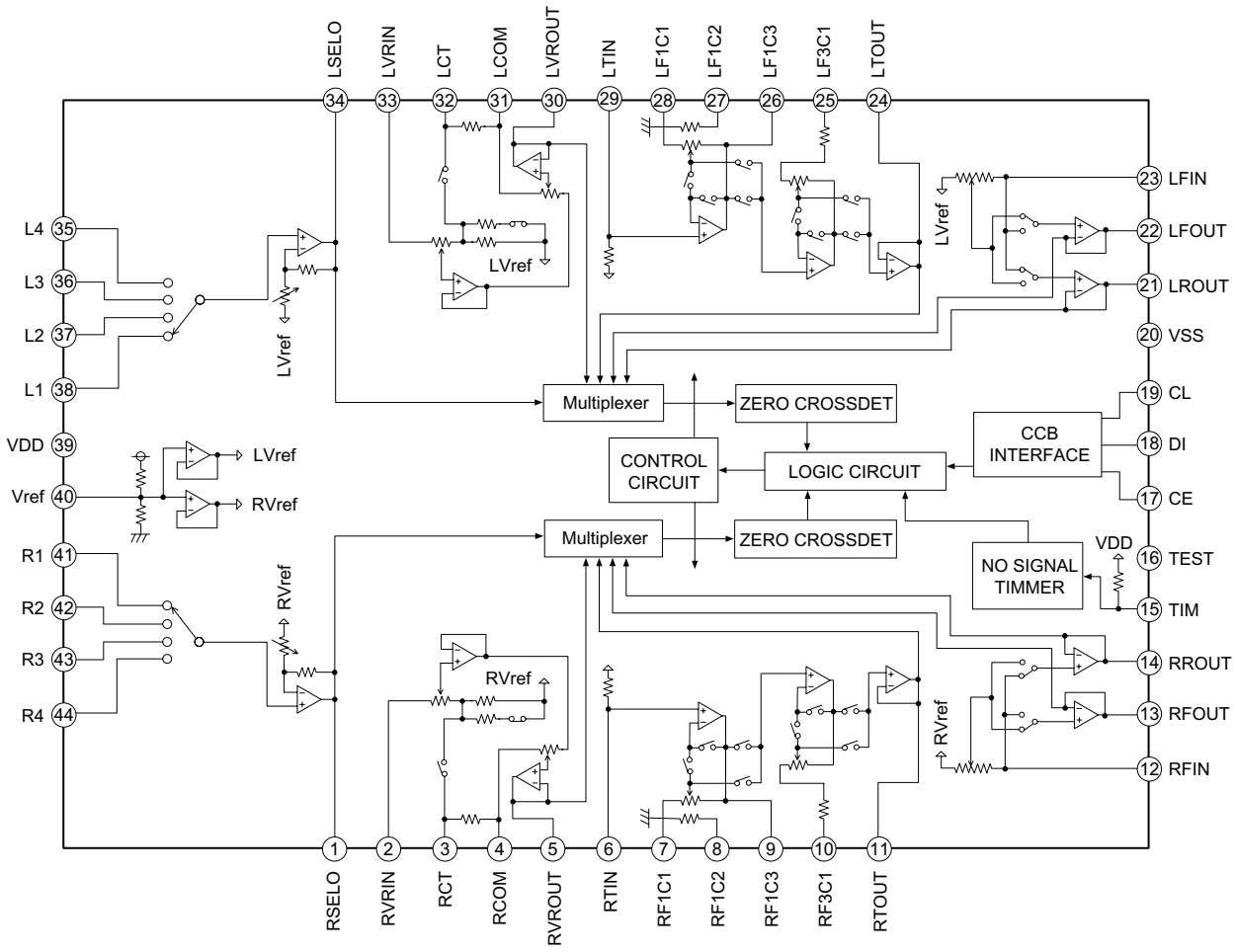
IC3A1 LA4742



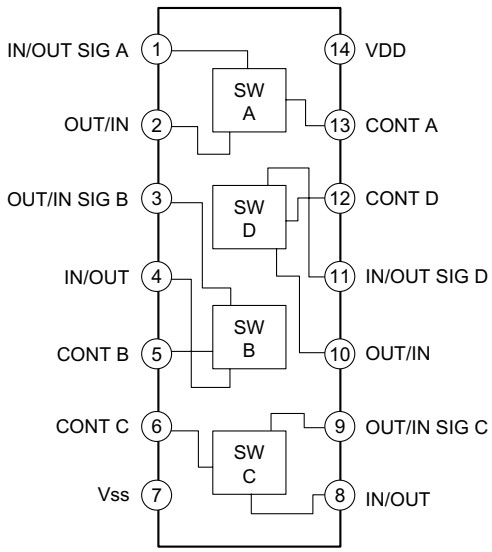
IC803 PST-3436



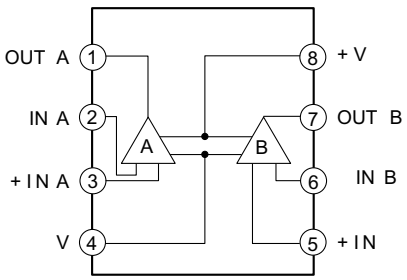
IC301 LC75411UES



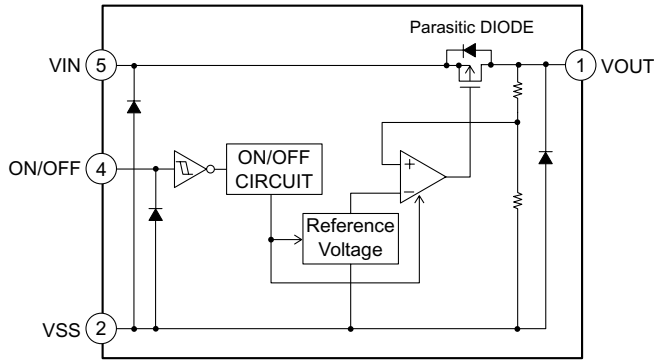
IC305 CD4066BPWR



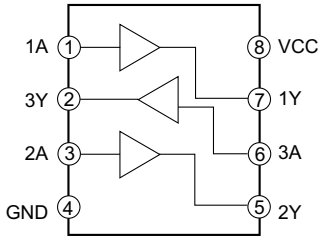
IC302~304 NJM4565V-TE1



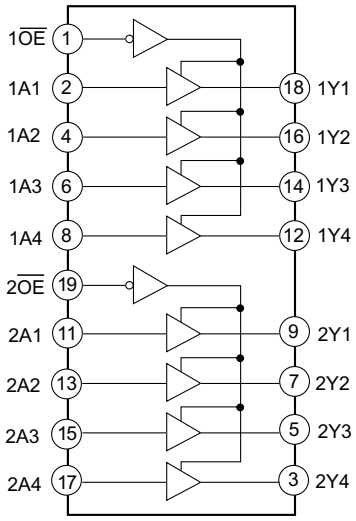
IC981 S-818A33AUC-BGN-T2G



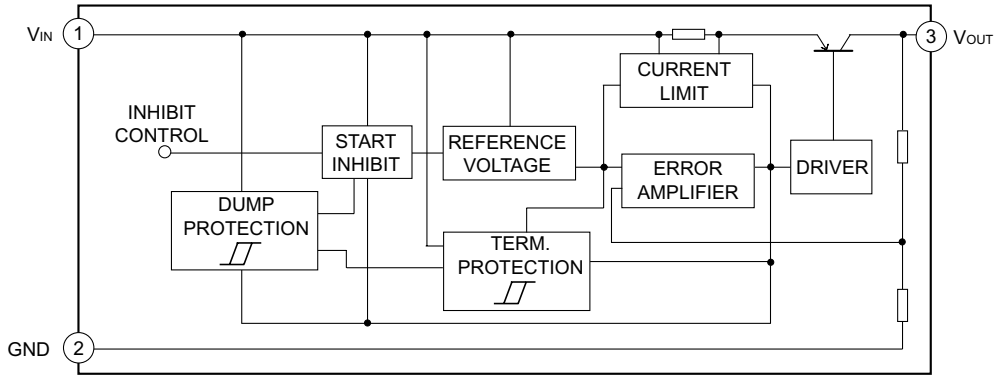
IC804 SN74AHC2G34HDCTR



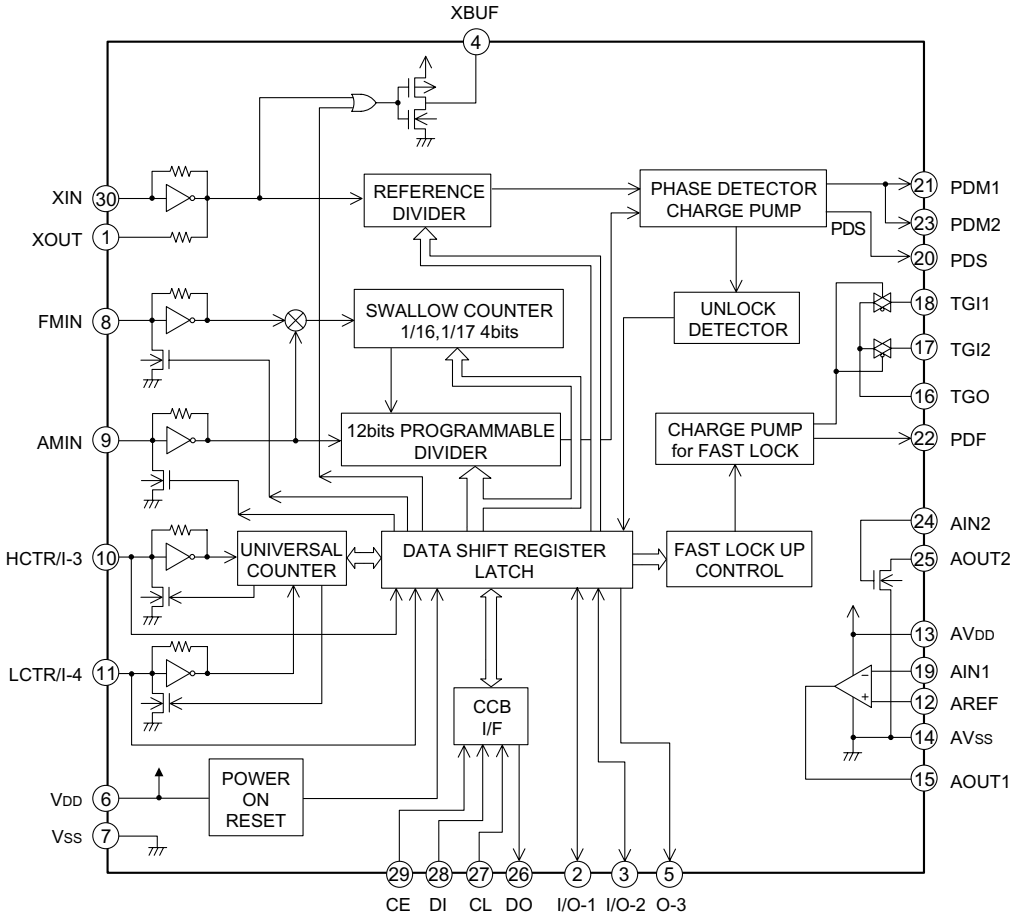
IC805 SN74AHCT244PWR



IC980 LF33AB-DT-TR

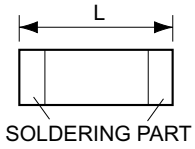


IC101 LC72151VS-TRM



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)			
R1A,18,etc.	103L299O9	R-CHIP	0Ω
R343A,443A	103L290O1	R-CHIP	10Ω
R731~733A	103L190O2	R-CHIP	12Ω
R731B~733B	103L190O3	R-CHIP	15Ω
R912,913	103L290O5	R-CHIP	22Ω
R4,11,etc.	103L291O3	R-CHIP	100Ω
R122	103L291O7	R-CHIP	220Ω
R931	103L241O9	R-CHIP	330Ω
R852B,933,973	103L291O9	R-CHIP	330Ω
R971	103L292O1	R-CHIP	470Ω
R780,790	103L292O2	R-CHIP	560Ω
R701,712,etc.	103L292O4	R-CHIP	820Ω
R784,794,etc.	103L292O5	R-CHIP	1kΩ
R702,703,etc.	103L292O6	R-CHIP	1.2kΩ
R704,715	103L292O7	R-CHIP	1.5kΩ
R705,716	103L292O8	R-CHIP	1.8kΩ
R327	103P502O8	R-CHIP	1.8kΩ
R116,340,etc.	103L292O9	R-CHIP	2.2kΩ
R343,443	103P502O9	R-CHIP	2.2kΩ
R707,783,793	103L293O0	R-CHIP	2.7kΩ
R11B,124B,etc.	103L293O1	R-CHIP	3.3kΩ
R898B,898C,898D	103L193O2	R-CHIP	3.9kΩ
R903,904	103L243O2	R-CHIP	3.9kΩ
R124A,350,etc.	103L293O2	R-CHIP	3.9kΩ
R123,849	103L293O3	R-CHIP	4.7kΩ
R710,771,835A	103L293O4	R-CHIP	5.6kΩ
R711,773	103L293O5	R-CHIP	6.8kΩ
R121	103L293O6	R-CHIP	8.2kΩ
R10B,11A,etc.	103L293O7	R-CHIP	10kΩ
R934	103L293O8	R-CHIP	12kΩ
R12,13,etc.	103L293O9	R-CHIP	15kΩ
R329,344,etc.	103P503O9	R-CHIP	15kΩ
R911	103L294O0	R-CHIP	18kΩ
R330,345,445	103P504O0	R-CHIP	18kΩ
R112B,923,932	103L294O1	R-CHIP	22kΩ
R10A,353,453	103L294O3	R-CHIP	33kΩ
R12A,13A,etc.	103L294O5	R-CHIP	47kΩ
R16A	103L294O6	R-CHIP	56kΩ
R835B,863B,etc.	103L294O9	R-CHIP	100kΩ
R3A1,3A2,etc.	103P504O9	R-CHIP	100kΩ
R12B,13B,976	103L295O1	R-CHIP	150kΩ
R859B,977	103L295O3	R-CHIP	220kΩ
R3N2,3N3	109P01226	R-NETWORK-CHIP	2.2Ω
R3N1,8N1,8N2	109P01218	R-NETWORK-CHIP	1kΩ
CHIP PARTS (CAPACITORS)			
C3A3,4A3,7A3	141L180O6	C-CERAMIC-CHIP	5pF
C1	141L181O5	C-CERAMIC-CHIP	15pF
C130	141L181O7	C-CERAMIC-CHIP	18pF
C101,108,etc.	141L182O5	C-CERAMIC-CHIP	39pF
C4,12A,etc.	141L160O9	C-CERAMIC-CHIP	1000pF
C902F	141L162O3	C-CERAMIC-CHIP	0.015μF
C901F	141L065O5	C-CERAMIC-CHIP	0.022μF
C12,13,etc.	141L163O3	C-CERAMIC-CHIP	0.022μF
C117	141L164O3	C-CERAMIC-CHIP	0.033μF
C124,350A,etc.	141L164O5	C-CERAMIC-CHIP	0.068μF
C124A,430A,835B	141L162O1	C-CERAMIC-CHIP	0.01μF
C390,391,etc.	141L164O6	C-CERAMIC-CHIP	0.1μF
C11,12B,etc.	141L164O8	C-CERAMIC-CHIP	0.22μF
C116	141L169O1	C-CERAMIC-CHIP	0.68μF
C106A,810A	141L069O5	C-CERAMIC-CHIP	1μF
C824A	141L069O1	C-CERAMIC-CHIP	2.2μF
TRANSISTORS			
Q911	260L021O3	TR 2SD1858Q	
Q901,930,etc.	260P68210	TR 2SD2375OP	
Q11,782,etc.	260M061O6	TR-CHIP 2SA1037R	
Q911A,972	260M061O3	TR-CHIP 2SC2412R	
Q12,13,etc.	260M061O5	TR-CHIP 2SC2412S	
Q770,780,790	260L010O1	TR-CHIP 2SD601A	
Q772	260L042O4	TR-CHIP DTA114T	
Q981	260M061O1	TR-CHIP DTA124E	
Q923,931	260L030O5	TR-CHIP DTA143E	
Q835,960	260L042O2	TR-CHIP DTA144T	
Q998	260L057O1	TR-CHIP DTB123Y	
Q859	260L014O7	TR-CHIP DTC115E	
Q16,811,etc.	260M061O2	TR-CHIP DTC124E	
Q921	260L042O1	TR-CHIP DTC124T	
Q982	260M061O8	TR-CHIP DTC144E	
Q12A,13A,etc.	260L033O1	TR-CHIP DTC323T	
DIODES			
D900	264P437O2	DIODE ERA83-004-PN-R-B	
D831,861,etc.	264L060O1	DIODE-CHIP 1SS355	

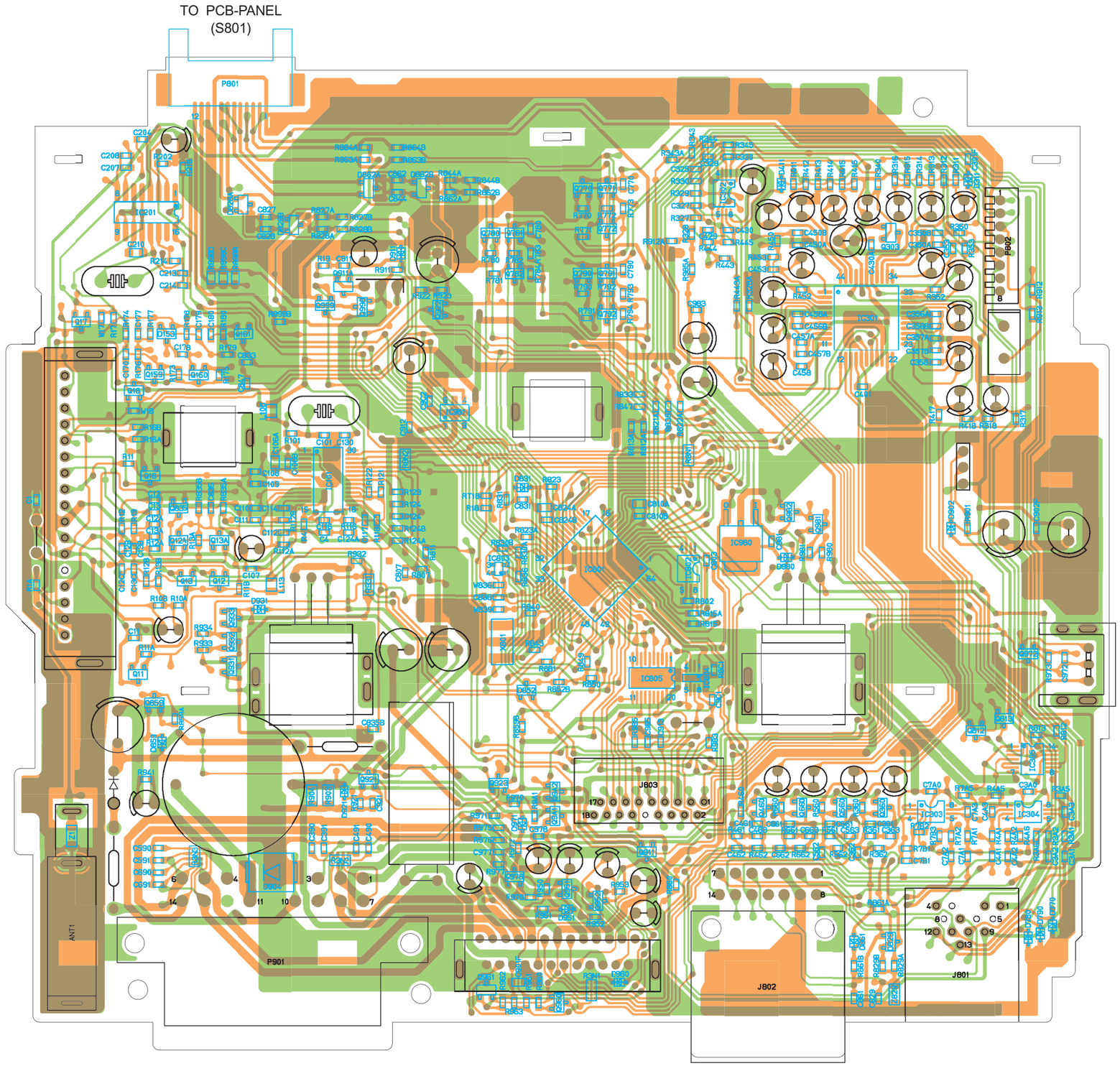
Ref. No.	Part No.	Description
D901	264L076O3	DIODE-CHIP AA1101W-740-TR
D829	264L037O1	DIODE-CHIP DCC010
D852	264P617O1	DIODE-CHIP MC2836T
D904	264P516O1	DIODE-CHIP S3D6600
D911	264P583O9	DIODE-Z MA8062H
D931	264L067O3	DIODE-Z-CHIP MA8051M
D980	264P583O8	DIODE-Z-CHIP MA8062M
D859	264P584O1	DIODE-Z-CHIP MA8068M
D921	264P584O7	DIODE-Z-CHIP MA8082M
D902	264P585O0	DIODE-Z-CHIP MA8091M
D971	264P585O3	DIODE-Z-CHIP MA8100M
D311,411,etc.	264P588O6	DIODE-Z-CHIP MA8270M
IC		
IC802	263P973O1	IC BR93LC56FV
IC305	263P02711	IC CD4066BPWR
IC3A1	266P524O1	IC LA4742
IC101	263P04310	IC LC72151VS-TRM
IC301	263P160O3	IC LC75411UES
IC980	266P59010	IC LF33AB-DT-TR
IC302~304	266L065O9	IC NJM4565V-TE1
IC803	263P05236	IC PST-3436
IC981	262P09733	IC S-818A33AUC-BGN-T2G
IC804	263L061O2	IC SN74AHC2G34HDCTR
IC805	263L060O9	IC SN74AHCT244PWR
IC801	262P53120	IC µPD780076GK-665-9ET
RESISTORS		
RF941	103L390O1	R-FUSE
RF900	103L390O2	R-FUSE

Ref. No.	Part No.	Description
COILS		
L1,910	351L171O3	COIL-CHOKE
L901	351P11510	COIL-CHOKE
L106,113	351P082O4	COIL-CHOKE-CHIP
CONNECTORS		
S801	452P151O4	CONNECTOR 12P
P801	452P153O4	CONNECTOR 12P
P901	452L34211	CONNECTOR 14P
J802	452P23214	CONNECTOR 14P
J803	452P177O8	CONNECTOR 18P
ANT1	449L076O2	SOCKET-ANT
J801	449L098O3	SOCKET-DIN 13P
OTHERS		
PL901~906	253L47610	LAMP-CHIP
X101	285L012O6	CRYSTAL
FE1	295P21524	TUNER-AMFM
X801	299L030O2	RESONATOR-CHIP
Z1	299P136O2	PROTECTOR-CHIP
VOL721	430L026O1	SW-ROTARY
SW901	432L115O2	SW-PUSH
SW701~717	432P02010	SW-PUSH 2P
H-IC1	593L69911	HOLDER-IC
H-TR1,2	593L70010	HOLDER-TR
PLATE1,2	593L70110	PLATE-G

PARTS LAYOUT ON PRINTED CIRCUIT BOARD

MODEL : DY-2X64WT-2-TH (PARTS SIDE)

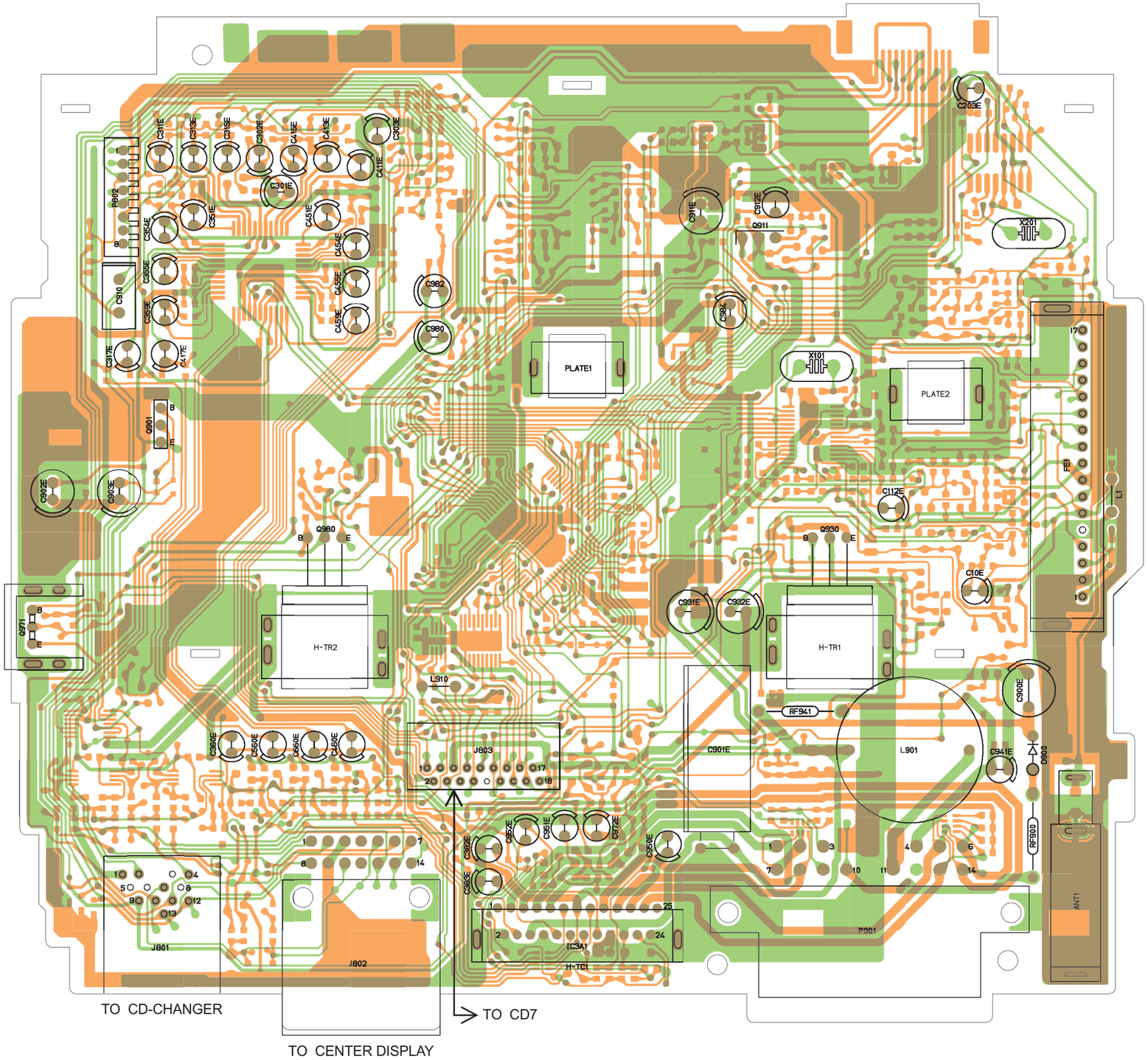
PCB-MAIN



PARTS LAYOUT ON PRINTED CIRCUIT BOARD

MODEL : DY-2X64WT-2-TH (PATTERN SIDE)

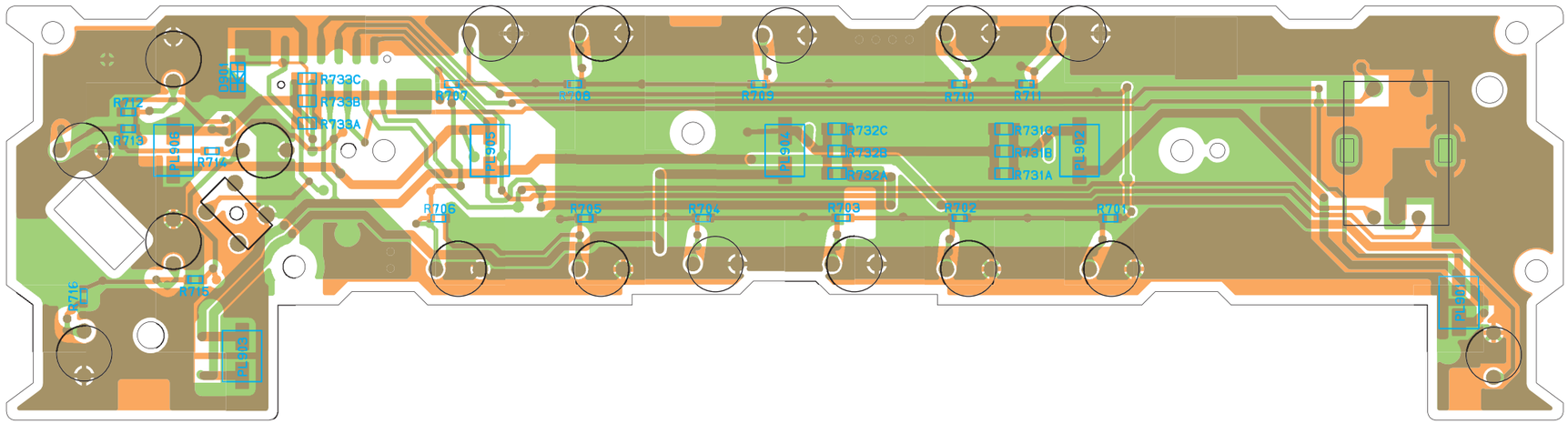
PCB-MAIN



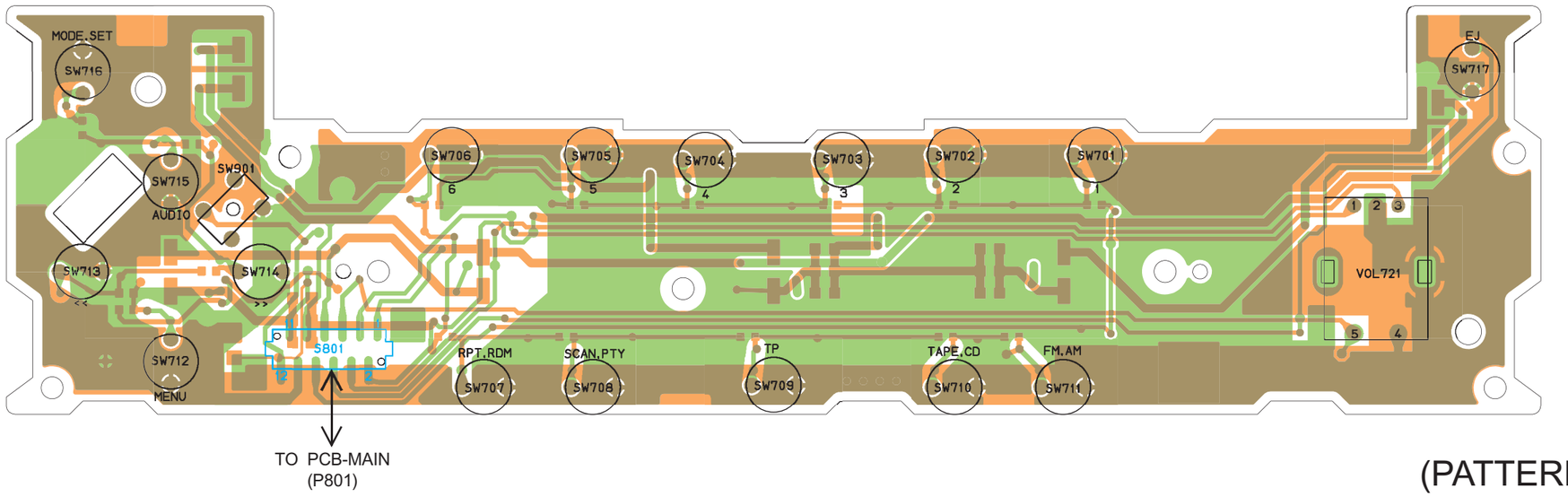
PARTS LAYOUT ON PRINTED CIRCUIT BOARD

MODEL : DY-2X64WT-2-TH

PCB-PANEL

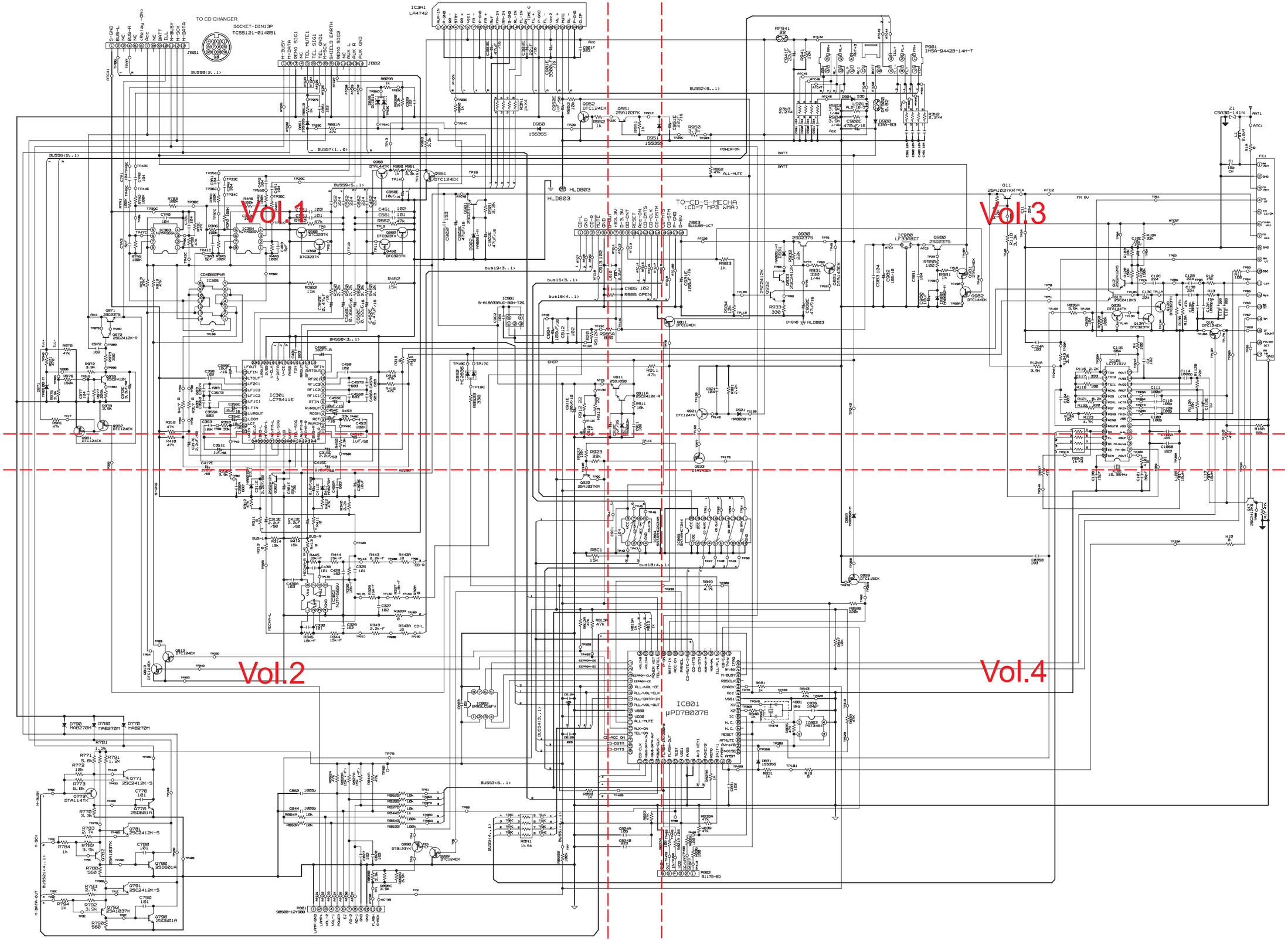


(PARTS SIDE)

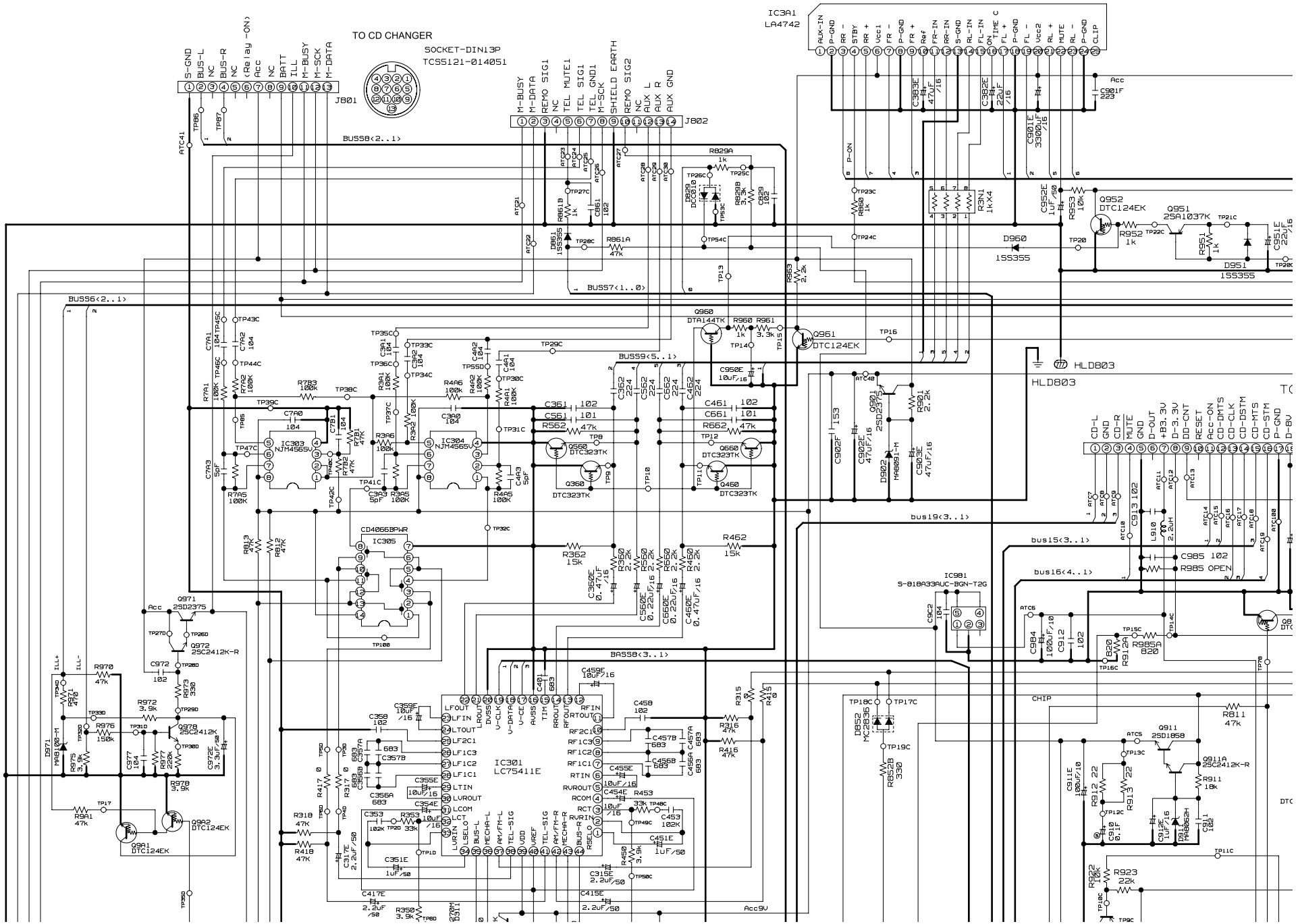


(PATTERN SIDE)

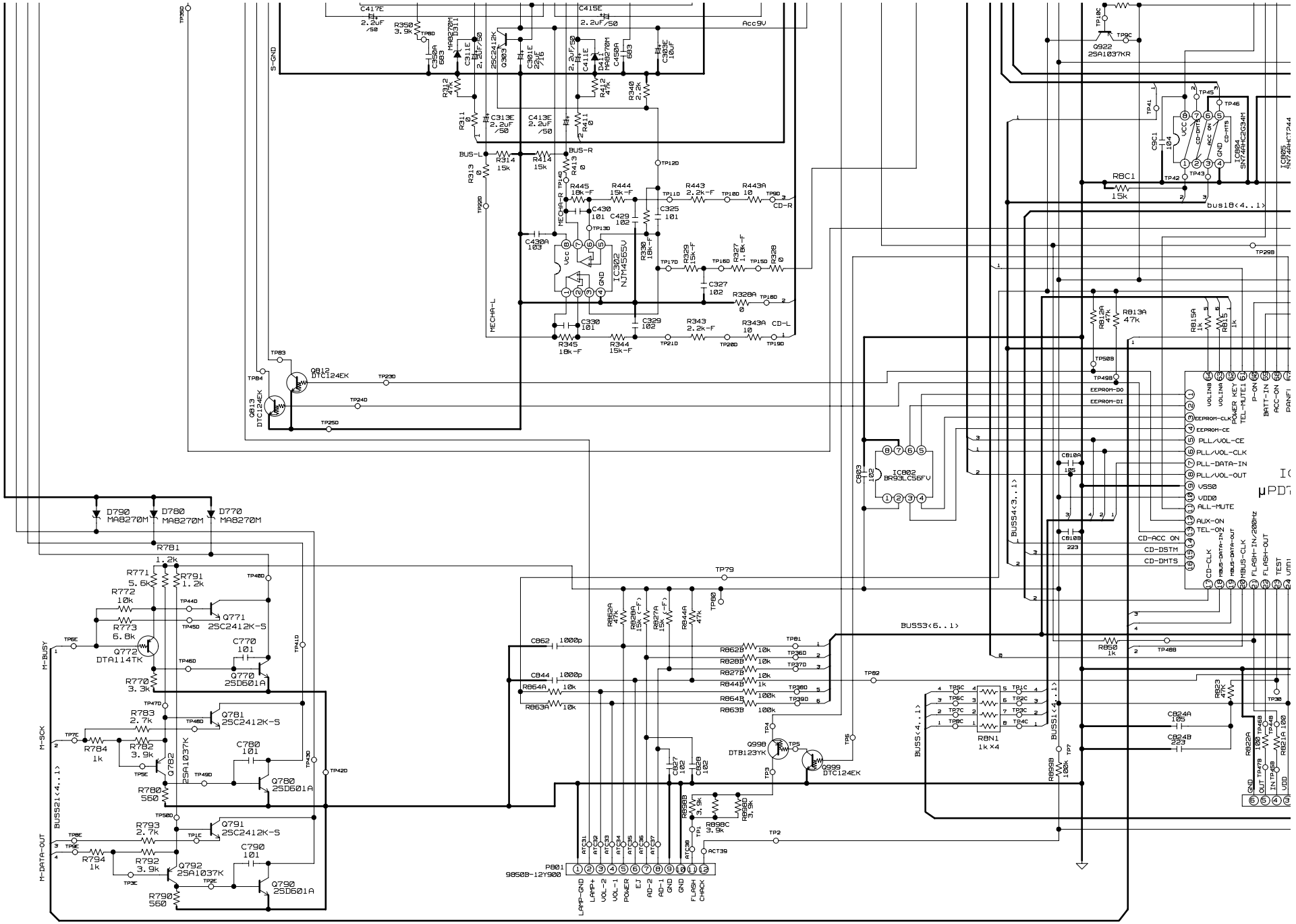
SCHEMATIC DIAGRAM PCB-MAIN MODEL : DY-2X64WT-2-TH



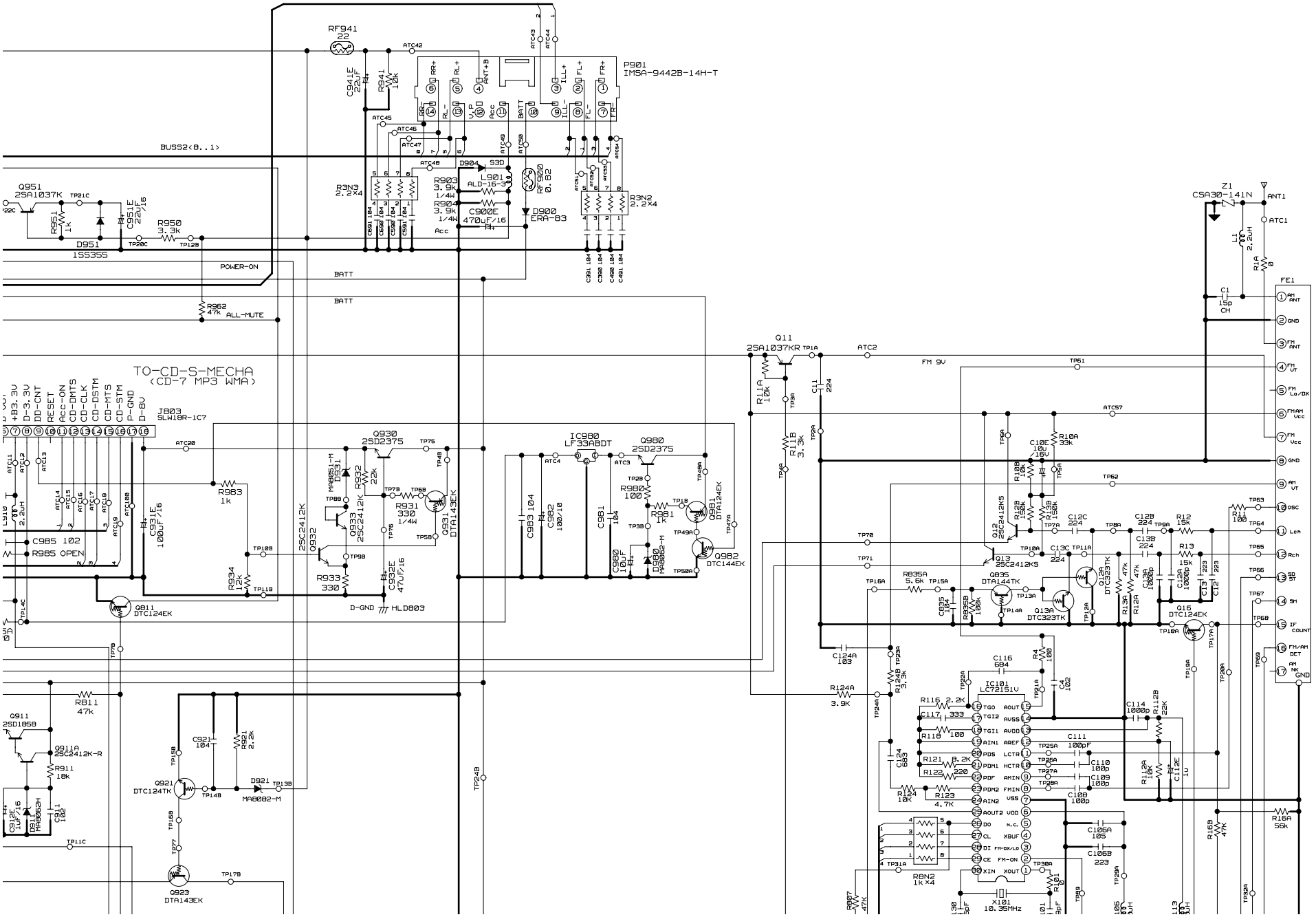
SCHEMATIC DIAGRAM PCB-MAIN MODEL : DY-2X64WT-2-TH Vol.1



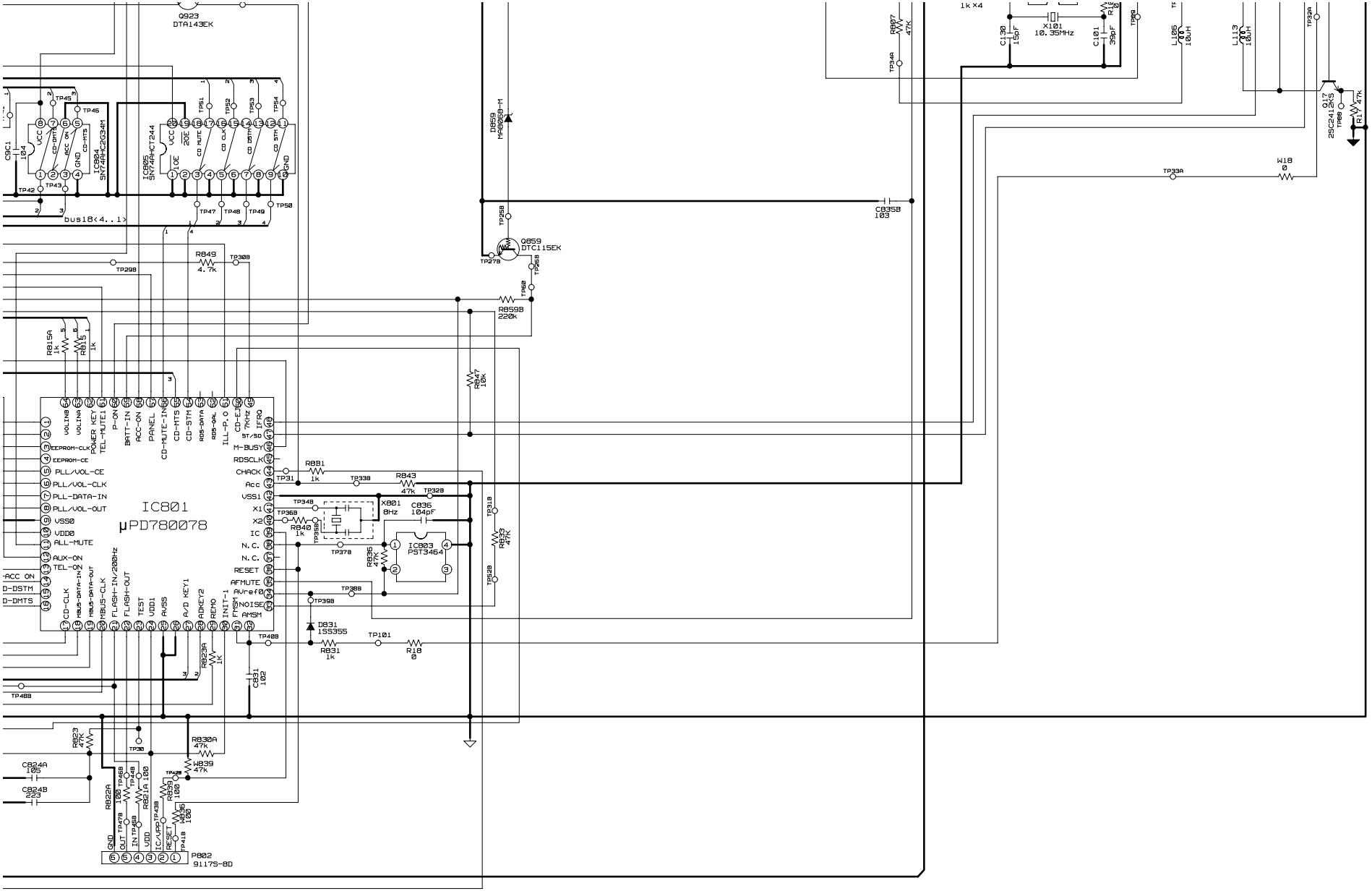
SCHEMATIC DIAGRAM PCB-MAIN MODEL : DY-2X64WT-2-TH Vol.2



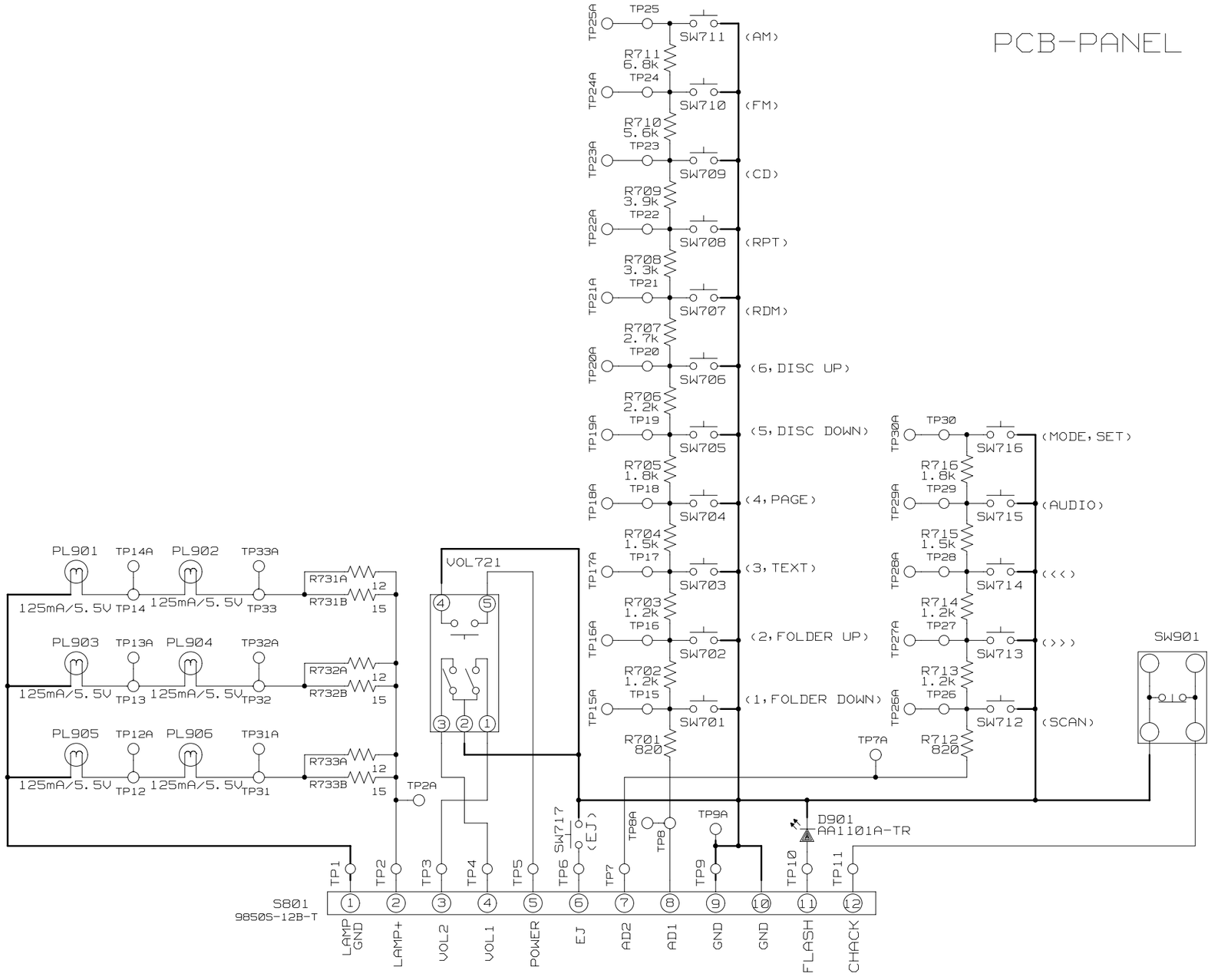
SCHEMATIC DIAGRAM PCB-MAIN MODEL : DY-2X64WT-2-TH Vol.3



SCHEMATIC DIAGRAM PCB-MAIN MODEL : DY-2X64WT-2-TH Vol.4



PCB-PANEL


TP25
TP25A
SW711
(AM)
R711
6.8k
TP24
TP24A
SW710
(FM)
R710
5.6k
TP23
TP23A
SW709
(CD)
R709
3.9k
TP22
TP22A
SW708
(RPT)
R708
3.3k
TP21
TP21A
SW707
(RDM)
R707
2.7k
TP20
TP20A
SW706
(6, DISC UP)
R706
2.2k
TP19
TP19A
SW705
(5, DISC DOWN)
R705
1.8k
TP18
TP18A
SW704
(4, PAGE)
R704
1.5k
TP17
TP17A
SW703
(3, TEXT)
R703
1.2k
TP16
TP16A
SW702
(2, FOLDER UP)
R702
1.2k
TP15
TP15A
SW701
(1, FOLDER DOWN)
R701
820
TP30
TP30A
SW716
(MODE, SET)
R716
1.8k
TP29
TP29A
SW715
(AUDIO)
R715
1.5k
TP28
TP28A
SW714
(<<<)
R714
1.2k
TP27
TP27A
SW713
(>>>)
R713
1.2k
TP26
TP26A
SW712
(SCAN)
R712
820
TP7A
SW901
PL901 TP14A PL902 TP33A
125mA/5.5V TP14 125mA/5.5V TP33
R731A 12
R731B 15
PL903 TP13A PL904 TP32A
125mA/5.5V TP13 125mA/5.5V TP32
R732A 12
R732B 15
PL905 TP12A PL906 TP31A
125mA/5.5V TP12 125mA/5.5V TP31
R733A 12
R733B 15
TP2A
VOL721
SW717
(EJ)
TP8A
TP8B
TP9A
D901
AA1101A-TR
S801
9850S-12B-T
TP1 TP2 TP3 TP4 TP5 TP6 TP7 TP9 TP10 TP11
1 2 3 4 5 6 7 8 9 10 11 12
LAMP GND
LAMP+
VOL2
VOL1
POWER
EJ
AD2
AD1
GND
GND
FLASH
CHACK

VOLTAGE
MODEL : DY-2X64WT-2-TH

(Pin numbers are as measurement points.)

1. μ-COM : μPD780076GK-699-9ET
IC801 (PCB-MAIN)

FM 98.1MHz/AM 999kHz, 30%MOD, VOL MIN
BATT, ACC 13.2V

Pin No.	Pin sign	Pin Name	I/O	ACT	Voltage[V] AM	FM	CD	Function	ACC OFF	Pin Function
1	P50/A8	EEPROM DO	O	H	0	0	0	EEPROM serial data output	L	
2	P51/A9	EEPROM DI	I	H	0	0	0	EEPROM serial data input	Hi-z	
3	P52/A10	EEPROM CLK	O	H	0	0	0	EEPROM serial clock output	L	
4	P53/A11	EEPROM CE	O	H	0	0	0	EEPROM CE output	L	
5	P54/A12	PLL/VOL CE	O	H	0	0	0	PLL/E-VOL communication CE terminal	Hi-z	
6	P55/A13	PLL/VOL CLK	O	H	0	0	0	Serial clock output to PLL/E-VOL	Hi-z	
7	P56/A14	PLL DATA IN	I	H	5	5	5	Serial data input from PLL-IC	Hi-z	
8	P57/A15	PLL/VOL DATA OUT	O	H	0	0	0	Serial data output to PLL/E-VOL	Hi-z	
9	VSS0	GND	-	-	0	0	0		-	
10	VDD0	VDD	-	-	5	5	5		-	
11	P30	ALL MUTE	O	H	0	0	0	MUTE output	Hi-z (H)	Nch
12	P31	AUX ON	O	H	5	5	5	AUX ON output	Hi-z (H)	Nch
13	P32	TEL ON	O	H	5	5	5	Telephone voice interrupt output	Hi-z (H)	Nch
14	P33	CD ACC ON	O	H	0	0	0	CD-mecha ACC power supply ON output	Hi-z (H)	Nch
15	P34/SI3/TxD2	CD D-STM	I	H	5	5	5	Serial data input from CD	Hi-z	SI3
16	P35/SO3/RxD2	CD D-MTS	O	L	0	0	5	Serial data output to CD	Hi-z	SO3
17	P36/_SCK3 /ASCK2	CD D-CLK	I	H	5	5	5	Serial clock input from CD	Hi-z	SCK3
18	P20/SI1	M DATA IN	I	H	5	5	5	M-BUS data input	Hi-z	SI1
19	P21/SO1	M DATA OUT	O	H	5	5	5	M-BUS data output	H	SO1
20	P22/SCK1	M SCK	I/O	H	5	5	5	M-BUS clock in/output	Hi-z	SCK1
21	P23/RxD0	FLASH IN	I	H	0	0	0	for FLASH WRITE	Hi-z	
22	P24/TxD0	FLASH OUT	I	H	0	0	0	for FLASH WRITE	Hi-z	
23	P25/ASCK0	TEST	I	H	5	5	5		Hi-z	
24	VDD1	VDD	-	-	5	5	5		-	
25	AVSS	GND	-	-	0	0	0		-	
26	P17/ANI7	GND	-	-	0	0	0		-	
27	P16/ANI6	A/D KEY1	I	-	5	5	5	A/D KEY1 input	-	ANI6
28	P15/ANI5	A/D KEY2	I	-	5	5	5	A/D KEY2 input	-	ANI5
29	P14/ANI4	REMO	I	-	5	5	5	D/C REMO input	-	ANI4
30	P13/ANI3	INIT-1	I	-	5	5	5	Initial setting input (function change)	-	ANI3
31	P12/ANI2	FM SM	I	-	-	-	-	FM electric field input	-	ANI2
32	P11/ANI1	AM SM	I	-	-	-	-	AM/LW electric field input	-	ANI1
33	P10/ANI0	NOISE	I	-	5	5	5	Noise volume	-	
34	AVREF	VDD	I	-	5	5	5		-	
35	P80/_SS1	AF MUTE	O	L	0	0	0	AF MUTE output	L	
36	_RESET	RESET	I	-	5	5	5		-	
37	XT2	-	-	-	-	-	-	Not Used	-	
38	XT1	-	I	-	5	5	5	Not Used	-	
39	IC(VPP)	IC(VPP)	I	-	0	0	0		-	
40	X2	X2	-	-	-	-	-	4.332MHz	-	
41	X1	X1	I	-	-	-	-	4.332MHz	-	
42	VSS1	GND	-	-	0	0	0		-	
43	P00/INTP0	ACC IN	I	H	0	0	0	ACC input	Hi-z	INTP0
44	P01/INTP1	CHACK	I	H	5	5	5	CHACK input	Hi-z	
45	P02/INTP2	RDS CLK	I	H	0	0	0	RDS clock input	Hi-z	INTP2
46	P03/INTP3 /ADTRG	M BUSY	I/O	H	5	5	5	M-BUS BUSY in/output	Hi-z	INTP3
47	P70/TI000/TO00	ST/SD	I	H	5	5	5	ST(IFREQ OFF)/SD(IFREQ ON) input	Hi-z	
48	P71/TI010	IF REQ	O	H	5	5	5	IF request output	H	
49	P72/TI50/TO50	7kHz	O	H	0	0	0	Speaker check output	L	TO50
50	P73/TI51/TO51	CD-EJ	I	H	5	5	5		Hi-z	
51	P74/PCL/TI011	ILL P.O	O	H	5	5	5		L	
52	P75/BUZ/TI001 /TO01	RDS QUAL	I	H	0	0	0	NO RDS detection input	Hi-z	
53	P64/_RD	RDS DATA	I	H	0	0	0	RDS data input	Hi-z	
54	P65/_WR	CD STM	I	H	5	5	5	CD communication request input	Hi-z	
55	P66/_WAIT	CD MTS	O	H	5	5	5	CD communication request output	Hi-z	
56	P67/ASTB	CD MUTE IN	I	H	5	5	5	CD MUTE input	Hi-z	
57	P40/AD0	PANEL	O	H	5	5	5	PANEL OUT output	L	
58	P41/AD1	ACC ON	O	H	5	5	5	ACC ON output	L	
59	P42/AD2	BATT IN	I	H	5	5	5	BATT input	Hi-z	
60	P43/AD3	POWER ON	O	H	5	5	5	Power IC standby output	L	
61	P44/AD4	TEL MUTE	I	H	5	5	5	TEL-MUTE input	Hi-z	
62	P45/AD5	POWER KEY	I	H	5	5	5	POWER KEY input	Hi-z	
63	P46/AD6	VOL IN A	I	H	5	5	5	Encoder VOL input	Hi-z	
64	P47/AD7	VOL IN B	I	H	5	5	5	Encoder VOL input	Hi-z	

2.PLL IC : LC72151VS
IC101 (PCB-MAIN)

FM 98.1MHz/AM 999kHz, 30%MOD, VOL MIN
BATT, ACC 13.2V

Pin No.	Pin sign	Pin Name	I/O	ACT	Voltage[V]	Function	ACC OFF	Pin Function
2	I/O-1	FM ON	O	H	8.5	FM power supply ON	H	Nch
3	I/O-2	-	O	H	-	Not Used	L	Nch
5	O-3	-	O	H	-	Not Used	L	Nch
10	HCTR/I-3	IF COUNT	I	-	2.3	FM IF count input	-	HCTR
11	LCTR/I-4	IF COUNT	I	-	0	MW/LW IF count input	-	LCTR

3.ELE-VOL IC
IC301 PCB-MAIN

FM 83MHz, 30%MOD, VOL MIN
BATT, ACC 13.2V
( ) : reference value
(communication wave)

Pin No.	Pin Name	Voltage [V]
1	RESLO	4.6
2	RVRIN	4.6
3	RCT	4.6
4	RCOM	4.6
5	RVROUT	4.6
6	RTIN	4.6
7	RF1C1	4.6
8	RF1C2	0
9	RF1C3	4.6
10	RF3C1	4.6
11	RTOUT	4.6
12	RFIN	4.6
13	RFOUT	4.6
14	RROUT	4.6
15	TIM	0
16	TEST	0
17	CE	(0)
18	DI	(0)
19	CL	5.1
20	VSS	0
21	LROUT	4.6
22	LFOUT	4.6
23	LFIN	4.6
24	LTOUT	4.6
25	LF3C1	4.6
26	LF1C3	4.6
27	LF1C2	0
28	LF1C1	4.6
29	LTIN	4.6
30	LVROUT	4.6
31	LCOM	4.6
32	LCT	4.6
33	LVRIN	4.6
34	LSELO	4.6
35	L4	4.6
36	L3	4.6
37	L2	4.6
38	L1	4.6
39	VCC	8.6
40	VREF	4.6
41	R1	4.6
42	R2	4.6
43	R3	4.6
44	R4	4.6

4.POWER IC
IC3A1 PCB-MAIN

FM 83MHz, 30%MOD, VOL MIN
BATT, ACC 13.2V
- : unsettled

Pin No.	Pin Name	Voltage [V]
1	BEEP	3.1
2	P-GND	0
3	FR-	2.8
4	STBY	4.8
5	FR+	2.8
6	VCC1	13.2
7	RR-	2.8
8	P-GND	0
9	RR+	2.8
10	Ref	12.0
11	RR-IN	3.1
12	FR-IN	3.1
13	S-GND	0
14	FL-IN	3.1
15	RL-IN	3.1
16	ON TIME C	2.4
17	RL+	2.8
18	P-GND	0
19	RL-	2.8
20	VCC2	13.2
21	FL+	2.8
22	MUTE	4.0
23	FL-	2.8
24	P-GND	0
25	CLIP	-

5.POWER SUPPLY, TUNER VT TERMINAL

BATT, ACC, ILL 13.2V
(E):Emitter,(C):Collector
[V]

BATT 5V	
Q911(E)	5.2

ACC 5V	
Q922(C)	5.0

ACC 9V	
Q901(E)	8.5

ILL ON	
Q971(E)	8.8

FE1 PCB-MAIN

9pin(AM)
4pin(FM)
BATT, ACC 13.2V

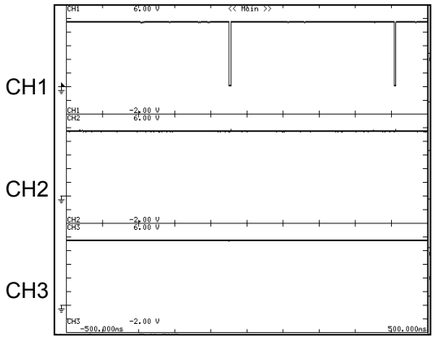
AM	VT	
	531kHz	1629kHz
	2.0	4.6
FM	VT	
	87.5MHz	108.0MHz
	1.3	7.0

WAVEFORM
MODEL : DY-2X64WT-2-TH
(Pin numbers are as measurement points.)

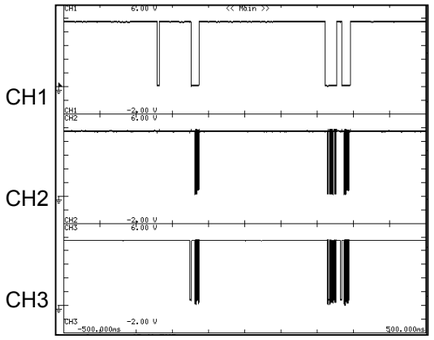
J802 **(PCB-MAIN)**

CH1=1pin (M-BUSY)
CH2=8pin (M-SCK)
CH3=2pin (M-DATA)

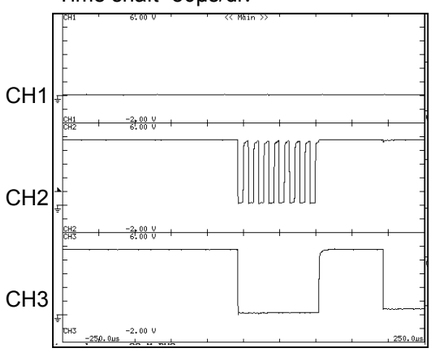
At the time of the M-BUS non-connection.
Vpp=4.8Vpp
Time shaft=100ms/div
Period (CH1)=700ms



At the time of the M-BUS non-connection.
Vpp=4.8Vpp
Time shaft=100ms/div

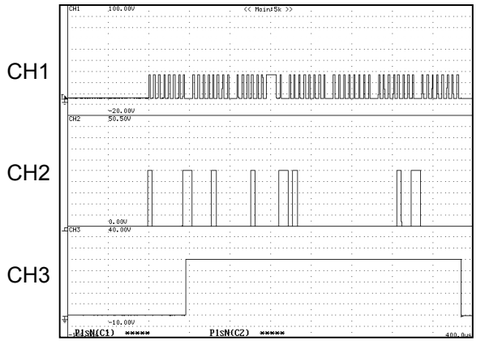


At the time of the M-BUS non-connection.
Vpp=4.8Vpp
Time shaft=50µs/div



IC801 **(PCB-MAIN)**

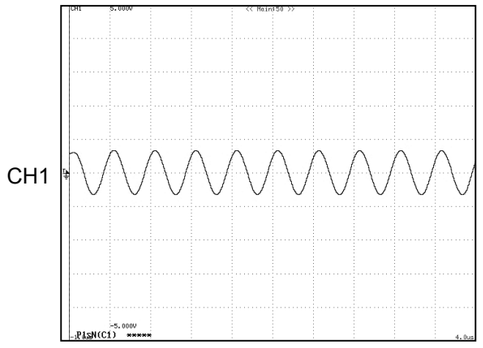
CH1=6pin (PLL/VOL CLK)
CH2=8pin (PLL/VOL DATA OUT)
CH3=5pin (PLL/VOL CE)
Vpp=5.0Vpp
At the time of power supply on.
Time shaft=50µs/div



IC801 **(PCB-MAIN)**

CH1=40pin (X2)

At the time of power supply on.
Vpp=0.3Vpp
Time shaft=500ns/div
Frequency (CH1)=8MHz



J803 **(PCB-MAIN)**

CH1=12pin (CD-DMTS, 3.3Vpp)
CH2=14pin (CD-DSTM, 3.3V)
CH3=15pin (CD-MTS, 3.3V)
CH4=16pin (CD-STM, 3.3V)
CH5=13pin (CD-CLK, 3.3V)

Time shaft=20µs/div