

Service  
Service

# Service Manual

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## SPECIFICATIONS

### ■ General

Power supply:	12V DC(11V-16V) Test voltage 14.4V, negative ground
Maximum power output:	55Wx4 channels
Suitable speaker impedance:	4-8 ohm
Suitable speaker power:	80-100 Wx4 channels
Pre-Amp output voltage:	4.0V ( CD play mode: 1KHz, 0 dB, 10 K $\Omega$ load )
Fuse:	15A
Dimensions(WxHxD)	178x50x166mm
Weight:	1.64kg
Aux-in level:	$\geq$ 300mV
Sub-woofer output voltage:	4.0V

### ■ FM Stereo Radio

Frequency range:	87.5 - 108.0 Mhz (Europe mode) 87.5 - 107.9 Mhz (USA mode) 65.0 - 74.0 MHz ( OIRT mode)
Sensitivity:	10 dB $\mu$
Frequency response:	30 Hz-15KHz
Stereo separation:	30dB(1KHz)
Image response ratio:	50dB
IF response ratio:	70dB
Signal/noise ratio	55dB

### ■ AM(MW) Radio

Frequency range:	522-1620 khz (Europe mode) 530-1710 khz (USA mode)
Sensitivity(S/N=20dB):	30 dB $\mu$

### ■ Disc Player

System:	Disc digital audio system
Frequency response:	20 Hz - 20KHz
Signal/noise ratio:	>80 dB
Total harmonic distortion:	Less than 0.20%(1 KHz)
Channel separation:	>60 dB
ESP:	CD $\geq$ 12s, MP3 $\geq$ 45s

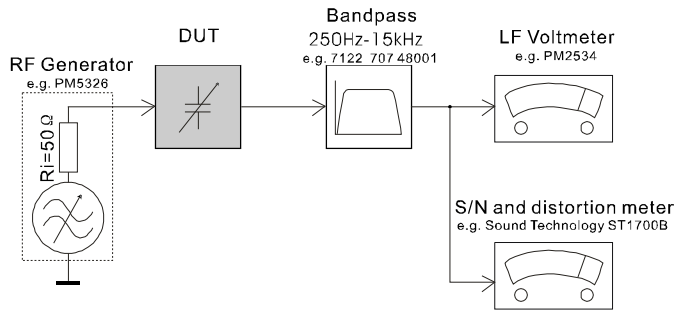
### ■ Components

Mounting collar	1
Machine screws M5x6 mm	4
M4x6 mm	4
Mounting bolt (50 mm)	1
Wire connector	1
Case for removable control panel	1
Trim plate	1
T-key	2
User manual	1
Rubber cushion	1
Remote controller(optional)	1

Note: Specifications and design are subject to change without notice for product improvements.

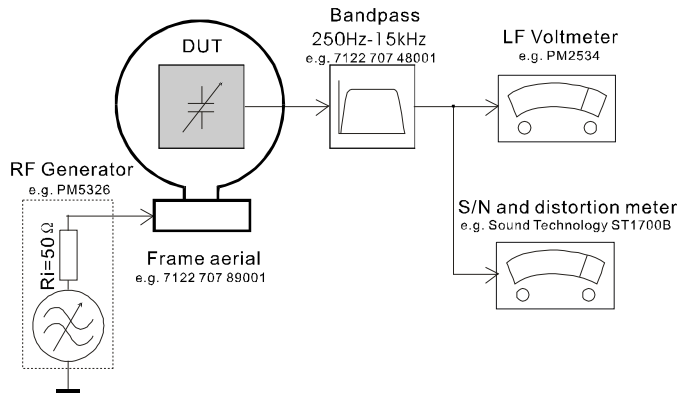
## MEASUREMENT SETUP

### Tuner FM



Use a bandpass filter to eliminate hum(50Hz,100Hz) and disturbance from the pilotone(19kHz,38kHz).

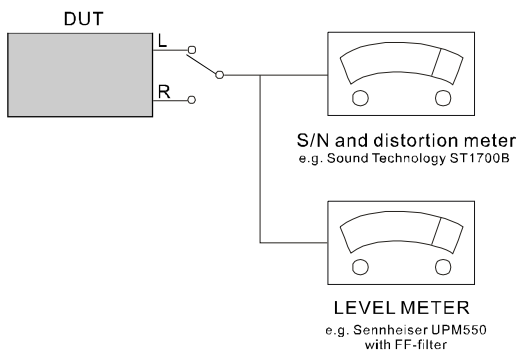
### Tuner AM (MW,LW)



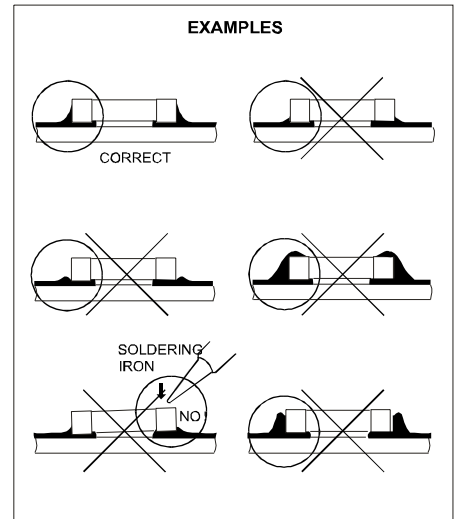
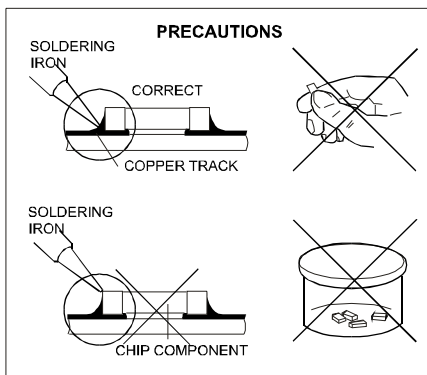
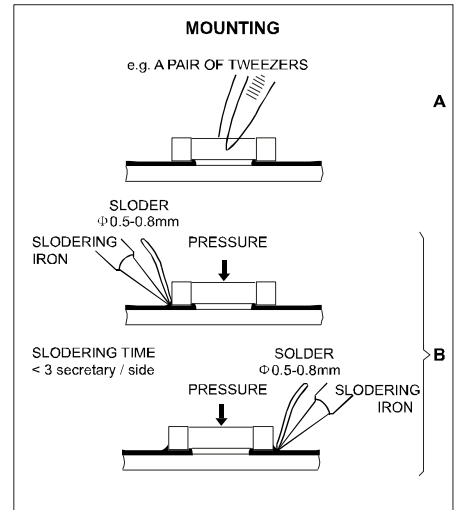
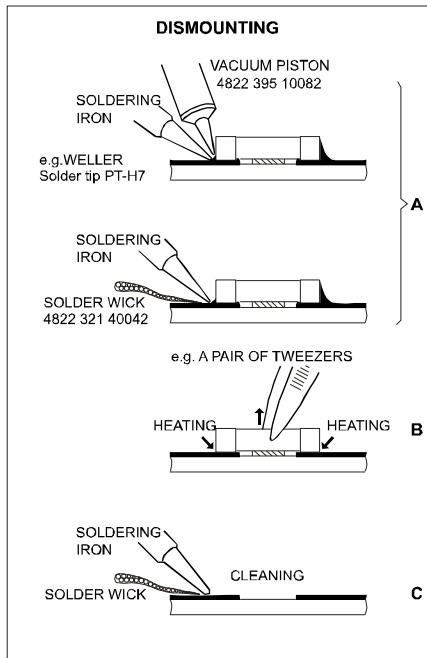
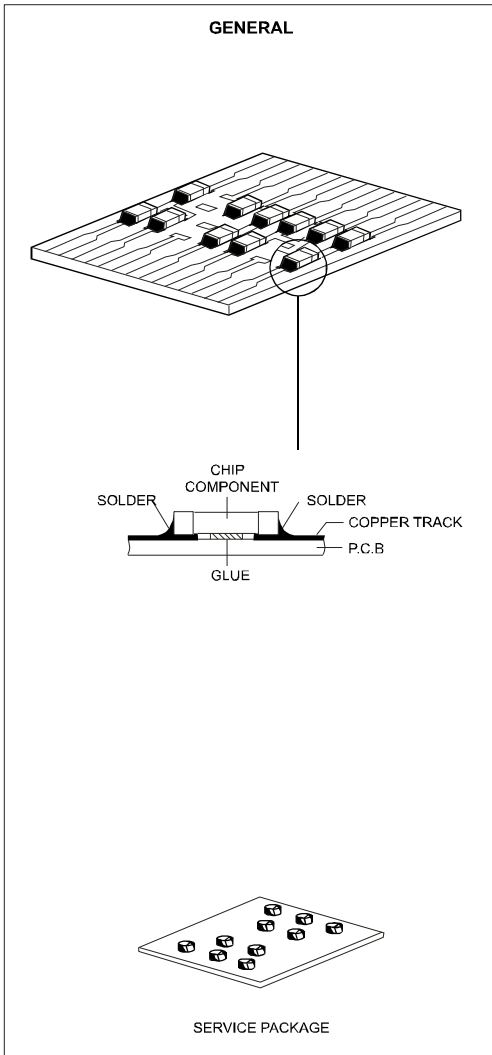
To avoid atmospheric interference all AM-measurements have to be carried out in a Faraday's cage.  
Use a bandpass filter ( or at least a high pass filter with 250Hz) to eliminate hum ( 50Hz,100Hz ).

### CD

Use Audio Signal Disc SBC429 4822 397 30184  
(replaces test disc 3)



# HANDLING CHIP COMPONENTS



**GB WARNING**

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.

When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.

**ESD****NL WAARSCHUWING**

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).

Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen. Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat. Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

**F ATTENTION**

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques(ESD).

Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.

Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.

Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

**D WARNING**

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen(ESD).

Unsorgfältige Behandlung im Reparaturfall kann die Lebensdauer drastisch reduzieren.

Veranlassen Sie, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand verbunden sind mit dem gleichen Potential wie die Masse des Gerätes.

Bauteile und Hilfsmittel auch auf dieses gleiche Potential halten.

**I AVVERTIMENTO**

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche(ESD).

La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.

Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.

Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

**GB ATTENTION**

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified, be used.

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne."

**NL**

Veiligheidsbepalingen vereisen, dat het apparaat bij reparatie in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

**F**

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisés les pièces de rechange identiques à celles spécifiées.

**GB Warning!**

Invisible laser radiation when open. Avoid direct exposure to beam.

**D**

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Geräts darf nicht verändert werden; für Reparaturen sind Original-Ersatzteile zu verwenden.

**S Varning!**

Osynlig laserstrålning när apparaten är öppnad och spårren är urkopplad. Betrakta ej strålen.

**I**

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambio identici a quelli specificati.

**SF Varoitus!**

Avatussa laitteessa ja suojalukituksen ohitettaessa olet alttiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

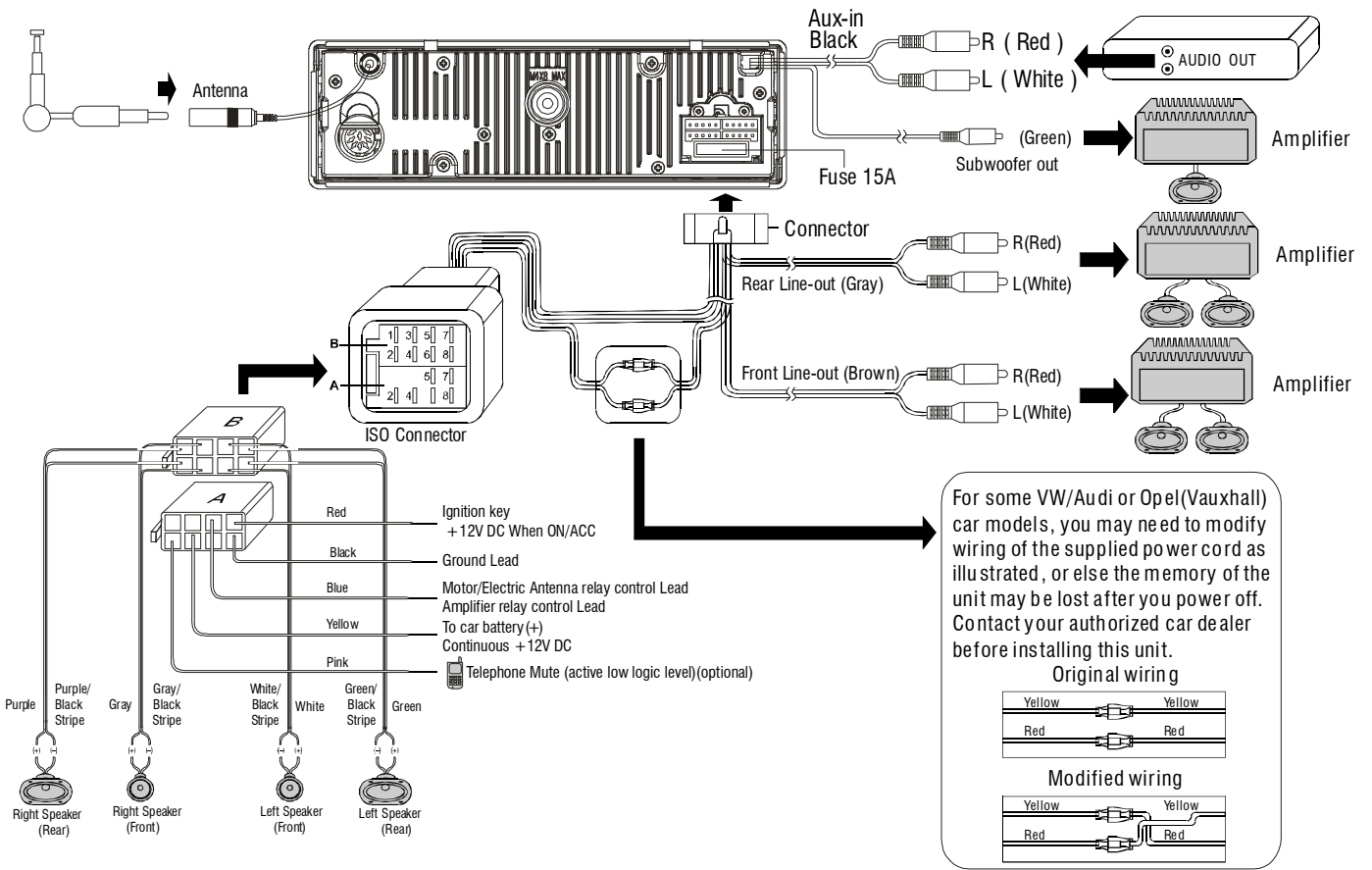
"After servicing and before returning set to customer perform a leakage current measurement test from all exposed metal parts to earth ground to assure no shock hazard exist. The leakage current must not exceed 0.5mA."

**DK Advarsel!**

Usynlig laserstrålning ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

# PREPARATIONS

## ■ Wiring Diagram



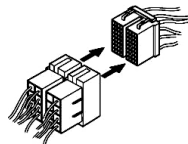
For some VW/Audi or Opel (Vauxhall) car models, you may need to modify wiring of the supplied power cord as illustrated, or else the memory of the unit may be lost after you power off. Contact your authorized car dealer before installing this unit.

Original wiring

Modified wiring

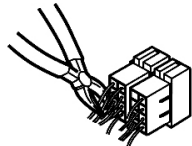
## ■ Using the ISO Connector

1. If your car is equipped with the ISO connector, then connect the ISO connectors as illustrated.




2. For connections without the ISO connectors, check the wiring in the vehicle carefully before connecting, incorrect connection may cause serious damage to this unit.

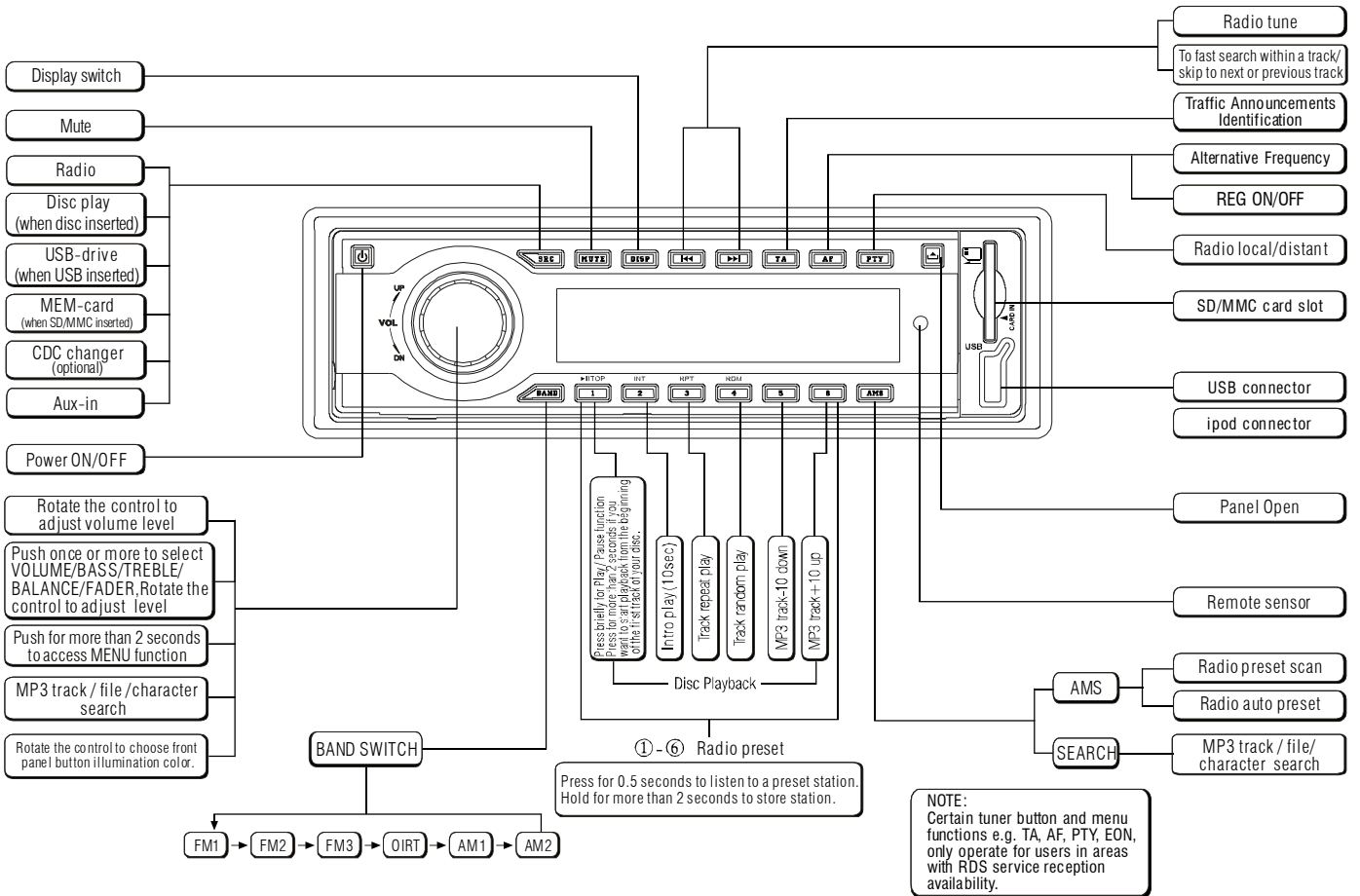
Cut the connector, connect the colored leads of the power cord to the car battery, as shown in the colour code table below for speaker and power cable connections



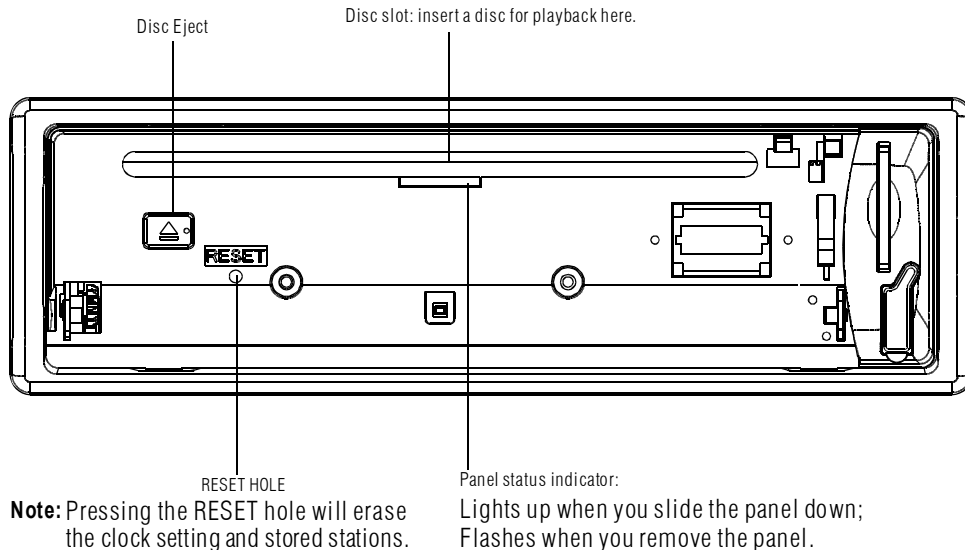
LOCATION	FUNCTION	
	Connector A	Connector B
1		Rear Right(+)--Purple
2	Telephone-mute/pink	Rear Right(--)--Purple/Black Stripe
3		Front Right(+)--Gray
4	Battery 12V (+)/yellow	Front Right(--)--Gray/Black Stripe
5	Auto Antenna/blue	Front Left(+)--White
6		Front Left(--)--White/Black Stripe
7	ACC +/red	Rear Left(+)--Green
8	Ground/black	Rear Left(--)--Green/Black Stripe

# CONTROLS

**Power On :** Press any button on the panel except  to turn on the unit.




Press the  to open the panel and press  to eject the disc.





# CONTROLS

## Disc Load / Eject



**Load :** Press  to flip down the panel.  
Insert the disc into the slot.

**Eject :** Press  to flip down the panel.  
Press  to eject the disc.



**Radio:** To fine tune the radio, press  $\blacktriangleright$  or  $\blacktriangleleft$  briefly.  
To search the station automatically, press  $\blacktriangleright$  or  $\blacktriangleleft$  for more than 0.5 second.



**Disc Playback:** Track skip: press briefly to go to the next or previous track.  
Track seek: press for more than 0.5 second to seek the forward or previous track.

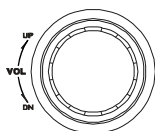
## AMS : Auto Memory Store

Press briefly to scan the preset station ①-⑥ for 5 seconds each. Hold for more than 2 seconds, the 6 strongest available station will be automatically saved in the memory of preset buttons ①-⑥.



## Viewing Clock Time During Radio/ Disc Playback

Press DISP (once for Radio mode or twice for other modes), display shows the clock time after 5 seconds.

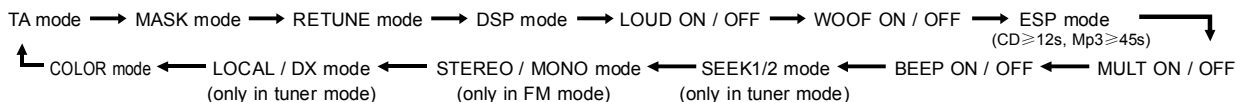


## Setting The Clock Time

Press DISP, time displays. Press again for more than 2 seconds, time display blinks. Rotate the control clockwise to set the hours or counterclockwise to set the minutes, press DISP again to exit the clock setting.



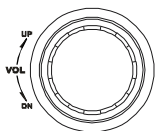
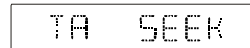
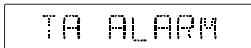
Press the rotary volume control for more than 2 seconds to enter the menu mode, then each press changes the mode as follows:



**TA mode:** Rotate the rotary control to choose TA ALARM or TA SEEK. If the TA (traffic Announcements) function is turned on and there is no traffic identification code received in the specified time then no TA/TP will be display.

**TAALARM mode :** Alarm is turned on.

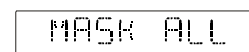
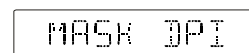
**TA SEEK mode:** TA SEEK is automatically activated.



**MASK mode:** Rotate the control to choose MASK DPI or MASK ALL mode. In some cases, the AF function may be influenced by some interference, examples are signals with strong field but without the RDS data. For this reason, the unit has two options to avoid the above interference.

**MASK DPI mode :** Only AF which has different program identification is masked.

**MASKALL mode :** The AF which has different program identification and NO RDS signal with high field strength is masked.





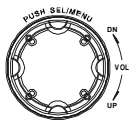
## CONTROLS

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RETUNE mode: Rotate the control to choose RETUNE-S or RETUNE-L.  
 RETUNE-S or RETUNE-L is time length selection of the TA SEEK retune interval.  
 RETUNE-S: short, TA SEEK retune interval is 45 seconds.  
 RETUNE-L: long, TA SEEK retune interval is 180 seconds.  
 Remark: RETUNE mode functions for TA during TA SEEK mode only.

RETUNE \_ S

RETUNE \_ L



DSP mode: Rotate the control to choose DSP sound effect: POP → ROCK → CLASSIC → FLAT → DSP OFF  
 LOUD mode: Rotate the control to choose loudness on or off.  
 WOOF ON / OFF: Rotate the control to choose Sub-woofer on or off.

ESP: 12/45s — ESP12: Selected as CD-ESP time 12 seconds.  
 — ESP45: Selected as MP3-ESP time 45 seconds.

MULT ON / OFF: Multi Session ON/OFF. (Multi session OFF: mixed cd, ONE session CD; Multi session ON: Mixed, Extra, multi session CD)  
 BEEP ON/OFF mode: Rotate the control to choose button beep sound on or off.

SEEK 1/2 mode: Rotate the control to choose radio seek mode 1 or 2 .

SEEK 1

SEEK 1: searching station will stop when next station is received.

SEEK 2

SEEK 2: searching station will stop when ►► or ◀◀ button is released and next station is received.

STEREO/MONO mode: Rotate the control to choose FM stereo or mono.

LOCAL/DX mode: Rotate the control to choose tuner sensitivity local or distant.

COLOR mode: Rotate the control to choose front panel button illumination color.

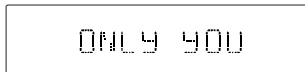
COLOR 1

COLOR 1: Button illumination color is RED.

COLOR 2: Button illumination color is GREEN.

COLOR 2

## MP3 PLAYBACK



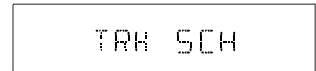
While playing MP3 disc/USB/SD/MMC-MP3 MUSIC, the folder/file name and ID3 TAG (Song title, Album and Artist) can scroll entirely across the LCD. (Press the BAND button to show ID3 information)

Elapsed playing time & Track number → Folder name & number → File name & number → Song title → Album title → Artist name

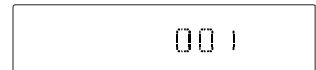
### MP3 Track search



Press AMS to select "TRACK SCH" mode.  
Press the control and LCD display will show "001".

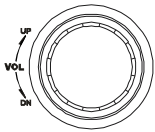


If the desired track number is less than 100,  
Rotate the control to select the first digit and press the control once again  
And rotate the control to set the tenth digit of the track number.  
Press the control again more than 0.5 second to play the track.



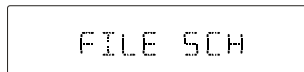
If the desired track number is more than 100,  
Rotate the control to select the first digit and press the control to confirm,  
Rotate the control to select the tenth digit and press the control to confirm,  
Rotate the control to select the hundredth digit and press the control to confirm,  
Press the control again to play the track.

\* If the track number you enter is beyond the maximum file number, the last song will be played.



### MP3 File search

Press AMS twice to select "FILE SCH" mode.  
Press the control to enter,  
Rotate the control to select folder.



If you just want to play songs from this folder, press the knob for more than 0.5 second to play the first track of the folder.  
If you want to play a desired track in the folder, press the knob and rotate to select the track you want.  
Press the knob again to play the track.

## MP3 CHARACTER SEARCH

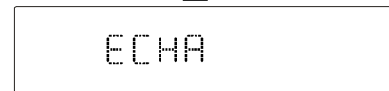
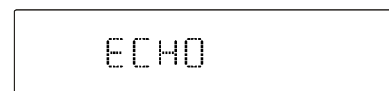
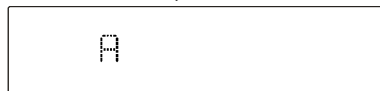
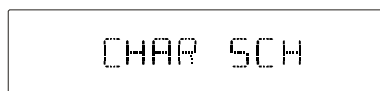
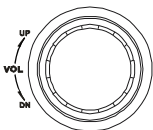


Press AMS button three times to select "CHAR SCH" mode.  
Press the control and "A" displayed.

If you press the control more than 0.5 second. A track beginning with the letter "A" will be played.  
If you want to select a track name beginning with a different letter. Rotate the control to select a letter, then press the control to confirm.

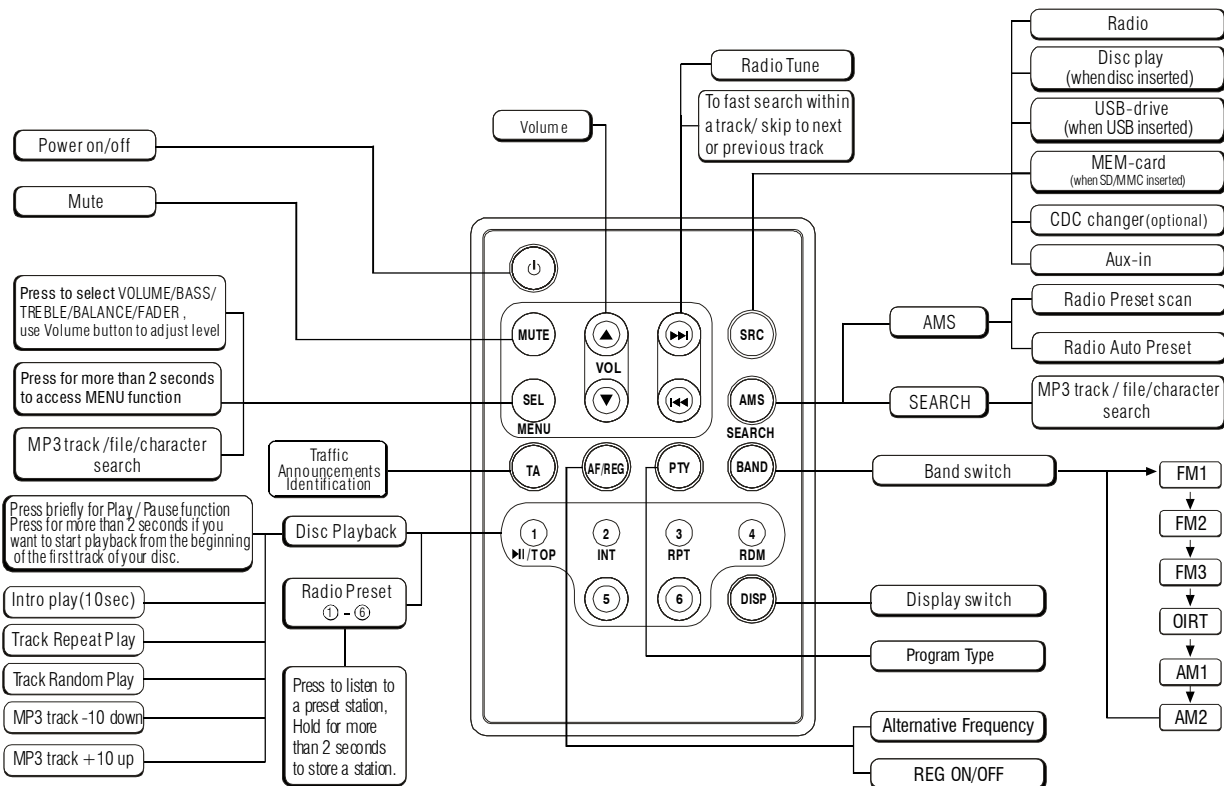
Then "A" flashes at the next place, select 2nd and other character of the desired track name as steps above.  
Press the control more than 0.5 second to play your desired track.

Example: To search character "ECHO".



## REMOTE CONTROLS

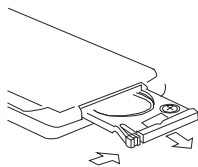
**Power On :** Press any button on the remote control to turn on the unit.



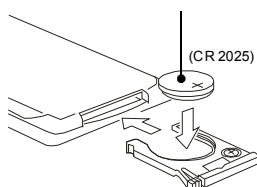
### Replacing the lithium battery of remote control unit.

\* When the operation range of the card remote control becomes short or no properly, replace the lithium battery with a new one. Make sure the battery polarity replacement is correct.

1. Pull out the battery holder while pressing the stopper.



2. Insert the button-type lithium battery with the (+) mark facing upward. Insert the battery holder into the remote control.



### WARNINGS:

- Store the battery in place where children cannot reach. If a child accidentally swallows the battery, consult a doctor immediately.
- Do not recharge, short, disassemble or heat the battery or dispose it in a fire.
- Doing any of these things may cause the battery to give off heat, crack or start a fire.
- Do not leave the battery with other metallic materials. Doing this may cause the battery to give off heat, crack or start a fire.
- When throwing away or saving the battery, wrap it in tape and insulate; otherwise, the battery may start to give off heat, crack or start a fire.
- Do not poke the battery with tweezers or similar tools. Doing this may cause the battery to give off heat, crack or start a fire.

## MAINTENANCE AND TROUBLESHOOTING

### Maintenance

#### Clearing disc

When a disc becomes dirty clean it with a cleaning cloth.  
Wipe the disc from the center out.

#### Cleaning the disc lens

After prolonged use, dirt or dust may accumulate at the lens. To ensure good playback quality, clean the disc with Philips CD lens Cleaner or any commercially available cleaner. Follow the instructions supplied with cleaner.

#### Cleaning the heads and the Tape Parts

To ensure good playback quality, clean the heads (A), the capstan (B), and pressure roller (C) after every 50 hours of tape operation. Use a cotton swab slightly moistened with cleaning fluid or alcohol. You can also clean the heads by playing a cleaning tape once.

### Troubleshooting

If you suspect something is wrong, immediately switch power off. Immediately stop using it and call the store where you purchased it. Never try to repair the unit yourself because it is dangerous to do so.

#### General

No power or  
no sound

Car engine switched off.  
**Turn on the car ignition.**  
Cable is not correctly connected.  
**Check connection.**  
Fuse is burnt. **Replace fuse.**  
**Check volume or mute on / off.**  
If the above solutions cannot help,  
**press the RESET hole.**

#### Radio

Interference noise  
during broadcast

Station is too far, or signals are too weak.  
**Select other stations of higher signal level.**

Preset station  
lost

Battery cable is not correctly connected.  
**Connect the battery cable to the live terminal .**

#### Disc

Disc is inserted but  
no sound.

Disc is upside down.  
**Place disc right way up, with the label side up.**  
Disc is dirty or damaged  
**Clean disc or change disc.**

Disc sound skips,  
tone quality is low.

Disc is dirty or damaged.  
**Clean CD or change another CD.**

Sound skips due  
to vibration.

Mounting angle is over 30°.  
**Adjust mounting angle to less than 30°.**

Unstable mounting.  
**Mount the unit securely with the mounting parts.**

#### Error Display Messages

NO FILE

Disc is not CD or contains no MP3 files.

ERR-7

Disc upside down.

ERR-10

Recovery error, check the disc.

ERR-11

MP3 error, check the disc.

ERR-12

USB/SD/MMC MP3 DATA error.

ERR-3

Disc mechanism error  
**Press (EJECT) to eject the disc.**  
**In case that the disc cannot be ejected by pressing (EJECT), press the RESET switch and press the (EJECT) again.**  
**If you are still unable to eject consult your dealer.**

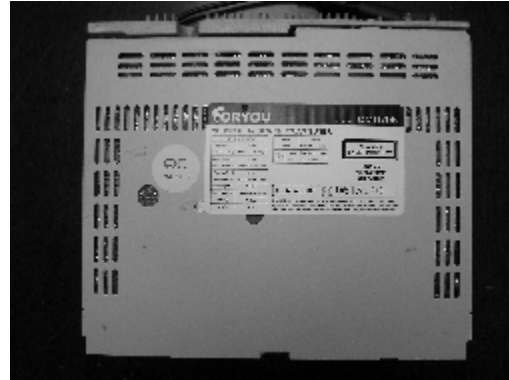
ERR-4

# DISMANTLING INSTRUCTIONS

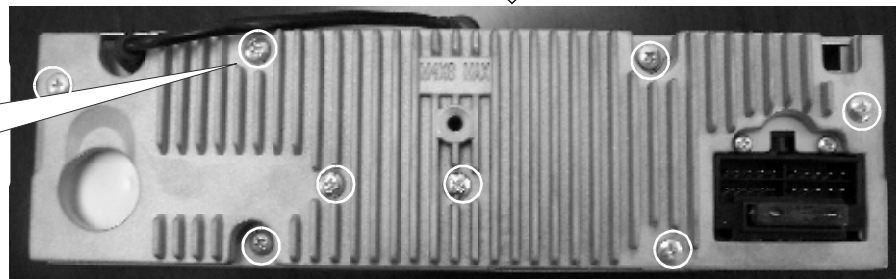
1 Pull out the short sheet from main set.



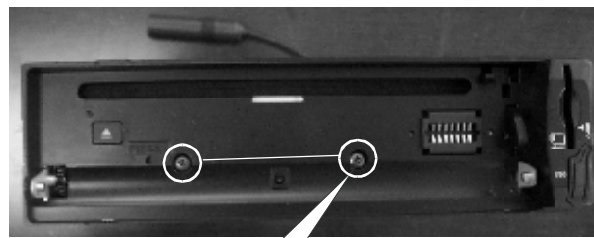
2 Remove top and bottom covers.



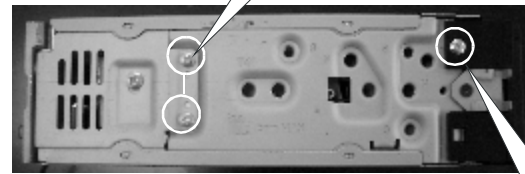
Loosen 8 screws to remove heatsink & top cover & bottom cover.



3 Loosen 4 pcs screw to remove Front Cabinet.



Remove 2 pcs screw from front cabinet.



Remove the 2 pcs screw to dismantle the frame.

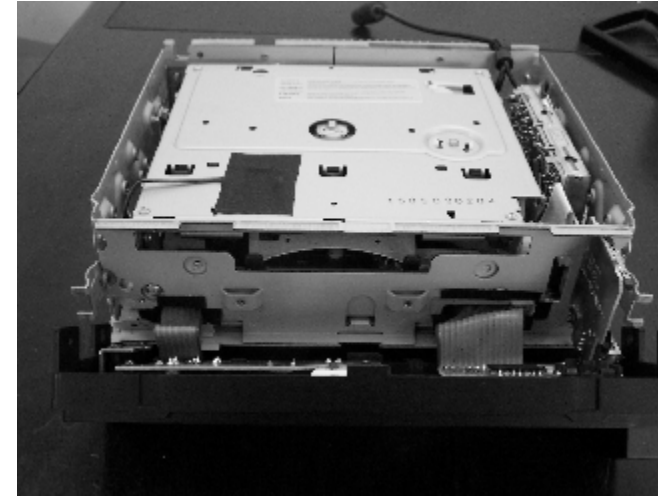
Remove the screw on the left side of the cabinet.



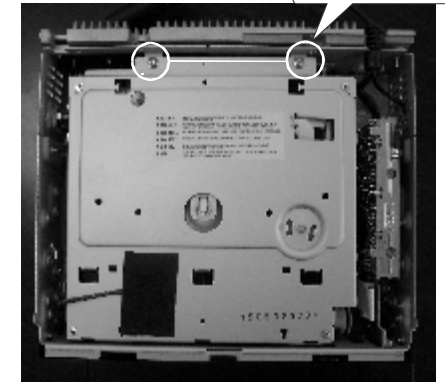
Remove the screw on the right side of the cabinet.

Remove the 2 pcs screw to dismantle the frame.

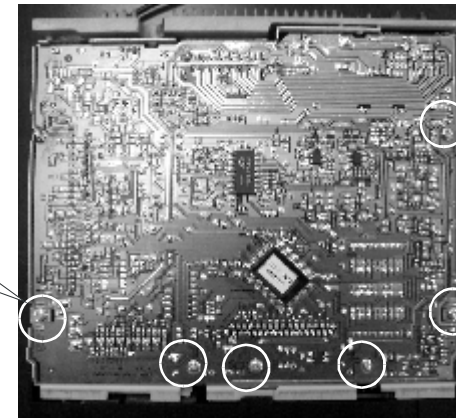
4 Remove CD loader



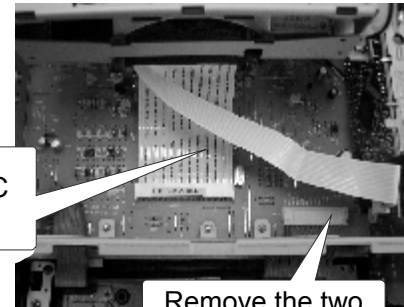
Remove 2 pcs screw on the top of loader.



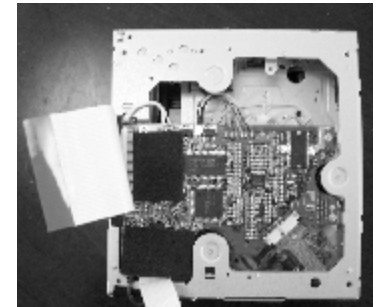
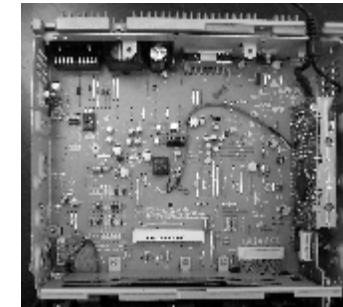
Remove 6 pcs screw on the main board.



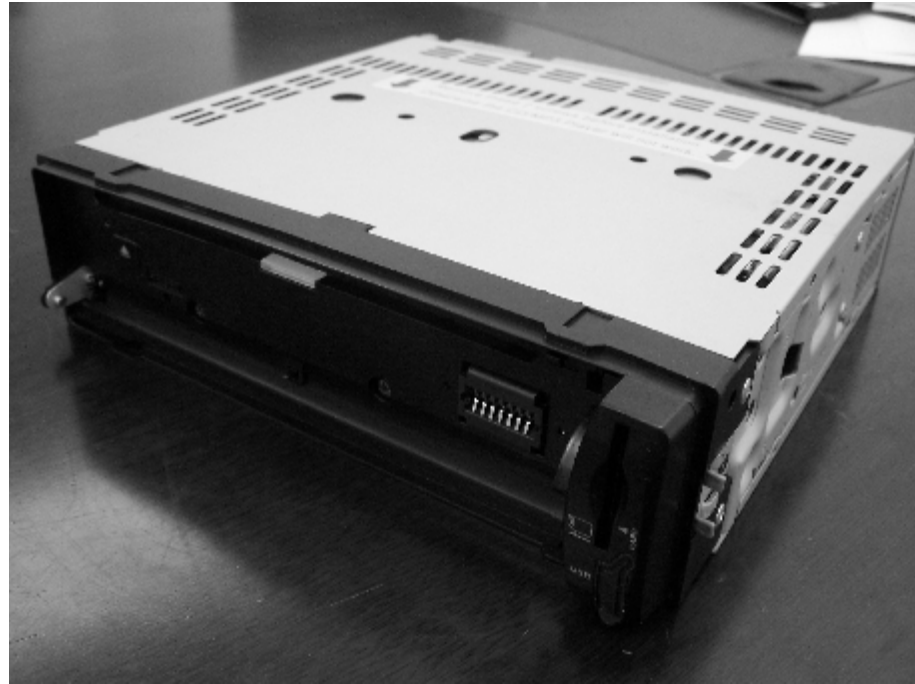
Pull out FPC wire.



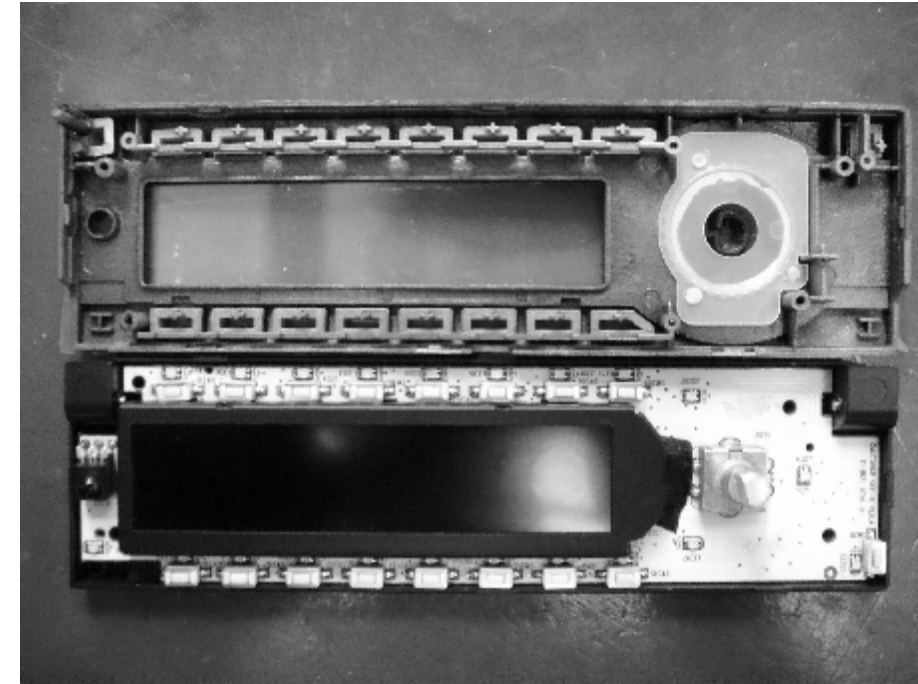
Remove the two connectors from the mainboard.



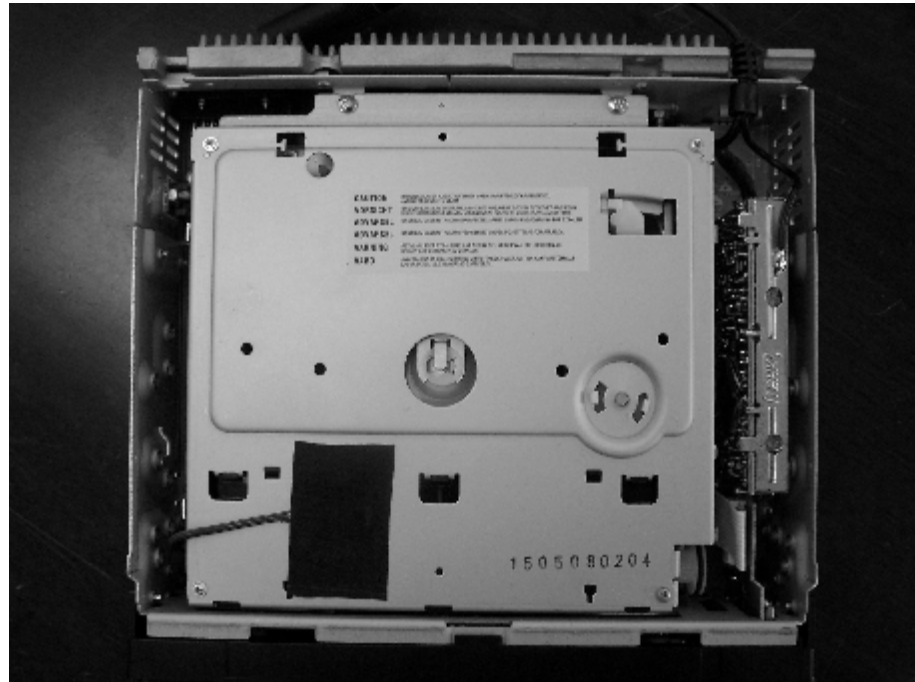
# DISMANTLING INSTRUCTIONS



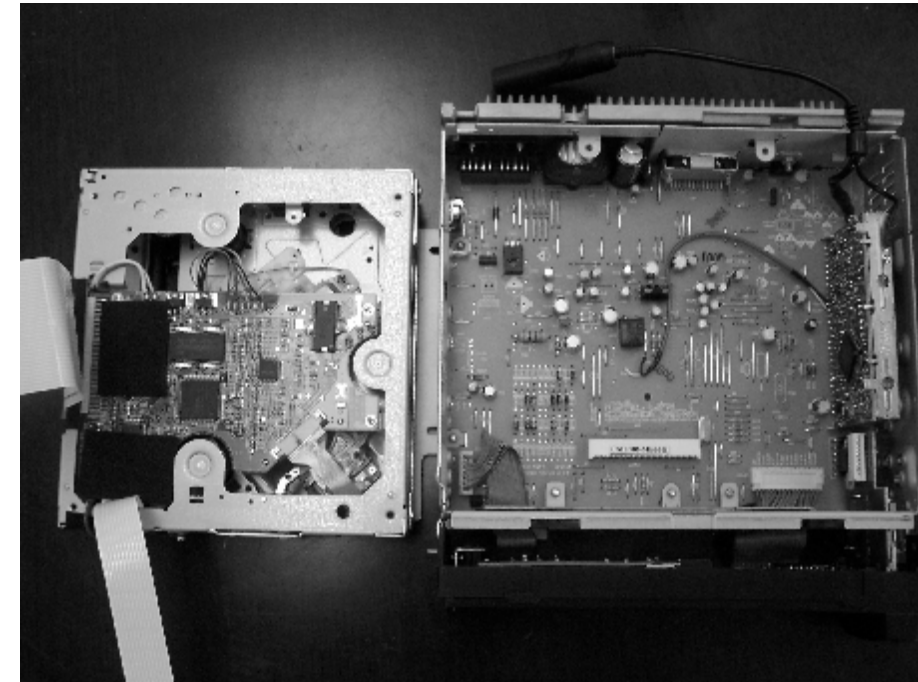
Service Position A



Service Position C

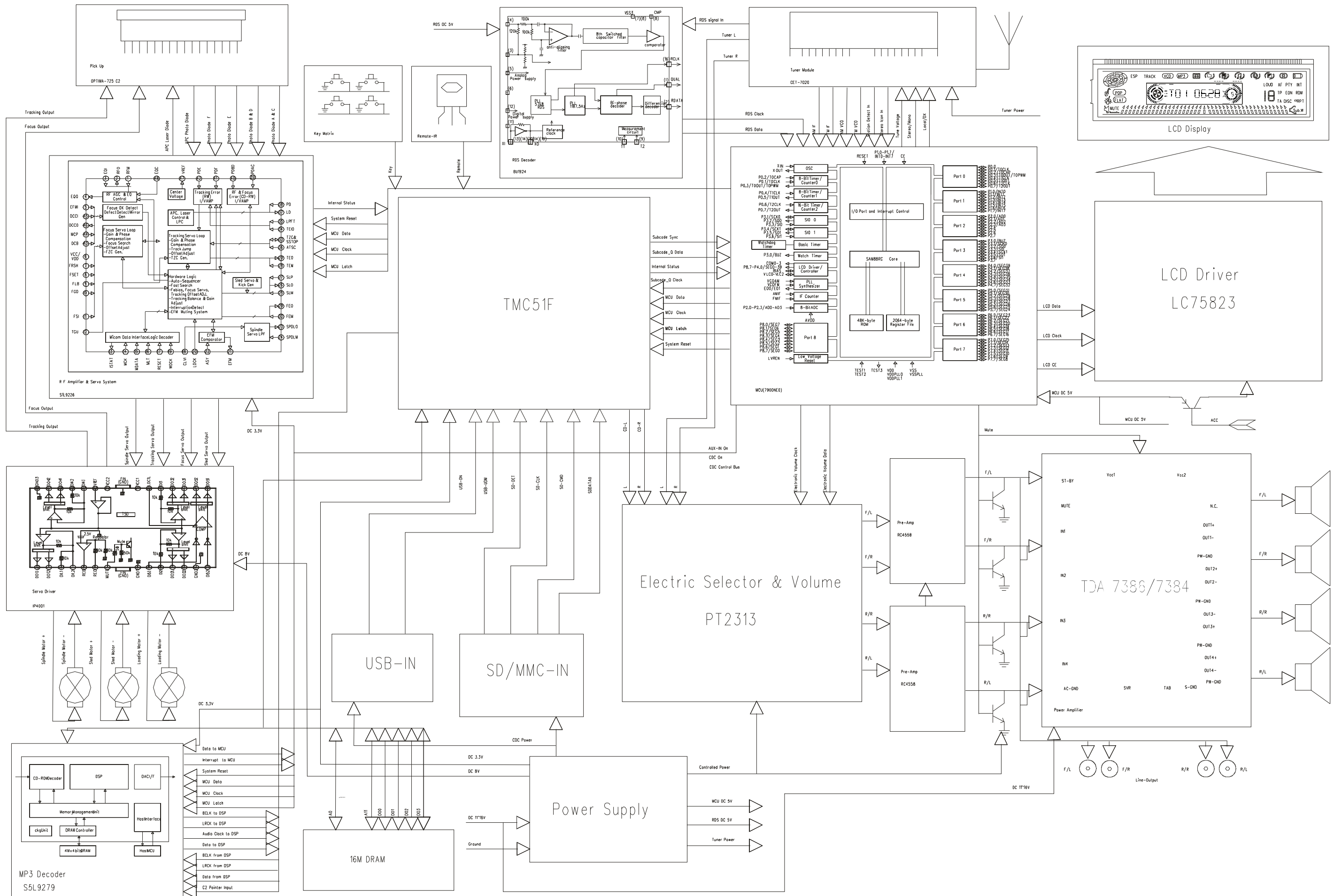


Service Position B

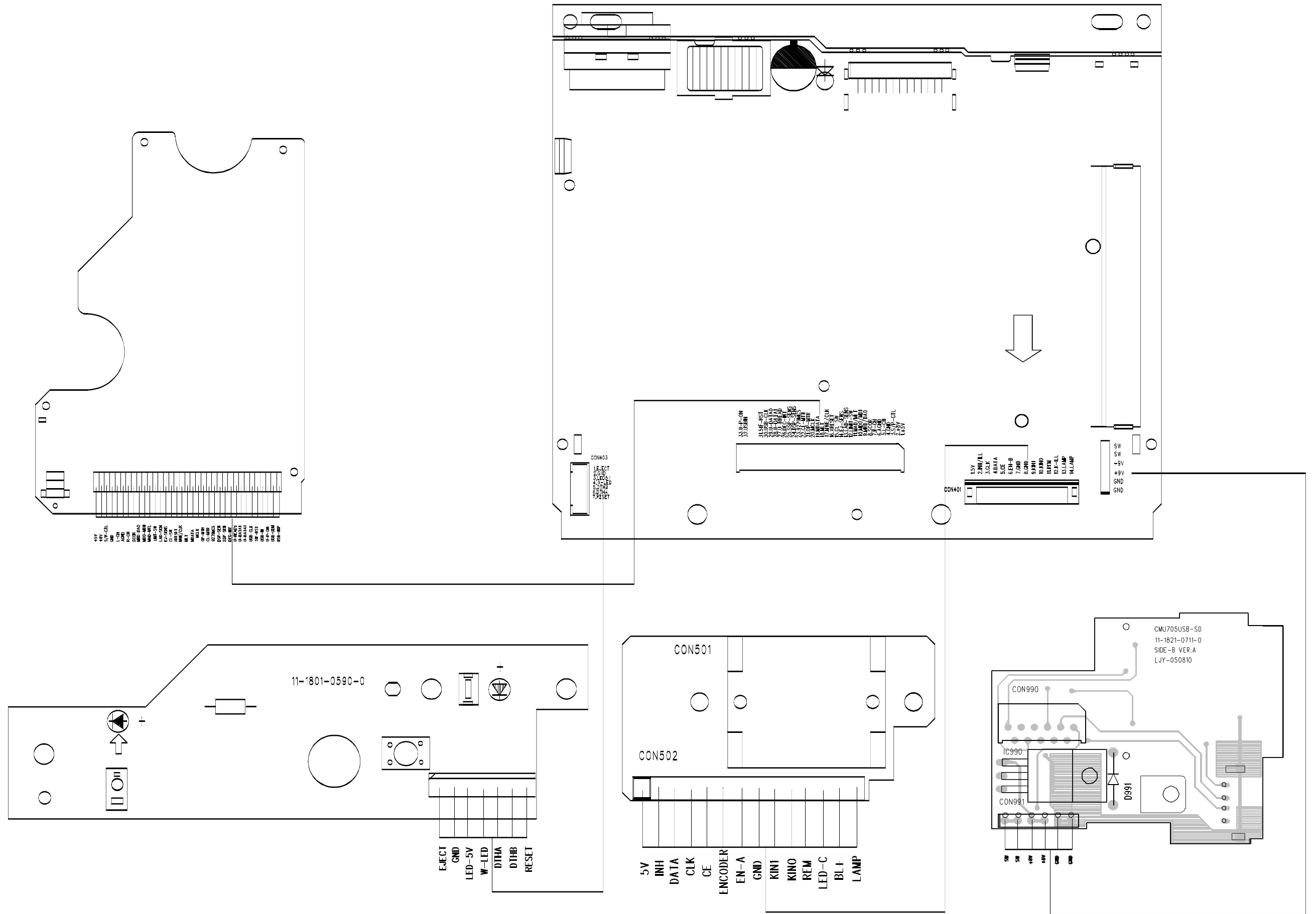


Service Position D

# SET BLOCK DIAGRAM



WIRING DIAGRAM



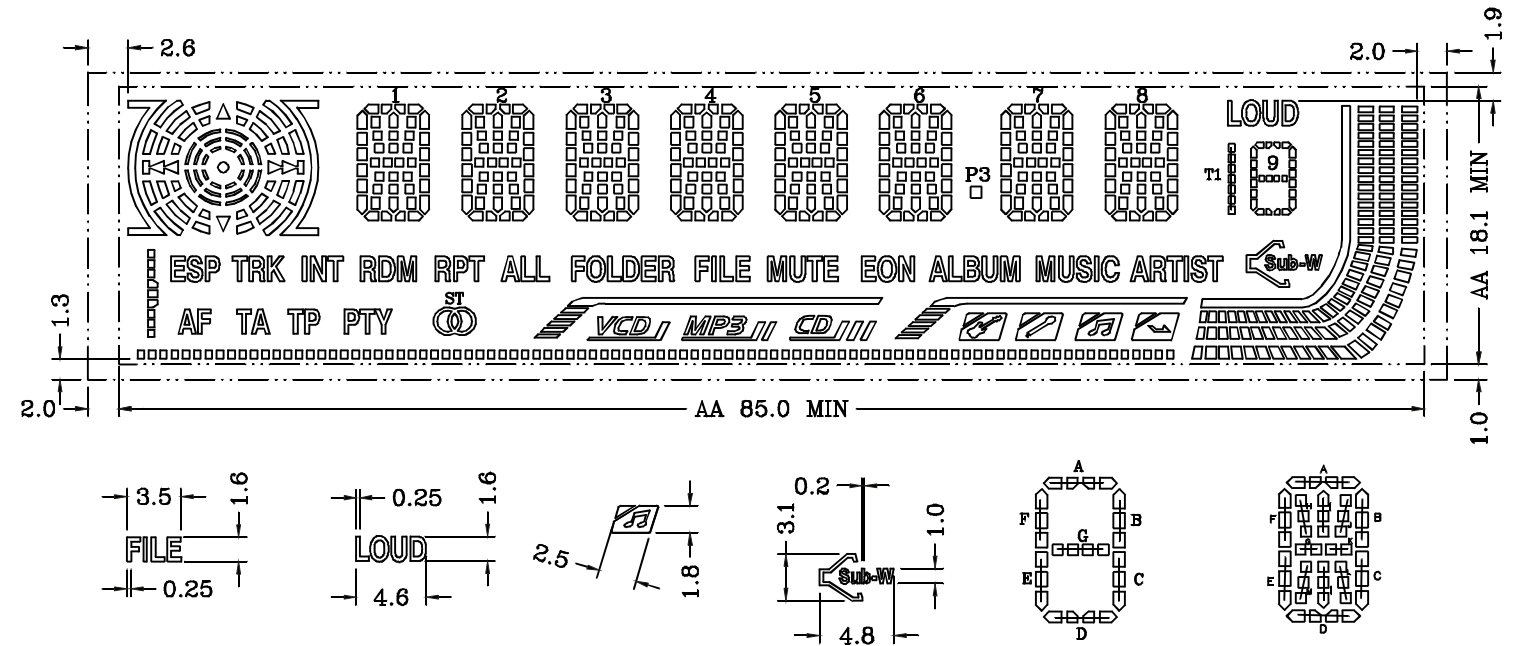


# KEY BOARD

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## LCD PIN CONNECTION

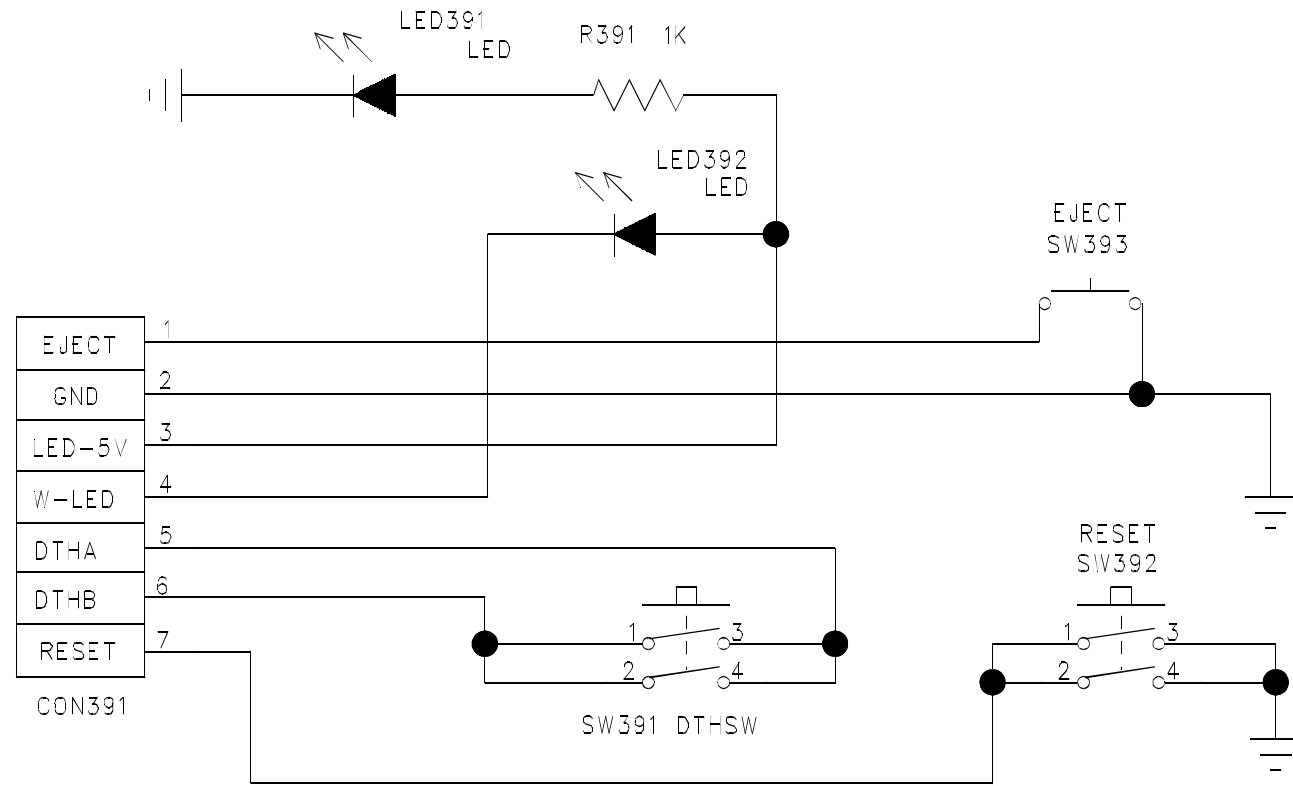


## PIN SEGMENT DISPLAY

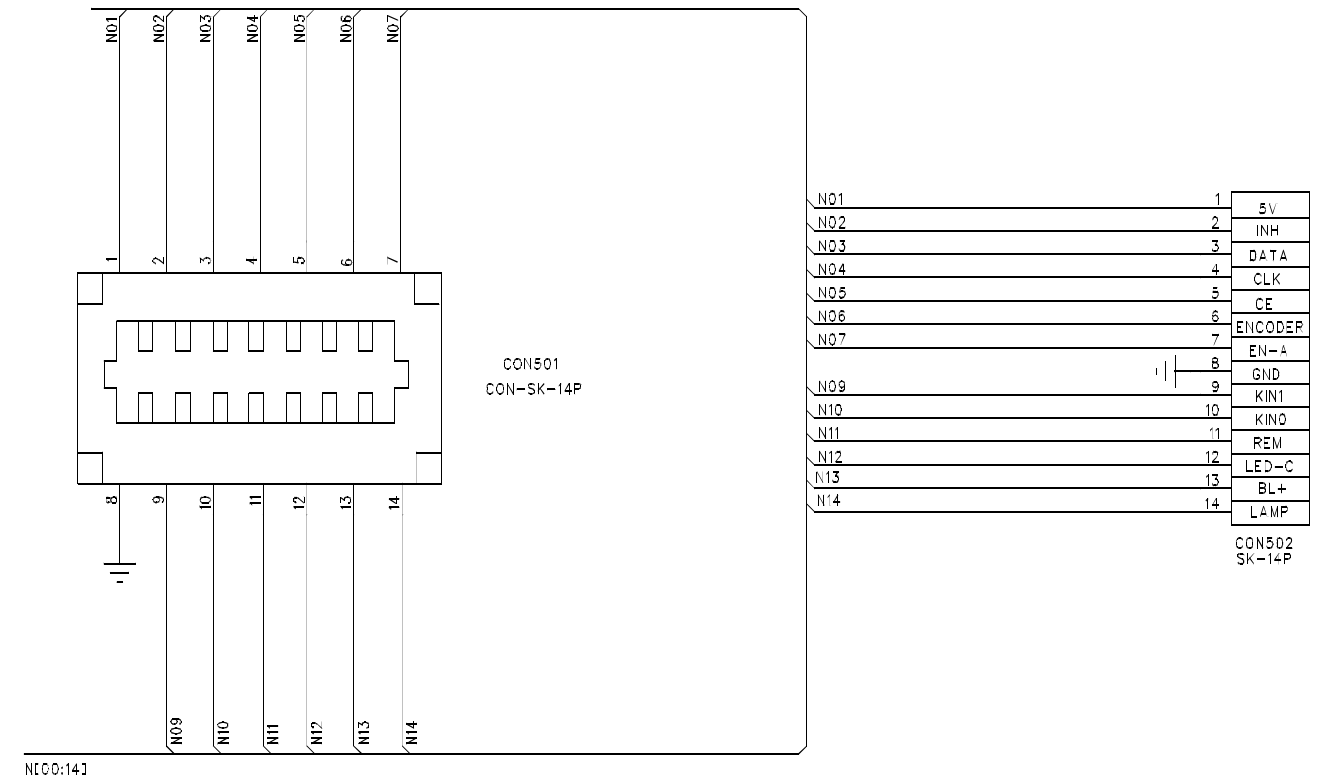
PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
COM1	L8	/	1E	1M	1D	1L	/	2E	2M	2D	2L	MUTE	3E	3M	3D	3L	VCD	4E	4M	4D	4L	ALL	5E	5M	5D	5L	RPT	6E
COM2	SUB-W	/	1G	1I	1K	1C	/	2G	2I	2K	2C	INT	3G	3I	3K	3C	TRK	4G	4I	4K	4C	RDM	5G	5I	5K	5C	MP3	6G
COM3	ESP	1F	1H	1A	1J	1B	2F	2H	2A	2J	2B	3F	3H	3A	3J	3B	4F	4H	4A	4J	4B	5F	5H	5A	5J	5B	6F	6H

PIN	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55
COM1	6M	6D	6L	FOLDER	7E	7M	7D	7L	FILE	8E	8M	8D	8L	LOUD	PTY	EON	/	FLAT	CLAS	9A	9B	L6	L3	COM1	/	/	/
COM2	6I	6K	6C	MUSIC	7G	7I	7K	7C	ALBUM	8G	8I	8K	8C	ARTIST	AF	TA	POP	--	9F	9G	9C	L5	L2	/	COM2	/	/
COM3	6A	6J	6B	7F	7H	7A	7J	7B	8F	8H	8A	8J	8B	ST	P3	TP	T1	ROCK	9E	9D	L7	L4	L1	/	/	COM3	CD

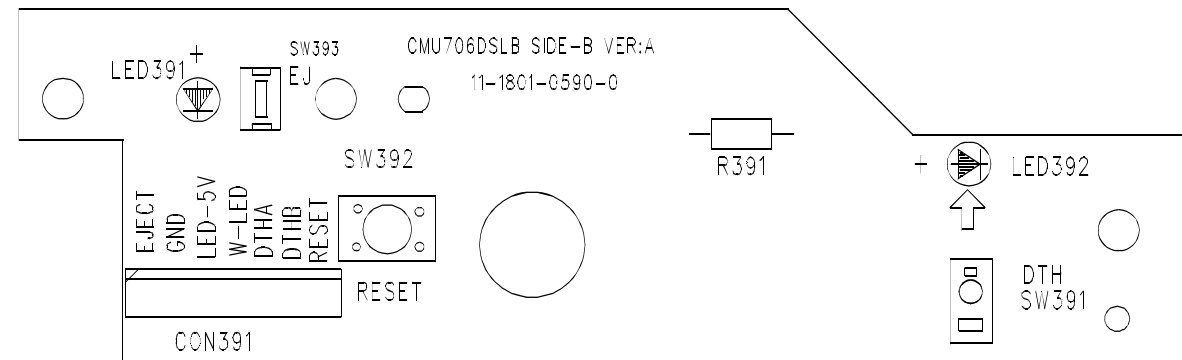
### FRONT BOARD - CIRCUIT DIAGRAM



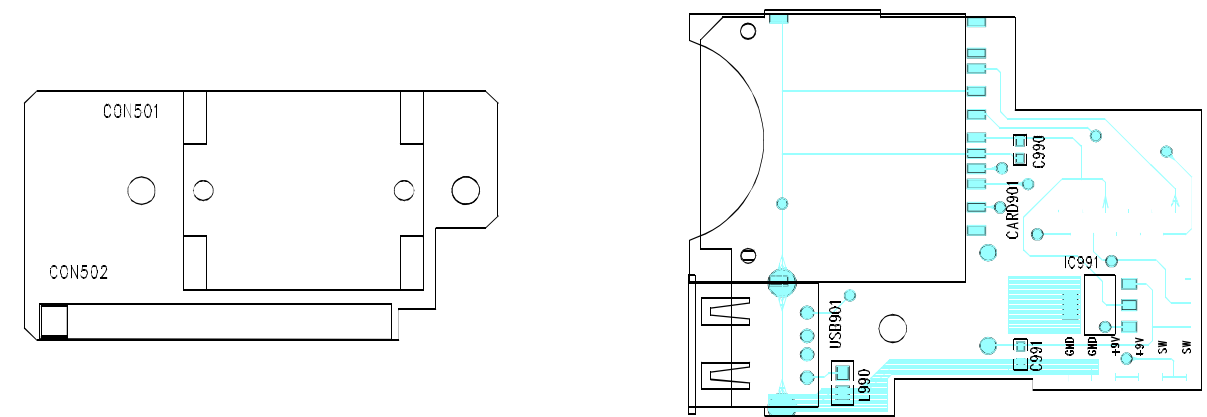
### CONNECTOR BOARD - CIRCUIT DIAGRAM



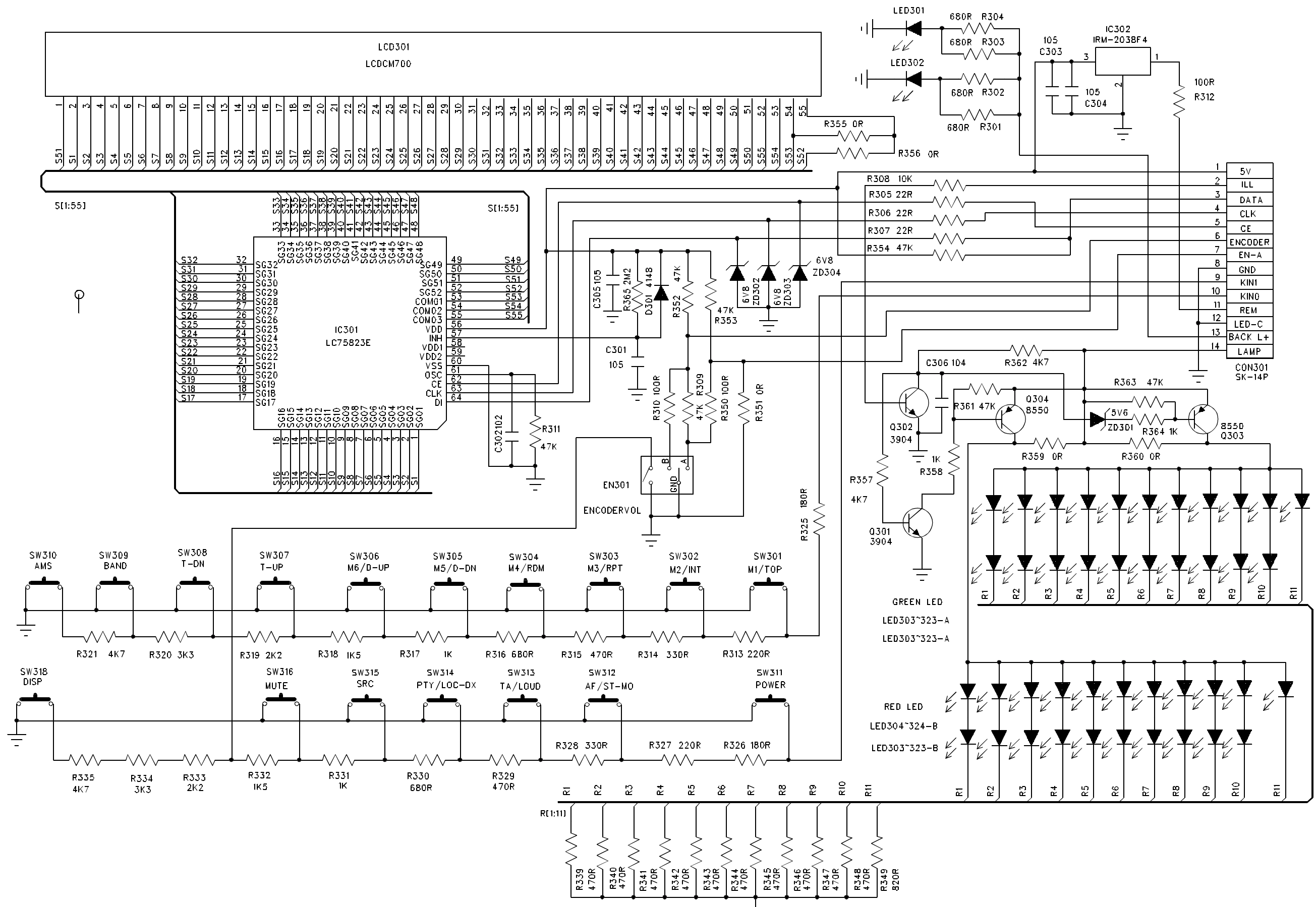
### FRONT BOARD - LAYOUT DIAGRAM



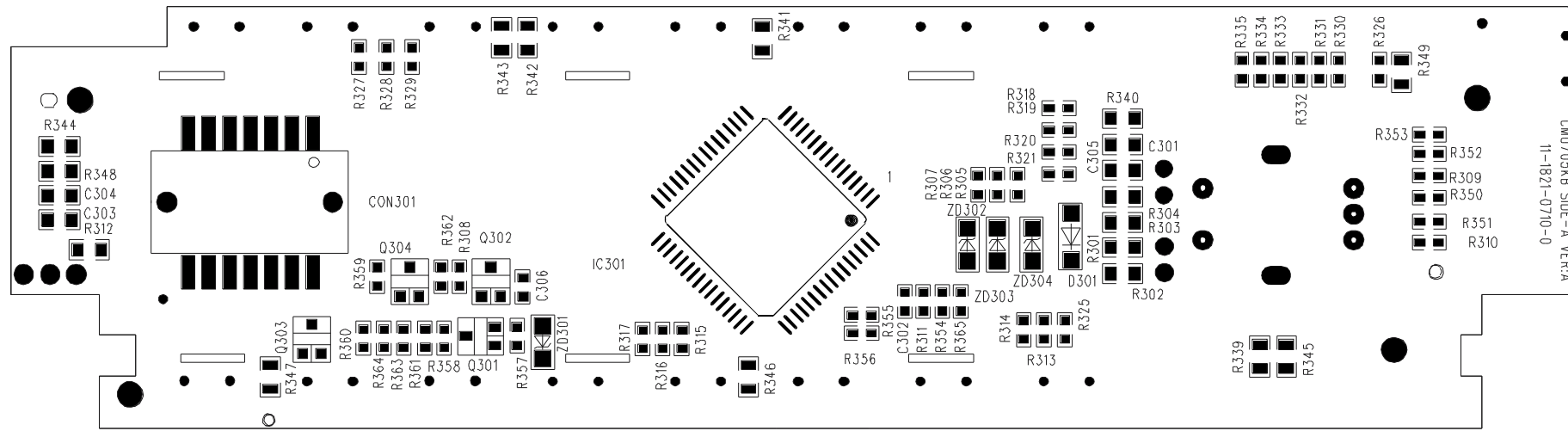
### CONNECTOR BOARD - LAYOUT DIAGRAM



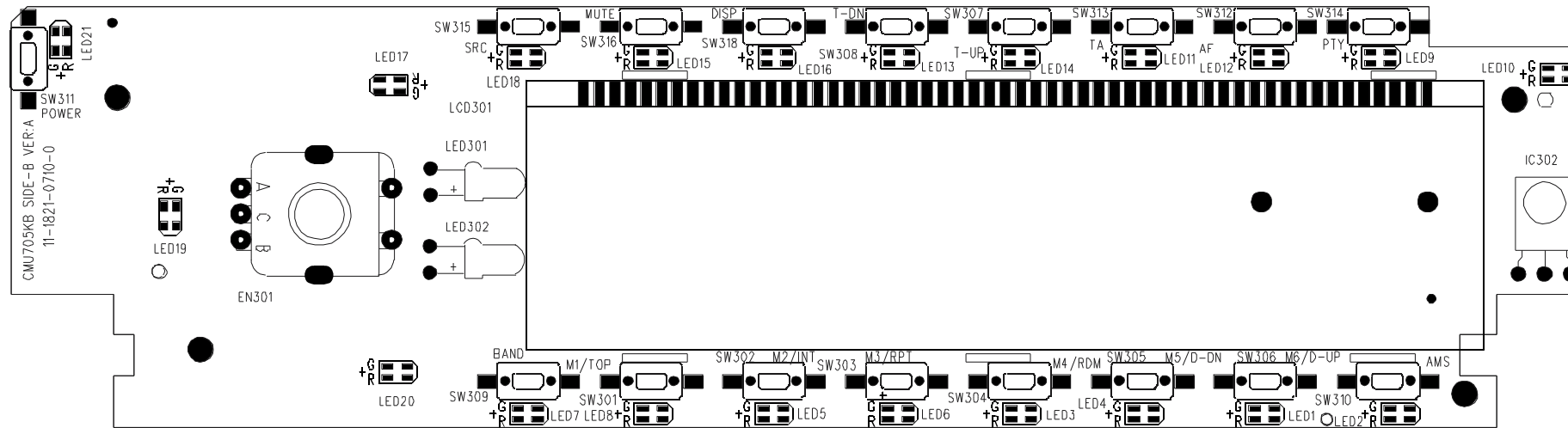
# KEY BOARD - CIRCUIT DIAGRAM



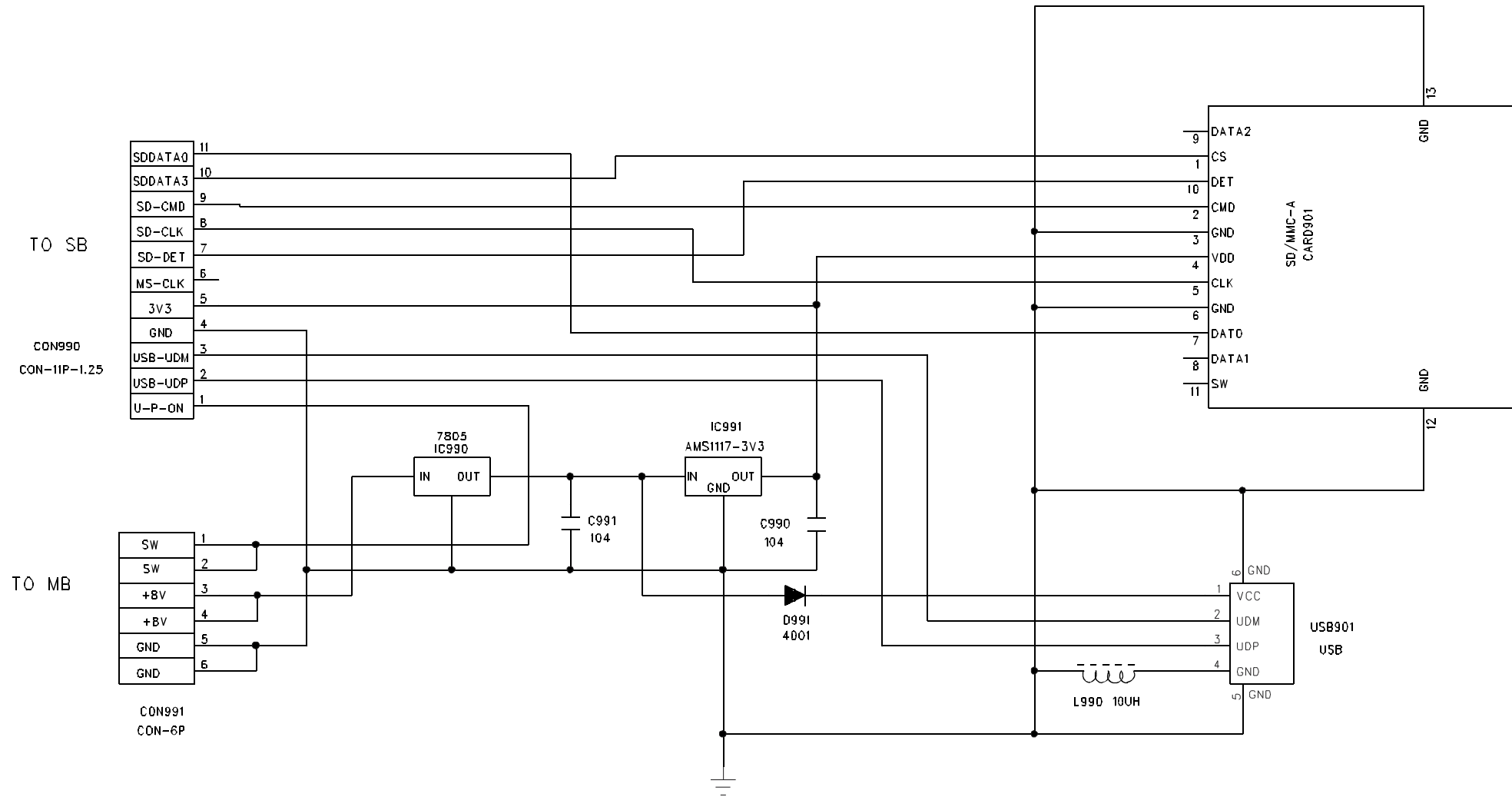
### KEY BOARD - LAYOUT DIAGRAM TOP VIEW



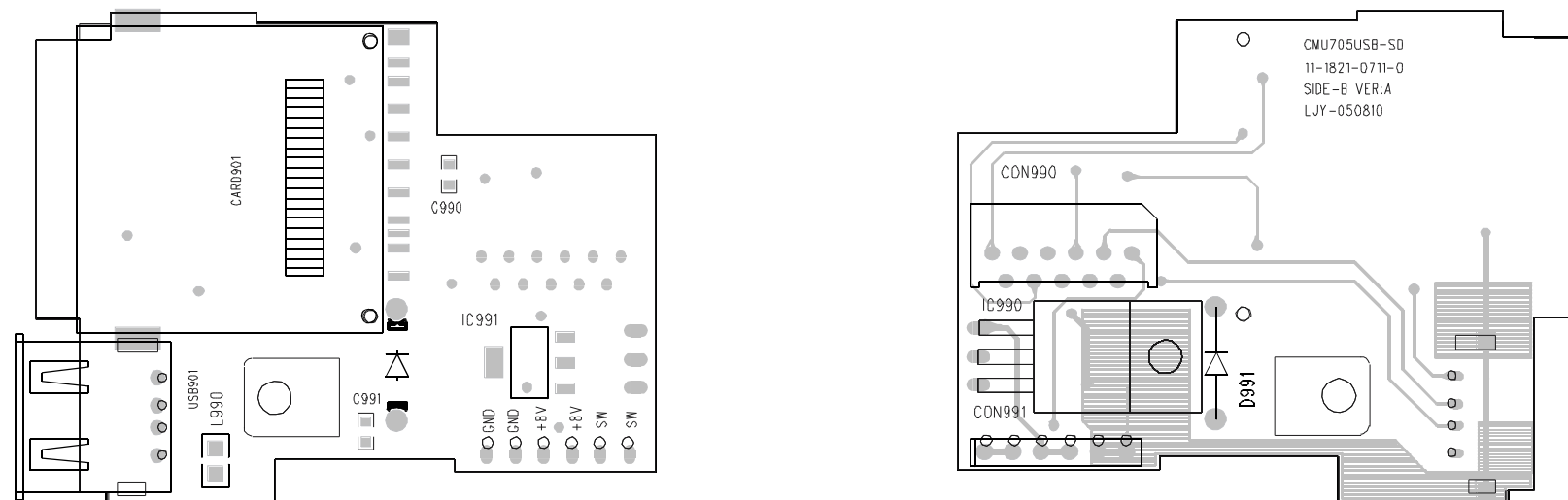
### KEY BOARD - LAYOUT DIAGRAM BOTTOM VIEW



### USB BOARD - CIRCUIT DIAGRAM



### USB BOARD - LAYOUT DIAGRAM



## ELECTRICAL PARTS LIST - KEY BOARD

Part NO.	Description	QTY	Location
83823CMU706FC000	CMU706 FC MI Assm	1	
133000010017	PCB,FB,CMU501,FR-2,38×20×1.2mm	1	
143805000217	CONNECTOR,14PIN,2.0mm,SOCKET FEMALE ESTF2-14-0,	1	CON501
123825000098	BAR CON.,14PIN,AWG28,50mm,GRAY	1	CON502
83823CMU706LB000	CMU706 LB MI Assm	1	
133000010029	PCB,LB,CMU706,94V0,1.2mm,96.5X24mm	1	
121640000102	RCF,1K $\Omega$ , $\pm$ 5%,1/8W	1	R391
143405010041	LED,RED, $\phi$ 3,204SRD/E-A,20mA,2.4V	1	LED391
143210000053	TACTSW,DP1130X,,PANASONIC	1	SW391
143210000021	TACT SW,TS-03-AS	1	SW393
143210000027	TACT SW,TS-06V-ASM	1	SW392
143825010117	BARCON,7PIN,AWG28#,50mm,GRAY	1	CON391
83822CMU705KB000	CMU705 KB SMT Assm	1	
143010000218	PCB,KB,CMU705,FR4,162.4×167.2×1.2mm	1	
142400000338	IC,SC75823E,QFP-64-14X14-0.8,SL	1	IC301
143405000048	LED,RED/GREEN,19-22URS YGC/S252/TR8, 25mA,2.4V	21	LED1~LED21
143210000016	TACT SW,KPS-1107YB-130	17	SW301~316,SW318
142206000020	SW DIODE,1N4148,25mA,0.9V,100V,MINI-MELF	1	D301
142224000023	ZENER DIODE,5V6,MINI MELF	1	ZD301
142224000025	ZENER DIODE,6V8,1/2W, $\pm$ 5%,1206	3	ZD302~ZD304
121606000681	RES,680 $\Omega$ , $\pm$ 5%,1/10W,0805	8	R301~R304 R345~R348
121606000471	RES,470 $\Omega$ , $\pm$ 5%,1/10W,0805	6	R339~R344
121606000101	RES,100 $\Omega$ , $\pm$ 5%,1/10W,0805	1	R312
121606000821	RES,820 $\Omega$ , $\pm$ 5%,1/10W,0805	1	R349
121604000000	RES,0 $\Omega$ , $\pm$ 5%,1/16W,0603	1	R355
121604000101	RES,100 $\Omega$ , $\pm$ 5%,1/16W,0603	2	R350,R310
121604000102	RES,1K $\Omega$ , $\pm$ 5%,1/16W,0603	4	R317,R331,R358,R364
121604000103	RES,10K $\Omega$ , $\pm$ 5%,1/16W,0603	1	R308
121604000152	RES,1K5 $\Omega$ , $\pm$ 5%,1/16W,0603	2	R318,R332
121604000181	RES,180 $\Omega$ , $\pm$ 5%,1/16W,0603	2	R325~R326
121604000220	RES,22 $\Omega$ , $\pm$ 5%,1/16W,0603	3	R305~R307
121604000221	RES,220 $\Omega$ , $\pm$ 5%,1/16W,0603	2	R313,R327
121604000222	RES,2K2 $\Omega$ , $\pm$ 5%,1/16W,0603	2	R319,R333
121604000225	RES,2.2M $\Omega$ , $\pm$ 5%,1/16W,0603	1	R365
121604000331	RES,330 $\Omega$ , $\pm$ 5%,1/16W,0603	2	R314,R328
121604000332	RES,3K3 $\Omega$ , $\pm$ 5%,1/16W,0603	2	R320,R334
121604000471	RES,470 $\Omega$ , $\pm$ 5%,1/16W,0603	2	R315,R329
121604000472	RES,4K7 $\Omega$ , $\pm$ 5%,1/16W,0603	4	R321,R335,R357,R362
121604000473	RES,47K $\Omega$ , $\pm$ 5%,1/16W,0603	6	R311,R352~R353,R354,R361,R363
121604000681	RES,680 $\Omega$ , $\pm$ 5%,1/16W,0603	2	R316,R330
121803000102	CAP,1nF, $\pm$ 10%,16V,X7R,0603	1	C302
121803000104	CAP,0.1 $\mu$ F,+80%-20%,16V,Y5V,0603	1	C306
121806000105	CAP,0805,105,50V,Y5V,+80%-20%	4	C301,C303~C304,C305
142251000001	TR,2N3904(NPN),SOT-23	2	Q301,Q302
142245000024	TR,KTC8550S(PNP),SOT-23	2	Q303,Q304
143400000048	LCD,CMU705,NEGATIVE COLOUR	1	LCD301
143405000060	LED,WHITE, $\phi$ 3,204-15AUWW,20MA,3.5V	2	LED301~LED302
121662000005	ENCODER,ECB11(7X5)(PV)S17, EC110201M2D-HA1-011	1	EN301

Part NO.	Description	QTY	Location
123805000016	14PIN,2.0mm,SOCKET MALE ESTF2-14-01 (90° )	1	CON301
142212010002	PHOTO DIODE,IRM2,638AF4,5V/1.1	1	IC302
83823CMU708SD001	CMU708 USD+SD MI Assm	1	
133010010308	PCB,MC-USB-SD,CMU705,FR4, 88.3×127.7×1.2mm	1	
121803000104	CAP,0.1 $\mu$ F,+80%-20%,16V,Y5V,0603	2	C990~C991
142206000004	REC DIODE, 1N4001, 1A, 1V, 50V. DO-41	1	D991
122040000042	CHIP BEAD,0805,2.0X1.2X0.9X0.5,200mA, 100MHZ,0.40 $\Omega$	1	L990
142400000504	IC,UTC1117-3.3V,SOT-23,UTC	1	IC991
142400000246	IC,MC7805,TO-220,TI/NATIONAL/KEC/NO-S	1	IC990
123800000050	FFC SOCKET,11PIN,1.25mm,DIP 90° ,UP	1	CON990
123800010043	6PIN,2.5mm,CONNECTOR (90° )	1	CON401
123805000097	6PIN,USB-SOCKET(STANDARD FEMALE CONNECTOR) 90°	1	USB901
143805000207	SD/MMC SOCKET-H SMT CMU705	1	CARD901
121830000226	E.CAP,22 $\mu$ F, $\pm$ 20%,4X5,16V,105°C	3	C993~C995

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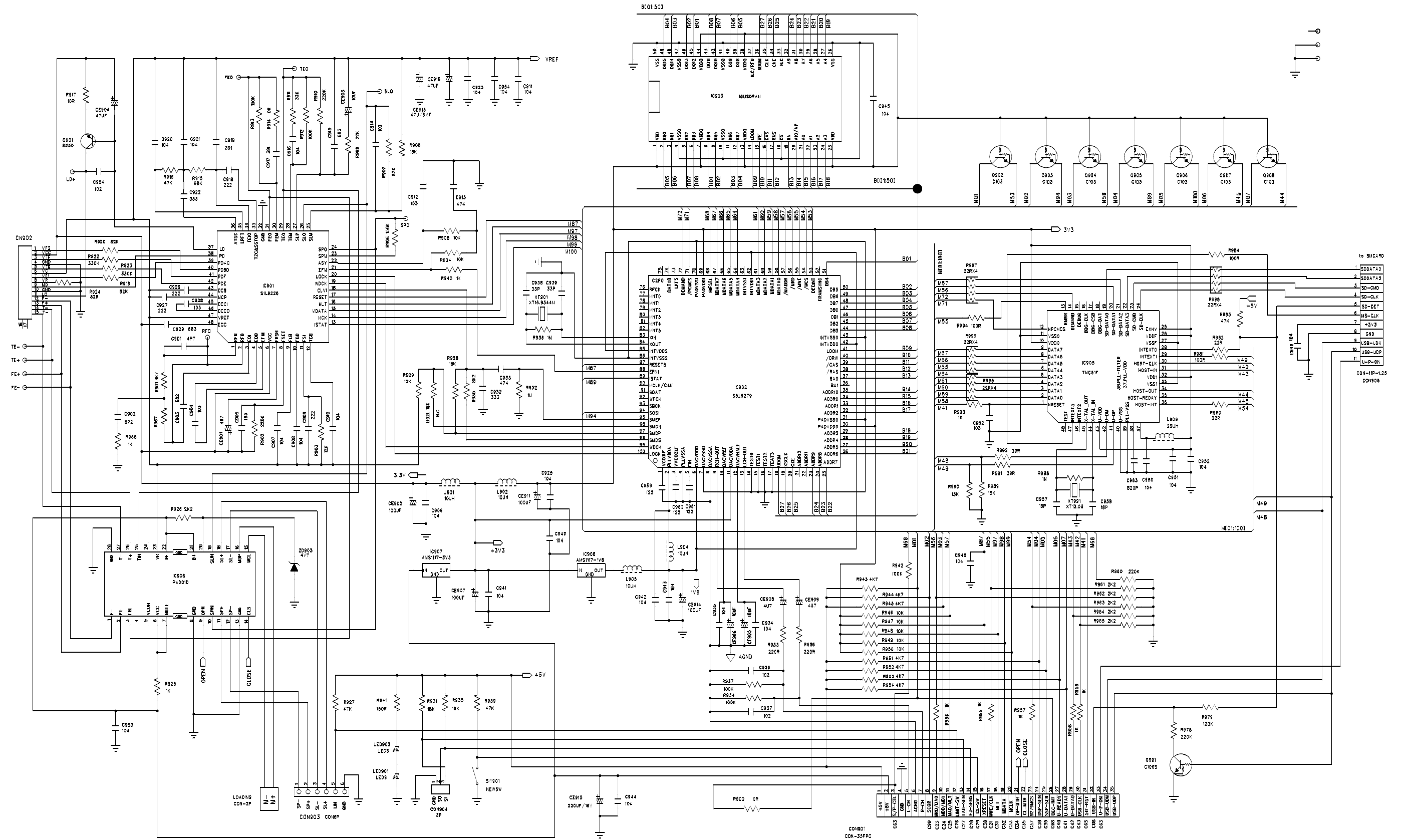
# SERVO BOARD

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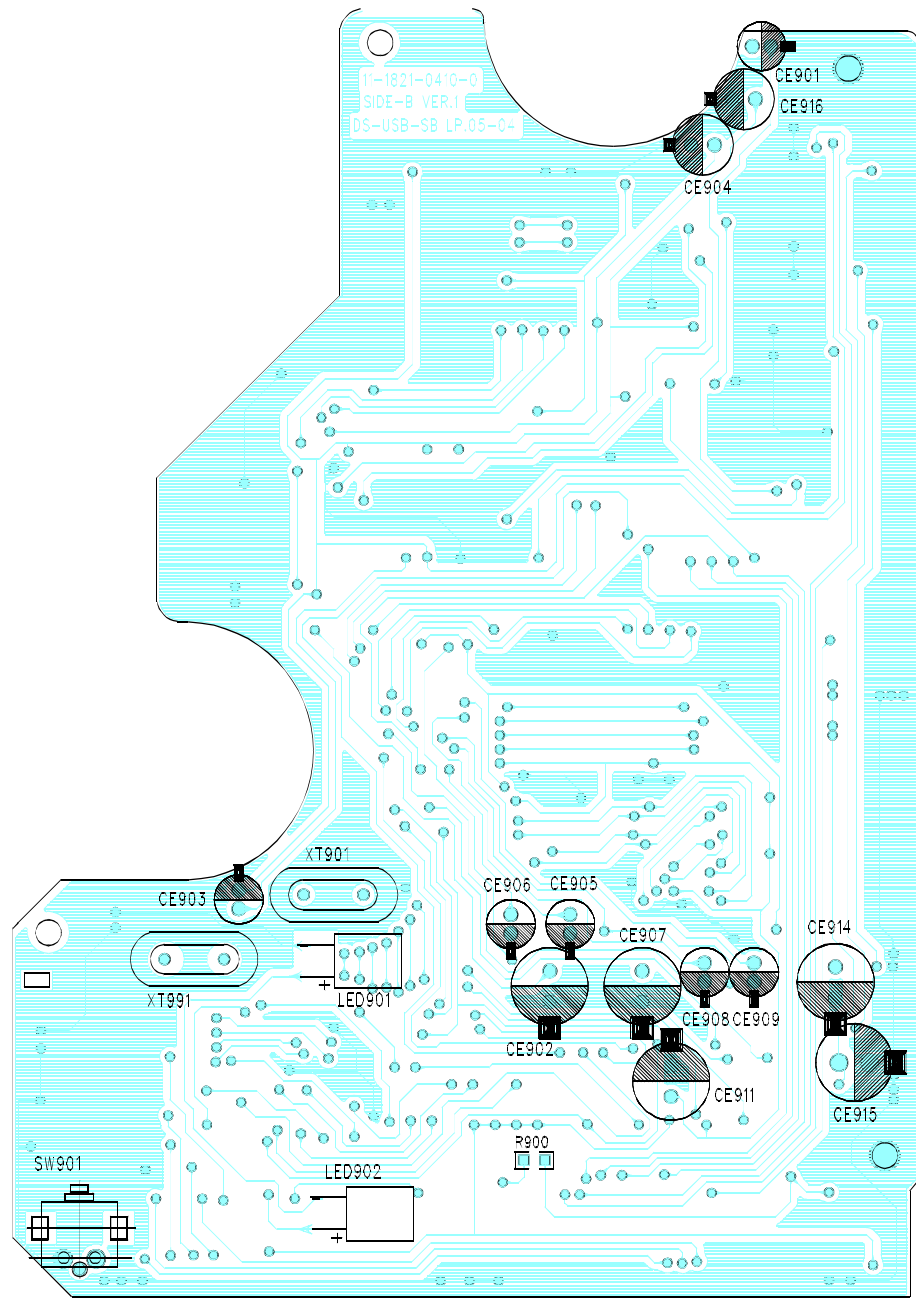
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# SERVO BOARD - CIRCUIT DIAGRAM

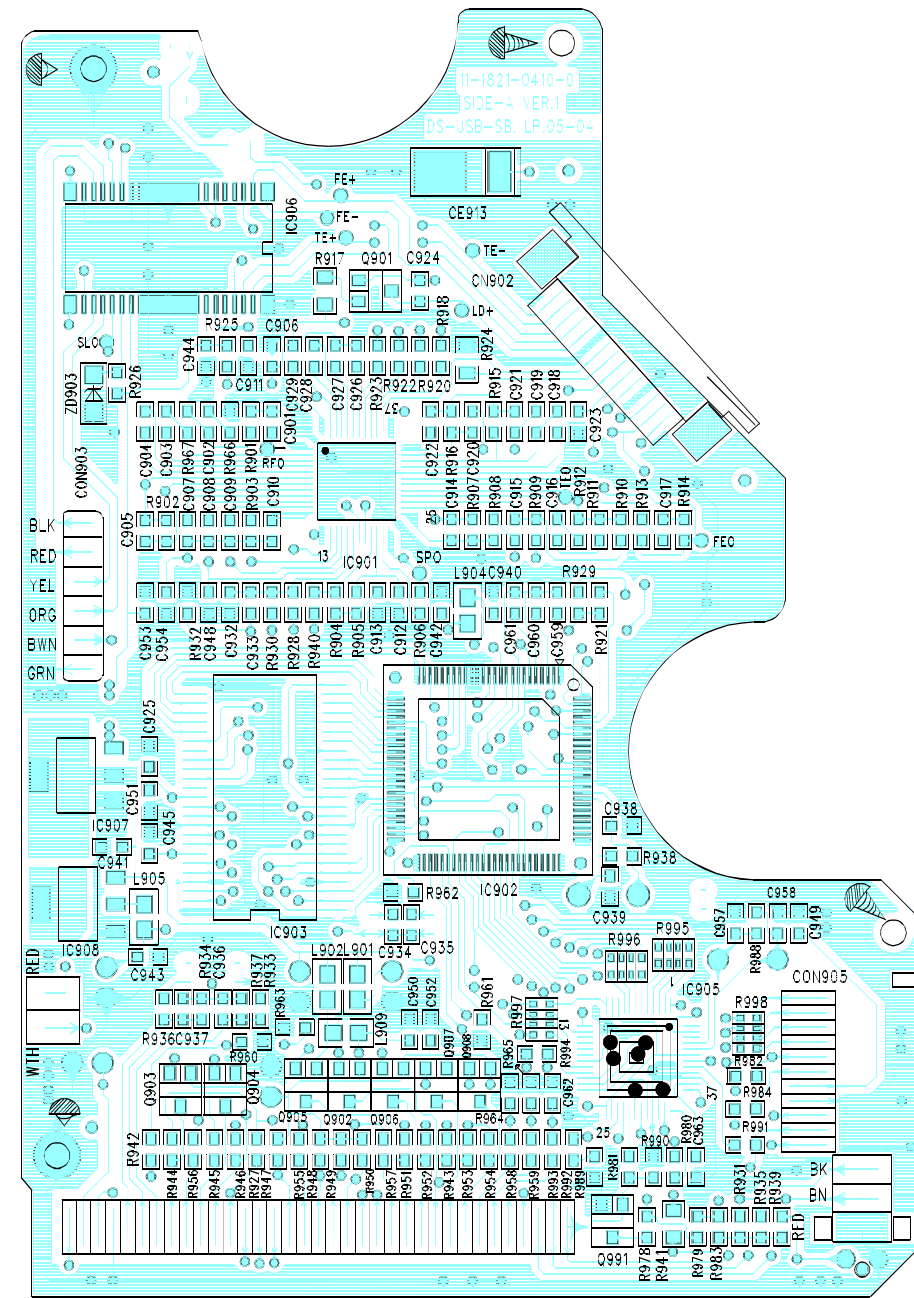




# SERVO BOARD - LAYOUT DIAGRAM TOP VIEW



# SERVO BOARD - LAYOUT DIAGRAM BOTTOM VIEW



## ELECTRICAL PARTS LIST - SERVO BOARD

Part NO.	Description	QTY	Location
83822CMU706SB002	CMU706 SB SMT Assm	1	
121604000101	RES,100Ω,±5%,1/16W,0603	3	R994,R981,R984
121604000102	RES,1KΩ,±5%,1/16W,0603	9	R925,R940,R955~R959,R966,R993
121604000103	RES,10KΩ,±5%,1/16W,0603	7	R904~R905, R949,R950,R946, R947, R948
121604000104	RES,100KΩ,±5%,1/16W,0603	5	R912,R913,R934, R937, R942
121604010105	RES,1MΩ,±1%,1/16W,0603	3	R932,R938,R988
121604000123	RES,12KΩ,±5%,1/16W,0603	2	R903,R929
121604000124	RES,120KΩ,±5%,1/16W,0603	1	R979
121604000153	RES,15KΩ,±5%,1/16W,0603	4	R908,R989,R990,R967
121604000154	RES,150KΩ,±5%,1/16W,0603	1	R906
121604000183	RES,18KΩ,±5%,1/16W,0603 (Temp Stability±100%PPM/°C)	2	R928,R935,
121604000220	RES,22Ω,±5%,1/16W,0603	2	R980,R982
121604000221	RES,220Ω,±5%,1/16W,0603	2	R933,R936
121604000222	RES,2K2Ω,±5%,1/16W,0603	5	R961~R965
121604000223	RES,22KΩ,±5%,1/16W,0603	2	R909,R931
121604000224	RES,220KΩ,±5%,1/16W,0603	4	R902,R910,R978,R960
121604000333	RES,33KΩ,±5%,1/16W,0603	1	R911
121604000472	RES,4K7Ω,±5%,1/16W,0603	8	R901,R943~R945,R951~R954
121604000473	RES,47KΩ,±5%,1/16W,0603	4	R983,R939,R927,R916
121604000683	RES,68KΩ,±5%,1/16W,0603	1	R915
121606000820	RES,82Ω,±5%,1/10W,0805	1	R924
121604000822	RES,8K2Ω,±5%,1/16W,0603	1	R930
121604000823	RES,82KΩ,±5%,1/16W,0603	3	R907,R918,R920
121606000100	RES,10Ω,±5%,1/10W,0805	1	R917
121606000151	RES,150Ω,±5%,1/10W,0805	1	R941
121618000220	RES,22Ω,4,±5%,1/16W,0603	4	R995~R998
121803000102	CAP,1nF,±10%,16V,X7R,0603	3	C924,C936,C937
121803000122	CAP,1200pF,±10%,50V,X7R,0603	2	C959,C961
121803000103	CAP,0.01μF,±10%,50V,X7R,0603	6	C904~C905,C914,C928,C912,C962
121803000104	CAP,0.1μF,+80%-20%,16V,Y5V,0603	27	C906~C908,C910,C911,C920,C921,C923,C925, C934~C935,C948~C954,C940~C945,C916 C965 ~C966
121803000047	CAP,4.7pF,±0.5P,50V,NPO,0603	1	C901
121803000082	CAP,8.2pF,±0.5P,50V,NPO,0603	1	C902
121803000180	CAP,18pF,±5%,50V,NPO,0603	2	C957,C958
121803000222	CAP,2200pF,±10%,50V,X7R,0603	4	C909,C918,C926,C927
121803000330	CAP,33pF,±5%,50V,NPO,0603	2	C938,C939
121803000333	CAP,33nF,±10%,16V,X7R,0603	2	C922,C932
121803000391	CAP,390pF,±10%,50V,X7R,0603	1	C919
121803000474	CAP,0.47μF,+80%-20%,25V,Y5V,0603	2	C913,C933
121803000682	CAP,6800pF,±10%,50V,X7R,0603	1	C903
121803000683	CAP,0.068μF,±10%,50V,X7R,0603	2	C915,C929
121803000821	CAP,0603,820pf,±10%,16V,X7R	1	C963
122040000042	CHIP BEAD,0805,2.0X1.2X0.9X0.5,200mA, 100MHZ,0.40Ω	4	L901,L902,L904,L909
142224000021	ZENER DIODE, 5V1, 1/2W, MINI MELF	1	ZD903
142245000020	TR, KRC106S (NPN), SOT-23	1	Q991
142245000019	TR, KRC103S, SOT-23	7	Q902~Q908
142245000024	TR, KTC8550S (PNP), SOT-23	1	Q901
142400000505	IC,UTC1117-1.8V,SOT-223,UTC	1	IC908

Part NO.	Description	QTY	Location
142400000504	IC,UTC1117-3.3V,SOT-23,UTC	1	IC907
142400000339	IC,SDRAM1MX16HY57V161610E,TSOP11-50, HYNIX	1	IC903
142400000321	IC,S1L9226,48-LQFP-0707,SAMSUNG	1	IC901
142400000176	IC,IP4001D,28SSOP H/S,INTERPION	1	IC906
142400000503	IC,TMC51FW,48-PIN-ETQFP,MULTMEDIA	1	IC905
142400000501	IC,S5L8310W,100-TQFP-PKG,MULTMEDIA	1	IC902
133010020419	DS-USB-SB,CM228,FR4,1.2mm,122X67.9mm	1	
121604000334	RES,330KΩ,±5%,1/16W,0603	2	R922,R923
143800000006	15PIN,1.0mm,FPC SOCKET SMT TYPE TOP CONNECT TYPE	1	CN902
121604000470	RES,47Ω,±5%,1/16W,0603	2	R991,R992
121604000000	RES,0Ω,±5%,1/16W,0603	1	R999
121604000681	RES,680Ω,±5%,1/16W,0603	1	R926
121803000470	CAP,47pF,±5%,16V,NPO,0603	1	C964
127070010965	CMV100,LASER WARNING LABEL	1	
121405000004	206,SPONGE FOR FPC	2	
144840030017	DECK,CL-C01FY7(SHINWA)	1	
121040000186	SCREW,PTS,Color Znic,M2.0X4	4	
121830020106	E. CAP,10μF,±20%,4X5.5,16V,85°C	3	CE903,CE905,CE906
121830020107	E. CAP,100μF,±20%,6.3X5,16V,105°C	4	CE902,CE907,CE911,CE914
141830000475	E. CAP,4.7μF,±20%,4X5,16V,105°C	3	CE901,CE908,CE909
121830040476	E. CAP,47μF,±20%,5X5,16V,105°C	2	CE904,CE916
121833000227	E. CAP,220μF,±20%,6.3X7,10V,85°C	1	CE915
143405000004	INFRARED RECEIVER,IR928-6C	2	LED901,LED902
142820000006	CRYSTAL,12.0MHZ,±30ppm,-20°C~+70°C, CL=18pF,HC-49/US	1	XT991
142820000008	CRYSTAL,16.9344MHz,±30ppm,-20°C~+70°C, CL=18pF,HC-49/US	1	XT901
143210000004	DETECT SW,SW111	1	SW901
123820010136	FFC,33PIN,1.25mm,100mm	1	CON901
143820010110	FFC,11PIN,1.25mm,200mm	1	CON905
121830000226	E. CAP,22μF,±20%,4X5,16V,105°C	1	CE918
142206000004	REC DIODE,1N4001,1A,1V,50V,DO-41	1	D901

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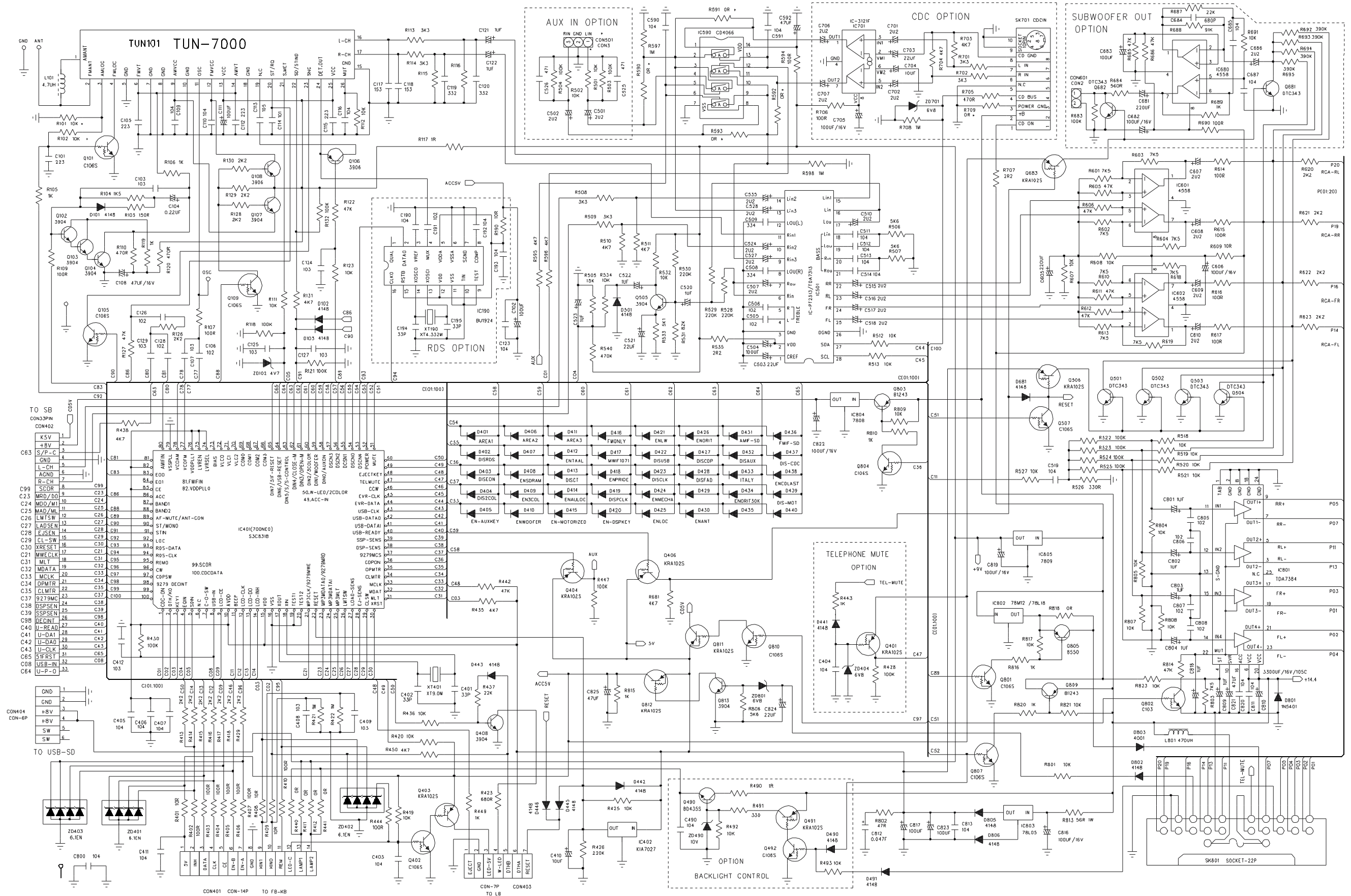
# MAIN BOARD

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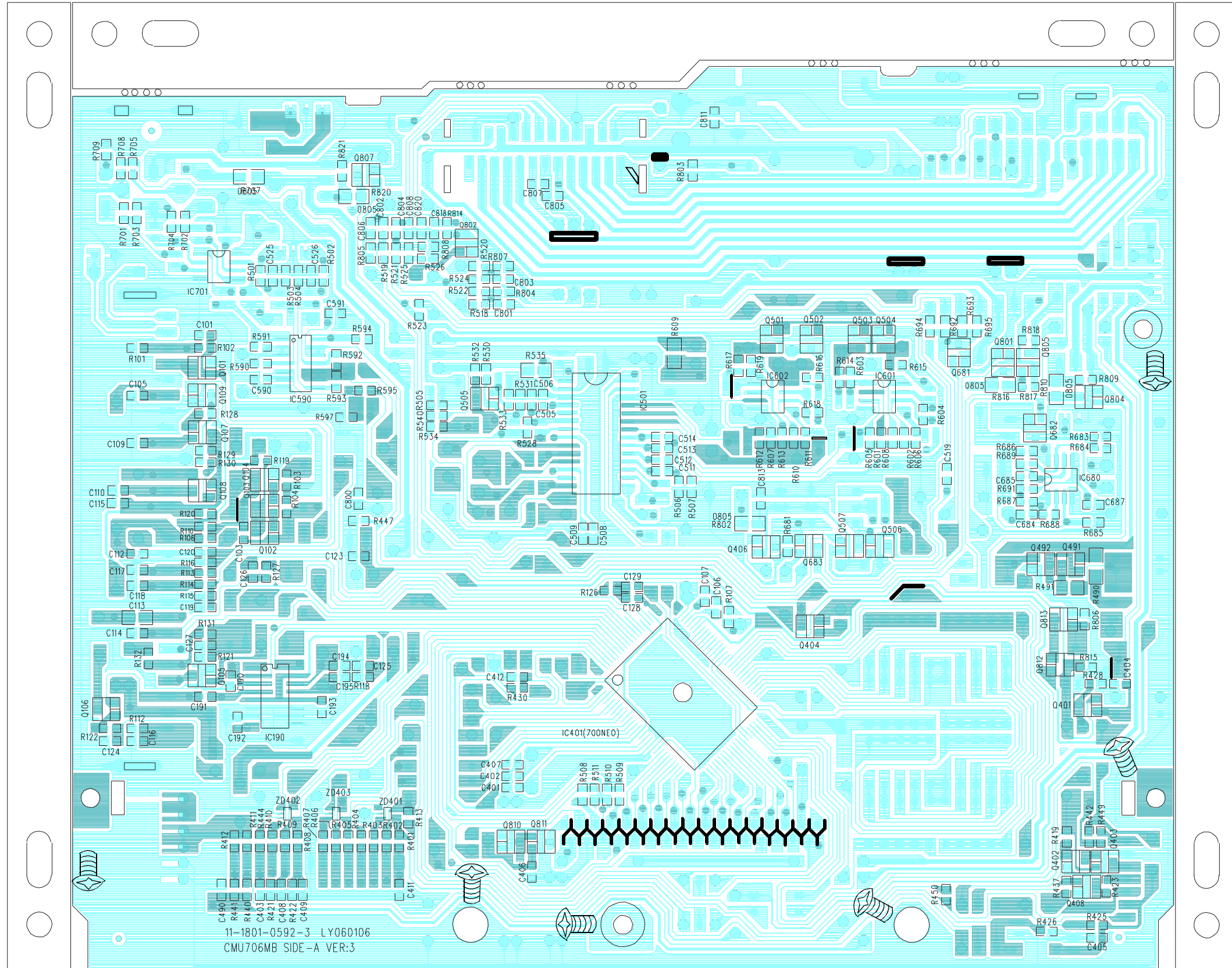
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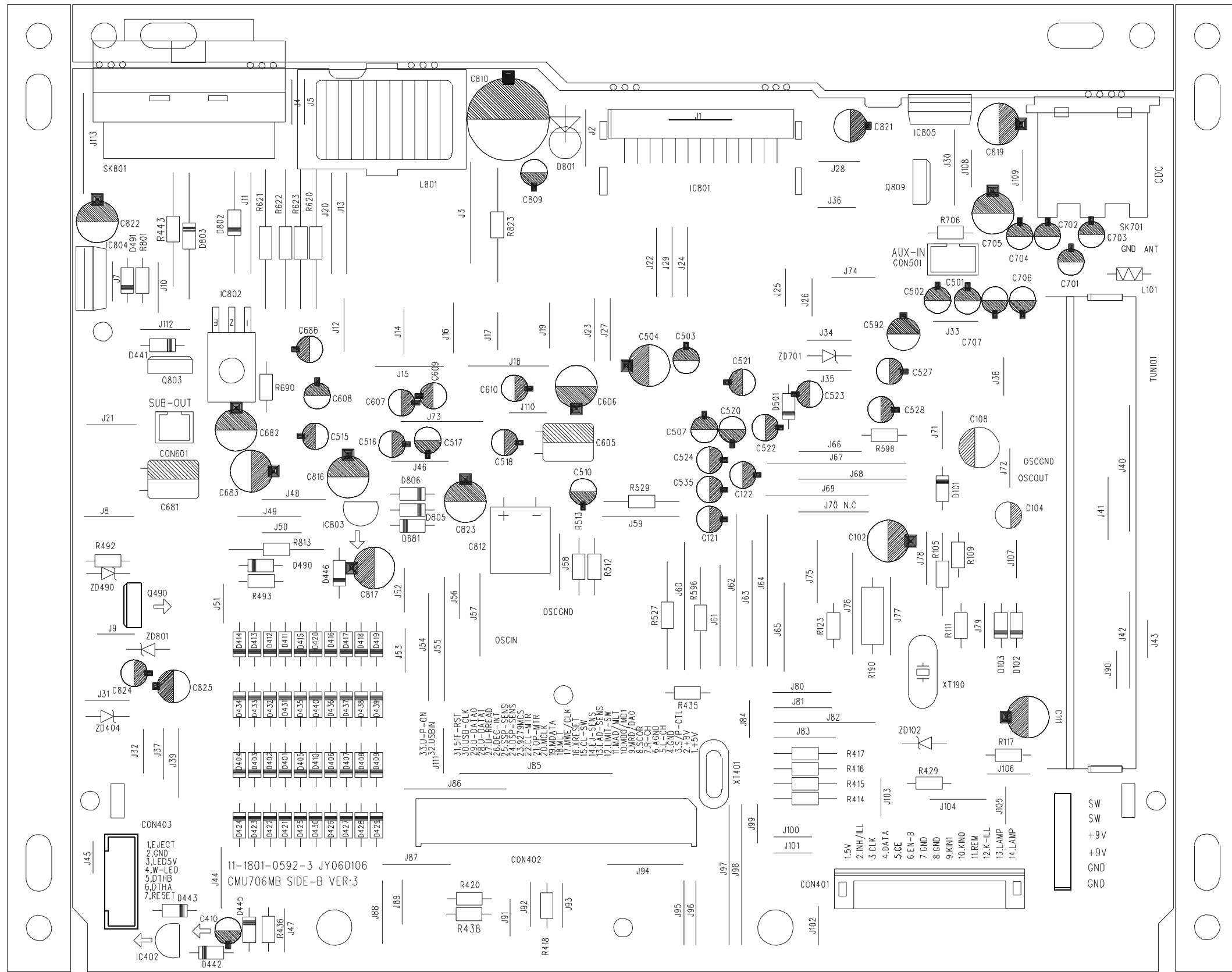
# MAIN BOARD - CIRCUIT DIAGRAM



# MAIN BOARD - LAYOUT DIAGRAM TOP VIEW



# MAIN BOARD - LAYOUT DIAGRAM BOTTOM VIEW



## ELECTRICAL PARTS LIST - MAIN BOARD

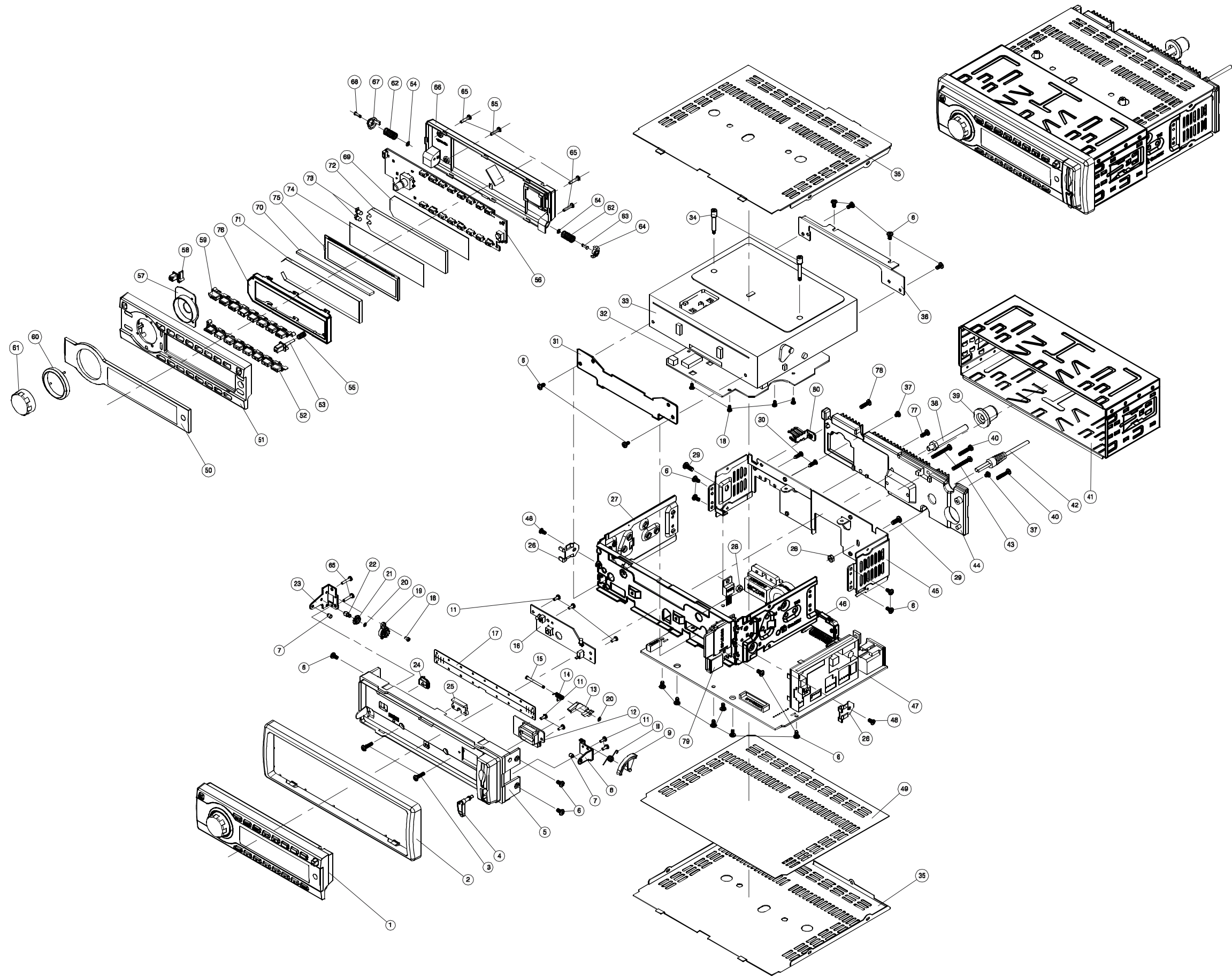
Part NO.	Description	QTY	Location	Part NO.	Description	QTY	Location
83823CMU706MB113	4X4V ESP FM/OIRT MB MI Assm	1		11385000028	∅ 0.5mm,24mm	3	J62,J64,J85,
121830000105	E.CAP,1 μ F,±20%,4X5,50V,105℃	4	C520,C522~C523,C809	122005000001	STANDINDUCTOR,,DRW2X2,4.7UH,±5%,190mA,62X5X3mm	1	L101
121830020106	E.CAP,10 μ F,±20%,4X5.5,16V,85℃	1	C410	142206000004	REC DIODE,1N4001,1A,1V,50V,DO-41	1	D803
121830020107	E.CAP,100 μ F,±20%,6.3X5,16V,105℃	9	C102,C111,C504,C606,C816,C817, C819,C822,C823,	142224000088	ZENER DIODE,6.8V,1/2W	1	ZD801
121842000224	E.CAP,0.22 μ F,±20%,4X5,50V,85℃,NON-POLARITY	1	C104	142203000003	SW DIODE,1N4148,DO-35	22	D101~D103,D401,D406,D408,D417, D431,D436,D438,D442,D443,D426, D434,D416,D432
121830000225	E.CAP,2.2 μ F,±20%,4X5,50V,105℃	14	C507,C510,C515~518 C524 C535, C607~610,C121,C122	121640000010	RCF,1 Ω,±5%,1/8W	1	R117
121830000226	E.CAP,22 μ F,±20%,4X5,16V,105℃	3	C503,C521,C824	121640000222	RCF,2K2 Ω,±5%,1/8W	5	R415~R418,R429
121830040476	E.CAP,47 μ F,±20%,5X5,16V,105℃	3	C821,C825,C108	121640000101	RCF,100 Ω,±5%,1/8W	1	R109
121836070227	E.CAP,220 μ F,±20%,6.3X11,16V,85℃	1	C605	121640000102	RCF,1K Ω,±5%,1/8W	1	R105
121842030338	E.CAP,3300 μ F,±20%,13X26,16V,105℃	1	L801	121640000103	RCF,10K Ω,±5%,1/8W	8	R512,R513,R527,R420,R111,R801, R823,R436,
122015000016	CHOKE COIL,470UH,1A,±30%,28mm(D)X29mm(H)X 12.5mm(L)(CM203)	1		121640000224	RCF,220K Ω,±5%,1/8W	1	R529
142206000006	REC DIODE, 1N5401, 3A, 1V, 100V, DO-27	1	D801	121640000472	RCF,4K7 Ω,±5%,1/8W	2	R435,R438
142257000001	TR,2SB1243TV2Q(PNP),ATV	2	Q803,Q809	121648000560	RCF,56 Ω,±5%,1W	1	R813
121670000109	PTC,GBX050	1	IC802,	133000030071	PCB,MB,CMU706,94-V0,152.6×173.6×1.6mm	1	
142400000040	IC,78L05,TO-92,UTC/ST/KEC	1	IC803	121604000000	RES,0 Ω,±5%,1/16W,0603	3	R818, R411, R412
142400000184	IC,KIA7027,TO-92,KEC	1	IC402	121604000100	RES,10 Ω,±5%,1/16W,0603	3	R401,R408,R409,
142400010379	IC,TDA7384,FLEXIWATT25,ST	1	IC801	121604000101	RES,100 Ω,±5%,1/16W,0603	12	R402~R407,R444,R614~R617,R410
142820000034	CRYSTAL,9.0MHZ,±30PPm,-20℃ +70℃,HC-49/US DIP 18PF	1	XT401	121604000102	RES,1K Ω,±5%,1/16W,0603	4	R106,R119,R449,R815
124800000025	FUSE,ZH270,15A,SLOW FUSE TYPE	1		121604000103	RES,10K Ω,±5%,1/16W,0603	14	R102,,R112,R419,R425,R532,R534, R607,R608,R804~R805,R807~R809, R821
144815000004	TUNER,CET-702CFYA,FM/OIRT	1	TUN101	121604000104	RES,100K Ω,±5%,1/16W,0603	9	R118,R132,R428,R430,R522~R525,R12
123830010086	CM700,20PIN,PWR/SPK EST-KNT-20-04	1	SK801	121604010105	RES,1M Ω,±1%,1/16W,0603	3	R421,R422,R708
123805000017	14PIN,2.0mm,WAFER 90°	1	CON401	121604000153	RES,15K Ω,±5%,1/16W,0603	1	R505
123805000101	7PIN,2.0mm,WAFER DIP 180°	1	CON403	121604000151	RES,150 Ω,±5%,1/16W,0603	1	R103
123800000024	33PIN,1.25mm,FPC SOCKET DIP TYPE(90° ) TOP CONNECT TYPE	1	CON402	121604000152	RES,1K5 Ω,±5%,1/16W,0603	1	R104
123825000107	BAR CON.,2PIN,AWG28#,150mm,White/Black	1	FMOSC	121604000222	RES,2K2 Ω,±5%,1/16W,0603	5	R126,R128~R130,R413
141000000319	CM226,BRACKET IC 7386,SECC,T0.8	1		121604000223	RES,22K Ω,±5%,1/16W,0603	1	R437
83822CMU706MB093	4X4V ESP FM OIRT MB SMT Assm	1		121604000224	RES,220K Ω,±5%,1/16W,0603	3	R426,R528,R530
83821CMU706MB103	CMU706 4X4V ESP FM/OIRT MB A/I Assm	1		121604000331	RES,330 Ω,±5%,1/16W,0603	1	R526
113850000036	∅ 0.5mm,5.0mm	1	J45	121604000332	RES,3K3 Ω,±5%,1/16W,0603	4	R113~114,R508~R509
113850000039	∅ 0.5mm,6mm	20	J17,J25,J26,J36,J43,J47,J51,J71, J72,J84,J90,J91,J99,J101~J103, J105,J108,	121604000471	RES,470 Ω,±5%,1/16W,0603	2	R110,R120
113850000041	∅ 0.5mm,7mm	22	J4, J5,J7,J14,J19,J28,J31,J32,J34, J8, J12, J16, J37,J78,J21, J10,J112	121604000472	RES,4K7 Ω,±5%,1/16W,0603	4	R131,R450,R510~R511
113850000043	∅ 0.5mm,8mm	8	J2, J46,J58,J80,J81,J104	121604000473	RES,47K Ω,±5%,1/16W,0603	15	R127,R442,R605~R606,R611~R612, R814,R618~R619,R603~R604
113850000045	∅ 0.5mm,9mm	6	J44,	121604000474	RES,470K Ω,±5%,1/16W,0603	1	R540
113850000044	∅ 0.5mm,9.5mm	1	J1,J23,J27,J48,J75,J88,J95,J96,J83	121604000512	RES,5K1 Ω,±5%,1/16W,0603	1	R533
113850000002	∅ 0.5mm,10mm	9	J15, J22, J24, J29, J39,J87, J70	121604000562	RES,5K6 Ω,±5%,1/16W,0603	3	R506~R507,R806
113850000004	∅ 0.5mm,11mm	7	J30,J59,J77,J94,	121604000681	RES,680 Ω,±5%,1/16W,0603	1	R423
113850000006	∅ 0.5mm,12mm	4	J18	121604000752	RES,7K5 Ω,±5%,1/16W,0603	5	R601,R602,R610,R613,R803
113850000008	∅ 0.5mm,13mm	1	J65,	121604000823	RES,82K Ω,±5%,1/16W,0603	1	R531
113850000010	∅ 0.5mm,14mm	1	J73,	121606000100	RES,10 Ω,±5%,1/10W,0805	1	R609
113850000009	∅ 0.5mm,14.5mm	1	J42,	121606000102	RES,1K Ω,±5%,1/10W,0805	2	R810,,R820
113850000012	∅ 0.5mm,15mm	1	J3, J11, J13, J20,J61,J76,J82,	121606000022	RES,2R2 Ω,±5%,1/10W,0805	1	R535
113850000014	∅ 0.5mm,16mm	7	J68,J86,J54,J113	121803000101	CAP,100pF,±5%,50V,NPO,0603	1	C114
113850000016	∅ 0.5mm,17mm	4	J40,J55,J60,63,	121803000102	CAP,1nF,±10%,16V,X7R,0603	5	C106,C126,C128,C505~C506
113850000022	∅ 0.5mm,20mm	4	J67,J97,J98,	121803000103	CAP,0.01 μ F,±10%,50V,X7R,0603	8	C103,C107,C125,C127,C129,C408~ C409, C412
113850000025	∅ 0.5mm,22mm	3					

**ELECTRICAL PARTS LIST - MAIN BOARD**

Part NO.	Description	QTY	Location
121803000104	CAP,0.1 $\mu$ F,+80%-20%,16V,Y5V,0603	18	C109~C110,C116,C123,C403,C405~ C407,C411,C511~C514,
121800020105	CAP,1 $\mu$ F, $\pm$ 10%,16V,X7R,0603	1	C818
121803000153	CAP,0.015 $\mu$ F, $\pm$ 10%,50V,X7R,0603	2	C117,C118
121803000223	CAP,0.022 $\mu$ F, $\pm$ 10%,50V,X7R,0603	4	C101,C105,C112,C115
121803000330	CAP,33pF, $\pm$ 5%,50V,NPO,0603	2	C401,C402
121803000222	CAP,2200pF, $\pm$ 10%,50V,X7R,0603	2	C119,C120
121803000334	CAP,0.33 $\mu$ F,+80%,-20%,50V,Z5U,0603	2	C508,C509
142245000015	TR,DTC343TK,SOT-23	4	Q501~504
142251000001	TR,2N3904(NPN),SOT-23	7	Q102~Q104,Q107,Q408,Q505,Q813
142245000048	TR,MMBT3906LT1,SOT-23,PNP	1	Q108
142245000020	TR,KRC106S(NPN),SOT-23	9	Q101,Q105,Q109,Q402,Q507,Q804, Q807,Q810,Q802
142245000017	TR,KRA102S(PNP),SOT-23	4	Q403,Q506,Q811~Q812
142400000140	IC,CSC2313F,SO-28,YOUDA	1	IC501
142400000506	IC,UTC4558,SOP-8,UTC	2	IC601,IC602
142400000498	IC,NEO-791NRF,100-QFP-1420C,DONGSUNG,(SB8310)	1	IC401
142290000003	ESD DIODE,PG05GBUSV,24A,200W,5G	3	ZD401~403
121803000471	CAP,470pF, $\pm$ 10%,50V,X7R,0603	4	C805~C808
121806000225	CAP,2.2 $\mu$ F,+80%,-20%,16V,X7R,0805	4	C801~C804
121640000102	RCF,1K $\Omega$ , $\pm$ 5%,1/8W	4	R620~R623



# EXPLODED VIEW - MAIN UNIT



## MECHANICAL PARTS LIST(BLACK PANEL, WITHOUT RDS)

Item	Assembly Part NO	Description	QTY
1	83823CMU705KB020	CMU705-58A Black MCE-525U Assm	1
2	141298000021	CM700 ,RIM,ABS(BLACK)	1
3	121040000089	SCREW,BTS,BLACK Zinc,M2.6X10.0	2
4	121490000034	CMU705,DUSTPROOF-STUD	1
5	141248010005	CMU705,CABINET,ABS	1
6	121040000083	SCREW,BTS,White Ni,M2.6X5	19
7	121025010155	CM700 ,RIVET PANEL	2
8	141000010034	CM700 ,BRACKET-PANEL-RIGHT,SECC,T1.0	1
9	141200000086	CMU706,PUSH,POM	1
10	121035000139	CMU706,HANDSPIKE-SPRING PRT,? .55	1
11	121040000185	SCREW,PTP,BLACK Zinc,M2X5	9
12	83823CMU706FC000	CMU706 FC MI Assm	1
13	141290000263	CMU706,LOCKER,POM	1
14	121035000140	CMU706,LOCK SPRING PRT,? .60	1
15	121025000157	CMU706,SHAFT-LOCK PRT	1
16	83823CMU706LB000	CMU706 LB MI Assm	1
17	121450000071	CM700S,DUSTPROOF,	1
18	121040000186	SCREW,PTS,Color Znic,M2.0X4	5
19	121200000087	CMU706,DAMPER(45g), NYLON	1
20	121440000031	CD206,FELT-16-025,种3.5X 1.5X0.25,Graphite fibre	2
21	141200010082	CM700 ,GEAR ,POM	1
22	121025010154	CM700 ,RIVET GEAR	1
23	141000000063	CM700 ,BRACKET-DAMPER,SECC,T1.0	1
24	141237010225	CM700 ,KNOB-EJECT,PC	1
25	141290000240	CM700 ,LENS GATE,PC	1
26	141000000068	CM700 ,SIDE STOPR,SECC,T1.0	2
27	141000010359	CMU706,BRACKET-FRONT-U PRT,SECC,T1.0	1
28	121050000005	NUT,White Znic,M3X2.5	2
29	121040000047	SCREW,BM,White Ni,M3X8	2
30	121040000154	SCREW,PA ,White Ni,M2.6X8	2
31	141000000358	CMU501,BRACKET DECK FRONT OF CLC01,SECC,T1.0	1
32	83823CMU706SB002	CMU706 SB MI Assm	1
33	144840030017	DECK,CL-C01FY7(SHINWA)	1
34	121040000101	SCREW,CM,Color Znic,M2.6x19,(SHINWA CL-C01)	2
35	141000020341	CM701 ,TOPCOVER,SECC,T0.6	2
36	121000010334	CM700 ,DECK REAR BRACKET,SECC,T1.0	1
37	121040000069	SCREW,BTS,White Znic,M2.6X3	2
38	121050000003	CMV100,POLE	1
39	121410000026	CMV100,RUBBER	1
40	121040000077	SCREW,BTS,White Ni,M2.6X14	2
41	141000000067	CAD310,SHORT SHEET,SECC, T0.6	1
42	124845000001	ANTENNA,W/GROUND 230mm	1
43	121040000059	SCREW,BTB,White Ni,M2.6X21	2
44	141010020047	CME0CM700,HEATSINK	1
45	121000030076	CAD510,BRACKET-REAR-U,SECC,T1.0	1
46	141000000319	CM226,BRACKET IC 7386,SECC,T0.8	1
47	83823CMU706MB113	CMU706 4X4V ESP FM/OIRT MB MI Assm	1
48	121040000222	SCREW,pFM,BLACK Zinc,M2.6X5	2
49	121290000662	CM725 ,ISOLATOR SHEET,PC SHEET (T=0.185mm),CM725	1
50	141228010411	CMU705,LENS,Pmma	1

Item	Assembly Part NO	Description	QTY
51	121218020063	CMU705,PANEL-FRONT,ABS(W/ODISCPROLOGY)	1
52	141237000306	CMU705,KNOB-BAND-NUM-AMS,PC	1
53	141237020307	CMU705,KNOB-OPEN,PC	1
54	121440000037	CM700,E-WASHER,4X0.5	2
55	121035000332	CMV100,SPRING RELEASE NEW,0.3mm,	1
56	83822CMU705KB000	CMU705 KB SMT Assm	1
57	141290010264	CMU705,LIGHT GUIDE,PC	1
58	141237000308	CMU705,KNOB-PWR,PC	1
59	141237000309	CMU705,KNOB-SRC-MUTE-DSIP-NO RDS,PC	1
60	141295000015	CMU705,DECORATED-RING,ABS	1
61	141235000025	CM233,KNOB-ENCODER,ABS	1
62	121035000136	CM700,L/&R ROTATING SPRING,Ø0.40	2
63	121025000153	CM700,RIGHT SLIDE BLOCK SHAFT	1
64	141200000084	CM700,RIGHT-SLIDE,POM	1
65	121040000120	SCREW,FTP,BLACK Zinc,M2.0X8	6
66	141218010064	CMU705,PANELBACK,ABS	1
67	141200000085	CM700,LEFT-SLIDE,POM	1
68	121025000152	CM700,LEFT SLIDE BLOCK SHAFT	1
69	121290000237	CM700,BACK LIGHTING SHEET	1
70	121490000120	CM203,ZEBRA STRIP	1
71	121460000027	CAD415,LIGHT SHIELDING SHEET,Tinsel Sheet,T0.15	1
72	141290000043	CA-C310,BACKLIGHTGUIDE,Pmma	1
73	143405000060	LED,WHITE,Ø3,204-15AUWW,20MA,3.5V	2
74	121290010238	CM700,FILTER SHEET	1
75	143400000048	LCD,CMU705,NEGATIVE COLOUR	1
76	141000000597	CMU705,LCD COVER,SECC,0.6mm	1
77	121040000086	SCREW,BTS,White Ni,M2.6X7	1
78	121040000075	SCREW,BTS,White Ni,M2.6X10	1
79	83823CMU708SD001	CMU708 USD+SD MI Assm	1
80	141490000118	CM700,FIXTURE FOR OUT LINE,SECC 0.8MM	1

## MECHANICAL PARTS LIST(SILVER PANEL, WITHOUT RDS)

Item	Assembly Part NO	Description	QTY
1	83823CMU705KB030	CMU705-58B SILVE MCE-525U Assm	1
2	141297000025	CM700 ,RIM,ABS(SILVER)	1
3	121040000089	SCREW,BTS,BLACK Zinc,M2.6X10.0	2
4	121490000034	CMU705,DUSTPROOF-STUD	1
5	141247010002	CMU705,CABINET,ABS	1
6	121040000083	SCREW,BTS,White Ni,M2.6X5	19
7	121025010155	CM700 ,RIVET PANEL	2
8	141000010034	CM700 ,BRACKET-PANEL-RIGHT,SECC,T1.0	1
9	141200000086	CMU706,PUSH,POM	1
10	121035000139	CMU706,HANDSPIKE-SPRING PRT,Ø0.55	1
11	121040000185	SCREW,PTP,BLACK Zinc,M2X5	9
12	83823CMU708FC000	CMU706 FC MI Assm	1
13	141290000263	CMU706,LOCKER,POM	1
14	121035000140	CMU706,LOCK SPRING PRT,Ø0.60	1
15	121025000157	CMU706,SHAFT-LOCK PRT	1
16	83823CMU706LB000	CMU706 LB MI Assm	1
17	121450000071	CM700S,DUSTPROOF,	1
18	121040000186	SCREW,PTS,Color Znic,M2.0X4	5
19	121200000087	CMU706,DAMPER(45g), NYLON	1
20	121440000031	CD206,FELT-16-025,种3.5X 1.5X0.25, Graphite fibre	2
21	141200010082	CM700 ,GEAR ,POM	1
22	121025010154	CM700 ,RIVET GEAR	1
23	141000000063	CM700 ,BRACKET-DAMPER,SECC,T1.0	1
24	141237010225	CM700 ,KNOB-EJECT,PC	1
25	141290000240	CM700 ,LENS GATE,PC	1
26	141000000068	CM700 ,SIDE STOPR,SECC,T1.0	2
27	141000010359	CMU706,BRACKET-FRONT-U PRT,SECC,T1.0	1
28	121050000005	NUT,White Znic,M3X2.5	2
29	121040000047	SCREW,BM,White Ni,M3X8	2
30	121040000154	SCREW,PA ,White Ni,M2.6X8	2
31	141000000358	CMU706,BRACKET DECK FRONT OF CLC01,SECC,T1.0	1
32	83823CMU706SB002	CMU706 SB MI Assm	1
33	144840030017	DECK,CL-C01FY7(SHINWA)	1
34	121040000101	SCREW,CM,Color Znic,M2.6x19,(SHINWA CL-C01)	2
35	141000020341	CM701 ,TOPCOVER,SECC,T0.6	2
36	121000010334	CM700 ,DECK REAR BRACKET,SECC,T1.0	1
37	121040000069	SCREW,BTS,White Znic,M2.6X3	2
38	121050000003	CMV100,POLE	1
39	121410000026	CMV100,RUBBER	1
40	121040000077	SCREW,BTS,White Ni,M2.6X14	2
41	141000000067	CAD310,SHORT SHEET,SECC, T0.6	1
42	124845000001	ANTENNA,W/GROUND 230mm	1
43	121040000059	SCREW,BTB,White Ni,M2.6X21	2
44	141010020047	CME0CM700,HEATSINK	1
45	121000030076	CAD510,BRACKET-REAR-U,SECC,T1.0	1
46	141000000319	CM226,BRACKET IC 7386,SECC,T0.8	1
47	83823CMU706MB113	CMU706 4X4V ESP FM/OIRT MB MI Assm	1
48	121040000222	SCREW,pFM,BLACK Zinc,M2.6X5	2
49	121290000662	CM725 ,ISOLATOR SHEET,PC SHEET (T=0.185mm),CM725	1
50	141228010411	CMU705,LENS,Pmma.	1

Item	Assembly Part NO	Description	QTY
51	121217020041	CMU705,PANEL-FRONT,ABS(W/ODISCPROLOGY)	1
52	141237000306	CMU705,KNOB-BAND-NUM-AMS,PC	1
53	141237020307	CMU705,KNOB-OPEN,PC	1
54	121440000037	CM700,E-WASHER,4X0.5	2
55	121035000332	CMV100,SPRING RELEASE NEW,0.3mm,	1
56	83822CMU705KB000	CMU705 KB SMT Assm	1
57	141290010264	CMU705,LIGHT GUIDE,PC	1
58	141237000308	CMU705,KNOB-PWR,PC	1
59	141237000309	CMU705,KNOB-SRC-MUTE-DSIP-NO RDS,PC	1
60	141295000015	CMU705,DECORATED-RING,ABS	1
61	141235000025	CM233,KNOB-ENCODER,ABS	1
62	121035000136	CM700,L/&R ROTATING SPRING,Ø0.40	2
63	121025000153	CM700,RIGHT SLIDE BLOCK SHAFT	1
64	141200000084	CM700,RIGHT-SLIDE,POM	1
65	121040000120	SCREW,FTP,BLACK Zinc,M2.0X8	6
66	141218010064	CMU705,PANELBACK,ABS	1
67	141200000085	CM700,LEFT-SLIDE,POM	1
68	121025000152	CM700,LEFT SLIDE BLOCK SHAFT	1
69	121290000237	CM700,BACK LIGHTING SHEET	1
70	121490000120	CM203,ZEBRA STRIP	1
71	121460000027	CAD415,LIGHT SHIELDING SHEET,Tinsel Sheet,T0.15	1
72	141290000043	CA-C310,BACKLIGHTGUIDE,Pmma	1
73	143405000060	LED,WHITE,Ø3,204-15AUWW,20MA,3.5V	2
74	121290010238	CM700,FILTER SHEET	1
75	143400000048	LCD,CMU705,NEGATIVE COLOUR	1
76	141000000597	CMU705,LCD COVER,SECC,0.6mm	1
77	121040000086	SCREW,BTS,White Ni,M2.6X7	1
78	121040000075	SCREW,BTS,White Ni,M2.6X10	1
79	83823CMU708SD00	CMU708 USD+SD MI Assm	1
80	1141490000118	CM700,FIXTURE FOR OUT LINE,SECC 0.8MM	1

## MECHANICAL PARTS LIST(BLACK PANEL, WITH RDS)

Item	Assembly Part NO	Description	QTY
1	83823CMU705KB000	CMU705-58C Black PANEL SILVE KNOB Assm	1
2	141298000021	CM700 ,RIM,ABS(BLACK)	1
3	121040000089	SCREW,BTS,BLACK Zinc,M2.6X10.0	2
4	121490000034	CMU705,DUSTPROOF-STUD	1
5	141248010005	CMU705,CABINET,ABS	1
6	121040000083	SCREW,BTS,White Ni,M2.6X5	19
7	121025010155	CM700 ,RIVET PANEL	2
8	141000010034	CM700 ,BRACKET-PANEL-RIGHT,SECC,T1.0	1
9	141200000086	CMU706,PUSH,POM	1
10	121035000139	CMU706,HANDSPIKE-SPRING PRT,Ø0.55	1
11	121040000185	SCREW,PTP,BLACK Zinc,M2X5	9
12	83823CMU708FC000	CMU706 FC MI Assm	1
13	141290000263	CMU706,LOCKER,POM	1
14	121035000140	CMU706,LOCK SPRING PRT,Ø0.60	1
15	121025000157	CMU706,SHAFT-LOCK PRT	1
16	83823CMU706LB000	CMU706 LB MI Assm	1
17	121450000071	CM700S,DUSTPROOF,	1
18	121040000186	SCREW,PTS,Color Znic,M2.0X4	5
19	121200000087	CMU706,DAMPER(45g), NYLON	1
20	121440000031	CD206,FELT-16-025,种3.5X 1.5X0.25, Graphite fibre	2
21	141200010082	CM700 ,GEAR ,POM	1
22	121025010154	CM700 ,RIVET GEAR	1
23	141000000063	CM700 ,BRACKET-DAMPER,SECC,T1.0	1
24	141237010225	CM700 ,KNOB-EJECT,PC	1
25	141290000240	CM700 ,LENS GATE,PC	1
26	141000000068	CM700 ,SIDE STOPR,SECC,T1.0	2
27	141000010359	CMU706,BRACKET-FRONT-U PRT,SECC,T1.0	1
28	121050000005	NUT,White Znic,M3X2.5	2
29	121040000047	SCREW,BM,White Ni,M3X8	2
30	121040000154	SCREW,PA ,White Ni,M2.6X8	2
31	141000000358	CMU706,BRACKET DECK FRONT OF CLC01,SECC,T1.0	1
32	83823CMU706SB002	CMU706 SB MI Assm	1
33	144840030017	DECK,CL-C01FY7(SHINWA)	1
34	121040000101	SCREW,CM,Color Znic,M2.6x19,(SHINWA CL-C01)	2
35	141000020341	CM701 ,TOPCOVER,SECC,T0.6	2
36	121000010334	CM700 ,DECK REAR BRACKET,SECC,T1.0	1
37	121040000069	SCREW,BTS,White Znic,M2.6X3	2
38	121050000003	CMV100,POLE	1
39	121410000026	CMV100,RUBBER	1
40	121040000077	SCREW,BTS,White Ni,M2.6X14	2
41	141000000067	CAD310,SHORT SHEET,SECC, T0.6	1
42	124845000001	ANTENNA,W/GROUND 230mm	1
43	121040000059	SCREW,BTB,White Ni,M2.6X21	2
44	141010020047	CME0CM700,HEATSINK	1
45	121000030076	CAD510,BRACKET-REAR-U,SECC,T1.0	1
46	141000000319	CM226,BRACKET IC 7386,SECC,T0.8	1
47	83823CMU706MB103	CMU706 4X4V RDS ESP FM/OIRT 4VSUB AUXI MB MI Assm	1
48	121040000222	SCREW,pFM,BLACK Zinc,M2.6X5	2
49	121290000662	CM725 ,ISOLATOR SHEET,PC SHEET (T=0.185mm),CM725	1
50	141228010412	CMU705,LENS,Pmma(WRDSPROLOGY)	1

Item	Assembly Part NO	Description	QTY
51	121218020124	CMU705,PANEL-FRONTBLACK,ABS	1
52	141237000306	CMU705,KNOB-BAND-NUM-AMS,PC	1
53	141237020307	CMU705,KNOB-OPEN,PC	1
54	1214400000037	CM700,E-WASHER,4X0.5	2
55	121035000332	CMV100,SPRING RELEASE NEW,0.3mm,	1
56	83822CMU705KB000	CMU705 KB SMT Assm	1
57	141290010264	CMU705,LIGHT GUIDE,PC	1
58	141237000308	CMU705,KNOB-PWR,PC	1
59	141237000310	CMU705,KNOB-SRC-MUTE-DSIP-RDS,PC	1
60	141295000015	CMU705,DECORATED-RING,ABS	1
61	141235000025	CM233,KNOB-ENCODER,ABS	1
62	121035000136	CM700,L/&R ROTATING SPRING,Ø0.40	2
63	121025000153	CM700,RIGHT SLIDE BLOCK SHAFT	1
64	141200000084	CM700,RIGHT-SLIDE,POM	1
65	121040000120	SCREW,FTP,BLACK Zinc,M2.0X8	6
66	141218010064	CMU705,PANELBACK,ABS	1
67	141200000085	CM700,LEFT-SLIDE,POM	1
68	121025000152	CM700,LEFT SLIDE BLOCK SHAFT	1
69	121290000237	CM700,BACK LIGHTING SHEET	1
70	121490000120	CM203,ZEBRA STRIP	1
71	121460000027	CAD415,LIGHT SHIELDING SHEET,Tinsel Sheet,T0.15	1
72	141290000043	CA-C310,BACKLIGHTGUIDE,Pmma	1
73	143405000060	LED,WHITE,Ø3,204-15AUWW,20MA,3.5V	2
74	121290010238	CM700,FILTER SHEET	1
75	143400000048	LCD,CMU705,NEGATIVE COLOUR	1
76	141000000597	CMU705,LCD COVER,SECC,0.6mm	1
77	121040000086	SCREW,BTS,White Ni,M2.6X7	1
78	121040000075	SCREW,BTS,White Ni,M2.6X10	1
79	83823CMU708SD001	CMU708 USD+SD MI Assm	1
80	141490000118	CM700,FIXTURE FOR OUT LINE,SECC 0.8MM	1

## MECHANICAL PARTS LIST(SILVER PANEL, WITH RDS)

Item	Assembly Part NO	Description	QTY
1	83823CMU705KB010	CMU705-58D SILVE KB MI Assm	1
2	141297000025	CM700 ,RIM,ABS(SILVER)	1
3	121040000089	SCREW,BTS,BLACK Zinc,M2.6X10.0	2
4	121490000034	CMU705,DUSTPROOF-STUD	1
5	141247010002	CMU705,CABINET,ABS	1
6	121040000083	SCREW,BTS,White Ni,M2.6X5	19
7	121025010155	CM700 ,RIVET PANEL	2
8	141000010034	CM700 ,BRACKET-PANEL-RIGHT,SECC,T1.0	1
9	141200000086	CMU706,PUSH,POM	1
10	121035000139	CMU706,HANDSPIKE-SPRING PRT,Ø0.55	1
11	121040000185	SCREW,PTP,BLACK Zinc,M2X5	9
12	83823CMU708FC000	CMU706 FC MI Assm	1
13	141290000263	CMU706,LOCKER,POM	1
14	121035000140	CMU706,LOCK SPRING PRT,Ø0.60	1
15	121025000157	CMU706,SHAFT-LOCK PRT	1
16	83823CMU706LB000	CMU706 LB MI Assm	1
17	121450000071	CM700S,DUSTPROOF,	1
18	121040000186	SCREW,PTS,Color Znic,M2.0X4	5
19	121200000087	CMU706,DAMPER(45g), NYLON	1
20	121440000031	CD206,FELT-16-025,种3.5X 1.5X0.25,Graphite fibre	2
21	141200010082	CM700 ,GEAR ,POM	1
22	121025010154	CM700 ,RIVET GEAR	1
23	141000000063	CM700 ,BRACKET-DAMPER,SECC,T1.0	1
24	141237010225	CM700 ,KNOB-EJECT,PC	1
25	141290000240	CM700 ,LENS GATE,PC	1
26	141000000068	CM700 ,SIDE STOPR,SECC,T1.0	2
27	141000010359	CMU706,BRACKET-FRONT-U PRT,SECC,T1.0	1
28	121050000005	NUT,White Znic,M3X2.5	2
29	121040000047	SCREW,BM,White Ni,M3X8	2
30	121040000154	SCREW,PA ,White Ni,M2.6X8	2
31	141000000358	CMU706,BRACKET DECK FRONT OF CLC01,SECC,T1.0	1
32	83823CMU706SB002	CMU706 SB MI Assm	1
33	144840030017	DECK,CL-C01FY7(SHINWA)	1
34	121040000101	SCREW,CM,Color Znic,M2.6x19,(SHINWA CL-C01)	2
35	141000020341	CM701 ,TOPCOVER,SECC,T0.6	2
36	121000010334	CM700 ,DECK REAR BRACKET,SECC,T1.0	1
37	121040000069	SCREW,BTS,White Znic,M2.6X3	2
38	121050000003	CMV100,POLE	1
39	121410000026	CMV100,RUBBER	1
40	121040000077	SCREW,BTS,White Ni,M2.6X14	2
41	141000000067	CAD310,SHORT SHEET,SECC, T0.6	1
42	124845000001	ANTENNA,W/GROUND 230mm	1
43	121040000059	SCREW,BTB,White Ni,M2.6X21	2
44	141010020047	CME0CM700,HEATSINK	1
45	121000030076	CAD510,BRACKET-REAR-U,SECC,T1.0	1
46	141000000319	CM226,BRACKET IC 7386,SECC,T0.8	1
47	83823CMU706MB103	CMU706 4X4V RDS ESP FM/OIRT 4VSUB AUXI MB MI Assm	1
48	121040000222	SCREW,pFM,BLACK Zinc,M2.6X5	2
49	121290000662	CM725 ,ISOLATOR SHEET,PC SHEET (T=0.185mm),CM725	1
50	141228010412	CMU705,LENS,Pmma(WRDSPROLOGY)	1

Item	Assembly Part NO	Description	QTY
51	141217020072	CMU705,PANEL-FRONTBLACK,ABS	1
52	141237000306	CMU705,KNOB-BAND-NUM-AMS,PC	1
53	141237020307	CMU705,KNOB-OPEN,PC	1
54	121440000037	CM700,E-WASHER,4X0.5	2
55	121035000332	CMV100,SPRING RELEASE NEW,0.3mm,	1
56	83822CMU705KB000	CMU705 KB SMT Assm	1
57	141290010264	CMU705,LIGHT GUIDE,PC	1
58	141237000308	CMU705,KNOB-PWR,PC	1
59	141237000310	CMU705,KNOB-SRC-MUTE-DSIP-RDS,PC	1
60	141295000015	CMU705,DECORATED-RING,ABS	1
61	141235000025	CM233,KNOB-ENCODER,ABS	1
62	121035000136	CM700,L/R ROTATING SPRING,Ø0.40	2
63	121025000153	CM700,RIGHT SLIDE BLOCK SHAFT	1
64	141200000084	CM700,RIGHT-SLIDE,POM	1
65	121040000120	SCREW,FTP,BLACK Zinc,M2.0X8	6
66	141218010064	CMU705,PANELBACK,ABS	1
67	141200000085	CM700,LEFT-SLIDE,POM	1
68	121025000152	CM700,LEFT SLIDE BLOCK SHAFT	1
69	121290000237	CM700,BACK LIGHTING SHEET	1
70	121490000120	CM203,ZEBRA STRIP	1
71	121460000027	CAD415,LIGHT SHIELDING SHEET,Tinsel Sheet,T0.15	1
72	141290000043	CA-C310,BACKLIGHTGUIDE,Pmma	1
73	143405000060	LED,WHITE,Ø3,204-15AUWW,20MA,3.5V	2
74	121290010238	CM700,FILTER SHEET	1
75	143400000048	LCD,CMU705,NEGATIVE COLOUR	1
76	141000000597	CMU705,LCD COVER,SECC,0.6mm	1
77	121040000086	SCREW,BTS,White Ni,M2.6X7	1
78	121040000075	SCREW,BTS,White Ni,M2.6X10	1
79	83823CMU708SD001	CMU708 USD+SD MI Assm	1
80	141490000118	CM700,FIXTURE FOR OUT LINE,SECC 0.8MM	1