

Service
Service
Service



Service Manual

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3141 785 34300

Version 1.0



PHILIPS

TECHNICAL SPECIFICATION

General

Power supply	12 V DC (11 V - 16 V), negative ground
Fuse	15 A
Suitable speaker impedance	4 - 8 Ω
Maximum power output	50 W x 4 channels
Continuous power output	24 W x 4 channels (4 Ω 10% T.H.D.)
Pre-Amp output voltage	2.0 V (CD play mode; 1 kHz, 0 dB, 10 k Ω load)
Subwoofer output voltage	2.0 V (CD play mode)
Aux-in level	\geq 500 mV
Dimensions (W x H x D)	188 x 58 x 193 mm
Weight	1.7 kg

Disc player

System	DVD / CD audio / MP3 system
Frequency response	20 Hz - 20k Hz
Signal/noise ratio	>75dB
Total harmonic distortion	Less than 1%
Channel separation	>55dB
Video signal format	NTSC/PAL/AUTO
Video output	1 +/- 0.2V

Tuner

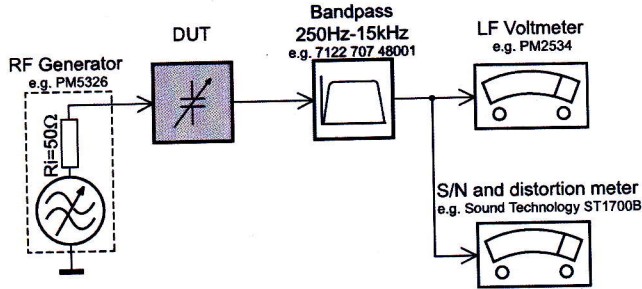
Frequency range - FM	87.5 - 108.0 MHz (100kHz per step in auto search and 50kHz per step in manual search)
Frequency range - AM(MW)	522 - 1620 KHz
Usable sensitivity - FM	8 μ V
Usable sensitivity - AM (MW)	50 μ V

LCD

Screen size	3.5 inches (16:9)
Display resolution	320 x 234 dots
Contrast ratio	350
Brightness	220 cd/m ²

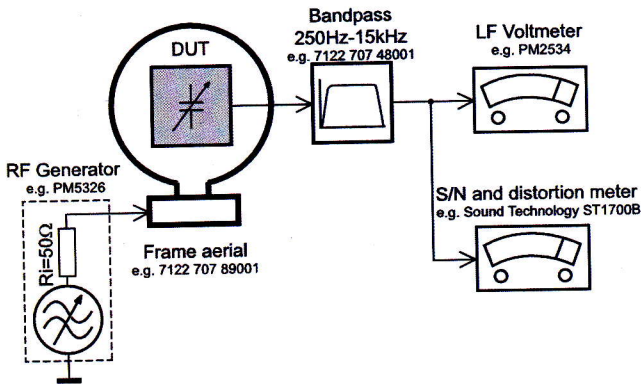
MEASUREMENT SETUP

Tuner FM



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

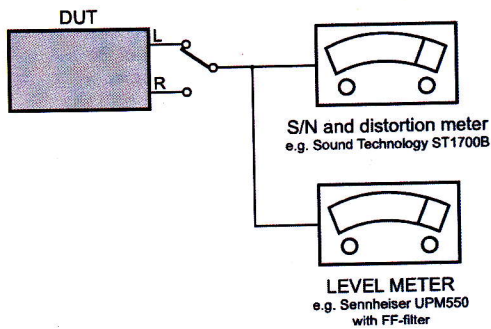
Tuner AM (MW,LW)



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).

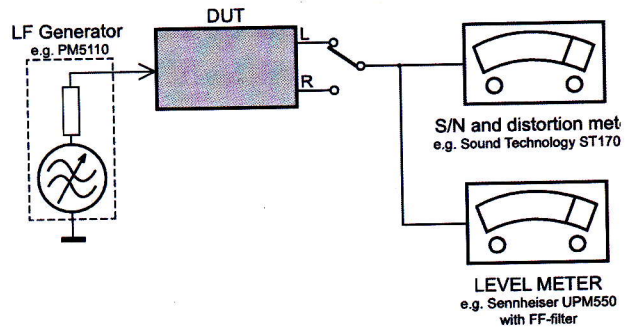
CD

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



Recorder

Use Universal Test Cassette CrO2 SBC419 4822 397 30069
or Universal Test Cassette Fe SBC420 4822 397 30071



SERVICE AIDS

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



GB

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

Safety components are marked by the symbol .

**CLASS 1
LASER PRODUCT**

INFORMATION ABOUT LEAD-FREE SOLDERING

Philips CE is producing lead-free sets from 1.1.2005 onwards.

IDENTIFICATION:

Regardless of special logo (not always indicated) one must treat all sets from **1 Jan 2005** onwards, according next rules:



- On our website www.atyourservice.ce.Philips.com you find more information to:
 - * BGA-de-/soldering (+ baking instructions)
 - * Heating-profiles of BGAs and other ICs used in Philips-sets
 - * Lead free

You will find this and more technical information within the "magazine", chapter "workshop news".

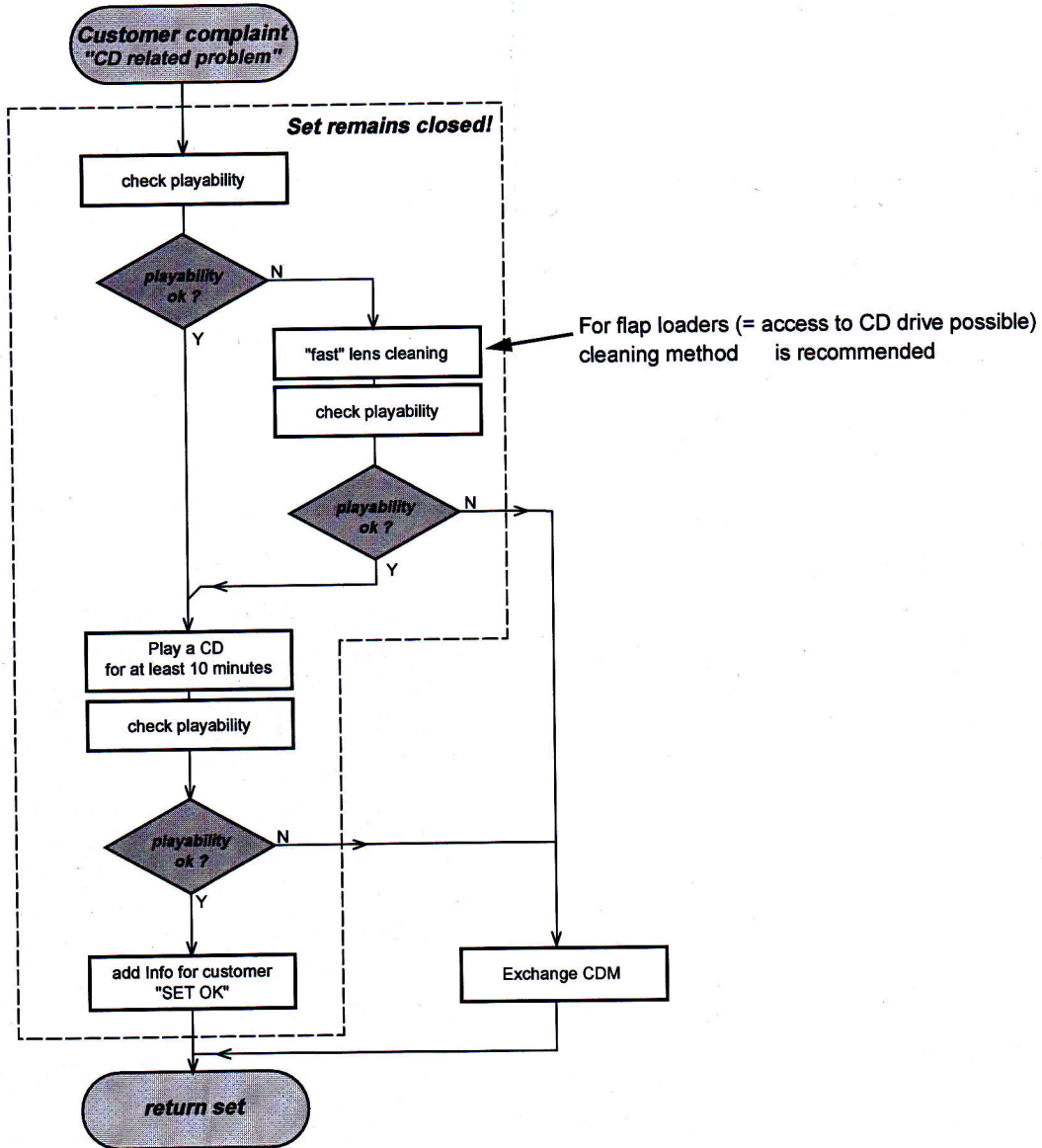
For additional questions please contact your local repair-helpdesk.

SERVICE INSTRUCTION

Safety regulations require that after a repair, the set must be returned in its original condition. Pay in particular attention to the following points:

- Route the wire trees correctly and fix them with the mounted cable clamps.
- Check the insulation of the AC Power lead for external damage.
- Check the strain relief of the AC Power cord for proper function.
- Check the electrical DC resistance between the AC Power Plug and the secondary side (only for sets which have a AC Power isolated power supply):
 1. Unplug the AC Power cord and connect a wire between the two pins of the AC Power plug.
 2. Set the AC Power switch to the "on" position (keep the AC Power cord unplugged!).
 3. Measure the resistance value between the pins of the AC Power plug and the metal shielding of the tuner or the aerial connection on the set. The reading should be larger than 4.5 Mohm (For U.S. it should be between 4.2 Mohm and 12 Mohm).
 4. Switch "off" the set, and remove the wire between the two pins of the AC Power plug.
- Check the cabinet for defects, to avoid touching of any inner parts by the customer.

INSTRUCTIONS ON CD PLAYABILITY



- For description - see following pages

INSTRUCTIONS ON CD PLAYABILITY

PLAYABILITY CHECK

For sets which are compatible with **CD-RW** discs
 use CD-RW Printed Audio Disc.....7104 099 96611
 TR 3 (Fingerprint)
 TR 8 (600µ Black dot) **maximum at 01:00**

- playback of these two tracks without audible disturbance
 playing time for: Fingerprint ≥ 10 seconds
 Black dot from 00:50 to 01:10
- jump forward/backward (search) within a reasonable time

For all other sets
 use CD-DA SBC 444A.....4822 397 30245
 TR 14 (600µ Black dot) **maximum at 01:15**
 TR 19 (Fingerprint)
 TR 10 (1000µ wedge)

- playback of all these tracks without audible disturbance
 playing time for: 1000µ wedge ≥ 10 seconds
 Fingerprint ≥ 10 seconds
 Black dot from 01:05 to 01:25
- jump forward/backward (search) within a reasonable time

CUSTOMER INFORMATION

It is proposed to add an addendum sheet to the set which informs the customer that the set has been checked carefully - but no fault was found.

The problem was obviously caused by a scratched, dirty or copy-protected CD. In case problems remain, the customer is requested to contact the workshop directly.

The lens cleaning (method) should be mentioned in the addendum sheet.

The final wording in national language as well as the printing is under responsibility of the Regional Service Organizations.

LIQUID LENS CLEANING

Before touching the lens it is advised to clean the surface of the lens by blowing clean air over it. This to avoid that little particles make scratches on the lens.

Because the material of the lens is synthetic and coated with a special anti-reflectivity layer, cleaning must be done with a non-aggressive cleaning fluid. It is advised to use "Cleaning Solvent"

The actuator is a very precise mechanical component and may not be damaged in order to guarantee its full function. Clean the lens gently (don't press too hard) with a soft and clean cotton bud moistened with the special lens cleaner.

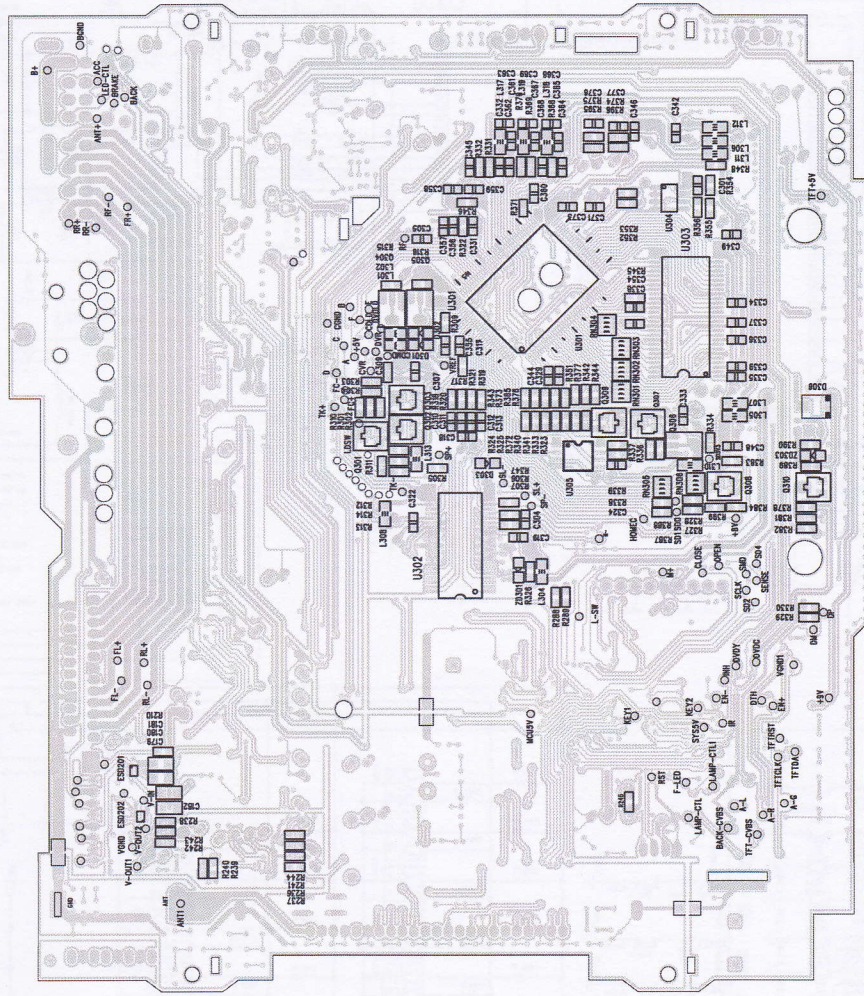
The direction of cleaning must be in the way as indicated in the picture below.



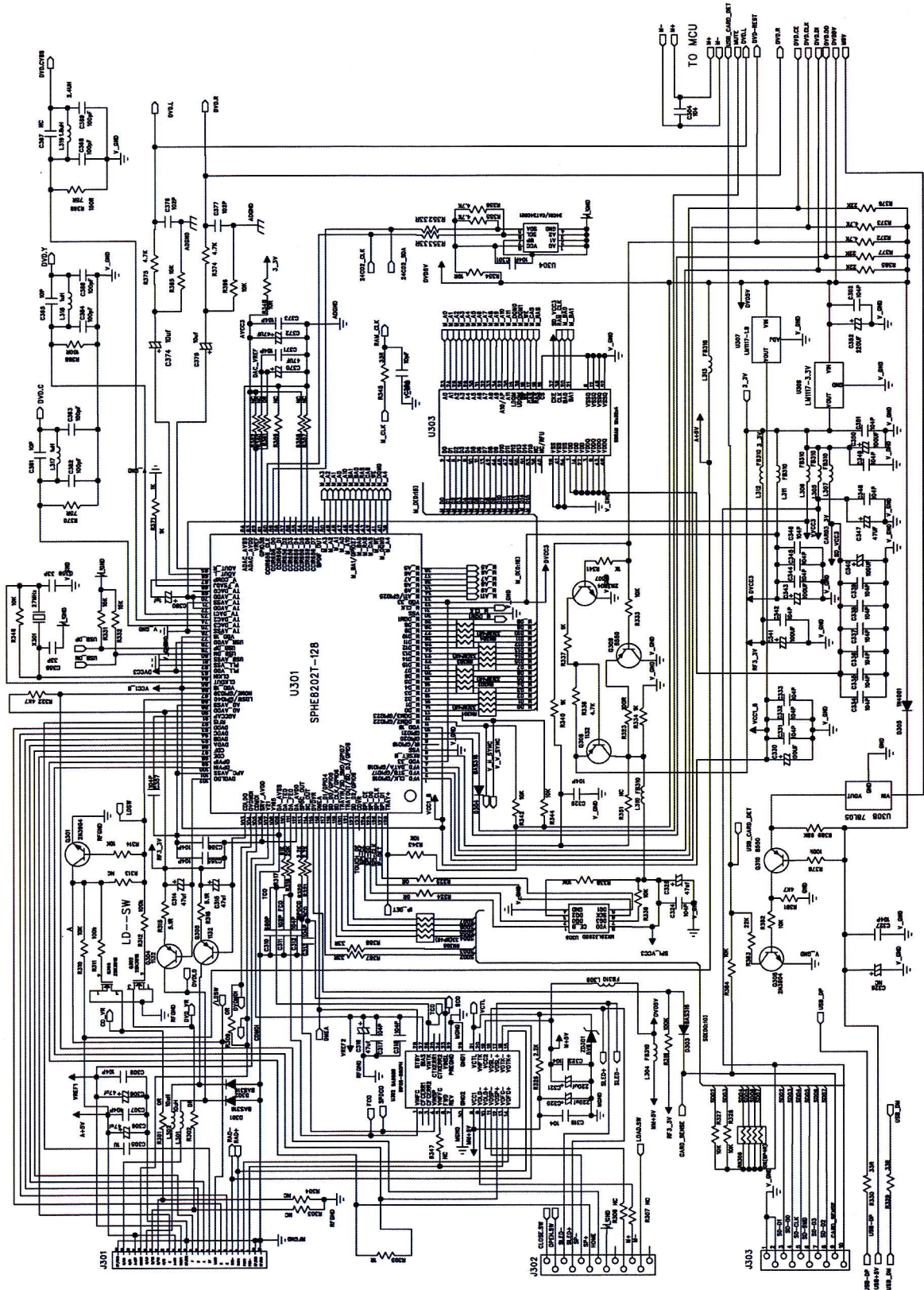
LAYOUT DIAGRAM - MAIN BOARD
BOTTOM SIDE

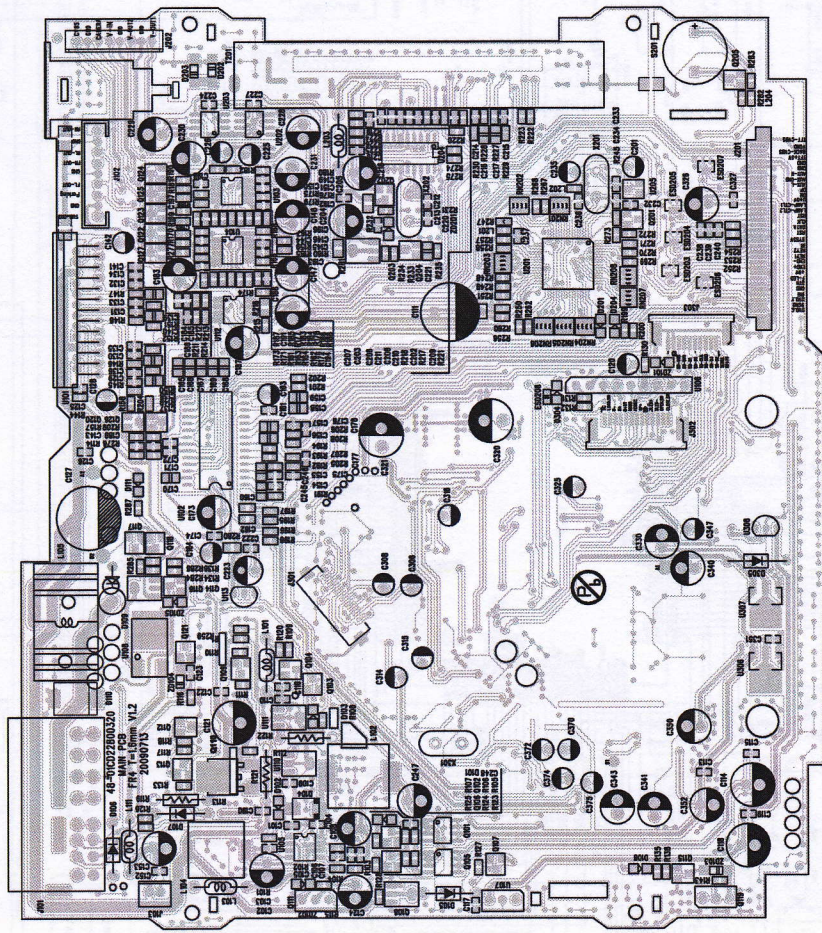
6-5

6-5



CIRCUIT DIAGRAM - MAIN BOARD PART 3

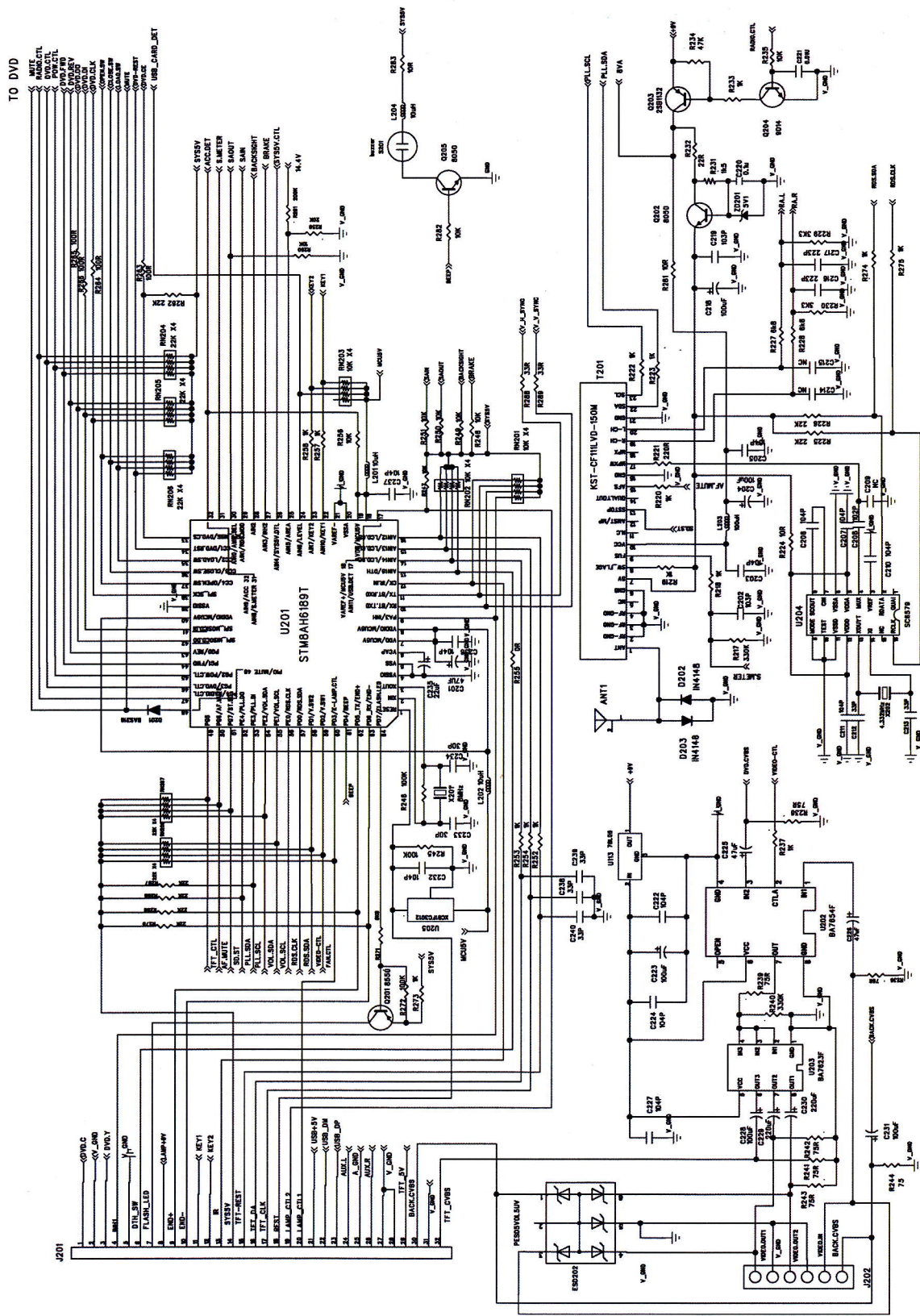




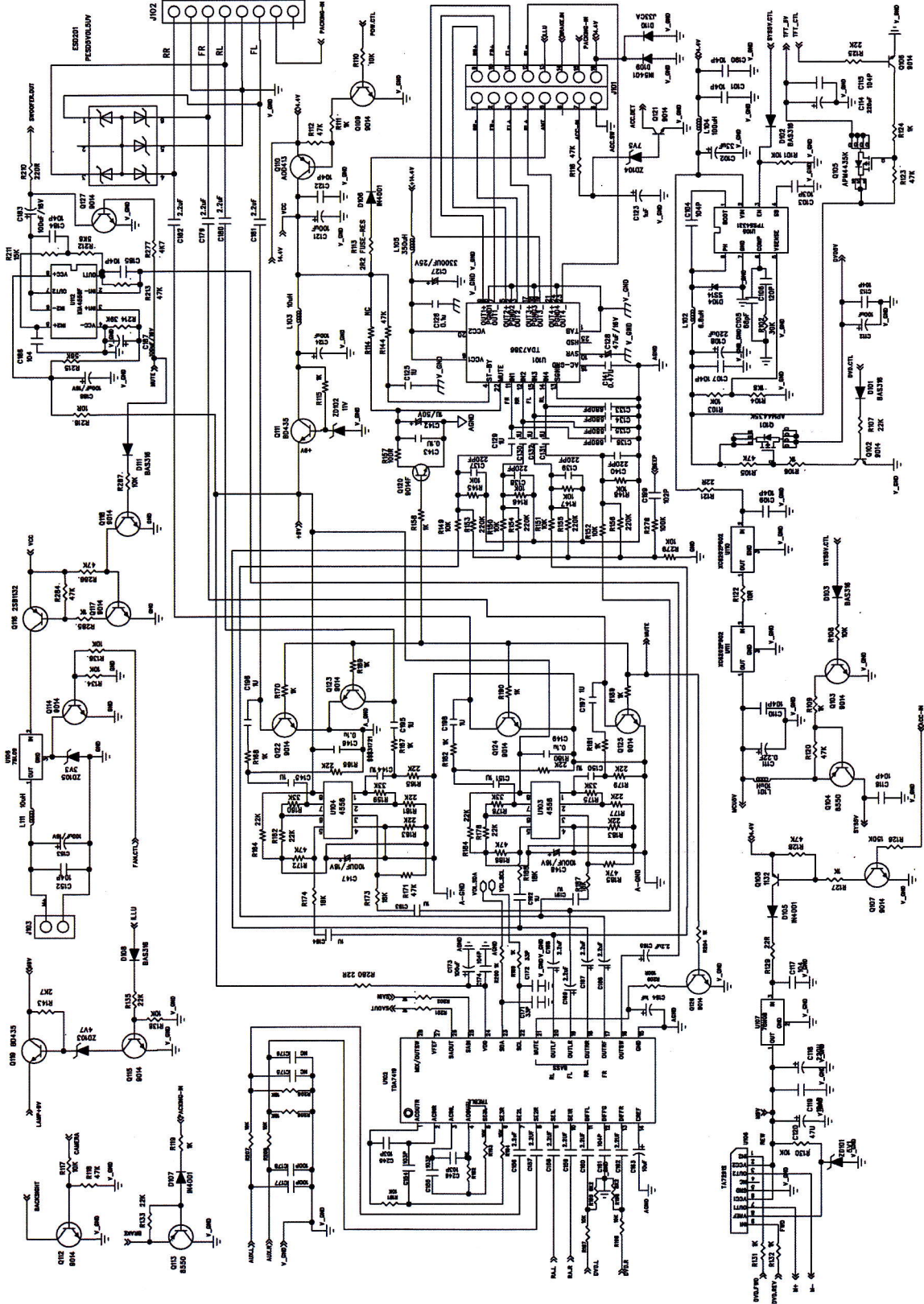
LAYOUT DIAGRAM - MAIN BOARD
TOP SIDE

FORM 3
CIRCUIT DRAWING - WORKING

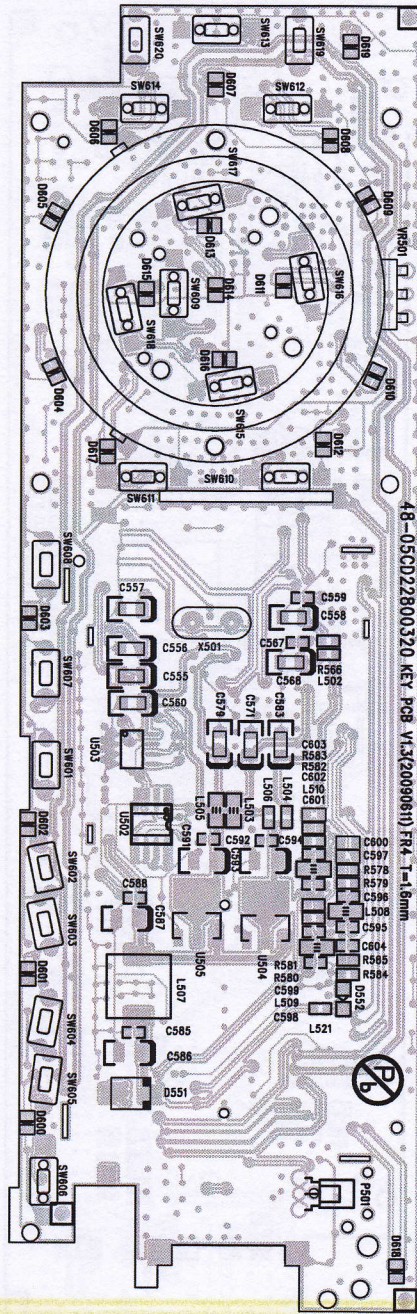
CIRCUIT DIAGRAM - MAIN BOARD PART 1



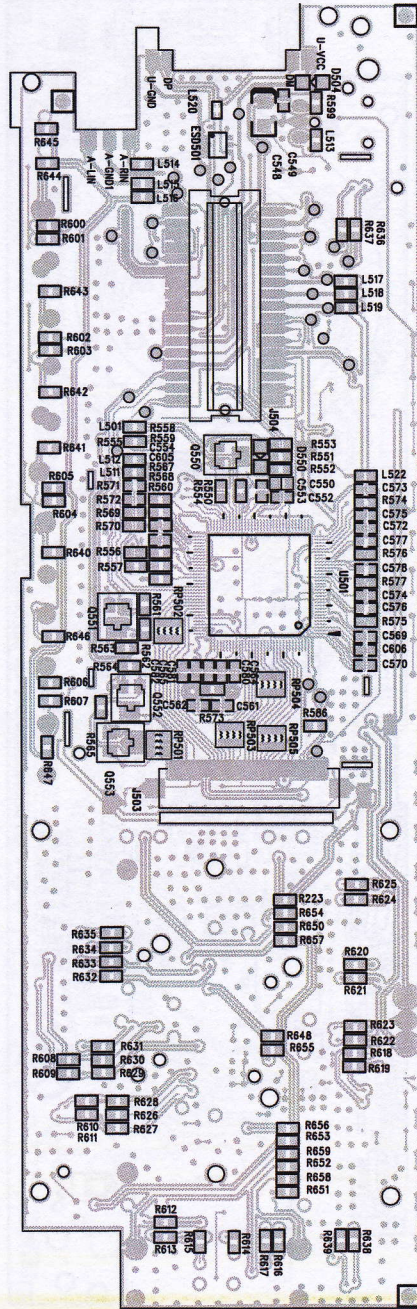
CIRCUIT DIAGRAM - MAIN BOARD PART 2



LAYOUT DIAGRAM - KEY BOARD
TOP SIDE

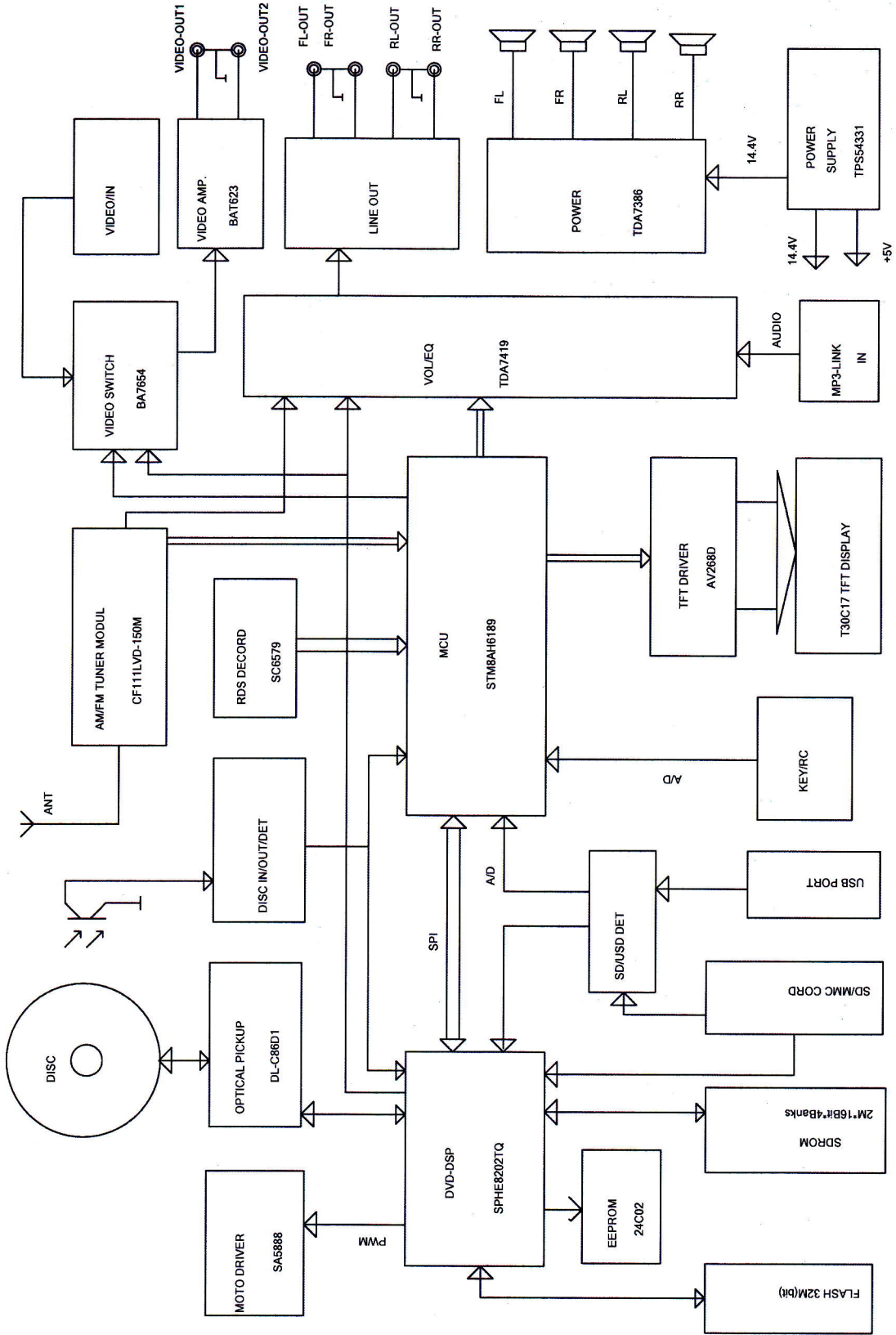


LAYOUT DIAGRAM - KEY BOARD
BOT SIDE




FOR THE
PACIFIC ELECTRONIC

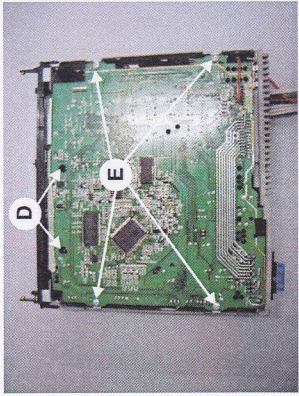
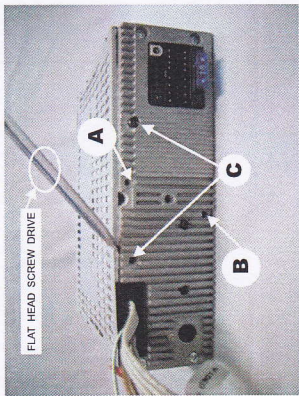
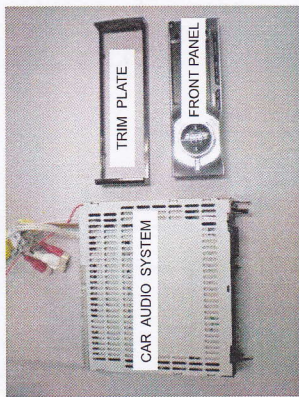
SET BLOCK DIAGRAM



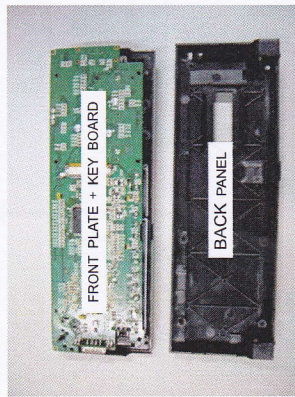
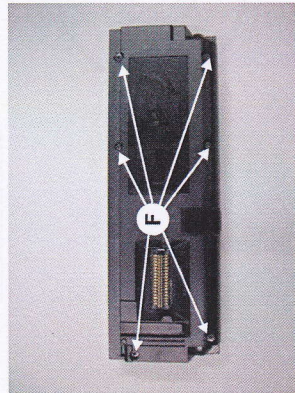
DISASSEMBLY INSTRUCTIONS

Dismantling of the car audio system and the front panel

- 1) Press  to open the panel, then push the right side panel toward the left side to disengage it from the chassis.
- 2) Remove 1 screw A and 1 screw B as indicated.
- 3) Remove the top and bottom lid as shown in the picture below with the help of a flat head screw driver.
- 4) Remove 2 screws C and 2 screws D as indicated to loosen the DVD mechanism.
- 5) Remove 4 screws E as indicated to loosen the main board.



- 6) Remove 6 screws F as indicated to loosen the front panel.



ELECTRICAL PARTSLIST**MAIN BOARD ASSEMBLY**

ANT	996510027473	ANT JACK AJ-2074
C127	996510027555	E.CAP 3300UF 25V +-20% 105C
J101	996510027539	16P SOCKET
T201	996510027514	TUNER MODULE KST-CF111LVD150M
U101	996510027474	IC TDA7386 (DIP)
U102	996510027482	IC TDA7419TR (SO-28 TAPE&REEL)
U103	994000001201	IC NJM4556AM
U104	994000001201	IC NJM4556AM
U105	996510027566	IC TPS54331 8PIN (R-PDSO-G8)
U106	996510002119	IC TA7291S
U107	996510018852	IC UTC7808
U108	996510018852	IC UTC7808
U109	996510018962	IC UTC7805
U110	996510027556	IC XC6202P802PR (SOT-89)
U111	996510027505	IC XC6202P502PR (SOT-89)
U113	996510003984	IC CYT78L05 (TO-92)
U201	996510027572	MCU IC STM8AH6189
U202	996510027559	VIDEO SWITCHER IC BA7654F-SMD
U203	996510027541	IC BA7623F
U204	996510027492	IC SC6579A SOP-16-225-1.27
U205	994000002853	IC XC61FC3012MR
U301	996510027549	IC SPHE8202TQ (128-PIN LQFP)
U302	996510027536	DRIVER IC 5-CH MOTO SA5888
U303	996510027537	IC K4S2816321-T(U)C/L60
U304	996510002114	IC BR24C02F-WE2
U305	996510027563	IC (MXIC)MX25L3205DM21-12G
U306	994000002839	IC LM1117S-3.3
U307	996510009335	IC LM1117S-1.8V SOT-223
X201	996500040365	CRYSTAL 8MHZ HC-49/US -30PPM
X202	994000004449	CRYSTAL 4.332MHZ +-20PPM
X301	996510009448	CRYSTAL27MHzHC49/US30PF+-20PPM

SK BOARD ASSEMBLY

D501	996510020774	SMD DIODE BAS316
D502	996510000438	LED LAMP
D504	996510023952	LED LAMP (BLUE) 2x1.75x0.74mm
ESD502	996510027516	ESD PROTECT DIODE PESD5V0L5UV
J505	996510027558	PHONEJACK 3.5mm ST-0219S00-030
J508	996510027491	USB SOCKET
SW501	996510027547	TACT SWITCH 6x6mm 4.3mm #TSA-
SW502	994000003093	CD DOOR SWITCH 1P1T DTS-03
SW503	996510027545	SMD TACT SWITCH 5.1x3.7 H=1.6mm

SD BOARD ASSEMBLY

ESD503	996510027561	ESD PROTECT DIODE PESD5V0L4UG
ESD504	996510027561	ESD PROTECT DIODE PESD5V0L4UG
J507	996510009323	SD CARD CONNECTORDT009-20-2050

MOTO BOARD ASSEMBLY

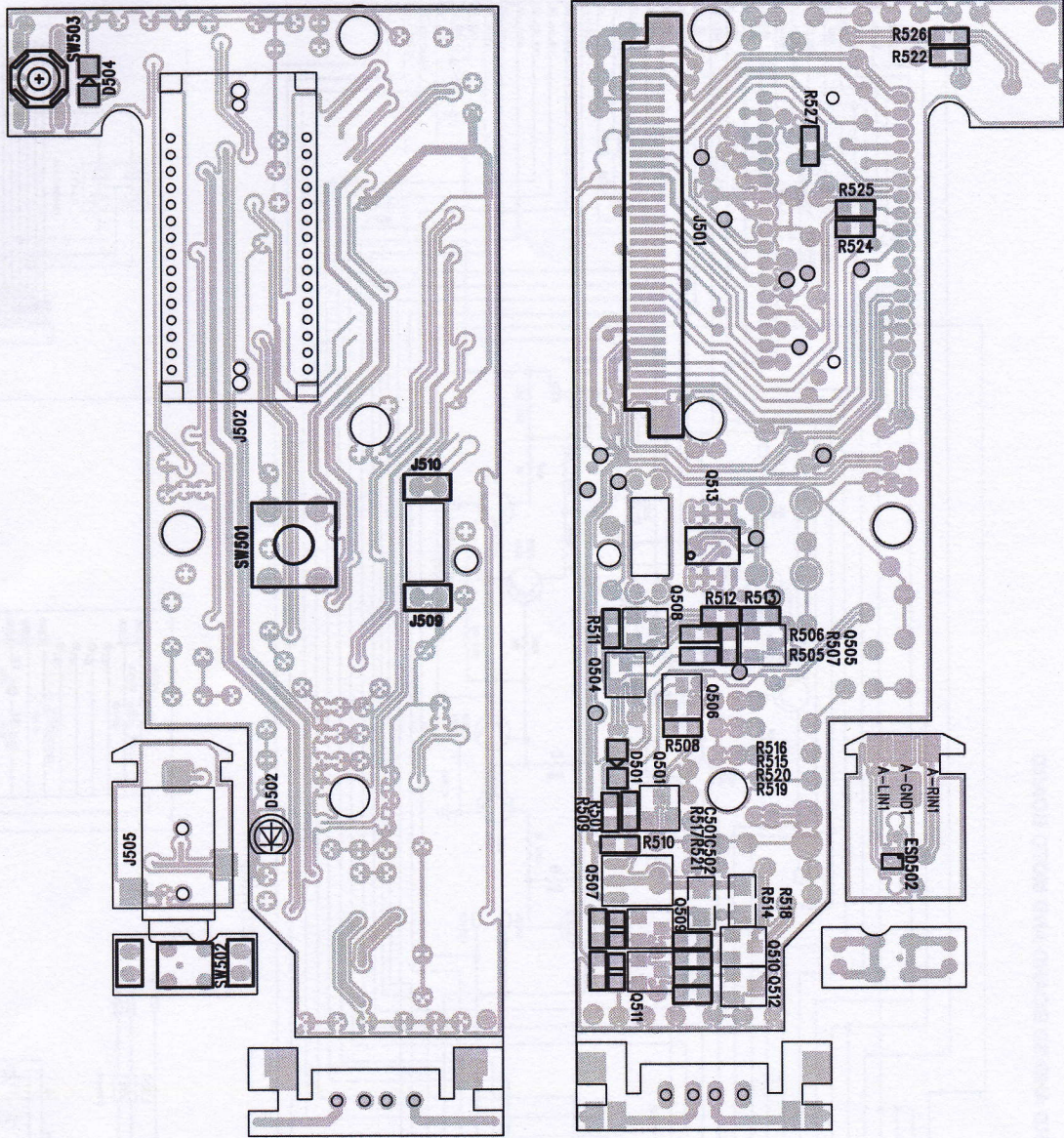
SW701	996510027476	DETECT SWITCH (MST-008N)
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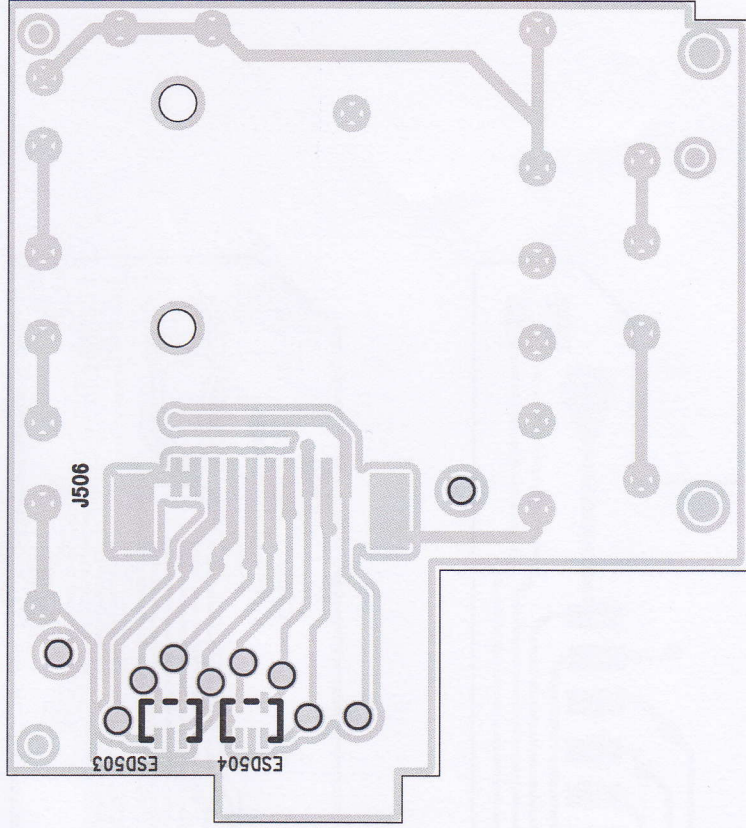
ELECTRICAL PARTSLIST**PANEL BOARD ASSEMBLY**

D550	996510027488	CHIP DIODE SOD323 BZX384-C3V9
D551	996500042437	CH-DIODE SS14 SMA/DO-214AC
D552	996510020774	SMD DIODE BAS316
D600	996510027564	LED RED/BLUE
D601	996510027564	LED RED/BLUE
D602	996510027564	LED RED/BLUE
D603	996510027564	LED RED/BLUE
D604	996510027564	LED RED/BLUE
D605	996510027564	LED RED/BLUE
D606	996510027564	LED RED/BLUE
D607	996510027564	LED RED/BLUE
D608	996510027564	LED RED/BLUE
D609	996510027564	LED RED/BLUE
D610	996510027564	LED RED/BLUE
D611	996510027564	LED RED/BLUE
D612	996510027564	LED RED/BLUE
D613	996510027564	LED RED/BLUE
D614	996510027564	LED RED/BLUE
D615	996510027564	LED RED/BLUE
D616	996510027564	LED RED/BLUE
D617	996510027564	LED RED/BLUE
D618	996510027564	LED RED/BLUE
D619	996510027564	LED RED/BLUE
ESD501	996510027478	ESD PROTECT DIODE PRTR5V0U4D
LCD	996510027644	TFT-LCD MODULE 3" T30C17
P501	996510009320	OPTIC SENSER FM-6038TN2-5AN
SW601	996510027484	SMD TACT SWITCH
SW602	996510027535	TACT SWITCH 4.3mm 180+-50g
SW603	996510027535	TACT SWITCH 4.3mm 180+-50g
SW604	996510027535	TACT SWITCH 4.3mm 180+-50g
SW605	996510027535	TACT SWITCH 4.3mm 180+-50g
SW606	996510027484	SMD TACT SWITCH
SW607	996510027535	TACT SWITCH 4.3mm 180+-50g
SW608	996510027535	TACT SWITCH 4.3mm 180+-50g
SW609	996510027484	SMD TACT SWITCH
SW610	996510027484	SMD TACT SWITCH
SW611	996510027484	SMD TACT SWITCH
SW612	996510027484	SMD TACT SWITCH
SW613	996510027484	SMD TACT SWITCH
SW614	996510027535	TACT SWITCH 4.3mm 180+-50g
SW615	996510027484	SMD TACT SWITCH
SW616	996510027484	SMD TACT SWITCH
SW617	996510027484	SMD TACT SWITCH
SW618	996510027484	SMD TACT SWITCH
U501	996510027554	SOC VIDEO PROCESSOR IC AV268D
U502	996510027542	IC W25X16 (8-PIN SOIC 208-MIL)
U504	994000002839	IC LM1117S-3.3
U505	996510009335	IC LM1117S-1.8V SOT-223
VR501	996510027493	ROTARY ENCODER
X501	996510008326	CRYSTAL 12 MHzHC-49/US H=3.5mm

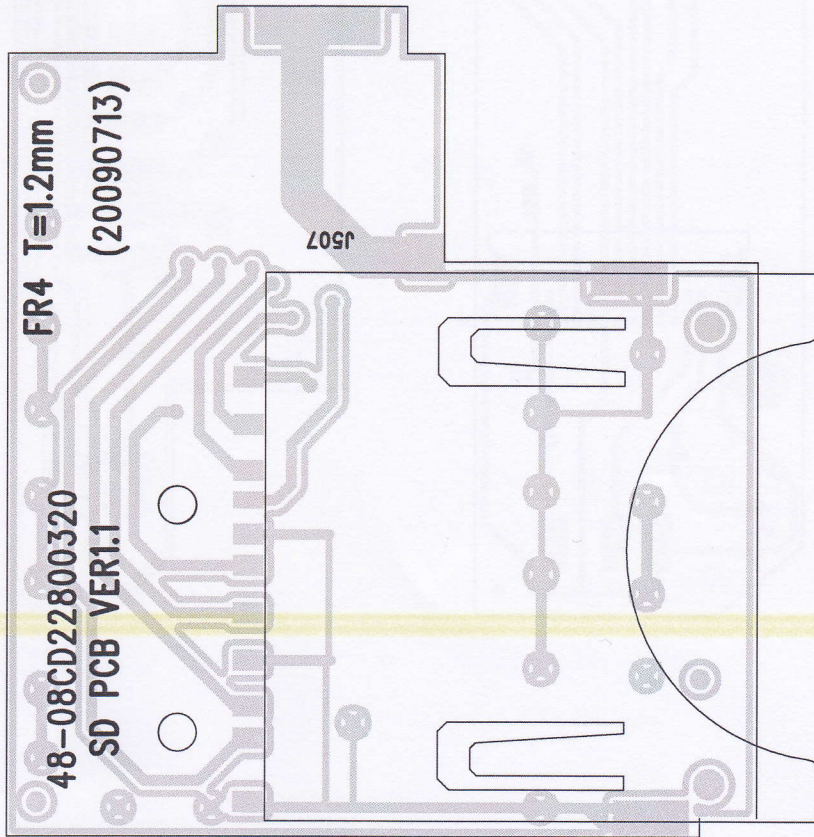
Note: Only these parts mentioned in the list are normal service parts.

LAYOUT DIAGRAM - SK BOARD

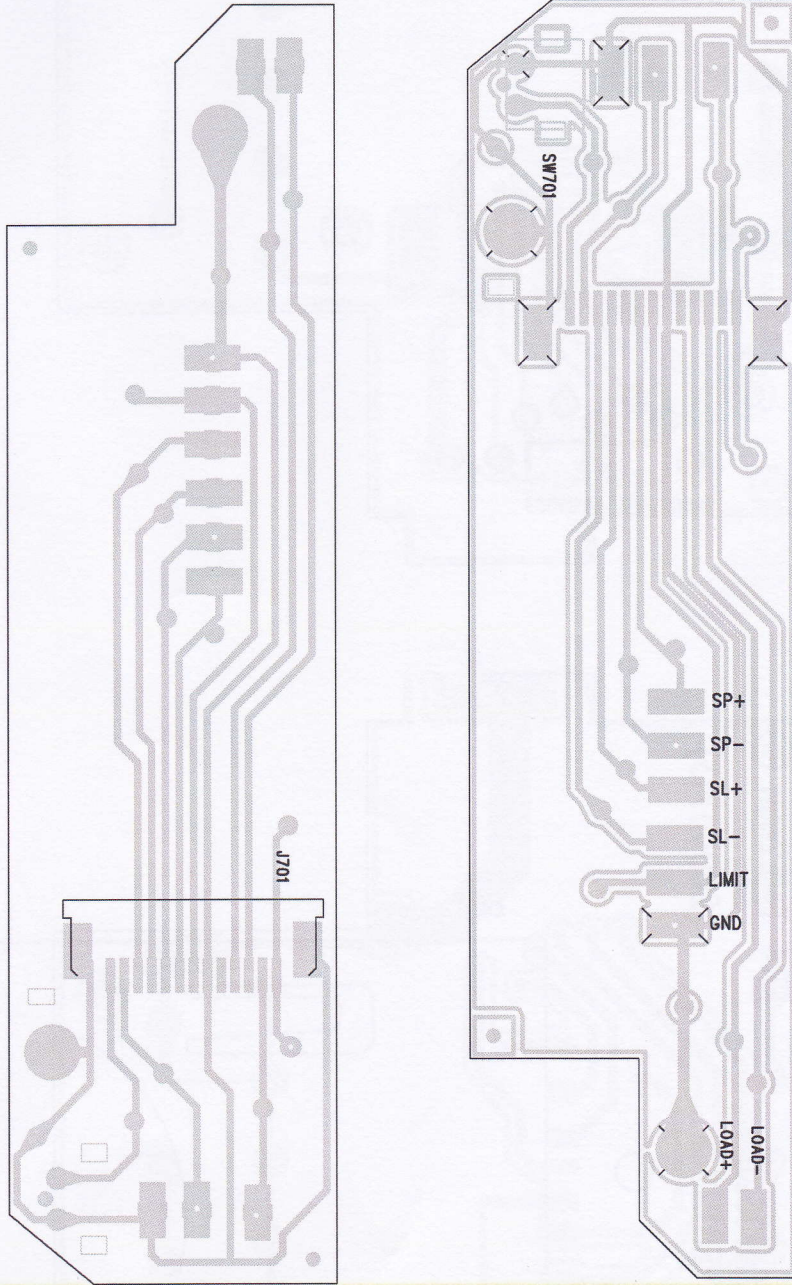




LAYOUT DIAGRAM - SD BOARD



LAYOUT DIAGRAM - MOTO BOARD



MECHANICAL PARTSLIST

0128	996510027507	SPRING-1
0129	996510027567	SPRING-2
0130	996510027495	SPRING-3
0131	996510027508	SPRING-4
0201	996510027643	FRONT PANEL
0202	996510027479	GLASSES BOX
0204	996510027646	BACK PANEL
0205	996510027497	CENTER-BTN-BKT
0206	996510027543	NAVIGATION BTNS-BKT
0207	996510027571	RELEASE-BUTTON-BKT
0208	996510027565	USB-COVER-BKT
0209	996510027645	PANEL BASE
0210	996510027481	RESISTANCE WHEEL
0211	996510027501	GEAR
0212	996510027552	EJECT-KEY
0213	996510027538	ROTARY KNOB
0214	996510027569	DBB-BUTTON
0215	996510027483	EQ-MENU-BUTTON
0216	996510027489	SOURCE-KEY
0217	996510027513	NAVIGATION-BTNS
0218	996510027496	CENTER-BTN
0219	996510027546	TOGGLE-BUTTON
0220	996510027562	NUMERAL-BTNS-1256
0221	996510027475	RELEASE BUTTON
0222	996510027498	NUMERAL-BTNS-4
0223	996510027485	SKIP-BUTTON
0224	996510027548	IR-SENSOR-LENS
0225	996510027512	RELEASE-ARM
0226	996510027486	LOCK PNL
0227	996510027499	RIGHT-SHAFT
0228	996510027494	LEFT-SHAFT
0229	996510027642	TFT-BRACKET
0230	996510027515	IR-SENSOR-BKT
0231	996510027502	SOCKET-BKT
0232	996510027534	USB COVER
0233	996510027472	ANNULAR-LIGHT-GUIDE
0234	996510027517	BEZEL-FRAME
0235	996510027509	CD-REFLECT-PLATE
J002	996510027544	WIRE 16P UP +16P DOWN L=200mm
J003	996510027553	32P FFC, 1mm L=70mm
J004	996510027503	10P FFC, 1mm L=60mm
J005	996510021284	13P FFC, 1mm L=100mm
0001	996510027487	PCBA-MAIN "CED228/98"
0002	996510027504	PCBA-KEY "CED228/98"
0003	996510027551	PCBA-SD "CED228/98"
0004	996510027568	PCBA-MOTO "CED228/98"
0005	996510027506	PCBA-SK "CED228/98"
0007	996510027511	CAR DVD MECHANISM DL-C86D1
0008	996510027557	FUSE 15A/32V
0006	996510027477	REMOTE CONTROL
J001	996510002089	CONN. CORD 3.5 ST/PLUGx2 500mm

ACCESSORIES

Note: Only these parts mentioned in the list are normal service parts.