

Service
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Service Manual

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SPECIFICATIONS

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	4.0 V (CD play mode; 1 kHz, 0 dB, 10 kΩ load)
Subwoofer output voltage	4.0 V (CD play mode, 61 Hz, 0 dB, 10 kΩ load)
Aux-in level	≥ 500 mV
Dimensions (W x H x D)	178 x 50 x 210 mm
Weight (main unit)	3.1 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 only
Video output	1 +/- 0.2V

Radio

Frequency range - FM	87.5 - 108.0 MHz (50kHz per step)
Frequency range - AM(MW)	522 - 1620 KHz (9kHz per step)
Usable sensitivity - FM	5 uV
Usable sensitivity - AM (MW)	25 uV

LCD

Screen size	7.0 inches
Display resolution	800 x 480 dots
Contrast ratio	500
Brightness	450 cd/m2

Bluetooth

Communication system	Bluetooth Standard version 2.0
Output	Bluetooth Standard Power Class 2
Maximum communication range	Line of sight approx. 8m
Frequency band	2.4 GHz band (2.4000 GHz - 2.4835 GHz)
Compatible Bluetooth profiles	Hands-Free Profile (HFP) Handset Profile (HSP) Advanced Audio Distribution Profile (A2DP) Audio Video Remote Control Profile (AVRCP)

Supported codecs	
Receive	SBC (Sub Band Codec)
Transmit	SBC (Sub Band Codec)

Playability information

Compatible USB devices:

- USB flash memory (USB 2.0 or USB1.1)
- USB flash players (USB 2.0 or USB1.1)
- Memory cards (SD / MMC / SDHC)

Supported USB formats:

- USB or memory file format: FAT16, FAT32
- MP3 bit rate (data rate): 32-320 Kbps and
variable bit rate
- WMA v9 or earlier
- Directory nesting up to a maximum of 8
levels

- Number of albums/folders: maximum 99
- Number of tracks/titles: maximum 999
- ID3 tag v2.0 or later
- File name in Unicode UTF8 (maximum
length: 128 bytes)

Supported MP3 disc format:

- ISO9660, Joliet
- Maximum title number: 512 (depending on
file name length)
- Maximum album number: 255
- Supported sampling frequencies: 32 kHz,
44.1 kHz, 48 kHz
- Supported Bit-rates: 32-320 Kbps and
variable bit rate

Supported video formats:

The following video formats(containers) are supported on current product:

- MPEG1 (*.avi, *.mpg, *.dat)
- MPEG4 (simple profile) (*.avi)
- DIVX4 (*.avi)
- DIVX5 (*.avi)
- XVID (*.avi)

NOTE:

To ensure smooth playback, the image size should not be higher than 640X480, frame rate should not be higher than 20 fps and data rate should not be higher than 500kbps in the encoded video.

Unsupported video formats:

The following video formats(containers) cannot be supported on current product:

- M-JPEG (*.avi, *.mov)
- MPEG4 (*.mov, *.wmv, *.mp4, *.3g2, *.asf, *.3gp)
- H.263 (*.avi, *.mov, *.flv, *.3gp)
- H.264 (*.mp4, *.mov)
- WMV3 (*.wmv, *.avi)
- WMV2 (*.wmv)
- RealVideo4 (*.rmvb, *.rm)
- RealVideo3 (*.rm)
- RealVideo2 (*.ram)
- MS Video (*.avi)

NOTE:

For format(container) not listed above, it is not guaranteed to work.
Please avoid from using with the product.

CED780 Dismantlement Method

1. Take out the three screws at heat sink, the six screws at the left right side of the main unit and the screw at the base panel



Take out the screws at heat sink



Take out the screws at the left side of the unit



Take out the screws at the right side of the unit



Take out the screw at base panel

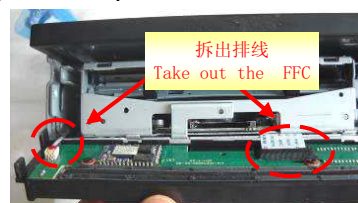
2. Prize up the left right hook of the base panel and take out the base panel, separate the bottom cover from the unit



Disassemble the left side of the base panel



Disassemble the right side of the base panel



Disassemble the FFC at base panel

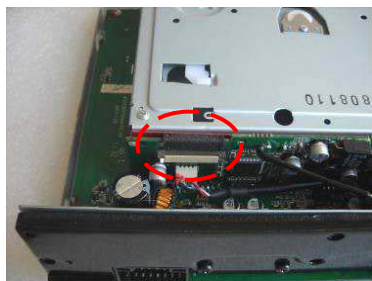


Disassemble the top cover



Separate the component of the button cover

3. Take out the FFC which connect to main board, and take out the fixed screws of the back cover, then take out the FFC at the deck mechanism



Take out FFC



Take out the screws at deck mechanism



Lift up deck mechanism



Disassemble the FFC at deck mechanism



Disassemble deck mechanism

4. Disassemble black wire and FFC first, then take out the screws around TFT



Take out the wire and motor wire



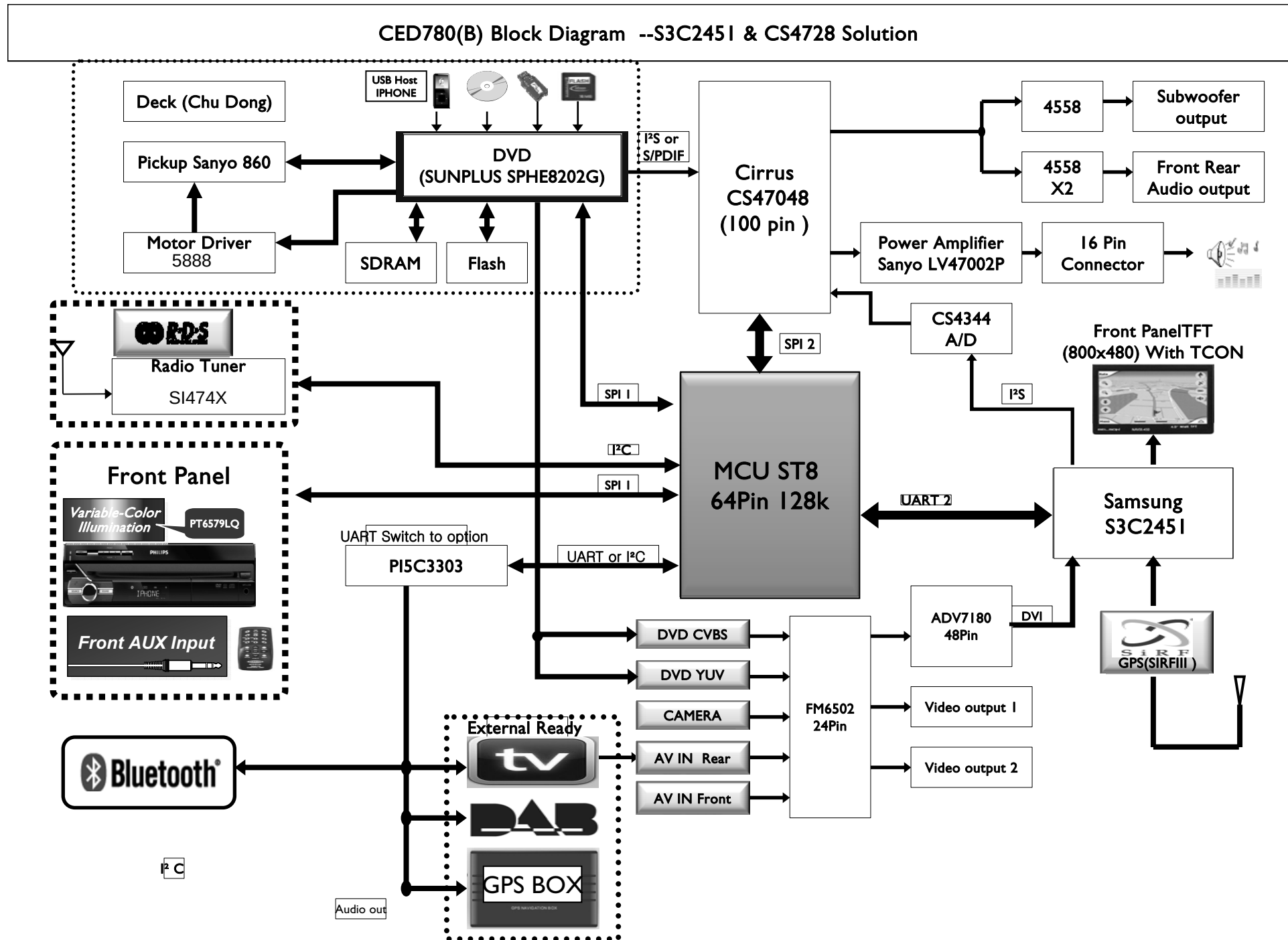
Disassemble the FFC



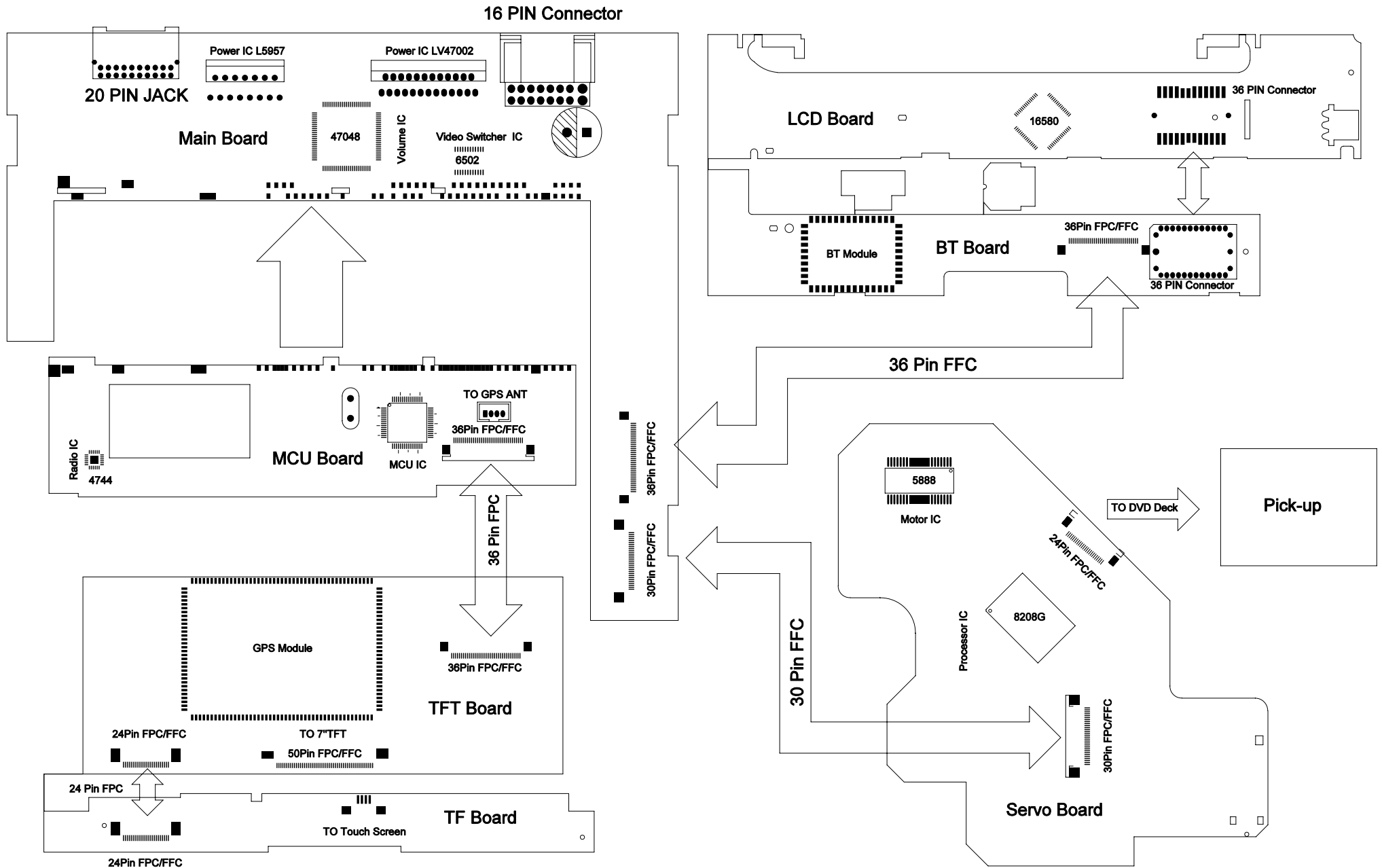
Take out the screws around TFT



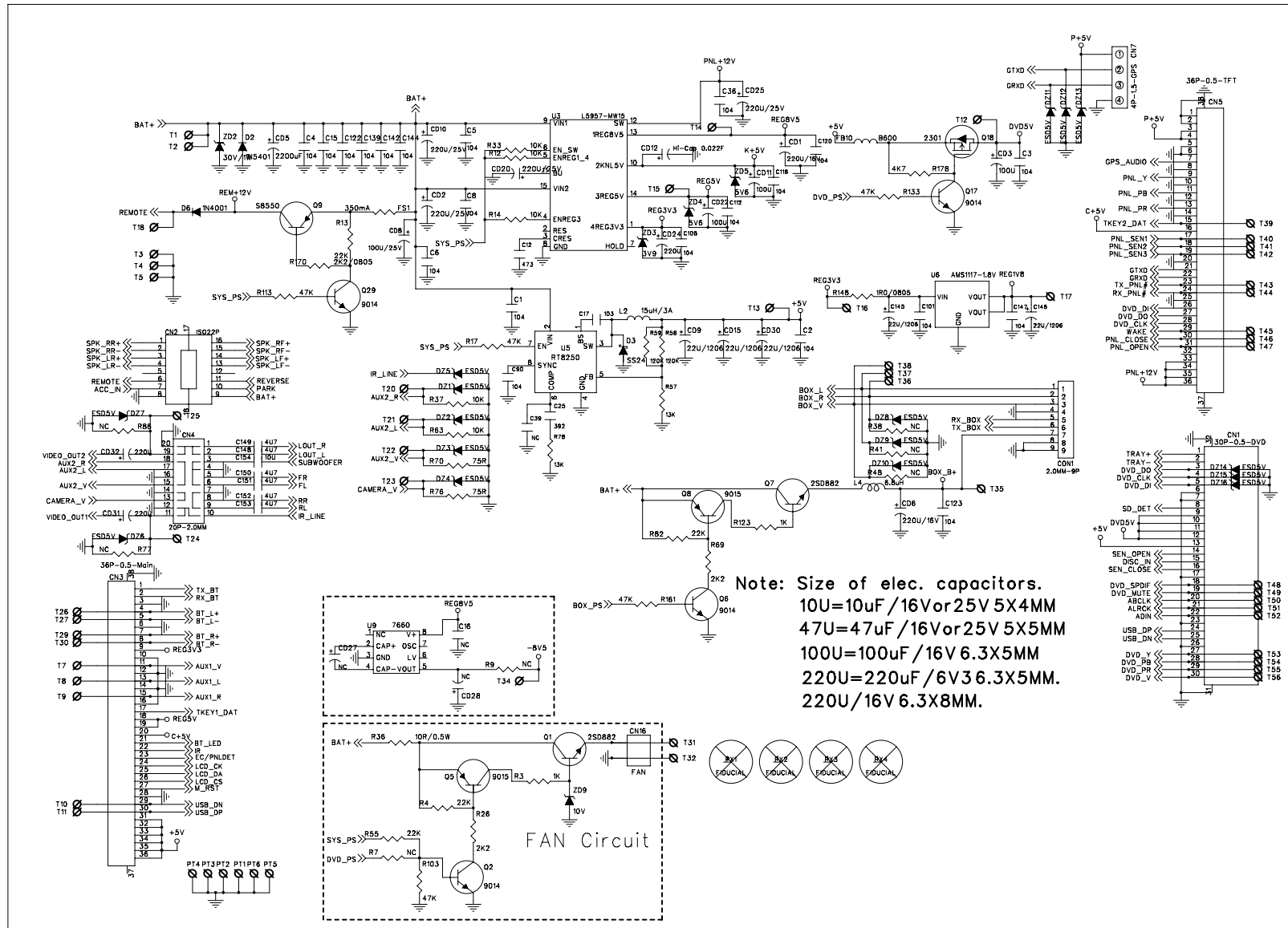
CED780(B) Block Diagram --S3C2451 & CS4728 Solution

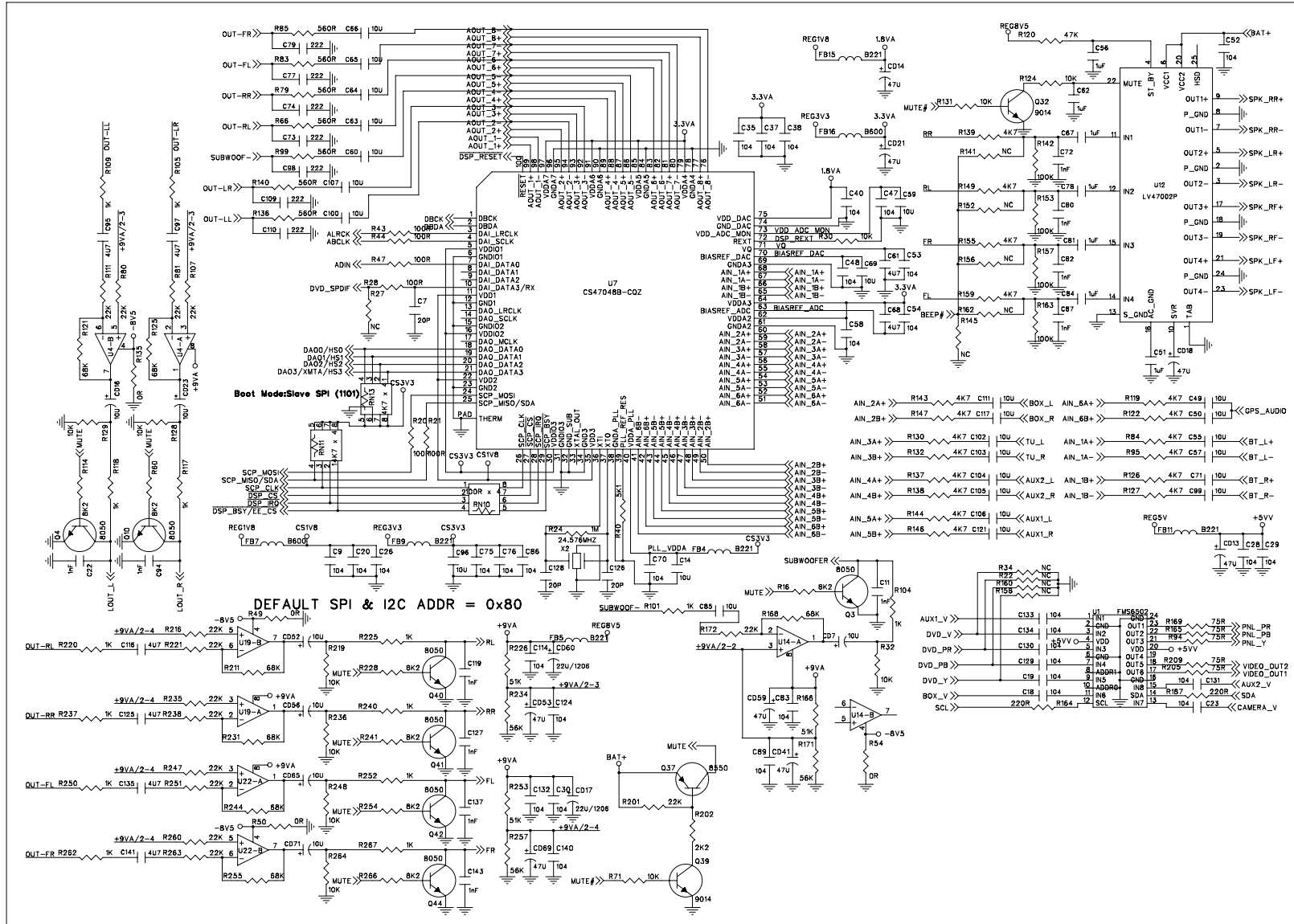


WIRING DIAGRAM



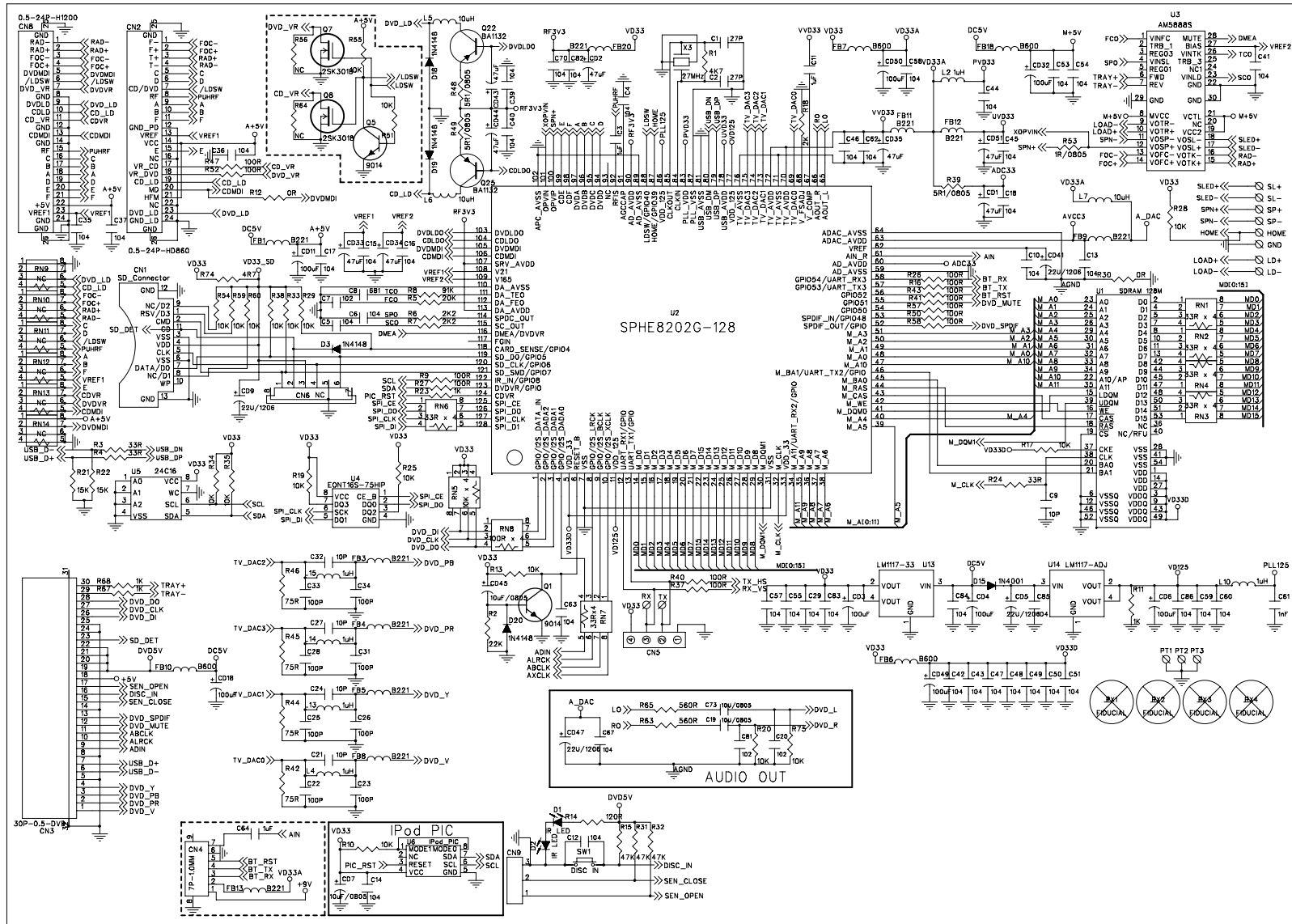
CIRCUIT DIAGRAM-MAIN & MCU & TUNER BOARD



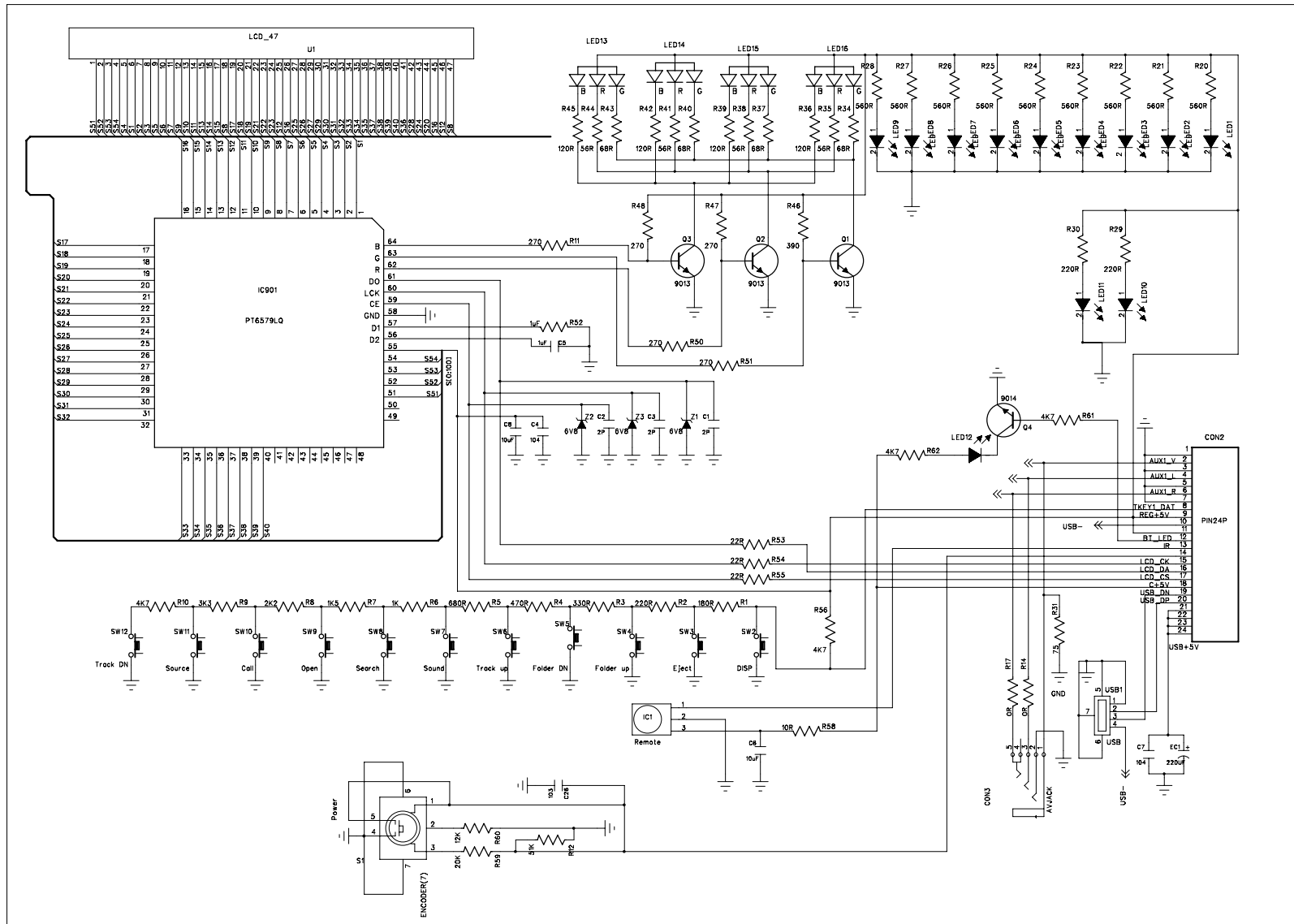


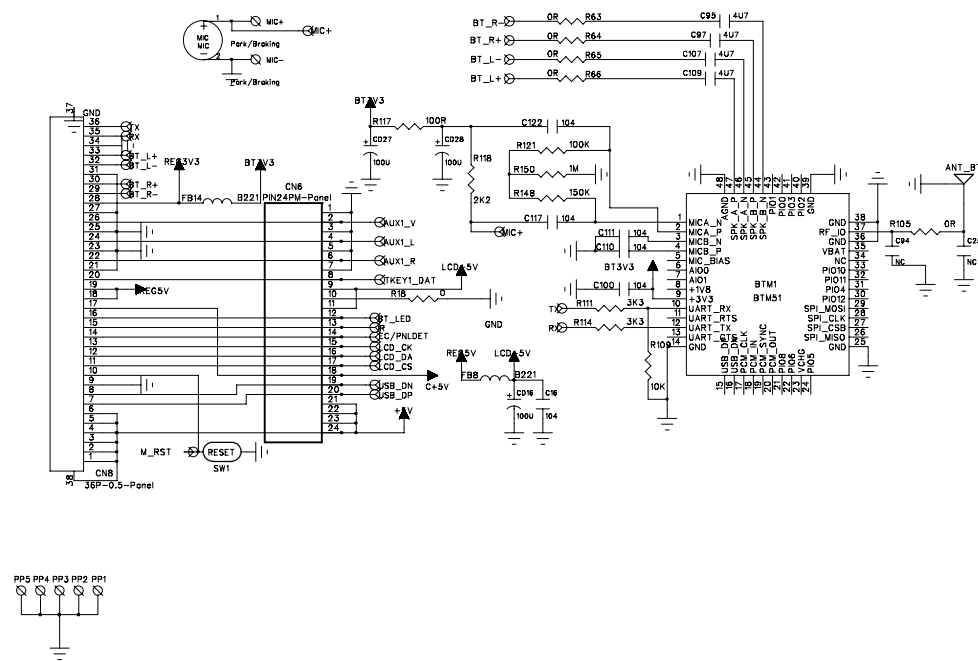


CIRCUIT DIAGRAM-SERVO BOARD

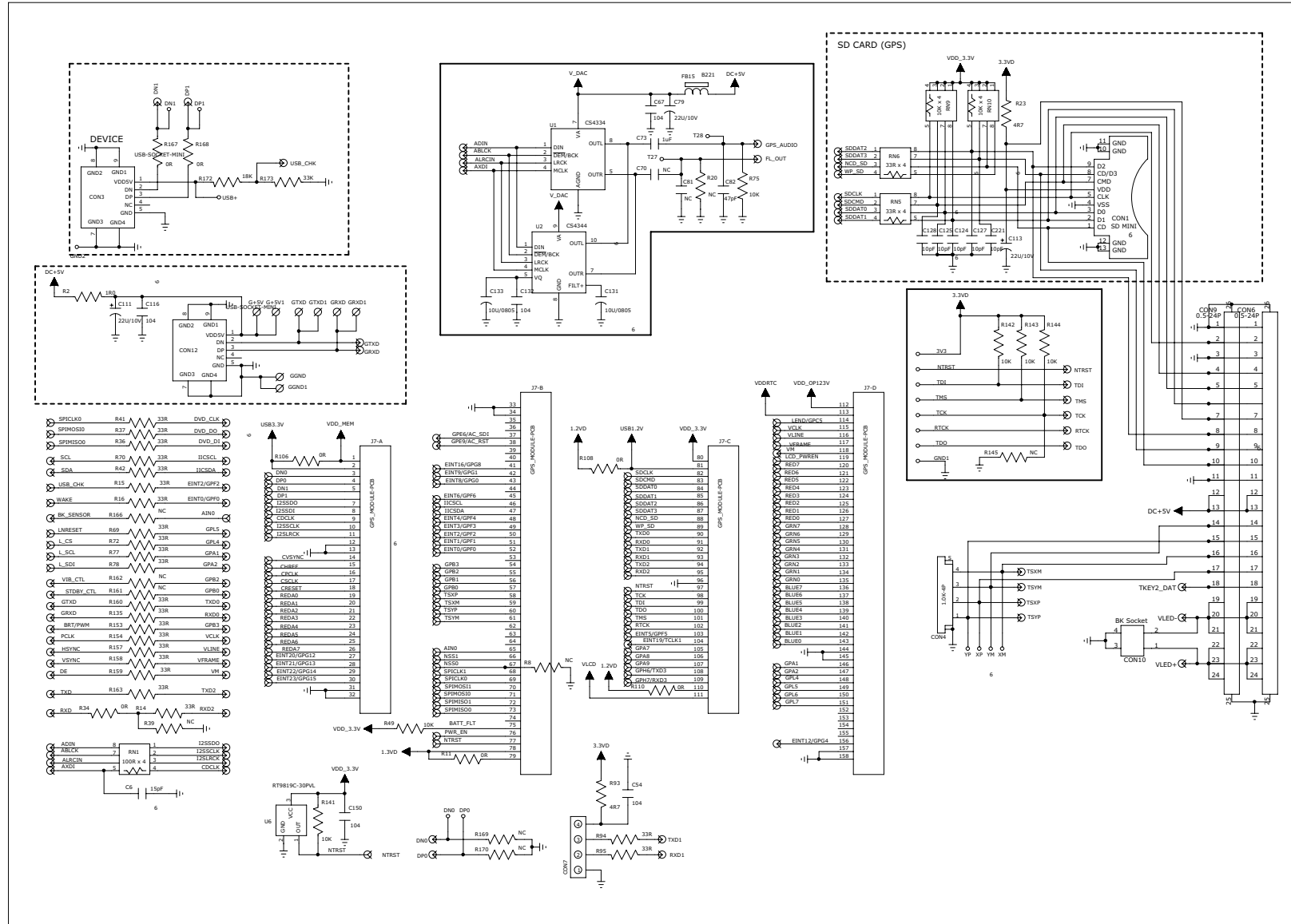


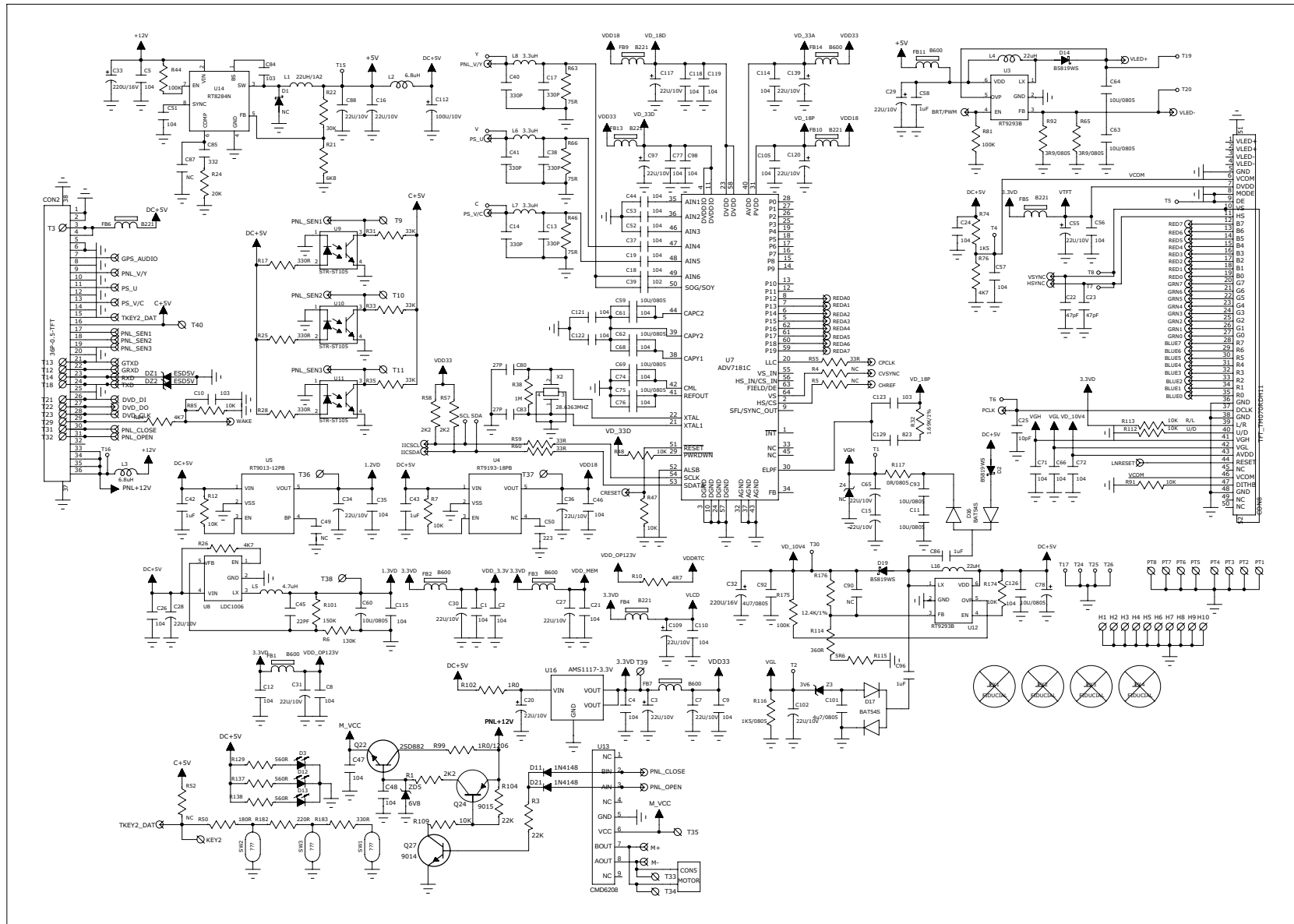
CIRCUIT DIAGRAM-PANEL & BT BOARD



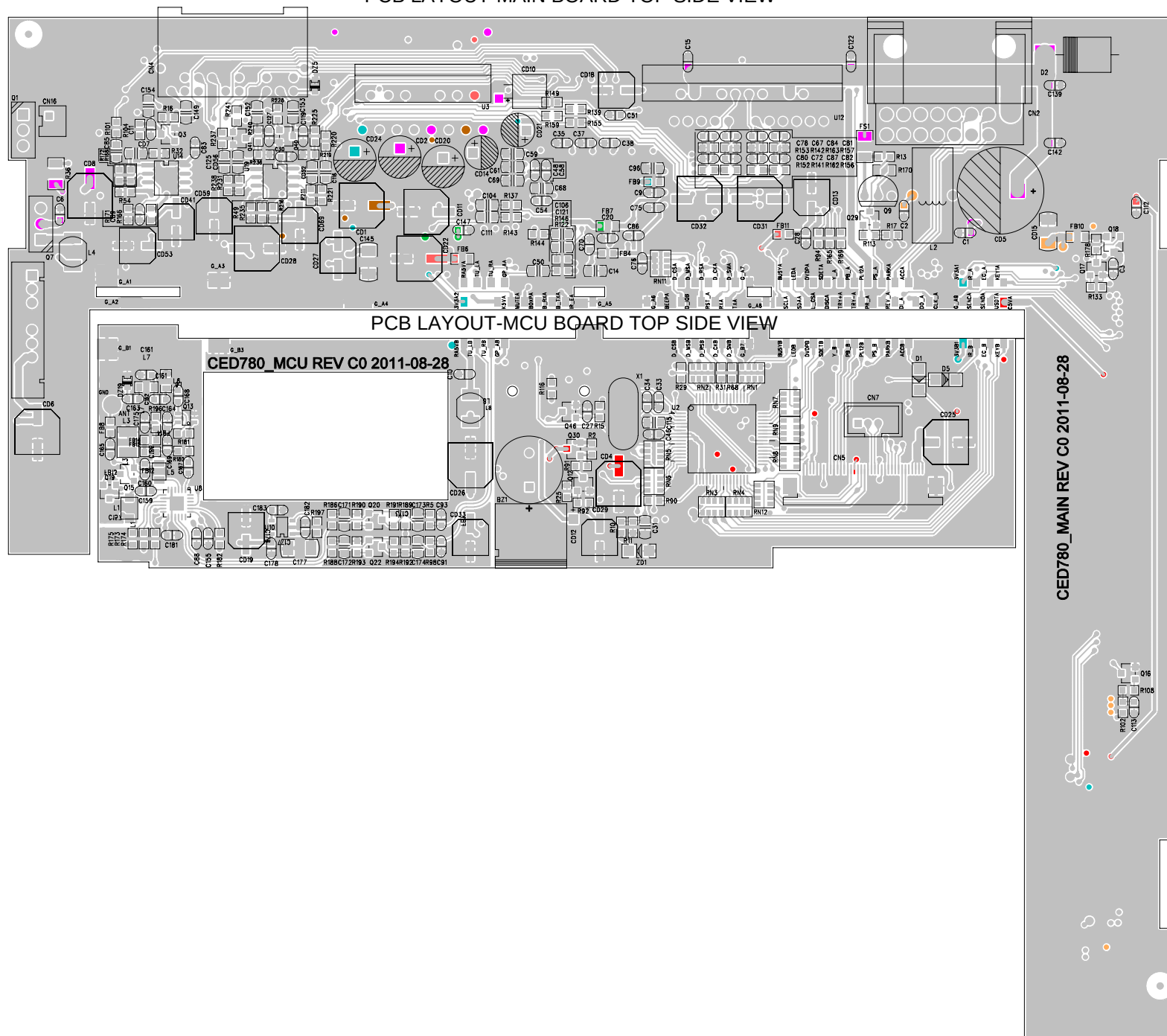


CIRCUIT DIAGRAM-PANEL TFT & SD BOARD

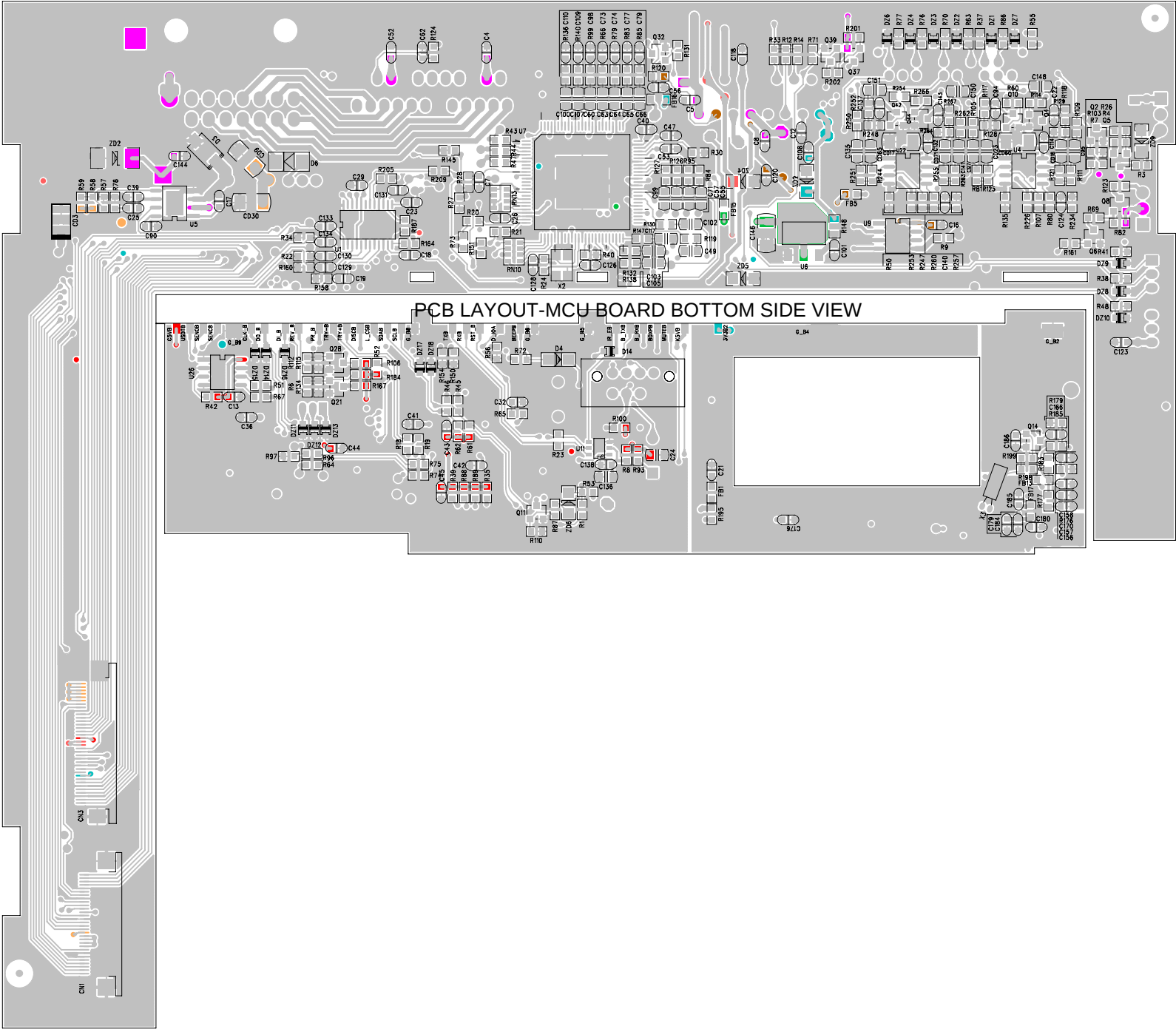




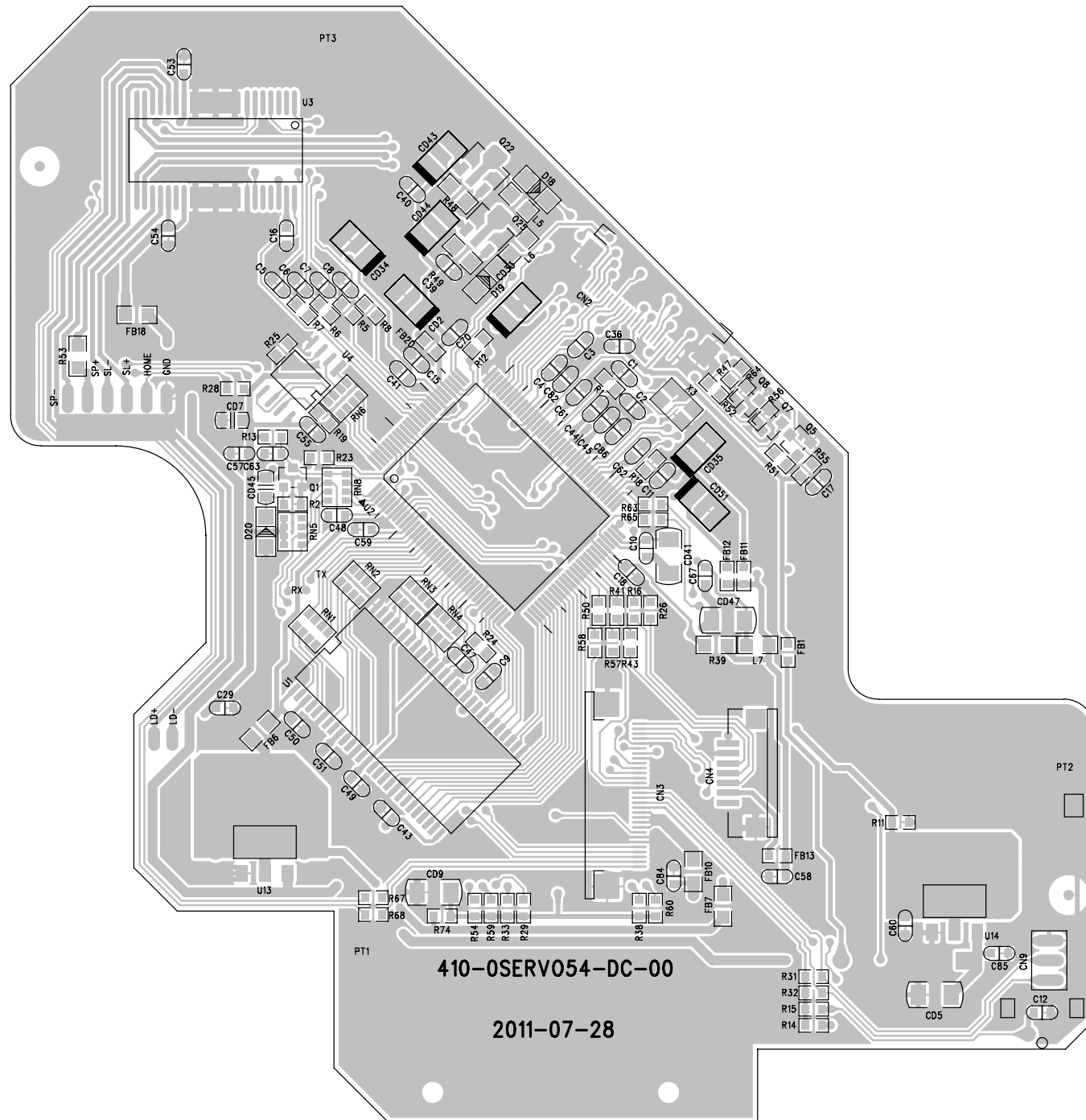
PCB LAYOUT-MAIN BOARD TOP SIDE VIEW



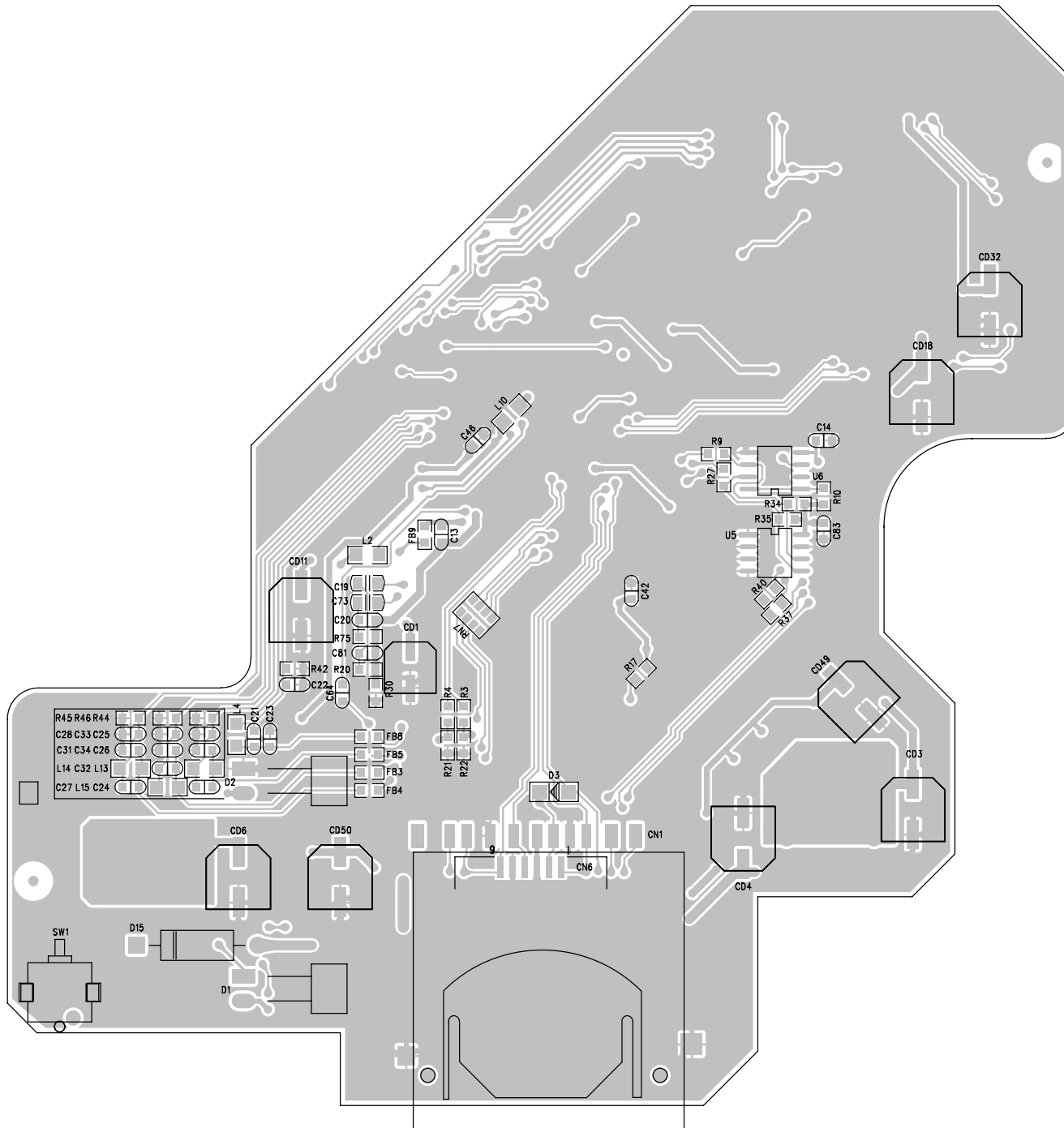
PCB LAYOUT-MAIN BOARD BOTTOM SIDE VIEW



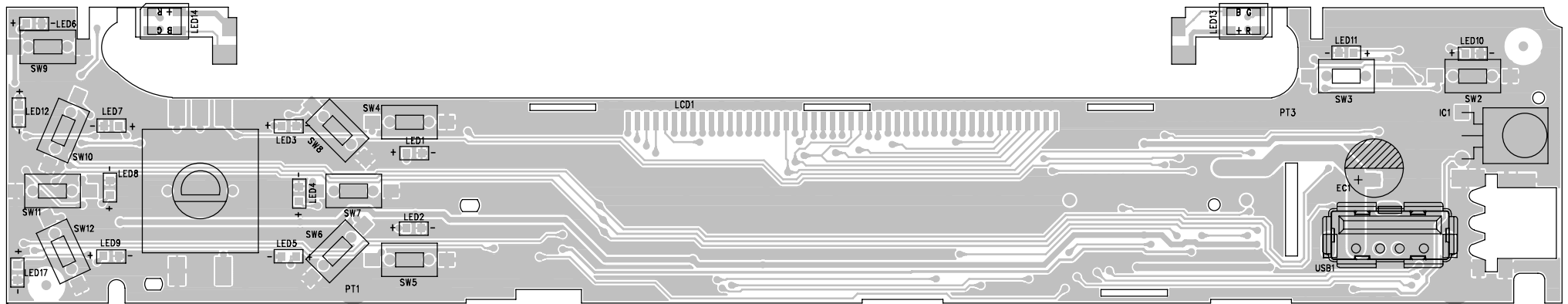
PCB LAYOUT-SERVO BOARD TOP SIDE VIEW



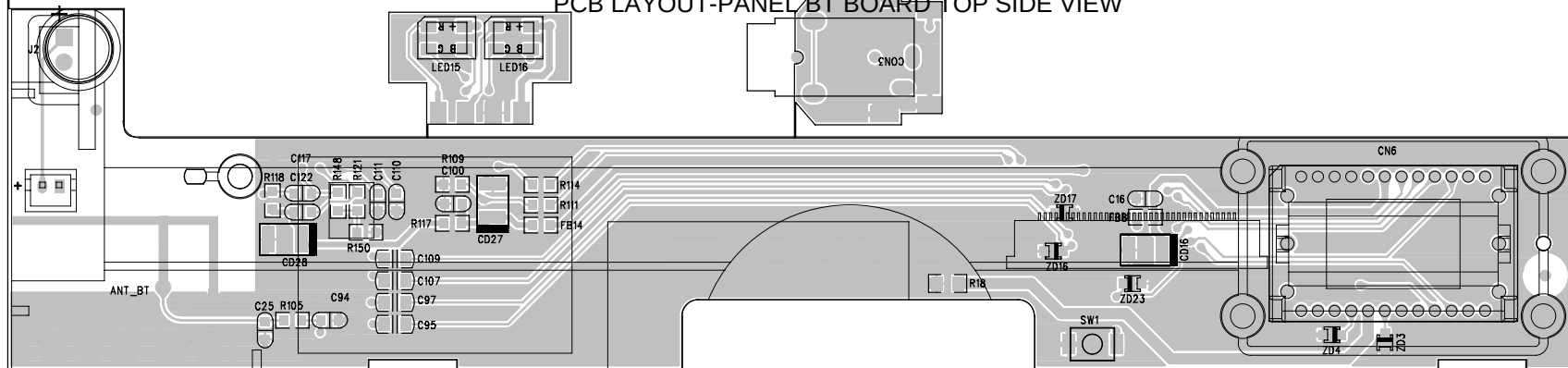
PCB LAYOUT-SERVO BOARD BOTTOM SIDE VIEW



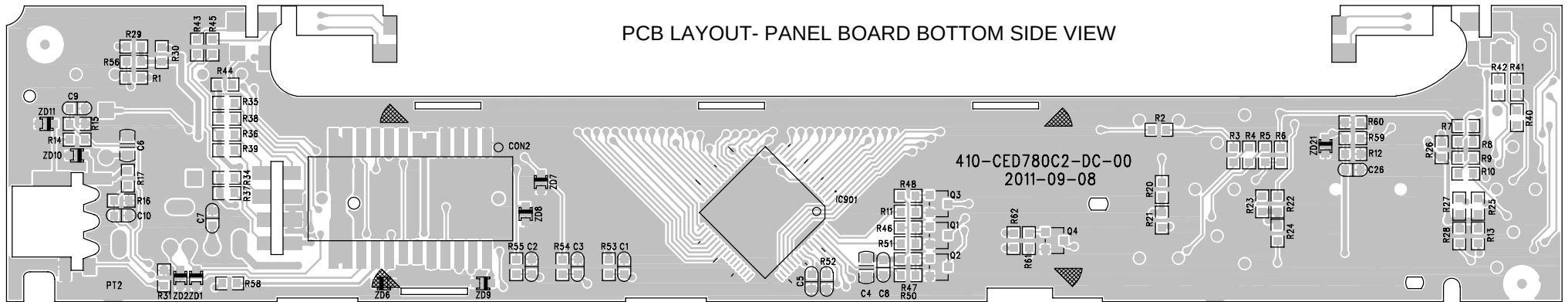
PCB LAYOUT-PANEL BOARD TOP SIDE VIEW



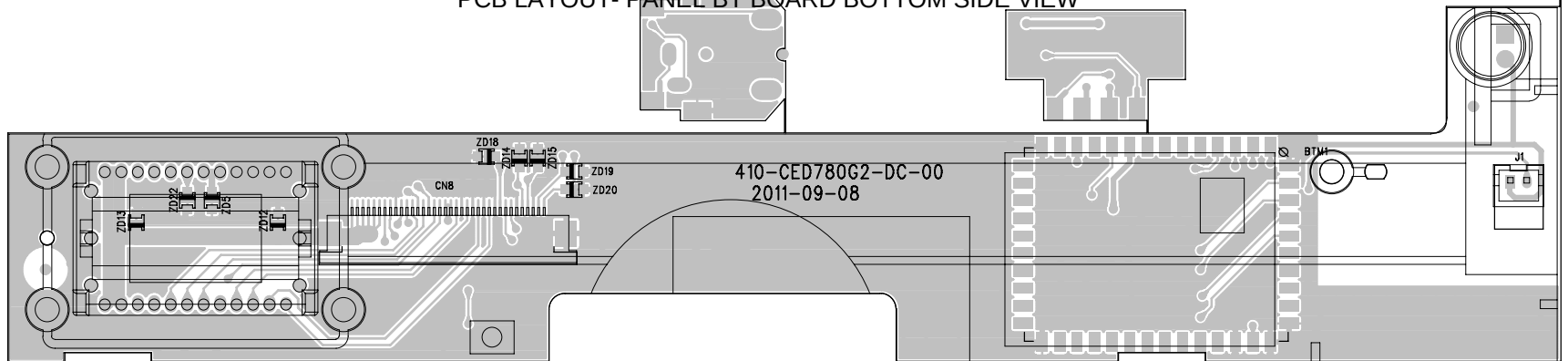
PCB LAYOUT-PANEL BT BOARD TOP SIDE VIEW



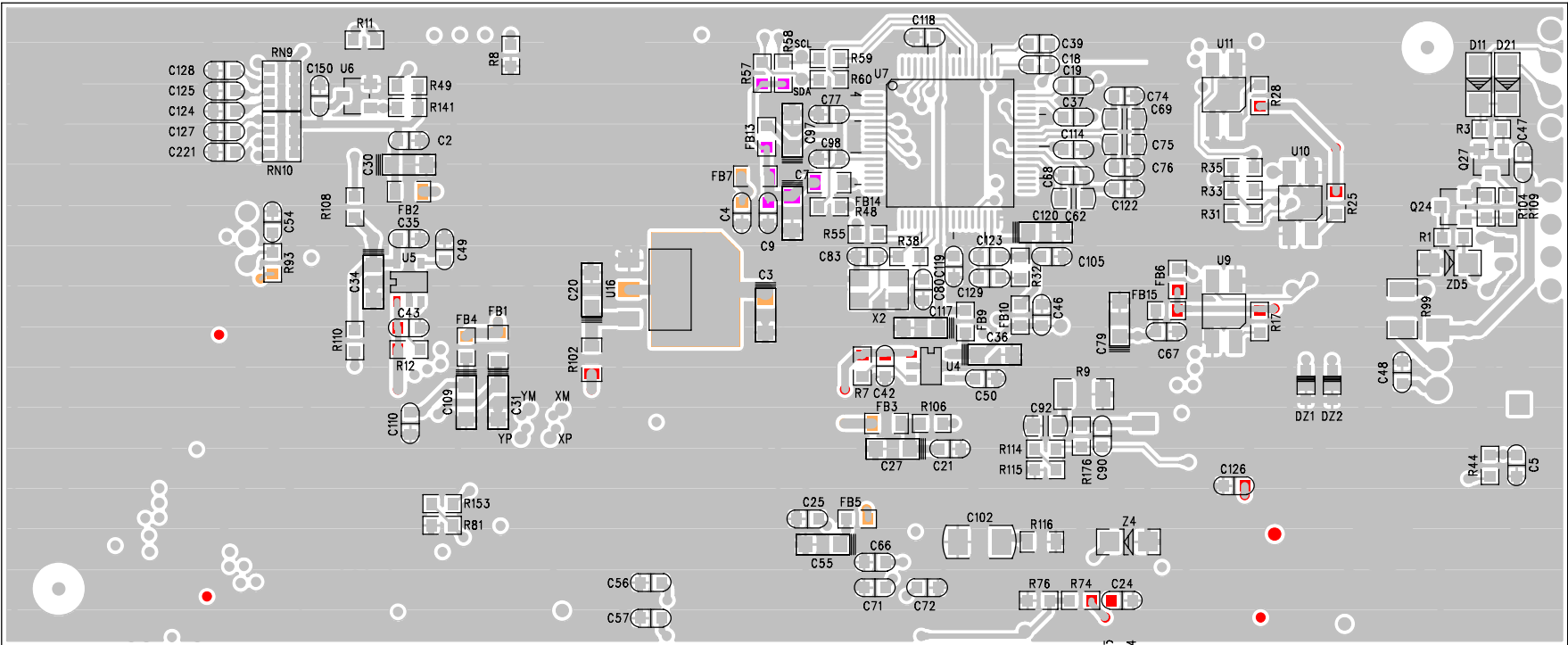
PCB LAYOUT- PANEL BOARD BOTTOM SIDE VIEW



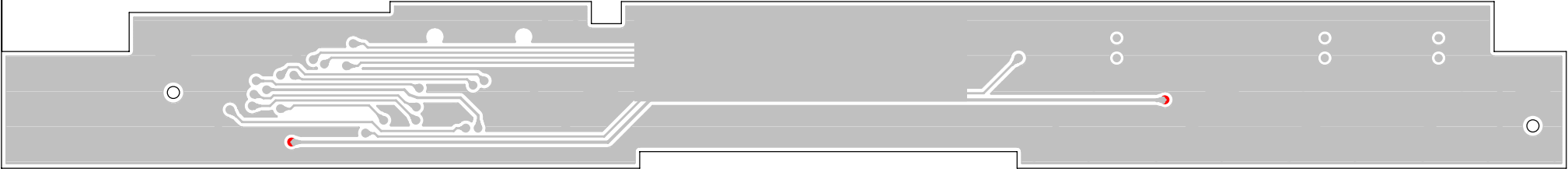
PCB LAYOUT- PANEL BT BOARD BOTTOM SIDE VIEW



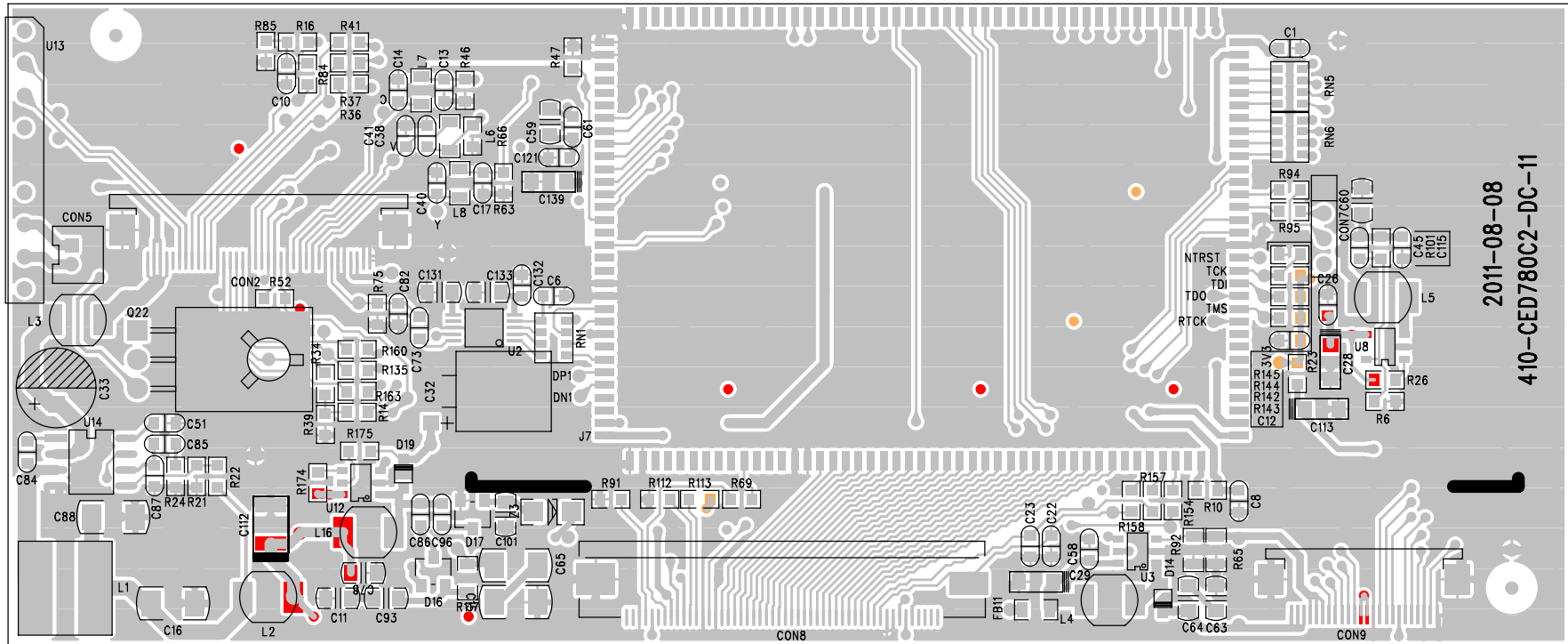
PCB LAYOUT-PANEL TFT BOARD TOP SIDE VIEW



PCB LAYOUT-PANEL SD BOARD TOP SIDE VIEW

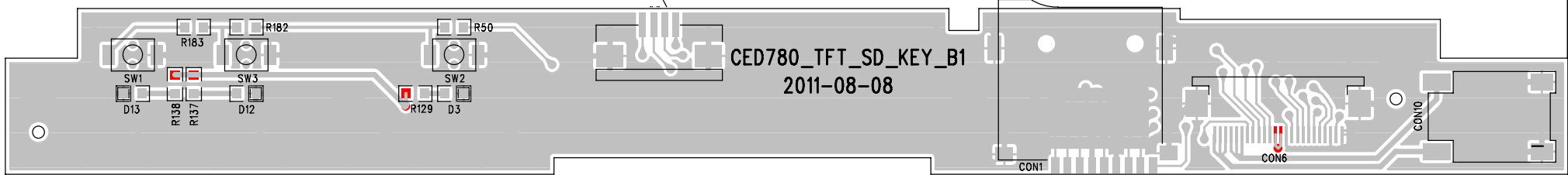


PCB LAYOUT-PANEL TFT BOARD BOTTOM SIDE VIEW



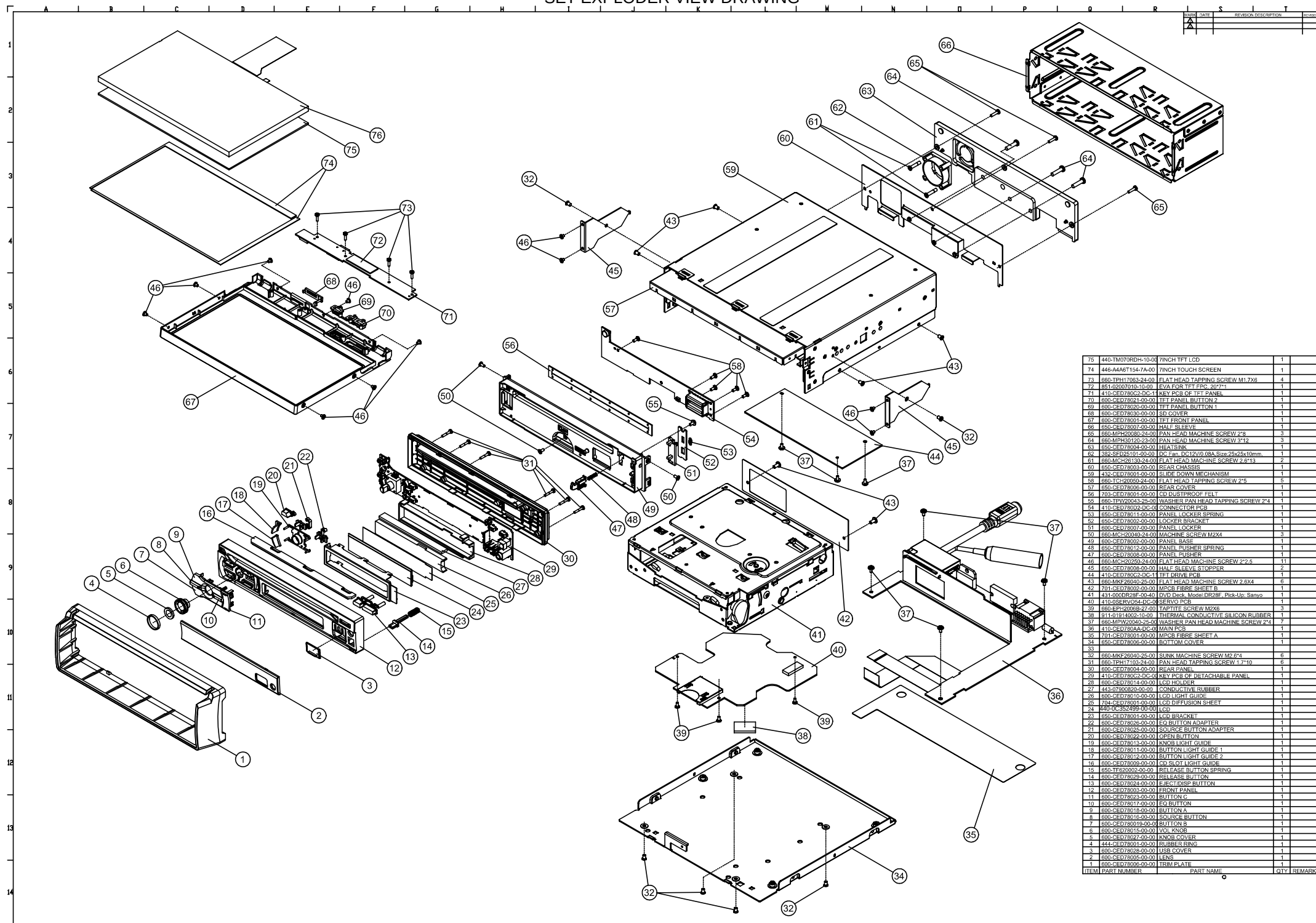
2011-08-08
410-CED780C2-DC-11

PCB LAYOUT- PANEL SD BOARD BOTTOM SIDE VIEW



CED780_TFT_SD_KEY_B1
2011-08-08

SET EXPLODER VIEW DRAWING



Trouble shooting

Product Model		CED780	Area	All area	Tate	2011-11-28	
NO.	failure phenomena	failure cause					remark
1	NO Power	a. To check whether the CN2(14pin) connector of the tail of the unit is connect well , Whether it is loose of the 15A fuse of the Filter Box, or insert non in place.					
		b. To check whether there is any contamination and bad contact on the 24 Pin male/female connector on the panel and main board.					
		c. To check the U3 of multiple voltage regulator IC,the 9 pin should be +12V0、 the 10 pin should be +5V0、 the 1 pin should be +3V3、 the 13 pin should be +8V5、 the 14 pin should be +5V0.					
		d. To check the 7 pin voltage of the U2(MCU) should be +5V0.					
		e. To check the oscillation frequence of crystal X1 shuold be 16MHz .					
2	7"TFT abnormal	a.To check the connectors of the CON6、 CON9, whether the socket of it is loose.					
		b.To Check the voltage of the 33 pin~36 pin of the CON2 ,should be +12V0					
		c.To check the voltage of the L2 of the TFT board,should be +5V0.					
		d.To check the voltage of the cathode of the D14 of the TFT board,should be +10V0.					
		e.If the TFT move defective, to check the U13(6208 IC) and the U9~U11 of the photo reflective, to check whether there is any abnormal of the rotation of the TFT mechanism.					
3	NO audio output	a. To check whether the volume knob is turn to the minimum position.					
		b. To check whether the unit is at MUTE mode, press SOURCE button and check whether it is effective of the input sound source.					
		c. To check whether the connection of 8 PIN audio output wire of ISO connector is correct; wrong connection or short circuit to the ground will caused the protection of the power amplifier(no voltage output).					
		d . To check the circuit of power amplifier U12(LV47002 IC) and VOLUME U7(47048 IC).					
		e. To check the voltage of 22 PIN(MUTE) of power amplifier U12(47002 IC) , normally should be 4V0.					
4	Radio abnormal	a. To check the antenna of the AM/FM tuner.					
		b. To check whether the strength of then input signal of the tuner is too weak.					
		c. To check the voltage of the 13 pin of the U8 of the tuner IC, should be +3V3.					
		d. To check the oscillation frequence of crystal X3 of the tuner IC,shuold be 32.768MHz					

NO.	failure phenomena	failure cause	remark
5	CD/DVD defective	a. To check whether the signal format of the disc is correspond to the request of the unit, whether there is any contamination or damage or light leakage on the surface of the disc.	
		b. To check whether there is any abnormal of the rotation of the deck mechanism, or whether the disc is enter in position.	
		c. To check whether it is normal when reading USB?	
		d. To check whether the 24P FFC of laser pick up is inserted in place, whether the socket of it is loose.	
		e. To check whether there is any contamination or foreign body on the surface of the laser pick up.	
		f. To check the servo board connector of CN3 and the main board connector of CN1, whether the socket of it is loose.	
		g.To check the voltage of the 9 pin ~ 12 pin of the CN1 , should be +5V0.	
		h. To check the switch SW1 on the servo board.	
		i. To check the rotation mechanism of CD/DVD deck.	
6	USB/SD defective	a. To check whether the USB/SD signal format is correspond to the request of the unit.	
		b. To check the voltage of the USB connector of the left first pin , should be +5V.	
		c. To check whether there is any wearing and scratch of the shrapnel and pin of the panel USB.	
		d. To check the servo board connector of CN3 and the main board connector of CN1, whether the socket of it is loose.	
		e.To check whether there is any contamination and bad contact on the male/female connector of the panel and main board. If necessary, can exchange the panel to test whether the defective is occurred by the unit or panel.	
7	AUX defective	a. To check the SOURCE shoule be in MP3-LINK mode.	
		b. To check the AUX IN input signal.	
		c. To check whether there is any contamination and bad contact on the male/female connector of the panel and main board. If necessary, can exchange the panel to test whether the defective is occurred by the unit or panel.	
8	BT defective	a.Check the unit should be in pair with the BT phone connection status	
		b.To check the 9 pin of the BT module,should be +3V3.	
		c.To check the CN8 connector.	
9	GPS defective	a.To check the micro SD memorizer of the map of the GPS.	
		b.To check the GPS antenna of the tail of the unit.	
		c.To check the connectors of the CON2、CON8、CON9 , whether the socket of it is loose.	