SAMSUNG

DIGITAL AUDIO PLAYER

YP-30S

SERVICE Manual

DIGITAL AUDIO PLAYER

CONTENTS

1. Precautions
2. Specifications
3. Parts Description
4. Mass-production Initialization Program
5. Troubleshooting Guide
6. Exploded View and Disassembly Order
7. Electrical Part List
8. Block Diagram
9. Internal Block Diagram of Main IC
10. PCB Wiring Diagrams
11. Schematic Diagram

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1. Precautions

1-1 Static electricity sense device

Some semi-conductor parts may be easily damaged due to static electricity.
These elements are generally called as static electricity sense device (ESD). Typically examples of EST include IC, some transistor and chip element for semi-conductor with electrical field effect.
The following methods should be used to reduce damage of elements occurred due to static electricity:

1. Contact and emit all the grounding objects with static electricity from your body before handling with elements for semi-conductor or devices with elements for semi-conductor. You should purchase and use static electricity arm rings or commercially available. You should remove it due to potential shock before supplying power to the device under test.

2. You should place appliance on the conductive surface like aluminum film to prevent that static electricity is accumulated or the device is disclosed outside after removing electrical appliance with the ESD device.

3. You should use only soldering iron that is ground when soldering the ESD device.

4. Minimize physical operation when handling with the ESD device for replacement without packing (Otherwise, namely friction between cloth fibers or lifting of the foot from the carpet floor may cause static electricity enough to damage the ESD device).

1-2 Cautions for Safety

1. To remove dust from cabinet, use a dry cloth without using liquid and aerosol cleaner.

2. You should not use attachments not recommended by the company. Otherwise, it may cause critical damage.

3. You should not use this product near water such as bathtub, swimming pool or lake etc.

4. Power supply: A type of battery as displayed on the label should be only used.

5. You should not put any object or liquid into product. Otherwise, it may cause failure or mal-operation.

6. If replacement material is required, service engineer should use materials with the same standard. The use of non-standardized materials may cause failure of product.

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2. Specifications

Standards and design may be changed without notice and related weight and dimensions are only approximate.

Power	1.5V (1EA of AAA cell)
Playing Time	Lasts 5 hours(based on Alkaline cell)
Memory capacity	64MB
Dimensions (WxHxD) / Weight	44 x 65 x 14.5 mm/34g
Material of case	Plastic / Aluminum
File transfer speed	Max. 7 Mbps (USB)
Earphones output Power	5mW (16Ω earphone)
Ratio of signal to noise	85dB with 20KHz LPP
Scope of output frequency	20Hz – 20KHz
Processor	18MHz, 20bit RISC
Temperature characteristics	-5 ~ 35^{0}C

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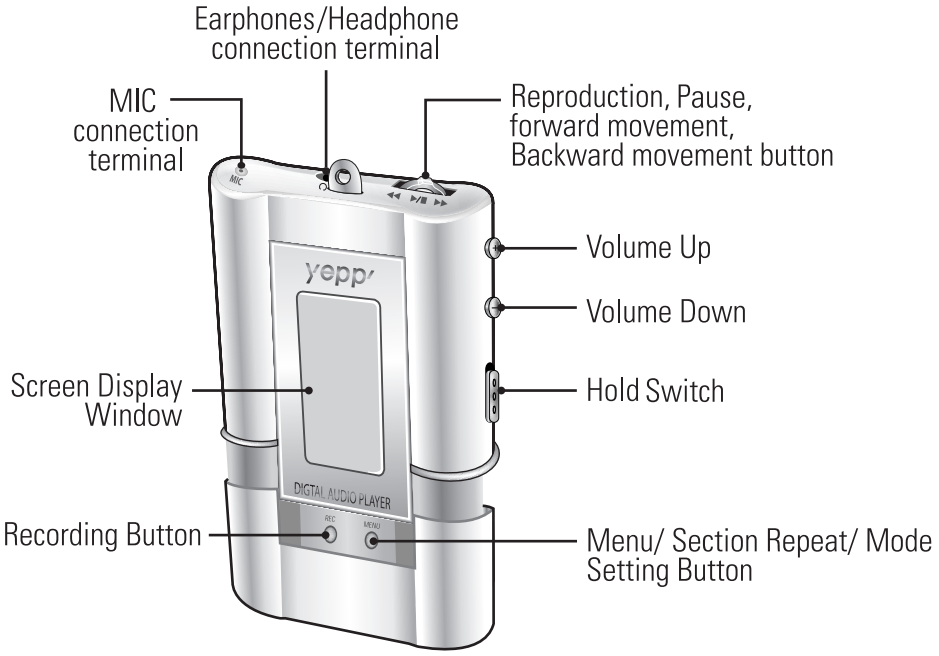
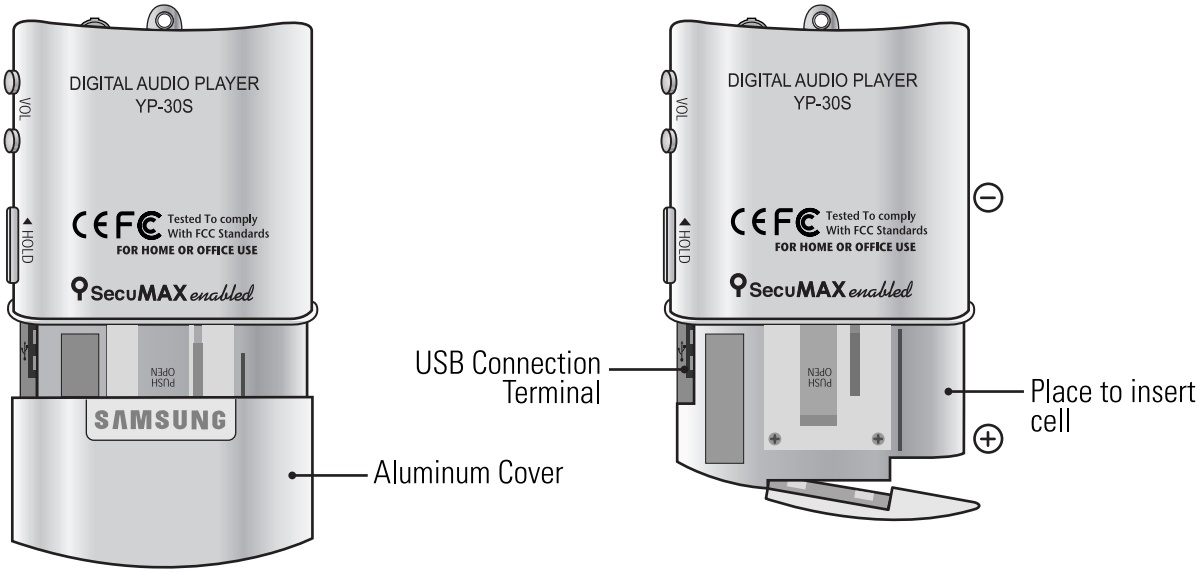
3. Parts Description

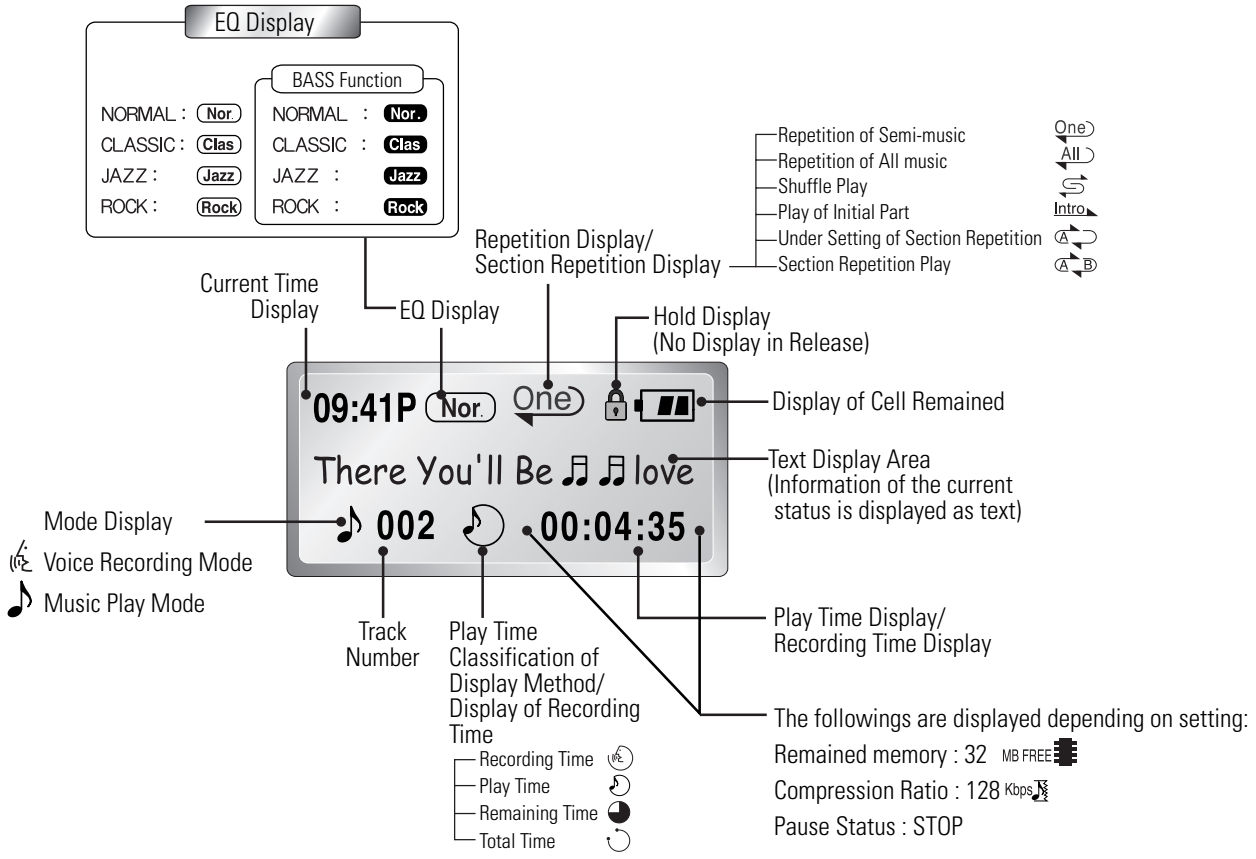
Front Side



Rear Side



Screen Display Window



4. Mass-production Initialization Program

4-1 About Mass-production Initialization Program

Program for test and product initialization is provided as separate software in service of this product.
This program is not provided to customers and is only designed to use good product inspection and initialization of the ASS'Y PCB obtained from the service center.

4-1-1 Method to supply program

Always perform downloading since this program is not provided as a separate diskette but is distributed via YP-30S SVC Manual Sub-Chapter of **ITSELF System.**

4-1-2 Environment for using program

(1) IBM compatible PC (PII 233 or more is recommended)
(2) WINDOWS 98SE / ME / 2000
(3) USB Interface
(4) Supporting 16bits Color or more and using Video Card
(5) HDD 5Mbyte or more

4-1-3 Program Function

(1) Downloading FONT, ICON, LOGO
(2) Testing Download, Delete, Format
(3) Downloading Sample Song
(4) Saving UID

4-1-4 Method to install program

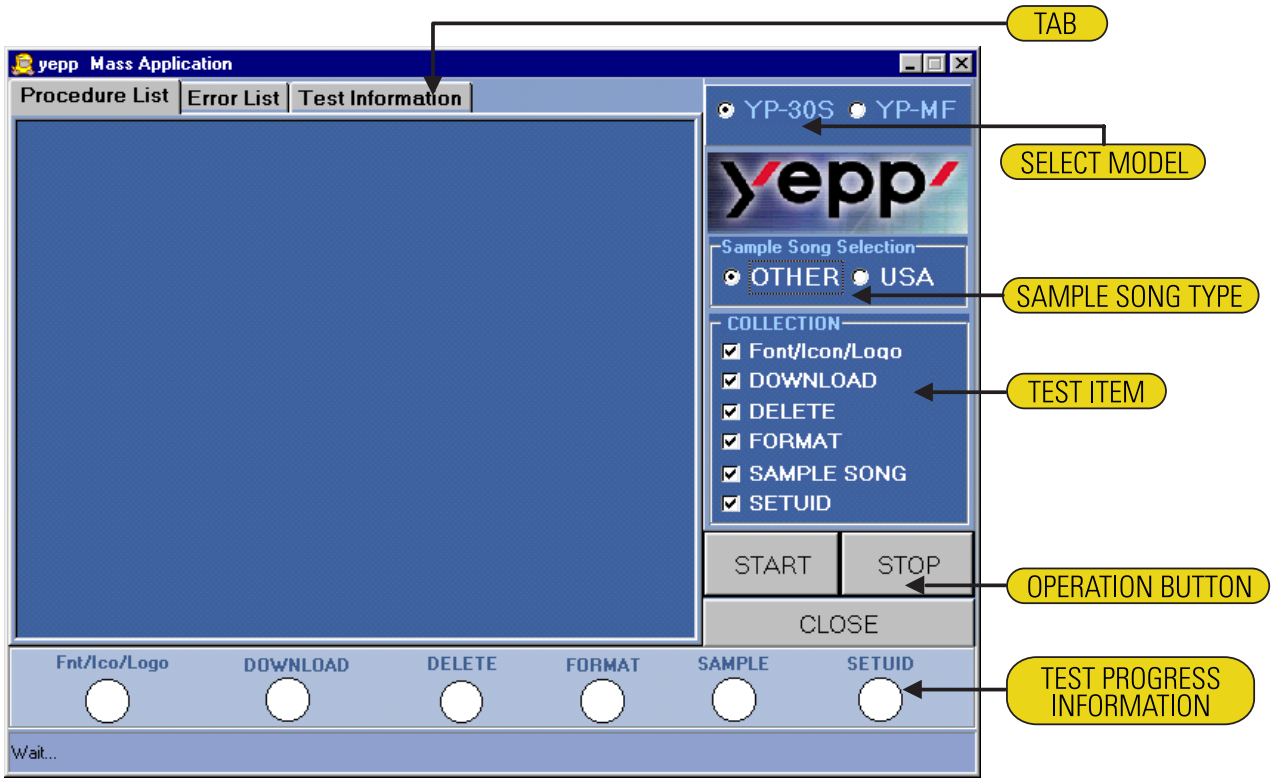
(1) Execute downloaded program (YP30MASS. Exe)
(2) Execute installation in accordance with guide of a dialog box.
(3) Program (yepp Mass Program.exe) is installed on the desktop if installation is completed.

4-1-5 Method to use program

ASS'Y PCB obtained from the service center is not initialized and subject to good product inspection. Please execute as follows for good product inspection and initialization of the obtained ASS'Y.

(1) Connect ASS'Y PCB of YP 30S to PC via the USB cable.
(2) After connecting YP-30S to PC, wait 1 minute for YP-30S to format itself.
(3) No USB communication is done when YP-30S is in clock display mode. Please change to general mode by pressing the (▶/ ■) button.
(4) Execute program (yepp Mass Program.exe) installed on the basic screen.
(5) Select all the test items (all are basically selected).
(6) Click START from the operation button.
(7) Good product inspection and initialization are successfully completed if a pop-up window called PASS.
(8) You can view saved contents if clicking the pop-up window called PASS and then clicking the Test Information TAB.

4-2 Explanation of Mass-production Initialization Program



1. TAB

If clicking each tab, you can see the relevant contents.

(1) Procedure List

-. Test progress information message is output.

(2) Error List

-. Error message occurred during test progress is output.

(3) Test Information

-. Result information is output after completing test.

2. SELECT MODEL (model selection)

(1) YP-30S

-. For YP-30S (selected for this product)

(2) YP-MF

-. For YP-MF series

3. SAMPLE SONG TYPE

(1) OTHER

-. Music file to be initially saved among products released in area except for USA.

-. Music files at "₩MUSIC₩kor₩" where program is installed.

-. File name: "Yepp-1 groove.mp3", "Yepp-2 funk.mp3"

(2) USA

-. Music file to be initially saved among products released in USA.

-. Music files at " ₩MUSIC₩eng₩" where program is installed.

-. File name: "Yepp-1 groove.mp3", "Yepp-2 funk.mp3"

4. Test item (explanation)

Select items to test.

(1) Font / Icon / Logo

-. Ascii Font, Icon, Default Logo, User Logo download check box

(2) DOWNLOAD

-. Download test check box (file download for test, not for consumer)

(3) DELETE

-. Delete test check box

(4) FORMAT

-. Format test check box

(5) SAMPLE SONG

-. Sample song download check box (basic file provided to consumers)

(6) SETUID

-. Check box to register UID

❇All items are basically checked (select the only relevant check box if necessary)

5. Operation button

Execute the selected test item.

(1) START

-. Perform test for only .

(2) STOP

-. Suspend test during test.

(3) CLOSE

-. Complete test application.

Test progress information

1. Circle is filled with blue if no error occurs in the selected test items.
2. Circle is filled with red if error occurs in the selected test items.

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5. Troubleshooting Guide

Status of Non-conforming	Cause	Point of Repair
Poor power connection	Poor contact of PCB's battery(+) terminal	Replace battery(+) terminal plate.
Poor switch	Poor key (SW1 – SW6) contact	Replace the relevant switch.
No back-light ON	Poor LCD contact	Replace LCD.
Poor display or No display (forming of stripe, partial dark)	Poor LCD	Replace LCD.
	No initialization	Execute initialization program.
Black screen in display of FONT and LOGO	Poor initialization work	Execute initialization program.
Poor USB communication (perform test sequentially)	Poor computer	- Test in comparison with other YP-30S set - Test in comparison with other computer
	Poor USB cable	- Test in comparison with other USB cable
	Soldering of USB port	- Ensure soldering status

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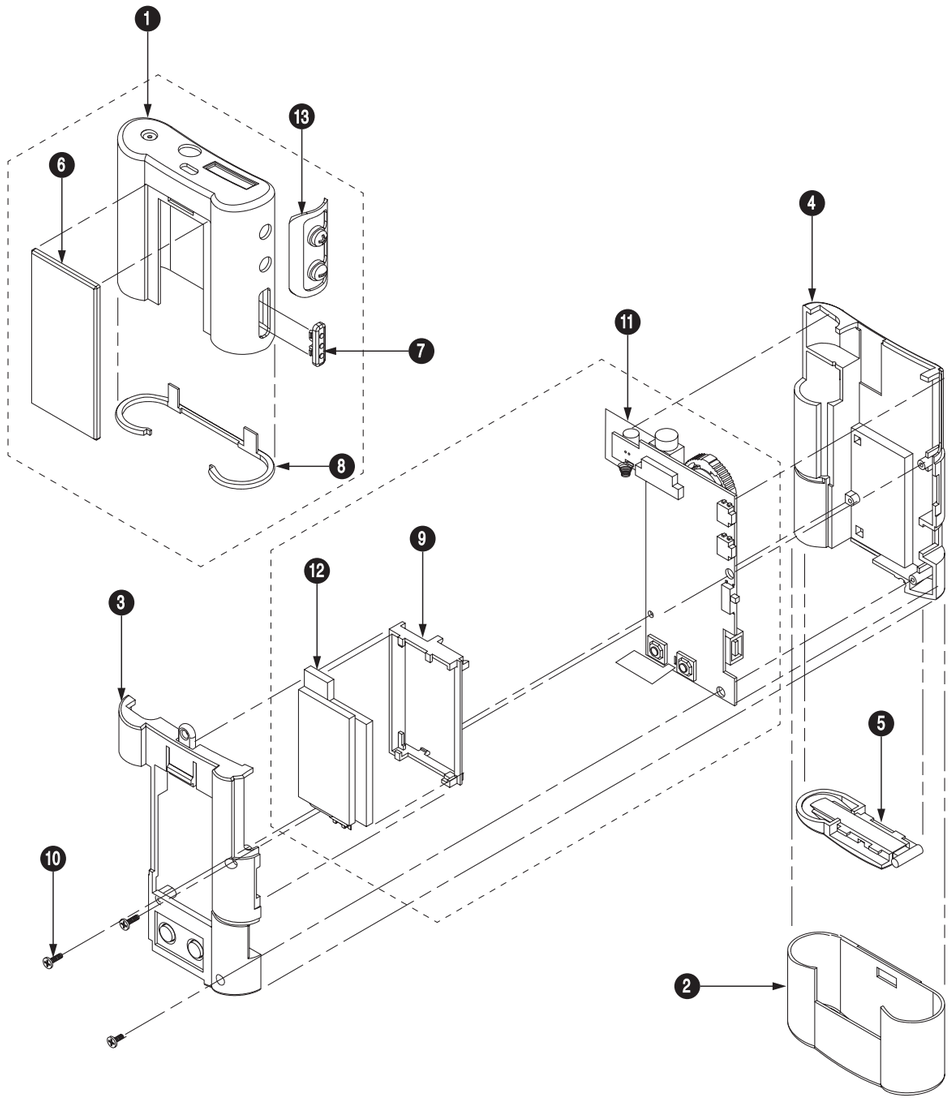
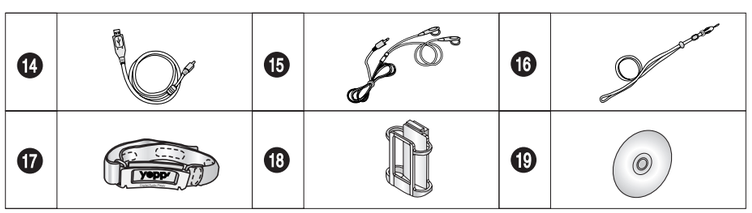
6. Exploded View and Disassembly Order



NO	Code-No	Description;Specification
1	AH64-01376A	CABINET-TOP;YP-30S,ANODIZING,AL,0.7T
2	AH97-00789A	ASSY-CASE BOTTOM; ASSY, YP-30S
3	AH97-00790A	ASSY-FRAME TOP; ASSY, YP-30S
4	AH97-00791A	ASSY-FRAME BOTTOM; ASSY, YP-30S
5	AH97-00792A	ASSY-COVER BATTERY; ASSY, YP-30S
6	AH64-01407A	WINDOW-LCD; YP-30S, ACRYL, 1.5
7	AH64-01379A	KNOB-HOLD; YP-30S, ABS
8	AH64-01382A	DECORATION-RING; YP-30S, ABS
9	AH61-00790A	HOLDER-LCD; YP-30S, ABS
10	6003-001257	SCREW-TAPTITE; PH, +, B, M1, L, L6.5, NI PLT, SW
11	AH92-01100A	ASSY PCB-MIC; YP-30S, ONE-BOARD (For 64MB YP-30S)
	AH92-01382A	ASSY PCB-32MB-ONE-BOARD; YP-30S(For 32MB YP-30S/CT)
12	AH07-00059A	LCD; UG-12T14-FGHT X-A, YP-30S, -, 32X4
13	AH64-01381A	KNOB-VOLUME; YP-30S, ABS
14	AH39-00301A	CABLE FORM; YD-150B, YP-MF64,4P, 1.2M, -,-,PVC, BEIGE, 4PX1200MM,-,USB CABLE
15	AH59-01014A	SPEAKER SYSTEM; YP-30S, YH-30SGU, 0.22V,0.2
16	AH61-00845A	HANGER-NECKLES; YP-30S
17	AH63-00380A	BAND; -,-,PVC, YP-30S,DOMESTIC(For Asia)
	AH63-00328A	BAND-ARM; -,-,PVC,YP-30S(Except Asia)
18	AH97-00844A	ASSY-CRADLE; -,YP-30S
19	AH80-00028A	INSTALL-MFN CD; YP-30S,30S CD, CD, KOR-CD



▣ Disassembly and assembly method

1. Remove No ❷ while pressing No.❹ "PUSH OPEN".
2. Remove No. ❼
3. Remove No. ❻
4. Pull and remove No. ❶ while pressing the upper part of No. ❶ (take care so that No. ⓲ switch would not be pressed).
5. Carefully extend No.❽ a little, and lift up and remove it along with the main body
6. Remove No. ❿
7. Lift No.⓫ up (separate it No.❸, No.❹, No.❺ and No.⓫).
8. Lift the No.⓫ LCD connector up.
9. After lifting No.⓬ up from the connector lightly, apply heat with a soldering iron on the soldering part.
10. Separate No.❾ and No.⓬.

▣ Cautions in assembling

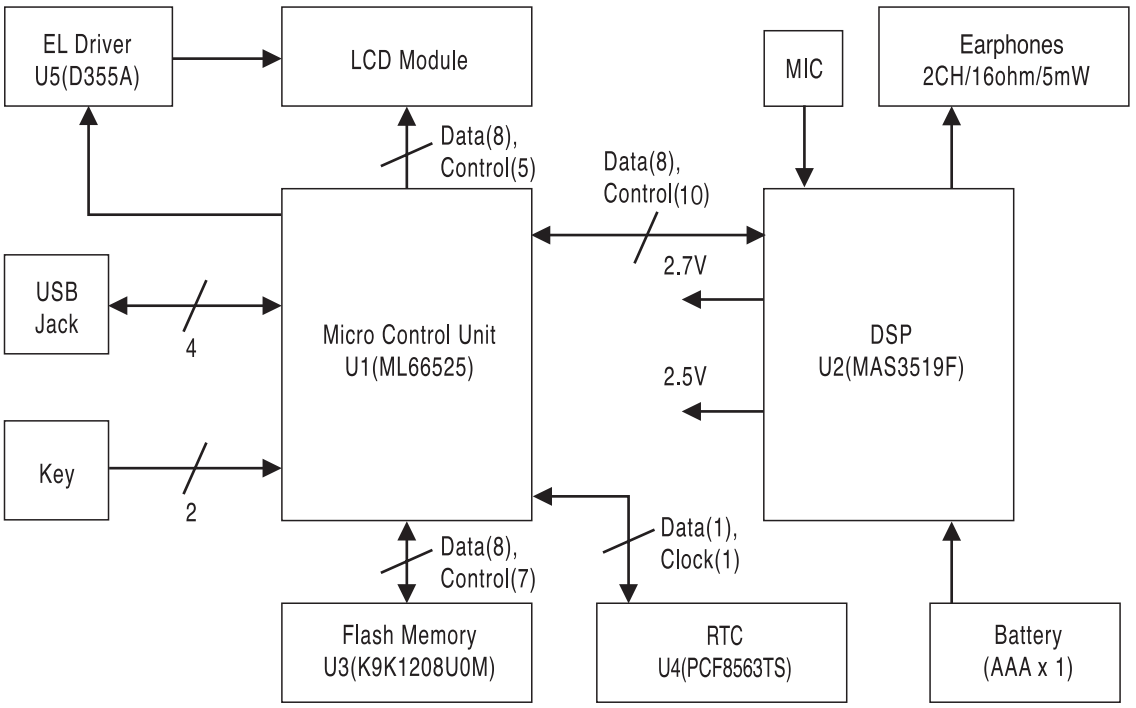
1. After ensuring No.⓲ is properly placed at No.❶, insert frame (without care, SW2 or SW3 may be damaged).
2. Since a flaw may occur if lifting No.❽ up from the lower part and then inserting it, lower it down from the upper part for insertion.
3. Securely insert No.⓬ and No.❾ into the No.⓫ connector and then fix them at the PCB.
   (Back light soldering condition of LCD: 360˚C, within 2 seconds)
4. When properly placing No.⓲ (+, -), adjust orientation accurately.

7. Electrical Parts List

Loc. No.	Code No.	Description ; Specification	Remark
B3	3301-001419	CORE-FERRITE BEAD;AB,220ohm,1.6x0.8x0.8m	
BT2	2409-001042	C-EDL;200000UF,3.3V,3.3V,0.15MA,TP,6	
C10	2203-000726	C-CERAMIC,CHIP;3.9nF,10%,50V,X7R,TP,1608	
C13	2203-000125	C-CERAMIC,CHIP;1.2nF,10%,50V,X7R,TP,1608	
C14	2203-000125	C-CERAMIC,CHIP;1.2nF,10%,50V,X7R,TP,1608	
C15	2203-005005	C-CERAMIC,CHIP;100nF,10%,16V,X7R,TP,1608	
C16	2203-005005	C-CERAMIC,CHIP;100nF,10%,16V,X7R,TP,1608	
C17	2203-005005	C-CERAMIC,CHIP;100nF,10%,16V,X7R,TP,1608	
C18	2203-001103	C-CERAMIC,CHIP;6.8nF,10%,50V,X7R,TP,1608	
C19	2203-001103	C-CERAMIC,CHIP;6.8nF,10%,50V,X7R,TP,1608	
C2	2404-000293	C-TA,CHIP;220UF,10%,6.3V,GP,TP,7343H	
C20	2404-001159	C-TA,CHIP;100UF,10%,6.3V,GP,TP,6032	
C21	2404-001159	C-TA,CHIP;100UF,10%,6.3V,GP,TP,6032	
C22	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,1608	
C3	2404-000335	C-TA,CHIP;3.3uF,20%,16V,GP,TP,3216	
C30	2203-000315	C-CERAMIC,CHIP;0.12nF,5%,50V,NP0,TP,1608	
C32	2203-005005	C-CERAMIC,CHIP;100nF,10%,16V,X7R,TP,1608	
C33	2203-005005	C-CERAMIC,CHIP;100nF,10%,16V,X7R,TP,1608	
C34	2203-005005	C-CERAMIC,CHIP;100nF,10%,16V,X7R,TP,1608	
C35	2404-001020	C-TA,CHIP;10uF,20%,10V,GP,TP,3216,3.2	
C36	2404-000151	C-TA,CHIP;1uF,20%,16V,-,TP,3216,-	
C38	2203-005005	C-CERAMIC,CHIP;100nF,10%,16V,X7R,TP,1608	
C39	2203-005005	C-CERAMIC,CHIP;100nF,10%,16V,X7R,TP,1608	
C4	2404-000293	C-TA,CHIP;220UF,10%,6.3V,GP,TP,7343H	
C40	2203-005005	C-CERAMIC,CHIP;100nF,10%,16V,X7R,TP,1608	
C41	2203-005005	C-CERAMIC,CHIP;100nF,10%,16V,X7R,TP,1608	
C42	2203-005005	C-CERAMIC,CHIP;100nF,10%,16V,X7R,TP,1608	
C43	2203-005005	C-CERAMIC,CHIP;100nF,10%,16V,X7R,TP,1608	
C46	2203-005005	C-CERAMIC,CHIP;100nF,10%,16V,X7R,TP,1608	
C47	2203-005005	C-CERAMIC,CHIP;100nF,10%,16V,X7R,TP,1608	
C52	2203-000315	C-CERAMIC,CHIP;0.12nF,5%,50V,NP0,TP,1608	
C54	2203-000315	C-CERAMIC,CHIP;0.12nF,5%,50V,NP0,TP,1608	
C55	2404-000151	C-TA,CHIP;1uF,20%,16V,-,TP,3216,-	
C56	2203-000726	C-CERAMIC,CHIP;3.9nF,10%,50V,X7R,TP,1608	
C6	2404-000335	C-TA,CHIP;3.3uF,20%,16V,GP,TP,3216	
C60	2203-000626	C-CERAMIC,CHIP;0.022nF,5%,50V,NP0,TP,160	
C61	2203-001195	C-CERAMIC,CHIP;0.007nF,0.25pF,50V,NP0,TP	
C62	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,1608	
C63	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,1608	
C64	2203-000998	C-CERAMIC,CHIP;0.047nF,5%,50V,NP0,TP,160	
C65	2203-000998	C-CERAMIC,CHIP;0.047nF,5%,50V,NP0,TP,160	
C7	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,1608	
C8	2404-001158	C-TA,CHIP;47uF,10%,6.3V,GP,TP,3528	
C9	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,1608	
D11	0404-001010	DIODE-SCHOTTKY;MA729,30V,200mA,DSM,TP	
D12	0404-001010	DIODE-SCHOTTKY;MA729,30V,200mA,DSM,TP	
D13	0404-001010	DIODE-SCHOTTKY;MA729,30V,200mA,DSM,TP	
D3	0404-001089	DIODE-SCHOTTKY;RB551V-30,30V,500mA,SOD-3	
D4	0404-001089	DIODE-SCHOTTKY;RB551V-30,30V,500mA,SOD-3	
D5	0404-001010	DIODE-SCHOTTKY;MA729,30V,200mA,DSM,TP	
D6	0404-001010	DIODE-SCHOTTKY;MA729,30V,200mA,DSM,TP	
D7	0404-001010	DIODE-SCHOTTKY;MA729,30V,200mA,DSM,TP	
D9	0404-001010	DIODE-SCHOTTKY;MA729,30V,200mA,DSM,TP	
J1	3722-001605	JACK-PHONE;3P,3.6PI,AG,BLK,-	
J2	3708-001630	CONNECTOR-FPC/FC/PIC;15P,0.5MM,SMD-A,-	
J3	3708-001600	CONNECTOR-FPC/FC/PIC;4P,0.8MM,SMD-A,GOLD	
L1	2703-001864	INDUCTOR-SMD;15UH,20%,6X6X2.8MM	
L2	2703-001864	INDUCTOR-SMD;15UH,20%,6X6X2.8MM	
L3	2703-002247	INDUCTOR-SMD;4.7MH,20%,3.8X3.8X2.0	
L4	2703-000271	INDUCTOR-SMD;4.7uH,10%,2x1.25x1.25mm	
L5	2703-000271	INDUCTOR-SMD;4.7uH,10%,2x1.25x1.25mm	
MIC	3003-001062	MIC-CONDENSOR;2V,130UA-50,-42DB+-3DB,2.2	
Q2	0505-001426	FET-SILICON;IRLML6401,P,-12V,-4.3A,0.05o	
Q3	0504-001048	TR-DIGITAL;-,NPN,100MW,47K,SC-70,TP	
R10	2007-000123	R-CHIP;1.5Kohm,5%,1/16W,DA,TP,1608	
R11	2007-000123	R-CHIP;1.5Kohm,5%,1/16W,DA,TP,1608	
R12	2007-000121	R-CHIP;820ohm,5%,1/16W,DA,TP,1608	
R13	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
R15	2007-000090	R-CHIP;10KOHM,5%,1/16W,DA,TP,1608	
R16	2007-000090	R-CHIP;10KOHM,5%,1/16W,DA,TP,1608	
R19	2007-000120	R-CHIP;680ohm,5%,1/16W,DA,TP,1608	
R2	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
R20	2007-000125	R-CHIP;3.9Kohm,5%,1/16W,DA,TP,1608	
R21	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
R22	2007-000090	R-CHIP;10KOHM,5%,1/16W,DA,TP,1608	
R23	2007-000123	R-CHIP;1.5Kohm,5%,1/16W,DA,TP,1608	
R24	2007-000123	R-CHIP;1.5Kohm,5%,1/16W,DA,TP,1608	
R25	2007-000123	R-CHIP;1.5Kohm,5%,1/16W,DA,TP,1608	
R26	2007-000113	R-CHIP;33ohm,5%,1/16W,DA,TP,1608	
R29	2007-000090	R-CHIP;10KOHM,5%,1/16W,DA,TP,1608	
R3	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
R30	2007-000090	R-CHIP;10KOHM,5%,1/16W,DA,TP,1608	
R31	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
R33	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
R34	2007-000090	R-CHIP;10KOHM,5%,1/16W,DA,TP,1608	
R4	2007-000090	R-CHIP;10KOHM,5%,1/16W,DA,TP,1608	
R40	2007-000071	R-CHIP;22ohm,5%,1/16W,DA,TP,1608	
R41	2007-000123	R-CHIP;1.5Kohm,5%,1/16W,DA,TP,1608	
R42	2007-000071	R-CHIP;22ohm,5%,1/16W,DA,TP,1608	
R43	2007-000109	R-CHIP;1Mohm,5%,1/16W,DA,TP,1608	
R44	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
R45	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
R46	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
R47	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
R48	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
R49	2007-000090	R-CHIP;10KOHM,5%,1/16W,DA,TP,1608	
R5	2007-000124	R-CHIP;2.2Kohm,5%,1/16W,DA,TP,1608	
R50	2007-000125	R-CHIP;3.9Kohm,5%,1/16W,DA,TP,1608	
R51	2007-000125	R-CHIP;3.9Kohm,5%,1/16W,DA,TP,1608	
R52	2007-000125	R-CHIP;3.9Kohm,5%,1/16W,DA,TP,1608	
R53	2007-000090	R-CHIP;10KOHM,5%,1/16W,DA,TP,1608	
R54	2007-000090	R-CHIP;10KOHM,5%,1/16W,DA,TP,1608	
R55	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
R57	2007-000121	R-CHIP;820ohm,5%,1/16W,DA,TP,1608	
R59	2007-000987	R-CHIP;5.6ohm,5%,1/16W,DA,TP,1608	
R6	2007-001147	R-CHIP;7.5ohm,5%,1/16W,DA,TP,1608	
R60	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
R62	2007-000090	R-CHIP;10KOHM,5%,1/16W,DA,TP,1608	
R7	2007-001147	R-CHIP;7.5ohm,5%,1/16W,DA,TP,1608	
R8	2007-000113	R-CHIP;33ohm,5%,1/16W,DA,TP,1608	
R9	2007-000113	R-CHIP;33ohm,5%,1/16W,DA,TP,1608	
SW1	3408-001070	SWITCH-SLIDE;5V DC,10mA,-,OFF-<ON>,-	
SW2	3404-001161	SWITCH-TACT;12V DC,50mA,220gf,5.5x4.5x1.	
SW3	3404-001161	SWITCH-TACT;12V DC,50mA,220gf,5.5x4.5x1.	
SW4	3404-001180	SWITCH-TACT;12V DC,50MA,260GF,5.2X5.2X1.	
SW5	3404-001180	SWITCH-TACT;12V DC,50MA,260GF,5.2X5.2X1.	
SW6	3408-001052	SWITCH-SLIDE;5V,0.3A,2P,<OFF-ON>,-	
T1	0406-001128	DIODE-TVS;MLVS-0603-E08,50V,-,-	
T2	0406-001128	DIODE-TVS;MLVS-0603-E08,50V,-,-	
T3	0406-001128	DIODE-TVS;MLVS-0603-E08,50V,-,-	
T4	0406-001128	DIODE-TVS;MLVS-0603-E08,50V,-,-	
T5	0406-001128	DIODE-TVS;MLVS-0603-E08,50V,-,-	
U1	0903-001248	IC-MICROCONTROLLER;ML66Q525,16BIT,TQFP,1	
U2	1204-001881	IC-ENCODER/DECODER;MAS3519F,PLQFP,64P,-,	
U3	1107-001280	IC-FLASH MEMORY;9K1208,64Mx8Bit,TSOP,48P	
U4	0909-001031	IC-REAL TIME CLOCK;8563,-,TSSOP,8P,118MI	
U5	1003-001233	IC-POWER DRIVER;1DDD355AA-M02,MSOP,8P,-,	
U6	1203-001970	IC-VOLTAGE REGULATOR;-,SOT-89,3P,100MIL	
U7	1203-002172	IC-VOL. DETECTOR;80823,SC-82AB,4P,49MIL,	
Y1	2802-001168	RESONATOR-CERAMIC;12MHZ,0.5%,TP,3.7X3.1X	
Y2	2801-004053	CRYSTAL-SMD;0.032768MHZ,20PPM,28-BCG,7PF	
Y3	2802-001150	RESONATOR-CERAMIC;18.432MHZ,0.5%,TP,3.2X	
	AA61-00787A	PLATE-BATTERY;YP-30S,BPS,0.2T,Au-p	
	AA61-00806A	SPRING-BATTERY;YP-30S,SWC,0.45,-,-,-	

MEMO

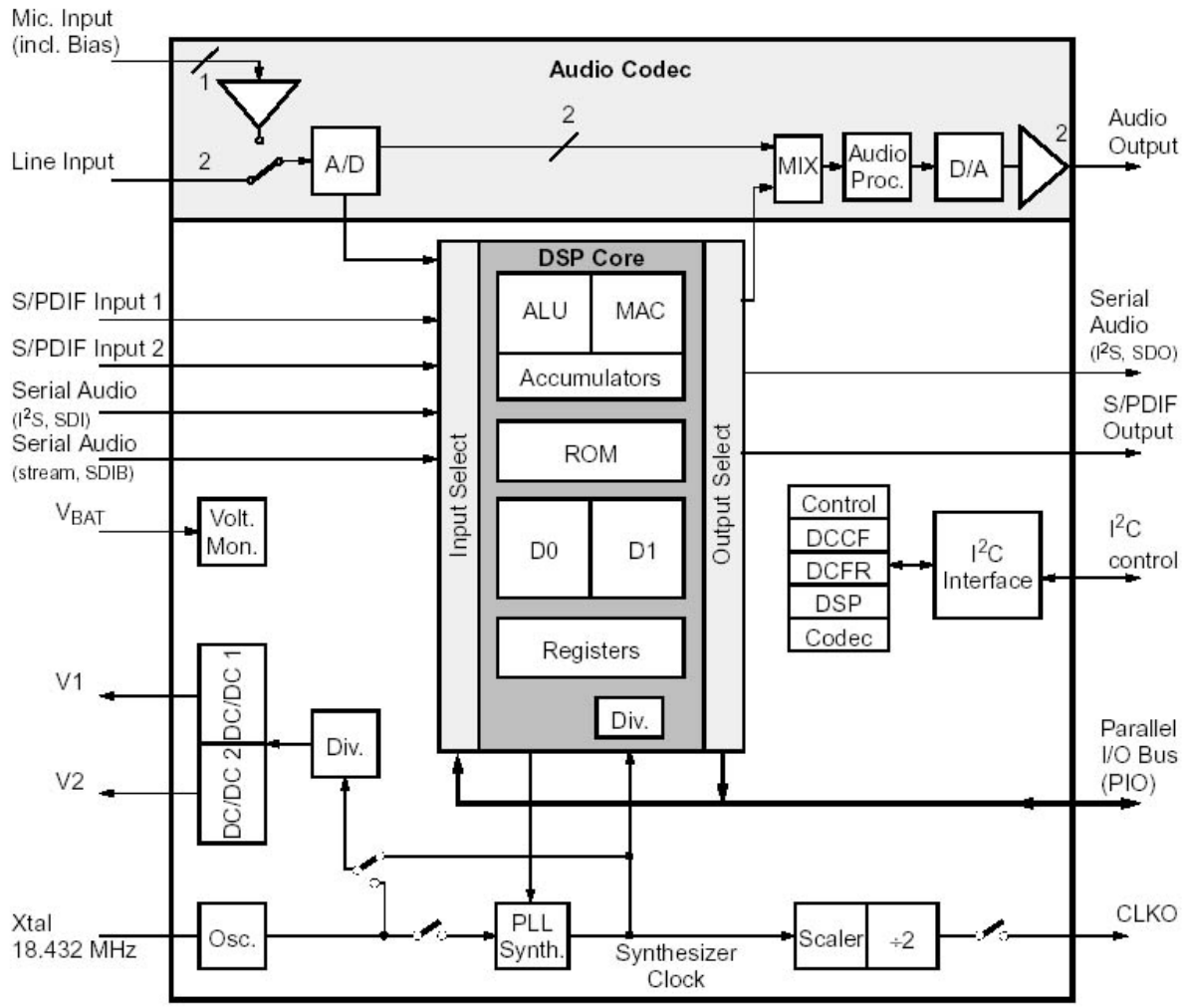
8. Block Diagram



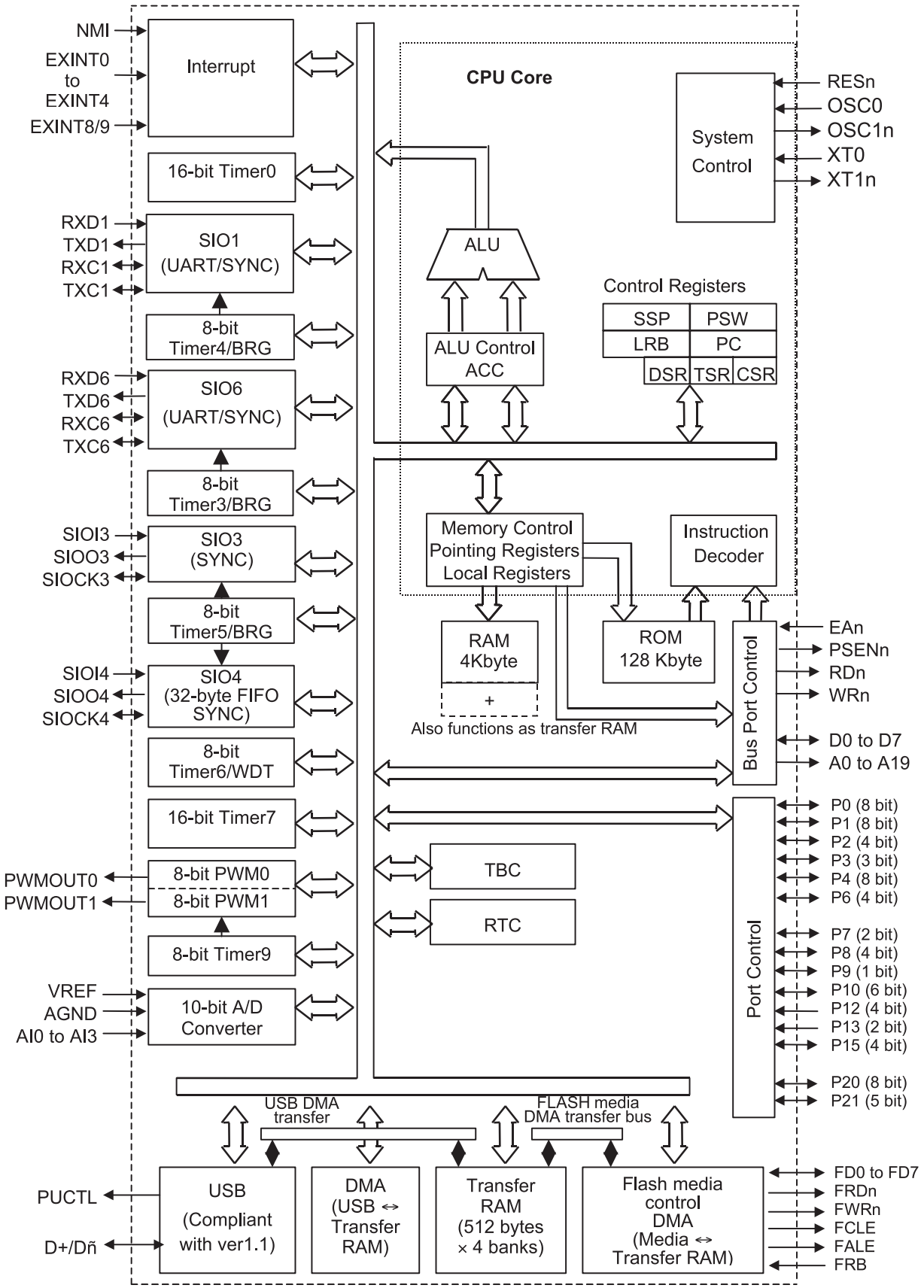
MEMO

9. Internal Block Diagram of Main IC

9-1 MAS3519

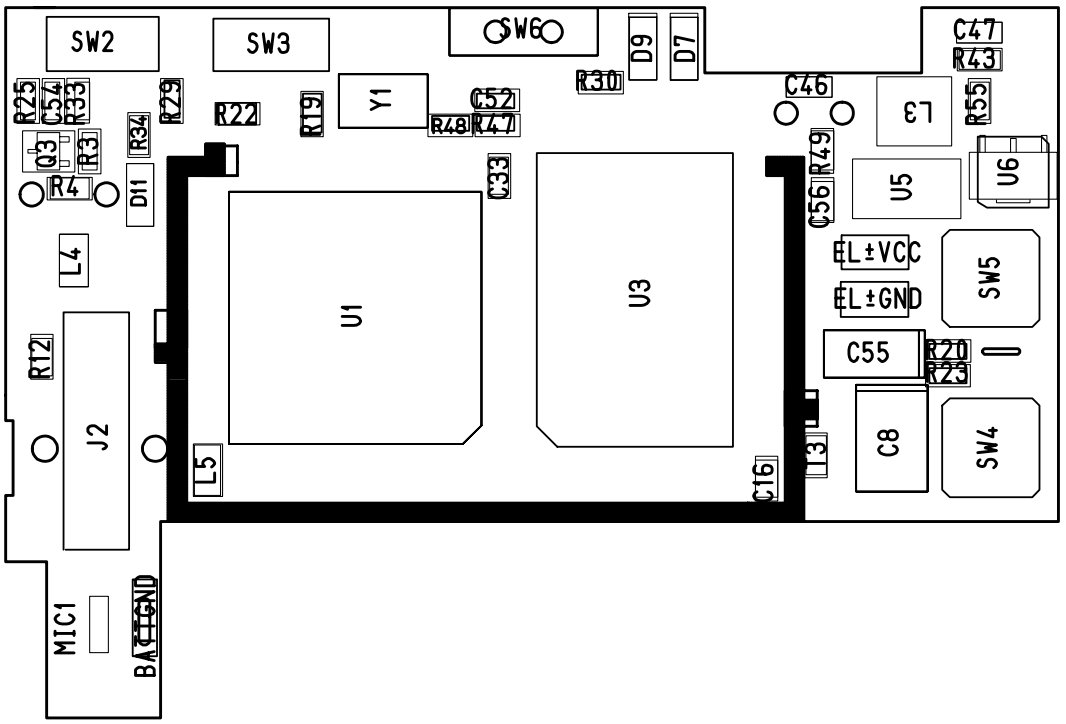


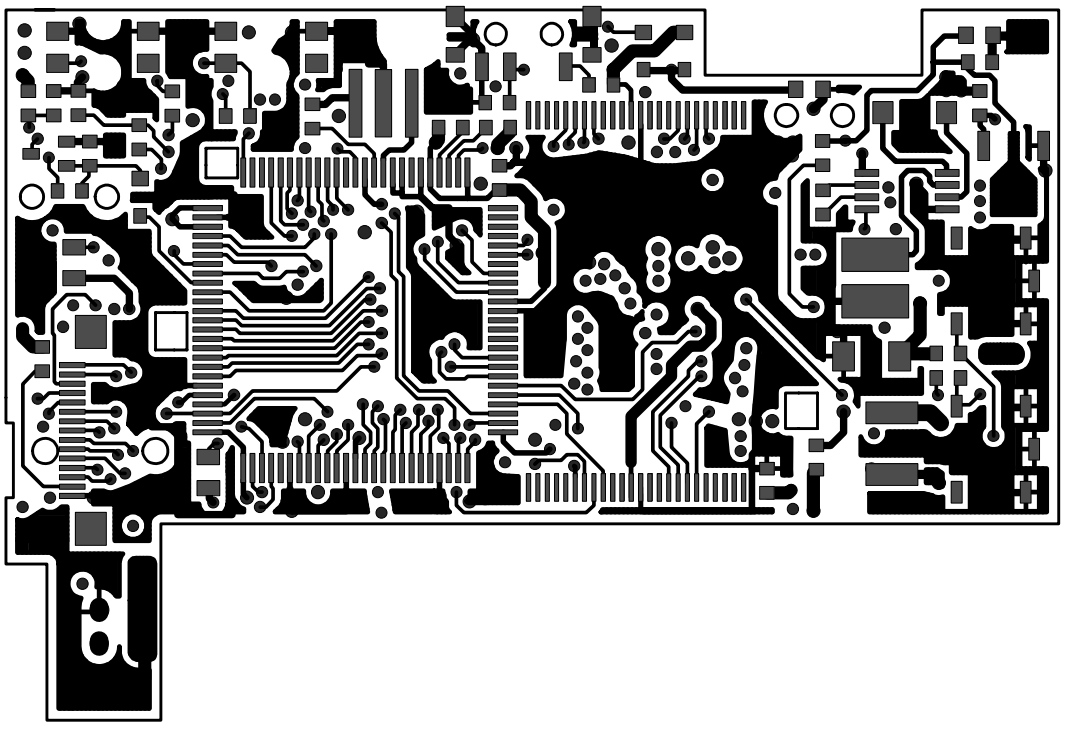
9-2 ML66525


NMI
EXINT0 to EXINT4
EXINT8/9
Interrupt
16-bit Timer0
RXD1
TXD1
RXC1
TXC1
SIO1 (UART/SYNC)
8-bit Timer4/BRG
RXD6
TXD6
RXC6
TXC6
SIO6 (UART/SYNC)
8-bit Timer3/BRG
SIOI3
SIOO3
SIOCK3
SIO3 (SYNC)
8-bit Timer5/BRG
SIOI4
SIOO4
SIOCK4
SIO4 (32-byte FIFO SYNC)
8-bit Timer6/WDT
16-bit Timer7
PWMOUT0
PWMOUT1
8-bit PWM0
8-bit PWM1
8-bit Timer9
VREF
AGND
AI0 to AI3
10-bit A/D Converter
CPU Core
ALU
ALU Control ACC
Control Registers
SSP
PSW
LRB
PC
DSR
TSR
CSR
System Control
RESn
OSC0
OSC1n
XT0
XT1n
Memory Control Pointing Registers Local Registers
Instruction Decoder
RAM 4Kbyte
+
Also functions as transfer RAM
ROM 128 Kbyte
Bus Port Control
EAn
PSENn
RDn
WRn
D0 to D7
A0 to A19
TBC
RTC
Port Control
P0 (8 bit)
P1 (8 bit)
P2 (4 bit)
P3 (3 bit)
P4 (8 bit)
P6 (4 bit)
P7 (2 bit)
P8 (4 bit)
P9 (1 bit)
P10 (6 bit)
P12 (4 bit)
P13 (2 bit)
P15 (4 bit)
P20 (8 bit)
P21 (5 bit)
USB DMA transfer
FLASH media DMA transfer bus
PUCTL
D+/Dñ
USB (Compliant with ver1.1)
DMA (USB ↔ Transfer RAM)
Transfer RAM (512 bytes × 4 banks)
Flash media control DMA (Media ↔ Transfer RAM)
FD0 to FD7
FRDn
FWRn
FCLE
FALE
FRB

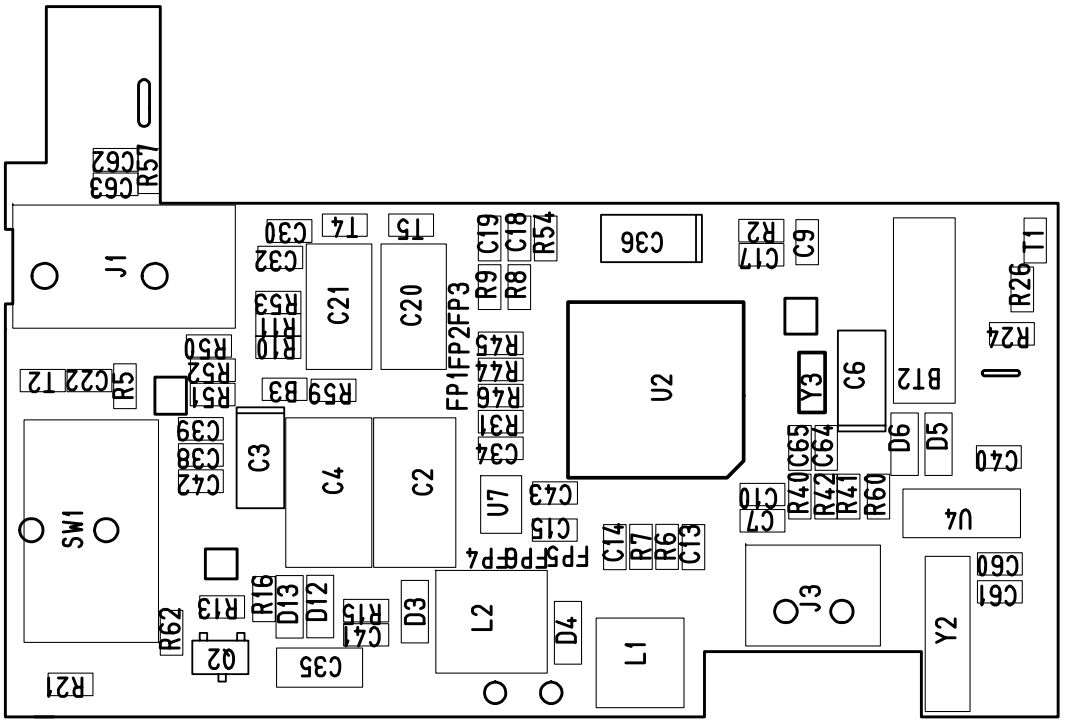
10. PCB Wiring Diagrams

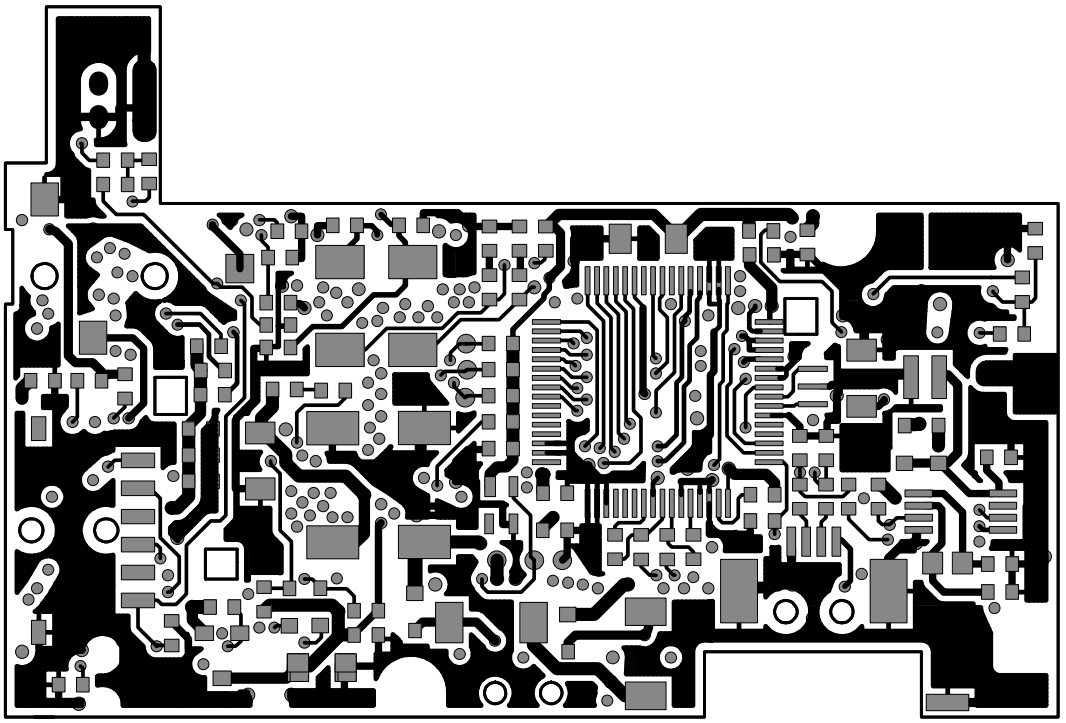
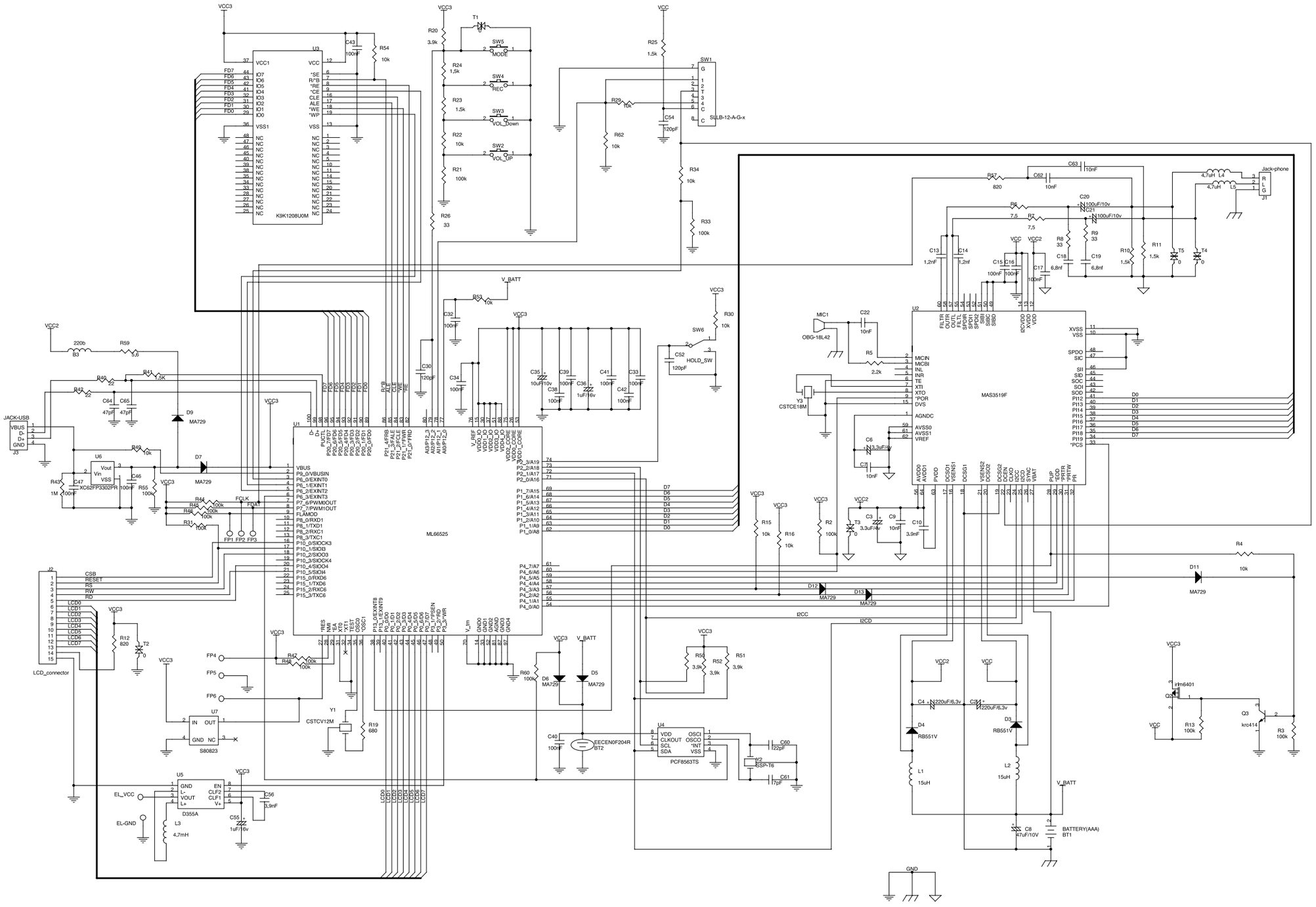
10-1 Component Side





10-2 Solder Side





11. Schematic Diagram