



SCPH-70000series

SCPH-70000 series

SERVICE MANUAL 1st edition
for GH-035 BOARD
(LCG-chassis)

PlayStation®2



Sony Computer Entertainment Inc.
Customer Service Department



SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

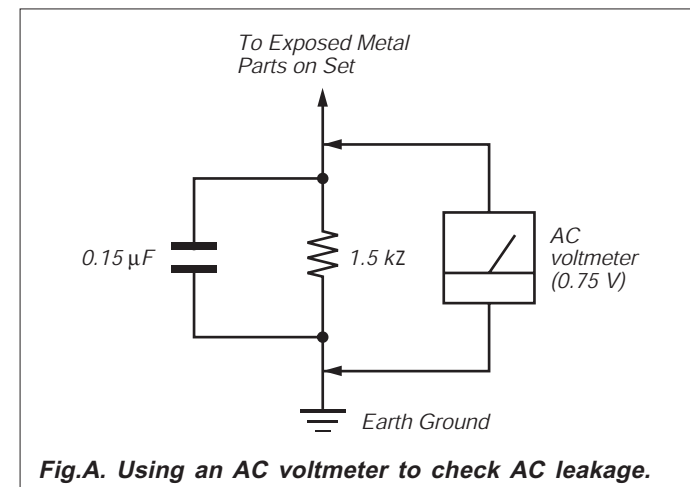
1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
6. Check the B+ voltage to see it is at the values specified.
7. Check the metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described right.

LEAKAGE TEST



The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers.).

Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

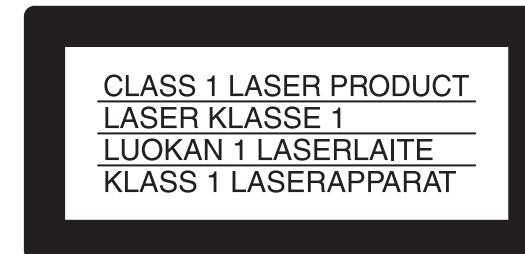


SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  OR DOTTED LINE WITH MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION, REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS ARE APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

CAUTION

The use of optical instruments with this product will increase eye hazard. As the laser beam used in this CD/DVD ROM Drive is harmful to eyes, do not attempt disassemble the cabinet. Refer servicing to qualified personnel only.



This appliance is classified as a CLASS 1 LASER product.

CAUTION:

The use of optical instrument with this product will increase eye hazard.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

WARNING!!

WHEN SERVICING , DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION, BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 25cm FROM THE SERFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.

CAUTION

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer.

Discard used batteries according to the manufacturer's instructions.

Lithium Batteries

If an equipment is provided with a replaceable lithium battery, the following applies:

- if the battery is placed in an OPERATOR ACCESS AREA, there shall be a warning close to the battery or in both the operating and the service instructions:
- if the battery is placed elsewhere in the equipment, there shall be a warning close to the battery or in the service instructions.

Table of contents

1. CIRCUIT DIAGRAM (GH -035)

1-1. EE+GS + RDRAM -----	05
1-2. IOP -----	06
1-3. POWER SUPPLY -----	07
1-4. AUDIO + Boot ROM -----	08
1-5. uCON + DSP -----	09
1-6. Analog (for TI) -----	10
1-7. 6chDVE+AVCN -----	11
1-8. LAN -----	12
1-9. Switch Board -----	13

2. PRINTED WIRING BOARD

2-1. GH -035 Board (Side A) -----	14
2-2. GH -035 Board (Side B) -----	15

3. EXPLODED VIEWS

3-1. OVERALL AND MAIN BLOCK -----	16
3-2. COVER UPPER ASSY AND STAND NUT BLOCK -----	17
3-3. PACKING INSTRUCTIONS -----	18

4. ELECTRICAL PART LIST



4-1. GH-035-03 FJT C4105+C4106 -----	20
4-2. GH-035-03 TXI C4105+C4106 -----	26

SECTION1 CIRCUIT DIAGRAM

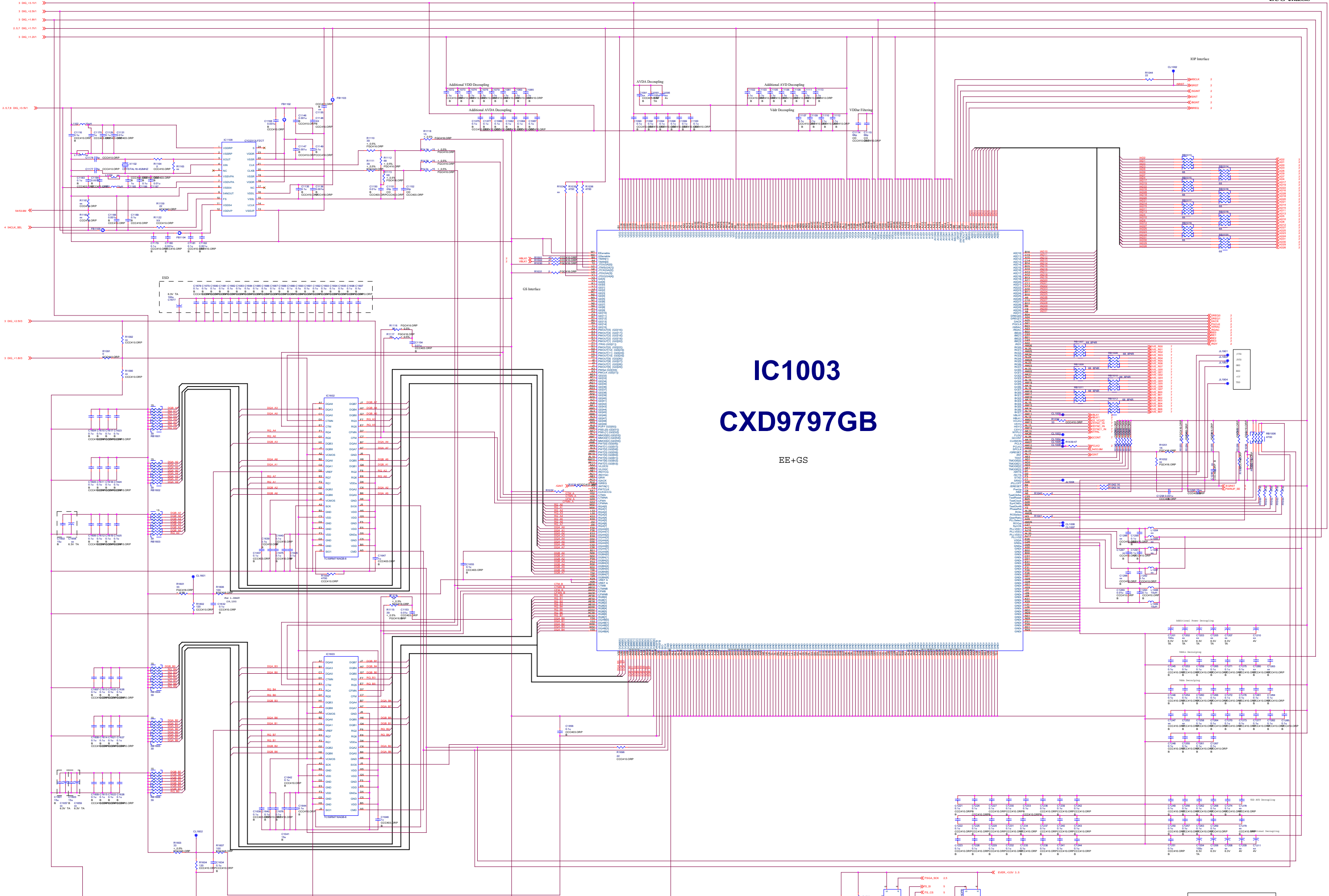
Note on Circuit Diagrams

- All capacitors are in μF unless otherwise noted. pF: $\mu \mu F$
50WV or less are not indicated except for electrolytics
and tantalums.
- All resistors are in Ω and $\frac{1}{4} W$ or less unless otherwise
specified.
- % :indicates tolerance.

Note:

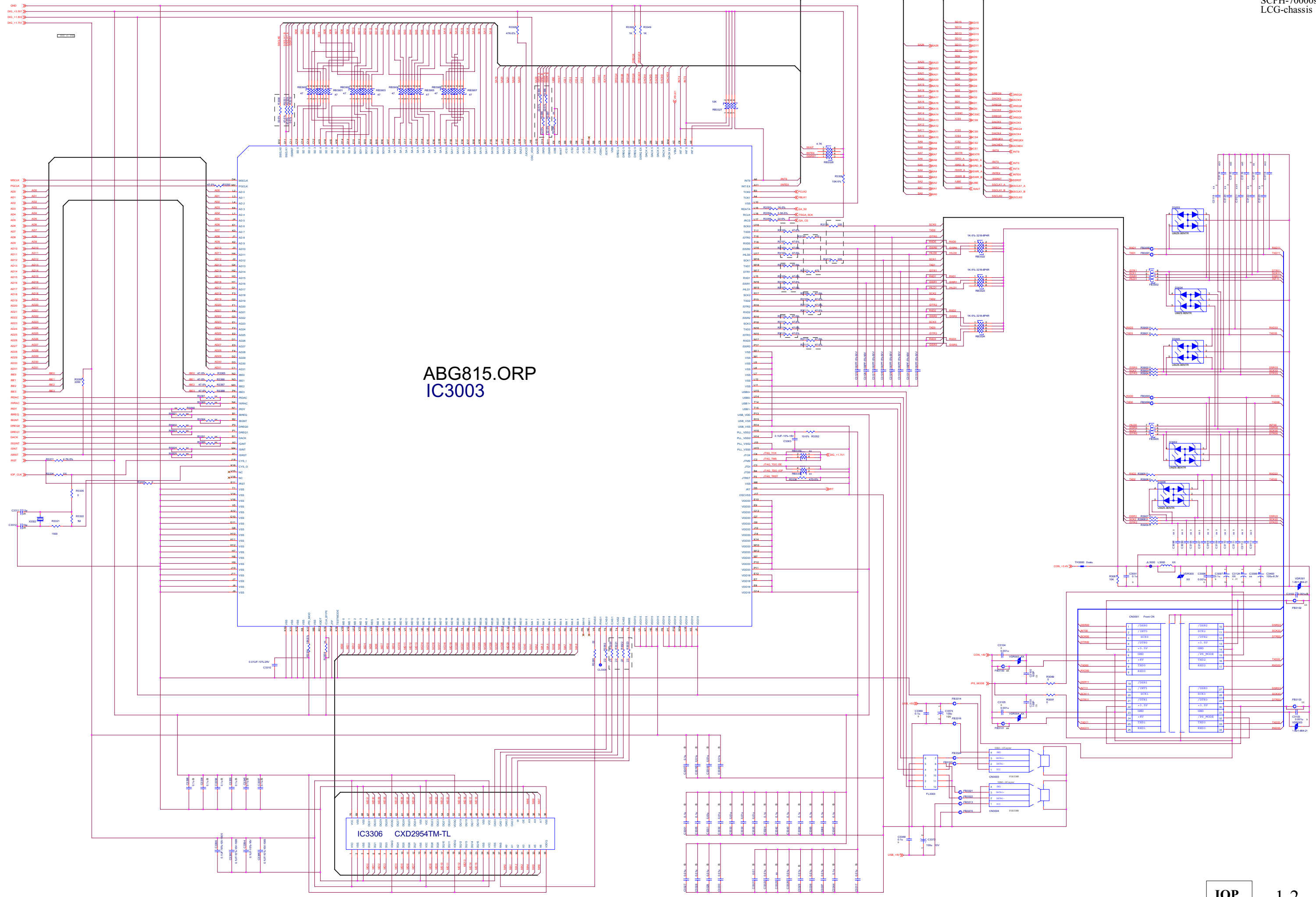
The components identified by mark 
or dotted line with mark  are critical
for safety.

Replace only with part number specified.



IC1003 CXD9797GB

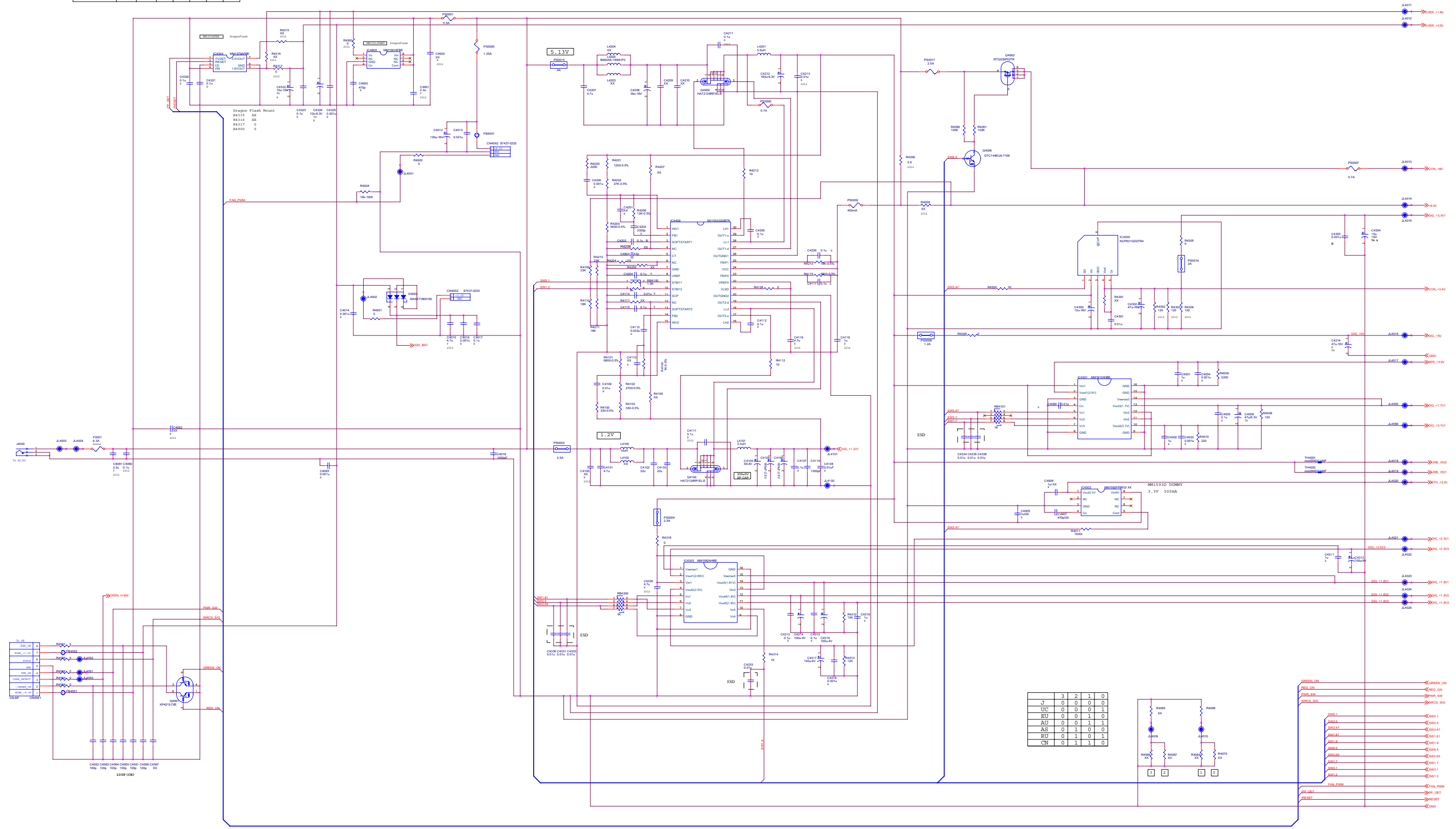
EE+GS



ABG815.0RP
IC3003

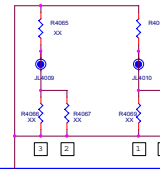
IC3006 CXD2954TM-TL

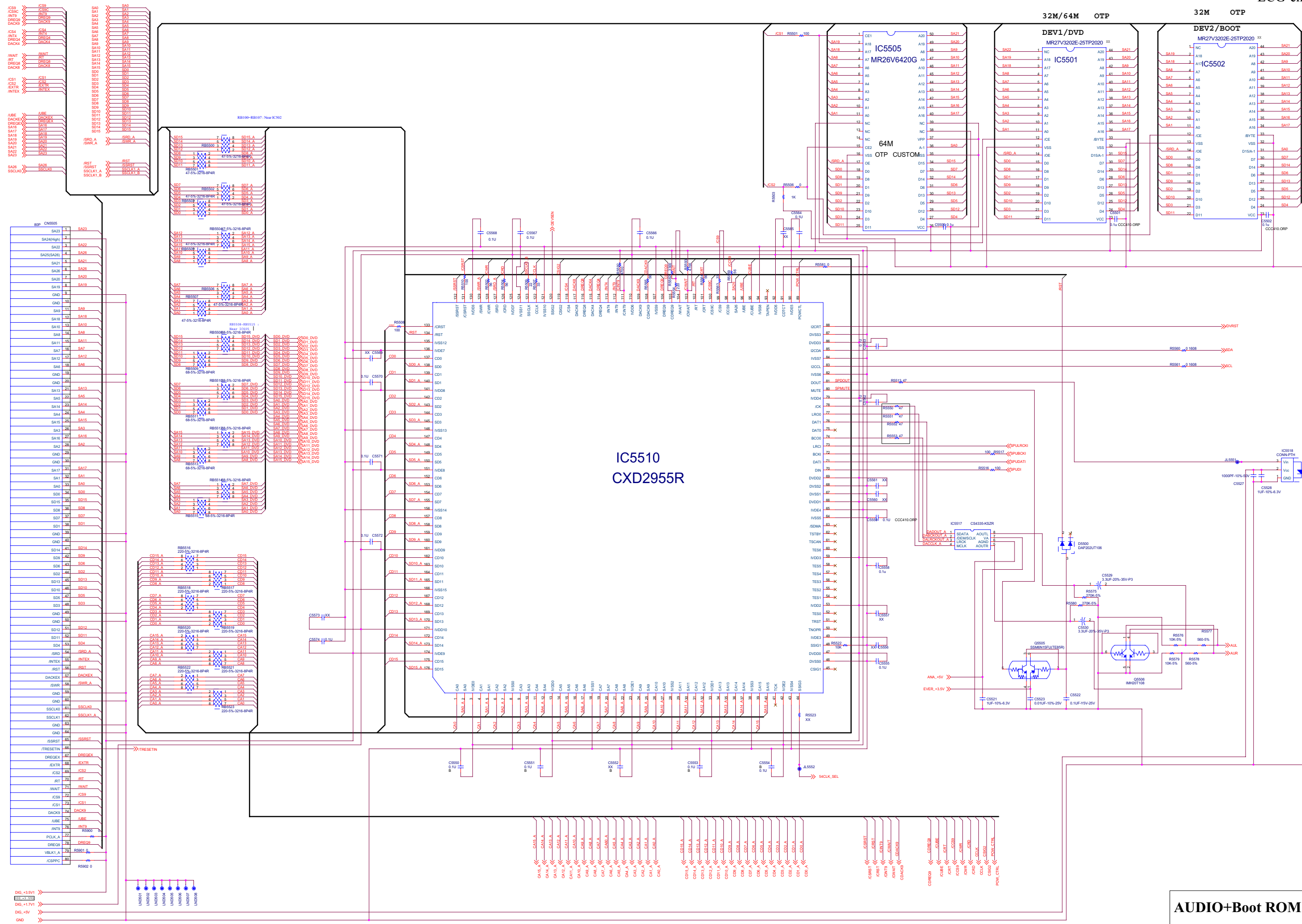
Dragon (DB30)	041304	044901	R4113	R4114	R4115	R4100	C4200
DBA Flash	R41550	R41551	XX	XX	0	0	0
Mask	R41570	XX	0	0	XX	XX	XX



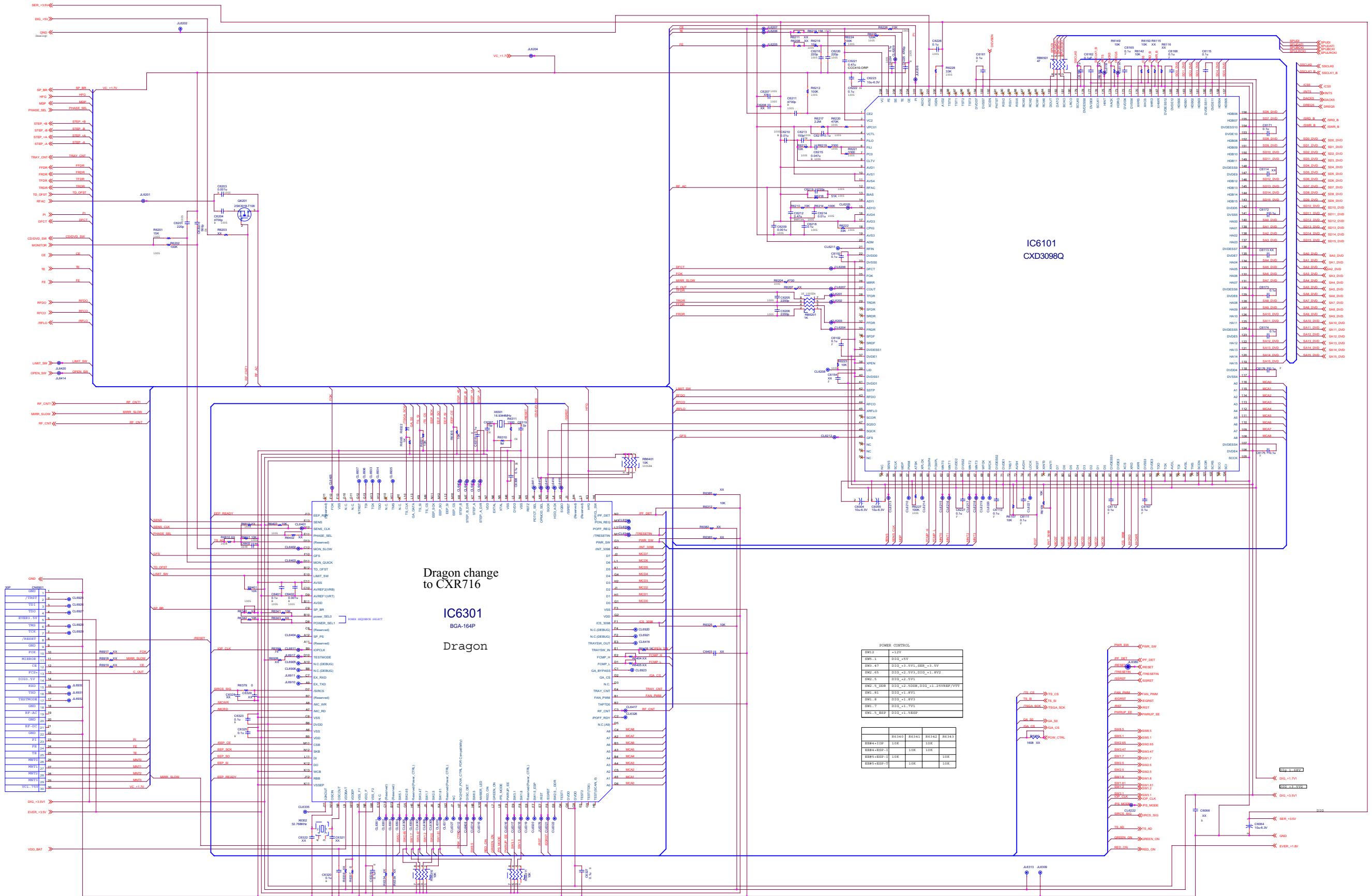
	C4113	C4202	C4206	C4117	C4200	C4109	C4904
SN105225DBTR	0.033μ	3300P	0.1μ	0.1μ	1000P	0.01μ	43P
MB39A116PFT-ERE1	0.022μ	2200P	XX	XX	330P	XX	47K

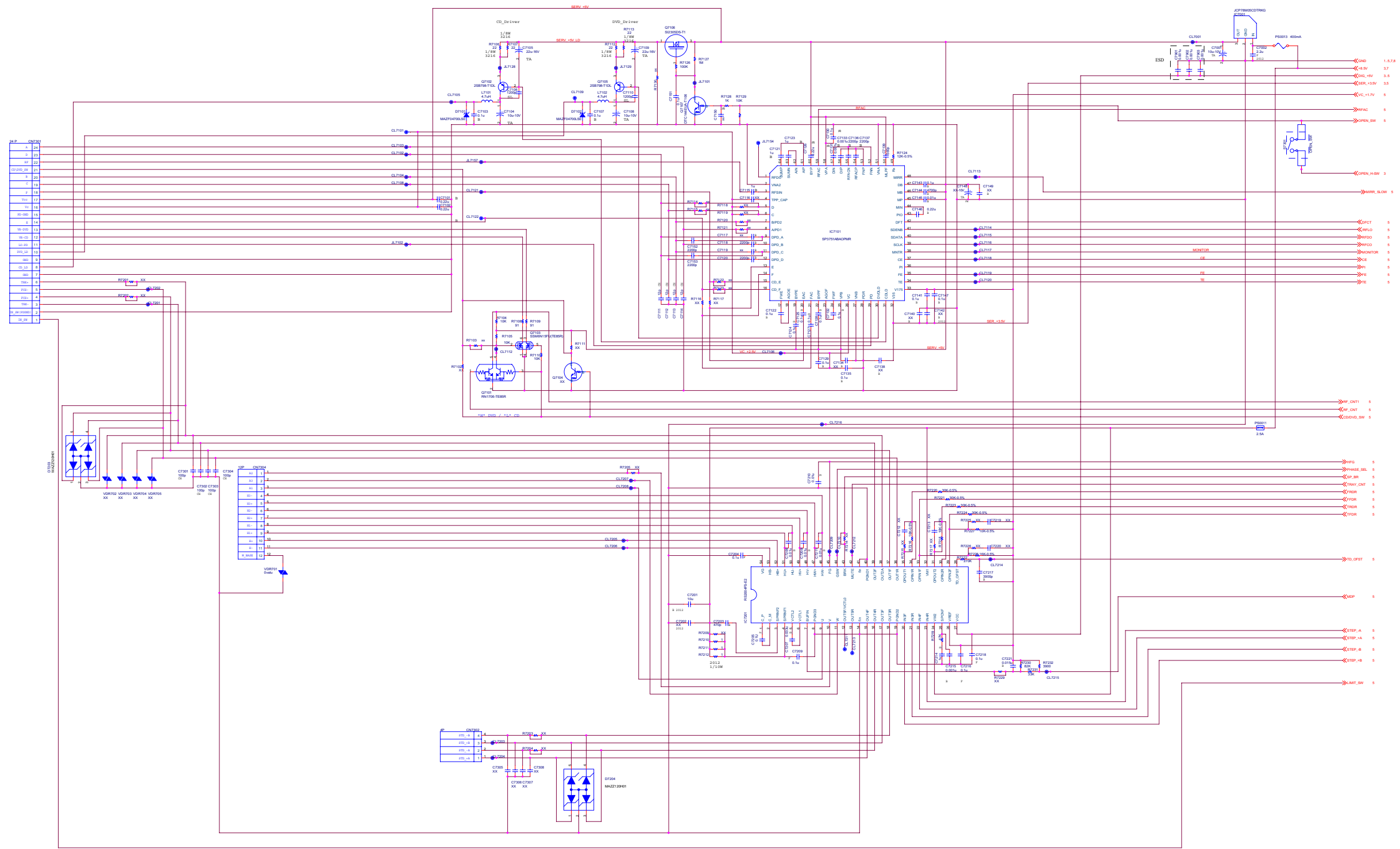
	3	2	1	0
J	0	0	0	0
UC	0	0	0	1
EU	0	0	1	0
AU	0	0	1	1
AS	0	1	0	0
RU	0	1	0	1
CN	0	1	1	0

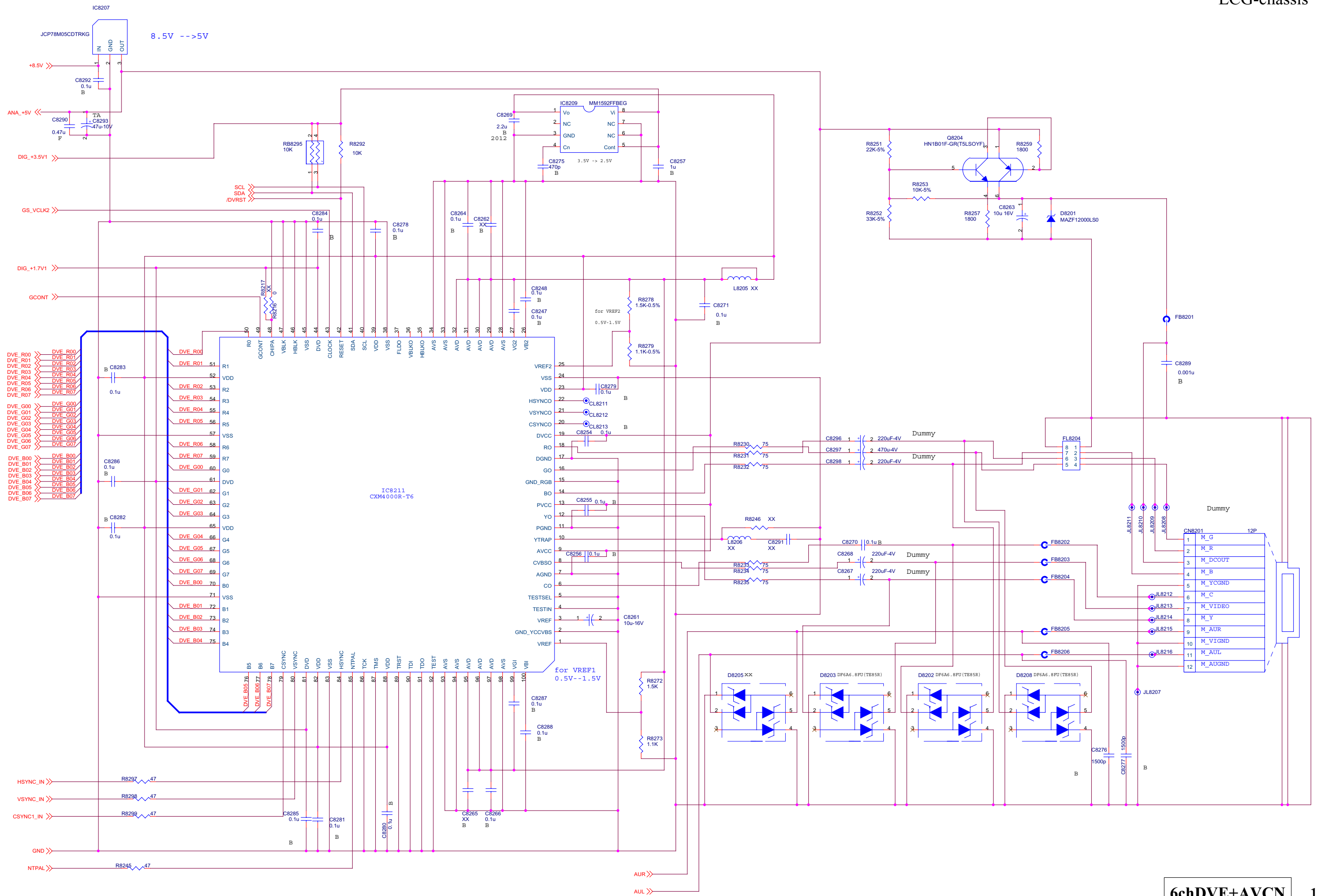


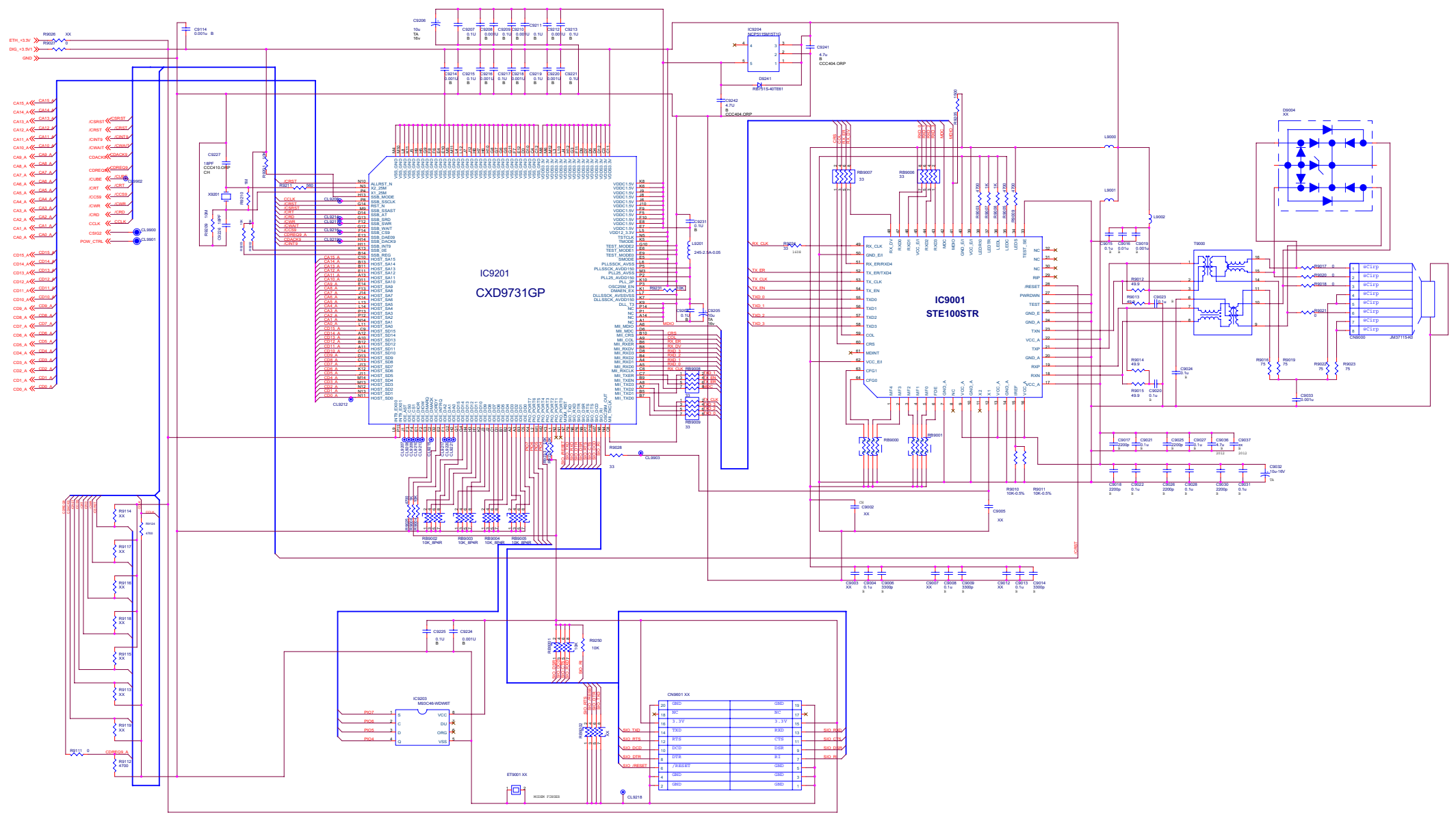


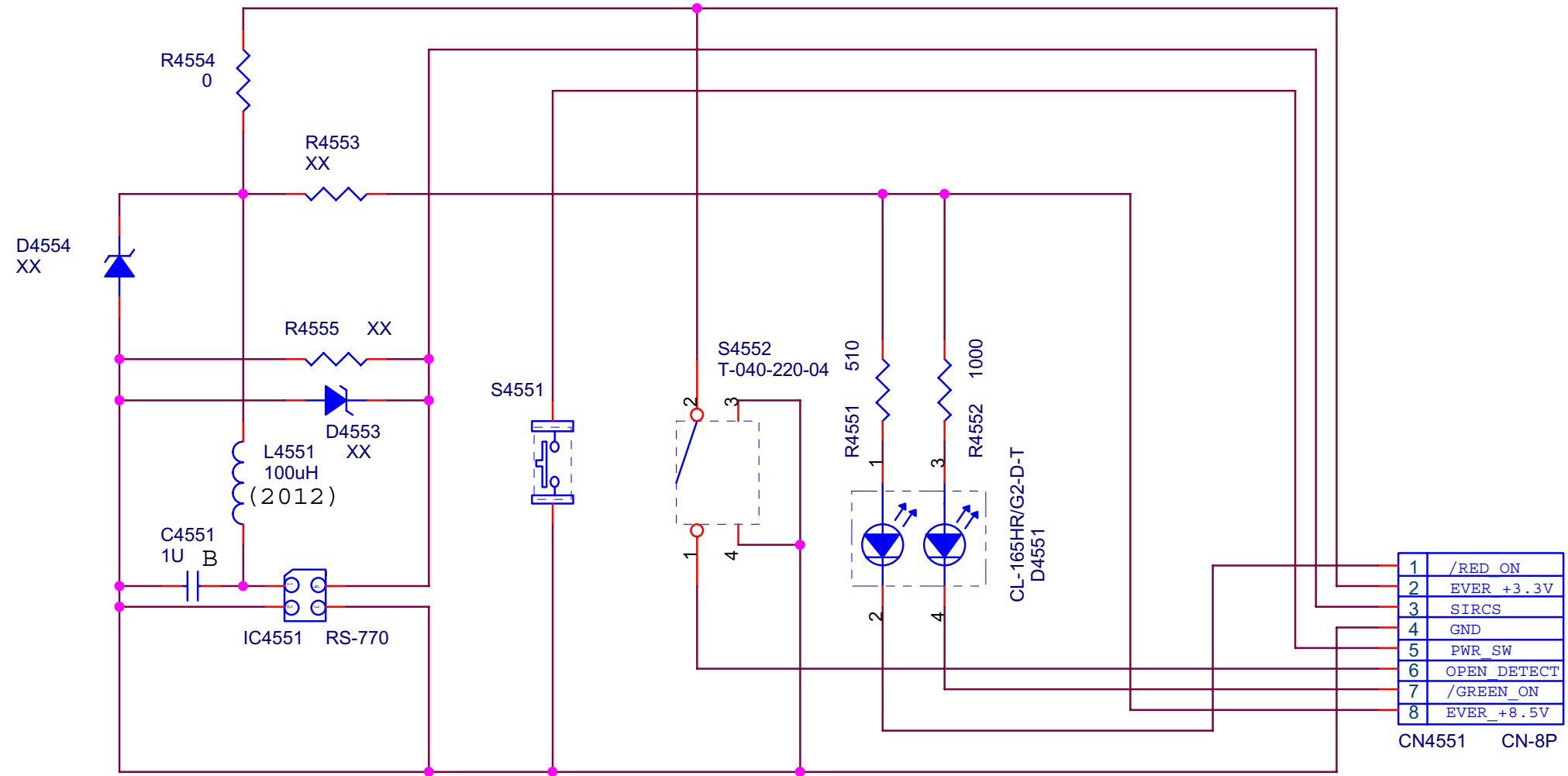
AUDIO+Boot ROM

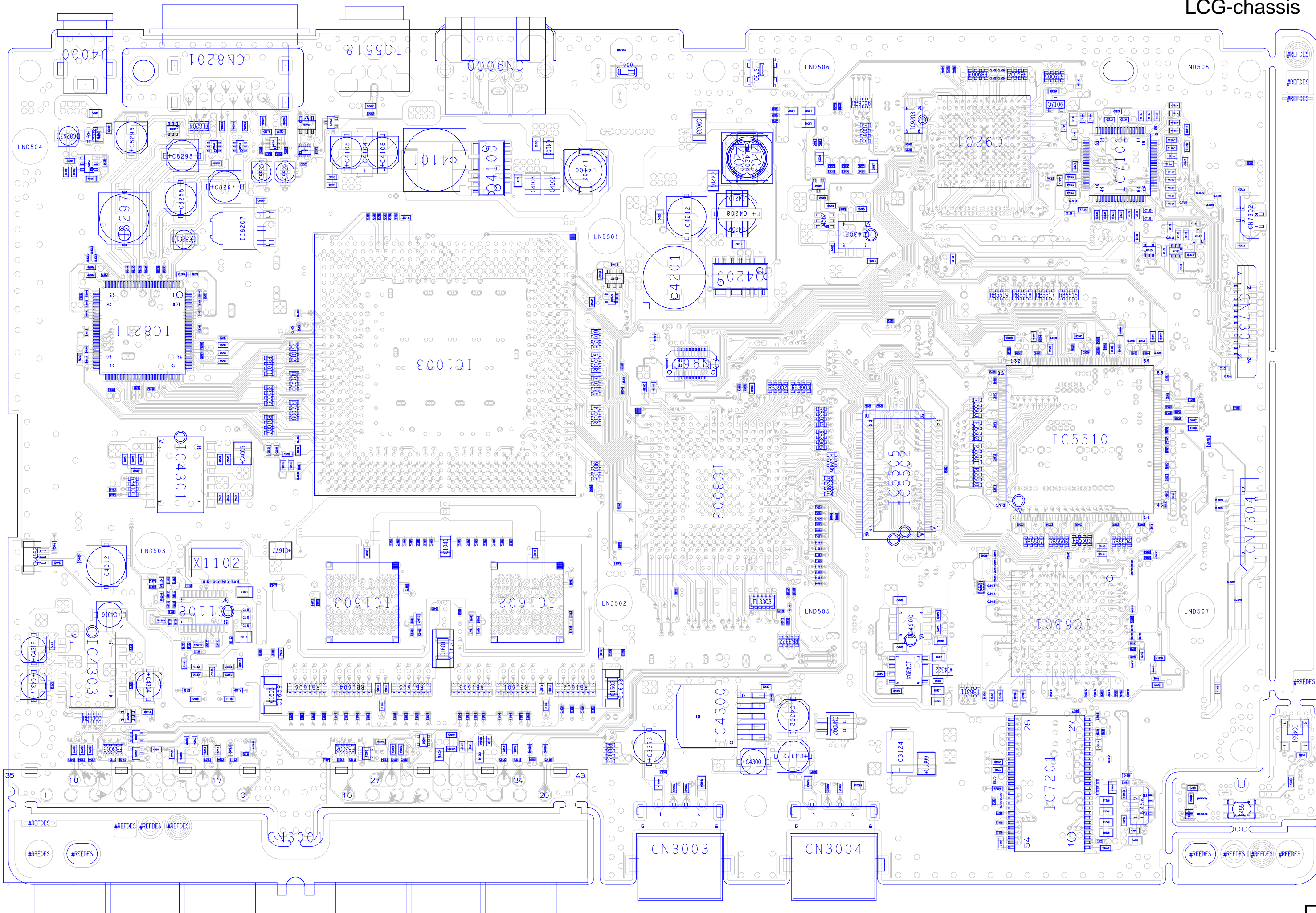


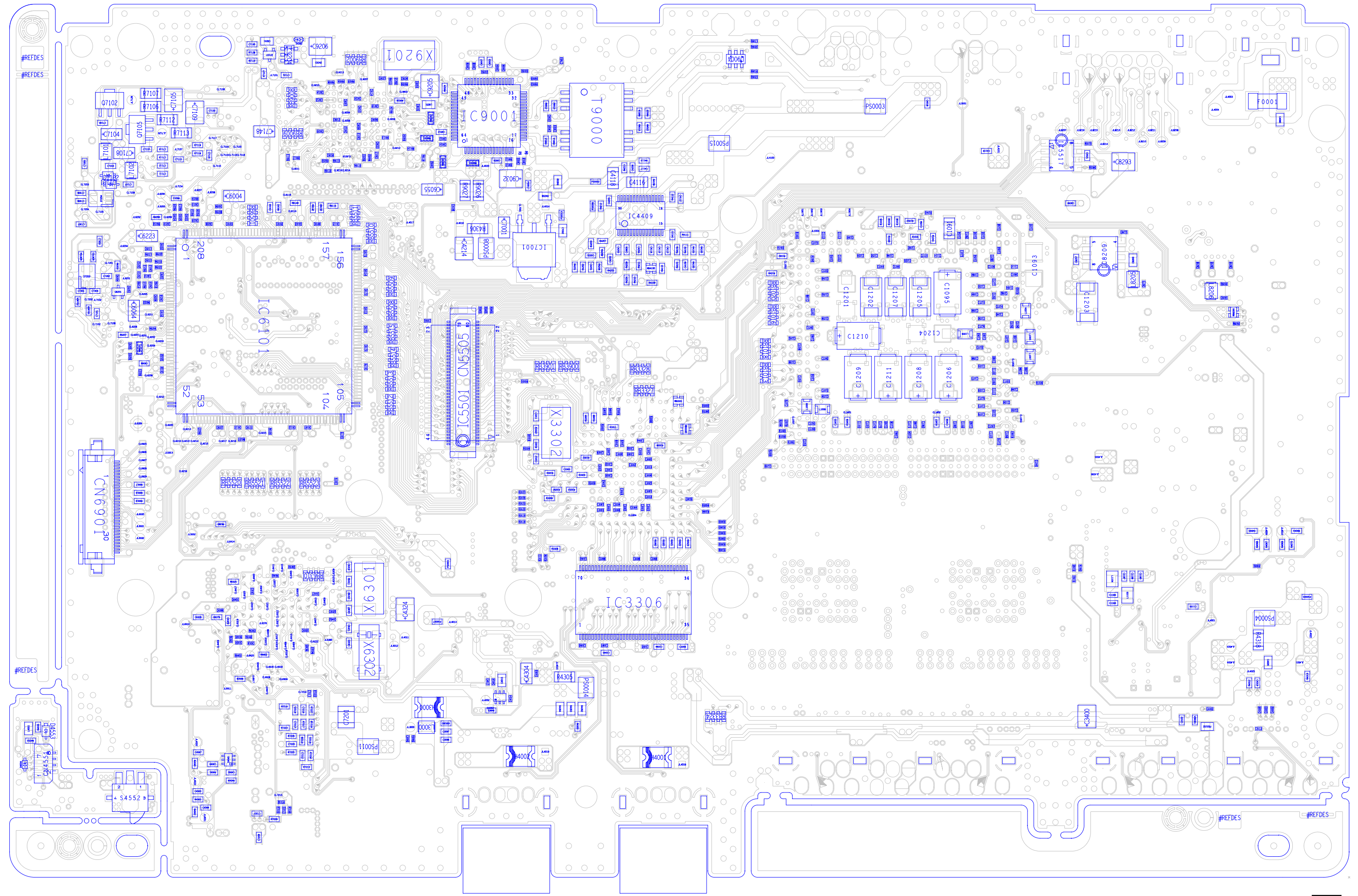




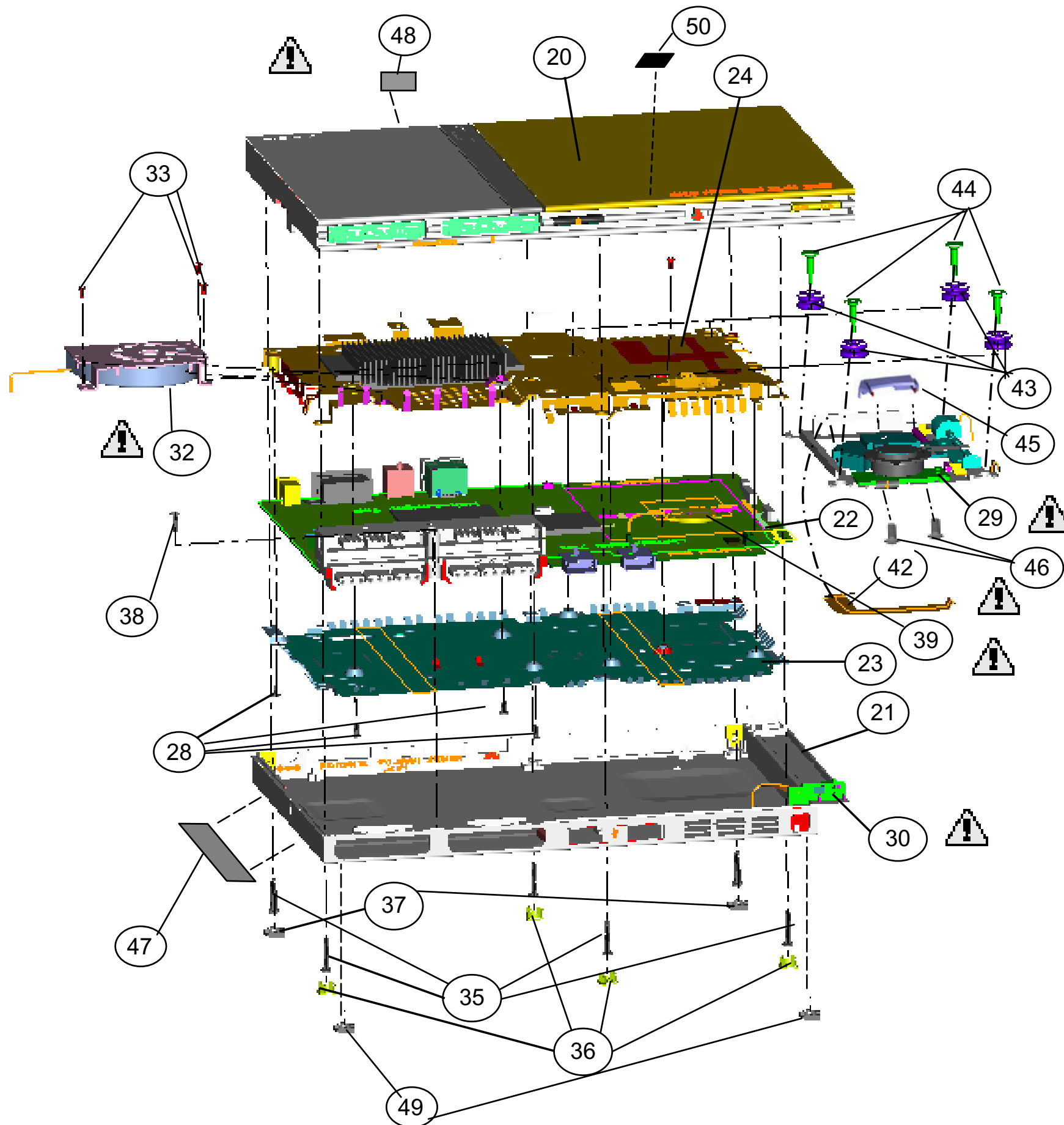








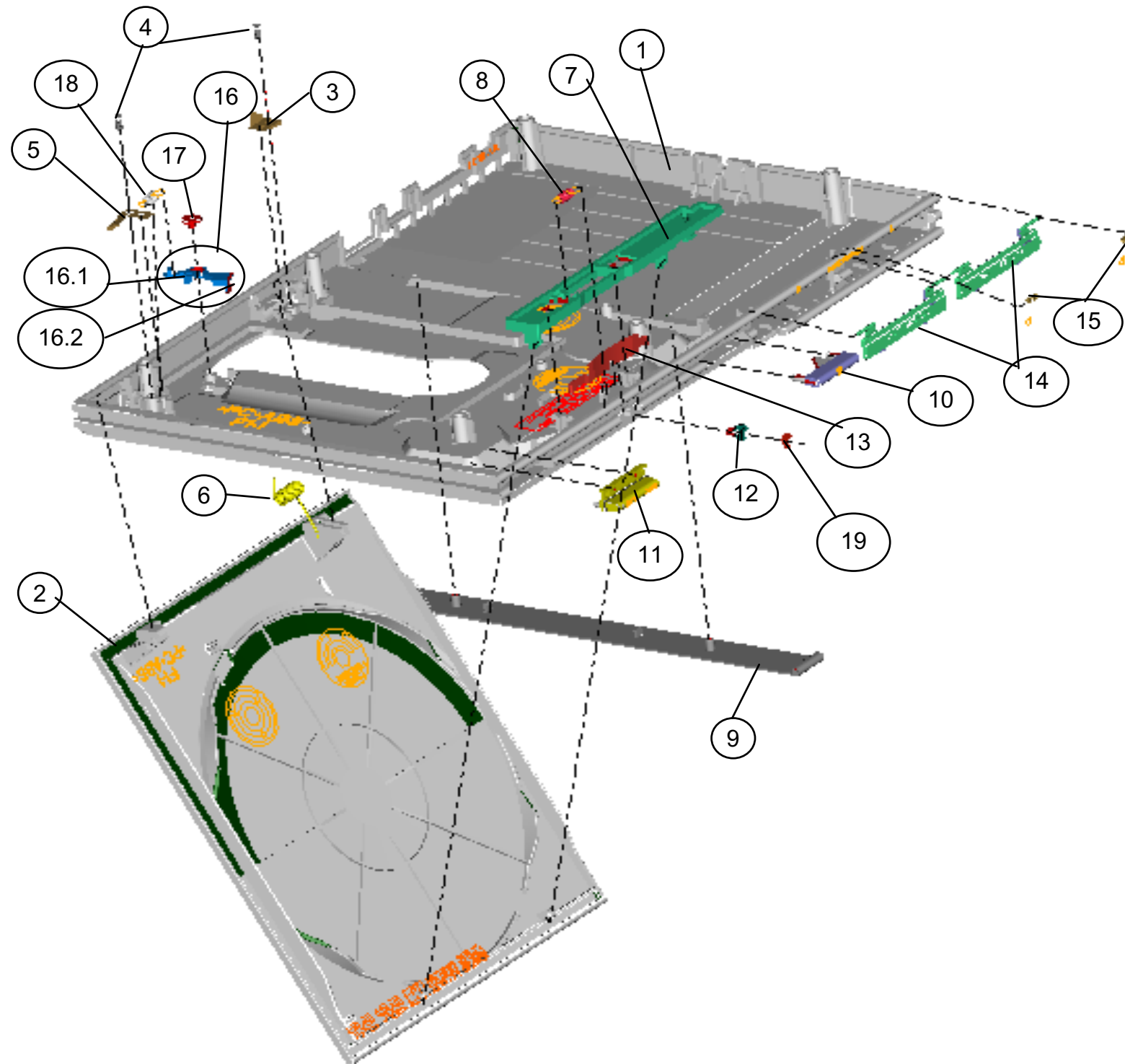
OVERALL AND MAIN BLOCK



OVERALL AND MAIN BLOCK

Ref-No	Customer part NO	Description	SET/PC
20	9-886-100-03	COVER ASSY,UPPER (Sankyo/No modem)	1
21	9-886-100-09	COVER ASSY, LOWER (no modem)	1
22		MAIN BOARD	1
23	9-886-100-10	SHIELD ASSY,LOWER	1
24	9-886-100-12	SHIELD ASSY,UPPER	1
25	2-318-817-01	SHEET (EE), ELECTRIC HEAT	1
26	3-080-294-01	SHEET (DRIVER), ELECTRIC HEAT	1
27	3-088-454-01	SHEET (MULTI), ELECTRIC HEAT	2
28	3-074-552-01	0 PLATE 2 MAIN 2X5 S TITE	4
29	1-788-194-11	TRAVERSE SANKYO	1
	1-788-193-11	TRAVERSE MITSUMI	1
30	9-886-100-15	SW BOARD	1
31	9-886-100-16	8 PIN FFC	1
32	9-886-100-17	DC FAN	1
33	9-886-100-18	SCREW, TAPPING (M2X4)	6
34	3-074-560-01	HARNESSTAPE(FAN)	1
35	9-886-100-19	SCREW , TAPPING(P2.6X12)	6
36	2-187-329-01	COVER , SCREW	4
37	2-187-330-01	CAP(R)	2
38	9-886-100-20	SCREW(FTB)(+BV2.6X8)	1
39	9-886-100-13	BATTERY UNIT ASSY	1
42	1-864-648-11	OPU FPC	1
	1-864-648-21	OPU FPC	1
43	2-187-328-01	INSULATOR	4
44	9-886-100-14	SCREW(TR,2X4.5 S)	4
45	2-348-243-01	DISC GUARD FOR SANKYO	1
	2-348-242-01	DISC GUARD FOR MITSUMI	1
46	9-886-100-42	SCREW for SANKYO D-guard	2
	9-886-100-42	SCREW for MITSUMI D-guard	1
47	2-342-708-01	LABEL, MODEL NUMBER	1
48	2-345-222-01	TAPE (D), VOID	1
49	2-187-325-01	CAP(F)	2
50	2-579-638-01	PUSH LABEL	1

COVER UPPER ASSY AND STAND NUT BLOCK

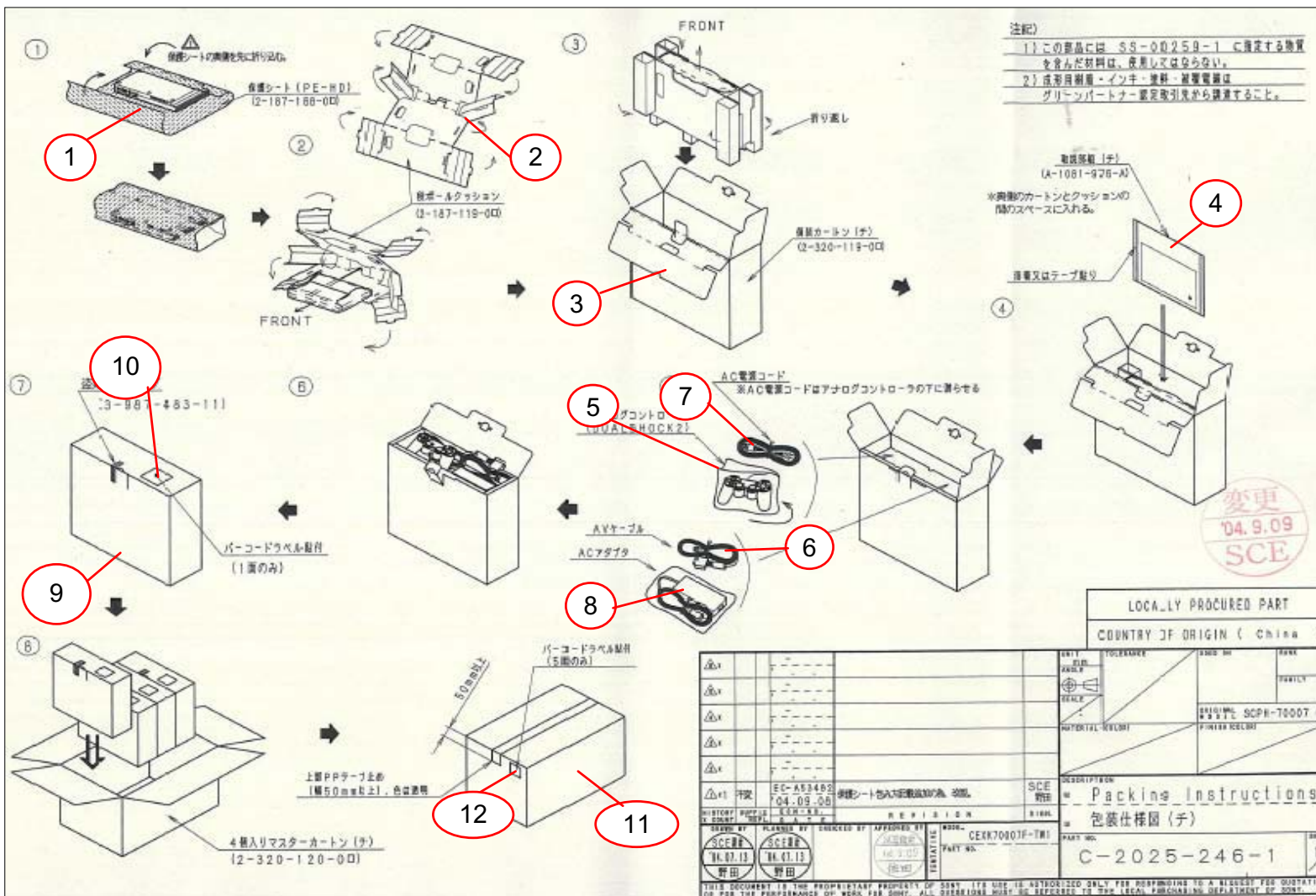


COVER UPPER ASSY AND STAND NUT BLOCK

Ref-NO	Customer part NO	Description	SET/PC
1		COVER UPPER	1
2		LID	1
3		LID_Spring(L)	1
4	9-886-100-42	SCREW(+P2X4 B)	2
5		LID-Spring(R)	1
6	9-886-100-04	SPRING ,LID	1
7		SLIDE,LOCK	1
8	9-886-100-04	SPRING ,SLIDE	1
9		ORNAMENTAL PLATE	1
10		OPEN BUTTON	1
11		POWER BUTTON	1
12		SHAFT,ROTARY	1
13		Rotate_Shaft_Spring	1
14		SHUTTER	2
15		SPRING ,TORSION FOR SHUTTER	2
16	9-886-100-05	BRAKE ASSY	1
16.1		LEVER BRAKE	1
16.2		CUSHION BRAKE	1
17	9-886-100-06	BRAKE SCREW(B2*2.7)	1
18	9-886-100-07	SPRING,BRAKE	1
19		PS MARK	1

TOOLS : The head form of SCREW DRIVER must match screw.
 The torsional damper moment is 2.0 ± 0.2 kgf.cm for SCREW DRIVER.

PACKING GROUP



Ref-NO	Customer part NO	Description	SET/PC
1	2-187-168-01	SHEET, PROTECTION	1
2	2-187-119-01	CUSHION , FIBERBOARD	1
3	2-320-119-01	INDIVIDUAL, CARTON	1
4	A-1081-976-A	MANUAL BLOCK ASSY	1
4-1	2-187-121-01	BAG, POLYETHYLENE	1
4-2	2-187-122-71	MANUAL, INSTRUCTION	1
4-3	2-320-109-11	INSTRUCTION (ACC)	1
4-4	2-349-598-11	INSTRUCTION (GYRO)	1
4-5	2-549-560-11	INSTRUCTION (ATTENTION)	1
5	1-829-867-11	CONTROLLER	1
	1-829-856-11	CONTROLLER	1
6	1-792-028-23	CORD, CONNECTION	1
	1-792-028-32	CORD, CONNECTION	1
	1-792-028-53	CORD, CONNECTION	1
	1-792-028-63	CORD, CONNECTION	1
	1-792-028-81	CORD, CONNECTION	1
	1-792-028-81	CORD, CONNECTION	1
7	1-824-506-31	CORD, POWER	1
	1-829-808-21	CORD, POWER	1
	1-829-809-21	CORD, POWER	1
	1-829-810-21	CORD, POWER	1
8	1-479-009-11	ADAPTOR, AC	1
9	3-987-483-11	TAPE,BERODDED PREVENTION	1
10		LABEL (D), BAR CODE, SONY	1
11	2-320-120-01	MASTER CARTON, 4 SETS	0.25
12		LABEL (D), BAR CODE, SONY	0.25

SECTION4 ELECTRICAL PART LIST

NOTE:

- Due to standardization , replacements in the parts list may be different form the parts specified in the diagrams or the components used on the set.
- RESISTORS
METAL :Metal-film resistor.
F: nonflammable
- SEMICONDUCTORS
In each case , u: μ ,for example:
uA.: μ A.. uPA.: μ PA..
uPB.: μ PB.. uPC.: μ PC.. uPD.: μ PD..



- CAPACITORS
uF: μ F
- COILS
uH: μ H

When indicating parts by reference number, please include the board.

NOTE:

- SC Classification
S: Supplied parts
U: Unsupplied parts

Note:

The components identified by mark 
or dotted line with mark  are critical
for safety.

Replace only with part number specified.

REPRODUCTION PROHIBITED

<u>SC</u>	<u>REF</u>	<u>P/N</u>	<u>DESCRIPTION</u>
U	RB5502	1-233-423-21	RES,SMD,RNET 47 5% 1/16W 3216 8P4R
U	RB5503	1-233-423-21	RES,SMD,RNET 47 5% 1/16W 3216 8P4R
U	RB5504	1-233-423-21	RES,SMD,RNET 47 5% 1/16W 3216 8P4R
U	RB5505	1-233-423-21	RES,SMD,RNET 47 5% 1/16W 3216 8P4R
U	RB5506	1-233-423-21	RES,SMD,RNET 47 5% 1/16W 3216 8P4R
U	RB5507	1-233-423-21	RES,SMD,RNET 47 5% 1/16W 3216 8P4R
U	RB5508	1-233-880-21	RES,SMD,RNET 68 5% 1/16W 3216 8P4R
U	RB5509	1-233-880-21	RES,SMD,RNET 68 5% 1/16W 3216 8P4R
U	RB5510	1-233-880-21	RES,SMD,RNET 68 5% 1/16W 3216 8P4R
U	RB5511	1-233-880-21	RES,SMD,RNET 68 5% 1/16W 3216 8P4R
U	RB5512	1-233-880-21	RES,SMD,RNET 68 5% 1/16W 3216 8P4R
U	RB5513	1-233-880-21	RES,SMD,RNET 68 5% 1/16W 3216 8P4R
U	RB5514	1-233-880-21	RES,SMD,RNET 68 5% 1/16W 3216 8P4R
U	RB5515	1-233-880-21	RES,SMD,RNET 68 5% 1/16W 3216 8P4R
U	RB5516	1-233-411-21	RES,SMD,RNET 220 5% 1/16W 3216 8P4R
U	RB5517	1-233-411-21	RES,SMD,RNET 220 5% 1/16W 3216 8P4R
U	RB5518	1-233-411-21	RES,SMD,RNET 220 5% 1/16W 3216 8P4R
U	RB5519	1-233-411-21	RES,SMD,RNET 220 5% 1/16W 3216 8P4R
U	RB5520	1-233-411-21	RES,SMD,RNET 220 5% 1/16W 3216 8P4R
U	RB5521	1-233-411-21	RES,SMD,RNET 220 5% 1/16W 3216 8P4R
U	RB5522	1-233-411-21	RES,SMD,RNET 220 5% 1/16W 3216 8P4R
U	RB5523	1-233-411-21	RES,SMD,RNET 220 5% 1/16W 3216 8P4R
U	RB6201	1-234-375-21	RES,SMD,RNET 1K 5% 1/32W 2010 8P4R
U	RB6310	1-233-415-21	RES,SMD,RNET 10K 5% 1/16W 3216 8P4R
U	RB6311	1-233-415-21	RES,SMD,RNET 10K 5% 1/16W 3216 8P4R
U	RB6401	1-234-378-21	RES,SMD,RNET 10K 5% 1/32W 2010 8P4R
U	RB6501	1-233-423-21	RES,SMD,RNET 47 5% 1/16W 3216 8P4R
U	RB8295	1-233-789-91	RES,SMD,RNET 10K 5% 1/16W 1608 4P2R
U	RB9000	1-234-378-21	RES,SMD,RNET 10K 5% 1/32W 2010 8P4R
U	RB9001	1-234-378-21	RES,SMD,RNET 10K 5% 1/32W 2010 8P4R
U	RB9002	1-233-415-21	RES,SMD,RNET 10K 5% 1/16W 3216 8P4R
U	RB9003	1-233-415-21	RES,SMD,RNET 10K 5% 1/16W 3216 8P4R
U	RB9004	1-233-415-21	RES,SMD,RNET 10K 5% 1/16W 3216 8P4R
U	RB9005	1-233-415-21	RES,SMD,RNET 10K 5% 1/16W 3216 8P4R
U	RB9006	1-234-524-21	RES,SMD,RNET 33 5% 1/16W 3216 8P4R
U	RB9007	1-234-524-21	RES,SMD,RNET 33 5% 1/16W 3216 8P4R
U	RB9008	1-234-524-21	RES,SMD,RNET 33 5% 1/16W 3216 8P4R
U	RB9009	1-234-524-21	RES,SMD,RNET 33 5% 1/16W 3216 8P4R
U	RB9201	1-234-378-21	RES,SMD,RNET 10K 5% 1/32W 2010 8P4R

SWITCH
U S7301 1-771-702-21 SW,SMD,(MPU11190MLBA)

TRANSE
U T9000 1-437-852-11 TRANSFORMER, SMD, PULSE H0037

VARISTOR
S TH3000 9-886-100-36 THERMISTOR,SMD,MF-MSMF125
S TH4001 1-804-812-11 miniSMDC100F
S TH4002 1-804-812-11 miniSMDC100F

THERMISTOR
U VDR303 1-801-864-21 VARISTOR,1608
U VDR304 1-801-864-21 VARISTOR,1608
U VDR701 1-801-864-21 VARISTOR,1608

CRYSTAL
U X1102 1-781-640-21 VIBRATOR,SMD,CRYSTAL 18.432MHZ
U X3302 1-781-768-21 VIBRATOR,SMD,CRYSTAL 16.9344MHZ
U X6301 1-781-768-21 VIBRATOR,SMD,CRYSTAL 16.9344MHZ
U X6302 1-781-266-41 VIBRATOR,SMD,CRYSTAL 32.768KHZ
U X9201 1-795-651-21 VIBRATOR,SMD,CRYSTAL 25MHZ

<u>SC</u>	<u>REF</u>	<u>P/N</u>	<u>DESCRIPTION</u>
S		9-886-100-15	SW-434-06 COMPL FJT/TXI
U	C4551	<u>CAPACITOR</u> 1-125-837-91	CAP,SMD,CER 1MF 10% 6.3V 1608 X7R
U	CN4551	<u>CONNECTOR</u> no parts number	CONN,SMD, FFC/FPC 8P
U	D4551	<u>DIODE</u> 6-500-232-01	DIO,SMD,CL-165HR/G2-D-T
U	IC4551	<u>IC</u> 6-600-163-01	IC,SMD,RS-770
U	L4551	<u>INDUCTOR</u> 1-469-847-21	IND,SMD,100UH 20% 30mA 7OHM 2012
U	R4551	<u>RESISTOR</u> 1-218-289-91	RES,SMD,510 5% 1/10W 1608
U	R4552	1-216-821-91	RES,SMD,1.0K5%1/10W1608,
U	R4554	1-216-864-91	CONDUCTOR,SMD,2A 100V 1608
U	S4551	<u>SWITCH</u> 1-786-700-11	SWITCH,SMD,TACTILE
U	S4552	no parts number	SWITCH,SMD,PUSH

SC REF P/N DESCRIPTION
