

SAMSUNG

GPRS GSM TELEPHONE SGH-S100

SERVICE *Manual*

GPRS GSM TELEPHONE



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1. SGH-S100 MAIN Electrical Parts List

Level	SEC Code	Design LOC	DESCRIPTIONS
0	GH92-01302A	-	PBA MAIN-SGHS100;SGH-S100,XEF,FRAN,-,-,-,-,-
1	GH71-00434A	ANT1	NPR-ANT CONTACT;SCH-X210,ST,T0.2,-,-
1	2203-000995	C1000,C1004,C1006	C-CERAMIC,CHIP;0.047nF,5%,50V,NP0,TP,1005
1	2203-005482	C1003,C1020	C-CERAMIC,CHIP;100nF,10%,10V,X5R,TP,1005,-
1	2203-000233	C1005,C1008,C1013	C-CERAMIC,CHIP;0.1nF,5%,50V,NP0,TP,1005
1	2203-005288	C1007,C1011,C1014	C-CERAMIC,CHIP;0.001nF,0.1pF,50V,NP0,TP,1005
1	2203-000812	C1009,C1010,C103	C-CERAMIC,CHIP;0.033nF,5%,50V,NP0,TP,1005
1	2203-001598	C101,C105,C111,C112	C-CERAMIC,CHIP;2200nF,+80-20%,16V,Y5V,TP,2012
1	2203-002687	C1012	C-CERAMIC,CHIP;1.2nF,10%,50V,X7R,TP,1005
1	2203-005288	C1015,C1017,C1019	C-CERAMIC,CHIP;0.001nF,0.1pF,50V,NP0,TP,1005
1	2203-000233	C1016,C1024,C1027	C-CERAMIC,CHIP;0.1nF,5%,50V,NP0,TP,1005
1	2203-000359	C1018	C-CERAMIC,CHIP;0.15nF,5%,50V,NP0,TP,1005
1	2203-000278	C1021,C803,C806	C-CERAMIC,CHIP;0.01nF,0.5pF,50V,NP0,TP,1005
1	2404-001100	C1022	C-TA,CHIP;33uF,20%,6.3V,GP,TP,3719,-
1	2404-001297	C1023,C1039	C-TA,CHIP;68uF,20%,10V,LR,TP,4028
1	2203-002677	C1025	C-CERAMIC,CHIP;0.75pF,0.1pF,50V,CH,TP,1005,-
1	2203-000654	C1026,C401,C416	C-CERAMIC,CHIP;270pF,10%,50V,X7R,TP,1005,-
1	2203-005383	C1038	C-CERAMIC,CHIP;7pF,0.1pF,50V,NPO,TP,1005,-
1	2203-005061	C104,C108,C124,C201	C-CERAMIC,CHIP;100nF,+80-20%,16V,Y5V,TP,1005
1	2203-000812	C106,C107,C923,R430	C-CERAMIC,CHIP;0.033nF,5%,50V,NP0,TP,1005
1	2203-005483	C109	C-CERAMIC,CHIP;68nF,10%,10V,X5R,TP,1005,-
1	2203-001598	C113,C114,C116,C120	C-CERAMIC,CHIP;2200nF,+80-20%,16V,Y5V,TP,2012
1	2404-001088	C115,C117	C-TA,CHIP;2.2uF,20%,6.3V,GP,TP,2012,-
1	2203-000233	C118,C213,C214,C219	C-CERAMIC,CHIP;0.1nF,5%,50V,NP0,TP,1005
1	2203-000254	C119,C200,C504,C600	C-CERAMIC,CHIP;10nF,10%,16V,X7R,TP,1005,-
1	2203-001598	C123	C-CERAMIC,CHIP;2200nF,+80-20%,16V,Y5V,TP,2012
1	2404-001105	C125	C-TA,CHIP;10uF,20%,6.3V,GP,TP,2012
1	2404-001268	C126	C-TA,CHIP;10uF,20%,10V,-,TP,2.2X1.25X1.0
1	2203-005061	C202,C206,C302,C402	C-CERAMIC,CHIP;100nF,+80-20%,16V,Y5V,TP,1005
1	2203-005065	C203,C204,C400,C414	C-CERAMIC,CHIP;1000nF,+80-20%,10V,Y5V,TP,1608
1	2203-005509	C205	C-CERAMIC,CHIP;330nF,+80-20%,10V,Y5V,TP,1005
1	2203-000995	C211,C212,C425,C426	C-CERAMIC,CHIP;0.047nF,5%,50V,NP0,TP,1005
1	2203-000438	C215,C216,C217,C411	C-CERAMIC,CHIP;1nF,10%,50V,X7R,TP,1005,-
1	2203-000233	C220,C221,C222,C223	C-CERAMIC,CHIP;0.1nF,5%,50V,NP0,TP,1005
1	2203-000233	C224,C225,C407,C424	C-CERAMIC,CHIP;0.1nF,5%,50V,NP0,TP,1005

Level	SEC Code	Design LOC	DESCRIPTIONS
1	2203-005055	C301	C-CERAMIC,CHIP;0.0056nF,0.25pF,50V,NP0,TP,1005
1	2203-001405	C403,C611,C903,C905	C-CERAMIC,CHIP;22nF,+80-20%,25V,Y5V,TP,1005
1	2404-001086	C404,C410	C-TA,CHIP;4.7uF,20%,6.3V,GP,TP,2012,-
1	2203-000885	C405	C-CERAMIC,CHIP;4.7nF,10%,25V,X7R,TP,1005,-
1	2203-005061	C408,C412,C417,C512	C-CERAMIC,CHIP;100nF,+80-20%,16V,Y5V,TP,1005
1	2404-001151	C409	C-TA,CHIP;33uF,20%,6.3V,LZ,TP,3216
1	2203-000438	C413,C415,C801,C802	C-CERAMIC,CHIP;1nF,10%,50V,X7R,TP,1005,-
1	2203-001239	C427	C-CERAMIC,CHIP;0.082nF,5%,50V,NP0,TP,1005
1	2007-007771	C428,R104,R105,R106	R-CHIP;0OHM,5%,1/16W,DA,TP,1005
1	2203-005061	C513,C516,C517,C518	C-CERAMIC,CHIP;100nF,+80-20%,16V,Y5V,TP,1005
1	2203-005061	C519,C612,C711	C-CERAMIC,CHIP;100nF,+80-20%,16V,Y5V,TP,1005
1	2203-005496	C601,C602,C709	C-CERAMIC,CHIP;220nF,+80-20%,10V,Y5V,TP,1005
1	2203-000254	C603,C604,C605,C606	C-CERAMIC,CHIP;10nF,10%,16V,X7R,TP,1005,-
1	2203-000254	C607,C608,C609,C610	C-CERAMIC,CHIP;10nF,10%,16V,X7R,TP,1005,-
1	2203-000254	C613,C712,C713,C714	C-CERAMIC,CHIP;10nF,10%,16V,X7R,TP,1005,-
1	2203-000233	C614,C900,C901,C902	C-CERAMIC,CHIP;0.1nF,5%,50V,NP0,TP,1005
1	2203-000628	C615,C616	C-CERAMIC,CHIP;0.022nF,5%,50V,NP0,TP,1005
1	2203-000679	C617	C-CERAMIC,CHIP;0.027nF,5%,50V,NP0,TP,1005
1	2203-001153	C707	C-CERAMIC,CHIP;0.068nF,5%,50V,NP0,TP,1005
1	2203-000585	C708	C-CERAMIC,CHIP;220pF,10%,50V,X7R,TP,1005,-
1	2203-005065	C710	C-CERAMIC,CHIP;1000nF,+80-20%,10V,Y5V,TP,1608
1	2203-000254	C715,C716,C717,C718	C-CERAMIC,CHIP;10nF,10%,16V,X7R,TP,1005,-
1	2203-000254	C719,C800,C805,C807	C-CERAMIC,CHIP;10nF,10%,16V,X7R,TP,1005,-
1	2203-000438	C804	C-CERAMIC,CHIP;1nF,10%,50V,X7R,TP,1005,-
1	2203-000254	C808,C809	C-CERAMIC,CHIP;10nF,10%,16V,X7R,TP,1005,-
1	2203-001405	C906,C908,C910,C914	C-CERAMIC,CHIP;22nF,+80-20%,25V,Y5V,TP,1005
1	2203-000233	C911,C916,C918,C919	C-CERAMIC,CHIP;0.1nF,5%,50V,NP0,TP,1005
1	2203-001405	C915,C917,C921	C-CERAMIC,CHIP;22nF,+80-20%,25V,Y5V,TP,1005
1	2203-000233	C920,C924,C925	C-CERAMIC,CHIP;0.1nF,5%,50V,NP0,TP,1005
1	2203-000995	C922	C-CERAMIC,CHIP;0.047nF,5%,50V,NP0,TP,1005
1	3709-001187	CN100	CONNECTOR-CARD EDGE;6P,2.54MM,SMD-A,-
1	3705-001248	CN1001	CONNECTOR-COAXIAL;-,-,50MOHM,50OHM,0.3DB
1	3711-004289	CN200	CONNECTOR-HEADER;BOX,30P,2R,0.5MM,SMD-S,AUF
1	3711-004623	CN201	CONNECTOR-HEADER;BOX,20P,2R,0.5mm,SMD-S,AUF
1	3710-001545	CN302	CONNECTOR-SOCKET;24P,1R,0.5MM,SMD-A,AUF
1	3722-001842	CN401	JACK-PHONE;4P,2.3PI,AU,BLK,-

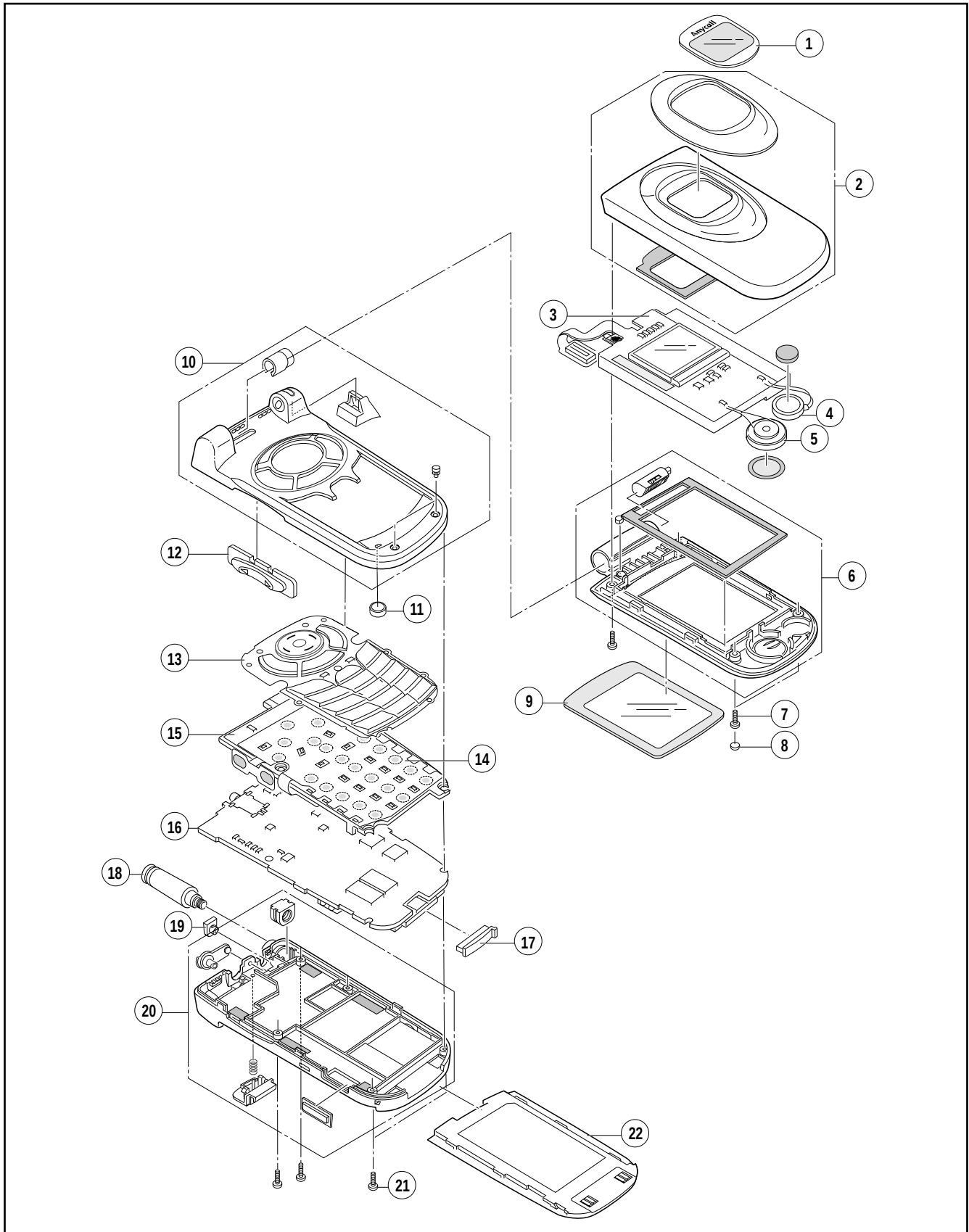
Level	SEC Code	Design LOC	DESCRIPTIONS
1	1405-001082	D202,D203,D204,ZD300	VARISTOR;5.6V,20A,1x0.5x0.6mm,TP
1	0406-001152	D301	DIODE-TVS;SD05,6/-/-,350W,SOD-323
1	4709-001279	F1000	COUPLER-DIRECTION;897.5+-17.5MHZ,18+-1DB,26DB,1.6X
1	4709-001278	F1001	COUPLER-DIRECTION;1850+-140MHZ,19.7+-1.4DB,25DB,1.
1	2909-001180	F1002	FILTER-DUPLEXER;942.5MHZ,897.5MHZ,0.2/0.5DB,TP,-,-
1	2904-001390	F1004	FILTER-SAW;942.5MHZ,-,1.0DB,TP,2.3DB,-
1	2904-001410	F1005	FILTER-SAW;1.96GHZ,-,1930-1990MHZ/2.4DB,TP,1930-19
1	2904-001403	F1006	FILTER-SAW;1.8425GHZ,-,1805-1880MHZ/2.0DB,TP,1805-
1	2901-001193	F200,F201,F202,F203	FILTER-EMI SMD;25V,0.1A,-,35pF,3.2x1.6x0.75MM,TP
1	2901-001193	F204	FILTER-EMI SMD;25V,0.1A,-,35pF,3.2x1.6x0.75MM,TP
1	2703-001288	L1000	INDUCTOR-SMD;2.7nH,0.5nH,1.6x0.8x0.8mm
1	2703-001512	L1001	INDUCTOR-SMD;27nH,5%,1.8x1.12x1.02mm
1	2703-002165	L1002	INDUCTOR-SMD;7.5nH,5%,1.6x1.12x1.02mm
1	2703-001751	L1004,L900	INDUCTOR-SMD;3.9nH,0.3nH,1.0x0.5x0.5mm
1	2703-001747	L1005	INDUCTOR-SMD;4.7nH,0.3nH,1.0x0.5x0.5mm
1	2703-002471	L1006	INDUCTOR-SMD;6.2NH,5%,1608
1	3301-001105	L801	CORE-FERRITE;AB,1.6x0.8x0.8mm,-,-
1	0604-001146	LED200	PHOTO-IRDA;- ,875NM,500MW,30DEG,TP
1	4302-001119	M101	BATTERY-LI(2ND);3V,0.1MAH,-,-,3.1V,-
1	2801-004116	OSC601	CRYSTAL-UNIT;0.032768MHZ,20PPM,28-ABK,12.5FF,65KOH
1	2809-001260	OSC801	OSCILLATOR-VCTCXO;13MHZ,3PPM,10KOHM//10PF,TP,3V,-
1	0504-000168	Q100	TR-DIGITAL;RN1104,NPN,100MW,47K/47K,SSM,TP
1	0502-001201	Q101	TR-POWER;ZXT13P20DE6,PNP,1100MW,SOT-23-6,TP,300-90
1	0501-000225	Q400	TR-SMALL SIGNAL;2SC4617,NPN,200mW,EM3,TP,120-5
1	0504-000167	Q700,Q701,Q702	TR-DIGITAL;RN1102,NPN,100MW,10K/10K,SSM,TP
1	2007-001319	R100	R-CHIP;1.2Kohm,5%,1/16W,DA,TP,1005
1	2007-007311	R1000	R-CHIP;22Kohm,1%,1/16W,DA,TP,1005
1	2007-007142	R1001,R111,R611	R-CHIP;10Kohm,1%,1/16W,DA,TP,1005
1	2007-007309	R1002	R-CHIP;12Kohm,1%,1/16W,DA,TP,1005
1	2007-000138	R1003,R1004,R1008	R-CHIP;100ohm,5%,1/16W,DA,TP,1005
1	2007-001301	R1005,R1006	R-CHIP;68ohm,5%,1/16W,DA,TP,1005
1	2007-000138	R1009	R-CHIP;100ohm,5%,1/16W,DA,TP,1005
1	2007-000172	R101,R200,R400,R506	R-CHIP;10ohm,5%,1/16W,DA,TP,1005
1	2007-001288	R1010,R1014	R-CHIP;18ohm,5%,1/16W,DA,TP,1005
1	2007-007008	R1011,R1012,R1015	R-CHIP;300OHM,5%,1/16W,DA,TP,1005
1	2007-000174	R1013,R1017	R-CHIP;47ohm,5%,1/16W,DA,TP,1005

Level	SEC Code	Design LOC	DESCRIPTIONS
1	2007-007008	R1016	R-CHIP;300OHM,5%,1/16W,DA,TP,1005
1	2007-007698	R1018	R-CHIP;5.1Kohm,1%,1/16W,DA,TP,1005
1	2007-000167	R102	R-CHIP;390Kohm,5%,1/16W,DA,TP,1005
1	2007-007200	R103,R709,R710	R-CHIP;2.4OHM,5%,1/16W,DA,TP,1005
1	2007-000758	R110,R804	R-CHIP;330Kohm,5%,1/16W,DA,TP,1005
1	2007-007139	R112	R-CHIP;47Kohm,1%,1/16W,DA,TP,1005
1	2007-001323	R113	R-CHIP;3Kohm,5%,1/16W,DA,TP,1005
1	2007-000140	R303,R307,R308,R309	R-CHIP;1Kohm,5%,1/16W,DA,TP,1005
1	2007-000157	R305,R306,R608,R609	R-CHIP;47Kohm,5%,1/16W,DA,TP,1005
1	2007-000140	R310,R423	R-CHIP;1Kohm,5%,1/16W,DA,TP,1005
1	2007-007771	R312,R429,R700,R711	R-CHIP;0OHM,5%,1/16W,DA,TP,1005
1	2007-003001	R401	R-CHIP;12OHM,5%,1/16W,DA,TP,1005
1	2007-000159	R403,R406,R408,R421	R-CHIP;56Kohm,5%,1/16W,DA,TP,1005
1	2007-000775	R404,R407,R412	R-CHIP;33Kohm,5%,1/16W,DA,TP,1005
1	2007-000148	R405,R420,R424	R-CHIP;10Kohm,5%,1/16W,DA,TP,1005
1	2007-000141	R409,R414	R-CHIP;2.2Kohm,5%,1/16W,DA,TP,1005
1	2007-001119	R410	R-CHIP;680ohm,5%,1/16W,DA,TP,1005
1	2007-001325	R413	R-CHIP;3.3Kohm,5%,1/16W,DA,TP,1005
1	2007-000162	R415,R600,R701,R713	R-CHIP;100Kohm,5%,1/16W,DA,TP,1005
1	2007-001333	R422	R-CHIP;18Kohm,5%,1/16W,DA,TP,1005
1	2007-000172	R606,R715,R800,R805	R-CHIP;10ohm,5%,1/16W,DA,TP,1005
1	2007-000170	R610	R-CHIP;1Mohm,5%,1/16W,DA,TP,1005
1	2007-007308	R612,R613	R-CHIP;33Kohm,1%,1/16W,DA,TP,1005
1	2007-002796	R712	R-CHIP;510ohm,5%,1/16W,DA,TP,1005
1	2007-000162	R714	R-CHIP;100Kohm,5%,1/16W,DA,TP,1005
1	2007-002797	R801,R802	R-CHIP;560ohm,5%,1/16W,DA,TP,1005
1	2007-007771	R803,R901	R-CHIP;0OHM,5%,1/16W,DA,TP,1005
1	1203-002568	U100	IC-VOLTAGE REGULATOR;PSC2006,MLCC,68P,10X10MM,PLAS
1	1209-001379	U1000	IC-ETC, LINEAR;HD155173ANPEL,-,16P,-,3.4V,240MW,
1	1201-001864	U1001	IC-POWER AMP;08123,-,8P,13.75X8MM,DUAL,-,4.5V,-,
1	3711-004621	U1002	CONNECTOR-HEADER;BOX,14P,2R,0.5mm,SMD-S,AUF
1	1203-002127	U101	IC-BATTERY;1734,SOT-23,6P,150MIL,PLASTIC,4.7/5.3V,
1	0506-001052	U102	TR-ARRAY;UMH9N,NPN,2,150MW,SC-88,TP,68-
1	1001-001152	U400	IC-ANALOG MULTIPLEX;MAX4624EU-T,-,SOT23,6P,173MIL,
1	1204-001811	U401	IC-MELODY;YMU759-QE2,QFN,32P,-,PLASTIC,6V,-,20TO+
1	1109-001226	U501,U502	IC-ETC. MEMORY;28F6408W30,4MX16/512KX16BIT,CSP,80P

Level	SEC Code	Design LOC	DESCRIPTIONS
1	GH09-00020A	U601	IC MICOM-SGHS100;TR09WQTEB17IN2B-DT,SGH-S100,-,-,-
1	1209-001219	U602	IC-SENSOR;LM60C,SOT-23,3P,115MIL,PLASTIC
1	1204-001984	U700	IC-SIGNAL PROCESSOR;CSP1093CR1-RT10-DB,FSBGA,108P,
1	0504-001042	U701,U702,U703	TR-DIGITAL;BCR10PN,NPN/PNP,250mW,10K/10K,
1	0801-002345	U801	IC-CMOS LOGIC;7S04,INVERTER,SOT-353,5P,49MIL,SINGL
1	1205-002185	U900	IC-INTERFACE;SI4201-BM,MLP,20P,4X4MM,-,3V,-,-20TO+
1	1205-002184	U901	IC-TRANSCEIVER;SI4200-BM,MLP,32P,5X5MM,-,3V,-,-20T
1	1209-001434	U902	IC-PLL/SYNTHESISER;SI4133T-BM,MLP,28P,5X5MM,-,3V,-
1	1405-001082	ZD302,ZD303,ZD309	VARISTOR;5.6V,20A,1x0.5x0.6mm,TP
1	0406-001084	ZD305,ZD311	DIODE-TVS;SMF05,6/-/-V,200W,-
1	1405-001082	ZD310,ZD401,ZD402	VARISTOR;5.6V,20A,1x0.5x0.6mm,TP
1	1405-001082	ZD404,ZD405	VARISTOR;5.6V,20A,1x0.5x0.6mm,TP

2. SGH-S100 Exploded View and its Parts List

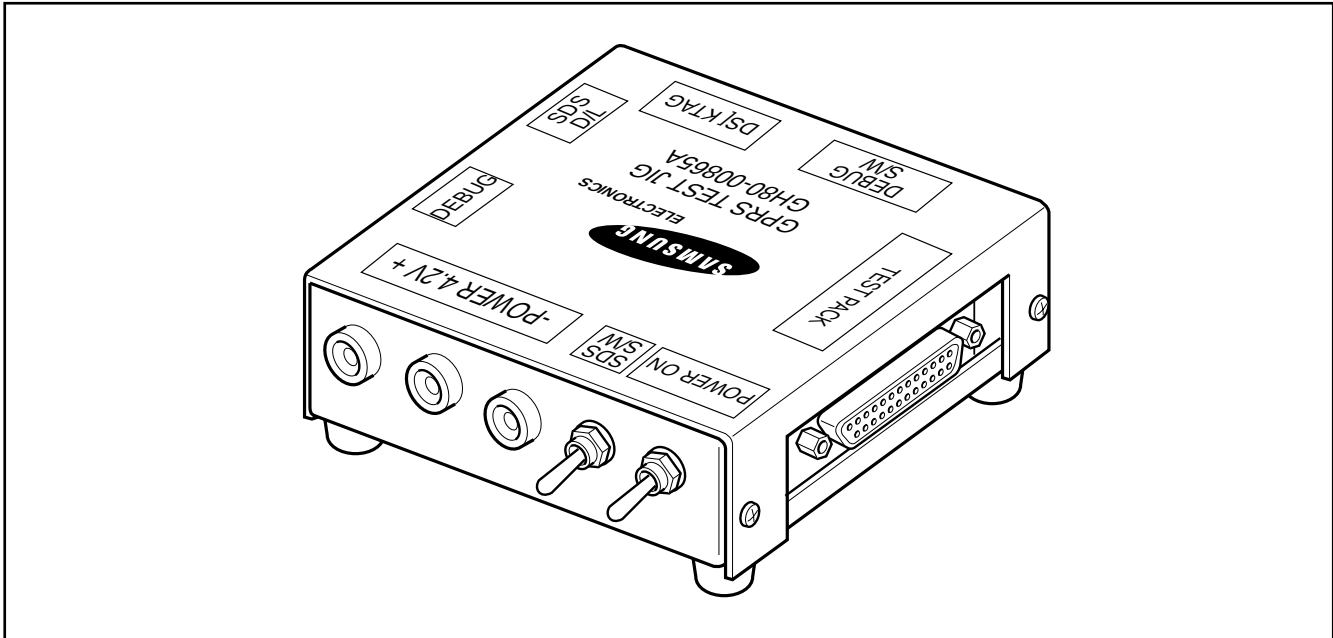
2-1. Cellular phone Exploded View



2-2. Cellular phone Parts List

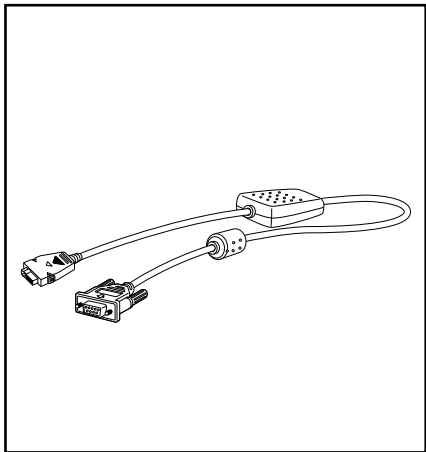
Location No.		Description	SEC CODE	Remark
			Silver	
1		DUAL LCD WINDOW	GH72-04715A	
2		SUB, FOLDER UPPER	GH75-02078A	
3		LCD ASS'Y	GH07-00179A	
4		MOTOR	3101-001295	
5		SPEAKER	3001-001297	
6		SUB FOLDER LOWER	GH75-02079A	
7		SCREW	6001-001478	
8		SCREW CAP	GH74-02036A	
9		MAIN LCD WINDOW	GH72-04716A	
10		SUB, FRONT	GH75-02076A	
11		MIC	GH59-00138A	
12		KEY PAD ASS'Y	GH75-02124A	
13		VOLUME KEY ASS'Y	GH75-02123A	
14		SHIELD COVER	GH75-02203A	
15		KEY-PCB	GH59-00425A	
16		MAIN PBA	GH92-01302A	
17		CONNECTOR COVER	GH73-01230A	
18		ANTENNA	GH42-00193A	
19		R / F COVER	GH73-01229A	
20		SUB, REAR COVER ASS'Y	GH75-02077A	
21		SCREW	6001-001479	
22		BATTERY	GH43-00558A	720 mAH
			GH43-00563A	900 mAH

2-3. Test Jig (GH80-00865A)



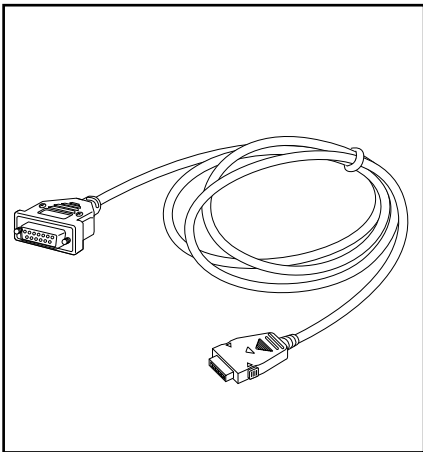
Data Link Cable

(GH39-00152A)



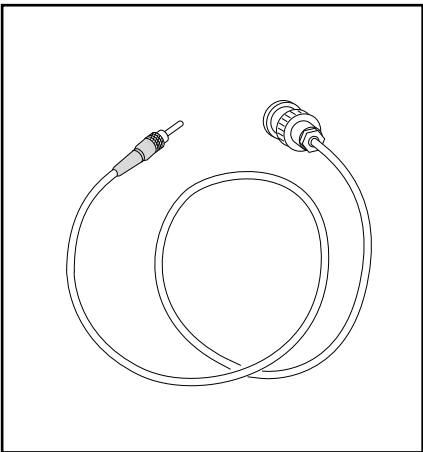
Test Cable

(GH39-00165A)



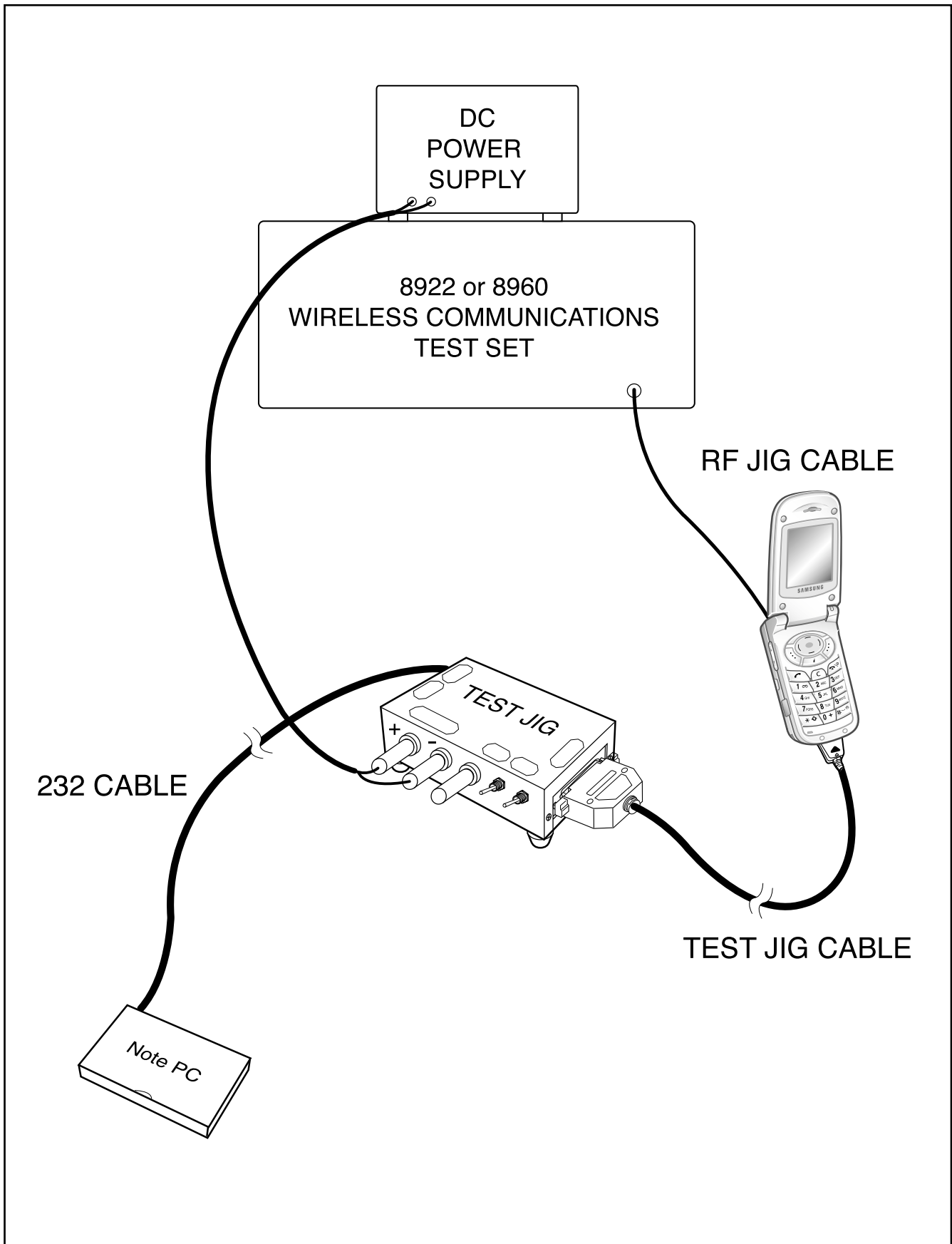
RF Cable

(GH39-00093A)



MODE	SWITCH				
	POWER ON	SDS S/W	DEBUG S/W	SDS D/L	DEBUG
D/L	HIGH	LOW	LOW	CONNECT	N.C
CAL	HIGH	LOW	LOW	CONNECT	N.C

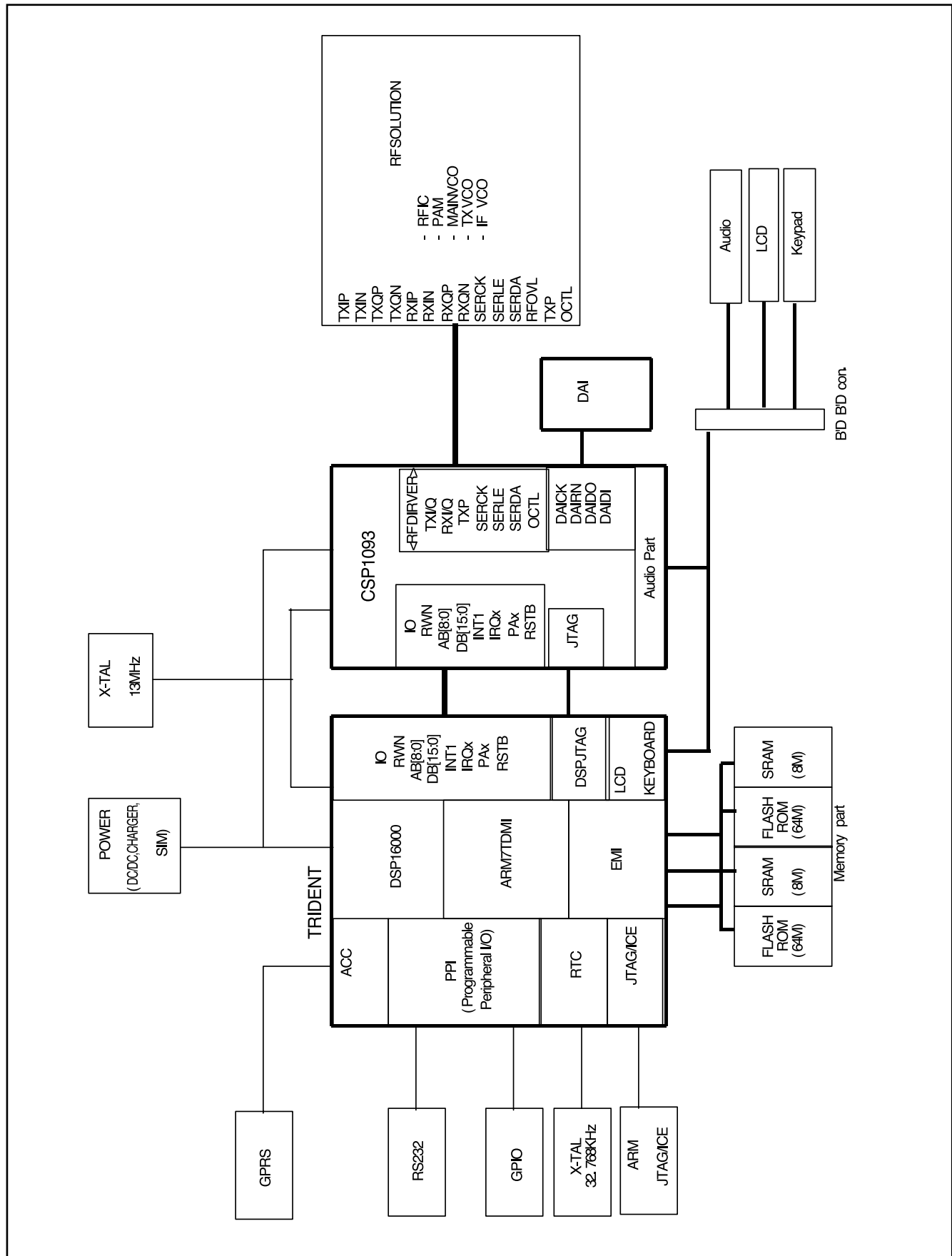
2-4. Test Jig

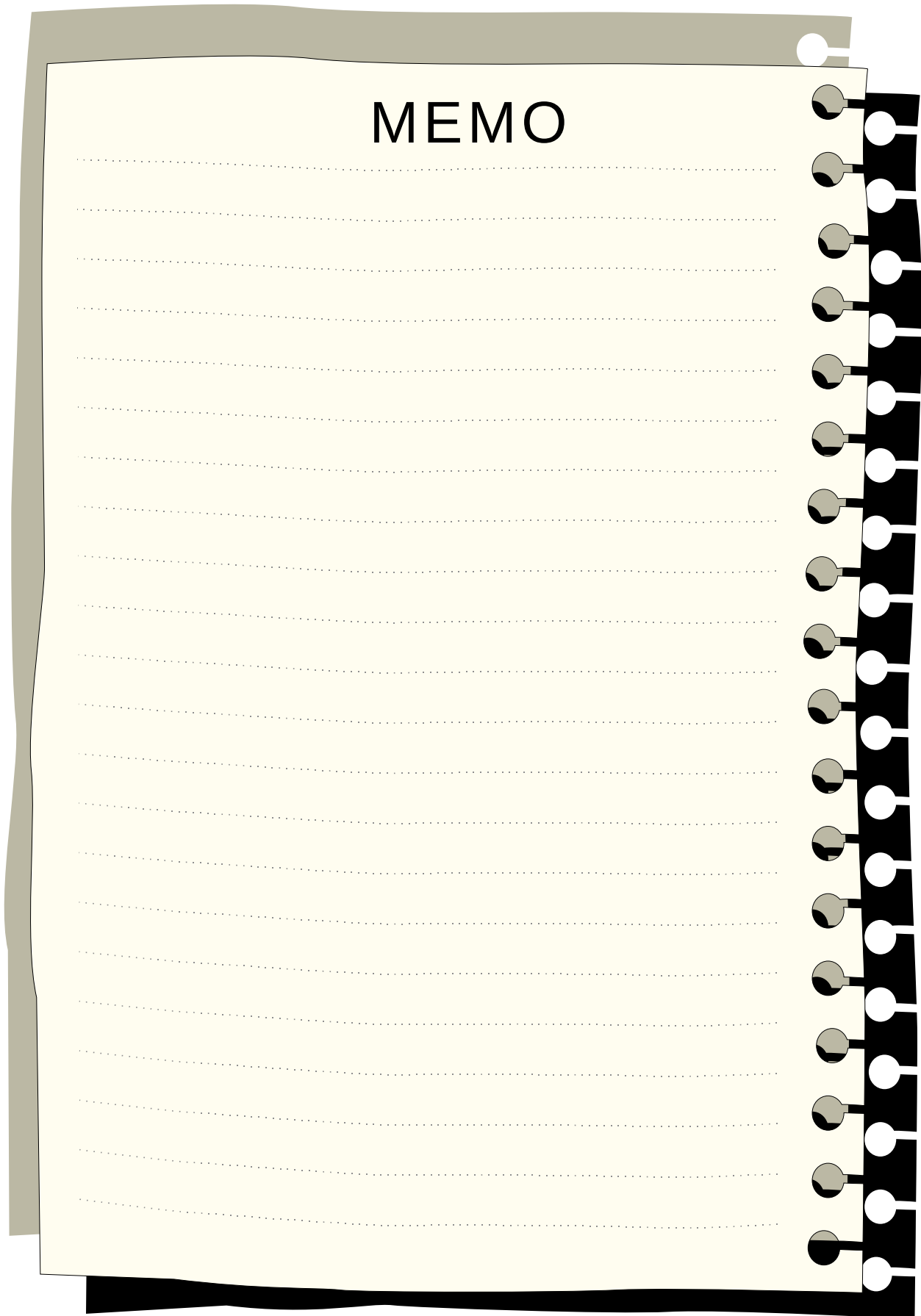


3-1. RF Solution Block Diagram



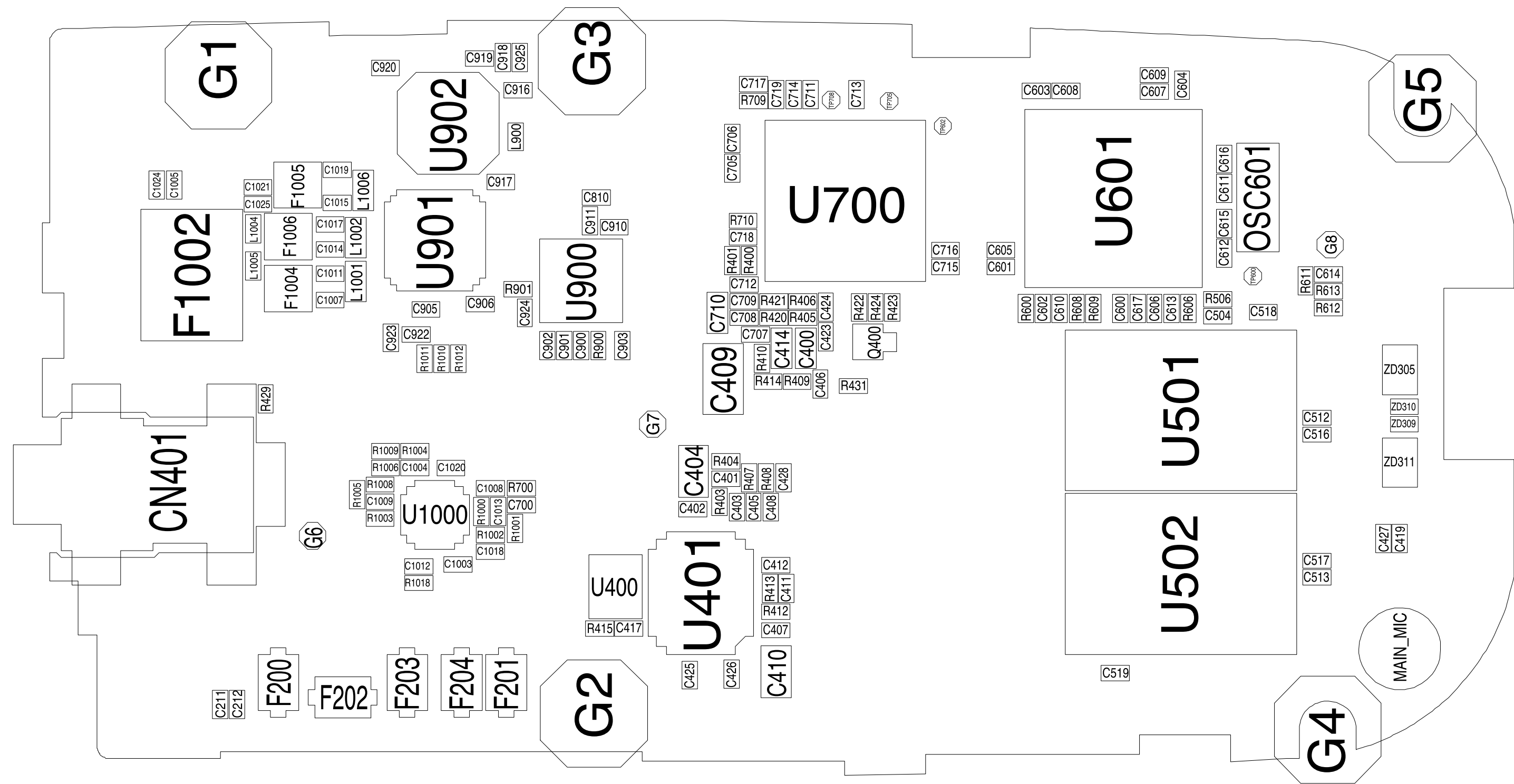
3-2. Base Band Solution Block Diagram





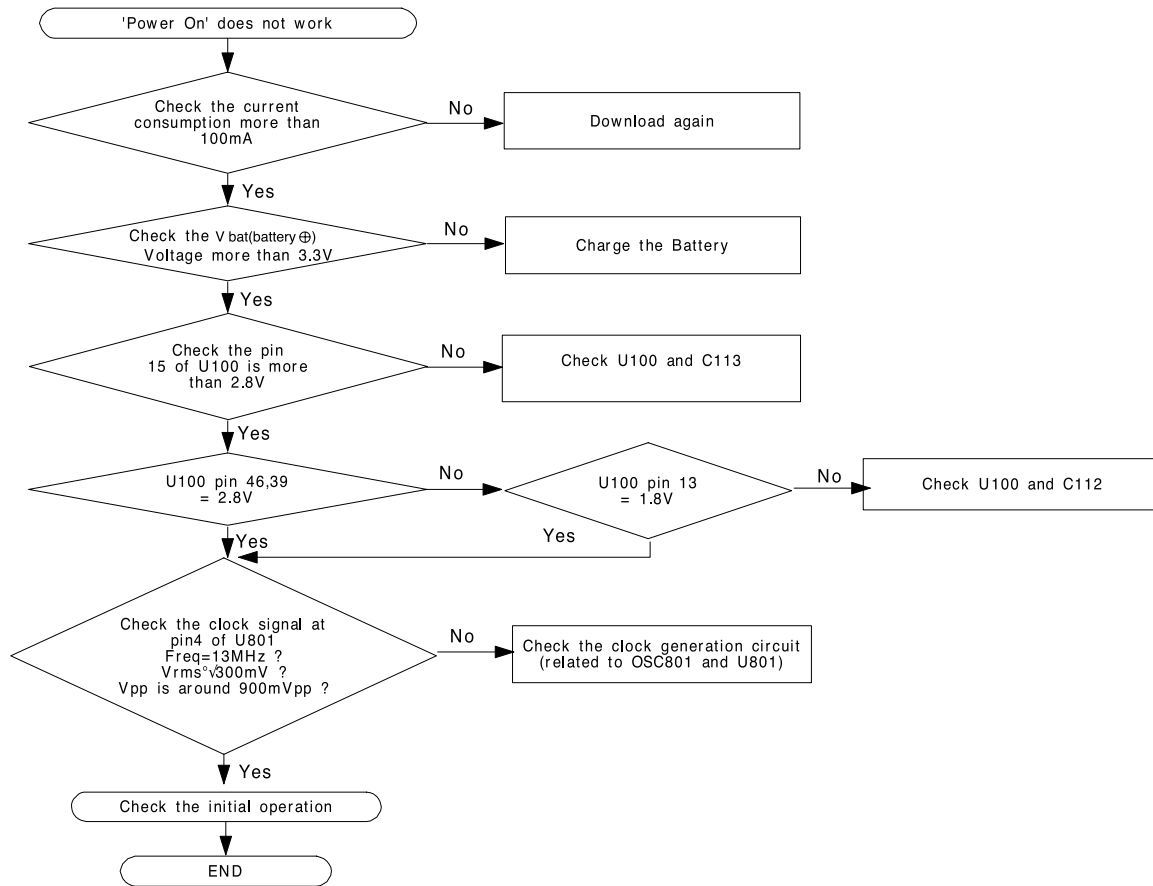
4. SGH-S100 PCB Diagrams

1. Main PCB Top Diagram

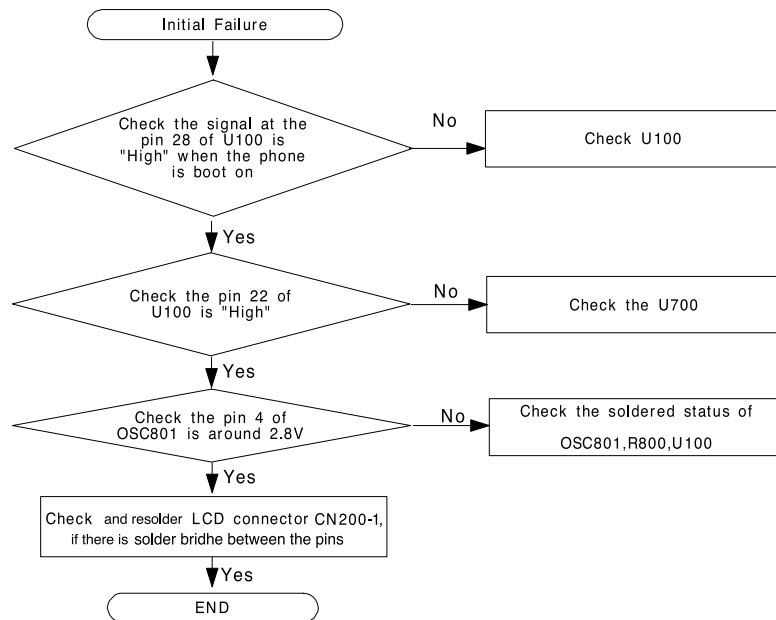


5.SGH-S100 Flow Chart of Troubleshooting and Circuit Diagrams

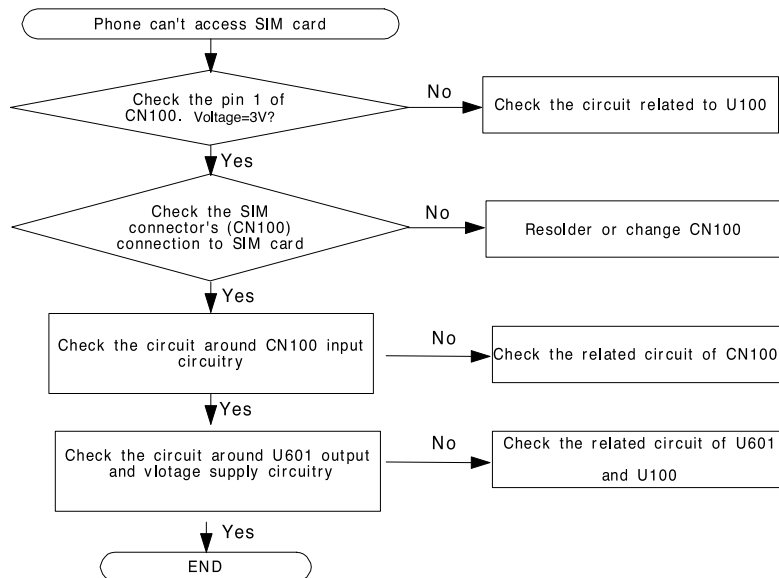
5-1. Power ON



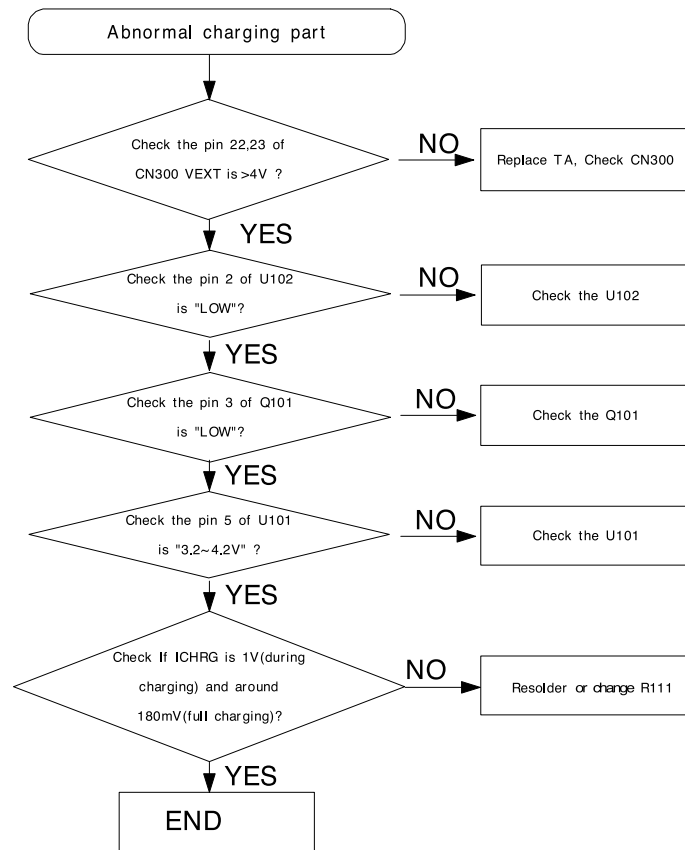
5-2. Initial



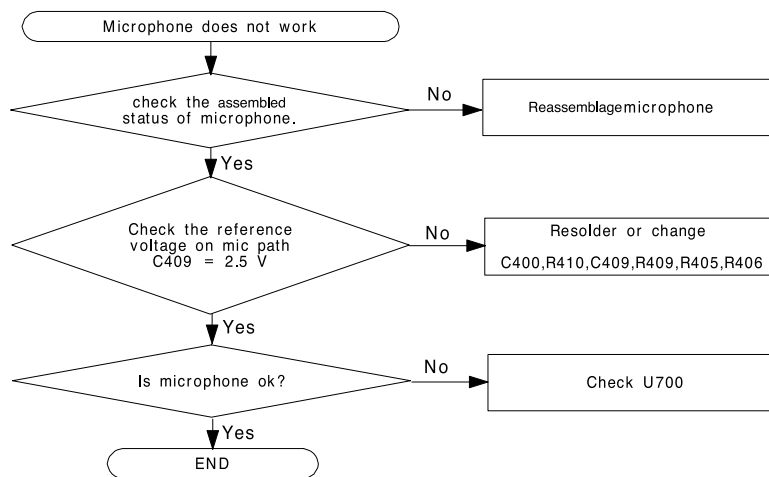
5-3. Sim Part



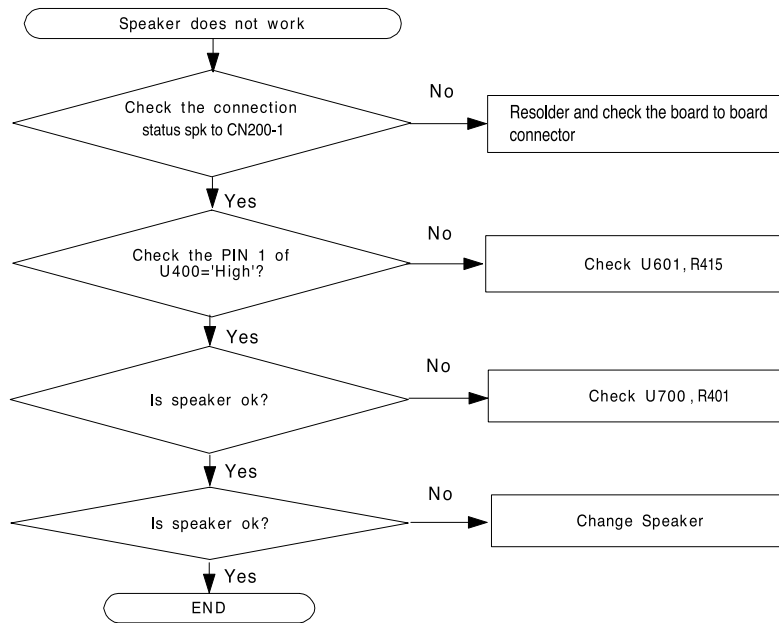
5-4. Charging Part



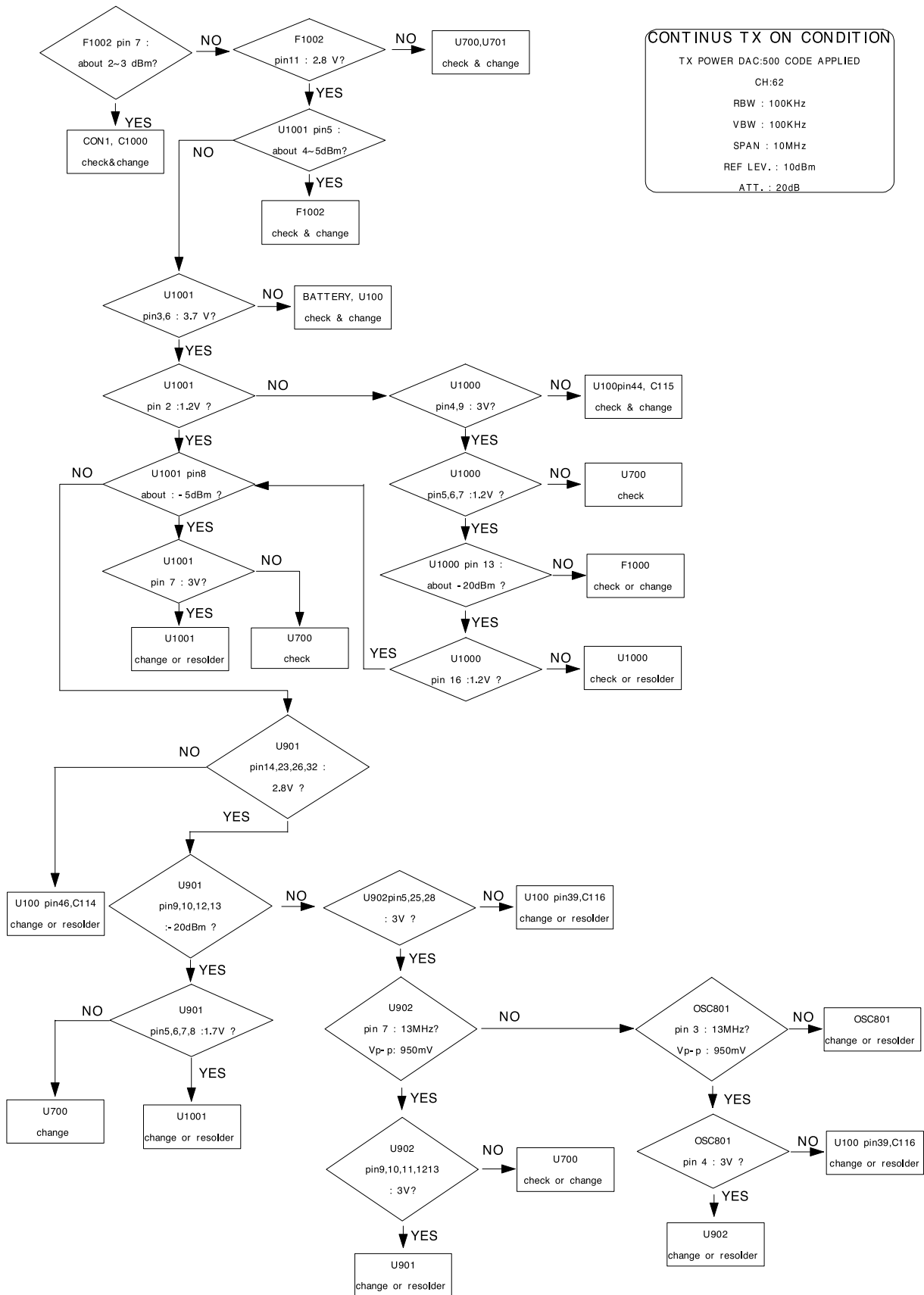
5-5. Microphone Part



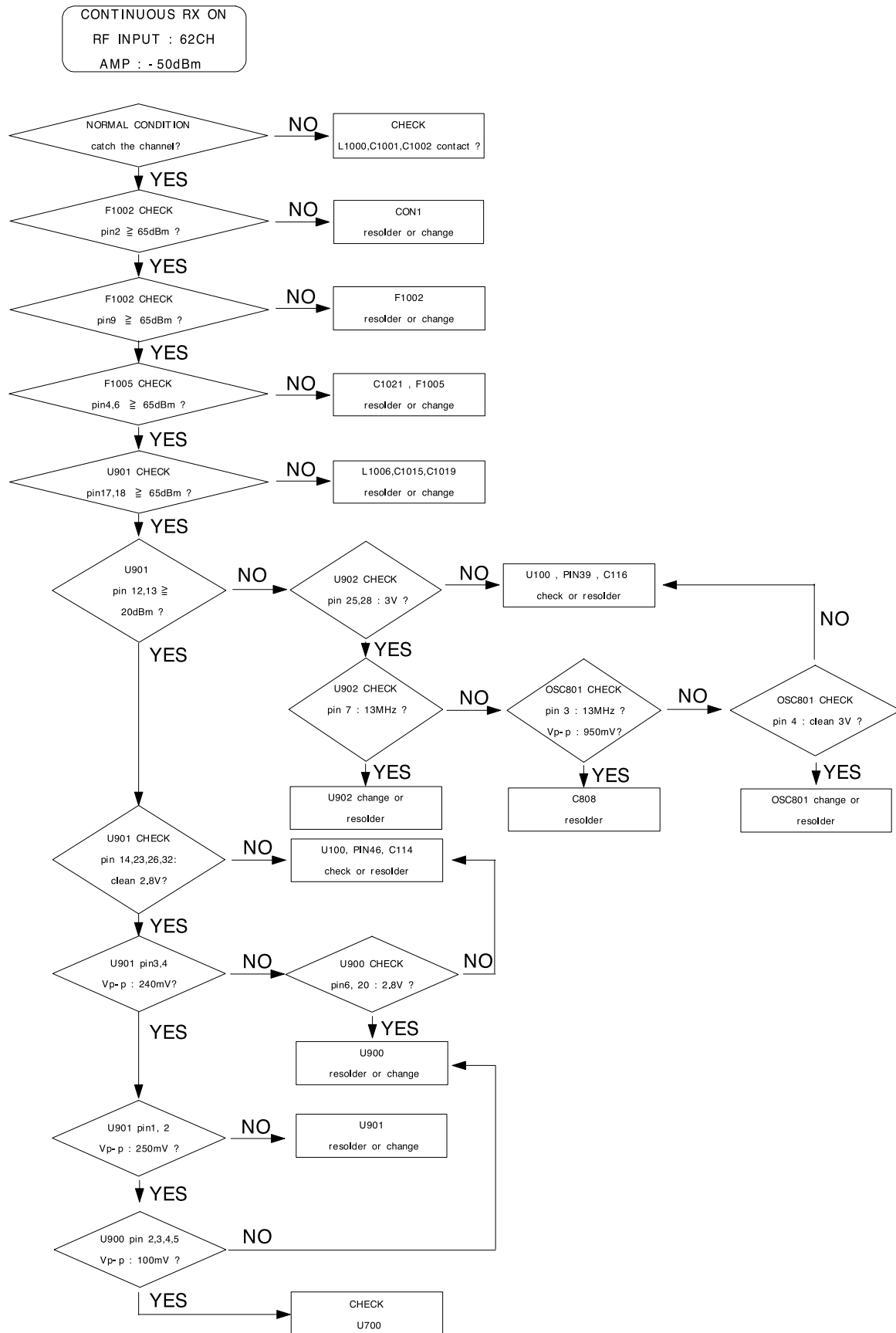
5-6. Speaker Part



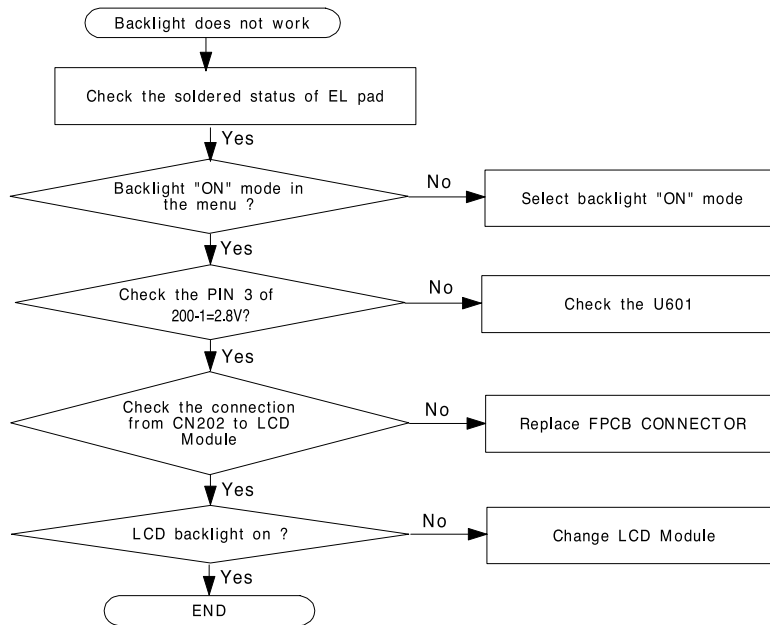
5-7. PCS Transmitter



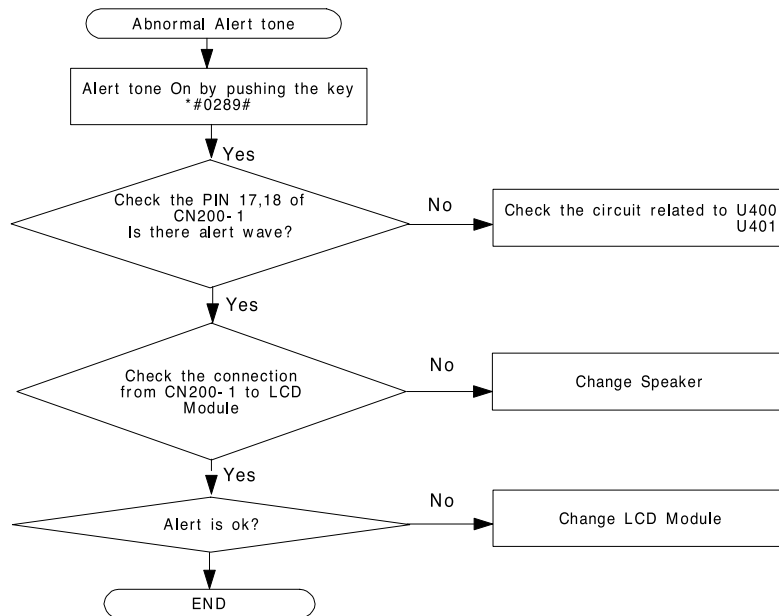
5-8. PCS Receiver



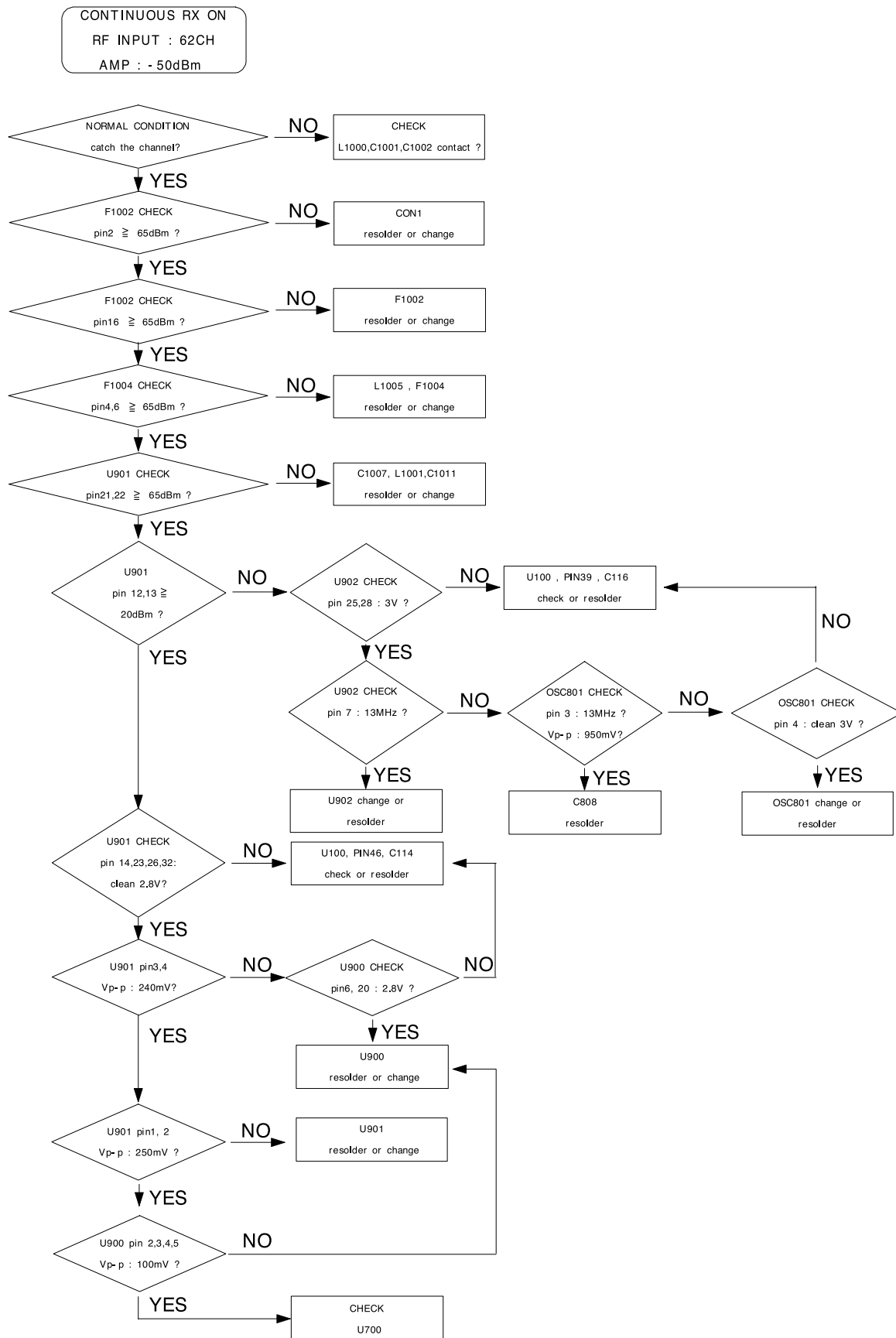
5-9. Back Light



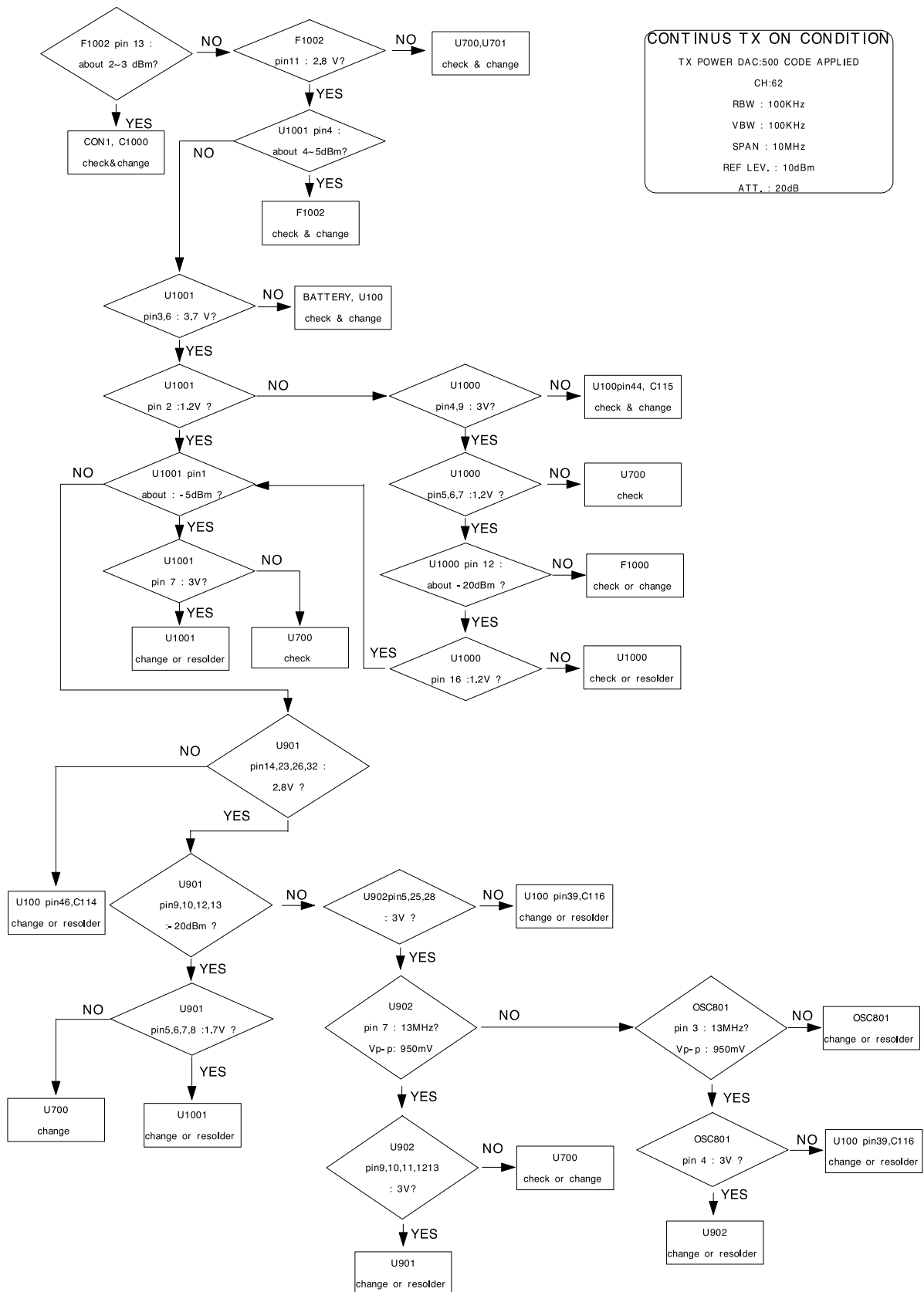
5-10. Alert Tone



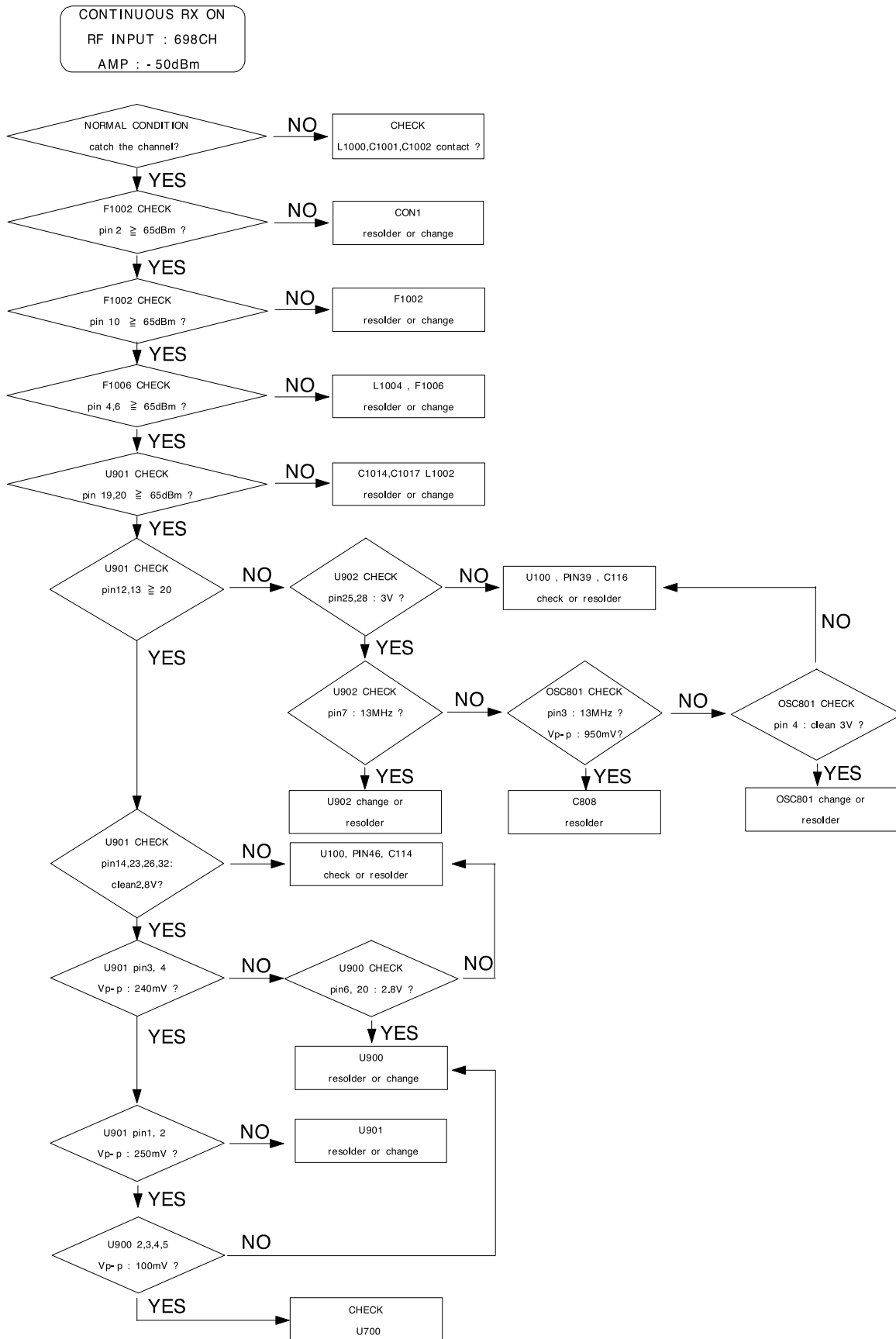
5-11. GSM Receiver



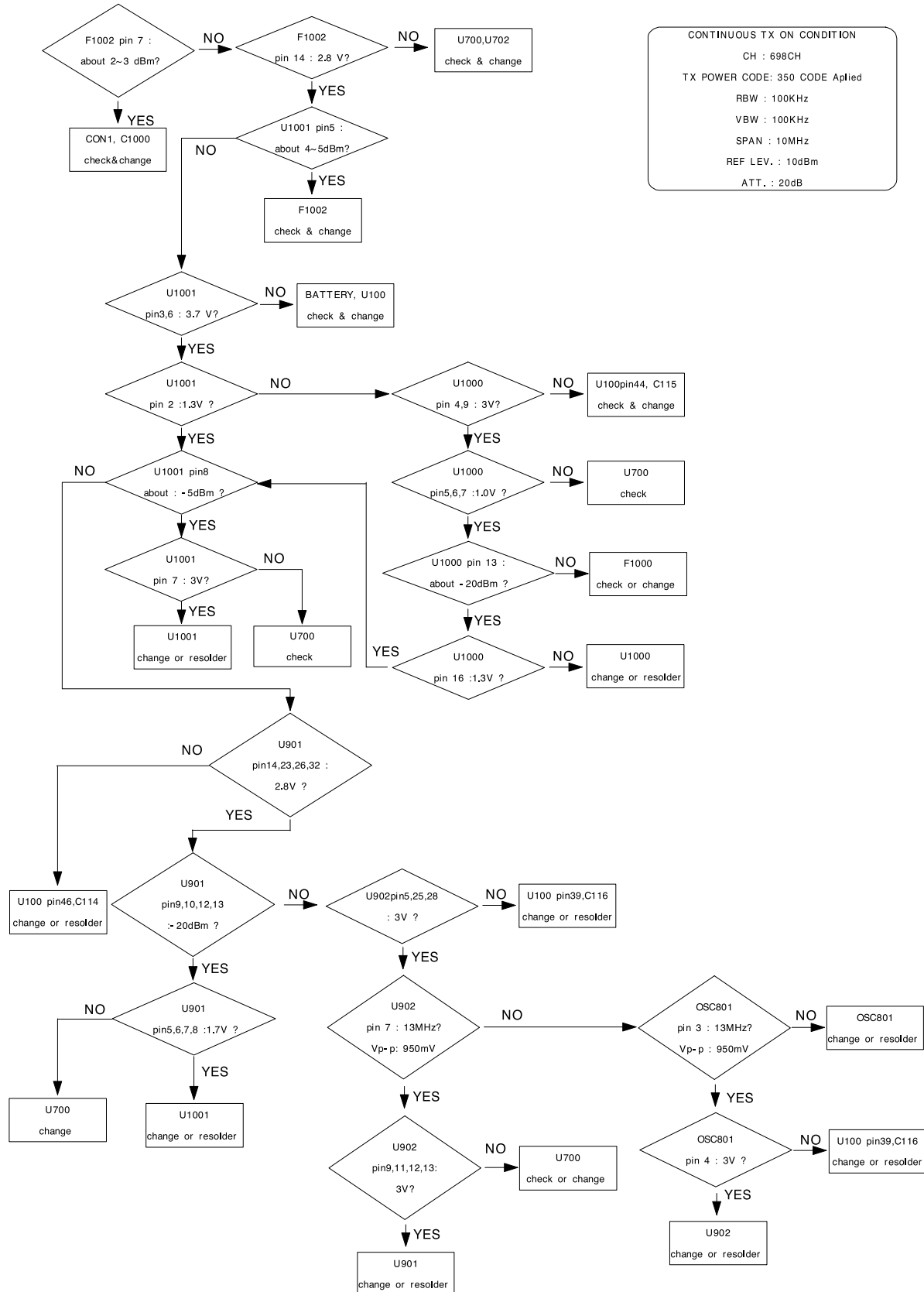
5-12. GSM Transmitter

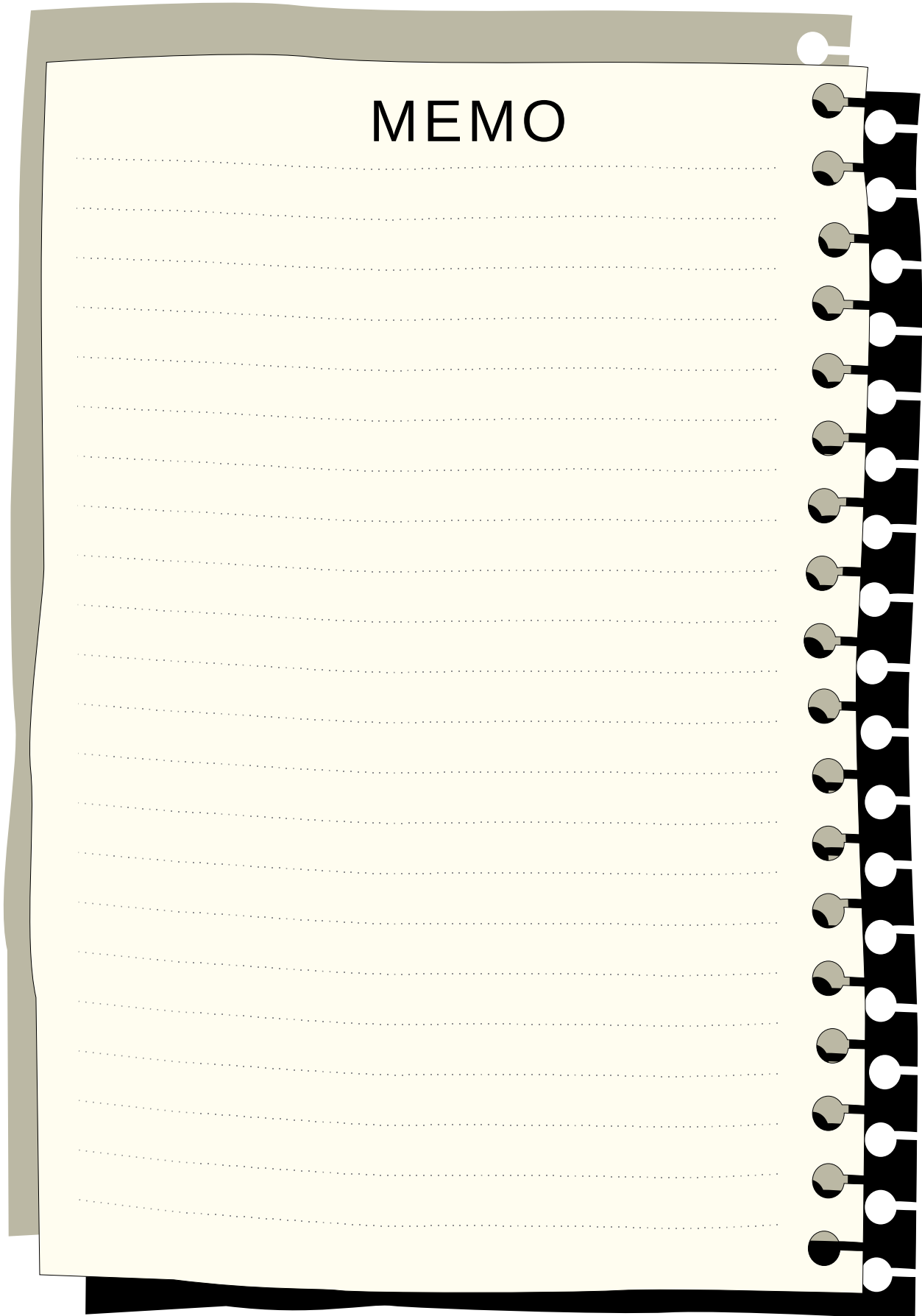


5-13. DCS Receiver

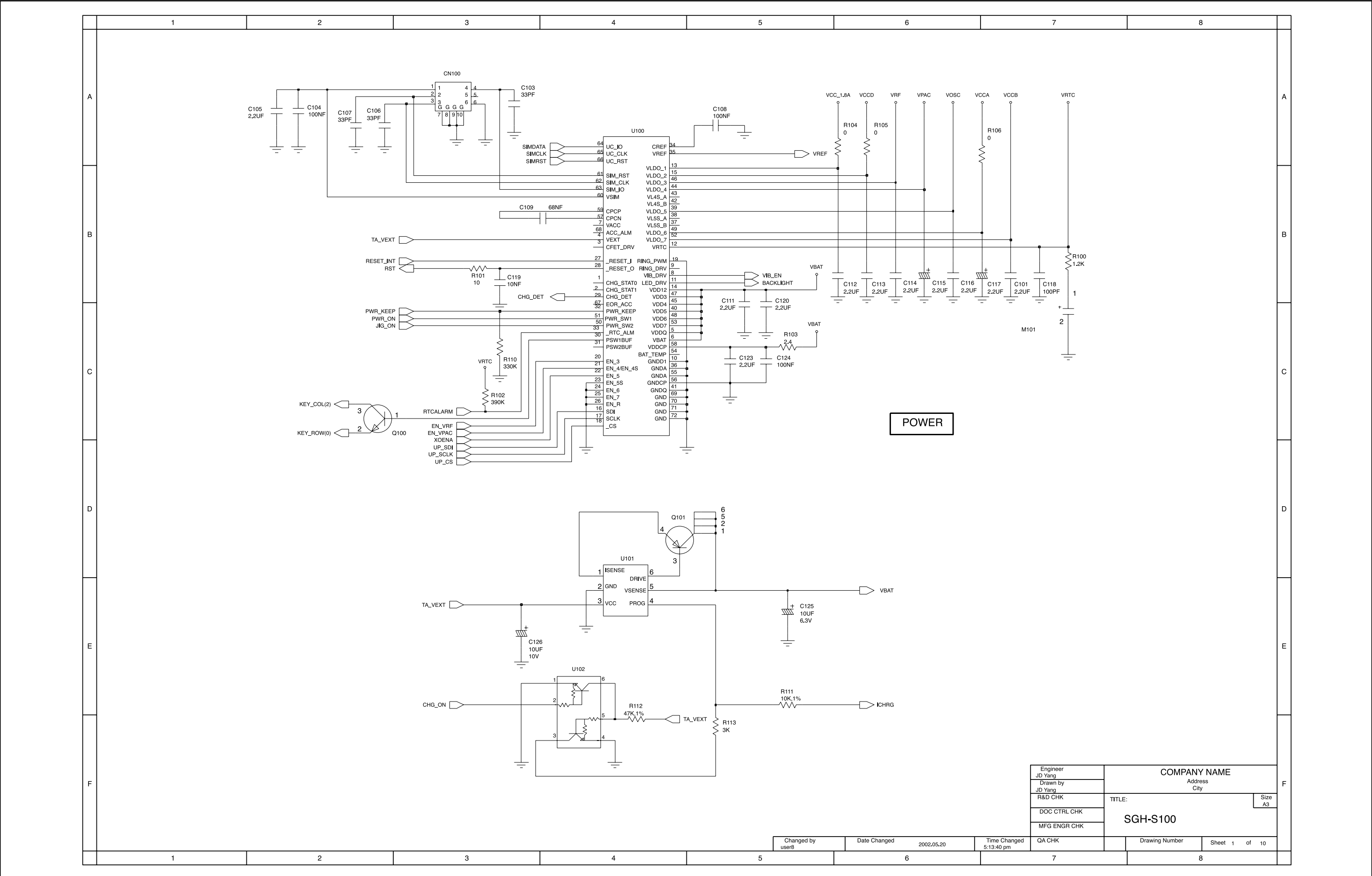


5-14. DCS Transmitter

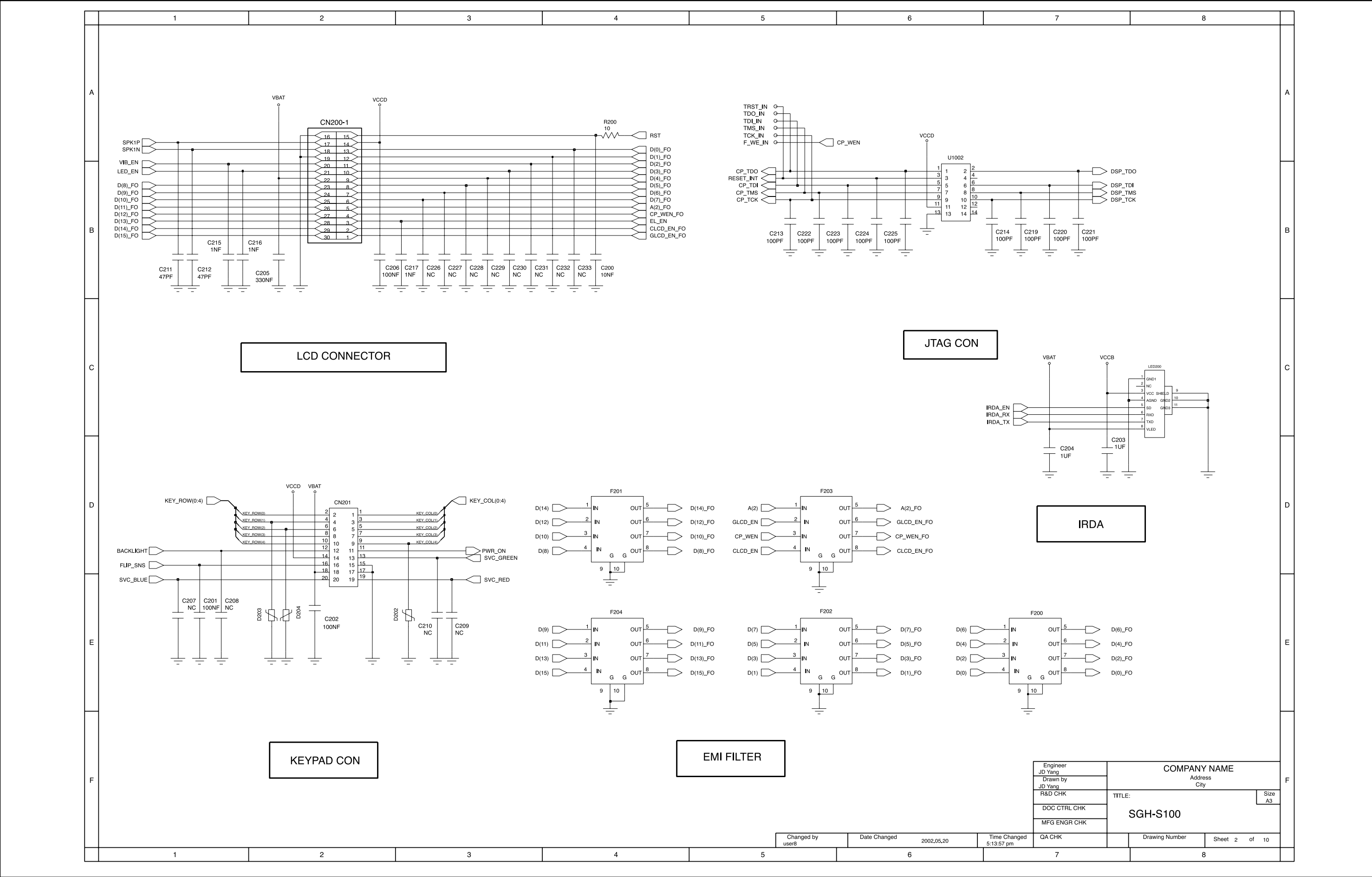




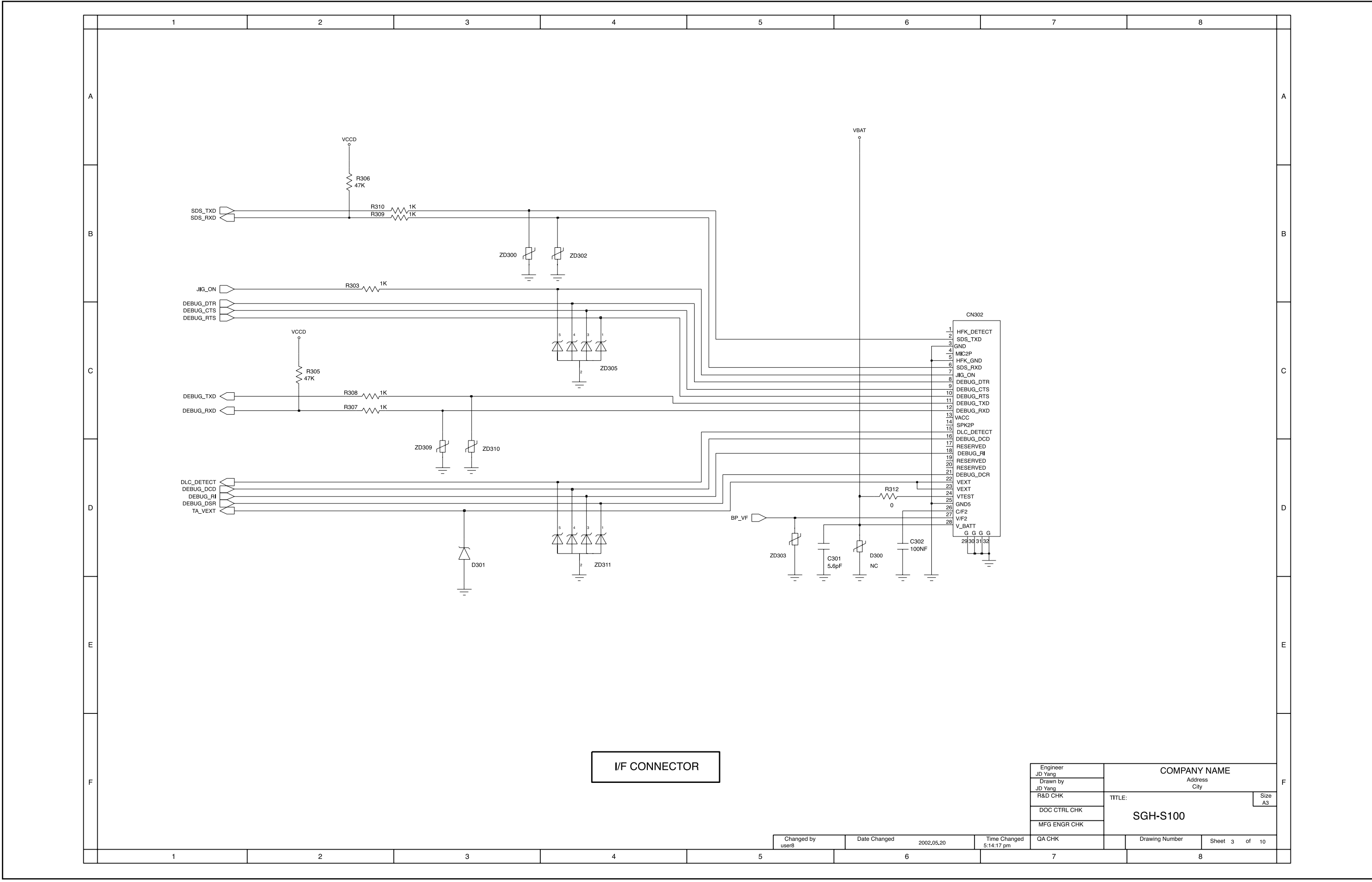
5-15. Power Circuit Diagram



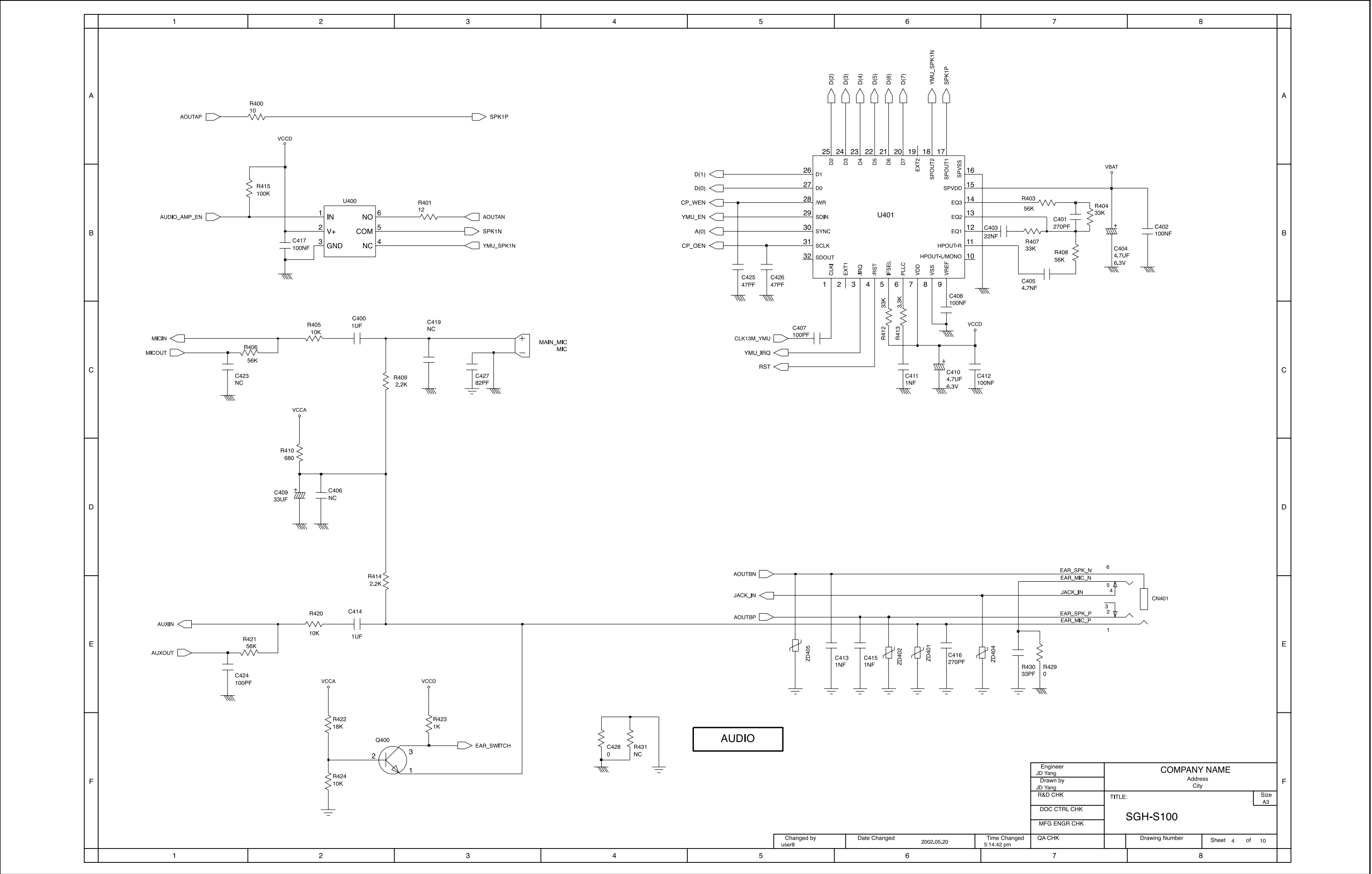
5-16. LCD & KEYPAD & EMI FILTER & JTAG & IRDA Connector Circuit Diagram



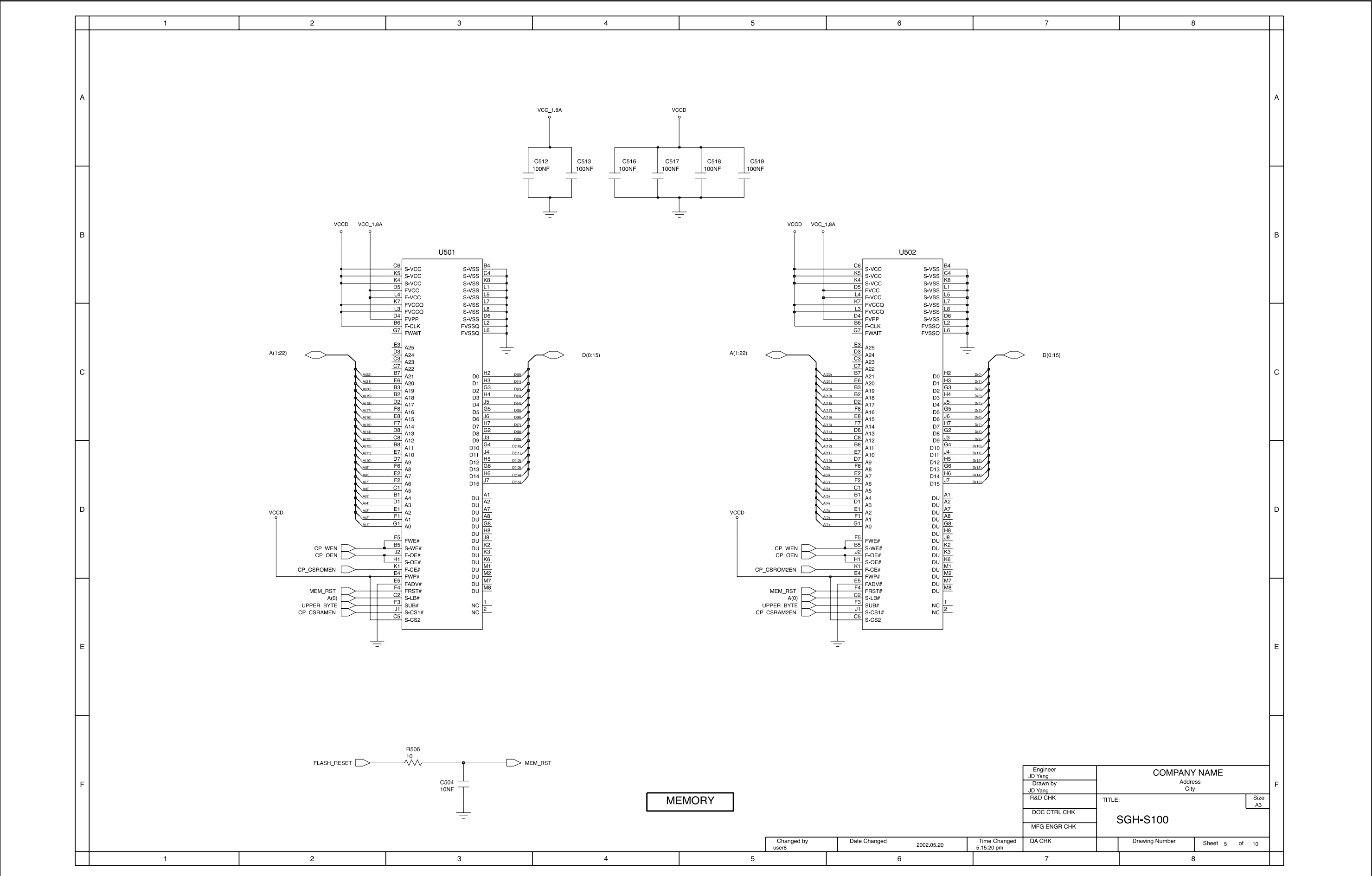
5-17. I/F Connector Circuit Diagram



5-18. Audio Circuit Diagram

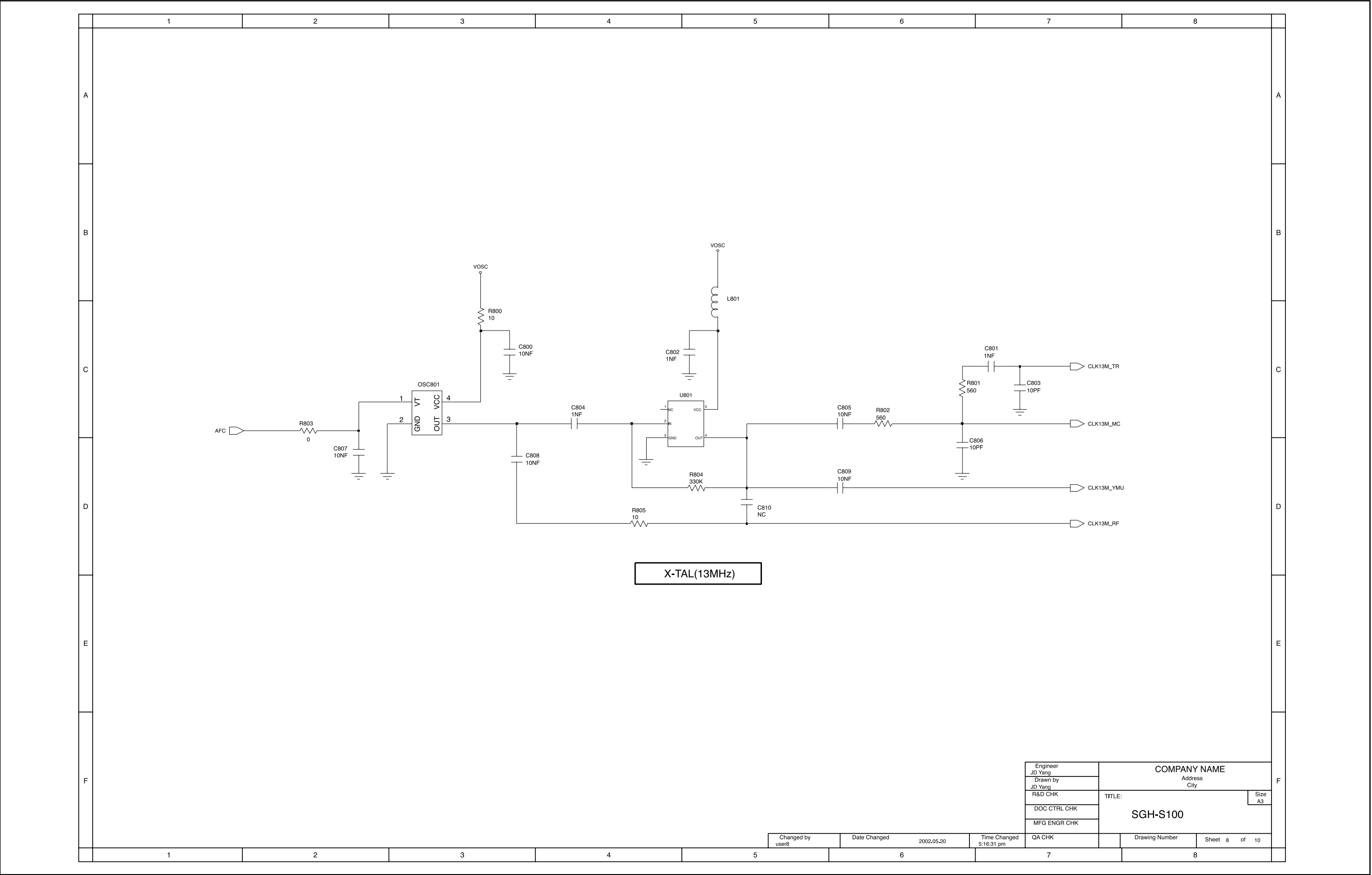


5-19. Memory & Buzzer Circuit Diagram

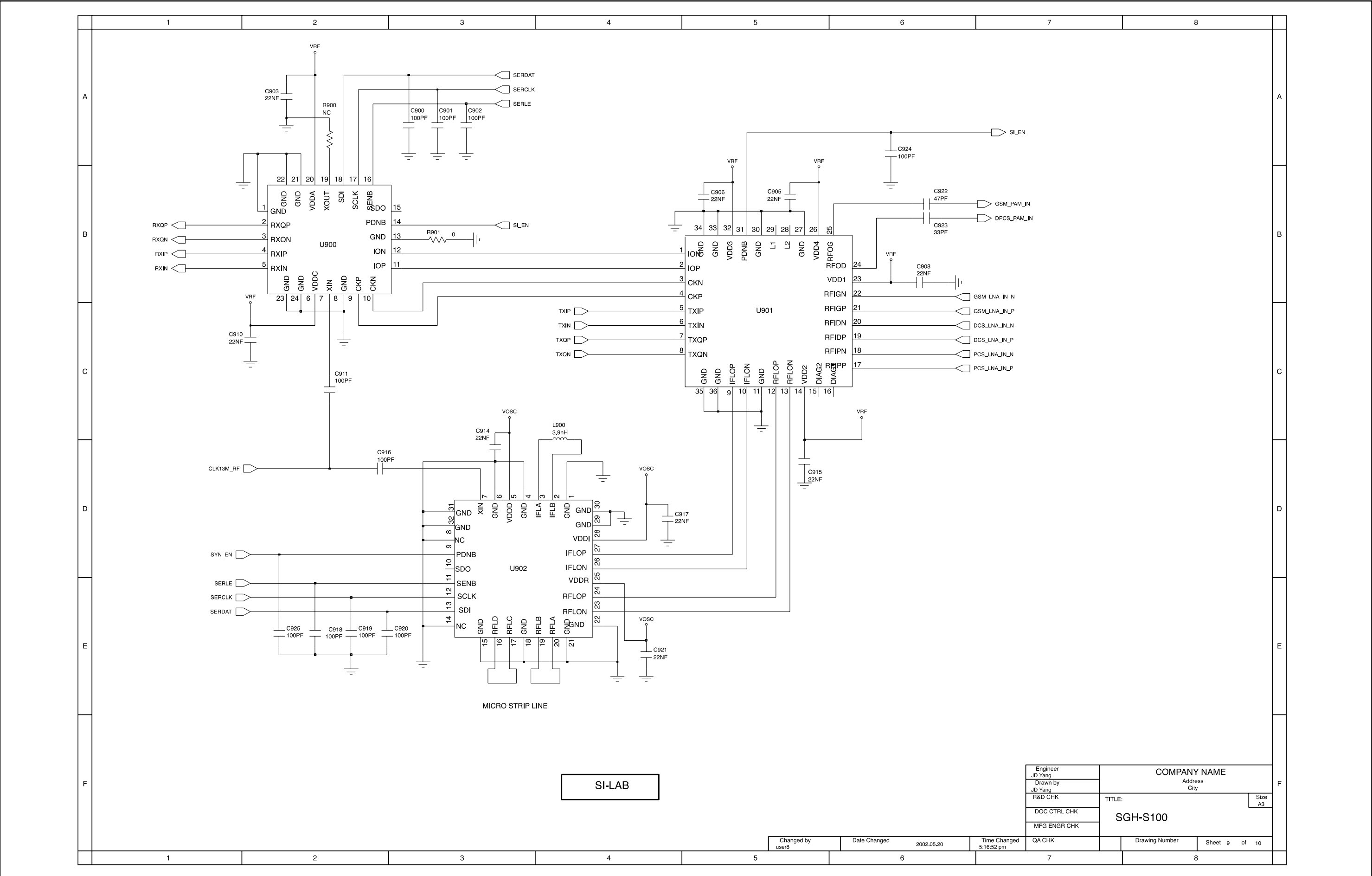




5-22. X-TAL(13 MHz) & SIM Circuit Diagram



5-23. Bright3 Circuit Diagram



SI-LAB

Engineer JD Yang	COMPANY NAME		
Drawn by JD Yang	Address City		
R&D CHK	TITLE:		Size A3
DOC CTRL CHK	SGH-S100		
MFG ENGR CHK			
QA CHK	Drawing Number	Sheet 9 of 10	

Changed by user8	Date Changed 2002.05.20	Time Changed 5:16:52 pm
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5-24. Transmitter & Receiver Circuit Diagram

