

SERVICE MANUAL

PERSONAL HANDYPHONE
SYSTEM

SPECIFICATIONS

■ Waiting mode	Public network only/dual/transceiver
■ Calling tone volume	3 steps (OFF/□■/■■■)
■ Receiving tone volume	4 steps
■ Calling methods	3 types (bell/vibration/vibration ► bell)
■ Calling tone	16 types
■ Pager function	Maximum of 10 received messages (50 letters in one message)
■ Re-dialing	20 stations (shared with incoming call history)
■ Electronic telephone directory	200 stations (telephone number: max. 32 digits, max. 5 phone numbers for one station, name: max. 10 letters, memo: max. 20 letters)
■ Literal memo	30 memos (50 letter for one memo)
■ Recording	30 seconds multiplied by 7 recordings
■ Mother machine that can be registered	5 machines
■ Other main functions	Alarm/help/security lock/P mail/schedule/single touch dialing/key lock/calling tone mute/light off/battery saving/clock/game
■ Communication system	TDMA-TDD digital system
■ Radio wave type	G1D, G1C, G1E, G1F, G1W
■ Transmission/reception frequency	1,900 MHz band
■ Transmission power	10 mW (average)
■ Power supply	DC 3.8 V (dedicated lithium-ion rechargeable battery pack)
■ Continuous talking time	About 5 hours
■ Continuous waiting time	About 500 hours
■ Outside diameter	41 (width) × 103 (height) × 17.5 (depth) mm
■ Mass	72 g (including rechargeable battery pack supplied)

- Design and specifications are subject to change without notice.

- The above-described continuous talking time is the value when the handyphone is used in the public telephone network inside the service area. If a handyphone is moved between public base stations even it is inside service area or any operation is performed, power consumption changes significantly, and usable time is shortened.
- The above-described continuous waiting time is the value when battery-save function is set in a handyphone that is used in the service area. If a handyphone is moved between public base stations even it is inside service area or any operation is performed, power consumption changes significantly, and usable time is shortened. The usable time can be shortened depending on the radio wave conditions.
- Aiwa Co. Ltd., is not liable for the loss and/or damage caused by missing opportunities of communication or recording due to trouble and defect of this machine.

ACCESSORIES/PACKAGE LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
▲	1 88-PD3-901-010	IB,AH (T) -H66	
	2 87-B30-257-010	AC ADAPTOR,AC-D905 TH	
	3 87-B30-367-010	BAT,LIB-903A	
	4 87-B30-302-010	CHARGER,RB-L04	
	5 87-PD3-050-010	STRAP,HAND	

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

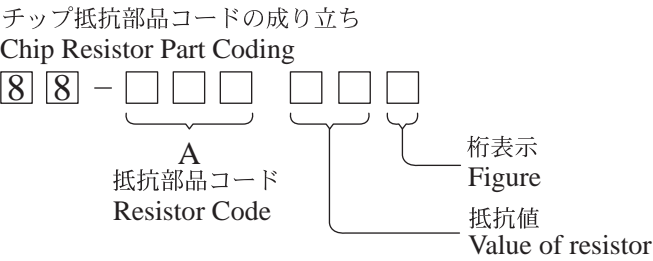
REF. NO	PART NO.	KANRI NO.	DESCRIPTION	REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC				C530	87-PD3-748-080		C-CAP,V 0.01-16 K B M
				C531	87-PD3-748-080		C-CAP,V 0.01-16 K B M
				C532	87-PD3-748-080		C-CAP,V 0.01-16 K B M
				C533	87-PD3-748-080		C-CAP,V 0.01-16 K B M
				C535	87-PD3-748-080		C-CAP,V 0.01-16 K B M
				C536	87-PD3-775-080		C-CAP,V 0.1-16 Z F M
				C537	87-PD3-748-080		C-CAP,V 0.01-16 K B M
				C538	87-PD3-775-080		C-CAP,V 0.1-16 Z F M
				C539	87-PD3-775-080		C-CAP,V 0.1-16 Z F M
				C540	87-PD3-710-080		C-CAP,V 7.0P-50 D CH M
				C541	87-PD3-710-080		C-CAP,V 7.0P-50 D CH M
				C542	87-A10-262-080		C-CAP,U 1-10 ZF
				C543	87-PD3-710-080		C-CAP,V 7.0P-50 D CH M
				C544	87-012-169-080		C-CAP,U 7P-50 CH
				C545	87-012-169-080		C-CAP,U 7P-50 CH
				C601	87-PD3-725-080		C-CAP,V 100P-50 J CH M
				C603	87-PD3-716-080		C-CAP,V 18P-50 J CH M
				C604	87-PD3-716-080		C-CAP,V 18P-50 J CH M
				C605	87-PD3-775-080		C-CAP,V 0.1-16 Z F M
				C606	87-PD3-748-080		C-CAP,V 0.01-16 K B M
				C607	87-PD3-725-080		C-CAP,V 100P-50 J CH M
				C608	87-PD3-748-080		C-CAP,V 0.01-16 K B M
				C609	87-PD3-748-080		C-CAP,V 0.01-16 K B M
				C610	87-PD3-748-080		C-CAP,V 0.01-16 K B M
				C611	87-PD3-725-080		C-CAP,V 100P-50 J CH M
				C612	87-PD3-725-080		C-CAP,V 100P-50 J CH M
				C613	87-A10-262-080		C-CAP,U 1-10 ZF
				C614	87-A10-262-080		C-CAP,U 1-10 ZF
				C615	87-A10-262-080		C-CAP,U 1-10 ZF
				C616	87-PD3-775-080		C-CAP,V 0.1-16 Z F M
				C617	87-PD3-775-080		C-CAP,V 0.1-16 Z F M
				C618	87-PD3-775-080		C-CAP,V 0.1-16 Z F M
				C619	87-PD3-775-080		C-CAP,V 0.1-16 Z F M
				C620	87-PD3-775-080		C-CAP,V 0.1-16 Z F M
				C621	87-PD3-775-080		C-CAP,V 0.1-16 Z F M
TRANSISTOR				C622	87-A10-262-080		C-CAP,U 1-10 ZF
				C623	87-PD3-710-080		C-CAP,V 7.0P-50 D CH M
				C624	87-PD3-710-080		C-CAP,V 7.0P-50 D CH M
DIODE				C801	87-PD3-748-080		C-CAP,V 0.01-16 K B M
				C803	87-PD3-748-080		C-CAP,V 0.01-16 K B M
				C805	87-016-296-080		C-CAP,TN 22-4SV(A)
				C806	87-016-296-080		C-CAP,TN 22-4SV(A)
				C807	87-016-296-080		C-CAP,TN 22-4SV(A)
				C808	87-016-296-080		C-CAP,TN 22-4SV(A)
				CN501	87-A60-520-080		C-CONN,40P P-JMDSS-G-TF
MAIN C.B				CN601	87-A60-747-080		C-CONN,28P 52893-28
				CN801	87-A60-522-080		C-CONN,2P 53398-02
				ECM501	87-A90-969-010		MIC,ECM KUF3323-015130 DIA6
BZ601	87-A70-156-080		C-VIB,BUZZER 2.4KHZ TR-40	EL601	88-PD3-610-110		EL,8PD-3
C501	87-PD3-748-080		C-CAP,V 0.01-16 K B M	L601	87-A50-321-080		C-COIL,MD520M402A
C502	87-PD3-748-080		C-CAP,V 0.01-16 K B M	LCD601	88-PD3-603-010		LCD,DMF-51055NF-S TH
C503	87-PD3-748-080		C-CAP,V 0.01-16 K B M	LED601	87-A40-556-080		C-LED,CL-270HR RED
C504	87-PD3-748-080		C-CAP,V 0.01-16 K B M	LED602	87-A40-126-080		C-LED,LT1E67A GRN
C505	87-PD3-748-080		C-CAP,V 0.01-16 K B M	LED603	87-A40-126-080		C-LED,LT1E67A GRN
C506	87-PD3-748-080		C-CAP,V 0.01-16 K B M	LED604	87-A40-126-080		C-LED,LT1E67A GRN
C507	87-PD3-775-080		C-CAP,V 0.1-16 Z F M	LED605	87-A40-126-080		C-LED,LT1E67A GRN
C508	87-PD3-775-080		C-CAP,V 0.1-16 Z F M	LED606	87-A40-126-080		C-LED,LT1E67A GRN
C509	87-PD3-775-080		C-CAP,V 0.1-16 Z F M	LED607	87-A40-126-080		C-LED,LT1E67A GRN
C510	87-PD3-775-080		C-CAP,V 0.1-16 Z F M	M601	88-PD3-605-010		MOT,FM-112K1-B2H14
C511	87-PD3-710-080		C-CAP,V 7.0P-50 D CH M	Q609	87-A30-232-040		C-P-TR,PT600T
C512	87-PD3-710-080		C-CAP,V 7.0P-50 D CH M	R505	87-A00-327-080		C-RES,U 237K-1/16W F
C514	87-010-831-080		C-CAP,U 0.1-16F	R634	87-022-292-080		CHIP RES U 330K-1/16W F
C515	87-010-746-080		CAP, TANTAL 10-4	R635	87-022-288-080		C-RES,U 150K-1/16WF
C516	87-PD3-710-080		C-CAP,V 7.0P-50 D CH M	R637	87-A00-432-080		C-RES,U 300K-1/16W F
C517	87-PD3-710-080		C-CAP,V 7.0P-50 D CH M	SP501	87-A90-929-010		SPKR,15 HAT-XW-15C-01
C518	87-PD3-748-080		C-CAP,V 0.01-16 K B M	SW601	87-A91-311-080		C-SW,LVR SLLB22-A-G-B
C519	87-016-034-080		CHIP CAP U 0.027-25F	SW602	87-A90-921-080		C-SW,TACT SKQLLC
C520	87-010-831-080		C-CAP,U 0.1-16F	TH601	87-A90-970-080		C-THMS,157-154-65001
C521	87-PD3-710-080		C-CAP,V 7.0P-50 D CH M	X601	87-A70-077-010		VIB,XTAL 32KHZ DT-26 5PPM
C522	87-A10-262-080		C-CAP,U 1-10 ZF				
C523	87-A10-262-080		C-CAP,U 1-10 ZF				
C524	87-012-278-080		C-CAP,U 2200P-50 B				
C525	87-012-278-080		C-CAP,U 2200P-50 B				
C526	87-PD3-748-080		C-CAP,V 0.01-16 K B M				
C527	87-PD3-710-080		C-CAP,V 7.0P-50 D CH M				
C528	87-PD3-710-080		C-CAP,V 7.0P-50 D CH M				
C529	87-PD3-748-080		C-CAP,V 0.01-16 K B M				

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
RF C.B			
C101	87-PD3-710-080	C-CAP,V 7.0P-50 D CH M	
C102	87-PD3-710-080	C-CAP,V 7.0P-50 D CH M	
C103	87-PD3-709-080	C-CAP,V 6.0P-50 D CH M	
C104	87-PD3-737-080	C-CAP,V 1000P-50 K B M	
C105	87-PD3-737-080	C-CAP,V 1000P-50 K B M	
C106	87-PD3-717-080	C-CAP,V 22P-50 J CH M	
C107	87-PD3-748-080	C-CAP,V 0.01-16 K B M	
C108	87-PD3-704-080	C-CAP,V 2.0P-50 C CK M	
C109	87-PD3-710-080	C-CAP,V 7.0P-50 D CH M	
C110	87-PD3-737-080	C-CAP,V 1000P-50 K B M	
C111	87-PD3-737-080	C-CAP,V 1000P-50 K B M	
C112	87-PD3-710-080	C-CAP,V 7.0P-50 D CH M	
C113	87-PD3-706-080	C-CAP,V 3.0P-50 C CJ M	
C114	87-PD3-702-080	C-CAP,V 1.0P-50 C CK M	
C115	87-PD3-725-080	C-CAP,V 100P-50 J CH M	
C116	87-PD3-725-080	C-CAP,V 100P-50 J CH M	
C117	87-016-563-080	C-CAP,TN 10-10 SV A	
C118	87-016-449-080	C-CAP,TN 10-4 F95 P	
C119	87-PD3-710-080	C-CAP,V 7.0P-50 D CH M	
C120	87-PD3-707-080	C-CAP,V 4.0P-50 C CH M	
C121	87-PD3-725-080	C-CAP,V 100P-50 J CH M	
C123	87-PD3-737-080	C-CAP,V 1000P-50 K B M	
C201	87-PD3-748-080	C-CAP,V 0.01-16 K B M	
C202	87-PD3-710-080	C-CAP,V 7.0P-50 D CH M	
C203	87-PD3-725-080	C-CAP,V 100P-50 J CH M	
C204	87-PD3-717-080	C-CAP,V 22P-50 J CH M	
C206	87-PD3-737-080	C-CAP,V 1000P-50 K B M	
C207	87-PD3-716-080	C-CAP,V 18P-50 J CH M	
C208	87-PD3-710-080	C-CAP,V 7.0P-50 D CH M	
C209	87-PD3-725-080	C-CAP,V 100P-50 J CH M	
C212	87-PD3-725-080	C-CAP,V 100P-50 J CH M	
C213	87-PD3-710-080	C-CAP,V 7.0P-50 D CH M	
C214	87-PD3-717-080	C-CAP,V 22P-50 J CH M	
C215	87-PD3-737-080	C-CAP,V 1000P-50 K B M	
C216	87-PD3-713-080	C-CAP,V 10P-50 D CH M	
C217	87-PD3-702-080	C-CAP,V 1.0P-50 C CK M	
C218	87-PD3-709-080	C-CAP,V 6.0P-50 D CH M	
C219	87-PD3-709-080	C-CAP,V 6.0P-50 D CH M	
C220	87-PD3-737-080	C-CAP,V 1000P-50 K B M	
C221	87-PD3-710-080	C-CAP,V 7.0P-50 D CH M	
C299	87-PD3-706-080	C-CAP,V 3.0P-50 C CJ M	
C301	87-PD3-719-080	C-CAP,V 33P-50 J CH M	
C302	87-PD3-733-080	C-CAP,V 470P-50 K B M	
C303	87-PD3-748-080	C-CAP,V 0.01-16 K B M	
C304	87-016-449-080	C-CAP,TN 10-4 F95 P	
C305	87-PD3-725-080	C-CAP,V 100P-50 J CH M	
C306	87-PD3-713-080	C-CAP,V 10P-50 D CH M	
C307	87-PD3-714-080	C-CAP,V 12P-50 J CH M	
C308	87-012-182-080	C-CAP,U 27P-50 CH	
C309	87-PD3-748-080	C-CAP,V 0.01-16 K B M	
C310	87-PD3-702-080	C-CAP,V 1.0P-50 C CK M	
C311	87-PD3-748-080	C-CAP,V 0.01-16 K B M	
C312	87-PD3-748-080	C-CAP,V 0.01-16 K B M	
C313	87-PD3-748-080	C-CAP,V 0.01-16 K B M	
C314	87-016-449-080	C-CAP,TN 10-4 F95 P	
C315	87-PD3-737-080	C-CAP,V 1000P-50 K B M	
C316	87-PD3-748-080	C-CAP,V 0.01-16 K B M	
C317	87-PD3-721-080	C-CAP,V 47P-50 J CH M	
C318	87-PD3-725-080	C-CAP,V 100P-50 J CH M	
C319	87-PD3-725-080	C-CAP,V 100P-50 J CH M	
C320	87-PD3-759-080	C-CAP,V 0.1-10 K B M	
C321	87-PD3-715-080	C-CAP,V 15P-50 J CH M	
C322	87-PD3-725-080	C-CAP,V 100P-50 J CH M	
C323	87-016-563-080	C-CAP,TN 10-10 SV A	
C324	87-016-449-080	C-CAP,TN 10-4 F95 P	
C325	87-016-449-080	C-CAP,TN 10-4 F95 P	
C326	87-PD3-748-080	C-CAP,V 0.01-16 K B M	
C327	87-PD3-725-080	C-CAP,V 100P-50 J CH M	


REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C328	87-PD3-748-080	C-CAP,V 0.01-16 K B M	
C329	87-PD3-725-080	C-CAP,V 100P-50 J CH M	
C330	87-PD3-731-080	C-CAP,V 330P-50 K B M	
C401	87-PD3-748-080	C-CAP,V 0.01-16 K B M	
C402	87-016-449-080	C-CAP,TN 10-4 F95 P	
C403	87-PD3-725-080	C-CAP,V 100P-50 J CH M	
C404	87-016-449-080	C-CAP,TN 10-4 F95 P	
C405	87-016-563-080	C-CAP,TN 10-10 SV A	
C406	87-PD3-725-080	C-CAP,V 100P-50 J CH M	
C407	87-PD3-759-080	C-CAP,V 0.1-10 K B M	
C408	87-PD3-732-080	C-CAP,V 390P-50 K B M	
C409	87-PD3-750-080	C-CAP,V 0.015-16 K B M	
C410	87-PD3-738-080	C-CAP,V 1200P-50 K B M	
C411	87-PD3-748-080	C-CAP,V 0.01-16 K B M	
C412	87-PD3-759-080	C-CAP,V 0.1-10 K B M	
C413	87-PD3-725-080	C-CAP,V 100P-50 J CH M	
C414	87-PD3-759-080	C-CAP,V 0.1-10 K B M	
C415	87-PD3-737-080	C-CAP,V 1000P-50 K B M	
C416	87-PD3-717-080	C-CAP,V 22P-50 J CH M	
C419	87-PD3-748-080	C-CAP,V 0.01-16 K B M	
C420	87-PD3-748-080	C-CAP,V 0.01-16 K B M	
C421	87-PD3-717-080	C-CAP,V 22P-50 J CH M	
C422	87-PD3-717-080	C-CAP,V 22P-50 J CH M	
C423	87-PD3-717-080	C-CAP,V 22P-50 J CH M	
C424	87-PD3-725-080	C-CAP,V 100P-50 J CH M	
C425	87-PD3-748-080	C-CAP,V 0.01-16 K B M	
CN502	87-A60-521-080	C-CONN,40P R-JMDSS-G-TF	
CT201	87-A90-685-080	C-TRIMMER,5P CTZ2S-05C	
F101	88-PD3-638-080	C-FLTR,DFC21R90P0 27LHA	
F102	88-PD3-639-080	C-FLTR,DFC21R90P0 27LHB	
F201	88-PD3-641-080	C-FLTR,PAFC248B	
F301	88-PD3-628-080	C-FLTR,CFECS10.75 ME11	
F302	88-PD3-629-080	C-FLTR,CFECS10.75 MK1	
L101	87-A50-293-080	C-COIL,BLM11A121SPT	
L102	87-A50-299-080	C-COIL,3.3NH LQG11A	
L103	87-A50-213-080	C-COIL,10NH LQN21A	
L104	87-A50-294-080	C-COIL,1.2NH LQG11A	
L105	87-A50-314-080	C-COIL,56NH LQG11A	
L108	87-A50-299-080	C-COIL,3.3NH LQG11A	
L201	87-A50-293-080	C-COIL,BLM11A121SPT	
L202	87-A50-208-080	C-COIL,BLM11A601SPT	
L204	87-A50-201-080	C-COIL,150NH LL2012-FR15J	
L205	87-A50-201-080	C-COIL,150NH LL2012-FR15J	
L206	87-A50-316-080	C-COIL,82NH LQG11A	
L207	87-A50-317-080	C-COIL,100NH LQG11A	
L208	87-A50-317-080	C-COIL,100NH LQG11A	
L209	87-A50-316-080	C-COIL,82NH LQG11A	
L301	87-A50-223-080	C-COIL,82NH LQN21A	
L302	87-A50-207-080	C-COIL,470NH LL2012-FR47J	
L303	87-A50-313-080	C-COIL,47NH LQG11A	
L305	87-A50-208-080	C-COIL,BLM11A601SPT	
L306	87-A50-208-080	C-COIL,BLM11A601SPT	
L307	87-A50-208-080	C-COIL,BLM11A601SPT	
L308	87-A50-208-080	C-COIL,BLM11A601SPT	
L309	87-A50-208-080	C-COIL,BLM11A601SPT	
L401	87-A50-293-080	C-COIL,BLM11A121SPT	
SFR201	87-A90-443-080	C-SFR,1K H POZ3AN	
VC301	87-070-405-080	C-VARI-CAP,1SV239	
X301	88-PD3-640-080	C-VIB,19.2MHZ TK14-EGR28N	
X401	88-PD3-637-080	C-VIB,1658MHZ RK-405R1658A3	

- Regarding connectors, they are not stocked as they are not the initial order items.
The connectors are available after they are supplied from connector manufacturers upon the order is received.

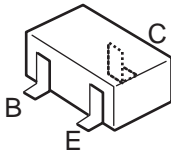
○チップ抵抗部品コード／CHIP RESISTOR PART CODE



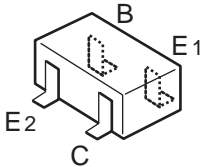
チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm)				抵抗コード : A
				外形／Form	L	W	t	Resistor Code : A
1/16W	1005	± 5%	CJ		1.0	0.5	0.35	104
1/16W	1608	± 5%	CJ		1.6	0.8	0.45	108
1/10W	2125	± 5%	CJ		2	1.25	0.45	118
1/8W	3216	± 5%	CJ		3.2	1.6	0.55	128

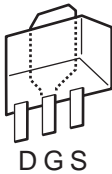
TRANSISTOR ILLUSTRATION



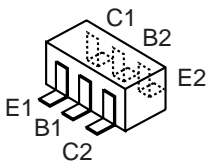
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2SA1362
2SA1586
2SC4116



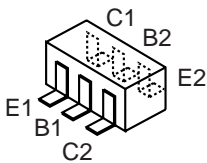
2SC4244
2SC4667
RN1311



2SC5319

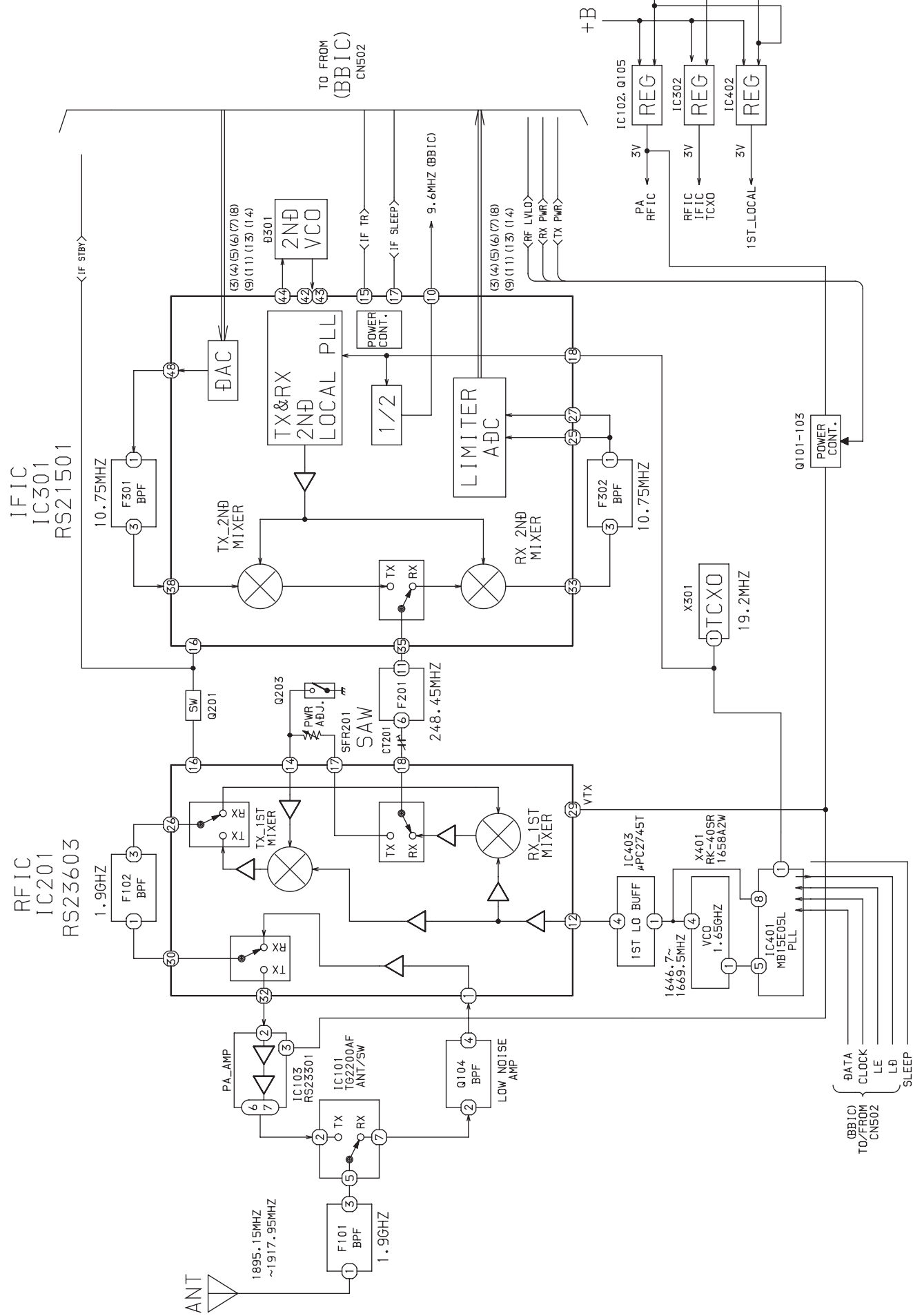


2SK1579

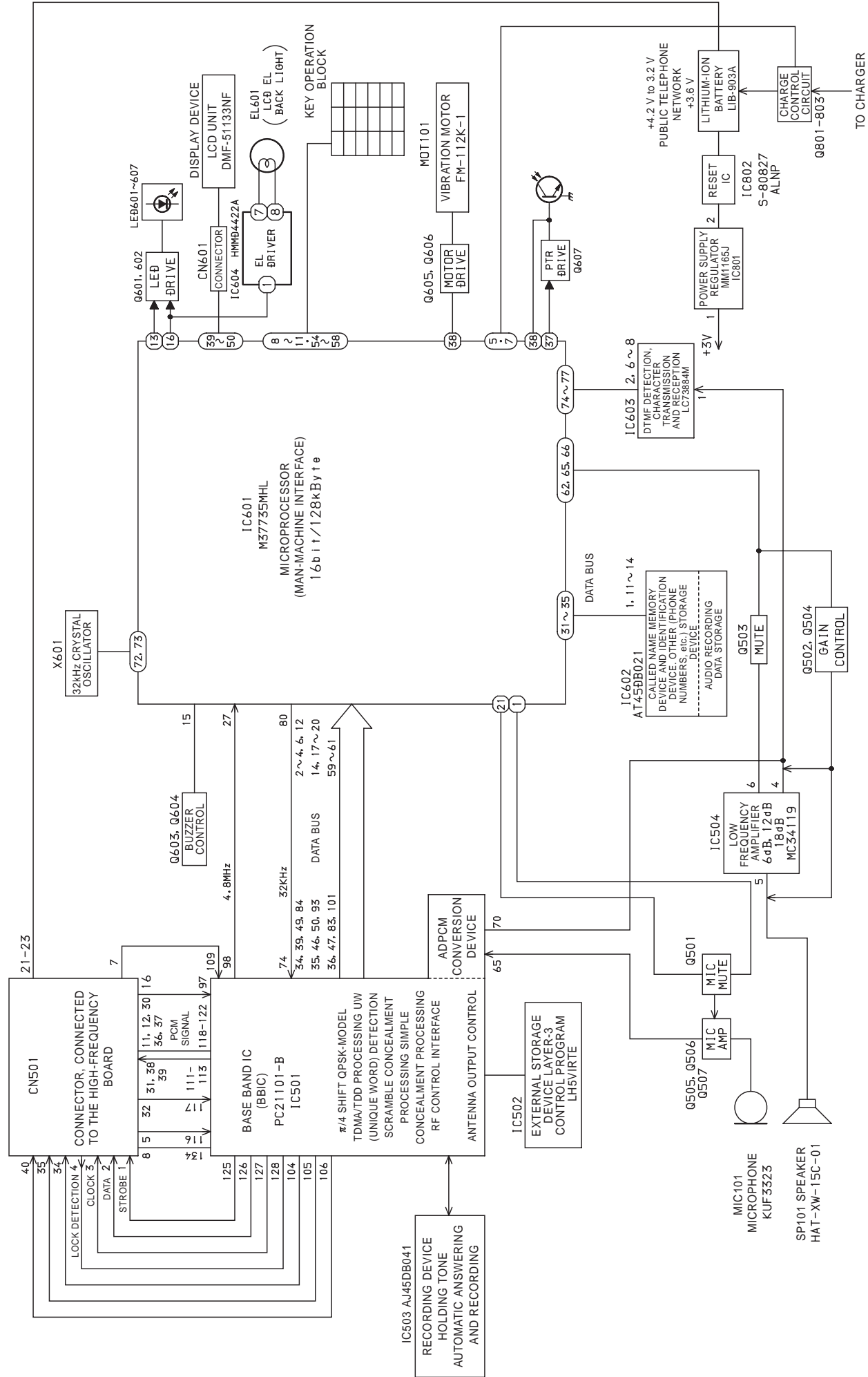


RN4905

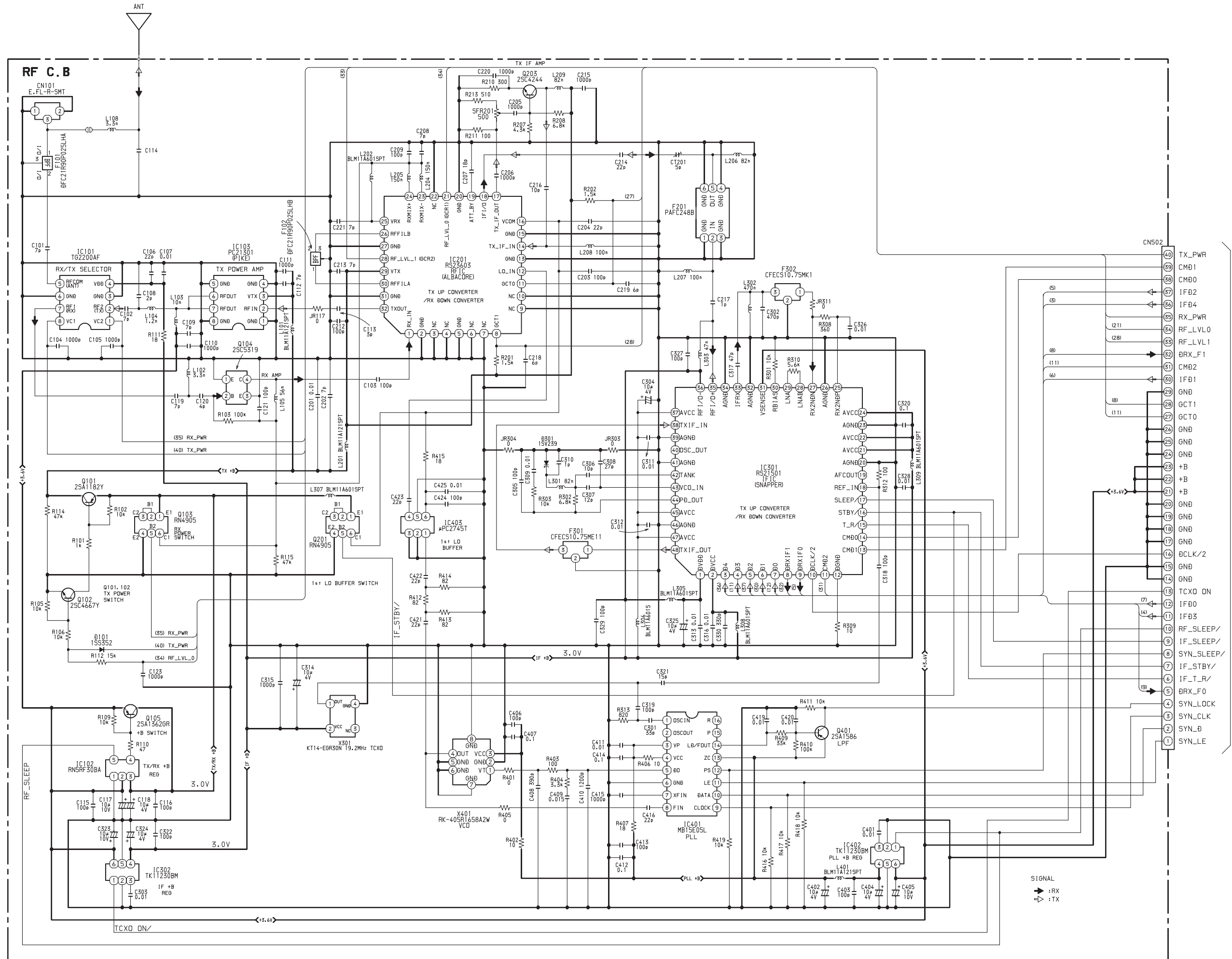
BLOCK DIAGRAM-1 (RF)

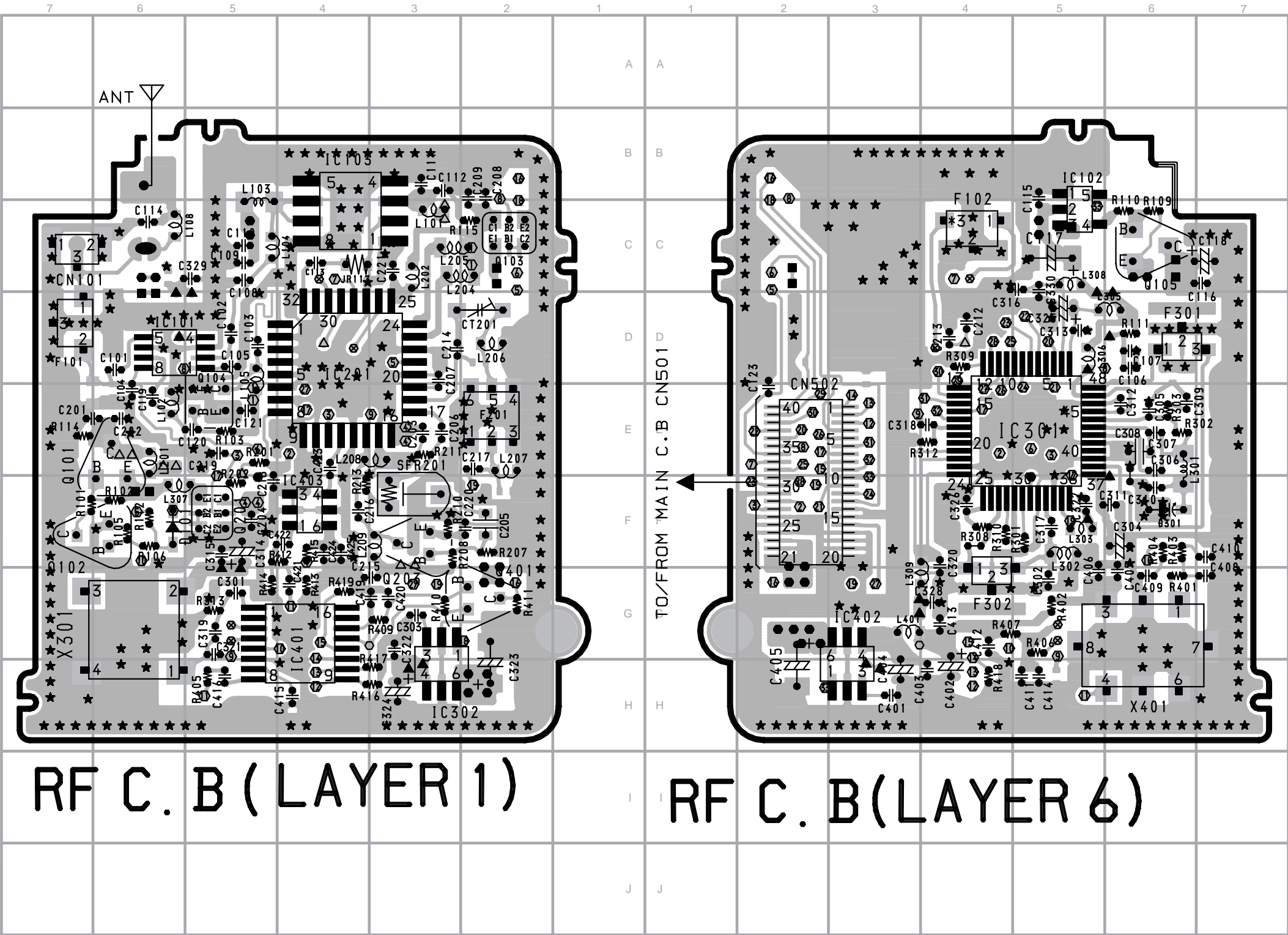


BLOCK DIAGRAM-2 (MAIN)



SCHEMATIC DIAGRAM-1 (RF)





WIRING NOTES

The RF C.B. is the 6-layer P.C.B.
The 2nd to 5th layers are not shown. In order to check wiring connections of these layers, refer to the through-hole note and through-hole locations.

[Through-hole note]

+3.6V	●
PLL +B	○
IF +B	▲
TX +B	△
TX/RX +B	■
GND	★
SIGNAL	⊗
	①~③③

- * ⊗: This symbol indicates the normal through-hole. The through-holes that are located in the symmetrical position on the checked location diagram, are conducting.
- * ①~③③: These through-holes are connected to the mid-layers in between. Therefore, wiring cannot be followed on the printed foil patterns. However, because the through-holes having the same symbol are conducting each other, refer to the through-hole location diagram in order to check wiring connections.

[Through-hole location]

①	C-3, E-5
②	E-5, F-3
③	E-4, E-5, F-2
④	E-3, F-4, F-5
⑤	C-2, D-4, F-6
⑥	C-2, E-5, F-6
⑦	C-4, E-2
⑧	C-2, E-3, D-6
⑨	E-4, G-5
⑩	F-6, G-5
⑪	G-5, H-5
⑫	E-3, G-4
⑬	E-3, G-4
⑭	D-3, G-4
⑮	E-3, G-4
⑯	B-2, F-2
⑰	E-3, E-4, E-5
⑱	C-2, G-3
⑲	E-3, F-3, F-5
⑳	D-5, E-3
㉑	D-5, F-3
㉒	D-5, E-2
㉓	D-5, E-2
㉔	D-5, E-3
㉕	D-5, E-3
㉖	D-5, E-3
㉗	D-4, F-3
㉘	D-5, E-3
㉙	D-3, D-4
㉚	D-4, E-3
㉛	E-3, E-4
㉜	E-3, E-4
㉝	C-6, E-3, G-3

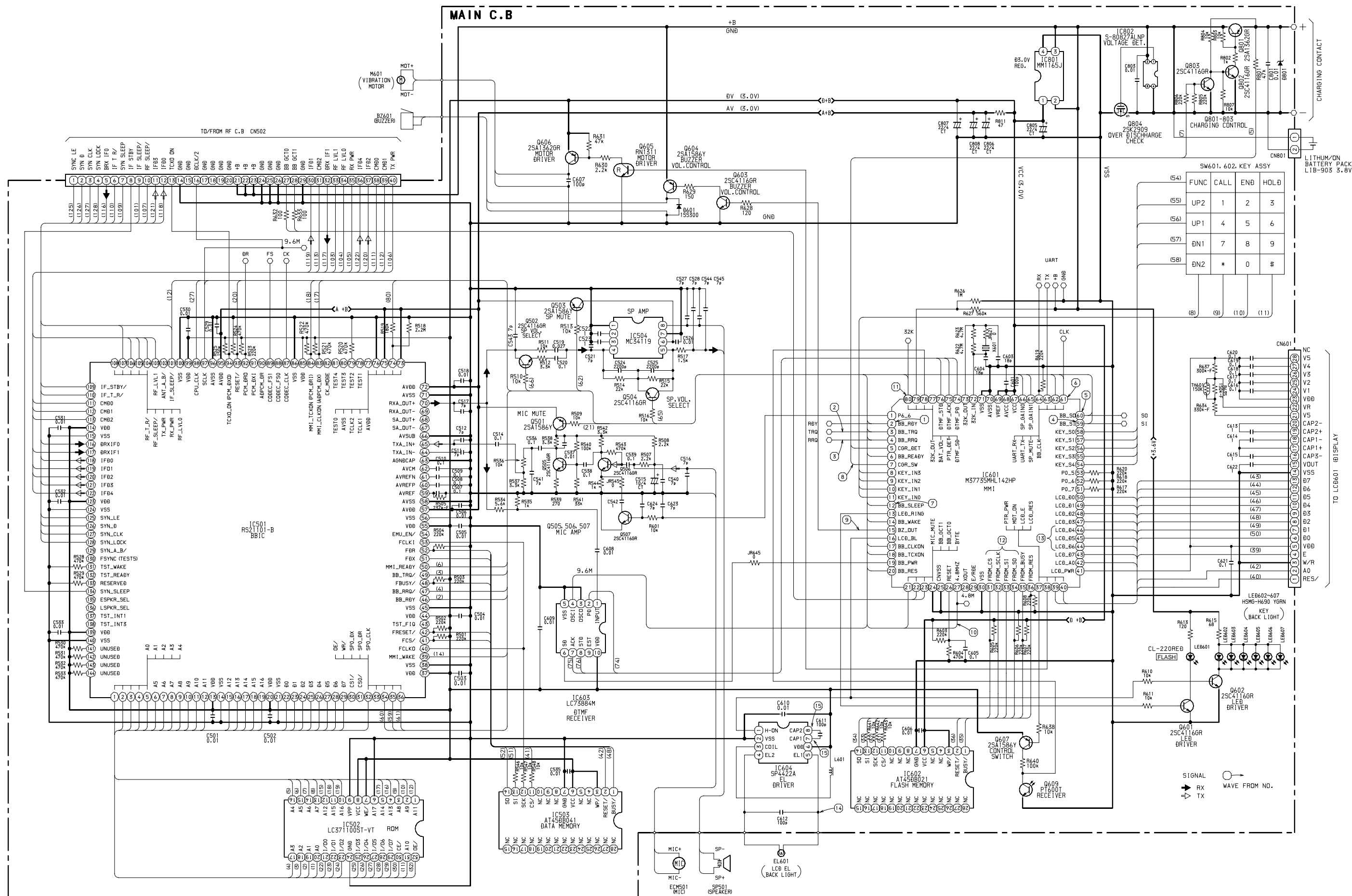
The MAIN C.B. is the 6-layer P.C.B.
The 2nd to 5th layers are not shown. In order to check wiring connections of these layers, refer to the through-hole note and through-hole locations.

- [Through-hole note]

+3.6V	●
D 3.0V	○
MICOM +B	■
A 3.0V	★
GND	●
CHARGING CONTACT⊕	▲
CHARGING CONTACT⊖	△
SIGNAL	⊗
	① ~ ④⑧
	① ~ ④⑧

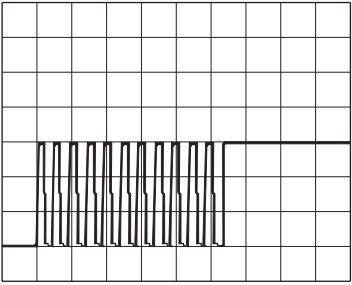
1	C-12, D-5, D-8	38	C-12, C-14	1	B-5, B-10
2	C-12, E-7	39	C-13, C-17, F-12	2	B-6, B-10
3	D-12, E-6	40	E-9, E-13, E-15	3	B-9, C-6
4	D-11, E-6	41	E-9, E-13, E-15	4	B-9, C-6
5	D-15, F-8, F-12, F-13, F-14, F-15, F-16	42	E-6, E-14	5	B-8, C-6
6	D-12, D-13, D-15, D-16, F-9	43	E-6, E-14	6	C-6, C-8
7	B-12, C-14, C-15, C-16, D-12, F-11	44	D-5, F-7	7	C-6, C-7
8	D-5, D-12, E-5	45	E-6, F-7	8	C-6, C-8
9	B-7, D-13	46	E-6, F-7	9	C-6, C-8
10	B-6, C-3	47	D-12	10	B-8, C-6
11	C-11, D-6, D-8, D-13	48	D-11	11	B-8, C-5
12	D-3, D-13			12	B-8, C-6
13	D-13, D-14			13	B-9, D-6
14	D-3, D-13			14	B-8, D-6
15	D-3, E-12			15	C-8, D-6
16	B-4, C-5, E-13			16	D-6, E-6, F-8
17	D-15, E-13			17	D-5, E-6, F-8
18	E-12, F-7			18	D-5, E-5
19	C-15, E-12, F-7			19	C-15, E-5
20	B-4, B-9, C-14, D-12			20	C-16, D-15
21	B-14, F-12			21	C-16, D-15
22	F-8, F-11			22	B-4, B-14
23	E-11, F-10			23	B-14, C-4
24	E-11, F-10			24	B-14, C-4
25	E-11, F-11			25	D-5, E-6, F-7, G-7, G-12
26	E-11, F-11			26	C-4, F-4
27	E-11, G-10			27	C-4, G-5
28	D-11, G-11			28	C-4, G-5
29	E-11, G-11			29	C-4, F-4
30	D-11, E-10			30	B-4, E-5
31	D-10			31	C-4, F-4
32	C-14, D-11, E-10			32	B-4, F-4
33	C-11, C-14, D-11			33	B-4, G-5
34	C-11, C-14, E-6			34	B-4, F-4
35	C-12, C-14			35	B-4, G-5
36	C-12, C-14			36	B-4, F-5, G-5
37	C-12, C-14			37	C-5, F-5
38	C-12, C-14			38	B-5
39	C-12, C-14			39	C-5, E-6

SCHEMATIC DIAGRAM-2 (MAIN)

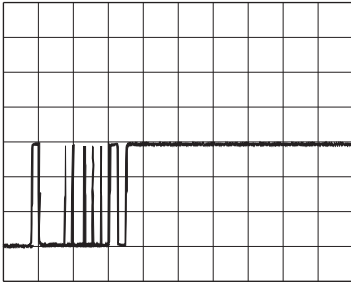


WAVE FORM

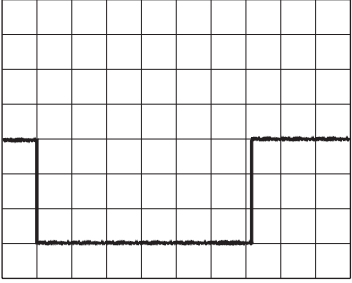
① IC601 Pin ② (BB_RDY) VOLT/DIV: 1V
TIME/DIV: 2mS



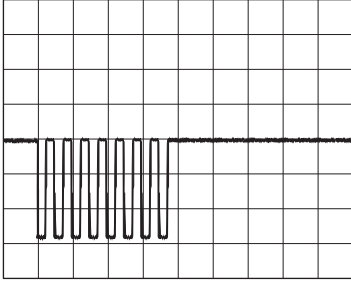
⑤ IC601 Pin ⑥⑩ (BB_SO) VOLT/DIV: 1V
TIME/DIV: 2mS



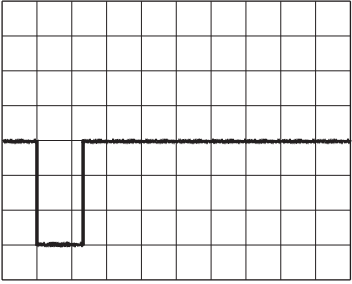
② IC601 Pin ③ (BB_TRQ) VOLT/DIV: 1V
TIME/DIV: 5mS



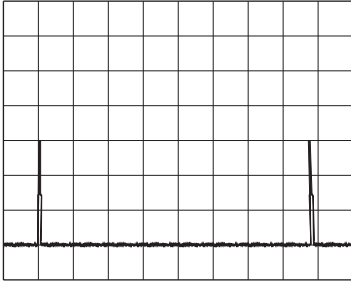
⑥ IC601 Pin ⑥⑪ (BB_CLK) VOLT/DIV: 1V
TIME/DIV: 20μS



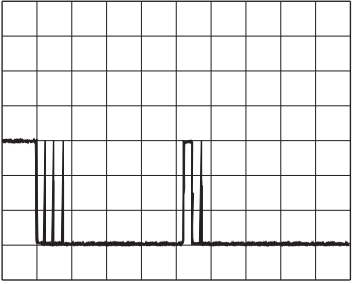
③ IC601 Pin ④ (BB_RRQ) VOLT/DIV: 1V
TIME/DIV: 5mS



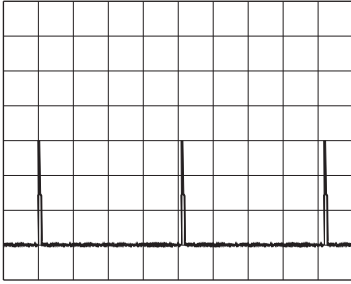
⑦ IC601 Pin ⑫ (BB_SLEEP) During call waiting VOLT/DIV: 1V
TIME/DIV: 200mS



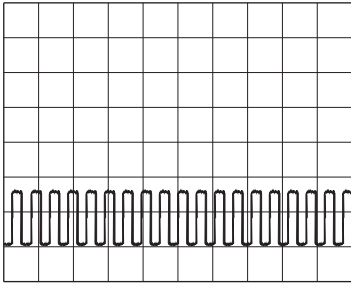
④ IC601 Pin ⑥⑨ (BB_SI) VOLT/DIV: 1V
TIME/DIV: 2mS



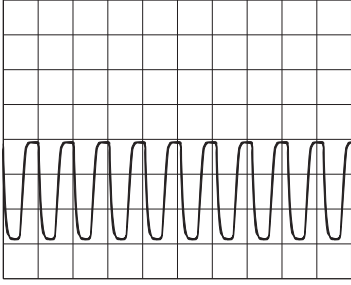
⑧ IC601 Pin ⑦ (CHG_SW) During charging battery VOLT/DIV: 1V
TIME/DIV: 500mS



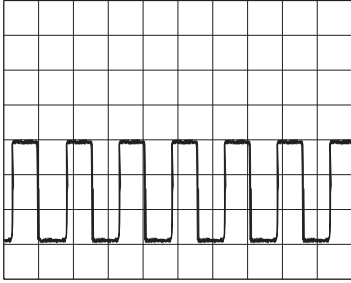
⑨ IC601 Pin ⑮ (BZ_OUT) While calling tone is being sent VOLT/DIV: 1V
TIME/DIV: 1mS



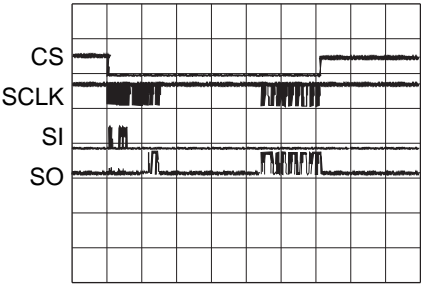
⑩ IC601 Pin ⑳ (4.8MHz) VOLT/DIV: 1V
TIME/DIV: 200nS



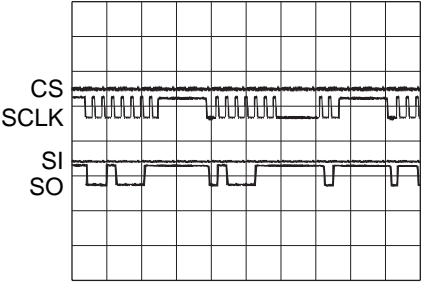
⑪ IC601 Pin ㉑ (32K_OUT) VOLT/DIV: 1V
TIME/DIV: 20μS



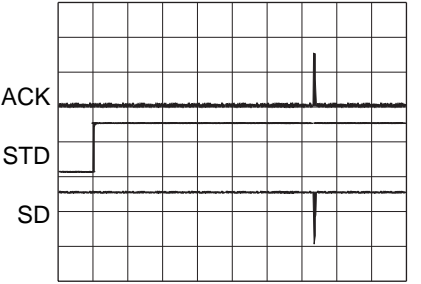
⑫ IC601 Pin ㉓ (FROM_CS) Pin ㉔ (FROM_SCLK) Pin ㉕ (FROM_SI) Pin ㉖ (FROM_SO) VOLT/DIV: 5V
TIME/DIV: 1mS



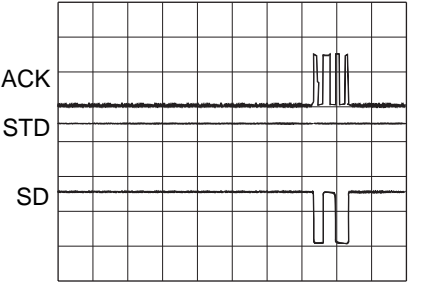
VOLT/DIV: 5V
TIME/DIV: 50μS



⑬ IC601 Pin ㉔ (DTMF_ACK) Pin ㉕ (DTMF_STD) Pin ㉖ (DTMF_SD) VOLT/DIV: 2V
TIME/DIV: 2mS

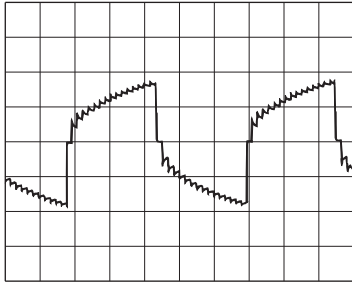


VOLT/DIV: 2V
TIME/DIV: 100μS



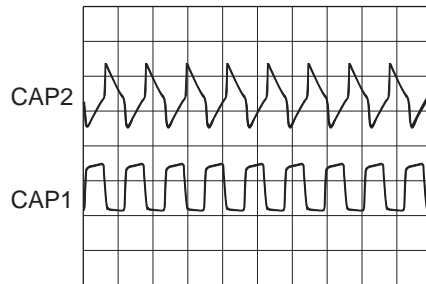
14 IC604 Pin ⑦ (EL2)
Pin ⑧ (EL1)

VOLT/DIV: 40V
TIME/DIV: 500 μ S



15 IC604 Pin ⑬ (CAP1)
Pin ⑭ (CAP2)

VOLT/DIV: 2V
TIME/DIV: 10 μ S



IC DESCRIPTION

IC, M37735MHLOTP

Pin No.	Pin Name	I/O	Description
1	D_RDY	I	For data communication.
2	BB_RDY	I	Signal at this pin is inverted when BBIC enables sending (receiving) or when sending or receiving of 1-byte signal is completed.
3	BB_TRQ	O	Data transfer request output to BBIC.
4	BB_RRQ	I	Sending request signal input from BBIC.
5	CHG_DET	I	Charger detection input.
6	BB_READY	I	“Start completion signal” input of BBIC.
7	CHG_SW	O	Controls current supply from charger. (L: Charging)
8-11	KEY_IN3-KEY_IN0	I	Key input terminals 3 to 0.
12	BB_SLEEP	I	Detects whether BBIC is sleeping.
13	LED_RING	O	“Call reception LED” control. (L: ON).
14	BB_WAKE	O	Start request signal to BBIC.
15	BZ_OUT	O	Buzzer output.
16	LCD-BL	O	LCD backlight and key LED control. (L: ON).
17	BB_CLKON	O	Main clock (4.8 MHz) request signal to BBIC.
18	BB_TCXON	O	
19	SP_GAIN0	O	Speaker volume control.
20	BB_RES	O	BBIC reset signal.
21	MIC_MUTE	O	Microphone mute signal. (H: mute ON).
22	BB_GCT1	O	Sending power control.
23	BB_GCT0	O	
24	BYTE	—	Ground.
25	CNVSS	—	
26	RESET	I	Reset input. (L: reset).
27	4.8MHz	I	4.8 MHz input.
28	XOUT	O	4.8 MHz output.
29	E/RDE	—	Open.
30	VSS	—	Ground.
31	FROM_CS	O	Flash memory chip select signal.
32	FROM_SCLK	O	Clock output for communication to flash memory.
33	FROM_SI	O	Data output to flash memory.
34	FROM_SO	I	Data input from flash memory.
35	FROM_BUSY	I	BUSY signal input of flash memory.
36	FROM_SEL	O	Control switching of flash memory. (L: BBIC, H: MMI).
37	BZ_VOL	O	Buzzer volume control. (L: low, H: high).
38	LCD_RS	O	LCD data/command switch signal.
39	LCD_E	O	Chip enable signal.
40	LCD_RES	O	LCD reset signal. (L: reset).
41	LCD_PWR	O	LCD power control. (H: power ON).
42	LCD_RW	O	LCD read/write switch signal.
43	DTMF_PD	O	DTMF receiver power-down signal. (H: power-down).

Pin No.	Pin Name	I/O	Description
44	DTMF_ACK	O	DTMF receiver clock signal.
45	DTMF_STD	I	DTMF receiver strobe signal.
46	DTMF_SD	I	Data input from DTMF receiver.
47-50	LCD_D7-LCD_D4	I/O	LCD data 7 to 4.
51, 52	PO_7, PO_6	—	Pull down.
53-58	KEY_S5-KEY_S0	O	Key scan output 5 to 0.
59	BB_SI	O	Data output to BBIC.
60	BB_SO	I	Data input from BBIC.
61	BB_CLK	O	Clock output for communication with BBIC.
62	P8_4	I	Pull down.
63	UART_TX	O	External communication data output.
64	UART_RX	I	External communication data input.
65	SP_MUTE	O	Speaker mute control. (H: mute ON).
66	P8-0	—	Pull down.
67	VCC	—	3 V.
68	AVCC	—	
69	VREF	—	
70	AVSS	—	Ground.
71	VSS	—	
72	32K_IN	I	32.768 kHz input from BBIC.
73	32K_OUT	O	32.768 kHz output to BBIC.
74	D_TX	O	For data communication.
75	D_RX	I	
76	MOT_ON	O	Motor control. (H: ON).
77	BB_PWR	O	Power control. (H: ON).
78	SP_GAIN1	O	Speaker volume control.
79	BAT_VOL	I	A-D input for battery voltage detection.
80	32K_OUT	O	32.768 kHz output to BBIC.

IC, RS21501

Pin No.	Pin Name	I/O	Description
1	DVDD	—	Power supply for digital block.
2	DVCC	—	Power supply for analog block.
3-7	D4-D0	I/O	Digital input/output terminals D4 to D0.
8, 9	DRXIF1, DRXIF0	O	Received data output.
10	DCLK/2	O	9.6 MHz output.
11	CMD2	I	Command input 2.
12	DGND	—	Digital ground.
13, 14	CMD1, CMD0	I	Command input 1, 0.
15	T/R	I	Send/reception selection.
16	$\overline{\text{STBY}}$	I	Standby.
17	$\overline{\text{SLEEP}}$	I	Sleep.
18	REF IN	I	TCXO 19.2 MHz input.
19	AFC OUT	—	NC.
20	AGND	—	Analog ground.
21, 22	AVCC	—	Power supply for analog block.
23	AGND	—	Analog ground.
24	AVCC	—	Power supply for analog block.
25	RX2NDP	I	Reception's second IF signal input (+).
26	AGND	—	Analog ground.
27	RX2NDN	I	Reception's second IF signal input (-).
28	LNAB	—	Gain adjustment.
29	LNA	—	
30	RBIAS	I	Bias.
31	VSENSE	I	Voltage detection input.
32	AGND	—	Analog ground.
33	IFRX	O	Reception's second IF signal output. (to 10.75 MHz band-pass filter).
34	AGND	—	Analog ground.
35	RFI/O+	I/O	First IF signal input/output. (+).
36	RFI/O-	I/O	First IF signal input/output. (-).
37	AVCC	—	Power supply for analog block.
38	TXIF_IN	I	Transmitter's second IF signal input.
39	AGND	—	Analog ground.
40	OSC_OUT	—	NC. (No connection).
41	AGND	—	Analog ground.
42	TANK	I	Tank circuit from second station.
43	VCO_IN	I	Input from second station.
44	PD_OUT	O	Phase comparator output from 2nd station.
45	AVCC	—	Power supply for analog block.
46	AGND	—	Analog ground.
47	AVCC	—	Power supply for analog block.
48	TXIF_OUT	O	Transmitter's second IF signal output. (to 10.75 MHz band pass filter).

IC, RS23603

Pin No.	Pin Name	I/O	Description
1	RX_IN	I	1.9 GHz reception signal input.
2	GND	—	Ground.
3, 4	NC	—	NC.
5	GND	—	Ground.
6, 7	NC	—	NC.
8	GCT1	I	GCT1 send output selection. (Fixed to the maximum point.).
9, 10	NC	—	NC.
11	GCT0	I	GCT0 send output selection. (Fixed to the maximum point.).
12	LO_IN	I	Input from first station.
13	GND	—	Ground.
14	IX_IF_IN	I	First IF signal (after amplification) input.
15	GND	—	Ground.
16	VCOM	—	Power supply for built-in buffer amplifier.
17	TX_IF_OUT	O	First IF signal (before amplification) output.
18	IFI/O	I/O	First IF signal input/output.
19	ATT_BY	—	Attenuator bypass (Not used.)
20	GND	—	Ground.
21	RF_LVL_0 (GCR1)	I	GCR1 reception attenuator selection.
22	NC	—	NC.
23	RXMIX+	I	Reception block's down-converter power supply.
24	RXMIX-	I	
25	VRX	—	Power supply for reception block.
26	RFFILB	I/O	Input/output for 1.9GHz band-pass filter.
27	GND	—	Ground.
28	RF_LVL_1 (GCR2)	I	GCR0 reception attenuator selection.
29	VTX	—	Power supply for transmission block.
30	RFFILA	I/O	Input/output for 1.9GHz band-pass filter.
31	GND	—	Ground.
32	TX OUT	O	1.9GHz send signal output.

Note) First IF signal 248.45 MHz
 Second IF signal 10.75 MHz
 Signal from first station 1.65GHz band
 Signal from second station 259.2 MHz

IC, LC73884M

Pin No.	Pin Name	I/O	Description
1	INPUT	I	Input coupling capacitor is necessary. This pin is internally biased by VDD/2.
2	$\overline{\text{PD}}$	I	The machine enters the power-down mode by setting this pin to “L”. This pin must be kept to “L” for 1μs or longer when the main power is turned on.
3	CLKSEL	I	Input clock frequency of either 9.6 MHz or 4.8 MHz can be selected by the setup of this pin. L: 9.6 MHz, H: 4.8 MHz.
4	OSCI	I	External 9.6 MHz or 4.8 MHz clock signal is input to this pin.
5	VSS	—	Power supply terminal. Normally 0 V.
6	SD	O	The decoded DTMF signal is outputted from this pin in the 4-bit serial data format with LSB first.
7	ACK	I	This pin is used to shift-out data to the SD pin. This pin is necessary for the 4 pulses to shift-out the DTFM letters consisting of 4 bits.
8	STD	O	This pin indicates that the DTMF signal is existing when this pin is “H”. This pin is delayed for the input signal when compared with the EST pin, but is immune to the burst wave.
9	EST	O	This pin indicates that the DTMF signal is existing when this pin is “H”. This pin or STD is monitored by external device that provides the 4 ACK pulses after elapse of appropriate time in order to access the data. Data is latched at the riseup of this pin.
10	VDD	—	Power supply terminal. Normally 2.85 to 5.5 V.

IC Functional Description (RS21101)

1. Audio Coding DSP

The DSP block of BBIC performs the low power optimum ADPCM coding in conformity with the G.726 specifications. It has the following features due to the coded software that is stored in built-in ROM inside DSP.

- It completely conforms to the G.726 ADPCM encoding and decoding. The 3-channel structure is also possible with the CS configuration. Single channel is possible with the PS configuration.
- Built-in audio recording function that can record and playback audio data to and from external flash memory at 16/24/32 kbps.
- Tone generator function including sound for DTMF and during the period of call execution.
- Modem control algorithm
- PHS layer-1 and 2 processing function
- 12-bit I/O port for external device connection and control function
- Interface function with external 2-channel PCM codec for base station
- 32 kbps external interface function for data transfer (3 channels with the CS configuration and single channel with the PS configuration)
- Power saving sleep function
- Signal output and quality monitoring function
- Digital side tone generation and programming of the same level

2. ARM7TDM1 16/32-bit RISC CPU Core

The built-in microprocessor inside BBIC is ARM7TDDM1 that is used in the advanced RISC machines. This CPU core realizes the high performance, low power consumption and highly efficient coding.

It operates on 4.8 MHz with the PS configuration and on 9.6 MHz with the CS configuration. In addition to the CPU core, BBIC controls the following microprocessor peripheral devices.

- 64 kbyte built-in ROM
- 2 kbyte built-in RAM
- 12-bit I/O for external device connection
- 2-channel serial synchronized interface function for direct connection with other processors such as MMI CPU.
- Power saving sleep function
- External ROM/RAM expansion up to maximum 256 kbytes with programmable wait state function
- Chip internal hardware break point, debug and in-circuit emulation via serial JTAG interface
- Complete support of ARM development environment with the C compiler, assembly, simulator and emulator
- Supporting the PHS layer-3 protocol with chip internal memory

3. Audio Bandwidth Codec

The built-in codec inside the chip contains the A/D and D/A functions of the required audio bandwidth. Therefore it can directly drive electret condenser microphone and piezo-electric or moving coil type headphones without any external active element. This codec has the following features.

- Low power consumption
- 8 kHz sampling rate, 14-bit linear PCM coding
- The transmission frequency, reception frequency and their gain characteristics conform to the G.711 and ETS300-175 part-8.
- Direct drive of earphone speaker
- Direct drive of external speaker and buzzer
- Gain setting is possible. (For transmission and reception)

4. RF Interface

The RF interface supports the Lockwell RF chipset. The RF interface has the following features.

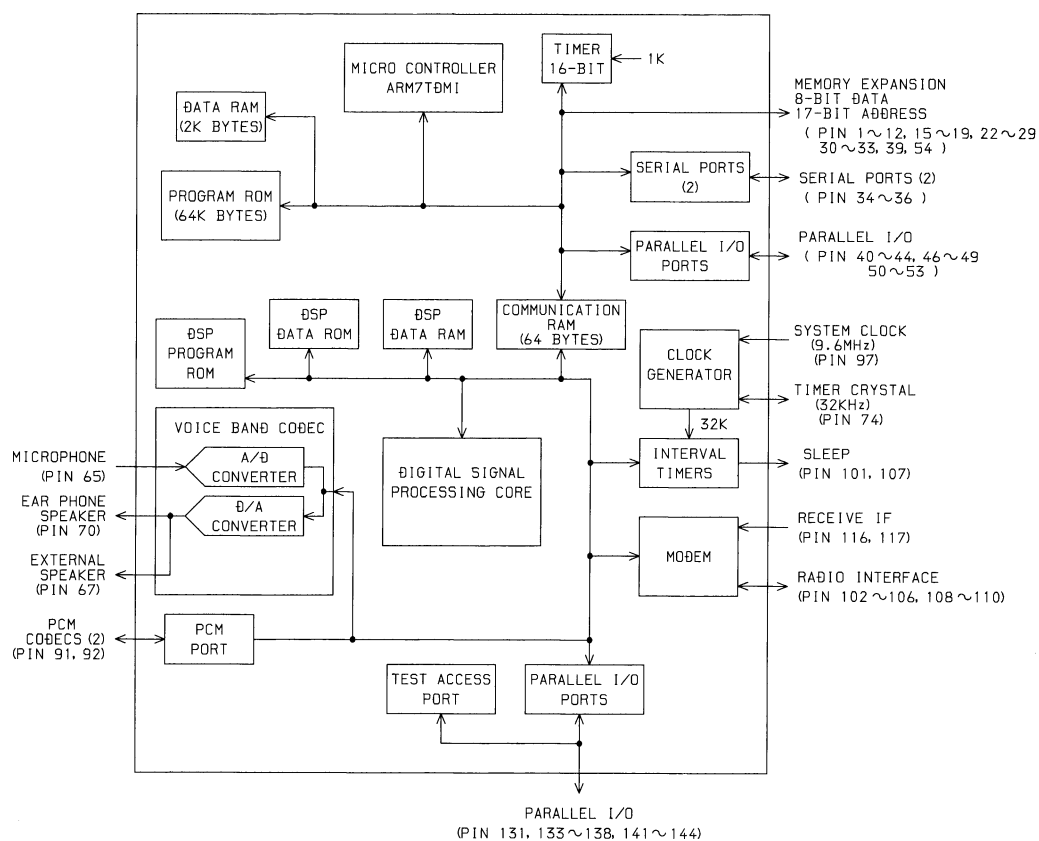
- Having the power control line to the PA block and the TX block.
- Having the diversity control line that is used in the CS configuration.
- Synthesizer programming by the software structure is possible.
- Synthesizer lost-lock detection function
- Reception signal power indication (RSSI) measurement can be controlled.

5. Modem

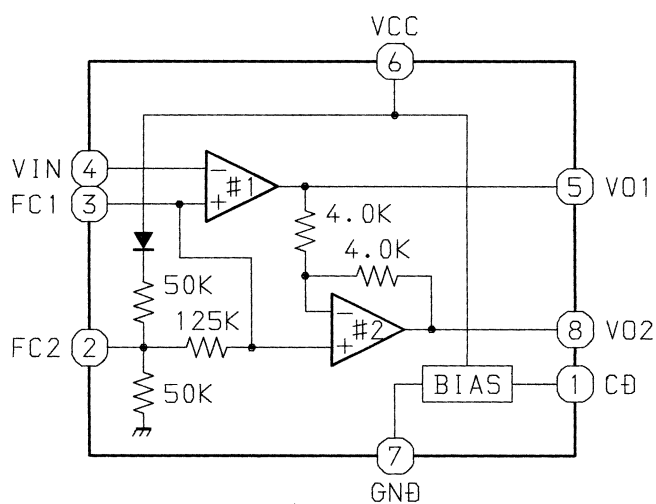
Modem modulates the $\pi/4$ -phase shift DQPSK signal and demodulates the IF reception signal supplied from the RF block. The modem block has the following features.

- Modulation of transmission data stream up to a maximum of 4 slots with the TDMA format channel on the common air interface. Burst rate of data stream is 384 kbps and its modulation system is $\pi/4$ -phase shift DQPSK.
- Demodulation of the reception slot data back to the 384 kbps data stream. Modem detects the reception signal at each data frame and follows them.
- Formatting and unformatting of transmission data and reception data supplied from common air interface. Formatting contains unique word detection CRC generation, CRC detection, multiplication and multiple-separation and encryption.

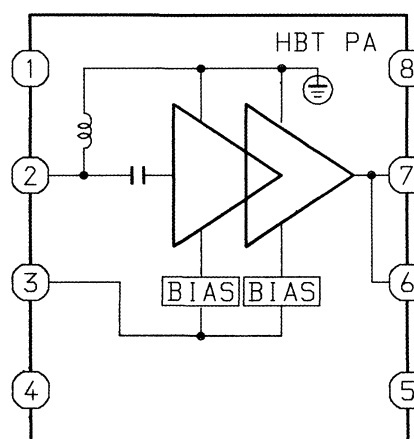
IC, RS21101B



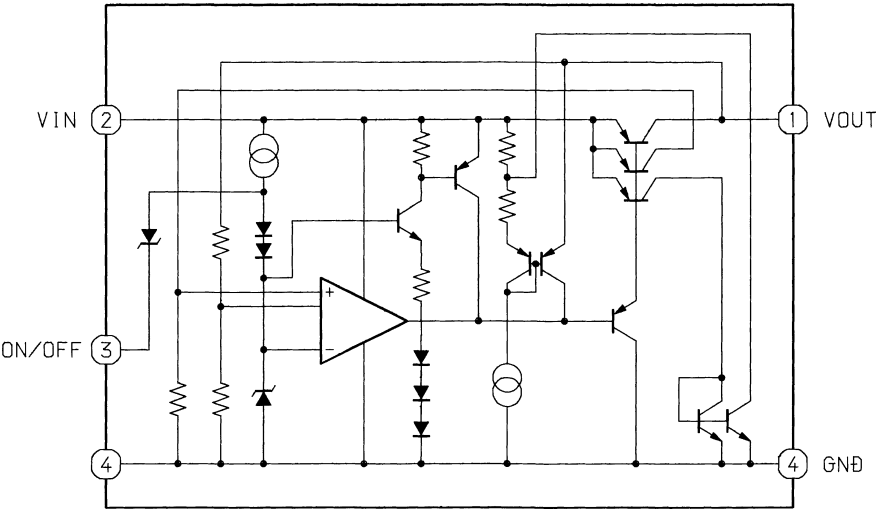
IC, MC34119



IC, PC21301



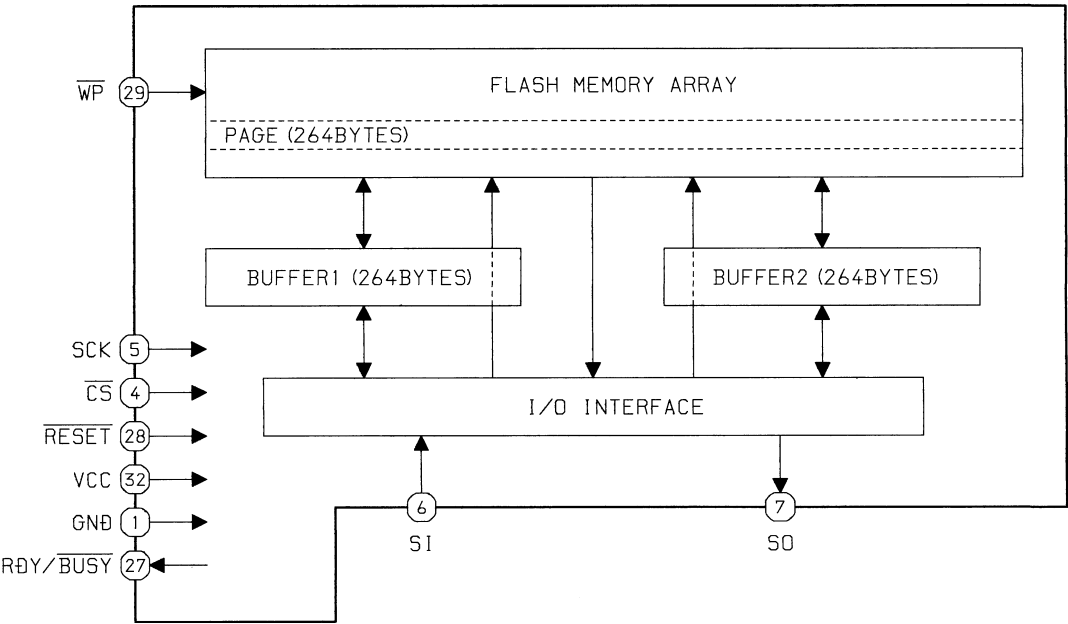
IC, MM1165



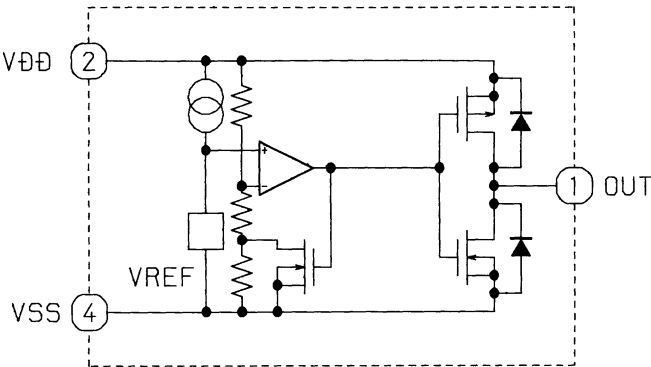
Not used.
Pin No.

2, 3
8~26
30, 31

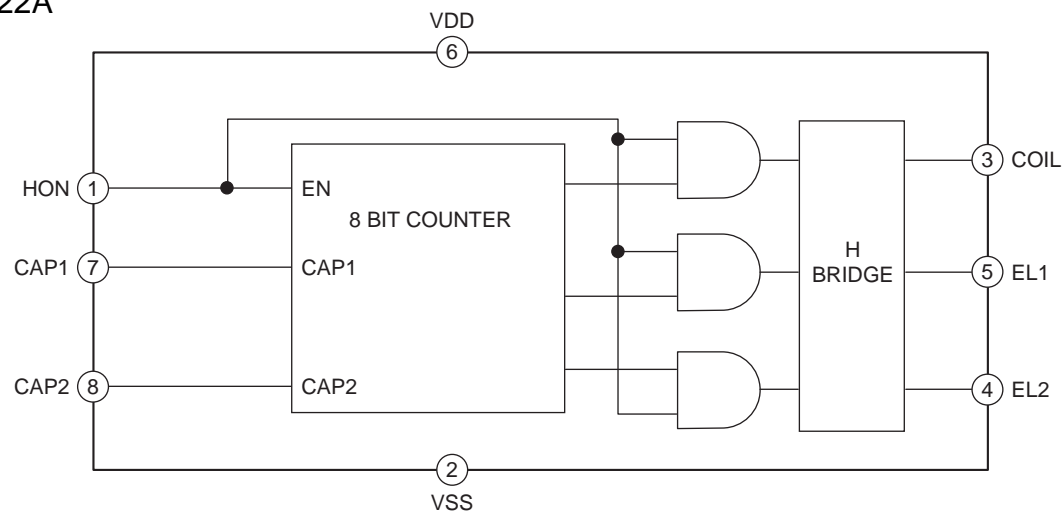
IC, AT45DB021



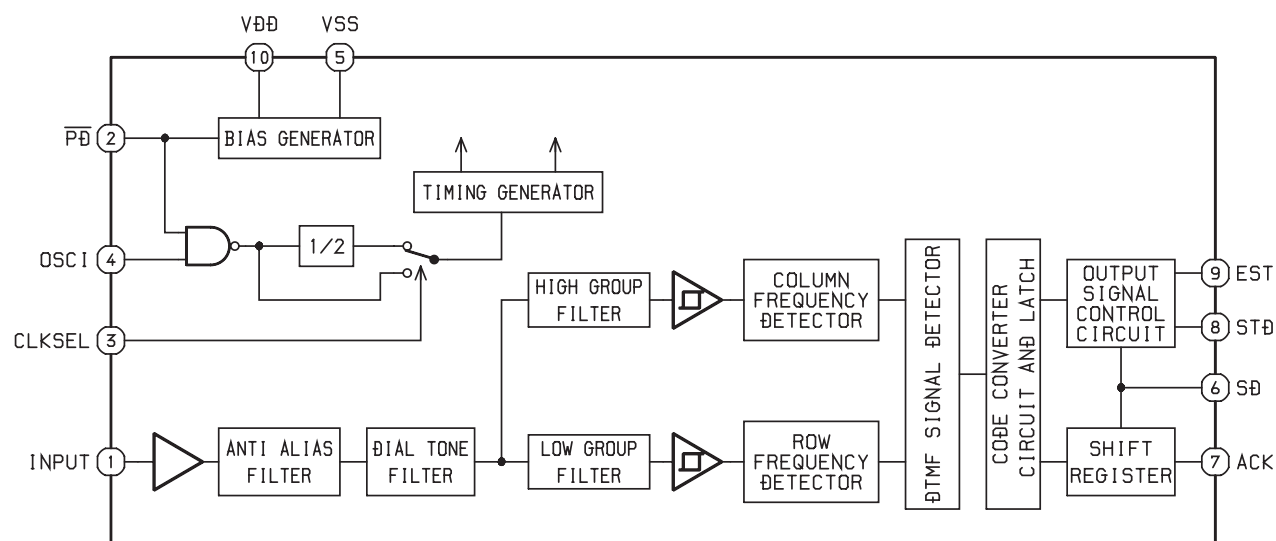
IC, S80827ALNP



IC, SP4422A

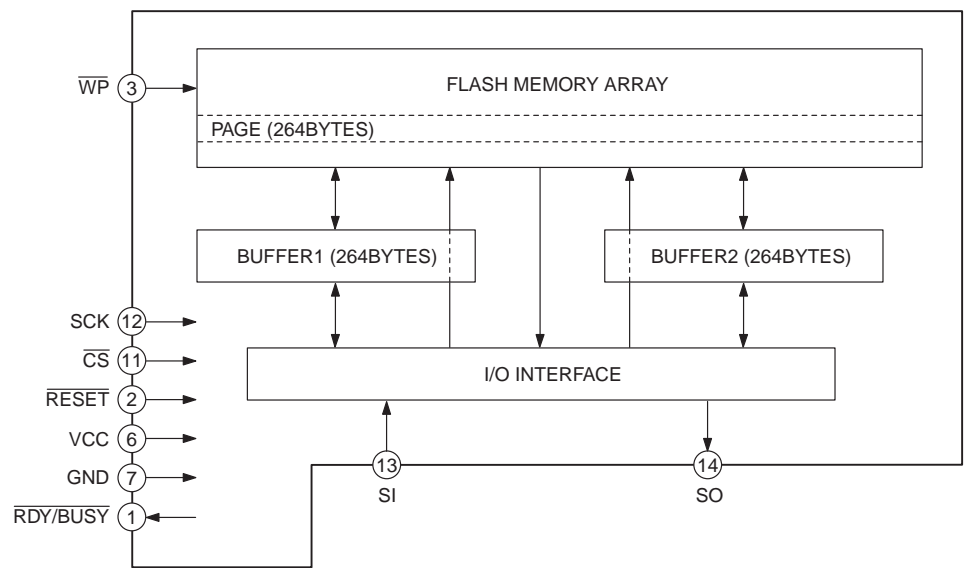


IC, LC73884M

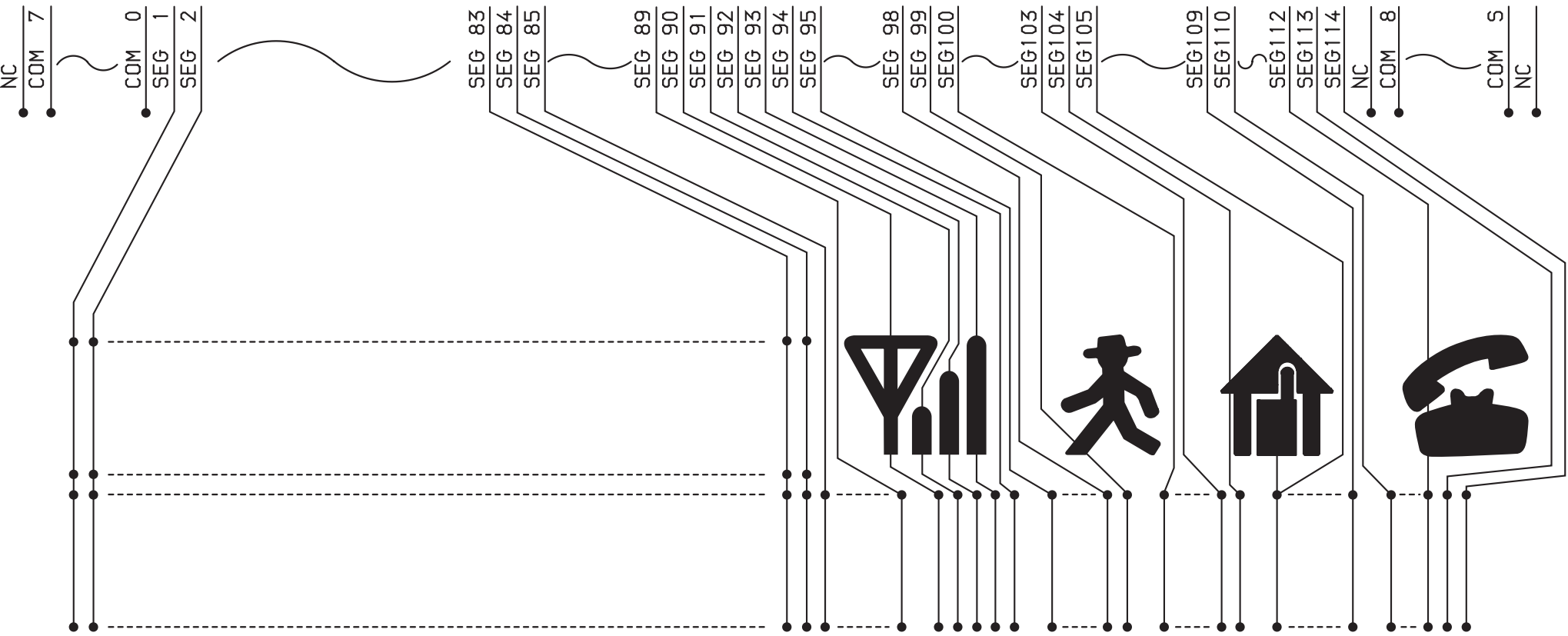


Not used. Pin No.
2, 3 8~26 30, 31

IC, AT45DB041

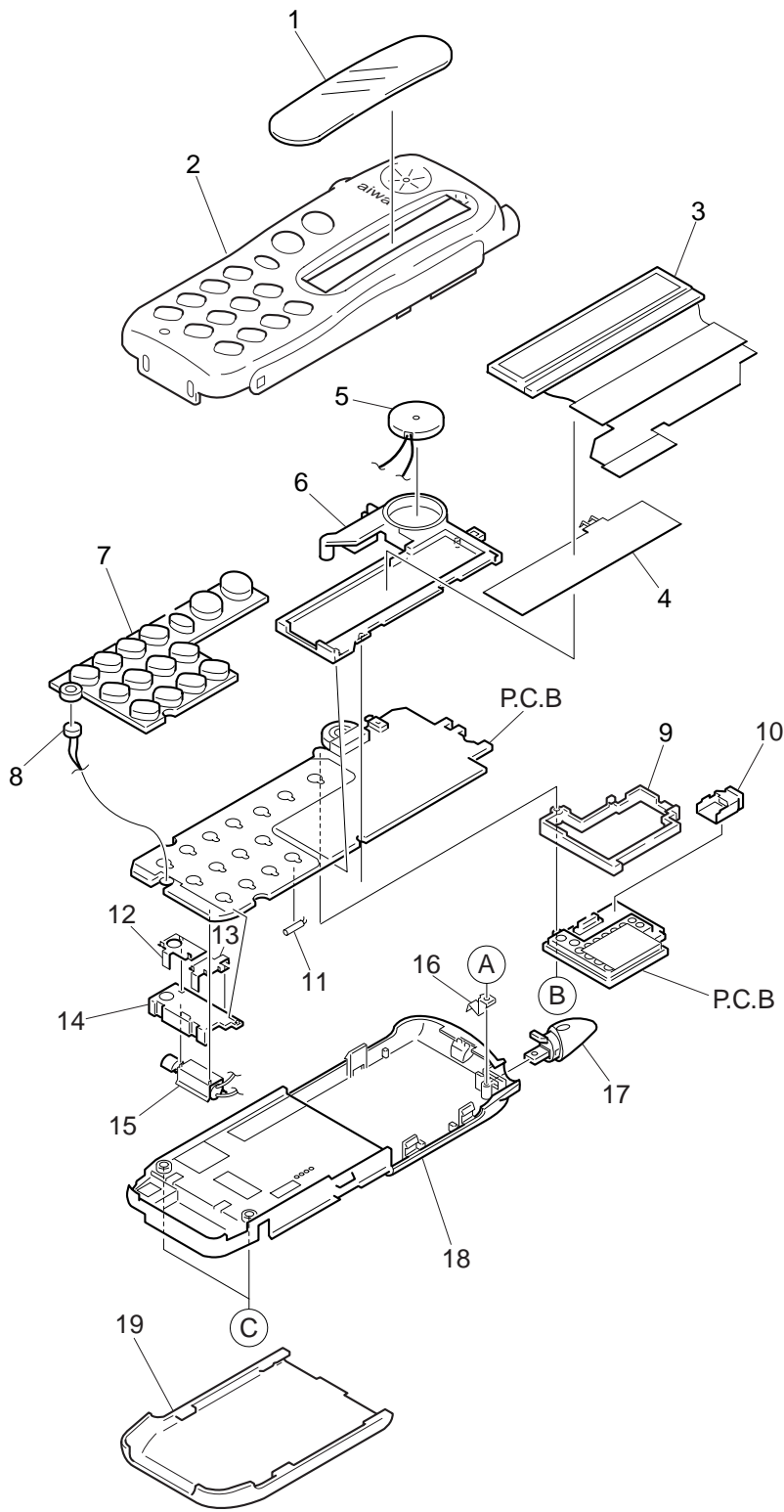


SEGMENT



PIN ASSIGNMENT

NO.	SYMBOL
1	ERES
2	A0
3	W/R
4	E
5	VDD
6	D0
7	D1
8	D2
9	D3
10	D4
11	D5
12	D6
13	D7
14	VSS
15	VOUT
16	CAP3-
17	CAP1+
18	CAP1-+
19	CAP2+
20	CAP2-
21	V5
22	VR
23	VDD
24	V1
25	V2
26	V3
27	V4
28	V5



MECHANICAL PARTS LIST 1/1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION	REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	88-PD3-004-110		WINDOW,LCD	17	88-PD3-630-010		ANT,1.9 GHELICAL 8PD-3
2	88-PD3-065-010		CABI,FR ASSY TAI G<G>	18	88-PD3-062-010		CABI,REAR TAI G<G>
2	88-PD3-045-010		CABI,FR ASSY TAI L<L>	18	88-PD3-042-010		CABI,REAR TAI L<L>
2	88-PD3-075-010		CABI,FR ASSY TAI P<P>	18	88-PD3-072-010		CABI,REAR TAI P<P>
2	88-PD3-037-010		CABI,FR ASSY TAI S<S>	18	88-PD3-032-010		CABI,REAR TAI S<S>
2	88-PD3-055-010		CABI,FR ASSY TAI Y<N,G>	18	88-PD3-052-010		CABI,REAR TAI Y<N>
3	88-PD3-603-010		LCD,DMF-51055NF-S TH	19	88-PD3-003-010		LID,BAT<S>
4	88-PD3-610-110		EL,8PD-3	19	88-PD3-063-010		LID,BAT TAI G<G>
5	87-A90-929-010		SPKR,15 HAT-XW-15C-01	19	88-PD3-073-010		LID,BAT TAI P<P>
6	88-PD3-202-110		HLDR,LCD	19	88-PD3-053-010		LID,BAT TAI Y<N>
7	88-PD3-030-010		KEY,FR TAI CYD	19	88-PD3-023-010		LID,BATT BLU<L>
8	87-A90-969-010		MIC,ECM KUF3323-015130 DIA6	A	87-067-405-010		SCREW,VP+1.4-6HL
9	88-PD3-201-010		HLDR,RF	B	88-PD3-221-010		S-SCREW,VT2 1.7-5-3.5 HL
10	88-PD3-222-010		HLDR,BZ	C	88-PD3-220-010		S-SCREW,VT2 1.7-5 CR HL 5WING
11	87-A70-077-010		VIB,XTAL 32KHZ DT-26 SRPM				
12	88-PD3-207-010		PLATE,CONT CHG M				
13	88-PD3-206-010		PLATE,CONT CHG P				
14	88-PD3-203-010		HLDR,CONT				
15	88-PD3-605-010		MOT,FM-112K1-B2H14				
16	88-PD3-208-210		TERMINAL,ANT				

COLOR NAME TABLE

Basic color symbol	Color	Basic color symbol	Color	Basic color symbol	Color
B	Black	C	Cream	D	Orange
G	Green	H	Gray	L	Blue
LT	Transparent Blue	N	Gold	P	Pink
R	Red	S	Silver	ST	Titan Silver
T	Brown	V	Violet	W	White
WT	Transparent White	Y	Yellow	YT	Transparent Yellow
LM	Metallic Blue	LL	Light Blue	GT	Transparent Green
LD	Dark Blue	DT	Transparent Orange		



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