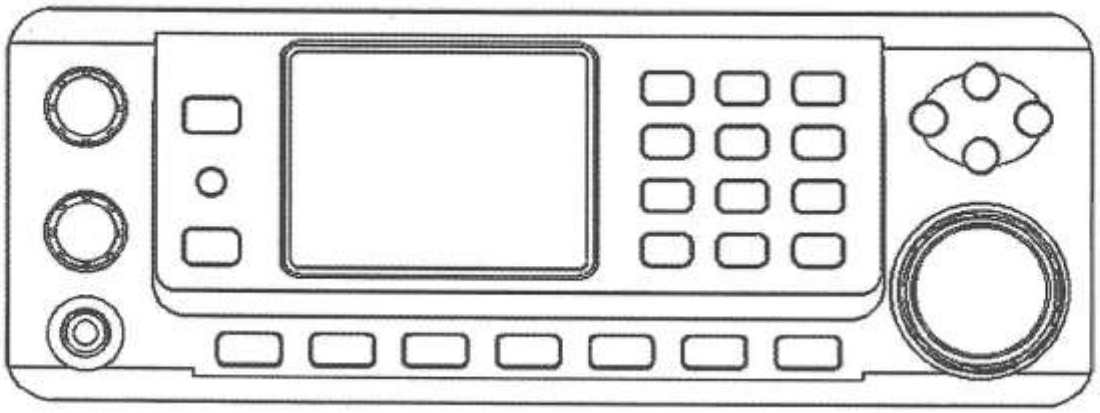
AOR

WIDE RANGE RECEIVER

AR8600 MARK2

Service Manual



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Tokyo 111-0055 Japan

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CIRCUIT DESCRIPTION

ALIGNMENT

TYPICAL VOLTAGES

PARTS LIST & LAYOUT

SCHEMATIC DIAGRAMS

Circuit Description

1. Block Diagram

Refer to Page 34. The AR8600MARK2 a wide-range receiver operating over a continuous range of 100kHz - 3000MHz. The receiver consists of a triple conversion superheterodyne circuit design.

2. Frontend Circuit

The incoming signal is fed to the antenna BPF (Band Pass Filter) according to the frequency. The BPF is consisted from BPF1~BPF11. The output signal coming from the BPF is led to either the RF pre amplifier or the diode balanced mixer (DBM) depending the receive frequency, and then goes to the Mixer Circuit.

BPF	Frequency [MHz]
BPF 1	0.1 - 1.6
BPF 2	1.6 - 18.0
BPF 3	18.0 - 30.0
BPF 4	30.0 - 75.0
BPF 5	75.0 - 118.0
BPF 6	118.0 - 174.0
BPF 7	174.0 - 300.0
BPF 8	300.0 - 470.0
BPF 9	470.0 - 820.0
BPF 10	820.0 - 2040.0
BPF 11	2040.0 - 3000

3. Mixer Circuit

3-1. Input Frequency: 0.1 – 30MHz

The incoming signal between 0.1 ~ 30 MHz will be led to the Second Mixer Circuit (DBM2). In the Second Mixer circuit, the local oscillator signal (45.05 MHz higher than the input signal) will be mixed to obtain the 45.05 MHz of the Second IF frequency.

3-2. Input Frequency: 30 – 540MHz

The incoming signal between 30 ~ 540 MHz will be led to the First Mixer Circuit consisted (DBM1). In the First Mixer circuit, the local oscillator signal (754.85 MHz higher than the input signal) will be mixed to obtain the 754.85 MHz of the First IF frequency.

3-3. Input Frequency: 540 – 1040MHz

The incoming signal between 540 ~ 1,040 MHz will be led to the First Mixer Circuit (DBM1). In the First Mixer circuit, the local oscillator signal (243.85 MHz higher than the input signal) will be mixed to obtain the 243.85 MHz of the First IF frequency.

3-4. Input Frequency: 1040 – 1540MHz

The incoming signal between 1,040 ~ 1,540 MHz will be led to the First Mixer Circuit (DBM1). In the First Mixer circuit, the local oscillator signal (243.85 MHz lower than the input signal) will be mixed to obtain the 243.85 MHz of the First IF frequency.

3-5. Input Frequency: 1540 – 2040MHz

The incoming signal between 1,540 ~ 2,040 MHz will be led to the First Mixer Circuit (DBM1). In the First Mixer circuit, the local oscillator signal (754.85 MHz lower than the input signal) will be mixed to obtain the 754.85 MHz of the First IF frequency.

3-6. Input Frequency: 2040 – 3000MHz

The incoming signal between 2,040 ~ 3,000 MHz will be led to the First Mixer IC (IC16). The local oscillator signal for the incoming signal between 2,040 ~ 2,500 MHz will be between 1796.15 ~ 2256.15 MHz which is multiplied by two times from the VCO. The local oscillator signal will be mixed with the incoming signal to obtain the 243.85MHz of the First IF Frequency.

The local oscillator signal for the incoming signal between 2,500 ~ 3,000 MHz will be between 1745.15 ~ 2245.15 MHz which is multiplied by two times from the VCO. The local oscillator signal will be mixed with the incoming signal to obtain the 754.85MHz of the First IF Frequency.

The First IF signal of 754.85MHz will be led to the SAW filter (BPF) consisted of the F1 and F2, and will be amplified by the transistor (TR14). Then the signal is fed to the Second Mixer.

The First IF signal of 243.85 MHz will be led to the RF transformers (L61, L63), and will be amplified by the transistor (TR15). Then the signal is fed to the Second Mixer.

The Second Mixer is DMB2. In the Second Mixer circuit, the local oscillator signal (709.8 MHz higher, or 198.8 MHz lower than the input signal) will be mixed to obtain the 45.05 MHz of the Second IF frequency.

4. VCO & PLL

A 10 KHz of the reference frequency signal has been obtained from the internal TCXO (Temperature Compensated Xtal Oscillator) unit of 14.400 MHz, and is supplied to the PLL IC chip MB15F04 (IC33). The other reference frequencies such as 50 Hz, 100 Hz, 1 KHz, 5 KHz, 6.25 KHz, 9 KHz have been obtained by the crystal oscillator X1 (44.595 MHz) by clarifying the frequency. There are three (3) VCO's (Voltage Controlled Oscillator) in the AR8600MARK2. The oscillator frequencies are as follows.

Rcv. Freq.	VCO Freq.	IF Freq.	VCO
0.1 - 30 MHz	45.15 - 75.05 MHz	45.05 MHz	#3
30 - 2040 MHz	783.850 - 1295.150 MHz	754.850MHz 243.850MHz	#1
2040 - 3000MHz	1745.150 - 2256.15 MHz	754.85MHz 243.850MHz	#1
30 - 540 MHz	709.800 MHz	45.05 MHz	#2
540 - 1040 MHz	198.800 MHz	45.05 MHz	#2
1540 - 2040 MHz	709.800 MHz	45.05 MHz	#2
2040 - 2500 MHz	198.800 MHz	45.05 MHz	#2
2500 - 3000 MHz	709.800 MHz	45.05 MHz	#2

EXAMPLE

Receive Frequency : 154.500MHz
VCO #2 Frequency : 154.500 + 754.850 = 909.350MHz
Second IF frequency : 45.05MHz

5. IF & Detector

5-1. WFM mode (Wide FM)

When in the WFM receive mode, the 45.05MHz of the IF signal is amplified by the IF AMP (CXA1611N, IC40). The IC40 has a built-in mixer circuit, therefore, the IF signal will be mixed with the 34.35 MHz of the local oscillator signal generated by the X2 and TR38 to convert to the 10.7 MHz of the Third IF frequency. The output IF signal is then fed to the 10.7 MHz of BPF (Band Pass Filters, F9 and F10), and will be detected to an audio signal.

5-2. FM signal, AM mode

All incoming IF signals other than the WFM mode are fed to the IF IC chip (TA31137, IC39) through the crystal filters (F3, F4) with 30 KHz of bandwidth. Then the input signal will be mixed with the 44.595MHz of the local oscillator signal to convert to the 455KHz of the IF frequency. After passing through the IF filter (F5, F6, or F7 depending the receive mode), all NFM (Narrow FM) and SFM (Super Narrow FM) signals will be detected by the IC40. When in the WAM (Wide AM), AM, NAM (Narrow AM) mode, the signal is detected by the IC39. When in the USB (Upper Side Band)/LSB (Lower Side Band)/CW mode, the signals will be amplified by the TR43 and TR44, and then detected with the BFO (Beat Frequency Oscillator) circuit consisted of the IC49 and IC50.

The frequency of the local oscillator (X1, 44.595 MHz) is variable by an external DC voltage to the D49. The actual oscillation frequency is between 44.595 ~ 44.605 MHz.

EXAMPLE

Receive Frequency	:	154.495 MHz
VCO #1 Frequency	:	154.500+754.850 = 909.350 MHz
VCO #2 Frequency	:	709.800 MHz
Second IF Frequency	:	45.055 MHz

To get a 455 KHz of the Third IF frequency, the local oscillator frequency will be 45.055 - 0.455 = 44.600 MHz

6. Audio Circuit

The detected NFM/SFM signals are fed to the Analog Switch (IC45) through a De-Emphasis circuit (R206, C315).

The WAM/AM/NAM/WFM are also led to the IC45 through the IC40.

The USB/LSB/CW are led to the IC45 through the TR45.

The output signal from the Analog Switch will go through the IC47, and then is led to the AF PA (IC53) to drive a speaker.

ALIGNMENT

1. TCXO Adjustment

Set a frequency to "80.900"MHz, mode NFM.
Connect a frequency counter to "FREQ", and adjust VR1 to get the following frequency:

80.900 + 754.850 = 835.750 MHz ± 100 Hz

2. Second VCO Adjustment

It is not necessary to align a new receiver. Each receiver is carefully aligned and checked by our technicians before it is forwarded from the factory and it is covered with a metal shield. However, if it comes necessary to align Second VCO, proceed as follows:

2-1. 709.800MHz VCO

Set a frequency to "80.900"MHz, mode NFM. Connect a DC voltage meter to "2ndVCO" and adjust VC6(trimmer) to get between 1 – 2V DC.

2-2. 198.800MHz VCO

Set a frequency to "600.0"MHz, mode NFM. Connect a DC voltage meter to "2ndVCO and adjust VC7 to get between 1 – 2V DC.

3. IF 455kHz Adjustment

Connect a frequency counter to "455kHz", SG(Signal Generator) to J13.

3-1.
Set a frequency to "5.000"MHz NFM. Set SG to 45.050MHz no modulation –30dBm output level.

Adjust VC5 to get 455.0kHz +/- 50Hz

3-2.

Set the receiver to a receive frequency of '5.001' MHz, with receive mode of NFM. Set the SG to '45.059'MHz with no modulation, -30dBm output level.

Adjust VR2 to get 455.0kHz +/- 50Hz

3-3.

Set the receiver to a receive frequency of '4.999' MHz, with receive mode of NFM. Set the SG to '45.051'MHz with no modulation, -30dBm output level.

Confirm frequency is 455.0kHz +/- 100Hz

4. BFO Adjustment

Connect a frequency counter to "BFO".

4-1. Set the receiver to a receive frequency of '5.000' MHz, with receive mode of LSB. Adjust VC1 and VC2 to get:

453.5kHz ± 50 Hz.

4-2. Set the receiver to a receive frequency of '5.000' MHz, with receive mode of USB. Adjust VC3 and VC4 to get:

456.5 kHz ± 50 Hz

5. WFM Adjustment

Connect a SG to the antenna connector and set to '80.900'MHz, +/-30kHz, -110dBm output level.

Adjust L88 and L94 to get maximum sensitivity for 12dB SINAD

6. AGC (Automatic Gain Control) Adjustment

Connect a SG to the antenna connector. Set the SG to '80.900'MHz with no modulation, -90dBm output level. Set the receiver to same frequency, NFM. Connect a voltage meter to "AGC".

Adjust VR3 for 2.0V

7. S-meter Adjustment

Connect a SG to the antenna connector. Set the SG to '80.900'MHz with no modulation, -115dBm output level. Set the receiver to same frequency, NFM.

Adjust VR4 so that one S-meter segment is displayed on LCD

Typical DC Voltages 1/2

IC46
uPC358G2

(NFM / No Signal)

Pin No.	DC Volt(V)
1	3.0
2	0.5
3	0.5
4	0
5	3.2
6	3.2
7	3.2
8	5.0

IC39
TA31137FN

(NFM / No Signal)

Pin No.	DC Volt(V)
1	4.6
2	4.0
3	4.7
4	3.5
5	4.7
6	4.3
7	4.3
8	3.7
9	4.7
10	4.4
11	4.4
12	0
13	3.9
14	4.7
15	1.2
16	0
17	0.6
18	0.6
19	0
20	0
21	0.5
22	0.5
23	0
24	0.8

IC40
CXA1611N

(WFM / No Signal)

Pin No.	DC Volt(V)
1	0
2	3.2
3	1.2
4	0
5	1.2
6	1.2
7	1.0
8	0
9	0
10	0.2
11	0.0
12	1.0
13	1.3
14	0
15	1.3
16	0
17	0
18	0
19	0.9
20	1.3
21	1.1
22	3.6
23	4.7
24	4.7

IC57
NJM2904M

(NFM / No Signal)

Pin No.	DC Volt(V)
1	25.1
2	0
3	26.3
4	0
5	0.8
6	0.8
7	4.7
8	26.4

IC47
NJM2904M

(NFM / No Signal)

Pin No.	DC Volt(V)
1	2.4
2	2.4
3	2.4
4	0
5	0.3
6	0.3
7	0
8	4.9

IC45
BU4066

(NFM / No Signal)

Pin No.	DC Volt(V)
1	1.2
2	1.2
3	1.2
4	0
5	0
6	0
7	0
8	0.8
9	1.2
10	0.8
11	0.2
12	0
13	5.0
14	5.0

IC34
TK11233

Pin No.	DC Volt(V)
1	4.5
2	0
3	1.1
4	3.2
5	0
6	5.0

Typical DC Voltages 2/2

IC33
MB15F04

(80.9MHz NFM / No Signal)

Pin No.	DC Volt(V)
1	0
2	1.1
3	0
4	2.2
5	3.2
6	2.2
7	0
8	2.6
9	1.0
10	0
11	0
12	1
13	2.6
14	3.2
15	2.2
16	3
17	1.6
18	0
19	0
20	0

IC44
NJM1496

LSB / No Signal)

Pin No.	DC Volt(V)
1	1.4
2	0.7
3	0.7
4	1.4
5	0.6
6	4.4
7	0
8	2.9
9	0
10	2.9
11	0
12	4.4
13	0
14	0

IC58
MAX3221

Pin No.	DC Volt(V)
1	0
2	5.0
3	5.0
4	5.0
5	5.0
6	0
7	0
8	0
9	5.0
10	0
11	4.5
12	0
13	0
14	0
15	5.0
16	5.0

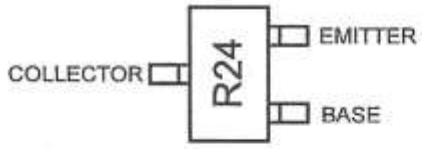
IC53
LA4525

Pin No.	DC Volt(V)
1	4.1
2	9.0
3	3.6
4	0
5	0
6	1.4
7	1.4
8	0

IC52
NJM2904M

Pin No.	DC Volt(V)
1	2.4
2	2.4
3	2.4
4	0
5	5.0
6	0
7	3.7
8	5.0

2SC3356 (R24)
2SC3123 (HE)
2SC4116 (LG)
2SC4915 (QY)
2SA1162 (ZY)
DTB123YK (F52)
RN1408 (XI)



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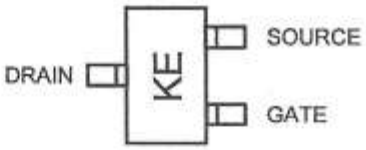

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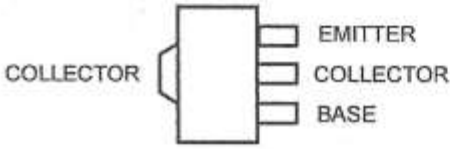

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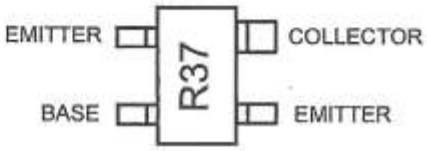

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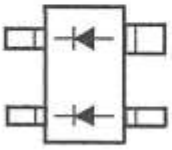

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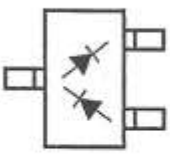

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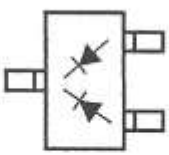

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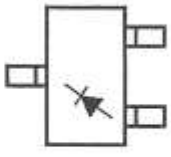

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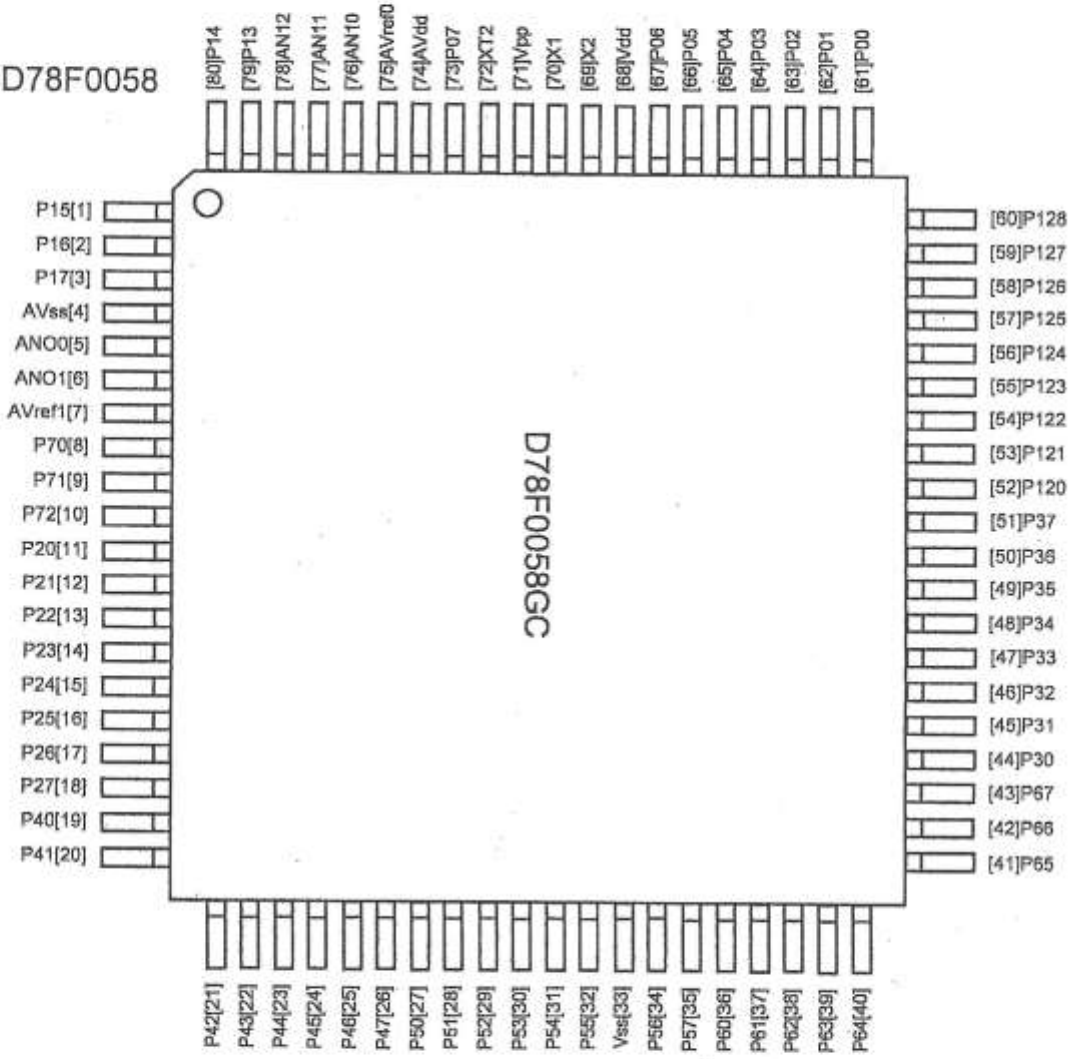

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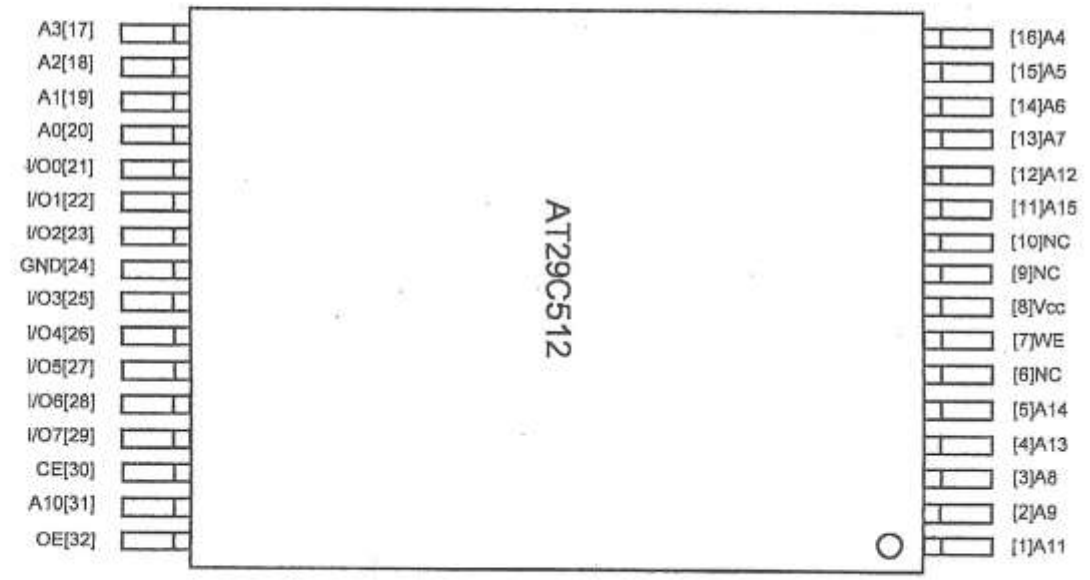

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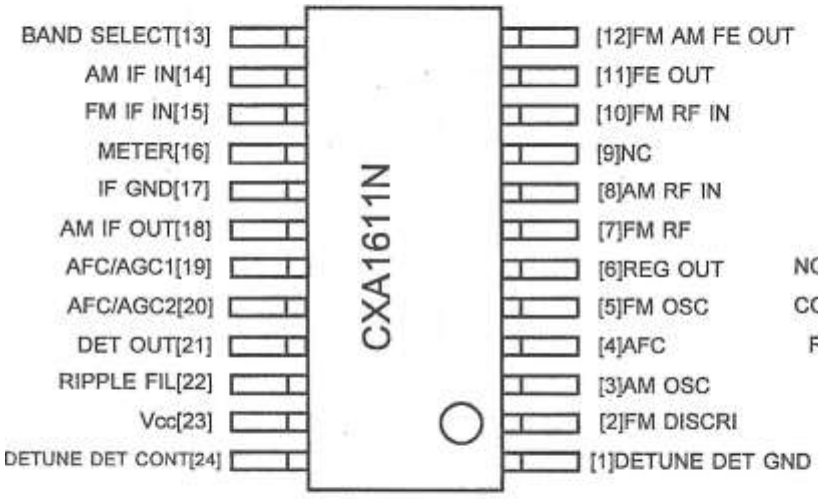

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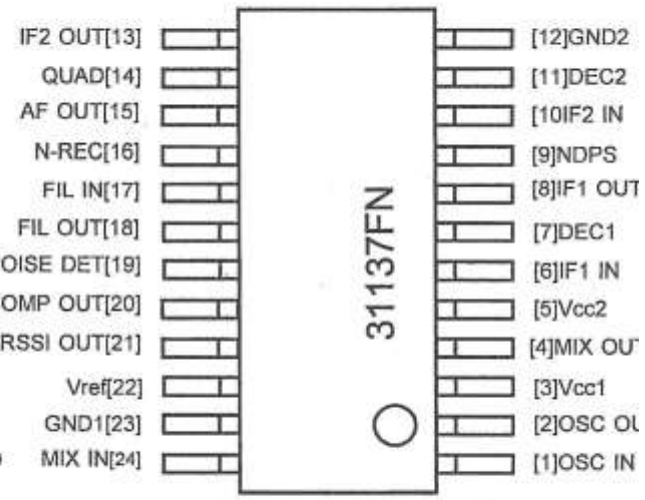

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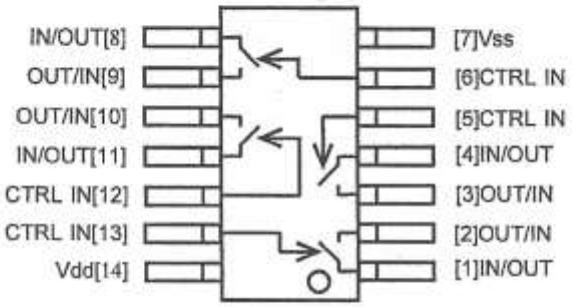

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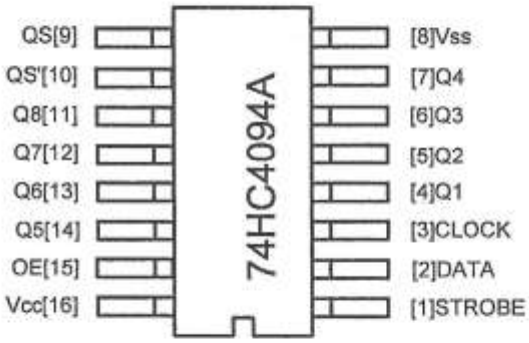

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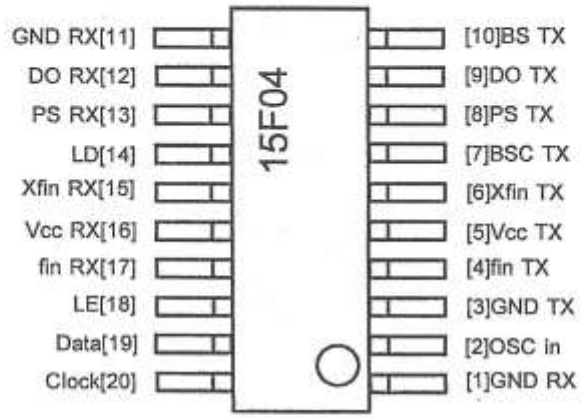

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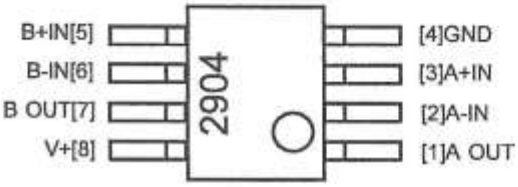

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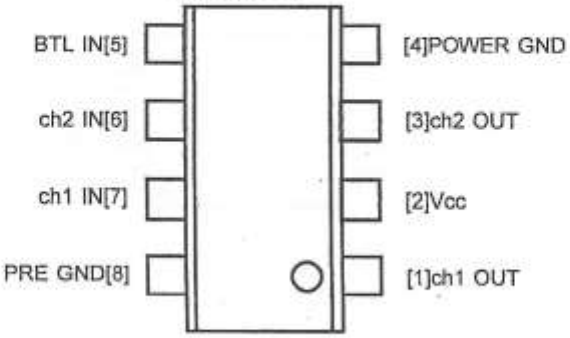

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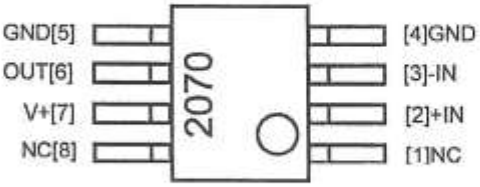

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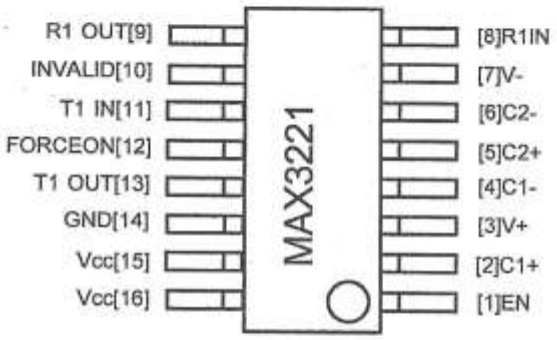

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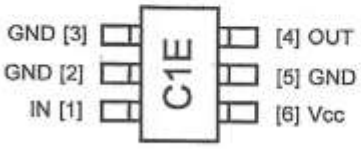

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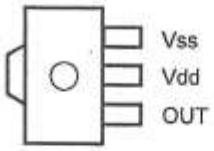

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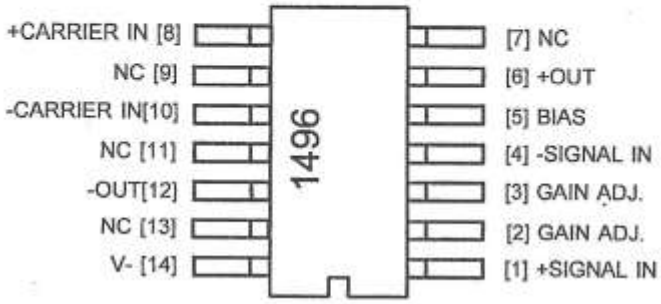

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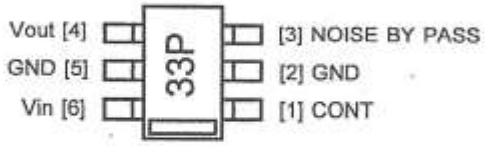

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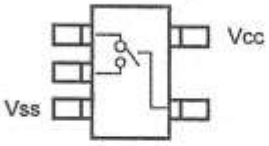

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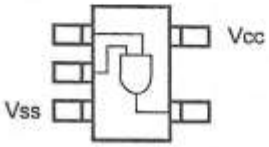

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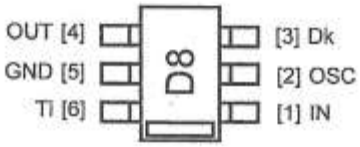

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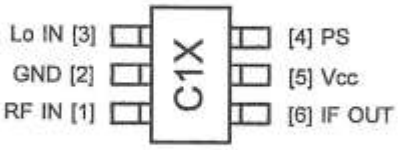

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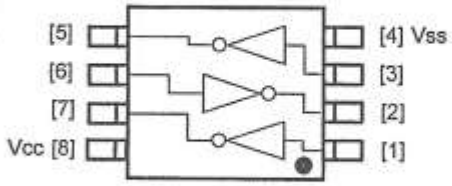


Parts List

Model AR8600MK2

PARTS			MAIN (86-MAIN3)			CPU (86-CPU3)			OPTION (86-OP2)		OTHERS	
Parts Name	Descriptions	Total	Q'ty	Symbol No.(Top)	Symbol No.(Bottom)	Q'ty	Symbol No.(Top	Symbol No.(Bottom)	Q'ty	Symbol No.(Bottom)	Q'ty	Symbol No.
LCD	RCM6037H-A(LCD)	1				1		LCD1				
DBM	RMS-1-24	1	1	DBM2								
	RMS-2	1	1	DBM1								
Diode	1SR154-400-TE25	1	1	D46								
	1SS355 TE-17	6	6		D31 D38 D41 D42 D43 D51							
	RB425D-T146	3	2		D39 D44	1		D13				
	02CZ15	1				1		D10				
	1SS184(B3)-TE85L	4	1		D50	3		D2 D11 D12				
	1SS226(C3)-TE85L	2	1		D45	1		D1				
	1SS319(A4)-TE85L	7				7		D3 D4 D5 D6 D7 D8 D9				
	1SV229-TPH3	2	2	D29 D30								
	1SV231-TH3	26	26	D2 D3 D4 D5 D6 D7 D8 D9 D10 D11 D12 D13 D14 D15 D16 D17 D21 D22 D23 D24 D25 D26 D27 D28 D47 D48								
	HSM276STR	1	1		D40							
	HVU131TRF	9	9		D18 D19 D20 D32 D33 D34 D35 D36 D37							
	KV1470TL002-3	1	1		D49							
LED	EIS03-AG1A7	15				15	LED1-LED15					
IC	NJM1496M	1	1	IC44								
	NJM2904M-T1	3	3	IC52	IC47 IC57							
	LA4525	1	1	IC53								
	CXA1611N	1	1		IC40							
	SPM3204	29	29	IC1 IC10 IC11 IC12 IC13 IC14 IC15 IC17 IC18 IC19 IC2 IC20 IC23 IC24 IC25 IC3 IC35 IC4 IC5 IC59 IC6 IC7 IC8 IC9	IC21 IC22 IC30 IC38 IC43							
	TA31137FN	1	1		IC39							
	TC4S11F-TE85R	2							2	IC510 IC511		
	TC4S81F-TE85R	1				1		IC3				
	TC74HC4094F-TP1	3	3		IC27 IC28 IC41							
	TC7SU04F-TE85L	1							1	IC512		
	TC7S66FU	3	3	IC51	IC32 IC36							
	TC7WU04FK	2	2		IC49 IC50							
	TK11233BMCL	1	1		IC34							
	TK11240MTL	1				1		IC7				
	TK11245MTL	2				2		IC5 IC6				
	TK11818MTL	1	1		IC56							
	HD74HC373FPVEL	1				1		IC8				
	MAX3221CAE-G068	1	1	IC58								
	uPC2409HA	1	1	IC55								
	uPC2709T	2	2	IC31 IC37								
	uPC2757TB-E3	1	1	IC16								
	uPC358G2-T1	1	1		IC46							
	uPC7805orTA7805	1	1	IC54								
	uPD78F0058	1				1		IC1				
	BU4051BCFV	3							3	IC502 IC503 IC504		
	BU4052BCFV	4							4	IC501 IC505 IC506 IC507		
	BU4066BCFV	2	1		IC45				1	IC508		

Parts List Model AR8600MK2

PARTS			MAIN (86-MAIN3)			CPU (86-CPU3)			OPTION (86-OP2)		OTHERS	
Parts Name	Descriptions	Total	Q'ty	Symbol No.(Top)	Symbol No.(Bottom)	Q'ty	Symbol No.(Top)	Symbol No.(Bottom)	Q'ty	Symbol No.(Bottom)	Q'ty	Symbol No.
IC	BU4094BCFV	4	3		IC26 IC29 IC42				1	IC509		
	AT29C512-15TC	1				1		IC2				
	S-80840ANUP-ED4-T2	1				1		IC4				
	MB15F04PFV-G-BND	1	1	IC33								
Transistor	DTB123YK-T146	2	2		TR35 TR47							
	IMD16A	7	6		TR53 TR54 TR55 TR56 TR57 TR58	1		TR2				
	2SA1162Y(SY)-TE85L	1	1		TR37							
	2SC3123(HE)-TE85L	1	1		TR33							
	2SC3356(R24)-T2	10	10	TR12 TR16 TR17 TR18 TR30 TR31 TR61	TR13 TR15 TR34							
	2SC4094(R37)-T1	14	14	TR2 TR3 TR4 TR5 TR6 TR7 TR8 TR9 TR14 TR23 TR24 TR26 TR32 TR46								
	2SC4116GR(LG)-TE85R	10	9		TR25 TR27 TR28 TR29 TR43 TR44 TR19 TR20 TR45	1		TR3				
	2SC4915-Y	4	4		TR11 TR38 TR41 TR42							
	2SK1062(KE)-TE85R	3	3		TR48 TR49 TR51							
	RN1408(XI)-TE85L	13	11	TR52	TR1 TR10 TR21 TR22 TR36 TR39 TR40 TR50 TR59 TR60	2		TR1 TR4				
Filter	CFJ455K5	1	1	F7								
	CFL455H	1	1	F6								
	CFUCG455F-TC	2	2	F5 F8								
	SFECV10M7JA00-R00	2	2	F9 F10								
	CDAC10.7MG1-A-TC	1	1	DS2								
	CDBC455CX24-TC	1	1	DS1								
	NSF754	2	2	F1 F2								
	DSS710-D223S-12-22	1	1	EM1								
	BLM11B252SDPT	2	2	EM2 EM3								
Crystal OSC.	34.350MHz/UM-1	1	1	X2								
	44.595MHz/UM-1	1	1	X1								
	45.05M30B1/UM-5	2	2	F3 F4								
	HC-49US/4.91MHzSMD-TP	1				1		X1				
TCXO	NT5032/14.4MHz	1	1	TCX1								
CeraRock	CSB453E 453.5KHz	1	1	X3								
	CSB456E 456.5KHz	1	1	X4								
Capacitor	GRM39B102K50PT 0.001uF	88	86	C10 C11 C116 C118 C132 C134 C137 C155 C163 C8 C167 C2 C203 C207 C208 C213 C221 C225 C24 C241 C263 C266 C275 C278 C30 C33 C36 C37 C374 C331 C38 C4 C41 C44 C423 C56 C57 C6 C60 C63 C65 C66 C73 C75 C76	C133 C148 C149 C156 C158 C161 C176 C181 C183 C210 C214 C230 C237 C246 C250 C254 C258 C291 C293 C294 C296 C302 C309 C314 C324 C335 C346 C347 C356 C363 C384 C385 C390 C413 C416 C426 C430 C47 C67 C139 C427	2		C11 C12				
	GRM39B103K50PT 0.01uF	42	41	C12 C131 C169 C172 C174 C19 C20 C22 C269 C27 C273 C28 C29 C55 C64	C101 C102 C13 C182 C21 C257 C261 C282 C284 C285 C286 C295 C328 C330 C340 C343 C348 C350 C351 C353 C48 C367 C402 C408 C412 C99	1		C25				
	GRM39B104K16PT 0.1uF(B)	12	8	C121 C127	C260 C316 C320 C323 C387 C397	4		C1 C3 C39 C9				
	GRM39B222K50PT 0.0022uF	2	2	C107 C110								
	GRM39B223K25PT 0.022uF	6	6		C113 C355 C417 C52 C53 C54							

Parts List Model AR8600MK2

PARTS			MAIN (86-MAIN3)			CPU (86-CPU3)			OPTION (86-OP2)		OTHERS	
Parts Name	Descriptions	Total	Q'ty	Symbol No.(Top)	Symbol No.(Bottom)	Q'ty	Symbol No.(Top	Symbol No.(Bottom)	Q'ty	Symbol No.(Bottom)	Q'ty	Symbol No.
Capacitor	GRM39B472K50PT 0.0047uF	6	6	C108 C109	C369 C371 C372 C401							
	GRM39CH040C50PT 4PF	3	3	C42 C80 C91								
	GRM39CH050C50PT 5PF	14	14	C277 C279 C40 C59 C61 C83 C87 C23 C25	C160 C290 C338 C77 C364							
	GRM39CH080D50PT 8PF	2	2	C70 C82								
	GRM39CH100D50PT 10PF	14	14	C105 C168 C51 C74 C94 C140 C219	C281 C337 C84 C95 C345 C362 C365							
	GRM39CH101J50PT 100PF	28	28	C96 C135 C136 C141 C142 C162 C164 C166 C185 C191 C194 C205 C216 C217 C220 C226 C243 C45 C85 C93	C100 C159 C193 C200 C229 C236 C245 C251							
	GRM39CH120J50PT 12PF	1	1	C268								
	GRM39CH150J50PT 15PF	6	6	C154 C78	C143 C147 C150 C326							
	GRM39CH151J50PT 150PF	5	5	C115 C119	C283 C287 C289							
	GRM39CH180J50PT 18PF	2	2	C31 C35								
	GRM39CH181J50PT 180PF	2	2	C122 C126								
	GRM39CH220J50PT 22PF	15	13	C202 C26 C270 C271 C39 C424 C43 C58 C62	C215 C288 C339 C425	2		C6 C7				
	GRM39CH221J50PT 220PF	8	8	C117	C375 C382 C383 C389 C98 C312 C313							
	GRM39CH330J50PT 33PF	6	6	C104 C14 C15 C16 C17 C18	C299							
	GRM39CH331J50PT 330PF	1	1	C124								
	GRM39CH470J50PT 47PF	8	8	C123 C125 C173	C349 C376 C377 C379 C380							
	GRM39CJ030C50PT 3PF	24	24	C32 C34 C153 C190 C195 C196 C197 C201 C223 C239 C267 C272 C274 C432 C69 C71 C79 C81	C151 C292 C325 C327 C144 C146							
	GRM39CK010C50PT 1PF	4	4	C165 C224 C240 C431	C145 C152							
	GRM39CK020C50PT 2PF	13	13	C188 C192 C222 C262 C264 C265 C68 C72 C88 C89 C90 C92	C86							
	GRM39F104Z25PT 0.1uF(F)	57	28	C186 C187 C204 C366 C370 C405	C184 C189 C297 C301 C307 C311 C315 C317 C318 C319 C358 C359 C360 C368 C378 C211 C238 C381 C391 C392 C97 C103	17		C10 C2 C20 C21 C22 C24 C27 C28 C29 C31 C33 C34 C35 C37 C38 C41 C8	12	C501-512		
	GRM39UJ010 1PF UJ	1	1	C242								
	GRM39UJ020 2PF UJ	1	1	C227								
	GRM39UJ050 5PF UJ	2	2	C228 C244								
	GRM39UJ150J50PT 15PF UJ	1	1		C304							
	GRM39UJ180J50PT 18PF UJ	1	1	C170								
	GRM39UJ220J50PT 22PF UJ	1	1		C303							
	GRM39UJ330J50PT 33PF UJ	2	2	C171	C342							
	GRM39UJ470J50PT 47PF UJ	1	1		C341							
	GRM40B105K16PT 1uF	23	23	C1 C106 C111 C112 C114 C120 C129 C130 C3 C418 C419 C420 C421 C428 C5 C7 C9	C157 C373 C394 C395 C396 C400							
	GRM40F224Z25PT 0.22uF	5				5		C13 C14 C15 C16 C17				
	HE50SJYB102K 0.001uF	1							1	C1		
	10MCS105MA-TER 1uF/10V	7	6	C406 C407	C352 C354 C388 C399	1		C4				
	16MCS225MA-TER 2.2uF/16V	5	5		C178 C179 C255 C256 C332							
	16MCS335MA-TER 3.3uF/16V	2				2		C18 C19				
	35MCS474MA-TER 0.47uF/35V	4	4		C175 C177 C252 C253							
	6MCS475MA-TER 4.7uF/6.3V	5	4		C209 C333 C357 C361	1		C26				

Parts List Model AR8600MK2

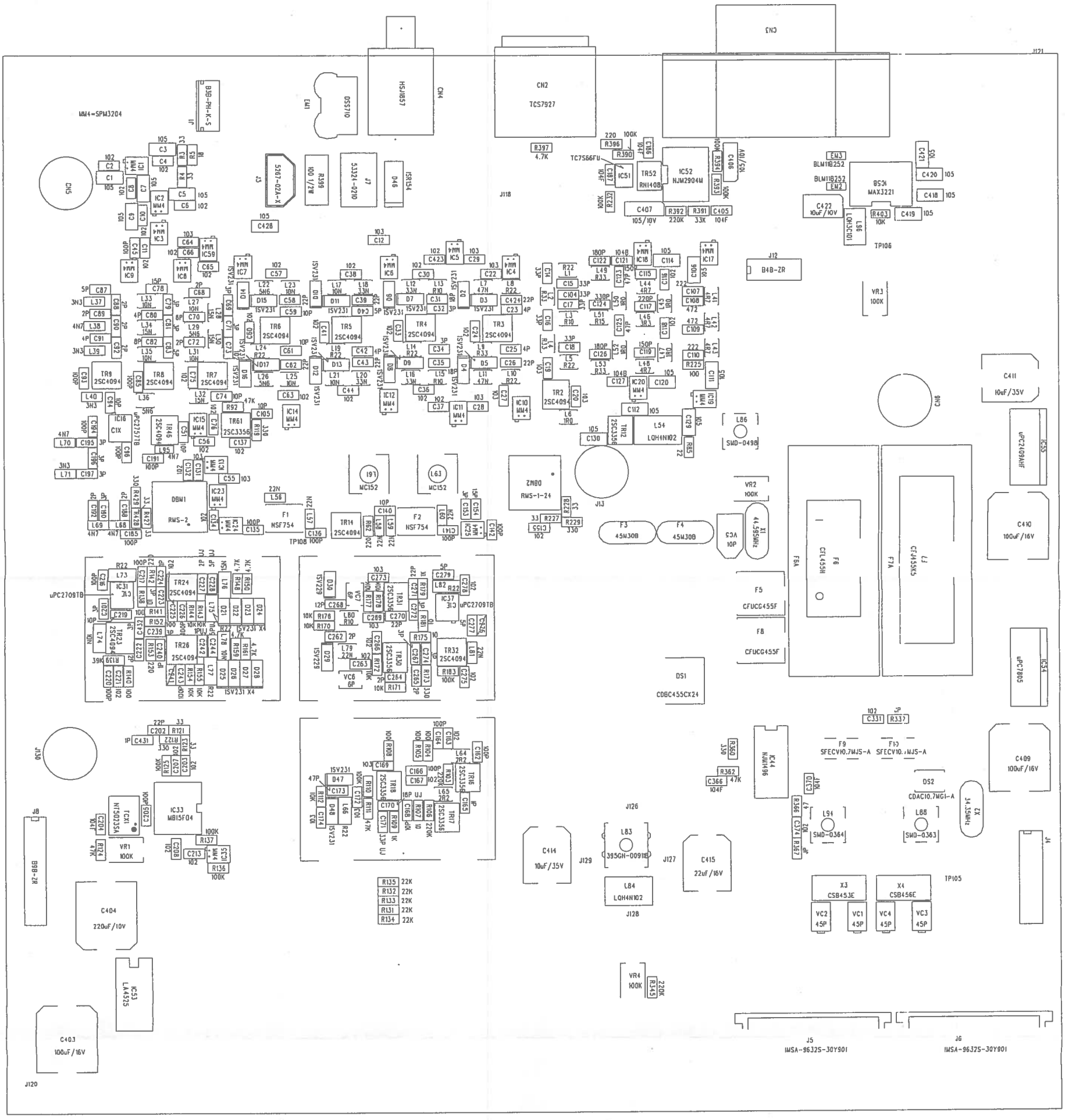
PARTS			MAIN (86-MAIN3)			CPU (86-CPU3)			OPTION (86-OP2)		OTHERS	
Parts Name	Descriptions	Total	Q'ty	Symbol No.(Top)	Symbol No.(Bottom)	Q'ty	Symbol No.(Top)	Symbol No.(Bottom)	Q'ty	Symbol No.(Bottom)	Q'ty	Symbol No.
Capacitor	10MCM106MA-TER 10uF/10V	18	14	C422	C180 C231 C247 C249 C259 C305 C308 C329 C334 C336 C440 C441 C235	4		C5 C23 C32 C36				
	ECEV1AA221P(10V/ 220uF)	1	1	C404								
	ECEV1CA220SR(16V/ 22uF)	1	1	C415								
	ECEV1VA100SR(35V /10uF)	3	2	C411 C414		1		C30				
	EEVFC1C101P 100uF/16V	3	3	C403 C409 C410								
Connector	IMSA-9120S-07	1									1	
	IMSA-9230B-1-07Z064-T	1									1	
	IMSA-9230B-1-14Z064-T	5							5			
	IMSA-9632S-30B-T	4	2	J5 J6		2		J2 J3				
	TCS7927-28-401	1	1	CN2								
	5267-02A-X	1	1									
	53324-0210	1	1									
	B03B-ZR	1				1		J1				
	B04B-ZR	1	1									
	B09B-ZR	3	3									
	B3B-PH-K-S	2	2									
	Wire Ass'y BC ANT AR8600	1	1									
	Wire Ass'y OP AR8600	2							2			
	Wire Ass'y PWR AR8600	1									1	
	HEC0757-010030	1	1	CN1								
	HSJ0913-01-010	1							1			
	HSJ1857-01-1020	1	1	CN4								
	TMP-J01X-V6	3	3	CN5 CN6 CN7								
	DMR-9S	1	1	CN3								
	Coaxil 86-IF1	1									1	
	Coaxil 86-RF1	1									1	
Inductor	LQH3C101K34 100uH	1	1	L96								
	LQH4N102K04 1mH	2	2	L54 L84								
	HK1608-10N 10nH	1	1	L78								
	HK1608-15N 15nH	1	1	L76								
	HK1608-22NJ 22nH	6	6	L56 L57 L58 L59 L60 L81								
	HK1608-3N3 3.3nH	3	3	L37 39 L40								
	HK1608-4N7N 4.7nH	5	5	L38 L68 L69 L70 L95								
	HK2125-10NJ 10nH	1	1	L74								
	HK2125-5N6J 5.6nH	5	5	L22 L26 L29 L71 L35								
	HK2125-R22J 0.22uH	6	6	L73 L66 L82 L75 L77	L62							
	LEM2520T-100J 10uH	1	1		L90							
	LEM2520T-10NK 10nH	8	8	L17 L21 L23 L25 L27 L31 L33 L36								
	LEM2520T-15NK 15nH	4	4	L28 L30 L32 L34								
	LEM2520T-1R0J 1uH	7	7	L45 L47 L50 L52 L6	L92 L93							
	LEM2520T-1R5J 1.5uH	2	2		L87 L89							
	LEM2520T-22NK 22nH	1	1	L79								
	LEM2520T-2R2J 2.2uH	3	3	L64 L65	L55							
	LEM2520T-33NK 33nH	4	4	L12 L16 L18 L20								
	LEM2520T-3R3K 3.3uH	2	2	L46	L91							
	LEM2520T-47NK 47nH	2	2	L7 L11								
	LEM2520T-4R7K 4.7uH	5	5	L41 L42 L43 L44 L48								
	LEM2520T-R10K 0.1uH	4	4	L3 L13 L15 L80								
	LEM2520T-R15 0.15uH	1	1	L51								
	LEM2520T-R22K 0.22uH	7	7	L1 L5 L8 L10 L14 L19 L24								
	LEM2520T-R33K 0.33uH	5	5	L2 L4 L9 L49 L53								

Parts List Model AR8600MK2

PARTS				MAIN (86-MAIN3)		CPU (86-CPU3)			OPTION (86-OP2)		OTHERS	
Parts Name	Descriptions		Total	Q'ty	Symbol No.(Top)	Symbol No.(Bottom)	Q'ty	Symbol No.(Top	Symbol No.(Bottom)	Q'ty	Symbol No.(Bottom)	Q'ty	Symbol No.
RF Trans	SMD-0363		1	1	L88								
	SMD-0364		1	1	L94								
	SMD-0498		1	1	L86								
	MC152(E558ANA-100055=P3)		2	2	L61 L63								
	395GN-0091IB(1.2mH)		1	1	L83								
Resistor	R1608-100	10 ohm	6	6	R107 R138 R175 R181	R182 R184							
	R1608-101	100 ohm	24	24	R104 R105 R108 R140 R141 R152	R157 R185 R187 R188 R193 R220 R329 R330 R380 R381 R69 R86 R146							
	R1608-102	1K ohm	26	21	R109 R179	R113 R115 R117 R163 R165 R167 R168 R195 R221 R223 R353 R356 R357 R358 R359 R369 R400 R74 R77	5		R2 R3 R4 R40 R41				
	R1608-103	10K ohm	29	24	R112 R143 R144 R154 R155 R170 R171 R172 R176 R177 R178 R403	R114 R164 R197 R206 R217 R372 R373 R387 R395 R407 R75 R371	5		R1 R12 R48 R49 R7				
	R1608-104	100K ohm	106	95	R110 R125 R136 R137 R232 R390 R393 R394 R183	R1 R10 R12 R102 R118 R120 R13 R14 R15 R16 R17 R186 R189 R19 R190 R196 R2 R20 R21 R216 R22 R23 R24 R25 R26 R28 R29 R30 R31 R32 R33 R333 R336 R34 R349 R350 R351 R37 R38 R385 R39 R40 R401 R41 R42 R43 R44 R45 R46 R49 R50 R51 R52 R53 R54 R55 R56 R57 R6 R60 R61 R65 R66 R7 R78 R79 R8 R80 R81 R82 R83 R87 R88 R89 R9 R90 R91 R93 R94 R95 R374 R98 R99 R58 R63 R237	11		R14 R15 R16 R25 R26 R27 R28 R43 R44 R47 R8				
	R1608-105	1M ohm	7	5		R344 R348 R352 R377 R378	2		R6 R13				
	R1608-122	1.2K ohm	1	1		R363							
	R1608-124	120K ohm	1	1		R201							
	R1608-180	18 ohm	1	1	R5								
	R1608-183	18K ohm	2	2		R365 R346							
	R1608-220	22 ohm	14	14	R85	R101 R11 R174 R18 R180 R27 R36 R48 R59 R64 R68 R97 R422							
	R1608-221	220 ohm	20	5	R142 R153 R396 R62	R230	15		R50 R51 R52 R53 R54 R55 R56 R57 R58 R59 R60 R61 R62 R63 R64				
	R1608-222	2.2K ohm	24	14		R116 R147 R158 R166 R194 R199 R231 R234 R236 R355 R375 R388 R70 R73	10		R30 R31 R32 R33 R34 R35 R36 R37 R38 R39				
	R1608-223	22K ohm	8	8	R131 R132 R133 R134 R135	R203 R337 R402							
	R1608-224	220K ohm	9	9	R103 R106 R345 R392	R192 R215 R341 R354 R368							
	R1608-330	33 ohm	14	14	R121 R123 R227 R228 R3 R4 R427 R428	R404 R406 R408 R409 R71 R72							
	R1608-331	330 ohm	9	9	R119 R122 R173 R229 R360 R429	R334 R405 R410							

Parts List Model AR8600MK2

PARTS				MAIN (86-MAIN3)			CPU (86-CPU3)			OPTION (86-OP2)		OTHERS	
Parts Name	Descriptions		Total	Q'ty	Symbol No.(Top)	Symbol No.(Bottom)	Q'ty	Symbol No.(Top	Symbol No.(Bottom)	Q'ty	Symbol No.(Bottom)	Q'ty	Symbol No.
	R1608-332	3.3K ohm	18	18		R149 R151 R160 R162 R169 R200 R202 R204 R207 R208 R209 R210 R211 R212 R213 R214 R361 R364							
	R1608-333	33K ohm	11	10	R391	R126 R127 R128 R129 R130 R338 R340 R76 R370	1		R46				
	R1608-334	330K ohm	1	1		R238							
	R1608-393	39K ohm	8	8	R139	R100 R224 R339 R35 R47 R67 R96							
	R1608-470	47 ohm	6	6	R366	R145 R156 R198 R331 R335							
	R1608-471	470 ohm	6	6		R226 R328 R384 R386 R382 R383							
	R1608-472	4.7K ohm	14	6	R148 R150 R159 R161 R397	R327	8		R17 R18 R19 R20 R21 R22 R23 R24				
	R1608-473	47K ohm	8	6	R92 R111 R124 R362 R398	R84	2		R5 R29				
	R1608-474	470K ohm	3	3		R222 R342 R347							
	R1608-514	510K ohm	1				1		R10				
	R1608-562	5.6K ohm	2	2		R376 R379							
	R1608-563	56K ohm	1				1		R45				
	R1608-624	620K ohm	1				1		R11				
	R1608-821	820 ohm	1	1		R191							
	R1608-JP	0 ohm	9	7	R367 R332	R205 R218 R235 R343 R419	2		JW1 R9				
	RMC1/2-101J	100 ohm	1	1	R399								
	RMC1/2-330J	33 ohm	1				1		R42				
	RAC164D473JATP	47K ohm X4	4							4	RA501-504		
	RVG3S08-104VM-TL	100K ohm	4	4	VR1 VR2 VR3 VR4								
Trimmer	TZY2K450A00	45PF	4	4	VC1 VC2 VC3 VC4								
	TZV02Z060A110T00	6PF	2	2	VC6 VC7								
	TZC03R100A	10PF	1	1	VC5								
Speaker	C050A14D0010		1									1	SP1
Pulse Switch	TP90N00E20 15S		1				1	SW27					
Tact Switch	SKQGAB-T		26				26	SW1-SW26					
Volume	TP96N00N 15FB103	10K ohm	1				1	VR1					
	TP96N00N 15FA103	10K ohm	1				1	VR2					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CN2
TC7S66FU
IC52 NJM2904M
TR52 RH1408
IC51
MAX3221
TC74LCX161G
TP106
J12 B4B-ZR
VR3 100K
CN3
CN4
CN5
CN6
J118
J120
J121
J13
J8 B8B-ZR
J4
J5 IMSA-96325-30Y901
J6 IMSA-96325-30Y901
DS1 CDBC455CX24
DS2 CDAC10.7MG1-A
F1 NSF754
F2 NSF754
F3 45M30B
F4 45M30B
F5 CFUCG455F
F8 CFUCG455F
F9 SFECV10.7MJS-A
F10 SFECV10.7MJS-A
F8A CTL455H
F7A CTJ455K5
X1 44.595MHz
X2 34.35MHz
X3 CSB453E
X4 CSB456E
IC44 NJM1496
IC53 LA4525
IC55 uPC2409AHF
IC54 uPC7805
IC31 uPC2709TB
IC37 uPC2709TB
IC16 uPC2757TB
DBM1 RMS-2
DBM2 RMS-1-24
TR2 2SC4094
TR3 2SC4094
TR4 2SC4094
TR5 2SC4094
TR6 2SC4094
TR7 2SC4094
TR8 2SC4094
TR9 2SC4094
TR14 2SC4094
TR24 2SC4094
TR26 2SC4094
TR23 2SC4094
TR31 2SC3356
TR30 2SC3356
TR32 2SC4094
TR18 2SC3356
TR17 2SC3356
TR12 2SC3356
TR61 2SC3356
IR46 2SC4094
TCX1 NT50C035A
VR1 100K
VR2 100K
VR4 100K
VC1 45P
VC2 45P
VC3 45P
VC4 45P
VC5 10P
L54 LQH4N102
L83 395GN-0091E
L84 LQH4N102
L86 SMD-0498
L88 SMD-0363
L94 SMD-0364
MC152
MC152
CN1 DSS710
CN2 TCS7927
CN3
CN4 H5JR857
J1 B8B-PH-K-S
J3 5267-02A-X
J7 53321-0220
D46 HSR154
J126
J127
J128
J129
J130
C404 220uF/10V
C409 100uF/16V
C410 100uF/16V
C411 10uF/35V
C414 10uF/35V
C415 22uF/16V
C422 10uF/10V
C428
C429
C430
C431
R135 22K
R132 22K
R133 22K
R131 22K
R134 22K
R396 220
R390 100K
R397 4.7K
R392 220K
R391 33K
R405 104F
R407 104F
R232 100K
R393 100K
R403 10K
R360 330
R362 47K
R366 47
R367 JP
R345 220K
R337 JP
R227 33
R229 330
R428 33
R427 33
R429 33
R430 33
R431 33
R432 33
R433 33
R434 33
R435 33
R436 33
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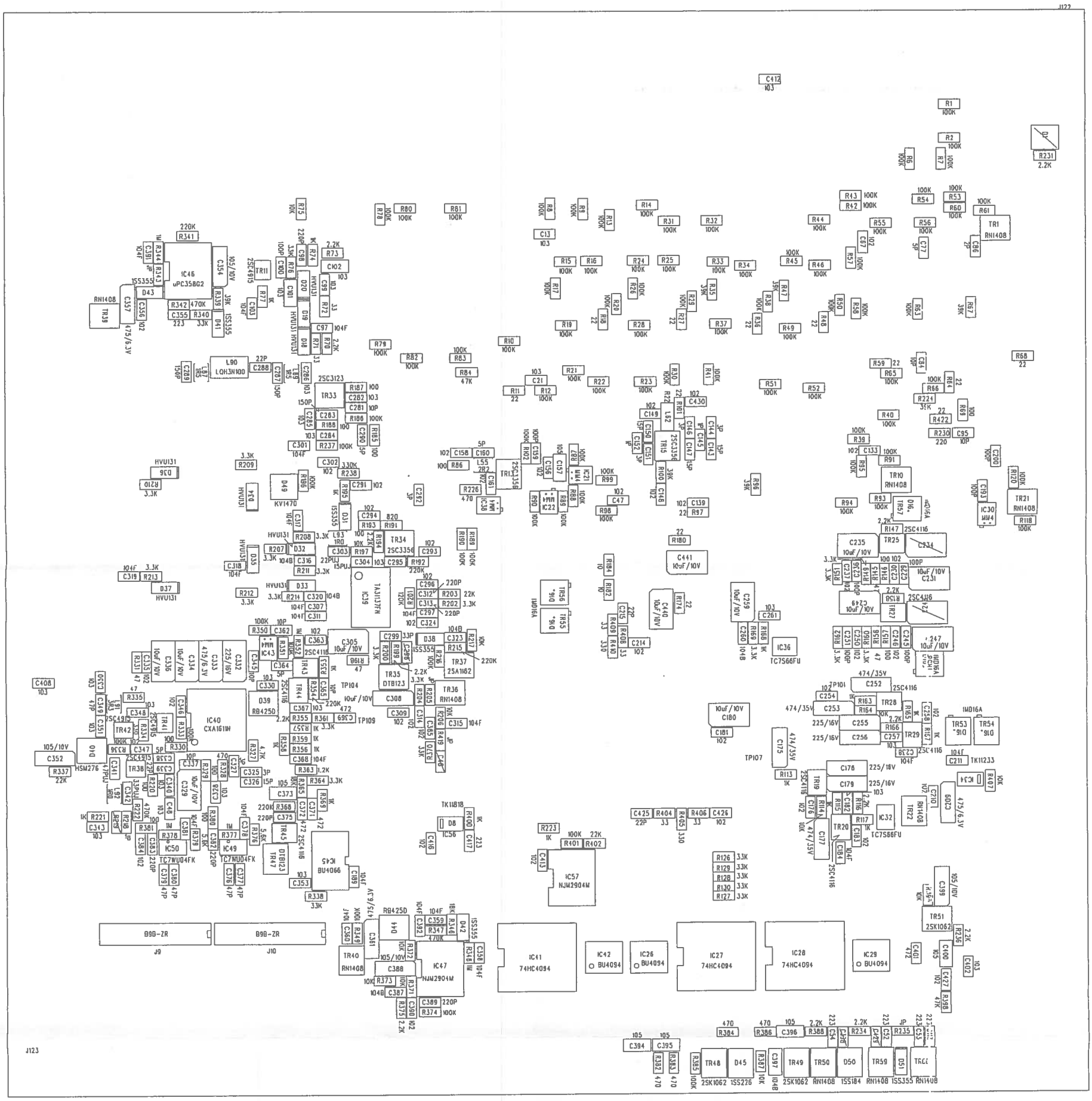
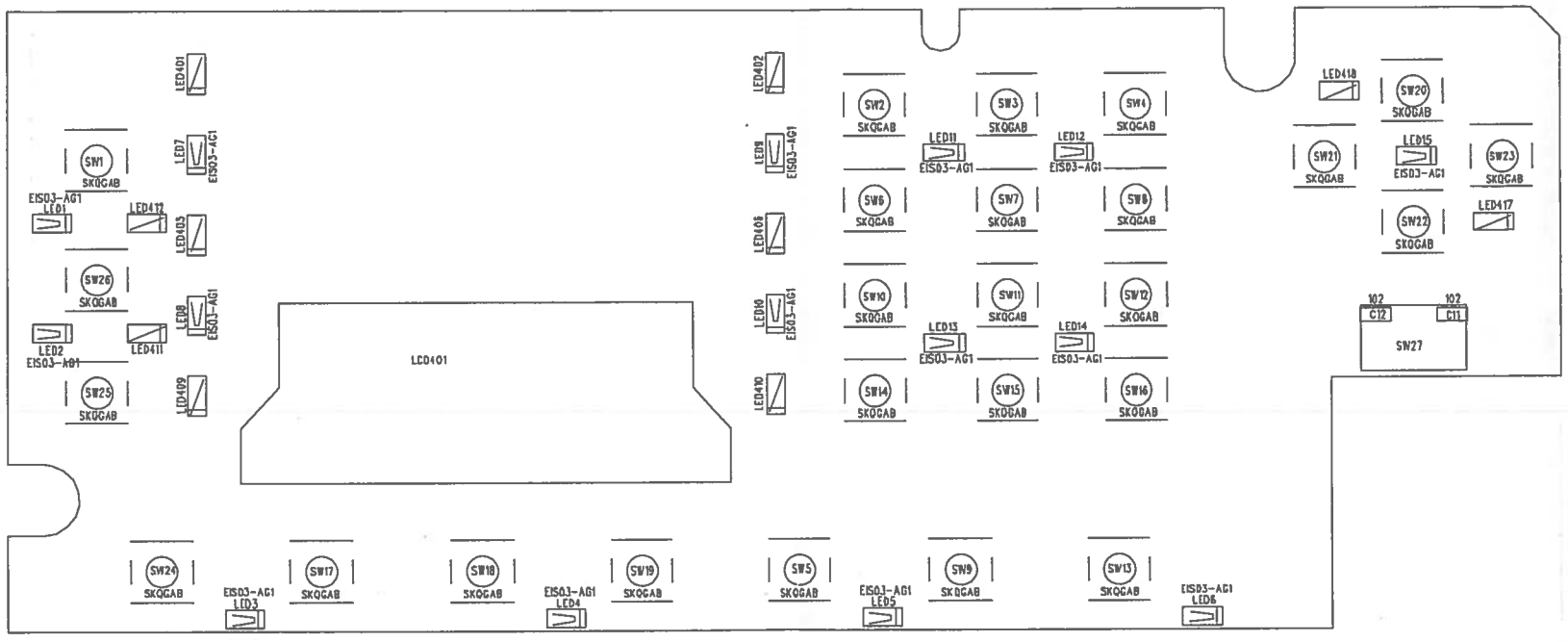
R446 33
R447 33
R448 33



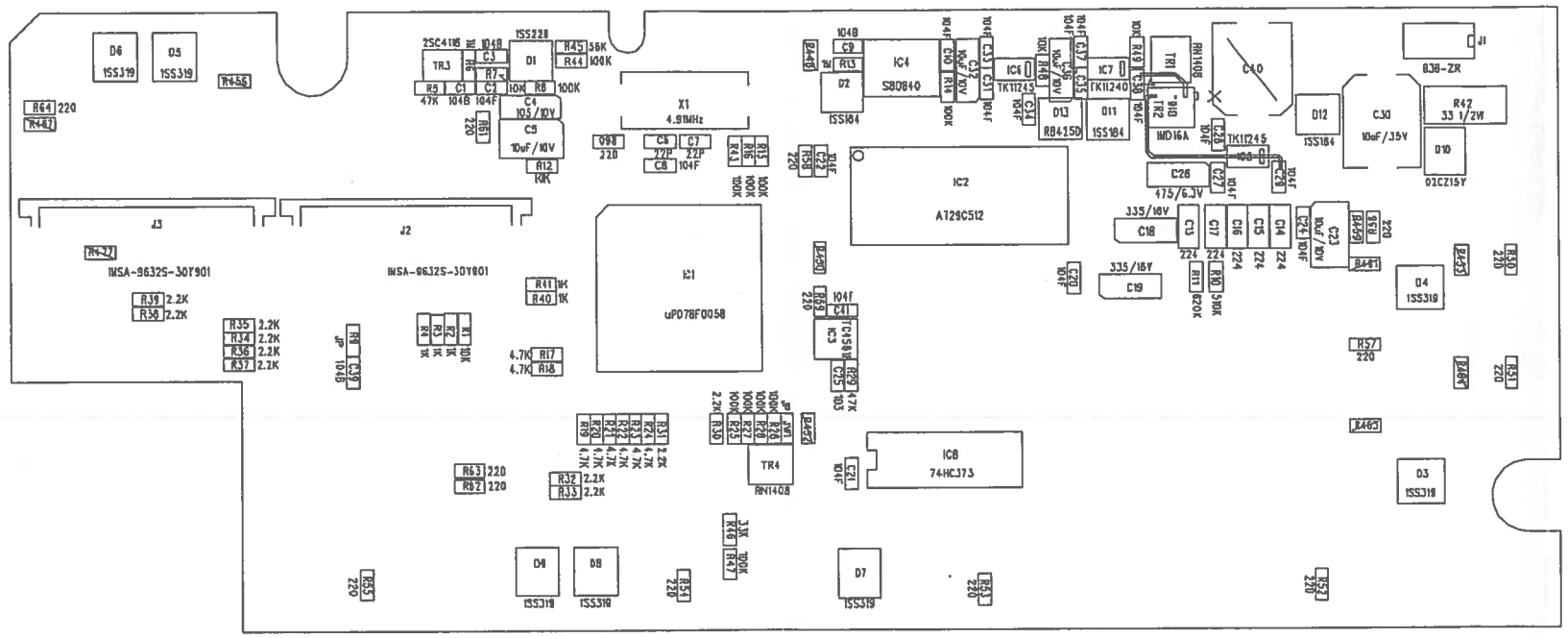
86-MAIN3 PARTS LAYOUT

25TH AUG. 2002



86-CPU3 PARTS LAYOUT

25TH AUG. 2002


D6 1SS319
D5 1SS319
R64 220
R443
R456
2SC4116
1SS228
D1
TR3
R45 56K
R44 100K
R5 47K
C1 104B
C2 104F
R7 1K
R8 100K
C4 103/10V
C5 10uF/10V
R12 10K
R6 220
X1 4.91MHz
C6 220
C7 22P
C8 22P
C9 104B
D2 1SS184
IC4 S80840
IC8 TK11245
IC7 TK11240
IC6 TK11245
D13 RB415D
D11 1SS184
TR1 2SB1188
RH1008
MD16A
C10
D12 1SS184
C30 10uF/35V
D10 02CZ15V
J1 838-ZR
R42 33 1/2W
C26 475/6.3V
C27 104F
C28 104F
C29 104F
C31 104F
C32 104F
C33 104F
C34 104F
C35 104F
C36 104F
C37 104F
C38 104F
C39 104F
C40 104F
C41 104F
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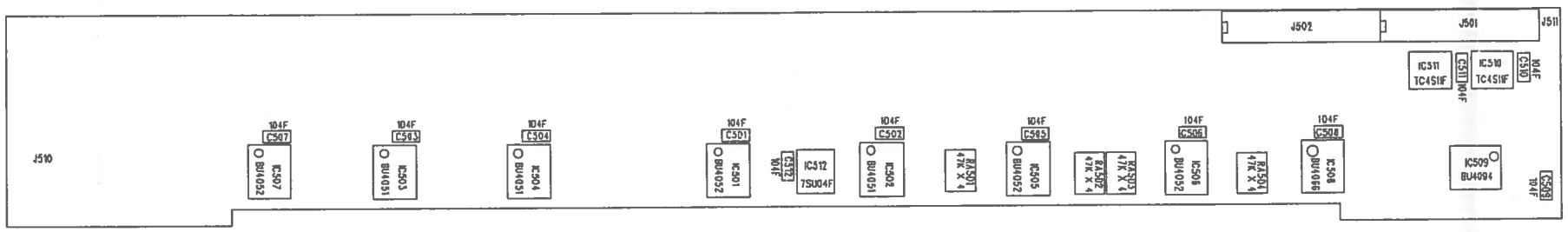
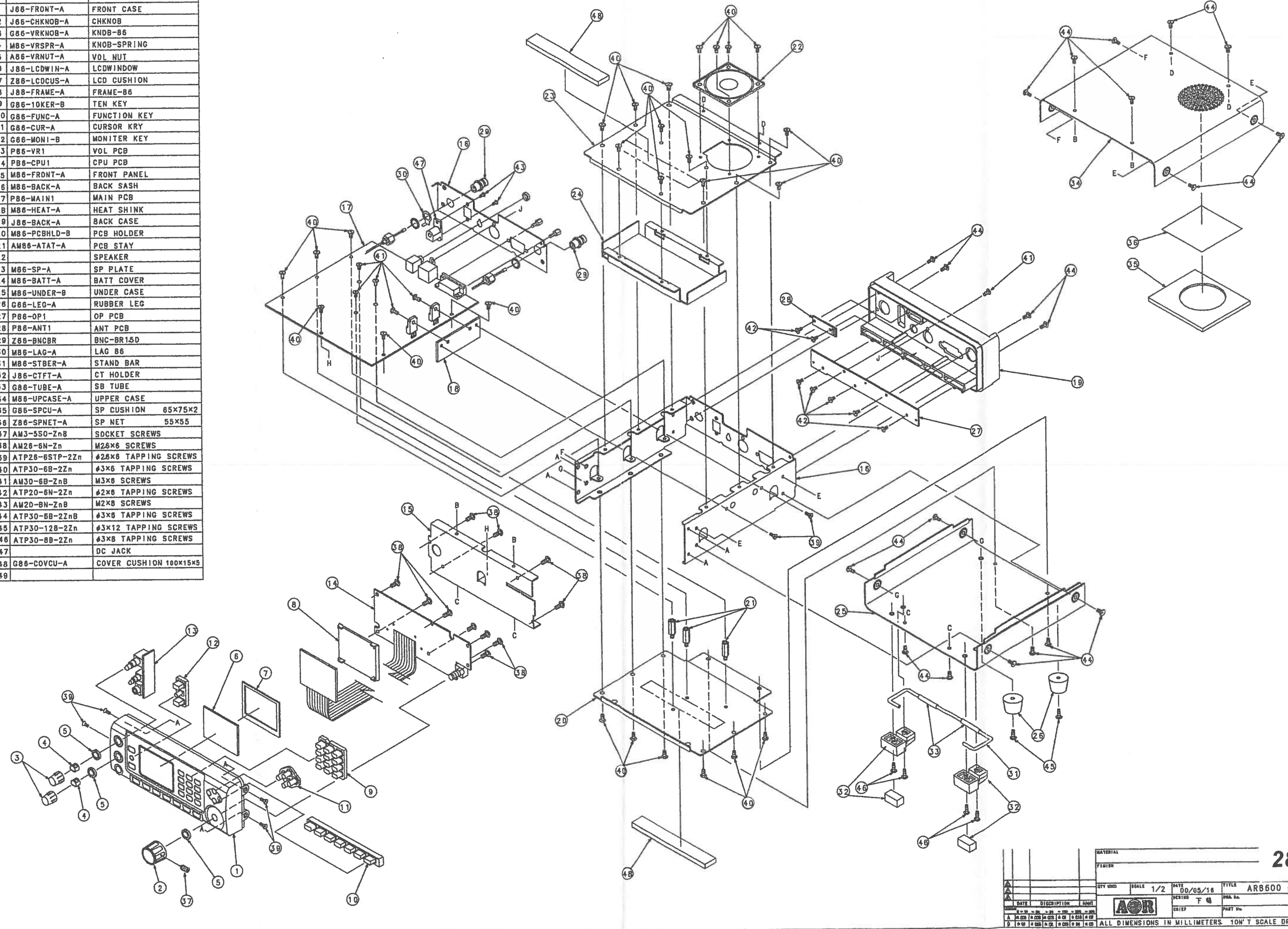
C45 104F
C46 104F
C47 104F
C48 104F
C49 104F
C50 104F


J502
J501
J511
J510
IC511 TC4511F
IC510 TC4511F
104F C510
104F C511
104F C507
104F C503
104F C504
104F C501
104F C502
104F C505
104F C506
104F C508
IC507 BU1032
IC503 BU1031
IC504 BU1031
IC501 BU4202
IC512 7SU04F
IC502 BU1031
IC500 47K X 4
IC505 BU4202
IC513 47K X 4
IC514 47K X 4
IC506 BU4202
IC508 47K X 4
IC509 BU4094
104F C509

1	J66-FRONT-A	FRONT CASE
2	J65-CHKNOB-A	CHKNOB
3	G65-VRKNOB-A	KNOB-86
4	M86-VRSPR-A	KNOB-SPRING
5	A86-VRNUT-A	VOL NUT
6	J86-LCDWIN-A	LCDWINDOW
7	Z86-LCDCUS-A	LCD CUSHION
8	J88-FRAME-A	FRAME-86
9	G86-10KER-B	TEN KEY
10	G86-FUNC-A	FUNCTION KEY
11	G86-CUR-A	CURSOR KRY
12	G66-MONI-B	MONITER KEY
13	P86-VR1	VOL PCB
14	P86-CPU1	CPU PCB
15	M86-FRONT-A	FRONT PANEL
16	M86-BACK-A	BACK SASH
17	P86-MAIN1	MAIN PCB
18	M86-HEAT-A	HEAT SHINK
19	J86-BACK-A	BACK CASE
20	M86-PCBHLD-B	PCB HOLDER
21	AM86-ATAT-A	PCB STAY
22		SPEAKER
23	M86-SP-A	SP PLATE
24	M86-BATT-A	BATT COVER
25	M86-UNDER-B	UNDER CASE
26	G66-LEG-A	RUBBER LEG
27	P86-OP1	OP PCB
28	P86-ANT1	ANT PCB
29	Z66-BNCBR	BNC-BR15D
30	M86-LAG-A	LAG 86
31	M86-STBER-A	STAND BAR
32	J86-CTFT-A	CT HOLDER
33	G86-TUBE-A	SB TUBE
34	M86-UPCASE-A	UPPER CASE
35	G85-SPCU-A	SP CUSHION 65×75×2
36	Z86-SPNET-A	SP NET 55×55
37	AM3-5SO-Zn8	SOCKET SCREWS
38	AM26-6N-Zn	M26×6 SCREWS
39	ATP26-6STP-2Zn	ø26×6 TAPPING SCREWS
40	ATP30-6B-2Zn	ø3×6 TAPPING SCREWS
41	AM30-6B-ZnB	M3×6 SCREWS
42	ATP20-6N-2Zn	ø2×6 TAPPING SCREWS
43	AM20-8N-ZnB	M2×8 SCREWS
44	ATP30-6B-2ZnB	ø3×6 TAPPING SCREWS
45	ATP30-12B-2Zn	ø3×12 TAPPING SCREWS
46	ATP30-8B-2Zn	ø3×8 TAPPING SCREWS
47		DC JACK
48	G86-COVCU-A	COVER CUSHION 100×15×5
49		



MATERIAL					28
FINISH					
QTY USED	SCALE 1/2	DATE 00/05/16	TITLE AR8600 分解図		
AOR		DESIGNED T.M	DWG. No.		
		CHIEF	PART No.		
DATE	DESCRIPTION	NAME	ALL DIMENSIONS IN MILLIMETERS. 1ON'T SCALE DRAWING.		

86-MAIN3

IC17 LPF 0.1-1.6MHz IC19
IC18 BPF 1.6-18MHz IC20
BPF 18-30MHz
TR12 2SC3356 AGC

BPF 30-75MHz TR2 AGC
IC4 IC10
BPF 75-118MHz TR3 TUNE AGC
IC5 IC11
BPF 118-174MHz TR4 TUNE AGC
IC12
IC6
BPF 174-300MHz TR5 TUNE AGC
BPF 300-470MHz TR6 TUNE AGC
IC7 IC14
BPF 470-820MHz TR7 TR61 AGC
IC59 IC15
IC8
HPF 820-2040MHz TR8 TR46 AGC
IC9
HPF 2040-3000MHz TR9
MIX IC16 uPC2757T
IC3
IC2
ATT 10dB
IC1
ANTENNA
LOOP FILTER TR28, TR29 2SC4116
VCO 780-1300MHz TR23, TR24, TR25 TR26, TR27, IC31
IC30
IC33 MB15F04
TO IC32, IC36
UNLOCK TR22 RN1408
TCX1 NT3052 14.400MHz

IC32 IC33 LOOP FILTER TR19, TR20 2SC4116
IC33 VCO 45 - 75MHz TR16, TR17, TR18
IC21 IC22
DBM2 RMS-2
IC13 IC23 IC24 754.850MHz TR14 F1, F2 IC25
243.850MHz TR15 L61, L63
IC38
DBM2 RMS-1-24
IF 45.05MHz
F3, F4 45M30B TR34 2SC3356 AGC
VCO
709.8MHz TR30 TR32 IC37
198.8MHz TR31
IC33
LPF IC36 IC33
TUNE DC X 5 IC57 NJM2904 28V

X1 44.595MHz
D/A
D49 KV1470
44.595~44.605MHz
DS1 DISCR1
SQL 10K ohm
IC39 TA31137FN
F5 12KHz
F6 6KHz
F7 3KHz
F8 12KHz

F9, F10 10.7MHz TR41 2SC4915 TR42 2SC4915
DET D40 D44 TO CPU
X2 34.35MHz
TR38 2SC4915
DS2 DISCR1
METER AMP IC47 NJM2904
IC40 CXA1611N
WFM
AM
IC43
AM/WFM
IC45 BU4066
IC47 NJM2904
SSB/CW TR43 TR44 IC44 MC1496 TR45
AGC
LSB 453.5KHz IC49 X3 CSB453E
USB/CW 456.5KHz IC50 X4 CSB456E
NFM/SFM
RSSI OUT AGC AMP BUFF IC46 uPC358G2 AGC

OPTION CARDS 86-OP2
VOL
AF PA IC53 LA4525
9V

TRANSFER IC41 74HC4094 5V
TRANSFER IC42 4094 5V
TRANSFER IC26 4094 5V
TRANSFER IC27 74HC4094 5V
TRANSFER IC28 74HC4094 5V
TRANSFER IC29 4094 5V

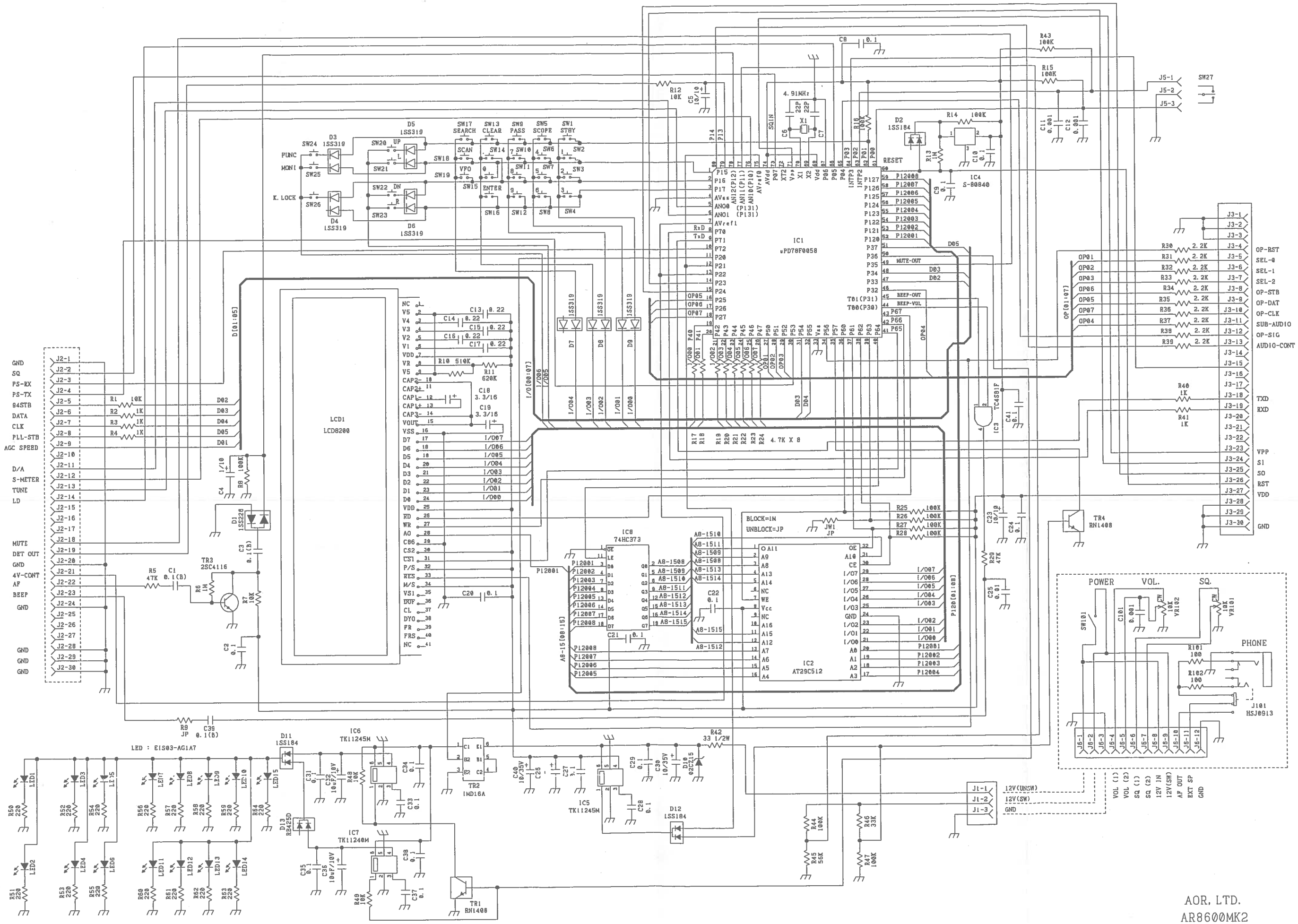
RS232C IC58 MAX3221
X1 4.91MHz
CPU IC1 uPD78054
RESET IC4 S80840
BEEP CTL IC3 4S81F TO IC53
PLL DATA
LCD
FLASH MEMORY IC2 AT29C512
IC8 74HC373
KEY MATRIX
IC1,2,8 REG IC5 TK11245
REG IC6 TK11245 DIMMER OFF
REG IC7 TK11240
DIMMER ON
BACK LIGHT
SWITCH TR2 IMD16A

28V 5V 9V
DC-DC IC56 TK11818
REG. IC54 7805
REG. IC55 2409
POWER
EXTERNAL DC 12V

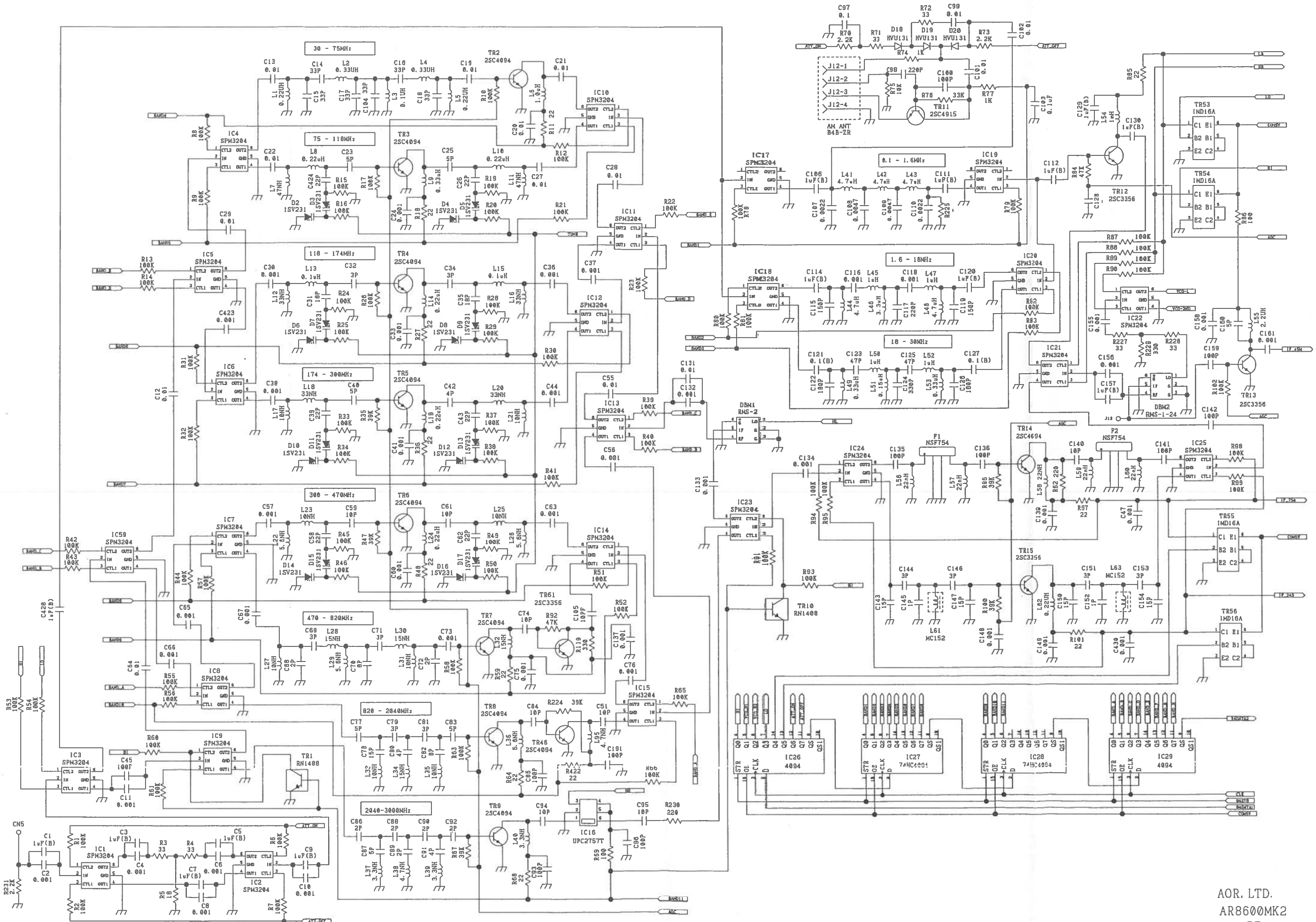
FREQUENCY CONFIGULATION

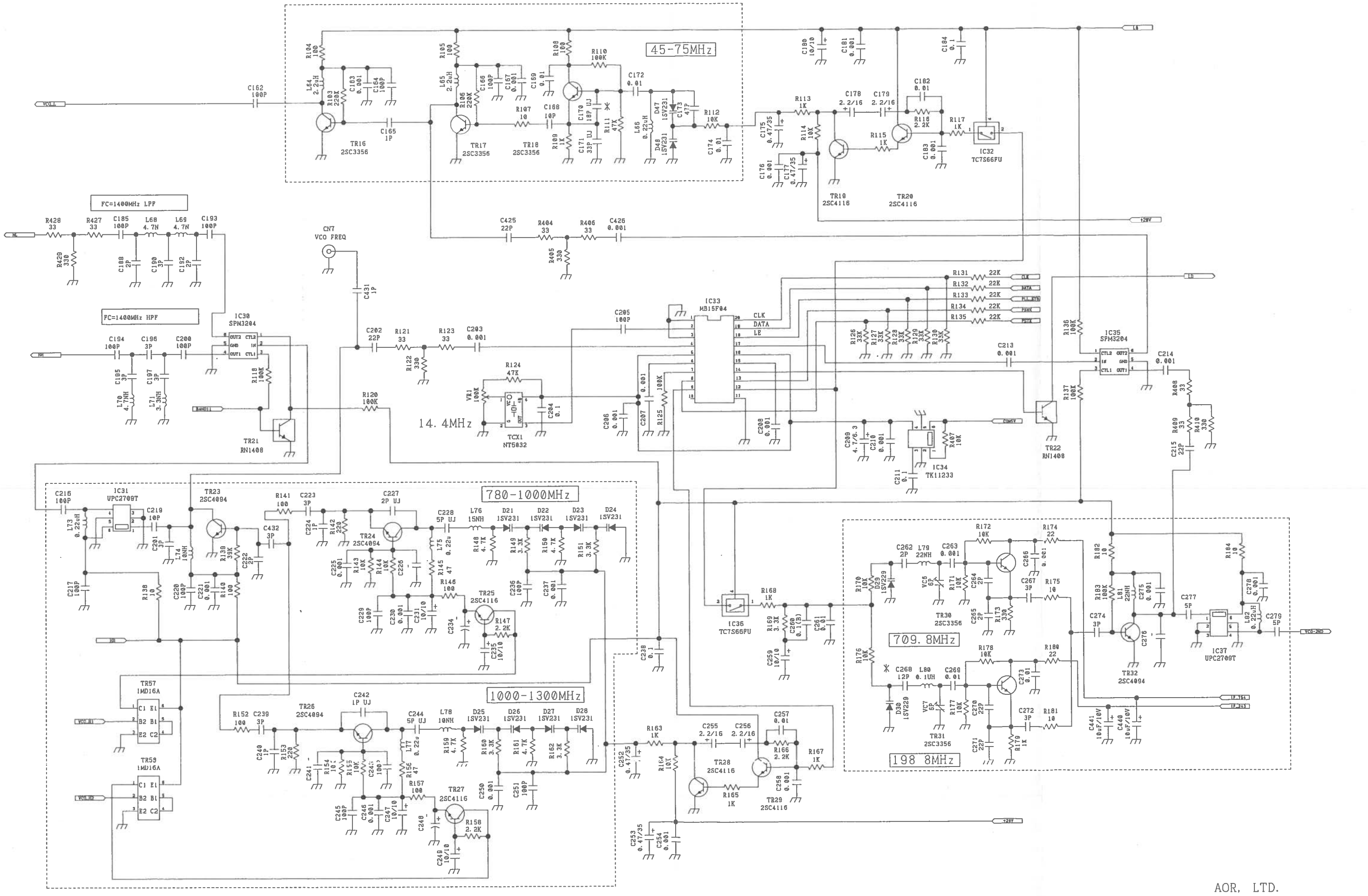
RX FREQ.	1st IF	VCO FREQ.
0.1 - 30MHz	+ 45.05MHz	45.150 - 75.050MHz
30 - 540MHz	+ 754.850MHz	784.850 - 1294.850MHz
540 - 1040MHz	+ 243.850MHz	783.850 - 1283.850MHz
1040 - 1540MHz	- 243.850MHz	796.150 - 1296.150MHz
1540 - 2040MHz	- 754.850MHz	785.150 - 1285.150MHz
2040 - 2500MHz	- 243.850MHz	1796.150 - 2256.150MHz 898.075 - 1128.075MHz
2500 - 3000MHz	- 754.850MHz	1745.150 - 2245.150MHz 872.075 - 1122.075MHz

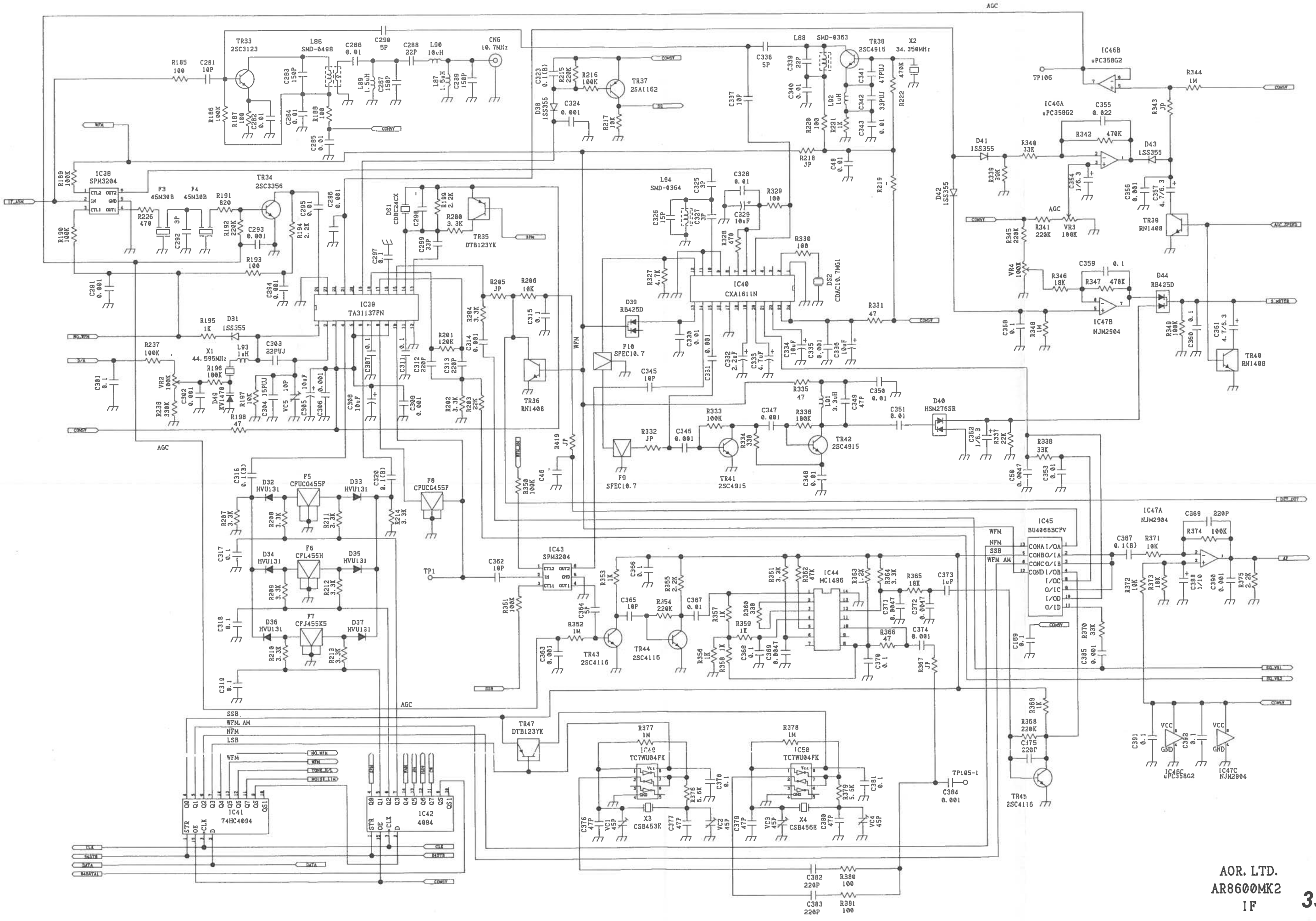
86-CPU3

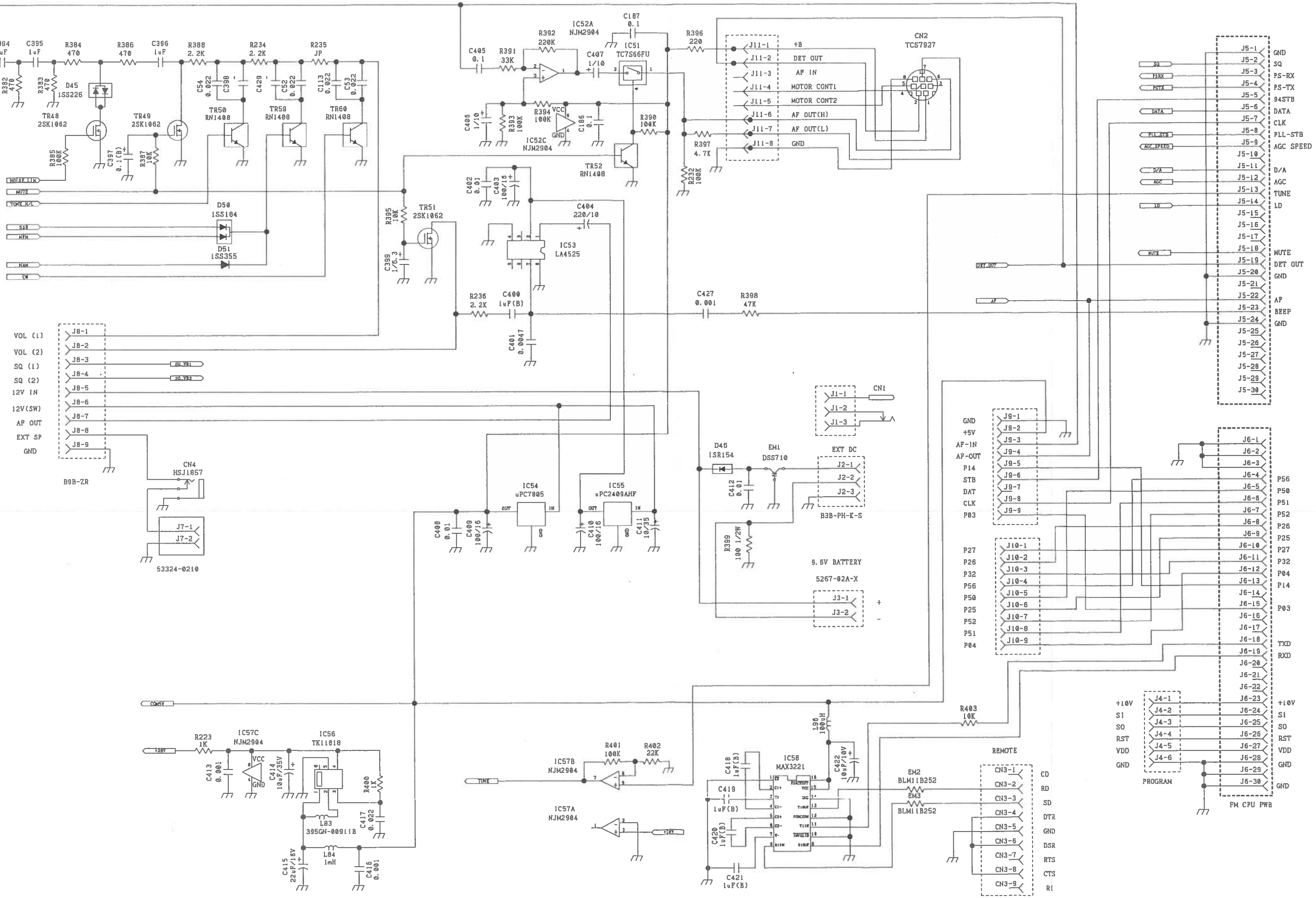


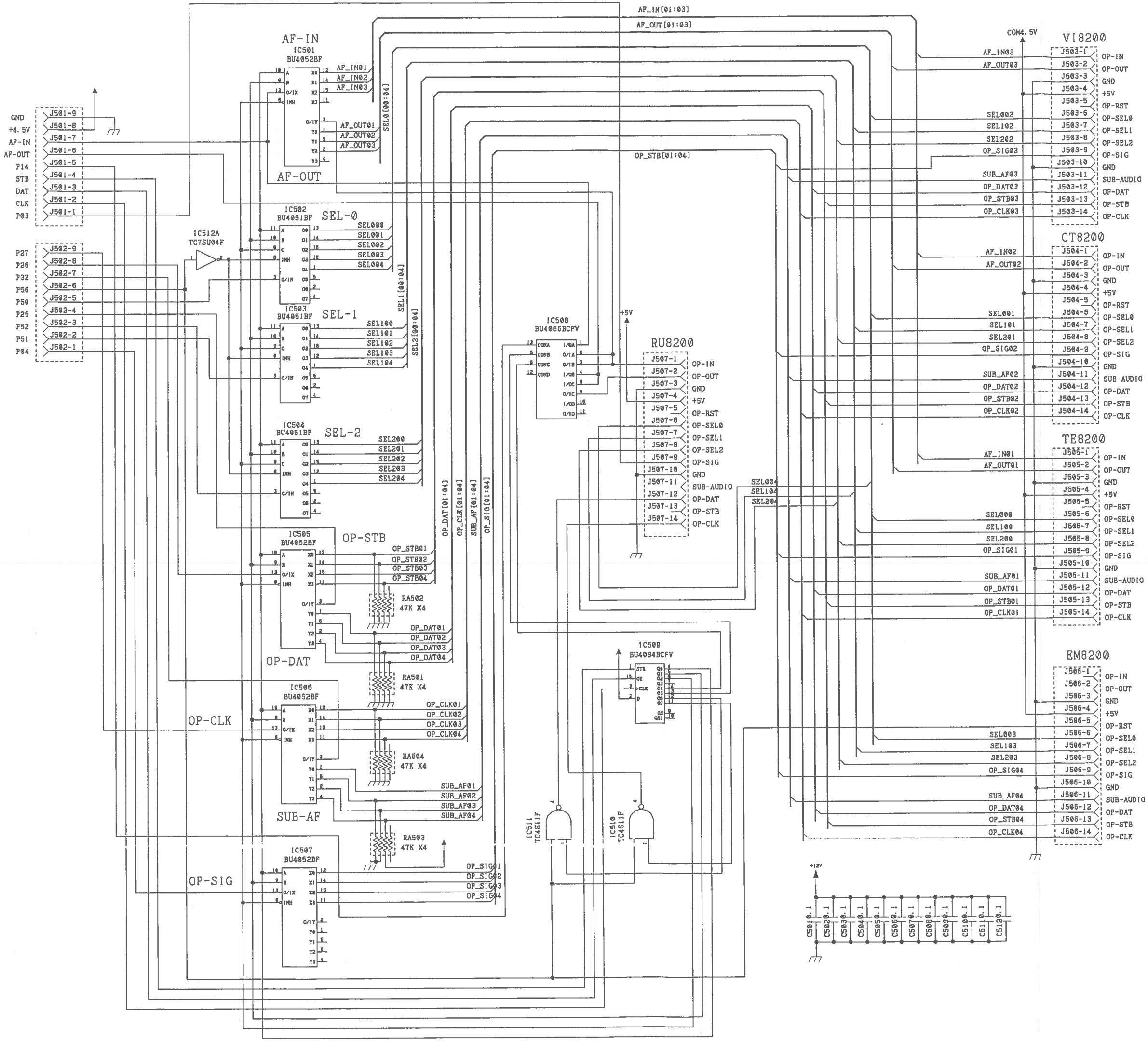
AOR, LTD.
AR8600MK2
CPU


30 - 75MHz
75 - 118MHz
118 - 174MHz
174 - 300MHz
300 - 470MHz
470 - 820MHz
820 - 2040MHz
2040-3000MHz
0.1 - 1.6MHz
1.6 - 18MHz
18 - 30MHz
AM ANT
B4B-ZR
DBM1
RNS-2
DBM2
RMS-1-24
UPC2757T
RN1408
MC152
74HC4094
4094


45-75MHz
780-1000MHz
1000-1300MHz
709.8MHz
198.8MHz
14.4MHz
FC=1400MHz LPF
FC=1400MHz HPF
CN7
VCO FREQ
IC30
SPM3204
IC31
UPC2709T
IC32
TC7S66FU
IC33
MB15F04
IC34
TK11233
IC35
SPM3204
IC36
TC7S66FU
IC37
UPC2709T
TCX1
NT5032
TR16
2SC3356
TR17
2SC3356
TR18
2SC3356
TR19
2SC4116
TR20
2SC4116
TR21
RN1408
TR22
RN1408
TR23
2SC4094
TR24
2SC4094
TR25
2SC4116
TR26
2SC4094
TR27
2SC4116
TR28
2SC4116
TR29
2SC4116
TR30
2SC3356
TR31
2SC3356
TR32
2SC4094
TR57
1MD16A
TR59
1MD16A
CLK
DATA
LE
+12V


AGC
TR33 2SC3123
L86 SMD-0498
C290 5P
C286 0.01
C288 22P
L90 10uH
CN6 10.7MHz
R185 100
C281 10P
C283 150P
C284 0.01
C285 0.01
C287 150P
C289 150P
L89 1.5uH
L87 1.5uH
R186 100K
R187 100
R188 100
C282 0.01
IC38 SPM3204
F3 45M30B
F4 45M30B
TR34 2SC3356
R189 100K
R190 100K
R191 820
R192 220K
R193 100
R194 2.2K
R195 1K
R196 100K
R197 10K
R198 47
R200 3.3K
R201 120K
R202 3.3K
R203 22K
R204 3.3K
R205 JP
R206 10K
R207 3.3K
R208 3.3K
R209 3.3K
R210 3.3K
R211 3.3K
R212 3.3K
R213 3.3K
R214 3.3K
R218 JP
R219 -
R220 100
R221 1K
R222 470K
C291 0.001
C292 3P
C293 0.001
C294 0.001
C295 0.01
C296 0.001
C297 0.1
C298 -
C299 33P
C300 10uF
C301 0.1
C302 0.001
C303 22PUJ
C304 15PUJ
C305 10uF
C306 0.001
C307 0.1
C308 10uF
C309 0.001
C310 0.1
C311 0.1
C312 220P
C313 220P
C314 0.001
C315 0.1
C316 0.1(B)
C317 0.1
C318 0.1
C319 0.1
C320 0.1(B)
C321 0.1(B)
C322 0.1
C323 0.1(B)
C324 0.001
C325 3P
C326 15P
C327 3P
C328 0.01
C329 10uF
C330 0.01
C331 0.001
C332 2.2uF
C333 4.7uF
C334 10uF
C335 0.001
C336 10uF
C337 10P
C338 5P
C339 22P
C340 0.01
C341 47PUJ
C342 33PUJ
C343 0.01
C345 10P
C346 0.001
C347 0.001
C348 0.01
C349 47P
C350 0.01
C351 0.01
C352 1/6.3
C353 0.01
C354 1/6.3
C355 0.022
C356 0.001
C357 4.7/6.3
C358 0.1
C359 0.1
C360 0.1
C361 4.7/6.3
C362 10P
C363 0.001
C364 5P
C365 10P
C366 0.1
C367 0.01
C368 0.1
C369 0.0047
C370 0.1
C371 0.0047
C372 0.0047
C373 1uF
C374 0.001
C375 220P
C376 47P
C377 47P
C378 0.1
C379 47P
C380 47P
C381 0.1
C382 220P
C383 220P
C384 0.001
C385 0.001
C386 0.1
C387 0.1(B)
C388 1/10
C389 220P
C390 0.001
C391 0.1
C392 0.1
L88 SMD-0363
L92 1uH
L93 1uH
L94 SMD-0364
TR35 DTB123YK
TR36 RN1408
TR37 2SA1162
TR38 2SC4915
TR39 RN1408
TR40 RN1408
TR41 2SC4915
TR42 2SC4915
TR43 2SC4116
TR44 2SC4116
TR45 2SC4116
TR47 DTB123YK
X1 44.595MHz
X2 34.350MHz
X3 CSB453E
X4 CSB456E
D31 1SS355
D32 HVU131
D33 HVU131
D34 HVU131
D35 HVU131
D36 HVU131
D37 HVU131
D38 1SS355
D39 RB425D
D40 HSM276SR
D41 1SS355
D42 1SS355
D43 1SS355
D44 RB425D
D40 KV1470
DS1 CDBC24CX
DS2 CDAC10.7MG1
F5 CPUCG455F
F6 CPL455H
F7 CPJ455K5
F8 CPUCG455F
F9 SFEC10.7
F10 SFEC10.7
IC39 TA31137FN
IC40 CXA1611N
IC41 74HC4094
IC42 4094
IC43 SPM3204
IC44 MC1496
IC45 BU4066BCFV
IC46A uPC358G2
IC46B uPC358G2
IC46C uPC358G2
IC47A NJM2904
IC47B NJM2904
IC47C NJM2904
R326 470
R327 4.7K
R328 470
R329 100
R330 100
R331 47
R332 JP
R333 100K
R334 330
R335 47
R336 100K
R337 22K
R338 33K
R339 39K
R340 33K
R341 220K
R342 470K
R343 JP
R344 1M
R345 220K
R346 18K
R347 470K
R348 1M
R349 100K
R350 100K
R351 100K
R352 1M
R353 1K
R354 220K
R355 2.2K
R356 1K
R357 1K
R358 1K
R359 1K
R360 330
R361 3.3K
R362 47K
R363 1.2K
R364 3.3K
R365 18K
R366 47
R367 1K
R368 220K
R369 1M
R370 33K
R371 10K
R372 10K
R373 10K
R374 100K
R375 2.2K
R376 5.6K
R377 1M
R378 1M
R379 5.6K
R380 100
R381 100
VR2 100K
VR3 100K
VR4 100K
VC1 45P
VC2 45P
VC3 45P
VC4 45P
VC5 10P
TP1
TP106
TP105-1
WFM
NFM
SSB
WFM AM
LSB
AGC
SSB.
WFM. AM
NFM
LSB
DATA
CLK
STR
OE
CLK
D
Q0 Q1 Q2 Q3 Q4 Q5 Q6 Q7 QS QS1


C394 1uF
C395 1uF
R384 470
R386 470
C396 1uF
R388 2.2K
R234 2.2K
R235 JP
R382 470
R383 470
D45 1SS226
TR48 2SK1062
TR49 2SK1062
C54 0.022
C398
C429
C52 0.022
C113 0.022
C53 0.022
TR50 RN1408
TR59 RN1408
TR60 RN1408
R385 100K
C397 0.1(B)
R387 10K
NOISE LIK
MUTE
TONE H/L
SSB
NFM
MAN
CW
D50 1SS184
D51 1SS355
R395 10K
TR51 2SK1062
C399 1/6.3
C402 0.01
C403 100/10
C404 220/10
IC53 LA4525
R236 2.2K
C400 1uF(B)
C401 0.0047
C427 0.001
R398 47K
C405 0.1
R391 33K
R392 220K
IC52A NJM2904
C187 0.1
IC51 TC7S66FU
C407 1/10
R396 220
C406 1/10
R393 100K
R394 100K
VCC
GND
IC52C NJM2904
C186 0.1
R390 100K
TR52 RN1408
R397 4.7K
R232 100K
J11-1 +B
J11-2 DET OUT
J11-3 AF IN
J11-4 MOTOR CONT1
J11-5 MOTOR CONT2
J11-6 AF OUT(H)
J11-7 AF OUT(L)
J11-8 GND
CN2 TCS7927
J5-1 GND
J5-2 SQ
J5-3 PS-RX
J5-4 PS-TX
J5-5 94STB
J5-6 DATA
J5-7 CLK
J5-8 PLL-STB
J5-9 AGC SPEED
J5-10
J5-11 D/A
J5-12 AGC
J5-13 TUNE
J5-14 LD
J5-15
J5-16
J5-17
J5-18 MUTE
J5-19 DET OUT
J5-20 GND
J5-21
J5-22 AF
J5-23 BEEP
J5-24 GND
J5-25
J5-26
J5-27
J5-28
J5-29
J5-30
DET OUT
AF
VOL (1)
VOL (2)
SQ (1)
SQ (2)
12V IN
12V(SW)
AF OUT
EXT SP
GND
J8-1
J8-2
J8-3
J8-4
J8-5
J8-6
J8-7
J8-8
J8-9
B9B-ZR
CN4 HSJ1657
J7-1
J7-2
53324-0210
IC54 uPC7805
IC55 uPC2409AHF
C408 0.01
C409 100/16
C410 100/16
C411 10/35
D46 ISR154
EM1 DSS710
C412 0.01
EXT DC
J2-1
J2-2
J2-3
B3B-PH-K-S
R399 100 1/2W
9.6V BATTERY
5267-02A-X
J3-1
J3-2
J1-1
J1-2
J1-3
CN1
GND
+5V
AF-IN
AF-OUT
P14
STB
DAT
CLK
P03
J9-1
J9-2
J9-3
J9-4
J9-5
J9-6
J9-7
J9-8
J9-9
P27
P26
P32
P56
P50
P25
P52
P51
P04
J10-1
J10-2
J10-3
J10-4
J10-5
J10-6
J10-7
J10-8
J10-9
J6-1
J6-2
J6-3
J6-4
J6-5
J6-6
J6-7
J6-8
J6-9
J6-10
J6-11
J6-12
J6-13
J6-14
J6-15
J6-16
J6-17
J6-18
J6-19
J6-20
J6-21
J6-22
J6-23
J6-24
J6-25
J6-26
J6-27
J6-28
J6-29
J6-30
P56
P50
P51
P52
P26
P25
P27
P32
P04
P14
P03
TXD
RXD
FM CPU PWB
R403 10K
+10V
SI
SO
RST
VDD
GND
J4-1
J4-2
J4-3
J4-4
J4-5
J4-6
PROGRAM
CONSV
+12V
R223 1K
IC57C NJM2904
IC56 TK11818
C413 0.001
C414 10uF/35V
R400 1K
L83 395GN-00911B
C417 0.022
L84 1mH
C415 22uF/16V
C416 0.001
IC57B NJM2904
TUNE
R401 100K
R402 22K
IC57A NJM2904
+8V
L85 100uH
C418 1uF(B)
IC58 MAX3221
C422 10uF/10V
C419 1uF(B)
C420 1uF(B)
C421 1uF(B)
EM2 BLM11B252
EM3 BLM11B252
REMOTE
CN3-1 CD
CN3-2 RD
CN3-3 SD
CN3-4 DTR
CN3-5 GND
CN3-6 DSR
CN3-7 RTS
CN3-8 CTS
CN3-9 RI


AF-IN
IC501
BU4052BF
AF_IN01
AF_IN02
AF_IN03
AF_OUT01
AF_OUT02
AF_OUT03
AF-OUT
SEL0[00:04]
AF_IN[01:03]
AF_OUT[01:03]
OP_STB[01:04]
GND
+4.5V
AF-IN
AF-OUT
P14
STB
DAT
CLK
P03
J501-9
J501-8
J501-7
J501-6
J501-5
J501-4
J501-3
J501-2
J501-1
IC512A
TC7SU04F
P27
P26
P32
P56
P50
P25
P52
P51
P04
J502-9
J502-8
J502-7
J502-6
J502-5
J502-4
J502-3
J502-2
J502-1
IC502
BU4051BF
SEL-0
SEL000
SEL001
SEL002
SEL003
SEL004
IC503
BU4051BF
SEL-1
SEL100
SEL101
SEL102
SEL103
SEL104
SEL1[00:04]
IC504
BU4051BF
SEL-2
SEL200
SEL201
SEL202
SEL203
SEL204
SEL2[00:04]
IC505
BU4052BF
OP-STB
OP_STB01
OP_STB02
OP_STB03
OP_STB04
RA502
47K X4
OP_DAT01
OP_DAT02
OP_DAT03
OP_DAT04
OP-DAT
RA501
47K X4
IC506
BU4052BF
OP_CLK01
OP_CLK02
OP_CLK03
OP_CLK04
OP-CLK
RA504
47K X4
SUB_AF01
SUB_AF02
SUB_AF03
SUB_AF04
SUB-AF
RA503
47K X4
IC507
BU4052BF
OP_SIG01
OP_SIG02
OP_SIG03
OP_SIG04
OP-SIG
OP_DAT[01:04]
OP_CLK[01:04]
SUB_AF[01:04]
OP_SIG[01:04]
IC508
BU4066BCFV
+5V
RU8200
J507-1
J507-2
J507-3
J507-4
J507-5
J507-6
J507-7
J507-8
J507-9
J507-10
J507-11
J507-12
J507-13
J507-14
OP-IN
OP-OUT
GND
+5V
OP-RST
OP-SEL0
OP-SEL1
OP-SEL2
OP-SIG
GND
SUB-AUDIO
OP-DAT
OP-STB
OP-CLK
SEL004
SEL104
SEL204
IC509
BU4094BCFV
IC511
TC4S11F
IC510
TC4S11F
COM4.5V
VI8200
J503-1
J503-2
J503-3
J503-4
J503-5
J503-6
J503-7
J503-8
J503-9
J503-10
J503-11
J503-12
J503-13
J503-14
AF_IN03
AF_OUT03
SEL002
SEL102
SEL202
OP_SIG03
SUB_AF03
OP_DAT03
OP_STB03
OP_CLK03
OP-IN
OP-OUT
GND
+5V
OP-RST
OP-SEL0
OP-SEL1
OP-SEL2
OP-SIG
GND
SUB-AUDIO
OP-DAT
OP-STB
OP-CLK
CT8200
J504-1
J504-2
J504-3
J504-4
J504-5
J504-6
J504-7
J504-8
J504-9
J504-10
J504-11
J504-12
J504-13
J504-14
AF_IN02
AF_OUT02
SEL001
SEL101
SEL201
OP_SIG02
SUB_AF02
OP_DAT02
OP_STB02
OP_CLK02
TE8200
J505-1
J505-2
J505-3
J505-4
J505-5
J505-6
J505-7
J505-8
J505-9
J505-10
J505-11
J505-12
J505-13
J505-14
AF_IN01
AF_OUT01
SEL000
SEL100
SEL200
OP_SIG01
SUB_AF01
OP_DAT01
OP_STB01
OP_CLK01
EM8200
J506-1
J506-2
J506-3
J506-4
J506-5
J506-6
J506-7
J506-8
J506-9
J506-10
J506-11
J506-12
J506-13
J506-14
SEL003
SEL103
SEL203
OP_SIG04
SUB_AF04
OP_DAT04
OP_STB04
OP_CLK04
+12V
C501 0.1
C502 0.1
C503 0.1
C504 0.1
C505 0.1
C506 0.1
C507 0.1
C508 0.1
C509 0.1
C510 0.1
C511 0.1
C512 0.1