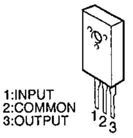
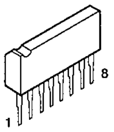
■ PIN CONNECTION DIAGRAM

● ICs

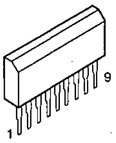
AN78N09



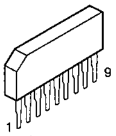
BA15218N
BA7612N



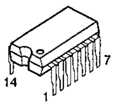
µPC4570HA



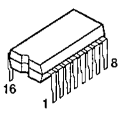
TA8409S



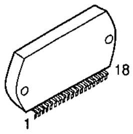
HD74HC125P



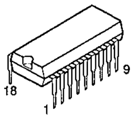
TC4052BP
TC4053BP
BU2090



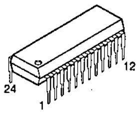
STK4182II
STK4122MK2



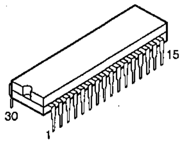
BA3835S
BU9252S



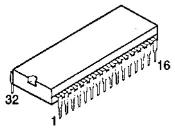
LC72130
LV1015



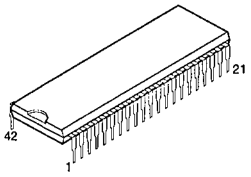
LA1835
LC7536



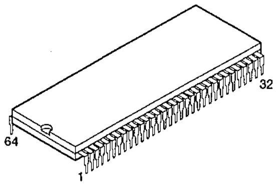
BA7726AS



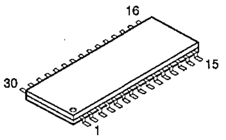
LA2786



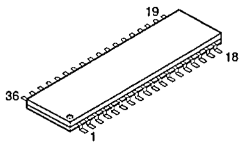
M38024M6-260SP



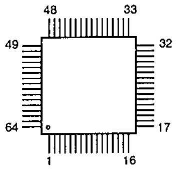
LA6536M



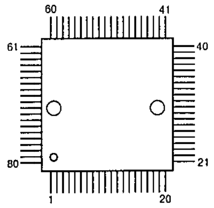
AN8806SB



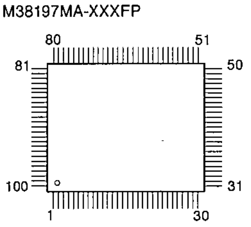
LC75359E



MN66271RA

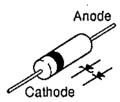


M38197MA-XXXFP

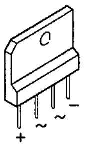


● Diodes

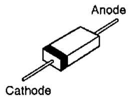
1SS133
1SS270A
1SR139-400
MTZJ4.7C
MTZJ13.0B
MTZJ20.0C
MTZJ27.0D



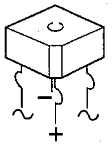
D3SBA20



1SS355
1SS380
MA8047-H
MA8056-M
MA8056-L
MA8062-M
MA8068-M
MA8091-H
UDZ7.5B

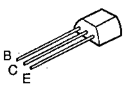


S4VB20

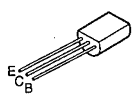


● Transistors

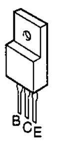
2SA933S (Q, R)
2SC1740S (R, S)
DTA114ES
DTA144ES
DTC114ES
DTC144ES
DTC143XS



2SA893A (D, E)
2SA1015 (Y)
2SB647 (C, D)
2SC535 (A, B, C)
2SC1815 (Y)
2SC1890A (D, E)
2SC2878 (A, B)
2SC4208A (Q, R, S)

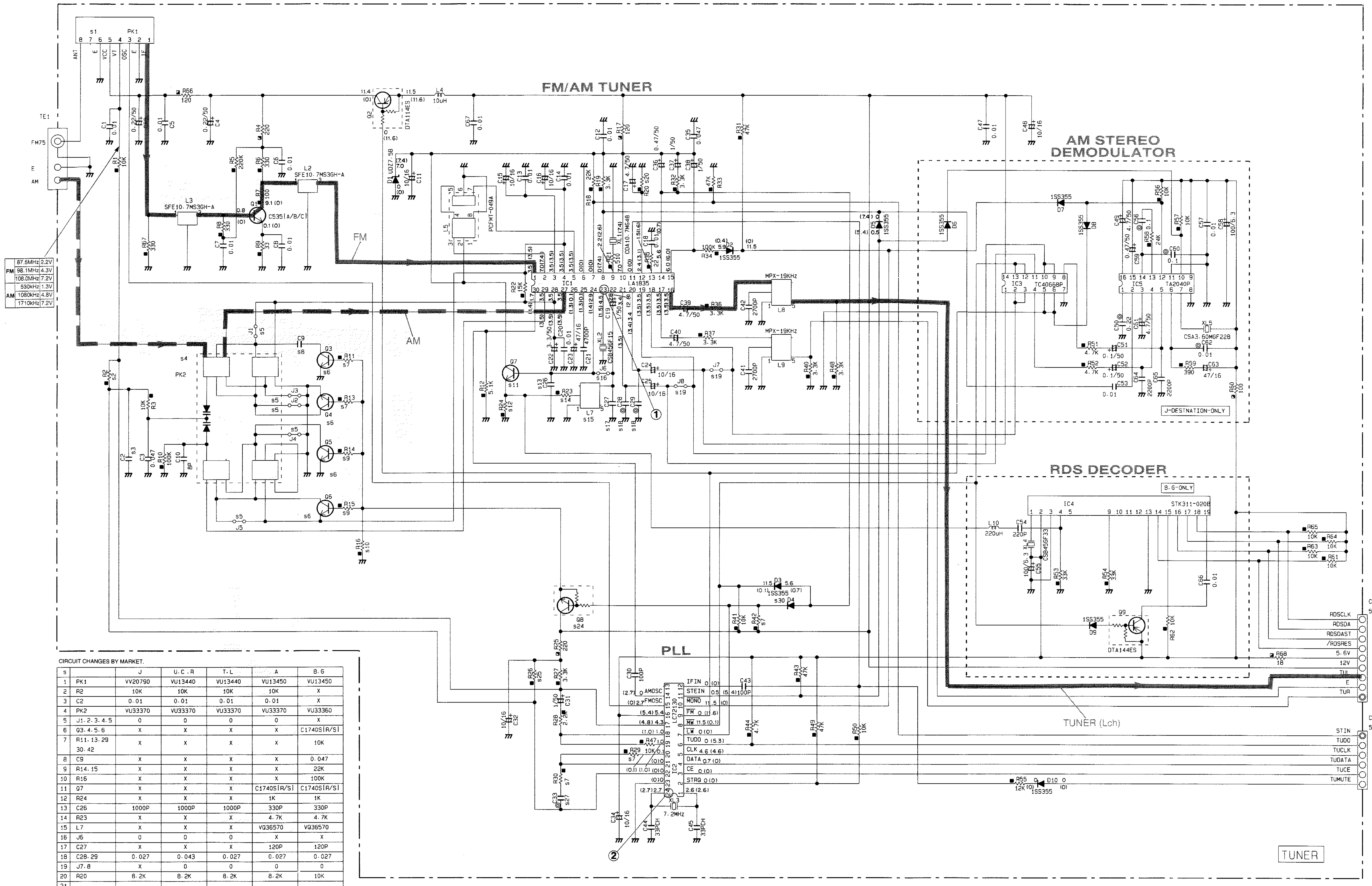


2SB1565 (E, F)
2SD2396 (J, K)



■ SCHEMATIC DIAGRAM (TUNER)

Each voltage represents the voltage when receiving FM (stereo) signal and the voltage in the parentheses ( ) is the voltage when receiving AM signal.



CIRCUIT CHANGES BY MARKET.

s		J	U.C.R	T.L	A	B.G
1	PK1	VV20790	VU13440	VU13440	VU13450	VU13450
2	R2	10K	10K	10K	10K	X
3	C2	0.01	0.01	0.01	0.01	X
4	PK2	VU33370	VU33370	VU33370	VU33370	VU33360
5	J1.2.3.4.5	0	0	0	0	X
6	Q3.4.5.6	X	X	X	X	C1740S[R/S]
7	R11.13.29 30.42	X	X	X	X	10K
8	C9	X	X	X	X	0.047
9	R14.15	X	X	X	X	22K
10	R16	X	X	X	X	100K
11	Q7	X	X	X	C1740S[R/S]	C1740S[R/S]
12	R24	X	X	X	1K	1K
13	C26	1000P	1000P	1000P	330P	330P
14	R23	X	X	X	4.7K	4.7K
15	L7	X	X	X	VQ36570	VQ36570
16	J6	0	0	0	X	X
17	C27	X	X	X	120P	120P
18	C28.29	0.027	0.043	0.027	0.027	0.027
19	J7.8	X	0	0	0	0
20	R20	8.2K	8.2K	8.2K	8.2K	10K
21						
22						
23						
24	Q8	X	X	X	X	DTC144ES
25	R26	X	X	X	X	3.3K
26						
27	C33	X	X	X	X	1
28						
29						
30	D4	X	X	X	X	1SS355

X : NOT USED
O : USED

NOTICE (model)
(J)····· JAPANESE
(U)····· U.S.A
(C)····· CANADIAN
(R)····· GENERAL
(A)····· AUSTRALIAN
(B)····· BRITISH
(G)····· EUROPEAN
(T)····· CHINA
(L)····· SINGAPORE

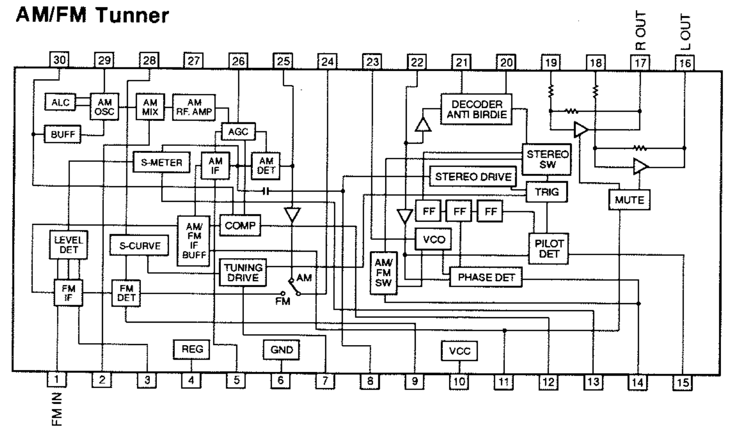
RESISTOR

REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P=5)
◪	CARBON FILM RESISTOR (P=10)
△	METAL OXIDE FILM RESISTOR
▲	METAL FILM RESISTOR
☒	METAL PLATE RESISTOR
▨	FIRE PROOF CARBON FILM RESISTOR
□	CEMENT MOLDED RESISTOR
⊘	SEMI VARIABLE RESISTOR
■	CHIP RESISTOR

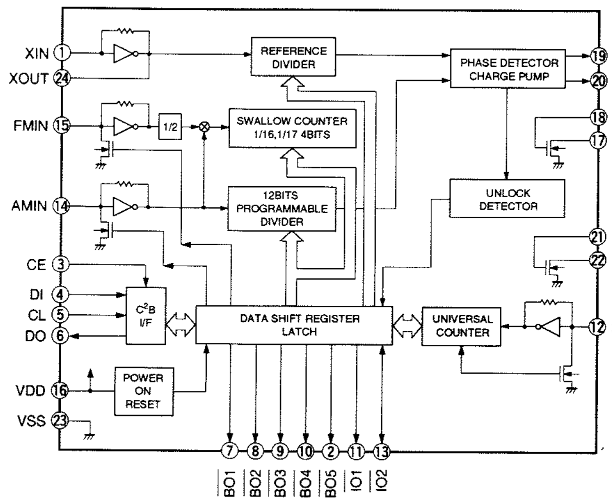
CAPACITOR

REMARKS	PARTS NAME	
NO MARK	ELECTROLYTIC CAPACITOR	⌗
⊗	TANTALUM CAPACITOR	
NO MARK	CERAMIC CAPACITOR	⊣⊢
◉	CERAMIC TUBULAR CAPACITOR	
◎	POLYESTER FILM CAPACITOR	
○	POLYSTYRENE FILM CAPACITOR	
ⓘ	MICA CAPACITOR	
Ⓟ	POLYPROPYLENE FILM CAPACITOR	
⊜	SEMICONDUCTIVE CERAMIC CAPACITOR	

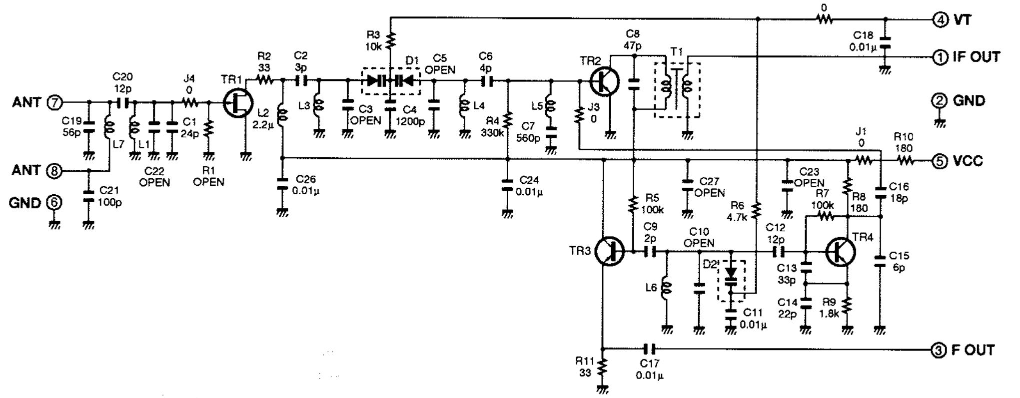
IC1 : LA1835
AM/FM Tuner



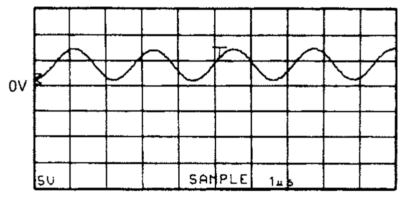
IC2 : LC72130
PLL Controller



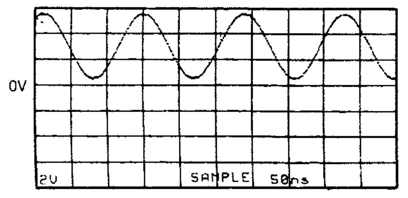
● **PK1 : ENV-17298G1 (VU134400) U, C, R, L models**



Point ① FM reception (Pin23 of IC1)
V : 5V/div H : 1 µsec/div
DC range 1 : 1 probe



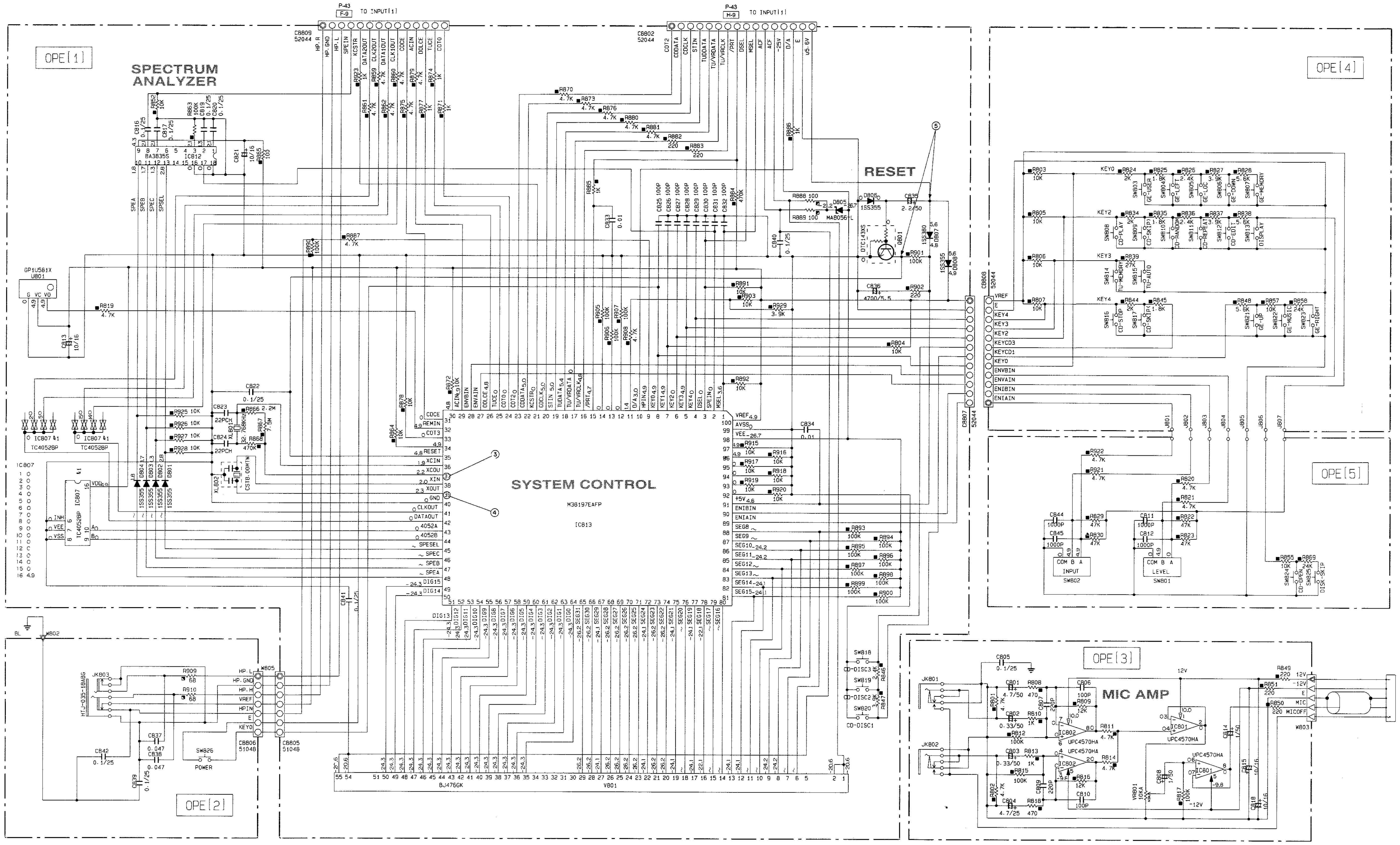
Point ② (Pin24 of IC2)
V : 2V/div H : 50nsec/div
DC range 1 : 1 probe



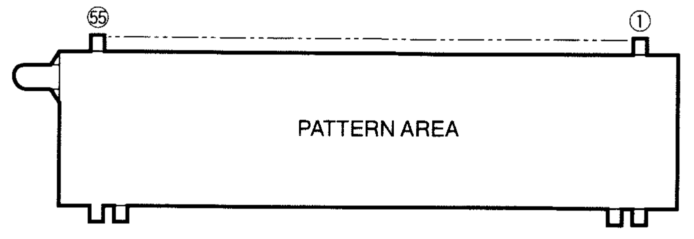
- * *All voltages are measured with a 10MΩ/V DC electric volt meter.*
- * *Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equal to those originally installed.*
- * *Schematic diagram is subject to change without notice.*

EMX-100CD

■ SCHEMATIC DIAGRAM (OPERATION)



● V801 : BJ476GK (VU667200)



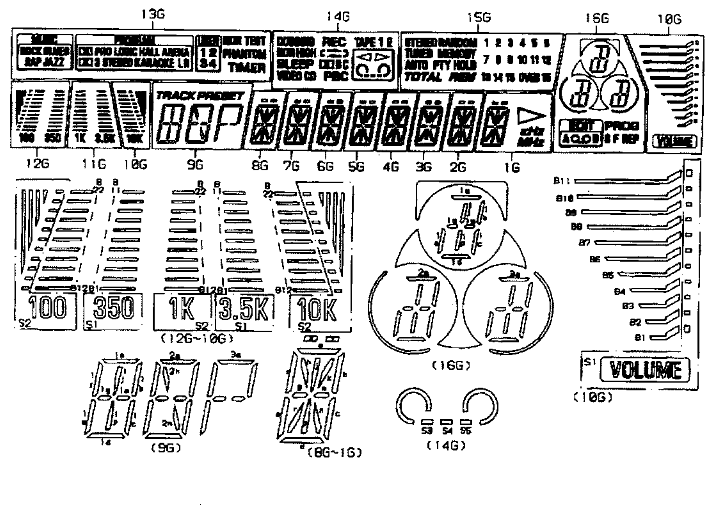
● PIN CONNECTION

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Connection	F1	F1	NP	NP	NC	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16	P17	P18	P19	P20	P21	P22	P23

Pin No.	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55
Connection	P24	NC	NC	NC	NC	NC	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G	12G	13G	14G	15G	16G	NC	NP	NP	F2	F2

Note 1) F1, F2 .... Filament
2) NP .... No Pin
3) NC .... No Connection
4) P1~P24 .... Datum Line
5) 1G~16G ...... Grid

● GRID ASSIGNMENT



● ANODE CONNECTION

	16G	15G	14G	13G	12G~10G	9G	8G~2G	1G
P1	1a, 1b, 1d 1g, 1m	1	TAPE	MUSIC	S1	1d	d	d
P2	1c	2	1	ROCK	B1	1e	p	p
P3	1e	3	2	BLUES	B2	1c	n	n
P4	1j, 1p	4	◁	RAP	B3	1m	r	r
P5	2a, 2b, 2d 2g, 2m	5	▷	JAZZ	B4	1g	e	e
P6	2c	6	S3	–	B5	1f	c	c
P7	2e	7	S4	–	B6	1b	m	m
P8	2j, 2p	8	S5	TIMER	B7	1j, 1p	g	g
P9	3a, 3b, 3d 3g, 3m	9	○ ○	PROGRAM	B8	1a	f	f
P10	3c	10	DUBBING	ARENA	B9	2d	b	b
P11	3e	11	NOR	DD PRO LOGIC	B10	2n	k	k
P12	3j, 3p	12	HIGH	DD 3 STEREO	B11	2e	h	h
P13		13	REC	KARAOKE	S2	2c	j	j
P14	(	14	C	L	B12	2g, 2m	a	a
P15	)	15	⇄	R	B13	2f	t	t
P16	PROG	OVER 15	ↄ	HALL	B14	2b	s	s
P17	oo	TOTAL	DD	USER	B15	2h	–	▷
P18	A	REM	B	1	B16	2a	–	kHz
P19	B	RANDOM	C	2	B17	3b	–	MHz
P20	EDIT	STEREO	SLEEP	3	B18	3a, 3e, 3f 3g, 3m	–	–
P21	–	MEMORY	VIDEO CD	4	B19	PRESET	–	–
P22	S	TUNED	PBC	NOR	B20	TRACK	–	–
P23	F	AUTO	–	PHANTOM	B21	–	–	–
P24	REP	PTY HOLD	–	TEST	B22	–	–	–

NOTICE (model)
(J)····· JAPANESE
(U)····· U. S. A
(C)····· CANADIAN
(R)····· GENERAL
(A)····· AUSTRALIAN
(B)····· BRITISH
(G)····· EUROPEAN
(T)····· CHINA
(L)····· SINGAPORE

RESISTOR

REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P=5)
⧄	CARBON FILM RESISTOR (P=10)
△	METAL OXIDE FILM RESISTOR
▲	METAL FILM RESISTOR
⊠	METAL PLATE RESISTOR
▨	FIRE PROOF CARBON FILM RESISTOR
□	CEMENT MOLDED RESISTOR
⊘	SEMI VARIABLE RESISTOR
▤	CHIP RESISTOR

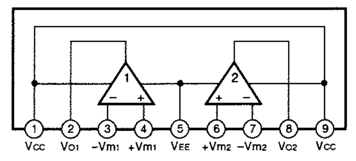
CAPACITOR

REMARKS	PARTS NAME	
NO MARK	ELECTROLYTIC CAPACITOR	⊣⊢
⊗	TANTALUM CAPACITOR	
NO MARK	CERAMIC CAPACITOR	⊣⊢
◉	CERAMIC TUBULAR CAPACITOR	
◎	POLYESTER FILM CAPACITOR	
○	POLYSTYRENE FILM CAPACITOR	
⦶	MICA CAPACITOR	
Ⓟ	POLYPROPYLENE FILM CAPACITOR	
⊜	SEMICONDUCTIVE CERAMIC CAPACITOR	

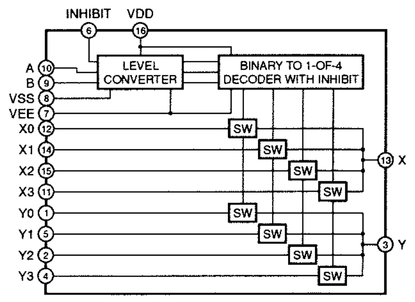
Interchangeable Parts at Manufacture-Stage

Mark	Reference Parts Number	Parts Name
&1	IC807	TC4052BP UPD4052BC

IC801, 802 : µPC4570HA
Dual OP-Amp

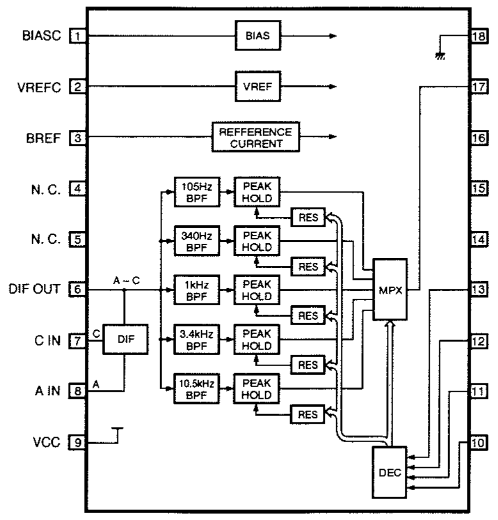


IC807 : TC4052BP
Dual 4 Channel Analog Multiplexers/Demultiplexers



INHIBIT	B	A	
0	0	0	0x, 0y
0	0	1	1x, 1y
0	1	0	2x, 2y
0	1	1	3x, 3y
1	X	X	NONE

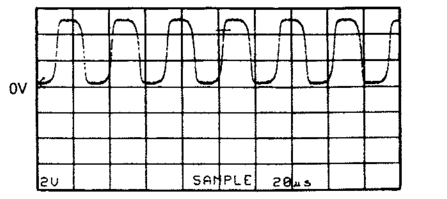
IC812 : BA3835S
5-Band BPF and Peak Hold for Spectrum Analyzer



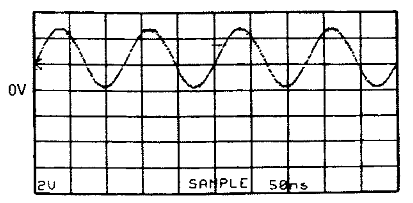
Other ICs

● IC813 : M38197MA-XXXFP → See page 17

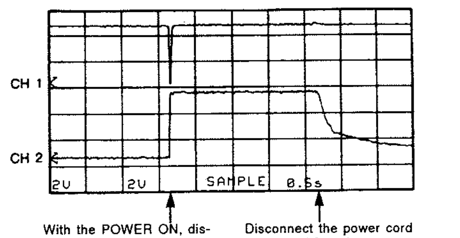
Point ③ (Pin37 of IC813)
V : 2V/div H : 20 µsec/div
DC range 1 : 1 probe



Point ④ (Pin39 of IC813)
V : 2V/div H : 50 nsec/div
DC range 1 : 1 probe



Point ⑤
CH1 : Pin35 of IC813 V : 2V/div (CH1)
CH2 : Anode of D807 V : 2V/div (CH2)
H : 0.5 sec/div DC range 1 : 1 probe
(This waveform is not available by pushing the power switch ON and OFF.)



With the POWER ON, disconnect the A/C power cord. Reconnect the A/C power cord and the above waveforms will start.

Disconnect the power cord from the AC outlet.

- * *All voltages are measured with a 10MΩ/V DC electric volt meter.*
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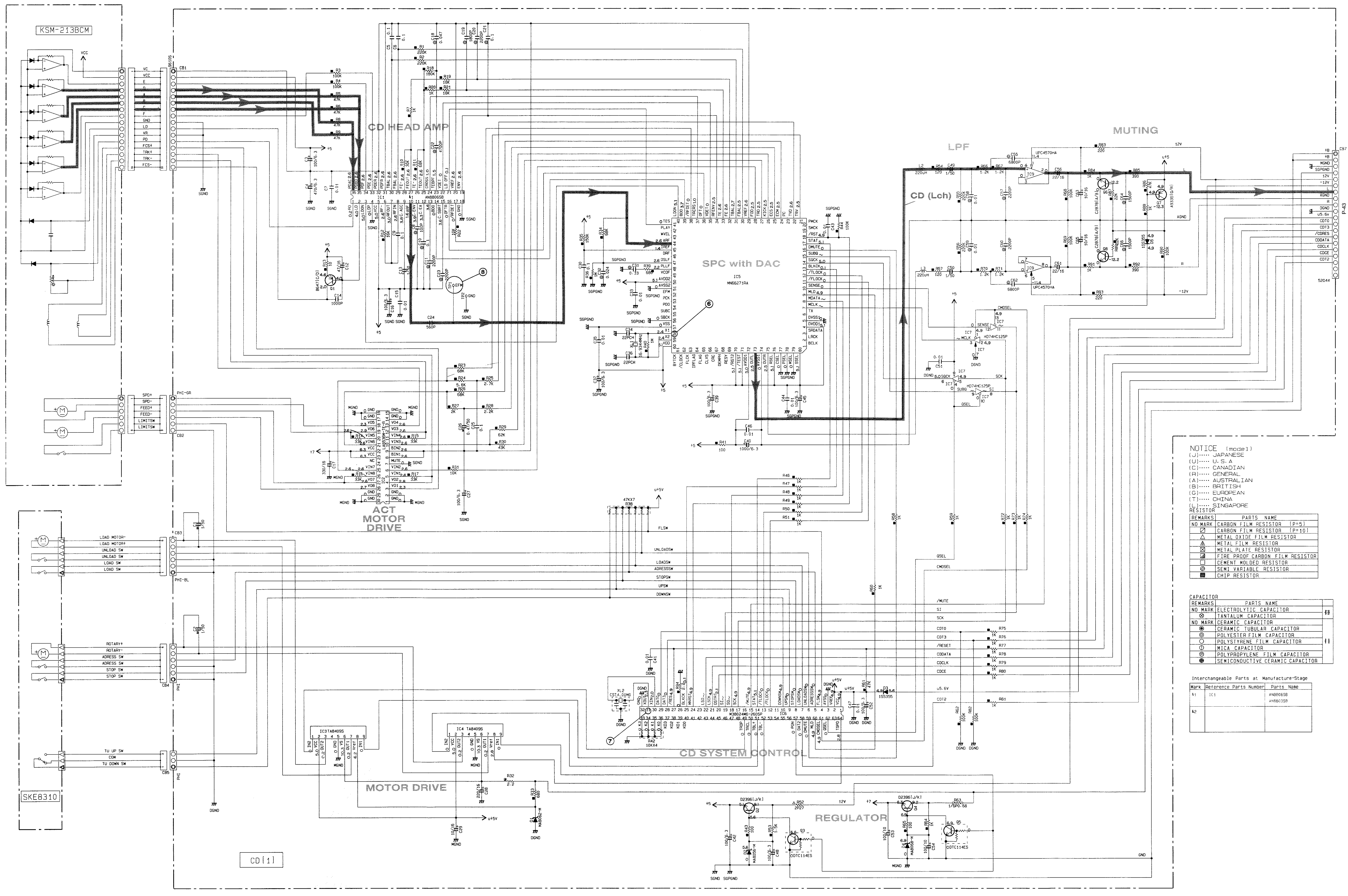
- * *Schematic diagram is subject to change without notice.*

■ SCHEMATIC DIAGRAM (CD)



NOTICE (model)
(J)…… JAPANESE
(U)…… U. S. A
(C)…… CANADIAN
(R)…… GENERAL
(A)…… AUSTRALIAN
(B)…… BRITISH
(G)…… EUROPEAN
(T)…… CHINA
(L)…… SINGAPORE

RESISTOR

REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P=5)
⊘	CARBON FILM RESISTOR (P=10)
△	METAL OXIDE FILM RESISTOR
▲	METAL FILM RESISTOR
⊠	METAL PLATE RESISTOR
◪	FIRE PROOF CARBON FILM RESISTOR
□	CEMENT MOLDED RESISTOR
⊘	SEMI VARIABLE RESISTOR
■	CHIP RESISTOR

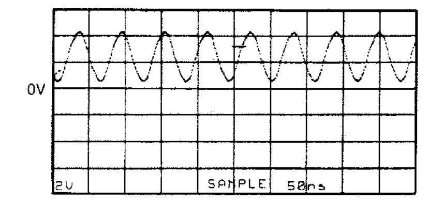
CAPACITOR

REMARKS	PARTS NAME	
NO MARK	ELECTROLYTIC CAPACITOR	⧺
⊗	TANTALUM CAPACITOR	
NO MARK	CERAMIC CAPACITOR	‖
◉	CERAMIC TUBULAR CAPACITOR	
◎	POLYESTER FILM CAPACITOR	
○	POLYSTYRENE FILM CAPACITOR	
Ⓘ	MICA CAPACITOR	
Ⓟ	POLYPROPYLENE FILM CAPACITOR	
⊖	SEMICONDUCTIVE CERAMIC CAPACITOR	

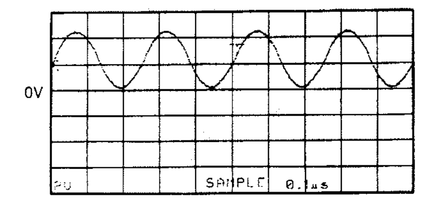
Interchangeable Parts at Manufacture-Stage

Mark	Reference Parts Number	Parts Name
&1	IC1	AN8806SB AN8603SB
&2		

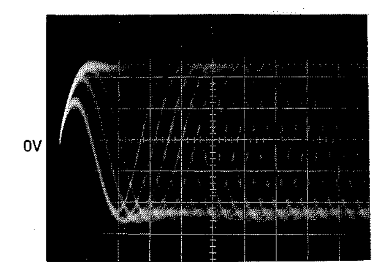
Point ⑥ (Pin58 of IC5)
V : 2V/div H : 50 nsec/div
DC range 1 : 1 probe



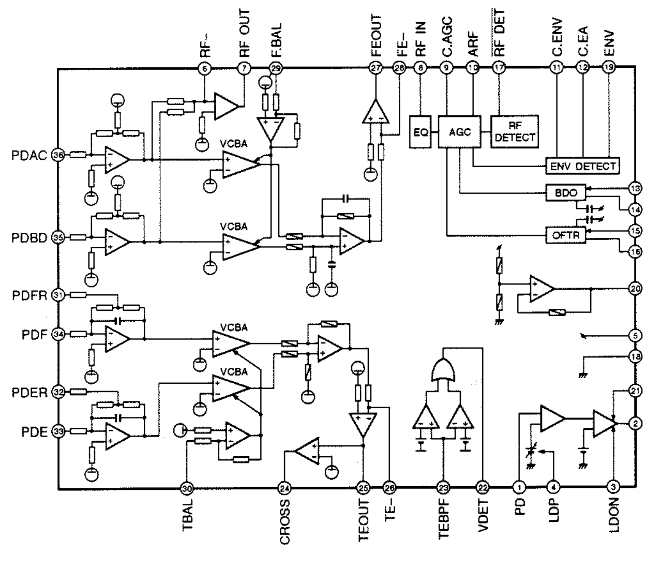
Point ⑦ (Pin31 of IC6)
V : 2V/div H : 0.1 μsec/div
DC range 1 : 1 probe



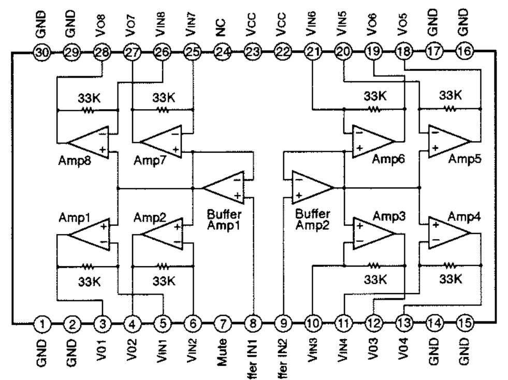
Point ⑧ (TP1 : Pin44 of IC5)
V : 0.2V/div H : 0.5 μsec/div
AC range 1 : 1 probe



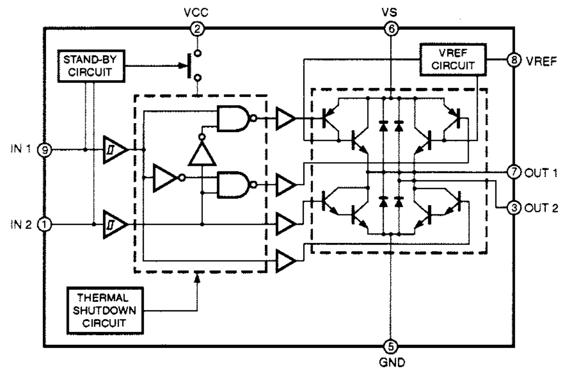
IC1 : AN8806SB
Digital Servo Head Amp



IC2 : LA6536M
4 Channel BTL Driver

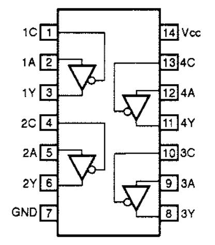


IC3, 4 : TA8409S
Full Bridge Motor Driver

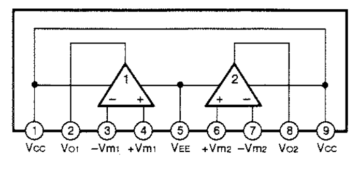


INPUT (Note)		OUTPUT		MODE
IN 1	IN 2	OUT 1	OUT 2	(MOTOR)
0	0	∞	∞	STOP
1	0	H	L	CW/CCW
0	1	L	H	CCW/CW
1	1	L	L	BRAEK

IC7 : HD74HC125P
Quad 3 State Bus Buffers



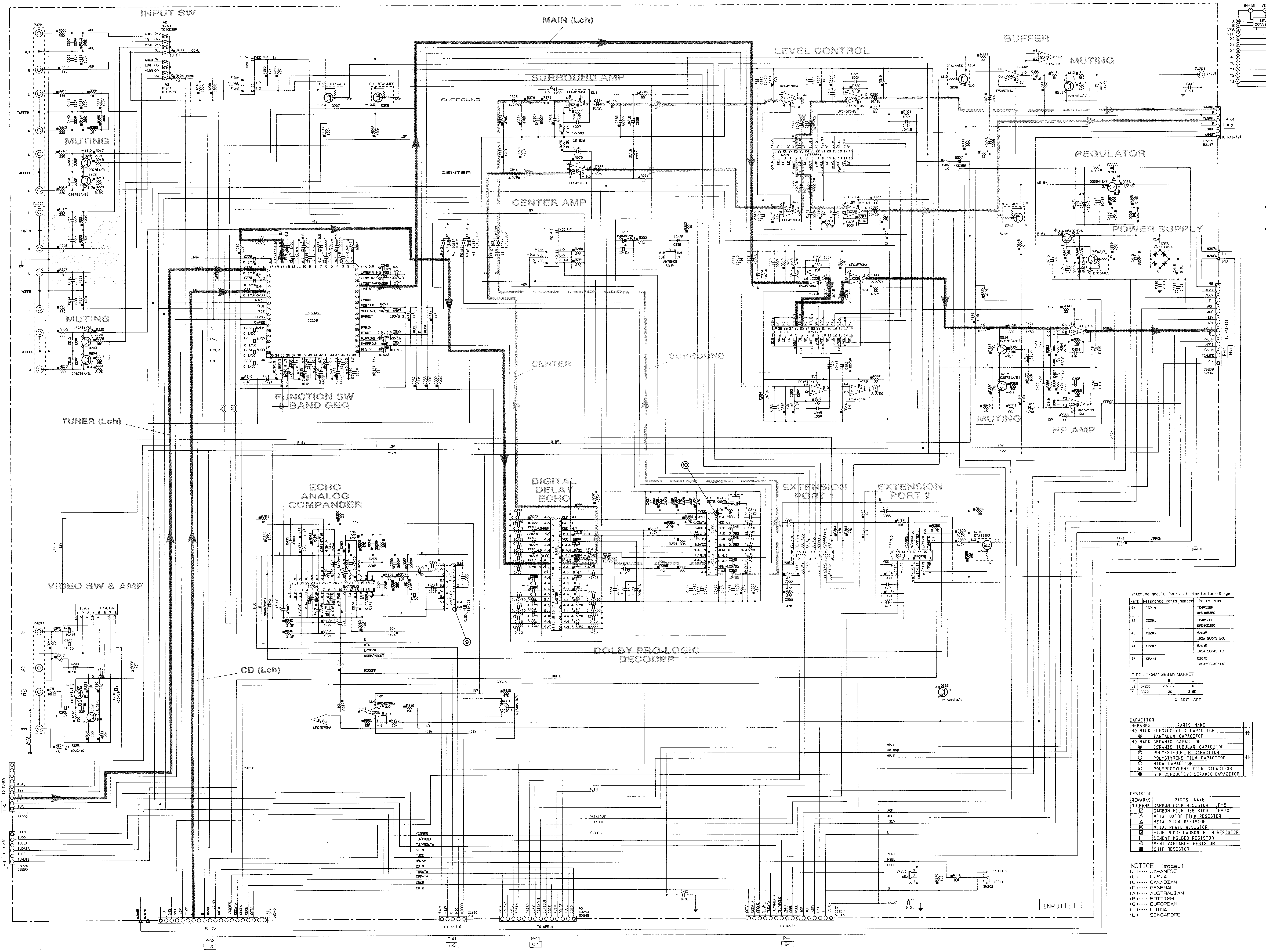
IC9 : μPC4570HA
Dual OP-Amp



Other ICs
- ● IC5 : MN66271RA → See page 13
- ● IC6 : M38024M6-260SP → See page 15

- * *All voltages are measured with a 10MΩ/V DC electric volt meter.*
- * *Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equal to those originally installed.*
- * *Schematic diagram is subject to change without notice.*

■ SCHEMATIC DIAGRAM (INPUT)



Interchangeable Parts at Manufacture-Stage

Mark	Reference Parts Number	Parts Name
⚠1	IC214	TC4053BP UPD4053BC
⚠2	IC201	TC4052BP UPD4052BC
⚠3	CB205	52045 IMSA-9604S-20C
⚠4	CB207	52045 IMSA-9604S-16C
⚠5	CB214	52045 IMSA-9604S-14C

CIRCUIT CHANGES BY MARKET.

S		R	L
52	SW201	VU75570	X
53	R370	2K	3.9K

X : NOT USED

CAPACITOR

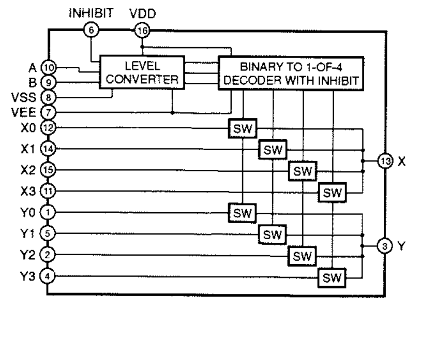
REMARKS	PARTS NAME	
NO MARK	ELECTROLYTIC CAPACITOR	⌗
⊗	TANTALUM CAPACITOR	
NO MARK	CERAMIC CAPACITOR	⊣⊢
◉	CERAMIC TUBULAR CAPACITOR	
◎	POLYESTER FILM CAPACITOR	
○	POLYSTYRENE FILM CAPACITOR	
⦶	MICA CAPACITOR	
Ⓟ	POLYPROPYLENE FILM CAPACITOR	
●	SEMICONDUCTIVE CERAMIC CAPACITOR	

RESISTOR

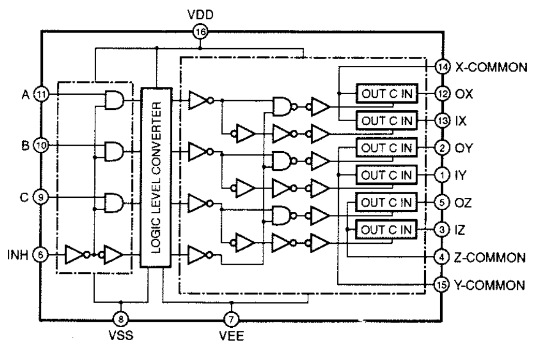
REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P=5)
◪	CARBON FILM RESISTOR (P=10)
△	METAL OXIDE FILM RESISTOR
▲	METAL FILM RESISTOR
⊠	METAL PLATE RESISTOR
◩	FIRE PROOF CARBON FILM RESISTOR
□	CEMENT MOLDED RESISTOR
⊘	SEMI VARIABLE RESISTOR
■	CHIP RESISTOR

NOTICE (model)
(J)······ JAPANESE
(U)······ U.S.A
(C)······ CANADIAN
(R)······ GENERAL
(A)······ AUSTRALIAN
(B)······ BRITISH
(G)······ EUROPEAN
(T)······ CHINA
(L)······ SINGAPORE

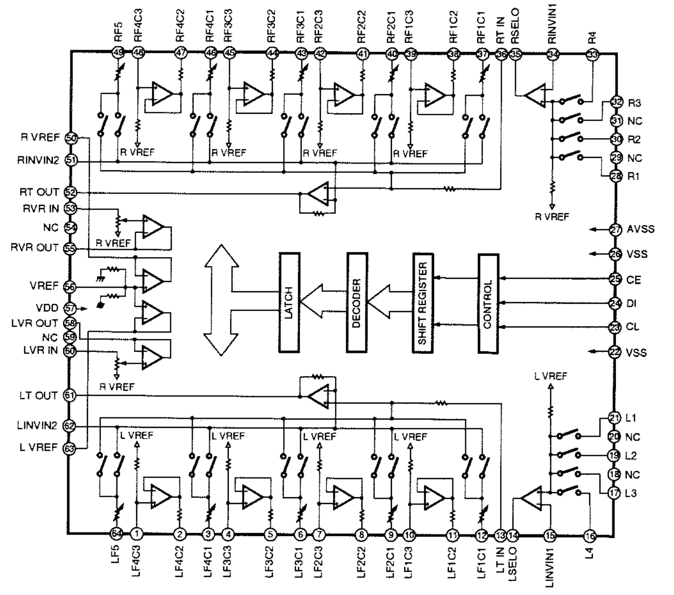
IC201 : TC4052BP
Dual 4 Channel Analog Multiplexers/Demultiplexers



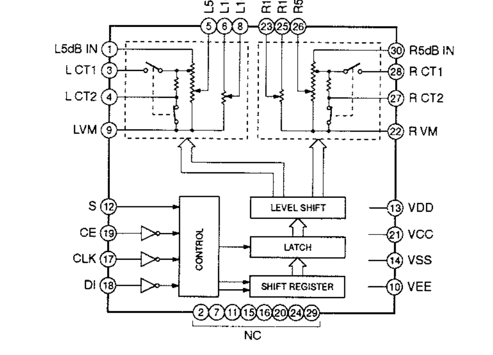
IC214 : TC4053BP
Triple 2 Channel Analog Multiplexers/Demultiplexers



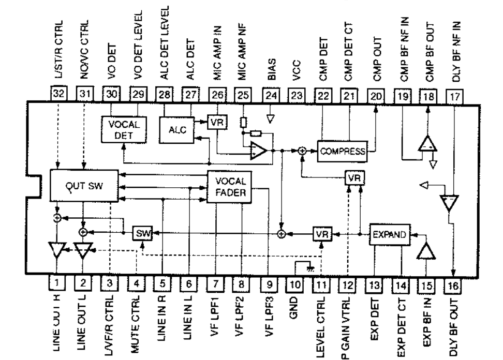
IC203 : LC75395E
Electric Controlled Volume with Function Switch



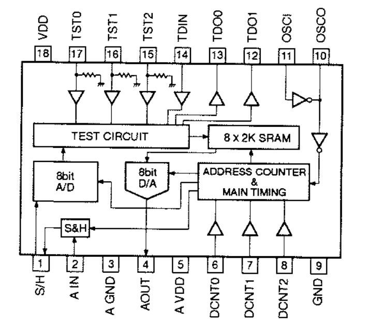
IC225, 230 : LC7536
Electric Controlled Volume



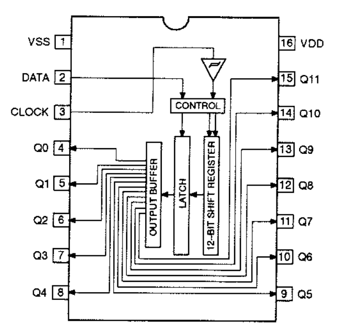
IC204 : BA7726AS
Analog Compander for Karaoke Echo System



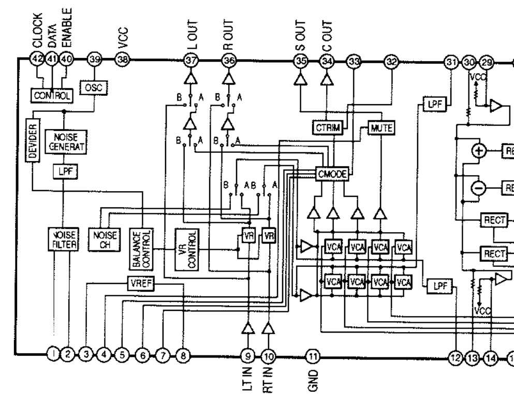
IC209 : BU9252S
Digital Delay for Karaoke Echo System



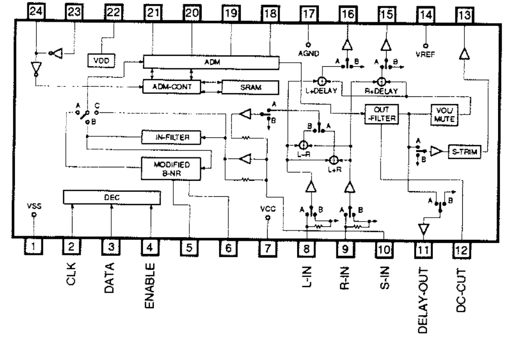
IC222, 241 : BU2090
Serial In/Parallel Out Driver



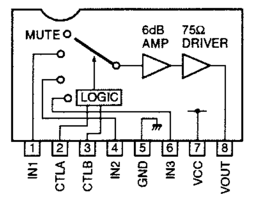
IC208 : LA2786
Dolby Pro Logic Surround Matrix Decoder



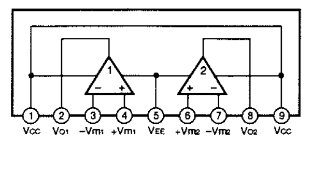
IC220 : LV1015
Dolby Surround Passive Decoder



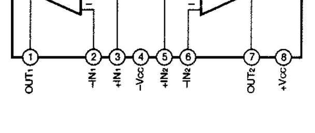
IC202 : BA7612N
3-Input Video Switch with 6dB Amp



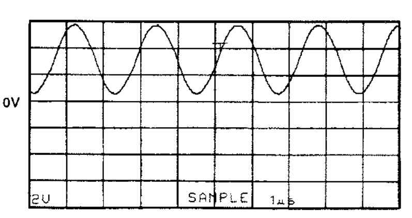
IC205, 210, 223, 226 : μPC4570HA
IC228, 231, 242 : μPC4570HA
Dual OP-Amp



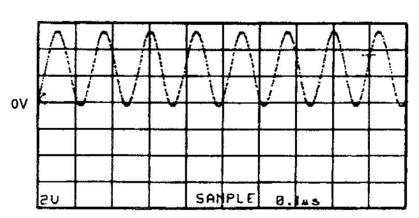
IC245 : BA15218N
Dual OP-Amp



Point ⑨ (Pin10 of IC209)
V : 2V/div H : 1 μsec/div
DC range 1 : 1 probe



Point ⑩ (Pin24 of IC220)
V : 2V/div H : 0.1 μsec/div
DC range 1 : 1 probe



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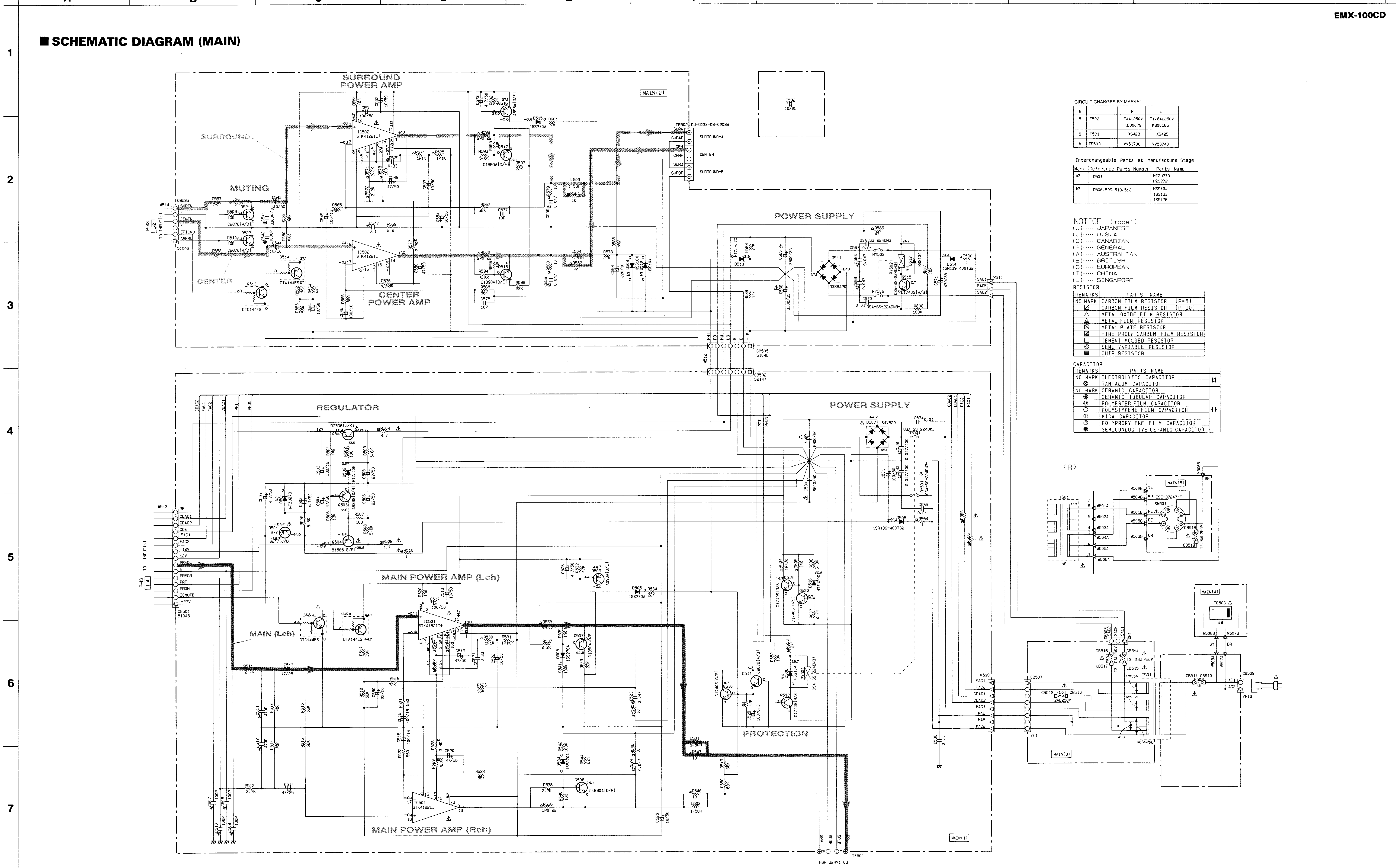
- *Schematic diagram is subject to change without notice.*

■ SCHEMATIC DIAGRAM (MAIN)



CIRCUIT CHANGES BY MARKET.

s		R	L
5	F502	T4AL250V KB00079	T1.6AL250V KB00166
8	T501	XS423	XS425
9	TE503	VV53780	VV53740

Interchangeable Parts at Manufacture-Stage

Mark	Reference Parts Number	Parts Name
⚠2	D501	MTZJ27D HZS272
⚠3	D506,509,510,512	HSS104 1SS133 1SS176

NOTICE (model)
(J)····· JAPANESE
(U)····· U.S.A
(C)····· CANADIAN
(R)····· GENERAL
(A)····· AUSTRALIAN
(B)····· BRITISH
(G)····· EUROPEAN
(T)····· CHINA
(L)····· SINGAPORE

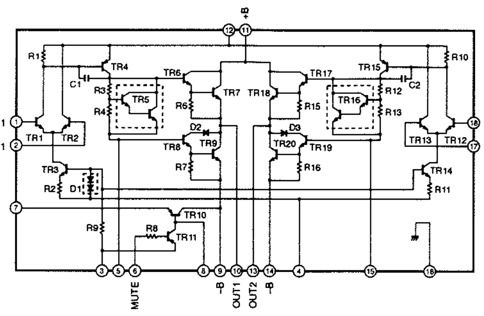
RESISTOR

REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P=5)
⧄	CARBON FILM RESISTOR (P=10)
△	METAL OXIDE FILM RESISTOR
▲	METAL FILM RESISTOR
⊠	METAL PLATE RESISTOR
◩	FIRE PROOF CARBON FILM RESISTOR
□	CEMENT MOLDED RESISTOR
⊘	SEMI VARIABLE RESISTOR
▤	CHIP RESISTOR

CAPACITOR

REMARKS	PARTS NAME	
NO MARK	ELECTROLYTIC CAPACITOR	⌗
⊗	TANTALUM CAPACITOR	
NO MARK	CERAMIC CAPACITOR	⊣⊢
◉	CERAMIC TUBULAR CAPACITOR	
◎	POLYESTER FILM CAPACITOR	
○	POLYSTYRENE FILM CAPACITOR	
⦶	MICA CAPACITOR	
Ⓟ	POLYPROPYLENE FILM CAPACITOR	
⊜	SEMICONDUCTIVE CERAMIC CAPACITOR	

IC501 : STK4182Ⅱ
IC502 : STK4122MK2
2 Channel AF Power Amp



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- *Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equal to those originally installed.*
- *Schematic diagram is subject to change without notice.*