STEREO RECEIVER

RX-V590/R-V901/ RX-V590RDS

SERVICE MANUAL

IMPORTANT NOTICE

This manual has been provided for the use of authorized YAMAHA Retailers and their service personnel. It has been assumed that basic service procedures inherent to the industry, and more specifically YAMAHA Products, are already known and understood by the users, and have therefore not been restated.

WARNING: Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components, and failure of the product to perform as specified. For these reasons, we advise all YAMAHA product owners that any service required should be performed by an authorized YAMAHA Retailer or the appointed service representative.

IMPORTANT: The presentation or sale of this manual to any individual or firm does not constitute authorization, certification or recognition of any applicable technical capabilities, or establish a principle-agent relationship of any form.

The data provided is believed to be accurate and applicable to the unit(s) indicated on the cover. The research, engineering, and service departments of YAMAHA are continually striving to improve YAMAHA products. Modifications are, therefore, inevitable and specifications are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

WARNING: Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground buss in the unit (heavy gauge black wires connect to this buss).

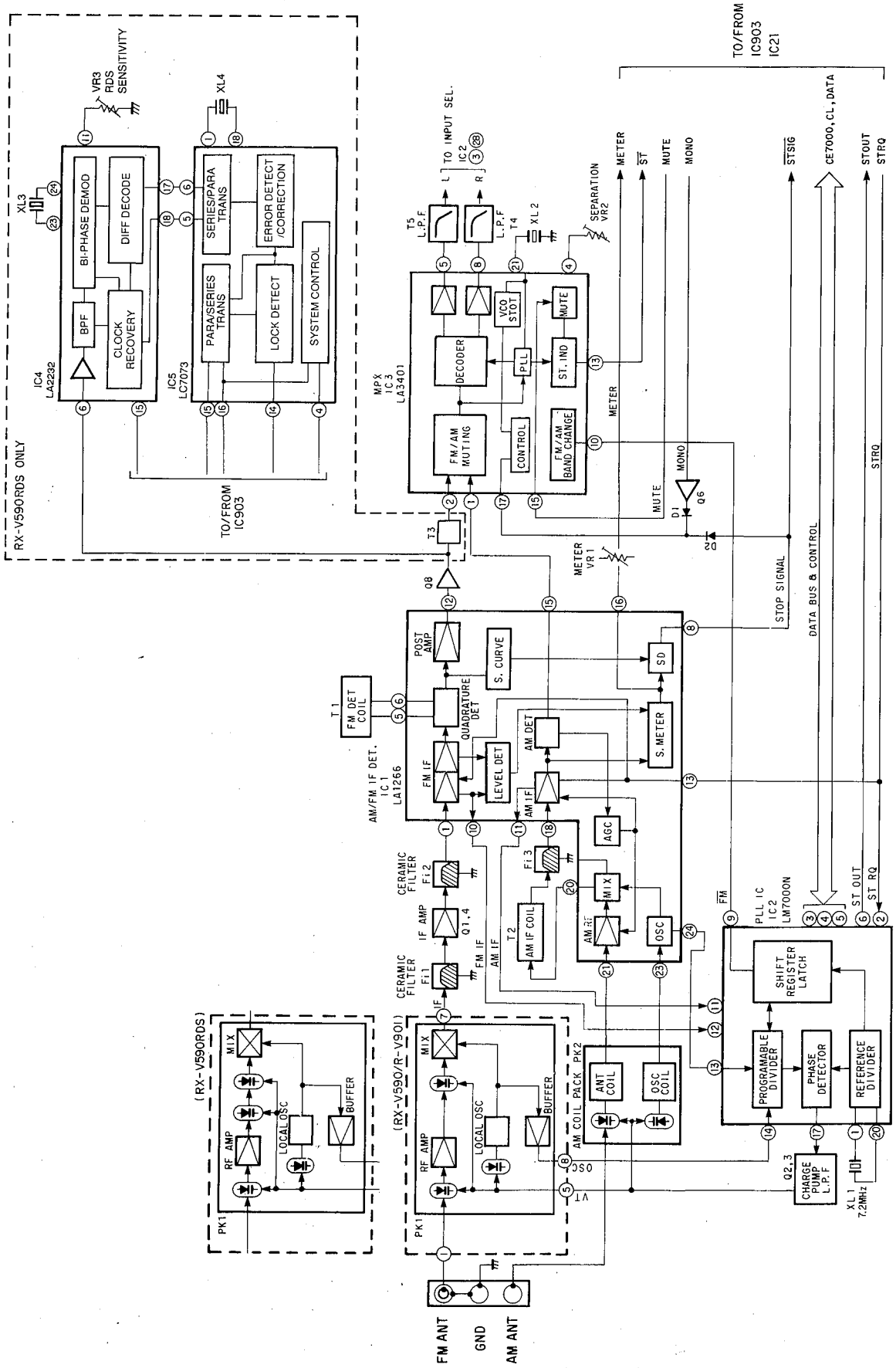
IMPORTANT: Turn the unit OFF during disassembly and part replacement. Recheck all work before you apply power to the unit.

■ CONTENTS

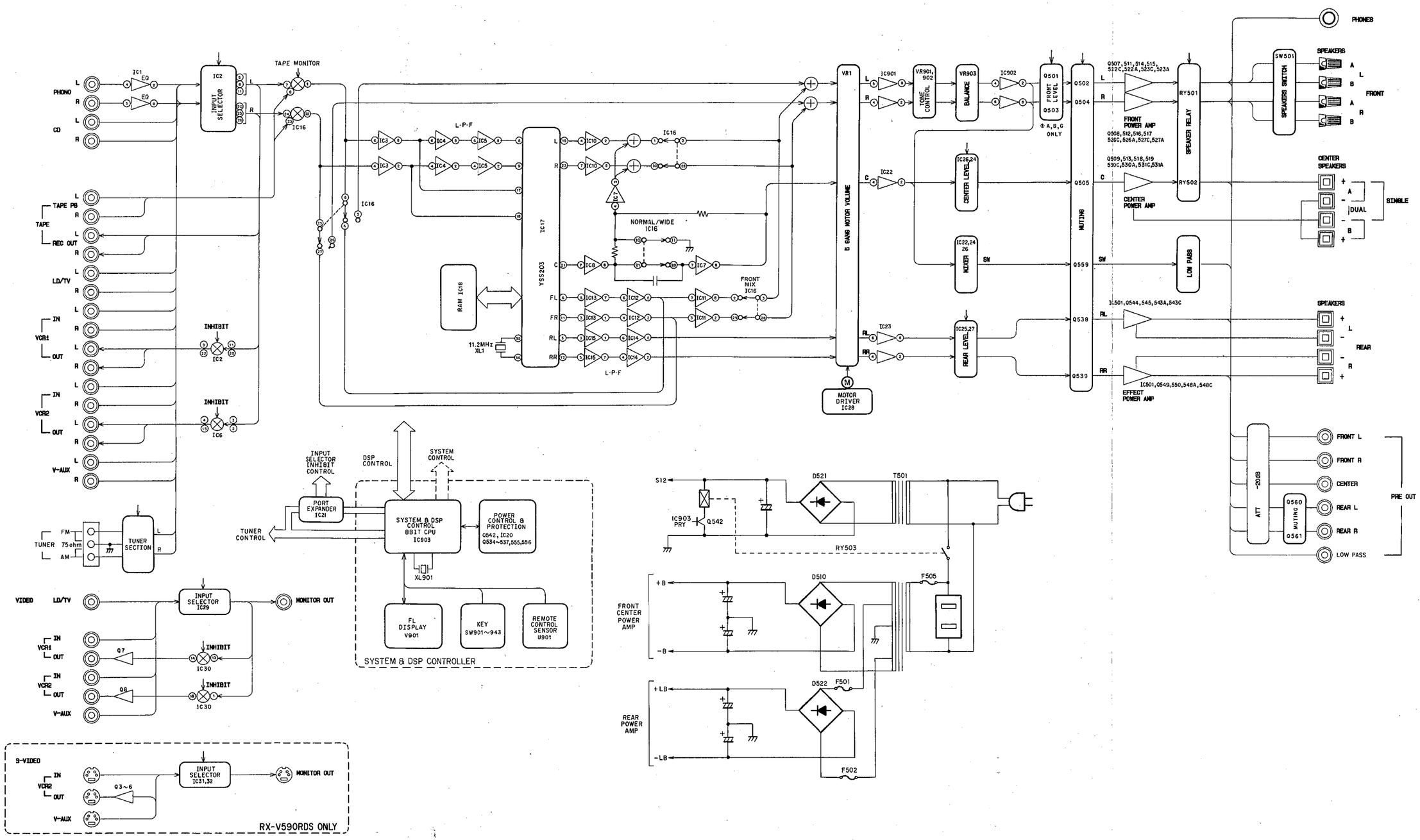
100512

YAMAHA
YAMAHA CORPORATION
P.O.Box1,Hamamatsu,Japan
3.3K-854 Printed in Japan '95.3

■ BLOCK DIAGRAM

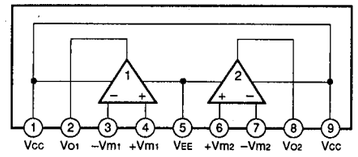


■ BLOCK DIAGRAM

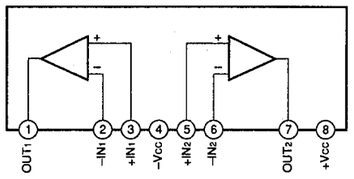


■ IC BLOCKS

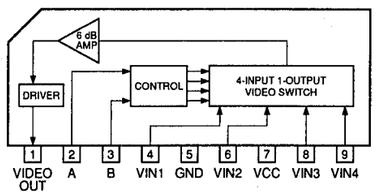
IC1, 3~5, 7~12, 14, 22~25 : μPC4570HA
IC901, 902 : μPC4570HA
Dual OP-Amp



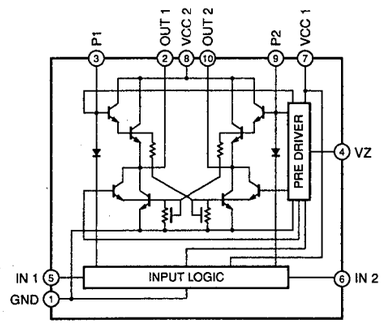
IC20 : NJM2904L
IC13, 15 : NJM4558L
IC501 : M5220L
Dual OP-Amp



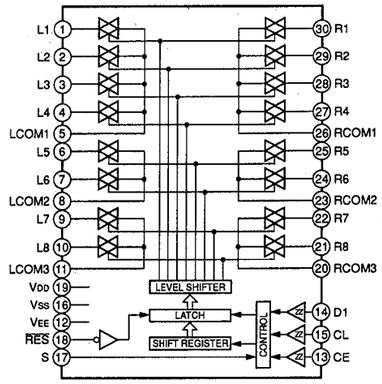
IC29, 31, 32 : LA7956
Video Switch



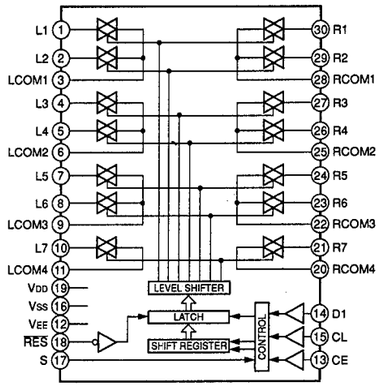
IC28 : LB1641
Motor Driver



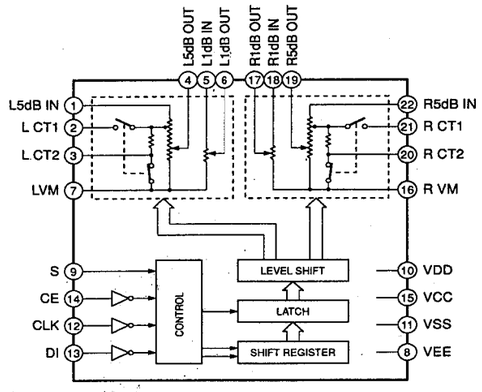
IC2 : LC78211
Analog Function Switch



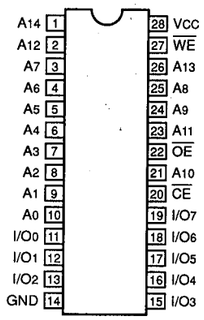
IC16 : LC78213
Analog Function Switch

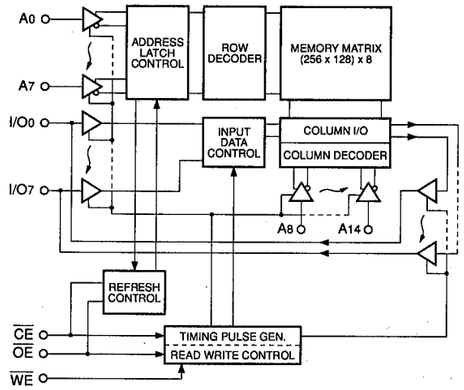


IC26, 27 : LC7535
Electric Controlled Volume

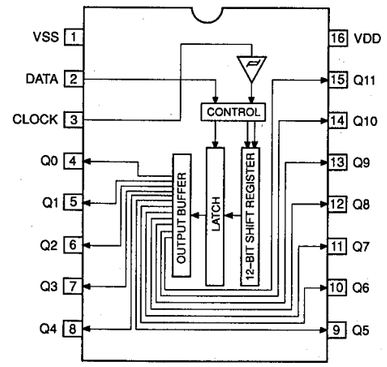


IC18 : HM65256BLSP-10
32768-word x 8 bit High Speed Pseudo Static RAM



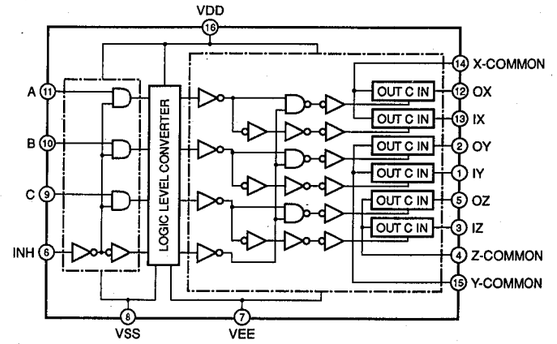


IC21 : BU2090
Serial In/Parallel Out Driver



No.	Port	Name	Function	Logic
1	VSS		GND	
2	DATA		Data in	
3	CLK		Clock in	
4	Q0	STREQ	Stop request (N.C.)	
5	Q1	CE7000	Chip enable LM7000 (N.C.)	
6	Q2	/MONO	Mono out (N.C.)	L:MONO
7	Q3	TMUTE	Tuner mute (N.C.)	H:ON
8	Q4		N.C.	
9	Q5	DSEL	DSP serial select	H:DSP
10	Q6	CEDSP	Chip enable DSP	H:ON
11	Q7	CEISL	Chip enable LC7821/LC7823/LC7535	H:ON
12	Q8		N.C.	
13	Q9	V2INH	VCR2 not select H : not VCR2	L:VCR2
14	Q10	VSELA	Video selector A (LA7956)	
15	Q11	VSELB	Video selector B (LA7956)	
16	VDD		+5V	

IC6, 30 : TC4053BP
Triple 2-Channel Multiplexer/Demultiplexer



CONTROL INPUTS				"ON" CHANNEL
INHIBIT (Pin 6)	C (Pin 9)	B (Pin 10)	A (Pin 11)	0X (Pin 12), 0Y (Pin 2), 0Z (Pin 5) 1X (Pin 13), 1Y (Pin 1), 1Z (Pin 3)
L	L	L	L	0X, 0Y, 0Z
L	L	L	H	1X, 0Y, 0Z
L	L	H	L	0X, 1Y, 0Z
L	L	H	H	1X, 1Y, 0Z
L	H	L	L	0X, 0Y, 1Z
L	H	L	H	1X, 0Y, 1Z
L	H	H	L	0X, 1Y, 1Z
L	H	H	H	1X, 1Y, 1Z
H	*	*	*	NOTE
* Don't Care				

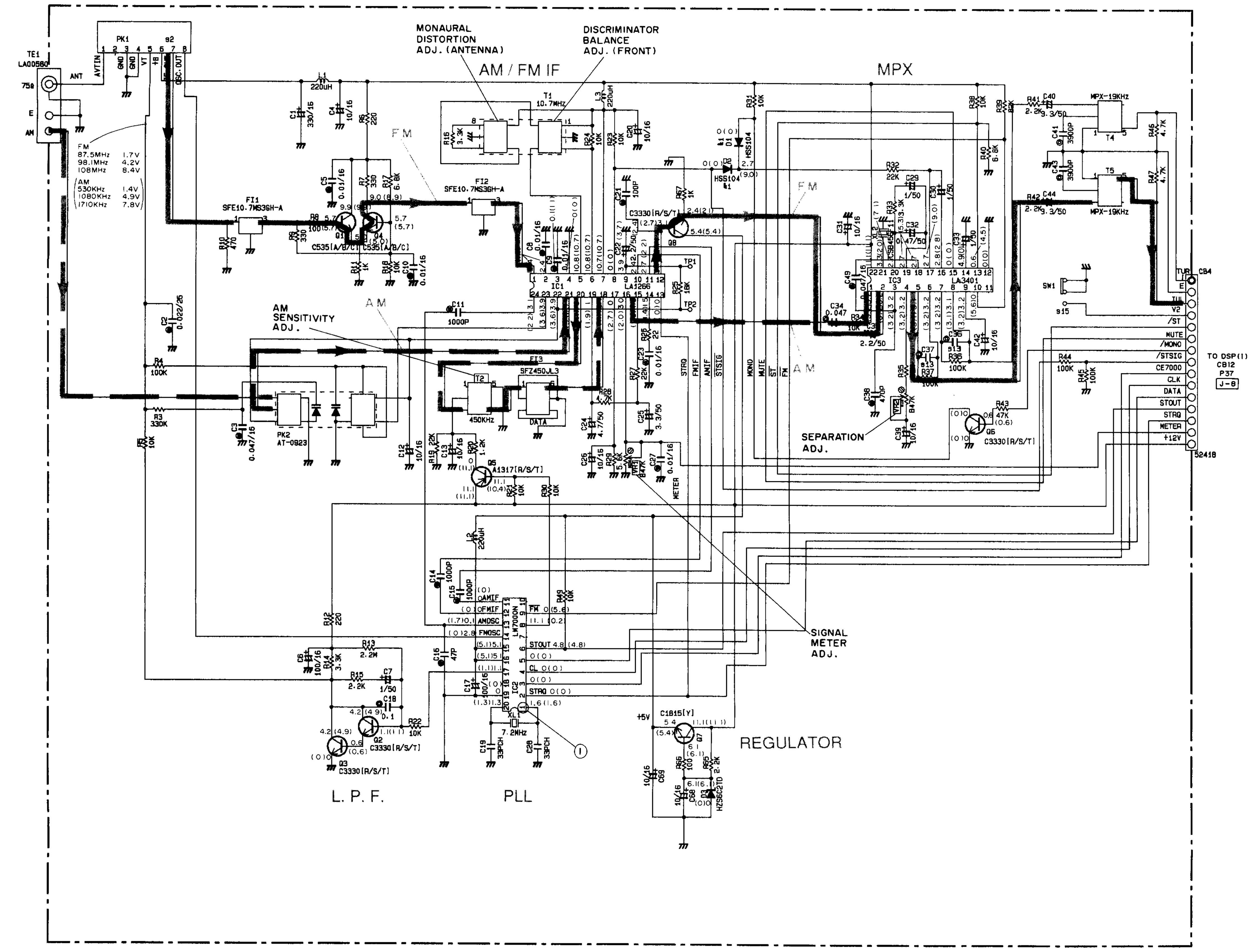
Other IC's
- **IC903 : M38102M4-621SP**→See page 15
- **IC17 : YSS203B**→See page 17

■ SCHEMATIC DIAGRAM (TUNER)

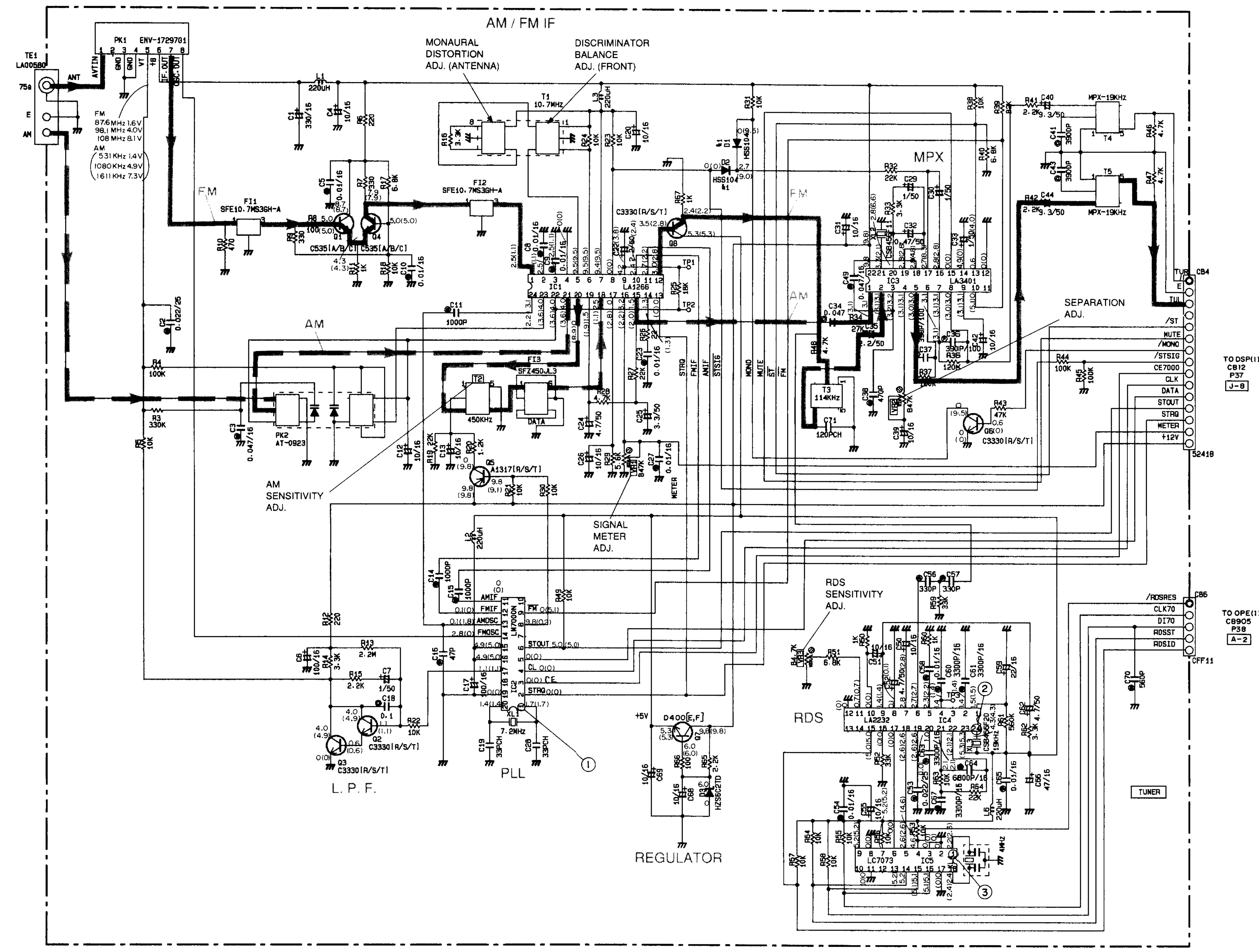
Each voltage given here represents that in the FM (98. 1MHz, STEREO) reception mode but the one in the parentheses ( ) is that in the AM (1080kHz, MAN'L) reception mode.

①~③ : TEST POINT WAVEFORMS (See page 14)

RX-V590/R-V901



RX-V590RDS



B		U·C	R	A
1				
2	PK1	VR24220	VR24220	VR24220
3				
4				
5				
6				
7	C21	100P	100P	100P
8	R34	10K	10K	10K
9	J51	○	○	○
10	R48	×	×	×
11	T3	×	×	×
12	R35	22K	22K	22K
13	C36·37	680P	680P	470P
14	R36·37	100K	100K	100K
15	SW1	×	VF54120	×
16	J61	×	×	×
17				

Interchangeable Parts at Manufacture-Stage

Mark	Reference Parts Number	Parts Name
※1	D1·2	HSS104 1SS133 1SS176

CAPACITOR

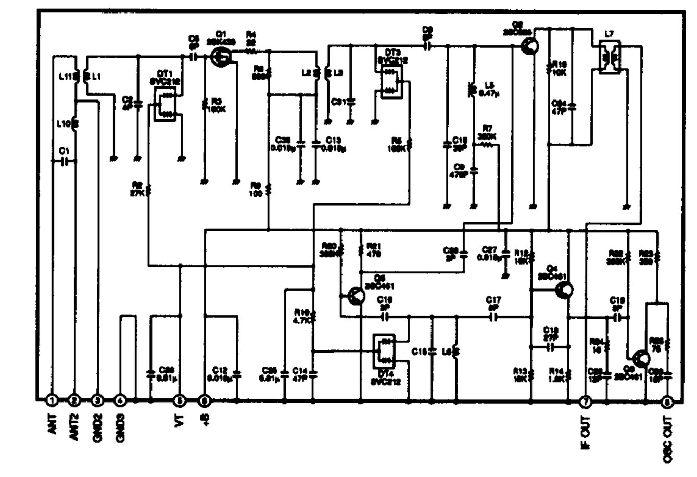
REMARKS	PARTS NAME	
NO MARK	ELECTROLYTIC CAPACITOR	⌿
⊗	TANTALUM CAPACITOR	
NO MARK	CERAMIC CAPACITOR	⊣⊢
◉	CERAMIC TUBULAR CAPACITOR	
◎	POLYESTER FILM CAPACITOR	
○	POLYSTYRENE FILM CAPACITOR	
⦶	MICA CAPACITOR	
Ⓟ	POLYPROPYLENE FILM CAPACITOR	
●	SEMICONDUCTIVE CERAMIC CAPACITOR	

RESISTOR

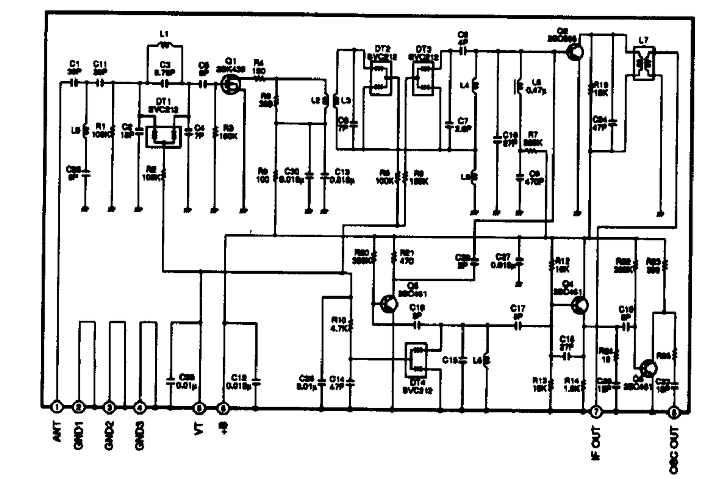
REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P=5)
⍁	CARBON FILM RESISTOR (P=10)
△	METAL OXIDE FILM RESISTOR
▲	METAL FILM RESISTOR
⊠	METAL PLATE RESISTOR
◪	FIRE PROOF CARBON FILM RESISTOR
□	CEMENT MOLDED RESISTOR
⊘	SEMI VARIABLE RESISTOR
■	CHIP RESISTOR

NOTICE
(J)····· Japanese model
(U)····· U.S.A model
(C)····· Canadian model
(A)····· Australian model
(G)····· European model
(B)····· British model
(R)····· General model
(P)····· RP model

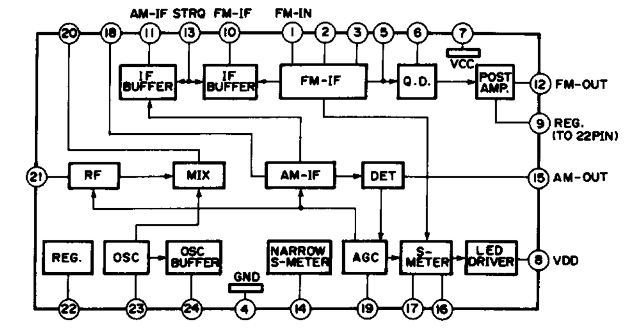
• RX-V590/R-V901
PK1 : ENV-17298GI (VR242200)



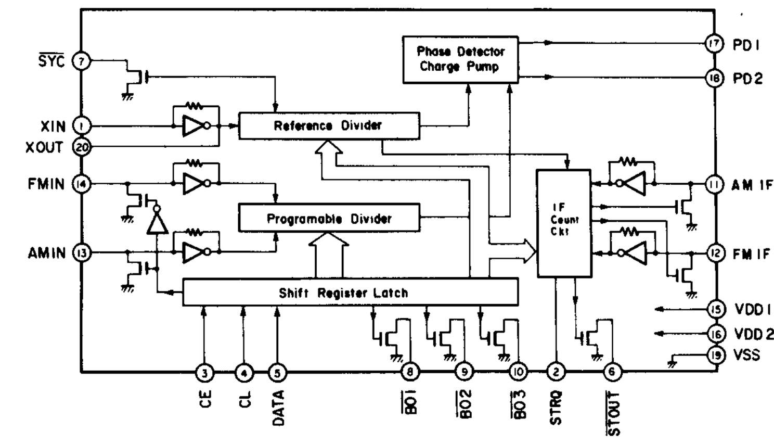
• RX-V590RDS
PK1 : ENV-17297GI (VQ987600)



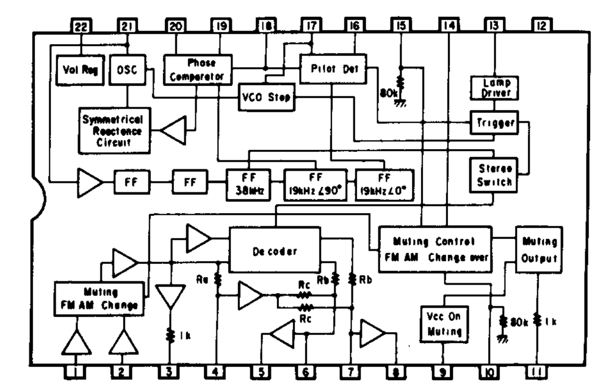
IC1 : LA1266
AM/FM IF



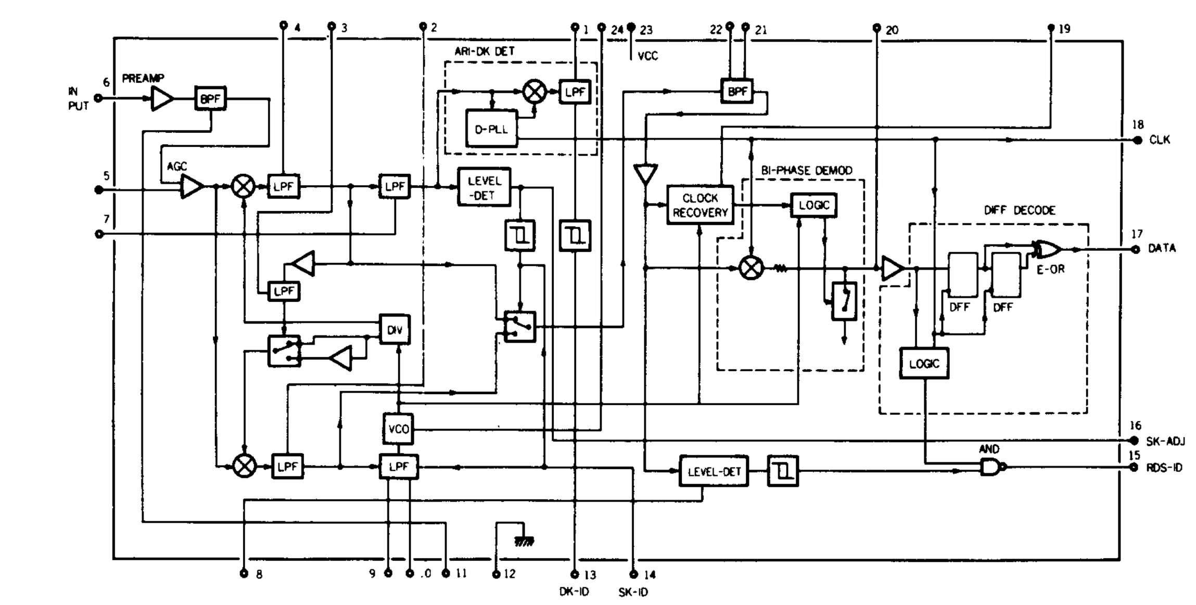
IC2 : LM7000N
PLL Controller



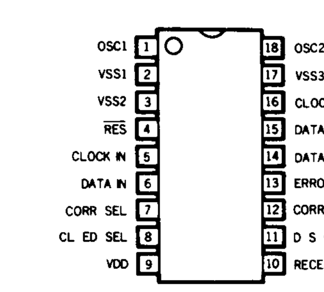
IC3 : LA3401
MPX

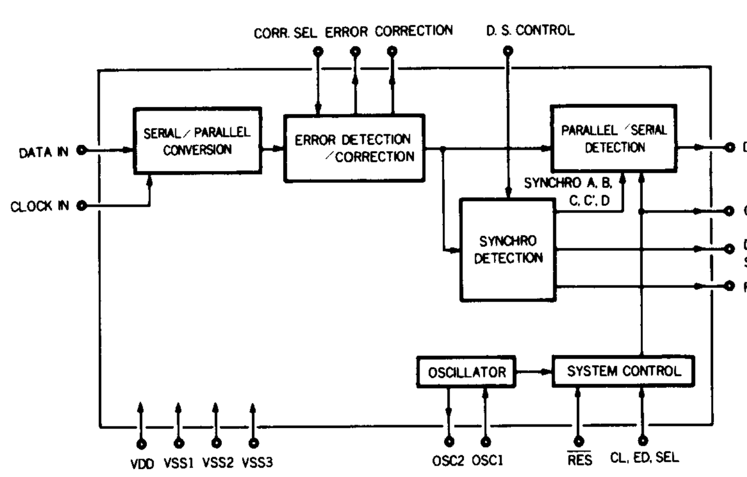


IC4 : LA2232
RDS Decoder

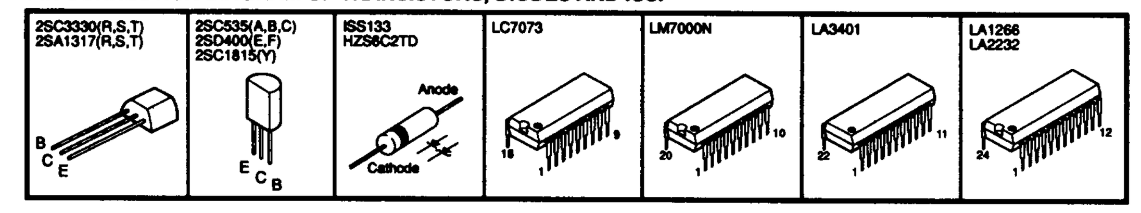


IC5 : LC7073
RDS Converter & Controller





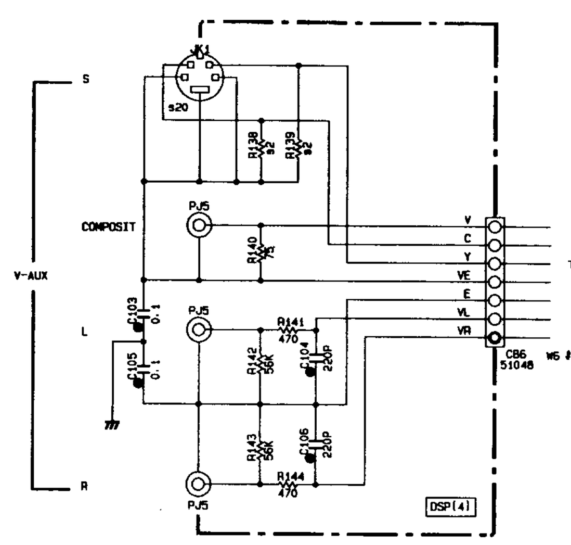
PIN CONNECTION DIAGRAM OF TRANSISTORS, DIODES AND ICS.



** All voltage are measured with a 10MΩ/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 (DSP)

④ : TEST POINT WAVEFORMS (See page 14)



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

5	Circuit No.	U.C.R.A	B.G
1	C2.C4	×	100P
2	R138.R139.R202.R203.R224.R228.R231.R235	×	75
3	R204.R205.R206.R207	×	10K
4	C155.C156.C177.C178	×	100P
5	C171.C179	×	10/16
6	C173.C176	×	1000/10
7	C181.C184	×	33/16
8	IC31.IC32	×	LA7956
9	Q3.Q5	×	A1015(Y)
10	Q4.Q6	×	C1815(Y)
11	R225.R227	×	150
12	R232.R234	×	330
13	R223.R230	×	1K
14	C174.C182	×	22P
15	JK2	×	VN93810
16	R222.R229	×	33K
17	R226.R233	×	22K
18	C172.C175.C180.C183	×	47/16
19	VR1	V064700	VS86830
20	JK1	×	VS86730
21	R1.R4	47	2.2K
22	C148.152	10P	100P
	PCB	VS71110	VS72800
	PWB	X0052	X0081

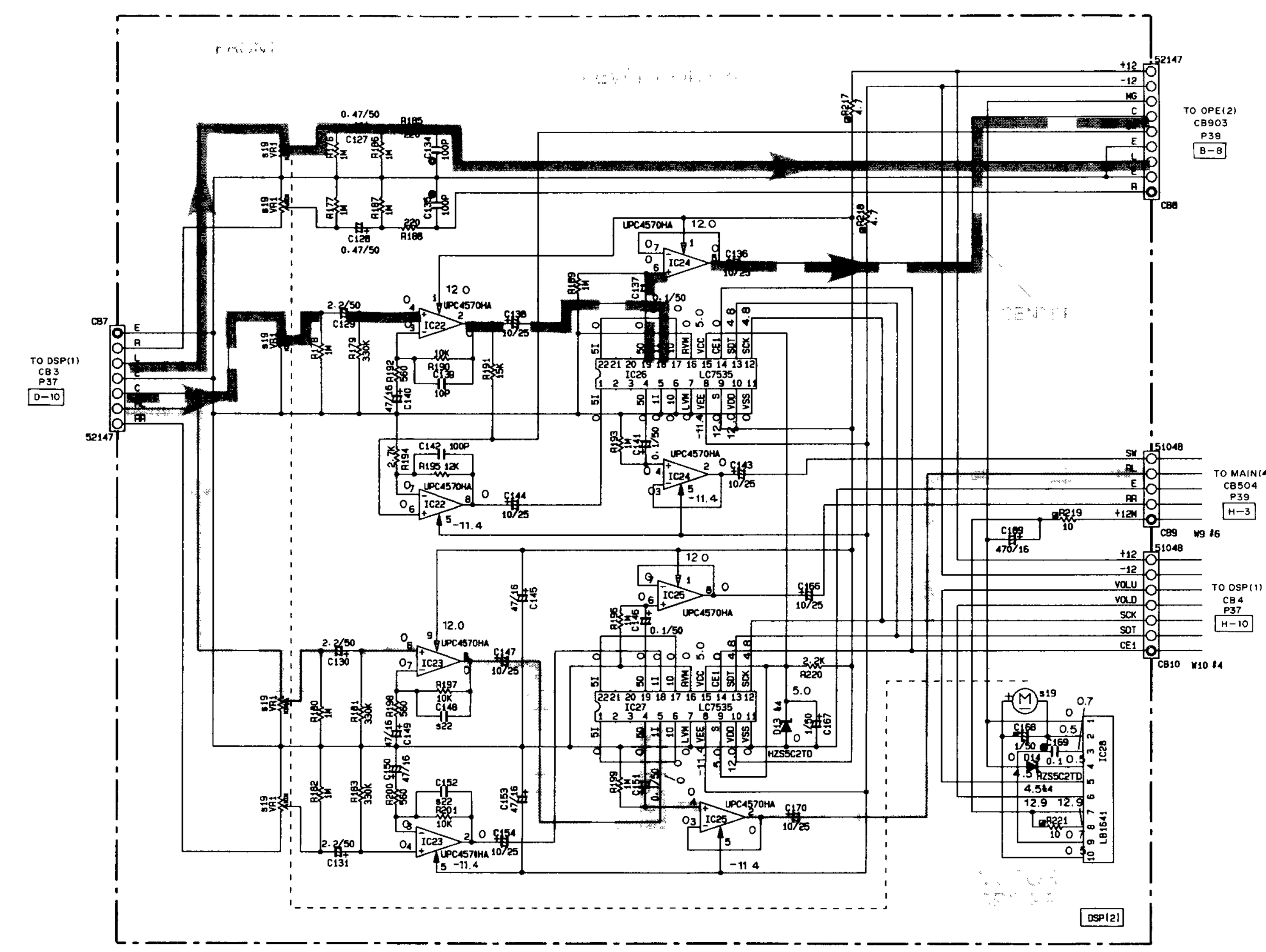
Interchangeable Parts at Manufacture-Stage

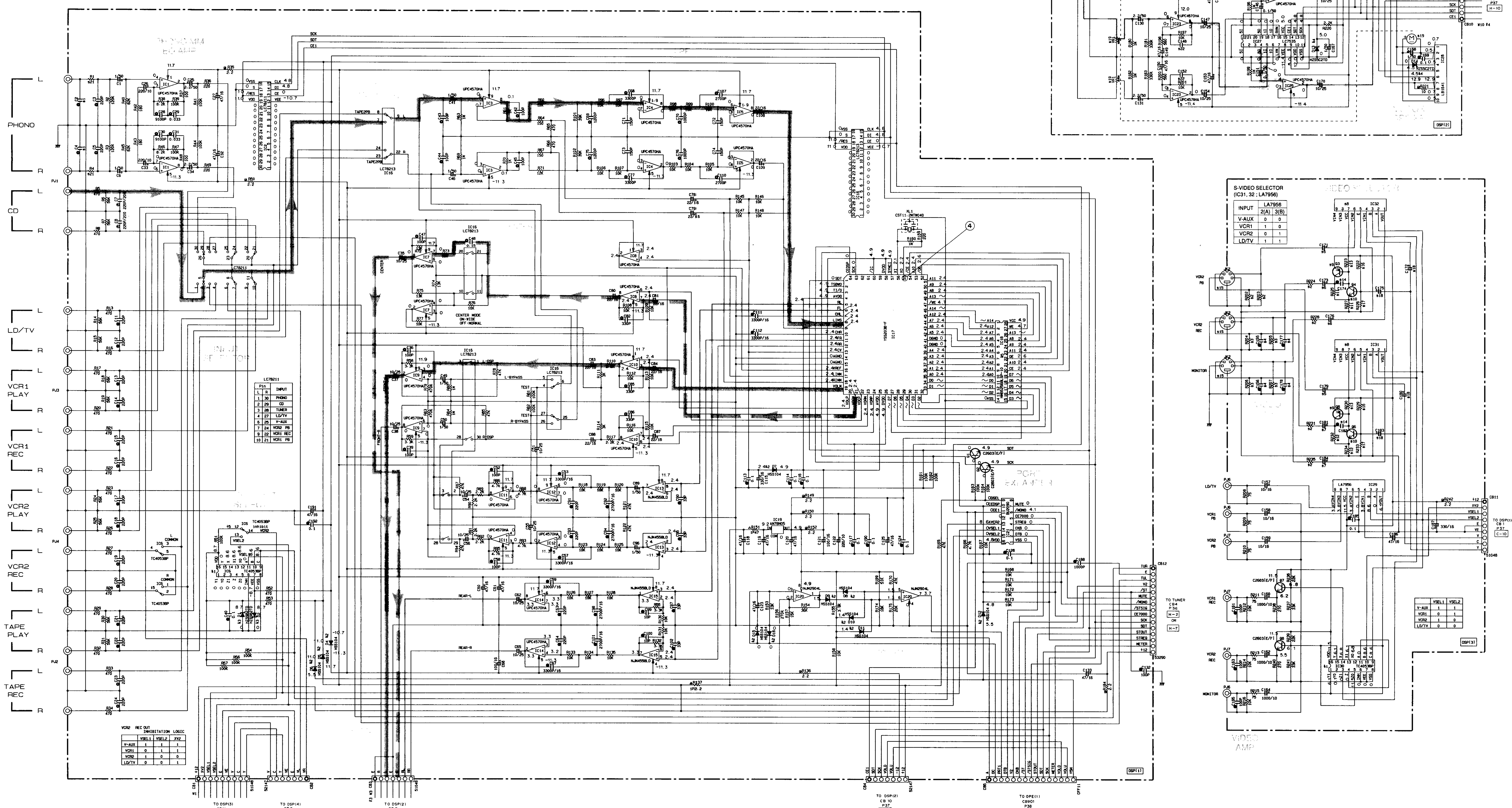
Mark	Reference Parts Number	Parts Name
⚠1	IC6.30	TC4053BP UPD4053BC
⚠2	D4-12.15.16	1SS176 1SS133 HSS104
⚠3	D1.2	HZS9B2TD MTZJ9.1B
⚠4	D13.14	HZS5C2TD MTZJ5.1B
⚠5	IC18	HM65256BLSP-10 TC51832ASPL-10

IC16 : LC78213

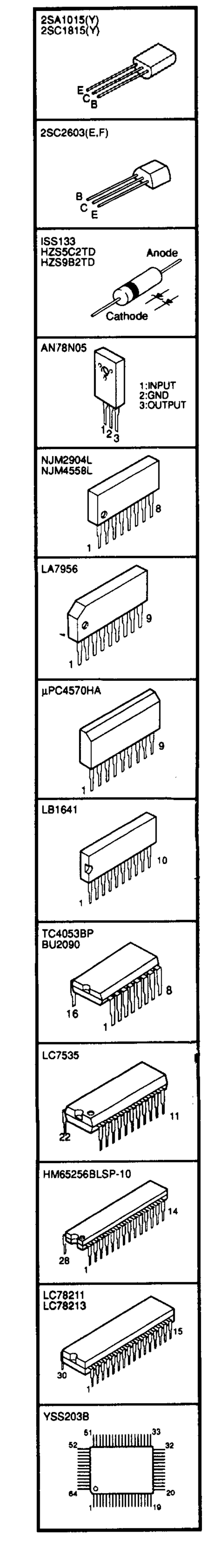
1, 30	MAIN DSP	MAIN, FRONT SELECT
2, 29	FRONT MIX	
4, 27	TEST	TEST, MAIN SELECT
5, 26	BYPASS	
7, 24	OTHER INPUT	TAPE MONITOR SELECT
8, 23	TAPE MONITOR	
10, 21	ON : WIDE OFF : NORMAL	CENTER MODE SELECT

CASE		LC78213						
		10, 21	8, 23	7, 24	5, 26	4, 27	2, 29	1, 30
1	SELF1	1	—	—	1	0	0	0
2	SELF2	1	—	—	0	0	1	0
3	SELF2	1	—	—	0	0	0	1
4	EFFECT OFF	—	—	—	1	0	0	0
5	TEST	—	0	0	0	1	0	0
6	PRO LOGIC	—	—	—	0	0	0	1
7	ENHANCED	—	—	—	0	0	1	1
8	DSP PROGRAM	—	—	—	1	0	1	0
Input TAPE MONITOR		—	1	0	—	—	—	—
Input EXACT		—	0	1	—	—	—	—





PIN CONNECTION DIAGRAM OF TRANSISTORS,DIODES AND ICS.



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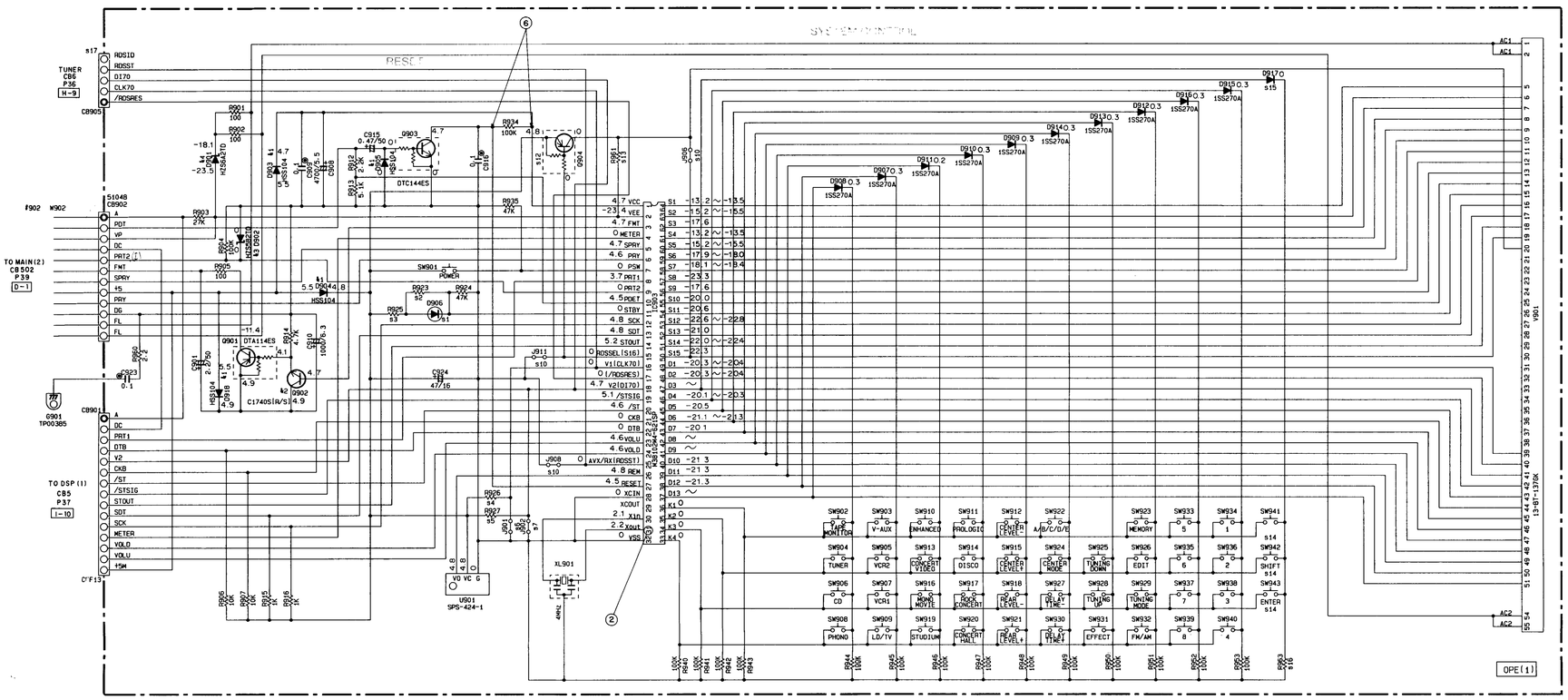
■ SCHEMATIC DIAGRAM (OPERATION)

⑤, ⑥ : TEST POINT WAVEFORMS (See page 14)



S	Circuit No.	U·C	R	A	B, G
1	D906	×	×	×	SLR-305VCA47
2	R923	×	×	×	33K
3	R925	×	×	×	220
4	R926	×	100K	100K	×
5	R927	100K	100K	×	×
6	J901	○	×	×	×
7	J902	×	×	○	×
8					
9					
10	J906·908·911	○	○	○	×
11					
12	Q904	×	×	×	DTA114ES
13	R961	×	×	×	68K
14	SW941·942·943	×	×	×	VG39290
15	D917	×	×	×	1SS270A
16	R963	×	×	×	100K
17	CB905	×	×	×	VR36120
	PCB	VS71060	VS71070	VS71080	VS72790
	PWB	XQ051	XQ051	XQ051	XQ080

Interchangeable Parts at Manufacture-Stage

Mark	Reference Parts Number	Parts Name
&1	D903·905·918	HSS104 1SS133 1SS176
&2	Q902	2SC1740S(R/S) 2SC2603(E/F) 2SC3311A(Q/R/S)
&3	D902	HZS5B2TD MTZJ4.7C
&4	D901	HZS6A2TD MTZJ5.6A

NOTICE
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(B)····· British model
(R)····· General model
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RESISTOR

REMARKS	PARTS NAME
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☑	CARBON FILM RESISTOR (P=10)
△	METAL OXIDE FILM RESISTOR
▲	METAL FILM RESISTOR
⊠	METAL PLATE RESISTOR
◪	FIRE PROOF CARBON FILM RESISTOR
□	CEMENT MOLDED RESISTOR
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■	CHIP RESISTOR

CAPACITOR

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Ⓘ	MICA CAPACITOR	
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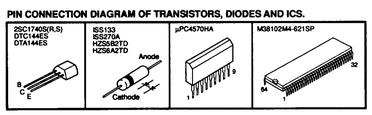
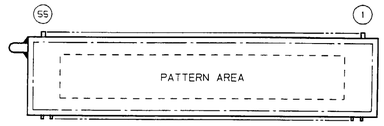
●	SEMICONDUCTIVE CERAMIC CAPACITOR	

PIN CONNECTION DIAGRAM OF TRANSISTORS, DIODES AND ICS.



■ DISPLAY DATA

● V901 : 13-BT-137(VS550600)



● PIN CONNECTION

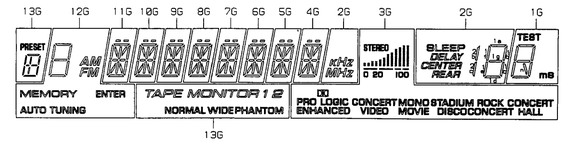
Pin No.	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37
Connection	F2	F2	NP	NP	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15

Pin No.	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	29	18
Connection	P16	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

Pin No.	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
Connection	13G	12G	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G	NP	NP	F1	F1

Note 1) F1, F2 ..... Filament
2) NP ..... No Pin
3) NC ..... No Connection
4) P1~P16 ..... Datum Line
5) 1G~13G ..... Grid

● GRID ASSIGMENT



● ANODE CONNECTION

	13G	12G	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	a	a	a	a	a	a	a	a	a	a	CONCERT HALL	1a	a
P2	b, c	b	b	b	b	b	b	b	b	b	ROCK CONCERT	1b	b
P3	d	c	c	c	c	c	c	c	c	c	DISCO	1c	c
P4	e, f	d	d	d	d	d	d	d	d	d	STADIUM	1d	d
P5	g	e	e	e	e	e	e	e	e	e	MONO MOVIE	1e	e
P6	j, p	f	f	f	f	f	f	f	f	f	CONCERT VIDEO	1f	f
P7	m	g	g	g	g	g	g	g	g	g	◫◫ PRO LOGIC	1g	g
P8	PRESET	ENTER	h	h	h	h	h	h	h	h	ENHANCED	2b, 2c	n
P9	NORMAL	AM	j	j	j	j	j	j	j	j	STEREO	*kHz*	TEST
P10	WIDE	FM	k	k	k	k	k	k	k	k	S1	*MHz*	mS
P11	PHANTOM	MEMORY	m	m	m	m	m	m	m	m	B1	*DELAY*	—
P12	*TAPE MONITOR*	AUTO TUNING	n	n	n	n	n	n	n	n	B2	*CENTER*	—
P13	*1*	—	p	p	p	p	p	p	p	p	B3	*REAR*	—
P14	*2*	—	r	r	r	r	r	r	r	r	B4	SLEEP	—
P15	—	—	t	t	t	t	t	t	t	t	—	—	—
P16	—	—	u	u	u	u	u	u	u	u	—	—	—

* All voltage are measured with a 10MΩ/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 (MAIN)

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

PIN CONNECTION DIAGRAM OF TRANSISTORS,DIODES AND ICS.

2SA1015(Y) 2SC1815(Y) 2SA970(GR,BL) 2SA933A(D,E) 2SC2240(GR,BL) 2SC1890A(D,E)

2SA933S(O,R) 2SC2603(E,F) 2SC3320(S,T) 2SD1915F(S,T)

2SA1726(O,P,Y) 2SC4495(S,T) 2SC4518(O,P,Y) 2SD2396(J,K)

2SA1358(O,Y) 2SC3421(O,Y)

2SA1492(O,P,Y) 2SC3858(O,P,Y)

2SA1708(S,T) 2SC4488(S,T)

2SK30ATM(GR)

ISS133 ISS270A HZS6B2TD HZS6C2TD HZS12B2TD HZS12C2TD HZS15ZTD HZS24ZTD — Anode, Cathode

D3SBA20 D5SBA20

S1NB20

NJM79M12FA — 1:OUTPUT 2:INPUT 3:COMMON

M5220L

	Mark	Reference Parts Number	Parts Name				
▲1	0521		2SA933S(D/R) 2SA1115(E/F) 2SA1309A(D/R/S)	▲6	D511.515		HZS15ZTD HTZJ15C
▲2	0505		HZS6B2TD HTZJ5.6C	▲7	D501.502.512.514		HZS24ZTD HTZJ24C
▲3	D504.513.516~519		HSS104 ISS133 ISS176				
▲4	D503		HZS6C2TD HTZJ6.2B				
▲5	D524		HZS12C2TD HTZJ15A				

		U	C	R	A	B	G
s1	R505.509	1K	1K	1K	2.2K	2.2K	2.2K
s2	R508.510	X	X	X	1K	1K	1K
s3	R501.503	X	X	X	D1915F(S/T)	D1915F(S/T)	D1915F(S/T)
s4	R506.512	X	X	X	10K	10K	10K
s5	C545.550.551.554.555	X	X	X	X	0.01	0.01
s6	R616.701	X	X	X	X	2.2	2.2
s7	W512	X	V575110	X	X	X	X
s8	CB511.512	X	X	VP20650	X	X	X
s9	T501	VC31370	VC31370	VK30620	VK50620	VK50620	VK50620
s10	SW502	X	X	X	VS60260	VS60260	VS60260
s11	SW503	X	VS60260	X	X	X	X
s12							
s13	D509	X	1SS133 1SS176 HSS104	X	X	X	X
s14	RY504	X	V124310	X	X	X	X
s15	W511	X	V571600	X		X	X
s16	F501.502	4A125V	4A125V	4A125V	T4AL250V	T4AL250V	T4AL250V
s17	CB83	0.1	0.1	X	X	0.1	0.1
s18	SW511	X	X	VA06180	X	X	X
s19	F504	X	X	T3.15AL250V	X	X	X
s20	W520	X	X	V144430	X	X	X
s21	W525	X	X	V037110	X	X	X
s22	W524	X	X	V037120	X	X	X
s23	W523	X	X	V037130	X	X	X
s24	W522	X	X	V037140	X	X	X
s25	W521	X	X	V037150	X	X	X
s26	W517	X	X	X	VG10540	VG10540	X
s27	W518	X	X	X	VG10530	VG10530	X
s28	W519	V571620	V571620	X	X	V571620	V571620
s29	JK502	VK48060	VK48060	X	X	X	VK48070
s30	J741	0	0	0	0	0	X
s31	F503	X	X	X	X	X	T2.5AL250V
s32	CB514.515	X	X	X	X	X	VP20650
s33	F505	7A125V	7A125V	7A125V	T3.15AL250V	T3.15AL250V	T3.15AL250V
s34	T501	XC083	XB619	XC082	XC084	XC084	XC084
s35	R669	1/2W2.2M	1/2W2.2M	X	X	X	X
s36	C581	X	47/25	47/63	X	X	X
s37	R857.858	X	56	5.6K	X	X	X
s38	D520	X	HZS12B2TD MTZJ13A	HZS12B2TD MTZJ13A	X	X	X
s39	W508	X	V571590	X	X	X	X
s40	W513.514	V571590	X	V571590	V571590	V571590	V571590
s41	C582	X	1000P	1000P	X	X	X
s42	Q553	X	D2396[J/K]	D2396[J/K]	X	X	X
s43	J781	0	X	X	0	0	0
s44	J733.791	X	X	X	0	0	0
s45	C503.505.506	X	X	X	X	0.01	0.01
s46	C504.507	X	X	X	X	0.022	0.022
s47	R501.502	X	X	X	4.7K	4.7K	4.7K
s48	R503	X	X	X	15K	15K	15K
s49	C502	X	X	X	1/50	1/50	1/50
s50	C552.553	VS57830	VS57830	VS57830	VS57830	VS52920	VS52920
s51	J762	X	0	X	X	X	X
s52	R509	X	V575120	X	X	X	X
s53	C510	X	X	X	X	0.1	0.1
s54	C545~549	X	X	X	X	0.022	0.022
s55	C517.520.523	33P	33P	33P	33P	33P/200	33P/200
s56	C515.516	X	X	X	X	100P	100P
s57	C559.568	22P	22P	22P	22P	5P	5P
s58	C560.569	470P	470P	470P	470P	1000P	1000P
s59	C520	X	X	X	X	0.022	0.022

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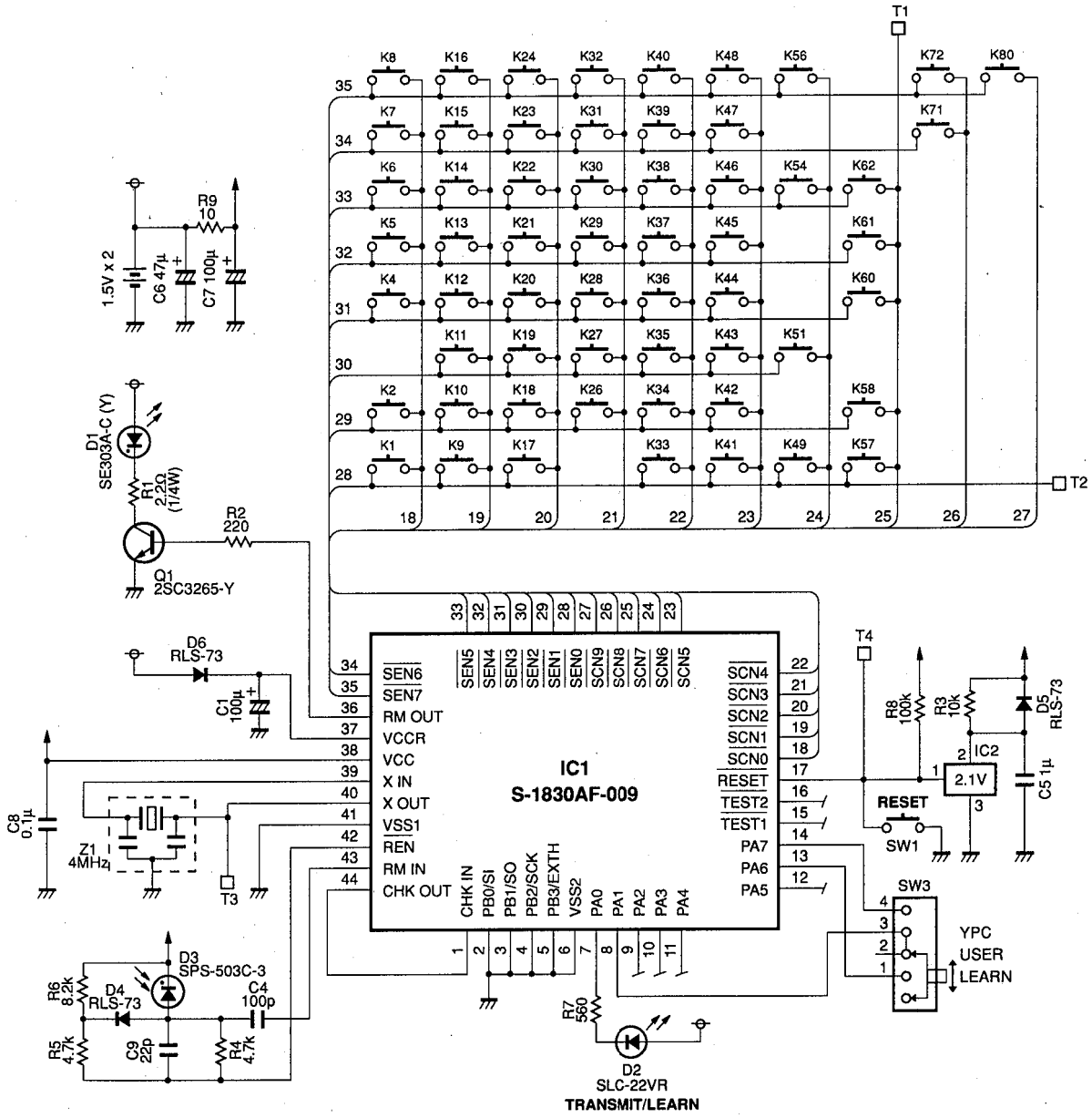
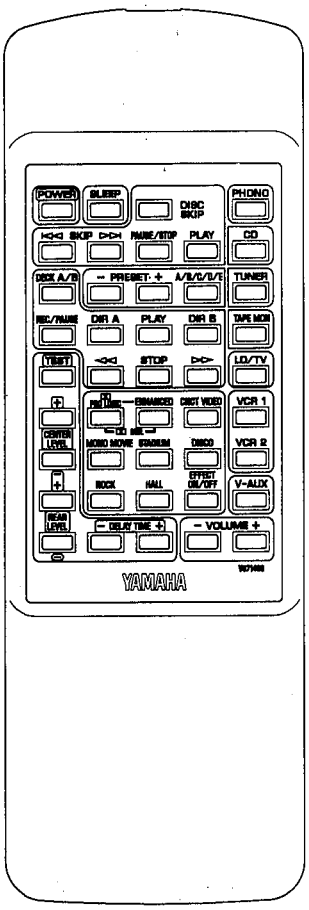
** Schematic diagram is subject to change without notice.*

■ SCHEMATIC DIAGRAM



REMOTE CONTROL TRANSMITTER

■ RX-V590/RX-V590RDS (R, B, G models)



KEY No.	FUNCTION	CUSTOM CODE (HEX)	SUB CUSTOM CODE (HEX)	DATA CODE (HEX)	C0 C7	$\overline{C0}$ $\overline{C7}$	D0 D7	$\overline{D0}$ $\overline{D7}$
1	PHONO	7A	85	14	0101 1110	1010 0001	0010 1000	1101 0111
3	SLEEP	7A	85	57	0101 1110	1010 0001	1110 1010	0001 0101
4	POWER	7A	85	1F	0101 1110	1010 0001	1111 1000	0000 0111
5	CD	7A	85	15	0101 1110	1010 0001	1010 1000	0101 0111
6	PLAY (CD)	7A	85	08	0101 1110	1010 0001	0001 0000	1110 1111
7	SKIP ►►	7A	85	0A	0101 1110	1010 0001	0101 0000	1010 1111
8	SKIP ◄◄	7A	85	0B	0101 1110	1010 0001	1101 0000	0010 1111
9	DISC SKIP	7A	85	4F	0101 1110	1010 0001	1111 0010	0000 1101
10	PAUSE/STOP (CD)	7A	85	09	0101 1110	1010 0001	1001 0000	0110 1111
13	TUNER	7A	85	16	0101 1110	1010 0001	0110 1000	1001 0111
14	A/B/C/D/E	7A	85	12	0101 1110	1010 0001	0100 1000	1011 0111
15	PRESET +	7A	85	10	0101 1110	1010 0001	0000 1000	1111 0111
16	PRESET –	7A	85	11	0101 1110	1010 0001	1000 1000	0111 0111
17	TAPE MON	7A	85	18	0101 1110	1010 0001	0001 1000	1110 0111
18	DIR B	7A	85	40	0101 1110	1010 0001	0000 0010	1111 1101
19	DECK A/B	7A	85	06	0101 1110	1010 0001	0110 0000	1001 1111
20	DIR A	7A	85	07	0101 1110	1010 0001	1110 0000	0001 1111
22	►►	7A	85	02	0101 1110	1010 0001	0100 0000	1011 1111
23	PLAY (TAPE)	7A	85	00	0101 1110	1010 0001	0000 0000	1111 1111
24	◄◄	7A	85	01	0101 1110	1010 0001	1000 0000	0111 1111
25	VCR 1	7A	85	0F	0101 1110	1010 0001	1111 0000	0000 1111
27	STOP (TAPE)	7A	85	03	0101 1110	1010 0001	1100 0000	0011 1111
28	REC/PAUSE	7A	85	04	0101 1110	1010 0001	0010 0000	1101 1111
29	LD/TV	7A	85	17	0101 1110	1010 0001	1110 1000	0001 0111
33	VOLUME +	7A	85	1A	0101 1110	1010 0001	0101 1000	1010 0111
34	VOLUME –	7A	85	1B	0101 1110	1010 0001	1101 1000	0010 0111
37	CONCERT VIDEO	7A	85	8A	0101 1110	1010 0001	0101 0001	1010 1110
38	ENHANCED	7A	85	89	0101 1110	1010 0001	1001 0001	0110 1110
39	PRO LOGIC	7A	85	88	0101 1110	1010 0001	0001 0001	1110 1110
41	CONCERT HALL	7A	85	8D	0101 1110	1010 0001	1011 0001	0100 1110
42	ROCK CONCERT	7A	85	8C	0101 1110	1010 0001	0011 0001	1100 1110
43	MONO MOVIE	7A	85	8B	0101 1110	1010 0001	1101 0001	0010 1110
44	DELAY TIME +	7A	85	52	0101 1110	1010 0001	0100 1010	1011 0101
45	DISCO	7A	85	8F	0101 1110	1010 0001	1111 0001	0000 1110
46	STADIUM	7A	85	8E	0101 1110	1010 0001	0111 0001	1000 1110
47	EFFECT ON/OFF	7A	85	56	0101 1110	1010 0001	0110 1010	1001 0101
48	DELAY TIME –	7A	85	53	0101 1110	1010 0001	1100 1010	0011 0101
52	TEST	7A	85	85	0101 1110	1010 0001	1010 0001	0101 1110
53	REAR LEVEL +	7A	85	5E	0101 1110	1010 0001	0111 1010	1000 0101
54	REAR LEVEL –	7A	85	5F	0101 1110	1010 0001	1111 1010	0000 0101
55	CENTER LEVEL +	7A	85	82	0101 1110	1010 0001	0100 0001	1011 1110
56	CENTER LEVEL –	7A	85	83	0101 1110	1010 0001	1100 0001	0011 1110
57	VCR 2	7A	85	13	0101 1110	1010 0001	1100 1000	0011 0111
58	V-AUX	7A	85	55	0101 1110	1010 0001	1010 1010	0101 0101