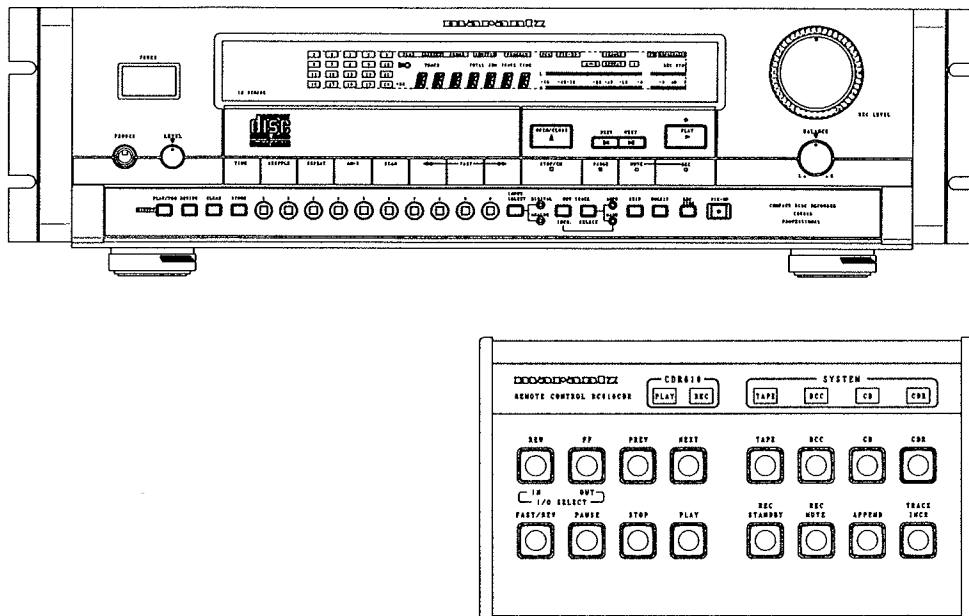


Service Manual

CDR610U

Compact Disc Recorder



This service manual explains them by extracting the different specifications from those of the model CDR600, based on the model CDR600. For both electrical and mechanical information on the after-sales service which is not stated, all information is described in the model CDR600 service manual.

The dispatch of the parts for after-sales service has to be referred to this service manual, with the first priority.

For this reason, please use this service manual with referring to the model CDR600 service manual.

marantz®

model CDR610

First issue : 1993/11

277K855210

MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, **MARANTZ** company has created the ultimate in stereo sound.

Only original **MARANTZ** parts can insure that your **MARANTZ** product will continue to perform to the specifications for which it is famous.

Parts for your **MARANTZ** equipment are generally available to our National Marantz Subsidiary or Agent.

ORDERING PARTS:

Parts can ordered either by mail or by telex. In both cases, the correct part number has to be specified. The following information must be supplied to eliminate delays in processing your order:

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which part is required
5. Way of shipment
6. Signature: any order form or telex must be signed, otherwise such part order will be considered as null and void.

SHOCK, FIRE HAZARD SERVICE TEST:

CAUTION: After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or Front Panel of product and controls and chassis bottom.

Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verified before return to user/customer.

Ref. UL Standard NO.1492.

MARANTZ EUROPE B.V.

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BUILDING SFF2
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PHONE : +31 - 40 - 732241
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1150 FEEHANVILLE DR.
MOUNT PROSPECT, ILLINOIS 60056
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PHONE : 708 - 299 - 4000
FAX : 708 - 299 - 4004

MARANTZ PROFESSIONAL PRODUCTS

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PHONE : 708 - 820 - 4800
FAX : 708 - 820 - 8103

LENBROOK INDUSTRIES LIMITED

633 GRANITE COURT,
PICKERING, ONTARIO L1W 3K1
CANADA
PHONE : 416 - 831 - 6555
FAX : 416 - 831 - 6936

TC ELECTRONICS CANADA LTD

540 FIRING AVE.
BAIE D'URFÉ, QUEBEC
H9X 3T2
PHONE : 514 - 457 - 4044
FAX : 514 - 457 - 5524

日本マランツ株式会社

本社 〒228 神奈川県相模原市相模大野7丁目35番1号
営業本部 〒150 東京都渋谷区恵比寿南1丁目11番9号

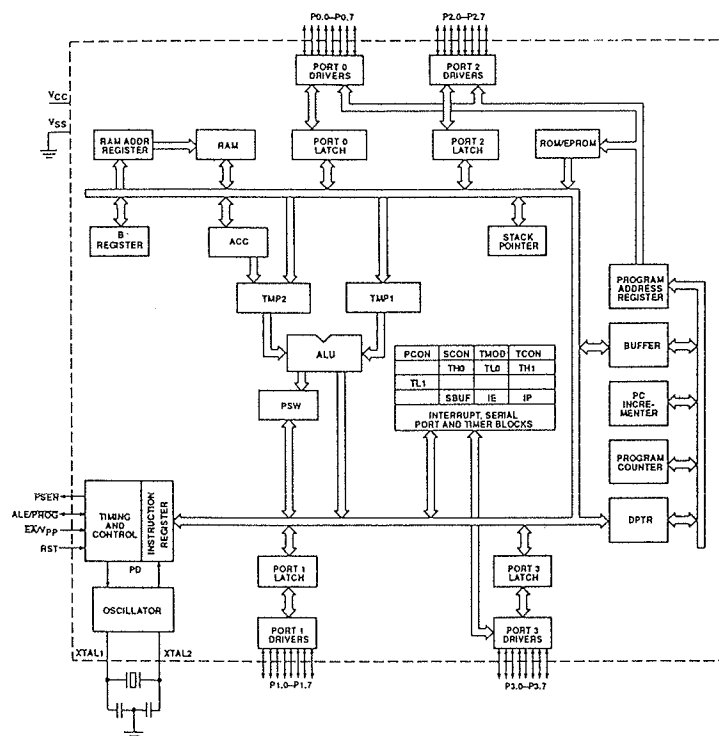
In case of difficulties, do not hesitate to contact the Technical Department at above mentioned address.

SPECIFICATIONS

Sampling Frequency	44.1 kHz
Quantization	16 bits Liner/channel
Pre Emphasis	No or 50/15 μ s
Frequency Response (record and reproduce)	20 Hz to 20 kHz $\pm$ 0.3 dB
Channel Balance (record and reproduce)	< 0.8 dB
Harmonic Distortion (record and reproduce)	< .005% (THD + Noise)
Signal-To-Noise Ratio (record and reproduce)	> 90 dB (A-Weighted)
Channel Separation (record and reproduce)	> 88 dB (1 kHz)
Phase Variation (record and reproduce)	< 0.5 degrees
INPUT (Electronically Balanced)	
Impedance	> 30 k Ω
Meter Calibration	
+4 dBu Reference Level	-15 dB on Meter
Maximum input level	+19 dBu (0 dB on Meter)
-10 dBu Reference Level	-15 dB on Meter
Maximum input level	+5 dBu (0 dB on Meter)
Reference Calibration	$\pm$ 5 dB (-10 dB to -20 dB on Meter)
OUTPUT (Electronically Balanced)	
Nominal Output Level	+4 dBu
Maximum Output Level	+19 dBu
Output Impedance	100 Ω
Headphone Output	
Output Voltage	0-6.5 Vrms (no load)
Output resistance	120 Ω
Load Impedance range	8 to 2 k Ω
Digital Input	
XLR	AES/EBU or IEC-958-II (Auto-switching)
RCA	IEC-958-II
TOS Link Optical	IEC-958-II
Digital Output	
XLR	AES/EBU or IEC-958-II (Switchable)
RCA	IEC-958-II
TOS Link Optical	IEC-958-II
Digital Cascade	Direct Pass-Through from XLR or RCA digital input to XLR Digital Output
Remote Control	RC610CDR (RC5 Serial and GPI) RC5 (Serial)
Power Supply	100V, 120V, 220V, 240V $\pm$ 10% 50/60 Hz
Power Consumption	< 40 Watts
Dimensions	
Width	19 inches (482mm)
Height	5.4 inches (137mm)
Depth	14 inches (355mm)

Specifications subject to change without prior notice.

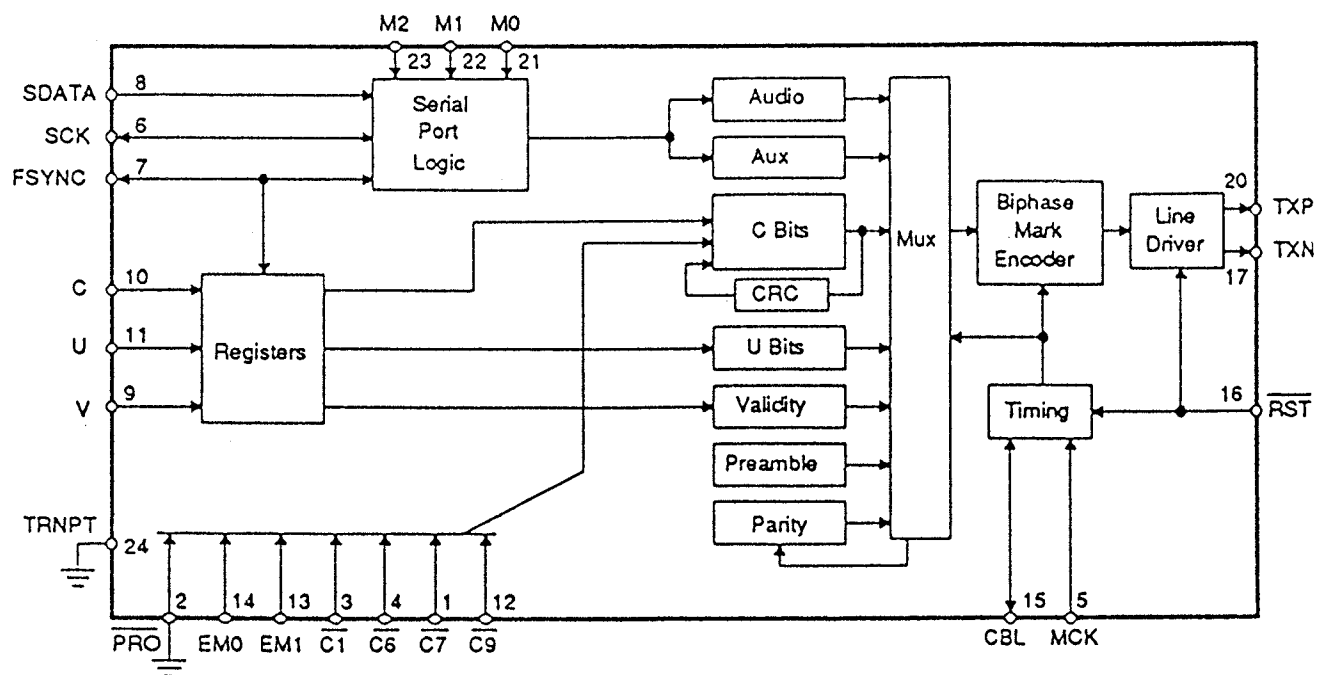
MICROPROCESSOR SC87C51CGN40 BLOCK DIAGRAM



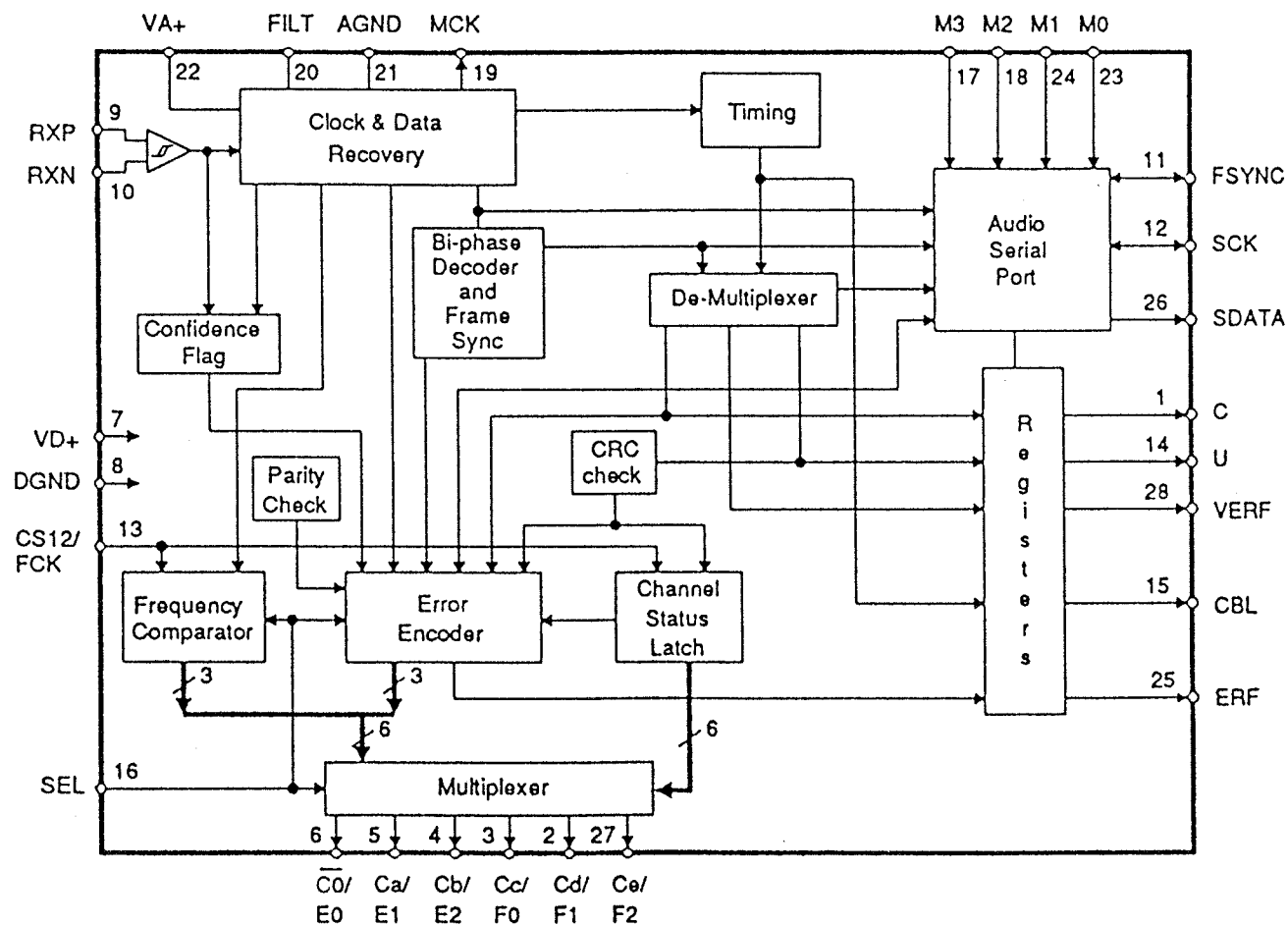
MICROPROCESSOR I/O PINS AND THEIR FUNCTION

PIN NO.	PORT NAME		I/O	ACT	FUNCTION
1	P1.0	D-SUB IN	I	H	PAUSE
2	P1.1	D-SUB IN	I	H	PLAY
3	P1.2	D-SUB IN	I	H	STOP
4	P1.3	D-SUB IN	I	H	REC
5	P1.4	D-SUB IN	I	H	TRACK INCREMENT
6	P1.5	D-SUB OUT	ø	L	STOP
7	P1.6	D-SUB OUT	ø	L	PLAY
8	P1.7	D-SUB OUT	ø	L	PAUSE
9	RESET	RESET	I	H	RESET FOR IC
10	P3.0	N.C			
11	P3.1	N.C			
12	P3.2	N.C			
13	P3.3	N.C			
14	P3.4	RC-5	ø	P	REMOTE CODE FOR CDR
15	P3.5	RC-5	ø	P	REMOTE CODE FOR SYSTEM
16	P3.6	SCL	I/O	P	CLOCK FOR EEPROM
17	P3.7	SDA	I/O	P	DATA FOR EEPROM
18	XTAL1	X1	—	—	CLOCK 12MHz
19	XTAL2	X2	—	—	CLOCK 12MHz
20	VSS	Vss	—	—	GND
21	P2.0	Key IN	I	P	TAPE, REC
22	P2.1	Key IN	I	P	DCC, MUTE
23	P2.2	Key IN	I	P	CD, APPEND
24	P2.3	Key IN	I	P	CDR, TR. INCR.
25	P2.4	Key IN	I	P	REW, REV/FAST
26	P2.5	Key IN	I	P	FF, PAUSE
27	P2.6	Key IN	I	P	PREV, STOP
28	2.7	Key IN	I	P	NEXT, PLAY
29	PSEN	N.C	—	—	
30	ALE	N.C.	—	—	
31	EA	E.C	—	—	
32	P0.7	Key OUT	ø	P	REC, MUTE, APPEND, TR INCR, REV/FAST, PAUSE, STOP, PLAY
33	P0.6	Key OUT	ø	P	TAPE, DCC, CD, CDR, REW, FF, PREV, NECT
34	P0.5	N.C	—	—	
35	P0.4	LED OUT	ø	L	REMOTE
36	P0.3	LED OUT	ø	L	TAPE
37	P0.2	LED OUT	ø	L	DCC
38	P0.1	LED OUT	ø	L	CD
39	P0.0	LED OUT	ø	L	CDR
40	VDD	VDD	—	—	+5V

IC BLOCK DIAGRAM CS8402



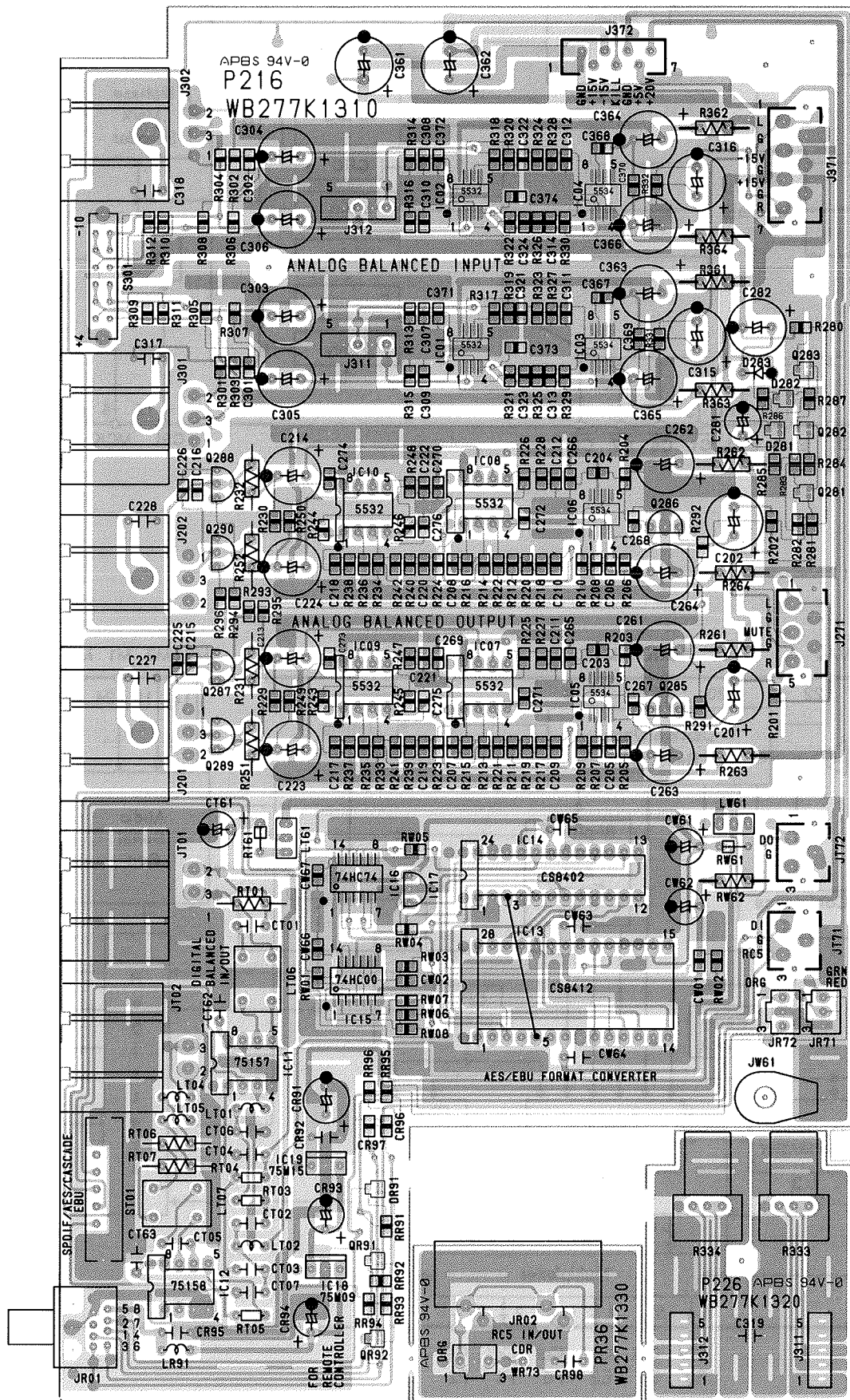
CS8412



BALANCED P.C. BOARD P216

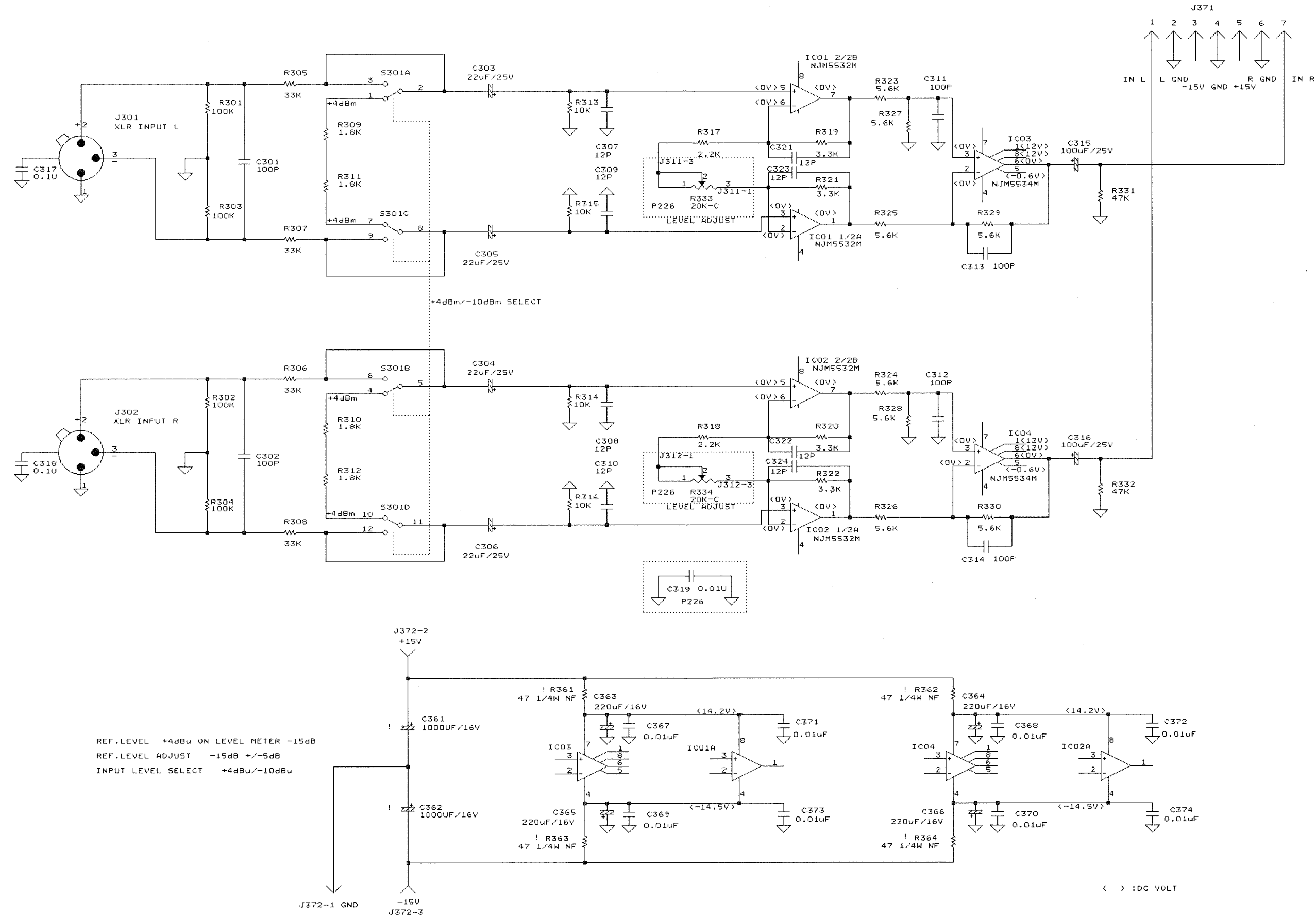
Q281~Q283

IC12 IC11 IC18 IC19 QR91 QR92

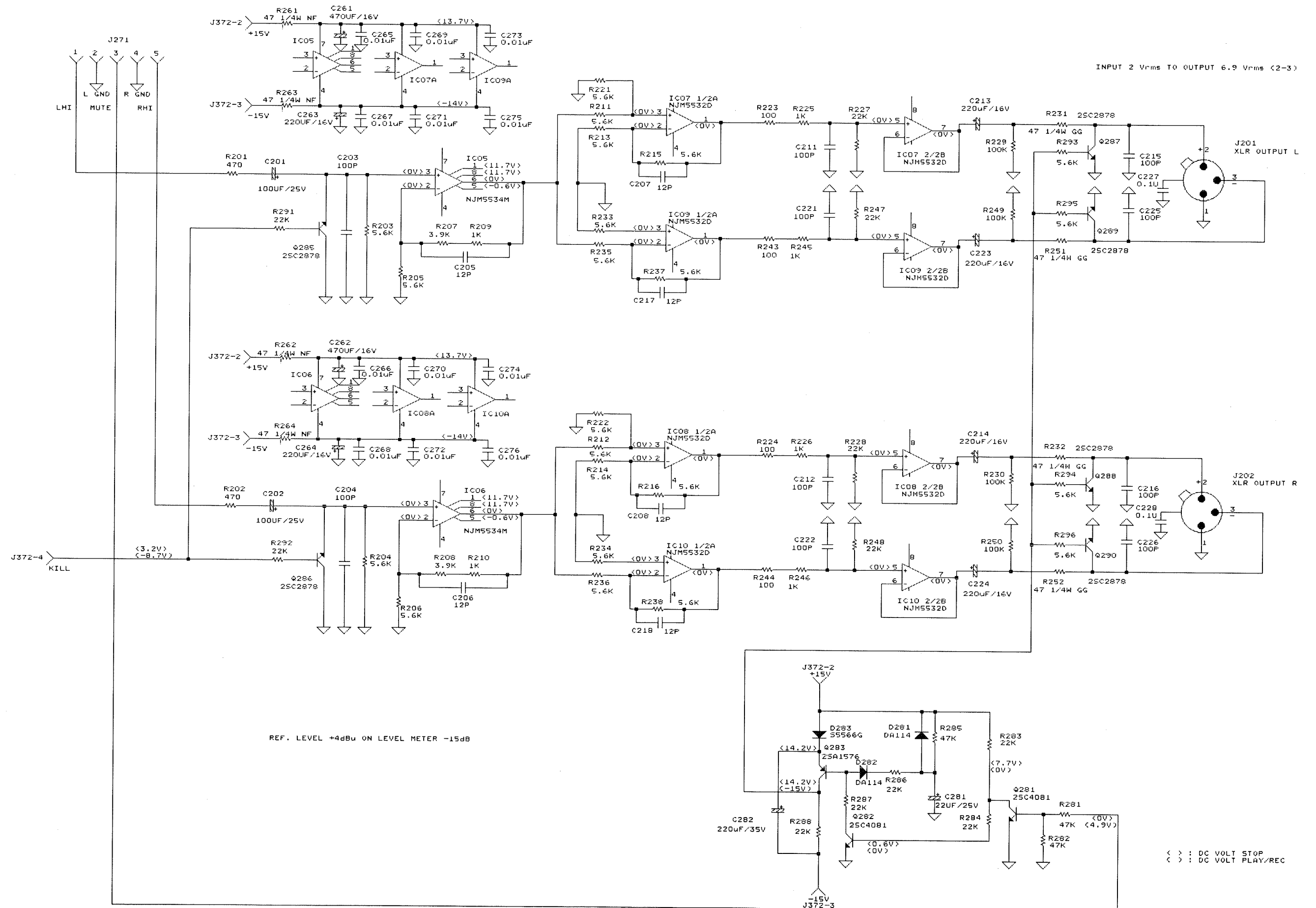


P216 - 1/4
ANALOG BALANCED INPUT

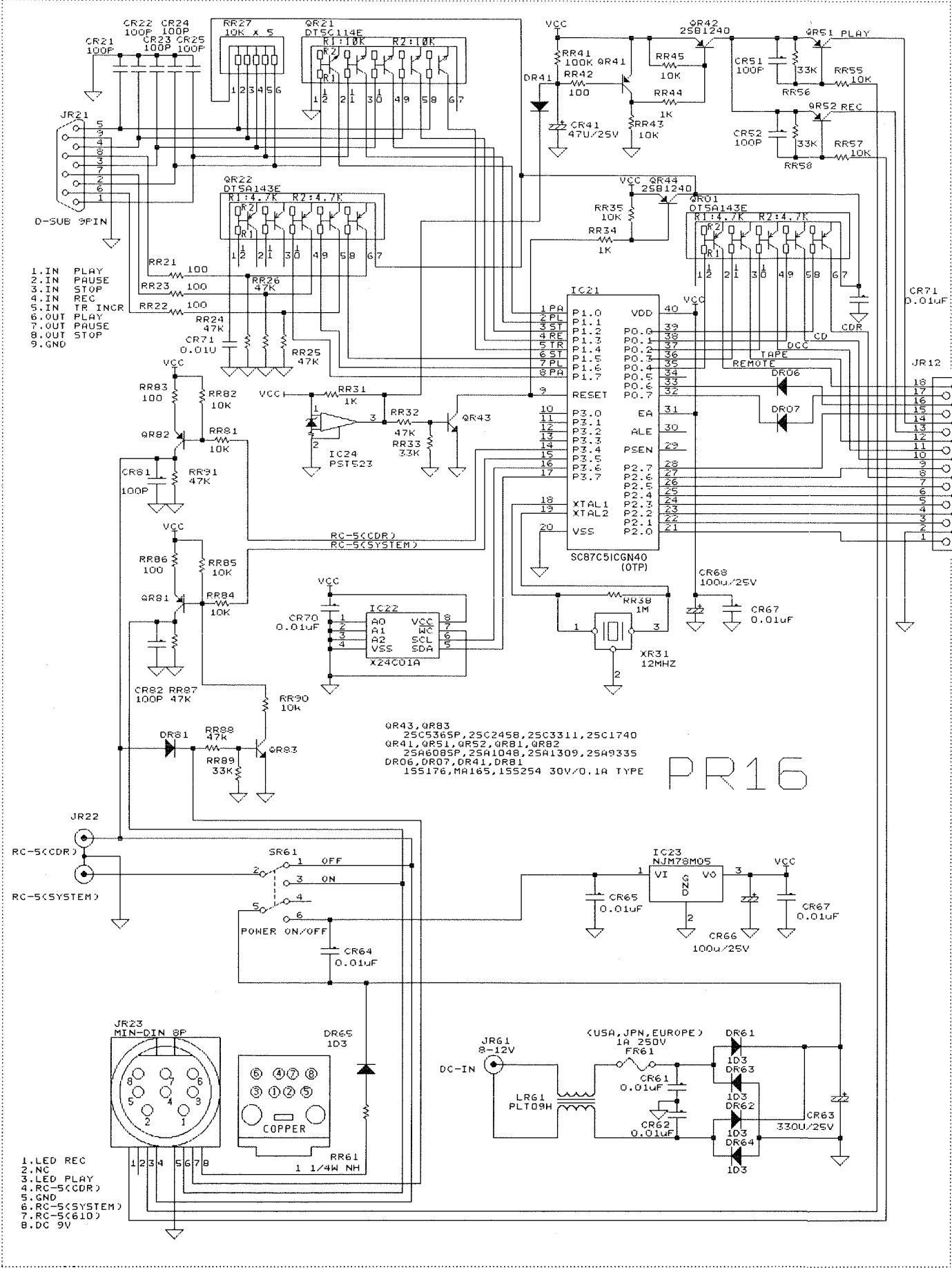
INPUT 6.9 Vrms (2-3) TO OUTPUT 700 mVrms ON +4dBu



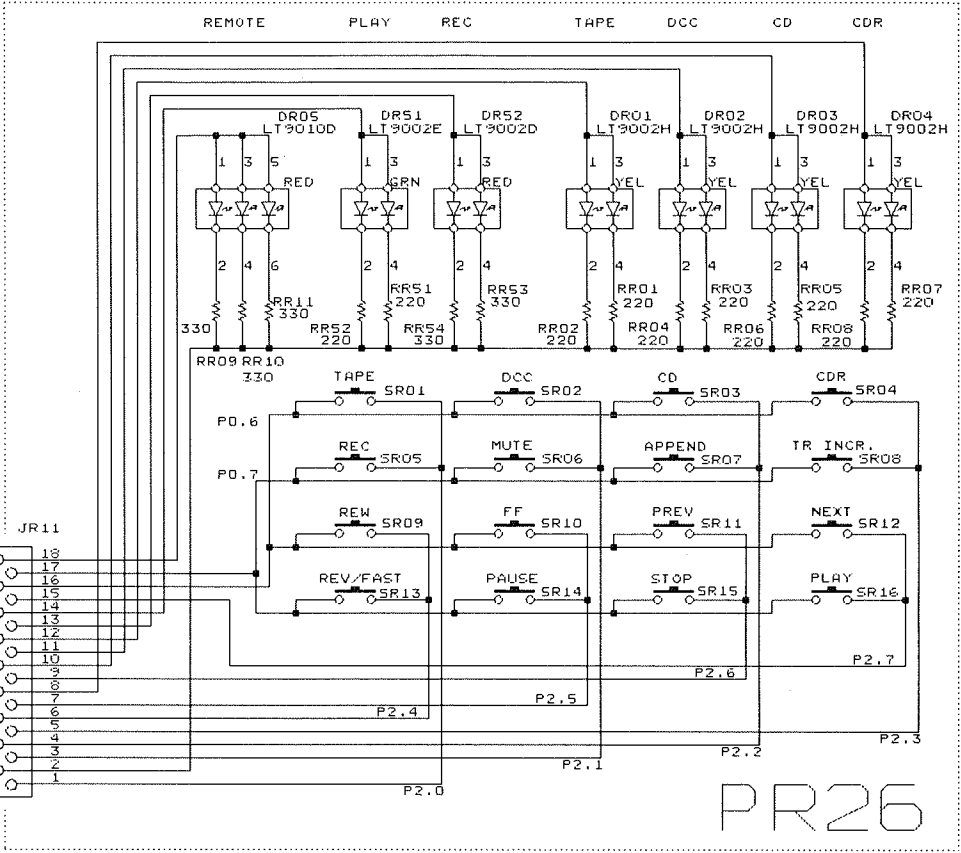
P216 - 2/4
ANALOG BALANCED OUTPUT



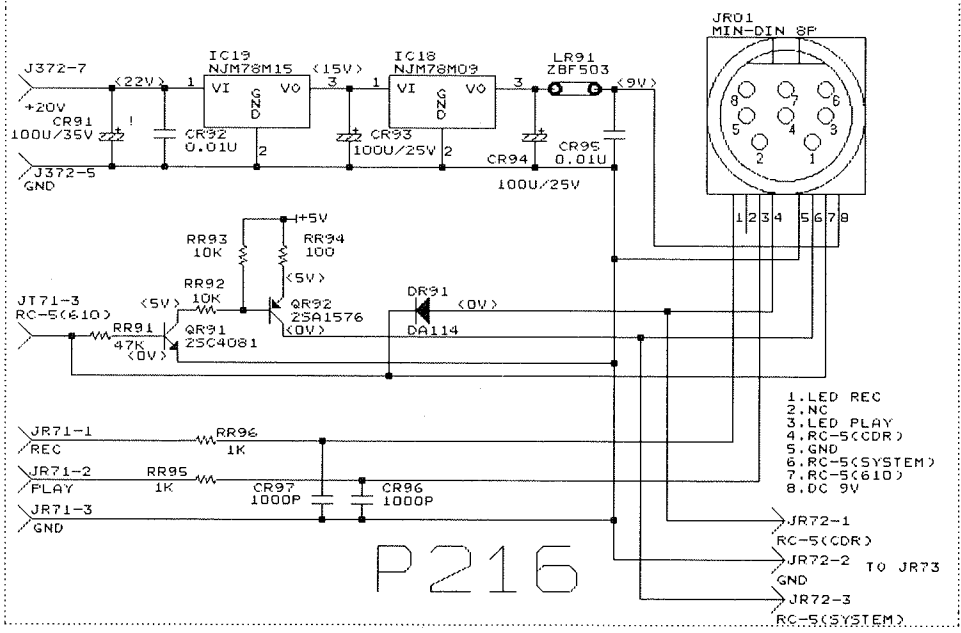
REMOTE MAIN



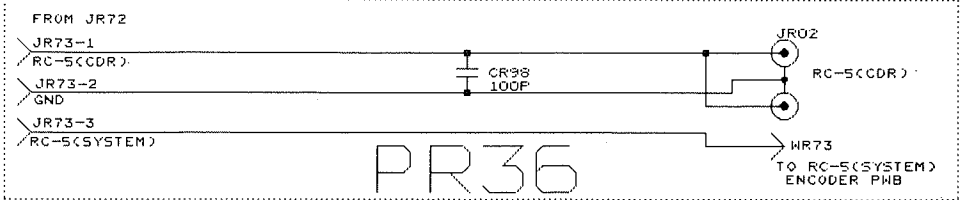
REMOTE TACT SW



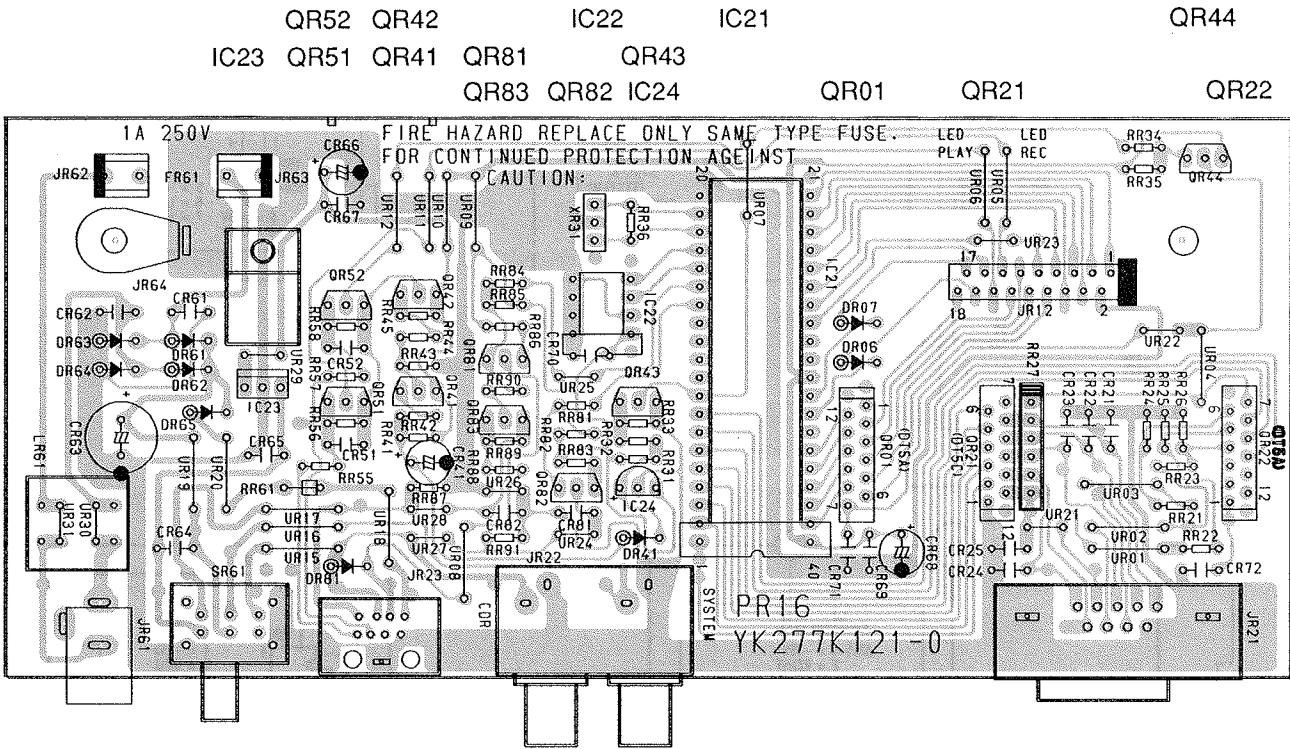
DIN IN/OUT



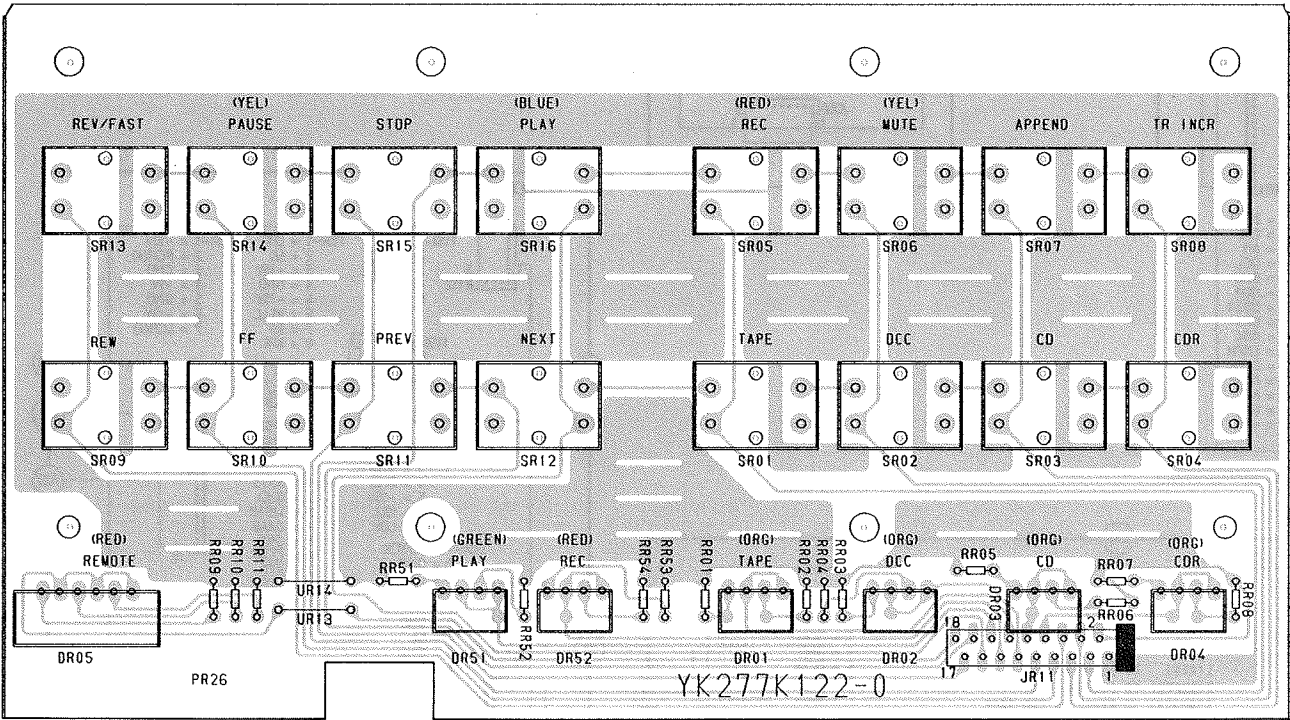
RC-5 IN/OUT



REMOTE MAIN P.C. BOARD PR16

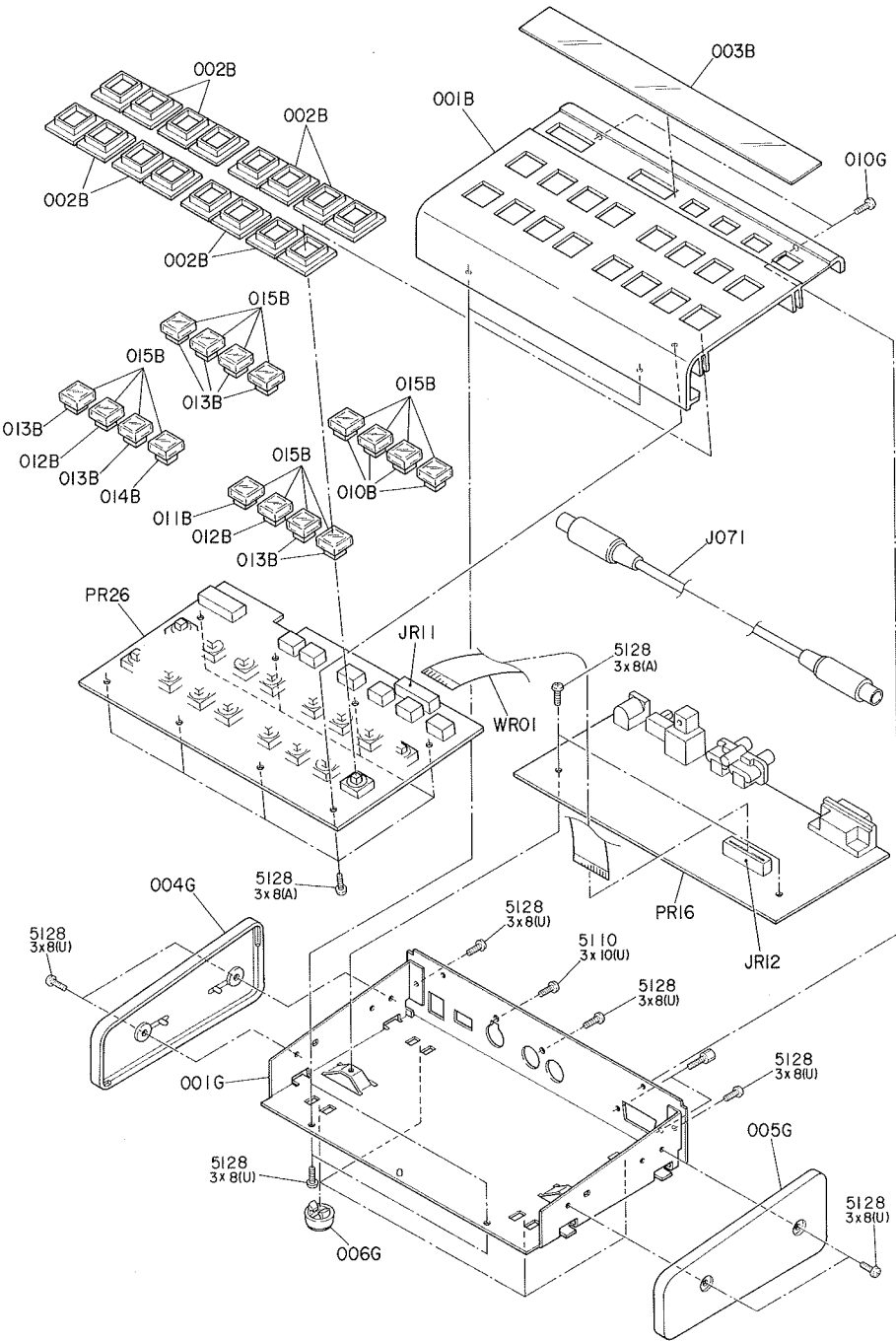


REMOTE TACT SW P.C. BOARD PR26



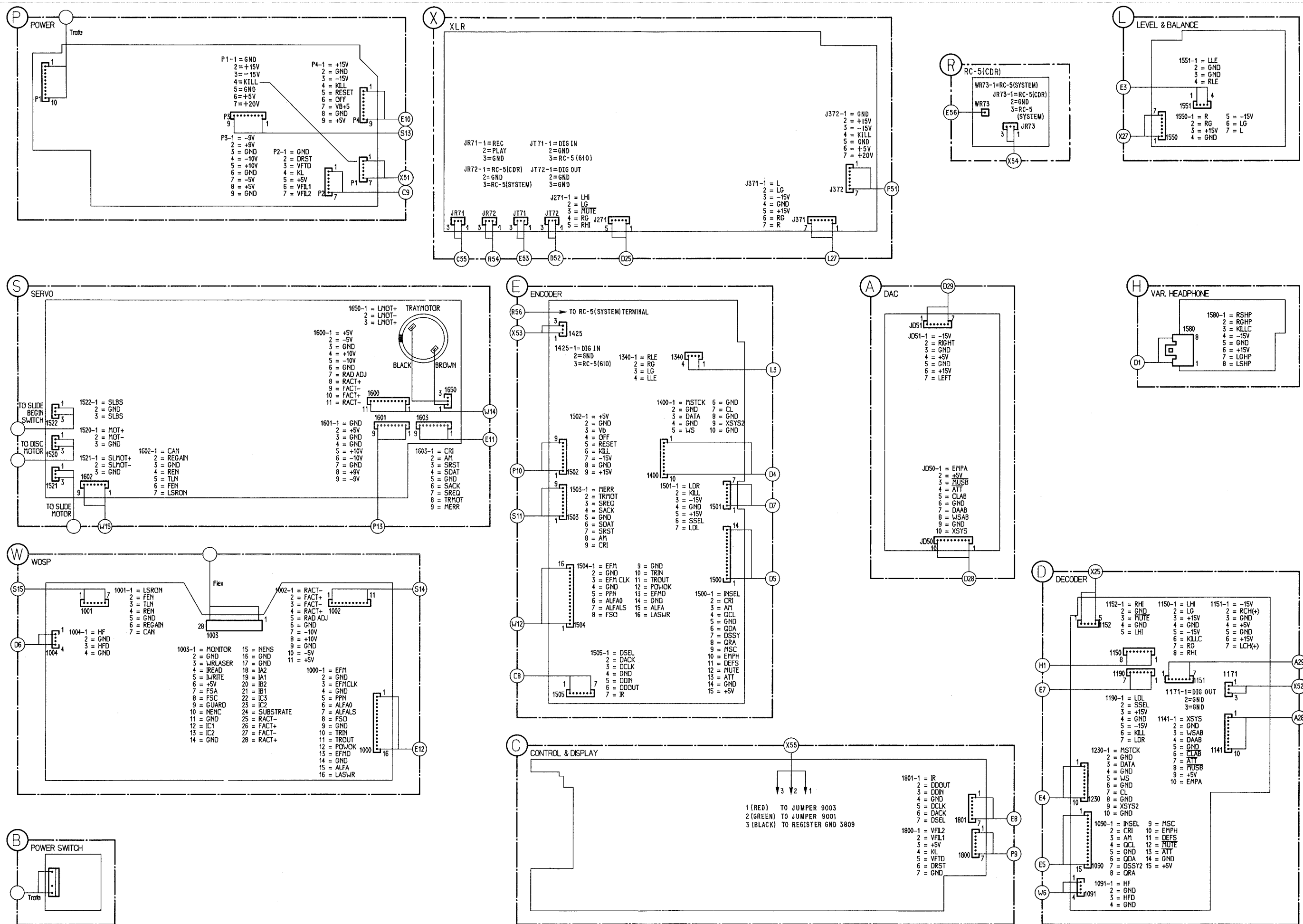
EXPLODED VIEW

REMOTE CONTROL



REF. DESIG.	PART NO.	DESCRIPTION
001B	277K248010	FRONT PANEL
002B	277K259010	BUSHING, PANEL FOR BUSHING
003B	277K158010	WINDOW
010B	277K270310	BUTTON, KEYTOP IVORY
011B	277K270210	BUTTON, KEYTOP RED
012B	277K270410	BUTTON, KEYTOP YELLOW
013B	277K270110	BUTTON, KEYTOP BLACK
014B	222S270010	BUTTON, KEYTOP BLUE
015B	222S067020	CAP, 61AAA0091A CAP FOR KEYTOP
016B	277K107010	SHEET, 010B, 011B, 012B, 013B, 014B, 015B
004G	277K249010	SIDE PANEL (L)
005G	277K249020	SIDE PANEL (R)
006G	258H057010	LEG
010G	51270310U0	PH.TAP.SCREW 3X10
WR01	YU18100510	JUMPER LEAD, FPC CORD 18P/ 100MM

WIRING DIAGRAM



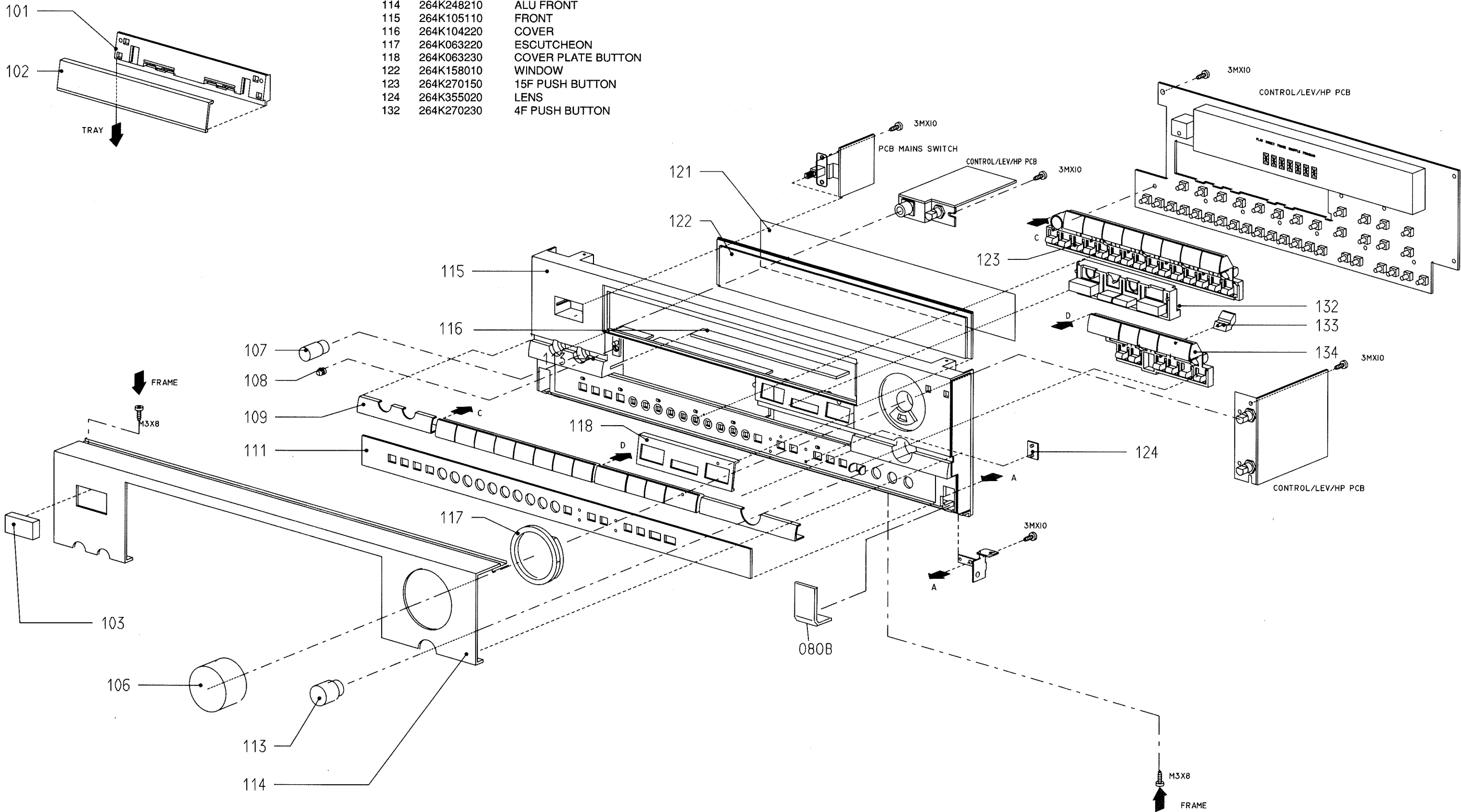
EXPLODED VIEWS

FRONT

MECHANICAL PARTS LIST

101	264K104020	TRAY FRONT
102	264K063210	ALU TRAY FRONT
103	415T270020	POWER BUTTON
106	264K154210	REC LEVEL KNOB
107	264K154230	PHONES VOLUME KNOB
109	264K063240	ALU BUTTON SET
111	264K063250	ALU COVER
113	264K154220	BALANCE KNOB
114	264K248210	ALU FRONT
115	264K105110	FRONT
116	264K104220	COVER
117	264K063220	ESCUTCHEON
118	264K063230	COVER PLATE BUTTON
122	264K158010	WINDOW
123	264K270150	15F PUSH BUTTON
124	264K355020	LENS
132	264K270230	4F PUSH BUTTON

133	264K355500	RECORDING LENS ASSY
134	264K270120	6F PUSH BUTTON
080B	277K303010	MASK, FRONT MOLD
	264K249210	SIDE PANEL LEFT
	264K249220	SIDE PANEL RIGHT
	264K253210	HANDLE
	264K355030	PLAY LENS



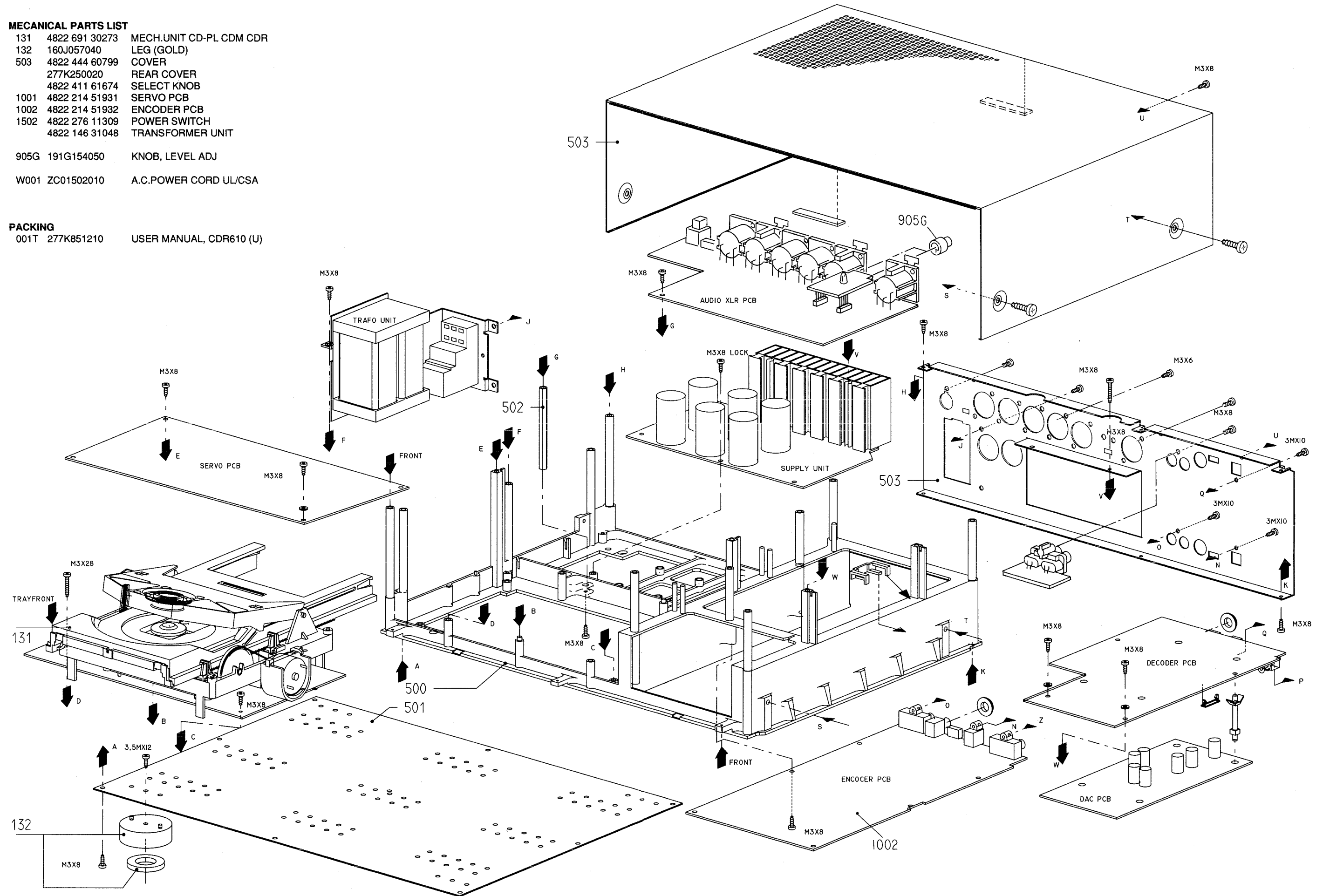
CABINIT

MECHANICAL PARTS LIST

131	4822 691 30273	MECH.UNIT CD-PL CDM CDR
132	160J057040	LEG (GOLD)
503	4822 444 60799	COVER
	277K250020	REAR COVER
	4822 411 61674	SELECT KNOB
1001	4822 214 51931	SERVO PCB
1002	4822 214 51932	ENCODER PCB
1502	4822 276 11309	POWER SWITCH
	4822 146 31048	TRANSFORMER UNIT
905G	191G154050	KNOB, LEVEL ADJ
W001	ZC01502010	A.C.POWER CORD UL/CSA

PACKING

001T 277K851210 USER MANUAL, CDR610 (U)



ELECTRICAL PARTS LIST

ASSIGNMENT OF COMMON PARTS CODES.

RESISTOR

R*** : (1) GD05 xxx 140, Carbon film fixed resistor, $\pm 5\%$ 1/4W
R*** : (2) GD05 xxx 160, Carbon film fixed resistor, $\pm 5\%$ 1/6W

① — Resistance value

Examples ;

① Resistance value

0.1 Ω001	10 Ω100	1 k Ω102	100 k Ω104
0.5 Ω005	18 Ω180	2.7 k Ω272	680 k Ω684
1 Ω010	100 Ω101	10 k Ω103	1 M Ω105
6.8 Ω068	390 Ω391	22 k Ω223	4.7 M Ω475

(Note) Please distinguish 1/4W from 1/6W by the shape of parts used actually.

C*** : CERAMIC CAP.

(1) DD1x xxx 370, Ceramic capacitor
 Disc type
 Temp. coeff. P350 ~ N1000, 50V

① ②
 Capacity value
 Tolerance

Examples ;

① Tolerance (Capacity deviation)

$\pm 0.25\text{pF}$ 0
 $\pm 0.5\text{pF}$ 1
 $\pm 5\%$ 5

* Tolerance of COMMON PARTS handled here are as follows :

0.5pF ~ 5pF $\pm 0.25\text{pF}$
 6pF ~ 10pF $\pm 0.5\text{pF}$
 12pF ~ 560pF $\pm 5\%$

② Capacity value

0.5 pF005	3 pF030	100 pF101
1 pF010	10 pF100	220 pF221
1.5 pF015	47 pF470	560 pF561

C*** : CERAMIC CAP.

(1) DK16 xxx 300, High dielectric constant ceramic capacitor
 Disc type
 Temp. chara. 2B4, 50V

①
 Capacity value

Examples ;

② Capacity value

100 pF101	1000 pF102	10000 pF103
470 pF471	2200 pF222	

C*** : ELECTROLY. CAP. (∇), FILM CAP. (∇)

(1) EA xxx xxx 10, Electrolytic capacitor
 One-way lead type,
 Tolerance $\pm 20\%$

① ②
 Working voltage
 Capacity value

Examples ;

① Capacity value

0.1 μF104	4.7 μF475	100 μF107
0.33 μF334	10 μF106	330 μF337
1 μF105	22 μF226	1100 μF118
		2200 μF228

② Working voltage

6.3 V006	25 V025
10 V010	35 V035
16 V016	50 V050

(2) DF15 xxx 350, Plastic film capacitor
 One-way type, Mylar $\pm 5\%$ 50V

①
 Capacity value

Examples ;

① Capacity value

0.001 μF (1000pF)102	0.1 μF104
0.0018 μF182	0.56 μF564
0.01 μF103	1 μF105
0.015 μF153	

NOTE : The above CODES (R***, R***, C***, C*** and C***) are omitted on the schematic diagram in some case.
 On the occasion, be confirmed common parts on the parts list.

REF. DESIG.	PART NO.	DESCRIPTION
P216-BALANCED CIRCUIT BOARD		
P216-CAPACITORS		
CR91	OA10703520	ELECT 100 μF 35V
CR92	DK18103310	CERAMIC 0.01 μF +80%-20% 50V
CR93	OA10702520	ELECT 100 μF 25V
CR94	OA10702520	ELECT 100 μF 25V
CR95	DK18103310	CERAMIC 0.01 μF +80%-20% 50V
CR96	DK56102300	CERAMIC 0.001 μF $\pm 10\%$ CHIP
CR97	DK56102300	CERAMIC 0.001 μF $\pm 10\%$ CHIP
CT01		
\$	DD38104010	CERAMIC 0.1 μF +80%-20% 50V
CT05		
CT06	DD15101300	CERAMIC 100 PF $\pm 5\%$ 50V
CT07	DD11100300	CERAMIC 10 PF $\pm 0.5\text{PF}$ 50V
CT61	OA10702520	ELECT 100 μF 25V
CT62	DK18103310	CERAMIC 0.01 μF +80%-20% 50V
CT63	DK18103310	CERAMIC 0.01 μF +80%-20% 50V
CW01	DK58473300	CERAMIC 47000 PF +80%-20% CHIP
CW02	DK58473300	CERAMIC 47000 PF +80%-20% CHIP
CW61	OA10702520	ELECT 100 μF 25V
CW62	OA10702520	ELECT 100 μF 25V
CW63		
\$	DD38104010	CERAMIC 0.1 μF +80%-20% 50V
CW65		
CW66	DK56103300	CERAMIC 0.01 μF $\pm 10\%$
CW67	DK56103300	CERAMIC 0.01 μF $\pm 10\%$
C201	OA10702520	ELECT 100 μF 25V
C202	OA10702520	ELECT 100 μF 25V
C203	DD55101300	CERAMIC 100 PF $\pm 5\%$ CHIP
C204	DD55101300	CERAMIC 100 PF $\pm 5\%$ CHIP
C205		
\$	DD55120300	CERAMIC 12 PF $\pm 5\%$ CHIP
C208		
C211	DD55101300	CERAMIC 100 PF $\pm 5\%$ CHIP
C212	DD55101300	CERAMIC 100 PF $\pm 5\%$ CHIP
C213	OA22701620	ELECT 220 μF 16V
C214	OA22701620	ELECT 220 μF 16V
C215	DD55101300	CERAMIC 100 PF $\pm 5\%$ CHIP
C216	DD55101300	CERAMIC 100 PF $\pm 5\%$ CHIP
C217	DD55120300	CERAMIC 12 PF $\pm 5\%$ CHIP
C218	DD55120300	CERAMIC 12 PF $\pm 5\%$ CHIP
C221	DD55101300	CERAMIC 100 PF $\pm 5\%$ CHIP
C222	DD55101300	CERAMIC 100 PF $\pm 5\%$ CHIP
C223	OA22701620	ELECT 220 μF 16V
C224	OA22701620	ELECT 220 μF 16V
C225	DD55101300	CERAMIC 100 PF $\pm 5\%$ CHIP
C226	DD55101300	CERAMIC 100 PF $\pm 5\%$ CHIP
C227	DD38104010	CERAMIC 0.1 μF +80%-20% 50V
C228	DD38104010	CERAMIC 0.1 μF +80%-20% 50V
C261	OA47701620	ELECT 470 μF 16V
C262	OA47701620	ELECT 470 μF 16V
C263	OA22701620	ELECT 220 μF 16V
C264	OA22701620	ELECT 22 μF 16V
C265		
\$	DK56103300	CERAMIC 0.01 μF 10% CHIP
C276		
C281	OA22602520	ELECT 22 μF 25V
C282	OA22703520	ELECT 220 μF 35V
C301	DD55101300	CERAMIC 100 PF $\pm 5\%$ CHIP
C302	DD55101300	CERAMIC 100 PF $\pm 5\%$ CHIP
C303		
\$	OA22602520	ELECT 22 μF 25V
C306		
C307		
\$	DD55120300	CERAMIC 12 PF $\pm 5\%$ CHIP
C310		
C311		
\$	DD55101300	CERAMIC 100 PF $\pm 5\%$ CHIP
C314		

REF. DESIG.	PART NO.	DESCRIPTION
C315	OA10702520	ELECT 100 μ F 25V
C316	OA10702520	ELECT 100 μ F 25V
C317	DD38104010	CERAMIC 0.1 μ F +80%-20% 50V
C318	DD38104010	CERAMIC 0.1 μ F +80%-20% 50V
C321		
§	DD55120300	CERAMIC 12 PF $\pm$ 5% CHIP
C324		
C361	OA10801620	ELECT 1000 μ F 16V
C362	OA10801620	ELECT 1000 μ F 16V
C363		
§	OA22701620	ELECT 220 μ F 16V
C366		
C367		
§	DK56103300	CERAMIC 0.01 μ F $\pm$ 10% CHIP
C374		
RR91	NI01473110	47K Ω $\pm$ 1% 1/10W CHIP
RR92	NI01103110	10K Ω $\pm$ 1% 1/10W CHIP
RR93	NI01103110	10K Ω $\pm$ 1% 1/10W CHIP
RR94	NI01101110	100 Ω $\pm$ 1% 1/10W CHIP
RR95	NI01102110	1K Ω $\pm$ 1% 1/10W CHIP
RR96	NI01102110	1K Ω $\pm$ 1% 1/10W CHIP
RT01	GG05121140	120 Ω $\pm$ 5% 1/4W
RT03	GG05471160	470 Ω $\pm$ 5% 1/6W
RT04	GG05103160	10K Ω $\pm$ 5% 1/6W
RT05	GG05101160	100 Ω $\pm$ 5% 1/6W
RT06	GG05560140	56 Ω $\pm$ 5% 1/4W
RT07	GG05560140	56 Ω $\pm$ 5% 1/4W
RT61	NH05010140	1 Ω $\pm$ 5% 1/4W FUSIBLE
RW01	NI01101110	100 Ω $\pm$ 1% 1/10W CHIP
RW02	NI01102110	1K Ω $\pm$ 1% 1/10W CHIP
RW03	NI01101110	100 Ω $\pm$ 1% 1/10W CHIP
RW04	NI01103110	10K Ω $\pm$ 1% 1/10W CHIP
RW05	NI01471110	470 Ω $\pm$ 1% 1/10W CHIP
RW06		
§	NI01101110	100 Ω $\pm$ 1% 1/10W CHIP
RW08		
RW61	NH05010140	1 Ω $\pm$ 5% 1/4W FUSIBLE
RW62	GG05220140	22 Ω $\pm$ 5% 1/4W
R201	NI01471110	470 Ω $\pm$ 1% 1/10W CHIP
R202	NI01471110	470 Ω $\pm$ 1% 1/10W CHIP
R203		
§	NI01562110	5.6K Ω $\pm$ 1% 1/10W CHIP
R206		
R207	NI01392110	3.9K Ω $\pm$ 1% 1/10W CHIP
R208	NI01392110	3.9K Ω $\pm$ 1% 1/10W CHIP
R209	NI01102110	1.0K Ω $\pm$ 1% 1/10W CHIP
R210	NI01102110	1.0K Ω $\pm$ 1% 1/10W CHIP
R211		
§	NI01562110	5.6K Ω $\pm$ 1% 1/10W CHIP
R216		
R221	NI01562110	5.6K Ω $\pm$ 1% 1/10W CHIP
R222	NI01562110	5.6K Ω $\pm$ 1% 1/10W CHIP
R223	NI01101110	100 Ω $\pm$ 1% 1/10W CHIP
R224	NI01101110	100 Ω $\pm$ 1% 1/10W CHIP
R225	NI01102110	1K Ω $\pm$ 1% 1/10W CHIP
R226	NI01102110	1K Ω $\pm$ 1% 1/10W CHIP
R227	NI01223110	22K Ω $\pm$ 1% 1/10W CHIP
R228	NI01223110	22K Ω $\pm$ 1% 1/10W CHIP
R229	NI01104110	100K Ω $\pm$ 1% 1/10W CHIP
R230	NI01104110	100K Ω $\pm$ 1% 1/10W CHIP
R231	GG05470140	47 Ω $\pm$ 5% 1/4W
R232	GG05470140	47 Ω $\pm$ 5% 1/4W
R233		
§	NI01562110	5.6K Ω $\pm$ 1% 1/10W CHIP
R238		
R243	NI01101110	100 Ω $\pm$ 1% 1/10W CHIP
R244	NI01101110	100 Ω $\pm$ 1% 1/10W CHIP
R245	NI01102110	1K Ω $\pm$ 1% 1/10W CHIP
R246	NI01102110	1K Ω $\pm$ 1% 1/10W CHIP

P216-RESISTORS

REF. DESIG.	PART NO.	DESCRIPTION
R247	NI01223110	22K Ω $\pm$ 1% 1/10W CHIP
R248	NI01223110	22K Ω $\pm$ 1% 1/10W CHIP
R249	NI01104110	100K Ω $\pm$ 1% 1/10W CHIP
R250	NI01104110	100K Ω $\pm$ 1% 1/10W CHIP
R251	GG05470140	47 Ω $\pm$ 5% 1/4W
R252	GG05470140	47 Ω $\pm$ 5% 1/4W
R261		
§	NF02470140	47 Ω $\pm$ 2% 1/4W FUSE
R264		
R280	NI01223110	22K Ω $\pm$ 1% 1/10W CHIP
R281	NI01473110	47K Ω $\pm$ 1% 1/10W CHIP
R282	NI01473110	47K Ω $\pm$ 1% 1/10W CHIP
R283	NI01223110	22K Ω $\pm$ 1% 1/10W CHIP
R284	NI01223110	22K Ω $\pm$ 1% 1/10W CHIP
R285	NI01473110	47K Ω $\pm$ 1% 1/10W CHIP
R286	NI01223110	22K Ω $\pm$ 1% 1/10W CHIP
R287	NI01223110	22K Ω $\pm$ 1% 1/10W CHIP
R291	NI01223110	22K Ω $\pm$ 1% 1/10W CHIP
R292	NI01223110	22K Ω $\pm$ 1% 1/10W CHIP
R293		
§	NI01562110	5.6K Ω $\pm$ 1% 1/10W CHIP
R296		
R301		
§	NI01104110	100K Ω $\pm$ 1% 1/10W CHIP
R304		
R305		
§	NI01333110	33K Ω $\pm$ 1% 1/10W CHIP
R308		
R309		
§	NI01182110	1.8K Ω $\pm$ 1% 1/10W CHIP
R312		
R313		
§	NI01103110	10K Ω $\pm$ 1% 1/10W CHIP
R316		
R317	NI01222110	2.2K Ω $\pm$ 1% 1/10W CHIP
R318	NI01222110	2.2K Ω $\pm$ 1% 1/10W CHIP
R319		
§	NI01332110	3.3K Ω $\pm$ 1% 1/10W CHIP
R322		
R323		
§	NI01562110	5.6K Ω $\pm$ 1% 1/10W CHIP
R330		
R331	NI01473110	47K Ω $\pm$ 1% 1/10W CHIP
R332	NI01473110	47K Ω $\pm$ 1% 1/10W CHIP
R361		
§	NF02470140	47 Ω $\pm$ 2% 1/4W FUSE
R364		
D281	HZ20010210	CHIP DIODE DA114
D282	HZ20010210	CHIP DIODE DA114
D283	HD20033050	DIODE, S5566G VRRM=400V IF=1A
DR91	HZ20010210	CHIP DIODE DA114
IC01	HC10034090	IC NJM5532M
IC02	HC10034090	IC NJM5532M
IC03		
§	HC10099090	IC NJM5534M FLAT
IC06		
IC07		
§	HC10023090	IC NJM5532D
IC10		
IC11	HC10070370	IC, LINE RECEIVER SN75157P
IC12	HC10071370	IC, LINE RECEIVER SN75158P
IC13	HC10001880	IC, DIR CS8412-CP
IC14	HC10002880	IC, DIT CS8402-CP
IC15	HC700000Z0	IC, 74HC00 FLAT
IC16	HC707400Z0	IC, 74HC74 FLAT
IC17	HC10010550	IC, RESET PST523D
IC18	HC38509090	IC, +9V 0.5A FP NJM78M09FA

P216-SEMICONDUCTORS

REF. DESIG.	PART NO.	DESCRIPTION
IC19	HC38515090	IC, +15V 0.5A FP NJM78M15FA
Q281	HX340811A0	CHIP TRANSISTOR, 2SC4081 (BQ)
Q282	HX340811A0	CHIP TRANSISTOR, 2SC4081 (BQ)
Q283	HX115761A0	CHIP TRANSISTOR, 2SA1576 (FQ)
Q285		
Q290	HT328782A0	TRANSISTOR 2SC2878 (A, BRANK)
QR91	HX340811A0	CHIP TRANSISTOR, 2SC4081 (BQ)
QR92	HX115761A0	CHIP TRANSISTOR, 2SA1576 (FQ)
J201	YJ01003810	P216-MISCELLANEOUS JACK, XLM-3-32PCV FOR XLR/ OUTPUT
J202	YJ01003810	JACK, XLM-3-32PCV FOR XLR/ OUTPUT
J271	YP06004550	PLUG, 5P STOCKO
J301	YJ01003800	JACK, XLM-3-31PCV FOR XLR/INPUT
J302	YJ01003800	JACK, XLM-3-31PCV FOR XLR/INPUT
JR01	YJ11000460	JACK, MIN DIN SOCKET 8P
JT01	YJ01003800	JACK, XLM-3-31PCV FOR XLR/INPUT
JT02	YJ01003810	JACK, XLM-3-32PCV FOR XLR/ OUTPUT
JW61	YL01010130	TERMINAL, PWB EARTH TERMINAL
LR91	FC90050090	FERRITE CORE
LT01	FC90050090	FERRITE CORE
LT02	FC90050090	FERRITE CORE
LT04	FC90050090	FERRITE CORE
LT05	FC90050090	FERRITE CORE
LT06	TP33842010	PULSE TRANSFORMER
LT07	TP33842010	PULSE TRANSFORMER
LT61	FM12223010	EMI FILTER
LW61	FM12223010	EMI FILTER
S301	SS02040030	SLIDE SWITCH, LEVEL SW
ST01	SS01030230	SLIDE SWITCH, OUT MODE SW
		P226-VR CIRCUIT BOARD
		P226-CAPACITOR
C319	DK18103310	CERAMIC 0.01 μ F +80%-20% 50V
R333	RB02030330	P226-RESISTORS 20K Ω -C VARIABLE
R334	RB02030330	20K Ω -C VARIABLE
		PR16-REMOTE (MAIN) CIRCUIT BOARD
		PR16-CAPACITORS
CR21		
CR25	DD15101300	CERAMIC 100PF $\pm$ 5% 50V
CR41	EJ47601610	ELECT 47 μ F 16V
CR51	DD15101300	CERAMIC 100 PF $\pm$ 5% 50V
CR52	DD15101300	CERAMIC 100 PF $\pm$ 5% 50V
CR61	DK18103310	CERAMIC 0.01 μ F +80%-20% 50V
CR62	DK18103310	CERAMIC 0.01 μ F +80%-20% 50V
CR63	EA33702510	ELECT 330 μ F 25V
CR64	DK18103310	CERAMIC 0.01 μ F +80%-20% 50V
CR65	DK18103310	CERAMIC 0.01 μ F +80%-20% 50V
CR66	EJ47601610	ELECT 47 μ F 16V
CR67	DK18103310	CERAMIC 0.01 μ F +80%-20% 50V
CR68	EJ47601610	ELECT 47 μ F 16V

REF. DESIG.	PART NO.	DESCRIPTION
CR69	DK18103310	CERAMIC 0.01 μ F +80%-20% 50V
CR72		
CR81	DD15101300	CERAMIC 100 PF $\pm$ 5% 50V
CR82	DD15101300	CERAMIC 100 PF $\pm$ 5% 50V
RR27	BW05103030	PR16-RESISTORS 10K Ω X 5 COMPO.
RR61	NH05010140	1 Ω $\pm$ 5% 1/4W FUSIBLE
SR61	SS02021460	SLIDE SWITCH
XR31	FQ12050040	SERAMIC VIBRATOR 12MHZ CST12.0MTW
R***		PR16-RESISTORS (COMMON) CARBON FILM FIXED RESISTOR, $\pm$ 5% 1/6W: RR21~RR26, RR31~RR36, RR41~RR45, RR55~RR58, RR81~RR91
		PR16-SEMICONDUCTORS
DR06	HD20002000	DIODE 1SS176, MA165, 1SS254 30V 0.1A
DR07	HD20002000	DIODE 1SS176, MA165, 1SS254 30V 0.1A
DR41	HD20002000	DIODE 1SS176, MA165, 1SS254 30V 0.1A
DR61		
DR65	HD20002710	DIODE 1D3 1A/200V
DR81	HD20002000	DIODE 1SS176, MA165, 1SS254 30V 0.1A
FR61	FS10100310	FUSE 1.0A 250V
IC21	HU10007490	MICROPROCESSOR, REMOTE CPU SC87C51CGN40 (OTP)
IC22	HC10018700	IC, EEPROM X24C01A
IC23	HC38505090	IC, 5V 0.5A FP NJM78M05FA
IC24	HC10010550	IC, RESET PST523D
QR01	BA10051210	DIGITAL TRANSISTOR DT5A143ES
QR21	BA20054210	DIGITAL TRANSISTOR DT5C114ES
QR22	BA10051210	DIGITAL TRANSISTOR DT5A143ES
QR41	HT10001000	TRANSISTOR 2SA608SP, 2SA1048, 2SA1309, 2SA933S
QR42	HT212402A0	TRANSISTOR 2SB1240 (Q,R)
QR43	HT30001000	TRANSISTOR 2SC536SP, 2SC2458, 2SC3311, 2SC1740S
QR44	HT212402A0	TRANSISTOR 2SB1240 (Q,R)
QR51	HT10001000	TRANSISTOR 2SA608SP, 2SA1048, 2SA1309, 2SA933S
QR52	HT10001000	TRANSISTOR 2SA608SP, 2SA1048, 2SA1309, 2SA933S
QR81	HT10001000	TRANSISTOR 2SA608SP, 2SA1048, 2SA1309, 2SA933S
QR82	HT10001000	TRANSISTOR 2SA608SP, 2SA1048, 2SA1309, 2SA933S
QR83	HT30001000	TRANSISTOR 2SC536SP, 2SC2458, 2SC3311, 2SC1740S
		P16-MISCELLANEOUS
JR12	YJ07003600	JACK, FFC, 18P
JR21	YP11000140	PLUG, D-SUB 9P SOCKET
JR22	YT02021190	TERMINAL, RCA PIN JACK 2P (ORANGE)
JR23	YJ11000460	JACK, MIN DIN SOCKET 8P
JR31	YJ90000640	JACK, 40P CPU SOCKET
JR61	YJ04000840	JACK
JR62	YJ08000450	JACK, FUSE CLIP
JR63	YJ08000430	JACK, FUSE CLIP

