



# Technical Manual

# COMPACT DISC PLAYER RCD-991

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### Specification

Total Harmonic Distortion + Noise	0.0035 % @1KHz
Intermodulation Distortion	0.0035 % @1KHz
Frequency Response (±0.5dB)	5 - 20,000 Hz
Channel Balance	± 0.5 dB
Phase Linearity	± 0.5 degree
Channel Separation	> 110 dB@1KHz
Signal to Noise Ratio	> 115 dB
Dynamic Range	> 100 dB
Digital to Analog Converters	Dual 20 Bit
Digital Filter	20 Bit, 8x over sampling
Linearity (w/o dither)	± 1.0 dB@-90 dB
Linearity (with dither, 1-7)	± 0.5 dB@-90 dB
Speed Accuracy, Wow & Flutter	Quartz Crystal Precision
Analog Output Impedance	120 Ohms
Analog Output Level	2 Volts
Digital Load Impedance	75 Ohms
Digital Output Level	0.5 Volt, Peak to Peak
Power Requirement	120 volts 60 Hz or 220-240 volts 50 Hz
Power Consumption	20 watts
Dimensions(W x H x D)	440 x 122 x 363 mm 17 <sup>3</sup> / <sub>8</sub> x 4 <sup>13</sup> / <sub>16</sub> x 14 <sup>5</sup> / <sub>16</sub> inches
Weight (net)	7.7 kg, 16.9 lb.

**THE ROTEL CO., LTD**  
 SHINSEN-BLD. 4F 10-10 SHINSEN-CHO, SHIBUYA-KU,  
 TOKYO 150-0045, JAPAN

Serial. NO. Beginning
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# Parts List-1

SYMBOL	PARTS NO.	DESCRIPTION
<b>X-1269-01 PCB ASSEMBLY</b>		
C101	043 TC50V473	CAP.CERA.50V0.047UF
C102	041 UFG1A101MEJ	CAP.ELEC.10V100UF
C206	043 TC50V473	CAP.CERA.50V0.047UF
C207	041 UFG0J102MPJ	CAP.ELEC.6.3V1000UF
C208	043 TC50V473	CAP.CERA.50V0.047UF
C209	041 UFG1A101MEJ	CAP.ELEC.10V100UF
C210	043 TC50V473	CAP.CERA.50V0.047UF
C211,212	043 TC50VCH220	CAP.CERA.50V22PF
C213	043 TC50V473	CAP.CERA.50V0.047UF
C214	041 UFG0J102MPJ	CAP.ELEC.6.3V1000UF
C216	043 TC50V473	CAP.CERA.50V0.047UF
C217	041 UFG1A101MEJ	CAP.ELEC.10V100UF
C218,219	041 25BGF100M	CAP.ELEC.25V100UF
C220,221	044 KP10-2C104M	CAP.P.P.160V0.1UF
C222,223	041 25BGF100M	CAP.ELEC.25V100UF
C224,225	044 KP10-2C104M	CAP.P.P.160V0.1UF
C228,229	041 25BGF100M	CAP.ELEC.25V100UF
C232,233	041 25BGF100M	CAP.ELEC.25V100UF
C234,235	044 KP10-2C104M	CAP.P.P.160V0.1UF
C236,237	041 25BGF100M	CAP.ELEC.25V100UF
C238,239	044 KP10-2C104M	CAP.P.P.160V0.1UF
C240,241	041 25BGF100M	CAP.ELEC.25V100UF
C244,245	041 25BGF100M	CAP.ELEC.25V100UF
C246-249	044 KP10-2C104M	CAP.P.P.160V0.1UF
C260,261	044 KP10-2C104M	CAP.P.P.160V0.1UF
C301-304	044 TCQM2A103J	CAP.P.P.100V0.01UF
C309,310	041 UKZ1E101MPB	CAP.ELEC.25V100UF
C311-316	044 TFKP2-2A332J	CAP.FILM 100V0.0033UF
C321,322	041 UKZ1E101MPB	CAP.ELEC.25V100UF
C327,328	041 UKZ1E101MPB	CAP.ELEC.25V100UF
C329	043 TC50V473	CAP.CERA.50V0.047UF
C331-334	044 KP10-2C104M	CAP.P.P.160V0.1UF
C335,336	043 TC50V473	CAP.CERA.50V0.047UF
C351-356	044 TCQM2A104J	CAP.P.P.100V0.1UF
C400	043 TC50V473	CAP.CERA.50V0.047UF
C401	041 TVX1H2R2	CAP.ELEC.50V2.2UF
C402	043 TC50V473	CAP.CERA.50V0.047UF
C403	041 TVX1C101	CAP.ELEC.16V100UF
C404	041 TVX1H100	CAP.ELEC.50V10UF
C405,406	043 TC50V473	CAP.CERA.50V0.047UF
C407	041 TVX1C101	CAP.ELEC.16V100UF
C408,409	043 TC50VCH330	CAP.CERA.50V33PF
C410	044 TBF014D0104J	CAP.M.P.63V0.1UF
C411	041 TVX1E101	CAP.ELEC.25V100UF
C412	044 TBF014D0104J	CAP.M.P.63V0.1UF
C413,414	041 TVX1H2R2	CAP.ELEC.50V2.2UF
C420	043 TC50V473	CAP.CERA.50V0.047UF
C421	041 TVX1C221	CAP.ELEC.16V220UF
C701	043 TC50V473	CAP.CERA.50V0.047UF
C702	041 TVX1C221	CAP.ELEC.16V220UF

SYMBOL	PARTS NO.	DESCRIPTION
C703,704	043 TC50V473	CAP.CERA.50V0.047UF
C705	041 TVX1C221	CAP.ELEC.16V220UF
C706	043 TC50V473	CAP.CERA.50V0.047UF
C707	041 TVX1H330	CAP.ELEC.50V33UF
C901-904	043 TC500V103	CAP.CERA.500V0.01UF
C907	041 GS1V472	CAP.ELEC.35V4700UF
C908	044 KP10-2C104M	CAP.P.P.160V0.1UF
C909	041 GS1V472	CAP.ELEC.35V4700UF
C910	044 KP10-2C104M	CAP.P.P.160V0.1UF
C911	041 25BGF100M	CAP.ELEC.25V100UF
C912	044 KP10-2C104M	CAP.P.P.160V0.1UF
C913	041 25BGF100M	CAP.ELEC.25V100UF
C914	044 KP10-2C104M	CAP.P.P.160V0.1UF
C915	041 25BGF100M	CAP.ELEC.25V100UF
C917	041 25BGF100M	CAP.ELEC.25V100UF
C920,921	043 TC50V473	CAP.CERA.50V0.047UF
C931,932	041 25BGF100M	CAP.ELEC.25V100UF
C933,934	044 KP10-2C104M	CAP.P.P.160V0.1UF
C935,936	041 25BGF100M	CAP.ELEC.25V100UF
C940-943	043 TC500V103	CAP.CERA.500V0.01UF
C944	041 UTSS1V101-FB	CAP.ELEC.35V100UF
C946	043 TC50V473	CAP.CERA.50V0.047UF
C947,948	041 TVX1H100	CAP.ELEC.50V10UF
C953-956	043 TC500V103	CAP.CERA.500V0.01UF
C959	041 VX1C472	CAP.ELEC.16V4700UF
C961	043 TC50V473	CAP.CERA.50V0.047UF
C962	041 VX1C222	CAP.ELEC.16V2200UF
C963	041 TVX1C221	CAP.ELEC.16V220UF
C964	041 VX1C222	CAP.ELEC.16V2200UF
C965	043 TC50V473	CAP.CERA.50V0.047UF
C966	041 UFG1C221MPJ	CAP.ELEC.16V220UF
C967	043 TC50V473	CAP.CERA.50V0.047UF
C968	041 VX1C222	CAP.ELEC.16V2200UF
C969	043 TC50V473	CAP.CERA.50V0.047UF
C971	041 VX1C222S	CAP.ELEC.16V2200UF
C981	041 TVX1H010	CAP.ELEC.50V1UF
C982	041 TVX1E101	CAP.ELEC.25V100UF
D400,401	034 T1N4148-86	DIODE
D402	034 TRD4.7JST1	ZENER DIODE
D403-407	034 T1N4148-86	DIODE
D901-904	034 T1N4003-TB	DIODE
D906-909	034 T1N4148-86	DIODE
D910	034 TRD15JST1	ZENER DIODE
D912	034 TRD15JST1	ZENER DIODE
D925,926	034 TRD5.6JST1	ZENER DIODE
D931-934	034 T1N4148-86	DIODE
D940-943	034 T1N4003-TB	DIODE
D944	034 TRD6.2JST1	ZENER DIODE
D945	034 TRD20JST1	ZENER DIODE
D953-956	034 T1N4003-TB	DIODE

## Parts List-2

SYMBOL	PARTS NO.	DESCRIPTION
D981,982	034 T1N4148-86	DIODE
D991-993	034 T1N4148-86	DIODE
F001	036 5ST1	MINI FUSE 250VT1A for STD
	036 5ST500	250VT500mA for CEE
K301	066 4TR-2709#7	2P PINJACK
K303,304	066 C-4516A01	3P CANNON CONNECTOR
K701	066 C-4485A00	1P PINJACK
K702	066 GP1F32T	OPTICAL TERMINAL
L001	021 TRL-356	LINE CHOKE COIL
L201	021 TRL-239	MICRO INDUCTOR 2.2UH
L202,203	021 TRL-395	MICRO INDUCTOR 4.7UH
L205-207	021 TRL-395	MICRO INDUCTOR 4.7UH
L208-211	021 TRL-392	MICRO INDUCTOR 33UH
L400,401	021 TRL-395	MICRO INDUCTOR 4.7UH
L701	021 TC1027-04	DIGITAL OUTPUT COIL
L702,703	021 TRL-395	MICRO INDUCTOR 4.7UH
R201	054 TMK2001MFECZ	R.METAL 1% 1M
R202	054 TMK2220RFECZ	R.METAL 1% 220R
R204	054 TMK2560RFECZ	R.METAL 1% 560R
R207-210	054 TMK2100RFECZ	R.METAL 1% 100R
R211,212	054 TMK2018RFECZ	R.METAL 1% 18R
R213,214	053 CR14-223J-A	R.CARBON 22K
R215	053 CR14-222J-A	R.CARBON 2.2K
R216	053 CR14-271J-A	R.CARBON 270R
R220-222	054 TMK2100RFECZ	R.METAL 1% 100R
R223,224	054 TMK2039RFECZ	R.METAL 1% 39R
R301-304	054 TMK2047RFECZ	R.METAL 1% 47R
R305,306	054 TMK2001MFECZ	R.METAL 1% 1M
R307-310	054 TMK203K3FECZ	R.METAL 1% 3.3K
R311,312	054 TMK201K2FECZ	R.METAL 1% 1.2K
R313-316	054 TMK2820RFECZ	R.METAL 1% 820R
R317,318	054 TMK2680RFECZ	R.METAL 1% 680R
R319,320	054 TMK2240RFECZ	R.METAL 1% 240R
R321-324	054 TMK203K3FECZ	R.METAL 1% 3.3K
R325,326	054 TMK2120RFECZ	R.METAL 1% 120R
R327,328	054 TMK2560KFECZ	R.METAL 1% 560K
R329,330	054 TMK2120RFECZ	R.METAL 1% 120R
R331,332	054 TMK2560KFECZ	R.METAL 1% 560K
R333-336	054 TMK2180RFECZ	R.METAL 1% 180R
R400	054 TMK2010KFECZ	R.METAL 1% 10K
R401	053 CR14-331J-A	R.CARBON 330R
R402	054 TMK2010KFECZ	R.METAL 1% 10K
R403	053 CR14-331J-A	R.CARBON 330R
R404	054 TMK2010KFECZ	R.METAL 1% 10K
R405	053 CR14-331J-A	R.CARBON 330R
R406	054 TMK2010KFECZ	R.METAL 1% 10K
R407	053 CR14-331J-A	R.CARBON 330R
R408	054 TMK2010KFECZ	R.METAL 1% 10K
R409	053 CR14-331J-A	R.CARBON 330R
R410	054 TMK2010KFECZ	R.METAL 1% 10K

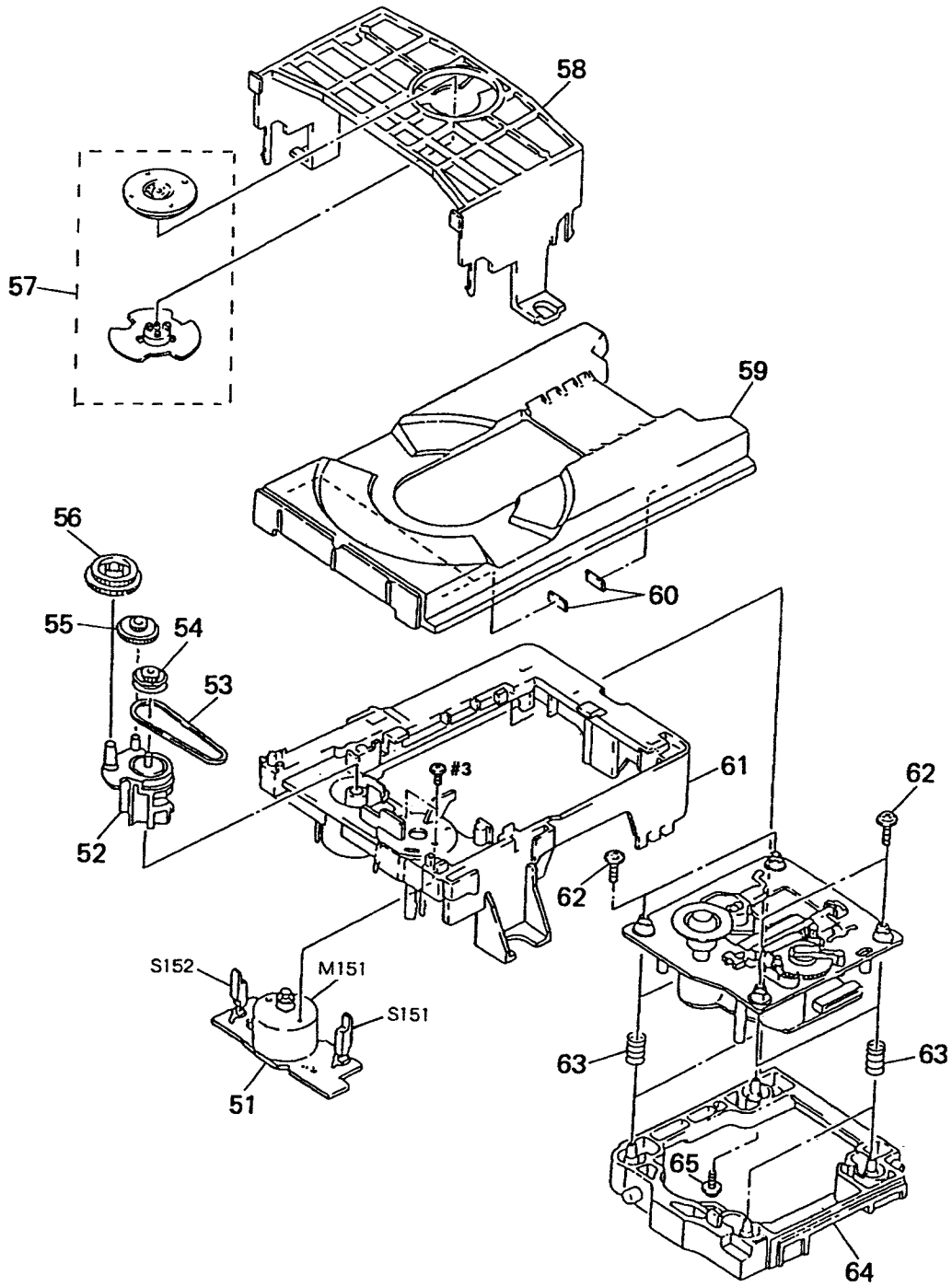
SYMBOL	PARTS NO.	DESCRIPTION
R411	053 CR14-331J-A	R.CARBON 330R
R412	054 TMK2010KFECZ	R.METAL 1% 10K
R413	053 CR14-331J-A	R.CARBON 330R
R414	054 TMK2022KFECZ	R.METAL 1% 22K
R415	054 TMK2047KFECZ	R.METAL 1% 47K
R416	054 TMK2010KFECZ	R.METAL 1% 10K
R417	054 TMK2022KFECZ	R.METAL 1% 22K
R418	054 TMK2100RFECZ	R.METAL 1% 100R
R419	054 TMK2022KFECZ	R.METAL 1% 22K
R420	054 SE8103J	THICK FILM NETWORK
R421	054 ERD2FCJ4R7P	FUSIBLE RESISTOR
R422	054 TMK2047KFECZ	R.METAL 1% 47K
R423	054 SE8103J	THICK FILM NETWORK
R424-428	054 TMK2001KFECZ	R.METAL 1% 1K
R429-431	054 TMK2010KFECZ	R.METAL 1% 10K
R701	054 TMK2075RFECZ	R.METAL 1% 75R
R702	054 TMK2022KFECZ	R.METAL 1% 22K
R901	053 CR14-104J-A	R.CARBON 100K
R902,903	054 ERD2FCJ4R7P	FUSIBLE RESISTOR
R911	054 TMK2047KFECZ	R.METAL 1% 47K
R912,913	054 TMK2120RFECZ	R.METAL 1% 120R
R914,915	054 TMK2100RFECZ	R.METAL 1% 100R
R931	054 TMK2047KFECZ	R.METAL 1% 47K
R933,934	054 TMK2120RFECZ	R.METAL 1% 120R
R935,936	054 TMK2100RFECZ	R.METAL 1% 100R
R940	054 TMK2010KFECZ	R.METAL 1% 10K
R941	054 TMK2220KFECZ	R.METAL 1% 220K
R942	054 TMK2010KFECZ	R.METAL 1% 10K
R943	054 TMK2047KFECZ	R.METAL 1% 47K
R944	054 TMK2022KFECZ	R.METAL 1% 22K
R952	054 ERQ14AJ2R2P	FUSIBLE RESISTOR
R954	054 ERQ14AJ2R2P	FUSIBLE RESISTOR
R981	053 CR14-102J-A	R.CARBON 1K
R982	053 CR14-223J-A	R.CARBON 22K
R984,985	053 CR14-103J-A	R.CARBON 10K
R986	053 CR14-150J-A	R.CARBON 15R
R987	053 CR14-393J-A	R.CARBON 39K
R988	053 CR14-154J-A	R.CARBON 150K
R989	053 CR14-103J-A	R.CARBON 10K
R990	053 CR14-222J-A	R.CARBON 2.2K
R991,992	053 CR14-153J-A	R.CARBON 15K
R993,994	053 CR14-471J-A	R.CARBON 470R
R997	053 CR14-471J-A	R.CARBON 470R
R998	053 CR14-223J-A	R.CARBON 22K
R999	053 CR14-683J-A	R.CARBON 68K
S301	063 V23106-24	RELAY
S303,304	063 V23106-24	RELAY
S701	064 4TR-2341	SLIDE SWITCH
T201	032 TC536-FG	TRANSISTOR
T400-407	032 TC536-FG	TRANSISTOR

# Parts List-3

SYMBOL	PARTS NO.	DESCRIPTION
T904	032 TC2362-FG	TRANSISTOR
T905	032 TA1016-FG	TRANSISTOR
T906	033 D1913-RS	TRANSISTOR
T907	033 B1274-RS	TRANSISTOR
T908	032 TA1016-FG	TRANSISTOR
T909	032 TC2362-FG	TRANSISTOR
T931	032 TA1016-FG	TRANSISTOR
T932	032 TC2362-FG	TRANSISTOR
T933	033 B1274-RS	TRANSISTOR
T934	033 D1913-RS	TRANSISTOR
T935	032 TC2362-FG	TRANSISTOR
T936	032 TA1016-FG	TRANSISTOR
T940	032 TC536-FG	TRANSISTOR
T941,942	032 TA608-FG	TRANSISTOR
T981,982	032 TC3708-ST	TRANSISTOR
T983	032 TC536-FG	TRANSISTOR
T984	032 TA608-FG	TRANSISTOR
T985	032 TA1450-ST	TRANSISTOR
T987,988	032 TA1450-ST	TRANSISTOR
U203	031 TC74HC14AP	IC
U204	031 TC74HC74AP	IC
U205	031 PMD100	IC
U206	031 TC74HCU04AP	IC
U208,209	031 PCM63P	IC
U216	031 TC74HC74AP	IC
U300	031 PC827	PHOTO COUPLER
U301,302	031 NE5534AN	IC
U303,304	031 NE5532AN	IC
U305,306	031 OPA2604AP	IC
U400	031 CXP82440A-166Q	IC
U401	031 LB1641	IC
U402	031 PIC16F84-04/P	IC
U403	031 TC74HC164AP	IC
U701	031 TC74HC00AP	IC
U702	031 TC74HCU04AP	IC
U951	031 MC7805AT	IC
U953	031 MC7805AT	IC
X201	023 HC49U-002	CRYSTAL 16.9344MHZ
X400	023 CSA10.0MHZ	CERAMIC RESONATOR
	017 C-4378A02	SUB HEATSINKER(S)
	017 C-4650A00	SUB HEATSINKER(L)
	069 C-3417A	FUSE CLIP
<b>X-1269-02 PCB ASSEMBLY</b>		
C001	044 DE1307E472M	SPARK KILLER
S001	061 C-3600B-T	POWER SWITCH

SYMBOL	PARTS NO.	DESCRIPTION
<b>X-1270-01 PCB ASSEMBLY</b>		
C103,104	043 TC50V473	CAP.CERA.50V0.047UF
D102	034 LN276RCPX	LED
O101	035 6BT209GK	FL TUBE
R101	053 CR14-103J-A	R.CARBON 10K
R102	053 CR14-182J-A	R.CARBON 1.8K
R103	053 CR14-562J-A	R.CARBON 5.6K
R104	053 CR14-103J-A	R.CARBON 10K
R105	053 CR14-182J-A	R.CARBON 1.8K
R106	053 CR14-103J-A	R.CARBON 10K
R107	053 CR14-182J-A	R.CARBON 1.8K
R108	053 CR14-331J-A	R.CARBON 330R
R109	053 CR14-223J-A	R.CARBON 22K
S101-107	061 4TR-3118	KEYBOARD SWITCH
<b>X-1270-02 PCB ASSEMBLY</b>		
C101	043 TC50V473	CAP.CERA.50V0.047UF
C102	041 TVX1C101	CAP.ELEC.16V100UF
U101	031 SBX1810-52	IC
<b>X-1270-03 PCB ASSEMBLY</b>		
D101	034 LA301MB	7 SEG LED
<b>OTHERS</b>		
011	FP-496	FRONT PANEL
014	C-4550A17	UPPER COVER
014	FP-495	CD DOOR
014	SE3-05A00	BOTTOM BOARD
014	4TR-2797#3	ORNAMENT SIDE BOARD
019	4TSH-19#2	PLASTIC FOOT
022	T-1062T01	POWER TRANSFORMER
069	C-4629A01	AC INLET
072	C-4620A01	AC CORD for STD
072	C-4622A01	AC CORD for AUSTRALIA
072	C-4623A01	AC CORD for UK
072	C-4624A01	AC CORD for CEE
081	SE4-09A00	INSIDE CARTON
081	Z-201	STYROL SIDE MOULDING
092	CDM14-5BD20	CD MECH.
092	RR-D93	REMOTE UNIT

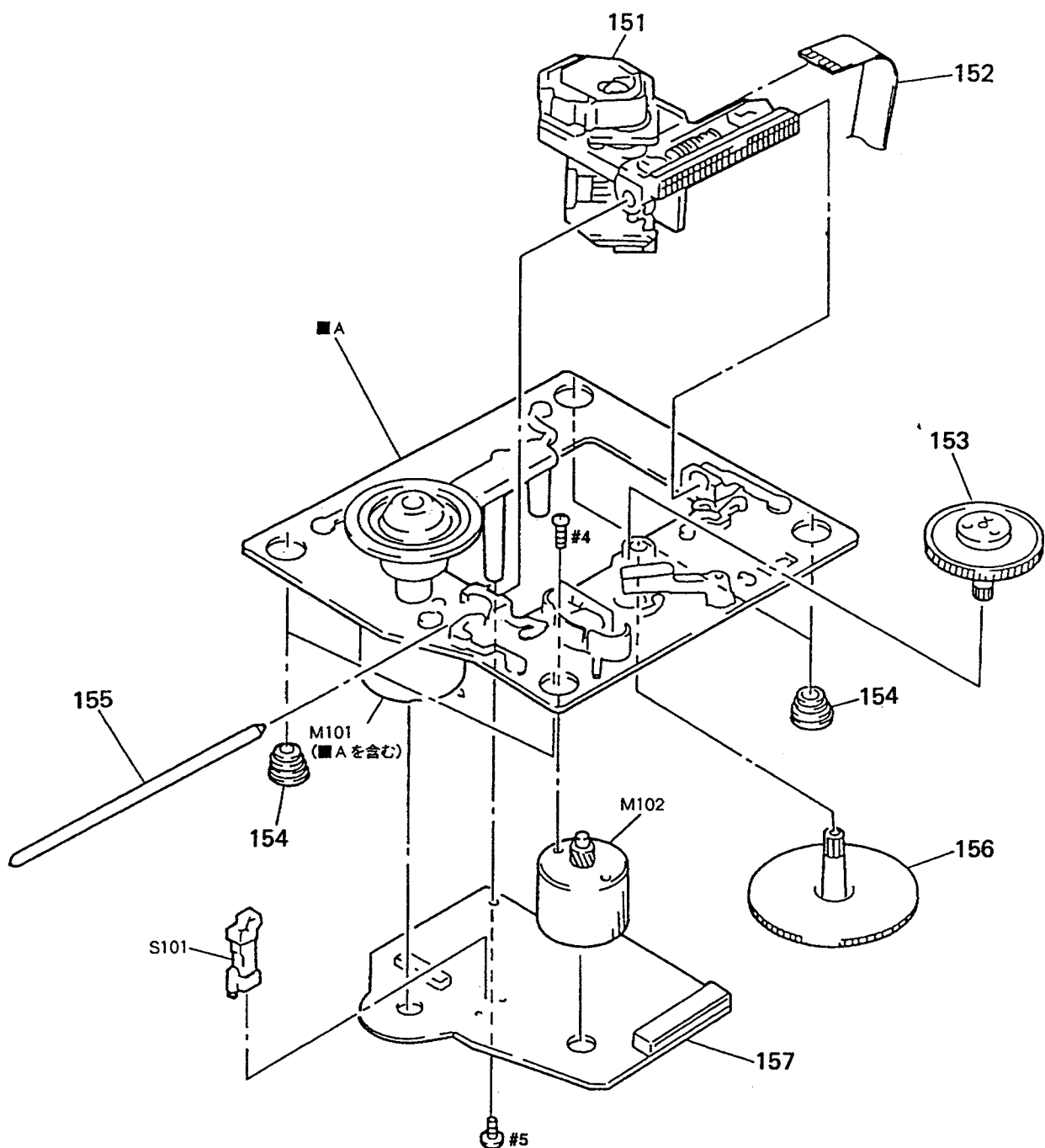
# Disassembly Diagram 1



KEY	DESCRIPTION	PARTS NO.
51	LOADING PCBOARD	1-645-721-11
52	CAM	4-933-109-01
53	BELT	4-927-649-01
54	PULLEY(S)	4-927-651-01
55	GEAR(C)	4-967-268-01
56	GEAR(PL)	4-933-107-01
57	MAGNET	1-452-538-11
58	HOLDER(MG)	4-933-110-41
59	DISCTABLE	4-961-487-01

KEY	DESCRIPTION	PARTS NO.
60	DAMPER	4-925-315-31
61	CHASSIS(MD)	4-933-111-01
62	SCREWM2.6X6	4-933-134-01
63	SPRING(932)	4-959-996-01
64	HOLDER(BU)	4-933-129-01
65	YOKE SUPPORT	4-917-583-21
M151	LOADING MOTOR ASSY	A-4604-363-A
S151	LEAF SWITCH(LOADOUT)	1-572-086-11
S152	LEAF SWITCH(LOADIN)	1-572-086-11

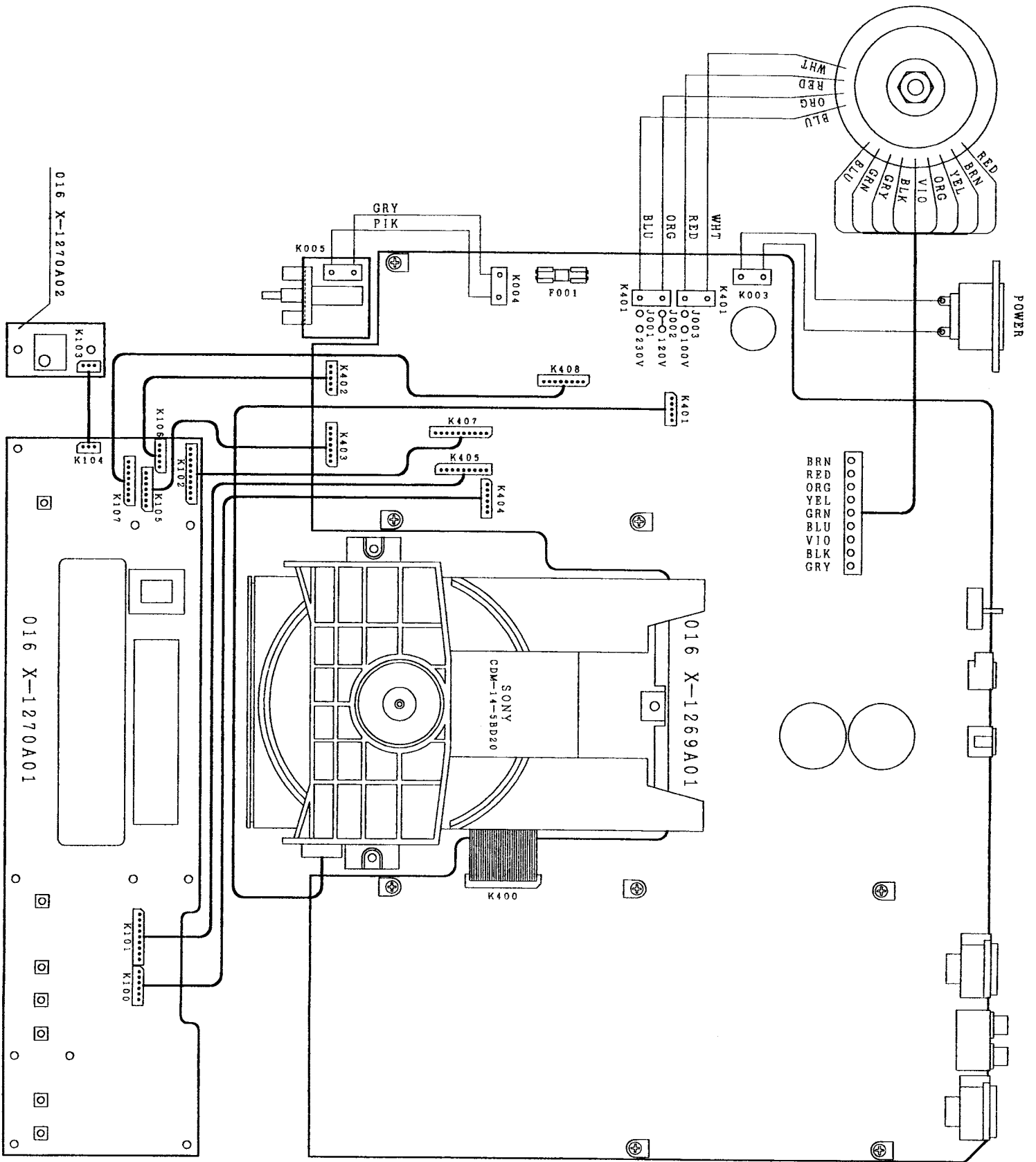
# Disassembly Diagram 2



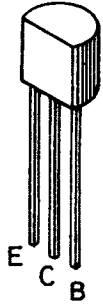
KEY	DESCRIPTION	PARTS NO.
151	PICKUP KSS-213B/K-N	8-848-367-11
152	FLAT CABLE	1-769-069-11
153	GEAR(M)	4-917-567-01
154	INSULATOR(BU)	4-951-940-01
155	SLED SHAFT	4-917-565-01

KEY	DESCRIPTION	PARTS NO.
156	FLAT GEAR(P)	4-917-564-01
157	PCBOARD ASSY	A-4673-509-A
M101	BASE ASSY(SPINDLE MOTOR)	X-4917-523-3
M102	MOTOR ASSY(SLED MOTOR)	X-4917-504-1
S101	LEAF SWITCH(LIMIT SWITCH)	1-572-085-11

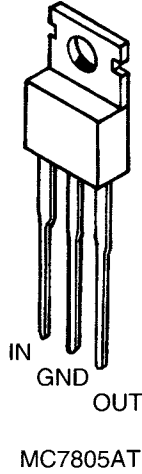
# Wiring Diagram



# Case Outlines



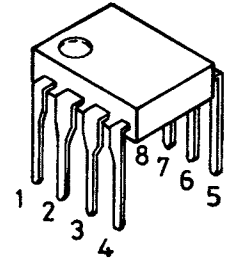
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2SA608K  
2SA1016K  
2SC2362K  
2SC3708  
2SA1450



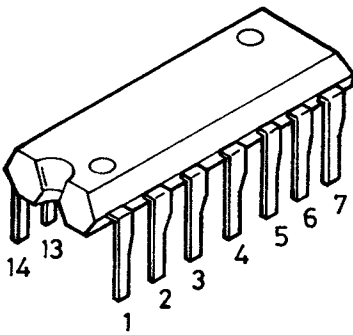
MC7805AT



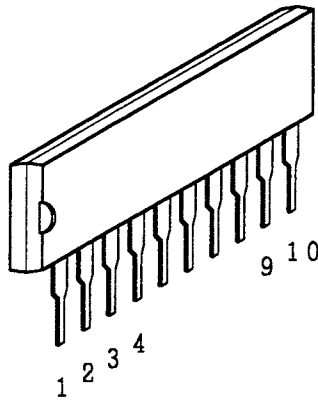
2SD1913  
2SB1274



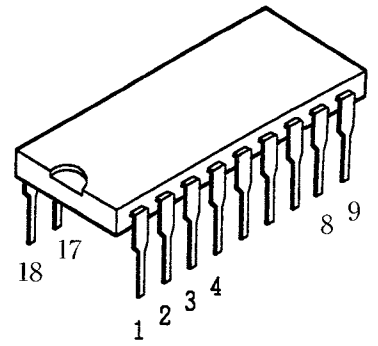
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NE5534AN  
PC827  
OPA2604AP



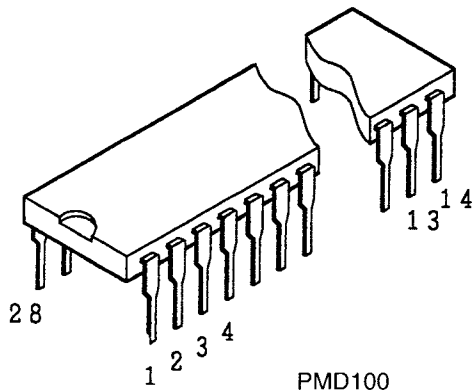
YC74HC00AP  
TC74HC14AP  
TC74HC74AP  
TC74HCU04AP



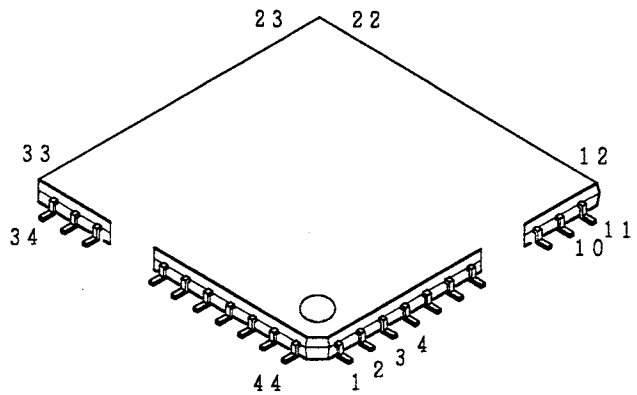
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PIC16F84-04P

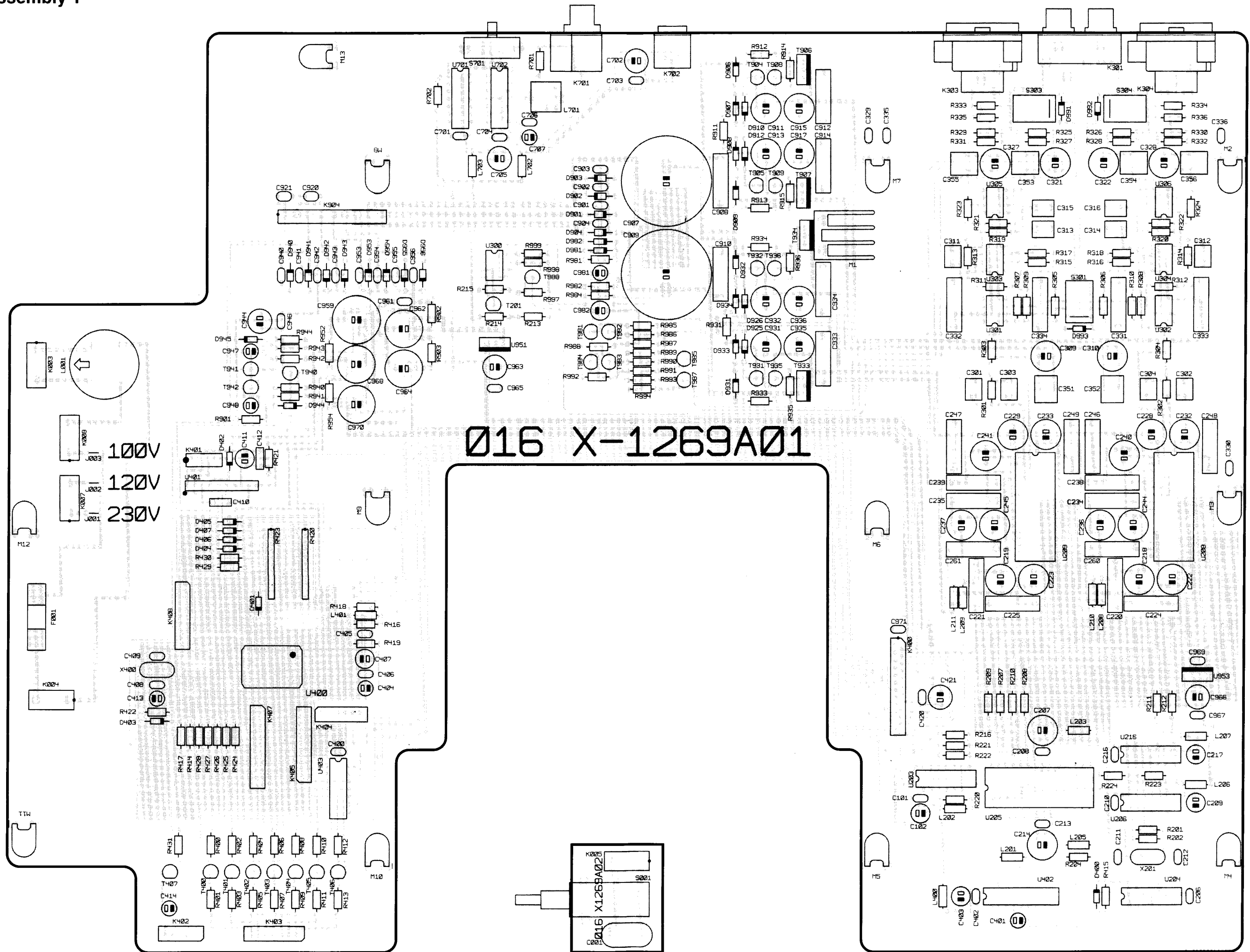


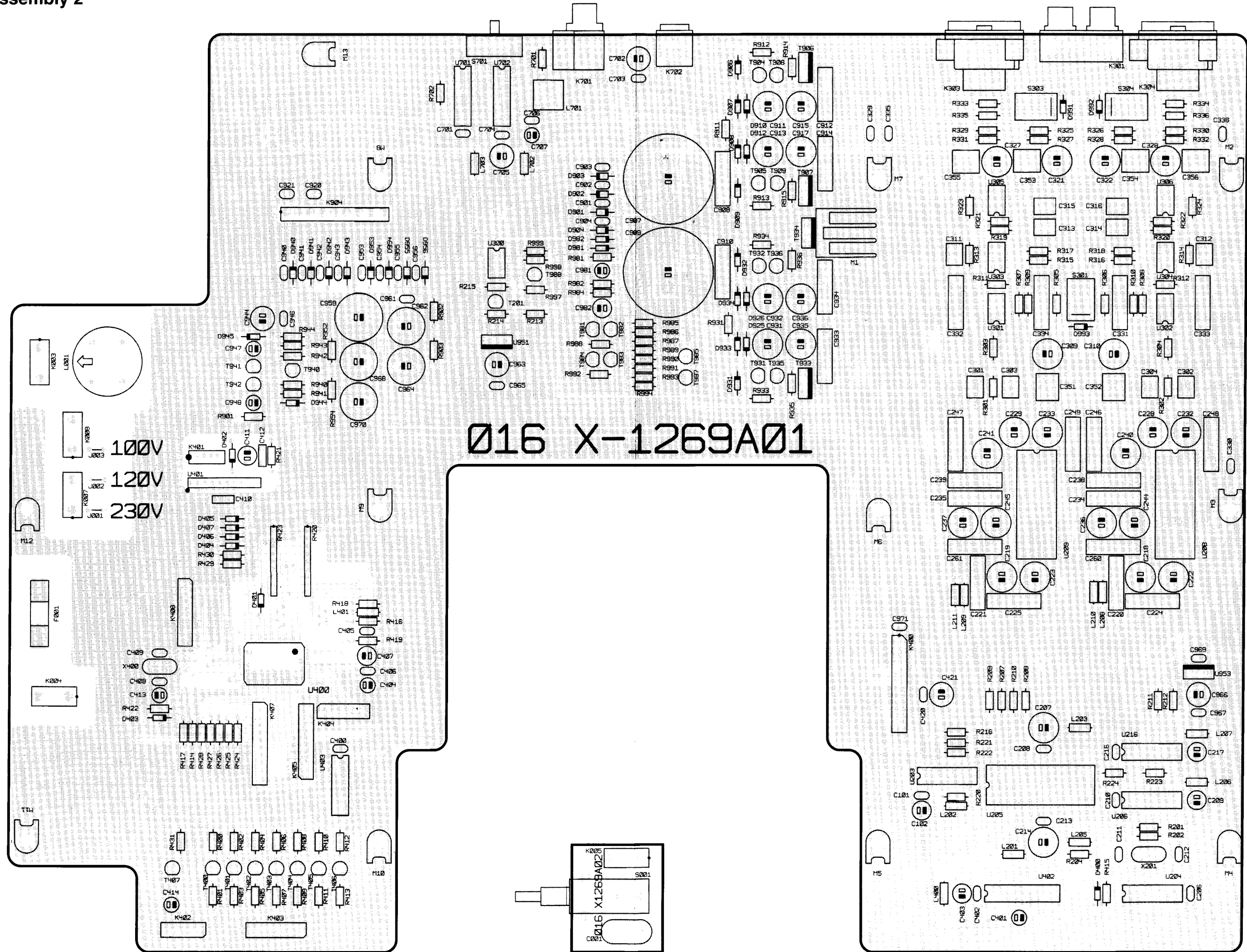
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PCM63P

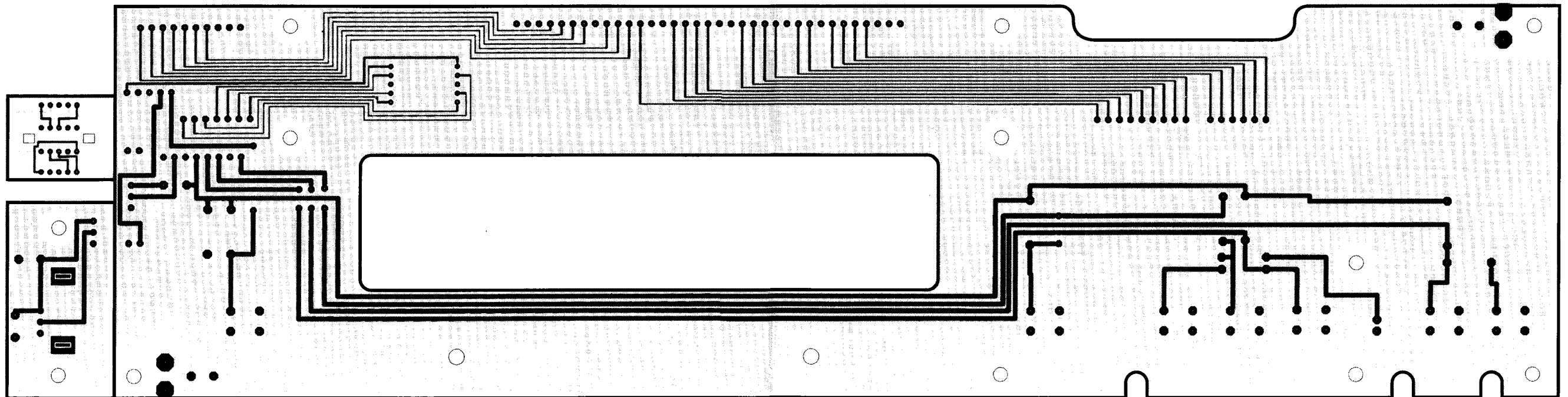
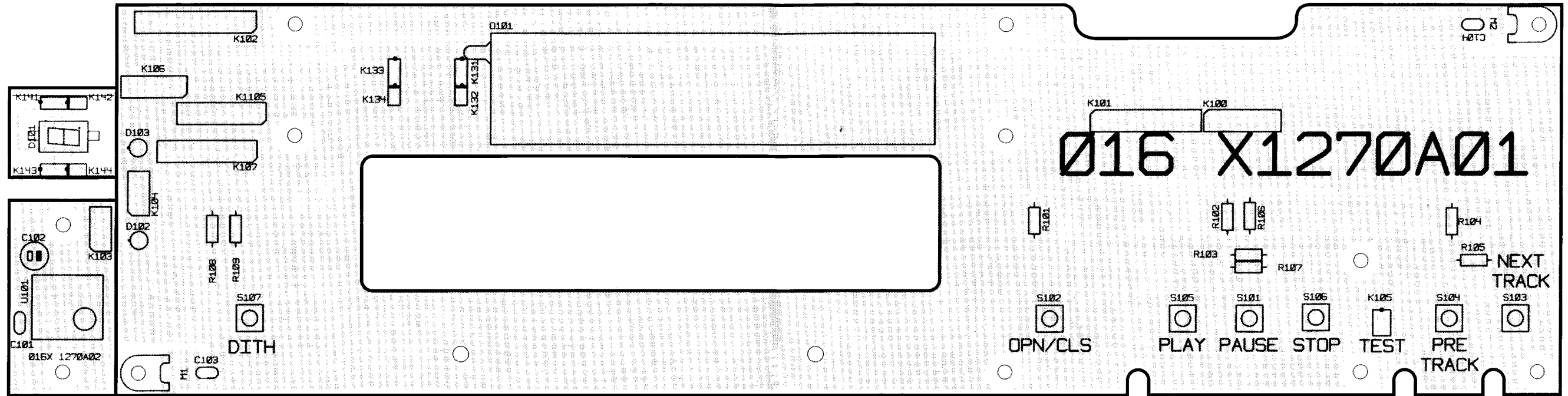


CXP82440A-166Q









# Schematic Diagram

