

# *SERVICE MANUAL*

## *RMP2660B*

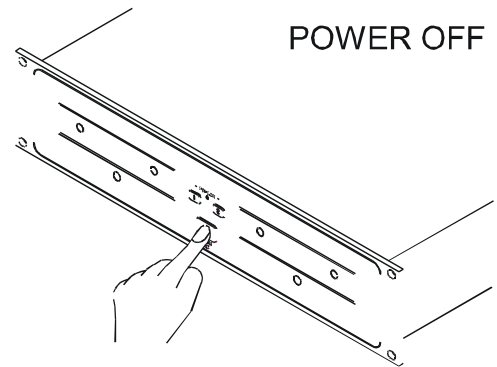
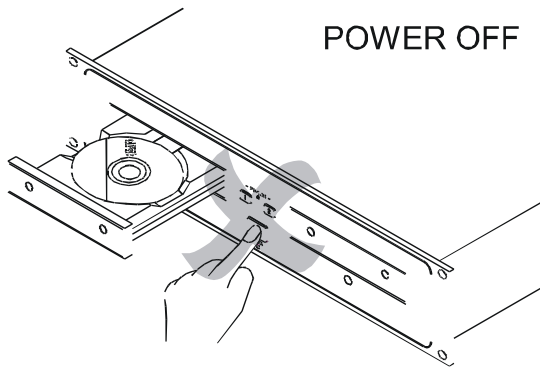
*MODEL NO.:RMP2660B*

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## Caution

**1:** Do not forcibly close the CD door when the power is off.

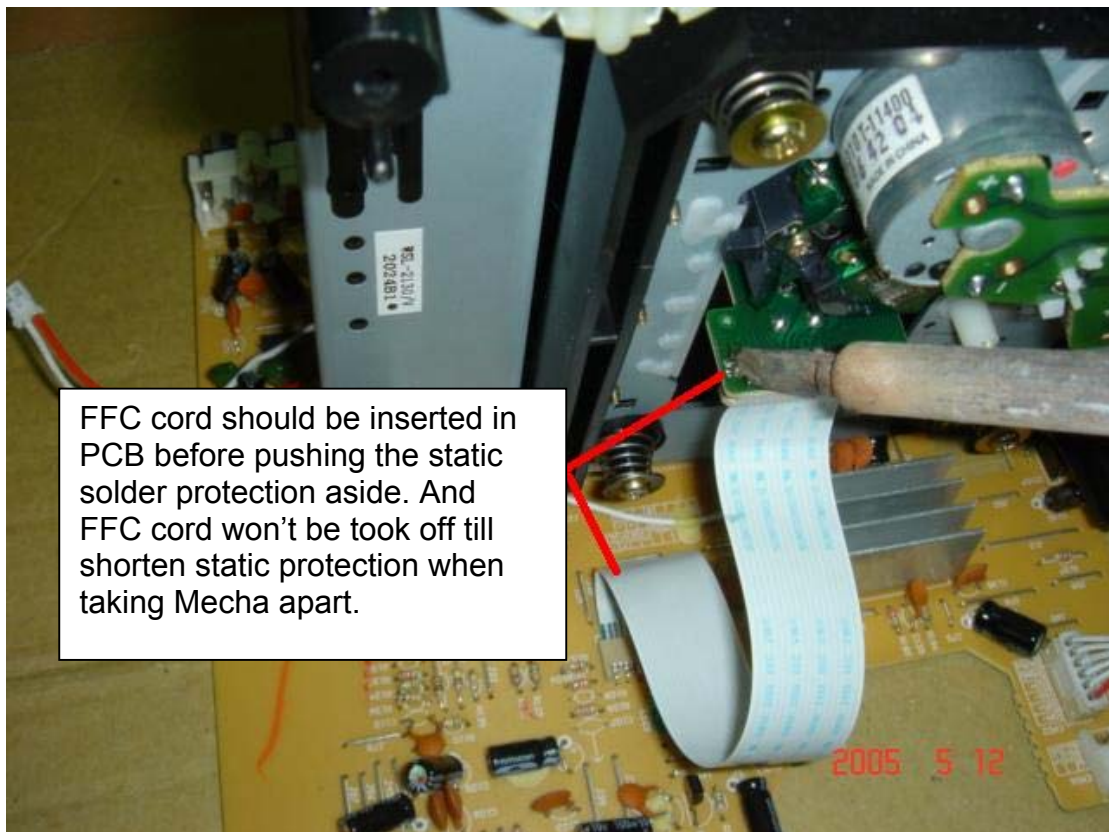


- Do not switch off the power when the CD door is open.

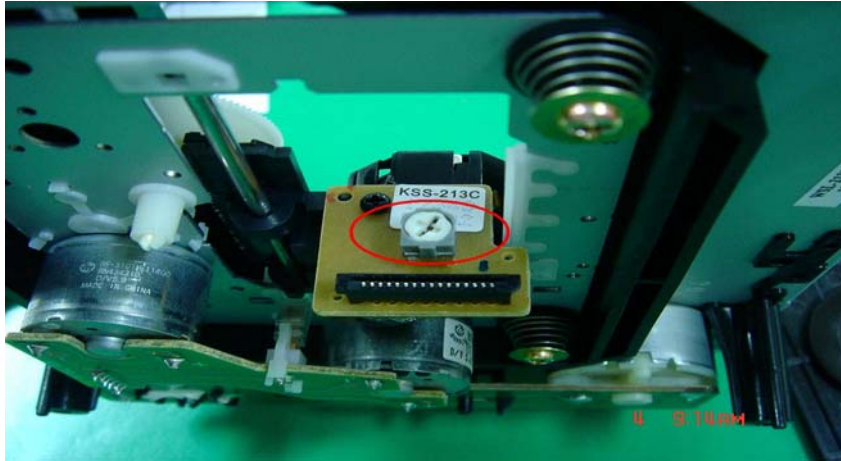
- To avoid damage, please don't switch off the power until "no disc" or "time code" is read on the display, always using the open/close button to close the CD Door

**2:** To prevent destroying the anti-static protection for the mechanism, please kindly be noted of the following important instruction for installing/disassembling the mechanism:

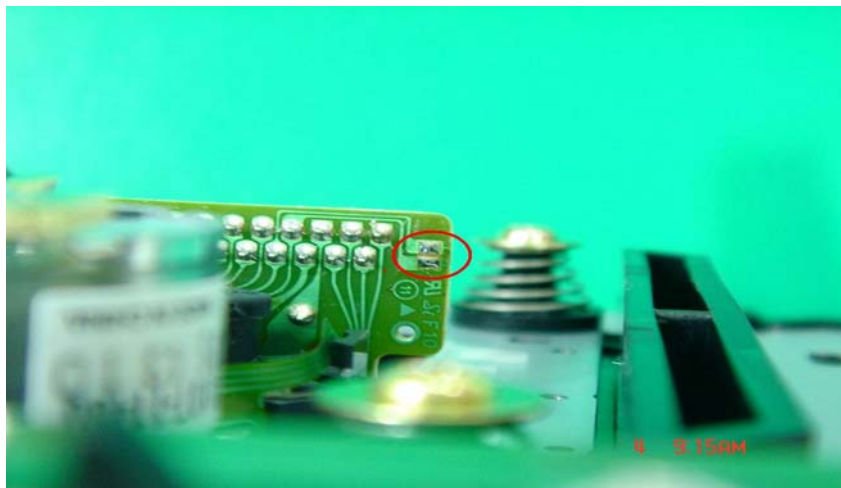
- When disassembling the mechanism, please make sure to turn off power and short the Anti-static protection welding point before removing the FFC cable.
- When assembling the mechanism, please make sure to connect the FFC cable and PCB before removing the Anti-static welding point, then, turn on the power.



- 3: 3-1. Please be aware of wearing an anti-static ring before repairing
- 3-2. It is forbidden to adjust the laser pick up VR.



3-3. To protect the mechanism; always short the Anti-static protection welding point before removing the mechanism.



## General Specification

1. MODEL	Model MCD-2450B1, Dual CD/MP3 player with wired remote control.		
2. POWER SOURCE	AC 115/230V, 50/60Hz, 20Watts		
3. DIMENSIONS	Main Unit	482(W)x 88.8(H)x 262.5(D)mm	
	Control Unit	482(W)x 88.8(H)x 97(D)mm	
4. WEIGHT	Main Unit	4.8 Kgs	
	Control Unit	1.4 Kgs	

### 5. FEATURES

- (1) 8 times over sampling 1 bit D/A converter.
- (2) Auto cue.
- (3) Pitch display.
- (4) +10 Track skip search.
- (5) Digital out
- (6) Pitch range: +/-8%, +/-12%, +/-16%
- (7) Selectable elapsed, remain and total remain time display
- (8) Single/Continuous
- (9) Relay play allow consecutive playback during two decks
- (10) Frame search
- (11) 4 fast search mode
- (12) Transport protection
- (13) 20 tracks program play
- (14) 10 sec Anti-shock
- (15) MP3 playback

### 6. AUDIO CHARACTERISTICS (TEST DISC: TCD-782, LOAD=47KOHM)

ITEM	TYPICAL	LIMIT	CONDITION
(1) OUTPUT LEVEL	2VRMS +/-0.5dB	2VRMS +/-1dB	1KHz, 0dB
(2) CHANNEL BALANCE	WITHIN 0.1dB	WITHIN 1dB	1KHz, 0dB
(3) FREQUENCY RESPONSE	20-20KHz +/-0.4dB	20-20KHz +/-1dB	0dB OUTPUT
(4) DE-EMPHASIS	+2.4/-0dB	+3/-0dB	16KHz, -20dB
(5) CHANNEL SEPARATION (*2)	100dB	90dB	1KHz, 0dB
(6) THD+N (*1)	0.006%	0.01%	1KHz, 0dB
(7) S/N (*2)	102dB	90dB	1KHz, 0dB

Note: \*1: WITH 20KHz LOW PASS FILTER.\*2: WITH 20KHz LOW PASS FILTER AND "IHF-A" WEIGHTED.

### 7. SEARCHING TIME (TEST DISC: TCD-792)

ITEM	TYPICAL	LIMIT	CONDITION
(1) SHORT ACCESS TIME	2Sec	4Sec	PLAY NEXT TRACK
(2) LONG ACCESS TIME	4Sec	6Sec	TRACK 1 TO 20,20 TO 1

### 8. PLAYABILITY

ITEM	TYPICAL	LIMIT	CONDITION
(1) INTERRUPTION	1mm	0.7mm	TCD-725
(2) BLACK DOT	1mm	0.6mm	TCD-725
(3) FINGER PRINTS	75um	65um	TCD-725
(4) ECCENTRICITY	140um	140um	TCD-712 W/O TRACK JUMP
(5) VERTICAL DEVIATION	1mm	0.5mm	TCD-731R

9. FUNCTION SWITCHES

MAIN UNIT

NAME	Q'TY	TYPE	NOTE
(1) POWER	1	PUSH	
(2) OPEN/CLOSE	2	TACT	

CONTROL UNIT

NAME	Q'TY	TYPE	NOTE
(1) PLAY/PAUSE	2	TACT	
(2) CUE	2	TACT	
(3) +10 TRACKS SKIP	2	TACT	
(4) F.SKIP/B.SKIP	4	TACT	
(5) REV-/FWD+	2	SHUTTLE	
(6) FRAME SEARCH	2	JOG WHEEL	
(7) SGL	2	TACT	
(8) TIME	2	TACT	
(9) PITCH ON/OFF	2	TACT	
(10) PITCH BEND	4	TACT	
(11) PITCH	2	6cm SLIDE VR	
(12) OPEN/CLOSE	2	TACT	
(13) PROG	2	TACT	
(14) LOOP	2	TACT	

10. GENERAL

- |                         |   |
|-------------------------|---|
| (1) System              | Compact Disc Digital Audio              |
| (2) Disc loading        | Front loading                           |
| (3) Display             | 12 Digital LCD Display                  |
| (4) Pitch control range | Within +/-8%, +/-12%, +/-16%            |
| (5) Pitch bend          | +/-16%                                  |
| (6) Pitch accuracy      | 0.1 %                                   |
| (7) Digital out level   | 0.5V+/-0.1 p-p @ LOAD = 75 ohm (option) |

11. ACCESSORIES

- |                             |             |
|-----------------------------|-------------|
| (1) Pin-connected cord      | L/R 2 pairs |
| (2) Remote connecting cable | 1 pc (1M)   |
| (3) Operating Instruction   | 1 pc        |

12. PICK-UP

- |                              |   |
|------------------------------|---|
| (1) System                   | (KSM-213CLCM)<br>Object lens drive system optical pick-up |
| (2) Object lens drive system | 2 dimensional parallel drive                              |
| (3) Tracking detection       | 3 spot beam detection                                     |
| (4) Optical source           | Semiconductor laser                                       |
| (5) Wave length              | 780nm   |

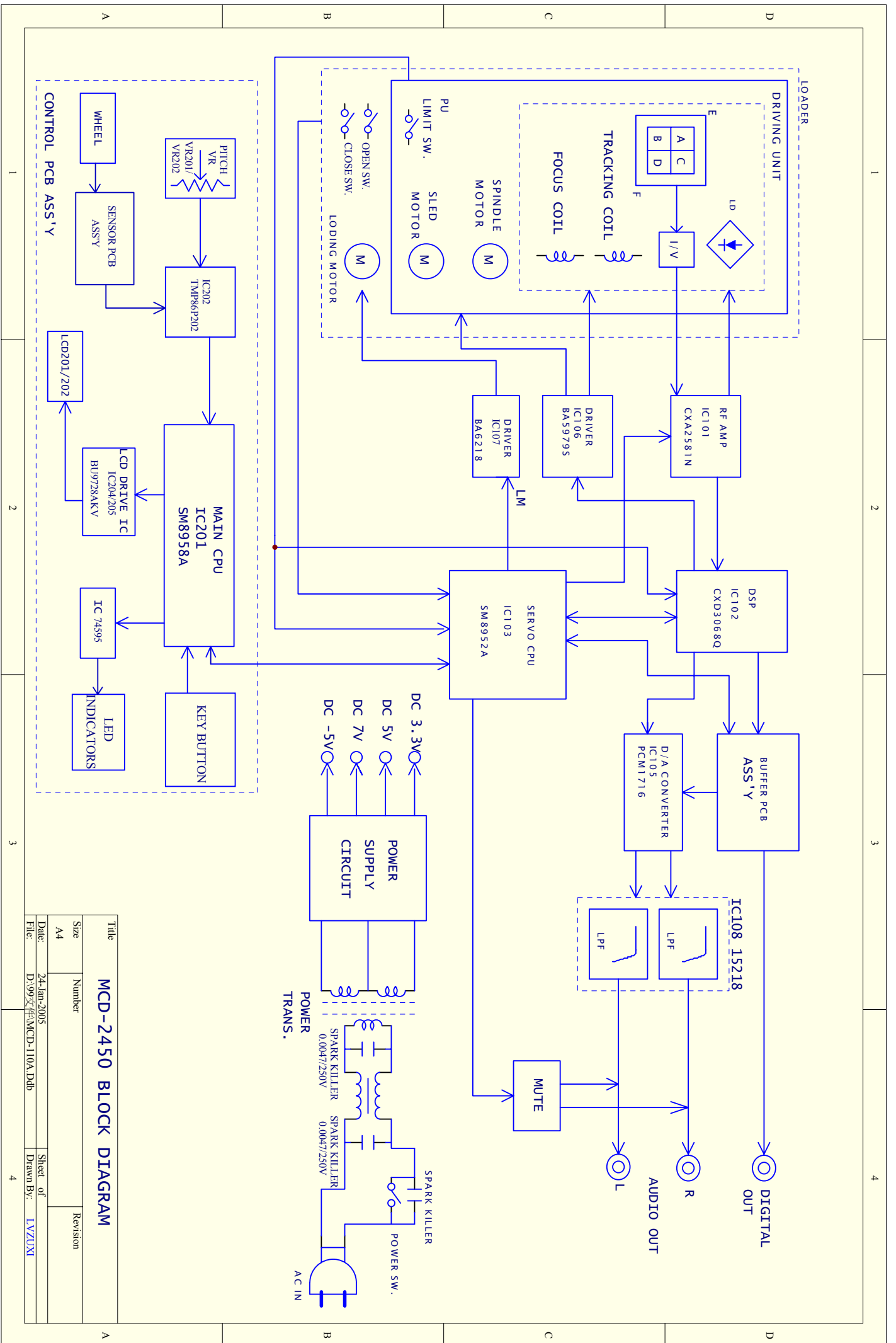
13. NOTES

- The specifications are subject to change to any improvement by negotiations in advance.
- The parts are subject to change to any improvement within the range of the specifications.

14. MP3 FORMAT

Disc Format	Applicable file extensions	mp3 . MP3 . mP3 . Mp3
	ISO9660	Level 1(max. 8"/8.3" character style)
		Level 2(max. 31/30 character style)
	Joliet	max. 64/64 character style
	CD-ROM sector format	mode-1 only
	Max. number of Folders	255
Max. number of files	max. 999 files (* note #1)	
MP3 Format	MPEG 1 Layer 3 standard (ISO/IEC 11172-3), which provides for single channel ('mono') and two-channel ('stereo') coding at sampling rates of 32, 44.1 and 48kHz.	
	MPEG 2 Layer 3 standard (ISO/IEC 13818-3), which provides for similar coding at sampling rates of 16, 22.05 and 24 kHz.	
	MPEG 2.5 Layer 3 standard, which provides for similar coding at sampling rates of 8, 11.025 and 12 kHz.	
Disc Writing Method	Disc at Once and Track at Once	
	Multi Session	If the 1 <sup>st</sup> session is CDDA, you can playback Only CDDA track, If the 1 <sup>st</sup> session is MP3, you can playback only MP3 file.

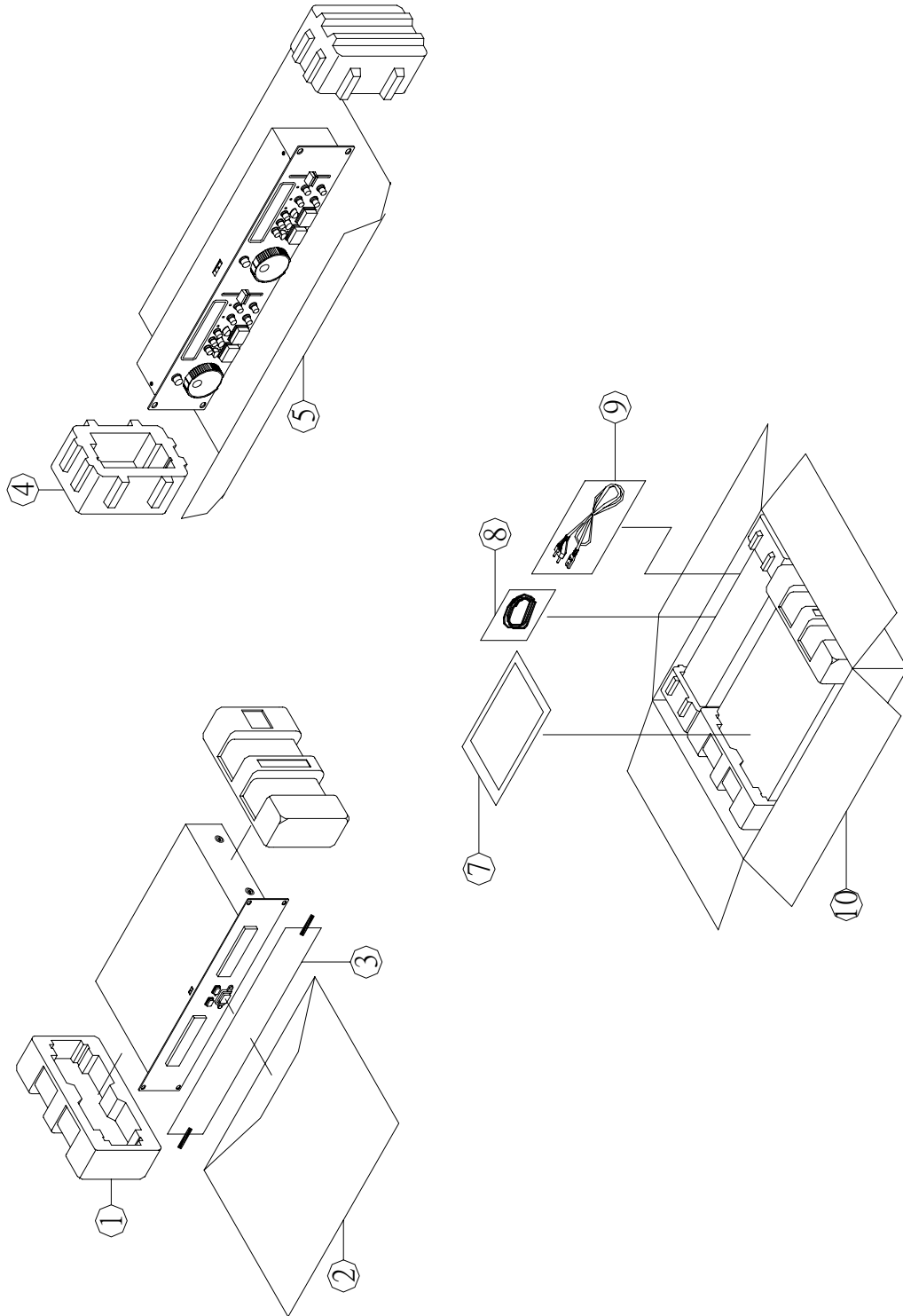
**Note #1:** max.255 files each folder



Title: MCD-2450 BLOCK DIAGRAM

Size	Number	Revision
A4		

Date: 24-Jan-2005  
 File: D:\99\零件\MCD-110A.Ddb  
 Sheet of:   
 Drawn By: LVZUXI

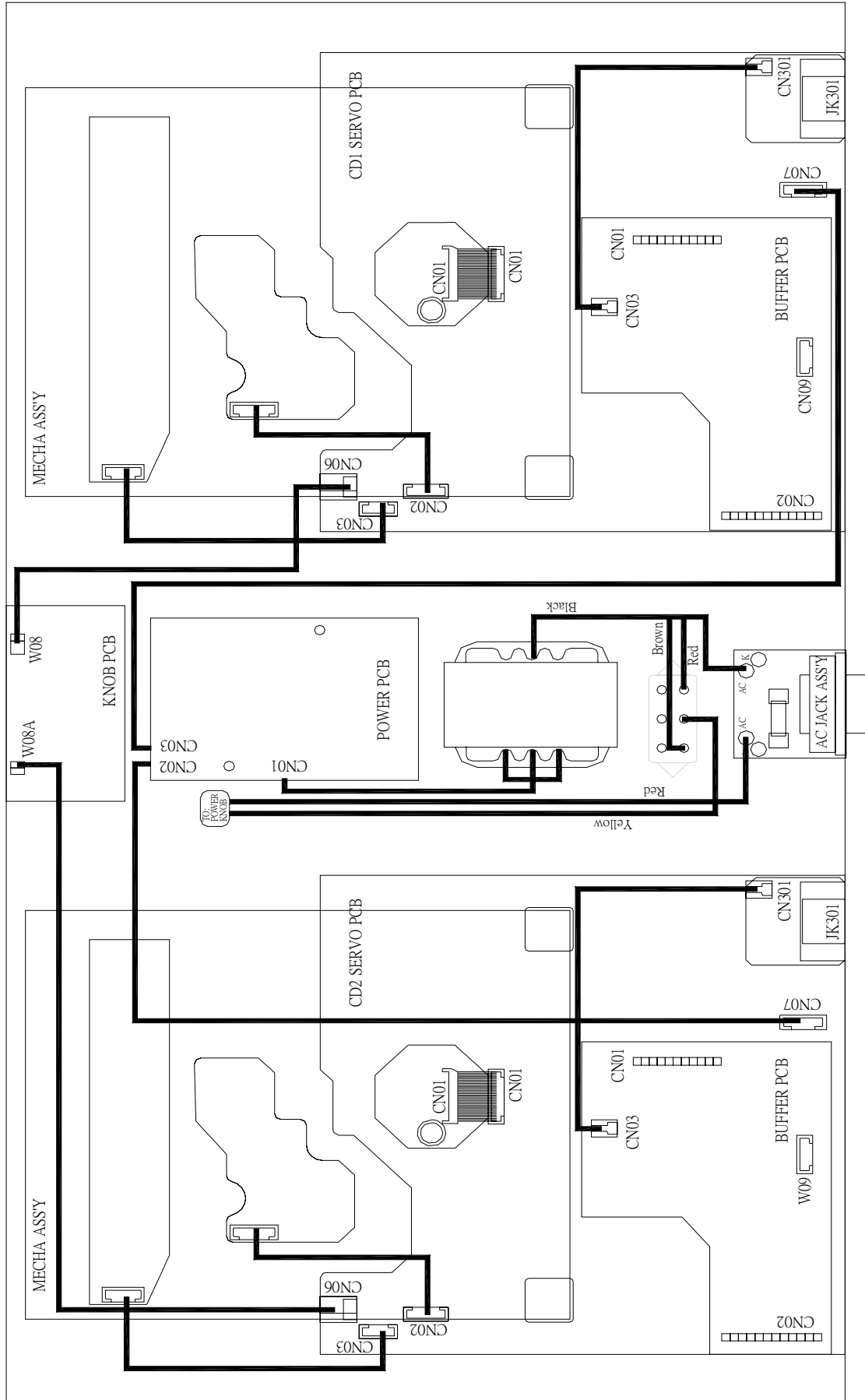


MCD-2450B1

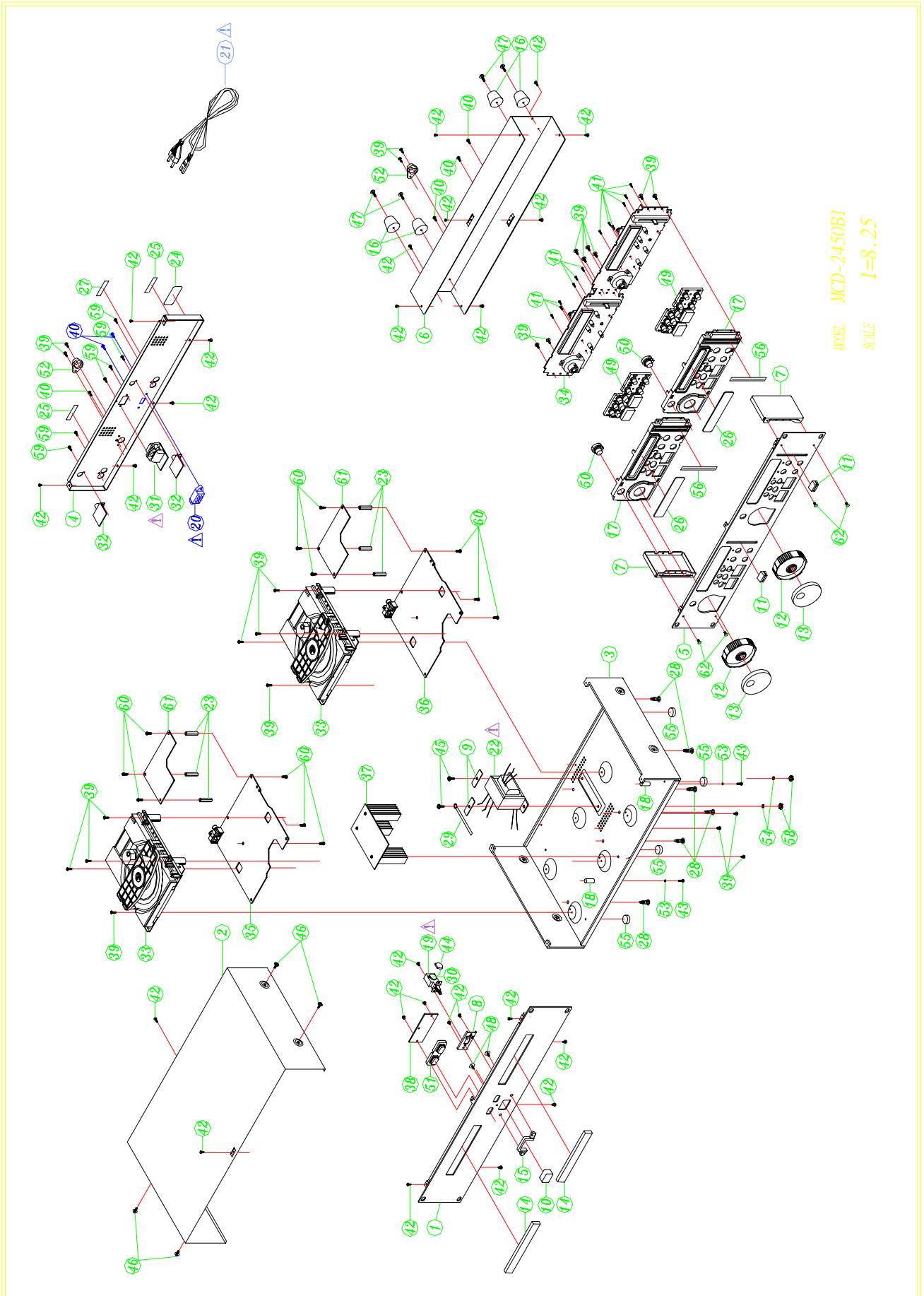




Point to Point Wiring Diagram



Exploded View



## Exploded View Part List

REF NO.	DESCRIPTION	PART NO.	Q'TY	REMARK
1	MAIN FRONT PANEL ASS'Y	703-M2450B1-1157	1	
2	MAIN UNIT COVER	300-HDJ200-342A	1	
3	MAIN UNIT BOTTOM	300-HDJ7000-479	1	
4	BACK BOARD	300-M2450B1-526K	1	
5	CONTROLLER FRONT PANEL ASS'Y	703-M2450B1-1158	1	
6	CONTROL UNIT REAR COVER	300-M2450B1-497C	1	
7	CONTROL UNIT SIDE BOARD	300-HDJ5000-496	2	
8	POWER SWITCH BRACKET	300-HDJ7000-478	1	
9	BRACKET TRANSFORMER	300-DV300B-443	2	
10	POWER KNOB	100-M2450B1-984	1	
11	CONTROLLER PITCH KNOB	100-HDJ7000-985	2	
12	SHUTTLE TUNING KNOB(SOURCE MATERIAL)	100-NCDS700-1299S	2	
13	JOG TUNING KNOB	100-HDJ2400-1298	2	
14	CD DOOR	100-HDJ2100-1223AS	2	
15	POWER SW PROTECTOR(PLASTIC)	100-HDJ2400-1300	1	
16	FOOT(PVC)	100-HDJ7000-1235	4	
17	FRAME PLASTIC(ABS)	100-HDJ2400-1297	2	
18	SLEEVE	200-HDJ7000-256	2	
19	POWER SW(SDDL1017U-HF,2PIN)	403-A100-005	1	
20	SLIDE SW(L21-22A8,6PIN)	403-HS100-042	1	
21	AC POWER CORD(L=1900mm+/-50mm,VDE,TYPE)	409-DJ2-070A	1	
22	TRANSFORMER(AC115/230V)	411-2450-441	1	
23	SPACER SUPPORT(H-20)	504-RMX30-157	6	
24	STICKER(CLASS 1)(58*26mm,t=0.08mm)	501-1420SRD-867	1	
25	LABEL(BARE,36*8mm,t=1.2mm)	501-DV300-1067	0	
26	DECORATIONS	501-C2450G-1160	2	
27	RATING LABEL(46*12mm,t=0.08mm)	501-M2450B1-1249	1	
28	BOARD SUPPORT	504-HDJ7000-031	6	
29	ADHESIVE BACKED MOUNTS	504-DJ2500J-047	1	
30	C SAFETY CAPACITOR(4700pF/250V,M,BULK,Y5V)	413-1431-104	1	
31	AC JACK ASS'Y	704-MCD110-5706	1	
32	D-OUT PCB ASS'Y	704-DCD310-5482	2	
33	MECHA ASS'Y	704-HDJ201-162	2	
34	CONTROL PCB ASS'Y	704-M2450B1-7408	1	
35	CD1 SERVO PCB ASS'Y	704-M510-5513	1	
36	CD2 SERVO PCB ASS'Y	704-M510-5515	1	
37	POWER PCB ASS'Y	704-P22NS-5465	1	
38	SWITCH PCB ASS'Y	704-HDJ5000-1560	1	
39	SCREW(3*8mm BTP)	602-2002-077	23	
40	SCREW(M3*8,P=0.5,BLACK)	602-2002-085	6	
41	SCREW(2.6*8 PTP)	602-SL24F-099	12	
42	SCREW(3*5mm,BLACK)	602-KE200-145	25	

Exploded View Part List

REF NO.	DESCRIPTION	PART NO.	Q'TY	REMARK
43	SCREW(M3*P0.5*L8)	602-HP1010K-178	2	
44	CNR COVER(HU-12-ULY)	504-CDC2050-105	1	
45	SCREW(W.STN,4*10,ZS)	602-HDJ9700-426	2	
46	SCREW(4*6mm TTB BLACK)	602-HDJ200-214	4	
47	SCREW(W BTP 3*12L)	602-HDJ7000-256	4	
48	SCREW(WPTP, 2.6*7,CAP10,ZMC)	602-DV300-5023	2	
49	KNOB(SILICA)	604-M2450B1-129A	2	
50	KNOB(SILICA GEL)	604-HDJ2400F1-130	2	
51	MAIN UNIT BUTTON	604-M3000C-146	1	
52	JACKET	100-MPCD4-2284	2	
53	WASHER	606-B300-039	2	
54	WASHER	606-STR830-141	2	
55	MAT FORBASE	612-HDJ201-053	4	
56	VR CUSHION(75.5*8.5*0.3t)	612-HDJ7000-056A	2	
58	NUT(4mm,P=0.7 ISO)	601-F200-001	2	
59	SCREW(PTB,3*8,ZB)	602-DJ5500-452	6	
60	PLASTIC SCREW(S-306-N66)	602-SPANDMK2-536	12	
61	BUFFER PCB ASS'Y	704-M2450-5600	2	
62	SCREW(M3*P0.5*L6)	602-HDJ5000-257	4	

CD1 Servo & Buffer P.C.B Ass'y Part List

REF NO.	DESCRIPTION	PART NO.	Q'TY	REMARK
	CD1 SERVO & BUFFER PCB ASS'Y	704-M2450-6001	1	
	PLASTIC SCREW(S-306-N66)	602-SPANDMK2-536	3	
	BUFFER PCB ASS'Y	704-M2450-5600	1	
CN01	11P CONNECTOR(P=2.54mm,SHD106-A03 TYPE)(Pb,Cd)	404-EP1000-1331	1	
CN02	12P CONNECTOR(P=2.54mm,SHD106-A03 TYPE)	404-HDJ7500-1336	1	
CN03	2P SOCKET(CKM2501WV-2P 180°WHITE)(Cd,Pb,Hg,Cr)	404-KMD1500-608A	1	
RB01	THICK FILM RESISTOR NETWORKS(10K OHM,1/8W J,RA TYPE,7R8P)	412-DJ1-420	1	
C26,C28	ELEC. CAPACITOR(220uF/10V,M,105°C,TAPING 6.3*11)(Cd,Pb,Hg,Cr)	413-KC220-119	2	
L01	BEAD CORE(TB36-863445NP T-26mm)	415-HV3500K-090	1	
X1	CRYSTAL( 16.9344MHz )	427-KC710-019	1	
	BUFFER PCB(FR4,115.1*74*1.6t)	405-MCD2450-1239B	1	
R29	CHIP RESISTOR(270 OHM 1/8W 0805 J TP 150V )	412-CDN88-014	1	
R19,R26,R27	CHIP RESISTOR(10K OHM,1/8W,0805,J,TP 150V)	412-DV330-306	3	
R01	CHIP RESISTOR(1M OHM,1/8W, 0805,J,TP 150V)	412-DV330-308	1	
R02,R03	CHIP RESISTOR(4.7K OHM,1/8W,0805,J,TP 150V )	412-DV330-320	2	
R04,R07,R08,R09,R10,R11, R12,R13,R16	CHIP RESISTOR( 220 OHM,1/8W,0805,J,TP 150V )	412-DV330-333	9	
R30	CHIP RESISTOR (0 OHM,1/8W,0805,J,TP 150V)	412-HV3500K-367	1	
R15	CHIP RESISTOR(300 OHM,1/8W,J,TP 0805,150V)	412-QFX19-555	1	
C36,C34,C35,C01,C02,C03, C04,C05,C06,C07,C08,C09, C10,C11,C12,C13,C14,C18, C19,C20,C21,C22,C23,C25, C27,C29,C30,C31	CHIP CAPACITOR(0.1uF/ 50V,Z,0805 TYPE,Y5V)	413-DV330-313	28	
C16,C17	CHIP CAPACITOR(15pF/ 50V,J,0805 TYPE,NPO)	413-DV330-314	2	
U2	IC(K4S641632E-TC/K4S641632F/K4S641632H-TC75,TSOP-54)	417-CDN88-501	1	
U5	IC(74HC04/74HC04DT,SOP-14)	417-DCM370E3-378	1	
U1	IC(SCF5249LPV120,SMD)	417-MCDS4-736	1	
U7	IC(BA18BC0FP-E2,3PIN,TO-252-3,SMD)	417-MCDS4-737	1	
U3	IC ASS'Y	704-M2450-5601	1	
	IC(M29W800B70N6.SMD)	417-MCDS4-735	1	
U8	BUFFER IC ASS'Y(CHECK SUM:73E4/1)	704-M510-5564	1	
	IC(XC9536XL-10VQ44C,SMD)	417-MCDS4-738	1	
JK102	DIN SOCKET SUPPORT BRACKET	300-HDJ7000-473	1	
CN03	5P SOCKET(CKM2001WV-5P 180°WHITE)	404-1210S-094A	1	
CN02	6P SOCKET(CKM2001WV-6P 180°WHITE)	404-3113-052A	1	
CN01	16P FFC CONNECTOR(P=1.0mm,16PIN)(Pb,Cd)	404-HDJ201-599	1	
CN09A	3P SOCKET(B3B-XH-A,P=2.5mm,180DEGREE)	404-HV3500K-623A	1	
CN06	3P SOCKET(CKM2501WR-3P 90°WHITE)(Cd,Pb,Hg,Cr)	404-KMD3500-609A	1	
IC103	44P IC SOCKET(DIP)	404-MPG100-384	1	
CN07	8P CONNECTOR WIRE	404-RCC1055-1569	1	
J78(20mm)	JUMPER	406-3113-175	1	
RB101	THICK FILM RESISTOR NETWORKS(10K OHM,1/8W J,RA TYPE,7R8P)	412-DJ1-420	1	
C101,C108,C102	ELEC. CAPACITOR(100uF/10V,M,105°C,TAPING 5*11)(Cd,Pb,Hg,Cr)	413-3113-046	3	
J72	BEAD CORE(TB36-863445NP T-26mm)	415-HV3500K-090	1	
IC106	IC(BA5979S,DIP-32)	417-DCM280-596	1	

CDI Servo & Buffer P.C.B Ass'y Part List

REF NO.	DESCRIPTION	PART NO.	Q'TY	REMARK
IC107	REVERSIBLE MOTOR DRIVER(BA6218/BA6418N)	417-KC720-049	1	
JK101	2P RCA JACK(RJ-1078B-10-0320A)	420-HDJ7000-045	1	
JK102	8P DIN JACK(MDJ18-08)	420-HDJ7000-046A	1	
CN04*2	6P STRIP PIN HEADER(L=31mm,P=2.54mm,180 DEGREES)	424-HDJ7500-058	2	
CN05	11P2.54 STRIP PIN HEADER(L=31mm,180°)	424-T2-075	1	
IC106	HEAT SINK	425-CDN88A3-066	1	
X102	QUARTZ CRYSTAL(24MHZ)	427-DRM120-095	1	
X101	CRYSTAL(33.8688MHZ)	427-DV330-043	1	
	SPACER SUPPORT(H-20)	504-RMX30-157	3	
	PLASTIC SCREW(S-306-N66)	602-SPANDMK2-536	3	
IC106	CLIP FOR HEAT SINK	603-CDN88-291	2	
C115,C177,C178	CERAMIC CAPACITOR(1000PF/50V,K,TAPING,Y5P)	413-1430-071	3	
C171,C172	CERAMIC CAPACITOR(180pF/50V,K,TAPING,Y5P)	413-3113-030	2	
C110,C112,C145,C146,C147	CERAMIC CAPACITOR(220pF/50V,K,TAPING,Y5P)	413-3113-032	5	
C103,C105,C106,C111,C113,C114,C127,C128,C142,C143,C144,C163,C176	CERAMIC CAPACITOR(0.1uF/50V,Z,TAPING,Y5V)	413-3113-035	13	
C126,C104,C109,C130,C179	ELEC. CAPACITOR(100uF/10V,M,105°C,TAPING 5*11)(Cd,Pb,Hg,Cr)	413-3113-046	5	
C181,C182,C107,C140,C161,C165,C166,C167,C168	ELEC. CAPACITOR(10uF/25V,M,105°C,TAPING 5*11)	413-3113-052	9	
C125	POLYESTER CAPACITOR(0.01uF/50V,J,TAPING)	413-3113-057	1	
C122,C169,C170	POLYESTER CAPACITOR(0.0015uF/50V,J,TAPING)	413-HT7016-219	3	
C135,C137,C162	ELEC. CAPACITOR(220uF/10V,M,105°C,TAPING 6.3*11)(Cd,Pb,Hg,Cr)	413-KC220-119	3	
C121	POLYESTER CAPACITOR(0.047uF/50V,J,TAPING)	413-KT300-099	1	
C160	ELEC. CAPACITOR(220uF/16V,M,105°C,TAPING 6.3*11)(Cd,Pb,Hg,Cr)	413-KT300-102	1	
C132	POLYESTER CAPACITOR(0.0033uF/100V,J,TAPING)	413-KT300-103	1	
C124	ELEC. CAPACITOR(0.47uF/50V,M,105°C,TAPING 5*11)(Cd,Pb,Hg,Cr)	413-KT350-093	1	
Q101	TRANSISTOR( 2SA933SR TAPING OR 2SA608G)	416-3113-008	1	
Q105,Q106	TRANSISTOR(2SD1468 TAPING)	416-3113-009	2	
Q102	TRANSISTOR(DTA124ESTP TAPING OR 2SA1346)	416-KC710-038	1	
Q104	TRANSISTOR(DTA124TS/2SA1589/DTA124TSATP,TAPING)	416-KE200S-024	1	
R110,R134	CARBON FILM RESISTOR(150K OHM,1/6W,J,T-26)	412-3113-046	2	
R107,R112,R131,R159,R160,R170	CARBON FILM RESISTOR(100K OHM,1/6W,J,T-26)	412-3113-047	6	
R108	CARBON FILM RESISTOR(2.2K OHM,1/6W,J,T-26)	412-3113-048	1	
R101,R102	CARBON FILM RESISTOR(12K OHM,1/6W,J,T-26)	412-3113-051	2	
R113,R114,R129	CARBON FILM RESISTOR(15K OHM,1/6W,J,T-26)	412-3113-053	3	
R109	CARBON FILM RESISTOR((27K OHM,1/6W,J,T-26)	412-3113-054	1	
R155,R156	CARBON FILM RESISTOR(4.7K OHM,1/6W,J,T-26)	412-3113-055	2	
R104	CARBON FILM RESISTOR(470 OHM,1/6W,J,T-26)	412-3113-056	1	
R117	CARBON FILM RESISTOR((3.3K OHM,1/6W,J,T-26)	412-3113-057	1	
R141,R197,R198,R123,R125,R126,R143,R173,R174,R175,R176,R177	CARBON FILM RESISTOR(220 OHM,1/6W,J,T-26)	412-3113-058	12	
R185,R186,R187,R188,R189,R190,R191,R192,R193,R194,R195,R196	CARBON FILM RESISTOR(100 OHM,1/6W,J,T-26)	412-3113-060	12	
R105	CARBON FILM RESISTOR(120K OHM,1/6W,J,T-26)	412-3113-062	1	

CDI Servo & Buffer P.C.B Ass'y Part List

REF NO.	DESCRIPTION	PART NO.	Q'TY	REMARK
R130,R135,R136,R137	CARBON FILM RESISTOR((47K OHM,1/6W,J,T-26)	412-3113-063	4	
R119,R138,R153,R154	CARBON FILM RESISTOR(10K OHM,1/6W,J,T-26)	412-3113-068	4	
R163,R164	CARBON FILM RESISTOR((2.7K OHM,1/6W,J,T-26)	412-3113-073	2	
R118,R133,R161,R162	CARBON FILM RESISTOR(1K OHM,1/6W,J,T-26)	412-3113-078	4	
R169	CARBON FILM RESISTOR(22 OHM,1/4W,J,T-52)	412-3113-089	1	
R132	CARBON FILM RESISTOR(30K OHM,1/6W,J,T-26)	412-DV300-291	1	
R106	CARBON FILM RESISTOR(4.3K OHM,1/6W,J,T-26)	412-HC1421FR-245	1	
R103	CARBON FILM RESISTOR(15 OHM,1/6W,J,T-26)	412-HDJ7150-709	1	
R124,R142,R184	CARBON FILM RESISTOR(10 OHM,1/6W,J,T-26)	412-KC220-132	3	
R183	CARBON FILM RESISTOR(470K OHM,1/6W,J,T-26)	412-KT300-108	1	
R157,R158	CARBON FILM RESISTOR(20K OHM,1/6W,J,T-26)	412-STR880-482	2	
D101,D103,D104	SWITCHING DIODE(1SS132/1SS133,300mw,55V,T-77)	414-3113-005	3	
ZD101	ZENER DIODE(MTZJ5.1-B,1/2W,T-77)	414-HDJ200-056	1	
L105,L109	BEAD CORE(TB36-863445NP T-26mm)	415-HV3500K-090	2	
L101,L103,L104,L107,L108	INDUCTOR(10uH T-26mm)	415-MPG100-047	5	
L102	MICRO INDUCTOR(33uH)	415-RCC955A-094	1	
	SERVO PCB	405-MCD2450-1238	1	
R181	CHIP RESISTOR(220K OHM,1/8W,0805,J,TP ,150V)	412-DFX1-569	1	
R121,R171,R178	CHIP RESISTOR(10K OHM,1/8W,0805,J,TP 150V)	412-DV330-306	3	
R122	CHIP RESISTOR(100K OHM,1/8W, 0805,J,TP 150V)	412-DV330-307	1	
R139,R116	CHIP RESISTOR(1M OHM,1/8W, 0805,J,TP 150V)	412-DV330-308	2	
R111	CHIP RESISTOR(33K OHM,1/8W,0805,J,TP 150V)	412-DV330-318	1	
R199	CHIP RESISTOR( 220 OHM,1/8W,0805,J,TP 150V )	412-DV330-333	1	
R120	CHIP RESISTOR(820K OHM,1/8W,0805,J,TP ,150V)	412-HDJ11-712	1	
R179	CHIP RESISTOR (1.5K OHM,1/8W, 0805,J,TP,150V )	412-QMX1-035	1	
R115,R182	CHIP RESISTOR((470K OHM,1/8W, 0805,J,TP 150V)	412-QMX2-120	2	
R180	CHIP RESISTOR (470 OHM,1/8W, 0805,J,TP,150V)	412-VCDG3-395	1	
C123	CHIP CAPACITOR(220pF/50V,J,0805 TYPE,NPO)	413-AMC110D-5104	1	
C139	CHIP CAPACITOR(100pF/50V,J,0805 TYPE,NPO)	413-DV330-310	1	
C164,C183,C184,C116,C117,C118,C129,C131,C134,C136,C138,C141	CHIP CAPACITOR(0.1uF/ 50V,Z,0805 TYPE,Y5V)	413-DV330-313	12	
C174,C175	CHIP CAPACITOR(20pF/ 50V,J,0805 TYPE,NPO)	413-DV330-315	2	
C120	CHIP CAPACITOR(5pF/50V,J,0805 TYPE,NPO)	413-DV330-325	1	
C133	CHIP CAPACITOR(0.068uF)	413-SMX701-755	1	
IC105	IC(PCM1716E,28PIN,SOP)	417-DCM270X-327A	1	
IC102	IC(CXD3068Q,QFP-80,SMD)	417-DCM280-587	1	
IC101	IC(CXA-2581N,SSOP-30,SMD)	417-DCM280-588	1	
IC108	IC(BA15218F/BA15218FE2,SOP-8)	417-QMX2-167	1	
IC103	SERVO IC ASS'Y(CHECK SUM:DED0/31)	704-M510-5514	1	
	IC(SM8952AC25J,PLCC-44)	417-HDJ2450-693C	1	



CD2 Servo & Buffer P.C.B Ass'y Part List

REF NO.	DESCRIPTION	PART NO.	Q'TY	REMARK
	CD2 SERVO & BUFFER PCB ASS'Y	704-M2450-6002	1	
	PLASTIC SCREW(S-306-N66)	602-SPANDMK2-536	3	
	BUFFER PCB ASS'Y	704-M2450-5600	1	
CN01	11P CONNECTOR(P=2.54mm,SHD106-A03 TYPE)(Pb,Cd)	404-EP1000-1331	1	
CN02	12P CONNECTOR(P=2.54mm,SHD106-A03 TYPE)	404-HDJ7500-1336	1	
CN03	2P SOCKET(CKM2501WV-2P 180°WHITE)(Cd,Pb,Hg,Cr)	404-KMD1500-608A	1	
RB01	THICK FILM RESISTOR NETWORKS(10K OHM,1/8W J,RA TYPE,7R8P)	412-DJ1-420	1	
C26,C28	ELEC. CAPACITOR(220uF/10V,M,105°C,TAPING 6.3*11)(Cd,Pb,Hg,Cr)	413-KC220-119	2	
L01	BEAD CORE(TB36-863445NP T-26mm)	415-HV3500K-090	1	
X1	CRYSTAL( 16.9344MHZ )	427-KC710-019	1	
	BUFFER PCB(FR4,115.1*74*1.6t)	405-MCD2450-1239B	1	
R29	CHIP RESISTOR(270 OHM 1/8W 0805 J TP 150V )	412-CDN88-014	1	
R19,R26,R27	CHIP RESISTOR(10K OHM,1/8W,0805,J,TP 150V)	412-DV330-306	3	
R01	CHIP RESISTOR(1M OHM,1/8W, 0805,J,TP 150V)	412-DV330-308	1	
R02,R03	CHIP RESISTOR(4.7K OHM,1/8W,0805,J,TP 150V )	412-DV330-320	2	
R04,R07,R08,R09,R10,R11,R12,R13,R16	CHIP RESISTOR( 220 OHM,1/8W,0805,J,TP 150V )	412-DV330-333	9	
R30	CHIP RESISTOR (0 OHM,1/8W,0805,J,TP 150V)	412-HV3500K-367	1	
R15	CHIP RESISTOR(300 OHM,1/8W,J,TP 0805,150V)	412-QFX19-555	1	
C36,C34,C35,C01,C02,C03,C04,C05,C06,C07,C08,C09,C10,C11,C12,C13,C14,C18,C19,C20,C21,C22,C23,C25,C27,C29,C30,C31	CHIP CAPACITOR(0.1uF/ 50V,Z,0805 TYPE,Y5V)	413-DV330-313	28	
C16,C17	CHIP CAPACITOR(15pF/ 50V,J,0805 TYPE,NPO)	413-DV330-314	2	
U2	IC(K4S641632E-TC/K4S641632F/K4S641632H-TC75,TSOP-54)	417-CDN88-501	1	
U5	IC(74HC04/74HC04DT,SOP-14)	417-DCM370E3-378	1	
U1	IC(SCF5249LPV120,SMD)	417-MCDS4-736	1	
U7	IC(BA18BC0FP-E2,3PIN,TO-252-3,SMD)	417-MCDS4-737	1	
U3	IC ASS'Y	704-M2450-5601	1	
	IC(M29W800B70N6.SMD)	417-MCDS4-735	1	
U8	BUFFER IC ASS'Y(CHECK SUM:73E4/1)	704-M510-5564	1	
	IC(XC9536XL-10VQ44C,SMD)	417-MCDS4-738	1	
	CD2 SERVO PCB ASS'Y	704-M510-5515	1	
CN03	5P SOCKET(CKM2001WV-5P 180°WHITE)	404-1210S-094A	1	
CN02	6P SOCKET(CKM2001WV-6P 180°WHITE)	404-3113-052A	1	
CN01	16P FFC CONNECTOR(P=1.0mm,16PIN)(Pb,Cd)	404-HDJ201-599	1	
CN06	3P SOCKET(CKM2501WR-3P 90°WHITE)(Cd,Pb,Hg,Cr)	404-KMD3500-609A	1	
IC103	44P IC SOCKET(DIP)	404-MPG100-384	1	
CN07	8P CONNECTOR WIRE	404-RCC1055-1569	1	
W09	3P2.5 CONNECTOR WIRE(L=220mm,AWM1007 AWG26)	404-ST150-1720	1	
J78(20mm)	JUMPER	406-3113-175	1	
RB101	THICK FILM RESISTOR NETWORKS(10K OHM,1/8W J,RA TYPE,7R8P)	412-DJ1-420	1	
C101,C108,C102	ELEC. CAPACITOR(100uF/10V,M,105°C,TAPING 5*11)(Cd,Pb,Hg,Cr)	413-3113-046	3	
IC106	IC(BA5979S,DIP-32)	417-DCM280-596	1	
IC107	REVERSIZLE MOTOR DRIVER(BA6218/BA6418N)	417-KC720-049	1	

CD2 Servo & Buffer P.C.B Ass'y Part List

REF NO.	DESCRIPTION	PART NO.	Q'TY	REMARK
JK101	2P RCA JACK(RJ-1078B-10-0320A)	420-HDJ7000-045	1	
CN04	6P STRIP PIN HEADER(L=31mm,P=2.54mm,180 DEGREES)	424-HDJ7500-058	2	
CN05	11P2.54 STRIP PIN HEADER(L=31mm,180°)	424-T2-075	1	
IC06	HEAT SINK	425-CDN88A3-066	1	
X102	QUARTZ CRYSTAL(24MHz)	427-DRM120-095	1	
X101	CRYSTAL(33.8688MHZ)	427-DV330-043	1	
	SPACER SUPPORT(H-20)	504-RMX30-157	3	
	PLASTIC SCREW(S-306-N66)	602-SPANDMK2-536	3	
IC106	CLIP FOR HEAT SINK	603-CDN88-291	2	
C115,C177,C178	CERAMIC CAPACITOR(1000PF/50V,K,TAPING,Y5P)	413-1430-071	3	
C171,C172	CERAMIC CAPACITOR(180pF/50V,K,TAPING,Y5P)	413-3113-030	2	
C110,C112,C145,C146,C147	CERAMIC CAPACITOR(220pF/50V,K,TAPING,Y5P)	413-3113-032	5	
C103,C105,C106,C111,C113,C114,C127,C128,C142,C143,C144,C163,C176	CERAMIC CAPACITOR(0.1uF/50V,Z,TAPING,Y5V)	413-3113-035	13	
C126,C104,C109,C130,C179	ELEC. CAPACITOR(100uF/10V,M,105°C,TAPING 5*11)(Cd,Pb,Hg,Cr)	413-3113-046	5	
C181,C182,C107,C140,C161,C165,C166,C167,C168	ELEC. CAPACTIOR(10uF/25V,M,105°C,TAPING 5*11)	413-3113-052	9	
C125	POLYESTER CAPACITOR(0.01uF/50V,J,TAPING)	413-3113-057	1	
C122,C169,C170	POLYESTER CAPACITOR(0.0015uF/50V,J,TAPING)	413-HT7016-219	3	
C135,C137,C162	ELEC. CAPACITOR(220uF/10V,M,105°C,TAPING 6.3*11)(Cd,Pb,Hg,Cr)	413-KC220-119	3	
C121	POLYESTER CAPACITOR(0.047uF/50V,J,TAPING)	413-KT300-099	1	
C160	ELEC. CAPACITOR(220uF/16V,M,105°C,TAPING 6.3*11)(Cd,Pb,Hg,Cr)	413-KT300-102	1	
C132	POLYESTER CAPACITOR(0.0033uF/100V,J,TAPING)	413-KT300-103	1	
C124	ELEC. CAPACITOR(0.47uF/50V,M,105°C,TAPING 5*11)Cd,Pb,Hg,Cr)	413-KT350-093	1	
Q101	TRANSISTOR( 2SA933SR TAPING OR 2SA608G)	416-3113-008	1	
Q105,Q106	TRANSISTOR(2SD1468 TAPING)	416-3113-009	2	
Q102	TRANSISTOR(DTA124ESTP TAPING OR 2SA1346)	416-KC710-038	1	
Q104	TRANSISTOR(DTA124TS/2SA1589/DTA124TSATP,TAPING)	416-KE200S-024	1	
R110,R134	CARBON FILM RESISTOR(150K OHM,1/6W,J,T-26)	412-3113-046	2	
R107,R112,R131,R159,R160,R170	CARBON FILM RESISTOR(100K OHM,1/6W,J,T-26)	412-3113-047	6	
R108	CARBON FILM RESISTOR(2.2K OHM,1/6W,J,T-26)	412-3113-048	1	
R101,R102	CARBON FILM RESISTOR(12K OHM,1/6W,J,T-26)	412-3113-051	2	
R113,R114,R129	CARBON FILM RESISTOR(15K OHM,1/6W,J,T-26)	412-3113-053	3	
R109	CARBON FILM RESISTOR((27K OHM,1/6W,J,T-26)	412-3113-054	1	
R155,R156	CARBON FILM RESISTOR(4.7K OHM,1/6W,J,T-26)	412-3113-055	2	
R104	CARBON FILM RESISTOR(470 OHM,1/6W,J,T-26)	412-3113-056	1	
R117	CARBON FILM RESISTOR((3.3K OHM,1/6W,J,T-26)	412-3113-057	1	
R141,R197,R198,R123,R125,R126,R143,R173,R174,R175,R176,R177	CARBON FILM RESISTOR(220 OHM,1/6W,J,T-26)	412-3113-058	12	
R185,R186,R187,R188,R189,R190,R191,R192,R193,R194,R195,R196	CARBON FILM RESISTOR(100 OHM,1/6W,J,T-26)	412-3113-060	12	
R105	CARBON FILM RESISTOR(120K OHM,1/6W,J,T-26)	412-3113-062	1	

CD2 Servo & Buffer P.C.B Ass'y Part List

REF NO.	DESCRIPTION	PART NO.	Q'TY	REMARK
R130,R135,R136,R137	CARBON FILM RESISTOR((47K OHM,1/6W,J,T-26)	412-3113-063	4	
R119,R138,R153,R154	CARBON FILM RESISTOR(10K OHM,1/6W,J,T-26)	412-3113-068	4	
R163,R164	CARBON FILM RESISTOR((2.7K OHM,1/6W,J,T-26)	412-3113-073	2	
R118,R133,R161,R162	CARBON FILM RESISTOR(1K OHM,1/6W,J,T-26)	412-3113-078	4	
R169	CARBON FILM RESISTOR(22 OHM,1/4W,J,T-52)	412-3113-089	1	
R132	CARBON FILM RESISTOR(30K OHM,1/6W,J,T-26)	412-DV300-291	1	
R106	CARBON FILM RESISTOR(4.3K OHM,1/6W,J,T-26)	412-HC1421FR-245	1	
R103	CARBON FILM RESISTOR(15 OHM,1/6W,J,T-26)	412-HDJ7150-709	1	
R124,R142,R184	CARBON FILM RESISTOR(10 OHM,1/6W,J,T-26)	412-KC220-132	3	
R183	CARBON FILM RESISTOR(470K OHM,1/6W,J,T-26)	412-KT300-108	1	
R157,R158	CARBON FILM RESISTOR(20K OHM,1/6W,J,T-26)	412-STR880-482	2	
D101,D103,D104	SWITCHING DIODE(1SS132/1SS133,300mw,55V,T-77)	414-3113-005	3	
ZD101	ZENER DIODE(MTZJ5.1-B,1/2W,T-77)	414-HDJ200-056	1	
L105,L109	BEAD CORE(TB36-863445NP T-26mm)	415-HV3500K-090	2	
L101,L103,L104,L107,L108	INDUCTOR(10uH T-26mm)	415-MPG100-047	5	
L102	MICRO INDUCTOR(33uH)	415-RCC955A-094	1	
	SERVO PCB	405-MCD2450-1238	1	
R181	CHIP RESISTOR(220K OHM,1/8W,0805,J,TP ,150V)	412-DFX1-569	1	
R121,R171,R178	CHIP RESISTOR(10K OHM,1/8W,0805,J,TP 150V)	412-DV330-306	3	
R122	CHIP RESISTOR(100K OHM,1/8W, 0805,J,TP 150V)	412-DV330-307	1	
R139,R116	CHIP RESISTOR(1M OHM,1/8W, 0805,J,TP 150V)	412-DV330-308	2	
R111	CHIP RESISTOR(33K OHM,1/8W,0805,J,TP 150V)	412-DV330-318	1	
R199	CHIP RESISTOR( 220 OHM,1/8W,0805,J,TP 150V )	412-DV330-333	1	
R120	CHIP RESISTOR(820K OHM,1/8W,0805,J,TP ,150V)	412-HDJ11-712	1	
R179	CHIP RESISTOR (1.5K OHM,1/8W, 0805,J,TP,150V )	412-QMX1-035	1	
R115,R182	CHIP RESISTOR((470K OHM,1/8W, 0805,J,TP 150V)	412-QMX2-120	2	
R180	CHIP RESISTOR (470 OHM,1/8W, 0805,J,TP,150V)	412-VCDG3-395	1	
C123	CHIP CAPACITOR(220pF/50V,J,0805 TYPE,NPO)	413-AMC110D-5104	1	
C139	CHIP CAPACITOR(100pF/50V,J,0805 TYPE,NPO)	413-DV330-310	1	
C164,C183,C184,C116,C117,C118,C129,C131,C134,C136,C138,C141	CHIP CAPACITOR(0.1uF/ 50V,Z,0805 TYPE,Y5V)	413-DV330-313	12	
C174,C175	CHIP CAPACITOR(20pF/ 50V,J,0805 TYPE,NPO)	413-DV330-315	2	
C120	CHIP CAPACITOR(5pF/50V,J,0805 TYPE,NPO)	413-DV330-325	1	
C133	CHIP CAPACITOR(0.068uF)	413-SMX701-755	1	
IC105	IC(PCM1716E,28PIN,SOP)	417-DCM270X-327A	1	
IC102	IC(CXD3068Q,QFP-80,SMD)	417-DCM280-587	1	
IC101	IC(CXA-2581N,SSOP-30,SMD)	417-DCM280-588	1	
IC108	IC(BA15218F/BA15218FE2,SOP-8)	417-QMX2-167	1	
IC103	SERVO IC ASS'Y(CHECK SUM:DED0/31)	704-M510-5514	1	
	IC(SM8952AC25J,PLCC-44)	417-HDJ2450-693C	1	

Control P.C.B Ass'y Part List

REF NO.	DESCRIPTION	PART NO.	Q'TY	REMARK
	CONTROL PCB ASS'Y	704-M2450B1-7408	1	
	BRACKET(L TYPE)	300-HDJ7000-472	2	
JOG201,JOG202	SRGP SW(SRGPJ-A-3-1,8PIN)	403-HDJ7000-086	2	
J205,J209,J250,J251	JUMPER( $\phi$ 0.6mm,L=5mm,H=10mm)	406-2002-106	4	
LCD201,LCD202	LCD(SV-WS279APMP)	410-2450-280	2	
D206,D209,D211,D213,D208,D215	LED (6224-10ID-A,RED )	410-CD6000-122	6	
D207,D212,D210,D214	LED ( GREEN )	410-CD6000-124	4	
D220,D221	BACKLIGHT(RED,FTEC-LB10416AR-7044-3)	410-M2800-289A	2	
RB201	THICK FILM RESISTOR NETWORKS(10K OHM,J,RA TYPE,8R9P)	412-DV300-5143	1	
RB202,RB203	THICK FILM RESISTOR NETWORKS(10K OHM,1/8W J,RA TYPE,6R7P )	412-KMD280-165	2	
R211,R212	CARBON FILM RESISTOR(10 OHM,1/2W,J,T-52)	412-SA12-566	2	
C217	ELEC. CAPACITOR(100uF/10V,M,105°C ,TAPING 5*11)(Cd,Pb,Hg,Cr)	413-3113-046	1	
C226	ELEC. CAPACITOR(4.7uF/50V,M,105°C ,TAPING 5*11)	413-3113-050	1	
C202,C227	ELEC. CAPACITOR(100uF/10V,M,105°C ,TAPING 5*7,MINI)(Cd,Pb,Hg,	413-HMA2200-5017	2	
VR201,VR202	SLIDE RESISTOR(10KB*2)	418-CD1000-052	2	
CN201	SERIES STRIP PIN HEADER(90 DEGREES,2mm)	424-CDN88-032	1	
X202	CRYSTAL 8MHZ	427-DV300-5017	1	
X201	CRYSTAL(18.432MHZ)	427-DV330-042	1	
D206,D207,D208,D209,D210,D211,D212,D213,D214,D215	LED HOLDER(LED-7,H=7mm,WHITE)	504-CDN34A-042	10	
	SCREW(3*5 P=0.5)	602-B300-041	4	
	ADAPTOR PCB ASS'Y	704-C2450-5473	1	
	BRACKET(L TYPE)	300-HDJ7000-472	2	
JK201	DIN SOCKET SUPPORT BRACKET	300-HDJ7000-473	1	
CN01A	SERIES FEMALE PCB CONNECTORS	404-CDN88-017	1	
RB205	THICK FILM RESISTOR NETWORKS(10K OHM,1/8W J,RA TYPE,6R7P )	412-KMD280-165	1	
IC203	IC(BA05T,3PIN)	417-CDN34A-314	1	
JK201	8P DIN JACK(MDJ18-08)	420-HDJ7000-046A	1	
JK202,JK203	HEADPHONE JACK( $\phi$ 3.5,2K6A/-3537*01-030)	420-HDJ7100-063	2	
IC203	HEAT SINK	425-P22-070	1	
	SCREW(3*8mm TTB)	602-2002-077	1	
	SCREW(3*5 P=0.5)	602-B300-041	2	
C222,C223,C224,C225	CERAMIC CAPACITOR(1000PF/50V,K,TAPING,Y5P)	413-1430-071	4	
C207,C208,C209,C210,C211,C212	CERAMIC CAPACITOR(220pF/50V,K,TAPING,Y5P)	413-3113-032	6	
C201,C239	CERAMIC CAPACITOR(0.1uF/50V,Z,TAPING,Y5V)	413-3113-035	2	
C240	ELEC. CAPACITOR(100uF/10V,M,105°C ,TAPING 5*11)(Cd,Pb,Hg,Cr)	413-3113-046	1	
	ADAPTOR PCB(BARE)	405-HDJP2450-1461	1	
R204,R205,R206,R207,R208,R209	CARBON FILM RESISTOR(220 OHM,1/6W,J,T-26)	412-3113-058	6	
L202,L203,L204,L205	BEAD CORE(TB36-863445NP T-26mm)	415-HV3500K-090	4	

Control P.C.B Ass'y Part List

REF NO.	DESCRIPTION	PART NO.	Q'TY	REMARK
SW201,SW202,SW203,S W204,SW205,SW206,SW2 07,SW208,SW209,SW210, SW211,SW212,SW213,S W215,SW216,SW217,SW2 18,SW219,SW220,SW221, SW222,SW223,SW224,S W225,SW226,SW214	TACT SW(H=5mm,TAPING)	403-DCM270X-101A	26	
Q202	TRANSISTOR( 2SA933SR TAPING OR 2SA608G)	416-3113-008	1	
Q201	TRANSISTOR(DTC124ES TAPING OR 2SC3400)	416-3113-010	1	
R215,R225	CARBON FILM RESISTOR(2.2K OHM,1/6W,J,T-26)	412-3113-048	2	
R216,R217,R218	CARBON FILM RESISTOR(270 OHM,1/6W,J,T-26)	412-3113-049	3	
R203	CARBON FILM RESISTOR((3.3K OHM,1/6W,J,T-26)	412-3113-057	1	
R202	CARBON FILM RESISTOR(10K OHM,1/6W,J,T-26)	412-3113-068	1	
D205	SWITCHING DIODE(1SS132/1SS133,300mw,55V,T-77)	414-3113-005	1	
L201	BEAD CORE(TB36-863445NP T-26mm)	415-HV3500K-090	1	
	CONTROL PCB(94V0/KB,1.6t,425.4*99mm)	405-P2450-1460B	1	
R219,R220	CHIP RESISTOR(270 OHM 1/8W 0805 J TP 150V )	412-CDN88-014	2	
JM1,JM2,J310,J311,J279,J 271,J219,J273,J274,J275,J 276,J277,J278,J282,J283,J 284,J285,J286,J287,J288,J 289,J290,J291,J292,J293,J 294,J295,J296,J297,J300,J 301,J302,J303,J304,J305,J 306,J307,J308,J309	CHIP RESISTOR(0 OHM,1/8W,1206,J,TP ,150V)	412-DJ3000-414	39	
R222,R224	CHIP RESISTOR(1K OHM,1/8W, 0805,J,TP 150V)	412-DV330-305	2	
R204,R205,R206,R208,R2 09,R210,R228	CHIP RESISTOR(10K OHM,1/8W,0805,J,TP 150V)	412-DV330-306	7	
R201	CHIP RESISTOR(1M OHM,1/8W, 0805,J,TP 150V)	412-DV330-308	1	
R221,R223	CHIP RESISTOR((470K OHM,1/8W, 0805,J,TP 150V)	412-QMX2-120	2	
C236,C237	CHIP CAPACITOR(30pF/50V,J,0805 TYPE,NPO)	413-BJ2300E-628	2	
C232,C233,C234,C235	CHIP CAPACITOR(0.01uF/50V,K,0805 TYPE,X7R)	413-DV330-312	4	
C203,C216,C218,C228,C238	CHIP CAPACITOR(0.1uF/ 50V,Z,0805 TYPE,Y5V)	413-DV330-313	5	
C204,C205	CHIP CAPACITOR(20pF/ 50V,J,0805 TYPE,NPO)	413-DV330-315	2	
D201,D202,D203,D204,D2 17,D218	SWITCHING DIODE(1SS355,UMD2,SMD,TAPING)	414-CD1000-075	6	
Q203,Q204	TRANSISTOR(2SA1037AKT146R/2SA1037AKR)	416-CDN88-045	2	
IC206	IC(74LV165D/74LV165DT,SO-16)	417-007USB-623	1	
IC204,IC205	IC(BU9728AKV,SQFP-48)	417-P22-741	2	
IC201	CONTROL IC(CHECK SUM:771F/16)	704-M2450A-5701	1	
	IC(SM8958AC25J,PLCC-44)	417-HDJ2450-693A	1	
IC202	IC ASS'Y(CHECK SUM:670C/4)	704-P22NS-5474	1	
	IC(TMP86P202M/TMP86P202P/M,SOP20)	417-P22-733	1	

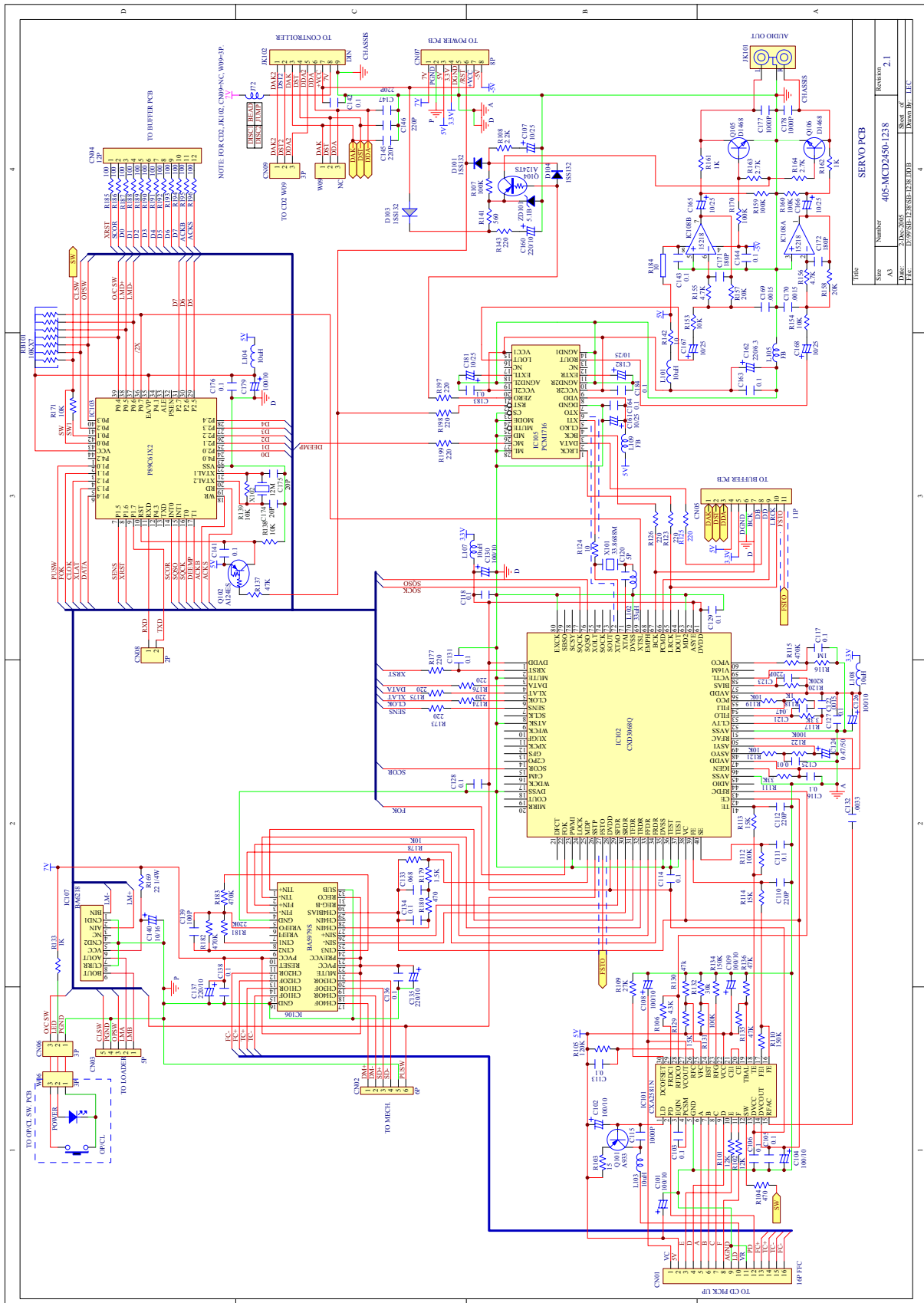
## Power P.C.B Ass'y Part List

REF NO.	DESCRIPTION	PART NO.	Q'TY	REMARK
	POWER PCB ASS'Y	704-P22NS-5465	1	
CN01	5P SOCKET(P=3.75mm)	404-HV3363K-555	1	
CN02	8P 2.5 CONNECTOR WIRE(L=300mm)	404-P22-1998	1	
CN03	8P 2.5 CONNECTOR WIRE(L=370mm)	404-P22-1999	1	
C01	ELEC. CAPACITOR(2200uF/16V,M, 105°C ,BULK 13*21)(Cd,Pb,Hg,Cr)	413-3113-053	1	
C04	ELEC. CAPACITOR(10000uF/16V,M, 105°C ,BULK 16*33)(Cd,Pb,Hg,Cr)	413-CDN34A-371	1	
D07,D08	DIODE(1N4001,1A/50V,TAPING 52mm)	414-DJ2500-110	2	
D01,D02,D03,D04,D05,D06	RECTIFYING DIODE(1N5392,1.5A/100V,TAPING 52mm)	414-HT7016-031	6	
IC01	IC(BA05T,3PIN)	417-CDN34A-314	1	
IC03	IC(BA033T/FP 3.3V TO220FP 3PIN)	417-HV3500K-253	1	
IC05	IC(AP-1084,TO220M)	417-P22-734	1	
IC01,IC03,IC05	HEAT SINK(AL)	425-HDJ2650-040	3	
	MICA SHEET	501-P22-1824	1	
	CABLE TIE	504-S100-004	2	
	SCREW(3*8mm TTB)	602-2002-077	6	
D05*2,D06*2	CERAMIC TUBE ( 4*2*11.5mm )	605-KMD510P-034	4	
	TRANSISTOR SPACER(602S-VO)	606-P22-206	1	
C14,C15,C16	CERAMIC CAPACITOR(0.01uF/50V,Z,TAPING,Z5V)	413-3113-028	3	
C03,C06,C07,C11	CERAMIC CAPACITOR(0.1uF/50V,Z,TAPING,Y5V)	413-3113-035	4	
C12	ELEC. CAPACITOR(2.2uF/50V,M,105°C ,TAPING 5*11)	413-3113-045	1	
C05	ELEC. CAPACITOR(470uF/16V,M, 105°C ,TAPING 8*12)(Cd,Pb,Hg,Cr)	413-HT8015-164	1	
C02	ELEC. CAPACITOR(470uF/10V,M, 105°C ,TAPING 8*12)(Cd,Pb,Hg,Cr)	413-HT8015-169	1	
C08,C09,C10	ELEC. CAPACITOR(220uF/10V,M,105°C ,TAPING 6.3*11)(Cd,Pb,Hg,Cr)	413-KC220-119	3	
IC02	IC(KIA79L05BP,TAPING,TO-92L)	417-CDN44-392	1	
R06	CARBON FILM RESISTOR(4.7K OHM,1/6W,J,T-26)	412-3113-055	1	
R03	CARBON FILM RESISTOR(2.2K OHM,1/6W F T-26)	412-P22-960	1	
R05	CARBON FILM RESISTOR(470 OHM,1/6W,F,T-26)	412-P22-961	1	
	POWER PCB(140*100*1.6)	405-2450-1458C	1	
IC04	IC(BD4745G/BD4745G-TR,SMP5)	417-HDJ2000-503	1	
FU01,FU02,FU03	CHIP FUSE(3A,63V,1206 TYPE)	422-MH2-076	3	

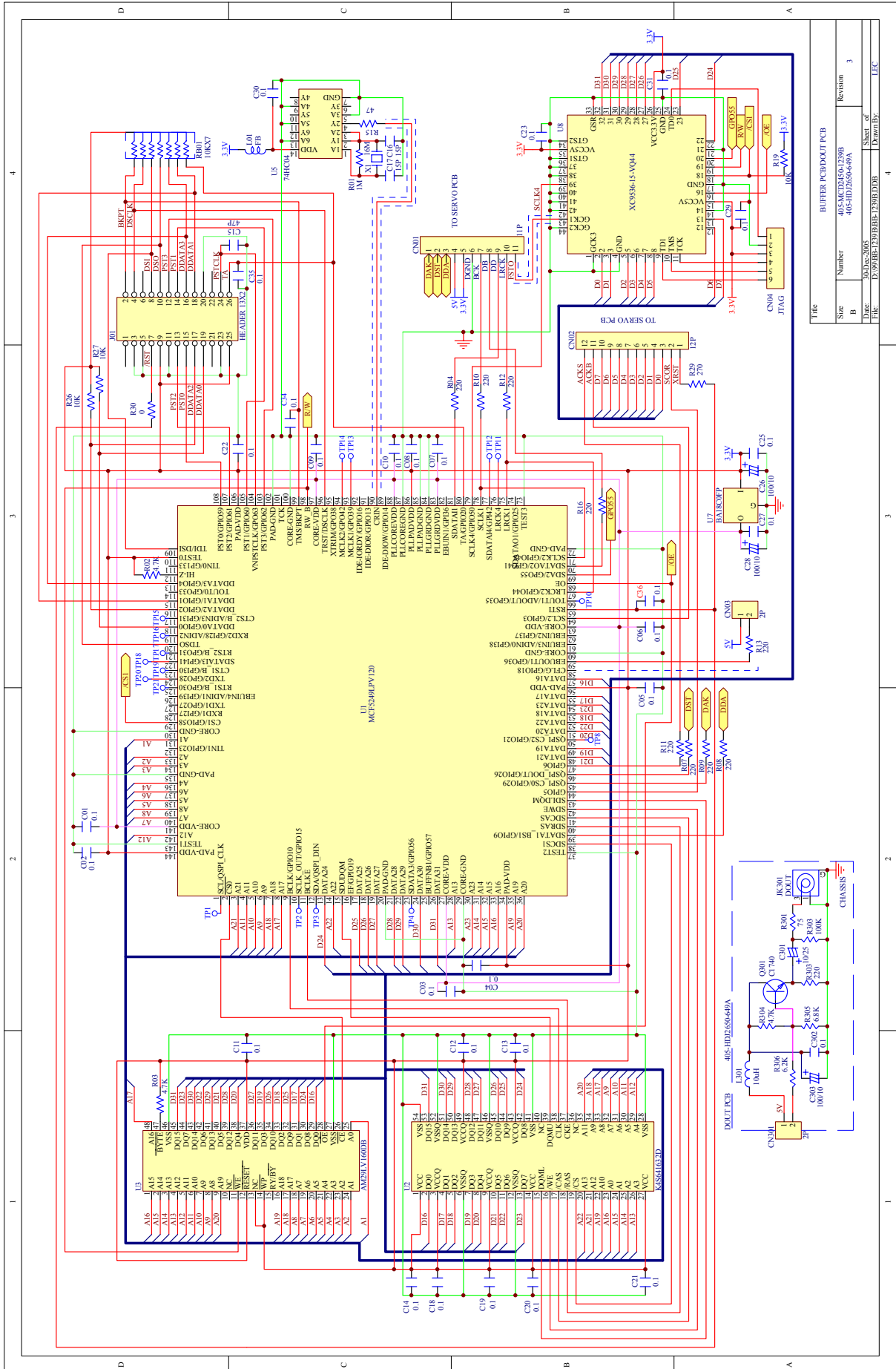
*D-Out & Ac Jack & Switch P.C.B Ass'y Part List*

REF NO.	DESCRIPTION	PART NO.	Q'TY	REMARK
	D-OUT PCB ASS'Y	704-DCD310-5482	2	
CN301	2P SOCKET(CKM2001WR-2P 90°WHITE)	404-DJ3000-847A	1	
JK301	1P RCA JACK(RJ-1081-31-0341A)(Pb,Cd)	420-HDJ2650-097A	1	
C302	CERAMIC CAPACITOR(0.1uF/50V,Z,TAPING,Y5V)	413-3113-035	1	
C303	ELEC. CAPACITOR(100uF/10V,M,105°C,TAPING 5*11)(Cd,Pb,Hg,Cr)	413-3113-046	1	
C301	ELEC. CAPACTIOR(10uF/25V,M,105°C,TAPING 5*11)	413-3113-052	1	
Q301	TRANSISTOR(2SC1740R TAPING)	416-3113-007	1	
	D-OUT PCB(BARE,94V0,120*123*1.6t)	405-HDJ2650-649A	1	
R302	CARBON FILM RESISTOR(100K OHM,1/6W,J,T-26)	412-3113-047	1	
R304	CARBON FILM RESISTOR(4.7K OHM,1/6W,J,T-26)	412-3113-055	1	
R303	CARBON FILM RESISTOR(220 OHM,1/6W,J,T-26)	412-3113-058	1	
R305	CARBON FILM RESISTOR(6.8K OHM,1/6W,J,T-26)	412-3113-069	1	
R306	CARBON FILM RESISTOR(6.2K OHM,1/6W,J,T-26)	412-HV3363K-349	1	
R301	CARBON FILM RESISTOR(75 OHM,1/6W,J,T-26)	412-KCG220-197	1	
L301	INDUCTOR(10uH T-26mm)	415-MPG100-047	1	
	SWITCH PCB ASS'Y	704-HDJ5000-1560	1	
SW101*2	TACT SW(SKHHAM2520-HF,4PIN)	403-HV3420K-085	2	
W08A	3P-2P 2.5/2.0 CONNECTOR WIRE(L=270mm,AWM1007,AWG26,RED/WHITE)	404-2450-2119	1	
W08	3P 2.5/2.0 CONNECTOR WIRE(L=130mm,AWM1007,AWG26,RED/WHITE*2,	404-2450-2120	1	
	SW PCB	405-HDJ2100-332A	1	
D105	LED (6224-10ID-A,RED )	410-CD6000-122	1	
	LED HOLDER(LED-7,H=7mm,WHITE)	504-CDN34A-042	1	
	AC JACK ASS'Y	704-MCD110-5706	1	
	AC JACK(SO-222)	404-DJ2-021	1	
FUSE	JUMPER	406-3113-175	1	
	AC SAFETY CAPACITOR(0.01uF/250V,M,BULK,Y5V)	413-S250-747	1	
	AC JACK PCB	405-DJ2-062B	1	
L01,L02	BEAD CORE(TB36-863445NP T-26mm)	415-HV3500K-090	2	

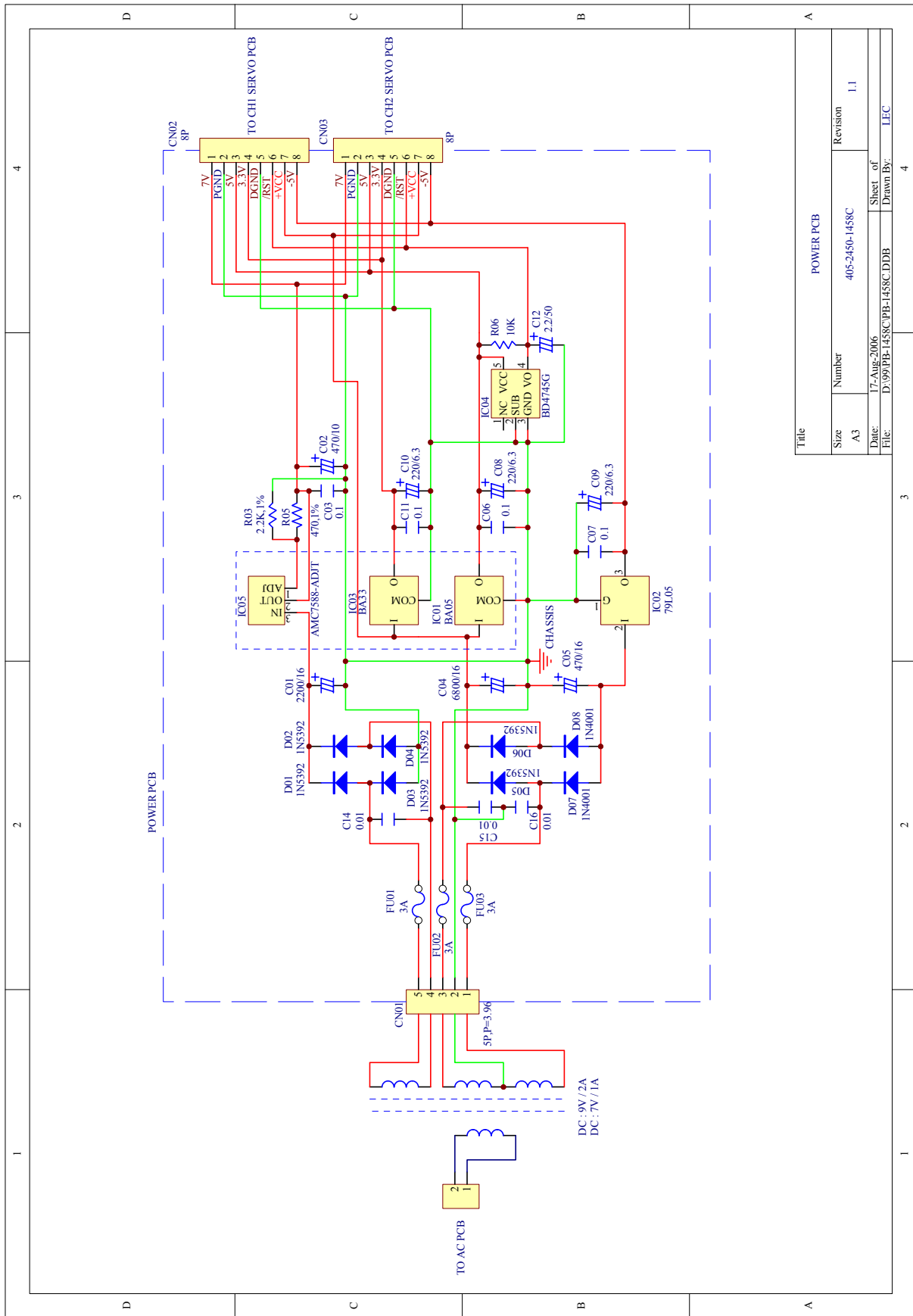
# Schematic Diagram

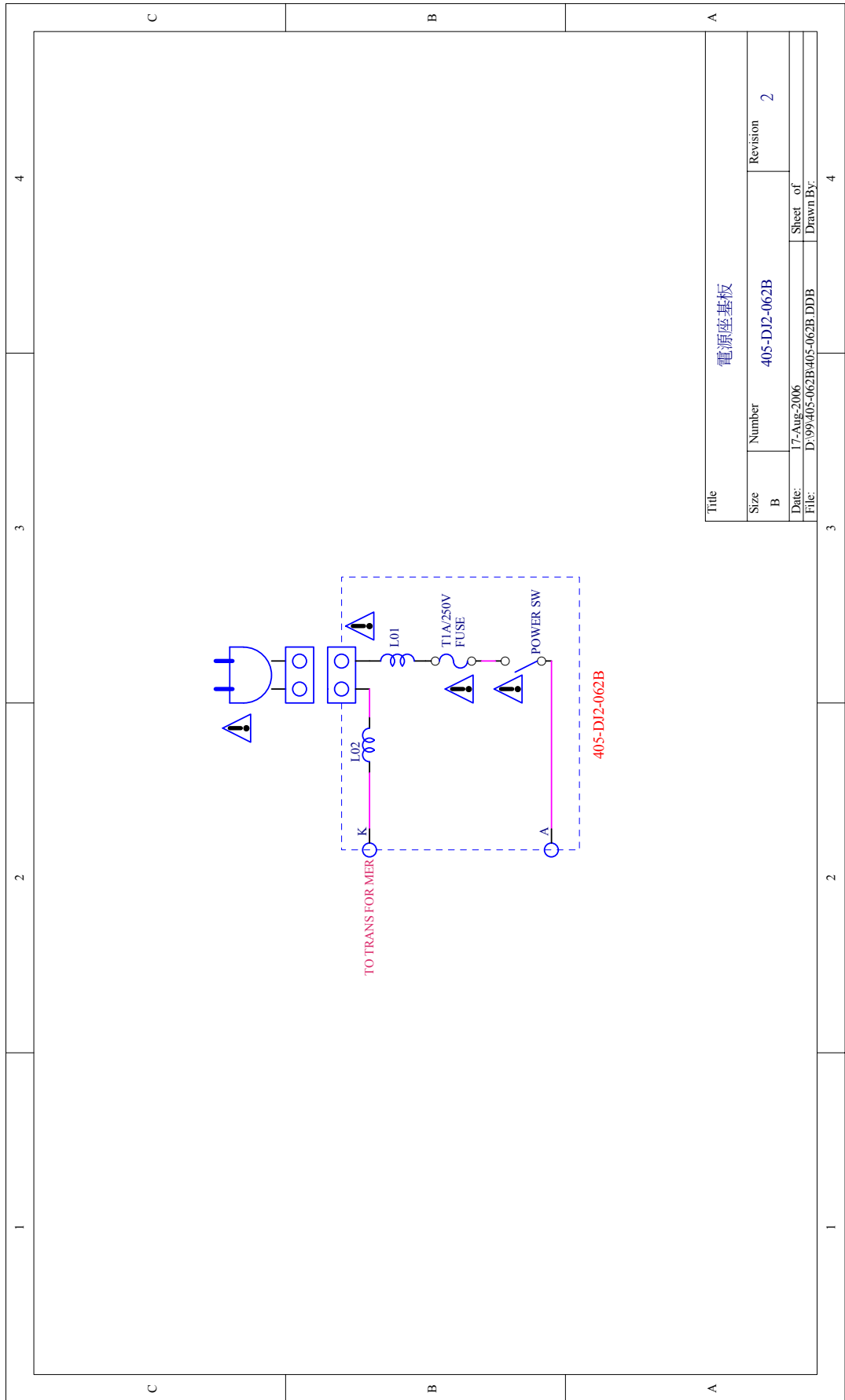


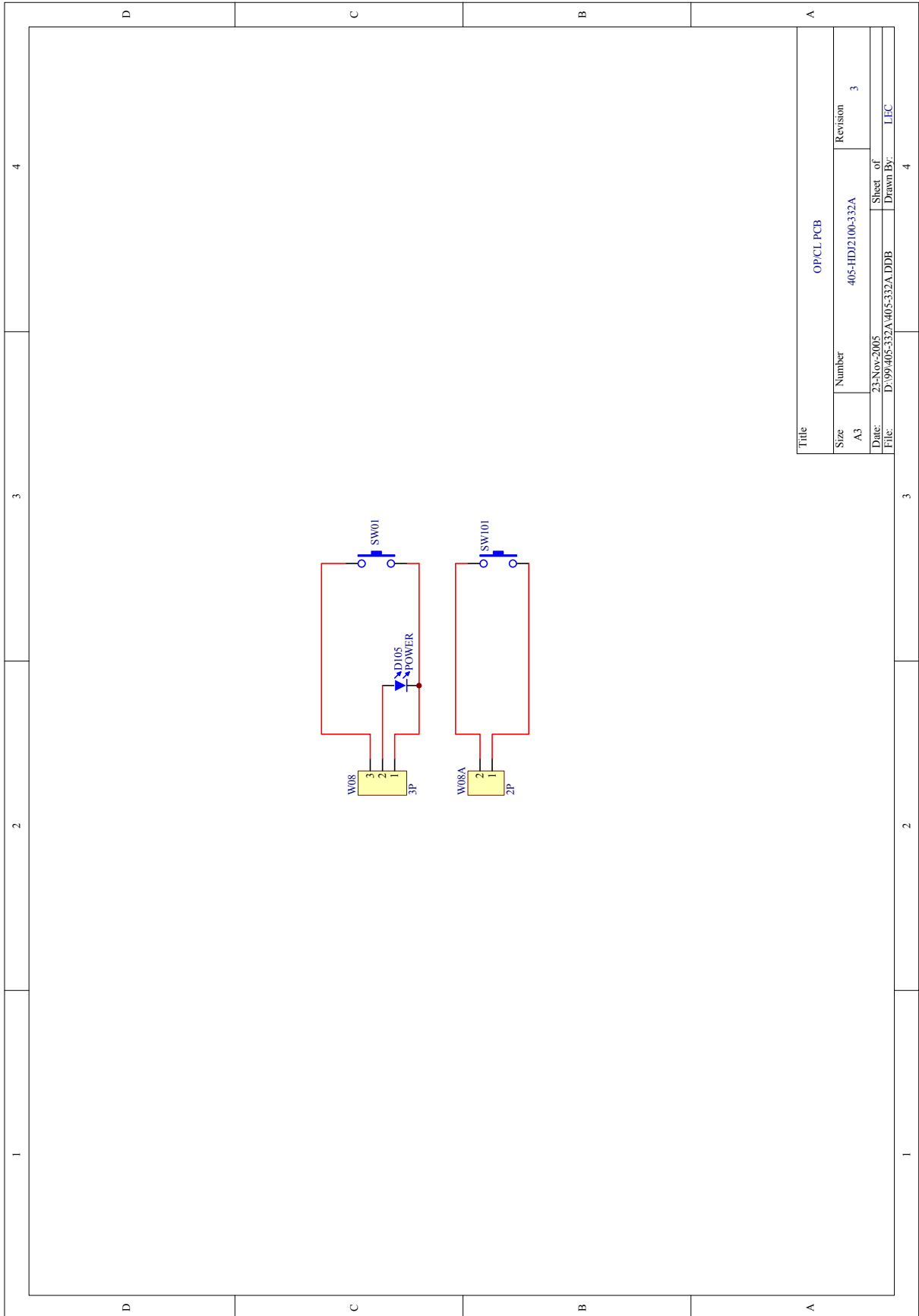


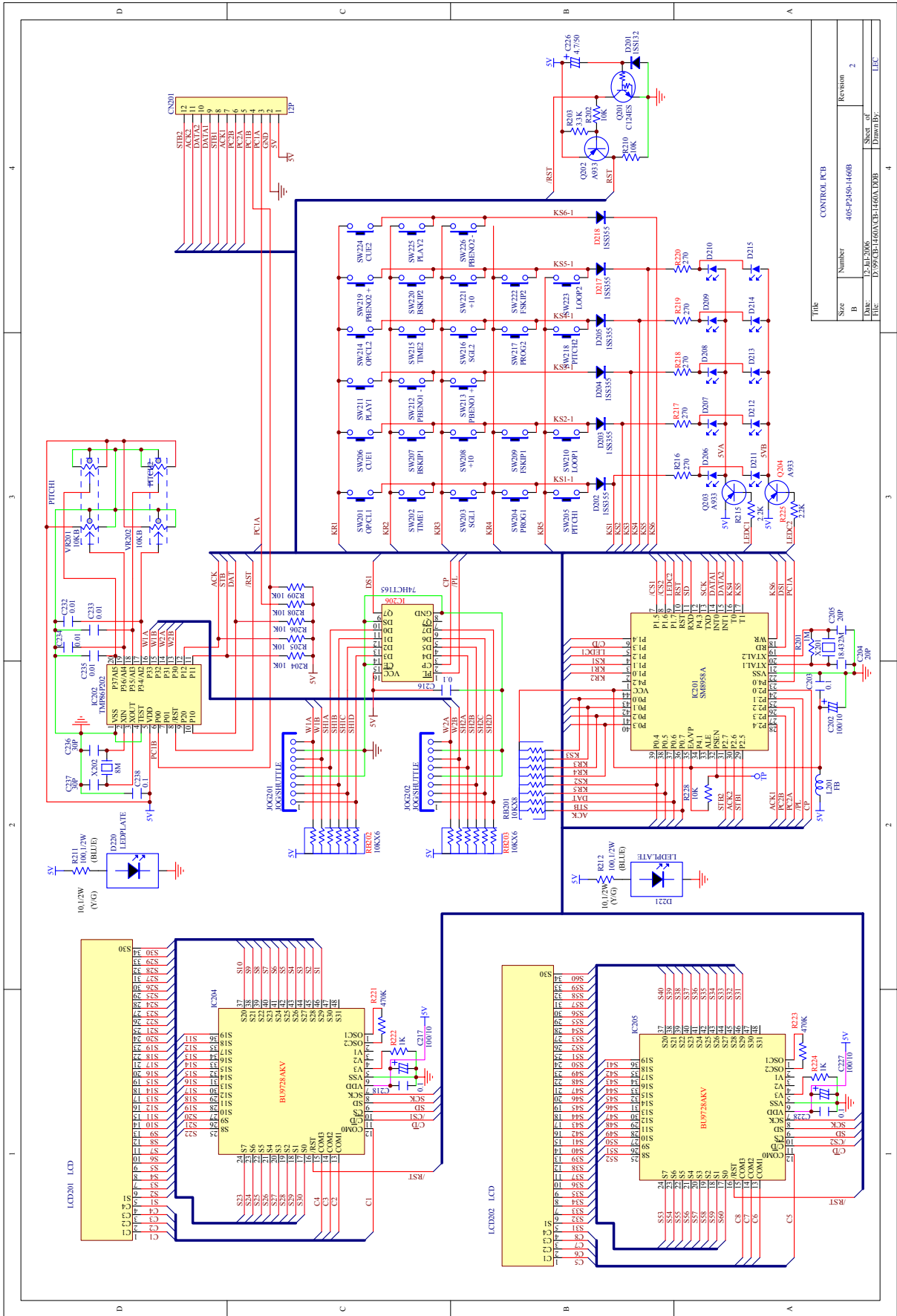


Title			
Size	Number	Revision	3
B	405-HD2LS5649A		
Date	2005-03-05	Sheet of	3
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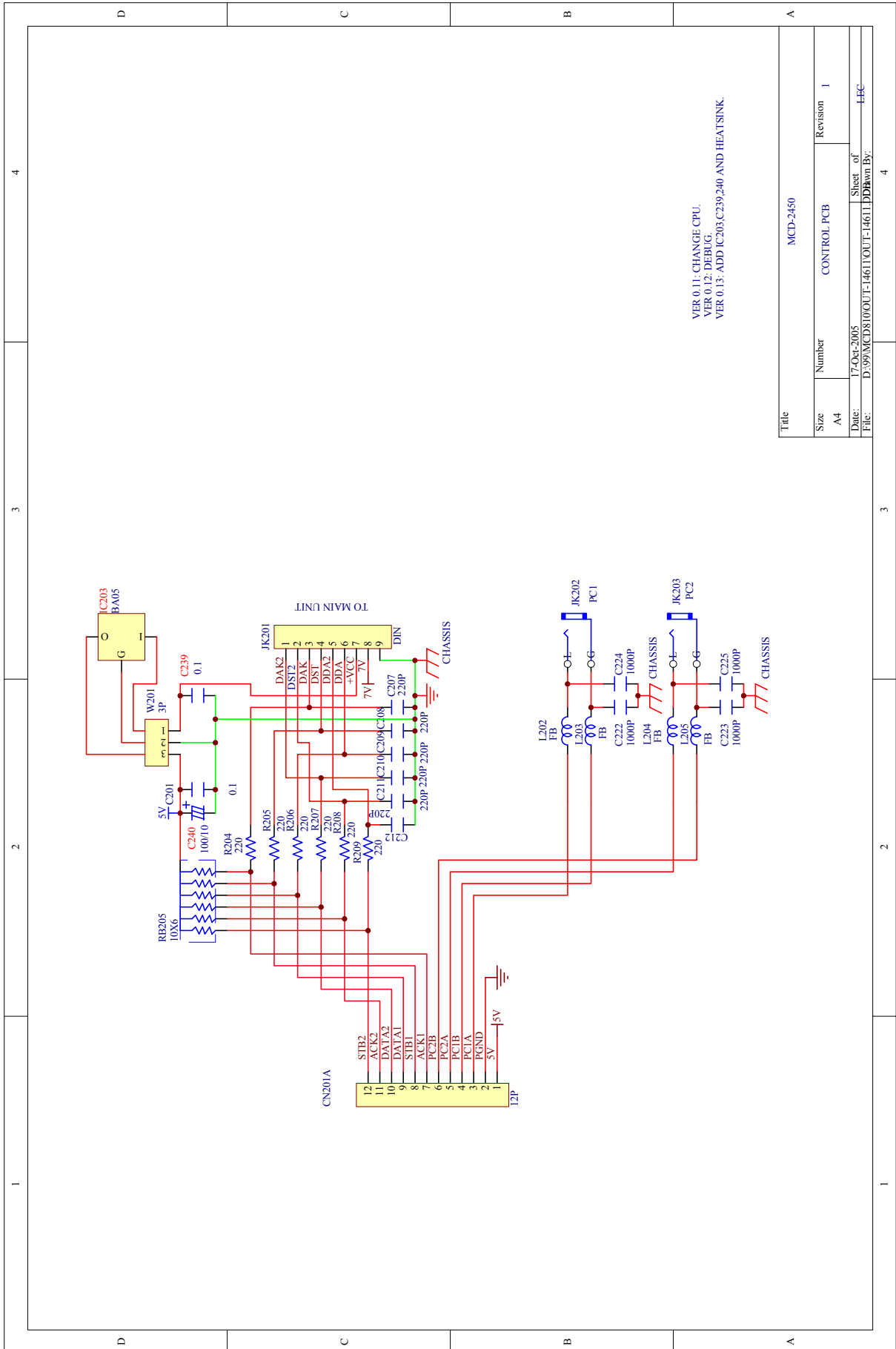








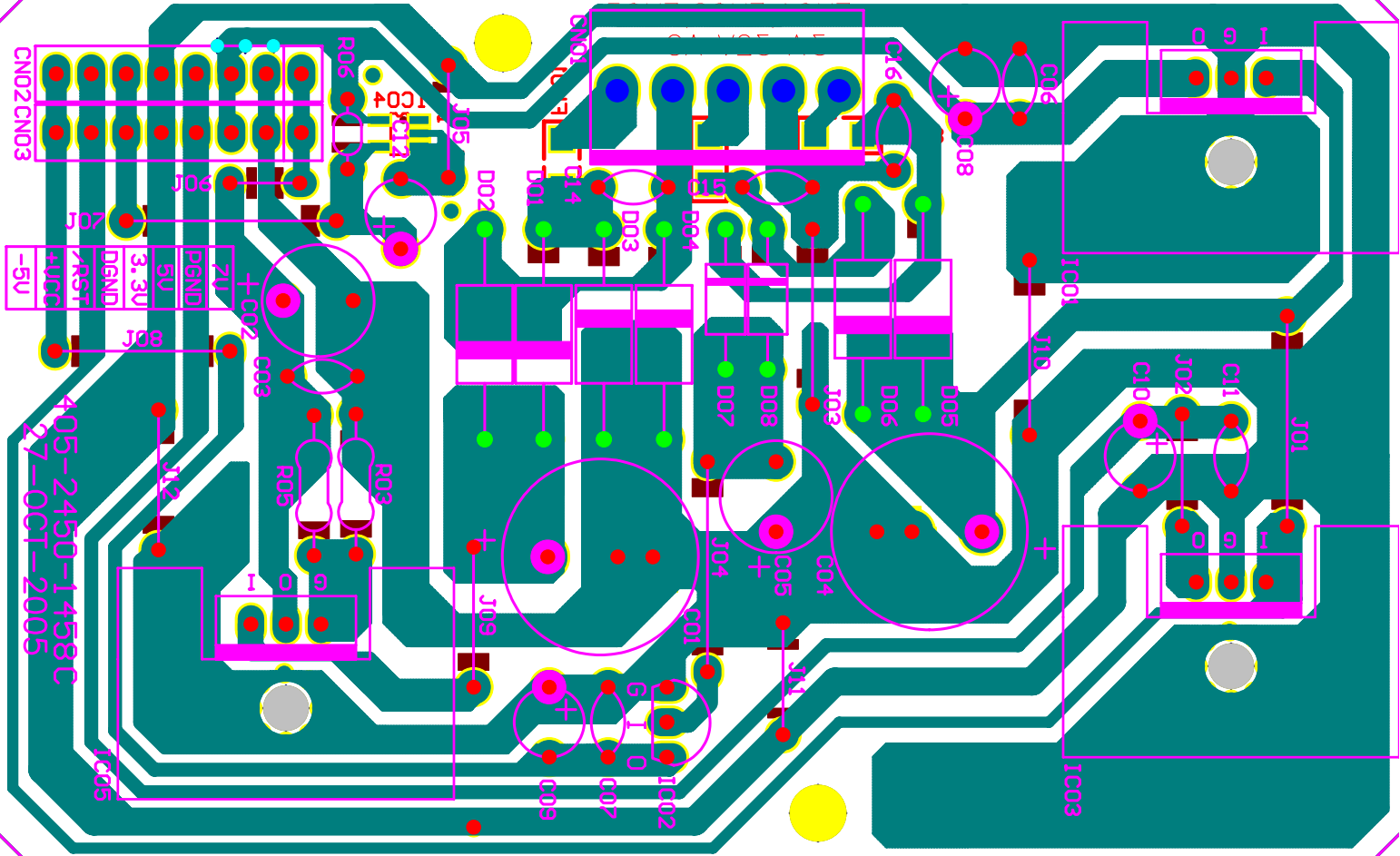
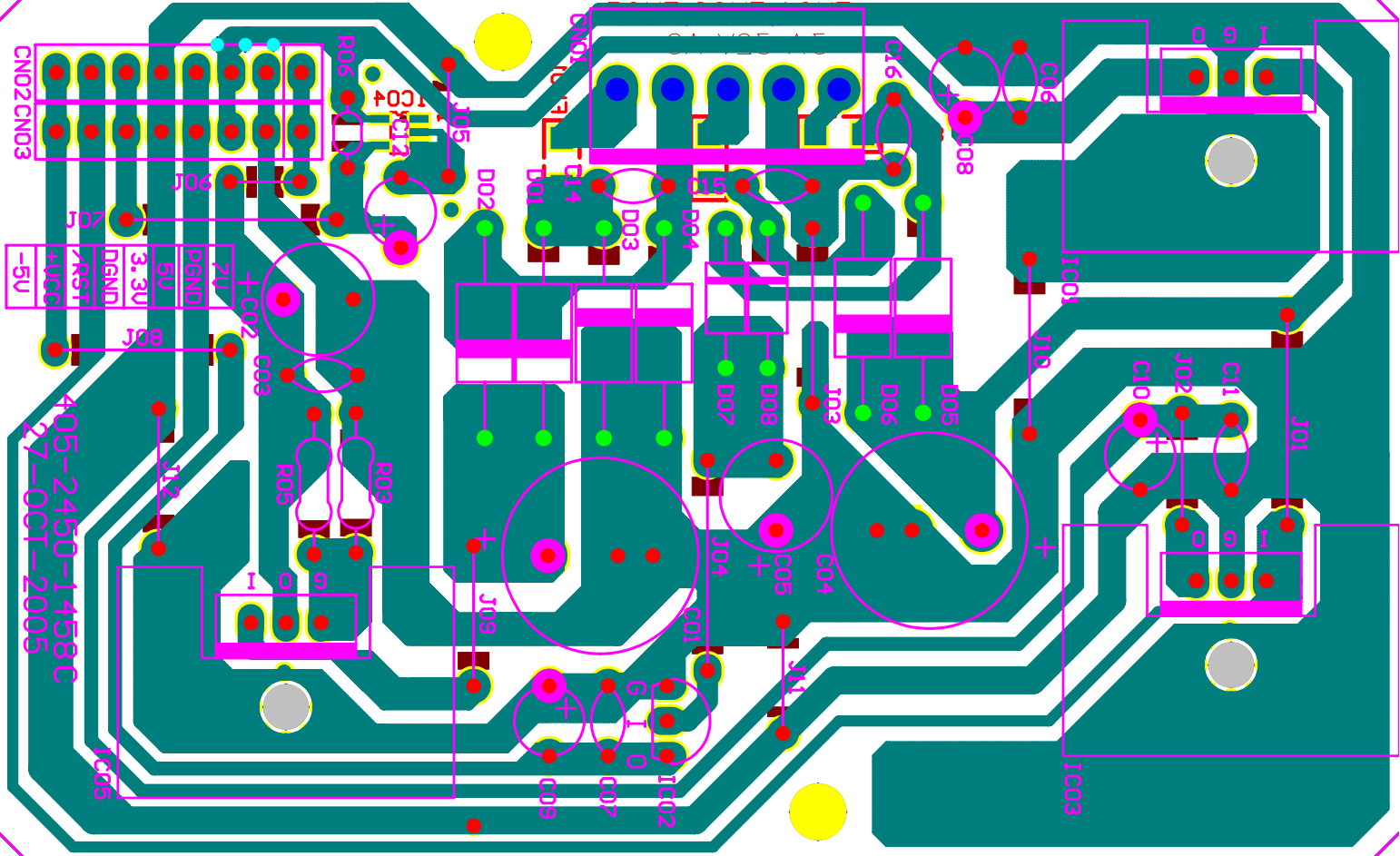
# Schematic Diagram



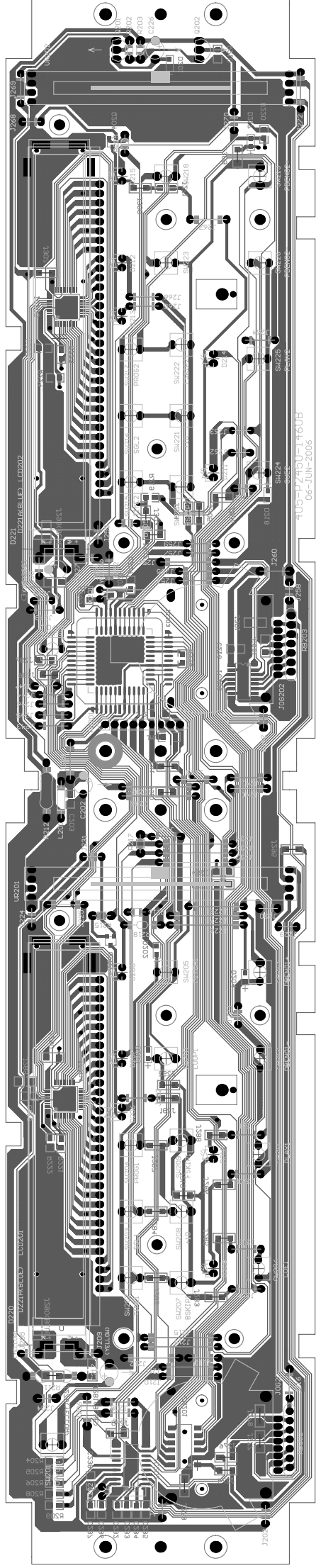
VER 0.11: CHANGE CPU.  
 VER 0.12: DEBUG.  
 VER 0.13: ADD IC203, C239, 240 AND HEATSINK.

Title		MCD-2450	
Size	A4	Number	CONTROL PCB
		Revision	1
Date:	17-Oct-2005	Sheet of	1
File:	D:\99MCD\810\OUT-1461\OUT-1461.DDR	Drawn By:	EEC

405-2450-1458C□  
POWER PCB

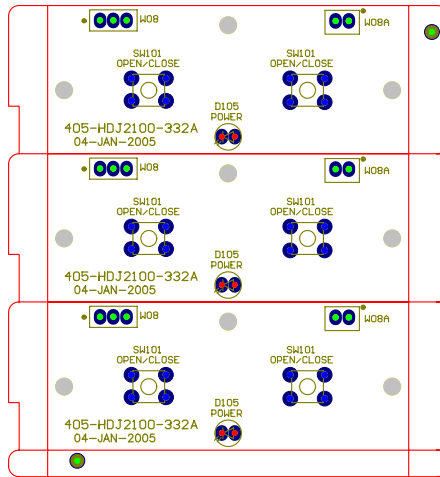
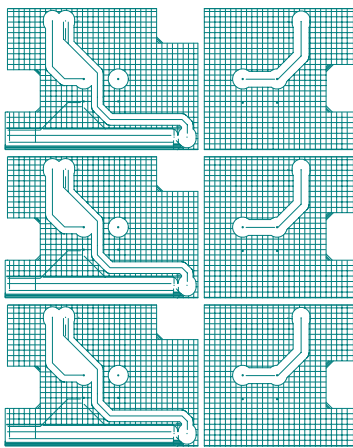
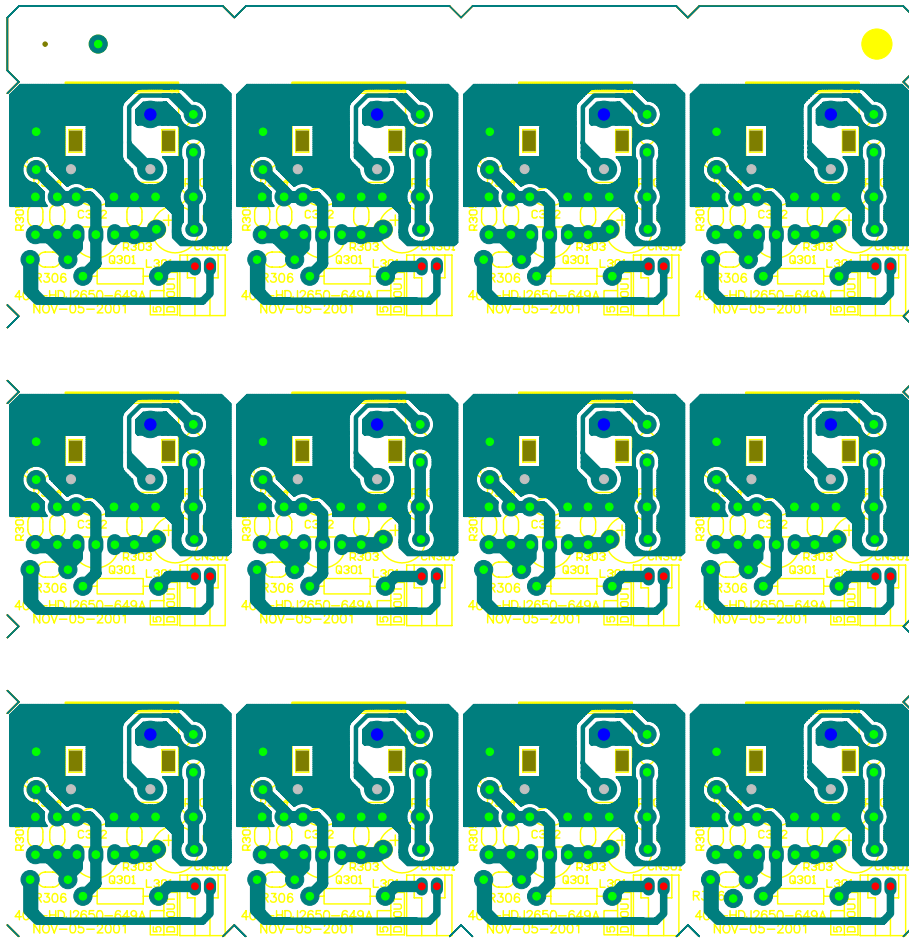


405-P2450-1460B  
CONTROL PCB

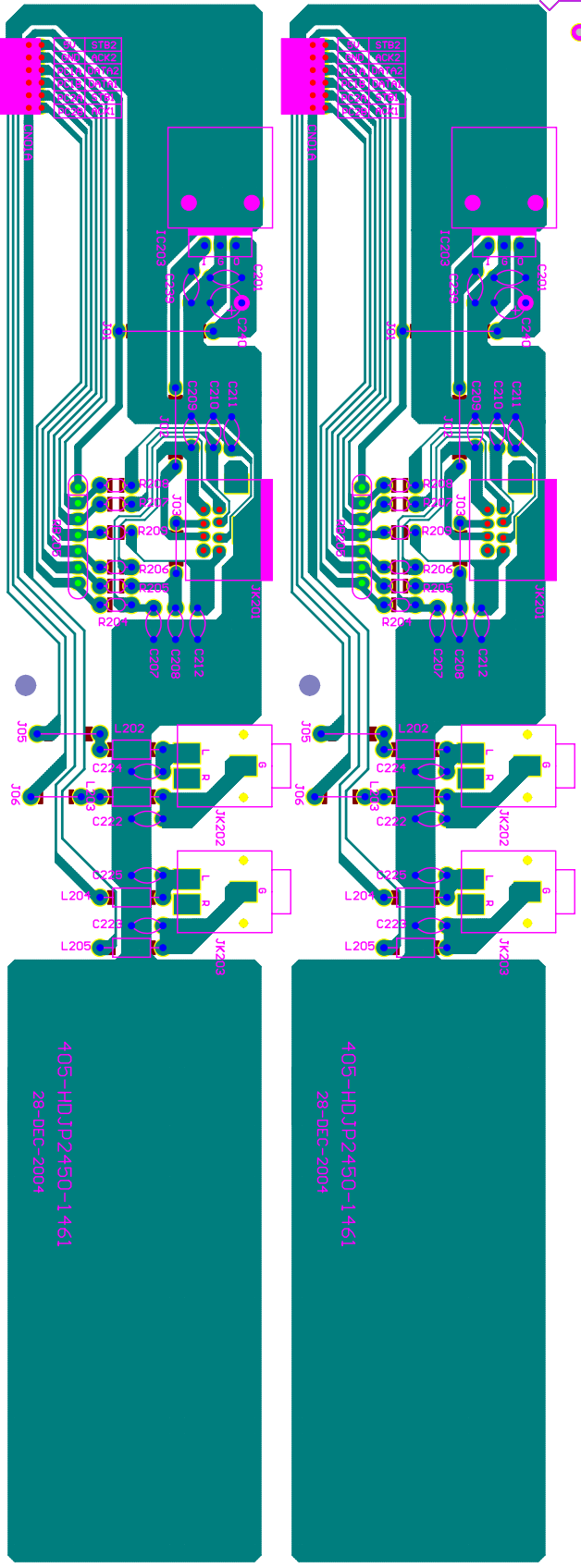




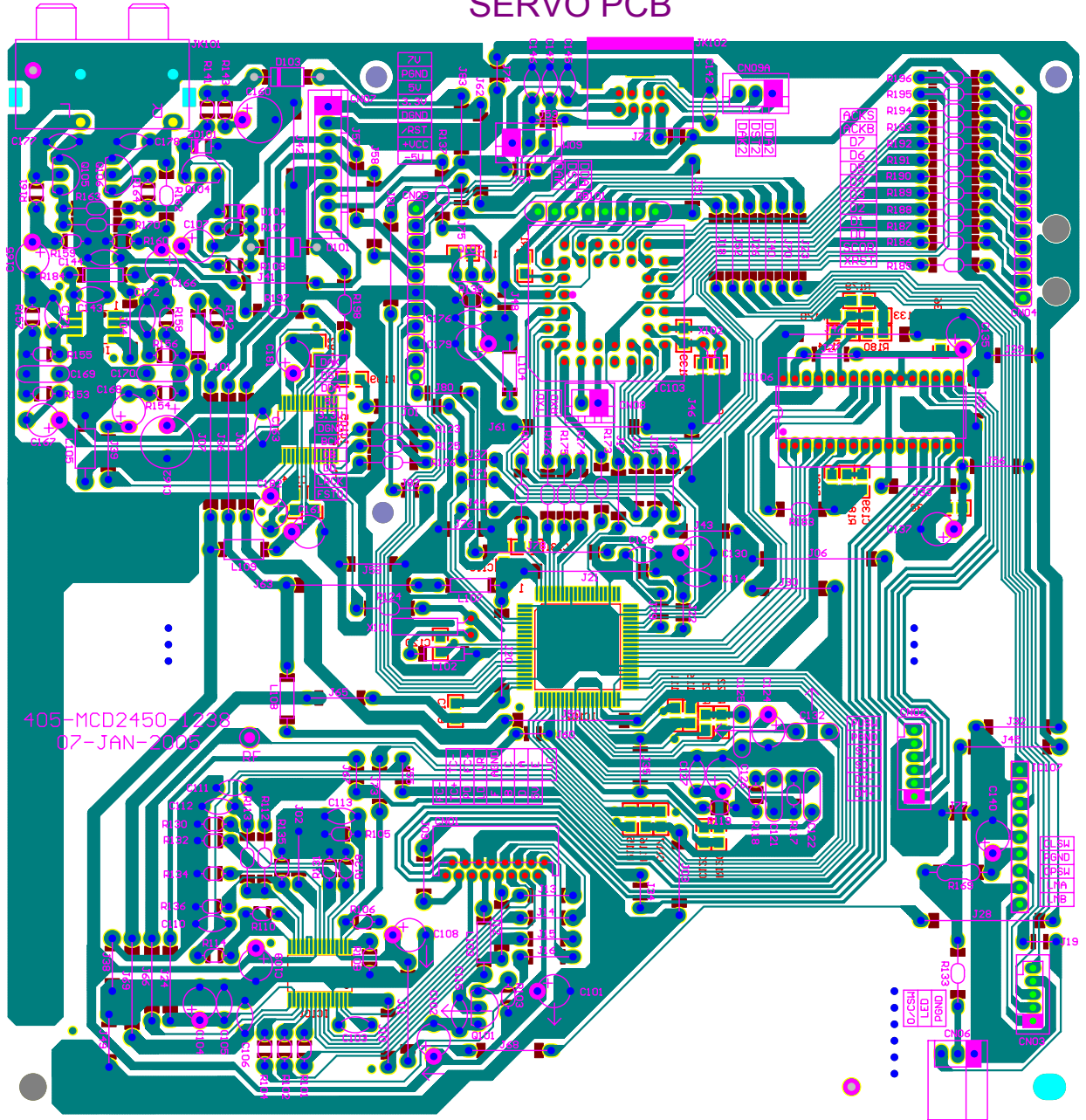
## 405-HDJ2650-649A/405-HDJ2100-332A □ DPOUT/SW PCB



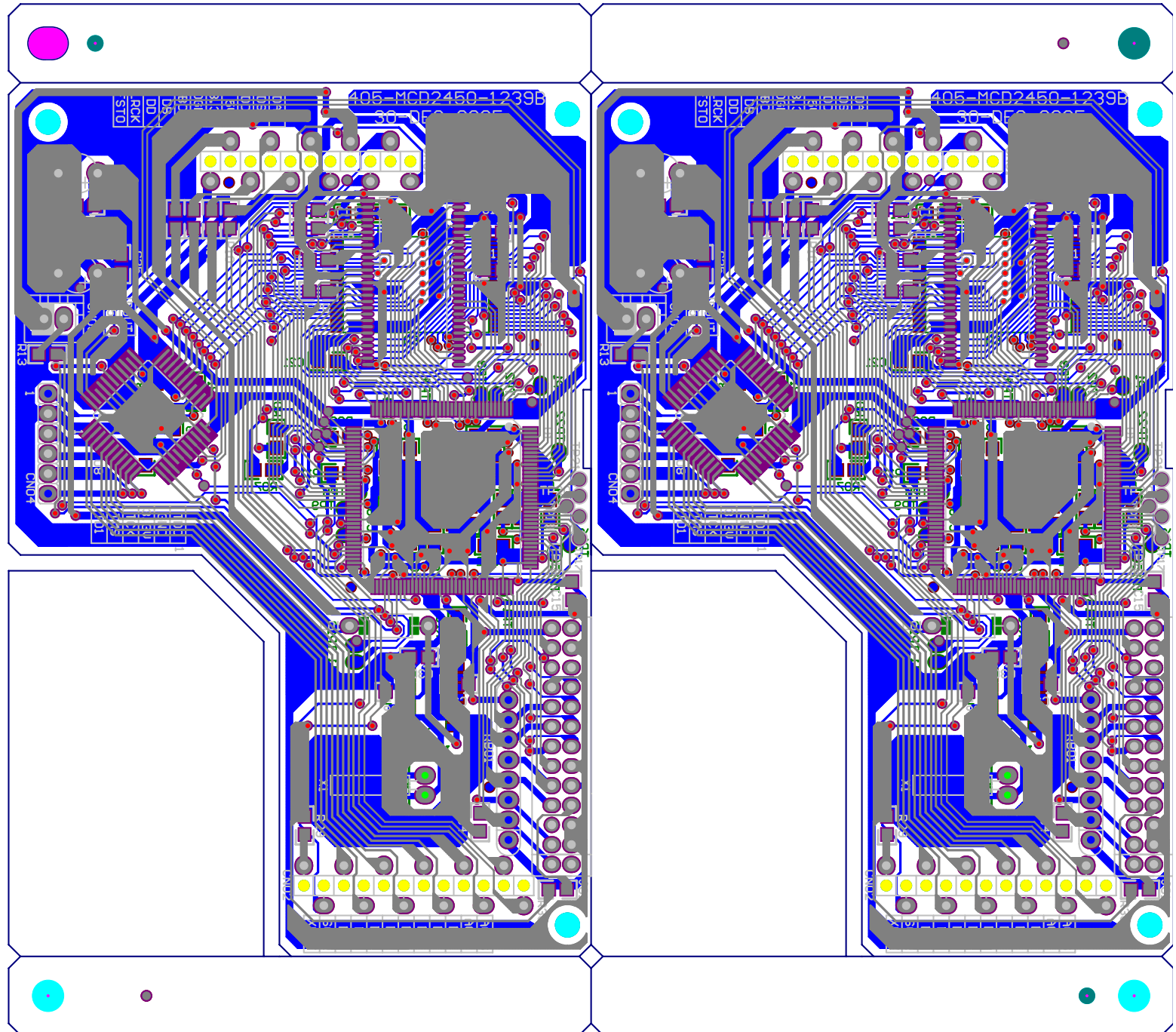
405-HDJ P2450-1461  
ADAPTOR PCB(BARE)



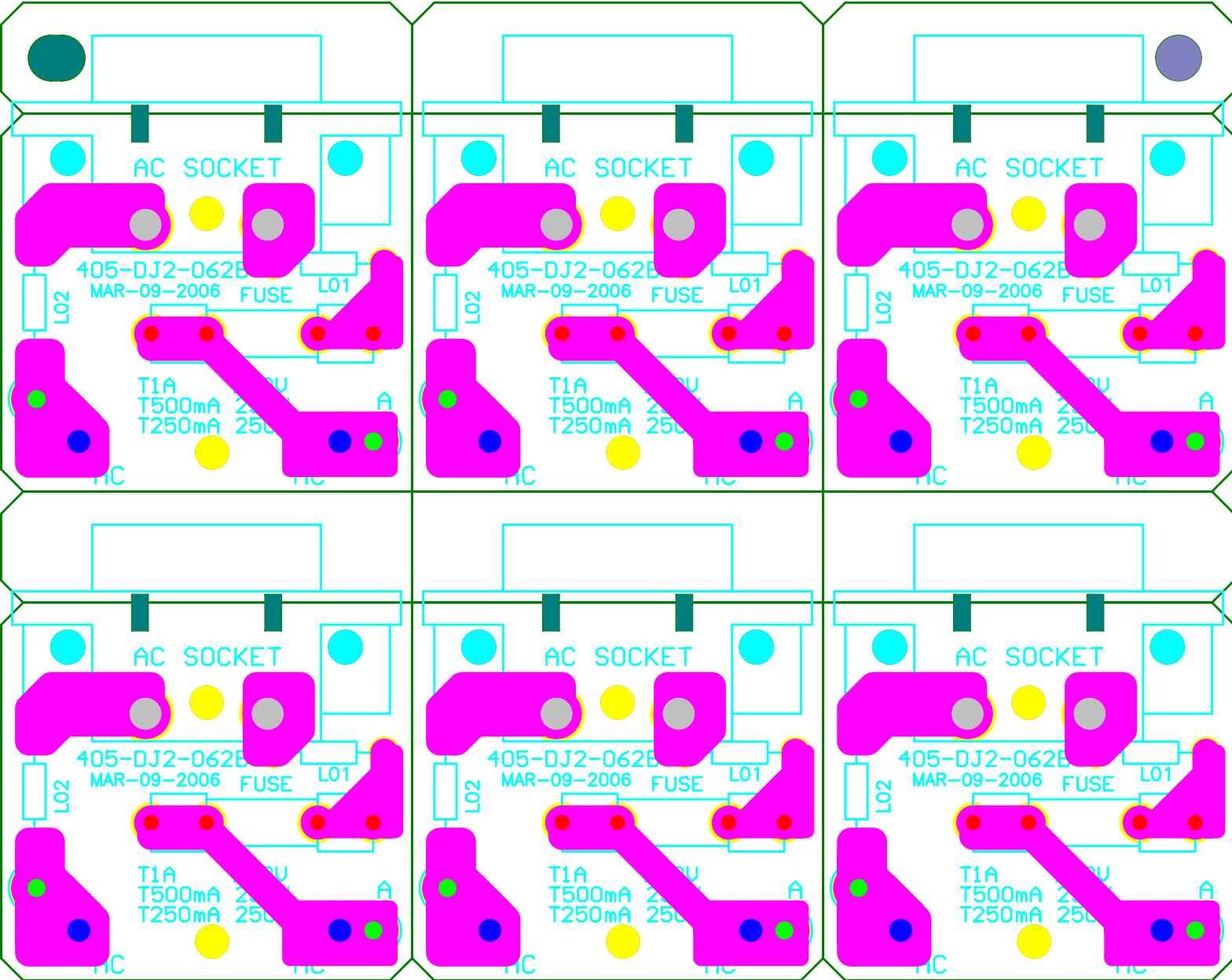
405-MCD2450-1238 □  
SERVO PCB



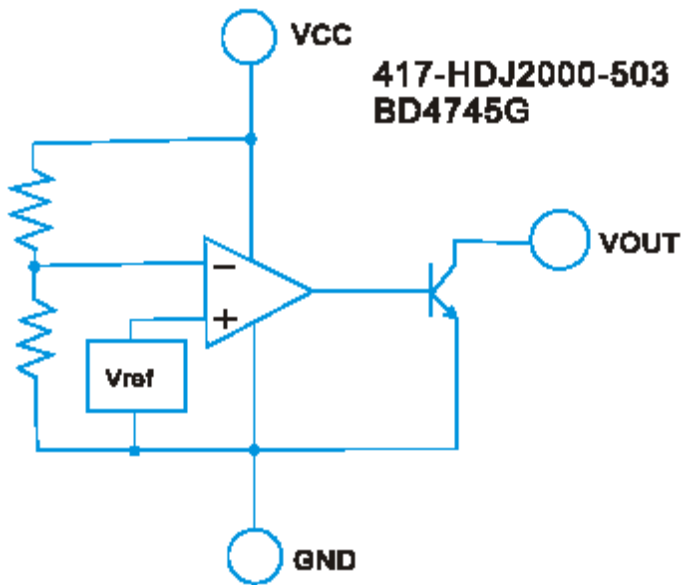
405-MCD2450-1239B □  
BUFFER PCB



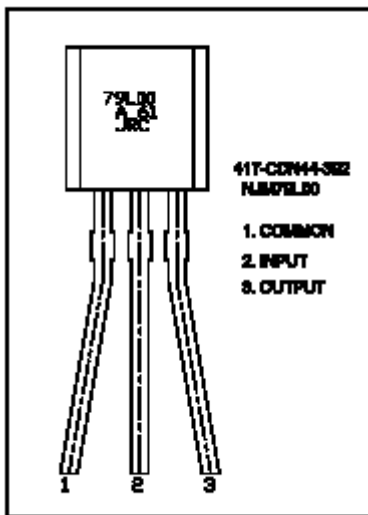
405-DJ2-062B  
AC JACK PCB



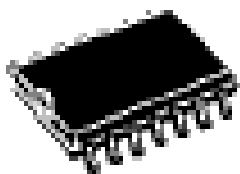
417-HDJ2000-503 IC(BD4745G/BD4745G-TR)



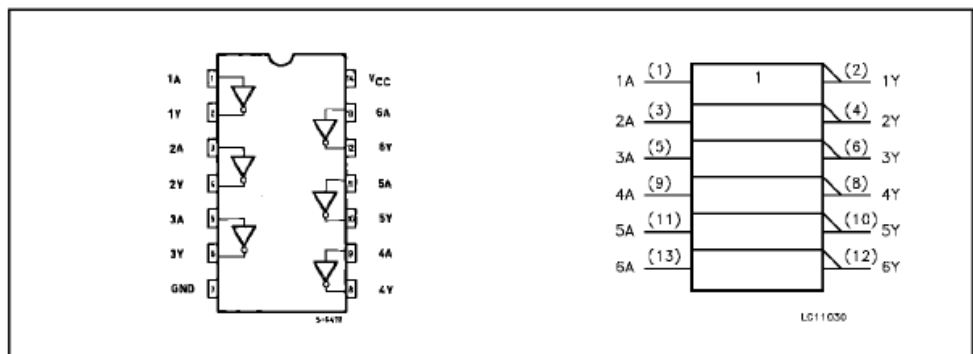
417-CDN44-392 IC(79L05A,TAPING,TO-92)



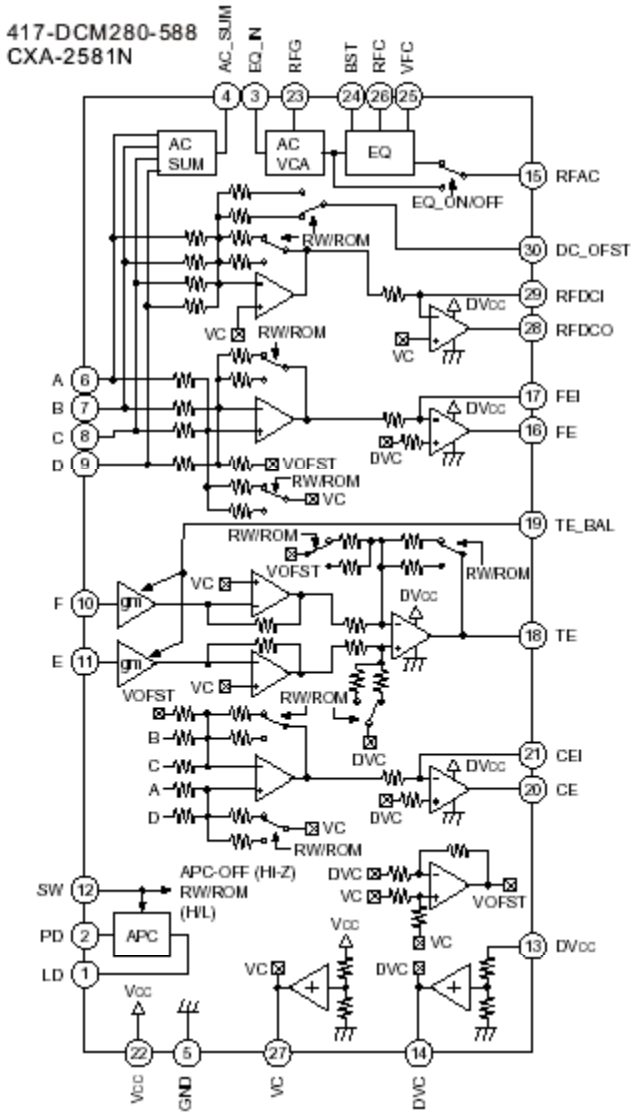
417-DCM370E3-378 IC(74HC04/74HC04DT,SOP-14)



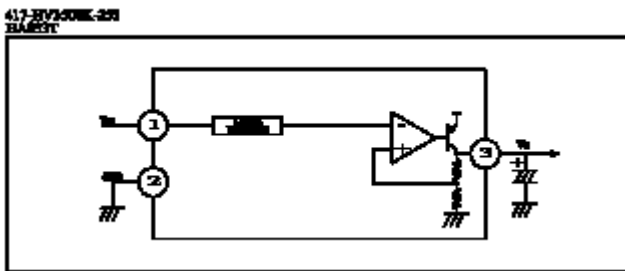
SOP



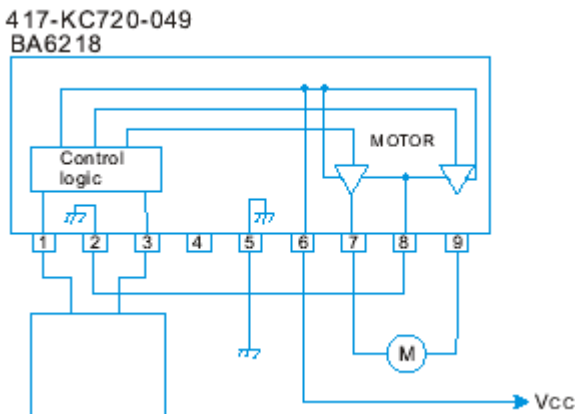
417-DCM280-588 IC(CXA-258IN,SSOP-30,SMD)



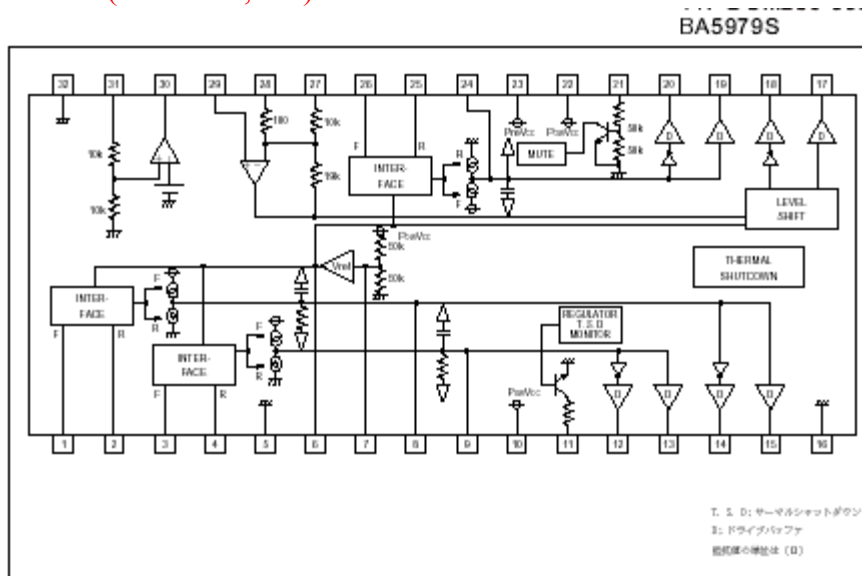
417-HV3500K-253 IC(BA033T/FP 3.3V TO220FP 3PIN)



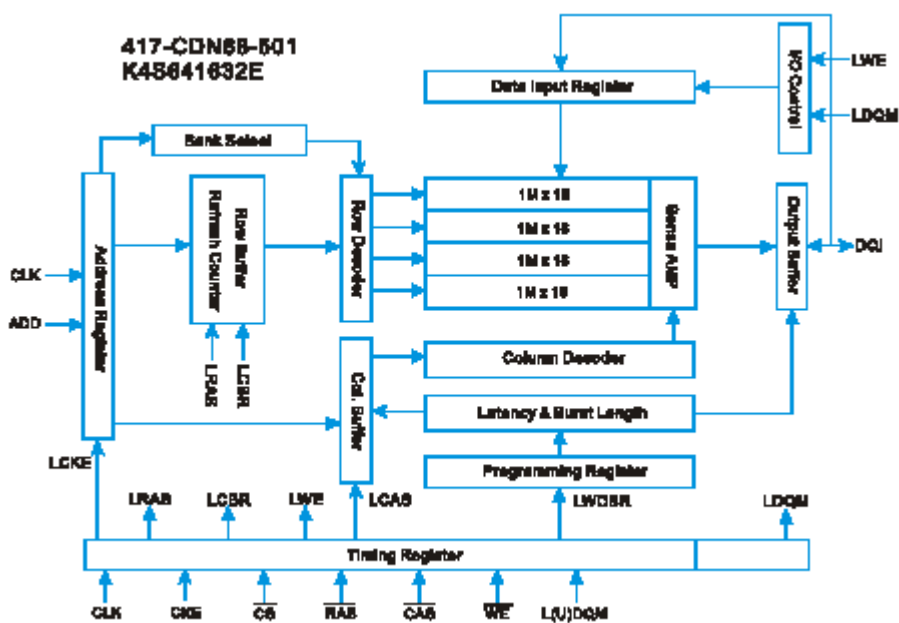
417-KC720-049 工作放大器(BA6218/BA6418N)



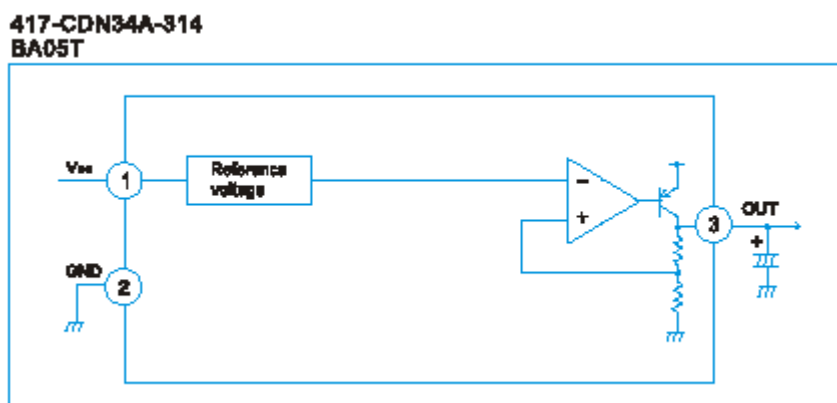
417-DCM280-596 IC(BA5979S,DIP)



417-CDN88-501 IC(K4S641632E-TC/75/K4S641632F,54PIN,TSOP)

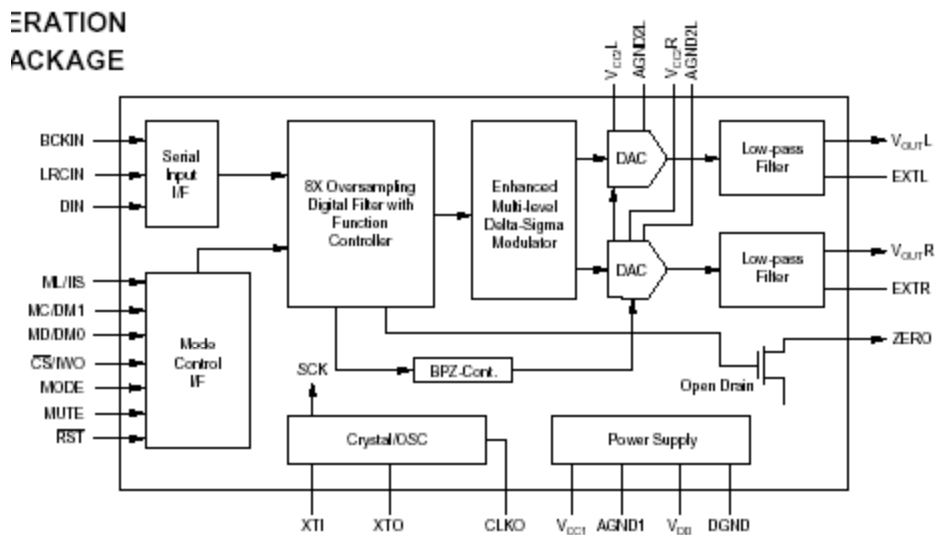


417-CDN34A-314 IC(BA05T,3PIN)

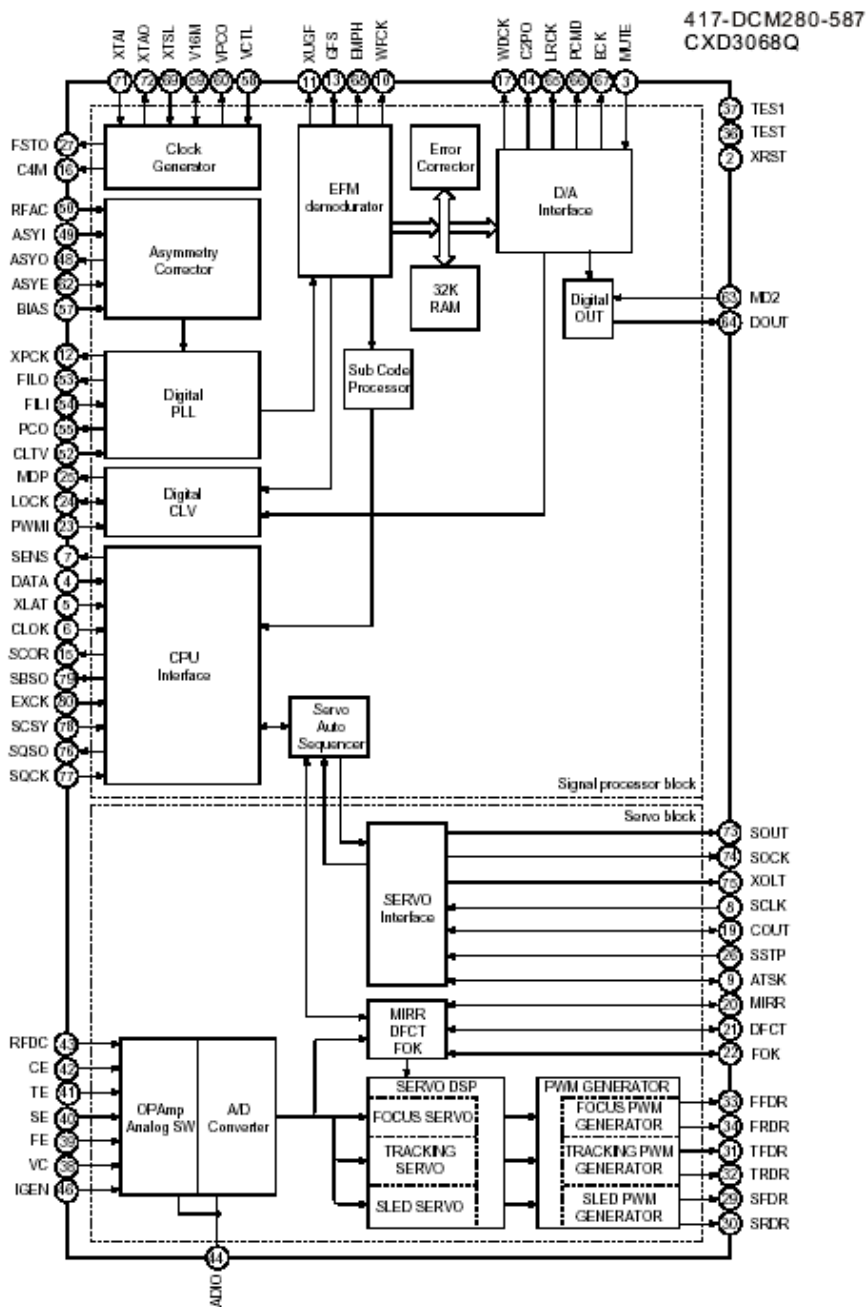




417-DCM270X-327A IC(PCM1716E,28PIN,SOP)



417-DCM280-587 IC(CXD3068Q,QFP-80,SMD)

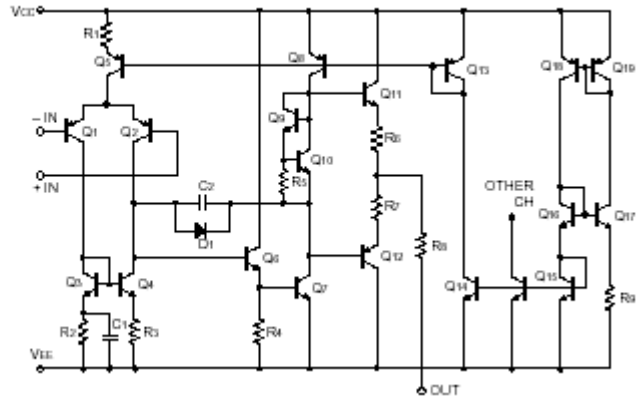
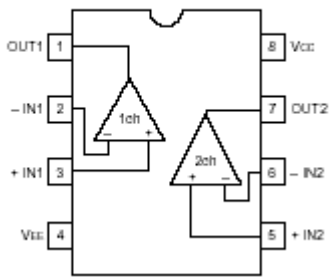


417-QMX2-167

IC(BA15218F/BA15218FE2,SOP-8)

● Internal circuit configuration

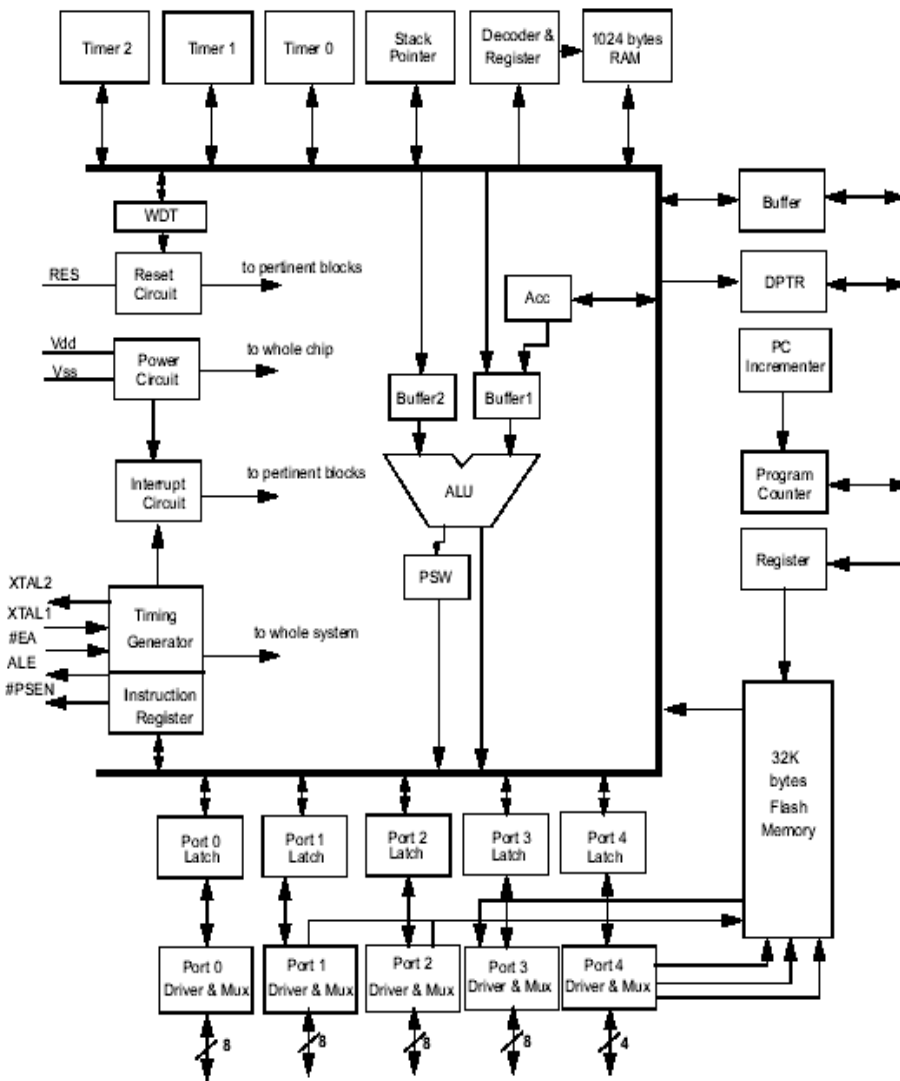
BA15218 / BA15218F



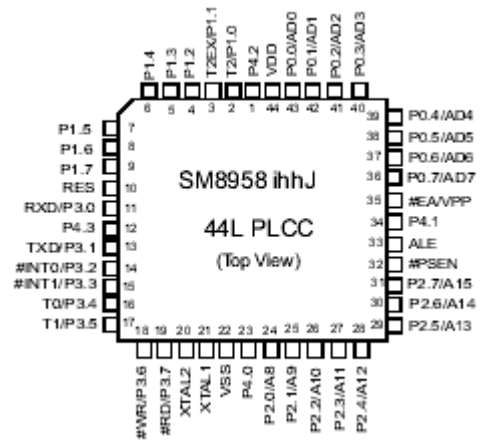
417-HDJ2450-693A

IC(SM8958AC25J PLCC-44)

Block Diagram



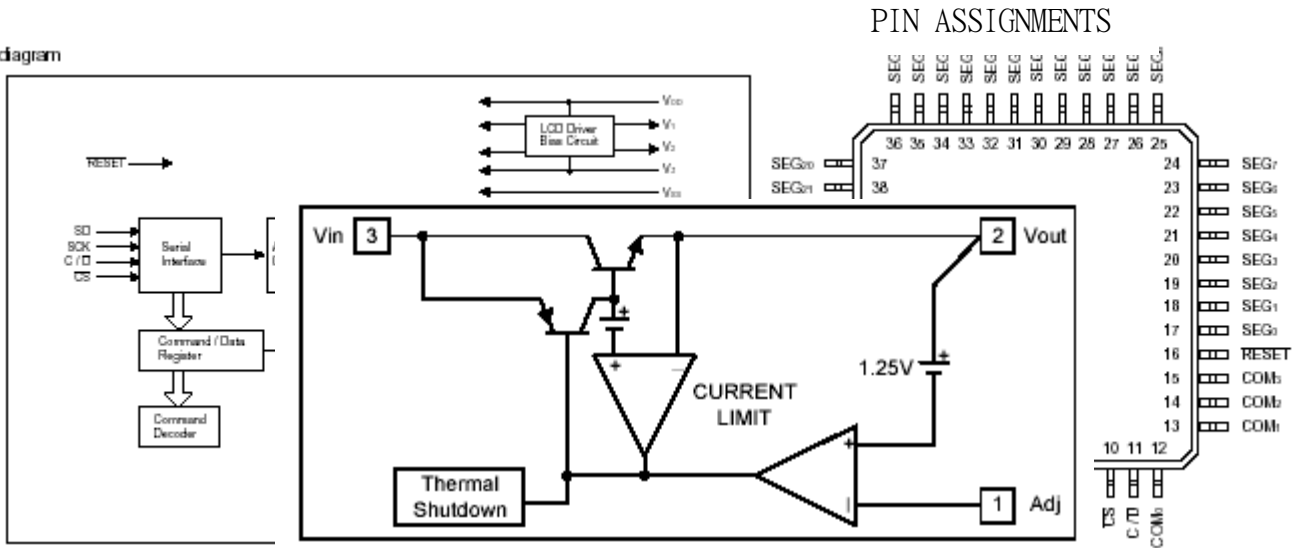
PIN ASSIGNMENTS



417-P22-741

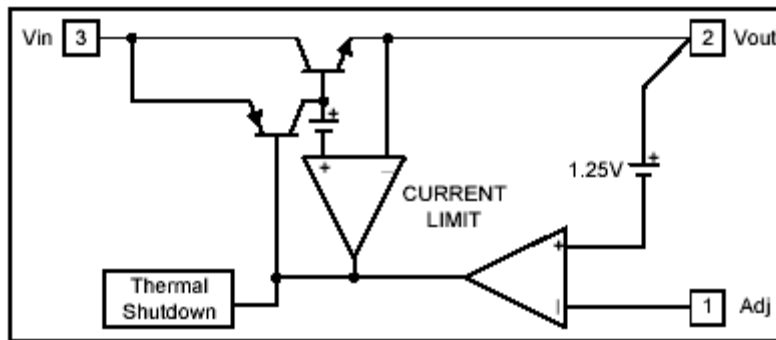
IC(BU9728AKV,SQFP-48)

•Block diagram

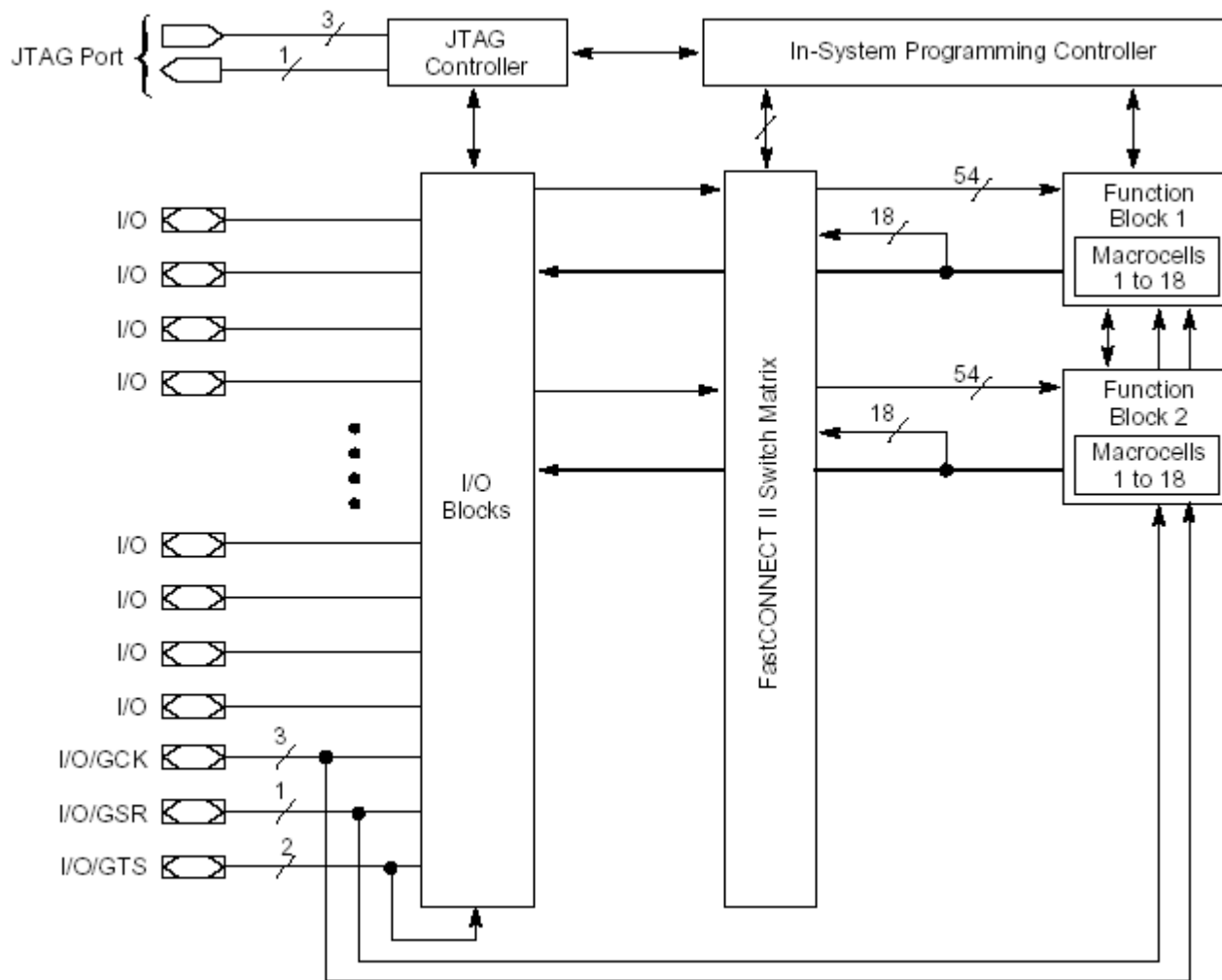


417-P22-734

AP1084-TL

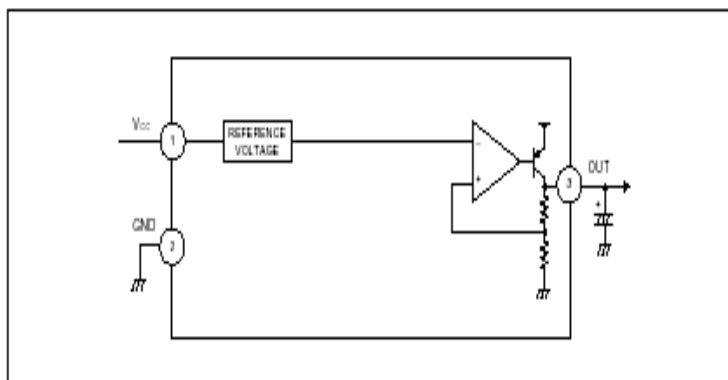


417-MCDS4-738 IC(XC9536XL-10VQ44C,SMD)

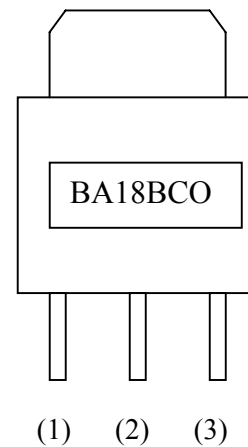


417-MCDS4-737 IC(BA18BCOFP-E2,SMD)

●Block diagram

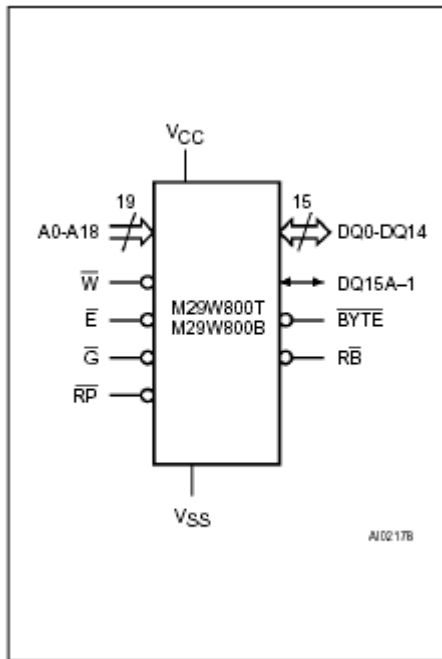


- (1) Vcc
- (2) GND
- (3) OUT

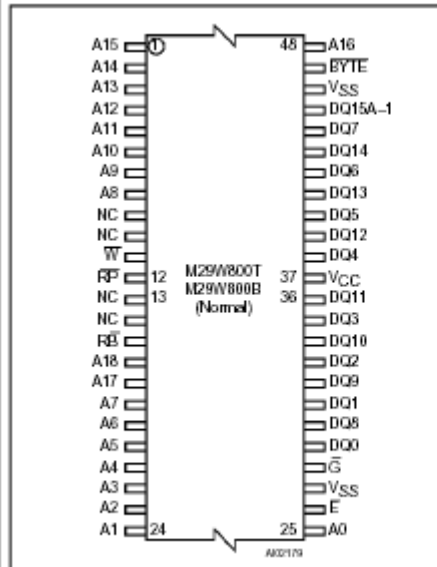


417-MCDS4-735

IC(M29W800B70N6.SMD)

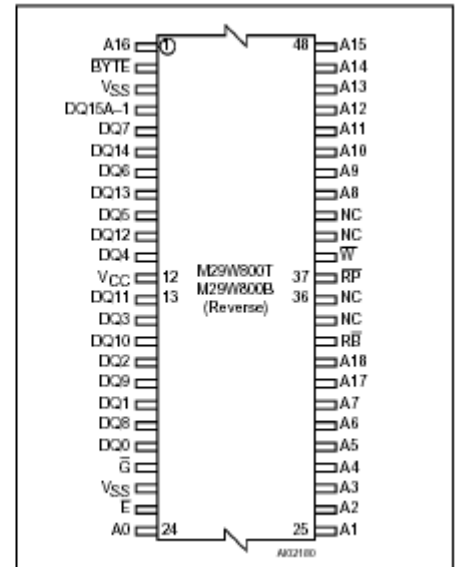


TSOP Pin Connections



Warning: NC - Not Connected.

TSOP Reverse Pin Connections



Warning: NC - Not Connected.

Table 1. Signal Names

A0-A18	Address Inputs
DQ0-DQ7	Data Input/Outputs, Command Inputs
DQ8-DQ14	Data Input/Outputs
DQ15A-1	Data Input/Output or Address Input
E-bar	Chip Enable
G-bar	Output Enable
W-bar	Write Enable
RP-bar	Reset / Block Temporary Unprotect
RB-bar	Ready/Busy Output
BYTE	Byte/Word Organisation
Vcc	Supply Voltage
Vss	Ground



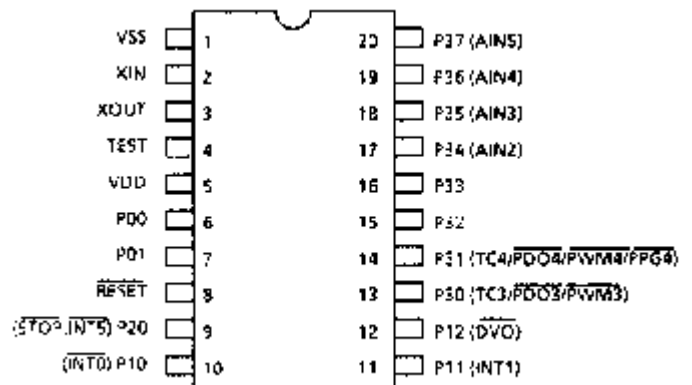
TSOP48 (N)  
12 x 20 mm

417-P22-733

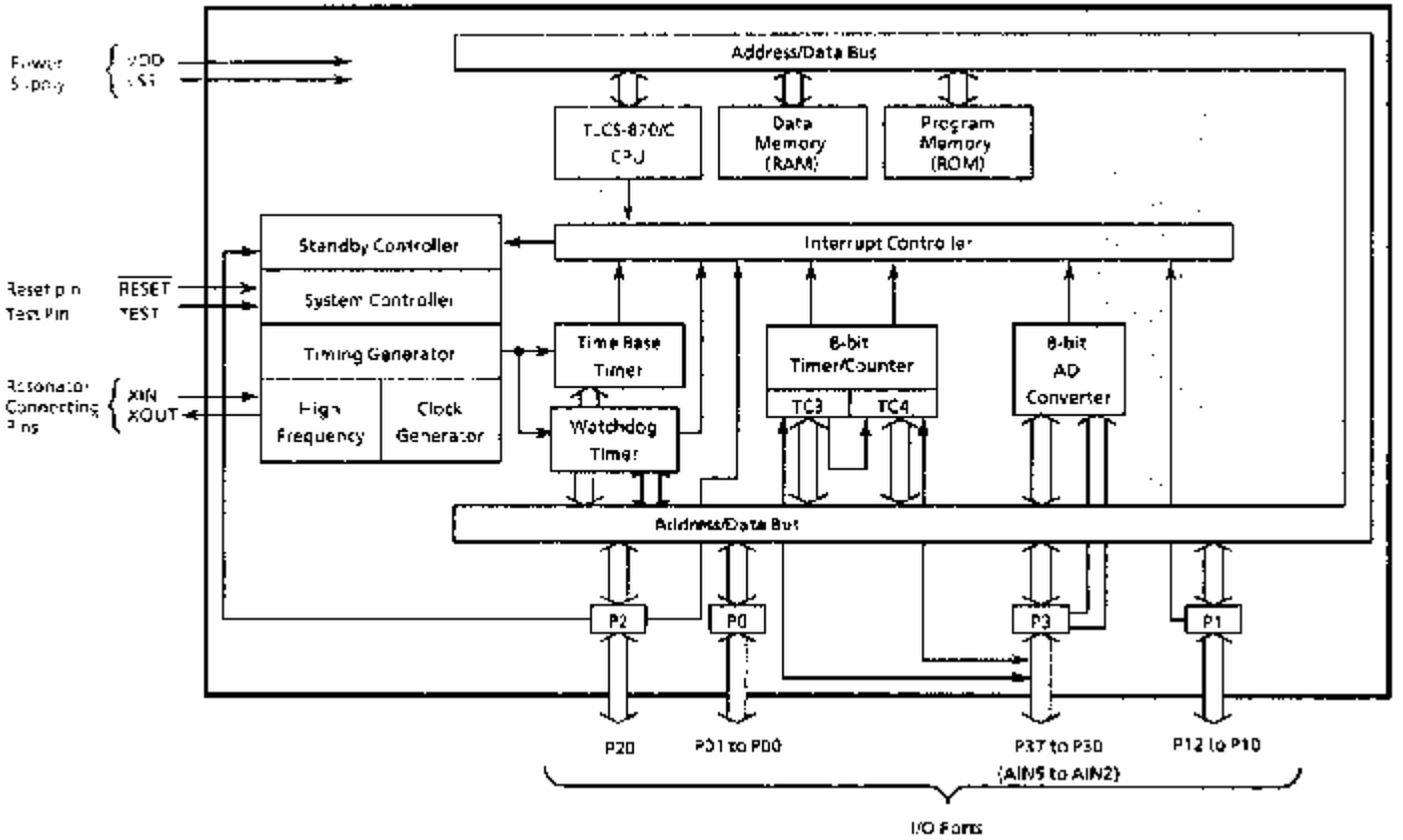
IC(TMP86P202M SOP20)

PIN ASSIGNMENTS

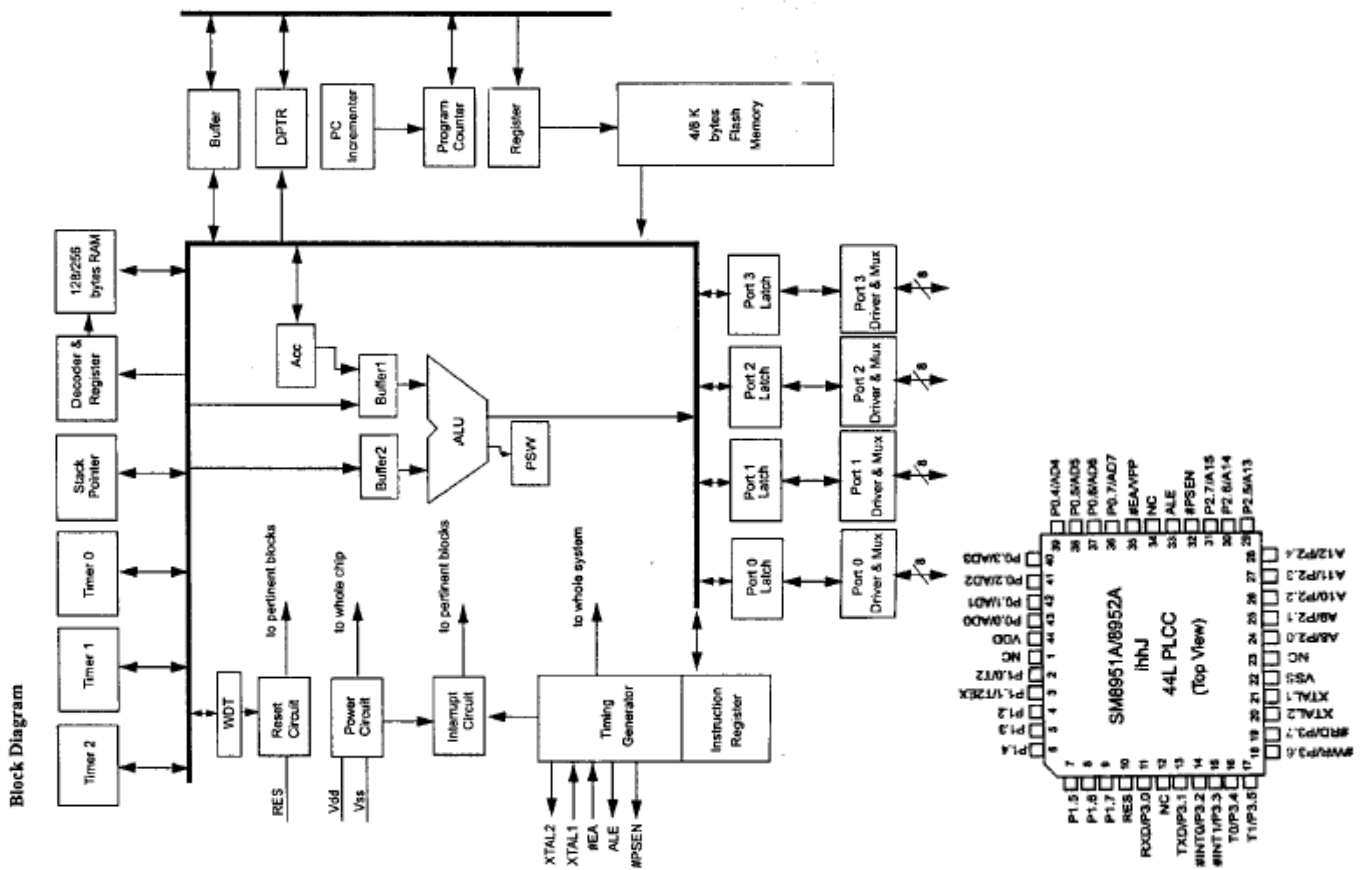
P-SOP20-300-1.27  
TMP86P202M  
(under Development)



Block Diagram

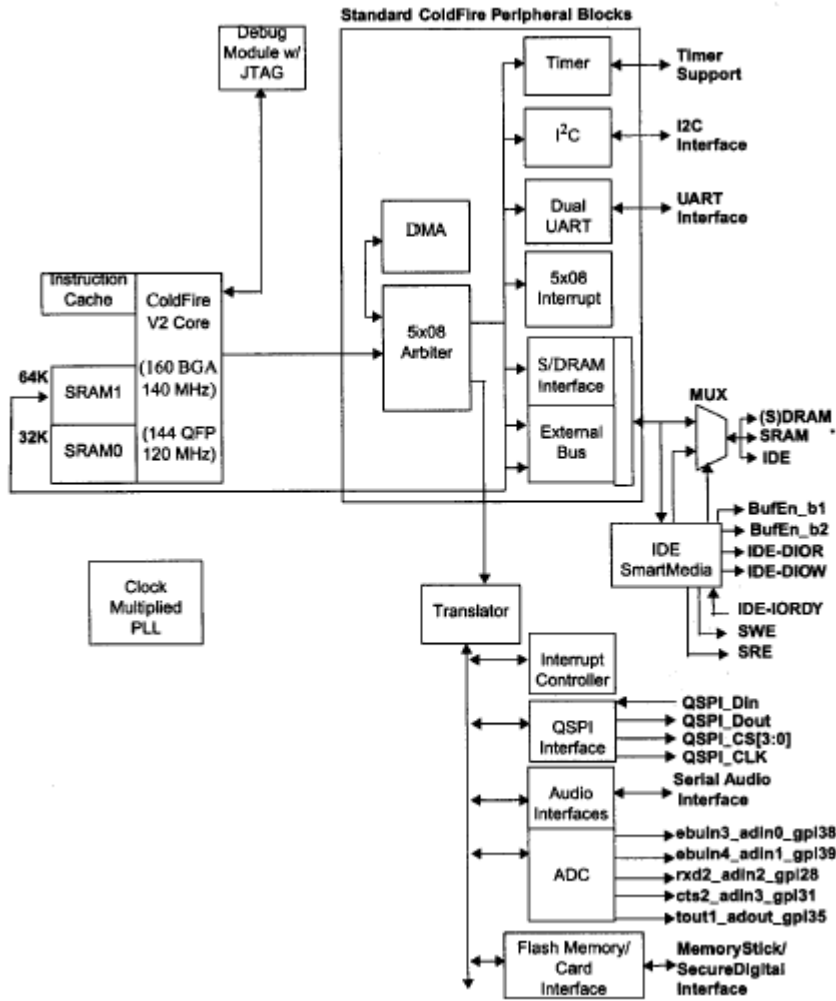


417-HDJ2450-693C IC(SM8952AC25J PLCC-44)



417-MCDS4-736

IC(SCF5249LPV120.SMD)



# 8-bit parallel-in/serial-out shift register

417-007USB-623

74LV165

## FEATURES

- Wide operating voltage: 1.0 to 5.5 V
- Optimized for low voltage applications: 1.0 to 3.6 V
- Accepts TTL input levels between  $V_{CC} = 2.7$  V and  $V_{CC} = 3.6$  V
- Typical  $V_{OLP}$  (output ground bounce)  $< 0.8$  V at  $V_{CC} = 3.3$  V,  $T_{amb} = 25^{\circ}\text{C}$
- Typical  $V_{OHV}$  (output  $V_{OH}$  undershoot)  $> 2$  V at  $V_{CC} = 3.3$  V,  $T_{amb} = 25^{\circ}\text{C}$
- Asynchronous 8-bit parallel load
- Synchronous serial input
- Output capability: standard
- $I_{CC}$  category: MSI

## DESCRIPTION

The 74LV165 is a low-voltage Si-gate CMOS device and is pin and function compatible with 74HC/HCT165.

The 74LV165 is an 8-bit parallel-load or serial-in shift register with complementary serial outputs ( $Q_7$  and  $\bar{Q}_7$ ) available from the last stage. When the parallel load ( $\bar{PL}$ ) input is LOW, parallel data from the  $D_0$  to  $D_7$  inputs are loaded into the register asynchronously. When  $\bar{PL}$  is HIGH, data enters the register serially at the  $D_S$  input and shifts one place to the right ( $Q_0 \rightarrow Q_1 \rightarrow Q_2$ , etc.) with each positive-going clock transition. This feature allows parallel-to-serial converter expansion by tying the  $Q_7$  output to the  $D_S$  input of the succeeding stage.

The clock input is a gated-OR structure which allows one input to be used as an active LOW clock enable ( $\bar{CE}$ ) input. The pin assignment for the CP and  $\bar{CE}$  inputs is arbitrary and can be reversed for layout convenience. The LOW-to-HIGH transition of input  $\bar{CE}$  should only take place while CP HIGH for predictable operation. Either the CP or the  $\bar{CE}$  should be HIGH before the LOW-to-HIGH transition of  $\bar{PL}$  to prevent shifting the data when  $\bar{PL}$  is activated.

## QUICK REFERENCE DATA

GND = 0 V;  $T_{amb} = 25^{\circ}\text{C}$ ;  $t_r = t_f \leq 2.5$  ns

SYMBOL	PARAMETER	CONDITIONS	TYPICAL	UNIT
$t_{PHL}/t_{PLH}$	Propagation delay $\bar{CE}$ , CP to $Q_7$ , $\bar{Q}_7$ PL to $Q_7$ , $\bar{Q}_7$ $D_7$ to $Q_7$ , $\bar{Q}_7$	$C_L = 15$ pF; $V_{CC} = 3.3$ V	18	ns
			18	
			14	
$f_{max}$	Maximum clock frequency		78	MHz
$C_I$	Input capacitance		3.5	pF
$C_{PD}$	Power dissipation capacitance per gate	$V_{CC} = 3.3$ V $V_I = \text{GND to } V_{CC}^1$	35	pF

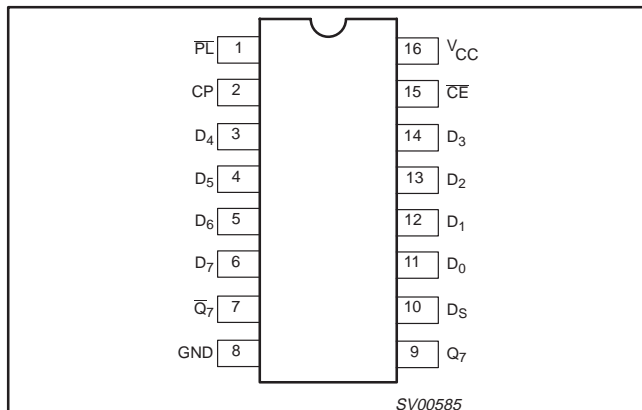
### NOTES:

1.  $C_{PD}$  is used to determine the dynamic power dissipation ( $P_D$  in  $\mu\text{W}$ )  
 $P_D = C_{PD} \times V_{CC}^2 \times f_i + \sum (C_L \times V_{CC}^2 \times f_o)$  where:  
 $f_i$  = input frequency in MHz;  $C_L$  = output load capacitance in pF;  
 $f_o$  = output frequency in MHz;  $V_{CC}$  = supply voltage in V;  
 $\sum (C_L \times V_{CC}^2 \times f_o)$  = sum of the outputs.

## ORDERING INFORMATION

PACKAGES	TEMPERATURE RANGE	OUTSIDE NORTH AMERICA	NORTH AMERICA	PKG. DWG. #
16-Pin Plastic DIL	$-40^{\circ}\text{C}$ to $+125^{\circ}\text{C}$	74LV165 N	74LV165 N	SOT38-4
16-Pin Plastic SO	$-40^{\circ}\text{C}$ to $+125^{\circ}\text{C}$	74LV165 D	74LV165 D	SOT109-1
16-Pin Plastic SSOP Type II	$-40^{\circ}\text{C}$ to $+125^{\circ}\text{C}$	74LV165 DB	74LV165 DB	SOT338-1
16-Pin Plastic TSSOP Type I	$-40^{\circ}\text{C}$ to $+125^{\circ}\text{C}$	74LV165 PW	74LV165PW DH	SOT403-1

## PIN CONFIGURATION



## PIN DESCRIPTION

PIN NUMBER	SYMBOL	FUNCTION
1	$\bar{PL}$	Asynchronous parallel load input (active LOW)
2	CP	Clock input (LOW to HIGH, edge-triggered)
7	$\bar{Q}_7$	Complementary output from the last stage
8	GND	Ground (0 V)
9	$Q_7$	Serial output from last stage
10	$D_S$	Serial data input
11, 12, 13, 14, 3, 4, 5, 6	$D_0$ to $D_7$	Parallel data inputs
15	$\bar{CE}$	Clock enable input (active LOW)
16	$V_{CC}$	Positive supply voltage



## *Trouble Shooting*

SYMPTOM	POSSIBLE CAUSE	CORRECTION ACTION
Device dose not react when switching on	Connection to main disrupted	Check AC plug and AC connection
Player does not start operation	CD is badly positioned or dirty	Reposition CD with label atop or clean with a dry and soft cloth
No sound	Check the mixer and amplifier connections inappropriate	Possibly exchange connections
Does not read properly	The device is exposed to vibrations	Place the device on a more stable stand, rack etc.
Does not read the program	The player is in normal playback mode	Press the Play-Pause button and re-program
Pop noise	Mixer and amplifier connections inappropriate	Check cable and jack quantity