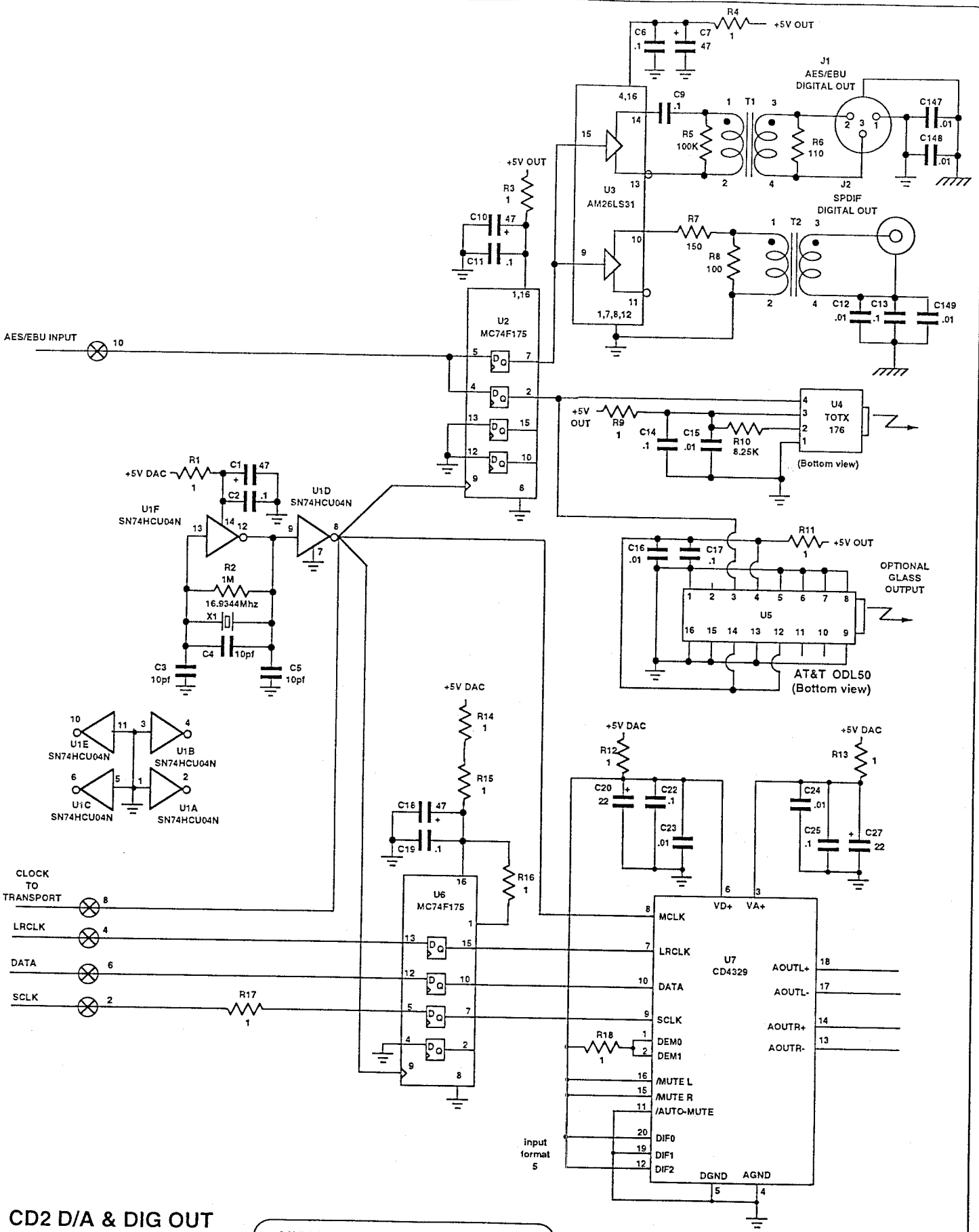


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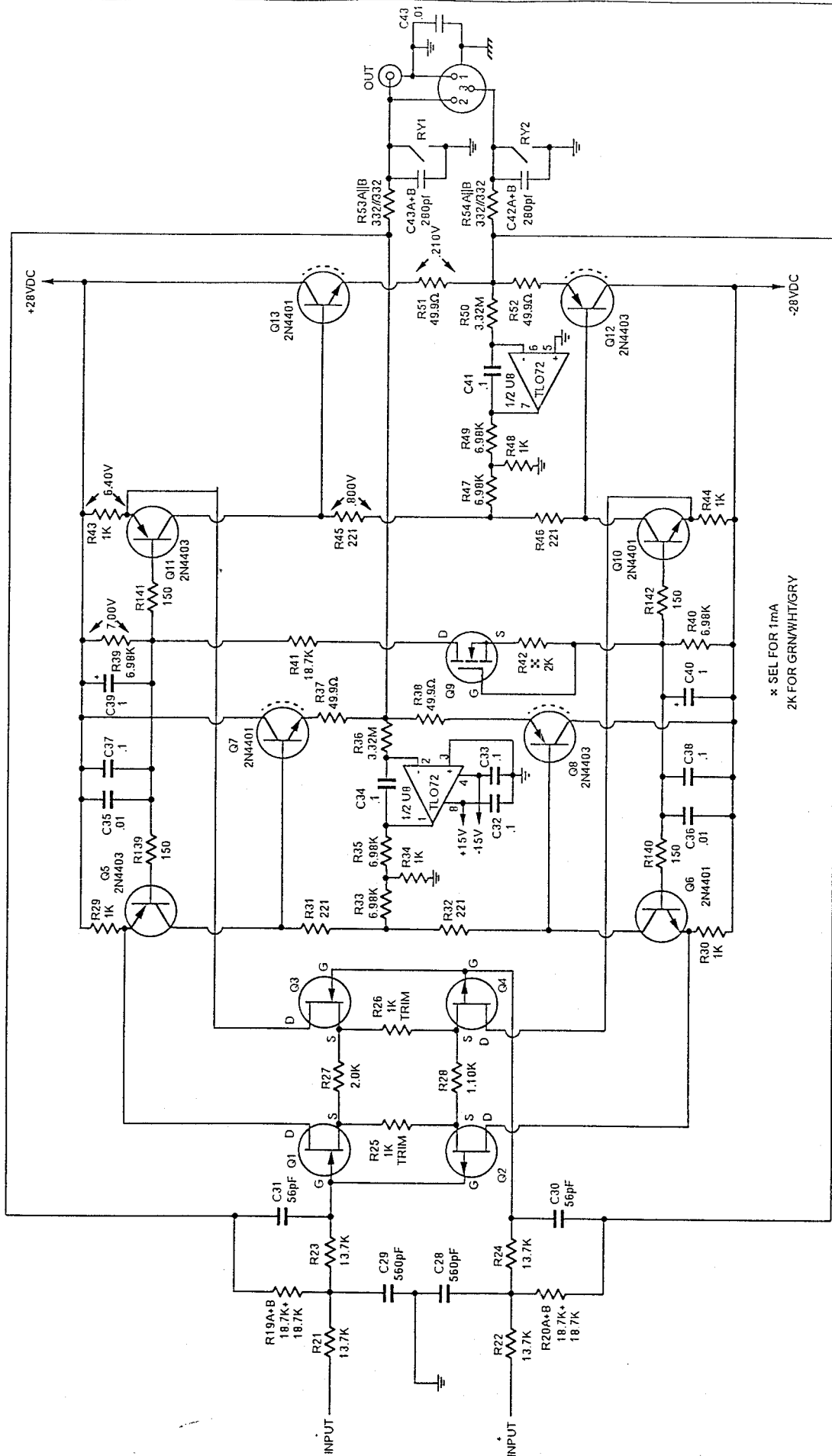
CD2 SCHEMATIC



CD2 D/A & DIG OUT
 REV 2
 Page 1 of 5
 11-21-96

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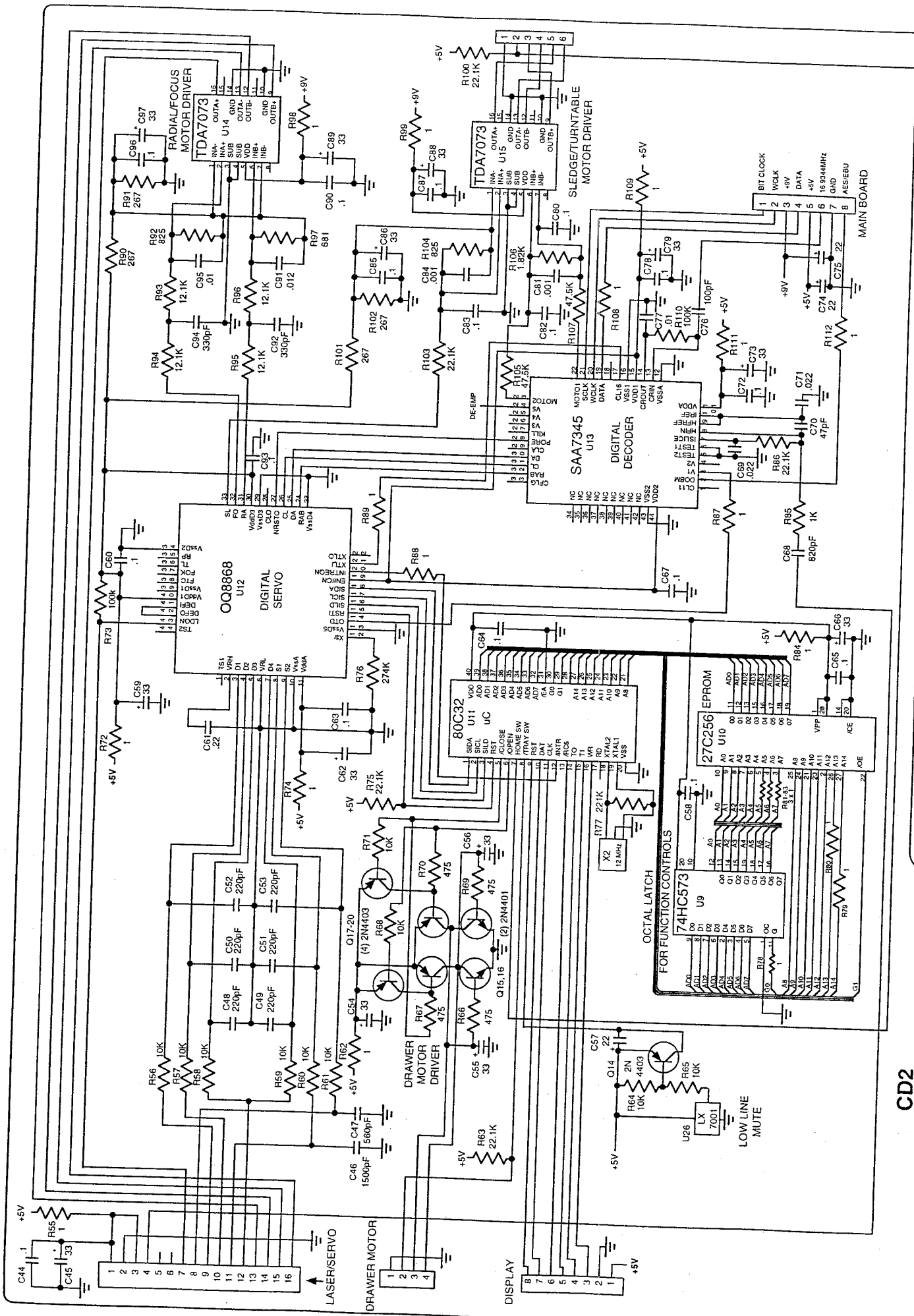
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CD2 AUDIO
REV 2
PAGE 2 OF 5
10-15-96

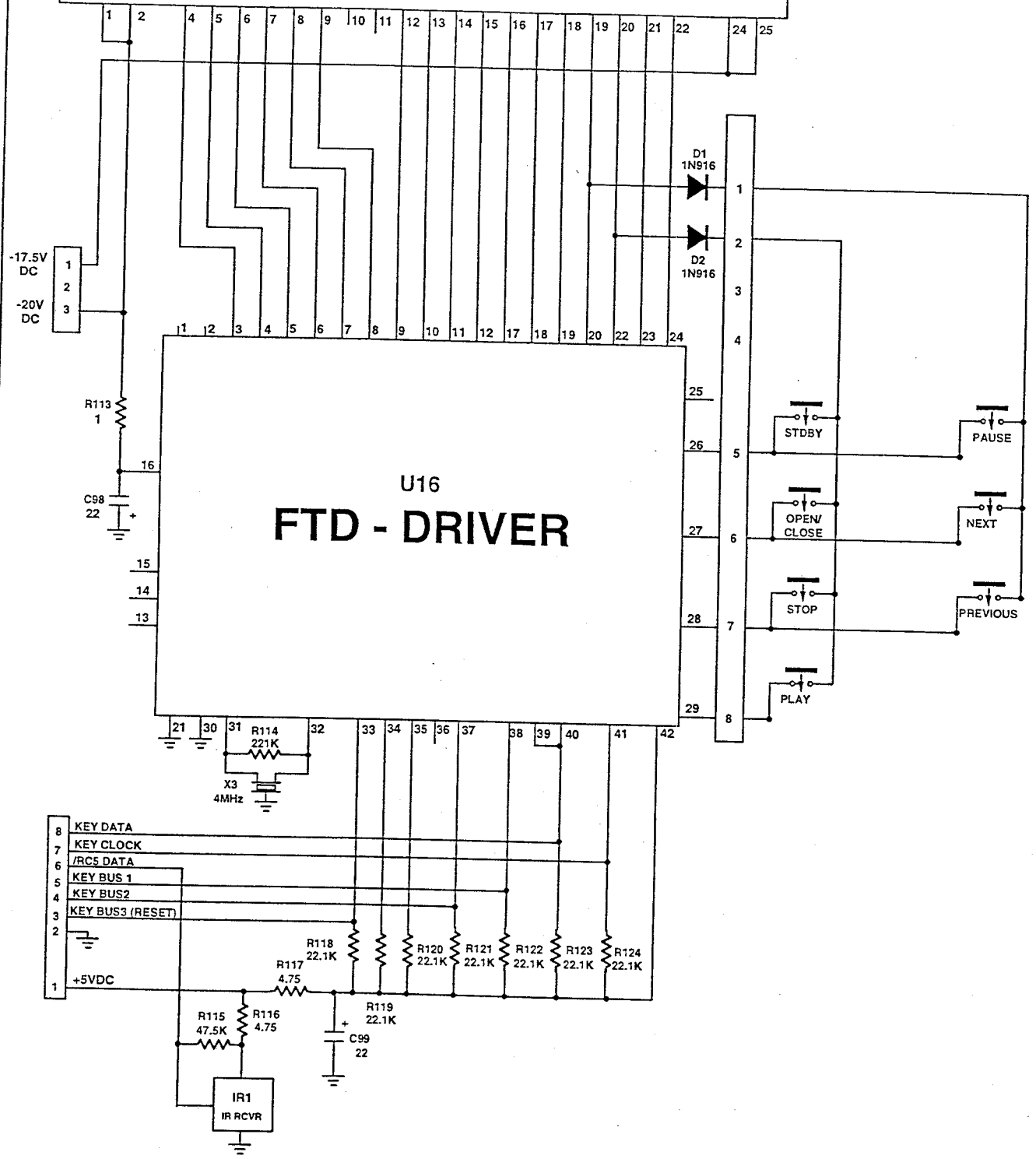


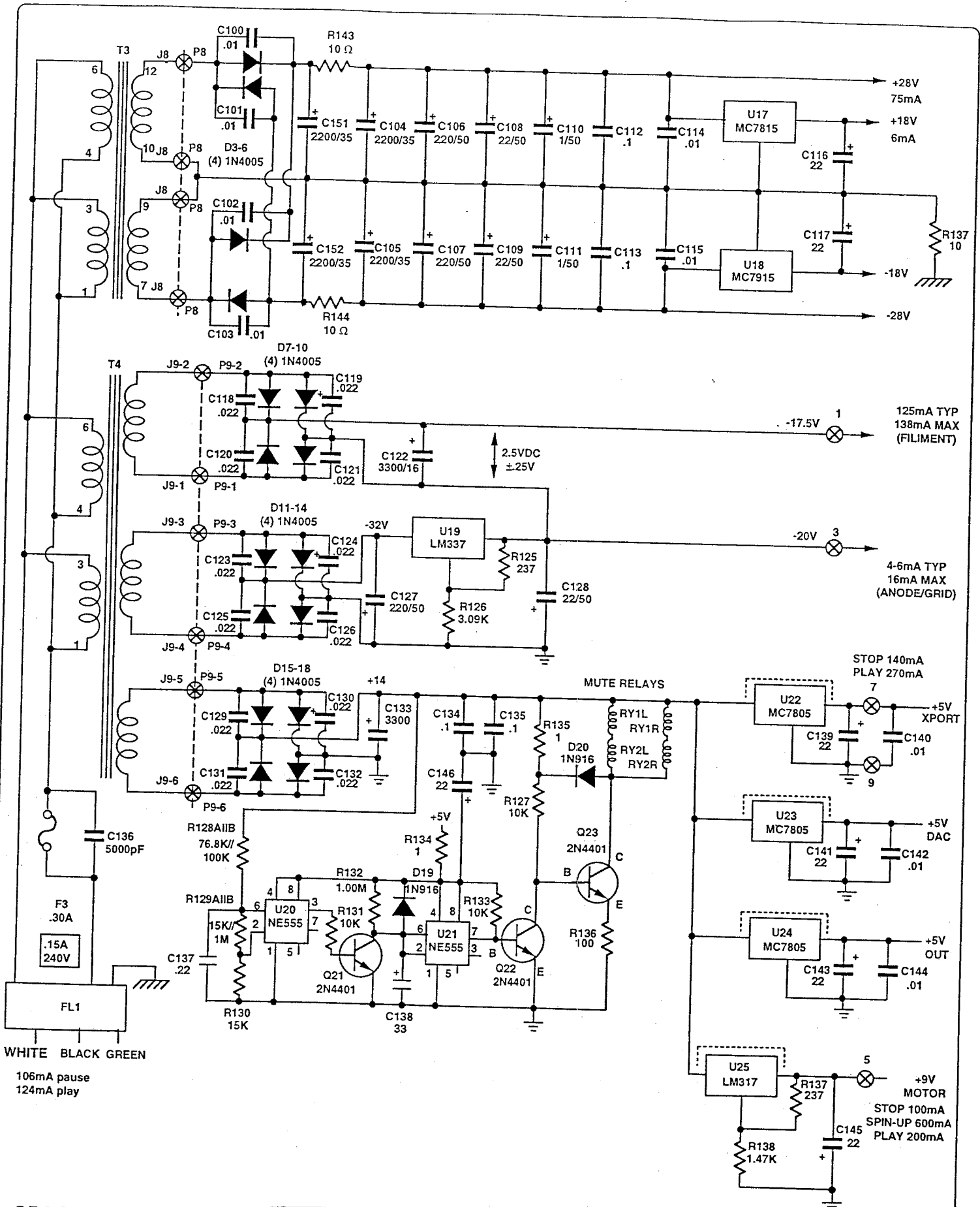
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**CD2
 TRANSPORT**
 Page 3 of 5
 11-21-96

FTD1 FLORESCENT TUBE DISPLAY





CD2 MAIN BOARD P.S.

Revision 5
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11-21-96

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WHITE BLACK GREEN
106mA pause
124mA play

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CD2 PARTS LIST

PRODUCT: CD2

NOTES: REV. 8

Schematic Symbol	Quantity	ARC Part #	Description
C CAPACITORS			
C1,7,10,18	4	50470701	CAP., 47 μ F 35V \pm 20%
C2,6,9,11,13,14,17,19,44,58,60,63,64	20	52100500	CAP., 0.1 μ f 100V \pm 20%
C 65,67,72,78,80,82,83,85			
C3,4,5	3	52100100	CAP., 10pf 200V \pm 10% CER. RAD.
C12,15,16,43,77,95,100-103,140,142	17	52100400	CAP., .01 μ f 200V \pm 10%
C 144,147,148,149			
C20,27,57,74,75,108,109,116,117,128	15	50220702	CAP., 22 μ F 50V "LYTIC"
C 139,141,143,145,146			
C22,25,32,33,34,37,38,41,112,113	16	53100506	CAP., 0.1 μ f \pm 10% 160V
C23,24,35,36,114,115	8	53100410	CAP., .01 μ f \pm 10% 400V
C28,29,42A,42B,43A,43B,	12	53560201	CAP., 560pf \pm 2.5% 630V
C30,31	4	53560103	CAP., 56pf \pm 2.5% 630V PPN
C39,40,110,111	6	50100601	CAP., 1 μ F 50V "LYTIC"
C45,54,55,56,59,62,66,73,79,86,88,89	13	50330701	CAP., 33 μ F 16V
C 97			
C46	1	52150300	CAP., 1500pf 200V \pm 10%
C47	1	52560200	CAP., 560pf 200V \pm 10% CER RAD
C48-53	6	52220200	CAP., 220pf 200V \pm 10%
C61	1	52220500	CAP., .22pF CERAMIC
C68	1	52820200	CAP., 820pF CERAMIC
C69,71,118-121,123-126,129-132	14	52220401	CAP., .022 μ F 200V \pm 10% CER RAD
C70	1	52470100	CAP., 47pf 200V \pm 10% CER RAD
C76	1	52100200	CAP., 100pf 200V \pm 10%
C81,84	2	52100301	CAP., 1000pf 200V \pm 10% CER RAD
C91	1	52120400	CAP., .012pF CERAMIC
C92,94	2	52330200	CAP., 330pf 200V \pm 10%
C98,99	2	50220703	CAP., 22 μ F 35V AXIAL
C104,105,151,152	4	50220903	CAP., 2200 μ F 35V ELECTROLYTIC
C106,107,127	3	50220801	CAP., 220 μ F 50V
C122,133	2	50330901	CAP., 3300 μ F 16V
C136	1	52500300	CAP., .005 μ F 300VAC/2000V \pm 20%
C137	1	53220507	CAP., .22 μ f \pm 10% 160V
C138	1	51330702	CAP., 33 μ f 16V \pm 10%
D DIODES			
D1,2,19,20	4	30500910	1N916B
D3-18	16	30500400	IN4005
F FUSES			
F1	1	34500121	FUSE, .3 AMP MDQ BUSSMAN
FL LINE FILTERS			
FL1	1	59000002	LINE FILTER, DAC5

PARTS LIST

As of APR 30 97

PRODUCT: CD2

Schematic Symbol	Quantity	ARC Part #	Description
FTD DISPLAYS			
FTD1	1	33000300	DISPLAY, CD2 6BT165GK
IR IR RECEIVERS			
IR1	1	34100300	RECEIVER, IR MODULE GP1U581X
J CONNECTORS			
J1,4	3	23201982	INSERT, CONNECTOR GOLD PIN
J2	1	23202200	CONNECTOR, BNC #227161-3
J3A	1	23201509	JACK, CHASSIS RED
J3B	1	23201510	JACK, CHASSIS WHITE
Q TRANSISTORS			
Q1,3	4	30006535	FET, WHITE ORANGE GREEN
Q2,4	4	30006425	FET, GRAY, GRAY, DOT
Q5,8,11,12,14,17-20	13	30002900	TRANSISTOR, 2N4403
Q6,7,10,13,15,16,21-23	13	30002800	TRANSISTOR, 2N4401
Q9	2	30011018	FET, GREEN/WHITE/GRAY
R RESISTORS			
R1,3,4,9,11-18,55,62,72,74,78-84,87-89	30	42100002	RES., 1 Ω MK-2 1% 50 PPM
R 98,99,108,109,111-113			
R2,129B,132	3	42100602	RES., 1 MEG MK2 1% 50PPM
R5,73,110,128B	4	42100502	RES., 100K Ω MK-2 1% 50PPM
R6	1	42110202	RES., 110 Ω MK-2 1% 50 PPM
R7,139,140,141,142	9	42150202	RES., 150 Ω MK-2 1% 50PPM
R8,136	2	42100202	RES., 100 Ω MK-2 1% 50 PPM
R10	1	42825302	RES., 8.25K Ω MK-2 1% 50 PPM
R19A,19B,20A,20B,41	10	42187402	RES., 18.7K Ω MK2 1% 50PPM
R21,22,23,24	8	42137402	RES., 13.7K Ω MK-2 1% 50PPM
R25,26,29,30,34,43,44,48,85	17	42100302	RES., 1K Ω MK-2 1% 50 PPM
R27,42	4	42200302	RES., 2K Ω MK-2 1% 50PPM
R28	2	42110302	RES., 1.1K Ω MK-2 1% 50PPM
R31,32,45,46	8	42221202	RES., 221 Ω MK-2 1% 50PPM
R33,35,39,40,47,49	12	42698302	RES., 6.98K Ω MK-2 1% 50 PPM
R36,50	4	42332602	RES., 3.32 MEG MK-2 1% 50PPM
R37,38,51,52	8	42499102	RES., 49.9 Ω MK-2 1% 50PPM
R53A,53B,54A,54B	8	42332202	RES., 332 Ω MK-2 1% 50PPM
R56-61,64,65,68,71,127,131,133	13	42100402	RES., 10K Ω MK-2 1% 50 PPM
R63,75,86,100,103,118-124	12	42221402	RES., 22.1K Ω MK-2 1% 50 PPM
R66,67,69,70	4	42475202	RES., 475 Ω MK-2 1% 50 PPM
R76	1	42274502	RES., 274K Ω MK-2 1% 50PPM
R77,114	2	42221502	RES., 221K Ω MK-2 1% 50 PPM
R87,90,93,96,134,135	7	52100500	CAP., 0.1 μ f 100V \pm 20%
R92,104	2	42825202	RES., 825 Ω MK-2 1% 50PPM
R93-96	4	42121402	RES., 12.1K Ω MK2 1% 50PPM
R97	1	42681202	RES., 681 Ω MK-2 1% 50PPM
R105,107,115	3	42475402	RES., 47.5K Ω MK-2 1% 50 PPM
R106	1	42182302	RES., 1.82K Ω MK-2 1% 50 PPM
R116,117	2	42475002	RES., 4.75 Ω MK-2 1% 50 PPM

PARTS LIST

As of APR 30 97

PRODUCT: CD2

Schematic Symbol	Quantity	ARC Part #	Description
R125,137	2	42237202	RES., 237Ω MK-2 1% 50PPM
R128A	1	42768402	RES., 76.8KΩ MK-2 1% 50PPM
R129A,130	2	42150402	RES., 15.0KΩ MK-2 1% 50 PPM
R134,135	5	42100002	RES., 1Ω MK-2 1% 50 PPM
R137,143,144	3	42100102	RES., 10Ω MK-2 1% 50 PPM
R138	1	42147302	RES., 1.47KΩ MK-2 1% 50PPM
RC1	1	14005290	REMOTE CONTROL, CD2 ENCO
RY			RELAYS
RY1,2	4	64101010	RELAY, 5 VDC 500Ω COIL
SW			SWITCHES
SW1-7	7	24200900	SWITCH, CD2 SS3984
T			TRANSFORMERS
T1,2	2	60010300	XFR., CDT1/CD1/DAC2
T3	1	60014414	XFR., CD2 T1 ANALOG
T4	1	60014314	XFR., CD2 T2 DIGITAL
U			INTEGRATED CIRCUITS
U1	1	31003310	SN74HCU04N
U2,6	2	31005620	CLOCK DRIVER, HIGH SPEED QUAD
U3	1	31005700	LINE DRIVER, AM26LS31PC
U4	1	34100010	MODULE, TRANSM. FIBER OPTIC
U7	1	31007620	DAC 20 PIN DIP
U8	2	31001910	TLO72CP
U9	1	31006810	74HC573AN
U10	1	31008800	I.C., EPROM 27C256 CD2
U11	1	31008700	I.C., MICROCONTROLLER 80C32
U12	1	31008500	I.C., DIGITAL SERVO CD2
U13	1	31008600	I.C., DECODER CD2 SAA7345GP/MS
U14,15	2	31008900	I.C., POWER DRIVER TDA7073AT
U16	1	31006210	I.C., VF DRIVER TMP47C212
U17	1	31002000	MC7815CT
U18	1	31002700	REGULATOR, VOLTAGE 15V. NEG.
U19	1	31004700	REGULATOR, VOLTAGE ADJ. NEG.
U20,21	2	31000800	TIMER, NE555N
U22,23,24	3	31002910	REGULATOR, IC 5V
U25	1	31004000	REGULATOR, VOLTAGE ADJ POS.
U26	1	31008400	LX7001CLP, LINFINITY
X			CRYSTALS
X1	1	27000010	CRYSTAL, 16.9344Mhz
X2	1	27000400	RESONATOR, 12mhz CERAMIC
X3	1	27000200	RESONATOR, 4Mhz #EFO-GC4004A4

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CD2 PROBLEM DIAGNOSIS AND REPAIR

Please refer to diagram #1, of the CD2 digital circuit board. This is attached to the underside of the transport mechanism. Locate the wire bundle that includes a larger gray shielded wire pair. One end attaches to this board, the other end plugs into the main board to the right of the 4 heat sinks.

Cut any tie wraps near the end of the bundle that goes underneath the transport. With unit on and playing a CD, gently move or tug on this gray wire to see if audio output stops, or the display reads ERR, skips or shuts off. If any of the above symptoms occur, the ground crimp and/or other crimps that attach the bundle to the soldered-in connector are faulty.

Remove the loading tray by pushing out the tray until it stops. Located in the extreme left rear of the tray is the D shaped opening. Use a small flat blade screwdriver to release the tray stop by gently prying it inward toward the transport spindle as you pull out the tray.

With the tray removed you will see holes in the transport frame front left and front right corners and also a center rear hole. Use a Philips #1 screwdriver to remove the three screws at the bottom of the three holes to release the transport from the CD2 chassis.

Refer to diagram #2. Carefully unplug the two connectors from the transport to the display board and the one connector from the transport to the main board. Do not pull out plugs by the wires. Rock connectors to release.

With the transport now fully removed from the CD2, invert it and locate the 6 Philips screws that secure the digital board to the transport. Remove these. Also unplug the two connectors on the bottom edge of the board. Gently lift the digital board up by the front edge about two inches to expose the flat ribbon cable that connects the laser assembly to the digital board.

Refer to diagram #3. Unlock the ribbon cable from the digital board by prying the two retaining tabs in the direction of the ribbon cable to release the edge connector.

Again, referring to diagram #1, locate the 8 wire digital cable bundle soldered to the component side of the digital board. This cable bundle is distinguished by a red wire at one end and a larger gray shielded wire pair.

Mark the wires using a pen or tape in order in the connector from one end so they can

be correctly re-attached to the circuit board later. Note that the braid shield is the 7th wire if you use the red wire as #1. It is critical that the wires not be interchanged as player malfunction or damage will occur.

After all wires are marked for location, use a side cutter to cut off the 8 wires flush with the black connector. Desolder the connector from the digital board and remove. Note that it is easier to remove the connector and avoid pulling out the circuit board plate-thru foils if you first cut the connector into segments using a side cutter to separate each connector barb so it may be desoldered and remove individually. Clear plate-thru holes.

Strip about 1/8" inch from the ends of the 7 insulated wires (the braid shield will need to be twisted tightly to fit into the hole). Tin each end. Resolder wires to digital board in order of removal. Note that the 7 insulated wires except the ground braid must make connection to foil paths on the component side of the digital board, so it is better to solder them in from this side as each wire is inserted. The ground braid must make connection to the solder side of the digital board, so solder it to the pad on the solder side after insertion from the component side.

Clean flux from connections and inspect for integrity and ensure that no strands touch other wires.

Reassemble in reverse order of disassembly. Test play operation by gently moving digital wire bundle while unit operates. No malfunction should occur.

Should you experience difficulty, contact Audio Research field service between 8am and 4pm M-F, central time.

Happy Listening.

Best regards,

AUDIO RESEARCH CORPORATION



Chris Ossanna
Field Service Department

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DIAGRAM 1

COMPONENT SIDE CD2 DIGITAL PWB

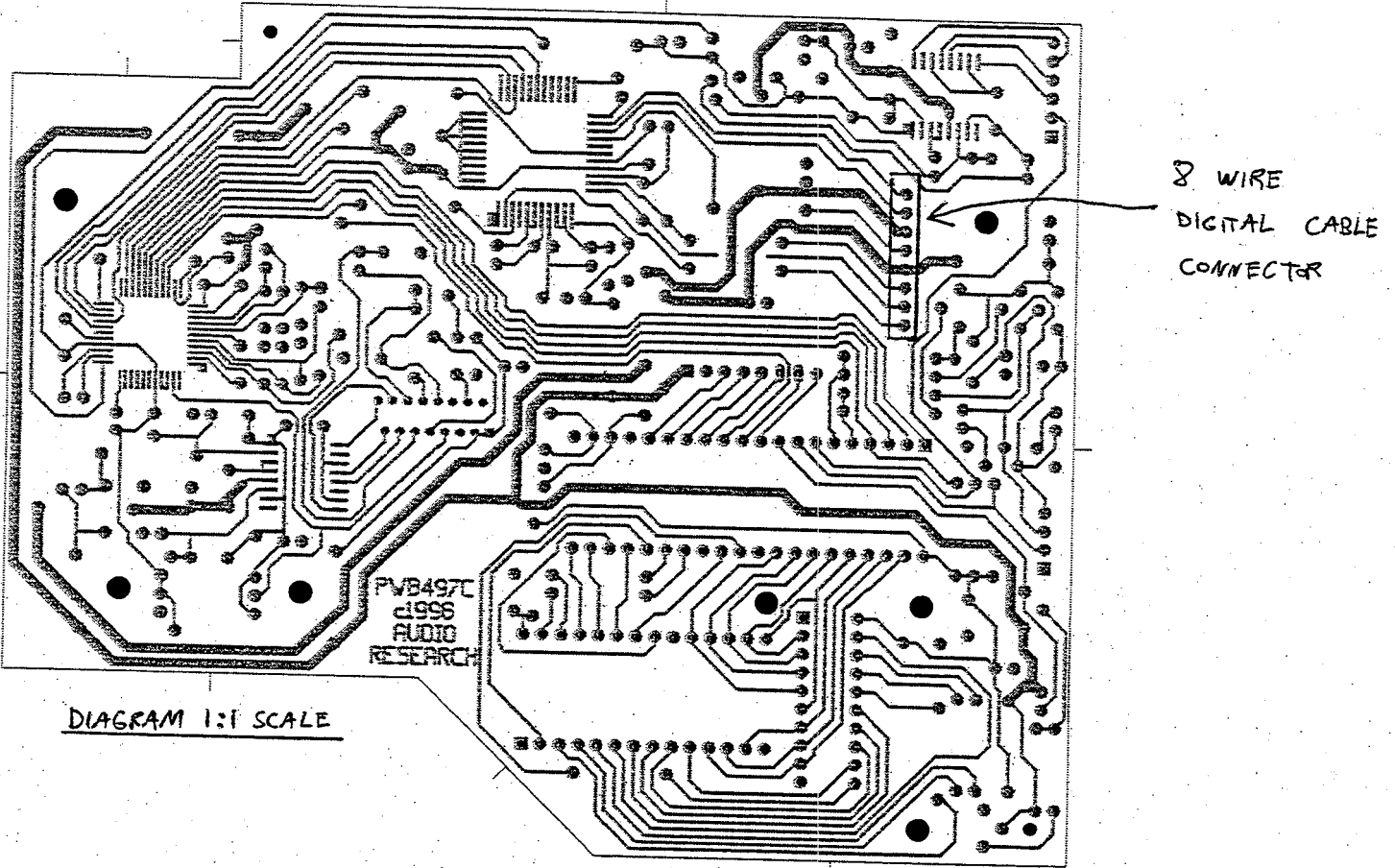
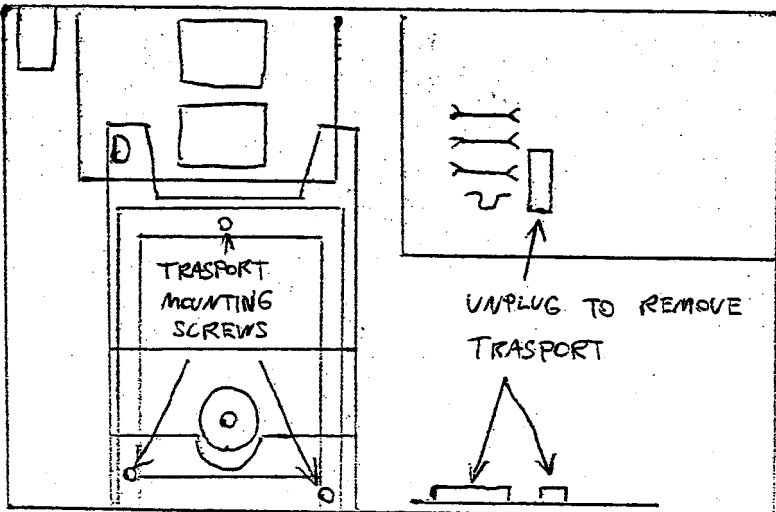


DIAGRAM 1:1 SCALE

DIAGRAM 2

CD2 TOP VIEW



NOTE THAT LOADING TRAY MUST BE REMOVED TO EXPOSE MOUNTING SCREWS

DIAGRAM 3

EDGE CONNECTOR DETAIL
LASER RIBBON CABLE

