

**PRIMARE**



**DVD 30 Multiformat Player  
Service Manual**

# 1. Circuit Diagrams

# 2. Technical Specifications

## **Confidential !**

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### **Author:**

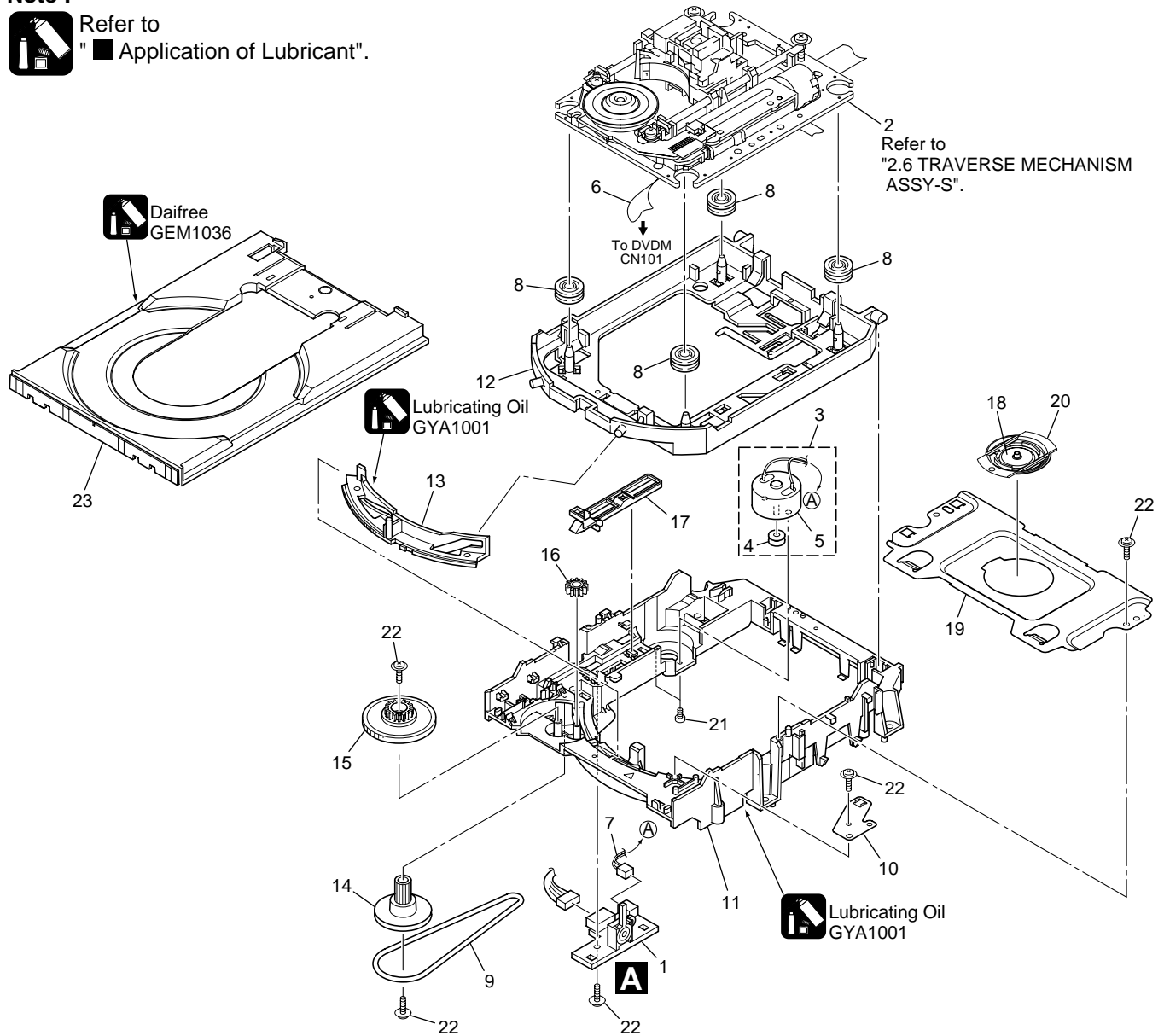
Bjorn Holmqvist  
Primare Systems AB  
bjorn@primare.net

## 2.5 LOADING MECHANISM ASSY

**Note :**



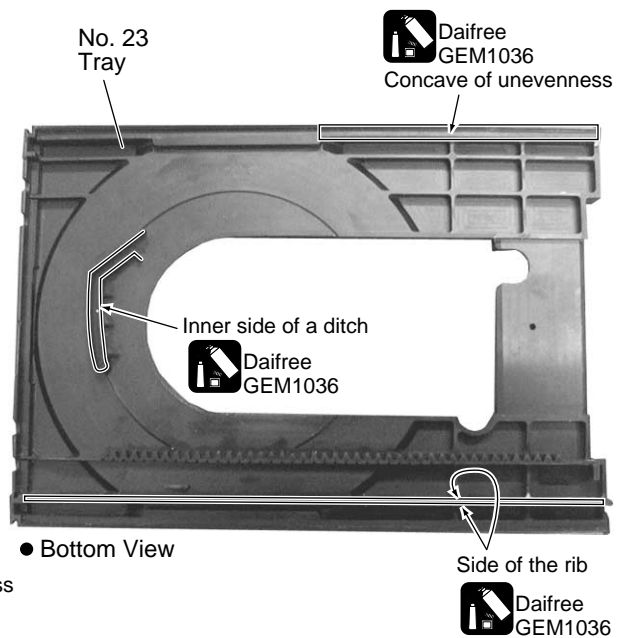
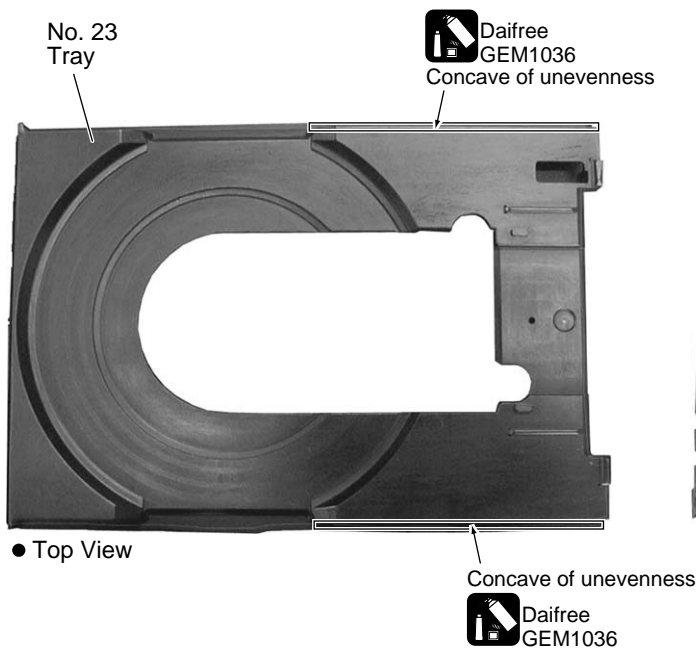
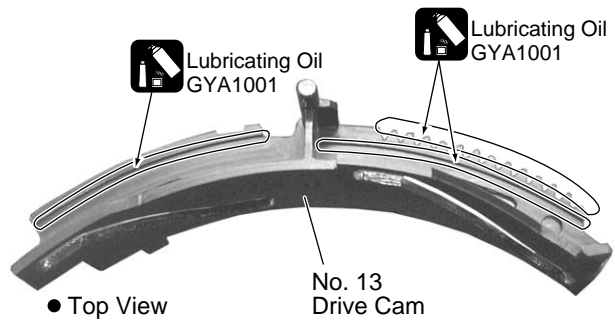
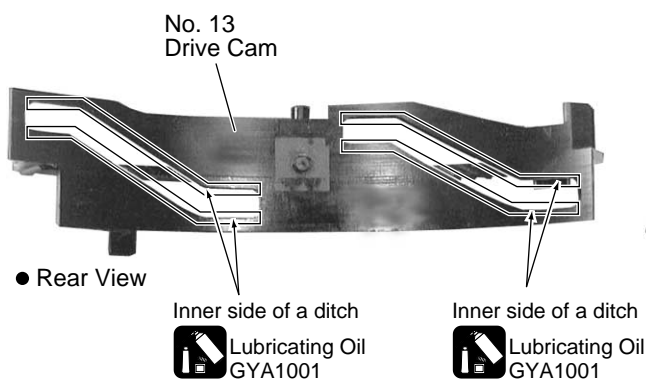
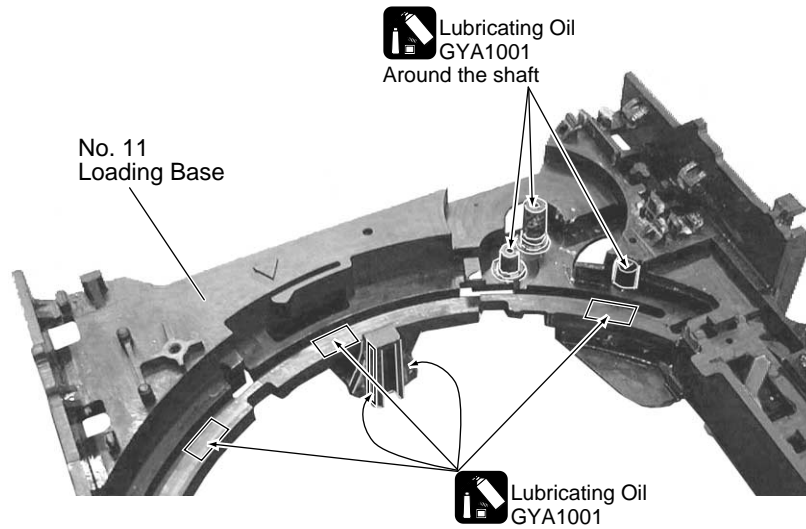
Refer to "Application of Lubricant".



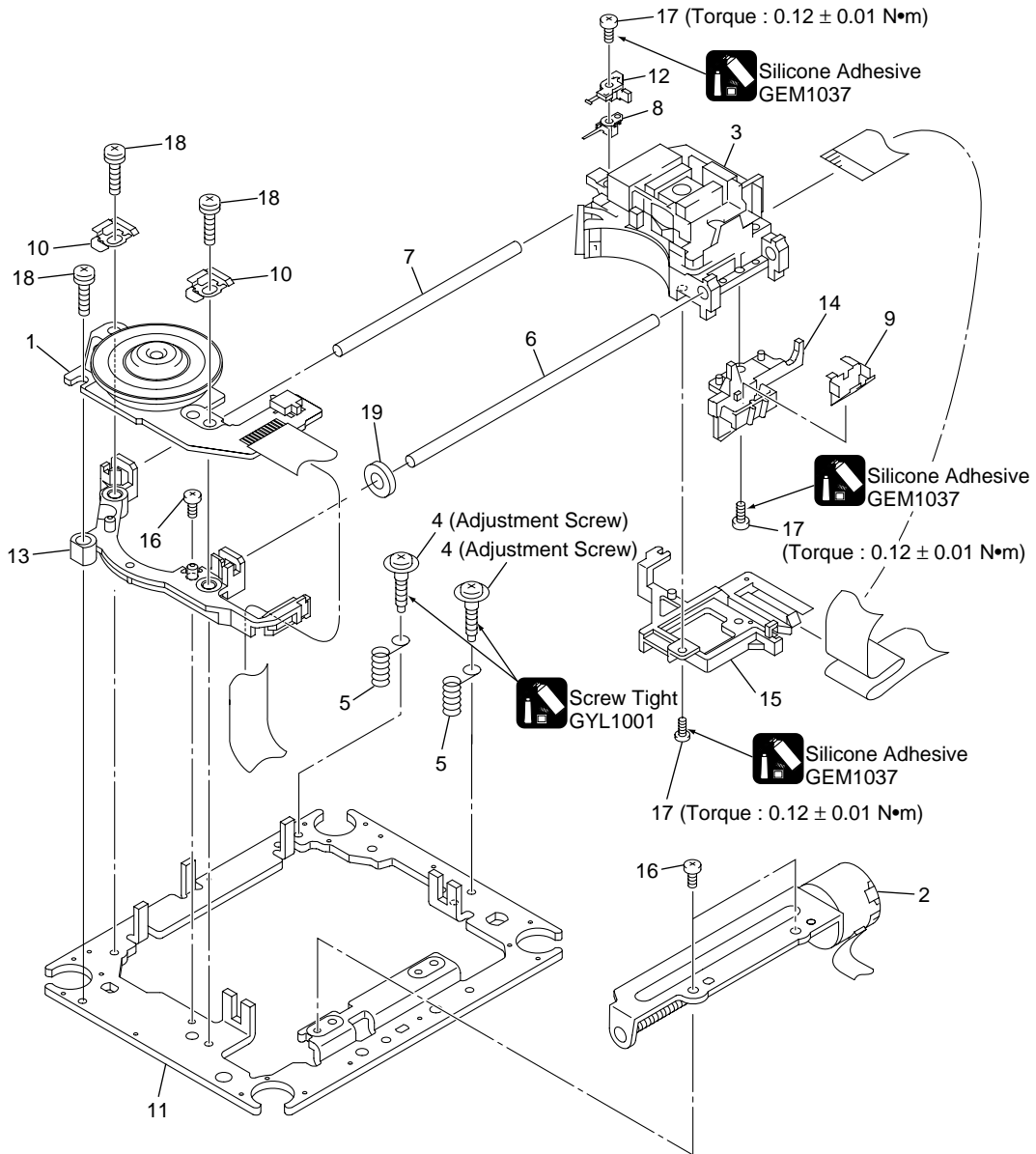
### ● LOADING MECHANISM ASSY PARTS LIST

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
NSP	1	LOAB Assy	VWG2279	11	11	Loading Base	VNL1917
	2	Traverse Mechanism Assy-S	VXX2782	12	12	Float Base DVD	VNL1918
	3	Loading Motor Assy	VXX2505	13	13	Drive Cam	VNL1919
	4	Motor Pulley	PNW1634	14	14	Gear Pulley	VNL1921
	5	Carriage DC Motor / 0.3W	PXM1027	15	15	Loading Gear	VNL1922
	6	Flexible Cable (26P)	VDA1864	16	16	Drive Gear	VNL1923
	7	Connector Assy 2P	VKP2253	17	17	SW Lever	VNL1925
	8	Float Rubber	VEB1327	18	18	Clamper Plate	VNE2251
	9	Belt	VEB1330	19	19	Bridge	VNE2252
	10	Stabilizer	VNE2253	20	20	Clamper	VNL1924
				21	21	Screw	JGZ17P028FMC
				22	22	Screw	Z39-019
				23	23	Tray	VNL1920

■ Application of Lubricant



## 2.6 TRAVERSE MECHANISM ASSY-S



### ● TRAVERSE MECHANISM ASSY-S PARTS LIST

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	Spindle Motor	VXM1088 (or VXM1089)	NSP	11	Mechanism Chassis	VNE2248
	2	Stepping Motor (CARRIAGE)	VXM1090 (or VXM1091)		12	Slider	VNL1811
	3	Pickup Assy-S	OXX8003		13	Spacer	VNL1913
	4	Skew Screw	VBA1080		14	Joint	VNL1914
	5	Skew Spring	VBH1335		15	FFC Holder	VNL1915
	6	Guide Bar	VLL1514		16	Screw	BBZ20P050FZK
	7	Sub Guide Bar	VLL1515		17	Screw	OBA8009
	8	Hold Spring	VNC1017		18	Screw	PMA26P100FMC
	9	Joint Spring	VNC1019		19	Damper Sheet	VEB1335
	10	Support Spring	VNC1020				

3.3 DVDM ASSY (1/4)

B 1/4 DVDM ASSY (VWS1471)

A

B

C

D

B 2/4

B 3/4

B 2/4

B 2/4

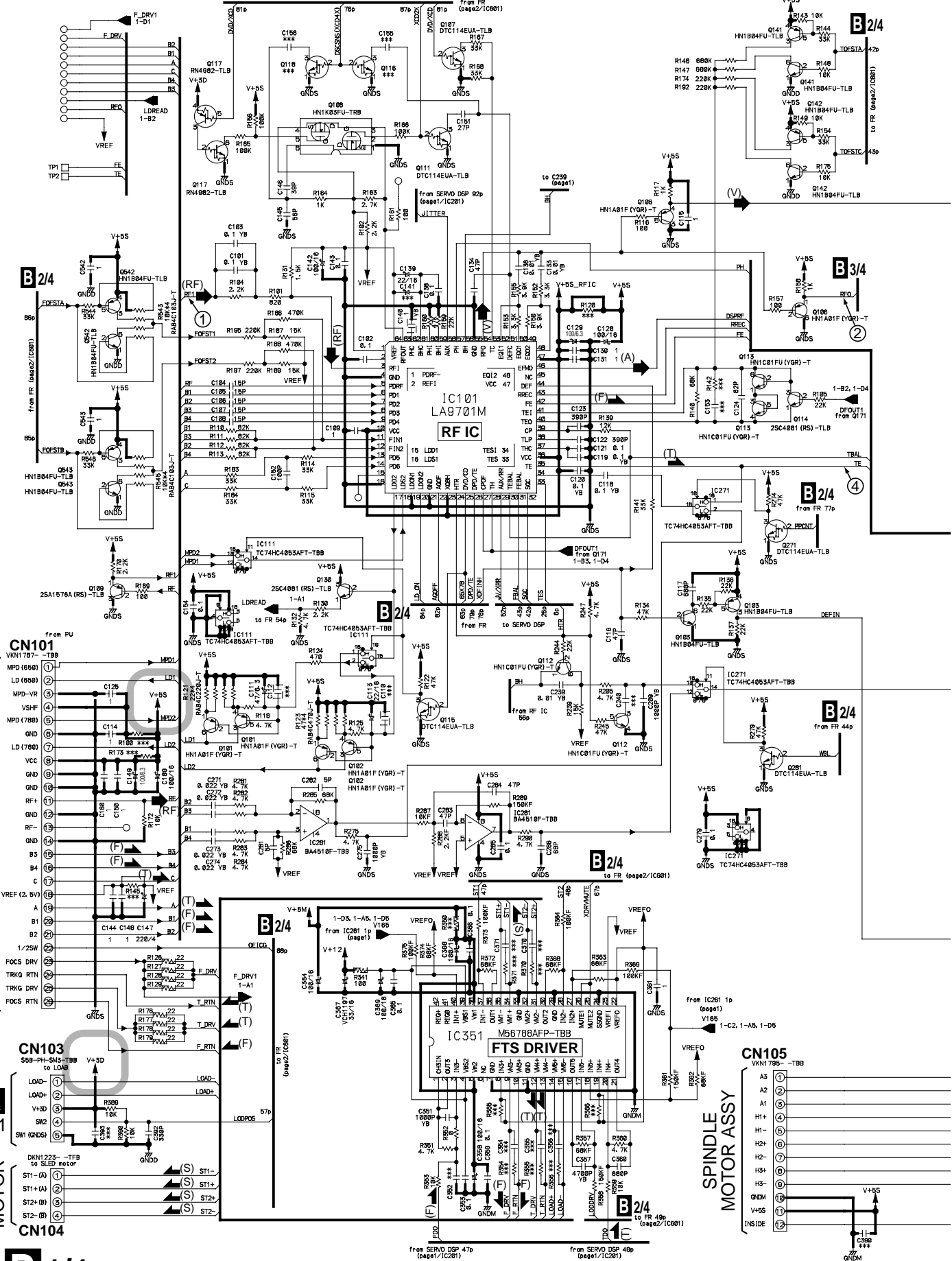
B 2/4

B 2/4

PICKUP ASSY

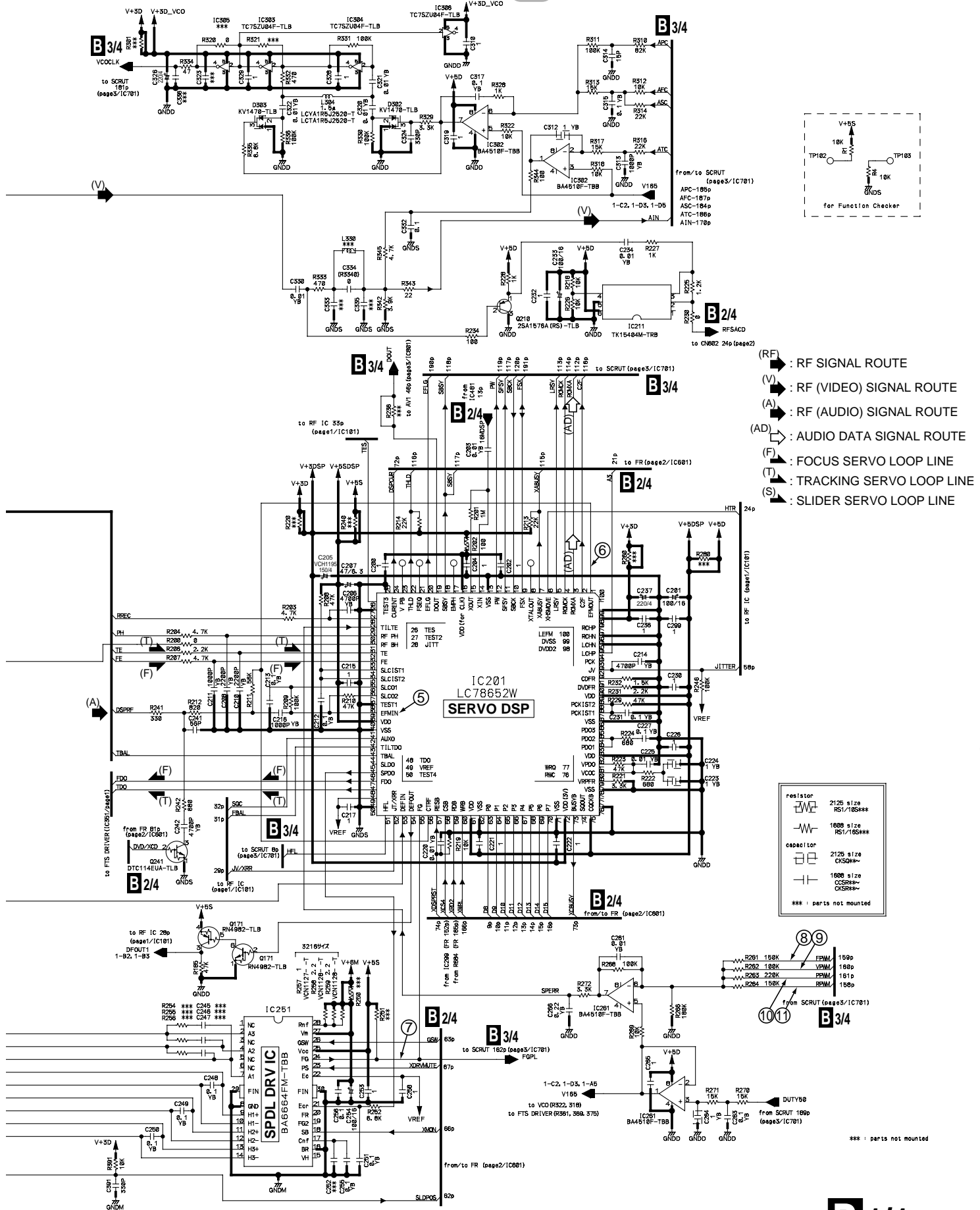
CARRIAGE MOTOR

SPINDLE MOTOR ASSY



# DV-47A, DV-S733A, DV-747A

**O** : The power supply is shown with the marked box.



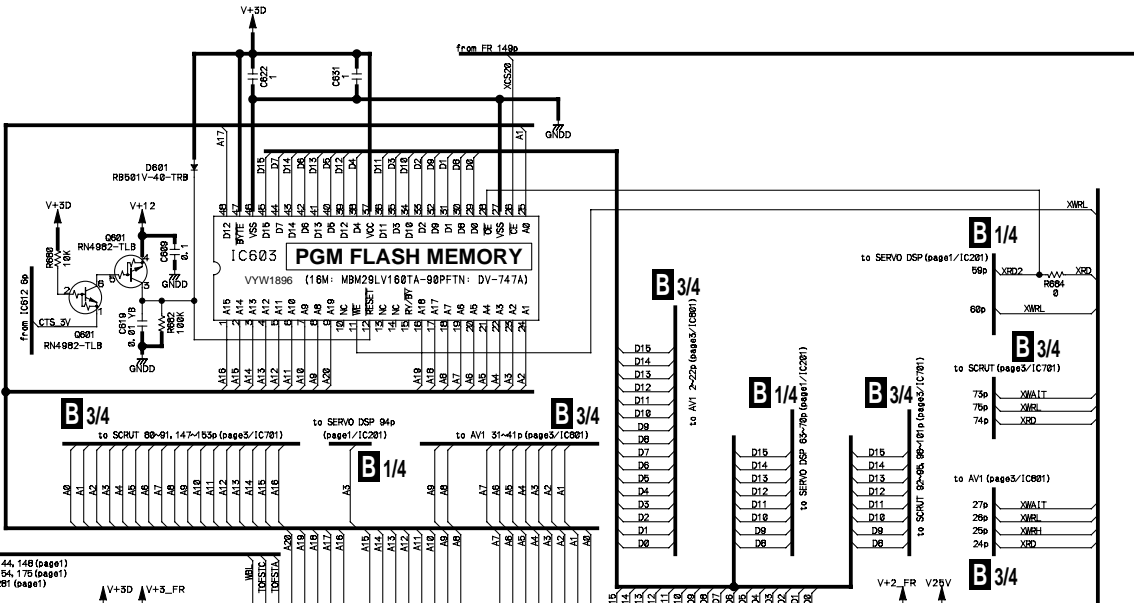
- (RF) : RF SIGNAL ROUTE
- (V) : RF (VIDEO) SIGNAL ROUTE
- (A) : RF (AUDIO) SIGNAL ROUTE
- (AD) : AUDIO DATA SIGNAL ROUTE
- (F) : FOCUS SERVO LOOP LINE
- (T) : TRACKING SERVO LOOP LINE
- (S) : SLIDER SERVO LOOP LINE

resistor	2125 size	R1/16S***
	1808 size	R1/16S***
capacitor	2125 size	CK50H**
	1808 size	CK50H**

\*\*\*: parts not mounted

3.4 DVDM ASSY (2/4)

B 2/4 DVDM ASSY (VWS1471)

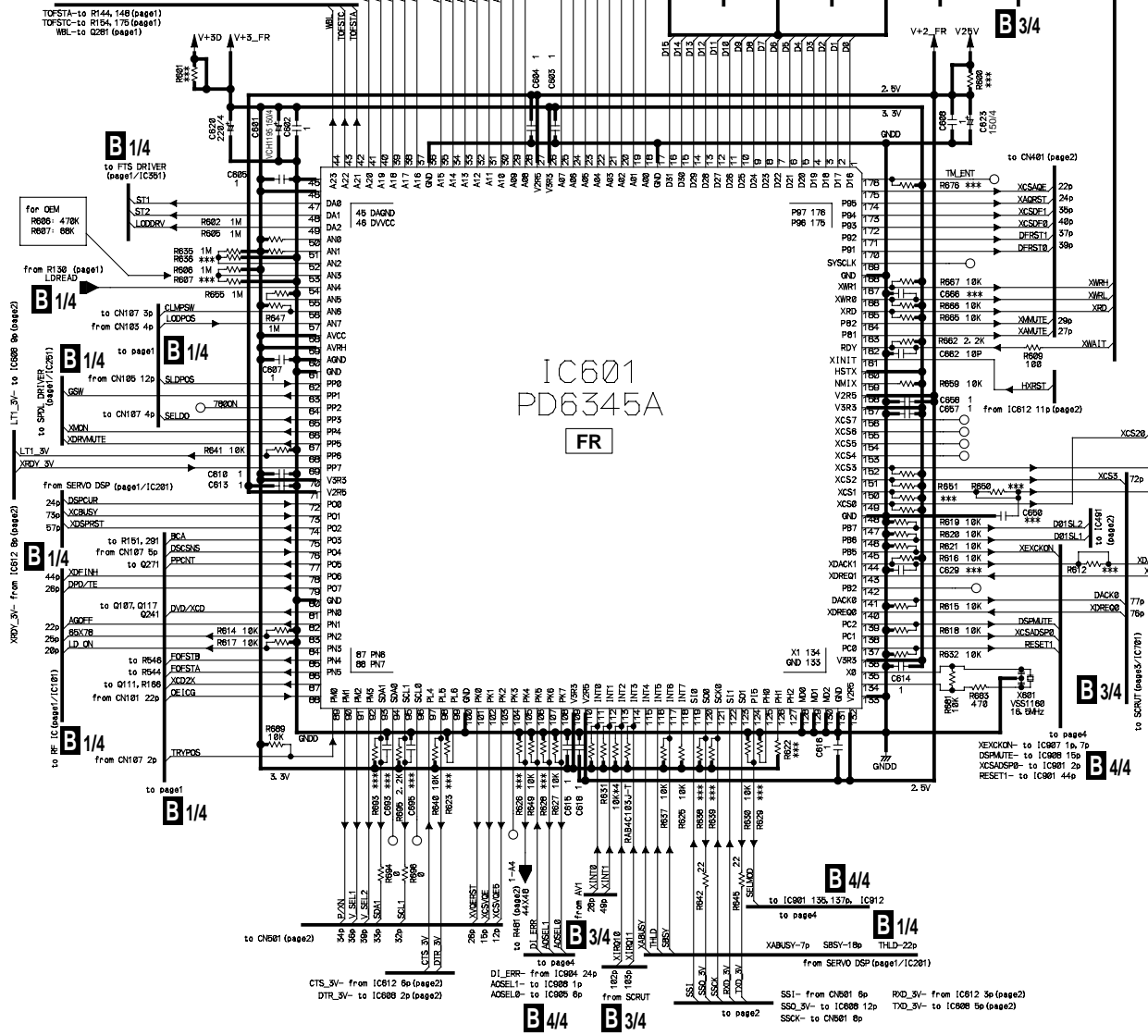


A

B


C

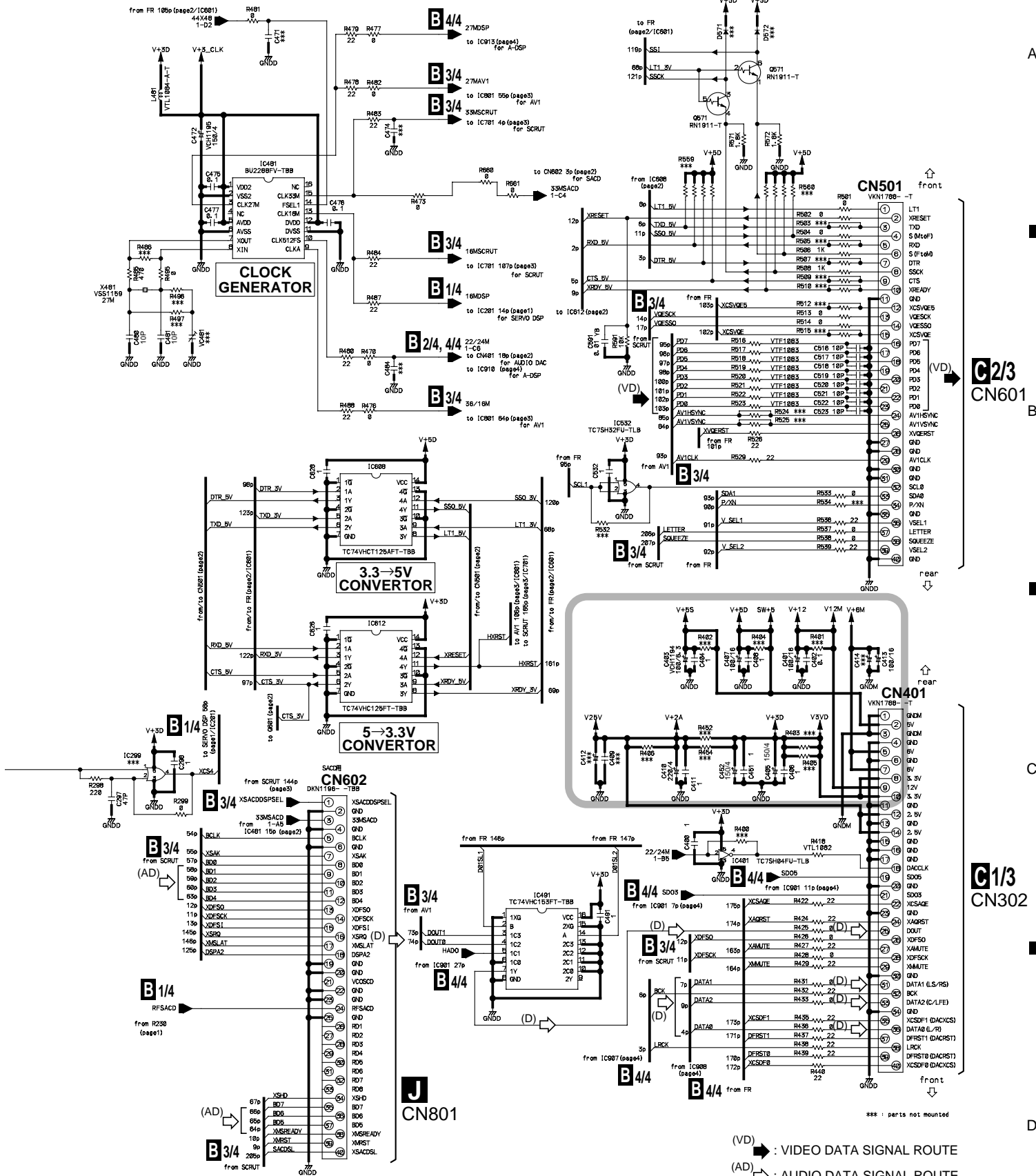
D





# DV-47A, DV-S733A, DV-747A

 : The power supply is shown with the marked box.



A

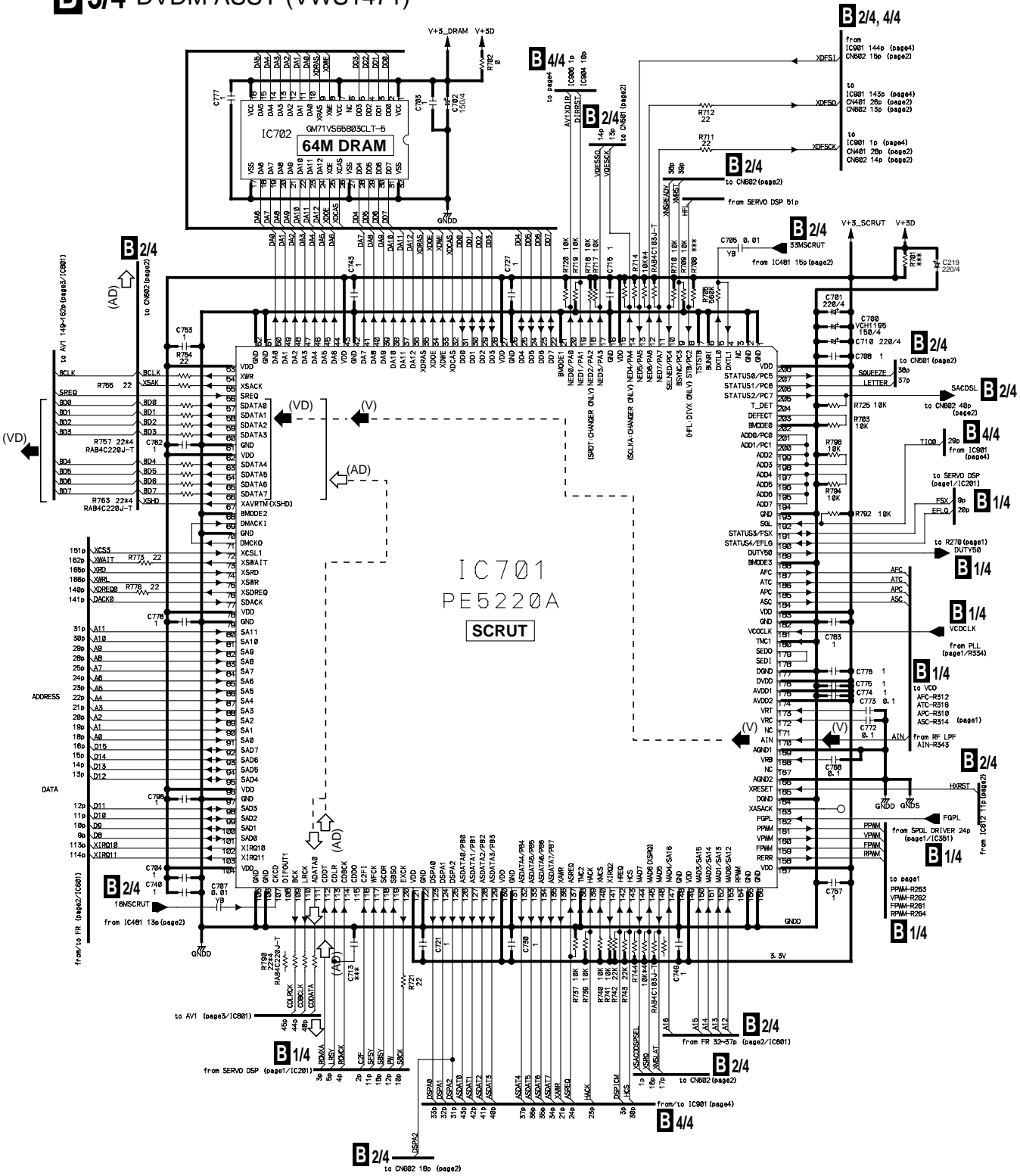
B

C

D

3.5 DVDM ASSY (3/4)

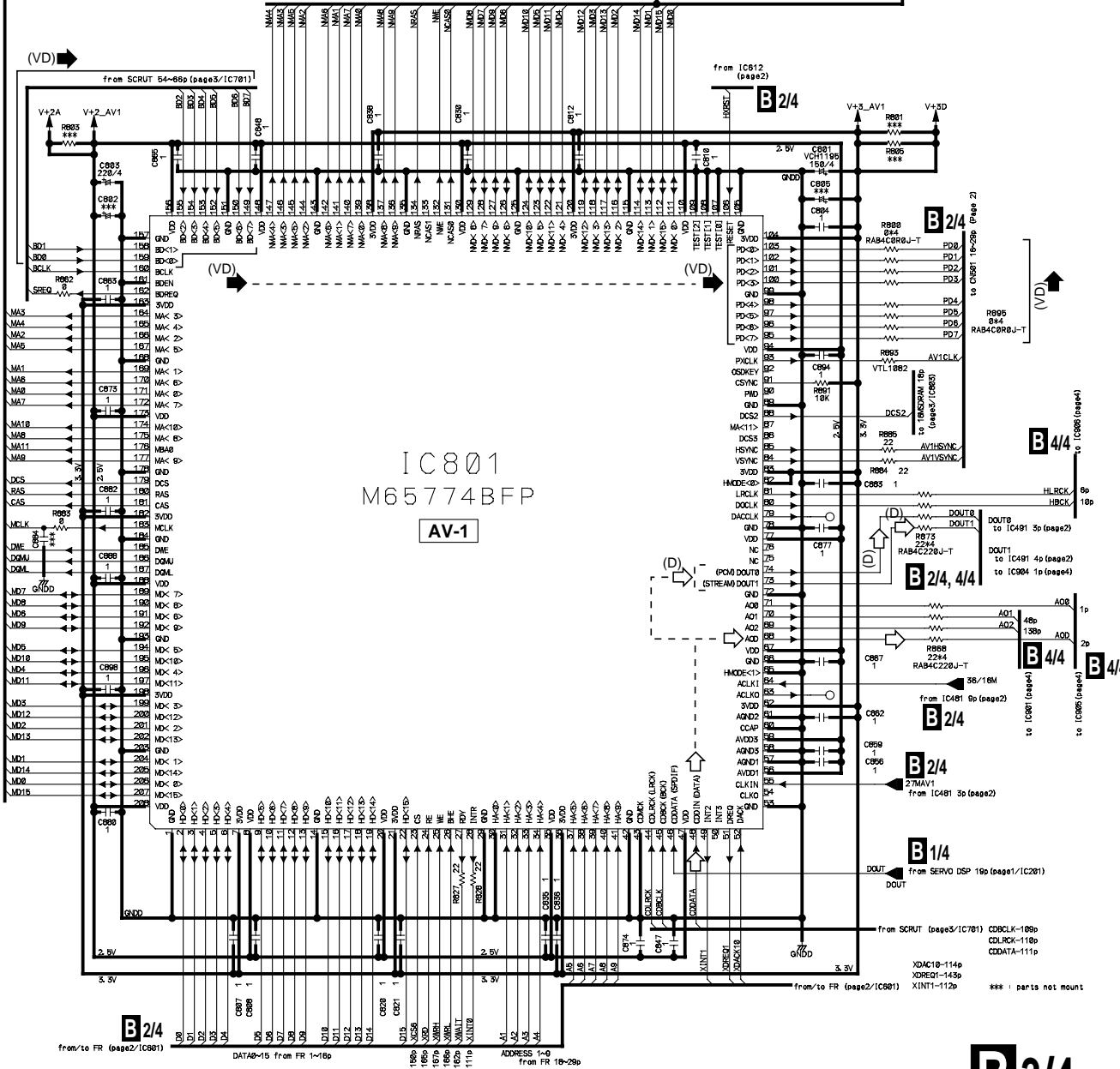
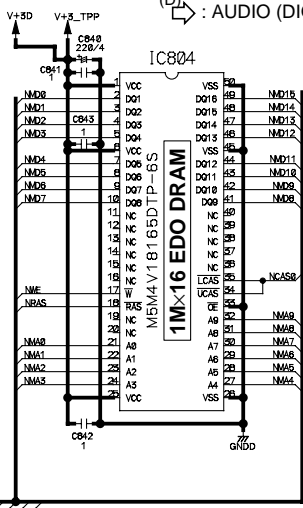
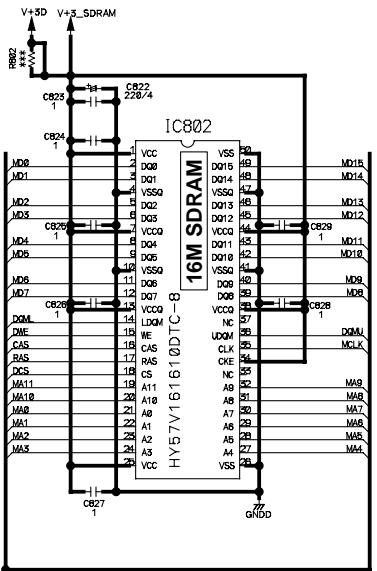
B 3/4 DVDM ASSY (VWS1471)



B 3/4

# DV-47A, DV-S733A, DV-747A

- (V) : RF (VIDEO) SIGNAL ROUTE
- (VD) : VIDEO DATA SIGNAL ROUTE
- (AD) : AUDIO DATA SIGNAL ROUTE
- : AUDIO SIGNAL ROUTE
- (D) : AUDIO (DIGITAL) SIGNAL ROUTE



A

B

C

D

3.6 DVDM ASSY (4/4)

**B 4/4** DVDM ASSY (VWS1471)

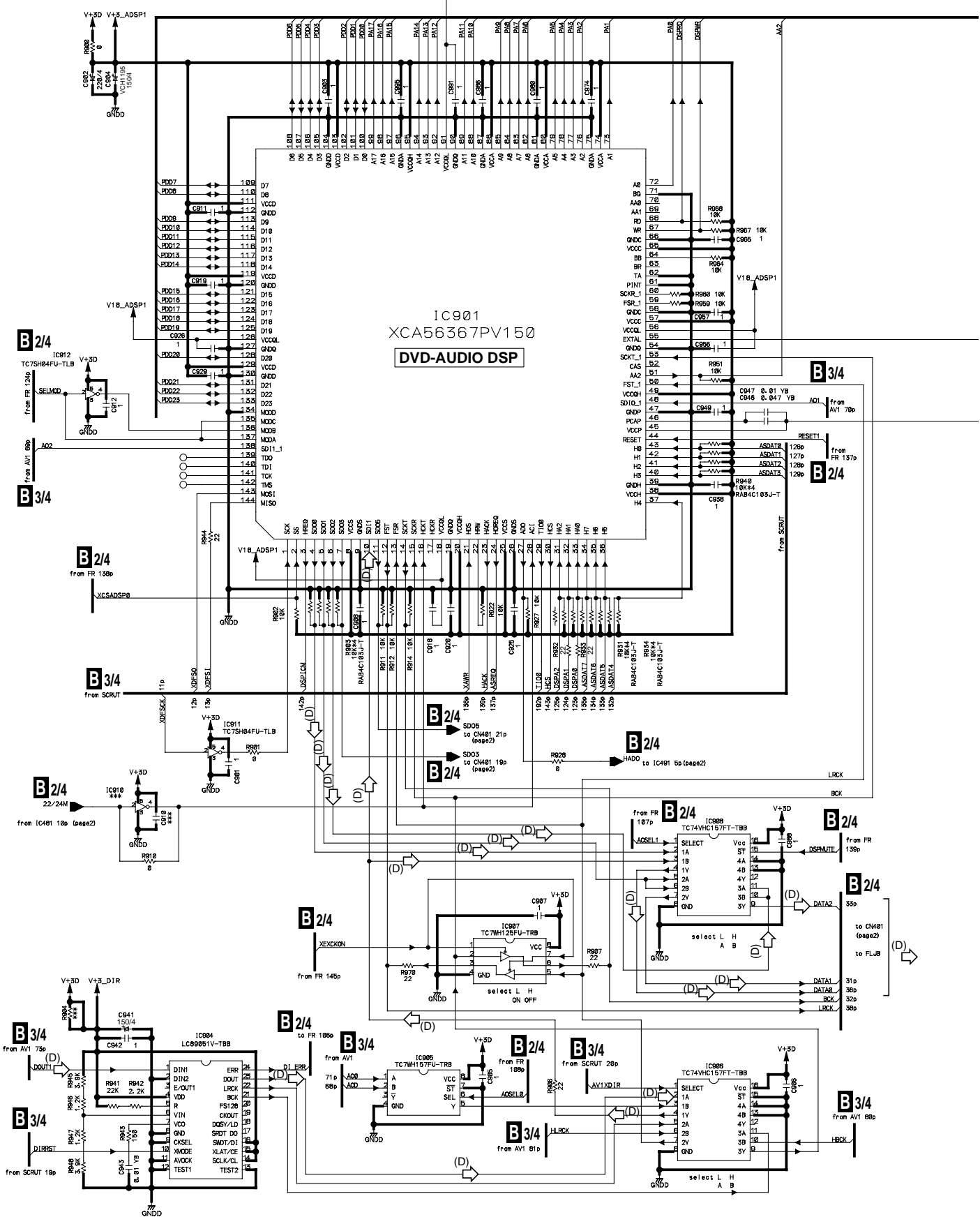
A


B

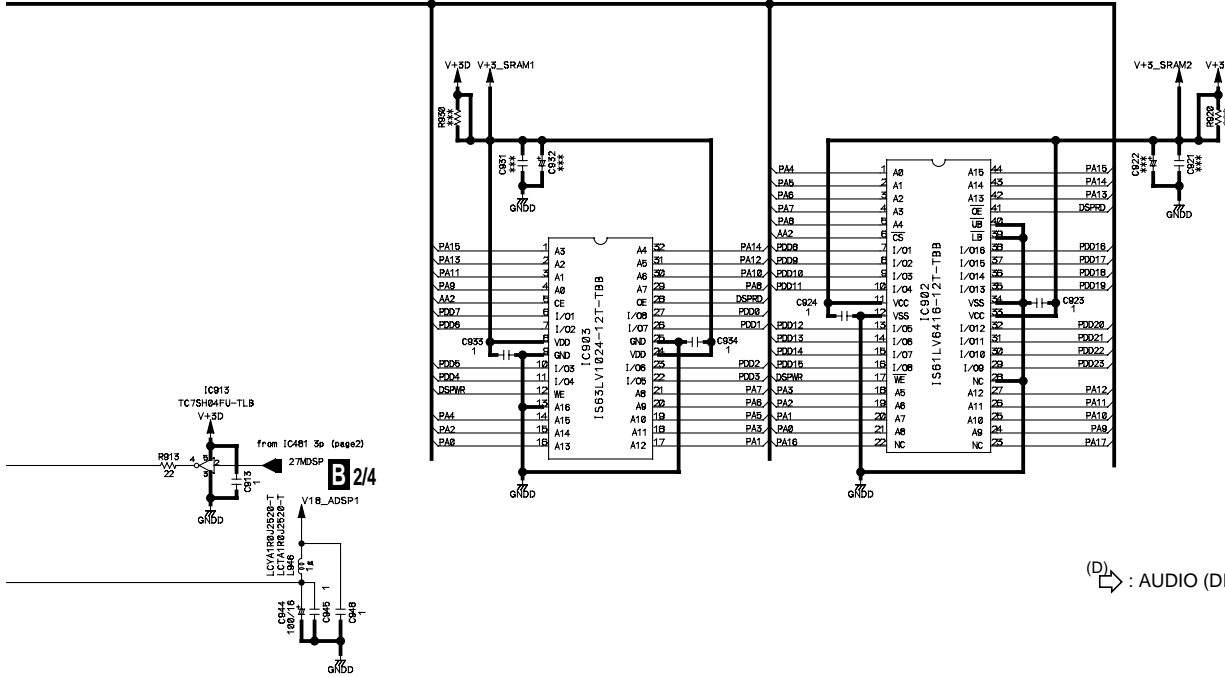
C


D

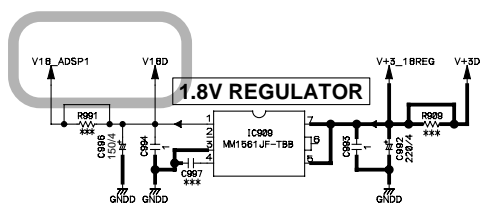
V1B\_ADSP1



 : The power supply is shown with the marked box.



 : AUDIO (DIGITAL) SIGNAL ROUTE

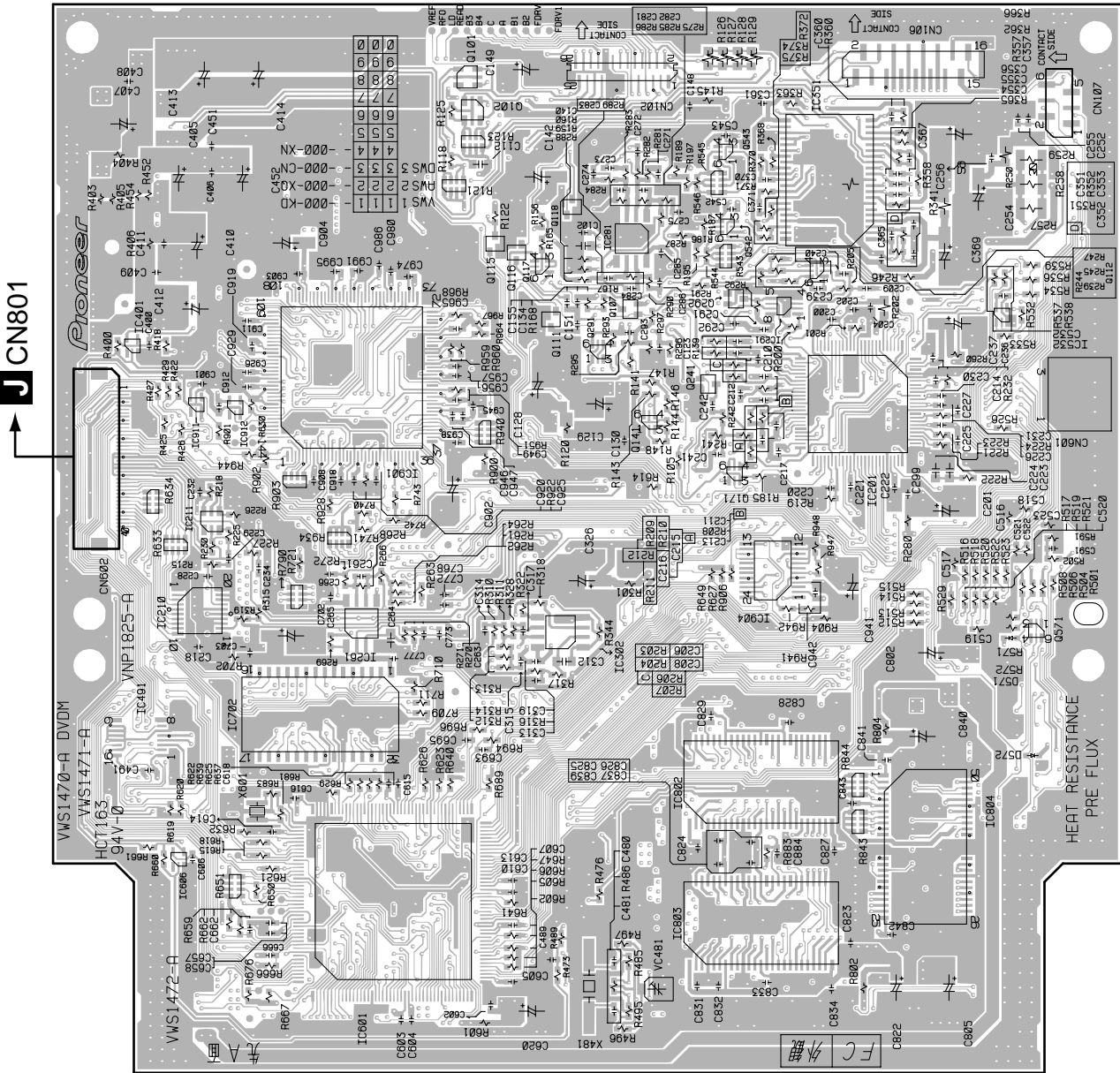


\*\*\* : parts not mounted

4.2 DVDM ASSY

B DVDM ASSY

SIDE A



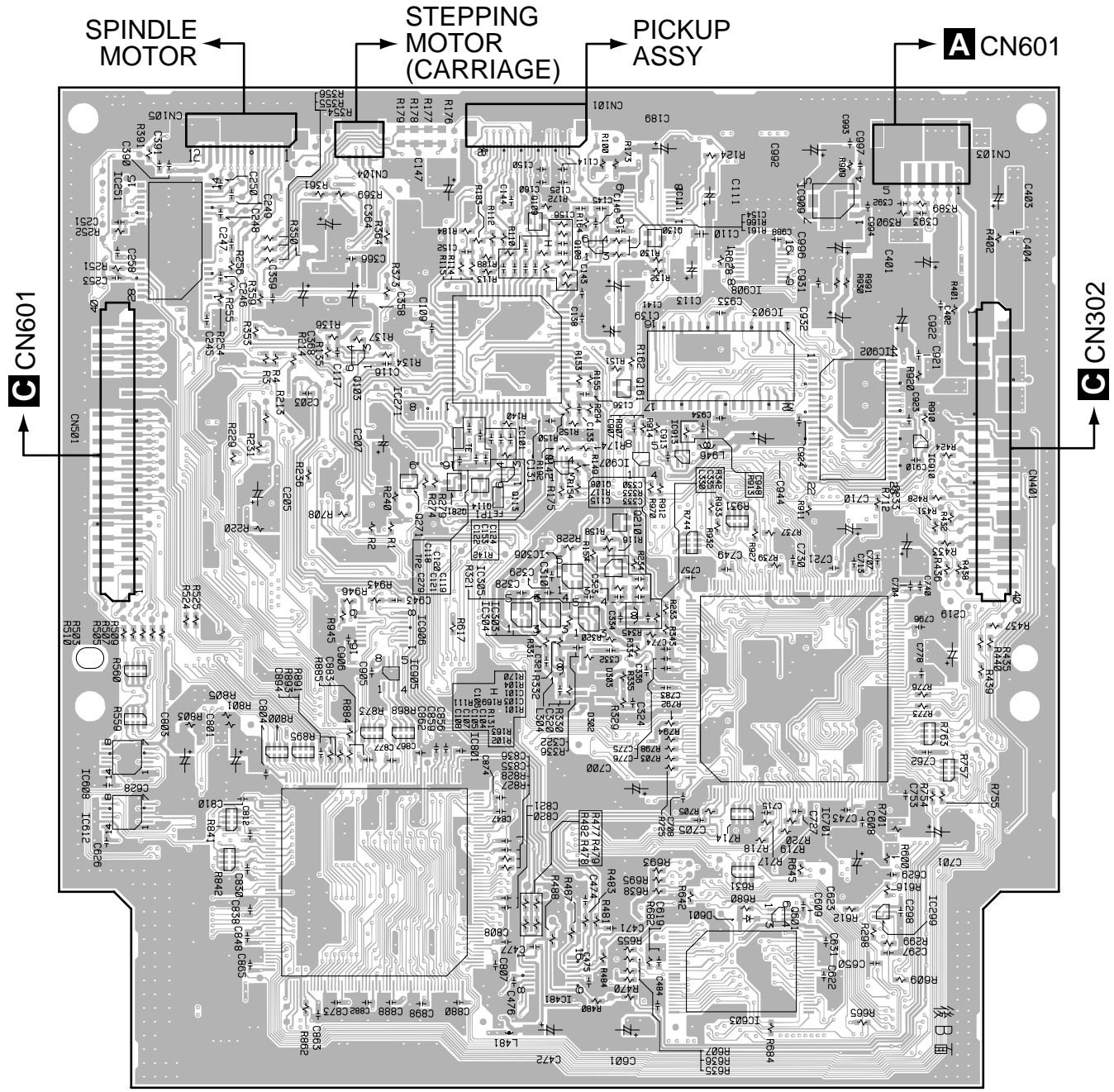
(VNP1825-A)

- IC401 IC911 IC912 IC901 Q101 Q118 IC281 Q543 IC351 IC532
- IC211 IC261 Q102 Q116 IC107 Q542 Q112 Q571
- IC491 IC210 IC702 IC601 Q115 Q117 Q291 Q141 Q241 IC291 IC201 IC804
- IC606 IC302 IC481 IC480 IC481 IC482 IC483 IC484 IC485 IC486 IC487 IC488 IC489 IC490 IC491 IC492 IC493 IC494 IC495 IC496 IC497 IC498 IC499 IC500 IC501 IC502 IC503 IC504 IC505 IC506 IC507 IC508 IC509 IC510 IC511 IC512 IC513 IC514 IC515 IC516 IC517 IC518 IC519 IC520 IC521 IC522 IC523 IC524 IC525 IC526 IC527 IC528 IC529 IC530 IC531 IC532 IC533 IC534 IC535 IC536 IC537 IC538 IC539 IC540 IC541 IC542 IC543 IC544 IC545 IC546 IC547 IC548 IC549 IC550 IC551 IC552 IC553 IC554 IC555 IC556 IC557 IC558 IC559 IC560 IC561 IC562 IC563 IC564 IC565 IC566 IC567 IC568 IC569 IC570 IC571 IC572 IC573 IC574 IC575 IC576 IC577 IC578 IC579 IC580 IC581 IC582 IC583 IC584 IC585 IC586 IC587 IC588 IC589 IC590 IC591 IC592 IC593 IC594 IC595 IC596 IC597 IC598 IC599 IC600 IC601 IC602 IC603 IC604 IC605 IC606 IC607 IC608 IC609 IC610 IC611 IC612 IC613 IC614 IC615 IC616 IC617 IC618 IC619 IC620 IC621 IC622 IC623 IC624 IC625 IC626 IC627 IC628 IC629 IC630 IC631 IC632 IC633 IC634 IC635 IC636 IC637 IC638 IC639 IC640 IC641 IC642 IC643 IC644 IC645 IC646 IC647 IC648 IC649 IC650 IC651 IC652 IC653 IC654 IC655 IC656 IC657 IC658 IC659 IC660 IC661 IC662 IC663 IC664 IC665 IC666 IC667 IC668 IC669 IC670 IC671 IC672 IC673 IC674 IC675 IC676 IC677 IC678 IC679 IC680 IC681 IC682 IC683 IC684 IC685 IC686 IC687 IC688 IC689 IC690 IC691 IC692 IC693 IC694 IC695 IC696 IC697 IC698 IC699 IC700 IC701 IC702 IC703 IC704 IC705 IC706 IC707 IC708 IC709 IC710 IC711 IC712 IC713 IC714 IC715 IC716 IC717 IC718 IC719 IC720 IC721 IC722 IC723 IC724 IC725 IC726 IC727 IC728 IC729 IC730 IC731 IC732 IC733 IC734 IC735 IC736 IC737 IC738 IC739 IC740 IC741 IC742 IC743 IC744 IC745 IC746 IC747 IC748 IC749 IC750 IC751 IC752 IC753 IC754 IC755 IC756 IC757 IC758 IC759 IC760 IC761 IC762 IC763 IC764 IC765 IC766 IC767 IC768 IC769 IC770 IC771 IC772 IC773 IC774 IC775 IC776 IC777 IC778 IC779 IC780 IC781 IC782 IC783 IC784 IC785 IC786 IC787 IC788 IC789 IC790 IC791 IC792 IC793 IC794 IC795 IC796 IC797 IC798 IC799 IC800 IC801 IC802 IC803 IC804 IC805 IC806 IC807 IC808 IC809 IC810 IC811 IC812 IC813 IC814 IC815 IC816 IC817 IC818 IC819 IC820 IC821 IC822 IC823 IC824 IC825 IC826 IC827 IC828 IC829 IC830 IC831 IC832 IC833 IC834 IC835 IC836 IC837 IC838 IC839 IC840 IC841 IC842 IC843 IC844 IC845 IC846 IC847 IC848 IC849 IC850 IC851 IC852 IC853 IC854 IC855 IC856 IC857 IC858 IC859 IC860 IC861 IC862 IC863 IC864 IC865 IC866 IC867 IC868 IC869 IC870 IC871 IC872 IC873 IC874 IC875 IC876 IC877 IC878 IC879 IC880 IC881 IC882 IC883 IC884 IC885 IC886 IC887 IC888 IC889 IC890 IC891 IC892 IC893 IC894 IC895 IC896 IC897 IC898 IC899 IC900 IC901 IC902 IC903 IC904 IC905 IC906 IC907 IC908 IC909 IC910 IC911 IC912 IC913 IC914 IC915 IC916 IC917 IC918 IC919 IC920 IC921 IC922 IC923 IC924 IC925 IC926 IC927 IC928 IC929 IC930 IC931 IC932 IC933 IC934 IC935 IC936 IC937 IC938 IC939 IC940 IC941 IC942 IC943 IC944 IC945 IC946 IC947 IC948 IC949 IC950 IC951 IC952 IC953 IC954 IC955 IC956 IC957 IC958 IC959 IC960 IC961 IC962 IC963 IC964 IC965 IC966 IC967 IC968 IC969 IC970 IC971 IC972 IC973 IC974 IC975 IC976 IC977 IC978 IC979 IC980 IC981 IC982 IC983 IC984 IC985 IC986 IC987 IC988 IC989 IC990 IC991 IC992 IC993 IC994 IC995 IC996 IC997 IC998 IC999 IC1000

B

**SIDE B**

**B** DVDM ASSY



(VNP1825-A)

IC251	Q103	IC271	Q109	Q108	Q130	IC903	IC909	IC910
IC608	Q271	Q281	IC101	Q142	Q161	IC913	IC701	IC902
IC612	IC905	Q113	IC306	Q210	IC907	Q601	IC299	
	IC801		IC304	IC303	IC305	IC603		

**B**

# WAVEFORMS

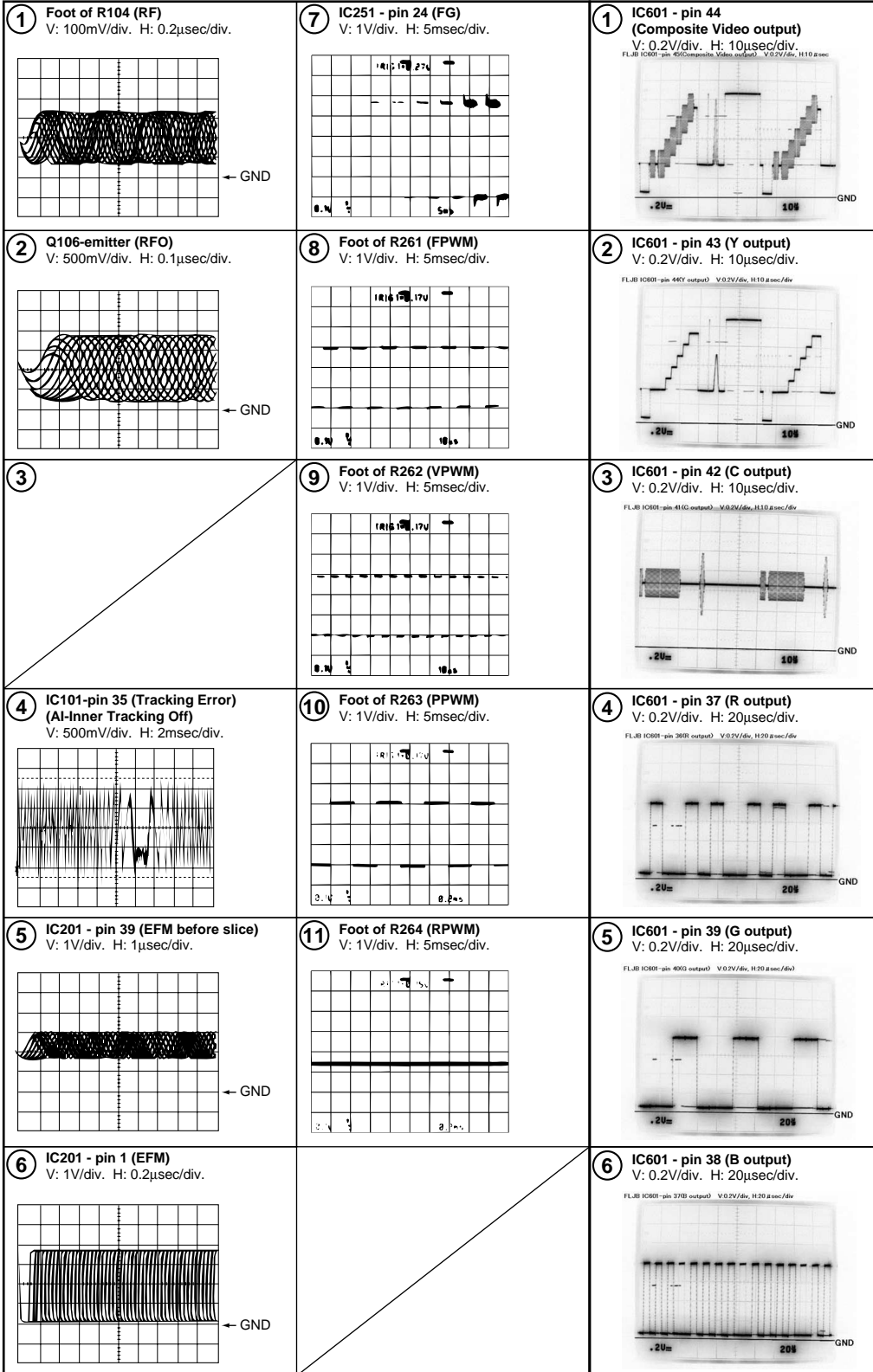
Note : The encircled numbers denote measuring point in the schematic diagram.

## B DVDM ASSY

Measurement condition : No. 1 to 4 and 6 to 11 : MJK1, Title 1-chp 1  
 No. 5 : CD, ABEX-784 Track 1

## C AVJB ASSY

Measurement condition : No. 1 to 3 : MJK1, Title 1-chp 4  
 No. 4 to 6 : T2-19, Color-bar





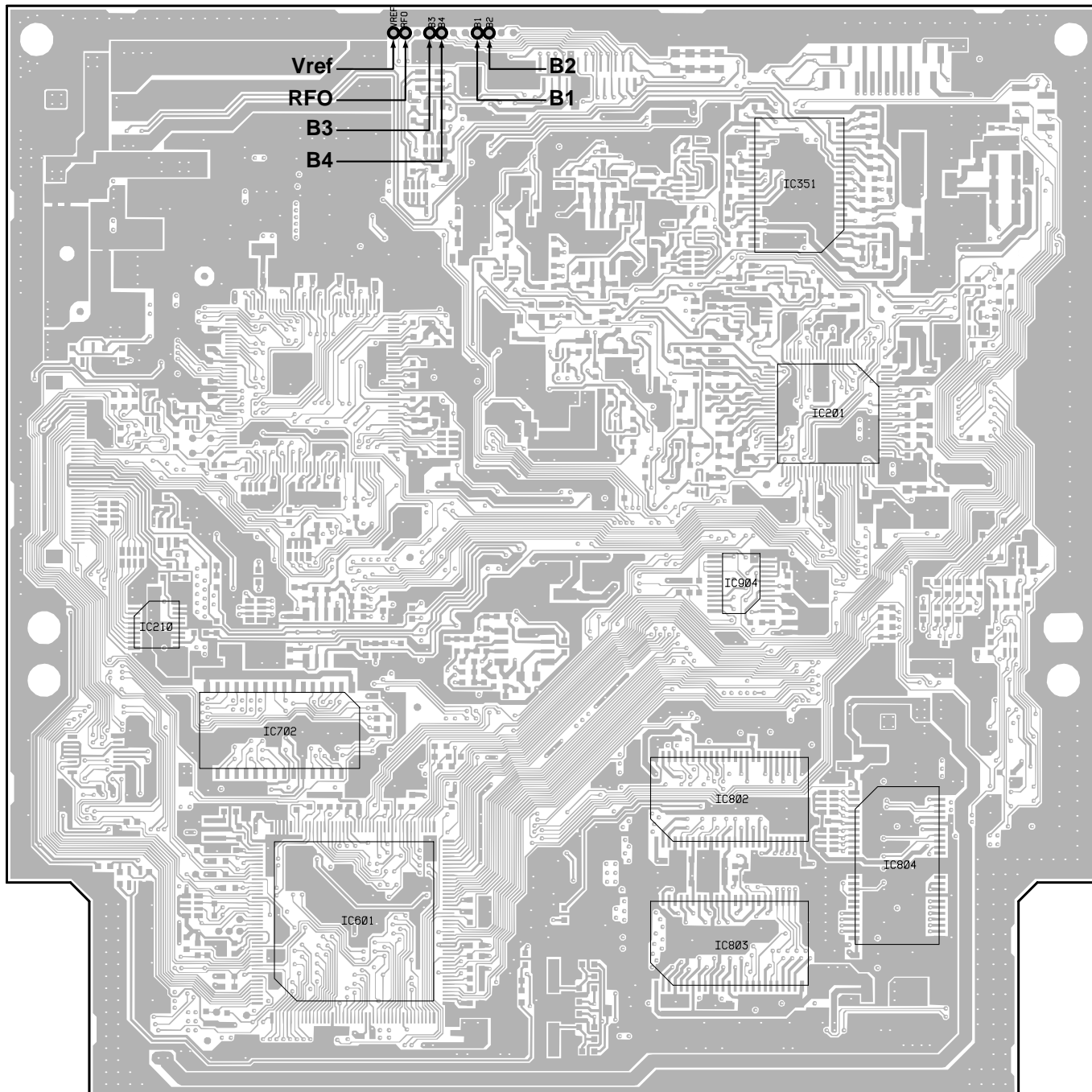
### 7.1.3 TEST POINTS LOCATION

This model has not test terminal.

Please use following points on the DVDM Assy when checking RF, FE and TE, etc..

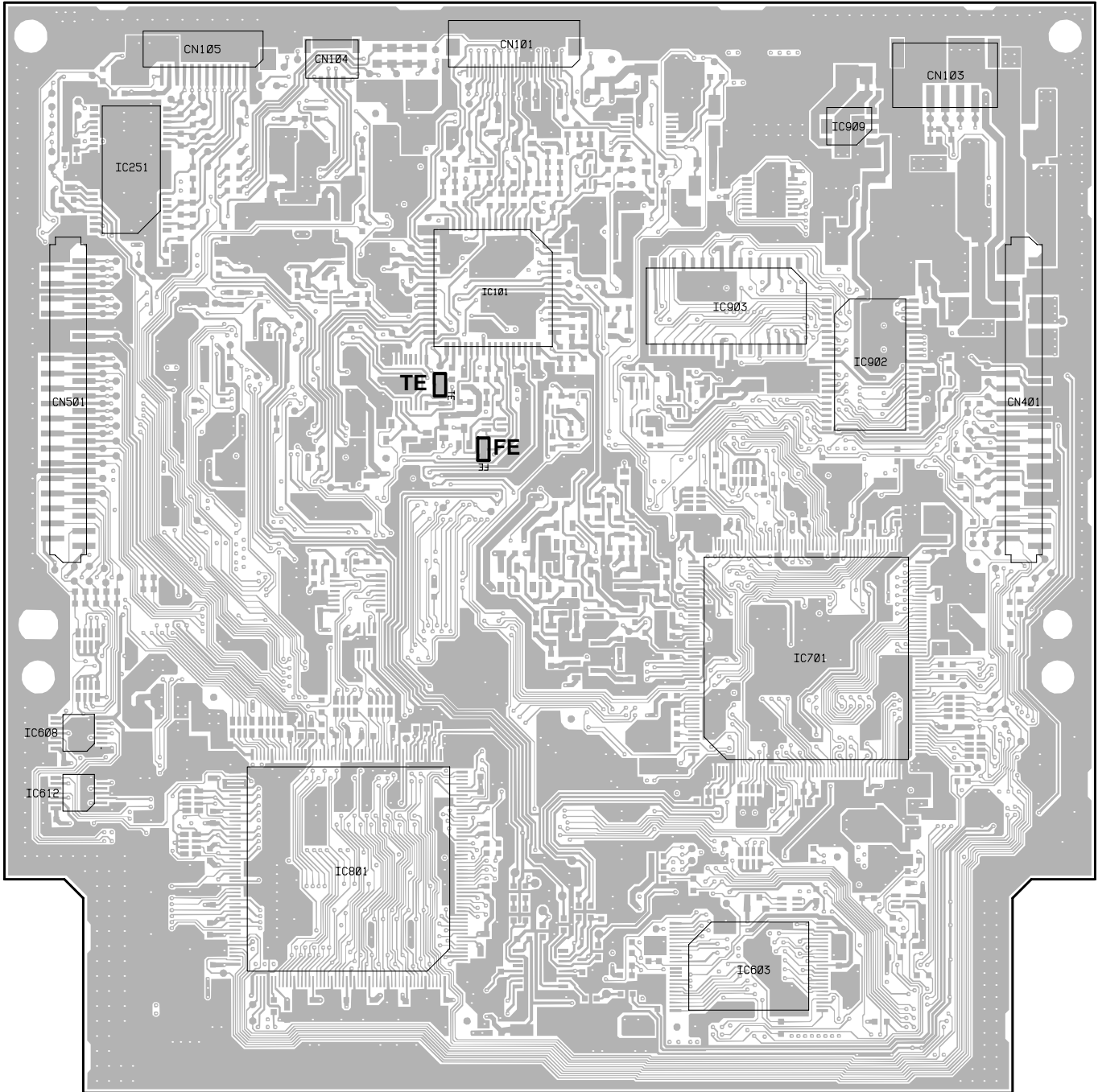
## **B** DVDM ASSY

**SIDE A**



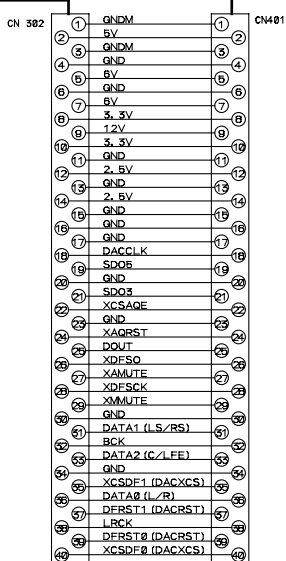
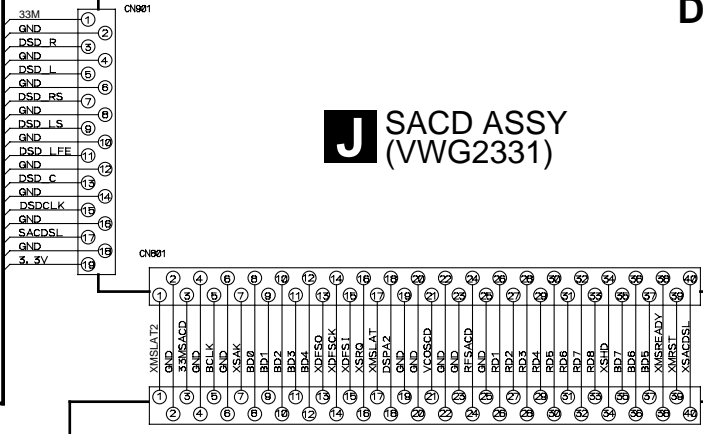
**SIDE B**

**B** DVDM ASSY



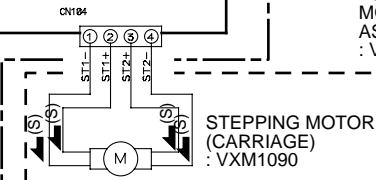
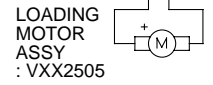
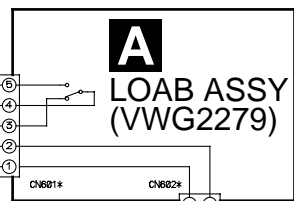
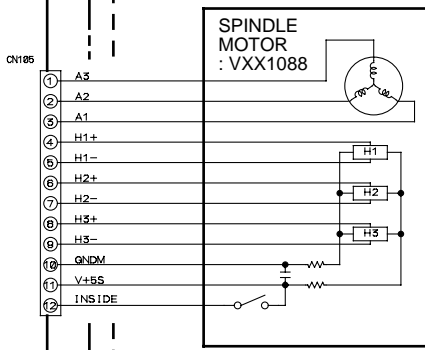
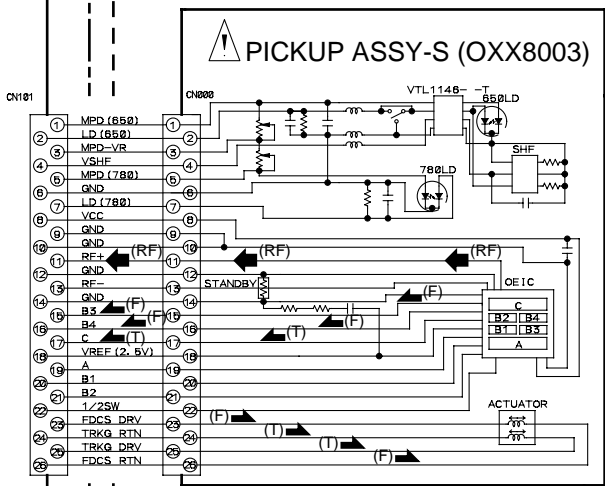
**J** SACD ASSY (VWG2331)

(RF) : RF SIGNAL ROUTE  
 (F) : FOCUS SERVO LOOP LINE  
 (T) : TRACKING SERVO LOOP LINE  
 (S) : SLIDER SERVO LOOP LINE



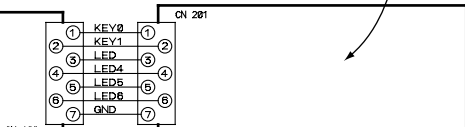
**B ( B1/4 - B4/4 )**  
 DVDM ASSY (VWS1471)

**F** PWSB ASSY  
 (KUXJ/CA : VWG2312)  
 (LBXJ : VWG2310)  
 (WLXJ/NC : VWG2310)  
 (WLXJ/RD : VWG2310)  
 (WYXJ : VWG2311)



TRaverse MECHANISM ASSY-S (VXX2782)

LOADING MECHANISM ASSY (VWT1188)



**G** KEYB ASSY (VWG2306)

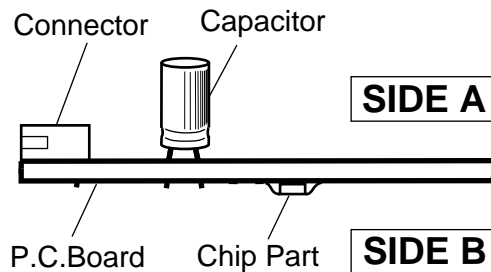
# 4. PCB CONNECTION DIAGRAM

## NOTE FOR PCB DIAGRAMS :

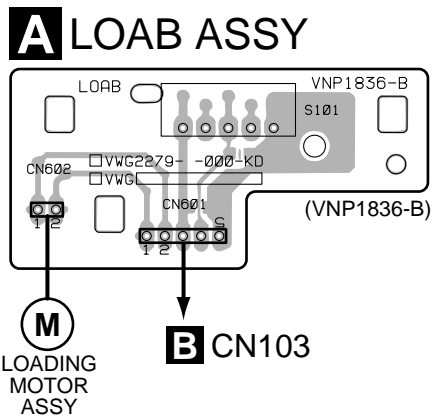
1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
		Transistor
		Transistor with resistor
		Field effect transistor
		Resistor array
		3-terminal regulator

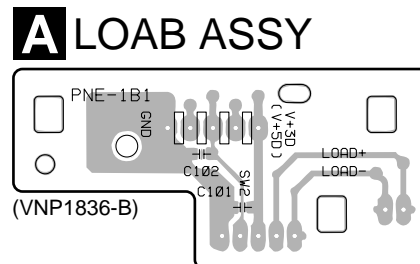
3. The parts mounted on this PCB include all necessary parts for several destinations.  
For further information for respective destinations, be sure to check with the schematic diagram.
4. View point of PCB diagrams.



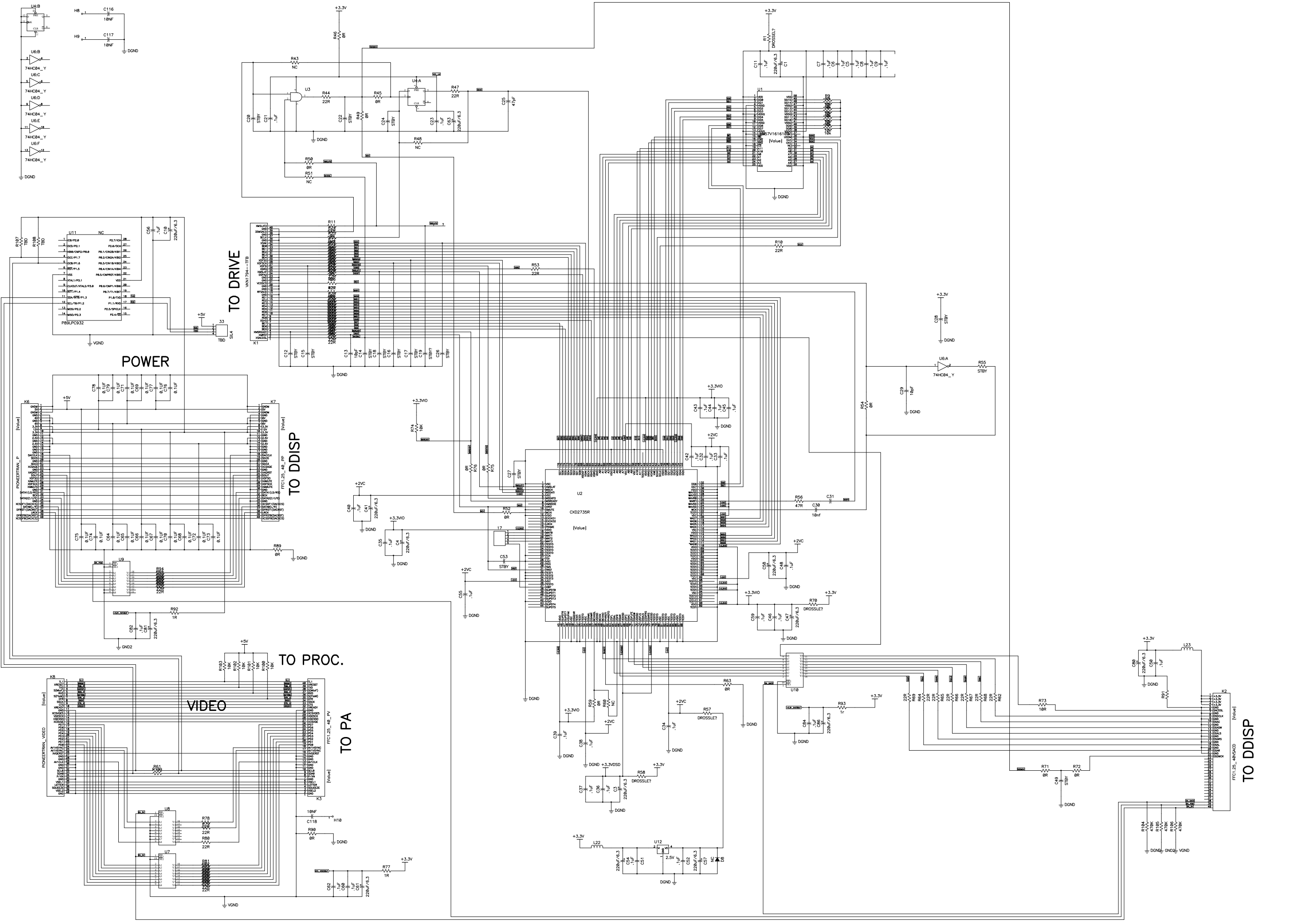
## 4.1 LOAB ASSY



**SIDE A**



**SIDE B**



**POWER**

**TO DRIVE**

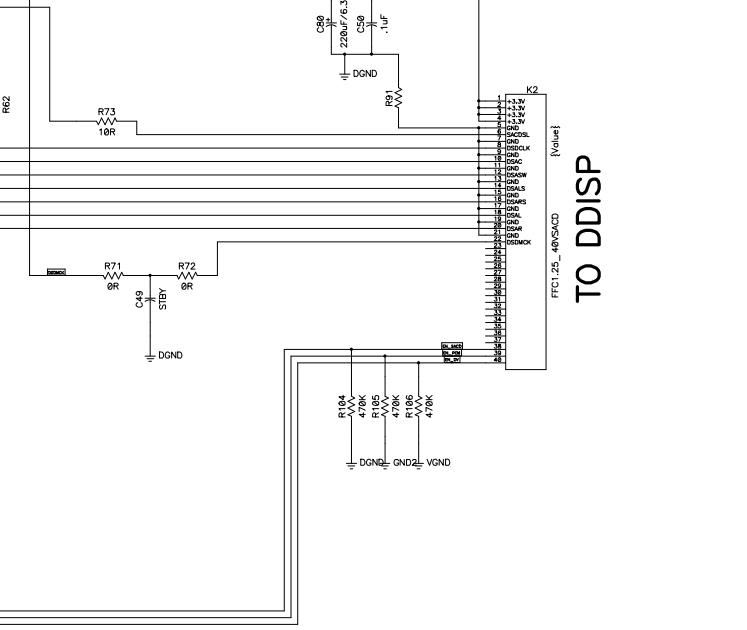
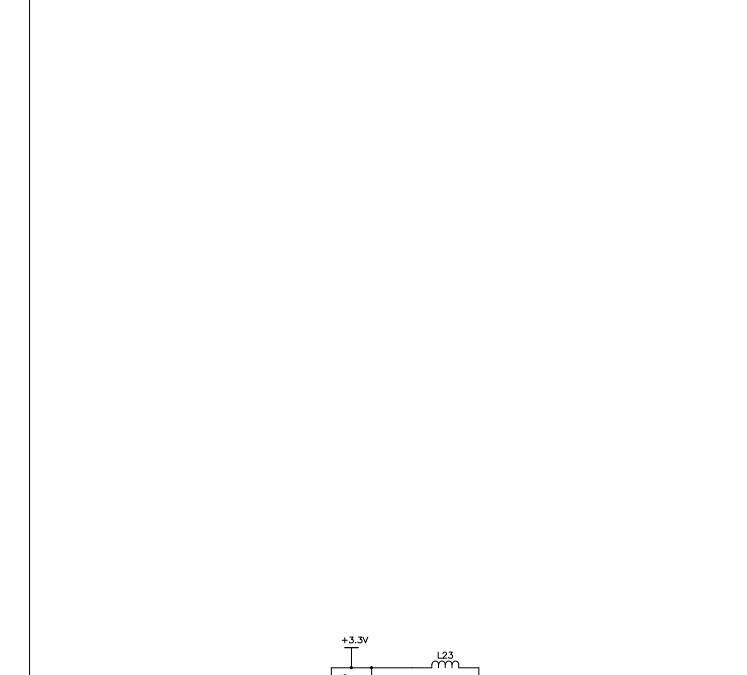
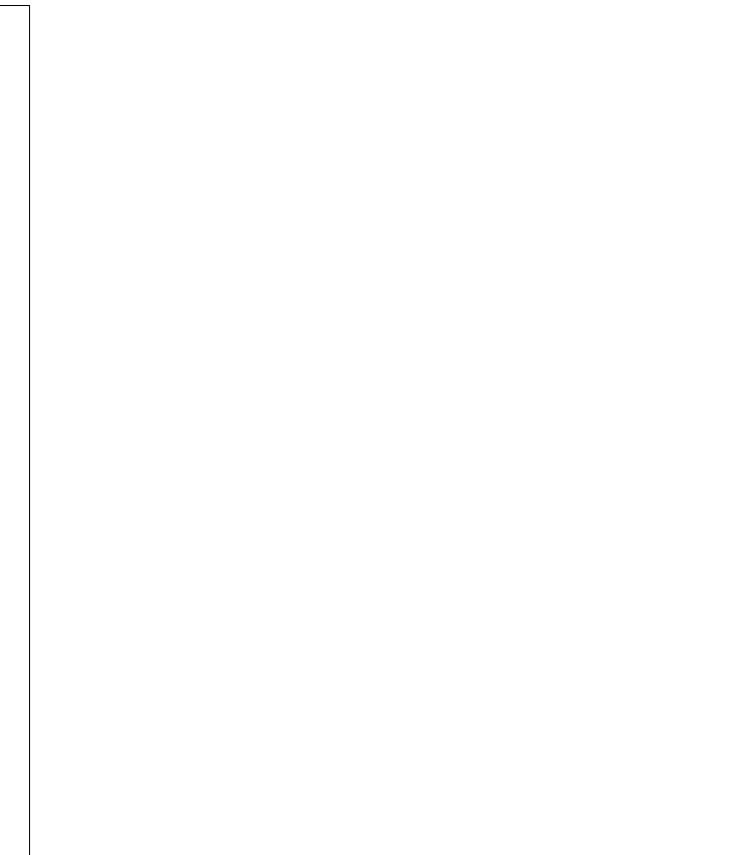
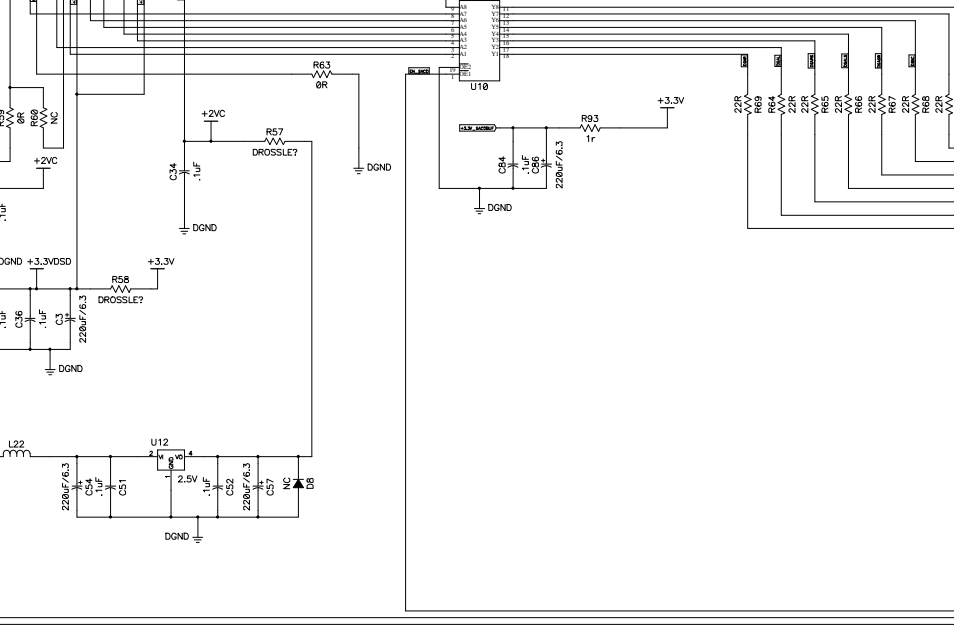
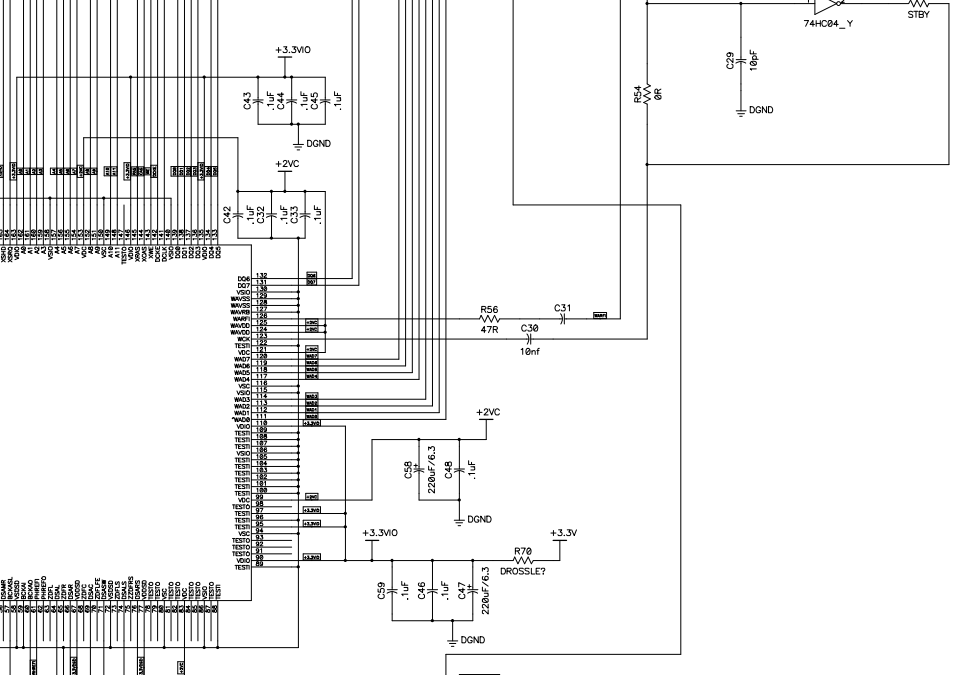
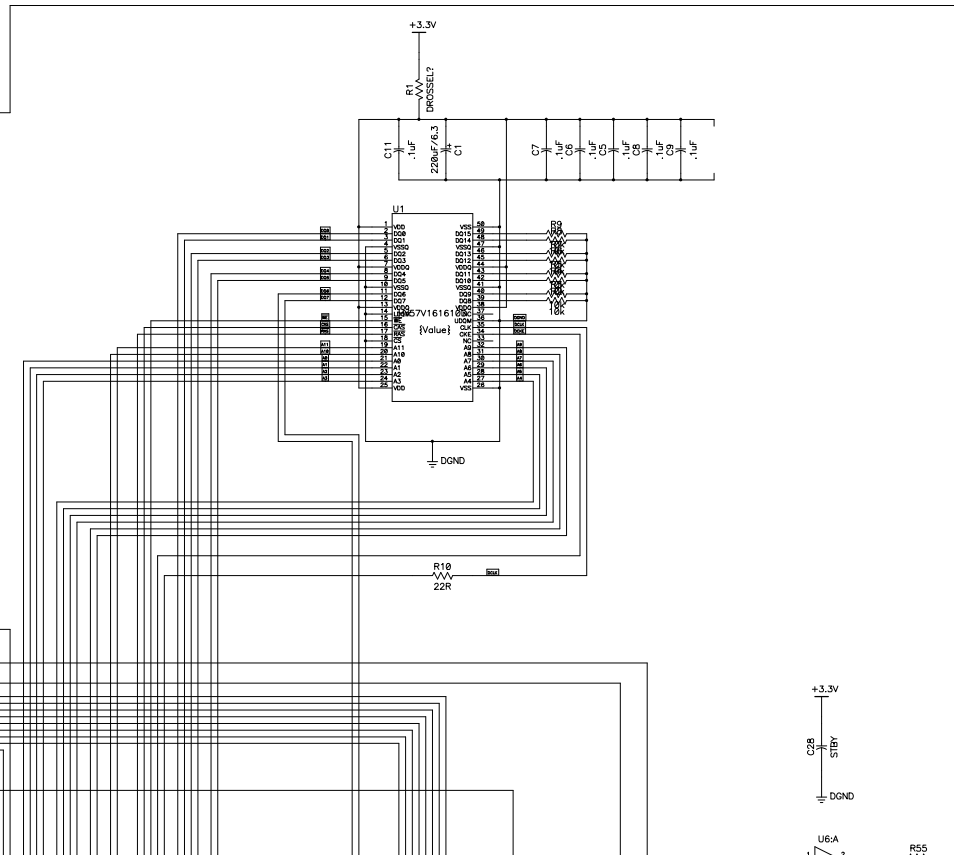
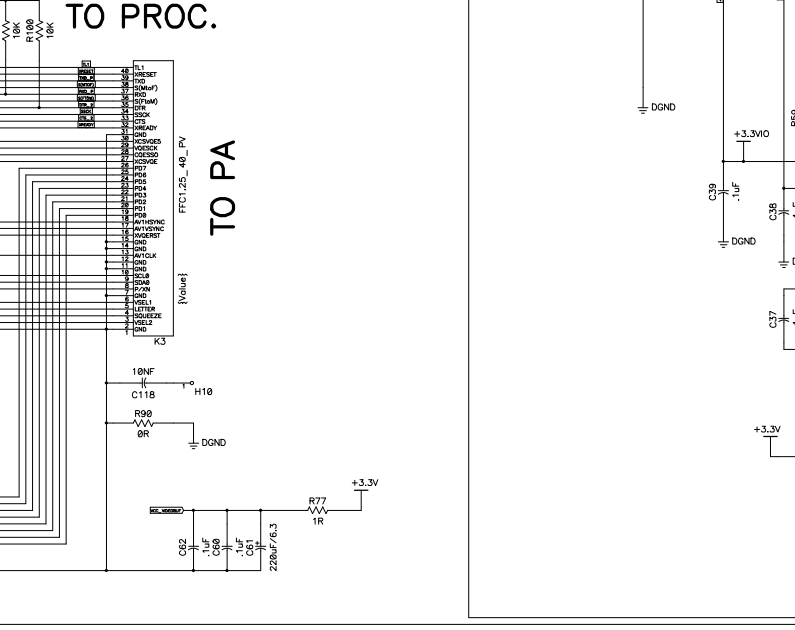
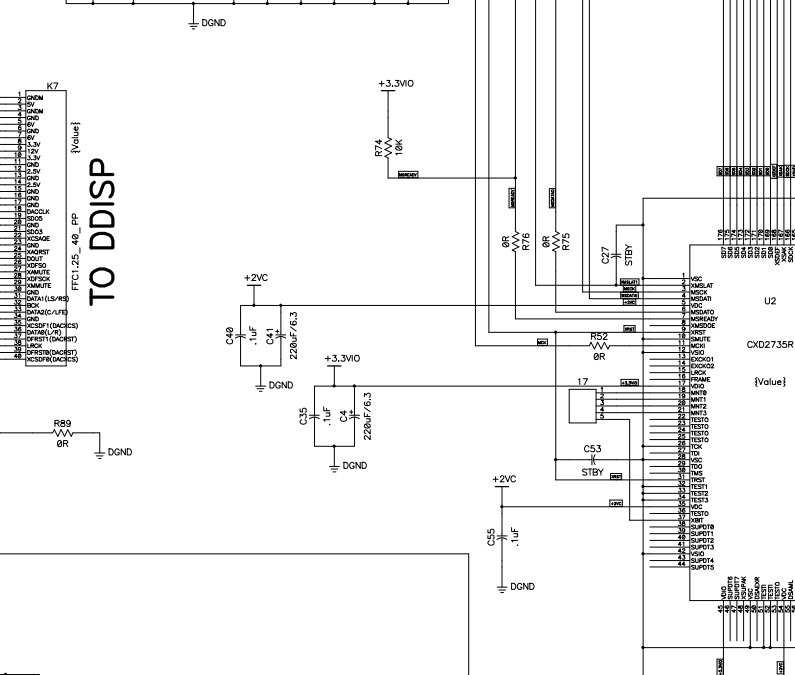
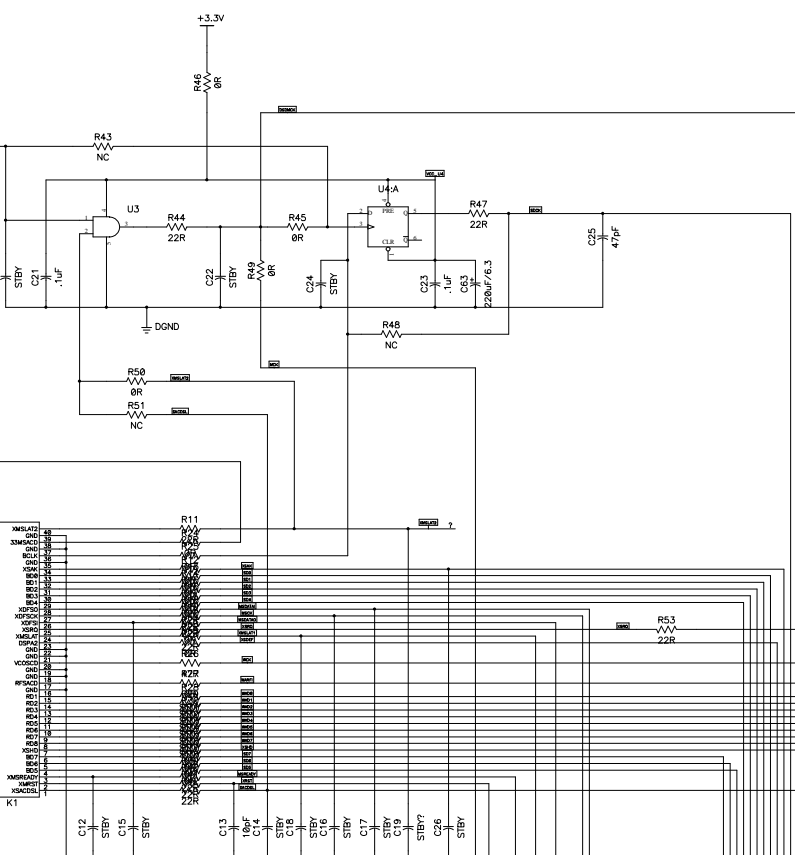
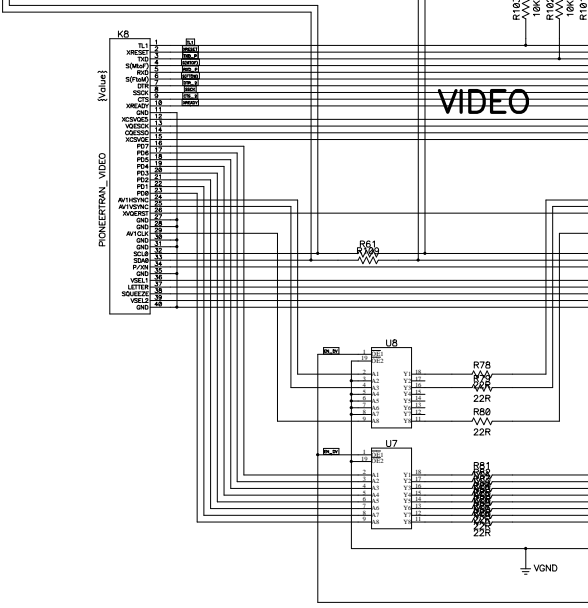
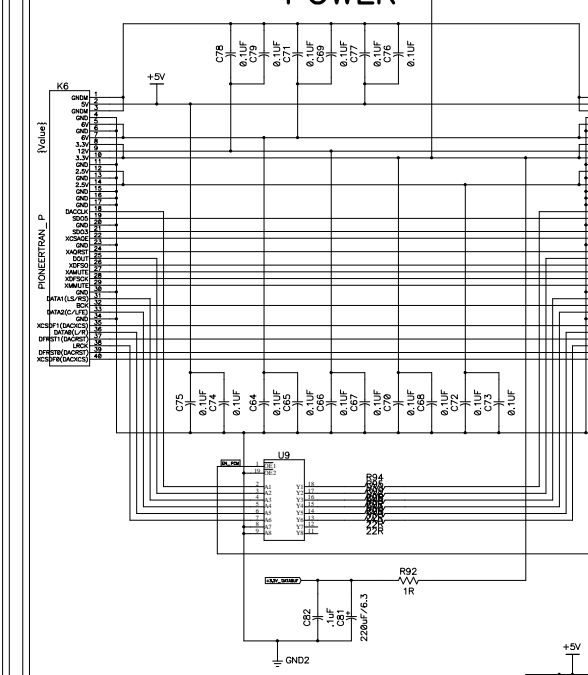
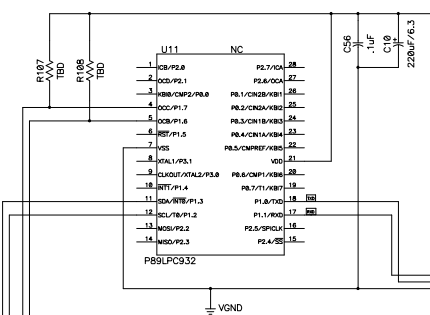
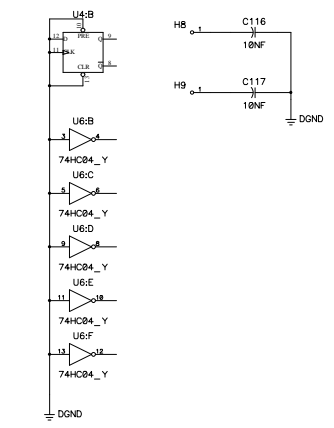
**TO DDISP**

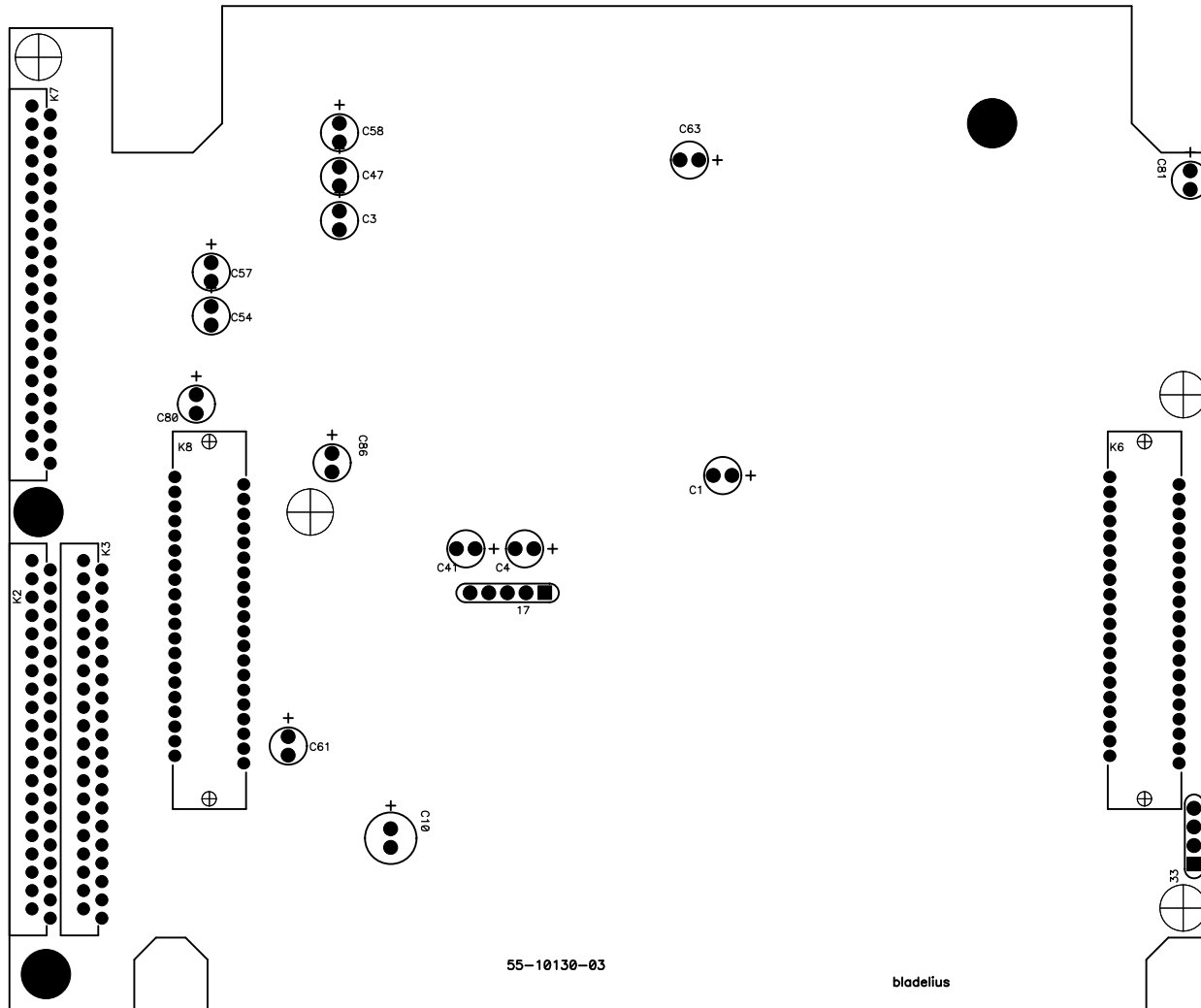
**TO PROC.**

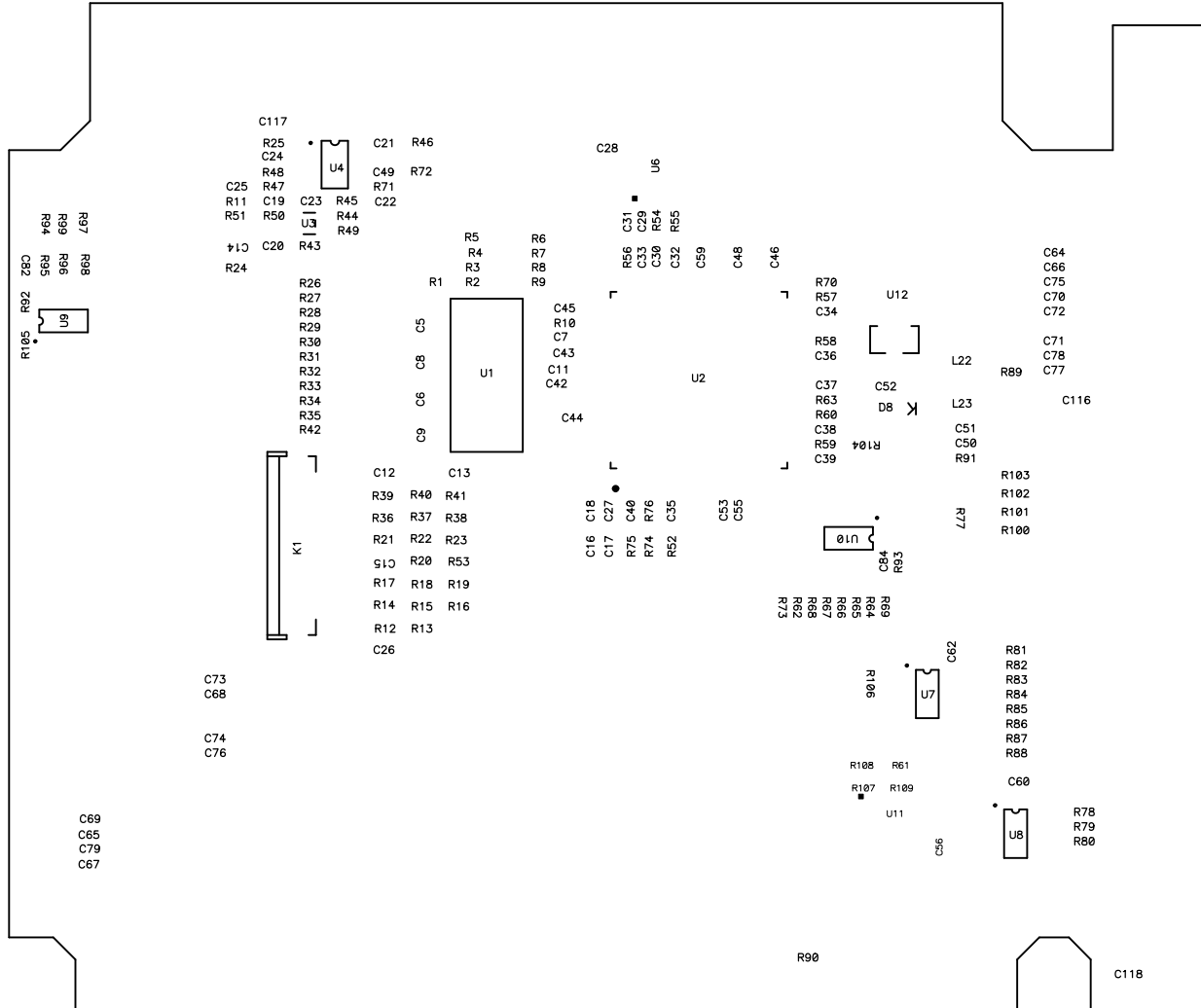
**VIDEO**

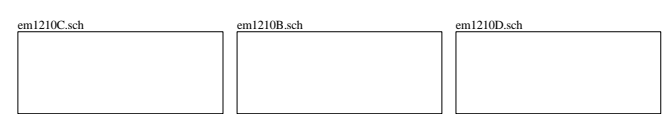
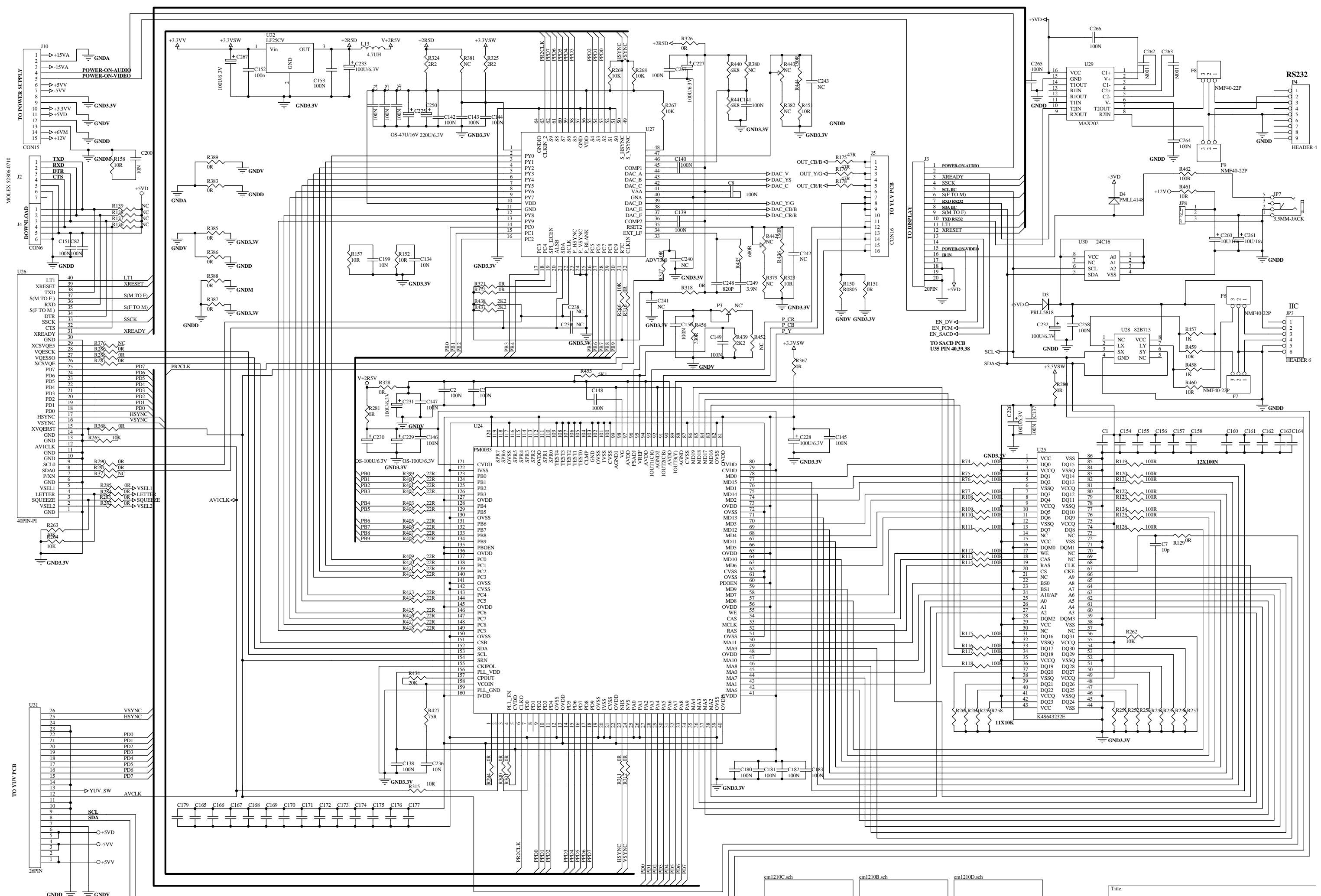
**TO PA**

**TO DDISP**



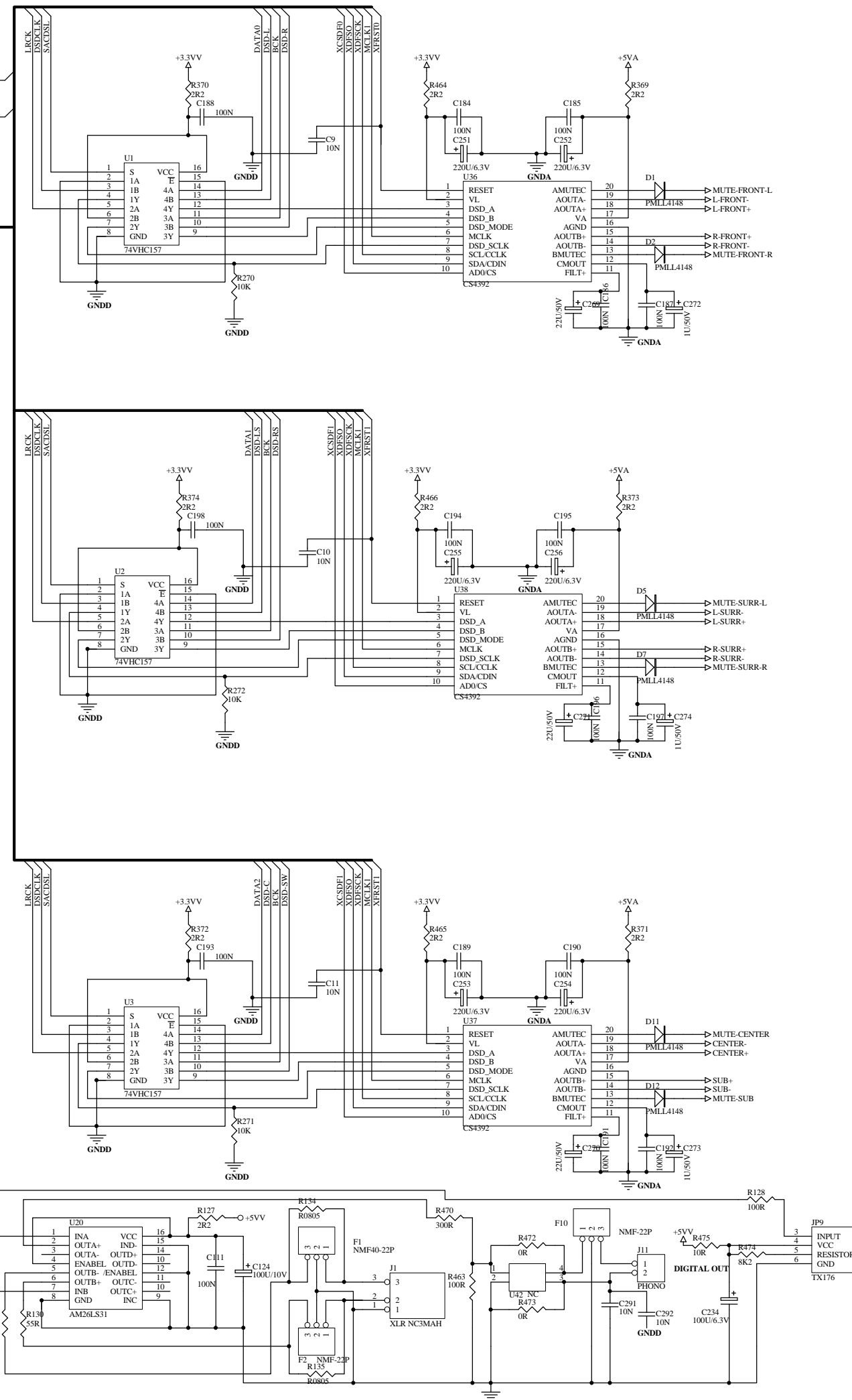
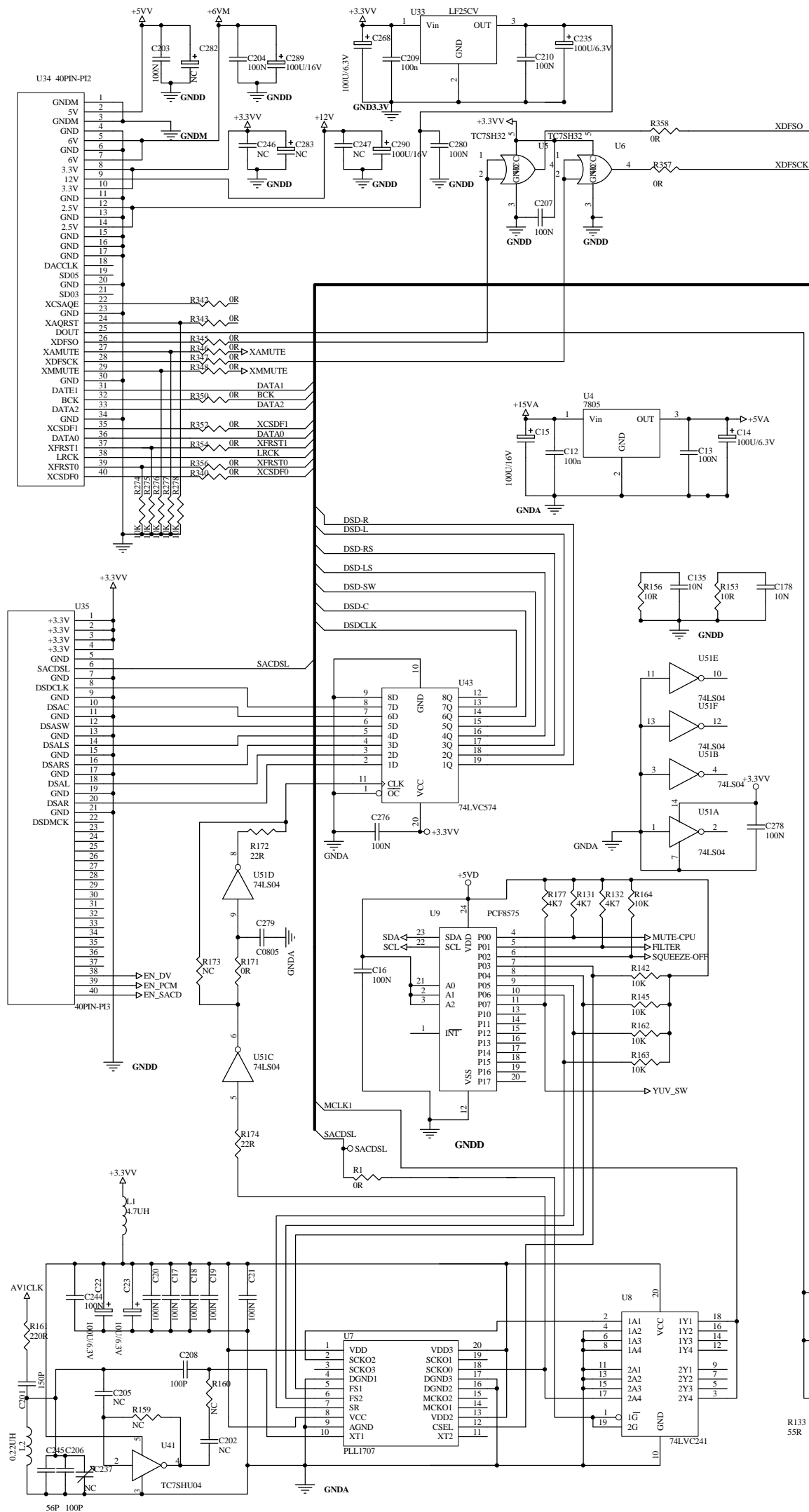




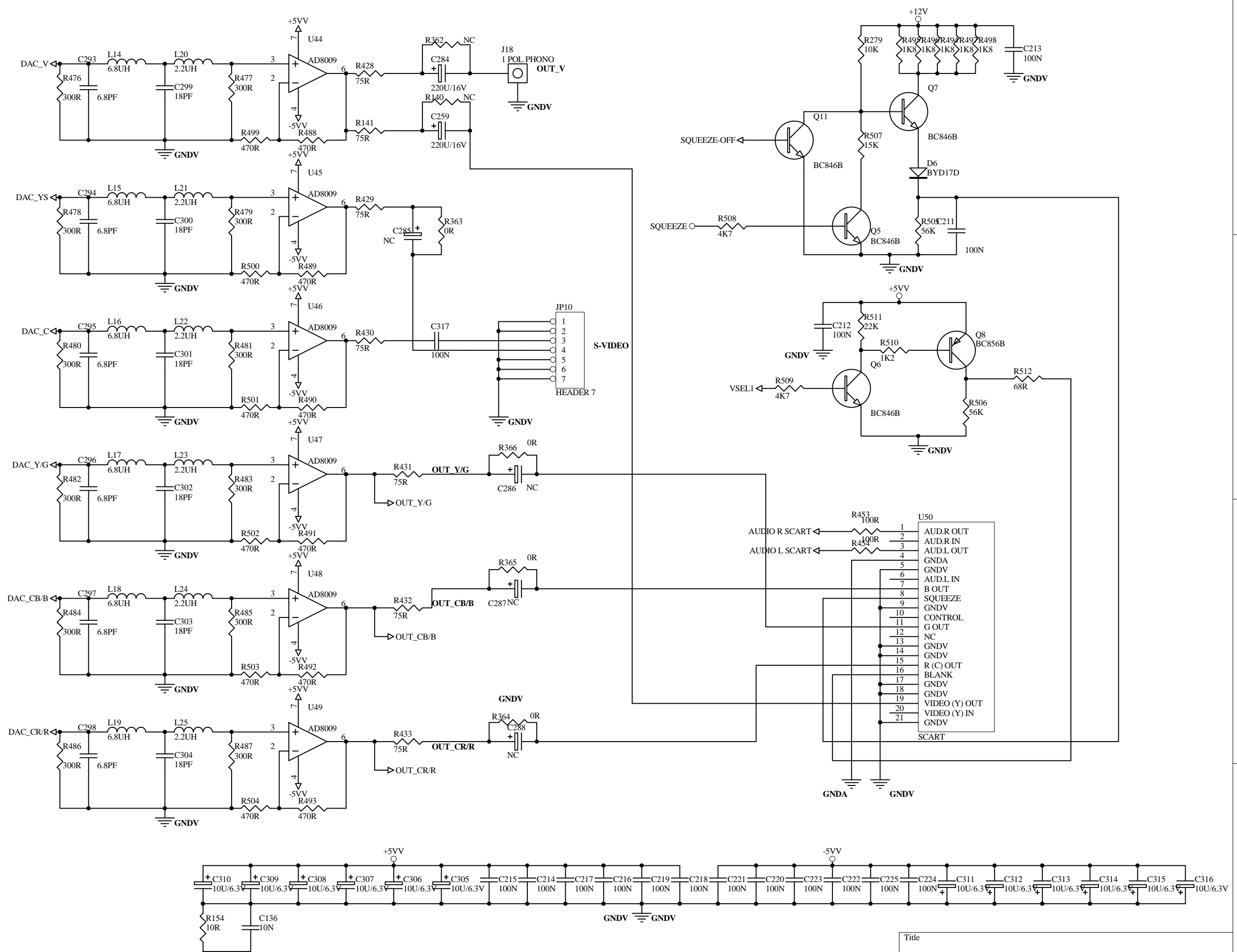


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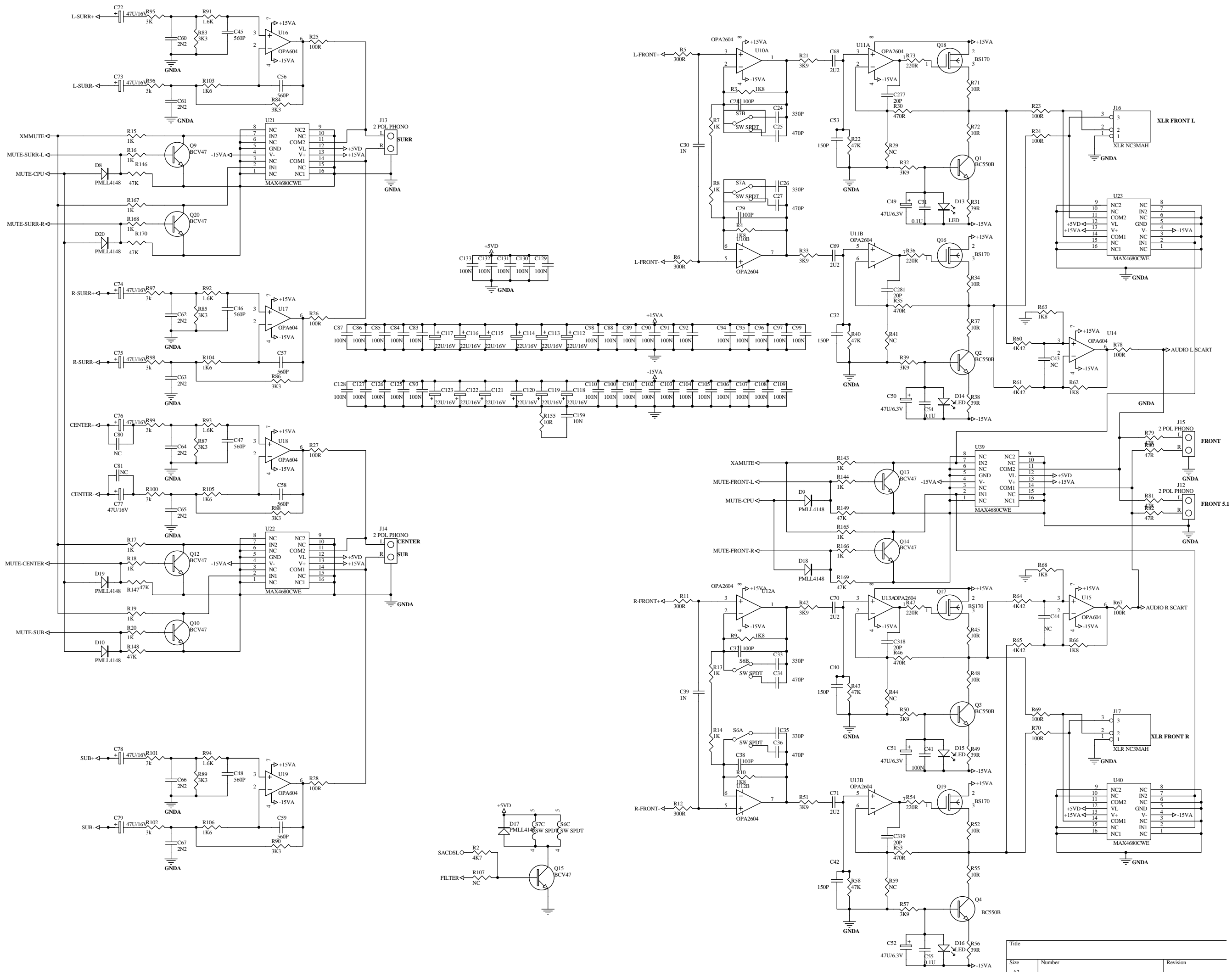




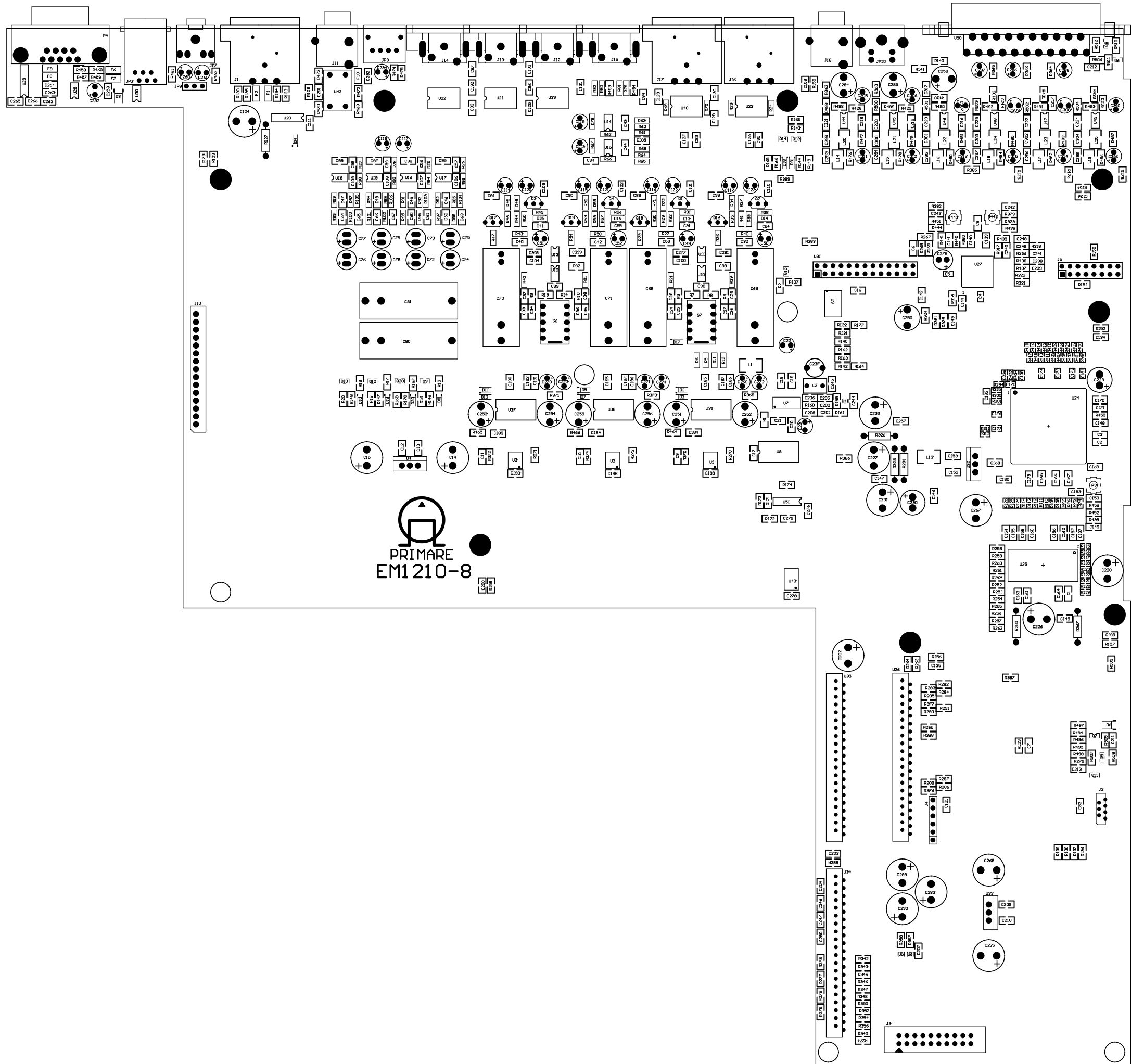
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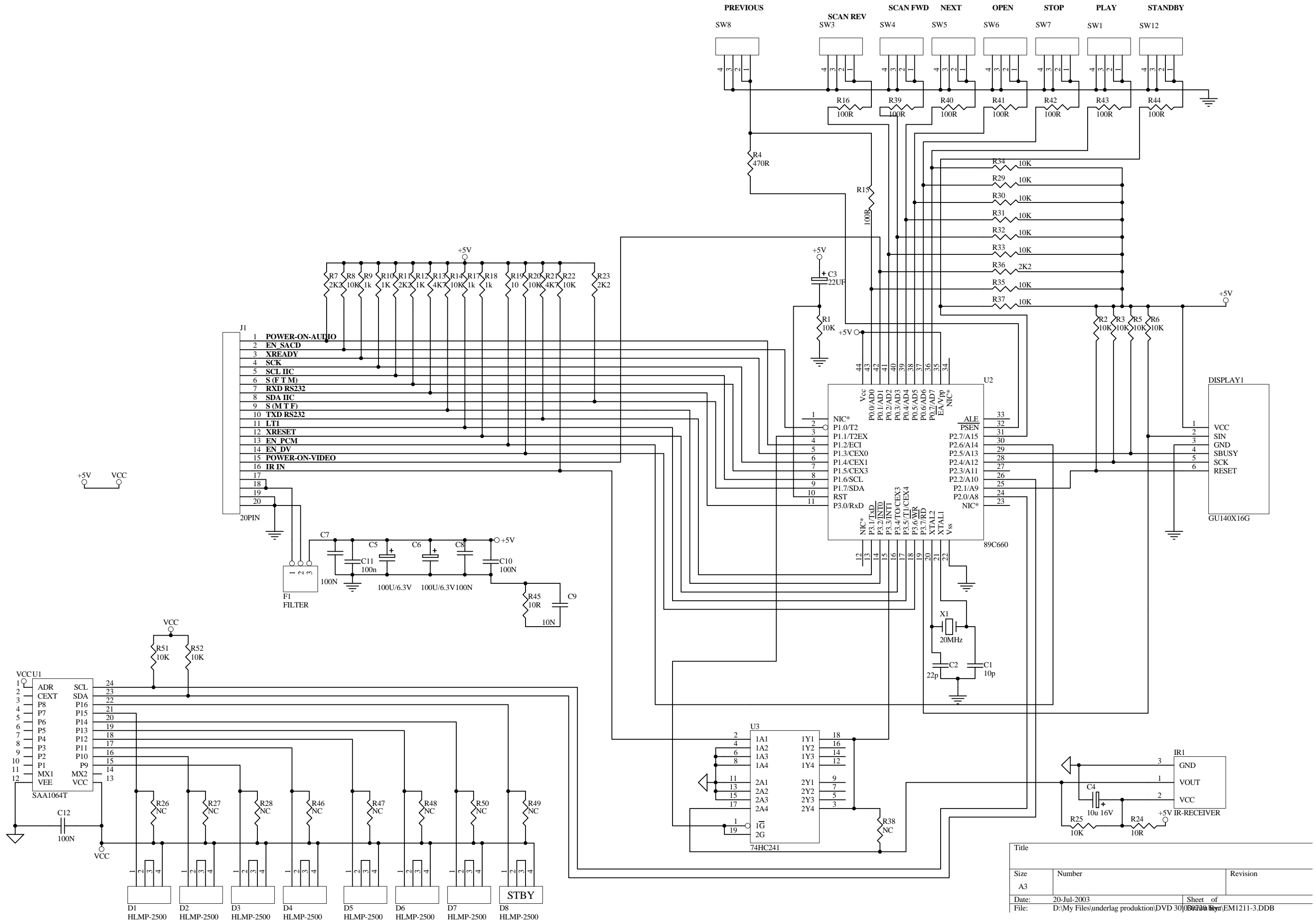


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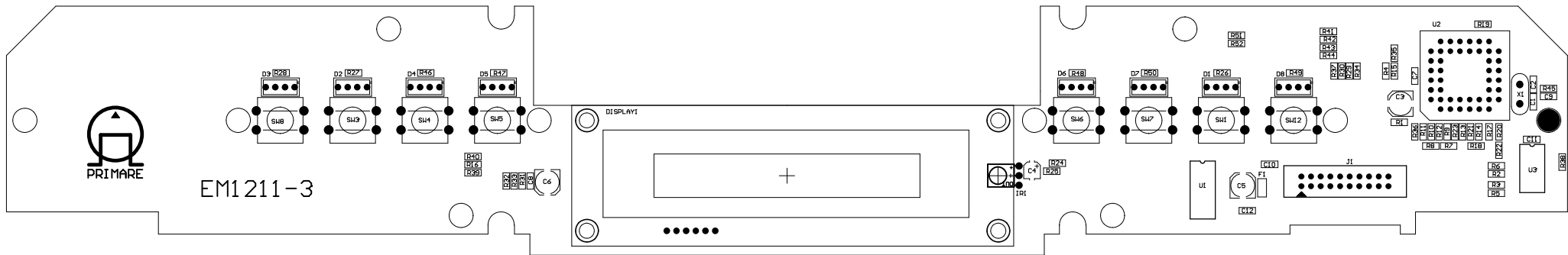


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Title		
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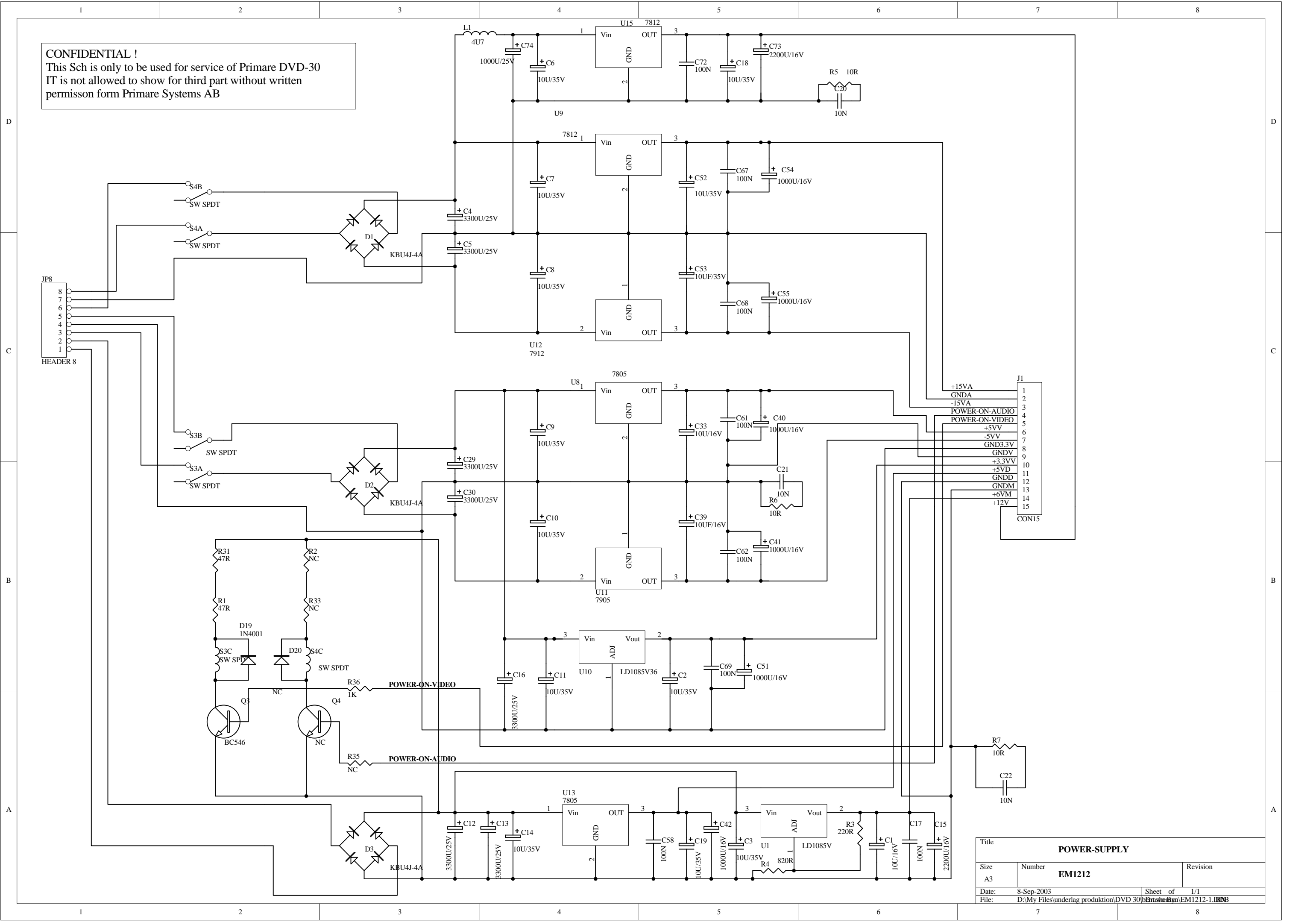


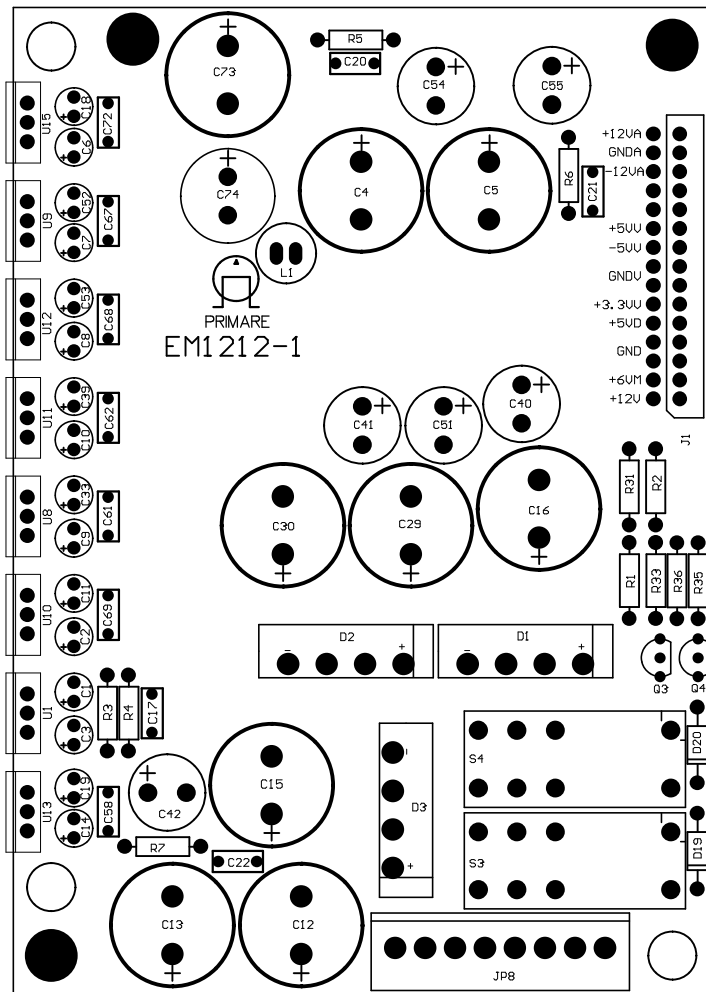
**CONFIDENTIAL !**  
 This Sch is only to be used for service of Primare DVD-30  
 IT is not allowed to show for third part without written  
 permisson form Primare Systems AB

JP8  
 8  
 7  
 6  
 5  
 4  
 3  
 2  
 1  
 HEADER 8

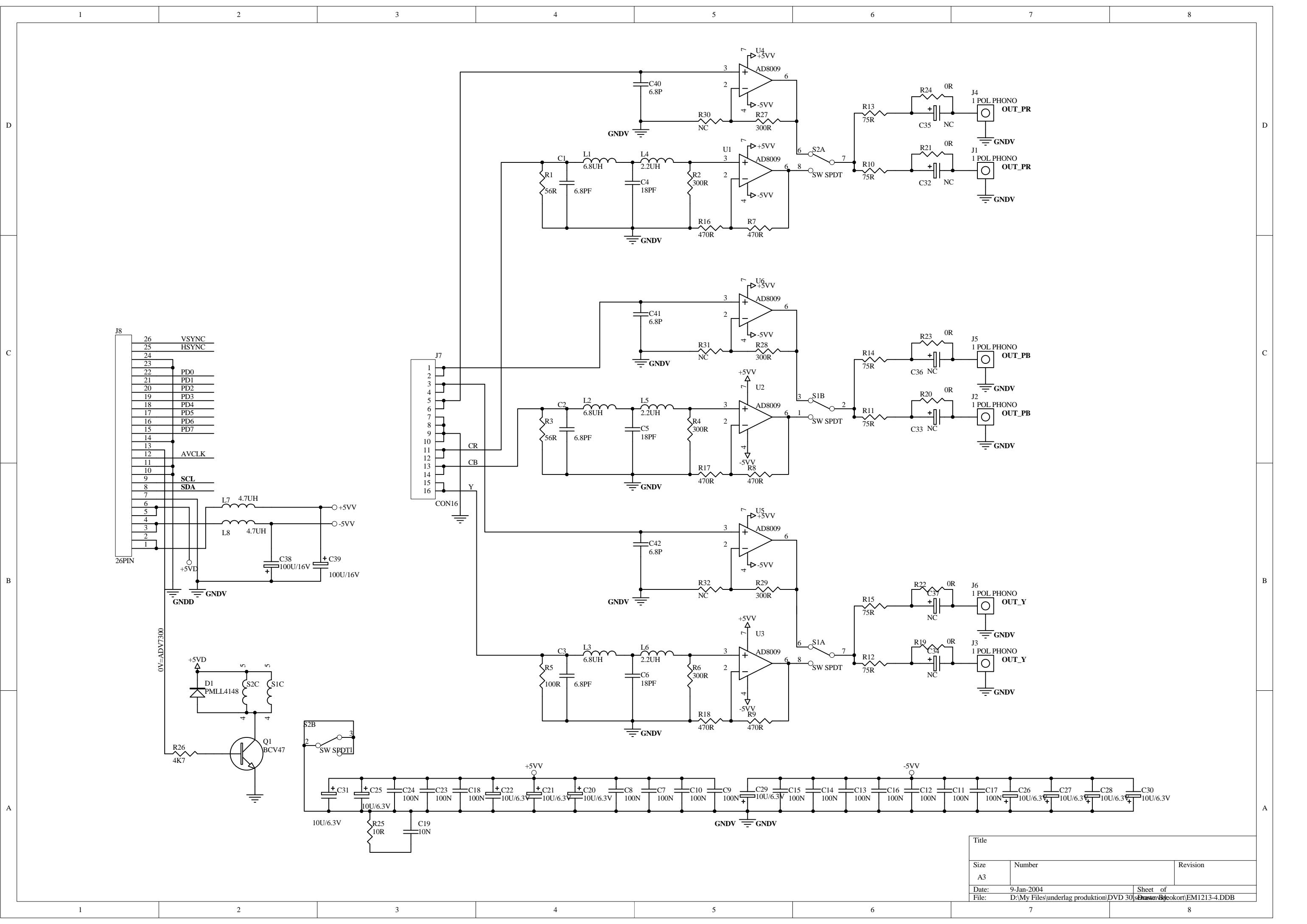
J1  
 1 +15VA  
 2 GND A  
 3 -15VA  
 4 POWER-ON-AUDIO  
 5 POWER-ON-VIDEO  
 6 +5VV  
 7 -5VV  
 8 GND 3.3V  
 9 GND V  
 10 +3.3VV  
 11 +5VD  
 12 GND D  
 13 GND M  
 14 +6VM  
 15 +12V  
 CON15

Title		
<b>POWER-SUPPLY</b>		
Size	Number	Revision
A3	<b>EM1212</b>	
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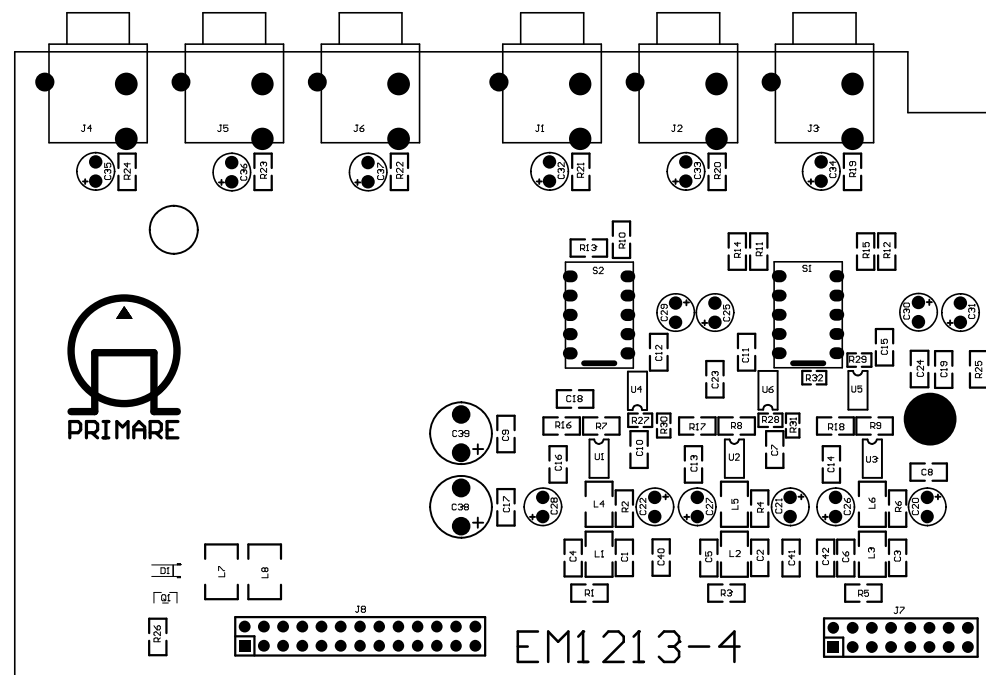


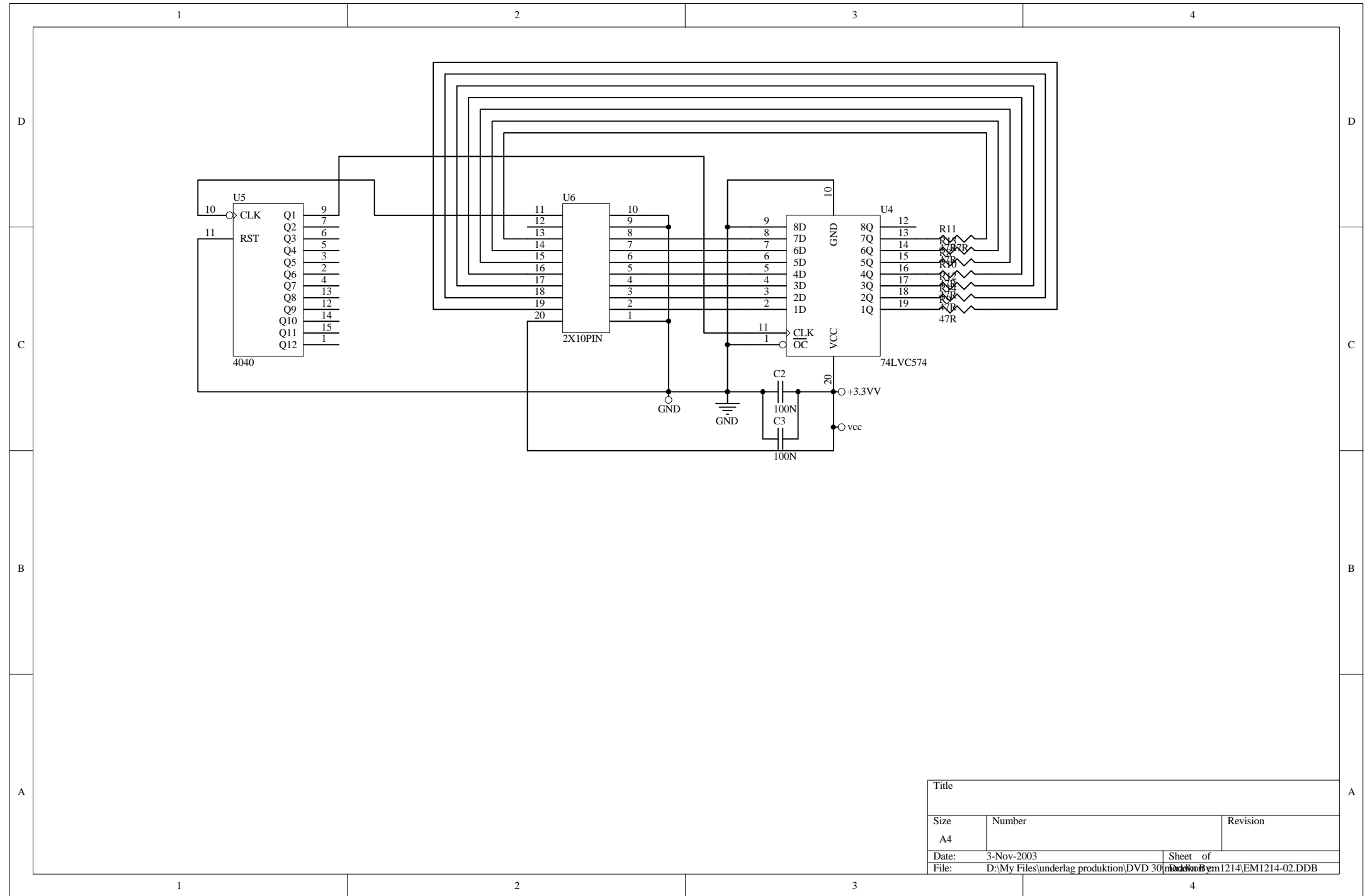




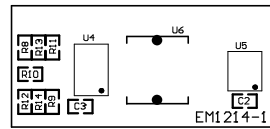


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Size	Number	Revision
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Date:	9-Jan-2004	Sheet of
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Title		
Size	Number	Revision
A4		
Date:	3-Nov-2003	Sheet of
File:	D:\My Files\underlag produktion\DVD 30\1214\1214EM1214-02.DDB	



## Technical specification

### Video Performance Features

PureCinema Progressive Scan (2-3 Pulldown)  
 108MHz/12bit Video DAC for high-quality DVD pictures  
 6 MHz Bandwidth  
 Twin-Wave Laser Pickup for CD/Video CD/CD-R/CD-RW/DVD-R/RW (DVD VideoFormat)  
 Playback Super-Fine Focus Filter with 4:4:4 Video Up-sampling  
 16 Video Parameter Adjustments w/3 User Memories  
 (Progressive Motion, PureCinema (on, off, Auto), YNR, CNR, Mosquito NR, Block NR, Sharpness High, Sharpness Mid, Detail, White level, Black Level, Gamma, Black Setup, Hue, Chroma Level, Chroma Delay)  
 3 Factory Video Settings (CRT/PDP/Professional)  
 Still/Step Play (Forward/Reverse, Except VCD Reverse)  
 Slow Motion Playback (Except VCD Reverse)

### Audio Performance Features

Multi-channel DVD Audio Playback  
 Multi-channel SACD Playback (1 bit)  
 MP3 Playback Capability  
 Bass Management  
 Triple 192KHz/24-bit (3x2 channel) Audio DAC's for Superior Sound Quality  
 Fully balanced circuitry  
 THD + Noise, 0.004% at 1 kHz  
 Dynamic range, 100dB  
 Signal-to-noise Ratio, 100dB  
 Channel separation, 100 dB  
 Output Level, 2.0V Maximum  
 Dolby® Digital and dts® Digital Outputs  
 Dolby® Digital and dts® Decoders

### Convenience Features

Resume Function (DVD, Video CD)  
 Repeat Mode  
 Program Play

### Output Terminals Video

Component Video (Y, Cr, Cb) Output x 2 (Gold Plated)  
 S-Video (S2 Compatible) x 1 (Gold Plated)  
 Composite Video Output x 1 (Gold Plated)  
 21-pin Scart x 1, RGB compatible

### Output Terminals Audio

Dolby® Digital/dts®/LPCM Coaxial Output x 1  
 Dolby® Digital/dts®/LPCM Optical Output x 1  
 Dolby® Digital/dts®/LPCM XLR Output x 1  
 Analog Output x 1 (Gold Plated)  
 6 Channel Audio Output x 1

### Output Terminals Others

IR input, 3,5 mm  
 Data input,  
 RS232 input

### Construction

2mm non-magnetic Heavy Duty chassis.

### Power Consumption

Operating: 38 W, Standby: 14 W

### Dimensions (WxHxD)

430 x 100 x 380 mm

### Weight

7,5 kg