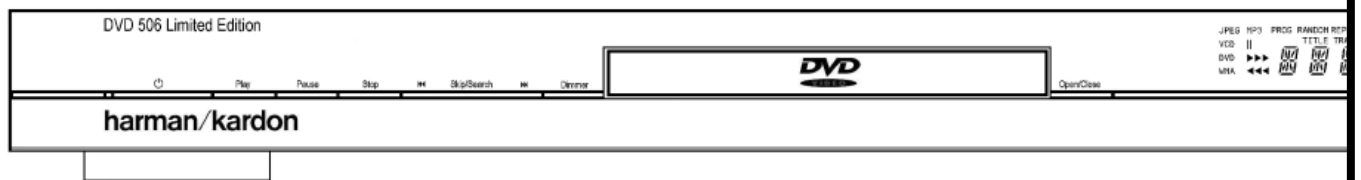


DVD 506 Limited Edition Digital Versatile Disc Player

SERVICE MANUAL



harman/kardon®

Power for the Digital Revolution®

Introduction

Kardon DVD. The DVD is a multipurpose DVD player, capable of playing both DVD-Video discs and conventional CD audio discs with the highest fidelity and access to future software upgrades via the Internet. Along with conventional DVD-Video and CD audio discs, the DVD is also compatible with MP3, WMA, JPEG and most recordable CD and DVD formats as well as VCD discs.

To enable you to get the maximum quality from DVDs, the DVD is equipped with the latest in design techniques, including advanced 10-bit video digital-to-analog converters (DAC) and Video (composite), S-Video and RGB video (RGB via SCART) outputs, to ensure that you get all the quality inherent in today's DVD medium. For optimum playback of NTSC and PAL DVD with compatible high-definition display devices, DVD is equipped with progressive component video outputs.

In addition, Harman Kardon's audio heritage continues into the digital video era with audiophile-grade Wolfson DACs to ensure that the audio quality matches the superb video. Of course, both coaxial and optical digital audio outputs are available for direct connection to A/V receivers or processors so that you may take advantage of Dolby Digital* and DTS® soundtracks. When playing audio CDs, the playback quality is state-of-the-art, matching that of the finest players available.

A wide range of programming features makes it easy to program an evening's worth of entertainment. When playing DVDs, easy-to-understand on-screen menus and icons make it simple to change languages, soundtracks, subtitles or aspect ratio, while a parental-lock function enables you to control which discs may be viewed by younger members of the household.

DVD players are among the fastest growing consumer electronics products ever brought to market, but this may, nevertheless, be the first DVD player you've owned. Although many of the features of the DVD resemble those of standard CD players, there are a number of functions that you may be unfamiliar with. To ensure that you are able to take advantage of all the power and flexibility the DVD has to offer, we encourage you to review this quick setup manual. That small investment of your time will pay major dividends in the enjoyment you will get from proper use of the DVD.

- **Plays a Wide Range of Video and Audio Formats, Including DVD-Video Discs, VCD, Standard CD Audio Discs, CD-R/RW, DVD-R/RW, DVD-+R/RW, Audio Discs and MP3 Discs**
- **High-Quality Video Playback 10-Bit DACs, Progressive Scan and Component Video Outputs**
- **Dolby Digital and DTS Data Signal Output Through Both Optical and Coaxial Digital Audio Connections**
- **Audiophile-Grade Wolfson Output DACs for the Finest Audio reproduction**
- **Easy-to-Use On-Screen Navigation System**
- **Playback of MP3 and Windows® WMA Audio Discs and JPEG image files**
- **Simultaneous Playback of MP3 and JPEG files**
- **Extensive Programming Capability for Audio and Video Discs**
- **Parental Lock Controls Prevent Unauthorized Viewing of Restricted Movies**
- **Multiple Options for Language, Soundtrack and Subtitle Selection**
- **Multiple-Angle Capabilities With Specially Encoded DVD Discs**
- **Backlit, Ergonomically Designed Remote Control**

Terminology

Terminology

Since they share some of the characteristics and technology of CD players, many of the terms and operational concepts used in a DVD player are similar to what you may be familiar with from CD players and changers, or older video disc formats such as Laser Disc. However, if this is your first DVD product, some of the terms used to describe the features of a DVD player may be unfamiliar. The following explanations should solve some of the mysteries of DVD, and help you to enjoy all the power and flexibility of the DVD format and the DVD.

With the arrival of DVD, disc data capacity has increased dramatically. On a DVD Video disc most of this capacity is taken up by MPEG 2 video and the multichannel movie soundtrack in Dolby Digital and/or DTS. This information is compressed.

Aspect Ratio: This is a description of the width of a video image in relation to its height. A conventional video screen is four units wide for every three units of height, that's why the ratio is called "4:3". Newer wide aspect ratio video displays are 16 units wide for every nine units of height, making them more like the screen in a movie theater. The program material on a DVD may be recorded in either format and, in addition, you may configure the DVD to play back in either format, depending on the features recorded on a disc.

Title: For a DVD, a title is defined as an entire movie or program. There can be as many chapters within a title as the producers decide to include. Most discs include only one title, but some may have more than one, to give you a "Double Feature" presentation.

Chapter: DVD programs are divided into chapters and titles. Chapters are the sub-sections programmed into a single title on a disc. Chapters may be compared to the individual tracks on an audio CD.

RGB Video: This is a new form of video signal that eliminates many of the artifacts of traditional composite video signals by splitting the signal into the three fundamental colors Red, Green and Blue (RGB). With an RGB connection (via SCART), you will see greater picture resolution and eliminate many picture imperfections such as the moiré patterns often seen on checkered patterned cloths. However, in order to benefit from RGB video, you must have a video display with an RGB compatible SCART input.

Progressive scan: DVD offers progressive scan video outputs for use with compatible high-resolution televisions and projectors. Before DVD, no consumer medium could store, transmit or display video with full resolution. To conserve bandwidth, analog compression (interlacing) is employed: first the odd-numbered lines of a frame are displayed, followed by the even-numbered lines. The result is that only half of the video image is drawn at one time; the viewer's brain must reassemble the complete image. This is acceptable, if the monitor is not too large and if there is not too much motion in the image. Large displays and fast-moving images reveal the limitations of this system. Thanks to DVD's immense data capacity, images are now stored intact (progressively), so that all the lines in each frame (odd and even) are shown at the same time. But because most TV's cannot handle a progressive signal, all current DVD players generate an interlaced output for compatibility. Now, the Harman Kardon DVD is among the select few DVD players with true progressive scan video output (NTSC and PAL) for use with compatible TV's and CRT projectors and with all plasma, LCD and DLP display devices via the component video output. The result is 40% greater light output than a conventional TV and a stunningly detailed high definition image, along with an almost complete absence of visible scanlines and motion artifacts. Of course, traditional Y/Pr/Pb component video, SCART, S-Video and composite video outputs are included for use with conventional televisions and projectors.

Multiple Angle: DVDs have the capability to show up to four different views of the same scene in a program. When a disc is encoded with multiple-angle information, pressing the Angle button will enable you to switch between these different views. Note that at present, few discs take advantage of this capability and, when they do, the multiple-angle technology may only be present for short periods of time within the disc. Producers will usually insert some sort of icon or graphic in the picture to alert you to the availability of multiple viewing angles.

Reading: This is a message that you will see after you've loaded the disc and the tray has closed. It refers to the fact that the player must first examine the contents of the disc to see if it is a CD or DVD, and then extract the information about the type of material on the disc, such as languages, aspect ratios, subtitles, number of titles and more. The slight delay while the contents of the disc are read is normal.

Resume: The operation of the Stop Button on the DVD works differently from what you are used to on CD players. On a traditional CD player, when you press the Stop button, the unit does just that: it stops playback. On a CD player, when you press the start button again, the disc starts from the beginning. With the DVD, however, you have two options when playing DVD discs. Pressing Stop once will stop playback, but it actually puts the unit in the Resume mode. This means that you can turn the machine off and, when you press play the next time, the disc will resume or continue from the point on the disc where the Stop button was pressed. This is helpful if you are watching a movie and must interrupt your viewing session but wish to pick up where you left off. Pressing the Stop button twice will stop the machine in a traditional manner and, when the disc is played again, it will start from the beginning.

In resume mode, the cover of the DVD will be displayed, if available. Otherwise, the Harman Kardon screen will appear.

Features

High quality video

- Advanced sophisticated 10-bit MPEG-2 video decoding circuits.
- Direct RGB output via SCART (selectable) for optimum video performance. SCART connector also configurable for Composite Video output.
- Pure PAL with NTSC disc due to true NTSC/PAL conversion.
- Dual-layer compatibility for extended play DVD.
- Progressive Scan component video outputs (NTSC and PAL)
- Playback of JPEG image files

High quality digital audio

- By connecting a DTS (Digital Theater Systems) or a Dolby Digital decoder, you can enjoy high quality 5.1 digital surround sound from DTS or Dolby Digital discs.
- With linear PCM audio at 16-24 bits and 44-96 kHz (also on digital output, see table page 15), audio quality exceeding that of CD becomes possible.
- Optical and coaxial digital audio output.

Many convenient features

- On-Screen Menu Icons for disc information or player information and access to many major functions of this unit.
- Subtitles may be displayed in one of numerous languages*.
- The multi-angle function allows you to choose the viewing angle of scenes which were shot from a number of different angles (Limited to DVD's recorded with multiple camera angles.)
- Multiple options for dialog language and soundtrack selection (limited to DVD's recorded with multiple dialog languages or soundtracks).
- Parental lock settings to prevent play of discs unsuitable for some audiences [DVD only].
- Intuitive menu operating system.
- 4 step Zoom during play and pause.
- Backlit, ergonomically designed remote control.
- Future software upgrades accessible via Internet. (See information below.)

* The number of languages recorded depends on the software.

Compatible with CD as well as DVD

- The DVD will play any conventional Audio CD or recordable (CD-R) or erasable CD (CD-RW) bearing the logos shown here, MP3, WMA (v8) or any VCD or DVD-Video with the region code 0 or 2.

Disc formats supported by this player

The unit can play the following disc formats (8 cm and 12 cm size):

- DVD-Video
- DVD-R
- DVD-RW
- DVD+R
- DVD+RW
- CD
- CD-R
- CD-RW
- VCD
- S-VCD

NOTE: Due to differences in the format of certain discs, it is possible that some discs may include a mix of features that are not compatible with the DVD. Similarly, although the DVD is capable of a wide range of features, not all discs include every capability of the DVD system. For example, although the DVD is compatible with multi-angle discs, that feature is only possible when the disc is specially encoded for multiple-angle play. In addition, the DVD is capable of playing back both Dolby Digital and DTS soundtracks, but the number and types of tracks available will vary from disc to disc. To make certain that a specific feature or soundtrack option is available, please check the options noted on the disc jacket.

- Playback capability for CD-R, CD-RW, WMA, JPEG, MP3, VCD/SVCD, DVD-R, DVD+R, DVD-RW and DVD+RW discs may vary due to variations in the quality of the disc and the recorder used to create the disc.

Upgradeability via Internet

The "firmware" controlling the functionality of the Harman Kardon DVD is fully upgradeable. In the event of future improvements to its operations and features, it will be possible to download firmware upgrades from www.harmankardon.com/International/ All you have to do is create a CD-R with the data and insert it in the DVD for an automatic upgrade.

Packing List

- 1 Harman Kardon DVD Player
- 1 Remote control
- 2 AA batteries
- 1 A/V cable for stereo analog audio and composite video
- 1 S-Video cable
- 1 remote extension cable
- 1 owner's manual

Technical Specifications

Applicable Disc:	Disc formats: 5 inch (12 cm) or 3 inch (8 cm) DVD Video, Standard conforming DVD+RW, DVD+R, DVD-R and DVD-RW, VCD, CD, CD-R, MP3, WMA, JPEG or CD-RW discs, Regio code: DVD Video disc with Code 2 or 0 only. DVD-Layers: Single Side/Single Layer, Single Side/Dual Layer, Dual Side/Single Layer, Dual Side/Dual Layer Audio formats: Linear PCM, MPEG, MLP/CPPM, Dolby Digital or DTS		
Video Signal System:	PAL/NTSC		
Composite Video Output:	1 V p-p/75 Ohms, sync negative polarity		
S Video Output:	Y/Luminance: 1 V p-p/75 Ohms, sync negative polarity C/Chrominance: 0.286 V p-p		
Component Video Output:	Y: 1Vp-p/75 Ohms, sync negative polarity Cr: 0.7Vp-p/75 Ohms Cb: 0.7Vp-p/75 Ohms		
Analog Audio Output:	2 Vrms max		
Frequency Response:	DVD (Linear PCM):	2 Hz - 22 kHz +0/-0.5 dB (48 kHz sampling)	2 Hz - 44 kHz +0/-0.5 dB (96 kHz sampling)
	CD:	2 Hz - 20 kHz +0/-0.5 dB	
Signal/Noise Ratio (SNR):	105 dB (A-weighted)		
Dynamic Range:	DVD: 100 dB (18 Bit) / 105 dB (20 Bit) CD/DVD: 96 dB (16 Bit)		
THD/1kHz:	DVD/CD: 0.003 %		
Wow & Flutter:	Below Measurable Limits		
AC Power:	110 - 240 V/ 50 - 60 Hz		
Power Consumption:	2 Watts (On)/20 Watts (Max)		
Dimensions (WxHxD):	440 x 49 x 330 mm		
Weight:	3.3 Kg		

Depth measurement includes knobs and connectors.

Height measurement includes feet and chassis.

All specifications subject to change without notice.

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Component				
Parts No.	Qty	Reference(English)	Part name	Remarks
380-B22PT001-8000	1		Case motherboard DVD22-PT001	
380-A22PT002-8500	1		case top cover DVD22-PT002	
380-C0DVD506-0500	1		back panel DVD22-PT003A	
600-00000005-6920	1		harman/kardon brand	
385-VD31ZPA2-5000	1		disk tray with aluminum ally wrap	
385-000DVD22-5200	1		Radiator	DVD31ZP-A2
332-300DVD22-0000	1		Top cover support	28×28×10
330-12ZPRE02-8000	1		Panel board DVD22ZP-RE02	
331-81ZPRE01-8001	1		Panel lens DVD31ZP-RE01	
330-21ZPRE07-8000	1		Disk tray DVD31ZP-RE07	
331-11ZPRE04-8000	1		Single key button	DVD31ZP-RE04
331-11ZPRE03-8000	1		More key button	DVD31ZP-RE03
330-71ZPRE05-8000	1		short decorate strip	DVD31ZP-RE05
330-71ZPRE06-8000	1		long decorate strip	DVD31ZP-RE06
332-41ZPRE08-8000	1		Power Indicator Cover	DVD31ZP-RE08
331-400DVD22-4000	4		Pedestal	bronzing(color optional) same to DVD 25
350-000DVD22-0200	4		Pedestal underlay	same as DVD25
332-200SZ003-0200	1		RC receiver head frame SZ003	5.5MM
350-000DVD22-0200	2		Fluorescence screen soft pad	
331-7C035040-0010	2		fasten alumium piece 01, 3*40	3.5×40 pyrocondensation tube
331-70000000-0000	2		alumium fastener 02,	fasten the power code
332-40000000-0000	4		screw jacket	
500-02000000-0030	1		lead nip 03	chip 5 and chip 6 fixed
500-01025015-0001	1		3M double side glue	25×15mm
500-01004120-0001	1		3M double side glue	4×120mm
500-01015130-0001	1		3M double side glue	15×130mm
500-09150085-0000	1		insulated piece for power board, stick to the bottom of power board	150×85mm (on the bottom)
500-09170100-0000	1		insulated paper for power board, stick to the upper power board	170×100mm (on cover)
331-91185165-9000	1		VFD filter	118.5×16.5mm
500-07130010-0000	1		insulated paper	130×10mm
313-AGDVD220-0001	1		Laser precausion mark	
313-AGDVD220-0002	1		Laser precausion guide	
500-0923040-0000	1		Main board insulated paper	230×40mm
332-200SZ036-0000	2		PCB plastic frame	Φ8×10
383-0201025C-3400	1		EVA Adhesive Tape	20×10×2.5
500-010060MM-0000	1		Fibrous tape	60mm长

Component				
Parts No.	Qty	Reference(English)	Part name	Remarks
160-E0130170-DA00	1		13chip 170mm long single pins, with the space of 2.0	Panel and main board linkage
160-E0120160-CA00	1		12 chip with one side 2.0mm, the other side 2.54mm	Bond wire for power board and main board
160-A0VH0040-0300	1		single line and double plugs of orange power code,	40 mm long
162-A0VH0300-0000	1		Power cord with pin of 300mm fixture	(round head twin pin)
160-E0030300-3A00	1		3chip 300mm long single pins, with the space of 2.54	Bond wire for panel board and main board
160-E0050280-0A00	1		5 chip 280 mm long twin pins, with space of 2.0	Bond wire for chip and main board
160-E0060150-0A00	1		6 chip 150 mm long twin pins, with space of 2.0	Bond wire for chip and main board
160-E0070240-0A00	1		7chip 240mm long twin tin dipped, with the space of 2.0	Panel and panel board linkage
161-24160050-0000	1		24 chip 240mm long with space of 0.5, flat cable	Bond wire for chip and main board
300-D001382C-0001	1		Remote control board 1382C	
206-0000DV34-2202	1	MECHANISM / Loader	DV-34 chip	
555-ADVD22RC-0000	1		DVD 506 RC, (with electric plastic	not complete)
310-00DVD506-0010	1	CARTON	package	EU
310-00DVD506-0110		CARTON	package	US
309-000PM065-0000	2		Foam pillow PM065	
311-52049522-1100	1		Unit plastic bag	same as dvd21 520×495
311-25035012-2200	1		User's manual plastic bag	same as dvd21 250×350
311-08424011-2200	1		Remot control plastic bag	same as dvd21 84×240
309-00PM0651-0010	1		isolation polyfoam PM065-1	
311-15523011-2200	1		self-seal plastic bag for AV wire	155×230
312-AB506000-0000	1		User's manual book	EU
312-AB506000-0010			User's manual book	US
312-KBDVD220-0010	1		Product card	US
162-B0001012-0000	1		Audio connecting cable	
162-B0001012-0000	1		Video connecting cable	
202-00000511-1200	1		5# battery	same as DVD25
162-H0001012-0000	1		Remot control transmission cable	same as DVD25
162-C0001012-0000	1		S-video connection cable	
313-AD0DVD22-0000	1		safety instruction manual	EU
312-KA0DVD22-0010	1		warranty card	US
555-0DVD506RC-0000	1	REMOTE CONTROL	RC DVD506	

Component				
Parts No.	Qty	Reference(English)	Part name	Remarks
381-00300634-1202	4		KBTTO M3×6	Screw
381-00300614-1311	5		PWMTTC M3×6	Screw
381-0040851-1200	4		RTHO M4×8	Screw
381-00300614-1912	2		PWBTTNI M 3×6	Screw
381-00300614-1912	6		PWBTTNI M3×6	Screw
381-00250811-2300	3		PAHO M3×8	Screw
381-00300814-1312	1			Screw
381-00300814-1302	1			Screw
381-00300811-2300	11		PAHC M3×8	Screw
381-00300814-1312	4		PWBTTTC M3×8	Screw
381-00300814-1302	1		PBTTC M3×6	Screw
381-00300614-1311	2		PWMTTC M3×6	Screw
381-00301514-1311	2		PWMTTC M3×15	Screw
381-00301010-1211	2		PWMO M3×10	Screw
382-000000M3-1100	2		M3	Screw
381-00300614-1912	2		PBTTNI M3×6	Screw
381-00300814-1912	1		PWBTTNI M3×8	Screw

MAIN BOARD				
Parts No.	Qty	Reference(English)	Part name	Remarks
300-C001297C-0002	1		Main board 1297C	
RESISTOR				
131-A00000JT-0000	4	R7 R47 R48 R49	0603-0Ω	
131-A00000JT-0000	2	R8 R10	0603-0Ω	
131-A0C022JT-0000	2	R730 R731	0603-2.2Ω	
131-A00022JT-0000	3	R38 R502 R725	0603-22Ω	
131-A00033JT-0000	6	R817 R818 R819 R822 R504 R823	0603-33Ω	
131-A00056JT-0000	2	R732 R733	0603-56Ω	
131-A00075FT-4000	12	R2 R3 R4 R5 R6 R11R12 R13 R14 R15 R16 R17 R50	0603-75Ω-1%	
		R51 R52 R407 R408 R409 R529 R530		
131-A00082JT-0000	3	R815 R816 R820	0603-75Ω	
131-A00091FT-4000	1	R17	0603-91Ω-1%	
131-A00082JT-0000	3	R815 R816 R820	0603-82Ω	
131-A01010JT-0000	4	R43 R835	0603-100Ω	
131-A01011JT-0000	1	R37	0603-110Ω	
131-A01015JT-0000	1	R36	0603-150	
131-A00187FT-4000	1	R405	0603-187Ω-1%	
131-A01022JT-0000	1	R39	0603-220Ω	
131-A01027JT-0000	1	2R13	0603-270Ω	
131-A01033JT-0000	2	R31 R32	0603-330Ω	
131-A01039JT-0000	1	2R12	0603-390Ω	
131-A01047JT-0000	4	R826 R827 R833 R834	0603-470Ω	
131-A01068JT-0000	2	R21 R29	0603-680Ω	
131-A02010JT-0000	2	R44 R828	0603-1KΩ	
131-A02012JT-0000	1	R727	0603-1.2KΩ	
131-A01178FT-4000	2	R24 R33	0603-1.78KΩ-1%	
131-A02022JT-0000	2	R501 R507	0603-2.2KΩ	
131-A02027JT-0000	11	R1 R9 R56 R114 R115 R116 R411R412 R413 R414 R420	0603-2.7KΩ	
131-A02033JT-0000	6	2R4 2R5 2R6 2R7 2R8 2R9	0603-3.3KΩ	
131-A02047JT-0000	2	2R1 2R11	0603-4.7KΩ	
131-A02047JT-0000	1	R432 (US) R433 (EU)	0603-4.7KΩ	

MAIN BOARD				
Parts No.	Qty	Reference(English)	Part name	Remarks
131-A01475FT-4000	4	R19 R26 R27 R35	0603-4.75KΩ-1%	
131-A02075JT-0000	4	R705 R710 R713 R830	0603-7.5KΩ	
131-A02075FT-4000	2	R25 R34	0603-7.5KΩ-1%	
131-A03010JT-0000	27	R18 R20 R23 R28 R41 R42 R417 R416 R428 R709 R714 R734 R735 R736 R737 R755 R810 R812 R821 2R2 2R3 2R18 R738 R741 R742 R749 R752	0603-10KΩ	
131-A03015JT-0000	2	R40 R702	0603-15KΩ	
131-A03018JT-0000	2	R703 R726	0603-18KΩ	
131-A03027JT-0000	1	R724	0603-27KΩ	
131-A03033JT-0000	1	R706	0603-33KΩ	
131-A03068JT-0000	1	R814	0603-68KΩ	
131-A03082JT-0000	1	R46	0603-82KΩ	
131-A05010JT-0000	1	R832	0603-1MΩ	
130-T41015JT-0000	1	2R15	RT-1/4-150Ω	
130-T42010JT-0000	2	2R10 2R14	RT-1/4-1KΩ	
132-0008010J-T100	1	RN571	10Ω	
132-0008022J-T100	1	RN504	22Ω	
132-0008033J-T100	4	RN801 RN803 RN804 RN805	33Ω	
132-0008082J-T100	1	RN806	82Ω	
132-0008222J-T100	5	RN501 RN502 RN503 RN505 RN506	2.2KΩ	
132-0008310J-T100	1	RN401	10KΩ	
132-0008347J-T100	1	RN802	47KΩ	
131-B00000JT-0000	2	<u>R8 R10</u>	0805-0Ω	
131-B00001JT-0000	2	3R6 3R9	0805-1Ω	
131-B00022JT-0000	1	<u>R502</u>	0805-22Ω	
131-B00027JT-0000	2	R728 R729	0805-27Ω	
131-B00033JT-0000	2	<u>R817 R819</u>	0805-33Ω	
131-B00075JT-4000	2	<u>R408 R409 R529 R530</u>	0805-75Ω-1%	
131-B01010JT-0000	2	<u>3R14 3R15</u>	0805-100Ω	
131-B00187FT-4000	1	<u>R406</u>	0805-187Ω-1%	
131-B01033JT-0000	2	<u>R22 R30</u>	0805-330Ω	
131-B02010JT-0000	4	<u>2R16 R55 R824R825</u>	0805-1KΩ	
131-B02022JT-0000	2	<u>R503 3R17</u>	0805-2.2KΩ	
131-B02027JT-0000	1	<u>R431</u>	0805-2.7KΩ	
131-B02039JT-0000	1	<u>R829</u>	0805-3.9KΩ	
131-B02047JT-0000	2	<u>R4A R5B</u>	0805-4.7KΩ	

MAIN BOARD				
Parts No.	Qty	Reference(English)	Part name	Remarks
131-B03010JT-0000	16	R410 R424 R806 3R11 3R12 3R10 R425 R426 R805 R807 R808 R809 R427 R802 R803 R804	0805-10KΩ	
131-B03015JT-0000	1	R813	0805-15KΩ	
131-B03018JT-0000	1	R720	0805-18KΩ	
131-B04010JT-0000	3	R418 R708 3R13	0805-100KΩ	
CAPACITOR				
141-C0A020PH-KT00	12	C15 C16 C17 C18 C19 C32 2C7 2C8 2C9 2C10 2C11 2C12	0603-20PF	
141-C0A033PH-KT00	1	C828	0603-33PF	
141-C0A120PH-KT00	2	C706 C711	0603-200PF	
141-C0A156PH-KT00	2	C702 C707	0603-560PF	
141-C0A168PH-KT00	2	2C5 2C6	0603-680PF	
141-C0A122PH-KT00	1	C814	0603-220PF	
141-C0A110PH-KT00	2	C52 C53	0603-100PF	
141-C0A210PH-KT00	1	CB15	0603-102	
141-C0A310PH-KT00	1	C842	0603-103	
141-C0A318PH-KT00	1	C831	0603-183	
141-C0A410PH-KT00	34	C69 C215 C714 C829 C830 C807 C808 C810 C817 C824 C841 CB1 CB2 CB3 CB4 CB5 CB6 CB7 CB8 CB9 CB18 CB19 2C2 2C3 2C4 CB430 CB432 CB204 CB414 CB421 CB422 CB423 CB424 CB425	0603-104	
141-C0B110PH-JT00	2	C44 C46	0805-100PF-NPO	
141-C0B168PH-JT00	2	C48 C51	0805-680PF-NPO	
141-C0B210PH-JT00	2	C45 C50	0805-102-NPO	
141-C0BC68PH-KT00	1	C502	0805-6.8PF	
141-C0B010PH-KT00	4	C408 C837 C823 C839	0805-10PF	
141-C0B022PH-KT00	3	C22 C410 C411	0805-22PF	
141-C0B047PH-KT00	2	C407 C821	0805-47PF	
141-C0B050PH-KT00	3	C20 C21 C41	0805-51PF	
141-C0B210PH-KT00	1	CB15 C813	0805-102	
141-C0B215PH-KT00	1	C815	0805-152	

MAIN BOARD				
Parts No.	Qty	Reference(English)	Part name	Remarks
141-C0B256PH-KT00	1	<u>C822</u>	0805-562	
141-C0A310PH-KT00	3	<u>C820 C836 3CB5</u>	0805-103	
141-C0B333PH-KT00	1	<u>C818</u>	0805-333	
		<u>C27 C39 C47 C49</u> <u>C56 C57 C58 C64</u> <u>C65 C70 C71 C72</u> <u>C74 C75 CB14 C54</u> <u>CB11 CB12 CB13 CB20</u> <u>CB16 C42 CB501 CB401</u> <u>CB405 CB410 C205 C208</u> <u>CB429 C809 C819 C832</u> <u>C838 C802 C803 C827</u> <u>CB10 C704 C731 C716</u> <u>CB415 CB427 C835 C812</u> <u>CB213 C216 C703 C728</u> <u>C712 C805 C73 C55</u> <u>CB21 CB63 CB205 CB502</u> <u>CB503 CB504 CB505 CB506</u> <u>CB404 CB408 CB409 CB402</u> <u>CB403 CB406 CB509 CB510</u> <u>CB407 CB411 CB412 CB413</u> <u>CB426 CB416 CB417 CB418</u> <u>CB419 CB420 CB428 CB431</u>		
141-C0B410PH-KT00	86	<u>C713 C806</u>	0805-104	
141-C0B510PH-KT00	4	<u>C816 C833 C834 3CB8</u>	0805-105	
140-DCA001UH -0A00	2	C4 C5	CD-50V-1μF	
140-DCAC47UH -0A00	2	C825 C826	CD-50V-4.7μF	
140-DCA010UF-0A00	3	C35 C59 C723	CD-25V-10μF	
140-DCA022UE-0A00	3	C7 C9 C14	CD-16V-22μF	
140-DCA047UE-0A00	11	C8 C13 C33 C34 C36 C37 C66 C67 C718 C719 2C1	CD-16V-47μF	
140-DCA047UH -0A00	10	3C1 3C2 3C3 3C5 3C16 3C7 3C9 3C13 3C15 3C4	CD-50V-47μF	
140-DCA110UD -0A00	7	C6 C12 C62 C76 C402 C404 C501	CD-10V-100μF	
140-DCA110UE -0A00	5	C63 C207 C715 C720 C730	CD-16V-100μF	
140-DCA110UF-0A00	4	C29 C38 C30 C31	CD-25V-100μF	
140-DCA122UD-0A00	4	C3 C26 C28 C210	CD-10V-220μF	

MAIN BOARD				
Parts No.	Qty	Reference(English)	Part name	Remarks
140-DCA122UE -0A00	9	C2 C23 C25 C201 C209 C403 C405 C406 C409	CD-16V-220μF	
140-DCA047UF -0A00	2	C60 C61	CD-25V-220μF	
140-DCA047UD -0A00	4	C10 C11 C1 C40	CD-10V-330μF	
140-DCA047UD -0A00	2	C24 C68	CD-10V-470μF	
Oscillator				
217-03386003-2200	1	Y801	33.868MHZ	basic freq.
217-02700003-2200	1	Y401	27.0MHz	basic freq.
Inductance				
151-3B0B39K1-A000	1	L3	0805 0.39μH	SMD
151-3B0B68K1-A000	3	L1 L2 L6	0805 0.68μH	SMD
152-1B205001-A000	18	L5 L401 L402 L403 L404 L405 L406 L407 L701 L702	0805 50Ω	SMD
		L703 L801 L802 L803 L804 L805 L14 L15		
153-RH356008-1000	9	L4 L13 FB6 FB7 FB8 FB9 FB10 FB11 FB14	50Ω	DIP
152-1A211201-A000	20	FB1 FB2 FB3 FB4 FB5 FB16 FB17 2FB1 2FB2 2FB3 2FB4 2FB5 2FB6 2FB7 2FB8 L8 L9 L10 L11 L12	0603 120Ω	
152-1A204701-A000	9	L16 L17 L18 L19 L20 L21 L22 L23 L24	0603 47KΩ	basic freq.
DIODE				
110-B0IN4148-0A00	10	D7 D8 D9 D10 D11	1N4148	DIP
		D12 D13 2D1 D801 D17		
111-B0IN4148-0A00	8	3D1 3D2 3D3 3D4 3D5 3D9	1N4148	SMD
	3	3D7 3D8		
110-B0IN5953-0A00	3	D15 D16 D14	1N5393	DIP
111-D000C061-0T00	1	3DZ1	Regulator Diode 6.1V	DIP
IC AND TRANSISTOR				
121-00008050-T400	3	Q701 Q801 Q802	8050	SMD
121-00008550-T300	4	Q702 Q703 Q704 Q712	8550	SMD
121-00009014-T000	7	Q705 Q706 Q707 Q708 Q709	9014	SMD
		Q710 Q711		
121-DTC343TK-T400	5	Q1 Q2 2Q2 2Q3 2Q4	DTC343TK	SMD
121-00003906-T000	3	Q3 Q4 2Q1	3906	SMD

MAIN BOARD				
Parts No.	Qty	Reference(English)	Part name	Remarks
IC				
102-00LM833M-6000	1	U3	LM833M	SMD
102-0AML3370-1000	1	U401	AML3370	SMD
102-0AT24C01-6000	1	U15	AT24C01	SMD
102-074HCT14-6000	1	U6	74HCT14	SMD
101-29LV800BA-8401	1	U502	29LV800BA-70	SMD
101-29LV800BA-8412	1	U502	29LV800BA-70	SMD
105-00078L05-8000	1	U7	78L05	SMD
102-AN8785SB-6000	1	U701	AN8785SB	SMD
101-HY57V641-8800	1	U501	HY57V641620HG	SMD
100-MN103S47-3000	1	U801	MN103S47JRB	SMD
105-SHAPC817-1000	1	2J2	SHARP PC817 photoelectric coupler	DIP
102-S018EZ01-0000	1	U8	SHARP O18EZ01	SMD
102-00WM8728-7000	1	U5	WM8728	SMD
102-BH7862FS-7000	1	U2	BH7862FS	SMD
105-00078L12-8000	1	U1	78L12	TO-92
105-00079L12-8000	1	U4	79L12	TO-92
102-00LM9022-7000	1	3U3	LM9022	SMD
Other				
180-0000PH5A-5100	1	CN5	PH-5A	
180-0000PH6A-5100	1	CN4	PH-6A	
180-000PH13A-5100	1	CN6	PH-13A	
180-000PH13A-5100	1	CN1	PH-13A	
181-00050241-0100	1	CN3	240.5mm	
187-00000000-0940	1	Remote signal in/out socket	SCJ351P00XS0B00 SCJ351P00XS0B00	BLACK
187-00000000-0740	1	SCART Connector	SCART	Europe
187-0000DSW6-0360	1	S-VIDEO	DSW-4	Gilded Antiflamin
186-0AV2841G-1300	1	AUDIO OUTPUT CONNECTOR	AV2-8.4-1G	DOWN RED&UP WHITE
186-0AV1846G-1300	1	AV1-8.4-6G	AV1-8.4-6G	ORANGE
186-00AV4845-1300	1	AV4-8.4-5	AV4-8.4-5	
187-1FA550TZ-0540	1	SHARP GP1FA550TZ	SHARP GP1FA550TZ	

POWER SUPPLY				
Parts No.	Qty	Reference(English)	Part name	Remarks
300-A001254C-0001	1		Power supply board1254C	ASSY
130-RNTC5D9-0000	1	NTC	NTC-5D-9	
130-M10D471K-0000	1	RV1	JVR10D471K	Varistor FNR
130-T45010JT-0000	1	R1	RT-1/4W-1M	
130-T63068JT-0000	1	R2	RT-1W-68K	
130-T64047JT-0000	1	R3	RT-1W-470K	(360K代)
130-T42022JT-0000	2	R17 R18	RT-1/4W-2.2K	
130-T42051JT-0000	3	R23 R24 R25	RT-1/4W-5K1	
130-T43010JT-0000	1	R15	RT-1/4W-10K	
130-T40010JT-0000	2	R4,R6	RT-1/4W-10R	
130-T43047JT-0000	1	R5	RT-1/4W-47K	
130-T40047JT-0000	1	R21	RT-1/4W-47R	
130-T41010JT-0000	1	R16	RT-1/4W-100R	
130-T41022JT-0000	3	R13 19 R20	RT-1/4W-220R	
130-T41068JT-0000	1	R14	RT-1/4W-680R	
130-T42010JT-0000	1	R26	RT-1/4W-1K	
140-CGA310PO-0A00	1	CX1	High voltage 104/∼275V	X-type
140-CGA147PQ-0A00	2	CY1 CY2	High voltage 471/∼400V	Y1-type
140-CGA210PQ-0A00	1	CY3	High voltage 102/∼400V	Y1-type
140-CGA310PW-0A00	1	C1	High voltage 103/∼1KV	
140-CHB347PF-JA00	2	C2 C13	CT-25V-473	Monolith
140-CHB368PF-JA00	1	C3	CT-25V-683	Monolith
140-CHB410PF-JA00	6	C10 C11 C12 C14 C15 C16	CT-25V-104	Monolith
140-DCAC22UM-0A00	1	EC3	CD-2.2uF/200V	4.7uF/160V代
140-DCAC22UF-0A00	1	EC22	CD-2.2uF/25V	
140-DCA047UH-0A00	1	EC2	CD-47uF/50V	
140-DCF047UQ-0A00	1	EC1	CD288H-47uF/400V	18x21mm,105°C
140-DCA047UF-0A00	2	EC17 EC18	CD-47uF/25V	
140-DCA110UF-0A00	2	EC11 EC12	CD-100uF/25V	105°C
140-DCA122UE-0A00	4	EC5 EC6 EC16 EC21	CD-220uF/16V	(16V代) 105°C
140-DCA122UF-0A00	4	EC9 EC10 EC14 EC15	CD-220uF/25V	105°C
140-DCA147UE-0A00	1	EC4	CD-470uF/16V	105°C
140-DCF210UE-0A00	2	EC19 EC20	CD288H-1000uF/16V	105°C
154-0L630010-0000	1	L7	L630 (10uH)	Magnetic bead

POWER SUPPLY				
Parts No.	Qty	Reference(English)	Part name	Remarks
154-B0810020-0000	1	L6	20UH (0810)	Filter inductor
154-B0608020-0000	4	L3 L4 L5 L8	DIP-20uH (0608)	Filter inductor
154-BLCLE650-0000	1	LF1	LCL ET20 (50mH)	
110-B0IN4001-0A00	1	D17	IN4001	
110-B0IN4007-0A00	4	D1 D2 D3 D4	IN4007	
110-B00FR104-0A00	6	D6 D8 D10 D11 D13	FR104	
110-B00FR107-0A00	1	D7	FR107	
110-B0IN4148-0A00	3	D14 D16 D18	1N4148	
110-B021DQ10-0A00	1	D12	21DQ10	
110-B031DQ06-0A00	1	D15	31DQ06	
110-B0001U08-0A00	1	D5	1U08	
110-D000C160-0A00	1	ZD1	16V 1/2W	Regulator Diode
110-0MCR1006-0A00	1	SC1	MCR100-6	
120-002N5551-A000	1	Q1	2N5551	
120-000C8550-A400	1	Q3	C8550	
120-00009014-A000	1	Q2	9014	
180-000VH03A-3100	1	JP1	Vertical VH 3 holes 2 pins(white)	Antiflaming
180-000VH03A-3110	1	JP2	Vertical VH 3 holes 2 pins(orange)	Antiflaming
180-0TJC303A-5100	1	CN1	TJC3-3A	
180-0TJC303A-5100	1	CN2	TJC3-13A	
105-KA5I0365-1000	1	IC1	KA5L0365R	
105-000KA431-8000	1	IC2	KA431	
105-00BA033T-8000	1	IC6	BA033T	
105-000LM317-8000	1	IC5	LM317	
105-00LM7805-8000	1	IC3	LM7805	
105-000PC817-1000	1	PH1	PC817	
	1	FU1	Fuse Holder	Antiflaming
210-01000250-2000	1	FU1	T1A/250V	
150-BBCKEC28-0020	1	TR1	BCK-EC2802	
385-00001623-5020	1	with IC3	Radiator	12X16X23mm
384-01M40000-0400	4	G1 G2 G3 G4	Grounding strip	
300-A001254C-2300	1	1254C rev2.4	PCB (Single-layer)	

FRONT				
Parts No.	Qty	Reference(English)	Part name	Remarks
300-D01298CA-0002	1		Front panel 1298C-A	Switch pcb
300-D01298CB-0002	1		Front panel 1298C-B	Display and processor
131-B01047JT-0000	1	3R4	0805-470Ω	
131-B01015JT-0000	1	3R3	0805-150Ω	
131-B02010JT-0000	1	3R8	0805-1KΩ	
131-B02047JT-0000	11	3R2 3R5 3R7 3R28 3R16 3R20 3R21 3R22 3R23 3R24 3R25	0805-4.7KΩ	
131-B03010JT-0000	1	3R1	0805-10KΩ	
131-B03033JT-0000	1	3R18	0805-33KΩ	
131-B03047JT-0000	1	3R19	0805-47KΩ	
131-A02010JT-0000	1	3R8	0603-1KΩ	
141-C0B022PH-0000	2	3C8 3C10	0805-22PF	
141-C0B047PH-0000	2	3CB6 3CB9	0805-47PF	
141-C0B022PH-0000	5	3CB1 3CB2 3CB3 3CB4	0805-104	
140-DCA047UD-0A00	1	3C6	CD-10V-47μF	
140-DCA010UD-0A00	1	3C14	CD-10V-100μF	
140-DCA022UD-0A00	1	3C12	CD-10V-220μF	
217-00400003-2200	1	3Y1	4.000MHz	
111-B01N4148-0A00	1	3D6	1N4148	
110-FHFT503C-AA00	1	3LD1 BLUE&ORANGE	HFT503CPBOΦ3	
121-00008050-T400	1	3Q3 3Q2	8550	
		3Q3	8050	
103-CF74504P-1240	1	3U1	CF745-04/P	
102-00PT6311-1000	1	3U2	PT6311	
Other				
105-0HL38B17-1000	1	3U4	HL38B17	
190-000DVD22-0120	1	3U6	VFD22 1101	
170-C0000004-0000	8	3K2 3K3 3K4 3K5 3K6 3K7 3K8 3K9	Touch switch 6×6	

Harman/Kardon-DVD 506

SPECIAL NOTES

These schematics reflect the current state of product development. This design had NOT yet been fully tested at the time these schematics were generated.

Since this product is in development, the user of this document is strongly advised to check for the latest revision.

ALL parts labeled "N/A" are NOT ASSEMBLED.

Print Instructions:

- To create a readable printout, we recommend to use A3 or 11x17" paper size.
- When printing from this PDF file, make sure to check the "Shrink to fit" box.

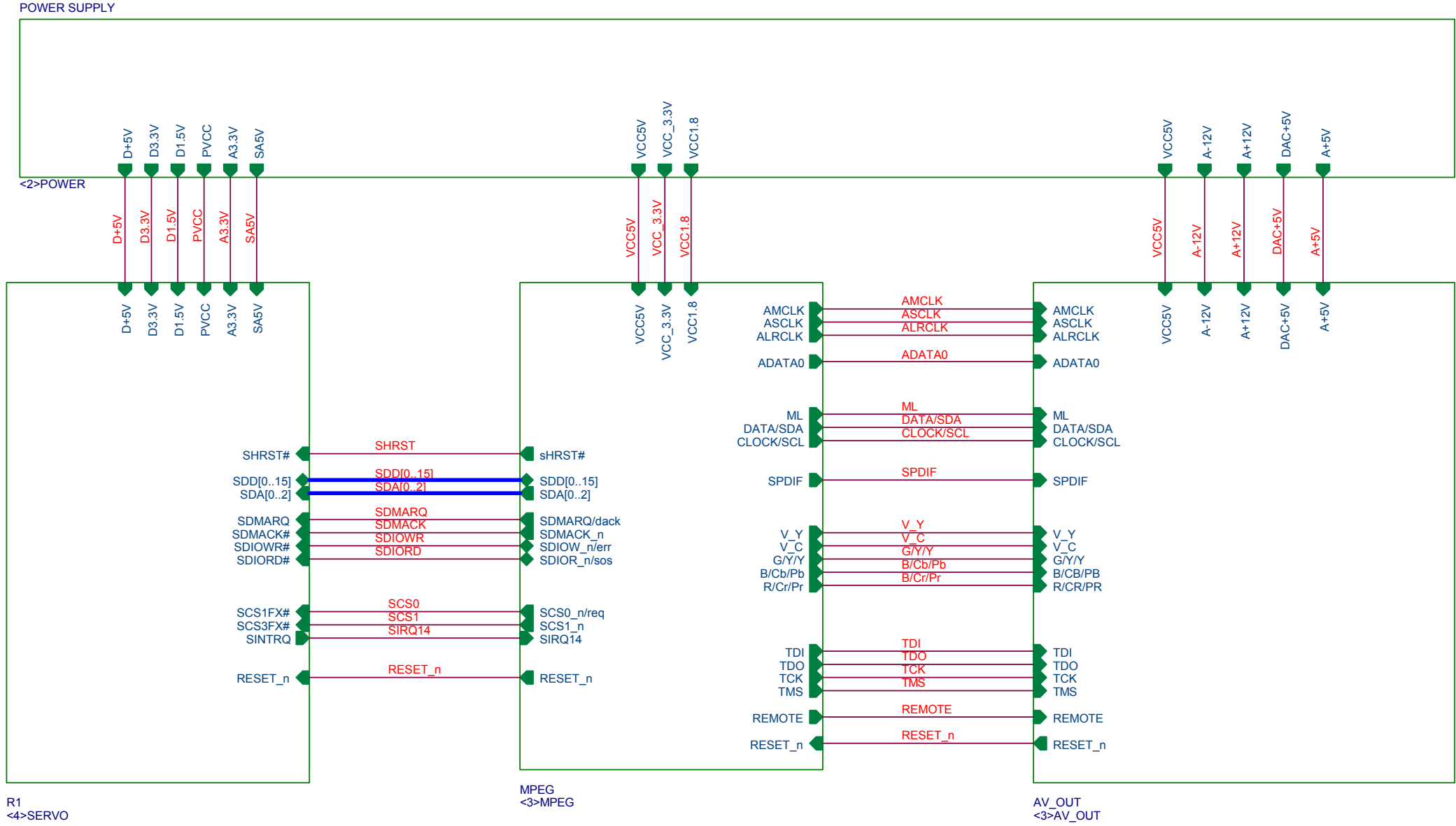
SYSTEM CONFIGURATION

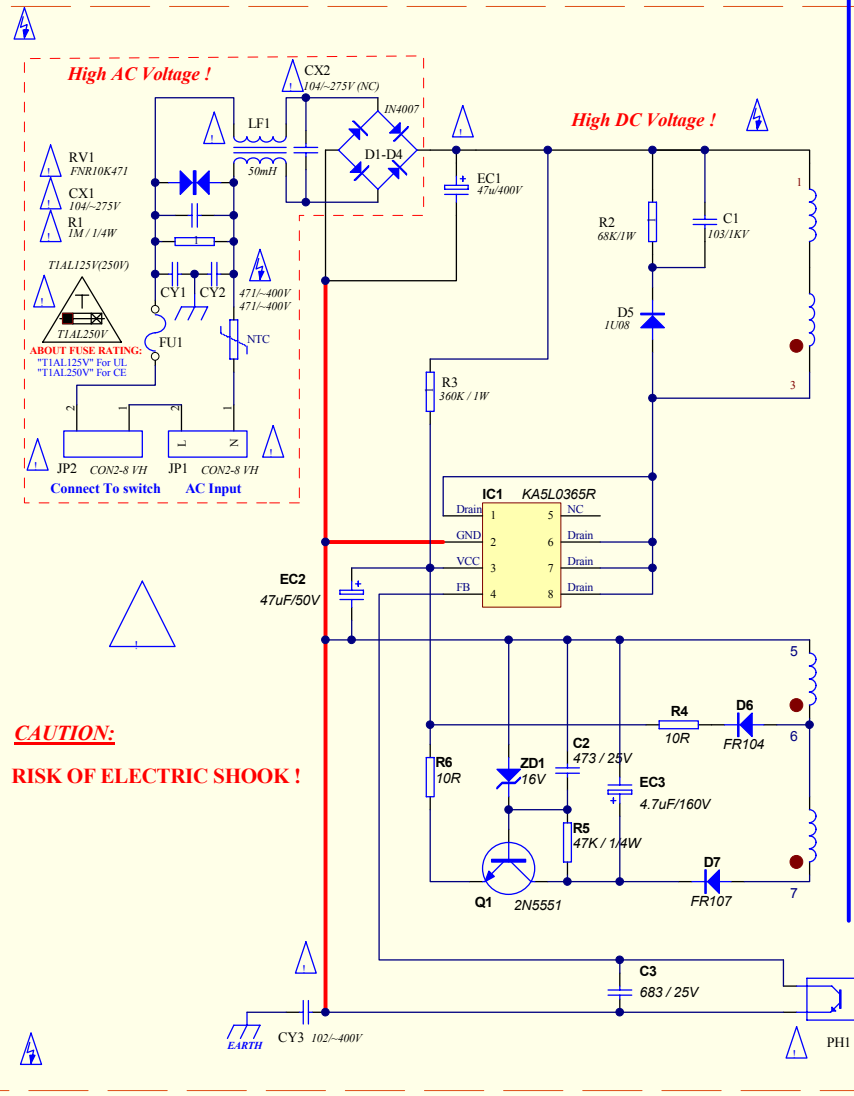
Module	Configuration	Description
AUDIO	2 channel	DAC : WM8728 OPAMP : LM833
	Electrical SPDIF Optical SPDIF	Connector on board Connector on board
VIDEO	CVBS and S-Video / Selection by software RGB and YCrCb	Video Buffer : Bh7862
SDRAM	64Mbit (x 16 Bits Wide)	HY57V641620HG-7 OR Equivalent for Mpeg
FLASH	8 Mbit (x 8 Bits Wide)	29LV800(or Equivalent)
LOADER	Sanyo DV34	Panasonic Chipset(PV 1)

CONFIDENTIAL

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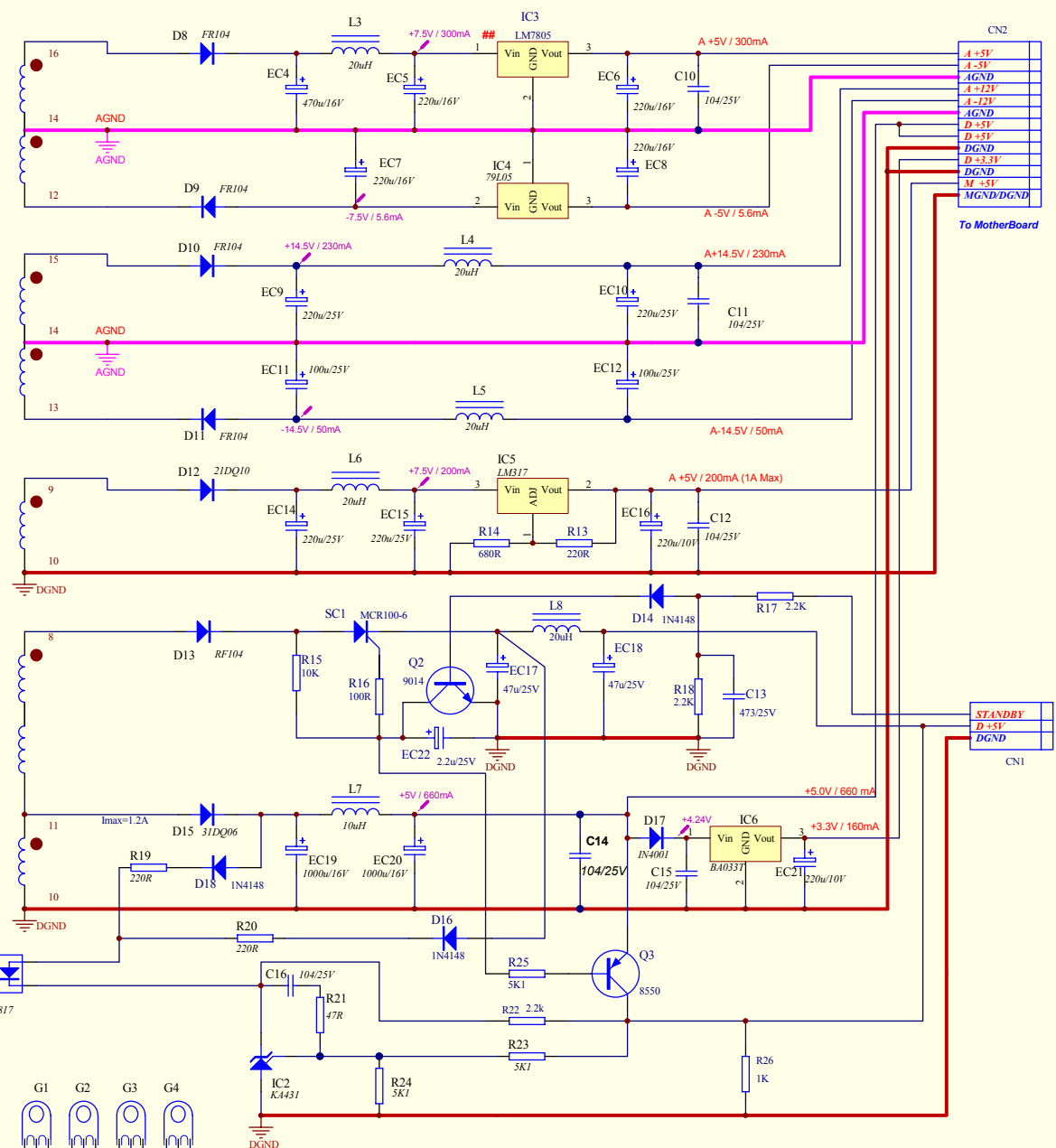
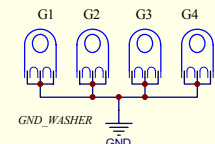


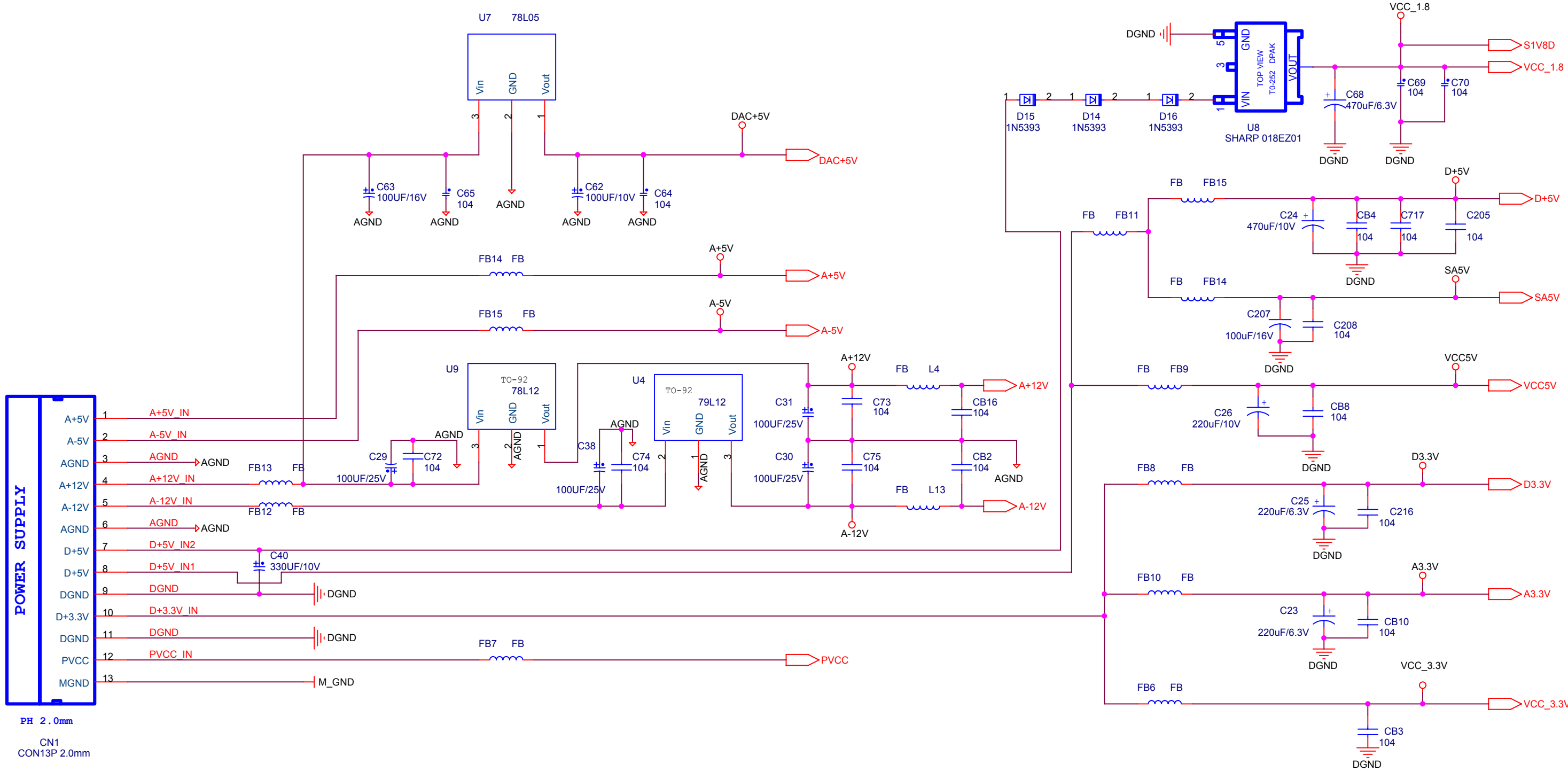




CAUTION:
RISK OF ELECTRIC SHOCK !

← Note: The Test Data Was Got By Playing a Commonly DVD Disk,
And It Was Only Provided For Reference.

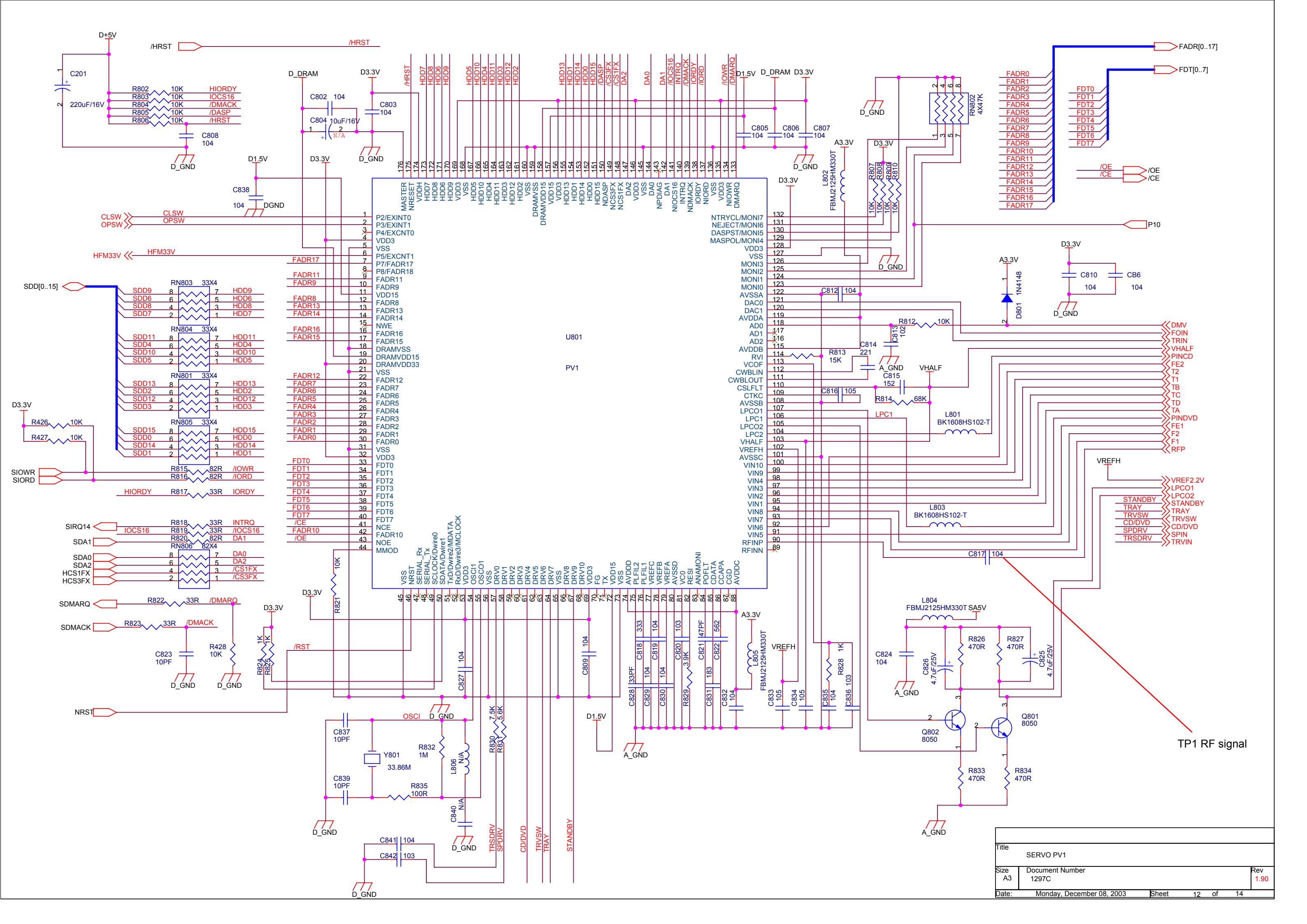




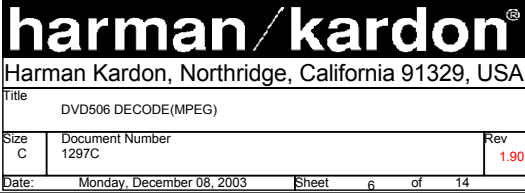
PH 2.0mm
CN1
CON13P 2.0mm

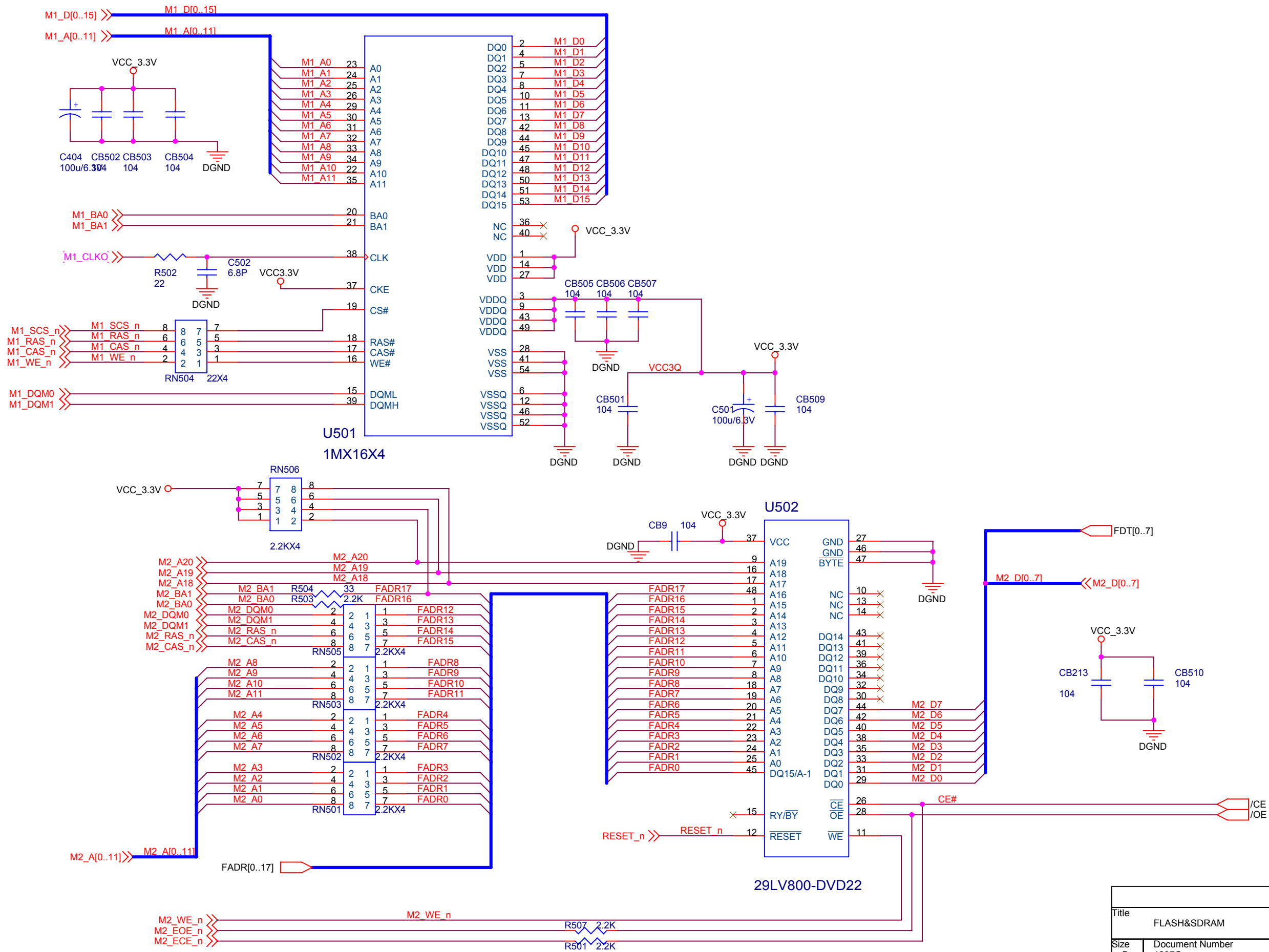
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Harman Kardon, Northridge, California 91329, USA

Title DVD506 Main board POWER SUPPLY		
Size B	Document Number 1297c	Rev 1.90
Date: Monday, December 08, 2003	Sheet 4	of 14



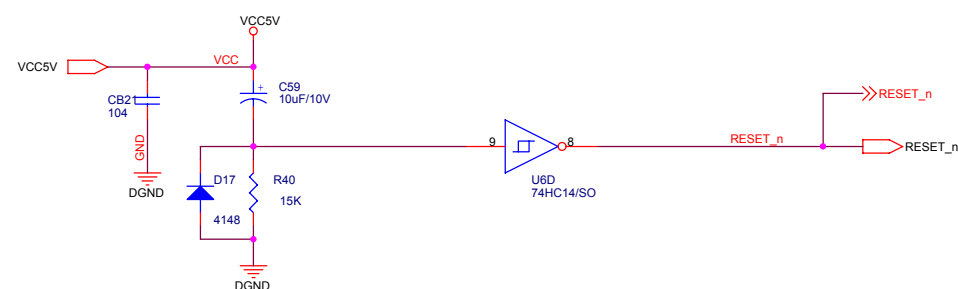
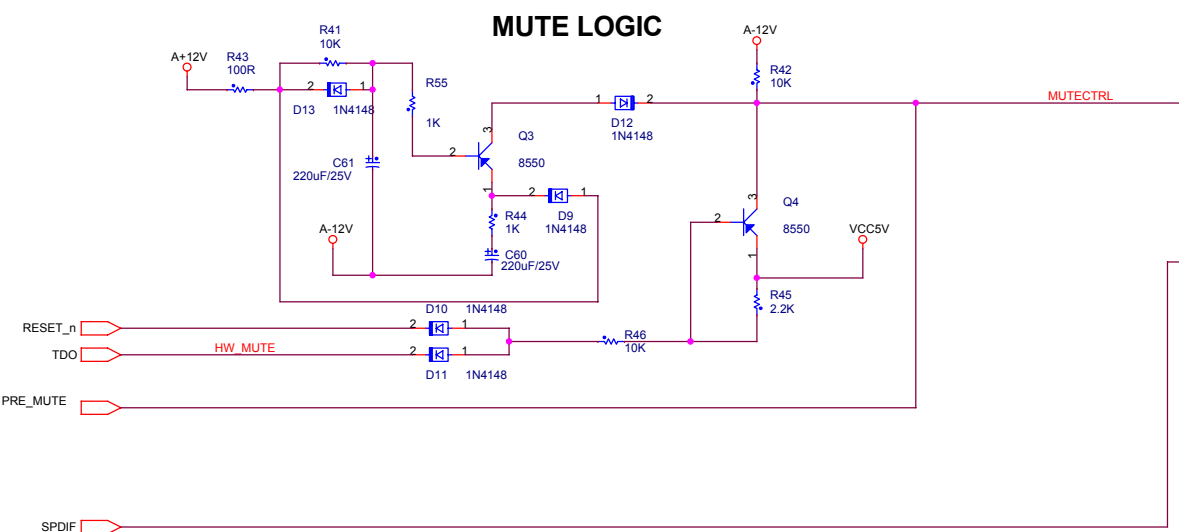
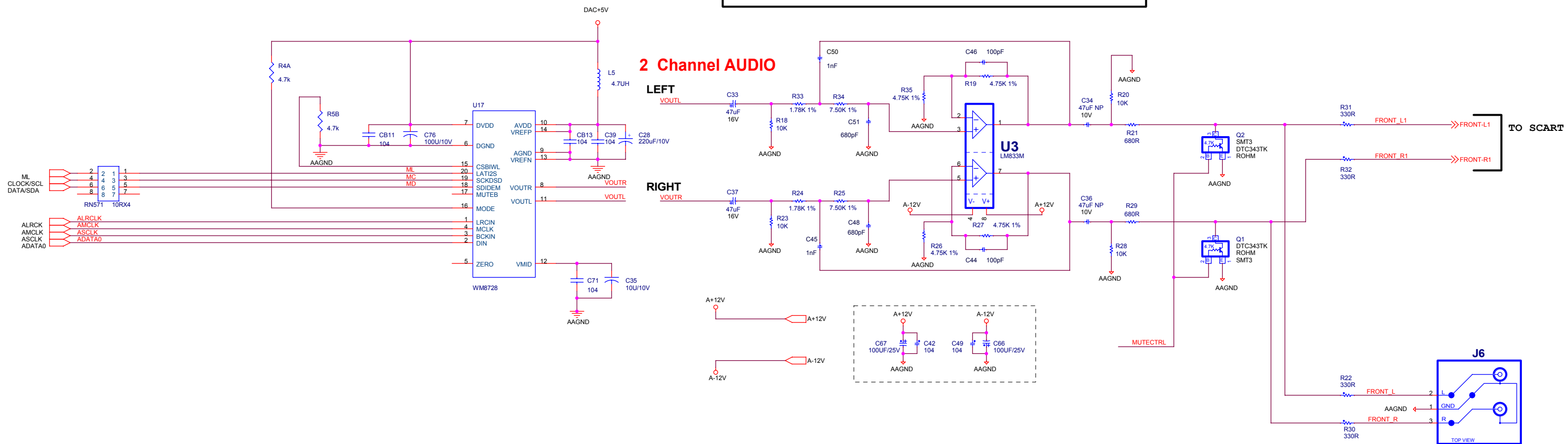
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Size	Document Number	Rev
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Title		
FLASH&SDRAM		
Size	Document Number	Rev
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Date:	Monday, December 08, 2003	Sheet 7 of 14

0805 NPO capacitance: C44 C45 C46 C48 C50 C51



SPDIF Interface

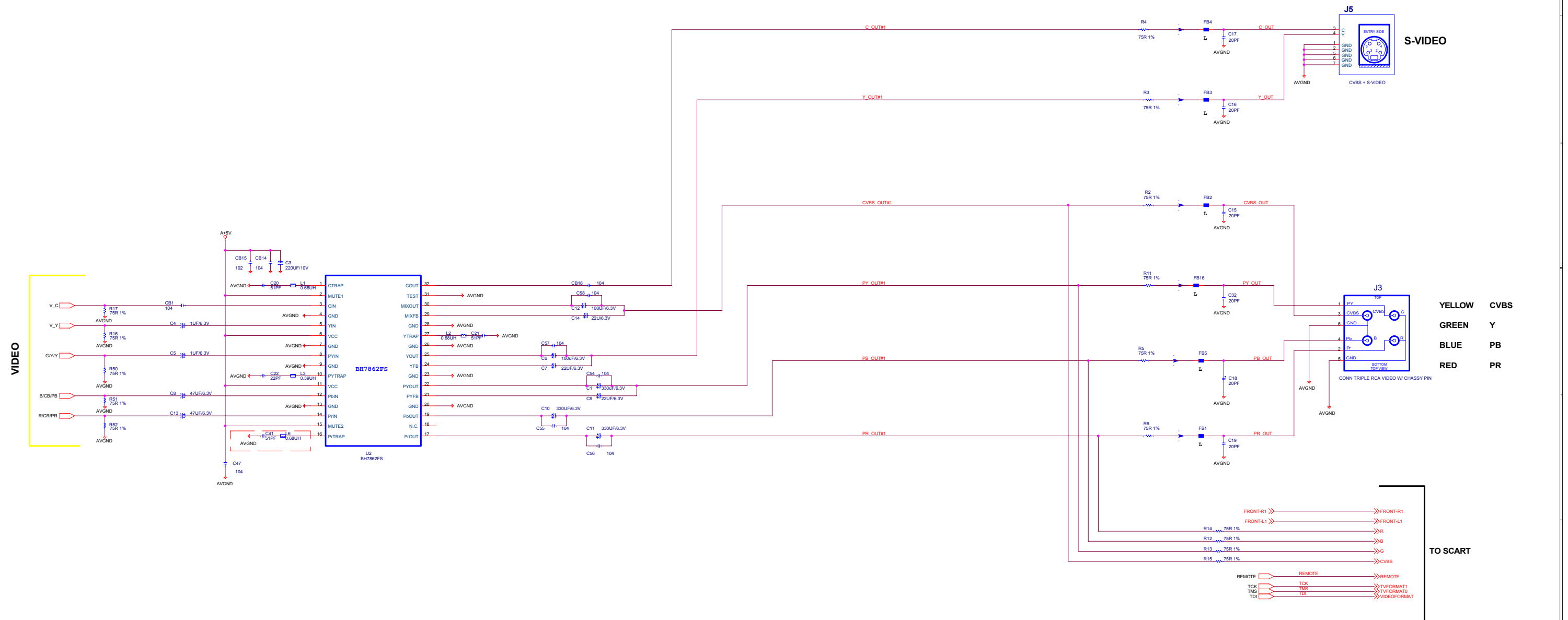
SPDIF COAX

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Title			DVD506 AUDIO OUT
Size	Document Number	Rev	
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TVFORMAT0	TVFORMAT1	CONTROL VOLTAGE	TV FUNCTION
0	1	~6V	SCART Active Auto Switch to 16:9 Aspect Ratio
0	0	~12V	SCART Active Auto Switch to 4:3 Aspect Ratio
1	0	~0V	SCART Inactive (Standby)
1	1	~0V	

