

DVD 22 - DVD22B 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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Manufactured under license from Dolby Laboratories. Dolby, AC-3, ProLogic and the double-D symbol are trademarks of Dolby Laboratories. Confidential.

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DTS is a trade mark of Digital Theater Systems, Inc.

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This product incorporates copyright protection technology that is protected by method claims of certain U.S. patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorized by Macrovision Corporation and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision Corporation. Reverse engineering or diassembly is prohibited.

Right hand man tips

DVD 22				
Symptom	Location	Action	Issue	Place
1> On and Off problems. When power key is pressed, the unit turn On momentarily and immediately back to "Stand-By".	POWER SUPPLY board	Defective Q1 leaky (2N5551) and zener diode ZD1 open (16 volts).	Service information	Theo, Convoy 07/2004
2> WMA audio playability up to V9			Service information	HCI
3> blocks during reproduction	software	upgrade to V0429 or higher	Service information	HCI
4> trouble with reading DVD discs with multiple angle option	software	upgrade to V0429 or higher	Service information	HCI
5> can't use navigator menu made by "InterVideo WinDVD Creator"	software	use other editor then InterVideo WinDVD Creator	Service information	HCI
6>unit does not turn on	Front board	glue of the smd components on the front panel to be conductive, resolder the SMD component.		menho
7>DOESN'T START UP CORRECT FROM STAND-BY	smmps board	CHANGE / CHECK EC19 IN POWER SUPPLY	Service information	Sweden Patrick, October 2004
8>LOCKED, READING OR NO DISPLAY	smmps board	CHECK CAPACITOR IN PSU, EC19	Service information	Sweden Patrick, October 2004
9>U502 flash ic change from 29LV800 to 26LV800 do to 29LV800 Obsolete	main board	in case u502 needs to be changed from 29LV800 to 26LV800 Add a pull up resistor as described in service bulletin 2004-03	Service bulletin 2004-003	HCGI okt 04
10>mecha do not read disc.	main board	in case the laser are dead check 5V supply at Q712 if 5V missing change Q711 and Q712. Q712 need to change to DTA114E and not the 8050	Service information	HCGI okt 05

harman/kardon

Service Bulletin

Service bulletin # HK2004-03 October 2004

Warranty labor rate: MINOR repair

To: All harman/kardon Service Centers

Model: DVD22

Subject: Locked in POWER ON

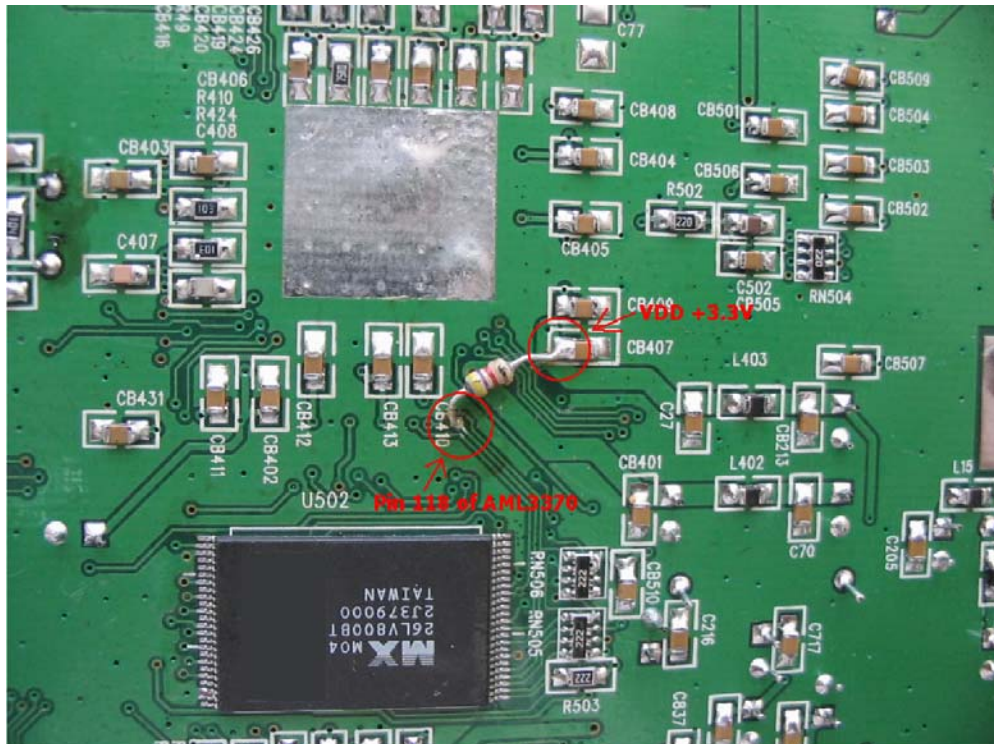
In the event you receive a DVD22 with the complaint: "The unit will turn ON with "POWER ON" in the display, but the unit is locked up and will not read a disc, nor will pressing any button accomplish anything, even the Power button", follow the instructions below.

(Behavior is intermittent; unplugging the AC power cord and replugging the unit in will sometimes reset it.)

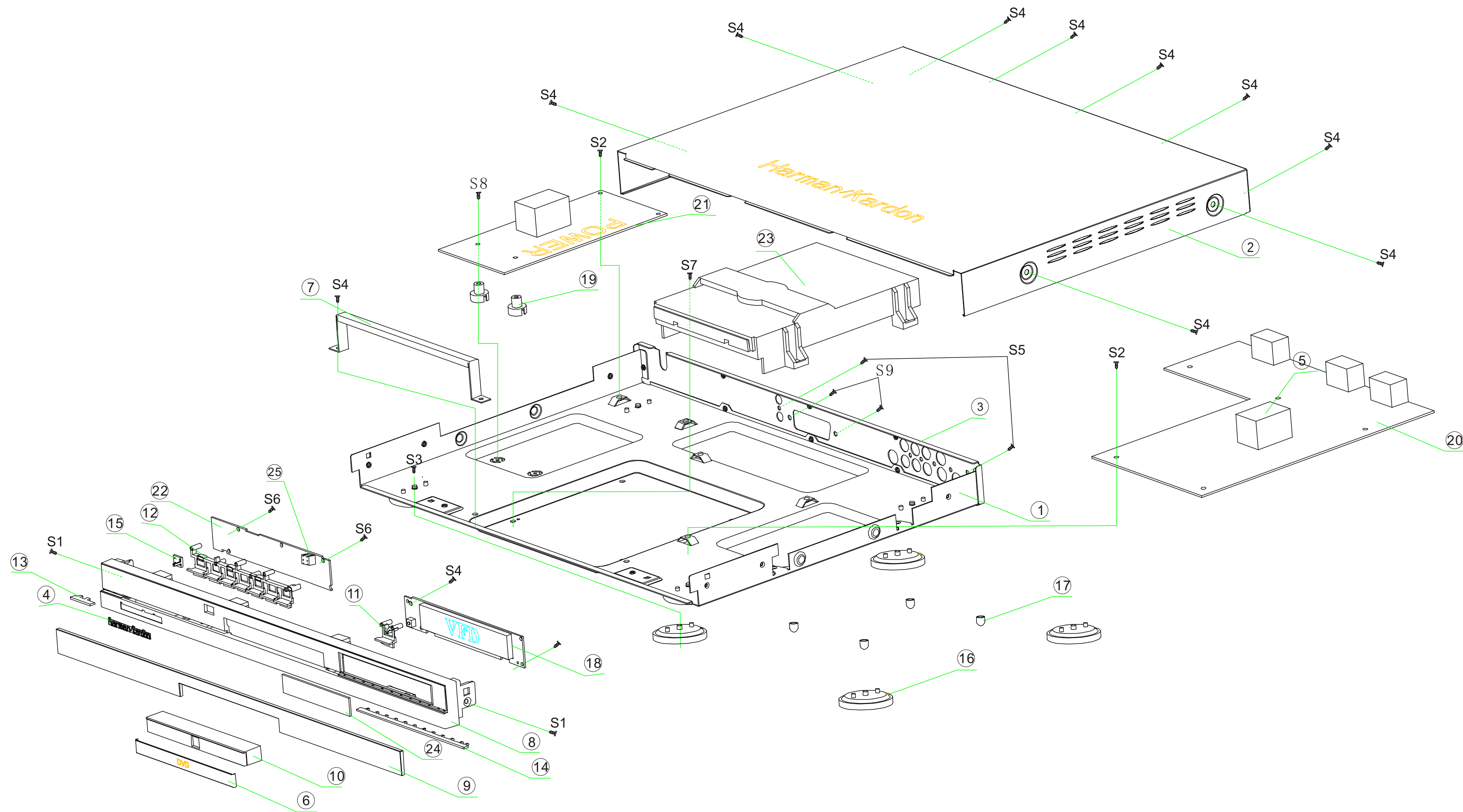
Synopsis: Add a 4.7K ohm resistor to the indicated area on the bottom of the Main PCB.

CAUTION: The DVD22 is an electrostatically sensitive unit and can be damaged by careless handling; you must follow proper static control procedures to prevent damage to the DVD player.

- 1) Remove the eight plated screws holding the top cover to the unit; remove the top cover.
- 2) Remove the four mox connectors and one small FFC cable from the Main PCB.
- 3) Remove the five plated machine screws (top) and the five black screws (rear panel) from the Main PCB.
- 4) Remove the Main PCB from the unit.
- 5) On the reverse side (bottom), solder a 4.7KΩ 1/8W resistor (h/k part#299-4.7K or WLD5.630.472) to the indicated area. (Attach one end of the 4.7KΩ resistor to one end of CB407, the other side, to a small through-hole pad near the silkscreen label "CB410").
- 6) Replace the Main PCB and assemble the unit in reverse order.
- 7) Test the unit.

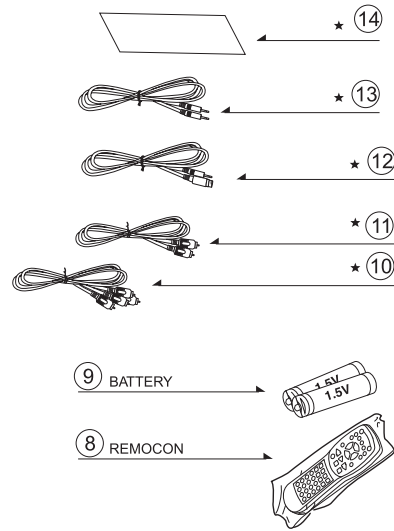
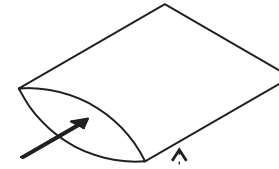


Model	Serial Number	Status	Action
DVD22 (120v)	WA0007-01000 to WA0007-10449	Unit may lock up after Powering ON	Add 4.7K ohm resistor
DVD22 (120v)	WA0007-10450 and above	Modified by Factory	None Required
DVD22 (230v)	WA0008-01000 to WA0008-26827	Unit may lock up after Powering ON	Add 4.7K ohm resistor
DVD22 (230v)	WA0008-26828 and above	Modified by Factory	None Required
DVD22BK (230v)	WA0012--01000 to WA0012-05020	Unit may lock up after Powering ON	Add 4.7K ohm resistor
DVD22BK (230v)	WA0012-05021 and above	Modified by Factory	None Required



			Name	EXPLODED VIEW	
MODEL NO.	DVD22/DVD22B				
REMARK		APPROVAL		DRAWING	
		CHECK		DESIGN	

See ACCESSORIES and PACKING PARTS for part numbers



⑤ EXPLAN BOOK

⑥ FROTH UNDERLAY

② FROTH

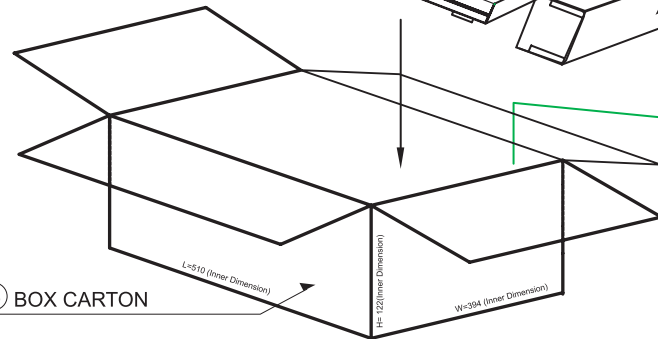
③ CASING

① DVD MACHINE

② FROTH

⑦ PACKING ACCESSORY BAG

④ BOX CARTON



			Name	PACKING INSTRUCTION	
MODEL NO.	DVD 22B				
REMARK		APPROVAL		DRAWING	
		CHECK		DESIGN	

Component

Item	Parts No.	Qty	SPECIFICATION	Remarks
METAL PART				
1	380-B22PT001-8000	1	Chassis	DVD22-PT001
2	380-A22PT002-8500	1	Top cover	DVD22
	380-A000022B-0500			DVD22B
3	380-C00DVD22-0500	1	Back panel	Europe revision
	380-C00DVD22-0510			America revision
4	600-00000005-6920	1	harman/kardon logo	DVD22 (blue background color, silver word)
	600-00000005-0920			DVD22B (black background color, silver word)
5	385-000DVD22-5200	1	Heat sink	for IC U401, 28mm×28mm×10mm
6	385-VD31ZPA2-5000	1	Aluminum ally wrap for disc tray	DVD31ZP-A2
7	332-300DVD22-0000	1	Top cover support	
PLASTIC PART				
8	330-12ZPRE02-8000	1	Plastic Panel	DVD22ZP-RE02 DVD22
	330-12ZPRE02-0000			DVD22ZP-RE02 DVD22B (black color)
9	331-81ZPRE01-8000	1	Panel lens	DVD31ZP-RE01
10	330-21ZPRE07-8000	1	Disc tray	DVD31ZP-RE07
11	331-11ZPRE04-8000	1	Single key button	DVD31ZP-RE04
12	331-11ZPRE03-8000	1	More key button	DVD31ZP-RE03
13	330-71ZPRE05-8000	1	Short decorate strip	DVD31ZP-RE05
14	330-71ZPRE06-8000	1	Long decorate strip	DVD31ZP-RE06
15	332-41ZPRE08-8000	1	Power Indicator Cover	DVD31ZP-RE08
16	331-400DVD22-4000	4	Pedestal	bronzing, size same as DVD 25, specify color
	350-000DVD22-0200	4	Pedestal underlay	same as DVD25
	332-20085505-0200	1	IR receiver head frame	8×5×5.5mm
	350-000DVD22-0200	2	VFD soft pad	20mm×10mm×3.5mm
	331-7C035040-0010	2	Alumium fastener 01	3.5mm×40mm
	331-70000000-0000	2	Plastic fastener 02	fasten the power cord
17	332-40000000-0000	4	Screw map	covers screws from mecha under the unit
	500-02000000-0030	1	Lead nip 03	
	500-09150085-0000	1	Insulated piece for power board	stick on chassis, 150×85mm
	500-09170100-0000	1	Insulated piece for power board	stick on top cover, 170×100mm
24	331-91185165-9000	1	VFD filter	118.5×16.5mm
	500-07130010-0000	1	Insulated piece for VFD	130×10mm
	313-AGDVD220-0001	1	Laser precausion mark	stick on loader
	313-AGDVD220-0002	1	Laser precausion guide	stick on loader
	500-0923040-0000	1	Insulated piece for mainboard	stick on chassis, 230×40mm
19	332-200SZ036-0000	2	PCB plastic frame/support	F 8×10mm for smps

Component

CONNECT CABLE				
	160-E0130170-DA00	1	13 pin, long 170mm, one end with connector, 2.0mm space	connect front panel board and mainboard
	160-E0120160-DA00	1	connector, one end with 2.54mm space, same direction	connect power supplier board and mainboard
	162-A0VH0300-0A00	1	Power cord with 300mm fixture	Europe version
	162-A0VH0300-0B00			America version
	160-E0030300-3A00	1	3 pin, long 280mm, two ends with connector, 2.54mm space	connect power supplier board and front panel board
	160-E0050280-0A00	1	5 pin, long 280mm, two ends with connector, 2.0mm space	connect loader and mainboard
	160-E0060150-0A00	1	6 pin, long 150mm, two ends with connector, 2.0mm space	connect loader and mainboard
	160-07270125-0000	1	7 pin, long 270mm, 1.25mm space, flat cable	connect two pieces front panel board
	161-24160050-0000	1	24 pin, long 160mm, 0.5mm space, flat cable	connect loader and mainboard
ASSEMBLED PCB				
20	300-C0221297-U002	1	1297C	DVD22 US version mainboard
20	300-C0221297-E002			DVD22 EU version mainboard
21	300-A001254C-0401	1	1254C	SMPS board
18	300-D01298CA-0002	1	1298C-A	front panel board, for old front panel tooling
	300-D01298CC-0002		1298C-C	front panel board, for new front panel tooling
22	300-D01298CB-0002	1	1298C-B	front panel board, for old front panel tooling
	300-D01298CD-0002		1298C-D	front panel board, for new front panel tooling
WHOLE PART				
23	206-0000DV34-2202	1	LOADER	SANYO DV34
	555-ADVD22RC-0010	1	Remote control	DVD22
	555-AVD22BRC-0010			DVD22B

Component

PACKING PART				
4	310-000DVD22-0010	1	Beatuy box	DVD22, EU version
	310-000DVD22-0110			DVD22, US version
	310-00DVD22B-0010			DVD22B, EU version
	310-00DVD22B-0110			DVD22B, US version
2	309-000PM065-0000	2	Polyfoam PM065	
3	311-52049522-1100	1	Plastic bag for unit	520×495mm
7	311-25035012-2200	1	Plastic bag for user's manual	250×350mm
	311-08424011-2200	1	Plastic bag for remote control	84×240mm
6	309-00PM0651-0010	2	Polyfoam PM065-1	310×168×28mm, EU version
	309-00PM0651-0010	1		310×168×28mm, US version
	311-15523011-2200	1	Plastic bag for AV cables	155×230mm
ACCESSORIES				
5	312-AB220000-0000	1	User's manual	DVD22 EU version
	312-AB220000-0010			DVD22 US version
	312-AB22B000-0000			DVD22B EU version
	312-AB22B000-0010			DVD22B US version
	312-KBDVD220-0010	1	Guarantee card	only for US version
10	162-B0001012-0000	1	Audio cable	
11	162-B0001012-0000	1	Video cable	
9	202-00000511-1200	1	5# battery	
13	162-H0001012-0000	1	Remot control transmission cable	
12	162-C0001012-0000	1	S-video cable	
	313-AD0DVD22-0000	1	Safety instruction manual	only for EU version
14	312-KA0DVD22-0010	1	Warning card	only for US version
8	555-0DVD22RC-0000	1	Remote control	DVD22
	555-AVD22BRC-0010			DVD22B

MAIN BOARD 1297C

Parts No.	Qty	LOCA.NO.	DESCRIPTION	SPECIFICATION	Remarks
131-A0C022JT-0000	2	R730 R731	Resistor, chip	2.2O 1/10W 0603 5%	
131-A00022JT-0000	2	R38 R725	Resistor, chip	22O 1/10W 0603 5%	
131-A00033JT-0000	4	R818 R822 R504 R823	Resistor, chip	33O 1/10W 0603 5%	
131-A00056JT-0000	2	R732 R733	Resistor, chip	56O 1/10W 0603 5%	
131-A00075FT-4000	15	R2 R3 R4 R5 R6 R11 R12 R13 R14 R15 R16 R50 R51 R52 R407	Resistor, chip	75O 1/10W 0603 1%	
131-A00082FT-4000	3	R815 R816 R820	Resistor, chip	82O 1/10W 0603 5%	
131-A00091FT-4000	1	R17	Resistor, chip	91O 1/10W 0603 1%	
131-A01010JT-0000	2	R43 R835	Resistor, chip	100O 1/10W 0603 5%	
131-A01011JT-0000	1	R37	Resistor, chip	110O 1/10W 0603 5%	
131-A01015JT-0000	1	R36	Resistor, chip	150O 1/10W 0603 5%	
131-A00187FT-4000	2	R405 R406	Resistor, chip	187O 1/10W 0603 1%	
131-A01022JT-0000	1	R39	Resistor, chip	220O 1/10W 0603 5%	
131-A01027JT-0000	1	2R13	Resistor, chip	270O 1/10W 0603 5%	
131-A01033JT-0000	2	R31 R32	Resistor, chip	330O 1/10W 0603 5%	
131-A01039JT-0000	1	2R12	Resistor, chip	390O 1/10W 0603 5%	
131-A01047JT-0000	4	R826 R827 R833 R834	Resistor, chip	470O 1/10W 0603 5%	
131-A01068JT-0000	2	R21 R29	Resistor, chip	680O 1/10W 0603 5%	
131-A02010JT-0000	2	R44 R828	Resistor, chip	1KO 1/10W 0603 5%	
131-A02012JT-0000	1	R727	Resistor, chip	1.2KO 1/10W 0603 5%	
131-A01178FT-4000	2	R24 R33	Resistor, chip	1.78KO 1/10W 0603 1%	
131-A02022JT-0000	3	R501 R507 R45	Resistor, chip	2.2KO 1/10W 0603 5%	
131-A02027JT-0000	11	R1 R9 R56 R114 R115 R116 R411 R412 R413 R414 R420	Resistor, chip	2.7KO 1/10W 0603 5%	
131-A02033JT-0000	5	2R4 2R5 2R6 2R7 2R8	Resistor, chip	3.3KO 1/10W 0603 5%	
131-A02047JT-0000	2	2R1 2R11	Resistor, chip	4.7KO 1/10W 0603 5%	
131-A02047JT-0000	1	R432	Resistor, chip	4.7KO 1/10W 0603 5%	only for US version
		R433			only for EU version
131-A01475FT-4000	4	R19 R26 R27 R35	Resistor, chip	4.75KO 1/10W 0603 1%	
131-A02056JT-0000	2	R712 R831	Resistor, chip	5.6KO 1/10W 0603 5%	
131-A02062JT-0000	1	R707	Resistor, chip	6.2KO 1/10W 0603 5%	
131-A02075JT-0000	4	R705 R710 R713 R830	Resistor, chip	7.5KO 1/10W 0603 5%	
131-A02075FT-4000	2	R25 R34	Resistor, chip	7.5KO 1/10W 0603 1%	
131-A03010JT-0000	26	R18 R20 R23 R28 R41 R42 R46 R417 R416 R428 R709 R714 R734 R735 R736 R737 R738 R741 R742 R749 R755 R810 R812 R821 2R2 2R3	Resistor, chip	10KO 1/10W 0603 5%	
131-A03015JT-0000	2	R40 R702	Resistor, chip	15KO 1/10W 0603 5%	
131-A03018JT-0000	2	R703 R726	Resistor, chip	18KO 1/10W 0603 5%	
131-A03027JT-0000	1	R724	Resistor, chip	27KO 1/10W 0603 5%	
131-A03033JT-0000	1	R706	Resistor, chip	33KO 1/10W 0603 5%	
131-A03068JT-0000	1	R814	Resistor, chip	68KO 1/10W 0603 5%	
131-A05010JT-0000	1	R832	Resistor, chip	1MO 1/10W 0603 5%	
130-T41015JT-0000	1	2R15	Fixed carbon film	150O 1/4W 5%	
130-T42010JT-0000	2	2R10 2R14	Fixed carbon film	1KO 1/4W 5%	
132-0008010J-T100	1	RN571	Resistor, thick film chip network	100x4 1/16W 0603 5%	
132-0008022J-T100	1	RN504	Resistor, thick film chip network	220x4 1/16W 0603 5%	
132-0008033J-T100	4	RN801 RN803 RN804 RN805	Resistor, thick film chip network	330x4 1/16W 0603 5%	
132-0008082J-T100	1	RN806	Resistor, thick film chip network	820x4 1/16W 0603 5%	
132-0008222J-T100	5	RN501 RN502 RN503 RN505 RN506	Resistor, thick film chip network	2.2KOx4 1/16W 0603 5%	
132-0008310J-T100	1	RN401	Resistor, thick film chip network	10KOx4 1/16W 0603 5%	
132-0008347J-T100	1	RN802	Resistor, thick film chip network	47KOx4 1/16W 0603 5%	

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Parts No.	Qty	LOCA.NO.	DESCRIPTION	SPECIFICATION	Remarks
131-B00000JT-0000	2	R8 R10	Resistor, chip	00 1/8W 0805 5%	
131-B00001JT-0000	2	3R6 3R9	Resistor, chip	10 1/8W 0805 5%	
131-B00022JT-0000	1	R502	Resistor, chip	220 1/8W 0805 5%	
131-B00027JT-0000	2	R728 R729	Resistor, chip	270 1/8W 0805 5%	
131-B00033JT-0000	2	R817 R819	Resistor, chip	330 1/8W 0805 5%	
131-B00075JT-4000	5	R49 R408 R409 R529 R530	Resistor, chip	750 1/8W 0805 1%	
131-B01010JT-0000	2	3R14 3R15	Resistor, chip	1000 1/8W 0805 5%	
131-B01033JT-0000	2	R22 R30	Resistor, chip	3300 1/8W 0805 5%	
131-B02010JT-0000	3	R55 R824 R825	Resistor, chip	1KO 1/8W 0805 5%	
131-B02020JT-0000	2	R47 R48	Resistor, chip	2KO 1/8W 0805 5%	
131-B02022JT-0000	2	R503 3R17	Resistor, chip	2.2KO 1/8W 0805 5%	
131-B02027JT-0000	1	R431	Resistor, chip	2.7KO 1/8W 0805 5%	
131-B02039JT-0000	1	R829	Resistor, chip	3.9KO 1/8W 0805 5%	
131-B02047JT-0000	4	R4A R5B R7 R500	Resistor, chip	4.7KO 1/8W 0805 5%	
131-B03010JT-0000	16	R410 R424 R425 R426 R427 R802 R803 R804 R805 R806 R807 R808 R809 3R10 3R11 3R12	Resistor, chip	10KO 1/8W 0805 5%	
131-B03015JT-0000	2	R53 R813	Resistor, chip	15KO 1/8W 0805 5%	
131-B03018JT-0000	1	R720	Resistor, chip	18KO 1/8W 0805 5%	
131-B04010JT-0000	3	R418 R708 3R13	Resistor, chip	100KO 1/8W 0805 5%	
141-C0A020PH-KT00	12	C15 C16 C17 C18 C19 C32 2C7 2C8 2C9 2C10 2C11 2C12	Capacitor,multilayer ceramic, chip	20PF 50V J NPO 0603	
141-C0A033PH-KT00	1	C828	Capacitor,multilayer ceramic, chip	33PF 50V J NPO 0603	
141-C0A120PH-KT00	2	C706 C711	Capacitor,multilayer ceramic, chip	200PF 50V J NPO 0603	
141-C0A156PH-KT00	2	C702 C707	Capacitor,multilayer ceramic, chip	560PF 50V J NPO 0603	
141-C0A168PH-KT00	2	2C5 2C6	Capacitor,multilayer ceramic, chip	680PF 50V J NPO 0603	
141-C0A122PH-KT00	1	C814	Capacitor,multilayer ceramic, chip	220PF 50V J NPO 0603	
141-C0A110PH-KT00	2	C52 C53	Capacitor,multilayer ceramic, chip	100PF 50V J NPO 0603	
141-C0A310PH-KT00	1	C842	Capacitor,multilayer ceramic, chip	0.01UF 50V K X7R 0603	
141-C0A318PH-KT00	1	C831	Capacitor,multilayer ceramic, chip	0.018UF 50V K X7R 0603	
141-C0A410PH-KT00	33	C69 C215 C714 C807 C808 C810 C817 C824 C829 C830 C841 CB1 CB2 CB3 CB4 CB5 CB6 CB7 CB8 CB9 CB18 CB19 CB204 CB414 CB421 CB422 CB423 CB425 CB430 CB432 2C2 2C3 2C4	Capacitor,multilayer ceramic, chip	0.1UF 50V Z Y5V 0603	
141-C0B110PH-JT00	2	C44 C46	Capacitor,multilayer ceramic, chip	100PF 50V J NPO 0805	
141-C0B168PH-JT00	2	C48 C51	Capacitor,multilayer ceramic, chip	680PF 50V J NPO 0805	
141-C0B210PH-JT00	2	C45 C50	Capacitor,multilayer ceramic, chip	1000PF 50V J NPO 0805	
141-C0BC68PH-KT00	1	C502	Capacitor,multilayer ceramic, chip	6.8PF 50V J NPO 0805	
141-C0B010PH-KT00	4	C408 C823 C837 C839	Capacitor,multilayer ceramic, chip	10PF 50V J NPO 0805	
141-C0B022PH-KT00	3	C22 C410 C411	Capacitor,multilayer ceramic, chip	22PF 50V J NPO 0805	
141-C0B047PH-KT00	2	C407 C821	Capacitor,multilayer ceramic, chip	47PF 50V J NPO 0805	
141-C0B050PH-KT00	2	C20 C21	Capacitor,multilayer ceramic, chip	51PF 50V J NPO 0805	
141-C0B210PH-KT00	2	CB15 C813	Capacitor,multilayer ceramic, chip	1000PF 50V J NPO 0805	
141-C0B215PH-KT00	1	C815	Capacitor,multilayer ceramic, chip	1500PF 50V J NPO 0805	
141-C0B256PH-KT00	1	C822	Capacitor,multilayer ceramic, chip	5600PF 50V J NPO 0805	
141-C0A310PH-KT00	3	C820 C836 3CB5	Capacitor,multilayer ceramic, chip	0.01UF 50V K X7R 0805	
141-C0B333PH-KT00	1	C818	Capacitor,multilayer ceramic, chip	0.033UF 50V K X7R 0805	

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Parts No.	Qty	LOCA.NO.	DESCRIPTION	SPECIFICATION	Remarks
141-C0B410PH-KT00	87	C27 C39 C42 C47 C49 C54 C55 C56 C57 C58 C64 C65 C70 C71 C72 C73 C74 C75 C205 C208 C216 C703 C704 C712 C713 C716 C717 C724 C728 C729 C731 C802 C803 C805 C806 C809 C812 C819 C827 C832 C835 C838 CB10 CB11 CB12 CB13 CB14 CB16	Capacitor,multilayer ceramic, chip	0.1UF 50V Z Y5V 0805	
		CB20 CB21 CB63 CB205 CB213 CB401 CB402 CB403			
		CB404 CB405 CB406 CB407 CB408 CB409 CB410 CB411			
		CB412 CB413 CB415 CB416 CB417 CB418 CB419 CB420			
		CB424 CB426 CB427 CB428 CB429 CB431 CB501 CB502 CB503 CB504 CB505 CB506 CB507 CB509 CB510			
141-C0B510PH-KT00	4	C816 C833 C834 3CB8	Capacitor,multilayer ceramic, chip	1UF 50V Z Y5V 0805	
140-DCA001UH -0A00	2	C4 C5	Capacitor, AL.electrolytic	1μF 50V 20%	
140-DCAC47UH -0A00	2	C825 C826	Capacitor, AL.electrolytic	4.7μF 50V 20%	
140-DCA010UF -0A00	3	C35 C59 C723	Capacitor, AL.electrolytic	10μF 25V 20%	
140-DCA022UE -0A00	3	C7 C9 C14	Capacitor, AL.electrolytic	22μF 16V 20%	
140-DCA047UE -0A00	11	C8 C13 C33 C34 C36 C37 C66 C67 C718 C719 2C1	Capacitor, AL.electrolytic	47μF 16V 20%	
140-DCA047UH -0A00	10	3C1 3C2 3C3 3C4 3C5 3C7 3C9 3C13 3C15 3C16	Capacitor, AL.electrolytic	47μF 50V 20%	
140-DCA110UD -0A00	7	C6 C12 C62 C76 C402 C404 C501	Capacitor, AL.electrolytic	100μF 10V 20%	
140-DCA110UE -0A00	5	C63 C207 C715 C720 C730	Capacitor, AL.electrolytic	100μF 16V 20%	
140-DCA110UF -0A00	4	C29 C38 C30 C31	Capacitor, AL.electrolytic	100μF 25V 20%	
140-DCA110UH -0A00	2	C60 C61	Capacitor, AL.electrolytic	100μF 50V 20%	
140-DCA122UD -0A00	4	C3 C26 C28 C210	Capacitor, AL.electrolytic	220μF 10V 20%	
140-DCA122UE -0A00	9	C2 C23 C25 C201 C209 C403 C405 C406 C409	Capacitor, AL.electrolytic	220μF 16V 20%	
140-DCA033UD -0A00	3	C10 C11 C40	Capacitor, AL.electrolytic	330μF 10V 20%	
140-DCA047UD -0A00	2	C24 C68	Capacitor, AL.electrolytic	470μF 10V 20%	
140-DCA215UC -0A00	1	C1	Capacitor, AL.electrolytic	1500μF 6.3V 20%	
217-03386003-2200	1	Y801	Fundamental. Oscillator	33.868MHz, In-line Package	
217-02700003-2200	1	Y401	Fundamental. Oscillator	27.0MHz, In-line Package	
151-3B0B39K1-A000	1	L3	Inductor, multilayer ceramic, chip	0.39μH HDW0805UC3R9JGT, 0805	
151-3B0B68K1-A000	2	L1 L2	Inductor, multilayer ceramic, chip	0.68μH HDW0805UC6R8JGT, 0805	
152-1B205001-A000	18	L5 L401 L402 L403 L404 L405 L406 L407 L701 L702 L703 L801 L802 L803 L804 L805 L14 L15	Bead, chip	Impedance is 50O, 0805	
153-RH356008-1000	9	L4 L13 FB6 FB7 FB8 FB9 FB10 FB11 FB14	Bead, leaded fixed	Impedance is 50O, In-line Package	
152-1A211201-A000	20	FB1 FB2 FB3 FB4 FB5 FB16 FB17 2FB1 2FB2 2FB3 2FB4 2FB5 2FB6 2FB7 2FB8 L8 L9 L10 L11 L12	Bead, chip	Impedance is 120O, 0603	
110-B0IN4148-0A00	8	D9 D10 D11 D12 D13 D17 2D1 D801	Diode	1N4148, In-line Package	
111-B0IN4148-0A00	8	3D1 3D2 3D3 3D4 3D5 3D9 3D7 3D8	Diode	1N4148, SMD	
110-B0IN5953-0A00	3	D14 D15 D16	Diode	1N5393, In-line Package	
111-D000C061-0T00	1	3DZ1	Zener Diode	Zener Diode, 6.1V, In-line Package	

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Parts No.	Qty	LOCA.NO.	DESCRIPTION	SPECIFICATION	Remarks
121-00008050-T400	5	Q701 Q801 Q802 Q5 Q6	Transistor	8050, SMD	SMD
121-00008550-T300	6	Q3 Q4 Q702 Q703 Q704 2Q1	Transistor	8550, SMD	SMD
121-00009014-T000	7	Q705 Q706 Q707 Q708 Q709 Q710 Q711	Transistor	9014, SMD	SMD
121-DTC343TK-T400	5	Q1 Q2 2Q2 2Q3 2Q4	Transistor, ROHM	DTC343TK, SMD	SMD
121-DTA114EKA-T400	1	Q712	Transistor, ROHM	DTA114EKA, SMD	SMD
102-00LM833M-6000	1	U3	IC, NS, Pre-amp	LM833M, 8P, MSOP	SMD
102-0AML3370-1000	1	U401	IC, Amlogic, decoder	AML3370, 208P, PQFP	SMD
102-0AT24C01-6000	1	U15	IC, Atmel, EEPROM	AT24C01, 8P, SOP	SMD
102-074HCT14-6000	1	U6	IC, Philips, Hex inverting Schmitt trigger	74HCT14, 14P, SO14	SMD
101-29LV800BA-8400	1	U502	IC, Fujitsu, Flash memory	29LV800BA-70,48P, TSOP48	firmware burn-in
105-00078L05-8000	1	U7	IC, NS, Voltage Regulator	78L05, 3P, TO-92	SMD
102-AN8785SB-6000	1	U701	IC, Panasonic, Motor Driver	AN8785SB, HSOP042	SMD
101-HY57V641-8800	1	U501	IC, Hyundai, SDRAM	HY57V641620HG, 54P, TSOP54	SMD
100-MN103S47-3000	1	U801	IC, Panasonic, Servo chip	MN103S47JRB, 176P	SMD
105-SHAPC817-1000	1	2U1	IC, Sharp, Photoelectric Coupler	PC817, 4P, DIP	DIP
102-S018EZ01-0000	1	U8	IC, Sharp, Voltage Regulator	O18EZ01, PQ025	SMD
102-00WM8728-7000	1	U5	IC, Wolfson, Audio DAC	WM8728, 20P, SSOP20	SMD
102-BH7862FS-7000	1	U2	IC, Rohm, Video Buffer	BH7862FS, 32P, SSOP-A32	SMD
105-00078L12-8000	1	U1	IC, NS, Voltage Regulator	78L12, 3P, TO-92	TO-92
105-00079L12-8000	1	U4	IC, NS, Voltage Regulator	79L12, 3P, TO-92	TO-92
102-00LM9022-7000	1	3U3	IC, NS, Vacuum Fluorescent Display Filament Driver	LM9022, 8P, SO8	SMD
180-0000PH5A-5100	1	CN5	Connector	PH-5A, 5P, In-line Package	
180-0000PH6A-5100	1	CN4	Connector	PH-6A, 6P, In-line Package	
180-000PH13A-5100	1	CN6	Connector	PH-13A, 13P, In-line Package	
180-000PH13A-5100	1	CN1	Connector	PH-13A, 13P, In-line Package	
181-00050241-0100	1	CN3	Connector	24pin 0.5mm connector, SMD	
187-00000000-0940	1	J1	IR in/out jack	SCJ351P00XS0B00 (BLACK), In-line Package	Black
187-00000000-0740	1	J2	SCART output jack	SCART, In-line Package	Europe version
187-0000DSW6-0360	1	J5	S-video output jack	DSW-6, In-line Package	Gilded Antiflamin
186-0AV2841G-1300	1	J6	Audio output jack	AV2-8.4-1G, In-line Package	Down red & up white
186-0AV1846G-1300	1	J7	Coaxial output jack	AV1-8.4-6G, In-line Package	Orange
186-00AV4845-1300	1	J3	Video output jack	AV4-8.4-5, In-line Package	Down blue red & up green yellow
187-1FA513TZ-0540	1	J8	Jack, Sharp, Fiber optic output jack with shutter	GP1FA513TZ, In-line Package	

Front Board 1298C

Parts No.	Qty	LOCA.NO.	DESCRIPTION	SPECIFICATION	Remarks
131-B01015JT-0000	1	3R3	Resistor, chip	150O 1/8W 0805 5%	
131-B01047JT-0000	1	3R4	Resistor, chip	470O 1/8W 0805 5%	
131-B02010JT-0000	1	3R8	Resistor, chip	1KO 1/8W 0805 5%	
131-B02047JT-0000	11	3R2 3R5 3R7 3R16 3R20 3R21 3R22 3R23 3R24 3R25 3R28	Resistor, chip	4.7KO 1/8W 0805 5%	
131-B03010JT-0000	1	3R1	Resistor, chip	10KO 1/8W 0805 5%	
131-B03033JT-0000	1	3R18	Resistor, chip	33KO 1/8W 0805 5%	
131-B03047JT-0000	1	3R19	Resistor, chip	47KO 1/8W 0805 5%	
141-C0B022PH-0000	2	3C8 3C10	Capacitor, multilayer ceramic, chip	22PF 50V J NPO 0805	
141-C0B047PH-0000	2	3CB6 3CB9	Capacitor, multilayer ceramic, chip	47PF 50V J NPO 0805	
141-C0B410PH-0000	5	3CB1 3CB2 3CB3 3CB4	Capacitor, multilayer ceramic, chip	0.1μF 50V Z Y5V 0805	
140-DCA047UD-0A00	1	3C6	Capacitor, AL.electrolytic	47μF 10V 20%	
140-DCA110UD-0A00	1	3C14	Capacitor, AL.electrolytic	100μF 10V 20%	
140-DCA122UD-0A00	1	3C12	Capacitor, AL.electrolytic	220μF 10V 20%	
217-00400003-2200	1	3Y1	Fundamental. Oscillator	4.000MHz, In-line Package	
111-B01N4148-0A00	1	3D6	Diode	1N4148, In-line Package	
110-FHFT503C-AA00	1	3LD1	Diode, color is blue&amber	HFT503CPBOF 3, 3P, In-line Package	
121-00008550-T300	1	3Q2 3Q3	Transistor	8550 SMD	
121-00008050-T400		3Q1	Transistor	8050 SMD	
103-CF74504P-1240	1	3U1	IC, Microchip, MCU	CF745-04/P, 18P, DIP	firmware burn-in
102-00PT6311-1000	1	3U2	IC, Princeton Technology Corp., VFD driver	PT6311 SMD	
105-OHL38B17-1000	1	3U4	IR receiver	HL38B17, 3P, In-line Package	
190-000DVD22-0120	1	3U6	VFD	VFD22 1101	
170-C0000004-0000	8	3K2 3K3 3K4 3K5 3K6 3K7 3K8 3K9	Touch switch	6×6	
180-0TJC303A-5100	1	CN4	Connector	TJC3-3A, 3P, In-line Package	
181-00125072-2000	2	CN2 CN3	Connector	7pin 1.25mm connector, In-line Package	

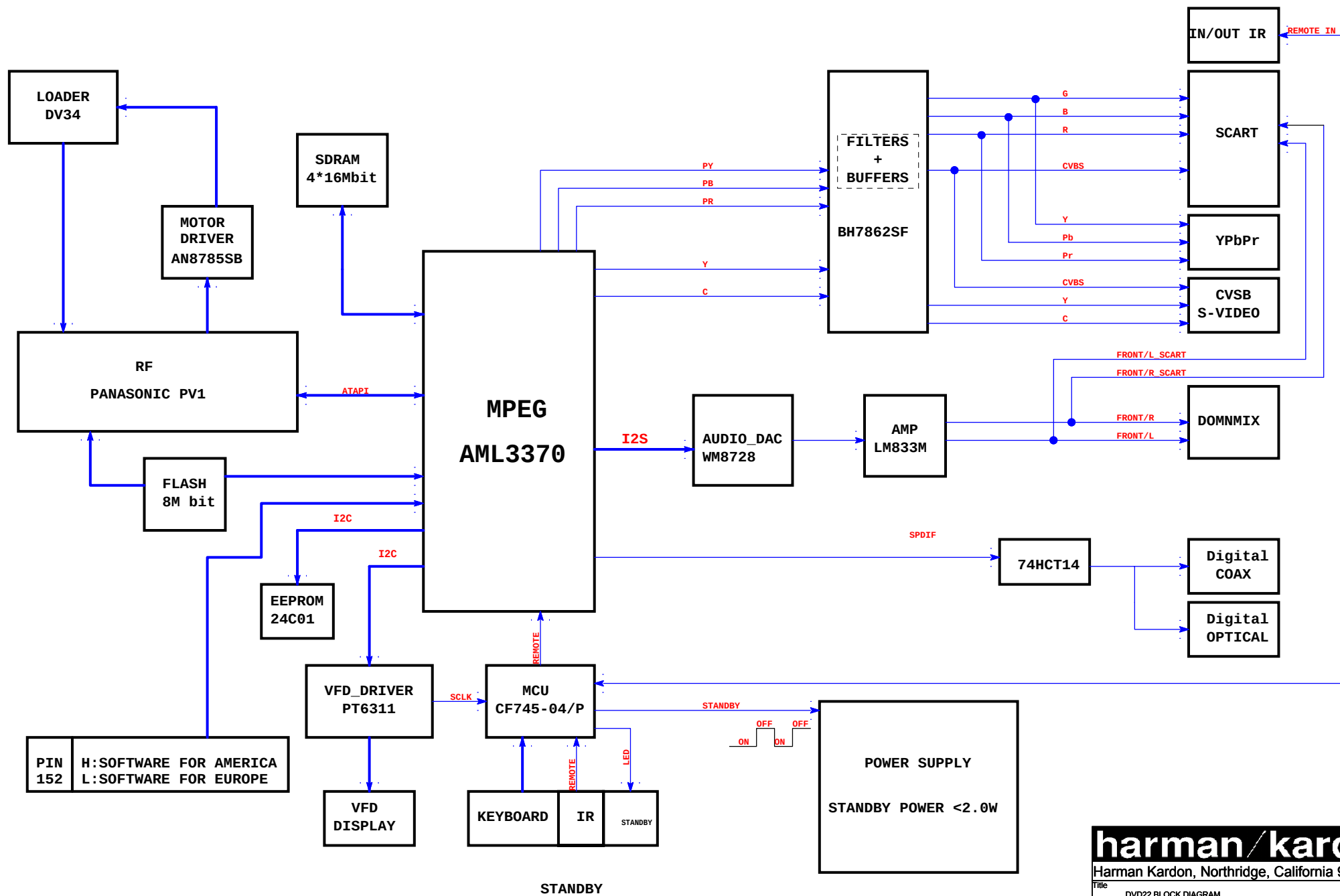
Power Supply 1254C

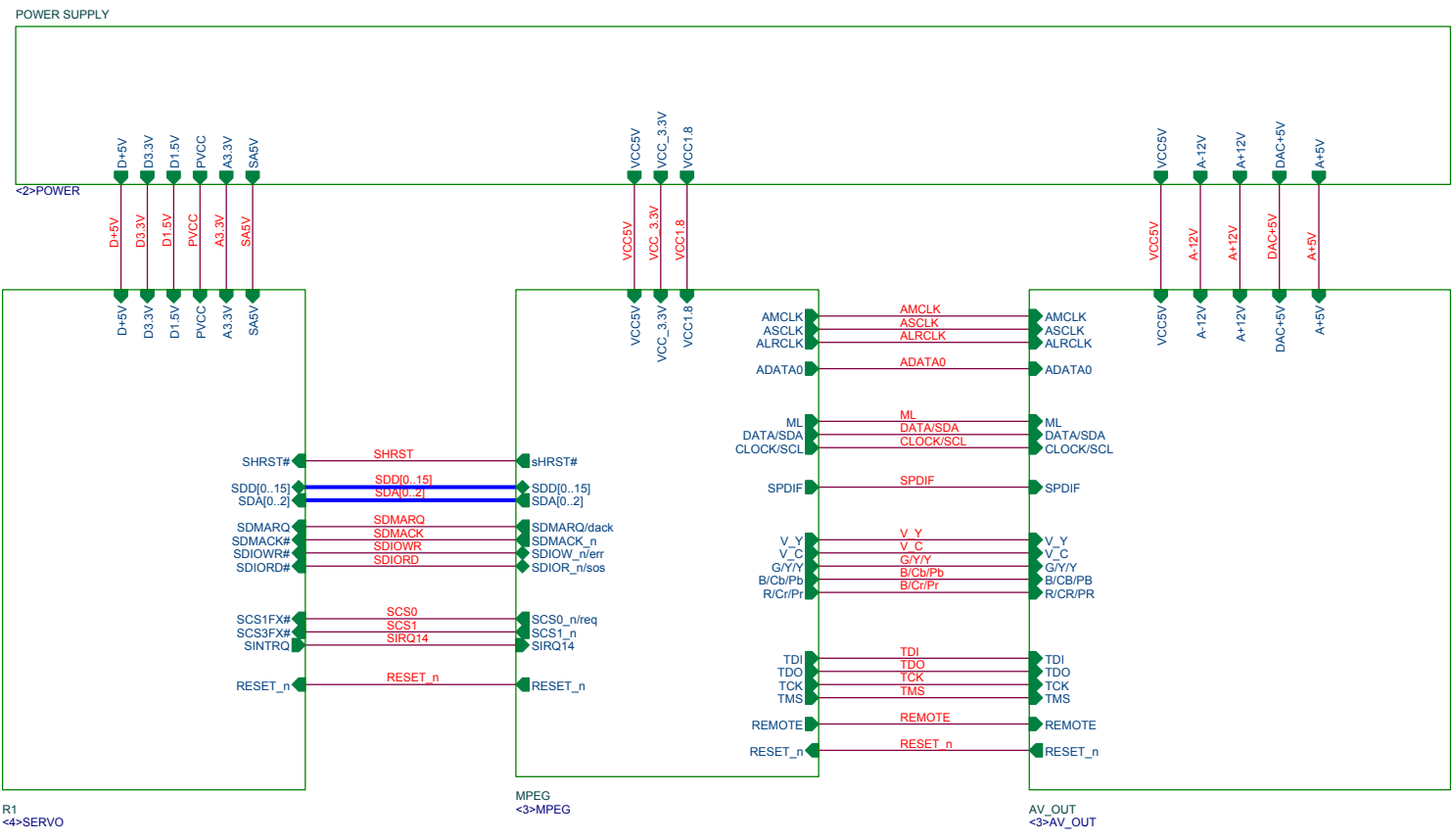
Parts No.	Qty	LOCA.NO.	DESCRIPTION	SPECIFICATION	Remarks
130-0RNTC5D9-0000	1	NTC	NTC thermistor	NTC-5D-9	
130-M10D471K-0000	1	RV1	Zinc oxide varistor	MYG10K471	
130-T45010JT-0000	1	R1	Fixed carbon film	1MO 1/4W 5%	
130-T63068JT-0000	1	R2	Fixed carbon film	68KO 1W 5%	
130-T64036JT-0000	1	R3	Fixed carbon film	360KO 1W 5%	
130-T42022JT-0000	3	R17 R18 R22	Fixed carbon film	2.2KO 1/4W 5%	
130-T42051JT-0000	3	R23 R24 R25	Fixed carbon film	5.1KO 1/4W 5%	
130-T43010JT-0000	1	R15	Fixed carbon film	10KO 1/4W 5%	
130-T40010JT-0000	2	R4 R6	Fixed carbon film	10O 1/4W 5%	
130-T43047JT-0000	1	R5	Fixed carbon film	47KO 1/4W 5%	
130-T40047JT-0000	1	R21	Fixed carbon film	47O 1/4W 5%	
130-T41010JT-0000	1	R16	Fixed carbon film	100O 1/4W 5%	
130-T41022JT-0000	3	R13 19 R20	Fixed carbon film	220O 1/4W 5%	
130-T41068JT-0000	1	R14	Fixed carbon film	680O 1/4W 5%	
130-T42010JT-0000	1	R26	Fixed carbon film	1KO 1/4W 5%	
140-CGA410PO-0A00	1	CX1	High-voltage metallized polyester film	0.1uF 275V 20%	X-type
140-CGA147PQ-0A00	2	CY1 CY2	High-voltage metallized polyester film	470PF 400V 20%	Y1-type
140-CGA210PQ-0A00	1	CY3	High-voltage metallized polyester film	1000PF 400V 20%	Y1-type
140-CGA310PW-0A00	1	C1	High-voltage metallized polyester film	0.01uF 1KV 20%	
140-CHB347PF-JA00	2	C2 C13	Radial leads mlcc	0.047uF 50V 20%	
140-CHB368PF-JA00	1	C3	Radial leads mlcc	0.068uF 50V 20%	
140-CHB410PF-JA00	6	C10 C11 C12 C14 C15 C16	Radial leads mlcc	0.1uF 25V 20%	
140-DCAC22UM-0A00	1	EC3	Capacitor, AL.electrolytic	4.7uF 160V 20%	
140-DCAC22UF-0A00	1	EC22	Capacitor, AL.electrolytic	2.2uF 25V 20%	
140-DCA047UH-0A00	1	EC2	Capacitor, AL.electrolytic	47uF 50V 20%	
140-DCF047UQ-0A00	1	EC1	Capacitor, AL.electrolytic	47uF 400V 105°C 20%	18x21mm,105°C
140-DCA047UF-0A00	2	EC17 EC18	Capacitor, AL.electrolytic	47uF 25V 20%	
140-DCA110UF-0A00	2	EC11 EC12	Capacitor, AL.electrolytic	100uF 25V 105°C 20%	
140-DCA122UE-0A00	4	EC5 EC6 EC16 EC21	Capacitor, AL.electrolytic	220uF 16V 105°C 20%	
140-DCA122UF-0A00	4	EC9 EC10 EC14 EC15	Capacitor, AL.electrolytic	220uF 25V 105°C 20%	
140-DCA147UE-0A00	1	EC4	Capacitor, AL.electrolytic	470uF 16V 105°C 20%	
140-DCF210UE-0A00	2	EC19 EC20	Capacitor, AL.electrolytic	1000uF 16V 105°C 20%	

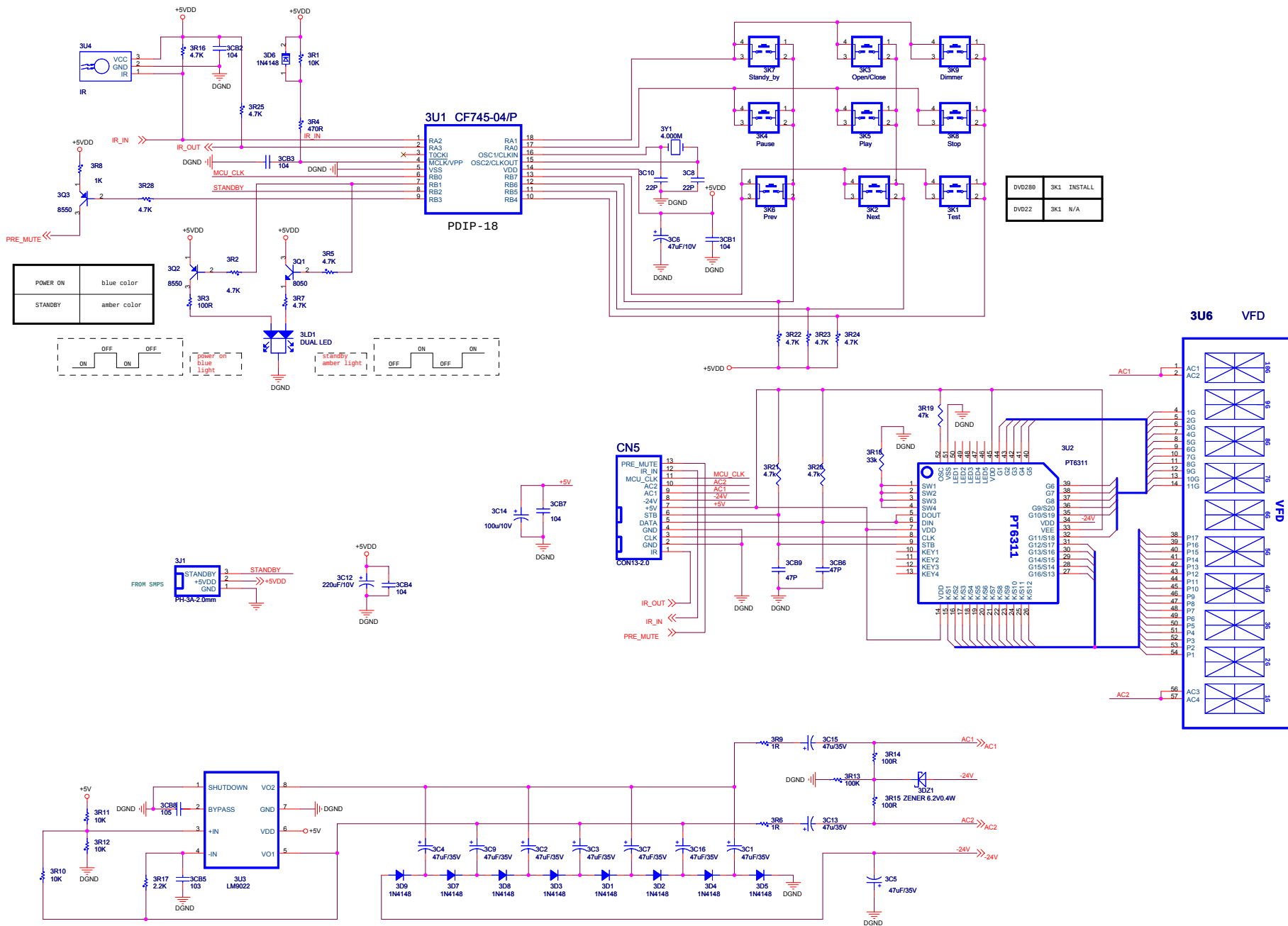
Power Supply 1254C

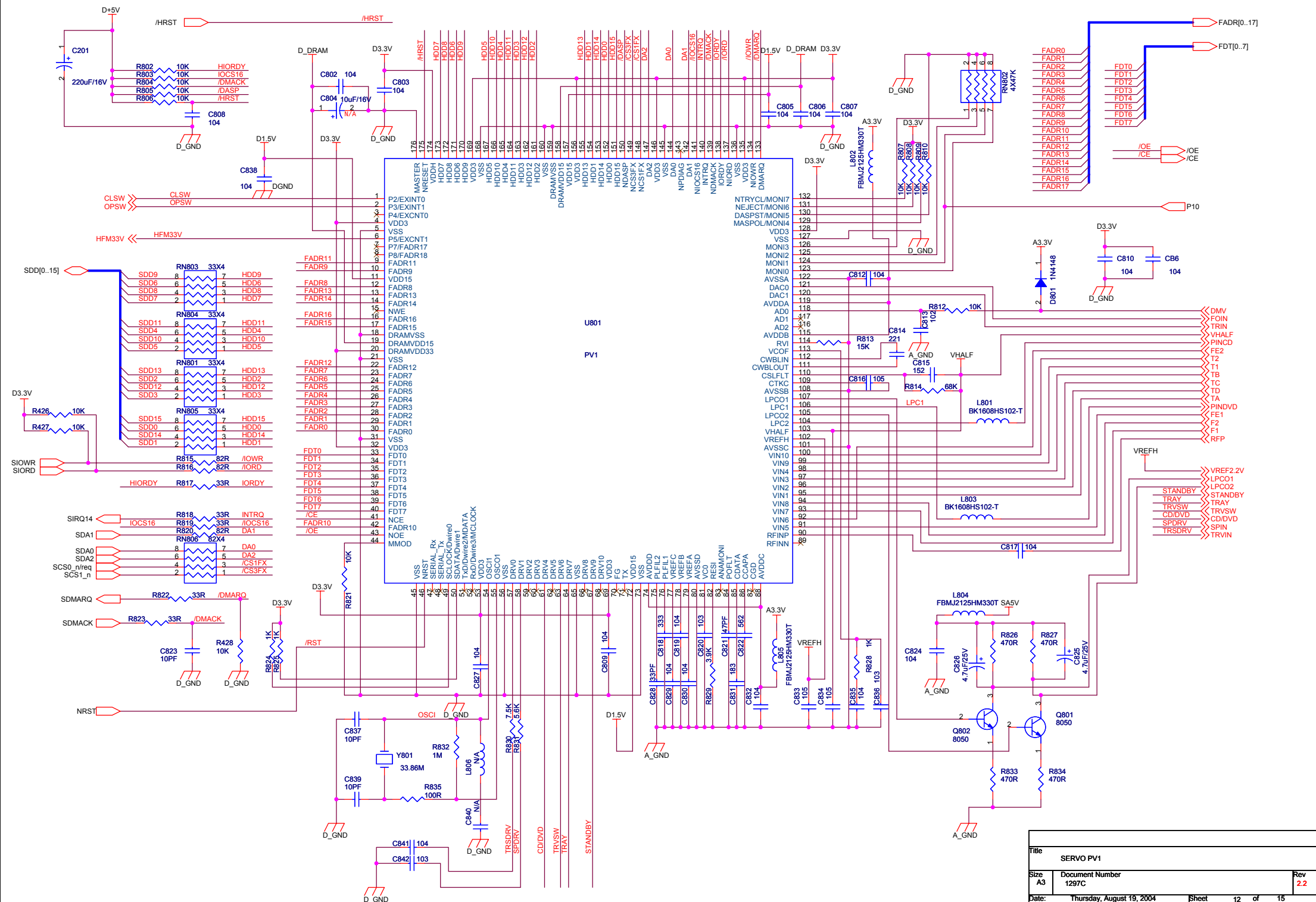
Parts No.	Qty	LOCA.NO.	DESCRIPTION	SPECIFICATION	Remarks
154-0L630010-0000	1	L7	Filter inductor	L630-10uH	
154-B0810020-0000	1	L6	Filter inductor	0810-20UH	
154-B0608020-0000	4	L3 L4 L5 L8	Filter inductor	0608-20uH	
154-BLCLE650-0000	1	LF1	Common Mode Choke	LCL ET20-50mH	
110-B0IN4001-0A00	1	D17	Diode	IN4001, In-line Package	
110-B0IN4007-0A00	4	D1 D2 D3 D4	Diode	IN4007, In-line Package	
110-B00FR104-0A00	5	D6 D8 D10 D11 D13	Fast recovery rectifiers diode	FR104, In-line Package	
110-B00FR107-0A00	1	D7	Fast recovery rectifiers diode	FR107, In-line Package	
110-B0IN4148-0A00	3	D14 D16 D18	Switching Diode	1N4148, In-line Package	
110-B021DQ10-0A00	1	D12	Diode	21DQ10, In-line Package	
110-B031DQ06-0A00	1	D15	Diode	31DQ06, In-line Package	
110-B0001U08-0A00	1	D5	Diode	1U08, In-line Package	
110-D000C160-0A00	1	ZD1	Zener Diode	16V 1/2W, In-line Package	
110-D000C180-0A00	1	ZD2	Zener Diode	18V 1/2W, In-line Package	
110-0MCR1006-0A00	1	SC1	Silicon controlled rectifiers	MCR100-6, In-line Package	
120-002N5551-A000	1	Q1	Transistor	2N5551, 3P, TO-92	
120-000C8550-A400	1	Q3	Transistor	C8550, 3P, TO-92	
120-00009014-A000	1	Q2	Transistor	9014, 3P, TO-92	
180-000VH03A-3100	1	JP1	Connector	Vertical VH three holes two pins(white)	Antiflaming
180-000VH03A-3110	1	JP2	Connector	Vertical VH three holes two pins(orange)	Antiflaming
180-0TJC303A-5100	1	CN1	Connector	TJC3-3A, 3P, In-line Package	
180-0TJC303A-5100	1	CN2	Connector	TJC3-13A, 13P, In-line Package	
105-KA5I0365-1000	1	IC1	IC,Fairchild, Power Switch	KA5L0365RN, 8P, DIP	
105-KA5M0265-1000				KA5M02659RN, 8P, DIP	
105-000KA431-8000	1	IC2	IC,Fairchild, Precision Adjustable Voltage Regulator	KA431, 3P, In-line Package	
105-00BA033T-8000	1	IC6	IC, Rohm, Voltage Regulator	BA033T, 3P, In-line Package	
105-000LM317-8000	1	IC5	IC, NS, Voltage Regulator	LM317, 3P, In-line Package	
105-00LM7805-8000	1	IC3	IC, NS, Voltage Regulator	LM7805,3P, In-line Package	
105-000PC817-1000	1	PH1	IC, Sharp, Photoelectric Coupler	PC817, 4P, DIP	
	1	FU1	Fuse Holder	Fuse Holder	Antiflaming
210-01000250-2000	1	FU1	Fuse	T1AL/250V	
150-BBCKEC28-0020	1	TR1	Transformer	BCK-EC2802	

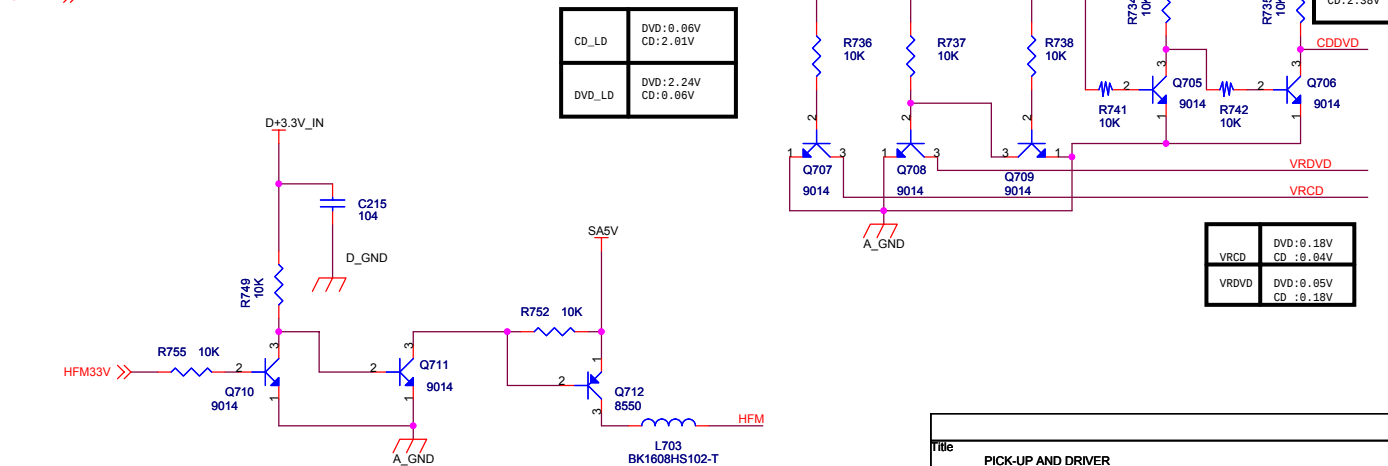
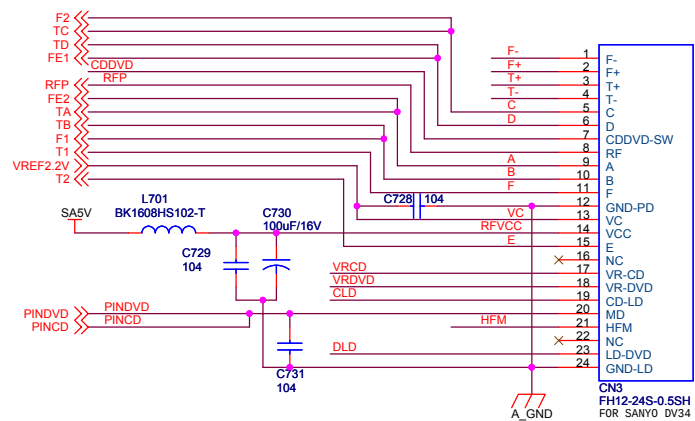
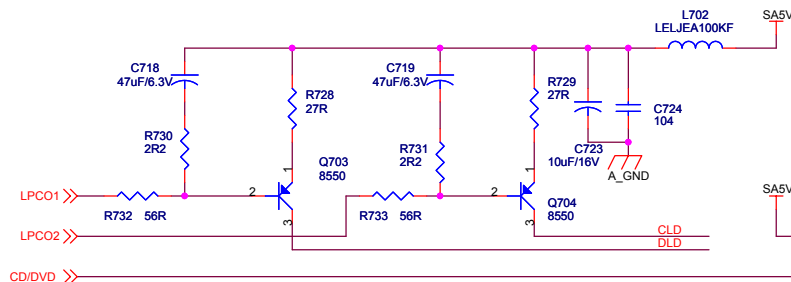
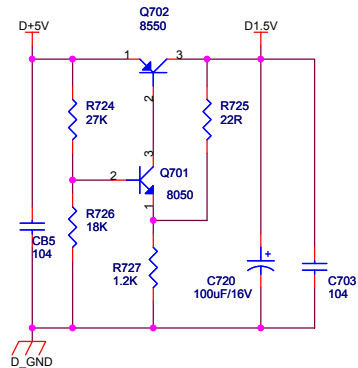
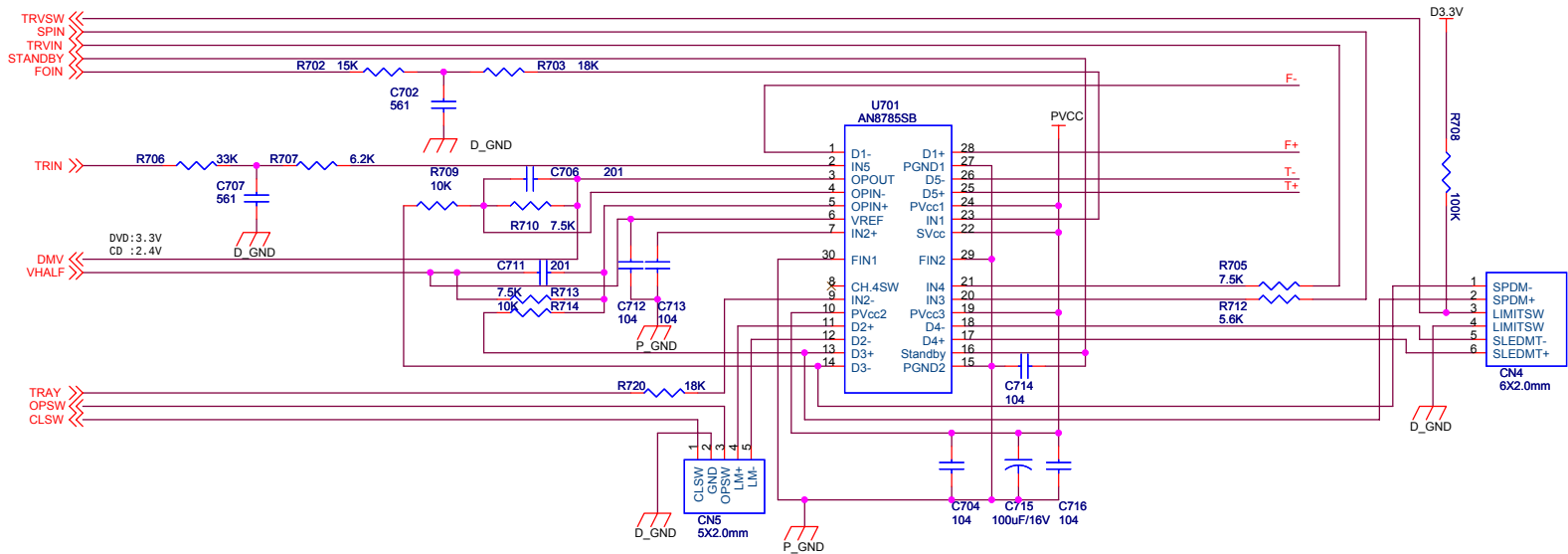
DVD22 BLOCK DIAGRAM

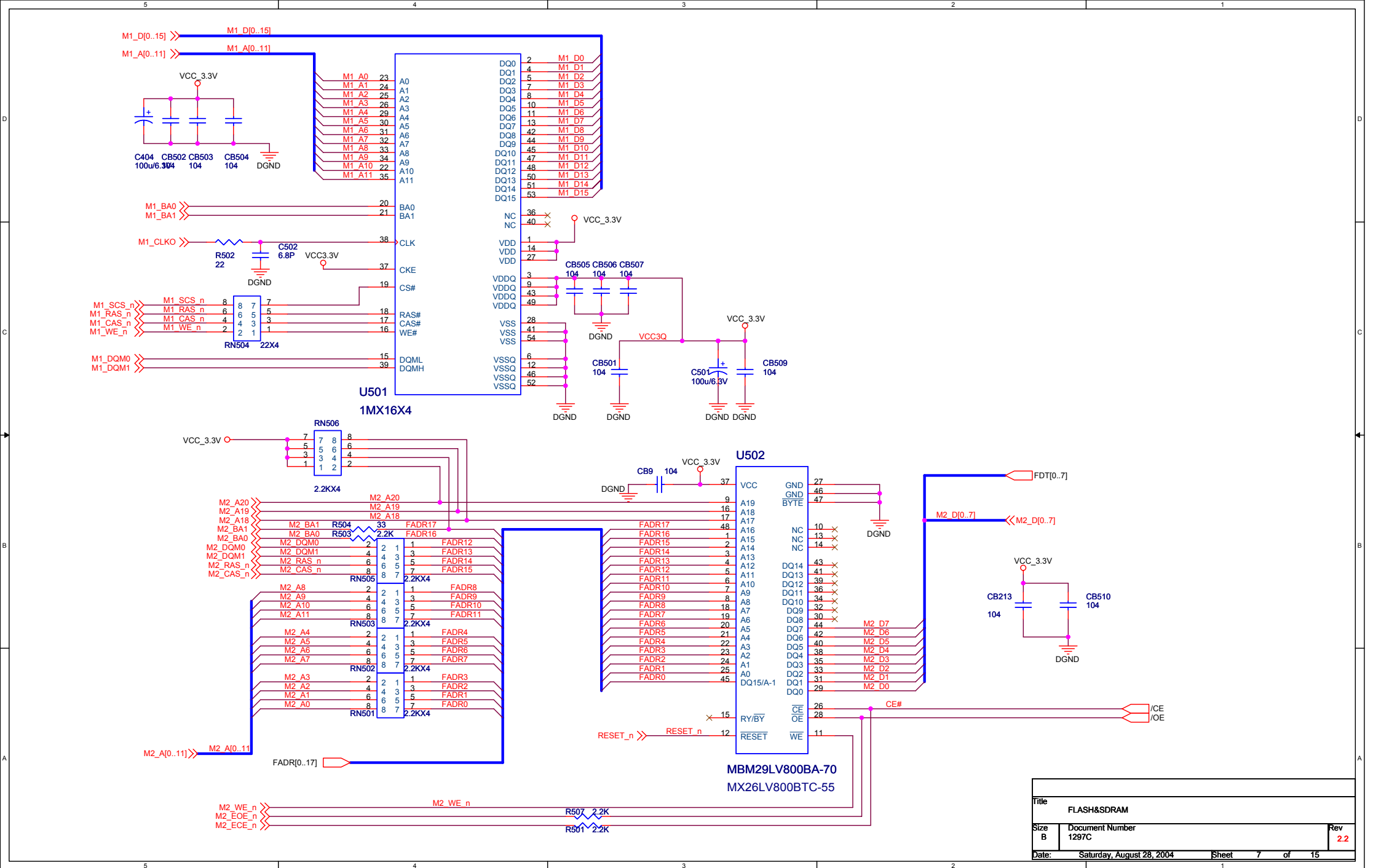






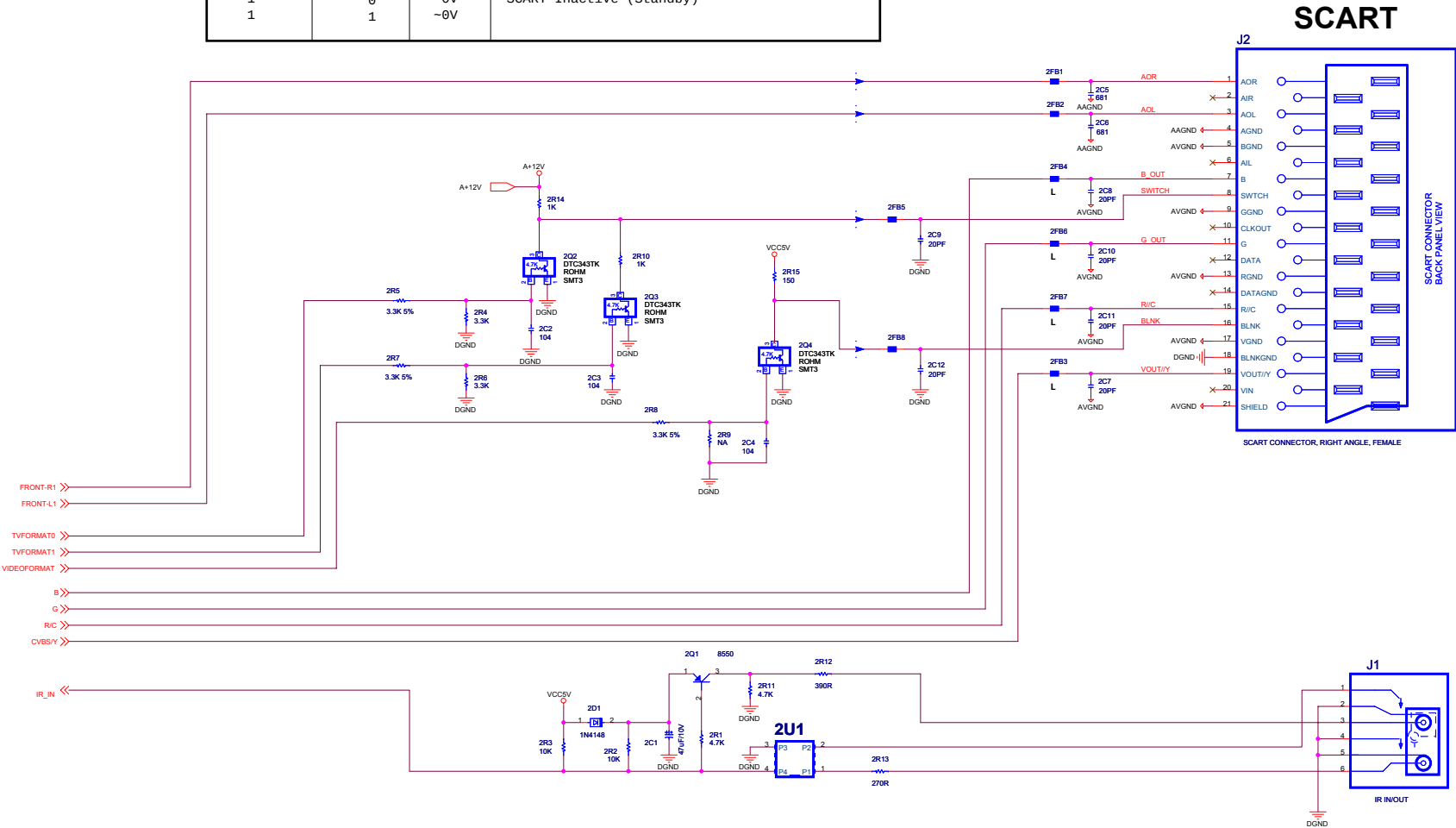






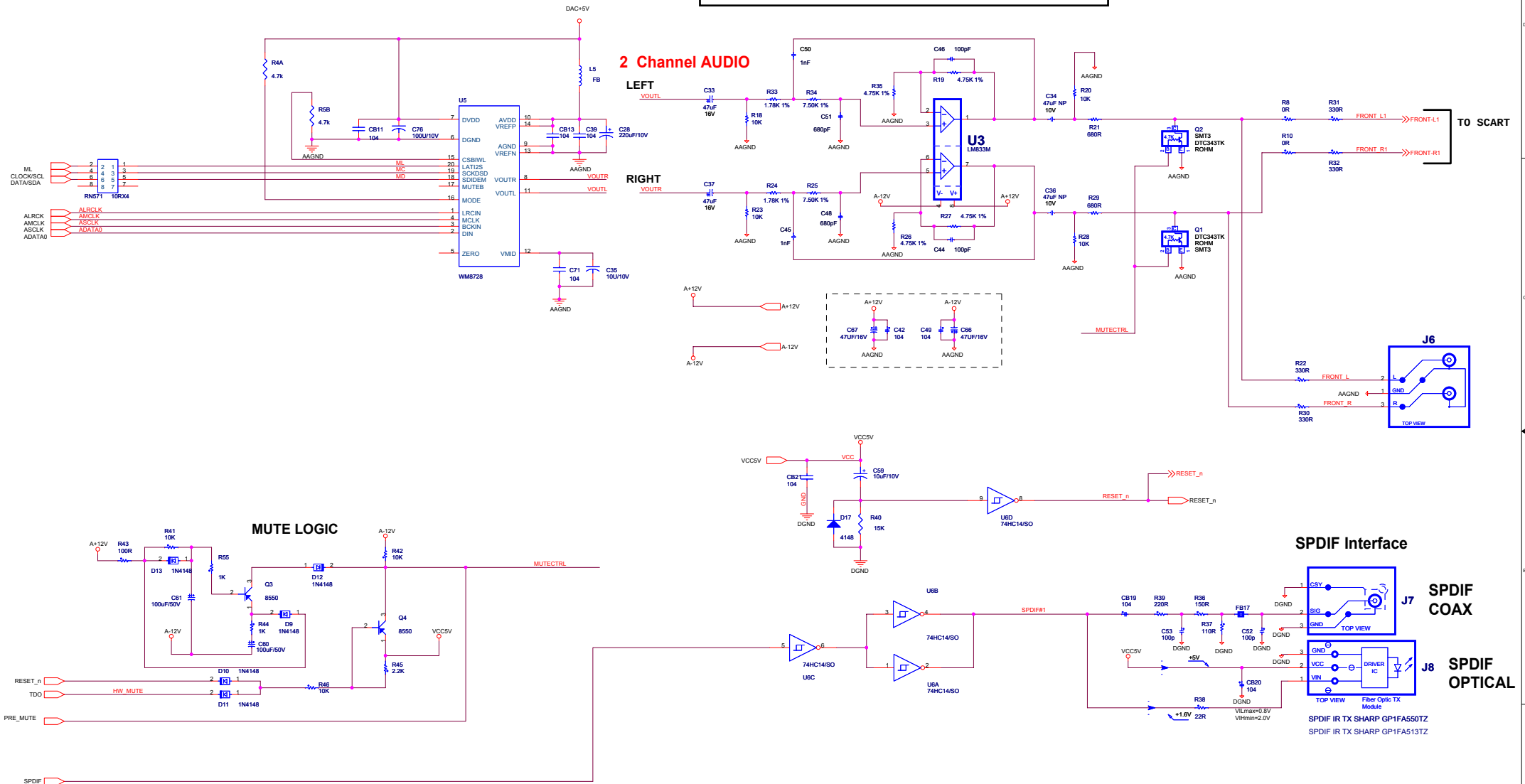
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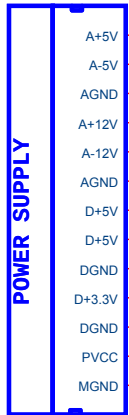
TVFORMAT0	TVFORMAT1	CONTROL VOLTAGE	TV FUNCTION
0	1	-6V	SCART Active Auto Switch to 16:9 Aspect Ratio
0	0	-12V	SCART Active Auto Switch to 4:3 Aspect Ratio
1	0	-0V	SCART Inactive (Standby)
1	1	-0V	SCART Inactive (Standby)





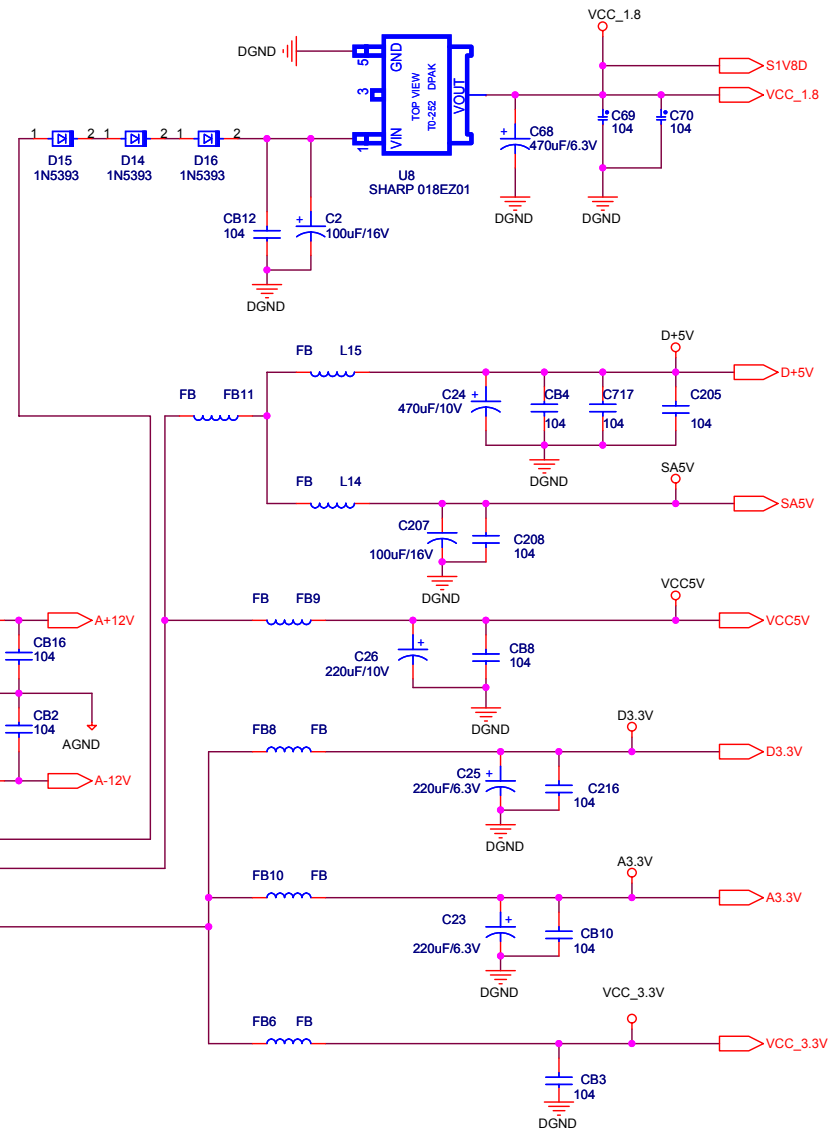
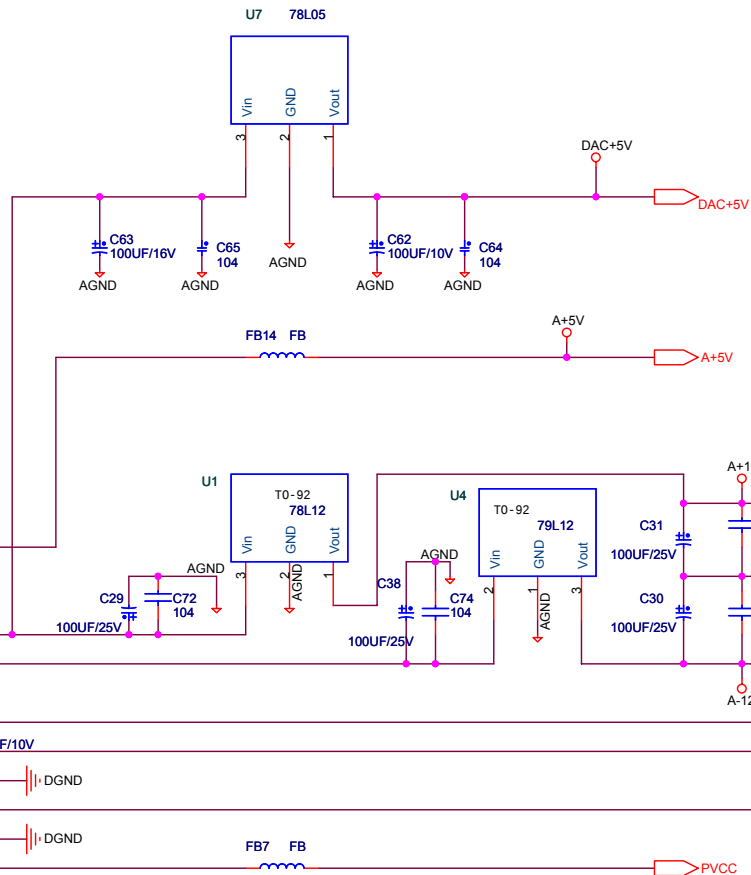
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0805 NPO capacitance: C44 C45 C46 C48 C50 C51
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PH 2.0mm

CN1
CON13P 2.0mm



harman/kardon®
Harman Kardon, Northridge, California 91329, USA

Title DVD22 POWER SUPPLY		
Size B	Document Number 1297C	Rev 2.2
Date:	Thursday, August 19, 2004	Sheet 4 of 15

