

DVD10
Digital Versatile Disc Player
Dolby Digital / DTS

PRELIMINARY
Service – Technical Manual



Features

DVD: a completely new dimension in video entertainment

- Subtitles may be displayed in one of a maximum of 32 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 recorded with multiple camera angles.)
- Advanced sophisticated 10-bit MPEG-2 video decoding circuits.
- Direct RGB output via SCART for optimum video performance.
- Second SCART connector for throughput of VCR or other video source to TVs with only one SCART input.
- Dual-layer compatibility for extended play DVD.

* The number of languages recorded depends on the software.

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 (not on digital output, see table page 13), audio quality exceeding that of CD becomes possible.

Many convenient features

- On-Screen Menu Icons for disc information or player information and access to many major functions of this unit.
- Programming of up to 9 scenes in memory (markers)
- Parental lock settings to prevent play of discs unsuitable for some audiences [DVD only]
- Intuitive menu operating system.
- Separate Buttons for convenient Fast Forward/Fast Reverse Search and Track Skip.

Compatible with CD as well as DVD.

- The DVD10 will play any conventional Audio CD or erasable CD (CD-RW), bearing the logos as shown below as well as any DVD with the region code 0 or 2.

Disc formats supported by this player

The unit can play discs bearing any of the following marks:



DVD

3" (8 cm) disc
5" (12 cm) disc

CD

3" (8 cm) disc
5" (12 cm) disc

CD-RW

5" (12 cm) disc

Accessories

Remote control unit

Batteries for remote control unit (size "AA")

Video/Audio Cable

Optional Accessories

S-Video Cable

Optical Digital Audio Cable

Coaxial Digital Audio Cable

Declaration of Conformity



We, Harman Consumer International
2, route de Tours
72500 Château-du-Loir,
FRANCE

declare in own responsibility, that the product described in this owner's manual is in compliance with technical standards:

EN 60 065:1993

EN 55 013/A12/8.1994

EN 55 020/12.1994

EN 61000-3-2/4.1995

EN 61000-3-3/1.1995

Carsten Olesen
Harman Kardon Europe
01/01

Specifications

Applicable Disc:	5 inch (12 cm) or 3 inch (8 cm) DVD-Movie, CD or CD-RW discs, Region 2 DVD-Movie Discs, DVD: Single Side/Single Layer, Single Side/Dual Layer, Dual Side, Dual Layer, Linear PCM, Dolby Digital or DTS Audio Discs
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 Outputs:	Y: 1 V p-p/75 Ohms, sync, negative polarity Pr: 0.648 V p-p/75 Ohms Pb: 0.648 V p-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):	110 dB (A-weighted)
Dynamic Range:	DVD: 100 dB (18 Bit) CD: 91 dB
THD:	DVD/CD: 0.0025 %
Wow & Flutter:	Below Measurable Limits
AC Power:	220-240 V/50 Hz
Power Consumption:	20 Watts (On)
Dimensions (WxHxD):	440x108x330 mm
Weight:	7 Kg

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.

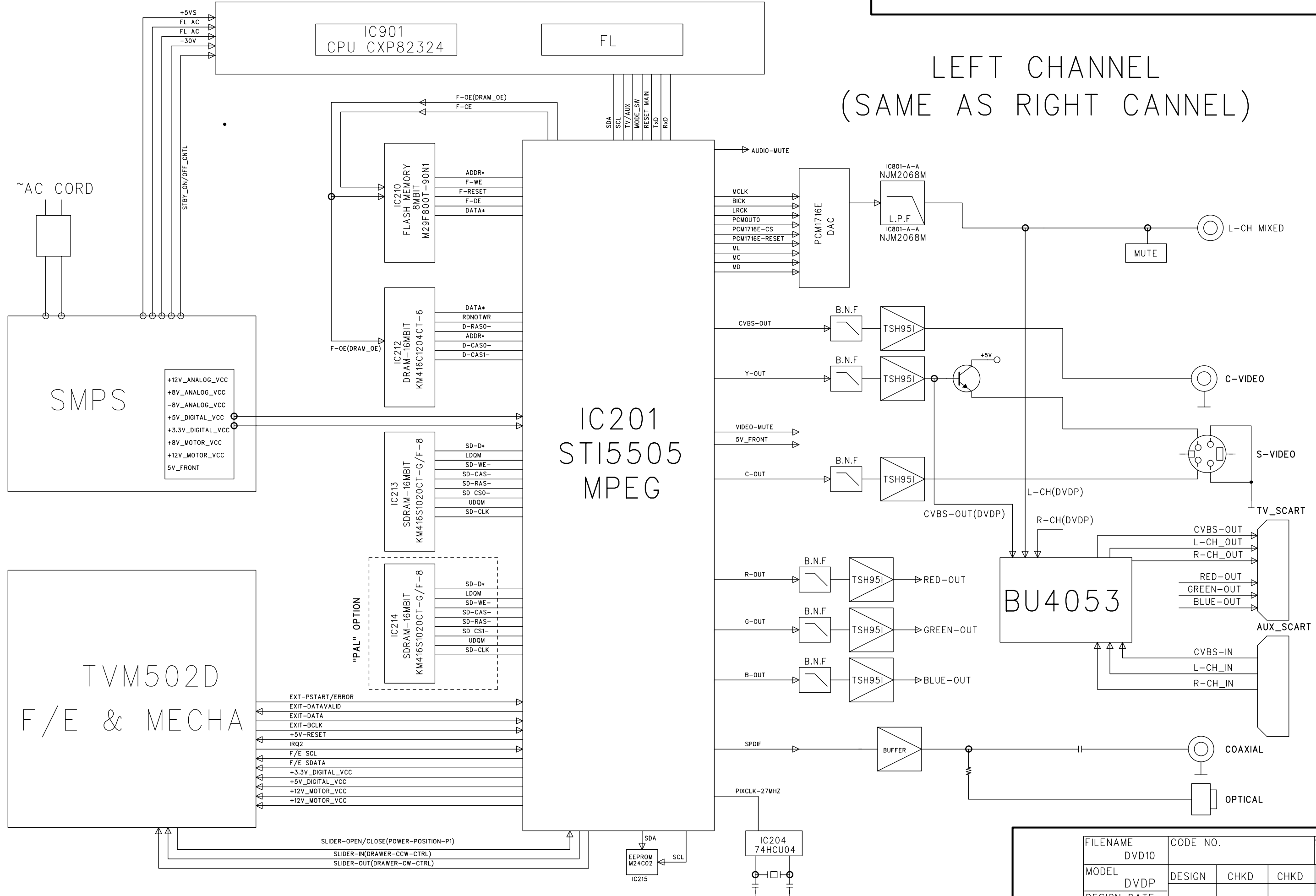
Unpublished Work. © 1992-1997 Dolby Laboratories, Inc. All rights reserved.

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

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 disassembly is prohibited.

DVD10 BLOCK DIAGRAM

LEFT CHANNEL
(SAME AS RIGHT CANNEL)



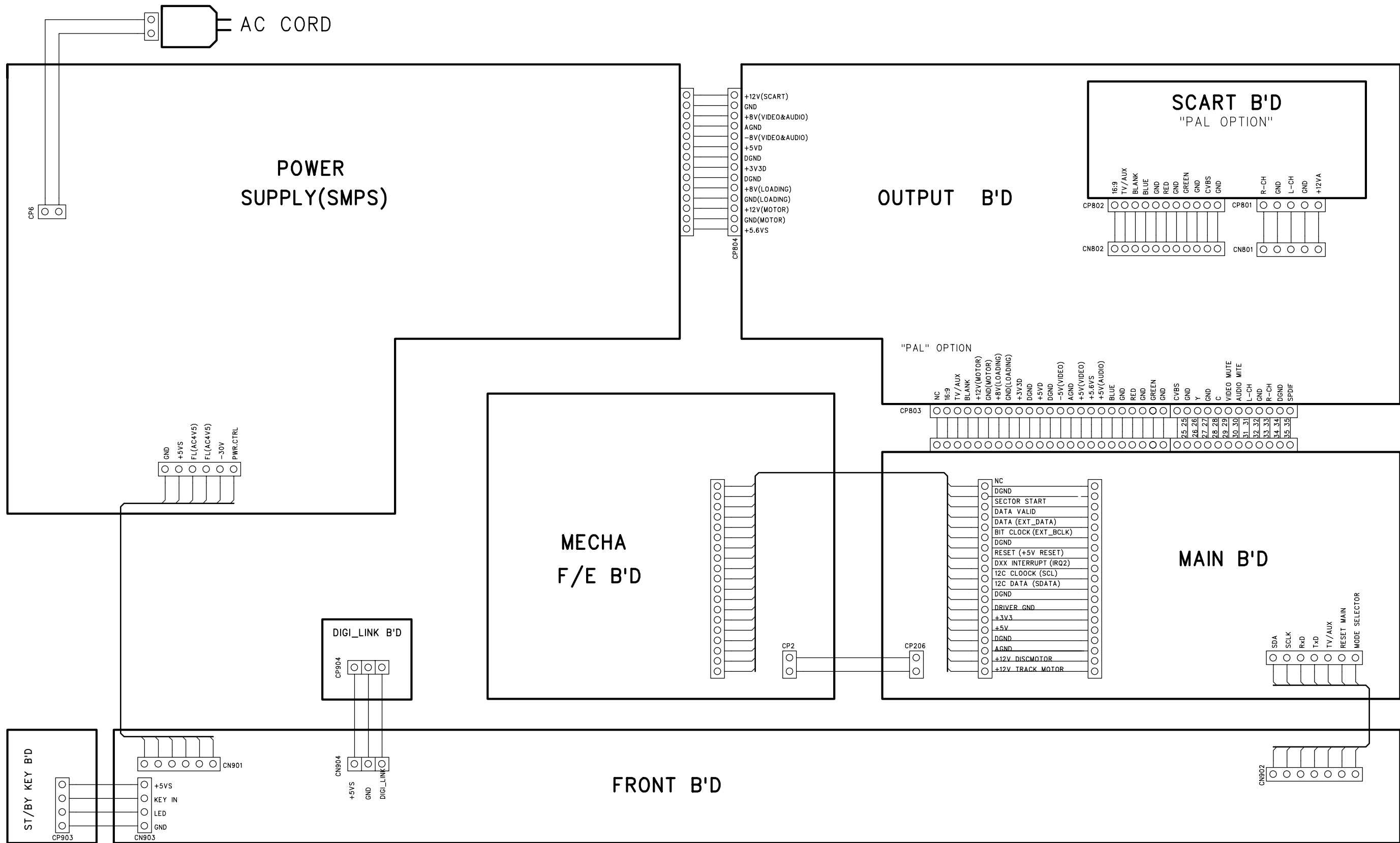
FILENAME DVD10	CODE NO.			SHEET /
MODEL DVDP	DESIGN	CHKD	CHKD	APPROVAL
DESIGN DATE 02/FEB/2001				

TTC LTD.

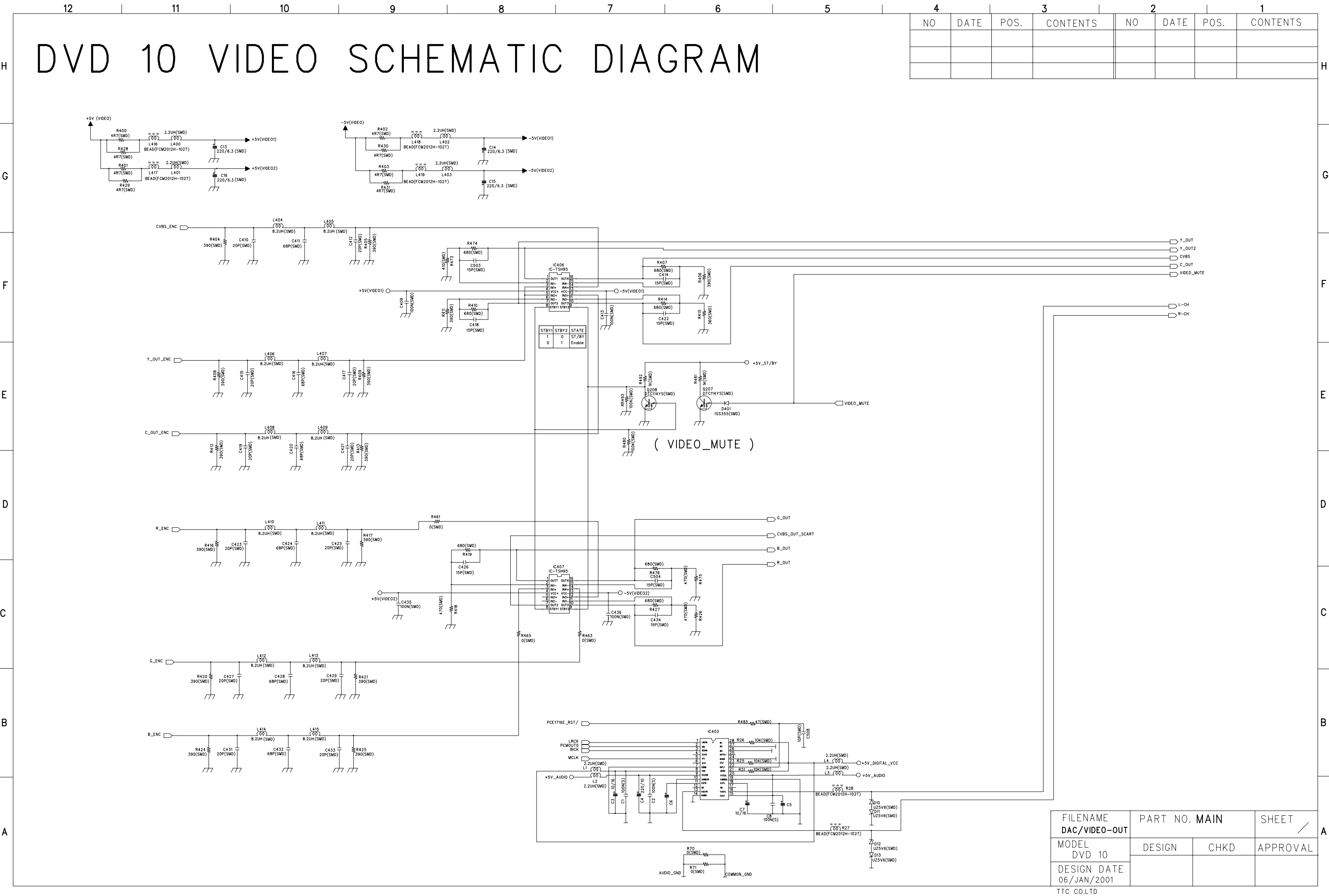
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DVD 10 WIRING DIAGRAM

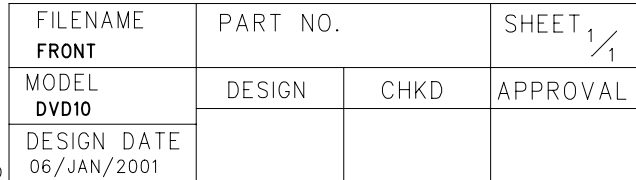
NO	DATE	POS.	CONTENTS	NO	DATE	POS.	CONTENTS



CONFIDENTIAL/CONTROL COPY				
FILENAME	CODE NO.			SHEET
WIRING				1 / 1
MODEL	DESIGN	CHKD	CHKD	APPROVAL
DVD 10				
DESIGN DATE				
02/OCT/2000				



NO	DATE	POS.	CONTENTS	NO	DATE	POS.	CONTENTS

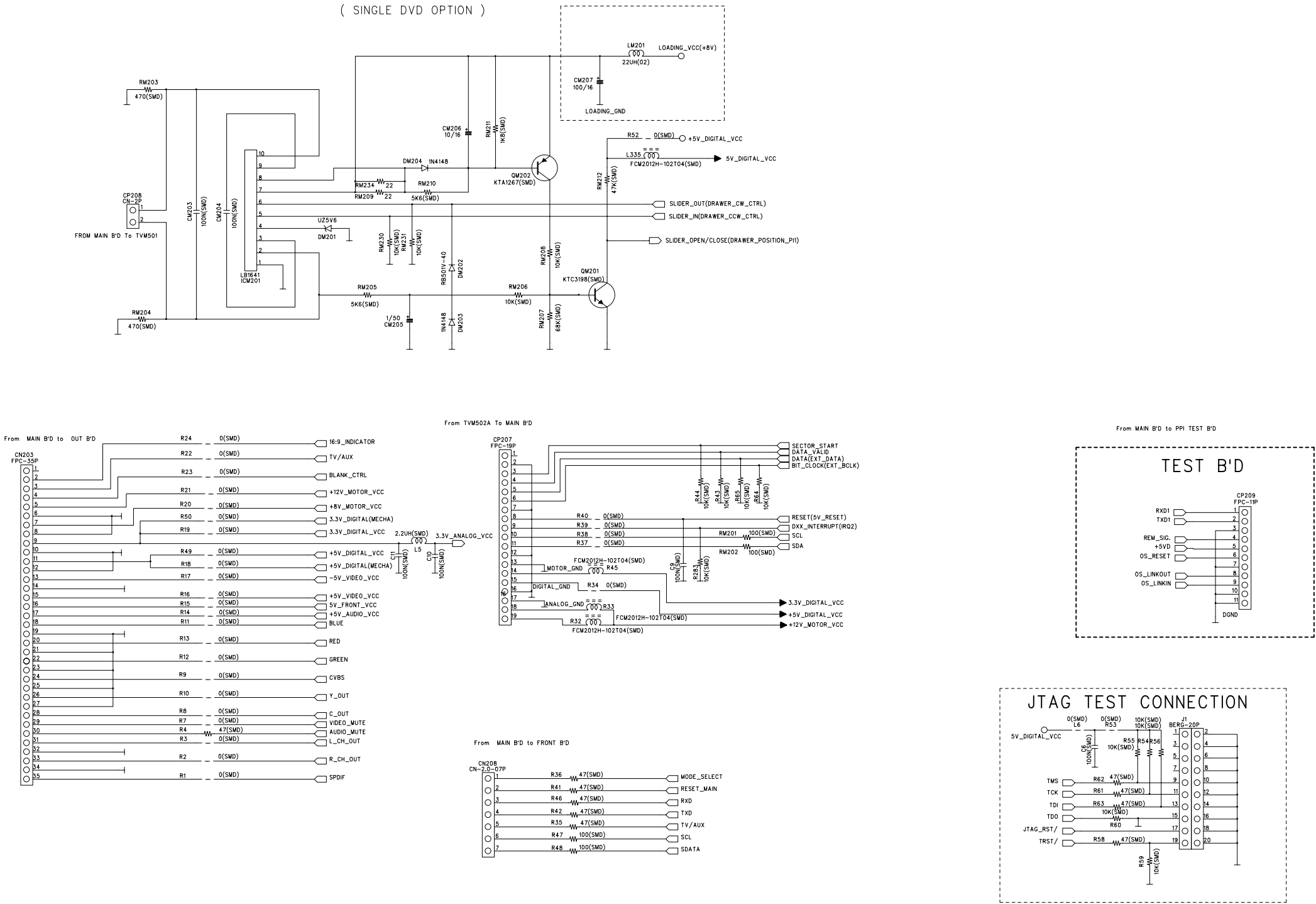


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NO	DATE	POS.	CONTENTS	NO	DATE	POS.	CONTENTS

DVD 10 SCHEMATIC DIAGRAM



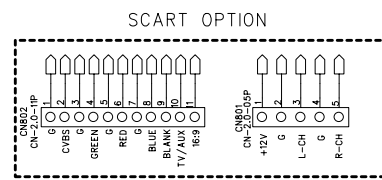
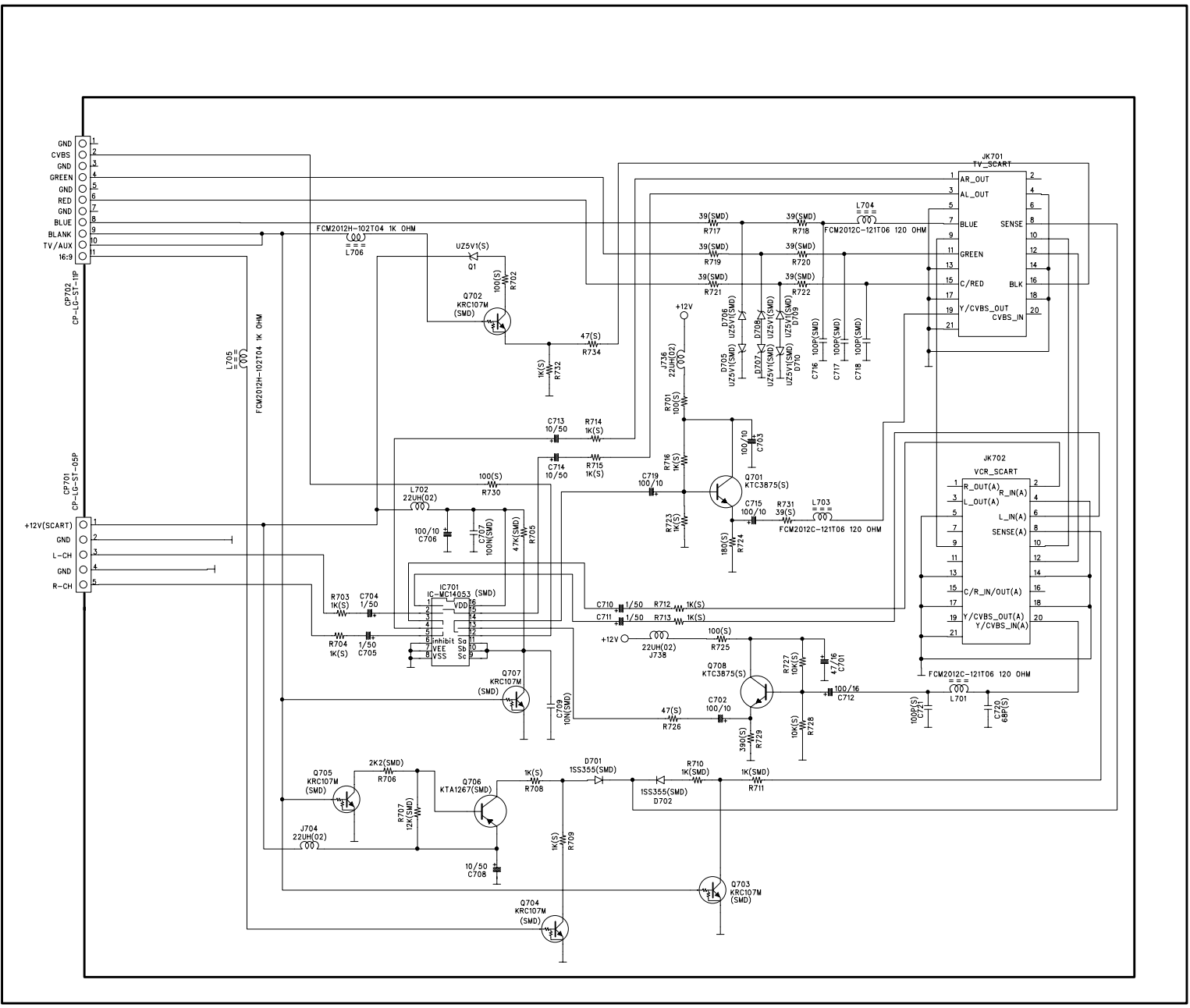
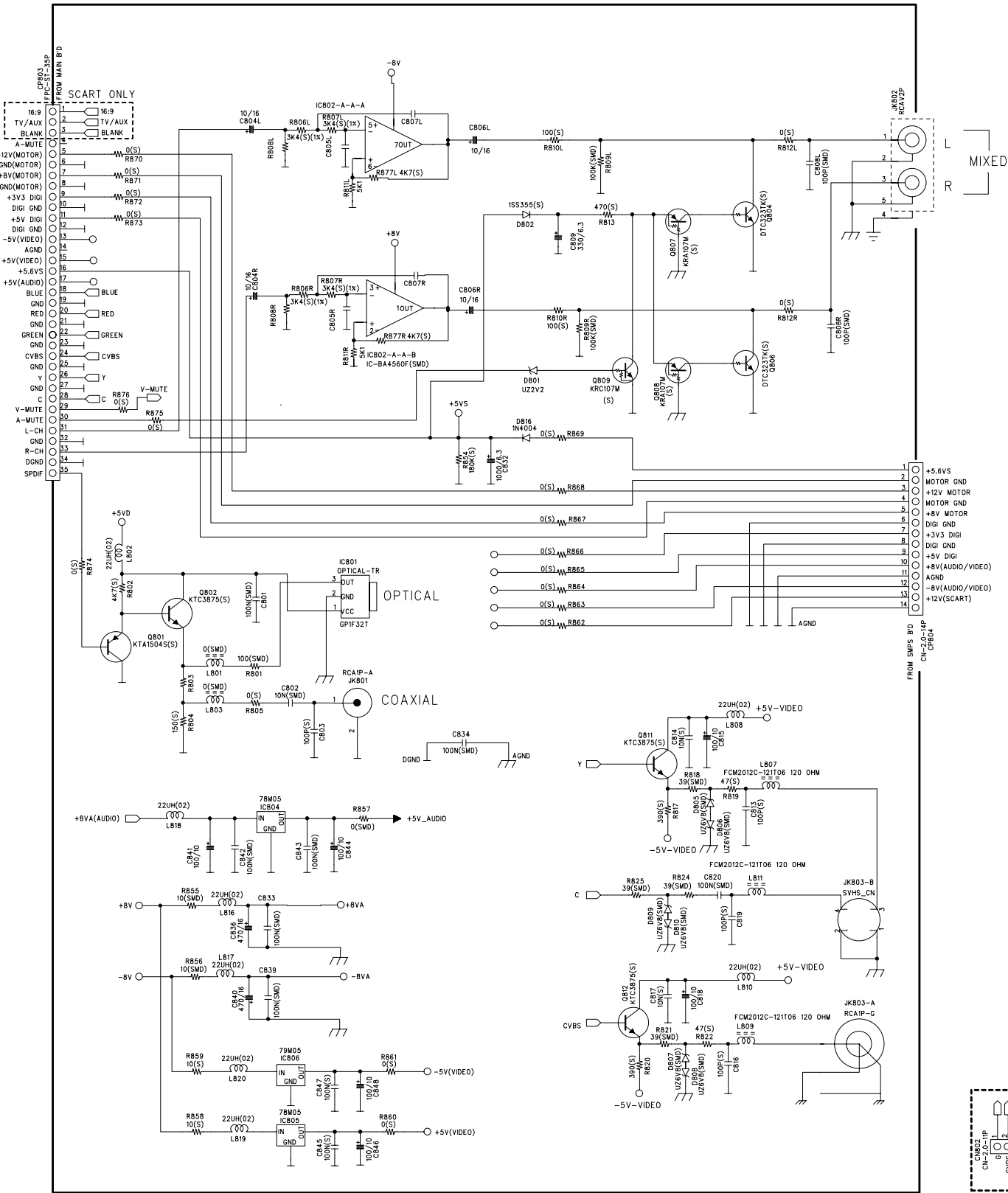
FILENAME MISC.SCH	PART NO. MAIN		SHEET /
MODEL DVD 10	DESIGN	CHKD	APPROVAL
DESIGN DATE 06/JAN/2001			

SCHEMATIC DIAGRAM

NO	DATE	POS.	CONTENTS	NO	DATE	POS.	CONTENTS

DVD 10 REAR SCHEMATIC DIAGRAM

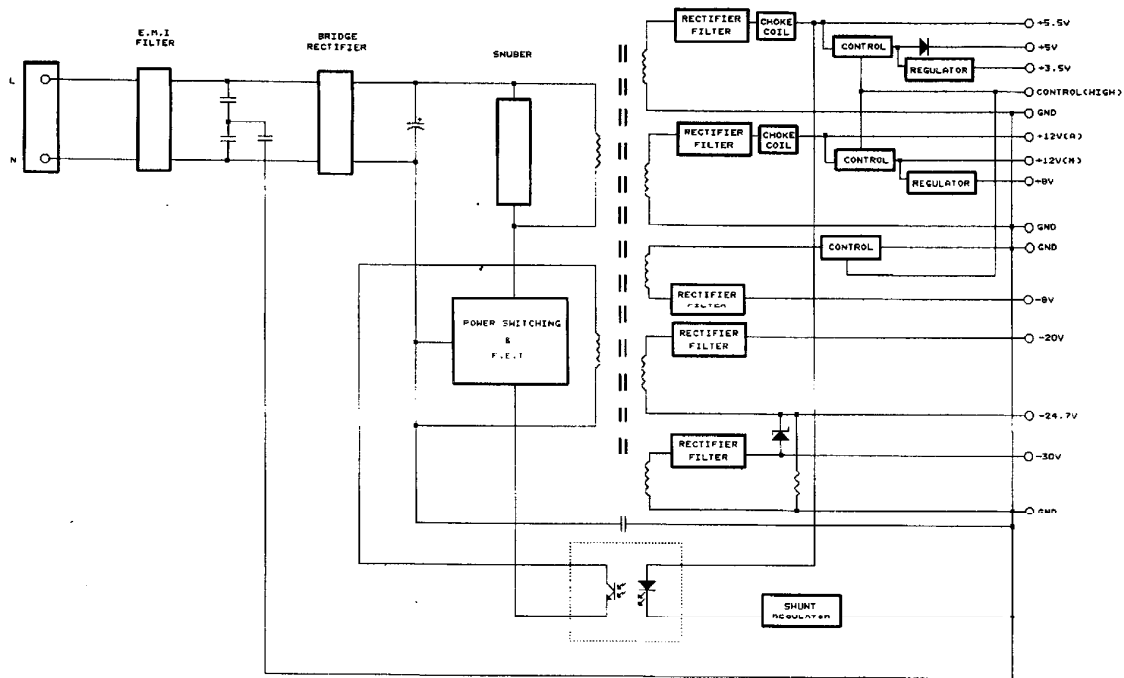
DVD 10 SCART SCHEMATIC DIAGRAM



FILENAME REAR/SCART	PART NO.		SHEET 1/1
MODEL DVD 10	DESIGN	CHKD	APPROVAL
DESIGN DATE 06/JAN/2001			

DVD10 POWER SUPPLY SCHEMATIC DIAGRAM

* BLOCK DIAGRAM *



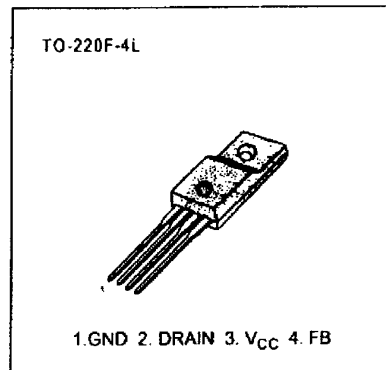
IC1: POWER SWITCHING AND F.E.T.

KA1H0280RB

S P S

S P S

The SPS product family is specially designed for an off-line SMPS with minimal external components. The SPS consist of high voltage power SenseFET and current mode PWM IC. Included PWM controller features integrated fixed oscillator, under voltage lock out, leading edge blanking, optimized gate turn-on/turn-off driver, thermal shut down protection, over voltage protection, and temperature compensated precision current sources for loop compensation and fault protection circuitry. Compared to discrete MOSFET and controller or RCC switching converter solution, a SPS can reduce total component count, design size, weight and at the same time increase efficiency, productivity, and system reliability. It has a basic platform well suited for cost effective design in either a flyback converter or a forward converter.



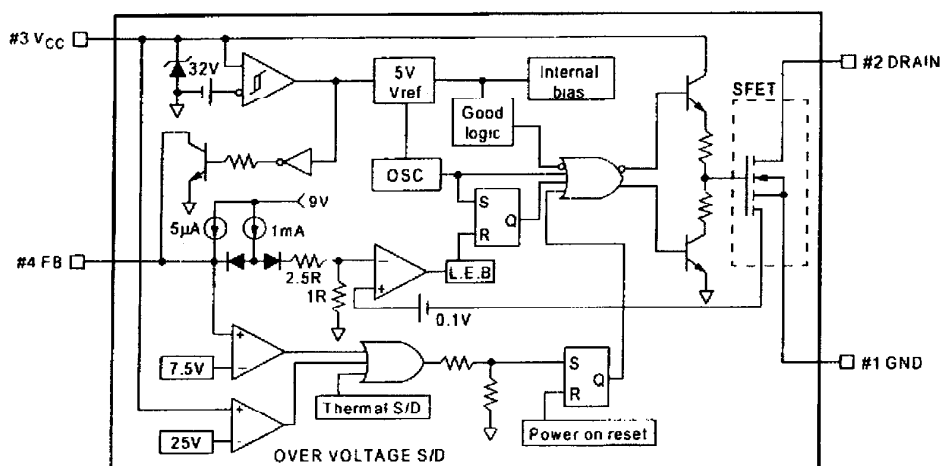
FEATURES

- Precision fixed operating frequency (100kHz)
- Pulse by pulse over current limiting
- Over current protection
- Over voltage protection (Min. 23V)
- Internal thermal shutdown function
- Under voltage lockout
- Internal high voltage sense FET
- Auto restart

ORDERING INFORMATION

Device	Package	Operating Temperature
KA1H0280RB	TO-220F-4L	-25°C to +85°C

BLOCK DIAGRAM



MODEL NO :	DVD10 EUR (4KT10DVDCHEA) Harman Kardon	
	DRAWING	DESCRIPTION
FL901	J2350120010X	VFD HNV-12SM05 SAM
IC23	2168602101	IC KA7808
IC201	J2135307001X	IC STI5505AVB
IC204	J2116007001X	IC 74HCU04M1R HEX
IC210	J2131007002X	IC FLASH M29F800T
IC212	J2131003009X	IC K4E151611C-TC60 DRAM
IC213	J2131003010X	IC SDRAM KS161622D
IC214	J2131003010X	IC SDRAM KS161622D
IC215	J2131007001X	IC M24C02 SOP8
IC403	J2133020001X	IC DAC PCM1716 2-C
IC406	J2110007001X	IC TSH95D VIDEO
IC407	J2110007001X	IC TSH95D VIDEO
IC701	J2141004003X	IC BU4053
IC802	J2110004003X	IC OPAMP BA4560F
IC804	J2112505019X	IC KIA7805PI TO220
IC805	J2112505019X	IC KIA7805PI TO220
IC806	J2112505014X	IC KIA7905PI
IC901	J2132314073X	IC CPU CXP82532-18
IC903	J2112505034X	IC KIA7042P 4V2
ICM201	J2113111001X	IC LB1641 MOTOR DR
PC1	J2123239002X	IC PHOTOCOUPLER PC
RM901	J2411320014X	REM SENSOR 38KHZ
X201	J3914010036X	CRYSTAL 27M 16.5PF
OUTPUT B'D ASM	JE000177001A	PCB OUT DVD10 247*
POWER SUPPLY B'D ASM	J4090100034X	SMPS MODULE DVD10
MAIN B'D ASM	JE000169001A	MAIN PCB DVD10 130
FRONT B'D ASM	JE000173001A	PCB FRONT DVD10 (1
MECHANISM ASM	10692860XX	OK TVM 502 D
	1035521091	RMGCFMIN 4R7 OHM +
	1105867091	CCCFMIN 100P0F +5%
	1105934091	CCCFMIN 10N0F +10%
	1105944091	CCCFMIN 10P0F +0P2
	1106642091	RMGCFMIN 390R0 OHM
	1106648091	RMGCFMIN 47K0 OHM
	1106650091	RMGCFMIN 68K0 OHM
	1500213030	CE 10U0F +20% 16.0
	20194780XX	CABLE-FIX CABLE-TI
	2025193030	CE 22U0F +20% 16.0
	2026729091	CCCFMIN 100N0F +80
	2026783030	CE 47U0F +20% 16.0
	2026884030	CE 1U0F +20% 50.0V

2026888030	CE 10U0F +20% 50.0
2026894030	CE 100U0F +20% 10.
2026902030	CE 100U0F +20% 16.
2026908030	CE 220U0F +20% 10.
2026911030	CE 330U0F +20% 6.3
2026914030	CE 470U0F +20% 16.
20269180AM	CE 1MI0F +20% 6.3V
2041506016	D-SR 1N4004 400.0V
2046894091	CCCFMIN 15P0F +5%
2046897091	CCCFMIN 330P0F +5%
2047190091	RMGCFMIN 39R0 OHM
2047192091	RMGCFMIN 220R0 OHM
2047194091	RMGCFMIN 680R0 OHM
2047195091	RMGCFMIN 1K0 OHM +
2047196091	RMGCFMIN 1K8 OHM +
2047199091	RMGCFMIN 12K0 OHM
2047202091	RMGCFMIN 180K0 OHM
20715540XX	AC CPL BAG PE CRKD
20867350XX	GRANULES PIGMENT R
20932750XX	AC CPL BAG PE 250M
20932870XX	AC PRI LABEL QC CH
21004090XX	BATNCMAG 1.5V AA 6
3093870091	CCCFMIN 68P0F +5%
3093874091	CCCFMIN 470P0F +5%
3094425091	RMGCFMIN 10R0 OHM
3094431091	RMGCFMIN 4K7 OHM +
4043517091	CCCFMIN 20P0F +5%
4044081091	RMGCFMIN 412R0 OHM
5088236091	CCCFMIN 33P0F +5%
5088660091	RMGCFMIN 5K1 OHM +
5088661091	RMGCFMIN 10K0 OHM
5088663091	RMGCFMIN 100K0 OHM
5088667091	RMGCFMIN 1M0 OHM +
55015950XX	GRANULES PIGMENT K
55042410XX	GRANULES M52348
6044144091	CCCFMIN 3N3F +10%
6044435091	RMGCFMIN 47R0 OHM
6044437091	RMGCFMIN 180R0 OHM
7043038091	CCCFMIN 820P0F +10
7043420091	RMGCFMIN 100R0 OHM
7043654016	D-SLP 1N4148 100.0
8043650091	CCCFMIN 24P0F +5%
8044037091	RMGCFMIN 150R0 OHM
8044039091	RMGCFMIN 2K2 OHM +
8044040091	RMGCFMIN 5K6 OHM +
8044051091	RMGCFMIN 0 OHM +0%
8044333060	RMGCFMIN 3K4 OHM +
9057439091	RMGCFMIN 360R0 OHM
9057440091	RMGCFMIN 470R0 OHM
AP82447619AL	STAMPING FOIL
J2021000601X	TR PNP MPSA56 Y
J2021200501X	TR PNP KRA107M
J2041000301X	TR KTA1504S SOT23
J2041020201X	TR KTC3875S SOT23
J2041200101X	TR PNP KRA107S

J2041220102X	TR NPN DTC114YKA
J2041220201X	TR CHIP NPN KRC107
J2041220302X	TR DTC323TK SMT3
J2123829001X	FIBER OPT GP1F32T
J2221010000X	DIODE SW IN4148
J2221451534X	D-ZENER .5W 5V1 J
J2221510304X	DIODE SCHOTTKY RB4
J2242422514X	D-ZEN CHIP UDZ2.2B
J2242451514X	D-CHIP ZNR5V1B0.2W
J2242468514X	D-ZENER 0.2W 6.8V
J2242510011X	D SCHOTTKY RB501V-
J2244010104X	DIODE CHIP 1SS355
J2301213022X	LED GN LTL1CHGEC 3
J2302310012X	LED RED/GREEN 5
J2611022011X	COIL CHIP ELJFC220
J2611422922X	COIL CHIP 2.2UH K
J2611482922X	COIL CHIP 8.2UH K
J2612222023X	COIL RA 22UH K
J2612222923X	2.2UH KS0606-2R2K
J2616222026X	COIL 22UH 220K AL0
J2631320075X	FCM2012V-301T07
J2631320095X	BEAD FCM2012V-601
J2631320105X	FCM2012H-102T04
J2631320245X	BEAD FCM2012C-121T
J2631330085X	BEAD FCM3216V 2K
J2632100016X	EMI CORE RING34 34
J3013220320X	RES MF 220OHM 1/5 J
J3024000120X	RES 0 OHM 1/10W J
J30241153175	RES 11K5 1/10 1%
J3024121120X	R-CHIP 120 1/10W J
J3024153120X	RES CHIP 15K 1/10W
J3024181120X	RES CHIP 180 1/10W
J30241873175	RES 18K7 1/10 1%
J3024223120X	RES CHIP 22K 1/10W
J3024271120X	R-CHIP 270 1/10W J
J3024332120X	RES CHIP 3K3 1/10W
J3024391120X	R-CHIP 390 2012J
J3024473120X	RES CHIP 47K 1/10W
J3024562120X	RES CHIP 5K6 1/10W
J3024681120X	RES CHIP 680 1/10W
J3029470120X	RES CHIP 47R 2010
J3470110991X	CE SG 1U 50V M
J3470147031X	CE SG 47U 16V M
J3470610111X	CE SSE 100U 6.3V
J3470647031X	CE SSE 47U 16V M
J3471247116X	CE SR470U 6V3 M8*9
J3525104540X	CC/CHIP 0.1U 25V Z
J3911030000X	RESON ZTT10MHZ CQ
J3927201111X	EMI FILTER STC104B
J4030100170X	PCB SCART DVD10 (1
J4112350601X	FPC CABLE 35P 60 1
J4114191211X	FPC CABLE 19P 120
J4141000800X	LUG 1P 18# 80MM
J4141001200X	LUG 1P 18# 120MM B
J4141001400X	LUG 1P 18# 140MM

J4300019910X	CNT 3P 620MM DL 2.
J4304025001X	CNT 5P 110MM 26# 2
J4304025002X	CNT 11P 110MM 26#
J4304025003X	CNT 6P 2.0MM 240MM
J4304025004X	CNT 7P 100MM 26# 2
J4304025005X	CNT 4P 100MM 2.0MM
J43731100000	CORD POWER EU 2.5A
J4420030340X	CNT PLUG 2.0 ST 3P
J4420030540X	CNT PLUG 2.0 ST 5P
J4420030740X	CNT PLUG 2.0ST 7P
J4420031140X	CNT ST 11P 2.0
J4420040271X	CNT PLUG 2P 2.5 JS
J4422011941X	FPC PLUG 19P ST 1.
J4422013541X	FPC PLUG 35P 1.25M
J4422401524X	FPC 15P 1.0MM ST
J4423241461X	PIN HEADER 14P 2.5
J44301000300	JACK RCA 1P BK GND
J44302000600	JACK RCA 2P, JE020
J44312000100	JACK RCA+S GND CAP
J44320000005	JACK REMOTE I/H 3.5*
J44372100205	SCART CONNECTOR
J46500500501	SW TACT SKQNAE
J54000000501	ASS'Y REMOCON
J5636130080X	SCREW
J5636140010X	SCREW
J5636140150X	SCREW
J60000005100	CHASSIS MAIN DV402
J60100003110	COVER TOP BLACK
J60110003400	PANEL REAR DVD10
J60300055000	BKT SCART PCB
J6171140010X	WIRE TIE NYLON6
J65100000100	BUSHING-AC CORD
J65540001200	SPRING FINGER
J67200012000	RUBBER SIDE
J67300009000	SPONGE FL
J67300010000	SPONGE FL
J70800000600	STUD 6*25
J80600031810	SCREW TAP 3.0*18 Y
J81000300810	SCREW BM3*6Y
J85300014020	WINDOW DISPLAY(WIT
J85500005000	FILTER FL
J85820001100	SPACER PCB
J85900503000	FOOT-RUBBER
J85940005000	DIFFUSER #1
J85940006000	DIFFUSER#2
J90200007200	MANUAL DVD10
J90300002000	CARD-WARRANTY PAPE
J90300007000	LABEL "PLEASE"
J90400011100	LBL-BARCODE DVD10
J90400012100	LBL S/N DVD10 EU
J90400013000	LABEL MADE IN CHIN
J90720301080	SCREW 3*10 TEETH T
J94310002000	CORD DIN 1P 1500 J
J94310004000	MONO PLUG 1P JW-81
J94330001000	CORD RCA 3P1500 JW

J96000007090	MASTER CARTON DVD1
J97000501000	POLY BAG PE T0.05
J97000502000	SHEET PE T0.5
J97100502000	LABEL-DATE
J97100506000	CARD-POST
J97100507100	SAFETY LEAF
J97200008100	CUSHION SIDE R DVD
J97200019100	CUSHION SIDE L DVD
J97300004000	CUSHION PAD SQR35*