

harman/kardon

DVD5

FIVE DISC DVD/CD CHANGER

SERVICE MANUAL



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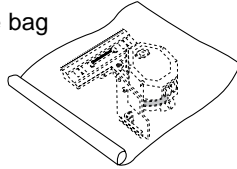
SERVICING PRECAUTIONS

NOTES REGARDING HANDLING OF THE PICK-UP

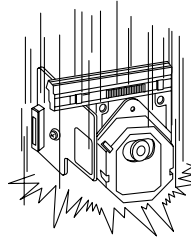
1. Notes for transport and storage

- 1) The pick-up should always be left in its conductive bag until immediately prior to use.
- 2) The pick-up should never be subjected to external pressure or impact.

Storage in conductive bag

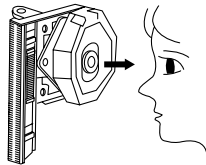


Drop impact



2. Repair notes

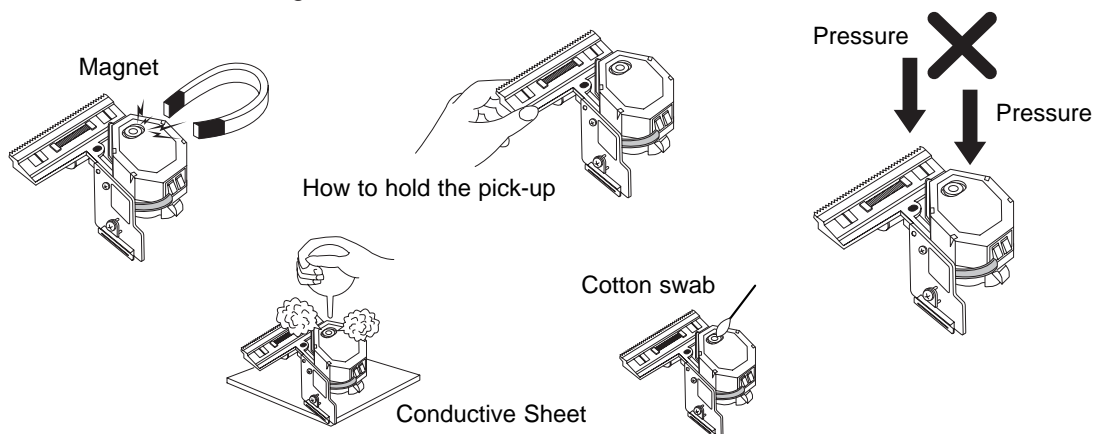
- 1) The pick-up incorporates a strong magnet, and so should never be brought close to magnetic materials.
- 2) The pick-up should always be handled correctly and carefully, taking care to avoid external pressure and impact. If it is subjected to strong pressure or impact, the result may be an operational malfunction and/or damage to the printed-circuit board.
- 3) Each and every pick-up is already individually adjusted to a high degree of precision, and for that reason the adjustment point and installation screws should absolutely never be touched.
- 4) Laser beams may damage the eyes!
Absolutely never permit laser beams to enter the eyes!
Also NEVER switch ON the power to the laser output part (lens, etc.) of the pick-up if it is damaged.



NEVER look directly at the laser beam, and don't let contact fingers or other exposed skin.

5) Cleaning the lens surface

If there is dust on the lens surface, the dust should be cleaned away by using an air bush (such as used for camera lens). The lens is held by a delicate spring. When cleaning the lens surface, therefore, a cotton swab should be used, taking care not to distort this.



6) Never attempt to disassemble the pick-up.

Spring by excess pressure. If the lens is extremely dirty, apply isopropyl alcohol to the cotton swab. (Do not use any other liquid cleaners, because they will damage the lens.) Take care not to use too much of this alcohol on the swab, and do not allow the alcohol to get inside the pick-up.

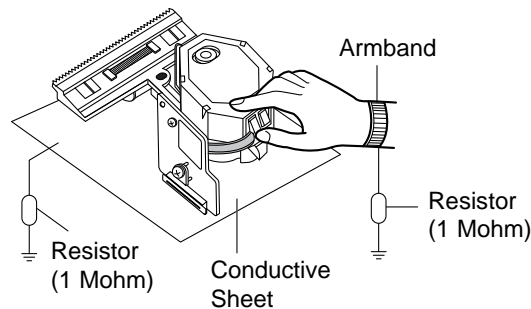
NOTES REGARDING COMPACT DISC PLAYER REPAIRS

1. Preparations

- 1) Compact disc players incorporate a great many ICs as well as the pick-up (laser diode). These components are sensitive to, and easily affected by, static electricity. If such static electricity is high voltage, components can be damaged, and for that reason components should be handled with care.
- 2) The pick-up is composed of many optical components and other high-precision components. Care must be taken, therefore, to avoid repair or storage where the temperature of humidity is high, where strong magnetism is present, or where there is excessive dust.

2. Notes for repair

- 1) Before replacing a component part, first disconnect the power supply lead wire from the unit
- 2) All equipment, measuring instruments and tools must be grounded.
- 3) The workbench should be covered with a conductive sheet and grounded.
When removing the laser pick-up from its conductive bag, do not place the pick-up on the bag. (This is because there is the possibility of damage by static electricity.)
- 4) To prevent AC leakage, the metal part of the soldering iron should be grounded.
- 5) Workers should be grounded by an armband (1M Ω)
- 6) Care should be taken not to permit the laser pick-up to come in contact with clothing, in order to prevent static electricity changes in the clothing to escape from the armband.
- 7) The laser beam from the pick-up should NEVER be directly facing the eyes or bare skin.



ESD PRECAUTIONS

Electrostatically Sensitive Devices (ESD)

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive Devices (ESD). Examples of typical ESD devices are integrated circuits and some field-effect transistors and semiconductor chip components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ESD devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ESD devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ESD devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ESD devices.
6. Do not remove a replacement ESD device from its protective package until immediately before you are ready to install it. (Most replacement ESD devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive materials).
7. Immediately before removing the protective material from the leads of a replacement ESD device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

CAUTION : BE SURE NO POWER IS APPLIED TO THE CHASSIS OR CIRCUIT, AND OBSERVE ALL OTHER SAFETY PRECAUTIONS.

8. Minimize bodily motions when handling unpackaged replacement ESD devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ESD device).

Technical Specifications

Applicable Discs:	5-inch (12cm) or 3-inch (8cm) DVD-Movie, CD or CD-RW discs Region 1 DVD-Movie discs DVD: Single Side/Single Layer, Single Side/Dual Layer, Dual Side/Dual Layer Linear PCM, Dolby Digital or DTS Audio
Video Signal System:	NTSC
Composite Video Output:	1V p-p/75 Ω , sync, negative polarity
S Video Output:	Y/Luminance: 1V p-p/75 Ω , sync, negative polarity C/Chrominance: 0.286V p-p
Component Video Outputs:	Y: 1V p-p/75 Ω , sync, negative polarity Pr: 0.648V p-p/75 Ω Pb: 0.648V p-p/75 Ω
Analog Audio Output:	2.0V RMS \pm 0.2
Coaxial Digital Audio Output:	0.5V p-p/75 Ω
Optical Digital Audio Output:	1.6V p-p
Frequency Response:	4Hz – 22kHz \pm 0.5dB (48kHz sampling)
Dynamic Range:	DVD: 105dB (20-bit) CD: 100dB
Channel Separation:	>90dB
THD:	DVD: 0.0035% CD: 0.0035%
Signal to Noise:	>100dB
Wow & Flutter:	Below measurable limits
Headphone Output:	1.2V RMS @ 32 Ω
AC Power:	120V/60Hz
Power Consumption:	25 watts
Dimensions (H x W x D):	5.1" x 17.3" x 17.2" (130mm x 440mm x 437mm)
Weight:	15.4 lbs/7kg

Depth measurement includes knobs and buttons.
Height measurement includes feet and chassis.
All specifications subject to change without notice.

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DVD SPECIFICATIONS(PCM)

1. Audio

* Test Disc : YEDS 7(Sony)

Item	Spec	Test Conditions	Test Track	
Analog	Output Level	2.0V ± 0.2Vrms	Ref. : 1KHz, 0dB 1	
	Frequency Response	0±0.5dB	Ref. : 1KHz, 0dB 20Hz ~ 20KHz 2 ~ 13	
	S/N	.100dB	Ref. : 1KHz, 0dB JIA A Filter 23	
	THD	. 0.005% . 0.06%	Ref. : 1KHz, 0dB(20KHzLPF)	1
			Ref. :20KHz,0dB(80kHzLPF)	13
	Dynamic Range	.90dB	Ref. : 1KHz, -60dB JIA A Filter 20	
CH. Separation	.90dB	Ref. : 1KHz, 0dB JIA A Filter 30, 34		
H/P	Output Level(32.)	1.2 ± 0.3Vrms	Ref. : 1KHz, 0dB 1	
Coaxial	Output Level (75.)	0.5 ± 0.05V(p-p)	1	

2. Video(75ohm Terminated)

* Test Disc : Navigation Vol 1, (BLUE DISC (1537163B))

* VM700T

Item	Spec	Test Conditions	Test Track	
C-Video	Output Level	1.0V ± 0.15(p-p)	100% Flat 1 - 1 - 7 (VIDEO SEC.BASIC)	
S - Video	(Y)Output Level	1.0V ± 0.15(p-p)	100% Fiat 1 - 1 - 7 (VIDEO SEC.BASIC)	
	(C)Output Level	0.286V(p-p) ± 10%	75% Color Bar 1 - 1 - 1 (VIDEO SEC.BASIC)	
Component Video	(Cb)Output Level	0.7V(p-p) ± 10%	100% Color Bar 1 - 1 - 1 (VIDEO SEC.BASIC)	
	(Cr)Output Level	0.7V(p-p) ± 10%	100% Color Bar 1 - 1 - 1 (VIDEO SEC.BASIC)	
	(Y)Output Level	1.0V ± 0.15(p-p)	100% Fiat 1 - 1 - 7 (VIDEO SEC.BASIC)	
C-Video	Frequency Response	0±2.5dB 40 IRE Multiburst 4.2MHz±0.5MHz	1 - 1 - 8 - 9 (VIDEO SEC.BASIC)	
S - Video				
Component Video				
C-Video	Video S/N	.55dB 50% Flat BPF : 100kHz ~ 4.2MHz WTD : Off, SC TRAP On	1 - 1 - 6 (VIDEO SEC.BASIC)	
S - Video				
Component Video				
C-Video	Color S/N AM/PM	.55dB	100% Color HPF : 100Hz	1 - 1 - 8 - 8 (VIDEO SEC.BASIC)
S - Video	Color S/N AM/PM	.55dB	LPF : 500KHz	
C-Video	Color Burst Error	±120Hz	75% Color Bar	1 - 1 - 1 (VIDEO SEC.BASIC)
S - Video				

DVD5 SPECIFICATIONS(DOLBY DIGITAL)

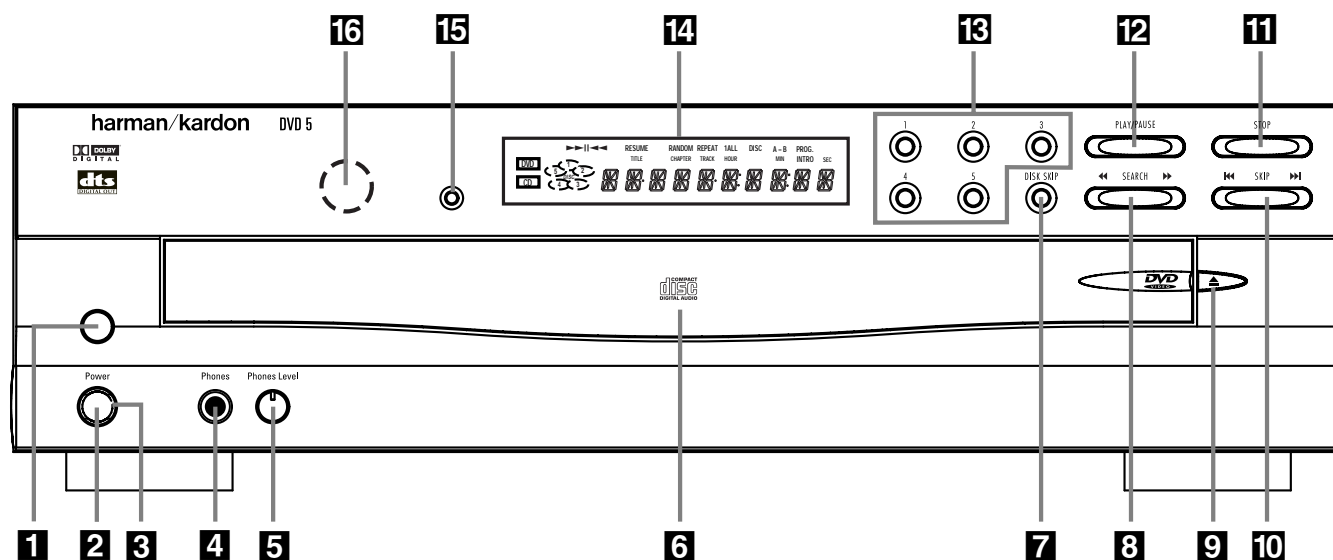
1. Audio

Item	Spec	Test Conditions	Test Title
* Test Disc : DVD-TEST1			
Analog	Output Level	2.0V ± 0.2Vrms	Ref. : 1KHz, 0dB 28
	Frequency Response	0±0.5dB	Ref. : Sweep 19
	20Hz ~ 20KHz -20dBFS		
	S/N	100dB	Ref. : 1KHz, 0dBFS No Signal JIA A Filter 28 80
	Dynamic Range	100dB	Ref. : 200Hz, -60dBFS 20bit JIA A Filter 13
	THD	0.005%	Ref. : 1KHz, 0dBFS LPF : 20KHz 28
	CH. Separation	90dB	Ref. : 1KHz, 0dBFS JIA A Filter 26, 27

PLAYABILITY

ITEM	CD SPEC	TEST DISC	DVD SPEC	TEST DISC
ECCENTRICITY	±140	TCD-712	±100	TDV-512
VERTICAL DEVIATION	0.8	TCD-731	0.8	TDV-532
INTERRUPTION	0.6	TCD-725	0.6	TDV-521
BLACK DOT	0.6	TCD-725	0.6	TDV-525
FINGER PRINT	65	TCD-725	65	TDV-525

Front Panel Controls



- | | | | |
|------------------------------|----------------------------------|--------------------------------|---------------------------------|
| 1 Master Power Switch | 5 Headphone Level Control | 9 Open/Close Button | 13 Direct Access Buttons |
| 2 Standby Switch | 6 Disc Tray | 10 Skip Forward/Reverse | 14 Information Display |
| 3 Status Indicator | 7 Disc Skip | 11 Stop | 15 Display Dim |
| 4 Headphone Jack | 8 Search Forward/Reverse | 12 Play/Pause | 16 Remote Sensor |

1 Master Power Switch: Press this switch to apply power to the DVD 5. When the unit is first turned on, the **Status Indicator 3** will turn green. Once the unit has been turned on with this switch, it may be operated from either the front panel or remote control. Press the switch again to turn the unit completely off.

2 Standby Switch: Press the button once to turn the DVD 5 on, press it again to put the unit in the Standby mode. Note that in order for this switch to operate, the Main Power Switch **1** must be pressed in so that it is in the ON position.

3 Status Indicator: When the DVD 5 is in the On mode, this indicator will glow green. When the unit has been placed in the Standby mode by pressing the **Power-Off button 29** on the remote, the indicator will glow amber, indicating that the unit is still connected to the AC main supply and is ready to be turned on from the remote control.

4 Headphone Jack: Connect standard headphones to this jack for private listening.

5 Headphone Level Control: Turn this control to adjust the volume level to the headphones. Note that the use of this control will not change the analog output levels at the rear panel audio outputs.

6 Disc Tray: This tray holds as many as five DVD or CD discs that can be played one at a time in the DVD 5.

7 Disc Skip: Press this button to change the disc being played. Each press of the button will move the tray forward to the next occupied position in the tray. Note that the unit will skip over the empty disc positions.

8 Search Forward/Reverse: Press this button to move forward or backward through a CD or DVD at one of four speeds. Each press and release will increase the search speed, as indicated in the on-screen display. Once you have selected the desired speed, release the button and the disc will continue to search at fast speed. To resume normal playback speed, press the play button.

9 Open/Close Button: Press this button to open or close the **Disc Tray 6**.

10 Skip Forward/Reverse: Press this button to move forward or backward through the music tracks on a CD disc or the chapters on a DVD disc.

11 Stop: Press this button once to place the disc in the Resume mode, which means that playback will stop, but as long as the tray is not opened or the disc changed, DVD playback will continue from the same point on the disc when the Play Button is pressed again. Resume will

also work if the unit was turned off. To stop a disc and have play start from the beginning, press the button twice.

12 Play/Pause: Press this button to momentarily pause playback. To resume playback, press the button again. If a DVD is playing, action will freeze and a still picture will be displayed when the button is pressed.

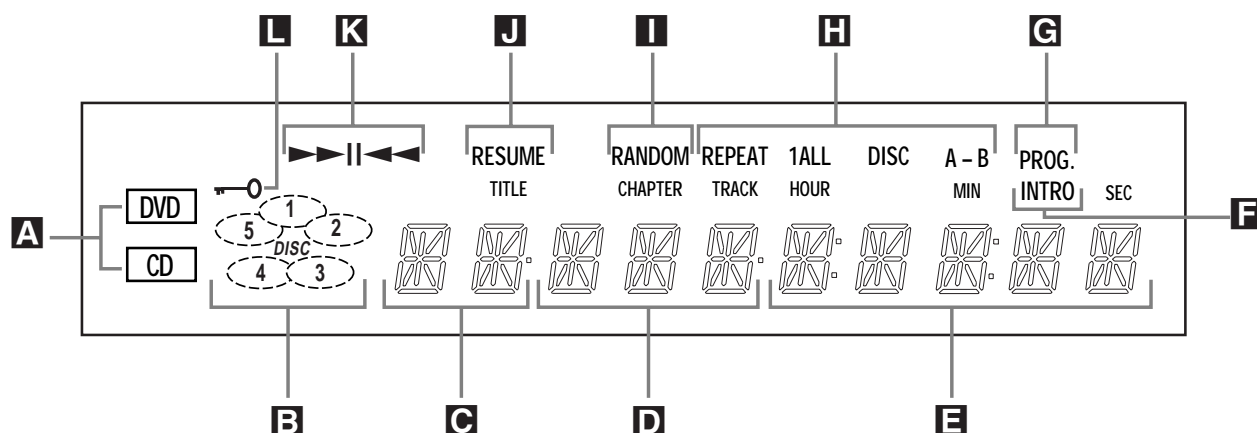
13 Direct Access Buttons: Press one of these buttons to play any of up to five discs loaded in the Disc Tray.

14 Information Display: This display contains a variety of indicators that provide information about the status of the DVD 5 and the disc currently playing.

15 Display Dim: Press this button to adjust the brightness of the Information Display by 50% or to turn the display off completely in the following order: FULL BRIGHTNESS → HALF BRIGHTNESS → OFF → FULL BRIGHTNESS.

16 Remote Sensor: The sensor that receives the infrared commands from the remote control is behind this area. Do not cover or obscure this part of the front panel in order to avoid a malfunction with the remote.

Front Panel Information Display



- A** Disc Type Indicators
B Disc-Number Indicators
C Title Indicators
D Chapter/Track Number Indicators
E Program Time Indicators

- F** Intro Indicator
G Program Indicator
H Repeat Indicators
I Random Indicator
J Resume Indicator

- K** Playback-Mode Indicators
L Parental Lock Indicator

A Disc Type Indicators: The DVD or CD indicator will illuminate to show the type of disc currently being played.

B Disc-Number Indicators: When the DVD 5 has sensed that a disc is loaded in one or more of the tray positions, the number inside the corresponding disc icon will illuminate. The disc position that is currently playing will flash. Note that if a disc is added to, or removed from, the tray while a disc is playing, the indicator will not show the change until all discs are cycled.

C Title Indicators: These two positions in the display will show the current title number when a DVD disc is playing.

D Chapter/Track Number Indicators: When a DVD disc is playing, these two positions in the display will show the current chapter. When a CD disc is playing they will show the current track number.

E Program Time Indicators: These positions in the indicator will show the running time of a DVD in play. When a CD is playing, these indicators will show the current track time, time remaining in the current track, or the total remaining time on the disc.

NOTE: The Program Time Indicators will also display text messages about the DVD 5's status, including **Reading** when a disc is loading, **Bye** when the unit is turned off, and **Disc Error** when a disc not compatible with the DVD 5 is put into the play position.

F Intro Indicator: This indicator lights when the Intro Scan function is active.

G Program Indicator: This indicator lights when the programming functions are in use.

H Repeat Indicators: These indicators light when any of the Repeat functions are in use.

I Random Indicator: This indicator lights when the unit is in the Random Play mode.

J Resume Indicator: This indicator lights when the Stop button has been pressed once to put the unit in the Resume mode.

K Playback-Mode Indicators: These indicators light to show the current playback mode:

▶ Lights when a disc is playing in the normal mode

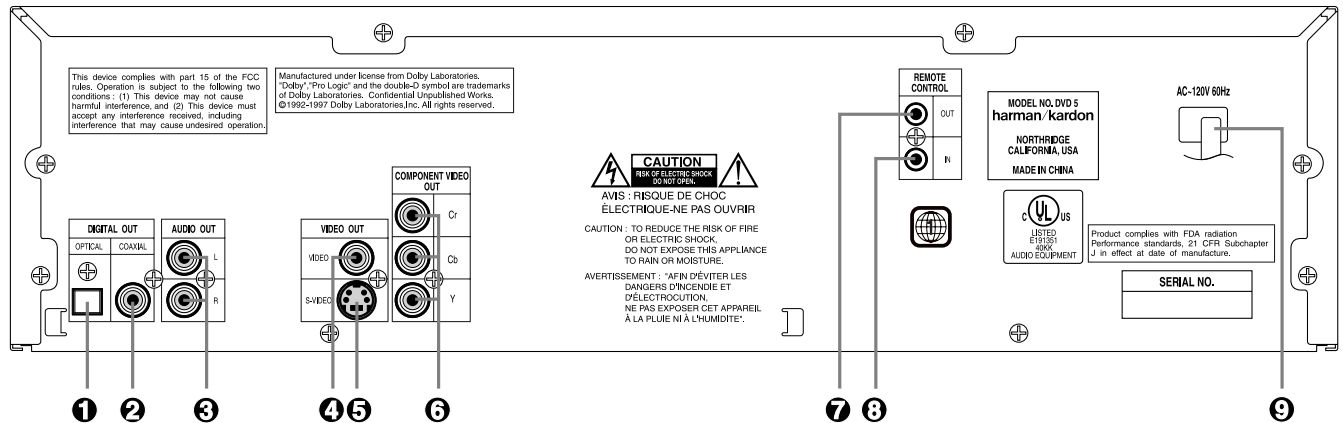
▶▶ Lights when the disc is in the Fast Search Forward mode. For DVDs, When both triangles glow steadily, the disc plays at 2x normal speed. When the right triangle is flashing, the disc plays at 4x normal speed. When the left triangle is flashing, the disc plays at 8x normal speed. When both triangles are flashing, the disc plays at 16x normal speed. For CDs, only the first three Fast Search modes are available.

▶▶▶ Lights when the disc is paused

◀◀ Lights when the disc is in the Fast Search Reverse mode. For DVDs, When both triangles glow steadily, the disc plays at 2x normal speed. When the left triangle is flashing, the disc plays at 4x normal speed. When the right triangle is playing, the disc plays at 8x normal speed. When both triangles are flashing, the disc plays at 16x normal speed. For CDs, only the first three Fast Search modes are available.

L Parental Lock Indicator: This indicator lights when the parental-lock system is engaged in order to prevent anyone from changing the rating level without a code.

Rear Panel Connections



- ❶ Optical Digital Output
- ❷ Coaxial Digital Output
- ❸ Analog Audio Outputs

- ❹ Composite Video Output
- ❺ S-Video Output
- ❻ Component Video Outputs

- ❼ Remote Control Output
- ❽ Remote Control Input
- ❾ AC Power Cord

❶ Optical Digital Output: Connect this jack to the optical digital input of an A/V receiver or surround processor for Dolby Digital, DTS or PCM audio playback.

❷ Coaxial Digital Output: Connect this jack to the coaxial digital input of an A/V receiver or surround processor for Dolby Digital, DTS or PCM audio playback.

NOTE: The coaxial digital output should only be connected to a digital input. Even though it is the same RCA-type connector as standard analog audio connections, DO NOT connect it to a conventional analog input jack.

❸ Analog Audio Outputs: Connect these jacks to an audio input on an A/V receiver or surround processor for analog audio playback.

❹ Composite Video Output: Connect this jack to the video input on a television or video projector, or to a video input on an A/V receiver or processor if you are using that type of device for video input switching.

❺ S-Video Output: Connect this jack to the S-Video input on a television or video projector, or to an S-Video input on an A/V receiver or processor if you are using that type of device for S-Video input switching.

❻ Component Video Outputs: If your TV or video projector has component video inputs, you may connect these output jacks to the set for the highest video quality available. Note that the component video inputs may be labeled as Y/Pr/Pb or Y/Cr/Cb but, for connection purposes, they are the same. The outputs of these jacks should NOT be connected to a standard composite video input.

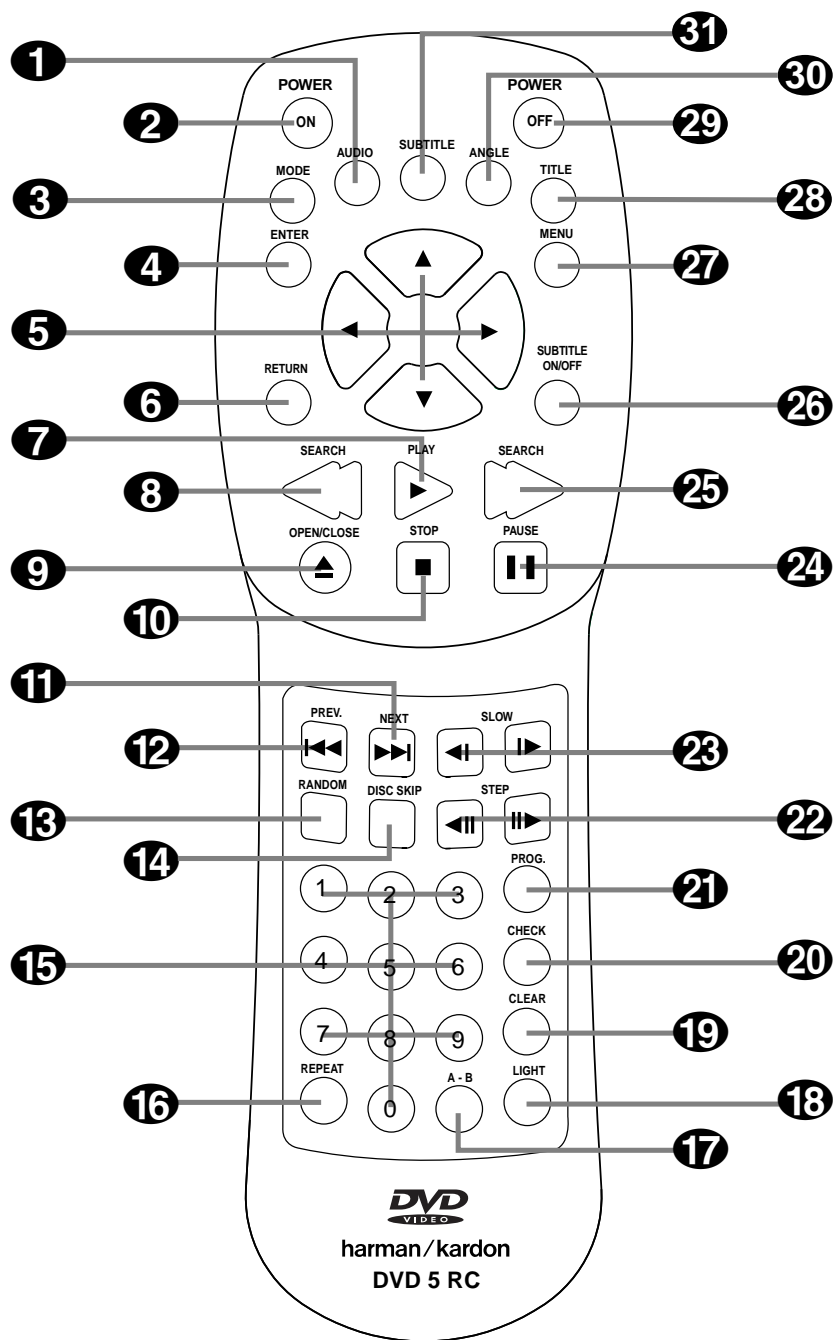
❼ Remote Control Output: Connect this jack to the infrared (IR) input jack of another compatible Harman Kardon remote controlled product to have the built-in Remote Sensor **16** on the DVD 5 provide IR signals to other compatible products.

❽ Remote Control Input: Connect the output of a remote infrared sensor, or the remote control output of another compatible Harman Kardon product, to this jack. This will enable the remote control to operate even when the front panel Remote Sensor **16** is blocked. This jack may also be used with compatible IR remote control-based automation systems.

❾ AC Power Cord: Connect this plug to an AC outlet. If the outlet is controlled by a switch, make certain that it is in the ON position.

Remote Control Functions

- 1 Audio Button
- 2 Power-On Button
- 3 Mode Button
- 4 Enter Button
- 5 Navigation Buttons
- 6 Return Button
- 7 Play Button
- 8 Reverse Search Button
- 9 Open/Close Button
- 10 Stop Button
- 11 Next Button
- 12 Previous Button
- 13 Random Button
- 14 Disc-Skip Button
- 15 Numeric Keys
- 16 Repeat Button
- 17 Repeat A-B Button
- 18 Light Button
- 19 Clear Button
- 20 Check Button
- 21 Program Button
- 22 Step Buttons
- 23 Slow-Play Buttons
- 24 Pause Button
- 25 Forward Search Button
- 26 Subtitle On/Off Button
- 27 Menu Button
- 28 Title Button
- 29 Power-Off Button
- 30 Angle Button
- 31 Subtitle Button



1 Audio Button: When a DVD is playing, press this button to select from the available audio tracks or languages on the disc.

2 Power-On Button: Press this button to turn the DVD 5 on. Note that in order for this control to function, the Front Panel **Main Power Switch 1** must first be pressed in, so that the unit is in the Standby mode.

3 Mode Button: When a disc is playing, pressing the button will display the Status Banner which contains information about the disc and enables you to change the functions.

4 Enter Button: Press this button to select the item that is highlighted in the DVD 5's Status Banner or in the on-screen menu displayed by a DVD disc.

Remote Control Functions

- 5 Navigation Buttons:** Press these buttons to change or select an item from the DVD 5's Status Banner or in the on-screen menu displayed by a DVD disc.
- 6 Return Button:** When viewing the menu display from a DVD disc, press this button to return to the previous menu screen.
- 7 Play Button:** Press this button to begin playback. If the disc tray drawer is open, it will automatically close when the button is pushed. Pressing the Play button when the unit is in the Standby mode will turn the unit on and begin playback of the last disc in use.
- 8 Reverse Search:** Press this button to move backward through a CD or DVD at one of four speeds. Each press and release will increase the search speed, in the following order: R. Search x 2 → R. Search x 4 → R. Search x 8 → R. Search x 16. Once you have selected the desired speed, release the button, and the disc will continue to search at fast speed. To resume normal playback, press the **Play Button 7**.
- 9 Open/Close Button:** Press this button to open or close the disc tray drawer. If the drawer is opened while a disc is still playing, playback will continue and discs not in use may be changed. If the drawer is opened while the unit is stopped, the disc that was playing will be presented at the front-center position of the tray.
- 10 Stop Button:** Press this button once to place the disc in the Resume mode, which means that playback will stop; as long as the tray is not opened or the disc changed, DVD playback will continue from the same point on the disc when the **Play Button 7** is pressed again. Resume will also work if the unit is turned off. To totally stop a disc, press the button twice.
- 11 Next Button:** Press this button to move forward through the music tracks on a CD disc or the chapters on a DVD disc.
- 12 Previous Button:** Press this button to move backward through the music tracks on a CD disc or the chapters on a DVD disc.
- 13 Random Button:** Press this button to begin the playback of all tracks on a disc in random order.
- 14 Disc-Skip Button:** Press this button to move to the next available disc in the tray.
- 15 Numeric Keys:** Press these keys to enter data for sequential programming, to enter or change the access password for parental control, to enter a language code, or to respond to menu options presented by a disc.
- 16 Repeat Button:** Press this button to select a Repeat-Play mode. Each press of the button shows the choice selected in either the on-screen Status Banner display or in the **Repeat Indicators H**.
- 17 Repeat A-B Button:** Press this button once to begin the selection of a portion of a disc to be repeated. Press it again to choose the end point of the repeat-play selection.
- 18 Light Button:** Press this button to activate the remote's backlighting so that the keys are visible in low-light conditions.
- 19 Clear Button:** Press this button to remove the Status Banner or other displays from your video screen. This button is also used to clear items from Programmed Play lists. (See page 29.)
- 20 Check Button:** When a CD is playing, press this button to check the status of the current disc via the on-screen display. This button is also used to verify the contents of a programmed play list via the front panel Information Display. (See page 28 for more information about programming the DVD 5.)
- 21 Program Button:** When the unit is stopped, press this button to display the program menu and enter a programmed play sequence. When a disc is playing, press this button to switch between normal play and programmed playback.
- 22 Step Buttons:** When a DVD disc is playing, press these buttons to move forward or backward one frame at a time. Press the **Play Button 7/12** to resume normal play. These buttons do not function when a CD is playing.
- 23 Slow-Play Buttons:** When a DVD disc is playing, press these buttons to move forward or backward through the disc in slow speed. Each press of these buttons changes the slow-play speed in the following order: 1/16 Normal Speed → 1/8 Normal Speed → 1/4 Normal Speed → 1/2 Normal Speed.
- To resume normal play, press the **Play Button 7/12**. These buttons do not function when a CD is playing.
- 24 Pause Button:** Press this button to stop the disc in use. To resume playback, either press the Pause Button again or press the **Play Button 7/12**.
- 25 Forward Search:** Press this button to move forward through a CD or DVD at one of four speeds. Each press and release will increase the search speed, in the following order: F. Search x 2 → F. Search x 4 → F. Search x 8 → F. Search x 16. Once you have selected the desired speed, release the button and the disc will continue to search at fast speed. To resume normal playback speed, press the play button.
- 26 Subtitle On/Off Button:** When a DVD is playing, press this button to turn the subtitle display on or off.
- 27 Menu Button:** This button has two functions. When a DVD disc is playing, press this button to stop the disc playback and display the DVD's main menu screen for the current title. When the unit is stopped, press this button to display the Setup Menu.
- 28 Title Button:** When a DVD disc is playing, press this button to display the disc's Title Select Menu. If the disc does not offer this function, a symbol (∅) will appear on the screen to indicate that there is only one title on the disc or that the disc does not allow this feature.
- 29 Power-Off Button:** Press this button to place the unit in the Standby mode.
- 30 Angle Button:** When a DVD encoded with multiple-angle information is playing, press this button to change the angle in use. Note that this function is only available on discs that are specially prepared to take advantage of the multiple-angle function, and only for those parts of the disc that are recorded with multiple-angle content. The DVD 5 will display a camera icon on the screen to indicate when this feature is available.
- 31 Subtitle Button:** When a DVD disc is playing, press this button to change the subtitle choice. To actually turn the subtitles on or off, press the **Subtitle On/Off Button 26**.

Installation and Connections

Installation

Connections will vary, depending on the type of audio and video components used with your DVD 5. However, regardless of the complexity of your system, the installation guidelines on pages 11–14 should always be followed to ensure a safe installation and reliable operation of the product.

Important Note: To prevent possible damage to your speakers or other components in your home entertainment system, we strongly recommend that ALL system components, including the DVD 5, be turned off and unplugged from their AC power source when any connections are made or a new component is installed.

Placement of the DVD 5

Since the laser transport mechanism and carousel tray in the DVD 5 are precision instruments that are designed and manufactured to precise tolerances, they are subject to interference from vibration. To minimize the possibility of skipping during playback, it is recommended that the unit be placed on a level, solid, vibration-free surface.

When installing the DVD 5 in a cabinet or tight space, always make certain that there is enough room in front of the unit for the disc tray to open fully, and that there is enough space above the unit so that discs may easily be inserted into the spaces in the tray.

As the disc drawer extends out about six inches from the front of the unit when it is open, you should also make certain that there is sufficient clearance in front of the unit to accommodate the disc drawer without it bumping into other objects or getting in the way of anyone walking in front of the unit.

In addition to the safety considerations outlined on page 4, it is also recommended that the DVD 5 not be placed in a location that is subject to direct sunlight or extreme heat or cold, as these conditions may damage the discs used in the player, or the player itself. Note that audio amplifiers or high-power receivers, as well as certain other electronic products, can generate significant heat. For that reason, do not place the DVD 5 directly on top of an amplifier, receiver, or other heat source. Always allow at least one inch of free space on all sides of the DVD 5 as well as around other electronic products to allow for proper ventilation.

Installation Options

The diagrams on pages 12–14 describe the three basic ways to connect the DVD 5 to your system components.

- Option #1: Use this setup if all audio and video connections from the DVD 5 will go directly to a television set or video projector without the use of an A/V receiver or surround processor.
- Option #2: Use this setup if the video connections will go directly to a television set or video projector, but the audio connections will be made to an A/V Receiver or surround processor.
- Option #3: Use this setup if all audio and video connections will be made through an A/V receiver or a surround processor.

Installation and Connections

OPTION 1:

Direct Connections to a Television or Video Projector

This is the simplest installation, as it does not require anything other than a television set. However, note that in this type of system you will not be able to enjoy the benefits of Dolby Digital or DTS discrete playback, as that requires the digital audio processing found in A/V receivers or surround processors. Follow as many of these steps as needed, based on the capabilities of your television:

▲ Connect the left and right **Analog Audio Outputs 3** on the DVD 5 to the audio inputs on your television. ▲ Connect the **Composite Video Output 4** on the DVD 5 to a video input on your television. Note that composite video connections typically have a yellow center ring for easy identification.

▲ If your television or projector is equipped with component video inputs, connect the three **Component Video Outputs 6** on the DVD 5 to the matching component video inputs on your video display.

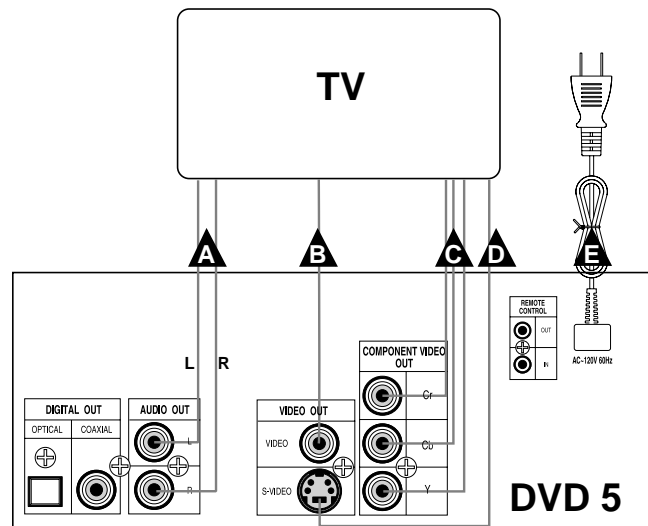
▲ Connect the **S-Video Output 5** on the DVD 5 to an S-Video input on your television.

▲ Connect the AC power cord to an AC outlet.

Installation Notes and Hints

- If your television has both standard composite video and S-Video inputs, you only need to use one of the two connections. Where possible, we recommend using the S-Video connection due to the higher picture quality.
- Do not connect any of the video outputs of the DVD 5 through a VCR. Due to the use of Macrovision encoding on most DVD discs, connections through the circuitry of a VCR will distort the picture so that it will become unwatchable.
- Note that the volume level for DVD playback may differ from the level for TV broadcasts. This is normal and does not indicate a problem with the DVD 5 or your TV set. Simply use the volume control on the TV set to set the desired level.

- Depending on the product and brand, a number of different descriptions are used to label component video connections. You may see them as Y/Pr/Pb, Y/Cr/Cb or Y/R-Y/B-Y. For the purpose of connecting a DVD player, all of these labels are normally identical. The best guide is to connect the component video connections using the green/red/blue color coding of the inner rings of the connection jacks.
- When making connections to a high definition (HDTV) or "digital ready" set, do not connect the component video outputs of the DVD 5 to inputs labeled "HD Component Inputs" unless you have checked with the set's owner's manual to ensure that the HD input is also compatible with standard scan (NTSC) video.



Installation and Connections

OPTION 2:

Direct Connections to a Television or Video Projector with Audio Connections to an A/V Receiver or Surround Processor

To hear the benefits of discrete, multichannel digital audio, you will need to use an external Dolby Digital/DTS-capable A/V receiver or surround processor. In this installation, you maintain a direct video connection to your television, but use the audio processing from another device.

Note that step **A** is not used, as it is for analog audio connections only. This installation starts with step **B**.

B Connect the **Composite Video Output 4** on the DVD 5 to a video input on your television. Note that composite video connections typically have a yellow center ring for easy identification.

C If your television or projector is equipped with component video inputs, connect the three **Component Video Outputs 6** on the DVD 5 to the matching component video inputs on your video display.

D Connect the **S-Video Output 5** on the DVD 5 to an S-Video input on your television.

E Connect the AC power cord to an AC outlet.

F Connect either the **Optical Digital Output 1** or the **Coaxial Digital Output 2** on the DVD 5 to the matching digital input jacks on your A/V receiver or surround processor. Note that only one of these connections is required, not both.

G Connect the left/right **Analog Audio Outputs 3** of the DVD 5 to the matching left/right analog inputs on your A/V receiver or surround processor.

Installation Notes and Hints

■ Only one type of audio connection is required, either digital or analog. If possible, a digital connection is preferred, as that will enable you to listen to DVD soundtracks with the clarity, definition and channel separation made possible by Dolby Digital and DTS. Follow Step **A** for digital audio connections. However, if you do not yet have a receiver capable of digital audio processing, you will still benefit from an analog connection so that the receiver may create a multichannel soundfield using Dolby Pro Logic or other matrix decoding. Follow Step **G** for instructions on analog audio connections.

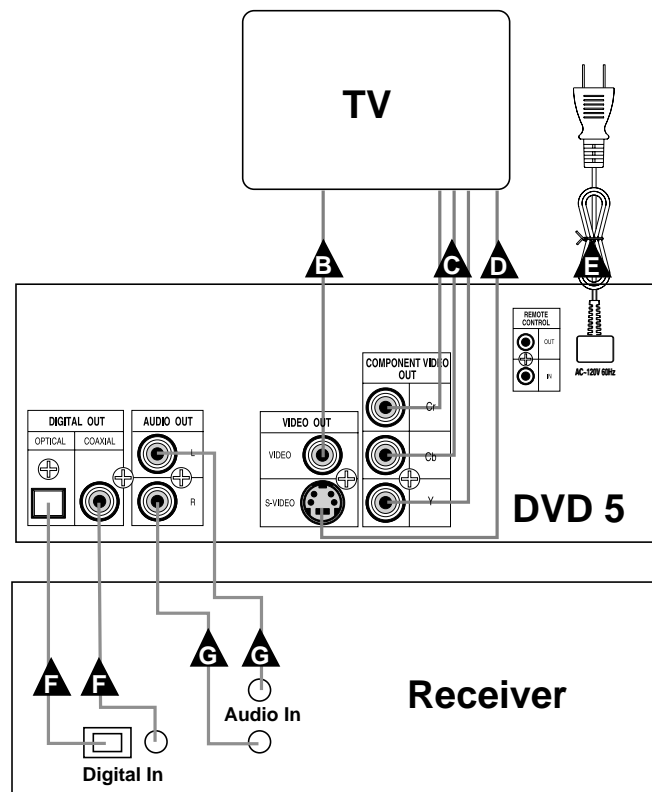
■ If your television has both standard composite video and S-Video inputs, you only need to use one of the two connections. Where possible, we recommend an S-Video connection due to the higher picture quality.

■ Do not connect any of the video outputs of the DVD 5 through a VCR. The use of Macrovision encoding on most DVD discs means that most discs will have a distorted picture when connections are made through a VCR.

■ Note that the volume level for DVD playback may differ from the level for other input sources to your receiver. This is normal and does not indicate a problem with the DVD 5 or your receiver. Simply use the volume control on the receiver to set the desired level.

■ Depending on the product and brand, a number of different descriptions are used to label component video connections. You may see them as Y/Pr/Pb, Y/Cr/Cb or Y/R-Y/B-Y. For the purposes of connecting a DVD player, all of these labels are normally identical. The best guide is to connect the component video connections using the green/red/blue color coding of the inner rings of the connection jacks.

■ When making connections to a high definition (HDTV) or "digital ready" set, do not connect the component video outputs of the DVD 5 to inputs labeled "HD Component Inputs" unless you have checked with the set's owner's manual to ensure that the HD input is also compatible with standard scan (NTSC) video.



Installation and Connections

OPTION 3:

Audio and Video Connections through an A/V Receiver or Surround Processor only

If your home entertainment system has other audio/video input sources in addition to the DVD 5, such as a VCR, cable set-top box or satellite receiver, LD player, personal video recorder or HDTV tuner, the most efficient way to manage the various components is to make all audio/video connections through an A/V receiver or surround processor. This simplifies the selection of an input source, and allows many different components to be connected to the same video display and speakers.

Note that steps **A** / **B** / **C** and **D** are not used. This installation starts with step **A**.

A Connect the AC power cord to an AC outlet.

A Connect either the **Optical Digital Output 1** or the **Coaxial Digital Output 2** on the DVD 5 to the matching digital input jacks on your A/V receiver or surround processor. Note that only one of these connections is required, not both.

A Connect the left/right **Analog Audio Outputs 3** of the DVD 5 to the matching left/right analog inputs on your A/V receiver or surround processor.

A Connect the **Composite Video Output 4** on the DVD 5 to a video input on your receiver or processor. Note that composite video connections typically have a yellow center ring for easy identification.

A Connect the **S-Video output 5** on the DVD 5 to an S-Video input on your receiver or processor.

A If your television or projector is equipped with component video inputs, connect the three **Component Video Outputs 6** on the DVD 5 to the matching component video inputs on your video display. However, if your receiver or processor has multiple component input switching capability, connect the **Component Video Output Jacks 5** on the DVD 5 to the matching component video inputs on your receiver, surround processor or video processor.

Installation Notes and Hints

■ For this installation, make the connections from the receiver or processor to your video display and speakers as described in the owner's manuals for those products.

■ Only one type of audio connection is required, either digital or analog. If possible, a digital connection is preferred as that will enable you to listen to DVD soundtracks with the clarity, definition and channel separation made possible by Dolby Digital and DTS. Follow Step **A** for digital audio connections. However, if you do not yet have a receiver capable of digital audio processing, you will still benefit from an analog connection so that the receiver may create a multi-channel soundfield using Dolby ProLogic or other matrix decoding. Follow Step **G** for instructions on analog audio connections.

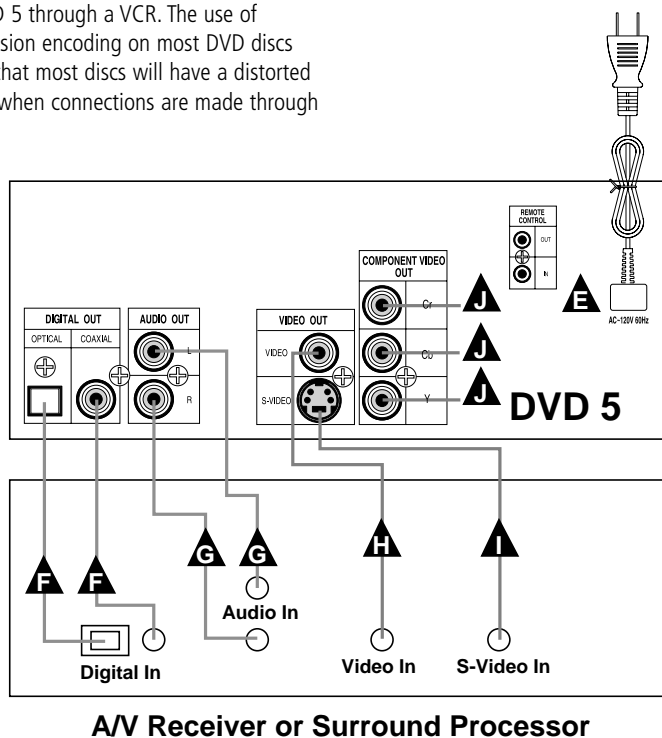
■ If your television has both standard composite video and S-Video inputs, you only need to use one of the two connections. Where possible, we recommend an S-Video connection due to the higher picture quality.

■ Do not connect any of the video outputs of the DVD 5 through a VCR. The use of Macrovision encoding on most DVD discs means that most discs will have a distorted picture when connections are made through a VCR.

■ Note that the volume level for DVD playback may differ from the level for other input sources to your receiver. This is normal and does not indicate a problem with the DVD 5 or your receiver. Simply use the volume control on the receiver to set the desired level.

■ Depending on the product and brand, a number of different descriptions are used to label component video connections. You may see them as Y/Pr/Pb, Y/Cr/Cb or Y/R-Y/B-Y. For the purposes of connecting a DVD player, all of these labels are normally identical. The best guide is to connect the component video connections using the green/red/blue color coding of the inner rings of the connection jacks.

■ When making connections to a high definition (HDTV) or "digital ready" set, do not connect the component video outputs of the DVD 5 to inputs labeled "HD Component Inputs" unless you have checked with the set's owner's manual to ensure that the HD input is also compatible with standard scan (NTSC) video.



Troubleshooting Guide

TROUBLESHOOTING GUIDE

SYMPTOM	POSSIBLE CAUSE	SOLUTION
Unit does not turn on	<ul style="list-style-type: none"> • Main Power Switch turned Off • No AC power 	<ul style="list-style-type: none"> • Press in Main Power Switch • Check AC power plug and make certain any switched outlet is turned on
Disc does not play	<ul style="list-style-type: none"> • Disc loaded improperly • Incorrect disc type • Invalid Region Code • Rating is above parental preset 	<ul style="list-style-type: none"> • Load disc label-side up • Check to see that disc is CD, CD-RW or DVD-Movie; other types will not play • Use Region 1 disc only • Enter password to override or change rating settings
No picture	<ul style="list-style-type: none"> • Intermittent connections • Wrong Input 	<ul style="list-style-type: none"> • Check all video connections • Check input selection of TV or receiver
No sound	<ul style="list-style-type: none"> • Intermittent connections • Incorrect digital audio selection • DVD disc is in fast or slow mode 	<ul style="list-style-type: none"> • Check all audio connections • Check digital audio settings • There is no audio playback on DVD discs during fast or slow modes
Picture is distorted or jumps during fast forward or reverse play	<ul style="list-style-type: none"> • MPEG-2 decoding 	<ul style="list-style-type: none"> • It is a normal artifact of DVD playback for pictures to jump or show some distortion during rapid play
Some remote buttons do not operate during DVD play	<ul style="list-style-type: none"> • Function not available for this disc 	<ul style="list-style-type: none"> • Some discs do not include all DVD features
The menu is in a foreign language	<ul style="list-style-type: none"> • Incorrect menu language 	<ul style="list-style-type: none"> • Change menu language selection
"Ø" Symbol Appears	<ul style="list-style-type: none"> • Requested function not available at this time 	<ul style="list-style-type: none"> • Certain functions may be disabled during passages of a disc
Picture is displayed in the wrong aspect ratio	<ul style="list-style-type: none"> • Incorrect match of aspect ratio settings to disc 	<ul style="list-style-type: none"> • Change Aspect Ratio settings
Remote control inoperative	<ul style="list-style-type: none"> • Weak batteries • Sensor is blocked 	<ul style="list-style-type: none"> • Change both batteries • Clear path to sensor or use remote sensor
Disc will not copy to VCR	<ul style="list-style-type: none"> • Macrovision protection 	<ul style="list-style-type: none"> • Most DVDs are encoded with Macrovision to prevent copying to VCR

SUBJECT: RESET DVD5 TO FACTORY DEFAULTS, RESETTING PARENTAL LOCK

In Stand-by mode, press SEARCH BACK and SKIP FORWARD buttons on the Front Panel simultaneously for more than 3 seconds.

The FL will then display 8 or 9 digit numbers. Disregard this read out. Reset the unit by pressing the OFF power button on the remote, or pushing the main power button on the unit.

DVD5 REVISIONS

Product Information

Product:	DVD5
Serial Number:	Verified on Reliability Qualification unit manufactured in February 2000

Failure Description

System Setup: --include equipment connected, speakers used, cable connections, etc.
Unit playing <i>The Man with the Golden Gun</i> , Special 007 Edition, Digital Coax Output to AVR, Composite Video Out to AVR or Unit playing <i>the above DVD using</i> , Analog Audio, Composite Video Out directly to TV.
Failure Mode: --include source (AM/FM, DVD, etc.), surround mode, volume level, and channels affected.
During Chapter 21 of <i>The Man with the Golden Gun</i> , Special 007 Edition, at a time of 1:21:23, a brief video pause is seen, and then the audio and video becomes severely distorted. The distortion occurs throughout the remainder of the disc. The problem was also recreated on an engineering sample DVD5.

Analysis

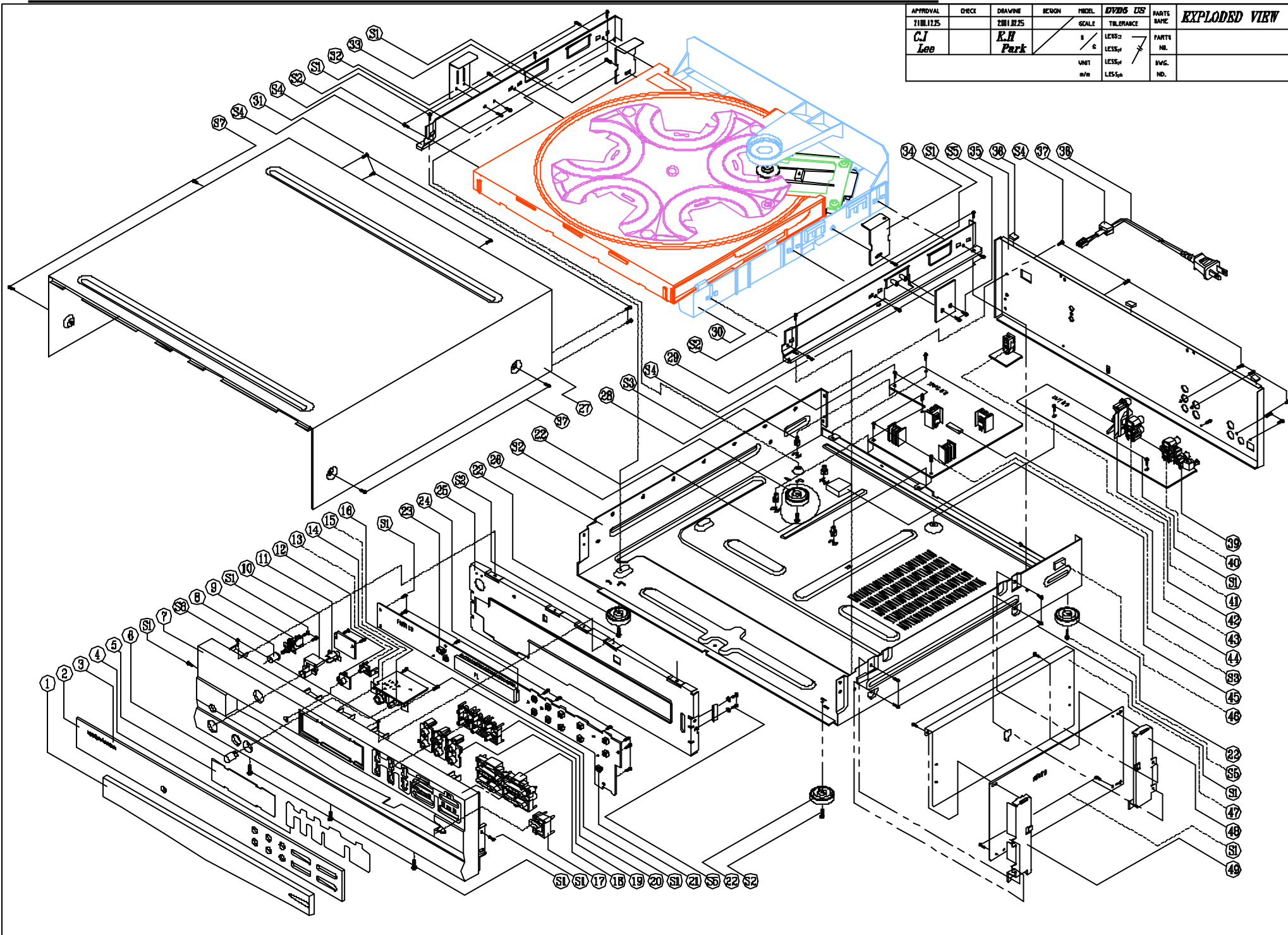
Results:
The DVD is a 2-layer DVD. It is believed that the point at which the problem occurs is at the transition (layer break) to layer 2. If this is the case, then the DVD5 has a problem reading layer 2 of the disc. Further analysis of DVD5 and of the material is needed to determine the exact cause of this failure.
6/30/00: We have recreated the problem and have determined that the problem is due to a failure of the ST chipset. All DVD players using the ST chipset have the same problem. Software Version 1.54 will correct the problem.

Describe Problem	ECN #24 1), Issue the latest software version to resolve: DVD can't play 2 layer disc. 2), Improve remote control sensitivity issue, change R985 from 3.9k ohm to 10k ohm.
Identify & Verify Root Cause	DVD5.0 has a problem reading layer 2 of the disc
Choose & Verify Permanent Corrective Action	Update new software (software version 1.55) to correct.
Serial Numbers	TH0007-09598 and later for DVD5 - US 120v version

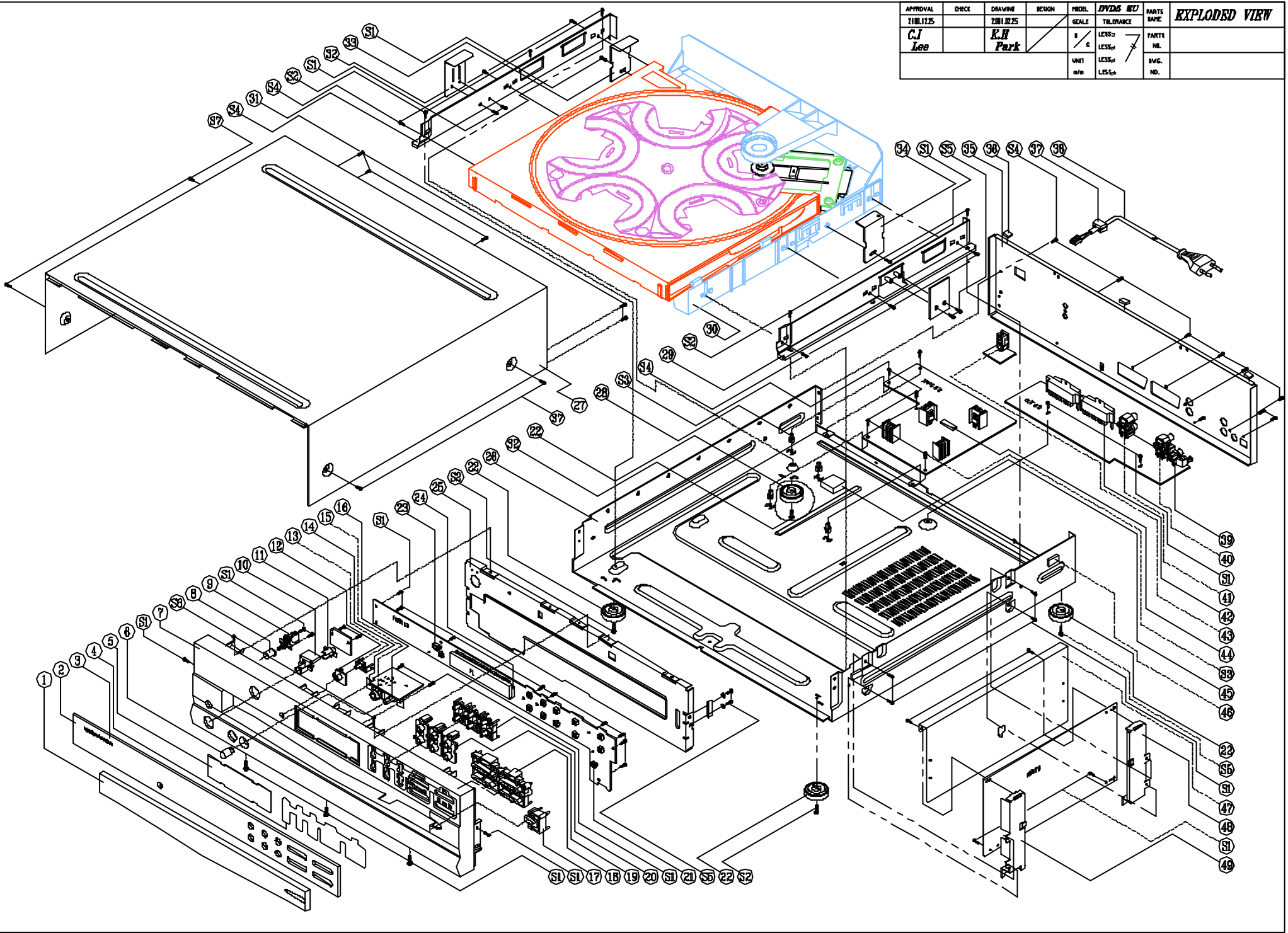
For additional information and current resources available to perform upgrades, please contact:

Harman Service Technical Support
 Phone: 516-682-6435
 E-mail: techsupport@harman.com

APPROVAL	CHECK	DRAWING	DESIGN	MODEL	DVD5 ES	PARTS NAME	<i>EXPLODED VIEW</i>
<i>C.J. Lee</i>		<i>R.H. Park</i>			TOLERANCE LESS- LESS- UNIT m/m	PARTS NR. AVG. NO.	



APPROVAL	CHECK	DRAWING	DESIGN	MODEL	DVD5 REV	PARTS NAME	EXPLODED VIEW
2101.12.25		2301.02.25		SCALE	TOLERANCE		
<i>C.J. Lee</i>		<i>R.H. Park</i>		1/2	LESS-	PARTS NR.	
				UNIT	LESS+	AVG.	
				m/m	LESS±	ND.	

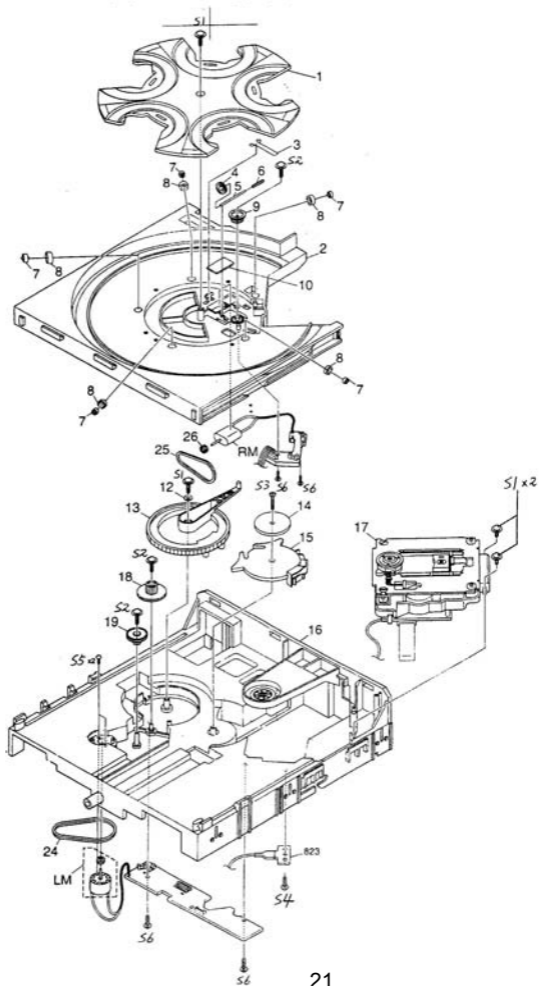


DVD5 MECHANICAL PART LIST

NO.	PART NO.	PART NAME	Q'TY		NO.	PART NO.	PART NAME	Q'TY	
			US	EU				US	EU
1	J85600007000	DOOR TRAY	1	1	27	J60100004000	COVER TOP	1	1
2	J85300013000	WINDOW DISPLAY	1	1	28	J85820001100	SPACER PCB	4	4
3	J60550003000	BADGE HARMAN/KAR	1	1	29	J60200007100	FRAME MECHA R	1	1
4	J85940004000	DIFFUSER DVD5.0	1	1	30	4KTDCD5D001A	ASS'Y CDM5D	1	1
5	J85500005000	FILTER FL	1	1	31	J60200007000	FRAME MECHA L	1	1
6	J85100011000	KNOB LEVEL	1	1	32	J60300044000	BKT MECHA MID	1	1
7	J85000009000	PANEL FRONT DVD5.0	1	1	33	J60300045200	BKT MECHA LEFT	1	1
8	J85200049000	BUTTON POWER HIPS	1	1	34	J60300045000	BKT MECHA RIGHT	1	1
9	J46203000101	PWR SW SDDL B14700	1	1	35	J60110004000	PANEL REAR	1	
10	J85200052000	BUTTON STANDBY	1	1		J60110004200	PANEL REAR	-	1
11	J85400019000	INDICATOR STANDBY	1	1	36	J94100008000	SHIELD FORM	3	3
12	J85400024000	CAP BUT DIMMER	1	1	37	J65100000100	BUSHING-AC CORD	1	1
13	J85200059200	BUT DIMMER	1	1	38	J43730100100	CORD POWER UL SPT	1	-
14	J60300024000	BKT PHONE	1	1		J43731100000	CORD POWER EU 2.5A	-	1
15	J44329000102	JACK MIC 9P GOLD	1	1	39	J44301000100	JACK RCA 1P BK GND	1	1
16	J32214000401	VOLUM RK09K12A ALP	1	1	40	J44302000600	JACK RCA 2P, JE020	1	1
17	J85200055000	BUT OPEN/CLOSE	1	1	41	J44312000100	JACK RCA+S GNDCAP	1	1
18	J85200059000	BUTTON PLAY	1	1	42	J44372100205	SCART CONNECTOR	-	2
19	J85400029000	CAP BUT DISC	1	1		J44303000200	JACK RCA 3P RBG	1	-
20	J85200059100	BUT DISC	1	1	43	J44320000005	JACK REMOTEIH 3.5*	1	1
21	J46500500501	SW TACT SKQNAE	14	14	44	J67300013000	SPONG CUSHION	1	1
22	J85900501000	FOOT-ASS'Y	4	4	45	J97200501000	PCB SPONGE	1	1
23	J67300010000	SPONGE SENSE	1	1	46	J94100006000	SHIELD FORM	6	6
24	J67300009000	SPONGE FL	2	2	47	J60600008000	SHIELD MPEG FRONT	1	1
25	J60020002000	CHASSIS FRONT	1	1	48	J60300023100	BKT MPER REAR	1	1
26	J60000006000	CHASSIS MAIN	1	1	49	J60300023000	BKT MPEG FRONT	1	1

DVD5 Tray/Carousel exploded view

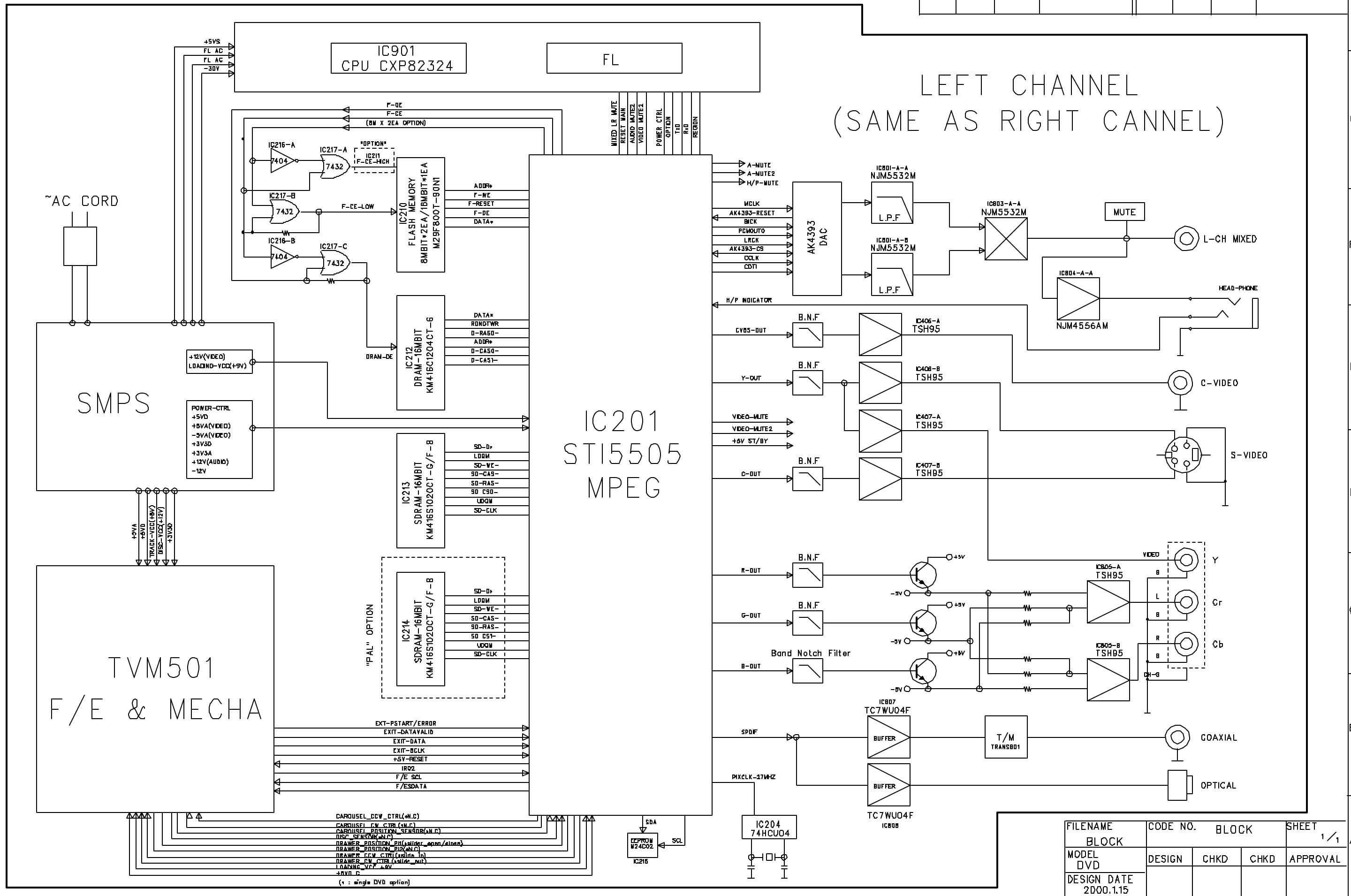
(legend on following page)



Legend for DVD5 Tray/Carousel exploded view

ITEM #	Part Number	Description	Q'ty
1	55020070XX	AC PLASTIC PLASTIC CD5D	1
2	55020080XX	AC PLASTIC DRAWER CD5D	1
3	20712060XX	AC SPRING CLIP CD5	1
4	20711410XX	AC PLASTIC PULLEY CD5	1
5	20711380XX	AC METAL SHAFT CD5	1
6	20710170XX	AC MLD GEAR WORM CD5	1
7	20712170XX	AC PLASTIC ROLLER HUB CD5	5
8	20712120XX	AC RUBBER ROLLER CD5	5
9	20710180XX	AC MLD GEAR HELICAL CD5	1
10	20634190XX	FELT BK 30.0MMX25.0MM 0.8MM 0MM 0 0	1
RM	20581820XX	AD ASY MOTOR DC FF-130SH-14230	1
12	55190760XX	WASHER-SPR 7.3MM 14.0MM 0.4MM Y 00 0 0	1
13	55020110XX	AC MLD GEAR MAIN CD5D	1
14	J60300048000	WASHER 55MM	1
15	20712230XX	AC PLASTIC CAM LIFTER CD5	1
16	55020090XX	AC PLASTIC BASE CD5D	1
17	10665110XX	DVD5 PICK-UP ASSEMBLY	1
18	20712240XX	AC MLD GEAR DRIVE CD5	1
19	20712250XX	AC MLD GEAR PULLEY CD5	1
LM	20584560XX	AC RAW WHEEL BELT	1
	20581800XX	AD ASY MOTOR DC RF-500TB	1
24	20712270XX	AC RUBBER BELT DRIVE CD5	1
25	20710160XX	AC RUBBER BELT PLATTER CD5	1
26	20584560XX	AC RAW WHEEL BELT	1
823	J60300036000	BKT GROUND MECHA	1
S1	20366370XX	SCREW-SPEC 3MM 10MM JIS LARGE WASHER HD 53 0 0	4
S2	20692300XX	SCREW-ST 3MM 10MM JIS B 1122 53 0 0	3
S3	J80200031820	SCREW 3*18	1
S4	55127120XX	SCREW-ST 3MM 8MM JIS B 1122 53 0 0	1
S5	20349530XX	SCREW 2.6MM 4MM JIS B 1111 53 0 0	2
S6	20349380XX	SCREW-ST 3MM 08MM JIS B 1122 53 0 0	4

BLOCK DIAGRAM

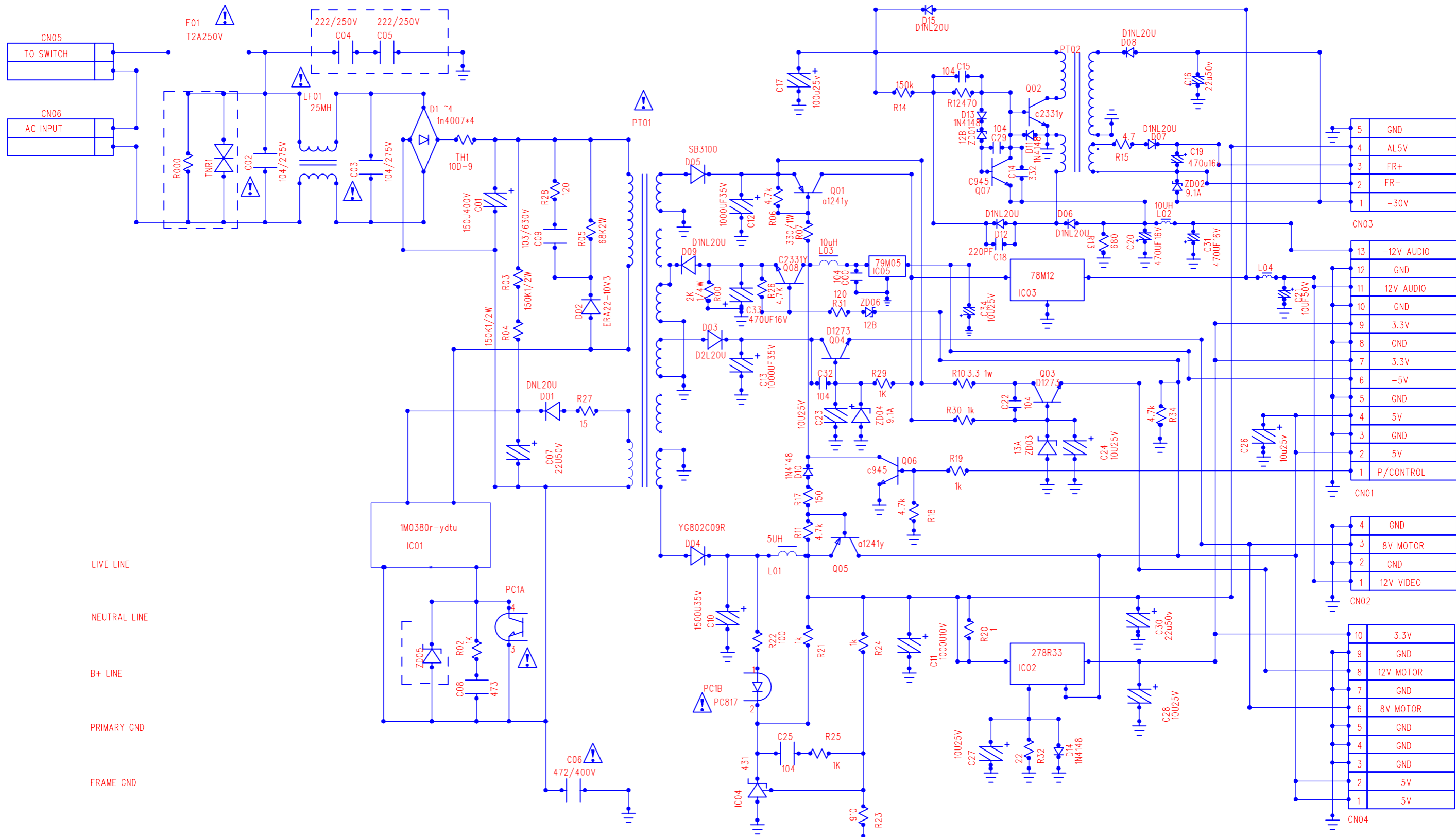


FILENAME	CODE NO.	BLOCK	SHEET
BLOCK			1/1
MODEL	DESIGN	CHKD	APPROVAL
DVD			
DESIGN DATE			
2000.1.15			

DVD5 EARLY VERSION POWER SUPPLY

DVD5

harman/kardon



⚠️ MARK IS SAFTY INPOMATION COMPONENT

SCALE		DROWING	CHKD	TITLE	S
UNIT				MODEL NO	DVD
DATE	99.08.10	PARK S.K		REV NO	2
				DWG NO	

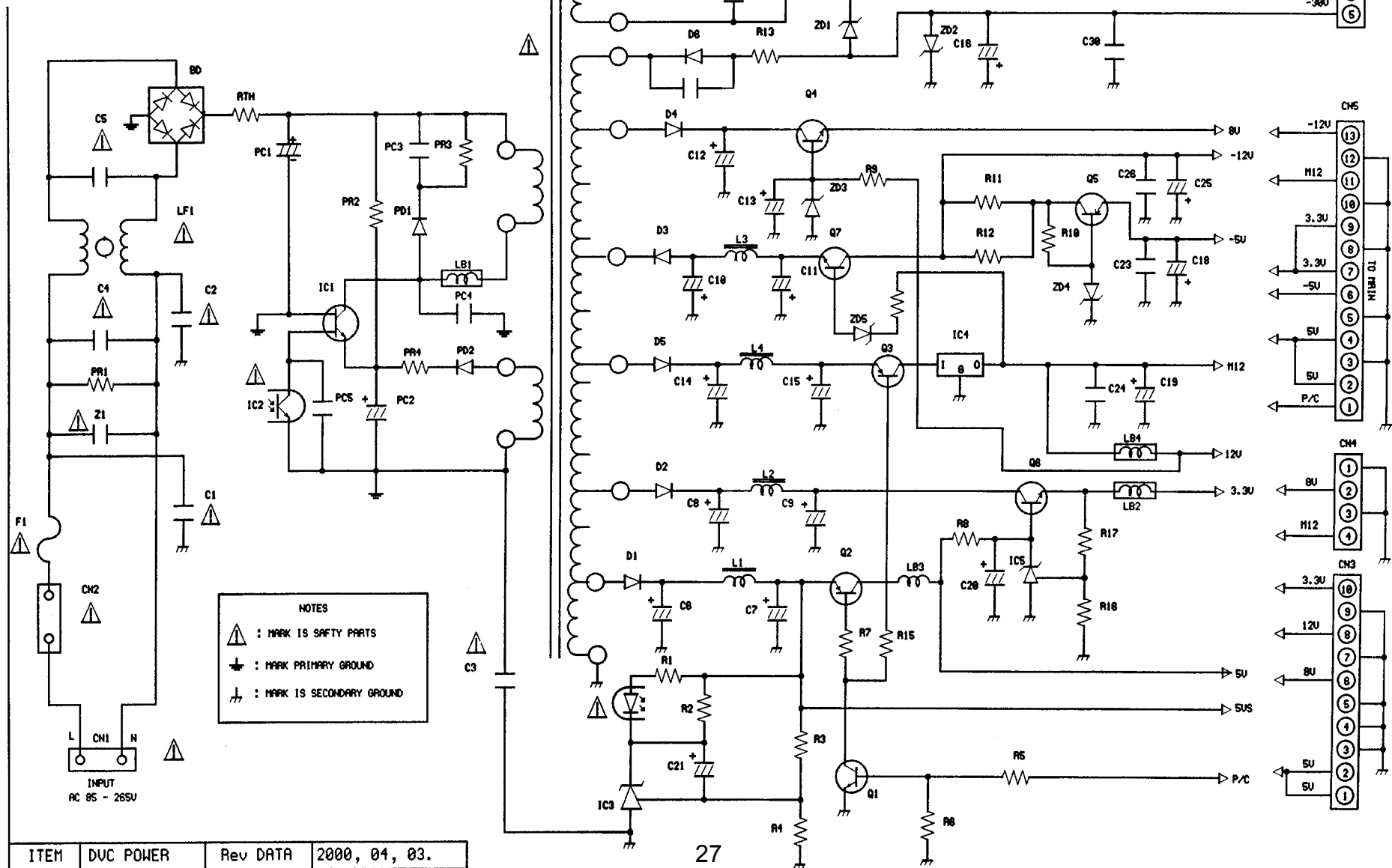
NOTE: For any omissions in the parts list, h/k Customer Service should be contacted to supply any needed parts @ (516) 255-4545			
DVD5 POWER SUPPLY PART LIST (Early Revision)			
See page 33 for Identification			
PART#	DESCRIPTION	QTY	Reference Designators
Resistors			
J3003154529X	RES CARBON/AX,TAP 150kohm 1/2W J	2	R03,R04
J3003102220X	RES CARBON/AX,TAP 1k ohm 1/8W J	4	R02,19,21,25
J3003689220X	RES CARBON/AX,TAP 6R8 ohm 1/8W J	1	R27
J3010121620X	RES OXIDE/TAP 120 ohm 1W J	1	R28
J3003101220X	RES CARBON/AX,TAP 100 ohm 1/8W J	1	R22
J3003911274X	RES MR/AX,TAP 910 ohm 1/8W F	1	R23
J3003102274X	RES MR/AX,TAP 1k ohm 1/8W F	1	R24
J3003121220X	RES CARBON/AX,TAP 120 ohm 1/8W J	1	R31
J3003102420X	RES CARBON/AX,TAP 1k ohm 1/4W J	2	R29,30
J3003220220X	RES CARBON/AX,TAP 22 ohm 1/8W J	1	R32
J3003472220X	RES CARBON/AX,TAP 4k7 ohm 1/8W J	5	R06,11,18,26,34
J3003472220X	RES OXIDE/TAP 4R7 ohm 1W J	1	R15
J3003154220X	RES CARBON/AX,TAP 150kohm 1/8W J	1	R14
J3003471220X	RES CARBON/AX,TAP 470 ohm 1/8W J	1	R12
J3003202420X	RES CARBON/AX,TAP 2k ohm 1/4W J	1	R00
J3003151420X	RES CARBON/AX,TAP 150 ohm 1/4W J	1	R17
J3003681529X	RES CARBON/AX,TAP 680 ohm 1/2W J	1	R13
J3003564529X	RES CARBON/AX,TAP 560kohm 1/2W J	1	R000
	RES-METAL OXID / PR02 68K-J / 2W 68K-J	1	R09
J3010331620X	RES OXIDE/TAP 330 ohm 1W J	1	R07
Semiconductors			
D1NL20U	DIODE F/R / D1NL20U / 200V 1A, 52mm TAPP	7	D01,06,07,08,09,12,15
	DIODE F/R / ERA22-10V3 / 1000V 0.5A	1	D02
DVD5S01	DIODE F/R / D2L20U / 200V 1.5A	1	D03
DVD5S02	DIODE F/R / MTZJ9.1A / 500mW(8.57V-9.01V)	2	ZD02,04
J2221010000X	DIODE AX/TAP, SW 1N4148	4	D10,11,13,14
DDTZ-G120B-S00	DIODE ZENER / MTZ12B	2	ZD01,06
DVD5S03	DIODE ZENER / MTZ13A / 500mW 26mm, TAPP	1	ZD03
DVD5S04	DIODE-FR / 1N4007S / 1000V 1A	4	D1,2,3,4
1300-945000-100	TR / KSC945CY / 50V 150mA	2	Q06,07
DVD5S05	TR / KSC2331 Y	2	Q02,08
2SA1244	TR / KTA1241YAT / 60V 5A, TAPP	2	Q01,05
0ISS431000A	I.C / KA431AZ	1	IC04
J2112505020X	IC REG KIA7812API TO-220IS KEC	1	IC03
DVD5S06	IC-REGULATOR / KA79M05R / -5V 500mA	1	IC05
J2112505014X	IC REG KIA7905API TO-220IS KEC	1	IC02
DVD5S07	IC-PWM / KA1M0380R	1	IC01
DVD5S08	DIODE-SCHOTTKY / SB3100 / 100V 3A	1	D05
DVD5S09	DIODE-SCHOTTKY / YG802C09 / 90V 10A	1	D04
J2123233001X	IC PHOTOCOUPERS LTV817 DIP4P	1	PC01
DVD5S27	TR / KSD1273P / 60V 3A TO220	2	Q03,04
Capacitors			
J3470122071X	CAP ELEC SG 22uF 50V M 5*11	2	C07,16
J3470110071X	CAP ELEC SG 10uF 50V M 5*11	8	C21,23,24,26,27,28,30,34
J3470147131X	CAP ELEC SG 470uF 16V M 10*12.5	4	C19,20,31,33
DVD5S10	CAP ELEC / KME25V 100uF / 6*11 105°C	1	C17
P5521-ND	CAP ELEC SG 1000uF 10V M 10*16	1	C11
DVD5S11	CAP POLY/RA,TAP 0.047uF 50V -K	1	C08
DVD5S12	CAP POLY/RA,TAP 0.1uF 50V -K	1	C25

PART#	DESCRIPTION	QTY	Reference Designators
DVD5S13	CAP-CERAMIC / EKB3A221K06FK / 1KV B 221K	1	C18
DVD5S14	CAP-CERAMIC / CCYV1H104ZE / 50V 0.1 uF TAPP	5	C00,15,22,29,32
DVD5S15	CAP POLY/RA,TAP 0.0033uF 50V -K	1	C14
DVD5S16	CAP-ELECT / SMH400V 150uF / 22*30 85°C	1	C01
J3524222730X	CAP CERA/AX,TAP X 2200pF 16V M	1	C06
DVD5S17	CAP ELEC SG 1000uF 35V M 13*25	2	C12,13
P10308-ND	CAP-ELECT / KME35V 1500uF / 16*25(105°C)	1	C10
J3610104330X	CAP POLYESTER/RA,TAP 0.1 uF 100V -K	2	C02,03
DVD5S18	CAP FILM / PC2JRB103K / 630V 0.01uF	1	C09
Miscellaneous			
DVD5S19	PEAKING-COIL / AA-E1 / DR6.5*7.5 10uH TAPP	3	L02,03,04
	FUSE CLIP / FC51F 5.23*20mm / AUTO INSERT TYPE	2	F0R,01
DVD5S20	LINE-FILTER / SQ2015 / 25mH	1	LF01
DVD5S21	THERMISTOR / DSC-10D-9 / 10ohm 3A	1	TH1
DVD5S22	CHOKO COIL / AA-27 / BAR CORE 5*20 5uH	1	L01
DVD5S23	CONNECTOR / GILS13PS2T2EF / 13PIN	1	CN01
	LEAD CONNECTOR ASS'Y / 5PIN	1	CN03
	WAFER / GILS4PS2T2EF / 4PIN	1	CN02
	CONNECTOR WAFER / 90325-0010 / 10P	1	CN04
	POST HEADER / YW396-03AV / WHITE COLOR(2PIN)	2	CN05,06
DVD5S24	FUSE / 50T2L 250V 2.0A	1	F01
	HEAT SINK / AL1.5T / 23.3*17*25	4	FOR IC01,02,D04
	HEAT SINK / AL1.5T	1	FOR IC05
DVD5S25	TRANSFORMER / DVD / EER2828	1	PT01
DVD5S26	TRANSFORMER / DVD / EE1614	1	PT02
	LUG GROUND	4	
	SCREW / TSWH3*8 / GLD	1	
	SCREW / TSWH3*8 / GLD	4	

4Y-31D5

NOTE: Ordinarily DVD5 Power Supply module, part# 55174740, is supplied only as a complete unit. Supplied Schematic and Parts list are included only for reference when the above part is not available and/or repair to component level is necessary.

LOAD TABLE				
3.3U/0.7A	5U/0.1A	5U/0.56A	8U/0.3A	12U/0.1A
M12/0.3A	-5U/0.10A	-12U/0.05A	-30U/0.03A	5.4U/0.15A



NOTES

- ⚠ : MARK IS SAFETY PARTS
- ⚡ : MARK PRIMARY GROUND
- ⚡ : MARK IS SECONDARY GROUND

ITEM	DVC POWER	Rev DATA	2000, 04, 03.
DWG NO	FHY3003 KS	DESIGN BY	JONG HEUN KIM

PARTS LIST

00-04-25

NO	ITEM	SPECIFICATION	DESCRIPTION	VENDOR	Q.TY	LOCATION
1	P.C.B.	FR-1 (HY-31D5)	150 X 170mm	GANA	1	
2	WAFER	YW396-03AV HLW3960-N-3	WHITE COLOR(2PIN)	YEONHO HAECHANG	1	CN1, CN2
3	WAFER	GIL-S-13P-S2T2EF	13PIN	LG CABLE	1	CN5
4	WAFER	GIL-S-4P-S2T2EF	4PIN	LG CABLE	1	CN4
5	WAFER	8370-10P(STRAIT) 90325-0010	10PIN FOR US 10PIN FOR EU	ELCO MOLEX	1	CN3
6	LEAD CONNECTOR ASS'Y		5PIN	HWASUNG TAEPYOUNGSA		CN6
7	C CERA	DG 102M 250VAC SD 02M 400VAC	1uF	SAMHWA	3	C1,C2,C3
8	LINE ACROSS	PCX2 335 104 AC275V	100uF	SUNGIL	1	C4
9	LINE ACROSS	PCX2 335 473 AC275V	47uF	SUNGIL	1	C5
10	C ELECTRO	400V 68uF	22 X 25 80°C	DAEWOO	1	PC1
11	C MYLAR	630V 223J	22uF	RUBYCON	1	PC3
12	C CERA	1KV 101K	0.1uF	RUBYCON	2	PC4,C22
13	C ELECTRO	RG 50V 22uF MH5 50V 22uF	5 X 11 80°C	SMAHWA RUBYCON	1	PC2
14	C MYLAR	100V 104J	100uF	DAEYOUNG	1	PC5
15	C ELECTRO	RG 50V 1uF MH5 50V 1uF	5 X 11 80°C	SMAHWA RUBYCON	1	C21

HWAYOUNG ELECTRONICS CO., LTD

PARTS LIST

00-04-25

NO	ITEM	SPECIFICATION	DESCRIPTION	VENDOR	Q'TY	LOCATION
16	C ELECTRO	RG 10V 1000uF	10 X 16 80°C	RUBYCON	2	C6,C7
17	C ELECTRO	RG 16V 470uF	10 X 13 80°C	RUBYCON	5	C10,C11,C12,C14,C15
18	C ELECTRO	RG 50V 10uF	5 X 11 80°C	RUBYCON	5	C13,C18,C19,C20,C25
19	C ELECTRO	RG 10V 470uF	8 X 12 80°C	RUBYCON	2	C8,C9
20	C ELECTRO	RG 50V 47uF	6.3 X 11 80°C	RUBYCON	1	C16
21	C ELECTRO	RG 10V 220uF	6.3 X 11 80°C	RUBYCON	1	C17
22	C CERA	50V 104Z	100uF	KIYOUNG	4	C23,C24,C26,C30
23	DIODE F/R	UF4005,SUF4007,HER106	1000V 1A	PYUNGCHANG	1	PD1
24	DIODE F/R	1N4937	600V 1A	PYUNGCHANG	2	PD2,D7
25	DIODE F/R	ER202 SF24	200V 2A	PYUNGCHANG DAEBO	3	D1,D2,D5
26	DIODE F/R	ER102 SF14	200V 1A	PYUNGCHANG DAEBO	1	D6
27	DIODE F/R	ER101,ER102 SF14	200V 1A	PYUNGCHANG DAEBO	2	D3,D4
28	DIODE BRIDGE	KBP205,PBP205	500V 2A	DAEBO	1	BD
29	DIODE ZENOR	UZ9.1BSA	50mW(8.57V~9.01V)	PYUNGCHANG	1	ZD1
30	DIODE ZENOR	UZ33BSB		PYUNGCHANG	1	ZD2

HWAYOUNG ELECTRONICS CO., LTD

PARTS LIST

00-04-25

NO.	ITEM	SPECIFICATION	DESCRIPTION	VENDOR	QTY	LOCATION
31	DIODE ZENOR	UZ9.1BSB		PYUNGCHANG	1	ZD3
32	DIODE ZENOR	1N5232 1/2W 5.6V		PYUNGCHANG	1	ZD4
33	DIODE ZENOR	18V		PYUNGCHANG	1	ZD5
34	FUSE	55T 250V 2A 50CT 250V 2A	ALL MARKING	SAMJU LITTLE	1	F1
35	FUSE CLIP	PFC 5000-0702	AUTO INSERT TYPE	SAMJU LITTLE	2	F1a,F1b
36	IC PWM	1M0380R-YDTU		SAMSUNG	1	IC1
37	PHOTO-COUPLER	LTV817C PC-17K1	7.8mm C-GRADE	LITEON KODENSHI	2	IC2
38	IC REGULATOR	KA431AZ-MTA		SAMSUNG	2	IC3,IC5
39	IC REGULATOR	KA7812	12V 1A	SAMSUNG	1	IC4
40	TR	KSC945CY C3198	50V 150mA	SAMSUNG	1	Q1
41	TR	KSA1273Y KSA928A		SAMSUNG	3	Q2,Q3,Q5
42	TR	TIP41C KSD2058-YTU	100V 6A	SAMSUNG	2	Q4,Q6
43	TR	KSC3205Y KSC2328A		SAMSUNG	2	Q7
44	LINE FILTER	SQ2014	30mH	HWAYOUNG	1	LF1
45	CHOKE COIL	L0811	22uH	HWAYOUNG	4	L1,L2,L3,L4

HWAYOUNG ELECTRONICS CO., LTD

PARTS LIST

00-04-25

NO	ITEM	SPECIFICATION	DESCRIPTION	VENDOR	Q'TY	LOCATION
46	BEAD COIL		5uH	SAMHWA	4	LB1, LB2, LB3, LB4
47	R METAL-OXIDE	1W 120K		JAEOYOUNG PILKOR	1	PR3
48	R METAL-OXIDE	1W 330K		SUNGIL PILKOR	1	PR2
49	R CARBON FILM	1/6W 20 1/8W 20		JAEOYOUNG	1	PR4
50	R CARBON FILM	1/6W 820 1/8W 820		JAEOYOUNG	1	R1
51	R CARBON FILM	1/6W 1K 1/8W 1K		JAEOYOUNG	3	R2, R5, R6
52	R CARBON FILM	1/6W 11KF 1/8W 11KF		JAEOYOUNG	1	R3
53	R CARBON FILM	1/6W 10KF 1/8W 10KF		JAEOYOUNG	1	R4
54	R CARBON FILM	1/4W 56		JAEOYOUNG	1	R7
55	R CARBON FILM	1/6W 33 1/8W 33		JAEOYOUNG	1	R8
56	R CARBON FILM	1/6W 470 1/8W 470		JAEOYOUNG	2	R9, R10
57	R CARBON FILM	1/2W 100		JAEOYOUNG	2	R11, R12
58	R CARBON FILM	1/4W 100		JAEOYOUNG	1	R13
59	R CARBON FILM	1/6W 2K 1/8W 2K		JAEOYOUNG	1	R14
60	R CARBON FILM	1/4W 470		JAEOYOUNG	1	R15

HWAYOUNG ELECTRONICS CO., LTD

PARTS LIST

00-04-25

NO	ITEM	SPECIFICATION	DESCRIPTION	VENDOR	Q'TY	LOCATION
61	R CARBON FILM	1/6W 35KF		JAEOYOUNG	1	R16
		1/8W 35KF				
62	R CARBON FILM	1/6W 13KF		JAEOYOUNG	1	R17
		1/8W 13KF				
63	TRANSFORMER	HY-31D5	950uH-EER2828	HWAYOUNG	1	T1
64	VARISTOR	SVC471D--10A		SAMHWA	1	Z1
		DNR10D471K		HYUNWOO		
65	THERMISTOR	5D9		SUYANG	1	RTH
66	JUMP-WIRE	0.65mm	SOLDER COATED	DAE-A LEAD	18	J1,J2,J3,J4,J5,J6,J7,J8,, J10,J11,J12,J13,J14,J15 J17,J18,J19
67	HEAT SINK	GN26900(30)	30mm	GANNA	1	IC1a
68	SCREW	3 X 8			1	IC1b
69	LOG EARTH	4φ		DONGYANG	4	E1,E2,E3,E4
70	SOLDER WIRE	RS63-0.8A	SN63,PB37	ALPHA		
71	SOLDER BAR	S63S-B20	SN63,PB37	ALPHA		
72	FLUX THINNER	I.P.A				
73	AUTO FLUX	JS-95TVS				
74	CARTON BOX					

HWAYOUNG ELECTRONICS CO., LTD

harman/kardon

Service Bulletin

Service bulletin # H/K2002-05 November 2002

Warranty labor rate: MINOR repair

To: All harman/kardon Service Centers

Model: DVD5

Subject: Stays in Standby mode; Power Supply Variations

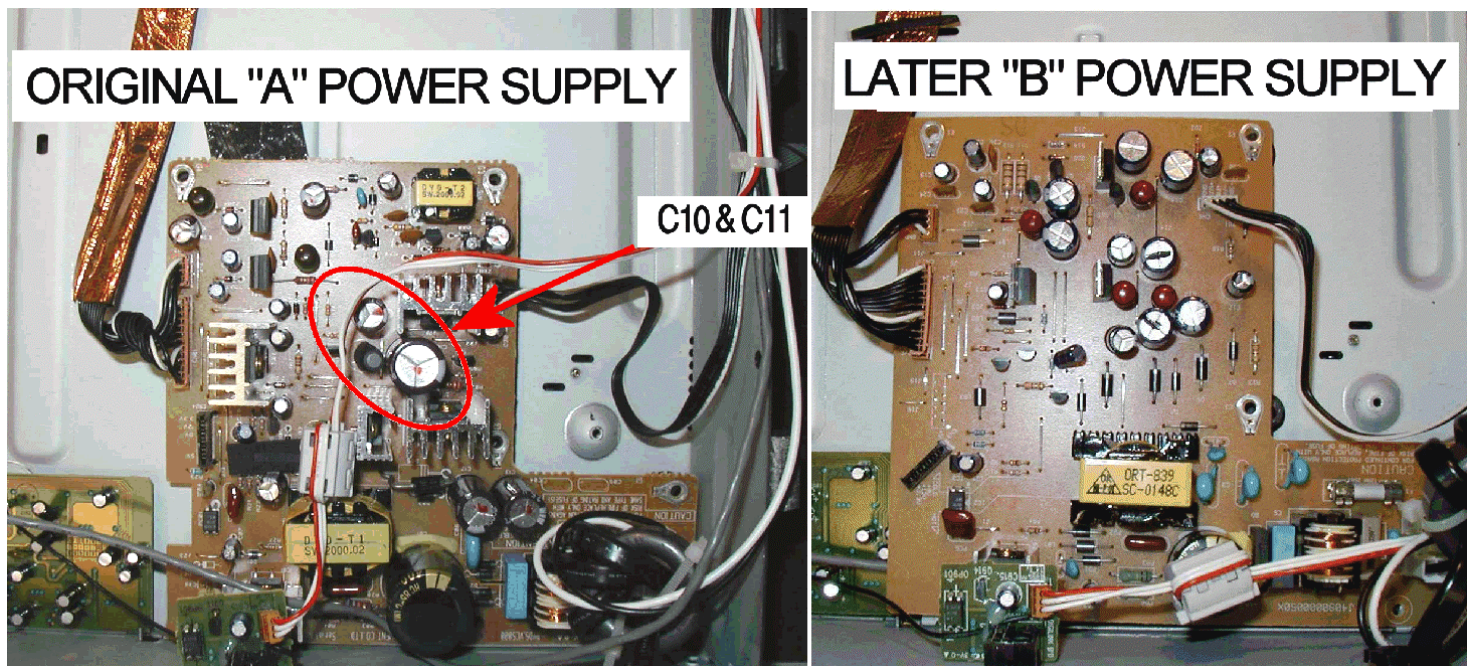
In the event you receive a DVD5 with one or more of these symptoms:

- Unit stays in Standby mode (amber indicator light)
- Unit will play for a time period, *then* goes into standby mode (amber indicator light)

Synopsis: Check and replace capacitors C10, C11, and diode D01 with new parts in the power supply section when necessary; they may be damaged.

There are two versions of the DVD5 power supply, an earlier "A" and later "B" supply. Bulletin only affects the DVD5 with earlier "A" supply. (See images below).

- 1) Remove the top cover.
- 2) Pull all ribbon connectors from the decoder PCB that connect to the chassis.
- 3) Remove the 4 screws that hold the chassis down to the bottom panel assy.
- 4) Pull the chassis slightly up in the rear and remove the entire assy. out the back.
C10: h/k part# **P10308-ND** ELECT 1500uf 35v 105c radial capacitor (in between two heatsinks)
C11: h/k part# **P5521-ND** ELECT 1000uf 10v 105c radial capacitor
 Check and replace **D01** Diode (200V 1A) in the power supply section if necessary with h/k part# **D1NL20U**
- 5) Reinstall in the reverse order.



harman/kardon

Service Bulletin

Service bulletin # H/K2003-01 Rev1 July 2003

Warranty labor rate: MAJOR repair

To: All harman/kardon Service Centers

Model: DVD5

Subject: Replacement of Laser Pick-up Assembly

In the event you receive a DVD5 where a Laser Pick-up Assembly replacement is warranted, the original DVD5 mechanism is no longer available. Follow the instructions below to add a new replacement mechanism:

I) Order the following parts:

- | | |
|---|-------------------------|
| 1) Laser Pick-up Ass'y (TVK15-1AA/502T) | h/k part# 10733290RETRO |
| 2) 10 wire - FCC CABLE | h/k part# 55174870 |
| 3) 12 wire - FCC CABLE | h/k part# 55174860 |

In addition, if the DVD5 has the early version of the power supply described in h/k bulletin # HK2002-05, (Figure 3 on page 2), order:

- | | |
|------------------------|--------------------|
| 4) 10 wire – CONNECTOR | h/k part# 55284430 |
|------------------------|--------------------|

In addition, if the DVD5 is in the serial number range TH0007-07492 and below, order:

- | | |
|--------------------|----------------------|
| 5) 5 Disc Carousel | h/k part# 5502007AMP |
|--------------------|----------------------|

II) DVD-5 Loader Module Replacement

- 1) Remove the top cover.
- 2) Pull all ribbon connectors from the decoder PCB that connect to the chassis.
- 3) Remove the 4 screws that hold the chassis down to the bottom panel assy.
- 4) Pull the chassis slightly up in the rear and remove the entire assy. out the back.

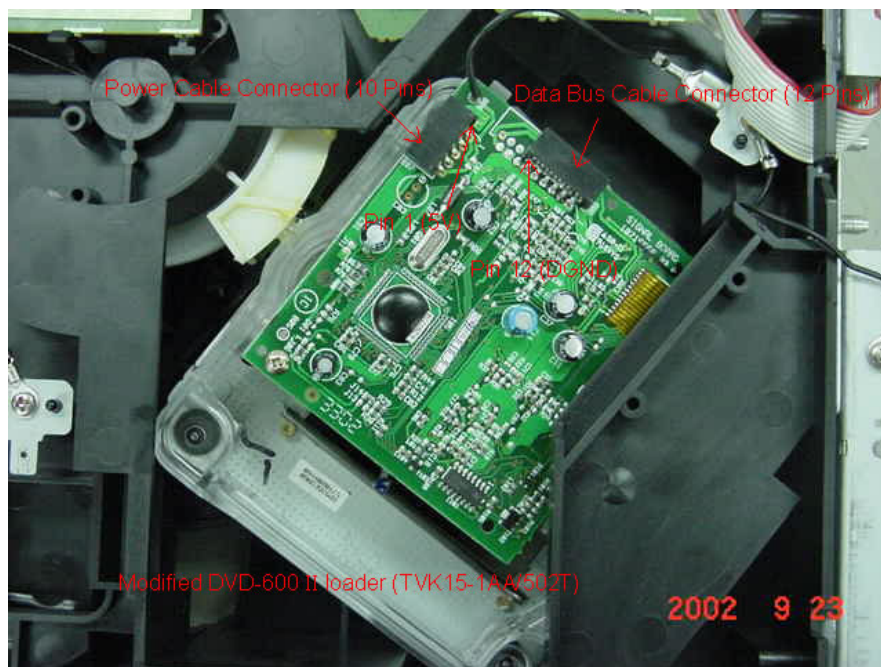


Figure 1. New Replacement Loader for DVD-5

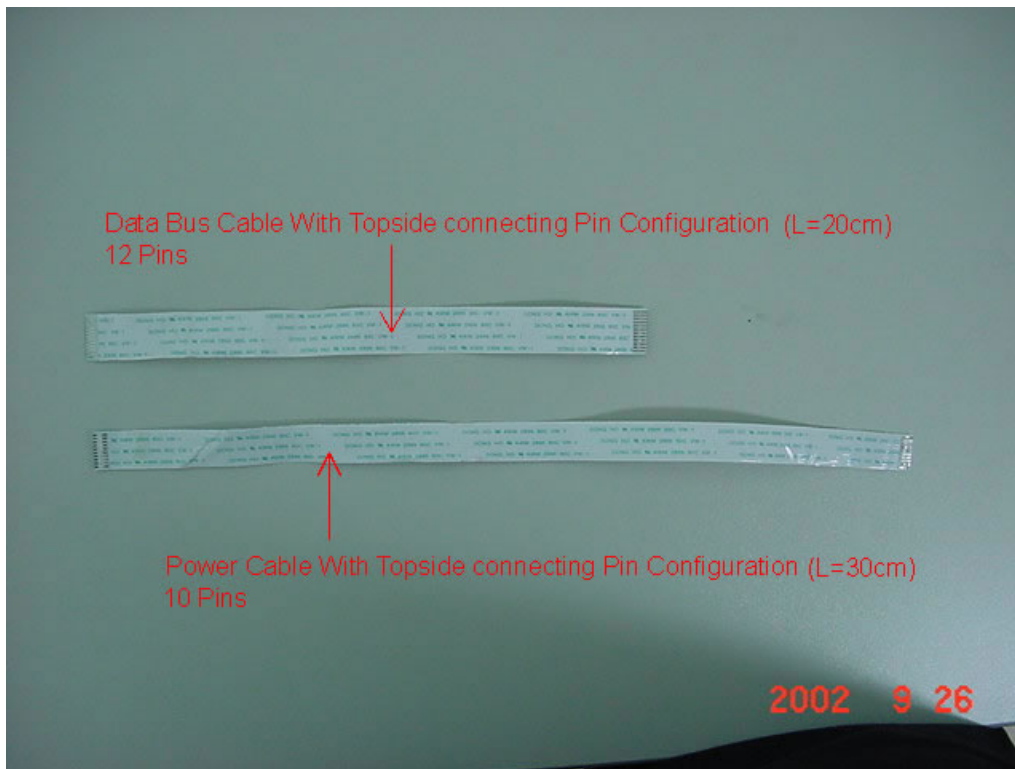


Figure 2. Flex Cables Required for Replacing New DVD-5 Loader

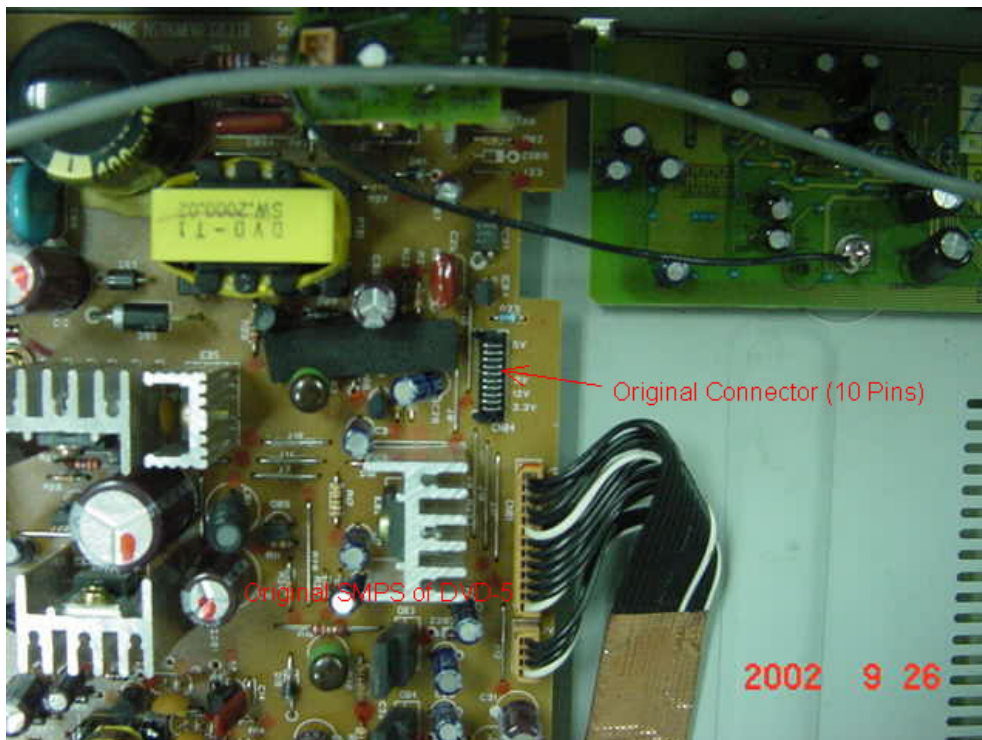


Figure 3. Original DVD5 POWER SUPPLY Power connector header (See h/k bulletin # HK2002-05)

a) Early Version: Molex Connector should be replaced with 10-Pin FCC connector, part# 55284430 on POWER SUPPLY module. See Figure 4. After replacing original molex connector, connect the loader and power supply with 10 wire - FCC CABLE, part# 55174870. Connect Pin 1 → Pin1 and Pin 10 → Pin 10. Refer to *Figure 4* and *Figure 6*.

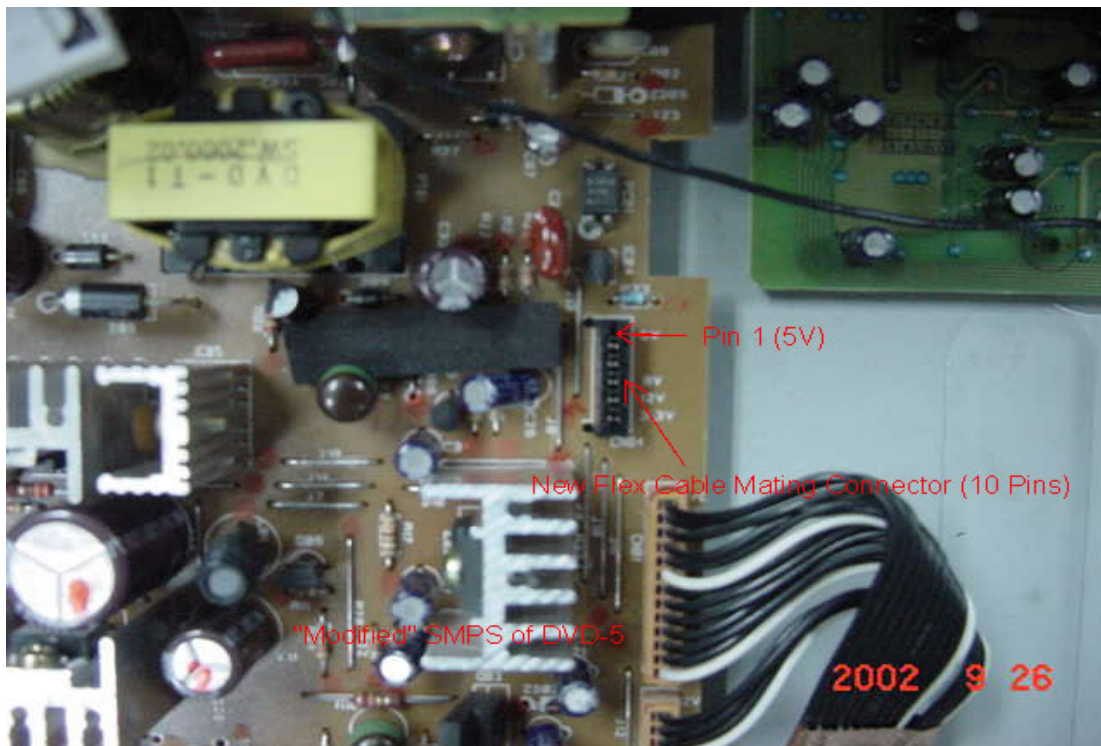


Figure 4. "Modified" DVD5 Power Supply

b) DVD-5 Later Version

No modification to the power supply connector is necessary if DVD5 has the connector shown in Figure 5 below. Connect loader module to power supply with 10 wire - FCC CABLE, part# 55174870.

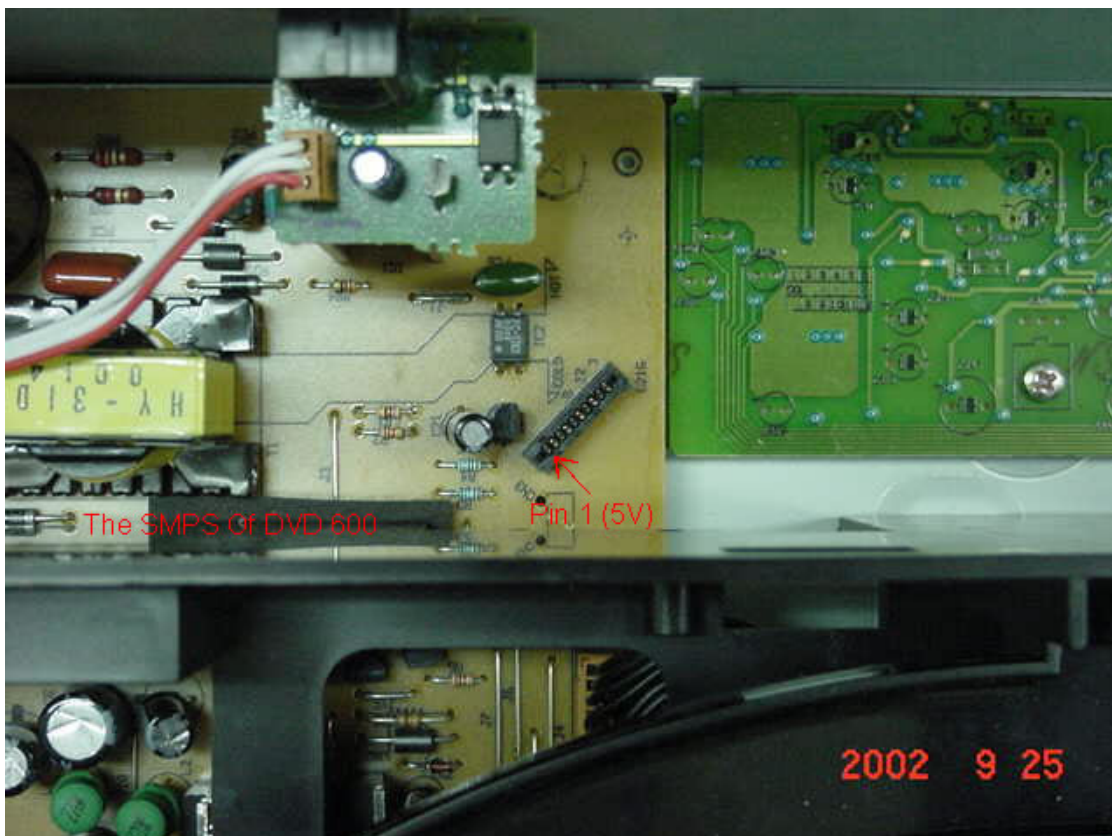


Figure 5.

III) Connect New Data Bus Cable From Loader To *Main PCB*

Connect new loader module's 12 pin data bus connector to *Main PCB*, using 12 wire - FCC CABLE part# 55174860. See Figure 6. **IMPORTANT:** This new cable bypasses and replaces two former cables and the interface PCB shown below, which should be removed and discarded (shown unfastened here from the chassis for illustration).

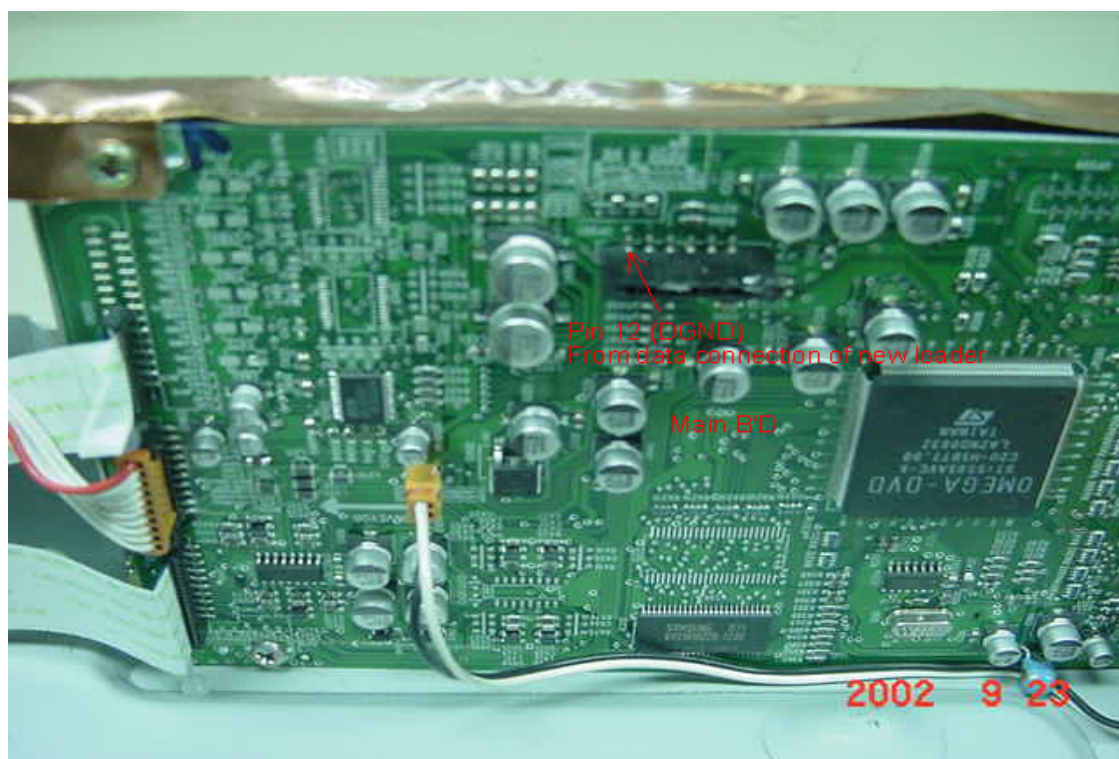
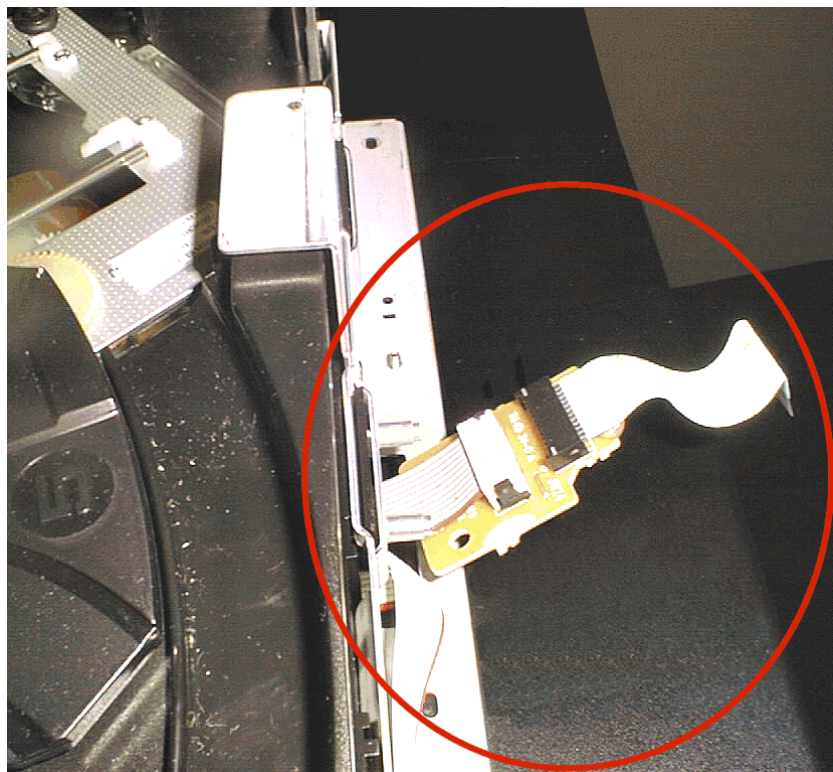


Figure 6. The data bus connector of *Main B'D*

IV) Replace Carousel with part# 5502007AMP if the DVD5 is in the serial number range TH0007-07492 and below, or if your carousel resembles the one below.



(Original) DVD5 Carousel



New Carousel, part# 5502007AMP, (used in DVD600 & DVD600 mkII)

V) Reassemble and test the unit.

Ref. Designator	Part Number	Description	Qty	Ref. Designator	Part Number	Description	Qty
-----------------	-------------	-------------	-----	-----------------	-------------	-------------	-----

DVD5 ELECTRICAL PARTS LIST

MAIN PCB

R001	5088295016RCF	100R0 OHM +5%	1	CN205	J4422401523X	FPC ST 1.0 15P	1
R002	5088295016RCF	100R0 OHM +5%	1	CN208	J4422501327X	FPC ANG 1.0 13P	1
090	J60600008000	SHIELD MPEG FRONT	1	CP202	J4422401523X	FPC ST 1.0 15P	1
100	J4112103001X	CARD CABLE 10P 1.2	1	CP207	J4422411220X	FPC ST 1.25 12P	1
CC203	J4111212000X	CABLE 21P 200 1.0	1	CP802	J4425031040X	CNT SMD 10P 2.0	1
CC203	J4111212200X	CABLE 21P 220 1.0	1	C206	J3515100270X	CC CHIP 10PF 50V D	1
CC205	J4111152000X	CABLE 15P 200 1.0	1	C211	J3525104540X	CC/CHIP 0.1U 25V Z	1
CC207	J4112120600X	CABLE 12P 60 1.25	1	C213	J3525104540X	CC/CHIP 0.1U 25V Z	1
CC207	J4112122001X	CABLE 12P 200 1.25	1	C214	J3525104540X	CC/CHIP 0.1U 25V Z	1
CN200	J4350009914X	CNT 17P SHELD 650	1	C215	J3525104540X	CC/CHIP 0.1U 25V Z	1
CP206	J4420031240X	CNT PLUG 12P 2.0MM	1	C216	J3470010106X	CE 100UF 16V	1
CP212	J4420030240X	CON WAFER 2P 2.0	1	C217	J3525103170X	CC/CHIP .01U 50V K	1
CP213	J4420030440X	CNT PLUG 4P 2.0MM	1	C218	J3515331170X	CC/CHIP 330PF 50V	1
CP214	J4420031140X	CNT ST 11P 2.0	1	C219	J3525332170X	CC/CHIP 3300PF 50V	1
FC101	J2632400016X	FERRITE CORE 12 BO	1	C220	J3525103170X	CC/CHIP .01U 50V K	1
FC102	J2632400016X	FERRITE CORE 12 BO	1	C221	J3470010106X	CE 100UF 16V	1
FC103	J2632400026X	FERRITE CORE 14 BO	1	C222	J3470010106X	CE 100UF 16V	1
FC104	J2632400026X	FERRITE CORE 14 BO	1	C223	J3525103170X	CC/CHIP .01U 50V K	1
FC105	J2632100016X	EMI CORE RING34 34	1	C226	J3525104540X	CC/CHIP 0.1U 25V Z	1
C2 LG01	J4141300501Y	HOOK-UP 50 1P #26	1	C227	J3525104540X	CC/CHIP 0.1U 25V Z	1
C2 LG02	J4141300901X	HOOK-UP 90 1P #26	1	C228	J3525104540X	CC/CHIP 0.1U 25V Z	1
LM201	J2612222023X	COIL RA 22UH K	1	C229	J3525104540X	CC/CHIP 0.1U 25V Z	1
L206	J2612222923X	2.2UH KS0606-2R2K	1	C230	J3525104540X	CC/CHIP 0.1U 25V Z	1
X201	J3914010036X	CRYSTAL 27M 16.5PF	1	C239	J3515220270X	CC/CHIP 22P 50V	1
CP210	J4420011206X	CNT ST 1.27	1	C239	J3515240270X	CC/CHIP 24PF 50V 2	1
CP211	J4422111220X	FPC 1.25 12P	1	C240	J3515220270X	CC/CHIP 22P 50V	1
C001	80434590AF	CC 22P0F +5% -5% 5	1	C240	J3515240270X	CC/CHIP 24PF 50V 2	1
C002	20246950AF	CC 100N0F +10% -10	1	C241	J3525104540X	CC/CHIP 0.1U 25V Z	1
C003	80434590AF	CC 22P0F +5% -5% 5	1	C242	J3525104540X	CC/CHIP 0.1U 25V Z	1
C004	20246950AF	CC 100N0F +10% -10	1	C243	J3525104540X	CC/CHIP 0.1U 25V Z	1
C005	20268030AM	CE 1MIOF +20% 25.0	1	C244	J3525104540X	CC/CHIP 0.1U 25V Z	1
D001	2041428001	D-ZENER 1N5232B 5	1	C245	J3525104540X	CC/CHIP 0.1U 25V Z	1
D002	2041428001	D-ZENER 1N5232B 5	1	C246	J3525104540X	CC/CHIP 0.1U 25V Z	1
IC001	20458950NR	IC-MOTORCIR BA6209	1	C247	J3525104540X	CC/CHIP 0.1U 25V Z	1
IC001	20656300NR	IC-MOTORCIR LB1641	1	C248	J3525104540X	CC/CHIP 0.1U 25V Z	1
IC002	20458950NR	IC-MOTORCIR BA6209	1	C249	J3525104540X	CC/CHIP 0.1U 25V Z	1
IC002	20656300NR	IC-MOTORCIR LB1641	1	C250	J3525104540X	CC/CHIP 0.1U 25V Z	1
L001	20265120NR	LF 39U0H +10% 130M	1	C251	J3525103170X	CC/CHIP .01U 50V K	1
M021	20656240XX	MAT-ING DOW CORNIN	1	C252	J3470010106X	CE 100UF 16V	1
M022	20457000XX	MAT-ING DOW CORNIN	1	C253	J3525103170X	CC/CHIP .01U 50V K	1
PI001	20586840NR	D-PHOTO RPI-574	1	C254	J3470010106X	CE 100UF 16V	1
PI001	20621240NR	D-PHOTO GP1S58V 20	1	C255	J3525103170X	CC/CHIP .01U 50V K	1
PI002	20586840NR	D-PHOTO RPI-574	1	C256	J3470010106X	CE 100UF 16V	1
PI002	20621240NR	D-PHOTO GP1S58V 20	1	C257	J3525103170X	CC/CHIP .01U 50V K	1
PI003	20586840NR	D-PHOTO RPI-574	1	C258	J3470010036X	CE 10U 16V M 3*5.2	1
PI003	20621240NR	D-PHOTO GP1S58V 20	1	C259	J3525103170X	CC/CHIP .01U 50V K	1
PI004	20556130NR	D-PHOTO GP2S28 20M	1	C260	J3470010106X	CE 100UF 16V	1
P003	20504010XX	CONN 2.0MM 6 MA ST	1	C261	J3525103170X	CC/CHIP .01U 50V K	1
C2 P004	20713210XX	WCL 150-05-05 UL24	1	C262	J3470022036X	CE 22U 16V M 5*5.2	1
P027	20713500NR	WCASSY 06187F 06 1	1	C263	J3470022036X	CE 22U 16V M 5*5.2	1
P406	J4350009909X	CNT 12P 280 #26 2	1	C265	J3515100270X	CC CHIP 10PF 50V D	1
C2 P406B	20649240XX	WCL 060-05-05 UL24	1	C266	J3515100270X	CC CHIP 10PF 50V D	1
R003	2054943001	RCFF 2R2 OHM +5% 2	1	C267	J3515100270X	CC CHIP 10PF 50V D	1
R004	2054943001	RCFF 2R2 OHM +5% 2	1	C268	J3515100270X	CC CHIP 10PF 50V D	1
CM207	J3470010106X	CE 100UF 16V	1	C270	J3515200270X	CC/CHIP 20P 50V	1
CM208	J3515100270X	CC CHIP 10PF 50V D	1	C301	J3515100270X	CC CHIP 10PF 50V D	1
CM209	J3515100270X	CC CHIP 10PF 50V D	1	C312	J3515471170X	C-CHIP 2012SL 470P	1
CM210	J3515100270X	CC CHIP 10PF 50V D	1	C332	J3525104540X	CC/CHIP 0.1U 25V Z	1
CM211	J3515100270X	CC CHIP 10PF 50V D	1	C333	J3525104540X	CC/CHIP 0.1U 25V Z	1
CM212	J3515100270X	CC CHIP 10PF 50V D	1	C334	J3525104540X	CC/CHIP 0.1U 25V Z	1
CM213	J3515100270X	CC CHIP 10PF 50V D	1	C335	J3525104540X	CC/CHIP 0.1U 25V Z	1
CM214	J3515100270X	CC CHIP 10PF 50V D	1	C336	J3470022036X	CE 22U 16V M 5*5.2	1
CM215	J3515100270X	CC CHIP 10PF 50V D	1	C337	J3525104540X	CC/CHIP 0.1U 25V Z	1
CN203	J4422402123X	FPC ST 1.0 21P	1	C338	J3525104540X	CC/CHIP 0.1U 25V Z	1
				C348	J3470010036X	CE 10U 16V M 3*5.2	1
				C349	J3525104540X	CC/CHIP 0.1U 25V Z	1
				C350	J3525104540X	CC/CHIP 0.1U 25V Z	1
				C351	J3470022036X	CE 22U 16V M 5*5.2	1
				C353	J3525104540X	CC/CHIP 0.1U 25V Z	1

Ref. Designator	Part Number	Description	Qty	Ref. Designator	Part Number	Description	Qty
C354	J3525104540X	CC/CHIP 0.1U 25V Z	1	C498	J3525104540X	CC/CHIP 0.1U 25V Z	1
C355	J3525104540X	CC/CHIP 0.1U 25V Z	1	C499	J3525104540X	CC/CHIP 0.1U 25V Z	1
C356	J3525104540X	CC/CHIP 0.1U 25V Z	1	C503	J3515150270X	CC/CHIP 15P 50V	1
C357	J3525104540X	CC/CHIP 0.1U 25V Z	1	C504	J3515150270X	CC/CHIP 15P 50V	1
C358	J3525104540X	CC/CHIP 0.1U 25V Z	1	C505	J3525104540X	CC/CHIP 0.1U 25V Z	1
C359	J3525104540X	CC/CHIP 0.1U 25V Z	1	C506	J3525104540X	CC/CHIP 0.1U 25V Z	1
C360	J3525104540X	CC/CHIP 0.1U 25V Z	1	C507	J3515100270X	CC CHIP 10PF 50V D	1
C361	J3525104540X	CC/CHIP 0.1U 25V Z	1	C508	J3515100270X	CC CHIP 10PF 50V D	1
C362	J3525104540X	CC/CHIP 0.1U 25V Z	1	C509	J3515100270X	CC CHIP 10PF 50V D	1
C363	J3525104540X	CC/CHIP 0.1U 25V Z	1	C510	J3515100270X	CC CHIP 10PF 50V D	1
C364	J3525104540X	CC/CHIP 0.1U 25V Z	1	C511	J3515100270X	CC CHIP 10PF 50V D	1
C365	J3515330270X	CC/CHIP 33P 50V J	1	C512	J3515100270X	CC CHIP 10PF 50V D	1
C366	J3515330270X	CC/CHIP 33P 50V J	1	C513	J3515100270X	CC CHIP 10PF 50V D	1
C367	J3515330270X	CC/CHIP 33P 50V J	1	C520	J3470010106X	CE 100UF 16V	1
C368	J3515330270X	CC/CHIP 33P 50V J	1	C521	J3470010106X	CE 100UF 16V	1
C369	J3515330270X	CC/CHIP 33P 50V J	1	D401	J2244010104X	DIODE CHIP 1SS355	1
C401	J3525104540X	CC/CHIP 0.1U 25V Z	1	IC201	J2135307001X	IC STI5505AVB	1
C402	J3470022116X	CE 220U 6.3V M 6.3	1	IC204	J2116007001X	IC 74HCU04M1R HEX	1
C403	J3525104540X	CC/CHIP 0.1U 25V Z	1	IC211	J2131007002X	IC FLASH M29F800T	1
C404	J3470022116X	CE 220U 6.3V M 6.3	1	IC211	J2131016001X	IC FLASH TMS29LF80	1
C405	J3525104540X	CC/CHIP 0.1U 25V Z	1	IC211	J2131041001X	ICFLASH SST39VF800	1
C406	J3470022116X	CE 220U 6.3V M 6.3	1	IC212	J2131003009X	IC K4E151611C-TC60	1
C408	J3470022116X	CE 220U 6.3V M 6.3	1	IC213	J2131003008X	IC SDRAM KM4161S11	1
C409	J3525104540X	CC/CHIP 0.1U 25V Z	1	IC213	J2131003010X	IC SDRAM KS161622D	1
C410	J3515200270X	CC/CHIP 20P 50V	1	IC214	J2131003008X	IC SDRAM KM4161S11	1
C411	J3515680270X	CC/CHIP 68P 2012	1	IC215	J2131007001X	IC M24C02 SOP8	1
C412	J3515200270X	CC/CHIP 20P 50V	1	IC402	J2133031001X	IC AK4393 AUDIO	1
C413	J3525104540X	CC/CHIP 0.1U 25V Z	1	IC406	J2110007001X	IC TSH95D VIDEO	1
C414	J3515150270X	CC/CHIP 15P 50V	1	IC407	J2110007001X	IC TSH95D VIDEO	1
C415	J3515200270X	CC/CHIP 20P 50V	1	IC408	J2112912001X	IC 7805DLA REG	1
C416	J3515680270X	CC/CHIP 68P 2012	1	J201	J3024000120X	RES 0 OHM 1/10W J	1
C417	J3515200270X	CC/CHIP 20P 50V	1	J202	J3024000120X	RES 0 OHM 1/10W J	1
C418	J3515150270X	CC/CHIP 15P 50V	1	J203	J3024000120X	RES 0 OHM 1/10W J	1
C419	J3515200270X	CC/CHIP 20P 50V	1	J204	J3024102120X	RES CHIP 1K 1/10W	1
C420	J3515680270X	CC/CHIP 68P 2012	1	J205	J3024102120X	RES CHIP 1K 1/10W	1
C421	J3515200270X	CC/CHIP 20P 50V	1	J206	J3024102120X	RES CHIP 1K 1/10W	1
C422	J3515150270X	CC/CHIP 15P 50V	1	J207	J3024102120X	RES CHIP 1K 1/10W	1
C423	J3515200270X	CC/CHIP 20P 50V	1	L202	J2611022011X	COIL CHIP ELJFC220	1
C424	J3515680270X	CC/CHIP 68P 2012	1	L203	J2611022011X	COIL CHIP ELJFC220	1
C425	J3515200270X	CC/CHIP 20P 50V	1	L205	J2631300011X	BEAD 120XOHM	1
C426	J3515150270X	CC/CHIP 15P 50V	1	L207	J2631330085X	BEAD FCM3216V 2K	1
C427	J3515200270X	CC/CHIP 20P 50V	1	L208	J2631330085X	BEAD FCM3216V 2K	1
C428	J3515680270X	CC/CHIP 68P 2012	1	L209	J2631330085X	BEAD FCM3216V 2K	1
C429	J3515200270X	CC/CHIP 20P 50V	1	L210	J2631330085X	BEAD FCM3216V 2K	1
C430	J3515150270X	CC/CHIP 15P 50V	1	L211	J2631330085X	BEAD FCM3216V 2K	1
C431	J3515200270X	CC/CHIP 20P 50V	1	L212	J2631330085X	BEAD FCM3216V 2K	1
C432	J3515680270X	CC/CHIP 68P 2012	1	L330	J2611022011X	COIL CHIP ELJFC220	1
C433	J3515200270X	CC/CHIP 20P 50V	1	L332	J2611022011X	COIL CHIP ELJFC220	1
C434	J3515150270X	CC/CHIP 15P 50V	1	L333	J2611022011X	COIL CHIP ELJFC220	1
C435	J3525104540X	CC/CHIP 0.1U 25V Z	1	L334	J2631330085X	BEAD FCM3216V 2K	1
C436	J3525104540X	CC/CHIP 0.1U 25V Z	1	L335	J2631330085X	BEAD FCM3216V 2K	1
C440	J3470010106X	CE 100UF 16V	1	L336	J2631330085X	BEAD FCM3216V 2K	1
C441	J3525104540X	CC/CHIP 0.1U 25V Z	1	L337	J3927201111X	EMI FILTER STC104B	1
C450	J3470010036X	CE 10U 16V M 3*5.2	1	L338	J3927201111X	EMI FILTER STC104B	1
C451	J3525104540X	CC/CHIP 0.1U 25V Z	1	L339	J2631330085X	BEAD FCM3216V 2K	1
C452	J3525104540X	CC/CHIP 0.1U 25V Z	1	L340	J2631330085X	BEAD FCM3216V 2K	1
C453	J3470010036X	CE 10U 16V M 3*5.2	1	L341	J2631330085X	BEAD FCM3216V 2K	1
C454	J3525104540X	CC/CHIP 0.1U 25V Z	1	L342	J2631330085X	BEAD FCM3216V 2K	1
C455	J3470010036X	CE 10U 16V M 3*5.2	1	L343	J2631330085X	BEAD FCM3216V 2K	1
C460	J3470010036X	CE 10U 16V M 3*5.2	1	L344	J2631330085X	BEAD FCM3216V 2K	1
C461	J3525104540X	CC/CHIP 0.1U 25V Z	1	L400	J2611022011X	COIL CHIP ELJFC220	1
C486	J3470033116X	CE 330U 6.3V M 8*6	1	L401	J2611022011X	COIL CHIP ELJFC220	1
C487	J3525104540X	CC/CHIP 0.1U 25V Z	1	L402	J2611022011X	COIL CHIP ELJFC220	1
C488	J3525104540X	CC/CHIP 0.1U 25V Z	1	L403	J2611022011X	COIL CHIP ELJFC220	1
C489	J3525104540X	CC/CHIP 0.1U 25V Z	1	L404	J2611082921X	COIL CHIP 8.2UH	1
C490	J3525104540X	CC/CHIP 0.1U 25V Z	1	L405	J2611082921X	COIL CHIP 8.2UH	1
C495	J3470033116X	CE 330U 6.3V M 8*6	1	L406	J2611082921X	COIL CHIP 8.2UH	1
C496	J3525104540X	CC/CHIP 0.1U 25V Z	1	L407	J2611082921X	COIL CHIP 8.2UH	1
C497	J3525104540X	CC/CHIP 0.1U 25V Z	1	L408	J2611082921X	COIL CHIP 8.2UH	1

Ref. Designator	Part Number	Description	Qty	Ref. Designator	Part Number	Description	Qty
L409	J2611082921X	COIL CHIP 8.2UH	1	R211	J3024472120X	RES CHIP 4K7 1/10W	1
L410	J2611082921X	COIL CHIP 8.2UH	1	R212	J3024103120X	RES CHIP 10K 1/10W	1
L411	J2611082921X	COIL CHIP 8.2UH	1	R213	J3024560120X	RES CHIP 56 1/10WJ	1
L412	J2611082921X	COIL CHIP 8.2UH	1	R214	J3024000120X	RES 0 OHM 1/10W J	1
L413	J2611082921X	COIL CHIP 8.2UH	1	R216	J3024103120X	RES CHIP 10K 1/10W	1
L414	J2611082921X	COIL CHIP 8.2UH	1	R218	J30241873175	RES 18K7 1/10 1%	1
L415	J2611082921X	COIL CHIP 8.2UH	1	R219	J30241153175	RES 11K5 1/10 1%	1
L416	J2631300011X	BEAD 120XOHM	1	R222	J3024000120X	RES 0 OHM 1/10W J	1
L417	J2631300011X	BEAD 120XOHM	1	R223	J3024000120X	RES 0 OHM 1/10W J	1
L418	J2631300011X	BEAD 120XOHM	1	R224	J2631320095X	BEAD FCM2012V-60	1
L419	J2631300011X	BEAD 120XOHM	1	R228	J3024331120X	R-CHIP 330 2012J	1
L420	J2611022011X	COIL CHIP ELJFC220	1	R229	J3024105120X	RES CHIP 1M 1/10WJ	1
L421	J2611022011X	COIL CHIP ELJFC220	1	R230	J3024103120X	RES CHIP 10K 1/10W	1
L422	J2631330085X	BEAD FCM3216V 2K	1	R231	J3024103120X	RES CHIP 10K 1/10W	1
L423	J3927201111X	EMI FILTER STC104B	1	R232	J3024103120X	RES CHIP 10K 1/10W	1
L450	J2631300011X	BEAD 120XOHM	1	R233	J3024103120X	RES CHIP 10K 1/10W	1
L452	J2631300011X	BEAD 120XOHM	1	R234	J2631320065X	FCM2012V-221T07	1
Q201	J2041020201X	TR KTC3875S SOT23	1	R235	J3024470120X	RES CHIP 47 1/10W	1
Q202	J2041020201X	TR KTC3875S SOT23	1	R236	J3024470120X	RES CHIP 47 1/10W	1
Q204	J2041020201X	TR KTC3875S SOT23	1	R237	J3024470120X	RES CHIP 47 1/10W	1
Q205	J2041020201X	TR KTC3875S SOT23	1	R238	J2631320065X	FCM2012V-221T07	1
Q206	J2041020201X	TR KTC3875S SOT23	1	R239	J2631320065X	FCM2012V-221T07	1
Q207	J2041220102X	TR NPN DTC114YKA	1	R240	J3024470120X	RES CHIP 47 1/10W	1
Q208	J2041220102X	TR NPN DTC114YKA	1	R243	J2631320245X	BEAD FCM2012C-121T	1
RA201	J3029470120X	RES CHIP 47R 2010	1	R244	J3024000120X	RES 0 OHM 1/10W J	1
RA202	J3029470120X	RES CHIP 47R 2010	1	R247	J3024000120X	RES 0 OHM 1/10W J	1
RA203	J3029470120X	RES CHIP 47R 2010	1	R248	J3024000120X	RES 0 OHM 1/10W J	1
RA204	J3029470120X	RES CHIP 47R 2010	1	R249	J3024472120X	RES CHIP 4K7 1/10W	1
RA205	J3029470120X	RES CHIP 47R 2010	1	R250	J3024472120X	RES CHIP 4K7 1/10W	1
RA206	J3029470120X	RES CHIP 47R 2010	1	R269	J3024101120X	RES CHIP 100 1/10W	1
RA207	J3029470120X	RES CHIP 47R 2010	1	R270	J3024101120X	RES CHIP 100 1/10W	1
RA208	J3029470120X	RES CHIP 47R 2010	1	R271	J2631320075X	FCM2012V-301T07	1
RA209	J3029470120X	RES CHIP 47R 2010	1	R272	J2631320075X	FCM2012V-301T07	1
RA210	J3029470120X	RES CHIP 47R 2010	1	R277	J3024103120X	RES CHIP 10K 1/10W	1
RA211	J3029470120X	RES CHIP 47R 2010	1	R278	J3024103120X	RES CHIP 10K 1/10W	1
RA212	J3029470120X	RES CHIP 47R 2010	1	R279	J3024103120X	RES CHIP 10K 1/10W	1
RA213	J3029470120X	RES CHIP 47R 2010	1	R280	J3024103120X	RES CHIP 10K 1/10W	1
RA214	J3029470120X	RES CHIP 47R 2010	1	R281	J3024103120X	RES CHIP 10K 1/10W	1
RA215	J3029470120X	RES CHIP 47R 2010	1	R283	J3024472120X	RES CHIP 4K7 1/10W	1
RA216	J3029470120X	RES CHIP 47R 2010	1	R286	J3024470120X	RES CHIP 47 1/10W	1
RM201	J3024221120X	R-CHIP 220 2012J	1	R289	J2631320105X	FCM2012H-102T04	1
RM202	J3024221120X	R-CHIP 220 2012J	1	R301	J3024000120X	RES 0 OHM 1/10W J	1
RM216	J3024103120X	RES CHIP 10K 1/10W	1	R301	J3024122120X	RES CHIP 1K2 1/10W	1
RM217	J3024103120X	RES CHIP 10K 1/10W	1	R330	J2631330085X	BEAD FCM3216V 2K	1
RM218	J3024473120X	RES CHIP 47K 1/10W	1	R332	J2631330085X	BEAD FCM3216V 2K	1
RM219	J3024473120X	RES CHIP 47K 1/10W	1	R333	J2631320125X	FCM2012H-202T02	1
RM220	J3024473120X	RES CHIP 47K 1/10W	1	R334	J2631320125X	FCM2012H-202T02	1
RM221	J3024473120X	RES CHIP 47K 1/10W	1	R335	J2631320015X	FCM2012K-202T02	1
RM222	J3024103120X	RES CHIP 10K 1/10W	1	R345	J3024000120X	RES 0 OHM 1/10W J	1
RM223	J2631320105X	FCM2012H-102T04	1	R346	J3024000120X	RES 0 OHM 1/10W J	1
RM224	J2631320105X	FCM2012H-102T04	1	R347	J3024473120X	RES CHIP 47K 1/10W 10	1
RM225	J2631320105X	FCM2012H-102T04	1	R348	J3024473120X	RES CHIP 47K 1/10W	1
RM226	J2631320105X	FCM2012H-102T04	1	R349	J2631320065X	FCM2012V-221T07	1
RM227	J2631320105X	FCM2012H-102T04	1	R350	J3024470120X	RES CHIP 47 1/10W	1
RM228	J2631320105X	FCM2012H-102T04	1	R351	J2631320065X	FCM2012V-221T07	1
RM229	J2631320105X	FCM2012H-102T04	1	R352	J3024470120X	RES CHIP 47 1/10W	1
RM230	J2631320105X	FCM2012H-102T04	1	R353	J3024470120X	RES CHIP 47 1/10W	1
RM232	J3024103120X	RES CHIP 10K 1/10W	1	R354	J3024470120X	RES CHIP 47 1/10W	1
RX06	J3024000120X	RES 0 OHM 1/10W J	1	R355	J3024470120X	RES CHIP 47 1/10W	1
RX08	J3024103120X	RES CHIP 10K 1/10W	1	R356	J3024470120X	RES CHIP 47 1/10W	1
R201	J3024182120X	RES CHIP 1K8 1/10W	1	R357	J3024473120X	RES CHIP 47K 1/10W	1
R202	J3024182120X	RES CHIP 1K8 1/10W	1	R358	J3024473120X	RES CHIP 47K 1/10W	1
R203	J3024103120X	RES CHIP 10K 1/10W	1	R359	J3024473120X	RES CHIP 47K 1/10W	1
R205	J3024103120X	RES CHIP 10K 1/10W	1	R360	J3024473120X	RES CHIP 47K 1/10W	1
R206	J3024103120X	RES CHIP 10K 1/10W	1	R361	J3024473120X	RES CHIP 47K 1/10W	1
R207	J3024103120X	RES CHIP 10K 1/10W	1	R362	J3024473120X	RES CHIP 47K 1/10W	1
R208	J3024103120X	RES CHIP 10K 1/10W	1	R363	J3024473120X	RES CHIP 47K 1/10W	1
R209	J3024103120X	RES CHIP 10K 1/10W	1	R366	J3024472120X	RES CHIP 4K7 1/10W	1
R210	J3024472120X	RES CHIP 4K7 1/10W	1	R367	J3024472120X	RES CHIP 4K7 1/10W	1

Ref. Designator	Part Number	Description	Qty	Ref. Designator	Part Number	Description	Qty
C2 WIRE1	J4134300701Y	HOOK-UP 60MM #24BK	1	D908	J2242251011X	D-CHIP RB501V-40 U	1
C2 WIRE1	J4141302001X	HOOK-UP 200 1P #26	1	J941	J3024000120X	RES 0 OHM 1/10W J	1
C2 WIRE2	J4134300701Y	HOOK-UP 60MM #24BK	1	J942	J3024000120X	RES 0 OHM 1/10W J	1
C2 WIRE2	J4134300851Y	HOOK-UP 70MM #24BK	1	J943	J3024000120X	RES 0 OHM 1/10W J	1
C2 WIRE3	J4141301001X	WIRE 1P 100 #24	1	J944	J3024000120X	RES 0 OHM 1/10W J	1
WIRE3	J4141301201X	WIRE 120 1P #24BK	1	L901	J2611022011X	COIL CHIP ELJFC220	1
WIRE3	J4141301401X	LUG 140 1P #24 BK	1	L902	J2631330085X	BEAD FCM3216V 2K	1
WIRE4	J4141301401X	LUG 140 1P #24 BK	1	L903	J2631330085X	BEAD FCM3216V 2K	1
C2 WIRE5	J4141302001Y	HOOK UP 90MM 1P 26	1	L904	J2631330085X	BEAD FCM3216V 2KP	1
X901	J3911030000X	RESON ZTT10MHZ CQ	1	L905	J3927201111X	EMI FILTER STC104B	1
C901	J3470947030X	CE 47U 16V	1	L906	J3927201111X	EMI FILTER STC104B	1
C906	J3470910110X	CE 100UF 6.3V	1	L908	J2631330085X	BEAD FCM3216V 2K	1
C909	J3470910970X	CE 1U 50V M SS 5*7	1	L909	J2631330085X	BEAD FCM3216V 2K	1
C912	J3513561170X	CC/DISC SL 560P50V	1	L912	J2631330085X	BEAD FCM3216V 2K	1
C913	J3513561170X	CC/DISC SL 560P50V	1	L913	J2631330085X	BEAD FCM3216V 2K	1
C914	J3523104540X	CAP C/D/T .1U 25V	1	L914	J2631330085X	BEAD FCM3216V 2K	1
C915	J3470947030X	CE 47U 16V	1	L915	J2631330085X	BEAD FCM3216V 2K	1
C916	J3471347116X	CE SS470U 6V3 M8*9	1	Q902	J2041220102X	TR NPN DTC114YKA	1
C917	J3470110211X	CE 1000UF 6.3V	1	Q904	J2041220102X	TR NPN DTC114YKA	1
IC902	J2112505034X	IC KIA7042P 4V2	1	Q906	J2041220102X	TR NPN DTC114YKA	1
Q907	J2021000601X	TR PNP MPSA56 Y	1	Q913	J2041220102X	TR NPN DTC114YKA	1
Q908	J2021000601X	TR PNP MPSA56 Y	1	Q914	J2041200102X	TR PNP DTA114YKA	1
Q909	J2021000601X	TR PNP MPSA56 Y	1	Q915	J2041220102X	TR NPN DTC114YKA	1
Q914	J2021200501X	TR PNP KRA107M	1	R901	J3024101120X	RES CHIP 100 1/10W	1
SW901	J46500500002	SW TACT	1	R902	J3024103120X	RES CHIP 10K 1/10W	1
SW901	J46500500501	SW TACT SKQNAE	1	R909	J3024221120X	R-CHIP 220 2012J	1
SW902	J46500500501	SW TACT SKQNAE	1	R910	J3024181120X	RES CHIP 180 1/10W	1
SW903	J46500500002	SW TACT	1	R910	J3024681120X	RES CHIP 680 1/10W	1
SW903	J46500500501	SW TACT SKQNAE	1	R911	J3024182120X	RES CHIP 1K8 1/10W	1
SW904	J46500500501	SW TACT SKQNAE	1	R911	J3024242120X	RES CHIP 2K4 1/10	1
SW905	J46500500002	SW TACT	1	R911	J3024332120X	RES CHIP 3K3 1/10W	1
SW905	J46500500501	SW TACT SKQNAE	1	R912	J3024682120X	RES CHIP 6K8 1/10W	1
SW906	J46500500501	SW TACT SKQNAE	1	R913	J3024203120X	RES CHIP 20K 1/10W	1
SW907	J46500500002	SW TACT	1	R913	J3024472120X	RES CHIP 4K7 1/10W	1
SW907	J46500500501	SW TACT SKQNAE	1	R913	J3024822120X	R-CHIP 8K2 1/10W J	1
SW909	J46500500002	SW TACT	1	R914	J3024103120X	RES CHIP 10K 1/10W	1
SW909	J46500500501	SW TACT SKQNAE	1	R914	J3024333120X	RES CHIP 33K 1/10W	1
SW911	J46500500002	SW TACT	1	R915	J3024333120X	RES CHIP 33K 1/10W	1
SW911	J46500500501	SW TACT SKQNAE	1	R916	J3024184120X	R-CHIP 180K 2012J	1
SW912	J46500500501	SW TACT SKQNAE	1	R921	J3024182120X	RES CHIP 1K8 1/10W	1
SW913	J46500500002	SW TACT	1	R921	J3024242120X	RES CHIP 2K4 1/10	1
SW913	J46500500501	SW TACT SKQNAE	1	R921	J3024332120X	RES CHIP 3K3 1/10W	1
SW914	J46500500501	SW TACT SKQNAE	1	R922	J3024332120X	RES CHIP 3K3 1/10W	1
SW915	J46500500002	SW TACT	1	R922	J3024682120X	RES CHIP 6K8 1/10W	1
SW915	J46500500501	SW TACT SKQNAE	1	R923	J3024203120X	RES CHIP 20K 1/10W	1
SW916	J46500500501	SW TACT SKQNAE	1	R923	J3024472120X	RES CHIP 4K7 1/10W	1
SW917	J46500500002	SW TACT	1	R923	J3024822120X	R-CHIP 8K2 1/10W J	1
SW917	J46500500501	SW TACT SKQNAE	1	R924	J3024103120X	RES CHIP 10K 1/10W	1
SW919	J46500500002	SW TACT	1	R924	J3024333120X	RES CHIP 33K 1/10W	1
SW919	J46500500501	SW TACT SKQNAE	1	R925	J3024333120X	RES CHIP 33K 1/10W	1
SW921	J46500500002	SW TACT	1	R926	J3024223120X	RES CHIP 22K 1/10W	1
SW921	J46500500501	SW TACT SKQNAE	1	R926	J3024473120X	RES CHIP 47K 1/10W	1
SW924	J46500500002	SW TACT	1	R927	J3024223120X	RES CHIP 22K 1/10W	1
SW924	J46500500501	SW TACT SKQNAE	1	R927	J3024473120X	RES CHIP 47K 1/10W	1
SW927	J46500500002	SW TACT	1	R931	J3024242120X	RES CHIP 2K4 1/10	1
SW927	J46500500501	SW TACT SKQNAE	1	R931	J3024332120X	RES CHIP 3K3 1/10W	1
SW930	J46500500002	SW TACT	1	R932	J3024682120X	RES CHIP 6K8 1/10W	1
SW930	J46500500501	SW TACT SKQNAE	1	R933	J3024203120X	RES CHIP 20K 1/10W	1
SW931	J46500500002	SW TACT	1	R933	J3024822120X	R-CHIP 8K2 1/10W J	1
SW931	J46500500501	SW TACT SKQNAE	1	R934	J3024333120X	RES CHIP 33K 1/10W	1
C903	J3525104540X	CC/CHIP 0.1U 25V Z	1	R938	J3024103120X	RES CHIP 10K 1/10W	1
C904	J3525104540X	CC/CHIP 0.1U 25V Z	1	R939	J3024103120X	RES CHIP 10K 1/10W	1
C905	J3525104540X	CC/CHIP 0.1U 25V Z	1	R940	J3024103120X	RES CHIP 10K 1/10W	1
C908	J3525104540X	CC/CHIP 0.1U 25V Z	1	R941	J3024103120X	RES CHIP 10K 1/10W	1
C911	J3525104540X	CC/CHIP 0.1U 25V Z	1	R942	J3024103120X	RES CHIP 10K 1/10W	1
C916	J3525104540X	CC/CHIP 0.1U 25V Z	1	R943	J3024473120X	RES CHIP 47K 1/10W	1
D906	J2242510011X	D SCHOTTKY RB501V-	1	R944	J3024103120X	RES CHIP 10K 1/10W	1
D906	J2244010104X	DIODE CHIP 1SS355	1	R945	J3024000120X	RES 0 OHM 1/10W J	1
D907	J2242510011X	D SCHOTTKY RB501V-	1	R945	J3024122120X	RES CHIP 1K2 1/10W	1

Ref. Designator	Part Number	Description	Qty	Ref. Designator	Part Number	Description	Qty
R946	J3024221120X	R-CHIP 220 2012J	1	C817	J3470147031X	CE SG 47U 16V M	1
R947	J3024681120X	RES CHIP 680 1/10W	1	C818	J3470147031X	CE SG 47U 16V M	1
R948	J3024103120X	RES CHIP 10K 1/10W	1	C819L	J3470947030X	CE 47U 16V	1
R949	J3024822120X	R-CHIP 8K2 1/10W J	1	C819R	J3470947030X	CE 47U 16V	1
R951	J3024181120X	RES CHIP 180 1/10W	1	C821L	J3470133111X	CE 330U 6V3 M 6.3*	1
R952	J3024181120X	RES CHIP 180 1/10W	1	C821R	J3470133111X	CE 330U 6V3 M 6.3*	1
R953	J3024181120X	RES CHIP 180 1/10W	1	C824	J3470147031X	CE SG 47U 16V M	1
R954	J3024181120X	RES CHIP 180 1/10W	1	C825	J3470147031X	CE SG 47U 16V M	1
R955	J3024181120X	RES CHIP 180 1/10W	1	C827	J3470147031X	CE SG 47U 16V M	1
R956	J3024181120X	RES CHIP 180 1/10W	1	C832	J3470147031X	CE SG 47U 16V M	1
R957	J3024181120X	RES CHIP 180 1/10W	1	C834	J3470147131X	CE 470U 16V 8*11.5	1
R958	J3024181120X	RES CHIP 180 1/10W	1	C835	J3470147131X	CE 470U 16V 8*11.5	1
R959	J3024181120X	RES CHIP 180 1/10W	1	C855	J3470122131X	CE SG 220U 16V M	1
R960	J3024181120X	RES CHIP 180 1/10W	1	C856	J3470122131X	CE SG 220U 16V M	1
R961	J3024101120X	RES CHIP 100 1/10W	1	C802A	J3515821170X	CC/CHIP 820P 50V J	1
R961	J3024181120X	RES CHIP 180 1/10W	1	C802C	J3515821170X	CC/CHIP 820P 50V J	1
R962	J3024181120X	RES CHIP 180 1/10W	1	C802N	J3515821170X	CC/CHIP 820P 50V J	1
R963	J3024181120X	RES CHIP 180 1/10W	1	C802P	J3515821170X	CC/CHIP 820P 50V J	1
R964	J3024103120X	RES CHIP 10K 1/10W	1	C803A	J3515821170X	CC/CHIP 820P 50V J	1
R964	J3024181120X	RES CHIP 180 1/10W	1	C803C	J3515821170X	CC/CHIP 820P 50V J	1
R965	J3024181120X	RES CHIP 180 1/10W	1	C803N	J3515821170X	CC/CHIP 820P 50V J	1
R965	J3024473120X	RES CHIP 47K 1/10W	1	C803P	J3515821170X	CC/CHIP 820P 50V J	1
R966	J3024181120X	RES CHIP 180 1/10W	1	C804L	J3515821170X	CC/CHIP 820P 50V J	1
R967	J3024181120X	RES CHIP 180 1/10W	1	C804R	J3515821170X	CC/CHIP 820P 50V J	1
R968	J3024181120X	RES CHIP 180 1/10W	1	C805L	J3515821170X	CC/CHIP 820P 50V J	1
R968	J3024220120X	RES CHIP 22 1/10W	1	C805R	J3515821170X	CC/CHIP 820P 50V J	1
R970	J3024102120X	RES CHIP 1K 1/10W	1	C807	J3525104540X	CC/CHIP 0.1U 25V Z	1
R972	J3024102120X	RES CHIP 1K 1/10W	1	C808	J3525104540X	CC/CHIP 0.1U 25V Z	1
R973	J3024102120X	RES CHIP 1K 1/10W	1	C809	J3525104540X	CC/CHIP 0.1U 25V Z	1
R974	J3024332120X	RES CHIP 3K3 1/10W	1	C811	J3525104540X	CC/CHIP 0.1U 25V Z	1
R975	J3024332120X	RES CHIP 3K3 1/10W	1	C813	J3525104540X	CC/CHIP 0.1U 25V Z	1
R976	J3024332120X	RES CHIP 3K3 1/10W	1	C814	J3525104540X	CC/CHIP 0.1U 25V Z	1
R983	J2244010104X	DIODE CHIP 1SS355	1	C820L	J3515471170X	C-CHIP 2012SL 470P	1
R984	J3024271120X	R-CHIP 270 1/10W J	1	C820R	J3515471170X	C-CHIP 2012SL 470P	1
R985	J3024103120X	RES CHIP 10K 1/10W	1	C822	J3525104540X	CC/CHIP 0.1U 25V Z	1
R986	J3024391120X	R-CHIP 390 2012J	1	C823	J3525104540X	CC/CHIP 0.1U 25V Z	1
R987	J3024473120X	RES CHIP 47K 1/10W	1	C826	J3525104540X	CC/CHIP 0.1U 25V Z	1
OUTPUT PCB (120V)				C828	J3525104540X	CC/CHIP 0.1U 25V Z	1
CN801	J4350009913X	CNT 3P 900 2.0#26	1	C833	J3525104540X	CC/CHIP 0.1U 25V Z	1
CN802	J4350009903X	CNT 10P 200 2.0 #2	1	C836	J3525104540X	CC/CHIP 0.1U 25V Z	1
CP203	J4422002127X	FPC ST 1.0 21P	1	C837	J3525104540X	CC/CHIP 0.1U 25V Z	1
CP205	J4422001527X	FPC ST 1.0 15P	1	C838	J3525104540X	CC/CHIP 0.1U 25V Z	1
CP801	J4420030340X	CNT PLUG 2.0 ST 3P	1	C839	J3525104540X	CC/CHIP 0.1U 25V Z	1
F801L	J3927001001X	EMI FILTER TU20MT	1	C840	J3525104540X	CC/CHIP 0.1U 25V Z	1
F801R	J3927001001X	EMI FILTER TU20MT	1	C841	J3525104540X	CC/CHIP 0.1U 25V Z	1
IC806	J2123829001X	FIBER OPT GP1F32T	1	C842	J3525104540X	CC/CHIP 0.1U 25V Z	1
JK803	J44303000200	JACK RCA 3P RBG	1	C843	J3525104540X	CC/CHIP 0.1U 25V Z	1
JK804	J44312000100	JACK RCA+S GND CAP	1	C844	J3525104540X	CC/CHIP 0.1U 25V Z	1
JK806	J44302000600	JACK RCA 2P, JE020	1	C845	J3525104540X	CC/CHIP 0.1U 25V Z	1
JK807	J44301000100	JACK RCA 1P BK GND	1	C846	J3525104540X	CC/CHIP 0.1U 25V Z	1
Q809	J2021200002X	TR PNP DTA114YS	1	C848L	J3515101270X	CC/CHIP 100P 50V	1
Q810L	J2021060001X	TR NPN KTD1302 B	1	C848R	J3515101270X	CC/CHIP 100P 50V	1
Q810R	J2021060001X	TR NPN KTD1302 B	1	C850	J3525104540X	CC/CHIP 0.1U 25V Z	1
R883	J3003222220X	RES CF 2K2 1/8W J	1	C851	J3525104540X	CC/CHIP 0.1U 25V Z	1
R884	J3003222220X	RES CF 2K2 1/8W J	1	C853	J3525104540X	CC/CHIP 0.1U 25V Z	1
TS801	J2831000014X	PULSE TRANS DAP-99	1	C857	J3515101270X	CC/CHIP 100P 50V J	1
TS801	J2831020105X	PULSE TRANS EP-7 2	1	C858	J3515101270X	CC/CHIP 100P 50V J	1
C801A	J3470947030X	CE 47U 16V	1	C859	J3515101270X	CC/CHIP 100P 50V J	1
C801C	J3470947030X	CE 47U 16V	1	C860	J3515101270X	CC/CHIP 100P 50V J	1
C801N	J3470947030X	CE 47U 16V	1	C861	J3515101270X	CC/CHIP 100P 50V J	1
C801P	J3470947030X	CE 47U 16V	1	C862	J3515101270X	CC/CHIP 100P 50V J	1
C806L	J3470947030X	CE 47U 16V	1	C863	J3515150270X	CC/CHIP 15P 50V	1
C806R	J3470947030X	CE 47U 16V	1	C864	J3515150270X	CC/CHIP 15P 50V	1
C810	J3470147031X	CE SG 47U 16V M	1	D801	J2244010104X	DIODE CHIP 1SS355	1
C812	J3470147031X	CE SG 47U 16V M	1	D802	J2242451514X	D-CHIP ZNR5V1B0.2W	1
C815	J3470147031X	CE SG 47U 16V M	1	D803	J2242451514X	D-CHIP ZNR5V1B0.2W	1
C816	J3470147031X	CE SG 47U 16V M	1	D804	J2242468514X	D-ZENER 0.2W 6.8V	1
				D805	J2242468514X	D-ZENER 0.2W 6.8V	1
				D807	J2242451514X	D-CHIP ZNR5V1B0.2W	1

Ref. Designator	Part Number	Description	Qty	Ref. Designator	Part Number	Description	Qty
D808	J2242451514X	D-CHIP ZNR5V1B0.2W	1	Q805	J2041220102X	TR NPN DTC114YKA	1
D809	J2242468514X	D-ZENER 0.2W 6.8V	1	Q806	J2041220102X	TR NPN DTC114YKA	1
D810	J2242468514X	D-ZENER 0.2W 6.8V	1	Q807	J2041220102X	TR NPN DTC114YKA	1
D811	J2242468514X	D-ZENER 0.2W 6.8V	1	Q808L	J2041220302X	TR DTC323TK SMT3	1
D812	J2242468514X	D-ZENER 0.2W 6.8V	1	Q808R	J2041220302X	TR DTC323TK SMT3	1
D813	J2242468514X	D-ZENER 0.2W 6.8V	1	Q809	J20412200102X	TR PNP DTA114YKA	1
D814	J2242468514X	D-ZENER 0.2W 6.8V	1	Q810L	J2041220302X	TR DTC323TK SMT3	1
D819	J2244010104X	DIODE CHIP 1SS355	1	Q810R	J2041220302X	TR DTC323TK SMT3	1
D821	J2242422514X	D-ZEN CHIP UDZ2.2B	1	R801A	J3024473120X	RES CHIP 47K 1/10W	1
IC801	J2110004003X	IC OPAMP BA4560F	1	R801C	J3024473120X	RES CHIP 47K 1/10W	1
IC801	J2110012003X	IC OP AMP NJM5532M	1	R801N	J3024473120X	RES CHIP 47K 1/10W	1
IC802	J2110004003X	IC OPAMP BA4560F	1	R801P	J3024473120X	RES CHIP 47K 1/10W	1
IC802	J2110012003X	IC OP AMP NJM5532M	1	R802A	J3024342175X	RES 3K4 1/10 1% F	1
IC803	J2110004003X	IC OPAMP BA4560F	1	R802C	J3024342175X	RES 3K4 1/10 1% F	1
IC803	J2110012003X	IC OP AMP NJM5532M	1	R802N	J3024342175X	RES 3K4 1/10 1% F	1
IC804	J2110012005X	IC AMP NJM4556AM D	1	R802P	J3024342175X	RES 3K4 1/10 1% F	1
IC805	J2110007001X	IC TSH95D VIDEO	1	R803A	J3024342175X	RES 3K4 1/10 1% F	1
IC807	J2115206008X	IC TC7WU04FU	1	R803C	J3024342175X	RES 3K4 1/10 1% F	1
IC808	J2115206008X	IC TC7WU04FU	1	R803N	J3024342175X	RES 3K4 1/10 1% F	1
J801	J3024000120X	RES 0 OHM 1/10W J	1	R803P	J3024342175X	RES 3K4 1/10 1% F	1
J802	J3024000120X	RES 0 OHM 1/10W J	1	R804A	J3024392120X	RES CHIP 3K9 1/10W	1
J803	J3024000120X	RES 0 OHM 1/10W J	1	R804C	J3024392120X	RES CHIP 3K9 1/10W 1	1
J804	J3024000120X	RES 0 OHM 1/10W J	1	R804N	J3024392120X	RES CHIP 3K9 1/10W 1	1
J808	J3024000120X	RES 0 OHM 1/10W J	1	R804P	J3024392120X	RES CHIP 3K9 1/10W	1
J809	J3024000120X	RES 0 OHM 1/10W J	1	R805A	J3024222120X	RES CHIP 2K2 1/10W 1	1
J813	J3024000120X	RES 0 OHM 1/10W J	1	R805C	J3024222120X	RES CHIP 2K2 1/10W 1	1
J814	J3024000120X	RES 0 OHM 1/10W J	1	R805N	J3024222120X	RES CHIP 2K2 1/10W 1	1
J818	J3024000120X	RES 0 OHM 1/10W J	1	R805P	J3024222120X	RES CHIP 2K2 1/10W	1
J819	J3024000120X	RES 0 OHM 1/10W J	1	R807A	J3024122120X	RES CHIP 1K2 1/10W	1
J836	J3024000120X	RES 0 OHM 1/10W J	1	R807C	J3024122120X	RES CHIP 1K2 1/10W	1
J837	J3024000120X	RES 0 OHM 1/10W J	1	R807N	J3024122120X	RES CHIP 1K2 1/10W	1
L801	J2631300011X	BEAD 120XOHM	1	R807P	J3024122120X	RES CHIP 1K2 1/10W	1
L802	J2631300011X	BEAD 120XOHM	1	R808L	J3024911120X	RES CHIP 910 1/10W	1
L803	J2631300011X	BEAD 120XOHM	1	R808R	J3024911120X	RES CHIP 910 1/10W	1
L804	J2631300011X	BEAD 120XOHM	1	R809L	J3024911120X	RES CHIP 910 1/10W	1
L805	J2631300011X	BEAD 120XOHM	1	R809R	J3024911120X	RES CHIP 910 1/10W	1
L806	J2631300011X	BEAD 120XOHM	1	R810L	J3024473120X	RES CHIP 47K 1/10W	1
L807	J2611022011X	COIL CHIP ELJFC220	1	R810R	J3024473120X	RES CHIP 47K 1/10W	1
L808	J2611022011X	COIL CHIP ELJFC220	1	R811L	J3024102120X	RES CHIP 1K 1/10W	1
L809	J2631300011X	BEAD 120XOHM	1	R811R	J3024102120X	RES CHIP 1K 1/10W	1
L810	J3024000120X	RES 0 OHM 1/10W J	1	R812L	J3024102120X	RES CHIP 1K 1/10W	1
L811	J3024000120X	RES 0 OHM 1/10W J	1	R812R	J3024102120X	RES CHIP 1K 1/10W	1
L812	J2631300011X	BEAD 120XOHM	1	R813	J3024100120X	R-CHIP 10 2012J	1
L813	J2631300011X	BEAD 120XOHM	1	R814	J3024100120X	R-CHIP 10 2012J	1
L814	J2611022011X	COIL CHIP ELJFC220	1	R815	J3024221120X	R-CHIP 220 2012J	1
L815	J2611022011X	COIL CHIP ELJFC220	1	R816L	J3024102120X	RES CHIP 1K 1/10W	1
L816	J2611022011X	COIL CHIP ELJFC220	1	R816R	J3024102120X	RES CHIP 1K 1/10W	1
L817	J2611022011X	COIL CHIP ELJFC220	1	R817L	J3024473120X	RES CHIP 47K 1/10W	1
L818	J3024000120X	RES 0 OHM 1/10W J	1	R817R	J3024473120X	RES CHIP 47K 1/10W	1
L819	J3024000120X	RES 0 OHM 1/10W J	1	R818L	J3024272120X	RES CHIP 2K7 1/10W	1
L820	J2611022011X	COIL CHIP ELJFC220	1	R818R	J3024272120X	RES CHIP 2K7 1/10W	1
L821	J2611022011X	COIL CHIP ELJFC220	1	R819L	J3024332120X	RES CHIP 3K3 1/10W	1
L822	J2611022011X	COIL CHIP ELJFC220	1	R819R	J3024332120X	RES CHIP 3K3 1/10W	1
L823	J2611022011X	COIL CHIP ELJFC220	1	R820L	J3024750120X	RES CHIP 75 1/10W	1
L824	J2611022011X	COIL CHIP ELJFC220	1	R820R	J3024750120X	RES CHIP 75 1/10W	1
L825	J2611022011X	COIL CHIP ELJFC220	1	R821	J3024221120X	R-CHIP 220 2012J	1
L826	J2611022011X	COIL CHIP ELJFC220	1	R822	J3024221120X	R-CHIP 220 2012J	1
L827	J3024000120X	RES 0 OHM 1/10W J	1	R823	J3024221120X	R-CHIP 220 2012J	1
L828	J2611022011X	COIL CHIP ELJFC220	1	R824	J3024221120X	R-CHIP 220 2012J	1
L829	J3024000120X	RES 0 OHM 1/10W J	1	R825	J3024221120X	R-CHIP 220 2012J	1
L830	J3024000120X	RES 0 OHM 1/10W J	1	R826	J3024221120X	R-CHIP 220 2012J	1
L831	J3024000120X	RES 0 OHM 1/10W J	1	R830	J3024390120X	RES 39R 1/10	1
L832	J3024000120X	RES 0 OHM 1/10W J	1	R831	J3024390120X	RES 39R 1/10	1
L833	J3024000120X	RES 0 OHM 1/10W J	1	R832	J3024390120X	RES 39R 1/10	1
Q801L	J2041220302X	TR DTC323TK SMT3	1	R833	J3024390120X	RES 39R 1/10	1
Q801R	J2041220302X	TR DTC323TK SMT3	1	R836	J3024100120X	R-CHIP 10 2012J	1
Q802	J2041200102X	TR PNP DTA114YKA	1	R837	J3024100120X	R-CHIP 10 2012J	1
Q803	J2041200102X	TR PNP DTA114YKA	1	R838	J30245621175	RES 562R 1/10 1% F	1
Q804	J2041220102X	TR NPN DTC114YKA	1	R839	J30246651175	RES 665R 1/10 1% F	1

Ref. Designator	Part Number	Description	Qty	Ref. Designator	Part Number	Description	Qty
R840	J30243921175	RES 392R 1/10 1% F	1	C855	J3470110071X	CE SG 10U 50V M	1
R841	J3024342175X	RES 3K4 1/10 1% F	1	C863	J3470110131X	CE SG 100U 16V M	1
R842	J30245621175	RES 562R 1/10 1% F	1	C864	J3470110131X	CE SG 100U 16V M	1
R843	J30241652175	RES CHIP 1K65 1% F	1	C866	J3470147031X	CE SG 47U 16V M	1
R844	J30248451175	RES 845R 1/10 1% F	1	C891N	J3470947030X	CE 47U 16V	1
R845	J30243921175	RES 392R 1/10 1% F	1	C891P	J3470947030X	CE 47U 16V	1
R846	J30243921175	RES 392R 1/10 1% F	1	C912	J3513561170X	CC/DISC SL 560P50V	1
R847	J30243921175	RES 392R 1/10 1% F	1	C913	J3513561170X	CC/DISC SL 560P50V	1
R848	J3024390120X	RES 39R 1/10 J	1	C914	J3523104540X	CAP C/D/T .1U 25V	1
R849	J3024390120X	RES 39R 1/10 J	1	C914L	J3470647931X	CE 4.7UF 16V M	1
R850	J3024390120X	RES 39R 1/10 J	1	C914R	J3470647931X	CE 4.7UF 16V M	1
R851	J3024390120X	RES 39R 1/10 J	1	C916L	J3470947030X	CE 47U 16V	1
R852	J3024390120X	RES 39R 1/10 J	1	C916R	J3470947030X	CE 47U 16V	1
R853	J3024390120X	RES 39R 1/10 J	1	C917L	J3470647931X	CE 4.7UF 16V M	1
R856	J3024101120X	RES CHIP 100 1/10W	1	C917R	J3470647931X	CE 4.7UF 16V M	1
R857	J3024101120X	RES CHIP 100 1/10W	1	L806	J3927001001X	EMI FILTER TU20MT	1
R858	J3024100120X	R-CHIP 10 2012J	1	L807	J3927001001X	EMI FILTER TU20MT	1
R859	J3024101120X	RES CHIP 100 1/10W	1	L808	J3927001001X	EMI FILTER TU20MT	1
R860	J3024181120X	RES CHIP 180 1/10W	1	L809	J3927001001X	EMI FILTER TU20MT	1
R861	J3024100120X	R-CHIP 10 2012J	1	Q910	J2021060001X	TR NPN KTD1302 B	1
R862	J3024750120X	RES CHIP 75 1/10W	1	Q911	J2021060001X	TR NPN KTD1302 B	1
R863	J3024471120X	RES CHIP 470 1/10W	1	Q912	J2021200002X	TR PNP DTA114YS	1
R865	J3024181120X	RES CHIP 180 1/10W	1	R926L	J3003750220X	RES CF 75 1/8 J	1
R867	J3024390120X	RES 39R 1/10 J	1	R926R	J3003750220X	RES CF 75 1/8 J	1
R868	J3024390120X	RES 39R 1/10 J	1	R950	J3003332220X	RES CF 3K3 1/8 J	1
R869	J3024104120X	RES CHIP 100K 1/10	1	R980	J3003332220X	RES CF 3K3 1/8 J	1
R870	J3024104120X	RES CHIP 100K 1/10	1	C802N	J3515821170X	CC/CHIP 820P 50V J	1
R871	J3024470120X	RES CHIP 470 1/10W	1	C802P	J3515821170X	CC/CHIP 820P 50V J	1
R872	J3024471120X	RES CHIP 470 1/10W	1	C803N	J3515821170X	CC/CHIP 820P 50V J	1
R873	J3024331120X	R-CHIP 330 2012J	1	C803P	J3515821170X	CC/CHIP 820P 50V J	1
R874	J3024331120X	R-CHIP 330 2012J	1	C804L	J3515821170X	CC/CHIP 820P 50V J	1
R875	J3024470120X	RES CHIP 47 1/10W	1	C804R	J3515821170X	CC/CHIP 820P 50V J	1
R876	J3024471120X	RES CHIP 470 1/10W	1	C805L	J3515821170X	CC/CHIP 820P 50V J	1
R878	J3024331120X	R-CHIP 330 2012J	1	C805R	J3515821170X	CC/CHIP 820P 50V J	1
R879	J3024331120X	R-CHIP 330 2012J	1	C807	J3525104540X	CC/CHIP 0.1U 25V Z	1
R880	J3024102120X	RES CHIP 1K 1/10W	1	C808	J3525104540X	CC/CHIP 0.1U 25V Z	1
R881	J3024102120X	RES CHIP 1K 1/10W	1	C809	J3525104540X	CC/CHIP 0.1U 25V Z	1
R882	J3024102120X	RES CHIP 1K 1/10W	1	C811	J3525104540X	CC/CHIP 0.1U 25V Z	1
R883	J3024222120X	RES CHIP 2K2 1/10W	1	C813	J3525104540X	CC/CHIP 0.1U 25V Z	1
R884	J3024222120X	RES CHIP 2K2 1/10W	1	C814	J3525104540X	CC/CHIP 0.1U 25V Z	1
OUTPUT PCB (230V)				C819	J3515101270X	CC/CHIP 100P 50V J	1
C801N	J3470947030X	CE 47U 16V	1	C820	J3515101270X	CC/CHIP 100P 50V J	1
C801P	J3470947030X	CE 47U 16V	1	C821	J3515101270X	CC/CHIP 100P 50V J	1
C806L	J3470947030X	CE 47U 16V	1	C826	J3525104540X	CC/CHIP 0.1U 25V Z	1
C806R	J3470947030X	CE 47U 16V	1	C828	J3525104540X	CC/CHIP 0.1U 25V Z	1
C810	J3470147031X	CE SG 47U 16V M	1	C829	J3024000120X	RES 0 OHM 1/10W J	1
C812	J3470147031X	CE SG 47U 16V M	1	C830	J3515680270X	CC/CHIP 68P 2012	1
C815	J3470147031X	CE SG 47U 16V M	1	C833	J3525104540X	CC/CHIP 0.1U 25V Z	1
C816	J3470147031X	CE SG 47U 16V M	1	C836	J3525104540X	CC/CHIP 0.1U 25V Z	1
C817	J3470147031X	CE SG 47U 16V M	1	C837	J3525104540X	CC/CHIP 0.1U 25V Z	1
C818	J3470147031X	CE SG 47U 16V M	1	C838	J3525104540X	CC/CHIP 0.1U 25V Z	1
C822	J3470147131X	CE 470U 16V 8*11.5	1	C839	J3525104540X	CC/CHIP 0.1U 25V Z	1
C823	J3470147131X	CE 470U 16V 8*11.5	1	C840	J3525104540X	CC/CHIP 0.1U 25V Z	1
C824	J3470110971X	CE SG 1U 50V M	1	C841	J3525104540X	CC/CHIP 0.1U 25V Z	1
C825	J3470110971X	CE SG 1U 50V M	1	C843	J3525103170X	CC/CHIP .01U 50V K	1
C827	J3470147031X	CE SG 47U 16V M	1	C844	J3525103170X	CC/CHIP .01U 50V K	1
C832	J3470147031X	CE SG 47U 16V M	1	C845	J3525103170X	CC/CHIP .01U 50V K	1
C834	J3470147131X	CE 470U 16V 8*11.5	1	C848L	J3515101170X	CC 100PF 50V 2012	1
C835	J3470147131X	CE 470U 16V 8*11.5	1	C848R	J3515101170X	CC 100PF 50V 2012	1
C842	J3470110131X	CE SG 100U 16V M	1	C853	J3525104540X	CC/CHIP 0.1U 25V Z	1
C846	J3470147031X	CE SG 47U 16V M	1	C856	J3515221170X	CC/CHIP 220P 50V J	1
C847	J3470110121X	CE SG 100U 10V M	1	C859	J3525104540X	CC/CHIP 0.1U 25V Z	1
C849	J3470110971X	CE SG 1U 50V M	1	C860	J3515101270X	CC/CHIP 100P 50V J	1
C850	J3470110971X	CE SG 1U 50V M	1	C861	J3515101270X	CC/CHIP 100P 50V J	1
C851	J3470110071X	CE SG 10U 50V M	1	C865	J3525104540X	CC/CHIP 0.1U 25V Z	1
C852	J3470110071X	CE SG 10U 50V M	1	C892N	J3515821170X	CC/CHIP 820P 50V J	1
C854	J3470147031X	CE SG 47U 16V M	1	C892P	J3515821170X	CC/CHIP 820P 50V J	1
				C893N	J3515821170X	CC/CHIP 820P 50V J	1
				C893P	J3515821170X	CC/CHIP 820P 50V J	1

Ref. Designator	Part Number	Description	Qty	Ref. Designator	Part Number	Description	Qty
C912R	J3525104540X	CC/CHIP 0.1U 25V Z	1	R801N	J3024473120X	RES CHIP 47K 1/10W	1
C913L	J3515471170X	C-CHIP 2012SL 470P	1	R801P	J3024473120X	RES CHIP 47K 1/10W	1
C913R	J3515471170X	C-CHIP 2012SL 470P	1	R802N	J3024342175X	RES 3K4 1/10 1% F	1
D801	J2242451514X	D-CHIP ZNR5V1B0.2W	1	R802P	J3024342175X	RES 3K4 1/10 1% F	1
D802	J2242451514X	D-CHIP ZNR5V1B0.2W	1	R803N	J3024342175X	RES 3K4 1/10 1% F	1
D803	J2242451514X	D-CHIP ZNR5V1B0.2W	1	R803P	J3024342175X	RES 3K4 1/10 1% F	1
D804	J2242468514X	D-ZENER 0.2W 6.8V	1	R804N	J3024392120X	RES CHIP 3K9 1/10W	1
D805	J2242468514X	D-ZENER 0.2W 6.8V	1	R804P	J3024392120X	RES CHIP 3K9 1/10W	1
D806	J2242451514X	D-CHIP ZNR5V1B0.2W	1	R805N	J3024272120X	RES CHIP 2K7 1/10W	1
D807	J2242451514X	D-CHIP ZNR5V1B0.2W	1	R805P	J3024272120X	RES CHIP 2K7 1/10W	1
D808	J2242451514X	D-CHIP ZNR5V1B0.2W	1	R806	J3024223120X	RES CHIP 22K 1/10W	1
D809	J2242422514X	D-ZEN CHIP UDZ2.2B	1	R807N	J3024122120X	RES CHIP 1K2 1/10W	1
D810	J2242451514X	D-CHIP ZNR5V1B0.2W	1	R807P	J3024122120X	RES CHIP 1K2 1/10W	1
D811	J2242451514X	D-CHIP ZNR5V1B0.2W	1	R808L	J3024911120X	RES CHIP 910 1/10W	1
D812	J2242451514X	D-CHIP ZNR5V1B0.2W	1	R808R	J3024911120X	RES CHIP 910 1/10W	1
D813	J2242451514X	D-CHIP ZNR5V1B0.2W	1	R809L	J3024911120X	RES CHIP 910 1/10W	1
D814	J2244010104X	DIODE CHIP 1SS355	1	R809R	J3024911120X	RES CHIP 910 1/10W	1
D815	J2244010104X	DIODE CHIP 1SS355	1	R810L	J3024473120X	RES CHIP 47K 1/10W	1
D816	J2242451514X	D-CHIP ZNR5V1B0.2W	1	R810R	J3024473120X	RES CHIP 47K 1/10W	1
D817	J2242451514X	D-CHIP ZNR5V1B0.2W	1	R811L	J3024000120X	RES 0 OHM 1/10W J	1
D818	J2244010104X	DIODE CHIP 1SS355	1	R811R	J3024000120X	RES 0 OHM 1/10W J	1
D819	J2244010104X	DIODE CHIP 1SS355	1	R812L	J3024102120X	RES CHIP 1K 1/10W	1
IC801	J2110012003X	IC OP AMP NJM5532M	1	R812R	J3024102120X	RES CHIP 1K 1/10W	1
IC802	J2110012003X	IC OP AMP NJM5532M	1	R813	J3024224120X	RES CHIP 220K 1/10	1
IC803	J2110012003X	IC OP AMP NJM5532M	1	R814	J3024224120X	RES CHIP 220K 1/10	1
IC807	J2115206008X	IC TC7WU04FU	1	R815	J3024331120X	R-CHIP 330 2012J	1
IC808	J2115206008X	IC TC7WU04FU	1	R816	J3024331120X	R-CHIP 330 2012J	1
IC902	J2110012005X	IC AMP NJM4556AM D	1	R817	J3024390120X	RES 39R 1/10 J	1
J802	J3024000120X	RES 0 OHM 1/10W J	1	R818	J3024390120X	RES 39R 1/10 J	1
J803	J3024000120X	RES 0 OHM 1/10W J	1	R819	J3024390120X	RES 39R 1/10 J	1
J808	J3024000120X	RES 0 OHM 1/10W J	1	R820	J3024390120X	RES 39R 1/10 J	1
J809	J3024000120X	RES 0 OHM 1/10W J	1	R821	J3024390120X	RES 39R 1/10 J	1
J810	J3024000120X	RES 0 OHM 1/10W J	1	R822	J3024390120X	RES 39R 1/10 J	1
J811	J3024000120X	RES 0 OHM 1/10W J	1	R824	J3024339120X	RES CHIP 3R3 1/10	1
J816	J3024000120X	RES 0 OHM 1/10W J	1	R825	J3024331120X	R-CHIP 330 2012J	1
J901	J3024000120X	RES 0 OHM 1/10W J	1	R826	J3024101120X	RES CHIP 100 1/10W	1
J902	J3024000120X	RES 0 OHM 1/10W J	1	R827	J3024224120X	RES CHIP 220K 1/10	1
L801	J3024000120X	RES 0 OHM 1/10W J	1	R828	J3024224120X	RES CHIP 220K 1/10	1
L802	J3024000120X	RES 0 OHM 1/10W J	1	R829	J3024103120X	RES CHIP 10K 1/10W	1
L803	J3024000120X	RES 0 OHM 1/10W J	1	R830	J3024470120X	RES CHIP 47 1/10W	1
L804	J3024000120X	RES 0 OHM 1/10W J	1	R831	J3024390120X	RES 39R 1/10 J	1
L805	J3024000120X	RES 0 OHM 1/10W J	1	R832	J3024390120X	RES 39R 1/10 J	1
L811	J2631300011X	BEAD 120XOHM	1	R833	J3024390120X	RES 39R 1/10 J	1
L814	J2611022011X	COIL CHIP ELJFC220	1	R834	J3024103120X	RES CHIP 10K 1/10W	1
L815	J2611022011X	COIL CHIP ELJFC220	1	R835	J3024822120X	R-CHIP 8K2 1/10W J	1
L816	J2611022011X	COIL CHIP ELJFC220	1	R836	J3024101120X	RES CHIP 100 1/10W	1
L817	J2611022011X	COIL CHIP ELJFC220	1	R837	J3024101120X	RES CHIP 100 1/10W	1
L818	J3024000120X	RES 0 OHM 1/10W J	1	R838	J3024123120X	RES CHIP 12K 1/10W	1
L819	J2611022011X	COIL CHIP ELJFC220	1	R839	J3024750120X	RES CHIP 75 1/10W	1
L820	J3024000120X	RES 0 OHM 1/10W J	1	R840	J3024102120X	RES CHIP 1K 1/10W	1
L902	J2611022011X	COIL CHIP ELJFC220	1	R841	J3024102120X	RES CHIP 1K 1/10W	1
L903	J2611022011X	COIL CHIP ELJFC220	1	R842	J3024102120X	RES CHIP 1K 1/10W	1
Q801L	J2041220302X	TR DTC323TK SMT3	1	R843	J3024473120X	RES CHIP 47K 1/10W	1
Q801R	J2041220302X	TR DTC323TK SMT3	1	R844	J3024473120X	RES CHIP 47K 1/10W	1
Q802	J2041200101X	TR PNP KRA107S	1	R845	J3024123120X	RES CHIP 12K 1/10W	1
Q803	J2041200101X	TR PNP KRA107S	1	R846	J3024123120X	RES CHIP 12K 1/10W	1
Q804	J2041220201X	TR CHIP NPN KRC107	1	R847	J3024101120X	RES CHIP 100 1/10W	1
Q805	J2041200201X	TR NPN KRC107S	1	R848	J3024100120X	R-CHIP 10 2012J	1
Q806	J2041020201X	TR KTC3875S SOT23	1	R849	J3024100120X	R-CHIP 10 2012J	1
Q807	J2041220201X	TR CHIP NPN KRC107	1	R850	J3024222120X	RES CHIP 2K2 1/10W	1
Q808	J2041000301X	TR KTA1504S SOT23	1	R851	J3024221120X	R-CHIP 220 2012J	1
Q809	J2041220201X	TR CHIP NPN KRC107	1	R852	J3024102120X	RES CHIP 1K 1/10W	1
Q810	J2041220302X	TR DTC323TK SMT3	1	R853	J3024181120X	RES CHIP 180 1/10W	1
Q811	J2041220201X	TR CHIP NPN KRC107	1	R854	J3024221120X	R-CHIP 220 2012J	1
Q812	J2041220201X	TR CHIP NPN KRC107	1	R856	J3024101120X	RES CHIP 100 1/10W	1
Q813	J2041220302X	TR DTC323TK SMT3	1	R857	J3024101120X	RES CHIP 100 1/10W	1
Q814	J2041220201X	TR CHIP NPN KRC107	1	R858	J3024100120X	R-CHIP 10 2012J	1
Q815	J2041020201X	TR KTC3875S SOT23	1	R859	J3024101120X	RES CHIP 100 1/10W	1
R001	J3024680120X	R-CHIP 68 1/10W J	1	R860	J3024271120X	R-CHIP 270 1/10W J	1

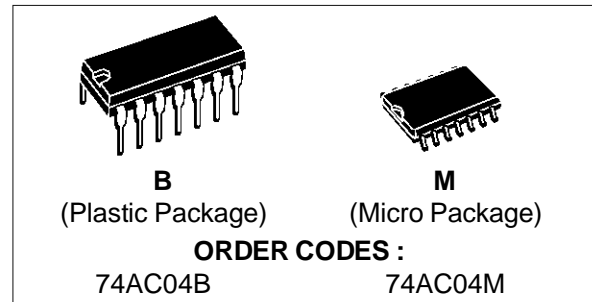
Ref. Designator	Part Number	Description	Qty	Ref. Designator	Part Number	Description	Qty
R861	J3024100120X	R-CHIP 10 2012J	1				
R862	J3024000120X	RES 0 OHM 1/10W J	1				
R863	J3024751120X	R-CHIP 750 2012J	1				
R864	J3024331120X	R-CHIP 330 2012J	1				
R867	J3024470120X	RES CHIP 47 1/10W	1				
R868	J3024330120X	RES CHIP 33 1/10W	1				
R876N	J3024473120X	RES CHIP 47K 1/10W	1				
R876P	J3024473120X	RES CHIP 47K 1/10W	1				
R877N	J3024392120X	RES CHIP 3K9 1/10W	1				
R877P	J3024392120X	RES CHIP 3K9 1/10W	1				
R878N	J3024342175X	RES 3K4 1/10 1% F	1				
R878P	J3024342175X	RES 3K4 1/10 1% F	1				
R879N	J3024342175X	RES 3K4 1/10 1% F	1				
R879P	J3024342175X	RES 3K4 1/10 1% F	1				
R880N	J3024272120X	RES CHIP 2K7 1/10W	1				
R880P	J3024272120X	RES CHIP 2K7 1/10W	1				
R881N	J3024122120X	RES CHIP 1K2 1/10W	1				
R881P	J3024122120X	RES CHIP 1K2 1/10W	1				
R882	J3024102120X	RES CHIP 1K 1/10W	1				
R919L	J3024102120X	RES CHIP 1K 1/10W	1				
R919R	J3024102120X	RES CHIP 1K 1/10W	1				
R920L	J3024473120X	RES CHIP 47K 1/10W	1				
R920R	J3024473120X	RES CHIP 47K 1/10W	1				
R924L	J3024272120X	RES CHIP 2K7 1/10W	1				
R924R	J3024272120X	RES CHIP 2K7 1/10W	1				
R925L	J3024332120X	RES CHIP 3K3 1/10W	1				
R925R	J3024332120X	RES CHIP 3K3 1/10W	1				
R927	J3024100120X	R-CHIP 10 2012J	1				
R928	J3024100120X	R-CHIP 10 2012J	1				
R981	J3024822120X	R-CHIP 8K2 1/10W J	1				
R982	J3024203120X	RES CHIP 20K 1/10W	1				

HEX INVERTER

- HIGH SPEED: $t_{PD} = 4 \text{ ns}$ (TYP.) at $V_{CC} = 5\text{V}$
- LOW POWER DISSIPATION:
 $I_{CC} = 4 \mu\text{A}$ (MAX.) at $T_A = 25^\circ\text{C}$
- HIGH NOISE IMMUNITY:
 $V_{NIH} = V_{NIL} = 28\% V_{CC}$ (MIN.)
- 50Ω TRANSMISSION LINE DRIVING CAPABILITY
- SYMMETRICAL OUTPUT IMPEDANCE:
 $|I_{OH}| = I_{OL} = 24 \text{ mA}$ (MIN)
- BALANCED PROPAGATION DELAYS:
 $t_{PLH} \cong t_{PHL}$
- OPERATING VOLTAGE RANGE:
 V_{CC} (OPR) = 2V to 6V
- PIN AND FUNCTION COMPATIBLE WITH 74 SERIES 04
- IMPROVED LATCH-UP IMMUNITY

DESCRIPTION

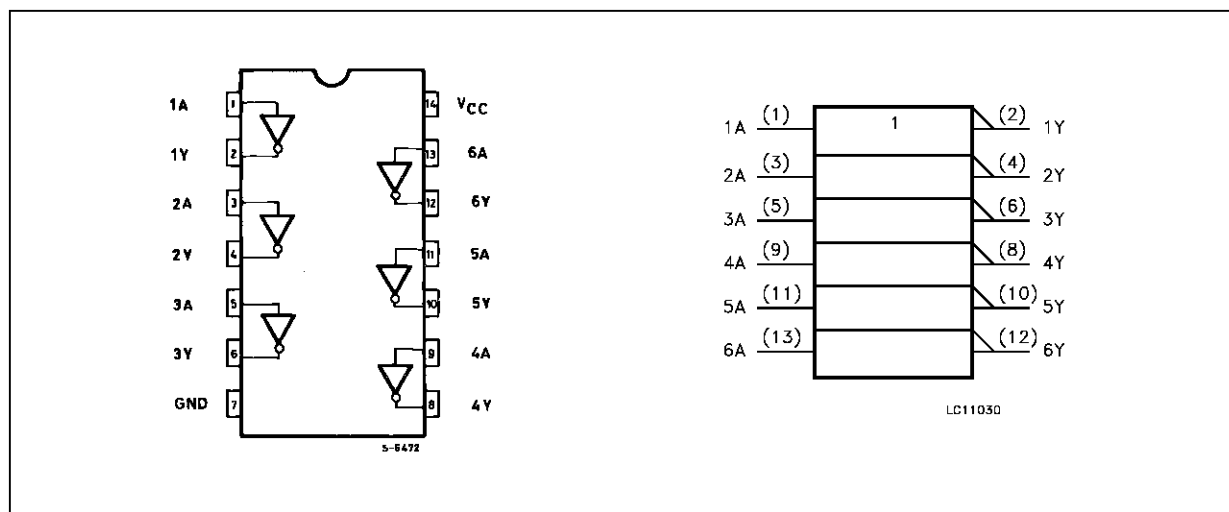
The AC04 is an advanced high-speed CMOS HEX INVERTER fabricated with sub-micron silicon gate and double-layer metal wiring C²MOS



technology. It is ideal for low power applications maintaining high speed operation similar to equivalent Bipolar Schottky TTL.

The internal circuit is composed of 3 stages including buffer output, which enables high noise immunity and stable output.

All inputs and outputs are equipped with protection circuits against static discharge, giving them 2KV ESD immunity and transient excess voltage.

PIN CONNECTION AND IEC LOGIC SYMBOLS



NJM4560

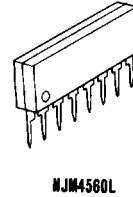
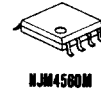
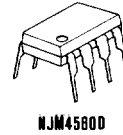
DUAL OPERATIONAL AMPLIFIER



■ GENERAL DESCRIPTION

The NJM4560 integrated circuit is a high-gain, wide-bandwidth, dual operational amplifier capable of driving 20V peak-to-peak into 400 Ω loads. The NJM4560 combines many of the features of the NJM4558 as well as providing the capability of wider bandwidth, and higher slew rate make the NJM4560 ideal for active filters, data and telecommunications, and many instrumentation applications. The availability of the NJM4560 in the surface mounted micro-package allows the NJM4560 to be used in critical applications requiring very high packing densities.

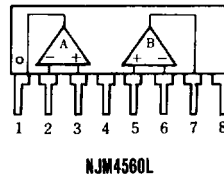
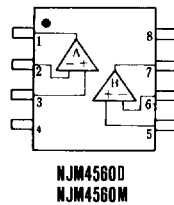
■ PACKAGE OUTLINE



■ FEATURES

- Operating Voltage (±4V ~ ±18V)
- Wide Gain Bandwidth Product (10MHz typ.)
- Slew Rate (4V/μs typ.)
- Package Outline DIP8, DMP8, SIP8
- Bipolar Technology

■ PIN CONFIGURATION

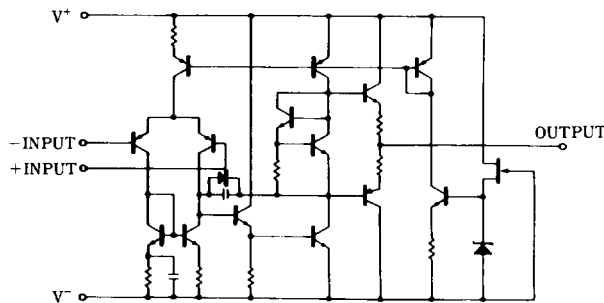


PIN FUNCTION

1. A OUTPUT
2. A-INPUT
3. A+INPUT
4. V⁻
5. B+INPUT
6. B-INPUT
7. B OUTPUT
8. V⁺

4

■ EQUIVALENT CIRCUIT (1/2 Shown)





NJM4556A

DUAL HIGH CURRENT OPERATIONAL AMPLIFIER

■ GENERAL DESCRIPTION

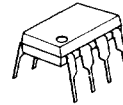
The NJM4556A integrated circuit is a high-gain, high output current dual operational amplifier capable of driving $\pm 70\text{mA}$ into $150\ \Omega$ loads ($\pm 10.5\text{V}$ output voltage), and operating low supply voltage ($V^+/V^- = \pm 2\text{V} \sim$).

The NJM4556A combines many of the features of the popular NJM4558 as well as having the capability of driving $150\ \Omega$ loads. In addition, the wide band-width, low noise, high slew rate and low distortion of the NJM4556A make it ideal for many audio, telecommunications and instrumentation applications.

■ FEATURES

- Operating Voltage ($\pm 2\text{V} \sim \pm 18\text{V}$)
- High Output Current ($I_o = 70\text{mA}$)
- Slew Rate ($3\text{V}/\mu\text{s}$ typ.)
- Gain Band Width Product (8MHz typ.)
- Package Outline DIP8, DMP8, SIP8, SSOP8
- Bipolar Technology

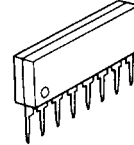
■ PACKAGE OUTLINE



NJM4556AD



NJM4556AM

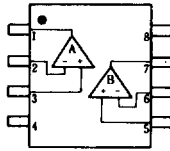


NJM4556AL

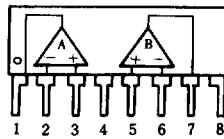


NJM4556AV

■ PIN CONFIGURATION



NJM4556AD
NJM4556AM
NJM4556AV



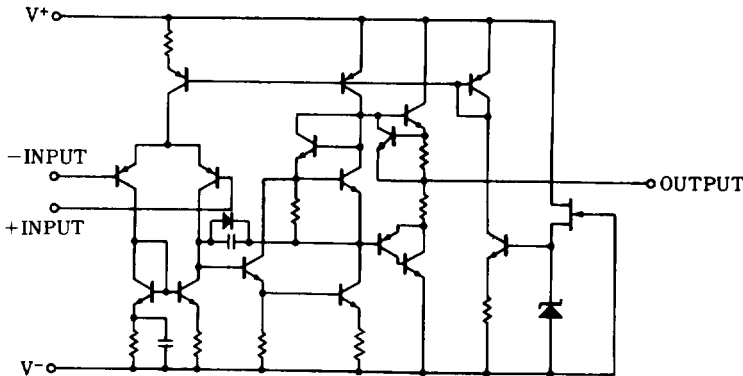
NJM4556AL

PIN FUNCTION

1. A OUTPUT
2. A-INPUT
3. A+INPUT
4. V-
5. B+INPUT
6. B-INPUT
7. B OUTPUT
8. V+

4

■ EQUIVALENT CIRCUIT (1/2 Shown)





CONFIDENTIAL

STi5505 (Rev. BB)

DVD BACKEND DECODER WITH INTEGRATED HOST PROCESSOR

PRODUCT PREVIEW

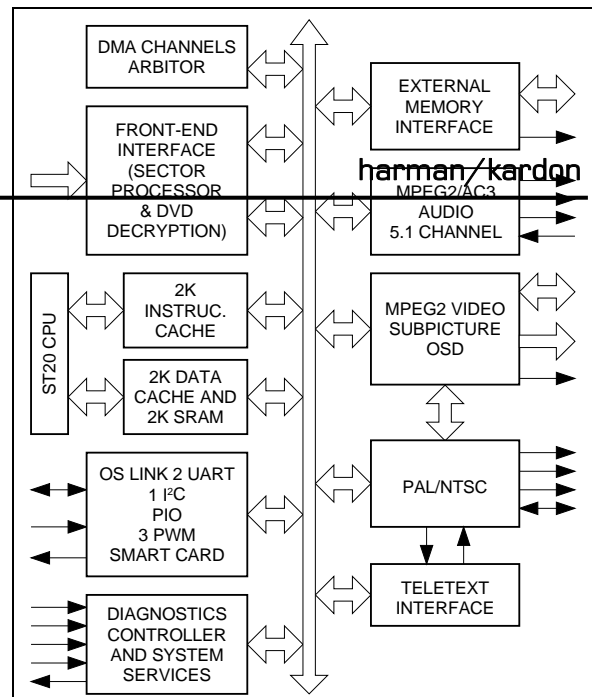
- INTEGRATED 32-BIT RISC HOST CPU
 - 2KBYTES INSTRUCTION CACHE, 2KBYTES DATA CACHE/SRAM
 - 50K DHRYSTONES/SEC (2.1) - 50MHz
- VIDEO DECODER
 - FULLY SUPPORTS MPEG-2 MP@ML
 - MEMORY REDUCTION - PAL IN 12MBITS
- SUBPICTURE DECODER
- HIGH PERFORMANCE ON-SCREEN DISPLAY
- AUDIO DECODER
 - 5.1 CHANNEL DOLBY® DIGITAL / MPEG-2 MULTI CHANNEL DECODING
 - DOWNMIX TO STEREO OR TO DOLBY PRO-LOGIC COMPATIBLE OUTPUTS FOR MPEG-2 AND DOLBY DIGITAL
 - IEC6958 - IEC61937 COMPATIBLE OUTPUT
 - LPCM (DVD) MODE SUPPORTED
- 5 CHANNELS OUTPUT

DESCRIPTION

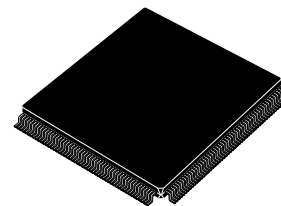
The STi5505 provides a very highly integrated back-end solution for DVD and combo DVD-DVB (Set Top Box) applications. The STi5505 incorporates a host CPU which handles both general application (DVD navigation, CD-DA, VCD, DVB) and drivers of the different embedded peripherals (audio/video, subpicture decoders, OSD, PAL/NTSC encoder...).

The STi5505 offers one of the best cost-effective (memory savings, internal peripherals availability) solution to DVD-DVB applications with rapid time to market (Reference design, DVD-DVB Software Toolkit).

Figure 1 : General Block Diagram



- PAL/NTSC ENCODER
 - MACROVISION® 7.01/6.1 COMPATIBLE
 - TELETEXT, AND CLOSED CAPTION
- HIGH PERFORMANCE SDRAM INTERFACE
- PROGRAMMABLE MEMORY INTERFACE FOR DRAM, ROM, PERIPHERALS ETC.
- FRONT-END CHANNEL IC INTERFACE
 - DVD, VCD AND CD-DA COMPATIBLE
 - DSS - DVB BISTREAMS
 - SERIAL AND PARALLEL INTERFACES
 - HARDWARE SECTOR FILTERING
 - INTEGRATED CSS DECRYPTION AND TRACK BUFFER
- INTEGRATED PERIPHERALS
 - 2 UARTS, 1 I²C CONTROLLER, 3 PWM OUTPUTS, 3 TIMERS, 3 CAPTURE TIMERS, SMART CARD
 - 34 BITS OF PROGRAMMABLE I/O
 - OS LINK
- PROFESSIONAL TOOLSET SUPPORT
 - ANSI C COMPILER AND LIBRARIES
 - OPERATING SYSTEMS SUPPORT
 - ADVANCED DEBUGGING TOOLS
- 208 PIN PQFP PACKAGE



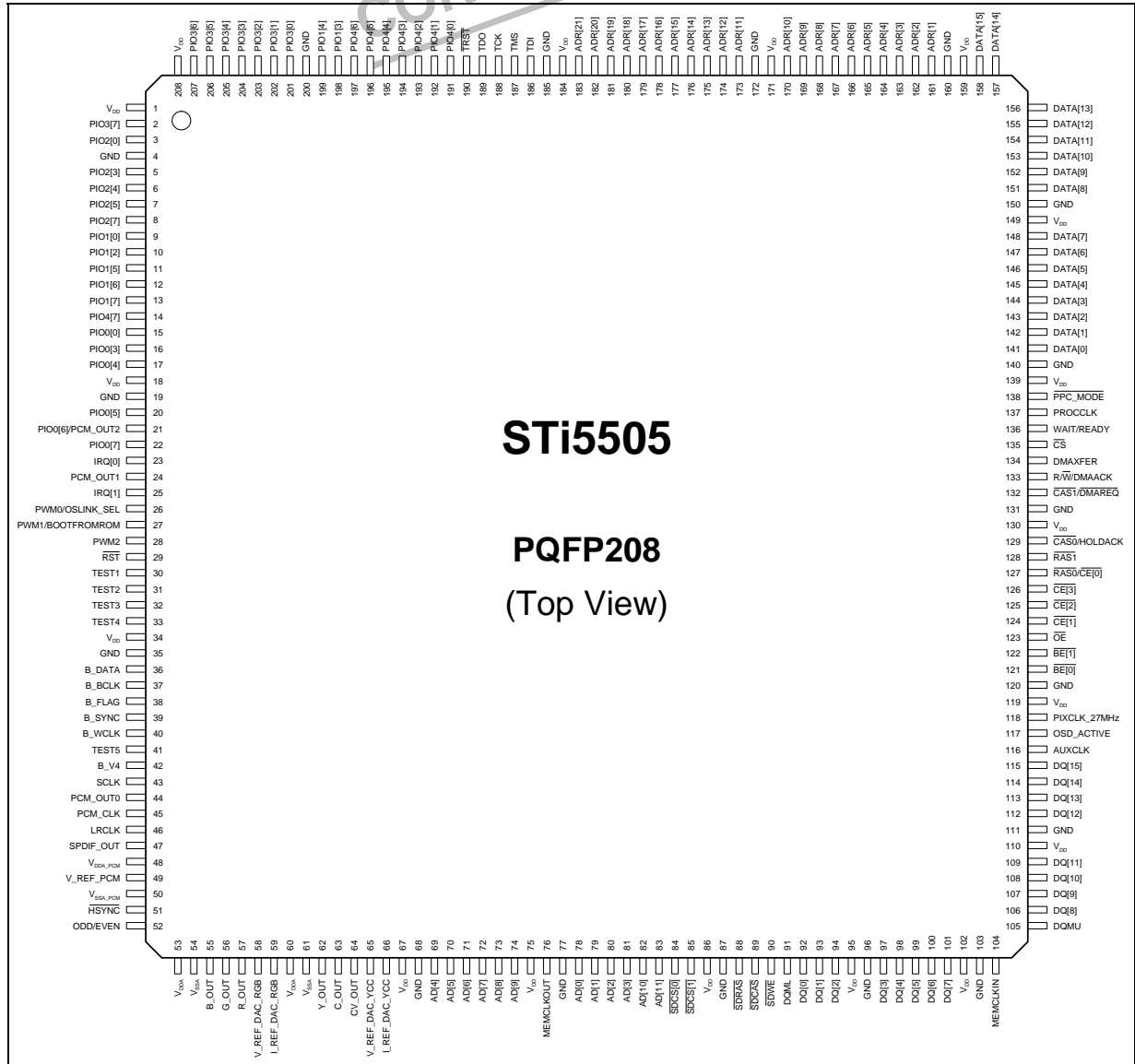
PQFP208 (Plastic Quad Flat Pack)
ORDER CODE : STi5505ACV

STi5505 (Rev. BB)

II - PIN DESCRIPTION

II.1 - Pin Connections

CONFIDENTIAL



STi5505 (Rev. BB)

II - PIN DESCRIPTION (continued)

II.2 - Pin List

Pin	Name	Type	Function
SUPPLIES			
1, 18, 34, 67, 75, 86, 95, 102, 110, 119, 130, 139, 149, 159, 171, 184, 208	V _{DD}		Power Supply
4, 19, 35, 68, 77, 87, 96, 103, 111, 120, 131, 140, 150, 160, 172, 185, 200	GND		Ground
53, 60	V _{DDA}		Analog Power Supply for DENC D/A Converters
54, 61	V _{SSA}		Analog Ground for DENC D/A Converters
48	V _{DDA_PCM}		Analog Power Supply for PLL PCM
49	V _{REF_PCM}		Analog Reference for PLL PCM
50	V _{SSA_PCM}		Analog Ground for PLL PCM

FRONT-END INTERFACE

36	B_DATA	I	I ² S Data (DVD) or PARA_DATA[2] (DVD//) or Link Data (DVB/DSS)
40	B_WCLK	I/O	I ² S Word Clock or NRSS_CLK (DVB/DSS)
37	B_BCLK	I	I ² S Bit Clock (DVD) or PARA_DATA[3] (DVD//) or Link Bit Clock (DVB/DSS)
38	B_FLAG	I	Error Flag (DVD) or PARA_DATA [4] (DVD//) or Link Sync (DVB/DSS)
39	B_SYNC	I	Sector / Abs Time Sync (DVD) or PARA_DATA[5] (DVD//) or Link Not Valid (DVB/DSS)
42	B_V4	I	Versatile Input Pin (Subcode Input) or NRSS_IN (DVB/DSS)

VIDEO OUTPUT INTERFACE

57	R_OUT	O	Red Output
56	G_OUT	O	Green Output
55	B_OUT	O	Blue Output
63	C_OUT	O	Chroma Output
64	CV_OUT	O	Composite Video Output
62	Y_OUT	O	Luma Output
59	I_REF_DAC_RGB	I	DAC Current Reference
66	I_REF_DAC_YCC	I	DAC Current Reference
58	V_REF_DAC_RGB	I	DAC Voltage Reference
65	V_REF_DAC_YCC	I	DAC Voltage Reference
117	OSD_ACTIVE	I/O	OSD Active
118	PIXCLK_27MHz	I	System Clock Input
51	HSYNC	I/O	Horizontal Sync
52	ODD/EVEN	I/O	Vertical Sync

AC-3/MPEG1-2 AUDIO OUTPUT INTERFACE

43	SCLK	O	Serial Bit Clock
44	PCM_OUT0	O	Audio Serial Output Data 0
24	PCM_OUT1	O	Audio Serial Output Data 1
21	PCM_OUT2	O	Audio Serial Output Data 2
45	PCM_CLK	I/O	PCM Clock In or Out
46	LRCLK	O	Left/Right Clock
47	SPDIF_OUT	I/O	S/PDIF Output (Tristated after reset)



STi5505 (Rev. BB)

II - PIN DESCRIPTION (continued)

II.2 - Pin List (continued)

Pin	Name	Type	Function
EXTERNAL INTERRUPTS			
23, 25	IRQ[0:1]	I	External Interrupts
PROGRAMMABLE I/O AND ALTERNATE FUNCTION (see Device Configuration Chapter)			
15	PIO0 [0]	I/O	General Purpose I/O or PARA_SYNC (DVD//Front End) or Sc1Data (Smart Card 1 Data I/O)
16	PIO0 [3]	I/O	General Purpose I/O or PARA_REQ (DVD//Front End) or Sc1Clk (Smart Card 1 Clock)
17	PIO0 [4]	I/O	General Purpose I/O or PARA_STR (DVD//Front End) or Sc1RST (Smart Card 1 Reset)
20	PIO0 [5]	I/O	General Purpose I/O or PARA_DATA[0] (DVD//Front End) or Sc1Cmd V _{CC} (Smart Card 1 Voltage Enable)
21	PIO0 [6]	I/O	General Purpose IO or Sc1DataDir (Smart Card 1 Dir)
22	PIO0 [7]	I/O	General Purpose I/O or PARA_DATA[1] (DVD//Front End) or Sc1Detect(Smart Card 1 Detect)
9	PIO1 [0]	I/O	General Purpose I/O or I ² C Data
10	PIO1 [2]	I/O	General Purpose I/O or I ² C Clock
198, 199	PIO1 [3:4]	I/O	General Purpose IO
11	PIO1 [5]	I/O	General Purpose IO or ASC1 TXD
12	PIO1 [6]	I/O	General Purpose IO or ASC1 RXD
13	PIO1 [7]	I/O	General Purpose IO or ASC3 TXD
3	PIO2 [0]	I/O	General Purpose I/O or Sc0Data (Smart Card 0 Data I/O)
5	PIO2 [3]	I/O	General Purpose I/O or Sc0Clk (Smart Card 0 Clock)
6	PIO2 [4]	I/O	General Purpose I/O or Sc0RST (Smart Card 0 Reset)
7	PIO2 [5]	I/O	General Purpose I/O or Sc0CmdV _{CC} (Smart Card 0 Voltage Enable)
8	PIO2 [7]	I/O	General Purpose I/O or Sc0Detect (Smart Card 0 Detect)
201	PIO3 [0]	I/O	General Purpose IO or OSLink In
202	PIO3 [1]	I/O	General Purpose IO or OSLink Out
203	PIO3 [2]	I/O	General Purpose IO or CPUReset
204	PIO3 [3]	I/O	General Purpose IO or CPU Analyse
205	PIO3 [4]	I/O	General Purpose IO or ErrorOut
206, 207, 2	PIO3 [5:7]	I/O	General Purpose IO
191-197	PIO4 [0:6]	I/O	General Purpose IO
14	PIO4 [7]	I/O	General Purpose IO or ASC3 RXD

JTAG INTERFACE

188	TCK	I	Test Clock
186	TDI	I	Test Data Input
189	TDO	O	Test Data Input
187	TMS	I	Test Mode Select
190	$\overline{\text{TRST}}$	I	Test Reset

SYSTEM USE

28	PWM2	O	PWM2 Output
27	PWM1/BOOTFROMROM	O/I	PWM1 Output or Configuration Oslink Pins
26	PWM0/OSLINK_SEL	O/I	PWM0 Output or Boot from ROM during Reset
29	$\overline{\text{RST}}$	I	Reset
116	AUXCLK	O	Auxiliary Clock for Any Purpose

STi5505 (Rev. BB)

II - PIN DESCRIPTION (continued)

II.2 - Pin List (continued)

Pin	Name	Type	Function
SDRAM INTERFACE			
78-81, 69, 70-74, 82, 83	AD[0:11]	O	SDRAM Address Bus
92-94, 97-101, 106-109, 112-115	DQ[0:15]	I/O	SDRAM Data (Lower Byte)
84, 85	$\overline{\text{SDCS}}[0:1]$	O	SDRAM Chip Selects
89	$\overline{\text{SDCAS}}$	O	SDRAM CAS
88	$\overline{\text{SDRAS}}$	O	SDRAM RAS
90	$\overline{\text{SDWE}}$	O	SDRAM Write Enable
104	MEMCLKIN	I	SDRAM Memory Clock Input
76	MEMCLKOUT	O	SDRAM Memory Clock Output
91	DQML	O	DQ Mask Enable (Lower)
105	DQMU	O	DQ Mask Enable (Upper)

EXTERNAL MEMORY INTERFACE

161-170, 173-183	ADR[1:21]	I/O	External Memory Address Bus
141-148, 151-158	DATA[0:15]	I/O	External Memory Data Bus
128	$\overline{\text{RAS1}}/\overline{\text{HOLDREQ}}$	O	DRAM RAS or reserved
136	WAIT/READY	I/O	External Wait States or Reserved
133	R/W/DMAACK	I/O	DRAM R/W Strobe or Reserved
121, 122	$\overline{\text{BE}}[0:1]$	O	Byte enable
129	$\overline{\text{CAS0}}/\overline{\text{HOLDACK}}$	O/I	DRAM CAS or Reserved
132	$\overline{\text{CAS1}}/\overline{\text{DMAREQ}}$	O	DRAM CAS or Reserved
124-126	$\overline{\text{CE}}[1:3]$	O	Chip Select for Banks 1 - 3
135	$\overline{\text{CS}}$	I	Reserved
137	$\overline{\text{PROCCLK}}$	I/O	ST20 Clock or Reserved
127	$\overline{\text{RAS0}}/\overline{\text{CE0}}$	O	DRAM RAS or Chip Select for Bank 0
134	$\overline{\text{DMAXFER}}$	I	Reserved
138	$\overline{\text{PPC_MODE}}$	I	Reserved
123	$\overline{\text{OE}}$	I/O	Output Enable or Reserved

SDAV/P1394 INTERFACE

30	TEST1	I/O	DATA_RX/STROBE_TX (SDAV Mode) or SDAV_CLK (P1394 Mode) or PARA_DATA[6] (DVD//)
31	TEST2	I/O	STROBE_RX/DATA_TX (SDAV Mode) or DATA_IN/DATA_OUT (P1394 Mode) or PARA_DATA[7] (DVD//)
32	TEST3	I/O	Direction (SDAV Mode) or DATA_VALID In/Out (P1394 Mode)

MISCELLANEOUS

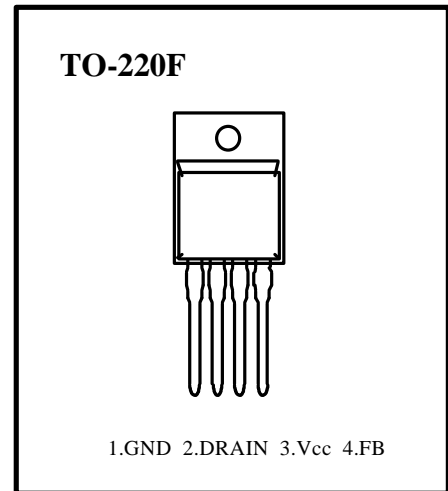
41	TEST5	O	NRSS_OUT (DVB/DSS)
33	TEST4	I	PARA_DVALID (DVD//) : Data valid on front end parallel interface

KA1M0380**S P S****FEATURES**

- Precision fixed operating frequency (70KHz)
- Pulse by pulse over current limiting
- Over load protection
- Internal thermal shutdown function
- Under voltage lockout
- Internal high voltage sense FET
- Low start up current ($\leq 0.4\text{mA}$)

PRODUCT SUMMARY

Part Number	BV _{dss}	R _{ds(on)}	I _D
KA1M0380	800V	5 Ω	3A

**ABSOLUTE MAXIMUM RATINGS (Ta = 25 °C , unless otherwise specified)**

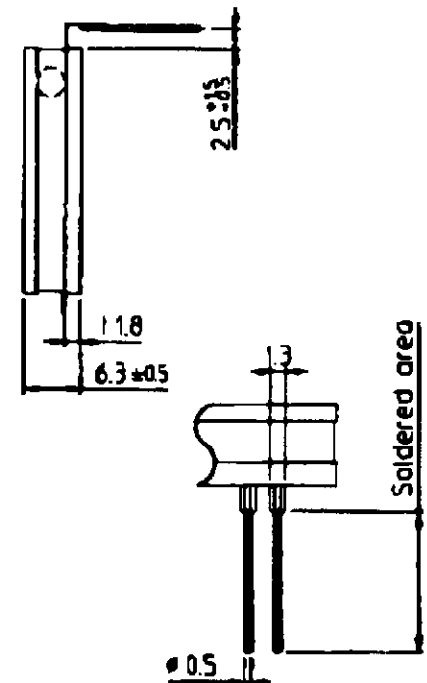
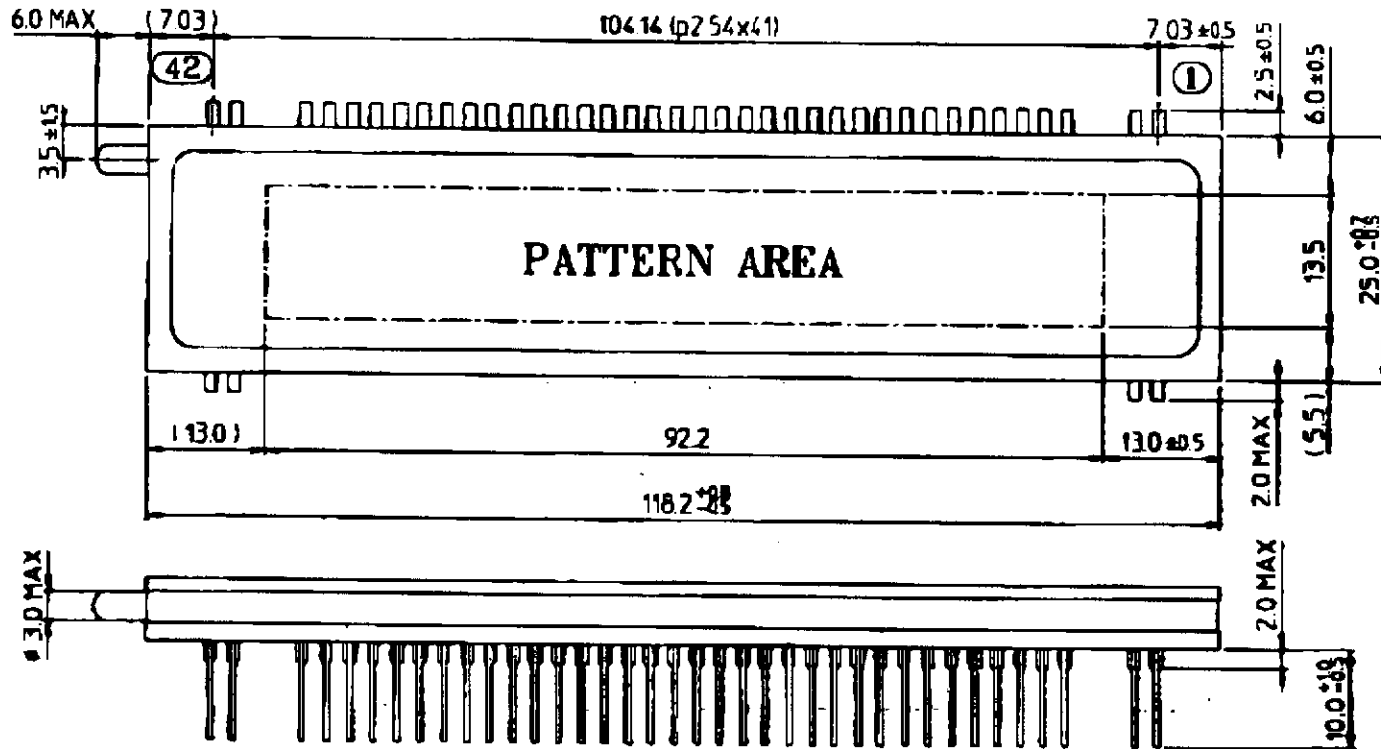
Characteristics	Symbol	Value	Unit
Drain - Source(GND) Voltage (1)	V _{DSS}	800	V
Drain - Gate Voltage (R _{gs} = 1M Ω) (1)	V _{DGR}	800	V
Gate - Source(GND) Voltage	V _{GS}	± 30	V
Rise Time (2)	T _r	95	ns
Fall Time (2)	T _f	60	ns
Drain-Source Off State Leakage Current (V _{ds} = 0V, V _{gs} = 0V)	I _{DSS}	250	μA
Continuous Drain Current (T _c = 25°C)	I _D	3.0	A _{DC}
Supply Voltage	V _{CC}	30	V
Analog Input Voltage Range	V _{FB}	-0.3 ~ V _{SD}	V
Total Power Dissipation	P _D (wt H/S)	20	W
	Derating	0.28	W/ °C
Operating Temperature	T _{OPR}	- 25 ~ + 85	°C
Storage Temperature	T _{STG}	- 55 ~ + 150	°C

Notes: (1) T_J = 25°C to 150°C

(2) V_{DD} = 400V, I_D = Max. Rating, V_{GS} = 10V

Rev. B

OUTER DIMENSIONS



LEAD DETAILS

PIN CONNECTION

PIN NO.	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
CONNECTION	F2	F2	NF	NP	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16	P17	P18	P19	P20	P21	P22	NC	1G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G	NP	NP	F1	F1

● Notes ●

- 1) F_n : Filament pin
- 2) nG : Grid pin
- 3) P_n : Anode pin
- 4) NC : No Connected pin
- 5) NP : No pin

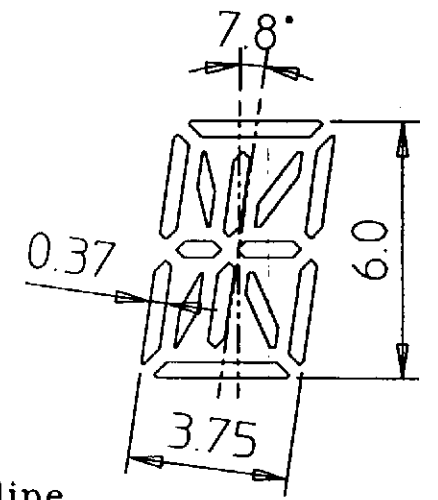
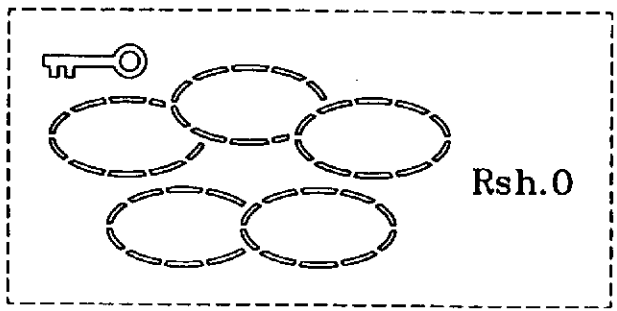
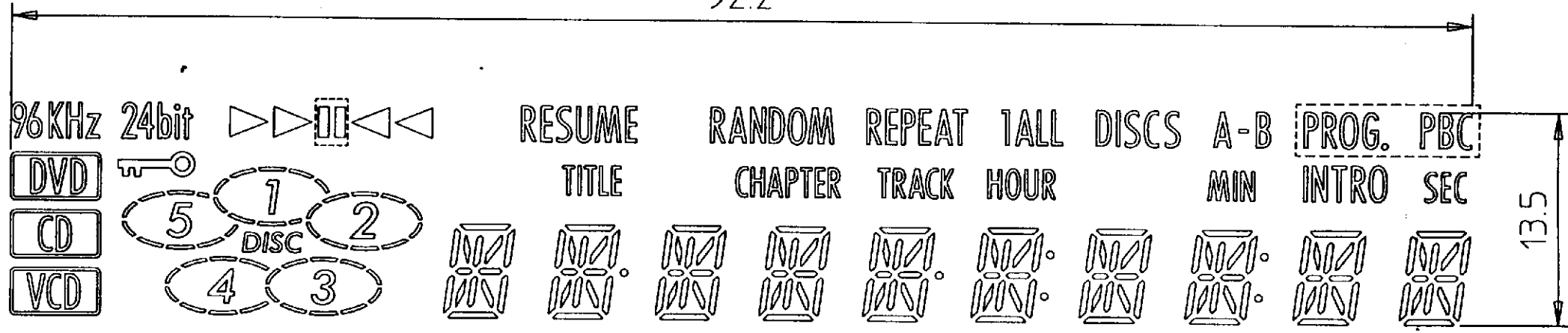
MODEL : HNV-11SM07
 OUTER DIMENSIONS
 Rev. (2) 1-Nov-99

11-02 11:28 TUE FROM: SAM SUNG DISPLAY FROM: 11-01 13:17 MON FROM: 02-774-2523 TO: 0234441496 TO: 40401465027742523# PAGE: 02 PAGE: 03

VFD 24bit PATTERN DETAILS

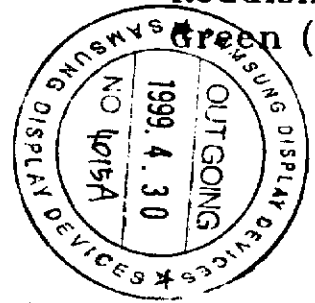


92.2



◎ Color of Illumination ◎

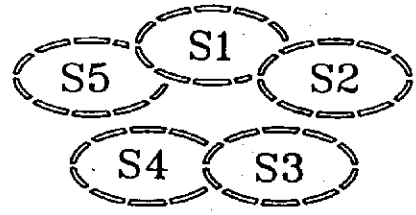
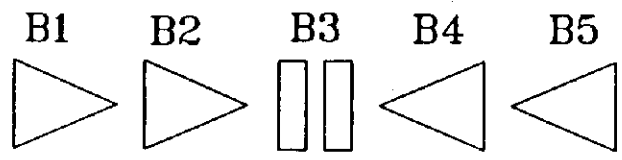
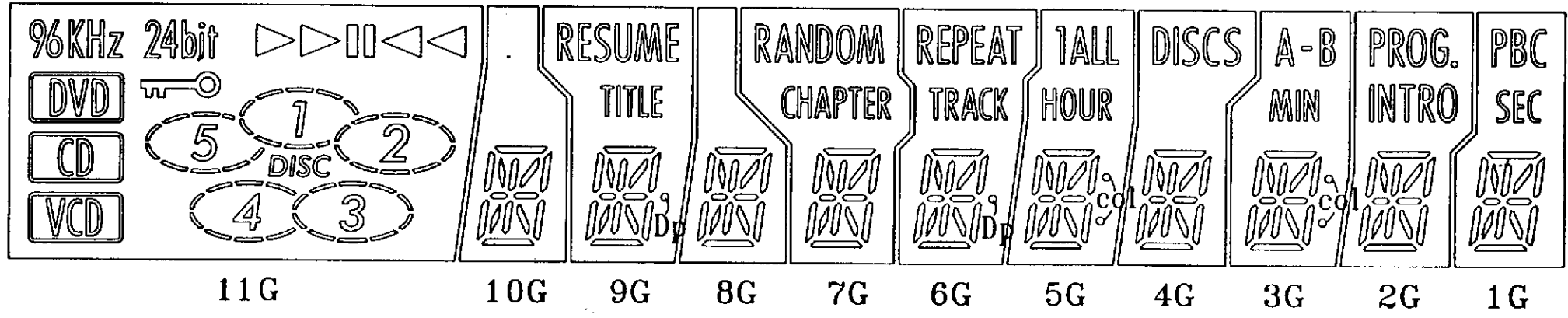
- Reddish Orange (Rsh.0. $x=0.624, y=0.374$) ----- Patterns within the dotted line.
- Green (G. $x=0.250, y=0.439$) ----- Others.



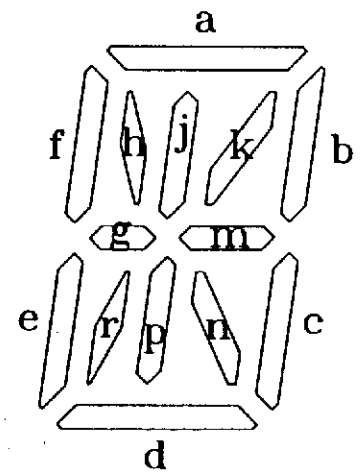
MODEL : HNV-11SM07
 PATTERN DETAILS
 Rev. ② 16-Apr-99



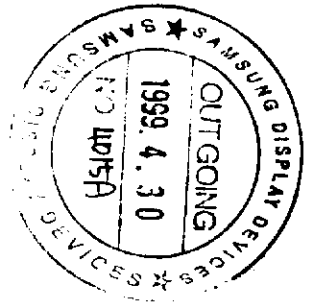
GRID ASSIGNMENT



(11G)



(10G-1G)

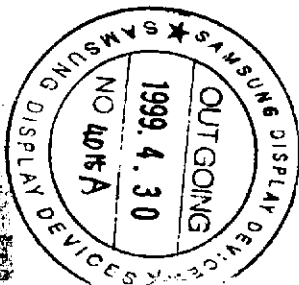


MODEL : HNV-11SM07
 GRID ASSIGNMENT
 Rev. ② 16-Apr-99

VFD개발 ANODE CONNECTION



	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	B5	a	a	a	a	a	a	a	a	a	a
P2	B4	h	h	h	h	h	h	h	h	h	h
P3	B3	j	j	j	j	j	j	j	j	j	j
P4	B2	k	k	k	k	k	k	k	k	k	k
P5	B1	b	b	b	b	b	b	b	b	b	b
P6	24bit	f	f	f	f	f	f	f	f	f	f
P7	96KHz	m	m	m	m	m	m	m	m	m	m
P8		g	g	g	g	g	g	g	g	g	g
P9	1	n	n	n	n	n	n	n	n	n	n
P10	S1	p	p	p	p	p	p	p	p	p	p
P11	2	r	r	r	r	r	r	r	r	r	r
P12	S2	c	c	c	c	c	c	c	c	c	c
P13	3	e	e	e	e	e	e	e	e	e	e
P14	S3	d	d	d	d	d	d	d	d	d	d
P15	4	-	DP	-	-	DP	col	-	col	-	-
P16	S4	-	RESUME	-	RANDOM	REPEAT	1	DISC	A-	PROG.	PBC
P17	5	-	TITLE	-	CHAPTER	TRACK	ALL	S	B	INTRO	SEC
P18	S5	-	-	-	-	-	HOUR	-	RAIN	-	-
P19	DISC	-	-	-	-	-	-	-	-	-	-
P20		-	-	-	-	-	-	-	-	-	-
P21		-	-	-	-	-	-	-	-	-	-
P22		-	-	-	-	-	-	-	-	-	-



MODEL : HNV-11SM07
 ANODE CONNECTION
 Rev. ② 16-Apr-99

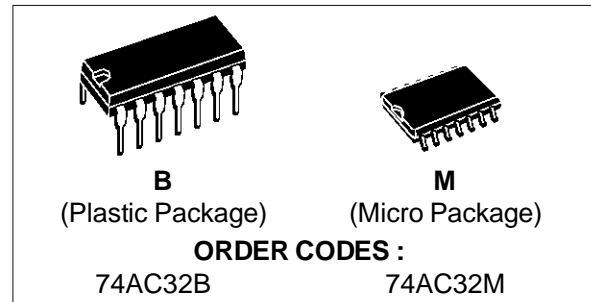


QUAD 2-INPUT OR GATE

- HIGH SPEED: $t_{PD} = 4 \text{ ns}$ (TYP.) at $V_{CC} = 5V$
- LOW POWER DISSIPATION:
 $I_{CC} = 4 \mu A$ (MAX.) at $T_A = 25^\circ C$
- HIGH NOISE IMMUNITY:
 $V_{NIH} = V_{NIL} = 28\% V_{CC}$ (MIN.)
- 50Ω TRANSMISSION LINE DRIVING CAPABILITY
- SYMMETRICAL OUTPUT IMPEDANCE:
 $|I_{OH}| = I_{OL} = 24 \text{ mA}$ (MIN)
- BALANCED PROPAGATION DELAYS:
 $t_{PLH} \cong t_{PHL}$
- OPERATING VOLTAGE RANGE:
 V_{CC} (OPR) = 2V to 6V
- PIN AND FUNCTION COMPATIBLE WITH 74 SERIES 32
- IMPROVED LATCH-UP IMMUNITY

DESCRIPTION

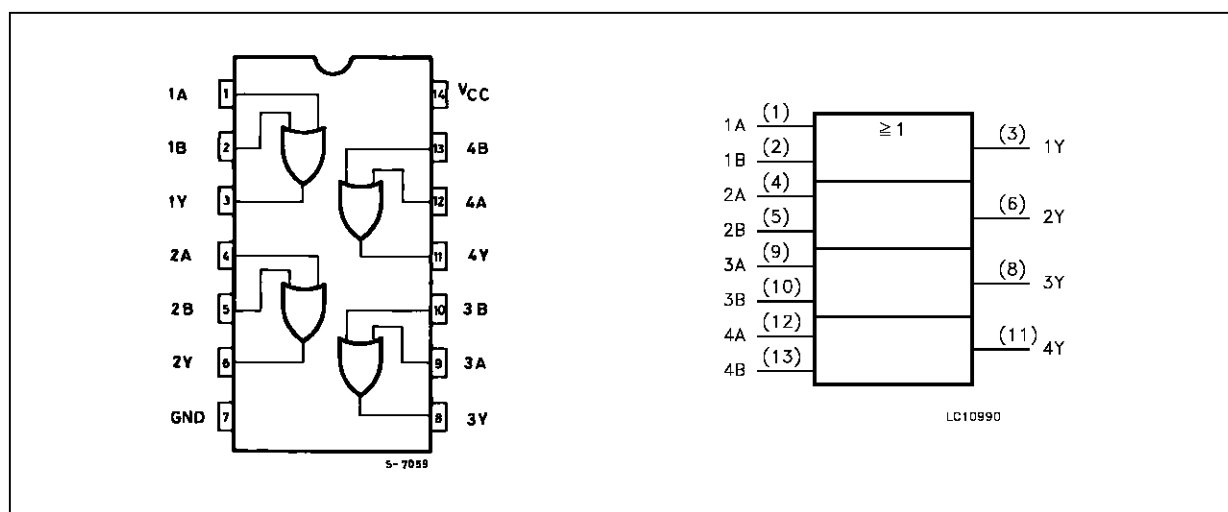
The AC32 is an advanced high-speed CMOS QUAD 2-INPUT OR GATE fabricated with sub-micron silicon gate and double-layer metal



wiring C²MOS technology. It is ideal for low power applications maintaining high speed operation similar to equivalent Bipolar Schottky TTL.

The internal circuit is composed of 2 stages including buffer output, which enables high noise immunity and stable output.

All inputs and outputs are equipped with protection circuits against static discharge, giving them 2KV ESD immunity and transient excess voltage.

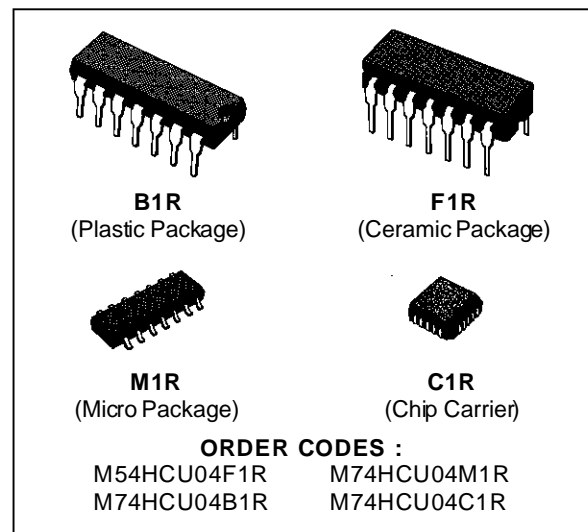
PIN CONNECTION AND IEC LOGIC SYMBOLS



M54HCU04
M74HCU04

HEX INVERTER (SINGLE STAGE)

- HIGH SPEED
 $t_{PD} = 5 \text{ ns}$ (TYP.) AT $V_{CC} = 5 \text{ V}$
- LOW POWER DISSIPATION
 $I_{CC} = 1 \mu\text{A}$ (MAX.) AT $T_A = 25 \text{ }^\circ\text{C}$
- HIGH NOISE IMMUNITY
 $V_{NIH} = V_{NIL} = 10\% V_{CC}$ (MIN.)
- OUTPUT DRIVE CAPABILITY
10 LSTTL LOADS
- SYMMETRICAL OUTPUT IMPEDANCE
 $|I_{OH}| = I_{OL} = 4 \text{ mA}$ (MIN.)
- BALANCED PROPAGATION DELAYS
 $t_{PLH} = t_{PHL}$
- WIDE OPERATING VOLTAGE RANGE
 $V_{CC} \text{ (OPR)} = 2 \text{ V TO } 6 \text{ V}$
- PIN AND FUNCTION COMPATIBLE WITH
54/74LS04



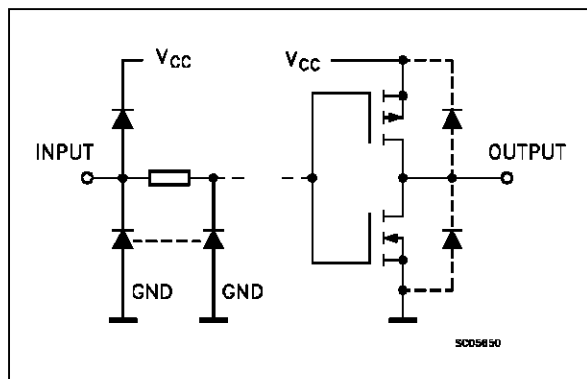
DESCRIPTION

The M54/74HCU04 is a high speed CMOS HEX INVERTER (SINGLE STAGE) fabricated in silicon gate C^2 MOS technology. It has the same high speed performance of LSTTL combined with true CMOS low power consumption.

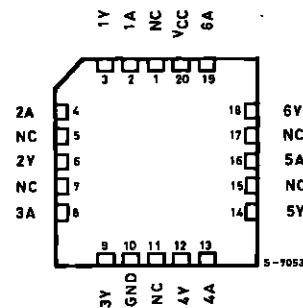
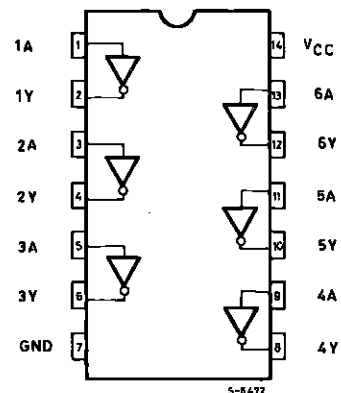
As the intrnal circuit is composed of a single stage inverter, it can be used in crystal oscillator.

All inputs are equipped with circuits against static discharge and transient excess voltage.

INPUT AND OUTPUT EQUIVALENT CIRCUIT



PIN CONNECTIONS (top view)



NC =
No Internal
Connection

Ordering number: EN 2575B

SANYO	No. 2575B	Monolithic Digital IC
		LB1641
Bidirectional Motor Driver		

The LB1641 is a bidirectional motor driver IC. Since it has a 2-input logic circuit and performs the functions of bidirectional driving and braking, it is capable of direct driving 6V, 9V, 12V motors. The output voltage can be varied by using an external zener diode.

Features

- . 2-input logic can be used to exercise control of bidirectional driving and braking.
- . On-chip elements to absorb dash current of motor
- . Input interfaceable to MOS LSI
- . Output voltage variable by use of external zener diode

Absolute Maximum Ratings at Ta=25°C

			unit
Maximum Supply Voltage	V_{CCmax}	18	V
Input Voltage	V_{IN}	-0.3 to V_{CC}	V
Output Current	I_{OUT}	± 1.6	A
Allowable Power Dissipation	P_{dmax}	1.2	W
Operating Temperature	T_{opr}	-25 to +75	°C
Storage Temperature	T_{stg}	-55 to +125	°C

Allowable Operating Conditions at Ta=25°C

			unit
Supply Voltage	V_{CC1}	7 to 18	V
	V_{CC2}	5 to 18	V

Electrical Characteristics at Ta=25°C, $V_{CC}=12V$

		min	typ	max	unit
Input Threshold Voltage	V_{th} $R_L=\infty$	1.1	1.3	1.5	V
Minimum Input ON-State Current	I_{IN} $R_L=\infty$		10	15	μA
Output Voltage	V_O $R_L=60\text{ohms}, V_Z=7.4V$	6.6	7.2	7.4	V
Output Leakage Current	I_{OL} Pins5,6 GND, $R_L=\infty$		0.01	1.0	mA
Current Dissipation	I_{CC} Pins5,6 GND, $R_L=\infty$	3	6	10	mA
Saturation Voltage (Upper)	V_{sat1} $V_{CC}=12V, I_{OUT}=300mA$		1.9	2.2	V
	V_{sat1} $V_{CC}=12V, I_{OUT}=500mA$		1.9	2.3	V
Saturation Voltage (Lower)	V_{sat2} $V_{CC}=12V, I_{OUT}=300mA$	0.25	0.5		V
	V_{sat2} $V_{CC}=12V, I_{OUT}=500mA$	0.4	0.65		V

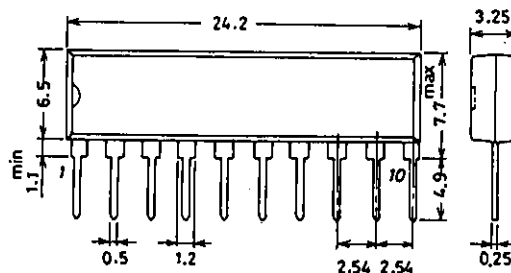
Truth Table

Input		Output		Operation
IN1	IN2	OUT1	OUT2	
0	0	0	0	Braking
1	0	1	0	Forward (reverse) drive
0	1	0	1	Reverse (forward) drive
1	1	0	0	Braking

Input level 1: 2.0V or greater
0: 0.7V or less

Package Dimensions 3043A

(unit: mm)



SANYO: SIP10

SANYO Electric Co., Ltd. Semiconductor Business Headquarters
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110 JAPAN



AK4393

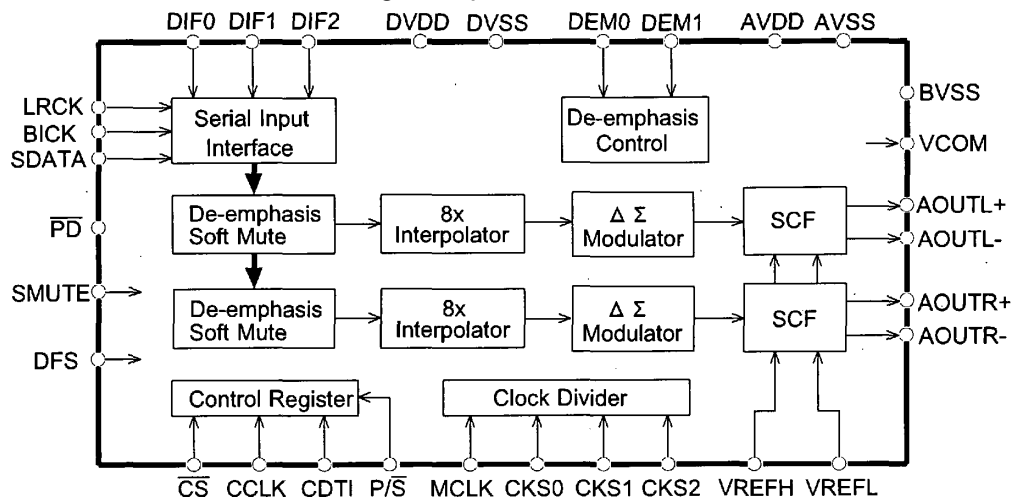
Advanced Multi-Bit 96kHz 24Bit $\Delta\Sigma$ DAC

General Description

AK4393 is a high performance stereo DAC for the 96kHz sampling mode of DAT, DVD including a 24bit digital filter. The AK4393 introduces the advanced multi-bit system for $\Delta\Sigma$ modulator. This new architecture achieves the wider dynamic range, while keeping much the same superior distortion characteristics as conventional Single Bit way. In the AK4393, the analog outputs are filtered in the analog domain by switched-capacitor filter(SCF) with high tolerance to clock jitter. The analog outputs are full differential output, so the device is suitable for hi-end applications. The operating voltages support analog=5V and digital=3.3V, so it is easy to I/F with 3.3V logic IC.

Features

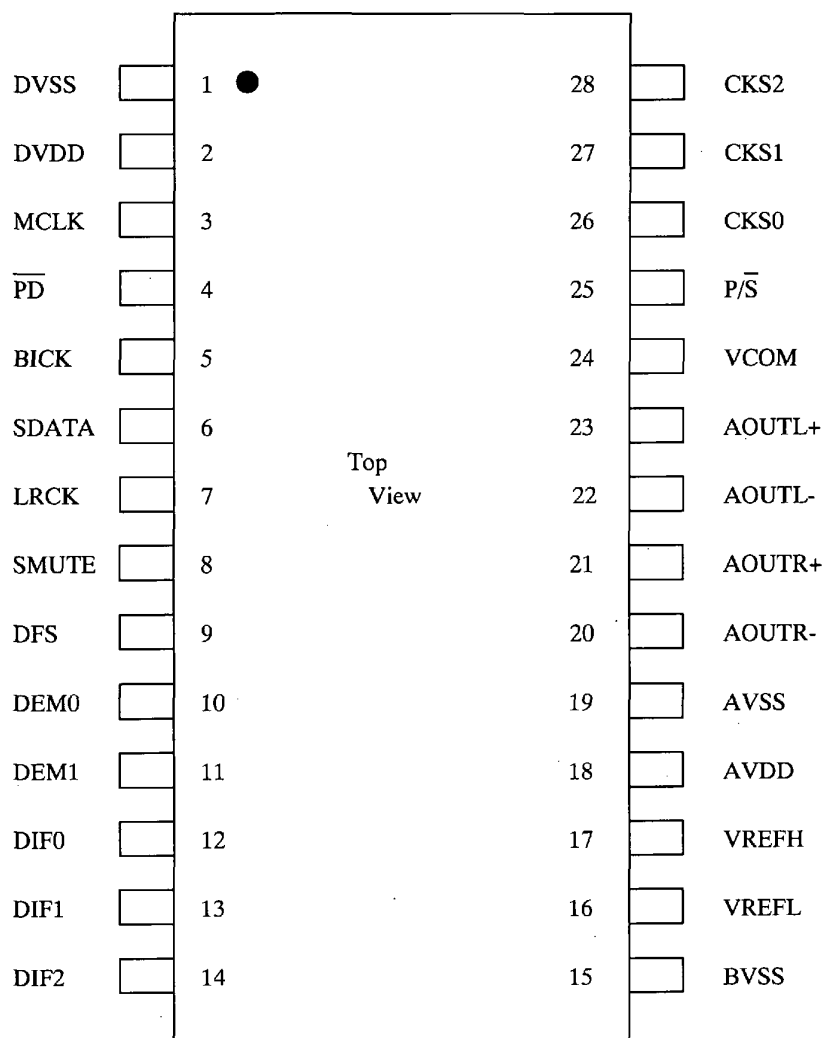
- 128x Oversampling
- Sampling Rate up to 108kHz
- 24Bit 8 times Digital Filter
 - Ripple: $\pm 0.005\text{dB}$, Attenuation: 75dB
- High Tolerance to Clock Jitter
- Low Distortion Differential Output
- Digital de-emphasis for 32, 44.1, 48 & 96kHz sampling
- Soft Mute
- THD+N: -100dB
- DR, S/N: 120dB
- I/F format : MSB justified, LSB justified, I2S
- Master Clock
 - Normal Speed: 256fs, 384fs, 512fs or 768fs
 - Double Speed: 128fs, 192fs, 256fs or 384fs
- Power Supply: 4.75 to 5.25V(Analog), 3 to 5.25V(Digital)
- Small Package: 28pin VSOP



■ Ordering Guide

AK4393VF	-40~+85°C	28pin VSOP(0.65mm pitch)
AKD4393	Evaluation Board	

■ Pin Layout



PIN/FUNCTION			
No.	Pin Name	I/O	Function
1	DVSS	-	Digital Ground Pin
2	DVDD	-	Digital Power Supply Pin, 3.3V or 5.0V
3	MCLK	I	Master Clock Input Pin
4	$\overline{\text{PD}}$	I	Power-Down Mode Pin When at "L", the AK4393 is in power-down mode and is held in reset. The AK4393 should always be reset upon power-up.
5	BICK	I	Audio Serial Data Clock Pin The clock of 64fs or more than is recommended to be input on this pin.
6	SDATA	I	Audio Serial Data Input Pin 2's complement MSB-first data is input on this pin.
7	LRCK	I	L/R Clock Pin
8	SMUTE	I	Soft Mute Pin When this pin goes "H", soft mute cycle is initiated. When returning "L", the output mute releases.
	CS	I	Chip Select Pin in serial mode
9	DFS	I	Double speed sampling mode Pin (Internal pull-down pin) "L": Normal Speed, "H": Double Speed
10	DEM0	I	De-emphasis Enable Pin
	CCLK	I	Control Data Clock Pin in serial mode
11	DEM1	I	De-emphasis Enable Pin
	CDTI	I	Control Data Input Pin in serial mode
12	DIF0	I	Digital Input Format Pin
13	DIF1	I	Digital Input Format Pin
14	DIF2	I	Digital Input Format Pin
15	BVSS	-	Substrate Ground Pin, 0V
16	VREFL	I	Low Level Voltage Reference Input Pin
17	VREFH	I	High Level Voltage Reference Input Pin
18	AVDD	-	Analog Power Supply Pin, 5V
19	AVSS	-	Analog Ground Pin, 0V
20	AOUTR-	O	Rch Negative analog output Pin
21	AOUTR+	O	Rch Positive analog output Pin
22	AOUTL-	O	Lch Negative analog output Pin
23	AOUTL+	O	Lch Positive analog output Pin
24	VCOM	O	Common Voltage Output Pin, 2.6V
25	$\overline{\text{P/S}}$	I	Parallel/Serial Select Pin (Internal pull-up pin) "L": Serial control mode, "H": Parallel control mode
26	CKS0	I	Master Clock Select Pin
27	CKS1	I	Master Clock Select Pin
28	CKS2	I	Master Clock Select Pin

Note: All input pins except internal pull-down pins should not be left floating.

KEC

KOREA ELECTRONICS CO.LTD.

SEMICONDUCTOR

TECHNICAL DATA

**KIA7019AP/AF~
KIA7045AP/AF**

BIPOLAR LINEAR INTEGRATED CIRCUIT

VOLTAGE DETECTOR

Function of this IC is accurately resetting the system after detecting voltage at the time of switching power on and instantaneous power off in various CPU systems and other logic systems.

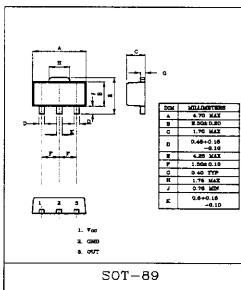
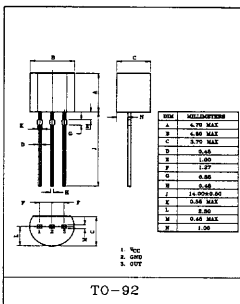
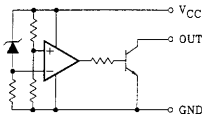
FEATURES

- Current Consumption is Low. $I_{cc} = 300\mu\text{A}$ Typ. $I_{OH} = 30\mu\text{A}$ Typ.
- Resetting Output Minimum Guarantee Voltage is Low 0.3V Typ.
- Hysteresis Voltage is Provided. 50mV Typ.
- Reset Signal Generation Starting Voltages:
 - KIA7019AP/AF 1.9V Typ. KIA7033AP/AF 3.3V Typ.
 - KIA7021AP/AF 2.1V Typ. KIA7034AP/AF 3.4V Typ.
 - KIA7023AP/AF 2.3V Typ. KIA7035AP/AF 3.5V Typ.
 - KIA7025AP/AF 2.5V Typ. KIA7036AP/AF 3.6V Typ.
 - KIA7027AP/AF 2.7V Typ. KIA7039AP/AF 3.9V Typ.
 - KIA7029AP/AF 2.9V Typ. KIA7042AP/AF 4.2V Typ.
 - KIA7031AP/AF 3.1V Typ. KIA7045AP/AF 4.5V Typ.
 - KIA7032AP/AF 3.2V Typ.
- Taping Type is also Available.

APPLICATIONS

- As Control Circuit of Battery-Backed Memory.
- As Measure Against Erroneous Operations at Power ON-OFF.
- As Measure Against System Runaway at Instantaneous Break of Power Supply etc.
- As Resetting Function for the CPU-Mounted Equipment, such as Personal Computers, Printers, VTRs and so forth.

EQUIVALENT CIRCUIT

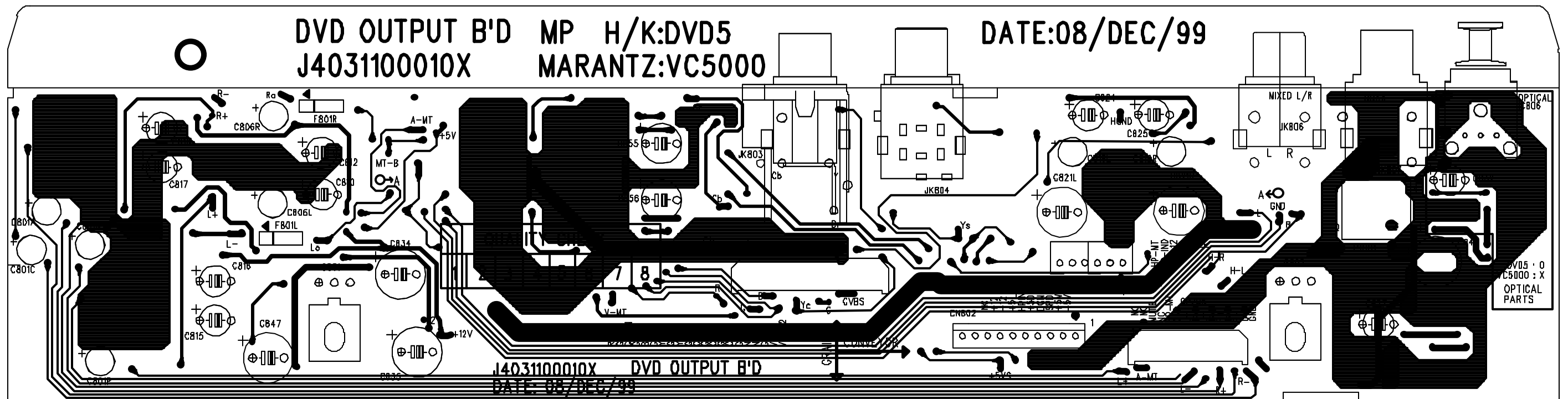


MAXIMUM RATINGS (Ta=25°C)

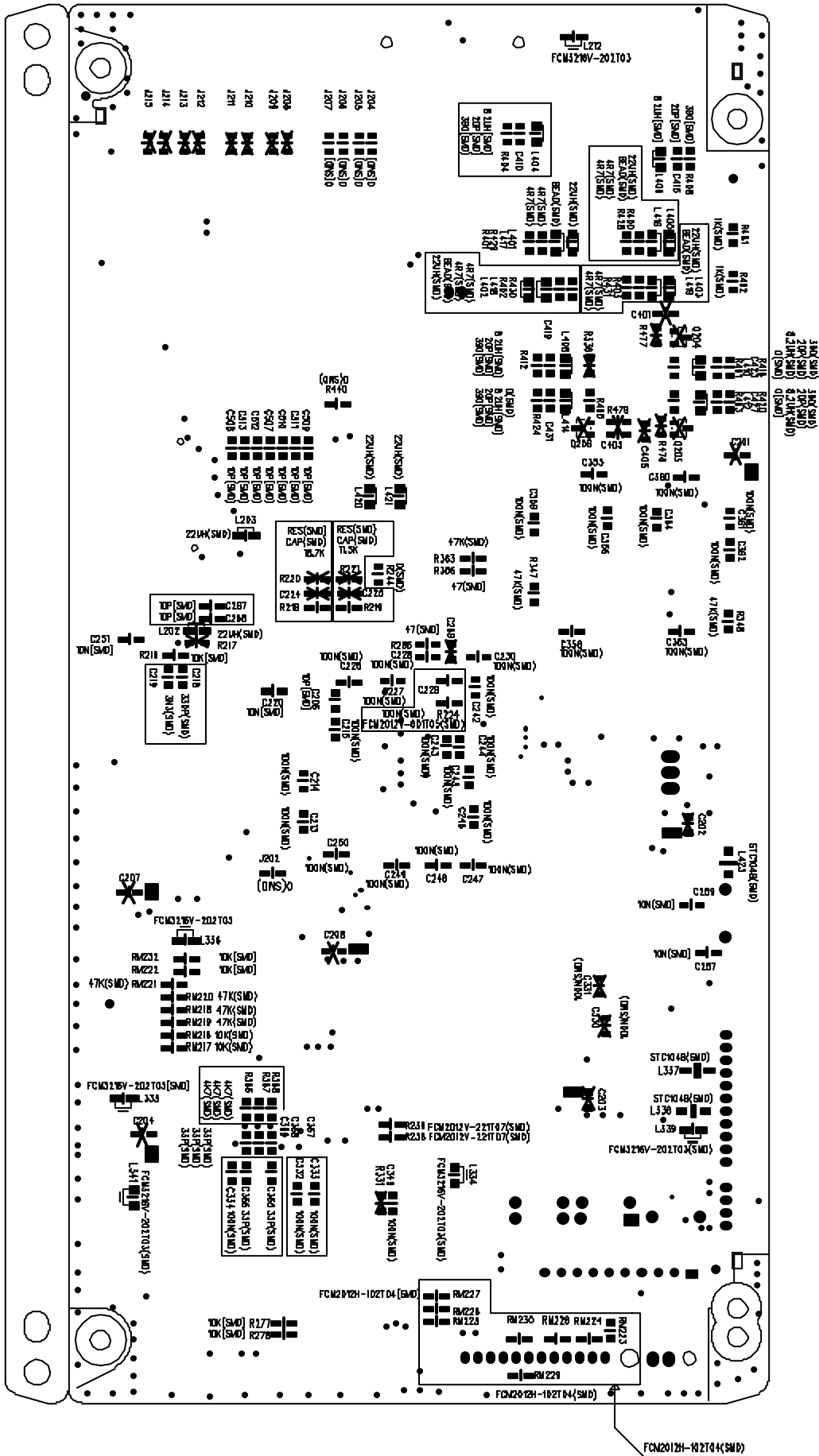
CHARACTERISTIC		SYMBOL	RATING	UNIT
Supply Voltage		V _{cc}	-0.3 ~ +15.0	V
Power Dissipation (Package Limitation)	KIA7019AP~45AP	P _D	400	mW
	KIA7019AF~45AF		500	
Operating Temperature		T _{OP}	-30 ~ -75	°C
Storage Temperature		T _{STG}	-55 ~ -150	°C

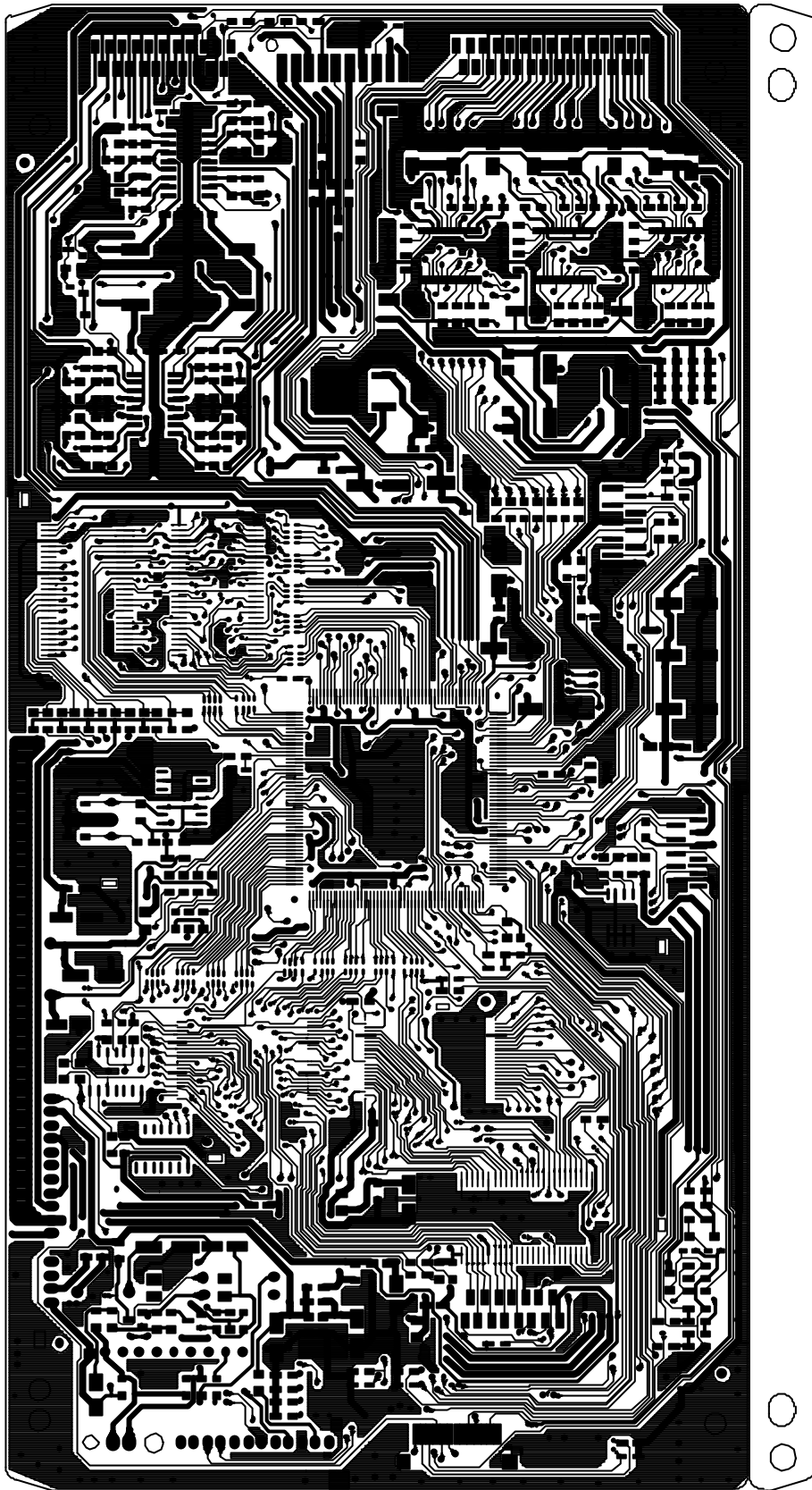
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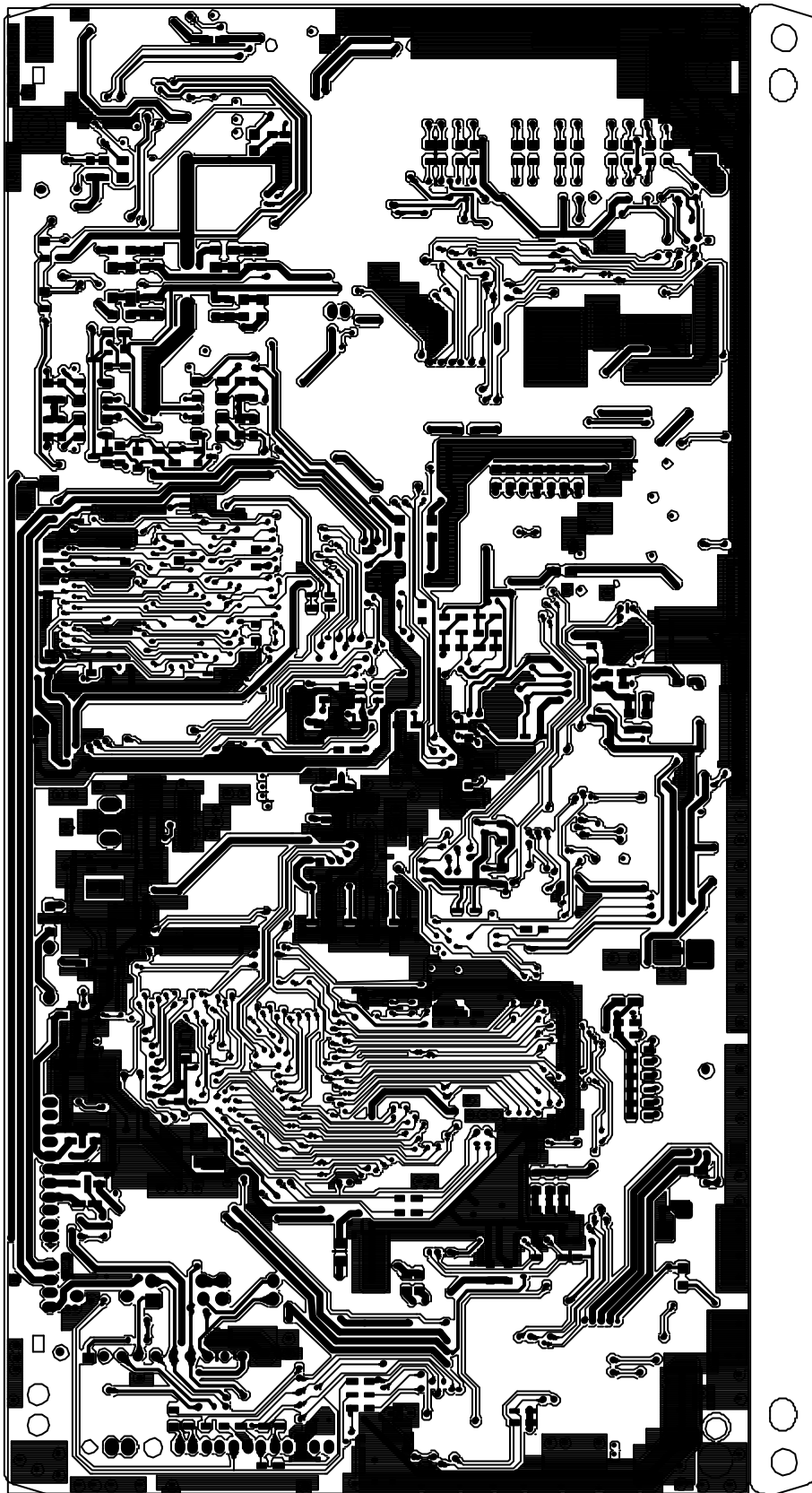
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KIA7019AF	6A	KIA7033AF	6J
KIA7021AF	6B	KIA7034AF	6K
KIA7023AF	6C	KIA7035AF	6L
KIA7025AF	6D	KIA7036AF	6M
KIA7027AF	6E	KIA7039AF	6N
KIA7029AF	6F	KIA7042AF	6P
KIA7031AF	6G	KIA7045AF	6R
KIA7032AF	6H		

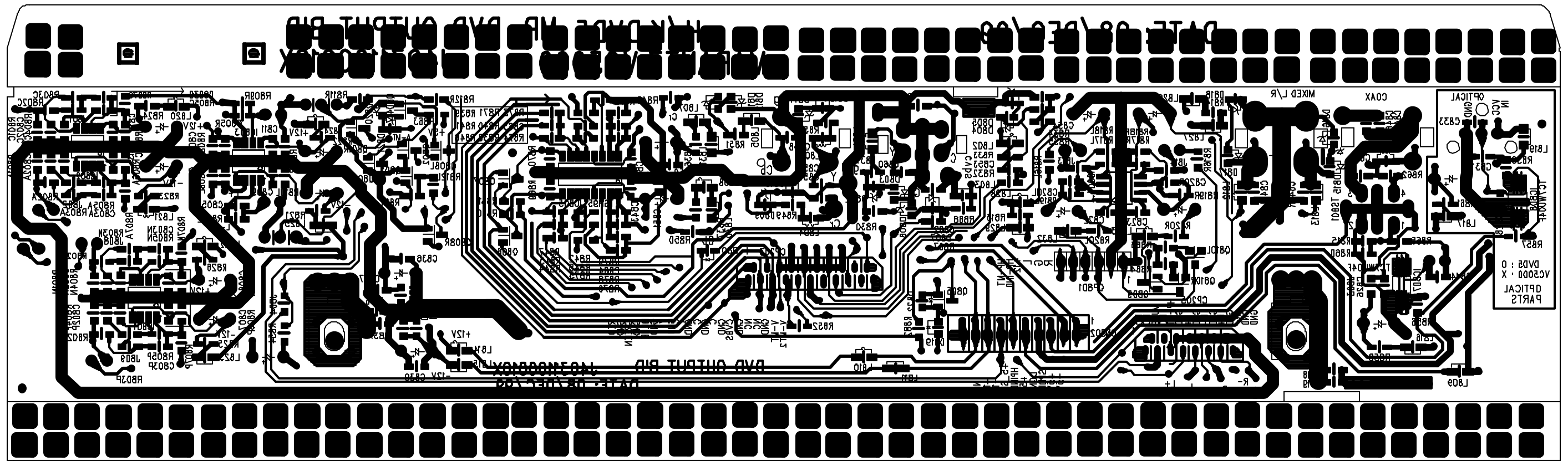


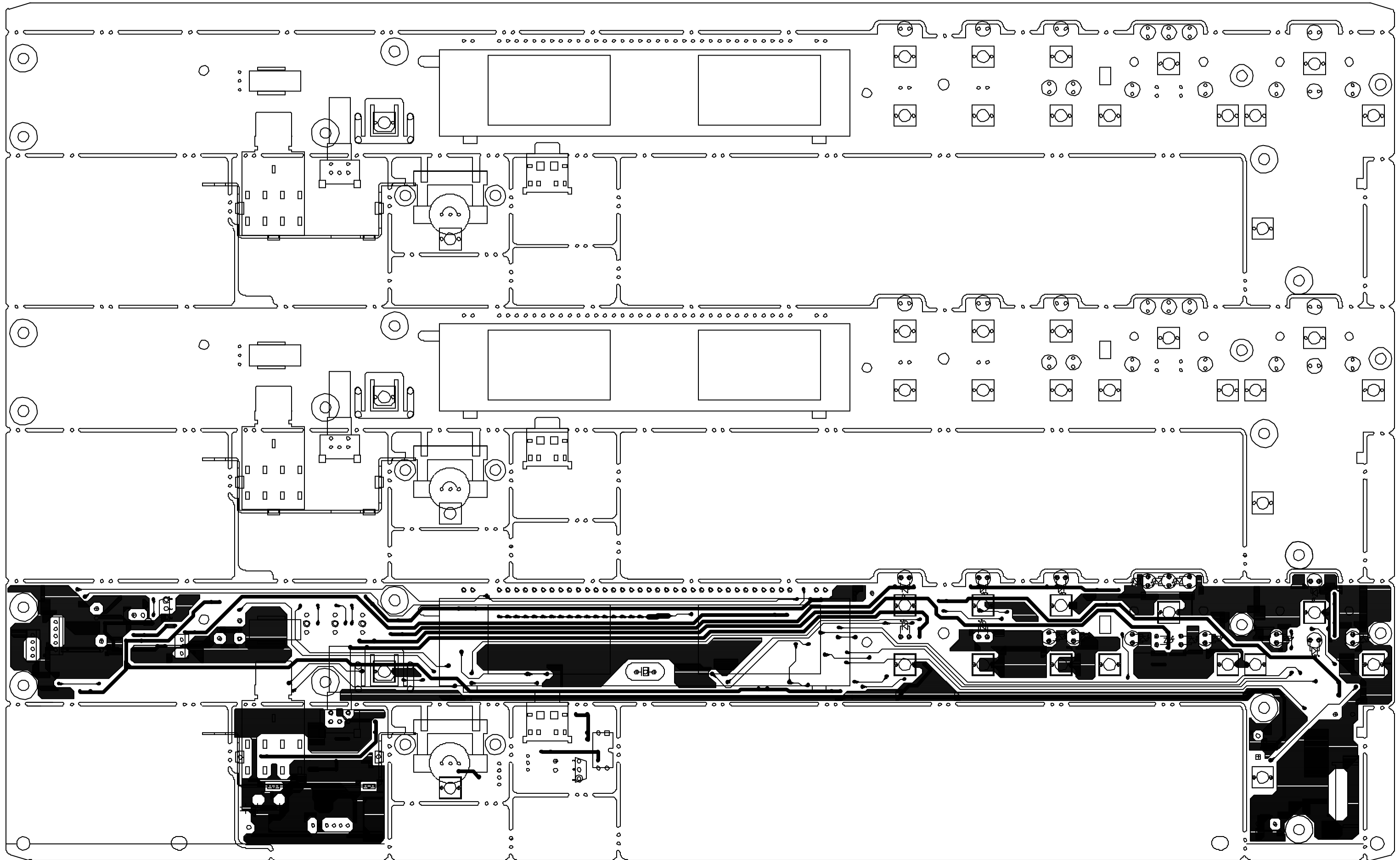
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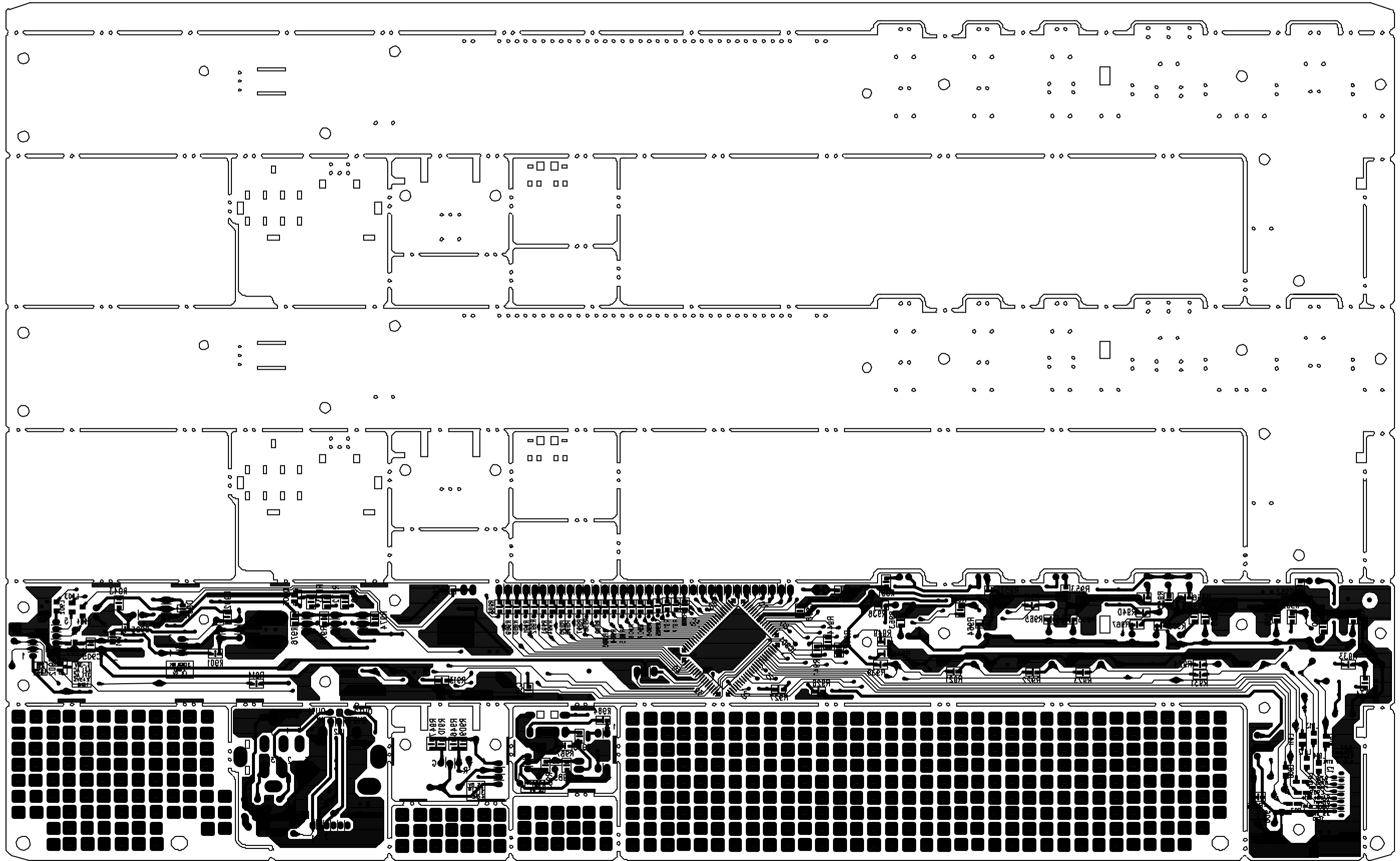


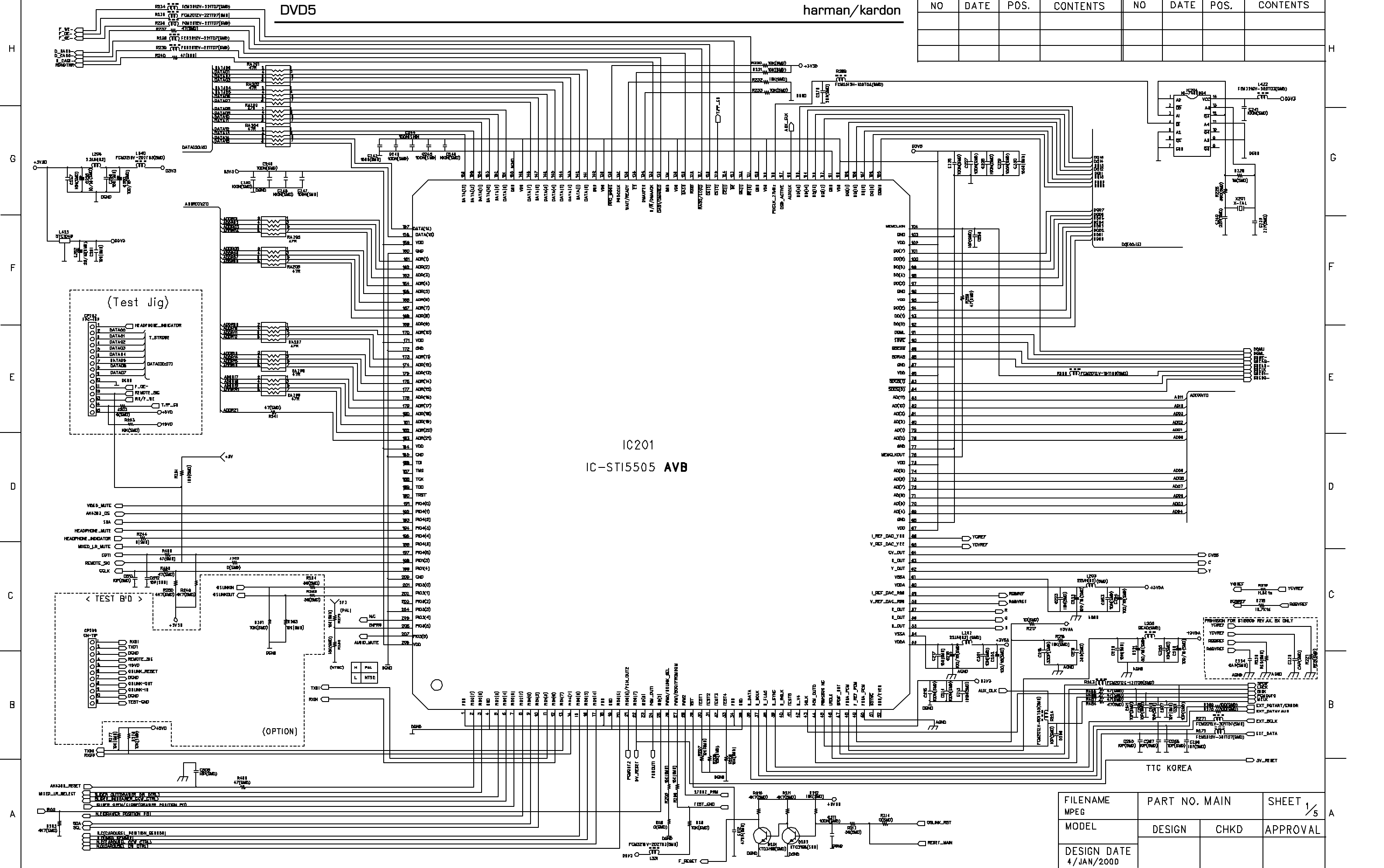












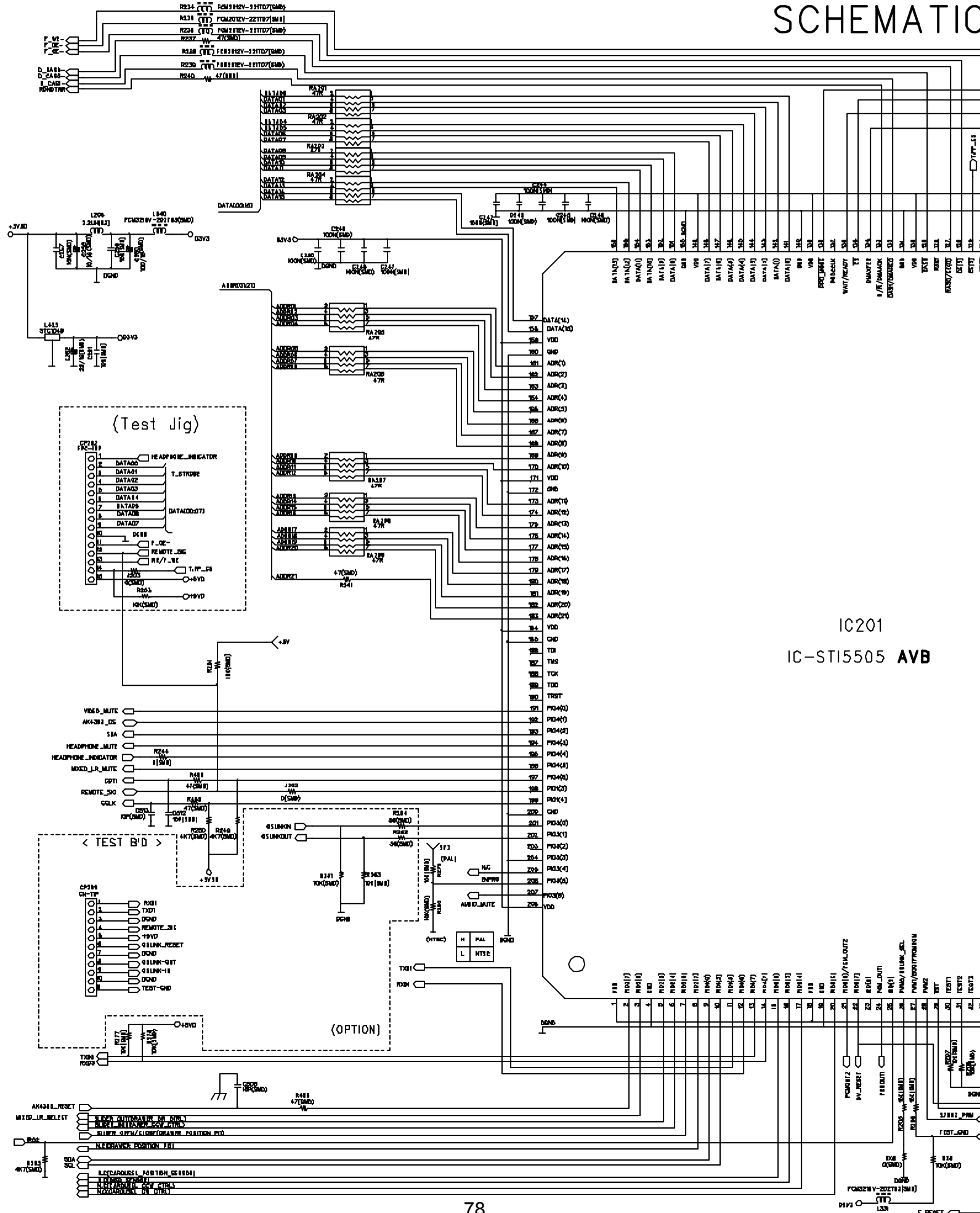
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DESIGN DATE 4/JAN/2000			
TTC CO.LTD			

IC201
IC-ST15505 AVB

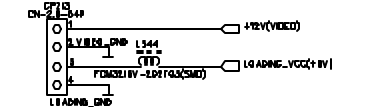
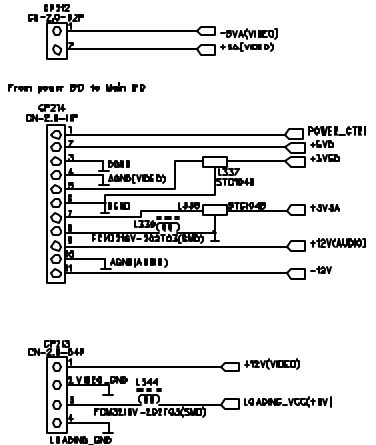
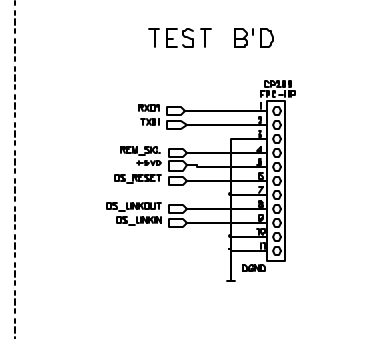
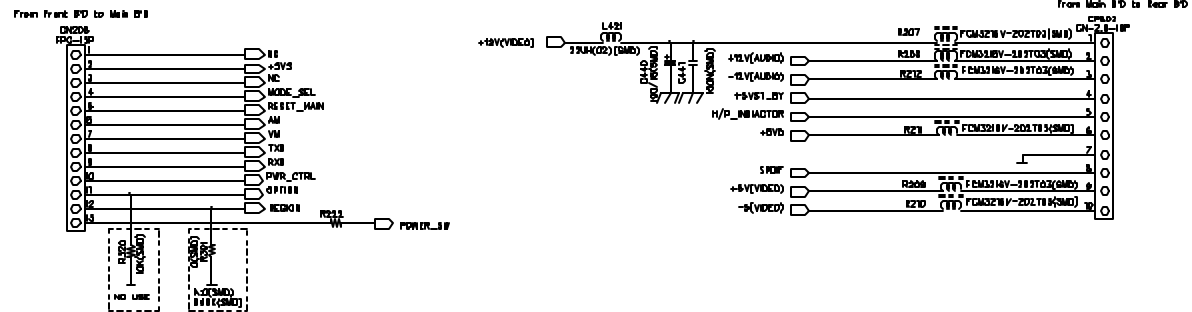
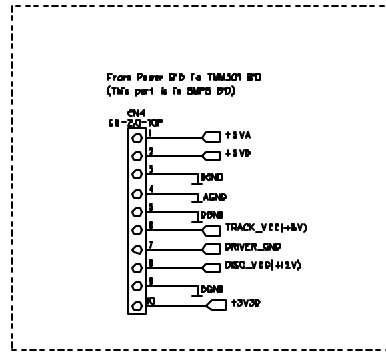
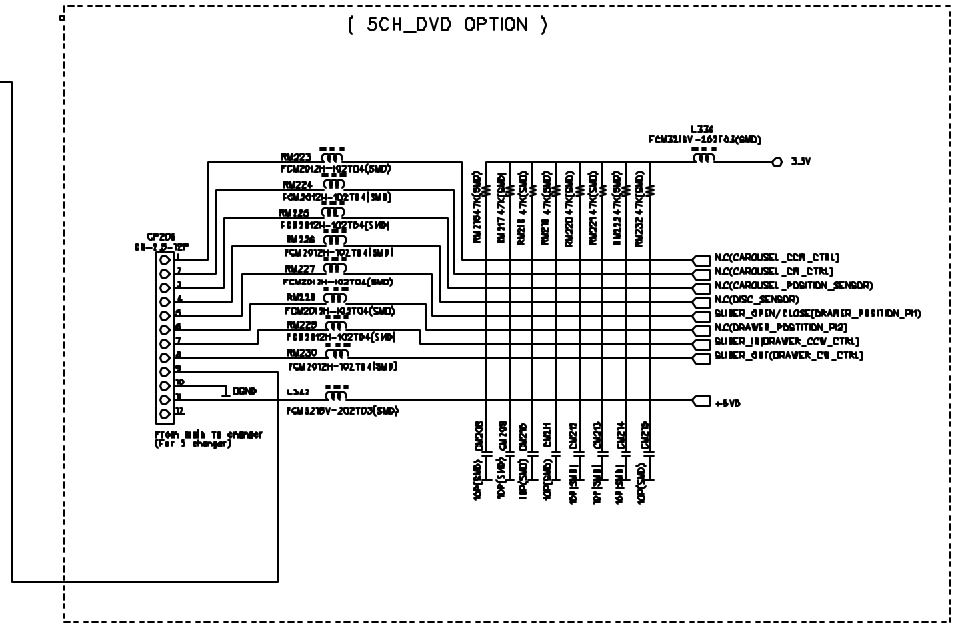
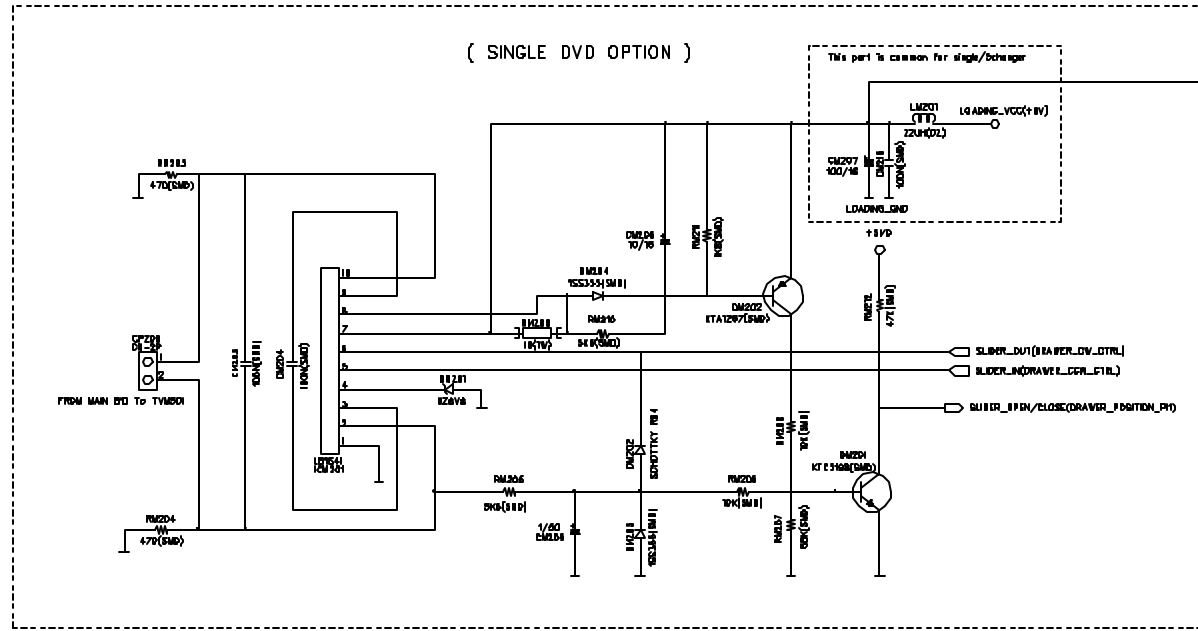
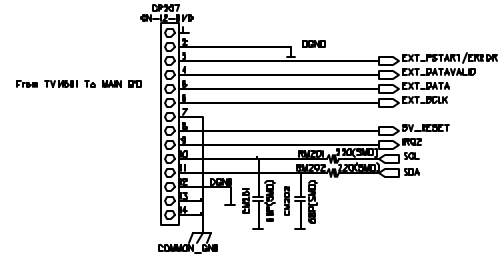
SCHEMATIC

H
G
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D
C
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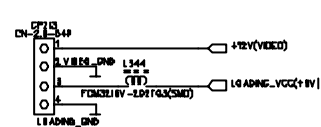
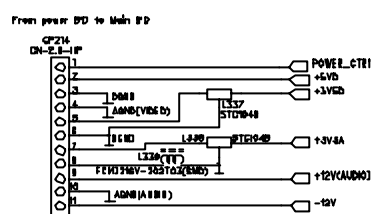
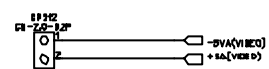
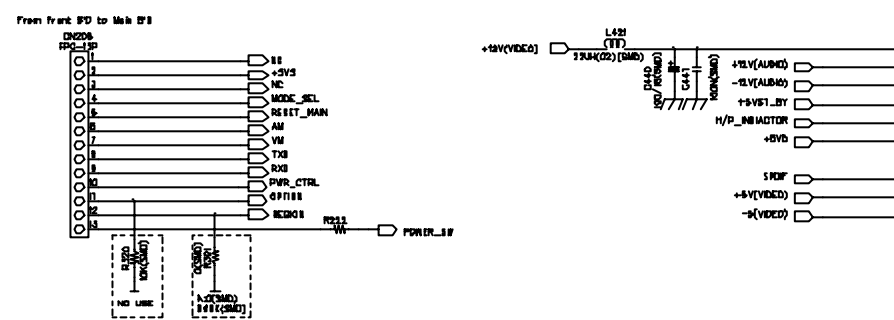
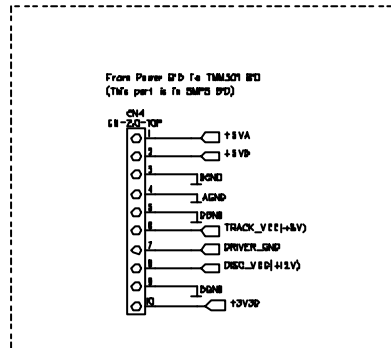
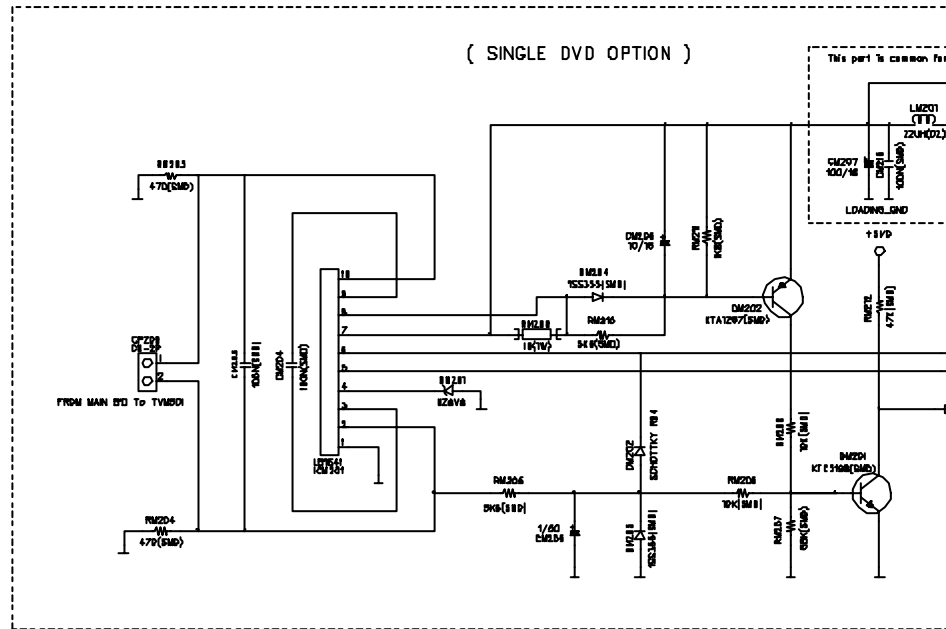
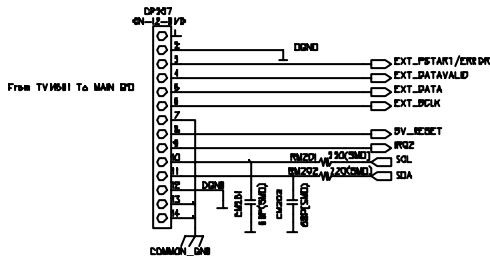


IC201
IC-ST15505 AVB

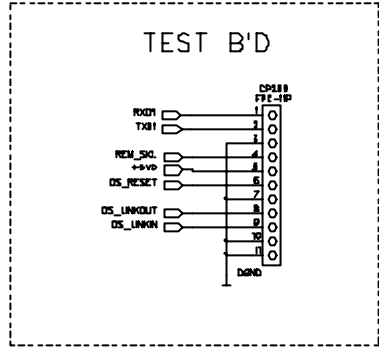
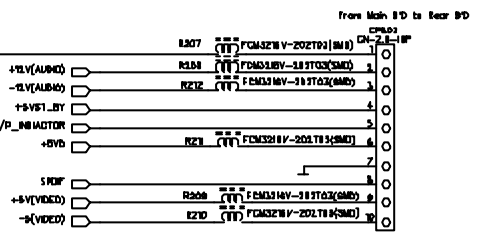
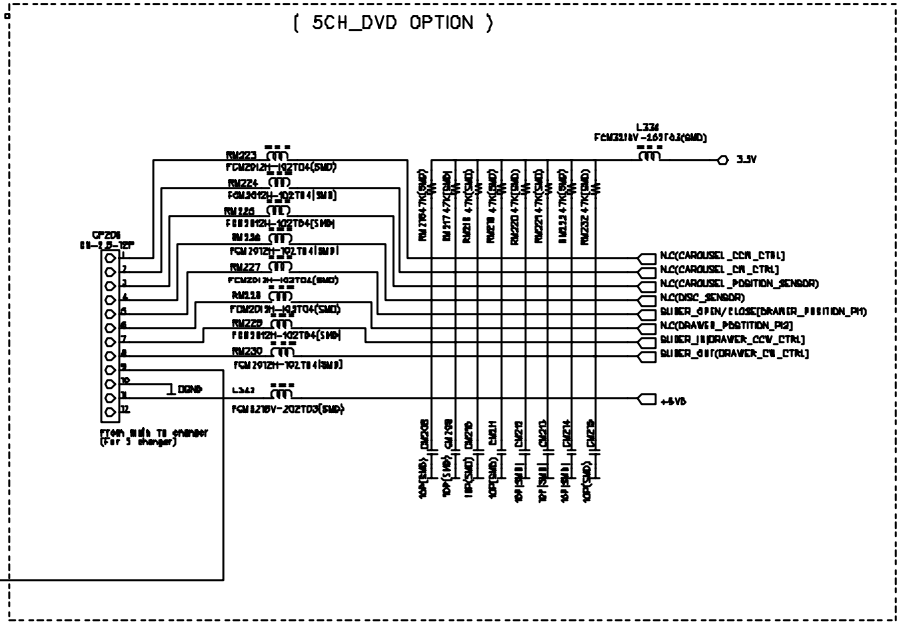
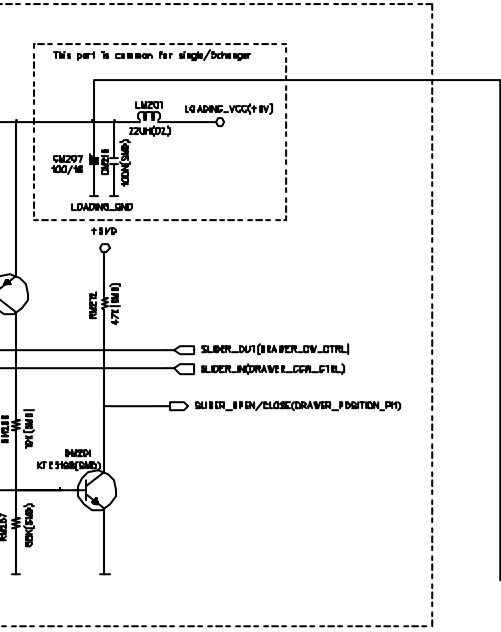
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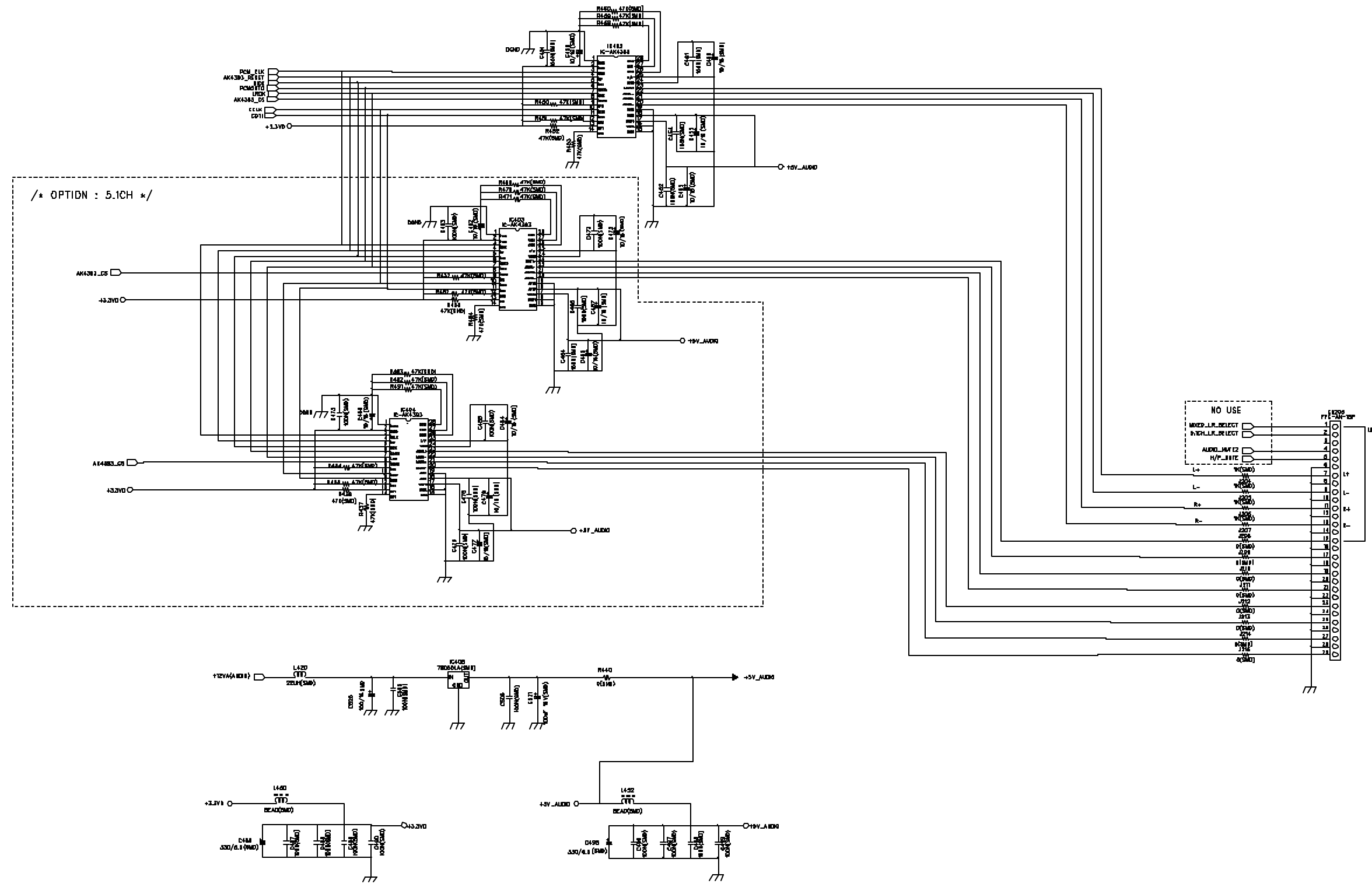
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MODEL	DESIGN	CHKD	APPROVAL
DESIGN DATE 15/JAN/2000			

SCHEMATIC DIAGRAM

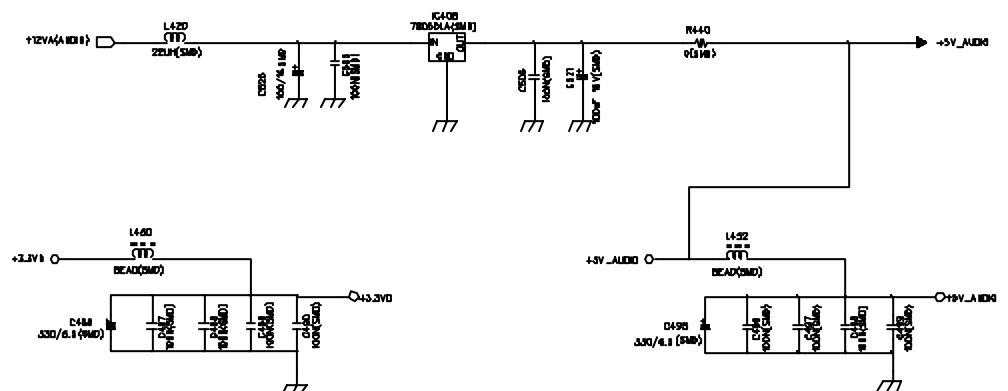
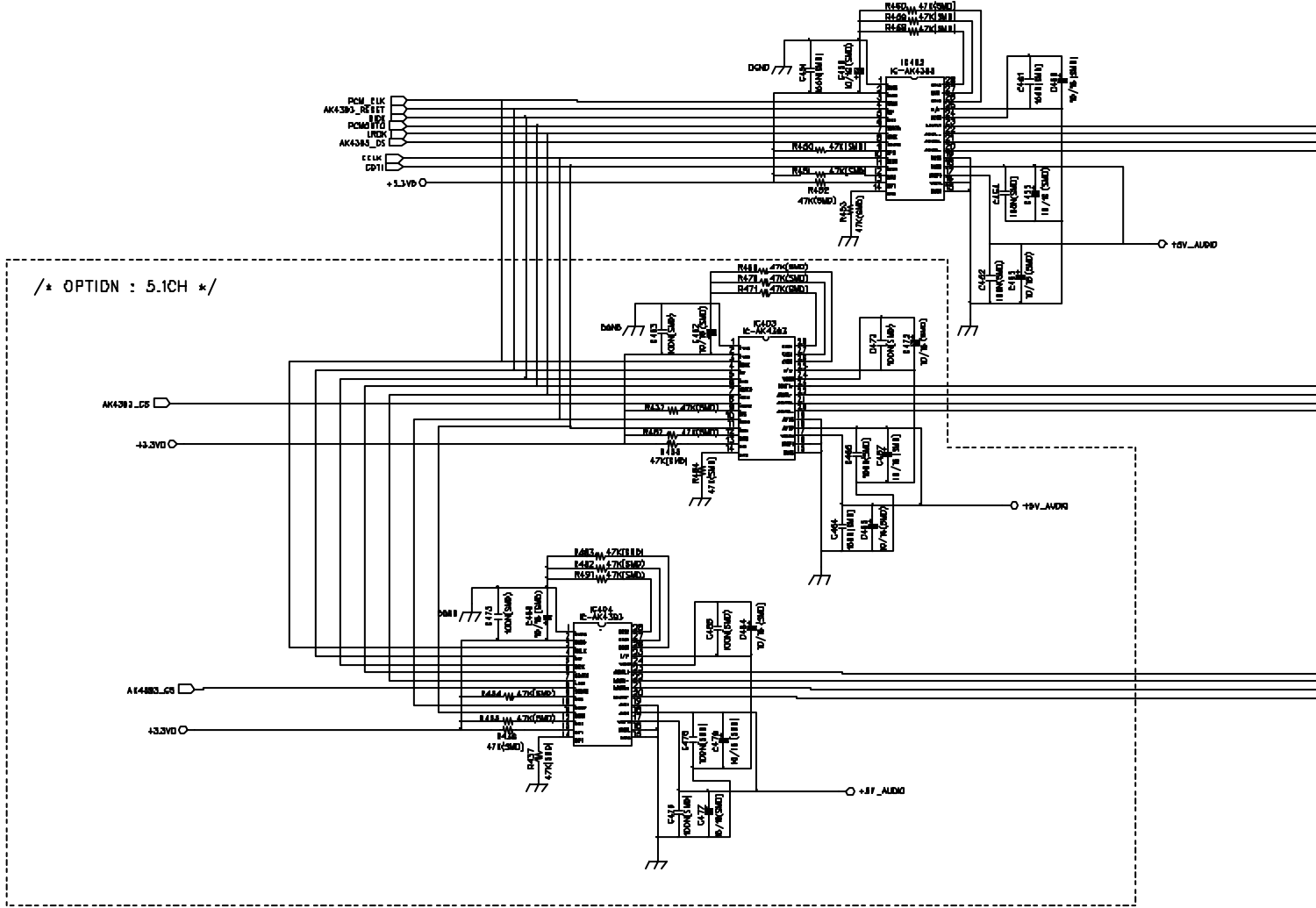
NO	DATE	POS.	CONTENTS	NO	DATE	POS.	CONTENTS



FILENAME AUDIO_DAC	PART NO.		SHEET 4/5
MODEL	DESIGN	CHKD	APPROVAL
DESIGN DATE 15/JAN/2000			

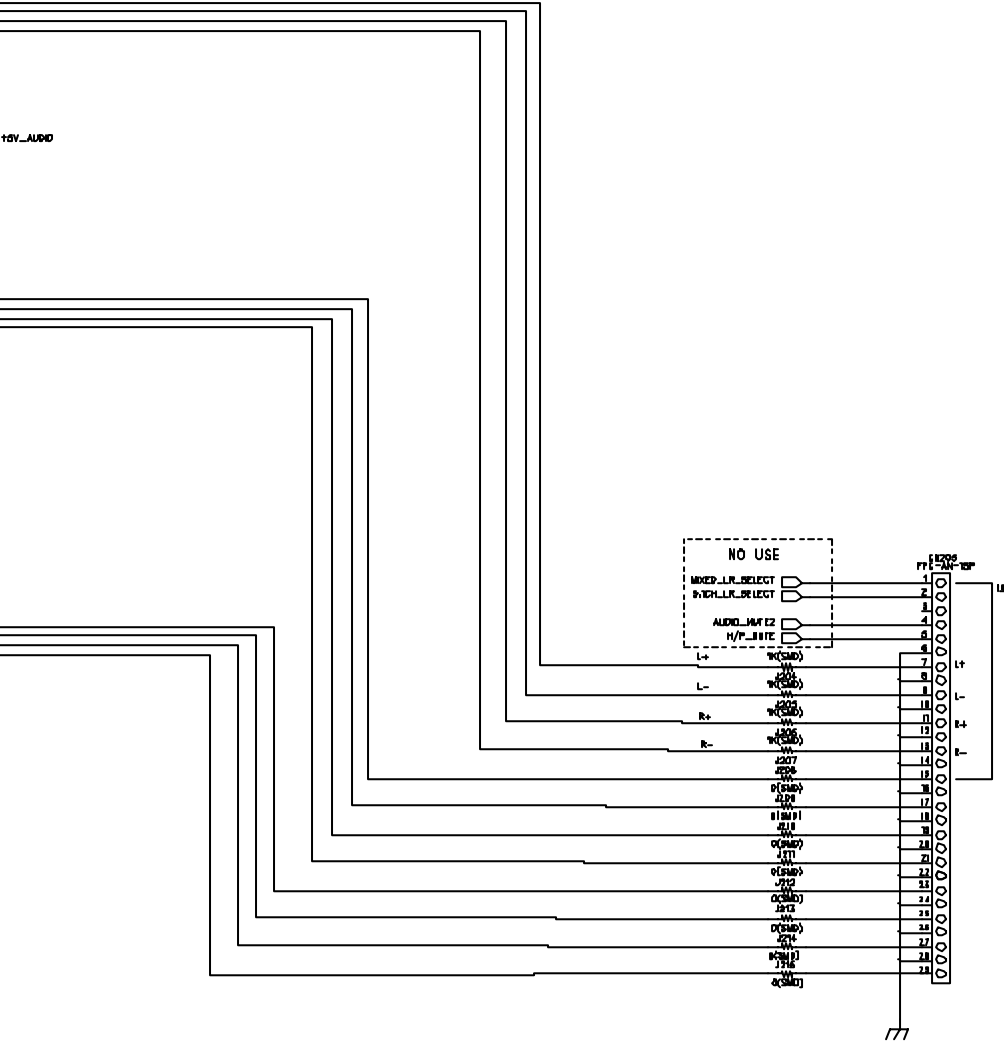
TTC CO., LTD

SCHEMATIC D



C DIAGRAM

NO	DATE	POS.	CONTENTS	NO	DATE	POS.	CONTENTS

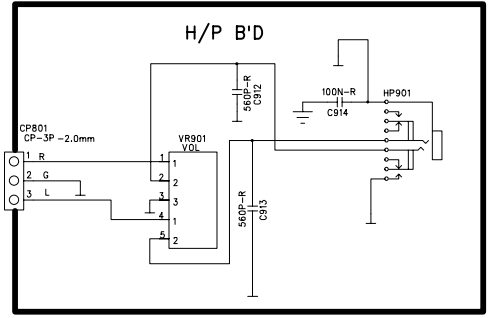
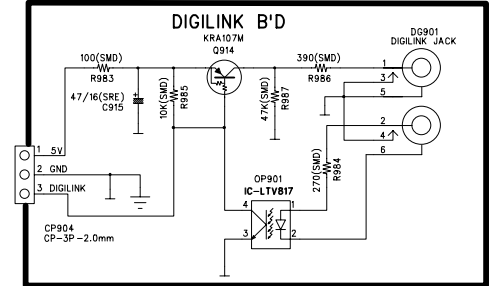
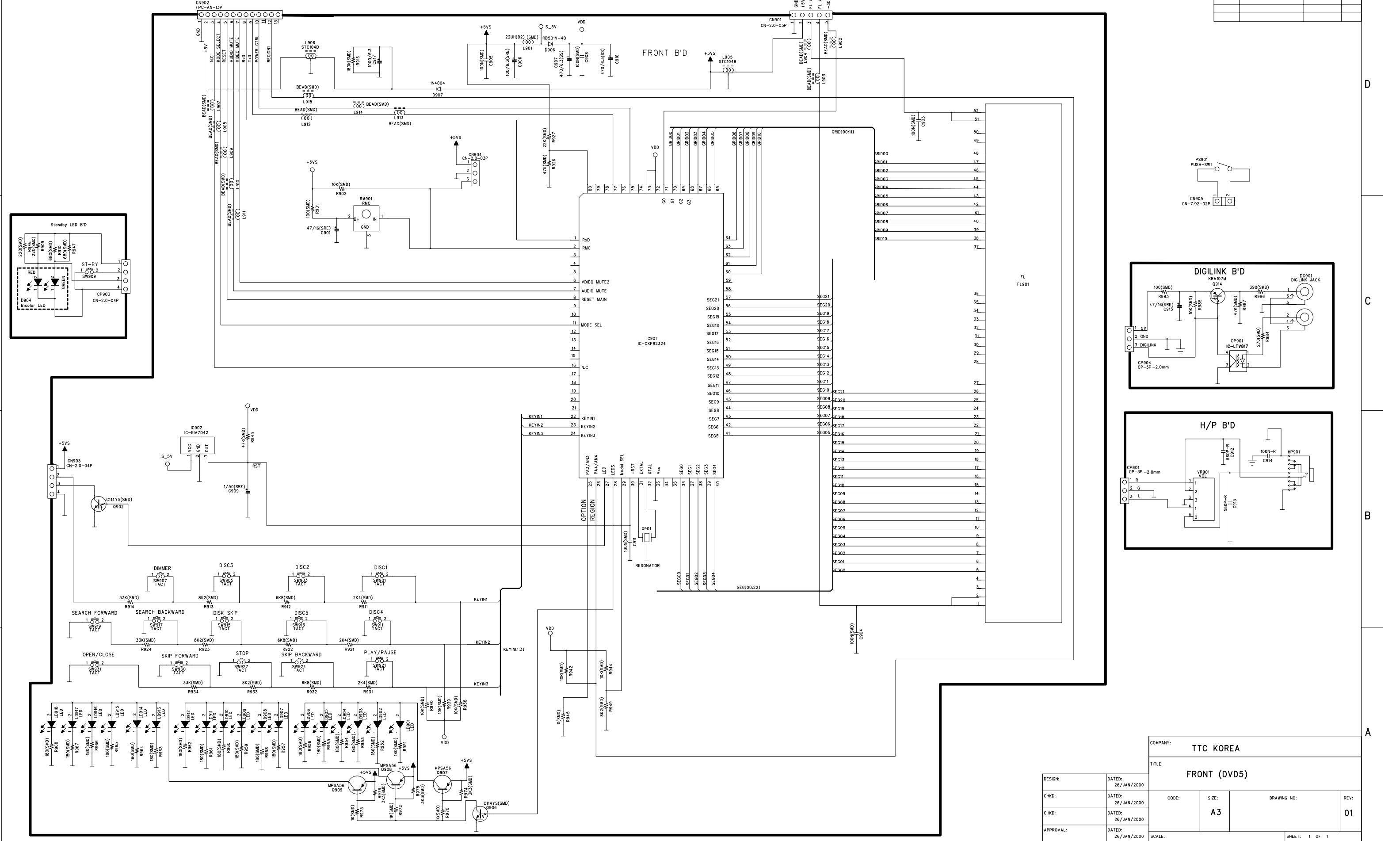


FILENAME AUDIO_DAC	PART NO.		SHEET 4/5
MODEL	DESIGN	CHKD	APPROVAL
DESIGN DATE			

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

TO MAIN
CC902 : MAIN CABLE 1mm 13P 150mm

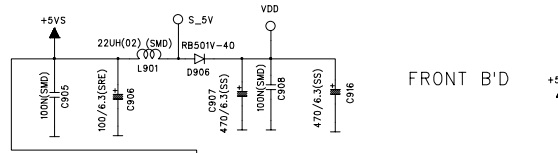
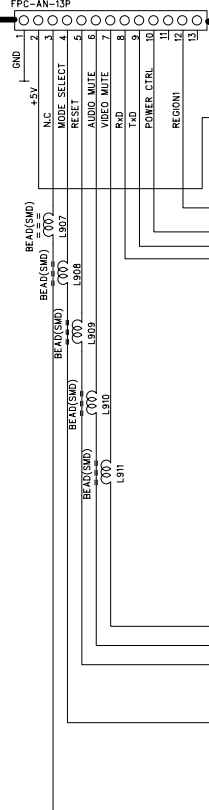
FROM SMPS



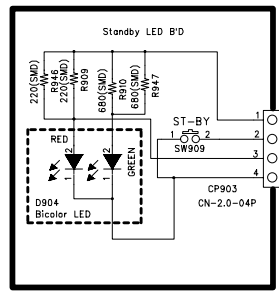
COMPANY:		TTC KOREA			
TITLE:		FRONT (DVD5)			
DESIGN:	DATED:	CODE:	SIZE:	DRAWING NO:	REV:
CHKD:	DATED:		A3		01
APPROVAL:	DATED:	SCALE:			

TO MAIN
CC902 : CARD CABLE 1mm 13P 150mm

CN902
TFC-AK-13P



FRONT B'D



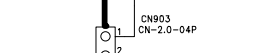
Standby LED B'D



D904
Bicolour LED

ST-BY
SW909

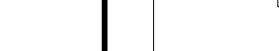
CN903
CN-2.0-04P



CN903
CN-2.0-04P



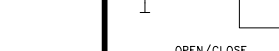
C114YS(SMD)
Q902



IC902
IC-KIA7042



1/50(SRE)
C903



47K(SMD)
R943



10K(SMD)
R942



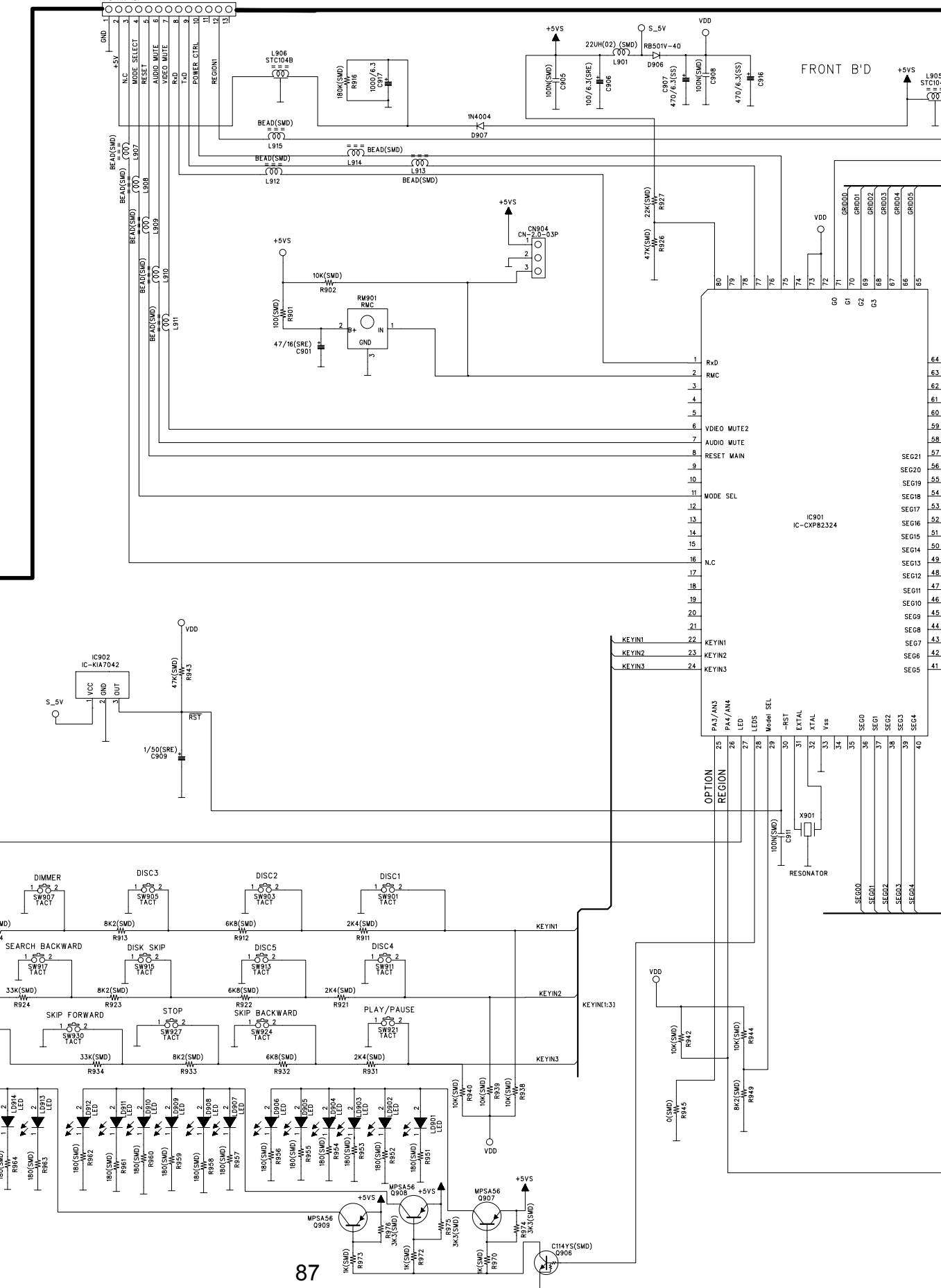
10K(SMD)
R944



10K(SMD)
R945



10K(SMD)
R946



IC901
IC-CXP2324

KEYIN1
KEYIN2
KEYIN3

PA1/AN3
PA2/AN4
LED
VSS
XTAL
XRES
SEG0
SEG1
SEG2
SEG3
SEG4

OPTION
REGION

RESONATOR

KEYIN1(1:3)

KEYIN2

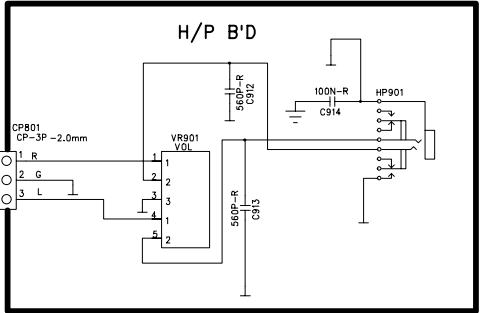
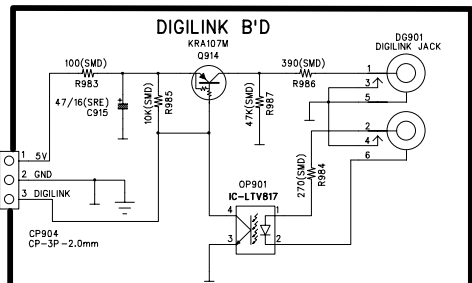
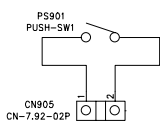
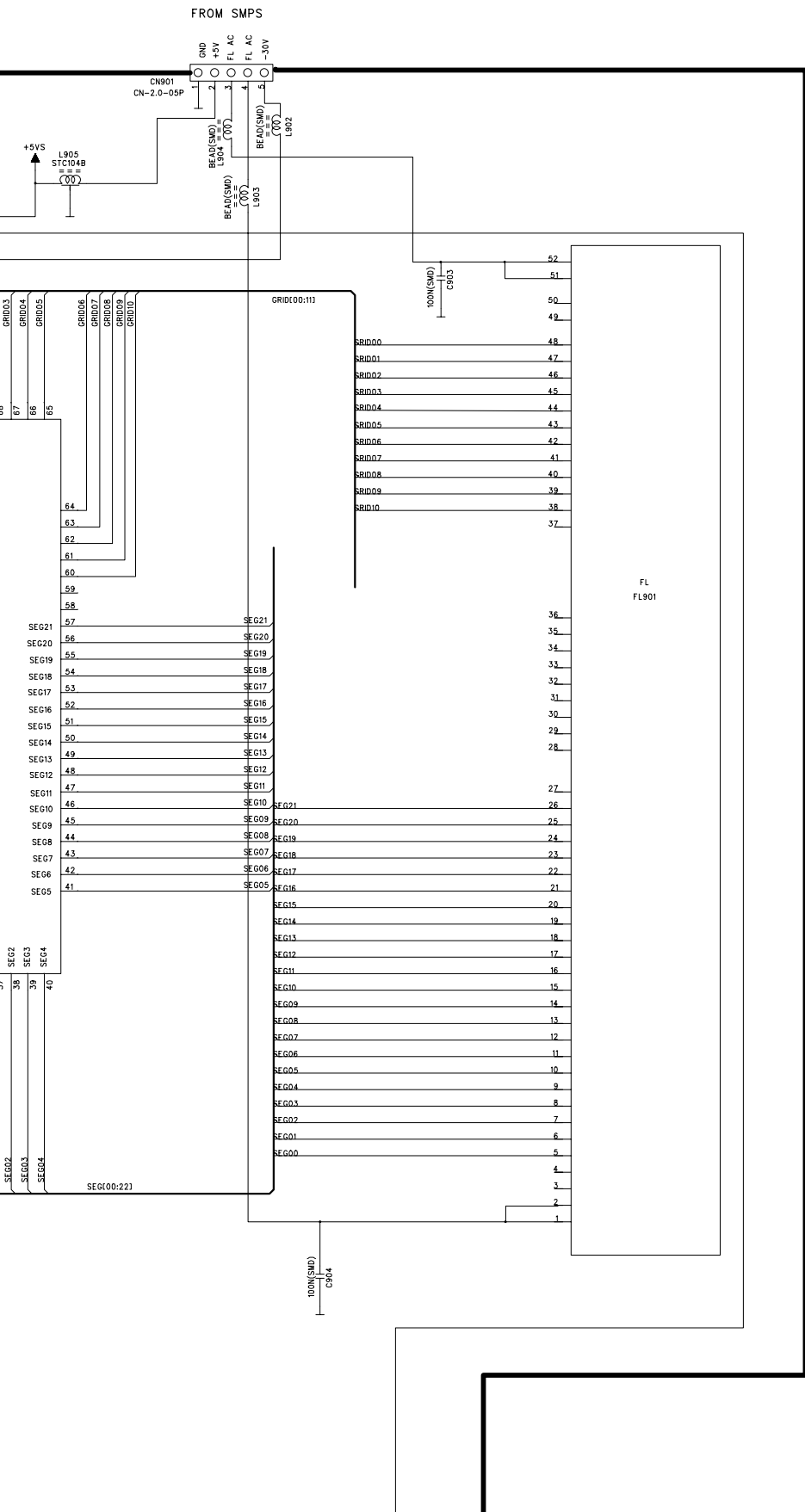
KEYIN3

VDD

VDD

VDD

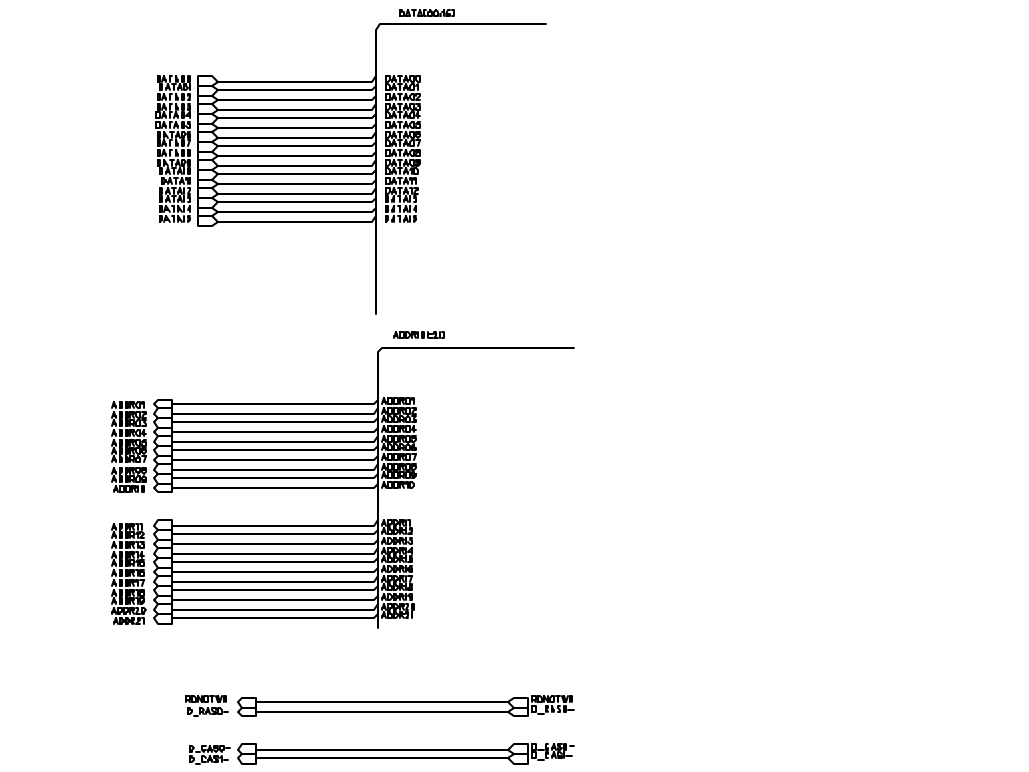
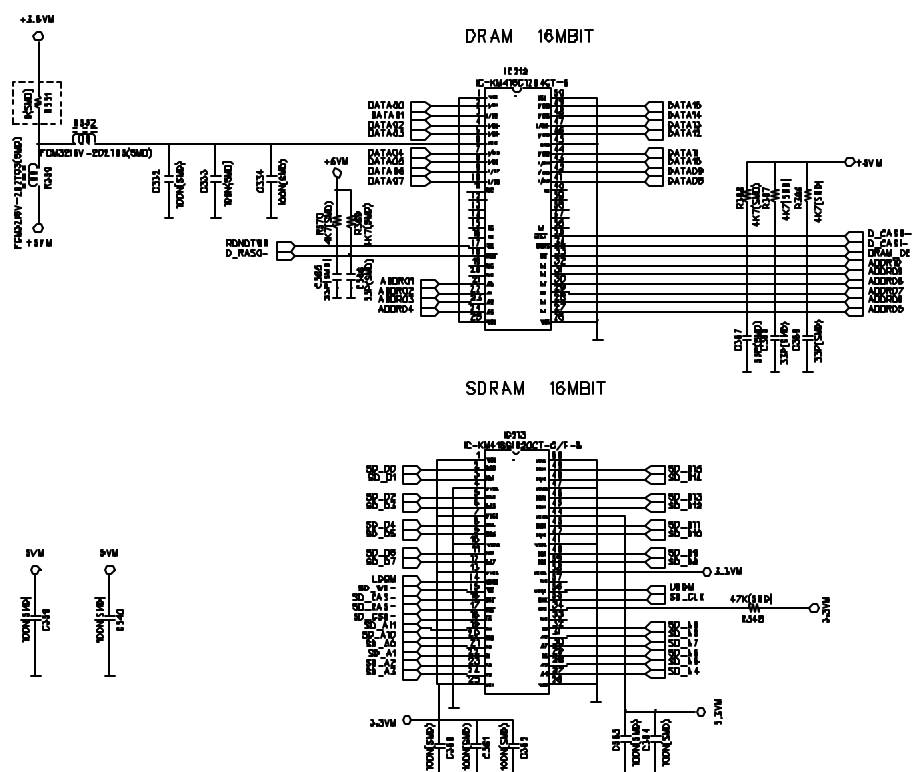
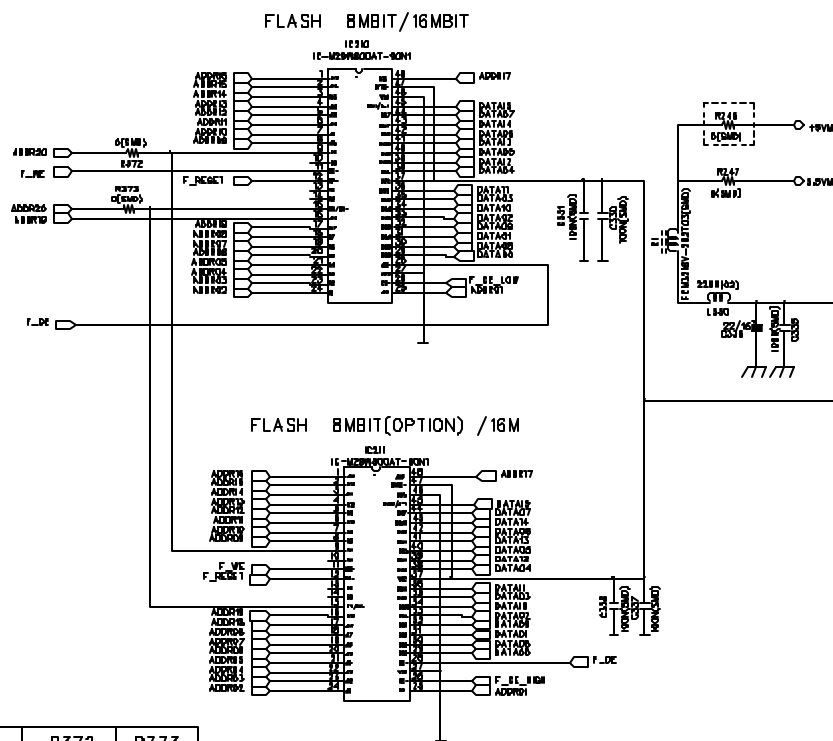
REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



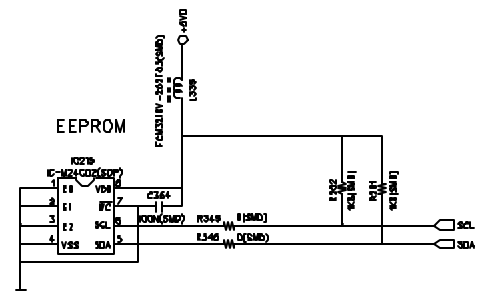
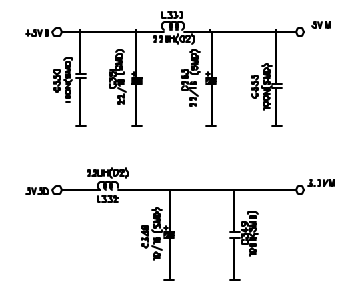
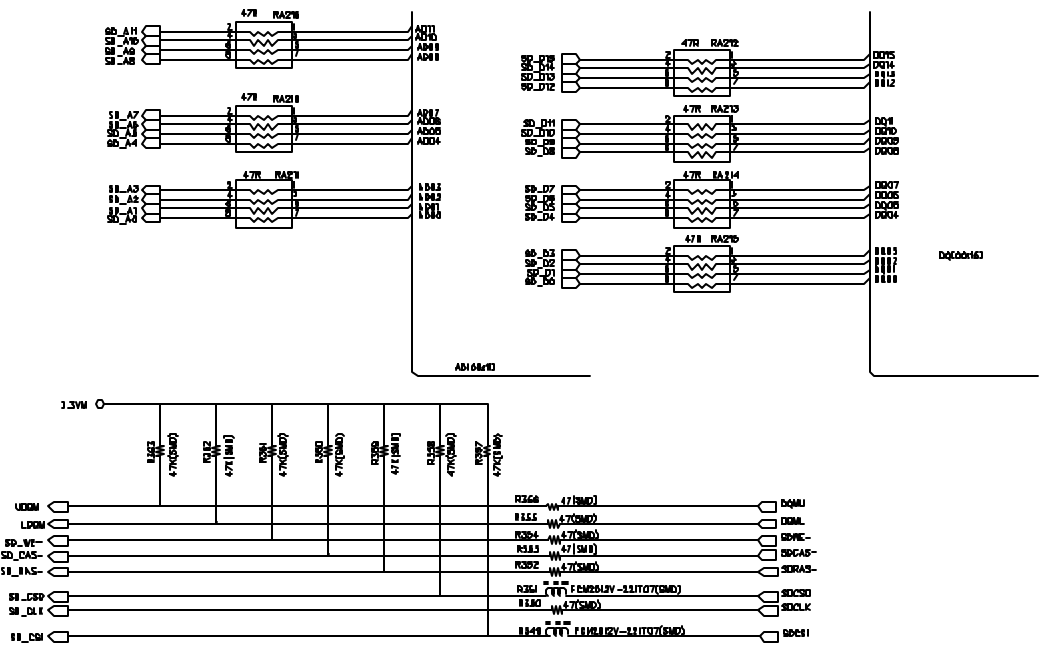
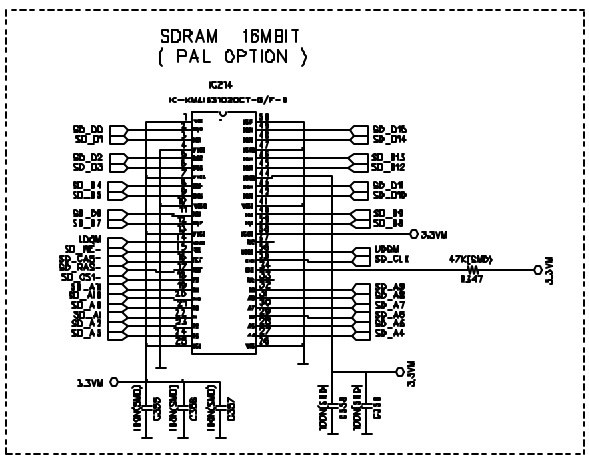
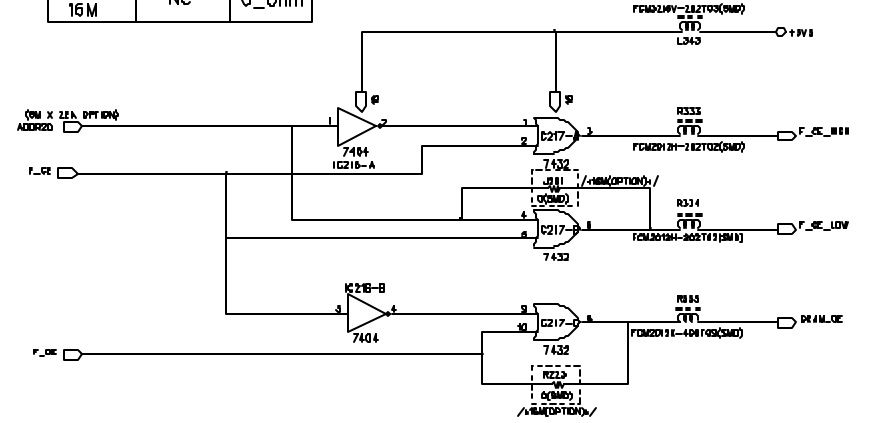
COMPANY: TTC KOREA			
TITLE: FRONT (DVD5)			
DESIGN: CHKD: CHKD: APPROVAL:	DATED: 26/JAN/2000 DATED: 26/JAN/2000 DATED: 26/JAN/2000 DATED: 26/JAN/2000	CODE: A3	DRAWING NO: 01
SCALE:			SHEET: 1 OF 1

SCHEMATIC DIAGRAM

NO	DATE	POS.	CONTENTS	NO	DATE	POS.	CONTENTS

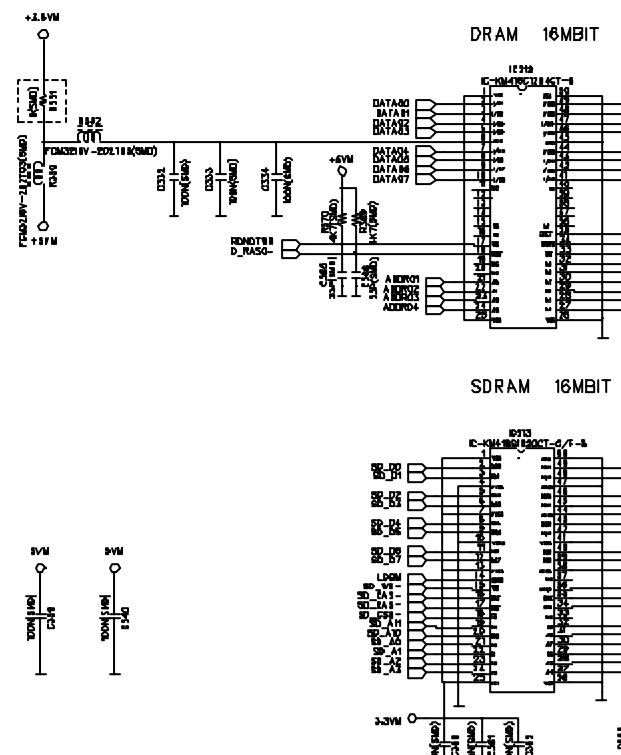
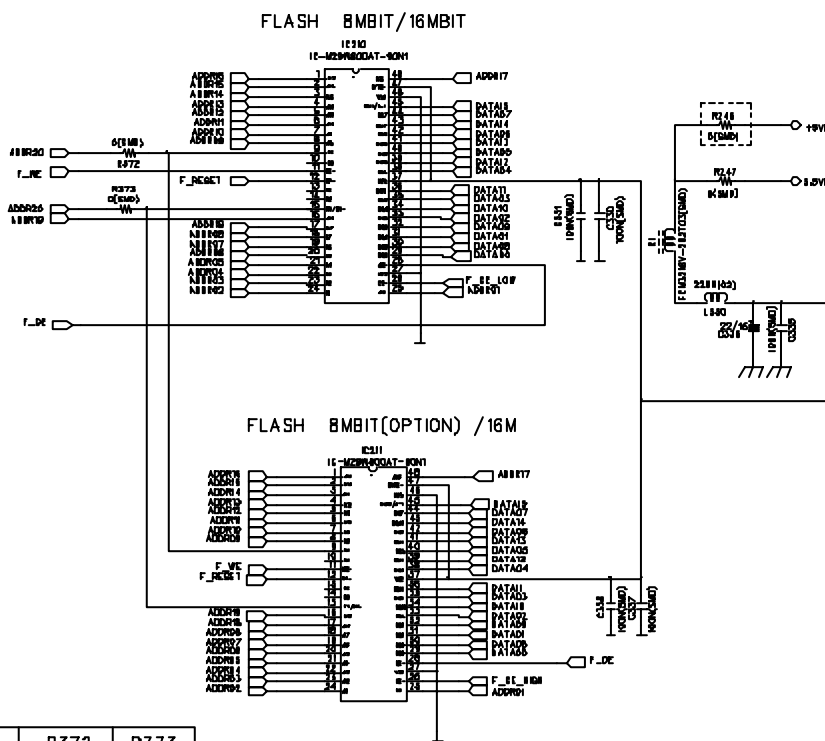


	R372	R373
ATMEL 16M	0_0hm	NC
ST 16M	NC	0_0hm

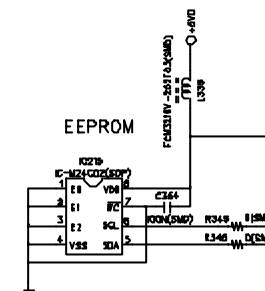
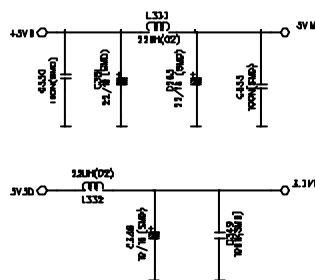
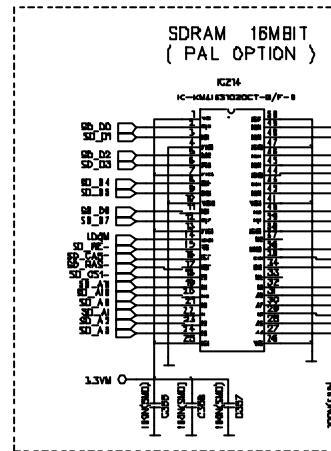
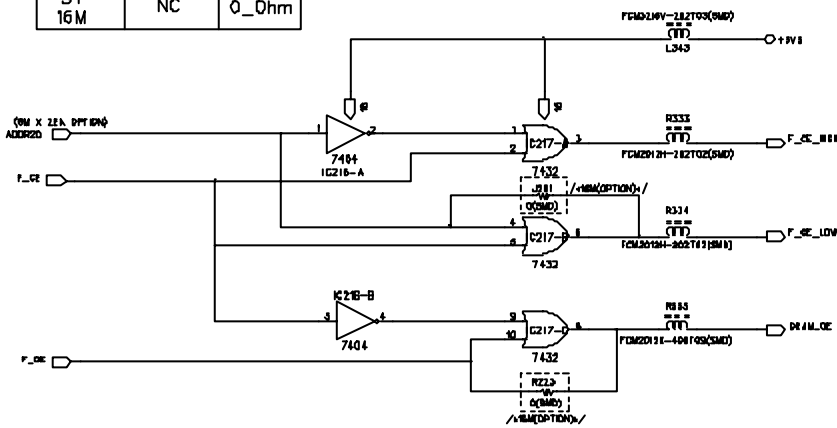


FILENAME MEMORY	PART NO. MAIN		SHEET 3/5
MODEL	DESIGN	CHKD	APPROVAL
DESIGN DATE 4/JAN/2000			

SCHEMATIC D



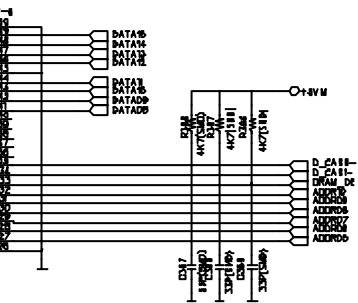
	R372	R373
ATMEL 16M	D_0hm	NC
ST 16M	NC	Q_0hm



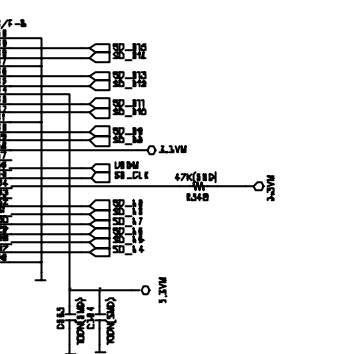
DIAGRAM

NO	DATE	PDS.	CONTENTS	NO	DATE	PDS.	CONTENTS

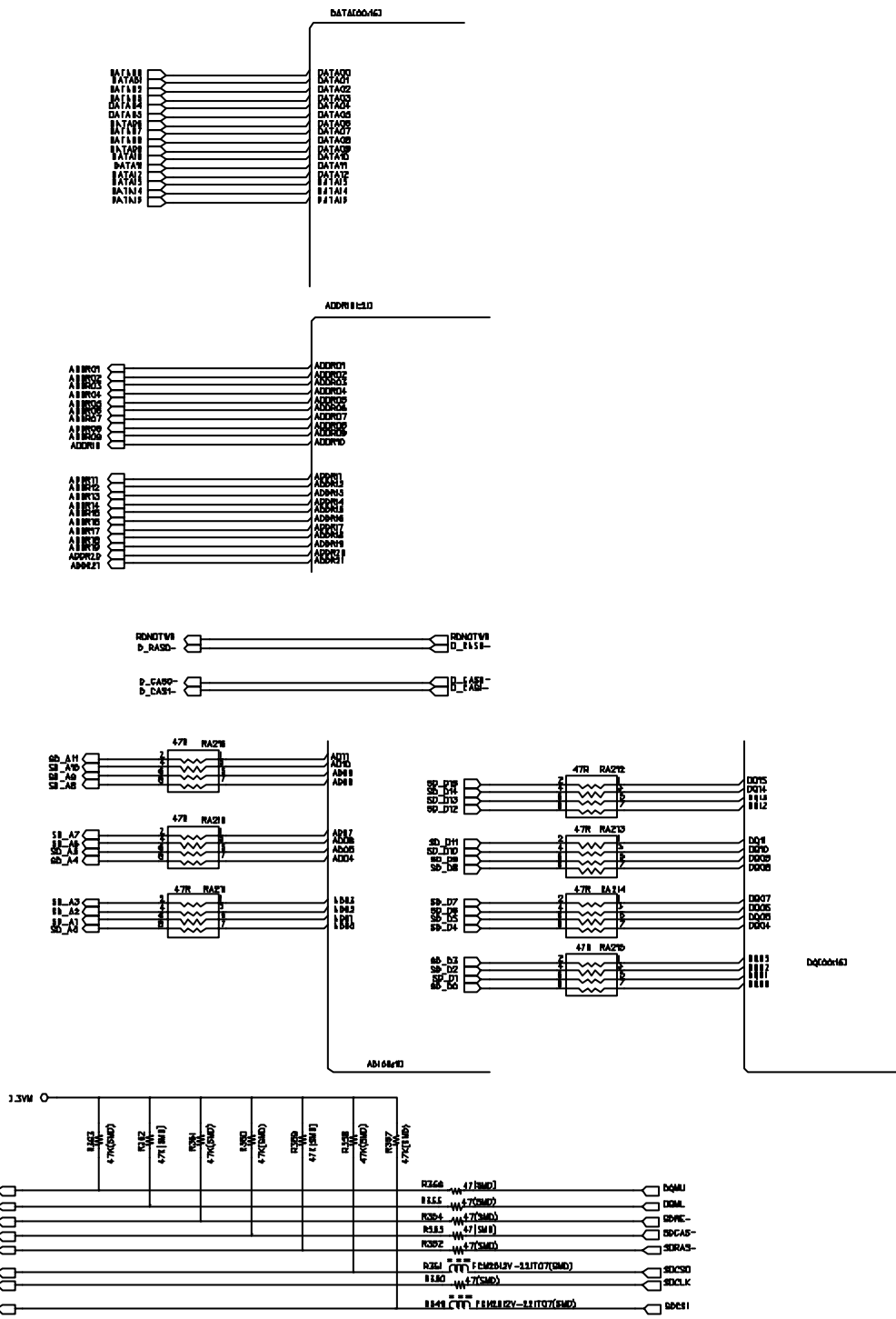
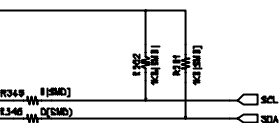
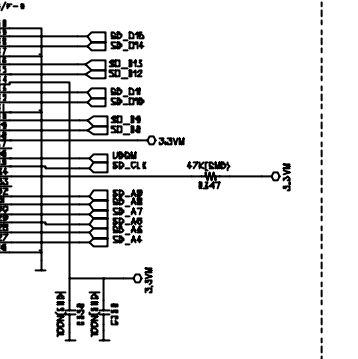
6MBIT



6MBIT

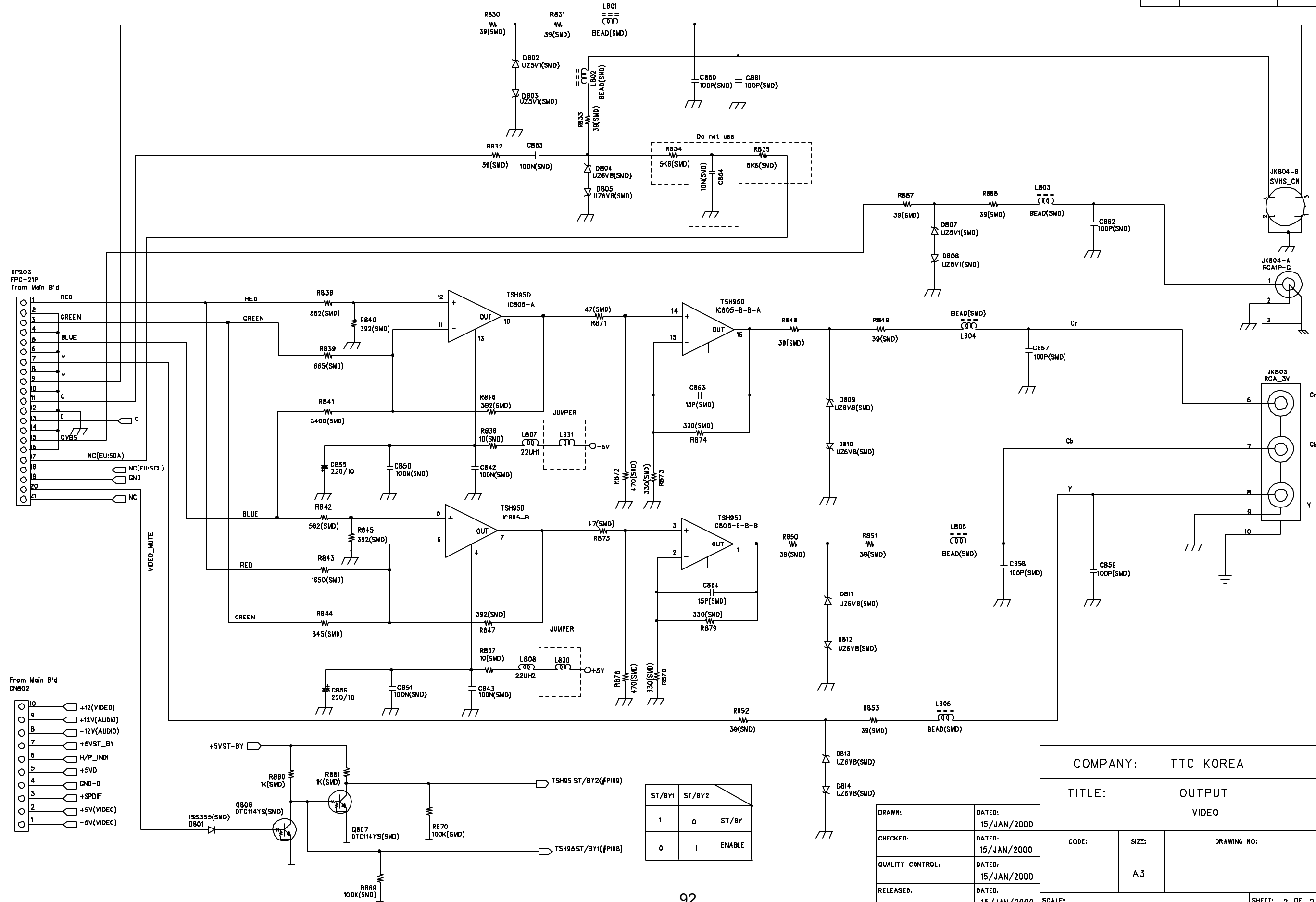


6MBIT
(ON)



FILENAME MEMRY	PART NO. MAIN		SHEET 3/5
MODEL	DESIGN	CHKD	APPROVAL
DESIGN DATE 4/JAN/2000			

REVISION RECORD			
LTR	ECD NO:	APPROVED:	DATE:



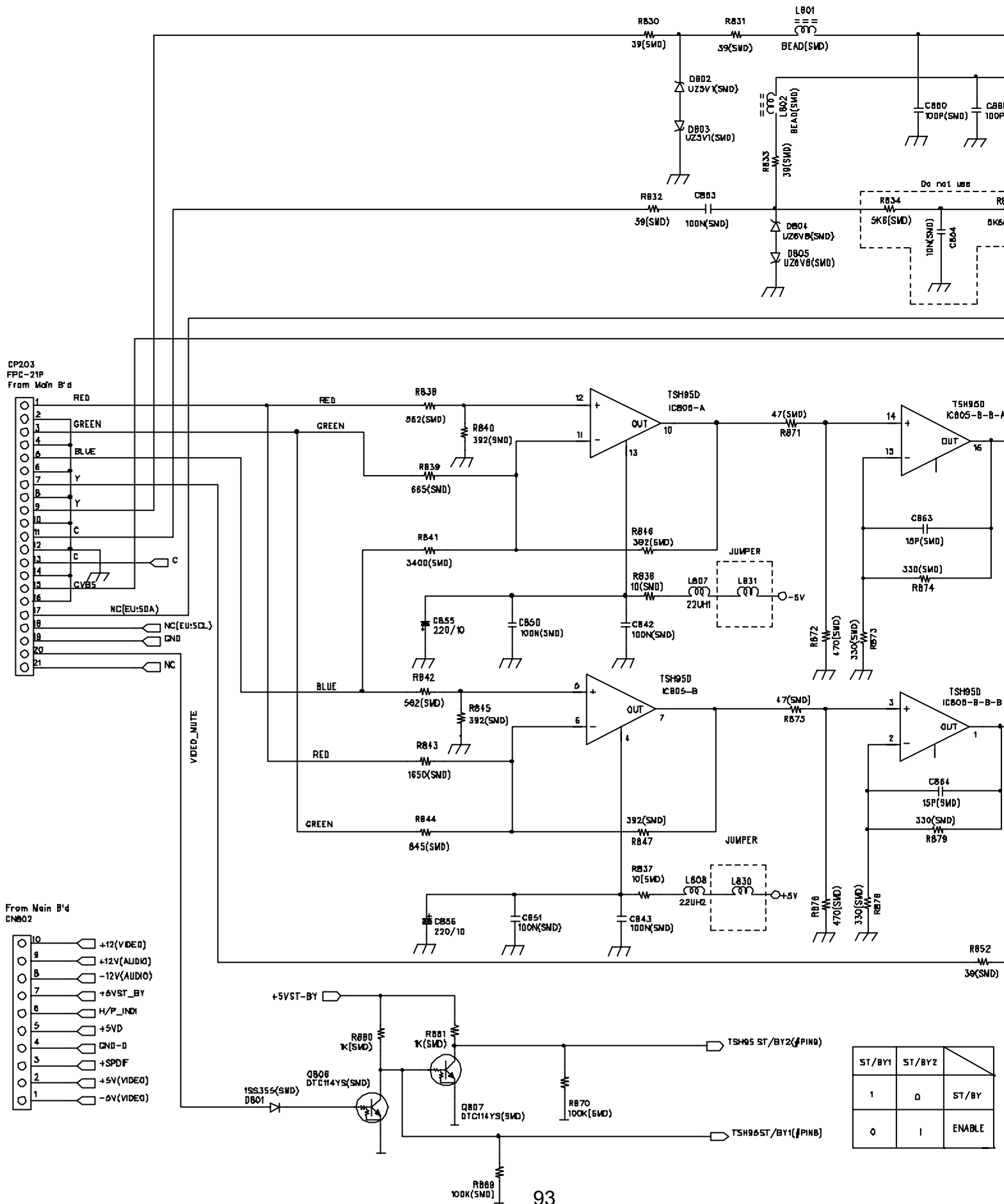
COMPANY: TTC KOREA			
TITLE: OUTPUT VIDEO			
DRAWN:	DATED: 15/JAN/2000	CODE:	REV:
CHECKED:	DATED: 15/JAN/2000	SIZE: A3	DRAWING NO:
QUALITY CONTROL:	DATED: 15/JAN/2000	SHEET: 2 OF 2	
RELEASED:	DATED: 15/JAN/2000	SCALE:	

D

C

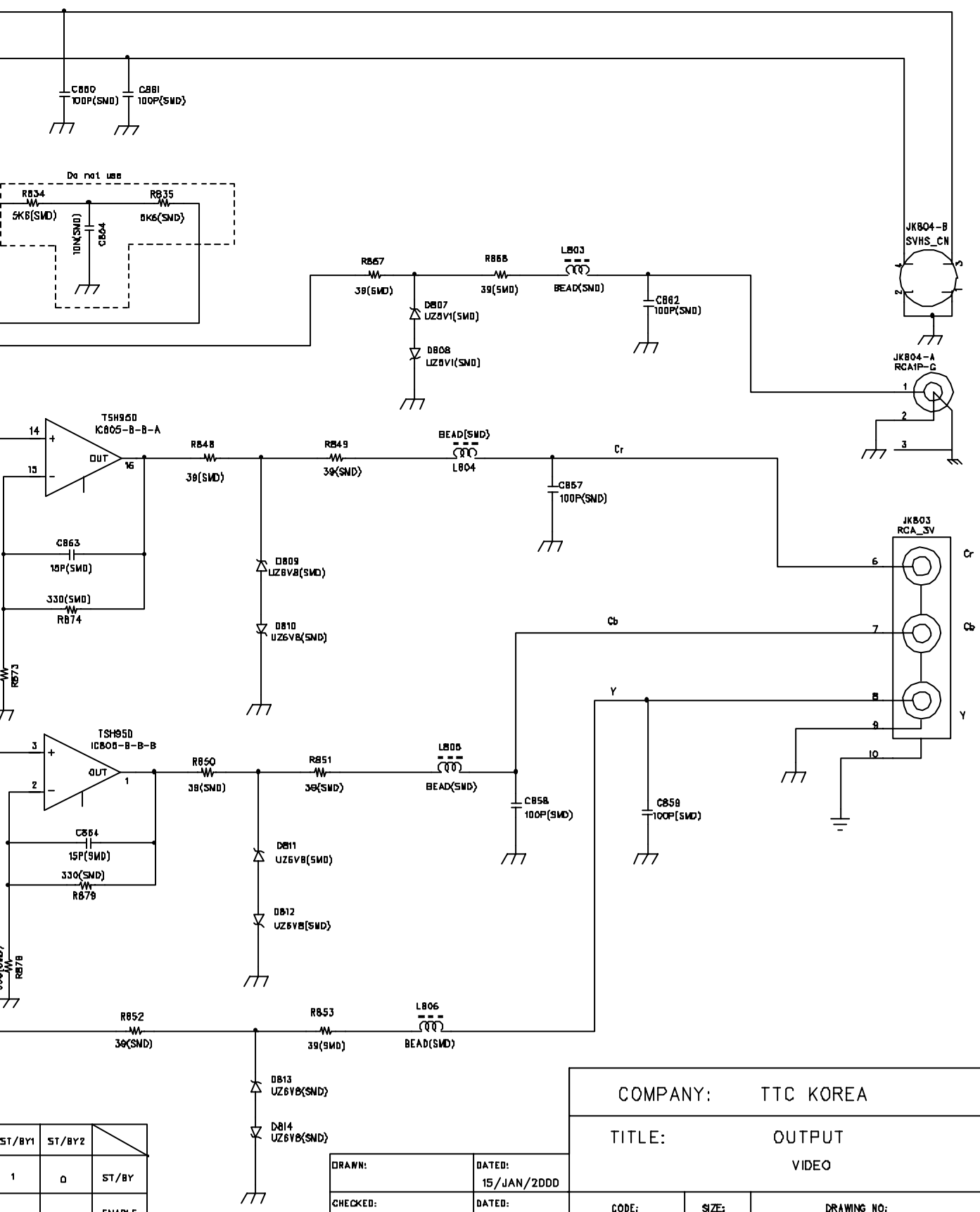
B

A



ST/BY1	ST/BY2	
1	0	ST/BY
0	1	ENABLE

REVISION RECORD			
LTR	ECD NO:	APPROVED:	DATE:

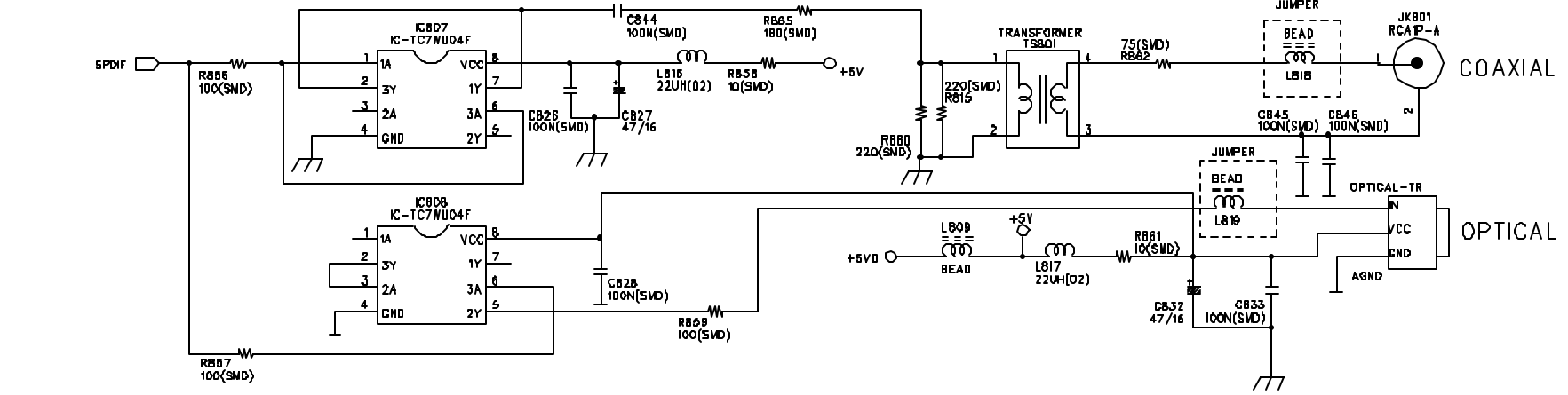
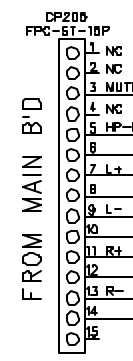
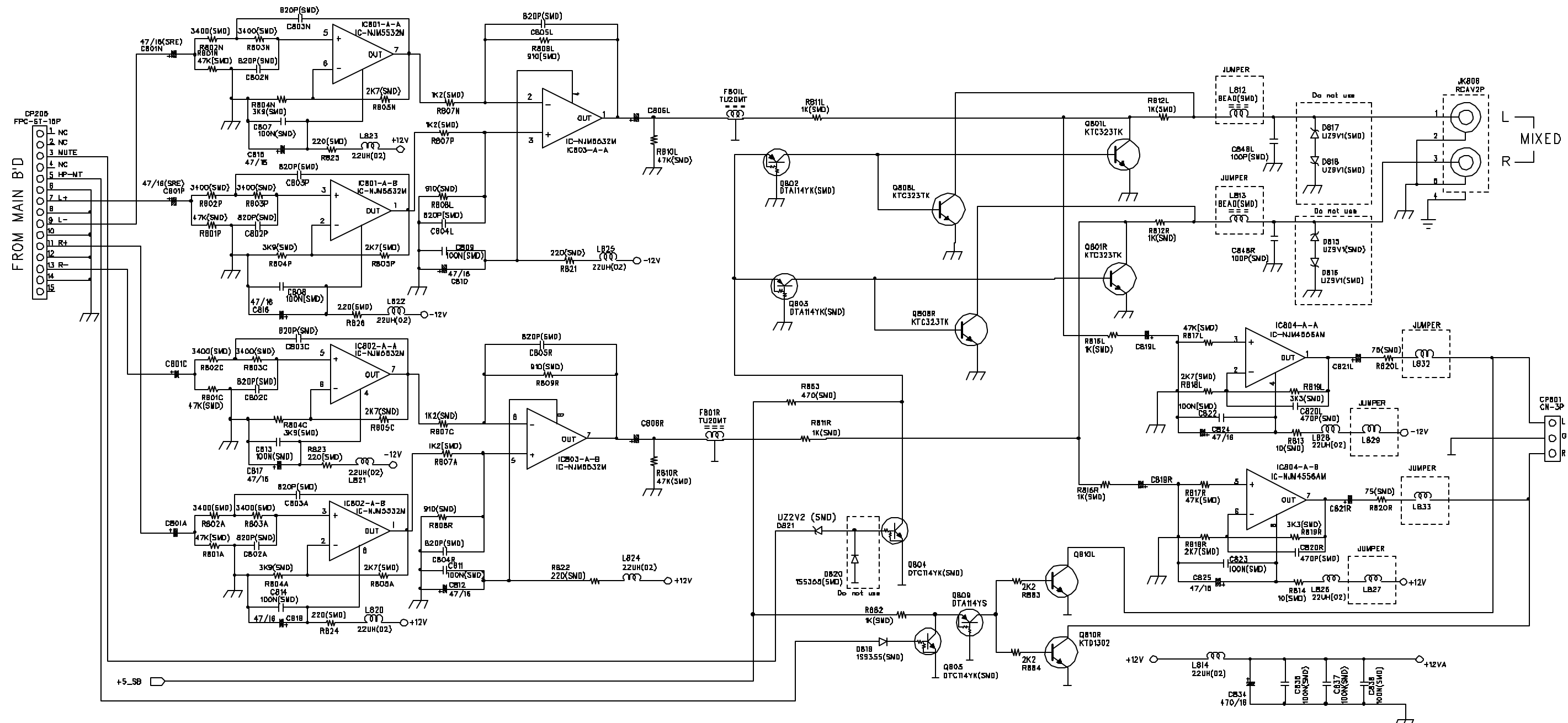


ST/BY1	ST/BY2	ST/BY
1	0	ST/BY
0	1	ENABLE

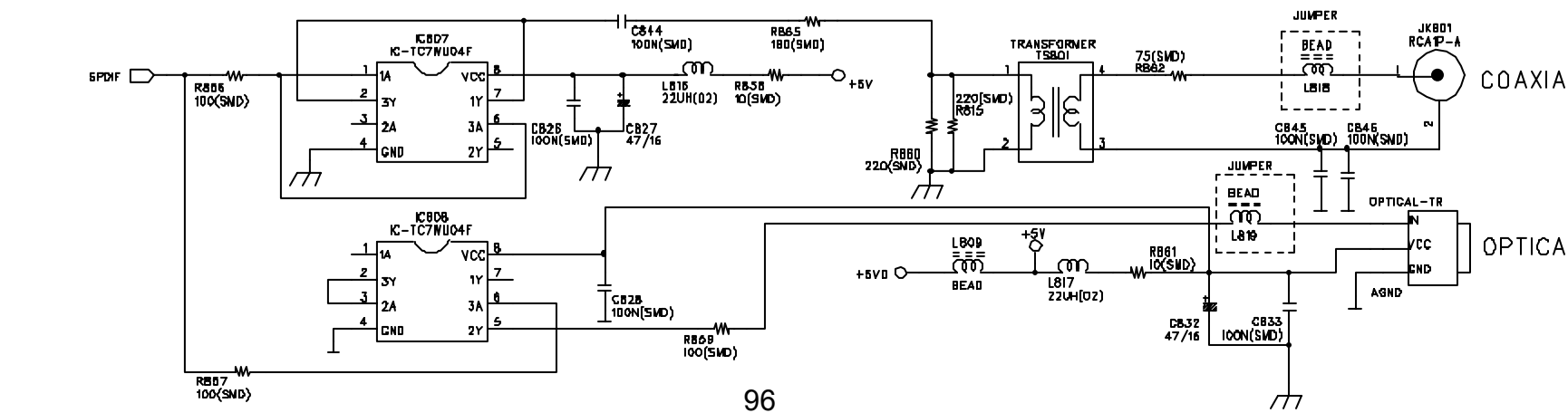
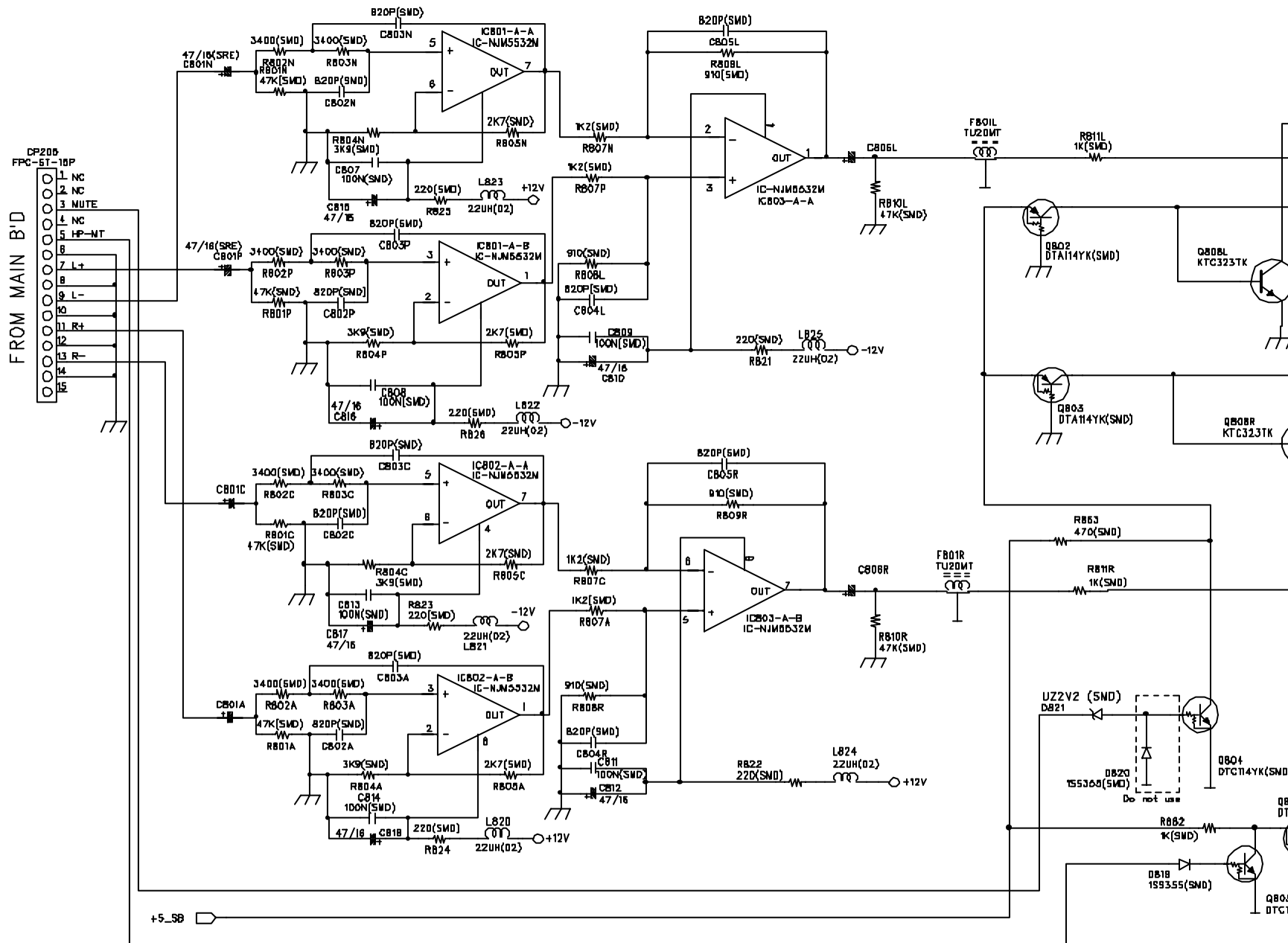
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CHECKED:	DATED: 15/JAN/2000
QUALITY CONTROL:	DATED: 15/JAN/2000
RELEASED:	DATED: 15/JAN/2000

COMPANY: TTC KOREA			
TITLE: OUTPUT VIDEO			
CODE:	SIZE:	DRAWING NO:	REV:
94	A3		
SCALE:			SHEET: 2 OF 2

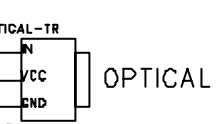
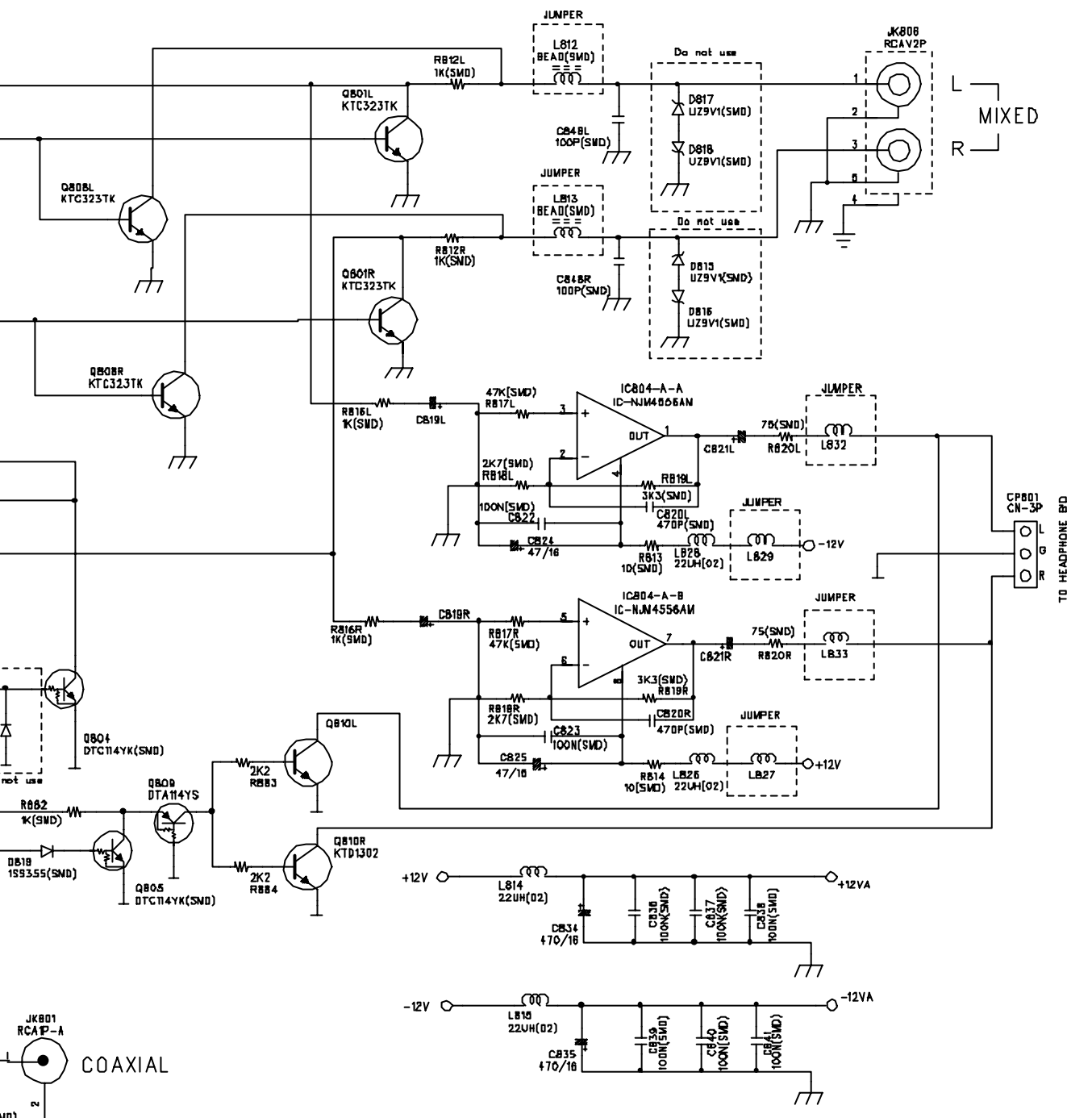
REVISION RECORD			
LTR	ECD NO:	APPROVED:	DATE:



DESIGNER:	DATE:	COMPANY:		TTC KOREA	
CHKD:	DATE:	TITLE:		OUTPUT AUDIO	
CHKD:	DATE:	CODE:	SIZE:	DRAWING NO:	REV:
APPROVAL:	DATE:		A3		01
	DATE:	SCALE:		SHEET:	1 OF 2



REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



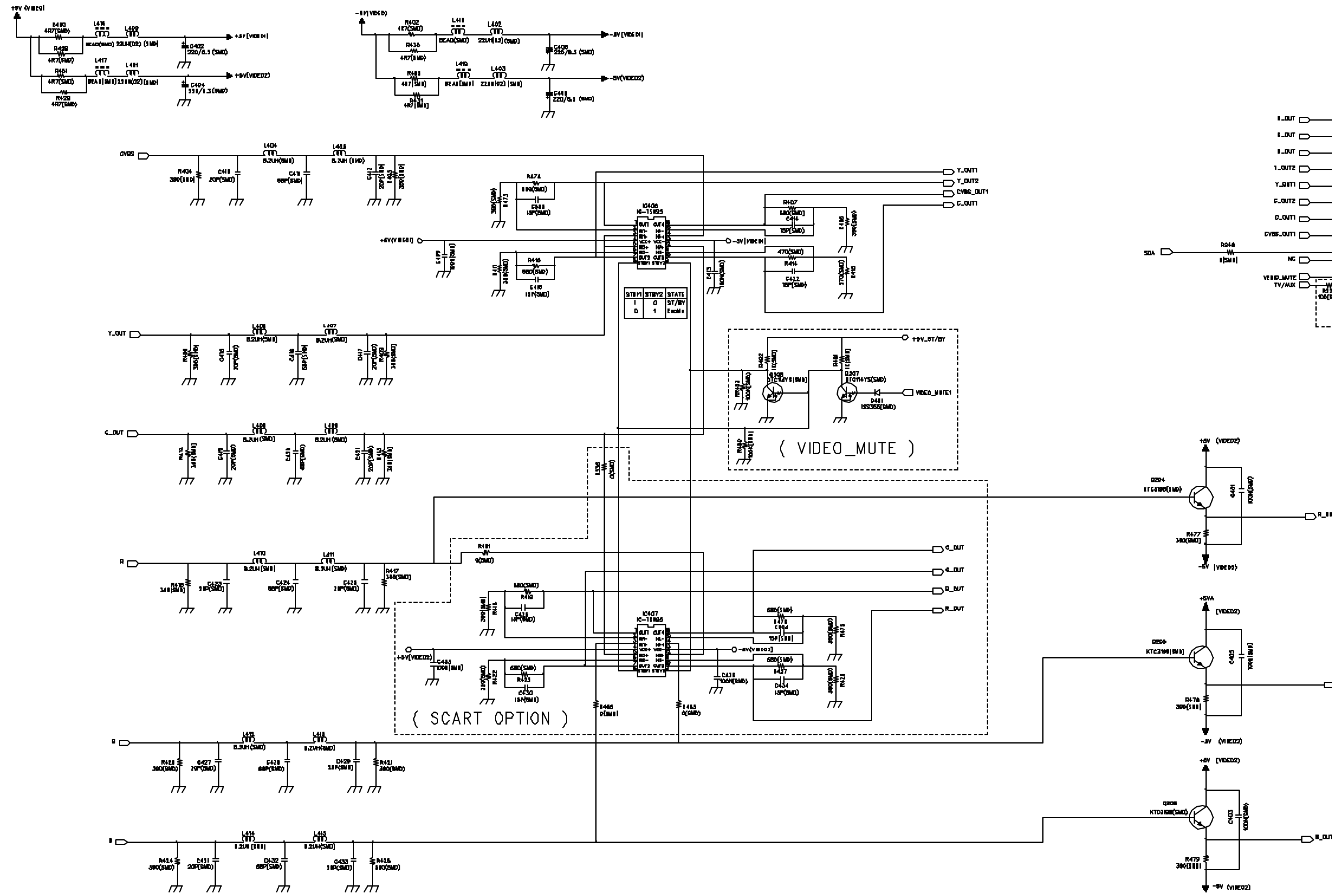
COMPANY: TTC KOREA

TITLE: OUTPUT AUDIO

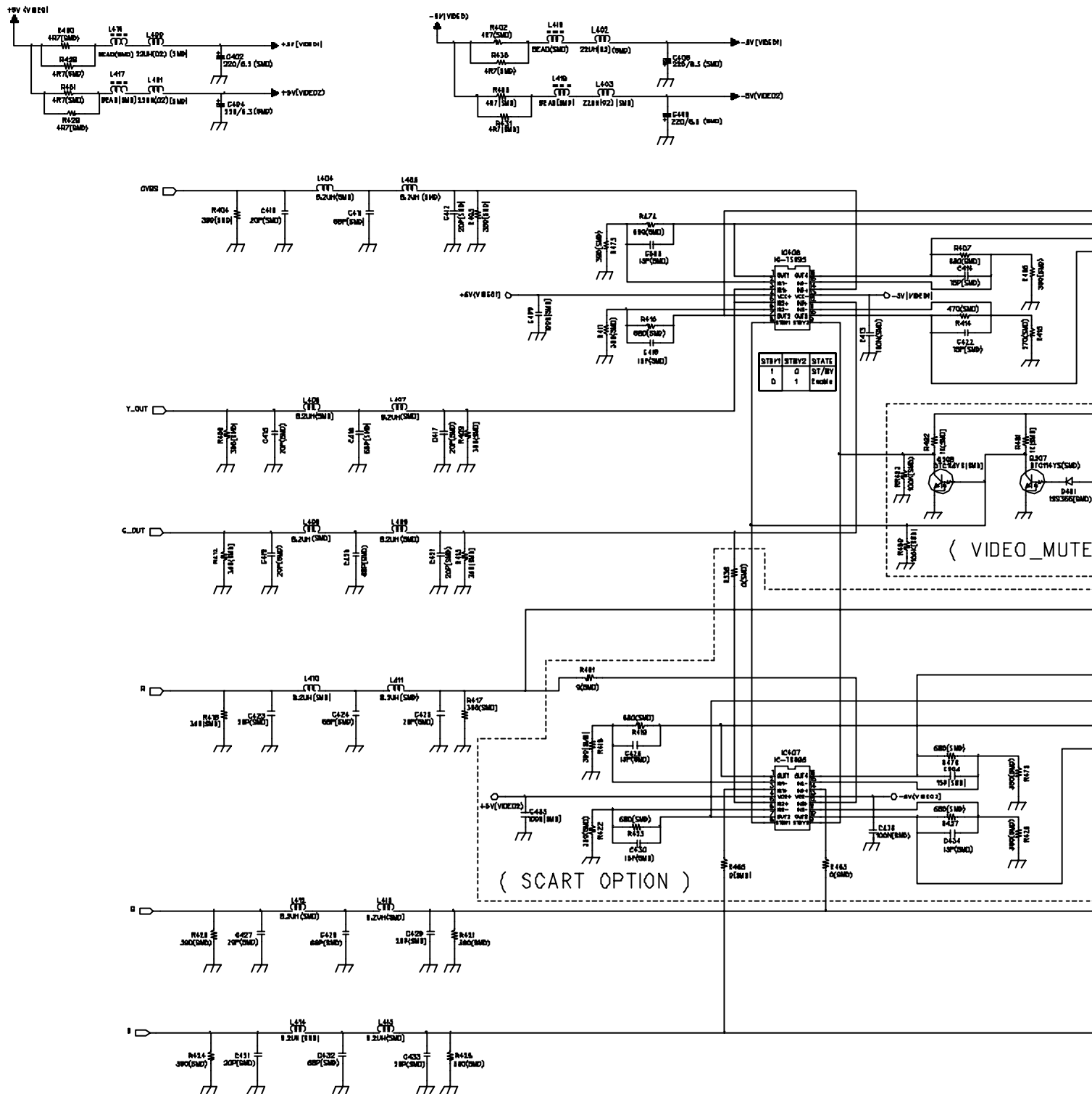
DESIGN:	DATED: 26/JAN/2000
CHKD:	DATED: 26/JAN/2000
CHKD:	DATED: 26/JAN/2000
APPROVAL:	DATED: 26/JAN/2000

CODE: 97	SIZE: A3	DRAWING NO:	REV: 01
SCALE:		SHEET: 1 OF 2	

NO	DATE	POS.	CONTENTS	NO	DATE	POS.	CONTENTS

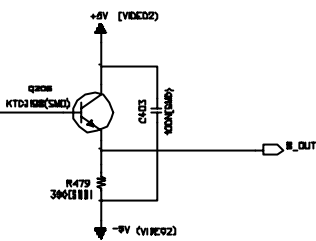
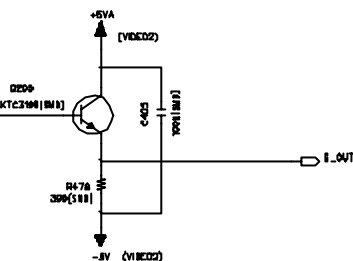
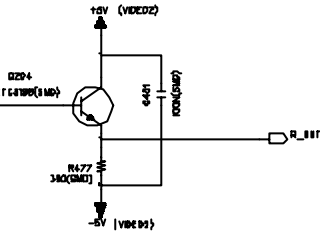
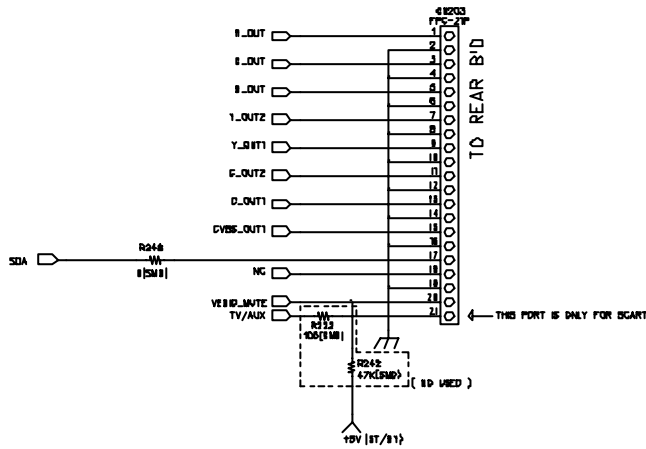
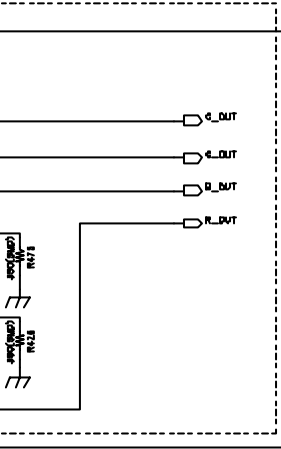
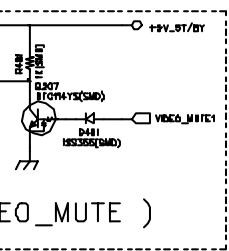
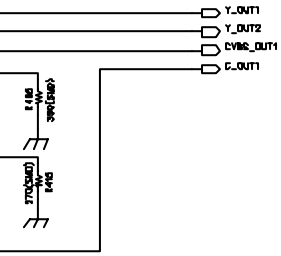


FILENAME	PART NO. MAIN		SHEET 5/5
VIDEO_OUTPUT	DESIGN	CHKD	APPROVAL
MODEL			
DESIGN DATE			
26/JAN/2000			



DIAGRAM

NO	DATE	POS.	CONTENTS	NO	DATE	POS.	CONTENTS



FILENAME VIDEO_OUTPUT	PART NO. MAIN		SHEET 5/5
MODEL	DESIGN	CHKD	APPROVAL

DVD5

harman/kardon

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

D

D

C

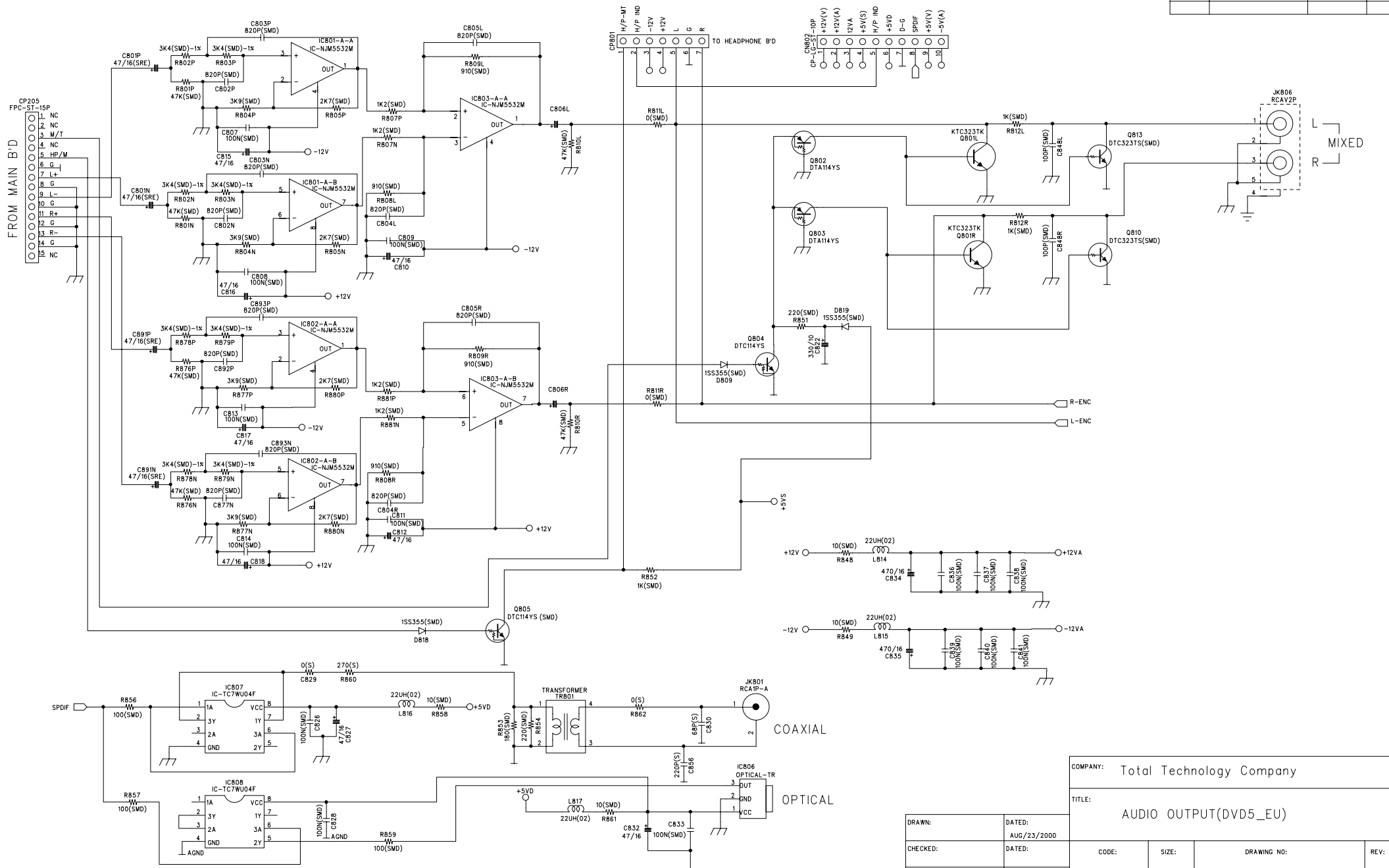
C

B

B

A

A



DRAWN:		DATED:		COMPANY: Total Technology Company	
CHECKED:		DATED:		TITLE: AUDIO OUTPUT(DVD5_EU)	
QUALITY CONTROL:		DATED:		CODE:	SIZE:
RELEASED:		DATED:		DRAWING NO:	REV:
SCALE:				SHEET: OF	

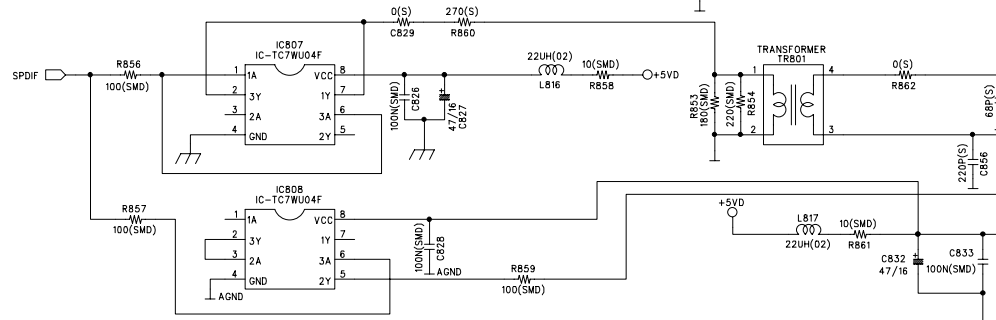
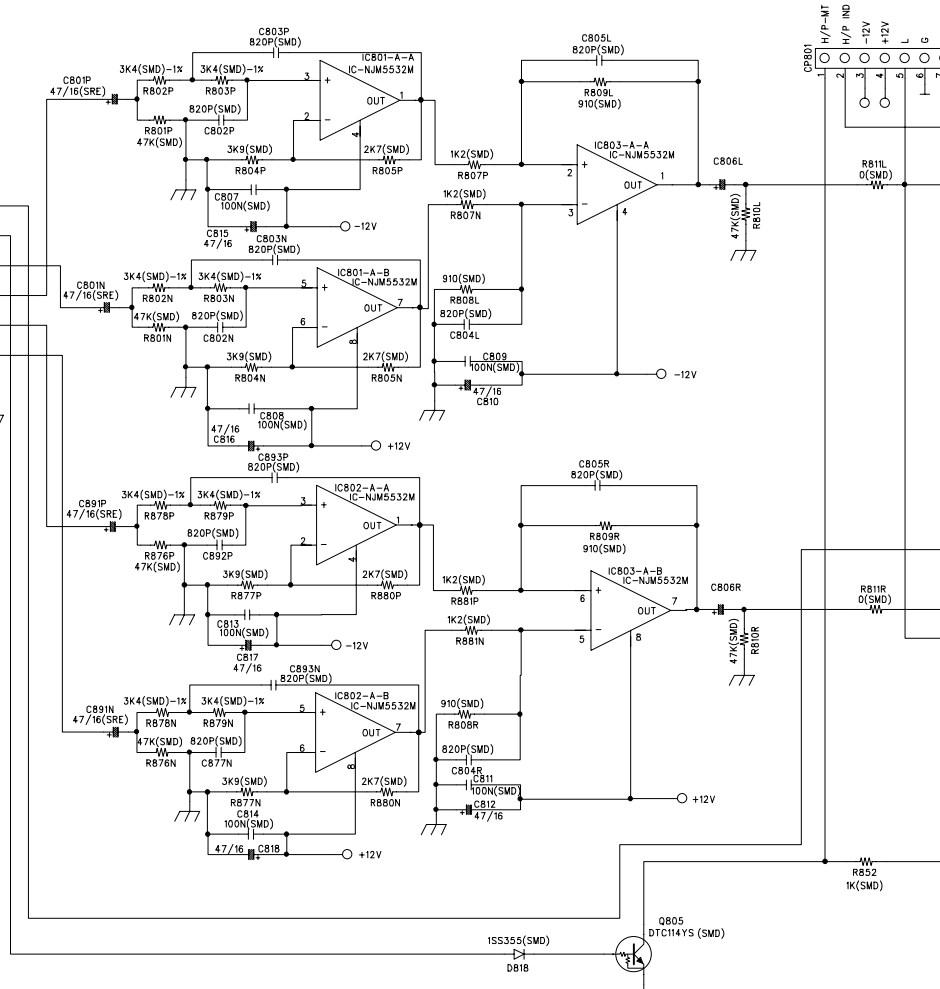
D

C

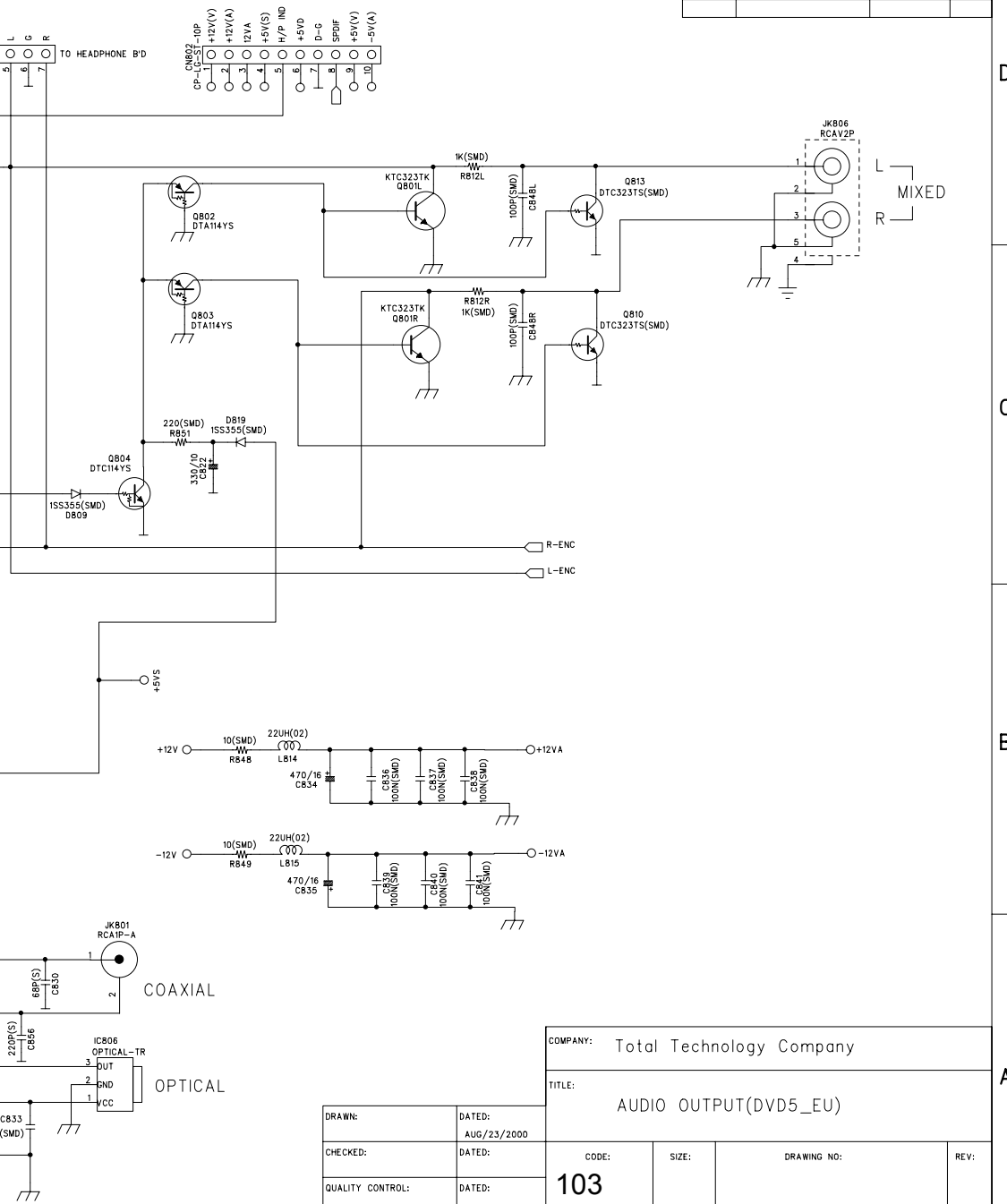
B

A

- FROM MAIN B'D
- 1 CP205
 - 2 FPC-ST-15P
 - 3 1 NC
 - 4 2 NC
 - 5 3 M/T
 - 6 4 NC
 - 7 5 HP/M
 - 8 6 G
 - 9 7 L+
 - 10 8 G
 - 11 9 R+
 - 12 10 G
 - 13 11 R-
 - 14 12 G
 - 15 13 R-
 - 16 14 G
 - 17 15 NC



REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



D

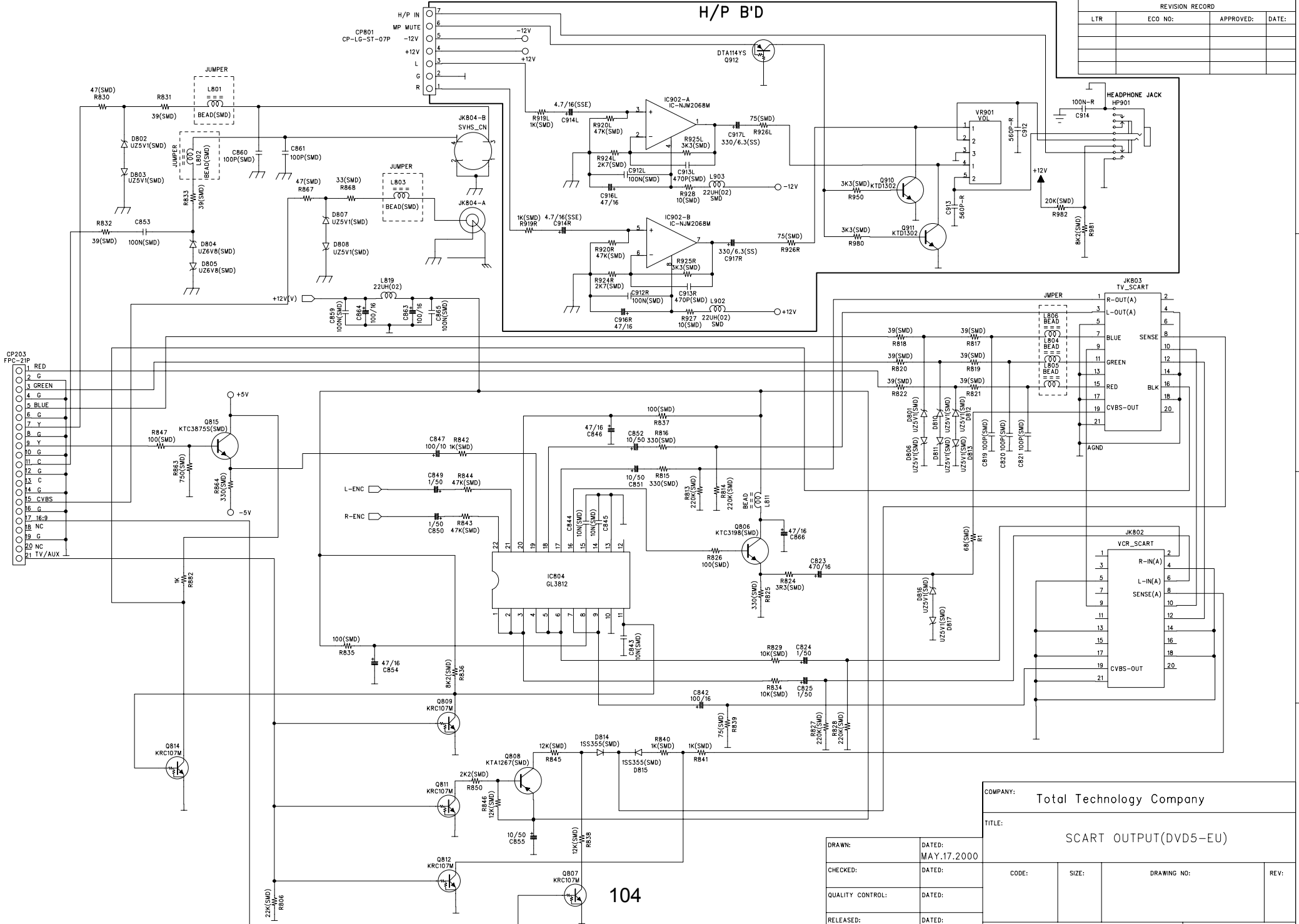
C

B

A

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

H/P B'D



COMPANY: Total Technology Company		TITLE: SCART OUTPUT(DVD5-EU)	
DRAWN:	DATED: MAY.17.2000	CODE:	SIZE:
CHECKED:	DATED:	DRAWING NO:	REV:
QUALITY CONTROL:	DATED:	SCALE:	SHEET: OF
RELEASED:	DATED:		

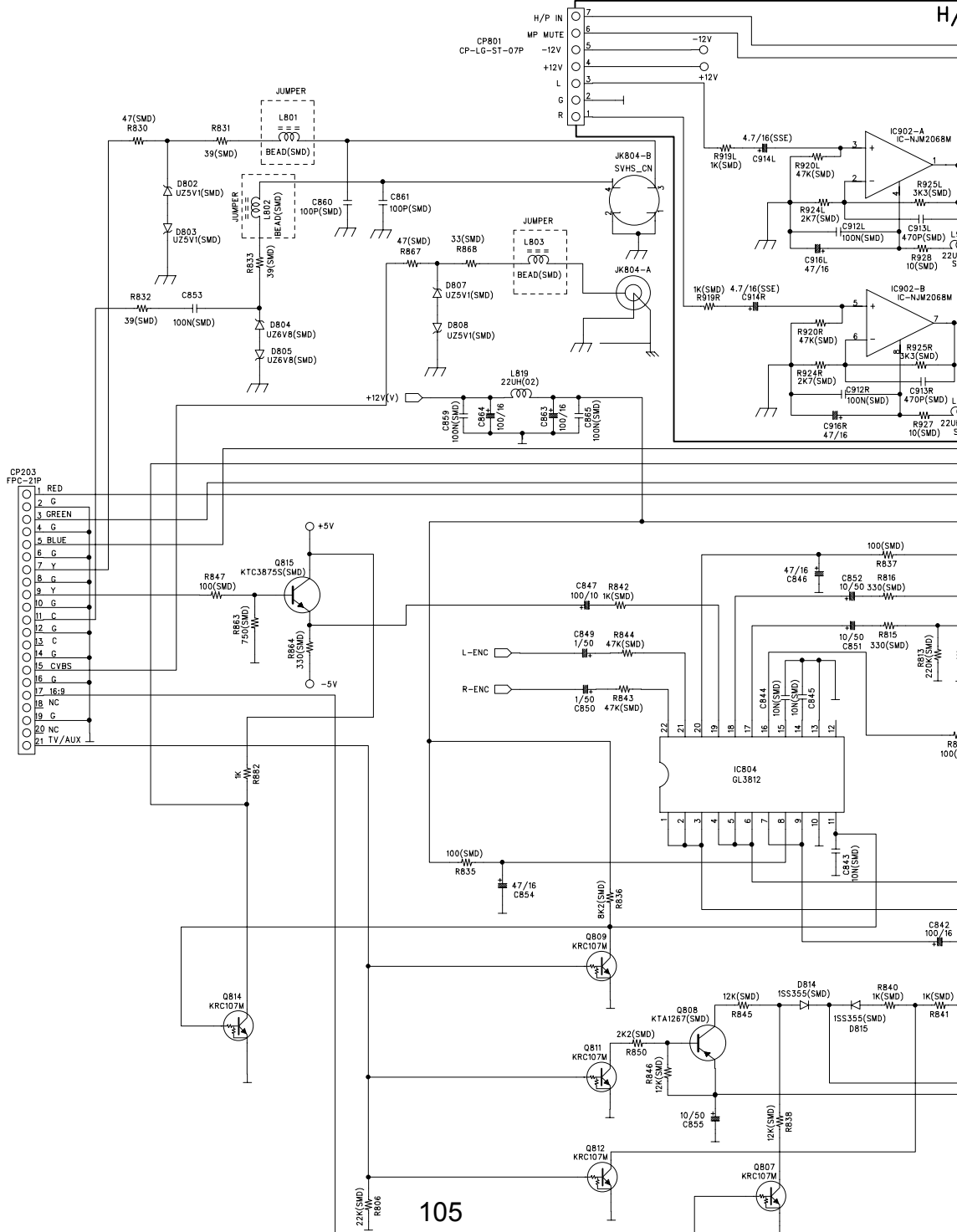
D

C

B

A

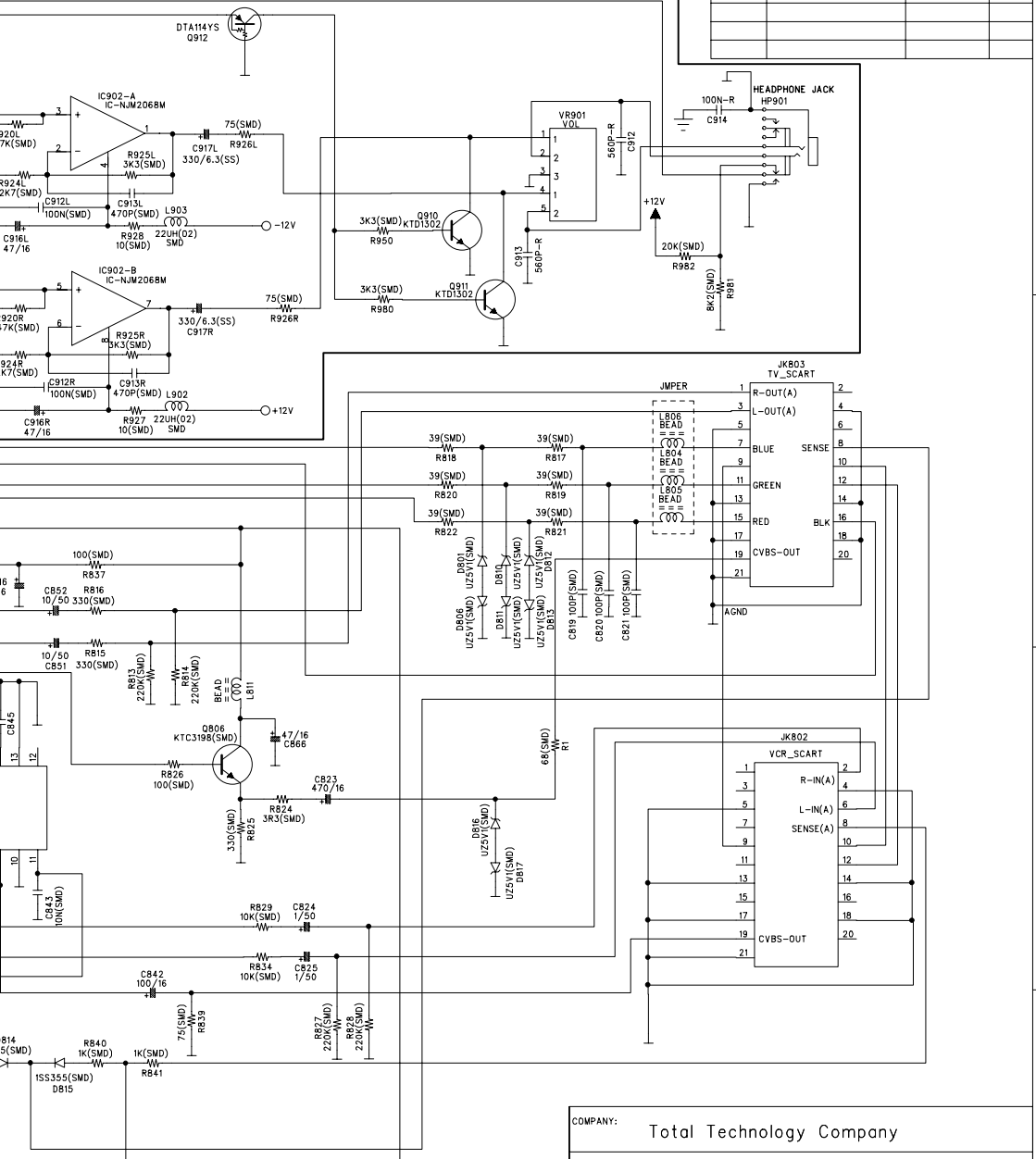
- CP203
FPC-21P
- 1 RED
 - 2 G
 - 3 GREEN
 - 4 C
 - 5 BLUE
 - 6 G
 - 7 Y
 - 8 C
 - 9 Y
 - 10 G
 - 11 C
 - 12 G
 - 13 C
 - 14 G
 - 15 CVBS
 - 16 G
 - 17 16:9
 - 18 NC
 - 19 G
 - 20 NC
 - 21 TV/AUX



H/P B'D

REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:



COMPANY: Total Technology Company

TITLE: SCART OUTPUT(DVD5-EU)

DRAWN:	DATED:
CHECKED:	DATED:
QUALITY CONTROL:	DATED:

CODE:	SIZE:	DRAWING NO:	REV:
106			

