Model DCR600II

A/V DOLBY DIGITAL RECEIVER

Cinema Propack™ 600II System

Service Manual

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JBL Consumer Products
250 Crossways Park Dr.
Woodbury, New York 11797

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ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES 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 ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge build-up or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES 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 ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical change sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material.)
7. Immediately before removing the protective material from the leads of a replacement ES 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 ES devices. (Otherwise harmless motion such as the brushing together or your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES devices.

PRODUCT SAFETY NOTICE

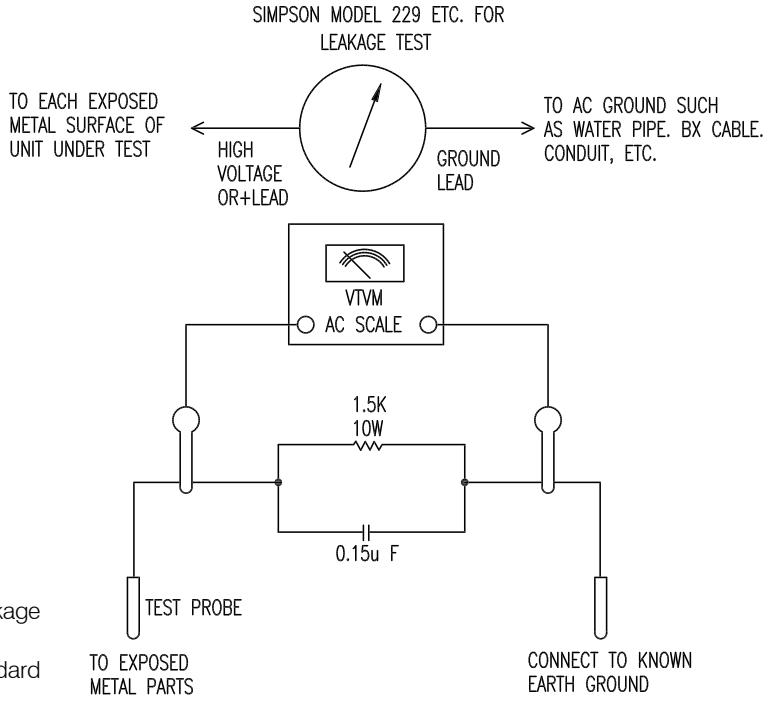
Each precaution in this manual should be followed during servicing.

Components identified with the IEC symbol ⚠ in the parts list are special significance to safety. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings or resistance, wattage, or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before retuming the product to the customer.

LEAKAGE TEST(FOR SERVICE ENGINEERS IN THE U.S.A)

Before returning the unit to the user, perform the following safety checks :

1. Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the unit.
2. Be sure that any protective devices such as nonmetallic control knobs, insulating fish-papers, cabinet backs, adjustment and compartment covers or shields, isolation resistor-capacity networks, mechanical insulators, etc. Which were removed for the servicing are properly re-installed.
3. Be sure that no shock hazard exists ; check for leakage current using Simpson Model 229 Leakage Tester, standard equipment item No. 21641, RCA Model WT540A or use alternate method as follows : Plug the power cord directly Into a 120 volt AC receptacle (do not use an Isolation Transformer for this test). Using two clip leads, connect a 1500 ohms, 10watt Resistor paralleled by a 0.15uF capacitor, in series with all exposed metal cabinet parts and a known earth ground, such as a water pipe or conduit. Use a VTVM or VOM with 1000 ohms per volt, or higher sensitivity to measure the AC voltage drop across the resistor. (See diagram) Move the resistor connection to each exposed metal part having a return path to the chassis (antenna, metal, cabinet, screw heads, knobs and control shafts, escutcheon, etc.) and measure the AC voltage drop across the resistor. (This test should be performed with the 0.35 volt RMS or more is excessive and indicates a potential shock hazard which must be corrected before returning the unit to the owner.



Technical Specifications

DCR600II

Audio Section

Two-Channel Stereo Mode

100W per channel continuous RMS power into 8 ohms at 0.08% THD, 80Hz to 20kHz

Five-Channel Cinema Mode

100W per channel dynamic RMS power into 8 ohms at 0.08% THD, 80Hz to 20kHz (Plus 100W into 8 ohms at 0.08% THD, 20Hz to 80Hz for subwoofer)

Input Sensitivity/Impedance
200mV/47k ohms

Signal-to-Noise Ratio	95dBA

Surround System Adjacent Channel Separation

Analog Decoding	40dB
Dolby Digital	55dB
DTS	55dB

Frequency Response
10Hz–100kHz (+0, –3dB)

FM Tuner Section

Frequency Range	87.5–108MHz
Usable Sensitivity	1.3µV/13.2dBf
Signal-to-Noise Ratio	70dB (mono) 68dB (stereo)
Distortion	0.2% (mono) 0.3% (stereo)
Stereo Separation	40dB @ 1kHz
Selectivity	±400kHz, 70dB
Image Rejection	80dB
IF Rejection	90dB
Tuner Output Level	500mV at 1kHz, ±75kHz Deviation

AM Tuner Section

Frequency Range	520kHz–1710kHz
Signal-to-Noise Ratio	45dB
Usable Sensitivity	500µV (loop)
Distortion	0.8% (1kHz, 50% Modulation)
Selectivity	30dB at ±10kHz

Video Section

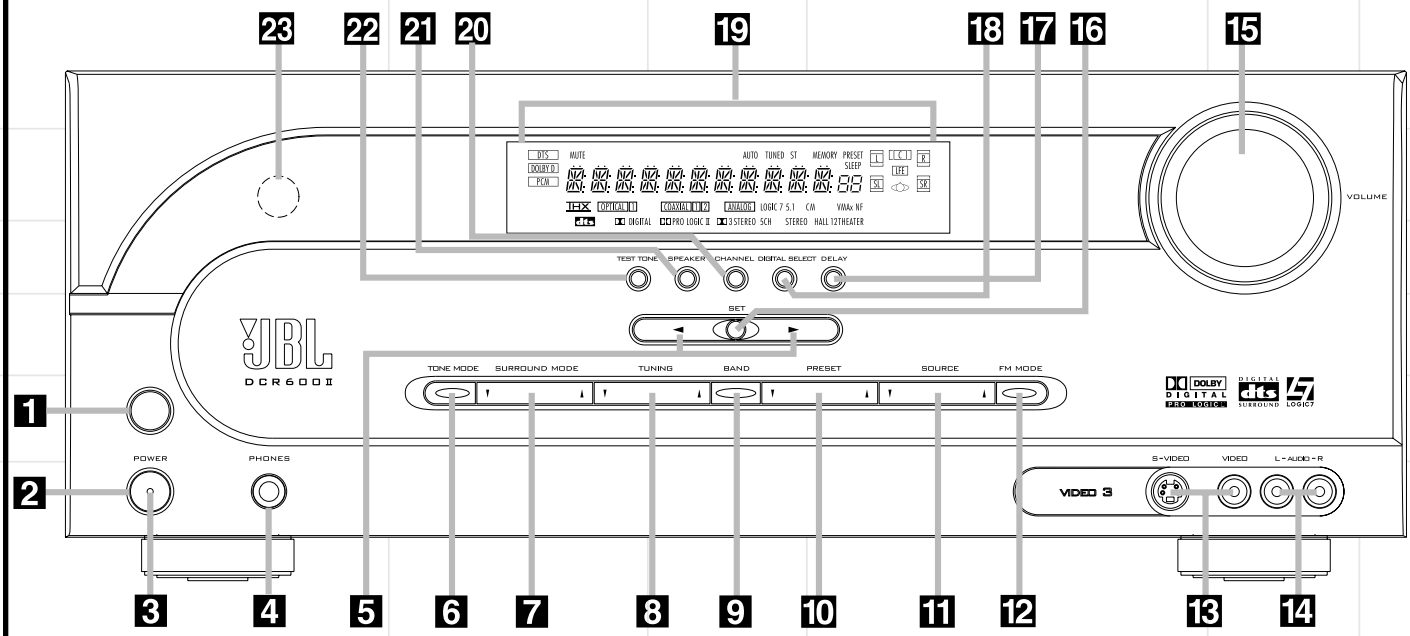
Format	NTSC
Input Level/Impedance	1Vp-p/75 ohms
Output Level/Impedance	1Vp-p/75 ohms
Video Frequency Response	10Hz to 8MHz (–3dB)

General

Unit Power Consumption	72W idle, 580W maximum
Unit Dimensions	
Width	17.3 inches (440mm)
Height	6.5 inches (165mm)
Depth	17.1 inches (435mm)
Unit Weight	31 lb (14.1kg)

Depth measurement includes knobs, buttons and terminal connections.
Height measurement includes feet and chassis.
All features and specifications are subject to change without notice.

DCR600II Front Panel Controls



1 Main Power Switch: Press this button to apply power to the DCR600II. When the switch is pressed in, the unit is placed in a Standby mode, as indicated by the amber **Power Indicator 3** surrounding the **System Power Control 2**. This button MUST be pressed in to operate the unit. To turn the unit off and prevent the use of the remote control, this switch should be pressed until it pops out from the front panel so that the word "OFF" may be read at the top of the switch.

NOTE: This switch is normally left in the "ON" position.

2 System Power Control: When the **Main Power Switch 1** is "ON," press this button to turn on the DCR600II; press it again to turn the unit off. Note that the **Power Indicator 3** in the center of the switch will turn green when the unit is on.

3 Power Indicator: This LED will be illuminated in amber when the unit is in the Standby mode to signal that the unit is ready to be turned on. When the unit is in operation, the indicator will turn green.

4 Headphone Jack: This jack may be used to listen to the receiver's output through a pair of headphones. Be certain that the headphones have a standard 1/4" stereo phone plug. Note that the speakers will automatically be turned off when the headphone jack is in use.

5 Selector Buttons: When you are establishing the configuration settings, use these buttons to select from the choices available, as shown in the **Main Information Display 19**.

6 Tone Mode: Pressing this button enables or disables the Bass and Treble tone controls. When the button is pressed so that the words TONE IN appear in the **Main Information Display 19**, press the **Set Button 16** to access the bass and treble adjustments. Press the **Selector Buttons 5** to increase or decrease bass and treble output levels by up to 10dB. When the button is pressed so that the words TONE OUT appear in the **Main Information Display 19**, the output signal will be "flat," without any bass or treble alteration, no matter how the actual Bass and Treble controls are adjusted.

7 Surround Mode Selector: Press this button to change the surround mode by scrolling through the list of available modes. Note that depending on the type of input, some modes are not always available. (See page 52 for more information about surround modes.)

8 Tuning Selector: Press the left side of the button to tune lower-frequency stations and the right side of the button to tune higher-frequency stations. When a station with a strong signal is reached, the **TUNED Indicator S** will be illuminated in the **Main Information Display 19**.

In Manual tuning mode, tap the button lightly and note that the tuner will step up one frequency increment per button press. When the button is held for a few seconds you will note that the unit will quickly advance through the frequency band. Release it and the tuner will stop. In Auto tuning mode, each press of the button will search for the next station with an acceptable signal. Press and hold the button to skip through the acceptable stations. When the button is released, the tuner will not stop until it reaches a station with an acceptable frequency.

To switch back and forth between the Auto and Manual tuning modes, press the **FM Mode Selector 12.**

9 Tuner Band Selector: Pressing this button will automatically switch the DCR600II to the Tuner mode. Pressing it again will switch between the AM and FM frequency bands.

10 Preset Stations Selector: Press this button to scroll up or down through the list or stations that have been entered into the preset memory.

11 Input Source Selector: Press this button to change the input by scrolling up or down through the list of input sources. When an audio source is selected, the last video input used remains routed to the **Video 1 Output** ⓮ and **Video Monitor Output** ⓲. This permits you to simultaneously view and listen to different sources.

12 FM Mode Selector: Press this button to select Auto or Manual tuning. When the button is pressed so that the **AUTO Indicator T** lights, the tuner will search for the next station with an acceptable signal any time the **Tuning Selector 8** ㊺ ㊾ is pressed. When the button is pressed so that the **AUTO Indicator T** is not lit, each press of the **Tuning Selector 8** ㊺ ㊾ will increase the frequency.

NOTE: When the FM reception of a station is weak, audio quality will be increased by switching to Mono mode by pressing the **FM (Tuning) Mode Button 12** ㊶ until the **STEREO Indicator R** goes out.

13 Video 3 Video Input Jacks: These jacks may be used for temporary connection to the composite or S-Video output of VCRs, video games, camcorders or other portable video products.

14 Video 3 Audio Input Jacks: These audio/video jacks may be used for temporary connection to VCRs, video games or portable audio/video products such as camcorders and portable audio players.

15 Volume Control: Turn this knob clockwise to increase the volume, counterclockwise to decrease the volume. If the DCR600II is muted, adjusting the volume control will automatically release the unit from the silenced condition.

16 Set Button: When making choices during the setup and configuration process, press this button to enter the desired setting as shown in the **Main Information Display 19** into the DCR600II receiver's memory. The Set button may also be used to change the display brightness, to avoid interfering with video presentations:

Press and hold the **Set Button 16** on the front panel for three seconds until the message in the **Main Information Display 19** reads VFD FULL. Within five seconds, press the front panel **Selector Buttons 5** until the desired brightness display level is shown. Press the **Set Button 16** again to enter the setting.

When FULL appears in the **Main Information Display 19**, the display is at its normal brightness. When HALF appears, the display is at half the normal brightness level. When OFF appears, all of the indicators in the **Main Information Display 19** will go dark. Note, however, that the **Power Indicator 3** will always remain lit to remind you that the unit is turned on.

Once the desired brightness level is selected, it will remain in effect until it is changed again or until the unit is turned off.

17 Delay: Press this button to begin the sequence of steps required to enter delay time settings.

18 Digital Input Selector: When playing a source that has a digital output, press this button to select between the **Optical** ❸ and **Coaxial** ❷ **Digital** inputs.

19 Main Information Display: This display delivers messages and status indications to help you operate the receiver.

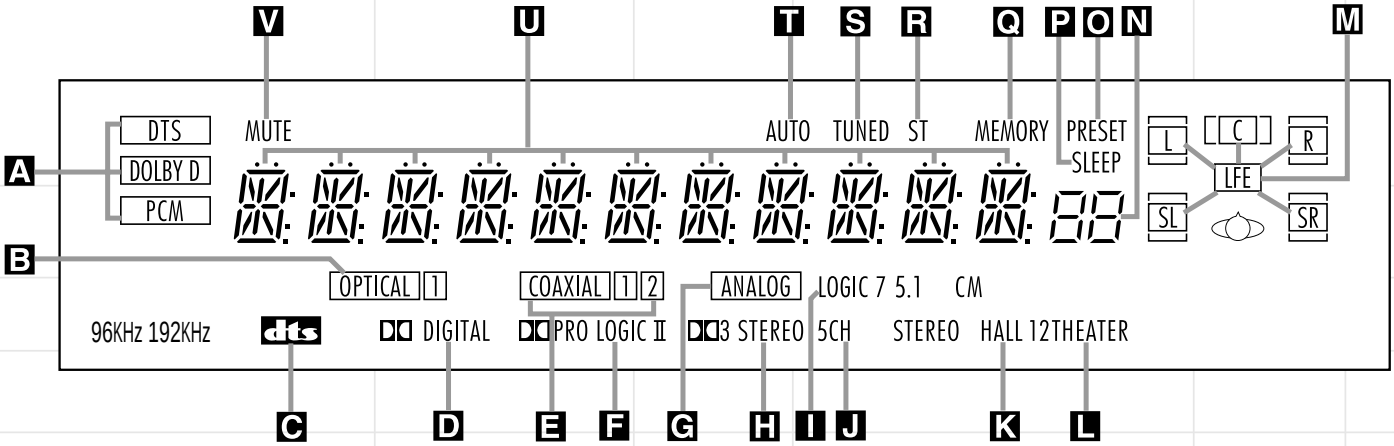
20 Channel Select Button: Press this button to begin the process of trimming the channel output levels using an external audio source.

21 Speaker Select Button: Press this button to begin the process of selecting the speaker positions that are used in your listening room.

22 Test Tone Selector: Press this button to begin the process of adjusting the channel output levels using the internal test tone as a reference.

23 Remote Sensor Window: The sensor behind this window receives infrared signals from the remote control. Aim the remote at this area and do not block or cover it unless an external remote sensor is installed.

DCR600II Front Panel Information Display



A Bitstream Indicators: When the input is a digital source, these indicators display the specific type of data signal. The DCR600II will also indicate when it detects a digital signal with a resolution of either 96kHz or 192kHz. This can occur when the receiver is used with an external DVD-Audio player or other device that is capable of transmitting this type of signal. You should not expect to see these indicators light when using the DVD600II as your source unit.

B Optical Source: Indicates the Optical Digital Input has been selected.

C DTS: Indicates a DTS-encoded source.

D Dolby Digital: Indicates a Dolby Digital source.

E Coaxial Source: Indicates a Coaxial Digital Input.

F Dolby Pro Logic II: Indicates a Dolby Pro Logic II mode has been selected. Either DOLBY PRO LOGIC II – MOVIE or DOLBY PRO LOGIC II – MUSIC or DOLBY PRO LOGIC II – EMULATION will scroll on the **Main Information Display U**, depending on the mode selected.

G Analog Input: Indicates an analog input source.

NOTE: Analog audio input is not available when the DVD input is in use.

H Dolby 3 Stereo Indicator: This indicator lights when the Dolby 3 Stereo mode has been selected.

I Logic 7 Mode: Indicates that the Logic 7 mode is in use. Logic 7C 5.1-CINEMA appears for the Cinema version of Logic 7; Logic 7M 5.1-MUSIC appears for the Music version of Logic 7.

J 5-Channel Stereo: Lights when the 5-Channel Stereo mode has been selected.

K Hall Mode: Lights when one of the two Hall modes has been selected.

L Theater Mode: Indicates that the Theater mode has been selected.

M Speaker/Channel Input: These indicators are multipurpose, indicating either the speaker type selected for each channel or the incoming data-signal configuration. The left, center, right, right surround and left surround speaker indicators are composed of three boxes, while the subwoofer is a single box. The center box lights when a "Small" speaker is selected, and all three boxes light when "Large" speakers are selected. When none of the boxes are lit for the center, surround or subwoofer channels, no speaker has been selected for one of those positions. The letters inside each of the center boxes display active input channels. For standard analog inputs, only the L and R will light, indicating a stereo input. When a digital source is playing, the indicators will light to display the channels being received at the digital input. When the letters flash, the digital input has been interrupted.

N Preset Number/Sleep Timer: In Tuner mode, these numbers indicate the preset memory location in use. In Sleep function mode, it shows the number of minutes remaining before the unit goes into the Standby mode.

O Preset Indicator: This indicator lights when the tuner is in use to show that the **Preset Number/Sleep Timer N** is showing the station's preset memory number.

P Sleep Indicator: This indicator lights when the Sleep function is in use.

Q Memory: Flashes when entering presets and other information into the tuner's memory.

R Stereo: Lights when an FM station is being tuned in stereo.

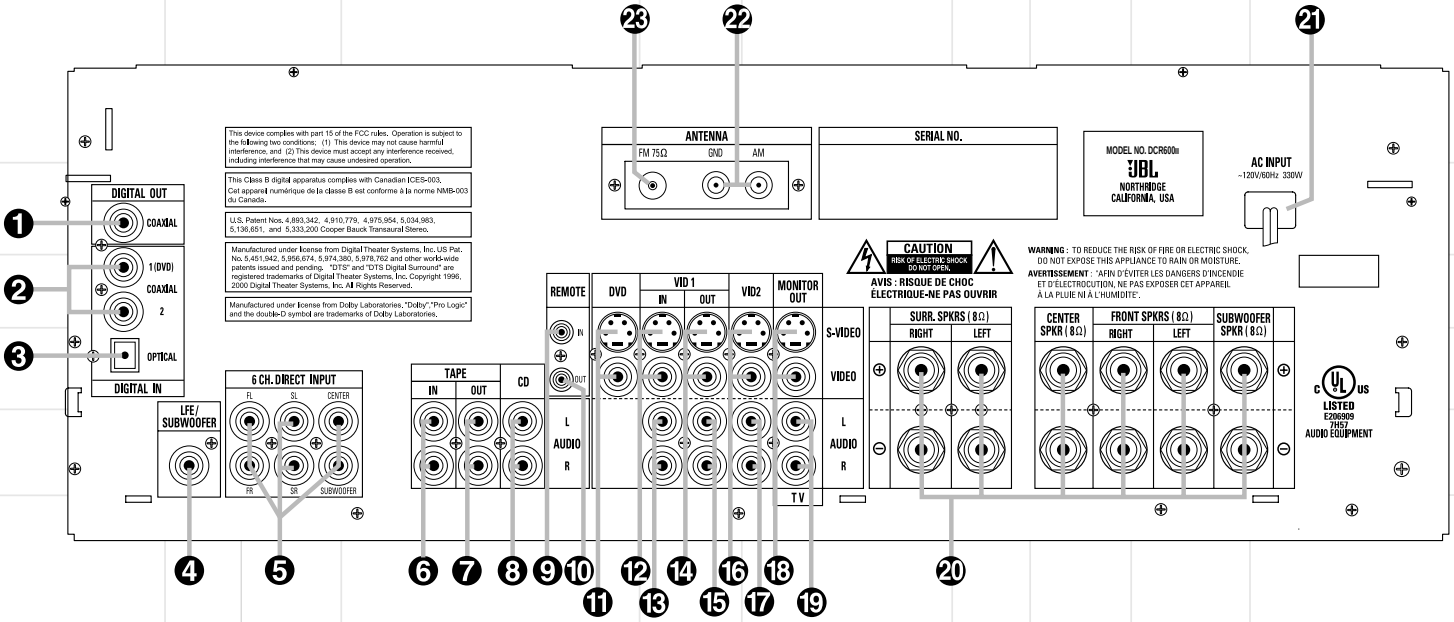
S Tuned: Lights when a station is being received with sufficient signal strength to provide acceptable listening quality.

T Auto: Lights when the tuner is in Auto mode.

U Main Information Display: Shows messages relating to the status, input source, surround mode, tuner, volume level or other aspects of operation.

V Mute: Lights to indicate that the unit has been put in Mute by pressing the **Mute Button 3**. Press the **Mute Button 3** again to return to the previously selected output level.

DCR600II Rear Panel Connections



IMPORTANT NOTES

A. The AC plug connections should always be the last connections made when installing an A/V system. When making subsequent connections to audio source equipment or speakers, it is always a good practice to unplug the unit from the AC wall outlet. This prevents the possibility of sending audio or transient signals to the speakers that may damage them.

B. Connect devices as per the Quick Setup Guide or per pages 6 through 8 of this manual.

C. The DCR600II offers both composite and S-Video inputs and outputs. However, **either** S-Video **or** composite input/output connections should be used throughout the system in order for it to function properly. Do not use S-Video and composite video connections interchangeably.

D. The digital outputs are active only when a digital signal is present, and they do not convert an analog input to a digital signal, or change the format of the digital signal. In addition, any digital recorder used must be compatible with the output signal. For example, the PCM digital input from a CD player may be recorded on a CD-R or MiniDisc, but Dolby Digital or DTS signals may not.

❶ **Coaxial Digital Audio Output:** Connect to the coaxial digital input connector on a CD-R or MiniDisc recorder.

❷ **Coaxial Digital Inputs:** Connect to coax digital output of a digital source. The signal may be either a Dolby Digital signal, DTS signal or a standard PCM digital source. Do not connect the RF digital output of an LD player to these jacks. To benefit from the factory default setting of the DCR600II, it is recommended that you plug the **Coaxial Digital Output** ❷ of the DVD600II into the jack marked "1 (DVD)" on the DCR600II.

❸ **Optical Digital Input:** Connect to optical digital output of a digital source. The signal may be either a Dolby Digital signal, a DTS signal or a standard PCM digital source.

❹ **LFE/Subwoofer Output:** Connect to the LFE or line-level input of an optional powered subwoofer. **Do not** use this connector with the SCS135P subwoofer included.

❺ **6-Channel Direct Inputs:** When an optional, external processor or playback device with 5.1-channel audio capability, such as a DVD-Audio player, is in use, connect the player's output jacks to these inputs.

❻ **Tape Inputs:** Connect to **PLAY/OUT** jacks of an audio recorder.

❼ **Tape Outputs:** Connect to **RECORD/INPUT** jacks of an audio recorder.

❽ **CD Inputs:** Connect to output of a CD player.

NOTE: When the CD player has both fixed and variable audio outputs, it is best to use the fixed output unless you find that the input to the receiver is so low that the sound is noisy, or so high that the signal is distorted.

❾ **Remote IR Input:** If the DCR600II's front panel IR sensor is blocked due to cabinet doors or other obstructions, an external IR sensor may be used. Connect the output of the sensor to this jack.

❿ **Remote IR Output:** Permits the IR sensor in the receiver to serve other remote-controlled devices. Connect this jack to the "IR IN" jack on the DVD600II or other compatible equipment.

⓫ **DVD Video Inputs:** Connect to composite or S-Video output jacks on a DVD.

(continued)

❶ **Video 1 Video Inputs:** Connect to **PLAY/OUT** composite or S-Video jacks on a VCR or other video source.

⓭ **Video 1 Audio Inputs:** Connect jacks to the **PLAY/OUT** audio jacks on a VCR or other video source.

⓮ **Video 1 Video Outputs:** Connect to **RECORD/INPUT** composite or S-Video jack on a VCR or other video receiver.

⓯ **Video 1 Audio Outputs:** Connect to the **RECORD/INPUT** audio jacks on a VCR or other video recorder.

⓰ **Video 2 Video Inputs:** Connect to **PLAY/OUT** composite or S-Video jacks on a cable television box, satellite receiver or other video source.

⓱ **Video 2 Audio Inputs:** Connect to **PLAY/OUT** audio jacks on a cable television box, satellite receiver or other video source.

⓲ **Video Monitor Outputs:** Connect to composite or S-Video input of a TV monitor or video projector.

⓳ **TV Audio Inputs:** Connect to output audio jacks on your television or other video source.

⓴ **Speaker Outputs:** Connect to matching + and – terminals on front left/right, center, surround left/right and subwoofer speakers.

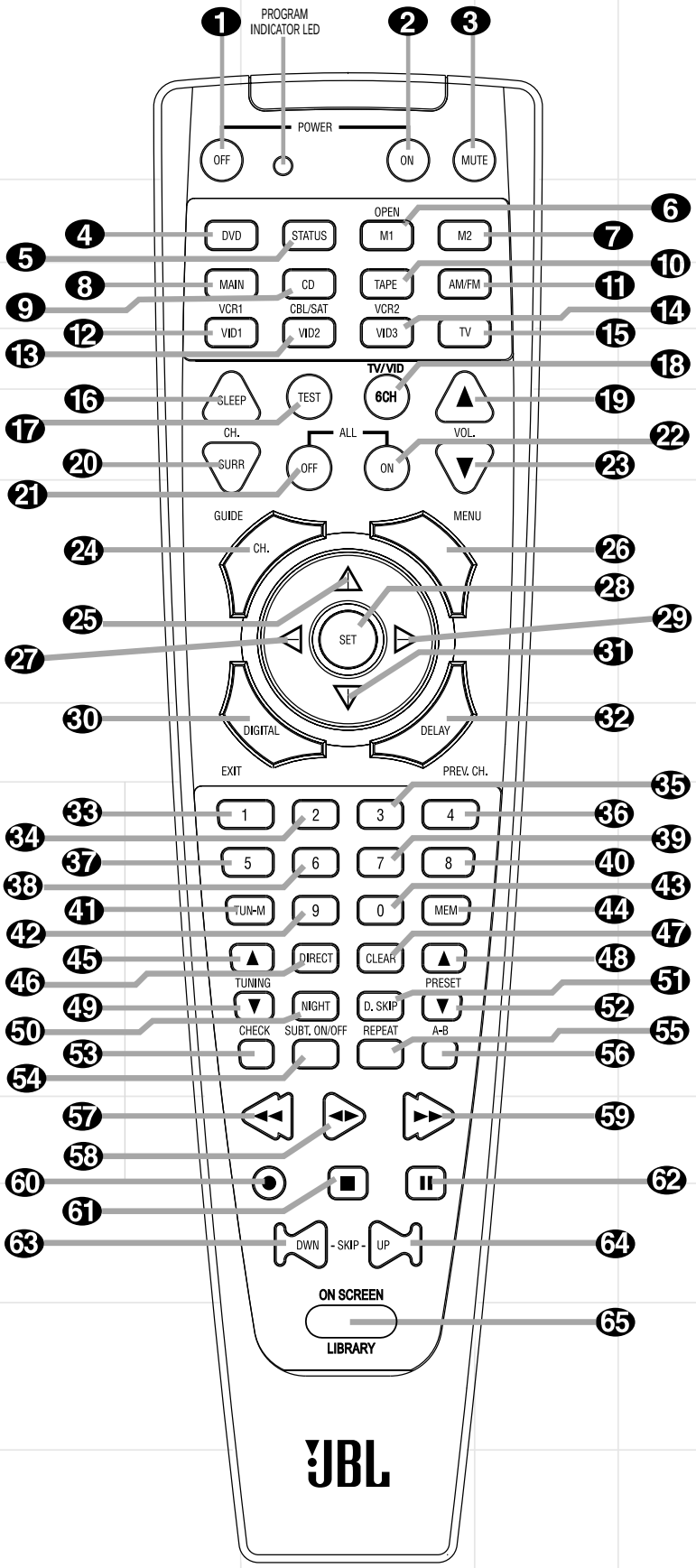
NOTE: When making speaker connections always make certain to maintain correct polarity by connecting the colored (+) terminals on the DCR600II to the red (+) terminals on the speakers and the black (–) terminals on the DCR600II to the black (–) terminals on the speakers.

㉑ **AC Power Cord:** Connect the AC plug to an unswitched AC wall output.

㉒ **AM Antenna:** Connect to the AM loop antenna supplied. If an external AM antenna is used, make connections to the **AM** and **GND** terminals in accordance with the instructions supplied with the antenna.

㉓ **FM Antenna:** Connect to the supplied indoor, or an optional external, FM antenna.

Remote Control Functions



❶ Power Off Button: Turns off the power to a device selected by pressing its Input Selector.

❷ Power On Button: Turns on the power to a device selected by pressing its Input Selector.

❸ Mute Button: Press to momentarily silence the DCR600II or TV set being controlled, depending on which device has been selected.

When the remote is being programmed to operate an external device, such as a CD player, this button is pressed, together with the Input Selector button for the new device, to begin the programming process.

❹ DVD Input Selector: Pressing this button will perform three actions: 1) If the DCR600II is not turned on, it will power up. 2) It will select DVD as the input source. 3) It will switch to the page for the DVD600II, which will cause the remote to operate only the DVD changer. Press the **Main Button ❽** to return the remote to control of the DCR600II receiver.

IMPORTANT NOTE: The remote control for the JBL Cinema ProPack 600II may be programmed to control up to eight devices, including the DCR600II and DVD600II. It is helpful to think of the remote as being organized into "pages," with one page for each device. Depending on which device has been selected, the buttons on that device's page will perform different functions, as listed starting on this page. These functions may vary from the labels on the remote, and from one device to the next. Some buttons may perform no function at all for a given device.

In order to go to the page for a particular device, such as the DVD600II, you will need to press the Input Selector button for that device (DVD in this case), located in a grouping just below the power buttons. The remote will then function as if it were dedicated to the DVD600II.

If you would like to make an adjustment that affects the DCR600II receiver, such as turning the volume up or down, you must first go to the page for the DCR600II by pressing its Input Selector button. This button is labeled "Main" on the remote. The exception to this rule is that the transport functions of the DVD600II – Play, Forward and Reverse Search, Stop, Pause, and Previous and Next Chapter/Track Skip – may be accessed from the "Main" page, without having to jump to the DVD page.

❺ Status Button: This button operates only when the DVD600II has been selected. When a disc is playing, pressing this button will display the Status Banner, which contains information about the disc and enables you to change the functions.

❻❼ M1 and M2 Macro Buttons/Open-Close Button: Press these buttons to store or recall a "Macro", which is a preprogrammed sequence of commands stored in the remote.

When the DVD600II has been selected, the **M1 Button ❻** functions to open or close the disc tray drawer. (**M2 ❼** has no function.) 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.

❽ Main Input Selector: Pressing this button will perform two actions: 1) If the DCR600II is not turned on, it will power up. 2) It will switch to the page for the DCR600II, which will cause the remote to operate only the receiver and the transport functions of the DVD600II.

❾ CD Input Selector: Pressing this button will perform three actions: 1) If the DCR600II is not turned on, it will power up. 2) It will select CD as the input source. 3) It will switch to the page for the CD player whose codes have been programmed into the remote, which will cause the remote to operate only the CD player. Press the **Main Button ❽** to return the remote to control of the DCR600II receiver.

❿ Tape Input Selector: Pressing this button will perform three actions: 1) If the DCR600II is not turned on, it will power up. 2) It will select TAPE as the input source. 3) It will switch to the page for the tape deck whose codes have been programmed into the remote, which will cause the remote to operate only the tape deck. Press the **Main Button ❽** to return the remote to control of the DCR600II receiver.

⓫ AM/FM Tuner: Selects the receiver's tuner as the listening choice. Pressing this button when the tuner is already in use will select between the AM and FM bands.

⓬ Video 1 Input Selector (VCR 1): Pressing this button will perform three actions: 1) If the DCR600II is not turned on, it will power up. 2) It will select VIDEO 1 as the input source. 3) It will switch to the page for the video device whose codes have been programmed into the remote, which will cause the remote to operate only that video device. You may find it convenient to connect your VCR to the Video 1 input, since it is the only video source that also features outputs for recording. Press the **Main Button ❽** to return the remote to control of the DCR600II receiver.

⓭ Video 2 Input Selector (Cable or Satellite): Pressing this button will perform three actions: 1) If the DCR600II is not turned on, it will power up. 2) It will select Video 2 as the input source. 3) It will switch to the page for the video device whose codes have been programmed into the remote, which will cause the remote to operate only that device. You may find it convenient to connect your cable television box or satellite receiver to this input. Press the **Main Button ❽** to return the remote to control of the DCR600II receiver.

⓮ Video 3 Input Selector (VCR 2): Pressing this button will perform three actions: 1) If the DCR600II is not turned on, it will power up. 2) It will select VIDEO 3 (the front panel input) as the input source. 3) It will switch to the page for the video device whose codes have been programmed into the remote, which will cause the remote to operate only that video device. Since this input is located on the front panel of the receiver, you may find it convenient to temporarily connect a camcorder, video game, or a second video cassette player to the Video 3 input. Press the **Main Button ❽** to return the remote to control of the DCR600II receiver.

⓯ TV Input Selector: Pressing this button will perform three actions: 1) If the DCR600II is not turned on, it will power up. 2) It will select TV as the input source. 3) It will switch to the page for the television whose codes have been programmed into the remote, which will cause the remote to operate only that device. You may find it convenient to connect your television to this input, particularly since it does not have a video input associated with it, the assumption being that the program signal originates at the TV, and that the TV is already displaying the video portion of the signal. Press the **Main Button ❽** to return the remote to control of the DCR600II receiver.

⓰ Sleep: Places the DCR600II in the Sleep Timer mode. After the time shown in the display has elapsed, the DCR600II will automatically go into Standby. Each press of this button changes the time until turn-off in intervals of 10 minutes, starting with a maximum of 90 minutes.

This button is also used to change channels on your TV when the TV is selected.

This button is also used during the "Auto Search" procedure when programming the remote.

⓱ Test: Begins the sequence used to calibrate the speaker output levels.

When the CD input has been selected and a CD recorder is in use, this button is used to select among the analog and digital inputs to the CDR.

⓲ 6CH (TV/VID): Press to select the **6-Channel Direct Input ❺** as the input source. When used with a compatibly programmed VCR, DVD, TV or Satellite receiver that has a "TV/Video" function, pressing this button will switch between the output of that device and the external video input to that device. Consult the owner's manual for your specific player or satellite receiver for the details of how it implements this function.

⓳ Volume Up: Use to raise the system volume.

⓴ Surround Mode/Audio: Begins the process of changing the surround mode when the DCR600II is selected. After the button has been pressed, use the **▲/▼ Buttons ㉕ ㉛** to select the desired surround mode.

When the DVD600II is selected, this button allows you to select from the available audio tracks (including audio surround modes) or languages on a DVD disc that is currently playing. Press this button repeatedly until the desired audio selection appears.

This button is also used to tune channels when the TV is selected.

This button is also used during the "Auto Search" procedure when programming the remote.

㉑ All Off: This feature of the JBL One-Click™ (patent pending) remote simultaneously sends Power Off commands to all programmed devices controlled by the remote.

㉒ All On: This feature of the JBL One-Click remote simultaneously sends Power On commands to all programmed devices controlled by the remote.

㉓ Volume Down: Use to lower the system volume.

㉔ Channel/Title/Guide: Starts the process of setting the receiver's speaker output levels using an input source rather than the test tone. Press this button, then use the **▲/▼ Buttons**

㉕ ㉛ to select the channel being adjusted, followed by the **Set Button** ㉘. You may then use the ▲/▼ **Buttons** ㉕ ㉛ again to change the level for that channel. Press the **Set Button** ㉘ to lock in the setting.

When using the DVD600II to play a DVD disc, this button functions as a Title button, and displays the disc's Title Select Menu, or a symbol (Ø) if the disc either does not offer this function or has only one title.

When the Video 2 input has been programmed for a cable or satellite service, this button will access the service's programming guide, if the service is active.

㉕ **▲:** Used to change or scroll through items in the on-screen menus, or to change configuration settings, such as output levels. When changing an item such as the surround mode or digital input directly, first press the function or mode to be changed, such as Surround Mode or Digital Input, and then press this button to scroll through the list of available choices. In DVD mode, press this button to skip to the next higher chapter of the current disc.

㉖ **Menu:** Used only with video sources. When DVD is selected, pressing this button while a DVD disc is playing stops playback and displays the disc's menu. When the unit is stopped, pressing this button displays the DVD player's Setup Menu.

㉗ **◀:** Used to change the menu selection or setting during some of the setup or other procedures. In DVD mode, press this button to play the current disc in Fast Reverse mode.

㉘ **Set:** Used to enter settings into the memory of the DCR600II, DVD600II or video device selected. Also used in the setup procedures for delay time, speaker configuration and channel output level adjustment. When the DVD600II has been selected, pressing this button will select the item that is highlighted in the Status Banner, or in the on-screen menu displayed by a DVD disc. When the Status Banner has not been activated, pressing this button will alternately Play or Pause the current disc. When the On Screen Library is displayed on-screen, pressing this button will begin play of the currently selected disc.

㉙ **▶:** Used to change the menu selection or setting during some of the setup or other procedures. In DVD mode, press this button to play the current disc in Fast Forward mode.

㉚ **Digital/Subtitle/Exit:** When the DCR600II is selected, press this button to assign one of the digital inputs to a source. When the DVD600II is selected, this button is used to change the subtitle choice. For other video devices, it exits the menu.

㉛ **▼:** Used to change or scroll through items in the on-screen menus, or to change configuration settings, such as output levels. When changing an item such as the surround mode or digital input directly, first press the function or mode to be changed, such as Surround Mode or Digital Input, and then press this button to scroll through the list of available choices. In DVD mode, press this button once to return to the beginning of the current chapter or track, and twice to skip to the next lower chapter or track of the current disc.

㉜ **Delay/Return/Prev Ch.:** Begins the process for setting the delay times used by the DCR600II when processing surround sound. After pressing this button, the delay times are entered by pressing the **Set Button** ㉘ and then using the ▲/▼ **Buttons** ㉕ ㉛ to change the setting. Press the **Set Button** ㉘ again to complete the process.

This button is also used when viewing a menu display from a DVD disc. Press it to return to the previous menu screen.

When the **Video 2 Input** ⑯⑰ has been programmed for a cable or satellite service, this button will skip to the previous channel.

㉝–㊵, ㊷ ㊸ **Numeric Keys:** These buttons serve as a ten-button numeric keypad to enter tuner preset positions. They are also used with the DVD600II to directly access a disc (when pressed within 3 seconds after the **Disc Skip Button** ㊶) or track (when pressed while a disc is playing), 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. When the TV or another video device is selected, they are used to select channel numbers. They may also be used to select track or chapter numbers when playing a CD or DVD.

㊶ **Tuner Mode/Angle:** Press this button when the tuner is in use to select between automatic tuning and manual tuning. When the button is pressed so that the **AUTO Indicator** T goes out, pressing the **Tuning Buttons** ㊺ ㊾ 8 will move the frequency up or down in single-step increments. When the **AUTO Indicator** T is lit, pressing the **Tuning Buttons** ㊺ ㊾ 8 will cause the tuner to search for the next station with an acceptable signal. When the FM band is in use, pressing this button when a station's signal is weak will change to monaural reception.

When a DVD encoded with multiple-angle information is playing, press to change the angle in use. 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 DVD600II will display a camera icon on the screen to indicate when this feature is available.

㊹ **Memory:** Enters a radio station into the DCR600II's preset memory. Once the **MEMORY Indicator** Q flashes, you have five seconds to enter a preset memory location using the **Numeric Keys** ㉝–㊵, ㊷ ㊸. Repeat the process to enter additional stations.

㊺ ㊾ **Tuning Up/Down/Step (Frame Advance) Buttons:** When the tuner is in use, these buttons will tune up or down through the selected frequency band. If the **Tuner Mode Button** ㊶ 12 has been pressed so that the **AUTO Indicator** T is illuminated, pressing either of the buttons will cause the tuner to seek the next station with acceptable signal strength for quality reception. When the **AUTO Indicator** T is NOT illuminated, pressing these buttons will tune stations in single-step increments.

When a DVD disc is playing, press these buttons to move forward or backward one frame at a time. Press the **Play/Pause Button** ㊽ 10D to resume normal play. These buttons do not function when a CD is playing.

㊻ **Direct/Program Button:** Pressing this button in tuner mode, or while a CD or DVD is playing, starts the sequence for direct entry of a station's frequency, a CD track or a DVD chapter. After pressing the button, simply press the proper **Numeric Keys** ㉝–㊵, ㊷ ㊸ to select a station, track or chapter. You may also skip to a track or chapter by entering its number, without first pressing the **Direct Button** ㊻.

When the DVD600II is stopped, press this button to display the program menu and enter a programmed play sequence. When a disc is playing, press to switch between normal play and programmed playback, if a playlist has been programmed.

㊼ **Clear Button:** Erases incorrect entries when using the remote to directly enter a radio station's frequency.

When the DVD600II has been selected, 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 playlists.

48 52 Preset Up/Down/Slow-Play Buttons: When the tuner is in use, press these buttons to scroll through the stations programmed into the receiver's memory.

When a DVD disc is playing and the DVD600II has been selected, 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/Pause Button 58 10D**. These buttons do not function when a CD is playing.

50 Night Mode/Random: Activates the Night mode of the DCR600II. This mode is available in specially encoded digital sources, and it preserves dialogue (center channel) intelligibility at low volume levels.

When the DVD600II has been selected, press to begin the playback of all tracks on a disc in random order.

51 Disc Skip Button: Press twice in rapid succession to move to the next available disc in the tray when using a DVD or CD player. This button has no direct effect on the DCR600II. When a single press of this button is followed by a disc number, the DVD600II will skip directly to that disc.

53 Check: This button only functions when the DVD600II has been selected. 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 playlist via the front-panel Information Display.

54 Subtitle On/Off: This button only functions when the DVD600II has been selected. When a DVD is playing, press this button to turn the Subtitle Display on or off.

55 Repeat: This button only functions when the DVD600II or a CD player has been selected. Press to select one of the Repeat-Play modes: Repeat All (discs), Repeat 1 Disc, Repeat Title, Repeat Track/Chapter. Each press of the button shows the choice selected in both the on-screen Status Banner display or in the **Repeat Indicators** in the front panel Information Display.

56 Repeat A–B: This button only functions when the DVD600II has been selected. Press 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. This function is unavailable during programmed or random play.

NOTE: When any of the following buttons **57 – 64** is pressed while the remote has selected the Main Page, the remote will automatically switch to control of the DVD, as indicated by the **DVD Input Selector 4** lighting.

57 Reverse Search/Rewind: When the DVD600II has been selected, press 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/Pause Button 58 10D**.

When a tape deck or VCR has been selected, this button rewinds the tape.

58 Play Button: Press to begin playback when the DVD600II has been selected. 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.

When a CD player, tape deck or VCR has been selected, pressing this button will also begin playback. See the owner's manual for that device for more information on the operation of the play function as it affects that device.

59 Forward Search/Fast Forward: When the DVD600II has been selected, press 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, press the **Play/Pause Button 58 10D**. When a tape deck or VCR has been selected, this button fast-forwards the tape.

60 Record Button: This button only functions when a CD/CD-R, tape deck or VCR connected to the **Video 1 Input 12 13 14 15** has been selected. See the owner's manual for that device for further information on how to make recordings.

61 Stop Button: This button has no effect on the DCR600II. When the DVD600II has been selected, press this button once to place the disc in the Resume mode. Playback will stop, and 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/Pause Button 58 10D** is pressed again, even if the unit has been turned off in the interim. To stop a disc without entering Resume mode, press the Stop button twice.

This button also performs the Stop function when a CD player, tape deck or VCR connected to the **Video 1 Input 12 13 14 15** has been selected.

62 Pause Button: Press to pause the disc in use. To resume playback, either press the Pause button again, or press the **Play/Pause Button 58 10D**.

63 64 Previous/Next: Press to move backward or forward through the music tracks on a CD disc or the chapters on a DVD disc. This button also scans backward or forward when a VCR connected to the **Video 1 Input 12 13 14 15** has been selected.

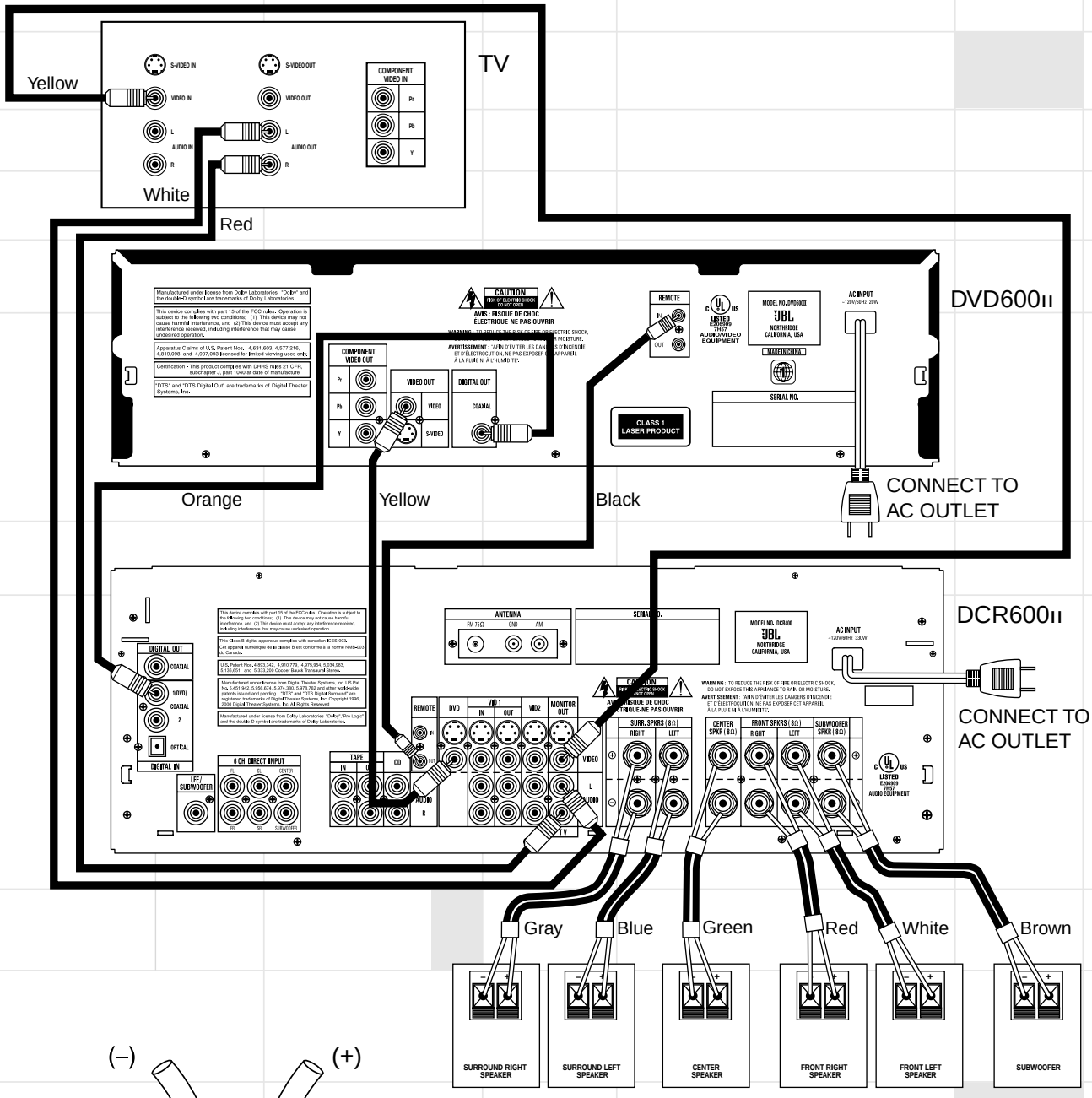
65 On Screen Library™ (patent pending): This feature lists the titles and disc types of all discs currently loaded in the DVD600II on your video screen. The On Screen Library resets automatically every time the DVD600II's disc tray is opened. When the tray is closed, the On Screen Library will need to read and identify all five discs, a process which will take approximately one minute. You may interrupt this process by pressing the **Stop Button 61 .** The On Screen Library will resume the process of identifying the discs when you press the **On Screen Library Button 65**. You may also prevent the On Screen Library from reading and identifying the discs by closing the tray with a press of one of the **Direct Access Buttons 11D,** which will begin play of that numbered disc.

If you have not opened the disc tray since the last time the On Screen Library was accessed, and if the current disc is stopped, you may press this button to display the On Screen Library, even if you have not selected DVD as the input source on the DCR600II. While in DVD mode, use the **▲/▼ Buttons 25 31** to scroll through the list. Press the **Set Button 28** to play the selected disc. Do not press a **Numeric Key 33 – 40, 42 43** while the On Screen Library is displayed, as it will remove the display without skipping to a different disc.

Program Indicator LED: Lights while programming the remote with device codes, macros, punch-through functions and device reassignments, or while resetting the remote memory.

Quick Installation Diagrams

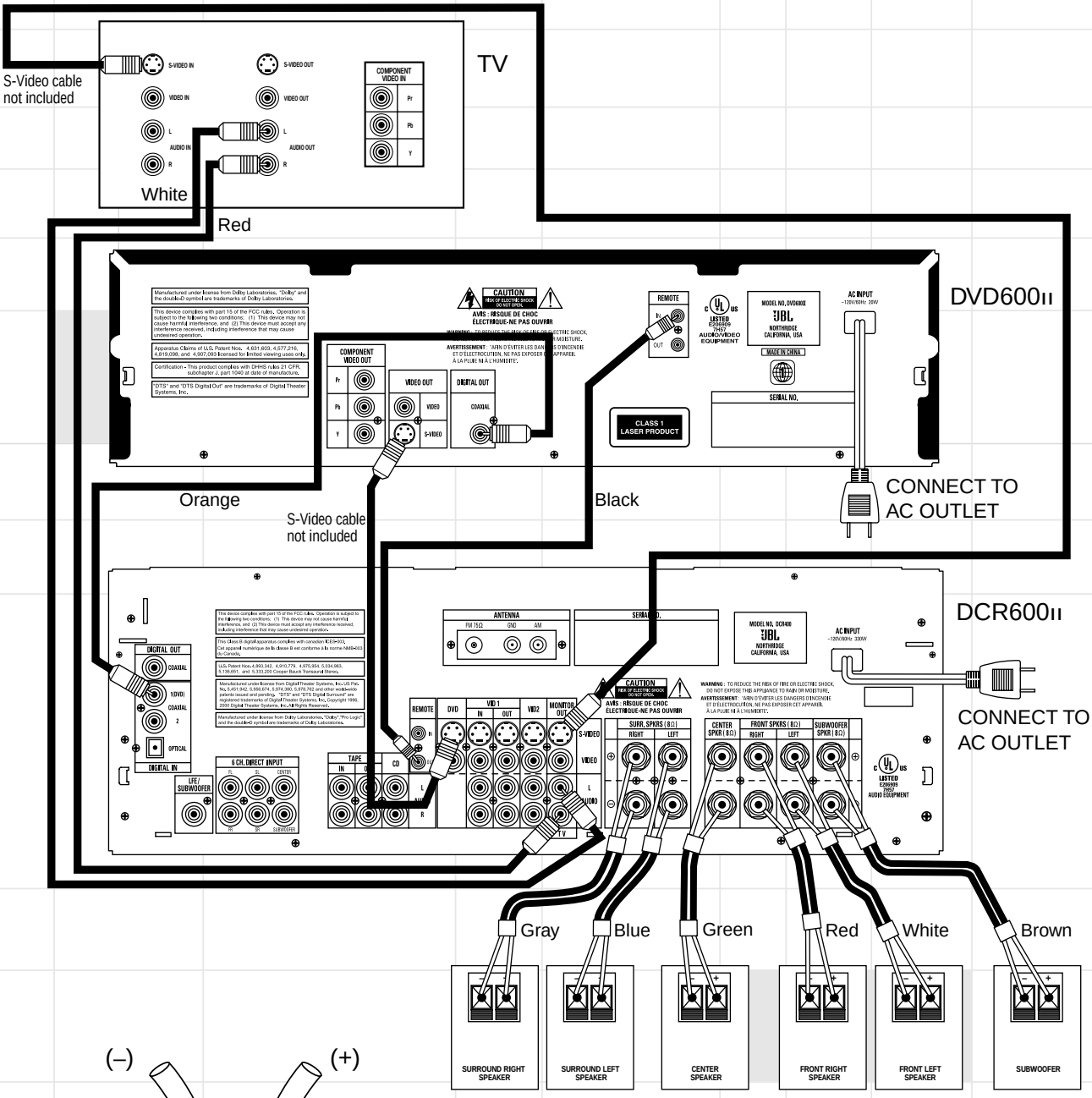
BASIC INSTALLATION: Your TV must at a minimum have a composite video input (this connector usually has a yellow-colored core), and Left (usually has a white-colored core) and Right (red-colored core) Stereo audio preamp-level RCA outputs. All wires for this hookup are included.

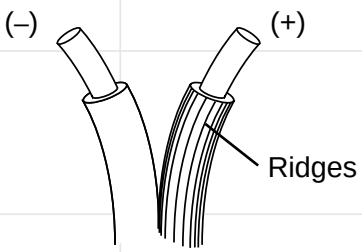


NOTES:
1. CONNECT “RIDGED” WIRE TO (+) COLORED TERMINAL AND CONNECT “SMOOTH” WIRE TO (–) BLACK TERMINAL ON DCR600II AND SPEAKERS.
2. WIRE COLOR CODES ARE FOR EASE OF CONNECTION.
THE SPEAKER WIRES CAN BE INTERCHANGED IF NECESSARY.

Quick Installation Diagrams

ALTERNATE INSTALLATION FOR BETTER PICTURE QUALITY: Your TV must have an S-Video input, and Left (usually has a white-colored core) and Right (red-colored core) Stereo audio preamp-level RCA outputs. Two pieces of S-Video cable are not included and should be purchased separately.

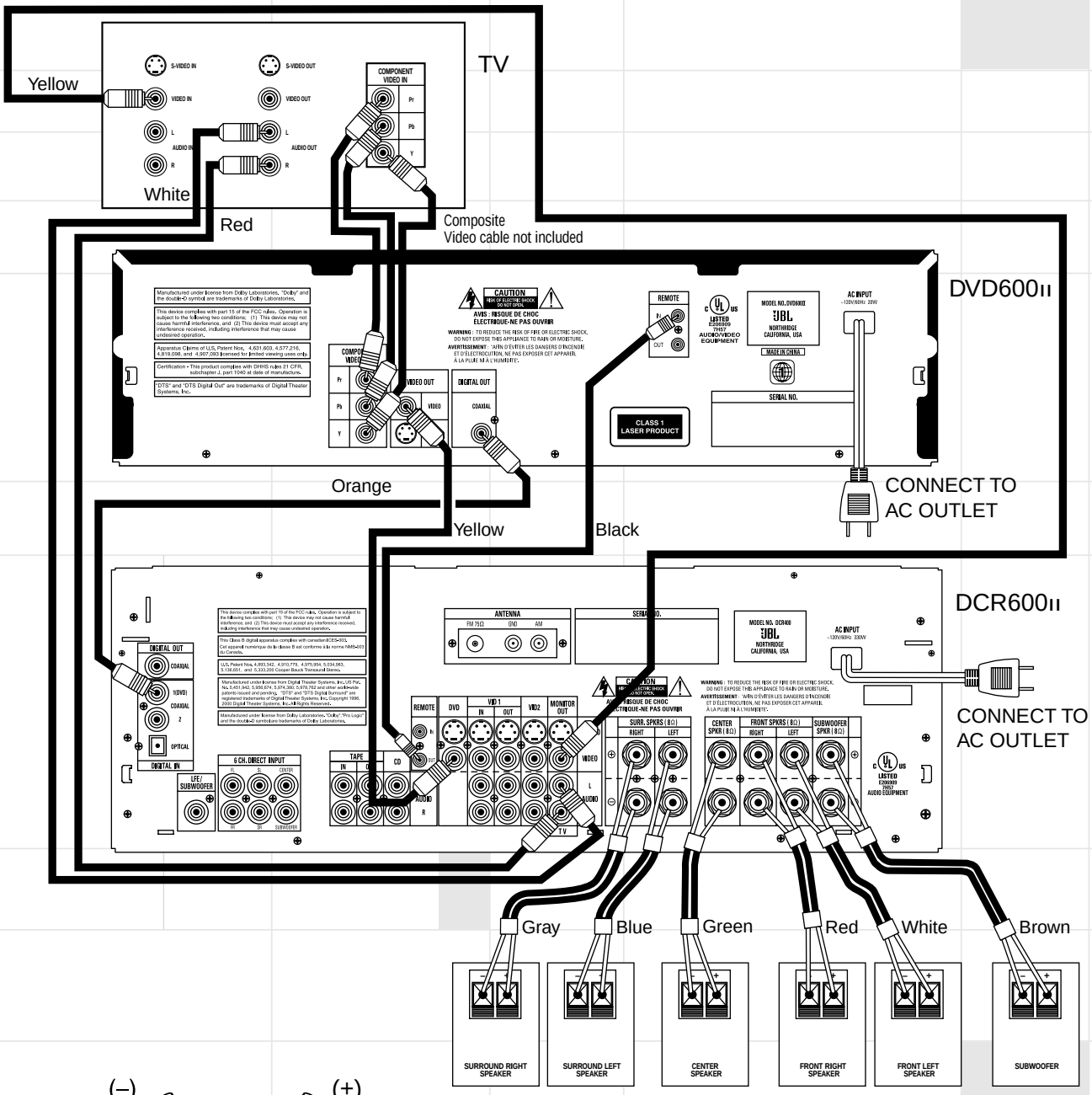


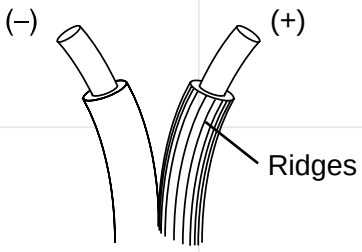


NOTES:
1. CONNECT “RIDGED” WIRE TO (+) COLORED TERMINAL AND CONNECT “SMOOTH” WIRE TO (–) BLACK TERMINAL ON DCR600II AND SPEAKERS.
2. WIRE COLOR CODES ARE FOR EASE OF CONNECTION.
THE SPEAKER WIRES CAN BE INTERCHANGED IF NECESSARY.

Quick Installation Diagrams

ALTERNATE INSTALLATION FOR BEST PICTURE QUALITY: Your TV must have Y/Pr/Pb component video inputs (three separate RCA connectors with red-, blue- and green-colored cores), and Left (usually has a white-colored core) and Right (red-colored core) Stereo audio preamp-level RCA outputs. The component video cable is not included and should be purchased separately. This setup requires that the TV's own video switching is utilized to access the DVD picture. All other video switching is still done through the DCR600II.





NOTES:
1. CONNECT "RIDGED" WIRE TO (+) COLORED TERMINAL AND CONNECT "SMOOTH" WIRE TO (–) BLACK TERMINAL ON DCR600II AND SPEAKERS.
2. WIRE COLOR CODES ARE FOR EASE OF CONNECTION.
THE SPEAKER WIRES CAN BE INTERCHANGED IF NECESSARY.
3. MUST USE VIDEO SWITCHING THROUGH TV TO ACCESS COMPONENT VIDEO.

Operating the DCR600II Receiver

Selecting a Surround Mode

One of the most important features of the DCR600II is its ability to reproduce a full multi-channel, surround sound field from digital sources, analog matrix surround-encoded programs and standard stereo programs. In all, a total of thirteen listening modes are available on the DCR600II.

Selection of a surround mode is based on personal taste, as well as the type of program source material being used. For example, motion pictures or TV programs bearing the logo of one of the major surround-encoding processes, such as Dolby Surround, DTS Stereo or UltraStereo may be played in either the Dolby Digital, Dolby Pro Logic II Movie or Logic 7 Cinema surround modes, depending on the source material.

NOTE: Once a program has been encoded with matrix surround information, it retains the surround information as long as the program is broadcast in stereo. Thus, movies with surround sound may be decoded via any of the analog surround modes such as Pro Logic II or Logic 7, when they are broadcast via conventional TV stations, cable, pay-TV and satellite transmission. In addition, a growing number of made-for-television programs, sports broadcasts, radio dramas and music CDs are also recorded in surround sound. You may view a list of these programs at the Dolby Laboratories Web site at www.dolby.com.

Even when a program is not listed as carrying intentional surround information, you may find that the Pro Logic II, Logic 7, Hall 1, Hall 2 or Theater modes often deliver enveloping surround presentations through the use of the natural information present in all stereo recordings. However, for stereo – but not surround – programs, we suggest that you experiment with the other modes.

Surround modes are selected using either the front panel controls or the remote. To select a surround mode from the front panel, press the **Surround Mode Selector** 7 to scroll up or down through the list of available modes. To select a surround mode using the remote, press the **Surround Mode Selector** 20 and then press the **▲/▼ Button** 25 31 to change the mode. As you press the buttons, the Surround mode name will appear in the **Main Information Display** U, and an individual mode indicator will also light up C D F H I J K L.

Note that the Dolby Digital and DTS modes may only be selected when a digital input is in use. In addition, when a digital source is present, the DCR600II will automatically select and switch to the correct mode (Dolby Digital or DTS), regardless of the mode that has been previously selected. For more information on selecting digital sources, see the following section of this manual.

To listen to a program in traditional two-channel stereo, using the front left and front right speakers only (plus the subwoofer if installed and configured), follow the instructions shown above for using the remote until SURR OFF appears in the **Main Information Display** U. Note that the DCR600II does not include a balance control. Also, as described elsewhere in this manual, the bass and treble adjustments are accessed by pressing the **Tone Mode Button** 6 followed by the **Set Button** 16.

Using Digital Sources

Digital audio is a major advance over older systems such as the original version of Dolby Pro Logic. It delivers five discrete channels: front left, center, front right, surround left and surround right. Each channel reproduces full frequency range (20Hz to 20kHz) and offers dramatically improved dynamic range and significant improvements to signal-to-noise ratios. In addition, digital systems have the capability to deliver an additional channel that is specifically devoted to low-frequency information. This is the ".1" channel referred to when you see these systems described as "5.1". The bass channel is separate from the other channels, but since it is intentionally bandwidth-limited, sound designers have given it that unique designation.

Dolby Digital

Dolby Digital (originally AC-3®) is a standard part of DVD, and is available on satellite broadcasts and is a part of the new high-definition television (HDTV) system. Some digital cable television systems also provide a Dolby Digital signal. However, due to cable's inherent bandwidth limitations, this may be only a 2.0-channel version rather than full 5.1-channel Dolby Digital. Check with your cable provider.

Note that an optional, external RF demodulator is required to use the DCR600II to listen to the Dolby Digital soundtracks available on laser discs. Connect the RF output of the LD player to the demodulator and then connect the digital output of the demodulator to the **Optical** or **Coaxial Inputs** 2 3 of the DCR600II. No demodulator is required for use with DVD players or DTS-encoded laser discs.

DTS

DTS is another digital audio system that is capable of delivering 5.1 audio. Although both DTS and Dolby Digital are digital, they use different methods of encoding the signals, and thus they require different decoding circuits to convert the digital signals back to analog.

DTS-encoded soundtracks are available on select DVD discs, as well as on special audio-only DTS discs. You may use any CD player equipped with a digital output to play DTS-encoded discs with the DCR600II. All that is required is to connect the player's output to either the **Optical** or **Coaxial Input** 2 3 on the rear panel.

In order to listen to DVDs encoded with DTS soundtracks, the DVD player must be compatible with the DTS signal as indicated by a DTS logo on the player's front panel. This does not indicate a problem with the DCR600II, as some players cannot pass the DTS signal through to the digital outputs. Note that, although early DVD players may not be able to play DTS-encoded DVDs, the DVD600II is compatible. If you are in doubt as to the capability of your DVD player to handle DTS discs, consult the player's owner's manual.

Selecting a Digital Source

To utilize either digital mode, you must have properly connected a digital source to the DCR600II. Connect the digital outputs from DVD players, HDTV receivers, satellite systems or CD players to the **Optical** or **Coaxial Inputs** 2 3. The DCR600II automatically assigns the **Coaxial 1 Input** 2 to the DVD video input. Make sure to connect the **Coaxial Digital Output** 49 on the back of the DVD600II to this input.

Since the DCR600II does not have an analog audio input available for the DVD source, if, in the future, you decide to use a different DVD player, one requiring an analog audio connection, you may wish to connect that player to the VID1, VID2 or VID3 input instead.

When playing a digital source, first select the input using the remote or front panel controls as outlined in this manual. Next, select the digital source by pressing the **Digital Input Selector Button** 30 18 and then using the **▲/▼ Buttons** 25 31 on the remote or the **Selector Buttons** 5 on the front panel to choose any of the OPTICAL or COAXIAL inputs, as they appear in the **Main Information Display** U, or **Source Indicators** B E. This procedure may also be used to select an input source's analog audio input, if available. The DCR600II does not offer an analog audio input for DVD. Note that the DVD input of the DCR600II is configured at the factory to default to the COAX 1 digital input.

(continued)

Operating the DCR600II Receiver

When the digital source is playing, the DCR600II will automatically detect whether it is a multi-channel Dolby Digital or DTS source, or a conventional PCM signal, which is the standard output from CD players. A **Bitstream Indicator A** will light in the **Main Information Display 19** to confirm that the digital signal is Dolby Digital, DTS or PCM.

Digital Status Indicators

When a digital source is playing, the DCR600II senses the type of bitstream data that is present. Using this information, the correct surround mode will automatically be selected. For example, DTS bitstreams will cause the unit to switch to DTS decoding, and Dolby Digital bitstreams will enable Dolby Digital decoding. When the unit senses PCM data from CDs, it will allow the appropriate surround sources to be selected manually. Since the range of available surround modes is dependent on the type of digital data that is present, the DCR600II uses a variety of indicators to let you know what type of signal is present. This will help you to understand the choice of modes.

When a digital source is playing, a **Bitstream Indicator A** will light to show which type of signal is playing:

DOLBY D: When the **DOLBY D Indicator A** lights, a Dolby Digital bitstream is being received. Depending on the settings on the source player and specific surround information and number of channels on the disc, a number of surround modes are possible. For discs with full 5.1 audio, only the Dolby Digital mode is available. When the Dolby Digital signal is only two-channel, you may also select from the Logic 7 Cinema/Music, Hall, Theater, Dolby Pro Logic II Movie/Music/Emulation, or Dolby 3 Stereo modes. When the receiver detects a 2.0-channel Dolby Digital signal, it will automatically select Dolby Pro Logic II as the surround processing mode, and both the **Dolby Digital D** and **Dolby Pro Logic II F** indicators will light, in accordance with the requirements of Dolby Laboratories.

DTS: When the **DTS Indicator A** lights, a DTS bitstream is being received. When the unit senses this type of data, only the DTS mode may be used.

PCM: When the **PCM Indicator A** lights, a standard Pulse Code Modulation, or PCM, signal is being received. This is the type of digital audio used by conventional compact disc and laser disc recordings. When a PCM bitstream is present, all modes except Dolby Digital and DTS are available.

In addition to the bitstream indicators, the DCR600II features a set of unique channel-input indicators that tell you how many channels of digital information are being received and/or whether the digital signal is interrupted.

These indicators are the L/C/R/SL/SR/LFE letters that are inside the center boxes of the **Speaker/Channel Input Indicators M** in the front panel **Main Information Display 19**. When a standard analog signal is in use, only the "L" and "R" indicators will light, as analog signals have only left and right channels, respectively.

Digital signals, however, may have two, five or six separate channels, depending on the program material, the method of transmission and the way in which it was encoded. When a digital signal is playing, the letters in these indicators will light in response to the specific signal being received. It is important to note that although Dolby Digital, for example, is referred to as a "5.1" system, not all Dolby Digital DVDs or programs are encoded for 5.1. Thus, it is sometimes normal for a DVD with a Dolby Digital soundtrack to trigger only the "L" and "R" indicators.

NOTE: Many DVD discs are recorded with both "5.1" and "2.0" versions of the same soundtrack. When playing a DVD, always be certain to check the type of material on the disc. Most discs show this information in the form of a listing or icon on the back of the disc jacket. When a disc does offer multiple soundtrack choices, you may have to make some adjustments to your DVD player (usually with the "Audio Select" button or in a menu screen on the disc) to send a full 5.1 feed to the DCR600II. It is also possible for the type of signal feed to change during the course of a DVD playback. In some cases, the previews of special material will only be recorded in 2.0 audio, while the main feature is available in 5.1 audio. As long as your DVD player is set for 6-channel output, the DCR600II will automatically sense changes to the bitstream and channel count and reflect them in these indicators.

The letters used by the **Speaker/Channel Input Indicators M** also flash to indicate when a bitstream has been interrupted. This will happen when a digital input source is selected before the playback starts, or when a digital source such as a DVD is paused. The flashing indicators remind you that the playback has stopped due to the absence of a digital signal and not through any fault of the DCR600II. This is normal, and the digital playback will resume once the playback is started again.

Night Mode

A special feature of Dolby Digital is the Night mode, or Dynamic Range Compression mode, which enables these input sources to be played back with full digital intelligibility while reducing the minimum peak level by 1/4 to 1/3. This prevents abruptly loud transitions from disturbing others, without reducing the impact of the digital source. The Night mode is available only when Dolby Digital signals with special data are being played.

The Night mode may be engaged when a Dolby Digital DVD is playing by pressing the **Night Mode Button 50** on the remote. Next, press the ▲/▼ **Buttons 25 31** to select either the middle range or full-compression versions of the Night mode. To turn the Night mode off, press the ▲/▼ **Buttons 25 31** until the message in the lower third of the video display and the **Main Information Display U** reads D-Range Off.

IMPORTANT NOTES ON DIGITAL PLAYBACK

1. When the digital playback source is stopped, or in a Pause, Fast Forward or Chapter Search mode, the digital audio data will momentarily stop, and the channel position letters inside the **Speaker/Channel Input Indicators M** will flash. This is normal and does not indicate a problem with either the DCR600II or the source machine. The DCR600II will return to digital playback as soon as the data is available and when the machine is in a standard play mode.

2. Although the DCR600II will decode virtually all DVD movies, CDs and HDTV sources, it is possible that some future digital sources may not be compatible with the DCR600II.

3. Note that not all digitally encoded programs contain full 5.1-channel audio. Consult the program guide that accompanies the DVD to determine which type of audio has been recorded on the disc. Also, due to bandwidth limitations, digital cable television signals may contain only a 2.0-channel Dolby Digital signal. Check with your cable provider. The DCR600II will automatically sense the type of digital surround encoding used and adjust to accommodate it.

4. When a digital source is playing, you may not be able to select some of the analog surround modes such as Dolby Pro Logic II, Dolby 3 Stereo, Hall, Theater or Logic 7.

Operating the DCR600II Receiver

5. When a Dolby Digital or DTS source is playing, it is not possible to make an analog recording using the **Tape** ❼ and **Video 1 Record Outputs** ⓮⓯. However, the digital signals will be passed through to the **Digital Audio Output** ❶.

PCM Audio Playback

PCM (Pulse Code Modulation) is the noncompressed digital audio system used for compact discs and laser discs. The digital circuits in the DCR600II are capable of high-quality digital-to-analog decoding, and they may be connected directly to the digital audio output of your CD player.

Connections may be made to the rear panel **Optical** or **Coaxial Inputs** ❷❸.

To listen to a PCM digital source, first select the input for the desired source (e.g., CD). Next press the **Digital Select Button** 18 ㉚ and then use the ▲/▼ **Buttons** ㉕ ㉛ on the remote, or the **Selector Buttons** 5 on the front panel, until the desired digital input choice, e.g. COAX 2 or OPTICAL 1, appears in the **Main Information Display** U.

When a PCM source is playing, the **PCM Indicator** A will light. During PCM playback, you may select any surround mode except Dolby Digital or DTS.

Playback from PCM sources may also benefit from the Logic 7 mode. When playing back a surround-encoded PCM source, such as a surround-encoded CD, use the Logic 7 C (or Cinema) mode. When playing true stereo recordings, use the Logic 7 M (or Music) mode for a wider soundstage and increased rear-channel ambience.

Similarly, the Dolby Pro Logic II modes may also increase your enjoyment of PCM and analog sources. Choose the Music mode for stereo recordings. For surround-encoded sources, you may choose either the Emulation mode or the Movie mode, which more closely re-creates a Dolby Digital sound field with discrete information provided to the surround channels.

With the great variety of surround modes available on the DCR600II receiver, you are encouraged to experiment to find the modes that suit your tastes, as well as different modes depending on the source material.

Operating the Tuner

The tuner of the DCR600II is capable of tuning AM, FM and FM Stereo broadcast stations. Stations may be tuned manually, or they may be stored as favorite station presets and recalled from a 30-position memory.

Station Selection

1. Press the **AM/FM Tuner Select Button** ⓫ on the remote to select the tuner as an input. The tuner may be selected from the front panel by either pressing the **Input Source Selector** 11 until the tuner is active or by pressing the **Tuner Band Selector** 9 at any time.

2. Press the **AM/FM Tuner Select Button** ⓫ or **Tuner Band Selector** 9 again to switch between AM and FM so that the desired frequency band is selected.

3. Press the **FM Mode Button** 12 ㊶ to select manual or automatic tuning.

When the **AUTO Indicator** T is illuminated in the **Main Information Display** U the tuner will stop only at those stations that have a signal strong enough to be received with acceptable quality.

When the **AUTO Indicator** T is not illuminated, the tuner is in a manual mode and will stop at each frequency increment in the selected band. Press and hold the **Tuning Selector Button** 8 ㊺ ㊾ to search more quickly.

4. To select stations, press the **Tuning Selector Button** 8 ㊺ ㊾. When the **AUTO Indicator** T is lit, press the button for two seconds and then release to cause the tuner to search for the next highest- or lowest-frequency station that has an acceptable signal. When tuning FM stations in the Auto mode, the tuner will select only stereo stations. To tune to the next station, press the button again. If the **STEREO Indicator** R is not lit, tap the **Tuning Selector Button** 8 ㊺ ㊾ to advance one frequency increment at a time, or press and hold it to locate a specific station. When the **TUNED Indicator** S lights, the station is properly tuned and should be heard with clarity.

5. Stations may also be tuned directly by pressing the **Direct Button** ㊻, and then pressing the **Numeric Keys** ㉝–㊵ ㊷ ㊸ that correspond to the station's frequency. The desired station will automatically be tuned. If you press an incorrect button while entering a direct frequency, press the **Clear Button** ㊼ to start over.

NOTE: When the FM reception of a station is weak, audio quality will be increased by switching to Mono mode by pressing the **FM Mode Button** 12 ㊶ until the **STEREO Indicator** R goes out.

Preset Tuning

Using the remote, up to 30 stations may be stored in the receiver's memory for easy recall using the front panel controls or the remote.

To enter a station into the memory, first tune the station using the steps outlined above. Then:

1. Press the **Memory Button** ㊹ on the remote. Note that the **MEMORY Indicator** Q will be illuminated and flash in the **Main Information Display** 19.

2. Within five seconds, press the **Numeric Keys** ㉝–㊵ ㊷ ㊸ corresponding to the location where you wish to store this station's frequency. Once entered, the preset number will appear in the **Preset Number/Sleep Timer Display** N.

3. Repeat the process after tuning any additional stations to be preset.

Recalling Preset Stations

- To manually select a station previously entered in the preset memory, press the **Numeric Keys** ㉝–㊵ ㊷ ㊸ that correspond to the desired station's memory location.
- To manually tune through the list of stored preset stations one by one, press the **Preset Stations Selector Buttons** 10 ㊽ ㊷ on the front panel or remote.

Tape Recording

In normal operation, the audio or video source selected for listening through the DCR600II is sent to the record outputs. This means that any program you are watching or listening to may be recorded simply by placing machines connected to the outputs for **Tape Outputs** ❼ or **Video 1 Outputs** ⓮⓯ in the Record mode.

When a digital audio recorder is connected to the **Digital Audio Output** ❶, you are able to record the digital signal using a CD-R, MiniDisc or other digital recording system.

NOTES:

- The digital outputs are active only when a digital signal is present, and they do not convert an analog input to a digital signal, or change the format of the digital signal. In addition, the digital recorder must be compatible with the output signal. For example, the PCM digital input from a CD player may be recorded on a CD-R or MiniDisc, but Dolby Digital or DTS signals may not.
- Please make certain that you are aware of any copyright restrictions on any material you copy. Unauthorized duplication of copyrighted materials is prohibited by federal law.

(continued)

Troubleshooting

Processor Reset

In the rare case where the receiver's operation or the displays seem abnormal, the cause may involve the erratic operation of the system's memory or microprocessor.

To correct this problem, first unplug the unit from the AC wall outlet and wait at least three minutes. After the pause, reconnect the AC power cord and check the unit's operation. If the system still malfunctions, a system reset may clear the problem.

To clear the receiver's entire system memory including tuner presets, output level settings, delay times and speaker configuration data, first put the unit in Standby by pressing the **System Power Control Button** 2. Next, press and hold the **Tone Mode** 6 and the **FM Mode Selector** 12 buttons for three seconds.

The unit will turn on automatically and display the RESET message in the **Main Information Display** U.

NOTE: Resetting the processor will erase any configuration settings you have made for speakers, output levels, surround modes and digital input assignments, as well as the tuner presets. After a reset, the unit will be returned to the factory presets, and all settings for these items must be reentered.

If the system is still operating incorrectly, there may have been an electronic discharge or severe AC line interference that has corrupted the memory or microprocessor.

If these steps do not solve the problem, consult an authorized JBL service center.

In the event that you forget the password for the DVD600II, you may reset it to the factory default by following this procedure: In Standby mode, press the **Search Reverse** 6D and **Skip Forward** 8D buttons on the front panel simultaneously for more than 3 seconds. The **Information Display** 12D will light, and a test pattern will appear on your TV. Press the **System Power Control** 2D to proceed.

SYMPTOM	PROBABLE CAUSE	SOLUTION
DCR600II does not function when Main Power Switch is pushed	• No AC Power	• Make certain AC power cord is plugged into a live outlet. • Check to see whether outlet is switch-controlled.
DVD600II does not turn on	• Main Power Switch turned off • No AC power	• Press in Main Power Switch. • Check AC power plug and make certain any switched outlet is turned on.
Display lights, but no sound	• Intermittent input connections • **Mute** is on • Volume control is down	• Make certain that all input and speaker connections are secure. • Press **Mute Button** 3. • Turn up volume control.
Unit turns on, but front panel display does not light up	• Display brightness is turned off	• Follow the instructions in the Display Brightness section so that the display is set to VFD FULL.
No sound from any speaker; light around power switch is red	• Amplifier is in Protection mode due to possible short • Amplifier is in Protection mode due to internal problems	• Check speaker wire connections for shorts at receiver and speaker ends. • Contact your local JBL service center.
No sound from any speaker	• No audio signal is being transmitted to the speakers • If in DVD mode, make sure that analog input is not accidentally assigned • Intermittent connections • Incorrect digital audio selection • DVD disc is in Fast or Slow mode	• Check that DCR600II is on and a source is playing. • Check all wires and connections between the DCR600II and speakers. Make sure all wires are connected. Make sure none of the speaker wires are frayed, cut or punctured. • Review proper operation of the DCR600II. • Check Input assignment for DVD Input. DVD Input should be set to COAX 1 and the DVD600II Digital Output should be connected to **Coaxial 1 Digital Input** 2 on the DCR600II. • Check all audio connections. • Check digital audio settings. • There is no audio playback on DVD discs during Fast or Slow modes.

Troubleshooting

No sound from one speaker	• No audio signal is being transmitted to the speakers	• Check all wires and connections between the DCR600II and speakers. Make sure all wires are connected. Make sure none of the speaker wires are frayed, cut or punctured. • In Dolby Digital or DTS modes, make sure that the DCR600II is configured so that the speaker in question is enabled.
No sound from surround or center speakers	• Incorrect surround mode	• Select a mode other than Stereo. • Make sure the movie or TV show you are watching is recorded in a surround sound mode. If it is not, try using another surround mode.
	• Input is monaural • Stereo or Mono program material	• There is no surround information from mono sources. • The surround decoder may not create center- or rear-channel information from nonencoded programs. • Review the operation of your DVD player and the jacket of your DVD to make sure that the DVD features the desired Dolby Digital or DTS mode, and that you have properly selected that mode using both the DVD player's menu and the DVD disc's menu.
	• No audio signal is being transmitted to the speaker	• Check all wires and connections between the DCR600II and speaker. Make sure all wires are connected. Make sure none of the speaker wires are frayed, cut or punctured.
	• Incorrect configuration	• If the DCR600II is set in Dolby Pro Logic II mode, make sure the center speaker is not in Phantom mode. • If the DCR600II is set in Dolby Digital or DTS mode, make sure it is configured so that the center speaker is enabled. • In Dolby Digital or DTS modes, make sure the DCR600II is configured so that the surround speakers are enabled. • Check all wires and connections between the DCR600II and speakers. Make sure all wires are connected. Make sure none of the speaker wires are frayed, cut or punctured.
System plays at low volume but shuts off as volume is increased	• Speaker impedances are dropping too low for receiver to handle	• Check all wires and connections between the DCR600II and speakers. Make sure all wires are connected. Make sure none of the speaker wires are frayed, cut or punctured. • Do not use more than one pair of main speakers.
Low (or no) bass output	• Speakers are connected out of phase	• Make sure the connections to the left and right Speaker Inputs have the correct polarity (+ and –).
	• Subwoofer output of DCR600II not enabled	• In Dolby Digital or DTS modes, make sure the DCR600II is configured so that the subwoofer and LFE output is enabled.
Unit does not respond to remote commands	• Weak batteries in remote • Wrong device selected • Remote sensor is obscured	• Change remote batteries. • Press the **Main** 8 or **DVD** 4 selector. • Make certain front panel sensor is visible to remote or connect remote sensor.
Intermittent buzzing in tuner	• Local interference	• Move unit or antenna away from computers, fluorescent lights, motors or other electrical appliances.
Letters flash in the channel indicator display and digital audio stops	• Digital audio feed paused	• Resume play for DVD. • Check that Digital Input is selected.

(continued)

Troubleshooting

Disc does not play	• Disc loaded improperly • Incorrect disc type • Invalid Region Code • Rating is above parental preset • Wrong source for CD was selected	• Load disc label-side up. • Check to see that disc is CD, CD-R, CD-RW, DVD-Movie, MP3 or Video CD; other types will not play. • Use Region 1 disc only. • Enter password to override or change rating settings. • If you are playing a CD in the DVD600II, you must select the DVD source on the DCR600II, not the CD source.
No picture	• Intermittent connections • Wrong input • Different types of video connections in use	• Check all video connections. • Check input selection of TV or DCR600II. • You may not mix video connection types. If you use S-Video connections from the DVD600IIto the DCR600II, you must also use the S-Video input on your television. If you use the composite video connections from the DVD600II to the DCR600II, you must also use the composite video input on your television.
Picture is distorted or jumps during Fast Forward or Reverse Play	• MPEG-2 decoding	• It is a normal artifact of DVD playback for pictures to jump or show some distortion during rapid play.
Picture jumps or freezes during normal play	• Unit may be overheating	• Due to the nature of this product category, DVD players, while being operated at elevated temperatures, may exhibit certain anomalies such as picture freeze-ups. If this occurs, the DVD600II needs to be “reset” by powering it down and up again, using its master On/Off switch. Should this occur with your DVD600II, first check your discs for any damage, scratches, and fingerprints. If discs are OK, then ventilation around the DVD600II needs to be increased to ensure proper operation.
Some remote buttons do not operate during DVD play	• Function not available for this disc	• Some discs do not include all DVD features.
The menu is in a foreign language	• Incorrect menu language	• Change menu language selection.
“Ø” symbol appears	• Requested function not available at this time	• Certain functions may be disabled during passages of a disc.
Picture is displayed in the wrong aspect ratio	• Incorrect match of aspect ratio settings to disc	• Change Aspect Ratio settings.
Disc will not copy to VCR	• Macrovision protection	• Most DVDs are encoded with Macrovision to prevent copying to VCR.

TECH TIPS

Troubleshooting tips and solutions to common service problems

For models:

JSR635
JSR635i
JSR400
DCR600
DCR600II

TIP# JBLTT2003-01 Rev1

Subject: Backup Memory on JBL Receivers

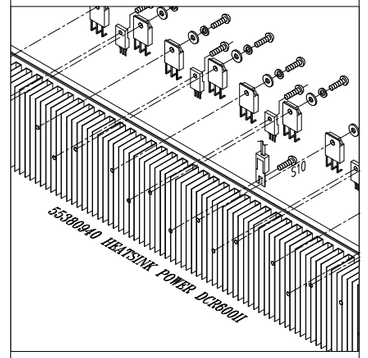
In the event of the complaint: "the receiver is losing its memory (any programmed system settings) when the unit is turned off, or after the unit is unplugged (briefly*)":

Check and replace:

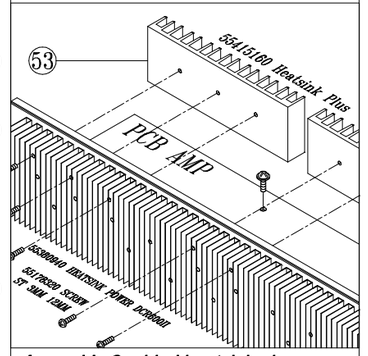
Model	Designator	Location	Description	Part number
JSR635	C712	Front PCB	.047 Farad 5.5v capacitor	# 3439247315
JSR635i	C714	Front PCB	.047 Farad 5.5v capacitor	# 3439247315
JSR400	C11	Control (Front) PCB	.047 Farad 5.5v capacitor	# 1881-000-010
DCR600	C216	Front PCB	.047 Farad 5.5v capacitor	# 55134360
DCR600II	C216	Front PCB	.047 Farad 5.5v capacitor	# 55134360

* After approximately two weeks of being disconnected from AC supply, even a normally functioning receiver may lose any programmed settings and switch to default settings.

PCB POWER
PCB SUPERVIDRO
PCB MAIN
PCB Extra
PCB AC-3
PCB AMP
PCB FRONT
PCB KEY SW
PCB PHONE
55178340



Assemble 2 added heatsink-plus



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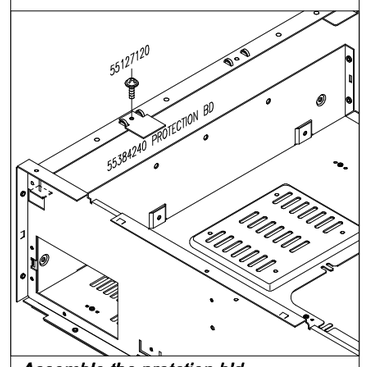


Assemble the protction b'd

DCR 600II EXPLODED VIEW

DCR600II US EXPLODED VIEW PART LIST

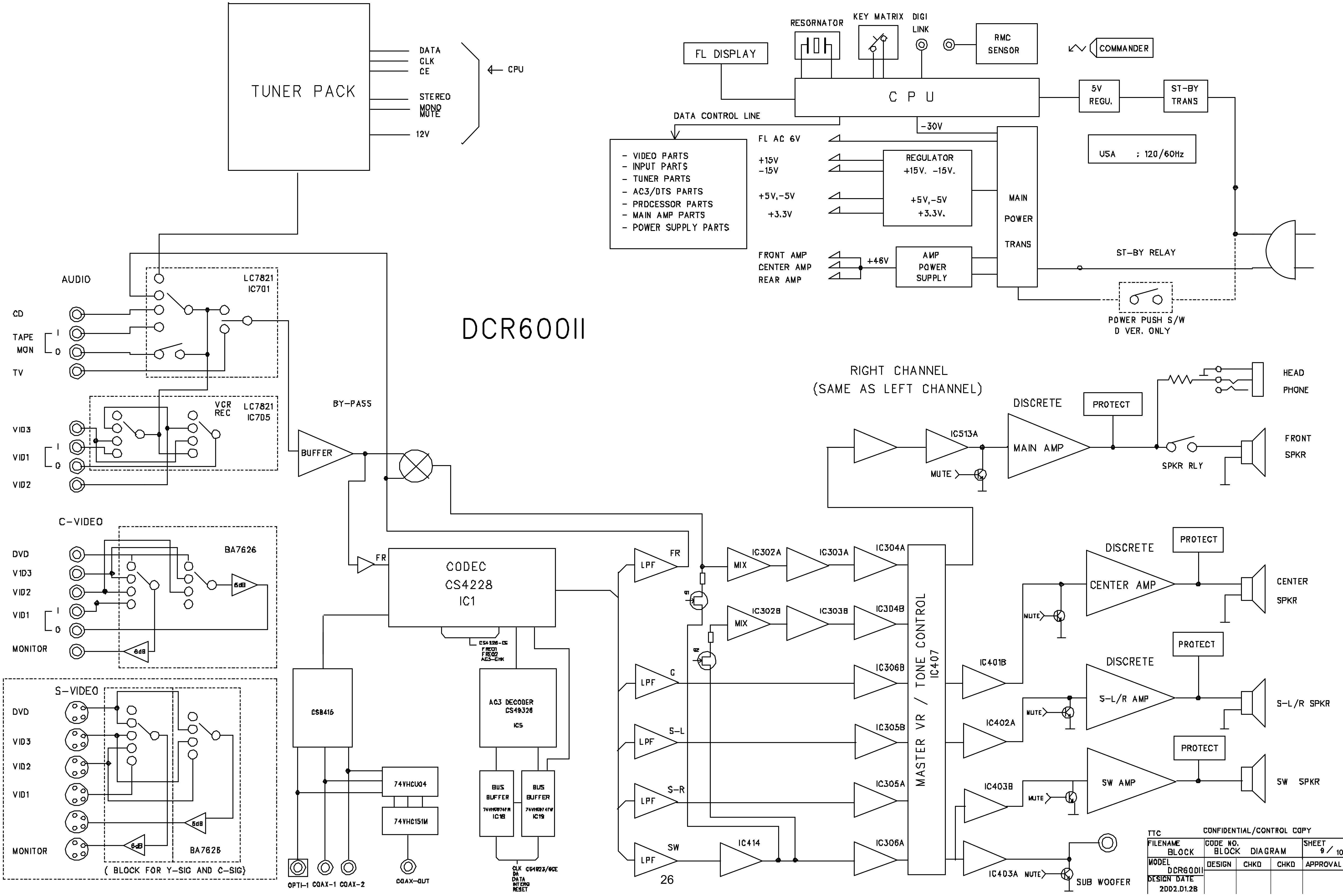
NO	PARTS CODE	PARTS NAME	Q'TY	MATERIAL & SPEC
1	55197210	WINDOW DISPLAY ACRYL	1	SAN
2	55242820	PANEL FRONT	1	HIPS 94HB
3	55192630	BTN STANDBY	1	HIPS 94HB
4	55192620	BUTTON POWER	1	HIPS 94HB
5	55192640	INDICATOR STANDBY	1	SAN
6	55178000	SW PUSH POWER TV-3	1	SDDLB14700
7	55124350	BKT PHONE	1	SECC 1.0t
8	55088400	JACK PHONE KUNMING	1	HTJ-064-07BG
9	55182450	VFD SAMSUNG	1	HNA-16LL15
10	55155930	REMOTE SENSOR	1	
11	55178440	FL GUIDE	1	HIPS 94HB
12	55178050	COVER TOP	1	SECC+VCM
13	55192560	KNOB MAIN	1	HIPS 94HB
14	55192610	BTN 7 KEY	1	HIPS 94HB
15	55196100	CAP DIGITAL	1	HIPS 94HB
			1	ET 0.5t
18	55192590	BTN 2 KEY R	1	HIPS 94HB
19	55192580	BTN 2 KEY L	1	HIPS 94HB
20	55192570	BTN 5KEY	1	HIPS 94HB
21	55113960	JACK S-VIDEO	1	C40160261N
22	55113740	SCKT RCA-307 3 PINS	1	
23	55134900	SWIROT EC16B24204A5	1	
24	55227770	COVER BOTTOM	1	
25	55164980	MLD BRACKET SPACE PCB	4	
26	55178250	CABINET CHASSIS FRONT	1	
27	55178170	BRACKET FRAME-GUIDE	2	
28	55192650	CABINET CHASSIS MAIN	1	
29	55124310	BRACKET TRANS RT2280	1	
30	55311150	METAL HEATSINK DIODE	1	
31	55125220	BUFFER PCB	6	
32	55190220	FOOT ASSY DCR600 ROUND	4	
33	55174760	FOOT RUBBER ROUND	4	
34	5538094A	HEATSINK POWER DCR600II	1	
35				
36	55132220	BRACKET MAIN PCB	2	
37	55192890	TUNER MODULE KST	1	
38	55149520	MIX SOCKET RCA-118JP1S	5	
39	55192840	SCKT REMOTE IN OUT 2 PINS	1	
40	55208270	TERMINAL SPKR 8P	1	
41	55192880	REAR PANEL SECC 1.0T	1	
42	55125180	CLAMP AC CORD RT2280	1	
43	20865960	AC CORD 0.82MM2 1990MM	1	
44	55191390	TERMINAL SPKR 4P	1	
45	55130170	HEATSINK REG TR RT2280 2P	2	
46	55176330	PHONO SCKT RCA 4P	2	
47	55088230	SCKT RCA-606P 6 PINS	1	
48	55226340	SCKT RCA 6P JACK	1	
49	55191370	SCKT RCA 1P JACK	1	
50	55208180	SCKT RCA 3P JACK	1	
51	55125430	D-LEM TORX178B RD	1	
52	55124320	BRACKET AC3 PCB	1	
53	55415160	HEATSINK PLUS DCR600II	2	
54				
55				

NO	PARTS CODE	PARTS NAME	
W1	55127310	WASHER FLAT P/W 3.3X8.0X0.5 MC	
W2	55127300	WASHER SPRING NO:2 M3 MC	
W3	55168690	SPRING WASHER RT2250(PAV5005)	
W4	55131730	WASHER 4.8MM 12MM 1.0MM	

	PARTS CODE	PARTS NAME	
	55135460	SCREW-SPEC 3MM 10MM	
	55127120	SCREW A183008000 BTTN W3X8Y	
	55127140	SCREW-ST 4MM 8MM JIS B	
	55127070	SCREW-ST 3MM 10MM JIS B	
	55127290	SCREW-ST 3MM 18MM JIS B	
	55049000	SCREW-ST 3MM 06MM	
	55164800	SCREW 3MM 8MM DIN963	
	55178320	SCREW-ST 3MM 12MM JIS B	
	55178340	SCREW-ST 4MM 10MM	
	55127280	SCREW-ST 3MM 6MM JIS B	

NO	PARTS CODE	PARTS NAME	
SW1	J46500500501	SW TACT 2P SKQNAE 160gf	

BLOCK DIAGRAM



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FILENAME BLOCK	CODE NO. BLOCK DIAGRAM			SHEET 9 / 10
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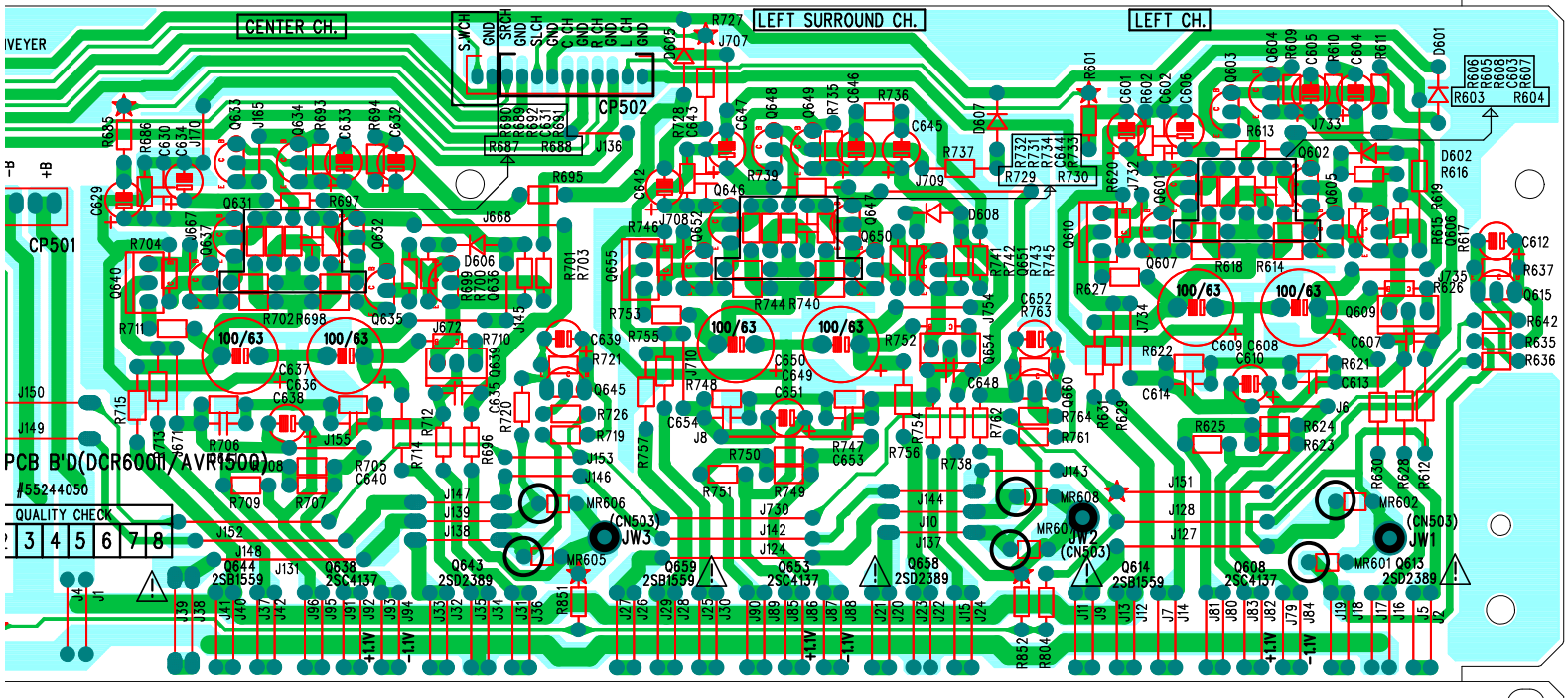
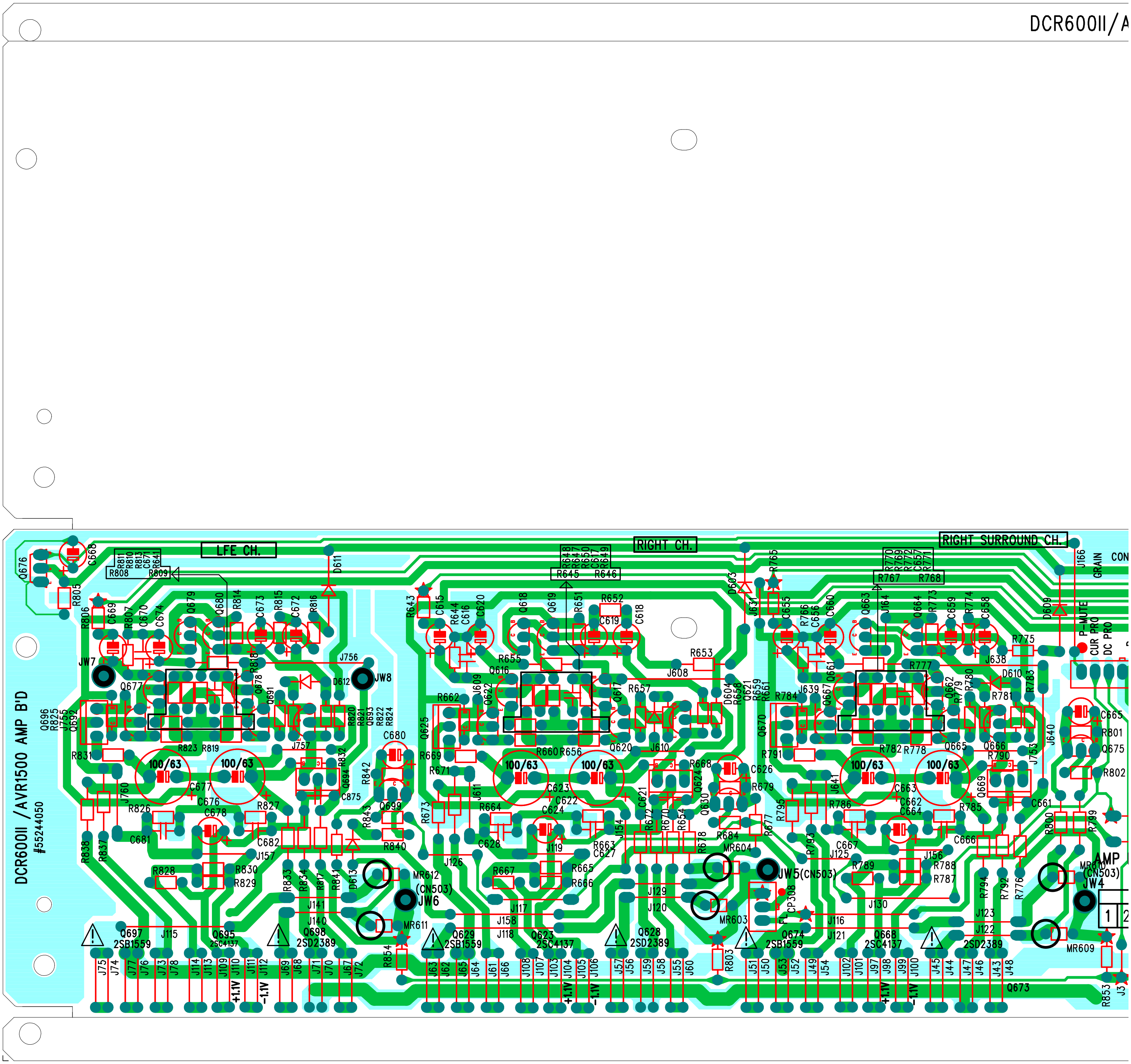
DESIGN DATE 2002.01.28				

\VR1500 AMP PCB MP

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DCR600II /AVR1500 AMP B'D
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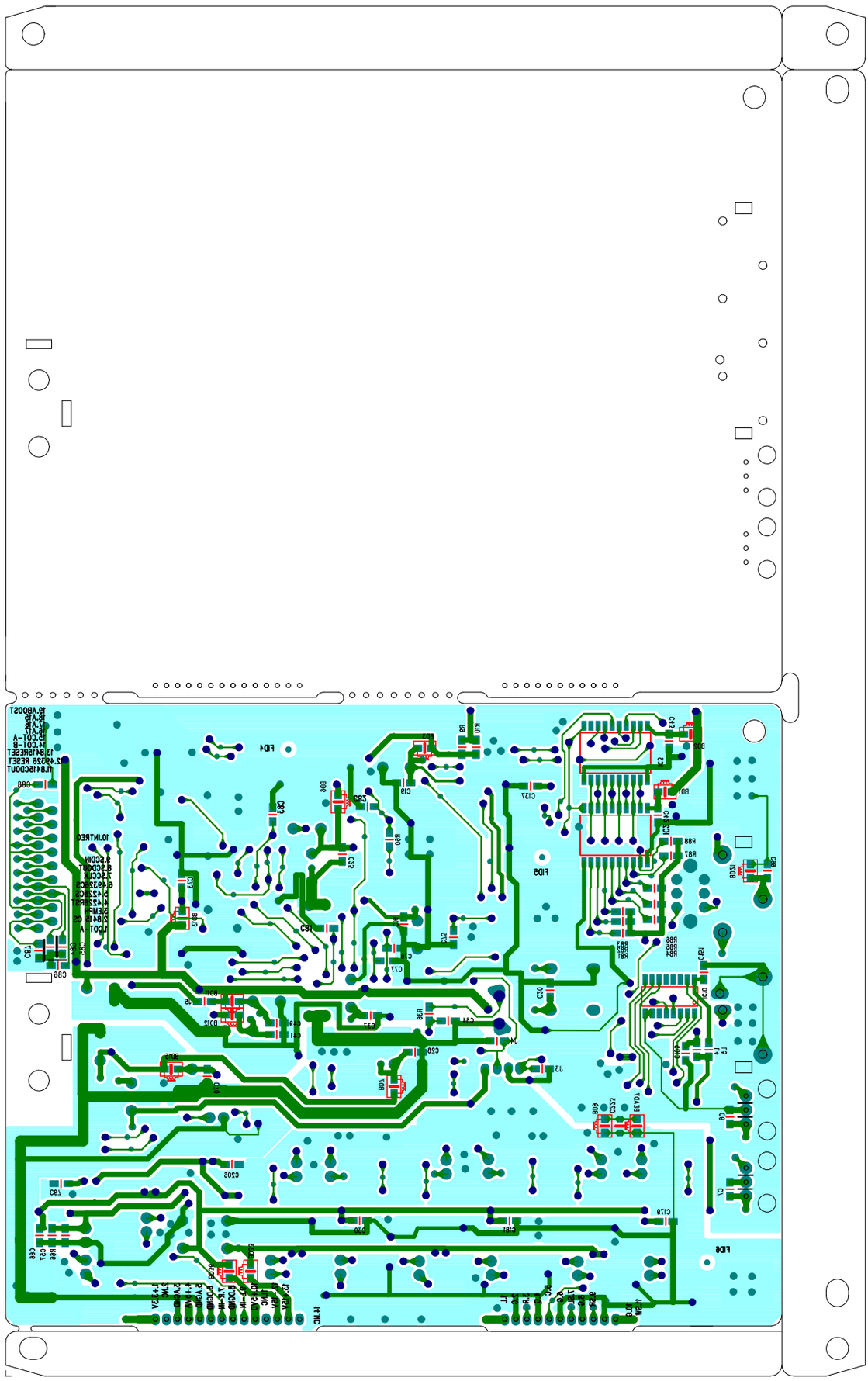
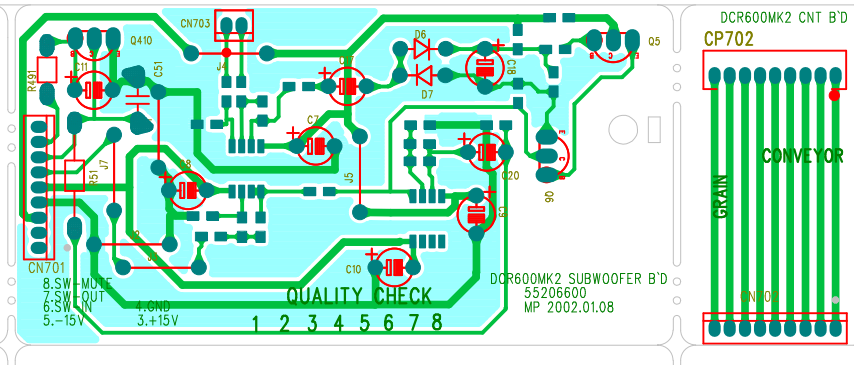
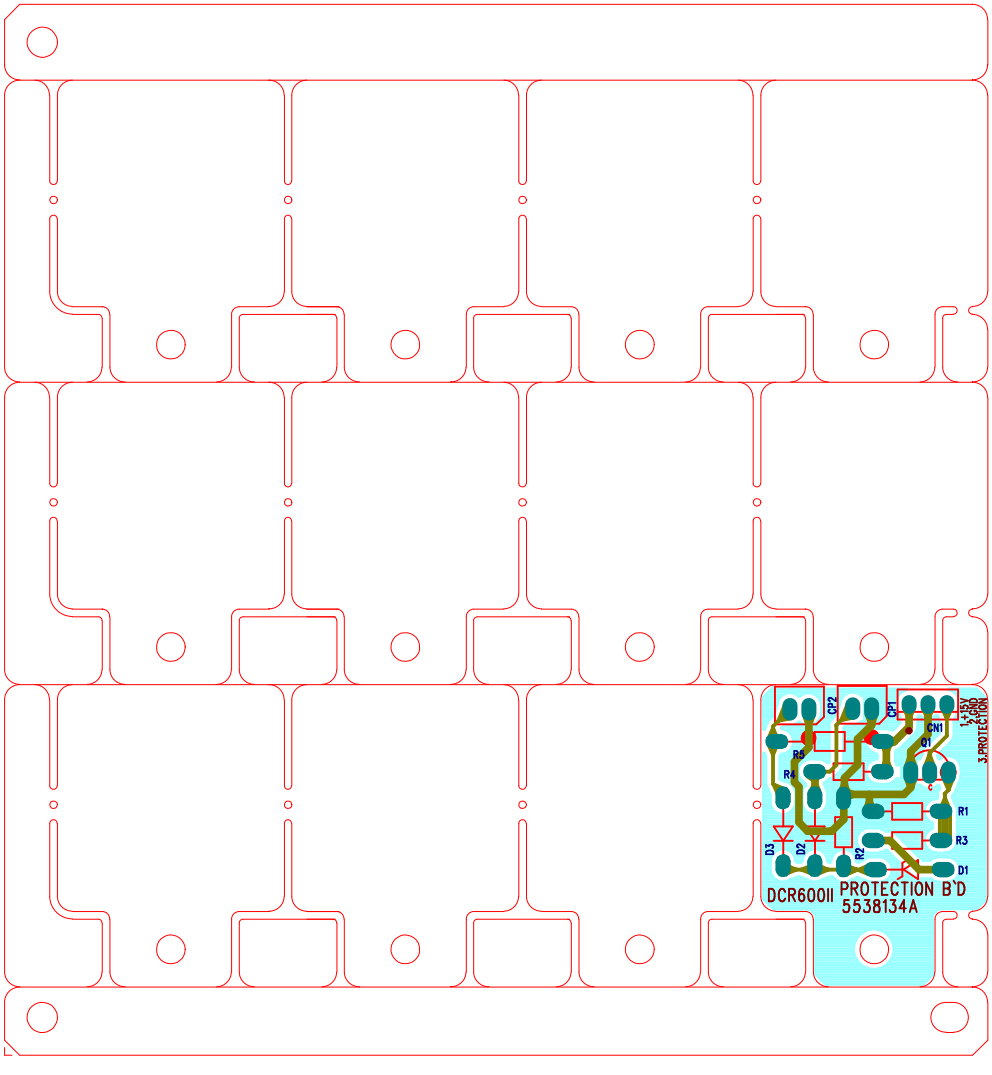
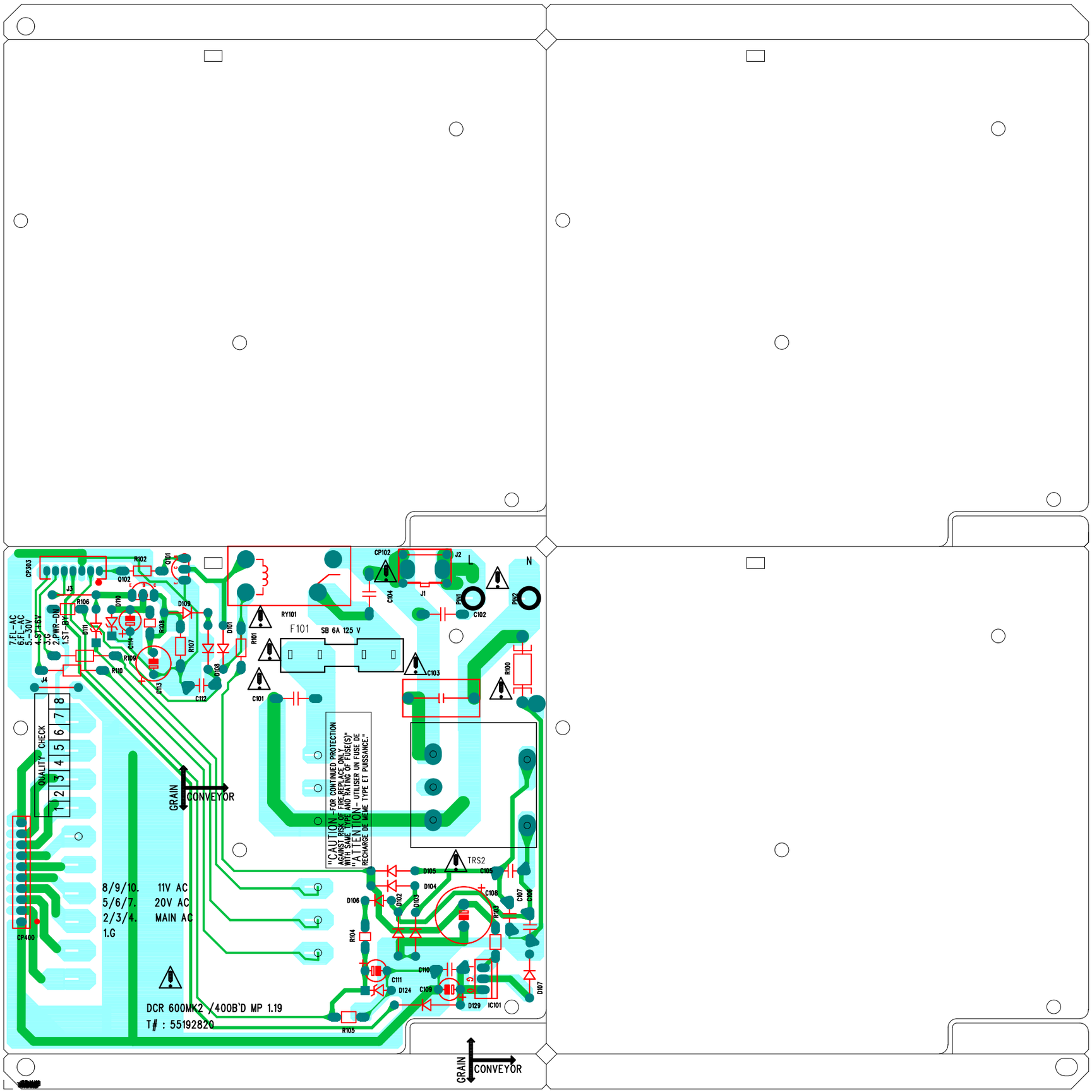
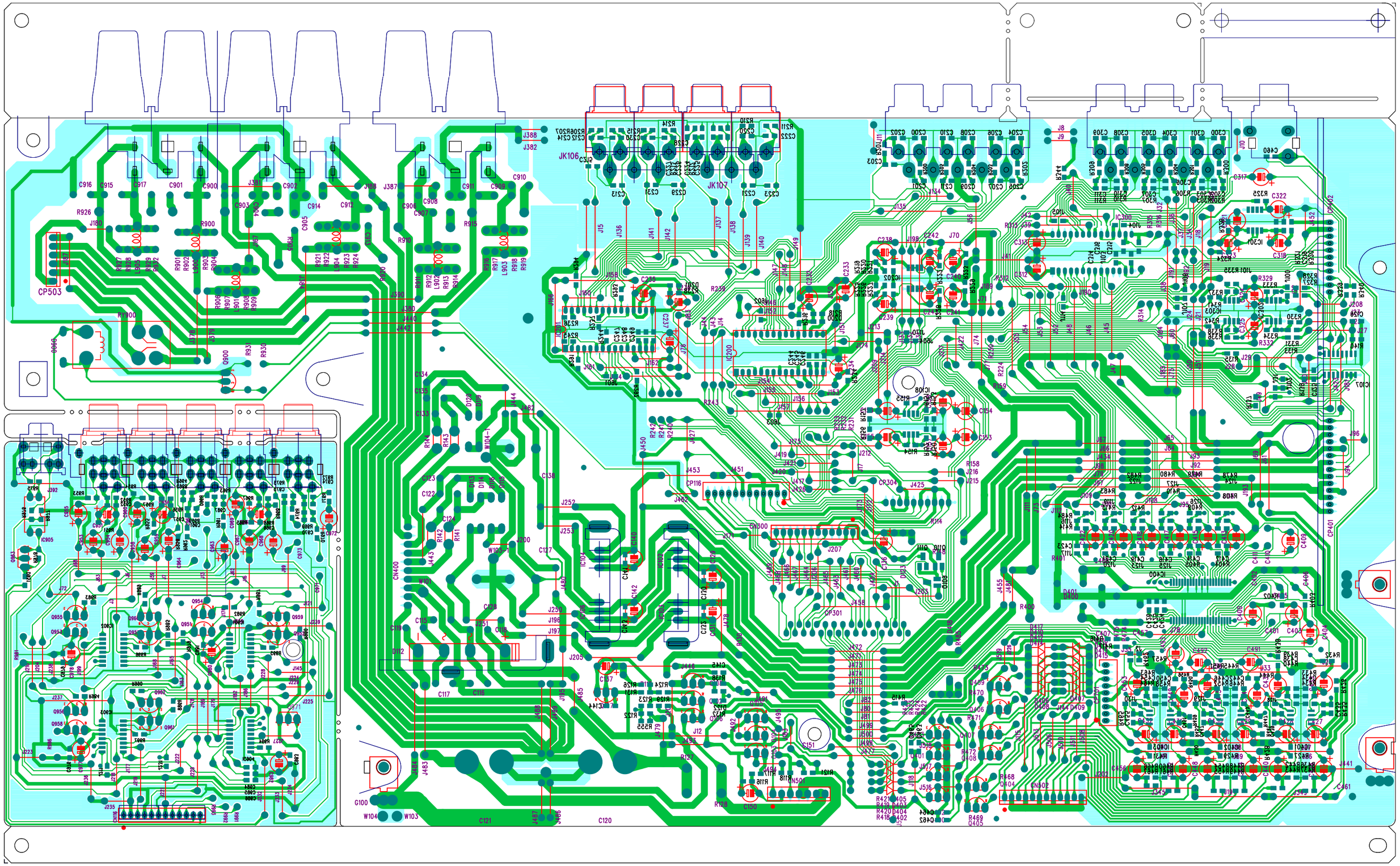
LFE CH.
RIGHT CH.
RIGHT SURROUND CH.

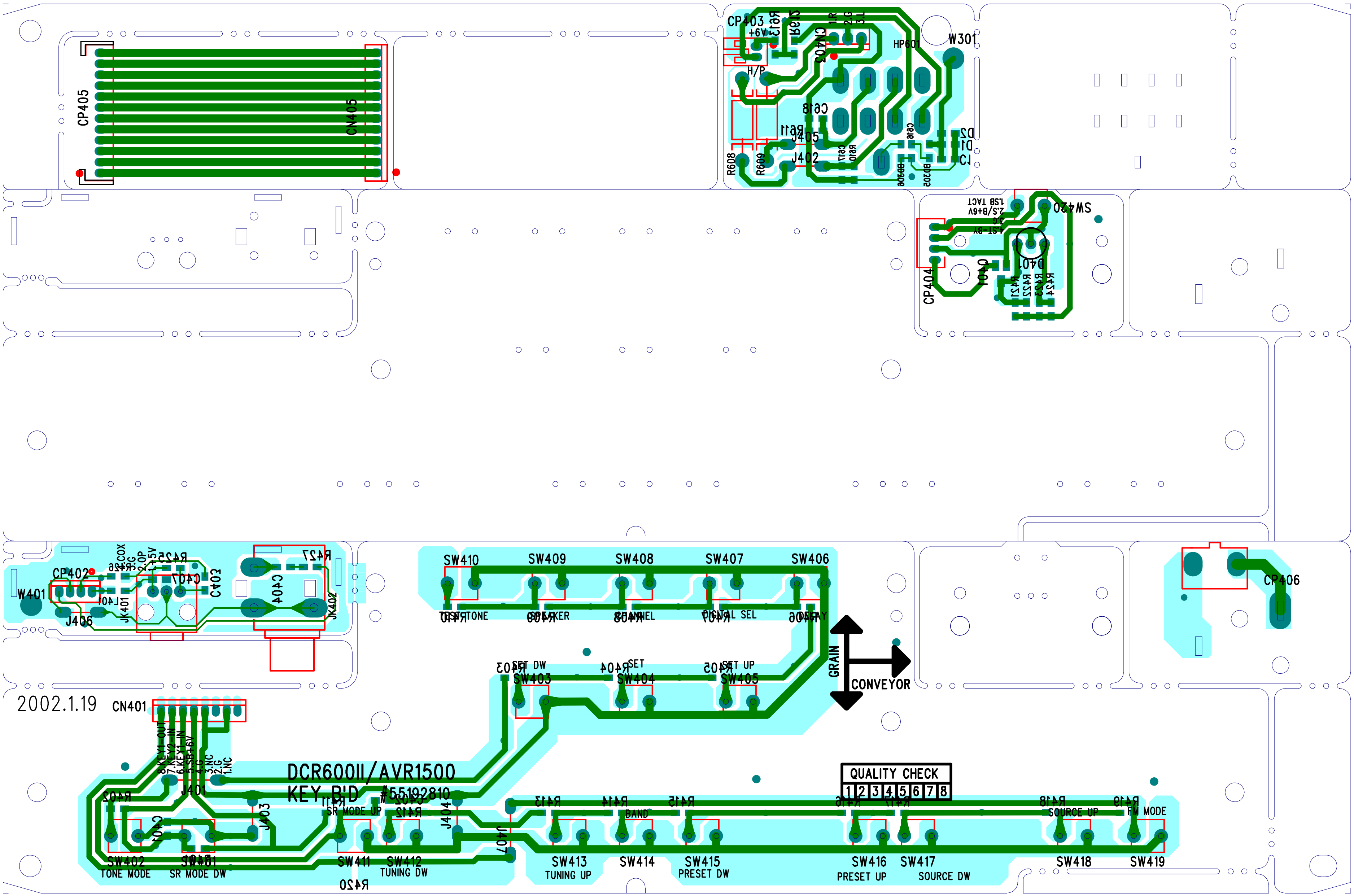



CN703
Q410
CN701
8.SW-MUTE
7.SW-OUT
6.SW-IN
5.-15V
4.GND
3.+15V
QUALITY CHECK
1 2 3 4 5 6 7 8
DCR600MK2 SUBWOOFER B`D
55206600
MP 2002.01.08
DCR600MK2 CNT B`D
CP702
CONVEYOR
GRAIN


CP2
CP1
CN1
Q1
R5
R4
C
R1
R3
D3
D2
R2
D1
DCR600II PROTECTION B'D
5538134A
3.PROTECTION






CP405
CN405
CP403
CN403
HP601
W301
H/P
C618
J405
J402
R608
R609
D2
D1
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CP404
D401
CP402
W401
J406
JK401
C407
C403
C404
R427
JK402
SW410
SW409
SW408
SW407
SW406
TONE
SPEAKER
CHANNEL
DIGITAL SEL
DELAY
SET DW
SW403
SET
SW404
SET UP
SW405
GRAIN
CONVEYOR
CP406
2002.1.19
CN401
DCR600II/AVR1500
KEY B'D
#55192810
QUALITY CHECK
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J401
J403
J404
J407
SR MODE UP
BAND
SOURCE UP
FM MODE
SW402
SW401
SW411
SW412
SW413
SW414
SW415
SW416
SW417
SW418
SW419
TONE MODE
SR MODE DW
TUNING DW
TUNING UP
PRESET DW
PRESET UP
SOURCE DW
R420

DCR600MKII/400MKII
FRONT B'D
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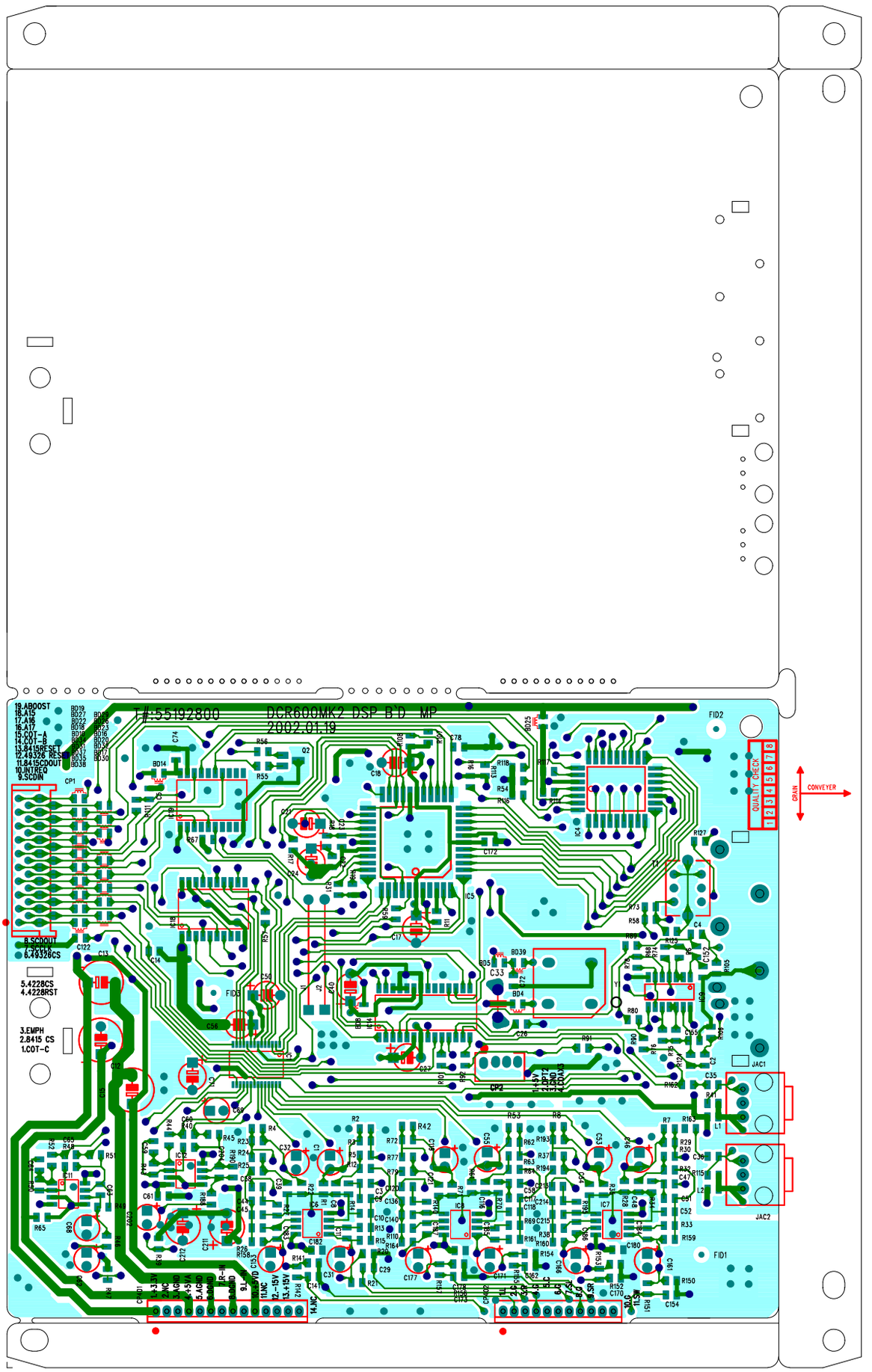
2002.1.19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DCR600MK2 DSP B'D MP
2002.01.19
CONVEYER
GRAIN
QUALITY CHECK
JAC1
JAC2
FID1
FID2
FID3

DCR600II Electrical Parts List

Ref. Designator	Part Number	Qty		Description
AMP PCB				
Capacitors				
C601	20178680	1	PC	CE 4U7F +20% 50.0V 85C 20202890
C602	20936650	1	PC	CC 100P0F +10% -10% 50.0V Y5P
C603	55126070	1	PC	CC 680P0F +10% -10% 50.0V 2B4
C604	20251930	1	PC	CE 22U0F +20% 16.0V 85C
C605	20247150	1	PC	CE 33U0F +20% 25.0V 85C
C606	20267830	1	PC	CE 47U0F +20% 16.0V 85C 20251640
C607	14039240	1	PC	CC 15P0F +5% -5% 50.0V SL
C609	11054760	1	PC	CE 100U0F +20% 63.0V 85C
C610	13055500	1	PC	CE 10U0F +20% 50.0V 85C
C612	13055500	1	PC	CE 10U0F +20% 50.0V 85C
C615	20178680	1	PC	CE 4U7F +20% 50.0V 85C 20202890
C616	20936650	1	PC	CC 100P0F +10% -10% 50.0V Y5P
C617	55126070	1	PC	CC 680P0F +10% -10% 50.0V 2B4
C618	20251930	1	PC	CE 22U0F +20% 16.0V 85C
C619	20247150	1	PC	CE 33U0F +20% 25.0V 85C
C620	20267830	1	PC	CE 47U0F +20% 16.0V 85C 20251640
C621	14039240	1	PC	CC 15P0F +5% -5% 50.0V SL
C622	11054760	1	PC	CE 100U0F +20% 63.0V 85C
C623	11054760	1	PC	CE 100U0F +20% 63.0V 85C
C624	13055500	1	PC	CE 10U0F +20% 50.0V 85C
C626	13055500	1	PC	CE 10U0F +20% 50.0V 85C
C629	20178680	1	PC	CE 4U7F +20% 50.0V 85C 20202890
C630	20936650	1	PC	CC 100P0F +10% -10% 50.0V Y5P
C631	55126070	1	PC	CC 680P0F +10% -10% 50.0V 2B4
C632	20251930	1	PC	CE 22U0F +20% 16.0V 85C
C633	20247150	1	PC	CE 33U0F +20% 25.0V 85C
C634	20267830	1	PC	CE 47U0F +20% 16.0V 85C 20251640
C635	14039240	1	PC	CC 15P0F +5% -5% 50.0V SL
C636	11054760	1	PC	CE 100U0F +20% 63.0V 85C
C637	11054760	1	PC	CE 100U0F +20% 63.0V 85C
C638	13055500	1	PC	CE 10U0F +20% 50.0V 85C
C639	13055500	1	PC	CE 10U0F +20% 50.0V 85C
C642	20178680	1	PC	CE 4U7F +20% 50.0V 85C 20202890
C643	20936650	1	PC	CC 100P0F +10% -10% 50.0V Y5P
C644	55126070	1	PC	CC 680P0F +10% -10% 50.0V 2B4
C645	20251930	1	PC	CE 22U0F +20% 16.0V 85C
C646	20247150	1	PC	CE 33U0F +20% 25.0V 85C
C647	20267830	1	PC	CE 47U0F +20% 16.0V 85C 20251640
C648	14039240	1	PC	CC 15P0F +5% -5% 50.0V SL
C649	11054760	1	PC	CE 100U0F +20% 63.0V 85C
C650	11054760	1	PC	CE 100U0F +20% 63.0V 85C
C651	13055500	1	PC	CE 10U0F +20% 50.0V 85C
C652	13055500	1	PC	CE 10U0F +20% 50.0V 85C
C655	20178680	1	PC	CE 4U7F +20% 50.0V 85C 20202890
C656	20936650	1	PC	CC 100P0F +10% -10% 50.0V Y5P
C657	55126070	1	PC	CC 680P0F +10% -10% 50.0V 2B4
C658	20251930	1	PC	CE 22U0F +20% 16.0V 85C
C659	20247150	1	PC	CE 33U0F +20% 25.0V 85C
C660	20267830	1	PC	CE 47U0F +20% 16.0V 85C 20251640
C661	14039240	1	PC	CC 15P0F +5% -5% 50.0V SL
C662	11054760	1	PC	CE 100U0F +20% 63.0V 85C

Ref. Designator	Part Number	Qty		Description
AMP PCB				
C663	11054760	1	PC	CE 100U0F +20% 63.0V 85C
C664	13055500	1	PC	CE 10U0F +20% 50.0V 85C
C665	13055500	1	PC	CE 10U0F +20% 50.0V 85C
C668	20267420	1	PC	CE 1U0F +20% 50.0V 105C
C669	20178680	1	PC	CE 4U7F +20% 50.0V 85C 20202890
C670	20936650	1	PC	CC 100P0F +10% -10% 50.0V Y5P
C671	55126070	1	PC	CC 680P0F +10% -10% 50.0V 2B4
C672	20251930	1	PC	CE 22U0F +20% 16.0V 85C
C673	20247150	1	PC	CE 33U0F +20% 25.0V 85C
C674	20267830	1	PC	CE 47U0F +20% 16.0V 85C 20251640
C676	11054760	1	PC	CE 100U0F +20% 63.0V 85C
C678	13055500	1	PC	CE 10U0F +20% 50.0V 85C
C680	13055500	1	PC	CE 10U0F +20% 50.0V 85C
C875	14039240	1	PC	CC 15P0F +5% -5% 50.0V SL
C608	11054760	1	PC	CE 100U0F +20% 63.0V 85C
C609	11054760	1	PC	CE 100U0F +20% 63.0V 85C
C622	11054760	1	PC	CE 100U0F +20% 63.0V 85C
C623	11054760	1	PC	CE 100U0F +20% 63.0V 85C
C636	11054760	1	PC	CE 100U0F +20% 63.0V 85C
C637	11054760	1	PC	CE 100U0F +20% 63.0V 85C
C649	11054760	1	PC	CE 100U0F +20% 63.0V 85C
C650	11054760	1	PC	CE 100U0F +20% 63.0V 85C
C662	11054760	1	PC	CE 100U0F +20% 63.0V 85C
C663	11054760	1	PC	CE 100U0F +20% 63.0V 85C
C676	11054760	1	PC	CE 100U0F +20% 63.0V 85C
C677	11054760	1	PC	CE 100U0F +20% 63.0V 85C
Semiconductors				
D601-613	70436540	13	PC	D-SLP 1N4148 100.0V 150E-3A
Q601	55133230	1	PC	TR-SLPLF KTA1268 GR P 100MI0A -120V
Q602	55133230	1	PC	TR-SLPLF KTA1268 GR P 100MI0A -120V
Q603	55133230	1	PC	TR-SLPLF KTA1268 GR P 100MI0A -120V
Q604	20508210	1	PC	TR-SLPLF KTA1266 Y P 150MI0A
Q605	20556600	1	PC	TR-SHPLF KTC3200BL N 100MI0A 120V
Q606	55133230	1	PC	TR-SLPLF KTA1268 GR P 100MI0A -120V
Q607	20556600	1	PC	TR-SHPLF KTC3200BL N 100MI0A 120V
Q609	55133260	1	PC	TR-SLPLF KTA1024 Y P 50MI0A -150V
Q610	55133240	1	PC	TR-SLPLF KTC3206 Y N 50MI0A 150V
Q615	20556600	1	PC	TR-SHPLF KTC3200BL N 100MI0A 120V
Q616	55133230	1	PC	TR-SLPLF KTA1268 GR P 100MI0A -120V
Q617	55133230	1	PC	TR-SLPLF KTA1268 GR P 100MI0A -120V
Q618	55133230	1	PC	TR-SLPLF KTA1268 GR P 100MI0A -120V
Q619	20508210	1	PC	TR-SLPLF KTA1266 Y P 150MI0A
Q620	20556600	1	PC	TR-SHPLF KTC3200BL N 100MI0A 120V
Q621	55133230	1	PC	TR-SLPLF KTA1268 GR P 100MI0A -120V
Q622	20556600	1	PC	TR-SHPLF KTC3200BL N 100MI0A 120V
Q624	55133260	1	PC	TR-SLPLF KTA1024 Y P 50MI0A -150V
Q625	55133240	1	PC	TR-SLPLF KTC3206 Y N 50MI0A 150V
Q630	20556600	1	PC	TR-SHPLF KTC3200BL N 100MI0A 120V
Q631	55133230	1	PC	TR-SLPLF KTA1268 GR P 100MI0A -120V
Q632	55133230	1	PC	TR-SLPLF KTA1268 GR P 100MI0A -120V
Q633	55133230	1	PC	TR-SLPLF KTA1268 GR P 100MI0A -120V
Q634	20508210	1	PC	TR-SLPLF KTA1266 Y P 150MI0A
Q635	20556600	1	PC	TR-SHPLF KTC3200BL N 100MI0A 120V
Q636	55133230	1	PC	TR-SLPLF KTA1268 GR P 100MI0A -120V

Ref. Designator	Part Number	Qty		Description
AMP PCB				
Q637	20556600	1	PC	TR-SHPLF KTC3200BL N 100MI0A 120V
Q639	55133260	1	PC	TR-SLPLF KTA1024 Y P 50MI0A -150V
Q640	55133240	1	PC	TR-SLPLF KTC3206 Y N 50MI0A 150V
Q645	20556600	1	PC	TR-SHPLF KTC3200BL N 100MI0A 120V
Q646	55133230	1	PC	TR-SLPLF KTA1268 GR P 100MI0A -120V
Q647	55133230	1	PC	TR-SLPLF KTA1268 GR P 100MI0A -120V
Q648	55133230	1	PC	TR-SLPLF KTA1268 GR P 100MI0A -120V
Q649	20508210	1	PC	TR-SLPLF KTA1266 Y P 150MI0A
Q650	20556600	1	PC	TR-SHPLF KTC3200BL N 100MI0A 120V
Q651	55133230	1	PC	TR-SLPLF KTA1268 GR P 100MI0A -120V
Q652	20556600	1	PC	TR-SHPLF KTC3200BL N 100MI0A 120V
Q654	55133260	1	PC	TR-SLPLF KTA1024 Y P 50MI0A -150V
Q655	55133240	1	PC	TR-SLPLF KTC3206 Y N 50MI0A 150V
Q660	20556600	1	PC	TR-SHPLF KTC3200BL N 100MI0A 120V
Q661	55133230	1	PC	TR-SLPLF KTA1268 GR P 100MI0A -120V
Q662	55133230	1	PC	TR-SLPLF KTA1268 GR P 100MI0A -120V
Q663	55133230	1	PC	TR-SLPLF KTA1268 GR P 100MI0A -120V
Q664	20508210	1	PC	TR-SLPLF KTA1266 Y P 150MI0A
Q665	20556600	1	PC	TR-SHPLF KTC3200BL N 100MI0A 120V
Q666	55133230	1	PC	TR-SLPLF KTA1268 GR P 100MI0A -120V
Q667	20556600	1	PC	TR-SHPLF KTC3200BL N 100MI0A 120V
Q669	55133260	1	PC	TR-SLPLF KTA1024 Y P 50MI0A -150V
Q670	55133240	1	PC	TR-SLPLF KTC3206 Y N 50MI0A 150V
Q675	20556600	1	PC	TR-SHPLF KTC3200BL N 100MI0A 120V
Q676	55133210	1	PC	TR-SLPLF DTC114YSA N 100MI0A
Q677	55133230	1	PC	TR-SLPLF KTA1268 GR P 100MI0A -120V
Q678	55133230	1	PC	TR-SLPLF KTA1268 GR P 100MI0A -120V
Q679	55133230	1	PC	TR-SLPLF KTA1268 GR P 100MI0A -120V
Q680	20508210	1	PC	TR-SLPLF KTA1266 Y P 150MI0A
Q691	20556600	1	PC	TR-SHPLF KTC3200BL N 100MI0A 120V
Q692	20556600	1	PC	TR-SHPLF KTC3200BL N 100MI0A 120V
Q693	55133230	1	PC	TR-SLPLF KTA1268 GR P 100MI0A -120V
Q694	55133260	1	PC	TR-SLPLF KTA1024 Y P 50MI0A -150V
Q696	55133240	1	PC	TR-SLPLF KTC3206 Y N 50MI0A 150V
Q699	20556600	1	PC	TR-SHPLF KTC3200BL N 100MI0A 120V
Q608	55133270	1	PC	TR-SHPLF 2SC4137 N 100MI0A 20V
Q613	55127360	1	PC	TR-SHPLF 2SD2390 DARLINGTON N 10.0A
Q614	55127370	1	PC	TR-SHPLF 2SB1560 DARLINGTON P 10.0A
Q623	55133270	1	PC	TR-SHPLF 2SC4137 N 100MI0A 20V
Q628	55127360	1	PC	TR-SHPLF 2SD2390 DARLINGTON N 10.0A
Q629	55127370	1	PC	TR-SHPLF 2SB1560 DARLINGTON P 10.0A
Q638	55133270	1	PC	TR-SHPLF 2SC4137 N 100MI0A 20V
Q643	55127360	1	PC	TR-SHPLF 2SD2390 DARLINGTON N 10.0A
Q644	55127370	1	PC	TR-SHPLF 2SB1560 DARLINGTON P 10.0A
Q653	55133270	1	PC	TR-SHPLF 2SC4137 N 100MI0A 20V
Q658	55127360	1	PC	TR-SHPLF 2SD2390 DARLINGTON N 10.0A
Q659	55127370	1	PC	TR-SHPLF 2SB1560 DARLINGTON P 10.0A
Q668	55133270	1	PC	TR-SHPLF 2SC4137 N 100MI0A 20V
Q673	55127360	1	PC	TR-SHPLF 2SD2390 DARLINGTON N 10.0A
Q674	55127370	1	PC	TR-SHPLF 2SB1560 DARLINGTON P 10.0A
Q695	55133270	1	PC	TR-SHPLF 2SC4137 N 100MI0A 20V
Q697	55127370	1	PC	TR-SHPLF 2SB1560 DARLINGTON P 10.0A
Q698	55127360	1	PC	TR-SHPLF 2SD2390 DARLINGTON N 10.0A

Ref. Designator	Part Number	Qty		Description
AMP PCB				
Resistors				
R601	11059640	1	PC	RCF 1K0 OHM +5% 250MI0W
R602	30939490	1	PC	RCF 33K0 OHM +5% 250MI0W
R603	30939370	1	PC	RCF 15R0 OHM +5% 250MI0W
R604	30939370	1	PC	RCF 15R0 OHM +5% 250MI0W
R605	11059630	1	PC	RCF 680R0 OHM +5% 250MI0W
R606	30939460	1	PC	RCF 750R0 OHM +5% 250MI0W
R607	30939460	1	PC	RCF 750R0 OHM +5% 250MI0W
R608	50882940	1	PC	RCF 68R0 OHM +5% 250MI0W
R609	50882960	1	PC	RCF 150R0 OHM +5% 250MI0W
R610	30939480	1	PC	RCF 10K0 OHM +5% 250MI0W
R611	20469510	1	PC	RCF 43K0 OHM +5% 250MI0W
R612	30939490	1	PC	RCF 33K0 OHM +5% 250MI0W
R613	20469460	1	PC	RCF 2K2 OHM +5% 250MI0W
R614	60441560	1	PC	RCF 560R0 OHM +5% 250MI0W
R615-620	60441560	6	PC	RCF 560R0 OHM +5% 250MI0W
R621	60441580	1	PC	RCF 22K0 OHM +5% 250MI0W
R622	60441580	1	PC	RCF 22K0 OHM +5% 250MI0W
R623	50882980	1	PC	RCF 820R0 OHM +5% 250MI0W
R624	80436990	1	PC	RCF 910R0 OHM +5% 250MI0W
R625	80437000	1	PC	RCF 1K2 OHM +5% 250MI0W
R626	11059590	1	PC	RCF 82R0 OHM +5% 250MI0W
R627	11059590	1	PC	RCF 82R0 OHM +5% 250MI0W
R628	70434970	1	PC	RCF 3R3 OHM +5% 250MI0W
R629	70434970	1	PC	RCF 3R3 OHM +5% 250MI0W
R630	50882950	1	PC	RCF 100R0 OHM +5% 250MI0W
R631	50882950	1	PC	RCF 100R0 OHM +5% 250MI0W
R635	80437010	1	PC	RCF 1K8 OHM +5% 250MI0W
R636	20469460	1	PC	RCF 2K2 OHM +5% 250MI0W
R637	80436990	1	PC	RCF 910R0 OHM +5% 250MI0W
R641	30939460	1	PC	RCF 750R0 OHM +5% 250MI0W
R642	20469490	1	PC	RCF 6K8 OHM +5% 250MI0W
R643	11059640	1	PC	RCF 1K0 OHM +5% 250MI0W
R644	30939490	1	PC	RCF 33K0 OHM +5% 250MI0W
R645	30939370	1	PC	RCF 15R0 OHM +5% 250MI0W
R646	30939370	1	PC	RCF 15R0 OHM +5% 250MI0W
R647	11059630	1	PC	RCF 680R0 OHM +5% 250MI0W
R648	30939460	1	PC	RCF 750R0 OHM +5% 250MI0W
R649	30939460	1	PC	RCF 750R0 OHM +5% 250MI0W
R650	50882940	1	PC	RCF 68R0 OHM +5% 250MI0W
R651	50882960	1	PC	RCF 150R0 OHM +5% 250MI0W
R652	30939480	1	PC	RCF 10K0 OHM +5% 250MI0W
R653	20469510	1	PC	RCF 43K0 OHM +5% 250MI0W
R654	30939490	1	PC	RCF 33K0 OHM +5% 250MI0W
R655	20469460	1	PC	RCF 2K2 OHM +5% 250MI0W
R656-662	60441560	7	PC	RCF 560R0 OHM +5% 250MI0W
R663	60441580	1	PC	RCF 22K0 OHM +5% 250MI0W
R664	60441580	1	PC	RCF 22K0 OHM +5% 250MI0W
R665	50882980	1	PC	RCF 820R0 OHM +5% 250MI0W
R666	80436990	1	PC	RCF 910R0 OHM +5% 250MI0W
R667	80437000	1	PC	RCF 1K2 OHM +5% 250MI0W
R668	11059590	1	PC	RCF 82R0 OHM +5% 250MI0W
R669	11059590	1	PC	RCF 82R0 OHM +5% 250MI0W
R670	70434970	1	PC	RCF 3R3 OHM +5% 250MI0W
R671	70434970	1	PC	RCF 3R3 OHM +5% 250MI0W

Ref. Designator	Part Number	Qty		Description
AMP PCB				
R672	50882950	1	PC	RCF 100R0 OHM +5% 250MI0W
R673	50882950	1	PC	RCF 100R0 OHM +5% 250MI0W
R677	80437010	1	PC	RCF 1K8 OHM +5% 250MI0W
R678	20469460	1	PC	RCF 2K2 OHM +5% 250MI0W
R679	80436990	1	PC	RCF 910R0 OHM +5% 250MI0W
R684	20469490	1	PC	RCF 6K8 OHM +5% 250MI0W
R685	11059640	1	PC	RCF 1K0 OHM +5% 250MI0W
R686	30939490	1	PC	RCF 33K0 OHM +5% 250MI0W
R687	30939370	1	PC	RCF 15R0 OHM +5% 250MI0W
R688	30939370	1	PC	RCF 15R0 OHM +5% 250MI0W
R689	11059630	1	PC	RCF 680R0 OHM +5% 250MI0W
R690	30939460	1	PC	RCF 750R0 OHM +5% 250MI0W
R691	30939460	1	PC	RCF 750R0 OHM +5% 250MI0W
R692	50882940	1	PC	RCF 68R0 OHM +5% 250MI0W
R693	50882960	1	PC	RCF 150R0 OHM +5% 250MI0W
R694	30939480	1	PC	RCF 10K0 OHM +5% 250MI0W
R695	20469510	1	PC	RCF 43K0 OHM +5% 250MI0W
R696	30939490	1	PC	RCF 33K0 OHM +5% 250MI0W
R697	20469460	1	PC	RCF 2K2 OHM +5% 250MI0W
R698-704	60441560	7	PC	RCF 560R0 OHM +5% 250MI0W
R705	60441580	1	PC	RCF 22K0 OHM +5% 250MI0W
R706	60441580	1	PC	RCF 22K0 OHM +5% 250MI0W
R707	50882980	1	PC	RCF 820R0 OHM +5% 250MI0W
R708	80436990	1	PC	RCF 910R0 OHM +5% 250MI0W
R709	80437000	1	PC	RCF 1K2 OHM +5% 250MI0W
R710	11059590	1	PC	RCF 82R0 OHM +5% 250MI0W
R711	11059590	1	PC	RCF 82R0 OHM +5% 250MI0W
R712	70434970	1	PC	RCF 3R3 OHM +5% 250MI0W
R713	70434970	1	PC	RCF 3R3 OHM +5% 250MI0W
R714	50882950	1	PC	RCF 100R0 OHM +5% 250MI0W
R715	50882950	1	PC	RCF 100R0 OHM +5% 250MI0W
R719	80437010	1	PC	RCF 1K8 OHM +5% 250MI0W
R720	20469460	1	PC	RCF 2K2 OHM +5% 250MI0W
R721	80436990	1	PC	RCF 910R0 OHM +5% 250MI0W
R726	20469490	1	PC	RCF 6K8 OHM +5% 250MI0W
R727	11059640	1	PC	RCF 1K0 OHM +5% 250MI0W
R728	30939490	1	PC	RCF 33K0 OHM +5% 250MI0W
R729	30939370	1	PC	RCF 15R0 OHM +5% 250MI0W
R730	30939370	1	PC	RCF 15R0 OHM +5% 250MI0W
R731	11059630	1	PC	RCF 680R0 OHM +5% 250MI0W
R732	30939460	1	PC	RCF 750R0 OHM +5% 250MI0W
R733	30939460	1	PC	RCF 750R0 OHM +5% 250MI0W
R734	50882940	1	PC	RCF 68R0 OHM +5% 250MI0W
R735	50882960	1	PC	RCF 150R0 OHM +5% 250MI0W
R736	30939480	1	PC	RCF 10K0 OHM +5% 250MI0W
R737	20469510	1	PC	RCF 43K0 OHM +5% 250MI0W
R738	30939490	1	PC	RCF 33K0 OHM +5% 250MI0W
R739	20469460	1	PC	RCF 2K2 OHM +5% 250MI0W
R740-746	60441560	7	PC	RCF 560R0 OHM +5% 250MI0W
R747	60441580	1	PC	RCF 22K0 OHM +5% 250MI0W
R748	60441580	1	PC	RCF 22K0 OHM +5% 250MI0W
R749	50882980	1	PC	RCF 820R0 OHM +5% 250MI0W
R750	80436990	1	PC	RCF 910R0 OHM +5% 250MI0W
R751	80437000	1	PC	RCF 1K2 OHM +5% 250MI0W
R752	11059590	1	PC	RCF 82R0 OHM +5% 250MI0W
R753	11059590	1	PC	RCF 82R0 OHM +5% 250MI0W

Ref. Designator	Part Number	Qty		Description
AMP PCB				
R754	70434970	1	PC	RCF 3R3 OHM +5% 250MI0W
R755	70434970	1	PC	RCF 3R3 OHM +5% 250MI0W
R756	50882950	1	PC	RCF 100R0 OHM +5% 250MI0W
R757	50882950	1	PC	RCF 100R0 OHM +5% 250MI0W
R761	80437010	1	PC	RCF 1K8 OHM +5% 250MI0W
R762	20469460	1	PC	RCF 2K2 OHM +5% 250MI0W
R763	80436990	1	PC	RCF 910R0 OHM +5% 250MI0W
R764	20469490	1	PC	RCF 6K8 OHM +5% 250MI0W
R765	11059640	1	PC	RCF 1K0 OHM +5% 250MI0W
R766	30939490	1	PC	RCF 33K0 OHM +5% 250MI0W
R767	30939370	1	PC	RCF 15R0 OHM +5% 250MI0W
R768	30939370	1	PC	RCF 15R0 OHM +5% 250MI0W
R769	11059630	1	PC	RCF 680R0 OHM +5% 250MI0W
R770	30939460	1	PC	RCF 750R0 OHM +5% 250MI0W
R771	30939460	1	PC	RCF 750R0 OHM +5% 250MI0W
R772	50882940	1	PC	RCF 68R0 OHM +5% 250MI0W
R773	50882960	1	PC	RCF 150R0 OHM +5% 250MI0W
R774	30939480	1	PC	RCF 10K0 OHM +5% 250MI0W
R775	20469510	1	PC	RCF 43K0 OHM +5% 250MI0W
R776	30939490	1	PC	RCF 33K0 OHM +5% 250MI0W
R777	20469460	1	PC	RCF 2K2 OHM +5% 250MI0W
R778-784	60441560	7	PC	RCF 560R0 OHM +5% 250MI0W
R785	60441580	1	PC	RCF 22K0 OHM +5% 250MI0W
R786	60441580	1	PC	RCF 22K0 OHM +5% 250MI0W
R787	50882980	1	PC	RCF 820R0 OHM +5% 250MI0W
R788	80436990	1	PC	RCF 910R0 OHM +5% 250MI0W
R789	80437000	1	PC	RCF 1K2 OHM +5% 250MI0W
R790	11059590	1	PC	RCF 82R0 OHM +5% 250MI0W
R791	11059590	1	PC	RCF 82R0 OHM +5% 250MI0W
R792	70434970	1	PC	RCF 3R3 OHM +5% 250MI0W
R793	70434970	1	PC	RCF 3R3 OHM +5% 250MI0W
R794	50882950	1	PC	RCF 100R0 OHM +5% 250MI0W
R795	50882950	1	PC	RCF 100R0 OHM +5% 250MI0W
R799	80437010	1	PC	RCF 1K8 OHM +5% 250MI0W
R800	20469460	1	PC	RCF 2K2 OHM +5% 250MI0W
R801	80436990	1	PC	RCF 910R0 OHM +5% 250MI0W
R802	20469490	1	PC	RCF 6K8 OHM +5% 250MI0W
R803	60441580	1	PC	RCF 22K0 OHM +5% 250MI0W
R804	60441580	1	PC	RCF 22K0 OHM +5% 250MI0W
R805	50883030	1	PC	RCF 150K0 OHM +5% 250MI0W
R806	11059640	1	PC	RCF 1K0 OHM +5% 250MI0W
R807	30939490	1	PC	RCF 33K0 OHM +5% 250MI0W
R808	30939370	1	PC	RCF 15R0 OHM +5% 250MI0W
R809	30939370	1	PC	RCF 15R0 OHM +5% 250MI0W
R810	11059630	1	PC	RCF 680R0 OHM +5% 250MI0W
R811	30939460	1	PC	RCF 750R0 OHM +5% 250MI0W
R813	50882940	1	PC	RCF 68R0 OHM +5% 250MI0W
R814	50882960	1	PC	RCF 150R0 OHM +5% 250MI0W
R815	30939480	1	PC	RCF 10K0 OHM +5% 250MI0W
R816	20469510	1	PC	RCF 43K0 OHM +5% 250MI0W
R817	30939490	1	PC	RCF 33K0 OHM +5% 250MI0W
R818	20469460	1	PC	RCF 2K2 OHM +5% 250MI0W
R818	40435630	1	PC	RCF 1K5 OHM +5% 250MI0W
R819-825	60441560	7	PC	RCF 560R0 OHM +5% 250MI0W
R826	60441580	1	PC	RCF 22K0 OHM +5% 250MI0W
R827	60441580	1	PC	RCF 22K0 OHM +5% 250MI0W

Ref. Designator	Part Number	Qty		Description
AMP PCB				
R828	80437000	1	PC	RCF 1K2 OHM +5% 250MI0W
R829	50882980	1	PC	RCF 820R0 OHM +5% 250MI0W
R830	80436990	1	PC	RCF 910R0 OHM +5% 250MI0W
R831	11059590	1	PC	RCF 82R0 OHM +5% 250MI0W
R832	11059590	1	PC	RCF 82R0 OHM +5% 250MI0W
R833	50882950	1	PC	RCF 100R0 OHM +5% 250MI0W
R834	70434970	1	PC	RCF 3R3 OHM +5% 250MI0W
R837	70434970	1	PC	RCF 3R3 OHM +5% 250MI0W
R838	50882950	1	PC	RCF 100R0 OHM +5% 250MI0W
R840	80437010	1	PC	RCF 1K8 OHM +5% 250MI0W
R841	20469460	1	PC	RCF 2K2 OHM +5% 250MI0W
R842	80436990	1	PC	RCF 910R0 OHM +5% 250MI0W
R843	20469490	1	PC	RCF 6K8 OHM +5% 250MI0W
R851-854	60441580	4	PC	RCF 22K0 OHM +5% 250MI0W
MR601-612	55134140	12	PC	RMOF 0.0390 OHM +5% 3.0W
Miscellaneous				
CN503	55142020	1	PC	WIRECONASY UNIQUE 6P 680MM UL1007 PVC DISCRETE 20 1
CP308	55177620	1	PC	CONN 2.5MM 3 MA ST NAT 0 0
CP501	55177610	1	PC	CONN 2.5MM 7 MA ST WH 0 0
CP502	55090100	1	PC	CONN 2.0MM 12 MA ST NAT LW2002P12 0 0
CP602	55090070	1	PC	CONN 2.0MM 2 MA ST NAT LW2002P0200T 0 0
JW7	55236790	1	PC	WIRECONASY UNIQUE 2P 420MM UL1007 PVC DISCRETE 26 1
DSP PCB				
Capacitors				
C10	11059320	1	PC	CCCFMIN 1N0F +10% -10% 50.0V X7R
C11	30938730	1	PC	CCCFMIN 220P0F +5% -5% 50.0V NP0
C116	11059320	1	PC	CCCFMIN 1N0F +10% -10% 50.0V X7R
C117-121	11059320	5	PC	CCCFMIN 1N0F +10% -10% 50.0V X7R
C122	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C136	11059320	1	PC	CCCFMIN 1N0F +10% -10% 50.0V X7R
C14	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C140	11059320	1	PC	CCCFMIN 1N0F +10% -10% 50.0V X7R
C141	40435540	1	PC	CCCFMIN 5N6F +10% -10% 50.0V X7R
C151	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C152	30938730	1	PC	CCCFMIN 220P0F +5% -5% 50.0V NP0
C152	80436520	1	PC	CCCFMIN 56P0F +5% -5% 50.0V NP0
C154	20469340	1	PC	CCCFMIN 4N7F +10% -10% 50.0V X7R
C155	30938730	1	PC	CCCFMIN 220P0F +5% -5% 50.0V NP0
C155	80436520	1	PC	CCCFMIN 56P0F +5% -5% 50.0V NP0
C162	20469340	1	PC	CCCFMIN 4N7F +10% -10% 50.0V X7R
C170	20469340	1	PC	CCCFMIN 4N7F +10% -10% 50.0V X7R
C172	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C173	20469340	1	PC	CCCFMIN 4N7F +10% -10% 50.0V X7R
C178	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C180	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C182	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C183-187	30938730	5	PC	CCCFMIN 220P0F +5% -5% 50.0V NP0
C2	11059340	1	PC	CCCFMIN 10N0F +10% -10% 50.0V X7R
C2	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
C204	11058670	1	PC	CCCFMIN 100P0F +5% -5% 50.0V NP0
C213	11059320	1	PC	CCCFMIN 1N0F +10% -10% 50.0V X7R

Ref. Designator	Part Number	Qty		Description
DSP PCB				
C214	11059320	1	PC	CCCFMIN 1N0F +10% -10% 50.0V X7R
C215	11059320	1	PC	CCCFMIN 1N0F +10% -10% 50.0V X7R
C22	11059340	1	PC	CCCFMIN 10N0F +10% -10% 50.0V X7R
C23	20267320	1	PC	CCCFMIN 220N0F +80% -20% 50.0V Y5V
C26	11059340	1	PC	CCCFMIN 10N0F +10% -10% 50.0V X7R
C29	40435540	1	PC	CCCFMIN 5N6F +10% -10% 50.0V X7R
C3	11059320	1	PC	CCCFMIN 1N0F +10% -10% 50.0V X7R
C35	11059340	1	PC	CCCFMIN 10N0F +10% -10% 50.0V X7R
C38	11059320	1	PC	CCCFMIN 1N0F +10% -10% 50.0V X7R
C39	11059320	1	PC	CCCFMIN 1N0F +10% -10% 50.0V X7R
C4	11059340	1	PC	CCCFMIN 10N0F +10% -10% 50.0V X7R
C4	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
C44	11059320	1	PC	CCCFMIN 1N0F +10% -10% 50.0V X7R
C45	11059320	1	PC	CCCFMIN 1N0F +10% -10% 50.0V X7R
C47	11059320	1	PC	CCCFMIN 1N0F +10% -10% 50.0V X7R
C48	11059320	1	PC	CCCFMIN 1N0F +10% -10% 50.0V X7R
C5	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C51	11059320	1	PC	CCCFMIN 1N0F +10% -10% 50.0V X7R
C52	11059320	1	PC	CCCFMIN 1N0F +10% -10% 50.0V X7R
C54	11059320	1	PC	CCCFMIN 1N0F +10% -10% 50.0V X7R
C58	11059320	1	PC	CCCFMIN 1N0F +10% -10% 50.0V X7R
C59	11058670	1	PC	CCCFMIN 100P0F +5% -5% 50.0V NP0
C60	11059330	1	PC	CCCFMIN 2N2F +10% -10% 50.0V X7R
C61	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C63	11058670	1	PC	CCCFMIN 100P0F +5% -5% 50.0V NP0
C64	11058670	1	PC	CCCFMIN 100P0F +5% -5% 50.0V NP0
C65	11059330	1	PC	CCCFMIN 2N2F +10% -10% 50.0V X7R
C72	30938700	1	PC	CCCFMIN 68P0F +5% -5% 50.0V NP0
C74	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C78	30938730	1	PC	CCCFMIN 220P0F +5% -5% 50.0V NP0
C8	11059320	1	PC	CCCFMIN 1N0F +10% -10% 50.0V X7R
C9	11059320	1	PC	CCCFMIN 1N0F +10% -10% 50.0V X7R
C105	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C137	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C151	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C16	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C179	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C181	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C19	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C20	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C206	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C25	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C28	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C30	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C34	11059330	1	PC	CCCFMIN 2N2F +10% -10% 50.0V X7R
C34	20251230	1	PC	CCCFMIN 33N0F +20% -20% 50.0V X7R
C34	20267320	1	PC	CCCFMIN 220N0F +80% -20% 50.0V Y5V
C34	20469340	1	PC	CCCFMIN 4N7F +10% -10% 50.0V X7R
C37	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C41	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C42	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C43	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C49	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C57	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C6	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C66	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V

Ref. Designator	Part Number	Qty		Description
DSP PCB				
C67	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C70	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C73	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C75	40435180	1	PC	CCCFMIN 47P0F +5% -5% 50.0V NP0
C76	30938730	1	PC	CCCFMIN 220P0F +5% -5% 50.0V NP0
C77	20468970	1	PC	CCCFMIN 330P0F +5% -5% 50.0V NP0
C79	20449060	1	PC	CC 12P0F +5% -5% 50.0V SL
C79	50882360	1	PC	CCCFMIN 33P0F +5% -5% 50.0V NP0
C81	11059440	1	PC	CCCFMIN 10P0F +0P25F -0P25F 50.0V NP0
C82	11059440	1	PC	CCCFMIN 10P0F +0P25F -0P25F 50.0V NP0
C83	11059440	1	PC	CCCFMIN 10P0F +0P25F -0P25F 50.0V NP0
C84-88	11059440	5	PC	CCCFMIN 10P0F +0P25F -0P25F 50.0V NP0
C99	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C1	15002130	1	PC	CE 10U0F +20% 16.0V 85C
C119	15002130	1	PC	CE 10U0F +20% 16.0V 85C
C12	20269180	1	PC	CE 1MI0F +20% 6.3V 85C
C13	20269180	1	PC	CE 1MI0F +20% 6.3V 85C
C15	20269180	1	PC	CE 1MI0F +20% 6.3V 85C
C153	15002130	1	PC	CE 10U0F +20% 16.0V 85C
C161	15002130	1	PC	CE 10U0F +20% 16.0V 85C
C166	15002130	1	PC	CE 10U0F +20% 16.0V 85C
C17	15002130	1	PC	CE 10U0F +20% 16.0V 85C
C171	15002130	1	PC	CE 10U0F +20% 16.0V 85C
C177	15002130	1	PC	CE 10U0F +20% 16.0V 85C
C18	15002130	1	PC	CE 10U0F +20% 16.0V 85C
C202	15002130	1	PC	CE 10U0F +20% 16.0V 85C
C21	20268850	1	PC	CE 2U2F +20% 50.0V 85C
C211	15001920	1	PC	CE 100U0F +20% 16.0V 85C 10124720
C212	15001920	1	PC	CE 100U0F +20% 16.0V 85C 10124720
C24	20267830	1	PC	CE 47U0F +20% 16.0V 85C 20251640
C27	20267830	1	PC	CE 47U0F +20% 16.0V 85C 20251640
C31	15002130	1	PC	CE 10U0F +20% 16.0V 85C
C32	15002130	1	PC	CE 10U0F +20% 16.0V 85C
C40	20267830	1	PC	CE 47U0F +20% 16.0V 85C 20251640
C46	15002130	1	PC	CE 10U0F +20% 16.0V 85C
C50	20268840	1	PC	CE 1U0F +20% 50.0V 85C
C53	15002130	1	PC	CE 10U0F +20% 16.0V 85C
C55	15002130	1	PC	CE 10U0F +20% 16.0V 85C
C56	20268840	1	PC	CE 1U0F +20% 50.0V 85C
C62	15002130	1	PC	CE 10U0F +20% 16.0V 85C
C68	15002130	1	PC	CE 10U0F +20% 16.0V 85C
C69	20251830	1	PC	CE 1U0F +20% 50.0V 85C
C69	20268840	1	PC	CE 1U0F +20% 50.0V 85C
C71	20268840	1	PC	CE 1U0F +20% 50.0V 85C
C12	20269180	1	PC	CE 1MI0F +20% 6.3V 85C
C13	20269180	1	PC	CE 1MI0F +20% 6.3V 85C
C15	20269180	1	PC	CE 1MI0F +20% 6.3V 85C
C33	20268850	1	PC	CE 2U2F +20% 50.0V 85C
C33	20268870	1	PC	CE 4U7F +20% 50.0V 85C
C33	20268950	1	PC	CE 100N0F +20% 50.0V 85C
C33	55130270	1	PC	CPF 82N0F +5% 100.0V
C69	20449060	1	PC	CC 12P0F +5% -5% 50.0V SL
Semiconductors				
IC1	5512539AKV	1	PC	IC COMM CS4228 QFP44 E VERSION CODEC ID

Ref. Designator	Part Number	Qty		Description
DSP PCB				
IC10	55133310	1	PC	IC-LOGIC M74HCU04M1R INVERTER HCT
IC11	20920060	1	PC	IC-OPERAMP KIA4558F DUAL OP
IC12	20920060	1	PC	IC-OPERAMP KIA4558F DUAL OP
IC14	55125410	1	PC	IC-LOWFREQ CS8415A-CS DSP
IC18	55125420	1	PC	IC-LOGIC 74VHC244MX INVERTER CMOS
IC19	55125420	1	PC	IC-LOGIC 74VHC244MX INVERTER CMOS
IC4	55171060	1	PC	IC-EPROM AT27LV010A-90JC
IC5	55125380	1	PC	IC-LOWFREQ CS493263-CL DSP
IC5	5512538A	1	PC	IC-LOWFREQ CS493263-CL G VERSION DSP
IC6	20920060	1	PC	IC-OPERAMP KIA4558F DUAL OP
IC7	20920060	1	PC	IC-OPERAMP KIA4558F DUAL OP
IC8	20920060	1	PC	IC-OPERAMP KIA4558F DUAL OP
IC9	55133310	1	PC	IC-LOGIC M74HCU04M1R INVERTER HCT
Q2	20970480	1	PC	TR-SLPSWA KTA1504Y P -50V -150MI0A
IC10	55229970	1	PC	IC-LOGIC MM74HC151M SOIC16 MULTIPLEXER CMOS
IC2	55170220	1	PC	IC-LOGIC F/F 74VHC574MX FLIP/FLOP HCMOS
IC3	55170220	1	PC	IC-LOGIC F/F 74VHC574MX FLIP/FLOP HCMOS
IC9	55229970	1	PC	IC-LOGIC MM74HC151M SOIC16 MULTIPLEXER CMOS
Resistors				
R1	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R101	55126660	1	PC	FBEAD SURFACE MT 600OHM FCM2012V-601T05
R105	11066390	1	PC	RMGCFMIN 75R0 OHM +5% 100MI0W
R106	11066390	1	PC	RMGCFMIN 75R0 OHM +5% 100MI0W
R107	11066440	1	PC	RMGCFMIN 3K3 OHM +5% 100MI0W
R107	30944310	1	PC	RMGCFMIN 4K7 OHM +5% 100MI0W
R108	11066440	1	PC	RMGCFMIN 3K3 OHM +5% 100MI0W
R108	30944310	1	PC	RMGCFMIN 4K7 OHM +5% 100MI0W
R11	11066440	1	PC	RMGCFMIN 3K3 OHM +5% 100MI0W
R11	30944310	1	PC	RMGCFMIN 4K7 OHM +5% 100MI0W
R110	20471970	1	PC	RMGCFMIN 2K4 OHM +5% 100MI0W
R111	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R113	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R114	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R116	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R117	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R118	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R12	90574400	1	PC	RMGCFMIN 470R0 OHM +5% 100MI0W
R124	11059340	1	PC	CCCFMIN 10N0F +10% -10% 50.0V X7R
R124	70434200	1	PC	RMGCFMIN 100R0 OHM +5% 100MI0W
R125	70434200	1	PC	RMGCFMIN 100R0 OHM +5% 100MI0W
R127	30944250	1	PC	RMGCFMIN 10R0 OHM +5% 100MI0W
R13	20471960	1	PC	RMGCFMIN 1K8 OHM +5% 100MI0W
R14	70434220	1	PC	RMGCFMIN 820R0 OHM +5% 100MI0W
R140	70434220	1	PC	RMGCFMIN 820R0 OHM +5% 100MI0W
R141	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R142	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R15	20471990	1	PC	RMGCFMIN 12K0 OHM +5% 100MI0W
R150	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R151	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R152	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R153	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R154	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R155	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R156	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W

Ref. Designator	Part Number	Qty		Description
DSP PCB				
R157	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R158	20471990	1	PC	RMGCFMIN 12K0 OHM +5% 100MI0W
R159	20471990	1	PC	RMGCFMIN 12K0 OHM +5% 100MI0W
R16	11066440	1	PC	RMGCFMIN 3K3 OHM +5% 100MI0W
R16	30944310	1	PC	RMGCFMIN 4K7 OHM +5% 100MI0W
R160	20471990	1	PC	RMGCFMIN 12K0 OHM +5% 100MI0W
R161	20471990	1	PC	RMGCFMIN 12K0 OHM +5% 100MI0W
R162	70434200	1	PC	RMGCFMIN 100R0 OHM +5% 100MI0W
R164	20471990	1	PC	RMGCFMIN 12K0 OHM +5% 100MI0W
R17	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R18	80440420	1	PC	RMGCFMIN 33K0 OHM +5% 100MI0W
R188	30944330	1	PC	RMGCFMIN 20K0 OHM +5% 100MI0W
R19	30944310	1	PC	RMGCFMIN 4K7 OHM +5% 100MI0W
R190	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R193	20471990	1	PC	RMGCFMIN 12K0 OHM +5% 100MI0W
R194	90574400	1	PC	RMGCFMIN 470R0 OHM +5% 100MI0W
R195	70434200	1	PC	RMGCFMIN 100R0 OHM +5% 100MI0W
R2	20471990	1	PC	RMGCFMIN 12K0 OHM +5% 100MI0W
R20	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R21	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R22	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R23	20471990	1	PC	RMGCFMIN 12K0 OHM +5% 100MI0W
R23	70434250	1	PC	RMGCFMIN 15K0 OHM +5% 100MI0W
R24	90574400	1	PC	RMGCFMIN 470R0 OHM +5% 100MI0W
R25	90574400	1	PC	RMGCFMIN 470R0 OHM +5% 100MI0W
R26	20471960	1	PC	RMGCFMIN 1K8 OHM +5% 100MI0W
R27	70434220	1	PC	RMGCFMIN 820R0 OHM +5% 100MI0W
R28	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R29	40438300	1	PC	RMGCFMIN 6K8 OHM +5% 100MI0W
R3	20471990	1	PC	RMGCFMIN 12K0 OHM +5% 100MI0W
R3	70434250	1	PC	RMGCFMIN 15K0 OHM +5% 100MI0W
R30	90574400	1	PC	RMGCFMIN 470R0 OHM +5% 100MI0W
R31	30944310	1	PC	RMGCFMIN 4K7 OHM +5% 100MI0W
R32	90574400	1	PC	RMGCFMIN 470R0 OHM +5% 100MI0W
R33	20471970	1	PC	RMGCFMIN 2K4 OHM +5% 100MI0W
R34	70434220	1	PC	RMGCFMIN 820R0 OHM +5% 100MI0W
R35	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R36	90574410	1	PC	RMGCFMIN 910R0 OHM +5% 100MI0W
R37	90574400	1	PC	RMGCFMIN 470R0 OHM +5% 100MI0W
R38	20471970	1	PC	RMGCFMIN 2K4 OHM +5% 100MI0W
R39	11066480	1	PC	RMGCFMIN 47K0 OHM +5% 100MI0W
R4	20471990	1	PC	RMGCFMIN 12K0 OHM +5% 100MI0W
R40	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R41	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R42	70434250	1	PC	RMGCFMIN 15K0 OHM +5% 100MI0W
R43	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R44	80440370	1	PC	RMGCFMIN 150R0 OHM +5% 100MI0W
R45	80440370	1	PC	RMGCFMIN 150R0 OHM +5% 100MI0W
R46	30944330	1	PC	RMGCFMIN 20K0 OHM +5% 100MI0W
R47	11066480	1	PC	RMGCFMIN 47K0 OHM +5% 100MI0W
R48	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R49	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R5	90574400	1	PC	RMGCFMIN 470R0 OHM +5% 100MI0W
R50	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R51	80440370	1	PC	RMGCFMIN 150R0 OHM +5% 100MI0W
R52	80440370	1	PC	RMGCFMIN 150R0 OHM +5% 100MI0W

Ref. Designator	Part Number	Qty		Description
DSP PCB				
R53	70434250	1	PC	RMGCFMIN 15K0 OHM +5% 100MI0W
R54	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R55	30944250	1	PC	RMGCFMIN 10R0 OHM +5% 100MI0W
R56	80440390	1	PC	RMGCFMIN 2K2 OHM +5% 100MI0W
R57	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
R58	90574400	1	PC	RMGCFMIN 470R0 OHM +5% 100MI0W
R59	55126660	1	PC	FBEAD SURFACE MT 600OHM FCM2012V-601T05
R6	11059340	1	PC	CCCFMIN 10N0F +10% -10% 50.0V X7R
R6	70434200	1	PC	RMGCFMIN 100R0 OHM +5% 100MI0W
R61	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R62	20471990	1	PC	RMGCFMIN 12K0 OHM +5% 100MI0W
R63	90574400	1	PC	RMGCFMIN 470R0 OHM +5% 100MI0W
R64	90574400	1	PC	RMGCFMIN 470R0 OHM +5% 100MI0W
R65	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R67	11066480	1	PC	RMGCFMIN 47K0 OHM +5% 100MI0W
R68	11066480	1	PC	RMGCFMIN 47K0 OHM +5% 100MI0W
R69	20471970	1	PC	RMGCFMIN 2K4 OHM +5% 100MI0W
R7	40438300	1	PC	RMGCFMIN 6K8 OHM +5% 100MI0W
R70	70434220	1	PC	RMGCFMIN 820R0 OHM +5% 100MI0W
R71	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R72	20471990	1	PC	RMGCFMIN 12K0 OHM +5% 100MI0W
R73	20471930	1	PC	RMGCFMIN 510R0 OHM +5% 100MI0W
R74	80440390	1	PC	RMGCFMIN 2K2 OHM +5% 100MI0W
R75	80440390	1	PC	RMGCFMIN 2K2 OHM +5% 100MI0W
R76	11066480	1	PC	RMGCFMIN 47K0 OHM +5% 100MI0W
R77	90574400	1	PC	RMGCFMIN 470R0 OHM +5% 100MI0W
R78	80440390	1	PC	RMGCFMIN 2K2 OHM +5% 100MI0W
R79	90574400	1	PC	RMGCFMIN 470R0 OHM +5% 100MI0W
R8	70434250	1	PC	RMGCFMIN 15K0 OHM +5% 100MI0W
R80	11066480	1	PC	RMGCFMIN 47K0 OHM +5% 100MI0W
R89	11059340	1	PC	CCCFMIN 10N0F +10% -10% 50.0V X7R
R89	70434200	1	PC	RMGCFMIN 100R0 OHM +5% 100MI0W
R90	11059340	1	PC	CCCFMIN 10N0F +10% -10% 50.0V X7R
R90	70434200	1	PC	RMGCFMIN 100R0 OHM +5% 100MI0W
R91	70434200	1	PC	RMGCFMIN 100R0 OHM +5% 100MI0W
R92	70434200	1	PC	RMGCFMIN 100R0 OHM +5% 100MI0W
R10	10355210	1	PC	RMGCFMIN 4R7 OHM +5% 100MI0W
R10	15112590	1	PC	RMGCFMIN 3R3 OHM +5% 100MI0W
R141	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R142	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R15	20471990	1	PC	RMGCFMIN 12K0 OHM +5% 100MI0W
R150	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R151	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R152	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R153	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R154	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R155	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R156	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R157	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R158	20471990	1	PC	RMGCFMIN 12K0 OHM +5% 100MI0W
R159	20471990	1	PC	RMGCFMIN 12K0 OHM +5% 100MI0W
R16	30944310	1	PC	RMGCFMIN 4K7 OHM +5% 100MI0W
R160	20471990	1	PC	RMGCFMIN 12K0 OHM +5% 100MI0W
R161	20471990	1	PC	RMGCFMIN 12K0 OHM +5% 100MI0W
R162	70434200	1	PC	RMGCFMIN 100R0 OHM +5% 100MI0W
R164	20471990	1	PC	RMGCFMIN 12K0 OHM +5% 100MI0W

Ref. Designator	Part Number	Qty		Description
DSP PCB				
R17	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R18	80440420	1	PC	RMGCFMIN 33K0 OHM +5% 100MI0W
R188	30944330	1	PC	RMGCFMIN 20K0 OHM +5% 100MI0W
R19	30944310	1	PC	RMGCFMIN 4K7 OHM +5% 100MI0W
R190	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R193	20471990	1	PC	RMGCFMIN 12K0 OHM +5% 100MI0W
R194	90574400	1	PC	RMGCFMIN 470R0 OHM +5% 100MI0W
R195	70434220	1	PC	RMGCFMIN 820R0 OHM +5% 100MI0W
R2	20471990	1	PC	RMGCFMIN 12K0 OHM +5% 100MI0W
R20	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R21	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R22	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R23	70434250	1	PC	RMGCFMIN 15K0 OHM +5% 100MI0W
R24	90574400	1	PC	RMGCFMIN 470R0 OHM +5% 100MI0W
R25	90574400	1	PC	RMGCFMIN 470R0 OHM +5% 100MI0W
R26	20471960	1	PC	RMGCFMIN 1K8 OHM +5% 100MI0W
R27	70434220	1	PC	RMGCFMIN 820R0 OHM +5% 100MI0W
R28	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R29	40438300	1	PC	RMGCFMIN 6K8 OHM +5% 100MI0W
R3	70434250	1	PC	RMGCFMIN 15K0 OHM +5% 100MI0W
R30	90574400	1	PC	RMGCFMIN 470R0 OHM +5% 100MI0W
R31	30944310	1	PC	RMGCFMIN 4K7 OHM +5% 100MI0W
R32	90574400	1	PC	RMGCFMIN 470R0 OHM +5% 100MI0W
R33	20471970	1	PC	RMGCFMIN 2K4 OHM +5% 100MI0W
R34	70434220	1	PC	RMGCFMIN 820R0 OHM +5% 100MI0W
R35	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R36	50886600	1	PC	RMGCFMIN 5K1 OHM +5% 100MI0W
R36	70434230	1	PC	RMGCFMIN 1K2 OHM +5% 100MI0W
R36	90574380	1	PC	RMGCFMIN 200R0 OHM +5% 100MI0W
R36	90574410	1	PC	RMGCFMIN 910R0 OHM +5% 100MI0W
R37	90574400	1	PC	RMGCFMIN 470R0 OHM +5% 100MI0W
R38	20471970	1	PC	RMGCFMIN 2K4 OHM +5% 100MI0W
R39	11066480	1	PC	RMGCFMIN 47K0 OHM +5% 100MI0W
R4	20471990	1	PC	RMGCFMIN 12K0 OHM +5% 100MI0W
R40	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R41	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R42	70434250	1	PC	RMGCFMIN 15K0 OHM +5% 100MI0W
R43	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R44	80440370	1	PC	RMGCFMIN 150R0 OHM +5% 100MI0W
R45	80440370	1	PC	RMGCFMIN 150R0 OHM +5% 100MI0W
R66	11066460	1	PC	RMGCFMIN 8K2 OHM +5% 100MI0W
R81	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R82	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R83-88	50886610	6	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R9	10355210	1	PC	RMGCFMIN 4R7 OHM +5% 100MI0W
R9	15112590	1	PC	RMGCFMIN 3R3 OHM +5% 100MI0W
BD10	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
BD16	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
BD17	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
BD17	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
BD18	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
BD18	30944260	1	PC	RMGCFMIN 22R0 OHM +5% 100MI0W
BD19	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
BD20	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
BD22	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
BD23	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W

Ref. Designator	Part Number	Qty		Description
DSP PCB				
BD26	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
BD27	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
BD29	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
BD30	30944260	1	PC	RMGCFMIN 22R0 OHM +5% 100MI0W
BD31	30944260	1	PC	RMGCFMIN 22R0 OHM +5% 100MI0W
BD32	30944260	1	PC	RMGCFMIN 22R0 OHM +5% 100MI0W
BD34	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
BD35	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
BD37	30944260	1	PC	RMGCFMIN 22R0 OHM +5% 100MI0W
BD38	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
BD39	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
BD22	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
BD23	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
BD38	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
Miscellaneous				
L1	55185090	1	PC	LF-SMD 33U0H +10%
L5	55185090	1	PC	LF-SMD 33U0H +10%
J3	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
J4	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
L4	55185090	1	PC	LF-SMD 33U0H +10%
BD1	55126690	1	PC	FBEAD SURFACE MT 2500OHM FCM2012H-252T02
BD11	55126690	1	PC	FBEAD SURFACE MT 2500OHM FCM2012H-252T02
BD12	55126690	1	PC	FBEAD SURFACE MT 2500OHM FCM2012H-252T02
BD13	55126690	1	PC	FBEAD SURFACE MT 2500OHM FCM2012H-252T02
BD15	55126690	1	PC	FBEAD SURFACE MT 2500OHM FCM2012H-252T02
BD2	55126690	1	PC	FBEAD SURFACE MT 2500OHM FCM2012H-252T02
BD21	55126690	1	PC	FBEAD SURFACE MT 2500OHM FCM2012H-252T02
BD14	55126690	1	PC	FBEAD SURFACE MT 2500OHM FCM2012H-252T02
BD25	55126690	1	PC	FBEAD SURFACE MT 2500OHM FCM2012H-252T02
BD4	55126690	1	PC	FBEAD SURFACE MT 2500OHM FCM2012H-252T02
BD5	55126650	1	PC	FBEAD SURFACE MT 300OHM FCM2012V-301T07
BD8	55126690	1	PC	FBEAD SURFACE MT 2500OHM FCM2012H-252T02
R60	55126660	1	PC	FBEAD SURFACE MT 600OHM FCM2012V-601T05
BD3	55126690	1	PC	FBEAD SURFACE MT 2500OHM FCM2012H-252T02
BD33	55126690	1	PC	FBEAD SURFACE MT 2500OHM FCM2012H-252T02
BD36	55126690	1	PC	FBEAD SURFACE MT 2500OHM FCM2012H-252T02
BD6	55126690	1	PC	FBEAD SURFACE MT 2500OHM FCM2012H-252T02
BD7	55126690	1	PC	FBEAD SURFACE MT 2500OHM FCM2012H-252T02
CP1	55124760	1	PC	CONN 1.25MM 19 FE R BK 00-8370-197-000-800 2794 A6
CP401	55125060	1	PC	CONN 2.0MM 14 MA R NAT MOLEX 35237-1410 0 0
CP402	55125030	1	PC	CONN 2.0MM 11 MA R NAT MOLEX 35237-1110 0 0
JAC1	55125430	1	PC	D-LEM TORX178B RD RND CL
JAC4	55208180	1	PC	CON PHONO SCKT RCA 3P JACK JE031164XN OG,OG,OG
T1	55176540	1	PC	TFPULSE TRANSFORMER 110UH FP-110 FERRIT MAGNET
Y1	55126130	1	PC	VCXO 12M288 HZ +50 PPM -50 PPM 0 OHM
FRONT PCB				
Capacitors				
C201	15070900	1	PC	CCCFMIN 820P0F +10% -10% 50.0V NP0
C205	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C206	50882360	1	PC	CCCFMIN 33P0F +5% -5% 50.0V NP0
C208	50882360	1	PC	CCCFMIN 33P0F +5% -5% 50.0V NP0

Ref. Designator	Part Number	Qty		Description
FRONT PCB				
C209	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C211	15070900	1	PC	CCCFMIN 820P0F +10% -10% 50.0V NP0
C212	15070900	1	PC	CCCFMIN 820P0F +10% -10% 50.0V NP0
C213	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C217	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C218	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C228	11058670	1	PC	CCCFMIN 100P0F +5% -5% 50.0V NP0
C229	11058670	1	PC	CCCFMIN 100P0F +5% -5% 50.0V NP0
C230	11058670	1	PC	CCCFMIN 100P0F +5% -5% 50.0V NP0
C237	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C238	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C242	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C242	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
C244	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C244	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
C245	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
CL211	11058670	1	PC	CCCFMIN 100P0F +5% -5% 50.0V NP0
CR211	11058670	1	PC	CCCFMIN 100P0F +5% -5% 50.0V NP0
C204	20269010	1	PC	CE 47U0F +20% 50.0V 85C
C210	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C214	20267830	1	PC	CE 47U0F +20% 16.0V 85C 20251640
C215	20267830	1	PC	CE 47U0F +20% 16.0V 85C 20251640
C219	20269010	1	PC	CE 47U0F +20% 50.0V 85C
C220	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C234	20268950	1	PC	CE 100N0F +20% 50.0V 85C
C235	10364820	1	PC	CPF 47N0F +10% 100.0V
C236	10364820	1	PC	CPF 47N0F +10% 100.0V
C246	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C247	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C248	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C216	55134340	1	PC	CM 47MI0F +80% -20% 5.5V 70C
Semiconductors				
D1	20496510	1	PC	D-SLP 1SS355 35.0V 225MI0A
D2	20496510	1	PC	D-SLP 1SS355 35.0V 225MI0A
D249	20496510	1	PC	D-SLP 1SS355 35.0V 225MI0A
D253	20496510	1	PC	D-SLP 1SS355 35.0V 225MI0A
D254	20496510	1	PC	D-SLP 1SS355 35.0V 225MI0A
D255	20496510	1	PC	D-SLP 1SS355 35.0V 225MI0A
D261	20496510	1	PC	D-SLP 1SS355 35.0V 225MI0A
D261	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
D262	20496510	1	PC	D-SLP 1SS355 35.0V 225MI0A
D262	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
D263	20496510	1	PC	D-SLP 1SS355 35.0V 225MI0A
D263	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
D264	20496510	1	PC	D-SLP 1SS355 35.0V 225MI0A
D264	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
Q236	55133190	1	PC	TR-SSD DTA114YKA P 10K0 OHM 47K0 OHM
Q237	55133180	1	PC	TR-SSD DTC114YKA N 10K0 OHM 47K0 OHM
IC201	55192850	1	PC	IC-MICROCONT CXP82860-348Q DCR600MKII
RM201	55155930	1	PC	IC-REMOTE RPM6938-RSIP-A3 RECEIVER 38KHZ
Resistors				
R1	90574440	1	PC	RMGCFMIN 56K0 OHM +5% 100MI0W

Ref. Designator	Part Number	Qty		Description
FRONT PCB				
R201	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R202	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R203	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R204	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R205	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R206-213	50886610	8	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R214	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R215	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R216	30944310	1	PC	RMGCFMIN 4K7 OHM +5% 100MI0W
R217	30944310	1	PC	RMGCFMIN 4K7 OHM +5% 100MI0W
R218	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R219	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R220	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R221	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R222	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R223	90574370	1	PC	RMGCFMIN 82R0 OHM +5% 100MI0W
R224	90574370	1	PC	RMGCFMIN 82R0 OHM +5% 100MI0W
R225	90574370	1	PC	RMGCFMIN 82R0 OHM +5% 100MI0W
R276	70434200	1	PC	RMGCFMIN 100R0 OHM +5% 100MI0W
R277	10355190	1	PC	RMGCFMIN 2R2 OHM +5% 100MI0W
R278	10355190	1	PC	RMGCFMIN 2R2 OHM +5% 100MI0W
R279	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R280	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R281	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R283	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R284	30944310	1	PC	RMGCFMIN 4K7 OHM +5% 100MI0W
R285	30944310	1	PC	RMGCFMIN 4K7 OHM +5% 100MI0W
R286	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R287	11066500	1	PC	RMGCFMIN 68K0 OHM +5% 100MI0W
R288	11066500	1	PC	RMGCFMIN 68K0 OHM +5% 100MI0W
R289	11066480	1	PC	RMGCFMIN 47K0 OHM +5% 100MI0W
R289	30944310	1	PC	RMGCFMIN 4K7 OHM +5% 100MI0W
R290	30944310	1	PC	RMGCFMIN 4K7 OHM +5% 100MI0W
R291	70434200	1	PC	RMGCFMIN 100R0 OHM +5% 100MI0W
R292	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R293	11066460	1	PC	RMGCFMIN 8K2 OHM +5% 100MI0W
R294	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
Miscellaneous				
J201-204	80440510	4	PC	RMGCFMIN 0 OHM +0% 100MI0W
J307	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
J308	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
J401	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
CN201	55087540	1	PC	WIRECONASY UNIQUE 7 450MM UL2468 RIBBON 26
CN201	55236740	1	PC	WIRECONASY UNIQUE 7P 400MM UL2468 RIBBON 26 1
CN202	55124760	1	PC	CONN 1.25MM 19 FE R BK 00-8370-197-000-800 2794 A6
CN202	55129010	1	PC	CONN 1.25MM 19 FE ST BK 00-8370-191-000-800 2794 A6
CN203	55192770	1	PC	CONN 1.25MM 29 FE ST BK 00-8370-291-000-800 2794 A6
CN203	55192780	1	PC	CONN 1.25MM 29 FE R WH GF120-29S-LS 2794 A6
CN204	55158660	1	PC	WIRECONASY UNIQUE 4P 80MM UL1007 PVC DISCRETE 26
CN205	55158620	1	PC	WIRECONASY UNIQUE 10P 410MM UL2468 RIBBON 26
CN205	55236750	1	PC	WIRECONASY UNIQUE 10P 480MM UL1533 SHIELD 26 1
CN210	55158640	1	PC	WIRECONASY UNIQUE 2P 110MM UL1007 PVC DISCRETE 26
CP203	55123340	1	PC	CONN 2.0MM 8 MA ST NAT LW2002P08 0 0

Ref. Designator	Part Number	Qty		Description
FRONT PCB				
FINGER	55178960	1	PC	AC SPRING PLATE SPRING GND C5212 0.2T AVR520
FL201	55182450	1	PC	DISPLAY VFD HNA-16LL18
JA201	55113740	1	PC	CON PHONO SCKT RCA-307 3 PINS
JA202	55113960	1	PC	CON DIN SCKT SOCKET CONNECTOR SVHS EST-S408J
L201	55179380	1	PC	LF 4U7H +10% 1.7 OHM 190.0A
L202	55179380	1	PC	LF 4U7H +10% 1.7 OHM 190.0A
V201	55134900	1	PC	SWIROT EC16B24204A5 5V 500U0A 10T 3P 0 0
W301	55158710	1	PC	WIRECONASY UNIQUE 1P 150MM UL1007 PVC DISCRETE 22 1
W401	55158710	1	PC	WIRECONASY UNIQUE 1P 150MM UL1007 PVC DISCRETE 22 1
X201	55126140	1	PC	CRESONATOR 10M0 HZ 25.0 OHM 0F
KEY PCB				
Capacitors				
C2	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C401	30939240	1	PC	CCCFMIN 22N0F +10% -10% 50.0V X7R
C402	30939240	1	PC	CCCFMIN 22N0F +10% -10% 50.0V X7R
C616	20246470	1	PC	CC 100N0F +80% -20% 25.0V Z5V
C616	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C617	11058710	1	PC	CCCFMIN 560P0F +5% -5% 50.0V NP0
C618	11058710	1	PC	CCCFMIN 560P0F +5% -5% 50.0V NP0
C1	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C2	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C401	30939240	1	PC	CCCFMIN 22N0F +10% -10% 50.0V X7R
C402	30939240	1	PC	CCCFMIN 22N0F +10% -10% 50.0V X7R
C617	11058710	1	PC	CCCFMIN 560P0F +5% -5% 50.0V NP0
C618	11058710	1	PC	CCCFMIN 560P0F +5% -5% 50.0V NP0
C1	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
Semiconductors				
Q401	55133180	1	PC	TR-SSD DTC114YKA N 10K0 OHM 47K0 OHM
Q401	55133190	1	PC	TR-SSD DTA114YKA P 10K0 OHM 47K0 OHM
Resistors				
R401	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R402	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R403	70434230	1	PC	RMGCFMIN 1K2 OHM +5% 100MI0W
R404	40438290	1	PC	RMGCFMIN 1K5 OHM +5% 100MI0W
R405	80440390	1	PC	RMGCFMIN 2K2 OHM +5% 100MI0W
R406	50886590	1	PC	RMGCFMIN 2K7 OHM +5% 100MI0W
R407	11066440	1	PC	RMGCFMIN 3K3 OHM +5% 100MI0W
R408	80440400	1	PC	RMGCFMIN 5K6 OHM +5% 100MI0W
R409	11066460	1	PC	RMGCFMIN 8K2 OHM +5% 100MI0W
R410	90574430	1	PC	RMGCFMIN 18K0 OHM +5% 100MI0W
R411	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R412	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R413	70434230	1	PC	RMGCFMIN 1K2 OHM +5% 100MI0W
R414	40438290	1	PC	RMGCFMIN 1K5 OHM +5% 100MI0W
R415	80440390	1	PC	RMGCFMIN 2K2 OHM +5% 100MI0W
R416	50886590	1	PC	RMGCFMIN 2K7 OHM +5% 100MI0W
R417	11066440	1	PC	RMGCFMIN 3K3 OHM +5% 100MI0W
R418	80440400	1	PC	RMGCFMIN 5K6 OHM +5% 100MI0W

Ref. Designator	Part Number	Qty		Description
KEY PCB				
R419	11066460	1	PC	RMGCFMIN 8K2 OHM +5% 100MI0W
R420	90574430	1	PC	RMGCFMIN 18K0 OHM +5% 100MI0W
R421	50886540	1	PC	RMGCFMIN 330R0 OHM +5% 100MI0W
R421	60444370	1	PC	RMGCFMIN 180R0 OHM +5% 100MI0W
R422	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R422	50886540	1	PC	RMGCFMIN 330R0 OHM +5% 100MI0W
R422	60444370	1	PC	RMGCFMIN 180R0 OHM +5% 100MI0W
R423	20471940	1	PC	RMGCFMIN 680R0 OHM +5% 100MI0W
R423	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R424	20471940	1	PC	RMGCFMIN 680R0 OHM +5% 100MI0W
R424	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R610	70434250	1	PC	RMGCFMIN 15K0 OHM +5% 100MI0W
R611	70434250	1	PC	RMGCFMIN 15K0 OHM +5% 100MI0W
R612	11066480	1	PC	RMGCFMIN 47K0 OHM +5% 100MI0W
R612	30944310	1	PC	RMGCFMIN 4K7 OHM +5% 100MI0W
R613	70434250	1	PC	RMGCFMIN 15K0 OHM +5% 100MI0W
R401	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R402	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R403	70434230	1	PC	RMGCFMIN 1K2 OHM +5% 100MI0W
R404	40438290	1	PC	RMGCFMIN 1K5 OHM +5% 100MI0W
R405	80440390	1	PC	RMGCFMIN 2K2 OHM +5% 100MI0W
R406	50886590	1	PC	RMGCFMIN 2K7 OHM +5% 100MI0W
R407	11066440	1	PC	RMGCFMIN 3K3 OHM +5% 100MI0W
R408	80440400	1	PC	RMGCFMIN 5K6 OHM +5% 100MI0W
R409	11066460	1	PC	RMGCFMIN 8K2 OHM +5% 100MI0W
R410	90574430	1	PC	RMGCFMIN 18K0 OHM +5% 100MI0W
R411	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R412	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R413	70434230	1	PC	RMGCFMIN 1K2 OHM +5% 100MI0W
R414	40438290	1	PC	RMGCFMIN 1K5 OHM +5% 100MI0W
R415	80440390	1	PC	RMGCFMIN 2K2 OHM +5% 100MI0W
R416	50886590	1	PC	RMGCFMIN 2K7 OHM +5% 100MI0W
R417	11066440	1	PC	RMGCFMIN 3K3 OHM +5% 100MI0W
R418	80440400	1	PC	RMGCFMIN 5K6 OHM +5% 100MI0W
R419	11066460	1	PC	RMGCFMIN 8K2 OHM +5% 100MI0W
R420	90574430	1	PC	RMGCFMIN 18K0 OHM +5% 100MI0W
R421	50886540	1	PC	RMGCFMIN 330R0 OHM +5% 100MI0W
R421	60444370	1	PC	RMGCFMIN 180R0 OHM +5% 100MI0W
R422	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R422	50886540	1	PC	RMGCFMIN 330R0 OHM +5% 100MI0W
R422	60444370	1	PC	RMGCFMIN 180R0 OHM +5% 100MI0W
R423	20471940	1	PC	RMGCFMIN 680R0 OHM +5% 100MI0W
R423	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R424	20471940	1	PC	RMGCFMIN 680R0 OHM +5% 100MI0W
R424	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R610	70434250	1	PC	RMGCFMIN 15K0 OHM +5% 100MI0W
R611	70434250	1	PC	RMGCFMIN 15K0 OHM +5% 100MI0W
R612	11066480	1	PC	RMGCFMIN 47K0 OHM +5% 100MI0W
R612	30944310	1	PC	RMGCFMIN 4K7 OHM +5% 100MI0W
R613	70434250	1	PC	RMGCFMIN 15K0 OHM +5% 100MI0W
R608	40440590	1	PC	RMOF 330R0 OHM +5% 2.0W
R609	40440590	1	PC	RMOF 330R0 OHM +5% 2.0W
Miscellaneous				
BD305	55126530	1	PC	FBEAD SURFACE MT 300OHM CHIP FERRITE BEAD U

Ref. Designator	Part Number	Qty		Description
KEY PCB				
BD305	55126650	1	PC	FBEAD SURFACE MT 300OHM FCM2012V-301T07
BD306	55126530	1	PC	FBEAD SURFACE MT 300OHM CHIP FERRITE BEAD U
BD306	55126650	1	PC	FBEAD SURFACE MT 300OHM FCM2012V-301T07
SW401-420	55145270	20	PC	SWITACT VERTICAL TACTILE F/B 50MI0A 12.0V 500MI0OHM 1T 1P
CN401	55175800	1	PC	WIRECONASY UNIQUE 8P 100MM UL1007 PVC DISCRETE 26 1
CN403	5515865A	1	PC	WIRECONASY UNIQUE 3P 390MM UL1007 PVC DISCRETE 26
CN403	55319130	1	PC	WIRECONASY UNIQUE 3P 500MM UL1007 PVC DISCRETE 26
CN405	55125040	1	PC	CONN 2.0MM 12 MA R NAT MOLEX 35237-1210 0 0
W301	55158710	1	PC	WIRECONASY UNIQUE 1P 150MM UL1007 PVC DISCRETE 22 1
CP403	55078520	1	PC	CONN 2.0MM 2 MA R NAT LW2003P02 0 0
CP404	55123310	1	PC	CONN 2.0MM 4 MA ST NAT LW2002P04 0 0
CP405	55124970	1	PC	CONN 2.0MM 12 MA ST NAT MOLEX 35336-1210 0 0
CP406	55201670	1	PC	WIRECONASY UNIQUE 2P 200MM UL1007 PVC DISCRETE 16 1
D401	55179330	1	PC	D-LEM RED/GREEN 5 RD RND CL
HP601	55088400	1	PC	CONN-PHJAC 6.35 ST HORZ EST-J6313 BK 0 0
J600	55201670	1	PC	WIRECONASY UNIQUE 2P 200MM UL1007 PVC DISCRETE 16 1
MAIN PCB				
Capacitors				
C125	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C126	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C130	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C132	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C141	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C143	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C144	11059340	1	PC	CCCFMIN 10N0F +10% -10% 50.0V X7R
C145	11059340	1	PC	CCCFMIN 10N0F +10% -10% 50.0V X7R
C200-215	11058670	15	PC	CCCFMIN 100P0F +5% -5% 50.0V NP0
C220-231	11058670	12	PC	CCCFMIN 100P0F +5% -5% 50.0V NP0
C244-249	11058670	6	PC	CCCFMIN 100P0F +5% -5% 50.0V NP0
C300-311	11058670	12	PC	CCCFMIN 100P0F +5% -5% 50.0V NP0
C314	11058670	1	PC	CCCFMIN 100P0F +5% -5% 50.0V NP0
C315	11058670	1	PC	CCCFMIN 100P0F +5% -5% 50.0V NP0
C316	11058670	1	PC	CCCFMIN 100P0F +5% -5% 50.0V NP0
C319	15049350	1	PC	CCCFMIN 470N0F +80% -20% 16.0V Y5V
C412	11058670	1	PC	CCCFMIN 100P0F +5% -5% 50.0V NP0
C414	11058670	1	PC	CCCFMIN 100P0F +5% -5% 50.0V NP0
C416	11058670	1	PC	CCCFMIN 100P0F +5% -5% 50.0V NP0
C419	11058670	1	PC	CCCFMIN 100P0F +5% -5% 50.0V NP0
C421	11058670	1	PC	CCCFMIN 100P0F +5% -5% 50.0V NP0
C423	11058670	1	PC	CCCFMIN 100P0F +5% -5% 50.0V NP0
C424	11058670	1	PC	CCCFMIN 100P0F +5% -5% 50.0V NP0
C425	11058670	1	PC	CCCFMIN 100P0F +5% -5% 50.0V NP0
C426	11058670	1	PC	CCCFMIN 100P0F +5% -5% 50.0V NP0
C434	50882360	1	PC	CCCFMIN 33P0F +5% -5% 50.0V NP0
C435	30938730	1	PC	CCCFMIN 220P0F +5% -5% 50.0V NP0
C438	50882360	1	PC	CCCFMIN 33P0F +5% -5% 50.0V NP0
C439	30938730	1	PC	CCCFMIN 220P0F +5% -5% 50.0V NP0
C442	50882360	1	PC	CCCFMIN 33P0F +5% -5% 50.0V NP0
C443	30938730	1	PC	CCCFMIN 220P0F +5% -5% 50.0V NP0
C446	50882360	1	PC	CCCFMIN 33P0F +5% -5% 50.0V NP0
C447	30938730	1	PC	CCCFMIN 220P0F +5% -5% 50.0V NP0
C450	50882360	1	PC	CCCFMIN 33P0F +5% -5% 50.0V NP0
C451	30938730	1	PC	CCCFMIN 220P0F +5% -5% 50.0V NP0

Ref. Designator	Part Number	Qty		Description
MAIN PCB				
C454	50882360	1	PC	CCCFMIN 33P0F +5% -5% 50.0V NP0
C455	30938730	1	PC	CCCFMIN 220P0F +5% -5% 50.0V NP0
C460	11058670	1	PC	CCCFMIN 100P0F +5% -5% 50.0V NP0
C952	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C957	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C961	11058670	1	PC	CCCFMIN 100P0F +5% -5% 50.0V NP0
C966	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C970	11058670	1	PC	CCCFMIN 100P0F +5% -5% 50.0V NP0
C974	11058670	1	PC	CCCFMIN 100P0F +5% -5% 50.0V NP0
C975	11058670	1	PC	CCCFMIN 100P0F +5% -5% 50.0V NP0
C976	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C979	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C981	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C983	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C984-988	11058670	5	PC	CCCFMIN 100P0F +5% -5% 50.0V NP0
C999	15049350	1	PC	CCCFMIN 470N0F +80% -20% 16.0V Y5V
C115-119	55095430	5	PC	CPM 100N0F +10% 250.0V
C122	40432960	1	PC	CPM 47N0F +20% 100.0V
C123	40432960	1	PC	CPM 47N0F +20% 100.0V
C124	40432960	1	PC	CPM 47N0F +20% 100.0V
C129	20268840	1	PC	CE 1U0F +20% 50.0V 85C
C131	20268840	1	PC	CE 1U0F +20% 50.0V 85C
C133	40432960	1	PC	CPM 47N0F +20% 100.0V
C134	40432960	1	PC	CPM 47N0F +20% 100.0V
C135	40432960	1	PC	CPM 47N0F +20% 100.0V
C136	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C137	20268850	1	PC	CE 2U2F +20% 50.0V 85C
C140	20268840	1	PC	CE 1U0F +20% 50.0V 85C
C142	20268840	1	PC	CE 1U0F +20% 50.0V 85C
C150	20268980	1	PC	CE 22U0F +20% 50.0V 85C
C151	20252670	1	PC	CE 470U0F +20% 10.0V 85C
C153	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C154	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C155	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C156	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C157	20267830	1	PC	CE 47U0F +20% 16.0V 85C 20251640
C158	20267830	1	PC	CE 47U0F +20% 16.0V 85C 20251640
C232	20267830	1	PC	CE 47U0F +20% 16.0V 85C 20251640
C233	20268840	1	PC	CE 1U0F +20% 50.0V 85C
C234	20267830	1	PC	CE 47U0F +20% 16.0V 85C 20251640
C235	20267830	1	PC	CE 47U0F +20% 16.0V 85C 20251640
C236	20268840	1	PC	CE 1U0F +20% 50.0V 85C
C237	20267830	1	PC	CE 47U0F +20% 16.0V 85C 20251640
C238	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C239	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C240	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C241	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C242	20267830	1	PC	CE 47U0F +20% 16.0V 85C 20251640
C243	20267830	1	PC	CE 47U0F +20% 16.0V 85C 20251640
C312	20267830	1	PC	CE 47U0F +20% 16.0V 85C 20251640
C313	20267830	1	PC	CE 47U0F +20% 16.0V 85C 20251640
C317	20267830	1	PC	CE 47U0F +20% 16.0V 85C 20251640
C318	20267830	1	PC	CE 47U0F +20% 16.0V 85C 20251640
C321-325	20267830	5	PC	CE 47U0F +20% 16.0V 85C 20251640
C400	20268960	1	PC	CE 330N0F +20% 50.0V 85C
C401	20266320	1	PC	CPF 15N0F +10% 50.0V

Ref. Designator	Part Number	Qty		Description
MAIN PCB				
C402	20266840	1	PC	CPF 8N2F +10% 50.0V
C403	20268860	1	PC	CE 3U3F +20% 50.0V 85C
C404	20268860	1	PC	CE 3U3F +20% 50.0V 85C
C405	20266120	1	PC	CPF 1N0F +10% 50.0V
C406	20266120	1	PC	CPF 1N0F +10% 50.0V
C407	20251930	1	PC	CE 22U0F +20% 16.0V 85C
C407	20269020	1	PC	CE 100U0F +20% 16.0V 85C
C408	20251930	1	PC	CE 22U0F +20% 16.0V 85C
C408	20269020	1	PC	CE 100U0F +20% 16.0V 85C
C409	20268960	1	PC	CE 330N0F +20% 50.0V 85C
C410	20266320	1	PC	CPF 15N0F +10% 50.0V
C411	20266840	1	PC	CPF 8N2F +10% 50.0V
C413	20268860	1	PC	CE 3U3F +20% 50.0V 85C
C415	20268860	1	PC	CE 3U3F +20% 50.0V 85C
C417	20268860	1	PC	CE 3U3F +20% 50.0V 85C
C418	20268860	1	PC	CE 3U3F +20% 50.0V 85C
C420	20268860	1	PC	CE 3U3F +20% 50.0V 85C
C422	20268860	1	PC	CE 3U3F +20% 50.0V 85C
C427-432	20267830	6	PC	CE 47U0F +20% 16.0V 85C 20251640
C433	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C436	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C437	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C440	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C441	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C444	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C445	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C448	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C449	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C452	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C453	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C456	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C457	20269020	1	PC	CE 100U0F +20% 16.0V 85C
C461	55129660	1	PC	CPM 680N0F +10% 63.0V
C491	20268840	1	PC	CE 1U0F +20% 50.0V 85C
C492	20268840	1	PC	CE 1U0F +20% 50.0V 85C
C493	20268840	1	PC	CE 1U0F +20% 50.0V 85C
C900	11055580	1	PC	CC 4N7F +10% -10% 50.0V Y5P
C901	40432960	1	PC	CPM 47N0F +20% 100.0V
C902	11055580	1	PC	CC 4N7F +10% -10% 50.0V Y5P
C903	11055580	1	PC	CC 4N7F +10% -10% 50.0V Y5P
C904	40432960	1	PC	CPM 47N0F +20% 100.0V
C905	11055580	1	PC	CC 4N7F +10% -10% 50.0V Y5P
C906	11055580	1	PC	CC 4N7F +10% -10% 50.0V Y5P
C907	40432960	1	PC	CPM 47N0F +20% 100.0V
C908	11055580	1	PC	CC 4N7F +10% -10% 50.0V Y5P
C909	11055580	1	PC	CC 4N7F +10% -10% 50.0V Y5P
C910	40432960	1	PC	CPM 47N0F +20% 100.0V
C911	11055580	1	PC	CC 4N7F +10% -10% 50.0V Y5P
C912	11055580	1	PC	CC 4N7F +10% -10% 50.0V Y5P
C913	40432960	1	PC	CPM 47N0F +20% 100.0V
C914	11055580	1	PC	CC 4N7F +10% -10% 50.0V Y5P
C915	11055580	1	PC	CC 4N7F +10% -10% 50.0V Y5P
C916	11055580	1	PC	CC 4N7F +10% -10% 50.0V Y5P
C917	40432960	1	PC	CPM 47N0F +20% 100.0V
C951	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C953	20268880	1	PC	CE 10U0F +20% 50.0V 85C

Ref. Designator	Part Number	Qty		Description
MAIN PCB				
C954	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C955	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C956	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C958	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C959	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C960	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C962	20252670	1	PC	CE 470U0F +20% 10.0V 85C
C963	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C964	20252670	1	PC	CE 470U0F +20% 10.0V 85C
C965	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C967	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C968	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C969	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C971	20252670	1	PC	CE 470U0F +20% 10.0V 85C
C972	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C973	20252670	1	PC	CE 470U0F +20% 10.0V 85C
C977	20267830	1	PC	CE 47U0F +20% 16.0V 85C 20251640
C978	20267830	1	PC	CE 47U0F +20% 16.0V 85C 20251640
C980	20267830	1	PC	CE 47U0F +20% 16.0V 85C 20251640
C982	20267830	1	PC	CE 47U0F +20% 16.0V 85C 20251640
C120	55183340	1	PC	CE 8MI2F +20% 80.0V 85C
C121	55183340	1	PC	CE 8MI2F +20% 80.0V 85C
C127	40433130	1	PC	CE 2MI2F +20% 35.0V 85C
C128	40433130	1	PC	CE 2MI2F +20% 35.0V 85C
C138	55126160	1	PC	CE 6MI8F +20% 16.0V 85C
C461	55129660	1	PC	CPM 680N0F +10% 63.0V
Semiconductors				
D122	20496510	1	PC	D-SLP 1SS355 35.0V 225MI0A
D200	20496510	1	PC	D-SLP 1SS355 35.0V 225MI0A
D201	20496510	1	PC	D-SLP 1SS355 35.0V 225MI0A
D951	20496510	1	PC	D-SLP 1SS355 35.0V 225MI0A
IC107	20718770	1	PC	IC-LOGIC BU4053BF MULTIPLEXER CMOS
IC108	20920060	1	PC	IC-OPERAMP KIA4558F DUAL OP
IC202	20920060	1	PC	IC-OPERAMP KIA4558F DUAL OP
IC301	20920060	1	PC	IC-OPERAMP KIA4558F DUAL OP
IC302	20920060	1	PC	IC-OPERAMP KIA4558F DUAL OP
IC303	20920060	1	PC	IC-OPERAMP KIA4558F DUAL OP
IC400	5518734064	1	PC	IC-LOWFREQ M62446AFP D61G MITSUBISHI TONE/VOL/BAL/MUTE
IC401	20920060	1	PC	IC-OPERAMP KIA4558F DUAL OP
IC402	20920060	1	PC	IC-OPERAMP KIA4558F DUAL OP
IC403	20920060	1	PC	IC-OPERAMP KIA4558F DUAL OP
IC901	55192900	1	PC	IC-SWITCH BA7626F SOP16 VIDEO
IC902	55192900	1	PC	IC-SWITCH BA7626F SOP16 VIDEO
IC903	55192900	1	PC	IC-SWITCH BA7626F SOP16 VIDEO
IC904	20718660	1	PC	IC-LOGIC BU4094BF SHIFT REGISTER CMOS
Q109	55133190	1	PC	TR-SSD DTA114YKA P 10K0 OHM 47K0 OHM
Q110	55039430	1	PC	TR-SSD DTC323TK N 2K2 OHM
Q111	55039430	1	PC	TR-SSD DTC323TK N 2K2 OHM
D123	20421210	1	PC	D-ZENER 1N5242B 12.0V 500MI0W
D400	20526960	1	PC	D-ZENER 1N5231B 5.1V 500MI0W
D400	20526990	1	PC	D-ZENER 1N5235B 6.8V 500MI0W
D401	20526960	1	PC	D-ZENER 1N5231B 5.1V 500MI0W
D401	20526990	1	PC	D-ZENER 1N5235B 6.8V 500MI0W
D402-417	70436540	16	PC	D-SLP 1N4148 100.0V 150E-3A

Ref. Designator	Part Number	Qty		Description
MAIN PCB				
D418	20526960	1	PC	D-ZENER 1N5231B 5.1V 500MI0W
Q102	20508210	1	PC	TR-SLPLF KTA1266 Y P 150MI0A
Q103	20508210	1	PC	TR-SLPLF KTA1266 Y P 150MI0A
Q104	55133250	1	PC	TR-SLPLF 2SC1740S R N 150MI0A 50V
Q105	55133250	1	PC	TR-SLPLF 2SC1740S R N 150MI0A 50V
Q106	20508210	1	PC	TR-SLPLF KTA1266 Y P 150MI0A
Q107	20556600	1	PC	TR-SHPLF KTC3200BL N 100MI0A 120V
Q108	55133230	1	PC	TR-SLPLF KTA1268 GR P 100MI0A -120V
Q400-403	55133220	4	PC	TR-SLPLF DTA114YSA P 100MI0A
Q404-410	55133290	7	PC	TR-SLPLF KTD1302 B N 300MI0A 20V
Q900	20508080	1	PC	TR-SLPLF KTC3198BL N 150MI0A
Q951	55180600	1	PC	TR-SLPLF 2SA933S P -150MI0A -50V
Q952	55180600	1	PC	TR-SLPLF 2SA933S P -150MI0A -50V
Q953	55180600	1	PC	TR-SLPLF 2SA933S P -150MI0A -50V
Q954	55157120	1	PC	TR-SLPLF KTC2874 A N 300MI0A 20V
Q955	55157120	1	PC	TR-SLPLF KTC2874 A N 300MI0A 20V
Q956	55157120	1	PC	TR-SLPLF KTC2874 A N 300MI0A 20V
Q957	55180600	1	PC	TR-SLPLF 2SA933S P -150MI0A -50V
Q958	55180600	1	PC	TR-SLPLF 2SA933S P -150MI0A -50V
Q959	55157120	1	PC	TR-SLPLF KTC2874 A N 300MI0A 20V
Q960	55157120	1	PC	TR-SLPLF KTC2874 A N 300MI0A 20V
Q961	55180600	1	PC	TR-SLPLF 2SA933S P -150MI0A -50V
Q962	55157120	1	PC	TR-SLPLF KTC2874 A N 300MI0A 20V
Q963	55133220	1	PC	TR-SLPLF DTA114YSA P 100MI0A
Q971	55133220	1	PC	TR-SLPLF DTA114YSA P 100MI0A
D112	55134080	1	PC	D-BRDLC RS603M
D113-116	20415060	4	PC	D-SR 1N4004 400.0V 1.0A
D119	20415060	1	PC	D-SR 1N4004 400.0V 1.0A
D120	20415060	1	PC	D-SR 1N4004 400.0V 1.0A
D900	20525530	1	PC	D-SR 1N4003 200.0V 1A
IC102	20832440	1	PC	IC-REGPOSFXD KIA7815API NORMAL
IC103	55124020	1	PC	IC-REGNEGFXD KIA7915PI NORMAL
IC104	55123960	1	PC	IC-REGPOSFXD KIA7805API NORMAL
IC106	55125450	1	PC	IC-REGPOSFXD BA033T NORMAL
IC200	20832580	1	PC	IC-SWITCH LC78211 ANALOG SWITCH
IC201	20832580	1	PC	IC-SWITCH LC78211 ANALOG SWITCH
IC300	55125460	1	PC	IC-SWITCH KIC9162AN ANALOG SWITCH
IC905	55179630	1	PC	PHOTCOUP PC-17T1 PHOTOCOUPLER DIP4
Resistors				
R116	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R117	11066500	1	PC	RMGCFMIN 68K0 OHM +5% 100MI0W
R118	11066440	1	PC	RMGCFMIN 3K3 OHM +5% 100MI0W
R121	40438290	1	PC	RMGCFMIN 1K5 OHM +5% 100MI0W
R122	11066420	1	PC	RMGCFMIN 390R0 OHM +5% 100MI0W
R122	20471940	1	PC	RMGCFMIN 680R0 OHM +5% 100MI0W
R122	50886560	1	PC	RMGCFMIN 750R0 OHM +5% 100MI0W
R123	20471940	1	PC	RMGCFMIN 680R0 OHM +5% 100MI0W
R124	60444400	1	PC	RMGCFMIN 22K0 OHM +5% 100MI0W
R126	11066540	1	PC	RMGCFMIN 560K0 OHM +5% 100MI0W
R129	11066540	1	PC	RMGCFMIN 560K0 OHM +5% 100MI0W
R131	11066440	1	PC	RMGCFMIN 3K3 OHM +5% 100MI0W
R132	80440390	1	PC	RMGCFMIN 2K2 OHM +5% 100MI0W
R133	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R135	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W

Ref. Designator	Part Number	Qty		Description
MAIN PCB				
R137	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R138	80440390	1	PC	RMGCFMIN 2K2 OHM +5% 100MI0W
R139	30944310	1	PC	RMGCFMIN 4K7 OHM +5% 100MI0W
R140	30944310	1	PC	RMGCFMIN 4K7 OHM +5% 100MI0W
R150	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R151	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R152	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R153	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R154	50886550	1	PC	RMGCFMIN 560R0 OHM +5% 100MI0W
R155	50886550	1	PC	RMGCFMIN 560R0 OHM +5% 100MI0W
R156	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R157	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R200-207	90574400	8	PC	RMGCFMIN 470R0 OHM +5% 100MI0W
R210-215	90574400	6	PC	RMGCFMIN 470R0 OHM +5% 100MI0W
R216	20471920	1	PC	RMGCFMIN 220R0 OHM +5% 100MI0W
R218	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R219	11066480	1	PC	RMGCFMIN 47K0 OHM +5% 100MI0W
R220	90574400	1	PC	RMGCFMIN 470R0 OHM +5% 100MI0W
R221	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R222	20471920	1	PC	RMGCFMIN 220R0 OHM +5% 100MI0W
R223	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R225	11066480	1	PC	RMGCFMIN 47K0 OHM +5% 100MI0W
R226	90574400	1	PC	RMGCFMIN 470R0 OHM +5% 100MI0W
R227	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R228	20471920	1	PC	RMGCFMIN 220R0 OHM +5% 100MI0W
R229	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R234	20471920	1	PC	RMGCFMIN 220R0 OHM +5% 100MI0W
R236	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R237	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R238	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R244	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R245	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R291-294	50886630	4	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R300	20471920	1	PC	RMGCFMIN 220R0 OHM +5% 100MI0W
R300	90574400	1	PC	RMGCFMIN 470R0 OHM +5% 100MI0W
R301	20471920	1	PC	RMGCFMIN 220R0 OHM +5% 100MI0W
R301	90574400	1	PC	RMGCFMIN 470R0 OHM +5% 100MI0W
R302	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R303	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R304	20471920	1	PC	RMGCFMIN 220R0 OHM +5% 100MI0W
R304	20471940	1	PC	RMGCFMIN 680R0 OHM +5% 100MI0W
R305	20471920	1	PC	RMGCFMIN 220R0 OHM +5% 100MI0W
R305	20471940	1	PC	RMGCFMIN 680R0 OHM +5% 100MI0W
R306	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R307	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R308	20471920	1	PC	RMGCFMIN 220R0 OHM +5% 100MI0W
R308	20471940	1	PC	RMGCFMIN 680R0 OHM +5% 100MI0W
R309	80440400	1	PC	RMGCFMIN 5K6 OHM +5% 100MI0W
R310	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R311	90574430	1	PC	RMGCFMIN 18K0 OHM +5% 100MI0W
R320	50886550	1	PC	RMGCFMIN 560R0 OHM +5% 100MI0W
R321	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R324	70434200	1	PC	RMGCFMIN 100R0 OHM +5% 100MI0W
R325	70434200	1	PC	RMGCFMIN 100R0 OHM +5% 100MI0W
R326	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R327	70434230	1	PC	RMGCFMIN 1K2 OHM +5% 100MI0W

Ref. Designator	Part Number	Qty		Description
MAIN PCB				
R328	80440390	1	PC	RMGCFMIN 2K2 OHM +5% 100MI0W
R330	70434230	1	PC	RMGCFMIN 1K2 OHM +5% 100MI0W
R331	80440390	1	PC	RMGCFMIN 2K2 OHM +5% 100MI0W
R333	11066440	1	PC	RMGCFMIN 3K3 OHM +5% 100MI0W
R334	11066440	1	PC	RMGCFMIN 3K3 OHM +5% 100MI0W
R335-338	11066440	4	PC	RMGCFMIN 3K3 OHM +5% 100MI0W
R339	60444370	1	PC	RMGCFMIN 180R0 OHM +5% 100MI0W
R340	60444370	1	PC	RMGCFMIN 180R0 OHM +5% 100MI0W
R341	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R342	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R344	80440400	1	PC	RMGCFMIN 5K6 OHM +5% 100MI0W
R402	70434200	1	PC	RMGCFMIN 100R0 OHM +5% 100MI0W
R403	70434200	1	PC	RMGCFMIN 100R0 OHM +5% 100MI0W
R404	15268430	1	PC	RMGCFMIN 1R0 OHM +5% 100MI0W
R405	15268430	1	PC	RMGCFMIN 1R0 OHM +5% 100MI0W
R408	60444390	1	PC	RMGCFMIN 3K9 OHM +5% 100MI0W
R409	60444390	1	PC	RMGCFMIN 3K9 OHM +5% 100MI0W
R410	60444390	1	PC	RMGCFMIN 3K9 OHM +5% 100MI0W
R412	60444390	1	PC	RMGCFMIN 3K9 OHM +5% 100MI0W
R413	60444390	1	PC	RMGCFMIN 3K9 OHM +5% 100MI0W
R414	60444390	1	PC	RMGCFMIN 3K9 OHM +5% 100MI0W
R415	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R416	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R417	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R426-431	70434200	6	PC	RMGCFMIN 100R0 OHM +5% 100MI0W
R432	50886550	1	PC	RMGCFMIN 560R0 OHM +5% 100MI0W
R433	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R434	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R435	11066460	1	PC	RMGCFMIN 8K2 OHM +5% 100MI0W
R436	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R437	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R438	50886550	1	PC	RMGCFMIN 560R0 OHM +5% 100MI0W
R439	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R440	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R441	11066460	1	PC	RMGCFMIN 8K2 OHM +5% 100MI0W
R442	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R443	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R444	50886550	1	PC	RMGCFMIN 560R0 OHM +5% 100MI0W
R445	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R446	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R447	11066460	1	PC	RMGCFMIN 8K2 OHM +5% 100MI0W
R448	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R449	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R450	50886550	1	PC	RMGCFMIN 560R0 OHM +5% 100MI0W
R451	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R452	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R453	11066460	1	PC	RMGCFMIN 8K2 OHM +5% 100MI0W
R454	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R455	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R456	50886550	1	PC	RMGCFMIN 560R0 OHM +5% 100MI0W
R457	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R458	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R459	11066460	1	PC	RMGCFMIN 8K2 OHM +5% 100MI0W
R460	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R461	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R462	50886550	1	PC	RMGCFMIN 560R0 OHM +5% 100MI0W

Ref. Designator	Part Number	Qty		Description
MAIN PCB				
R463	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R464	90574410	1	PC	RMGCFMIN 910R0 OHM +5% 100MI0W
R465	30944340	1	PC	RMGCFMIN 27K0 OHM +5% 100MI0W
R465	60444400	1	PC	RMGCFMIN 22K0 OHM +5% 100MI0W
R465	90574430	1	PC	RMGCFMIN 18K0 OHM +5% 100MI0W
R466	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R467	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R478	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R479	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R480	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R482	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R483	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R484	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R951	90574370	1	PC	RMGCFMIN 82R0 OHM +5% 100MI0W
R952	30944250	1	PC	RMGCFMIN 10R0 OHM +5% 100MI0W
R953	90574370	1	PC	RMGCFMIN 82R0 OHM +5% 100MI0W
R954	90574370	1	PC	RMGCFMIN 82R0 OHM +5% 100MI0W
R955	90574370	1	PC	RMGCFMIN 82R0 OHM +5% 100MI0W
R956	30944250	1	PC	RMGCFMIN 10R0 OHM +5% 100MI0W
R957	90574370	1	PC	RMGCFMIN 82R0 OHM +5% 100MI0W
R958	90574370	1	PC	RMGCFMIN 82R0 OHM +5% 100MI0W
R959	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R960	11066390	1	PC	RMGCFMIN 75R0 OHM +5% 100MI0W
R961	11066390	1	PC	RMGCFMIN 75R0 OHM +5% 100MI0W
R962	11066390	1	PC	RMGCFMIN 75R0 OHM +5% 100MI0W
R963	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R964	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R965	90574370	1	PC	RMGCFMIN 82R0 OHM +5% 100MI0W
R966	30944250	1	PC	RMGCFMIN 10R0 OHM +5% 100MI0W
R967	90574370	1	PC	RMGCFMIN 82R0 OHM +5% 100MI0W
R968	90574370	1	PC	RMGCFMIN 82R0 OHM +5% 100MI0W
R969	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R970	11066390	1	PC	RMGCFMIN 75R0 OHM +5% 100MI0W
R971	11066390	1	PC	RMGCFMIN 75R0 OHM +5% 100MI0W
R972	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R973	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R974	11066390	1	PC	RMGCFMIN 75R0 OHM +5% 100MI0W
R975	60444380	1	PC	RMGCFMIN 270R0 OHM +5% 100MI0W
R976	60444350	1	PC	RMGCFMIN 47R0 OHM +5% 100MI0W
R977	11066480	1	PC	RMGCFMIN 47K0 OHM +5% 100MI0W
R978	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R979	70434200	1	PC	RMGCFMIN 100R0 OHM +5% 100MI0W
R980	70434200	1	PC	RMGCFMIN 100R0 OHM +5% 100MI0W
R982	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R983	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R984	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R985	70434200	1	PC	RMGCFMIN 100R0 OHM +5% 100MI0W
R987	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R988	70434200	1	PC	RMGCFMIN 100R0 OHM +5% 100MI0W
R989	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R990	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R994	20471950	1	PC	RMGCFMIN 1K0 OHM +5% 100MI0W
R994	20471990	1	PC	RMGCFMIN 12K0 OHM +5% 100MI0W
R995	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R996	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R997	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W

Ref. Designator	Part Number	Qty		Description
MAIN PCB				
R114	11059600	1	PC	RCF 120R0 OHM +5% 250MI0W
R115	20469460	1	PC	RCF 2K2 OHM +5% 250MI0W
R130	20469460	1	PC	RCF 2K2 OHM +5% 250MI0W
R148	11059600	1	PC	RCF 120R0 OHM +5% 250MI0W
R158	50882950	1	PC	RCF 100R0 OHM +5% 250MI0W
R159	50882950	1	PC	RCF 100R0 OHM +5% 250MI0W
R224	60441560	1	PC	RCF 560R0 OHM +5% 250MI0W
R230	60441560	1	PC	RCF 560R0 OHM +5% 250MI0W
R231	11059640	1	PC	RCF 1K0 OHM +5% 250MI0W
R232	11059640	1	PC	RCF 1K0 OHM +5% 250MI0W
R233	11059640	1	PC	RCF 1K0 OHM +5% 250MI0W
R239	20469450	1	PC	RCF 220R0 OHM +5% 250MI0W
R240	11059640	1	PC	RCF 1K0 OHM +5% 250MI0W
R241	11059640	1	PC	RCF 1K0 OHM +5% 250MI0W
R242	11059640	1	PC	RCF 1K0 OHM +5% 250MI0W
R243	20469450	1	PC	RCF 220R0 OHM +5% 250MI0W
R312	50882950	1	PC	RCF 100R0 OHM +5% 250MI0W
R313	50882950	1	PC	RCF 100R0 OHM +5% 250MI0W
R314	11059640	1	PC	RCF 1K0 OHM +5% 250MI0W
R315	11059640	1	PC	RCF 1K0 OHM +5% 250MI0W
R316	11059640	1	PC	RCF 1K0 OHM +5% 250MI0W
R329	50882950	1	PC	RCF 100R0 OHM +5% 250MI0W
R332	50882950	1	PC	RCF 100R0 OHM +5% 250MI0W
R418	40435670	1	PC	RCF 47K0 OHM +5% 250MI0W
R419	40435670	1	PC	RCF 47K0 OHM +5% 250MI0W
R420	40435670	1	PC	RCF 47K0 OHM +5% 250MI0W
R421	40435670	1	PC	RCF 47K0 OHM +5% 250MI0W
R422	11059780	1	PC	RCF 1M0 OHM +5% 250MI0W
R423	11059780	1	PC	RCF 1M0 OHM +5% 250MI0W
R424	11059780	1	PC	RCF 1M0 OHM +5% 250MI0W
R425	11059780	1	PC	RCF 1M0 OHM +5% 250MI0W
R468	20469460	1	PC	RCF 2K2 OHM +5% 250MI0W
R469-474	20469460	6	PC	RCF 2K2 OHM +5% 250MI0W
R475	11059670	1	PC	RCF 2K7 OHM +5% 250MI0W
R485	11059640	1	PC	RCF 1K0 OHM +5% 250MI0W
R491	20469460	1	PC	RCF 2K2 OHM +5% 250MI0W
R901	30939390	1	PC	RCF 39R0 OHM +5% 250MI0W
R902	30939390	1	PC	RCF 39R0 OHM +5% 250MI0W
R903	30939390	1	PC	RCF 39R0 OHM +5% 250MI0W
R904	30939390	1	PC	RCF 39R0 OHM +5% 250MI0W
R906-909	30939390	4	PC	RCF 39R0 OHM +5% 250MI0W
R911-914	30939390	4	PC	RCF 39R0 OHM +5% 250MI0W
R916-919	30939390	4	PC	RCF 39R0 OHM +5% 250MI0W
R921-924	30939390	4	PC	RCF 39R0 OHM +5% 250MI0W
R927	30939390	1	PC	RCF 39R0 OHM +5% 250MI0W
R928	30939390	1	PC	RCF 39R0 OHM +5% 250MI0W
R929	30939390	1	PC	RCF 39R0 OHM +5% 250MI0W
R930	50883000	1	PC	RCF 3K3 OHM +5% 250MI0W
R931	40435670	1	PC	RCF 47K0 OHM +5% 250MI0W
R932	30939390	1	PC	RCF 39R0 OHM +5% 250MI0W
R981	50882950	1	PC	RCF 100R0 OHM +5% 250MI0W
R986	50882950	1	PC	RCF 100R0 OHM +5% 250MI0W
R991	11059640	1	PC	RCF 1K0 OHM +5% 250MI0W
R992	11059640	1	PC	RCF 1K0 OHM +5% 250MI0W
R993	11059640	1	PC	RCF 1K0 OHM +5% 250MI0W
R127	20696190	1	PC	RW 100MI0 OHM +5% 5.0W 260PPM/'C 260PPM/'C

Ref. Designator	Part Number	Qty		Description
MAIN PCB				
R128	20696190	1	PC	RW 100MI0 OHM +5% 5.0W 260PPM/'C 260PPM/'C
R141-144	55154180	1	PC	RMFF 270MI0 OHM +10% 1.0W
R400	90572170	1	PC	RMOF 270R0 OHM +5% 1.0W
R401	90572160	1	PC	RMOF 220R0 OHM +5% 1.0W
R401	90572170	1	PC	RMOF 270R0 OHM +5% 1.0W
R900	15022710	1	PC	RMOF 10R0 OHM +5% 2.0W
R905	15022710	1	PC	RMOF 10R0 OHM +5% 2.0W
R910	15022710	1	PC	RMOF 10R0 OHM +5% 2.0W
R915	15022710	1	PC	RMOF 10R0 OHM +5% 2.0W
R920	15022710	1	PC	RMOF 10R0 OHM +5% 2.0W
R926	15022710	1	PC	RMOF 10R0 OHM +5% 2.0W
Miscellaneous				
CN116	55125040	1	PC	CONN 2.0MM 12 MA R NAT MOLEX 35237-1210 0 0
CN300	55158720	1	PC	WIRECONASY UNIQUE 10P 190MM UL1007 PVC DISCRETE 26 1
CN400	55142040	1	PC	WIRECONASY UNIQUE 10P 320MM UL1007 PVC DISCRETE 20 1
CN400	55177600	1	PC	CONN 2.5MM 10 MA ST NAT 0 0
CN501	55144670	1	PC	WIRECONASY UNIQUE 7P 90MM UL1007 PVC DISCRETE 22 1
CN502	55144680	1	PC	WIRECONASY UNIQUE 12P 80MM UL1007 PVC DISCRETE 26 1
CP116	55124970	1	PC	CONN 2.0MM 12 MA ST NAT MOLEX 35336-1210 0 0
CP301	55192770	1	PC	CONN 1.25MM 29 FE ST BK 00-8370-291-000-800 2794 A6
CP301	55192780	1	PC	CONN 1.25MM 29 FE R WH GF120-29S-LS 2794 A6
CP304	55090050	1	PC	CONN 2.0MM 10 MA ST NAT LW2002P10 0 0
CP401	55124990	1	PC	CONN 2.0MM 14 MA ST NAT MOLEX 35336-1410 0 0
CP402	55124960	1	PC	CONN 2.0MM 11 MA ST NAT MOLEX 35336-1110 0 0
CP503	55146610	1	PC	CONN 2.5MM 6 MA ST NAT 0 0
CP701	55171520	1	PC	CONN 2.0MM 5 MA ST NAT MOLEX 35336-0510 0 0
CP701	55174590	1	PC	CONN 2.0MM 9 MA ST NAT MOLEX 35336-0910 0 0
G100	55135980	1	PC	TERMLUG GND
J100-107	80440510	8	PC	RMGCFMIN 0 OHM +0% 100MI0W
J114	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
J116	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
J117	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
J119	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
J120	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
J122-130	80440510	9	PC	RMGCFMIN 0 OHM +0% 100MI0W
J143	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
J170	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
J2	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
J211	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
J231	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
J31	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
J57	80440510	1	PC	RMGCFMIN 0 OHM +0% 100MI0W
J601-604	80440510	4	PC	RMGCFMIN 0 OHM +0% 100MI0W
JK104	55208270	1	PC	CONN-SPE TERMINAL SPKR 8P SH FE 19MM 8 BN 0 0
JK105	55191390	1	PC	CONN-SPE TERMINAL SPKR 4P SH0410376P FE 19MM 4 BK 0 0
JK106	55176330	1	PC	CON PHONO SCKT RCA 4P JW4104RS GND
JK107	55176330	1	PC	CON PHONO SCKT RCA 4P JW4104RS GND
JK109	55088230	1	PC	CON PHONO SCKT RCA-606P 6 PINS
JK110	55208190	1	PC	CON PHONO SCKT RCA 6P JACK JW-4105RSH
JK110	55226340	1	PC	CON PHONO SCKT RCA 6P JACK JW-4105RSI
JK111	55191370	1	PC	CON PHONO SCKT RCA 1P JACK JE010003XN
JK111	55219250	1	PC	CON PHONO SCKT RCA 1P W/GND CAP JE010003QN BN
JK112-116	55149520	5	PC	CON DIN SCKT MIX SOCKET RCA-118JP1S
JK117	55192840	1	PC	CON PHONO SCKT REMOTE IN OUT 2 PINS

Ref. Designator	Part Number	Qty		Description
MAIN PCB				
JK118	55208270	1	PC	CONN-SPE TERMINAL SPKR 8P SH FE 19MM 8 BN 0 0
L900-905	21070690	6	PC	LFA 1MM 10MM 7 LEFT 0.0MM NONE
RY900	55091520	1	PC	RELAYPWR 24.0V 1K1OHM 5.0A
RY900	55127410	1	PC	RELAYPWR 24.0V 1K1OHM 5.0A 30.0V
W101	55163540	1	PC	WIRECONASY UNIQUE 1P 100MM UL1007 PVC DISCRETE 18 1
W102	55285990	1	PC	WIRECONASY UNIQUE 1P 300MM UL1007 PVC DISCRETE 16 1
W103	55337550	1	PC	WIRECONASY UNIQUE 1P 180MM UL1007 RIBBON 18 1
W104	55337550	1	PC	WIRECONASY UNIQUE 1P 180MM UL1007 RIBBON 18 1
POWER PCB				
Capacitors				
C105	40432960	1	PC	CPM 47N0F +20% 100.0V
C106	40432960	1	PC	CPM 47N0F +20% 100.0V
C107	40432960	1	PC	CPM 47N0F +20% 100.0V
C109	20267420	1	PC	CE 1U0F +20% 50.0V 105C
C110	20246470	1	PC	CC 100N0F +80% -20% 25.0V Z5V
C111	55127400	1	PC	CE 560N0F +20% 50.0V 85C
C112	55095410	1	PC	CPM 220N0F +10% 63.0V
C113	13074540	1	PC	CE 100U0F +20% 50.0V 85C
C114	13055500	1	PC	CE 10U0F +20% 50.0V 85C
C101	55095470	1	PC	CC 4N7F +20% -20% 250.0V Y5V
C102	55095470	1	PC	CC 4N7F +20% -20% 250.0V Y5V
C103	55095460	1	PC	CPPMX 100N0F +20% -20%
C104	55095470	1	PC	CC 4N7F +20% -20% 250.0V Y5V
C108	20268030	1	PC	CE 1MI0F +20% 25.0V 85C
Semiconductors				
D106	70436540	1	PC	D-SLP 1N4148 100.0V 150E-3A
D110	20475340	1	PC	D-ZENER BZX55B30 30V 500MI0W
D111	20454630	1	PC	D-ZENER 1N5239B 9.1V 500MI0W
D124	20526960	1	PC	D-ZENER 1N5231B 5.1V 500MI0W
D129	70436540	1	PC	D-SLP 1N4148 100.0V 150E-3A
Q101	55133250	1	PC	TR-SLPLF 2SC1740S R N 150MI0A 50V
Q102	55133350	1	PC	TR-SLPLF MPSA56 Y P -500MI0A -300V
D101-105	20415060	5	PC	D-SR 1N4004 400.0V 1.0A
D107	20415060	1	PC	D-SR 1N4004 400.0V 1.0A
D108	20415060	1	PC	D-SR 1N4004 400.0V 1.0A
D109	20415060	1	PC	D-SR 1N4004 400.0V 1.0A
IC101	20361320	1	PC	IC-REGPOSFXD KIA7806PI NORMAL
Resistors				
R101	11059580	1	PC	RCF 56R0 OHM +5% 250MI0W
R102	50883000	1	PC	RCF 3K3 OHM +5% 250MI0W
R103	30939370	1	PC	RCF 15R0 OHM +5% 250MI0W
R104	40435640	1	PC	RCF 4K7 OHM +5% 250MI0W
R105	40435640	1	PC	RCF 4K7 OHM +5% 250MI0W
R106	30939360	1	PC	RCF 10R0 OHM +5% 250MI0W
R107	30939480	1	PC	RCF 10K0 OHM +5% 250MI0W
R108	11059640	1	PC	RCF 1K0 OHM +5% 250MI0W
R109	11067570	1	PC	RCF 1R0 OHM +5% 250MI0W
R110	11067570	1	PC	RCF 1R0 OHM +5% 250MI0W
R100	15041100	1	PC	RA 3M3 OHM +10% 500MI0W

Ref. Designator	Part Number	Qty		Description
POWER PCB				
R100	55180100	1	PC	RA 3M3 OHM +10% 500MI0W
Miscellaneous				
CP102	55123510	1	PC	CON 3.96MM PITCH HEADER 2 POS MOLEX 35328-0210
CP303	55090060	1	PC	CONN 2.0MM 7 MA ST NAT LW2002P07 0 0
CP400	55142040	1	PC	WIRECONASY UNIQUE 10P 320MM UL1007 PVC DISCRETE 20 1
CP400	55177600	1	PC	CONN 2.5MM 10 MA ST NAT 0 0
F101	55161150	1	PC	FUSULSLWBL 6.0 A 125.0 V
FC101	20413370	1	PC	TERMFUSEHLDR FUSE-HOLDER
FC101	55017140	1	PC	TERMFUSEHLDR FUSE-HOLDER
FC102	20413370	1	PC	TERMFUSEHLDR FUSE-HOLDER
FC102	55017140	1	PC	TERMFUSEHLDR FUSE-HOLDER
RY101	55091500	1	PC	RELAYPWR 12.0V 270.0OHM 10.0A 250.0V
TRS2	55131680	1	PC	TF-LAM 110V STANDBY 120V
PROTECT PCB				
D1	20414280	1	PC	D-ZENER 1N5232B 5.6V 500MI0W
D1	20454630	1	PC	D-ZENER 1N5239B 9.1V 500MI0W
D2	70436540	1	PC	D-SLP 1N4148 100.0V 150E-3A
D3	70436540	1	PC	D-SLP 1N4148 100.0V 150E-3A
R1	70430560	1	PC	RCF 5K6 OHM +5% 250MI0W
R2	30939510	1	PC	RCF 100K0 OHM +5% 250MI0W
R3	11059640	1	PC	RCF 1K0 OHM +5% 250MI0W
R4	40435640	1	PC	RCF 4K7 OHM +5% 250MI0W
R4	60441570	1	PC	RCF 5K1 OHM +5% 250MI0W
R5	20471960	1	PC	RMGCFMIN 1K8 OHM +5% 100MI0W
R5	40435640	1	PC	RCF 4K7 OHM +5% 250MI0W
R5	80437010	1	PC	RCF 1K8 OHM +5% 250MI0W
Q1	55133250	1	PC	TR-SLPLF 2SC1740S R N 150MI0A 50V
	20634190	1	PC	FELT BK 30.0MM X 25.0MM 0.8MM 0MM 0MM 0 0
CN1	55384540	1	PC	WIRECONASY UNIQUE 3P 340MM UL1007 RIBBON 24
CP1	55146560	1	PC	CONN 2.5MM 2 MA ST NAT 0 0
CP2	55146560	1	PC	CONN 2.5MM 2 MA ST NAT 0 0
SUBWOOFER PCB				
Capacitors				
C15	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C16	20267290	1	PC	CCCFMIN 100N0F +80% -20% 50.0V Y5V
C19	11059340	1	PC	CCCFMIN 10N0F +10% -10% 50.0V X7R
C10	20267830	1	PC	CE 47U0F +20% 16.0V 85C 20251640
C11	20268850	1	PC	CE 2U2F +20% 50.0V 85C
C17	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C18	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C20	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C20	20268980	1	PC	CE 22U0F +20% 50.0V 85C
C51	55129660	1	PC	CPM 680N0F +10% 63.0V
C7	20267830	1	PC	CE 47U0F +20% 16.0V 85C 20251640
C8	20267830	1	PC	CE 47U0F +20% 16.0V 85C 20251640
C9	20267830	1	PC	CE 47U0F +20% 16.0V 85C 20251640
C17	20268880	1	PC	CE 10U0F +20% 50.0V 85C
C18	20268880	1	PC	CE 10U0F +20% 50.0V 85C

Ref. Designator	Part Number	Qty		Description
SUBWOOFER PCB				
Semiconductors				
D6	20496510	1	PC	D-SLP 1SS355 35.0V 225MI0A
D7	20496510	1	PC	D-SLP 1SS355 35.0V 225MI0A
IC4	20920060	1	PC	IC-OPERAMP KIA4558F DUAL OP
IC5	20920060	1	PC	IC-OPERAMP KIA4558F DUAL OP
D6	70436540	1	PC	D-SLP 1N4148 100.0V 150E-3A
D7	70436540	1	PC	D-SLP 1N4148 100.0V 150E-3A
Q410	55133290	1	PC	TR-SLPLF KTD1302 B N 300MI0A 20V
Q5	20508080	1	PC	TR-SLPLF KTC3198BL N 150MI0A
Q6	20508080	1	PC	TR-SLPLF KTC3198BL N 150MI0A
Resistors				
R29	70434250	1	PC	RMGCFMIN 15K0 OHM +5% 100MI0W
R30	11066510	1	PC	RMGCFMIN 120K0 OHM +5% 100MI0W
R31	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R31	90574430	1	PC	RMGCFMIN 18K0 OHM +5% 100MI0W
R32	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R32	90574430	1	PC	RMGCFMIN 18K0 OHM +5% 100MI0W
R33	50886670	1	PC	RMGCFMIN 1M0 OHM +5% 100MI0W
R34	50886670	1	PC	RMGCFMIN 1M0 OHM +5% 100MI0W
R35	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R36	40438350	1	PC	RMGCFMIN 470K0 OHM +5% 100MI0W
R36	70434290	1	PC	RMGCFMIN 220K0 OHM +5% 100MI0W
R37	80440500	1	PC	RMGCFMIN 7M5 OHM +10% 100MI0W
R38	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R39	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R40	20471930	1	PC	RMGCFMIN 510R0 OHM +5% 100MI0W
R40	60444400	1	PC	RMGCFMIN 22K0 OHM +5% 100MI0W
R41	60444400	1	PC	RMGCFMIN 22K0 OHM +5% 100MI0W
R42	60444400	1	PC	RMGCFMIN 22K0 OHM +5% 100MI0W
R43	20471930	1	PC	RMGCFMIN 510R0 OHM +5% 100MI0W
R44	50886610	1	PC	RMGCFMIN 10K0 OHM +5% 100MI0W
R44	50886630	1	PC	RMGCFMIN 100K0 OHM +5% 100MI0W
R47	30944310	1	PC	RMGCFMIN 4K7 OHM +5% 100MI0W
R491	20469460	1	PC	RCF 2K2 OHM +5% 250MI0W
R51	11059640	1	PC	RCF 1K0 OHM +5% 250MI0W
Miscellaneous				
CN701	55174640	1	PC	CONN 2.0MM 9 MA R NAT SOCKET MOLEX 35237-0910 0 0
CN701	55206580	1	PC	CONN 2.0MM 5 MA R NAT BD'BD SOCKET MOLEX 35237-0510 0 0
CN702	55174640	1	PC	CONN 2.0MM 9 MA R NAT SOCKET MOLEX 35237-0910 0 0
CN702	55206580	1	PC	CONN 2.0MM 5 MA R NAT BD'BD SOCKET MOLEX 35237-0510 0 0
CN703	55090070	1	PC	CONN 2.0MM 2 MA ST NAT LW2002P0200T 0 0
CN703	55206610	1	PC	WIRECONASY UNIQUE 2P 300MM UL1007 RIBBON 26
CN703	55236790	1	PC	WIRECONASY UNIQUE 2P 420MM UL1007 PVC DISCRETE 26 1
CP702	55171520	1	PC	CONN 2.0MM 5 MA ST NAT MOLEX 35336-0510 0 0
CP702	55174590	1	PC	CONN 2.0MM 9 MA ST NAT MOLEX 35336-0910 0 0
TUNER PCB (ENTIRE ASSEMBLY)				
	55192890			

DCR600II PACKING/ACCESSORIES

Description	Part Number
Cinema Propack™ 600II System Outer carton	WG5359
DCR600II Outer carton	55281240
DCR600II Remote Control	55251910
Cinema Propack™ 600II System Owner's Manual	(N/A) Download PDF copy on-line HERE
Foam End - Left	55192670
Foam End - Right	55192680
AM Antenna Loop	55127490
FM Antenna cable 75Ω	55127450
Five pairs of speaker cables, receiver to sats:	
Blue	sal5009-1
Yellow	sal5009-2
Green	sal5009-3
White	sal063
Red	sal063
15 foot cable set, receiver to subwoofer	sal063-52
5 foot triple, red/wht/yellow RCA cable, DCR600II receiver to TV set	55176530
3 foot single orange RCA cable, DCR600II receiver to DVD600II	55186190
3 foot single yellow RCA cable, DCR600II receiver to DVD600II	55192120
1 single mini-phono jack for remote in/out	J94310004000

SONY

CXP82832/82840/82852/82860

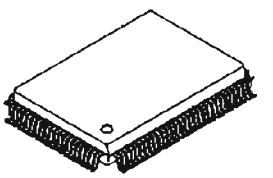
CMOS 8-bit Single Chip Microcomputer

Description

The CXP82832/82840/82852/82860 is a CMOS 8-bit single chip microcomputer integrating on a single chip an A/D converter, serial interface, timer/counter, time base timer, capture timer/counter, fluorescent display panel controller/driver, remote control reception circuit, and PWM output besides the basic configurations of 8-bit CPU, ROM, RAM, and I/O port.

The CXP82832/82840/82852/82860 also provides sleep/stop function that enables lower power consumption.

100 pin QFP (Plastic)



Structure

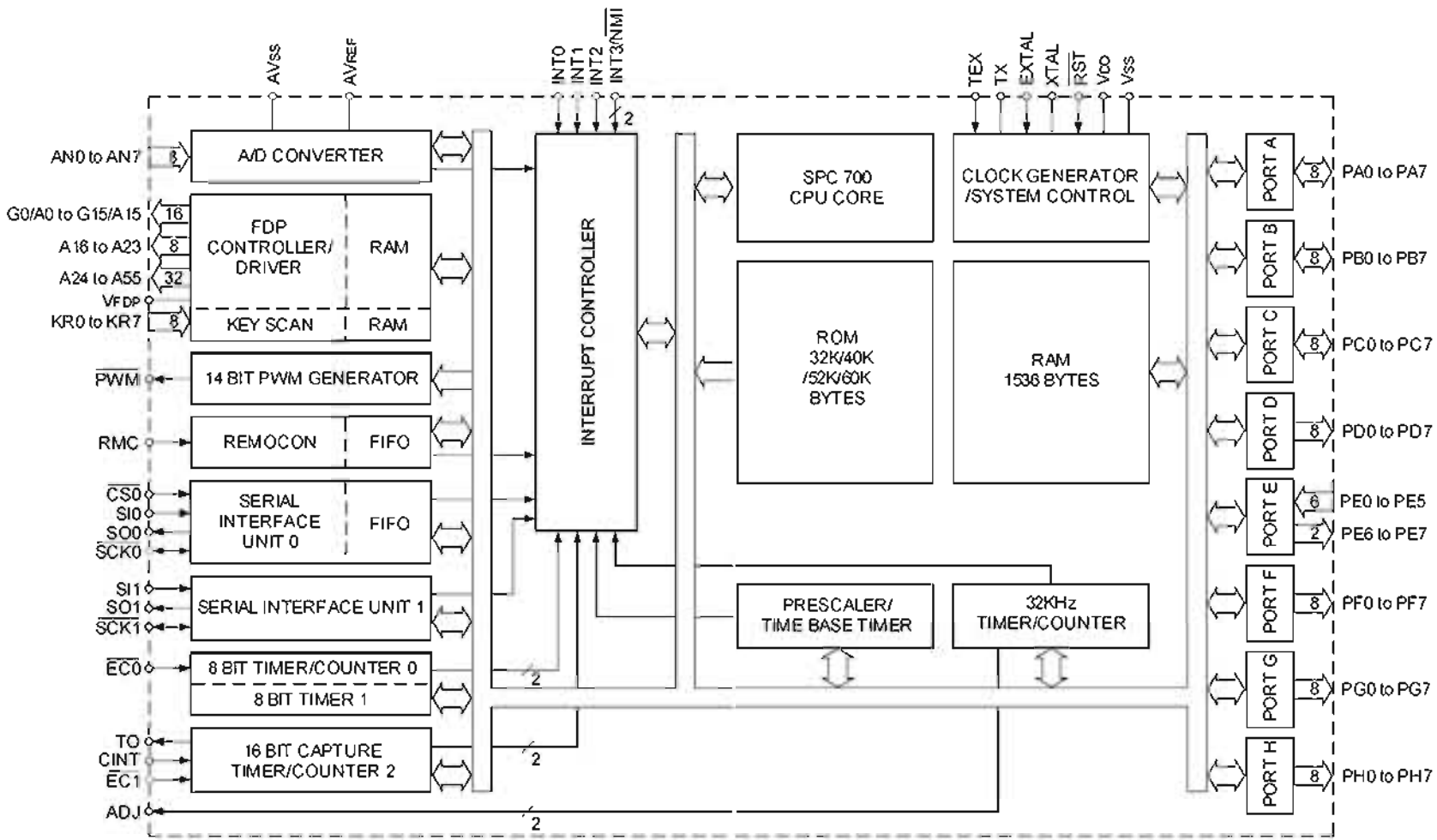
Silicon gate CMOS IC

Features

- Wide-range instruction system (213 instructions) to cover various types of data
  — 16-bit arithmetic/multiplication and division/boolean bit operation instructions

• Minimum instruction cycle	400ns at 10MHz operation (122µs at 32kHz operation)
• Incorporated ROM capacity	32K bytes (CXP82832) 40K bytes (CXP82840) 52K bytes (CXP82852) 60K bytes (CXP82860)
• Incorporated RAM capacity	1536 bytes (including fluorescent display area)
• Peripheral functions	
— A/D converter	8 bits, 8 channels, successive approximation method (Conversion time of 32µs/10MHz)
— Serial interface	8-bit, 8-stage FIFO incorporated (Auto transfer for 1 to 8 bytes), 1 channel 8-bit clock synchronized type, 1 channel
— Timers	8-bit timer, 8-bit timer/counter, 19-bit time base timer 16-bit capture timer/counter, 32kHz timer/counter
— Fluorescent display panel controller/driver	Supports the universal grid fluorescent display panel. High voltage drive output port of 56 pins (40V) Maximum of 640 segments display possible Display timing number of 1 to 20 Dimmer function Incorporated pull-down resistor (Mask option) Hardware key scan function (Maximum of 16 × 8 key matrix supportable)
— Remote control reception circuit	8-bit pulse measurement counter, 6-stage FIFO
— PWM output	14 bits, 1 channel
• Interruption	16 factors, 15 vectors, multi-interruption possible
• Standby mode	SLEEP/STOP
• Package	100-pin plastic QFP
• Piggyback/evaluation chip	CXP82800 100-pin ceramic QFP

Block Diagram

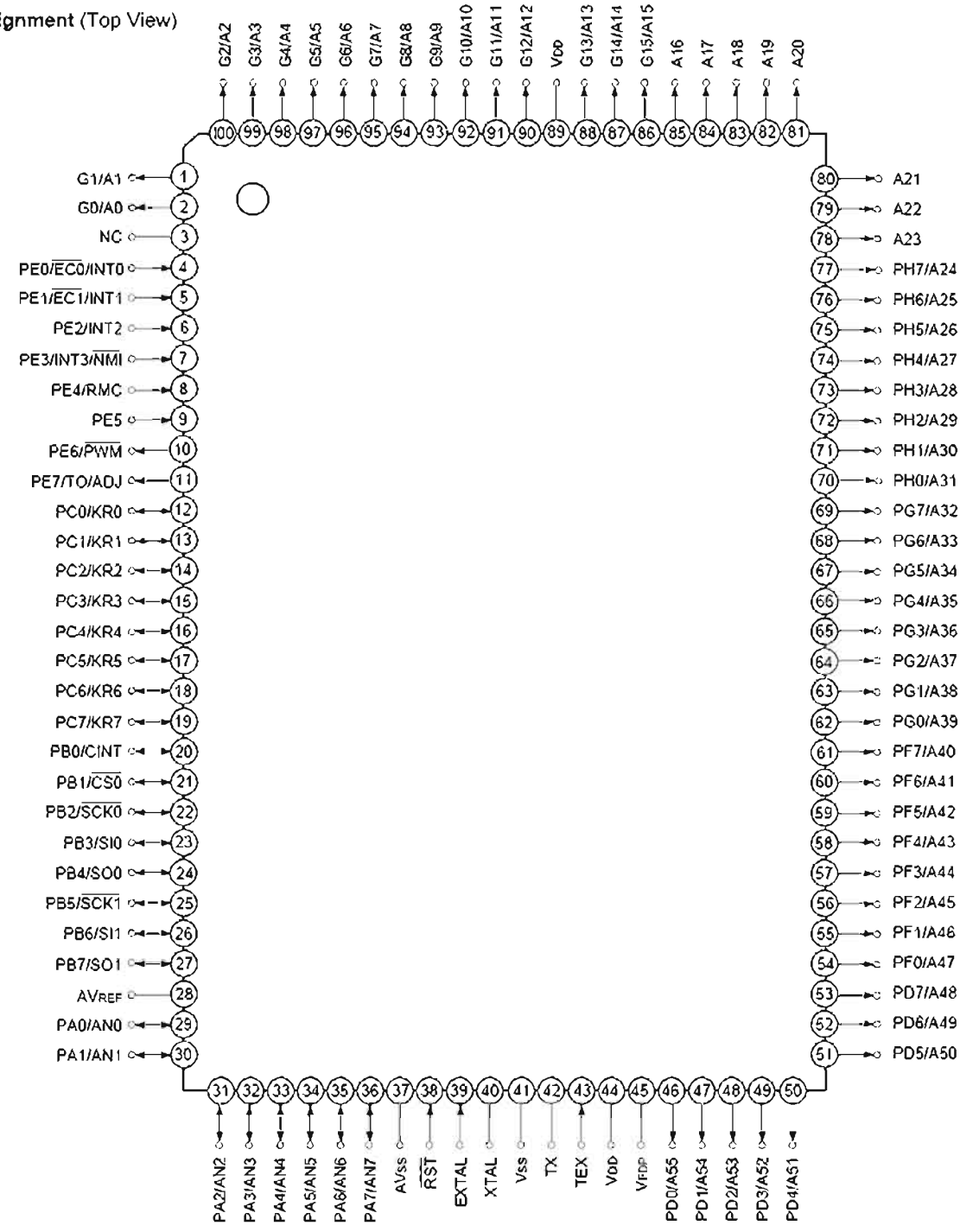


CMOS 8-Bit Single Chip Microcomputer IC

CXP82860

SONY

Pin Assignment (Top View)



Note) 1. NC (Pin 3) must be connected to V_{DD}.

2. V_{DD} (Pins 44 and 89) must be connected to V_{DD}.

<table>
<tr><th>Pin code</th><th>I/O</th><th colspan="3">Functions</th></tr>
<tr><td>PA0/AN0
to
PA7/AN7</td><td>I/O/
Analog input</td><td>(Port A)
8-bit I/O port. I/O can be set in a unit of single bits. Incorporation of the pull-up resistor can be set through the software in a unit of 4 bits.
(8pins)</td><td colspan="2">Analog inputs to A/D converter.
(8 pins)</td></tr>
<tr><td>PB0/CINT</td><td>I/O/Input</td><td rowspan="8">(Port B)
8-bit I/O port. I/O can be set in a unit of single bits. Incorporation of the pull-up resistor can be set through the software in a unit of 4 bits.
(8 pins)</td><td colspan="2">Capture input to 16-bit timer/counter.</td></tr>
<tr><td>PB1/$\overline{CS0}$</td><td>I/O/Input</td><td colspan="2">Chip select input for serial interface (CH0).</td></tr>
<tr><td>PB2/$\overline{SCK0}$</td><td>I/O/I/O</td><td colspan="2">Serial clock I/O (CH0).</td></tr>
<tr><td>PB3/SI0</td><td>I/O/Input</td><td colspan="2">Serial data input (CH0).</td></tr>
<tr><td>PB4/SO0</td><td>I/O/Output</td><td colspan="2">Serial data output (CH0).</td></tr>
<tr><td>PB5/$\overline{SCK1}$</td><td>I/O/I/O</td><td colspan="2">Serial clock I/O (CH1).</td></tr>
<tr><td>PB6/SI1</td><td>I/O/Input</td><td colspan="2">Serial data input (CH1).</td></tr>
<tr><td>PB7/SO1</td><td>I/O/Output</td><td colspan="2">Serial data output (CH1).</td></tr>
<tr><td>PC0/KR0
to
PC7/KR7</td><td>I/O/Input</td><td>(Port C)
8-bit I/O port. I/O can be set in a unit of single bits. Can drive 12mA sync current.
Incorporation of the pull-up resistor can be set through the software in a unit of 4 bits.
(8 pins)</td><td colspan="2">Serves as key return inputs when operating key scan with fluorescent display panel (FDP) segment signal.
(8 pins)</td></tr>
<tr><td>PD0/A55
to
PD7/A48</td><td>Output/Output</td><td>(Port D)
8-bit output port.
(8 pins)</td><td colspan="2">FDP segment signal (anode connection) outputs.</td></tr>
<tr><td>PE0/INT0/
$\overline{EC0}$</td><td>Input/Input/Input</td><td rowspan="8">(Port E)
8-bit port. Lower 6 bits are for inputs; upper 2 bits are for outputs.
(8 pins)</td><td rowspan="4">Inputs for external interruption request.
(4 pins)</td><td rowspan="2">External event inputs for timer/counter.
(2 pins)</td></tr>
<tr><td>PE1/INT1/
$\overline{EC1}$</td><td>Input/Input/Input</td></tr>
<tr><td>PE2/INT2</td><td>Input/Input</td><td></td></tr>
<tr><td>PE3/INT3/
$\overline{NMI}$</td><td>Input/Input/Input</td><td>Non-maskable interruption request input.</td></tr>
<tr><td>PE4/RMC</td><td>Input/Input</td><td colspan="2">Remote control reception circuit input.</td></tr>
<tr><td>PE5</td><td>Input</td><td colspan="2"></td></tr>
<tr><td>PE6/$\overline{PWM}$</td><td>Output/Output</td><td colspan="2">14-bit PWM output.</td></tr>
<tr><td>PE7/TO/ADJ</td><td>Output/Output/
Output</td><td colspan="2">Output for the 16-bit timer/counter rectangular waves, and 32kHz oscillation frequency division.</td></tr>
<tr><td>PF0/A47
to
PF7/A40</td><td>Output/Output</td><td>(Port F)
8-bit output port.
(8pins)</td><td colspan="2">FDP segment signal (anode connection) outputs.</td></tr>
</table>

Pin code	I/O	Functions	
PG0/A39 to PG7/A32	Output/Output	(Port G) 8-bit output port. (8 pins)	FDP segment signal (anode connection) outputs. (8 pins)
PH0/A31 to PH7/A24	Output/Output	(Port H) 8-bit output port. (8 pins)	FDP segment signal (anode connection) outputs. (8 pins)
A16 to A23	Output	FDP segment signal (anode connection) outputs. (8 pins)	
G0/A0 to G15/A15	Output/Output	Outputs for FDP timing signals (grid connection)/segment signals (anode connection). (16 pins)	
V_{FDP}		FDP voltage supply when incorporated pull-down (PD) resistor is set by mask option.	
EXTAL	Input	Crystal connectors for system clock oscillation. When the clock is supplied externally, input to EXTAL; opposite phase clock should be input to XTAL.	
XTAL	Output		
TEX	Input	Crystal connectors for 32kHz timer/counter clock oscillation. For usage as event input, input to TEX, and open TX.	
TX	Output		
$\overline{RST}$	Input	Low-level active, system reset	
NC		NC. Under normal operation, connect to V_{DD}.	
AV_{REF}	Input	Reference voltage input for A/D converter.	
AV_{SS}		A/D converter GND.	
V_{DD}		Vcc supply.	
V_{SS}		GND.	

AT27LV010A

Features

- **Fast Read Access Time - 90 ns**
- **Dual Voltage Range Operation**
  - **Low Voltage Power Supply Range, 3.0V to 3.6V**
  - **or Standard 5V ± 10% Supply Range**
- **Compatible with JEDEC Standard AT27C010**
- **Low Power CMOS Operation**
  - **20 µA max. (less than 1 µA typical) Standby for V_{CC} = 3.6V**
  - **29 mW max. Active at 5 MHz for V_{CC} = 3.6V**
- **JEDEC Standard Packages**
  - **32-Lead PLCC**
  - **32-Lead TSOP**
- **High Reliability CMOS Technology**
  - **2,000V ESD Protection**
  - **200 mA Latchup Immunity**
- **Rapid™ Programming Algorithm - 100 µs/byte (typical)**
- **CMOS and TTL Compatible Inputs and Outputs**
  - **JEDEC Standard for LVTTL**
- **Integrated Product Identification Code**
- **Commercial and Industrial Temperature Ranges**

1 Megabit (128K x 8) Low Voltage OTP CMOS EPROM

Description

The AT27LV010A is a high performance, low power, low voltage 1,048,576 bit one-time programmable read only memory (OTP EPROM) organized as 128K by 8 bits. It requires only one supply in the range of 3.0V to 3.6V in normal read mode operation, making it ideal for fast, portable systems using battery power.

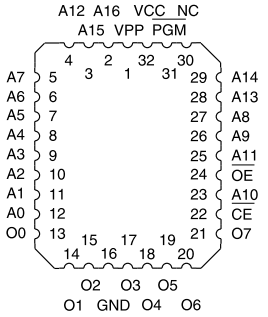
Atmel's innovative design techniques provide fast speeds that rival 5V parts while keeping the low power consumption of a 3.3V supply. At V_{CC} = 3.0V, any byte can be accessed in less than 90 ns. With a typical power dissipation of only 18 mW at 5 MHz and V_{CC} = 3.3V, the AT27LV010A consumes less than one fifth the power of a standard 5V EPROM. Standby mode supply current is typically less than 1 µA at 3.3V.

(continued)

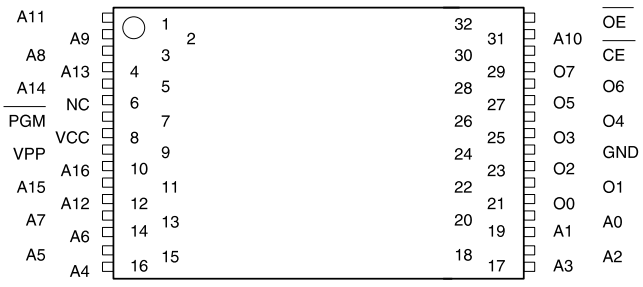
Pin Configurations

Pin Name	Function
A0 - A16	Addresses
O0 - O7	Outputs
$\overline{CE}$	Chip Enable
$\overline{OE}$	Output Enable
$\overline{PGM}$	Program Strobe
NC	No Connect

PLCC Top View



TSOP Top View
Type 1



0548B

Description (Continued)

The AT27LV010A is available in industry standard JEDEC-approved one-time programmable (OTP) plastic PLCC and TSOP packages. All devices feature two-line control ($\overline{CE}$, $\overline{OE}$) to give designers the flexibility to prevent bus contention.

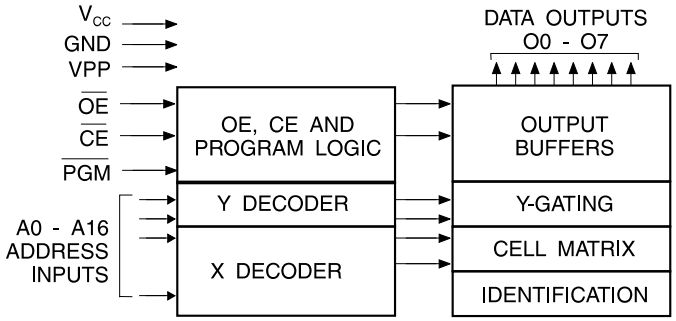
The AT27LV010A operating with V_{CC} at 3.0V produces TTL level outputs that are compatible with standard TTL logic devices operating at V_{CC} = 5.0V. The device is also capable of standard 5-volt operation making it ideally suited for dual supply range systems or card products that are pluggable in both 3-volt and 5-volt hosts.

Atmel's AT27LV010A has additional features to ensure high quality and efficient production use. The Rapid™ Programming Algorithm reduces the time required to program the part and guarantees reliable programming. Programming time is typically only 100 µs/byte. The Integrated Product Identification Code electronically identifies the device and manufacturer. This feature is used by industry standard programming equipment to select the proper programming algorithms and voltages. The AT27LV010A programs exactly the same way as a standard 5V AT27C010 and uses the same programming equipment.

System Considerations

Switching between active and standby conditions via the Chip Enable pin may produce transient voltage excursions. Unless accommodated by the system design, these transients may exceed data sheet limits, resulting in device non-conformance. At a minimum, a 0.1 µF high frequency, low inherent inductance, ceramic capacitor should be utilized for each device. This capacitor should be connected between the V_{CC} and Ground terminals of the device, as close to the device as possible. Additionally, to stabilize the supply voltage level on printed circuit boards with large EPROM arrays, a 4.7 µF bulk electrolytic capacitor should be utilized, again connected between the V_{CC} and Ground terminals. This capacitor should be positioned as close as possible to the point where the power supply is connected to the array.

Block Diagram



Absolute Maximum Ratings*

Temperature Under Bias	-40°C to +85°C
Storage Temperature	-65°C to +125°C
Voltage on Any Pin with Respect to Ground	-2.0V to +7.0V (1)
Voltage on A9 with Respect to Ground	-2.0V to +14.0V (1)
V_{PP} Supply Voltage with Respect to Ground	-2.0V to +14.0V (1)

*NOTICE: Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

Note: 1. Minimum voltage is -0.6V dc which may undershoot to -2.0V for pulses of less than 20 ns. Maximum output pin voltage is V_{CC} + 0.75V dc which may be exceeded if certain precautions are observed (consult application notes) and which may overshoot to +7.0 volts for pulses of less than 20 ns.

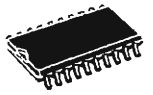
Operating Modes

Mode \ Pin	$\overline{CE}$	$\overline{OE}$	$\overline{PGM}$	Ai	V_{PP}	V_{CC}	**Outputs**
Read (2)	V_{IL}	V_{IL}	X (1)	Ai	X	V_{CC} (2)	D_{OUT}
Output Disable (2)	X	V_{IH}	X	X	X	V_{CC} (2)	High Z
Standby (2)	V_{IH}	X	X	X	X	V_{CC} (2)	High Z
Rapid Program (3)	V_{IL}	V_{IH}	V_{IL}	Ai	V_{PP}	V_{CC} (3)	D_{IN}
PGM Verify (3)	V_{IL}	V_{IL}	V_{IH}	Ai	V_{PP}	V_{CC} (3)	D_{OUT}
PGM Inhibit (3)	V_{IH}	X	X	X	V_{PP}	V_{CC} (3)	High Z
Product Identification (3, 5)	V_{IL}	V_{IL}	X	A9 = V_H (4) A0 = V_{IH} or V_{IL} A1 - A16 = V_{IL}	X	V_{CC} (3)	Identification Code

Notes: 1. X can be V_{IL} or V_{IH}.
2. Read, output disable, and standby modes require, $3.0V \le V_{CC} \le 3.6V$, or $4.5V \le V_{CC} \le 5.5V$.
3. Refer to Programming Characteristics. Programming modes require V_{CC} = 6.5V.
4. $V_H = 12.0 \pm 0.5V$.
5. Two identifier bytes may be selected. All Ai inputs are held low (V_{IL}), except A9 which is set to V_H and A0 which is toggled low (V_{IL}) to select the Manufacturer's Identification byte and high (V_{IH}) to select the Device Code byte.

OCTAL D-TYPE FLIP FLOP WITH 3 STATE OUTPUTS NON INVERTING

- HIGH SPEED:
- f_{MAX} = 180 MHz (TYP.) at V_{CC} = 5V
- LOW POWER DISSIPATION:
  I_{CC} = 4 μA (MAX.) at T_A=25°C
- HIGH NOISE IMMUNITY:
  $V_{NIH} = V_{NIL}$ = 28% V_{CC} (MIN.)
- POWER DOWN PROTECTION ON INPUTS
- SYMMETRICAL OUTPUT IMPEDANCE:
  $|I_{OH}| = I_{OL}$ = 8 mA (MIN)
- BALANCED PROPAGATION DELAYS:
  $t_{PLH} \cong t_{PHL}$
- OPERATING VOLTAGE RANGE:
  V_{CC}(OPR) = 2V to 5.5V
- PIN AND FUNCTION COMPATIBLE WITH 74 SERIES 574
- IMPROVED LATCH-UP IMMUNITY
- LOW NOISE: V_{OLP} = 0.9V (MAX.)



SOP

TSSOP

ORDER CODES

PACKAGE	TUBE	T & R
SOP	74VHC574M	74VHC574MTR
TSSOP		74VHC574TTR

DESCRIPTION

The 74VHC574 is an advanced high-speed CMOS OCTAL D-TYPE FLIP FLOP with 3 STATE OUTPUTS NON INVERTING fabricated with sub-micron silicon gate and double-layer metal wiring C^2MOS technology.

These 8 bit D-Type flip-flop is controlled by a clock input (CK) and an output enable input ($\overline{OE}$).

On the positive transition of the clock, the Q outputs will be set to the logic states that were setup at the D inputs.

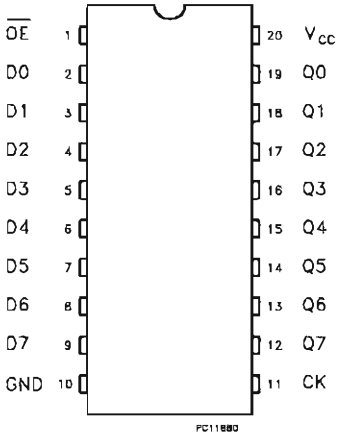
While the ($\overline{OE}$) input is low, the 8 outputs will be in a normal logic state (high or low logic level) and while high level the outputs will be in a high impedance state.

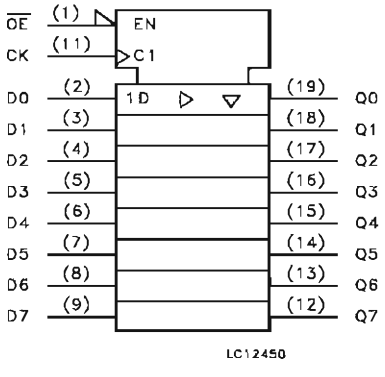
The Output control does not affect the internal operation of flip flop; that is, the old data can be retained or the new data can be entered even while the outputs are off.

Power down protection is provided on all inputs and 0 to 7V can be accepted on inputs with no regard to the supply voltage. This device can be used to interface 5V to 3V.

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

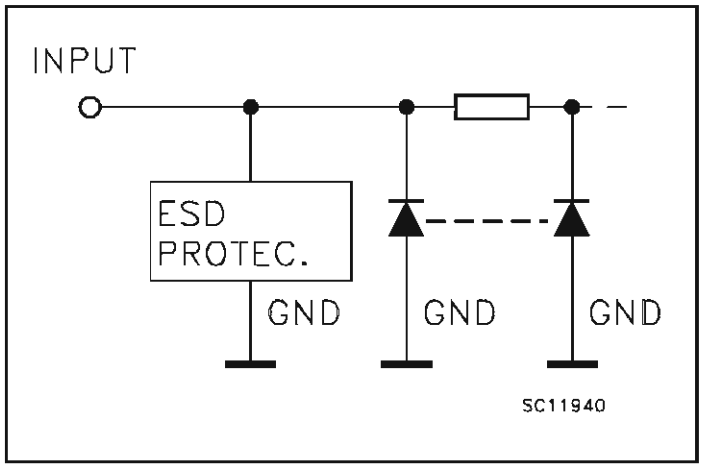
PIN CONNECTION AND IEC LOGIC SYMBOLS





74VHC574

INPUT EQUIVALENT CIRCUIT



PIN DESCRIPTION

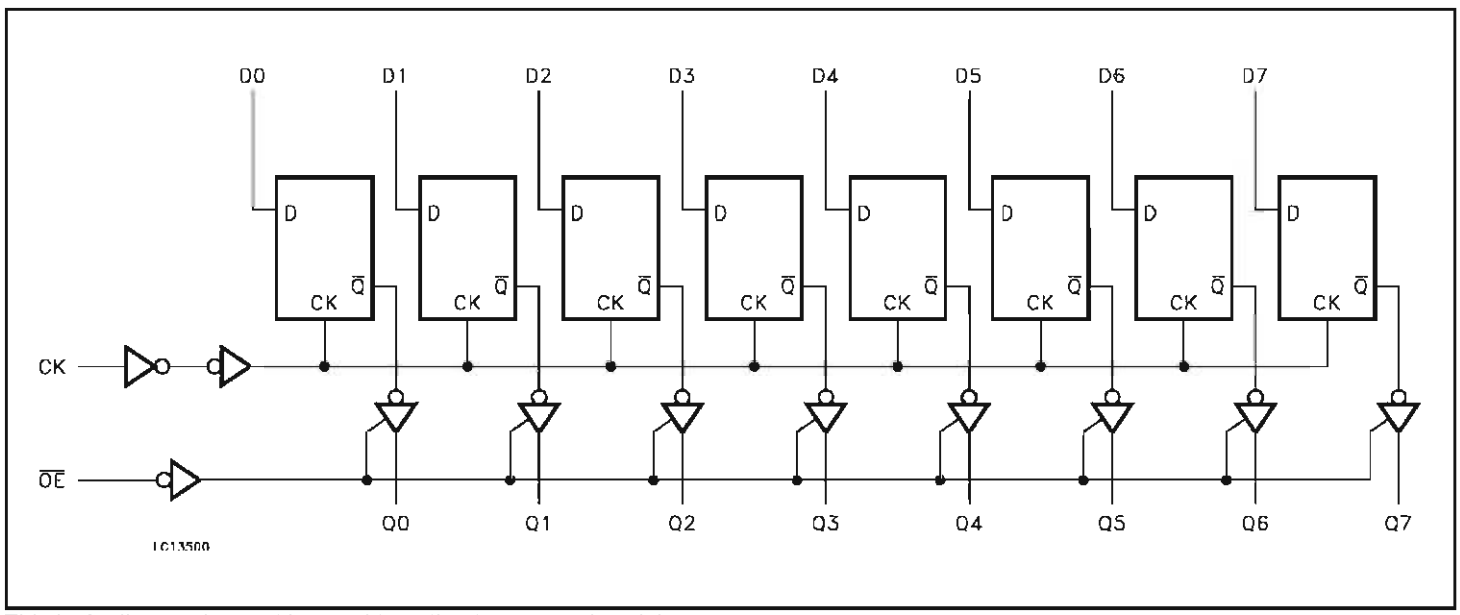
PIN No	SYMBOL	NAME AND FUNCTION
1	$\overline{OE}$	3-State Output Enable Input (Active LOW)
2, 3, 4, 5, 6, 7, 8, 9	D0 to D7	Data Inputs
12, 13, 14, 15, 16, 17, 18, 19	Q0 to Q7	3-State Outputs
11	CK	Clock Input (LOW-to-HIGH Edge Triggered)
10	GND	Ground (0V)
20	V_{CC}	Positive Supply Voltage

TRUTH TABLE

INPUTS			OUTPUT
$\overline{OE}$	CK	D	Q
H	X	X	Z
L	↓	X	NO CHANGE
L	↑	L	L
L	↑	H	H

X : Don't Care
Z : High Impedance

LOGIC DIAGRAM



This logic diagram has not be used to estimate propagation delays

MITSUBISHI SOUND PROCESSOR ICs

M62446AFP

6CH ELECTRONIC VOLUME WITH TONE CONTROL

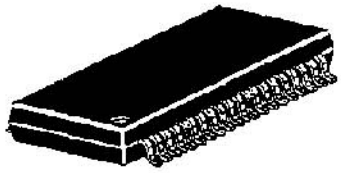
DESCRIPTION

The M62446AFP is 6ch electronic volume with tone control. This IC is revised from M62446FP. The extended function of M62446AFP is volume level and tone control level. M62446AFP is easy to use more than M62446FP.

FEATURES

(note) * is an extended function.

- 6ch Electric volume
  Volume level : 0 to -95dB(1dB/step)*
  <M62446FP:0 to -79dB(1dB/step)>
- Tone control
  Bass/Treble : -14dB to +14dB(2dB/step)*
  <M62446FP:-10dB to +10dB(2dB/step)>
- Noise voltage : 1.5μVrms <M62446FP:2.2μVrms>
- 4 Output ports
- Bypass mode is high quality sound.



Outline 42P2R-A
0.8mm pitch 450mil ssop
(8.4mm×17.5mm×2.0mm)

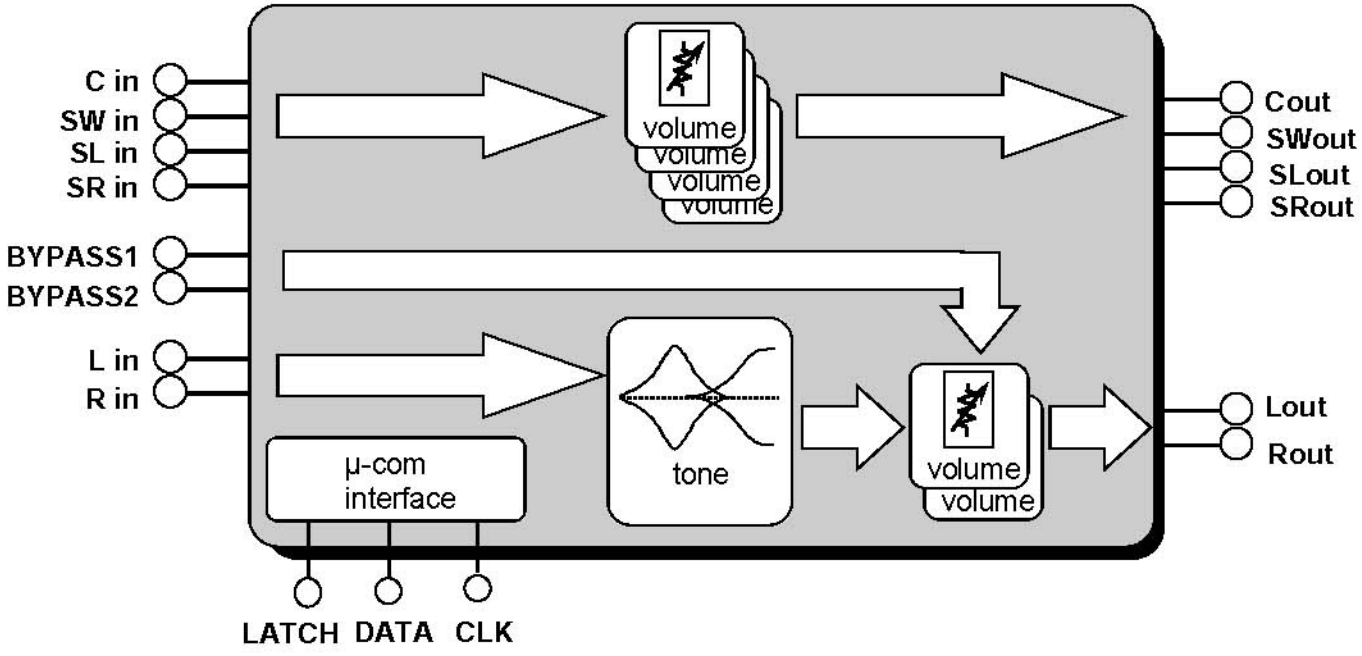
APPLICATION

DVD,Home Audio equipment,TV

RECOMMENDED OPERATING CONDITIONS

Supply voltage range----------±4.5 to ±7.5V(analog), 4.5 to 5.5V(digital)
Recommended supply voltage----------±7.0V(analog), 5.0V(digital)

SYSTEM BLOCK DIAGRAM

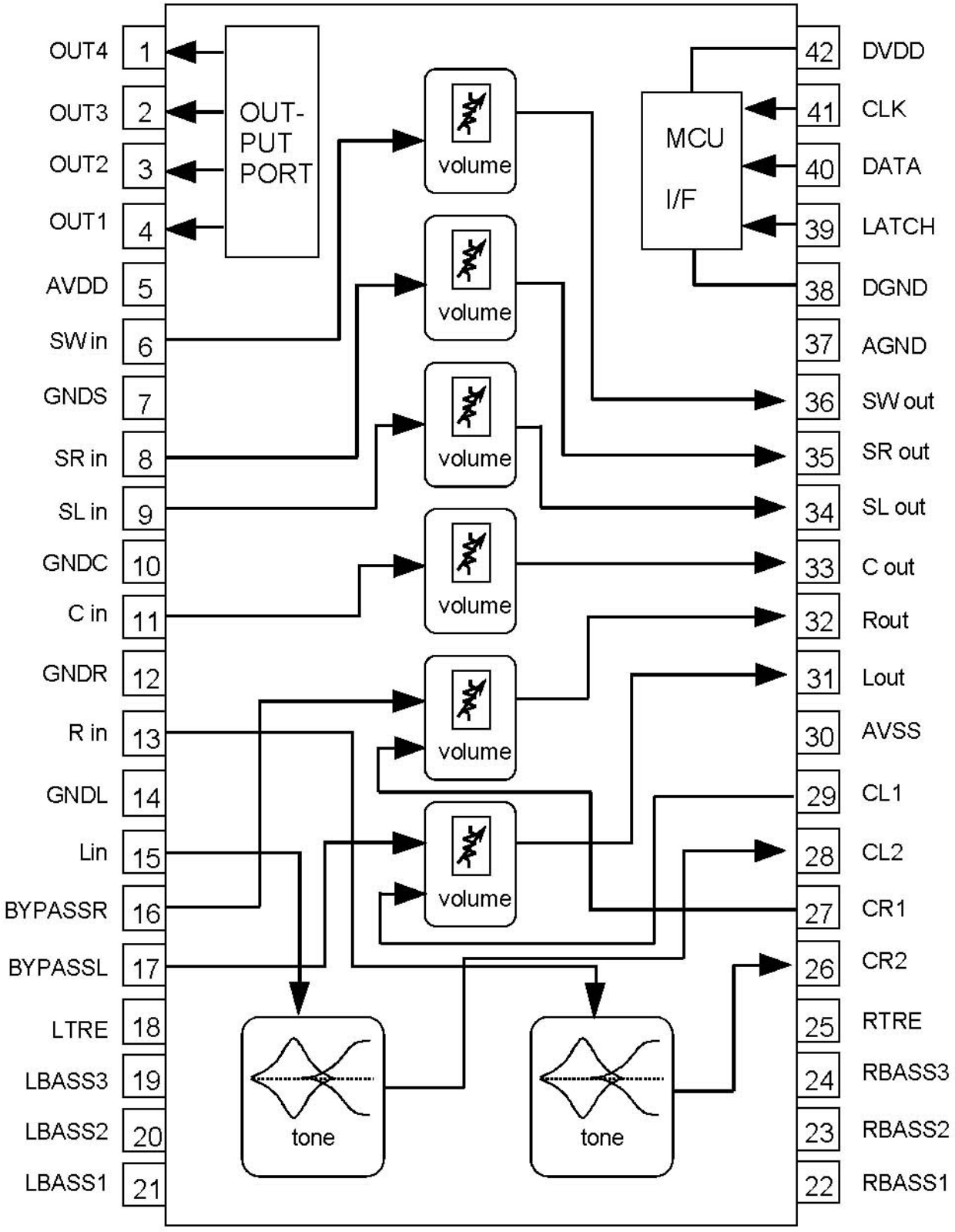


MITSUBISHI SOUND PROCESSOR ICs

M62446AFP

6CH ELECTRONIC VOLUME WITH TONE CONTROL

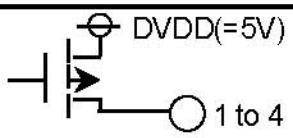
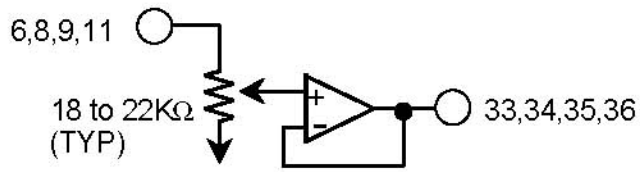
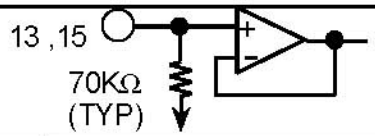
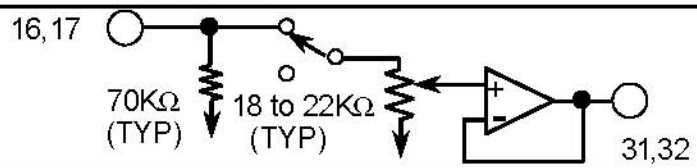
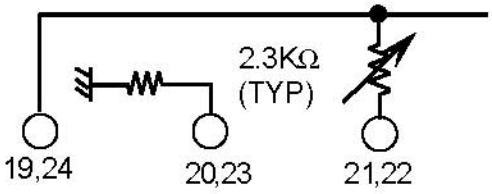
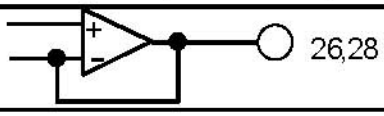
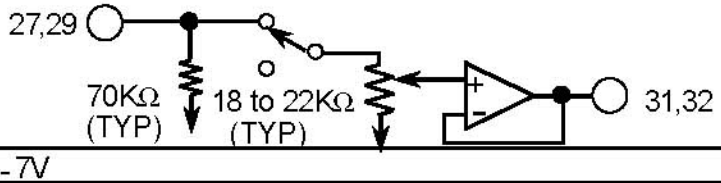
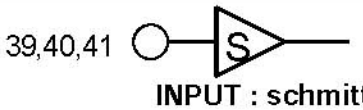
PIN CONFIGURATION AND BLOCK DIAGRAM



M62446AFP

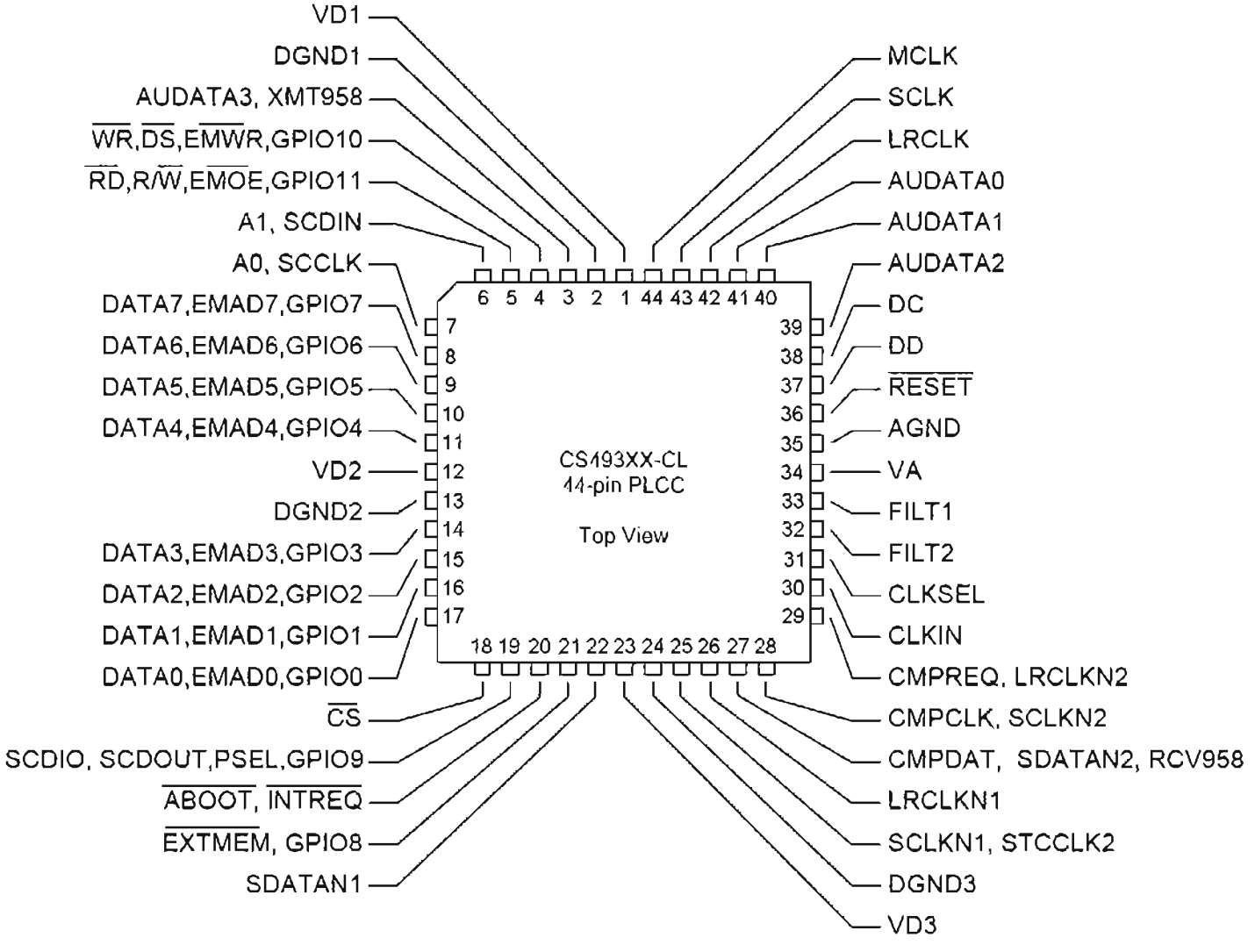
6CH ELECTRONIC VOLUME WITH TONE CONTROL

PIN DESCLIPTION

Pin No.	Symbol	Function	Circuit
1 2 3 4	OUT4 OUT3 OUT2 OUT1	Port OUTPUT	OUTPUT:PMOS Transistor open drain 
5	AVDD	Analog positive Power supply	+7V
7 10 12 14	GNDS GNDC GNDR GNDL	GND	Connect to analog GND
6 8 9 11	SW in SR in SL in C in	Volume INPUT	
36 35 34 33	SW out SR out SL out C out	Volume OUTPUT	
13 15	R in L in	Tone INPUT	
16 17 31 32	BYPASSR BYPASSL Lout Rout	L,R Volume INPUT in BYPASS mode L OUTPUT R OUTPUT	
18 25	LTRE RTRE	tone Treble cycle control	
19 24 20 23 21 26	LBASS3 RBASS3 LBASS2 RBASS2 LBASS1 RBASS1	tone Bass cycle control	
22 28	CR2 CL2	Tone OUTPUT	
27 29 31 32	CR1 CL1 Lout Rout	L,R Volume INPUT L OUTPUT R OUTPUT	
30	AVSS	Analog negative Power Supply	-7V
37	AGND	Analog GND	
38	DGND	Digital GND	
39 40 41	LATCH DATA CLK	Latch INPUT Data INPUT Clock INPUT Forward data	 INPUT : schmitt trigger type
42	DVDD	Digital Power supply	+5V

24-Bit Multi Standard Audio DSP Decoder

CS493263



Video signal switcher for AV amplifiers
BA7626 / BA7626F

The BA7626 and BA7626F are video signal switches that contain two five-channel analog multiplexers for switching chroma and audio signals, and two wide-band 6dB amplifiers. By simply adding transistor buffers to the outputs, it is possible to construct a record / playback switch for two record / playback VCRs, and three video playback machines (eg. laser desk players). Input switching and VCR record switching can be done independently. The inputs are terminated with 20kΩ resistors, and are suitable for switching chroma and audio signals.

●Applications

AV amplifiers (audio signals and S-pin chroma signals) and video selectors

●Features

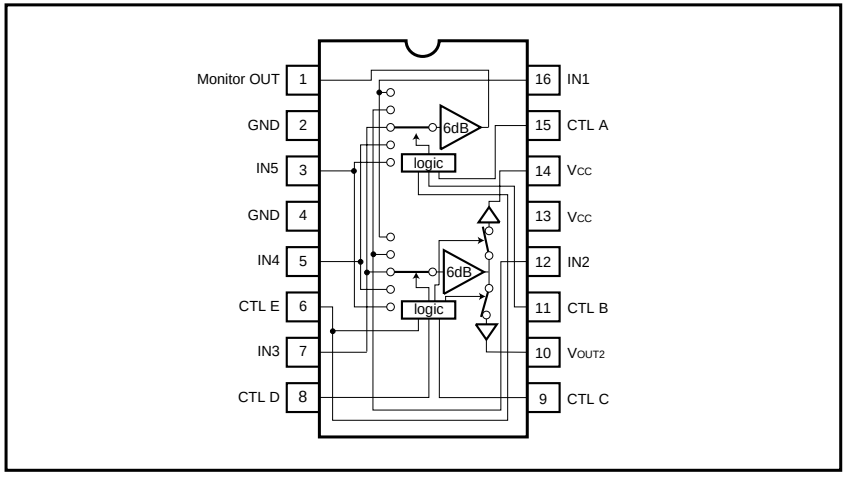
1) 5-input / 3-output switches.
2) 20kΩ input impedance.
3) Built-in 6dB amplifiers.
4) 5V supply voltage.

●Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Limits	Unit
Power supply voltage	V_{CC}	9	V
Power dissipation	Pd	500*	mW
Operating temperature	Topr	– 25 ~ +70	°C
Storage temperature	Tstg	– 55 ~ +125	°C

* Reduced by 5.0mW for each increase in Ta of 1°C over 25°C.

●Block diagram



●Truth table

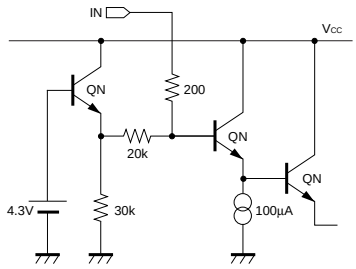
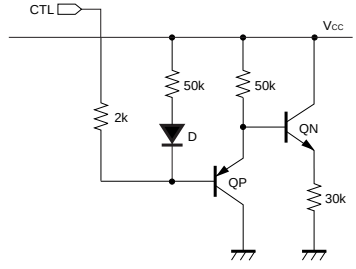
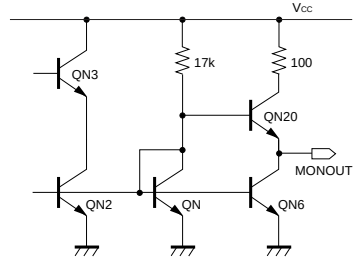
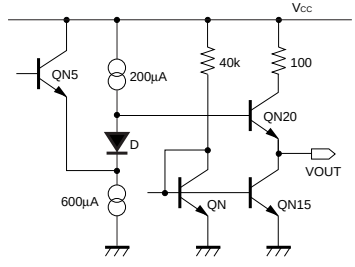
A	B	E	Monitor OUT
L	L	✻	IN1
H	L	✻	IN2
L	H	✻	IN3
H	H	L	IN4
H	H	H	IN5

C	D	E	V_{OUT1}
L	L	✻	—
H	L	✻	IN2
L	H	✻	IN3
H	H	L	IN4
H	H	H	IN5

C	D	E	V_{OUT2}
L	L	✻	IN1
H	L	✻	—
L	H	✻	IN3
H	H	L	IN4
H	H	H	IN5

Note 1: ✻ indicates "don't care" (H or L).

●Equivalent input / output circuits (unless otherwise noted, Ta=25°C and V_{CC} = 5V)

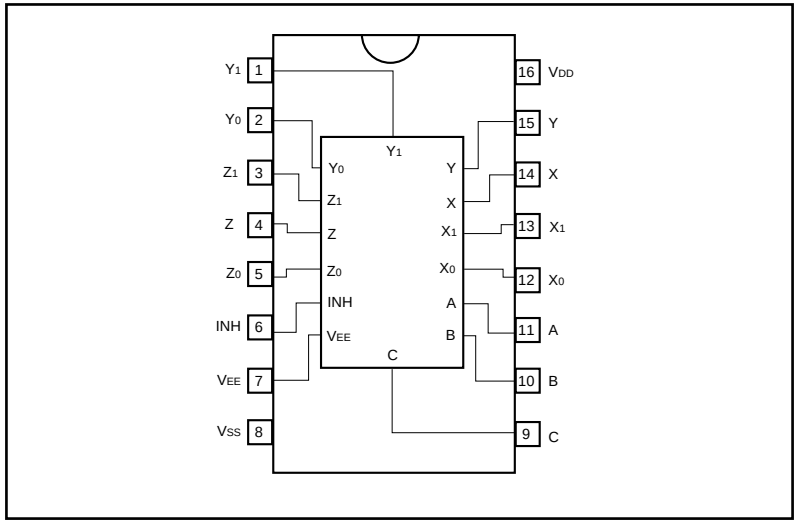
Pin No.	Pin name	Standard voltage (no input signal)	Equivalent input / output circuit
3 5 7 12 16	IN5 IN4 IN3 IN2 IN1	3.6V	
6 8 9 11 15	CTL E CTL D CTL C CTL B CTL A	0.6V	
1	MONOUT	2.0V	
10 14	$V_{OUT}2$ $V_{OUT}1$	2.0V	

Triple 2-channel analog multiplexer / demultiplexer

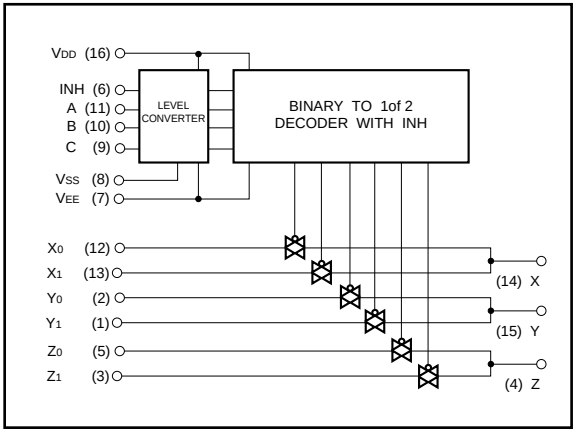
BU4053BC / BU4053BCF / BU4053BCFV

The BU4053BC, BU4053BCF, and BU4053BCFV are multiplexers / demultiplexers capable of selecting and combining analog signals and digital signals in a 2 ch × 3 configuration. Inhibit signals and control signals are used to turn on the switch corresponding to each of the channels. In addition, even if the logical amplitude (V_{DD}-V_{SS}) of the control signal is low, signals with a large amplitude (V_{DD}-V_{EE}) can be switched.
Also, as each switch has a low ON resistance, it can be connected to a low impedance circuit.

●Block diagram



●Logic circuit diagram



●Truth table

INH	A	B	C	ON SWITCH
L	L	L	L	X_0 Y_0 Z_0
L	H	L	L	X_1 Y_0 Z_0
L	L	H	L	X_0 Y_1 Z_0
L	H	H	L	X_1 Y_1 Z_0
L	L	L	H	X_0 Y_0 Z_1
L	H	L	H	X_1 Y_0 Z_1
L	L	H	H	X_0 Y_1 Z_1
L	H	H	H	X_1 Y_1 Z_1
H	X	X	X	NONE

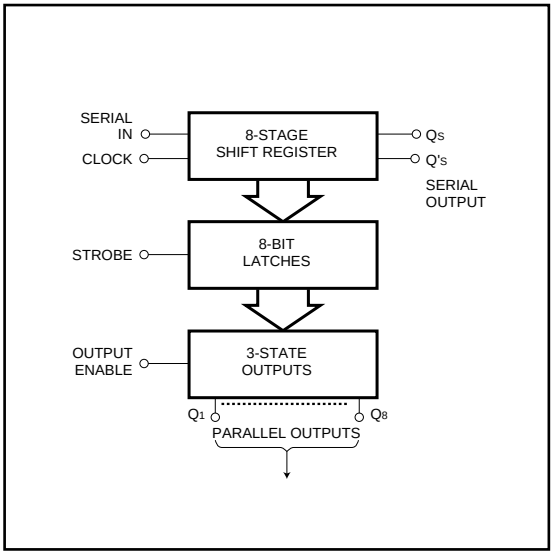
X: Irrelevant

8-bit compatible shift / store register

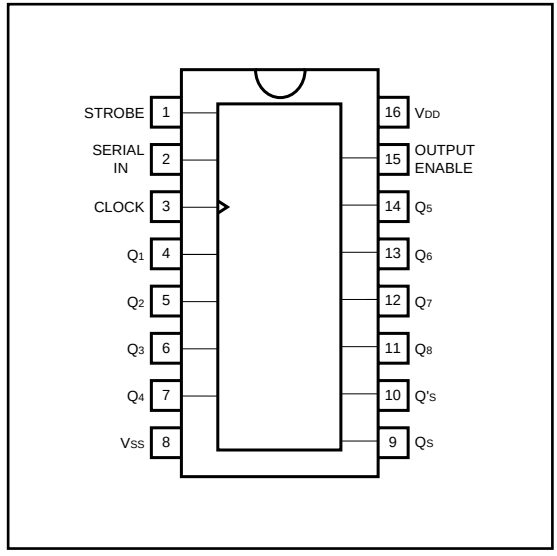
BU4094BC / BU4094BCF / BU4094BCFV

The BU4094BC, BU4094BCF, and BU4094BCFV are shift / store registers, each consisting of an 8-bit register and an 8-bit latch.
As the data in the shift register can be latched by an asynchronous strobe input, it is possible to hold the output in the data transfer mode.
The tri-state parallel output can be connected directly with an 8-bit bus line.
These registers are suitable for in-line / parallel data conversion, data receivers and other similar applications.

●Logic circuit diagram



●Block diagram



●Truth table

CLOCK	OUTPUT ENABLE	STROBE	SERIAL IN	Parallel output		Serial output	
				Q_1	Q_n	Q_S	Q'_S
↑	H	H	L	L	Q_{n-1}	Q_7	NC
↑	H	H	H	H	Q_{n-1}	Q_7	NC
↑	H	L	X	NC	NC	Q_7	NC
↑	L	X	X	Z	Z	Q_7	NC
↓	H	X	X	NC	NC	NC	Q_S
↓	L	X	X	Z	Z	NC	Q_S

NC: No Change Z: High Impedance X: Irrelevant

FAIRCHILD SEMICONDUCTOR®

www.fairchildsemi.com

KA4558

Dual Operational Amplifier

Features

- No frequency compensation required.
- No latch up.
- Large common mode and differential voltage range.
- Parameter tracking over temperature range.
- Gain and phase match between amplifiers.
- Internally frequency compensated.
- Low noise input transistors.

Descriptions

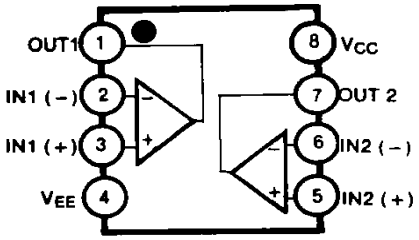
The KA4558 is a monolithic integrated circuit designed for dual operational amplifier.

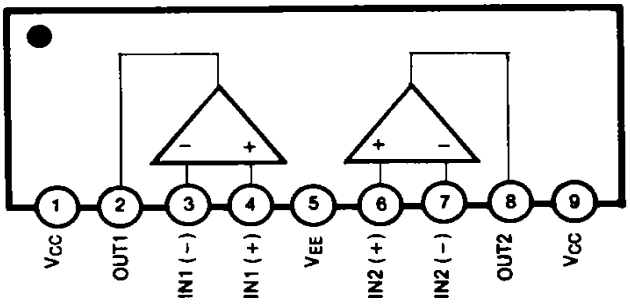
8-DIP

8-SOP

9-SIP

Internal Block Diagram





Rev. 1.0.1

CS4228

24-Bit, 96 kHz Surround Sound Codec

Features

- Two 24-bit A/D Converters
  - 102 dB dynamic range
  - 90 dB THD+N
- Six 24-bit D/A Converters
  - 103 dB dynamic range and SNR
  - 90 dB THD+N
- Sample rates up to 100 kHz
- Pop-free Digital Output Volume Controls
  - 90.5 dB range, 0.5 dB resolution (182 levels)
  - Variable smooth ramp rate, 0.125 dB steps
- Mute Control pin for off-chip muting circuits
- On-chip Anti-alias and Output Filters
- De-emphasis filters for 32, 44.1 and 48 kHz

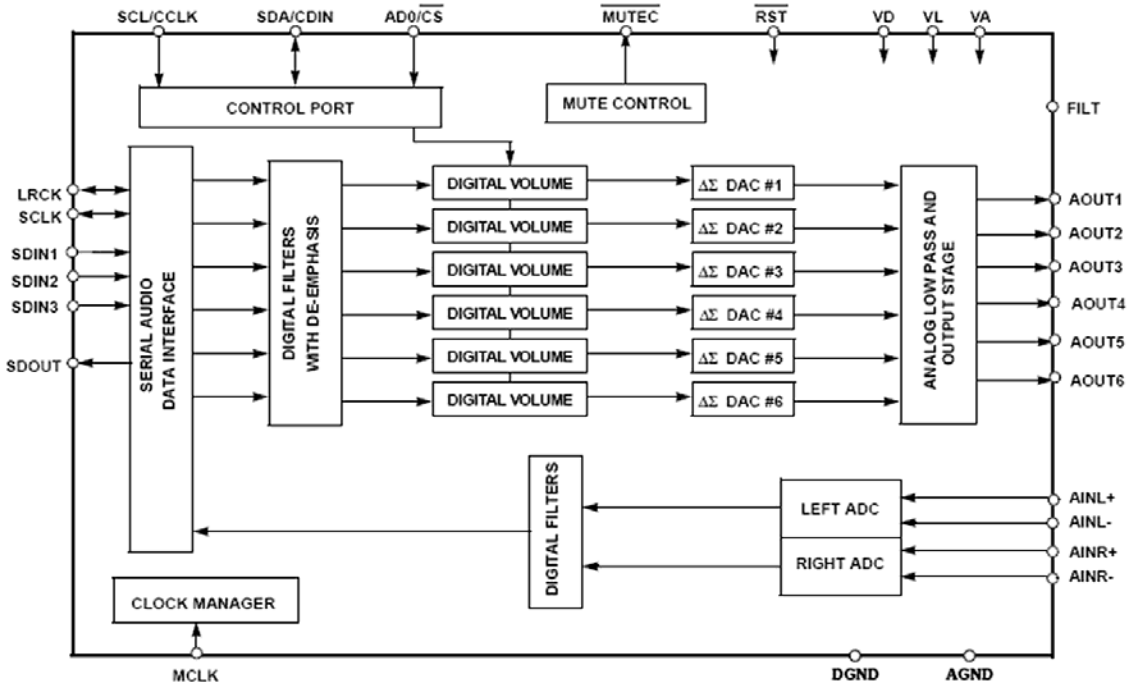
Description

The CS4228 codec provides two analog-to-digital and six digital-to-analog delta-sigma converters, along with volume controls, in a compact +5/+3.3 V, 28-pin SSOP device. Combined with an IEC958 (SPDIF) receiver (like the CS8414) and surround sound decoder (such as one of the CS492x or CS493xx families), it is ideal for use in DVD player, A/V receiver and car audio systems supporting multiple standards such as Dolby Digital AC-3, AAC, DTS, Dolby ProLogic, THX, and MPEG.

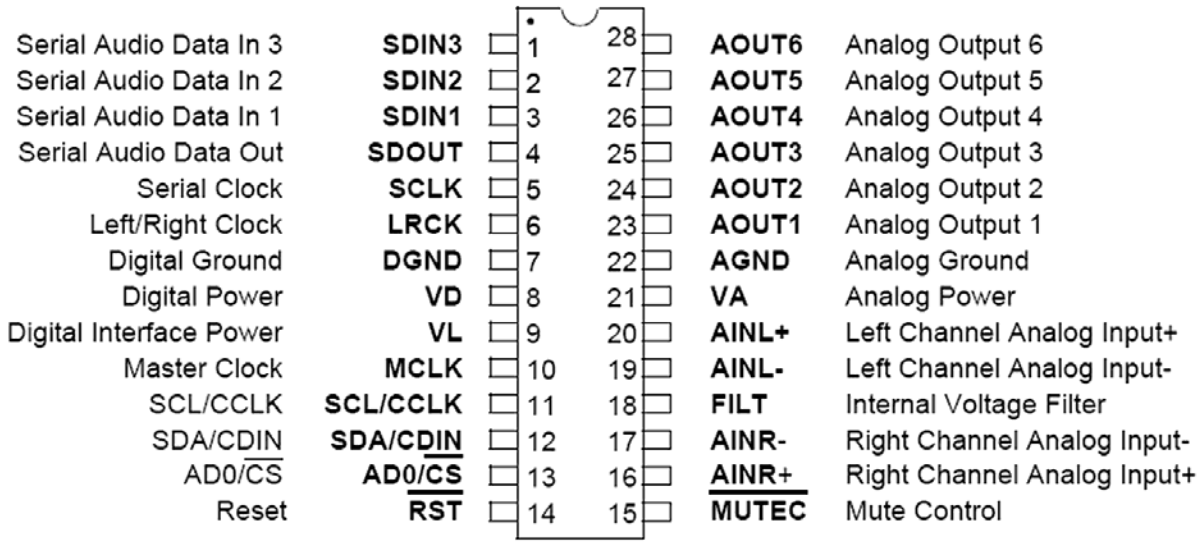
A flexible serial audio interface allows operation in Left Justified, Right Justified, I^2S, or One Line Data modes.

ORDERING INFORMATION

CS4228-KS	-10° to +70° C	28-pin SSOP
CDB4228		Evaluation Board



PIN DESCRIPTION



Serial Audio Data In - SDIN3, SDIN2, SDIN1

Pin 1, 2, 3, Input

Function:

Two's complement MSB-first serial audio data is input on this pin. The data is clocked into SDIN1, SDIN2, SDIN3 via the serial clock and the channel is determined by the Left/Right clock. The required relationship between the Left/Right clock, serial clock and serial data is defined by the Serial Mode Register. The options are detailed in Figures 9, 10, 11 and 12.

Serial Audio Data Out - SDOUT

Pin 4, Output

Function:

Two's complement MSB-first serial data is output on this pin. The data is clocked out of SDOUT via the serial clock and the channel is determined by the Left/Right clock. The required relationship between the Left/Right clock, serial clock and serial data is defined by the Serial Mode Register. The options are detailed in Figures 9, 10, 11 and 12.

The state of the SDOUT pin during reset is used to set the Control Port Mode (I2C or SPI). When $\overline{RST}$ is low, SDOUT is configured as an input, and the rising edge of $\overline{RST}$ latches the state of the pin. A weak internal pull up is present such that a resistive load less than 47 kΩ will pull the pin low, and the control port mode is I2C. When the resistive load on SDOUT is greater than 47 kΩ during reset, the control port mode is SPI.

Serial Clock — SCLK

Pin 5, Bidirectional

Function:

Clocks serial data into the SDIN1, SDIN2, and SDIN3 pins, and out of the SDOUT pin. The pin is an output in master mode, and an input in slave mode.

In master mode, SCLK is configured as an output. MCLK is divided internally to generate SCLK at the desired multiple of the sample rate.

In slave mode, SCLK is configured as an input. The serial clock can be provided externally, or the pin can be grounded and the serial clock derived internally from MCLK.

The required relationship between the Left/Right clock, serial clock and serial audio data is defined by the Serial Port Mode register. The options are detailed in Figures 9, 10, 11 and 12.

Left/Right Clock — LRCK

Pin 6, Bidirectional

Function:

The Left/Right clock determines which channel is currently being input or output on the serial audio data output, SDOUT. The frequency of the Left/Right clock must be at the output sample rate, Fs. In Master mode, LRCK is an output, in Slave Mode, LRCK is an input whose frequency must be equal to Fs and synchronous to the Master clock.

Audio samples in Left/Right pairs represent simultaneously sampled analog inputs whereas Right/Left pairs will exhibit a one sample period difference. The required relationship between the Left/Right clock, serial clock and serial data is defined by the Serial Port Mode register. The options are detailed in Figures 9, 10, 11 and 12.

Digital Ground - DGND

Pin 7, Inputs

Function:

Digital ground reference.

Digital Power - VD

Pin 8, Input

Function:

Digital power supply. Typically 3.3 VDC.

Digital Interface Power - VL

Pin 9, Input

Function:

Digital interface power supply. Typically 3.3 or 5.0 VDC. All digital output voltages and input thresholds scale with VL.

Master Clock - MCLK

Pin 10, Input

Function:

The master clock frequency must be either 128x, 256x, 384x or 512x the input sample rate in Base Rate Mode (BRM) and either 64x, 128x, 192x, or 256x the input sample rate in High Rate Mode (HRM). Table 2 illustrates several standard audio sample rates and the required master clock frequencies. The MCLK/Fs ration is set by the CI1:0 bits in the CODEC Clock Mode register

Sample Rate (kHz)	MCLK (MHz)							
	HRM				BRM			
	64x	128x	192x	256x	128x	256x	384x	512x
32	-	-	-	-	4.0960	8.1920	12.2880	16.3840
44.1	-	-	-	-	5.6448	11.2896	16.9344	22.5792
48	-	-	-	-	6.1440	12.2880	18.4320	24.5760
64	4.0960	8.1920	12.2880	16.3840	-	-	-	-
88.2	5.6448	11.2896	16.9344	22.5792	-	-	-	-
96	6.1440	12.2880	18.4320	24.5760	-	-	-	-

Table 2. Common Master Clock Frequencies

Serial Control Interface Clock - SCL/CCLK

Pin 11, Input

Function:

Clocks serial control data into or out of SDA/CDIN.

Serial Control Data I/O - SDA/CDIN

Pin 12, Bidirectional/Input

Function:

In I^2C mode, SDA is a bidirectional control port data line. A pull up resistor must be provided for proper open drain output operation. In SPI mode, CDIN is the control port data input line. The state of the SDOUT pin during reset is used to set the control port mode.

Address Bit 0 / Chip Select - AD0/$\overline{CS}$

Pin 13, Input

Function:

In I^2C mode, AD0 is the LSB of the chip address. In SPI mode, $\overline{CS}$ is used as a enable for the control port interface.

Reset - $\overline{RST}$

Pin 14, Input

Function:

When low, the device enters a low power mode and all internal registers are reset to the default settings, including the control port. The control port can not be accessed when reset is low.

When high, the control port and the CODEC become operational.

Mute Control - $\overline{\text{MUTEC}}$

Pin 15, Output

Function:

The Mute Control pin goes low during the following conditions: power-up initialization, power-down, reset, no master clock present, or if the master clock to left/right clock frequency ratio is incorrect. The Mute Control pin can also be user controlled by the MUTEC bit in the DAC Mute2 Control register. Mute Control can be automatically asserted when 512 consecutive zeros are detected on all six DAC inputs, and automatically deasserted when a single non-zero value is sent to any of the six DACs. The mute on zero function is controlled by the MUTCZ bit in the DAC Mute2 Control register. The $\overline{\text{MUTEC}}$ pin is intended to be used as a control for an external mute circuit to achieve a very low noise floor during periods when no audio is present on the DAC outputs, and to prevent the clicks and pops that can occur in any single supply system. Use of the Mute Control pin is not mandatory but recommended.

Differential Analog Inputs — AINR+, AINR- and AINL+, AINL-

Pins 16, 17 and 19, 20, Inputs

Function:

The analog signal inputs are presented deferentially to the modulators via the AINR+/- and AINL+/- pins. The + and - input signals are 180° out of phase resulting in a nominal differential input voltage of twice the input pin voltage. These pins are biased to the internal reference voltage of approximately 2.3 V. A passive anti-aliasing filter is required for best performance, as shown in Figure 5. The inputs can be driven at -1dB FS single-ended if the unused input is connected to ground through a large value capacitor. A single ended to differential converter circuit can also be used for slightly better performance.

Internal Voltage Filter - FILT

Pin 18, Output

Function:

Filter for internal circuits. An external capacitor is required from FILT to analog ground, as shown in Figure 5. FILT is not intended to supply external current. FILT+ has a typical source impedance of 250 kΩ and any current drawn from this pin will alter device performance. Care should be taken during board layout to keep dynamic signal traces away from this pin.

Analog Power - VA

Pin 21, Input

Function:

Power for the analog and reference circuits. Typically 5.0 VDC.

Analog Ground - AGND

Pin 22, Input

Function:

Analog ground reference.

Analog Output - AOUT1, AOUT2, AOUT3, AOUT4, AOUT5 and AOUT6

Pins 23, 24, 25, 26, 27, 28, Outputs

Function:

Analog outputs from the DACs. The full scale analog output level is specified in the Analog Characteristics specifications table. The amplitude of the outputs is controlled by the Digital Volume Control registers VOL6 - VOL1.

CS8415A

96 kHz Digital Audio Interface Receiver

Features

- Complete EIAJ CP1201, IEC-60958, AES3, S/PDIF compatible receiver
- +5 V Analog Supply(VA)
- +3 V to +5 V Digital Interface Supply (VL)
- 7:1 S/PDIF Input MUX
- Flexible 3-wire serial digital output port
- 8 kHz to 96 kHz sample frequency range
- Low jitter clock recovery
- Pin and microcontroller read access to Channel Status and User data
- Microcontroller and standalone modes
- Differential cable receiver
- On-chip Channel Status and User data buffer memories
- Auto-detection of compressed audio input streams
- Decodes CD Q sub-code
- OMCK System Clock Mode

General Description

The CS8415A is a monolithic CMOS device which receives and decodes one of 7 channels of audio data according to the IEC60958, S/PDIF, EIAJ CP1201, or AES3. The CS8415A has a serial digital audio output port and comprehensive control ability through a 4-wire microcontroller port. Channel status and user data are assembled in block sized buffers, making read access easy.

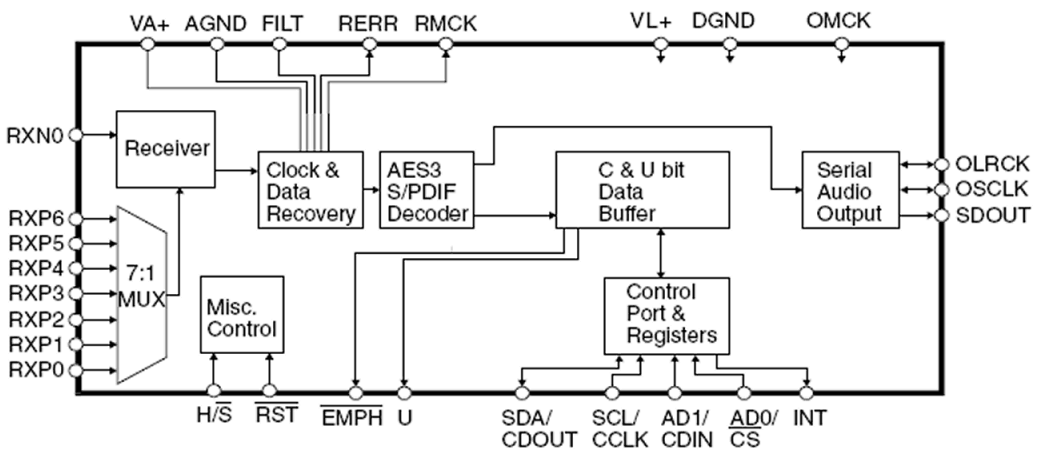
A low jitter clock recovery mechanism yields a very clean recovered clock from the incoming AES3 stream.

Stand-alone operation allows systems with no microcontroller to operate the CS8415A with dedicated output pins for channel status data.

Target applications include A/V receivers, CD-R, DVD receivers, multimedia speakers, digital mixing consoles, effects processors, set-top boxes, and computer and automotive audio systems.

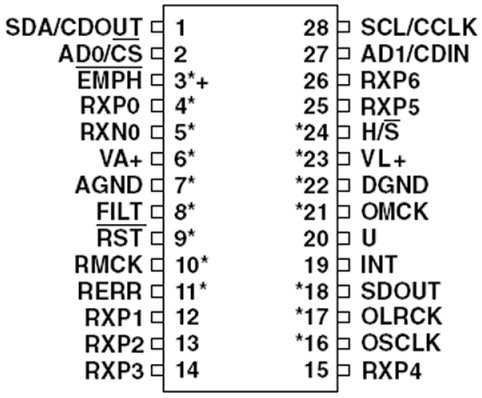
ORDERING INFOMATION

CS8415A-CS	28-pin SOIC	-10 to +70°C
CS8415A-CZ	28-pin TSSOP	-10 to +70°C
CS8415A-IS	28-pin SOIC	-40 to +85°C
CS8415A-IZ	28-pin TSSOP	-40 to +85°C
CDB8415A	Evaluation Board	



Preliminary Product Information | This document contains information for a new product. Cirrus Logic reserves the right to modify this product without notice.

9. PIN DESCRIPTION - SOFTWARE MODE

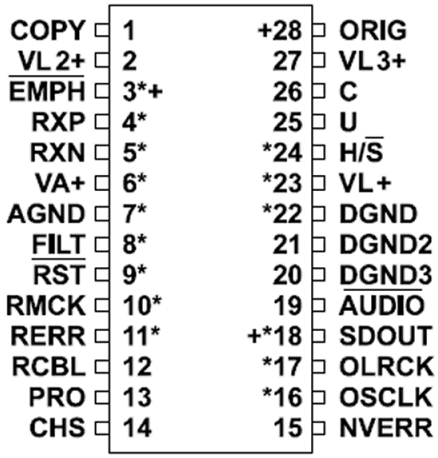


* Pins which remain the same function in all modes.
\+ Pins which require a pull up or pull down resistor to select the desired startup option.

SDA/CDOUT	1	**Serial Control Data I/O (Two-Wire) / Data Out (SPI)** (*Input/Output*) - In Two-Wire mode, SDA is the control I/O data line. SDA is open drain and requires an external pull-up resistor to VL+. In SPI mode, CDOUT is the output data from the control port interface on the CS8415A
AD0/$\overline{CS}$	2	**Address Bit 0 (Two-Wire) / Control Port Chip Select (SPI)** (*Input/Output)* - A falling edge on this pin puts the CS8415A into SPI control port mode. With no falling edge, the CS8415A defaults to Two-Wire mode. In Two-Wire mode, AD0 is a chip address pin. In SPI mode, $\overline{CS}$ is used to enable the control port interface on the CS8415A
$\overline{EMPH}$	3	**Pre-Emphasis** (*Output*) - $\overline{EMPH}$ is low when the incoming Channel Status data indicates 50/15 µs pre-emphasis. $\overline{EMPH}$ is high when the Channel Status data indicates no pre-emphasis or indicates pre-emphasis other than 50/15 µs. This is also a start-up option pin, and requires a 47 kΩ resistor to either VL+ or DGND, which determines the AD2 address bit for the control port in Two-Wire mode
RXP0 **RXN0**	4 5	**AES3/SPDIF Receiver Port** (*Input*) - Differential line receiver inputs carrying AES3 data. RXP0 may be used as a single-ended input as part of 7:1 S/PDIF Input MUX. If RXP0 is used in MUX, RXN0 must be ac coupled to ground.
RXP1 **RXP2** **RXP3** **RXP4** **RXP5** **RXP6**	12 13 14 15 25 26	**Additional AES3/SPDIF Receiver Port** (*Input*) - Single-ended receiver inputs carrying AES3 or S/PDIF digital data. These inputs, along with RXP0, comprise the 7:1 S/PDIF Input Multiplexer and select line control is accessed using the MUX2:0 bits in the Control 2 register. Please note that any unused inputs should be tied to ground. See Appendix A for recommended input circuits.
VA+	6	**Positive Analog Power** (*Input*) - Positive supply for the analog section. Nominally +5 V. This supply should be as quiet as possible since noise on this pin will directly affect the jitter performance of the recovered clock
AGND	7	**Analog Ground** (*Input*) - Ground for the analog circuitry in the chip. AGND and DGND should be connected to a common ground area under the chip.
FILT	8	**PLL Loop Filter** (*Output*) - An RC network should be connected between this pin and ground. Recommended schematic and component values are given in Figure 5 and Table 1, respectively. Application note AN159 provides additional resources for the PLL.
$\overline{RST}$	9	**Reset** (*Input*) - When $\overline{RST}$ is low, the CS8415A enters a low power mode and all internal states are reset. On initial power up, $\overline{RST}$ must be held low until the power supply is stable, and all input clocks are stable in frequency and phase. This is particularly true in hardware mode with multiple CS8415A devices where synchronization between devices is important

RMCK	10	**Input Section Recovered Master Clock** (*Input/Output*) - Input section recovered master clock output when PLL is used. Frequency defaults to 256x the sample rate (Fs) and may be set to 128x. When the PLL is bypassed by using the RXD0 bit in the Clock Source Control register, an external clock of 256 Fs may be applied to this pin
RERR	11	**Receiver Error** (*Output*) - When high, indicates a problem with the operation of the AES3 receiver. The status of this pin is updated once per sub-frame of incoming AES3 data. Conditions that can cause RERR to go high are: validity, parity error, bi-phase coding error, confidence, QCRC and CCRC errors, as well as loss of lock in the PLL. Each condition may be optionally masked from affecting the RERR pin using the Receiver Error Mask Register. The RERR pin tracks the status of the unmasked errors: the pin goes high as soon as an unmasked error occurs and goes low immediately when all unmasked errors go away
OSCLK	16	**Serial Audio Output Bit Clock** (*Input/Output*) - Serial bit clock for audio data on the SDOUT pin
OLRCK	17	**Serial Audio Output Left/Right Clock** (*Input/Output*) - Word rate clock for the audio data on the SDOUT pin. Frequency will be the output sample rate (Fs)
SDOUT	18	**Serial Audio Output Data** (*Output*) - Audio data serial output pin
INT	19	**Interrupt** (*Output*) - Indicates errors and key events during the operation of the CS8415A. All bits affecting INT may be unmasked through bits in the control registers. The condition(s) that initiated interrupt are readable through a control register. The polarity of the INT output, as well as selection of a standard or open drain output, is set through a control register. Once set true, the INT pin goes false only after the interrupt status registers have been read and the interrupt status bits have returned to zero
U	20	**User Data** (*Output*) - Outputs User data from the AES3 receiver, see Figure 9 for timing information
OMCK	21	**System Clock** (*Input*) - When the OMCK System Clock Mode is enabled using the SWCLK bit in the Control 1 register, the clock signal input on this pin is output through RMCK. OMCK serves as reference signal for OMCK/RMCK ratio expressed in register 0x1E
DGND	22	**Digital Ground** (*Input*) - Ground for the digital circuitry in the chip. DGND and AGND should be connected to a common ground area under the chip.
VL+	23	**Positive Digital Power** (*Input*) - Positive supply for the digital section. Typically +3 to +5 V.
H/$\overline{S}$	24	**Hardware/Software Mode Control** (*Input*) - Determines the method of controlling the operation of the CS8415A, and the method of accessing CS and U data. In software mode, device control and CS and U data access is primarily through the control port, using a microcontroller. Hardware mode provides an alternate mode of operation and access to the CS and U data through dedicated pins. This pin should be permanently tied to VL+ or DGND
AD1/CDIN	27	**Address Bit 1 (Two-Wire) / Serial Control Data in (SPI)** (*Input*) - In Two-Wire mode, AD1 is a chip address pin. In SPI mode, CDIN is the input data line for the control port interface
SCL/CCLK	28	**Control Port Clock** (*Input*) - Serial control interface clock and is used to clock control data bits into and out of the CS8415A. In Two-Wire mode, SCL requires an external pull-up resistor to VL+

11. PIN DESCRIPTION - HARDWARE MODE



* Pins which remain the same function in all modes.
\+ Pins which require a pull up or pull down resistor to select the desired startup option.

COPY	1	**COPY Channel Status Bit** (*Output*) - Reflects the state of the Copyright Channel Status bit in the incoming AES3 data stream. If the category code is set to General, copyright will be indicated whatever the state of the Copyright bit.
VL2+ **VL+** **VL3+**	2 23 27	**Positive Digital Power** (*Input*) - Typically +3 to +5V.
$\overline{\text{EMPH}}$	3	**Pre-Emphasis** (*Output*) - $\overline{\text{EMPH}}$ is low when the incoming Channel Status data indicates 50/15 µs pre-emphasis. $\overline{\text{EMPH}}$ is high when the Channel Status data indicates no pre-emphasis or indicates pre-emphasis other than 50/15 µs. This is also a start-up option pin, and requires a 47 kΩ resistor to either VL+ or DGND, which determines the AD2 address bit for the control port in Two-Wire mode.
RXP0 **RXN0**	4 5	**AES3/SPDIF Receiver Port** (*Input*) - Differential line receiver inputs for the AES3 biphase encoded data. See Appendix A for recommended circuits.
VA+	6	**Positive Analog Power** (*Input*) - Nominally +5 V. This supply should be as quiet as possible since noise on this pin will directly affect the jitter performance of the recovered clock.
AGND	7	**Analog Ground** (*Input*) - Ground for the analog circuitry in the chip. AGND and DGND should be connected to a common ground area under the chip.
FILT	8	**PLL Loop Filter** (*Output*) - An RC network should be connected between this pin and ground. Recommended schematic and component values are given in Figure 5 and Table 1, respectively. Application note AN159 provides additional information about the PLL.
$\overline{\text{RST}}$	9	**Reset** (*Input*) - When $\overline{\text{RST}}$ is low, the CS8415A enters a low power mode and all internal states are reset. On initial power up, $\overline{\text{RST}}$ must be held low until the power supply is stable, and all input clocks are stable in frequency and phase. This is particularly true in hardware mode with multiple CS8415A devices where synchronization between devices is important.
RMCK	10	**Recovered Master Clock** (*Input/Output*) - Recovered master clock output when PLL is locked to the incoming AES3 stream. Frequency is 256x the sample rate (Fs).
RERR	11	**Receiver Error** (*Output*) - When high, indicates an error condition in the AES3 receiver. The status of this pin is updated once per sub-frame of incoming AES3 data. Conditions that can cause RERR to go high are: validity bit high, parity error, bi-phase coding error, and loss of lock by the PLL.

RCBL	12	**Receiver Channel Status Block** (*Output*) **-**Indicates the beginning of a received channel status block. RCBL goes high two frames after the reception of a Z preamble, remains high for 16 frames while COPY, ORIG, AUDIO, $\overline{\text{EMPH}}$ and PRO are updated, and returns low for the remainder of the block. RCBL changes on rising edges of RMCK.
PRO	13	**PRO Channel Status Bit** (*Output*) **-** Reflects the state of the Professional/Consumer Channel Status bit in the incoming AES3 data stream. Low indicates Consumer and high indicates Professional.
CHS	14	**Channel Select (Input) -** Selects which sub-frame's channel status data is output on the $\overline{\text{EMPH}}$, COPY, ORIG, PRO and $\overline{\text{AUDIO}}$ pins. Channel A is selected when CHS is low, channel B is selected when CHS is high.
NVERR	15	**No Validity Receiver Error Indicator** (*Output*) **-** A high output indicates a problem with the operation of the AES3 receiver. The status of this pin is updated once per frame of incoming AES3 data. Conditions that cause NVERR to go high are: parity error, and bi-phase coding error, and loss of lock by the PLL.
OSCLK	16	**Serial Audio Output Bit Clock** (*Input/Output*) - Serial bit clock for audio data on the SDOUT pin.
OLRCK	17	**Serial Audio Output Left/Right Clock** (*Input/Output*) - Word rate clock for the audio data on the SDOUT pin. Frequency will be the output sample rate (Fs).
SDOUT	18	**Serial Audio Output Data** (*Output*) - Audio data serial output pin
$\overline{\text{AUDIO}}$	19	**Audio Channel Status Bit** (*Output*) **-** Reflects the state of the audio/non audio Channel Status bit in the incoming AES3 data stream. When this bit is low a valid audio stream is indicated.
DGND3 **DGND2** **DGND**	20 21 22	**Digital Ground** (*Input*) - Ground for the digital circuitry in the chip. DGND and AGND should be connected to a common ground area under the chip.
H/$\overline{\text{S}}$	24	**Hardware/Software Mode Control** (*Input*) - Determines the method of controlling the operation of the CS8415A, and the method of accessing CS and U data. In software mode, device control and CS and U data access is primarily through the control port, using a microcontroller. Hardware mode provides an alternate mode of operation and access to the CS and U data through dedicated pins. This pin should be permanently tied to VL+ or DGND.
U	25	**User Data** (*Output*) - Outputs user data from the AES3 receiver, clocked by the rising and falling edges of OLRCK.
C	26	**Channel Status Data** (*Output*) - Outputs channel status data from the AES3 receiver, clocked by the rising and falling edges of OLRCK.
ORIG	28	**Original Channel Status** (*Output*) **-** SCMS generation indicator. This is decoded from the incoming category code and the L bit in the Channel Status bits. A low output indicates that the source of the audio data stream is a copy not an original. A high indicates that the audio data stream is original. This is also a start-up option pin, and requires a pull-up or pull-down resistor.

M74HCU04

HEX INVERTER (SINGLE STAGE)

DESCRIPTION

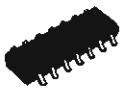
The M54/74HCU04 is a high speed CMOS HEX INVERTER (SINGLE STAGE) fabricated in silicon gate C^2MOS technology. It has the same high speed performance of LSTTL combined with true CMOS low power consumption.

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.

B1R
(Plastic Package)

F1R
(Ceramic Package)



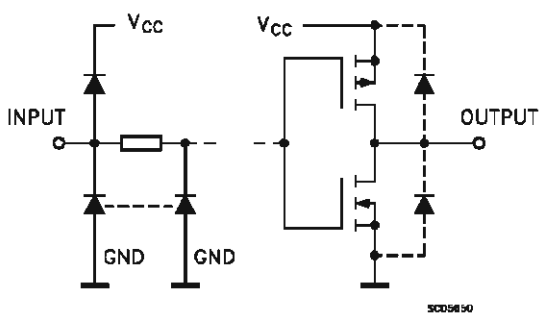
M1R
(Micro Package)

C1R
(Chip Carrier)

ORDER CODES :

M54HCU04F1R M74HCU04M1R
M74HCU04B1R M74HCU04C1R

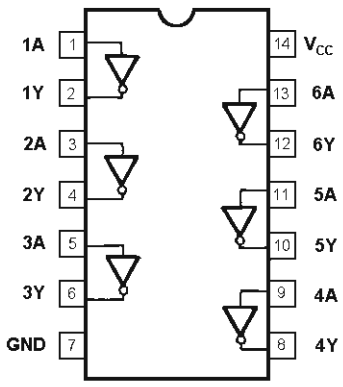
INPUT AND OUTPUT EQUIVALENT CIRCUIT

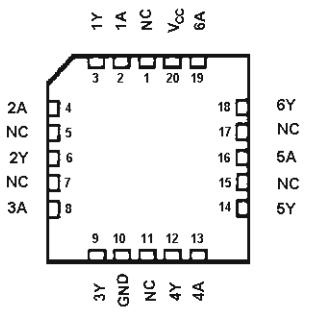


PIN DESCRIPTION

PIN No	SYMBOL	NAME AND FUNCTION
1, 3, 5, 9, 11, 13	1A to 6A	Data Inputs
2, 4, 6, 8, 10, 12	1Y to 6Y	Data Outputs
7	GND	Ground (0V)
14	Vcc	Positive Supply Voltage

PIN CONNECTIONS (top view)





NC =
No Internal
Connection

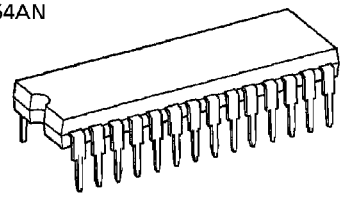
TOSHIBA CMOS DIGITAL INTEGRATED CIRCUIT SILICON MONOLITHIC

TC9162AN, TC9163AN, TC9164AN
TC9162AF, TC9163AF, TC9164AF

HIGH VOLTAGE ANALOG FUNCTION SWITCH ARRAY

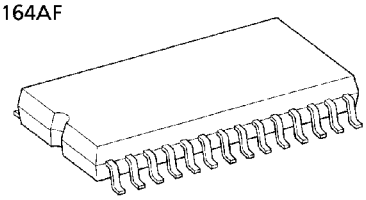
TC9162AN / AF, TC9163AN / AF and TC9164AN / AF are analog switch arrays for high voltage application. By inputting the specified serial data, the analog switches are controlled. As each analog switch is independently controllable, switch of wide use is available.

TC9162AN
TC9163AN
TC9164AN



SDIP28-P-400-1.78

TC9162AF
TC9163AF
TC9164AF



SOP28-P-450-1.27

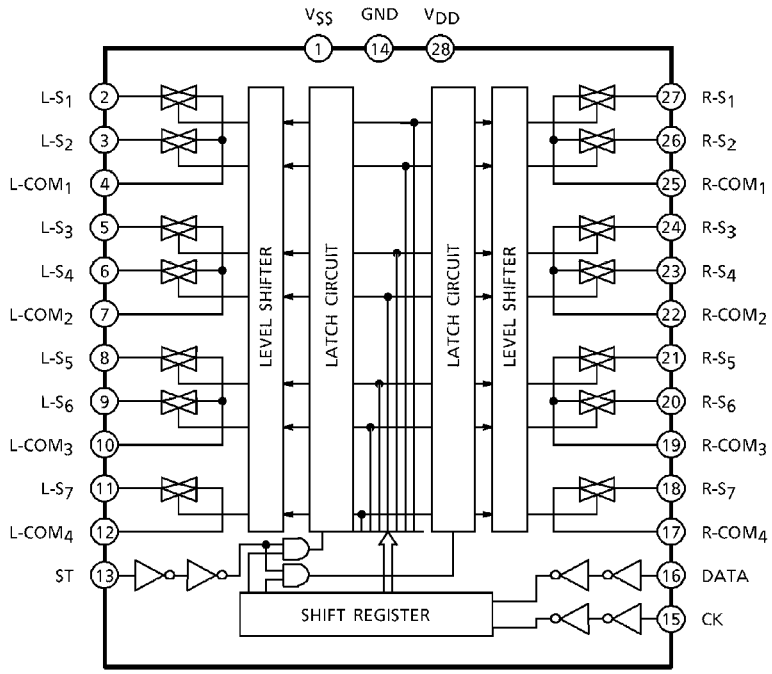
Weight
SDIP28-P-400-1.78 : 2.2g (Typ.)
SOP28-P-450-1.27 : 0.8g (Typ.)

FEATURES

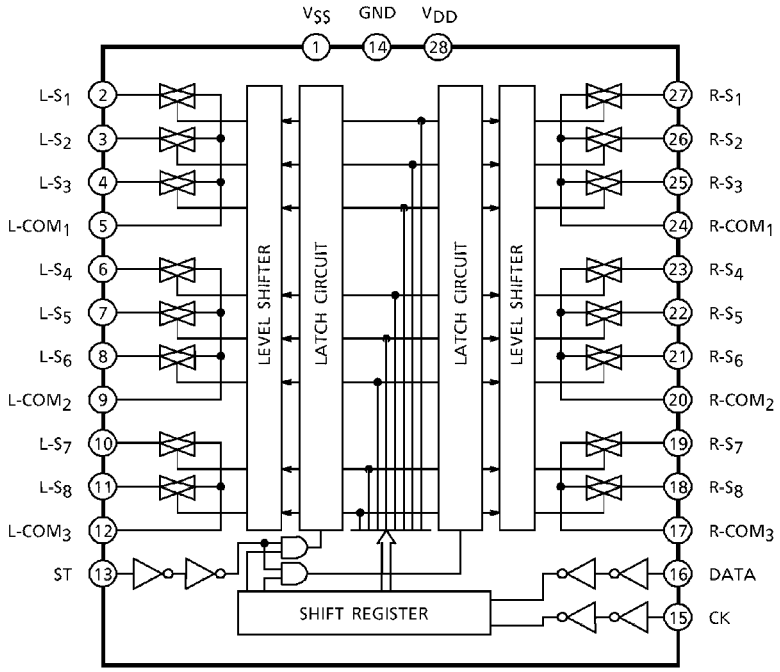
- Analog switches of 16 circuits are built in, allowing to provide three types according to internal connections.
- Dual power supply of (+) and (−) can be used.
  In this case the switch select data is operated in a single power supply by the built-in level shifter.
  As the threshold level of the input inverter is designed low, interface with CMOS microcomputer is easily available.
- As the analog switches are high-voltage (30V) use and have superior linearity of on-resistance, extra low distortion and wide dynamic range can be realized.
- Owing to CMOS structure current consumption is low.
- Package is shrinked DIP 28 PIN.

BLOCK DIAGRAM

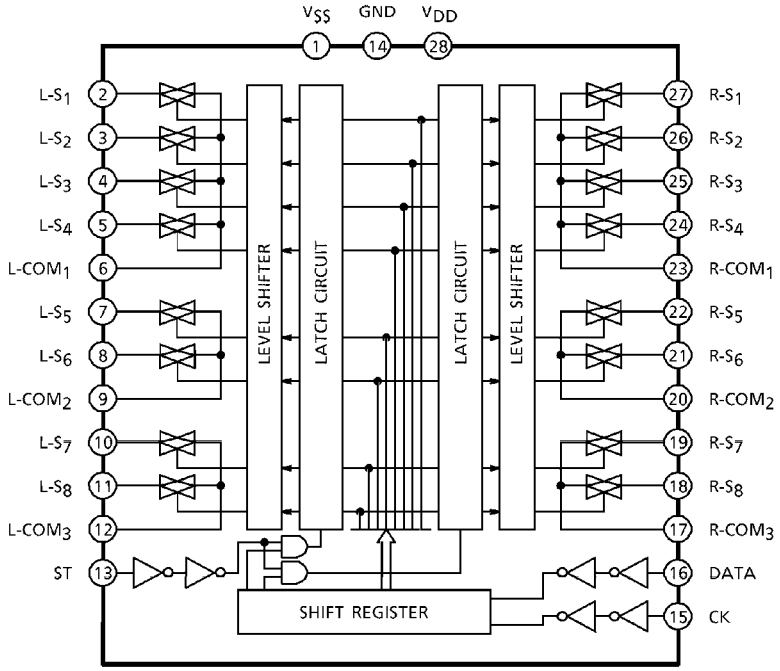
TC9162AN / AF



TC9163AN / AF

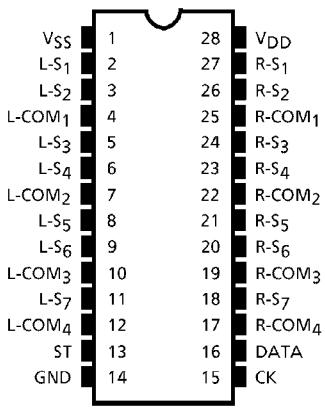


TC9164AN / AF

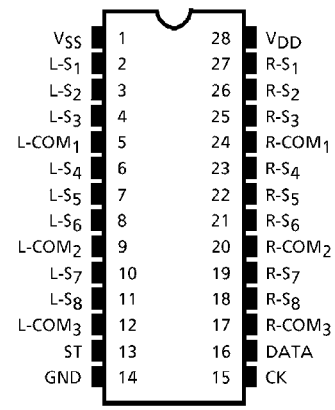


PIN CONNECTION (TOP VIEW)

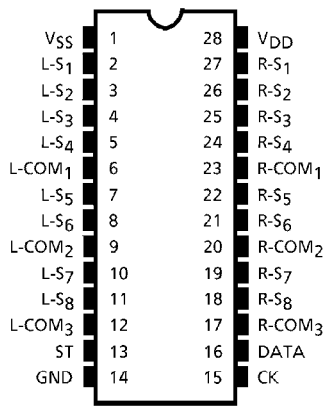
TC9162AN / AF



TC9163AN / AF



TC9164AN / AF



TOSHIBA CMOS DIGITAL INTEGRATED CIRCUIT SILICON MONOLITHIC

TC74VHC240F, TC74VHC240FW, TC74VHC240FT
TC74VHC244F, TC74VHC244FW, TC74VHC244FT

OCTAL BUS BUFFER

TC74VHC240F / FW / FT INVERTED, 3 - STATE OUTPUTS

TC74VHC244F / FW / FT NON - INVERTED, 3 - STATE OUTPUTS

(Note) The JEDEC SOP (FW) is not available in Japan.

The TC74VHC240 and 244 are advanced high speed CMOS OCTAL BUS BUFFERs fabricated with silicon gate C²MOS technology.

They achieve the high speed operation similar to equivalent Bipolar Schottky TTL while maintaining the CMOS low power dissipation.

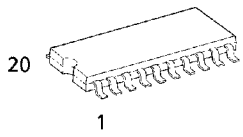
The 74VHC240 is an inverting 3 - state buffer having two active - low output enables. The TC74VHC244 is a non - inverting 3 - state buffer, and has two active - low output enables.

These devices are designed to be used with 3 - state memory address drivers, etc.

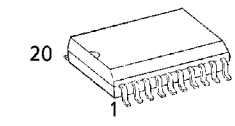
An input protection circuit ensures that 0 to 7V can be applied to the input pins without regard to the supply voltage. This device can be used to interface 5V to 3V systems and two supply systems such as battery back up. This circuit prevents device destruction due to mismatched supply and input voltages.

FEATURES :

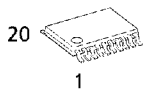
- High Speed ..... t_{pd} = 3.9ns(typ.) at V_{CC} = 5V
- Low Power Dissipation ..... I_{CC} = 4μA(Max.) at Ta = 25°C
- High Noise Immunity ..... $V_{NIH} = V_{NIL}$ = 28% V_{CC} (Min.)
- Power Down Protection is provided on all inputs.
- Balanced Propagation Delays ..... $t_{pLH} \simeq t_{pHL}$
- Wide Operating Voltage Range ..... V_{CC} (opr) = 2V ~ 5.5V
- Low Noise ..... V_{OLP} = 0.9V (Max.)
- Pin and Function Compatible with 74ALS240/244



F (SOP20-P-300-1.27)
Weight : 0.22g (Typ.)



FW (SOL20-P-300-1.27)
Weight : 0.46g (Typ.)



FT (TSSOP20-P-0044-0.65)
Weight : 0.08g (Typ.)

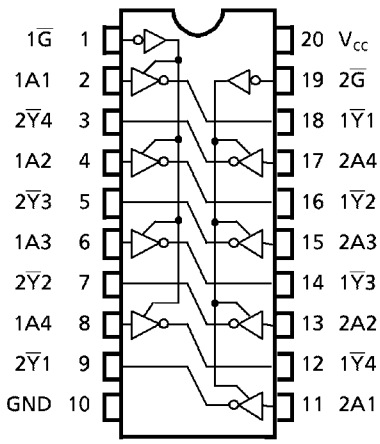
TRUTH TABLE

INPUTS		OUTPUTS	
$\overline{G}$	A_n	Y_n	$\overline{Y}_n$
L	L	L	H
L	H	H	L
H	X	Z	Z

X : Don't Care
Z : High Impedance
Y_n : TC74VHC244
$\overline{Y}_n$: TC74VHC240

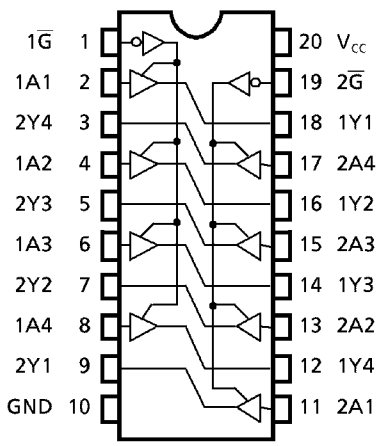
PIN ASSIGNMENT

TC74VHC240



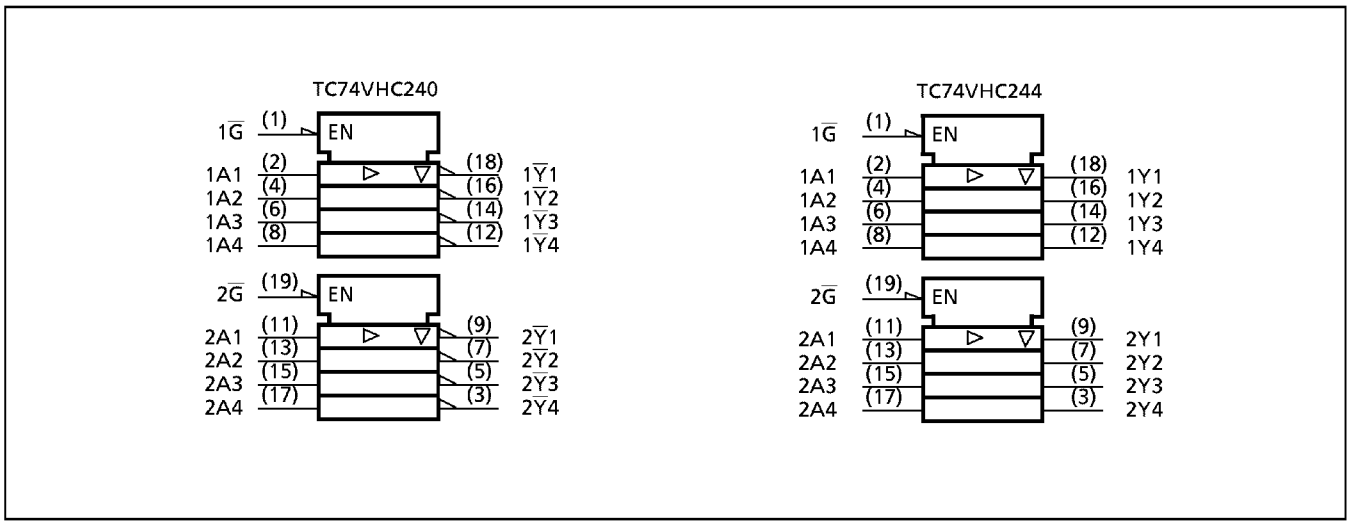
(TOP VIEW)

TC74VHC244



961001EBA2

IEC LOGIC SYMBOL



ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	VALUE	UNIT
Supply Voltage Range	V_{CC}	−0.5~7.0	V
DC Input Voltage	V_{IN}	−0.5~7.0	V
DC Output Voltage	V_{OUT}	−0.5~V_{CC}+0.5	V
Input Diode Current	I_{IK}	−20	mA
Output Diode Current	I_{OK}	±20	mA
DC Output Current	I_{OUT}	±25	mA
DC V_{CC}/Ground Current	I_{CC}	±75	mA
Power Dissipation	P_D	180	mW
Storage Temperature	T_{stg}	−65~150	°C

RECOMMENDED OPERATING CONDITIONS

PARAMETER	SYMBOL	VALUE	UNIT
Supply Voltage	V_{CC}	2.0~5.5	V
Input Voltage	V_{IN}	0~5.5	V
Output Voltage	V_{OUT}	0~V_{CC}	V
Operating Temperature	T_{opr}	−40~85	°C
Input Rise and Fall Time	dt / dv	0~100 (V_{CC} = 3.3 ± 0.3V) 0~20 (V_{CC} = 5 ± 0.5V)	ns / V

Ordering number : EN4817A

CMOS LSI

LC78211, 78212, 78213

Analog Function Switch

Applications

Function switching under serial data control in amplifiers, receivers, and other electronic equipment

Features

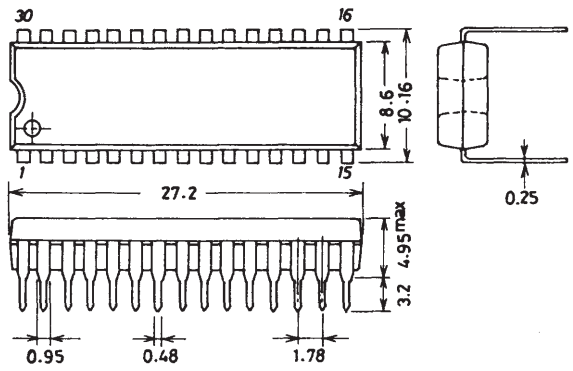
- Two sets of eight (or in the LC78213, seven) built-in circuits with three switching configurations available based on differing internal connections
- Control according to serial data sent from a micro-processor, and easy connection to 5 V microprocessors
- Two identical products can be connected to a shared bus due to the provision of a select pin (S).
- A reset pin that turns off all analog switches
- A ±20 V withstand voltage rating allows these products to provide a wide dynamic range.

Package Dimensions

unit: mm

3061-DIP30S

[LC78211, 78212, 78213]



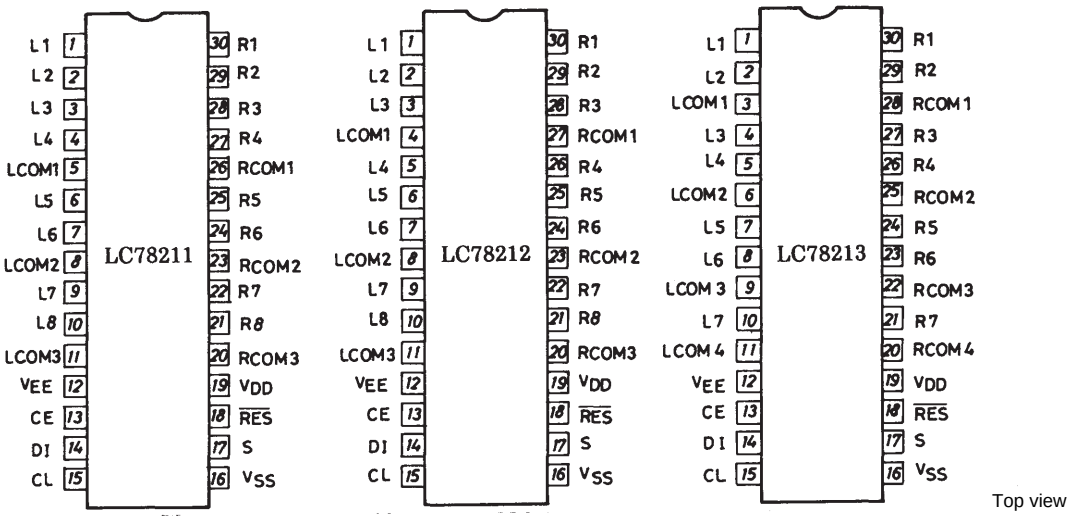
SANYO: DIP30S

Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{DD} max	V_{DD}	–0.3 to +20	V
	V_{EE} max	V_{EE}	–20 to +0.3	V
Maximum input voltage	V_I1	DI, CL, CE, S, $\overline{RES}$	–0.3 to +20	V
	V_I2	L1 to L8, R1 to R8, LCOM1 to LCOM4, RCOM1 to RCOM4	V_{EE} – 0.3 to V_{DD} + 0.3	V
Analog switch potential difference when on	ΔV_{ON}	With the switch on	0.5	V
Allowable power dissipation	Pd max	Ta ≤ 75°C	100	mW
Operating temperature range	Topr		–30 to +75	°C
Storage temperature range	Tstg		–40 to +125	°C

Pin Assignments

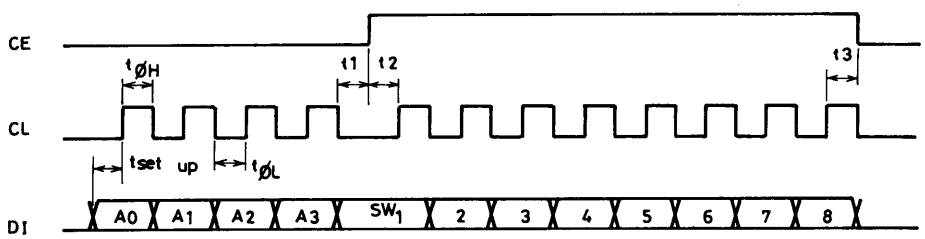


Top view

Allowable Operating Ranges at Ta = 25°C, V_{SS} = 0 V, $|V_{DD}| \geq |V_{EE}|$

Parameter	Symbol	Conditions	min	typ	max	Unit
Maximum supply voltage	V_{DD}	$V_{DD} - V_{EE} \geq 12$ V: V_{DD}	6.0		18.5	V
	V_{EE}	$V_{DD} - V_{EE} \geq 12$ V: V_{EE}	–18.5		0	V
Input high level voltage	$V_{IH}1$	DI, CL, CE	4.0		18.5	V
	$V_{IH}2$	S, $\overline{RES}$	0.7 V_{DD}		V_{DD}	V
Input low level voltage	$V_{IL}1$	DI, CL, CE	0		0.7	V
	$V_{IL}2$	S, $\overline{RES}$	0		0.3 V_{DD}	V
Analog switch input voltage range	V_{IN}	L1 to L8, R1 to R8, LCOM1 to LCOM4, RCOM1 to RCOM4	V_{EE}		V_{DD}	V
Low level clock pulse width	$t_{øL}$	CL	0.5			µs
High level clock pulse width	$t_{øH}$	CL	0.5			µs
Setup time	$t_{set\ up}$	CL, DI	0.5			µs
	t1*	CL, CE	0.5			µs
	t2*	CL, CE	0.5			µs
	t3*	CL, CE	0.5			µs
Minimum reset pulse width	t_{wRES}	$V_{DD} \geq 6$ V: $\overline{RES}$	1.0			µs
Hysteresis	V_H	CL, CE, DI	0.3			V

Note: * CE, CL and DI waveforms

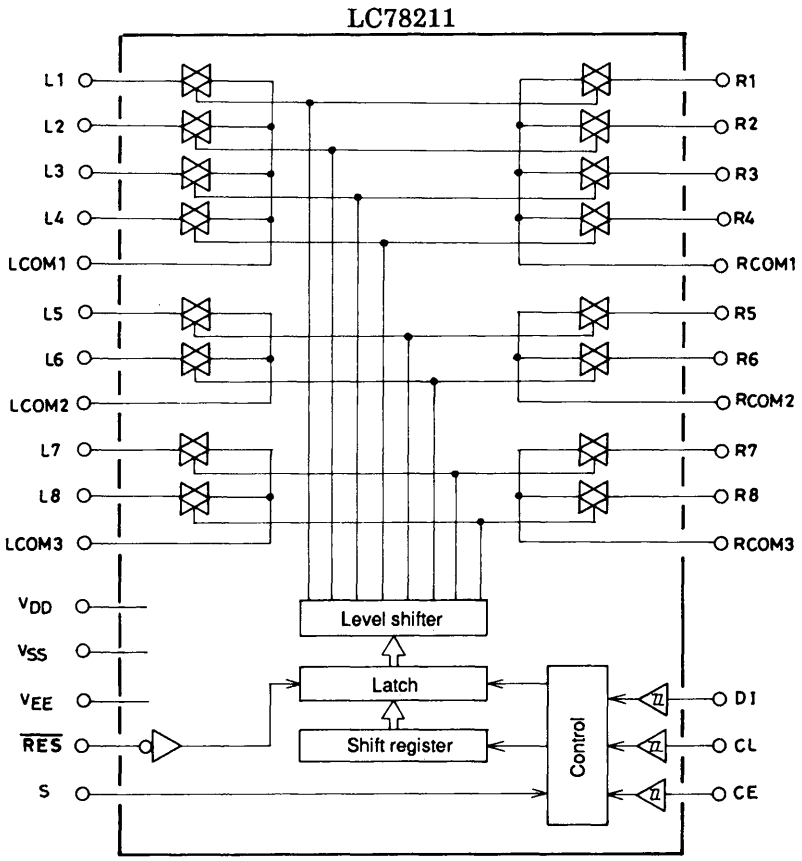


LC78211, 78212, 78213

Electrical Characteristics at Ta = 25°C, V_{SS} = 0 V

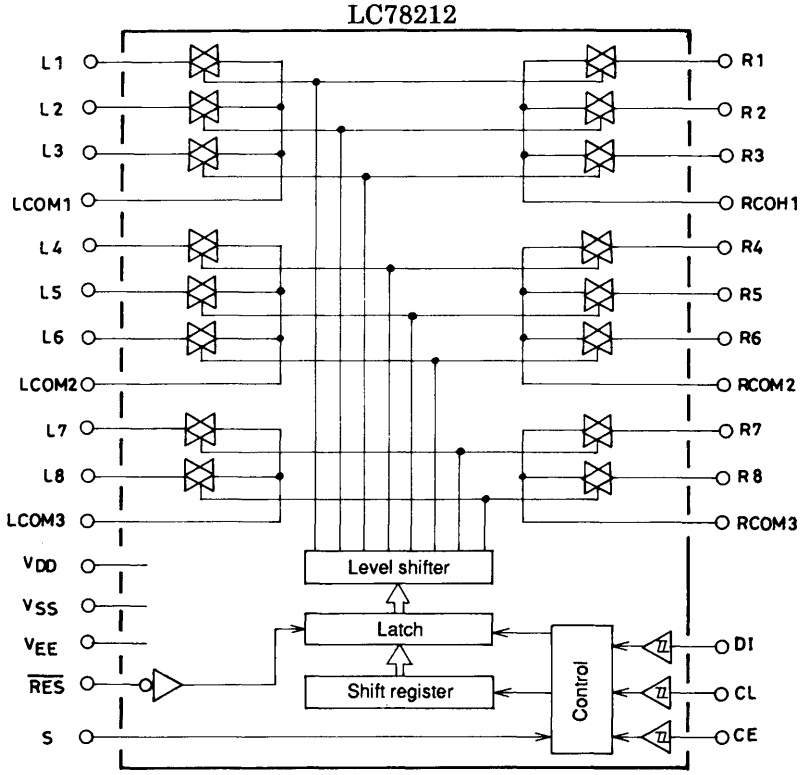
Parameter	Symbol	Conditions	min	typ	max	Unit
Analog switch on resistance	$R_{ON}1$	I = 1 mA, $V_{DD} - V_{EE}$ = 12 V: L1 to L8, R1 to R8, LCOM1 to LCOM4, RCOM1 to RCOM4		150		Ω
	$R_{ON}2$	I = 1 mA, $V_{DD} - V_{EE}$ = 37 V: L1 to L8, R1 to R8, LCOM1 to LCOM4, RCOM1 to RCOM4		70		Ω
Total harmonic distortion	THD1	V_{IN} = 1 Vrms, f = 1 kHz, $V_{DD} - V_{EE}$ = 37 V: L1 to L8, R1 to R8, LCOM1 to LCOM4, RCOM1 to RCOM4		0.0015	0.01	%
	THD2	V_{IN} = 0.1 Vrms, f = 1 kHz, $V_{DD} - V_{EE}$ = 37 V: L1 to L8, R1 to R8, LCOM1 to LCOM4, RCOM1 to RCOM4		0.01	0.05	%
Feedthrough	F_{TH}	V_{IN} = 0 dBV, f = 10 kHz, $V_{DD} - V_{EE}$ = 37 V: L1 to L8, R1 to R8, LCOM1 to LCOM4, RCOM1 to RCOM4		55		dB
Crosstalk	CT	V_{IN} = 0 dBV, f = 10 kHz, $V_{DD} - V_{EE}$ = 37 V: L1 to L8, R1 to R8, LCOM1 to LCOM4, RCOM1 to RCOM4		75		dB
Input high level current	I_{IH}	V_I = 18.5 V: DI, CL, CE, S, $\overline{RES}$			+10	μA
Input low level current	I_{IL}	V_I = 0 V: DI, CL, CE, S, $\overline{RES}$	–10			μA
Analog switch leakage current (off state)	I_{OFF}	$V_I = V_{EE}$ to V_{EE} + 37 V: L1 to L8, R1 to R8, LCOM1 to LCOM4, RCOM1 to RCOM4	–10		+10	μA
Current drain	I_{DD}	V_{DD}			1.0	mA

Equivalent Circuit Block Diagrams

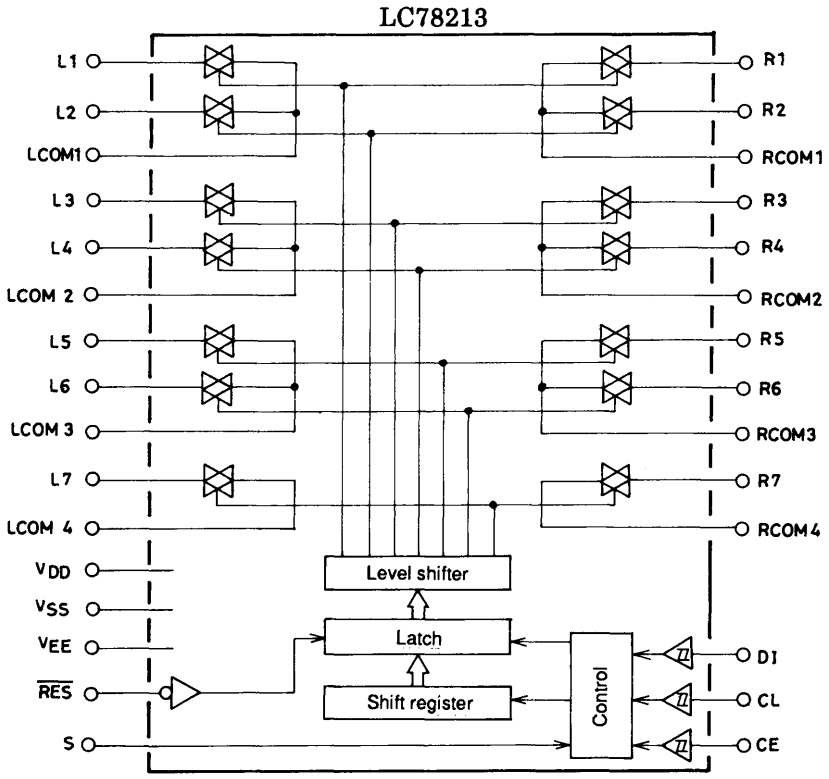


Continued from preceding page.

LC78212



LC78213



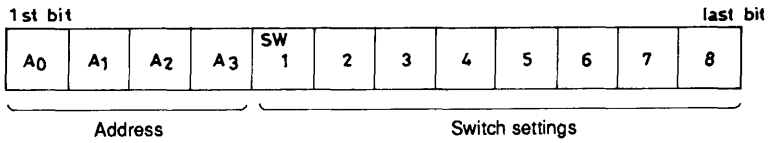
Pin Functions

<table>
<tr><th>Pin</th><th>I/O</th><th>Internal equivalent circuit</th><th>Pin function</th></tr>
<tr><td>V_{DD}, V_{SS}, V_{EE}</td><td></td><td></td><td>Power supply</td></tr>
<tr><td>L1 to L8, R1 to R8,
LCOM1 to LCOM4,
RCOM1 to RCOM4</td><td></td><td>See the block diagram.</td><td>Analog switch input and output</td></tr>
<tr><td>CL, DI, CE</td><td>I</td><td>  </td><td>Serial data input (Schmitt buffer)
CL.....Clock input
DI.....Data input
CE .....Chip enable</td></tr>
<tr><td>S</td><td>I</td><td>  </td><td>Selection of one of two chips
The address is set to the values shown in the table below according to the level input to the S pin.
<table>
<tr><th rowspan="2">Product</th><th rowspan="2">S pin level</th><th colspan="4">Address</th></tr>
<tr><th>A_0</th><th>A_1</th><th>A_2</th><th>A_3</th></tr>
<tr><td rowspan="2">LC78211</td><td>L</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
<tr><td>H</td><td>1</td><td>1</td><td>0</td><td>1</td></tr>
<tr><td rowspan="2">LC78212</td><td>L</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>H</td><td>1</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td rowspan="2">LC78213</td><td>L</td><td>0</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>H</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
</table></td></tr>
<tr><td>$\overline{RES}$</td><td>I</td><td>  </td><td>Reset input
The states of the analog switches are undefined when power is first applied. Setting this pin low will force all switches the off state.</td></tr>
</table>

Operation

1. Data Input Procedure

   The LC78211, LC78212 and LC78213 are controlled by inputting specified data to the CL, DI and CE pins. The input data consists of 12 bits, of which four bits are address and eight bits are data.



   Bits correspond to the L1 to L8 and R1 to R8 analog switches, and a value of one turns the corresponding switch on, and a value of zero turns it off.

   0.....Off

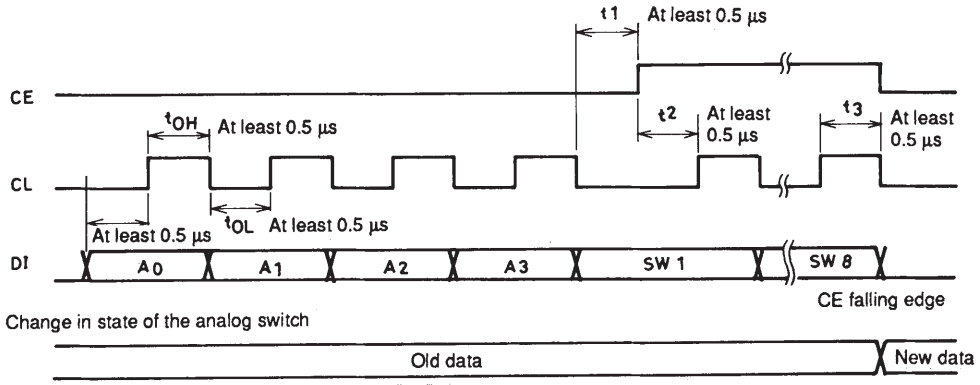
   1.....On

   The address is used when the chip is connected to a shared bus. The data (address) that must be transmitted depends on the S pin and the particular product as shown in the table below.

Product	S pin level	Address			
		A_0	A_1	A_2	A_3
LC78211	L	0	1	0	1
	H	1	1	0	1
LC78212	L	0	0	1	1
	H	1	0	1	1
LC78213	L	0	1	1	1
	H	1	1	1	1

   Note: The bit for switch eight in the LC78213 is a “don’t care” bit, that is it can be either 0 or 1 without affecting chip function. This is because the LC78213 has two sets of seven (not eight) circuits.

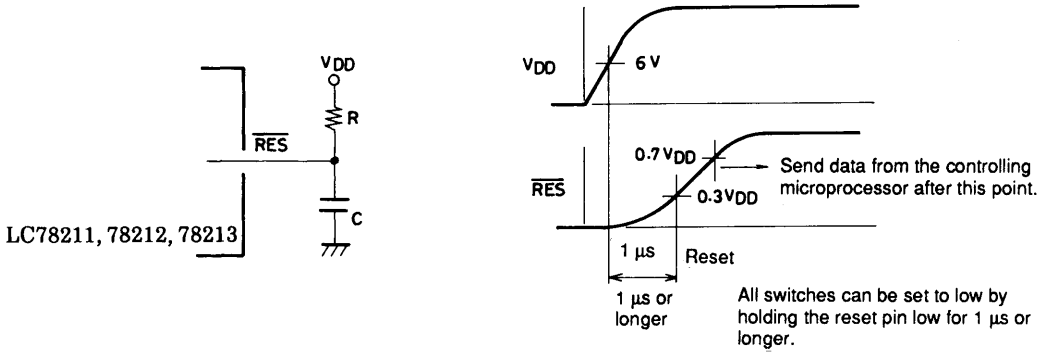
2. DI, CL and CE Timing



Data is read in on the rising edge of CL and latched on the falling edge of CE.

3. Notes on the Reset Pin

The states of the analog switches are undefined when power is first applied. However, it is possible to use the reset pin to force all switches to the off state by connecting an RC circuit to this pin.



4. Using a CCB Bus with Multiple ICs

The LC78211, LC78212 and LC78213 retain their prior state until they receive data with a matching address.

5. Replacing Earlier Models

Caution is required when replacing an LC7821N, LC7823N and LC7823N with an LC78211, LC78212 and LC78213, since the S pin threshold levels differ.

6. Handling of Unused Input Pins

We recommend connecting any unused switch pin to V_{SS} through a resistor of up to a few 100 kΩ to prevent damage from static electricity.

National Semiconductor

November 1995

MM54HC151/MM74HC151 8-Channel Digital Multiplexer

General Description

This high speed Digital multiplexer utilizes advanced silicon-gate CMOS technology. Along with the high noise immunity and low power dissipation of standard CMOS integrated circuits, it possesses the ability to drive 10 LS-TTL loads. The MM54HC151/MM74HC151 selects one of the 8 data sources, depending on the address presented on the A, B, and C inputs. It features both true (Y) and complement (W) outputs. The STROBE input must be at a low logic level to enable this multiplexer. A high logic level at the STROBE forces the W output high and the Y output low.

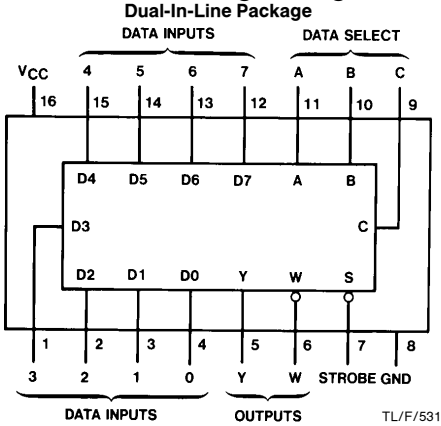
The 54HC/74HC logic family is functionally as well as pin-out compatible with the standard 54LS/74LS logic family. All inputs are protected from damage due to static discharge by internal diode clamps to V_{CC} and ground.

Features

- Typical propagation delay
  data select to output Y: 26 ns
- Wide operating supply voltage range: 2–6V
- Low input current: 1 μA maximum
- Low quiescent supply current: 80 μA maximum (74HC)
- High output drive current: 4 mA minimum

Connection and Logic Diagrams

Dual-In-Line Package



TL/F/5313–1

Top View

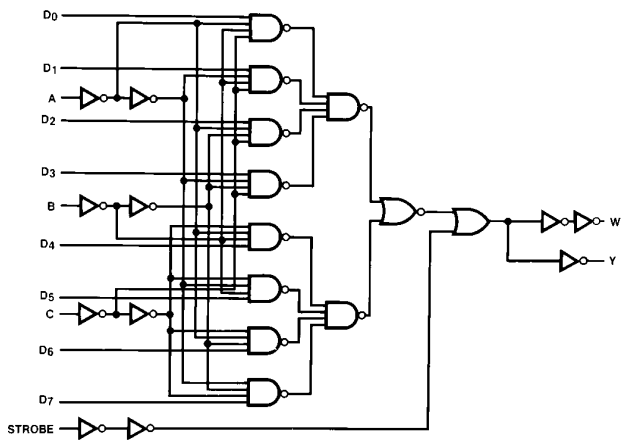
Order Number MM54HC151 or MM74HC151

Truth Table

Inputs				Outputs	
Select			Strobe		
C	B	A	S	Y	W
X	X	X	H	L	H
L	L	L	L	D0	$\overline{D0}$
L	L	H	L	D1	$\overline{D1}$
L	H	L	L	D2	$\overline{D2}$
L	H	H	L	D3	$\overline{D3}$
H	L	L	L	D4	$\overline{D4}$
H	L	H	L	D5	$\overline{D5}$
H	H	L	L	D6	$\overline{D6}$
H	H	H	L	D7	$\overline{D7}$

H = High Level, L = Low Level, X = Don't Care

D0, D1...D7 = the level of the respective D input



TL/F/5313–2

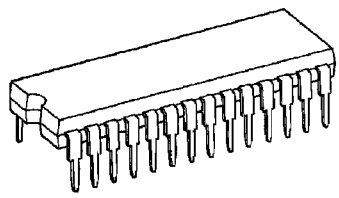
TOSHIBA CMOS DIGITAL INTEGRATED CIRCUIT SILICON MONOLITHIC

TC9482N, TC9482F

SYSTEM ELECTRONIC VOLUME CONTROL

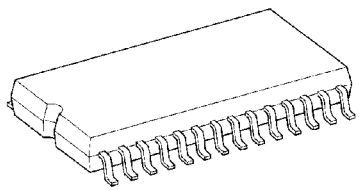
The TC9482N and TC9482F are six-channel electronic volume control ICs developed for Hi-Fi audio equipment. Since all six channels can be individually controlled, the devices are optimum for audio equipment with multiple outputs.

TC9482N



SDIP28-P-400-1.78

TC9482F



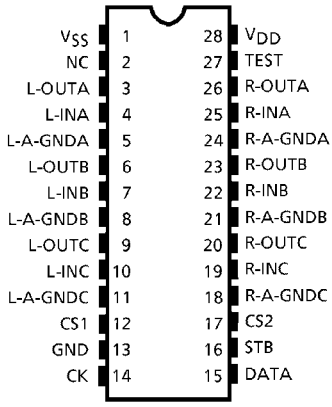
SOP28-P-450-1.27

Weight
SDIP28-P-400-1.78 : 2.2 g (Typ.)
SOP28-P-450-1.27 : 0.8 g (Typ.)

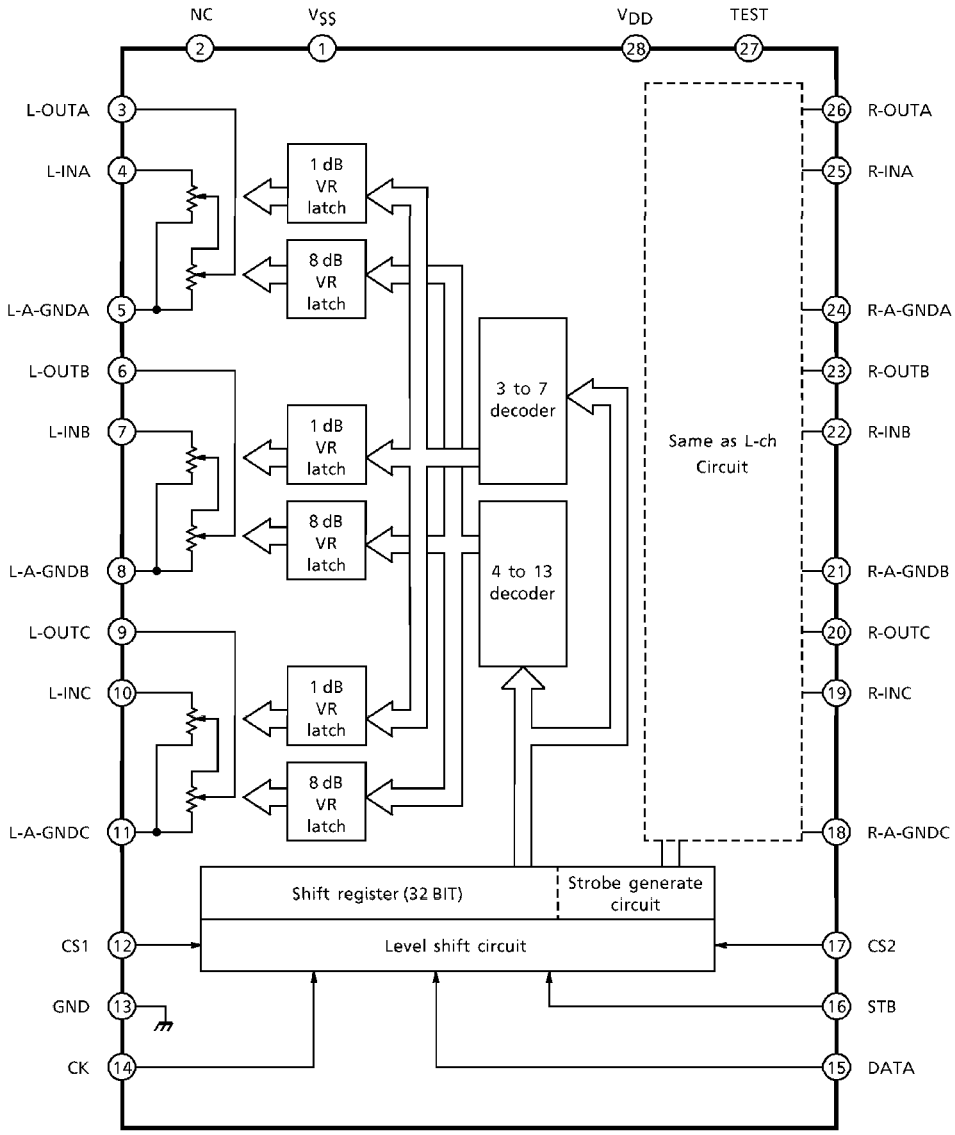
FEATURES

- Sound volume can be controlled in 97 steps from 0 to −95dB or up to an infinite level in 1dB increments.
- Incorporating six channels of volume control circuits, the device allows independent volume control.
- Can operate with a single or dual power supplies.
- Can control up to 4 chips on the same bus by using chip select input.
- Built-in interface for 5-V microcomputers.
- Thanks to its polysilicon resistor, the device allows you to configure a low-distortion, high-performance volume control system.
- Two packages supported: 28-pin shrink DIP and 28-pin flat package.

PIN CONNECTIONS

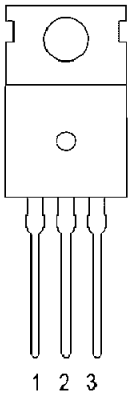


BLOCK DIAGRAM



3-Terminal 1.5A Negative Adjustment Regulator IC

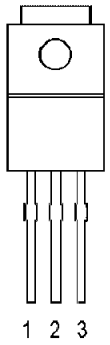
KA337



1) Adjustment
2) Input
3) Output

Low Saturation Voltage Type 3-Pin Regulator IC

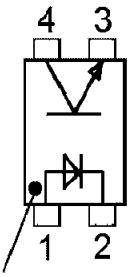
BA033T



1 Vcc
2 Ground
3 Out

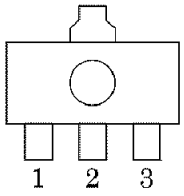
Photocoupler IC

PC-17T1

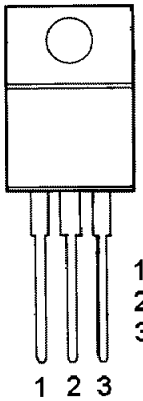


POSITIVE REGULATORS VARIOUS STYLES 7805, 7806, 7812, 7815, 7824

SOT-89

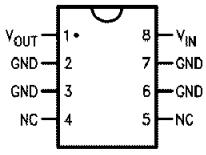


1.OUT
2.GND
3.IN



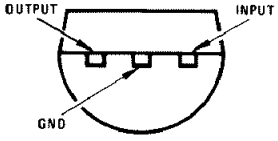
1. IN
2. GROUND
3. OUT

SO-8 Plastic (M) (Narrow Body)



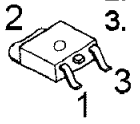
Top View

(TO-92) Plastic Package (Z)



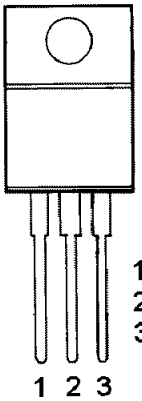
Bottom View

TO-252



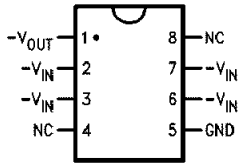
1. IN
2. GRD
3. OUT

NEGATIVE REGULATORS VARIOUS STYLES 7905, 7915



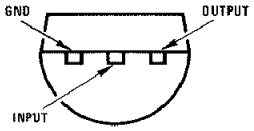
1. GROUND
2. IN
3. OUT

SO-8 Plastic (Narrow Body)



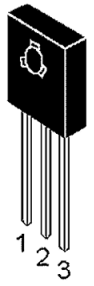
Top View

TO-92 Plastic Package (Z)



Bottom View

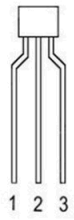
2SC4137



1. Emitter
2. Collector
3. Base

Small Signal Bi-Polar PNP Transistor

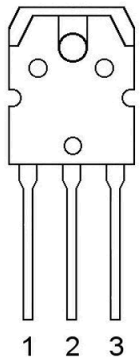
2SA933AS



1 Emitter
2 Collector
3 Base

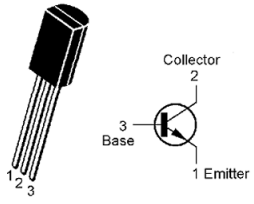
Silicon Transistor

2SA1986, 2SA1941,2SB1560 PNP
2SC5198, 2SC5358,2SD2390 NPN

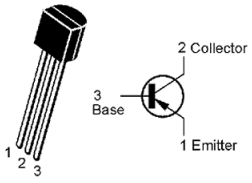


1 Base
2 Collector (Heat Sink)
3 Emitter

KTC3206

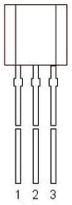


KRC107
KTA1268
KTA1266
KTA1024



EPITAXIAL PLANAR TRANSISTOR

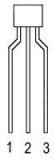
KTC3200
KTC2874
KTC3198
KRA107M PNP



1 Emitter
2 Collector
3 Base

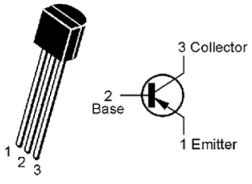
Silicon PNP Transistor

2SA1740S
DTA114TSA

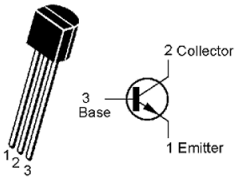


1 Emitter
2 Collector
3 Base

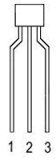
MPSA56



KTD1302

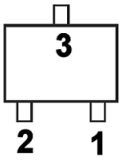


DTA114YSA
DTC114YSA NPN

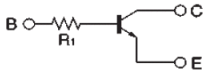


1) Ground
2) In
3) Out

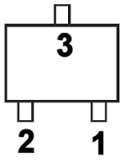
DTC323TK



1) Emitter
2) Base
3) Collector

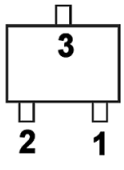


DTA114YKA



1) Ground
2) In
3) Out

KRA107S PNP
KTD1304 NPN
KRC111S NPN
DTC114TKA NPN
DTC114YKA NPN
KTA1504



1) Emitter
2) Base
3) Collector

DCR6001I

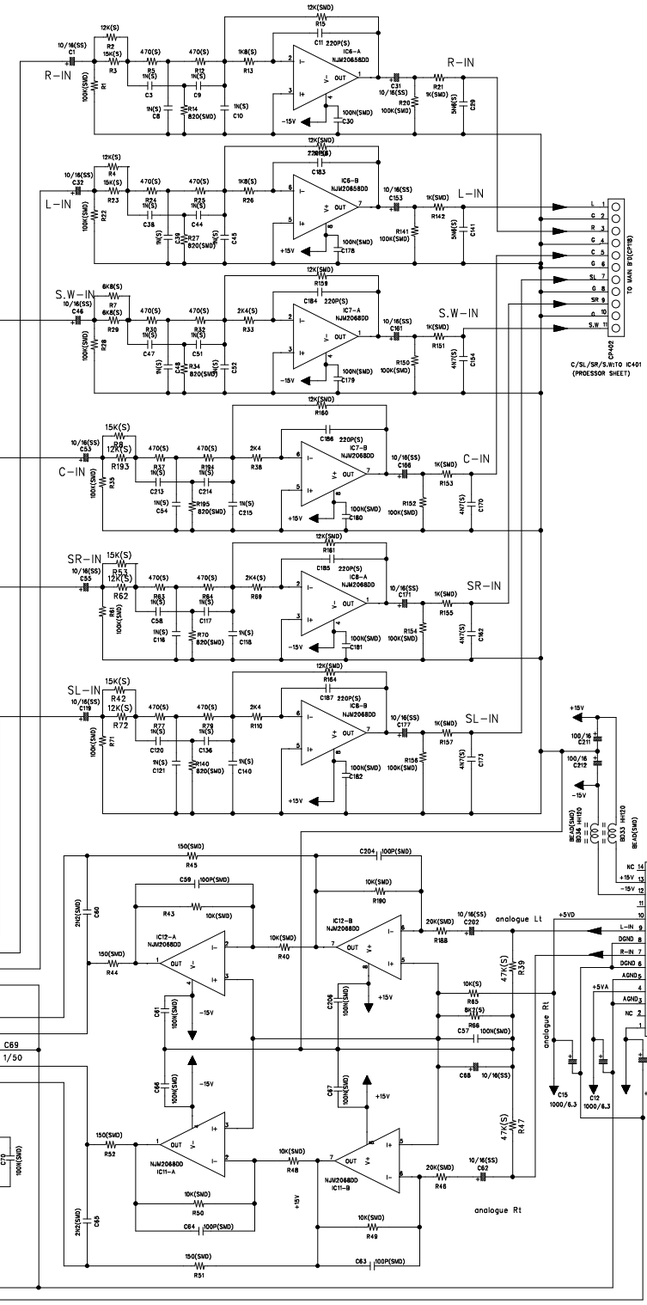
SCHEMATIC DIAGRAM

JBL

DSP B'D

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

JBL DSP DSP B'D



AC-3(DSP) B'D

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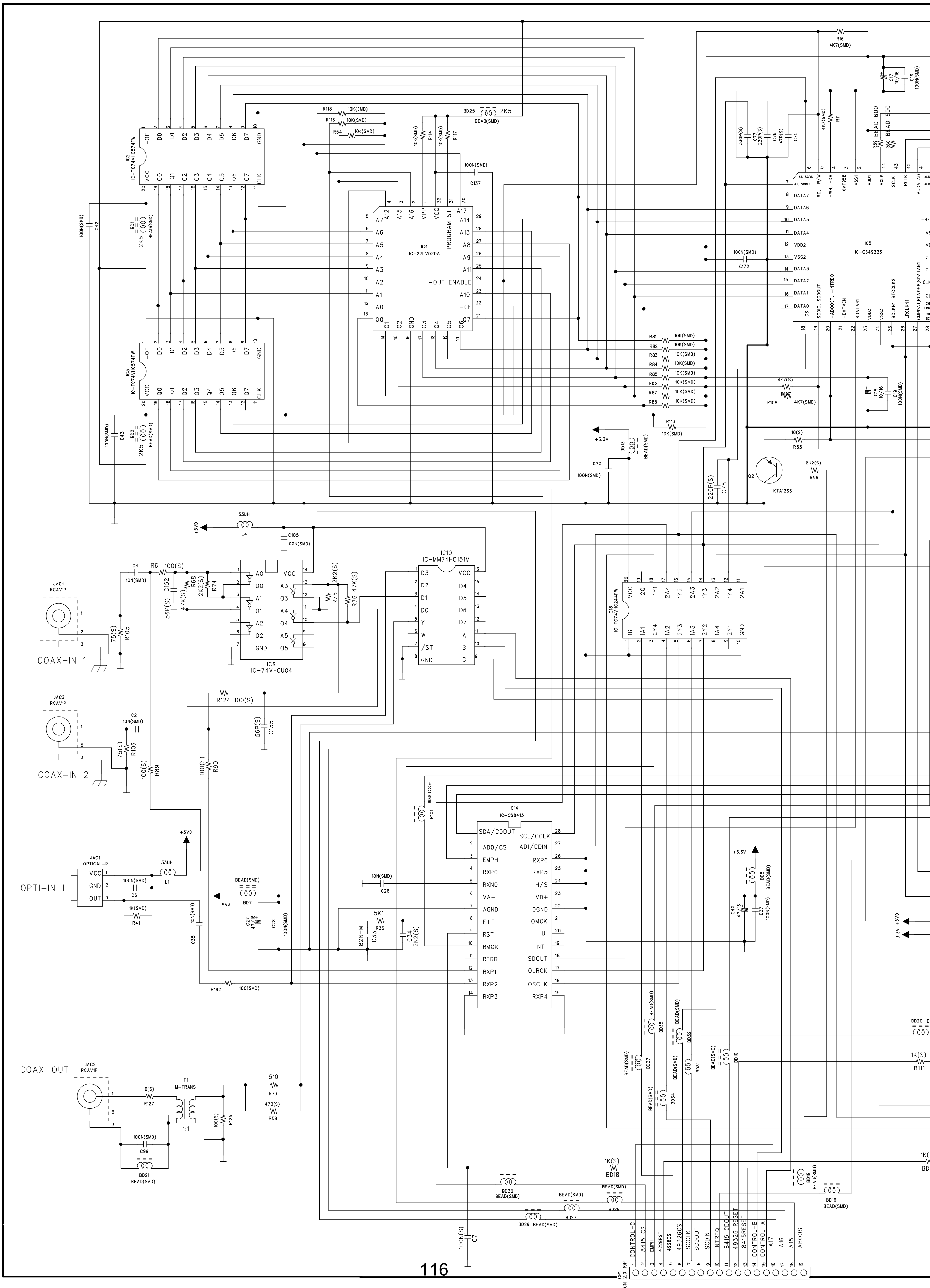
CHECKED:	DATE:	TITLE:	
QUALITY CONTROL:	DATE:	CODE: / SIZE: / DRAWING NO: 55192720XX / REV:	
RELEASED:	DATE:	SCALE:	SHEET: 1 OF 1

DCR600II

JBL

SCHEMATIC DIAG



3 2 1

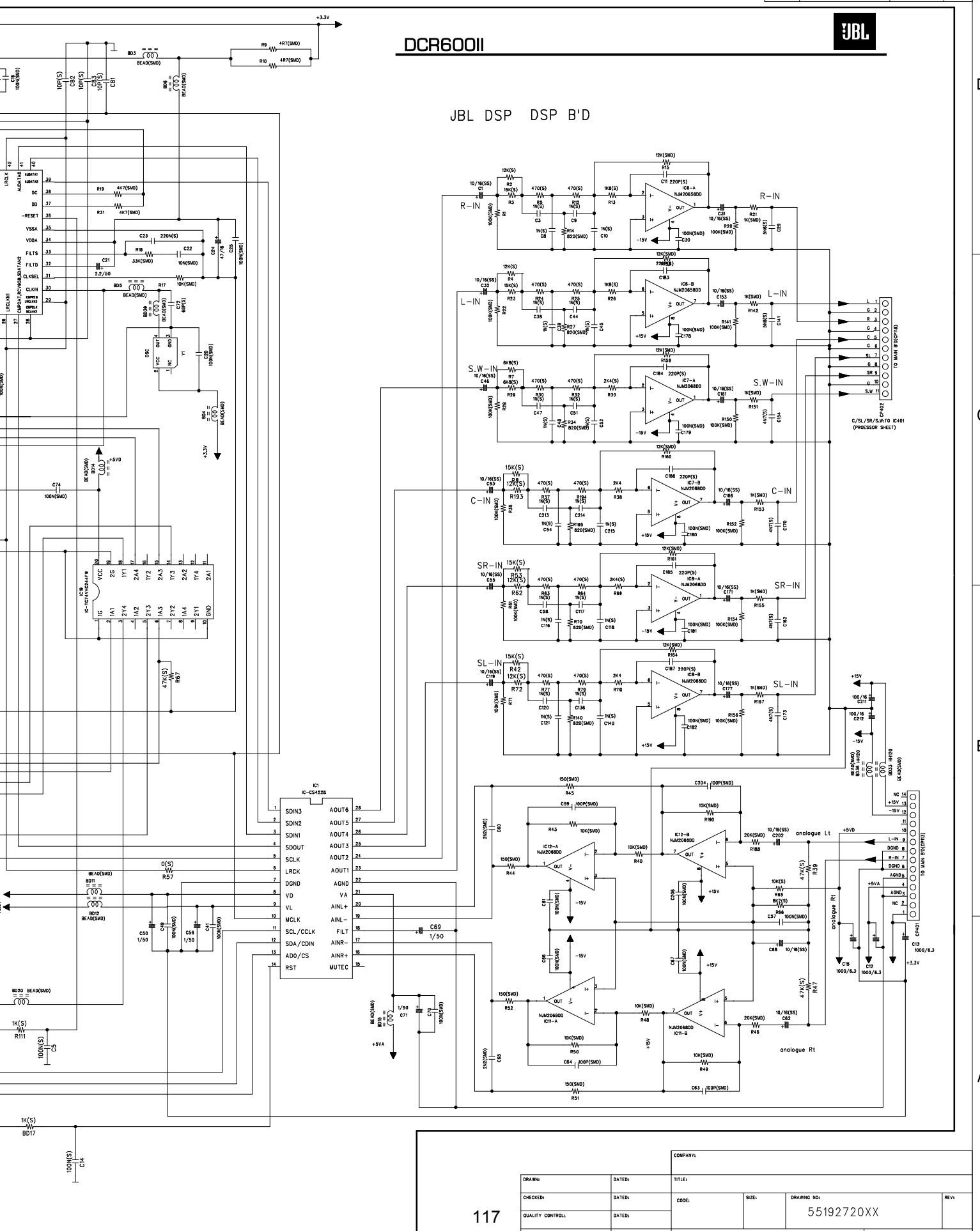
GRAM JBL DSP B'D

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

D C B A

DCR600II

JBL DSP DSP B'D



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DRAWN:	DATED:	TITLE:			
CHECKED:	DATED:	CODE:	SIZE:	DRAWING NO: 55192720XX	REV:
QUALITY CONTROL:	DATED:				
RELEASED:	DATED:	SCALE:		SHEET: 1 OF 1	$$$9748

117

AC-3(DSP) B'D

SCHEMATIC DIAGRAM

DCR600MKII

DCR600II

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

JBL

KEY B'D

FL201

POWER S/W B'D

H/P B'D

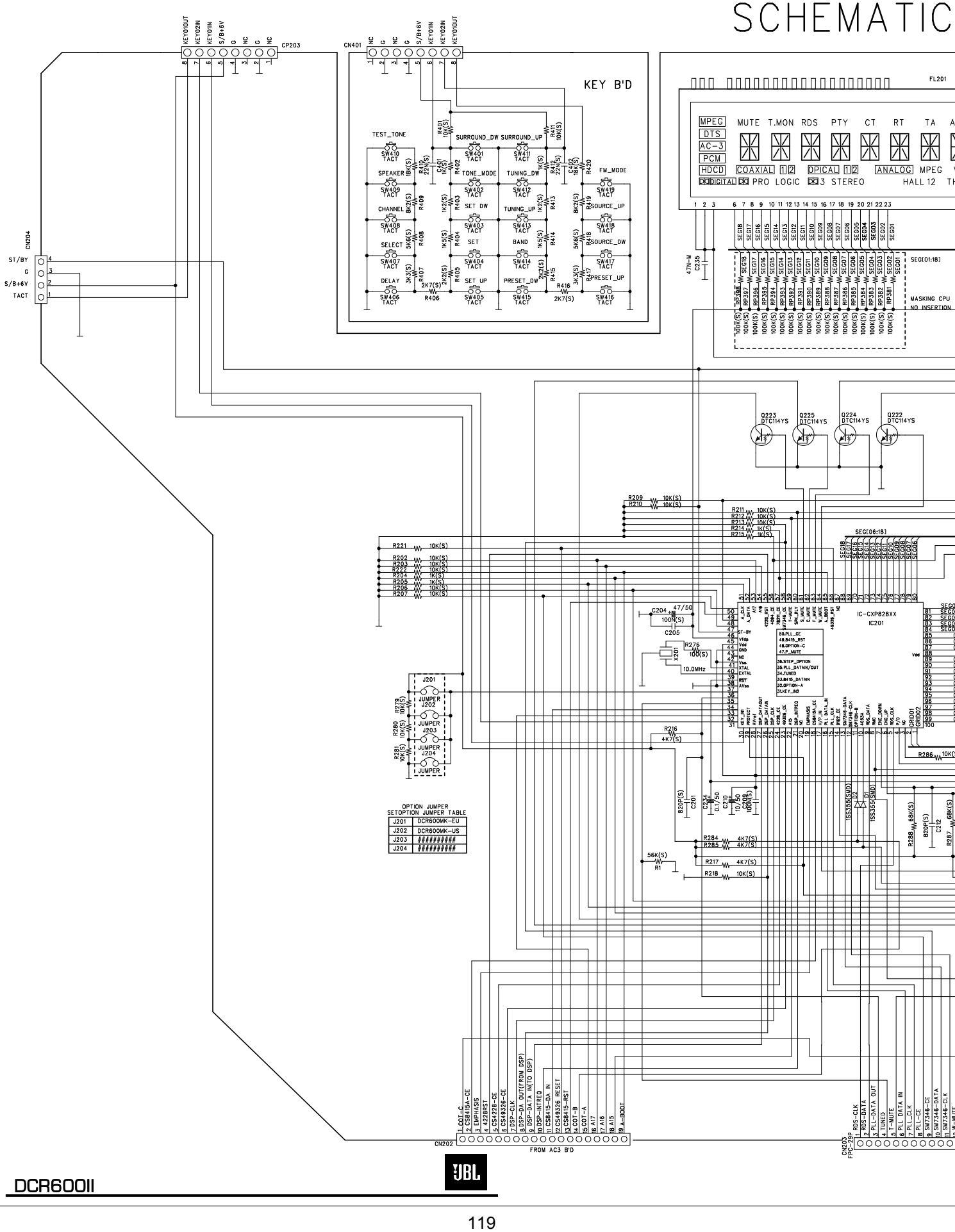
TACT S/W B'D

OPTION JUMPER SETOPTION JUMPER TABLE

J201	DCR600MK-EU
J202	DCR600MK-US
J203	##########
J204	##########

COMPANY:	
TITLE:	DCR600II FRONT, KEY
DRAWN: S.P.SON	DATED: 2001.06.20
CHECKED:	DATED:
QUALITY CONTROL:	DATED:
RELEASED:	DATED:
CODE:	SIZE:
DRAWING NO:	55192710XX
REV:	
SCALE:	SHEET: OF

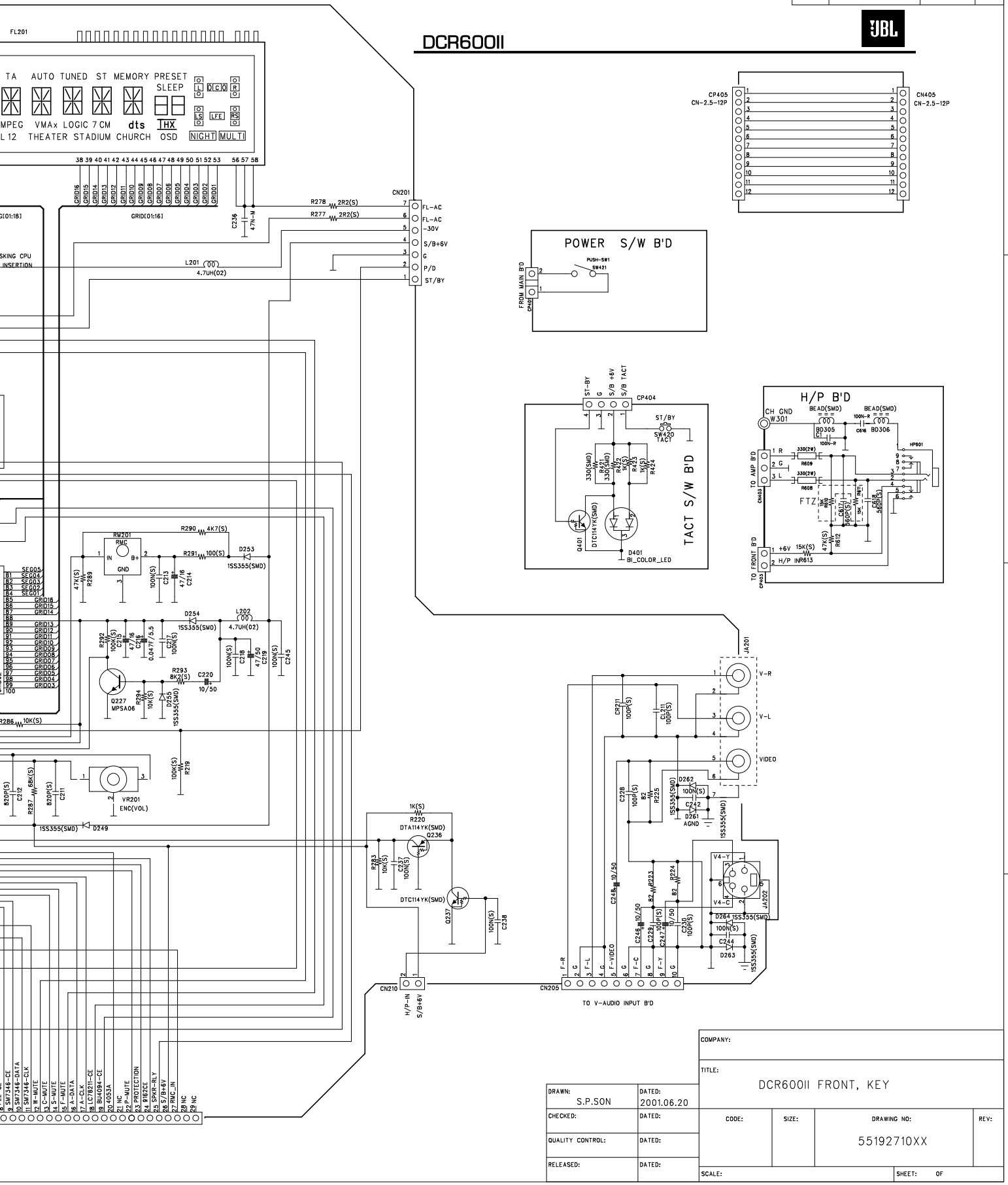
SCHEMATIC


KEY B'D
FL201
IC-CXP82BXX
IC201
OPTION JUMPER
SETOPTION JUMPER TABLE
J201 DCR600MK-EU
J202 DCR600MK-US
J203 ##########
J204 ##########
FROM AC3 B'D

IC DIAGRAM DCR600MKII

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

DCR600II



DRAWN: S.P.SON	DATED: 2001.06.20	COMPANY:	
CHECKED:	DATED:	TITLE: DCR600II FRONT, KEY	
QUALITY CONTROL:	DATED:	CODE:	SIZE: DRAWING NO: 55192710XX REV:
RELEASED:	DATED:	SCALE:	SHEET: OF

SCHEMATIC DIAGRAM

DCR600II

JBL

S-LEFT CH.

F-LEFT CH.

CENTER CH.

F-RIGHT CH.

S-RIGHT CH.

SW-CH.

SL IN

FL IN

CNT IN

FR IN

SR IN

SW IN

ON HEATSINK

TO H/P B'D

CN-2.0-12P CP502

CP308

CP501

JW7 FEED-INV

JW8 FEED-NONINV

FR(JW5)

FL(JW1)

SR(JW4)

SL(JW2)

SW(JW5)

C(JW3)

CONFIDENTIAL/CONTROL COPY

FILE NAME	CODE No.			SHEET
AMP				5/10
MODEL	DESIGEN	CHKD	CHKD	APPROVAL
DCR600MK2				
DESIGN DATE				
2001.06.20				

DCR600II

SCHEMATIC DIAGRAM

DCR600MK2 MAIN B'D – MAIN

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

DRAWN:	DATED: 2001.06.11.	COMPANY:	
CHECKED:	DATED:	TITLE: DCR600MK2 MAIN POWER/LIMIT PARTS	
QUALITY CONTROL:	DATED:	CODE:	SIZE:
RELEASED:	DATED:	DRAWING NO: 55192740XX	REV:
		SCALE:	SHEET: 1 OF 11

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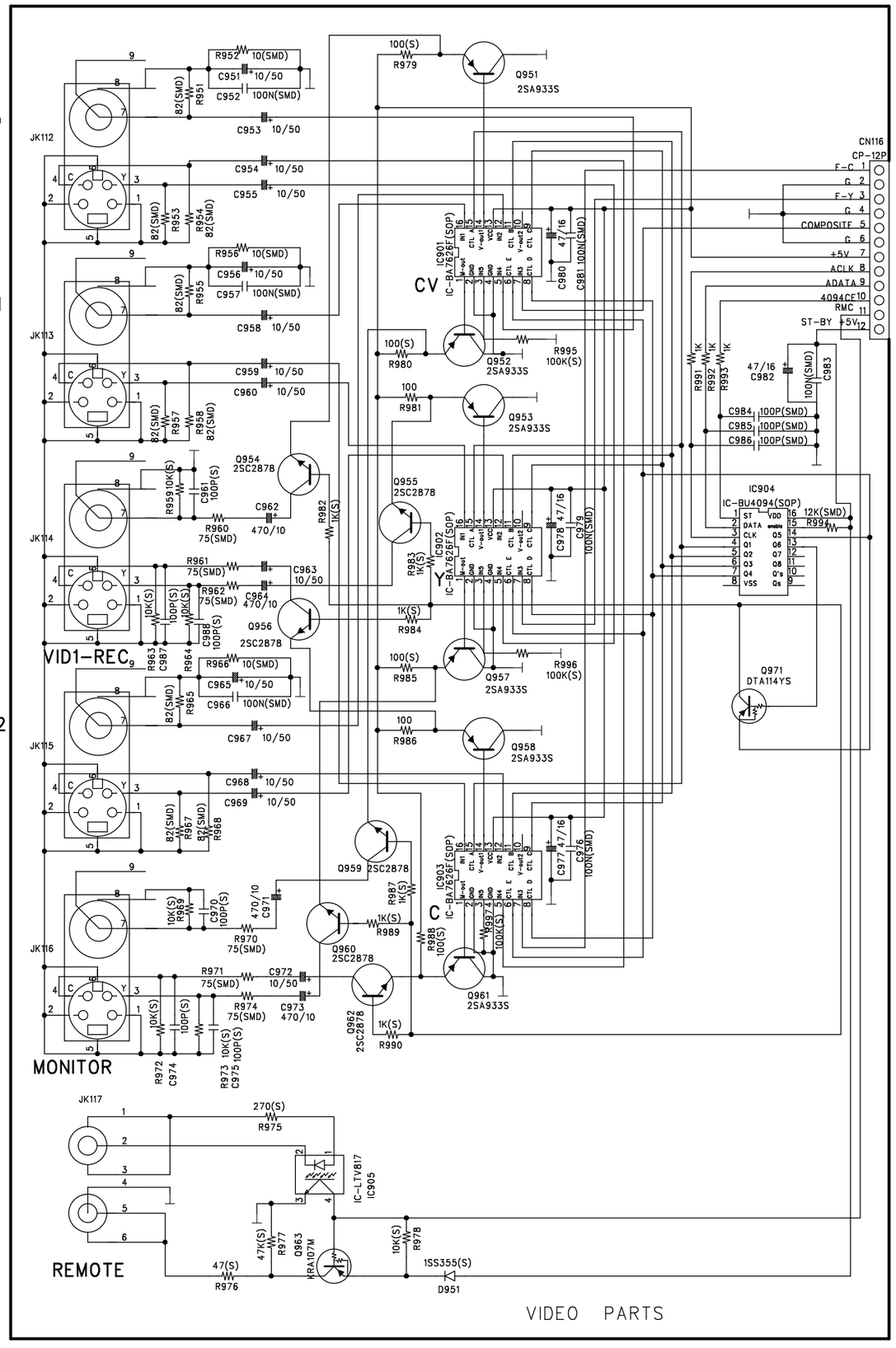
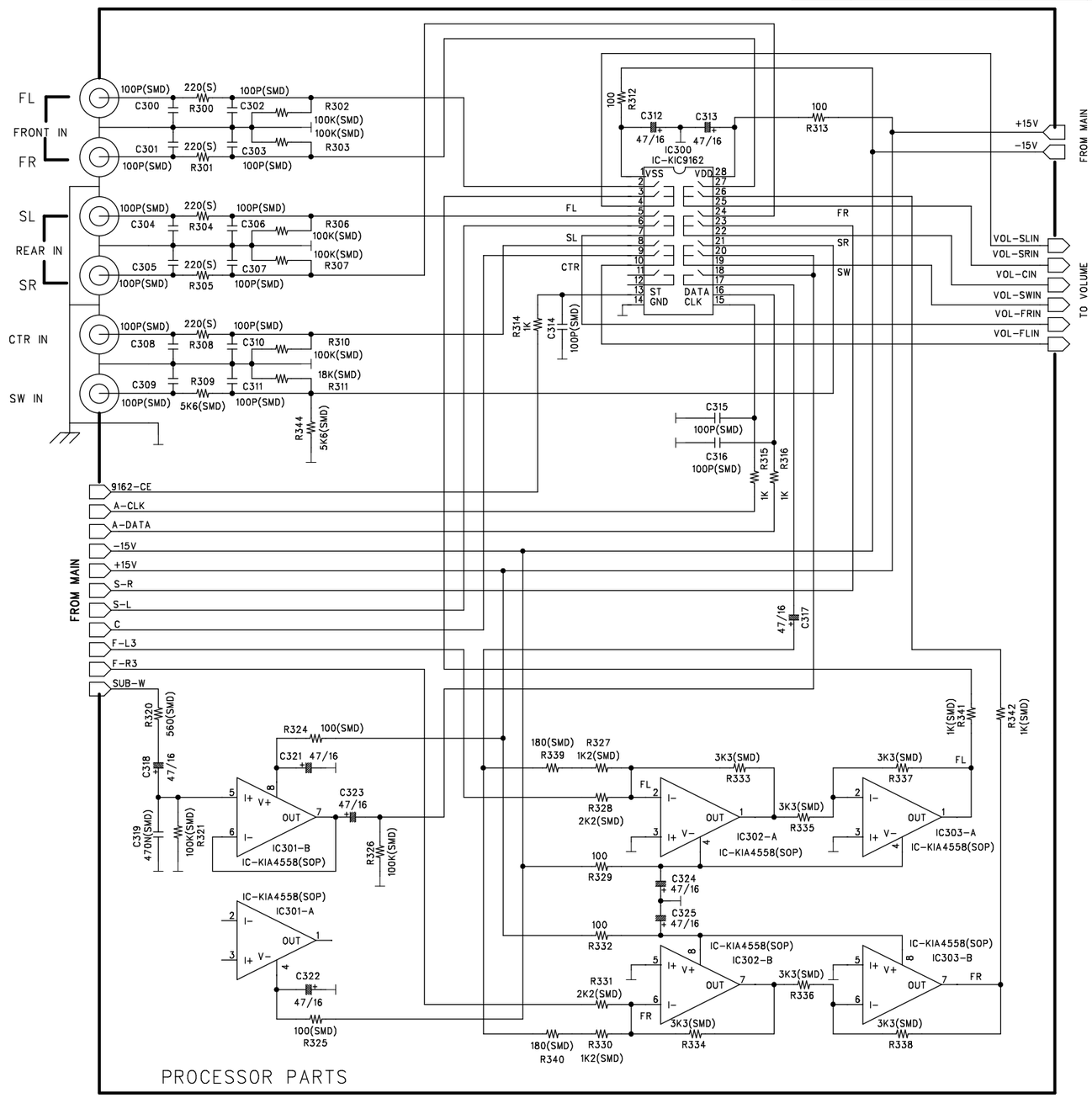
REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

DCR600II





DCR600MK2 MAIN B'D – PROCESSOR SCHEMATIC DIAGRAM

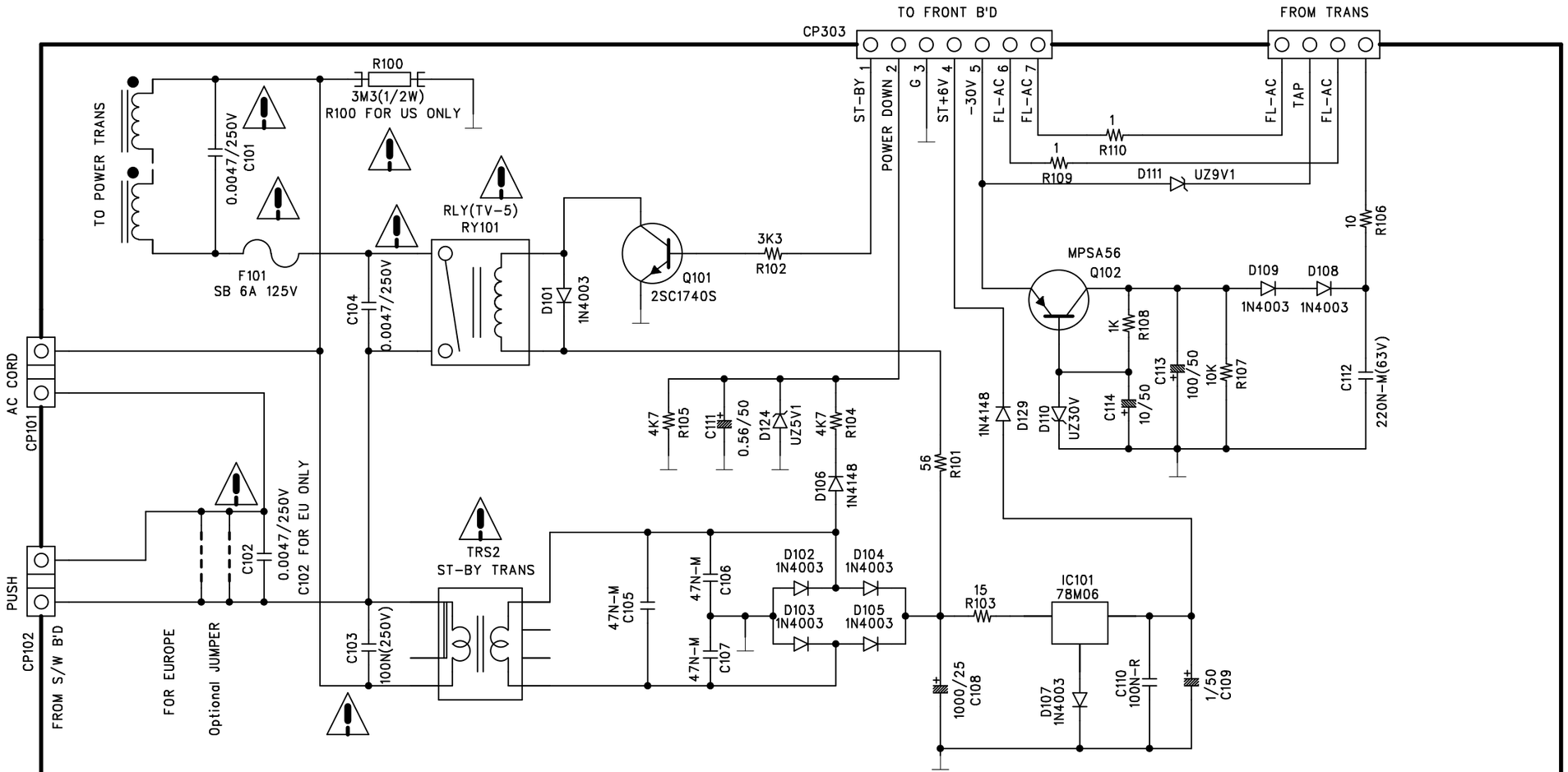
DRAWN:	DATED: 2001.06.11.	COMPANY:	
CHECKED:	DATED:	TITLE: DCR600MK2 MAIN PROCESSOR/S-VIDEO PARTS	
QUALITY CONTROL:	DATED:	CODE:	SIZE: / DRAWING NO: / REV:
RELEASED:	DATED:	SCALE:	SHEET: 3 OF 11

6	5	4	3	2	1

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

DCR60011

JBL



DRAWN:	DATED: 2001.06.20	COMPANY:	
CHECKED:	DATED:	TITLE: POWER B'D	
QUALITY CONTROL:	DATED:	CODE:	SIZE:
RELEASED: 124	DATED:	DRAWING NO: 55192730XX	REV:
		SCALE:	SHEET: OF

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

FROM FRONT B'D — TO MAIN — FROM MAIN — FROM MAIN

CP304: F-L 1, G 2, F-R 3, G 4, F-VIDEO 5, G 6, F-C 7, G 8, F-Y 9, G 10, F-Y, F-C, TU-R, TU-L, 7821-CE, A-DATA, A-CLK, +15V, -15V, DIG-R, DIG-L

CD: L R200 470(SMD) C200 100P(SMD) C201 100P(SMD); R R201 470(SMD) C202 100P(SMD) C203 100P(SMD)

PLAY / TAPE / REC: L R202 470(SMD) C204 100P(SMD) C205 100P(SMD); R R203 470(SMD) C206 100P(SMD) C207 100P(SMD); L R204 470(SMD) C208 100P(SMD) C209 100P(SMD); R R205 470(SMD) C210 100P(SMD) C211 100P(SMD)

TV: L R206 470(SMD) C212 100P(SMD) C213 100P(SMD); R R207 470(SMD) C214 100P(SMD) C215 100P(SMD)

C277 100N

SAT: L R210 470(SMD) C220 100P(SMD) C221 100P(SMD); R R211 470(SMD) C222 100P(SMD) C223 100P(SMD); L R212 470(SMD) C224 100P(SMD) C225 100P(SMD); R R213 470(SMD) C226 100P(SMD) C227 100P(SMD)

VCR1: L R214 470(SMD) C228 100P(SMD) C229 100P(SMD); R R215 470(SMD) C230 100P(SMD) C231 100P(SMD)

IC200 IC-LC78211 (FR, FL, VDD, RES, VSS, VEE, DE, DI, CL)

R216 220(SMD)

R220 470(SMD) C238 10/50 — R222 220(SMD) C242 47/16 — IC202-B IC-KIA4558(SOP) — R230 560 — FR R-IN1

C232 47/16 — 1SS355(SMD) D200 — R218 100K(SMD) — R219 47K(SMD) — R221 100K(SMD) — 10/50 C240 — 100K(SMD) R223 — 1/50 C233

R226 470(SMD) C239 10/50 — R228 220(SMD) C243 47/16 — IC202-A IC-KIA4558(SOP) — R224 560 — FL L-IN1

R225 47K(SMD) — R227 100K(SMD) — 10/50 C241 — 100K(SMD) R229

R231 1K — R232 1K — R233 1K

C234 47/16 — R234 220(SMD) — C244 100P(SMD) — C245 100P(SMD) — C246 100P(SMD)

R236 100K(SMD) — R294 100K(SMD) — R237 100K(SMD) — R293 100K(SMD)

1SS355(SMD) D201 100K(SMD) R238 — C236 1/50 — 47/16 C235 — 220 R239

IC201 IC-LC78211 (FR, FL, VDD, RES, VSS, VEE, DE, DI, CL)

R240 1K — R241 1K — R242 1K

R245 100K(SMD) — R291 100K(SMD) — R244 100K(SMD) — R292 100K(SMD) — R243 220 — 47/16 C237 — C247 100P(SMD) — 100P(SMD) C248 — C249 100P(SMD)

AUDIO PARTS

FROM MAIN — COMPOSITE

CN103 CN-2.4-02P: FEED-NONINV, FEED-INV

CP-LG-1.5-06P CN101: SW-MUTE 6, SW-OUT 5, SW-IN 4, −15V 3, GND 2, +15V 1

2K2 R491 — 680N-M(63V) C51 — 1K R51

IC-KIA4558(SOP) IC5-A

Q410 KTD1302 — C10 47/16 — C6 47/16

IC-KIA4558(SOP) IC4-B — 10/50 C20 — 4K7(S) R44 — 10N(S) C19 — 22K(S) R42 — 510(S) R43

2.2/50 C11 — AGND

22K(S) R41

IC-KIA4558(SOP) IC4-A — 15K(S) R29 — 100N(S) C15 — 100N(S) C16 — 120K(S) R30 — C7 47/16

10K(S) R39 — 7M5(SMD) R37 — 22K(S) R40

1SS355(S) D7 — 10K(S) R38 — Q5 KTC3198 — Q6 KTC3198

1M(S) R34 — IC-KIA4558(SOP) IC3-B — 18K(S) R31 — 18K(S) R32 — 1M(S) R33 — 10K(S) R35 — 10/50 C17 — 10/50 C18 — 220K(S) R36 — 1SS355(S) D6 — 47/16 C8

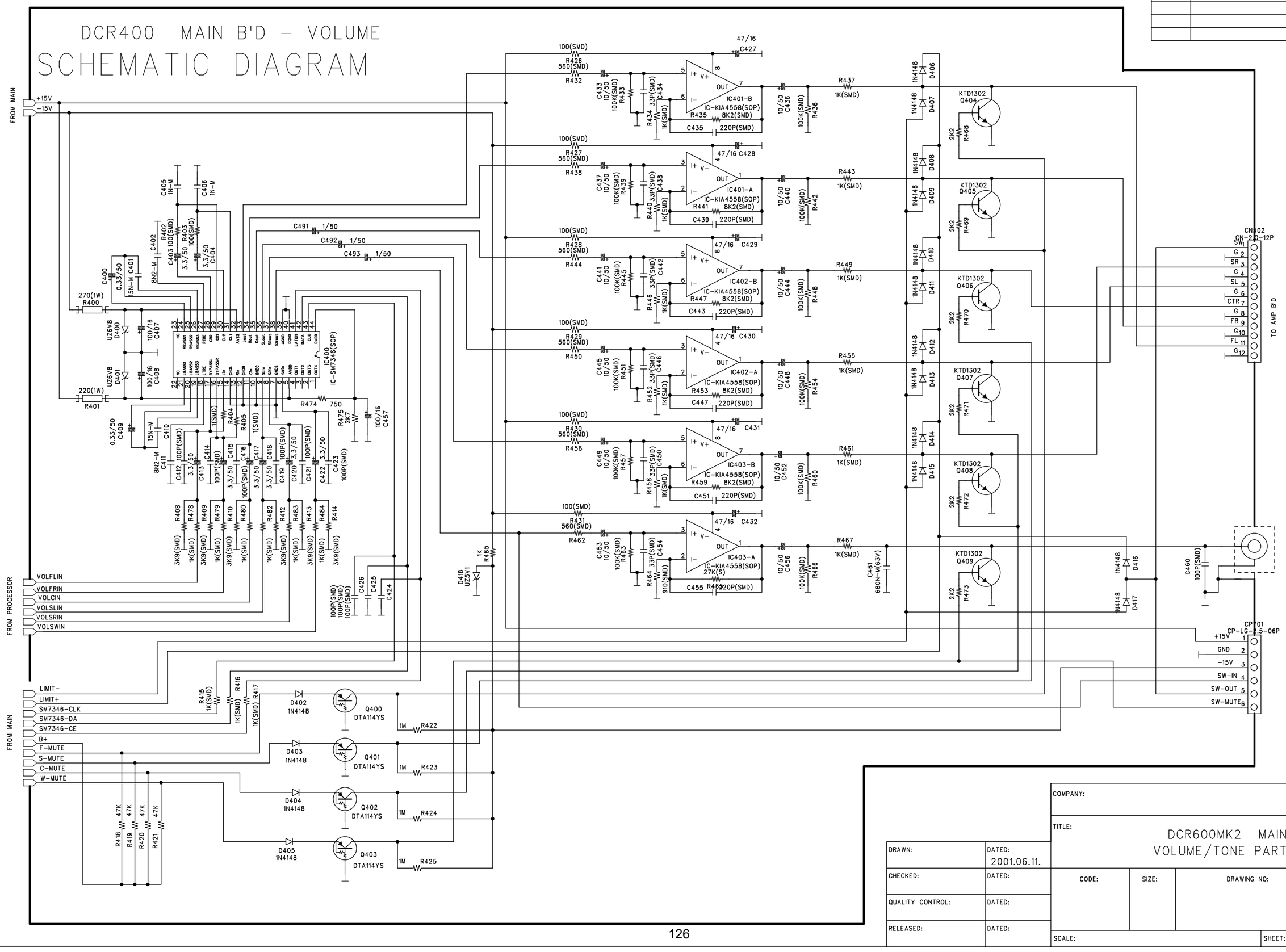
DCR600MK2 MAIN B'D – INPUT

SCHEMATIC DIAGRAM

DRAWN:	DATED: 2001.06.11.	COMPANY:	
CHECKED:	DATED:	TITLE: DCR600MK2B MAIN AUDIO/C-VIDEO PARTS	
QUALITY CONTROL:	DATED:	CODE:	SIZE: / DRAWING NO: / REV:
RELEASED:	DATED:	SCALE:	SHEET: 2 OF 10

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

DCR400 MAIN B'D – VOLUME
SCHEMATIC DIAGRAM



DRAWN:	DATED: 2001.06.11.	COMPANY:	
CHECKED:	DATED:	TITLE: DCR600MK2 MAIN VOLUME/TONE PARTS	
QUALITY CONTROL:	DATED:	CODE:	SIZE: / DRAWING NO: / REV:
RELEASED:	DATED:	SCALE:	SHEET: 4 OF 11

6	5	4	3	2	1

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE: