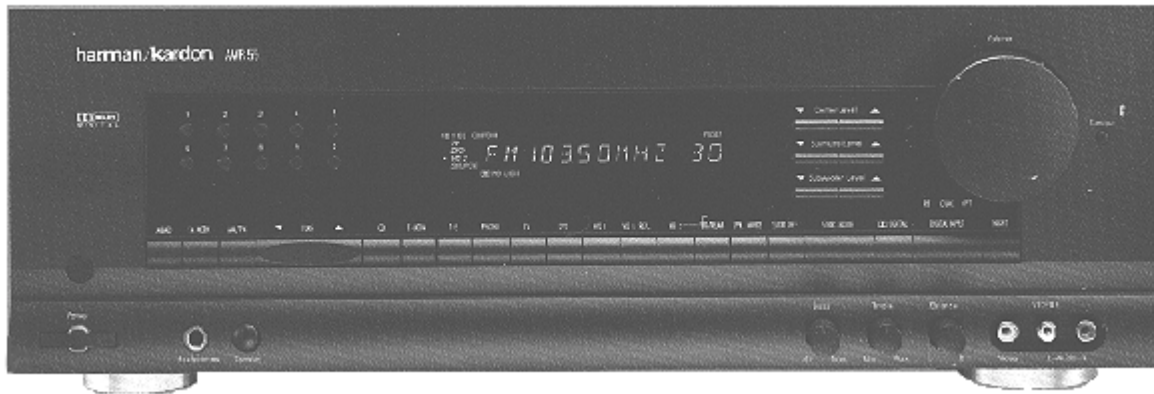


harman/kardon

AVR55

**AUDIO/VIDEO
AC-3 PRO-LOGIC RECEIVER
SERVICE MANUAL**



harman/kardon, Inc.
250 Crossways Park Dr.
Woodbury, New York 11797

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Technical Specifications

Audio Section

Stereo Mode

Continuous Average Power (FTC)

65 Watts per channel 20Hz–20kHz:
@ < 0.07% THD, both channels driven into 8 Ohms

Five-Channel Surround Mode

Power Per Individual Channel

Front L&R channels:
55 Watts per channel,
@ 0.07% THD, 20Hz–20kHz into 8 ohms

Center channel:
55 Watts, 20Hz–20kHz into 8 ohms

Surround channels:
55 Watts per channel, 40Hz–20kHz into 8 ohms

Input Sensitivity/Impedance

Linear (High Level) 200mV/32 Kohms
Phono 3mV/47 Kohms

Signal-to-Noise Ratio (IHF-A)

Linear (CD) 95dB
Phono 73dB

Surround System Adjacent Channel Separation

Analog Decoding (Pro Logic, etc.) 40dB
Dolby Digital (AC-3) 55dB

Frequency Response

@ 1W (+0, -3dB) 8Hz–100kHz

High Instantaneous

Current Capability (HCC) ±35 Amps

Transient Intermodulation

Distortion (TIM) Unmeasurable

Rise Time

16 µsec

Slew Rate

40 V/µsec

FM Tuner Section

Frequency Range	87.5–108 MHz
Usable Sensitivity	IHF 1.3 µV/14.2dBf
Signal-to-Noise Ratio	Mono/Stereo 70/68dB
Distortion	Mono/Stereo 0.3/0.5%
Stereo Separation	1kHz, 40dB
Selectivity	±400kHz 65dB
Image Rejection	98MHz 65dB
Tuner Output Level	1kHz, ±75kHz Dev 500mV

AM Tuner Section

Frequency Range	520–1710kHz
Signal-to-Noise Ratio	45dB
Usable Sensitivity	Loop 500 µV
Distortion	1kHz, 50% Mod 0.8%
Selectivity	±9kHz, 25dB

General

Power Requirement	AC 120V 60Hz
Power Consumption	60W idle, 325W maximum (2 channels driven)

Dimension (Max)

Width	17.4 inches (440 mm)
Height	6.3 inches (160 mm)
Depth	16.0 inches (406 mm)
Weight	32.6 lbs. (14.8 kg)

Depth measurement includes knobs, buttons and terminal connections.

All features and specifications are subject to change without notice.

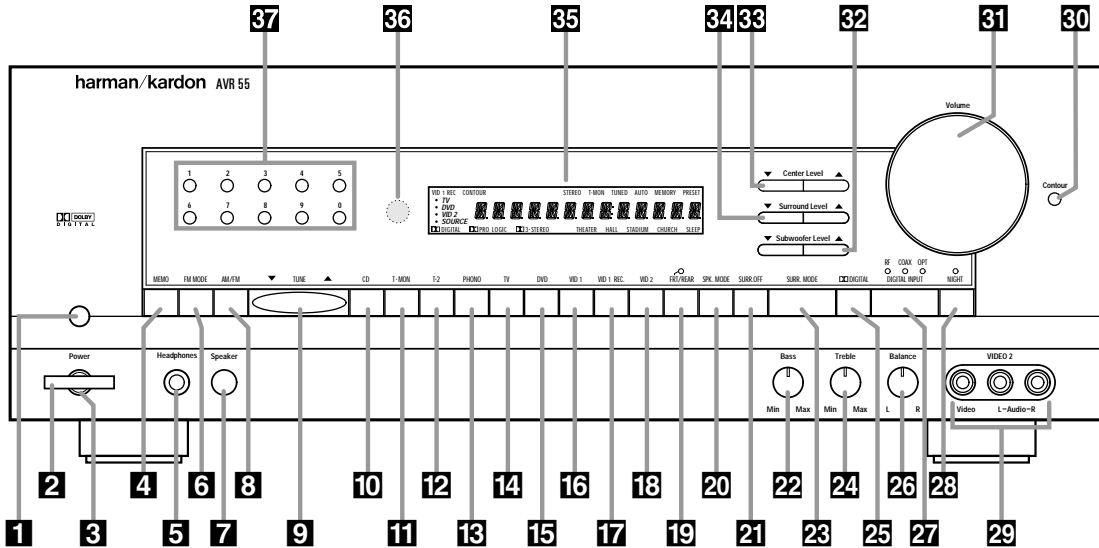
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†DTS is a trademark of Digital Theater Systems.

††UltraStereo is a trademark of UltraStereo Corp.

AVR55 120 volt

Front Panel Controls



- | | | |
|-------------------------------|---------------------------------|----------------------------------|
| 1 Main Power Switch | 14 TV | 27 Digital Input Selector |
| 2 System Power Control | 15 DVD Input | 28 Night Mode |
| 3 Power Indicator | 16 Vid 1 | 29 Video 2 Inputs |
| 4 Memo Button | 17 Vid 1 Rec | 30 Contour |
| 5 Headphone Jack | 18 Vid 2 | 31 Volume Control |
| 6 FM Mode | 19 Vid 2 Front/Rear | 32 Subwoofer Level Adjust |
| 7 Speaker Switch | 20 Speaker Mode Selector | 33 Center Level Adjust |
| 8 AM/FM | 21 Surround Off | 34 Surround Level Adjust |
| 9 Tuning Button | 22 Bass Control | 35 Information Display |
| 10 CD | 23 Surround Mode | 36 Remote Sensor Window |
| 11 Tape 1/Monitor | 24 Treble Control | 37 Numeric Keys |
| 12 Tape 2 | 25 Digital Mode Selector | |
| 13 Phono | 26 Balance Control | |

AVR55 120 volt

Front Panel Controls

1 Main Power Switch: Press this button to apply power to the AVR55. When the switch is pressed the unit is placed in a Standby mode, as indicated by the amber LED **3** surrounding the **System Power** control **2**. This button **MUST** be pressed in to operate the unit regardless of the status of the Power Switch at the bottom of the front panel. To turn the unit off and prevent the use of the remote control, this switch should be pressed until it pops out to extend from the front panel so that the word "OFF" may be read at the top of the switch.

NOTE: In normal operation this switch may be left in the "on" position.

2 System Power Control: When the **Main Power Switch 1** is pressed in, press this button to turn on the AVR55, press it again to turn the unit off. Note that the **Power Indicator** surrounding the switch **3** will turn green when the unit is on.

3 Power Indicator: This LED will illuminate 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 Memo Button: This button is used to enter settings for speaker modes, tuner presets and delay time after making the appropriate selection.

5 Headphone Jack: This jack may be used to listen to the AVR55's output through a pair of headphones. Be certain that the headphones have a standard $\frac{1}{4}$ " stereo phone plug.

6 FM Mode: Press this button to select the stereo or mono mode for FM tuning. In the STEREO mode a **STEREO** indicator will illuminate in the information display, and stereo reception will be provided when stations are transmitting stereo signals. In the MONO mode the left and right signals from stereo broadcasts will be mixed together and reproduced through all channels. Select MONO for better reception of weak signals.

7 Speaker Switch: This switch controls the front left/right speakers. For normal operation it is pressed in and sound is heard through the front speakers. To silence the front left/right speakers, push the button once until it is in the "out" position. When the front speakers are turned off sound will continue to be heard through the center and rear speakers and the headphone jack.

8 AM/FM: Press this button to select the tuner as the AVR55's input source. When it is first pressed the last station tuned will appear. Press it again to change between AM and FM bands.

9 Tuning Button: 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 frequency is tuned, the **TUNED** indicator will illuminate in the **Information Display 35**. A brief (1/2 second) press of the button will manually tune to the next frequency increment, while pressing and holding the button for a longer period will automatically tune to the next station with a signal strong enough for acceptable reception.

10 CD: Press this button to select the device connected to the **CD Input** jacks **23** as the listening source.

11 Tape1/Monitor: Press this button to select the device connected to the **Tape 1 Play** jacks **11** as the listening source. The **T-Mon** indicator **K** will illuminate to indicate that the Tape Monitor has been selected, while the input being monitored will remain in the **Main Information Display 35**.

12 Tape 2: Press this button to select the device connected to the **Tape 2 Play** jacks **9** as the listening source.

13 Phono: Press this button to select the **Phono Input 24** as the listening source.

14 TV: Press this button to select the device connected to the **TV/Aux** jacks **1** as the listening and viewing source.

15 DVD Input: Press this button to select the device connected to the **DVD Play** jacks **18** as the listening and viewing source.

16 Vid 1: Press this button to select the device connected to the **Video 1 In** jacks **18** as the listening and viewing source.

17 Vid 1 Rec: Press this button to select the device that will be recorded by the device connected to the **Video 1 Out** jacks **14**. The selected source is shown in the **Vid 1 Source** indicators **A** in the **Information Display 35**. Note that this recording will take place even if another source is being listened to.

18 Vid 2: Press this button to select the device connected to the **Video 2 Play** jacks **19** as the listening and viewing source.

Front Panel Controls

19 Vid 2 Front/Rear: Press this button to choose either the rear panel **Video 2 Play** jacks **19** or the front panel **Video 2 Inputs** **29** as the input source. When the green light above the button is illuminated, the front panel jacks are selected.

20 Speaker Mode Selector: Press this button to configure the AVR55 for the type of speakers used in your system. See page 18 for details on using this button.

21 Surround Off: Press this button to turn the surround modes off to listen to a source in traditional two-channel stereo from the front left/right speakers only.

22 Bass Control: Turn this control to modify the low frequency output of the left/right channels by as much as ± 10 dB. Set this control to a suitable position for your taste and room acoustics.

23 Surround Mode: Press this button to select one of the analog surround processing modes (Dolby Pro Logic, Dolby 3 Stereo, Theater, Hall, Stadium and Church) for a listening session.

24 Treble Control: Turn this control to modify the high frequency output of the left/right channels by as much as ± 10 dB. Set this control to a suitable position for your taste and room acoustics.

25 Digital Mode Selector: Press this button to listen to a source when a PCM or Dolby Digital (AC-3) signal is present.

NOTE: Dolby Digital may only be used with the **CD, TV, DVD, Vid 1** and **Vid 2** inputs.

26 Balance Control: Turn this control to change the relative volume for the front left/right channels.

NOTE: For proper operation of the surround modes this control should be at the midpoint, or "12 O'clock" position.

27 Digital Input Selector: When the **Digital Mode Selector** **25** has been pressed, this button is used to select the type of digital input to be used.

NOTE: The coax or optical inputs may be selected with the **CD, TV, DVD, Vid 1** and **Vid 2** inputs. The RF input may be used with the **Vid 1** input only.

28 Night Mode: Press this button to activate the "Night" mode, preventing a loud playback when the digital modes are in use.

29 Video 2 Inputs: These jack may be used to temporarily connect an audio/video source such as a video game or camcorder to the AVR55. To select these jacks as the input, press the **Vid 2 Front/Rear** button **19** until the green LED above that button is illuminated.

30 Contour: Press this button when listening at low levels to activate special circuits that compensate for the response of the human ear at lower volumes. In the off position the unit will provide flat frequency response.

31 Volume Control: Turn the knob clockwise to increase volume, counterclockwise to decrease the volume. Note that approximately two revolutions of the knob are required to go from no output to maximum volume.

32 Subwoofer Level Adjust: Press these buttons to raise or lower the output to the subwoofer channel. These buttons should be used during normal listening sessions for touch-up adjustments, not when the test signal is being used for major system alignment.

33 Center Level Adjust: Press these buttons to raise or lower the output to the center channel. These buttons should be using during normal listening sessions for touch-up adjustments, not when the test signal is being used for major system alignment.

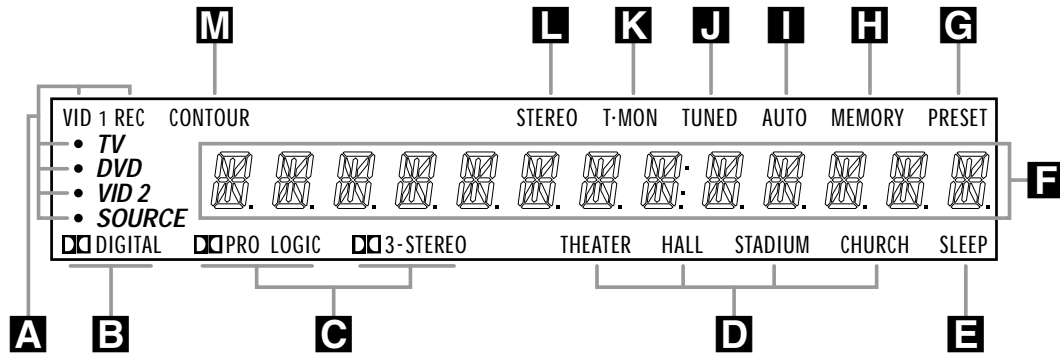
34 Surround Level Adjust: Press these buttons to raise or lower the output to the surround channels. These buttons should be used during normal listening sessions for touch-up adjustments, not when the test signal is being used for major system alignment.

35 Information Display: This display delivers messages and status indications to help you operate the receiver. Refer to the separate diagram for complete explanation of the FL display.

36 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.

37 Numeric Keys: Press these buttons to enter or recall stations entered to the tuner's preset memory. See page 25 for complete information on using the tuner and the preset memories.

Front Panel Information Display



- | | | |
|--|-----------------------------------|----------------------------|
| A Vid 1 Record Indicators | F Main Information Display | K T-Mon Indicator |
| B Dolby Digital Indicator | G Preset Indicator | L Stereo Indicator |
| C Analog Dolby Surround Mode Indicators | H Memory Indicator | M Contour Indicator |
| D Analog Surround Mode Indicators | I Auto Mode In Indicator | |
| E Sleep Indicator | J Tuned Indicator | |

A Vid 1 Record Indicators: A dot appears next to one of the sources shown in this indicator to tell you which input has been selected as the output to the device connected to the **Video 1 Out** jacks **10**. Press the **Vid 1 Rec** button **17** to change the source.

B Dolby Digital Indicator: This indicator illuminates when a Dolby Digital source is being played.

C Analog Dolby Surround Mode Indicators: These indicators illuminate when one of the analog (matrix) dolby Surround modes is in use.

D Analog Surround Mode Indicators: These indicators illuminate when one of the DSP generated analog surround modes is in use.

E Sleep Indicator: This indicator is illuminated when the Sleep function is in use. The number that appears above the indicator is the number of minutes remaining before the AVR55 will return to the Standby mode.

F Main Information Display: This display shows messages relating to the status, input source, surround mode, tuner, volume level or other aspects of unit's operation.

G Preset Indicator: This indicator illuminates when one of the stations entered into the preset memory is tuned. The number that appears below the indicator is the preset station's memory.

H Memory Indicator: This flashes after the **Memo** button **4** **21** has been pressed to indicate that you should quickly select and enter a preset memory location for a specific radio station.

I Auto Mode In Indicator: This indicator illuminates when the "Auto" mode is in use for FM tuning.

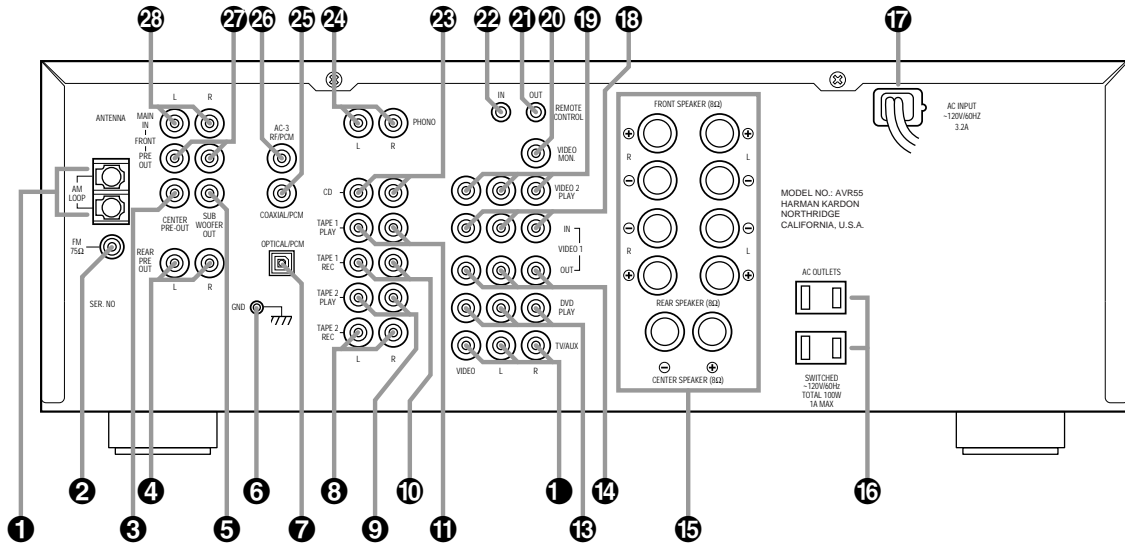
J Tuned Indicator: This indicator illuminates when a station is being received with sufficient signal strength to allow for acceptable listening quality.

K T-Mon Indicator: This indicator illuminates when the Tape Monitor function is in use to remind you that you are listening to the record output of the device connected to the **Tape 1 Record** jacks **10**, not to the actual input source shown in the **Information Display**.

L Stereo Indicator: This indicator illuminates when an FM station is being tuned in stereo.

M Contour Indicator: This indicator illuminates when the Contour circuits have been engaged by pressing the **Contour** button **30**.

Rear Panel Connections



- 1 AM Antenna
- 2 FM Antenna
- 3 Center Channel Preamp Output
- 4 Rear Preamp Outputs
- 5 Subwoofer Output
- 6 Ground Terminal
- 7 Optical/PCM Digital Input
- 8 Tape 2 Rec
- 9 Tape 2 Play
- 10 Tape 1 Rec

- 11 Tape 1 Play
- 12 TV Inputs
- 13 DVD Input
- 14 Video 1 Outputs
- 15 Speaker Outputs
- 16 Switched Outlets
- 17 AC Power Cord
- 18 Video 1 Inputs
- 19 Video 2 Play Inputs
- 20 Video Monitor Output

- 21 Remote Control Extension Output
- 22 Remote Control Extension Input
- 23 CD Input
- 24 Phono Input
- 25 Coax Digital Input
- 26 AC-3 RF Input
- 27 Front Channel Preamp Outputs
- 28 Front Channel Main In Amp Inputs

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

2 FM Antenna: Connect an indoor or external FM antenna to this terminal.

3 Center Channel Preamp Output: These jacks may be used to connect the center channel to an optional, external power amplifier.

4 Rear Preamp Outputs: These jacks may be used to connect the surround channels to an optional, external power amplifier.

5 Subwoofer Output: Connect this jack to the mono line level input of an optional powered subwoofer, or your optional external subwoofer amplifier.

6 Ground Terminal: Connect the ground wire from a turntable to this terminal to reduce system hum.

7 Optical/PCM Digital Input: Connect the AC-3 RF output of an LV player equipped for digital audio to this jack.

NOTE: Do not connect standard analog audio sources to these jacks **7 25 26**.

Rear Panel Connections

8 Tape 2 Rec: Connect the RECORD/INPUT jacks of an audio tape recorder to these jacks.

9 Tape 2 Play: Connect the PLAY/OUT jacks of an audio tape recorder to these jacks.

10 Tape 1 Rec: Connect the RECORD/INPUT jacks of an audio tape recorder to these jacks.

11 Tape 1 Play: Connect the PLAY/OUT jacks of an audio tape recorder to these jacks.

NOTE: The recorder connected to the **Tape 1/Mon** jacks may be monitored during a recording session by pressing the **Tape 1/Mon** button **11 4** on the front panel or remote.

1 TV Inputs: Connect the audio and video outputs from a TV, Satellite receiver or other A/V source to these jacks. The signal sent to the audio jacks may also be used to trigger the TV Auto On function. (See page 23 for more information on TV Auto On.)

13 DVD Input: Connect the composite video and analog audio outputs of a DVD player to these jacks.

14 Video 1 Outputs: Connect the audio and video REC/IN jacks of your main VCR to these jacks.

NOTE: The **Video 1** jacks may be used for any video source, but when used with a VCR they will permit dubbing from one source to another while a separate source is being listened to by selecting the **VID 1 Rec** button **17**.

15 Speaker Outputs: Connect these terminals to the input terminals on your front left/right, center and surround speakers.

16 Switched Outlets: These outlets provide AC power only when the AVR55 is turned on. Note that the total power draw of the products connected may not exceed 100 watts.

17 AC Power Cord: Connect this plug to an unswitched 115 volt AC outlet.

18 Video 1 Inputs: Connect the audio and video PLAY/OUT jacks of your main VCR to these jacks.

19 Video 2 Play Inputs: Connect the audio and video PLAY/OUT jacks of a VCR, DVD, LD, Satellite system or other video source to these jacks.

20 Video Monitor Output: Connect this jack to the video input of a TV or video projector to view the selected source.

21 Remote Control Extension Output: This jack may be connected to other compatible Harman Kardon products so that they will receive infrared commands captured by the AVR55's remote sensor.

22 Remote Control Extension Input: If the AVR55'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.

23 CD Input: Connect the output of your CD player or D/A converter to these jacks.

24 Phono Input: Connect the output of your turntable or tone arm to these jacks. Note that only Moving Magnet (MM) type cartridges may be used.

25 Coax Digital Input: Connect the coax digital output from a DVD player, HDTV receiver, LV player or CD player to this jack. The signal may be either a Dolby Digital (AC-3) signal or a standard PCM digital source.

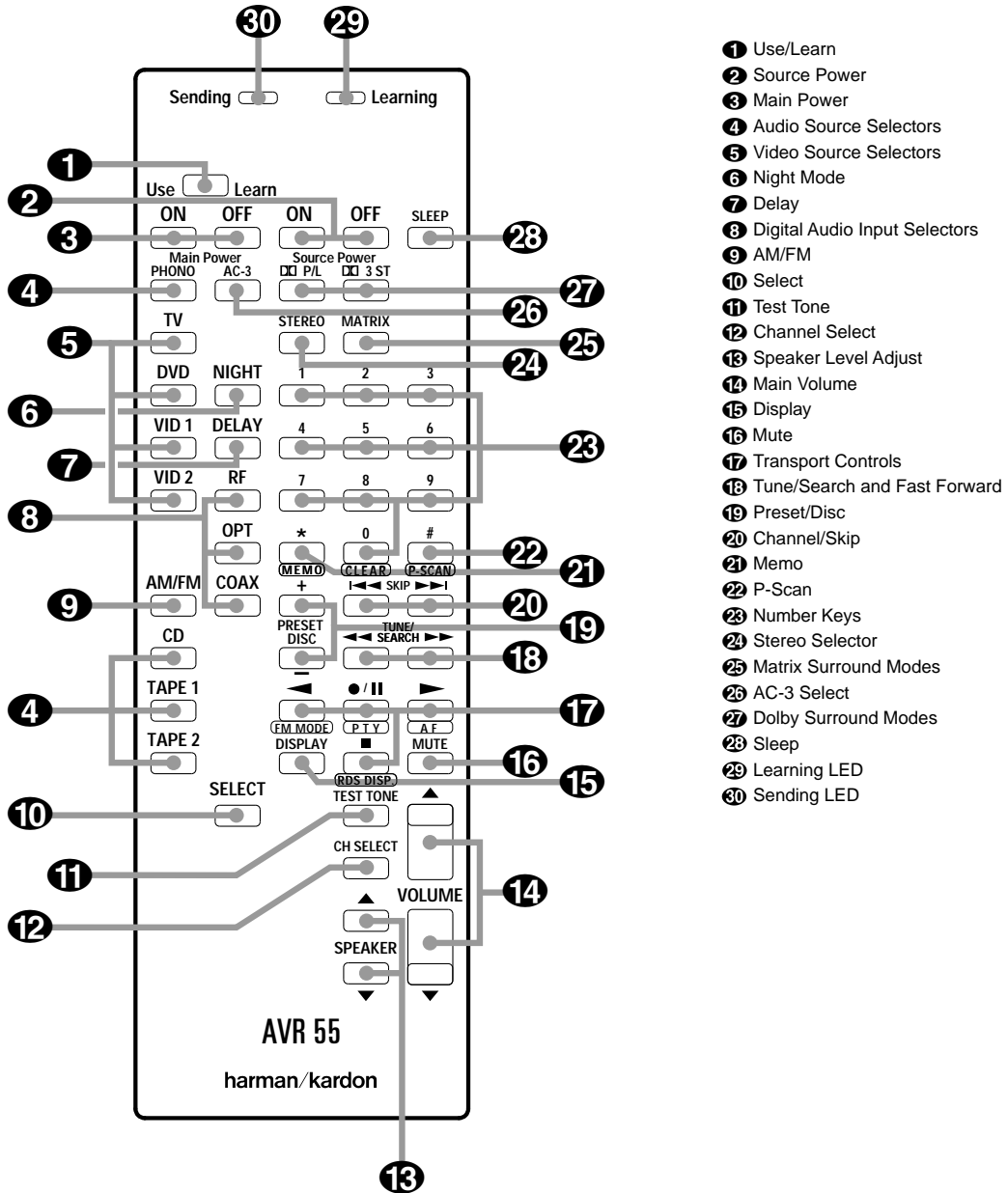
25 AC-3 RF Input: Connect the AC-3 RF output of an LV player equipped for digital audio to this jack.

NOTE: Do not connect standard analog audio sources to these jacks **7 25 26**

27 Front Channel Preamp Outputs: These jacks provide the output for the front left and right channels to an external amplifier or processor. In normal operation, unless an external power amplifier is used, the jumper pins should remain connected to the **Front Main In** jacks **28**.

28 Front Channel Main In Amp Inputs: These jacks are the input to the AVR 51's front left/right channel power amplifier. Unless an external power amplifier is used for the left/right channels, the jumper pins should remain connected to the **Front Pre Out** jacks **27**.

Remote Control Functions



AVR55 120 volt

Remote Control Functions

1 Use/Learn: This switch selects the operation mode of the remote control. Slide it to the left for normal operation. Slide it to the right when the remote is being programmed.

2 Source Power: Press these buttons to control power for the last source device selected when power on/off commands have been programmed into the remote's memory.

3 Main Power: Press these buttons to turn the unit on or off.

4 Audio Source Selectors: Press these buttons to select any of the audio only sources (**CD, Phono, Tape 1, Tape 2**) as the AVR55's input.

5 Video Source Selectors: Press these buttons to select any of the audio/video sources (**TV, DVD, Vid 1, Vid 2**) as the AVR55's input.

6 Night Mode: Press this button to activate the "Night" mode, preventing loud playback when the digital modes are in use without altering the dynamic range of the output signal.

7 Delay: Press this button to change the delay time, after the Delay function has been initiated by first pressing the **Select** button **10**.

8 Digital Audio Input Selectors: Press one of these buttons to select a digital audio input. The digital audio source may be the same as, or different than, the analog audio source of the selected video input.

9 AM/FM: Press this button to select the AVR55's tuner as an input source. Pressing this button when the tuner is in use will switch between the AM and FM bands.

10 Select: Press this button to initiate the process that changes the delay time (see page 20).

11 Test Tone: Press this button to begin the adjustment of the channel output levels. The first press will circulate the test tone among the speakers. A second press enables the levels to be set for each channel (see page 19).

12 Channel Select: Press this button to view the output level for the surround or center channels. When the **Test Tone** button **11** has been pressed so that the Tone is audible, pressing this button will change the channel available for adjustment (see page 19).

13 Speaker Level Adjust: When setting the system output levels, press these buttons to increase or decrease the output level.



14 Main Volume: These buttons control the unit's volume. Note that all channels are controlled simultaneously.

15 Display: Press this button to reduce the brightness of the front panel display, or to turn it off completely.

16 Mute: Press this button to temporarily cut the audio output of the receiver. Press it again to return to the previous volume level.

17 Transport Controls: These buttons may be programmed to control the tape or disc motion of the last playback source selected with the **Source Selection** buttons **4**. Use them as you would the Play, Stop, Pause, Record, Reverse Play and Forward Play buttons on any VCR, CD, cassette, DVD or LD remote control. The Reverse Play button  also operates the FM Mode function of the AVR55's tuner.

18 Tune/Search and Fast Forward: These buttons may be programmed to have multiple functions, which vary according to the input device selected.

- a. When the **TUNER** has been selected, these buttons are used to tune stations.
- b. When **CD, Tape, DVD, LD** or **VCR** is the input source, these buttons act as the Fast Scan Forward  or Fast Scan Reverse  controls.

Remote Control Functions

19 Preset/Disc: These buttons have multiple functions, which vary according to the input device selected.

- a. When the **TUNER** has been selected, these buttons will scroll up **▶** or down **◀** through the stations that have been programmed in the preset memory.
- b. When **CD** is selected and the unit is a CD changer, these buttons will change to the next disc **+** or previous disc **-**.
- c. When **Tape 1** or **Tape 2** is the input source, and the tape machine is a compatible Harman Kardon dual cassette deck, these buttons will switch between the "A" and "B" sides.

20 Channel/Skip: These buttons have multiple functions, which vary according to the input device selected and the codes programmed from another remote.

- a. When **TV**, **Vid 1** or **Vid 2** are selected, they may function as the channel up **▶** or channel down **◀** tuning buttons when programmed with the codes from another unit's remote.
- b. When **CD** is selected these buttons act as forward and reverse "Skip" buttons to move to the next track or chapter on the disc.

- c. When a compatible Harman Kardon cassette player has been selected as **Tape 1** or **Tape 2**, these buttons move the tape forward **▶** or backwards **◀** to the next selection using the Music Scan feature.

21 Memo: The memo button is used to enter settings for the tuner's preset memory and when entering speaker types. It is also used when clearing the memory.

22 P-Scan: Press this button to automatically scan through the stations preset into the tuner memory. Press the button again to end the scan when the tuner stops at the desired station.

23 Number Keys: These buttons serve as a ten button numeric keypad to enter tuner preset positions. They are also to be used to select channel numbers when **TV** has been selected on the remote, or to select track numbers on a CD, DVD or LD player, depending on how the remote has been programmed.

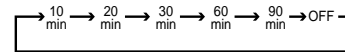
24 Stereo Selector: Press this button to turn the surround processing off and listen to an input in traditional two-channel (front left/right) audio.

25 Matrix Surround Modes: Press this button to select the Theater, Hall, Stadium or Church surround modes. Each press of the button cycles through the four modes (see page 23).

26 AC-3 Select: Press this button to activate the Dolby Digital mode when an appropriate digital audio source is present and the correct digital input is selected (see page 24).

27 Dolby Surround Modes: Press these buttons to select the Dolby Pro Logic or Dolby 3 Stereo modes. Use Pro Logic when surround speakers are installed, and Dolby 3 Stereo when only front speakers are available.

28 Sleep: Press this button to activate the sleep timer. Each press of the button will increase the time increment before the AVR55 goes into the Standby mode in the following order:



Note that the front panel display will dim when the Sleep function is active.

29 Learning LED: This indicator will illuminate when a button on the remote is being programmed with signals from another remote during the "learning" mode. The light will go out when the signal is received and memorized.

30 Sending LED: This indicator should flash any time a button is pressed to confirm that a command is being sent to the receiver or another unit. If the light is dim or does not illuminate when a button is pressed the batteries in the remote should be replaced.

Installation and Setup

System Installation

After unpacking the unit, and placing it on a solid surface capable of supporting its weight, you will need to make the connections to your audio and video equipment. These steps need to be done only when the receiver is first installed, or when a change is made to the input source equipment.

Audio Input and Output Connections

We recommend that you use high-quality cables when making connections to source equipment and recorders to preserve the quality of the signals.

When making connections to audio source equipment or speakers it is always a good practice to unplug the unit from the AC wall plug. This prevents any possibility of accidentally sending audio or transient signals to the speakers that may damage them.

1. For playback-only audio sources, such as a CD player, CD changer, tape deck or phono cartridge, connect the output jacks of the player to the appropriately labeled inputs on the rear panel ②③.

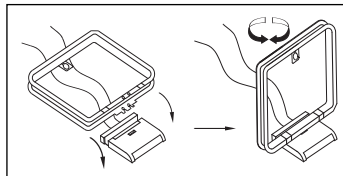
NOTE: When the source device has both fixed and variable audio outputs it is best to use the fixed output unless you find that the input to the receiver is so low that the sound is noisy, or high that the signal is distorted.

1. If a turntable is connected to the **Phono** input ②, connect the ground wire from the cartridge or tone arm to the **Ground** terminal ③.

3. When connecting audio recording devices such as cassette recorders, open reel audio tape decks, DAT or MD, connect the PLAY/OUT jacks of the recorder to the **Play** jacks ⑨ ⑩ on the AVR55. Connect the RECORD/IN jacks on the recorder to the **Tape Rec** jacks ⑧ ⑩ on the AVR55.

4. Connect the output of any digital sources to be used to the appropriate connections on the AVR55 rear panel. The **Optical** and **Coaxial** digital inputs ⑦ ⑮ may be used with either a Dolby Digital (AC-3) source or the output of a conventional CD or LV player's PCM (S/P-DIF) output. The **AC-3 RF** input ⑮ may ONLY be connected to the special AC-3 RF output of a laser disc player.

5. Assemble the AM Loop Antenna supplied with the unit as shown below. Connect it to the **AM** and **GND** screw terminals ①.



6. Connect an FM antenna to the **FM (75 ohm)** connection ②. The FM antenna may be an external roof antenna, an inside powered or wire lead antenna, or a connection from a cable TV system. Note that if the antenna or connection uses 300-ohm twin lead cable, you must use the 300-ohm to 75-ohm adapter supplied with the unit to make the connection.

7. Connect the front, center and surround speaker outputs ⑬ to the respective speakers.

To assure that all the audio signals are carried to your speakers without loss of clarity or resolution, we suggest that you use high-quality speaker cable. Many brands of cable are available, and the choice of cable may be influenced by the distance between your speakers and this receiver, the type of speakers you use, personal preferences and other factors. Your dealer or installer is a valuable resource to consult in selecting the proper cable.

Regardless of the brand of cable selected, we recommend that you use a cable constructed of fine, multistrand copper with a gauge of 14 or larger. Remember that in specifying cable, the lower the number, the thicker the cable.

Cable with a gauge of 16 may be used for short runs of less than ten feet. We do not recommend that you use cables with an AWG equivalent of 18 or higher due to the power loss and degradation in performance that will occur.

Cables that are run inside walls should have the appropriate markings to indicate listing with UL, CSA or other appropriate testing agency standards. Questions about running cables inside walls should be referred to your installer or a licensed electrical contractor who is familiar with the NEC and/or the applicable local building codes in your area.

Installation and Setup

When connecting wires to the speakers, be certain to observe proper polarity. Remember to connect the “negative” or “black” wire to the same terminal on the receiver and the speaker. Similarly, the “positive” or “red” wire should be connected to the like terminal on the AVR55 and speaker.

NOTE: While most speaker manufacturers adhere to an industry convention of using black terminals for negative and red ones for positive, some manufacturers may vary from this configuration. To assure proper phase, and optimal performance, consult the identification plate on your speaker, or the speaker’s manual to verify polarity. If you do not know the polarity of your speaker, ask your dealer for advice before proceeding, or consult the speaker’s manufacturer.

8. Connections to a subwoofer are made via a line level audio connection from the **Subwoofer Output** ⑤ to the line level input of a subwoofer with a built-in amplifier. If a passive subwoofer is used, the connection first goes to a power amplifier, which will be connected to one or more subwoofer speakers.

Video Input and Output Connections

Video connections are made in a similar fashion to those for audio components. Again, the use of high-quality interconnect cables is recommended to preserve signal quality.

1. Connect your VCR’s audio and video OUT jacks to the **Video 1 In** jacks ⑮ on the rear panel. The audio and video IN jacks on the VCR should be connected to the **Video 1 Out** jacks ⑭ on the AVR55.

2. Connect the audio and video outputs of a satellite receiver, cable TV converter or television set or any other video source to the **TV** jacks ①.

3. Connect the audio and video outputs of a DVD or laser disc player to the **DVD** jacks ⑬.

4. Connect the **Video Mon** ⑳ jack on the receiver to the video input of your television monitor or video projector.

System and Power Connections

The AVR55 is designed for flexible use with external control components and power amplifiers. These connections are easy to make during an initial installation, or at a later date should you choose to upgrade your system.

Remote Control Extension

If the receiver is placed behind a solid or smoked glass cabinet door, the obstruction may prevent the remote sensor from receiving commands. In this event, an optional remote sensor may be used. Connect the output of the remote sensor to the **Remote Cont. In** jack ⑳.

If other components are also prevented from receiving remote commands, only one sensor is needed. They may use this unit’s sensor or a remote eye by running a connection from the **Remote Cont. Out** jack ㉑ to the Remote In jack on Harman Kardon or other compatible equipment.

External Audio Power Amplifier Connections

If desired, optional external power audio power amplifiers may be used with the AVR55. Connections may be made by connecting the **Preamp Outputs** ③ ④ ㉑ of the AVR55 to the inputs of the external amplifier. Before connecting the front channels to an external amplifier, remove the jumper pins connecting the **Front Channel Inputs** and **Outputs** ㉑ ㉒ and save them for future use.

AC Power Connections

This unit is equipped with two accessory AC outlets. They may be used to power accessory devices, but they should not be used with high-current draw equipment such as power amplifiers. Their total power draw may not exceed 100 watts.

These **Outlets** ㉓ will receive power only when the unit is on. These recommended for devices that have no power switch, or a mechanical power switch that may be left in the “ON” position.


NOTE: Devices with electronic power switches may only go into a Standby mode when plugged in here.

Finally, when all connections are complete, plug the **AC Power Cord** ㉔ into a non-switched 120-volt AC wall outlet. You’re almost ready to enjoy the AVR55!

Remote Control Programming and Operation

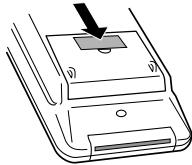
This product is equipped with a powerful remote control. As supplied, it will operate the receiver, as well as most CD players and tape decks manufactured by Harman Kardon. If your equipment requires different codes, it may be programmed to copy the codes from most infrared remotes.

Loading Batteries

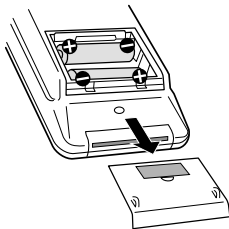
The life of the batteries for the remote control is about one year in normal operation. If the amber **Sending**  indicator does not flash when remote buttons are pushed, that is an indication that the batteries need to be replaced.

To change the batteries:

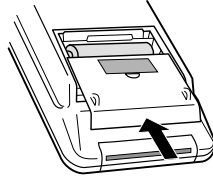
1. Remove the back cover by sliding it in the direction of the arrows.



2. Remove the old batteries and insert fresh AAA type cells. Be certain to observe the correct polarity by noting the (+) and (-) marks on both the inside of the case and on the battery cells. It is recommended that both batteries be changed at the same time.



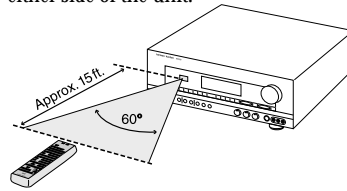
3. Close the cover until it clicks shut.



NOTE: It is important that the batteries be replaced within ten minutes after the old batteries are removed to avoid losing any remote codes that have been programmed into the remote's memory.

Remote Control Range

The remote will operate at a range of up to 15 feet from the unit, when the batteries are fully charged. The remote will also operate at an angle of up to 30° to either side of the unit.



Always point the remote transmitter at the front of the unit when issuing commands. If you find that remote commands are not being received by the remote, it may be necessary to use a remote IR sensor.

Remote Programming

Programmable Keys

Many of the buttons on the remote control may be user programmed to new functions to operate virtually any component in your system. Eleven CANNOT be programmed with a new code, as they control high-level functions of the AVR55. These keys are **Main Power ON**, **Main Power OFF**, and the source input keys: **TV**, **DVD**, **VID 1**, **VID 2**, **Phono**, **CD**, **Tape 1**, **Tape 2**.

Programmable keys are divided into two groups. Some keys may be programmed with a separate function for each of the inputs. Thus, these keys may change their code when the input source is changed. (e.g., The **Play** key may transmit a different code when **CD** is selected as opposed to when **VCR** is selected.) The keys that may be programmed with multiple codes are the following:

All Numeric Keys (0 - 9)

- Forward Play 
- Source Power On
- Reverse Play 
- Source Power Off
- Stop 
- Preset Disc 
- Record 
- Preset Disc 
- Pause 
- Channel/Skip 
- Channel/Skip 
- Tune/Search 
- Memo
- Tune/Search 
- P-Scan

Remote Control Programming and Operation

All other keys may only be programmed with one remote code. The code contained in these keys remains the same regardless of the source selection.

WARNING: These keys transmit codes that are vital to the operation of the product. It is not recommended that they be programmed with alternative codes, as it may then be impossible to operate certain functions of the receiver.

Night
Delay
RF
Opt
Coax
Select
All Mode Selectors
★

Display
Speaker ▲▼
CH Select
Volume ▲▼
Test Tone
Mute

To program the remote, follow these steps. Note that it is not necessary to program all keys, only those that are required to operate the subject device. Keys not programmed will retain the codes preprogrammed at the factory.

1. Slide **Use/Learn** ❶ switch at the top left corner of the remote to the right so that it is next to **Learn**.

2. If one of the multifunction buttons is being programmed press the source button (e.g. **CD, VID 1**) you wish to have this function associated with. If you are programming a single function key, proceed to the next step.

3. Press the button on the remote that is to be programmed. Note that the **Learning LED** ❷ will illuminate.

4. Place the remote head to head with the remote control whose function is being learned. The two remotes should be no more than 8 inches apart.

5. Press and hold the button on the remote corresponding to the function to be memorized until the **Learning LED** starts to blink. When the LED goes out, release the button on the transmitting remote. The function code has been successfully captured by the remote.

NOTE: If both LEDs flash during a programming operation, it indicates that the remote's memory is full or that the remote codes from the transmitting remote are not compatible with the unit's signal format.

6. Continue to program any additional remote commands required using steps 2 through 5. When you have finished programming the remote, slide the **Use/Learn** switch to the left so that it is in the **Use** position.

Clearing the Remote Memory

In normal operation, codes for a new device may be programmed "over" the codes that have been previously programmed into the remote. It is also possible to clear the memory for individual keys, or for the entire remote. When a memory position is cleared, the remote will return to the original factory preset command.

To clear the memory for a specific individual key location, put the **Use/Learn** switch in the **Learn** position. Press the **Main Power Off** ❸ button and the button to be cleared at the same time. Both the **Sending** and **Learning** indicators will light momentarily. When the lights go out, the memory has been cleared of the user programmed code and returned to the factory preset. Return the **Use/Learn** ❶ switch to the **Use** position when you are finished.

To clear the remote's entire memory and return all keys to their factory preset commands, first put the **Use/Learn** ❶ switch in the **Learn** position. Then press the **Main Power On** button ❹ and confirm that the **Learning** indicator ❷ has illuminated. While continuing to press the **Main Power On** button, press and hold the **Main Power Off** ❸ button until the **Learn** indicator goes off for about 3 seconds. It will then blink twice. Then release the two buttons. This indicates that the memory has been cleared of any user programmed commands and that the original commands have been restored. Slide the **Use/Learn** switch ❶ back to the **Use** position to return the remote to normal operation.

System Configuration

After completing all audio, video and system connections, there are a few configuration adjustments that must be made. A few minutes spent to correctly configure and calibrate the unit will greatly add to your listening experience.

Speaker Selection

The placement of speakers in a multi-channel home theater system can have a noticeable impact on the quality of sound reproduced.

No matter which type or brand of speakers is used, the same model or brand of speaker should be used for the front left, center and right speakers. This creates a seamless front soundstage, and eliminates the possibility of distracting sonic disturbances that occur when a sound moves across mismatched front channel speakers.

Speaker Placement

Depending on the type of center channel speaker in use and your viewing device, place the center speaker directly above or below your TV or in the center behind a perforated front projection screen.

Once the center channel speaker is installed, position the left and right front speakers so that they are as far away from one another as the center channel speaker is from the preferred listening position. Ideally, the front channel speakers should be placed so that their tweeters are no more than 24" off center from the tweeter in the center channel speaker.

Depending on the specifics of your room acoustics and the type of speakers in use, you may find that imaging is improved by moving the front left and

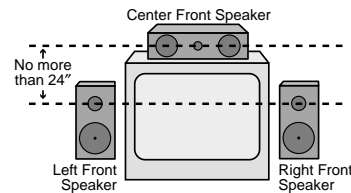
right speakers slightly forward of the center channel speaker. If possible, adjust all front loudspeakers so that they are aimed at ear height when you are seated in the listening position.

Using these guidelines, you'll find that it takes some experimentation to find the correct location for the front speakers in your particular installation. Don't be afraid to move things around until the system sounds correct. Optimize your speakers so that pans across the front of the room sound smooth, and that sounds from all speakers appear to arrive at the listening position at the same time without delay from the center speaker as opposed to the left and right speakers.

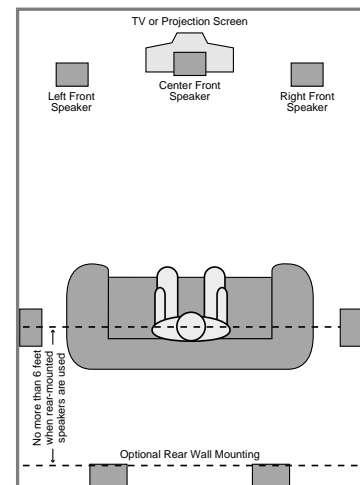
Surround speakers should be placed on the side walls of the room, at or slightly behind the listening position. The center of the speaker should face into the room. The speakers should be located so that the bottom of the cabinet is at least two feet higher than the listeners' ears when in the desired area.

If side wall mounting is not practical, the speakers may be placed on a rear wall, behind the listening position. Again, they should be located so that the bottom of the cabinet is at least two feet higher than the listeners' ears. The speakers should be no more than six feet behind the rear of the seating area.

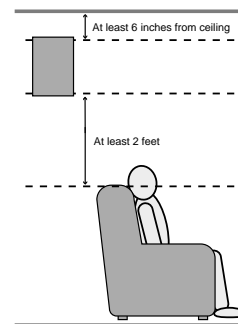
Subwoofers produce non-directional sound, so they may be placed almost anywhere in a room. Subwoofer placement is highly influenced by room size and shape, and the type of subwoofer used. Follow the instructions of the subwoofer's manufacturer, or experiment with the best location for a subwoofer in your listening room.



A) Front Channel Speaker Installation with Direct View TV Sets or Rear Screen Projectors



B) The distance between the left and right speakers should be equal to the distance from the seating position to the viewing screen. You may also experiment with placing the left and right speakers slightly forward of the center speaker.



System Configuration

System Configuration

Once the speakers have been placed in their proper positions and connected to the AVR55, the final steps in the installation process involve configuration of the unit for the specific speaker types in use and the balancing of speaker output levels.

Before proceeding, check to make certain that all connections are secure and follow these steps:

1. Plug the unit into an unswitched AC outlet and press the **Main Power** button **1** until it is flush with the front panel. Note that the **Power Indicator** **3** will turn orange.
2. Install the supplied AAA batteries in the remote control, as shown on page 15.
3. Press the **System Power Control** **2** on the front panel or the **Main Power On** button **3** on the remote and note that the **Power Indicator** **3** will turn green.

Bass Management

The settings made during the speaker configuration process will determine which speakers receive low-frequency information, which are those sounds below 100Hz. If a subwoofer is installed, it will receive low-frequency information, and none will be sent to the front left/right speakers. If you do NOT have full-range front speakers, it is important that "NO" be selected as the subwoofer setting option to prevent damage to your front speakers.

Speaker Configuration

The next few steps tell the AVR55 which type of speakers are installed. This, in turn, configures the bass management system so that low-frequency sounds are directed to the proper speaker location.

1. Press the front panel **Surround Mode** button **23**. Press and hold the **Speaker Mode Selector** **20** until the word **CENTER** appears in the **Information Display** **5**. The word **LARGE**, **SMALL** or **NONE** will also appear, and blink to indicate the current setting. Release the button for a second, and while the word **LARGE** is still blinking in the display, press the **Speaker Mode Selector** **20** again until the word describing the type of center speaker installed in your system appears.

- Select **LARGE** if your center channel speaker is a traditional full-range speaker that is capable of reproducing frequencies below 100Hz.
- Select **SMALL** if your center channel speaker is a smaller "satellite" type speaker that is not capable of extended bass response or reproducing frequencies below 100Hz.
- Select **NONE** if no center channel speaker is installed.

2. Once you have made your selection, immediately press the **Memo** button **4** while the display is still blinking. Note that the speaker selection will change to **SUBWOOFER**. The word **Yes** or **NO** will blink indicating the current setting.

Press the **Speaker Mode Selector** **20** again until the appropriate selection is made.

- Select **YES** if a subwoofer is installed. When **YES** is selected all low-frequency information will be sent to the subwoofer, and all front and surround speakers will only receive audio information above 100Hz.
- Select **NO** if no subwoofer is present. When **NO** is selected the front left/right and surround speakers will receive a full-range signal, and the feed to the center speaker will be based on the selection mode in the previous step.

3. While your choice is blinking in the display, press the **Memo** button **4** to enter the selection. The display will stop blinking to indicate that the setting is entered and then return to normal.

NOTES:

- In order to enter the speaker configuration, the **Speaker Switch** **7** must be in the "in" position.
- In order to enter information for the center speaker, the AVR55 must be in the Dolby Pro Logic or Dolby 3 Stereo mode. To select either of these modes, press the front panel **Surround Mode Selector** **23** or one of the **Dolby Surround Mode** buttons **27** on the remote.

System Configuration

Speaker Output Adjustments

Adjustments and calibration of the speaker output levels is important to proper surround operation. During this process, the unit is adjusted so that the output levels from each channel is set so that all channels have a reference level that is as close to one another as possible. A small amount of time spent to properly calibrate the AVR55's output levels will enable the unit to deliver all the performance it is capable of within the environment of your specific listening room.

IMPORTANT NOTE: Many listeners are often confused about the operation of the rear (surround) channels. While some assume that sound should always be coming from each speaker, most of the time there will be little or no sound in the surround channels. This is because they are only used when a movie director or sound mixer specifically places sound there to create ambiance, an effect or to continue action from the front of the room to the rear. When the output levels are properly set it is normal for rear/surround speakers to operate only occasionally. Artificially increasing the volume to the rear speakers may destroy the illusion of an enveloping sound field that duplicates the way you hear sound in a movie theater or concert hall.

Before beginning the adjustment process make certain that all speaker connections have been properly made. The system volume should be set to the level that you will use during a typical listening session. Finally, make certain that the **Balance Control** 26 is set to the center "12 O'clock" position.

1. Press the **Test Tone** button 11 on the remote to begin the adjustment process. A test noise will circulate from one speaker channel to the next, as indicated in the **Information Display** 17.

2. Take a minute to listen to the test noise from each speaker as the location indicated in the display changes. Check to make certain that, for example, when the display reads **TEST - FRONT L**, that the test noise is coming from the front left speaker. If the test tone's location does not match the display for any channel, press the **Test Tone** button 11 to end the adjustment and turn the unit off using the **Main Power Switch** 14. Check all connections to make certain the **Speaker Outputs** 15 are connected to the proper speaker.

Installation Hint: While the test tone is circulating among the channels, make a note if it sounds reasonably equal in volume, or if one channel or more channels seems significantly louder than the others.

3. When you have verified that all channels are properly connected, press the **Channel Select** button 12 to begin the adjustment process.

4. The Test Tone will stop circulating and be heard through the center channel only. If the center channel appeared to be at a level above or below the front left/right channels while the tone was circulating, press the **Speaker Level Adjust** buttons 13 to raise or lower the volume so that the tone is the same level as the other channels. When the adjustment is complete, press the **Channel Select** button 12 to move to the next channel.

5. The Test Tone will now be heard through the right surround speaker. As with the center channel speaker, use the **Speaker Level Adjust** buttons 13 to adjust the level as required so that the tone is the same level as the other channels. When the adjustment is complete, press the **Channel Select** button 12 to move to the next channel.

6. The Test Tone will now be heard through the left surround speaker. As with the previous channels, use the **Speaker Level Adjust** buttons 13 to adjust the level as required so that the test tone is the same level as the other channels. When the adjustment is complete press the **Test Tone** button 11 twice so that the tone momentarily stops, and then begins to circulate.

System Configuration

7. Listen carefully and check to see if the tone is now at the same volume level from each channel. If further adjustment is required, press the **Channel Select** button **12** and repeat steps 4 through 7 as shown above. Repeat the procedure as often as needed until the test tone circulates and has the same volume from each channel.

8. When all adjustments have been made, press the **Test Tone** button once to return to normal operation.

Delay Settings

One aspect of the surround modes is the delay of audio signals between the front speakers and the rear speakers. Each surround mode is factory preset with a specific delay time, but it is possible to individually adjust the delay timing to custom tailor the sound to your individual taste and the acoustic conditions in your listening room or home theater.

The factory setting is appropriate for most rooms, but some installations create an uncommon distance between the front and surround speakers that may cause the arrival of front channel sounds to become disconnected from surround channel sounds.

To resynchronize the front and surround channels, follow these steps:

1. Measure the distance from the listening/viewing position to the front speakers.
2. Measure the distance from the listening/viewing position to the surround speakers.
3. Subtract the distance to the surround speakers from the distance to the front speakers.

a. When setting the delay time for the Dolby Digital surround mode, the optimal delay time is the resulting figure. For example, if the front speakers are ten feet away and the surround speakers are five feet away, the optimal delay time is figured as $10-5=5$. Thus, in this example, the delay should be set at five milliseconds.

b. When setting the delay time for an analog surround mode (Pro Logic, Hall, Movie or Matrix) take the result of the subtraction and add 15 to obtain the optimal delay time. For example, if the front speakers are ten feet away and the surround speakers are five feet away, the optimal delay time is figured as $10-5+15=20$. Thus in this example, the delay should be set at twenty milliseconds.

With the correct delay time figures for your listening room calculated, first make certain that the unit is in the Dolby Pro Logic mode by pressing the **Surround Mode** button **23** or **Dolby Surround Mode** buttons **27** until the **Pro Logic** indicator **6** is illuminated.

Press the **Select** button **10** to begin the adjustment process. The **Information Display** **5** will show the current delay setting, such as **REAR - 1.5 mS**. If adjustment is required, immediately press the **Delay** button **7** on the remote to change the setting until it is closest to the desired time. Within five seconds the display will return to normal readout and the setting will be entered.

The Dolby Digital mode also provides a separate setting for the center channel delay mode, since the discrete nature of Dolby Digital signals makes the location of the center channel speaker more critical. To set the delay for the center channel, measure the distance from the preferred listening position in the center of the room to both the center channel speaker and either the left or right speaker.

System Configuration

If the distances are equal, no further adjustment is required, and the center delay should be set to zero. If the distance to the front speakers is greater than the distance to the center speaker you may wish to reposition the speakers by moving the front left/right speakers closer to the listening position or the center speaker further away from the listening position.

If repositioning of the speakers is not possible, adjust the center delay time so that you add one millisecond of center channel delay for each foot that the distance to the center speaker lags behind the front speakers. For example, if the front left/right speakers are each 10 feet from the listening position and the center channel speaker is 8 feet away, the delay is figured as $10 - 8 = 2$, suggesting an optimal center delay of 2 milliseconds.

To change the delay settings for Dolby Digital operation, first calculate the correct timings as outlined above. Next, make certain that the AVR55 is in the Dolby Digital mode by pressing the **Dolby Digital/AC-3** button **25** **26** on the front panel or remote. Make certain that the **Dolby Digital Indicator** **13** is illuminated.

Next, press the **Select** button **10** to begin the adjustment process. The **Information Display** **14** will show the current setting, such as

REAR - 15 mS.

If adjustment is required, immediately press the **Delay** button **7** on the remote to change the setting until it is closest to the desired time. Within five seconds the display will return to normal readout and the setting will be entered.

To adjust the delay settings for Dolby Digital, press the **Select** button **10** and note that the **Information Display** **14** will show the settings for both the center and rear/surround delay as

C - 0 mS R - 10 mS.

The center channel delay will blink, indicating that you may change the setting.

Press the **Delay** button **7** to change the center delay time to the desired setting. When the appropriate number is shown press the **Select** button **10** once so that the number for rear/surround delay time on the right side of the display blinks.

Use the **Delay** button **7** to change the rear/surround delay to the desired setting.

When both settings are correct, press the **Select** button **10** again and note that the display will stop blinking. After a few seconds the display will return to normal operation and the settings will be entered to memory.

Operation

Basic Operation

Once you have completed the setup and installation of your new receiver, it is simple to operate and enjoy. The following instructions will provide the steps needed to enjoy the AVR55

- When using the AVR55 for the first time, it is necessary to press the **Main Power** button **1** on the front panel to turn the unit on. This places the unit in a standby mode, as indicated by the amber color of the **Power Indicator** **3**. Once the unit is in standby, you may begin a listening session by pressing the **System Power Control** **2** on the front panel or the **Main Power** button **3** on the remote. Note that the **Power Indicator** **3** will turn green. This will turn the unit on and return it to the input source that was last used. The unit may also be turned on from standby by pressing any of the **Source Selector** buttons on the remote **4 5 9** or front panel **8 10 13 14 15 16 18 22**.

To turn the unit off at the end of a listening session simply press the **System Power Control** **2** on the front panel or the **Main Power** button **3** on the remote. Power to any equipment plugged into the rear panel **Switched Outlet** **16** will be shut off and the **Power Indicator** **3** will turn amber.

When the remote is used to turn the unit "off" it is actually placing the system in a standby mode, as indicated by the amber color of the power switch ring.

When you will be away from home for an extended period of time it is always a good idea to completely turn the unit off using the front panel **Main**

Power Switch **1**. Note that all preset memories are lost if the unit is left turned off with the **Main Power Switch** **1** for more than two weeks.

Source Selection

- To select a source at any time, press any of the **Source Selector** buttons on the remote **4 5 9** or front panel **8 10 13 14 15 16 18 22**.
- The front panel **Audio/Video Inputs** **29** may be used to connect a device such as a video game or camcorder to your home entertainment system on a temporary basis. To listen to and view the output of the playback unit connected to these inputs, first press the **Vid 2 Input Selector** **18 5**, and then press the **Vid 2 Front/Rear** button **19**. When the front panel inputs are selected, a green LED will illuminate above the selector button.
- When an audio source is selected the last video input used remains routed to the **Video 1 and Monitor Outputs** **14 20**. This permits simultaneous viewing and listening to different sources.
- During a listening session you may wish to adjust the **Bass** **22** and **Treble** **24** controls to suit your listening tastes.
- At lower volume levels you may wish to engage the **Contour** button **30**. This boosts the low- and high-frequency sounds in accordance with what are known as the Fletcher-Munson hearing curves to compensate for the response of human hearing at low sound levels.

- Adjust the volume to a comfortable level using the front panel **Volume Control** **31** or remote **Volume Up/Down** **14** buttons.

- To temporarily silence all speaker outputs press the **Mute** button **16**. This will cut the output to all speakers, but it will not effect any recording or dubbing that may be in progress. When the system is muted the word **MUTE** will flash in the information display. Press the **Mute** **16** button again to return to normal operation.

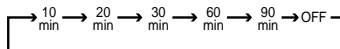
- For private listening, plug the 1/4" stereo phone plug from a pair of stereo headphones into the front panel **Headphone** jack **5**. To cut the speaker output when using headphones, press the **Speaker** button **7** so that it is in the extended position from the front panel.

- When one of the **Video** inputs **14 15 16 18 5** is selected the video signal for that input will be routed to the **Video Monitor** output jack **20** and will be viewable on a TV monitor connected to the AVR55. Make certain that your TV is set to the proper input to view the signal.

- In some installations it may be desirable to dim or extinguish the front panel lights. This may be done by pressing and holding the **Display** button **15** on the remote or front panel. The first press will dim the lights to one half normal brightness, and a second press will turn them totally off. Press the button again to return the lights to normal brightness. Note that the **Power Indicator** will remain lit at all times as a reminder that the unit is turned on.

Operation

- To program the AVR55 for automatic turn off, press the **Sleep** button **23** on the remote. Each press of the button will increase the time before shut down in the following sequence:



The sleep time will be displayed on the right side of the **Information Display** **14**, and it will count down until the time has elapsed.

When the programmed time has elapsed the unit will automatically turn off. Note that the front panel display will dim to one half brightness when the Sleep function is programmed. To cancel the Sleep function, press the **Sleep** button **23** until the information display returns to normal brightness and the Sleep indicator numbers disappear.

TV Auto-On

The AVR55 is capable of automatic operation that turns it on and off in response to the operation of an audio source such as the TV. This eliminates the need to manually turn on the AVR55 with a separate remote command. While this feature is most commonly used with TV audio, it may be used with any audio source. To use the TV Auto-On feature follow these steps:

1. Connect the audio source that will be used to trigger the Auto-On feature to the **TV Inputs** **1**.
2. Activate the feature by pressing and holding the **TV Input** button **14** **5** on the front panel or remote until the words **AUTO - ON** appear in the **Information Display** **14**.

3. Release the button, and then press it again within 2.5 seconds until the display changes to read **AUTO - ON** and then release the button.

4. The TV Auto-On feature is now engaged. Whenever an audio source is present at the TV input and the AVR55 is in the Standby mode the unit will automatically turn on and switch to the TV input.

5. Unless another input source is selected, the unit will automatically return to the Standby mode approximately five minutes after the audio source connected to the TV input is turned off.

NOTE: Remember that when the TV Auto feature is engaged the AVR55 will turn off whenever the TV input has been selected and the source feeding that input is not active. To disable this feature follow steps 2 and 3 above, but toggle the buttons so that the words **AUTO - OFF** appear in the **Information Display** **14**.

Surround Mode Selection

One of the most important features of the AVR55 is its ability to reproduce a full multichannel surround soundfield from Dolby Digital sources, analog matrix surround encoded programs, and standard stereo programs. In all a total of seven listening modes are available on the AVR55.

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 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 or Movie Surround depending on the source material. TV or radio broadcasts of programs in surround, but not originally

produced as theatrical motion pictures should normally be played back in Dolby Pro Logic or one of the other analog surround modes.

NOTE: Once a program has been encoded with surround information, it retains the surround matrix as long as the program is broadcast in stereo. Thus, movies with surround sound will carry surround information 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 obtain a list of these programs and discs from the Dolby Laboratories web site at www.dolby.com

Surround modes for conventional analog audio inputs are selected by pressing the **Surround Mode** button **28** on the front panel or the **Matrix** and **Dolby Mode** buttons **25** **27** on the remote. As described above, when a "Surround Sound" logo is associated with the program you are listening to, it is always best to start with Dolby Pro Logic, or Dolby 3-Stereo when there are no surround speakers. However, you may wish to experiment with the Theater, Hall, Church or Stadium modes to see if you find that sound more pleasing. Remember, you can't break anything by trying a different surround mode.

When a program is not listed as carrying intentional surround information, you will find that the Pro Logic or Dolby 3-Stereo often deliver enveloping surround presentations through the use of the natural information present in all stereo recordings. However, for stereo, but non-surround programs, we suggest that you try one of the other analog surround modes to see which one is most suitable.

Operation

To listen to a program in traditional two-channel stereo, with only the front left and right speakers plus the subwoofer, if installed, press the **Stereo** button **24** on the remote or the **Surround Off** button **21** on the front panel.

Dolby Digital

Dolby Digital (also known as AC-3) is the latest advancement in surround sound technology, delivering up to five full-range surround channels (left, center, right, left surround and right surround) plus a special dedicated Low-Frequency Effects (LFE) channel. This represents a major advancement over traditional analog surround in that each surround channel is fully discrete and capable of full bandwidth reproduction. Dolby Digital is available on DVD and LV discs, and it will be a part of the new high-definition television (HDTV) system when digital broadcasting begins in 1998. Dolby Digital for the home is based on the same system used to deliver digital audio soundtracks in movie theaters, enabling true cinema reproduction in your home.

To utilize the Dolby Digital mode you must have a digital source properly connected to the AVR55. The RF digital output of a laser disc player should be connected to the **AC-3 RF** jack **25** on the rear panel. Note that this jack is for use *only* with the AC-3 RF output from an LV player and should not be connected to any other audio, video or digital device. Digital datastream outputs from DVD players, HDTV receivers and CD players should be connected to the **AC-3/PCM Optical** or **Coaxial** inputs **7** **25** on the

rear panel. In order to provide a backup signal and a source for recording, the analog outputs provided on digital source equipment should also be connected to their appropriate rear panel inputs (e.g., connect the analog stereo audio output from a DVD to the **DVD** inputs **13** on the rear panel when you connect the digital outputs).

Dolby Digital sources must be used in conjunction with one of the video related inputs: DVD, TV, Vid 1 or Vid 2. First select one of these sources so that the video appears at the unit's output before choosing digital audio. Next, press the **Digital Input** button **27** **3** that corresponds to the type of digital input used. An LED will light above the data type selected, and a message will scroll across the **Information Display** **1** to confirm your choice.

Finally, press the **AC-3/Dolby Digital** button **26** **25** to select Dolby Digital. The mode name will briefly scroll in the **Information Display** **1**, and the **Dolby Digital** indicator **3** will illuminate.

Night Mode

A special feature of Dolby Digital is the Night mode, which enables AC-3 input sources to be played back with their full range while reducing the minimum peak level by 1/4 to 1/3. This prevents abruptly loud transitions from causing disturbances without reducing the impact of the digital source. The Night mode is available only when AC-3 signals with special data are being played.

To engage the Night mode, press the **Night** button **28** **6** and note that the indicator will illuminate above the **Night** button on the front panel.

IMPORTANT NOTES ON DOLBY DIGITAL PLAYBACK:

1. The AVR55 will decode digital audio sources with a sampling frequency of 32kHz, 44.1 kHz and 48kHz. Although this will enable it to decode virtually all DVD movies and HDTV sources, it is possible that some digital sources may not be compatible with the AVR55.
2. The AVR55 will automatically detect most Dolby Digital sources. It is possible, however, that future source equipment that could not be anticipated at this time, may require manual surround mode selection or analog playback.
3. Note that not all programs recorded in Dolby Digital contain full 5.1 channel audio. Consult the program guide that accompanies the DVD or Laser Disc to determine which type of audio has been recorded on the disc. The AVR55 will automatically sense the type of digital surround encoding used on an AC-3 program source and adjust to accommodate it.
4. When a Dolby Digital source is playing, you may not select one of the analog surround modes.
5. It is not possible to record the output of a Dolby Digital program.

Operation

PCM Audio Playback

PCM (Pulse Code Modulation) is the non-compressed digital audio system used for compact discs and non-AC-3 laser discs. The digital circuits in the AVR55 are capable of high-quality digital-to-analog decoding, and they may be connected directly to the digital audio output of your CD or LV player.

Connections should be made to the **AC-3/PCM Optical** or **Coaxial** inputs **7** **25** on the rear panel, using whichever input is not occupied by an AC-3 source such as a DVD player.

IMPORTANT NOTE: PCM Audio playback is possible **ONLY** when the CD input is selected. If you wish to use the AVR55 to decode the PCM audio track from a Laser Disc player, you must first select the CD input.

Tuner Operation

The AVR55's tuner 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** button **8** **9** to select the tuner as an input.
2. Press the **AM/FM** button **8** **9** again to switch between AM and FM so that the desired frequency band is selected.
3. Press the **Tuning Mode** button **6** **17** to select manual or automatic tuning.

When the **AUTO** indicator is illuminated in the main information display the tuner will only stop at those stations that have a strong enough signal to be received with acceptable quality.

If the **AUTO** indicator is **NOT** illuminated, the tuner is in a manual mode and will stop at each frequency increment in the selected band.

4. To select stations from the front panel press the **Tune** button **9**. When **AUTO** indicator is illuminated each press will 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 only select Stereo stations. To tune to the next station, press the button again. If the **AUTO** indicator is **NOT** illuminated, tap the **Tune** button **9** to advance one frequency increment at a time, or press and hold it to locate a specific station. When the **TUNED** indicator illuminates the station is properly tuned and should be heard with clarity. To listen to the station in stereo, press the **FM Mode** button **6** until the red **STEREO** indicator illuminates in the front panel display.

5. To select stations using the remote, press the **Manual Tune** **◀◀ / ▶▶** buttons **13** to select stations one at a time. Alternatively, the **Automatic Tune** **|◀◀ / ▶▶|** buttons **21** may be used to scan only those stations with sufficient strength for proper reception. Each press of these buttons will advance the tuner to the next station. For FM stereo reception press the **FM Mode** button **6** **17** until the **STEREO** indicator is illuminated.

NOTE: When the FM reception of a station is weak, audio quality will be increased by switching to mono mode by pressing the **Tuning Mode** button **6** **17** until the **STEREO** indicator goes out.

Preset Tuning

Up to 30 stations may be stored in the AVR55's memory for easy recall using the front panel controls or the remote.

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

1. Press the **Memo** button **4** **21** on the front panel or remote. Note that the **MEMORY** indicator will illuminate and flash in the information display.
2. Within five seconds, press the **Numeric Buttons** **37** **21** corresponding to the location where you wish to store this station's frequency. To enter a station to memory location "30," press only the **0** button.
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 Buttons** **37** **21** corresponding to the desired station's location. To select the station in location "30," press the **0** button only.
- To manually tune through the list of stored preset stations one by one, press the **Preset/Disc Skip** buttons **19** on the remote.

Operation

- To automatically scan through the stations entered in the preset memory, press the **P-Scan** button **22** on the remote. The tuner will run through the list of preset stations, stopping for five seconds at each one. Press the **P-Scan** button again to stop the scan at your desired station.

Tape Recording

In normal operation, the audio or video source selected for listening through the AVR55 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 1** or **Tape 2** **10** **8** in the record mode.

When a tape recorder with separate record and playback heads is used, you may monitor the output of the recording by selecting the **Tape 1/Monitor** input **11** **4**. Note that the **T-MON** indicator **13** will illuminate in the front panel display to remind you that you are listening to the record playback instead of the actual input source being recorded.

Video Recording

The AVR55 permits you to make a video recording from one of the input sources while another source is being listened to through the unit's main amplifiers.

To make a video recording, press the **Video 1 Record** button **17** and observe the indicator dot at the far left side of the front panel **Information Display** **85**. As you press the **Record** button, the **Video 1 Record** indicator **A** will change to show which output is being sent to the **Video 1 Out** jacks **14**. The output may be either the current listening source, or one of the other video inputs (TV, DVD, Video 2).

IMPORTANT NOTE: Please make certain that you are aware of the copyright restrictions on any material you copy. Unauthorized duplication of copyrighted materials is prohibited by Federal law.

Output Level Trim Adjustment

Normal output level adjustment for the AVR55 is established using the Test Tone, as outlined on page 19. In some cases, however, it may be desirable to adjust the output levels using program material such as a test disc, or a selection you are familiar with.

To adjust the output levels using program material, first set the reference volume for the front left/right channels using the **Volume Control** **31** **12**. If you wish to vary the difference between the left and right channels, use the **Balance Control** **26**.

To change the level for the channels you wish to adjust use the appropriate front panel level adjust control for the **Subwoofer**, **Center** or **Surround** channels **32** **33** **34**.

Memory Backup

This product is equipped with a memory backup system that preserves tuner presets and system configuration information if the unit is accidentally unplugged or subject to a power outage. This memory will last for approximately one week, after which time all information must be re-entered.

Processor Reset

In the rare case where the unit'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.

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

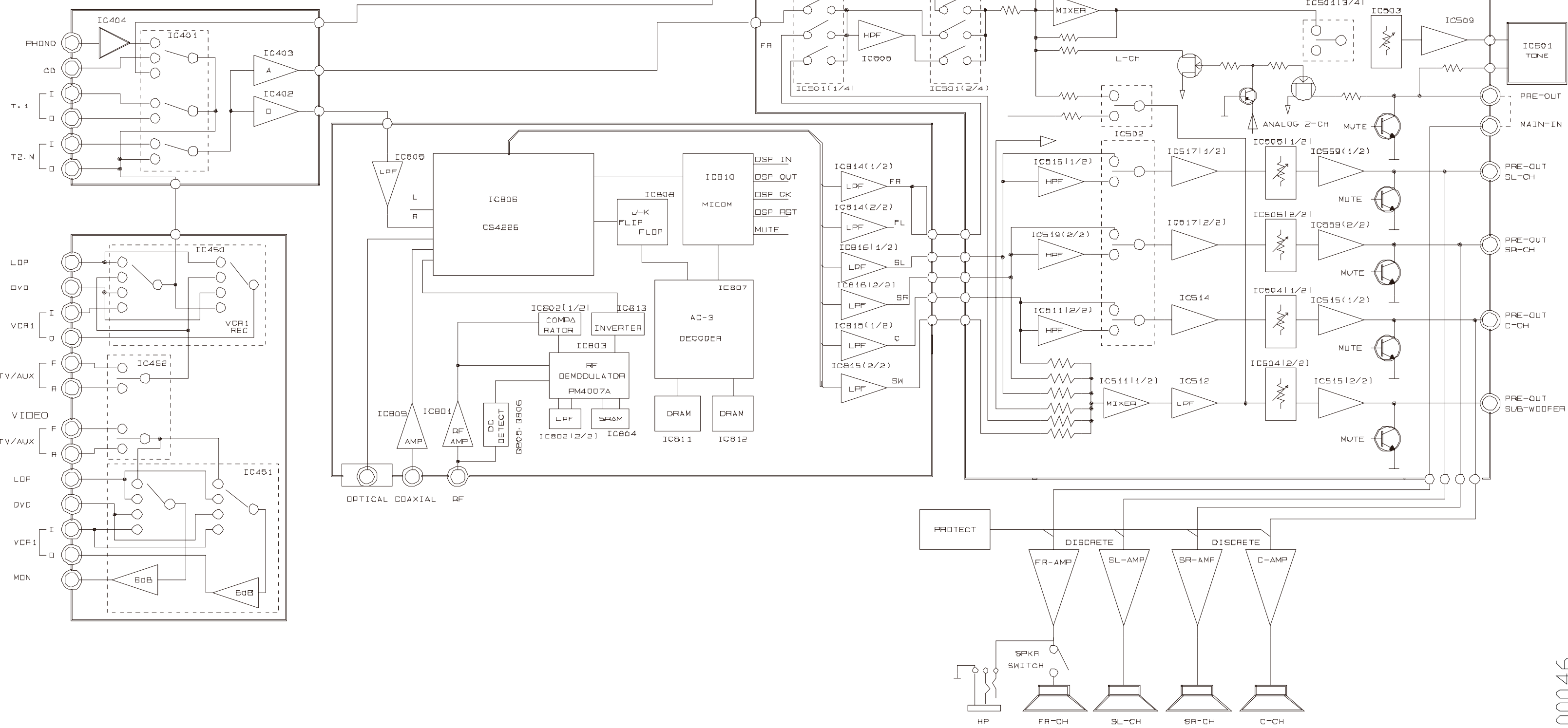
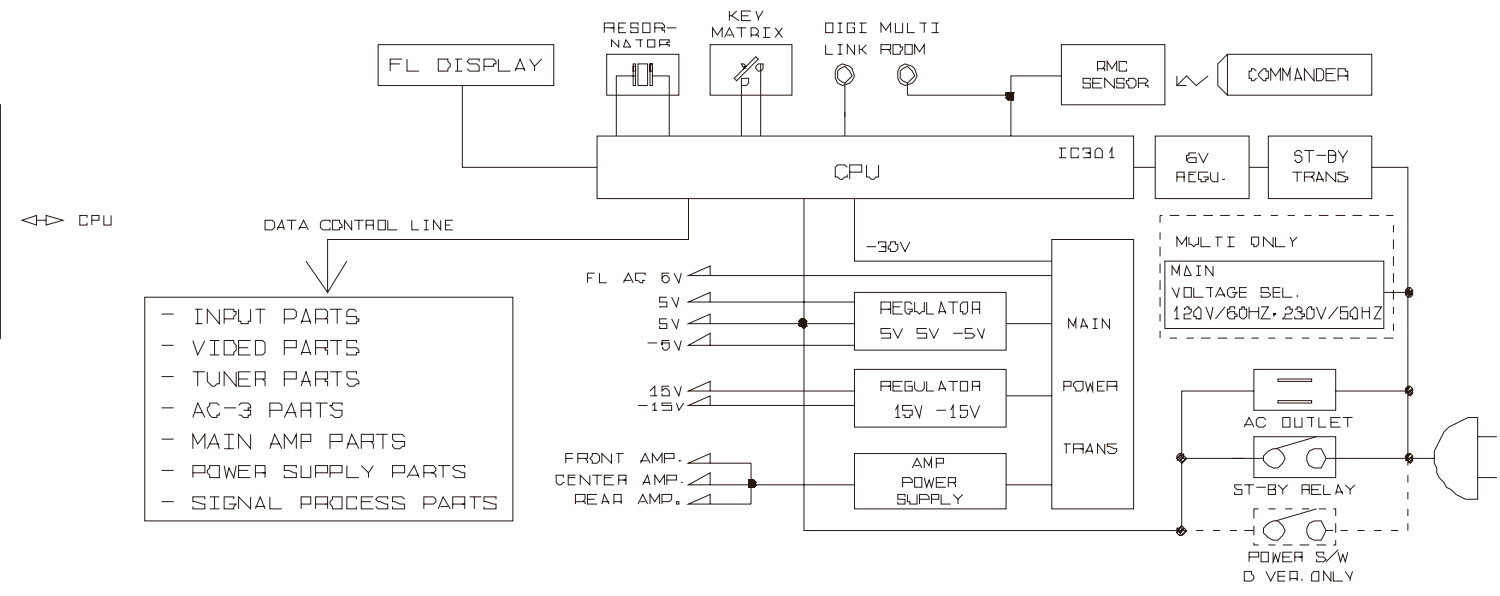
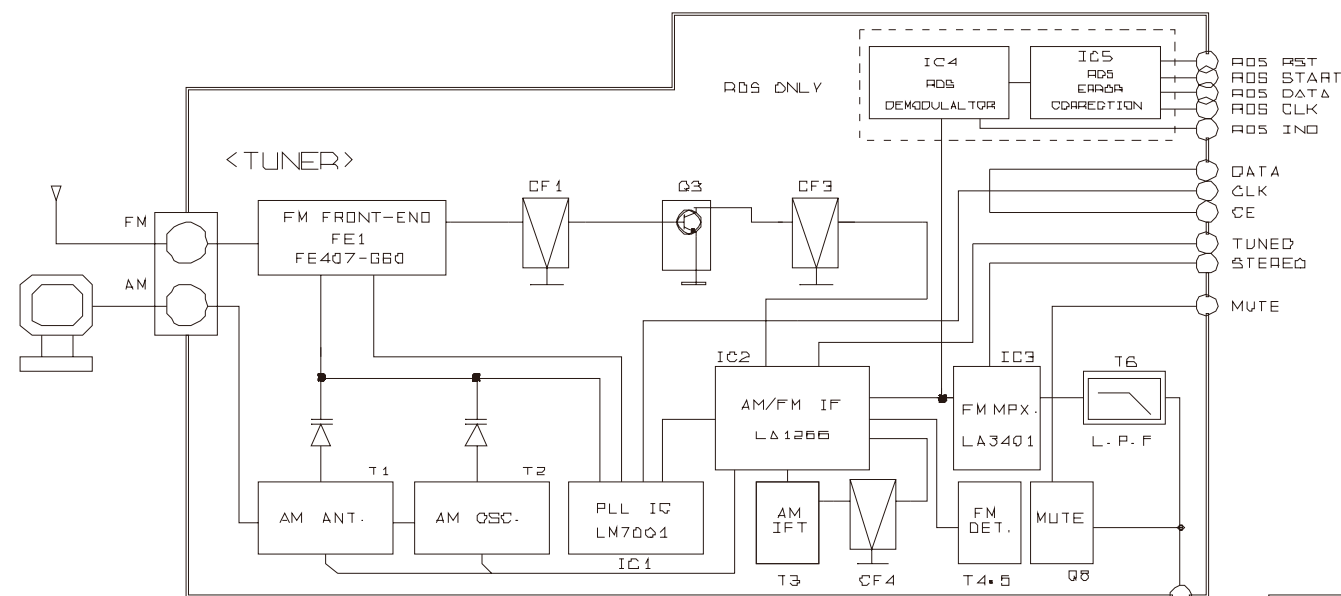
If a reset does not solve the problem, consult an authorized Harman Kardon service depot.

Troubleshooting Guide

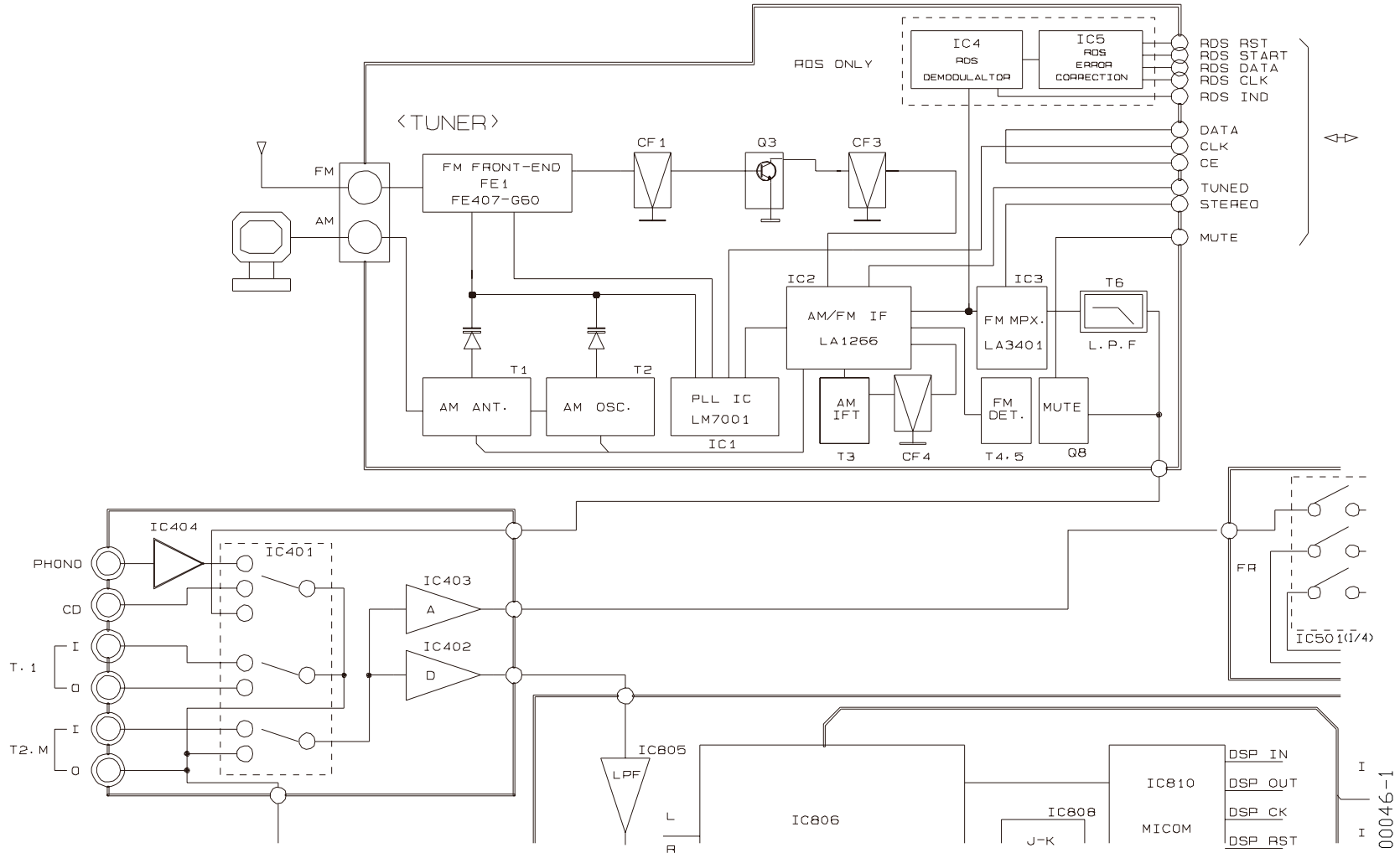
Troubleshooting Guide

<i>SYMPTOM</i>	<i>CAUSE</i>	<i>SOLUTION</i>
No front panel lights when power switch is pressed	<ul style="list-style-type: none">• No AC Power	<ul style="list-style-type: none">• Make certain AC power cord is plugged into a live outlet.• Check to see if outlet is switch controlled.
Display lights, but no sound or picture	<ul style="list-style-type: none">• Intermittent input connections• Mute is on• Volume control is down	<ul style="list-style-type: none">• Make certain that all input and speaker connections are secure.• Press Mute button.• Turn up volume control.
No sound from any speaker. Light around power switch is red	<ul style="list-style-type: none">• Amplifier is in protection mode due to possible short• Amplifier is in protection mode due to internal problems	<ul style="list-style-type: none">• Check speaker wire connections at receiver and speaker ends for shorts.• Contact your local Harman Kardon service depot.
No sound from surround or center speakers	<ul style="list-style-type: none">• Incorrect surround mode• Input is monaural• Incorrect configuration	<ul style="list-style-type: none">• Select a mode other than Stereo.• There is no surround information from mono sources.• Check speaker mode
Unit does not respond to remote commands	<ul style="list-style-type: none">• Weak batteries in remote.• Remote is in Learn position• Remote sensor is obscured	<ul style="list-style-type: none">• Change remote batteries.• Slide Use/Learn switch to Use.• Make certain front panel sensor is visible to remote.
Intermittent buzzing in tuner	<ul style="list-style-type: none">• Local interference	<ul style="list-style-type: none">• Move unit or antenna away from computers, fluorescent lights, motors or other electrical appliances.

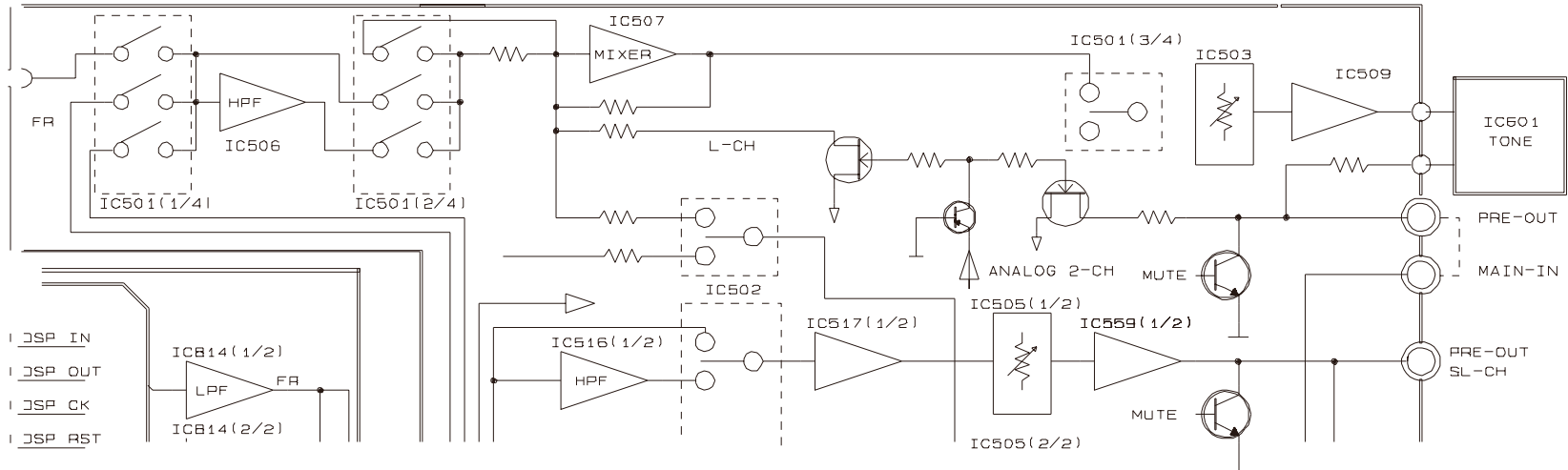
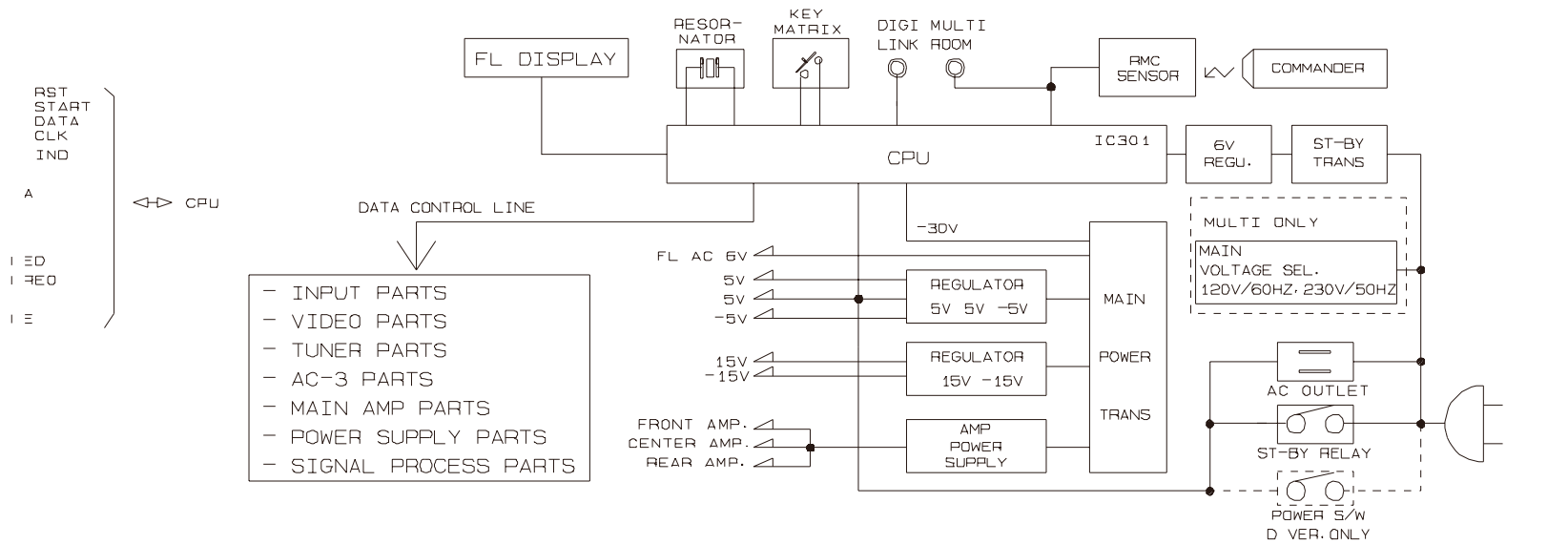
BLOCK DIAGRAM

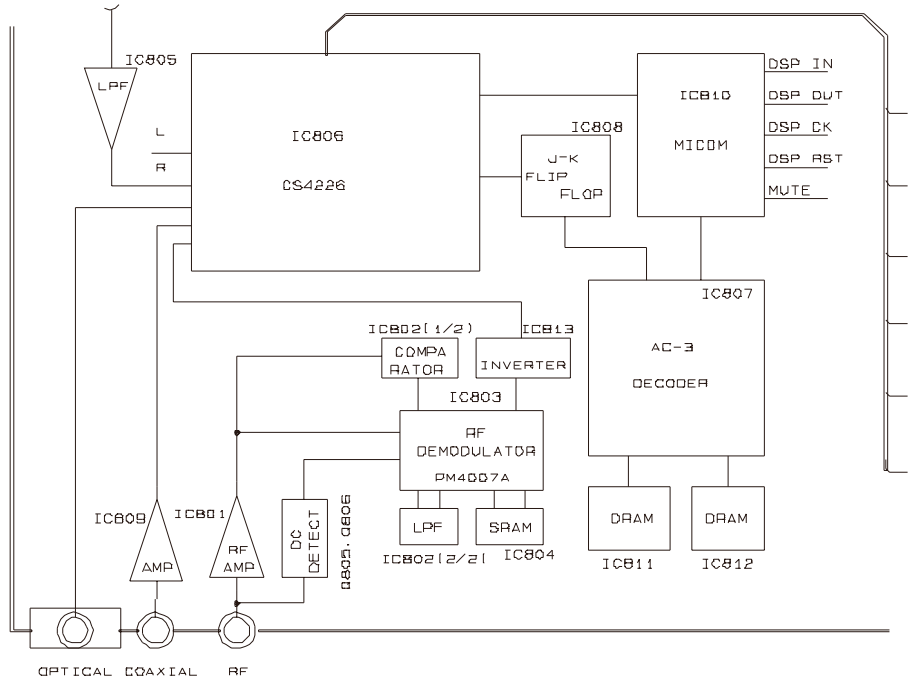
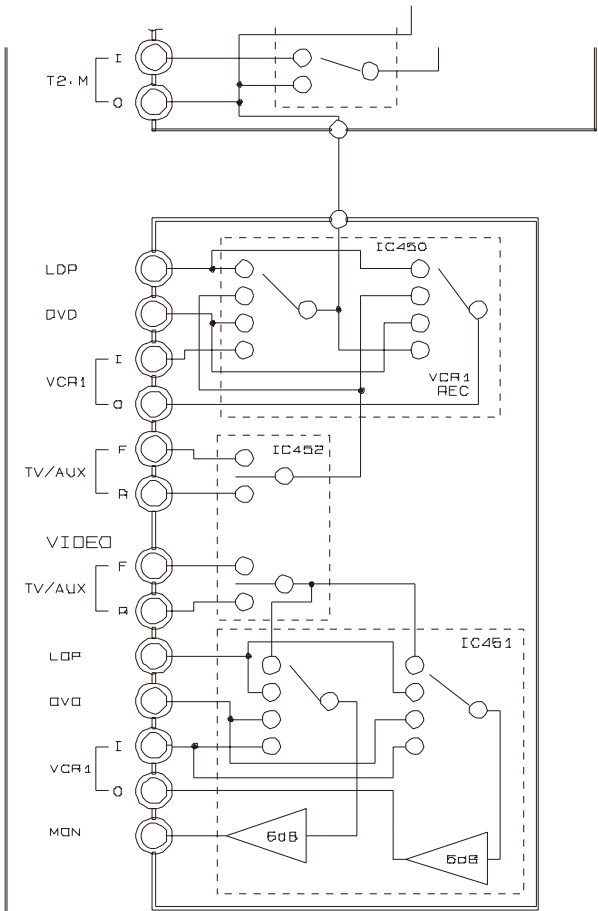


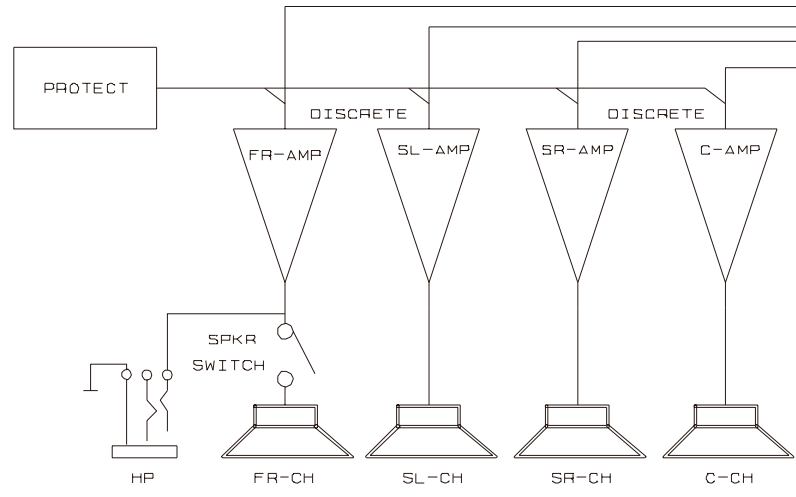
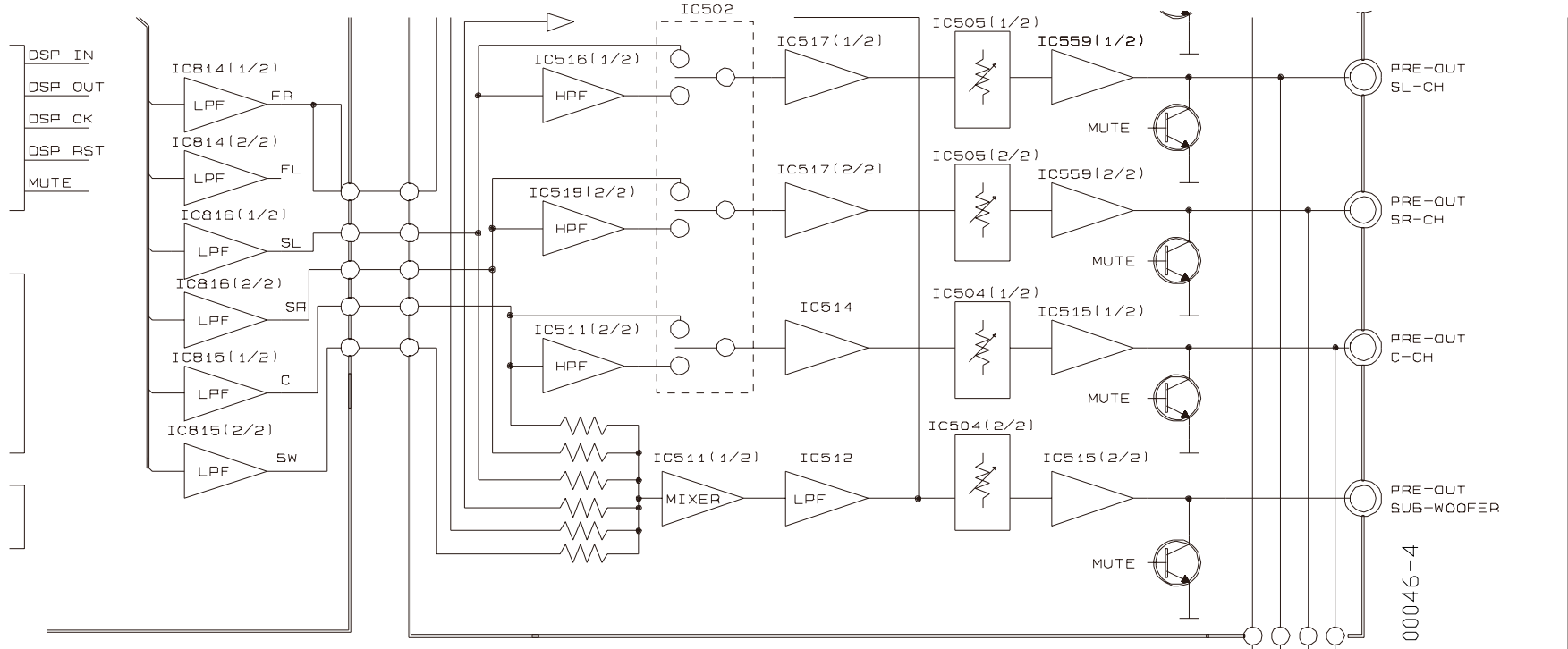
BLOCK C



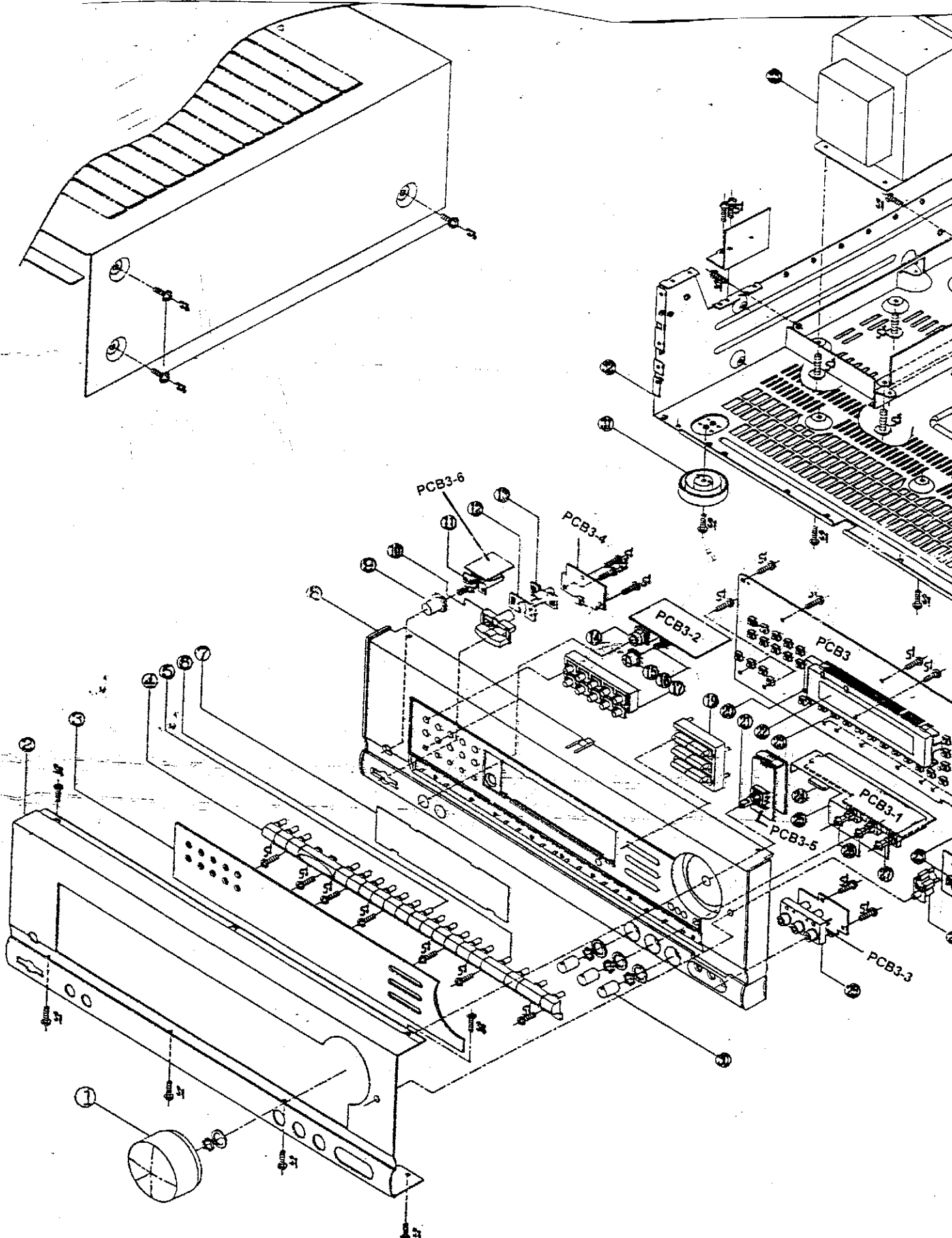
K DIAGRAM







EXPLODED VIEW PART 1



MECHANICAL PARTS LIST

REF NO.	DESCRIPTION	PARTS NO.	Q'TY	REF NO.	DESCRIPTION	PARTS NO.	Q'TY
	PACKAGE			45	JACK REMOTE	G402042130000	1
	BOX CARTON	6017040990350	1	46	JACK RCA (1P)	G600100555020	1
	CUSHION,SNOW	6230042794010	1	47	JACK RCA (3P)	G606300390010	2
	FILM SOFT PE	6327040302010	1	48	JACK RCA (9P)	G607901220060	1
	POLY BAG	633704122201A	1	49	JACK RCA (2P)	G601200430030	3
				50	JACK RCA (4P)	G602400450020	1
	ACCESSORIES			51	JACK RCA (6P)	G603600460010	1
	AM ANTENNA,LOOP	E601010000000	1	52	JACK RCA (2P)	G601200099030	1
	ANTENNA,WIRE	E605010010000	1	53	RIVET SNAP	1560040036010	3
	BATTERY (1.5V)	G670011R50000	1	54	MODULE OPTO RCVR	E944102000010	1
	INSTRUCTION MANUAL	5707046840020	1	55	SHIELD PLATE	3070046716010	1
	MATCHING TRANS	L109284007100	1	56	JACK RCA (4P)	G602400450040	1
	RCA CORD (1P)	L063041230000	1	57	TERMINAL ANT	G590040470000	1
	REMOCON	8300040650010	1	58	JUMP PLUG	L063040750000	2
				59	TERMINAL SCREW GND	3790000090000	1
	CABINET & CHASSIS			60	ASS'Y CORD AC POWER	L061040050010	1
1	KNOB MAIN ASS'Y	5088041581010	1	61	STOPPER CORD	4380040162010	1
2	PANEL FRONT	3067046448010	1	62	HEATSINK POWER	2120044988010	1
3	WINDOW	5077045232010	1	63	BKT HEATSINK	4010056906010	5
4	BTN FUCNTION LEFT	5097091071010	1	64	BKT PCB	4010056896010	1
5	BTN FUNCTION CENTER	5097091081010	1	65	BKT HEATSINK	4010057166010	5
6	BTN FUNCTION RIGHT	5097091091010	1		HARDWEAR KIT		
7	FILTER	5200041692010	1	S1	SCREW, #BTT 3X8B	B020030083B10	92
8	BODY FRONT (MOLD)	3417041341010	1	S2	SCREW, #BWPTT 3X6Y	B020030061W10	9
9	BTN POWER	5097054691010	1	S3	SCREW, #WSAM 4X8B	B020940083W10	7
10	BTN STANDBY	509704537101A	1	S4	SCREW, GROUND	1507040996010	8
11	SW POWER	G000041610000	1	S5	SCREW, HEAT SINK	1507041146010	10
12	LIGHT SHIELD	4470042662010	1	S6	SCREW, #2FTC 3X8B	B010530083F10	2
13	INDICATOR POWER	5160040573010	1		MISCELLANEOUS		
14	JACK PHONE	G402040161330	1		TOP CABINET	3000045406010	1
15	BTN SPEAKER	5097053841010	1		CLAMP WIRE	4330040213010	1
16	SW SPEAKER	G000040960000	1		CABLE TIE	4330040343010	1
17	BTN PRESET	5097091041010	1		BACK CHASSIS	3207056496010	1
19	BTN TUNING	5097091061010	1				
20	HOLDER FL	4320040841010	2				
21	SW ENCODER	C49004106001A	1				
22	FIP	K530162800010	1				
23	SW TACT	G180000210030	39				
24	SPONGE	4050043895010	2				
25	BKT VOLUME	4010057126011	2				
26	VR ROTARY	C454121402810	2				
27	VR ROTARY	C452111402200	1				
28	BTN CINEMA	5097091101010	1				
29	JACK RCA 3P	G606040300000	1				
30	KNOB ROTARY	5097054701010	3				
31	FOOT P.L (H/S)	4007040201010	4				
32	ASS'Y MAIN CHASSIS	3208056416200	1				
33	POWER TRANS	8200281015870	1				
35	REG TR HEAT SINK	2120044808010	2				
36	REG TR HEAT SINK	2120043538020	2				
37	REG TR HEAT SINK	2120044358010	1				
38	SPACER PCB	4300040561010	4				
39	HOLDER PCB	4320044771010	1				
40	AC OUTLET	G435040070000	1				
41	TERMINAL SPEAKER (8P)	G614081036000	1				
42	TERMINAL SPEAKER (2P)	G611040310000	1				
43	PLATE GROUND	3070045526010	3				
44	CHASSIS BACK	3207056496010	1				

ELECTRICAL PARTS LIST

REF NO.	DESCRIPTION	PARTS NO.	TY	REF NO.	DESCRIPTION	PARTS NO.	QTY		
PCB 1	ASSEMBLY P.C. BOARD AMP	7027040988500			TRANSISTORS				
	CAPACITORS								
C201C	ELECT GE 85C	47 uF 16V M	D040470083100	1	Q201C	KTA1268BL, PNP	J5001268B0050	1	
C201L	ELECT GE 85C	47 uF 16V M	D040470083100	1	Q201L	KTA1268BL, PNP	J5001268B0050	1	
C201R	ELECT GE 85C	47 uF 16V M	D040470083100	1	Q201R	KTA1268BL, PNP	J5001268B0050	1	
C201SL	ELECT GE 85C	47 uF 16V M	D040470083100	1	Q201SL	KTA1268BL, PNP	J5001268B0050	1	
C201SR	ELECT GE 85C	47 uF 16V M	D040470083100	1	Q201SR	KTA1268BL, PNP	J5001268B0050	1	
C202C	CERAMIC HIK AXIAL	330 pF 50V B	D005331077530	1	Q202C	KTA1268BL, PNP	J5001268B0050	1	
C202L	CERAMIC HIK AXIAL	330 pF 50V B	D005331077530	1	Q202L	KTA1268BL, PNP	J5001268B0050	1	
C202R	CERAMIC HIK AXIAL	330 pF 50V B	D005331077530	1	Q202R	KTA1268BL, PNP	J5001268B0050	1	
C202SL	CERAMIC HIK AXIAL	330 pF 50V B	D005331077530	1	Q202SL	KTA1268BL, PNP	J5001268B0050	1	
C202SR	CERAMIC HIK AXIAL	330 pF 50V B	D005331077530	1	Q202SR	KTA1268BL, PNP	J5001268B0050	1	
C203C	CERAMIC HIK AXIAL	470 pF 50V K	D005471077530	1	Q203C	KTA1268BL, PNP	J5001268B0050	1	
C203L	CERAMIC HIK AXIAL	470 pF 50V K	D005471077530	1	Q203L	KTA1268BL, PNP	J5001268B0050	1	
C203R	CERAMIC HIK AXIAL	470 pF 50V K	D005471077530	1	Q203R	KTA1268BL, PNP	J5001268B0050	1	
C203SL	CERAMIC HIK AXIAL	470 pF 50V K	D005471077530	1	Q203SL	KTA1268BL, PNP	J5001268B0050	1	
C203SR	CERAMIC HIK AXIAL	470 pF 50V K	D005471077530	1	Q203SR	KTA1268BL, PNP	J5001268B0050	1	
C204C	ELECT GE 85C	1 uF 50V M	D040010087050	1	Q204C	KTA1268BL, PNP	J5001268B0050	1	
C204L	ELECT GE 85C	1 uF 50V M	D040010087050	1	Q204L	KTA1268BL, PNP	J5001268B0050	1	
C204R	ELECT GE 85C	1 uF 50V M	D040010087050	1	Q204R	KTA1268BL, PNP	J5001268B0050	1	
C204SL	ELECT GE 85C	1 uF 50V M	D040010087050	1	Q204SL	KTA1268BL, PNP	J5001268B0050	1	
C204SR	ELECT GE 85C	1 uF 50V M	D040010087050	1	Q204SR	KTA1268BL, PNP	J5001268B0050	1	
C205C	ELECT GE 85C	22 uF 16V M	D040220083100	1	Q205C	KTC2240BL(BKTC3200), NPN	J5023200B0050	1	
C205L	ELECT GE 85C	22 uF 16V M	D040220083100	1	Q205L	KTC2240BL(BKTC3200), NPN	J5023200B0050	1	
C205R	ELECT GE 85C	22 uF 16V M	D040220083100	1	Q205R	KTC2240BL(BKTC3200), NPN	J5023200B0050	1	
C205SL	ELECT GE 85C	22 uF 16V M	D040220083100	1	Q205SL	KTC2240BL(BKTC3200), NPN	J5023200B0050	1	
C205SR	ELECT GE 85C	22 uF 16V M	D040220083100	1	Q205SR	KTC2240BL(BKTC3200), NPN	J5023200B0050	1	
C206C	ELECT GE 85C	220 uF 10V M	D040221082100	1	Q206C	KTC2240BL(BKTC3200), NPN	J5023200B0050	1	
C206L	ELECT GE 85C	220 uF 10V M	D040221082100	1	Q206L	KTC2240BL(BKTC3200), NPN	J5023200B0050	1	
C206R	ELECT GE 85C	220 uF 10V M	D040221082100	1	Q206R	KTC2240BL(BKTC3200), NPN	J5023200B0050	1	
C206SL	ELECT GE 85C	220 uF 10V M	D040221082100	1	Q206SL	KTC2240BL(BKTC3200), NPN	J5023200B0050	1	
C206SR	ELECT GE 85C	220 uF 10V M	D040221082100	1	Q206SR	KTC2240BL(BKTC3200), NPN	J5023200B0050	1	
C209C	ELECT GE 85C	10 uF 50V M	D040100087050	1	Q207C	KTA1268BL, PNP	J5001268B0050	1	
C209L	ELECT GE 85C	10 uF 50V M	D040100087050	1	Q207L	KTA1268BL, PNP	J5001268B0050	1	
C209R	ELECT GE 85C	10 uF 50V M	D040100087050	1	Q207R	KTA1268BL, PNP	J5001268B0050	1	
C209SL	ELECT GE 85C	10 uF 50V M	D040100087050	1	Q207SL	KTA1268BL, PNP	J5001268B0050	1	
C209SR	ELECT GE 85C	10 uF 50V M	D040100087050	1	Q207SR	KTA1268BL, PNP	J5001268B0050	1	
C210C	ELECT GE 85C	470 uF 63V M	D040471088020	1	Q208C	2SA1360, PNP	J5001360O000	1	
C210L	ELECT GE 85C	470 uF 63V M	D040471088020	1	Q208L	2SA1360, PNP	J5001360O000	1	
C210R	ELECT GE 85C	470 uF 63V M	D040471088020	1	Q208R	2SA1360, PNP	J5001360O000	1	
C210SL	ELECT GE 85C	470 uF 63V M	D040471088020	1	Q208SL	2SA1360, PNP	J5001360O000	1	
C210SR	ELECT GE 85C	470 uF 63V M	D040471088020	1	Q208SR	2SA1360, PNP	J5001360O000	1	
C211C	ELECT GE 85C	470 uF 63V M	D040471088020	1	Q209C	2SC3423, NPN	J5023423O0000	1	
C211L	ELECT GE 85C	470 uF 63V M	D040471088020	1	Q209L	2SC3423, NPN	J5023423O0000	1	
C211R	ELECT GE 85C	470 uF 63V M	D040471088020	1	Q209R	2SC3423, NPN	J5023423O0000	1	
C211SL	ELECT GE 85C	470 uF 63V M	D040471088020	1	Q209SL	2SC3423, NPN	J5023423O0000	1	
C211SR	ELECT GE 85C	470 uF 63V M	D040471088020	1	Q209SR	2SC3423, NPN	J5023423O0000	1	
C212C	ELECT GE 85C	10 uF 50V M	D040100087050	1	Q210C	2SC1740S, NPN	J5021740S0010	1	
C212L	ELECT GE 85C	10 uF 50V M	D040100087050	1	Q210L	2SC1740S, NPN	J5021740S0010	1	
C212R	ELECT GE 85C	10 uF 50V M	D040100087050	1	Q210R	2SC1740S, NPN	J5021740S0010	1	
C212SL	ELECT GE 85C	10 uF 50V M	D040100087050	1	Q210SL	2SC1740S, NPN	J5021740S0010	1	
C212SR	ELECT GE 85C	10 uF 50V M	D040100087050	1	Q210SR	2SC1740S, NPN	J5021740S0010	1	
C214C	CERAMIC T.C AXIAL	1 pF 50V K	D001010077530	1	Q211C	2SC4883A, NPN	J5024883Y0000	1	
C214L	CERAMIC T.C AXIAL	1 pF 50V K	D001010077530	1	Q211L	2SC4883A, NPN	J5024883Y0000	1	
C214R	CERAMIC T.C AXIAL	1 pF 50V K	D001010077530	1	Q211R	2SC4883A, NPN	J5024883Y0000	1	
C214SL	CERAMIC T.C AXIAL	1 pF 50V K	D001010077530	1	Q211SL	2SC4883A, NPN	J5024883Y0000	1	
C214SR	CERAMIC T.C AXIAL	1 pF 50V K	D001010077530	1	Q211SR	2SC4883A, NPN	J5024883Y0000	1	
C215C	CERAMIC HIK AXIAL	180 pF 50V B	D005181077530	1	Q212C	TR 2SA 1859A-Y	J5001859Y0000	1	
C215L	CERAMIC HIK AXIAL	180 pF 50V B	D005181077530	1	Q212L	TR 2SA 1859A-Y	J5001859Y0000	1	
C215R	CERAMIC HIK AXIAL	180 pF 50V B	D005181077530	1	Q212R	TR 2SA 1859A-Y	J5001859Y0000	1	
C215SL	CERAMIC HIK AXIAL	180 pF 50V B	D005181077530	1	Q212SL	TR 2SA 1859A-Y	J5001859Y0000	1	
C215SR	CERAMIC HIK AXIAL	180 pF 50V B	D005181077530	1	Q212SR	TR 2SA 1859A-Y	J5001859Y0000	1	
C216L	ELECT GE 85C	10 uF 50V M	D040100087050	1	Q213C	2SC5200, NPN	J502520000010	1	
C216R	ELECT GE 85C	10 uF 50V M	D040100087050	1	Q213L	2SC5200, NPN	J502520000010	1	
C218	ELECT GE 85C	47 uF 50V M	D040470087100	1	Q213R	2SC5200, NPN	J502520000010	1	
	CONNECTOR				Q213SL	2SC5200, NPN	J502520000010	1	
CN201	WIRE, 1007#20 2.5		L021080831810	1	Q214C	2SA1943, PNP	J500194300010	1	
CN202	WIRE, 1007#20 2.5		L021070831810	1	Q214L	2SA1943, PNP	J500194300010	1	
CP201	WAFER 20MM (10P)		L101220100000	1	Q214SL	2SA1943, PNP	J500194300010	1	
CP202	WAFER 3.96MM		L104353130200	1	Q214SR	2SA1943, PNP	J500194300010	1	
	DIODES				Q215C	KTC2240BL(BKTC3200), NPN	J5023200B0050	1	
D201C	1N4148M, SWITCHING		K000414801520	1	Q215L	KTC2240BL(BKTC3200), NPN	J5023200B0050	1	
D201L	1N4148M, SWITCHING		K000414801520	1	Q215R	KTC2240BL(BKTC3200), NPN	J5023200B0050	1	
D201R	1N4148M, SWITCHING		K000414801520	1	Q215SL	KTC2240BL(BKTC3200), NPN	J5023200B0050	1	
D201SL	1N4148M, SWITCHING		K000414801520	1	Q215SR	KTC2240BL(BKTC3200), NPN	J5023200B0050	1	
D201SR	1N4148M, SWITCHING		K000414801520	1					
D202C	1N4148M, SWITCHING		K000414801520	1	RESISTORS				
D202L	1N4148M, SWITCHING		K000414801520	1	R201C	METAL FILM	1 kohm 1/5W J	C06001026P52	1
D202R	1N4148M, SWITCHING		K000414801520	1	R201L	METAL FILM	1 kohm 1/5W J	C06001026P52	1
D202SL	1N4148M, SWITCHING		K000414801520	1	R201R	METAL FILM	1 kohm 1/5W J	C06001026P52	1
D202SR	1N4148M, SWITCHING		K000414801520	1	R201SL	METAL FILM	1 kohm 1/5W J	C06001026P52	1
L201C	INDUCTOR COIL 0.5uH		D330900001320	1	R201SR	METAL FILM	1 kohm 1/5W J	C06001026P52	1
L201L	INDUCTOR COIL 0.5uH		D330900001320	1	R202C	CHIP THICK	33 kohm 1/10 J	C200033360200	1
L201R	INDUCTOR COIL 0.5uH		D330900001320	1	R202L	CHIP THICK	33 kohm 1/10 J	C200033360200	1
					R202R	CHIP THICK	33 kohm 1/10 J	C200033360200	1
					R202SL	CHIP THICK	33 kohm 1/10 J	C200033360200	1
					R202SR	CHIP THICK	33 kohm 1/10 J	C200033360200	1

REF NO.	DESCRIPTION	PARTS NO.	Q'TY	REF NO.	DESCRIPTION	PARTS NO.	Q'TY	
R239C	METAL FILM	39 ohm 1/5W J	1	D121-D128	1N4003, RECTIFIER	K040400300520	8	
R239L	METAL FILM	39 ohm 1/5W J	1	D129	ZENER 9.1V	K06009R124520	1	
R239R	METAL FILM	39 ohm 1/5W J	1	D130	1N4148M, SWITCHING	K000414801520	1	
R240C	METAL FILM	39 ohm 1/5W J	1					
R240L	METAL FILM	39 ohm 1/5W J	1		FUSES			
R240R	METAL FILM	39 ohm 1/5W J	1	F101	FUSE, SB 8A 250V	G650802251010	1	
R243	METAL FILM	560 ohm 1/5W J	1	F103	FUSE, SB 315MA 125V	G650311121150	1	
R245L	CHIP THICK	22 kohm 1/10W J	1	F104/F105	FUSE, SB 1A 125V	G650102121150	2	
R245R	CHIP THICK	22 kohm 1/10W J	1	F106/F107	FUSE, SB 1.5A 125V	G650152121150	2	
R246	METAL FILM	560 ohm 1/5W J	1					
MRP201C	CEMENT MPR DUAL	0.27 ohm 5W 5%	1		INTEGRATED CIRCUITS			
MRP201L	CEMENT MPR DUAL	0.27 ohm 5W 5%	1	IC101	KIA7815, REGULATER	J126781500020	1	
MRP201R	CEMENT MPR DUAL	0.27 ohm 5W 5%	1	IC102	KIA7915, REGULATER	J126791500030	1	
MRP201SL	CEMENT MPR DUAL	0.27 ohm 5W 5%	1	IC103/IC104	KIA7805, REGULATER	J126780500020	2	
MRP201SR	CEMENT MPR DUAL	0.27 ohm 5W 5%	1	IC105	KIA7905, REGULATER	J126790500070	1	
				IC107	KIA7806, REGULATER	J126780600120	1	
	THERMISTORS							
TH201C	THERMISTOR, NTC5D-302KPC	F340530200000	1		TRANSISORS			
TH201L	THERMISTOR, NTC5D-302KPC	F340530200000	1	Q101	DTC114YS, NPN	J602011400050	1	
TH201R	THERMISTOR, NTC5D-302KPC	F340530200000	1	Q140	DTA114YS, PNP	J6000114Y0010	1	
TH201SL	THERMISTOR, NTC5D-302KPC	F340530200000	1	Q141	KTA1267Y, PNP	J5001267Y0050	1	
TH201SR	THERMISTOR, NTC5D-302KPC	F340530200000	1	Q142/Q143	2SC1740S, NPN	J5021740Y0050	2	
				Q164	2SC3199Y (BKT3C199), NPN	J5023199Y0050	1	
				Q165	DTA114YS, PNP	J6000114Y0010	1	
PCB 2	ASSEMBLY P.C. BOARD MAIN	7028040955200						
	CAPACITORS				RESISTORS			
C101	CERAMIC AC (SAFETY)	D00847208K03D	1		METAL FILM	3.3 Mohm 1/2W J	C060033574530	1
C102-C104	FILM POLYESTER	0.047 uF 100V J	3	R101	METAL FILM	470 ohm 1/5W J	C06004716P520	1
C107	ELECT GE 85C	330 uF 25V M	1	R102	CHIP THICK	10 kohm 1/10W J	C200010360200	1
C108	CERAMIC HIK DISC	0.1 uF 50V Z	1	R103	CARBON FILM	1 Mohm 1/5W J	C00001056P520	1
C109	ELECT GE 85C	1 uF 50V M	1	R104	CARBON FILM	100 kohm 1/5W J	C00001048P520	1
C110	ELECT GE 85C	100 uF 35V M	1	R105	METAL FILM	10 ohm 1W J	C060010068520	1
C111/C112	ELECT GE 85C	15000 uF 63V M	2	R106	CARBON FILM	15 kohm 1/5W J	C00001536P520	1
C113	ELECT GE 85C	1 uF 50V M	1	R107	METAL FILM	330 ohm 1W J	C060033165520	1
C115	FILM POLYESTER	0.1 uF 250V K	1	R108	CARBON FILM	1 Mohm 1/5W J	C00001056P520	1
C116	FILM POLYESTER	0.1 uF 83V K	1	R109	CHIP THICK	100 kohm 1/10W J	C200010480200	1
C117/C118	FILM POLYESTER	0.1 uF 250V K	2	R110	METAL FILM	10 ohm 1W J	C060010068520	2
C119	ELECT GE 85C	1 uF 50V M	1	R111/R112	METAL FILM	1 ohm 2W J	C060001066520	3
C122-C124	FILM POLYESTER	0.047 uF 100V J	3	R117	METAL FILM	1 kohm 1/5W J	C06004716P520	1
C127-C129	FILM POLYESTER	0.047 uF 100V J	3	R118/R119	METAL FILM	470 ohm 1/5W J	C06004716P520	2
C130/C131	ELECT GE 85C	2200 uF 35V M	2	R120	METAL FILM	470 ohm 1/5W J	C06004716P520	1
C132	ELECT GE 85C	1 uF 50V M	1	R122	CARBON FILM	24 kohm 1/5W J	C00002436P520	1
C133	CERAMIC HIK DISC	0.1 uF 50V Z	1	R142 SL	CARBON FILM	24 kohm 1/5W J	C00002436P520	1
C134	ELECT GE 85C	1 uF 50V M	1	R142 SR	CARBON FILM	24 kohm 1/5W J	C00002436P520	1
C135	CERAMIC HIK DISC	0.1 uF 50V Z	1	R143	CARBON FILM	24 kohm 1/5W J	C00002436P520	1
C136-C138	FILM POLYESTER	0.047 uF 100V J	3	R144	METAL FILM	4.7 kohm 1/5W J	C06004726P520	1
C139	ELECT GE 85C	10000 uF 16V M	1	R145	CARBON FILM	100 kohm 1/5W J	C00001046P520	1
C140	ELECT GE 85C	2200 uF 16V M	1	R146	CARBON FILM	68 kohm 1/5W J	C00006838P520	1
C141	ELECT GE 85C	1 uF 50V M	1	R147	METAL FILM	3.3 kohm 1/5W J	C06003326P520	1
C142	CERAMIC HIK DISC	0.1 uF 50V Z	1	R148	METAL FILM	1.5 kohm 1/5W J	C06001526P520	1
C143	ELECT GE 85C	1 uF 50V M	1	R149	METAL FILM	1 kohm 1/5W J	C06001026P520	1
C144	CERAMIC HIK DISC	0.1 uF 50V Z	1					
C145	ELECT GE 85C	1 uF 50V M	1		MISCELLANEOUS			
C146	CERAMIC HIK DISC	0.1 uF 50V Z	1	RLY101	RELAY, HR-CR7 DC12V	G680125020010	1	
C151	ELECT GE 85C	1 uF 50V M	1	TRANS101	ST-BY, 120V/60Hz	8200280960010	1	
C152	ELECT GE 85C	470 uF 6.3V T	1	TRANS	POWER TRANS, 120V/60Hz	8200281015870	1	
	CONNECTORS			PCB 3	ASSEMBLY P.C. BOARD FRONT	7028040955600		
CN151	Wafer, 7.92mm 2P	L104353280200	1		CAPACITORS			
CP100	WAFER 2.5MM	L102532911910	1	C301-C310	CERAMIC T.C AXIAL	100 pF 50V J	D001101077530	10
CP101	WAFER 3.96MM	L104353280400	1	C311/C312	FILM POLYESTER	0.047 uF 100V J	D02047306C060	2
CP102	WAFER 2.5MM (6P)	L102526706010	1	C313	ELECT GE 85C	0.1 uF 50V M	D040R10087050	1
CP103	WAFER 2.5MM	L102526704010	1	C316/C317	ELECT GE 85C	47 uF 25V M	D040470084100	2
CP111	WAFER 7.92MM (2P)	L10882P300010	1	C318	ELECT GE 85C	10 uF 50V M	D040100087050	1
CP141	WAFER 2.5MM	L102526702010	1	C319	ELECT GE 85C	47 uF 50V M	D040470087100	1
CP201	WAFER 2.5MM (8P)	L102526708010	1	C321	CERAMIC T.C AXIAL	100 pF 50V J	D001101077530	1
CP202	WAFER 2.5MM (7P)	L102526707010	1	C322	BACK UP. CAP	0.047 uF 5.5V F	D090473700200	1
CP301	FPC 1.25MM	L131520453100	1	C331	CERAMIC T.C AXIAL	100 pF 50V J	D001101077530	1
CP302	WAFER 2.0MM (7P)	L101220070000	1					
CP401	WAFER 2.0MM (11P)	L101353361110	1		CONNECTORS			
CP402	WAFER 2.0MM (8P)	L101353360810	1	CN301	FPC 1.25MM		L131525753100	1
CP451	WAFER 2.0MM (16P)	L101353361610	1	CN302	WIRE, 1007#26 2.0		L022074034320	1
CP501	WAFER 2.0MM (19P)	L101353361910	1	CN303	WIRE 2.5MM		L003121052600	1
CP502	WAFER 2.0MM (15P)	L101353361510	1	CN304	WAFER 2.0MM (5P)		L101220050010	1
CP751D	WAFER 3.96MM	L104353280200	1	CN305	WAFER 2.5MM (2P)		L102526802010	1
CP801	WAFER 2.0MM (11P)	L101353361110	1	CN306	WIRE, 2P		L024021432310	1
CP802	WAFER 2.0MM (14P)	L101353361410	1	CN603	WIRE, 1007#26 2.0		L022045234320	1
CP901	WAFER 2.5MM (11P)	L102534211110	1					
	DIODES			D301-D310	1N4148M, SWITCHING	K000414801520	10	
D101-D106	1N4003, RECTIFIER	K040400300520	7	D312	1N4148M, SWITCHING	K000414801520	1	
D107	ZENER 4.3V	K06004R314520	1	D314	1N4148M, SWITCHING	K000414801520	1	
D108/D109	1N4148M, SWITCHING	K000414801520	2	D316-D319	LED SLR-34URCF25	K500032101120	4	
D110/D111	ZENER 9.1V	K06009R124520	2	D320-D323	1N4148M, SWITCHING	K000414801520	4	
D112	ZENER 12V	K060120024520	1	D331	1N4148M, SWITCHING	K000414801520	1	
D113	ZENER 7.5V	K06007R524520	1	D651	LED SLR-34URCF25	K500032101120	1	
D114	1N4148M, SWITCHING	K000414801520	1					
D116/D117	D5SBA60, RECTIFIER BRIDGE	K040758000010	2		INTEGRATED CIRCUITS			
D119-D128	1N4003, RECTIFIER	K040400300520	10	IC301	CXP82852-124Q (DWP475A) ,CPU			

REF NO.	DESCRIPTION	PARTS NO.	QTY	REF NO.	DESCRIPTION	PARTS NO.	QTY
IC302	REMOTE SENSO	E940134200000	1				
	TRANSISTORS			R601 L/R	RESISTORS		
Q302-Q304	DTC114YS, NPN	J6020114Y0050	3	R602 L/R	CARBON FILM	100 kohm 1/5W J	C00001046P520 2
Q305-Q308	2SC199Y(BKTC3199Y), NPN	J5023199Y0050	4	R603 L/R	CARBON FILM	1 Mohm 1/5W J	C00001058P520 2
Q309	MPSA05(MPSA06), NPN	J5020600Y0050	1	R604 L/R	CARBON FILM	47 kohm 1/5W J	C00004736P520 2
Q311	DTC114YS, NPN	J6020114Y0050	1	R605 L/R	METAL FILM	2.7 kohm 1/5W J	C06002726P520 2
Q651	DTC114YS, NPN	J6020114Y0050	1	R606 L/R	CARBON FILM	10 Mohm 1/5W J	C00001066P520 2
	RESISTORS			R607 L/R	METAL FILM	4.7 kohm 1/5W J	C06004726P520 2
R301-R310	METAL FILM	1 kohm 1/5W J	C06001026P520 10	R608 L/R	CARBON FILM	27 kohm 1/5W J	C00002736P520 2
R311-R320	CARBON FILM	100 kohm 1/5W J	C00001046P520 10	R609 L/R	METAL FILM	3.3 kohm 1/5W J	C06003326P520 2
R321-R324	CARBON FILM	47 kohm 1/5W J	C00004736P520 4	R610 L/R	CARBON FILM	22 kohm 1/5W J	C00002236P520 2
R325	CARBON FILM	39 kohm 1/5W J	C00003936P520 1	R611 L/R	METAL FILM	560 ohm 1/5W J	C06005616P520 2
R328	CARBON FILM	10 kohm 1/5W J	C00001036P520 1	R612 L/R	METAL FILM	2.2 kohm 1/5W J	C06002226P520 2
R329	METAL FILM	4.7 kohm 1/5W J	C06004726P520 1	R613 L/R	CARBON FILM	1.8 kohm 1/5W J	C06001826P520 2
R331	CARBON FILM	47 kohm 1/5W J	C00004736P520 1	R614	CARBON FILM	100 kohm 1/5W J	C00001046P520 2
R332RV	CARBON FILM	10 kohm 1/5W J	C00001036P520 1	R615	CARBON FILM	1 Mohm 1/5W J	C00001058P520 1
R333A	CARBON FILM	10 kohm 1/5W J	C00001036P520 1	R616/R617	METAL FILM	220 ohm 1/5W J	C06002216P520 2
R334/R335	CARBON FILM	68 kohm 1/5W J	C00006836P520 2	R618 L/R	CARBON FILM	1 Mohm 1/5W J	C00001058P520 2
R336	CARBON FILM	10 kohm 1/5W J	C00001036P520 1		MISCELLANEOUS		
R337/R338	METAL FILM	470 ohm 2W J	C060047166520 2	VR601/VR802	VR, ROTARY 14MM-100K		C454121402810 2
R340	CARBON FILM	10 kohm 1/5W J	C00001036P520 1	VR603	VR, ROTARY 11MM-100K		C4521114022200 1
R341/R342	METAL FILM	1 kohm 1/5W J	C06001026P520 2	W601	WIRE LUG #24BK200 (1P)		L046241020580 1
R343/R344	CARBON FILM	22 kohm 1/5W J	C00002236P520 2		PCB 3-2 ASSEMBLY P.C. BOARD HP/SPK SW		
R349	METAL FILM	470 ohm 2W J	C060047166520 1		CAPACITORS		
R350	CARBON FILM	100 kohm 1/5W J	C00001046P520 1	C701 L/R	CERAMIC HIK AXIAL	560 pF 50V B	D005561077530 1
R351/R352	CARBON FILM	6.8 ohm 1/5W J	C0006R806P520 2		RESISTORS		
R355	CARBON FILM	10 kohm 1/5W J	C00001036P520 1	R701 L/R	METAL FILM	470 ohm 1/5W J	C06004716P520 2
R356	METAL FILM	100 ohm 1/5W J	C06001016P520 1	R702 L/R	CARBON FILM	15 kohm 1/5W J	C00001536P520 2
R357-R360	CARBON FILM	100 kohm 1/5W J	C00001046P520 4	R703 L/R	CARBON FILM	22 kohm 1/5W J	C00002236P520 2
R361	CARBON FILM	22 kohm 1/5W J	C06002236P520 1		MISCELLANEOUS		
R365-R368	METAL FILM	2.2 kohm 1/5W J	C06002226P520 4	CN701	WIRE, CTJ 0657 210, 1007#18 3.96		L018065042660 1
R371	CARBON FILM	10 kohm 1/5W J	C00001036P520 1	H/P JACK	HTJ064-11D(G)		G402040161330 1
R372/NORDS	CARBON FILM	10 kohm 1/5W J	C00001036P520 1	H/P BKT	BRACKET, SW JACK		4010056196010 1
R373/RDS	CARBON FILM	100 kohm 1/5W J	C00001046P520 1	SW701	PUSH SW		G000040960000 1
R374	METAL FILM	2.2 kohm 1/5W J	C06002226P520 1	W701	WIRE LUG #24BK200 (1P)		L046241020580 1
R375	CARBON FILM	47 kohm 1/5W J	C00004736P520 1		PCB 3-3 ASSEMBLY P.C. BOARD VIDEO FRONT		
R377	CARBON FILM	100 kohm 1/10W J	C00001046P520 1		CAPACITORS		
R378	CARBON FILM	39 kohm 1/5W J	C00003936P520 1	C651 L/R	CERAMIC T.C AXIAL	100 pF 50V J	D001101077530 1
R380	CARBON FILM	5.6 kohm 1/5W J	C00005626P520 1	C654/C655	CERAMIC HIK AXIAL	0.1 uF 50V Z	D005104097530 1
R381	METAL FILM	470 ohm 2W J	C060047166520 1	C656	ELECT GE 85C	33 uF 16V M	D040330083120 1
R384	METAL FILM	100 ohm 1/5W J	C06001016P520 1		RESISTORS		
R391	METAL FILM	1 kohm 1/5W J	C06001026P520 1	R652 L/R	METAL FILM	470 ohm 1/5W J	C06004716P520 1
R392	CARBON FILM	100 kohm 1/5W J	C00001046P520 1	R653	METAL FILM	75 ohm 1/5W J	C06007506P520 1
R393	CARBON FILM	10 kohm 1/5W J	C00001036P520 1		MISCELLANEOUS		
R394	CARBON FILM	100 kohm 1/5W J	C00001046P520 1	VIDEO JACK	RCA 3PIN		G606040300000 1
R396	CARBON FILM	2.2 Mohm 1/5W J	C00002256P520 1	CN601	WAFER 2.0MM		L101220050010 1
R399	CARBON FILM	5.6 kohm 1/5W J	C00005626P520 1	W651	WIRE LUG #24BK200 (1P)		L046241020580 1
R401	CARBON FILM	5.6 kohm 1/5W J	C00005626P520 1		PCB 3-4 ASSEMBLY P.C. BOARD POWER SW TACT		
R651	METAL FILM	820 ohm 1/5W J	C06008216P520 1	C314	ELECT GE 85C	10 uF 16V M	D040100083120 1
	MISCELLANEOUS			CP304	WIRE, 2651#26 2.0		L352105123300 1
J305	BEAD CORD 3580	7610010030000	1	D321	LED 5PR 54MDW3		K500055106050 1
FIP	DISPLAY,FLT	K530162800020	1	Q321	DTC114YS, NPN		J6020114Y0050 1
FL HOLDER	HOLDER FL	4320040841010	1	Q322	DTC114YS, NPN		J6020114Y0050 1
SW301-342	SW,TACT	G180000210030	1	R326/R327	METAL FILM	270 ohm 1/5W J	C06002716P520 2
X300	RESONATOR, CST10.0MTW-TF01	E830100000050	1	SW751ABK	TACT SW		G180000210030 1
	PCB 3-1 ASSEMBLY P.C. BOARD TONE & CBASS				PCB 3-5 ASSEMBLY P.C. BOARD VOL. ENC		
	CAPACITORS			C351/C352	CERAMIC HIK AXIAL	820 pF 50V K	D005821077530 2
C801 L/R	ELECT GE 85C	4.7 uF 50V M	D0404R7087100 2	CP303	WIRE 2.5MM		L003121052600 1
C802 L/R	CERAMIC T.C AXIAL	47 pF 50V J	D00147D067530 2	VR351	ENCODER ROTARY VR		C49004106001A 1
C803 L/R	ELECT GE 85C	10 uF 16V M	D040100083110 2		PCB 3-6 ASSEMBLY P.C. BOARD SW PUSH		
C804 L/R	ELECT GE 85C	10 uF 16V M	D040100083110 2	CN751D	WIRE, CTM 0250 35191, 1617#22 7.92		L001501022200 1
C805 L/R	FILM POLYESTER	0.082 uF 63V J	D020823068050 2	SW752D	PUSH SW		G000041610000 1
C806 L/R	FILM POLYESTER	0.015 uF 63V J	D020153068050 2		PCB 3-7 ASSEMBLY P.C. BOARD CBASS SW		
C807 L/R	FILM POLYESTER	0.022 uF 63V J	D020223068050 2	CP306	WIRE, 2P		L024021432310 1
C808 L/R	FILM POLYESTER	0.003 uF 63V J	D020332068050 2	SW343	TACT SW		G180000210030 1
C809 L/R	FILM POLYESTER	0.33 uF 63V J	D020334068050 2		PCB 4 ASSEMBLY P.C. BOARD INPUT		
C610 L/R	FILM POLYESTER	0.008 uF 63V J	D020822068050 2		CAPACITORS		
C611 L/R	ELECT GE 85C	10 uF 16V M	D040100083110 2	C401LD-C410LD	CERAMIC T.C AXIAL	100 pF 50V J	D001101077530 10
C612	ELECT GE 85C	3.3 uF 50V M	D0403R3087100 1	C401RD-C410RD	CERAMIC T.C AXIAL	100 pF 50V J	D001101077530 10
C613/C614	ELECT GE 85C	47 uF 25V M	D040470084100 2	C411	ELECT GE 85C	47 uF 25V M	D040470084100 1
	CONNECTORS			C412	ELECT GE 85C	1 uF 50V M	D040010087050 1
CN602	WAFER 2.0MM (9P)	L101220090000	1	C414	ELECT GE 85C	47 uF 25V M	D040470084100 1
CP305	WIRE, 2877#36 2.5	L021021433310	1	CN751D	CERAMIC T.C AXIAL	100 pF 50V J	D001101077530 1
	INTEGRATED CIRCUITS			C418-C421	ELECT GE 85C	47 uF 25V M	D040470084100 4
IC601	NJM2068DD, LINEAR OP	J121206800000	1				
	TRANSISTORS						
Q601	DTC114YS, NPN	J6020114Y0050	1				
Q602	DTA114YS, PNP	J601114YS0050	1				
Q603 L/R	2SK117Y, FET	J5441170Y0050	2				

REF NO.	DESCRIPTION	PARTS NO.	QTY	REF NO.	DESCRIPTION	PARTS NO.	QTY					
C422/LR	ELECT GE 85C	4.7 uF	50V M	D0404R7087100	2	C491	ELECT GE 85C	22 uF	16V M	D040220083100	1	
C423/LR	ELECT GE 85C	4.7 uF	50V M	D0404R7087100	2							
C424/LR	ELECT GE 85C	4.7 uF	50V M	D0404R7087100	2							
C425/LR	ELECT GE 85C	4.7 uF	50V M	D0404R7087100	2							
C426LD	CERAMIC T.C AXIAL	100 pF	50V J	D001101077530	1	CP601	CONNECTORS					
C426RD	CERAMIC T.C AXIAL	100 pF	50V J	D001101077530	1	CP803	WAFER 2.0MM (16P)			L101352371610	1	
C427/LR	CERAMIC T.C AXIAL	100 pF	50V J	D001101077530	2		WAFER 2.0MM (5P)			L101220050000	1	
C428/LR	ELECT GE 85C	4.7 uF	50V M	D0404R7087100	2		WAFER 2.0MM (4P)			L101220040010	1	
C429LD	CERAMIC HIK AXIAL	0.0022 uF	16V J	D005222773530	1	D450/D451	DIODES					
C429RD	CERAMIC HIK AXIAL	2200 pF	16V K	D005222773530	1		1N4148, SWITCHING			K000414801520	2	
C430/LR	ELECT GE 85C	33 uF	25V M	D040330084100	2							
C431/LR	FILM POLYESTER	0.002 uF	100V J	D02018206C060	2	IC450	INTEGRATED CIRCUITS					
C432/LR	FILM POLYESTER	0.006 uF	100V J	D02056206C060	2	IC451	LC7821, LOGIC			J040782100010	1	
C433/LR	ELECT GE 85C	1 uF	50V J	D040010087050	2	IC452	BA7625, VIDEO SW			J171762500000	1	
C434/LR	FILM POLYESTER	0.002 uF	100V J	D02018206C060	2	IC453	MC14053, MOT			J040140530000	1	
C435/C436	ELECT GE 85C	47 uF	25V M	D040470084100	2	IC454	MC14094, LOGIC			J040140940000	1	
C437	CERAMIC HIK AXIAL	10000 pF	16V Y	D005103773530	1		LTV817, PHOTO COUPLER			K614817000001	1	
C473	ELECT GE 85C	47 uF	25V M	D040470084100	1							
	CONNECTORS					Q450/Q451	TRANSISTORS					
CN401	WAFER 2.0MM (11P)	L101352371110	1	Q452	BKTA1267, PNP					J5001267Y0050	2	
CN402	WAFER 2.0MM (8P)	L101352370810	1	Q453	KTD1303, NPN					J503130300050	1	
	DIODE			Q454	DTC114YS, NPN					J602011400050	1	
D401	1N4148M, SWITCHING	K000414801520	1	Q454	KRA107M, PNP					J601107M00050	1	
	INTEGRATED CIRCUITS			Q455	DTA114YS, PNP					J6000114Y0010	1	
IC401	LC7821, LOGIC	J040782100010	1	Q456	2KS117Y, FET					J5441170Y0060	1	
IC402-IC404	KIA4559, LINEAR OP	J121455900010	3									
	COILS			R451/LR	RESISTORS							
L401LD	COIL, FILTER INDUCTOR 47uH	D330470001020	1	R452/LR	METAL FILM	470 ohm	1/5W	J	C08004716P520	2		
L401RD	COIL, FILTER INDUCTOR 47uH	D330470001020	1	R453/LR	METAL FILM	470 ohm	1/5W	J	C08004716P520	2		
	RESISTORS			R454/LR	METAL FILM	470 ohm	1/5W	J	C08004716P520	2		
R401/LR	METAL FILM	470 ohm	1/5W	J	R455/LR	METAL FILM	470 ohm	1/5W	J	C08004716P520	2	
R402/LR	METAL FILM	470 ohm	1/5W	J	R456	METAL FILM	220 ohm	1/5W	J	C08002216P520	1	
R403/LR	METAL FILM	470 ohm	1/5W	J	R457	CHIP THICK	100 kohm	1/10W	J	C200010460200	1	
R404/LR	METAL FILM	470 ohm	1/5W	J	R458-R463	METAL FILM	1 kohm	1/5W	J	C06001026P520	6	
R405/LR	METAL FILM	1 kohm	1/5W	J	R464-R468	METAL FILM	3.3 kohm	1/5W	J	C06003326P520	5	
R406	METAL FILM	220 ohm	1/5W	J	R469	METAL FILM	10 ohm	1/5W	J	C06001006P520	1	
R407	CHIP THICK	100 kohm	1/10W	J	R470	METAL FILM	220 ohm	1/5W	J	C08002216P520	1	
R408-R412	METAL FILM	220 ohm	1/5W	J	R471/R472	METAL FILM	100 ohm	1/5W	J	C06001016P520	2	
R413-R415	METAL FILM	1 kohm	1/5W	J	R473-R478	METAL FILM	75 ohm	1/5W	J	C06007508P520	6	
R416/LR	CHIP THICK	100 kohm	1/10W	J	R479/R480	METAL FILM	100 ohm	1/5W	J	C06001016P520	2	
R417/LR	CHIP THICK	100 kohm	1/10W	J	R481	CARBON FILM	220 kohm	1/5W	J	C00002248P520	1	
R418/LR	CHIP THICK	100 kohm	1/10W	J	R483	METAL FILM	1 kohm	1/5W	J	C06001026P520	1	
R419/LR	CHIP THICK	100 kohm	1/10W	J	R485	METAL FILM	1 kohm	1/5W	J	C06001026P520	1	
R420/LR	METAL FILM	1 kohm	1/5W	J	R489	CARBON FILM	10 kohm	1/5W	J	C00001036P520	1	
R421/LR	CARBON FILM	91 kohm	1/5W	J	R490	METAL FILM	3.9 kohm	1/5W	J	C08003926P520	1	
R422/LR	CARBON FILM	91 kohm	1/5W	J	R491	METAL FILM	100 ohm	1/5W	J	C06001016P520	1	
R423/LR	METAL FILM	820 ohm	1/5W	J	R493	METAL FILM	270 ohm	1/5W	J	C08002716P520	1	
R424/LR	CARBON FILM	43 kohm	1/5W	J	R494	METAL FILM	47 ohm	1/5W	J	C08004706P520	1	
R425/LR	CARBON FILM	580 kohm	1/5W	J	R495	CARBON FILM	47 kohm	1/5W	J	C00004736P520	1	
R426/LR	METAL FILM	580 ohm	1/5W	J	R497	CARBON FILM	10 kohm	1/5W	J	C00001036P520	1	
R427/LR	CHIP THICK	100 kohm	1/10W	J	R498	CHIP THICK	100 kohm	1/10W	J	C200010460200	1	
R428/R429	METAL FILM	220 ohm	1/5W	J	R499	CARBON FILM	100 kohm	1/5W	J	C00001046P520	1	
R430/LR	METAL FILM	1 kohm	1/5W	J	R511	METAL FILM	470 ohm	1/5W	J	C06004716P520	1	
R431/LR	METAL FILM	1 kohm	1/5W	J								
R433/LR	METAL FILM	470 ohm	1/5W	J	PCB 4-2	ASSEMBLY P.C. BOARD SPKR						
R434/LR	METAL FILM	470 ohm	1/5W	J	C901C	FILM POLYESTER	0.047 uF	100V	J	D02047306C060	1	
R435/LR	CHIP THICK	47 kohm	1/10W	J	C901L	FILM POLYESTER	0.047 uF	100V	J	D02047306C060	1	
	PCB 4-1	ASSEMBLY P.C. BOARD INPUT & VIDEO		C901R	FILM POLYESTER	0.047 uF	100V	J	D02047306C060	1		
C452LD/RD	CERAMIC T.C AXIAL	100 pF	50V J	D001101077530	2	C901SL	FILM POLYESTER	0.047 uF	100V	J	D02047306C060	1
C454LD/RD	CERAMIC T.C AXIAL	100 pF	50V J	D001101077530	2	C901SR	FILM POLYESTER	0.047 uF	100V	J	D02047306C060	1
C456LD/RD	CERAMIC T.C AXIAL	100 pF	50V J	D001101077530	2	C902C	CERAMIC HIK AXIAL	4700 pF	16V	X	D005472773530	1
C458LD/RD	CERAMIC T.C AXIAL	100 pF	50V J	D001101077530	2	C902LD	CERAMIC HIK AXIAL	4700 pF	16V	X	D005472773530	1
C460	ELECT GE 85C	47 uF	25V M	D040470084100	1	C902RD	CERAMIC HIK AXIAL	4700 pF	16V	X	D005472773530	1
C461	ELECT GE 85C	10 uF	50V M	D040100087050	1	C902SLD	CERAMIC HIK AXIAL	4700 pF	16V	X	D005472773530	1
C463	ELECT GE 85C	47 uF	25V M	D040470084100	1	C902SRD	CERAMIC HIK AXIAL	4700 pF	16V	X	D005472773530	1
C466/C467	ELECT GE 85C	100 pF	50V J	D001101077530	2	C903C	CERAMIC HIK AXIAL	4700 pF	16V	X	D005472773530	1
C468	CERAMIC HIK AXIAL	0.1 uF	50V Z	D005104097530	1	C903LD	CERAMIC HIK AXIAL	4700 pF	16V	X	D005472773530	1
C469/C470	CERAMIC T.C AXIAL	100 pF	50V J	D001101077530	2	C903SRD	CERAMIC HIK AXIAL	4700 pF	16V	X	D005472773530	1
C471	ELECT GE 85C	47 uF	25V M	D040470084100	1							
C472	ELECT GE 85C	10 uF	50V M	D040100087050	1							
C473	ELECT GE 85C	47 uF	25V M	D040470084100	1							
C474/C475	ELECT GE 85C	10 uF	50V M	D040100087050	2	L901SL	COILS					
C478	CERAMIC HIK AXIAL	0.1 uF	50V Z	D005104097530	1	L901SR	INDUCTOR COIL			D330900001320	1	
C479	ELECT GE 85C	33 uF	25V M	D040330084100	1		INDUCTOR COIL			D330900001320	1	
C480	ELECT GE 85C	470 uF	10V E	D040471082100	1							
C481	ELECT GE 85C	33 uF	25V M	D040330084100	1	R901C	RESISTORS					
C482	ELECT GE 85C	470 uF	10V E	D040471082100	1	R901L	METAL FILM	10 ohm	1W	J	C060010068520	1
C483	ELECT GE 85C	33 uF	25V M	D040330084100	1	R901R	METAL FILM	10 ohm	1W	J	C060010068520	1
C484	ELECT GE 85C	33 uF	25V M	D040330084100	1	R901SL	METAL FILM	10 ohm	1W	J	C060010068520	1
C489	ELECT GE 85C	47 uF	16V M	D040470083100	1	R901SR	METAL FILM	10 ohm	1W	J	C060010068520	1
C490	ELECT GE 85C	100 uF	16V M	D040101083100	1	R902SL	METAL FILM	10 ohm	1W	J	C060010065520	1
						R902SR	METAL FILM	10 ohm	1W	J	C060010065520	1

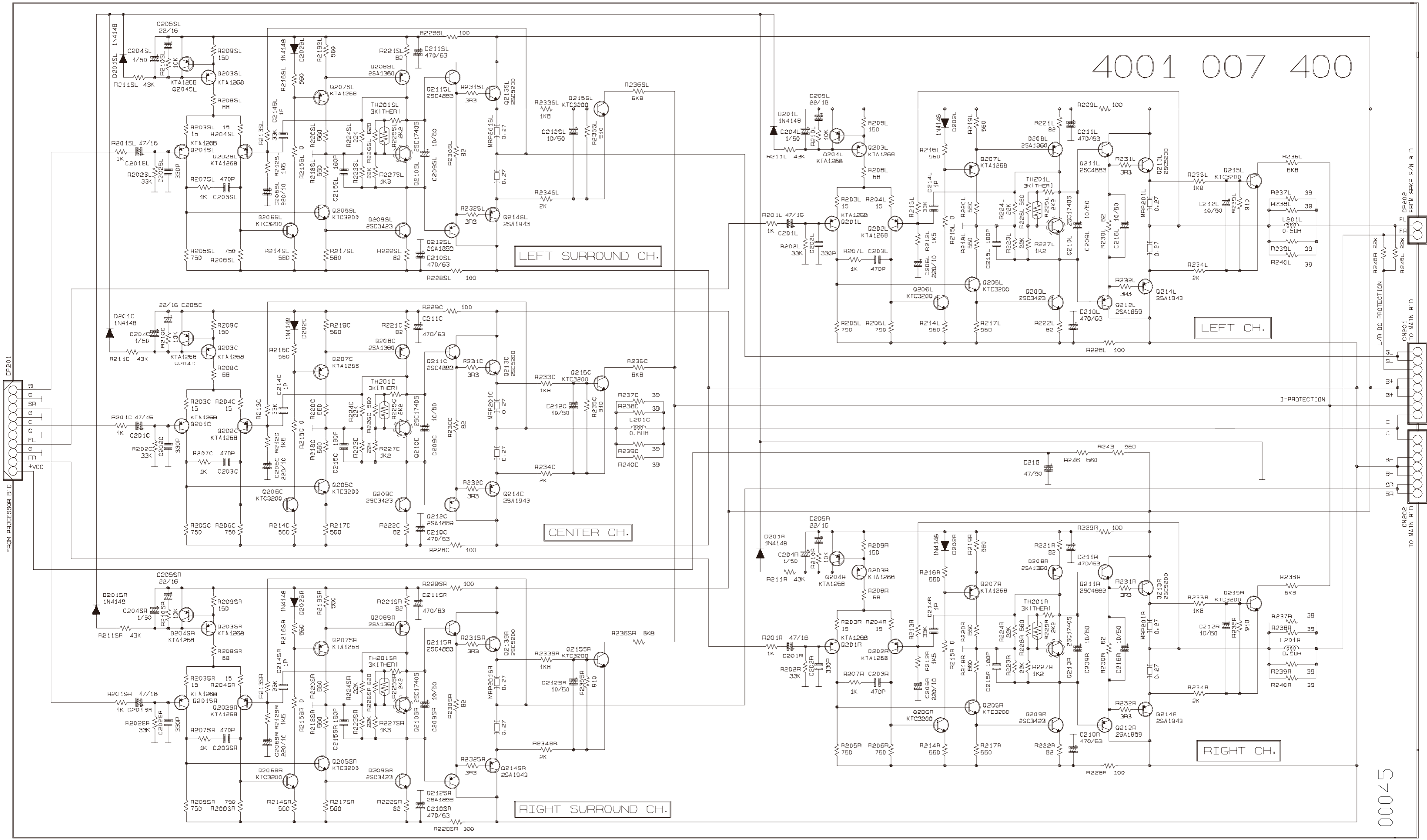
REF NO.	DESCRIPTION	PARTS NO.	QTY	REF NO.	DESCRIPTION	PARTS NO.	QTY
PCB 5	ASSEMBLY P.C. BOARD TUNER	7028040956000			RESISTORS		
	CAPACITORS				CHIP THICK	100 kohm 1/10W J	C200010480200 1
C1	CERAMIC HIK AXIAL	0.022 uF 25V Z	D005223574530 1	R10	METAL FILM	1 kohm 1/5W J	C06001026P520 1
C10	CERAMIC DISC	100 pF 50V J	D004101067060 1	R11	METAL FILM	180 ohm 1/5W J	C06001816P520 1
C11	ELECTROLYTIC SG	47 uF 16V M	D040470083100 1	R12	METAL FILM	560 ohm 1/5W J	C06005616P520 1
C12	CERAMIC DISC	0.022 uF 50V Z	D004223097060 1	R13	METAL FILM	3.3 kohm 1/5W J	C06003326P520 1
C13	CERAMIC TUBULAR	0.022 uF 25V Z	D005223574530 1	R14	METAL FILM	560 ohm 1/5W J	C06005616P520 1
C14	ELECTROLYTIC SG	100 uF 16V M	D040101083100 1	R15	METAL FILM	470 ohm 1/5W J	C06004716P520 1
C15	POLY	470 pF 50V J	D022471067050 1	R16	METAL FILM	100 ohm 1/5W J	C06001016P520 1
C16	CERAMIC DISC CH	15 pF 50V J	D000150167070 1	R17-R19	METAL FILM	1 kohm 1/5W J	C06001026P520 3
C17/C18	CERAMIC TUBULAR	0.022 uF 25V Z	D005223574530 2	R2	CARBON FILM	5.6 kohm 1/5W J	C00005626P520 1
C2	CERAMIC DISC	0.047 uF 50V Z	D004473097060 1	R20	METAL FILM	330 ohm 1/5W J	C06003316P520 1
C20	ELECTROLYTIC SG	10 uF 35V M	D040100085100 1	R21	METAL FILM	270 ohm 1/5W J	C06002716P520 1
C21/C22	CERAMIC TUBULAR	0.022 uF 25V Z	D005223574530 2	R22	METAL FILM	470 ohm 1/5W J	C06004716P520 1
C23	CERAMIC TUBULAR	0.01 uF 18V Y	D005103773530 1	R24	METAL FILM	4.7 kohm 1/5W J	C06004726P520 1
C24/C25	CERAMIC DISC	0.022 uF 50V Z	D004223097060 2	R25	CARBON FILM	68 kohm 1/5W J	C00006836P520 1
C26	ELECTROLYTIC SG	4.7 uF 50V M	D0404R7087100 1	R26	CARBON FILM	47 kohm 1/5W J	C00004736P520 1
C27	ELECTROLYTIC SG	3.3 uF 50V M	D0403R3087100 1	R27	CARBON FILM	10 kohm 1/5W J	C00001036P520 1
C28	ELECTROLYTIC SG	4.7 uF 50V M	D0404R7087100 1	R28	CARBON FILM	22 kohm 1/5W J	C00002236P520 1
C29	CERAMIC DISC	0.022 uF 50V Z	D004223097060 1	R29	METAL FILM	22 ohm 1/5W J	C06002206P520 1
C3	ELECTROLYTIC SG	3.3 uF 50V M	D0403R3087100 1	R3	CARBON FILM	62 kohm 1/5W J	C00006236P520 1
C30	CERAMIC DISC	0.022 uF 50V Z	D004223097060 1	R30	METAL FILM	4.7 kohm 1/5W J	C06004726P520 1
C31	MYLAR	0.003 uF 100V J	D02033206C060 1	R32	CARBON FILM	10 kohm 1/5W J	C00001036P520 1
C32	MYLAR	0.039 uF 100V J	D02039306C060 1	R33	METAL FILM	3.3 kohm 1/5W J	C06003326P520 1
C33	ELECT GE 85C	0.47 uF 50V M	D040R47087100 1	R34	METAL FILM	100 ohm 1/5W J	C06001016P520 1
C34	CERAMIC TUBULAR	0.022 uF 25V Z	D005223574530 1	R34	METAL FILM	100 ohm 1/5W J	C06001016P520 1
C35	ELECTROLYTIC SG	100 uF 16V M	D040101083100 1	R35	METAL FILM	1.8 kohm 1/5W J	C06001826P520 1
C36	CERAMIC DISC	100 pF 50V J	D004101067060 1	R36	CARBON FILM	47 kohm 1/5W J	C00004736P520 1
C37	CERAMIC DISC	82 pF 50V J	D000820067060 1	R37	METAL FILM	22 ohm 1/5W J	C06002206P520 1
C38	C.CERAMIC HIK DISC	100 pF 50V J	D004101067060 1	R38	METAL FILM	1 kohm 1/5W J	C06001026P520 1
C39	ELECTROLYTIC SG	10 uF 35V M	D040100085100 1	R39	METAL FILM	100 ohm 1/5W J	C06001016P520 1
C4	CERAMIC TUBULAR	0.01 uF 18V Y	D005103773530 1	R4	CARBON FILM	100 kohm 1/5W J	C00001046P520 1
C40	CERAMIC TUBULAR	0.022 uF 25V Z	D005223574530 1	R40	CARBON FILM	47 kohm 1/5W J	C00004736P520 1
C41	ELECT GE 85C	10 uF 35V M	D040100085100 1	R41	CARBON FILM	22 kohm 1/5W J	C00002236P520 1
C42	CERAMIC TUBULAR	0.047 uF 50V F	D005473097530 1	R42	METAL FILM	3.3 kohm 1/5W J	C06003326P520 1
C43	FILM STYLOR	680 pF 50V J	D022681067050 1	R43	CARBON FILM	22 kohm 1/5W J	C00002236P520 1
C44	ELECTROLYTIC SG	100 uF 16V M	D040101083100 1	R44	CARBON FILM	47 kohm 1/5W J	C00004736P520 1
C45	ELECTROLYTIC SG	1 uF 50V M	D040010087050 1	R46 L/R	CARBON FILM	220 kohm 1/5W J	C00002246P520 2
C46	ELECTROLYTIC SG	0.22 uF 50V M	D040R22087100 1	R47L/R	CARBON FILM	270 kohm 1/5W J	C00002746P520 2
C47	ELECTROLYTIC SG	1 uF 50V M	D040010087050 1	R48L/R	METAL FILM	2.7 kohm 1/5W J	C06002726P520 2
C48	CERAMIC DISC	0.022 uF 50V Z	D004223097060 1	R48L/R	METAL FILM	3.3 kohm 1/5W J	C06003326P520 2
C49	ELECTROLYTIC SG	10 uF 35V M	D040100085100 1	R5	METAL FILM	470 ohm 1/5W J	C06004716P520 1
C5	ELECTROLYTIC SG	47 uF 16V M	D040470083100 1	R50	METAL FILM	680 ohm 1/5W J	C06006816P520 1
C50L/R	CERAMIC DISC	220 pF 50V J	D004221067060 2	R51-R54	CARBON FILM	10 kohm 1/5W J	C00001036P520 4
C51L/R	ELECTROLYTIC SG	10 uF 35V M	D040100085100 2	R55	CARBON FILM	100 kohm 1/5W J	C00001046P520 1
C53	ELECTROLYTIC SG	10 uF 35V M	D040100085100 1	R56	CARBON FILM	2.2 Mohm 1/5W J	C00002256P520 1
C54	CERAMIC HIK AXIAL	270 pF 50V K	D005271077530 1	R6	CARBON FILM	100 kohm 1/5W J	C00001046P520 1
C55	ELECTROLYTIC SG	47 uF 16V M	D040470083100 1	R7	CARBON FILM	10 kohm 1/5W J	C00001036P520 1
C56	ELECTROLYTIC SG	10 uF 35V M	D040100085100 1	R8	METAL FILM	270 ohm 1/5W J	C06002716P520 1
C57	CERAMIC HIK AXIAL	0.1 uF 50V Z	D005104097530 1	R9	METAL FILM	560 ohm 1/5W J	C06005616P520 1
C58/C59	CERAMIC DISC	27 pF 50V J	D004270067060 2				
C6	CERAMIC TUBULAR	0.022 uF 25V Z	D005223574530 1		COILS		
C60	ELECTROLYTIC SG	0.1 uF 50V Z	D004104097060 1	T1	AM-ANT	D304564300000 1	
C61	ELECT GE 85C	10 uF 35V M	D040100085100 1	T2	AM-OSC	D940111027000 1	
C62L/R	CERAMIC DISC	10 pF 50V J	D000100067060 2	T3	AM-IFT	D950010050000 1	
C7	CERAMIC TUBULAR	0.01 uF 18V Y	D005103773530 1	T4	FM-DET-A	D970010020000 1	
C8/C9	CERAMIC UNKNOWN	12 pF 50V J	D009791201300 2	T5	FM-DET-B	D970010030000 1	
				T6L/R	MPX(19/38kHz)	E401500100000 2	
	CERAMIC FILTERS						
CF1-CF3	10.7MA8-A-TF21	E430107000140	3		SEMI FLXED VARIABLE RESISTORS		
CF4	CFM2-450BL	E431450000120	1	VR1/VR2 VR3	SEMI, 50K SEMI, 500K	C541503115000 2 C541504115000 1	
	CONNECTOR				MISCELLANEOUS		
CN100	PLUG, 15P	L112524191900	1		TERMINAL ANT	G590040470000 1	
	DIODES			ANT1	FM TUNER, FTH4-460H	E900446000110 1	
D1	ZENER, 5.1V	K06005R114520	1	L1	COIL INDUCTOR 20.8MH	D330208001120 1	
D2	1N4148, SWITCHING	K000414801520	1	TC1	CAPACITOR TREMMER, 10 pF	D110100901100 1	
D3	ZENER, 5.1V	K06005R114520	1	VD1/VD2	VARACTOR, SVC321 SPA-C	K0800321005020 1	
D4	1N4148, SWITCHING	K000414801520	1	X1	X-TAL, 7.2MHZ	E800720000090 1	
D5	1N4148, SWITCHING	K000414801520	1	X2	CRYSTAL, CSB456F	E830456000050 1	
				X3	X-TAL, 4.332MHZ	E800433200050 1	
				X4	RESONATOR, CST4.00MGW-TF01	E830400000070 1	
	INTEGRATED CIRCUITS				PCB 6		
IC1	LM7001M, PLL	J124700100010	1		ASSEMBLY P.C. BOARD PROCESSOR	7028040956200	
IC2	LA1266G, AM/FM IF	J124126600010	1		CAPACITORS		
IC3	LA3401, MPX	J124340100010	1	C501L/R	FILM POLYESTER	0.1 uF 63V J	D020104088050 2
IC4	TDA7330BD, RDS DECODER	J020733000010	1	C502L/R	FILM POLYESTER	0.1 uF 63V J	D020104068050 2
IC5	LC7073M, ERROR CORRECTION	J124707300010	1	C503L/R	CERAMIC T.C AXIAL	100 pF 50V J	D001101077530 2
				C504L/R	ELECT GE 85C	2.2 uF 50V M	D0402R2087100 2
	TRANSISTORS			C505L/R	ELECT GE 85C	2.2 uF 50V M	D0402R2087100 2
Q1/Q2	2SC1740S, NPN	J5021740S0010	2	C506L/R	ELECT GE 85C	4.7 uF 50V M	D0404R7087100 2
Q3	KTC1923Y/BKTC3194Y, NPN	J5023194Y0050	1	C507	CERAMIC T.C AXIAL	100 pF 50V J	D001101077530 1
Q4-Q6	KRA107M/DTA114YS, PNP	J601107M00050	3	C508L/R	ELECT GE 85C	4.7 uF 50V M	D0404R7087100 2
Q7	2SC1740S, NPN	J5021740S0010	1	C509L/R	CERAMIC T.C AXIAL	100 pF 50V J	D001101077530 2
Q8L/R	DTC323TS, NPN	J602323T50050	2	C510L/R	ELECT GE 85C	0.47 uF 50V M	D040R47087100 2
Q9	KRA107M/DTA114YS, PNP	J601107M00050	1				

REF NO.	DESCRIPTION	PARTS NO.	Q'TY	REF NO.	DESCRIPTION	PARTS NO.	Q'TY
R782W	CARBON FILM	100 kohm 1/5W J	C00001046P520	1	▶ FRONT PCB ASS'Y (PCB3) INCLUDES THE FOLLOWING BOARDS. ① ASS'Y PCB 3-1 (TONE&CBASS) ② ASS'Y PCB 3-2 (HP/SPK SW) ③ ASS'Y PCB 3-3 (VIDEO FRONT) ④ ASS'Y PCB 3-4 (POWER SW TACT) ⑤ ASS'Y PCB 3-5 (VOL. ENC) ⑥ ASS'Y PCB 3-6 (SW PUSH) ⑦ ASS'Y PCB 3-7 (CBASS SW)		
R782SL	CARBON FILM	100 kohm 1/5W J	C00001046P520	1			
R782SR	CARBON FILM	100 kohm 1/5W J	C00001046P520	1			
R782W	CARBON FILM	100 kohm 1/5W J	C00001046P520	1			
R783L	METAL FILM	2.2 kohm 1/5W J	C06002226P520	1			
R783R	METAL FILM	2.2 kohm 1/5W J	C06002226P520	1			
R784C	METAL FILM	2.2 kohm 1/5W J	C06002226P520	1			
R784W	METAL FILM	2.2 kohm 1/5W J	C06002226P520	1			
R785SL	METAL FILM	2.2 kohm 1/5W J	C06002226P520	1			
R785SR	METAL FILM	2.2 kohm 1/5W J	C06002226P520	1			
R786/R787	METAL FILM	4.7 kohm 1/5W J	C06004726P520	2	▶ INPUT PCB ASS'Y (PCB4) INCLUDES THE FOLLOWING BOARDS. ① ASS'Y PCB 4-1 (INPUT&VIDEO) ② ASS'Y PCB 4-2 (SPKR)		
R788L	METAL FILM	470 ohm 1/5W J	C06004716P520	1			
R788R	METAL FILM	470 ohm 1/5W J	C06004716P520	1			
R789C	METAL FILM	470 ohm 1/5W J	C06004716P520	1			
R789W	METAL FILM	470 ohm 1/5W J	C06004716P520	1			
R790SL	METAL FILM	470 ohm 1/5W J	C06004716P520	1			
R790SR	METAL FILM	470 ohm 1/5W J	C06004716P520	1			
R791	METAL FILM	470 ohm 1/5W J	C06004716P520	1			
R792/R793	CARBON FILM	22 kohm 1/5W J	C00002236P520	2			
R801	METAL FILM	100 ohm 1/5W J	C06001016P520	1			
R802	METAL FILM	560 ohm 1/5W J	C06005616P520	1			
R803-R805	METAL FILM	1 kohm 1/5W J	C06001026P520	3			
R806	METAL FILM	4.7 kohm 1/5W J	C06004726P520	1			
R807	CHIP THICK	150 ohm 1/10W J	C200015180200	1			
R808	METAL FILM	2.2 kohm 1/5W J	C06002226P520	1			
R809-R812	METAL FILM	1 kohm 1/5W J	C06001026P520	4			
R813	CARBON FILM	10 kohm 1/5W J	C00001036P520	1			
R814	METAL FILM	1 kohm 1/5W J	C06001026P520	1			
R815	METAL FILM	4.7 kohm 1/5W J	C06004726P520	1			
R816	METAL FILM	1 kohm 1/5W J	C06001026P520	1			
R817	METAL FILM	3.3 kohm 1/5W J	C06003326P520	1			
R818/R819	METAL FILM	1 kohm 1/5W J	C06001026P520	2			
R820	METAL FILM	1.8 kohm 1/5W J	C06001826P520	1			
R821/R822	CARBON FILM	10 kohm 1/5W J	C00001036P520	2			
R823	METAL FILM	4.7 kohm 1/5W J	C06004726P520	1			
R824	CARBON FILM	100 kohm 1/5W J	C00001046P520	1			
R825	METAL FILM	4.7 kohm 1/5W J	C06004726P520	1			
R826	METAL FILM	3.9 kohm 1/5W J	C06003926P520	1			
R827	CARBON FILM	22 kohm 1/5W J	C00002236P520	1			
R828	CHIP THICK	8.2 kohm 1/10W J	C200082260200	1			
R829	CARBON FILM	68 kohm 1/5W J	C00006836P520	1			
R830	CARBON FILM	27 kohm 1/5W J	C00002736P520	1			
R831/R832	CARBON FILM	10 kohm 1/5W J	C00001036P520	2			
R833	CARBON FILM	47 kohm 1/5W J	C00004736P520	1			
R834	CHIP THICK	120 ohm 1/10W J	C200012160200	1			
R835	CARBON FILM	47 kohm 1/5W J	C00004736P520	1			
R836	METAL FILM	47 ohm 1/5W J	C06004706P520	1			
R837/R838	CARBON FILM	47 kohm 1/5W J	C00004736P520	2			
R839/R840	CARBON FILM	10 kohm 1/5W J	C00001036P520	2			
R841-R843	CARBON FILM	47 kohm 1/5W J	C00004736P520	3			
R844/R845	CARBON FILM	10 kohm 1/5W J	C00001036P520	2			
R846	METAL FILM	1 kohm 1/5W J	C06001026P520	1			
R847-R856	CARBON FILM	47 kohm 1/5W J	C00004736P520	10			
R857	CARBON FILM	10 kohm 1/5W J	C00001036P520	1			
R858	METAL FILM	470 ohm 1/5W J	C06004716P520	1			
R859/R860	CARBON FILM	47 kohm 1/5W J	C00004736P520	2			
R861/R862	METAL FILM	100 kohm 1/5W J	C06001016P520	2			
R863/R864	CARBON FILM	22 kohm 1/5W J	C00002236P520	2			
R865	METAL FILM	3.3 kohm 1/5W J	C06003326P520	1			
R866	CARBON FILM	1 Mohm 1/5W J	C00001056P520	1			
R867	CARBON FILM	47 kohm 1/5W J	C00004736P520	1			
R868/R869	METAL FILM	47 ohm 1/5W J	C06004706P520	2			
R870	CARBON FILM	33 kohm 1/5W J	C00003336P520	1			
R871-R876	CARBON FILM	10 kohm 1/5W J	C00001036P520	6			
R876-R880	METAL FILM	470 ohm 1/5W J	C06004716P520	3			
R881	METAL FILM	82 ohm 1/5W J	C06008206P520	1			
R882	METAL FILM	680 ohm 1/5W J	C06006816P520	1			
R883	METAL FILM	4.7 kohm 1/5W J	C06004726P520	1			
R884	CARBON FILM	10 kohm 1/5W J	C00001036P520	1			
R885-R888	CARBON FILM	100 kohm 1/5W J	C00001046P520	4			
R889	CARBON FILM	18 kohm 1/5W J	C00001836P520	1			
R890-R893	CARBON FILM	100 kohm 1/5W J	C00001046P520	4			
R894	CARBON FILM	10 kohm 1/5W J	C00001036P520	1			
R895	METAL FILM	100 kohm 1/5W J	C06001016P520	1			
R896-R898	CARBON FILM	10 kohm 1/5W J	C00001036P520	3			
R899	CHIP THICK	220 kohm 1/10W J	C200022460200	1			

MISCELLANEOUS

BPF801	FILTER BPF 2.88MHZ	E440000010010	1
PLR102	MODULE,OPTICAL RCVR PLR102	E944102000010	1
VC101	DIODE VARACTOR KV1851	K080185100010	1
X801	X-TAL, 18.432MHZ	E800184320810	1
X802	X-TAL, 24.576MHZ	E800245760810	1
X803	RESONATOR CST4.19MGW-TF01	E830419000060	1

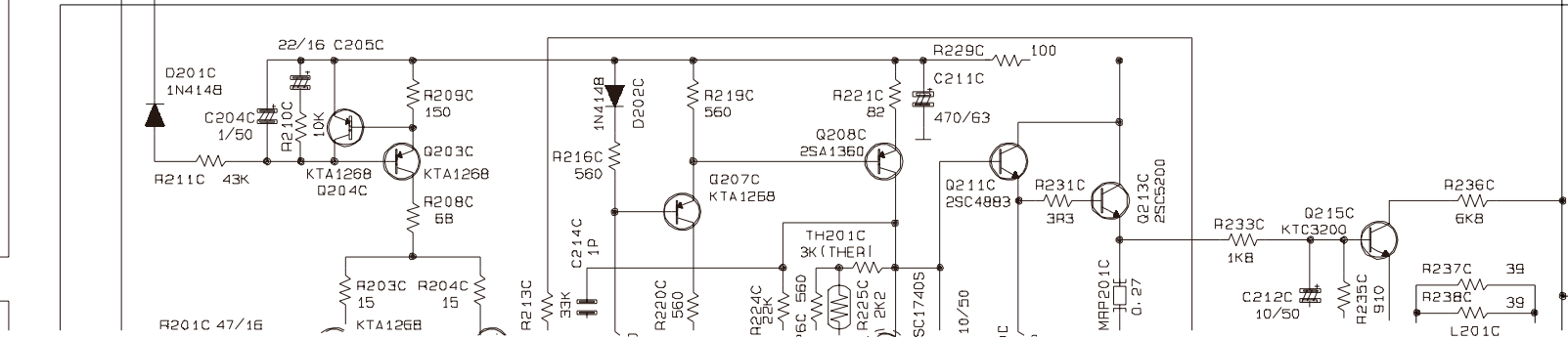
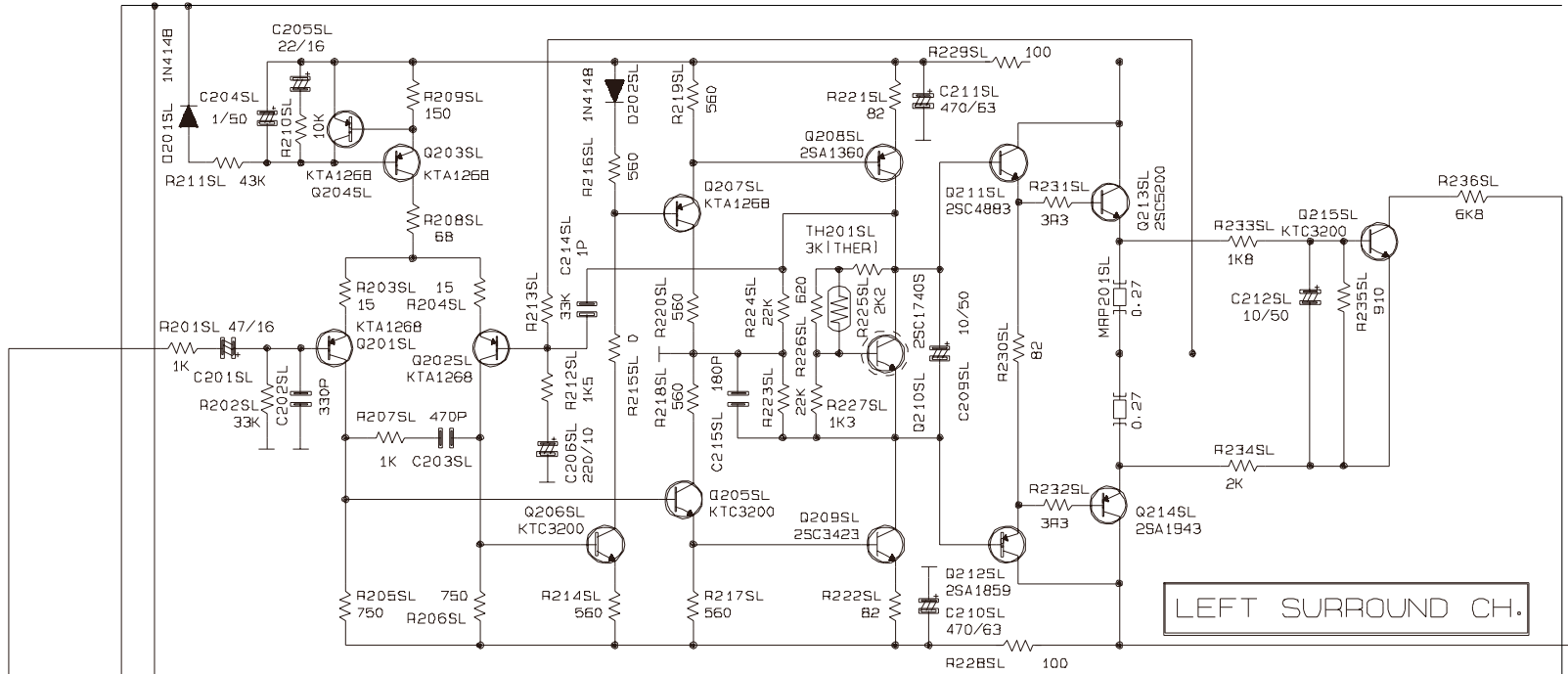
SCHEMATIC DIAGRAM



FROM PROCESSOR B/D

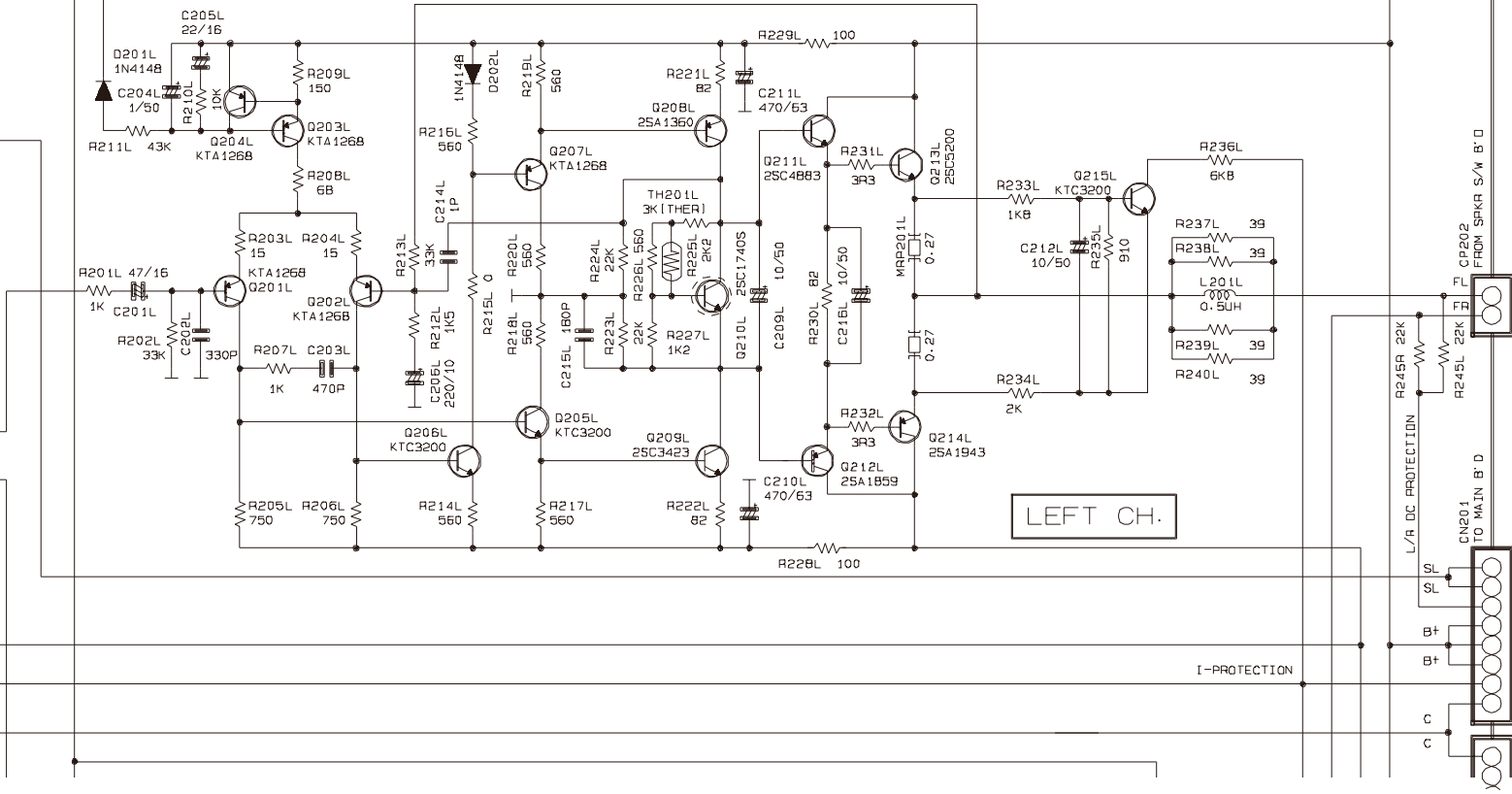
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SCHEMAT



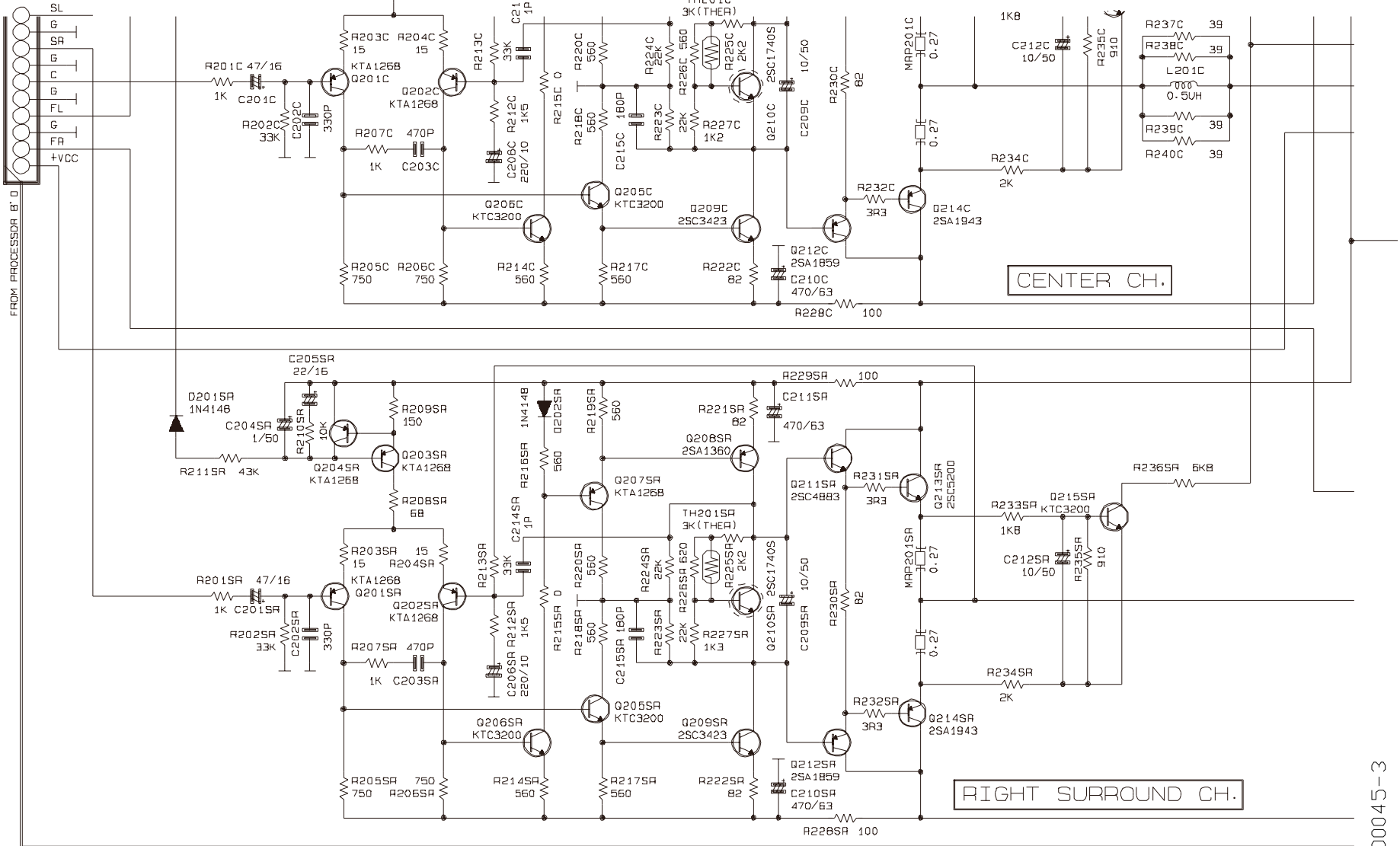
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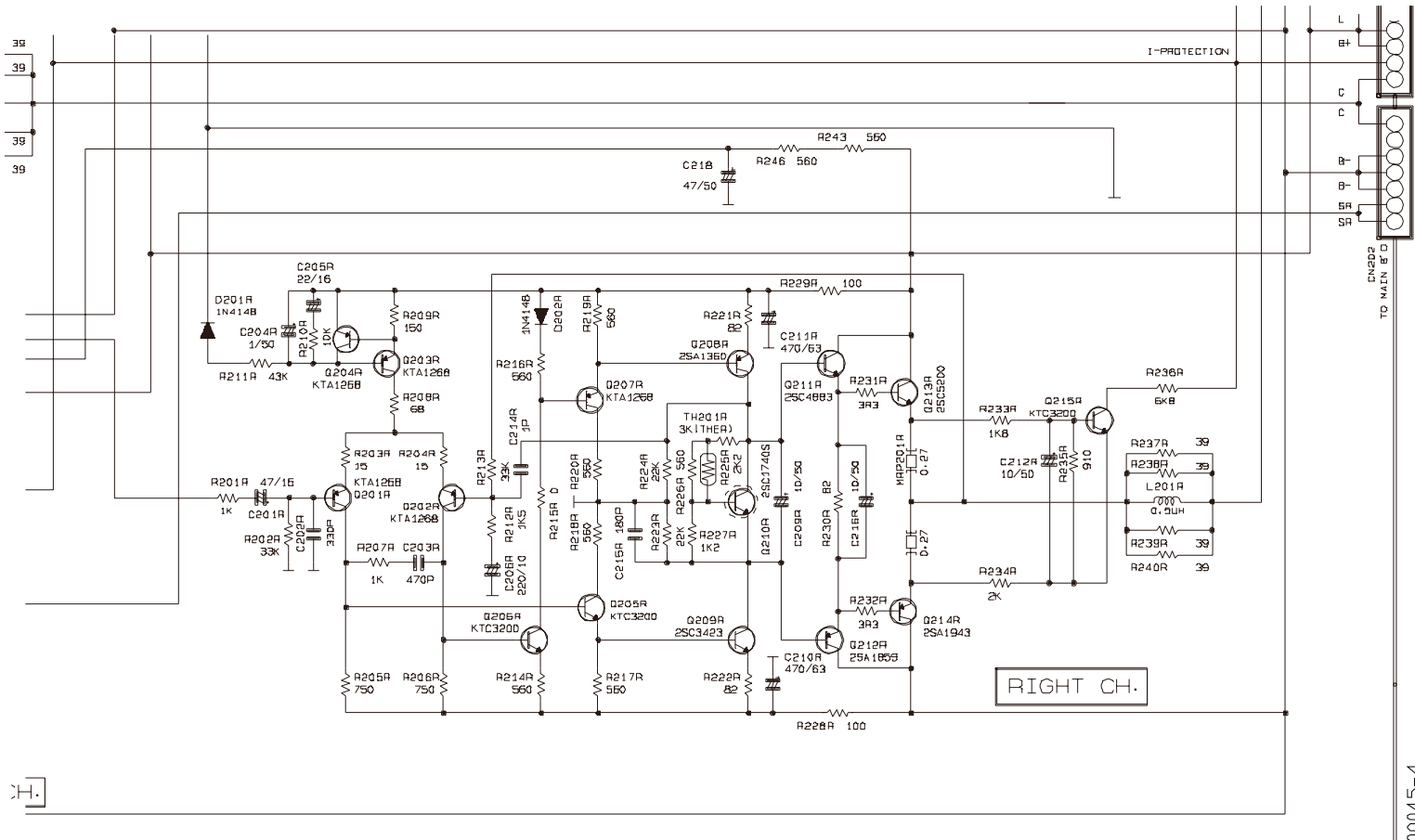
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LEFT CH.

I-PROTECTION

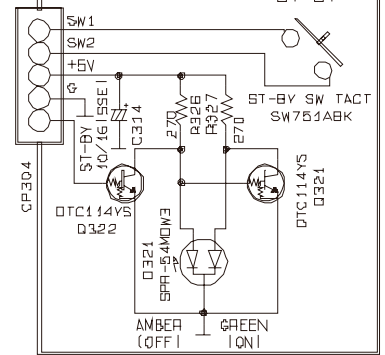




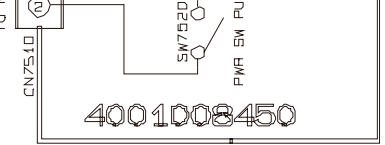
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SCHEMATIC DIAGRAM

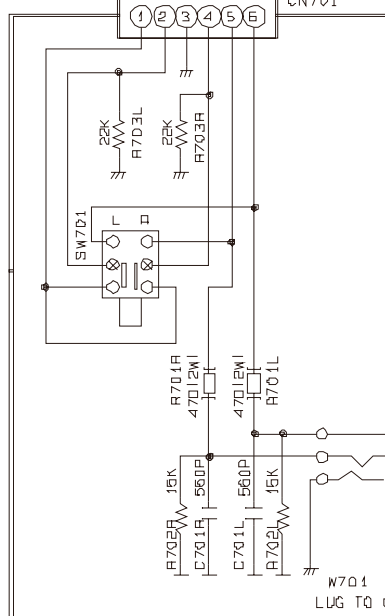
POWER SW TACT BD
4001008440



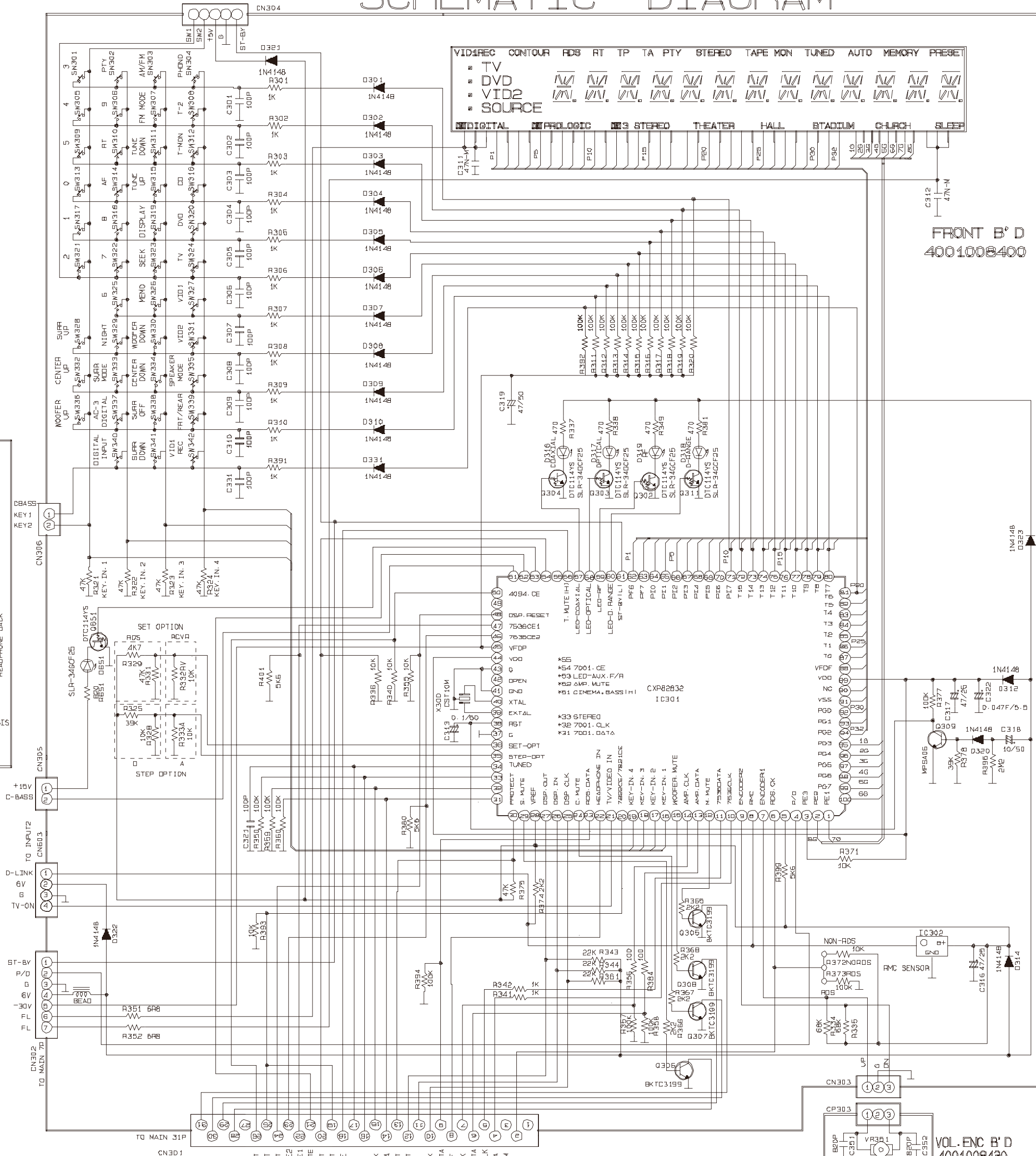
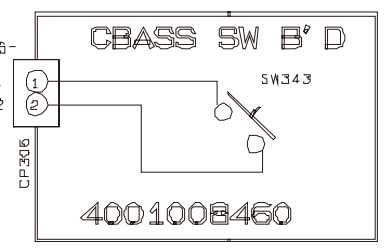
SW PUSH BD
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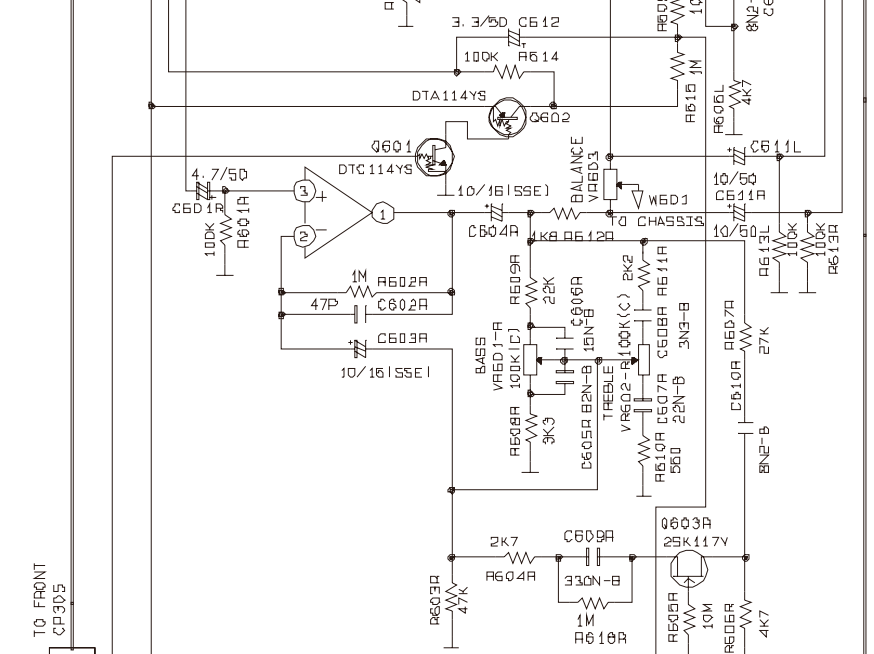
HP/SPK SW B'D
4001008420



CBASS SW B'D
4001008460



FRONT B'D
4001008400



TO FRONT CP305

TO VIDEO BP

TO PROCESSOR BP

TO MAIN BP

TO MAIN 2P

TO MAIN 3P

TO MAIN 4P

TO MAIN 5P

TO MAIN 6P

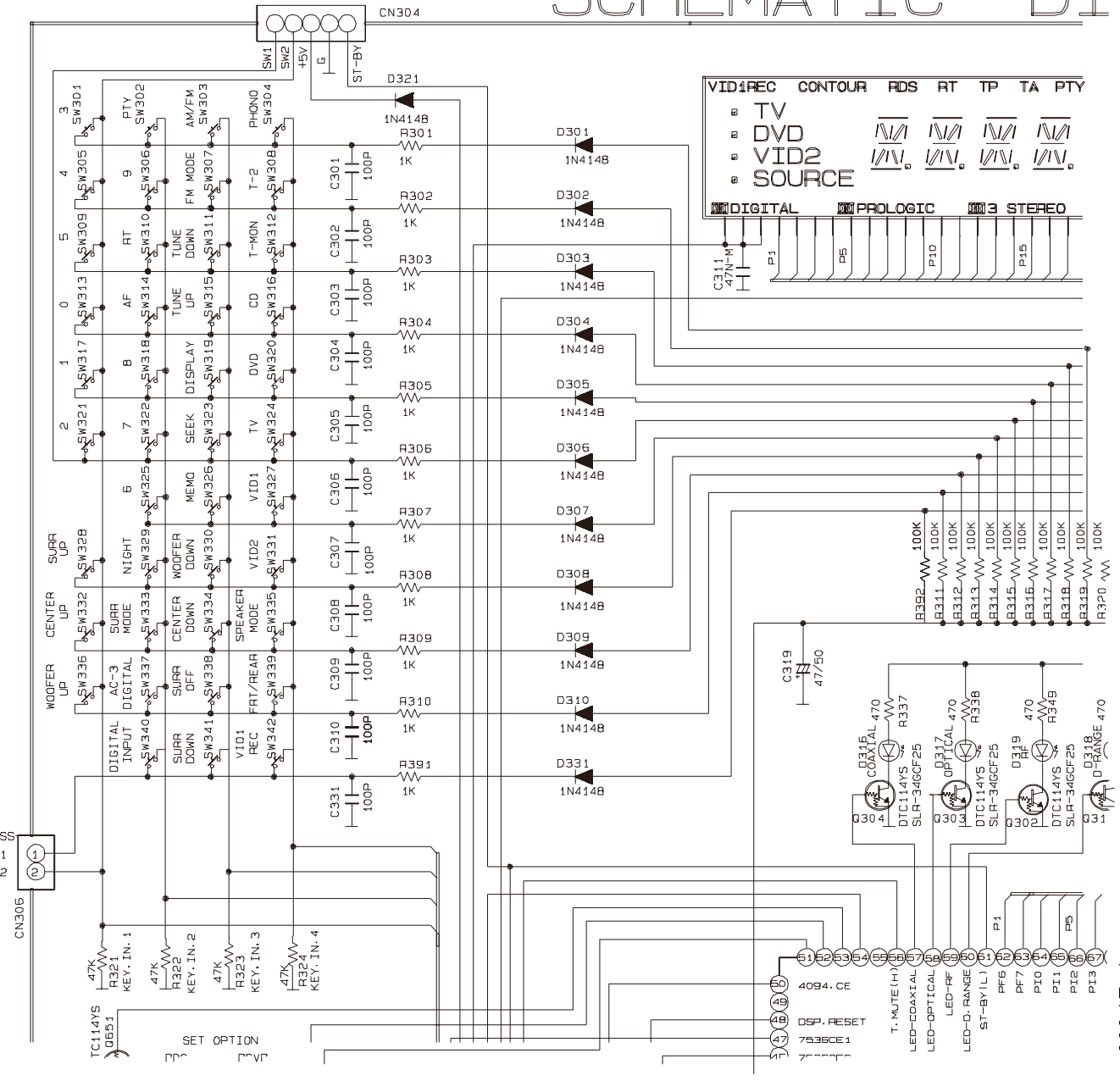
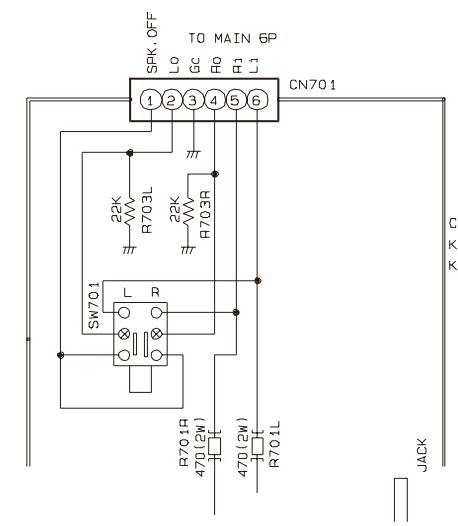
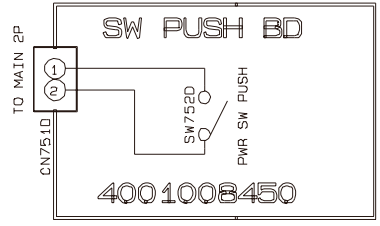
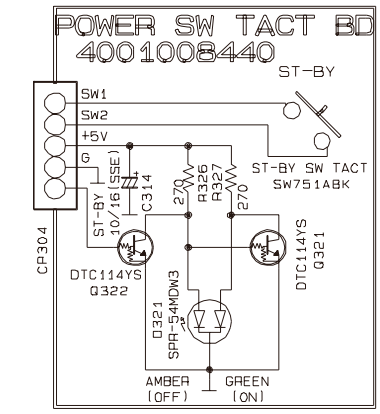
TO MAIN 7P

TO MAIN 8P

TO MAIN 9P

TO MAIN 10P

SCHEMATIC DI



C DIAGRAM

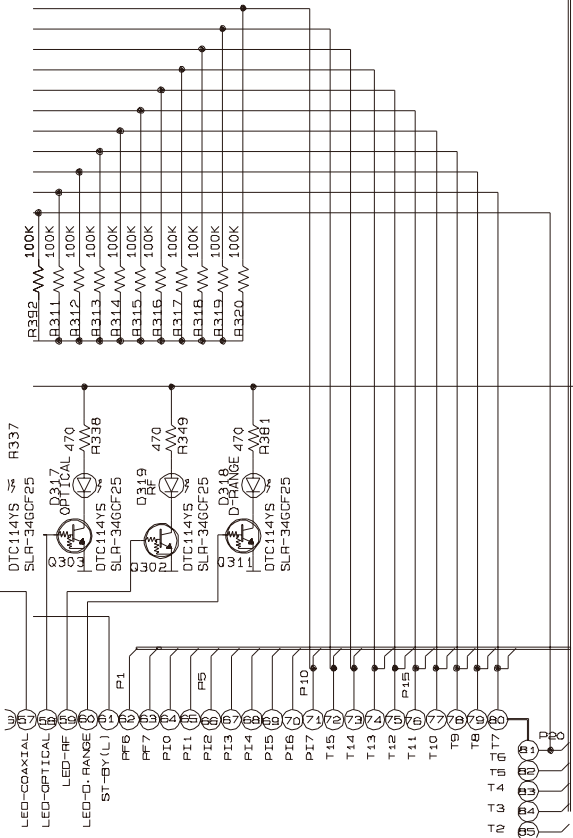
DS RT TP TA PTY STEREO TAPE MON TUNED AUTO MEMORY PRESET



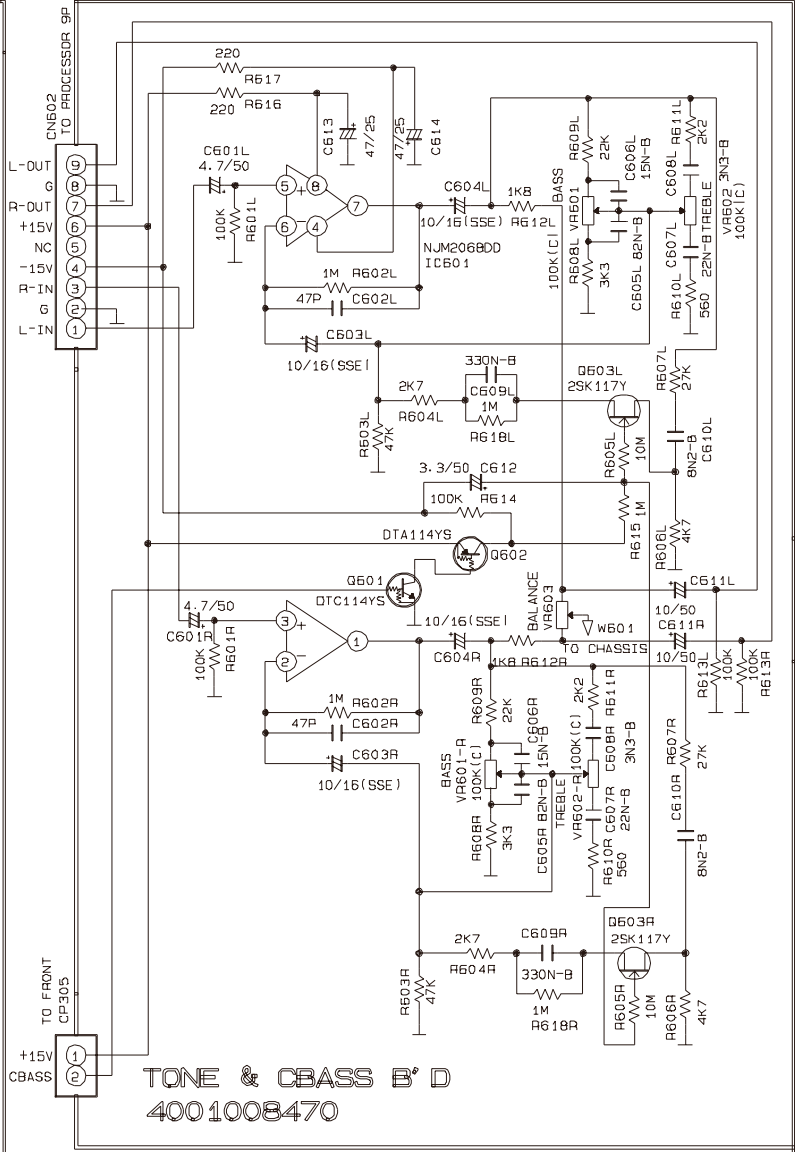
LOGIC 3 STEREO THEATER HALL STADIUM CHURCH SLEEP

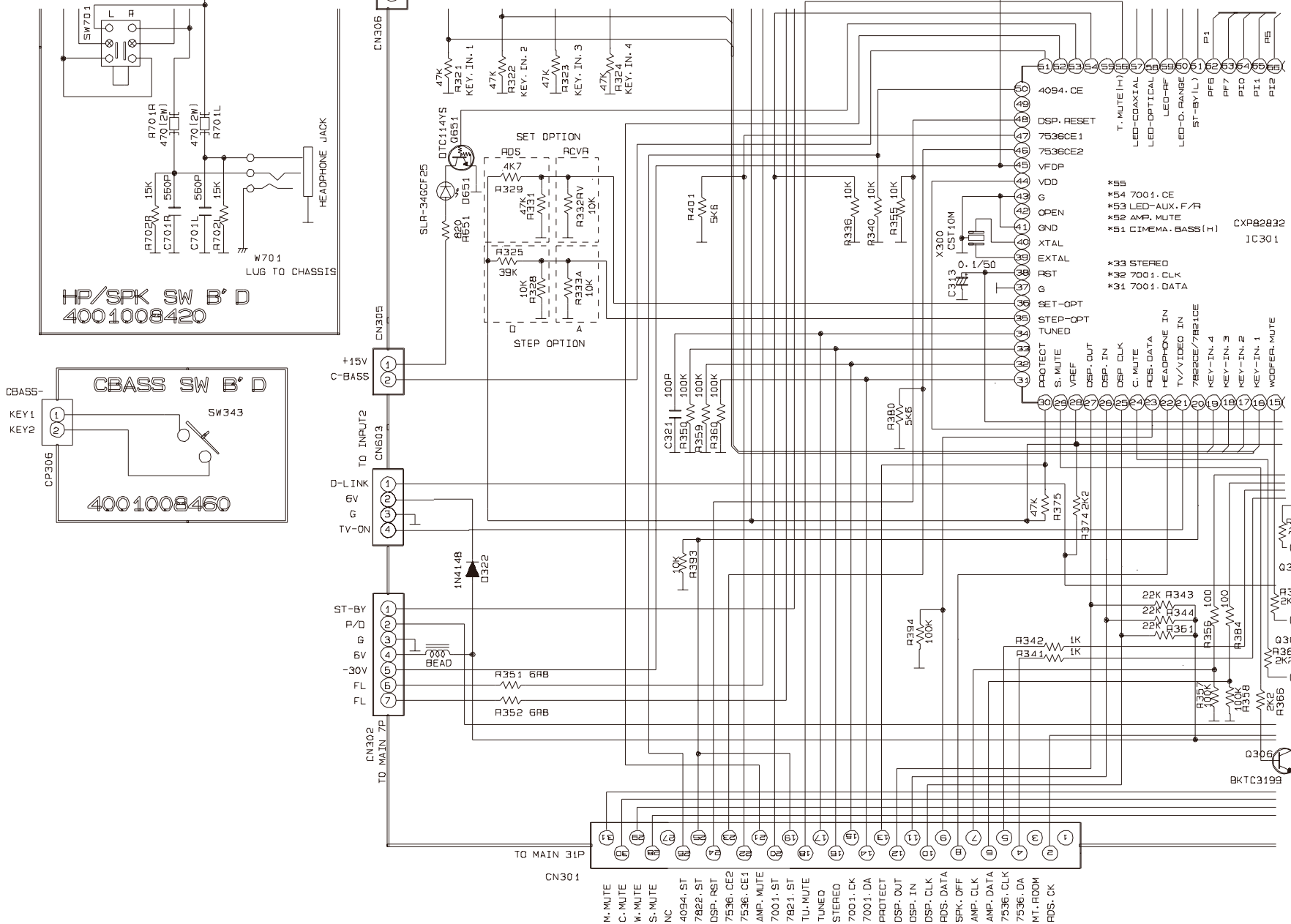


FRONT B' D
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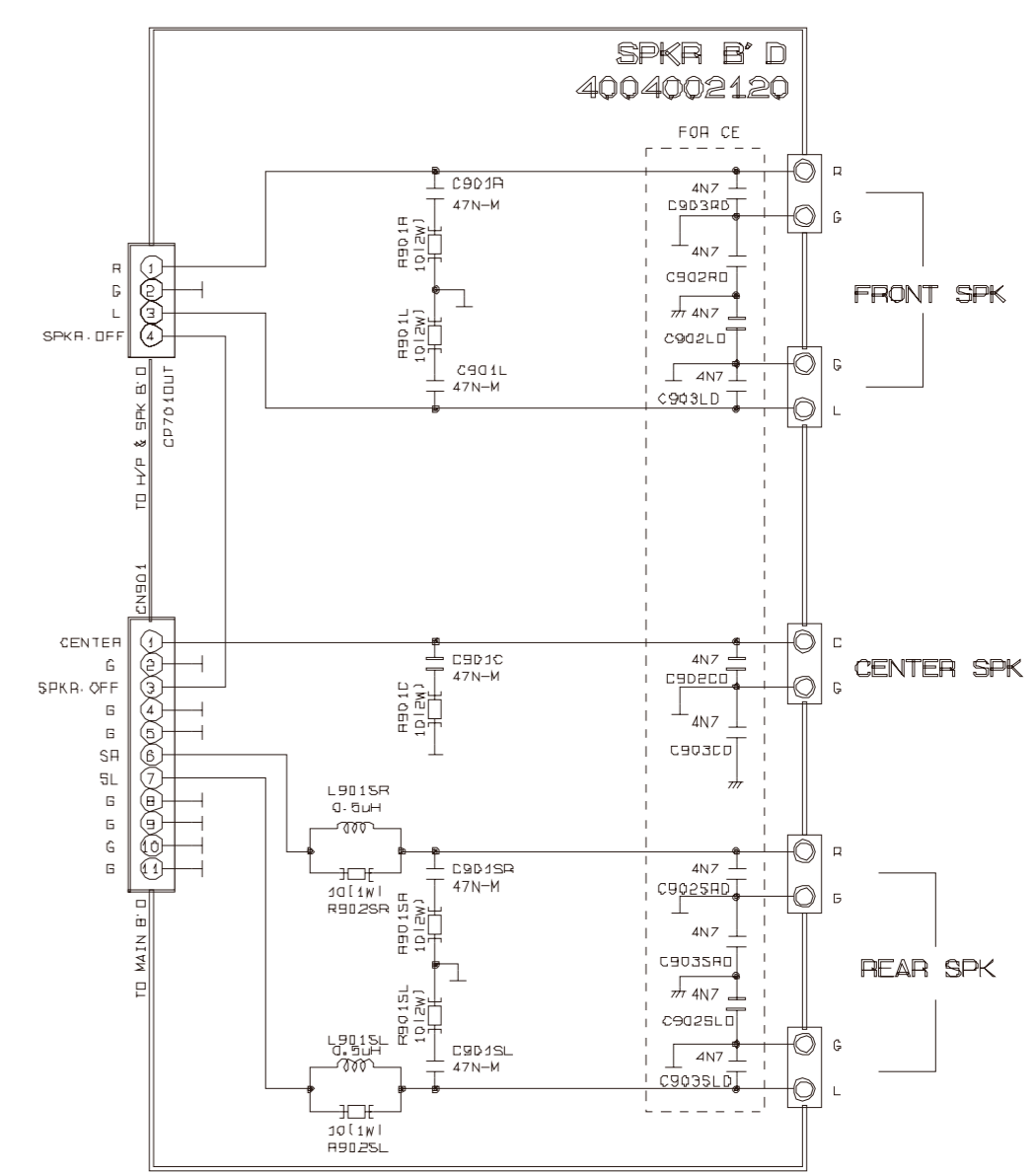
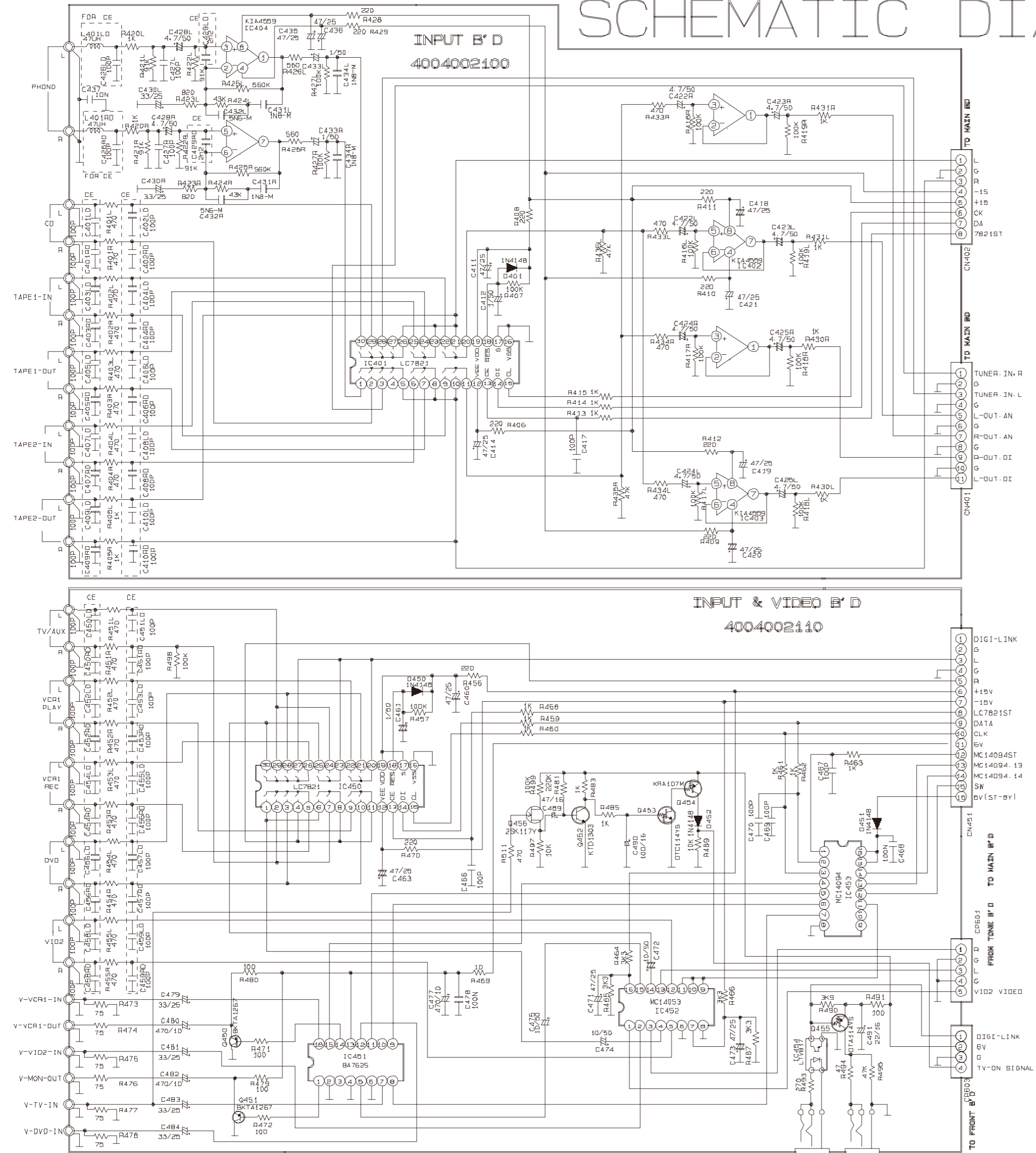


1N4148
D323

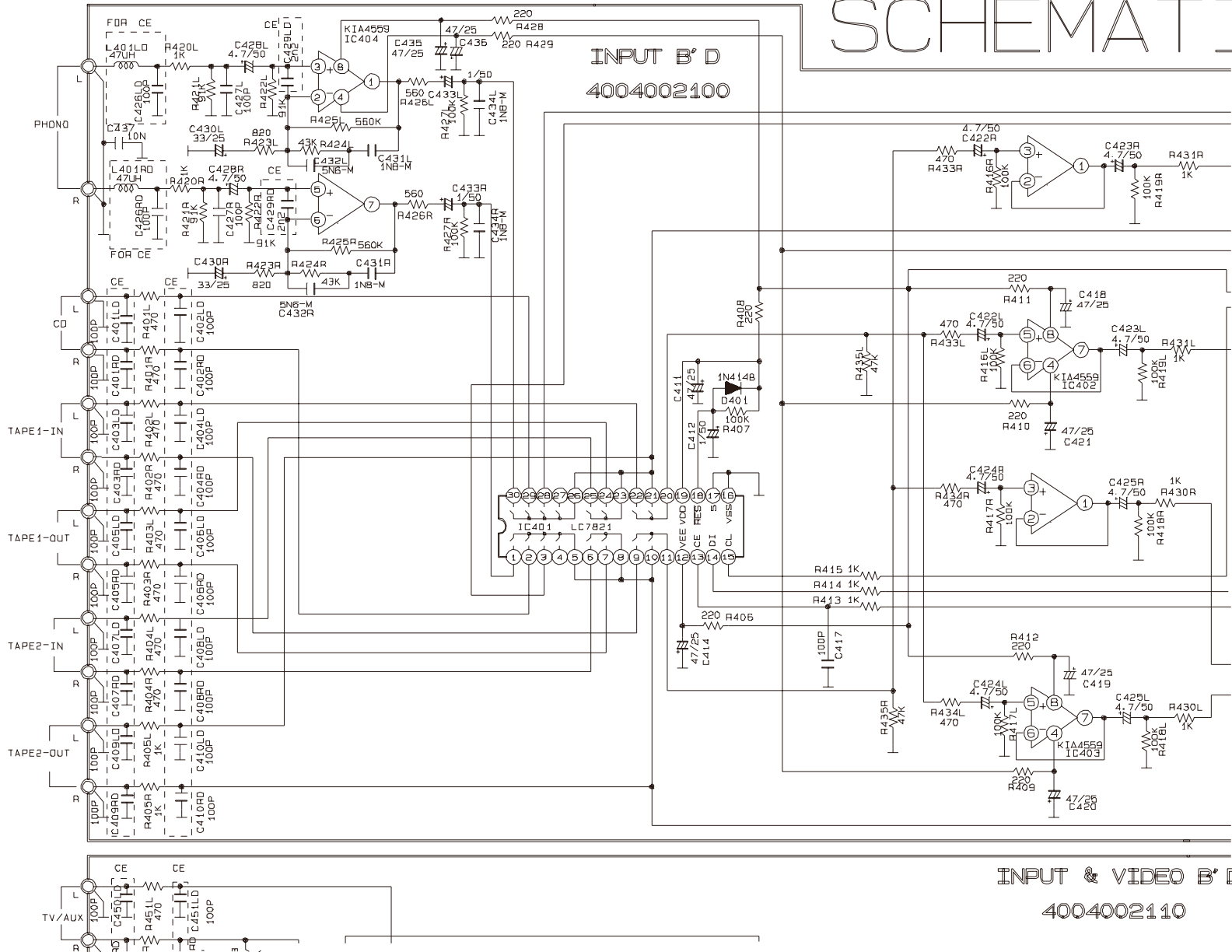




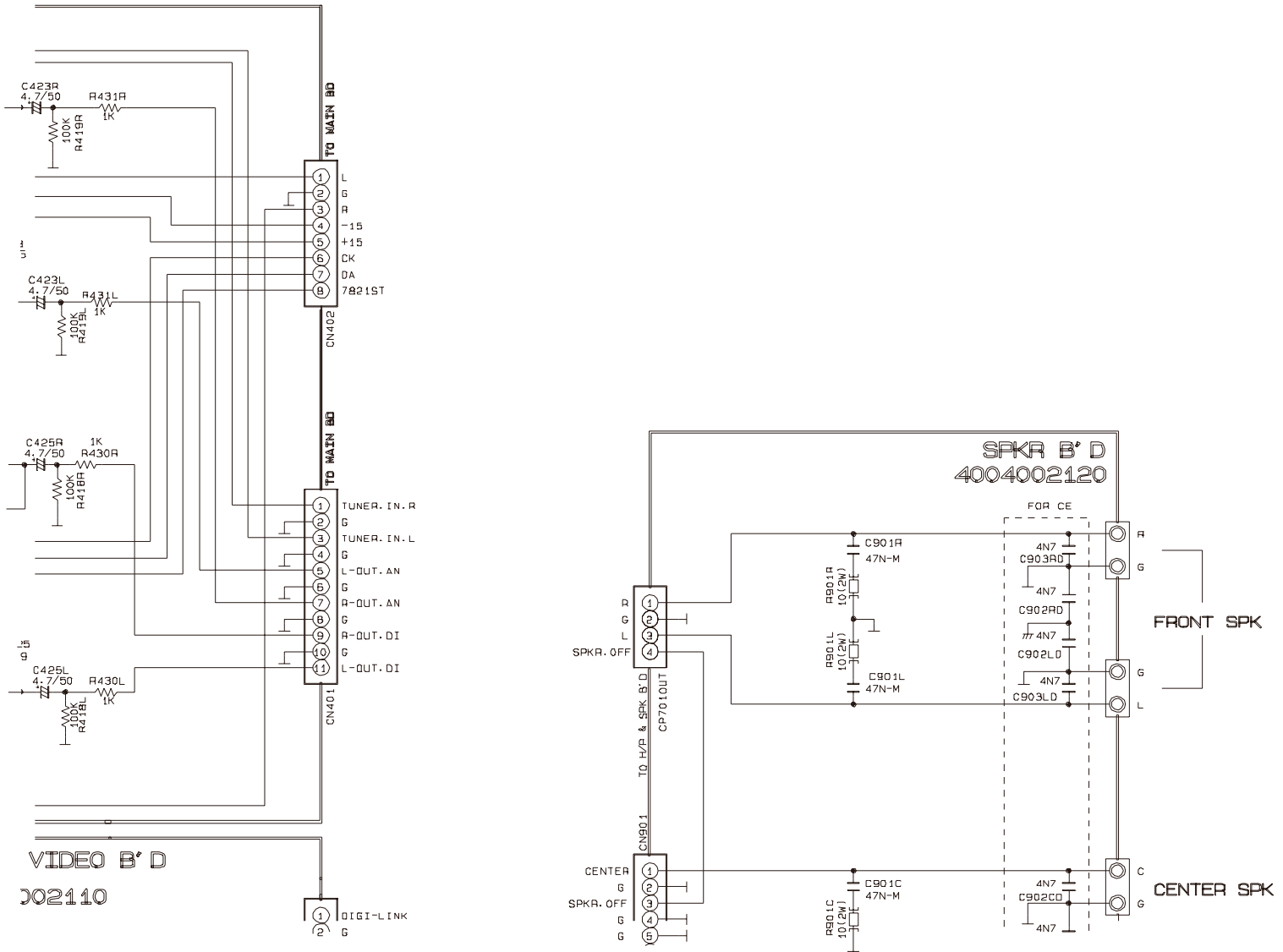
SCHEMATIC DIAGRAM

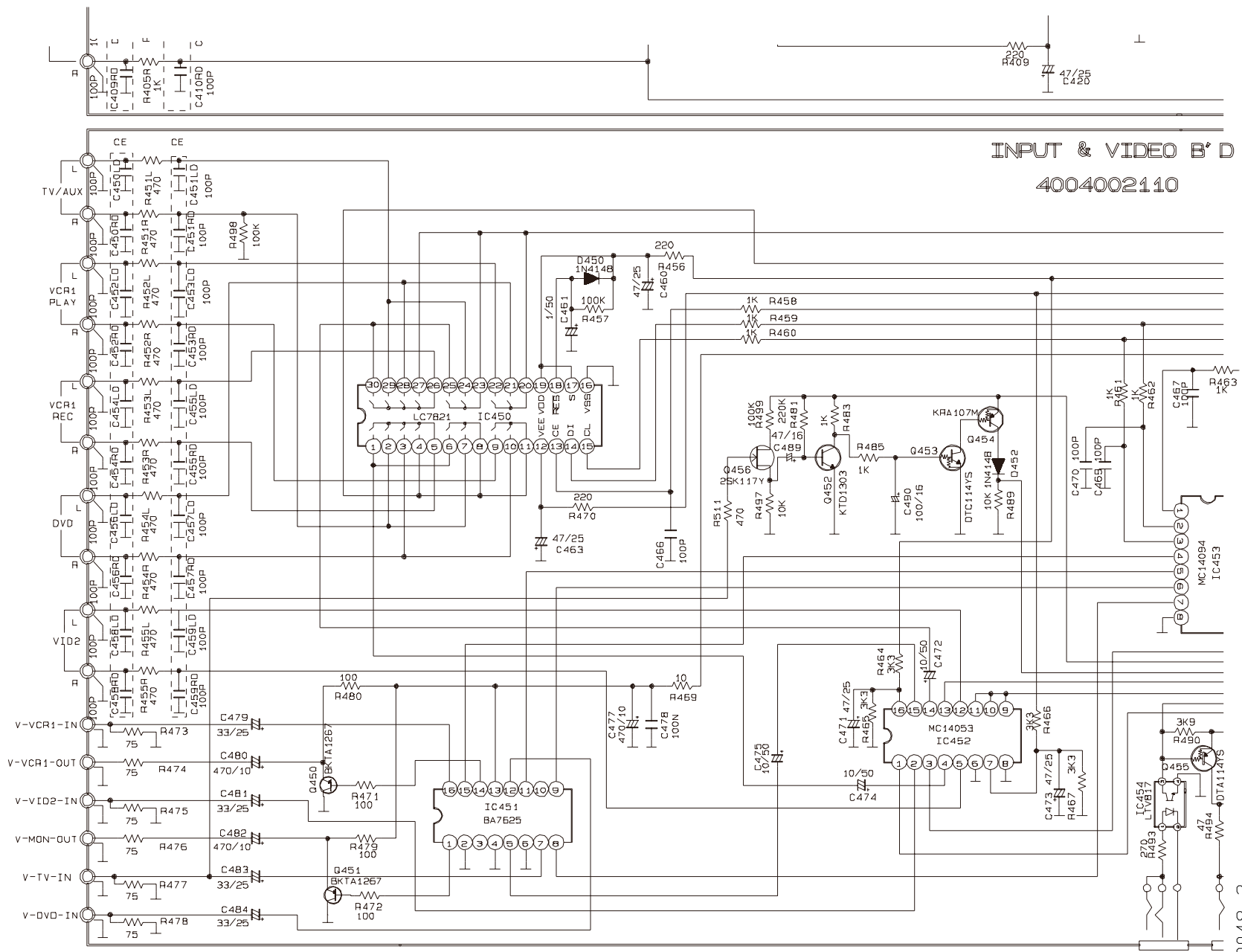


SCHEMATIC



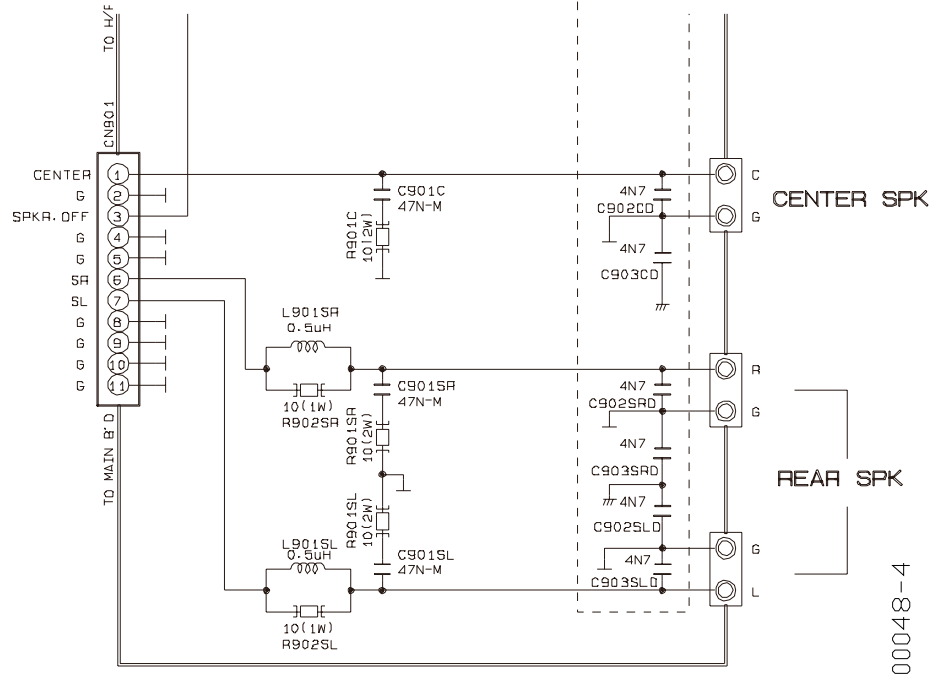
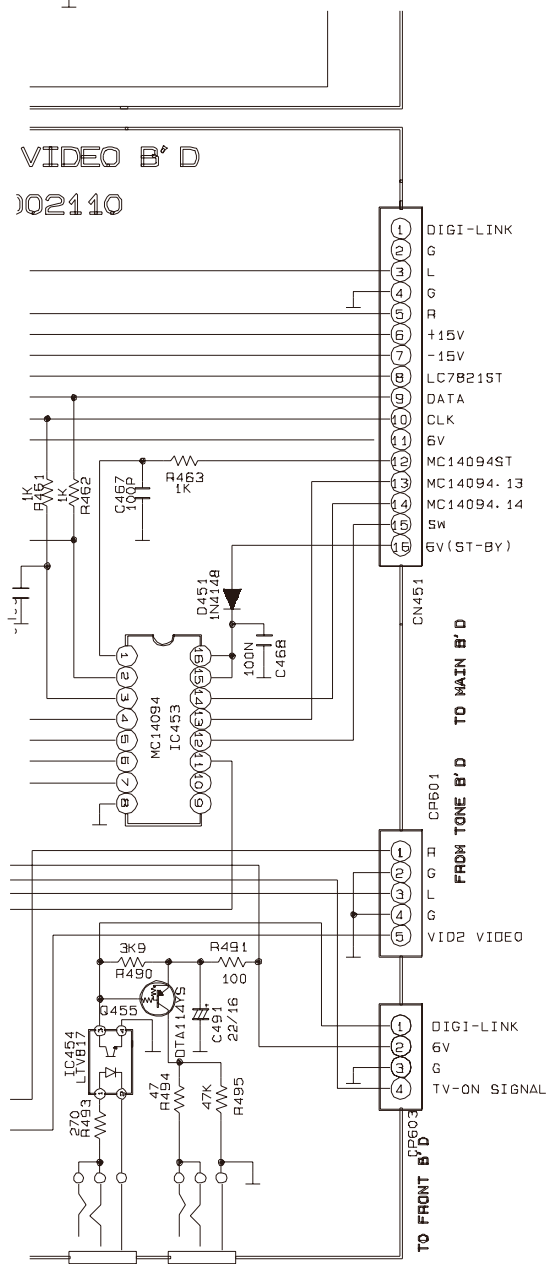
ATIC DIAGRAM





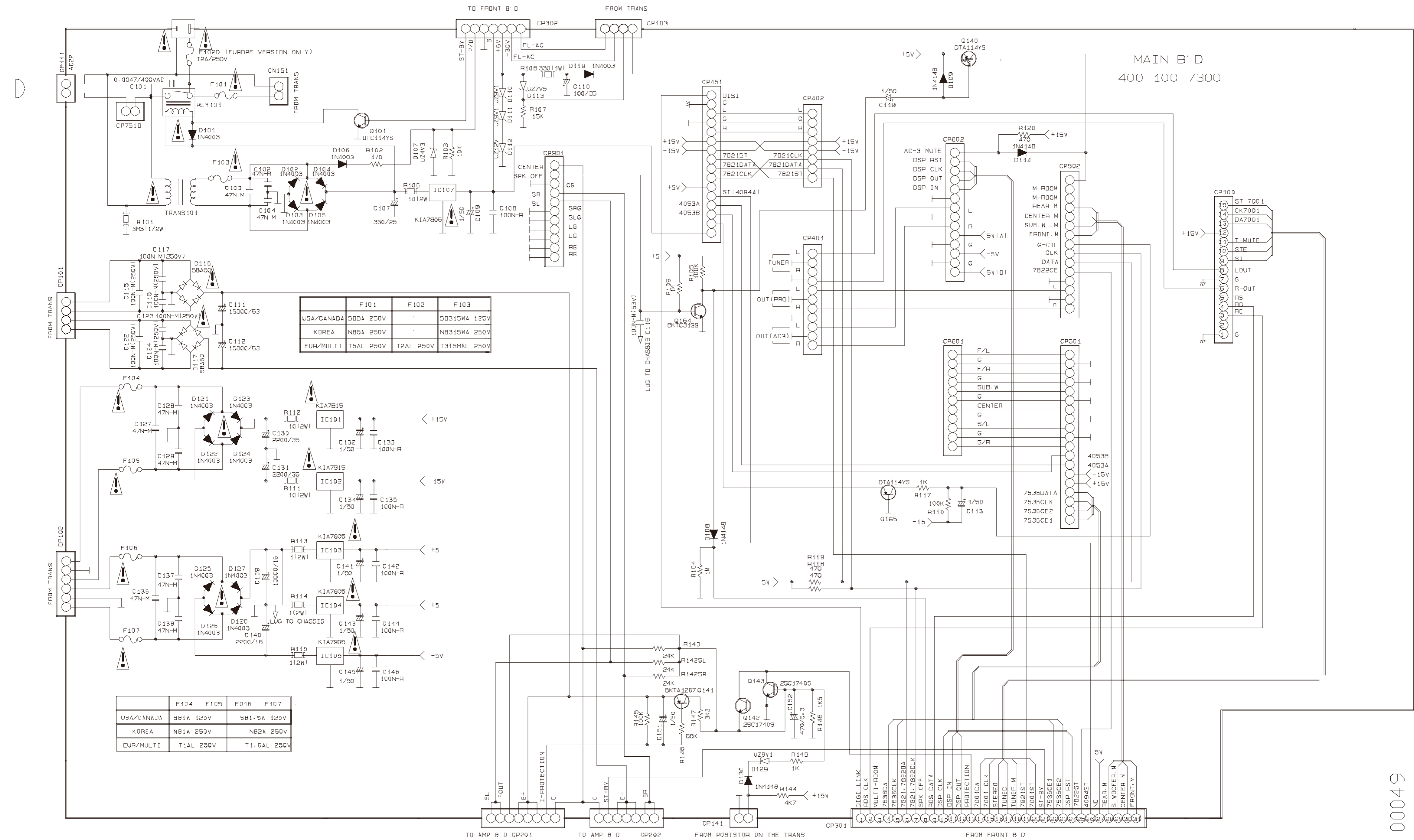
INPUT & VIDEO B'D
4004002110

VIDEO B'D
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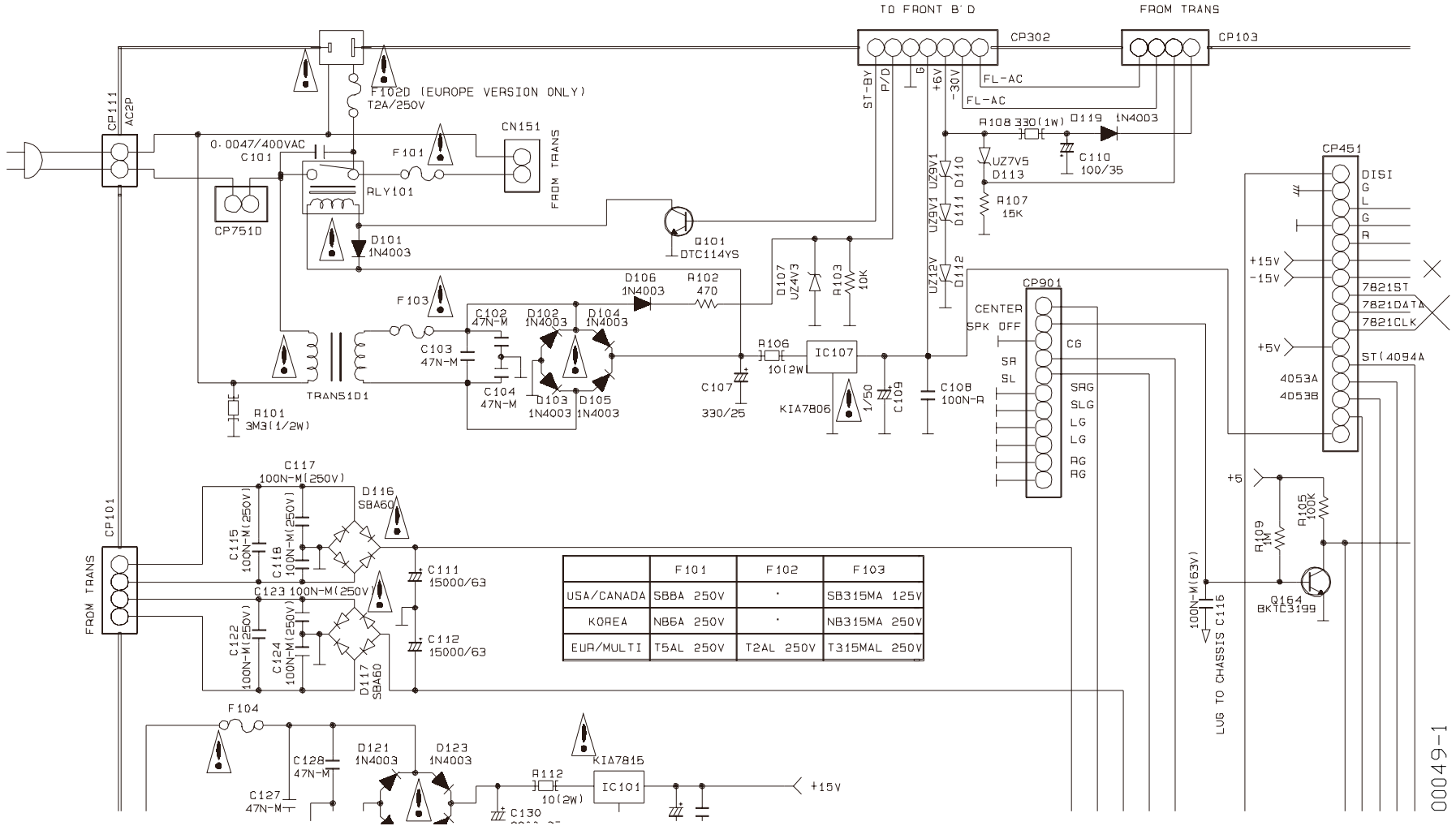


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SCHEMATIC DIAGRAM

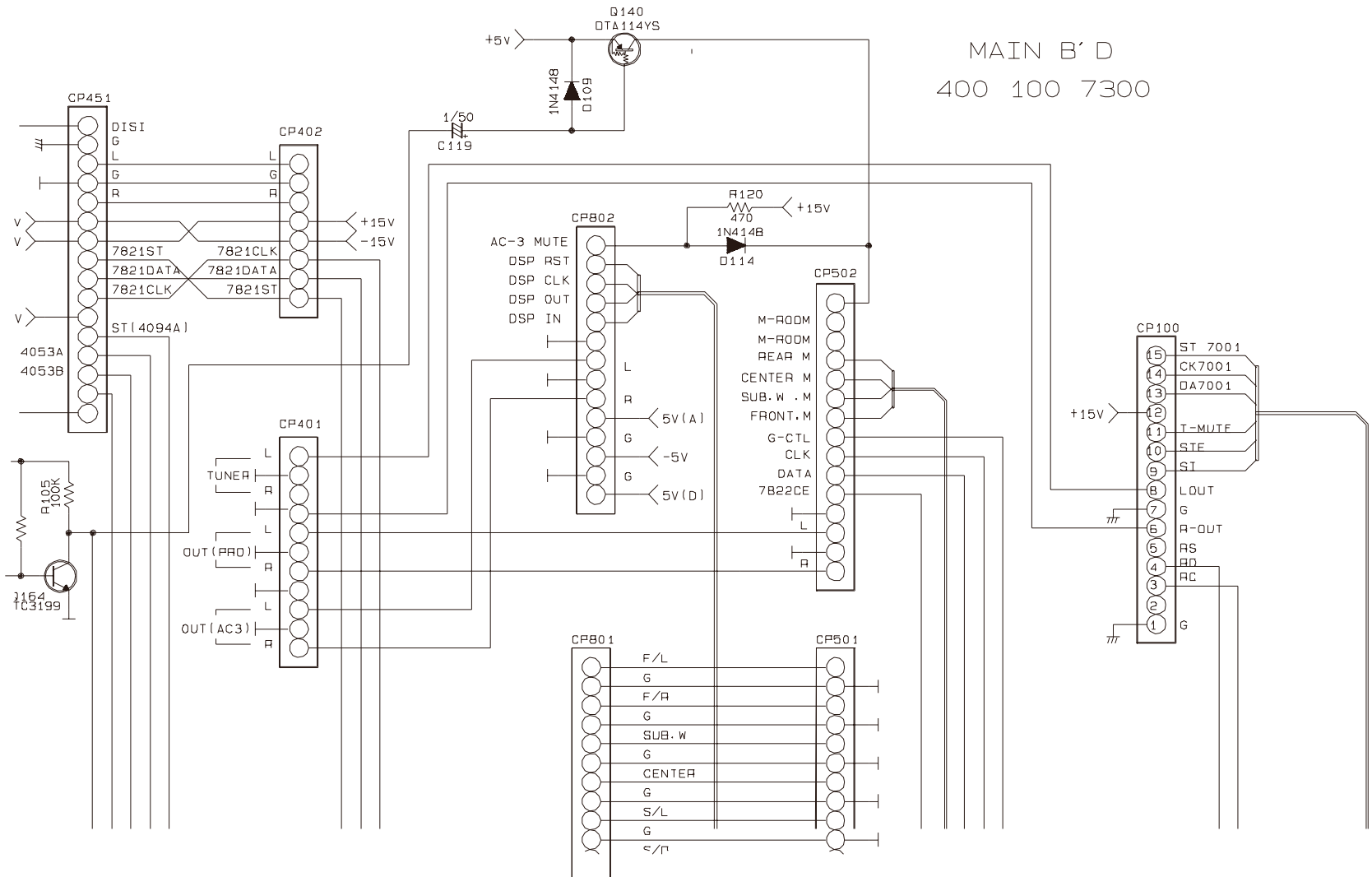


SCHEMATIC

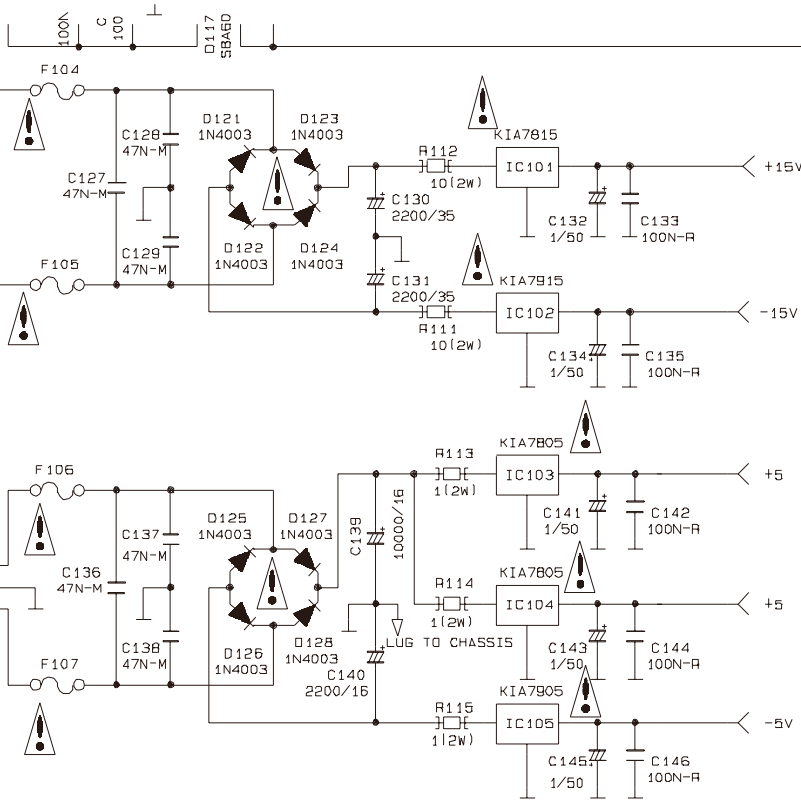


	F101	F102	F103
USA/CANADA	SB8A 250V	.	SB315MA 125V
KOREA	NB8A 250V	.	NB315MA 250V
EUR/MULTI	T5AL 250V	T2AL 250V	T315MAL 250V

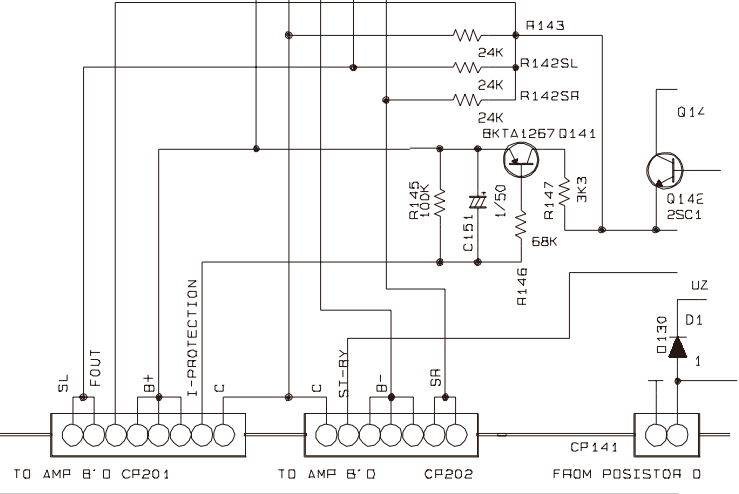
ATIC DIAGRAM



FROM TRANS

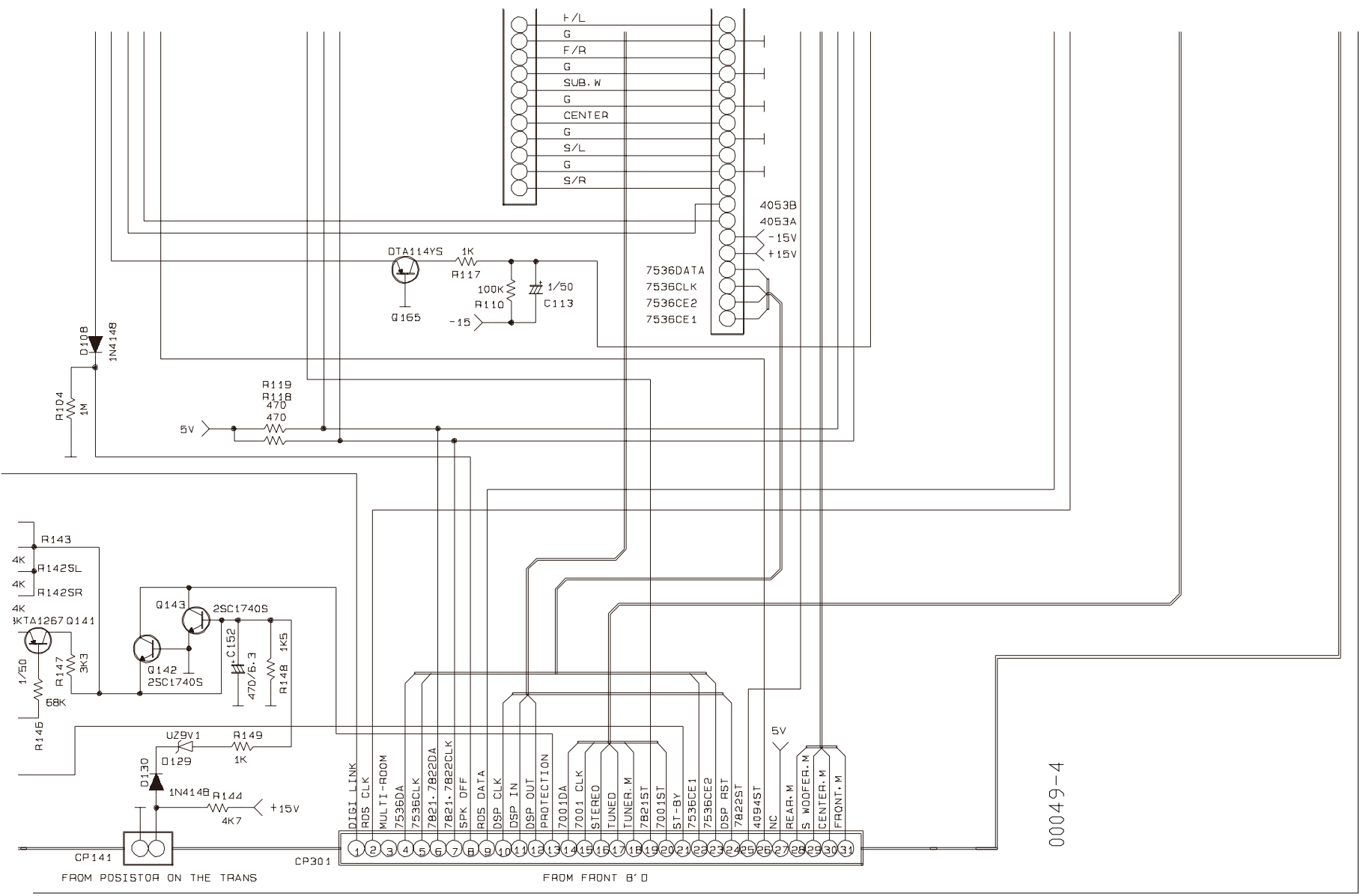


	F104	F105	F016	F107
USA/CANADA	SB1A 125V	SB1A 125V	SB1.5A 125V	
KOREA	NB1A 250V	NB1A 250V	NB2A 250V	
EUR/MULTI	T1A1 250V	T1A1 250V	T1.6A1 250V	



TO AMP B'D CP201 TO AMP B'D CP202 FROM POSISTOR 0

LUG TO CHA

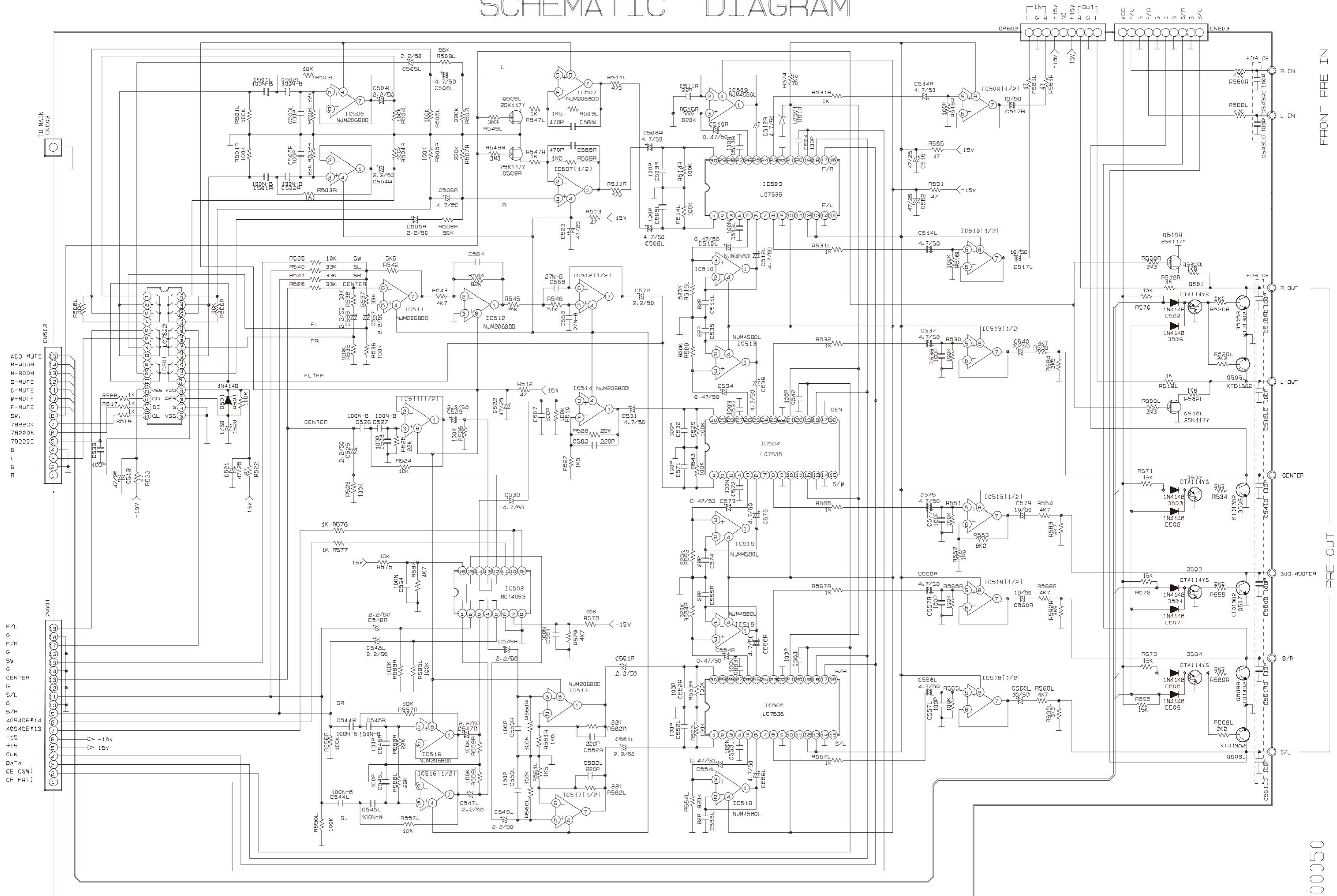


00049-4

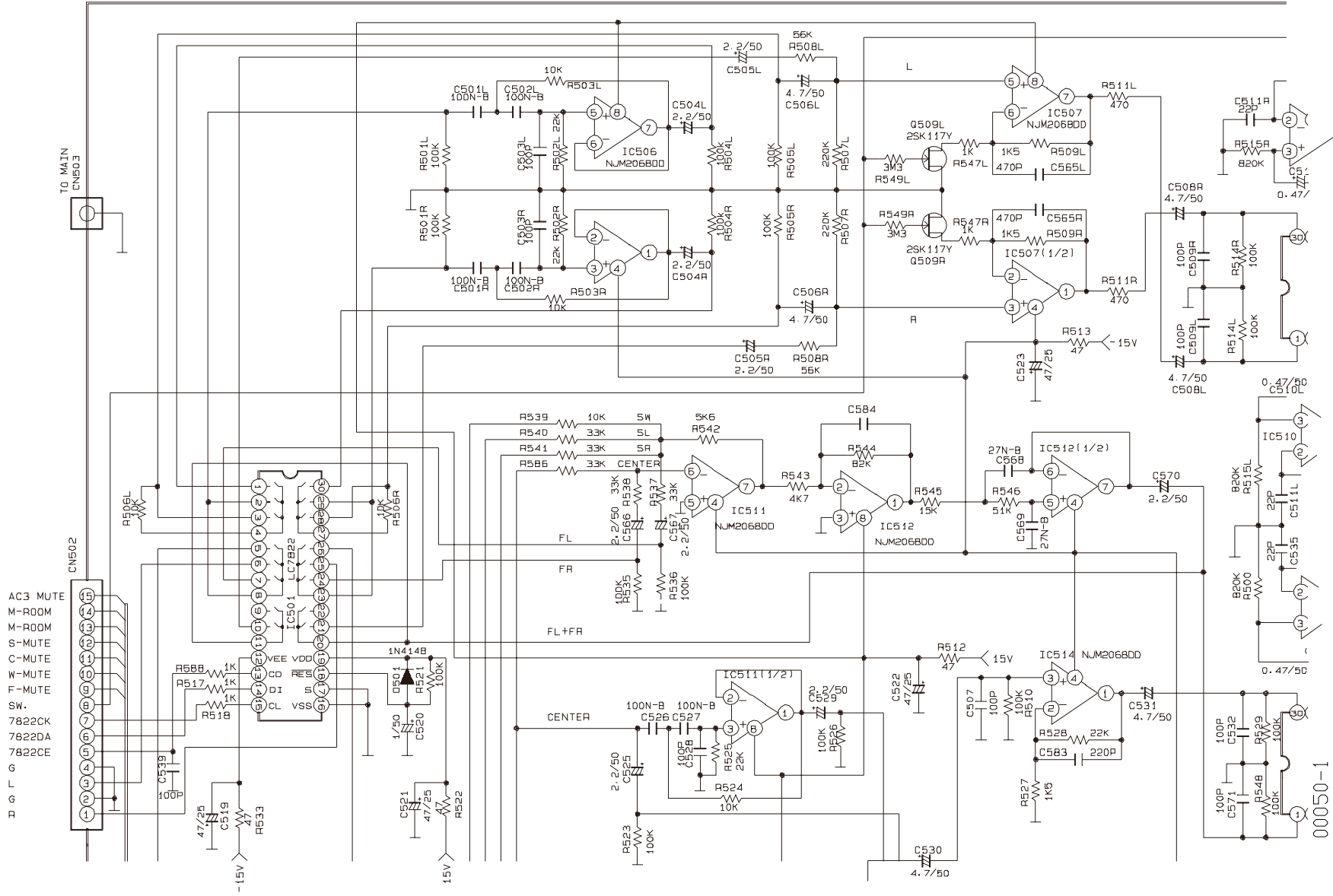
FROM POSISTOR ON THE TRANS

FROM FRONT B'D

SCHEMATIC DIAGRAM

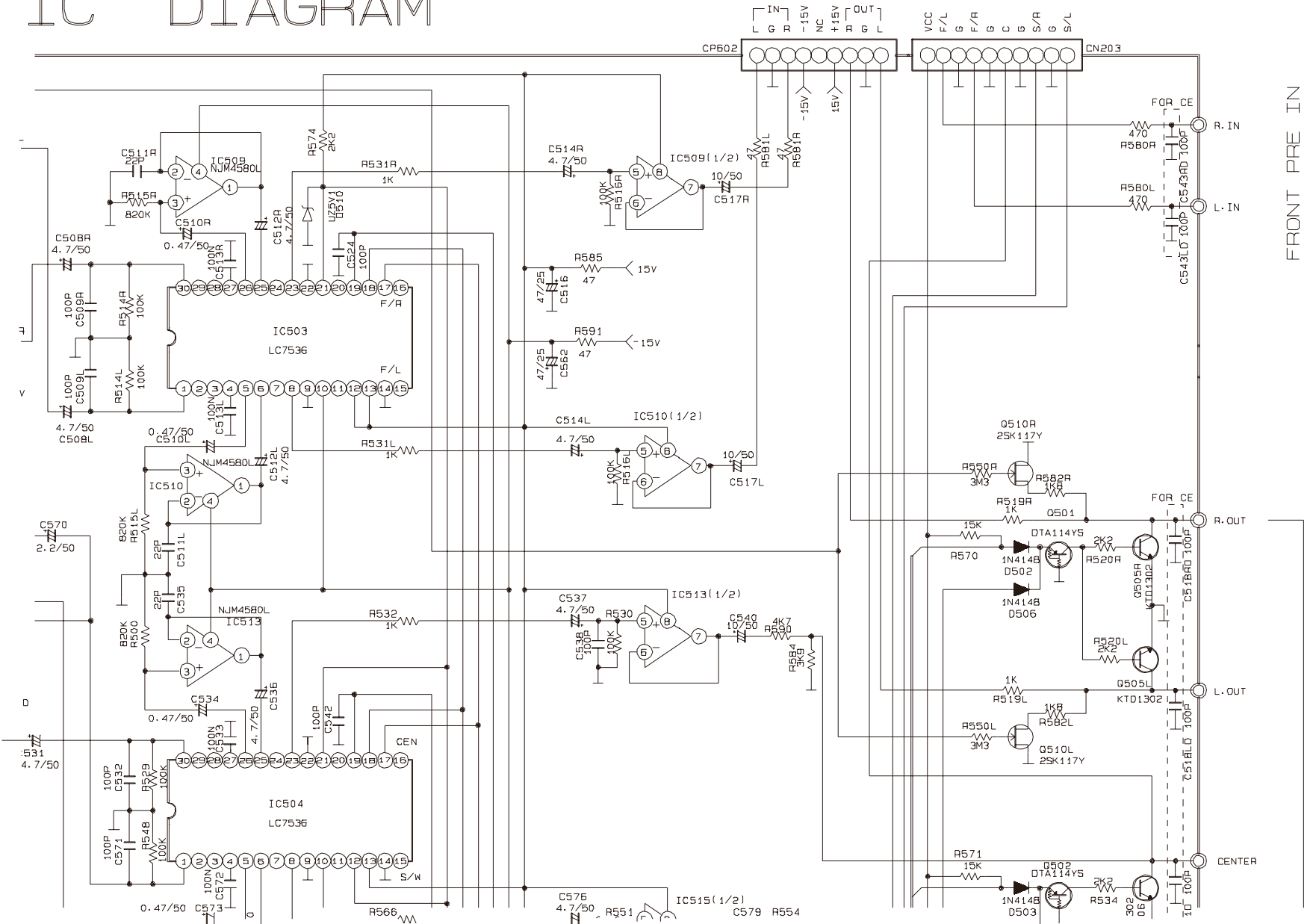


SCHEMATIC

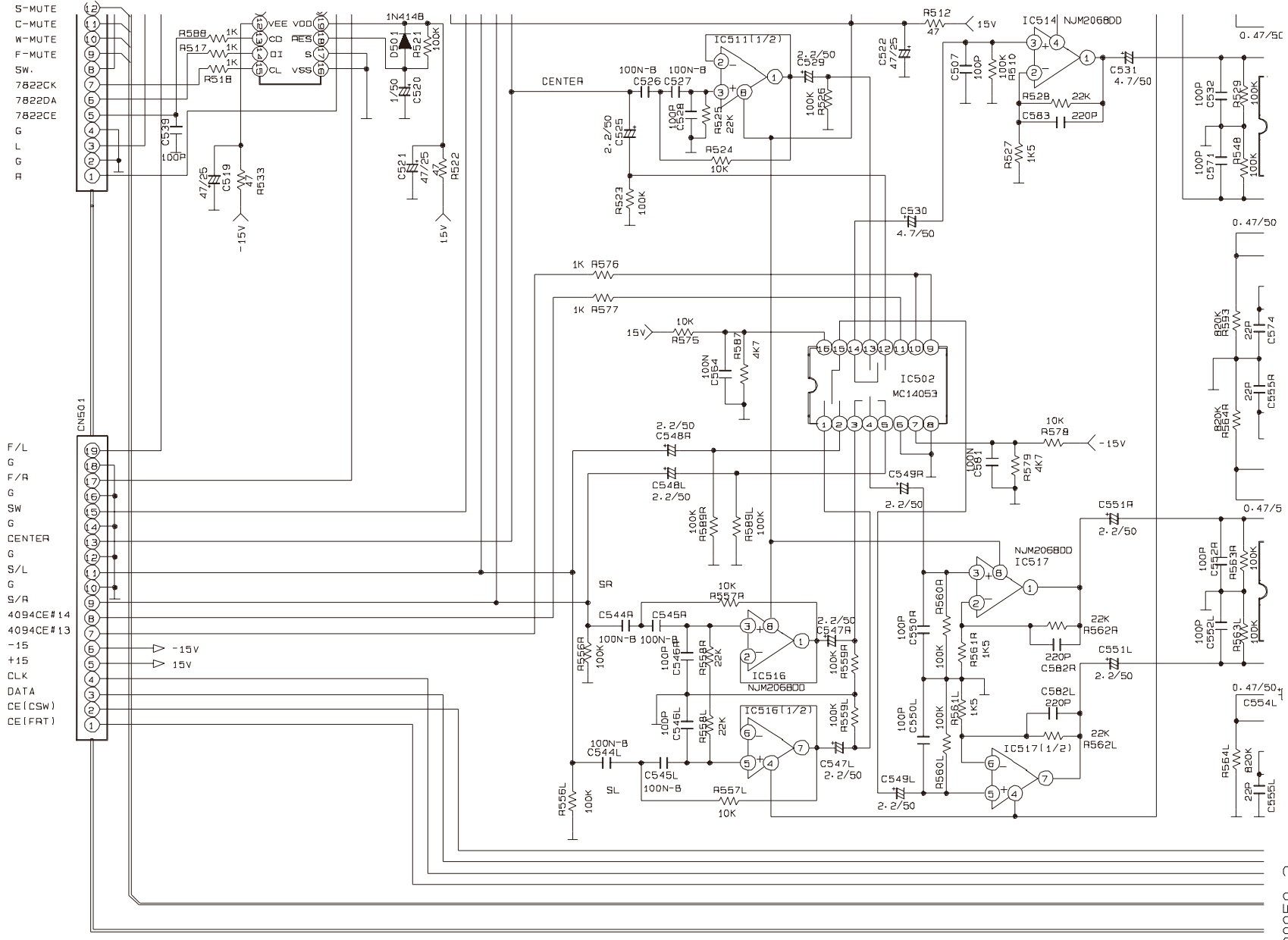


00050-1

IC DIAGRAM



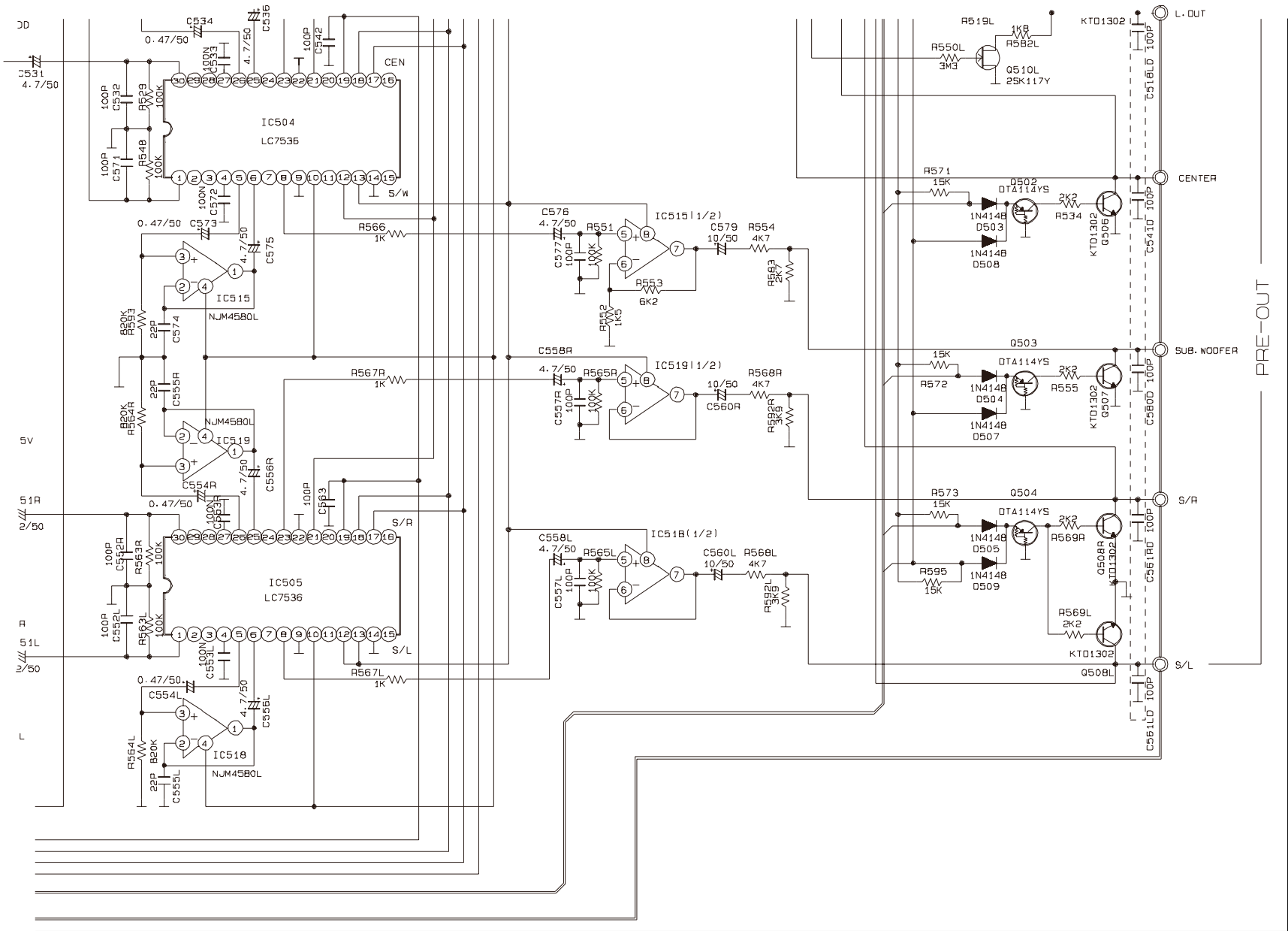
FRONT PRE IN



S-MUTE
C-MUTE
W-MUTE
F-MUTE
SW.
7822CK
7822DA
7822CE

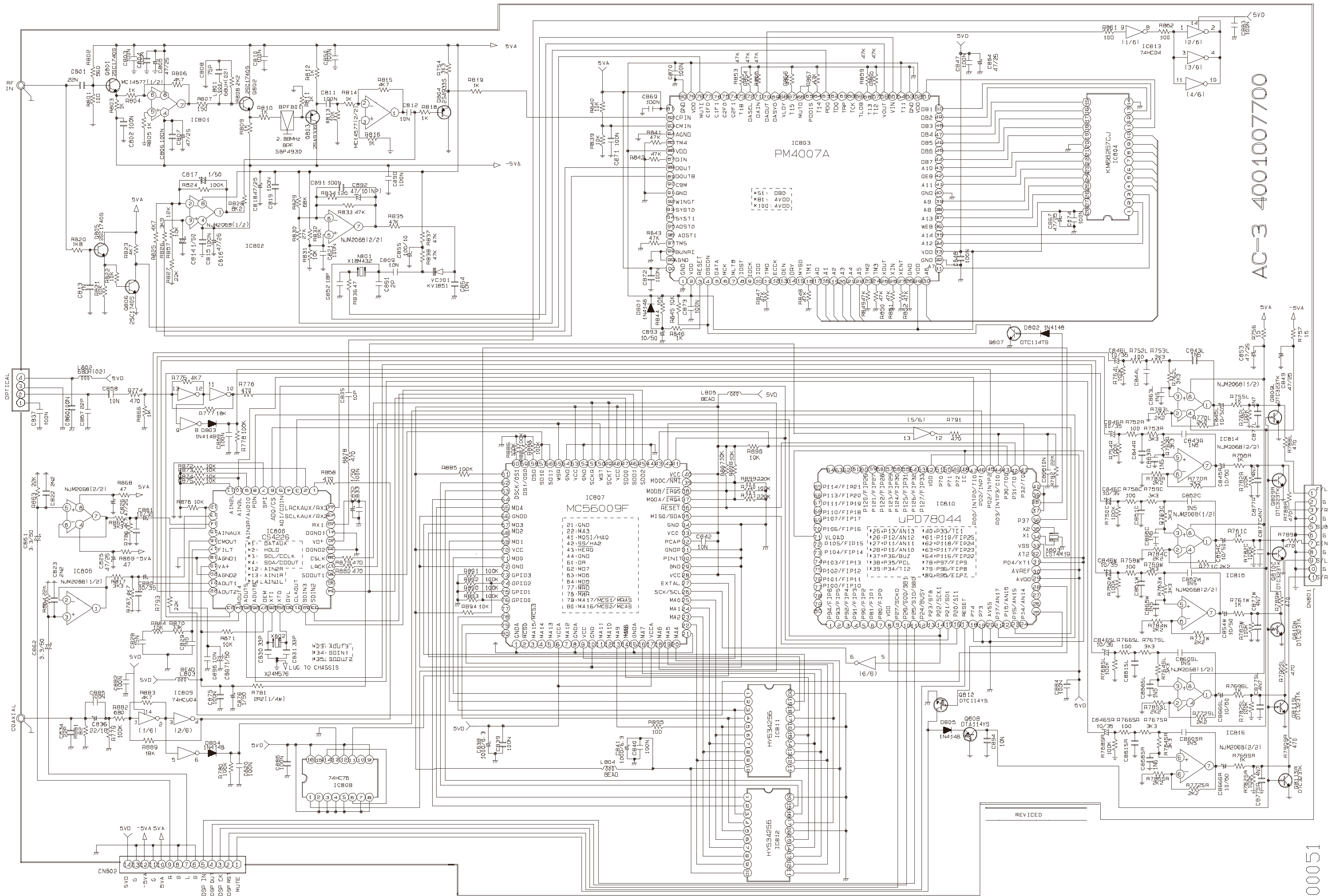
F/L
G
F/R
G
SW
G
CENTER
G
S/L
G
S/R
4094CE# 14
4094CE# 13
-15
+15
CLK
DATA
CE(CSW)
CE(LFRT)

0.47/5C
0.47/50
0.47/5
0.47/50H
0.47/50H



PRE-OUT

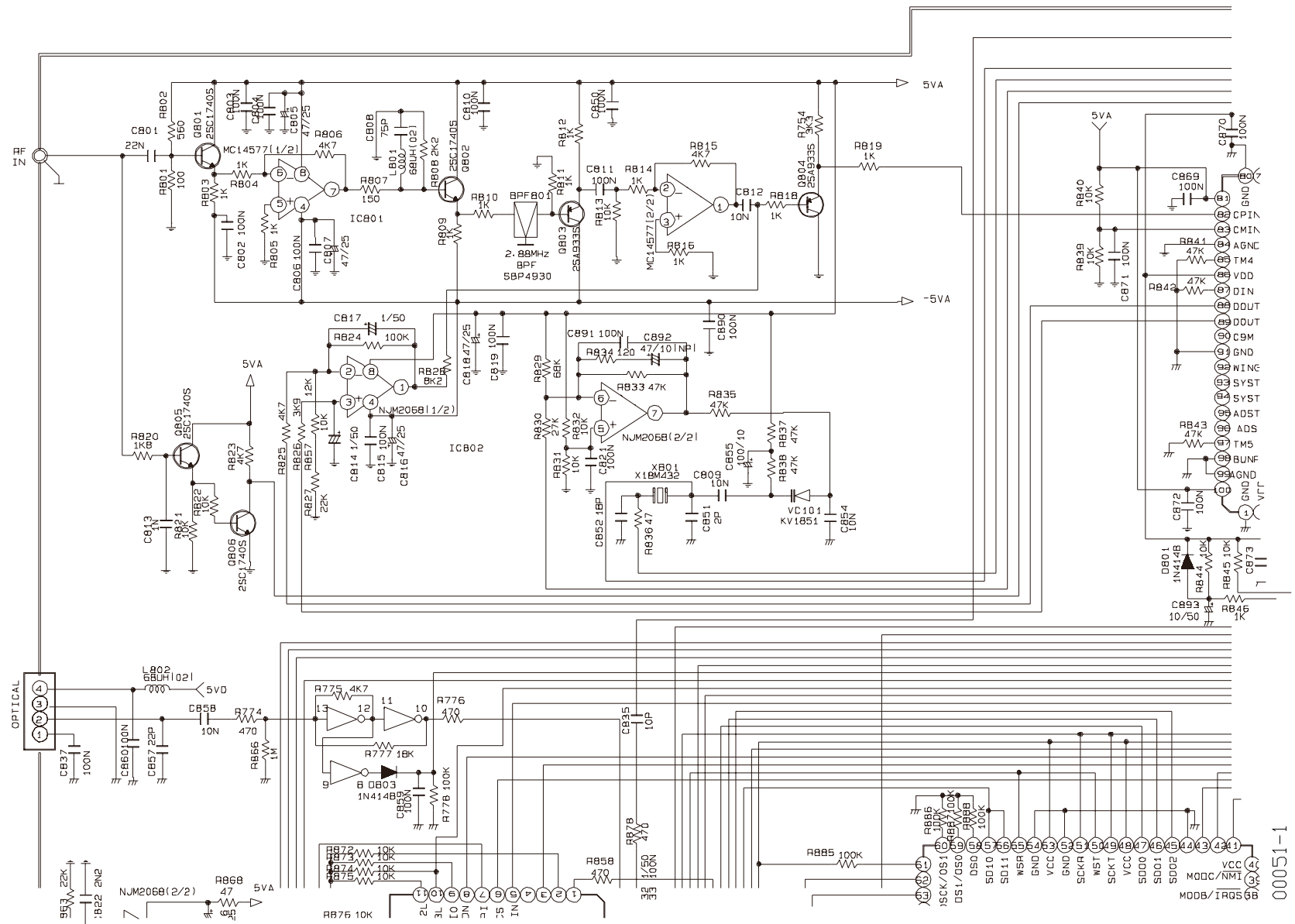
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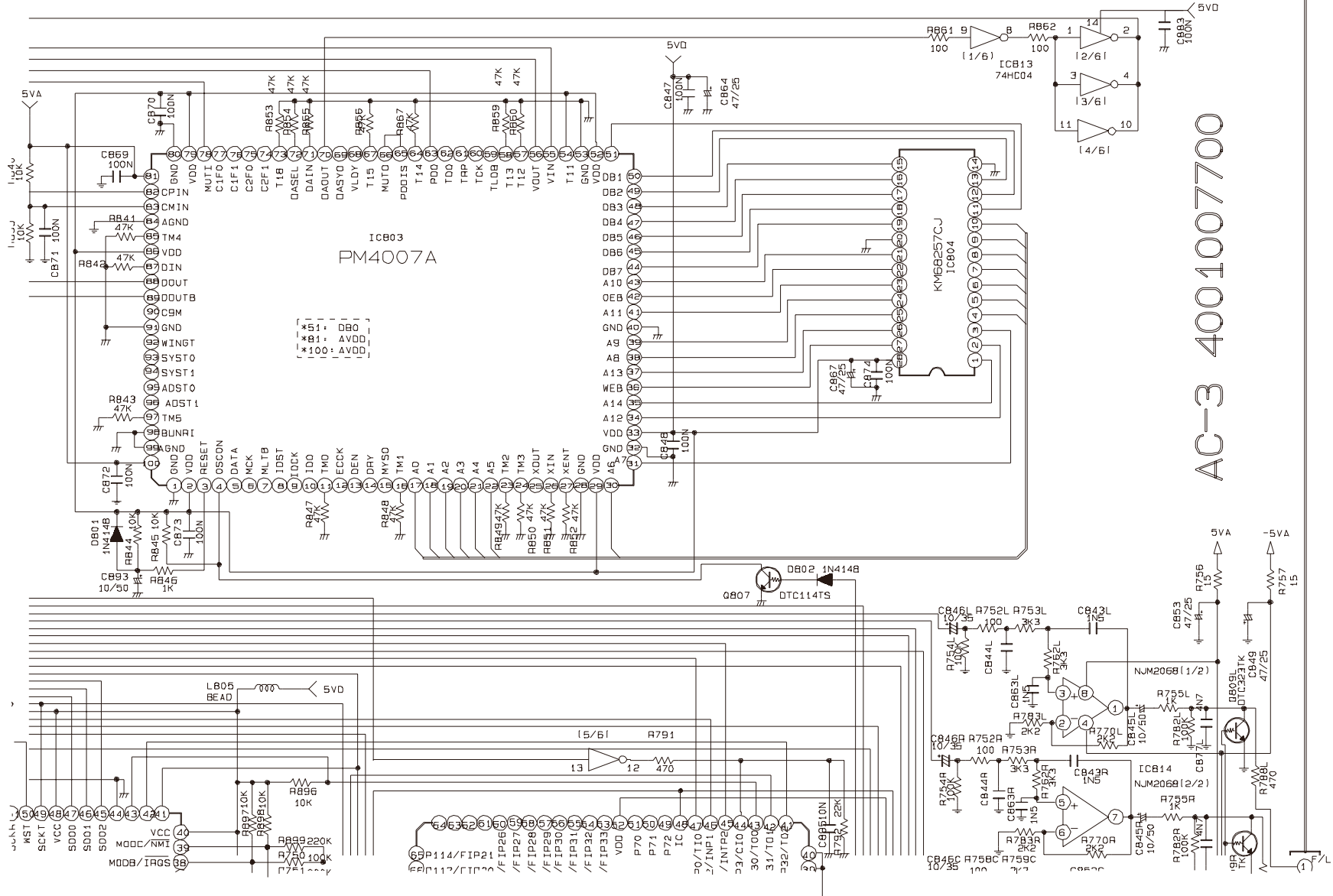
AC-3 4001007700

REVISED

SCHEMATIC DIAG



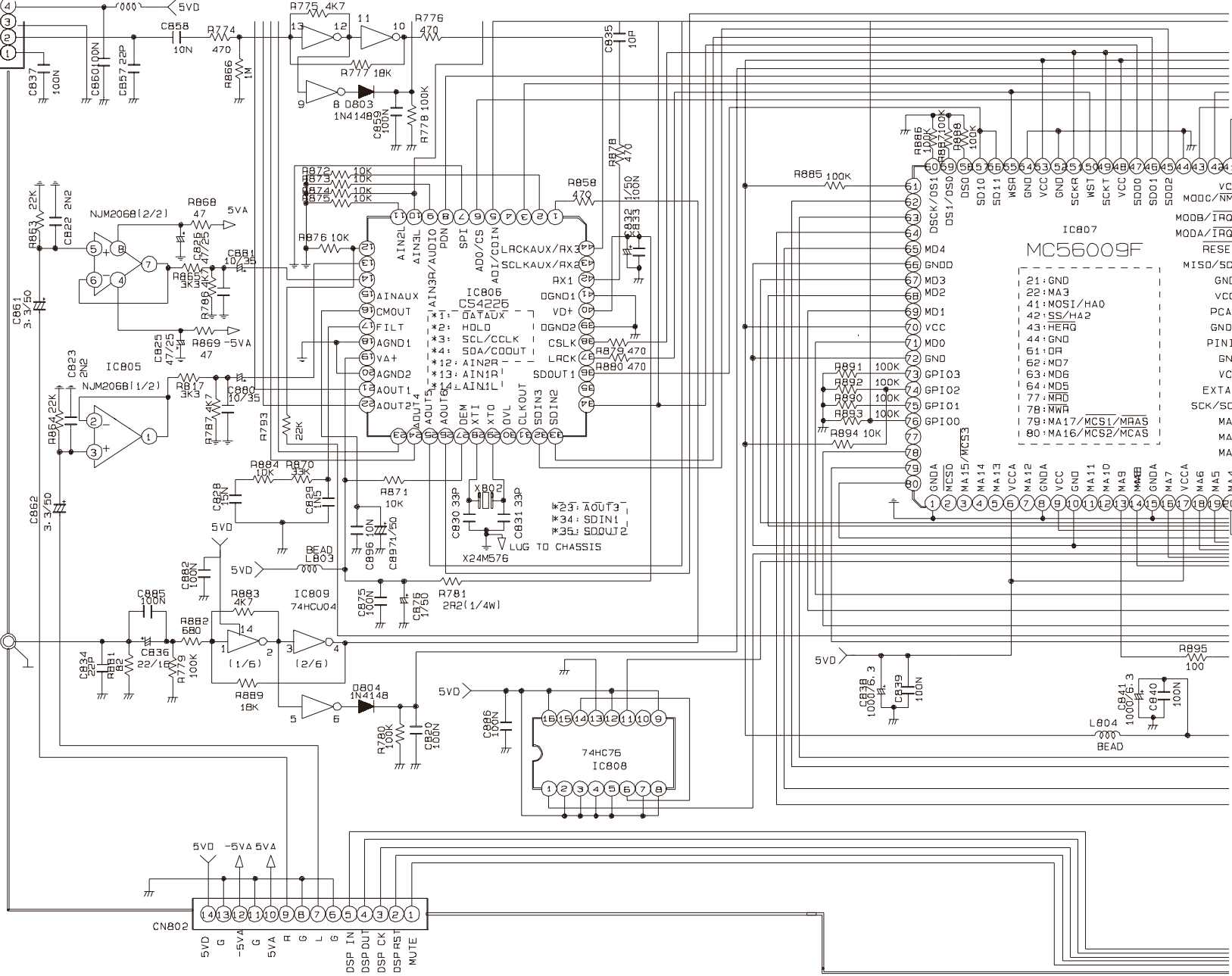
DIAGRAM



AC-3 4001007700

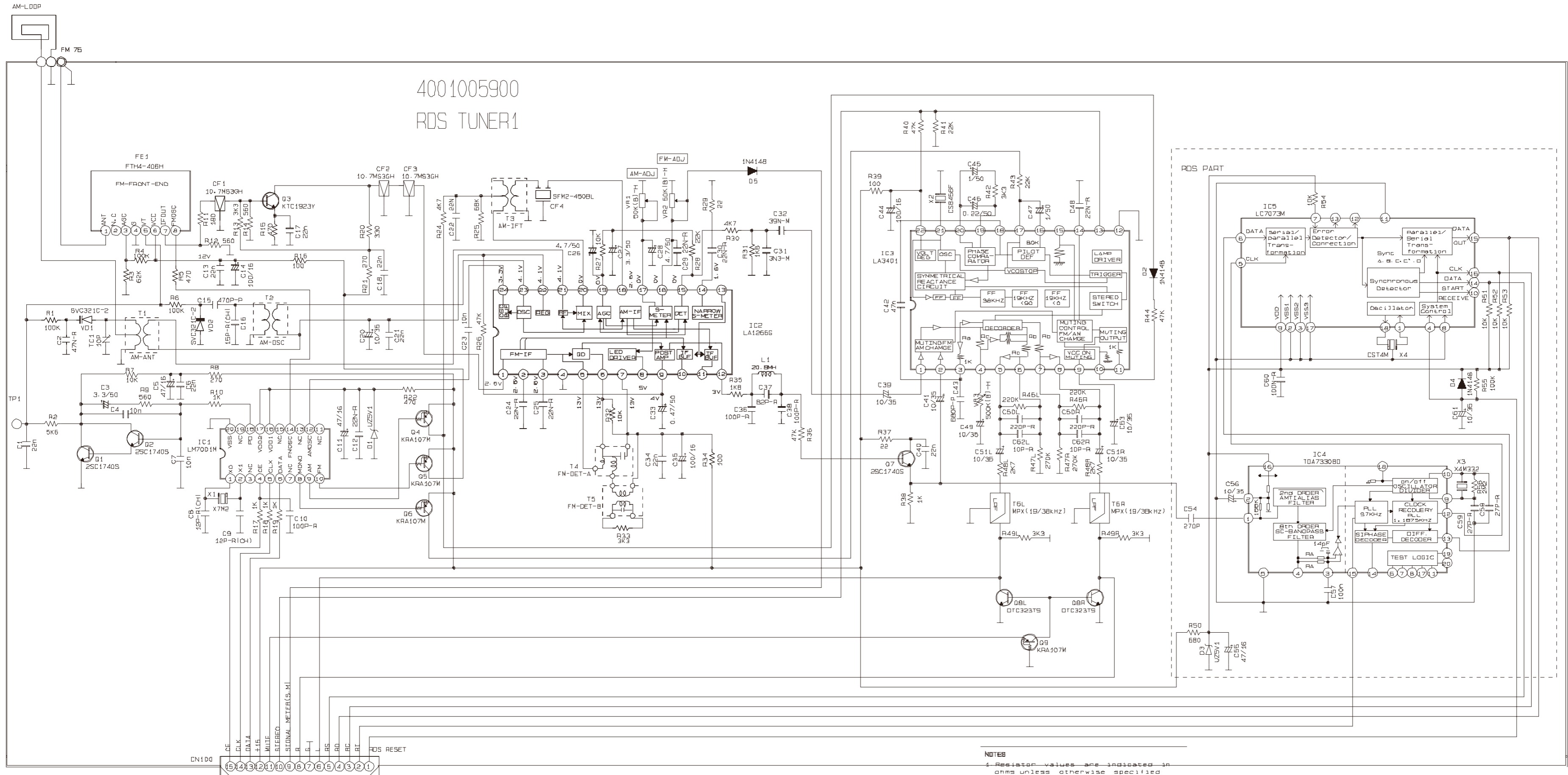
COAXIAL

OPTICA



SCHEMATIC DIAGRAM

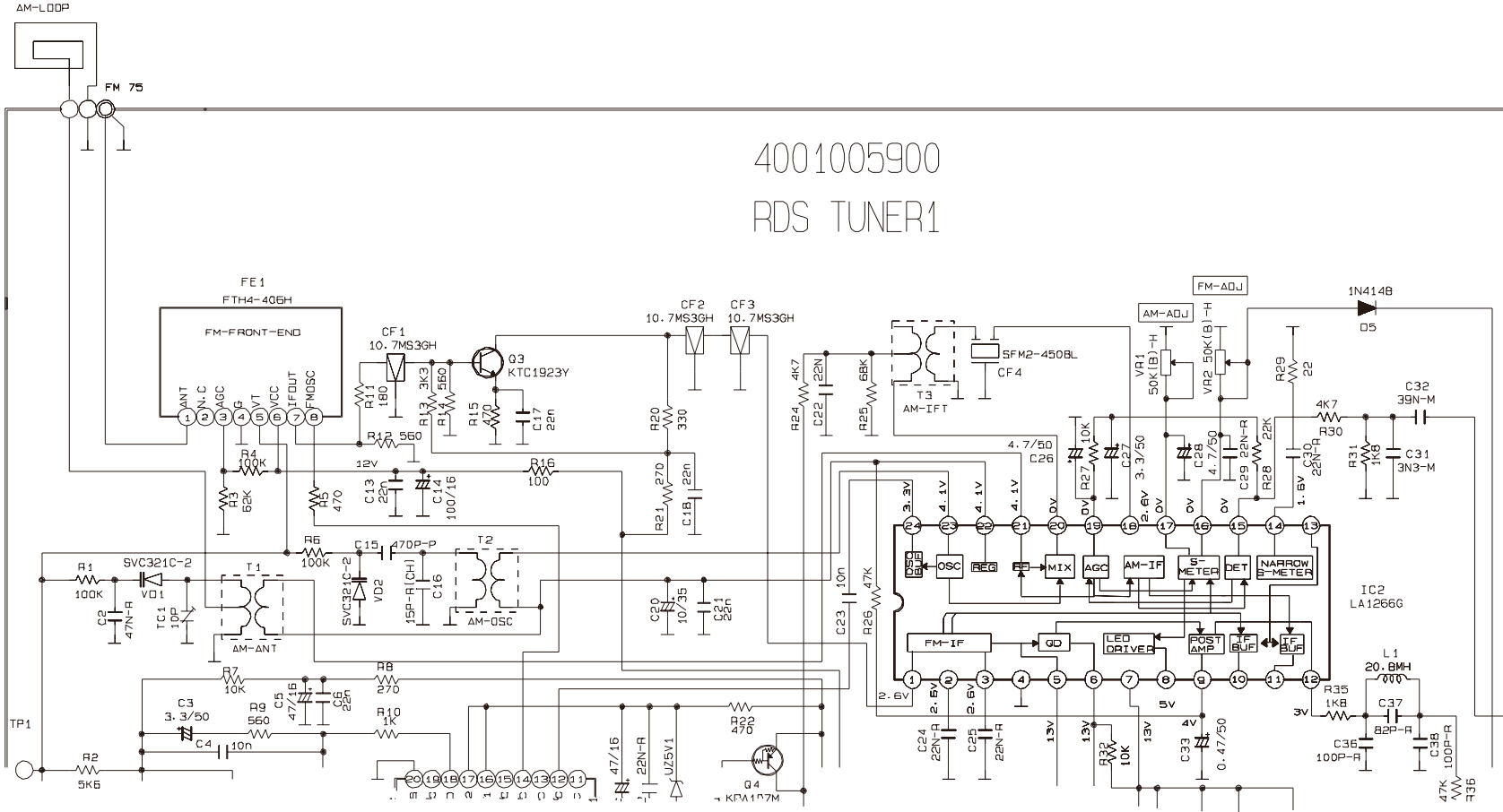
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RDS TUNER1



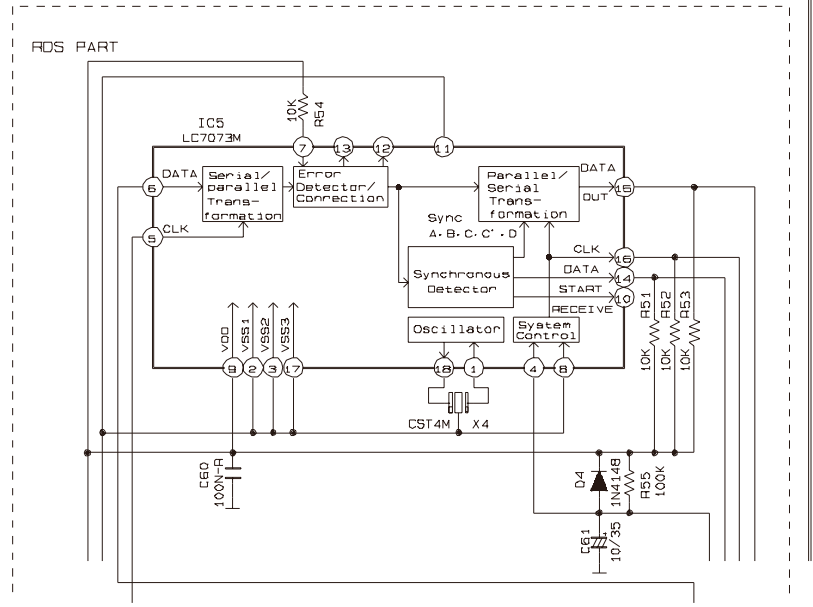
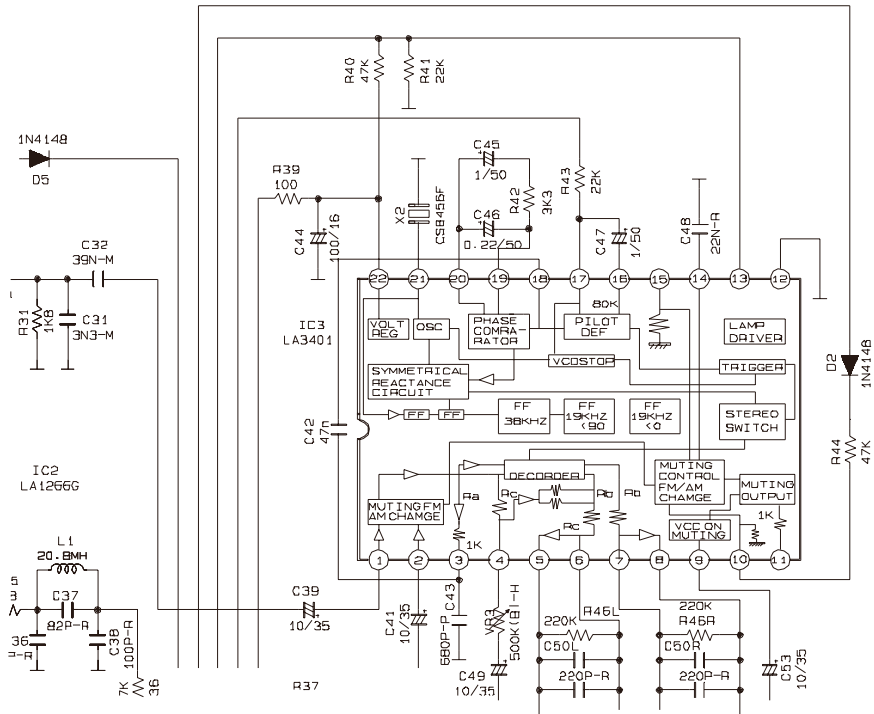
NOTES
1 Resistor values are indicated in ohms unless otherwise specified

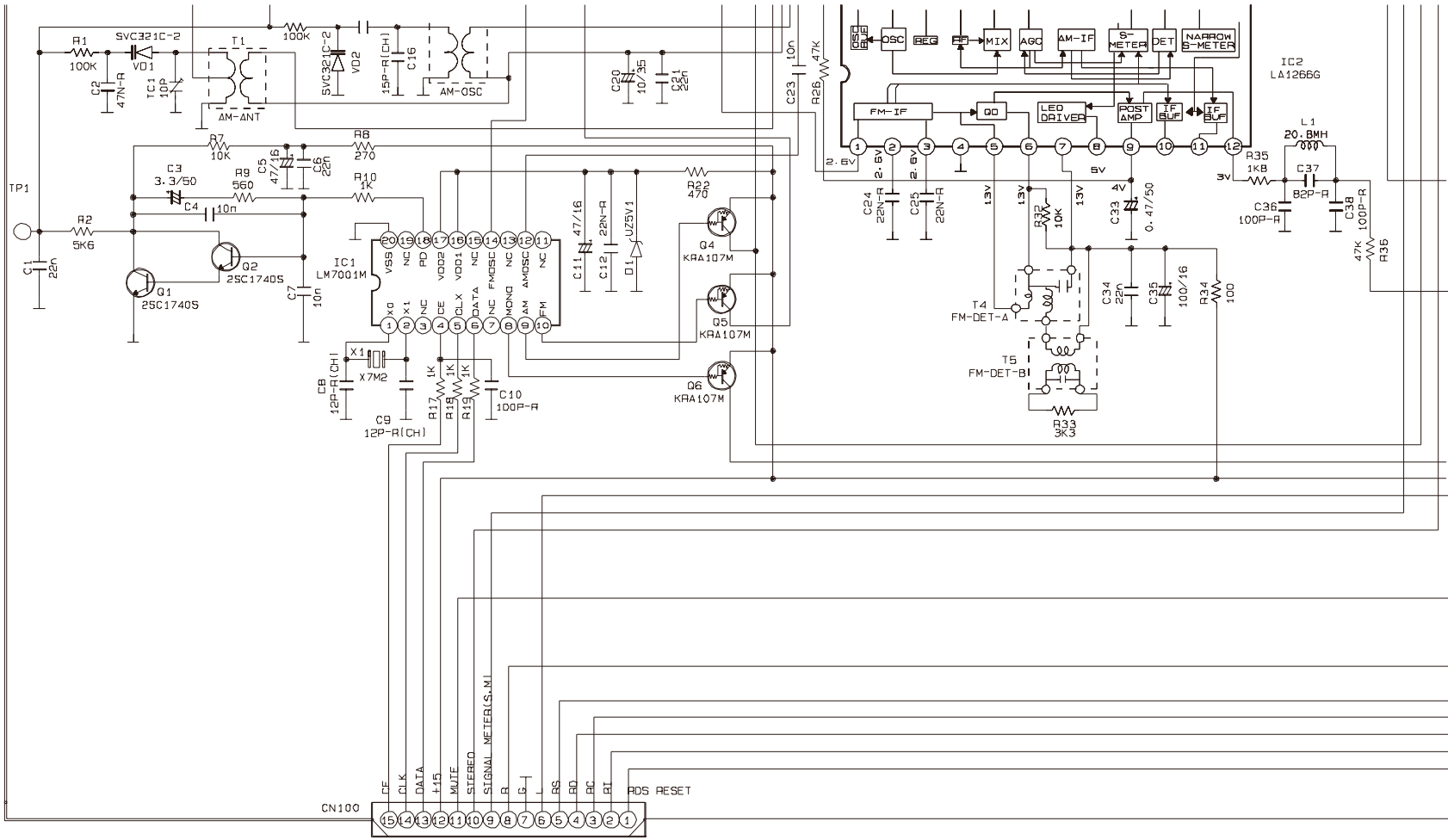
SCHEMATIC DIA

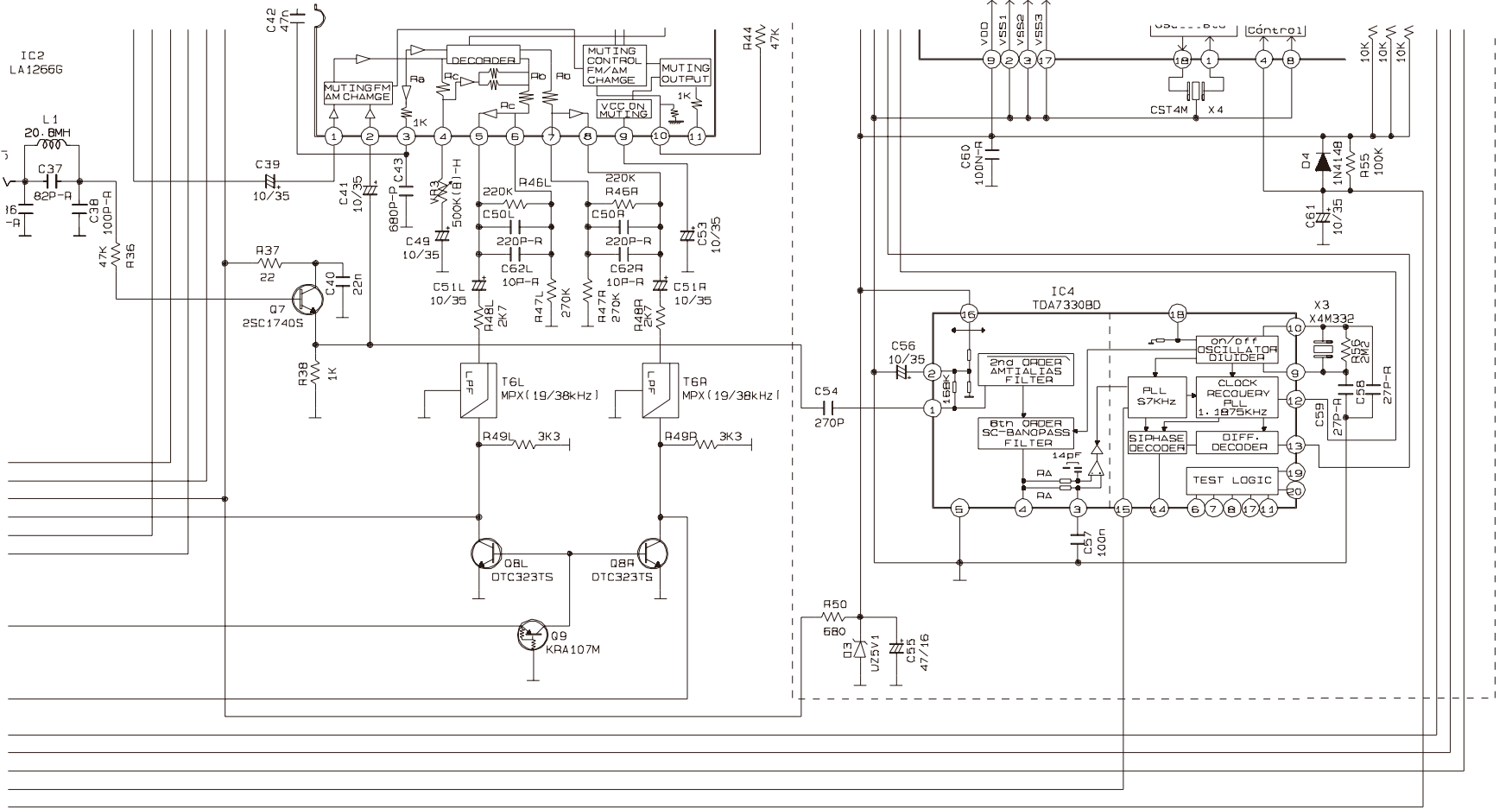
4001005900
RDS TUNER1



DIAGRAM



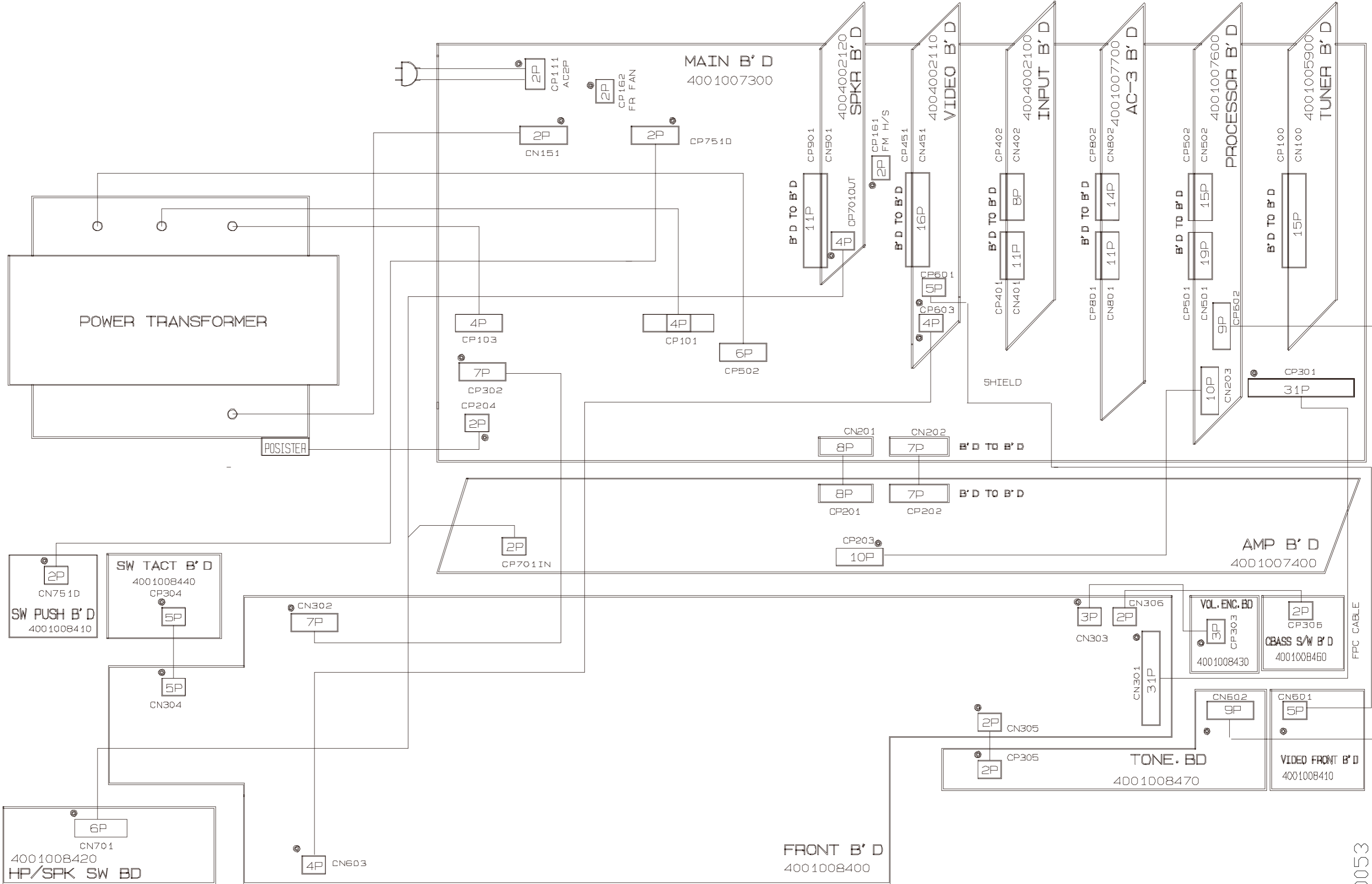




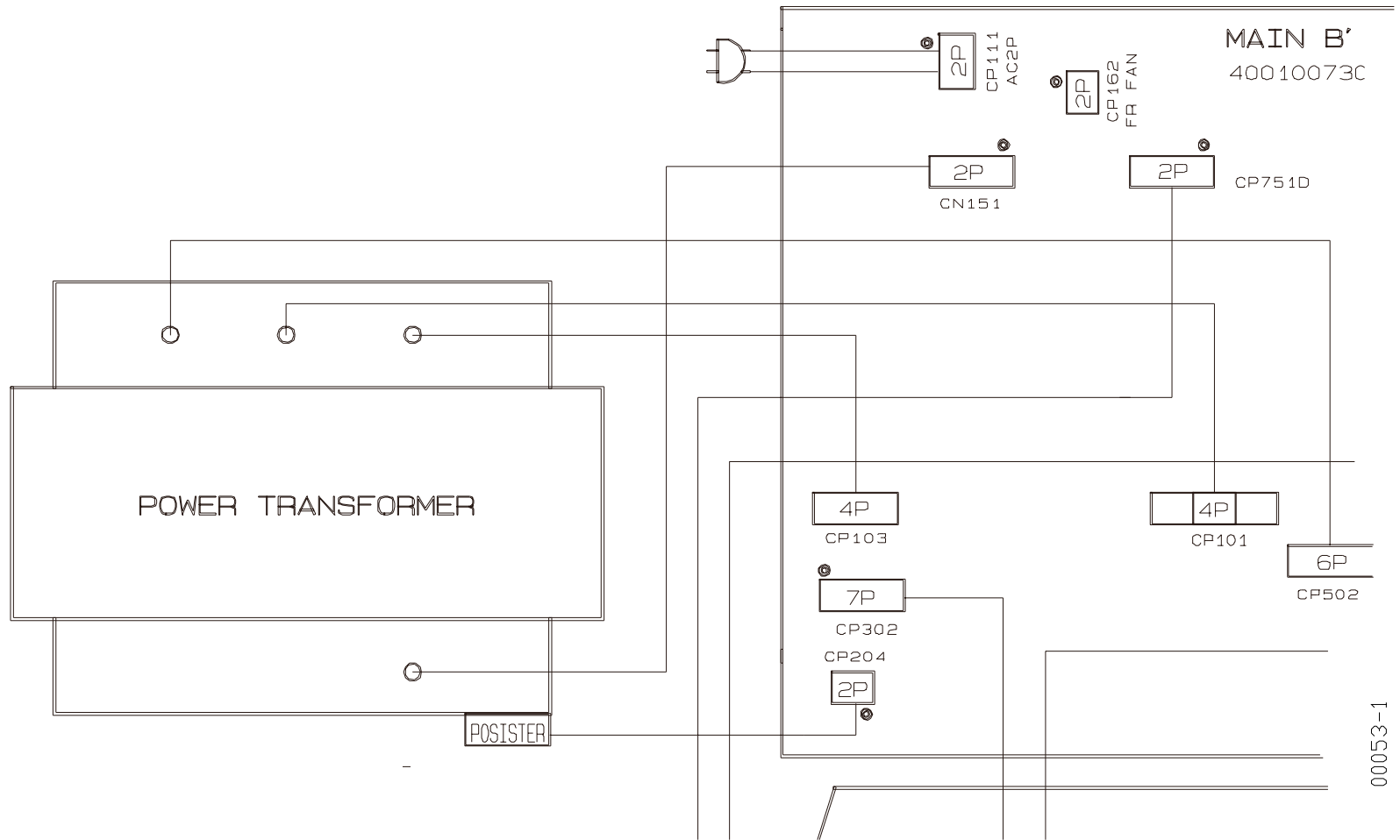
NOTES

1 Resistor values are indicated in ohms unless otherwise specified

WIRING DIAGRAM



WIRING C



WG D I A G R A M

