

harman/kardon

HK3270/3270RDS

STEREO A/V RECEIVER

SERVICE MANUAL



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Woodbury, New York 11797

Rev1 2/2004

SPECIFICATIONS

FRONT AMP SECTION

	Nominal	Limit
Continuous Power Output (STEREO MODE), Input: CD	≥ 70W	≥ 65W
THD: 0.08%, 8ohms		
Both Channel Driven (20Hz - 20KHz) (STEREO MODE)	≥ 95W	≥ 90W
THD: 0.2%, 4ohms, Input: CD		
Both Channel Driven (20Hz - 20KHz)		
THD at 65W, 8ohms, Input: CD		
20Hz	≤ 0.05%	≤ 0.08%
1KHz	≤ 0.05%	≤ 0.08%
20KHz	≤ 0.05%	≤ 0.08%
IM Distortion at 50W, 8ohms,		
20Hz	≤ 0.05%	≤ 0.08%
Input Sensitivity for Rated Power Output (65W)		
Tape Monitor/ CD/ AUX/ TAPE2	200mV	150-250mV
Phono	2.5mV	2.2-2.8mV
S/N Ratio Input Shorted at 1KHz 70W Output (WTD IHF-A)		
CD	≥ 100dB	≥ 95dB
Tone Control		
Bass: 100Hz	+10dB	+10±2dB
	-10dB	-10±2dB
Treble: 10Hz	+10dB	+10±2dB
	-10dB	-10±2dB
Frequency Response at -3dB		
Mode: Stereo, Ref: 1KHz, 10Hz-120KHz 15Hz-100KHz		
Channel Crosstalk Input Shorted by 1Kohms		
100Hz	≥ 60dB	≥ 52dB
1KHz	≥ 60dB	≥ 52dB
10KHz	≥ 50dB	≥ 42dB

GENERAL

	Nominal	Limit
Power Consumption		
At Rated Power All Channel Driven		
USA/Canada	332W	160-200W
Europe	332W	400-500W
Idling at Minimum Volume Control		
USA/Canada	72W	20-40W
Europe	72W	50-90W
Power Supplies:		
USA/Canada	AC120V, 60Hz	
Europe	AC230V, 50Hz	
Dimensions (W×H×D)		
inches	17.4×6.1×16.3	
mm	442×156×415	
Weight(lbs/ kgs)	24.6/ 11.2	

FM SECTION

	Nominal	Limit
Tuning Cover Range		
USA/ Canada: 100KHz STEP	87.50-108.00MHz	
Europe : 50KHz STEP	87.50-108.00MHz	
Mono Usable Sensitivity(75ohms Input, 98MHz)	≤ 12.2dbf	≤ 17.3dbf
Image Rejection (at 98MHz)		
USA/Canada	≥ 40dB	≥ 35dB
Europe	≥ 70dB	≥ 65dB
IF Rejection (at 98MHz)	≥ 80dB	≥ 70dB
50dB Quieting Sensitivity (at 98MHz, 100% MOD.)		
IHF Band Pass Filter		
Stereo	≤ 41.2dbf	≤ 47.3dbf
Distortion (1KHz, 100% MOD. at 98MHz, 65dbf Input)		
IHF Band Pass Filter		
Mono	≤ 0.3%	≤ 0.5%
S/N Ratio (500 Input, 100% MOD. at 98MHz)		
IHF Band Pass Filter		
Stereo	≥ 65dB	≥ 60dB
Frequency Response(-3dB)		
USA/Canada De-Emphasis: 75μs	20Hz-15KHz	40Hz-14KHz
Europe De-Emphasis: 50μs	20Hz-15KHz	40Hz-14KHz
AM suppression at 98MHz		
	≥ 52dB	≥ 47dB
Muting threshold (at 98MHz)	35.2dbf	31.2-39.2dbf
Overload Distortion at 98MHz	0.3%	1%
Capture Ratio at 65dbf	≤ 1.5dB	≤ 2.5dB
Stereo Separation (at 98MHz, 100% MOD., 500μV Input)		
IHF Band Pass Filter	≥ 40dB	≥ 30dB
1KHz		
Tape out Level (at 98MHz)	500mV	350-650mV

AM SECTION

	Nominal	Limit
Tuning Cover Range (MW)		
USA/ Canada: 10KHz STEP	520-1710MHz	
Other : 9KHz STEP	522-1611MHz	
Usable Sensitivity		
999/990KHz	≤ 500μV/m	≤ 1000μV/m
Image Rejection (at 999KHz)	≥ 35dB	≥ 30dB
AGC Figure of Merit (From 100mV/m at 999/1000KHz)		
	≥ 55dB	≥ 50dB
Distortion (999/1000Hz, 30% MOD. 50mV/m Input)		
	≤ 1.0%	≤ 1.5%
Frequency Response (999/1000KHz) at -6dB	80Hz-2.3KHz	100Hz-2KHz
Selectivity (at 999/1000Hz)		
9KHz/ 10KHz	≥ 25dB	≥ 20dB
S/N Ratio (999/1000KHz, With Antenna Input 50mV/m)	≥ 40dB	≥ 35dB
Overload Distortion at 999/1000KHz		
	≥ 1%	≥ 1.5%
TAPE Output Level at 999/1000KH (5mV/m Input)		

ELECTROSTATICALLY SENSITIVE (ES) DEVICES

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

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

CAUTION: Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

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

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing.

Components identified with the IEC symbol **▲** in the parts list are of special significance to safety. When replacing a component identified with **▲**, use only the replacement parts designated, or parts with the same ratings or resistance, wattage, or voltage that are designated in the parts list in this manual.

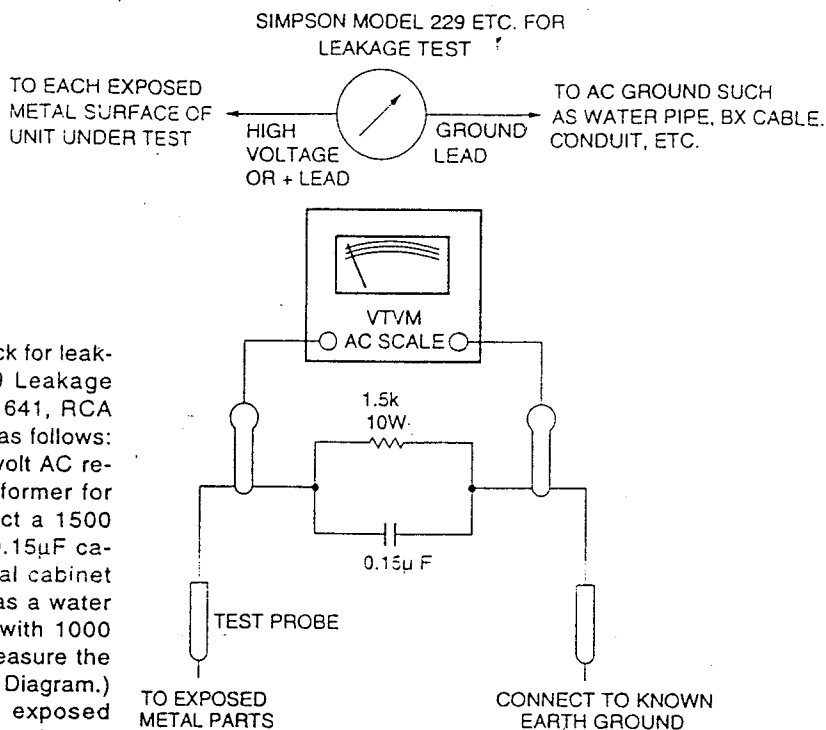
Leakage - current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

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

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

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

A reading of 0.35 volt RMS or more is excessive and indicates a potential shock hazard which must be corrected before returning the unit to the owner.



ALIGNMENT PROCEDURES

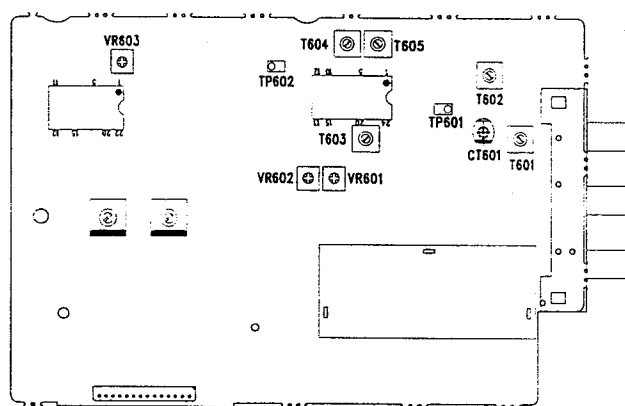
HK3270/HK3270RDS

1. Test Equipment Required

- AM Standard Signal Generator (AM SSG)
- Oscilloscope
- AC Voltmeter
- FM Standard Signal Generator (FM SSG)
- Stereo Modulator
- Audio Generator
- Distortion Meter
- DC Voltmeter
- Frequency Counter

Note: Disconnect external FM antenna prior to alignment

2. Alignment and Test Points

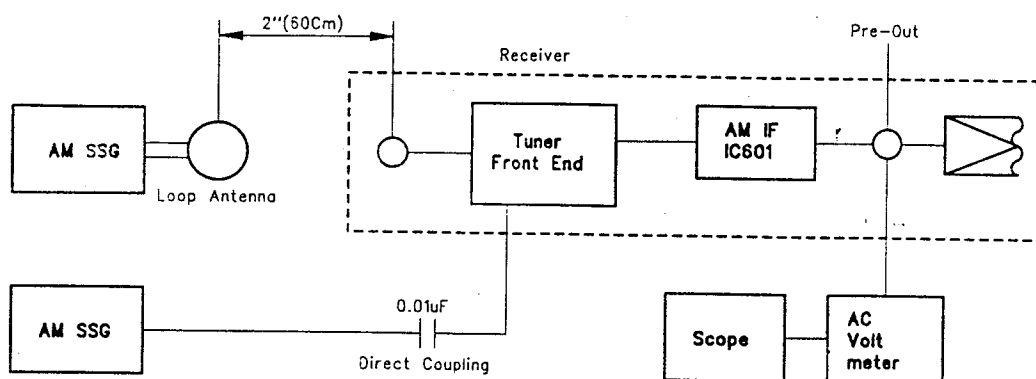


3. AM IF and RF Alignment

Preparation

1. Output of signal Generator should not be higher than necessary to obtain an optimum output reading.
2. Signal Generator Modulation: 30%
3. Switch: Press to AM.

Step	Signal Generator Frequency	Receiver Frequency on the Display	Equipment Connection	Adjustment Point	Adjust for
1	990KHz (400Hz, Mod.)	520KHz	DC Voltmeter TP601	T602	1.2V reading Maximum
2	600KHz (400Hz, Mod.)	600KHz	AC Voltmeter to TAPE OUT jack	T601	reading Maximum
3	1400KHz (400Hz, Mod.)	400KHz	AC Voltmeter to TAPE OUT jack	CT601	reading Maximum
4	990KHz (400Hz, Mod.)	990KHz	AC Voltmeter to TAPE OUT jack	T603	reading FL display "TUNED"
5	990KHz (400Hz, Mod.)	990KHz	Same as Step 1.	VR601	Indicator on receiver with AM SSG Output level of 800 μ V/m



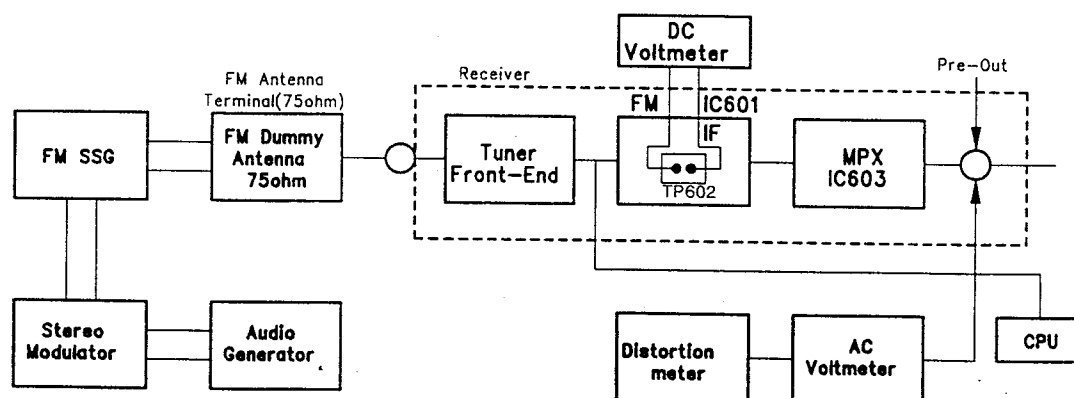
AM Alignment Connection

4. FM IF Alignment

Preparation

1. Signal Generator output should be no higher than necessary to obtain an optimum output reading.
2. Switch Press to FM.
3. Signal generator deviation: 75KHz (HK3270) 40KHz (HK3270RDS)

Step	Signal Generator Frequency	Receiver Frequency on the Display	Equipment Connection	Adjustment Point	Adjust for
1	98.0MHz (1KHz, Mod.)	98.0MHz	DC Voltmeter to TP 602	T604	Zero reading on DC voltmeter
2	98.0MHz (1KHz, Mod.)	98.0MHz	Distortion meter to TAPE OUT jack	T605	Minimum distortion
3	98.0MHz (1KHz, Mod.)	98.0MHz	Same as Step 1	VR602	FL display "TUNED" Indication on receiver with FM SSG output level of 35.2 dbf



FM RF/IF and MPX Alignment Connection

5. MPX Alignment, SM Alignment

HK3270/HK3270RDS

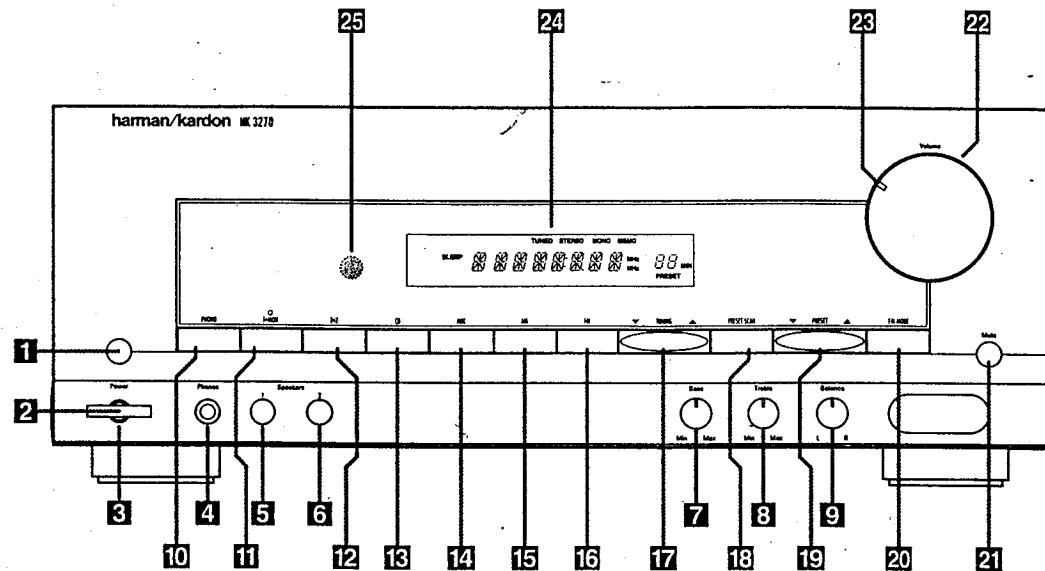
Preparation

1. Switch : Press to FM.
2. Tuner for 98MHz on band.
3. Signal Generator output level : 1000 μ V.
4. Deviation : 75 KHz (HK3270), 40 KHz (HK3270RDS) at 100% modulation of composite signal.
5. Connect Signal Generator to FM antenna terminal through FM dummy antenna (75 Ω).

Step	19KHz Modulation Level	Signal Generator Frequency Setting	Equipment Connection	Adjustment Point	Adjust for
1	7.5KHz Mod.	Composite to channel 1KHz R	AC voltmeter to TAPE OUT jack of R channel	-	Adjust for about 450mV of audio output
2	7.5KHz Mod.	Composite to channel 1KHz L	AC voltmeter to TAPE OUT jack of R channel	VR603	AC voltmeter reading should be at least 40dBbeicw.
3	7.5KHz Mod.	Composite to channel 1KHz R	AC voltmeter to TAPE OUT jack of L channel	VR603	Same as Step 2.

If you could not obtain -40dB reading in Steps 2 and 3 (compared with Step 1), read just VR603 until you obtain -40dB readings for both steps 2 and 3. Nominal is -45dB.

Front Panel Controls



1 Main Power Switch: Press this button to apply power to the HK3270/HK3270RDS.

When the switch is pressed in 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. To turn the unit off and prevent the use of the remote control, this switch should be pressed until it pops out from the front panel so that the word "OFF" may be read at the top of the switch.

NOTE: In normal operation this switch is left in the "ON" position.

2 System Power Control: When the **Main Power Switch** **1** is "ON," press this button to turn on the HK3270/HK3270RDS; 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. A red indicator means that the unit is in the Protect mode, and should be turned off and then checked for a possible speaker wire short circuit.

4 Headphone Jack: This jack may be used to listen to the HK3270/HK3270RDS's output through a pair of headphones. Be Certain that the headphones have a standard 1/4" stereo phone plug.

5 Speaker 1 Button: Press this button to activate the speaker connected to the **Speaker 1** output terminals **16**.

6 Speaker 2 Button: Press this button to activate the speaker connected to the **Speaker 2** output terminals **17**.

7 Bass Control: Turn this control to modify the low-frequency output of the left/right channels by as much as $\pm 10\text{dB}$. Set this control to a suitable position for your taste and room acoustics.

8 Treble Control: Turn this control to modify the high-frequency output of the left/right channels by as much as $\pm 10\text{dB}$. Set this control to a suitable position for your taste and room acoustics.

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

10 Phono Button: Press this button to select the output of a turntable which is connected to the **Phono** inputs **6**.

11 Tape Monitor: Press this button to listen to the output of a tape recorded connected to the **Tape Monitor** inputs. A red LED indicator will illuminate above the button to indicate that the input source is being monitored when the HK3270/HK3270RDS is connected to a three head tape deck or another unit with off-head playback.

12 Tape 2: Press this button to listen to the output of a tape recorder or other device connected to the **Tape 2** inputs **11**.

13 CD Button: Press this button to listen to the output of a CD player connected to the **CD** inputs **7**.

14 AUX Button: Press this button to listen to the output of device connected to the **AUX** inputs **8**.

15 AM Button: Press this button to listen to radio stations in the AM (MW) frequency band.

16 FM Button: Press this button to listen to radio stations in the FM frequency band.

17 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 signal is tuned, the **TUNED** indicator will illuminate in the **Information Display** **24**. 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.

18 Preset Scan: Press this button to automatically scan through the stations that have been programmed in the HK3270/HK3270RDS's memory. The tuner will play five seconds of each station before moving to the next preset station. To stop the scan when the desired station is heard, press the button again.

19 Preset Stations Selector: Press this button to select stations that have been entered into the preset memory.

20 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** **24**, 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.

21 Mute: Press this button to momentarily silence the speaker output of the HK3270/HK3270RDS.

22 Volume Control: Turn the knob clockwise to increase volume, counterclockwise to decrease the volume.

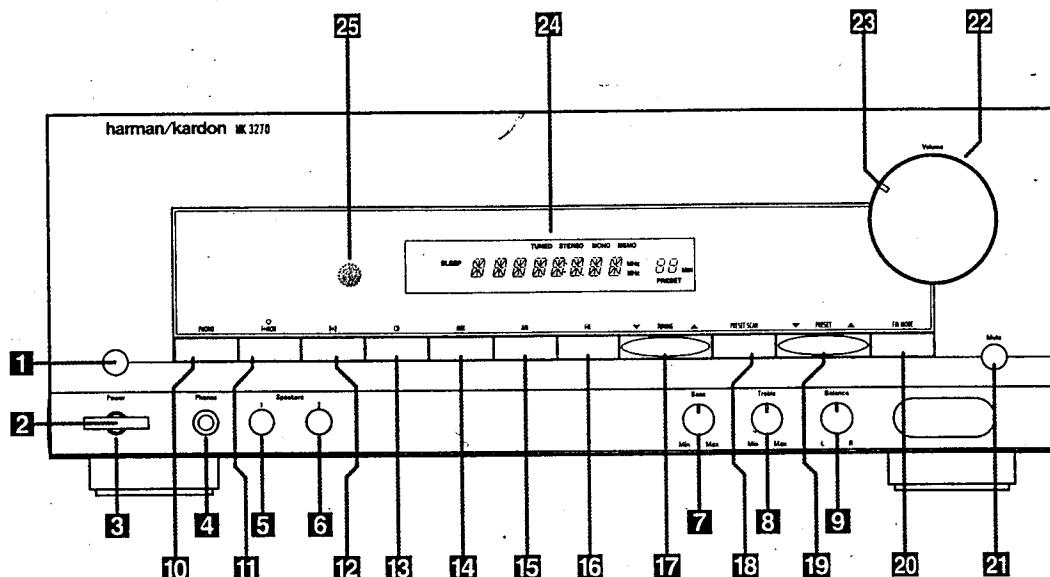
23 Volume/ Mute Indicator: This indicator will glow green when the HK3270/HK3270RDS is turned on. Its position will enable you to judge the relative volume of the unit even when the speakers are muted or turned off. When the indicator is pointing towards the left, at an "8 o'clock" position, the volume is low; when it is pointing to the right, as in a "3 o'clock" position, the volume is loud. When the unit has been muted, pressing the **Mute** button **21** the indicator will flash.

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

25 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.

CONTROLS AND FUNCTIONS

Front Panel Controls



1 Main Power Switch: Press this button to apply power to the HK3270/HK3270RDS.

When the switch is pressed in 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. To turn the unit off and prevent the use of the remote control, this switch should be pressed until it pops out from the front panel so that the word "OFF" may be read at the top of the switch.

NOTE: In normal operation this switch is left in the "ON" position.

2 System Power Control: When the **Main Power Switch** **1** is "ON," press this button to turn on the HK3270/HK3270RDS; 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. A red indicator means that the unit is in the Protect mode, and should be turned off and then checked for a possible speaker wire short circuit.

4 Headphone Jack: This jack may be used to listen to the HK3270/HK3270RDS's output through a pair of headphones. Be certain that the headphones have a standard 1/4" stereo phone plug.

5 Speaker 1 Button: Press this button to activate the speaker connected to the **Speaker 1** output terminals **16**.

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7 Bass Control: Turn this control to modify the low-frequency output of the left/right channels by as much as $\pm 10\text{dB}$. Set this control to a suitable position for your taste and room acoustics.

8 Treble Control: Turn this control to modify the high-frequency output of the left/right channels by as much as $\pm 10\text{dB}$. Set this control to a suitable position for your taste and room acoustics.

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

10 Phono Button: Press this button to select the output of a turntable which is connected to the **Phono** inputs **6**.

11 Tape Monitor: Press this button to listen to the output of a tape recorded connected to the Tape Monitor inputs. A red LED indicator will illuminate above the button to indicate that the input source is being monitored when the HK3270/ HK3270RDS is connected to a three head tape deck or another unit with off-head playback.

12 Tape 2: Press this button to listen to the output of a tape recorder or other device connected to the **Tape 2** inputs **11**.

13 CD Button: Press this button to listen to the output of a CD player connected to the **CD** inputs **7**.

14 AUX Button: Press this button to listen to the output of device connected to the **AUX** inputs **8**.

15 AM Button: Press this button to listen to radio stations in the AM (MW) frequency band.

16 FM Button: Press this button to listen to radio stations in the FM frequency band.

17 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 signal is tuned, the **TUNED** indicator will illuminate in the **Information Display** **24**. 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.

18 Preset Scan: Press this button to automatically scan through the stations that have been programmed in the HK3270/ HK3270RDS's memory. The tuner will play five seconds of each station before moving to the next preset station. To stop the scan when the desired station is heard, press the button again.

19 Preset Stations Selector: Press this button to select stations that have been entered into the preset memory.

20 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** **24**, 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.

21 Mute: Press this button to momentarily silence the speaker output of the HK3270/ HK3270RDS.

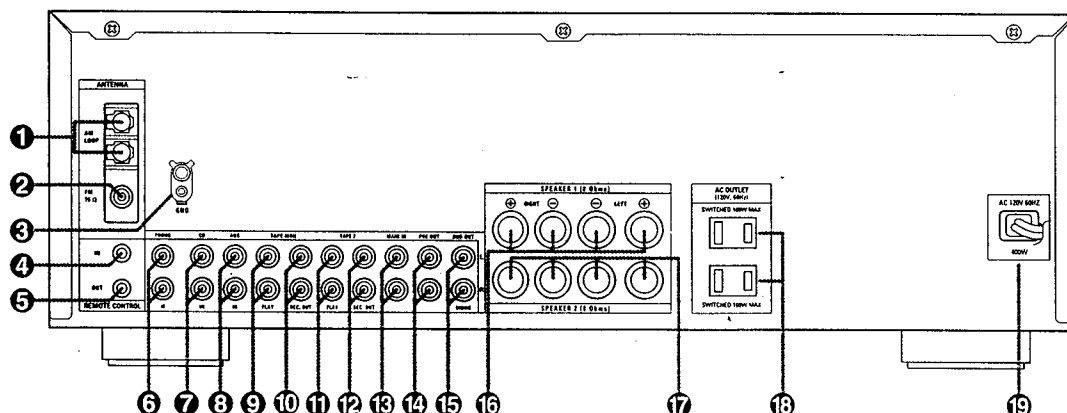
22 Volume Control: Turn the knob clockwise to increase volume, counterclockwise to decrease the volume.

23 Volume/ Mute Indicator: This indicator will glow green when the HK3270/ HK3270RDS is turned on. Its position will enable you to judge the relative volume of the unit even when the speakers are muted or turned off. When the indicator is pointing towards the left, at an "8 o'clock" position, the volume is low; when it is pointing to the right, as in a "3 o'clock" position, the volume is loud. When the unit has been muted, pressing the **Mute** button **21** the indicator will flash.

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

25 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.

Rear Panel Connections



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

4 Remote IR In: If the HK3270/HK3270RDS 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.

5 Remote IR Out: This connection permits the IR sensor in the receiver to serve other remote controlled devices. Connect this jack to the "IR IN" jack on Harman Kardon or other compatible equipment.

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

7 CD Inputs: Connect these jacks to the output of a compact disc player or CD changer.

8 Aux Inputs: Connect these jacks to the line-level output of any audio device such as a TV, cable converter or portable audio player.

9 Tape Monitor Play/In: Connect these jacks to the Play/Out jacks of an audio recorder.

10 Tape Monitor Record/Out: Connect these jacks to the Rec/In jacks of an audio recorder.

NOTE: When these jacks are connected to a three-head recorder or another device with off-head playback, it will be possible to monitor the source being recorded.

11 Tape 2 Play/In: Connect these jacks to the PLAY/OUT jacks of a second audio recorder.

12 Tape 2 Record/Out: Connect these jacks to the Rec/In jacks of a second audio recorder.

13 Main In: These jacks are the input to the HK3270/HK3270RDS's power amplifier. Unless an external power amplifier is used, the jumper pins should remain connected to the **Preamp Out** jacks **14**.

14 Preamp Out: These jacks provide an output for the left and right channels to an optional external amplifier. In normal operation, unless an external power amplifier is used, the jumper pins should remain connected to the **Main In** jacks **13**.

15 Subwoofer Out: Connect these jacks to the line level input of a powered subwoofer. If an external subwoofer amplifier is used, connect this jack to the subwoofer amplifier input.

16 Speaker 1 Terminals: Connect these terminals to the appropriate terminals on your speakers.

17 Speaker 2 Terminals: Connect these terminals to the appropriate terminals on your speakers.

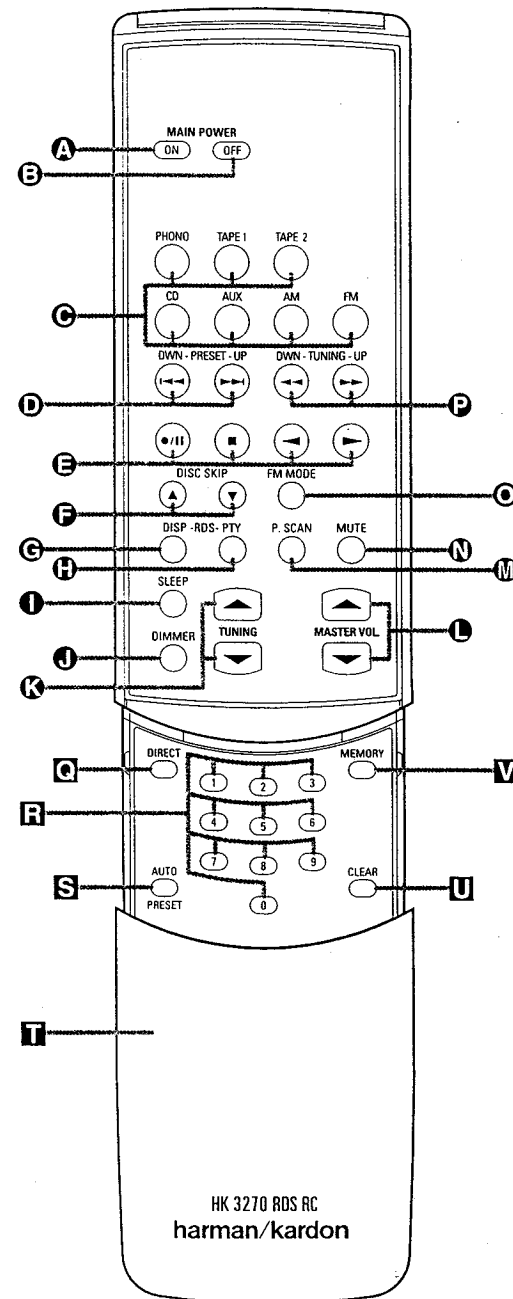
18 Accessory Outlets: These outlets may be used to power low-current draw devices such as CD players or cassette decks. Note that the power to these outlets will remain on as long as the **Main Power Switch 1** is pressed in. These outlets will continue to be powered even when the unit is in the Standby mode. To remove power to these outlets, the **Main Power Switch 1** must be placed in the OFF position.

NOTE: The power consumption of the devices plugged into these outlets should not exceed 100 watts.

19 Power Cable: Connect the AC plug to a non-switched AC wall output.

Remote Control Functions

HK3270/HK3270RDS



A Main Power On: When the HK3270/ HK3270RDS is in the Standby mode, as indicated by the Power Indicator glowing amber, press this button to turn the HK3270/ HK3270RDS on.

B Main Power Off: When the HK3270/ HK3270RDS is turned on, press this button to place it in the Standby mode. Note that in this condition, the unit is still connect to AC Power.

C Source Selectors: Press these buttons to select an input source for the HK3270/ HK3270RDS.

D Preset Up/ Down: When the tuner is in use, these buttons scroll through the stations that have been programmed into the HK3270/ HK3270RDS's memory. These buttons also control the track Skip Up and Down on compatible Harman Kardon compact disc players/ changers.

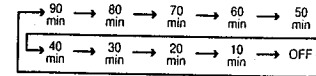
E Transport Controls: These buttons are used to control Play, Play Forward, Play Reverse, Stop, Pause and Record functions on compatible Harman Kardon compact disc players/ changers and cassette tape decks.

F Disc Skip: These buttons do not have any functions when controlling the HK3270/ HK3270RDS, but they operate the Disc Skip functions of compatible Harman Kardon compact disc changers.

G RDS Display Button: Press this button to view the various displays of the RDS options that are available when a station is transmitting RDS data.

H RDS PTY Button: Press this button to start a search for a specific PTY type using the RDS capabilities of the HK3270 RDS.

I Sleep Button: Press this button to place the unit in the Sleep mode. After the time shown in the display, the HK3270/ HK3270RDS will automatically go into the Standby mode. Each press of the button changes the time until turn-off in the following order:



J Dimmer: Press this button once to reduce the brightness of the front panel display to half the normal intensity. Press it again to turn the front panel display completely off. When the display is completely off, press the button to return to normal brightness.

K Tuning: Press these buttons to tune up or down through a selected frequency band.

L Master Volume: Press these buttons to raise or lower the HK3270/ HK3270RDS's volume.

M P-Scan: Press this button to automatically scan through the list of stations that are programmed into the HK3270/ HK3270RDS's tuner memory. When the button is pressed, each preset station will play for five seconds before the next station is selected. Press the button again when the desired station is heard to stop the preset scan.

N Mute: Press this button to momentarily silence the HK3270/ HK3270RDS.

O FM Mode: Press this button when the tuner is in use in the FM band to switch to monaural reception if the station is weak and noisy. When the MONO indicator is on, FM reception will be monaural regardless of the strength of the tuned FM station.

P Tuning Up/Down: When the tuner is in use, these buttons will tune up or down through the selected frequency band. 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. These buttons will also control Fast Forward and Fast Reverse (or Rewind) for compatible Harman Kardon compact disc players/ changers and cassette tape decks.

Q Direct: Press this button to select a radio station by entering its frequency using the Numeric Keys **R**.

R Numeric Keys: These buttons serve as a ten-button numeric keypad to enter tuner preset positions.

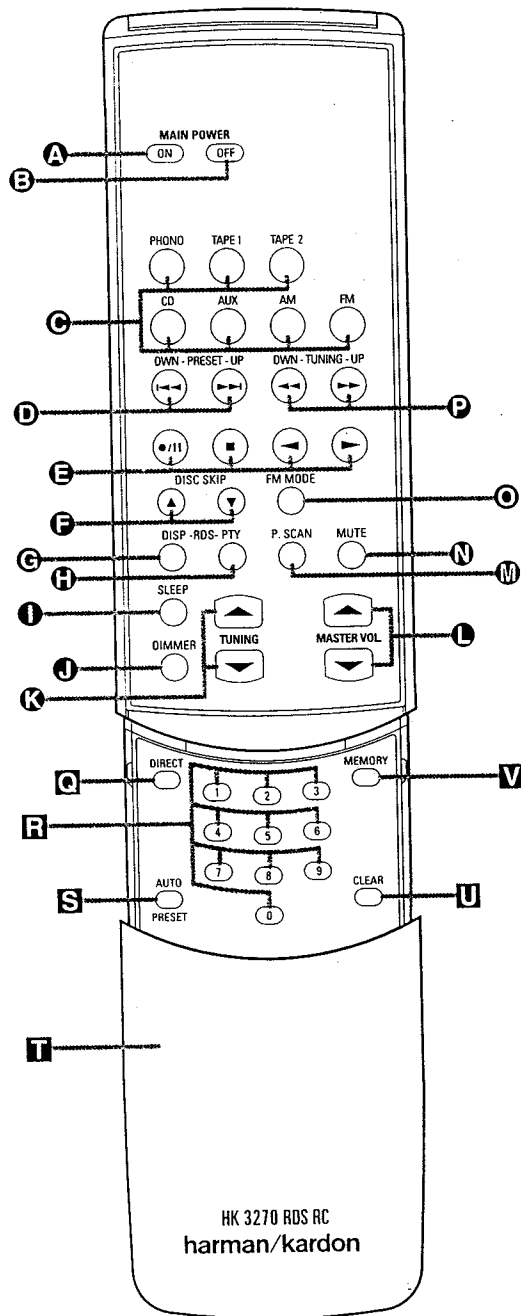
S Auto Preset: When the tuner and FM band have been selected, this button may be used to automatically program the tuner presets for all active stations. To start the auto preset scan, press and hold the button. Note that the MEMO and PRESET indicators will flash. After a few seconds, the tuner will start to "look" for active stations, as shown by increasing frequency numbers in the Information Display. Release the button and note that the tuner will briefly stop at each active station and add a preset number to the memory. If the FM tuner found less the 30 FM stations with acceptable signal strength, the Auto Preset tuning will scan two more cycles or until the remaining vacant preset memory spaces have been filled with those found in the first scan. The scan will stop when all 30 preset memory spaces have been filled or when three scans through the band have been completed.

T Secondary Control Cover: This sliding cover normally is in the "up" position so that it hides the secondary controls. To access these controls, place your thumb on the small recessed area at the top center of the control, and gently press the cover down and towards you.

U Clear Button: This button is used to clear preset memory information for the HK3270/ HK3270RDS's tuner.

V Memory: Press this button to open a memory position that stores a preset location for the HK3270/ HK3270RDS's tuner.

Remote Control Functions



A Main Power On: When the HK3270/ HK3270RDS is in Standby mode, as indicated by the Power Indicator glowing, press this button to turn the HK3270RDS on.

B Main Power Off: When the HK3270/ HK3270RDS is on, press this button to place the unit in Standby mode. Note that in Standby mode, the unit is still on Power.

C Source Selectors: Press these buttons to select an input source for the HK3270/ HK3270RDS.

D Preset Up/ Down: When a station is in use, these buttons select the stations that have been programmed into the HK3270RDS's memory. These buttons also control the track Skip function on compatible Harman Kardon compact disc players/ changers.

E Transport Controls: These buttons are used to control the transport functions: Forward, Play Reverse, Stop, and Record functions on compatible Harman Kardon compact disc players/ changers and cassette decks.

F Disc Skip: These buttons have any functions when used with the HK3270/ HK3270RDS. They operate the Disc Skip function on compatible Harman Kardon compact disc players/ changers.

G RDS Display Button: Press this button to view the various RDS options that are available when a station is transmitting RDS data.

H RDS PTY Button: Press this button to start a search for a station type using the RDS capability of the HK3270 RDS.

I Sleep Button: Press this button to place the unit in the Sleep mode. The time shown in the display will automatically go into the Sleep mode. Each press of the button changes the time until the following order:

When the
OS is in the
indicated by the
ving amber, press
HK3270/

When
RDS is turned on,
ace it in the
that in this
till connect to AC

s: Press these
input source for
RDS.

n: When the tuner
ns scroll through
e been
HK3270/
ory. These buttons
Skip Up and
Harman Kardon
/ changers.

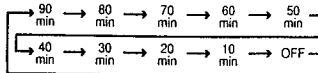
ols: These but-
ontrol Play, Play
se, Stop, Pause
s on compatible
pact disc players/
te tape decks.

buttons do not
hen controlling
RDS, but they
functions of
Kardon compact

ttion: Press this
rious displays of
are available
smitting RDS

: Press this but-
for a specific PTY
capabilities of the

ess this button to
leep mode. After
display, the
S will
the Standby
the button
i turn-off in the



Dimmer: Press this button once to reduce the brightness of the front panel display to half the normal intensity. Press it again to turn the front panel display completely off. When the display is completely off, press the button to return to normal brightness.

Tuning: Press these buttons to tune up or down through a selected frequency band.

Master Volume: Press these buttons to raise or lower the HK3270/ HK3270RDS's volume.

P • Scan: Press this button to automatically scan through the list of stations that are programmed into the HK3270/ HK3270RDS's tuner memory. When the button is pressed, each preset station will play for five seconds before the next station is selected. Press the button again when the desired station is heard to stop the preset scan.

Mute: Press this button to momentarily silence the HK3270/ HK3270RDS.

FM Mode: Press this button when the tuner is in use in the FM band to switch to monaural reception if the station is weak and noisy. When the **MONO** indicator is on, FM reception will be monaural regardless of the strength of the tuned FM station.

Tuning Up/Down: When the tuner is in use, these buttons will tune up or down through the selected frequency band. 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. These buttons will also control Fast Forward and Fast Reverse (or Rewind) for compatible Harman Kardon compact disc players/ changers and cassette tape decks.

Direct: Press this button to select a radio station by entering its frequency using the **Numeric Keys**.

Numeric Keys: These buttons serve as a ten-button numeric keypad to enter tuner preset positions.

Auto Preset: When the tuner and FM band have been selected, this button may be used to automatically program the tuner presets for all active stations. To start the auto preset scan, press and hold the button. Note that the **MEMO** and **PRESET** indicators will flash. After a few seconds, the tuner will start to "look" for active stations, as shown by increasing frequency numbers in the Information Display. Release the button and note that the tuner will briefly stop at each active station and add a preset number to the memory. If the FM tuner found less the 30 FM stations with acceptable signal strength, the Auto Preset tuning will scan two more cycles or until the remaining vacant preset memory spaces have been filled with those found in the first scan. The scan will stop when all 30 preset memory spaces have been filled or when three scans through the band have been completed.

Secondary Control Cover: This sliding cover normally is in the "up" position so that it hides the secondary controls. To access these controls, place your thumb on the small recessed area at the top center of the control, and gently press the cover down and towards you.

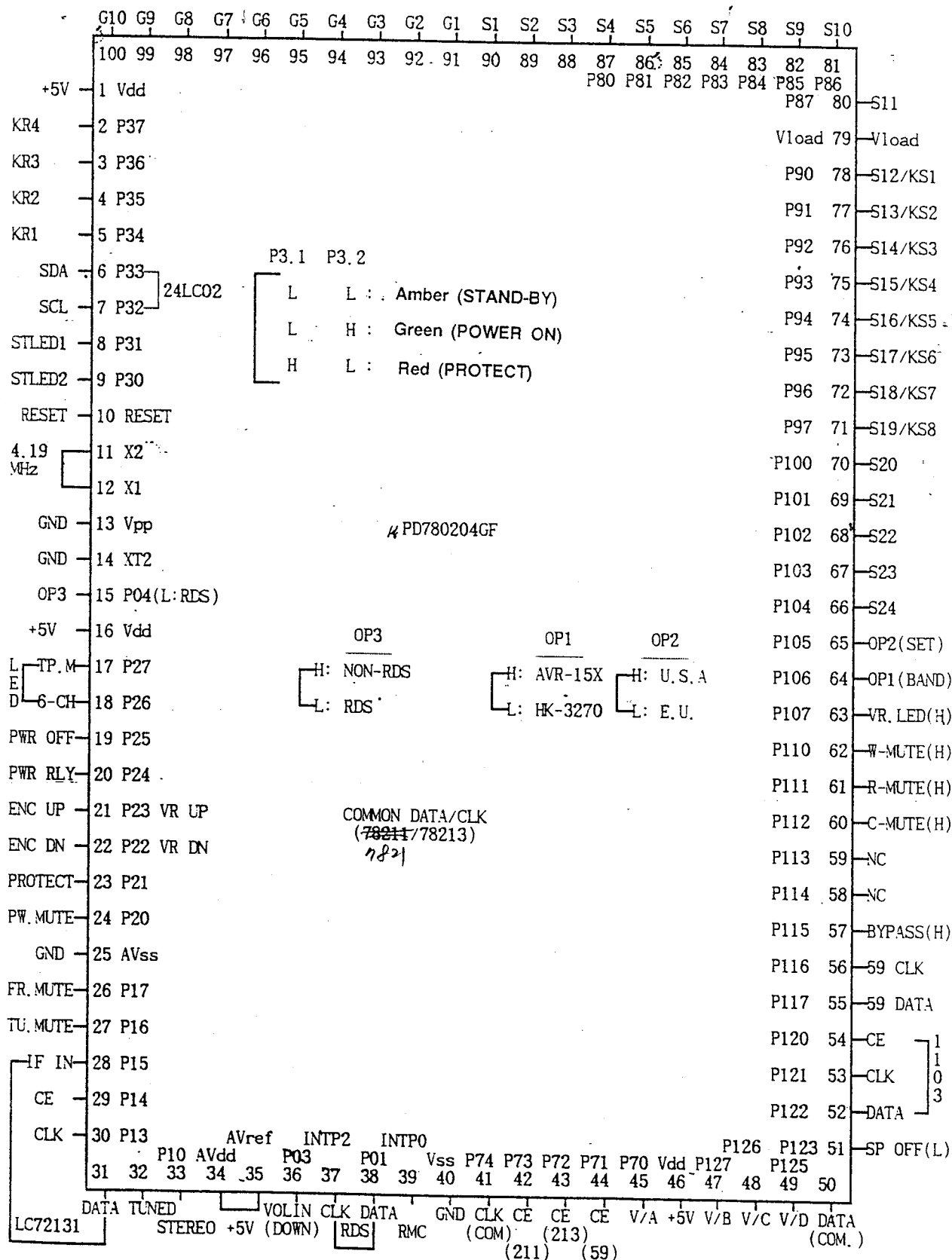
Clear Button: This button is used to clear preset memory information for the HK3270/ HK3270RDS's tuner.

Memory: Press this button to open a memory position that stores a preset location for the HK3270/ HK3270RDS's tuner.

CIRCUIT DESCRIPTION

CPU(IC701): μ PD780204GF

1. Pin Description & Block Diagram



2. Input and Output Terminal Functions

< CPU PIN DISCRIPTION >

μPD780204GF QFP TYPE

PIN NO	PIN NAME	I/O	ACTIVE	PORT NAME	REMARK
1	Vdd	-	H	+5 V	SYSTEM POWER SUPPLY
2	P37	I	H	KR4	KEY READ 4
3	P36	I	H	KR3	KEY READ 3
4	P35	I	H	KR2	KEY READ 2
5	P34	I	H	KR1	KEY READ 1
6	P33	I/O	H	SDA	EEPROM DATA } 24LC02
7	P32	O	H	SCL	EEPROM CLOCK }
8	P31	O	H/L	PWR LED1	L Amber, L Green, H Red
9	P30	O	H/L	PWR LED2	L STBY, H POWER, L PROT }
10	RESET	I	L	SYSTEM RESET	LOW RESET
11	X2	-	-	MAIN OSC.	MAIN SYSTEM OSCILLATION
12	X1	I	-	4.19MHz	
13	Vpp	-	L	connect to Vss	PROM WRITING
14	XT2	-	-	OPEN	NOT USED
15	P04	I	L	OP3	OPTION "L": RDS
16	Vdd	-	H	+5 V	SYSTEM POWER SUPPLY
17	P27	O	H	TAPE/M LED	TAPE MONITOR LED
18	P26	O	H	6-CH LED	6-CHANNEL LED
19	P25	I	L	POWER OFF	POWER OFF: "L"
20	P24	O	H	POWER RELAY	POWER ON: "H"
21	P23	I/O	H/L	ENCODER/VR.UP	AVR5/18: ENCODER IN
22	P22	I/O	H/L	ENCODER/VR.DN	HK3270 : VOLUME OUTPUT
23	P21	I	L	PROTECT	PROTECT DETECT IN : "L"
24	P20	O	L	POWER MUTE	MUTE ON: "L"
25	AVss	-	L	GND	A/D GND
26	P17	O	L	F_MUTE	MUTE ON: "L"
27	P16	O	H	T_MUTE	MUTE ON: "H"
28	P15	I	H/L	IF IN	IF COUNTER IN (LC7218)
29	P14	O	H	PLL CE	PLL CHIP ENABLE (LC7218)
30	P13	O	H	PLL CLK	PLL CLOCK (LC7218)
31	P12	O	H	PLL DATA	PLL DATA (LC7218)
32	P11	I	L	TUNED	TUNED IN ON: "L"

PIN.NO	PIN NAME	I/O	ACTIVE	PORT NAME	REMARK
33	P10	I	L	STEREO	STEREO IN ON: "L"
34	AVdd	-	H	+5 V	A/D Vdd
35	AVref	I	L	GND	A/D GND
36	INTP3	I	L	ENC IN(DOWN)	ENCODER IN (DOWN)
37	INTP2	I	L	CLK	RDS RDS CLOCK IN "L"
38	P01	I	H	DATA	RDS DATA IN
39	INTP0	I	L	REMOCON IN	REMOCON IN
40	Vss	-	L	GND	SYSTEM GND
41	P74	O	H	CLK (COMMON)	COMMON CLOCK(7821-1/-3)
42	P73	O	H	CE (7821-1)	CHIP ENABLE(7821-1)
43	P72	O	H	CE (7821-3)	CHIP ENABLE(7821-3)
44	P71	O	H	CE (9459)	VOLUME IC CHIP ENABLE(9459)
45	P70	O	H/L	VID A	VIDEO CONTROL A
46	Vdd	-	H	+5 V	POWER SUPPLY
47	P127	O	H/L	VID B	VIDEO CONTROL B
48	P126	O	H/L	VID C	VIDEO CONTROL C
49	P125	O	H/L	VID D	VIDEO CONTROL D
50	P124	O	H	DATA(COMMON)	COMMON DATA(7821-1/-3)
51	P123	I	L	SP OFF	SPEAKER OFF: "L"
52	P122	O	H	DATA(1103)	DOLBY IC. 1103 DATA
53	P121	O	L	CLK (1103)	CLOCK
54	P120	O	L	CE. (1103)	CHIP ENABLE
55	P117	O	H	DATA(9459)	VOLUME IC. TC9459 DATA
56	P116	O	H	CLK (9459)	CLOCK
57	P115	O	H	BYPASS(1103)	DOLBY IC. 1103 BYPASS: "H"
58	P114	O	-	REMAINED	REMAINED
59	P113	O	-	REMAINED	REMAINED
60	P112	O	L	C_MUTE	CENTER MUTE ON: "L"
61	P111	O	L	R_MUTE	REAR MUTE ON: "L"
62	P110	O	L	W_MUTE	WOOFER MUTE ON: "L"
63	P107	O	H	VR. LED	VOLUME LED ON: "H"
64	P106	O	L/H	OP1	H: USA BAND, L: EU. BAND
65	P105	O	L/H	OP2	H: AVR5/18, L: HK3270
66	FIP33	O	H	S24	FIP SEGMENT OUTPUT
67	FIP32	O	H	S23	
68	FIP31	O	H	S22	
69	FIP30	O	H	S21	

PIN NO	PIN NAME	I/O	ACTIVE	PORT NAME	REMARK
70	FIP29	0	H	S20	FIP SEGMENT OUTPUT FIP SEG19/KEY SCAN 8 18/KEY SCAN 7 17/KEY SCAN 6 16/KEY SCAN 5 15/KEY SCAN 4 14/KEY SCAN 3 13/KEY SCAN 2 12/KEY SCAN 1
71	FIP28	0	H	S19/KS8	
72	FIP27	0	H	S18/KS7	
73	FIP26	0	H	S17/KS6	
74	FIP25	0	H	S16/KS5	
75	FIP24	0	H	S15/KS4	
76	FIP23	0	H	S14/KS3	
77	FIP22	0	H	S13/KS2	
78	FIP21	0	H	S12/KS1	
79	Vload	-	-	Vload	FIP DRIVER VOLTAGE FIP SEGMENT OUTPUT
80	FIP20	0	H	S11	
81	FIP19	0	H	S10	
82	FIP18	0	H	S9	
83	FIP17	0	H	S8	
84	FIP16	0	H	S7	
85	FIP15	0	H	S6	
86	FIP14	0	H	S5	
87	FIP13	0	H	S4	
88	FIP12	0	H	S3	
89	FIP11	0	H	S2	FIP GRID OUTPUT
90	FIP10	0	H	S1	
91	FIP9	0	H	G1	
92	FIP8	0	H	G2	
93	FIP7	0	H	G3	
94	FIP6	0	H	G4	
95	FIP5	0	H	G5	
96	FIP4	0	H	G6	
97	FIP3	0	H	G7	
98	FIP2	0	H	G8	
99	FIP1	0	H	G9	
100	FIP0	0	H	G10	

3. KEY MATRIX IN THE CPU (Front Panel)

	P34/KR1 (IC701 Pin5)	P35/KR2 (IC701 Pin4)	P36/KR3 (IC701 Pin3)	P37/KR4 (IC701 Pin2)
	DELAY	SP CHANNEL	CENTER MODE	<< SET(&)
	8010	8020	8040	8080
S19/KS8 P97 (IC701 Pin71)	SET	SET >>(&)	MUTE /*MUTE	SURR OFF
	4010	4020	4040	4080
S18/KS7 P96 (IC701 Pin72)	TEST TONE	THEATER	HALL2	HALL1
	2010	2020	2040	2080
S17/KS6 P95 (IC701 Pin73)	3 STEREO	PRO. LOGIC	FM MODE /*FM MODE	PRE UP(&) /*PRE UP(&)
	1010	1020	1040	1080
S16/KS5 P94 (IC701 Pin74)	PRE DOWN(&)/ *PRE DOWN (*)	PRE SCAN /*PRE SCAN	TUNNING UP /*TUNNING UP	TUNNING DN(&) /*TUNN- DN(&)
	0810	0820	0840	0880
S15/KS4 P93 (IC701 Pin75)	AM / FM /*FM	6-CH /*AM	VIDEO3	VIDEO2
	0410	0420	0440	0480
S14/KS3 P92 (IC701 Pin76)	VIDEO1/ *AUX	DVD /*TAPE2	CD /*CD	TAPE MON /*TAPE MON
	0210	0220	0240	0280
S13/KS2 P91 (IC701 Pin77)	ST-BY/ *ST-BY	PHONO/ *PHONO	PTY /*PTY	DISPLAY /*DISPLAY
	0110	0120	0140	0180
S12/KS1 P90 (IC701 Pin78)				

*: HK-3270
 &: KEY

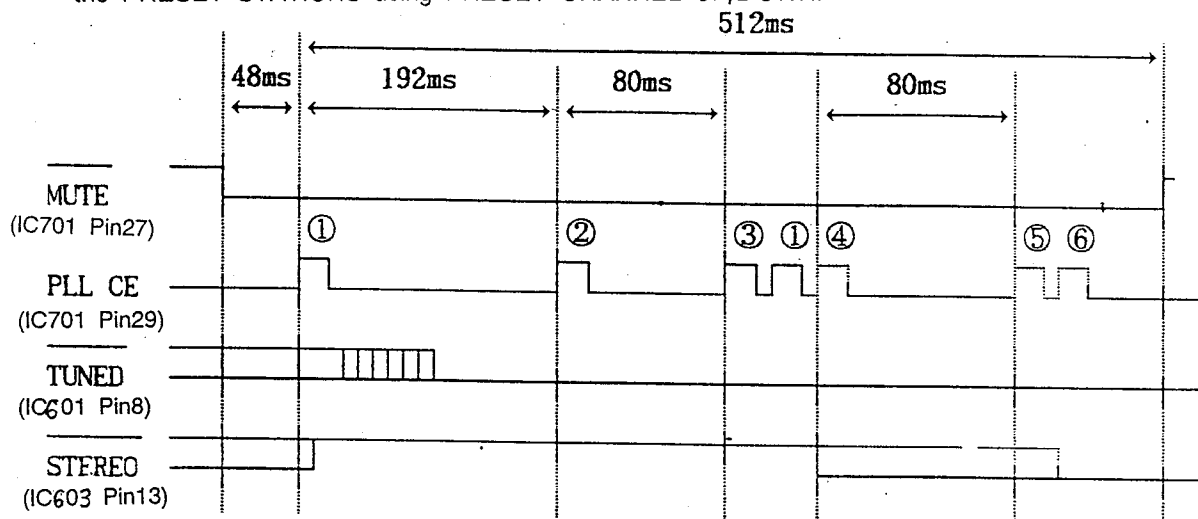
R	DIMMER (A010)	SURR DOWN (A020)	SURR UP (A040)	AUTO PRESET (A080)
E	MEMORY (B010)	DIRECT (B020)	VR. UP (B040)	VR. DOWN (B080)
M	PWR ON (C010)	PWR OFF (C020)	SLEEP (C040)	CLEAR (C080)
O	NO. 1 (D010)	NO. 2 (D020)	NO. 3 (D040)	NO. 4 (D080)
L	NO. 5 (E010)	NO. 6 (E020)	NO. 7 (E040)	NO. 8 (E080)
T	NO. 9 (F010)	NO. 0 (F020)	AUX (F040)	TAPE2 (F080)
Y				
E				

4. TIMING CHART (IF COUNT)

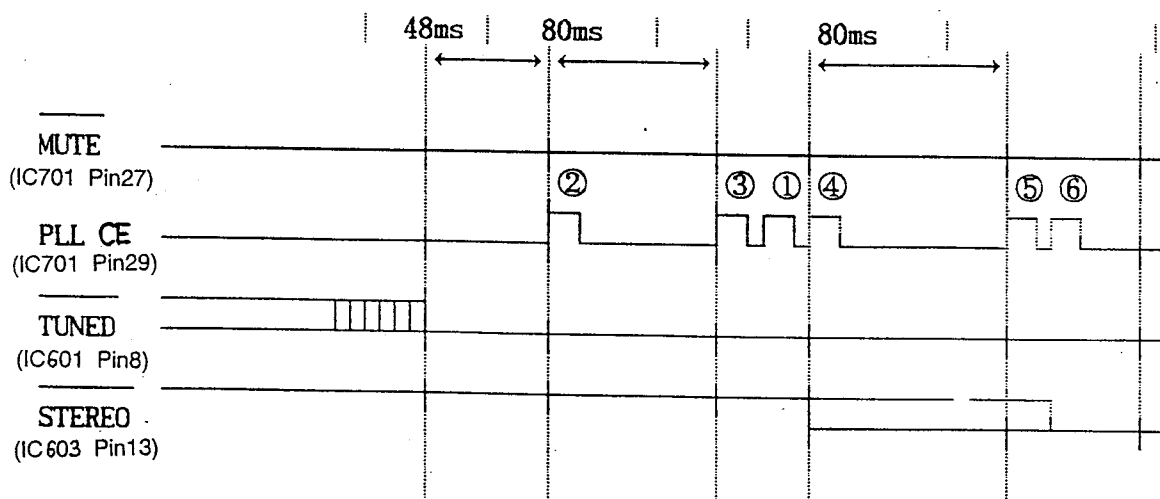
- ① PLL MODE-1
- ② PLL MODE-2
- ③ PLL MODE-3
- ④ PLL MODE-4
- ⑤ PLL MODE-5
- ⑥ PLL MODE-6

A dotted line (.....) : In case that IF COUNT is not proper, follow PLL MODE of ④, ⑤, ⑥.

- When changing BAND, selecting the PRESET STATIONS using TEN KEY and selecting the PRESET STATIONS using PRESET CHANNEL UP/DOWN.

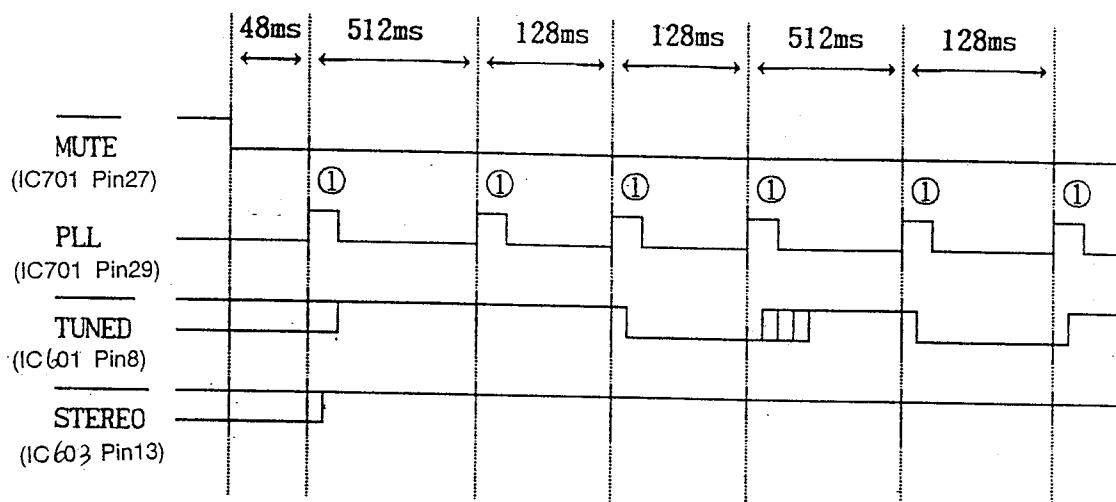


When IF COUNT is not proper in case that the frequency is not tuned,



- MANUAL TUNING UP/DOWN

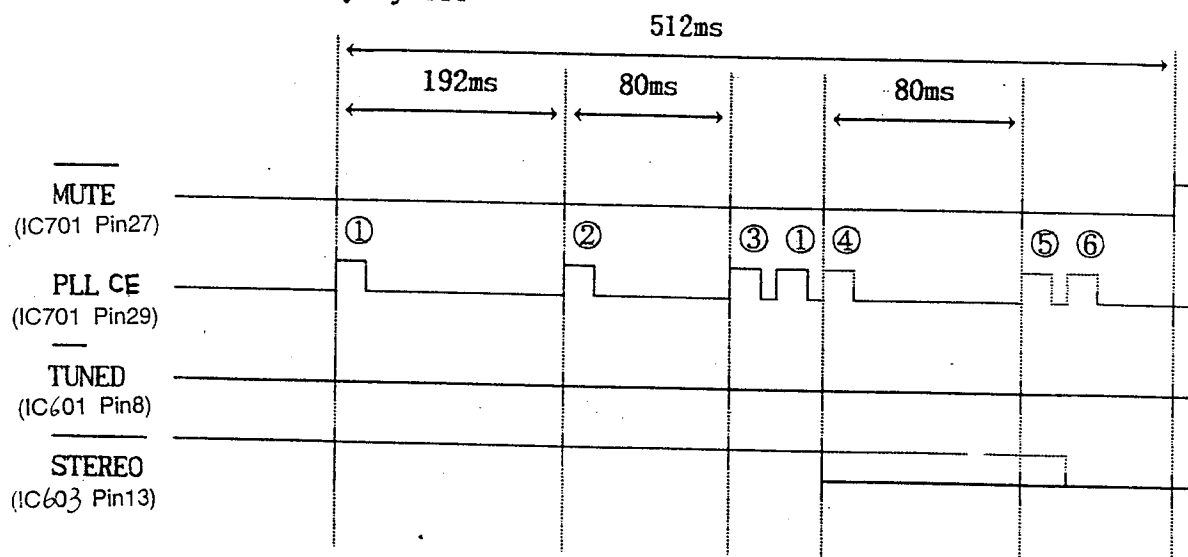
↓ KEY ON



(EXAMPLE) 87.5MHz $\longleftrightarrow$ 108.0MHz
 108.0MHz $\longleftrightarrow$ 87.5MHz

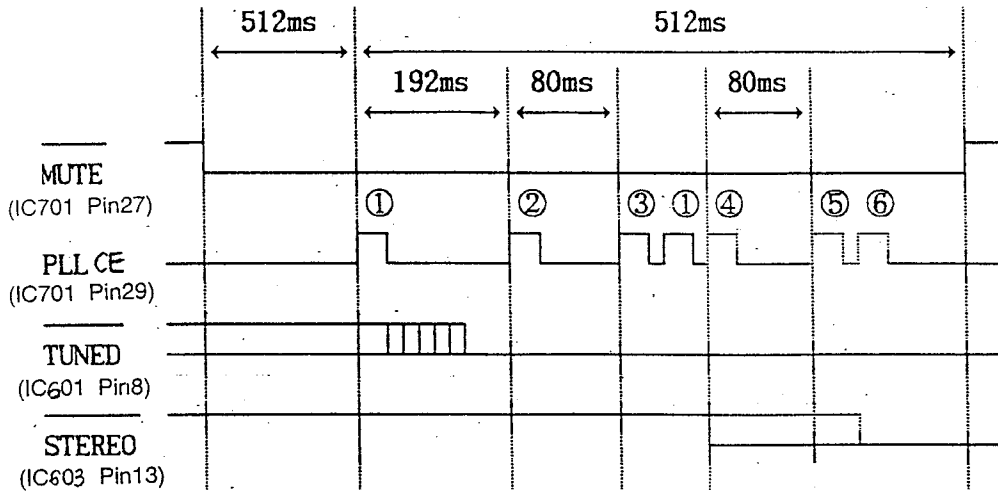
- MANUAL TUNING UP/DOWN key OFF

↓ key off



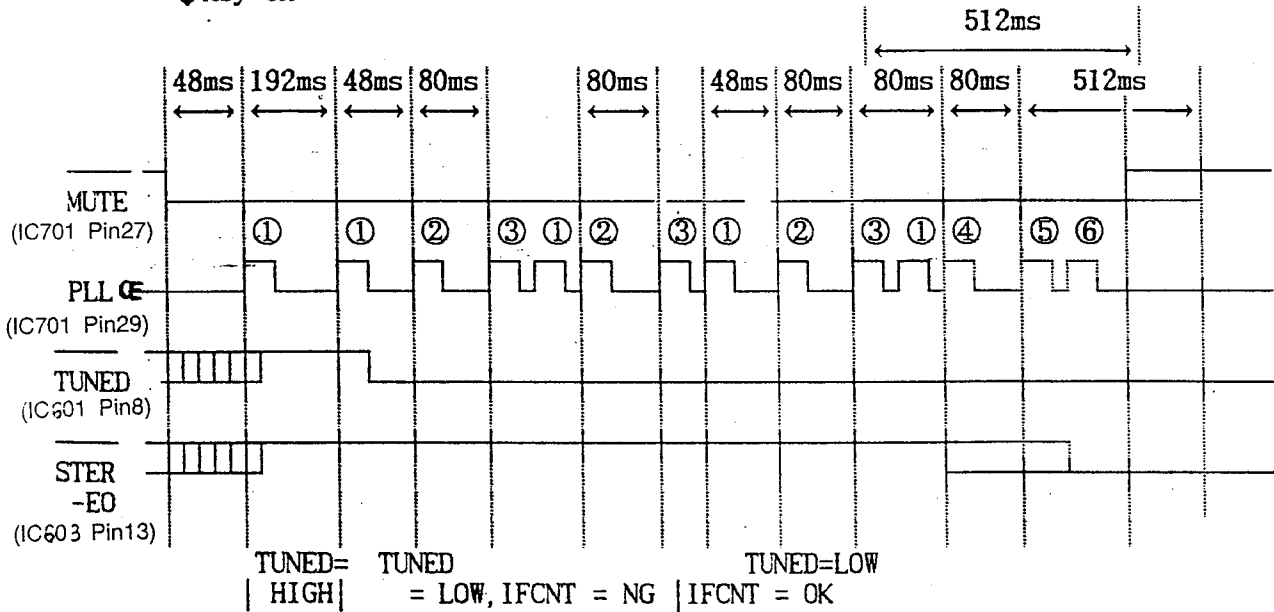
- POWER ON

↓ key on



- AUTO TUNING UP/DOWN

↓ key on



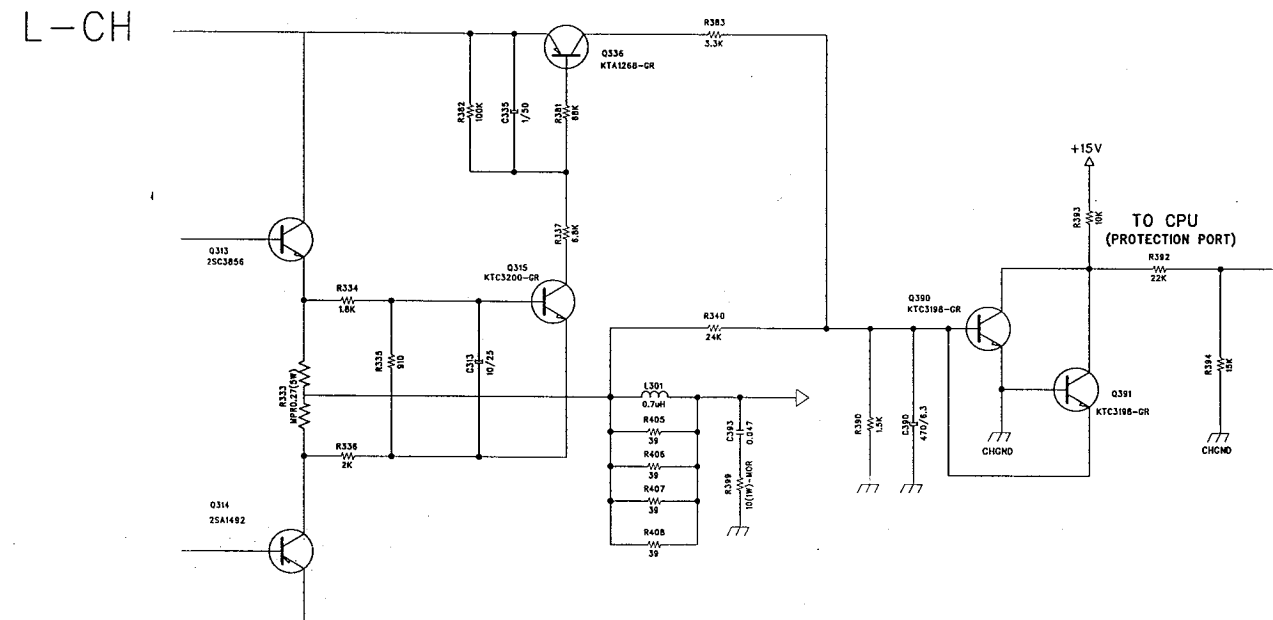
5. Protection Circuits

SPEAKER PROTECTION CIRCUIT

The CPU protects both this unit and the speakers when an abnormally high current flows in Q313, Q333 and Q314, Q334 due to excessive input drive, too low of a load impedance, or short of the speaker terminals. If current increase is excessive the voltage across R333, R373, turns on Q315, Q335 then Q336 turns on Q390.

It brings the protection port of the CPU to low state.

Then all channels are muted and the display is turned off.

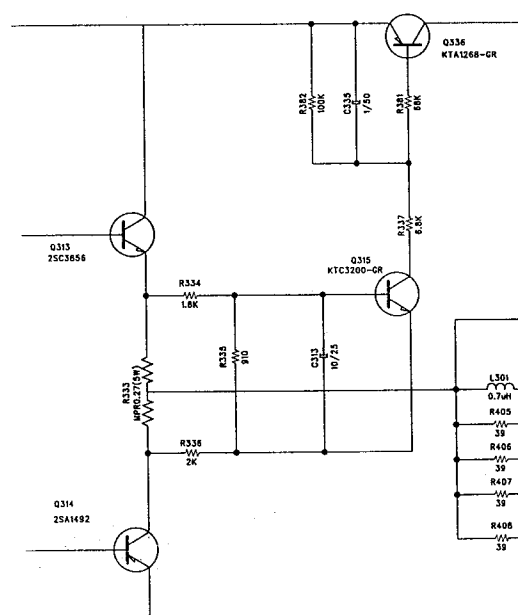


5. Protection Circuits

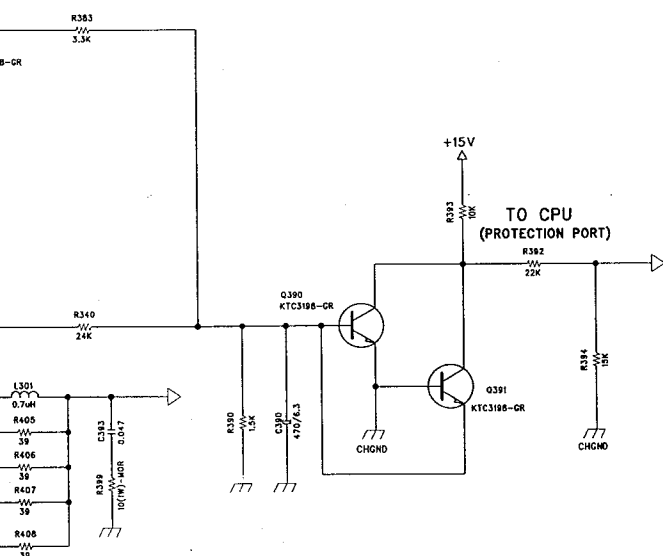
SPEAKER PROTECTION CIRCUIT

The CPU protects both this unit and the speaker Q313, Q333 and Q314, Q334 due to excess current. If current increases, Q313 turns on Q315, Q335 then Q336 turns on Q314. It brings the protection port of the CPU to low. Then all channels are muted and the display

L-CH



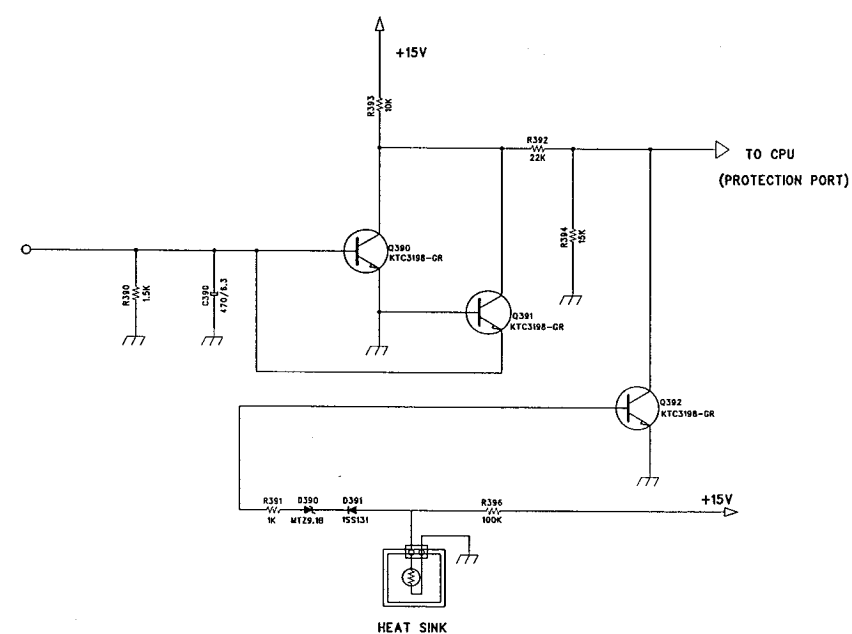
speakers when an abnormally high current flows in
cessive input drive, too low of a load impedance, or
ncrease is excessive the voltage across R333, R373,
Q390.
o low state.
lay is turned off.



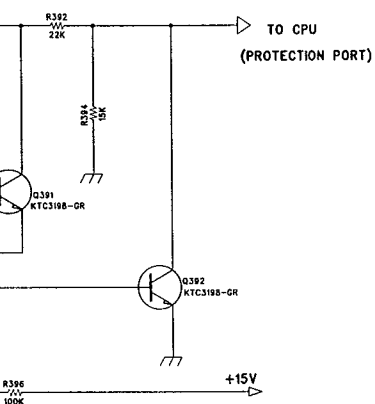
THERMAL PROTECTION CIRCUIT

This receiver has overload thermal protection circuits to guard abnormal operation. When the temperature of H/SINK POSISTOR rises abnormally, resistance of the posistor becomes larger and Q3 is turned on.

It brings the protection port of the CPU to low state. Then all channels are muted and the display is turned off.

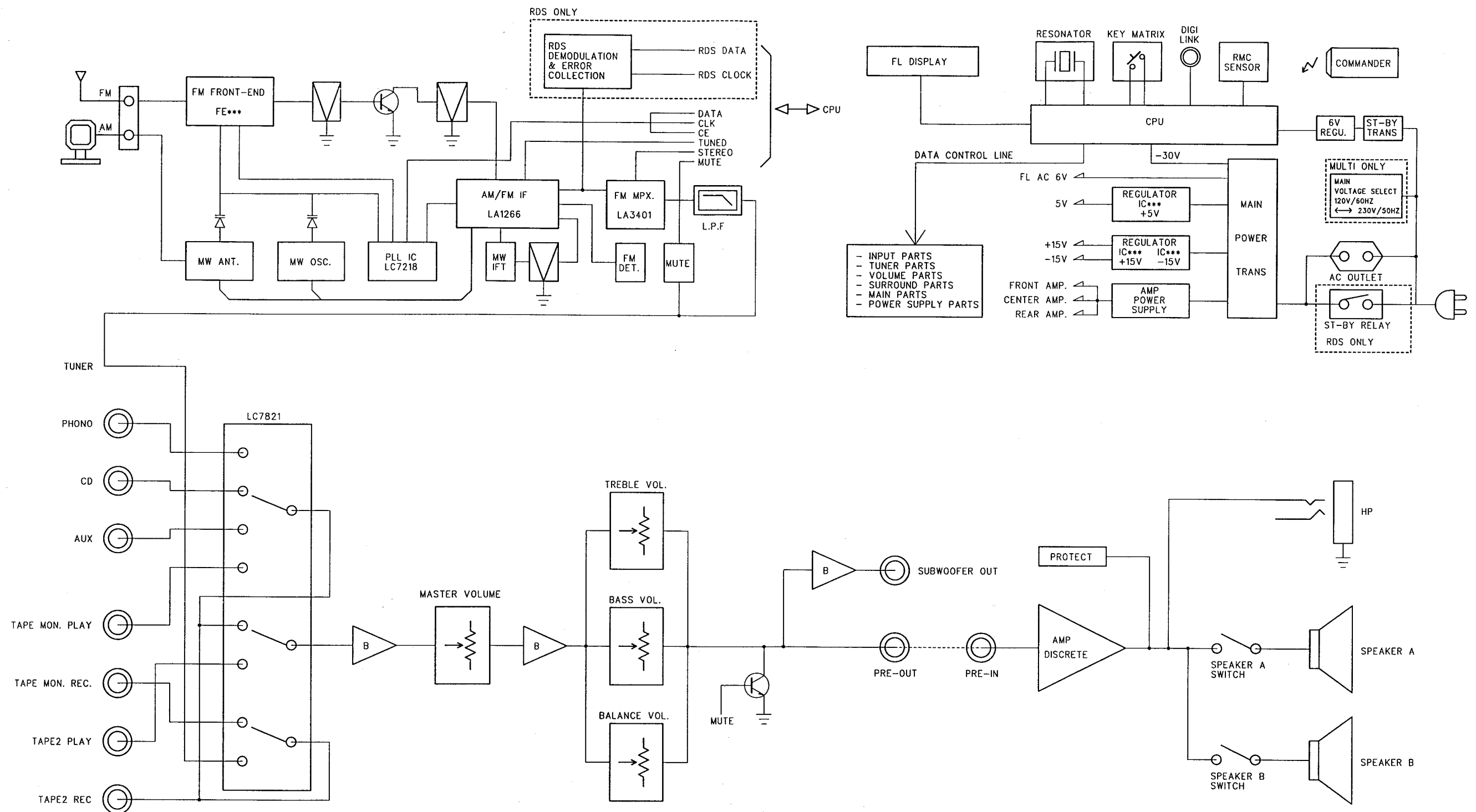


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 lly, resistance of the posistor becomes larger
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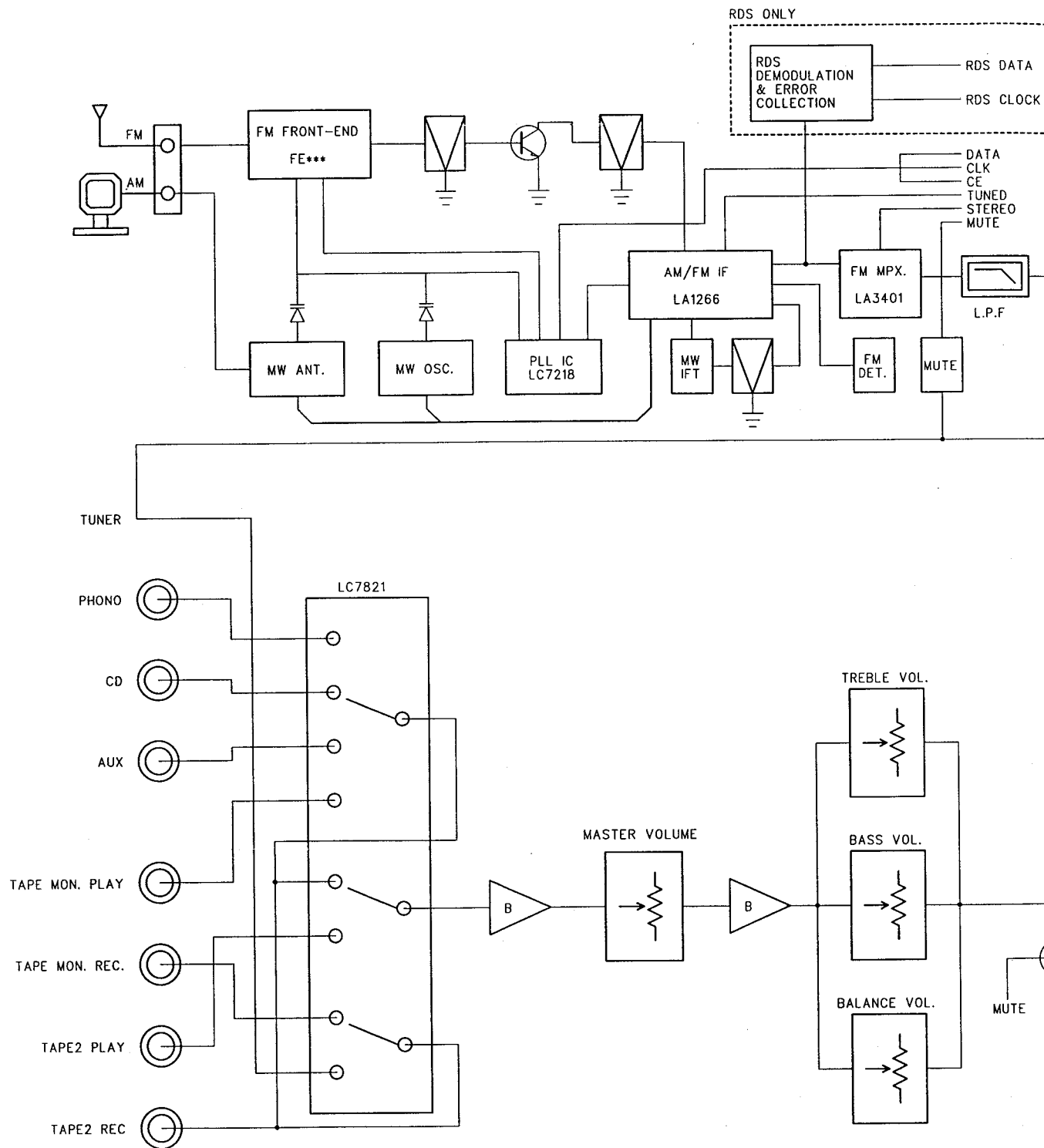


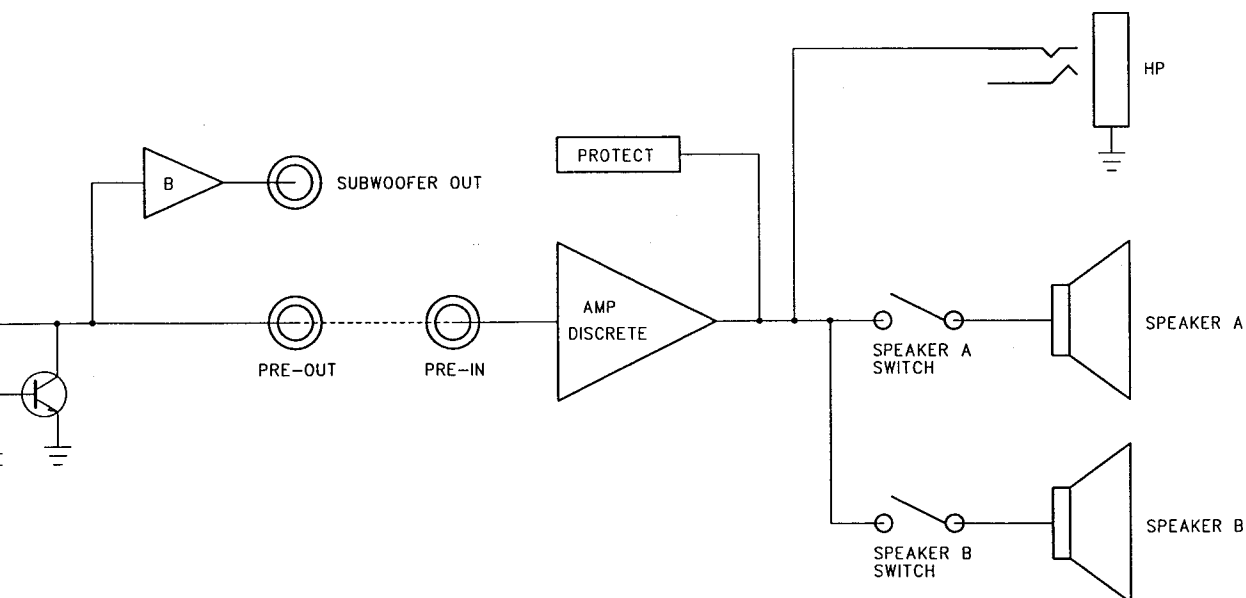
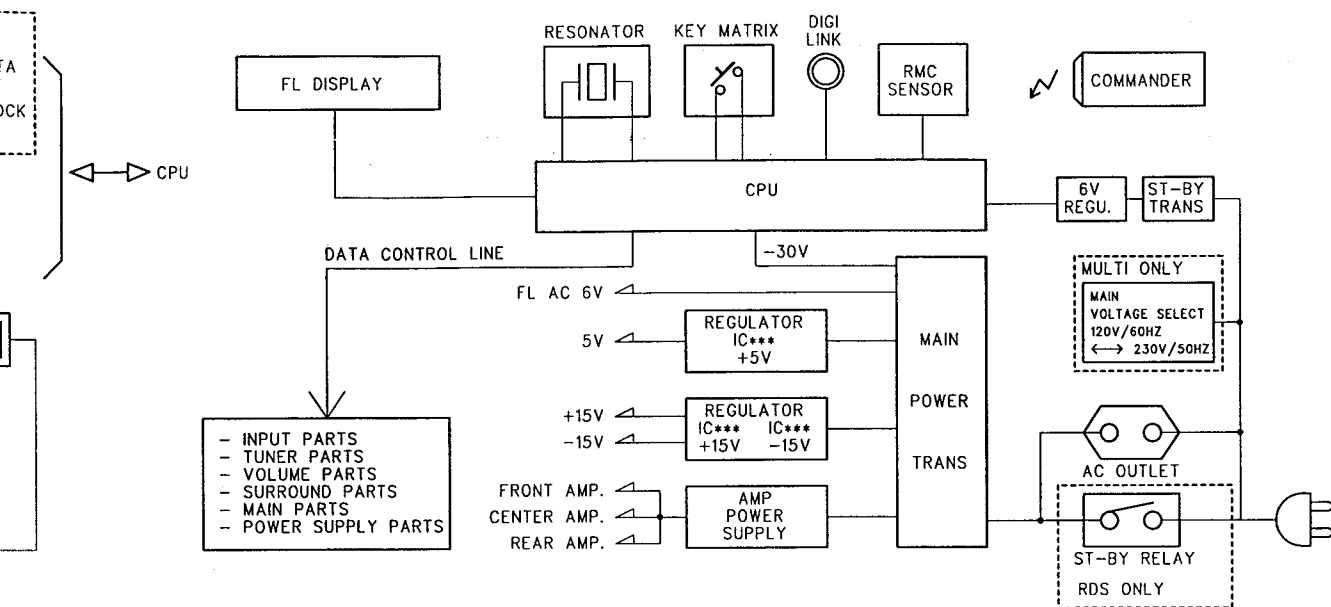
BLOCK DIAGRAM

HK3270/HK3270RDS



BLOCK DIAGRAM





(Refer to pages 25 ~ 29)

1 CHASSIS TOP <42> REMOVAL

Remove 9 screws <A, K> and then remove the Chassis Top <42>.

2 FRONT PANEL ASS'Y <AA> REMOVAL

1. Remove the Chassis Top <42>, referring to the previous step 1.
2. Disconnect the connector <CN701, CARD CABLE> from connector <CW 108> on the Main P.C. Board <1>.
3. Disconnect the lead wire <CW701, 7P> from connector <CW105, 7P> on the Main P.C. Board <1>.
4. Disconnect the connector <CW305, 2P> on the standby P. C. Board<8> from connector <CW101, 2P> on the Main P. C. Board<1>.
5. Remove 1 screw <1> of Chassis Panel and then lead wire <CH 701, 1P> on the Speaker P.C. Board <1>.
6. Disconnect the lead wire <CN706, 4P> on the speaker P. C. Board <1> from connector <CW113, 4P> on the Main P.C. Board <1>.
7. Disconnect the lead wire <CN705, 3P> on the speaker P.C. Board <1> from connector <CW301, 3P> on the Amp P.C. Board <1>.
8. Remove 1 screw <1> of Chassis Panel and then lead wire <CH702, 1P> on the Tone P.C. Board <6>.
9. Disconnect the lead wire <CH107, 8P> on the Volume P.C. Board <4> from connector <CW107, 10P> on the Main P.C. Board <1>.
10. Remove 9 screws <H, 1> and then remove the Front Panel Ass'y <AA>.

3 FRONT P. C. BOARD <6> REMOVAL

1. Remove the Chassis Top <42>, referring to the previous step 1.
2. Remove the Front Panel Ass'y <AA>, referring to the previous step 2.
3. Disconnect the lead wire <CW704, 5P> from connector <CW202, 5P> on the Volume P. C. Board<4>.
4. Disconnect the connector <CN702, 5P> from lead wire <SW704, 5P> on the Power P. C. Board <11>.
5. Disconnect the lead wire <CW703, 3P> from connector <CN703, 3P> on the Mute P. C. Board <5>.
6. Remove 13 screws <1> and then remove the Front P.C. Board <6>.

4 VOLUME P.C. BOARD <4> REMOVAL

1. Remove the Chassis Top <42>, referring the previous step 1.
2. Remove the Front Panel Ass'y <AA>, referring to the previous step 2.
3. Disconnect the connector <CW203, 2P> from lead wire <CH203, 2P> on the Volume LED P.C. Board<4>.
4. Pull out the Volume knob <1>.
5. Disconnect the connector <CW202, 5P> from lead wire <CW704, 5P> on the Front P. C. Board<6>.
6. Disconnect the connector <CW201, 10P> from lead wire <CW705, 8P> on the Tone P. C. Board<6>.
7. Remove 1 hexagon nut <3>, 1 washer <4> and then remove the volume P. C. Board <4>.

5 STANDBY P.C. BOARD <8> REMOVAL

1. Remove the Chassis Top<42>, referring to the previous step 1.
2. Remove the Front Panel Ass'y <AA>, referring to the previous step 2.
3. Disconnect the connector <CW305, 2P> from connector <CW101, 2P> on the Main P. C. Board<1>.
4. Remove 2 screws <1> and then remove the Standby P.C. Board<8>.

6 POWER P. C. BOARD <11> REMOVAL

1. Remove the Chassis Top<42>, referring to the previous step 1.
2. Remove the Front Panel Ass'y <AA>, referring to the previous step 2.
3. Disconnect the lead wire <SW704, 5P> from connector <CN702, 5P> on the Front P. C. Board<6>.
4. Remove 2 screws <1> and then remove the Power P.C. Board <11>.

7 SPEAKER P. C. BOARD <①> REMOVAL

1. Remove the Chassis Top<④②>, referring to the previous step ①.
2. Remove the Front Panel Ass'y <AA>, referring to the previous step ②.
3. Remove 3 screws <⑤, ①> and then remove the Speaker P.C. Board <①>.

8 TONE P. C. BOARD <⑥> REMOVAL

1. Remove the Chassis Top<④②>, referring to the previous step ①.
2. Remove the Front Panel Ass'y <AA>, referring to the previous step ②.
3. Pull out the Balance knobs<⑤>.
4. Disconnect the lead wire <CW705, 8P> from connector <CW201, 10P> on the Volume P.C. Board <④>.
5. Remove 4 screws <①> and then remove the Tone P.C. Board Ass'y<AC>.
6. Remove 4 hexagon nut <③>, and then remove the Shield Balance <⑩>.

9 VOLUME LED P.C. BOARD<③> REMOVAL

1. Remove the Chassis Top <④②>, referring to the previous step ①.
2. Disconnect the lead wire <CH203, 2P> from connector <CW203, 2P> on the Volume P. C. Board <④>.
3. Pull out the Volume knob Ass'y <AD>.
4. Remove the Volume LED P.C. Board<③>.

10 RADIATOR ASS'Y <AB> REMOVAL

1. Remove the Chassis Top<④②>, referring to the previous step ①.
2. Disconnect the lead wire <CH110, 4P> from connector <CW110, 4P> on the Main P. C. Board<①>.
3. Disconnect the lead wire <CH112, 5P> from connector <CW112, 5P> on the Main P. C. Board<①>.
4. Remove 1 screw <①> of the Radiator<⑨> and then disconnect the connector <CW 302, 2P>.
5. Disconnect the lead wire <CH111, 8P> from connector <CW111, 8P> on the Main P. C. Board<①>.
6. Disconnect the connector <CW301, 3P> from lead wire <CN705, 3P> on the Speaker P. C. Board<①>.
7. Remove 4 screws <①, ①> and then remove the Radiator Ass'y <AB>.

11 AMP P.C. BOARD <①> REMOVAL

1. Remove the Chassis Top<④②>, referring to the previous step ①.
2. Remove the Radiator Ass'y <AB>, referring to the previous step ⑩.
3. Remove 4 screws <①> and then remove the Amp P.C. Board<①>.

12 TUNER P.C. BOARD <④> REMOVAL

1. Remove the Chassis Top<④②>, referring to the previous step ①.
2. Remove 2 screws <⑥, ④> and then remove the Tuner P.C. Board<④>.

13 MAIN P. C. BOARD <①> REMOVAL

1. Remove the Chassis Top<④②>, referring to the previous step ①.
2. Remove the Tuner P. C. Board<④>, referring to the previous step ⑫.
3. Disconnect the connector <CW105, 7P> from lead wire <CW701, 7P> on the Front P.C. Board <⑥>.
4. Disconnect the connector <CW114, 3P> from lead wire <3P, Orange 2P, Gray 1P> in the P/T<③⑥>.
5. Disconnect the connector <CW111, 8P> from lead wire <CH111, 8P> on the Amp P. C. Board<①>.
6. Disconnect the connector <CW104, 3P> from lead wire <3P, Blue 2P, Black 1P> in the P/T<③⑥>.
7. Disconnect the connector <CW110, 4P> from lead wire <CH110, 4P> on the Amp P. C. Board<①>.
8. Disconnect the connector <CW107, 10P> from lead wire <CH107, 8P> on the Volume P. C. Board<④>.
9. Disconnect the connector <CW112, 5P> from lead wire <CH112, 5P> on the Amp P. C. Board<①>.
10. Disconnect the connector <CW108, Card Cable> from connector <CN701> on the Front P.C. Board <⑥>.

10. Disconnect the connector <CW108, Card Cable> from connector <CN701> on the Front P.C. Board <②>.
11. Disconnect the connector <CW103, 2P> from lead wire <2P, Yellow & White> in the P/T <③⑥>. (HK3270RDS only)
11. Disconnect the connector <CW103, 2P> from lead wire <2P, Black & White> in the P/T <③⑨>. (HK3270 only)
12. Disconnect the connector <CW102, 2P> from AC Cord Ass'y <AE>.
13. Disconnect the connector <CW101, 2P> from connector <CW305, 2P> on the Standby P. C. Board <②>.
14. Disconnect the connector <CW106, 3P> from connector <CH401, 3P> on the Sub P/T P. C. Board <①>. (HK3270RDS only)
15. Disconnect the connector <CW106, 3P> from lead wire <3P> in the P/T <③⑥>. (HK3270 only)
16. Disconnect the connector <CW113, 4P> from lead wire <CN706, 4P> on the Speaker P.C. Board <①>.
17. Remove 21 screws <Ⓚ, ④> and then remove the Chassis back <③⑦>.
18. Remove 6 screws <ⓐ, ⑤> and then remove the Main P. C. Board <①>.

brings

⑭ SUB P/T P. C. BOARD <①> REMOVAL (HK3270RDS only)

1. Remove the Chassis Top <④②>, referring to the previous step ①.
2. Disconnect the connector <CW401, 3P> from lead wire <3P> in the P/T <③⑥>.
3. Disconnect the lead wire <CH401, 3P> from connector <CW106, 3P> on the Main P. C. Board <①>.
4. Remove 4 screws <Ⓚ> and then remove the Sub P/T P. C. Board <①>.

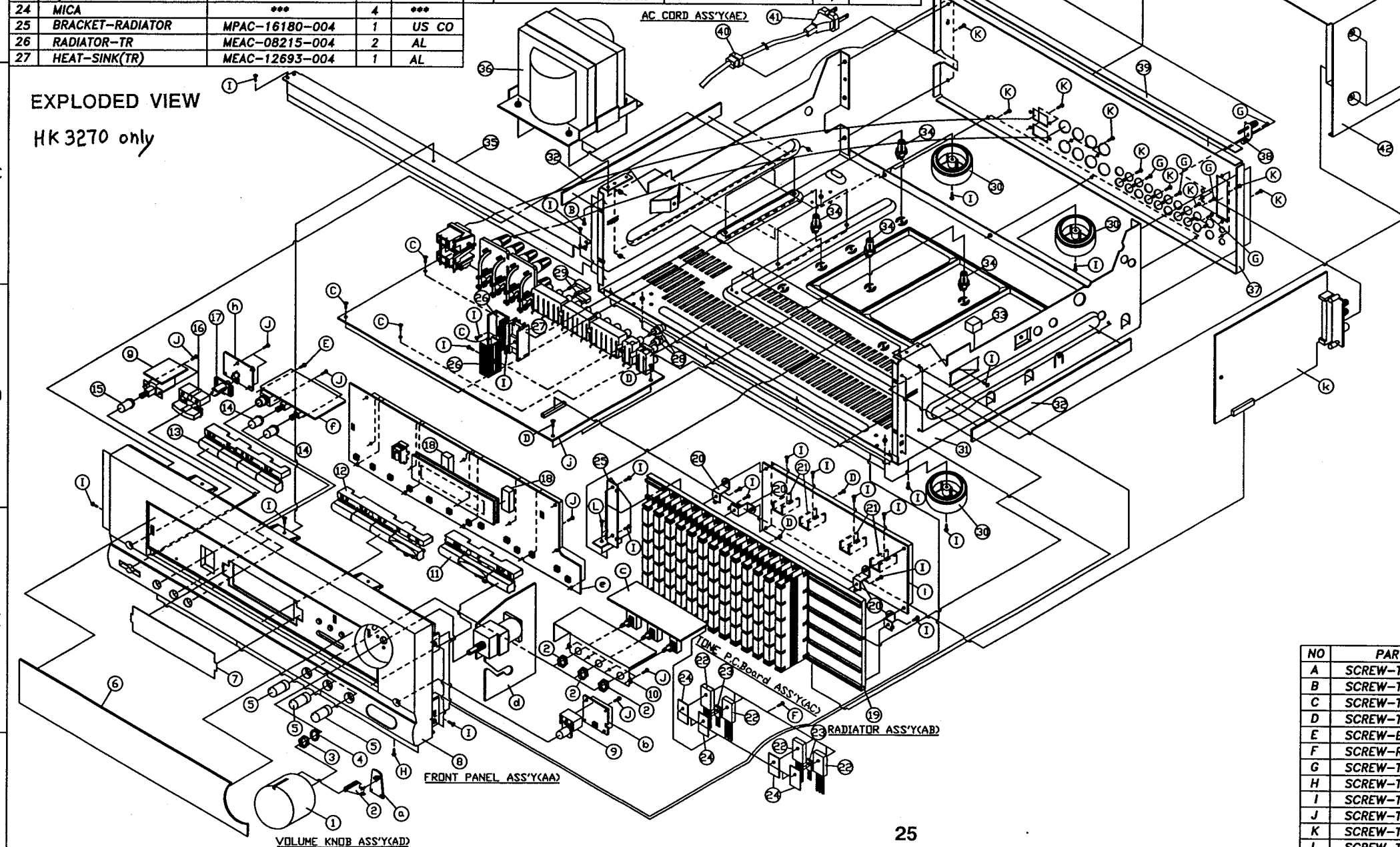
⑮ POWER TRANS <③⑥> REMOVAL

1. Remove the Chassis Top <④②>, referring to the previous step ①.
2. Disconnect the lead wire <3P, Orange 2P, Gray 1P> from connector <CW114, 3P> on the Main P. C. Board <①>.
3. Disconnect the lead wire <3P, Blue 2P, Black 1P> from connector <CW104, 3P> on the Main P. C. Board <①>.
4. Disconnect the lead wire <2P, Yellow & White> from connector <CW103, 2P> on the Main P. C. Board <①>.
5. Disconnect the lead wire <3P> from connector <CW401, 3P> on the Sub P/T P. C. Board <①>. (HK3270RDS only)
6. Disconnect the lead wire <3P> from connector <CW106, 3P> on the Main P. C. Board <①>. (HK3270 only)
7. Remove 4 screws <ⓐ> and then remove the Power Trans <③⑥>.

NO	PARTS NAME	PART NO	Q'TY	REMARK	NO	PARTS NAME	PART NO	Q'TY	REMARK	NO	PARTS NAME	PART NO	Q'TY	REMARK
1	KNOB-VOLUME	MJAF-16100-ZZ4	1	ABS	28	PLUG-RCA	PLRC-00020-S30	2	***	l	AMP P.C.BOARD	***	1	***
2	LENS-VOLUME	MAAF-16130-ZZ3	1	ACRYL	29	JACK-CONNECT	MMAC-17070-004	2	***	J	MAIN P.C.BOARD	***	1	***
3	NUT	***	4	***	30	FOOT(A)	MJAF-15640-ZZ4	4	ABS	k	TUNER P.C.BOARD	***	1	***
4	WASHER	***	1	***	31	CHASSIS-BOTTOM	MPAC-04811-002	1	US CO					
5	KNOB-BALANCE	MJAF-16070-ZZ4	3	ABS	32	CUSHION-A	MRAG-13050-004	2	FELT					
6	WINDOW-FL	MAAF-08071-ZZ3	1	PVC	33	CUSHION-A	MRAG-13030-004	1	EVA					
7	FILTER-FL	MAAF-16150-ZZ4	1	PVC	34	SUPPORT-PCB	MJAF-16140-ZZ4	4	ABS					
8	PANEL-FRONT	MJAF-06081-ZZ1	1	ABS	35	CHASSIS-PANEL	MPAC-04760-003	1	US CO					
9	KNOB-MUTE	MJAF-16080-ZZ4	1	ABS	36	POWER-TRANS	PTAN-03430-CJU	1	***					
10	SHIELD-BALANCE	MPAC-16160-004	1	ET-HD	37	CHASSIS-BACK	MPAC-04780-ZZ2	1	SECC					
11	PUSH-BUTTONS(C)	MJAF-08060-ZZ3	1	ABS	38	TERMINAL-GND	MMAC-12060-004	1	***					
12	PUSH-BUTTONS(B)	MJAF-08050-ZZ3	1	ABS	39	CUSHION-A	MRAG-13040-004	1	FELT					
13	PUSH-BUTTONS(A)	MJAF-08040-ZZ3	1	ABS	40	CORD-BUSH	MJAG-00280-003	1	***					
14	KNOB-SPEAKER	MJAF-16060-ZZ4	2	ABS	41	CORD-AC ASS'Y	ACAC-00413-000	1	***					
15	KNOB-STANDBY	MJAF-16050-ZZ4	1	ABS	42	CHASSIS-TOP	MPAC-04820-ZZ2	1	VCM					
16	KNOB-POWER	MJAF-16110-ZZ4	1	ABS	a	VOLUME LED P.C.BOARD	***	1	***					
17	LENS-POWER	MAAF-16120-ZZ4	1	ACRYL	b	MUTE P.C.BOARD	***	1	***					
18	CUSHION-A	MRAG-13020-004	2	EVA	c	tone P.C.BOARD	***	1	***					
19	RADIATOR-MAIN	MEAC-04850-002	1	A6063	d	VOLUME P.C.BOARD	***	1	***					
20	BRACKET-RADIATOR(S)	MPAC-16220-004	4	SECC	e	FRONT P.C.BOARD	***	1	***					
21	RADIATOR	MEAC-08212-004	4	AL	f	SPEAKER SELECTOR P.C.BOARD	***	1	***					
22	T/R	***	4	***	g	STANDBY P.C.BOARD	***	1	***					
23	T/R	***	2	***	h	POWER SWITCH P.C.BOARD	***	1	***					
24	MICA	***	4	***										
25	BRACKET-RADIATOR	MPAC-16180-004	1	US CO										
26	RADIATOR-TR	MEAC-08215-004	2	AL										
27	HEAT-SINK(TR)	MEAC-12693-004	1	AL										

HK3270/HK3270RDS

EXPLODED VIEW
HK 3270 only

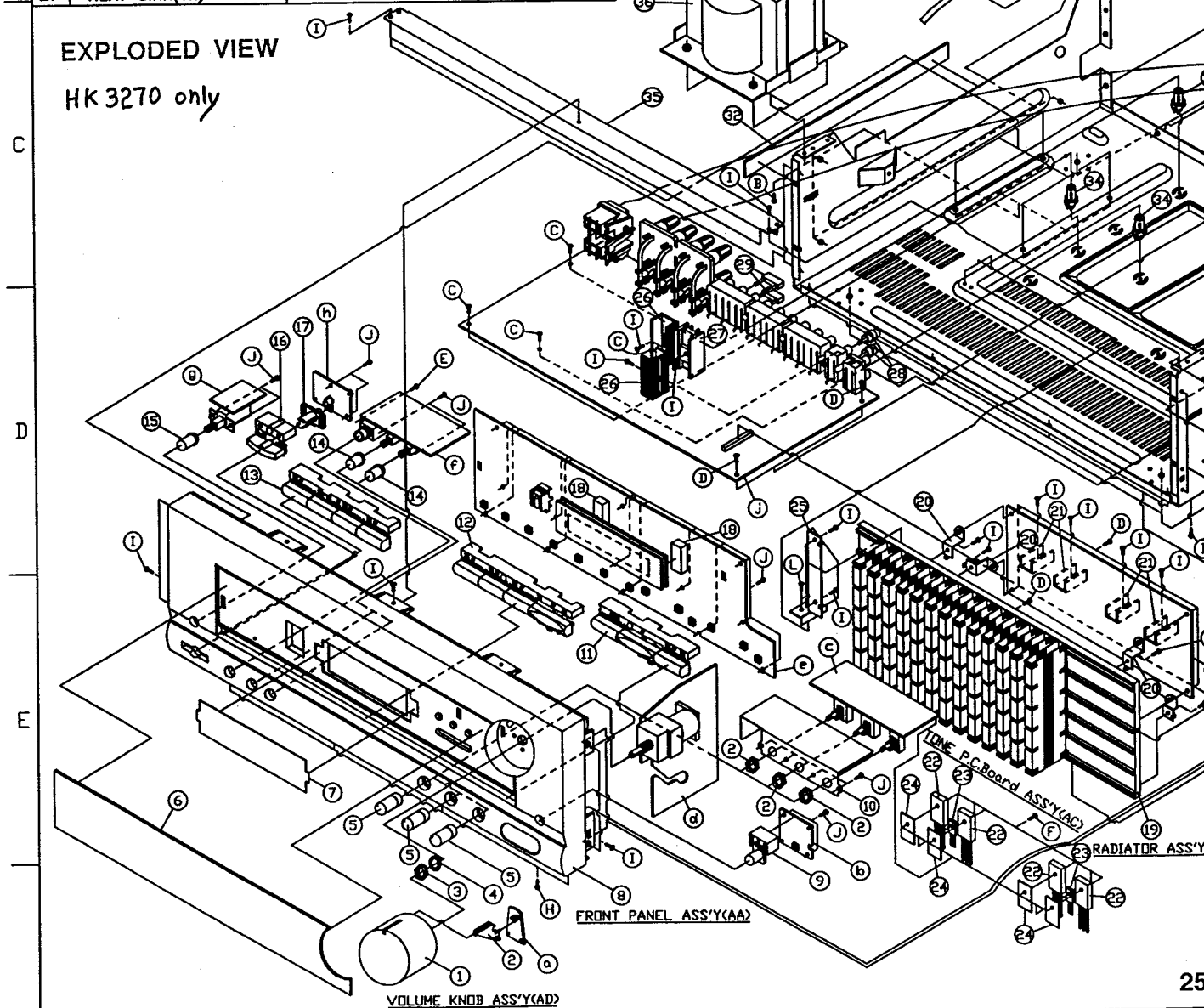


NO	PARTS NAME	PART NO	Q'TY	REMARK
A	SCREW-TAPPING	XSTB-40080-ZB8	6	***
B	SCREW-TAPPING	XSTB-40080-ZY8	4	***
C	SCREW-TAPPING	XSTS-30180-ZY4	4	***
D	SCREW-TAPPING	XSTS-30080-ZY4	7	***
E	SCREW-BH/W	MMTC-12180-004	1	***
F	SCREW-RADIATOR	MMAC-15650-004	6	***
G	SCREW-T/P-TOOTH	MMAC-03592-004	6	***
H	SCREW-TAPPING	XSTB-30080-ZB4	7	***
I	SCREW-TAPPING	XSTB-30080-ZY4	27	***
J	SCREW-TAPPING	XSTB-30100-ZY4	25	***
K	SCREW-TAPPING	XSTB-30100-ZB4	16	***
L	SCREW-TAPPING	XSTB-30060-ZY4	2	***

1					2					3					4				
NO	PARTS NAME	PART NO	Q'TY	REMARK	NO	PARTS NAME	PART NO	Q'TY	REMARK	NO	PARTS NAME	PART NO	Q'TY	REMARK	NO	PARTS NAME	PART NO	Q'TY	REMARK
1	KNOB-VOLUME	MJAF-16100-ZZ4	1	ABS	28	PLUG-RCA	PLRC-00020-S30	2	***	28	PLUG-RCA	PLRC-00020-S30	2	***	28	PLUG-RCA	PLRC-00020-S30	2	***
2	LENS-VOLUME	MAAF-16130-ZZ3	1	ACRYL	29	JACK-CONNECT	MMAC-17070-004	2	***	29	JACK-CONNECT	MMAC-17070-004	2	***	29	JACK-CONNECT	MMAC-17070-004	2	***
3	NUT	***	4	***	30	FOOT(A)	MJAF-15640-ZZ4	4	ABS	30	FOOT(A)	MJAF-15640-ZZ4	4	ABS	30	FOOT(A)	MJAF-15640-ZZ4	4	ABS
4	WASHER	***	1	***	31	CHASSIS-BOTTOM	MPAC-04811-002	1	US CO	31	CHASSIS-BOTTOM	MPAC-04811-002	1	US CO	31	CHASSIS-BOTTOM	MPAC-04811-002	1	US CO
5	KNOB-BALANCE	MJAF-16070-ZZ4	3	ABS	32	CUSHION-A	MRAG-13050-004	2	FELT	32	CUSHION-A	MRAG-13050-004	2	FELT	32	CUSHION-A	MRAG-13050-004	2	FELT
6	WINDOW-FL	MAAF-08071-ZZ3	1	PVC	33	CUSHION-A	MRAG-13030-004	1	EVA	33	CUSHION-A	MRAG-13030-004	1	EVA	33	CUSHION-A	MRAG-13030-004	1	EVA
7	FILTER-FL	MAAF-16150-ZZ4	1	PVC	34	SUPPORT-PCB	MJAF-16140-ZZ4	4	ABS	34	SUPPORT-PCB	MJAF-16140-ZZ4	4	ABS	34	SUPPORT-PCB	MJAF-16140-ZZ4	4	ABS
8	PANEL-FRONT	MJAF-06081-ZZ1	1	ABS	35	CHASSIS-PANEL	MPAC-04760-003	1	US CO	35	CHASSIS-PANEL	MPAC-04760-003	1	US CO	35	CHASSIS-PANEL	MPAC-04760-003	1	US CO
9	KNOB-MUTE	MJAF-16080-ZZ4	1	ABS	36	POWER-TRANS	PTAN-03430-CJU	1	***	36	POWER-TRANS	PTAN-03430-CJU	1	***	36	POWER-TRANS	PTAN-03430-CJU	1	***
10	SHIELD-BALANCE	MPAC-16160-004	1	ET-HD	37	CHASSIS-BACK	MPAC-04780-ZZ2	1	SECC	37	CHASSIS-BACK	MPAC-04780-ZZ2	1	SECC	37	CHASSIS-BACK	MPAC-04780-ZZ2	1	SECC
11	PUSH-BUTTONS(C)	MJAF-08060-ZZ3	1	ABS	38	TERMINAL-GND	MMAC-12060-004	1	***	38	TERMINAL-GND	MMAC-12060-004	1	***	38	TERMINAL-GND	MMAC-12060-004	1	***
12	PUSH-BUTTONS(B)	MJAF-08050-ZZ3	1	ABS	39	CUSHION-A	MRAG-13040-004	1	FELT	39	CUSHION-A	MRAG-13040-004	1	FELT	39	CUSHION-A	MRAG-13040-004	1	FELT
13	PUSH-BUTTONS(A)	MJAF-08040-ZZ3	1	ABS	40	CORD-BUSH	MJAG-00280-003	1	***	40	CORD-BUSH	MJAG-00280-003	1	***	40	CORD-BUSH	MJAG-00280-003	1	***
14	KNOB-SPEAKER	MJAF-16060-ZZ4	2	ABS	41	CORD-AC ASS'Y	ACAC-00413-000	1	***	41	CORD-AC ASS'Y	ACAC-00413-000	1	***	41	CORD-AC ASS'Y	ACAC-00413-000	1	***
15	KNOB-STANDBY	MJAF-16050-ZZ4	1	ABS	42	CHASSIS-TOP	MPAC-04820-ZZ2	1	VCM	42	CHASSIS-TOP	MPAC-04820-ZZ2	1	VCM	42	CHASSIS-TOP	MPAC-04820-ZZ2	1	VCM
16	KNOB-POWER	MJAF-16110-ZZ4	1	ABS	a	VOLUME LED P.C.BOARD	***	1	***	a	VOLUME LED P.C.BOARD	***	1	***	a	VOLUME LED P.C.BOARD	***	1	***
17	LENS-POWER	MAAF-16120-ZZ4	1	ACRYL	b	MUTE P.C.BOARD	***	1	***	b	MUTE P.C.BOARD	***	1	***	b	MUTE P.C.BOARD	***	1	***
18	CUSHION-A	MRAG-13020-004	2	EVA	c	tone P.C.BOARD	***	1	***	c	tone P.C.BOARD	***	1	***	c	tone P.C.BOARD	***	1	***
19	RADIATOR-MAIN	MEAC-04850-002	1	A6063	d	VOLUME P.C.BOARD	***	1	***	d	VOLUME P.C.BOARD	***	1	***	d	VOLUME P.C.BOARD	***	1	***
20	BRACKET-RADIATOR(S)	MPAC-16220-004	4	SECC	e	FRONT P.C.BOARD	***	1	***	e	FRONT P.C.BOARD	***	1	***	e	FRONT P.C.BOARD	***	1	***
21	RADIATOR	MEAC-08212-004	4	AL	f	SPEAKER SELECTOR P.C.BOARD	***	1	***	f	SPEAKER SELECTOR P.C.BOARD	***	1	***	f	SPEAKER SELECTOR P.C.BOARD	***	1	***
22	T/R	***	4	***	g	STANDBY P.C.BOARD	***	1	***	g	STANDBY P.C.BOARD	***	1	***	g	STANDBY P.C.BOARD	***	1	***
23	T/R	***	2	***	h	POWER SWITCH P.C.BOARD	***	1	***	h	POWER SWITCH P.C.BOARD	***	1	***	h	POWER SWITCH P.C.BOARD	***	1	***
24	MICA	***	4	***															
25	BRACKET-RADIATOR	MPAC-16180-004	1	US CO															
26	RADIATOR-TR	MEAC-08215-004	2	AL															
27	HEAT-SINK(TR)	MEAC-12693-004	1	AL															

EXPLODED VIEW

HK 3270 only



REMARK	NO	PARTS NAME	PART NO	Q'TY	REMARK
***	I	AMP P.C.BOARD	***	1	***
***	J	MAIN P.C.BOARD	***	1	***
ABS	k	TUNER P.C.BOARD	***	1	***

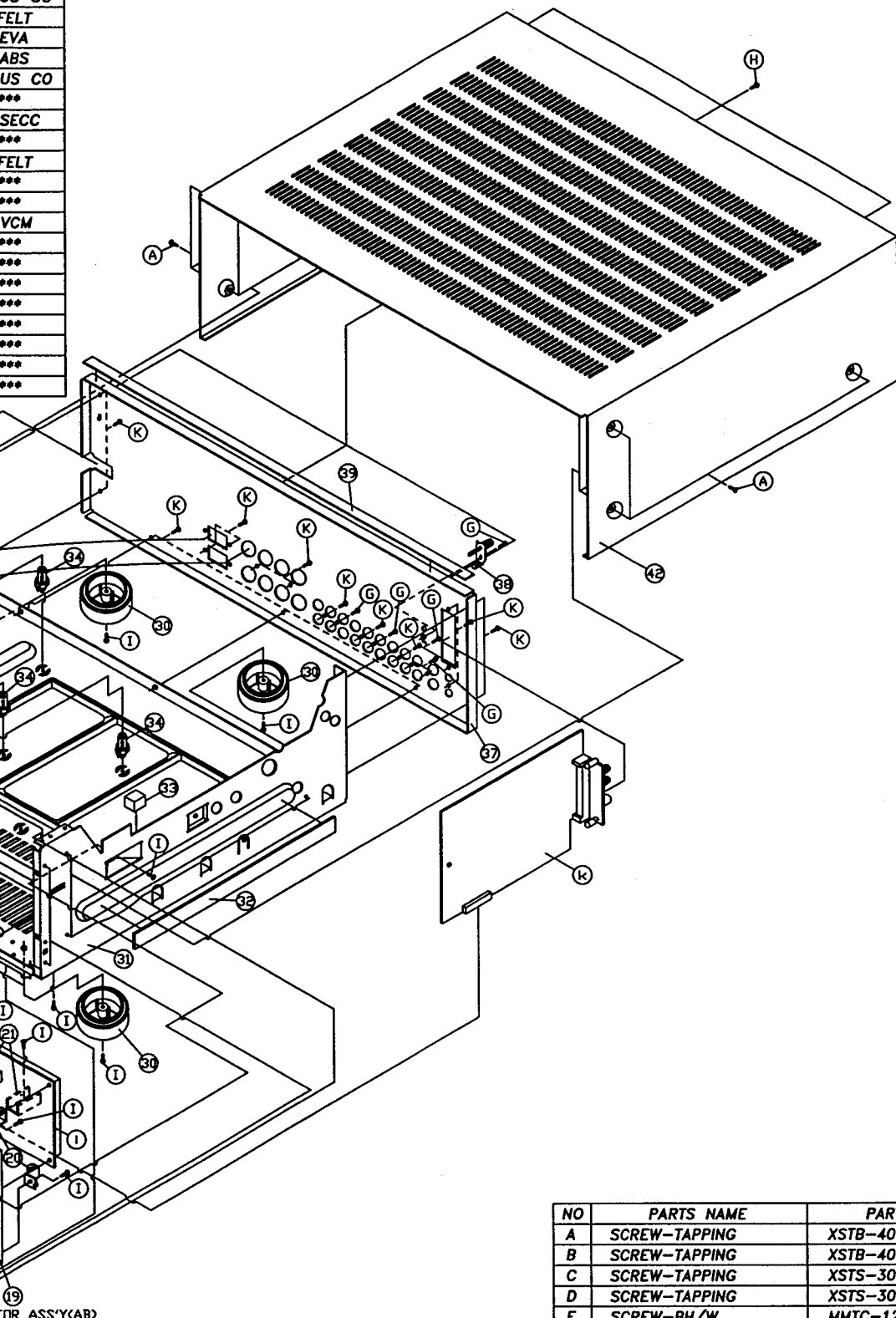
HK3270/HK3270RDS

US CO
FELT
EVA
ABS
US CO

SECC

FELT

VCM



OR ASS'Y(AB)

NO	PARTS NAME	PART NO	Q'TY	REMARK
A	SCREW-TAPPING	XSTB-40080-ZB8	6	***
B	SCREW-TAPPING	XSTB-40080-ZY8	4	***
C	SCREW-TAPPING	XSTS-30180-ZY4	4	***
D	SCREW-TAPPING	XSTS-30080-ZY4	7	***
E	SCREW-BH/W	MMTC-12180-004	1	***
F	SCREW-RADIATOR	MMAC-15650-004	6	***
G	SCREW-T/P-TOOTH	MMAC-03592-004	6	***
H	SCREW-TAPPING	XSTB-30080-ZB4	7	***
I	SCREW-TAPPING	XSTB-30080-ZY4	27	***
J	SCREW-TAPPING	XSTB-30100-ZY4	25	***
K	SCREW-TAPPING	XSTB-30100-ZB4	16	***
L	SCREW-TAPPING	XSTB-30060-ZY4	2	***

1					2					3					4					5					6					7					8				
NO	PARTS NAME	PART NO	Q'TY	REMARK	NO	PARTS NAME	PART NO	Q'TY	REMARK	NO	PARTS NAME	PART NO	Q'TY	REMARK	NO	PARTS NAME	PART NO	Q'TY	REMARK	NO	PARTS NAME	PART NO	Q'TY	REMARK	NO	PARTS NAME	PART NO	Q'TY	REMARK										
1	KNOB-VOLUME	MJAF-16100-ZZ4	1	ABS	28	PLUG-RCA	PLRC-00020-S30	2	***	9	STANDBY P.C.BOARD	***	1	***	k	TUNER P.C.BOARD	***	1	***																				
2	LENS-VOLUME	MAAF-16130-ZZ3	1	ACRYL	29	JACK-CONNECT	MMAC-17070-004	2	***	h	POWER SWITCH P.C.BOARD	***	1	***	l	SUB-P/T P.C.BOARD	***	1	***																				
3	NUT	***	4	***	30	FOOT(A)	MJAF-15640-ZZ4	4	ABS	i	AMP P.C.BOARD	***	1	***																									
4	WASHER	***	1	***	31	CHASSIS-BOTTOM	MPAC-04811-002	1	US CO	j	MAIN P.C.BOARD	***	1	***																									
5	KNOB-BALANCE	MJAF-16070-ZZ4	3	ABS	32	CUSHION-A	MRAG-13050-004	2	FELT																														
6	WINDOW-FL	MAAF-08071-ZZ3	1	PVC	33	CUSHION-A	MRAG-13030-004	1	EVA																														
7	FILTER-FL	MAAF-16150-ZZ4	1	PVC	34	SUPPORT-PCB	MJAF-16140-ZZ4	4	ABS																														
8	PANEL-FRONT	MJAF-06081-ZZ1	1	ABS	35	CHASSIS-PANEL	MPAC-04760-003	1	US CO																														
9	KNOB-MUTE	MJAF-16080-ZZ4	1	ABS	36	POWER-TRANS	PTAN-03430-YJV	1	***																														
10	SHIELD-BALANCE	MPAC-16160-004	1	ET-HD	37	CHASSIS-BACK	MPAC-04781-ZZ2	1	SECC																														
11	PUSH-BUTTONS(C)	MJAF-08060-ZZ3	1	ABS	38	TERMINAL-GND	MMAC-12060-004	1	***																														
12	PUSH-BUTTONS(B)	MJAF-08050-ZZ3	1	ABS	39	CUSHION-A	MRAG-13040-004	1	FELT																														
13	PUSH-BUTTONS(A)	MJAF-08040-ZZ3	1	ABS	40	CORD-BUSH	MJAG-00280-003	1	***																														
14	KNOB-SPEAKER	MJAF-16060-ZZ4	2	ABS	41	CORD-AC ASS'Y	ACAC-00393-002	1	***																														
15	KNOB-STANDBY	MJAF-16050-ZZ4	1	ABS	42	CHASSIS-TOP	MPAC-04820-ZZ2	1	VCM																														
16	KNOB-POWER	MJAF-16110-ZZ4	1	ABS	43	SHIELD-MAIN	MPAC-16250-004	1	ET-HD																														
17	LENS-POWER	MAAF-16120-ZZ4	1	ACRYL	44	CORK-TERMINAL	MJAG-13060-ZZ4	8	ABS																														
18	CUSHION-A	MRAG-13020-004	2	EVA	a	VOLUME LED P.C.BOARD	***	1	***																														
19	RADIATOR-MAIN	MEAC-04850-002	1	A6063	b	MUTE P.C.BOARD	***	1	***																														
20	BRACKET-RADIATOR(S)	MPAC-16150-004	4	SECC	c	TONE P.C.BOARD	***	1	***																														
21	RADIATOR	MEAC-08212-004	4	AL	d	VOLUME P.C.BOARD	***	1	***																														
22	T/R	***	4	***	e	FRONT P.C.BOARD	***	1	***																														
23	T/R	***	2	***	f	SPEAKER SELECTOR P.C.BOARD	***	1	***																														
24	MICA	***	4	***																																			
25	BRACKET-RADIATOR	MPAC-16180-004	1	US CO																																			
26	RADIATOR-TR	MEAC-08215-004	2	AL																																			
27	HEAT-SINK(TR)	MEAC-12693-004	1	AL																																			

AC CORD ASS'Y(AE)

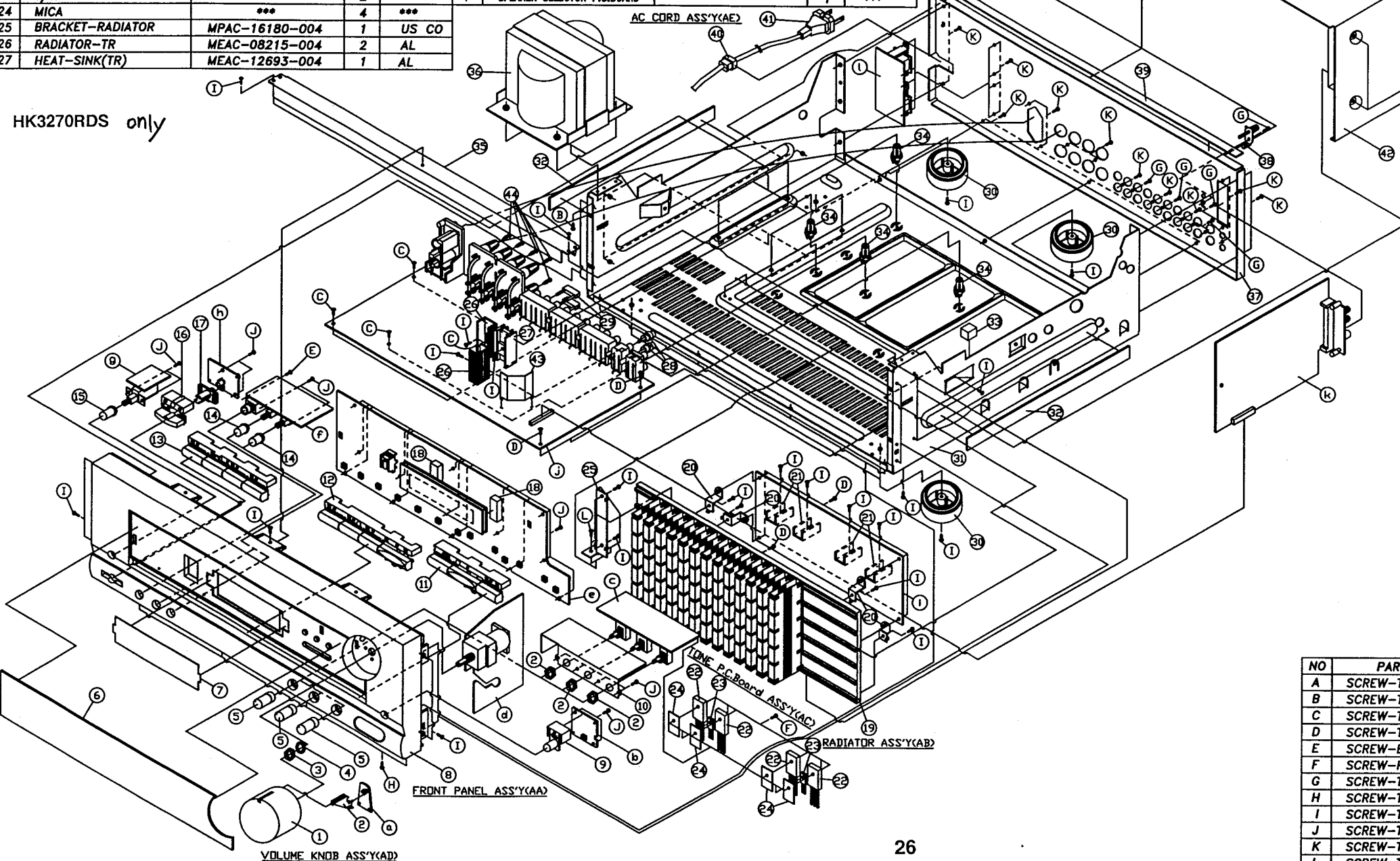
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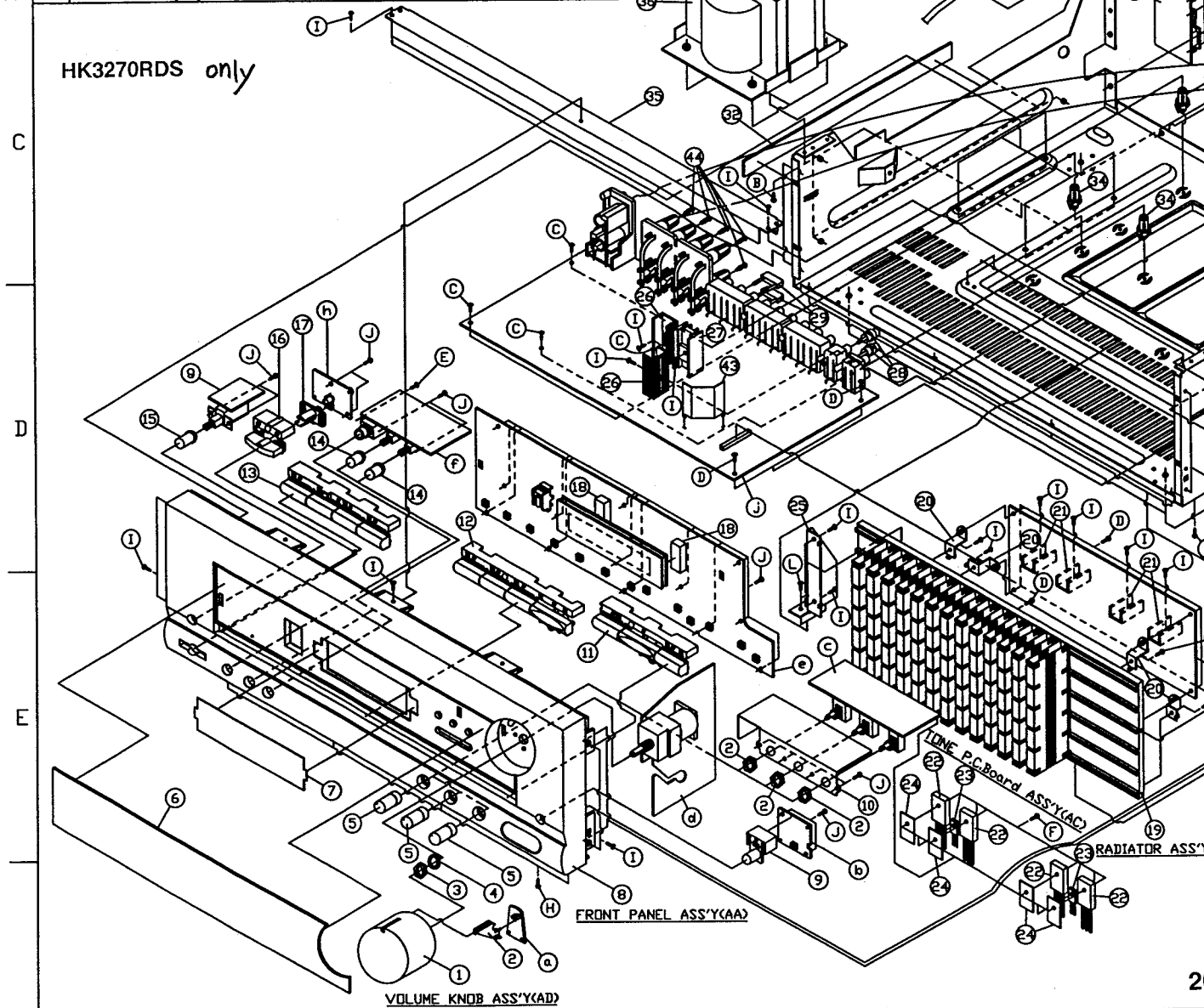
HK3270/HK3270RDS

HK3270/HK3270RDS



NO	PARTS NAME	PART NO	Q'TY	REMARK
A	SCREW-TAPPING	XSTB-40080-ZB8	6	***
B	SCREW-TAPPING	XSTB-40080-ZY8	4	***
C	SCREW-TAPPING	XSTS-30180-ZY4	4	***
D	SCREW-TAPPING	XSTS-30080-ZY4	7	***
E	SCREW-BH/W	MMTC-12180-004	1	***
F	SCREW-RADIATOR	MMAC-15650-004	6	***
G	SCREW-T/P-TOOTH	MMAC-03592-004	8	***
H	SCREW-TAPPING	XSTB-30080-ZB4	7	***
I	SCREW-TAPPING	XSTB-30080-ZY4	27	***
J	SCREW-TAPPING	XSTB-30100-ZY4	25	***
K	SCREW-TAPPING	XSTB-30100-ZB4	18	***
L	SCREW-TAPPING	XSTB-30060-ZY4	2	***

1					2					3					4				
NO	PARTS NAME	PART NO	Q'TY	REMARK	NO	PARTS NAME	PART NO	Q'TY	REMARK	NO	PARTS NAME	PART NO	Q'TY	REMARK	NO	PARTS NAME	PART NO	Q'TY	REMARK
1	KNOB-VOLUME	MJAF-16100-ZZ4	1	ABS	28	PLUG-RCA	PLRC-00020-S30	2	***	28	PLUG-RCA	PLRC-00020-S30	2	***	28	PLUG-RCA	PLRC-00020-S30	2	***
2	LENS-VOLUME	MAAF-16130-ZZ3	1	ACRYL	29	JACK-CONNECT	MMAC-17070-004	2	***	29	JACK-CONNECT	MMAC-17070-004	2	***	29	JACK-CONNECT	MMAC-17070-004	2	***
3	NUT	***	4	***	30	FOOT(A)	MJAF-15640-ZZ4	4	ABS	30	FOOT(A)	MJAF-15640-ZZ4	4	ABS	30	FOOT(A)	MJAF-15640-ZZ4	4	ABS
4	WASHER	***	1	***	31	CHASSIS-BOTTOM	MPAC-04811-002	1	US CO	31	CHASSIS-BOTTOM	MPAC-04811-002	1	US CO	31	CHASSIS-BOTTOM	MPAC-04811-002	1	US CO
5	KNOB-BALANCE	MJAF-16070-ZZ4	3	ABS	32	CUSHION-A	MRAG-13050-004	2	FELT	32	CUSHION-A	MRAG-13050-004	2	FELT	32	CUSHION-A	MRAG-13050-004	2	FELT
6	WINDOW-FL	MAAF-08071-ZZ3	1	PVC	33	CUSHION-A	MRAG-13030-004	1	EVA	33	CUSHION-A	MRAG-13030-004	1	EVA	33	CUSHION-A	MRAG-13030-004	1	EVA
7	FILTER-FL	MAAF-16150-ZZ4	1	PVC	34	SUPPORT-PCB	MJAF-16140-ZZ4	4	ABS	34	SUPPORT-PCB	MJAF-16140-ZZ4	4	ABS	34	SUPPORT-PCB	MJAF-16140-ZZ4	4	ABS
8	PANEL-FRONT	MJAF-06081-ZZ1	1	ABS	35	CHASSIS-PANEL	MPAC-04760-003	1	US CO	35	CHASSIS-PANEL	MPAC-04760-003	1	US CO	35	CHASSIS-PANEL	MPAC-04760-003	1	US CO
9	KNOB-MUTE	MJAF-16080-ZZ4	1	ABS	36	POWER-TRANS	PTAN-03430-YJV	1	***	36	POWER-TRANS	PTAN-03430-YJV	1	***	36	POWER-TRANS	PTAN-03430-YJV	1	***
10	SHIELD-BALANCE	MPAC-16160-004	1	ET-HD	37	CHASSIS-BACK	MPAC-04781-ZZ2	1	SECC	37	CHASSIS-BACK	MPAC-04781-ZZ2	1	SECC	37	CHASSIS-BACK	MPAC-04781-ZZ2	1	SECC
11	PUSH-BUTTONS(C)	MJAF-08060-ZZ3	1	ABS	38	TERMINAL-GND	MMAC-12060-004	1	***	38	TERMINAL-GND	MMAC-12060-004	1	***	38	TERMINAL-GND	MMAC-12060-004	1	***
12	PUSH-BUTTONS(B)	MJAF-08050-ZZ3	1	ABS	39	CUSHION-A	MRAG-13040-004	1	FELT	39	CUSHION-A	MRAG-13040-004	1	FELT	39	CUSHION-A	MRAG-13040-004	1	FELT
13	PUSH-BUTTONS(A)	MJAF-08040-ZZ3	1	ABS	40	CORD-BUSH	MJAG-00280-003	1	***	40	CORD-BUSH	MJAG-00280-003	1	***	40	CORD-BUSH	MJAG-00280-003	1	***
14	KNOB-SPEAKER	MJAF-16060-ZZ4	2	ABS	41	CORD-AC ASS'Y	ACAC-00393-002	1	***	41	CORD-AC ASS'Y	ACAC-00393-002	1	***	41	CORD-AC ASS'Y	ACAC-00393-002	1	***
15	KNOB-STANDBY	MJAF-16050-ZZ4	1	ABS	42	CHASSIS-TOP	MPAC-04820-ZZ2	1	VCM	42	CHASSIS-TOP	MPAC-04820-ZZ2	1	VCM	42	CHASSIS-TOP	MPAC-04820-ZZ2	1	VCM
16	KNOB-POWER	MJAF-16110-ZZ4	1	ABS	43	SHIELD-MAIN	MPAC-16250-004	1	ET-HD	43	SHIELD-MAIN	MPAC-16250-004	1	ET-HD	43	SHIELD-MAIN	MPAC-16250-004	1	ET-HD
17	LENS-POWER	MAAF-16120-ZZ4	1	ACRYL	44	CORK-TERMINAL	MJAG-13060-ZZ4	8	ABS	44	CORK-TERMINAL	MJAG-13060-ZZ4	8	ABS	44	CORK-TERMINAL	MJAG-13060-ZZ4	8	ABS
18	CUSHION-A	MRAG-13020-004	2	EVA	a	VOLUME LED P.C.BOARD	***	1	***	a	VOLUME LED P.C.BOARD	***	1	***	a	VOLUME LED P.C.BOARD	***	1	***
19	RADIATOR-MAIN	MEAC-04850-002	1	A6063	b	MUTE P.C.BOARD	***	1	***	b	MUTE P.C.BOARD	***	1	***	b	MUTE P.C.BOARD	***	1	***
20	BRACKET-RADIATOR(S)	MPAC-16150-004	4	SECC	c	TONE P.C.BOARD	***	1	***	c	TONE P.C.BOARD	***	1	***	c	TONE P.C.BOARD	***	1	***
21	RADIATOR	MEAC-08212-004	4	AL	d	VOLUME P.C.BOARD	***	1	***	d	VOLUME P.C.BOARD	***	1	***	d	VOLUME P.C.BOARD	***	1	***
22	T/R	***	4	***	e	FRONT P.C.BOARD	***	1	***	e	FRONT P.C.BOARD	***	1	***	e	FRONT P.C.BOARD	***	1	***
23	T/R	***	2	***	f	SPEAKER SELECTOR P.C.BOARD	***	1	***	f	SPEAKER SELECTOR P.C.BOARD	***	1	***	f	SPEAKER SELECTOR P.C.BOARD	***	1	***
24	MICA	***	4	***															
25	BRACKET-RADIATOR	MPAC-16180-004	1	US CO															
26	RADIATOR-TR	MEAC-08215-004	2	AL															
27	HEAT-SINK(TR)	MEAC-12693-004	1	AL															



5					6			7			8				
REMARK	NO	PARTS NAME	PART NO	Q'TY	REMARK	NO	PARTS NAME	PART NO	Q'TY	REMARK	NO	PARTS NAME	PART NO	Q'TY	REMARK
***	9	STANDBY P.C.BOARD	***	1	***	k	TUNER P.C.BOARD	***	1	***					
***	h	POWER SWITCH P.C.BOARD	***	1	***	l	SUB-P/T P.C.BOARD	***	1	***					
ABS	i	AMP P.C.BOARD	***	1	***										
US CO	J	MAIN P.C.BOARD	***	1	***										

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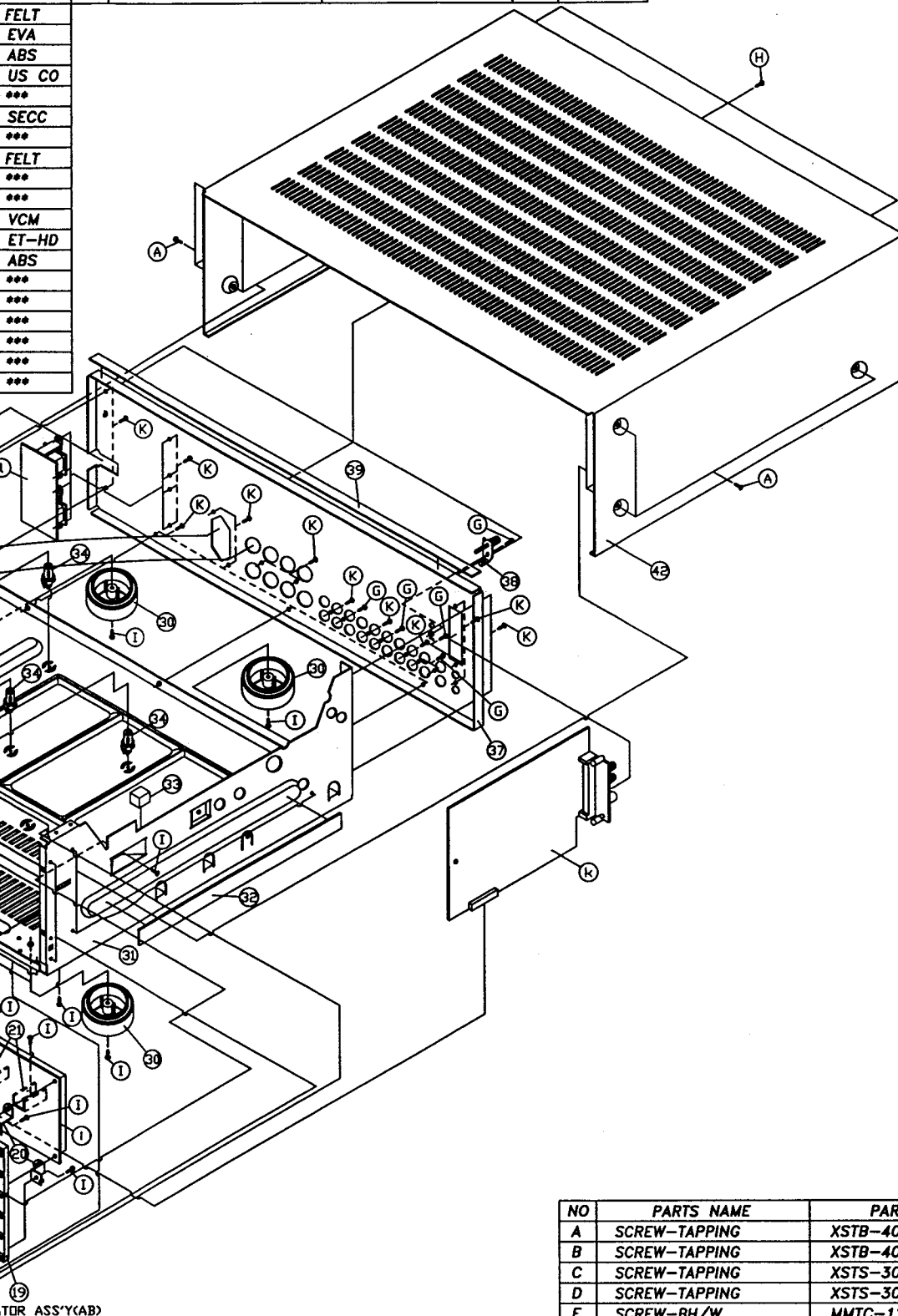
HK3270/HK3270RDS

FELT
EVA
ABS
US CO

SECC

FELT

VCM
ET-HD
ABS

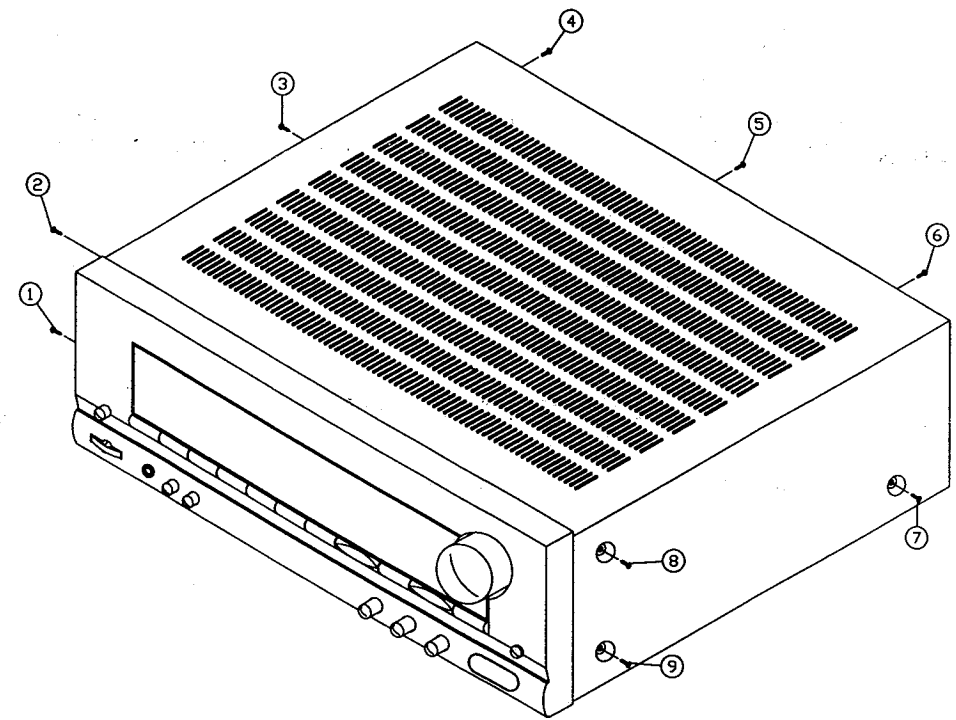


TDR ASS'Y(AB)

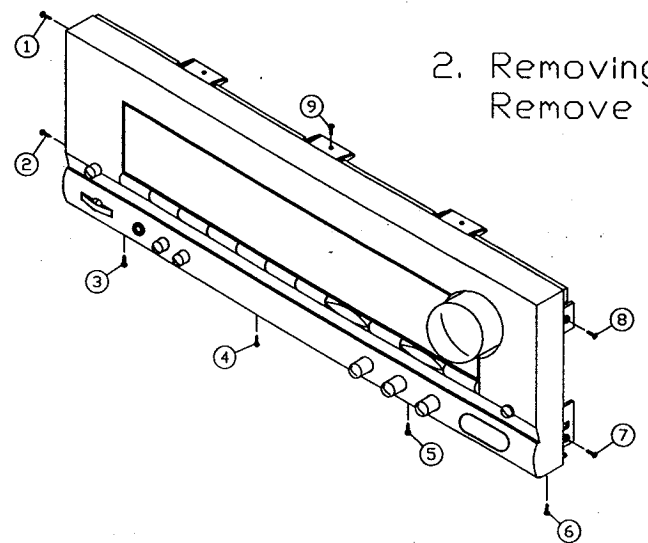
NO	PARTS NAME	PART NO	Q'TY	REMARK
A	SCREW-TAPPING	XSTB-40080-ZB8	6	***
B	SCREW-TAPPING	XSTB-40080-ZY8	4	***
C	SCREW-TAPPING	XSTS-30180-ZY4	4	***
D	SCREW-TAPPING	XSTS-30080-ZY4	7	***
E	SCREW-BH/W	MMTC-12180-004	1	***
F	SCREW-RADIATOR	MMAC-15650-004	6	***
G	SCREW-T/P-TOOTH	MMAC-03592-004	8	***
H	SCREW-TAPPING	XSTB-30080-ZB4	7	***
I	SCREW-TAPPING	XSTB-30080-ZY4	27	***
J	SCREW-TAPPING	XSTB-30100-ZY4	25	***
K	SCREW-TAPPING	XSTB-30100-ZB4	18	***
L	SCREW-TAPPING	XSTB-30060-ZY4	2	***

HK3270 ONLY

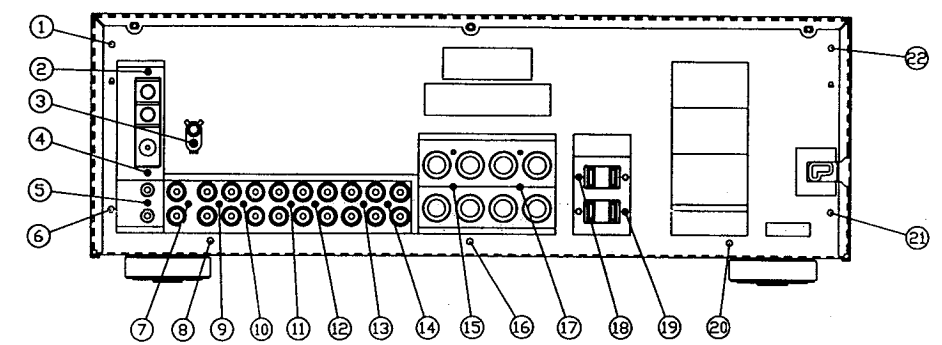
1. Removing the Chassis Top
Remove the screws ①-⑨



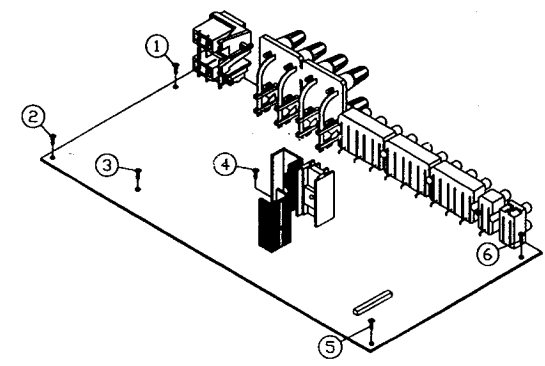
2. Removing the Front Panel
Remove the screws ①-⑨



3. Removing the Rear Panel
Remove the screws ①-⑳

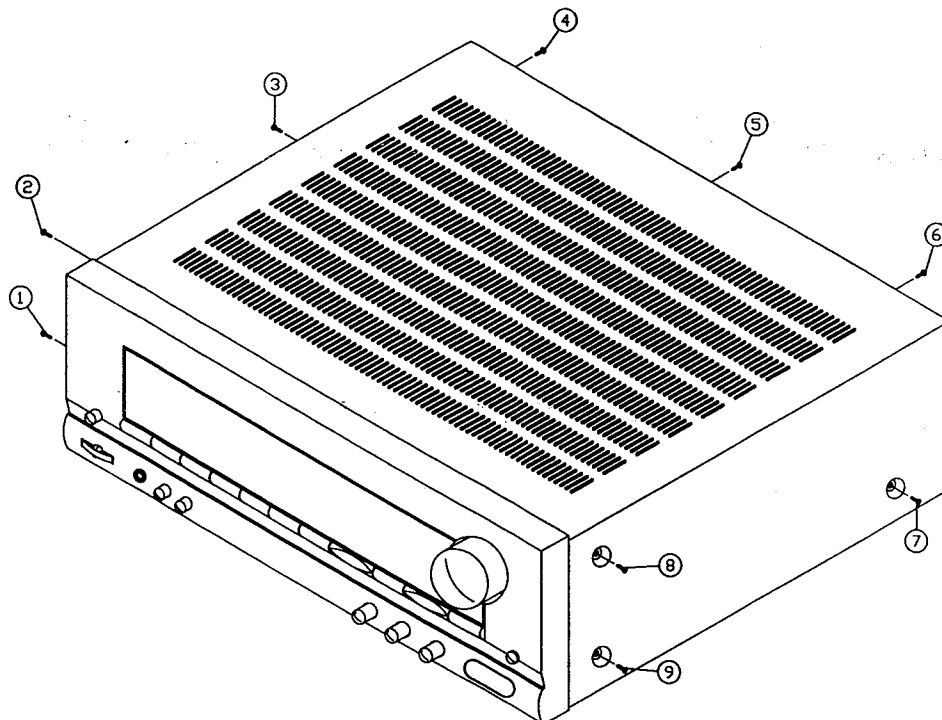


4. Removing the Main PCB Block
Remove the screws ①-⑥

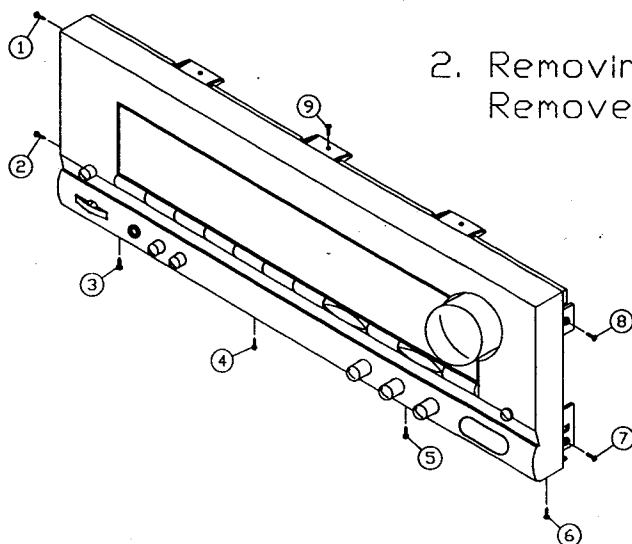


HK3270 ONLY

1. Removing the Chassis Top
Remove the screws ①-⑨

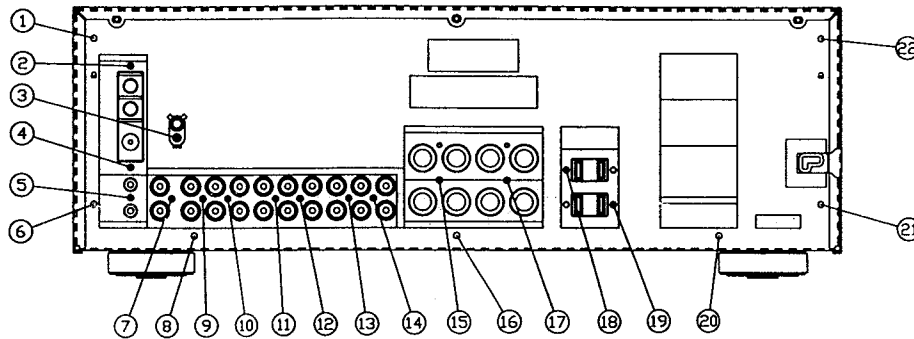


2. Removing the Front Panel
Remove the screws ①-⑨



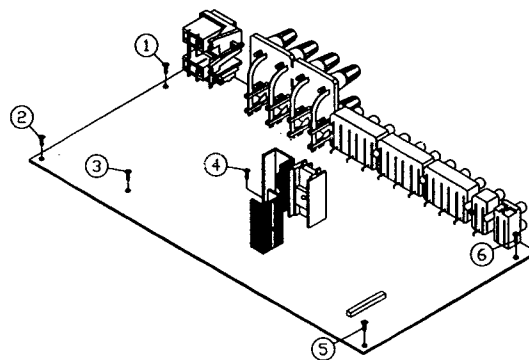
3. Removing the Rear Panel

Remove the screws ①-②



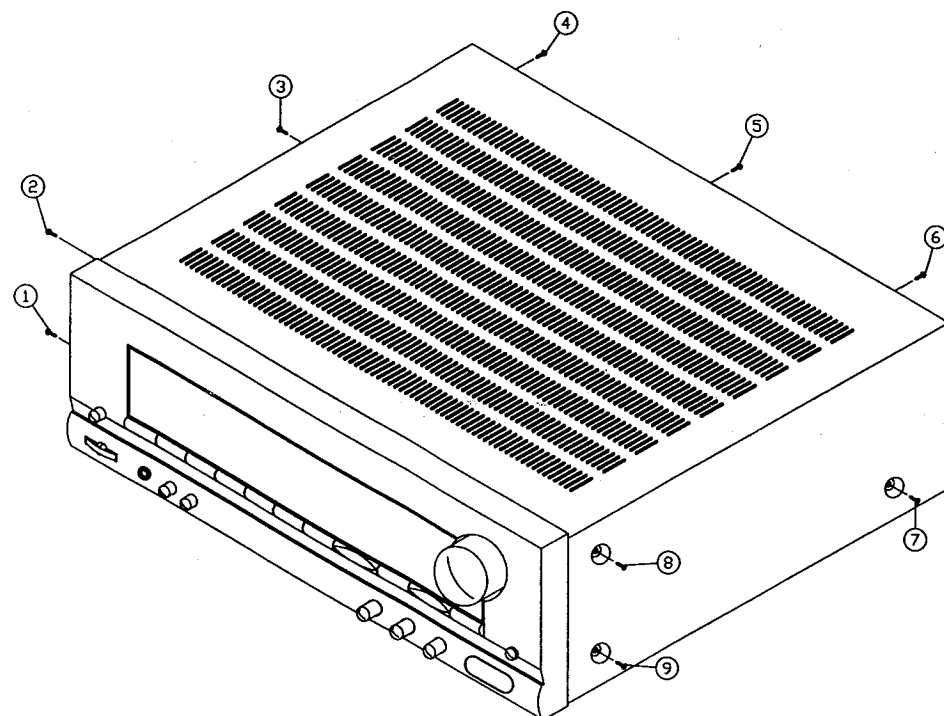
4. Removing the Main PCB Block

Remove the screws ①-⑥

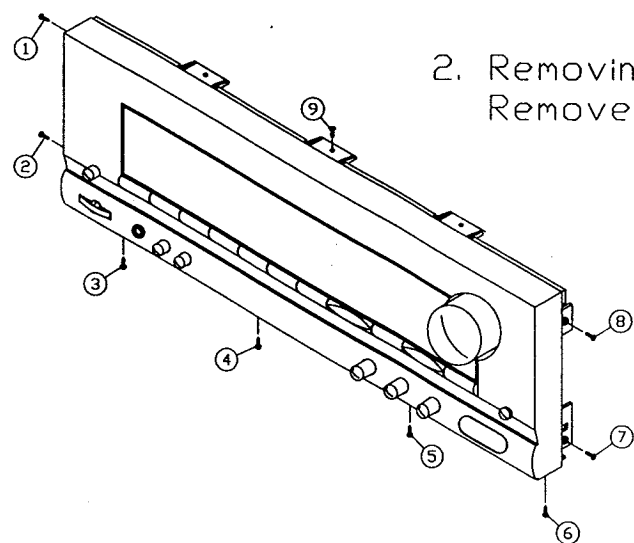


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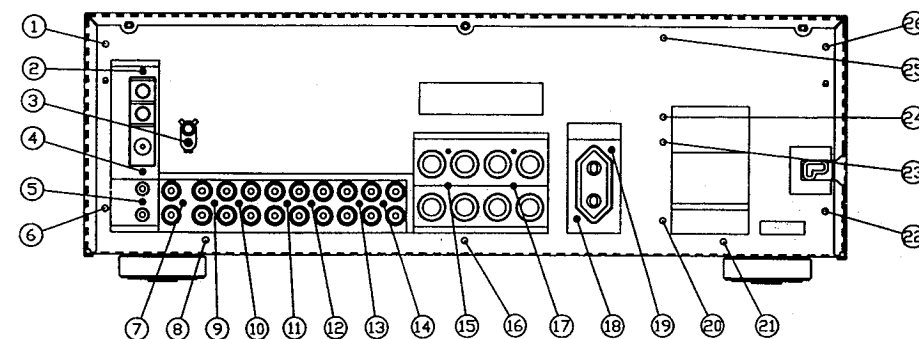
1. Removing the Chassis Top
Remove the screws ①-⑨



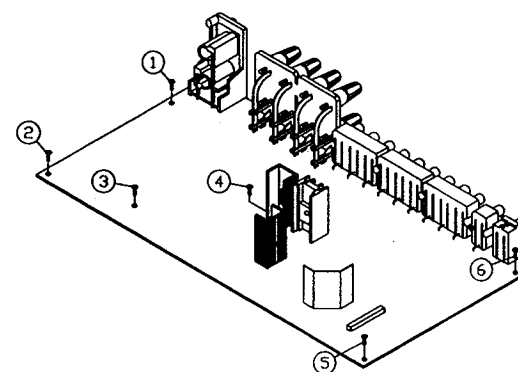
2. Removing the Front Panel
Remove the screws ①-⑨



3. Removing the Rear Panel
Remove the screws ①-⑳

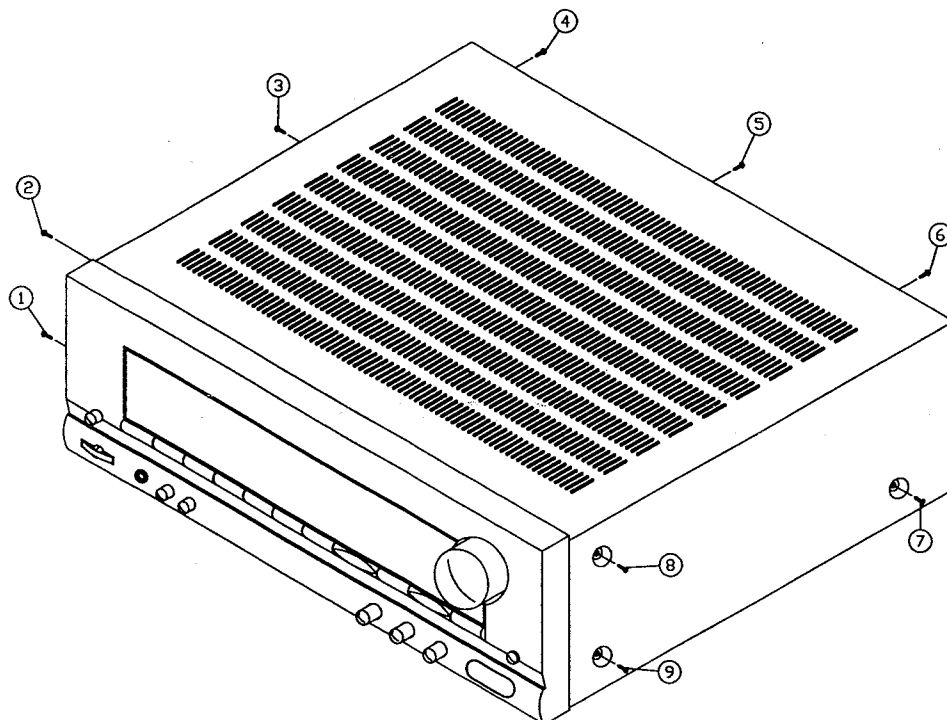


4. Removing the Main PCB Block
Remove the screws ①-⑥

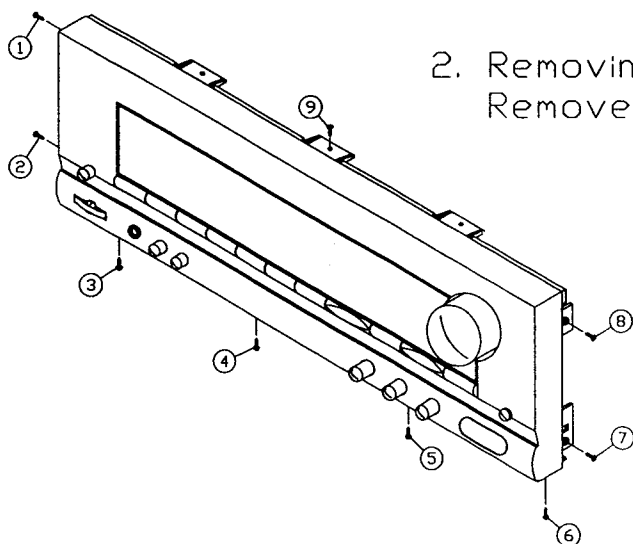


HK3270RDS ONLY

1. Removing the Chassis Top
Remove the screws ①-⑨

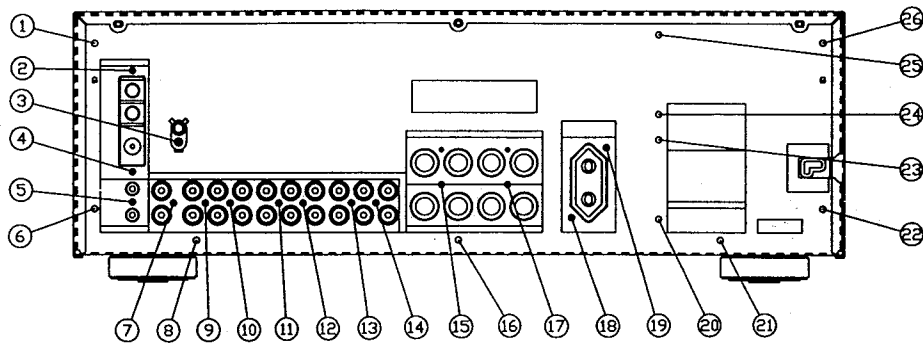


2. Removing the Front Panel
Remove the screws ①-⑨



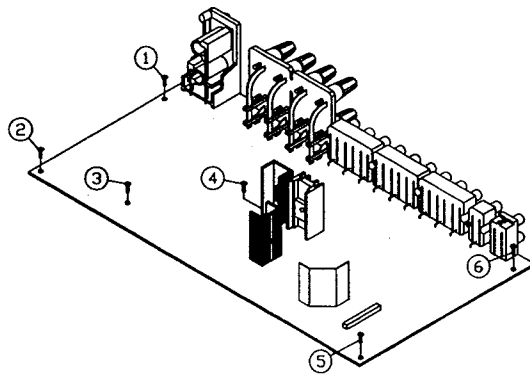
3. Removing the Rear Panel

Remove the screws ①-②⑥



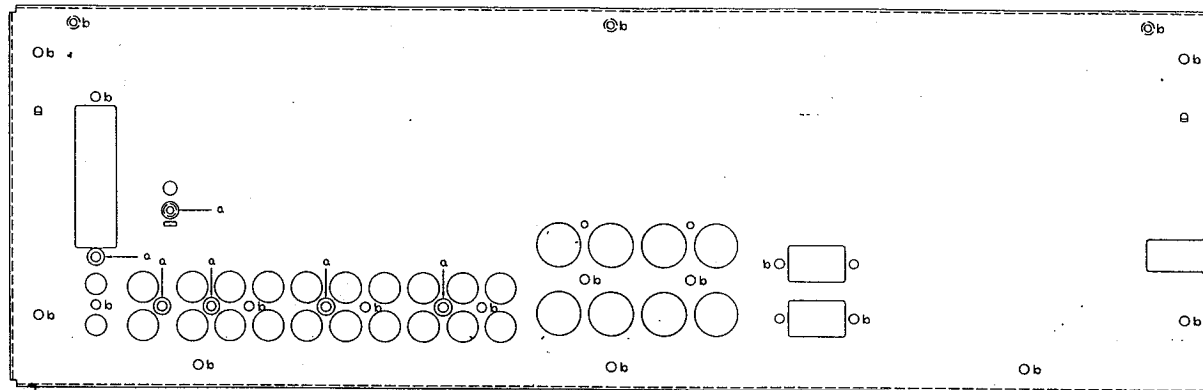
4. Removing the Main PCB Block

Remove the screws ①-⑥



PRINCIPAL SCREW LOCATIONS

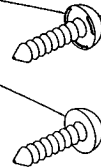
* HK-3270



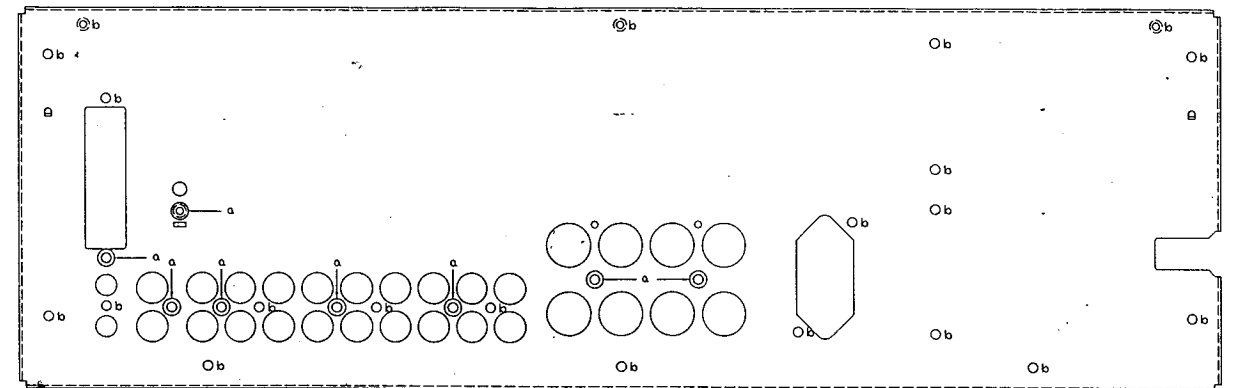
- * a POINT(6) : MMAC-03592-004 SCREW-T/P-TOOTH(FOR GROUNDING)
- * b POINT(19) : XSTB-30100-ZB4 SCREW-TAPPING

MMAC-03592-004 SCREW-T/P-TOOTH

XSTB-30100-ZB4 SCREW-TAPPING



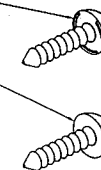
* HK-3270RDS



- * a POINT(8) : MMAC-03592-004 SCREW-T/P-TOOTH(FOR GROUNDING)
- * b POINT(21) : XSTB-30100-ZB4 SCREW-TAPPING

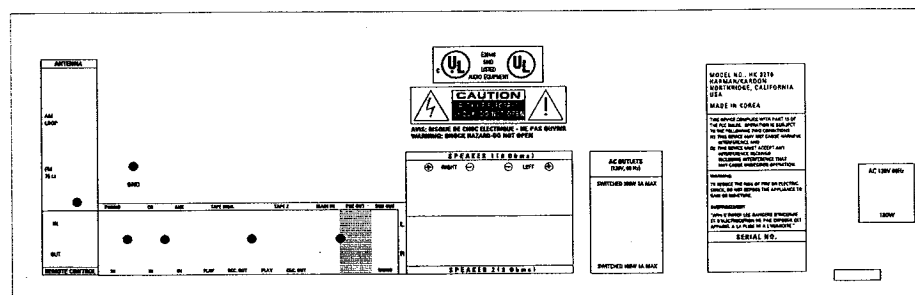
MMAC-03592-004 SCREW-T/P-TOOTH

XSTB-30100-ZB4 SCREW-TAPPING

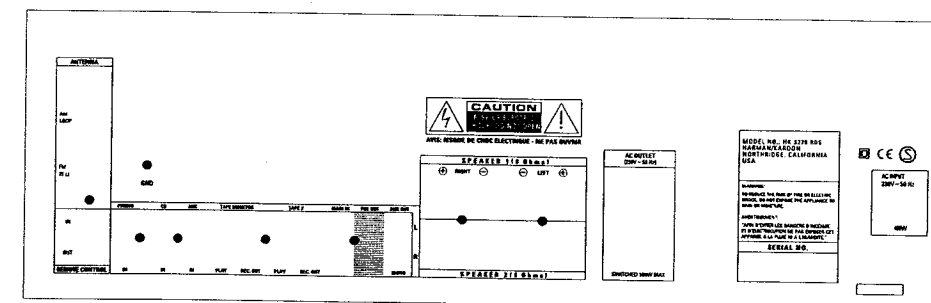


● GROUND POSITION

* HK-3270

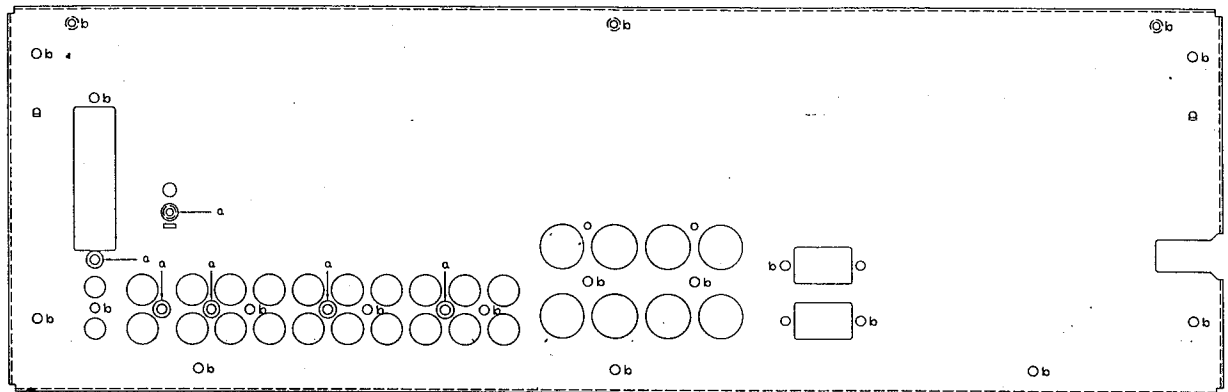


* HK 3270 RDS



PRINCIPAL SCREW LOCATIONS

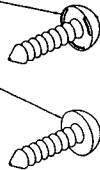
* HK-3270



- * a POINT(6) : MMAC-03592-004 SCREW-T/P-TOOTH(FOR GROUNDING)
- * b POINT(19) : XSTB-30100-ZB4 SCREW-TAPPING

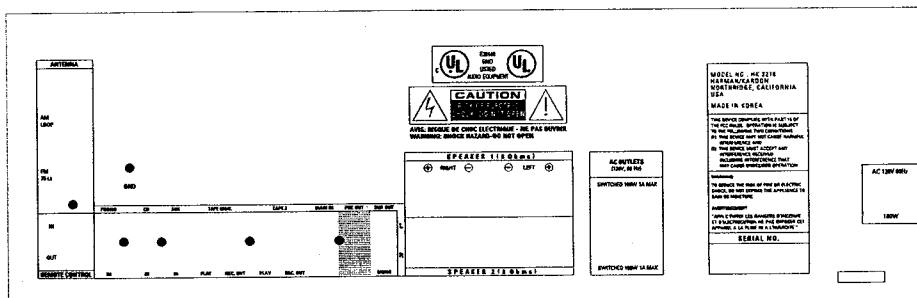
MMAC-03592-004 SCREW-T/P-TOOTH

XSTB-30100-ZB4 SCREW-TAPPING

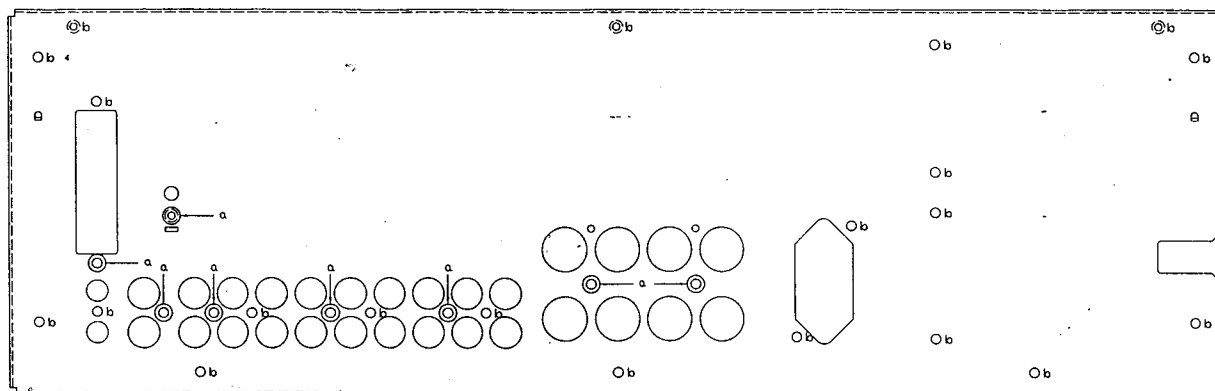


● GROUND POSITION

* HK-3270



* HK-3270RDS

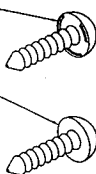


* a POINT(8) : MMAC-03592-004 SCREW-T/P-TOOTH(FOR GROUNDING)

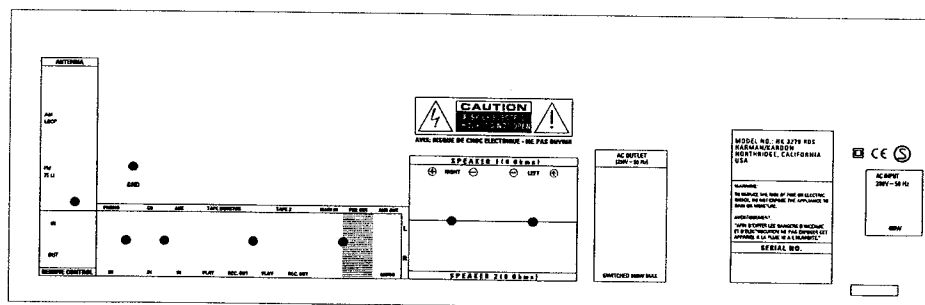
* b POINT(21) : XSTB-30100-ZB4 SCREW-TAPPING

MMAC-03592-004 SCREW-T/P-TOOTH

XSTB-30100-ZB4 SCREW-TAPPING



* HK 3270 RDS



MECHANICAL PARTS LIST

Ref. No.	Part No.	Description	Version
1	MJAF-16100-ZZ4	KNOB-VOLUME	ABS-720
2	MAAF-16130-ZZ4	LENS-VOLUME	PMMA(IF-850)
5	MJAF-16070-ZZ4	KNOB-BALANCE	ABS-720
6	MAAF-08071-ZZ3	WINDOW-FL	PVC, A700D R(a)
7	MAAF-16150-ZZ4	FILTER-FL	PVC, RSM-05
8	MJAF-06081-ZZ1	PANEL-FRONT	ABS-720
9	MJAF-16080-ZZ4	KNOB-MUTE	ABS-720
10	MPAC-16160-004	SHIELD-BALANCE	ET-HD t0.5
11	MJAF-08060-ZZ3	PUSH-BUTTONS	ABS-720
12	MJAF-08050-ZZ3	PUSH-BUTTONS	ABS-720
13	MJAF-08040-ZZ3	PUSH-BUTTONS	ABS-720
14	MJAF-16060-ZZ4	KNOB-SPEAKER	ABS-720
15	MJAF-16050-ZZ4	KNOB-STANDBY	ABS-720
16	MJAF-16110-ZZ4	KNOB-POWER	ABS-720
17	MAAF-16120-ZZ4	LENS-POWER	PMMA(IF-850)
19	MEAC-04850-002	RADIATOR-MAIN	A6063,T-5 +AL
20	MPAC-16220-004	BRACKET-RADIATOR(S)	US COATING T1.0
21	MEAC-08212-004	RADITOR	AL
25	MPAC-16180-004	BRACKET-RADIATOR	US Coating t1.0
26	MEAC-08215-004	RADIATOR-TR	AL
27	MEAC-12693-004	HEAT-SINK (TR)	AL
29	MMAC-17070-004	JACK-CONNECT	
30	MJAF-15640-ZZ4	FOOT(A)	
31	MPAC-04811-002	CHASSIS-BOTTOM	US Coating t1.2
32	MRAG-13050-004	CUSHION-A	FELT 250x10x0.5 S
33	MRAG-13030-004	CUSHION-A	EVA(VE-45),15X15X12T
34	MJAF-16140-004	SUPPORT-PCB	ABS-720
35	MPAC-04760-003	CHASSIS-PANEL	US Coating t1.0
37	MPAC-04781-ZZ2	CHASSIS-BACK	US Coating t1.0
37	MPAC-04780-ZZ2	CHASSIS-BACK	US Coating t1.0
38	MMAC-12060-004	TERMINAL-GND	
39	MRAG-13040-004	CUSHION-A	FELT 437x10x0.5 S
40	MJAG-00280-003	CORD-BUSH	NIFCO
41	ACAC-00393-002	CORD-AC(CORE O)	KKJ-1004A,JE201-03,JE203T
41	ACAC-00413-000	CORD-AC ASSY	KE-01P,JE201-03,JE203T
42	MPAC-04820-ZZ2	CHASSIS-TOP	VCM t0.95(SECC0.8+PVC0.15)
44	MJAG-13060-ZZ4	CORK-TERMINAL	ABS HF-380
A	XSTB-40080-ZB8	SCREW-TAPPING	BHT3T 4x8 FE-ZB
B	XSTB-40080-ZY8	SCREW-TAPPING	BHT3T 4x8 FE-ZY
C	XSTS-30180-ZY4	SCREW-TAPPING	PHWT2T 3x18 FE-ZY
D	XSTS-30080-ZY4	SCREW-TAPPING	PHWT2T 3x8 FE-ZY
E	MMTC-12180-004	SCREW-BH/W	
F	MMAC-15650-004	SCREW-RADIATOR	
G	MMAC-03592-004	SCREW-T/P-TOOTH	BH T2T 3X10 FE-ZB
H	XSTB-30080-ZB4	SCREW-TAPPING	BHT2T 3x8 FE-ZB
I	XSTB-30080-ZY4	SCREW-TAPPING	BHT2T 3x8 FE-ZY
J	XSTB-30100-ZY4	SCREW-TAPPING	BHT2T 3x10 FE-ZY
K	XSTB-30100-ZB4	SCREW-TAPPING	BHT2T 3x10 FE-ZB
L	XSTB-30060-ZY4	SCREW-TAPPING	BHT2T 3x6 FE-ZY
**	ACRC-0058J-000	ASS'Y-REMOCON	HK3270RDS
**	ACRC-0057J-000	ASS'Y-REMOCON	HK3270
**	ANTL-00060-E50	ANTENNA-LOOP	AAN-007 19.5uH 7T 125x93
**	ANTT-00090-075	ANTENNA-T TYPE	75ohm AFN009 3480 W/SOCKET
**	ANTT-00054-075	ANTENNA-T TYPE	75ohm W/TER(Y)-1200m/m
**	BAMN-00010-150	BATTERY MANGANESE	R03(AAAM) 1.5V 10.5x44.5
**	MJAG-04540-004	CABLE-TIE-L80	*
**	MMSC-00900-004	AIR-STAPLER	
**	MWAW-00910-003	PALLETS	1040X1126X141
**	TFMA-00100-D00	TRANSFORMER-MATCHING	MT115050 300ohm & 75ohm
**	YGAP-14252-ZZ4	BOX-GIFT	DW-3
**	YIAR-I3001-ZZE	INST-MANUAL	
**	YSAP-12070-002	CUSHION-L/R	EPS
**	YVAP-01862-ZZ4	POLY-BAG-I(G)	
**	YVAP-13320-ZZ4	TOILON-SHEET	750x1200, 0.5t
**	YWAR-I3001-ZZA	WARRANTY-CARD	
**	7JJG-00016-000	PP BAND	18mm * 560m
**	7JJG-00016-001	PP BAND CLIP	1300pc
**	7JJP-00212-001	WRAP	

HK 3270 ONLY

HK 3270RDS ONLY
HK 3270 ONLYHK 3270RDS ONLY
HK 3270 ONLYHK 3270RDS ONLY
HK 3270 ONLY

HK 3270 ONLY

Ref. No.	Part No.	Description	Version
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ELECTRICAL PARTS LIST

PRODUCT SAFETY NOTICE : Products marked with ▲ Have special characteristics important to safety.
 If you replace any of these components, read carefully the product safety notice in
 Don't degrade the safety of the product through improper servicing.
 Resistor/capacitor tolerance-- D: ($\pm 0.5\%$), J: ($\pm 5\%$), K: ($\pm 10\%$), M: ($\pm 20\%$).

Ref. No.	Part No.	Description
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1.MAIN P.C BOARD

FUSES

▲ F101	FGFB-S2002-837	FUSE GLASS	2A 250V 50T	HK 3270RDS ONLY
▲ F101	FGFB-O2002-831	FUSE GLASS	2A 125V 51S	HK 3270 ONLY
▲ F102	FGFB-S2002-837	FUSE GLASS	2A 250V 50T	HK 3270RDS ONLY
▲ F102	FGFB-O2002-831	FUSE GLASS	2A 125V 51S	HK 3270 ONLY
▲ F103	FGFB-S3151-837	FUSE GLASS	315mA 250V 5x20 V/S/B T	HK 3270RDS ONLY
▲ F104	FGFB-S3152-837	FUSE GLASS	3.15A 250V 5x20 V/S/B T	HK 3270RDS ONLY
▲ F104	FGFB-O5002-831	FUSE GLASS	5A 125V 5x20 U/C SB	HK 3270 ONLY
▲ F105	FGFB-S2502-837	FUSE GLASS	2.5A 250V 5x20 V/S/B T	HK 3270RDS ONLY

CAPACITORS

▲ C101	CFMT-S104K-GI0	CAPACITOR F/POLYESTR	0.1uF K 250V 9.5x11 TL	
▲ C102	CFMT-S104K-GI0	CAPACITOR F/POLYESTR	0.1uF K 250V 9.5x11 TL	
▲ C103	CFMT-S104K-GI0	CAPACITOR F/POLYESTR	0.1uF K 250V 9.5x11 TL	
C106	CEEZ-L104M-RV1	CAPACITOR E/ALUMINUM	10000uF M 63V 30x40 HM	
C107	CEEZ-L104M-RV1	CAPACITOR E/ALUMINUM	10000uF M 63V 30x40 HM	
C108	CFMT-N103J-DE0	CAPACITOR F/POLYESTR	0.01uF J 100V 6x7 T	
C109	CFMT-N103J-DE0	CAPACITOR F/POLYESTR	0.01uF J 100V 6x7 T	
C110	CFMT-N103J-DE0	CAPACITOR F/POLYESTR	0.01uF J 100V 6x7 T	
C111	CEEM-G222M-LR1	CAPACITOR E/ALUMINUM	2200uF M 35V 16x31.5 U M	
C112	CEEM-G222M-LR1	CAPACITOR E/ALUMINUM	2200uF M 35V 16x31.5 U M	
C113	CEET-J1R0M-CI0	CAPACITOR E/ALUMINUM	1.0uF M 50V 5x11 T	
C114	CEET-J1R0M-CI0	CAPACITOR E/ALUMINUM	1.0uF M 50V 5x11 T	
C115	CEES-G102M-LL1	CAPACITOR E/ALUMINUM	1000uF M 35V 16x16 D S	HK 3270 ONLY
C116	CEET-J1R0M-CI0	CAPACITOR E/ALUMINUM	1.0uF M 50V 5x11 T	HK 3270 ONLY
C117	CFMT-N473J-GK0	CAPACITOR F/POLYESTR	0.047uF J 100V 8.9x13. T	HK 3270RDS ONLY
C118	CFMT-N473J-GK0	CAPACITOR F/POLYESTR	0.047uF J 100V 8.9x13. T	HK 3270RDS ONLY
C119	CFMT-N473J-GK0	CAPACITOR F/POLYESTR	0.047uF J 100V 8.9x13. T	HK 3270RDS ONLY
C120	CEET-F102M-HN0	CAPACITOR E/ALUMINUM	1000uF M 25V 13x16 T	HK 3270RDS ONLY
C121	CEET-J1R0M-CI0	CAPACITOR E/ALUMINUM	1.0uF M 50V 5x11 T	HK 3270RDS ONLY
C122	CCAT-J104Z-AAF	CAPACITOR CERAMIC	0.1uF Z 50V F T	HK 3270RDS ONLY
▲ C124	CACS-S472M-179	CAPACITOR AC	4700pF $\pm 20\%$, 250V	HK 3270RDS ONLY
C125	CCCT-J223Z-OFF	CAPACITOR CERAMIC	0.022uF Z 50V F T	
C126	CEET-G471M-HN1	CAPACITOR E/ALUMINUM	470uF M 35V 13x16 U T	
C127	CCCT-J223Z-OFF	CAPACITOR CERAMIC	0.022uF Z 50V F T	
C128	CCCT-J223Z-OFF	CAPACITOR CERAMIC	0.022uF Z 50V F T	
C131	CEET-J470M-DI0	CAPACITOR E/ALUMINUM	47uF M 50V 6.3x11 T	
C132	CCAT-F103Z-AAF	CAPACITOR CERAMIC	0.01uF Z 25V F T	
C133	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T	HK 3270RDS ONLY
C134	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T	HK 3270RDS ONLY
C135	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T	
C136	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T	
C137	CEET-J4R7M-CI0	CAPACITOR E/ALUMINUM	4.7uF M 50V 5x11 T	
C138	CCAT-J102K-AAB	CAPACITOR CERAMIC	1000PF K 50V B T	
C140	CEET-F470M-CI0	CAPACITOR E/ALUMINUM	47uF M 25V 5x11 T	
C141	CFMT-N152J-CJ0	CAPACITOR F/POLYESTR	0.0015uF J 100V 5.4x12 T	
C142	CFMT-N562J-DJ0	CAPACITOR F/POLYESTR	0.0056uF J 100V 5.8x12 T	
C143	CEET-D101M-CI0	CAPACITOR E/ALUMINUM	100uF M 10V 5x11 T	
C144	CEET-J4R7M-CI0	CAPACITOR E/ALUMINUM	4.7uF M 50V 5x11 T	
C145	CFMT-N182J-CJ0	CAPACITOR F/POLYESTR	0.0018uF J 100V 5.5x12 T	
C146	CEET-J4R7M-CI0	CAPACITOR E/ALUMINUM	4.7uF M 50V 5x11 T	
C148	CEET-F470M-CI0	CAPACITOR E/ALUMINUM	47uF M 25V 5x11 T	
C149	CCAT-J102K-AAB	CAPACITOR CERAMIC	1000PF K 50V B T	
C150	CFMT-N152J-CJ0	CAPACITOR F/POLYESTR	0.0015uF J 100V 5.4x12 T	
C151	CFMT-N562J-DJ0	CAPACITOR F/POLYESTR	0.0056uF J 100V 5.8x12 T	
C152	CEET-D101M-CI0	CAPACITOR E/ALUMINUM	100uF M 10V 5x11 T	

Ref. No.	Part No.	Description		Version
C153	CEET-J4R7M-CI0	CAPACITOR E/ALUMINUM	4.7uF M 50V 5x11 T	
C154	CFMT-N182J-CJ0	CAPACITOR F/POLYESTR	0.0018uF J 100V 5.5x12 T	
C155	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T	HK 3270RDS ONLY
C156	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T	HK 3270RDS ONLY
C157	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T	HK 3270RDS ONLY
C158	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T	HK 3270RDS ONLY
C159	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T	HK 3270RDS ONLY
C160	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T	HK 3270RDS ONLY
C161	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T	HK 3270RDS ONLY
C162	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T	HK 3270RDS ONLY
C163	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T	HK 3270RDS ONLY
C164	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T	HK 3270RDS ONLY
C165	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T	HK 3270RDS ONLY
C166	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T	HK 3270RDS ONLY
C167	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T	HK 3270RDS ONLY
C168	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T	HK 3270RDS ONLY
C169	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T	HK 3270RDS ONLY
C170	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T	HK 3270RDS ONLY
C171	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T	HK 3270RDS ONLY
C172	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T	HK 3270RDS ONLY
C173	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T	HK 3270RDS ONLY
C174	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T	HK 3270RDS ONLY
C175	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T	HK 3270RDS ONLY
C176	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T	HK 3270RDS ONLY
C177	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T	HK 3270RDS ONLY
C178	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T	HK 3270RDS ONLY
C179	CEET-J1R0M-CI0	CAPACITOR E/ALUMINUM	1.0uF M 50V 5x11 T	
C180	CEET-F470M-CI0	CAPACITOR E/ALUMINUM	47uF M 25V 5x11 T	
C181	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T	
C182	CEET-F470M-CI0	CAPACITOR E/ALUMINUM	47uF M 25V 5x11 T	
C183	CEET-F470M-CI0	CAPACITOR E/ALUMINUM	47uF M 25V 5x11 T	
C184	CEET-J4R7M-CI0	CAPACITOR E/ALUMINUM	4.7uF M 50V 5x11 T	
C185	CEET-F470M-CI0	CAPACITOR E/ALUMINUM	47uF M 25V 5x11 T	
C186	CEET-F470M-CI0	CAPACITOR E/ALUMINUM	47uF M 25V 5x11 T	
C187	CEET-J4R7M-CI0	CAPACITOR E/ALUMINUM	4.7uF M 50V 5x11 T	
C188	CEET-F470M-CI0	CAPACITOR E/ALUMINUM	47uF M 25V 5x11 T	
C189	CEET-F470M-CI0	CAPACITOR E/ALUMINUM	47uF M 25V 5x11 T	
C190	CEET-J4R7M-CI0	CAPACITOR E/ALUMINUM	4.7uF M 50V 5x11 T	
C191	CCAT-J102K-AAB	CAPACITOR CERAMIC	1000PF K 50V B T	
C192	CEET-J4R7M-CI0	CAPACITOR E/ALUMINUM	4.7uF M 50V 5x11 T	
C193	CEET-F470M-CI0	CAPACITOR E/ALUMINUM	47uF M 25V 5x11 T	
C194	CEET-J4R7M-CI0	CAPACITOR E/ALUMINUM	4.7uF M 50V 5x11 T	
C195	CCAT-J102K-AAB	CAPACITOR CERAMIC	1000PF K 50V B T	
C196	CEET-J4R7M-CI0	CAPACITOR E/ALUMINUM	4.7uF M 50V 5x11 T	
C197	CEET-E220M-CE0	CAPACITOR E/ALUMINUM	22uF M 16V 5x7 T	
C198	CCCT-J472K-0FB	CAPACITOR CERAMIC	4700PF K 50V B T	HK 3270RDS ONLY
C199	CCCT-J472K-0FB	CAPACITOR CERAMIC	4700PF K 50V B T	HK 3270RDS ONLY
C200	CCCT-J472K-0FB	CAPACITOR CERAMIC	4700PF K 50V B T	HK 3270RDS ONLY
C201	CCCT-J472K-0FB	CAPACITOR CERAMIC	4700PF K 50V B T	HK 3270RDS ONLY
C202	CCCT-J472K-0FB	CAPACITOR CERAMIC	4700PF K 50V B T	HK 3270RDS ONLY
C203	CCCT-J472K-0FB	CAPACITOR CERAMIC	4700PF K 50V B T	HK 3270RDS ONLY
C204	CCCT-J472K-0FB	CAPACITOR CERAMIC	4700PF K 50V B T	HK 3270RDS ONLY
C205	CCCT-J472K-0FB	CAPACITOR CERAMIC	4700PF K 50V B T	HK 3270RDS ONLY
C215	CCAT-J473Z-AAF	CAPACITOR CERAMIC	0.047uF Z 50V F T	
C216	CCAT-J473Z-AAF	CAPACITOR CERAMIC	0.047uF Z 50V F T	
C217	CCAT-J473Z-AAF	CAPACITOR CERAMIC	0.047uF Z 50V F T	
C218	CEET-F102M-HN0	CAPACITOR E/ALUMINUM	1000uF M 25V 10x20 T	HK 3270 ONLY
C219	CCAT-J220J-AAZ	CAPACITOR CERAMIC	22PF J 50V SL T	HK 3270RDS ONLY
C220	CCAT-J220J-AAZ	CAPACITOR CERAMIC	22PF J 50V SL T	HK 3270RDS ONLY
C221	CCAT-J220J-AAZ	CAPACITOR CERAMIC	22PF J 50V SL T	HK 3270RDS ONLY
C222	CCAT-J220J-AAZ	CAPACITOR CERAMIC	22PF J 50V SL T	HK 3270RDS ONLY
C223	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T	HK 3270RDS ONLY
▲ C395	CFMT-S104K-GI0	CAPACITOR F/POLYESTR	0.1uF K 250V 9.5x11 TL	
▲ C396	CFMT-S104K-GI0	CAPACITOR F/POLYESTR	0.1uF K 250V 9.5x11 TL	
DIODES				
▲ D101	DDMR-00230-T10	DIODE-RECTIFIER	GP60-04F(400V 6A)	

Ref. No.	Part No.	Description		Version
▲D102	DDMR-00230-T10	DIODE-RECTIFIER	GP60-04F(400V 6A)	
▲D103	DDMR-00230-T10	DIODE-RECTIFIER	GP60-04F(400V 6A)	
▲D104	DDMR-00230-T10	DIODE-RECTIFIER	GP60-04F(400V 6A)	
▲D105	DDTR-00040-T10	DIODE-RECTIFIER	1N4004S(400V 1A 0.6mm) T	
▲D106	DDTR-00040-T10	DIODE-RECTIFIER	1N4004S(400V 1A 0.6mm) T	
▲D107	DDTR-00040-T10	DIODE-RECTIFIER	1N4004S(400V 1A 0.6mm) T	
▲D108	DDTR-00040-T10	DIODE-RECTIFIER	1N4004S(400V 1A 0.6mm) T	
▲D109	DDTR-00040-T10	DIODE-RECTIFIER	1N4004S(400V 1A 0.6mm) T	HK 3270 ONLY
▲D110	DDTR-00040-T10	DIODE-RECTIFIER	1N4004S(400V 1A 0.6mm) T	HK 3270 ONLY
▲D111	DDTR-00040-T10	DIODE-RECTIFIER	1N4004S(400V 1A 0.6mm) T	HK 3270RDS ONLY
▲D112	DDTR-00040-T10	DIODE-RECTIFIER	1N4004S(400V 1A 0.6mm) T	HK 3270RDS ONLY
▲D113	DDTR-00040-T10	DIODE-RECTIFIER	1N4004S(400V 1A 0.6mm) T	HK 3270RDS ONLY
▲D114	DDTR-00040-T10	DIODE-RECTIFIER	1N4004S(400V 1A 0.6mm) T	HK 3270RDS ONLY
D117	DDTR-00040-T10	DIODE-RECTIFIER	1N4004S(400V 1A 0.6mm) T	HK 3270RDS ONLY
▲D118	DDTR-00040-T10	DIODE-RECTIFIER	1N4004S(400V 1A 0.6mm) T	
▲D119	DDTR-00040-T10	DIODE-RECTIFIER	1N4004S(400V 1A 0.6mm) T	
D123	DDTS-00070-S00	DIODE-SI	1SS133 (40V 0.11A) DO-40 T	
INTEGRATED CIRCUITS				
▲IC101	ICRG-00061-SE0	IC REGULATOR	KA7815 15V 3mm TO-220	
▲IC102	ICRG-00251-SE0	IC REGULATOR	KA7915 15V 3mm TO-220	
▲IC103	ICRG-00091-SE0	IC REGULATOR	KA7806 6V 3mm TO-220	HK 3270 ONLY
▲IC104	ICRG-00091-SE0	IC REGULATOR	KA7806 6V 3mm TO-220	HK 3270RDS ONLY
IC105	ICOP-00432-SG0	IC OP AMP	NJM2068DD DIP8	
IC106	ICDG-00260-S10	IC FUNCTION SELECTOR	LC7821 DIP30S	
IC107	ICOP-00432-SG0	IC OP AMP	NJM2068DD DIP8	
IC108	ICOP-00130-SE0	IC DUAL OP AMP	KA4558S SIP9	
IC109	ICPC-00010-TB0	IC PHOTOCOUPLER	LTV817B DIP4	
COILS				
L101	KIOT-4470K-003	INDUCTOR	47uH K LAL02 T	HK 3270RDS ONLY
L102	KIOT-4470K-003	INDUCTOR	47uH K LAL02 T	HK 3270RDS ONLY
CONNECTORS				
▲CW101	KNCW-00990-2T9	CONNECTOR-WAFER	JE202A-1T-02	
▲CW102	KNCW-00990-2T9	CONNECTOR-WAFER	JE202A-1T-02	
▲CW103	KNCW-00990-2T9	CONNECTOR-WAFER	JE202A-1T-02	
CW104	KNCW-00140-3TM	CONNECTOR-WAFER	5267-03A 2.5mm MILK	
CW105	KNCW-00140-7TM	CONNECTOR-WAFER	5267-07A 2.5mm MILK	
CW106	KNCW-00970-3T9	CONNECTOR-WAFER	JE202-1T-3P	
CW107	KNCW-00240-AT9	CONNECTOR-WAFER	53014-10 2.0mm WHT	
CW108	KNCW-06380-16S	CONNECTOR-WAFER	GF120-16S-TS 1.25mm S	
CW109	KNCW-01520-ES9	CONNECTOR-WAFER	35336-1410 20MM 14P	
CW110	KNCW-00140-4TM	CONNECTOR-WAFER	5267-04A 2.5mm MILK	
CW111	KNCW-00140-8TM	CONNECTOR-WAFER	5267-08A 2.5mm MILK	
CW112	KNCW-00240-5T9	CONNECTOR-WAFER	53014-05 2.0mm WHT	
CW113	KNCW-00970-4T9	CONNECTOR-WAFER	JE202-1T-4P	
CW114	KNCW-00140-3TM	CONNECTOR-WAFER	5267-03A 2.5mm MILK	
MISCELLANEOUS				
▲RL101	ESRY-00290-124	RELAY DC 12V	DG12D1-O(M),SPST	HK 3270RDS ONLY
	LLA3-16451-E10	CARD CABLE	KF2B16/450 P7S9 B9 VS3 VB3	
	MEAC-08215-004	RADIATOR-TR	Use for the IC(IC102)	
	MEAC-08215-004	RADIATOR-TR	Use for the IC(IC103)	HK 3270 ONLY
	MEAC-12693-004	HEAT-SINK(TR)	Use for the IC(IC101)	
TE102	MPAC-03811-004	TERMINAL-GND		
TE103	MPAC-03811-004	TERMINAL-GND		
TE104	MPAC-03811-004	TERMINAL-GND		
TE105	MPAC-03811-004	TERMINAL-GND		
FC101	MPAC-11620-004	FUSE CLIP	5.2Pi TAPPING TYPE	
FC102	MPAC-11620-004	FUSE CLIP	5.2Pi TAPPING TYPE	
FC103	MPAC-11620-004	FUSE CLIP	5.2Pi TAPPING TYPE	
FC104	MPAC-11620-004	FUSE CLIP	5.2Pi TAPPING TYPE	
FC105	MPAC-11620-004	FUSE CLIP	5.2Pi TAPPING TYPE	HK 3270RDS ONLY

Ref. No.	Part No.	Description	Version
FC106	MPAC-11620-004	FUSE CLIP	HK 3270RDS ONLY
FC107	MPAC-11620-004	FUSE CLIP	HK 3270RDS ONLY
FC108	MPAC-11620-004	FUSE CLIP	HK 3270RDS ONLY
FC109	MPAC-11620-004	FUSE CLIP	HK 3270RDS ONLY
FC110	MPAC-11620-004	FUSE CLIP	HK 3270RDS ONLY
	MPAC-16250-004	SHIELD-MAIN	HK 3270RDS ONLY
▲PT101	PTAC-03260-YJV	TRANSFORMER-MAIN	HK 3270RDS ONLY
▲PT1	PTAN-03430-YJV	TRANSFORMER-SUB	HK 3270RDS ONLY
▲PT1	PTAN-03430-CJU	TRANSFORMER-MAIN	HK 3270RDS ONLY
▲AC101	SKAO-00130-4CV	AC OUTLET	HK 3270 ONLY
▲AC101	SKAO-00190-C50	AC OUTLET	HK 3270RDS ONLY
PC1	SKPH-00520-360	MINIATURE JACK	HK 3270 ONLY
JK101	SKRC-00290-020	SOCKET-RCA	
JK102	SKRC-00420-061	SOCKET-RCA	
JK103	SKRC-00420-061	SOCKET-RCA	
JK104	SKRC-00760-060	SOCKET-RCA	
TE101	TESP-00230-08S	TERMINAL SPEAKER	
	XSTB-30080-ZY4	SCREW-TAPPING	

5.2Pi TAPPING TYPE
5.2Pi TAPPING TYPE
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5.2Pi TAPPING TYPE
5.2Pi TAPPING TYPE
ET-HD, 0.3T
A35-326Y-V 230V/50Hz
A85-343Y-V 230V 50Hz
A85-343C-U 120V 60Hz
YKE31-0090
S2-764T-214
HSJ1002-01-1020
JK0200440N 2P
JK0600460N
JK0600460N
JK0600467N
SH0810360P
BHT2T 3x8 FE-ZY

RESISTORS

▲R1	RCFT-G335K-1D0	RESISTOR-CARBON FILM	3.3Mohm 1/2W ERC12UGK335V	HK 3270 ONLY
R72	RCFT-E471J-000	RESISTOR-CARBON FILM	470ohm 1/5W 5% T	
R73	RCFT-E471J-000	RESISTOR-CARBON FILM	470ohm 1/5W 5% T	
R90	RCFT-F470J-010	RESISTOR-CARBON FILM	47ohm 1/4W 5% T	
R101	RMOE-H4R7J-020	RESISTOR-METAL OXIDE	1W ERG-1SJ4R7E 4.7ohm T	
R102	RMOR-H100J-0C0	RESISTOR-METAL OXIDE	10ohm 1W 5% ERG(X)1SJ100E	
R103	RMOR-H470J-0C0	RESISTOR-METAL OXIDE	47ohm 1W 5% ERG(X)1SJ470E	HK 3270
R104	RMOR-H470J-0C0	RESISTOR-METAL OXIDE	47ohm 1W 5% ERG(X)1SJ470E	HK 3270
R105	RMOR-H100J-0C0	RESISTOR-METAL OXIDE	10ohm 1W 5% ERG(X)1SJ100E	HK 3270RDS ONLY
R108	RCFT-E101J-000	RESISTOR-CARBON FILM	100ohm 1/5W 5% T	HK 3270RDS ONLY
R109	RCFT-E102J-000	RESISTOR-CARBON FILM	1Kohm 1/5W 5% T	HK 3270RDS ONLY
R110	RCFT-F470J-010	RESISTOR-CARBON FILM	47ohm 1/4W 5% T	
R111	RCFT-E3R3J-000	RESISTOR-CARBON FILM	3.3ohm 1/5W 5% T	
R112	RCFT-E3R3J-000	RESISTOR-CARBON FILM	3.3ohm 1/5W 5% T	
R113	RCFT-E561J-000	RESISTOR-CARBON FILM	560ohm 1/5W 5% T	
R114	RCFT-E561J-000	RESISTOR-CARBON FILM	560ohm 1/5W 5% T	
R122	RCFT-E102J-000	RESISTOR-CARBON FILM	1Kohm 1/5W 5% T	
R123	RCFT-E104J-000	RESISTOR-CARBON FILM	100Kohm 1/5W 5% T	
R124	RCFT-E102J-000	RESISTOR-CARBON FILM	1Kohm 1/5W 5% T	
R125	RCFT-E104J-000	RESISTOR-CARBON FILM	100Kohm 1/5W 5% T	
R126	RCFT-E104J-000	RESISTOR-CARBON FILM	100Kohm 1/5W 5% T	
R127	RCFT-E564J-000	RESISTOR-CARBON FILM	560Kohm 1/5W 5% T	
R128	RCFT-E473J-000	RESISTOR-CARBON FILM	47Kohm 1/5W 5% T	
R129	RCFT-E751J-000	RESISTOR-CARBON FILM	750ohm 1/5W 5% T	
R130	RCFT-E471J-000	RESISTOR-CARBON FILM	470ohm 1/5W 5% T	
R131	RCFT-E104J-000	RESISTOR-CARBON FILM	100Kohm 1/5W 5% T	
R132	RCFT-E221J-000	RESISTOR-CARBON FILM	220ohm 1/5W 5% T	
R133	RCFT-E104J-000	RESISTOR-CARBON FILM	100Kohm 1/5W 5% T	
R134	RCFT-E564J-000	RESISTOR-CARBON FILM	560Kohm 1/5W 5% T	
R135	RCFT-E473J-000	RESISTOR-CARBON FILM	47Kohm 1/5W 5% T	
R136	RCFT-E751J-000	RESISTOR-CARBON FILM	750ohm 1/5W 5% T	
R137	RCFT-E471J-000	RESISTOR-CARBON FILM	470ohm 1/5W 5% T	
R138	RCFT-E104J-000	RESISTOR-CARBON FILM	100Kohm 1/5W 5% T	
R139	RCFT-E221J-000	RESISTOR-CARBON FILM	220ohm 1/5W 5% T	
R140	RCFT-E471J-000	RESISTOR-CARBON FILM	470ohm 1/5W 5% T	
R141	RCFT-E471J-000	RESISTOR-CARBON FILM	470ohm 1/5W 5% T	
R142	RCFT-E471J-000	RESISTOR-CARBON FILM	470ohm 1/5W 5% T	
R143	RCFT-E471J-000	RESISTOR-CARBON FILM	470ohm 1/5W 5% T	
R144	RCFT-E471J-000	RESISTOR-CARBON FILM	470ohm 1/5W 5% T	
R145	RCFT-E471J-000	RESISTOR-CARBON FILM	470ohm 1/5W 5% T	
R146	RCFT-E471J-000	RESISTOR-CARBON FILM	470ohm 1/5W 5% T	
R147	RCFT-E471J-000	RESISTOR-CARBON FILM	470ohm 1/5W 5% T	
R148	RCFT-E471J-000	RESISTOR-CARBON FILM	470ohm 1/5W 5% T	
R149	RCFT-E471J-000	RESISTOR-CARBON FILM	470ohm 1/5W 5% T	
R150	RCFT-E104J-000	RESISTOR-CARBON FILM	100Kohm 1/5W 5% T	
R151	RCFT-E221J-000	RESISTOR-CARBON FILM	220ohm 1/5W 5% T	
R152	RCFT-E102J-000	RESISTOR-CARBON FILM	1Kohm 1/5W 5% T	

Ref. No.	Part No.	Description		Version
R153	RCFT-E102J-000	RESISTOR-CARBON FILM	1Kohm 1/5W 5% T	
R154	RCFT-E102J-000	RESISTOR-CARBON FILM	1Kohm 1/5W 5% T	
R155	RCFT-E221J-000	RESISTOR-CARBON FILM	220ohm 1/5W 5% T	
R156	RCFT-E473J-000	RESISTOR-CARBON FILM	47Kohm 1/5W 5% T	
R157	RCFT-E471J-000	RESISTOR-CARBON FILM	470ohm 1/5W 5% T	
R158	RCFT-E104J-000	RESISTOR-CARBON FILM	100Kohm 1/5W 5% T	
R159	RCFT-E224J-000	RESISTOR-CARBON FILM	220Kohm 1/5W 5% T	
R160	RCFT-E102J-000	RESISTOR-CARBON FILM	1Kohm 1/5W 5% T	
R161	RCFT-E221J-000	RESISTOR-CARBON FILM	220ohm 1/5W 5% T	
R162	RCFT-E473J-000	RESISTOR-CARBON FILM	47Kohm 1/5W 5% T	
R163	RCFT-E471J-000	RESISTOR-CARBON FILM	470ohm 1/5W 5% T	
R164	RCFT-E104J-000	RESISTOR-CARBON FILM	100Kohm 1/5W 5% T	
R165	RCFT-E224J-000	RESISTOR-CARBON FILM	220Kohm 1/5W 5% T	
R166	RCFT-E102J-000	RESISTOR-CARBON FILM	1Kohm 1/5W 5% T	
R167	RCFT-E221J-000	RESISTOR-CARBON FILM	220ohm 1/5W 5% T	
R168	RCFT-E471J-000	RESISTOR-CARBON FILM	470ohm 1/5W 5% T	
R169	RCFT-E104J-000	RESISTOR-CARBON FILM	100Kohm 1/5W 5% T	
R170	RCFT-E202J-000	RESISTOR-CARBON FILM	2Kohm 1/5W 5% T	
R171	RCFT-E202J-000	RESISTOR-CARBON FILM	2Kohm 1/5W 5% T	
R172	RCFT-E104J-000	RESISTOR-CARBON FILM	100Kohm 1/5W 5% T	
R173	RCFT-E471J-000	RESISTOR-CARBON FILM	470ohm 1/5W 5% T	
R174	RCFT-E221J-000	RESISTOR-CARBON FILM	220ohm 1/5W 5% T	
R175	RCFT-E471J-000	RESISTOR-CARBON FILM	470ohm 1/5W 5% T	
R176	RCFT-E104J-000	RESISTOR-CARBON FILM	100Kohm 1/5W 5% T	
R177	RCFT-E202J-000	RESISTOR-CARBON FILM	2Kohm 1/5W 5% T	
R178	RCFT-E202J-000	RESISTOR-CARBON FILM	2Kohm 1/5W 5% T	
R179	RCFT-E104J-000	RESISTOR-CARBON FILM	100Kohm 1/5W 5% T	
R180	RCFT-E471J-000	RESISTOR-CARBON FILM	470ohm 1/5W 5% T	
R181	RCFT-E221J-000	RESISTOR-CARBON FILM	220ohm 1/5W 5% T	
R182	RCFT-E123J-000	RESISTOR-CARBON FILM	12Kohm 1/5W 5% T	
R183	RCFT-E332J-000	RESISTOR-CARBON FILM	3.3Kohm 1/5W 5% T	
R184	RCFT-E332J-000	RESISTOR-CARBON FILM	3.3Kohm 1/5W 5% T	
R185	RCFT-E332J-000	RESISTOR-CARBON FILM	3.3Kohm 1/5W 5% T	
R186	RCFT-E271J-000	RESISTOR-CARBON FILM	270ohm 1/5W 5% T	
R187	RCFT-E101J-000	RESISTOR-CARBON FILM	100ohm 1/5W 5% T	
R188	RCFT-E392J-000	RESISTOR-CARBON FILM	3.9Kohm 1/5W 5% T	
R189	RCFT-E473J-000	RESISTOR-CARBON FILM	47Kohm 1/5W 5% T	
R190	RCFT-E470J-000	RESISTOR-CARBON FILM	47ohm 1/5W 5% T	
R206	RCFT-E104J-000	RESISTOR-CARBON FILM	100Kohm 1/5W 5% T	
R206	RMOH-H100J-030	RESISTOR-METAL OXIDE	10ohm 1W 5% H	
R207	RCFT-E104J-000	RESISTOR-CARBON FILM	100Kohm 1/5W 5% T	
R207	RMOH-H100J-030	RESISTOR-METAL OXIDE	10ohm 1W 5% H	
R208	RCFT-F4R7J-010	RESISTOR-CARBON FILM	4.7ohm 1/4W 5% H	HK 3270 ONLY
R209	RCFT-E221J-000	RESISTOR-CARBON FILM	220ohm 1/5W 5% T	HK 3270RDS ONLY
R210	RCFT-E221J-000	RESISTOR-CARBON FILM	220ohm 1/5W 5% T	HK 3270RDS ONLY
R211	RCFT-E221J-000	RESISTOR-CARBON FILM	220ohm 1/5W 5% T	HK 3270RDS ONLY
R212	RCFT-E221J-000	RESISTOR-CARBON FILM	220ohm 1/5W 5% T	HK 3270RDS ONLY
R213	RCFT-E473J-000	RESISTOR-CARBON FILM	47Kohm 1/5W 5% T	HK 3270RDS ONLY

		TRANSISTORS		
Q101	TRTC-0016G-SD0	TRANSISTOR N-H FREQ	KTC3198-GR TO92	HK 3270RDS ONLY
Q105	TRTC-01700-SD0	TRANSISTOR N-H FREQ	KRC107M W/RESIST TO92M	
Q106	TRTA-00940-SD0	TRANSISTOR P-H FREQ	KRA107M W/RESIST TO92M	
Q107	TRTD-00200-SD0	TRANSISTOR N-L FREQ	KTD-1302 TO92	
Q108	TRTD-00200-SD0	TRANSISTOR N-L FREQ	KTD-1302 TO92	
Q109	TRTA-00940-SD0	TRANSISTOR P-H FREQ	KRA107M W/RESIST TO92M	
Q392	TRTC-0016G-SD0	TRANSISTOR N-H FREQ	KTC3198-GR TO92	

1-1. VOLUME P.C BOARD.

		CAPACITORS	
C206	CEET-E101M-D10	CAPACITOR E/ALUMINUM	100uF M 16V 6.3x11 T
C207	CCAT-F103Z-AAF	CAPACITOR CERAMIC	0.01uF Z 25V F T
C208	CCAT-F103Z-AAF	CAPACITOR CERAMIC	0.01uF Z 25V F T
C209	CCAT-F103Z-AAF	CAPACITOR CERAMIC	0.01uF Z 25V F T
C210	CCAT-F103Z-AAF	CAPACITOR CERAMIC	0.01uF Z 25V F T

Ref. No.	Part No.	Description	Version
C211	CCAT-J473Z-AAF	CAPACITOR CERAMIC	0.047uF Z 50V F T
C213	CEET-F470M-CIO	CAPACITOR E/ALUMINUM	47uF M 25V 5x11 T
C214	CEET-F470M-CIO	CAPACITOR E/ALUMINUM	47uF M 25V 5x11 T
C224	CCAT-J560J-AAZ	CAPACITOR CERAMIC	56PF J 50V SL T
C225	CCAT-J560J-AAZ	CAPACITOR CERAMIC	56PF J 50V SL T

CONNECTORS			
CW201	KNCW-00240-AT9	CONNECTOR-WAFER	53014-10 2.0mm WHT
CW202	KNCW-00240-5T9	CONNECTOR-WAFER	53014-05 2.0mm WHT
CW203	KNCW-00240-2T9	CONNECTOR-WAFER	53014-02 2.0mm WHT
CH107	UM09-A0900-000	WIRE-ASS'Y(TO MAIN B'D)	UL1533#28 RED-320 10P

INTEGRATED CIRCUITS			
IC201	ICDG-00560-SO0	IC MOTOR DRIVER	BA6208 SIP9
IC202	ICRG-00043-SE0	IC REGULATOR	KA7805 5V 3mm TO-220

TRANSISTORS			
Q201	TRTC-01720-SD0	TRANSISTOR N-H FREQ	KRC111M W/RESIST TO92M

RESISTORS			
R201	RCFT-E391J-000	RESISTOR-CARBON FILM	390ohm 1/5W 5% T
R203	RCFT-E102J-000	RESISTOR-CARBON FILM	1Kohm 1/5W 5% T
R204	RCFT-E102J-000	RESISTOR-CARBON FILM	1Kohm 1/5W 5% T
R205	RMOH-H820J-030	RESISTOR-METAL OXIDE	82ohm 1W 5% H

MOTOR VOLUME			
VR201	VWBD-E005A-503	VR-W/MOTOR	RK16812MG0ATA-50KAx2

1-2. LED P.C BOARD

LD201	DPLE-00210-YG0	LED DISPLAY-LED	SM3511
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CH203	U208-2K816-250	MISCELLANEOUS WIRE-ASS'Y(V/R LED)	UL20080#28 RED-160 2P
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1-3. POWER SWITCH P.C BOARD

▲SW1	SWPU-00591-059	MISCELLANEOUS SWITCH-PUSH	SDDL B13300
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▲ CW305	KNCW-00990-2T9	CONNECTORS CONNECTOR-WAFER	JE202A-1T-02
▲	U345-6A350-450	WIRE-ASS'Y(POWER SWITCH)	UL1617#18 BLU-500 2P

1-4. AMP. P.C BOARD

CAPACITORS			
C301	CEET-F470M-CIO	CAPACITOR E/ALUMINUM	47uF M 25V 5x11 T
C302	CCTT-J680J-0FC	CAPACITOR CERAMIC	68PF J 50V CH T
C303	CCTT-J681J-0BZ	CAPACITOR CERAMIC	680PF J 50V SL T
C304	CEET-F330M-CIO	CAPACITOR E/ALUMINUM	33uF M 25V 5x11 T
C305	CEET-E220M-CE0	CAPACITOR E/ALUMINUM	22uF M 16V 5x7 T
C306	CCTT-J120J-0BC	CAPACITOR CERAMIC	12PF J 50V CH T
C307	CEET-C471M-FI1	CAPACITOR E/ALUMINUM	470uF M 6.3V 8x11.5 U T
C308	CEET-L331M-DI1	CAPACITOR E/ALUMINUM	330uF M 63V 10x20 SHL T
C309	CEET-L331M-DI1	CAPACITOR E/ALUMINUM	330uF M 63V 10x20 SHL T
C310	CCTT-J470J-0DC	CAPACITOR CERAMIC	47PF J 50V CH T
C311	CEET-J100M-CIO	CAPACITOR E/ALUMINUM	10uF M 50V 5x11 T

Ref. No.	Part No.	Description	Version
C312	CEET-J4R7M-CI0	CAPACITOR E/ALUMINUM	4.7uF M 50V 5x11 T
C313	CEET-J100M-CI0	CAPACITOR E/ALUMINUM	10uF M 50V 5x11 T
C321	CEET-F470M-CI0	CAPACITOR E/ALUMINUM	47uF M 25V 5x11 T
C322	CCTT-J680J-0FC	CAPACITOR CERAMIC	68PF J 50V CH T
C323	CCTT-J681J-0BZ	CAPACITOR CERAMIC	680PF J 50V SL T
C324	CEET-F330M-CI0	CAPACITOR E/ALUMINUM	33uF M 25V 5x11 T
C325	CEET-E220M-CE0	CAPACITOR E/ALUMINUM	22uF M 16V 5x7 T
C326	CCTT-J120J-0BC	CAPACITOR CERAMIC	12PF J 50V CH T
C327	CEET-C471M-FI1	CAPACITOR E/ALUMINUM	470uF M 6.3V 8x11.5 U T
C328	CEET-L331M-DI1	CAPACITOR E/ALUMINUM	330uF M 63V 10x20 SHL T
C329	CEET-L331M-DI1	CAPACITOR E/ALUMINUM	330uF M 63V 10x20 SHL T
C330	CCTT-J470J-0DC	CAPACITOR CERAMIC	47PF J 50V CH T
C331	CEET-J100M-CI0	CAPACITOR E/ALUMINUM	10uF M 50V 5x11 T
C332	CEET-J4R7M-CI0	CAPACITOR E/ALUMINUM	4.7uF M 50V 5x11 T
C333	CEET-J100M-CI0	CAPACITOR E/ALUMINUM	10uF M 50V 5x11 T
C335	CEET-J1R0M-CI0	CAPACITOR E/ALUMINUM	1.0uF M 50V 5x11 T
C336	CEET-J1R0M-CI0	CAPACITOR E/ALUMINUM	1.0uF M 50V 5x11 T
C390	CEET-C471M-FI1	CAPACITOR E/ALUMINUM	470uF M 6.3V 8x11.5 U T
C391	CFMT-N473J-GK0	CAPACITOR F/POLYESTR	0.047uF J 100V 8.9x13. T
C392	CFMT-N473J-GK0	CAPACITOR F/POLYESTR	0.047uF J 100V 8.9x13. T
C393	CFMT-N473J-GK0	CAPACITOR F/POLYESTR	0.047uF J 100V 8.9x13. T
C394	CFMT-N473J-GK0	CAPACITOR F/POLYESTR	0.047uF J 100V 8.9x13. T
DIODES			
D301	DDTS-00070-SO0	DIODE-SI	1SS133 (40V 0.11A) DO-40 T
D302	DDTS-00070-SO0	DIODE-SI	1SS133 (40V 0.11A) DO-40 T
D303	DDTS-00070-SO0	DIODE-SI	1SS133 (40V 0.11A) DO-40 T
D304	DDTS-00070-SO0	DIODE-SI	1SS133 (40V 0.11A) DO-40 T
D390	DDTZ-G091B-SO0	DIODE ZENER	MTZ9.1B 9.01 DO40 T
D391	DDTS-00070-SO0	DIODE-SI	1SS133 (40V 0.11A) DO-40 T
COILS			
L301	KIBK-00190-E40	INDUCTOR 0.7uH	
L302	KIBK-00190-E40	INDUCTOR 0.7uH	
CONNECTORS			
CW301	KNCW-00970-3T9	CONNECTOR-WAFER	JE202-1T-3P
CW302	KNCW-00140-2TM	CONNECTOR-WAFER	5267-02A 2.5mm MILK
CH110	U410-20820-200	WIRE-ASS'Y(TO MAIN)	UL1533#28 RED-260 4P
CH112	U508-4M726-250	WIRE-ASS'Y(TO MAIN)	UL1007#26 YEL-260 5P
CH111	U810-7M412-200	WIRE-ASS'Y(TO MAIN)	UL1007#20 VIT-120 8P
RESISTORS			
R301	RCFT-E331J-000	RESISTOR-CARBON FILM	330ohm 1/5W 5% T
R302	RCFT-E333J-000	RESISTOR-CARBON FILM	33Kohm 1/5W 5% T
R303	RCFT-E681J-000	RESISTOR-CARBON FILM	680ohm 1/5W 5% T
R304	RCFT-E751J-000	RESISTOR-CARBON FILM	750ohm 1/5W 5% T
R305	RCFT-E751J-000	RESISTOR-CARBON FILM	750ohm 1/5W 5% T
R306	RCFT-E333J-000	RESISTOR-CARBON FILM	33Kohm 1/5W 5% T
R307	RCFT-E150J-000	RESISTOR-CARBON FILM	15ohm 1/5W 5% T
R308	RCFT-E150J-000	RESISTOR-CARBON FILM	15ohm 1/5W 5% T
R309	RCFT-E680J-000	RESISTOR-CARBON FILM	68ohm 1/5W 5% T
R310	RCFT-E333J-000	RESISTOR-CARBON FILM	33Kohm 1/5W 5% T
R311	RCFT-E103J-000	RESISTOR-CARBON FILM	10Kohm 1/5W 5% T
R312	RCFT-E151J-000	RESISTOR-CARBON FILM	150ohm 1/5W 5% T
R313	RCFT-E152J-000	RESISTOR-CARBON FILM	1.5Kohm 1/5W 5% T
R314	RCFT-E561J-000	RESISTOR-CARBON FILM	560ohm 1/5W 5% T
R315	RCFT-E561J-000	RESISTOR-CARBON FILM	560ohm 1/5W 5% T
R316	RCFT-E561J-000	RESISTOR-CARBON FILM	560ohm 1/5W 5% T
R317	RCFT-E561J-000	RESISTOR-CARBON FILM	560ohm 1/5W 5% T
R318	RCFT-E561J-000	RESISTOR-CARBON FILM	560ohm 1/5W 5% T
R319	RCFT-E561J-000	RESISTOR-CARBON FILM	560ohm 1/5W 5% T
R320	RCFT-E472J-000	RESISTOR-CARBON FILM	4.7Kohm 1/5W 5% T

Ref. No.	Part No.	Description	Version
R321	RCFT-E820J-000	RESISTOR-CARBON FILM	82ohm 1/5W 5% T
R322	RCFT-E223J-000	RESISTOR-CARBON FILM	22Kohm 1/5W 5% T
R323	RCFT-E122J-000	RESISTOR-CARBON FILM	1.2Kohm 1/5W 5% T
R324	RCFT-E223J-000	RESISTOR-CARBON FILM	22Kohm 1/5W 5% T
R325	RCFT-E821J-000	RESISTOR-CARBON FILM	820ohm 1/5W 5% T
R326	RCFT-E821J-000	RESISTOR-CARBON FILM	820ohm 1/5W 5% T
R327	RCFT-E820J-000	RESISTOR-CARBON FILM	82ohm 1/5W 5% T
R328	RMOH-H470J-030	RESISTOR-METAL OXIDE	47ohm 1W 5% H
R329	RMOH-H470J-030	RESISTOR-METAL OXIDE	47ohm 1W 5% H
R330	RCFT-E820J-000	RESISTOR-CARBON FILM	82ohm 1/5W 5% T
R331	RCFT-E3R3J-000	RESISTOR-CARBON FILM	3.3ohm 1/5W 5% T
R332	RCFT-E3R3J-000	RESISTOR-CARBON FILM	3.3ohm 1/5W 5% T
▲ R333	RMFS-LR27J-0J0	RESISTOR-METAL PLATE	0.27ohm 5W 5% MPR-55R
R334	RCFT-E182J-000	RESISTOR-CARBON FILM	1.8Kohm 1/5W 5% T
R335	RCFT-E911J-000	RESISTOR-CARBON FILM	910ohm 1/5W 5% T
R336	RCFT-E152J-000	RESISTOR-CARBON FILM	1.5Kohm 1/5W 5% T
R337	RCFT-E682J-000	RESISTOR-CARBON FILM	6.8Kohm 1/5W 5% T
R340	RCFT-E243J-000	RESISTOR-CARBON FILM	24Kohm 1/5W 5% T
R341	RCFT-E331J-000	RESISTOR-CARBON FILM	330ohm 1/5W 5% T
R342	RCFT-E333J-000	RESISTOR-CARBON FILM	33Kohm 1/5W 5% T
R343	RCFT-E681J-000	RESISTOR-CARBON FILM	680ohm 1/5W 5% T
R344	RCFT-E751J-000	RESISTOR-CARBON FILM	750ohm 1/5W 5% T
R345	RCFT-E751J-000	RESISTOR-CARBON FILM	750ohm 1/5W 5% T
R346	RCFT-E333J-000	RESISTOR-CARBON FILM	33Kohm 1/5W 5% T
R347	RCFT-E150J-000	RESISTOR-CARBON FILM	15ohm 1/5W 5% T
R348	RCFT-E150J-000	RESISTOR-CARBON FILM	15ohm 1/5W 5% T
R349	RCFT-E680J-000	RESISTOR-CARBON FILM	68ohm 1/5W 5% T
R350	RCFT-E333J-000	RESISTOR-CARBON FILM	33Kohm 1/5W 5% T
R351	RCFT-E103J-000	RESISTOR-CARBON FILM	10Kohm 1/5W 5% T
R352	RCFT-E151J-000	RESISTOR-CARBON FILM	150ohm 1/5W 5% T
R353	RCFT-E152J-000	RESISTOR-CARBON FILM	1.5Kohm 1/5W 5% T
R354	RCFT-E561J-000	RESISTOR-CARBON FILM	560ohm 1/5W 5% T
R355	RCFT-E561J-000	RESISTOR-CARBON FILM	560ohm 1/5W 5% T
R356	RCFT-E561J-000	RESISTOR-CARBON FILM	560ohm 1/5W 5% T
R357	RCFT-E561J-000	RESISTOR-CARBON FILM	560ohm 1/5W 5% T
R358	RCFT-E561J-000	RESISTOR-CARBON FILM	560ohm 1/5W 5% T
R359	RCFT-E561J-000	RESISTOR-CARBON FILM	560ohm 1/5W 5% T
R360	RCFT-E472J-000	RESISTOR-CARBON FILM	4.7Kohm 1/5W 5% T
R361	RCFT-E820J-000	RESISTOR-CARBON FILM	82ohm 1/5W 5% T
R362	RCFT-E223J-000	RESISTOR-CARBON FILM	22Kohm 1/5W 5% T
R363	RCFT-E122J-000	RESISTOR-CARBON FILM	1.2Kohm 1/5W 5% T
R364	RCFT-E223J-000	RESISTOR-CARBON FILM	22Kohm 1/5W 5% T
R365	RCFT-E821J-000	RESISTOR-CARBON FILM	820ohm 1/5W 5% T
R366	RCFT-E821J-000	RESISTOR-CARBON FILM	820ohm 1/5W 5% T
R367	RCFT-E820J-000	RESISTOR-CARBON FILM	82ohm 1/5W 5% T
R368	RMOH-H470J-030	RESISTOR-METAL OXIDE	47ohm 1W 5% H
R369	RMOH-H470J-030	RESISTOR-METAL OXIDE	47ohm 1W 5% H
R370	RCFT-E820J-000	RESISTOR-CARBON FILM	82ohm 1/5W 5% T
R371	RCFT-E3R3J-000	RESISTOR-CARBON FILM	3.3ohm 1/5W 5% T
R372	RCFT-E3R3J-000	RESISTOR-CARBON FILM	3.3ohm 1/5W 5% T
▲ R373	RMFS-LR27J-0J0	RESISTOR-METAL PLATE	0.27ohm 5W 5% MPR-55R
R374	RCFT-E182J-000	RESISTOR-CARBON FILM	1.8Kohm 1/5W 5% T
R375	RCFT-E911J-000	RESISTOR-CARBON FILM	910ohm 1/5W 5% T
R376	RCFT-E152J-000	RESISTOR-CARBON FILM	1.5Kohm 1/5W 5% T
R377	RCFT-E682J-000	RESISTOR-CARBON FILM	6.8Kohm 1/5W 5% T
R380	RCFT-E243J-000	RESISTOR-CARBON FILM	24Kohm 1/5W 5% T
R381	RCFT-E683J-000	RESISTOR-CARBON FILM	68Kohm 1/5W 5% T
R382	RCFT-E104J-000	RESISTOR-CARBON FILM	100Kohm 1/5W 5% T
R383	RCFT-E332J-000	RESISTOR-CARBON FILM	3.3Kohm 1/5W 5% T
R384	RCFT-E334J-000	RESISTOR-CARBON FILM	330Kohm 1/5W 5% T
R390	RCFT-E152J-000	RESISTOR-CARBON FILM	1.5Kohm 1/5W 5% T
R391	RCFT-E102J-000	RESISTOR-CARBON FILM	1Kohm 1/5W 5% T
R392	RCFT-E223J-000	RESISTOR-CARBON FILM	22Kohm 1/5W 5% T
R393	RCFT-E103J-000	RESISTOR-CARBON FILM	10Kohm 1/5W 5% T
R394	RCFT-E153J-000	RESISTOR-CARBON FILM	15Kohm 1/5W 5% T
R396	RCFT-E184J-000	RESISTOR-CARBON FILM	180Kohm 1/5W 5% T
R401	RCFT-E390J-000	RESISTOR-CARBON FILM	39ohm 1/5W 5% T
R402	RCFT-E390J-000	RESISTOR-CARBON FILM	39ohm 1/5W 5% T

Ref. No.	Part No.	Description	Version
R403	RCFT-E390J-000	RESISTOR-CARBON FILM	39ohm 1/5W 5% T
R404	RCFT-E390J-000	RESISTOR-CARBON FILM	39ohm 1/5W 5% T
R405	RCFT-E390J-000	RESISTOR-CARBON FILM	39ohm 1/5W 5% T
R406	RCFT-E390J-000	RESISTOR-CARBON FILM	39ohm 1/5W 5% T
R407	RCFT-E390J-000	RESISTOR-CARBON FILM	39ohm 1/5W 5% T
R408	RCFT-E390J-000	RESISTOR-CARBON FILM	39ohm 1/5W 5% T

TRANSISTORS

Q301	TRTA-0011G-SD0	TRANSISTOR P-H FREQ	KTA1268-GR	TO92
Q302	TRTA-0011G-SD0	TRANSISTOR P-H FREQ	KTA1268-GR	TO92
Q303	TRTA-0011G-SD0	TRANSISTOR P-H FREQ	KTA1268-GR	TO92
Q304	TRTA-0011G-SD0	TRANSISTOR P-H FREQ	KTA1268-GR	TO92
Q305	TRTC-0015G-SD0	TRANSISTOR N-H FREQ	KTC3200-GR	TO92
Q306	TRTC-0015G-SD0	TRANSISTOR N-H FREQ	KTC3200-GR	TO92
Q307	TRTA-0011G-SD0	TRANSISTOR P-H FREQ	KTA1268-GR	TO92
Q308	TRTA-0013Y-SD0	TRANSISTOR N-H FREQ	KTA1024-Y	
Q309	TRTC-0087Y-SD0	TRANSISTOR N-H FREQ	KTC3206-Y	TO92L
Q310	TRSC-01540-SJ0	TRANSISTOR N-H FREQ	2SC4883A	
Q311	TRSA-01450-SJ0	TRANSISTOR N-H FREQ	2SA1859A	
Q312	TRSC-01680-SB0	TRANSISTOR N-H FREQ	2SC4137 TO-126FP	
▲Q313	TRSC-01340-SJ0	TRANSISTOR P-H FREQ	2SC3856	
▲Q314	TRSA-00950-SJ0	TRANSISTOR P-H FREQ	2SA-1492	
Q315	TRTC-0015G-SD0	TRANSISTOR N-H FREQ	KTC3200-GR	TO92
Q321	TRTA-0011G-SD0	TRANSISTOR P-H FREQ	KTA1268-GR	TO92
Q322	TRTA-0011G-SD0	TRANSISTOR P-H FREQ	KTA1268-GR	TO92
Q323	TRTA-0011G-SD0	TRANSISTOR P-H FREQ	KTA1268-GR	TO92
Q324	TRTA-0011G-SD0	TRANSISTOR P-H FREQ	KTA1268-GR	TO92
Q325	TRTC-0015G-SD0	TRANSISTOR N-H FREQ	KTC3200-GR	TO92
Q326	TRTC-0015G-SD0	TRANSISTOR N-H FREQ	KTC3200-GR	TO92
Q327	TRTA-0011G-SD0	TRANSISTOR P-H FREQ	KTA1268-GR	TO92
Q328	TRTA-0013Y-SD0	TRANSISTOR N-H FREQ	KTA1024-Y	
Q329	TRTC-0087Y-SD0	TRANSISTOR N-H FREQ	KTC3206-Y	TO92L
Q330	TRSC-01540-SJ0	TRANSISTOR N-H FREQ	2SC4883A	
Q331	TRSA-01450-SJ0	TRANSISTOR N-H FREQ	2SA1859A	
Q332	TRSC-01680-SB0	TRANSISTOR N-H FREQ	2SC4137 TO-126FP	
▲Q333	TRSC-01340-SJ0	TRANSISTOR P-H FREQ	2SC3856	
▲Q334	TRSA-00950-SJ0	TRANSISTOR P-H FREQ	2SA-1492	
Q335	TRTC-0015G-SD0	TRANSISTOR N-H FREQ	KTC3200-GR	TO92
Q336	TRTA-0011G-SD0	TRANSISTOR P-H FREQ	KTA1268-GR	TO92
Q337	TRTC-01700-SD0	TRANSISTOR N-H FREQ	KRC107M W/RESIST	TO92M
Q390	TRTC-0016G-SD0	TRANSISTOR N-H FREQ	KTC3198-GR	TO92
Q391	TRTC-0016G-SD0	TRANSISTOR N-H FREQ	KTC3198-GR	TO92

MISCELLANEOUS

MEAC-08212-004
VSTH-00101-101

RADIATOR
POSISTOR
Use for the TR's(Q310,Q330,Q311,Q331)
P43T6D100BW23

2. FRONT P.C BOARD

CAPACITORS

C703	CCCT-J103Z-0DF	CAPACITOR CERAMIC	0.01uF Z 50V F T
C704	CCAT-J104Z-AAF	CAPACITOR CERAMIC	0.1uF Z 50V F T
C705	CEET-J100M-CI0	CAPACITOR E/ALUMINUM	10uF M 50V 5x11 T
C706	CEGS-B104Z-BK0	CAPACITOR E/DO LAYER	0.1F Z 5.5V EECS5R5V104
C707	CEET-D101M-CI0	CAPACITOR E/ALUMINUM	100uF M 10V 5x11 T
C708	CEET-F470M-CI0	CAPACITOR E/ALUMINUM	47uF M 25V 5x11 T
C709	CCAT-J104Z-AAF	CAPACITOR CERAMIC	0.1uF Z 50V F T
C710	CCTT-J101J-0CZ	CAPACITOR CERAMIC	100PF J 50V SL T
C711	CCAT-J473Z-AAF	CAPACITOR CERAMIC	0.047uF Z 50V F T
C712	CCAT-J473Z-AAF	CAPACITOR CERAMIC	0.047uF Z 50V F T
C713	CEET-J470M-DI0	CAPACITOR E/ALUMINUM	47uF M 50V 6.3x11 T
C714	CCAT-J104Z-AAF	CAPACITOR CERAMIC	0.1uF Z 50V F T
C715	CEET-J1R0M-CI0	CAPACITOR E/ALUMINUM	1.0uF M 50V 5x11 T
C716	CCAT-J104Z-AAF	CAPACITOR CERAMIC	0.1uF Z 50V F T
C752	CCAT-J104Z-AAF	CAPACITOR CERAMIC	0.1uF Z 50V F T

Ref. No.	Part No.	Description	Version
C760	CCAT-J104Z-AAF	CAPACITOR CERAMIC	0.1uF Z 50V F T
C761	CCAT-J104Z-AAF	CAPACITOR CERAMIC	0.1uF Z 50V F T
C762	CCAT-F223Z-AAF	CAPACITOR CERAMIC	0.022uF Z 25V F T
DIODES			
D701	DDTS-00070-SO0	DIODE-SI	1SS133 (40V 0.11A) DO-40 T
D702	DDTS-00070-SO0	DIODE-SI	1SS133 (40V 0.11A) DO-40 T
D703	DDTS-00070-SO0	DIODE-SI	1SS133 (40V 0.11A) DO-40 T
D704	DDTS-00070-SO0	DIODE-SI	1SS133 (40V 0.11A) DO-40 T
D705	DDTS-00070-SO0	DIODE-SI	1SS133 (40V 0.11A) DO-40 T
D706	DDTS-00070-SO0	DIODE-SI	1SS133 (40V 0.11A) DO-40 T
D707	DDTS-00070-SO0	DIODE-SI	1SS133 (40V 0.11A) DO-40 T
D708	DDTS-00070-SO0	DIODE-SI	1SS133 (40V 0.11A) DO-40 T
D710	DDTS-00070-SO0	DIODE-SI	1SS133 (40V 0.11A) DO-40 T
D712	DDTZ-G075B-SO0	DIODE ZENER	MTZ7.5B 7.07-7.45 D040 T
D714	DDTS-00070-SO0	DIODE-SI	1SS133 (40V 0.11A) DO-40 T
D715	DDTS-00070-SO0	DIODE-SI	1SS133 (40V 0.11A) DO-40 T
D716	DDTS-00070-SO0	DIODE-SI	1SS133 (40V 0.11A) DO-40 T
LD705	DPLE-00201-RR0	DISPLAY-LED	SR3511 RED 5mm TAPPING
LD708	DPLE-00201-RR1	DISPLAY-LED	SR3511 RED 5mm TAPPING
INTEGRATED CIRCUITS			
IC701	ICMP-03100-S20	IC MICOM	UPD780204GF-049-3BA QFP100
IC702	ICOP-00210-SD0	IC RESET	KIA7042P/F 4.2V TO-92
IC703	ICHY-00221-U60	IC REMOTE RECEIVER	TSOP1238TB1
IC704	ICCM-00231-SR0	IC 2K CMOS EEPROM	M24C02-BN6 DIP8
CONNECTORS			
CN701	KNCW-06380-16S	CONNECTOR-WAFER	GF120-16S-TS 1.25mm S
CN702	KNCW-00160-5S9	CONNECTOR-WAFER	53015-0510 2mm-WHT
CW701	U710-6M736-200	WIRE-ASS'Y	UL1007#26 BLU-360 7P
CW704	U508-4M713-250	WIRE-ASS'Y(V/R CONTROL)	UL1007#26 YEL-130 5P
TRANSISTORS			
Q704	TRTC-01700-SD0	TRANSISTOR N-H FREQ	KRC107M W/RESIST TO92M
Q705	TRTC-01700-SD0	TRANSISTOR N-H FREQ	KRC107M W/RESIST TO92M
Q707	TRTC-01700-SD0	TRANSISTOR N-H FREQ	KRC107M W/RESIST TO92M
Q708	TRTC-01700-SD0	TRANSISTOR N-H FREQ	KRC107M W/RESIST TO92M
Q710	TRTC-0016G-SD0	TRANSISTOR N-H FREQ	KTC3198-GR TO92
RESISTORS			
R701	RCFT-E472J-000	RESISTOR-CARBON FILM	4.7Kohm 1/5W 5% T
R702	RCFT-E472J-000	RESISTOR-CARBON FILM	4.7Kohm 1/5W 5% T
R703	RCFT-E472J-000	RESISTOR-CARBON FILM	4.7Kohm 1/5W 5% T
R704	RCFT-E472J-000	RESISTOR-CARBON FILM	4.7Kohm 1/5W 5% T
R705	RCFT-E223J-000	RESISTOR-CARBON FILM	22Kohm 1/5W 5% T
R706	RCFT-E104J-000	RESISTOR-CARBON FILM	100Kohm 1/5W 5% T
R712	RCFT-E271J-000	RESISTOR-CARBON FILM	270ohm 1/5W 5% T
R716	RCFT-E271J-000	RESISTOR-CARBON FILM	270ohm 1/5W 5% T
R717	RCFT-E271J-000	RESISTOR-CARBON FILM	270ohm 1/5W 5% T
R719	RCFT-E331J-000	RESISTOR-CARBON FILM	330ohm 1/5W 5% T
R723	RCFT-F272J-010	RESISTOR-CARBON FILM	2.7Kohm 1/4W 5% T
R736	RCFT-F272J-010	RESISTOR-CARBON FILM	2.7Kohm 1/4W 5% T
R737	RCFT-F272J-010	RESISTOR-CARBON FILM	2.7Kohm 1/4W 5% T
R738	RCFT-F272J-010	RESISTOR-CARBON FILM	2.7Kohm 1/4W 5% T
R746	RCFT-E223J-000	RESISTOR-CARBON FILM	22Kohm 1/5W 5% T
R747	RCFT-E223J-000	RESISTOR-CARBON FILM	22Kohm 1/5W 5% T
R752	RCFT-F223J-010	RESISTOR-CARBON FILM	22Kohm 1/4W 5% T
R753	RCFT-F223J-010	RESISTOR-CARBON FILM	22Kohm 1/4W 5% T
R755	RCFT-E103J-000	RESISTOR-CARBON FILM	10Kohm 1/5W 5% T
R756	RCFT-E103J-000	RESISTOR-CARBON FILM	10Kohm 1/5W 5% T
R761	RCFT-E100J-000	RESISTOR-CARBON FILM	10ohm 1/5W 5% T
R762	RCFT-E101J-000	RESISTOR-CARBON FILM	100ohm 1/5W 5% T

Ref. No.	Part No.	Description	Version
R763	RCFT-E101J-000	RESISTOR-CARBON FILM	100ohm 1/5W 5% T
R764	RCFT-E333J-000	RESISTOR-CARBON FILM	33Kohm 1/5W 5% T
R765	RCFT-E561J-000	RESISTOR-CARBON FILM	560ohm 1/5W 5% T
R766	RCFT-E104J-000	RESISTOR-CARBON FILM	100Kohm 1/5W 5% T
R767	RCFT-E105J-000	RESISTOR-CARBON FILM	1Mohm 1/5W 5% T
R769	RCFT-E103J-000	RESISTOR-CARBON FILM	10Kohm 1/5W 5% T
R770	RCFT-E223J-000	RESISTOR-CARBON FILM	22Kohm 1/5W 5% T

SWITCHES

SW733	SWTA-00220-060	SWITCH-TACT	SKHV10910(A) 12V 50mA
SW734	SWTA-00220-060	SWITCH-TACT	SKHV10910(A) 12V 50mA
SW735	SWTA-00220-060	SWITCH-TACT	SKHV10910(A) 12V 50mA
SW736	SWTA-00220-060	SWITCH-TACT	SKHV10910(A) 12V 50mA
SW737	SWTA-00220-060	SWITCH-TACT	SKHV10910(A) 12V 50mA
SW738	SWTA-00220-060	SWITCH-TACT	SKHV10910(A) 12V 50mA
SW739	SWTA-00220-060	SWITCH-TACT	SKHV10910(A) 12V 50mA
SW740	SWTA-00220-060	SWITCH-TACT	SKHV10910(A) 12V 50mA
SW741	SWTA-00220-060	SWITCH-TACT	SKHV10910(A) 12V 50mA
SW742	SWTA-00220-060	SWITCH-TACT	SKHV10910(A) 12V 50mA
SW743	SWTA-00220-060	SWITCH-TACT	SKHV10910(A) 12V 50mA
SW744	SWTA-00220-060	SWITCH-TACT	SKHV10910(A) 12V 50mA
SW745	SWTA-00220-060	SWITCH-TACT	SKHV10910(A) 12V 50mA

MISCELLANEOUS

X701	KTRE-00170-042	RESONATOR	CST4.19MGW 4.19MHz
FL701	DPFL-00630-00P	DISPLAY-FLUORESCENT	CM1530C

2-1. TUNER P.C BOARD

CAPACITORS

C601	CEET-F470M-C10	CAPACITOR E/ALUMINUM	47uF M 25V 5x11 T
C602	CCCT-J223Z-OFF	CAPACITOR CERAMIC	0.022uF Z 50V F T
C604	CCCT-J223Z-OFF	CAPACITOR CERAMIC	0.022uF Z 50V F T
C605	CEET-F470M-C10	CAPACITOR E/ALUMINUM	47uF M 25V 5x11 T
C606	CCCT-J223Z-OFF	CAPACITOR CERAMIC	0.022uF Z 50V F T
C607	CCCT-J223Z-OFF	CAPACITOR CERAMIC	0.022uF Z 50V F T
C608	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T
C609	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T
C611	CCCT-J473Z-0JF	CAPACITOR CERAMIC	0.047uF Z 50V F T
C613	CCTT-J150J-0BC	CAPACITOR CERAMIC	15PF J 50V CH T
C614	CFST-O471J-CJ0	CAPACITOR F/STYROL	470PF J 125V 5.5x12 T
C615	CEET-G100M-C10	CAPACITOR E/ALUMINUM	10uF M 35V 5x11 T
C616	CCCT-J223Z-OFF	CAPACITOR CERAMIC	0.022uF Z 50V F T
C617	CCCT-J223Z-OFF	CAPACITOR CERAMIC	0.022uF Z 50V F T
C618	CEET-J4R7M-C10	CAPACITOR E/ALUMINUM	4.7uF M 50V 5x11 T
C619	CEET-J4R7M-C10	CAPACITOR E/ALUMINUM	4.7uF M 50V 5x11 T
C620	CCCT-J223Z-OFF	CAPACITOR CERAMIC	0.022uF Z 50V F T
C621	CFMT-N223J-EK0	CAPACITOR F/POLYESTR	0.022uF J 100V 7.4x13 T
C622	CEET-J3R3M-C10	CAPACITOR E/ALUMINUM	3.3uF M 50V 5x11 T
C623	CFMT-N332J-DJ0	CAPACITOR F/POLYESTR	0.0033uF J 100V 5.8x12 T
C624	CFMT-N393J-FK0	CAPACITOR F/POLYESTR	0.039uF J 100V 8.5x13. T
C625	CCCT-J103Z-0DF	CAPACITOR CERAMIC	0.01uF Z 50V F T
C626	CEET-J1R0M-C10	CAPACITOR E/ALUMINUM	1.0uF M 50V 5x11 T
C627	CCCT-J223Z-OFF	CAPACITOR CERAMIC	0.022uF Z 50V F T
C628	CCCT-J223Z-OFF	CAPACITOR CERAMIC	0.022uF Z 50V F T
C629	CEET-F470M-C10	CAPACITOR E/ALUMINUM	47uF M 25V 5x11 T
C630	CCCT-J473Z-0JF	CAPACITOR CERAMIC	0.047uF Z 50V F T
C631	CCTT-J331J-0FZ	CAPACITOR CERAMIC	330PF J 50V SL T
C632	CCTT-J101J-0CZ	CAPACITOR CERAMIC	100PF J 50V SL T
C633	CCTT-J820J-0BZ	CAPACITOR CERAMIC	82PF J 50V SL T
C634	CCCT-J223Z-OFF	CAPACITOR CERAMIC	0.022uF Z 50V F T
C635	CCCT-J103Z-0DF	CAPACITOR CERAMIC	0.01uF Z 50V F T
C636	CCCT-J223Z-OFF	CAPACITOR CERAMIC	0.022uF Z 50V F T
C637	CCTT-J300J-0CC	CAPACITOR CERAMIC	30PF J 50V CH T

HK 3270RDS ONLY
HK 3270RDS ONLY

Ref. No.	Part No.	Description		Version
C638	CEET-F470M-CI0	CAPACITOR E/ALUMINUM	47uF M 25V 5x11 T	
C639	CCTT-J390J-0DC	CAPACITOR CERAMIC	39PF J 50V CH T	
C640	CEET-JR47M-CI0	CAPACITOR E/ALUMINUM	0.47uF M 50V 5x11 T	
C642	CEET-F470M-CI0	CAPACITOR E/ALUMINUM	47uF M 25V 5x11 T	
C643	CCCT-J223Z-0FF	CAPACITOR CERAMIC	0.022uF Z 50V F T	
C644	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T	
C645	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T	
C646	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T	
C647	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T	
C649	CEET-G100M-CI0	CAPACITOR E/ALUMINUM	10uF M 35V 5x11 T	
C650	CEET-JR684-CI0	CAPACITOR E/ALUMINUM	0.68uF K 50V 5x11 T	
C651	CEET-JR684-CI0	CAPACITOR E/ALUMINUM	0.68uF K 50V 5x11 T	
C652	CCAT-J100J-AAC	CAPACITOR CERAMIC	10PF J 50V C T	
C653	CCAT-J100J-AAC	CAPACITOR CERAMIC	10PF J 50V C T	
C654	CCAT-J221K-AAB	CAPACITOR CERAMIC	220PF K 50V B T	
C655	CCAT-J221K-AAB	CAPACITOR CERAMIC	220PF K 50V B T	
C656	CEET-G100M-CI0	CAPACITOR E/ALUMINUM	10uF M 35V 5x11 T	
C657	CCTT-J681J-0BZ	CAPACITOR CERAMIC	680PF J 50V SL T	
C658	CEET-J4R7M-CI0	CAPACITOR E/ALUMINUM	4.7uF M 50V 5x11 T	
C659	CEET-G100M-CI0	CAPACITOR E/ALUMINUM	10uF M 35V 5x11 T	
C660	CCAT-J473Z-AAF	CAPACITOR CERAMIC	0.047uF Z 50V F T	
C661	CEET-E101M-DI0	CAPACITOR E/ALUMINUM	100uF M 16V 6.3x11 T	
C662	CEET-J1R0M-CI0	CAPACITOR E/ALUMINUM	1.0uF M 50V 5x11 T	
C663	CEET-JR22M-CI0	CAPACITOR E/ALUMINUM	0.22uF M 50V 5x11 T	
C664	CEET-J1R0M-CI0	CAPACITOR E/ALUMINUM	1.0uF M 50V 5x11 T	
C665	CCCT-J223Z-0FF	CAPACITOR CERAMIC	0.022uF Z 50V F T	
C666	CCAT-J271K-AAB	CAPACITOR CERAMIC	270PF K 50V B T	HK 3270RDS ONLY
C667	CEET-F470M-CI0	CAPACITOR E/ALUMINUM	47uF M 25V 5x11 T	HK 3270RDS ONLY
C668	CCCT-J104Z-0FF	CAPACITOR CERAMIC	0.1uF Z 50V F T	HK 3270RDS ONLY
C669	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T	HK 3270RDS ONLY
C670	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T	HK 3270RDS ONLY
C671	CEET-G100M-CI0	CAPACITOR E/ALUMINUM	10uF M 35V 5x11 T	HK 3270RDS ONLY
C673	CCTT-J100D-0BC	CAPACITOR CERAMIC	10PF D 50V CH T	HK 3270RDS ONLY
C674	CCTT-J100D-0BC	CAPACITOR CERAMIC	10PF D 50V CH T	HK 3270RDS ONLY
C675	CCAT-J104Z-AAF	CAPACITOR CERAMIC	0.1uF Z 50V F T	HK 3270RDS ONLY
C676	CCAT-J104Z-AAF	CAPACITOR CERAMIC	0.1uF Z 50V F T	
C677	CCAT-J104Z-AAF	CAPACITOR CERAMIC	0.1uF Z 50V F T	
DIODES				
D602	DDTS-00070-S00	DIODE-SI	1SS133 (40V 0.11A) DO-40 T	
VD601	DDSV-00120-S10	DIODE-VARACTOR	SVC321SPA-C2 AM8V DO40S	
VD602	DDSV-00120-S10	DIODE-VARACTOR	SVC321SPA-C2 AM8V DO40S	
ZD601	DDTZ-G051B-SOS	DIODE ZENER	MTZJ5.1B 4.94-5.20 DO34 T	
ZD602	DDTZ-G051B-SOS	DIODE ZENER	MTZJ5.1B 4.94-5.20 DO34 T	HK 3270RDS ONLY
INTEGRATED CIRCUITS				
IC601	ICLN-03620-S10	IC AM/FM IF	LA1266 DIP24	
IC602	ICLN-03680-S10	IC PLL	LC7218JM SOP-24	
IC603	ICLN-03610-S10	IC PLL FM MPX	LA3401 DIP22	
IC604	ICLN-03630-SR0	IC RDS DEMODULATOR	TDA7479D SOP16	HK 3270RDS ONLY
COILS				
T601	KIAT-00530-E20	COIL-AM ANT	AAT053 MW 7mm - CAN	
T602	KIAO-00460-E20	COIL-AM OSC	AAO046 MW 7mm - CAN	
T603	KIAA-00260-E20	COIL-AM IFT	AAA-026 7MC-K502713N4-KR	
T604	IFFA-00110-E20	IFT-FM	AFA011 7mm-CAN	
T605	IFFD-00100-E20	IFT-FM DET	AFD010 7mm-CAN	
T606	KIML-A0010-E20	COIL-FM MPX FILTER	AMA001 19KHz 10mm-CAN	
T607	KIML-A0010-E20	COIL-FM MPX FILTER	AMA001 19KHz 10mm-CAN	
L602	KIFK-00080-E20	COIL-FM CHOKE	AFK016 A187LY-K5006 20.8mH	HK 3270RDS ONLY
L603	KI0T-4101K-003	COIL-INDUCTOR	100uH K LA 40 T L 02	HK 3270RDS ONLY
CONNECTORS				
TP601	KNCW-01490-2T9	CONNECTOR-WAFER	JE115-AT-02P	

Ref. No.	Part No.	Description	Version
TP602	KNCW-01490-2T9	CONNECTOR-WAFER	JE115-AT-02P
TP603	KNCW-01490-2T9	CONNECTOR-WAFER	JE115-AT-02P
CH602	KNCW-01510-ES9	CONNECTOR-WAFER	35237-1410 2M/M 14P
CONTROLS			
CT601	VCTC-00022-200	TRIMMER	CVCN06C200
VR601	VFEB-A021B-472	RESISTOR-SEMI FIXED	RH0638C-4.7KB 4.7Kohm
VR602	VFEB-A021B-473	RESISTOR-SEMI FIXED	RH0638C-47KB 47Kohm
VR603	VFEB-A021B-224	RESISTOR-SEMI FIXED	RH0638C-220KB 220Kohm
MISCELLANEOUS			
CF601	BTBP-00140-BPM	FILTER-MICA PRINT	GfMB3-T
CF602	BTCE-00152-107	FILTER-CERAMIC	SFE10.7MJA10H-A-TF21
CF602	BTCE-00040-107	FILTER-CERAMIC	SFE10.7MS2-A-TF21
CF603	BTCE-00040-107	FILTER-CERAMIC	SFE10.7MS2-A-TF21
CF604	BTCE-00450-045	FILTER-CERAMIC	AHCFM2-450AL
CF605	KTRE-00300-288	RESONATOR	ZTB456F11
X601	KTAL-00041-072	CRYSTAL	HC-49/U 7.200000MHz
X602	KTAL-00321-433	CRYSTAL	HC-49/U 4.332MHz
	MRAG-13020-004	CUSHION-A	EVA(VE-45),10X25X6T
ANT601	TEAT-00160-02S	TERMINAL ANTENNA	SC0210392N
ANT601	TEAT-00170-02S	TERMINAL ANTENNA	SC0210393N
FE601	TUFF-00201-00K	FM/ F/E TUNER	FTA4-460H
FE601	TUFF-00231-00K	FRONT-END	FTA3-509H
RESISTORS			
R273	RCFT-E332J-000	RESISTOR-CARBON FILM	3.3Kohm 1/5W 5% T
R601	RCFT-E102J-000	RESISTOR-CARBON FILM	1Kohm 1/5W 5% T
R602	RCFT-E243J-000	RESISTOR-CARBON FILM	24Kohm 1/5W 5% T
R603	RCFT-E104J-000	RESISTOR-CARBON FILM	100Kohm 1/5W 5% T
R604	RCFT-E122J-000	RESISTOR-CARBON FILM	1.2Kohm 1/5W 5% T
R605	RCFT-E101J-000	RESISTOR-CARBON FILM	100ohm 1/5W 5% T
R606	RCFT-E332J-000	RESISTOR-CARBON FILM	3.3Kohm 1/5W 5% T
R607	RCFT-E561J-000	RESISTOR-CARBON FILM	560ohm 1/5W 5% T
R608	RCFT-E331J-000	RESISTOR-CARBON FILM	330ohm 1/5W 5% T
R609	RCFT-E331J-000	RESISTOR-CARBON FILM	330ohm 1/5W 5% T
R610	RCFT-E4R7J-000	RESISTOR-CARBON FILM	4.7ohm 1/5W 5% T
R611	RCFT-E271J-000	RESISTOR-CARBON FILM	270ohm 1/5W 5% T
R612	RCFT-E221J-000	RESISTOR-CARBON FILM	220ohm 1/5W 5% T
R613	RCFT-E221J-000	RESISTOR-CARBON FILM	220ohm 1/5W 5% T
R614	RCFT-E104J-000	RESISTOR-CARBON FILM	100Kohm 1/5W 5% T
R618	RCFT-E104J-000	RESISTOR-CARBON FILM	100Kohm 1/5W 5% T
R621	RCFT-E472J-000	RESISTOR-CARBON FILM	4.7Kohm 1/5W 5% T
R622	RCFT-E683J-000	RESISTOR-CARBON FILM	68Kohm 1/5W 5% T
R624	RCFT-E473J-000	RESISTOR-CARBON FILM	47Kohm 1/5W 5% T
R625	RCFT-E102J-000	RESISTOR-CARBON FILM	1Kohm 1/5W 5% T
R626	RCFT-E472J-000	RESISTOR-CARBON FILM	4.7Kohm 1/5W 5% T
R627	RCFT-E220J-000	RESISTOR-CARBON FILM	22ohm 1/5W 5% T
R628	RCFT-E472J-000	RESISTOR-CARBON FILM	4.7Kohm 1/5W 5% T
R629	RCFT-E472J-000	RESISTOR-CARBON FILM	4.7Kohm 1/5W 5% T
R630	RCFT-E103J-000	RESISTOR-CARBON FILM	10Kohm 1/5W 5% T
R631	RCFT-E222J-000	RESISTOR-CARBON FILM	2.2Kohm 1/5W 5% T
R632	RCFT-E272J-000	RESISTOR-CARBON FILM	2.7Kohm 1/5W 5% T
R633	RCFT-E101J-000	RESISTOR-CARBON FILM	100ohm 1/5W 5% T
R634	RCFT-E472J-000	RESISTOR-CARBON FILM	4.7Kohm 1/5W 5% T
R635	RCFT-E823J-000	RESISTOR-CARBON FILM	82Kohm 1/5W 5% T
R636	RCFT-E220J-000	RESISTOR-CARBON FILM	22ohm 1/5W 5% T
R637	RCFT-E391J-000	RESISTOR-CARBON FILM	390ohm 1/5W 5% T
R638	RCFT-E103J-000	RESISTOR-CARBON FILM	10Kohm 1/5W 5% T
R640	RCFT-E101J-000	RESISTOR-CARBON FILM	100ohm 1/5W 5% T
R641	RCFT-E473J-000	RESISTOR-CARBON FILM	47Kohm 1/5W 5% T
R642	RCFT-E332J-000	RESISTOR-CARBON FILM	3.3Kohm 1/5W 5% T
R643	RCFT-E103J-000	RESISTOR-CARBON FILM	10Kohm 1/5W 5% T
R645	RCFT-E103J-000	RESISTOR-CARBON FILM	10Kohm 1/5W 5% T

Ref. No.	Part No.	Description	Version
R646	RCFT-E471J-000	RESISTOR-CARBON FILM	470ohm 1/5W 5% T
R647	RCFT-E103J-000	RESISTOR-CARBON FILM	10Kohm 1/5W 5% T
R648	RCFT-E101J-000	RESISTOR-CARBON FILM	100ohm 1/5W 5% T
R649	RCFT-E102J-000	RESISTOR-CARBON FILM	1Kohm 1/5W 5% T
R650	RCFT-E102J-000	RESISTOR-CARBON FILM	1Kohm 1/5W 5% T
R651	RCFT-E102J-000	RESISTOR-CARBON FILM	1Kohm 1/5W 5% T
R659	RCFT-E102J-000	RESISTOR-CARBON FILM	1Kohm 1/5W 5% T
R660	RCFT-E102J-000	RESISTOR-CARBON FILM	1Kohm 1/5W 5% T
R661	RCFT-E152J-000	RESISTOR-CARBON FILM	1.5Kohm 1/5W 5% T
R662	RCFT-E152J-000	RESISTOR-CARBON FILM	1.5Kohm 1/5W 5% T
R663	RCFT-E272J-000	RESISTOR-CARBON FILM	2.7Kohm 1/5W 5% T
R664	RCFT-E272J-000	RESISTOR-CARBON FILM	2.7Kohm 1/5W 5% T
R665	RCFT-E622J-000	RESISTOR-CARBON FILM	6.2Kohm 1/5W 5% T
R666	RCFT-E622J-000	RESISTOR-CARBON FILM	6.2Kohm 1/5W 5% T
R667	RCFT-E274J-000	RESISTOR-CARBON FILM	270Kohm 1/5W 5% T
R668	RCFT-E274J-000	RESISTOR-CARBON FILM	270Kohm 1/5W 5% T
R669	RCFT-E224J-000	RESISTOR-CARBON FILM	220Kohm 1/5W 5% T
R670	RCFT-E224J-000	RESISTOR-CARBON FILM	220Kohm 1/5W 5% T
R671	RCFT-E473J-000	RESISTOR-CARBON FILM	47Kohm 1/5W 5% T
R672	RCFT-E101J-000	RESISTOR-CARBON FILM	100ohm 1/5W 5% T
R674	RCFT-E223J-000	RESISTOR-CARBON FILM	22Kohm 1/5W 5% T
R675	RCFT-E473J-000	RESISTOR-CARBON FILM	47Kohm 1/5W 5% T
R676	RCFT-E223J-000	RESISTOR-CARBON FILM	22Kohm 1/5W 5% T
R677	RCFT-E681J-000	RESISTOR-CARBON FILM	680ohm 1/5W 5% T
R678	RCFT-E103J-000	RESISTOR-CARBON FILM	10Kohm 1/5W 5% T
R679	RCFT-E103J-000	RESISTOR-CARBON FILM	10Kohm 1/5W 5% T
R680	RCFT-E101J-000	RESISTOR-CARBON FILM	100ohm 1/5W 5% T
R681	RCFT-E101J-000	RESISTOR-CARBON FILM	100ohm 1/5W 5% T
R683	RCFT-E182J-000	RESISTOR-CARBON FILM	1.8Kohm 1/5W 5% T
R684	RCFT-E102J-000	RESISTOR-CARBON FILM	1Kohm 1/5W 5% T
R685	RCFT-E151J-000	RESISTOR-CARBON FILM	150ohm 1/5W 5% T

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TRANSISTORS

Q601	TRTC-0010Y-SD0	TRANSISTOR N-H FREQ	KTC3194-Y TO92
Q603	TRTC-0016G-SD0	TRANSISTOR N-H FREQ	KTC3198-GR TO92
Q605	TRTA-00940-SD0	TRANSISTOR P-H FREQ	KRA107M W/RESIST TO92M
Q606	TRTA-00940-SD0	TRANSISTOR P-H FREQ	KRA107M W/RESIST TO92M
Q607	TRTA-00940-SD0	TRANSISTOR P-H FREQ	KRA107M W/RESIST TO92M
Q608	TRTA-00940-SD0	TRANSISTOR P-H FREQ	KRA107M W/RESIST TO92M
Q609	TRTD-00200-SD0	TRANSISTOR N-L FREQ	KTD-1302 TO92
Q610	TRTD-00200-SD0	TRANSISTOR N-L FREQ	KTD-1302 TO92
Q611	TRTC-0016G-SD0	TRANSISTOR N-H FREQ	KTC3198-GR TO92
Q612	TRTC-0016G-SD0	TRANSISTOR N-H FREQ	KTC3198-GR TO92

2-2. TONE P.C BOARD

CAPACITORS

C731	CEET-F470M-CI0	CAPACITOR E/ALUMINUM	47uF M 25V 5x11 T
C732	CEET-F470M-CI0	CAPACITOR E/ALUMINUM	47uF M 25V 5x11 T
C733	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T
C734	CCAT-J101K-AAB	CAPACITOR CERAMIC	100PF K 50V B T
C735	CCAT-J330J-AAZ	CAPACITOR CERAMIC	33PF J 50V SL T
C736	CCAT-J330J-AAZ	CAPACITOR CERAMIC	33PF J 50V SL T
C737	CEET-J100M-CI0	CAPACITOR E/ALUMINUM	10uF M 50V 5x11 T
C738	CEET-J100M-CI0	CAPACITOR E/ALUMINUM	10uF M 50V 5x11 T
C739	CEET-J100M-CI0	CAPACITOR E/ALUMINUM	10uF M 50V 5x11 T
C740	CEET-J100M-CI0	CAPACITOR E/ALUMINUM	10uF M 50V 5x11 T
C741	CFMT-N392J-DJ0	CAPACITOR F/POLYESTR	0.0039uF J 100V 5.8x12 T
C742	CFMT-N392J-DJ0	CAPACITOR F/POLYESTR	0.0039uF J 100V 5.8x12 T
C743	CFMT-N183J-EK0	CAPACITOR F/POLYESTR	0.018uF J 100V 7.3x13 T
C744	CFMT-N183J-EK0	CAPACITOR F/POLYESTR	0.018uF J 100V 7.3x13 T
C745	CFMT-N153J-EK0	CAPACITOR F/POLYESTR	0.015uF J 100V 7.1x13 T
C746	CFMT-N153J-EK0	CAPACITOR F/POLYESTR	0.015uF J 100V 7.1x13 T
C747	CFMT-N823J-IK0	CAPACITOR F/POLYESTR	0.082uF J 100V 10.6x14 T
C748	CFMT-N823J-IK0	CAPACITOR F/POLYESTR	0.082uF J 100V 10.6x14 T

Ref. No.	Part No.	Description	Version
INTEGRATED CIRCUITS			
IC705	ICOP-03150-SG0	IC OP AMP	NJM2068M SOP8
CONTROLS			
VR701	VRAE-P050C-104	VR-ROTARY	RK14K1260106-100KCx2
VR702	VRAE-P050C-104	VR-ROTARY	RK14K1260106-100KCx2
VR703	VRAE-P049W-104	VR-ROTARY	RK11K1160106-100KW
CONNECTORS			
CH702	U1T1-01520-Z10	WIRE-ASS'Y(LUG)	1007#22 BLK-200 Pi-3.2
CW705	UM08A0890-000	WIRE-ASS'Y(10P--8P)	UL1533#28 RED-180 10P--8P
RESISTORS			
R771	RCFT-E471J-000	RESISTOR-CARBON FILM	470ohm 1/5W 5% T
R772	RCFT-E471J-000	RESISTOR-CARBON FILM	470ohm 1/5W 5% T
R773	RCFT-E473J-000	RESISTOR-CARBON FILM	47Kohm 1/5W 5% T
R774	RCFT-E473J-000	RESISTOR-CARBON FILM	47Kohm 1/5W 5% T
R775	RCFT-E105J-000	RESISTOR-CARBON FILM	1Mohm 1/5W 5% T
R776	RCFT-E105J-000	RESISTOR-CARBON FILM	1Mohm 1/5W 5% T
R777	RCFT-E152J-000	RESISTOR-CARBON FILM	1.5Kohm 1/5W 5% T
R778	RCFT-E152J-000	RESISTOR-CARBON FILM	1.5Kohm 1/5W 5% T
R779	RCFT-E563J-000	RESISTOR-CARBON FILM	56Kohm 1/5W 5% T
R780	RCFT-E563J-000	RESISTOR-CARBON FILM	56Kohm 1/5W 5% T
R781	RCFT-E222J-000	RESISTOR-CARBON FILM	2.2Kohm 1/5W 5% T
R782	RCFT-E222J-000	RESISTOR-CARBON FILM	2.2Kohm 1/5W 5% T
R783	RCFT-E223J-000	RESISTOR-CARBON FILM	22Kohm 1/5W 5% T
R784	RCFT-E223J-000	RESISTOR-CARBON FILM	22Kohm 1/5W 5% T
R785	RCFT-E561J-000	RESISTOR-CARBON FILM	560ohm 1/5W 5% T
R786	RCFT-E561J-000	RESISTOR-CARBON FILM	560ohm 1/5W 5% T
R787	RCFT-E392J-000	RESISTOR-CARBON FILM	3.9Kohm 1/5W 5% T
R788	RCFT-E392J-000	RESISTOR-CARBON FILM	3.9Kohm 1/5W 5% T

2-3. STANDBY POWER TACT P.C BOARD

CONNECTORS			
CH702	U508-4M714-250	WIRE-ASS'Y(ST-BY)	1007#26 YEL-140 5P
DIODE			
LD707	DPLE-00280-RG0	DISPLAY-LED	SAM5270 RED/GRN
MISCELLANEOUS			
SW704	SWTA-00220-060	SWITCH-TACT	SKHV10910(A) 12V 50mA

2-4. MUTE P.C BOARD

CONNECTORS			
CN703	KNCW-00160-3S9	CONNECTOR-WAFER	53015-0310 2mm-WHT
MISCELLANEOUS			
SW726	SWTA-00220-060	SWITCH-TACT	SKHV10910(A) 12V 50mA

2-5. HEADPHONE & SPEAKER SELECTOR P.C BOARD

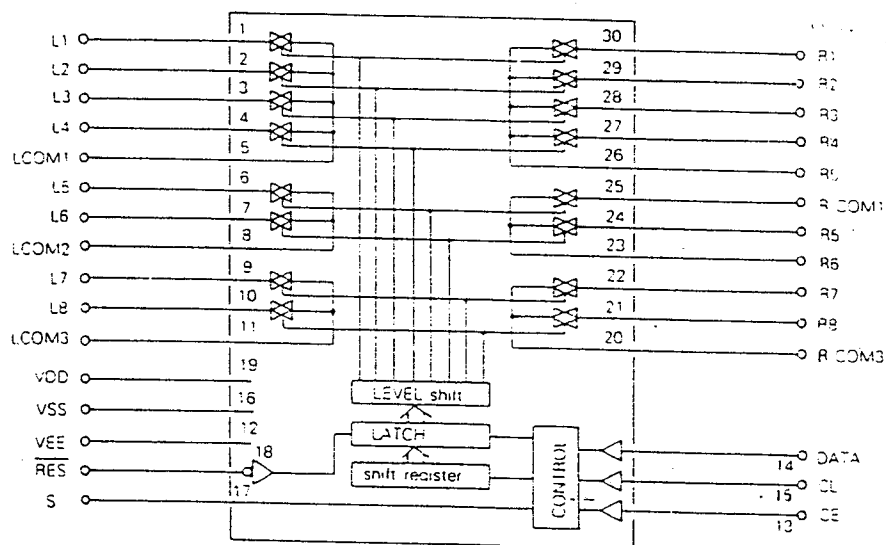
Ref. No.	Part No.	Description	Version
SW767	SWPU-00612-060	CONTROLS SWITCH-PUSH	SPUN24X1H011 DC25V 1A
C791 C792 C793	CCAT-F103Z-AAF CCCT-J222K-0DB CCCT-J222K-0DB	CAPACITORS CAPACITOR CERAMIC CAPACITOR CERAMIC CAPACITOR CERAMIC	0.01uF Z 25V F T 2200PF K 50V B T 2200PF K 50V B T
CH703 CN705 CN706	U1T1-01520-Z10 U345-21338-450 U445-31346-450	CONNECTORS WIRE-ASS'Y WIRE-ASS'Y WIRE-ASS'Y	1007#22 BLK-200 Pi 3.2 UL1007#18 RED-380 3P UL1007#18 ORG-460 4P
D791 D792	DDTS-00070-S00 DDTS-00070-S00	DIODES DIODE-SI DIODE-SI	1SS133 (40V 0.11A) DO-40 T 1SS133 (40V 0.11A) DO-40 T
R793 R794	RMOH-J221J-040 RMOH-J221J-040	RESISTORS RESISTOR-METAL OXIDE RESISTOR-METAL OXIDE	220ohm 2W 5% H 220ohm 2W 5% H
JK703	SKPH-00332-66W	MISCELLANEOUS PHONE JACK	HTJ-064-11

3. SUB P/T P.C BOARD

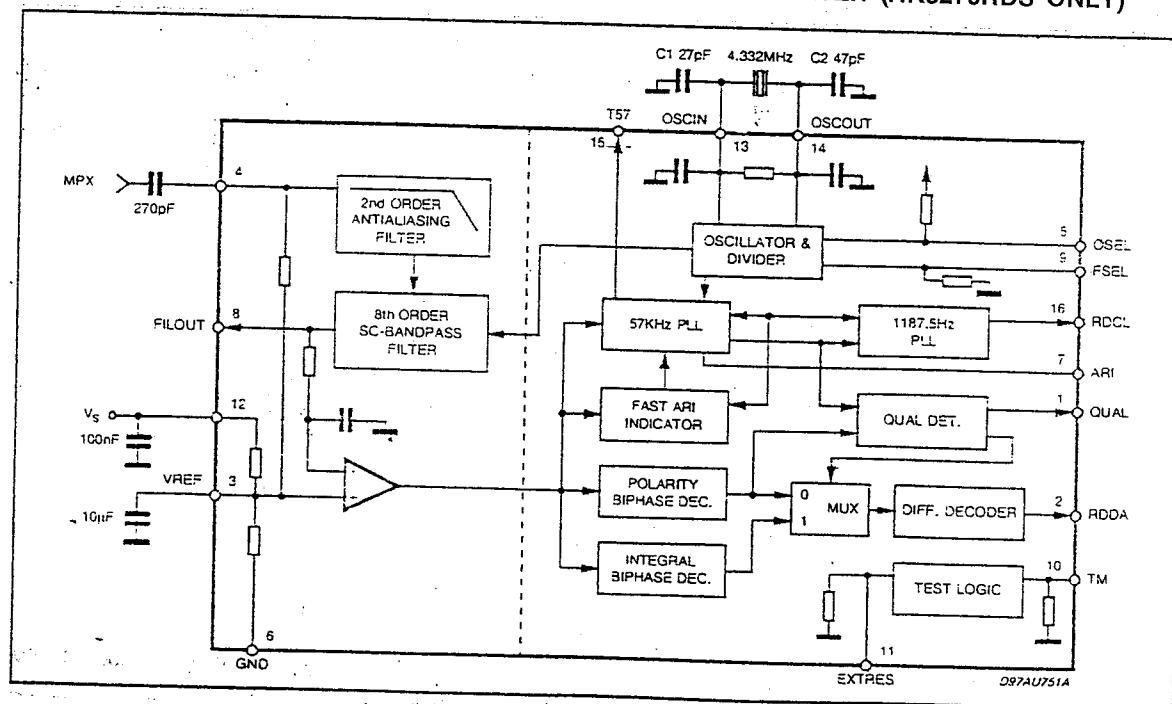
CW401 CH401	KNCW-00980-3S9 U345-2A535-450	CONNECTOR CONNECTOR-WAFER WIRE-ASS'Y(TO MAIN)	JE202A-2T-3P 1617#22 350mm 3P	HK 3270RDS ONLY HK 3270RDS ONLY
CT401 CT402	TFCH-00070-R00 TFCH-00070-R00	CHOKE COILS TRANSFORMER CHOKE TRANSFORMER CHOKE	EI-35 500uH 80m ohm EI-35 500uH 80m ohm	HK 3270RDS ONLY HK 3270RDS ONLY

IC BLOCK DIAGRAMS

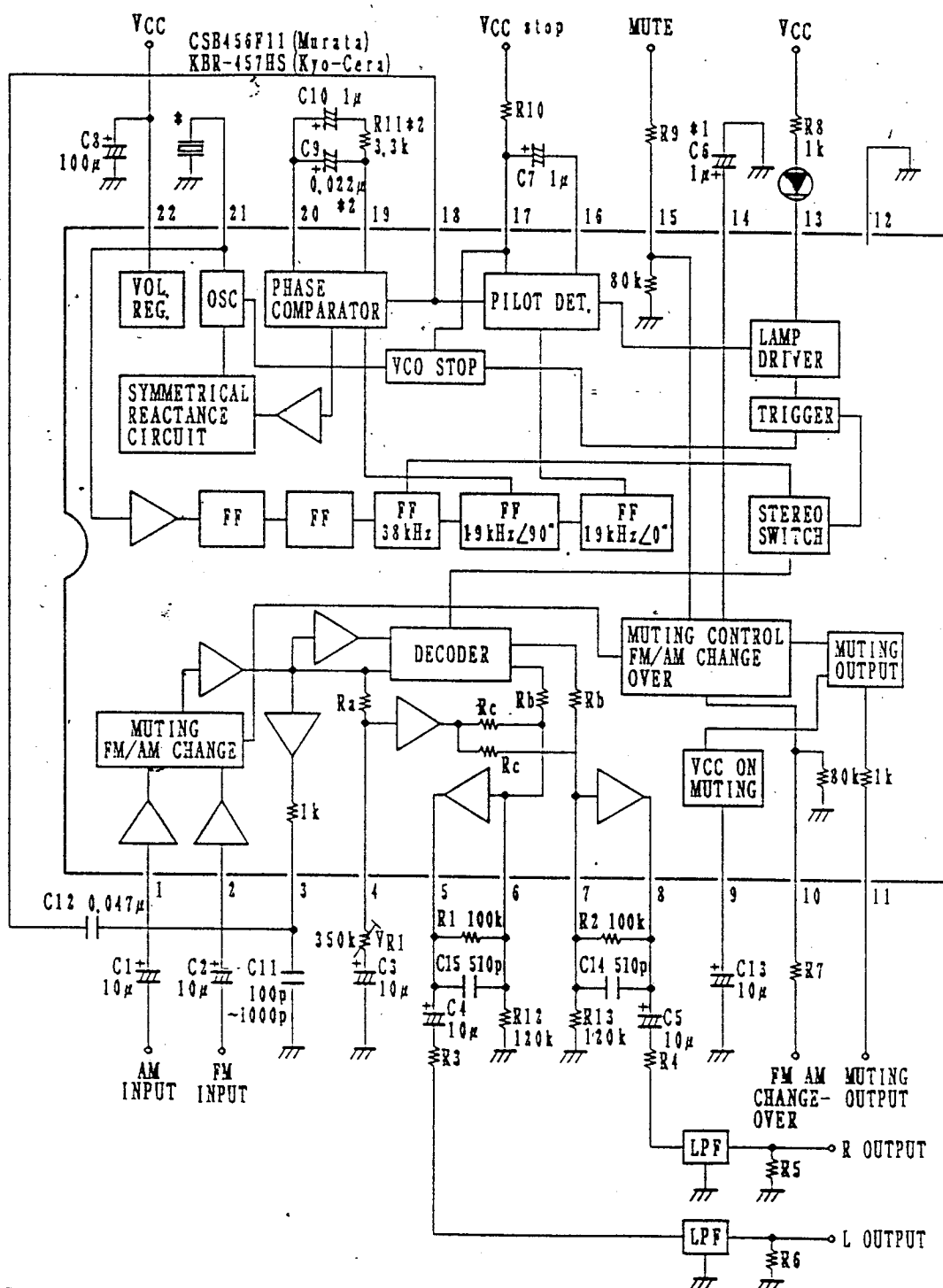
IC106: LC7821 ANALOG FUNCTION SELECTOR



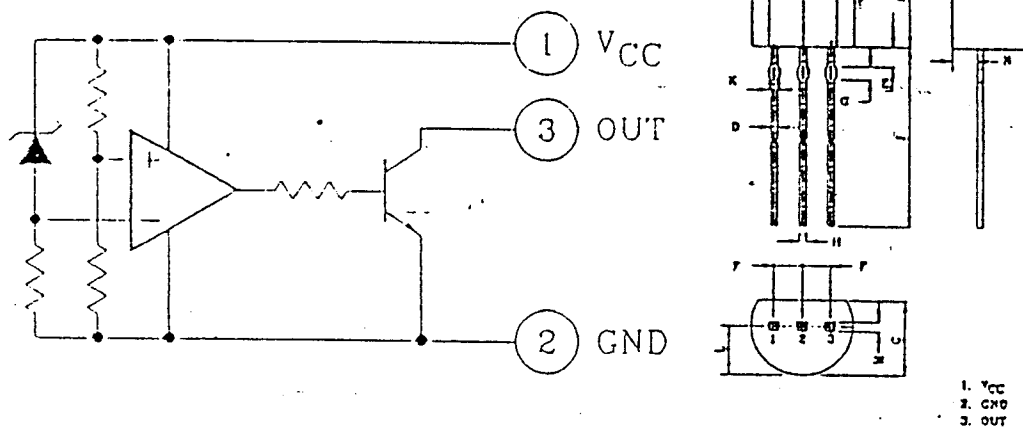
BLOCK DIAGRAM TDA7479: IC604 RDS DEMODULATOR + FILTER (HK3270RDS ONLY)



LA3401: IC603 FM/AM MPX IC

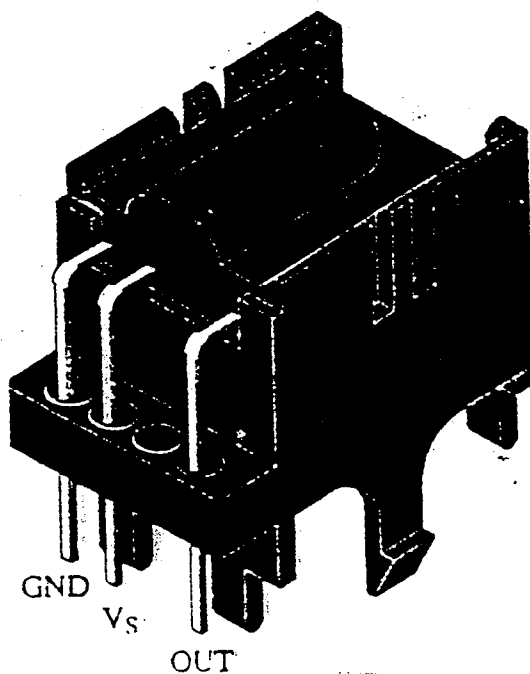
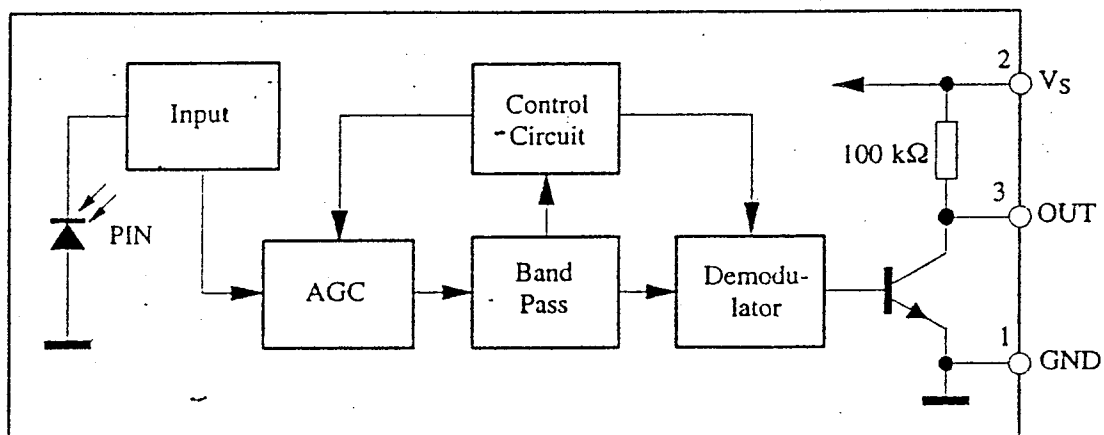


IC KIA7042: IC702 RESET

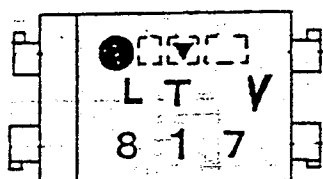


IC TFMT5.0: IC703 REMOTE RECEIVER

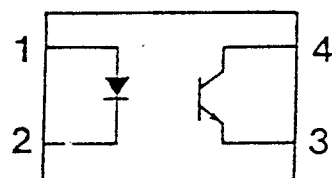
Block Diagram



LTV817B: IC109 PHOTO COUPLER



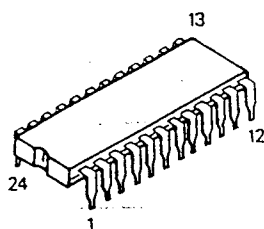
Pin No. and internal connection diagram



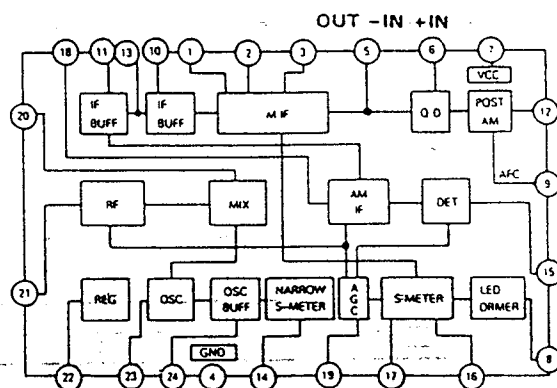
- 1. Anode
- 2. Cathode
- 3. Emitter
- 4. Collector

LA1266: IC601 AM/FM IF

Package Outline



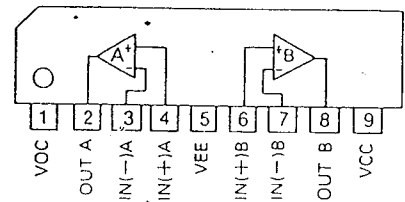
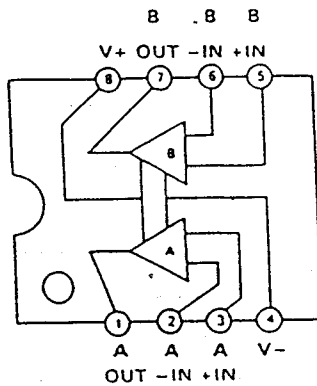
Block Diagram



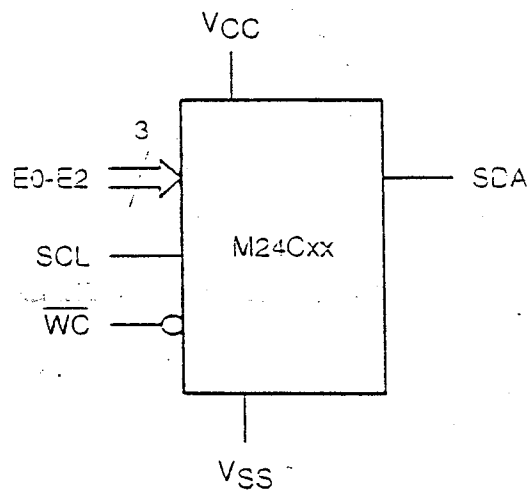
IC105, IC107, IC705

IC108MC4558S: DUAL OP AMP

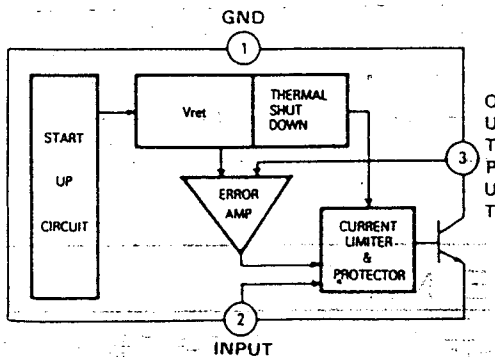
NJM2068DD/ NJM4558M/ NJM2068M: DUAL OP AMP



24C0281P: IC704 2K CMOS EEPROM

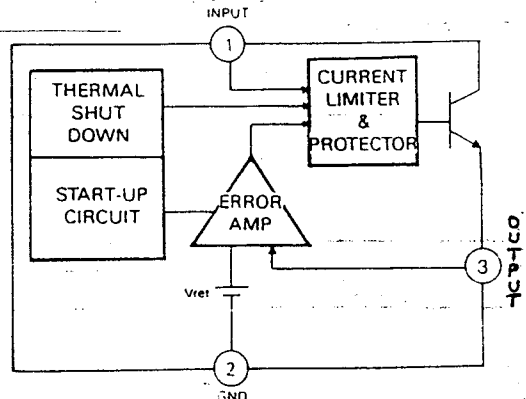


IC102: KA79XX REGULATOR

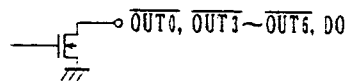
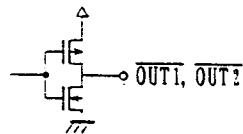
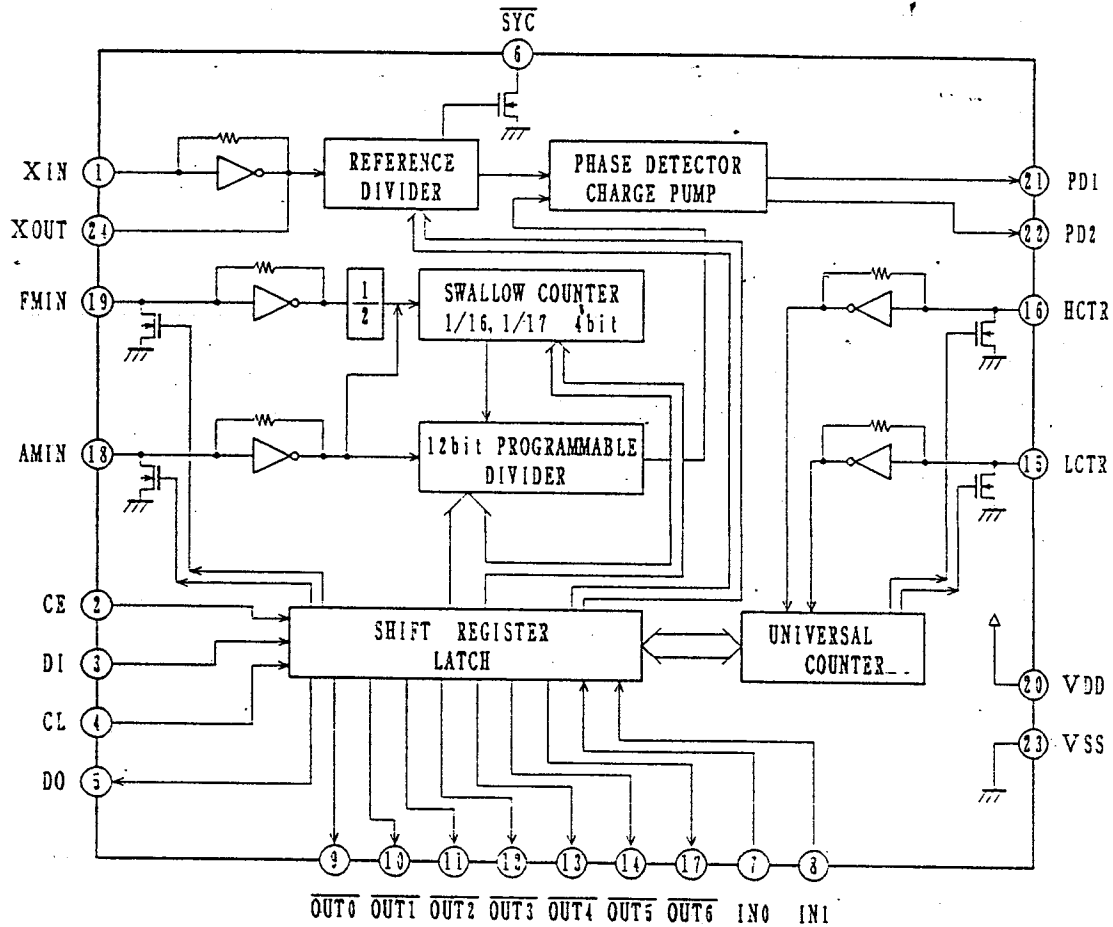


IC101, IC104, IC202, IC103

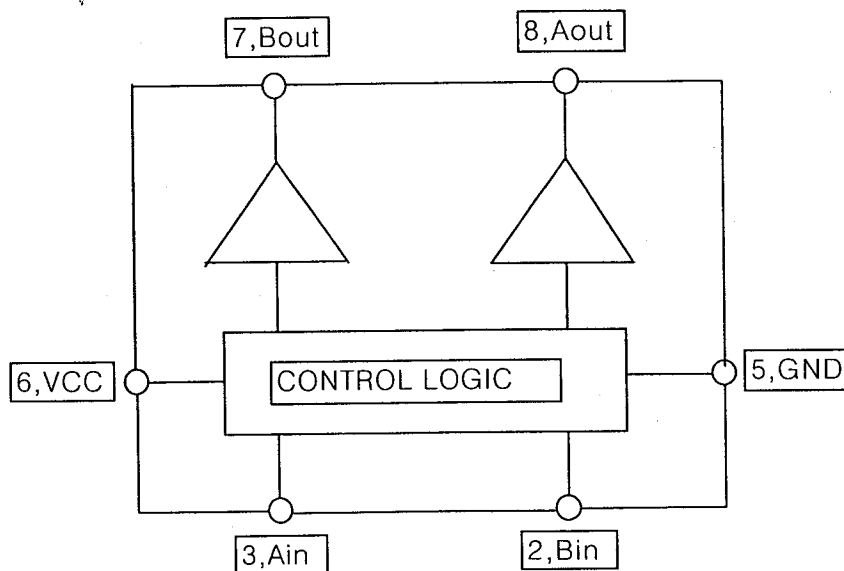
KA78XX REGULATOR



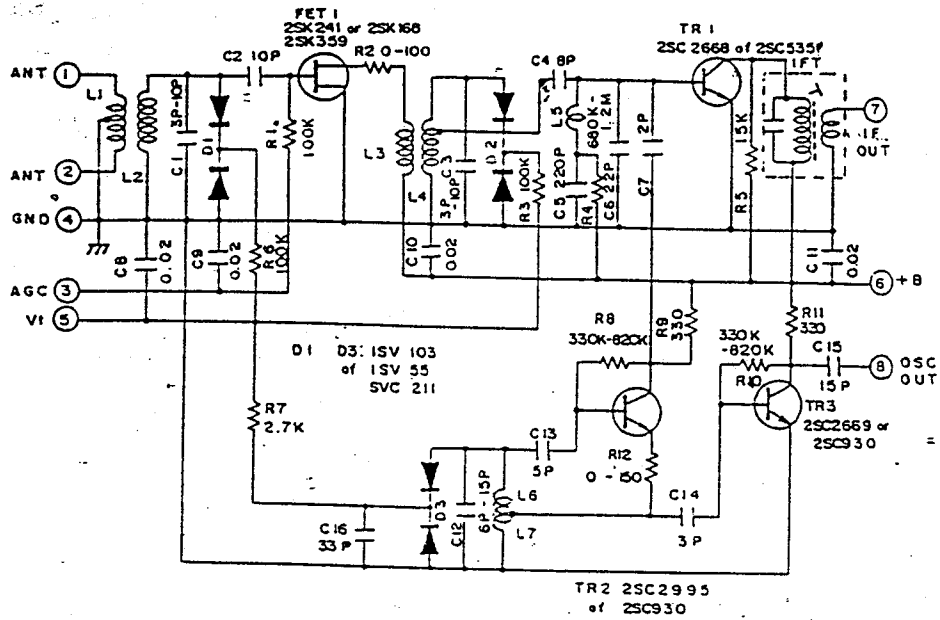
LC7218JM: IC602 PLL FREQUENCY SYNTHESIZER



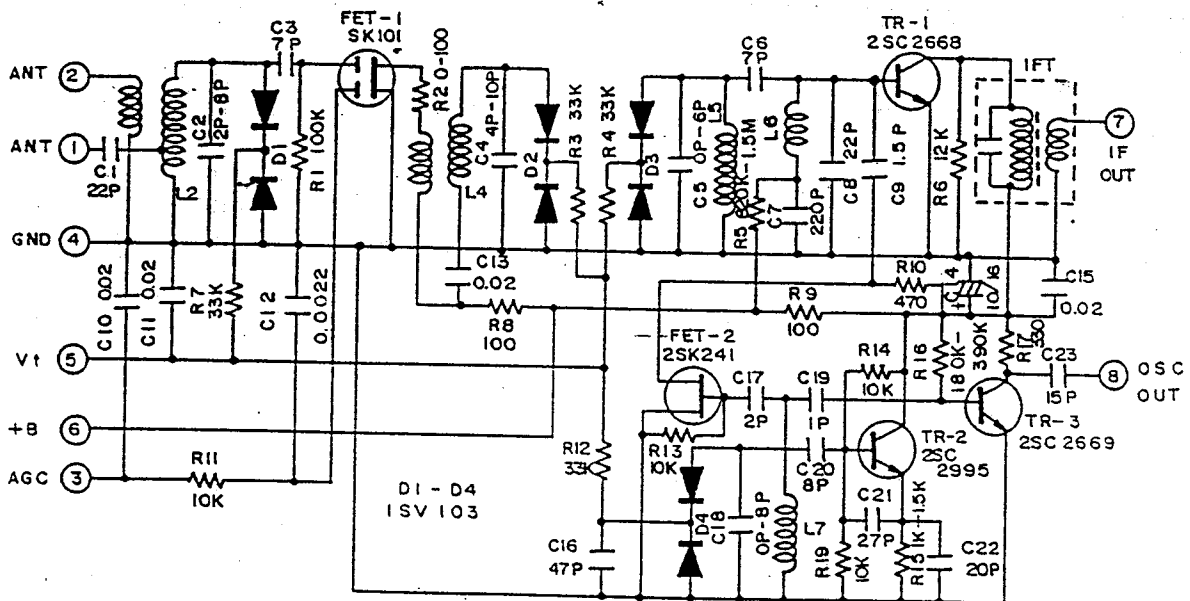
IC201: BA6208



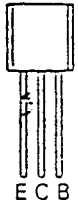
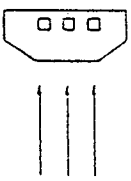
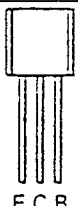
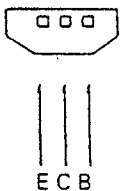
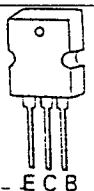
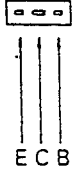
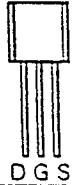
FRONT END: FE601 (FTA3-509H) U.S.A. Version



FRONT END: FE601 (FTA4-460H) EU. Version



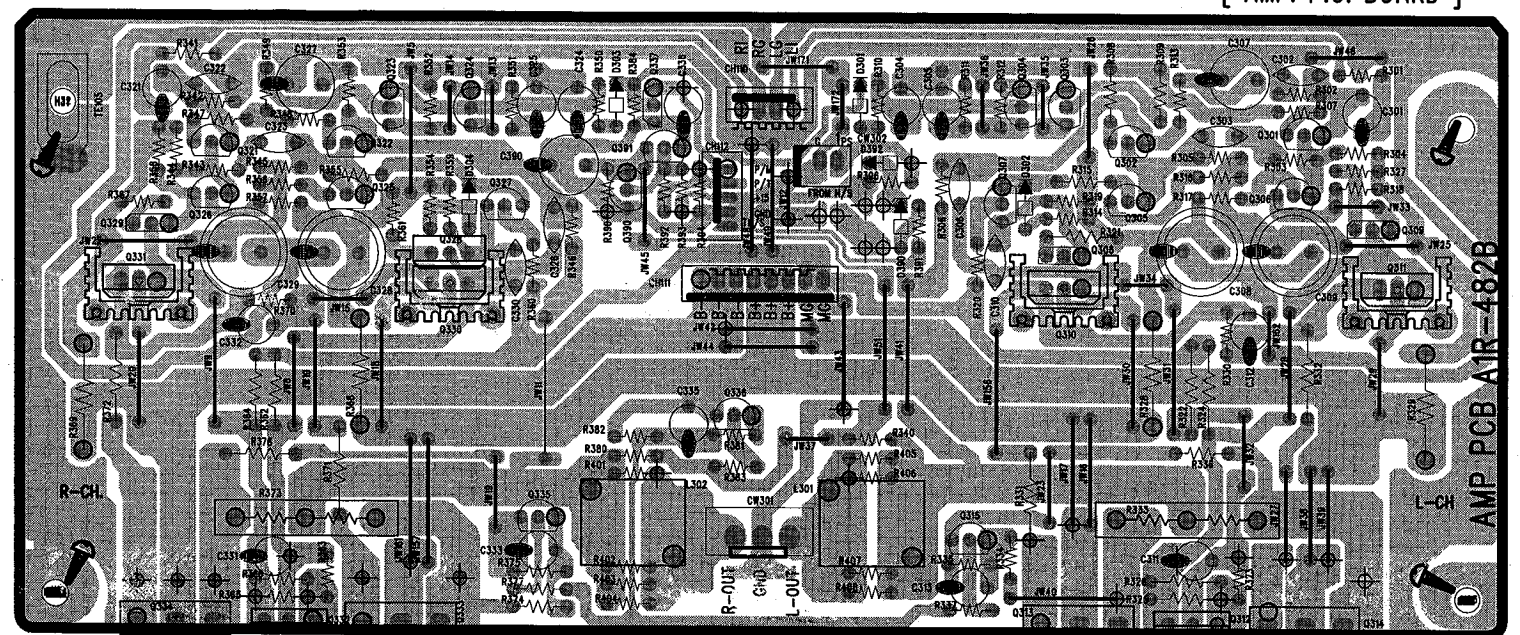
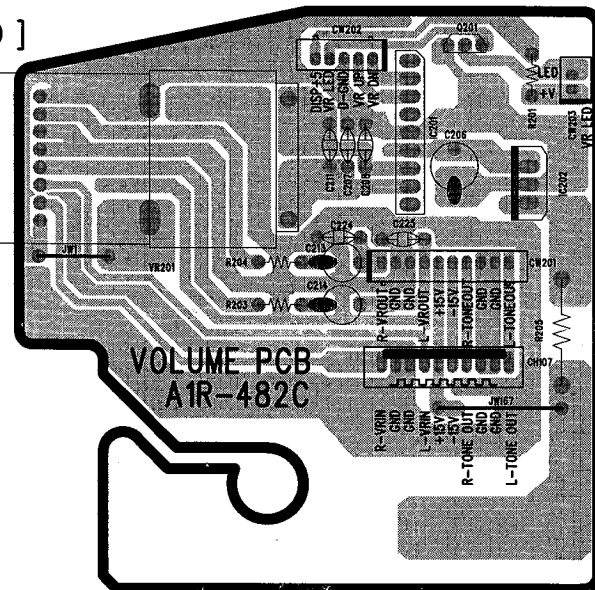
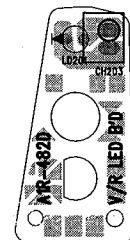
TRANSISTORS LEAD IDENTIFICATION

TRANSISTOR	FRONT VIEW	BOTTOM VIEW
KTD1302 KTC3200/KTC2240 KTC3198/KTC1815 KTC1923/KTC3194 KTA2400 KTA1268/KTA970 KTA1266/KTA1015		
DTC114YS DTA114YS KRA107M KRC107M KRC111M		
KTA1024 KTC3206 KTA1267Y		
2SC4137 2SC4883 2SA1859		
2SK168D		
2SA1492 2SC3856		
TERMINAL NAME		
D→DRAIN G→GATE S→SOURCE	B→BASE C→COLLECTOR E→EMITTER	

P. C. BOARD

[VOLUME P.C. BOARD]

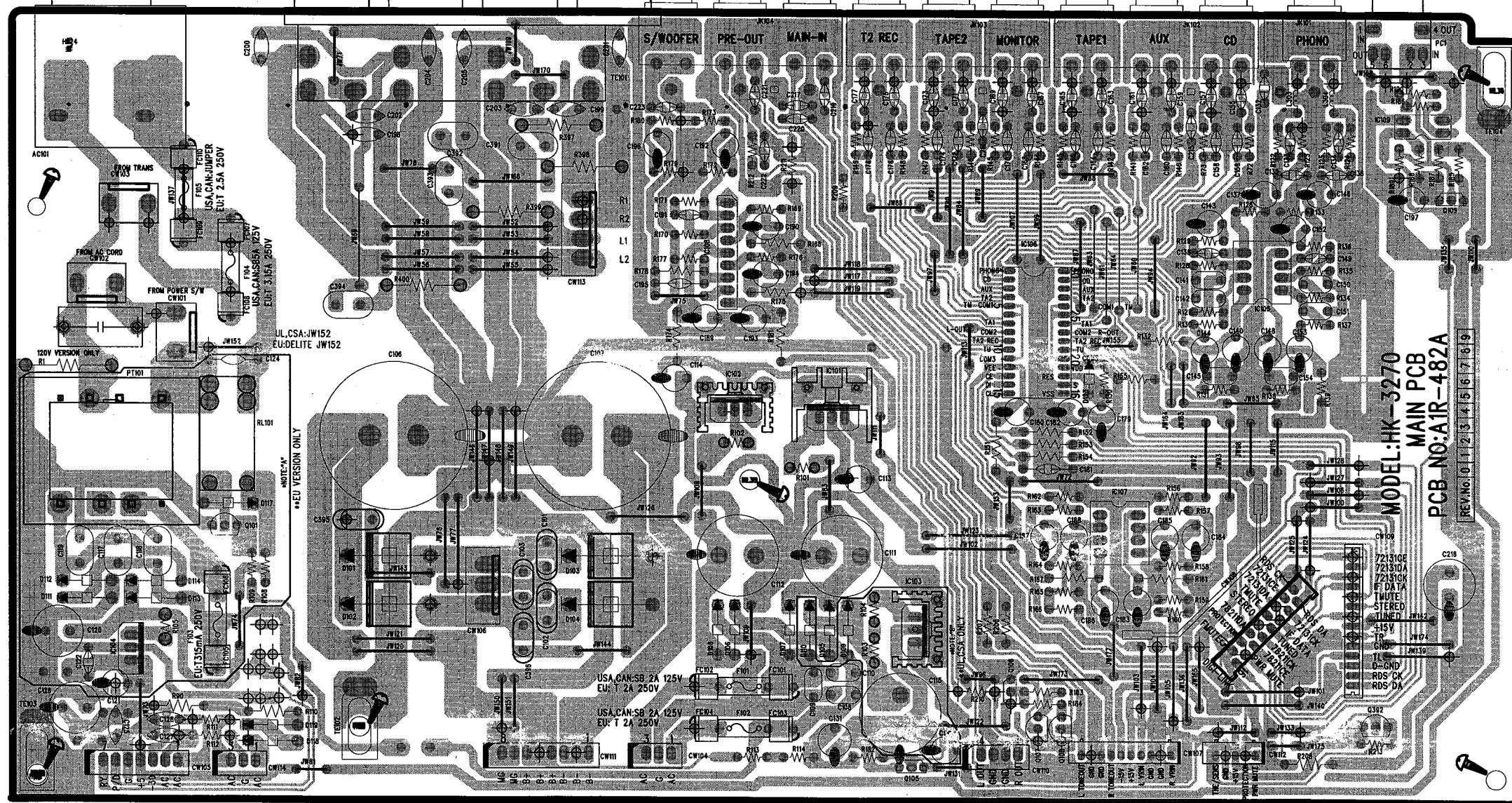
[VOLUME LED P.C. BOARD]



[AMP. P.C. BOARD]

HK3270/HK3270RDS

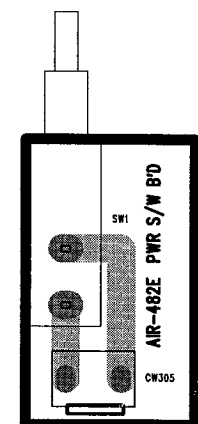
[MAIN P.C. BOARD]



[OPTION TABLE]

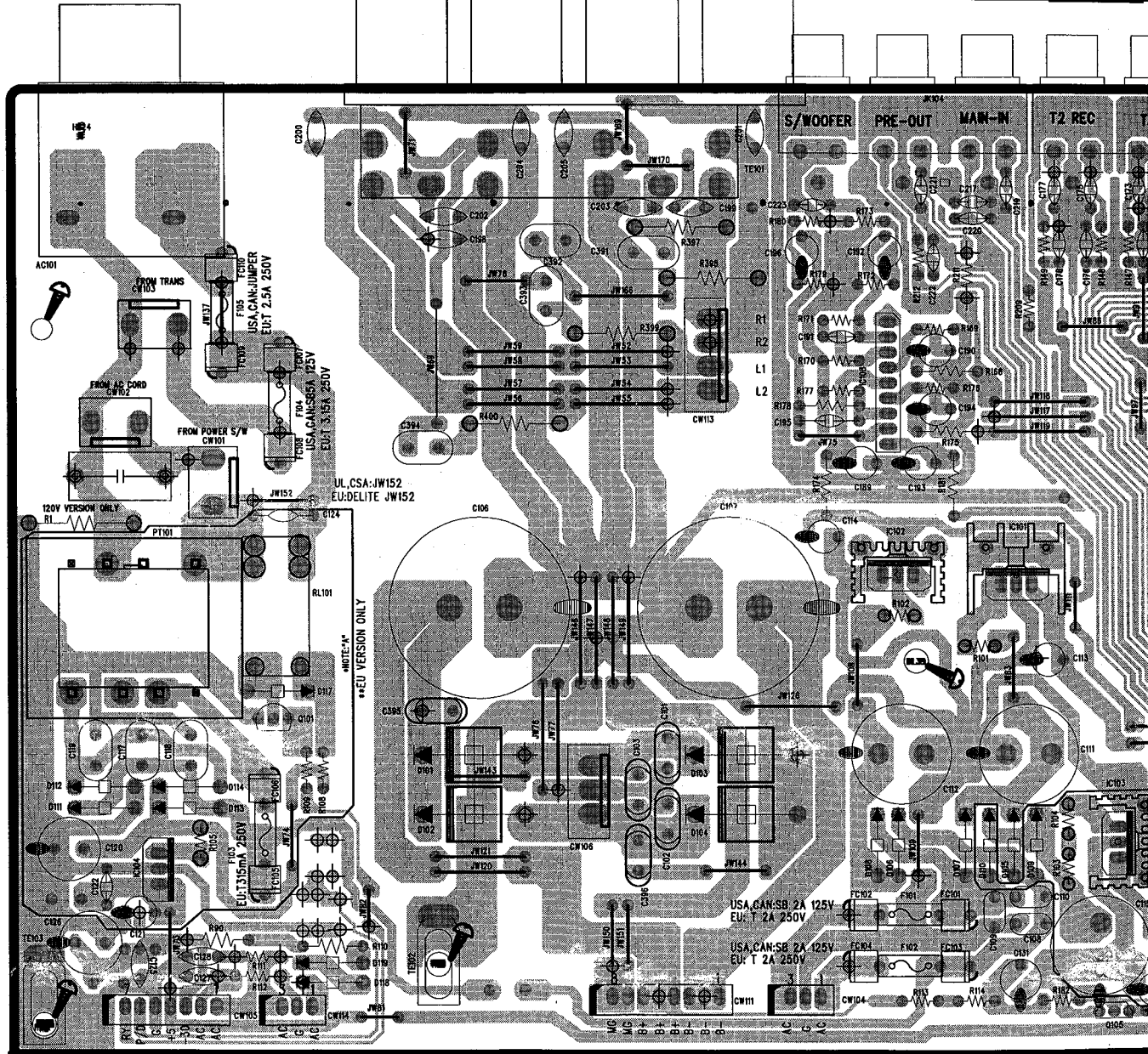
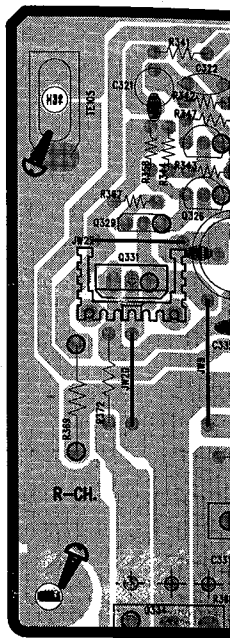
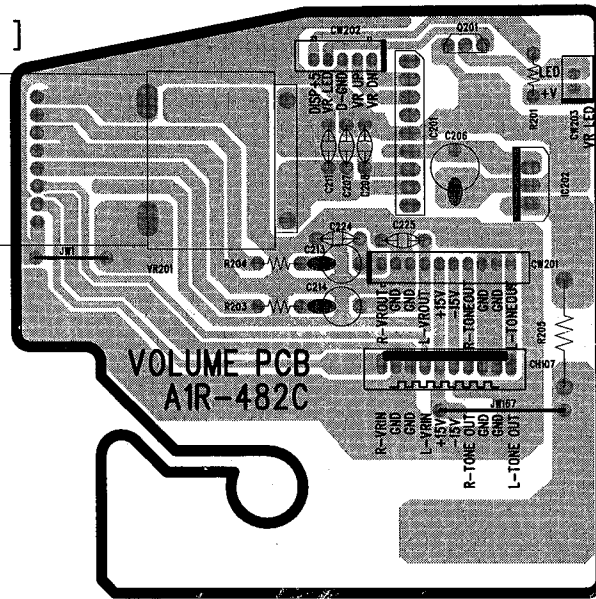
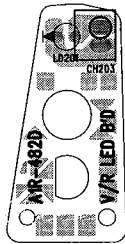
NO.	PARTS NAME	USA/CAN	EUROPE(RDS)	ETC.
1	NOTE-A*	X	X	
2	NOTE-B*	O	X	
3	FC108/FC110	JUMPER	O	
4	JW137	O	X	
5	AC101	S2-7641-214	YKE31-0080	
7	L303/L304	JUMPER	O	
8	C153/C154	X	O	
9	C155 - C178	X	O	DELETE
10	JW116	X	X	
11	JW152	O	X	
12	F101/F102	SB 2A 125V	T 2A 250V	
13	F103	X	T 315mA 250V	
14	F104	SB 5A 125V	T 315mA 250V	
15	F105	JUMPER	T 2.5A 250V	
16	R208 -> R212	JUMPER	O	
17	C219 -> C222	X	O	
18	C196 -> C205	X	O	
19	SH101	X	X	
20	C218	O	X	
21	R208	O	JUMPER	

[POWER SWITCH P.C. BOARD]



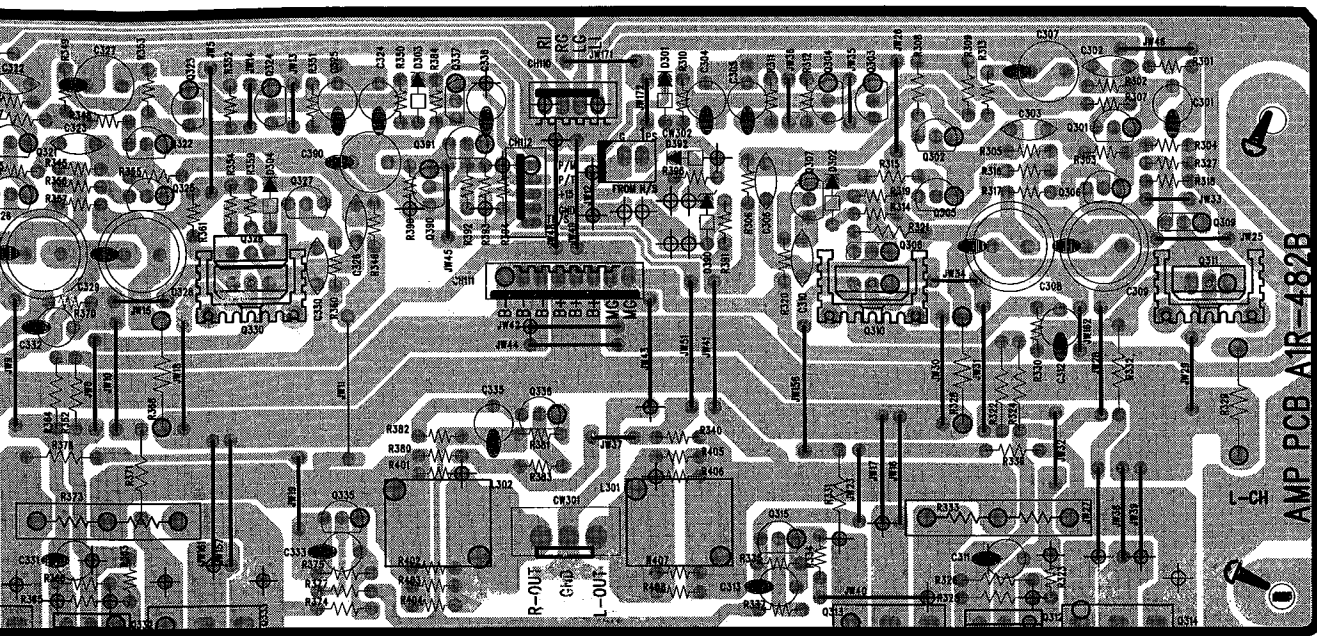
[VOLUME P.C. BOARD]

[VOLUME LED P.C. BOARD]

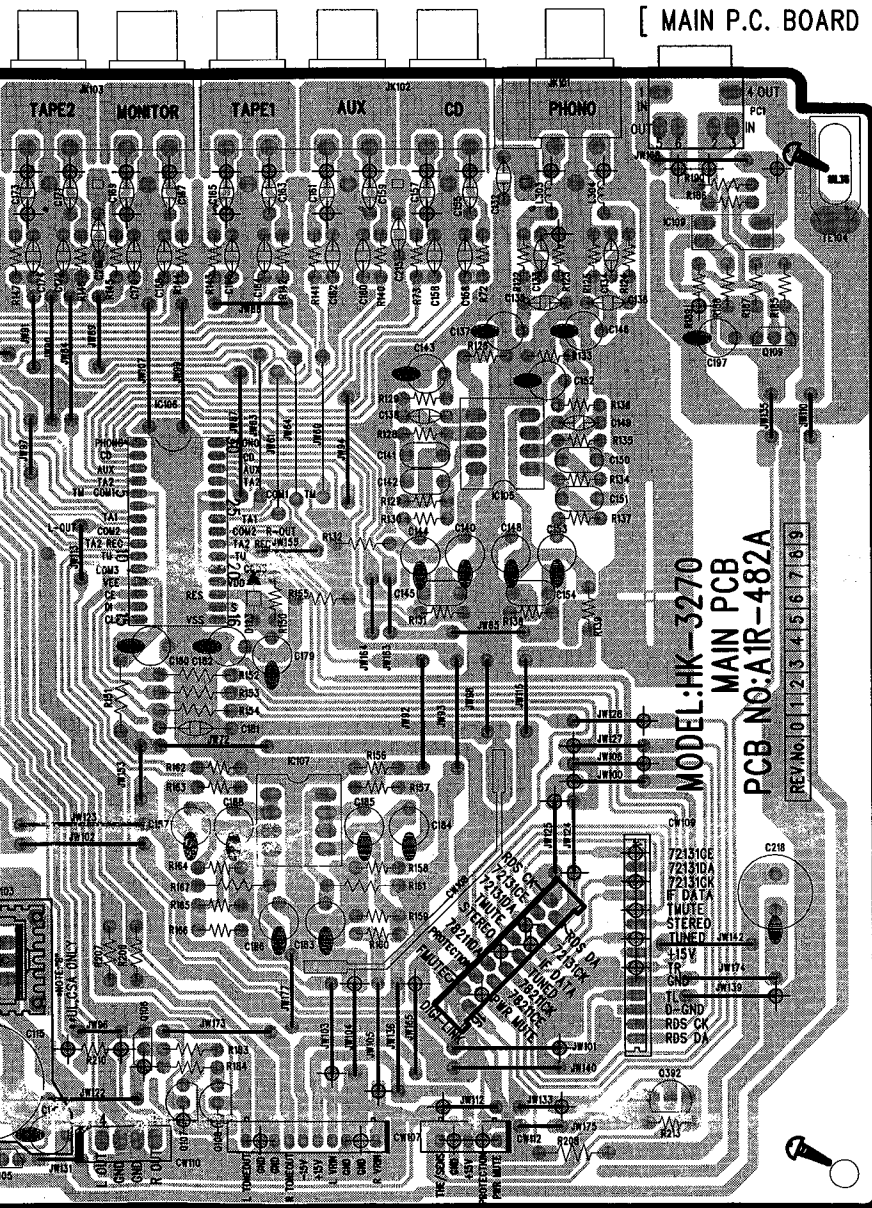


[AMP. P.C. BOARD]

HK3270/HK3270RDS



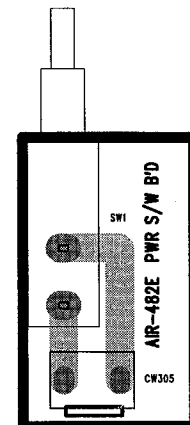
[MAIN P.C. BOARD]

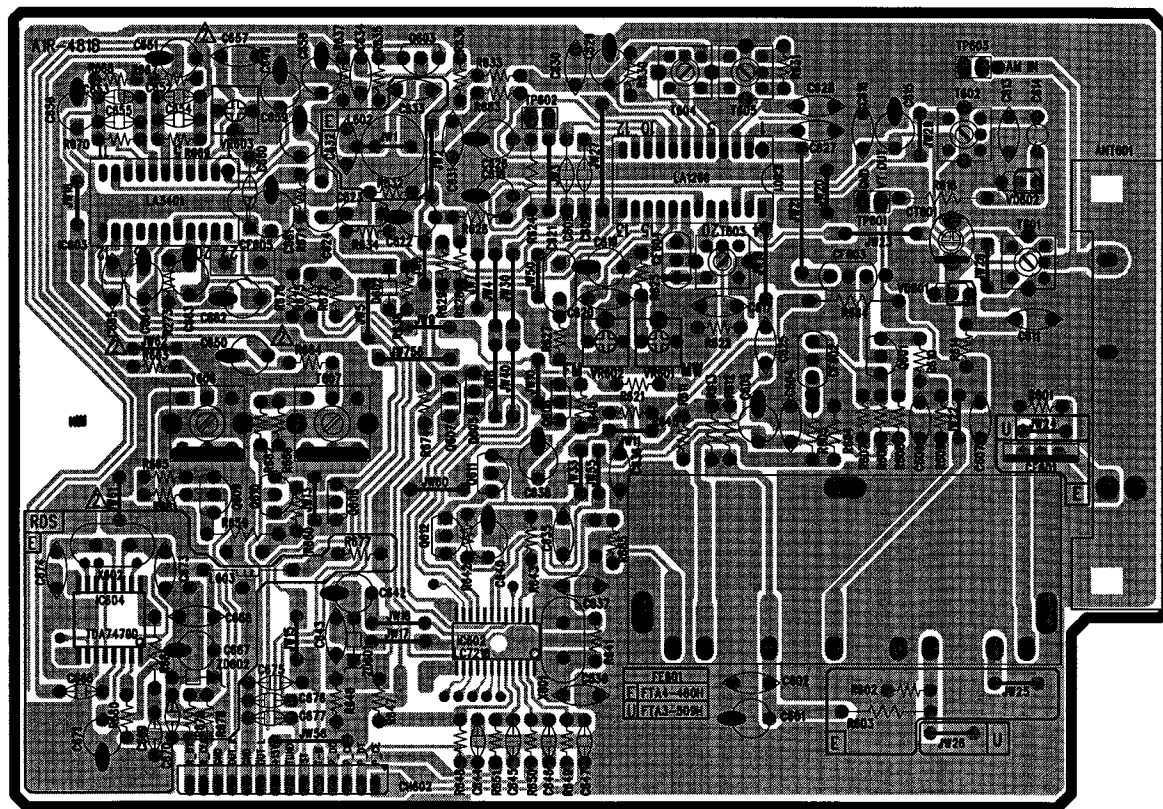
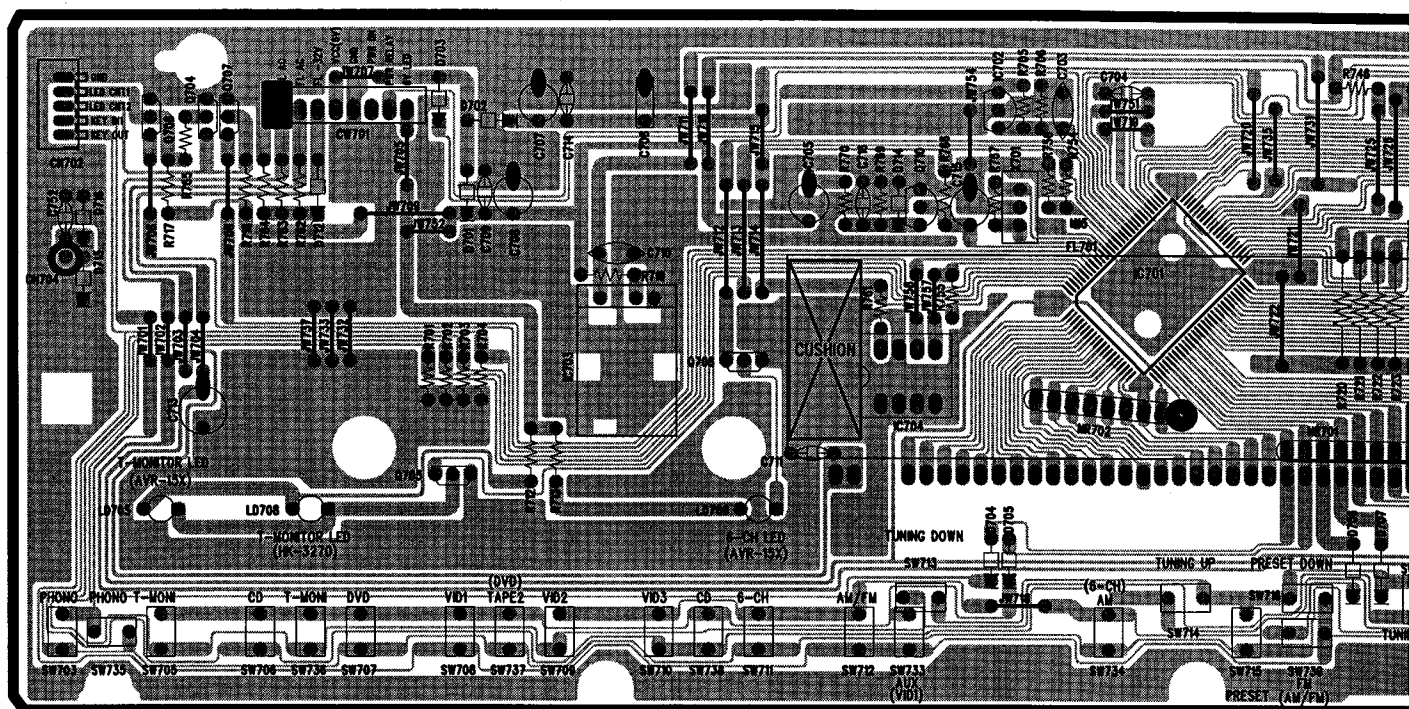


[OPTION TABLE]

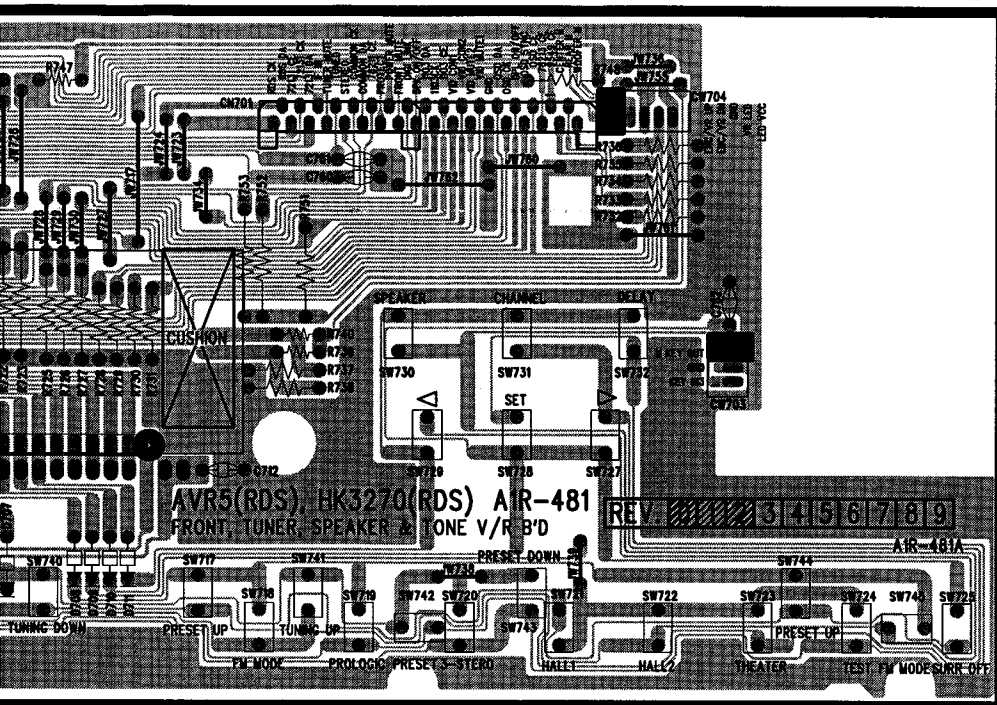
NO.	PARTS NAME	VERSION		ETC.
		USA/CAN	EUROPE/RDS	
1	NOTE "A"	X	O	
2	NOTE "B"	O	X	
3	FC109, FC110	JUMPER	O	
4	JW137	O	X	
5	AC101	S2-7647-214	YKES1-0090	
6	L303, L304	JUMPER	O	
7	C133, C134	X	O	
8	C155 --- C178	X	O	
9	JW116	O	X	DELETE
10	JW152	O	X	
11	F101, F102	SB 2A 125V	T 2A 250V	
12	F103	X	T 315mA 250V	
13	F104	SB 6A 125V	T 3.15A 250V	
14	F105	JUMPER	T 2.5A 250V	
15	R209 --> R212	JUMPER	O	
16	C210 --> C222	X	O	
17	C198 --> C205	X	O	
18	SH101	X	O	
19	C218	O	X	
20	C219	O	X	
21	R208	O	JUMPER	

[POWER SWITCH P.C. BOARD]

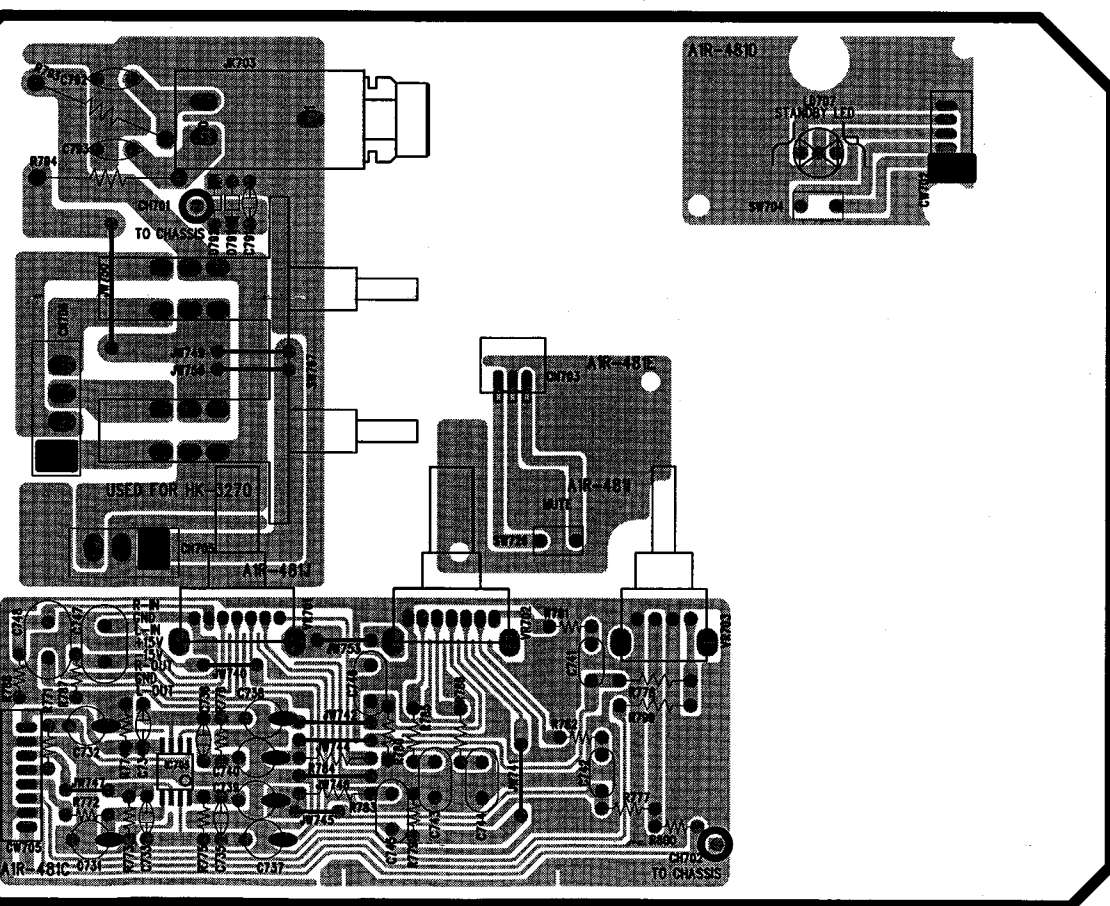




FRONT P.C BOARD



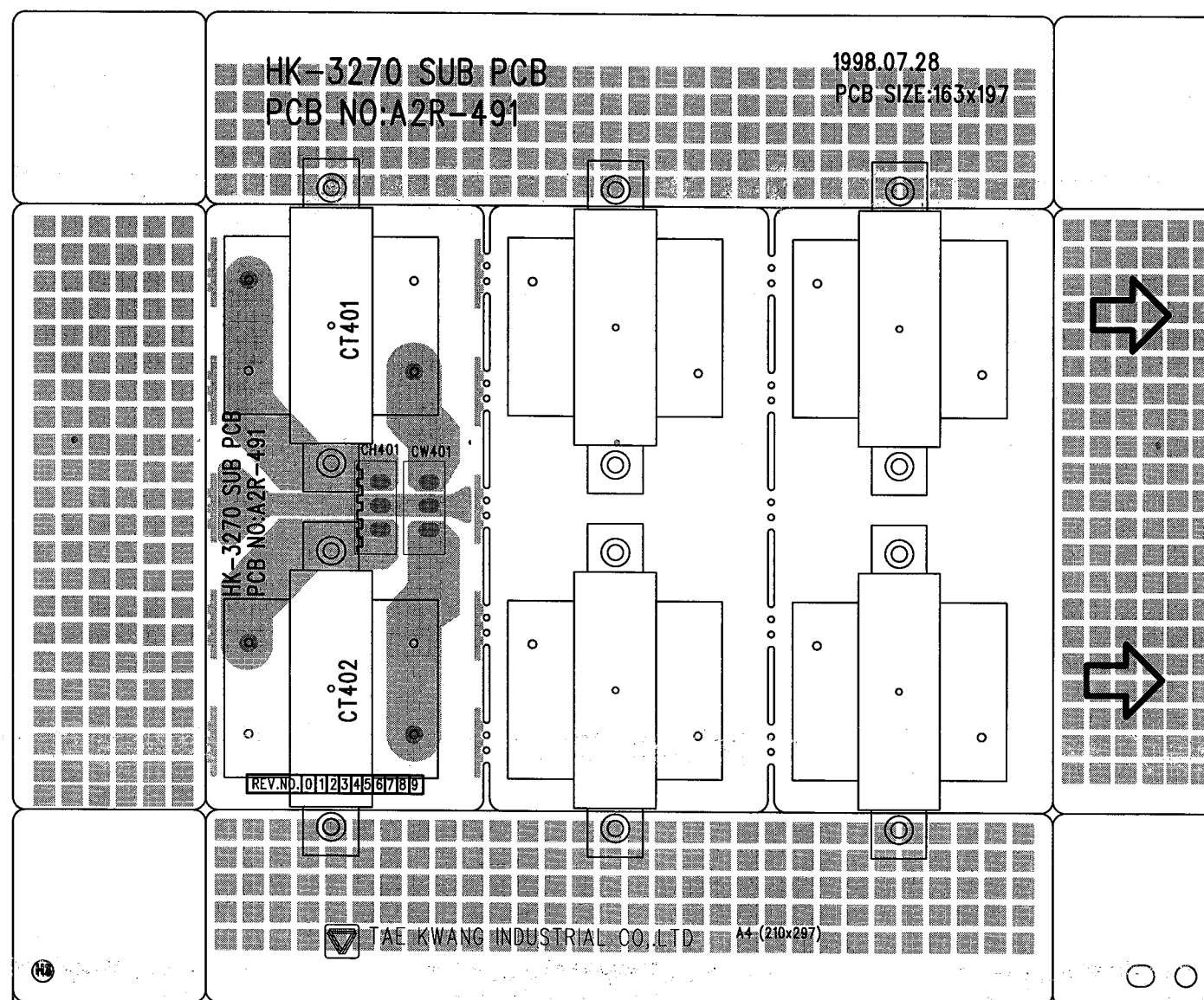
TONE, HEADPHONE, SPEAKER SELECTOR, MUTE, & STANDBY BOARDS



P. C. BOARD

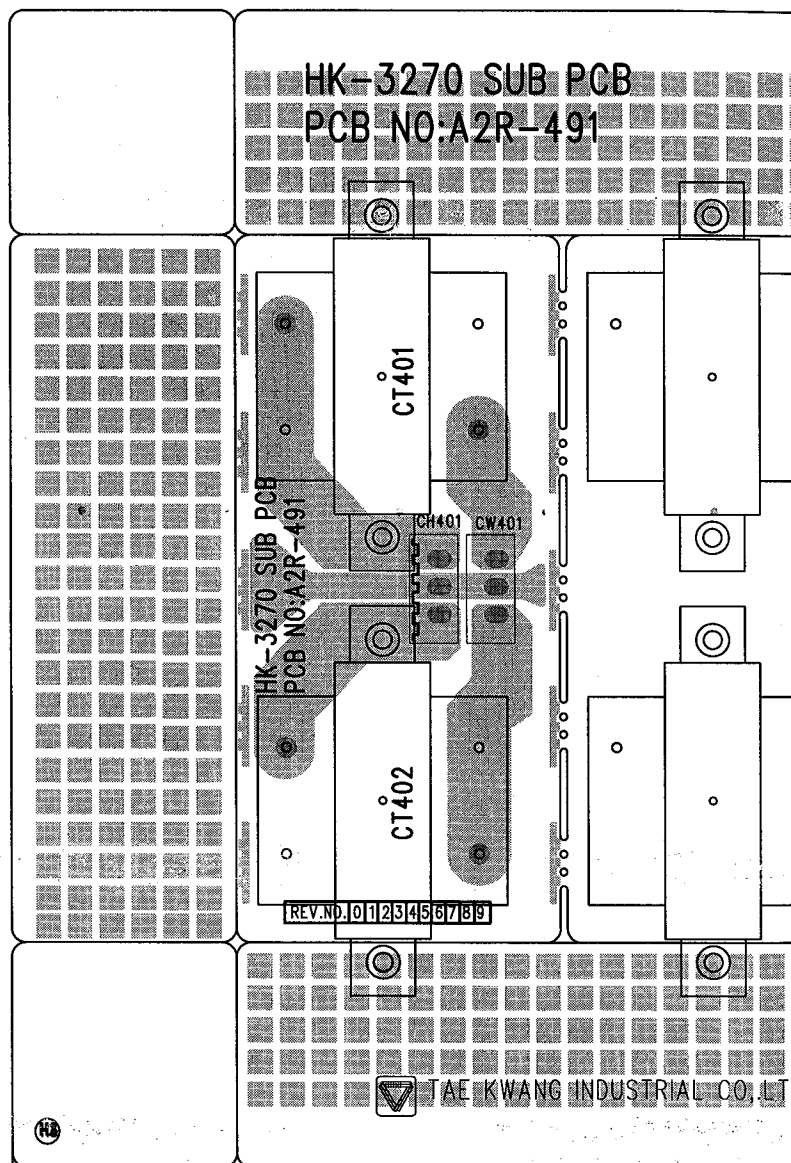
HK3270RDS ONLY

HK3270/HK3270RDS

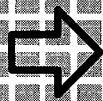


P. C. BOARD

HK3270RDS ONLY



1998.07.28
PCB SIZE:163x197

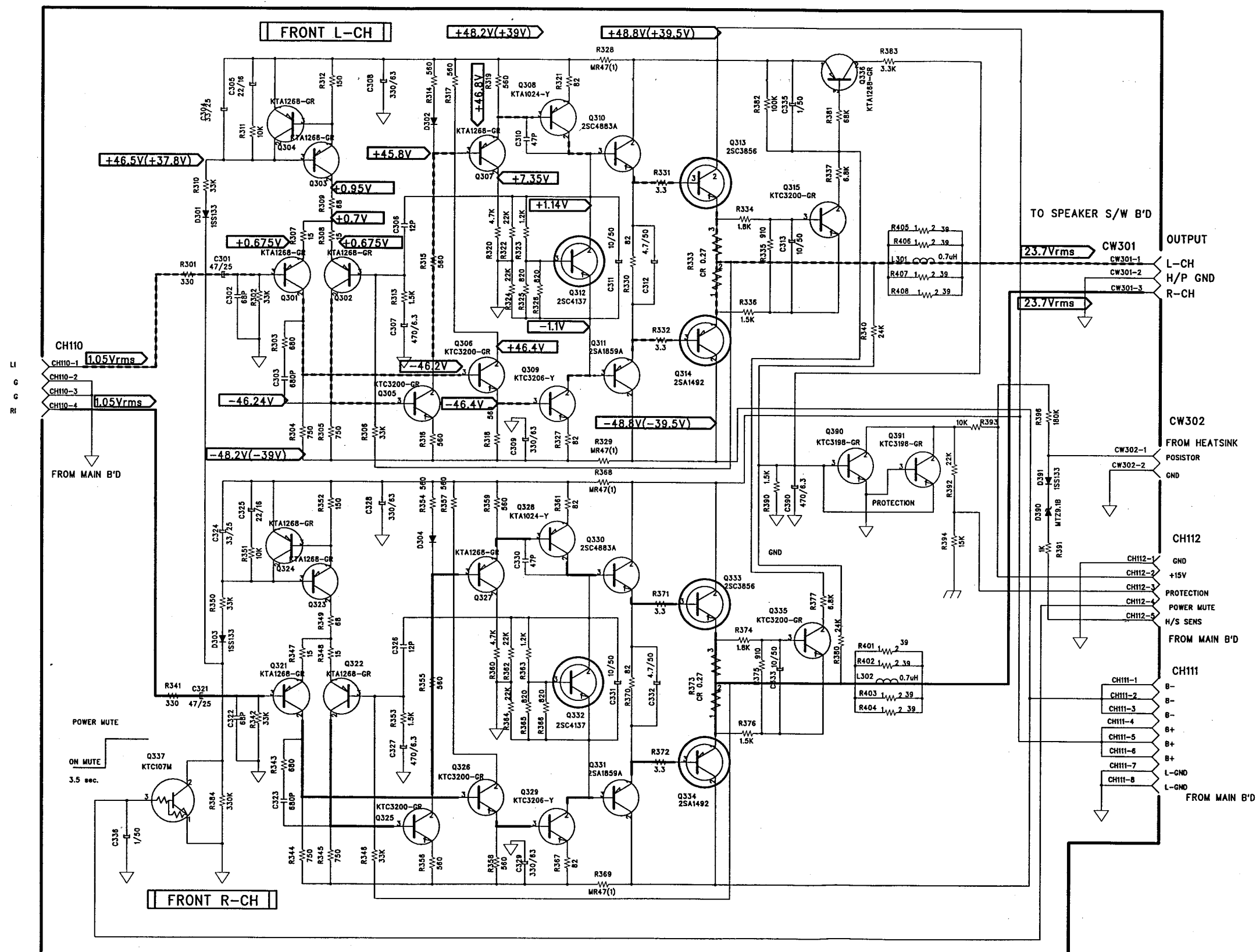


A4 (210x297)

SCHEMATIC DIAGRAM

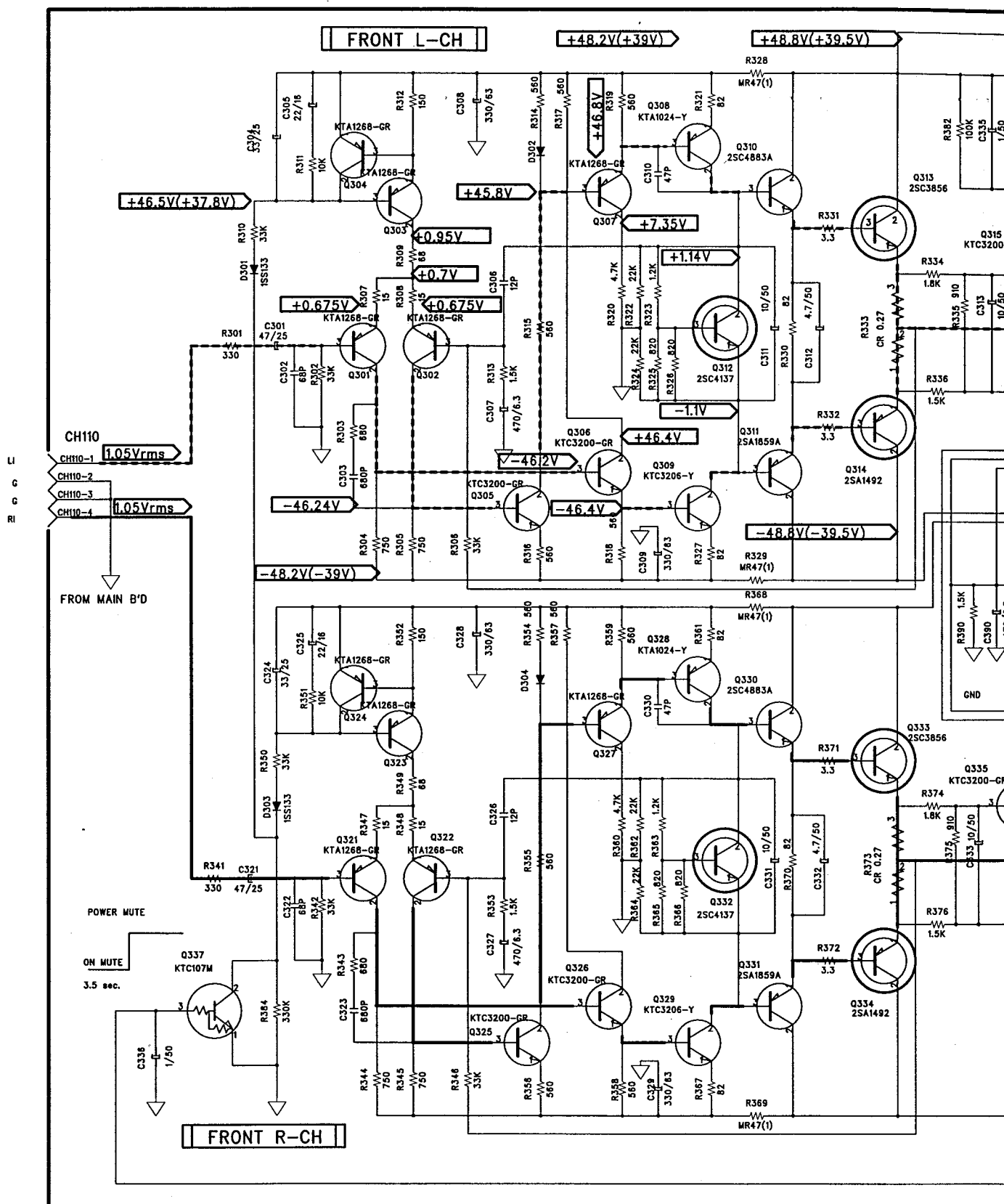
AMP BOARD

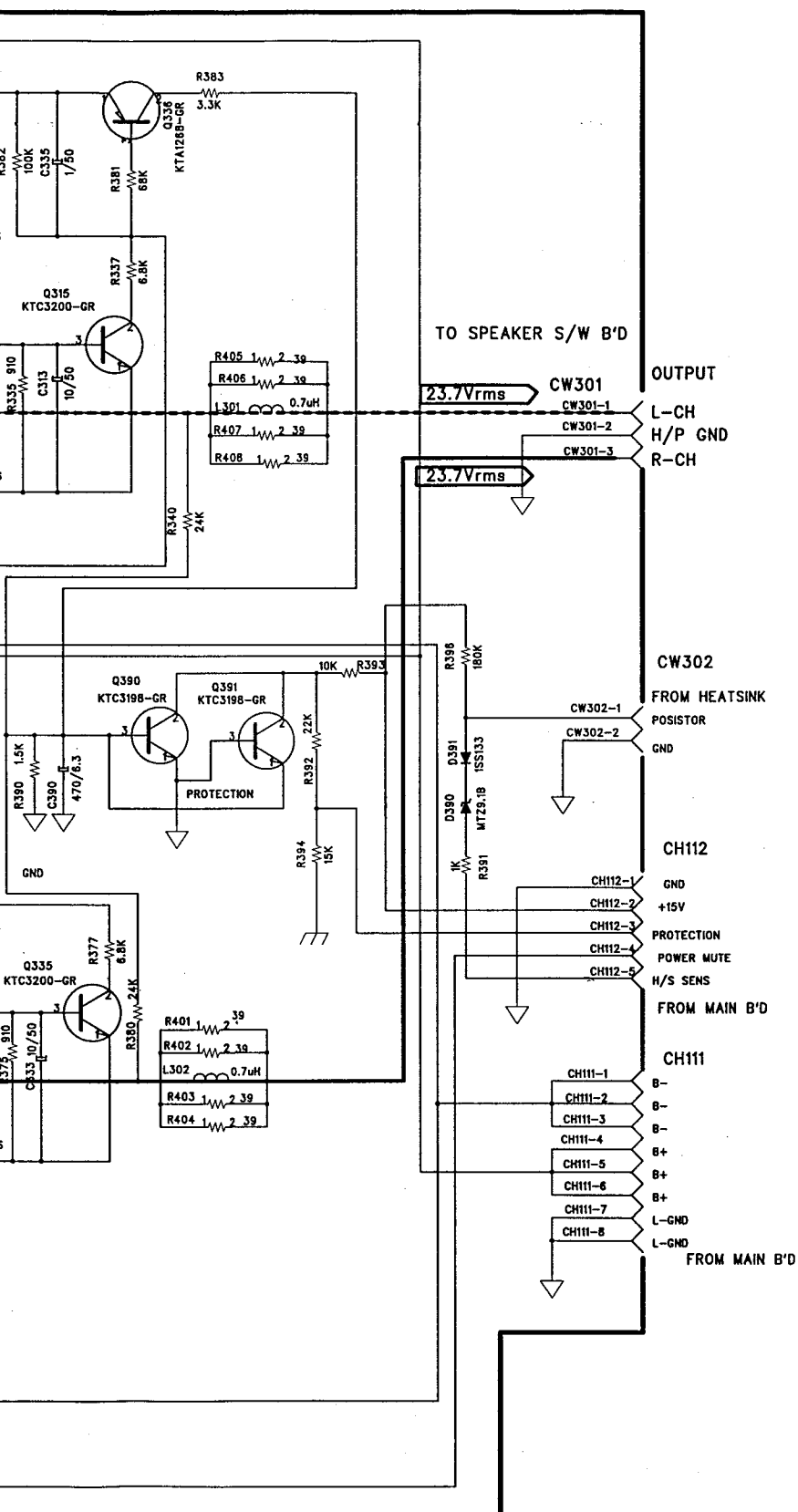
HK3270/HK3270RDS



SCHEMATIC DIAGRAM

AMP BOARD

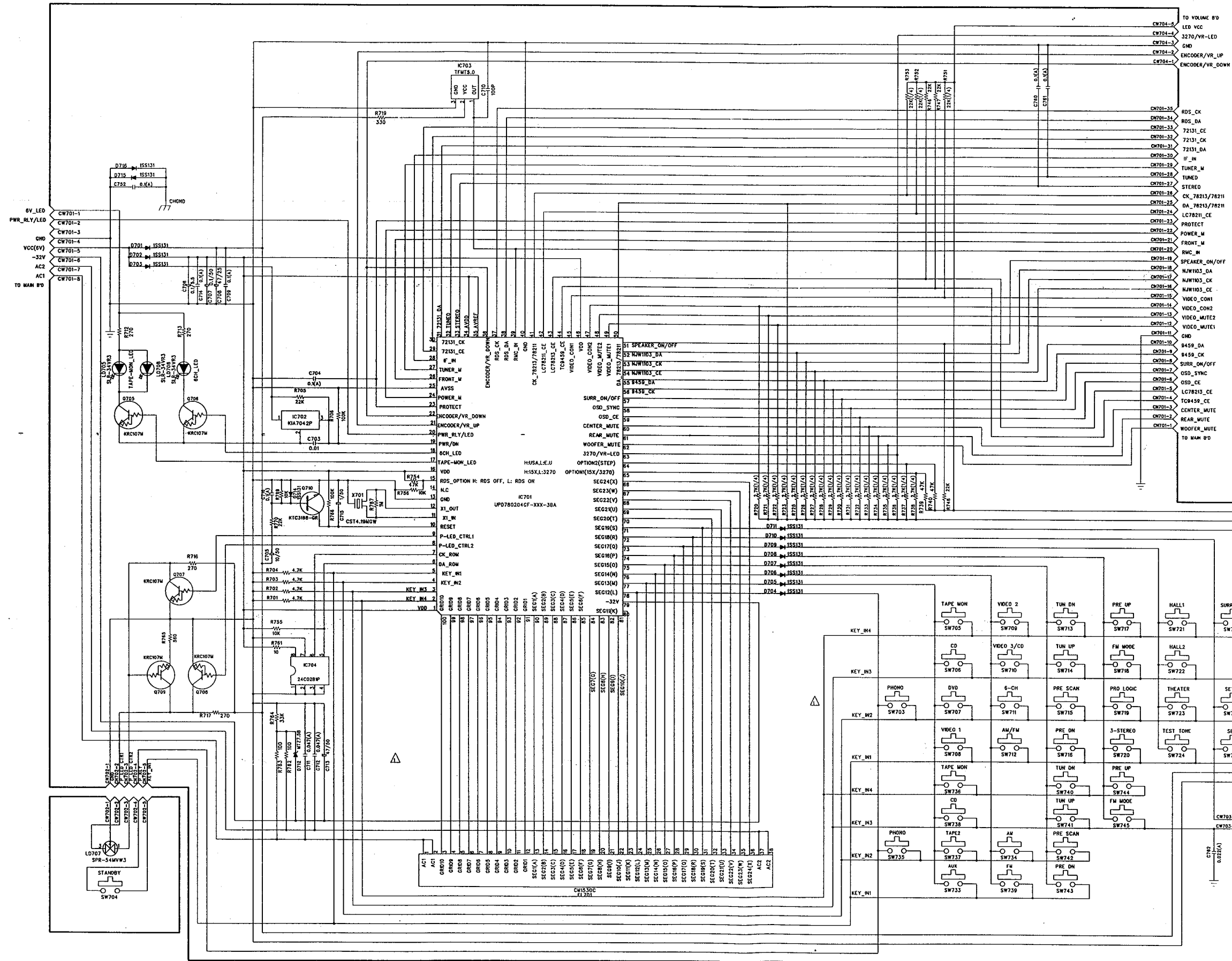




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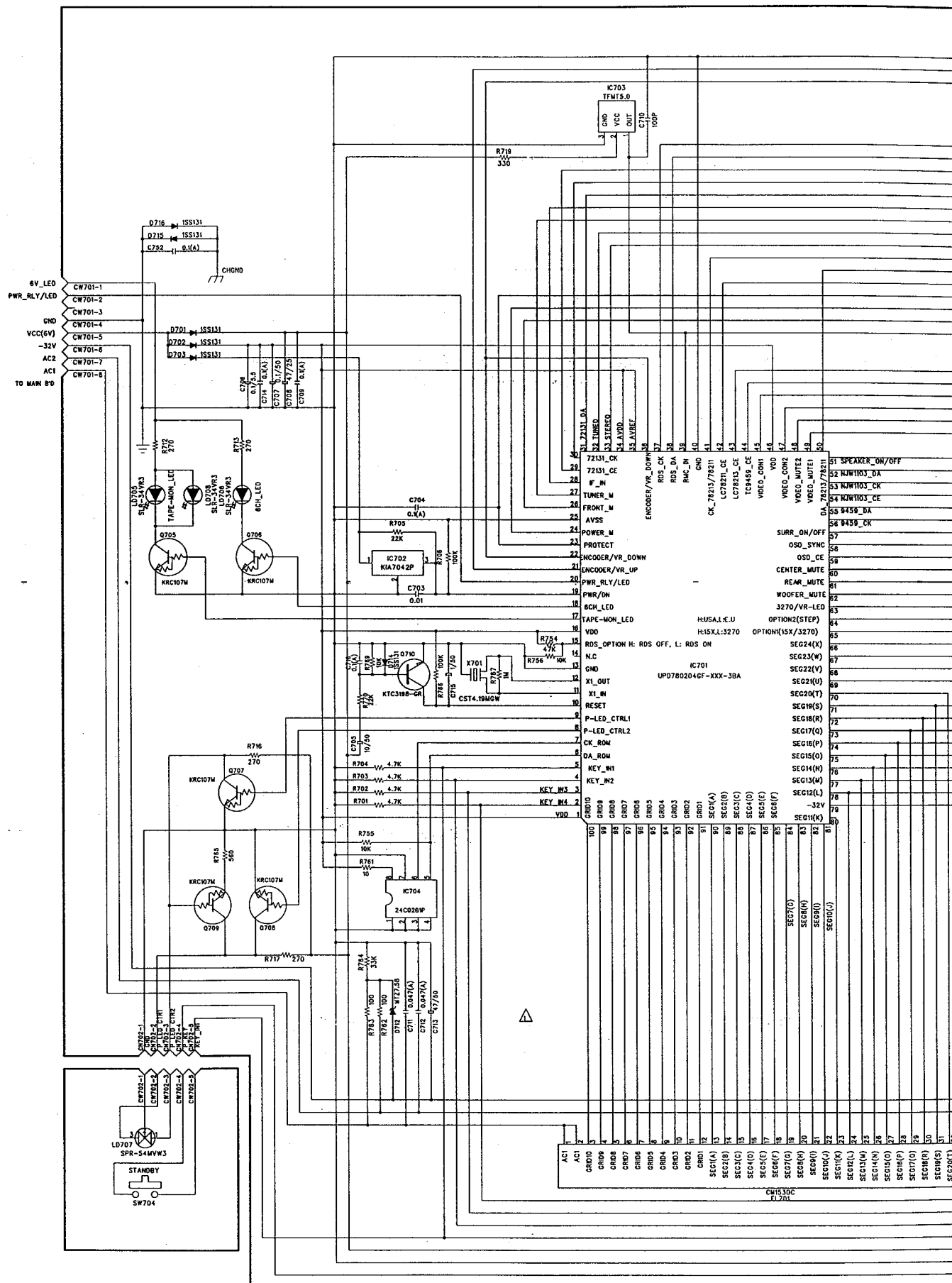
FRONT, MUTE, STANDBY BOARDS

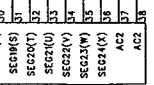
HK3270/HK3270RDS

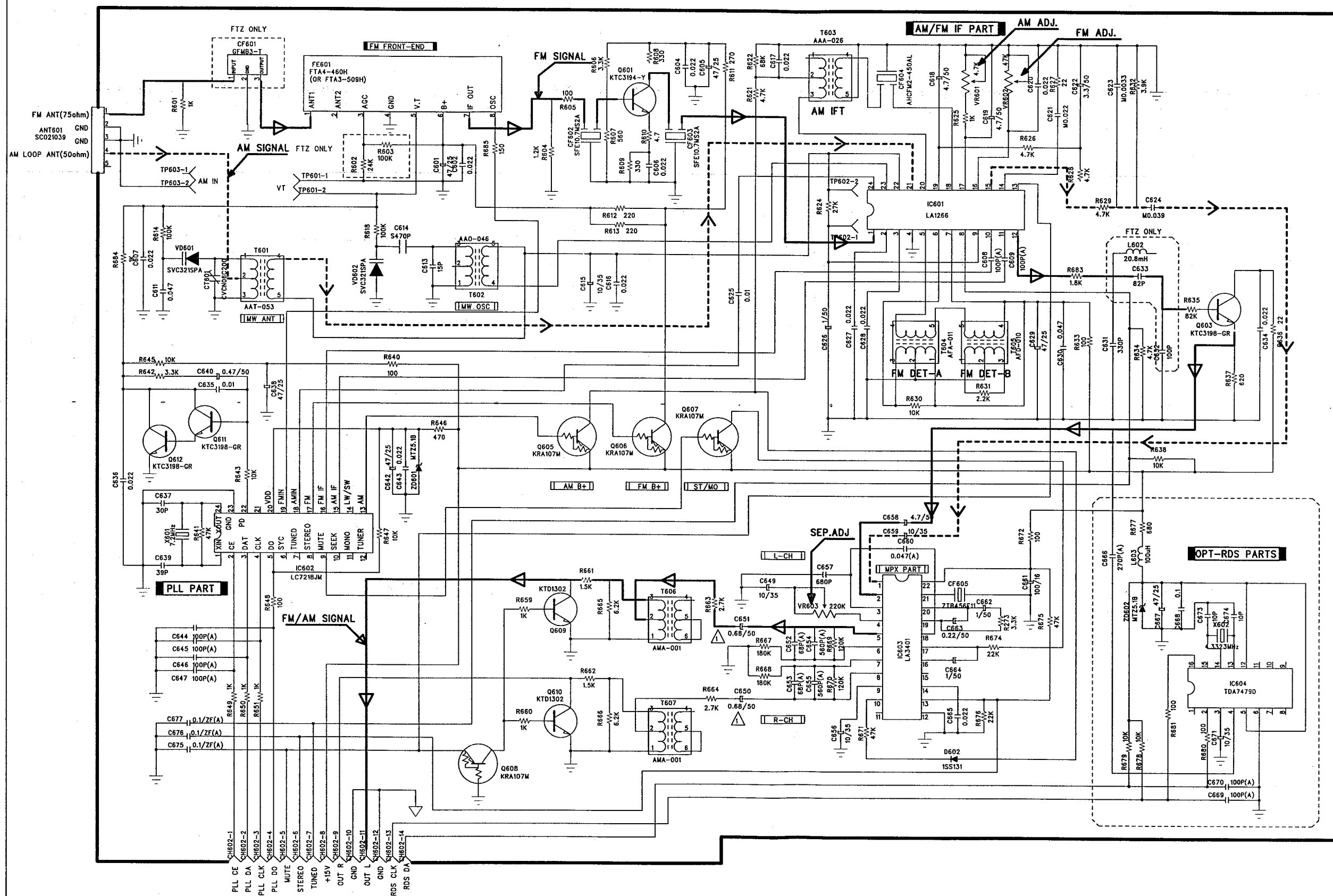


SCHEMATIC DIAGRAM

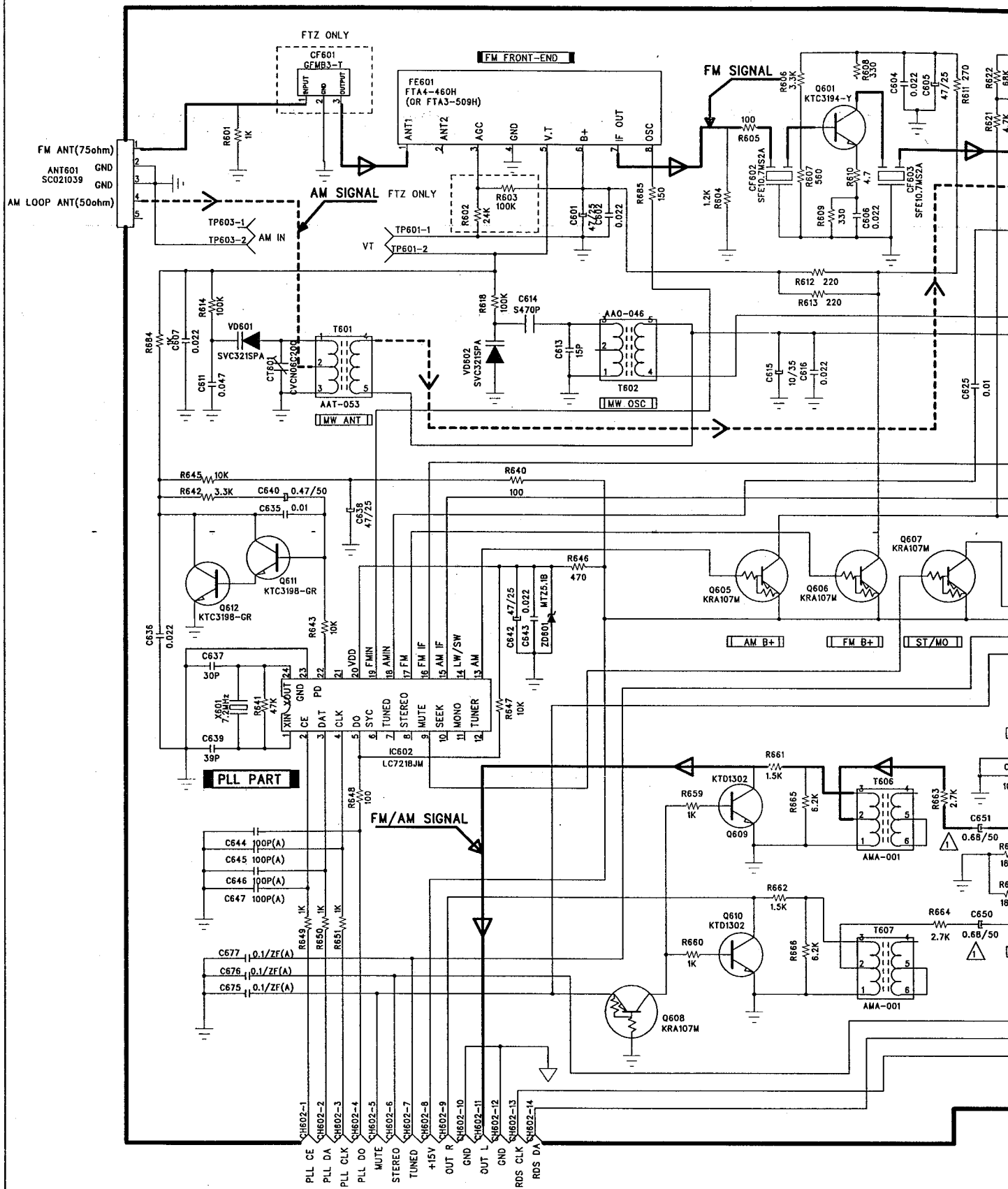
FRONT, MUTE, STANDBY BOARDS

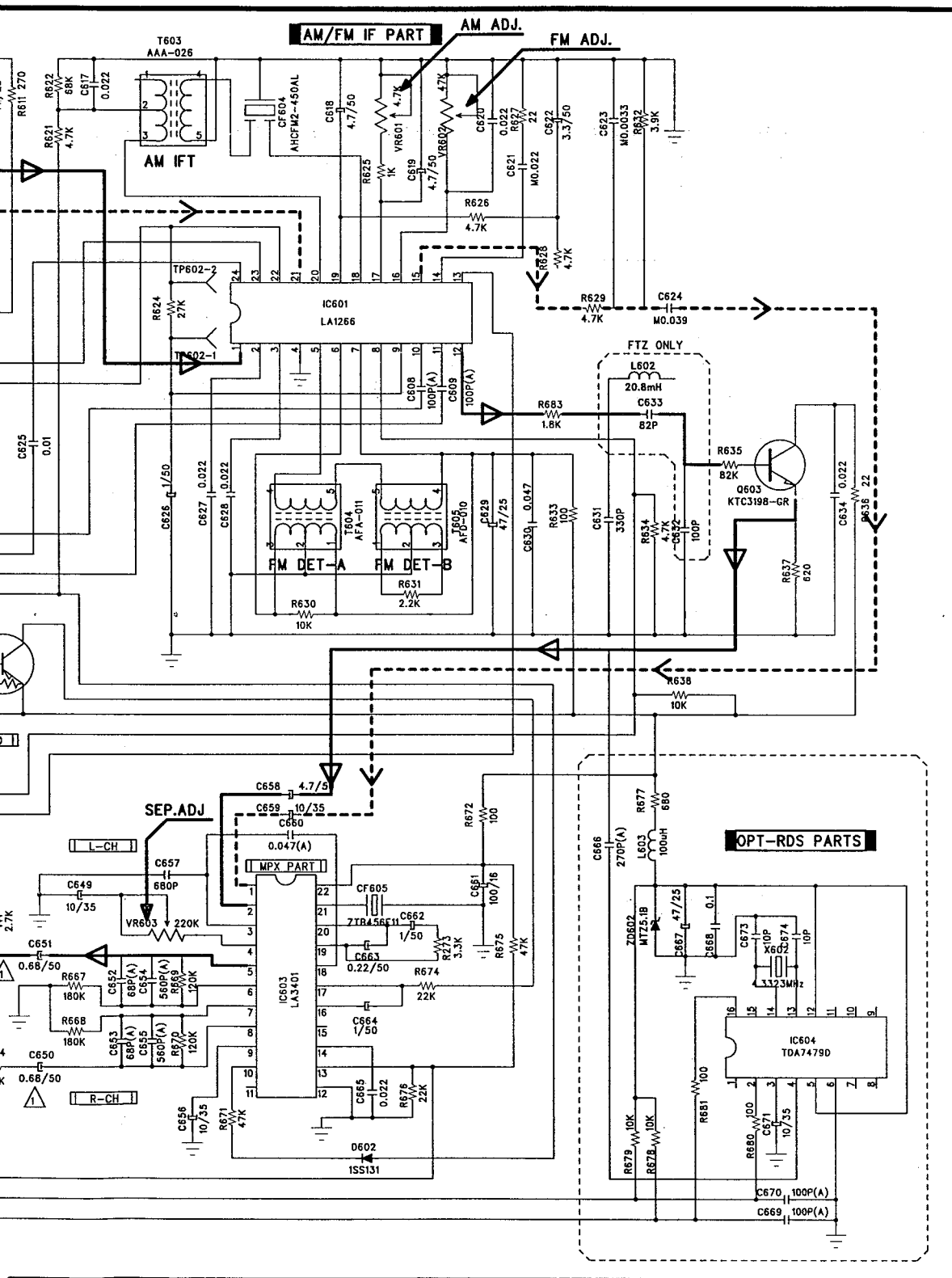




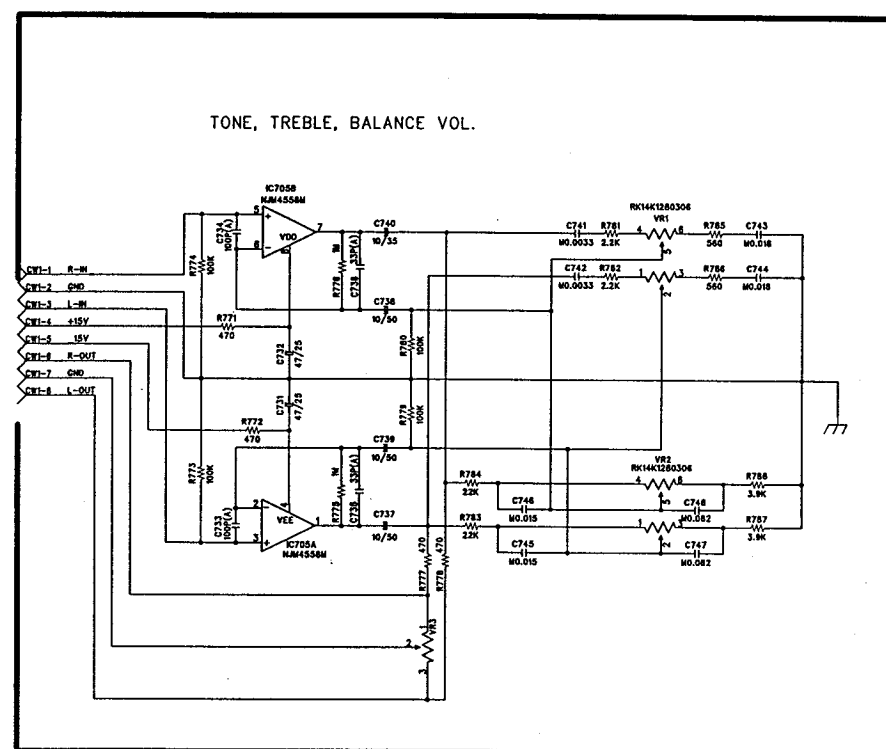


TUNER BOARD

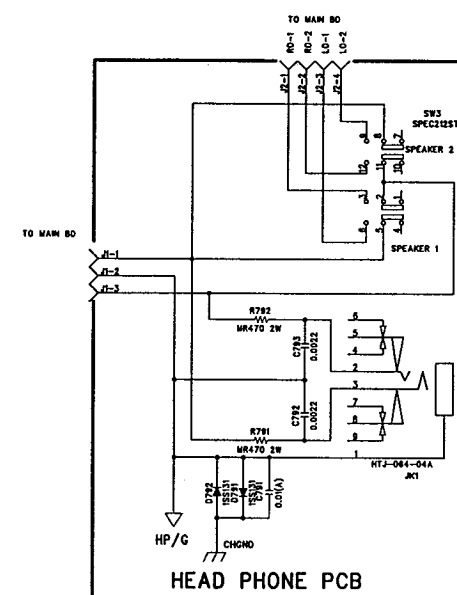




TONE BOARD

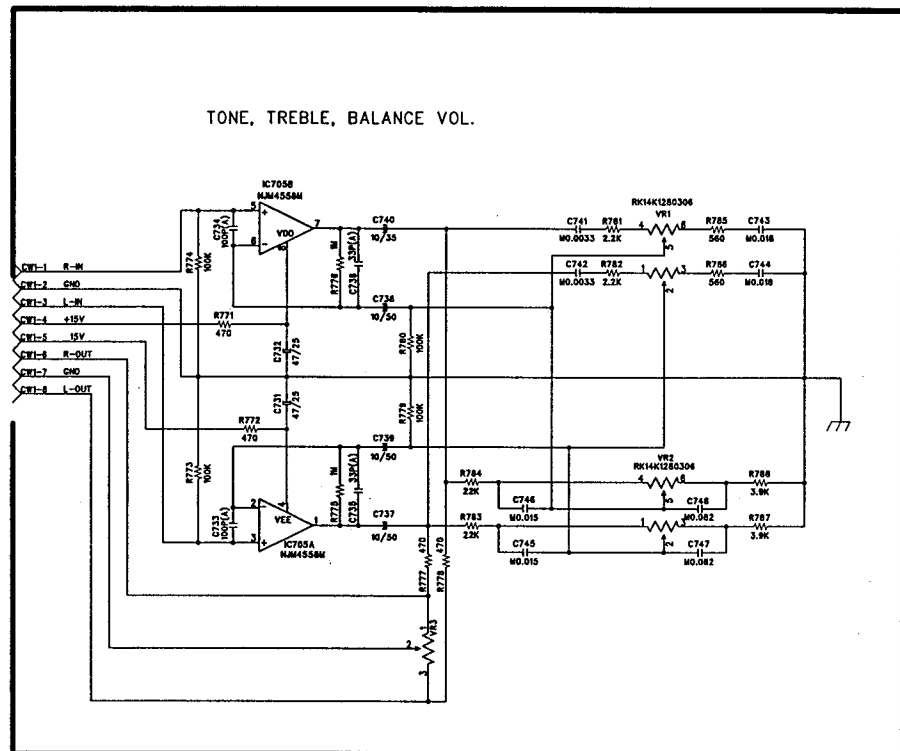


HEAD PHONE BOARD

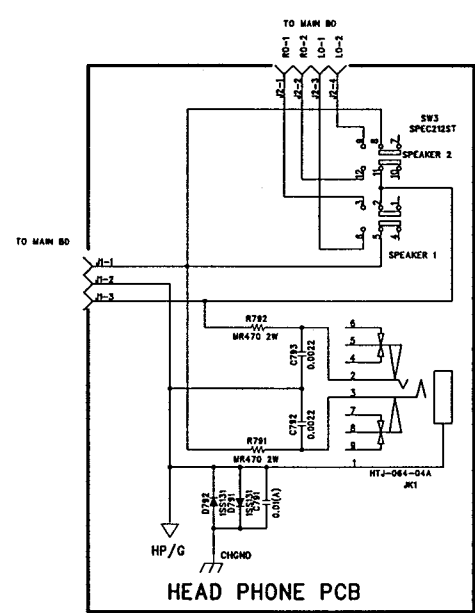


SCHEMATIC DIAGRAM

TONE BOARD



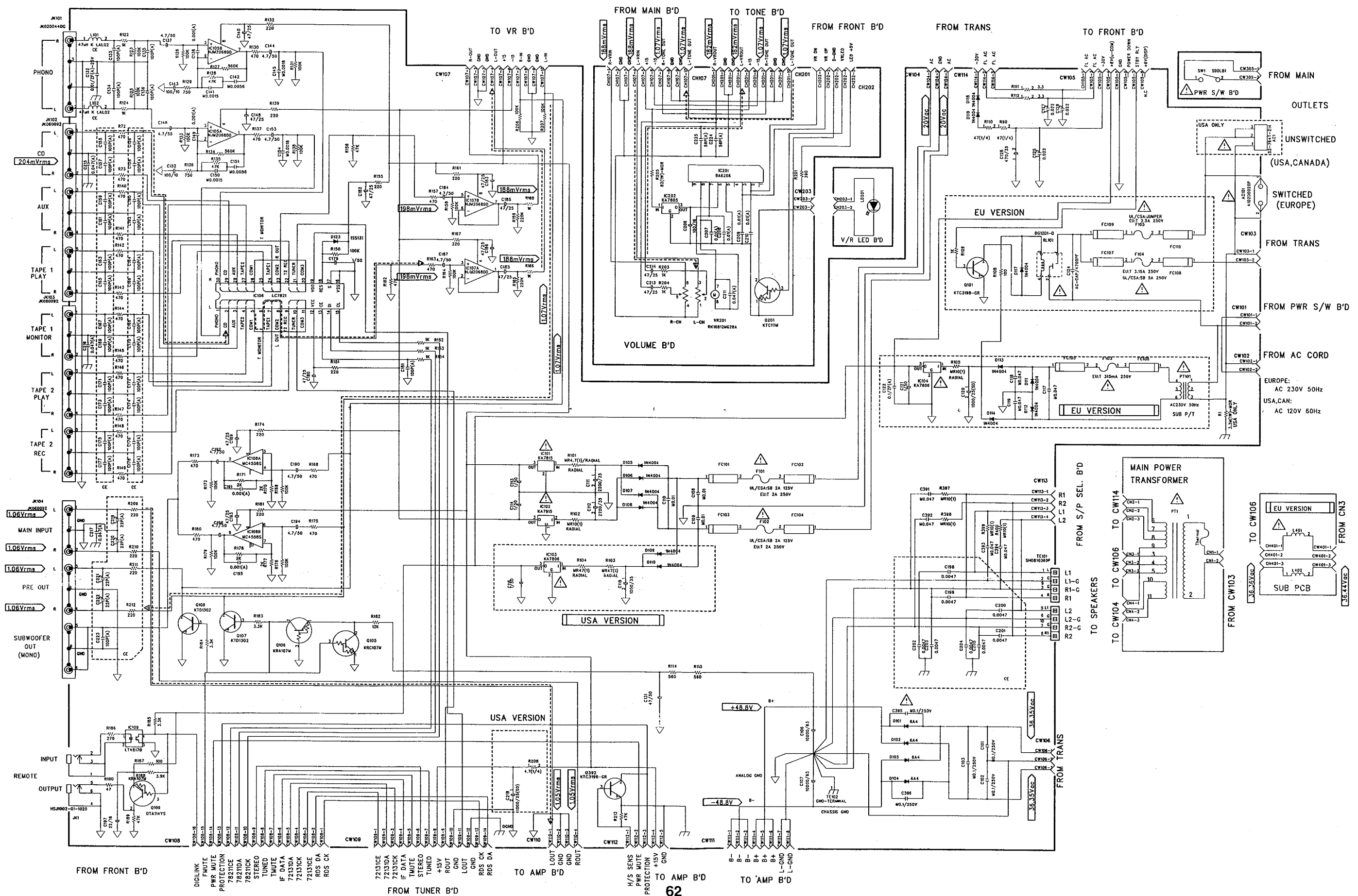
HEAD PHONE BOARD



SCHEMATIC DIAGRAM

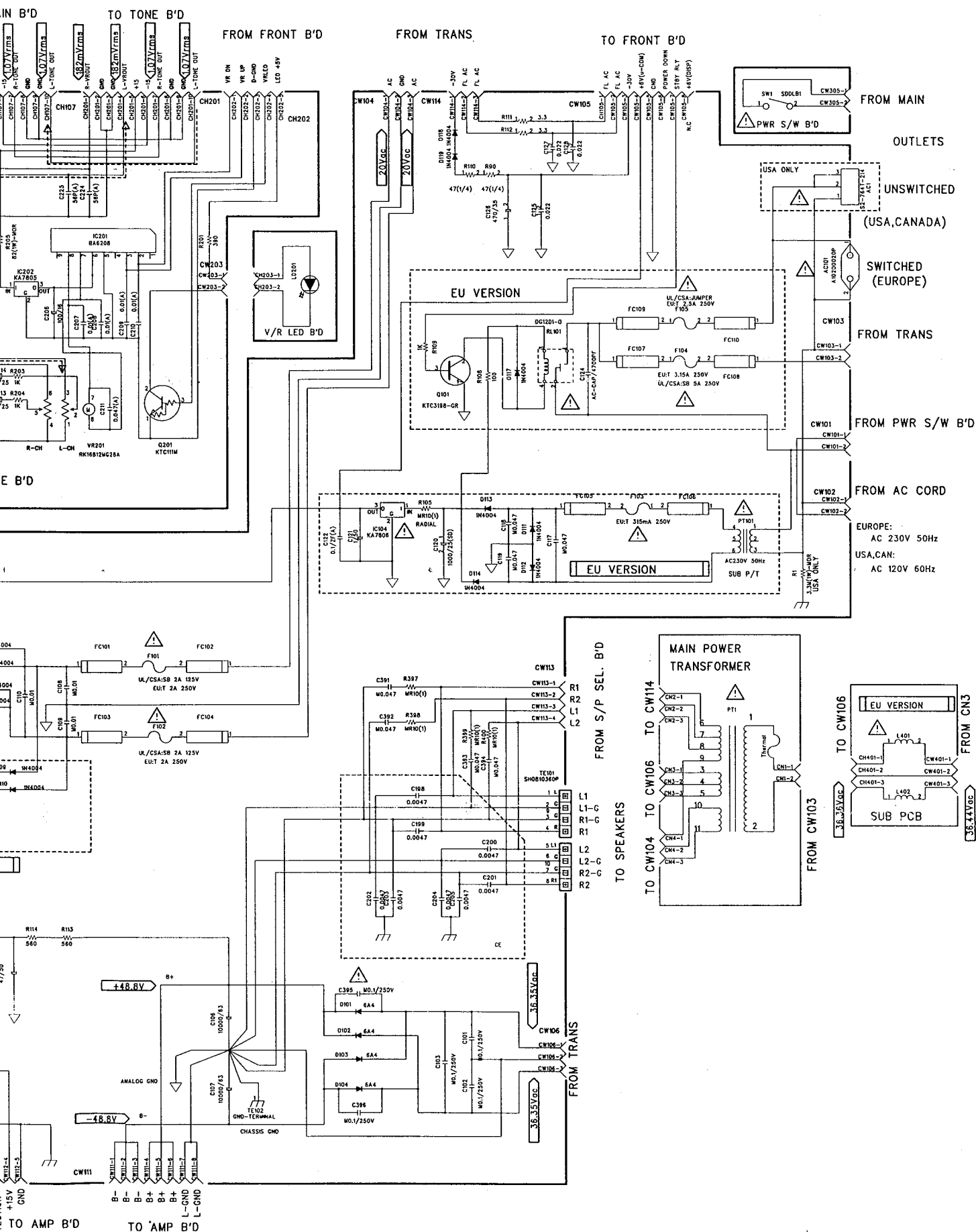
MAIN, POWER SWITCH, LED & VOLUME BOARDS

HK3270/HK3270RDS

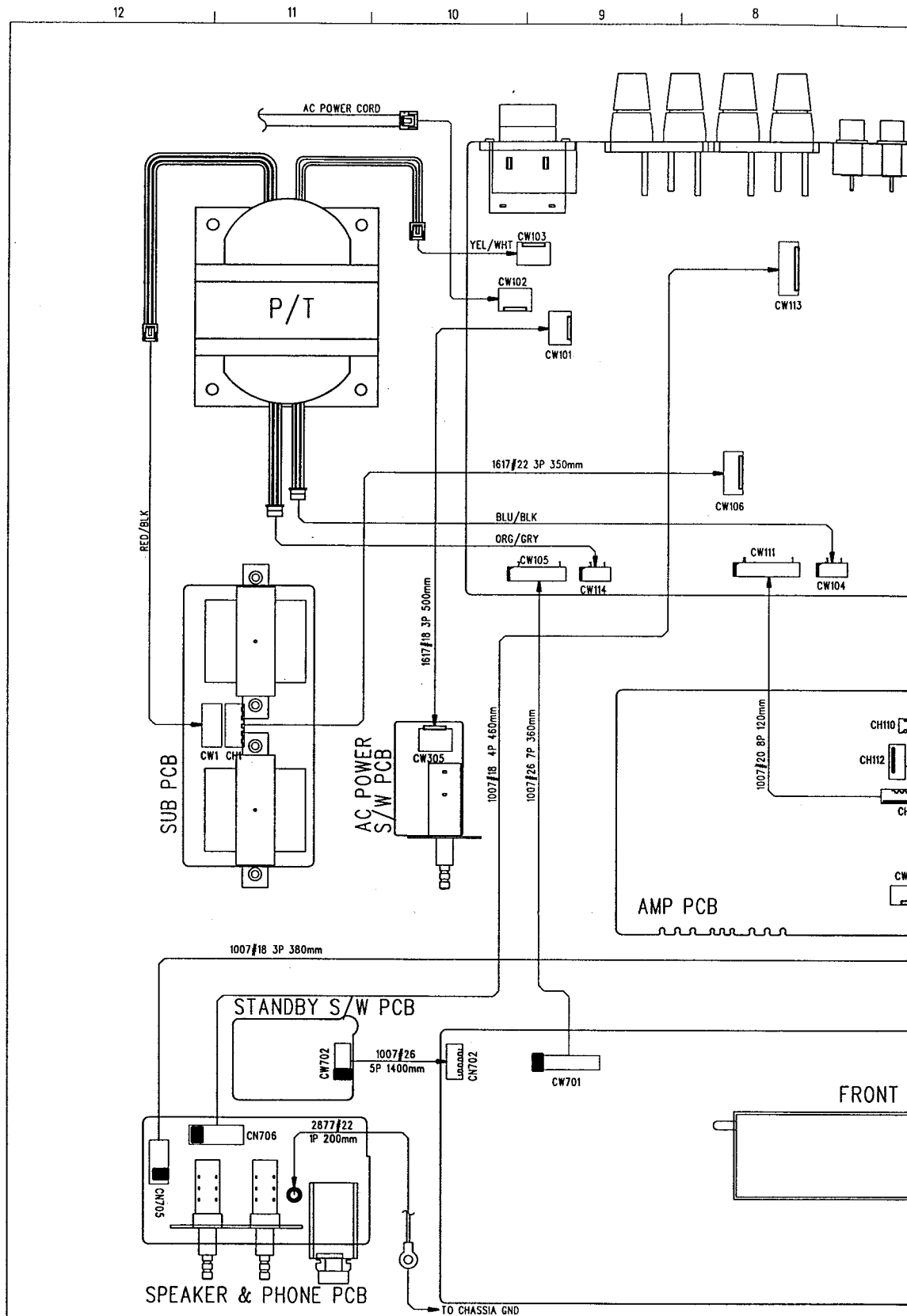


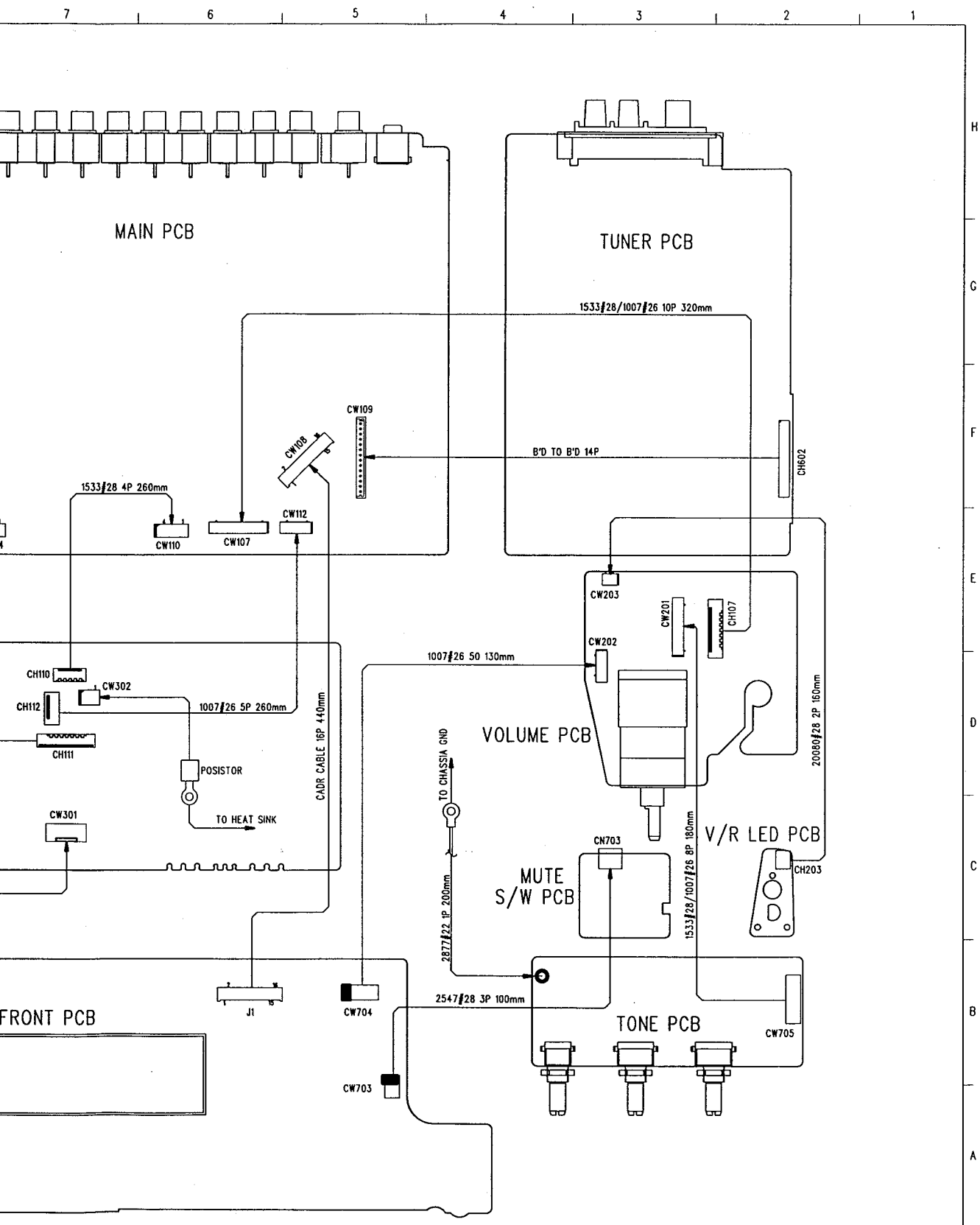
MAIN, POWER SWITCH, LED & VOLUME BOARDS





WIRING DIAGRAM



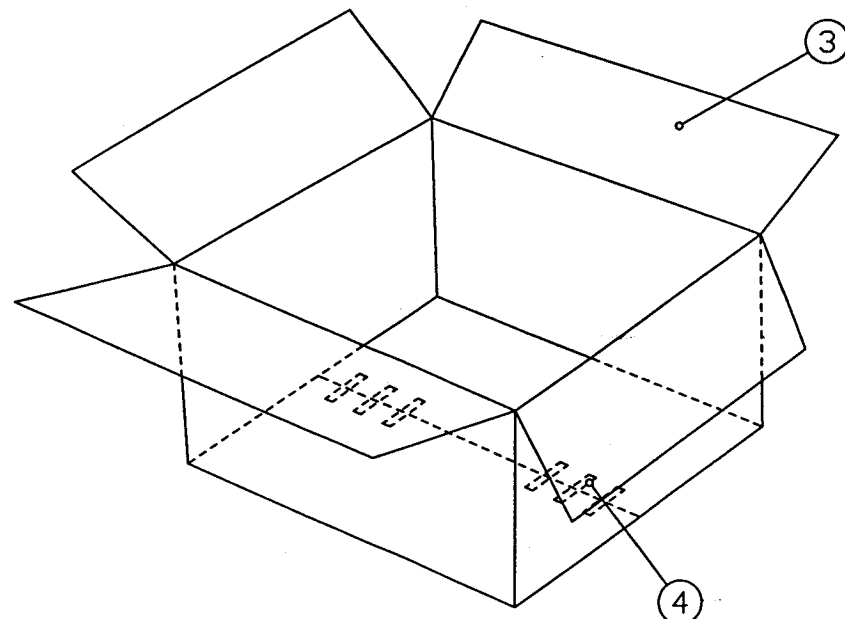
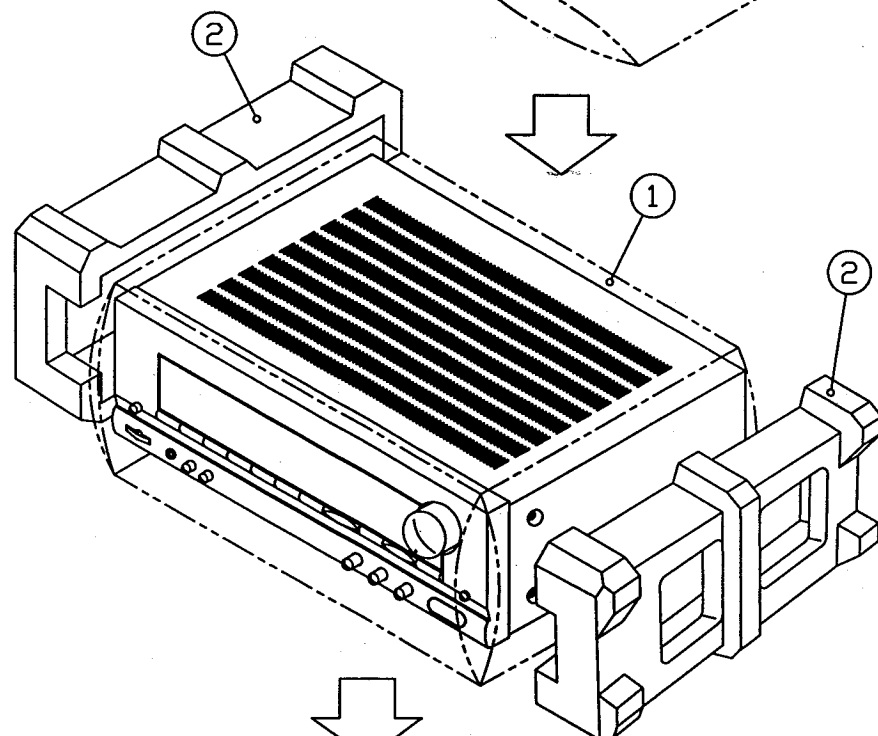


HK3270 only

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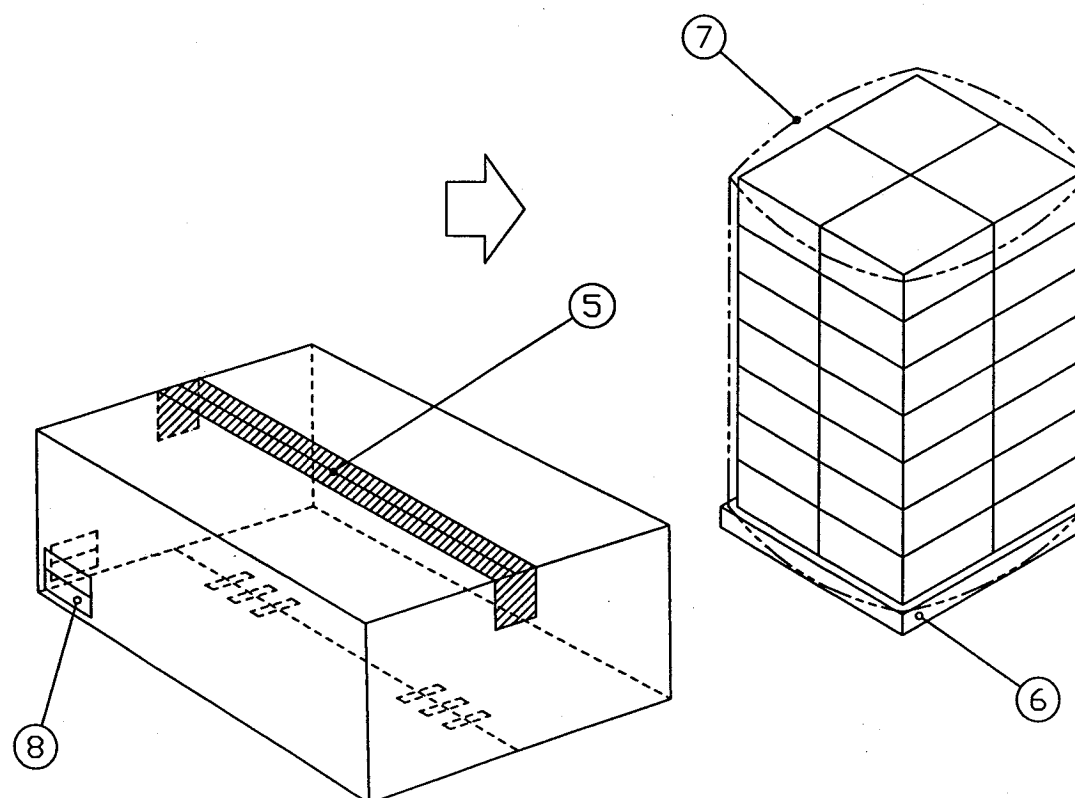
PACKING MATERIAL

(A) ACCESSORY PARTS



PACKING MATERIAL

NO	PARTS NAME	PART NO	Q'TY	REMARK
A	POLY-BAG-1KG	YVAP-01862-ZZ4	1	***
	INST-MANUAL	YIAR-I3000-ZZA	1	***
	REMOTE CONTROL	ACRC-0057J-000	1	***
	WARRANTY CARD	YWAR-I3000-ZZA	1	***
	BATTERY	BAMN-00010-150	2	***
	FM-ANTENNA	ANNT-00054-075	1	***
	AM-ANTENNA	ANTL-00060-E50	1	***
	MATCHING TRANSFORMER	TFMA-00100-D00	1	***
1	TOILON-SHEET	YVAP-13320-ZZ4	1	***
2	CUSHION-L/R	YSAP-12070-002	2	EPS
3	BOX-GIFT	YGAP-14250-ZZA	1	DW3
4	AIR-STAPLES	MMSC-00900-004	6	STEEL
5	OPP TAPE	***	*	***
6	PALLETS	MWAW-00910-003	*	***
7	WRAP	7JJG-00212-001	*	***
8	LABEL	***	4	***



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PACKING MATERIAL

A

(A) ACCESSORY PARTS

B

C

D

E

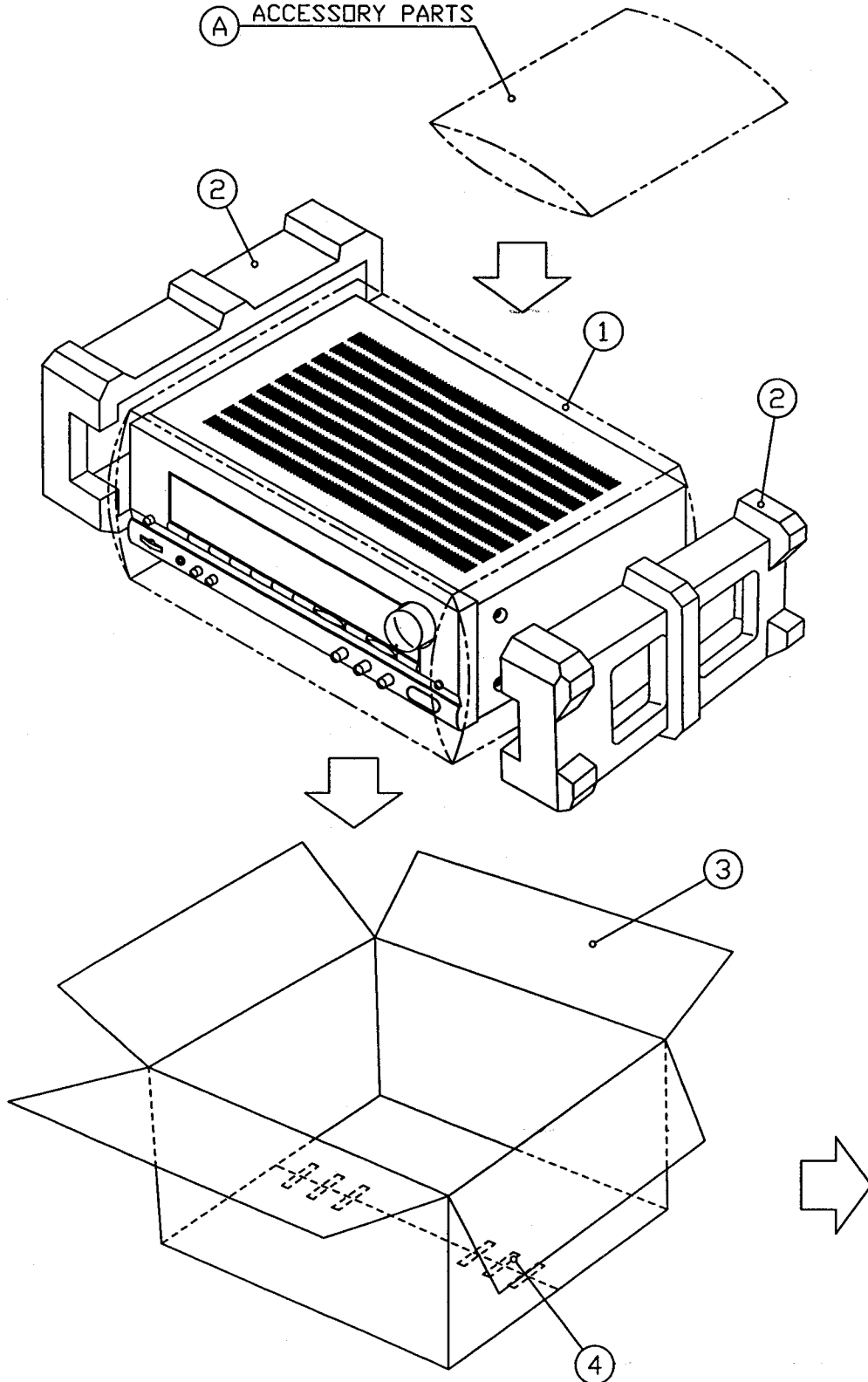
A

B

C

D

E



NO

A

1

2

3

4

5

6

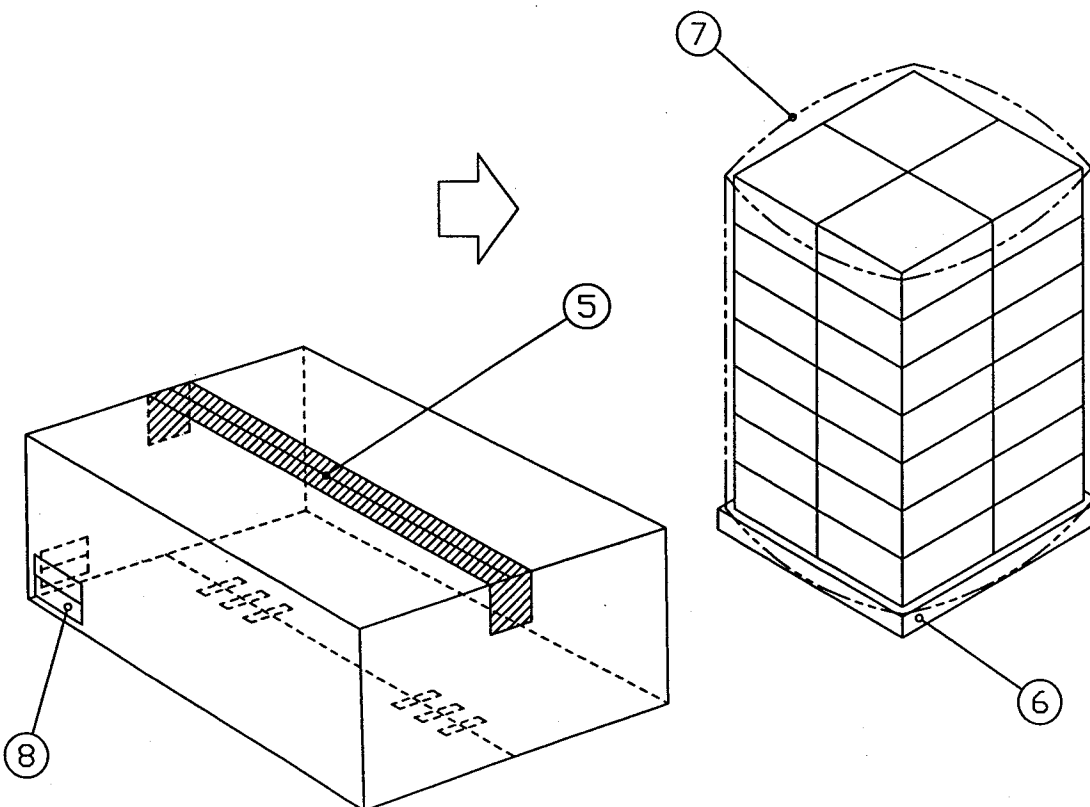
7

8

8

PACKING MATERIAL

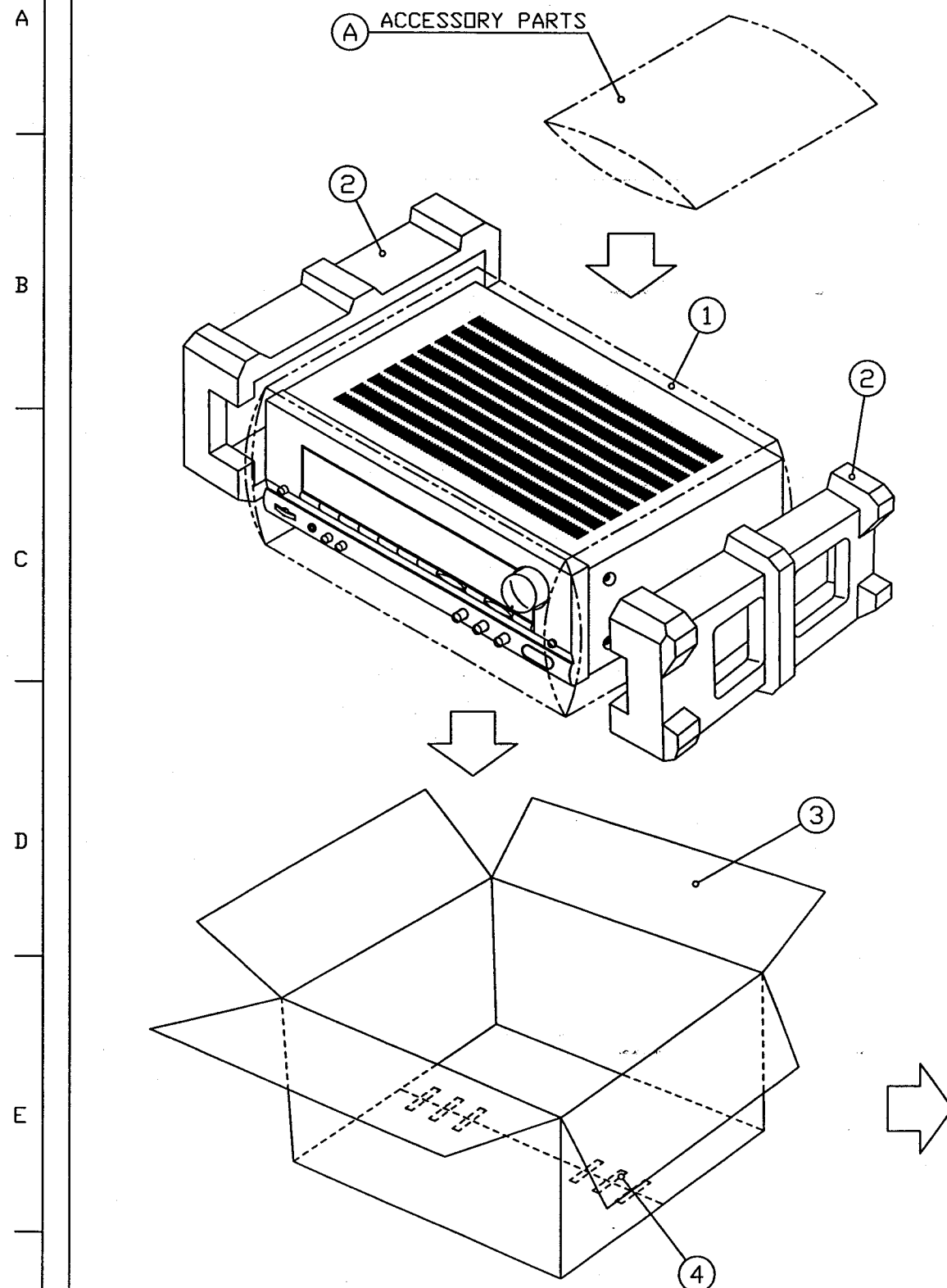
NO	PARTS NAME	PART NO	Q'TY	REMARK
A	POLY-BAG-1KG	YVAP-01862-ZZ4	1	***
	INST-MANUAL	YIAR-I3000-ZZA	1	***
	REMOTE CONTROL	ACRC-0057J-000	1	***
	WARRANTY CARD	YWAR-I3000-ZZA	1	***
	BATTERY	BAMN-00010-150	2	***
	FM-ANTENNA	ANTT-00054-075	1	***
	AM-ANTENNA	ANTL-00060-E50	1	***
	MATCHING TRANSFORMER	TFMA-00100-D00	1	***
1	TOILON-SHEET	YVAP-13320-ZZ4	1	***
2	CUSHION-L/R	YSAP-12070-002	2	EPS
3	BOX-GIFT	YGAP-14250-ZZA	1	DW3
4	AIR-STAPLES	MMSC-00900-004	6	STEEL
5	OPP TAPE	***	*	***
6	PALLETS	MWAW-00910-003	*	***
7	WRAP	7JJG-00212-001	*	***
8	LABEL	***	4	***



HK3270RDS only

PAGE

PACKING MATERIAL



1

2

3

4

PAGE

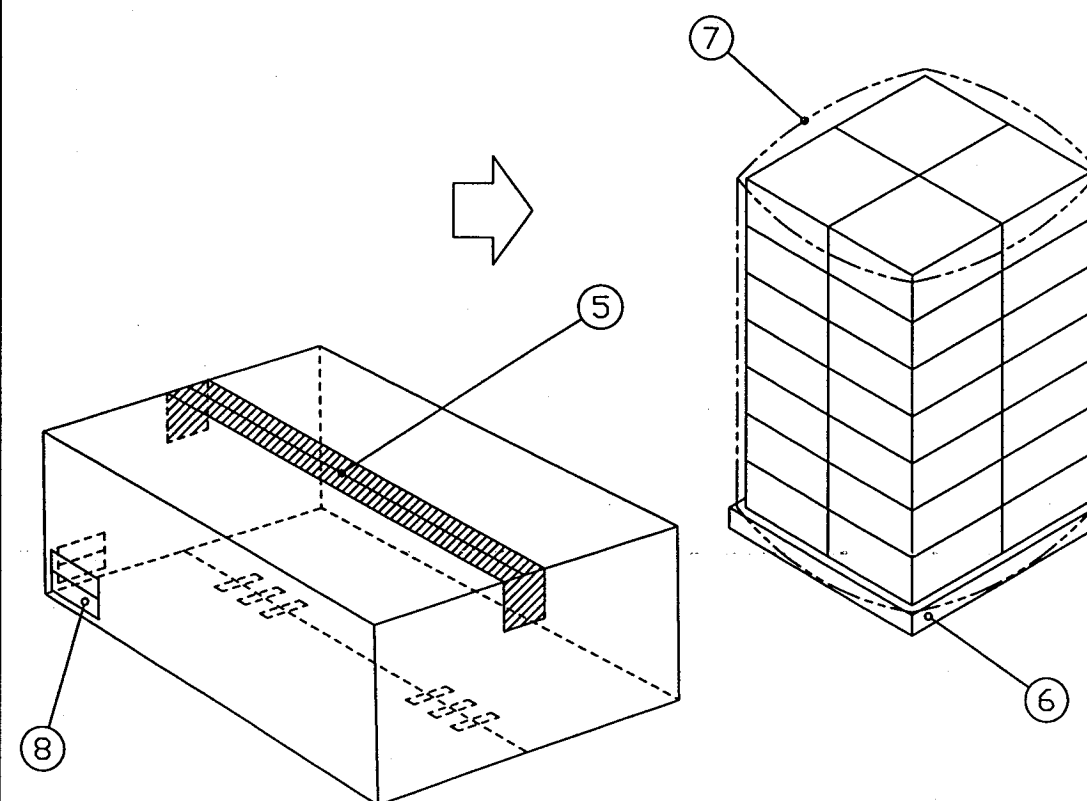
PACKING MATERIAL

NO	PARTS NAME	PART NO	Q'TY	REMARK
A	POLY-BAG-I(G)	YVAP-01862-ZZ4	1	***
	INST-MANUAL	YIAR-I3001-ZZE	1	***
	REMOTE CONTROL	ACRC-0058J-000	1	***
	WARRANTY CARD	YWAR-I3001-ZZA	1	***
	BATTERY	BAMN-00010-150	2	***
	FM-ANTENNA	ANTT-00090-075	1	***
	AM-ANTENNA	ANTL-00060-E50	1	***
1	TOILON-SHEET	YVAP-13320-ZZ4	1	***
2	CUSHION-L/R	YSAP-12070-002	2	EPS
3	BOX-GIFT	YGAP-14250-ZZA	1	DW3
4	AIR-STAPLES	MMSC-00900-004	6	STEEL
5	OPP TAPE	***	*	***
6	PALLETS	MWAW-00910-003	*	***
7	WRAP	7JJG-00212-001	*	***
8	LABEL	***	4	***

C

D

E



PACKING MATERIAL

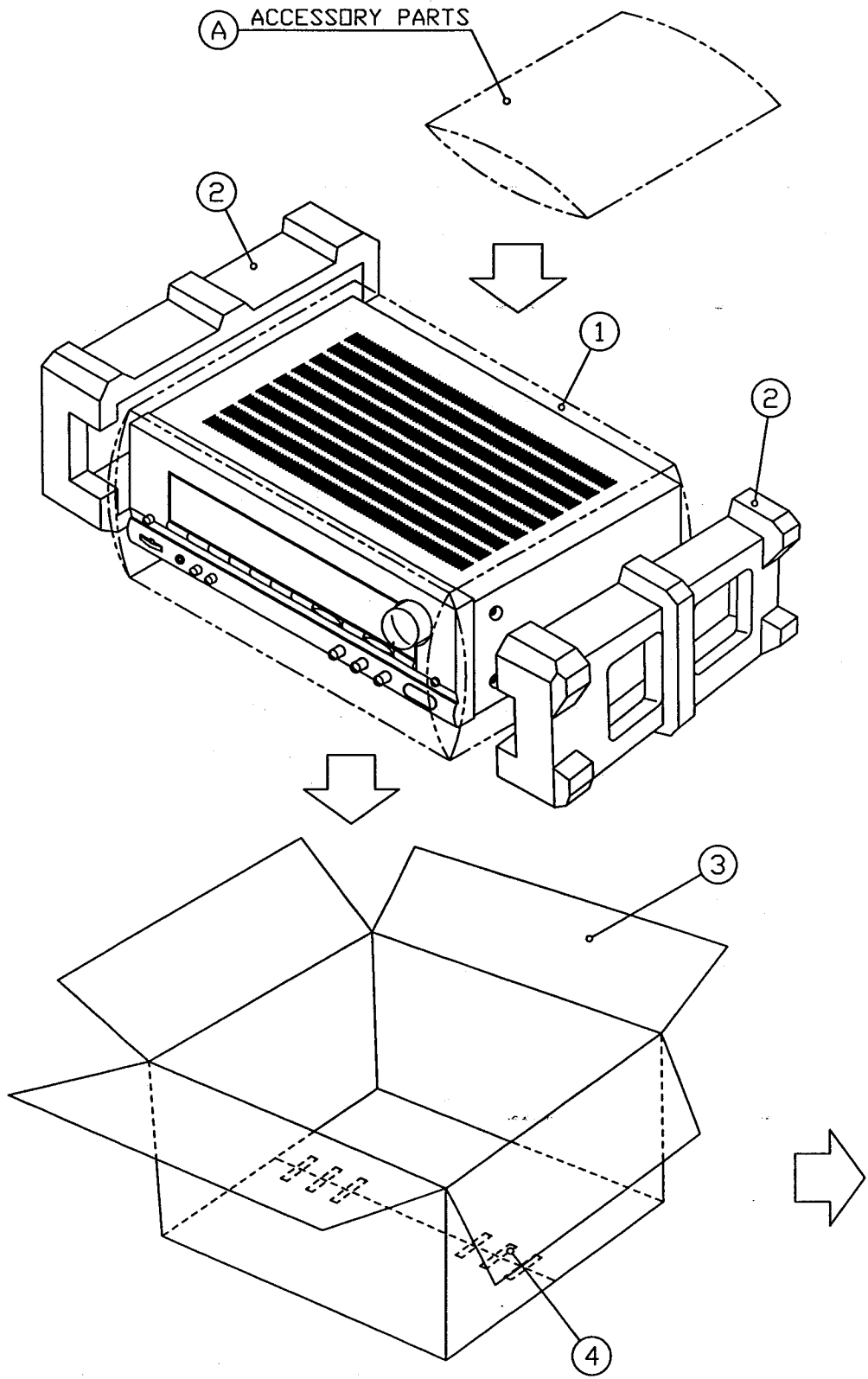
A

B

C

D

E



A

B

C

D

E

NO
1
2
3
4
5
6
7
8

1

2

3

4

PAGE

PACKING MATERIAL

NO	PARTS NAME	PART NO	Q'TY	REMARK
A	POLY-BAG-IG)	YVAP-01862-ZZ4	1	***
	INST-MANUAL	YIAR-I3001-ZZE	1	***
	REMOTE CONTROL	ACRC-0058J-000	1	***
	WARRANTY CARD	YWAR-I3001-ZZA	1	***
	BATTERY	BAMN-00010-150	2	***
	FM-ANTENNA	ANTT-00090-075	1	***
	AM-ANTENNA	ANTL-00060-E50	1	***
1	TOILON-SHEET	YVAP-13320-ZZ4	1	***
2	CUSHION-L/R	YSAP-12070-002	2	EPS
3	BOX-GIFT	YGAP-14250-ZZA	1	DW3
4	AIR-STAPLES	MMSC-00900-004	6	STEEL
5	OPP TAPE	***	*	***
6	PALLETS	MWAW-00910-003	*	***
7	WRAP	7JJG-00212-001	*	***
8	LABEL	***	4	***

