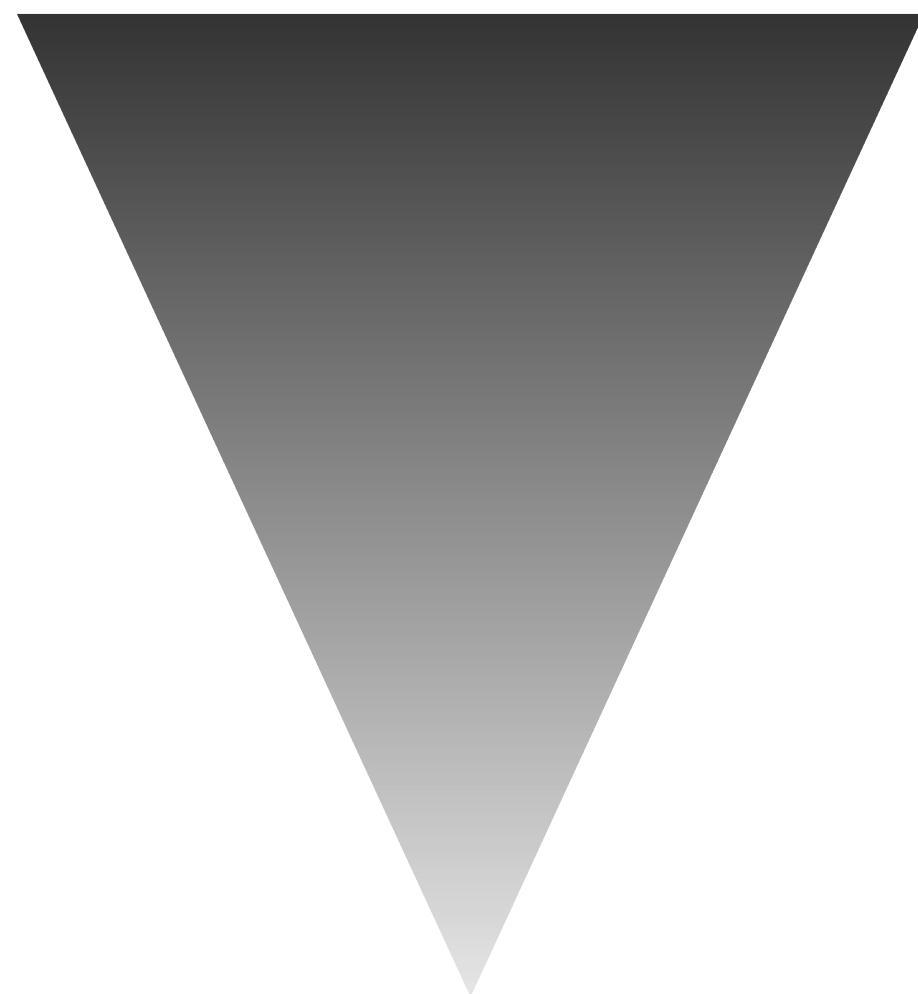




# ***SERVICE MANUAL***

*29 "N" Chassis*

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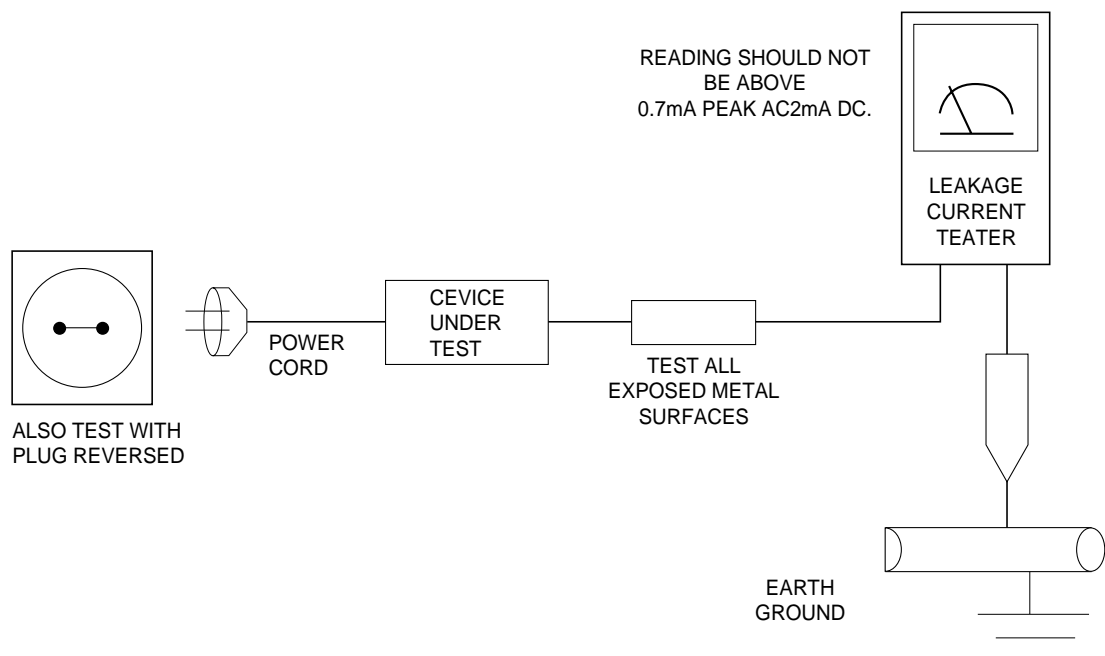
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# 1. Precautions

Follow these safety, servicing and ESD precautions to prevent damage and protect against potential hazards, such as electrical shock and X-rays.

## 1-1 Safety Precautions

1. Be sure that all of the built-in protective devices are replaced.  
Restore any missing protective shields.
2. When reinstalling the chassis and its assemblies, be sure to restore all protective devices, including : nonmetallic control knobs and compartment covers.
3. Make sure that there no cabinet openings through which people-particularly children might insert fingers and contact dangerous voltages. Such opening include the spacing between the picture tube and the cabinet mask, excessively wide cabinet ventilation slots, and improperly fitted back covers.  
If the measured resistance is less than 1.0 megohm or greater than 5.2 megohms, an abnormality exists that must be corrected before the unit is returned to the customer.
4. Leakage Current Hot Check (Figure 1-1) :  
Warning : Do not use an isolation transformer during this test. Use a leakage current tester or a metering system that complies with International Electrotechnical Commission 65.(IEC 65)



**FIGURE 1-1  
AC LEAKAGE TEST**


- 
- 
- 5. With the unit completely reassembled, plug the AC line cord directly the power outlet.**  
With the unit's AC switch first in the ON position and then OFF, measure the current between a known earth ground (metal water pipe, conduit, etc) and all exposed metal parts, including: antennas, handle brackets, metal cabinets, screwheads and control shafts. The current measured should not exceed 0.5 milliamp. Reverse the power-plug prongs in the AC outlet and repeat the test.
6. Antenna Cold Check:  
With the unit's AC plug disconnected from the AC source, connect an electrical jumper across the two AC prongs. Connect one lead of the ohmmeter to an AC prong. Connect the other lead to the coaxial connector.
7. X-ray Limits:  
The picture tube is especially designed to prohibit X-ray emissions.  
To ensure continued X-ray protection, replace the picture tube only with one that is the same type as the original. Carefully reinstall the picture tube shields and mounting hardware: these also provide X-ray protection.
8. High Voltage Limits:  
High voltage must be measured each time servicing is done on the +B, horizontal deflection or high voltage circuits.
9. High voltage is maintained within specified limits by close-tolerance, safety-related components and adjustments. If the high voltage exceeds the specified limits, check each of the special components.
10. Design Alteration Warning:  
Never alter or add to the mechanical or electrical design of this unit.  
Example: Do not add auxiliary audio or video connectors. Such alterations might create a safety hazard. Also, any design changes or additions will void the manufacturer's warranty.
11. Components, parts and wiring that appear to have overheated or that are otherwise damaged should be replaced with parts that meet the original specifications. Always determine the cause of damage or overheating, and correct any potential hazards.
12. Observe the original lead dress, especially near the following areas:  
Antenna wiring, sharp edges, and especially the AC and high voltage power supplies. Always inspect for pinched, out-of place, or frayed wiring.  
Do not change the spacing between components and the printed circuit board. Check the AC power cord for damage. Make sure that leads and components do not touch thermally hot parts.
13. Picture Tube Implosion Warning:  
The picture tube in this receiver employs "integral implosion" protection.  
To ensure continued implosion protection, make sure that the replacement picture tube is the same as the original.
14. Do not remove, install or handle the picture tube without first putting on shatterproof goggles equipped with side shields.  
Never handle the picture tube by its neck. Some "in-line" picture tubes are equipped with permanently attached deflection yoke: do not try to remove such "permanently attached" yokes from the picture tube.

---

15. Product Safety Notice:

Some electrical and mechanical parts have special safety-related characteristics which might not be obvious from visual inspection.

These safety features and the protection they give might be lost if the replacement component differs from the original--even if the replacement is rated for higher voltage, wattage, etc.

Components that are critical for safety are indicated in the circuit diagram by shading(  )

Use replacement components that have the same ratings, especially for flame resistance and dielectric strength specifications. A replacement part that does not have the same safety characteristics as the original might create shock, fire or other hazards.

## 1-2 Servicing Precautions

**Warning 1:** First read the "Safety Precaution" section of the manual.

If some unforeseen circumstance creates a conflict between the servicing and safety precautions, always follow the safety precaution.

**Warning 2:** An electrolytic capacitor installed with the wrong polarity might explode.

1. Servicing Precautions are printed on the cabinet. Follow them.
2. Always unplug the unit's AC power cord from the AC power source before attempting to: (a) Remove or reinstall any component or assembly, (b) Disconnect an electrical plug or connector, (c) Connect a test component in parallel with an electrolytic capacitor.
3. Some components are raised above the printed circuit board for safety.  
An insulation tube or tape is sometimes used. The internal wiring is sometimes clamped to prevent contact with thermally hot components.  
Reinstall all such elements to their original position.
4. After servicing, always check that the screws, components and wiring have been correctly reinstalled. Make sure that the portion around the serviced part has not been damaged.
5. Check the insulation between the blades of the AC plug and accessible conductive parts (examples: metal panels,. input terminals).
6. Insulation Checking Procedure: Disconnect the power cord from the AC source and turn the power switch ON. Connect an insulation resistance meter (500V) to the blades of the AC plug.  
The insulation resistance between each blade of the AC plug and accessible conductive parts (see above) should be greater than 1 megohm.
7. Never defeat any of the B+ voltage interlocks. Do not apply AC power to the unit (or any of its assemblies) unless all solid-state heat sinks are correctly installed.
8. Always connect a test instrument's ground lead to the instrument chassis ground before connecting the positive lead: always remove the instrument's ground lead list.

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### 1-3 Precautions for Electrostatically Sensitive Devices (ESDs)

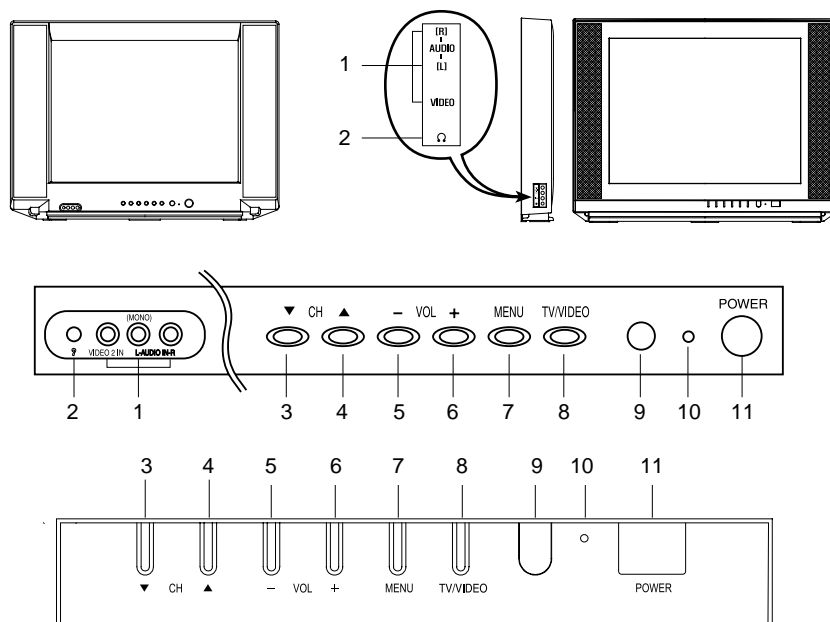
1. Some semiconductor ("solid state") devices are easily damaged by static electricity. Such some components are called Electrostatically Sensitive devices (ESDs); examples include integrated circuits and some field-effect transistors. The following techniques will reduce the occurrence of component damage caused by static electricity.
2. Immediately before handling any semiconductor components or assemblies, drain the electrostatic charge from your body by, touching a known earth ground. Alternatively, wear the discharging wrist-strap device. (Be sure to remove it prior to applying power- this is an electric shock precaution.
3. After removing an ESD-equipped assembly, place it on a conductive surface such as aluminum foil to prevent accumulation of electrostatic charge.
4. Do not use freon-propelled chemicals. These can generate electrical charges that damage ESDS.
5. Use only a grounded-tip soldering iron when soldering or unsoldering ESDS.
6. Use only an anti-static solder removal device. Many solder removal devices are not rated as "anti-static"; these can accumulate sufficient electrical charge to damage ESDS.
7. Do not remove a replacement ESD from its protective package until you are ready to install it. Most replacement ESDs are packaged with leads that are electrically shorted together by conductive foam, aluminum foil or other conductive materials.
8. Immediately before removing the protective material from the leads of a replacement ESD, touch the protective material to the chassis or circuit assembly into which the device will be installed.
9. Minimize body motions when unpackaged replacement ESDS. Motion, such as brushing clothes together, or lifting a foot from a carpeted floor can generate, enough static electricity to damage an ESD.

## 2. Specifications

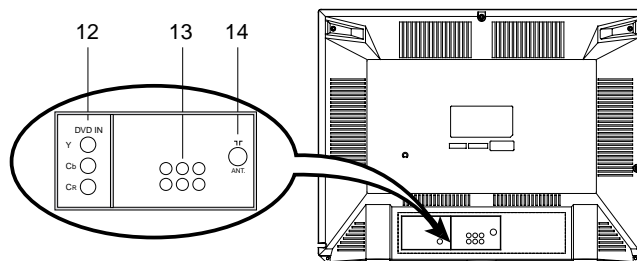
RECEPTION SYSTEM	NTSC M, PAL M/N
POWER REQUIREMENTS	AC 90~250V 50/60Hz(AUTO)
POWER CONSUMPTION	130W
STEREO	BTSC - Stereo + SAP
SOUND OUTPUT POWER	10W(R) + 10W(L) AT10% TOTAL HARMONIC DISTORTION
ANTENNA IMPEDANCE	75 OHM UNBALANCED TYPE
OPERATING FREQUENCIES	VIDEO IF 45.75MHz SOUND IF 41.25MHz
CHANNEL COVERAGE	VHF CH : 2 ~ 13 UHF CH : 14 ~ 69 CABLE CH : 1, 14 ~ 125
CHANNEL INDICATION	ON - SCREEN DISPLAY
REMOTE CONTROL UNIT	REQUIRES TWO 1.5V BATTERIES TYPE AAA SIZE
PROGRAM CH MEMORY	181CH MEMORY

### 3. Description of controls

#### FRONT



#### REAR



- |                           |  |
|---------------------------|--|
| 1. Video/Audio 2 In Jacks | 8. TV/Video Key                          |
| 2. Headphone Jack         | 9. Remote Control Sensor                 |
| 3. Channel Down (▼) Key   | 10. Stand-by Indicator                   |
| 4. Channel Up (▲) Key     | 11. Main Power Key                       |
| 5. Volume Down (-) Key    | 12. Component Video Input Jacks (DVD IN) |
| 6. Volume Up (+) Key      | 13. Audio/Video In/Out Jacks             |
| 7. Menu Key               | 14. Coaxial cable Connector (75ohm)      |



**WARNING : TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS TELEVISION TO RAIN OR MOISTURE**



---

## 4. Alignment and Adjustments

### 4-1 Preadjustment

#### 4-1-1 Factory Mode

1. Do not attempt these adjustments in the VIDEO mode.
2. The Factory Mode adjustments are necessary when either the EEPROM(IC02) or the CPT is replaced.
3. Do not tamper with the "Adjustment" screen of the Factory Mode menu. The screen is intended only for factory use.

#### 4-1-2 When EEPROM (IC02) is replaced

1. When IC02 is replaced all adjustment data revert to their initial values. It is necessary to re-program this data.
2. After IC02 is replaced, warm up the TV for 10 seconds.

#### 4-1-3 When CPT is replaced

1. Make the following the adjustments after setting up purity and convergence:
  - White Balance
  - Vertical center
  - Vertical size
  - Horizontal size

### 4-2 Factory / Service Mode

#### 4-2-1 Procedure for the "Adjustment" Mode

1. This mode uses the standard remote control. In the stand-by mode, Press display + MENU + 3 + 8 + Power(on) button on the remote controller in --> sequence
2. The Factory Mode will be displayed. The Factory Mode has three components :  
SCREEN, PICTURE SIZE, PICTURE CONTROL.
3. Access the Adjustment Mode by pressing the VOLUME keys (Up or Down). The adjustment Parameters adjusted are listed in the accompanying table, and they are selected by pressing the CH keys (Up or Down).
4. The VOLUME keys increase or decrease the adjustment values.

## IIC BUS DEFAULT DATA

PART	NO	OSD	RANGE	29FLAT	REMARK
PICTURE	1	HRS(60)	0~31	38	
	2	HRS(50)	0~31	10	FIX
	3	VRS	0~63	25	V-PHAS:0~7
	4	HEIGHT	0~63	34	
	5	V-SLOP	0~15	36	
	6	S-COR	0~15	26	
	7	H-SIZE	0~63	47	
	8	PINCUSHION	0~63	18	
	9	EW-TRAP	0~63	32	
	10	EW-UPPER	0~31	32	
	11	EW-LOWER	0~31	36	
	12	H-EHT	0~7	33	
	13	V-EHT	0~7	32	
SERVICE1	1	CONT MIN	0~127	20	FIX
	2	CONT CEN	0~127	63	FIX
	3	CONT MAX	0~127	100	FIX
	4	BRIG MIN	0~127	20	FIX
	5	BRIG CEN	0~127	68	FIX
	6	BRIG MAX	0~127	100	FIX
	7	SHARP MIN	0~63	0	FIX
	8	SHARP CEN	0~63	32	FIX
	9	SHARP MAX	0~63	63	FIX
	10	COLOR MIN	0~127	0	FIX
	11	COLOR CEN	0~127	52	FIX
	12	COLOR MAX	0~127	100	FIX
	13	TINT MIN	0~127	0	FIX
	14	TINT CEN	0~127	63	FIX
	15	TINT MAX	0~127	127	FIX
	16	MAIN AGC	0~63	31	FIX
	17	SCALE-TV	0~127	75	
	18	SCALE-AUX	0~127	85	
OPTION	1	CABLE MODE		STANDARD	ALL/STANDARD
	2	AUTO POWER		ON	
	3	VIDEO MUTE		ON	
	4	SHUT DOWN		ON	
	5	YUV MODE		ON	YUV option
	6	BLUE BACK		ON	
	7	W.BALANCE		STANDARD	STANDARD/USER
	8	LANGUAGE		ENGLISH	language option

---

## 4-3 Other Adjustments

### 4-3-1 General Alignment Instructions

1. Usually, a color TV needs only slight touch-up adjustment upon installation. Check the basic characteristics such as height, horizontal and vertical sync and focus.
2. Observe the picture for good black and white details. There should be no objectionable color, shading: if color shading is present, perform the purity and convergence adjustments described below.
3. Use the specified test equipment or its equivalent.
4. Correct impedance matching is essential.
5. Avoid overload. Excessive signal from a sweep generator might overload the front-end of the TV. When inserting signal markers, do not allow the marker generator to distort test results.
6. Connect the TV only to an AC power source with voltage and frequency as specified on the back cover nameplate.
7. Do not attempt to connect or disconnect any wires while the TV is turned on. Make sure that the power cord is disconnected before replacing any parts.
8. To protect against shock hazard, use an isolation transformer.

### 4-3-2 Automatic Degaussing

A degaussing coil is mounted around the picture tube, so that external degaussing after moving the TV should be unnecessary. But the receiver must be properly degaussed upon installation .

The degaussing coil operates for about 1 second after the power is switched ON. If the set is moved or turned in a different direction, the power should be OFF for at least 20 minutes. If the chassis or parts of the cabinet become magnetized, poor color purity will result. If this happens, use an external degaussing coil. Slowly move the degaussing coil around the faceplate of the picture tube and the sides and front of the receiver. Slowly withdraw the coil to a distance of about 6 feet before turning power OFF.

If color shading persists, perform the following Color Purity and Convergence adjustments.

### 4-3-3 High Voltage Check

**CAUTION :** There is no HIGH VOLTAGE ADJUSTMENT on this chassis. But +B power must be adjusted in +120V under the full color bar pattern and normal picture control level.

- ① Connect an accurate high voltmeter to the second anode of the picture tube.
- ② Tune on the TV. Set the Brightness and Contrast controls to minimum (Zero beam current).
- ③ Adjust the Brightness and Contrast controls to both extremes. Ensure that the high voltage does not exceed 34KV under any conditions.

### 4-3-4. RF AGC Adjustment

- ① Tune in the strongest channel.
- ② Enter input the AGC in the service mode.
- ③ Adjust AGC until color noise disappears.

#### 4-3-5 Screen Voltage Adjustment

1. Turn on TV and warm up the set for 30 minutes regardless of an input signal.
2. After Sufficient warming-up, Press display + MENU + 3 + 8 + Power(on).
3. Select "SCREEN" by pressing the VOLUME keys(+,-).
4. Make white colored line by adjusting "RDC", "GDC", "BDC" as follows;

Cut-off	Key	Action	Key	Action
RED(1)	VOL(-)	RED(-)	VOL(+)	RED(+)
GREEN(5)	VOL(-)	GREEN(-)	VOL(+)	GREEN(+)
BLUE(9)	VOL(-)	BLUE(-)	VOL(+)	BLUE(+)

5. Adjust the Screen VR (on the FBT) so that horizontal line is just seen a little.

#### 4-3-6 WHITE BALANCE ADJUSTMENT (MANUAL)

1. Set up : Turn the pure white pattern and warm up the set for 20 minutes.
2. Low -Light Adjustment
  - 1-1. Turn the CONTRAST and BRIGHTNESS controls to  $3.0 \pm 0.3$ fl with using CA100
  - 1-2. Adjust RDC, GDC and BDC so that the levels are suitable to each local area.
  - 1-3. Check the result of adjustment using White Balance meter.  
LOW LIGHT : X=0.261, Y=0.268
3. HIGH-LIGHT Adjustment
  - 3-1. Turn the CONTRAST and BRIGHTNESS controls to  $40 \pm 4$ fl with using CA100
  - 3-2. Adjust GDRV and BDRV so that the levels are suitable to each local area.
  - 3-3. Check the result of adjustment using White Balance meter.  
HIGH LIGHT : X=0.261, Y=0.268



NOTE : If a white balance meter is not available than approximate the following color adjustments " by eye".

#### 4-3-7 FOCUS Adjustment

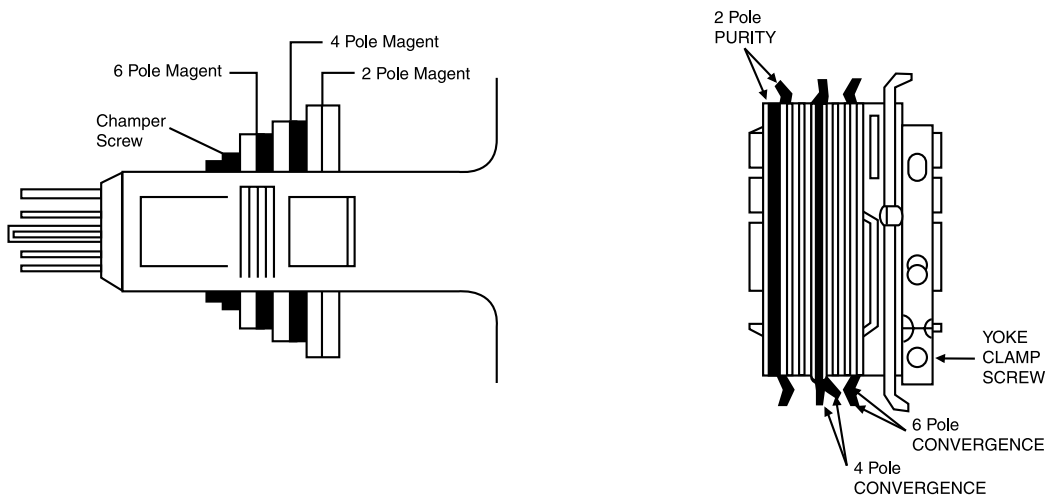
1. Turn in the active station in your area.
2. Press the P.STD buton on the Remote control for DYNAMIC condition.
3. In put the standard signal. (Cross-Hatch pattern)
4. Adjust the FOCUS control on the FBT to obtain a sharp and clear picture.

#### 4-3-8 Purity Adjustment

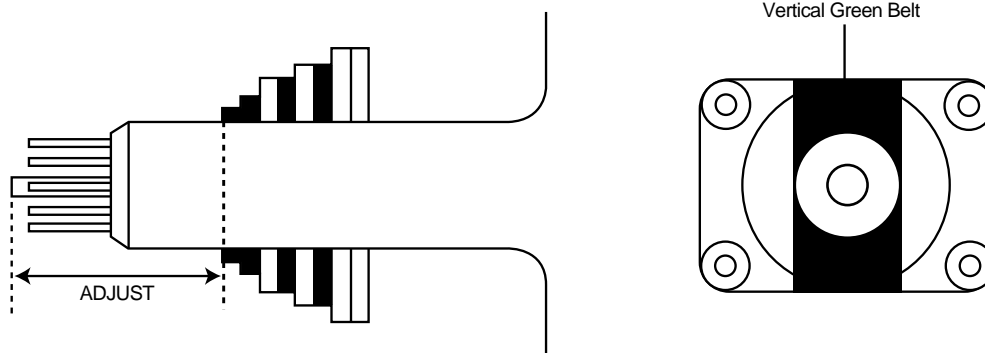
1. Warm up the receiver for at least 30 minutes.
2. Plug in the CRT deflection yoke. Tighten the clamp screw.
3. Plug the convergence yoke into the CRT and set it as shown in Fig. B-1.
4. Input a black and white signal.
5. Fully demagnetize the receiver by using an external degaussing coil.
6. Turn the CONTRAST and BRIGHTNESS controls to maximum.
7. Loosen the clamp screw holding the yoke. Slide the yoke backward or forward to produce a vertical green belt. (Fig. B-2)
8. Tighten the convergence yoke.
9. Slowly move the deflection yoke forward. Adjust for the best overall green screen.
10. Temporarily tighten the deflection yoke.
11. Produce blue and red rasters by adjusting the-low-light controls.  
Check for good purity in each field.
12. Tighten the deflection yoke.

#### 4-3-9 Center Convergence Adjustment

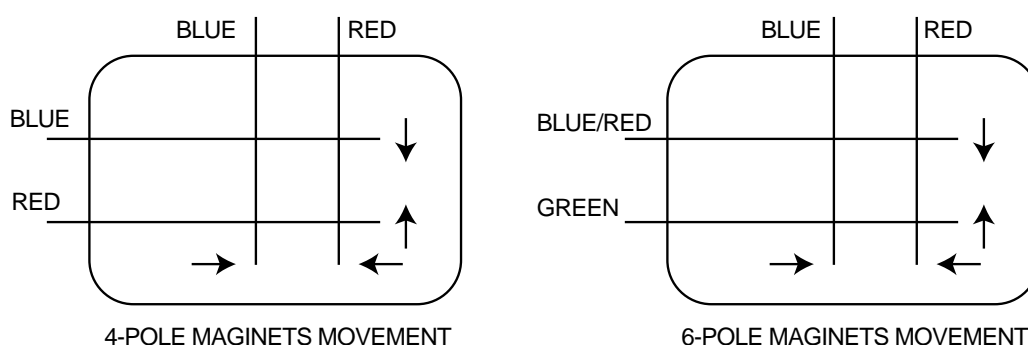
1. Warm up the receiver for at least 30 minutes.
2. Adjust the two tabs of the 4-pole magnets: Change the angle between them.  
Superimpose the red and blue vertical lines in the center area of the screen.
3. Adjust the BRIGHTNESS and CONTRAST controls for a well-defined picture.
4. Adjust the two tabs of the 4-pole magnets, and change the angle between them.  
Superimpose the red and blue vertical lines in the center area of the screen.
5. Turn the both tabs at the same time, keeping the angle constant, and superimpose the red and blue horizontal lines in the center of the screen.
6. Adjust two-tabs of 6-pole magnets to superimpose the red and blue lines onto the green.  
Adjust the angle affects the vertical lines, and rotating both magnets affects the horizontal lines.
7. Repeat adjustments 2-6, if necessary.
8. Since the 4-pole and 6-pole magnets interact, the dot movement is complex(fig B-3).



**FIG. B-1 CONVERGENCE MAGNET ASSEMBLY**



**FIG. B-2 CENTER CONVERGENCE ADJUSTMENT**



**FIG. B-3 CENTER CONVERGENCE ADJUSTMENT**

#### 4-3-10 TEST EQUIPMENT

DIGITAL VOLTMETER	Fluke model 8060A or equivalent.
OSCILLOSCOPE	Kikusui Model cos 2050 or equivalent
DIRECT/LOW-CAPACITY PROBE	(Accessory of osc)
COLOR-BAR/DOT/CROSSHATCH	
GENERATOR	PM 5518 or equivalent
SWEEP/MAKER ALIGNMENT	
GENERATOR	Leader Model 480-080 or equivalent
BIAS SUPPLY	Kikusui Model 7314A or equivalent (Combined in Model 415 generator)

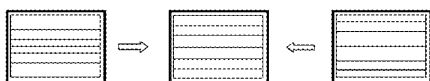
#### 4-3-11 Geometry Adjustment

(1) Ready of Adjustment.

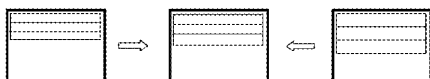
- ① Turn the monochrome(lion head pattern) channel and warm up the set for 20 minutes.
- ② On factory mode, select screen.
- ③ Use Program Up(▲)/Down(▼) key to select of item.

## (2) Deflection Adjustment Procedure

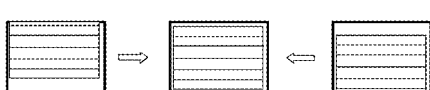
S-COR(Vertical S Correction)



V-SLOPE(Vertical Linerarity)



VRS(Vertical Shift)



HIGHT(Vertical Height)



HRS (60)(60Hz Horizontal Shift)



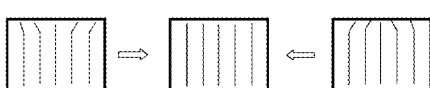
H-SIZE(East-West Width)



PINCUSH.(East-West Paraboola)



EW-UPPER(Upper East-West Corner)



EW-LOWER(Bottom East-West Corner)



EW-TRAP(East-West Trapezium)







## 5-2. 15+15W DUAL BRIDGE AMPLIFIER(TDA7297)

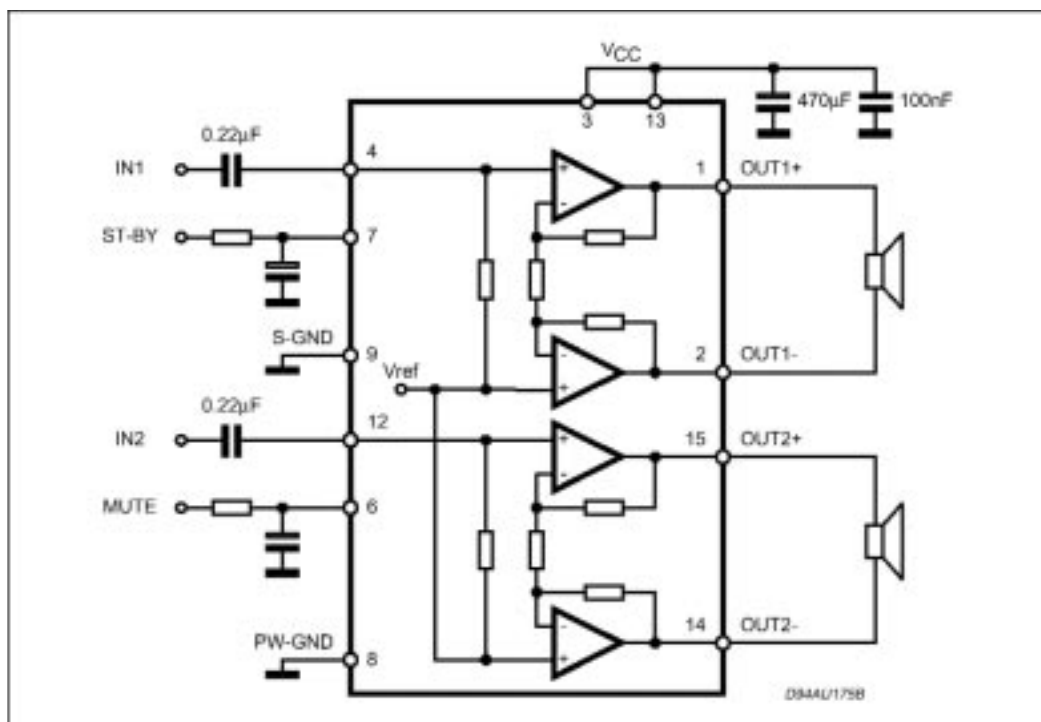
- WIDE SUPPLY VOLTAGE RANGE (5V -18V)
- MINIMUM EXTERNAL COMPONENTS
  - NO SWR CAPACITOR
  - NO BOOTSTRAP
  - NO BOUCHEROT CELLS
  - INTERNALLY FIXED GAIN
- STAND-BY & MUTE FUNCTIONS
- SHORT CIRCUIT PROTECTION
- THERMAL OVERLOAD PROTECTION

### DESCRIPTION

The TDA7297 is a dual bridge amplifier specially designed for TV and Portable Radio applications.



### BLOCK AND APPLICATION DIAGRAM



### 5-2-3. BLOCK DIAGRAM

#### TDA7297

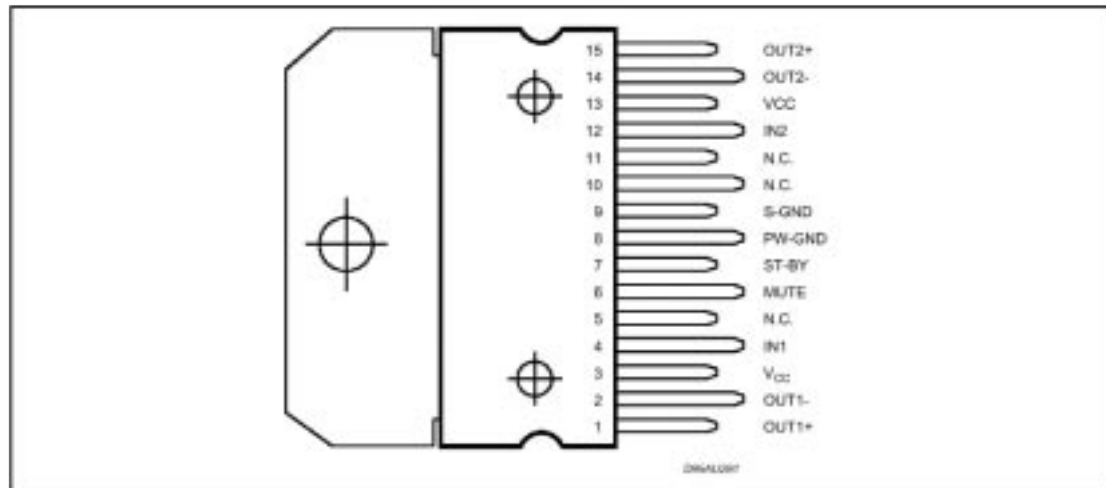
#### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
$V_S$	Supply Voltage	20	V
$I_O$	Output Peak Current (internally limited)	2	A
$P_{tot}$	Total Power Dissipation ( $T_{case} = 70^{\circ}\text{C}$ )	33	W
$T_{op}$	Operating Temperature	0 to 70	$^{\circ}\text{C}$
$T_{stg}, T_J$	Storage and Junction Temperature	-40 to +150	$^{\circ}\text{C}$

#### THERMAL DATA

Symbol	Description	Value		Unit
$R_{th(j-case)}$	Thermal Resistance Junction to case	Typ. 1.4	Max. 2	$^{\circ}\text{C/W}$

#### PIN CONNECTION (Top view)



**ELECTRICAL CHARACTERISTICS** ( $V_{CC} = 16.5\text{V}$ ,  $R_L = 8\Omega$ ,  $f = 1\text{kHz}$ ,  $T_{amb} = 25^{\circ}\text{C}$  unless otherwise specified.)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
$V_{CC}$	Supply Range		6.5		18	V
$I_Q$	Total Quiescent Current	$R_L = \infty$		50	65	mA
$V_{OS}$	Output Offset Voltage				120	mV
$P_O$	Output Power	THD = 10%	13	15		W
THD	Total Harmonic Distortion	$P_O = 1\text{W}$		0.1	0.3	%
		$P_O = 0.1\text{W to } 5\text{W}$ $f = 100\text{Hz to } 15\text{kHz}$			1	%
SVR	Supply Voltage Rejection	$f = 100\text{Hz}$ $V_R = 0.5\text{V}$	40	56		dB
CT	Crosstalk		46	60		dB
$A_{MUTE}$	Mute Attenuation		60	80		dB
$T_{TH}$	Thermal Threshold			150		$^{\circ}\text{C}$
$G_V$	Closed Loop Voltage Gain		31	32	33	dB
$\Delta G_V$	Voltage Gain Matching				0.5	dB
$R_i$	Input Resistance		25	30		$\text{K}\Omega$

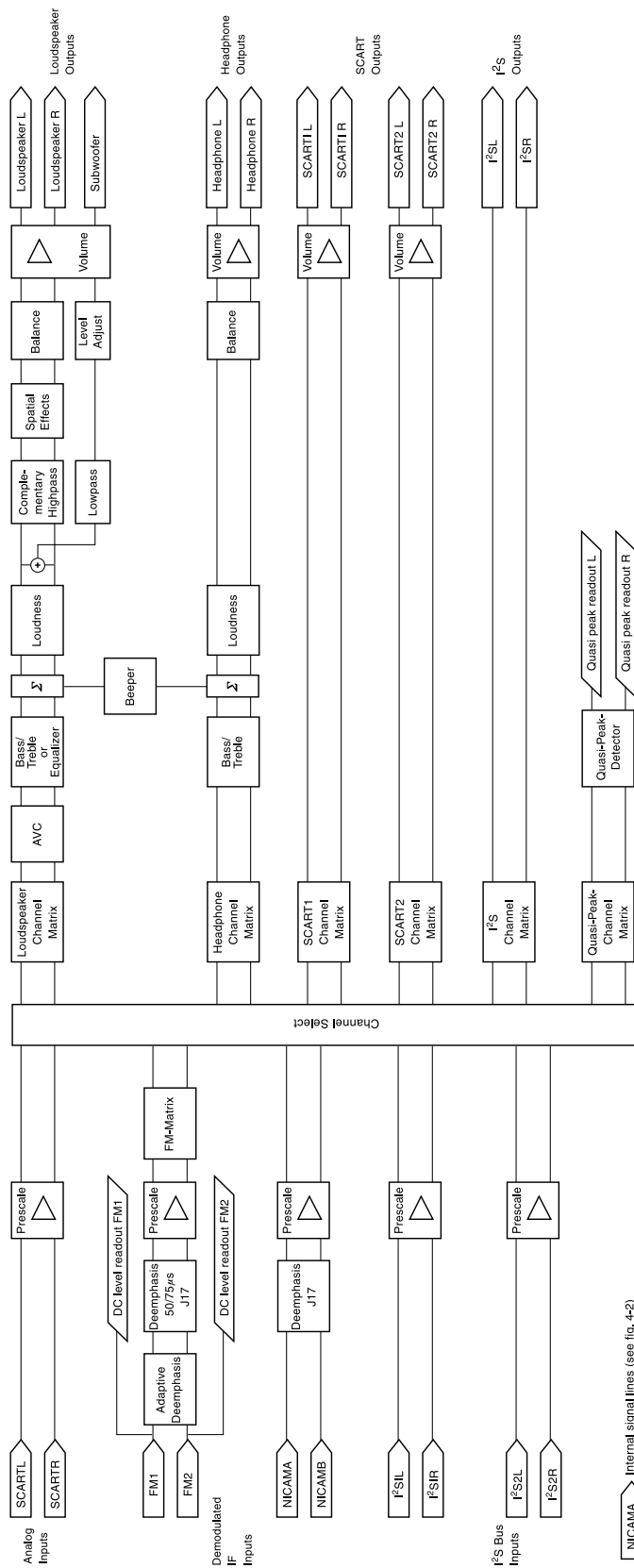
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## 5-3 MSP 3420G

### 5-3-1 Feature

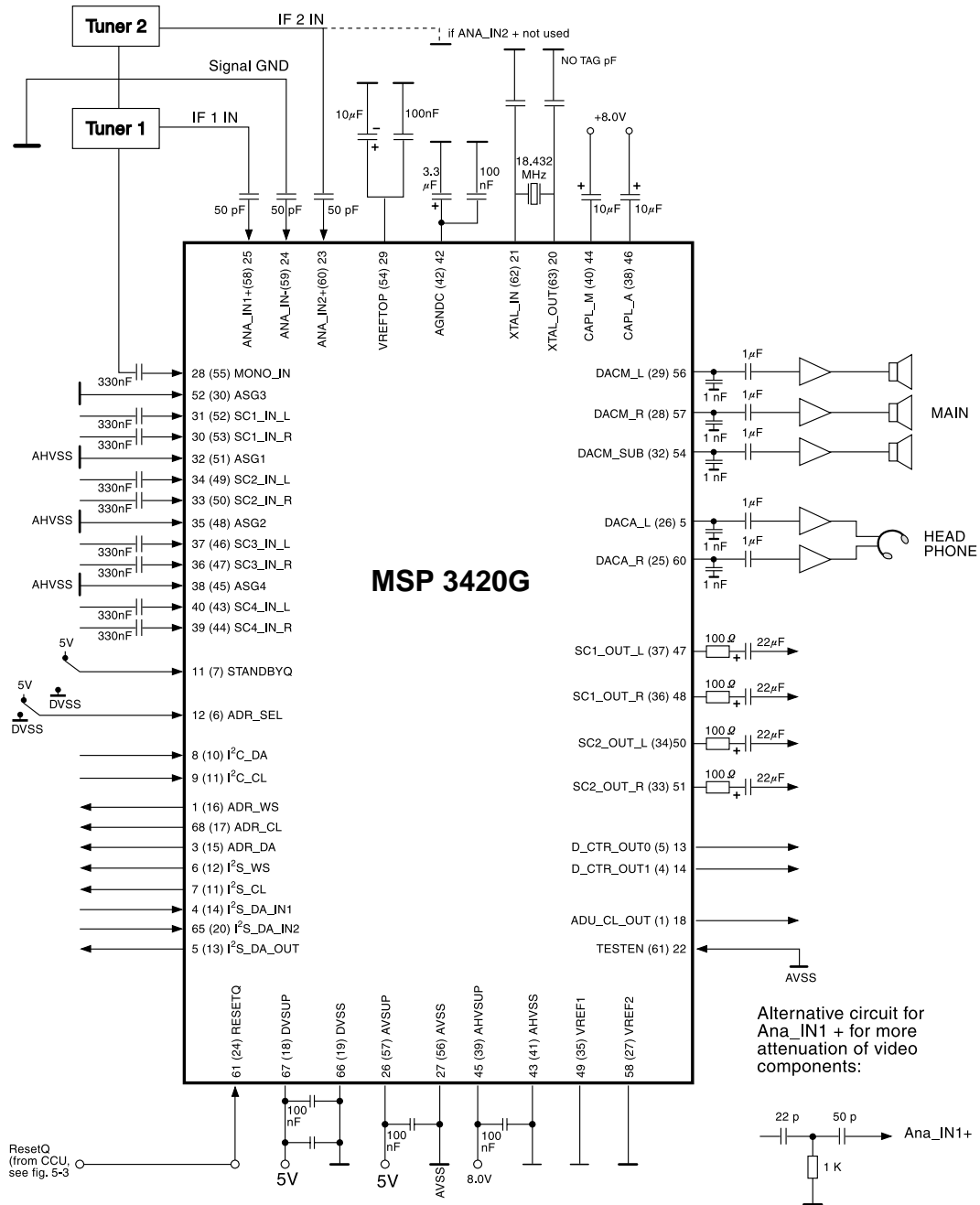
- AVC: Automatic Volume Correction
- Subwoofer Output
- 5-band graphic equalizer (as in MSP 3420G)
- Enhanced spatial effect (pseudostereo/basewidth enlargement as in MSP 3420G)
- headphone channel with balance, bass, treble, loudness
- balance for loudspeaker and headphone channels in dB units (option)
- Additional SCART input
- Full SCART in/out matrix without restrictions
- Scart volume in dB units (optional)
- Additional I<sup>2</sup>S input
- New FM-identification
- Demodulator short programming
- Autodetection for terrestrial TV-sound standards
- Precise bit-error rate indication
- Automatic switching from NICAM to FM/AM or vice versa
- Improved NICAM synchronization algorithm
- Improved carrier mute algorithm
- Improved AM-demodulation
- Dolby Pro Logic together with DPL 35xx A
- Reduction of necessary controlling
- Less external components
- Significant reduction of radiation

## 5-3-2 PRELIMINARY DATA SHEET



**Fig. 4-5:** Audio baseband processing (DSP-Firmware)

### 5-3-3 Application Circuit



**Note :** Pin numbers refer to PLCC68 package, numbers in brackets refer to the PSDIP64 package.

## 5-4. POWER (KA5Q1265RF)

### KA5Q-SERIES

KA5Q0765RT/KA5Q12656RT/KA5Q1265RF/KA5Q1565RF  
Fairchild Power Switch (FPS)

#### Features

- Quasi Resonant Converter Controller
- Internal Burst Mode Controller for Stand-by Mode
- Pulse by Pulse Current Limiting
- Over Current Latch Protection
- Over Voltage Protection ( $V_{sync}$ , Min. 11V)
- Internal Thermal Shutdown Function
- Under Voltage Lockout
- Internal High Voltage Sense FET
- Auto-Restart Mode

#### Description

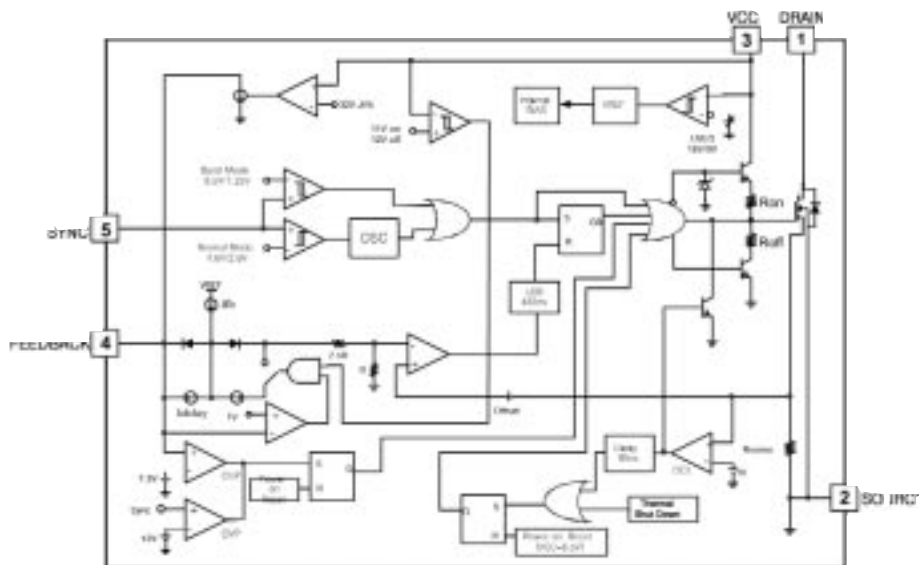
The Fairchild Power Switch(FPS) product family is specially designed for an off-line SMPS with minimal external components. The Fairchild Power Switch(FPS) consist of high voltage power SenseFET and current mode PWM controller IC. PWM controller features integrated fixed oscillator, under voltage lock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

TO-220F-5L TO-3PF-5L



1 Drain 2 GND 3 VCC 4 FB 5 Sync

#### Internal Block Diagram



## 5-5 Vertical deflection output circuit(LA78045)

LA78045

- a. Vertical output IC for TVs and CRT displays
- b. Package TO22D-7B
- c. Maximum Ratings at  $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	Vcc2max		45	V
Output block supply voltage	Vcc6max		92	V
Allowable power dissipation	Pdmax	With arbitrarily large heat sink	9	W
Deflection output current	I5max		-1.5 to +1.5	A <sub>p-p</sub>
Thermal resistance	$\theta_{j-c}$		3	$^\circ\text{C/W}$
Operating temperature	T <sub>opg</sub>		-20 to +85	$^\circ\text{C}$
Storage temperature	T <sub>stg</sub>		-40 to +150	$^\circ\text{C}$

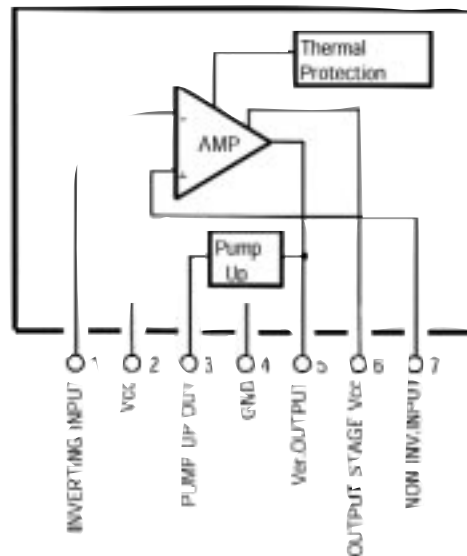
- d. Operating Conditions at  $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	Vcc2max		30	V
Operating supply voltage range	Vcc2op		16 to 44	V
Recommended deflection output current	I5p-p		to 2.2	A <sub>p-p</sub>

- e. Operating Characteristics at  $T_a = 25^\circ\text{C}$ , Vcc2=30V

Parameter	Symbol	Conditions	min	typ	max	Unit
Deflection output saturation voltage (lower)	Vsat5-4	I5=1.1A			1.5	V
Deflection output saturation voltage (upper)	Vsat6-5	I5=-1.1A			3.5	V
Pump-up charge saturation voltage	Vsat3-4	I3=20mA			1.8	V
Pump-up discharge saturation voltage	Vsat2-3	I3= -1.1A			3.2	V
Idling current	I <sub>dl</sub>		20		50	mA
Midpoint voltage	V <sub>mid</sub>		14.0	15.0	16.0	V

- f. Block Diagram



## 5-6 Triple video output amplifier(TDA6108JF)

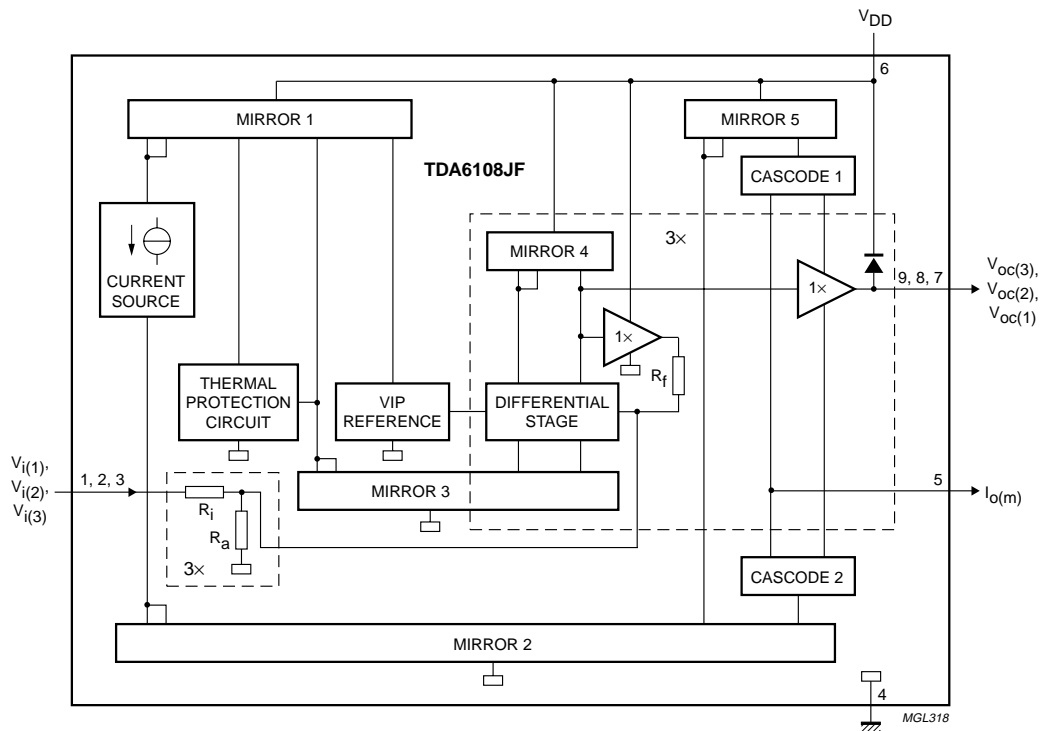
### 5-6-1. Features

- Typical bandwidth of 9.0MHz for an output signal of 60V(p-p)
- High slew rate of 1850V/ $\mu$ s
- No external components required
- Very simple application
- Single supply voltage of 200V
- Internal reference voltage of 2.5V

### 5-6-2. PINNING

SYMBOL	PIN	DESCRIPTION
$V_{i(1)}$	1	inverting input 1
$V_{i(2)}$	2	inverting input 2
$V_{i(3)}$	3	inverting input 3
GND	4	grund (fin)
$I_{om}$	5	black current measurement output
VDD	6	supply voltage
$V_{oc(3)}$	7	cathode output 3
$V_{oc(3)}$	8	cathode output 2
$V_{oc(3)}$	9	cathode output 1

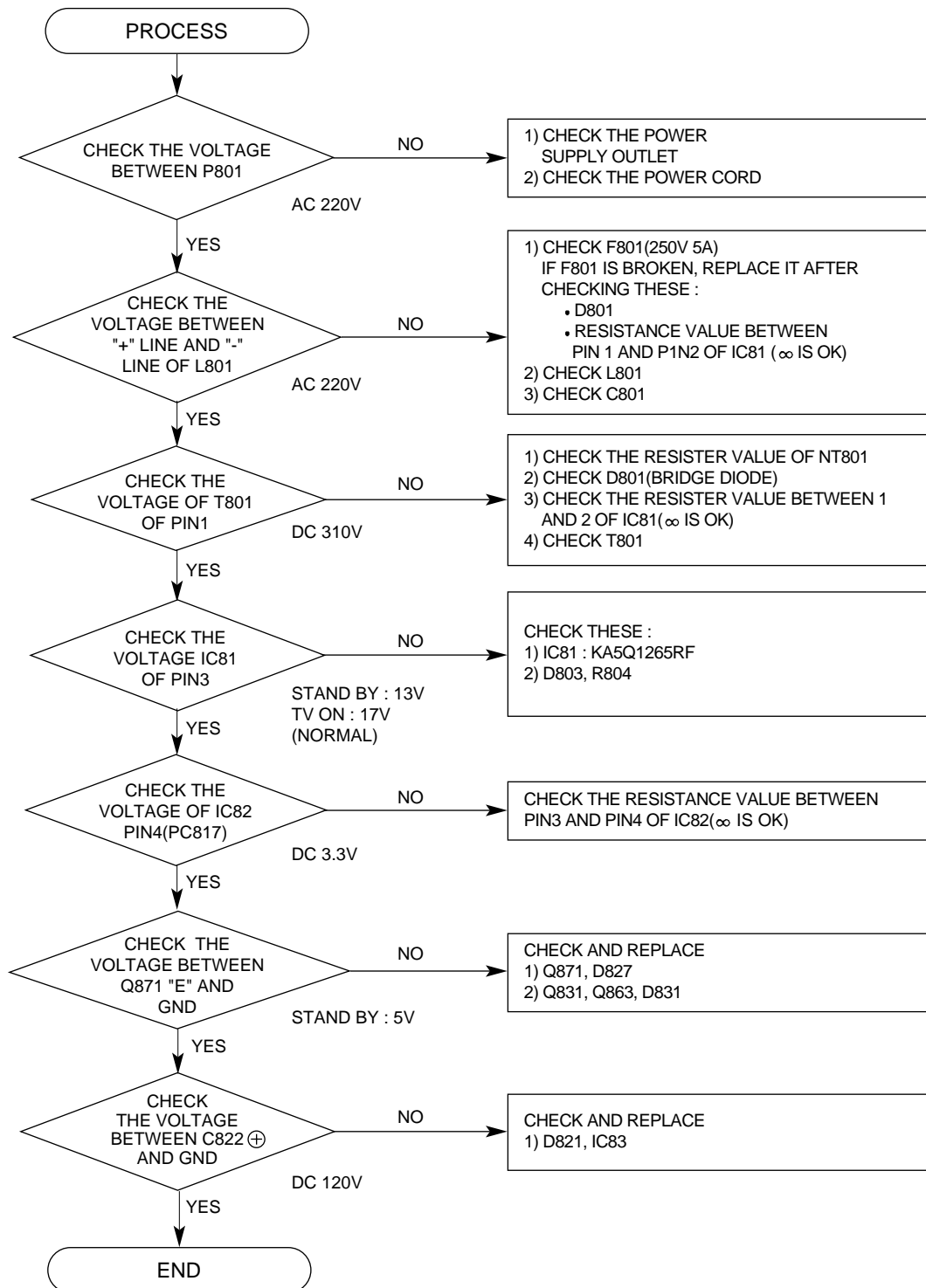
### 5-6-3. BLOCK DIAGRAM





## 6. TROUBLESHOOTING

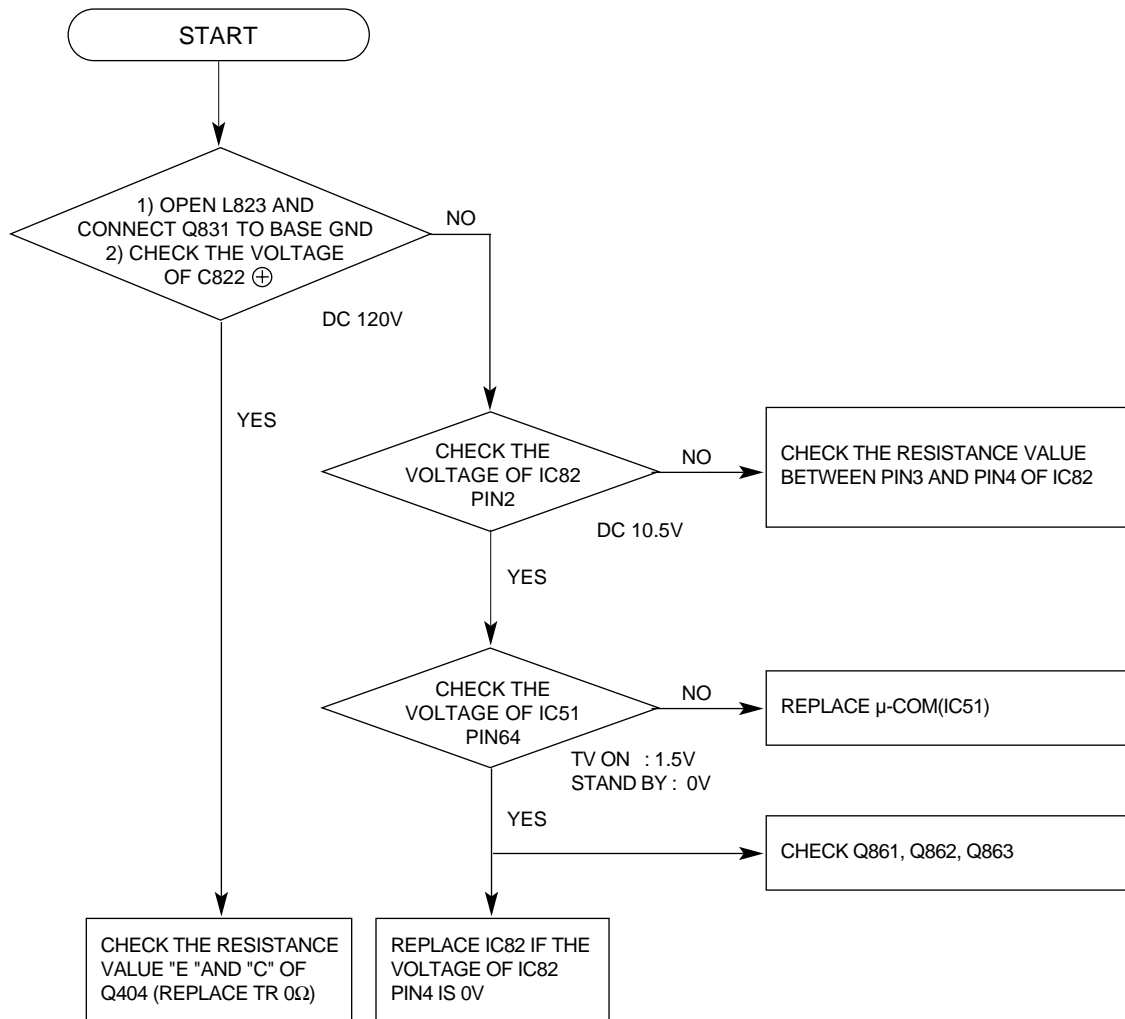
### 1. No Power



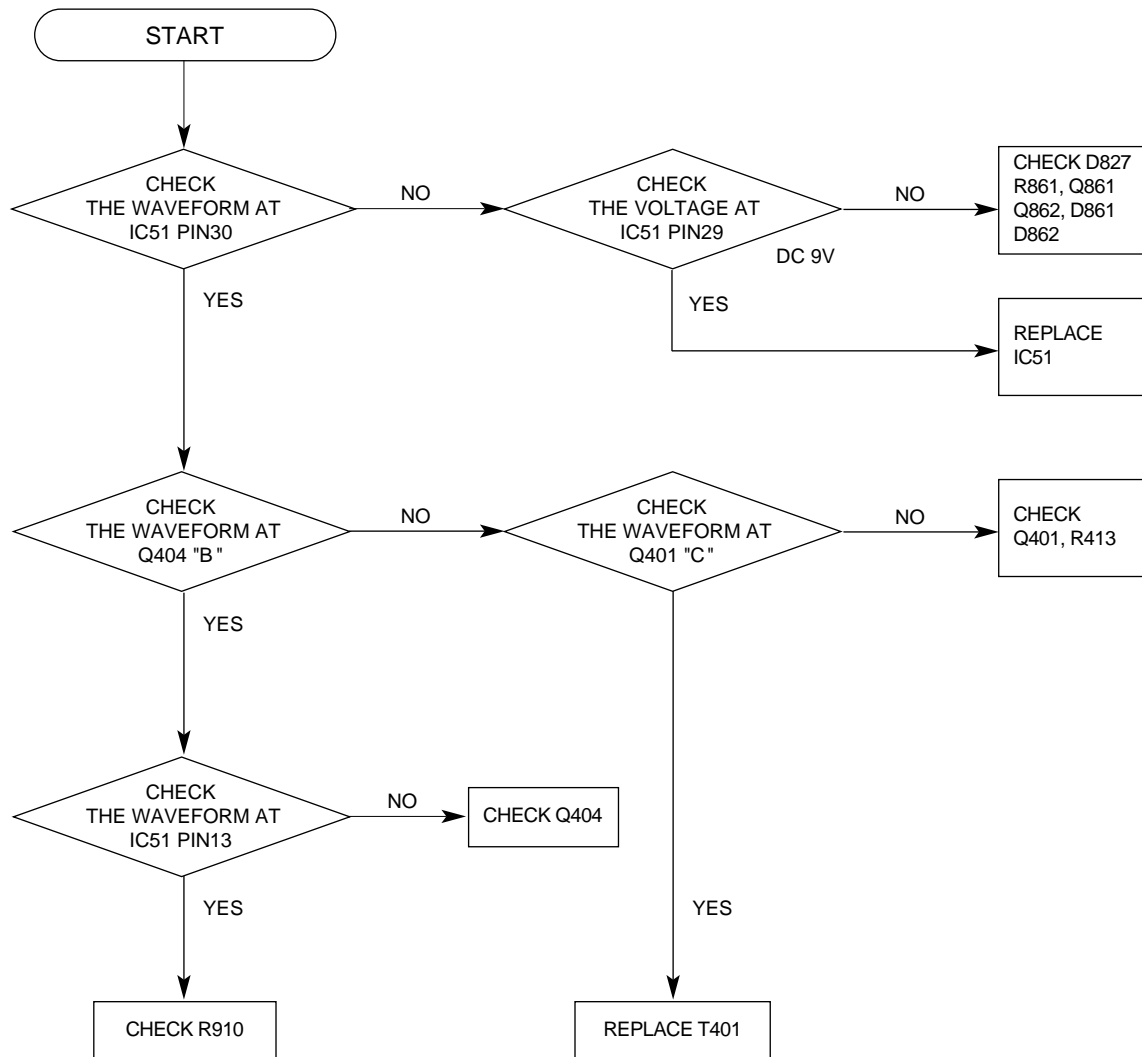
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## 2. In stand-by status (POWER OK), TV is switched on, SMPS turns off and LED turns off (ON/OFF)

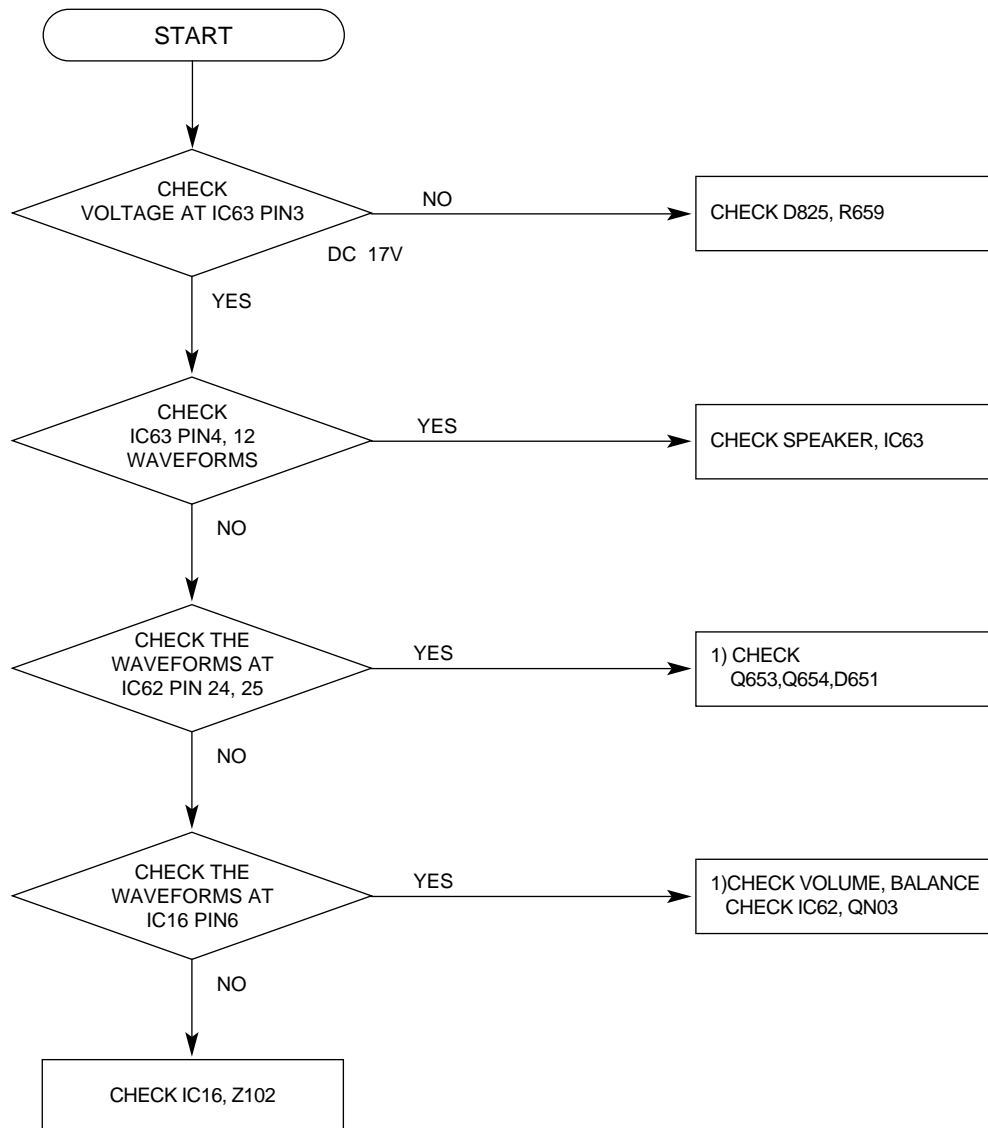
*Cause : If IC81 becomes off because secondary side of SMPS is overloaded, primary side of SMPS may be normal.*



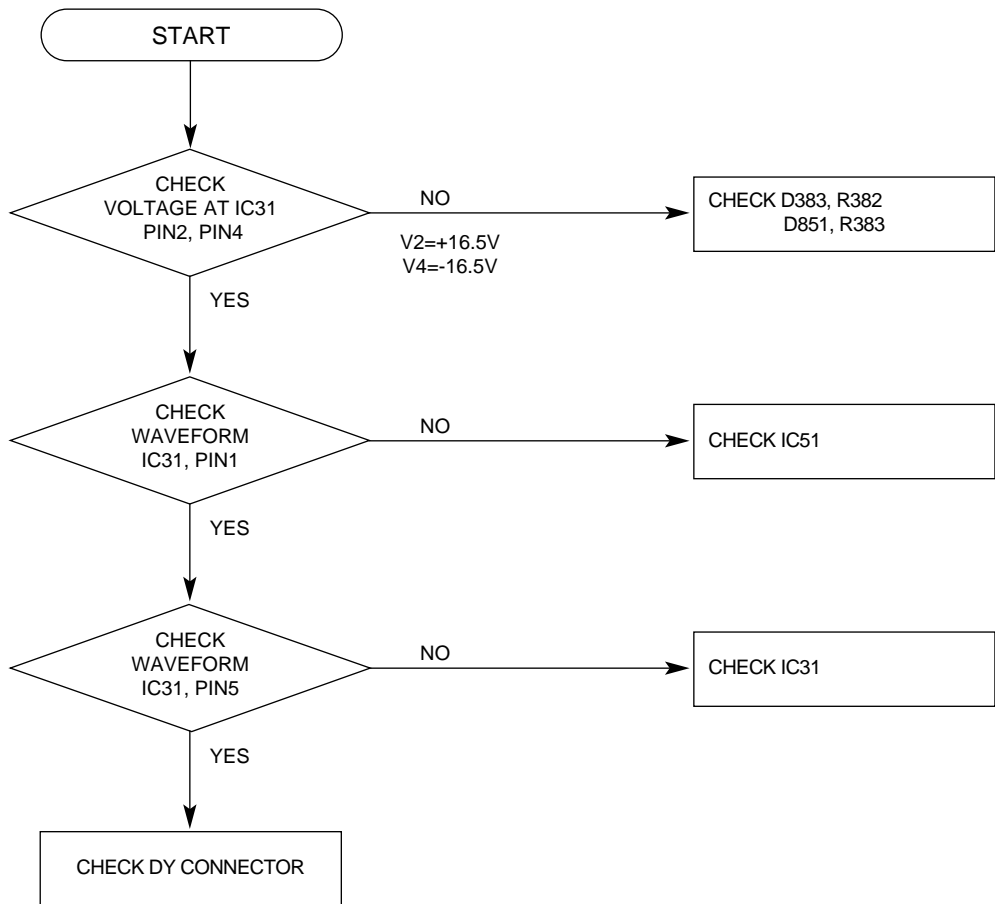
### 3. No Picture(sound ok)



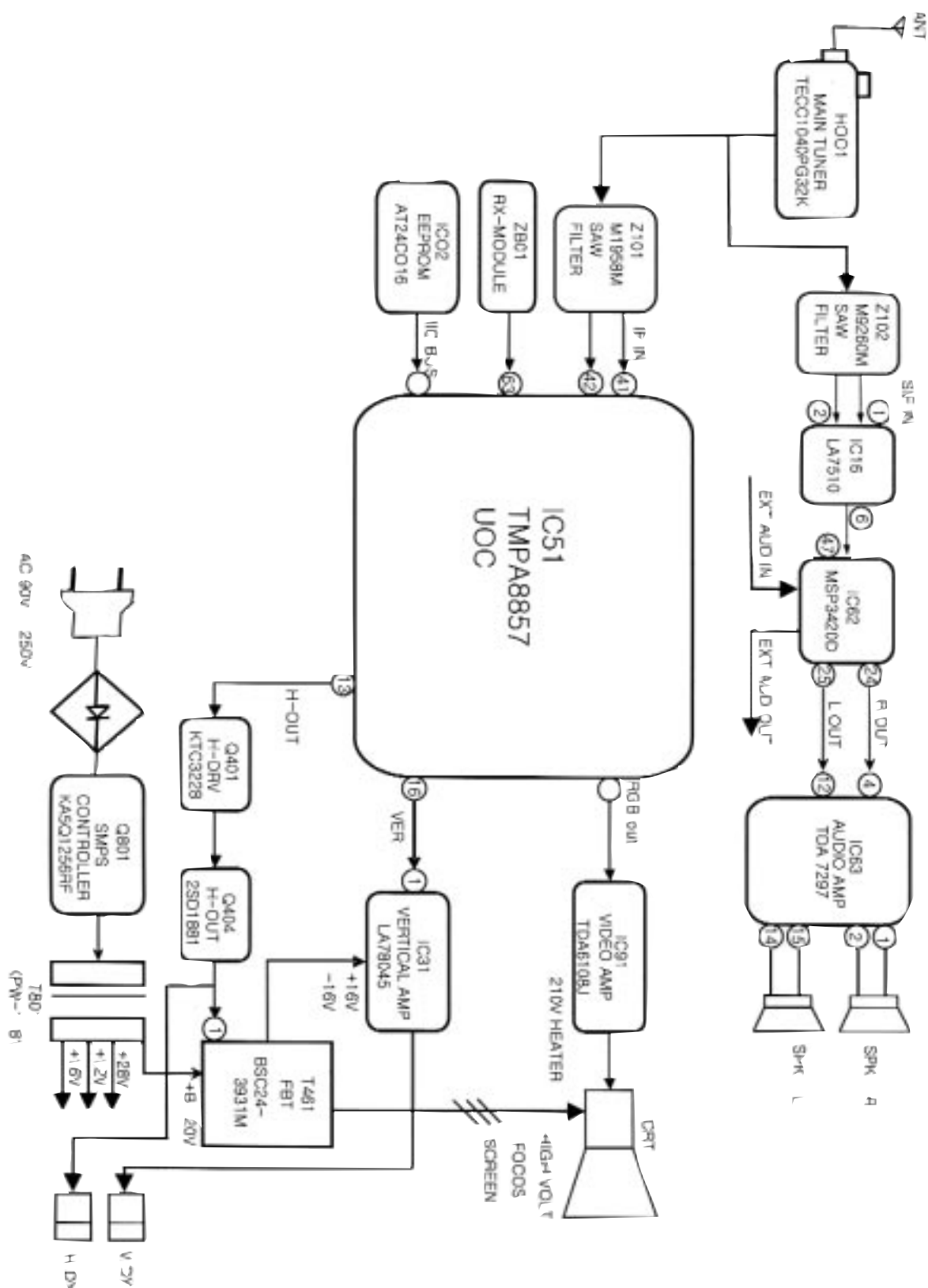
#### 4. No Sound



## 5. Vertical Line(Reference Line)



## 7. BLOCK DIAGRAM



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## 8. PCB LAYOUT(MAIN)

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## PCB LAYOUT(SUB)



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## PCB LAYOUT(PIP)

# ELECTRICAL PARTS LIST

P / No.	ITEM No.	ITEM NAME	P / No.	ITEM No.	ITEM NAME
A001	150013111	"MAIN, NTSC PTNM04 29GN2BU"	DV21	11115638T	"ZD, MTZJ8.2B (VZ7.78-8.19) 0.5W"
A001R	150610830	"MAIN, RHU PTNM04 29GN2BU"	DZ802	11115678T	"ZD, MTZJ27B (VZ24.97-26.26) 0.5W"
A001U	150111454	"MAIN, AUTO PTNM04 29GN2BU"	DZ803	11115664T	"ZD, MTZJ18C (VZ17.42-18.33) 0.5W"
A001A	150211583	"MAIN, AXIAL PTNM04 29GN2BU"	EL02	11061303	"EYELET, HTR 2.80*2.9 SNI"
C035	12474102T	"CERAMIC CAP, B 50V 1000PF K AXIAL"	EL03	11061303	"EYELET, HTR 2.80*2.9 SNI"
C036	12497103T	"CERAMIC CAP, F 25V 0.01MF Z AXIAL"	EL04	11061303	"EYELET, HTR 2.80*2.9 SNI"
C044	12497103T	"CERAMIC CAP, F 25V 0.01MF Z AXIAL"	EL05	11061303	"EYELET, HTR 2.80*2.9 SNI"
C055	12497103T	"CERAMIC CAP, F 25V 0.01MF Z AXIAL"	EL06	11061303	"EYELET, HTR 2.80*2.9 SNI"
C104	12497103T	"CERAMIC CAP, F 25V 0.01MF Z AXIAL"	EL07	11061303	"EYELET, HTR 2.80*2.9 SNI"
C161	12497103T	"CERAMIC CAP, F 25V 0.01MF Z AXIAL"	EL08	11061303	"EYELET, HTR 2.80*2.9 SNI"
C163	12497103T	"CERAMIC CAP, F 25V 0.01MF Z AXIAL"	EL09	11061303	"EYELET, HTR 2.80*2.9 SNI"
C165	12497103T	"CERAMIC CAP, F 25V 0.01MF Z AXIAL"	EL10	11061303	"EYELET, HTR 2.80*2.9 SNI"
C166	12497103T	"CERAMIC CAP, F 25V 0.01MF Z AXIAL"	EL11	11061303	"EYELET, HTR 2.80*2.9 SNI"
C181	12497103T	"CERAMIC CAP, F 25V 0.01MF Z AXIAL"	EL12	11061303	"EYELET, HTR 2.80*2.9 SNI"
C187	12497103T	"CERAMIC CAP, F 25V 0.01MF Z AXIAL"	EL13	11061303	"EYELET, HTR 2.80*2.9 SNI"
C503	12474102T	"CERAMIC CAP, B 50V 1000PF K AXIAL"	EL14	11061303	"EYELET, HTR 2.80*2.9 SNI"
C523	12497103T	"CERAMIC CAP, F 25V 0.01MF Z AXIAL"	EL15	11061303	"EYELET, HTR 2.80*2.9 SNI"
C531	12474102T	"CERAMIC CAP, B 50V 1000PF K AXIAL"	EL16	11061303	"EYELET, HTR 2.80*2.9 SNI"
C557	12473470T	"CERAMIC CAP, SL 50V 47PF J AXIAL"	EL17	11061303	"EYELET, HTR 2.80*2.9 SNI"
C557	12473470AT	"CERAMIC CAP, SL 50V 47PF J AXIAL"	EL18	11061303	"EYELET, HTR 2.80*2.9 SNI"
C558	12473470T	"CERAMIC CAP, SL 50V 47PF J AXIAL"	EL19	11061303	"EYELET, HTR 2.80*2.9 SNI"
C558	12473470AT	"CERAMIC CAP, SL 50V 47PF J AXIAL"	EL20	11061303	"EYELET, HTR 2.80*2.9 SNI"
C563	12474102T	"CERAMIC CAP, B 50V 1000PF K AXIAL"	EL21	11061303	"EYELET, HTR 2.80*2.9 SNI"
C572	12474181T	"CERAMIC CAP, B 50V 180PF K AXIAL"	EL23	11061303	"EYELET, HTR 2.80*2.9 SNI"
C574	12474561T	"CERAMIC CAP, B 50V 560PF K AXIAL"	EL31	11061303	"EYELET, HTR 2.80*2.9 SNI"
CN03	12497103T	"CERAMIC CAP, F 25V 0.01MF Z AXIAL"	ES01	11061202	"EYELET, HTR 2.11*2.8 SNI"
CN06	12474332T	"CERAMIC CAP, B 50V 3300PF K AXIAL"	ES02	11061202	"EYELET, HTR 2.11*2.8 SNI"
CN07	12474332T	"CERAMIC CAP, B 50V 3300PF K AXIAL"	ES03	11061202	"EYELET, HTR 2.11*2.8 SNI"
CN08	12497103T	"CERAMIC CAP, F 25V 0.01MF Z AXIAL"	ES04	11061202	"EYELET, HTR 2.11*2.8 SNI"
CN12	12497103T	"CERAMIC CAP, F 25V 0.01MF Z AXIAL"	ES05	11061202	"EYELET, HTR 2.11*2.8 SNI"
CN16	12497103T	"CERAMIC CAP, F 25V 0.01MF Z AXIAL"	ES06	11061202	"EYELET, HTR 2.11*2.8 SNI"
CN24	12497103T	"CERAMIC CAP, F 25V 0.01MF Z AXIAL"	ES07	11061202	"EYELET, HTR 2.11*2.8 SNI"
CN27	12497103T	"CERAMIC CAP, F 25V 0.01MF Z AXIAL"	ES08	11061202	"EYELET, HTR 2.11*2.8 SNI"
CN28	12497103T	"CERAMIC CAP, F 25V 0.01MF Z AXIAL"	ES09	11061202	"EYELET, HTR 2.11*2.8 SNI"
CV21	12497103T	"CERAMIC CAP, F 25V 0.01MF Z AXIAL"	ES10	11061202	"EYELET, HTR 2.11*2.8 SNI"
CV81	12497103T	"CERAMIC CAP, F 25V 0.01MF Z AXIAL"	ES11	11061202	"EYELET, HTR 2.11*2.8 SNI"
D027	11115024T	"SILICON DIODE, 1N4148"	ES12	11061202	"EYELET, HTR 2.11*2.8 SNI"
D103	11115686T	"ZD, MTZJ33B (VZ30.32-31.88) 0.5W"	ES13	11061202	"EYELET, HTR 2.11*2.8 SNI"
D311	11115003T	"SILICON DIODE, 1N4004"	ES14	11061202	"EYELET, HTR 2.11*2.8 SNI"
D340	11115024T	"SILICON DIODE, 1N4148"	ES15	11061202	"EYELET, HTR 2.11*2.8 SNI"
D341	11115626T	"ZD, MTZJ5.6B (VZ5.45-5.73) 0.5W"	ES16	11061202	"EYELET, HTR 2.11*2.8 SNI"
D351	11115777T	"DIODE-REC, 1N4758A,56V,1W,DO-41"	ES17	11061202	"EYELET, HTR 2.11*2.8 SNI"
D383	11115458T	"DIODE, FAST RECOVERY UF-156"	ES18	11061202	"EYELET, HTR 2.11*2.8 SNI"
D410	11115638T	"ZD, MTZJ8.2B (VZ7.78-8.19) 0.5W"	ES19	11061202	"EYELET, HTR 2.11*2.8 SNI"
D441	11115014T	"SILICON DIODE, RGP10J"	ES20	11061202	"EYELET, HTR 2.11*2.8 SNI"
D517	11115024T	"SILICON DIODE, 1N4148"	ES21	11061202	"EYELET, HTR 2.11*2.8 SNI"
D527	11115615T	"ZD, MTZJ3.9B (VZ3.89-4.16) 0.5W"	ES22	11061202	"EYELET, HTR 2.11*2.8 SNI"
D550	11115645T	"ZD, MTZJ10C (VZ9.70-10.20) 0.5W"	ES23	11061202	"EYELET, HTR 2.11*2.8 SNI"
D551	11115645T	"ZD, MTZJ10C (VZ9.70-10.20) 0.5W"	ES24	11061202	"EYELET, HTR 2.11*2.8 SNI"
D552	11115645T	"ZD, MTZJ10C (VZ9.70-10.20) 0.5W"	ES25	11061202	"EYELET, HTR 2.11*2.8 SNI"
D651	11115615T	"ZD, MTZJ3.9B (VZ3.89-4.16) 0.5W"	ES26	11061202	"EYELET, HTR 2.11*2.8 SNI"
D802	11115464T	"DIODE, RECTIFIER 1N5398E"	ES27	11061202	"EYELET, HTR 2.11*2.8 SNI"
D808	11115224T	"DIODE, FAST RECOVERY 1N4937"	ES28	11061202	"EYELET, HTR 2.11*2.8 SNI"
D809	11115024T	"SILICON DIODE, 1N4148"	ES29	11061202	"EYELET, HTR 2.11*2.8 SNI"
D823	11115014T	"SILICON DIODE, RGP10J"	ES30	11061202	"EYELET, HTR 2.11*2.8 SNI"
D827	11115014T	"SILICON DIODE, RGP10J"	ES31	11061202	"EYELET, HTR 2.11*2.8 SNI"
D831	11115024T	"SILICON DIODE, 1N4148"	ES33	11061202	"EYELET, HTR 2.11*2.8 SNI"
D834	11115444T	"DIODE, RGP15J"	ES34	11061202	"EYELET, HTR 2.11*2.8 SNI"
D851	11115458T	"DIODE, FAST RECOVERY UF-156"	ES35	11061202	"EYELET, HTR 2.11*2.8 SNI"
D852	11115626T	"ZD, MTZJ5.6B (VZ5.45-5.73) 0.5W"	ES36	11061202	"EYELET, HTR 2.11*2.8 SNI"
D861	11115641T	"ZD, MTZJ9.1B (VZ8.57-9.01) 0.5W"	ES37	11061202	"EYELET, HTR 2.11*2.8 SNI"
D862	11115024T	"SILICON DIODE, 1N4148"	ES38	11061202	"EYELET, HTR 2.11*2.8 SNI"
D871	11115626T	"ZD, MTZJ5.6B (VZ5.45-5.73) 0.5W"	ES39	11061202	"EYELET, HTR 2.11*2.8 SNI"
DE01	11115024T	"SILICON DIODE, 1N4148"	ES40	11061202	"EYELET, HTR 2.11*2.8 SNI"
DF01	11115224T	"DIODE, FAST RECOVERY 1N4937"	ES41	11061202	"EYELET, HTR 2.11*2.8 SNI"
DF02	11115626T	"ZD, MTZJ5.6B (VZ5.45-5.73) 0.5W"	ES42	11061202	"EYELET, HTR 2.11*2.8 SNI"
DV11	11115641T	"ZD, MTZJ9.1B (VZ8.57-9.01) 0.5W"	ES43	11061202	"EYELET, HTR 2.11*2.8 SNI"
DV12	11115641T	"ZD, MTZJ9.1B (VZ8.57-9.01) 0.5W"	ES44	11061202	"EYELET, HTR 2.11*2.8 SNI"
DV13	11115641T	"ZD, MTZJ9.1B (VZ8.57-9.01) 0.5W"	ES45	11061202	"EYELET, HTR 2.11*2.8 SNI"

## ELECTRICAL PARTS LIST

[illegible]

# ELECTRICAL PARTS LIST

P / No.	ITEM No.	ITEM NAME	P / No.	ITEM No.	ITEM NAME
L110	11237100T	"COIL, AXIAL LAL02TB 10UH K"	R320	12919109T	"CARBON RESISTOR, SB 1/2W 1 OHM J"
L161	11237688T	"COIL, AXIAL LAL02TB 0.68UH K"	R340	12368822T	"CARBON RESISTOR, SB 1/6W 8.2K OHM J"
L181	11237100T	"COIL, AXIAL LAL02TB 10UH K"	R341	12368103T	"CARBON RESISTOR, SB 1/6W 10K OHM J"
L182	11237100T	"COIL, AXIAL LAL02TB 10UH K"	R382	12531478T	"FUSE RESISTOR, RN A 1/2W 0.47 OHM J"
L183	11237100T	"COIL, AXIAL LAL02TB 10UH K"	R383	12531478T	"FUSE RESISTOR, RN A 1/2W 0.47 OHM J"
L201	11237829T	"COIL, AXIAL LAL02TB 8.2UH K"	R402	12368101T	"CARBON RESISTOR, SB 1/6W 100 OHM J"
L301	11230100T	"INDUCTOR-AXIAL, AL04 TB 10UH-K"	R404	12321102T	"OXIDE RESISTOR, B 1/2W 1K OHM J"
L404	11103041T	"B-CORE, BF40 BTL3.5*7B-AG(0.62X63)"	R405	12368752T	"CARBON RESISTOR, SB 1/6W 7.5K OHM J"
L404	C1103095T	"B-CORE, RH03506ST-B"	R409	12368473T	"CARBON RESISTOR, SB 1/6W 47K OHM J"
L509	11237100T	"COIL, AXIAL LAL02TB 10UH K"	R410	12368270T	"CARBON RESISTOR, SB 1/6W 27 OHM J"
L517	11237470T	"COIL, AXIAL LAL02TB 47UH K"	R411	12321512T	"OXIDE RESISTOR, B 1/2W 5.1K OHM J"
L536	11237100T	"COIL, AXIAL LAL02TB 10UH K"	R413	12321109T	"OXIDE RESISTOR, B 1/2W 1 OHM J"
L544	11237100T	"COIL, AXIAL LAL02TB 10UH K"	R432	12321102T	"OXIDE RESISTOR, B 1/2W 1K OHM J"
L555	11237100T	"COIL, AXIAL LAL02TB 10UH K"	R441	12531478T	"FUSE RESISTOR, RN A 1/2W 0.47 OHM J"
L806	11103041T	"B-CORE, BF40 BTL3.5*7B-AG(0.62X63)"	R442	12919224T	"CARBON RESISTOR, SB 1/2W 220K OHM J"
L806	C1103095T	"B-CORE, RH03506ST-B"	R445	12531478T	"FUSE RESISTOR, RN A 1/2W 0.47 OHM J"
L807	11103041T	"B-CORE, BF40 BTL3.5*7B-AG(0.62X63)"	R495	12371102T	"METAL RESISTOR, RN 1/2W 1KF"
L807	C1103095T	"B-CORE, RH03506ST-B"	R496	12371623T	"METAL RESISTOR, RN 1/2W 62K F"
L808	11103041T	"B-CORE, BF40 BTL3.5*7B-AG(0.62X63)"	R501	12368681T	"CARBON RESISTOR, SB 1/6W 680 OHM J"
L808	C1103095T	"B-CORE, RH03506ST-B"	R502	12368333T	"CARBON RESISTOR, SB 1/6W 33K OHM J"
L821	11103041T	"B-CORE, BF40 BTL3.5*7B-AG(0.62X63)"	R503	12368102T	"CARBON RESISTOR, SB 1/6W 1K OHM J"
L821	C1103095T	"B-CORE, RH03506ST-B"	R505	12368103T	"CARBON RESISTOR, SB 1/6W 10K OHM J"
L825	11103041T	"B-CORE, BF40 BTL3.5*7B-AG(0.62X63)"	R512	12368512T	"CARBON RESISTOR, SB 1/6W 5.1K OHM J"
L825	C1103095T	"B-CORE, RH03506ST-B"	R513	12368102T	"CARBON RESISTOR, SB 1/6W 1K OHM J"
LE01	11237100T	"COIL, AXIAL LAL02TB 10UH K"	R514	12368822T	"CARBON RESISTOR, SB 1/6W 8.2K OHM J"
LN01	11237100T	"COIL, AXIAL LAL02TB 10UH K"	R519	12368101T	"CARBON RESISTOR, SB 1/6W 100 OHM J"
LN02	11237100T	"COIL, AXIAL LAL02TB 10UH K"	R520	12368221T	"CARBON RESISTOR, SB 1/6W 220 OHM J"
LN03	11237109T	"COIL, AXIAL LAL02TB 1UH K"	R521	12368101T	"CARBON RESISTOR, SB 1/6W 100 OHM J"
LV81	11237109T	"COIL, AXIAL LAL02TB 1UH K"	R525	12919271T	"CARBON RESISTOR, SB 1/2W 270 OHM J"
N001A	11965057	"TAPE, YW-5006 6.2MM*2000M ROLL"	R526	12368201T	"CARBON RESISTOR, SB 1/6W 200 OHM J"
N001B	11965058	"TAPE, TESAKREPP-4387 6.0MM*2000M"	R527	12368393T	"CARBON RESISTOR, SB 1/6W 39K OHM J"
R003	12368333T	"CARBON RESISTOR, SB 1/6W 33K OHM J"	R528	12368101T	"CARBON RESISTOR, SB 1/6W 100 OHM J"
R013	12368471T	"CARBON RESISTOR, SB 1/6W 470 OHM J"	R530	12368302T	"CARBON RESISTOR, SB 1/6W 3K OHM J"
R018	12368103T	"CARBON RESISTOR, SB 1/6W 10K OHM J"	R531	12368332T	"CARBON RESISTOR, SB 1/6W 3.3K OHM J"
R020	12368112T	"CARBON RESISTOR, SB 1/6W 1.1K OHM J"	R535	12368155T	"CARBON RESISTOR, SB 1/6W 1.5M OHM J"
R021	12368561T	"CARBON RESISTOR, SB 1/6W 560 OHM J"	R545	12368332T	"CARBON RESISTOR, SB 1/6W 3.3K OHM J"
R027	12368203T	"CARBON RESISTOR, SB 1/6W 20K OHM J"	R546	12368224T	"CARBON RESISTOR, SB 1/6W 220K OHM J"
R028	12368333T	"CARBON RESISTOR, SB 1/6W 33K OHM J"	R547	12368473T	"CARBON RESISTOR, SB 1/6W 47K OHM J"
R030	12368101T	"CARBON RESISTOR, SB 1/6W 100 OHM J"	R548	12368153T	"CARBON RESISTOR, SB 1/6W 15K OHM J"
R035	12368221T	"CARBON RESISTOR, SB 1/6W 220 OHM J"	R550	12368101T	"CARBON RESISTOR, SB 1/6W 100 OHM J"
R057	12368103T	"CARBON RESISTOR, SB 1/6W 10K OHM J"	R551	12368101T	"CARBON RESISTOR, SB 1/6W 100 OHM J"
R058	12368103T	"CARBON RESISTOR, SB 1/6W 10K OHM J"	R552	12368101T	"CARBON RESISTOR, SB 1/6W 100 OHM J"
R101	12368101T	"CARBON RESISTOR, SB 1/6W 100 OHM J"	R557	12368101T	"CARBON RESISTOR, SB 1/6W 100 OHM J"
R102	12368101T	"CARBON RESISTOR, SB 1/6W 100 OHM J"	R558	12368101T	"CARBON RESISTOR, SB 1/6W 100 OHM J"
R103	12321222T	"OXIDE RESISTOR, B 1/2W 2.2K OHM J"	R561	12368103T	"CARBON RESISTOR, SB 1/6W 10K OHM J"
R106	12368222T	"CARBON RESISTOR, SB 1/6W 2.2K OHM J"	R562	12368103T	"CARBON RESISTOR, SB 1/6W 10K OHM J"
R111	12368101T	"CARBON RESISTOR, SB 1/6W 100 OHM J"	R563	12368511T	"CARBON RESISTOR, SB 1/6W 510 OHM J"
R112	12368101T	"CARBON RESISTOR, SB 1/6W 100 OHM J"	R564	12368103T	"CARBON RESISTOR, SB 1/6W 10K OHM J"
R113	12368331T	"CARBON RESISTOR, SB 1/6W 330 OHM J"	R565	12368103T	"CARBON RESISTOR, SB 1/6W 10K OHM J"
R116	12368101T	"CARBON RESISTOR, SB 1/6W 100 OHM J"	R571	12368101T	"CARBON RESISTOR, SB 1/6W 100 OHM J"
R118	12368563T	"CARBON RESISTOR, SB 1/6W 56K OHM J"	R572	12368222T	"CARBON RESISTOR, SB 1/6W 2.2K OHM J"
R119	12368123T	"CARBON RESISTOR, SB 1/6W 12K OHM J"	R573	12368152T	"CARBON RESISTOR, SB 1/6W 1.5K OHM J"
R121	12368472T	"CARBON RESISTOR, SB 1/6W 4.7K OHM J"	R574	12368564T	"CARBON RESISTOR, SB 1/6W 560K OHM J"
R122	12368681T	"CARBON RESISTOR, SB 1/6W 680 OHM J"	R575	12368471T	"CARBON RESISTOR, SB 1/6W 470 OHM J"
R162	12368472T	"CARBON RESISTOR, SB 1/6W 4.7K OHM J"	R576	12368683T	"CARBON RESISTOR, SB 1/6W 68K OHM J"
R163	12368270T	"CARBON RESISTOR, SB 1/6W 27 OHM J"	R577	12368123T	"CARBON RESISTOR, SB 1/6W 12K OHM J"
R164	12368122T	"CARBON RESISTOR, SB 1/6W 1.2K OHM J"	R578	12368392T	"CARBON RESISTOR, SB 1/6W 3.9K OHM J"
R165	12368331T	"CARBON RESISTOR, SB 1/6W 330 OHM J"	R579	12368392T	"CARBON RESISTOR, SB 1/6W 3.9K OHM J"
R167	12368221T	"CARBON RESISTOR, SB 1/6W 220 OHM J"	R580	12368223T	"CARBON RESISTOR, SB 1/6W 22K OHM J"
R181	12368221T	"CARBON RESISTOR, SB 1/6W 220 OHM J"	R651	12368431T	"CARBON RESISTOR, SB 1/6W 430 OHM J"
R201	12368470T	"CARBON RESISTOR, SB 1/6W 47 OHM J"	R652	12368431T	"CARBON RESISTOR, SB 1/6W 430 OHM J"
R202	12368201T	"CARBON RESISTOR, SB 1/6W 200 OHM J"	R653	12368911T	"CARBON RESISTOR, SB 1/6W 910 OHM J"
R203	12368101T	"CARBON RESISTOR, SB 1/6W 100 OHM J"	R654	12368911T	"CARBON RESISTOR, SB 1/6W 910 OHM J"
R204	12368161T	"CARBON RESISTOR, SB 1/6W 160 OHM J"	R657	12368123T	"CARBON RESISTOR, SB 1/6W 12K OHM J"
R307	12371562T	"METAL RESISTOR, RN 1/2W 5.6K F"	R658	12368102T	"CARBON RESISTOR, SB 1/6W 1K OHM J"
R311	12328562T	"METAL RESISTOR, K 1/6W 5.6K OHM F"	R660	12368472T	"CARBON RESISTOR, SB 1/6W 4.7K OHM J"
R312	12328223T	"METAL RESISTOR, K 1/6W 22K OHM F"	R661	12368222T	"CARBON RESISTOR, SB 1/6W 2.2K OHM J"
R313	12328203T	"METAL RESISTOR, K 1/6W 20K OHM F"	R662	12368153T	"CARBON RESISTOR, SB 1/6W 15K OHM J"
R314	12328392T	"METAL RESISTOR, K 1/6W 3.9K OHM F"	R666	12321331T	"OXIDE RESISTOR, B 1/2W 330 OHM J"

# ELECTRICAL PARTS LIST

P / No.	ITEM No.	ITEM NAME	P / No.	ITEM No.	ITEM NAME
R667	12321331T	"OXIDE RESISTOR, B 1/2W 330 OHM J"	RV27	12368102T	"CARBON RESISTOR, SB 1/6W 1K OHM J"
R803	12919471T	"CARBON RESISTOR, SB 1/2W 470 OHM J"	RV28	12368102T	"CARBON RESISTOR, SB 1/6W 1K OHM J"
R804	12919689T	"CARBON RESISTOR, SB 1/2W 6.8 OHM J"	RV29	12368224T	"CARBON RESISTOR, SB 1/6W 220K OHM J"
R805	12919821T	"CARBON RESISTOR, SB 1/2W 820 OHM J"	RV51	12368471T	"CARBON RESISTOR, SB 1/6W 470 OHM J"
R807	12919474T	"CARBON RESISTOR, SB 1/2W 470K OHM J"	RV52	12368470T	"CARBON RESISTOR, SB 1/6W 47 OHM J"
R808	12919474T	"CARBON RESISTOR, SB 1/2W 470K OHM J"	RV53	12368750T	"CARBON RESISTOR, SB 1/6W 75 OHM J"
R811	12371433T	"METAL RESISTOR, RN 1/2W 43K F"	RV54	12368102T	"CARBON RESISTOR, SB 1/6W 1K OHM J"
R812	12371252T	"METAL RESISTOR, RN 1/2W 2.5K F"	U111	C1893326B	"PCB, MAIN PTNM04 (29KN)FR1=1Y"
R813	12368304T	"CARBON RESISTOR, SB 1/6W 300K OHM J"	C009	12692103T	"PLASTIC CAPACITOR, M 50V 0.01MF J"
R814	12371152T	"METAL RESISTOR, RN 1/2W 1.5K F"	C014	12692272T	"PLASTIC CAPACITOR, M 50V 2700PF J"
R815	12371102T	"METAL RESISTOR, RN 1/2W 1K F"	C017	12692103T	"PLASTIC CAPACITOR, M 50V 0.01MF J"
R816	12371753T	"METAL RESISTOR, RN 1/2W 75K F"	C025	12692103T	"PLASTIC CAPACITOR, M 50V 0.01MF J"
R821	12368223T	"CARBON RESISTOR, SB 1/6W 22K OHM J"	C047	12693222T	"PLASTIC CAPACITOR, M 100V 2200PF J"
R822	12919100T	"CARBON RESISTOR, SB 1/2W 10 OHM J"	C101	12797100T	"CHEMICON, 50V 10MF 85C 5*11"
R831	12368472T	"CARBON RESISTOR, SB 1/6W 4.7K OHM J"	C103	12793471T	"CHEMICON, 10V 470MF 85C 8*12"
R832	12919102T	"CARBON RESISTOR, SB 1/2W 1K OHM J"	C108	12794221T	"CHEMICON, 16V 220MF 85C 8*12"
R833	12919123T	"CARBON RESISTOR, SB 1/2W 12K OHM J"	C110	12794470T	"CHEMICON, 16V 47MF 85C 5*11"
R855	12919561T	"CARBON RESISTOR, SB 1/2W 560 OHM J"	C111	12797100T	"CHEMICON, 50V 10MF 85C 5*11"
R862	12368473T	"CARBON RESISTOR, SB 1/6W 47K OHM J"	C117	12797479T	"CHEMICON, 50V 4.7MF 85C 5*11"
R863	12368102T	"CARBON RESISTOR, SB 1/6W 1K OHM J"	C182	12797479T	"CHEMICON, 50V 4.7MF 85C 5*11"
R864	12368471T	"CARBON RESISTOR, SB 1/6W 470 OHM J"	C183	12797479T	"CHEMICON, 50V 4.7MF 85C 5*11"
R865	12368472T	"CARBON RESISTOR, SB 1/6W 4.7K OHM J"	C184	12797479T	"CHEMICON, 50V 4.7MF 85C 5*11"
R872	12368821T	"CARBON RESISTOR, SB 1/6W 820 OHM J"	C185	12353560T	"CERAMIC CAPACITOR, CH 50V 56PF J"
R890	12005825T	"SURGE RES(VDE), 1/2W 8.2M OHM"	C186	12353470T	"CERAMIC CAPACITOR, CH 50V 47PF J"
R892	12005335T	"R-SURGE, PRC 1/2W 3.3M OHM"	C201	12795470T	"CHEMICON, 25V 47MF 85C 5*11"
RC01	12368562T	"CARBON RESISTOR, SB 1/6W 5.6K OHM J"	C311	12794220T	"CHEMICON, 16V 22MF 85C 5*11"
RC02	12368752T	"CARBON RESISTOR, SB 1/6W 7.5K OHM J"	C312	12693102T	"PLASTIC CAPACITOR, M 100V 1000PF J"
RC03	12368113T	"CARBON RESISTOR, SB 1/6W 11K OHM J"	C313	12693102T	"PLASTIC CAPACITOR, M 100V 1000PF J"
RC04	12368183T	"CARBON RESISTOR, SB 1/6W 18K OHM J"	C314	12797100T	"CHEMICON, 50V 10MF 85C 5*11"
RC05	12368363T	"CARBON RESISTOR, SB 1/6W 36K OHM J"	C320	12693104T	"PLASTIC CAPACITOR, M 100V 0.1MF J"
RC06	12368114T	"CARBON RESISTOR, SB 1/6W 110K OHM J"	C331	12796101T	"CHEMICON, 35V 100MF 85C 8*12"
RE01	12368112T	"CARBON RESISTOR, SB 1/6W 1.1K OHM J"	C361	12795101T	"CHEMICON, 25V 100MF 85C 6.3*11"
RE02	12368271T	"CARBON RESISTOR, SB 1/6W 270 OHM J"	C363	12693104T	"PLASTIC CAPACITOR, M 100V 0.1MF J"
RE03	12368363T	"CARBON RESISTOR, SB 1/6W 36K OHM J"	C385	12214681T	"CERAMIC CAPACITOR, B 500V 680PF K"
RE04	12368822T	"CARBON RESISTOR, SB 1/6W 8.2K OHM J"	C386	12795471T	"CHEMICON, 25V 470MF 85C 10*16"
RE05	12368821T	"CARBON RESISTOR, SB 1/6W 820 OHM J"	C387	12795101T	"CHEMICON, 25V 100MF 85C 6.3*11"
RE06	12368753T	"CARBON RESISTOR, SB 1/6W 75K OHM J"	C388	12795101T	"CHEMICON, 25V 100MF 85C 6.3*11"
RE07	12368271T	"CARBON RESISTOR, SB 1/6W 270 OHM J"	C407	12693222T	"PLASTIC CAPACITOR, M 100V 2200PF J"
RE08	12368153T	"CARBON RESISTOR, SB 1/6W 15K OHM J"	C408	12436331T	"CERAMIC CAPACITOR, SL 50V 330PF J"
RE09	12368242T	"CARBON RESISTOR, SB 1/6W 2.4K OHM J"	C412	12692103T	"PLASTIC CAPACITOR, M 50V 0.01MF J"
RE11	12368104T	"CARBON RESISTOR, SB 1/6W 100K OHM J"	C413	12797330T	"CHEMICON, 50V 33MF 85C 6.3*11"
RE12	12368153T	"CARBON RESISTOR, SB 1/6W 15K OHM J"	C505	12692103T	"PLASTIC CAPACITOR, M 50V 0.01MF J"
RE13	12368564T	"CARBON RESISTOR, SB 1/6W 560K OHM J"	C506	12353220T	"CERAMIC CAPACITOR, CH 50V 22PF J"
RF01	12328183T	"METAL RESISTOR, K 1/6W 18K OHM F"	C507	12353220T	"CERAMIC CAPACITOR, CH 50V 22PF J"
RF02	12328023T	"METAL RESISTOR, K 1/6W 10.2K OHM F"	C509	12797100T	"CHEMICON, 50V 10MF 85C 5*11"
RF03	12328103T	"METAL RESISTOR, K 1/6W 10K OHM F"	C514	12797478T	"CHEMICON, 50V 0.47MF 85C 5*11"
RN01	12368101T	"CARBON RESISTOR, SB 1/6W 100 OHM J"	C515	12797478T	"CHEMICON, 50V 0.47MF 85C 5*11"
RN02	12368101T	"CARBON RESISTOR, SB 1/6W 100 OHM J"	C517	12794101T	"CHEMICON, 16V 100MF 85C 6.3*11"
RN05	12368103T	"CARBON RESISTOR, SB 1/6W 10K OHM J"	C519	12797109T	"CHEMICON, 50V 1MF 85C 5*11"
RN06	12368102T	"CARBON RESISTOR, SB 1/6W 1K OHM J"	C520	12797109T	"CHEMICON, 50V 1MF 85C 5*11"
RN07	12368102T	"CARBON RESISTOR, SB 1/6W 1K OHM J"	C521	12797109T	"CHEMICON, 50V 1MF 85C 5*11"
RN08	12368102T	"CARBON RESISTOR, SB 1/6W 1K OHM J"	C525	12794470T	"CHEMICON, 16V 47MF 85C 5*11"
RN09	12368102T	"CARBON RESISTOR, SB 1/6W 1K OHM J"	C526	12797478T	"CHEMICON, 50V 0.47MF 85C 5*11"
RN10	12368102T	"CARBON RESISTOR, SB 1/6W 1K OHM J"	C527	12795220T	"CHEMICON, 25V 22MF 85C 5*11"
RN11	12368102T	"CARBON RESISTOR, SB 1/6W 1K OHM J"	C529	12692103T	"PLASTIC CAPACITOR, M 50V 0.01MF J"
RR01	12368470T	"CARBON RESISTOR, SB 1/6W 47 OHM J"	C534	12797100T	"CHEMICON, 50V 10MF 85C 5*11"
RV01	12368104T	"CARBON RESISTOR, SB 1/6W 100K OHM J"	C535	12797478T	"CHEMICON, 50V 0.47MF 85C 5*11"
RV02	12368104T	"CARBON RESISTOR, SB 1/6W 100K OHM J"	C536	12794470T	"CHEMICON, 16V 47MF 85C 5*11"
RV03	12368750T	"CARBON RESISTOR, SB 1/6W 75 OHM J"	C537	12797109T	"CHEMICON, 50V 1MF 85C 5*11"
RV04	12368104T	"CARBON RESISTOR, SB 1/6W 100K OHM J"	C539	12797109T	"CHEMICON, 50V 1MF 85C 5*11"
RV05	12368104T	"CARBON RESISTOR, SB 1/6W 100K OHM J"	C544	12794101T	"CHEMICON, 16V 100MF 85C 6.3*11"
RV09	12368750T	"CARBON RESISTOR, SB 1/6W 75 OHM J"	C546	12797109T	"CHEMICON, 50V 1MF 85C 5*11"
RV11	12368750T	"CARBON RESISTOR, SB 1/6W 75 OHM J"	C547	12797228T	"CHEMICON, 50V 0.22MF 85C 5*11"
RV12	12368750T	"CARBON RESISTOR, SB 1/6W 75 OHM J"	C549	12794101T	"CHEMICON, 16V 100MF 85C 6.3*11"
RV13	12368750T	"CARBON RESISTOR, SB 1/6W 75 OHM J"	C550	12353470T	"CERAMIC CAPACITOR, CH 50V 47PF J"
RV21	12368333T	"CARBON RESISTOR, SB 1/6W 33K OHM J"	C551	12353470T	"CERAMIC CAPACITOR, CH 50V 47PF J"
RV22	12368103T	"CARBON RESISTOR, SB 1/6W 10K OHM J"	C552	12353470T	"CERAMIC CAPACITOR, CH 50V 47PF J"
RV25	12368224T	"CARBON RESISTOR, SB 1/6W 220K OHM J"	C555	12794101T	"CHEMICON, 16V 100MF 85C 6.3*11"
RV26	12368820T	"CARBON RESISTOR, SB 1/6W 82 OHM J"	C562	12353220T	"CERAMIC CAPACITOR, CH 50V 22PF J"

# ELECTRICAL PARTS LIST

P / No.	ITEM No.	ITEM NAME	P / No.	ITEM No.	ITEM NAME
C564	12797228T	"CHEMICON, 50V 0.22MF 85C 5*11"	Q851	11114281T	"TR, KTC2235-Y (KTC1027-Y)"
C571	12797109T	"CHEMICON, 50V 1MF 85C 5*11"	Q861	11114281T	"TR, KTC2235-Y (KTC1027-Y)"
C573	12797100T	"CHEMICON, 50V 10MF 85C 5*11"	Q862	11114049T	"TR, KTA1015-Y (KTA1266-Y)"
C575	12692272T	"PLASTIC CAPACITOR, M 50V 2700PF J"	Q863	11114056T	"TR, KTC1815-Y (KTC3198-Y)"
C651	12692224T	"PLASTIC CAPACITOR, M 50V 0.22MF J"	Q871	11114281T	"TR, KTC2235-Y (KTC1027-Y)"
C652	12692224T	"PLASTIC CAPACITOR, M 50V 0.22MF J"	QE01	11114049T	"TR, KTA1015-Y (KTA1266-Y)"
C653	12692332T	"PLASTIC CAPACITOR, M 50V 3300PF J"	QE02	11114049T	"TR, KTA1015-Y (KTA1266-Y)"
C654	12692332T	"PLASTIC CAPACITOR, M 50V 3300PF J"	QN03	11119699T	"IC, VOLTAGE DETECTOR KIA7042AP"
C656	12797220T	"CHEMICON, 50V 22MF 85C 5*11"	QV21	11114056T	"TR, KTC1815-Y (KTC3198-Y)"
C657	12692104T	"PLASTIC CAPACITOR, M 50V 0.1MF J"	QV51	11114056T	"TR, KTC1815-Y (KTC3198-Y)"
C666	12795470T	"CHEMICON, 25V 47MF 85C 5*11"	C406	12700479T	"CHEMICON, 250V 4.7MF SMS,SG (10*13)"
C667	12795470T	"CHEMICON, 25V 47MF 85C 5*11"	C411	12094213T	"CERA-CAPA, DG3DHR681K825 (2KV680)"
C804	12797330T	"CHEMICON, 50V 33MF 85C 6.3*11"	C441	12700100T	"CHEMICON, 250V 10MF SMS,SG (10*20)"
C807	12693222T	"PLASTIC CAPACITOR, M 100V 2200PF J"	C491	12095062T	"P/ CAP, 250V 0.1MF J TNU"
C809	12693223T	"PLASTIC CAPACITOR, M 100V 0.022MF J"	C658	12795102T	"CHEMICON, 25V 1000MF 85C 13*20"
C811	12214681T	"CERAMIC CAPACITOR, B 500V 680PF K"	C802	12094169T	"CERA-CAPA, AC250V E 2200PF M AA"
C818	12693102T	"PLASTIC CAPACITOR, M 100V 1000PF J"	C803	12094169T	"CERA-CAPA, AC250V E 2200PF M AA"
C823	12214681T	"CERAMIC CAPACITOR, B 500V 680PF K"	C821	12094213T	"CERA-CAPA, DG3DHR681K825 (2KV680)"
C825	12214681T	"CERAMIC CAPACITOR, B 500V 680PF K"	C824	12796221T	"CHEMICON, 35V 220MF 85C 10*13"
C827	12214681T	"CERAMIC CAPACITOR, B 500V 680PF K"	C826	12087017T	"CHEMICON, 25V 2200UF SMS(12.5*25)"
C851	12214681T	"CERAMIC CAPACITOR, B 500V 680PF K"	C828	12795102T	"CHEMICON, 25V 1000MF 85C 13*20"
C853	12797100T	"CHEMICON, 50V 10MF 85C 5*11"	C852	12795102T	"CHEMICON, 25V 1000MF 85C 13*20"
C854	12797100T	"CHEMICON, 50V 10MF 85C 5*11"	F801	11144210T	"FUSE, 250V 5A SR-5"
C855	12797100T	"CHEMICON, 50V 10MF 85C 5*11"	L822	11103049T	"B-CORE, ZBF503M-00TA-(K)-02"
C856	12795470T	"CHEMICON, 25V 47MF 85C 5*11"	L822	C1103096T	"B-CORE, RH03506B27-Y7"
C861	12797100T	"CHEMICON, 50V 10MF 85C 5*11"	L826	11103049T	"B-CORE, ZBF503M-00TA-(K)-02"
C862	12795470T	"CHEMICON, 25V 47MF 85C 5*11"	L826	C1103096T	"B-CORE, RH03506B27-Y7"
C871	12795470T	"CHEMICON, 25V 47MF 85C 5*11"	SW01	11145228BT	"SWITCH, TACT KPT-1115VM(TAP)"
C872	12795470T	"CHEMICON, 25V 47MF 85C 5*11"	SW02	11145228BT	"SWITCH, TACT KPT-1115VM(TAP)"
CE01	12693473T	"PLASTIC CAPACITOR, M 100V 0.047MF J"	SW03	11145228BT	"SWITCH, TACT KPT-1115VM(TAP)"
CE02	12692104T	"PLASTIC CAPACITOR, M 50V 0.1MF J"	SW04	11145228BT	"SWITCH, TACT KPT-1115VM(TAP)"
CF01	12797330T	"CHEMICON, 50V 33MF 85C 6.3*11"	SW05	11145228BT	"SWITCH, TACT KPT-1115VM(TAP)"
CN04	12793221T	"CHEMICON, 10V 220MF 85C 6.3*11"	SW06	11145228BT	"SWITCH, TACT KPT-1115VM(TAP)"
CN05	12692473T	"PLASTIC CAPACITOR, M 50V 0.047MF J"	X001	11153023T	"CRYSTAL, 8.000000MHZ 16PF-FD HC 20"
CN10	12693222T	"PLASTIC CAPACITOR, M 100V 2200PF J"	Z201	11107013T	"C/TRAP,TPSRA4M50C00-A0( MURATA)"
CN11	12693222T	"PLASTIC CAPACITOR, M 100V 2200PF J"	C405	12095188B	"P/ CAP, 200V 0.62MF J MPU"
CN13	12793471T	"CHEMICON, 10V 470MF 85C 8*12"	C414	12834223B	"P/ CAP, T 400V 0.022MF K PFU"
CN14	12797100T	"CHEMICON, 50V 10MF 85C 5*11"	C415	12095077B	"P/ CAP, T 1.6KV 4700PF J PSU"
CN15	12797339T	"CHEMICON, 50V 3.3MF 85C 5*11"	C416	12095110B	"P/ CAP, T 1.6KV 0.015MF J PSU"
CN19	12797109T	"CHEMICON, 50V 1MF 85C 5*11"	C432	12085032S	"CHEMICON, BPS NP 50V 10MF (16*35.5)"
CN20	12797109T	"CHEMICON, 50V 1MF 85C 5*11"	C801	12095246C	"PLASTIC CAP,LE-224C AC275V 0.22MF K"
CN21	12797109T	"CHEMICON, 50V 1MF 85C 5*11"	C805	12086062	"CHEMICON, 400V 330MF SMH (35*30)"
CN22	12797109T	"CHEMICON, 50V 1MF 85C 5*11"	C805	C2086062	"CHEMICON, 400V 330MF SMH(35*30)"
CN23	12797109T	"CHEMICON, 50V 1MF 85C 5*11"	C806	12095050D	"P/ CAP, T 1.6KV 2200PF J PSU"
CN25	12793221T	"CHEMICON, 10V 220MF 85C 6.3*11"	C822	12709221S	"CHEMICON, 200V 220MF (18*40)"
CN29	12353060T	"CERAMIC CAPACITOR, CH 50V 6PF C"	C841	12709221S	"CHEMICON, 200V 220MF (18*40)"
CN30	12353060T	"CERAMIC CAPACITOR, CH 50V 6PF C"	C893	12095207B	"CERA-CAPA, DA2GYE222MK617 NK"
CR01	12795470T	"CHEMICON, 25V 47MF 85C 5*11"	CV41	12353220T	"CERAMIC CAPACITOR, CH 50V 22PF J"
CV22	12797479T	"CHEMICON, 50V 4.7MF 85C 5*11"	D402	11115576	"DIODE, F-RECTI RU4AM(LF-L1) SANKEN"
CV23	12797479T	"CHEMICON, 50V 4.7MF 85C 5*11"	D403	11115474	"DIODE, DAMP RU4DS LF-L1(015-206)"
CV24	12797478T	"CHEMICON, 50V 0.47MF 85C 5*11"	D801	11115780A	"DIODE-BRIDGE, TS4B05G,600V,4A"
CV51	12797100T	"CHEMICON, 50V 10MF 85C 5*11"	D821	11115540	"DIODE, RECT RU4A LF015-304"
CW32	12797479T	"CHEMICON, 50V 4.7MF 85C 5*11"	D825Z	150500500	"HEAT SINK, ASSY LA7510 29EQ"
IC83	11118219T	"IC, REGULATOR KA431LZTA (0.5%)"	D825	11115495	"DIODE, SWITCHING FMU22S"
L101	11261020T	"COIL, ELC0607RA-180K(KRF9200)"	D825A	11865602	"HEAT SINK, 20LX (45MM)"
Q001	11114049T	"TR, KTA1015-Y (KTA1266-Y)"	D825B	11032381	"SCREW, TTB 3*8 SZN"
Q161	11114066T	"TR, KTC388A-TM (KTC3197)"	D825C	11971010	"COMPOUND SILICON, YG6260"
Q201	11114056T	"TR, KTC1815-Y (KTC3198-Y)"	DL01	11113003	"LED, SLR124 RED*3 DIFF. ST-LESS"
Q401	11114225T	"TR, KTC2383-Y (KTC3228-Y)"	DL01A	11826974	LED HOLDER(3*)
Q504	11119699T	"IC, VOLTAGE DETECTOR KIA7042AP"	H001	C1121255	"TUNER, TAF5-U2F23 (NTSC CH)"
Q550	11114333T	"TR, BRT KRC1211 (KRC111M)"	IC02	11118625	"IC-EEPROM,AT24C16A-10PU-2.7 (DIP8P)"
Q551	11114333T	"TR, BRT KRC1211 (KRC111M)"	IC16	11118241	"IC,SIF DETECTOR LA7510 (SIP9) SANYO"
Q552	11114333T	"TR, BRT KRC1211 (KRC111M)"	IC21	11119722	"IC, SWITCHING NJM2235L"
Q571	11114049T	"TR, KTA1015-Y (KTA1266-Y)"	IC31Z	150500544	"HEAT SINK, ASSY LA78045 29KN300"
Q572	11114049T	"TR, KTA1015-Y (KTA1266-Y)"	IC31	11118621	"IC-VERTICAL, LA78045-E"
Q573	11114056T	"TR, KTC1815-Y (KTC3198-Y)"	IC31A	11866065	HEAT SINK
Q653	11119699T	"IC, VOLTAGE DETECTOR KIA7042AP"	IC31B	11032388	"SCREW, TTBW 3*10 SZN"
Q654	11114056T	"TR, KTC1815-Y (KTC3198-Y)"	IC31C	11971010	"COMPOUND SILICON, YG6260"
Q831	11114056T	"TR, KTC1815-Y (KTC3198-Y)"	IC51	11118684	"IC,MICOM TMPA8859 (DIP64) MASK(29GN)"

# ELECTRICAL PARTS LIST

P / No.	ITEM No.	ITEM NAME	P / No.	ITEM No.	ITEM NAME
IC62	11118436A	"IC,MSP3420G-PO-B8-V3.IC PSDIP52P"	R891	C2000096	"VARISTOR, MYG3-14K360"
IC63Z	150500549	"HEAT SINK, ASS'Y TDA7297 (IC63)"	RE20	12323129S	"OXIDE RESISTOR, B 2W 1.2 OHM J"
IC63	11118385	"IC, TDA7297 (MW15) AUDIO(10W+10W)"	SW07	11145166	"TACT SWITCH, KPT1104C"
IC63A	11866143	"HEAT SINK, 29LN (40MM)"	T401	C1224036A	"DRIVE TRANS, CKLN2022"
IC63B	11032381	"SCREW, TTB 3*8 SZN"	T461	C1226254	FBT BSC24-3931M (B/R 400 OHM)
IC63C	11971010	"COMPOUND SILICON, YG6260"	T801	C1213402	"TRANS,SMPS CKPW-1181 29EQ"
IC81Z	150500545	"HEAT SINK, ASS'Y KA5Q1265RF 29KN300"	XN01	11153217	"CRYSTAL, 18.432000MHZ 16PF-FD HC 5"
IC81	11118620	"IC-PWM CONTROLLER, KA5Q1265RFHYD-TU"	Z101	11107146	"SAW FILTER, M1958M NTSC(45.75MHZ)"
IC81A	11866104	"HEAT SINK,"	Z102	11107252	"SAW FILTER, M9260M (SIP5K) SIEMENS"
IC81B	11032382	"SCREW, TTB 3*10 SZN"	ZB01	11132045	"RX MODULE, ROM-N338KT 38KHZ"
IC81C	11971010	"COMPOUND SILICON, YG6260"	A002	150013062	"SUB, NTSC PTNZ02 29KN200"
IC82	11118022	"IC, PHOTO-COUP LTV817C CTR200-400"	A002A	150013063	"SUB, CRT PTNZ02-1 29KN200"
IC82	11118022	"IC, PHOTO-COUP LTV817C CTR200-400"	AA02R	150610824	"CRT, RHU PTNZ02-1 29KN200"
IC85Z	150500546	"HEAT SINK, ASS'Y KIA7809PI 29KN"	AA02U	150111437	"CRT, AUTO PTNZ02-1 29KN200"
IC85	11119388	"IC, REGU. 1[A] KIA7809PI(7809API)"	AA02A	150211563	"CRT, AXIAL PTNZ02-1 29KN200"
IC85A	11865602	"HEAT SINK, 20LX (45MM)"	D901	11115781T	"DIODE, HV SWITC PSS244"
IC85B	11032381	"SCREW, TTB 3*8 SZN"	D902	11115781T	"DIODE, HV SWITC PSS244"
IC85C	11971010	"COMPOUND SILICON, YG6260"	D903	11115781T	"DIODE, HV SWITC PSS244"
JV03	11163140	"JACK,PJ6037B 6P YL-RDS-WH/YL-RDS-WH"	D904	11115003T	"SILICON DIODE, 1N4004"
JV04	11163155	"SOCKET DIN, PJ6046B-01"	D905	11115635T	"ZD, MTZJ7.5B (VZ7.07-7.45) 0.5W"
JY01	11163207	"JACK, PPJ115B-01"	D907	11115781T	"DIODE, HV SWITC PSS244"
L401	11222095A	"COIL, LIN KLN-5142A 22UH (DR 14*15)"	D908	11115781T	"DIODE, HV SWITC PSS244"
L402	C1251076	"COIL, CHOKE CKRF-G056 (610UH)"	D909	11115781T	"DIODE, HV SWITC PSS244"
L801	C1211041	"COIL, LINEFILTER CDMF-2814B"	EL91	11061303	"EYELET, HTR 2.80*2.9 SNI"
L823	C1251065	"COIL, CHOKE CKRF-G049(100UH)"	EL92	11061303	"EYELET, HTR 2.80*2.9 SNI"
N101	11961024	"SOLDER WIRE, ENERGIZED 63SN 1.2MM"	EL93	11061303	"EYELET, HTR 2.80*2.9 SNI"
N102	11961025	"SOLDER WIRE, 63SN 3.0MM"	EL94	11061303	"EYELET, HTR 2.80*2.9 SNI"
N103	11961044	"SOLVENT, IM-1000(IPA4520)"	J901	11183004	"PLATING WIRE, 0.6MM"
N104	11961042	"FLUX, DF-98TV"	J902	11183004	"PLATING WIRE, 0.6MM"
NT801	12000092	NTC KL13L4R7 (4.7OHM)	L902	11103041T	"B-CORE, BF40 BTL3.5*7B-AG(0.62X63)"
P401	11164637	"PLUG, 4P SP-8064"	L902	C1103095T	"B-CORE, RH03506ST-B"
P501	11164123	"PLUG, 4P 5267-04AX"	L903	11103041T	"B-CORE, BF40 BTL3.5*7B-AG(0.62X63)"
P502	11164124	"PLUG, 5P 5267-05AX"	L903	C1103095T	"B-CORE, RH03506ST-B"
P661	11164121	"PLUG, 2P 5267-02AX"	N002A	11965057	"TAPE, YW-5006 6.2MM*2000M ROLL"
P662	11164122	"PLUG, 3P 5267-03AX"	N002B	11965058	"TAPE, TESAKREPP-4387 6.0MM*2000M"
P663	11164126	"PLUG, 7P 5267-07AX"	R901	12919471T	"CARBON RESISTOR, SB 1/2W 470 OHM J"
P801	11164034	"PLUG, 2P LARGE 5289-2A 7.5MM"	R902	12919471T	"CARBON RESISTOR, SB 1/2W 470 OHM J"
P802	11164595	"PLUG, 2P YPW500-2"	R903	12919471T	"CARBON RESISTOR, SB 1/2W 470 OHM J"
PF01	11164124	"PLUG, 5P 5267-05AX"	R904	12368102T	"CARBON RESISTOR, SB 1/6W 1K OHM J"
PV01	11164124	"PLUG, 5P 5267-05AX"	R905	12368102T	"CARBON RESISTOR, SB 1/6W 1K OHM J"
Q404Z	150500550	"HEAT SINK, ASS'Y FJAF6810TU 29KN"	R906	12368102T	"CARBON RESISTOR, SB 1/6W 1K OHM J"
Q404	11114666	"TR, FJAF6810TU"	R907	12368681T	"CARBON RESISTOR, SB 1/6W 680 OHM J"
Q404A	11865598	"HEAT SINK, 29AD2 (70MM)"	R908	12368681T	"CARBON RESISTOR, SB 1/6W 680 OHM J"
Q404B	11032382	"SCREW, TTB 3*10 SZN"	R909	12368681T	"CARBON RESISTOR, SB 1/6W 680 OHM J"
Q404C	11971010	"COMPOUND SILICON, YG6260"	R912	12919475T	"CARBON RESISTOR, SB 1/2W 4.7M OHM J"
QE03Z	150500543	"HEAT SINK, ASS'Y KTD2059 29KN300"	R915	12368102T	"CARBON RESISTOR, SB 1/6W 1K OHM J"
QE03	11114520	"TR, KTD2059-Y"	U112	C1893327D	"PCB, SUB PTNZ02 (29KN)FR1=xY"
QE03A	11865599	"HEAT SINK, ""E"" 29AD2"	L901	11261020T	"COIL, ELC0607RA-180K(KRF9200)"
QE03B	11032381	"SCREW, TTB 3*8 SZN"	SG901	11140027T	"SPARK GAP, 1.5KV SSG-152-A1"
QE03C	11971010	"COMPOUND SILICON, YG6260"	SG901	C1140027T	"SPARK GAP, 1.5KV 0.75PF"
R308	12323109S	"OXIDE RESISTOR, B 2W 1 OHM J"	SG902	11140027T	"SPARK GAP, 1.5KV SSG-152-A1"
R364	12323391S	"OXIDE RESISTOR, B 2W 390 OHM J"	SG902	C1140027T	"SPARK GAP, 1.5KV 0.75PF"
R365	12323391S	"OXIDE RESISTOR, B 2W 390 OHM J"	SG903	11140027T	"SPARK GAP, 1.5KV SSG-152-A1"
R407	12323153S	"OXIDE RESISTOR, B 2W 15K OHM J"	SG903	C1140027T	"SPARK GAP, 1.5KV 0.75PF"
R433	12323129S	"OXIDE RESISTOR, B 2W 1.2 OHM J"	SG904	11140027T	"SPARK GAP, 1.5KV SSG-152-A1"
R481	12323183S	"OXIDE RESISTOR, B 2W 18K OHM J"	SG904	C1140027T	"SPARK GAP, 1.5KV 0.75PF"
R482	12323183S	"OXIDE RESISTOR, B 2W 18K OHM J"	SG905	11140027T	"SPARK GAP, 1.5KV SSG-152-A1"
R493	12323473S	"R-METAL OXIDE-R,RS 2W 47K OHM J"	SG905	C1140027T	"SPARK GAP, 1.5KV 0.75PF"
R659	12978168S	"PRN RESISTOR, B 2W 0.16 OHM J"	C901	12095062T	"P/ CAP, 250V 0.1MF J TNU"
R801	12323333S	"OXIDE RESISTOR, B 2W 33K OHM J"	C902	12700479T	"CHEMICON, 250V 4.7MF SMS,SG (10*13)"
R802	12323333S	"OXIDE RESISTOR, B 2W 33K OHM J"	C904	12700100T	"CHEMICON, 250V 10MF SMS,SG (10*20)"
R806	12000091A	"PTC, 290V-3P-4.5ΩJ503P61D4R5Q290"	C905	12094210T	"CERA-CAPA, DM3DYB222K725 (2KV/2200)"
R851	12323249S	"OXIDE RESISTOR, B 2W 2.4 OHM J"	IC91Z	150500547	"HEAT SINK, ASS'Y TDA6108JF 29KN"
R852	12323201S	"R-METAL OXIDE-R,RS 2W 200 OHM J"	IC91	11118401	"IC, TDA6108JF/N1 (VIDEO AMP)"
R853	12323569S	"OXIDE RESISTOR, B 2W 5.6 OHM J"	IC91A	11865708	"HEAT SINK, 14HZ (40MM)"
R854	12323479S	"OXIDE RESISTOR, B 2W 4.7 OHM J"	IC91B	11032382	"SCREW, TTB 3*10 SZN"
R861	12323220S	"OXIDE RESISTOR, B 2W 22 OHM J"	IC91C	11971010	"COMPOUND SILICON, YG6260"
R871	12323220S	"OXIDE RESISTOR, B 2W 22 OHM J"	M501	300424050D	"HARNESS, 4P 500MM (5264-5395)"
			M502	300524050B	"HARNESS, 5P 500MM (5264-5395)"

# ELECTRICAL PARTS LIST

P / No.	ITEM No.	ITEM NAME	P / No.	ITEM No.	ITEM NAME
N201	11961024	"SOLDER WIRE, ENERGIZED 63SN 1.2MM"	W662D	11037312	"SCREW, BTBW 3*12 SZN"
N202	11961025	"SOLDER WIRE, 63SN 3.0MM"	W662E	11845573A	"SPACER, (450*20*1.0T)BLK"
N203	11961044	"SOLVENT, IM-1000(IPA4520)"	W662F	11858409	"CUSHION, LT121AA"
N204	11961042	"FLUX, DF-98TV"	L901	11200066B	"COIL DEGAUSS, 29"" KSB-2188 (TDC053)"
P901	11160001	"TERMINAL, PIN R93-31"	L901	C1200066B	"COIL DEGAUSS, 29"" CSB-2188 (TDC053A)"
R910	12322279S	"OXIDE RESISTOR, B 1W 2.7 OHM J"	V901	1111248412	"CPT, 29"" LG A68QCU770 54 TINT(-200)"
V901A	11116393	"SOCKET CRT, PCS629-03D 20"" 28MM"	V901	1111249012	"CPT, 29""CH A68AKY13X08V(-200MG)FLAT"
A002B	150012951	"SUB, A/V PTNZ02-2 29KN300"	V901A	11814910	PVC SHEET(30X35X1T)
AB02A	150211311	"A/V, AXIAL PTQZ01-2 29FQ2TPT"	V901B	11035630	SCREW CORD CLAMP(L180*W4*7.5)
J651	11183004	"PLATING WIRE, 0.6MM"	V901C	11035680	SCREW CORD CLAMP(L80*W4*7.5)
JV02	11163143	"JACK, S-456B-01 3P YL-WH-RD"	V901E	C700112906	"CRT EARTH ASS'Y, 29"" FLAT"
M663	300724030C	"HARNESS, 7P 300MM (5395-5264)"	V901E	3700112906	"CRT EARTH ASS'Y, 29"" FLAT"
MV02	300524025H	"HARNESS, 5P 250MM (5264-5395)"	V901X	11962053	"SILICONE, KS-650N"
P651	11164554	"PHONE JACK, HJSJ2000-01-010(SHQ7999-"	K400	153002835	"BACK COVER SUB, ASS'Y 29GN2BU"
E001	151000884	"COMPLETE CHASSIS, 29KQ2CUP"	K411	39678036	"B/C ASSY, (HB) A/V-IN/OUT(DVDIN)29D"
B101	11826778	"PCB BRACKET, (HB-WHITE)"	K411A	11845545	SPACER (350*15*0.7T)BLK
B101A	11037312	"SCREW, BTBW 3*12 SZN"	K411B	11845546	SPACER (450*15*0.7T)BLK
B101B	23847701	"SPACER, 150*20*0.5T BLK"	K411C	11826781	"GUIDE RAIL, PCB 29"" (HB-WHITE)"
B101C	11847244	"SPACER, 80*12*1T(BLK)"	K412	11903186A	"LABEL, B/C NAME 29GN2BU"
B101D	11847963	"HEMERON, 270*10*0.5T"	K413	23950556	"LABEL, SET NUMBER(KEC)"
B101E	11845547	"SPACER, (200*10*0.5T)BLK"	K415	11035416	"SCREW, BTB 4*16 SZN"
B102B	11035312	"SCREW, BTB 3*12 SZN"	K416	11036316	"SCREW, BTBW 3*16 SBN"
B104	11845548	"SPACER, (200*40*0.5T)BLK"	K007	154002924	"PACKING MATERIAL 1SET, 29GN2BU"
B105	11962028	"SILICON BOND, X-86-EX"	K701	11928096	"CARTON BOX, 29GN2BU"
NE02	11116286	"WIRE HOLDER, DARW-50"	K701A	11902897	"LABEL, UPC 29GT2BUP"
NE03	11845001	QUICK TIE	K702	11934089	"PACKING 1SET, 29FF"
P881	11176218	"CORD AC, KKP-419C/B-286 400MM(29BD)"	K703	11941180	"LAMINATED, POLY BAG(1400*1600) 29AA"
P881	C1176218	"CORD AC, WP-202(IU1P-3098-01A)"	K704	23968001	"STAPLE, 35*19"
K001	152003074	"CABINET, 29GN2BU"	K705	23965173	"TAPE, MASKING W40"
K100	152103057	"FRONT COVER SUB, ASS'Y 29GN2BU"	V000	160010512	"VITAL S/PART'S, 29GN2BU"
K101	39618222A	"F/COVER, ASS'Y 29GT2BUP/GN2BU(S-006"	F801	11144210T	"FUSE, 250V 5A SR-5"
K101A	23965173	"TAPE, MASKING W40"	H001	C1121255	"TUNER, TAF5-U2F23 (NTSC CH)"
K101B	11826716	"KNOB, POWER 29GF"	IC02	11118625	"IC-EEPROM, AT24C16A-10PU-2.7 (DIP8P)"
K101C	11819129A	"PLATE, B/M(DIA) MICROSONIC 20""(L)"	IC31	11118621	"IC-VERTICAL, LA78045-E"
K101D	11836143	"SPRING, FOR POWER 14QN(R)"	IC51	11118684	"IC, MICOM TMPA8859 (DIP64) MASK(29GN"
K101E	11826214	"LED LENS, 21DG"	IC62	11118436A	"IC, MSP3420G-PO-B8-V3. IC PSDIP52P"
K101F	11826669	"LENS FOR SENSOR, 29GF"	IC63	11118385	"IC, TDA7297 (MW15) AUDIO(10W+10W)"
K101G	11826717	"KNOB, BLOCK 29GF"	IC81	11118620	"IC-PWM CONTROLLER, KA5Q1265RFHYD-
K101H	11037312	"SCREW, BTBW 3*12 SZN"	TU"		
K101I	11826812	"CONTROL DOOR, 29GK(S-006)"	IC85	11119388	"IC, REGU. 1[A] KIA7809PI(7809API)"
K101J	11826813	"A/V DOOR, 29GK(S-006)"	Q401	11114225T	"TR, KTC2383-Y (KTC3228-Y)"
K101K	11814830	"PLATE, CONTROL 29GF2CP"	Q404	11114666	"TR, FJAF6810TU"
K101L	11814864	"PLATE, A/V-3 29GK"	T401	C1224036A	"DRIVE TRANS, KCLN2022"
K101M	11847466	PUSH LATCH ASSEMBLY	T461	C1226254	FBT BSC24-3931M (B/R 400 OHM)
K101N	23962006	"BOND, DONG-A"	T801	C1213402	"TRANS, SMPS CKPW-1181 29EQ"
K101P	11826781	"GUIDE RAIL, PCB 29"" (HB-WHITE)"	Y222	390110688	"REMOCON, RW3410D MICROSONIC
K102	11826704	"HOLDER, PCB 29"" (ABS)"	29CQ2BU"		
K102A	11037312	"SCREW, BTBW 3*12 SZN"	Y001	154602817	"ACCESSORY 1SET, 29GN2BU"
K103	11037308	"SCREW, BTBW 3*8 SZN"	Y101Z	154701660	"OWNER'S MANUAL, ASS'Y 29GN2BU"
K104	11845611	RUBBER CUSHION (23*8*3T)	Y101	11906892	"OWNER'S MANUAL, 29GN2BU"
K106	11965114	"INSULATION TAPE, SGT-730(BK)0.25*19"	Y105	11943051	"POLY BAG, W230 H360"
K107	11858472	SHEET CUSHION - CR(60X20X3.0)	Y106	23968006	STAPLE
K109	11037312	"SCREW, BTBW 3*12 SZN"	Y222	390110688	"REMOCON, RW3410D MICROSONIC
K109A	11035420	"SCREW, BTB 4*20 SZN"	29CQ2BU"		
K201	152300240	"SPEAKER SYSTEM, SPK-2105A 29JD-L"			
M661	300225255A	"HARNESS, 2PIN 550MM (5264- )"			
W661	11151209A	"SPEAKER, SPK2105A(CS1707T90197) 8*"			
W661	C1151209A	"SPEAKER, CSPK2105A(CS1707T90197) 8*"			
W661B	11961024	"SOLDER WIRE, ENERGIZED 63SN 1.2MM"			
W661C	11826672	"SPEARK HORN, 29FF"			
W661D	11037312	"SCREW, BTBW 3*12 SZN"			
W661E	11845573A	"SPACER, (450*20*1.0T)BLK"			
W661F	11858409	"CUSHION, LT121AA"			
K202	152300239	"SPEAKER SYSTEM, SPK-2105A 29JD-R"			
M662	300325255B	"HARNESS, 3PIN 550MM (5264-"			
W662	11151209A	"SPEAKER, SPK2105A(CS1707T90197) 8*"			
W662	C1151209A	"SPEAKER, CSPK2105A(CS1707T90197) 8*"			
W662B	11961024	"SOLDER WIRE, ENERGIZED 63SN 1.2MM"			
W662C	11826672	"SPEARK HORN, 29FF"			



29"N" Chassis (NTSC)  
Part No. 11900000  
January 2006

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