

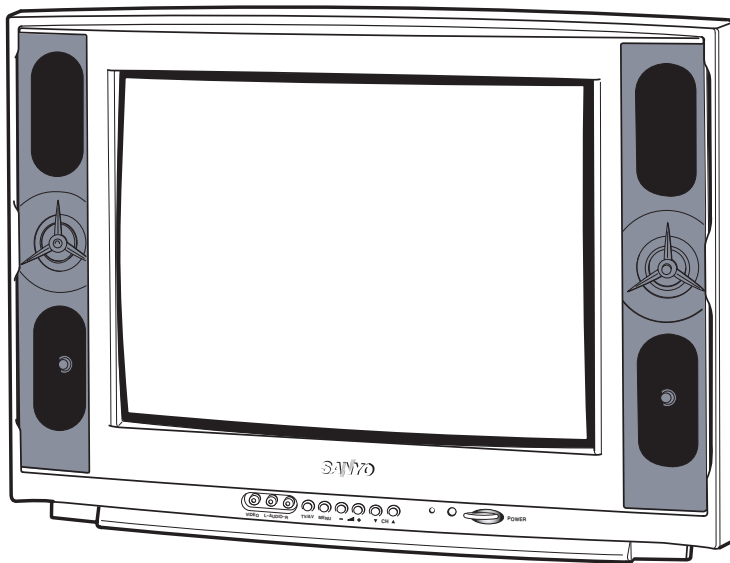
FILE NO.

SERVICE MANUAL Colour Television

**Model No. CM21LX8C
CM21LX8CA**

(Middle East)

Service Ref. No. CM21LX8C-00
CM21LX8CA-00



Specifications

| | |
|--------------------------|---|
| Power Source | AC110-240V, 50/60Hz. |
| Colour System | PAL, SECAM, NTSC4.43, NTSC, PAL 60Hz |
| Television System | B/G, D/KK', I, M/M |
| Channel Coverage | VHF: E2-E12, R1-R12, K1-K9, J1-J12, A2-A13 UHF: 21-69, A14-A69, J13-J62 CATV: S1-S41, X, Y, Z, Z+1, Z+2 |

Video IF38.0 MHz

Aerial Input Impedance . 75Ω

Power Consumption . . . 53 W

Ext. Terminals

Video inputs: Phono jack $\times 2$ (1.0Vp-p, impedance 75 Ω)
 DVD Input: Component Video Jack-Y $\times 1$ (1.0Vp-p, impedance 75 Ω)
 Component Video Jack CB/CR $\times 1$ (0.7Vp-p, impedance 75 Ω)
 Audio inputs: Phono jack (L/R) $\times 2$ (436mVrms, impedance more than 40K Ω)
 Video monitor output: Phono jack $\times 1$ (1.0Vp-p, 75 Ω)
 Audio monitor outputs: Phono jack (L/R) $\times 1$ (436mVrms, Impedance less than 600 Ω)

Speaker 6cm × 12cm × 2pcs.

Sound Output (RMS) . . . 7.5W + 7.5W

Dimensions 645 (W) × 465 (H) × 484 (D)mm

Weight approx. 20.8 Kg

Specifications subject to change without notice

Product Code: 111368014 (CM21LX8C)
111368034 (CM21LX8CA)

Original Version

Chassis Series: AC6-A

Give complete "SERVICE REF. NO." for parts order or servicing. It is shown on the rating plate at the cabinet back of the unit.

This T.V. receiver will not work properly in foreign countries where the television transmission system and power source differ from the design specifications. Refer to the specification table.

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Safety Notice




SAFETY PRECAUTIONS

- | | |
|--|--|
| 1: An isolation transformer should be connected in the power line between the receiver and the AC line when a service is performed on the primary of the converter transformer of the set. | 3: When replacing a chassis in the cabinet, always be certain that all the protective devices are installed properly, such as, control knobs, adjustment covers or shields, barriers, isolation resistor-capacitor networks etc.. Before returning any television to the customer, the service technician must be sure that it is completely safe to operate without danger of electrical shock. |
| 2: Comply with all caution and safety-related notes provided on the cabinet back, inside the cabinet, on the chassis or the picture tube. | |

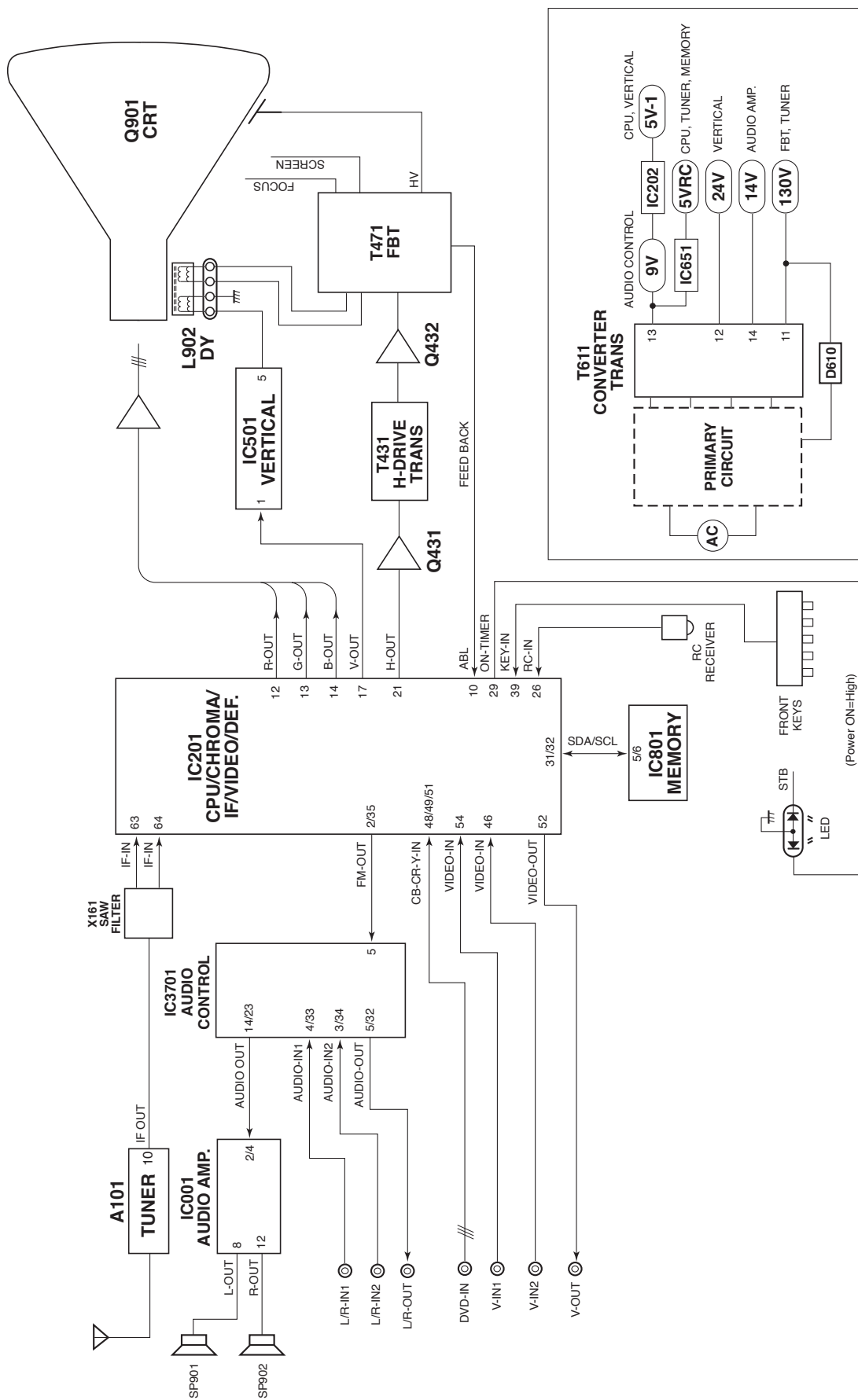
X-RADIATION PRECAUTION

The primary source of X-RADIATION in television receiver is the picture tube. The picture tube is specially constructed to limit X-RADIATION emissions. For continued X-RADIATION protection, the replacement tube must be the same type as the original including suffix letter. Excessive high voltage may produce potentially hazardous X - RADIATION. To avoid such hazards, the high voltage must be maintained within specified limit. Refer to this service manual, high voltage adjustment for specific high voltage limit. If high voltage exceeds specified limits, take necessary corrective action. Carefully follow the instructions for + B1 volt power supply adjustment, and high voltage check to maintain the high voltage within the specified limits.

PRODUCT SAFETY NOTICE

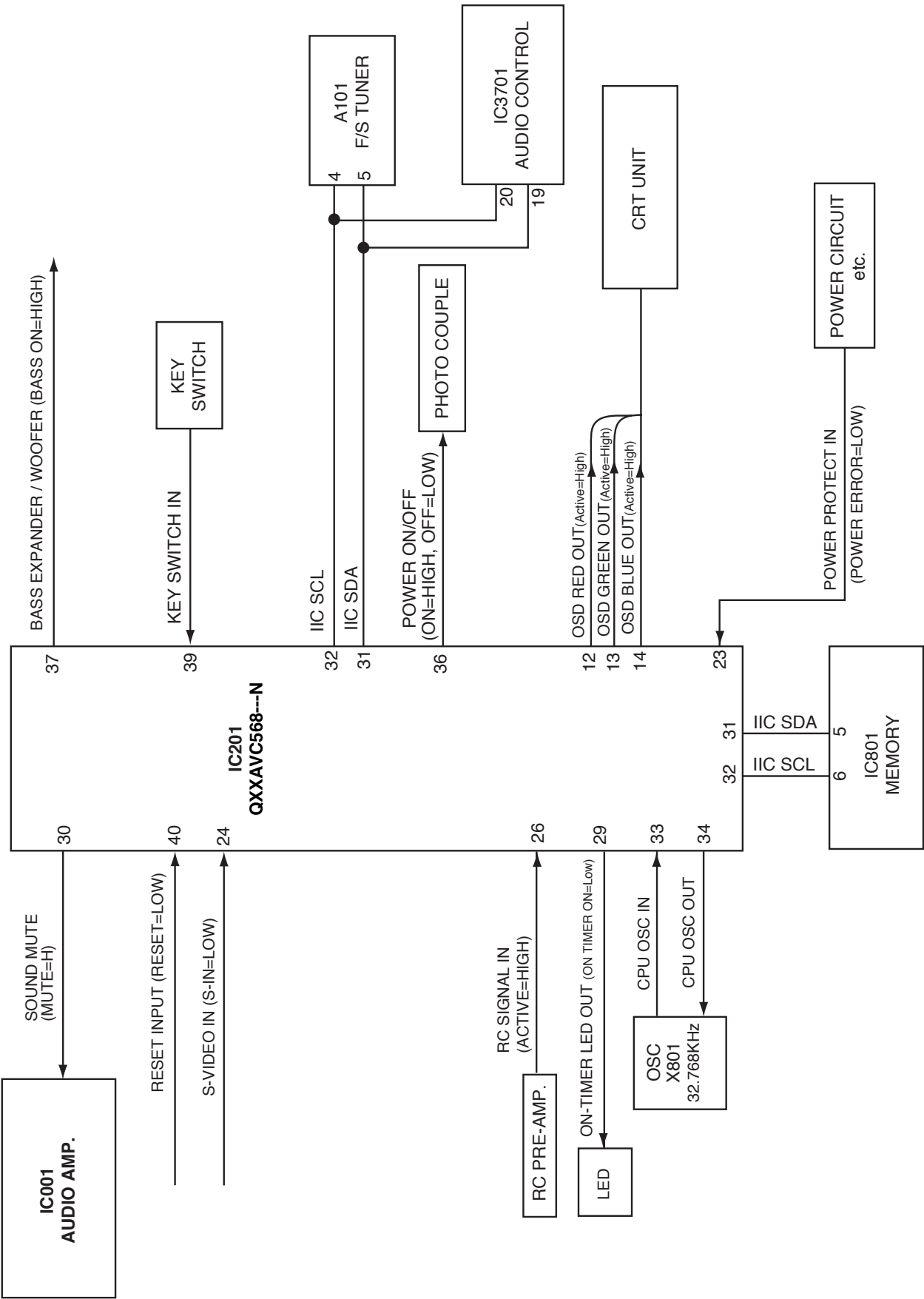
Product safety should be considered when a component replacement is made in any area of a receiver. Components indicated by mark  in the parts list and the schematic diagram designate components in which safety can be of special significance. It is particularly recommended that only parts designated on the parts list in this manual be used for component replacement designated by mark . No deviations from resistance wattage or voltage ratings may be made for replacement items designated by mark .

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Chassis Block Diagrams

System Control



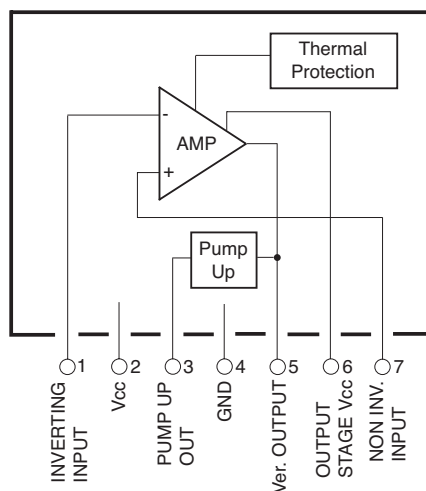
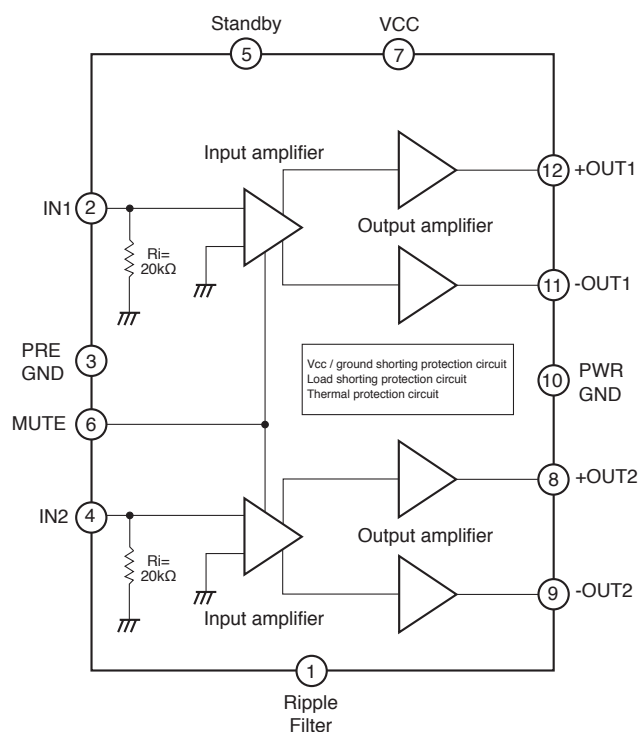
IC201 < CPU/IF/Video/Chroma/Def.> LA76938DE56S0-E



IC Block Diagrams

IC001 < Audio AMP.> LA42072-E

IC501 < Vertical Output > LA78040/LA78040N



Protection Circuit

This TV set has a built-in power supply protection circuit.

It is provided to protect the TV set in case of a power supply circuit malfunctions. When something abnormality occurs during TV reception, the TV set goes to the stand-by mode.

When an abnormality occurs during TV reception, it causes pin 23 of the Processor to go continually Low (less than 2.0V) for about 2 second. The Processor detects that this has occurred and outputs the signal from pin 36 to switch off the power supply lines.

■ Releasing the protective circuit and restoring power supply

To release the protective circuit and restore power supply, turn the power to the TV set OFF and then ON again via either the main power switch or the ON-OFF button on the remote control. This will work only if the power supply trouble was temporary. If there is permanent trouble such as a damaged circuit, power cannot be restored and the circuit will have to be repaired.

CPU Port Functions (IC201)

| Pin No. | Function Name | Function |
|---------|--------------------------|---|
| 1 | SIFout | SIF Output (NICAM) |
| 2 | IFAGC-F | IF AGC Filter |
| 3 | SIF-IN | SIF Input |
| 4 | FM-F | Filter for the DC loop of FM detector |
| 5 | FMout | FM detector output |
| 6 | Audout | Audio output |
| 7 | SND-APC-F | Snd VCO frequency is locked at 500kHz from SIF |
| 8 | IF-Vcc | DC Supply pin for IF circuit |
| 9 | VM/Ext-A-IN | External audio signal input |
| 10 | ABL | Auto Beam Limiter function |
| 11 | RGB Vcc | Vcc input pin of RGB output block function |
| 12 | R-Out | R signal output pin function |
| 13 | G-Out | G signal output pin function |
| 14 | B-Out | B signal output pin function |
| 15 | NC | Not Connected |
| 16 | Vramp | To generate a ramp waveform for the reference V-out |
| 17 | V-out | Output pin of vertical synchronization ramp signal |
| 18 | Iref | Producing reference current function |
| 19 | H-Vcc | Vcc of Horizontal deflection and BUS interface |
| 20 | AFC-F | AFC Filter pin of horizontal VCO function |
| 21 | H-out | Horizontal output pin |
| 22 | VCD-GND | Video Chroma Deflection GND |
| 23 | Power Fail IN | Power Fail Input function |
| 24 | S-TERM IN | S-Video input |
| 25 | STATUS IN | Factory PC mode status (L=ON) |
| 26 | Remote IN | Remote Control signal receiver |
| 27 | P14/PWM1 | |
| 28 | P15/PWM2 | |
| 29 | ON-TIMER LED OUT | On timer led out function |
| 30 | MUTE OUT | Mute out function |
| 31 | IIC SDA1 | IIC-Bus Data Line |
| 32 | IIC SCK1 | IIC-Bus Clock Line |
| 33 | X'tal | Crystal Oscillator |
| 34 | X'tal | Crystal Oscillator |
| 35 | 5V | Supply (5V) |
| 36 | Power Out | Power On/Off signal output |
| 37 | Bass Expander ON/OFF OUT | Bass Expander On/Off function |
| 38 | VIF M OUT /Bilingual Out | VIF M Out/Bilingual Out function |
| 39 | AD KEY IN | Key signal input |
| 40 | RESET | RESET pin function |
| 41 | FILT | FILT pin function |
| 42 | GND | Ground |
| 43 | CCD-Vcc | Vcc (5V) pin for 1H delay-line |
| 44 | FBP-IN | Fly Back Pulse Input |
| 45 | YC-C | Y/C-C Input function |
| 46 | YC-Y | Y/C-Y Input function |

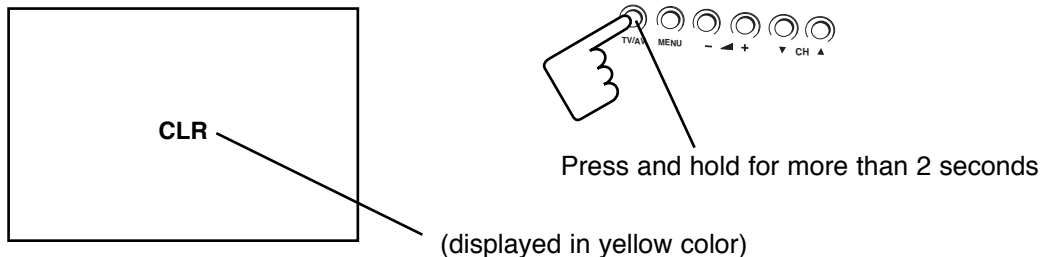
| Pin No. | Function Name | Function |
|---------|---------------|--|
| 47 | C-APC2 | AFC filter pin of chroma VCO. (3.58MHz) |
| 48 | DVD-Y | DVD-Y Input |
| 49 | CB-IN | C _B Input (for DVD) |
| 50 | X'tal | 4.43MHz Crystal |
| 51 | CR-IN | C _R Input (for DVD) |
| 52 | SVO/FSC | Selected Video Output or FSC Output |
| 53 | C-APC-F | Chroma APC Filter |
| 54 | Ext-Video-IN | Ext Video Input & Y Input in S-VHS mode |
| 55 | VCD-Vcc | Video Chroma Deflection VCC |
| 56 | Int-Video-IN | Int. Video Input & Chroma Signal Input in S-VHS mode |
| 57 | Blk-F | Black peak level detection in black stretch circuit. |
| 58 | PIF-APC-F | APC filter pin for PLL circuit function. |
| 59 | AFT | Automatic Fine Tuning Output pin |
| 60 | Video out | Video Output pin |
| 61 | RF AGC | RF AGC Output pin |
| 62 | IF-GND | Ground of IF circuit |
| 63 | VIF IN | PIF input pin |
| 64 | VIF IN | PIF input pin |

Service Adjustments with Replacing Memory IC(IC801)

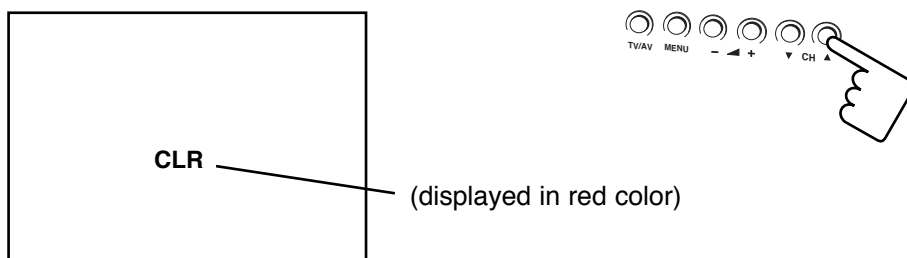
Note: The CPU (IC201) and memory IC (IC801) store the service adjustments data and controls data for each circuit. When the Memory IC (IC801) is replaced, some of the service adjustments should be readjusted to obtain the best performance. The necessary service adjustments are carried out by using the RC handset. Please set up the TV set with following steps [1] to [2].

[1] Initializing Procedure

1. Put a new memory IC.
2. Turn on the TV set.
3. Press and hold the **TV/AV Selector** on the TV set for more than 2 seconds. The following picture appears on the screen.



4. Press the **PROGRAMME UP** on the TV set while the above On-Screen Display is still on the screen. The following picture appears on the screen.



5. Switch off the TV set by pressing the **Power Switch button** on the TV set while the above On-Screen Display is still on the screen.

This completes the initialization of memory IC.

Following shows the initialized contents of memory data by this procedure.

- | | |
|---------------------|----------------|
| - Plug & play | : No executed |
| - Inhibit data | : Cancelled |
| - Ch skip data | : Cancelled |
| - Sound volume data | : 10/63 steps. |
| - Volume Lock | : OFF |
| - Colour system | : AUTO |

[2] Required Service Adjustments

Readjust the following service adjustments.

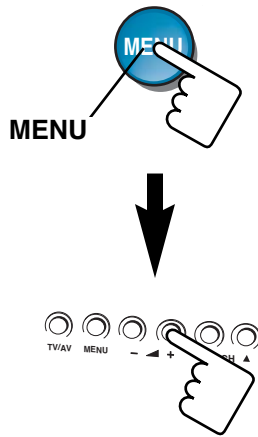
| <u>Adjustments</u> | <u>Service Mode No. & Item</u> |
|-----------------------|------------------------------------|
| RF AGC | Item 01, RF AGC |
| Horizontal centre | Item 02, H-PHA |
| Vertical Position | Item 04, V-SHIFT |
| Vertical linearity | Item 05, V-LIN |
| Vertical-S correction | Item 07, V-SCO |
| Gray scale | Item 30-33, 35-37 |

Further adjustment please refer to page 12 and 13.

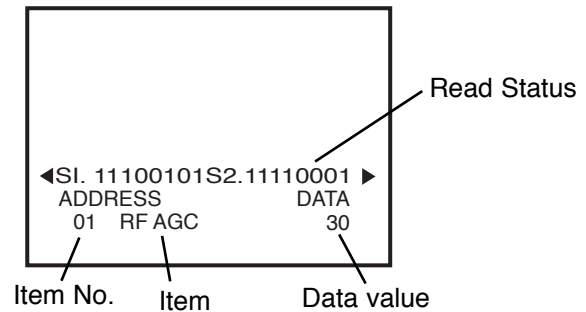
Service Adjustments with Replacing Memory IC(IC801)

[Entering to Service Mode]

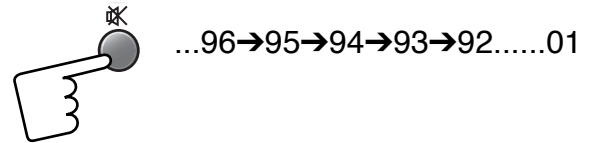
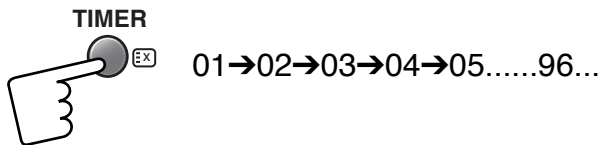
1. Press and hold the **MENU** button on the Remote Control and press the **VOLUME (+)** button on the TV set.
Following setting items appears on the screen.



Display for [RF AGC] RF AGC adjustment

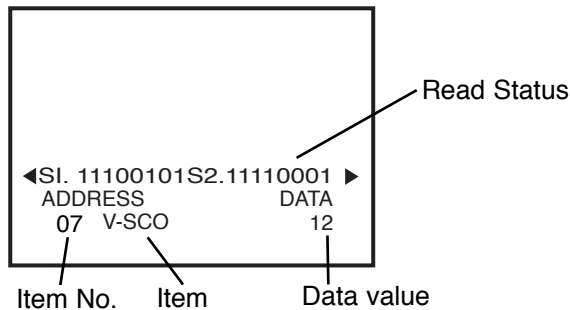


2. Select item by pressing the **TIMER** (Item No. UP) or **SOUND MUTE** (Item No. DOWN) button on the remote control handset.

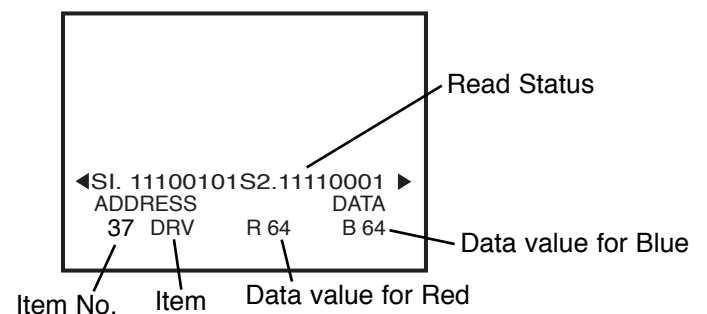


Example

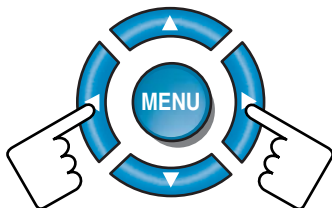
Display for [V-SCO] V-S Correction adjustment



Display for [DRV] White balance adjustment



3. Adjust data value by pressing the **VOLUME +** or **VOLUME -** button on the remote control handset.



To return to normal TV mode, press the **MENU** button on the TV set or the remote control handset.

Service Adjustments with Replacing Memory IC(IC801)

Following table shows the initial values which have been stored in the CPU ROM, and items for the service adjustments.

Service mode adjustments table in CPU ROM

| No. | ITEM | DATA RANGE | INITIAL SETUP DATA | DESCRIPTION |
|-----|---------------|------------|--------------------|--|
| 01 | RFAGC | 0~63 | 27 | RF AGC Adj. |
| 02 | H-PHA | 0~31 | 18 | H-Phase (H-Centering) Adj. (50Hz) |
| 03 | V-POS | 0~63 | 40 | V-Position (V-Centering) Adj. (50Hz)Fixed. |
| 04 | V-SHIFT | 0~15 | 6 | V-Phase Adj. (50Hz) |
| 05 | V-SIZ | 0~127 | 52 | V-Size Adj. (50Hz) |
| 06 | V-LIN | 0~31 | 15 | V-Linearity Adj. (50Hz) |
| 07 | V-SCO | 0~31 | 10 | Vertical S-Correction Adj. (50Hz) |
| 08 | V-TRANS | 0~1 | 0 | Data transmission between V Retrace |
| 09 | V-RES | 0~1 | 0 | Vertical Reset Timing. |
| 10 | H-P60 | -16~+15 | +2 | H-Phase Adj. (60Hz) difference val. |
| 11 | V-S60 | -64~+63 | +2 | V-size Adj. (60Hz) difference val. |
| 12 | V-SHIF60 | -16~+15 | -3 | V-Phase Adj. (60Hz) difference val. |
| 13 | OSDHP | 0~255 | 35 | OSD H-Position Adj. |
| 14 | OSDC | 0~7 | 5 | OSD Contrast Adj. |
| 15 | V-SCP | 0~7 | 7 | V-Size COMP Adj. |
| 16 | H-SCP | 0~7 | 7 | H-Size COMP Adj. |
| 17 | EWDC | 0~63 | 0 | H-Width / H-Size adj. |
| 18 | EWAMP | 0~63 | 0 | EW Parabola / Width ratio |
| 19 | EWTLT | 0~63 | 0 | EW Trapezium correction |
| 20 | EWTOP | 0~15 | 0 | EW Corner Top |
| 21 | EWBTM | 0~15 | 0 | EW Corner Bottom |
| 22 | EWCNRSW | 0~3 | 0 | Select control range for corner corr. |
| 23 | EWTEST | 0~7 | 0 | Select EW DAC test mode |
| 24 | EWDC60 | -32~+31 | 0 | H-Width / H-Size Adj. NTSC (60Hz) |
| 25 | EWAMP60 | -32~+31 | 0 | EW Parabola/Width ratio NTSC (60 Hz) |
| 26 | EWTLT60 | -32~+31 | 0 | EW Trapezium correction NTSC (60 Hz) |
| 27 | EWTOP60 | -16~+15 | 0 | EW Corner Top NTSC (60Hz) |
| 28 | EWBTM60 | -16~+15 | 0 | EW Corner bottom NTSC (60Hz) |
| 29 | SBIAS | 0~255 | 105 | Sub Bias Adj. |
| 30 | RBIAS | 0~255 | 0 | Red Bias Adj. |
| 31 | GBIAS | 0~255 | 0 | Green Bias Adj. |
| 32 | BBIAS | 0~255 | 0 | Blue Bias Adj. |
| 33 | RDRIV | 0~127 | 64 | Red Drive Adj. |
| 34 | GDRIV | 0~15 | 8 | Green Drive Adj. |
| 35 | BDRIV | 0~127 | 64 | Blue Drive Adj. |
| 36 | 1 Line Appear | | | White Balance Adj. |
| 37 | DRV | | | White Balance Adj. |
| 38 | B-YD | 0~31 | 24 | B-Y DC Level |
| 39 | R-YD | 0~31 | 24 | R-Y DC Level |
| 40 | B-YDN | -16~+15 | 0 | NTSC B-Y DC Level Adj. |
| 41 | R-YDN | -16~+15 | 0 | NTSC R-Y DC Level Adj. |
| 42 | SBDC | -16~+15 | +3 | SECAM B-Y DC Level Adj. |
| 43 | SRDC | -16~+15 | -3 | SECAM R-Y DC Level Adj. |
| 44 | B-YDD | -16~+15 | -14 | DVD B-Y DC Level |
| 45 | R-YDD | -16~+15 | -17 | DVD R-Y DC Level |

| No. | ITEM | DATA RANGE | INITIAL SETUP DATA | DESCRIPTION |
|-----|-----------|------------|--------------------|--|
| 46 | RGBTEMP | 0~1 | 0 | RGB Temp. SW |
| 47 | RGBTEST | 0~1 | 0 | RGB Test |
| 48 | EXTRGBC | 0~1 | 0 | External RGB Contrast |
| 49 | RGBTEST | 0~1 | 0 | RGB Test |
| 50 | HALFTONE | 0~3 | 0 | Halftone Color |
| 51 | G-YA | 0~1 | 1 | G-Y Angle |
| 52 | GYAMP | 0~15 | 3 | G-Y Amplitude Adj. |
| 53 | RBGB | 0~15 | 8 | R-Y / B-Y Gain Balance |
| 54 | RBAG | 0~15 | 8 | R-Y / B-Y Angle |
| 55 | G-YAN | 0~1 | 0 | NTSC G-Y Angle |
| 56 | GYAMPN | -8~+7 | 0 | NTSC G-Y Amplitude Adj. |
| 57 | RBGBN | -16~+15 | 0 | NTSC R-Y / B-Y Gain Balance |
| 58 | RBAGN | -16~+15 | 0 | NTSC R-Y / B-Y Angle |
| 59 | RBGBDN | -16~+15 | +10 | DVD NTSC R-Y / B-Y Gain Balance |
| 60 | RBAGDN | -16~+15 | +10 | DVD NTSC R-Y / B-Y Angle |
| 61 | VOLFIL | 0~1 | 0 | DAC Volume filter disable |
| 62 | APCOFFSET | 0~1 | 0 | Align APC Offset Current |
| 63 | IF-AGC | 0~1 | 0 | IF AGC defeat |
| 64 | OVERMOD | 0~1 | 0 | Select Over Modulation Circuit Type |
| 65 | COGV | 0~3 | 0 | Coring Gain |
| 66 | BLKS | 0~3 | 3 | Blk. Str. Start (w/ defeat) |
| 67 | BLKG | 0~3 | 3 | Blk. Str. Gain |
| 68 | BRTA | 0~1 | 0 | Brt. Abl. Def. |
| 69 | BRST | 0~1 | 0 | Mid. Stp. Def. |
| 70 | BRTH | 0~7 | 0 | Bright Abl. Threshold |
| 71 | WPL | 0~3 | 2 | White Peak Limit Op. Point (w/ defeat) |
| 72 | YGAM | 0~3 | 0 | Y Gamma Start |
| 73 | PRS | 0~3 | 0 | Pre-shoot AV Adj. |
| 74 | ORS | 0~3 | 2 | Over-shoot AV Adj. |
| 75 | DCREST | 0~3 | 0 | Select Luminance DC Restoration |
| 76 | RFCO | 0~3 | 1 | RF Coring Gain Difference |
| 77 | PRSN | 0~3 | 0 | Pre-shoot RF Adj. |
| 78 | ORSN | 0~3 | 2 | Over-shoot RF Adj. |
| 79 | CTRAP | 0~7 | 4 | Chroma Trap control |
| 80 | CBPF | 0~3 | 0 | Chroma BPF control |
| 81 | CBPFN | 0~3 | 1 | Chroma BPF control NTSC |
| 82 | CBPFAVN | 0~3 | 0 | Chroma BPF control AV NTSC |
| 83 | TINT | -16~+15 | +10 | Tint RF |
| 84 | TINT443 | -16~+15 | 0 | Tint (NTSC4.43) |
| 85 | SHRF | -32~+31 | 0 | RF Sharpness |
| 86 | SH Adj | -32~+31 | 0 | Sharpness Adjustment |
| 87 | COL TEST | 0~1 | 0 | Color Test |
| 88 | COL NTSC | -32~+31 | -10 | Color NTSC (difference from PAL) |
| 89 | CODP | -16~+15 | -6 | DVD PAL Color |
| 90 | CODN | -16~+15 | -10 | DVD NTSC Color |

Following table shows the initial values which have been stored in the CPU ROM, and items for the service adjustments.

Service mode adjustments table in CPU ROM

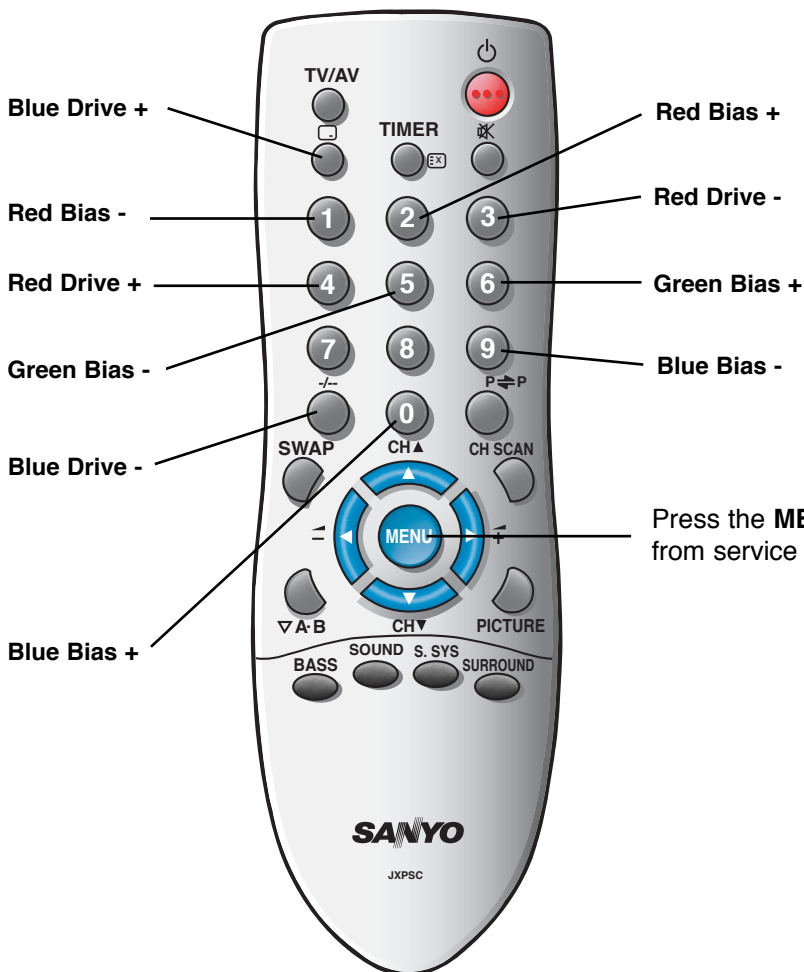
| No. | ITEM | DATA RANGE | INITIAL SETUP DATA | DESCRIPTION |
|-----|----------|------------|--------------------|---|
| 136 | SCM TEST | 0~1 | 0 | SECAM DC Level Adj. |
| 137 | BELL SW | 0~1 | 1 | Enable BELL Filter Adj. |
| 138 | EQU SW | 0~1 | 0 | Enable EQUALIZER Circuit Adj. |
| 139 | BELLADJ | 0~15 | 4 | BELL Filter Adj. |
| 140 | EQU ADJ | 0~15 | 0 | EQUALIZER Filter Adj. |
| 141 | POMT | 0~127 | 25 | Power Mute Time |
| 142 | CHMT | 0~31 | 8 | Ch Mute Time |
| 143 | SYST | 0~15 | 5 | System |
| 144 | S-STE | 0~3 | 1 | AV Stereo/Mono Option |
| 145 | VOLTBL | 0~1 | 1 | Volume Table Select |
| 146 | MPP | 0~1 | 0 | MPP Function on/off Option |
| 147 | TUNER | 0~1 | 0 | Tuner Option |
| 148 | BOOSTER | 0~1 | 0 | Booster Option (LNA Tuner) |
| 149 | OPT AVIN | 0~3 | 1 | AV1/AV2/AV3 Option |
| 150 | OPT POS | 0~1 | 1 | 255 Position Option |
| 151 | LANGUAGE | 0~1 | 1 | Language Option |
| 152 | OPT COL | 0~1 | 1 | Color System Option |
| 153 | OPT SIF | 0~1 | 1 | SIF System Option |
| 154 | OPT BASS | 0~3 | 2 | Bass Expander Option |
| 155 | OPT SURR | 0~1 | 1 | Surround Option |
| 156 | OPT BLBK | 0~1 | 1 | Blue Back Option |
| 157 | 1LINEMOD | 0~1 | 0 | Color Output Data Option at 1 Line Mode |
| 158 | OPT VM | 0~1 | 0 | Select VM Out or Ext Audio In |
| 159 | OPT ERGB | 0~1 | 1 | Select Video In or RGB In |
| 160 | AUDGAIN | 0~7 | 0 | Gain Control LV1116 |
| 161 | L/RGAIN | 0~7 | 7 | L/R Output Gain Control LV111 |
| 300 | R00 | 0~255 | 0 | ROM Correction |
| 301 | R01 | 0~255 | 0 | ROM Correction |
| 302 | R02 | 0~255 | 0 | ROM Correction |
| 303 | R03 | 0~255 | 0 | ROM Correction |
| 304 | R04 | 0~255 | 0 | ROM Correction |
| 305 | R05 | 0~255 | 0 | ROM Correction |
| 306 | R06 | 0~255 | 0 | ROM Correction |
| 307 | R07 | 0~255 | 0 | ROM Correction |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| 375 | R75 | 0~255 | 0 | ROM Correction |
| 376 | R76 | 0~255 | 0 | ROM Correction |
| 377 | R77 | 0~255 | 0 | ROM Correction |

Service Mode Adjustments

Items 30-33, 35-37 GREY SCALE

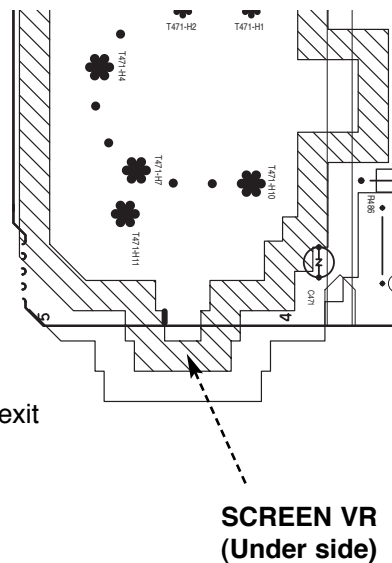
- (1) Receive a monochrome circular pattern.
- (2) Set the brightness and colour to normal, contrast to maximum.
- (3) Enter to the service mode.
- (4) Select No. 30 RBIAS (Red Bias), No. 31 GBIAS (Green Bias), and No. 32 BBIAS (Blue Bias) and set each data to 0 by pressing the VOLUME + or - key.
- (5) Select No. 33 RDRIV (Red Drive) and No. 35 BDRIV (Blue Drive) and set each data to 64 by pressing the VOLUME + or - key.
- (6) Turn Screen Control on the FBT (T471) to minimum (fully counter-clock-wise).
- (7) Select No. 36 (1-line appear).
- (8) Advance Screen Control clockwise to obtain just visible one colour line. If line does not appear, place this control to maximum (fully clockwise).
- (9) Raise each Bias Level with 1, 2, 5, 6, 9 and 0 keys to obtain just visible white line.
- (10) Select No. 37 DRV (Drive Adjustments).
- (11) Adjust Red and Blue Drive Levels alternately with 3, 4, -/-- or RECALL key to produce normal black and white picture in highlight areas.
- (12) Check for proper grayscale at all brightness levels. To turn off the TV Service Menu display, press the MENU key.

Note: If the Grayscale adjustment is made after picture tube replacement, check the High Voltage



Press the **MENU** button to exit from service mode.

MAIN BOARD



Service Mode Adjustments

Following adjustments should be carried out when the memory IC is replaced. How to enter the service mode and adjust values, please refer to "Entering to Service mode" on page 9.

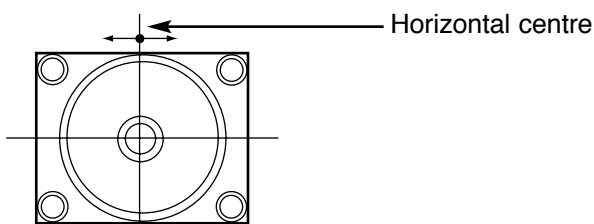
Item 01 [RF AGC] AGC

NOTE: Do not attempt this adjustment with weak signal.

- (1) Tune the receiver to most clearest (or strongest) VHF station in your area. Set the brightness and contrast controls to maximum. Set the colour control to minimum.
- (2) Select [RF AGC] in the service mode.
- (3) Change value until the snow noise just disappears.
- (4) Exit from service mode.

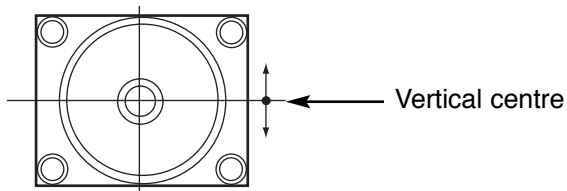
Item 02 [H-PHA] HORIZONTAL CENTRE

- (1) Receive a monochrome circular pattern.
- (2) Set the brightness and contrast to normal.
- (3) Select [H-PHA] in the service mode.
- (4) Change value to be optimum horizontal centre position.
- (5) Exit from service mode.



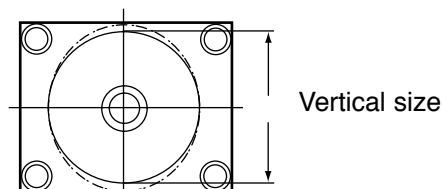
Item 04 [V-SHIFT] VERTICAL CENTRE

- (1) Receive a monochrome circular pattern.
- (2) Set the brightness and contrast to normal.
- (3) Select [V-POS] in the service mode.
- (4) Change value to be optimum vertical centre position.
- (5) Exit from service mode.



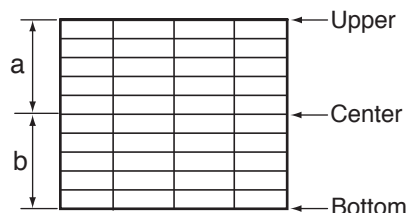
Item 05 [V-SIZ] VERTICAL SIZE

- (1) Receive a monochrome circular pattern..
- (2) Set the brightness and contrast to maximum.
- (3) Select [V-SIZ] in the service mode.
- (4) Change value to be optimum vertical size.
- (5) Exit from service mode.



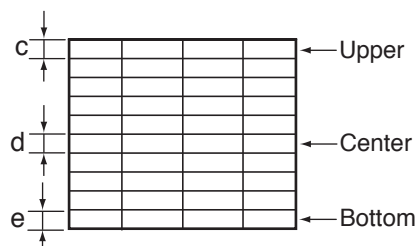
Item 06 [V-LIN] VERTICAL LINEARITY

- (1) Receive a crosshatch pattern.
- (2) Select a picture mode of NATURAL by pressing the PICTURE MODE button.
- (3) Select [V-LIN] in the service mode.
- (4) Adjust Vertical Linearity so that the difference of "a" and "b" becomes less than 3mm by pressing VOLUME + or - button.
- (5) Exit from service mode.



Item 07 [V-SCO] V-S CORRECTION

- (1) Receive a crosshatch pattern.
- (2) Select a picture mode of NATURAL by pressing the PICTURE MODE button.
- (3) Select [V-SCO] in the service mode.
- (4) Adjust Vertical S-letter Correction so that the difference of "c", "d" and "e" becomes less than 2 mm by pressing the VOLUME + or - button.
- (5) Confirm Vertical Linearity and adjust Vertical Center then Vertical Size.
- (6) Exit from service mode.



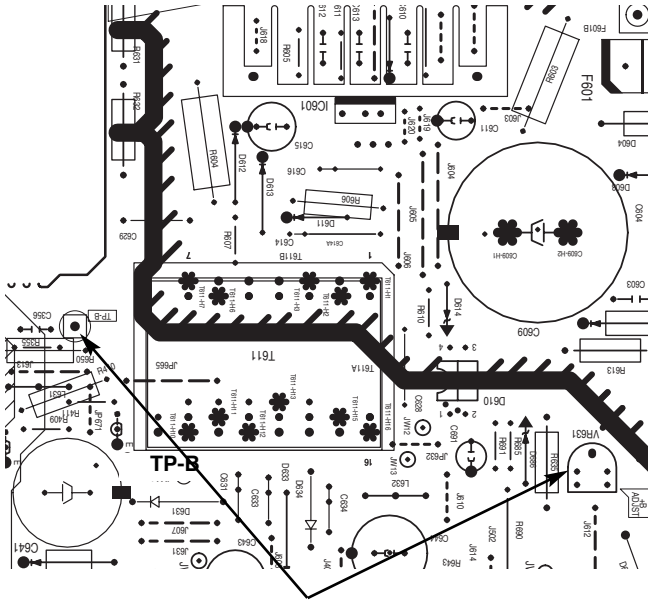
Service Adjustments

Following adjustments are not required to readjust when replacing the memory IC.

B-VOLTAGE SUPPLY CHECKING

- (1) Connect DC meter to TP-B and the ground.
- (2) Tune the receiver to an active channel and synchronized picture. Select NATURAL picture mode by pressing the **PICTURE MODE** button on the remote control.
- (3) Adjust B-voltage to be $130 \pm 0.5V$ DC by using VR631.

MAIN BOARD



B-Voltage Supply Adjustment

HIGH VOLTAGE CHECK

Note: +B (+130V) Voltage Check and Grayscale Adjustment must be completed before attempting High Voltage Check.

- (1) Connect high voltage voltmeter negative lead to ground, and connect + lead to anode of picture tube.
- (2) Tune receiver to an active channel and confirm TV is operating properly.
- (3) Maximize the beam current by adjusting the contrast and brightness controls to maximum. Confirm high voltage is within 24.0 KV and 26.0 KV at maximum beam current.
- (4) Eliminate the beam current by adjusting the contrast and brightness controls to minimum. Confirm high voltage does not exceed 27.5 KV at zero beam current.

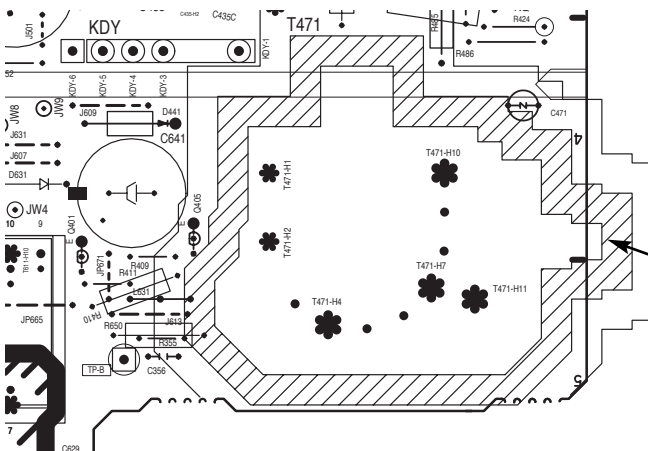
If reading is not within range, check horizontal circuit.

No high-voltage adjustment is provided on this chassis.

FOCUS ADJUSTMENT

- (1) Receive the monochrome circular pattern.
- (2) Set the brightness to normal and contrast to maximum.
- (3) Adjust the focus control on the F.B.T. for the best focus on the screen centre.

MAIN BOARD



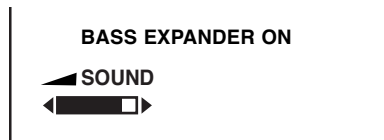
Focus VR
(Upper side)

Special Function

The following special functions can be set up on this TV set.

(1) Volume Lock setting

With this function, a maximum sound volume limit can be set at any level.



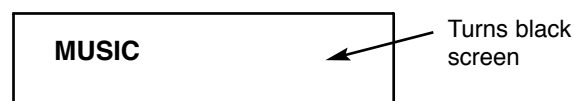
(2) Tuning Lock setting

Once TUNING LOCK is switched on, further channel tuning (Pre-set) is not possible. The Channel Swapping function also is not possible.



(3) Music Mode setting

When Music Mode is ON, Programme position from “247” to “255” and “0” are set Music Mode. Only sound is provided and any picture is not on the screen under Music Mode.



(4) AV Start setting

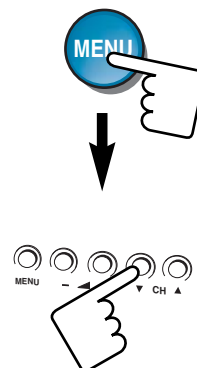
Set AV-START to ON and every time the TV set is switched on, AV1 position will be the initial programme position.



How to set the special function:

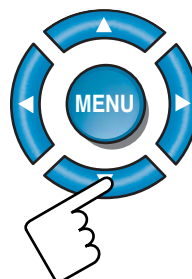
Note: When making the VOLUME LOCK setting, set the desired maximum sound volume by pressing the **VOLUME +** or **-** button before entering Special Function setting mode.

- 1 To enter into the special function setting mode, press and hold the **MENU** button of the remote control, then press the **PROGRAMME DOWN** button on the TV set.



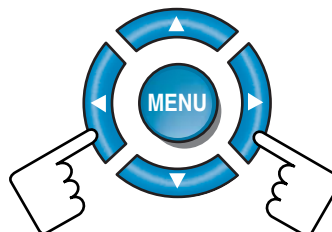
| | |
|--------------------|-----|
| VOLUME LOCK | OFF |
| TUNING LOCK | OFF |
| MUSIC MODE | OFF |
| AV START | OFF |
| SELECT ADJUST EXIT | |

- 2 Select an item of the special functions by pressing the **PROGRAMME UP** or **DOWN** button on the remote control or the TV set.



| | |
|--------------------|-----|
| VOLUME LOCK | OFF |
| TUNING LOCK | OFF |
| MUSIC MODE | OFF |
| AV START | OFF |
| SELECT ADJUST EXIT | |

- 3 Set the selected special function “ON” by pressing the **VOLUME +** or **-** button. To cancel, set to “OFF”.



| | |
|--------------------|-----|
| VOLUME LOCK | OFF |
| TUNING LOCK | ON |
| MUSIC MODE | OFF |
| AV START | OFF |
| SELECT ADJUST EXIT | |

- 4 Press the **MENU** button of the remote control to return to the normal TV mode.



Purity and Convergence Adjustment

CAUTION: The Convergence and Purity adjustments have been made at the factory. Readjustment should be made only after picture tube or deflection yoke replacement, following the steps below:

PURITY ADJUSTMENT

1. Demagnetize the picture tube and receiver using an external degaussing coil. When replacing picture tube or deflection yoke, mount deflection yoke and purity-convergence magnets assembly properly, see figures 1 and 4.
2. Turn Red and Blue guns off and provide only Green raster. Rotate Screen control to fully counterclockwise. Rotate Red and Blue Bias controls fully counterclockwise. Slowly rotate Green Bias control clockwise to produce Green raster.
3. Loosen the screw holding the Deflection Yoke and remove the 3 Rubber Wedges, and slide the Deflection Yoke fully forward.
4. Rotate and spread the Tabs of the two Purity Magnets to centre the vertical green belt in the picture screen. The Purity Magnets are also adjusted to obtain vertical centring of the raster.
5. Slowly slide the Deflection Yoke backward until a uniform green screen is obtained.
6. Check the purity of the red and blue screens for uniformity, turn off other colours to check this (use bias controls). Readjust the yoke position if necessary until all screens are pure.
7. Adjust each Bias control and screen control to obtain white raster. Refer to Gray Scale Adjustment. If part of the picture screen is coloured, adjust the Deflection Yoke position forward or backward slightly.

8. Tighten the mounting screw of the Deflection Yoke. Adjust Convergence next.

CENTRE CONVERGENCE ADJUSTMENT

1. Use a dot crosshatch pattern signal.
2. Turn Red and Blue guns on and turn off Green gun. Adjust the angle between the Tabs of the Four Pole Magnet 1 and 2, and superimpose the Red and Blue vertical lines in the centre area of the picture screen. Refer to figure 2.
3. Keeping the mutual angle of the Tabs of the Four Pole Magnet turn them together to superimpose the Blue and Red horizontal lines in the centre area of the picture screen. Refer to figure 2.
4. Turn Green gun on and adjust Six Pole Magnet 3 and 4 that the Green line superimposed on the Red/Blue lines. This is the same procedure used in steps 2 and 3. Refer to figure 3.

OUTER AREA CONVERGENCE ADJUSTMENT

Slightly loosen the screw holding the Deflection Yoke. Adjust the Deflection Yoke to converge the detail in the outer area (left side and right side) of the picture screen by orbital movement of the front of the Yoke, then secure the Deflection Yoke in appropriate position by putting the wedges as illustrated. Tighten screw holding the Deflection Yoke.

Note: The form of deflection yoke changes with models.

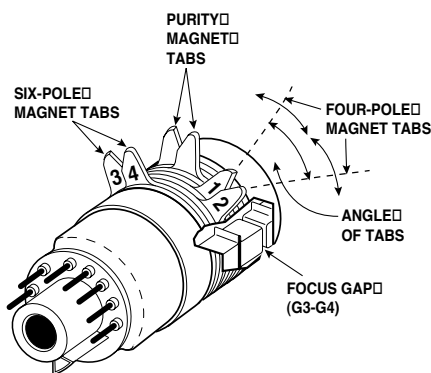


Figure 1. Purity and Convergence Magnets

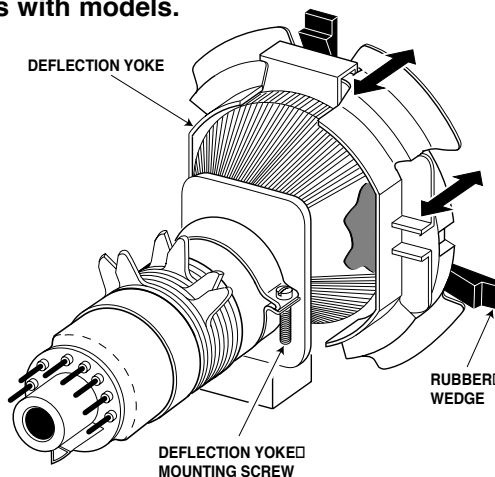


Figure 4. Deflection Yoke Movement

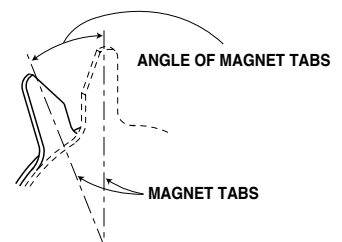


Figure 5. Adjusting Magnet

Adjust tabs angle to superimpose blue and red vertical line.

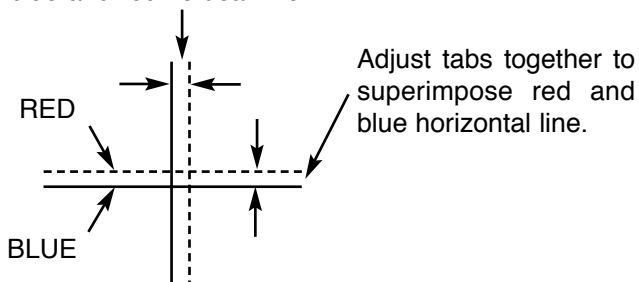


Figure- 2 BLUE AND RED LINE MOVEMENT

Adjust tabs angle to superimpose red/blue and green vertical line.

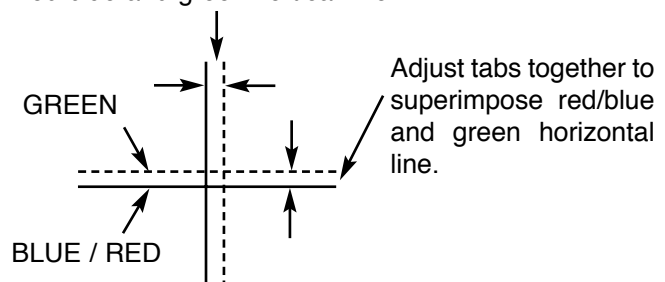
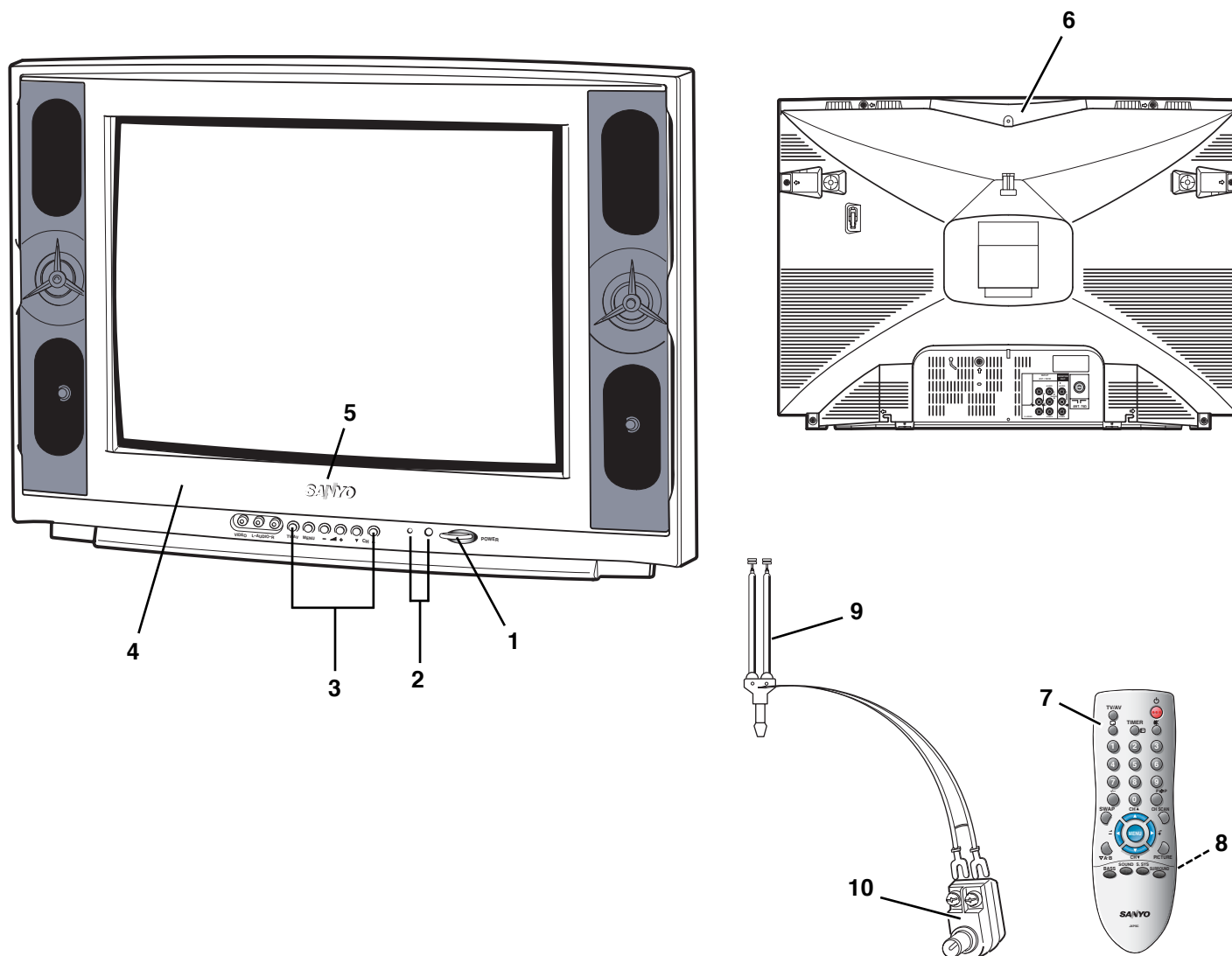


Figure- 3 BLUE/RED AND GREEN MOVEMENT

Cabinet Parts List

C5RS/C5RSA

Note: Parts order must contain Service Ref. No., Part No., and descriptions.



| Key No. | Part No. | Description | Key No. | Part No. | Description |
|---------|--------------|--------------------------|---------|------------|--|
| 1 | 610 305 7347 | BUTTON POWER-C5JA | | 6103263366 | INSTRUCTION MANUAL-C5ZCA-A (English + Arabic) |
| 2 | 610 293 3741 | DEC IND-C4SA | | 6103263458 | SIMPLIFIED MANUAL-C5ZCA-A (Russia + Spanish) |
| 3 | 610 312 7996 | ASSY,BUTTON UNITED-C5RA | | | |
| 4 | 610 320 6806 | ASSY,CABINET FR-A-C5RAS | | | |
| 4-a | 610 320 7131 | CABINET FRONT-A-C5RAS | | | |
| 4-b | 610 305 7477 | GRILLE SP-C5RA | | | |
| 5 | 645 040 4672 | BADGE,SANYO*43.5X10L43.5 | | | |
| or | 645 041 7269 | BADGE,SANYO*43.5X10L43.5 | | | |
| or | 645 075 2162 | BADGE,SANYO*43.5X10L43.5 | | | |
| 6 | 610 325 9420 | CABINET BACK-C6YS | | | |
| 7 | 645 071 1145 | ASSY,REMOCON JXPSC | | | |
| 8 | 610 313 3393 | RC-BATTERY LID-JXPLA | | | |
| 9 | 610 011 6405 | ROD ANTENNA ASSY | | | |
| or | 610 216 4886 | ROD ANTENNA ASSY | | | |
| or | 610 217 1006 | ROD ANTENNA ASSY | | | |
| 10 | 610 230 3216 | ANT MATCHING BOX | | | |
| or | 645 003 2837 | ANTENNA CONVERTER | | | |
| or | 652 001 2875 | ANTENNA CONVERTER | | | |

Chassis Electrical Parts List

C5RS/C5RSA

Product safety should be considered when a component replacement is made in any area of a receiver. Components indicated by a Δ mark in this parts list and the circuit diagram show components whose value have special significance to product safety. It is particularly recommended that only parts specified on the following parts list be used for components replacement pointed out by the mark.

Note: Parts order must contain Chassis No., Part No., and descriptions. The main PCB unit will be supplied without tuner and flyback transformer. They should be ordered separately.

| Ref. No. | Part No. | Description | Ref. No. | Part No. | Description |
|--|----------|-------------|----------|----------|-------------|
| <div>NOTES:</div> <div>Read description in the Capacitor and Resistor as follows:</div> <div>CAPACITOR</div> <div>CERAMIC 100P K 50V</div> <div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></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iv></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></</div></div></div> | | | | | |

| Ref. No. | Part No. | Description | Ref. No. | Part No. | Description |
|----------|------------|---------------------|--------------------|------------|-------------------------------|
| Q1002 | 4050026924 | TR 2SA1179-M7-TB | Q631 | 4051631711 | TR 2SC2812N-L7-TB0 |
| | 4051631513 | TR 2SA1179N-M6-TB | | 4051739813 | TR 2SC3928A1R |
| | 4051632718 | TR 2SA1179N-M7-TB | | 4051739912 | TR 2SC3928A1S |
| | 4051739615 | TR 2SA1235A1E | | 4051843411 | TR 2SD0601A-R-TX |
| | 4051739714 | TR 2SA1235A1F | | 4051843510 | TR 2SD0601A-S-TX |
| | 4051843114 | TR 2SB0709A-R-TX | | 4050144519 | TR 2SC2412K T146 R |
| | 4051843213 | TR 2SB0709A-S-TX | | 4050144618 | TR 2SC2412K T146 S |
| | 4051648016 | TR KTA1504S-GR-RTK | | 4050158724 | TR 2SC2812-L6-TB |
| | 4051345925 | TR 2SA1037AK-T146-R | | 4050158922 | TR 2SC2812-L7-TB |
| | 4051472215 | TR 2SA1037AK-S-T146 | | 4051631612 | TR 2SC2812N-L6-TB0 |
| | 4050020318 | TR 2SA1037K T146 R | | 4051631711 | TR 2SC2812N-L7-TB0 |
| | 4050020417 | TR 2SA1037K T146 S | | 4051739813 | TR 2SC3928A1R |
| | 4050026726 | TR 2SA1179-M6-TB | | 4051739912 | TR 2SC3928A1S |
| | 4050026924 | TR 2SA1179-M7-TB | | 4051843411 | TR 2SD0601A-R-TX |
| Q1003 | 4051631513 | TR 2SA1179N-M6-TB | Q641 | 4051843510 | TR 2SD0601A-S-TX |
| | 4051632718 | TR 2SA1179N-M7-TB | | 4050144519 | TR 2SC2412K T146 R |
| | 4051739615 | TR 2SA1235A1E | | 4050144618 | TR 2SC2412K T146 S |
| | 4051739714 | TR 2SA1235A1F | | 4050158724 | TR 2SC2812-L6-TB |
| | 4051843114 | TR 2SB0709A-R-TX | | 4050158922 | TR 2SC2812-L7-TB |
| | 4051843213 | TR 2SB0709A-S-TX | | 4051631612 | TR 2SC2812N-L6-TB0 |
| | 4051648016 | TR KTA1504S-GR-RTK | | 4051631711 | TR 2SC2812N-L7-TB0 |
| | 4051345925 | TR 2SA1037AK-T146-R | | 4051739813 | TR 2SC3928A1R |
| | 4051472215 | TR 2SA1037AK-S-T146 | | 4051739912 | TR 2SC3928A1S |
| | 4050020318 | TR 2SA1037K T146 R | | 4051843411 | TR 2SD0601A-R-TX |
| | 4050020417 | TR 2SA1037K T146 S | | 4051843510 | TR 2SD0601A-S-TX |
| | 4050026726 | TR 2SA1179-M6-TB | Q661 | 4050599903 | TR 2SD1913-R-RA |
| | 4050026924 | TR 2SA1179-M7-TB | | 4050599903 | TR 2SD1913-R-RA |
| | 4051631513 | TR 2SA1179N-M6-TB | | 4050600005 | TR 2SD1913-S-RA |
| | 4051632718 | TR 2SA1179N-M7-TB | | 4050600005 | TR 2SD1913-S-RA |
| | 4051739615 | TR 2SA1235A1E | | 4050118411 | TR 2SC1740S-Q |
| Q111 | 4051739714 | TR 2SA1235A1F | Q681 | 4050118510 | TR 2SC1740S-R |
| | 4051843114 | TR 2SB0709A-R-TX | | 4050118619 | TR 2SC1740S-S |
| | 4051843213 | TR 2SB0709A-S-TX | | 4050122012 | TR 2SC1815-GR |
| | 4050159721 | TR 2SC2814-F4-TB | | 4050122111 | TR 2SC1815-O |
| | 4050144519 | TR 2SC2412K T146 R | | 4050122319 | TR 2SC1815-Y |
| Q122 | 4050144618 | TR 2SC2412K T146 S | Q683 | 4050207511 | TR 2SC945A-PA |
| | 4050158724 | TR 2SC2812-L6-TB | | 4050207719 | TR 2SC945A-QA |
| | 4050158922 | TR 2SC2812-L7-TB | | 4050207917 | TR 2SC945A-RA |
| | 4051631612 | TR 2SC2812N-L6-TB0 | | 4050890010 | TR 2SA1707-S |
| | 4051631711 | TR 2SC2812N-L7-TB0 | | 4050890119 | TR 2SA1707-T |
| Q1902 | 4051739813 | TR 2SC3928A1R | Q684 | 4050096917 | TR 2SB985-S |
| | 4051739912 | TR 2SC3928A1S | | 4050097013 | TR 2SB985-T |
| | 4051413515 | TR KTA1266-Y-T | | 4050118411 | TR 2SC1740S-Q |
| | 4050017417 | TR 2SA1015-O(SAN) | | 4050118510 | TR 2SC1740S-R |
| | 4050017615 | TR 2SA1015-Y(SAN) | | 4050118619 | TR 2SC1740S-S |
| Q402 | 4050043119 | TR 2SA564A-Q(CU) | Q886 | 4050122012 | TR 2SC1815-GR |
| | 4050043218 | TR 2SA564A-R(CU) | | 4050122111 | TR 2SC1815-O |
| | 4050061717 | TR 2SA933S-Q | | 4050122319 | TR 2SC1815-Y |
| | 4050061816 | TR 2SA933S-R | | 4050207511 | TR 2SC945A-PA |
| | 4050144519 | TR 2SC2412K T146 R | | 4050207719 | TR 2SC945A-QA |
| Q431 | 4050144618 | TR 2SC2412K T146 S | | 4050207917 | TR 2SC945A-RA |
| | 4050158724 | TR 2SC2812-L6-TB | INTEGRATED CIRCUIT | 4050144519 | TR 2SC2412K T146 R |
| | 4050158922 | TR 2SC2812-L7-TB | | 4050144618 | TR 2SC2412K T146 S |
| | 4051631612 | TR 2SC2812N-L6-TB0 | | 4050158724 | TR 2SC2812-L6-TB |
| | 4051631711 | TR 2SC2812N-L7-TB0 | | 4050158922 | TR 2SC2812-L7-TB |
| | 4051739813 | TR 2SC3928A1R | | 4051631612 | TR 2SC2812N-L6-TB0 |
| | 4051739912 | TR 2SC3928A1S | | 4051631711 | TR 2SC2812N-L7-TB0 |
| | 4051843411 | TR 2SD0601A-R-TX | | 4051739813 | TR 2SC3928A1R |
| | 4051843510 | TR 2SD0601A-S-TX | | 4051739912 | TR 2SC3928A1S |
| | 4050180517 | TR 2SC3332-R | | 4051843411 | TR 2SD0601A-R-TX |
| | 4050180616 | TR 2SC3332-S | | 4051843510 | TR 2SD0601A-S-TX |
| Q432 | 4060171908 | TR TT2140LS-YB11 | | | |
| | 4050144519 | TR 2SC2412K T146 R | | | |
| | 4050144618 | TR 2SC2412K T146 S | | | |
| Q511 | 4050158724 | TR 2SC2812-L6-TB | | IC001 | 4095732105 IC LA42072-E |
| | 4050158922 | TR 2SC2812-L7-TB | | IC201 | 4105636904 IC LA76938DE56S0-E |
| | 4051631612 | TR 2SC2812N-L6-TB0 | | IC202 | 4092415407 IC BA178M05T |
| | | | | | 4092654806 IC L78M05CV |

| Ref. No. | Part No. | Description | Ref. No. | Part No. | Description |
|--|------------|--------------------------------|----------|------------|-------------------------|
| IC3701 IC501 IC601 IC651 IC801 | 4091721509 | IC MC78M05CT | C120 | 4032844314 | CERAMIC 0.022U K 50V |
| | 4093205700 | IC UPC78M05AHF | C121 | 4032152211 | CERAMIC 0.01U K 50V |
| | 4095922734 | IC LV1116NV-TLM-E | C122 | 4040847809 | ELECT 100U M 16V |
| | 4094494103 | IC LA78040 | | 4030422425 | ELECT 100U M 16V |
| | 4095070900 | IC LA78040N | C123 | 4011057919 | MT-GLAZE 0.000 ZA 1/16W |
| | 4105643100 | IC STR-W6754(LF2003) | C132 | 4033145915 | CERAMIC 0.47U K 16V |
| | 4092415407 | IC BA178M05T | | 4032070515 | CERAMIC 0.47U Z 16V |
| | 4092654806 | IC L78M05CV | C138 | 4032844314 | CERAMIC 0.022U K 50V |
| | 4091721509 | IC MC78M05CT | C171 | 4031552111 | CERAMIC 1500P K 50V |
| | 4093205700 | IC UPC78M05AHF | C172 | 4032152211 | CERAMIC 0.01U K 50V |
| CAPACITOR | 4104958007 | IC AT24C16A-10PI-2.7 | C174 | 4031571914 | CERAMIC 10P D 50V |
| | 4094594506 | IC 24LC16B/P | C176 | 4011057919 | MT-GLAZE 0.000 ZA 1/16W |
| | | | C1902 | 4040875406 | ELECT 22U M 50V |
| | | | | 4030502810 | ELECT 22U M 50V |
| | C001 | 4040848400 ELECT 1000U M 25V | C202 | 4031793217 | POLYESTER 0.015U J 50V |
| | | 4030451534 ELECT 1000U M 25V | C203 | 4032152211 | CERAMIC 0.01U K 50V |
| | C002 | 4040848905 ELECT 10U M 50V | C204 | 4040897200 | ELECT 100U M 25V |
| | | 4030494224 ELECT 10U M 50V | | 4030449521 | ELECT 100U M 25V |
| | C003 | 4031133815 CERAMIC 1000P K 50V | C210 | 4040848400 | ELECT 1000U M 25V |
| | C004 | 4032070317 CERAMIC 1U Z 16 | | 4030451534 | ELECT 1000U M 25V |
| | | 4032789615 CERAMIC 1U Z 16V | C212 | 4031554214 | CERAMIC 15P J 50V |
| | C005 | 4032070317 CERAMIC 1U Z 16 | C215 | 4040848806 | ELECT 1U M 50V |
| | | 4032789615 CERAMIC 1U Z 16V | | 4030490018 | ELECT 1U M 50V |
| | C006 | 4031133815 CERAMIC 1000P K 50V | C224 | 4032052818 | CERAMIC 0.047U K 25V |
| | C007 | 4033670417 CERAMIC 0.1U K 50V | C225 | 4040848806 | ELECT 1U M 50V |
| | C008 | 4033670417 CERAMIC 0.1U K 50V | | 4030490018 | ELECT 1U M 50V |
| | C009 | 4033670417 CERAMIC 0.1U K 50V | C226 | 4040848707 | ELECT 0.47U M 50V |
| | C010 | 4033670417 CERAMIC 0.1U K 50V | | 4030486328 | ELECT 0.47U M 50V |
| | C011 | 4040848905 ELECT 10U M 50V | C227 | 4032152211 | CERAMIC 0.01U K 50V |
| | | 4030494224 ELECT 10U M 50V | C230 | 4032152211 | CERAMIC 0.01U K 50V |
| | C013 | 4040875505 ELECT 220U M 50V | C231 | 4031686529 | MT-POLYEST 0.47U J 50V |
| | | 4030504468 ELECT 220U M 50V | | 4030677815 | MT-COMPO 0.47U J 50V |
| | C1001 | 4040848806 ELECT 1U M 50V | | 4032560848 | MT-COMPO 0.47U J 50V |
| | | 4030490018 ELECT 1U M 50V | C232 | 4032152211 | CERAMIC 0.01U K 50V |
| | C1002 | 4040848905 ELECT 10U M 50V | C233 | 4040848400 | ELECT 1000U M 25V |
| | | 4030494224 ELECT 10U M 50V | | 4030451534 | ELECT 1000U M 25V |
| | C1003 | 4040848905 ELECT 10U M 50V | C234 | 4032152211 | CERAMIC 0.01U K 50V |
| | | 4030494224 ELECT 10U M 50V | C243 | 4032152211 | CERAMIC 0.01U K 50V |
| | C1004 | 4040848905 ELECT 10U M 50V | C244 | 4040847809 | ELECT 100U M 16V |
| | | 4030494224 ELECT 10U M 50V | | 4040897200 | ELECT 100U M 25V |
| | C1005 | 4040848905 ELECT 10U M 50V | | 4030422425 | ELECT 100U M 16V |
| | | 4030494224 ELECT 10U M 50V | | 4030449521 | ELECT 100U M 25V |
| | C1006 | 4040848004 ELECT 220U M 16V | C245 | 4032070317 | CERAMIC 1U Z 16V |
| | | 4030430222 ELECT 220U M 16V | | 4032789615 | CERAMIC 1U Z 16V |
| | C1007 | 4040848905 ELECT 10U M 50V | C247 | 4040849001 | ELECT 2.2U M 50V |
| | | 4030494224 ELECT 10U M 50V | | 4030499823 | ELECT 2.2U M 50V |
| | C1008 | 4040848905 ELECT 10U M 50V | C273 | 4033423310 | CERAMIC 0.1U K 25V |
| | | 4030494224 ELECT 10U M 50V | C291 | 4040848202 | ELECT 47U M 16V |
| | C1009 | 4040848806 ELECT 1U M 50V | | 4030439136 | ELECT 47U M 16V |
| | | 4030490018 ELECT 1U M 50V | C356 | 4030732920 | CERAMIC 390P K 50V |
| | C101 | 4040848301 ELECT 470U M 16V | C358 | 4040848806 | ELECT 1U M 50V |
| | | 4030441743 ELECT 470U M 16V | | 4030490018 | ELECT 1U M 50V |
| | C1010 | 4033670417 CERAMIC 0.1U K 50V | C3701 | 4040848806 | ELECT 1U M 50V |
| | C1011 | 4033670417 CERAMIC 0.1U K 50V | | 4030490018 | ELECT 1U M 50V |
| | C1012 | 4040848806 ELECT 1U M 50V | C3702 | 4040849209 | ELECT 4.7U M 50V |
| | | 4030490018 ELECT 1U M 50V | | 4030510627 | ELECT 4.7U M 50V |
| | C104 | 4040849308 ELECT 47U M 50V | C3703 | 4031552418 | CERAMIC 5600P K 50V |
| | | 4030513123 ELECT 47U M 50V | C3704 | 4032152211 | CERAMIC 0.01U K 50V |
| | C105 | 4033423310 CERAMIC 0.1U K 25V | C3705 | 4031577114 | CERAMIC 2700P K 50V |
| | | 4031640214 CERAMIC 0.1U Z 25V | C3706 | 4033077018 | CERAMIC 0.068U K 16V |
| | | 4033670417 CERAMIC 0.1U K 50V | | 4033709117 | CERAMIC 0.068U K 50V |
| | | 4033053517 CERAMIC 0.1U Z 50V | C3707 | 4033077018 | CERAMIC 0.068U K 16V |
| | C106 | 4040875406 ELECT 22U M 50V | | 4033709117 | CERAMIC 0.068U K 50V |
| | | 4030502810 ELECT 22U M 50V | C3708 | 4040848806 | ELECT 1U M 50V |
| | C111 | 4032152211 CERAMIC 0.01U K 50V | | 4030490018 | ELECT 1U M 50V |
| | C112 | 4032152211 CERAMIC 0.01U K 50V | C3710 | 4040848806 | ELECT 1U M 50V |
| | C114 | 4032152211 CERAMIC 0.01U K 50V | | 4030490018 | ELECT 1U M 50V |

| Ref. No. | Part No. | Description | Ref. No. | Part No. | Description |
|----------|------------|-------------------------|----------|------------|--------------------------|
| C3711 | 4040849209 | ELECT 4.7U M 50V | C524 | 4030641212 | POLYESTER 0.1U K 100V |
| | 4030510627 | ELECT 4.7U M 50V | | 4032769726 | POLYESTER 0.1U K 100V |
| C3712 | 4040936909 | ELECT 2200U M 16V | C525TM | 4030689026 | CERAMIC 100P K 50V |
| | 4030431952 | ELECT 2200U M 16V | △C601 | 4040712404 | MT-POLYEST 0.22U K 250V |
| C3713 | 4040849209 | ELECT 4.7U M 50V | | 4040725909 | MT-POLYEST 0.22U M 250V |
| | 4030510627 | ELECT 4.7U M 50V | | 4040881704 | MT-POLYEST 0.22U K 250V |
| C3714 | 4040848806 | ELECT 1U M 50V | | 4040662204 | MT-POLYEST 0.22U M 275V |
| | 4030490018 | ELECT 1U M 50V | | 4040888802 | MT-POLYEST 0.22U M 275V |
| C3715 | 4040849209 | ELECT 4.7U M 50V | △C602 | 4040727903 | MT-POLYEST 0.068U K 250V |
| | 4030510627 | ELECT 4.7U M 50V | | 4040726104 | MT-POLYEST 0.068U M 250V |
| C3716 | 4040849209 | ELECT 4.7U M 50V | | 4040796503 | MT-POLYEST 0.068U M 250V |
| | 4030510627 | ELECT 4.7U M 50V | | 4040737506 | MT-POLYEST 0.068U M 275V |
| C3717 | 4031577312 | CERAMIC 6800P K 50V | C603 | 4030766707 | CERAMIC 1000P K 1K |
| C3718 | 4033423310 | CERAMIC 0.1U K 25V | | 4033128225 | CERAMIC 1000P K 1K |
| C3719 | 4031577114 | CERAMIC 2700P K 50V | C604 | 4030766707 | CERAMIC 1000P K 1K |
| C3720 | 4033077018 | CERAMIC 0.068U K 16V | | 4033128225 | CERAMIC 1000P K 1K |
| | 4033709117 | CERAMIC 0.068U K 50V | C605 | 4033423310 | CERAMIC 0.1U K 25V |
| C3721 | 4033077018 | CERAMIC 0.068U K 16V | | 4031640214 | CERAMIC 0.1U Z 25V |
| | 4033709117 | CERAMIC 0.068U K 50V | | 4033670417 | CERAMIC 0.1U K 50V |
| C3722 | 4040848806 | ELECT 1U M 50V | | 4033053517 | CERAMIC 0.1U Z 50V |
| | 4030490018 | ELECT 1U M 50V | C609 | 4040728405 | ELECT 270U M 400V |
| C3724 | 4040848806 | ELECT 1U M 50V | | 4041000708 | ELECT 270U M 400V |
| | 4030490018 | ELECT 1U M 50V | C610 | 4031793712 | POLYESTER 1200P J 50V |
| C432 | 4030757121 | CERAMIC 1000P K 500V | C611 | 4040848806 | ELECT 1U M 50V |
| | 4031149519 | CERAMIC 1000P K 500V | | 4030490018 | ELECT 1U M 50V |
| | 4034171814 | CERAMIC 1000P K 500V | C612 | 4030572130 | POLYESTER 0.1U J 50V |
| C433 | 4030763122 | CERAMIC 3900P K 500V | | 4031818316 | POLYESTER 0.1U J 50V |
| | 4032753329 | CERAMIC 3900P K 500V | C613 | 4040904601 | POLYESTER 2200P K 63V |
| | 4034172910 | CERAMIC 3900P K 500V | | 4030593046 | POLYESTER 2200P J 50V |
| C434 | 4040876007 | ELECT 47U M 35V | | 4031792715 | POLYESTER 2200P J 50V |
| | 4030540713 | ELECT 47U M 35V | C614 | 4033486612 | POLYPRO 0.02U J 630V |
| C435 | 4040774204 | MT-POLYPRO 7000P H 1.5K | C615 | 4040876007 | ELECT 47U M 35V |
| | 4041009503 | MT-POLYPRO 7000P H 1.5K | | 4030540713 | ELECT 47U M 35V |
| | 4033472516 | MT-POLYPRO 7000P H 1.5K | C616 | 4032454404 | CERAMIC 470P K 2K |
| C436 | 4032758334 | CERAMIC 220P K 3K | | 4034140414 | CERAMIC 470P K 2K |
| | 4034140810 | CERAMIC 220P K 3K | C617 | 4032758423 | CERAMIC 390P K 3K |
| C437 | 4031686529 | MT-POLYEST 0.47U J 50V | | 4034133010 | CERAMIC 390P K 3K |
| | 4030677815 | MT-COMPO 0.47U J 50V | C627 | 4040733904 | CERAMIC 1000P K 250V |
| | 4032560848 | MT-COMPO 0.47U J 50V | | 4040732105 | CERAMIC 1000P M 250V |
| C438 | 4032758334 | CERAMIC 220P K 3K | △C627 | 4040713302 | CERAMIC 1000P M 400V |
| | 4034140810 | CERAMIC 220P K 3K | | 4040978503 | CERAMIC 1000P K 400V |
| C441 | 4033467225 | MT-POLYPRO 0.33U J 250V | △C628 | 4040733904 | CERAMIC 1000P K 250V |
| | 4033727012 | MT-POLYPRO 0.33U J 250V | | 4040732105 | CERAMIC 1000P M 250V |
| C469 | 4040848905 | ELECT 10U M 50V | | 4040713302 | CERAMIC 1000P M 400V |
| | 4030494224 | ELECT 10U M 50V | | 4040978503 | CERAMIC 1000P K 400V |
| C471 | 4040565208 | NP-ELECT 2.2U M 100V | △C629 | 4040733904 | CERAMIC 1000P K 250V |
| | 4040849902 | NP-ELECT 2.2U M 100V | | 4040732105 | CERAMIC 1000P M 250V |
| C486 | 4040876106 | ELECT 22U M 100V | | 4040713302 | CERAMIC 1000P M 400V |
| | 4031150842 | ELECT 22U M 100V | | 4040978503 | CERAMIC 1000P K 400V |
| C491 | 4030765324 | CERAMIC 680P K 500V | C631 | 4033991215 | CERAMIC 1500P K 1K |
| | 4034164915 | CERAMIC 680P K 500V | C632 | 4032475023 | CERAMIC 470P K 1K |
| | 4034173115 | CERAMIC 680P K 500V | | 4034084510 | CERAMIC 470P K 1K |
| C510 | 4040875406 | ELECT 22U M 50V | | 4034084520 | CERAMIC @470P K 1K |
| | 4030502810 | ELECT 22U M 50V | C633 | 4032475023 | CERAMIC 470P K 1K |
| C511 | 4040848905 | ELECT 10U M 50V | | 4034084510 | CERAMIC 470P K 1K |
| | 4030494224 | ELECT 10U M 50V | | 4034084520 | CERAMIC @470P K 1K |
| C514 | 4040849209 | ELECT 4.7U M 50V | C634 | 4032475023 | CERAMIC 470P K 1K |
| | 4030510627 | ELECT 4.7U M 50V | | 4034084510 | CERAMIC 470P K 1K |
| C515 | 4040848400 | ELECT 1000U M 25V | | 4034084520 | CERAMIC @470P K 1K |
| | 4030451534 | ELECT 1000U M 25V | C641 | 4040739005 | ELECT 220U M 160V |
| C517 | 4040849407 | ELECT 220U M 35V | | 4040973706 | ELECT 220U M 160V |
| | 4030532134 | ELECT 220U M 35V | C643 | 4040849506 | ELECT 470U M 35V |
| C518 | 4030729425 | CERAMIC 3300P K 50V | | 4030541532 | ELECT 470U M 35V |
| | 4031041922 | CERAMIC 3300P K 50V | C644 | 4040848400 | ELECT 1000U M 25V |
| | 4034171111 | CERAMIC 3300P K 50V | | 4030451534 | ELECT 1000U M 25V |
| C521 | 4040886709 | ELECT 1000U M 35V | C645 | 4040848400 | ELECT 1000U M 25V |
| | 4030528553 | ELECT 1000U M 35V | | 4030451534 | ELECT 1000U M 25V |

| Ref. No. | Part No. | Description | Ref. No. | Part No. | Description |
|-----------------|------------|-------------------------|----------|------------|-------------------------|
| C649 | 4040874706 | ELECT 22U M 25V | R1029 | 4011050514 | MT-GLAZE 1K JA 1/16W |
| | 4040875406 | ELECT 22U M 50V | R103 | 4010618101 | OXIDE-MT 39K JA 1W |
| | 4030455829 | ELECT 22U M 25V | R1030 | 4011050514 | MT-GLAZE 1K JA 1/16W |
| | 4030502810 | ELECT 22U M 50V | R1031 | 4011050514 | MT-GLAZE 1K JA 1/16W |
| C650 | 4040849100 | ELECT 3.3U M 50V | R106 | 4010246730 | CARBON 100 JA 1/6W |
| | 4030506610 | ELECT 3.3U M 50V | R107 | 4010246730 | CARBON 100 JA 1/6W |
| C651 | 4040847601 | ELECT 470U M 10V | R108 | 4011052112 | MT-GLAZE 18K JA 1/16W |
| | 4030414529 | ELECT 470U M 10V | R109 | 4011058213 | MT-GLAZE 68K JA 1/16W |
| C661 | 4040848905 | ELECT 10U M 50V | R111 | 4011050514 | MT-GLAZE 1K JA 1/16W |
| | 4030494224 | ELECT 10U M 50V | R112 | 4011056011 | MT-GLAZE 5.6K JA 1/16W |
| C662 | 4040847809 | ELECT 100U M 16V | R114 | 4011054017 | MT-GLAZE 330 JA 1/16W |
| | 4030422425 | ELECT 100U M 16V | R115 | 4010272135 | CARBON 56 JA 1/6W |
| C691 | 4040848806 | ELECT 1U M 50V | R116 | 4011055816 | MT-GLAZE 56 JA 1/16W |
| | 4030490018 | ELECT 1U M 50V | R121 | 4011056615 | MT-GLAZE 6.8K JA 1/16W |
| C801 | 4031397316 | CERAMIC 18P J 50V | R122 | 4011052815 | MT-GLAZE 2.2K JA 1/16W |
| C802 | 4031397316 | CERAMIC 18P J 50V | R124 | 4011050613 | MT-GLAZE 10K JA 1/16W |
| C803 | 4032152211 | CERAMIC 0.01U K 50V | R125 | 4011053416 | MT-GLAZE 27K JA 1/16W |
| C805 | 4040897200 | ELECT 100U M 25V | R130 | 4011057919 | MT-GLAZE 0.000 ZA 1/16W |
| | 4030449521 | ELECT 100U M 25V | R132 | 4011055212 | MT-GLAZE 470 JA 1/16W |
| C842 | 4033423310 | CERAMIC 0.1U K 25V | R140 | 4011055915 | MT-GLAZE 560 JA 1/16W |
| C843 | 4033423310 | CERAMIC 0.1U K 25V | R141 | 4011055915 | MT-GLAZE 560 JA 1/16W |
| C863 | 4040848806 | ELECT 1U M 50V | R176 | 4011050613 | MT-GLAZE 10K JA 1/16W |
| | 4030490018 | ELECT 1U M 50V | R1902 | 4011051115 | MT-GLAZE 12K JA 1/16W |
| C893 | 4040849001 | ELECT 2.2U M 50V | R1903 | 4011056011 | MT-GLAZE 5.6K JA 1/16W |
| | 4030499823 | ELECT 2.2U M 50V | R1904 | 4011054611 | MT-GLAZE 3.9K JA 1/16W |
| C894 | 4032815017 | CERAMIC 0.033U K 25V | R1905 | 4011052815 | MT-GLAZE 2.2K JA 1/16W |
| | | | R1906 | 4011052013 | MT-GLAZE 1.8K JA 1/16W |
| | | | R1907 | 4010246730 | CARBON 100 JA 1/6W |
| RESISTOR | | | R1911 | 4011052716 | MT-GLAZE 220 JA 1/16W |
| R001 | 4011054611 | MT-GLAZE 3.9K JA 1/16W | R1912 | 4011052716 | MT-GLAZE 220 JA 1/16W |
| R002 | 4011054611 | MT-GLAZE 3.9K JA 1/16W | R1913 | 4011052716 | MT-GLAZE 220 JA 1/16W |
| R003 | 4011054116 | MT-GLAZE 3.3K JA 1/16W | R210 | 4011053713 | MT-GLAZE 3K JA 1/16W |
| R004 | 4011054116 | MT-GLAZE 3.3K JA 1/16W | R211 | 4010251338 | CARBON 150 JA 1/6W |
| R005 | 4011052914 | MT-GLAZE 22K JA 1/16W | R212 | 4010251338 | CARBON 150 JA 1/6W |
| R007 | 4010247034 | CARBON 1K JA 1/6W | R215 | 4011057919 | MT-GLAZE 0.000 ZA 1/16W |
| R008 | 4011057919 | MT-GLAZE 0.000 ZA 1/16W | R223 | 4010247034 | CARBON 1K JA 1/6W |
| R009 | 4011050514 | MT-GLAZE 1K JA 1/16W | R225 | 4011051115 | MT-GLAZE 12K JA 1/16W |
| R010 | 4010255435 | CARBON 2.2 JA 1/6W | R226 | 4011053416 | MT-GLAZE 27K JA 1/16W |
| R011 | 4010255435 | CARBON 2.2 JA 1/6W | R227 | 4011054215 | MT-GLAZE 33K JA 1/16W |
| R012 | 4010255435 | CARBON 2.2 JA 1/6W | R228 | 4010254933 | CARBON 180K JA 1/6W |
| R013 | 4010255435 | CARBON 2.2 JA 1/6W | R229 | 4011056714 | MT-GLAZE 680K JA 1/16W |
| R014 | 4011052815 | MT-GLAZE 2.2K JA 1/16W | R230 | 4010275037 | CARBON 68 JA 1/6W |
| R015 | 4011050613 | MT-GLAZE 10K JA 1/16W | R234 | 4011050910 | MT-GLAZE 120 JA 1/16W |
| R1001 | 4011134412 | MT-GLAZE 75 JA 1/16W | R235 | 4011050910 | MT-GLAZE 120 JA 1/16W |
| R1002 | 4011050514 | MT-GLAZE 1K JA 1/16W | R236 | 4011050910 | MT-GLAZE 120 JA 1/16W |
| R1003 | 4011052112 | MT-GLAZE 18K JA 1/16W | R243 | 4010683703 | OXIDE-MT 470 JA 2W |
| R1004 | 4011050514 | MT-GLAZE 1K JA 1/16W | R244 | 4011055410 | MT-GLAZE 47K JA 1/16W |
| R1005 | 4011052112 | MT-GLAZE 18K JA 1/16W | R245 | 4011055410 | MT-GLAZE 47K JA 1/16W |
| R1006 | 4011056516 | MT-GLAZE 680 JA 1/16W | R280 | 4010246730 | CARBON 100 JA 1/6W |
| R1007 | 4011050712 | MT-GLAZE 100K JA 1/16W | R286 | 4012039914 | MT-GLAZE 4.7K FA 1/16W |
| R1008 | 4011056516 | MT-GLAZE 680 JA 1/16W | R290 | 4010681600 | OXIDE-MT 4.7 JA 2W |
| R1009 | 4011050712 | MT-GLAZE 100K JA 1/16W | R340 | 4011057513 | MT-GLAZE 82K JA 1/16W |
| R101 | 4011057919 | MT-GLAZE 0.000 ZA 1/16W | R351 | 4010256531 | CARBON 20K JA 1/6W |
| R1010 | 4011134412 | MT-GLAZE 75 JA 1/16W | R352 | 4010126953 | CARBON 10K JA 1/4W |
| R1011 | 4011050712 | MT-GLAZE 100K JA 1/16W | | 4010127059 | CARBON 10K JA 1/4W |
| R1012 | 4011050514 | MT-GLAZE 1K JA 1/16W | R355 | 4010153751 | CARBON 18K JA 1/4W |
| R1013 | 4011052112 | MT-GLAZE 18K JA 1/16W | | 4010153850 | CARBON 18K JA 1/4W |
| R1014 | 4011050514 | MT-GLAZE 1K JA 1/16W | R357 | 4010267032 | CARBON 3.9K JA 1/6W |
| R1015 | 4011052112 | MT-GLAZE 18K JA 1/16W | R358 | 4011057919 | MT-GLAZE 0.000 ZA 1/16W |
| R1016 | 4011134412 | MT-GLAZE 75 JA 1/16W | R3701 | 4011054611 | MT-GLAZE 3.9K JA 1/16W |
| R1017 | 4011057919 | MT-GLAZE 0.000 ZA 1/16W | R3702 | 4011054611 | MT-GLAZE 3.9K JA 1/16W |
| R1018 | 4011134412 | MT-GLAZE 75 JA 1/16W | R3704 | 4010257439 | CARBON 220 JA 1/6W |
| R1019 | 4011057919 | MT-GLAZE 0.000 ZA 1/16W | R3705 | 4010257439 | CARBON 220 JA 1/6W |
| R1020 | 4011134412 | MT-GLAZE 75 JA 1/16W | R401 | 4010200752 | CARBON 470 JA 1/4W |
| R1021 | 4011134412 | MT-GLAZE 75 JA 1/16W | R401 | 4010200851 | CARBON 470 JA 1/4W |
| R1026 | 4011050514 | MT-GLAZE 1K JA 1/16W | R422 | 4010202835 | CARBON 47K JA 1/4W |
| R1027 | 4011050514 | MT-GLAZE 1K JA 1/16W | | 4010202954 | CARBON 47K JA 1/4W |
| R1028 | 4011050514 | MT-GLAZE 1K JA 1/16W | | | |

| Ref. No. | | Part No. | | Description | | Ref. No. | | Part No. | | Description | |
|----------|------------|-------------|------|-------------|-------|-------------------|------------|-------------------------|------|-------------|-------|
| R423 | 4010224035 | CARBON | 68K | JA | 1/4W | R819 | 4011050613 | MT-GLAZE | 10K | JA | 1/16W |
| | 4010224154 | CARBON | 68K | JA | 1/4W | R830 | 4011050514 | MT-GLAZE | 1K | JA | 1/16W |
| R424 | 4010247034 | CARBON | 1K | JA | 1/6W | R834 | 4011050613 | MT-GLAZE | 10K | JA | 1/16W |
| R426 | 4010247440 | CARBON | 10K | JA | 1/6W | R837 | 4011051610 | MT-GLAZE | 15K | JA | 1/16W |
| R431 | 4010247034 | CARBON | 1K | JA | 1/6W | R838 | 4011051610 | MT-GLAZE | 15K | JA | 1/16W |
| R432 | 4010269630 | CARBON | 470 | JA | 1/6W | R839 | 4011050415 | MT-GLAZE | 100 | JA | 1/16W |
| R433 | 4010071134 | CARBON | 1K | JA | 1/2W | R840 | 4011055212 | MT-GLAZE | 470 | JA | 1/16W |
| R434 | 4010607402 | OXIDE-MT | 270 | JA | 1W | R841 | 4011055311 | MT-GLAZE | 4.7K | JA | 1/16W |
| R435 | 4020803702 | OXIDE-MT | 6.8 | JB | 7W | R842 | 4011055311 | MT-GLAZE | 4.7K | JA | 1/16W |
| R441 | 4010648702 | OXIDE-MT | 1K | JA | 2W | R844 | 4011050415 | MT-GLAZE | 100 | JA | 1/16W |
| R445 | 4010687800 | OXIDE-MT | 560 | JA | 2W | R845 | 4010247440 | CARBON | 10K | JA | 1/6W |
| R475 | 4010095843 | CARBON | 330 | JA | 1/2W | R850 | 4011050415 | MT-GLAZE | 100 | JA | 1/16W |
| R479 | 4010257835 | CARBON | 2.2K | JA | 1/6W | R852 | 4011050613 | MT-GLAZE | 10K | JA | 1/16W |
| R481 | 4010645701 | OXIDE-MT | 1.8 | JA | 2W | R853 | 4011050613 | MT-GLAZE | 10K | JA | 1/16W |
| R488 | 4010573103 | OXIDE-MT | 0.22 | JA | 1W | R863 | 4011055410 | MT-GLAZE | 47K | JA | 1/16W |
| R501A | 4010626106 | OXIDE-MT | 560 | JA | 1W | R886 | 4011052914 | MT-GLAZE | 22K | JA | 1/16W |
| | 4010687800 | OXIDE-MT | 560 | JA | 2W | R887 | 4010258238 | CARBON | 22K | JA | 1/6W |
| R502 | 4011058114 | MT-GLAZE | 56K | JA | 1/16W | R888 | 4011055915 | MT-GLAZE | 560 | JA | 1/16W |
| R510 | 4010247440 | CARBON | 10K | JA | 1/6W | R893 | 4011058015 | MT-GLAZE | 1M | JA | 1/16W |
| R511 | 4010247440 | CARBON | 10K | JA | 1/6W | R894 | 4011050415 | MT-GLAZE | 100 | JA | 1/16W |
| R514 | 4010278632 | CARBON | 8.2K | JA | 1/6W | VARIABLE RESISTOR | | | | | |
| R515 | 4010261337 | CARBON | 27K | JA | 1/6W | | | | | | |
| R516 | 4010247440 | CARBON | 10K | JA | 1/6W | VR631 | 6450065514 | VR,SEMI,2.2K | N | | |
| R518 | 4010068114 | CARBON | 1.2 | JA | 1/2W | | 6450035579 | VR,SEMI,2.2K | N | | |
| R522 | 4010257439 | CARBON | 220 | JA | 1/6W | COIL | | | | | |
| R525 | 4010588107 | OXIDE-MT | 120 | JA | 1W | | | | | | |
| R602 | 4020825605 | WIRE WOUND | 1.8 | KA | 10W | L431 | 6100319998 | PIPE CORE | | | |
| | 4020998200 | WIRE WOUND | 1.8 | KA | 10W | | 6450187025 | CORE,PIPE | | | |
| R603 | 4011808402 | OXIDE-MT | 0.47 | JA | 2W | | 6520010475 | PIPE CORE | | | |
| R604 | 4011808402 | OXIDE-MT | 0.47 | JA | 2W | L432 | 6100319998 | PIPE CORE | | | |
| R606 | 4010632909 | OXIDE-MT | 68K | JA | 1W | | 6450187025 | CORE,PIPE | | | |
| R607 | 4010246433 | CARBON | 10 | JA | 1/6W | | 6520010475 | PIPE CORE | | | |
| R609 | 4010246730 | CARBON | 100 | JA | 1/6W | L441 | 6450609817 | COIL,LINERITY | | | |
| R610 | 4010247034 | CARBON | 1K | JA | 1/6W | | 6520011083 | COIL,LINERITY | | | |
| R611 | 4010247034 | CARBON | 1K | JA | 1/6W | △L601 | 6450193873 | LINE FILTER | | | |
| R613 | 4010585908 | OXIDE-MT | 100K | JA | 1W | | 6450588235 | LINE FILTER | | | |
| △R631 | 4020008602 | SOLID | 5.6M | KA | 1/2W | | 6520001961 | LINE FILTER | | | |
| | 4020976604 | CARBON | 5.6M | KA | 1/2W | L631 | 6100785946 | PIPE CORE | | | |
| △R632 | 4020008602 | SOLID | 5.6M | KA | 1/2W | | 6100785953 | PIPE CORE | | | |
| | 4020976604 | CARBON | 5.6M | KA | 1/2W | | 6520010123 | CORE,PIPE | | | |
| R635 | 4010075815 | CARBON | 120K | JA | 1/2W | | 6520010147 | CORE,PIPE | | | |
| R636 | 4011056011 | MT-GLAZE | 5.6K | JA | 1/16W | TRANSFORMER | | | | | |
| R640 | 4011050712 | MT-GLAZE | 100K | JA | 1/16W | | | | | | |
| R641 | 4011057414 | MT-GLAZE | 8.2K | JA | 1/16W | T431 | 6450799587 | TRANS,DRIVE | | | |
| R642 | 4010247737 | CARBON | 100K | JA | 1/6W | | 6520011144 | TRANS,DRIVE | | | |
| R643 | 4020518705 | FUSIBLE RES | 4.7 | J- | 1/2W | △T471 | 6450659386 | TRANS,FLYBACK | | | |
| R645 | 4010251932 | CARBON | 15K | JA | 1/6W | △T611 | 6450764394 | TRANS,POWER,PULSE | | | |
| R661 | 4010607402 | OXIDE-MT | 270 | JA | 1W | DIODE | | | | | |
| R667 | 4010084421 | CARBON | 2.7 | JA | 1/2W | | | | | | |
| R668 | 4010673100 | OXIDE-MT | 3.9 | JA | 2W | D001 | 4071490817 | DIODE 1SS355-TE-17 | | | |
| R681 | 4010247034 | CARBON | 1K | JA | 1/6W | D004 | 4071490817 | DIODE 1SS355-TE-17 | | | |
| R685 | 4010145132 | CARBON | 15K | JA | 1/4W | D005 | 4070054525 | DIODE DS442X | | | |
| | 4010145251 | CARBON | 15K | JA | 1/4W | | 4080093204 | DIODE 1N4148 | | | |
| R686 | 4010126953 | CARBON | 10K | JA | 1/4W | | 4070124426 | DIODE 1SS133 | | | |
| | 4010127059 | CARBON | 10K | JA | 1/4W | | 4070134336 | DIODE 1S2076A | | | |
| R687 | 4010191852 | CARBON | 3.9K | JA | 1/4W | | 4070137129 | DIODE 1S2473 | | | |
| | 4010191951 | CARBON | 3.9K | JA | 1/4W | D1001 | 4070639623 | ZENER DIODE MTZJ9.1A | | | |
| R688 | 4010258238 | CARBON | 22K | JA | 1/6W | | 4070579632 | ZENER DIODE RD9.1EB1 | | | |
| R689 | 4010273231 | CARBON | 560K | JA | 1/6W | | 4071622713 | ZENER DIODE UZ-9.1BCB | | | |
| R691 | 4010191852 | CARBON | 3.9K | JA | 1/4W | | 4080480004 | ZENER DIODE MTZJ9.1B | | | |
| | 4010191951 | CARBON | 3.9K | JA | 1/4W | | 4080480301 | ZENER DIODE MTZJ9.1C-52 | | | |
| R801 | 4011053515 | MT-GLAZE | 270K | JA | 1/16W | D1002 | 4070639623 | ZENER DIODE MTZJ9.1A | | | |
| R813 | 4011050613 | MT-GLAZE | 10K | JA | 1/16W | | 4070579632 | ZENER DIODE RD9.1EB1 | | | |
| R814 | 4011050613 | MT-GLAZE | 10K | JA | 1/16W | | 4071622713 | ZENER DIODE UZ-9.1BCB | | | |
| R815 | 4011050613 | MT-GLAZE | 10K | JA | 1/16W | | 4080480004 | ZENER DIODE MTZJ9.1B | | | |
| R817 | 4010247034 | CARBON | 1K | JA | 1/6W | | 4080480301 | ZENER DIODE MTZJ9.1C-52 | | | |
| R818 | 4010247034 | CARBON | 1K | JA | 1/6W | D1003 | 4070639623 | ZENER DIODE MTZJ9.1A | | | |

| Ref. No. | Part No. | Description | Ref. No. | Part No. | Description |
|----------|------------|-------------------------|----------------------|------------|-------------------------|
| | 4070579632 | ZENER DIODE RD9.1EB1 | D512 | 4070058632 | DIODE ERA15-02-V1 |
| | 4071622713 | ZENER DIODE UZ-9.1BCB | D603 | 4070066310 | DIODE ERC05-10BV1 |
| | 4080480004 | ZENER DIODE MTZJ9.1B | | 4070096921 | DIODE RM11C |
| | 4080480301 | ZENER DIODE MTZJ9.1C-52 | | 4080457501 | DIODE ERC05-10B |
| D1004 | 4070638329 | ZENER DIODE MTZJ11C | D604 | 4070066310 | DIODE ERC05-10BV1 |
| | 4070541827 | ZENER DIODE RD11EB3 | | 4070096921 | DIODE RM11C |
| D1005 | 4070638329 | ZENER DIODE MTZJ11C | | 4080457501 | DIODE ERC05-10B |
| | 4070541827 | ZENER DIODE RD11EB3 | D605 | 4070066310 | DIODE ERC05-10BV1 |
| D1006 | 4070638329 | ZENER DIODE MTZJ11C | | 4070096921 | DIODE RM11C |
| | 4070541827 | ZENER DIODE RD11EB3 | | 4080457501 | DIODE ERC05-10B |
| D1007 | 4070638329 | ZENER DIODE MTZJ11C | D606 | 4070066310 | DIODE ERC05-10BV1 |
| | 4070541827 | ZENER DIODE RD11EB3 | | 4070096921 | DIODE RM11C |
| D1008 | 4070638329 | ZENER DIODE MTZJ11C | | 4080457501 | DIODE ERC05-10B |
| | 4070541827 | ZENER DIODE RD11EB3 | D609 | 4080093204 | DIODE 1N4148 |
| D1009 | 4070638329 | ZENER DIODE MTZJ11C | △ D610 | 4072348701 | PHOTO COUPLE PC123X5YFZ |
| | 4070541827 | ZENER DIODE RD11EB3 | | 4072303908 | PHOTO COUPLE PC123Y52 |
| D1010 | 4070638329 | ZENER DIODE MTZJ11C | D611 | 4071468113 | DIODE EG01C |
| | 4070541827 | ZENER DIODE RD11EB3 | D612 | 4070077415 | DIODE EU1 |
| D1011 | 4070638329 | ZENER DIODE MTZJ11C | | 4080457709 | DIODE EU1 |
| | 4070541827 | ZENER DIODE RD11EB3 | D613 | 4070077415 | DIODE EU1 |
| D1012 | 4070638329 | ZENER DIODE MTZJ11C | | 4080457709 | DIODE EU1 |
| | 4070541827 | ZENER DIODE RD11EB3 | D614 | 4070995422 | ZENER DIODE MTZJ6.2B |
| D1015TM | 4070124426 | DIODE 1SS133 | D615 | 4070054525 | DIODE DS442X |
| | 4070124406 | DIODE 1SS133 | | 4080093204 | DIODE 1N4148 |
| D102 | 4070995620 | ZENER DIODE MTZJ6.8A | | 4070124426 | DIODE 1SS133 |
| | 4070574013 | ZENER DIODE RD6.8EB1 | | 4070134336 | DIODE 1S2076A |
| | 4080478506 | ZENER DIODE MTZJ6.8A | | 4070137129 | DIODE 1S2473 |
| D103 | 4071000224 | ZENER DIODE MTZJ36A | D631 | 4070098816 | DIODE RU3AM |
| | 4070562317 | ZENER DIODE RD36EB1 | D632 | 4072116102 | DIODE FE301-1L43 |
| | 4080476106 | ZENER DIODE MTZJ36A | | 4071296706 | DIODE RU4YX LF-L1 |
| D122 | 4071661118 | DIODE 1SS356-TW11 | D633 | 4070077613 | DIODE EU2 |
| D1901 | 4070054525 | DIODE DS442X | | 4080458102 | DIODE EU2Z |
| | 4080093204 | DIODE 1N4148 | D634 | 4070098915 | DIODE RU3M |
| | 4070124426 | DIODE 1SS133 | | 4080458409 | DIODE RU3M |
| | 4070134336 | DIODE 1S2076A | D661 | 4070996122 | ZENER DIODE MTZJ10B |
| | 4070137129 | DIODE 1S2473 | | 4070540018 | ZENER DIODE RD10EB2 |
| D1910 | 4071589204 | LED SPR-39MVWF | D681 | 4070054525 | DIODE DS442X |
| | 4080429607 | LED BT-603W-30 | | 4080093204 | DIODE 1N4148 |
| D1910A | 6102645064 | HOLDER LED-S2CP | | 4070124426 | DIODE 1SS133 |
| | 6102737929 | HOLDER LED-S4KF | | 4070134336 | DIODE 1S2076A |
| | 6103039954 | HOLDER LED-C4LA | | 4070137129 | DIODE 1S2473 |
| D249 | 4070996023 | ZENER DIODE MTZJ9.1B | D686 | 4070995521 | ZENER DIODE MTZJ6.2C |
| | 4070579711 | ZENER DIODE RD9.1EB2 | | 4070572831 | ZENER DIODE RD6.2EB3 |
| D352 | 4070638626 | ZENER DIODE MTZJ5.1A | MISCELLANEOUS | | |
| | 4070569811 | ZENER DIODE RD5.6EB1 | | | |
| | 4080476403 | ZENER DIODE MTZJ5.1A | △ F601 | 4230288603 | FUSE 250V 4A |
| D357 | 4070054525 | DIODE DS442X | | 4230248409 | FUSE 250V 4A |
| | 4080093204 | DIODE 1N4148 | F601A | 6450403576 | HOLDER, FUSE |
| | 4070124426 | DIODE 1SS133 | | 6450705434 | HOLDER, FUSE |
| | 4070134336 | DIODE 1S2076A | F601B | 6450403576 | HOLDER, FUSE |
| | 4070137129 | DIODE 1S2473 | | 6450705434 | HOLDER, FUSE |
| D3701 | 4070058632 | DIODE ERA15-02-V1 | A101 | 6450572753 | TUNER, U/V |
| | 4070114318 | DIODE TVR1B | | 6450614132 | TUNER, U/V |
| | 4080537708 | DIODE TVR1B | | 6450720871 | TUNER, U/V |
| D421 | 4070997228 | ZENER DIODE MTZJ16A | | 6450785689 | TUNER, U/V |
| | 4070547027 | ZENER DIODE RD16EB1 | A1901A | 6450476228 | UNIT, REMOCON RECEIVER |
| | 4070547215 | ZENER DIODE RD16EB3 | | 6450794124 | UNIT, REMOCON RECEIVER |
| | 4080475208 | ZENER DIODE MTZJ16A-52 | K1001 | 6520012974 | JACK, RCA-3 |
| D467 | 4080093204 | DIODE 1N4148 | K1003 | 6520015425 | JACK, RCA-6 |
| | 4070134336 | DIODE 1S2076A | K1005 | 6520015401 | JACK, RCA-3 |
| | 4070137129 | DIODE 1S2473 | △ PS601 | 4080465407 | TH PTDCA1BF4R5Q200 |
| D468 | 4070124426 | DIODE 1SS133 | | 4080545109 | THERMISTOR ECPCD4R5Q270 |
| D476 | 4070638329 | ZENER DIODE MTZJ11C | SW1901 | 6450034701 | SWITCH, PUSH 1P-1TX1 |
| | 4070541827 | ZENER DIODE RD11EB3 | | 6450194887 | SWITCH, PUSH 1P-1TX1 |
| | 4080473105 | ZENER DIODE MTZJ11C | | 6450277382 | SWITCH, PUSH 1P-1TX1 |
| D485 | 4070077415 | DIODE EU1 | SW1902 | 6450034701 | SWITCH, PUSH 1P-1TX1 |
| | 4080457709 | DIODE EU1 | | 6450194887 | SWITCH, PUSH 1P-1TX1 |

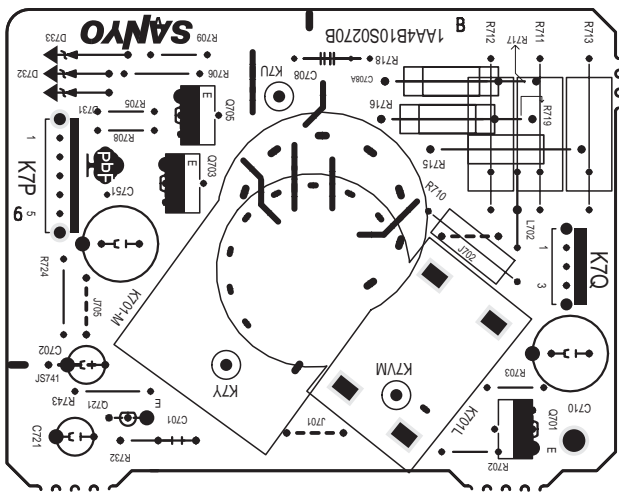
| Ref. No. | Part No. | Description | Ref. No. | Part No. | Description |
|--------------------------------------|------------|-------------------------|----------------------|------------|------------------------|
| SW1903 | 6450277382 | SWITCH,PUSH 1P-1TX1 | R711 | 4010654604 | OXIDE-MT 12K JA 2W |
| | 6450034701 | SWITCH,PUSH 1P-1TX1 | R712 | 4010654604 | OXIDE-MT 12K JA 2W |
| | 6450194887 | SWITCH,PUSH 1P-1TX1 | R713 | 4010654604 | OXIDE-MT 12K JA 2W |
| SW1904 | 6450277382 | SWITCH,PUSH 1P-1TX1 | R715 | 4010091528 | CARBON 2.7K JA 1/2W |
| | 6450034701 | SWITCH,PUSH 1P-1TX1 | R716 | 4010091528 | CARBON 2.7K JA 1/2W |
| | 6450194887 | SWITCH,PUSH 1P-1TX1 | R717 | 4010091528 | CARBON 2.7K JA 1/2W |
| SW1905 | 6450277382 | SWITCH,PUSH 1P-1TX1 | R723 | 4011051511 | MT-GLAZE 1.5K JA 1/16W |
| | 6450034701 | SWITCH,PUSH 1P-1TX1 | R724 | 4010269630 | CARBON 470 JA 1/6W |
| | 6450194887 | SWITCH,PUSH 1P-1TX1 | R732 | 4010246433 | CARBON 10 JA 1/6W |
| SW1906 | 6450277382 | SWITCH,PUSH 1P-1TX1 | R743 | 4010247440 | CARBON 10K JA 1/6W |
| | 6450034701 | SWITCH,PUSH 1P-1TX1 | COIL | | |
| | 6450194887 | SWITCH,PUSH 1P-1TX1 | L702 | 6450079979 | INDUCTOR,33U J |
| △ SW601 | 6450590061 | SWITCH, POWER 1P-1TX1 | | 6450079993 | INDUCTOR,33U K |
| △ VA601 | 4071712008 | VARISTOR ERZV14D471 | DIODE | | |
| | 4072471300 | VARISTOR SVC471D-07ABW7 | D741 | 4071490817 | DIODE 1SS355-TE-17 |
| X161 | 4210115202 | SAW F TSF6376Y | D742 | 4071490817 | DIODE 1SS355-TE-17 |
| | 4210094705 | SAW F TSF6376U | MISCELLANEOUS | | |
| X211 | 6450248818 | OSC,CRYSTAL 4.433619MHZ | △ K701L | 6450262005 | SOCKET,CRT 8P |
| | 6450820052 | OSC,CRYSTAL 4.433619MHZ | | | |
| | 6520010154 | OSC,CRYSTAL 4.433619MHZ | | | |
| X801 | 6450041938 | OSC,CRYSTAL 32.768KHZ | | | |
| | 6450041945 | OSC,CRYSTAL 32.768KHZ | | | |
| 6103259383 ASSY,PWB,CRT C4MSA | | | | | |
| 1AA0B10S170EB | | | | | |
| TRANSISTOR | | | | | |
| Q701 | 4050416507 | TR 2SC2621-D-RA | | | |
| | 4050416705 | TR 2SC2621-E-RA | | | |
| | 4050669903 | TR 2SC2688(1)-K | | | |
| | 4050670008 | TR 2SC2688(1)-L | | | |
| | 4050670107 | TR 2SC2688(1)-M | | | |
| Q703 | 4050416507 | TR 2SC2621-D-RA | | | |
| | 4050416705 | TR 2SC2621-E-RA | | | |
| | 4050669903 | TR 2SC2688(1)-K | | | |
| | 4050670008 | TR 2SC2688(1)-L | | | |
| | 4050670107 | TR 2SC2688(1)-M | | | |
| Q705 | 4050416507 | TR 2SC2621-D-RA | | | |
| | 4050416705 | TR 2SC2621-E-RA | | | |
| | 4050669903 | TR 2SC2688(1)-K | | | |
| | 4050670008 | TR 2SC2688(1)-L | | | |
| | 4050670107 | TR 2SC2688(1)-M | | | |
| Q721 | 4051413515 | TR KTA1266-Y-T | | | |
| | 4050017417 | TR 2SA1015-O(SAN) | | | |
| | 4050017615 | TR 2SA1015-Y(SAN) | | | |
| CAPACITOR | | | | | |
| C703 | 4030733511 | CERAMIC 390P K 50V | | | |
| | 4031576513 | CERAMIC 390P K 50V | | | |
| C705 | 4030733511 | CERAMIC 390P K 50V | | | |
| | 4031576513 | CERAMIC 390P K 50V | | | |
| C707 | 4030733511 | CERAMIC 390P K 50V | | | |
| | 4031576513 | CERAMIC 390P K 50V | | | |
| C708 | 4040861904 | CERAMIC 2200P K 2K | | | |
| | 4034140216 | CERAMIC 2200P K 2K | | | |
| C710 | 4030560028 | ELECT 4.7U M 250V | | | |
| RESISTOR | | | | | |
| R701 | 4010251338 | CARBON 150 JA 1/6W | | | |
| R702 | 4011051917 | MT-GLAZE 180 JA 1/16W | | | |
| R704 | 4011051412 | MT-GLAZE 150 JA 1/16W | | | |
| R705 | 4011051917 | MT-GLAZE 180 JA 1/16W | | | |
| R707 | 4010251338 | CARBON 150 JA 1/6W | | | |
| R708 | 4011051917 | MT-GLAZE 180 JA 1/16W | | | |
| R710 | 4010573103 | OXIDE-MT 0.22 JA 1W | | | |

Main Board (Parts Side)

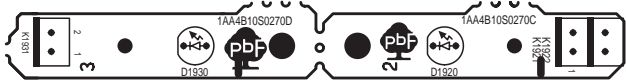


Component Locations

CRT Board (Parts Side)



LED Board (Parts Side) <Not used>



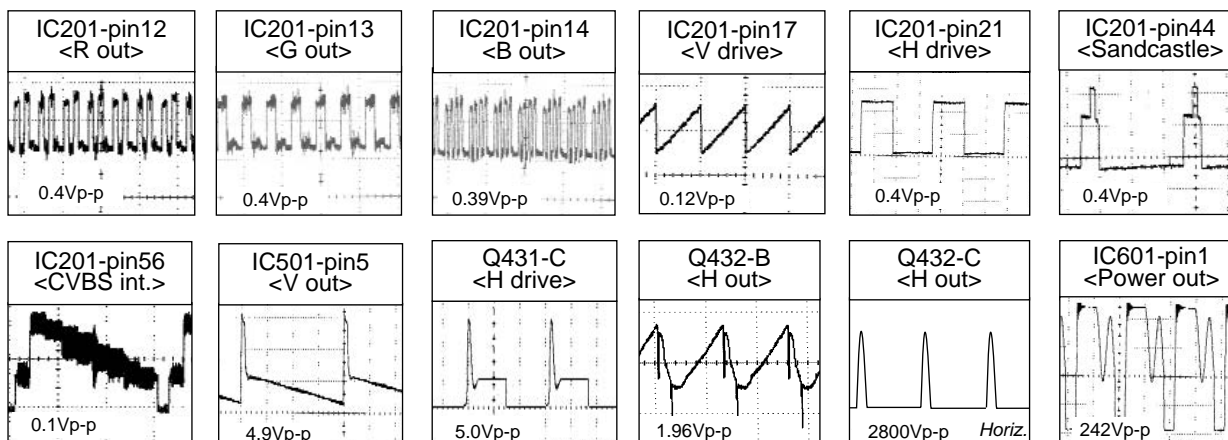
Voltages and Waveforms Charts

Note: Voltages and waveforms were measured with colour bar signal and controls adjusted for normal picture.

Main Board

| | | | | | | | | | | | |
|---|--|--|--|---|---------------------------------------|---|--|--|--|--------------------------------------|--|
| Q002 E 8.5V C 0V B 8.7V | Q1001 E 4.2V C 0V B 3.5V | Q1002 E 4.1V C 0V B 3.5V | Q1003 E 3.3V C 0V B 2.7V | Q111 E 0.5V C 5.6V B 1.2V | Q122 E 0V C 0V B 0.6V | Q130 E 4.9V C 2.3V B 4.4V | Q131 E 1V C 0.5V B 0.96V | Q132 E 0.5V C 4.4V B 0.96V | Q133 E 0V C 0.97V B 0.5V | Q1902 E 5V C 1V B 5V | Q3701 E 6.5V C 0V B 5.8V |
|---|--|--|--|---|---------------------------------------|---|--|--|--|--------------------------------------|--|

| | | | | | | | | | | |
|---|--|---|---------------------------------------|--|---|---------------------------------------|---------------------------------------|--|---------------------------------------|---------------------------------------|
| Q402 E 1.4V C 4.1V B 1.6V | Q431 E 0V C 17V B 0.5V | Q432 E 3.7V C 336V B 4.1V | Q511 E 0V C 3.8V E 0V | Q631 E 6.4V C 22.6V B 6.9V | Q641 E 4.1V C 5V B 4.8V | Q661 E 0V C 9.9V B 0V | Q681 E 0V C 9.9V B 0V | Q683 E 24.9V C 24.8V B 24.2V | Q684 E 0V C 0V B 0.7V | Q886 E 0V C 0V B 0.7V |
|---|--|---|---------------------------------------|--|---|---------------------------------------|---------------------------------------|--|---------------------------------------|---------------------------------------|



IC001 (AUDIO AMP.)

| | | | | | | | | |
|-------------|---------|---------|-------|--------|------|---------|--------|--------|
| Pin-1 15.3V | 2 0V | 3 GND | 4 0V | 5 4.5V | 6 0V | 7 16.3V | 8 7.6V | 9 7.6V |
| 10 GND | 11 7.5V | 12 7.8V | 13 NC | | | | | |

IC501 (VERT. OUT)

| | | | | | | |
|------------|---------|------|-------|---------|-------|--------|
| Pin-1 2.5V | 2 24.8V | 3 1V | 4 GND | 5 11.9V | 6 24V | 7 2.5V |
|------------|---------|------|-------|---------|-------|--------|

IC601 (POWER)

| | | | | | | |
|------------|------|------|-------|--------|--------|--------|
| Pin-1416V~ | 2 0V | 3 0V | 4 18V | 5 0.1V | 6 1.3V | 7 0.7V |
|------------|------|------|-------|--------|--------|--------|

IC651 (5VRC)

| | | |
|-------------|-------|------|
| Pin-1 12.4V | 2 GND | 3 5V |
|-------------|-------|------|

IC202 (5V1)

| | | |
|------------|-------|------|
| Pin-1 7.8V | 2 GND | 3 5V |
|------------|-------|------|

IC801 (MEMORY)

| | | | | | | | |
|-----------|-------|-------|-------|--------|--------|------|------|
| Pin-1 GND | 2 GND | 3 GND | 4 GND | 5 3.8V | 6 3.6V | 7 5V | 8 5V |
|-----------|-------|-------|-------|--------|--------|------|------|

IC3701 (AUDIO CONTROL)

| | | | | | | | | |
|------------|----------|----------|----------|----------|----------|----------|----------|----------|
| Pin-1: GND | 2: 4.2V | 3: 4.2V | 4: 4.2V | 5: 3.5V | 6: 4.2V | 7: 4.2V | 8: 4.2V | 9: 4.2V |
| 10: 4.2V | 11: 4.2V | 12: 4.2V | 13: 4.2V | 14: 4.2V | 15: 4.2V | 16: 4.2V | 17: 8.3V | 18: 3V |
| 19: 3.8V | 20: 3.5V | 21: 0V | 22: 4.2V | 23: 4.2V | 24: 4.2V | 25: 4.2V | 26: 4.2V | 27: 4.2V |
| 28: 4.2V | 29: 4.7V | 30: 4.2V | 31: 4.2V | 32: 3.5V | 33: 4.2V | 34: 4.2V | 35: 4.2V | 36: 4.2V |

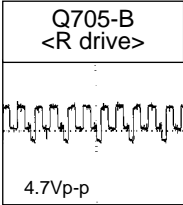
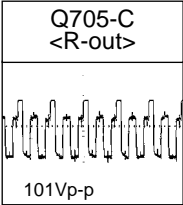
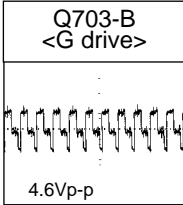
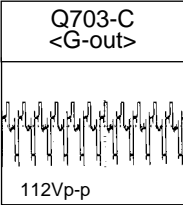
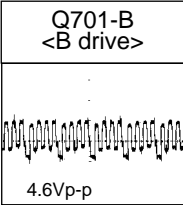
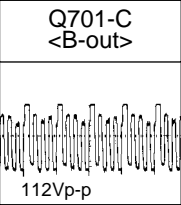
IC201 (IF/VIDEO/CHROMA/DEF/CPU)

| | | | | | | | | |
|-------------|----------|----------|----------|----------|----------|----------|----------|----------|
| Pin-1: 2.1V | 2: 2.5V | 3: 3.2V | 4: 2.8V | 5: 2.3V | 6: 2.3V | 7: 2.2V | 8: 5V | 9: 2.6V |
| 10: 3.5V | 11: 8V | 12: 2.6V | 13: 2.5V | 14: 2.7V | 15: 2.2V | 16: 2.2V | 17: 2.3V | 18: 1.6V |
| 19: 5V | 20: 2.6V | 21: 1.6V | 22: GND | 23: 3.9V | 24: 3.8V | 25: 5V | 26: 4.9V | 27: 5V |
| 28: 5V | 29: 5V | 30: 0V | 31: 3.8V | 32: 3.7V | 33: 2.7V | 34: 2.7V | 35: 5V | 36: 4.9V |
| 37: 4.9V | 38: 4.9V | 39: 0V | 40: 4V | 41: 3.3V | 42: GND | 43: 4.5V | 44: 1V | 45: 2.5V |
| 46: 2.6V | 47: 2.6V | 48: 2.6V | 49: 2.6V | 50: 2.5V | 51: 2.5V | 52: 2.7V | 53: 3.5V | 54: 2.6V |
| 55: 5V | 56: 2.8V | 57: 2.5V | 58: 2.3V | 59: 2.3V | 60: 2.2V | 61: 1.8V | 62: GND | 63: 2.9V |
| 64: 2.9V | | | | | | | | |

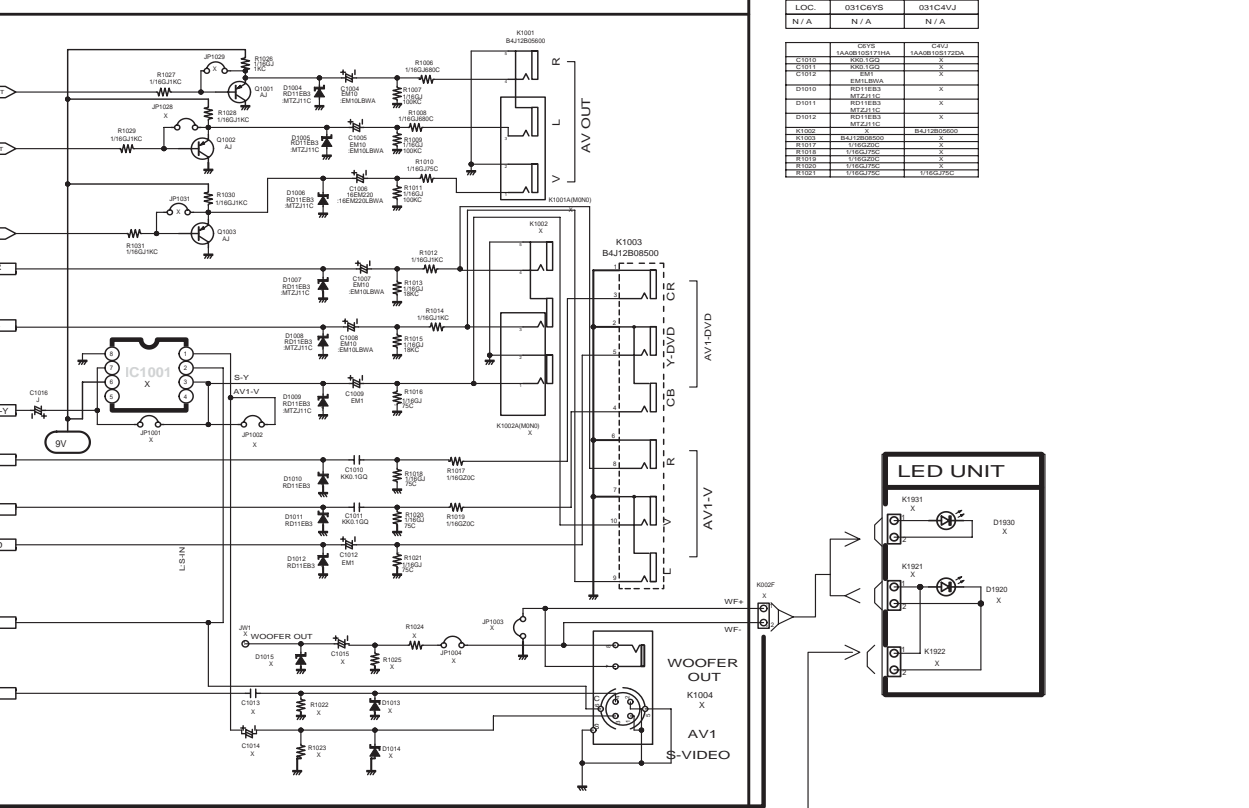
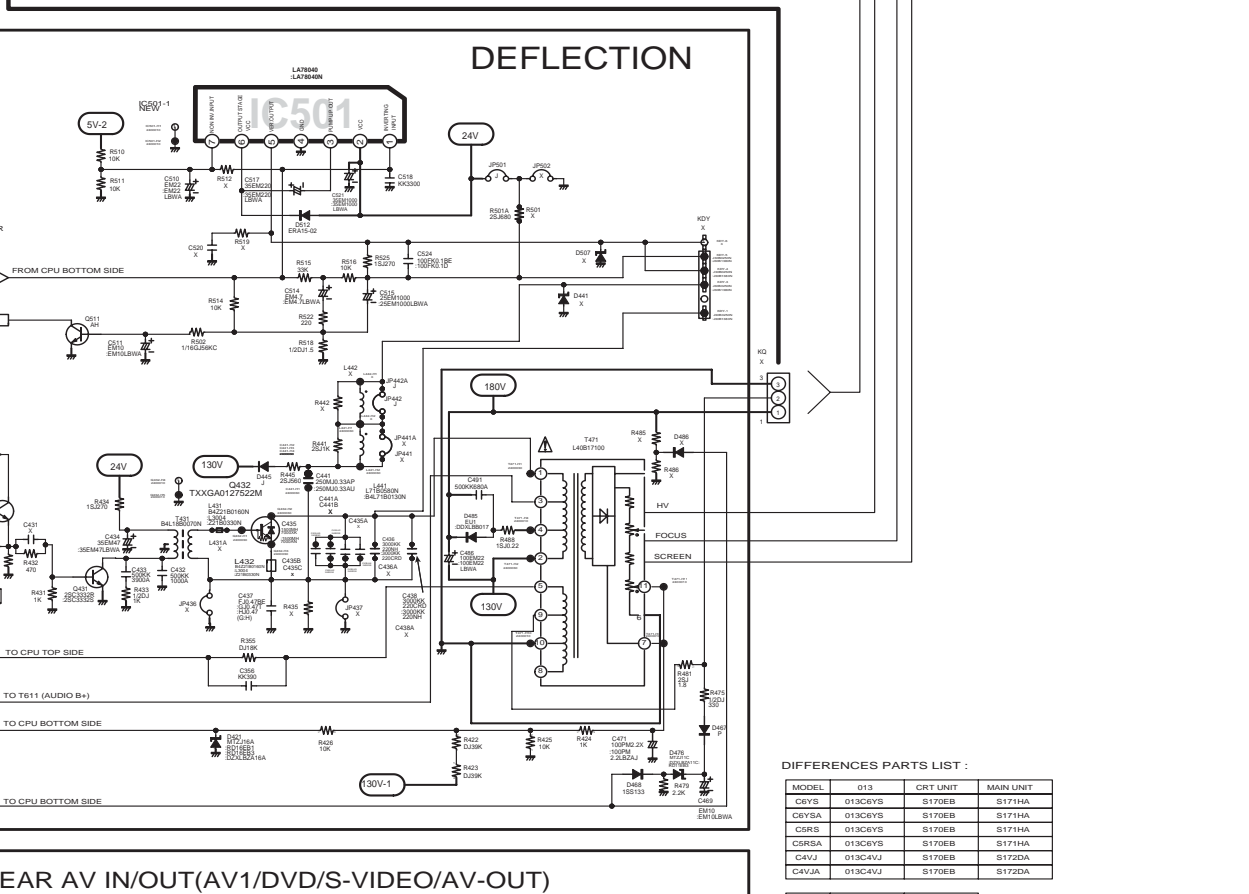
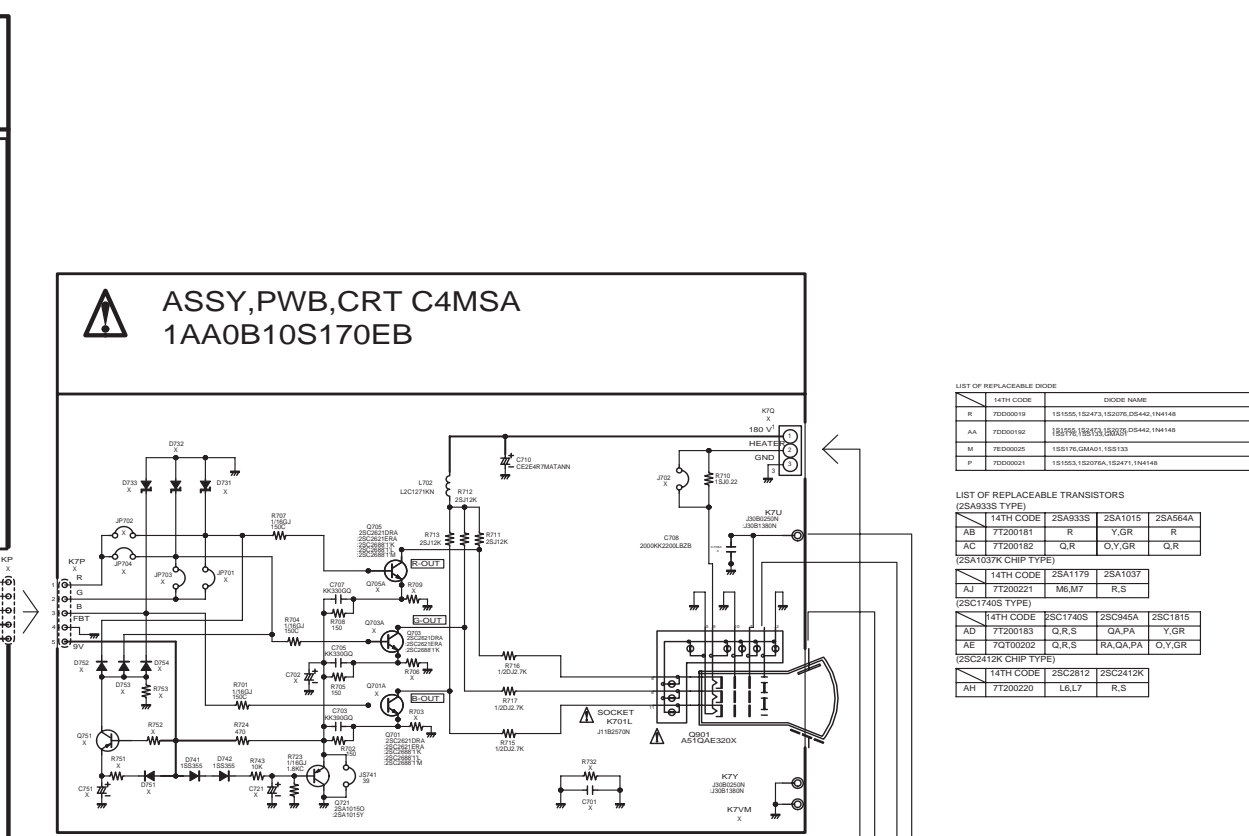
Voltages and Waveforms Charts

CRT Board

| | | | |
|-------------|-------------|-------------|-------------|
| Q701 | Q703 | Q705 | Q721 |
| E 2.5V | E 2.2V | E 2.3V | E 1.6V |
| C 8.5V | C 15V | C 13V | C 0V |
| B 2.6V | B 2.2V | B 2.3V | B 0.9V |







TRANSISTOR, DIODE AND INTEGRATED CIRCUIT TERMINAL GUIDE

| | | |
|---|--|--|
| <p>C: COLLECTOR</p> <p>B: BASE</p> <p>E: EMITTER</p> | <p>A': ANODE</p> <p>K: KATHODE</p> | <p>CHIP COMPONENTS</p> <p>TRANSISTOR</p> <p>DIOIDE</p> <p>RESISTOR</p> |
|---|--|--|

| PARTICULAR PARTS SYMBOL | |
|--------------------------------|-----------------------------|
| | FUSIBLE RESISTOR |
| | NON POLE ELECTRIC CAPACITOR |
| | POSISTER |