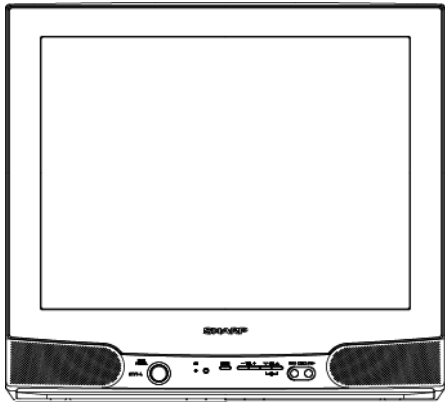


# SHARP SERVICE MANUAL

S8811021V1L



## COLOUR TELEVISION Chassis No. GA8

MODEL **21V1-L**

In the interests of user safety (Required by safety regulations in some countries) the set should be restored to its original condition and only parts indential to those specified should be used.

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### ELECTRICAL SPECIFICATIONS

POWER INPUT.....AC 110-220 V, 50/60 Hz  
POWER RATING .....76W  
PICTURE SIZE .....1,239 cm<sup>2</sup>(192sq inch)  
CONVERGENCE ..... Magnetic  
SWEEP DEFLECTION ..... Magnetic  
FOCUS ..... Electrostatic  
INTERMEDIATE FREQUENCIES  
Picture IF Carrier Frequency ..... 45.75 MHz  
Sound IF Carrier Frequency ..... 41.25 MHz  
Color Sub-Carrier Frequency .....42.17 MHz  
(Nominal)  
AUDIO POWER  
OUTPUT RATING... ..... 3.0 W(RMS) x 1pc

SPEAKER  
SIZE ..... 2" X 3.5", 1pc  
VOICE COIL IMPEDANCE .....16 ohm at 400 Hz  
ANTENNA INPUT IMPEDANCE  
VHF/UHF .....75 ohm Unbalanced  
TUNING RANGES  
VHF-Channels ..... 2 thru 13  
UHF-Channels .....14 thru 69  
CATV Channels ..... 1 thru 125  
(EIA, Channel Plan U.S.A.)

**Specifications are subject to change without prior notice.**

**SHARP CORPORATION**

This document has been published to be used for after sales service only.  
The contents are subject to change without notice.

## CHAPTER 1. IMPORTANT SERVICE SAFETY PRECAUTION

### IMPORTANT SERVICE SAFETY PRECAUTION

- **Service work should be performed only by qualified service technicians who are thoroughly familiar with all safety checks and the servicing guidelines which follow:**

#### WARNING

1. For continued safety, no modification of any circuit should be attempted.
2. Disconnect AC power before servicing.
3. Semiconductor heat sinks are potential shock hazards when the chassis is operating.
4. The chassis in this receiver has two ground systems which are separated by insulating material. The non-isolated (hot) ground system is for the B+ voltage regulator circuit and the horizontal output circuit. The isolated ground system is for the low B+ DC voltages and the secondary circuit of the high voltage transformer.

To prevent electrical shock use an isolation transformer between the line cord and power receptacle, when servicing this chassis.

#### SERVICING OF HIGH VOLTAGE SYSTEM AND PICTURE TUBE

**When servicing the high voltage system, remove the static charge by connecting a 10k ohm resistor in series with an insulated wire (such as a test probe) between the picture tube ground and the anode lead. (AC line cord should be disconnected from AC outlet.)**

1. Picture tube in this receiver employs integral implosion protection.
2. Replace with tube of the same type number for continued safety.
3. Do not lift picture tube by the neck.
4. Handle the picture tube only when wearing shatterproof goggles and after discharging the high voltage anode completely.

#### X-RADIATION AND HIGH VOLTAGE LIMITS

1. Be sure all service personnel are aware of the procedures and instructions covering X-radiation. The only potential source of X-ray in current solid state TV receivers is the picture tube. However, the picture tube does not emit measurable X-Ray radiation, if the high voltage is as specified in the "High Voltage Check" instructions. It is only when high voltage is excessive that X-radiation is capable of penetrating the shell of the picture tube including the lead in the glass material. The important precaution is to keep the high voltage below the maximum level specified.
2. It is essential that servicemen have available at all times an accurate high voltage meter. The calibration of this meter should be checked periodically.
3. High voltage should always be kept at the rated value –no higher. Operation at higher voltages may cause a failure of the picture tube or high voltage circuitry and;also, under certain conditions, may produce radiation in exceeding of desirable levels.
4. When the high voltage regulator is operating properly there is no possibility of an X-radiation problem. Every time a color chassis is serviced, the brightness should be tested while monitoring the high voltage with a meter to be certain that the high voltage does not exceed the specified value and that it is regulating correctly.
5. Do not use a picture tube other than that specified or make unrecommended circuit modifications to the high voltage circuitry.
6. When trouble shooting and taking test measurements on a receiver with excessive high voltage, avoid being unnecessarily close to the receiver.  
Do not operate the receiver longer than is necessary to locate the cause of excessive voltage.

# IMPORTANT SERVICE SAFETY PRECAUTION

(Continued)

## BEFORE RETURNING THE RECEIVER

### (Fire & Shock Hazard)

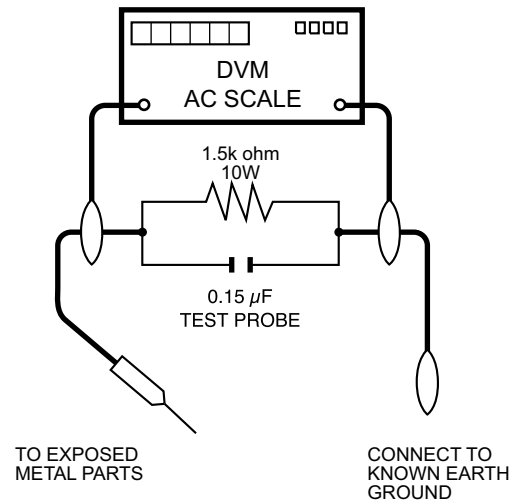
Before returning the receiver to the user, perform the following safety checks.

1. Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the receiver.
2. Inspect all protective devices such as non-metallic control knobs, insulating materials, cabinet backs, adjustment and compartment covers or shields, isolation resistor-capacity networks, mechanical insulators, etc.
3. To be sure that no shock hazard exists, check for leakage current in the following manner.
  - Plug the AC cord directly into a 110~220 volt AC outlet, (Do not use an isolation transformer for this test).
  - Using two clip leads, connect a 1.5k ohm, 10 watt resistor paralleled by a 0.15 $\mu$ F capacitor in series with all exposed metal cabinet parts and a known earth ground, such as electrical conduit or electrical ground connected to earth ground.
  - Use an AC voltmeter having with 5000 ohm per volt, or higher, sensitivity to measure the AC voltage drop across the resistor.

- Connect the resistor connection to all exposed metal parts having a return to the chassis (antenna, metal cabinet, screw heads, knobs and control shafts, escutcheon, etc.) and measure the AC voltage drop across the resistor.

All checks must be repeated with the AC line cord plug connection reversed. (If necessary, a non-polarized adapter plug must be used only for the purpose of completing these check.)

Any current measured must not exceed 0.5 milliamp. Any measurements not within the limits outlined above indicate of a potential shock hazard and corrective action must be taken before returning the instrument to the customer.



## SAFETY NOTICE

Many electrical and mechanical parts in television receivers have special safety-related characteristics. These characteristics are often not evident from visual inspection, nor can protection afforded by them be necessarily increased by using replacement components rated for higher voltage, wattage, etc.

Replacement parts which have these special safety characteristics are identified in this manual; electrical components having such features are identified by " $\triangle$ " and shaded areas in the Replacement Parts Lists and Schematic Diagrams.

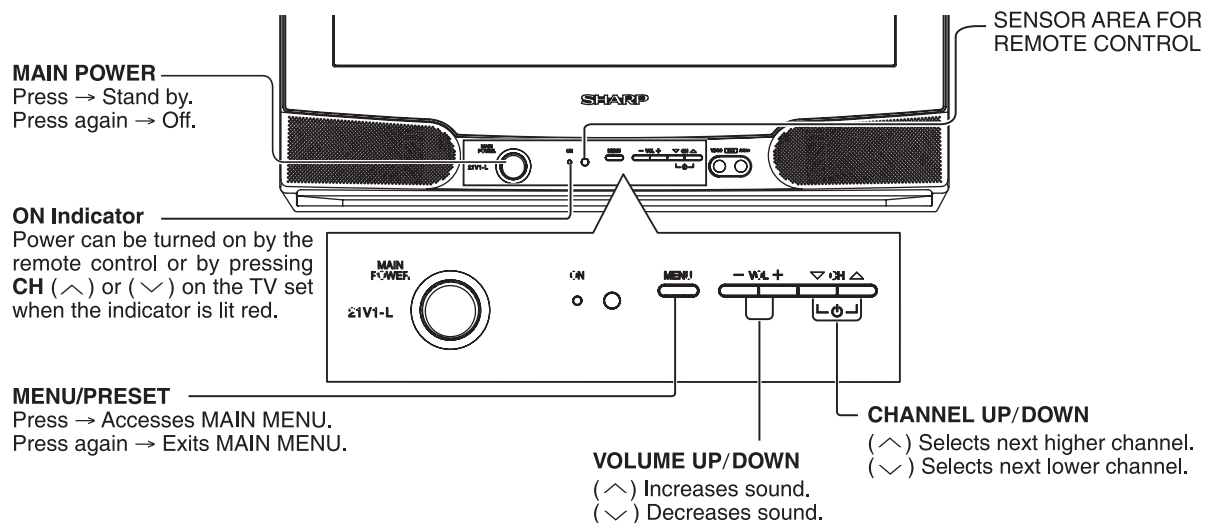
For continued protection, replacement parts must be identical to those used in the original circuit. The use of substitute replacement parts which do not have the same safety characteristics as the factory recommended replacement parts shown in this service manual, may create shock, fire, X-radiation or other hazards.

## CHAPTER 2. LOCATION OF USER'S CONTROL

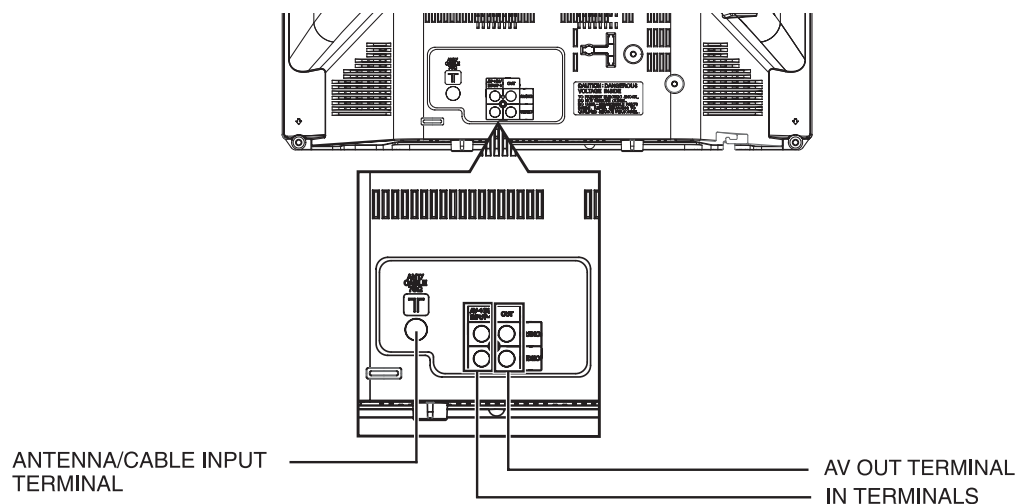
### [1] LOCATION OF USER'S CONTROL

#### Location of Controls

##### Front Panel



##### Rear Panel



## CHAPTER 3. INSTALLATION AND SERVICE INSTRUCTIONS

### INSTALLATION AND SERVICE INSTRUCTIONS

- Note:** (1) When performing any adjustments to resistor controls and transformers use non-metallic screwdrivers or TV alignment tools.  
 (2) Before performing adjustments, the TV set must be on at least 15 minutes.

#### CIRCUIT PROTECTION

The receiver is protected by a 3.15A fuse (F701), mounted on PWB-A, wired into one side of the AC line input.

#### X-RADIATION PROTECTOR CIRCUIT TEST

After service has been performed on the horizontal deflection system, high voltage system, B+ system, test the X-Radiation protection circuit to ascertain proper operation as follows:

1. Apply 110~220V AC using a variac transformer for accurate input voltage.
2. Allow for warm up and adjust all customer controls for normal picture and sound.
3. Receive a good local channel.
4. Connect a digital voltmeter to C602 +ve and make sure that the voltmeter reads  $20 \pm 1.1V$ .
5. Apply external 27V DC at C602 +ve by using an external DC supply, TV must be shut off.
6. To reset the protector, unplug the AC cord and make a short circuit between C602 -ve and C602 +ve. Now make sure that normal picture appears on the screen.
7. If the operation of the horizontal oscillator does not stop in step 5, the circuit must be repaired before the set is returned to the customer.

#### HIGH VOLTAGE CHECK

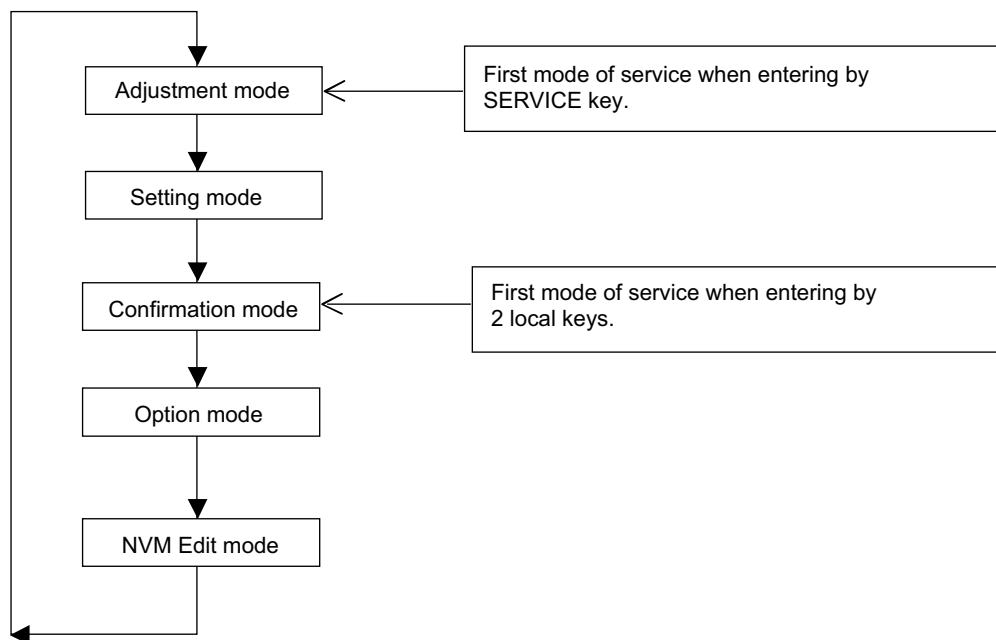
High voltage is not adjustable but must be checked to verify that the receiver is operating within safe and efficient design limitations as specified checks should be as follows:

1. Connect an accurate high voltage meter between ground and anode of picture tube.
2. Operate receiver for at least 15 minutes at 110~220V AC line voltage, with a strong air signal or a properly tuned in test signal.
3. Enter the service mode and set Y-mute ON by using Service R/C.
4. The voltage should be approximately 27.5kV (at zero beam).  
 If a correct reading cannot be obtained, check circuitry for malfunctioning components. After the voltage test, make Y-mute off to the normal mode.

## CHAPTER 4. SERVICE MODE

### SERVICE MODE

1. Service mode is switched by SERVICE key, CH UP + VOL DOWN when reset.
2. Service mode is cancelled by SERVICE key during Service mode.
3. Service mode can be switched to the following 5 modes via MENU key:



4. During Service mode, AFT operation is prohibited. The setting data for PLL is always set to fo data.
5. During Service mode, the following user data are set to default value and stored as last memory.  
 PICTURE/TINT/COLOR/BRIGHT/SHARP/COLOR TEMP.  
 BASS/TREBLE/BALANCE/MTS/FAO/SPEAKER/ENERGY SAVE
6. During Service mode, OSD display for ON/OFF is toggled via [CH CALL] key.
  - At display OFF condition, if changing adjustment data, channel, input source, it remains display OFF.
  - At display OFF condition, if changing adjustment item, it returns to display ON.
7. During Service mode, the following operation are prohibited.  
 CLOSED CAPTION/No signal BLUE SCREEN
8. During Service mode, sound is muted(only MTSIC) except when selecting the following items.  
 V24, M01

## Adjustment Mode Items

Data	Service Mode	Function	Range	Default Data
V01	SUB-CON	CONTRAST	0~127	127
V02	SUB-TINT	TINT	0~127	64
V03	SUB-COL	COLOR	0~127	64
V04	SUB-BRI	BRIGHT	0~255	128
V05	SUB-SHP-PRE	VIDEO-TONE(PRE)	0~63	41
V06	SUB-SHP-OVER	VIDEO-TONE(OVER)	0~63	41
V07	V-SHIFT	V-SHIFT	0~7	4
V08	H-SHIFT	H-PHASE	0~31	16
V09	RF-AGC	RF-DELAY	0~127	127
V10	V-SIZE	V-SIZE	0~63	32
V11	V-SHIFT50	V-SHIFT(OFFSET)	-7~+7	0
V12	H-SHIFT50	H-PHASE(OFFSET)	-15~+15	0
V13	V-SIZE50	V-SIZE(OFFSET)	-31~+31	0
V14	VIF-VCO	VIF-VCO	0~63	32
V15	R-CUT	R-CUTOFF	0~255	127
V16	G-CUT	G-CUTOFF	0~255	127
V17	B-CUT	B-CUTOFF	0~255	127
V18	R-DRI	R-DRIVE	0~127	64
V19	B-DRI	B-DRIVE	0~127	64
V20	SUB-COLOR-YUV	COLOR	0~127	64
V21	SUB-TINT-YUV	BASEBAND-TINT	0~127	64
V22	CC-POS	CC-POS	0~255	32
V23	SCREEN CUT OFF	CUT OFF	0~2	0
V24	SUB-VOL	A-ATT	0~127 (O20=0) 0~255 (O20=1)	127 255
V25	H-VCO	H-VCO	0~7	4
V26	S-TRAP	S-TRAP ADJ	0~127	64
V27	VS-CORRECT	VS-CORRECTION	0~63	36
V28	VS-CORRECT50	VS-CORRECTION	-13~+13	0
V29	V LINEARITY	V-LINEARITY	0~63	35
V30	V LINEARITY50	V-LINEARITY	-13~+13	0
V31	PARABOLA	E/W PARABOLA	0~63	32
V32	PARABOLA50	E/W PARABOLA	-13~+13	0
V33	TRAPEZIUM	E/W TRAPEZIUM	0~63	32
V34	TRAPEZIUM50	E/W TRAPEZIUM	-13~+13	0
V35	H-SIZE	E/W H-SIZE	0~63	32
V36	H-SIZE50	E/W H-SIZE	-13~+13	0
V37	UPPER CORNER	E/W UPPER CORNER	0~63	32
V38	UPPER CORNER50	E/W UPPER CORNER	-13~+13	0
V39	LOWER CORNER	E/W LOWER CORNER	0~63	32
V40	LOWER CORNER50	E/W LOWER CORNER	-13~+13	0
V41	ANGLE ADJ	ANGLE ADJ	0~63	31
V42	ANGLE ADJ50	ANGLE ADJ	-13~+13	0
V43	BOW ADJ	BOW ADJ	0~63	31
V44	BOW ADJ50	BOW ADJ	-13~+13	0
V45	S-TRAP ADJ START	S-TRAP ADJ	0~127	25
V46	S-TRAP STOP	S-TRAP ADJ	0~127	95
M01	MTS-ATT	DIRECT OUT LEVEL ADJ	0~15	10

Note 1) V23 = "1" ... HORIZONTAL MODE

V23 = "2" ... Y-MUTE MODE

Note 2) V24: These registers are set to maximum value.

## ■ AUTO ADJUSTMENT

### H-VCO

1. When there is H-VCO auto adjustment key input at item H-VCO, auto adjustment will be implemented.
2. H-FREE (1chip) is set to 1.
3. H-OUT (1chip) is set by intelligent monitor output.
4. IM input becomes TIM input.
5. H-VCO (1chip) data is changed so that the number is 126 inside 8ms interval.
6. When adjustment is completed, OSD display and H-VCO auto adjustment data of EERPOM are updated.
7. H-FREE (1chip), intelligent monitor output, IM input mode are recovered.

### RF-AGC

1. If there is RFAGC auto adjustment key input at item RF-AGC, auto adjustment will be implemented.
2. AGC-OUT (MONITOR(1chip)) is set by intelligent monitor output.
3. IM input becomes AD input.
4. RF-AGC(1chip) is decreased from current RF-AGC value to 0, the maximum AFT input voltage is obtained.
5. RF-AGC(1chip) is increased until at the point of AFT input voltage is (max. 0.3V), adjustment is completed.
6. When adjustment is completed, OSD display and RFAGC auto adjustment status in EEPROM are updated.
7. Intelligent monitor output, IM input mode are recovered.

### PIF-VCO

1. If there is PIFVCO auto adjustment key input at item PIF- VCO, auto adjustment will be implemented.
2. VIF-DEF (1chip) is set to 1.
3. AFT output (1chip) is set by intelligent monitor output.
4. IM input becomes AD input.
5. VIF-VCO (1chip) is changed so the input voltage becomes 2.5V.
6. When adjustment is completed, OSD display and PIF-VCO auto adjustment status in EEPROM are updated.
7. VIF-DEF (1chip) intelligent monitor output, IM input mode are recovered.

### S-TRAP

1. If there is S-TRAP auto adjustment key input at item S-TRAP, auto adjustment will be implemented.
2. S-TRAP OUTPUT is set by intelligent monitor output.
3. IM input becomes AD input.
4. S-Trap (1chip) is set to the value of V45(S-TRAP ADJ Start).
5. S\_Trapping\_Result is set to the value of V45(S-TRAP ADJ Start).
6. S-Trap (1chip) is increased until the minimum input voltage becomes minimum.
7. Wait 20ms before sampling the new\_AD\_data.
8. When adjustment is completed, OSD display and S-TRAP auto adjustment status in EEPROM are updated.
9. S-TRAP (1chip) intelligent monitor output, IM input mode are recovered.



## Setting Mode Items

Data	Service Mode	Function	Range	Default Data
F01	ABCL-Gain	ABCL-G	0/1	0
F02	SHP-AV-PRE	VIDEO-TONE (PRE)	-16~+16	0
F03	SHP-YUV-PRE	VIDEO-TONE (PRE)	-16~+16	0
F04	SHP-P-PRE	VIDEO-TONE (PRE)	-31~+31	0
F05	SHP-N3-PRE	VIDEO-TONE (PRE)	-31~+31	0
F06	SHP-AV-OVER	VIDEO-TONE (OVER)	-16~+16	0
F07	SHP-YUV-OVER	VIDEO-TONE (OVER)	-16~+16	0
F08	SHP-P-OVER	VIDEO-TONE (OVER)	-31~+31	0
F09	SHP-N3-OVER	VIDEO-TONE (OVER)	-31~+31	0
F10	SHP ANT-ON II OFFSET	VIDEO-TONE	-15~0	-10
F11	RGB-CLIP	EXTRGB-CLIP	0/1	0
F12	E-SAVE	CONTRAST(OFFSET)	0~63	30
F13	FAO-VOL	A-ATT	0~127 (O20=0) 0~255 (O20=1)	120 246
F14	VIF-G	VIF-GAIN	0~7	5
F15	YDL-TV	Y-DELAY	0~7	5
F16	YDL-TV-P	Y-DELAY	0~7	5
F17	YDL-TV-N3	Y-DELAY	0~7	5
F18	YDL-AV	Y-DELAY	0~7	5
F19	YDL-AV-P	Y-DELAY	0~7	5
F20	YDL-AV-N3	Y-DELAY	0~7	5
F21	YDL-YUV	Y-DELAY	0~7	0
F22	TINT-AV	TINT(OFFSET)	-32~+32	6
F23	COL-AV	COLOR(OFFSET)	-32~+32	0
F24	COL-P	COLOR(OFFSET)	-31~+31	24
F25	COL-N3	COLOR(OFFSET)	-31~+31	0
F26	R-R	R-DRI(OFFSET)	-32~+32	3
F27	R-B	R-DRI(OFFSET)	-32~+32	-2
F28	B-R	B-DRI(OFFSET)	-32~+32	-8
F29	B-B	B-DRI(OFFSET)	-32~+32	6
F30	GAMMA	GAMMA	0~3	1
F31	BS-D	BS-DISCHARGE	0~3	0
F32	BS-C	BS-CHARGE	0~3	0
F33	SL-TV	S-SLICE DOWN	0~7	2
F34	SL-AV	S-SLICE DOWN	0~7	2
F35	SL-YUV	S-SLICE DOWN	0~7	0
F36	AFC2	AFC2-G	0/1	0
F37	VD-TV	VSUVC-DET	0~7	5
F38	VD-AV	VSUVC-DET	0~7	7
F39	VD-YUV	VSUVC-DET	0~7	1
F40	AS-TV	AUTO-SLICE	0/1	1
F41	AS-AV	AUTO-SLICE	0/1	1
F42	AS-YUV	AUTO-SLICE	0/1	0
F43	FBP-TV	FBP VTH	0/1	0
F44	FBP-AV	FBP VTH	0/1	0
F45	FBP-YUV	FBP VTH	0/1	0
F46	C.Clip Level	C.CLIP LEVEL	0/1	0
F47	CP	CP	0/1	1
F48	CC LEVEL	CC LEVEL	0~31	0
F49	OSD POS-H	OSD POS	0~31	0
F50	OSD POS-V50	OSD POS	1~55	38
F51	OSD POS-V60	OSD POS	1~50	23
F52	OFFSET-ADJ-COLOR	COLOR	-32~+32	10
F53	OFFSET-ADJ-TINT	TINT	-32~+32	2
F54	WAIT MD TIMER	(SLOW MODE)	0/1	1

## Setting Mode Items (Continued)

F55	R-CUT-YUV	R-CUT (OFFSET)	-63~+63	0
F56	G-CUT-YUV	G-CUT (OFFSET)	-63~+63	0
F57	B-CUT-YUV	B-CUT (OFFSET)	-63~+63	0
F58	R-DRI-YUV	R-DRI (OFFSET)	-63~+63	0
F59	B-DRI-YUV	B-DRI (OFFSET)	-63~+63	0
F60	CONTRAST OFFSET	CONTRAST(OFFSET)	-63~+63	0
F61	CONTRAST YUV OFFSET	CONTRAST(OFFSET)	-63~+63	0
F62	BRIGHT OFFSET	BRIGHT (OFFSET)	-63~+63	0
F63	BRIGHT AV2 OFFSET	BRIGHT (OFFSET)	-15~+15	1
F64	BRIGHT YUV OFFSET	BRIGHT (OFFSET)	-63~+63	0
F65	TRAP	TRAP-FINE	0~3	2
F66	TRAP-P	TRAP-FINE	0~3	2
F67	TRAP-N3	TRAP-FINE	0~3	2
F68	AFC1-Gain-TV	AFC1-G	0~3	0
F69	AFC1-Gain-AV	AFC1-G	0~3	3
F70	AFC1-Gain-YUV	AFC1-G	0~3	3
F71	OM-DET	OM-Det	0/1	0
F72	BS-Gain	BS-Gain	0/1	0
F73	C-ANGLE	C.ANGLE	0/1	0
F74	V-DL	V-DL Fine	0~3	0
F75	U-DL	U-DL Fine	0~3	0
F76	AS-SPEED-DN	AS-SPEED-DN	0/1	0
F77	AS-SPEED-UP	AS-SPEED-UP	0/1	0
F78	CR-PEDESTAL-ADJ	Cr Pedestal Adj.	0~15	8
F79	CB-PEDESTAL-ADJ	Cb Pedestal Adj.	0~15	8
F80	SIF-BPF-WIDE	SIF BPF WIDE	0~7	3
F81	SIF-BPF-WIDE-LOW	SIF BPF WIDE LOW	0/1	0
F82	SIF-BPF-WIDE-HIGH	SIF BPF WIDE HIGH	0/1	0
F83	COL-SYSTEM	COL-SYSTEM	0: 11XX (AUTO) 1: 0011 (PAL-M) 2: 0111 (PAL-N) 3: 0110 (N358)	3
F84	Pow-Storage	CONTRAST/BRIGHTNESS INCREASE GRADUALLY	0/1	1
F85	SIF45 GAIN DOWN	SIF45 GAIN DOWN	0/1	0
F86	S-TRAP OFF	S-Trap	0/1	1
F87	BASS OFFSET	BASS	-4~+4	0
F88	MID1 OFFSET	AUDIO EQ MID1	-4~+4	0
F89	MID2 OFFSET	AUDIO EQ MID2	-4~+4	0
F90	MID3 OFFSET	AUDIO EQ MID3	-4~+4	0
F91	TREBLE OFFSET	TREBLE	-4~+4	0
F92	AVL LEVEL	AUDIO AVL LEVEL	0~3	0
F93	AVL OPTION	AVL ON	0: fix to 0 1: fix to 1 2: AVL in SOUND MENU	2
F94	AU-ATT AMP	AU ATTOUT GAIN	0 (0dB)/1(3dB)	0
F95	OSD LEVEL	OSD LEVEL	0: 10% 1: 30% 2: 50% 3: 70% 4: 90%	3
F96	R MTX UP	R MTX UP	0/1	0
F97	MATRIX ADJ	MATRIX ADJ	0~3	0

## Setting Mode Items (Continued)

F98	SAP LEVEL	SAP LEVEL	0/1	0
F99	STEREO SENS	STEREO SENS	0/1	0
F100	SAP SENS	SAP SENS	0/1	0
F101	MER	S-BOOSTER FREQ. CHARACTERISTIC CONTROL	0~255	70
F102	MEL1	S-BOOSTER LEVEL1	0~255	150
F103	MEL2	S-BOOSTER LEVEL2	0~255	156
F104	MEL3	S-BOOSTER LEVEL3	0~255	163
F105	MEL4	S-BOOSTER LEVEL4	0~255	165
F106	MEL5	S-BOOSTER LEVEL5	0~255	170
F107	MEL6	S-BOOSTER LEVEL6	0~255	180
F108	S-St-Point	S-BOOSTER START POINT	0~60	21
F109	S-Sp-Point	S-BOOSTER STOP POINT	0~60	60
F110	S-Step	S-BOOSTER STEP	0~60	7
F111	CONT NEWS	CONTRAST SETTING- NEWS	0~60	40
F112	CONT MUSIC	CONTRAST SETTING- MUSIC	0~60	50
F113	CONT MOVIE	CONTRAST SETTING- MOVIE	0~60	60
F114	BRIGHT NEWS	BRIGHTNESS SETTING- NEWS	-30~+30	0
F115	BRIGHT MUSIC	BRIGHTNESS SETTING- MUSIC	-30~+30	0
F116	BRIGHT MOVIE	BRIGHTNESS SETTING- MOVIE	-30~+30	0
F117	COL NEWS	COLOUR SETTING- NEWS	-30~+30	0
F118	COL MUSIC	COLOUR SETTING- MUSIC	-30~+30	0
F119	COL MOVIE	COLOUR SETTING- MOVIE	-30~+30	10
F120	SHARP NEWS	SHARPNESS SETTING- NEWS	-30~+30	-10
F121	SHARP MUSIC	SHARPNESS SETTING- MUSIC	-30~+30	0
F122	SHARP MOVIE	SHARPNESS SETTING- MOVIE	-30~+30	5
F123	SURR NEWS	SURROUND SETTING- NEWS	0(OFF)/1(ON)	0
F124	SURR MUSIC	SURROUND SETTING- MUSIC	0(OFF)/1(ON)	0
F125	SURR MOVIE	SURROUND SETTING- MOVIE	0(OFF)/1(ON)	0
F126	TREBLE NEWS	TREBLE SETTING- NEWS	-10~+10	-10
F127	TREBLE MUSIC	TREBLE SETTING- MUSIC	-10~+10	0
F128	TREBLE MOVIE	TREBLE SETTING- MOVIE	-10~+10	5
F129	BASS NEWS	BASS SETTING- NEWS	-10~+10	-5
F130	BASS MUSIC	BASS SETTING- MUSIC	-10~+10	0
F131	BASS MOVIE	BASS SETTING- MOVIE	-10~+10	10
F132	EQ BASS NEWS	EQ BASS SETTING- NEWS	-10~+10	0
F133	EQ BASS MUSIC	EQ BASS SETTING- MUSIC	-10~+10	0
F134	EQ BASS MOVIE	EQ BASS SETTING- MOVIE	-10~+10	0
F135	EQ MID1 NEWS	EQ MID1 SETTING- NEWS	-10~+10	0
F136	EQ MID1 MUSIC	EQ MID1 SETTING- MUSIC	-10~+10	0
F137	EQ MID1 MOVIE	EQ MID1 SETTING- MOVIE	-10~+10	0
F138	EQ MID2 NEWS	EQ MID2 SETTING- NEWS	-10~+10	0
F139	EQ MID2 MUSIC	EQ MID2 SETTING- MUSIC	-10~+10	0
F140	EQ MID2 MOVIE	EQ MID2 SETTING- MOVIE	-10~+10	0
F141	EQ MID3 NEWS	EQ MID3 SETTING- NEWS	-10~+10	0
F142	EQ MID3 MUSIC	EQ MID3 SETTING- MUSIC	-10~+10	0
F143	EQ MID3 MOVIE	EQ MID3 SETTING- MOVIE	-10~+10	0
F144	EQ TRE NEWS	EQ TRE SETTING- NEWS	-10~+10	0
F145	EQ TRE MUSIC	EQ TRE SETTING- MUSIC	-10~+10	0
F146	EQ TRE MOVIE	EQ TRE SETTING- MOVIE	-10~+10	0
F147	S-BOOST NEWS	S-BOOSTER SETTING- NEWS	0(OFF)/1(ON)	0
F148	S-BOOST MUSIC	S-BOOSTER SETTING- MUSIC	0(OFF)/1(ON)	1
F149	S-BOOST MOVIE	S-BOOSTER SETTING- MOVIE	0(OFF)/1(ON)	1

**Setting Mode Items (Continued)**

F150	CORNER UP-LOW EN	EW CNUPLOW EN	0/1	1
F151	BOW/ANGLE-ON/OFF	BOW/ANGLE	0(OFF)/1(ON)	1
F152	SHP-NR-OFFSET	VIDEO TONE	-15~0	0
F153	V-FREE60	V-FREE60	0/1	1
F154	TAKEOFF TV	TAKE-OFF	0/1	0
F155	STRAP OFFSET	S-TRAP ADJ	-16~+16	0

## CHAPTER 5. ADJUSTMENT METHOD

MODEL NAME	21V1-L										
ADJUSTMENT ITEM	OPTION SET UP										
ADJUSTMENT POSITION	REFER AS BELOW			STEP RANGE			REFER AS BELOW				
CONTROL	—										
PRE-ADJUST REQUIREMENT	—										
CONTENT	—										
INPUT CONDITION											
OUTPUT	OSD CHECKING										
ADJUSTMENT PROCEDURE	BUS OPTION      FOR THIRD STAGE SERVICE DATA										
	FUNCTION	O01 LNA	O02 FAO	O03 PON-CH	O04 ANT- BOOSTER	O05 AV	O06 AV2	O07 MTS	O08 COMP	O09 TONE-CTRL	O10 AUTO-OFF
	21V1-L	0	0	1	0	1	1	0	0	0	1
	FUNCTION	O11 LAST POWER	O12 SETUP FLAG	O13 AV MODE	O14 MP IN	O15 S- BOOSTER	O16 F-COL	O17 INIT LANG	O18 LANG SEL	O19 ARROW KEY	O20 VOL-TABLE
	21V1-L	0	1	0	0	0	0	1	1	0	0
	FUNCTION	O21 AUTO JUDGMENT	O22 WHITE-OUT	O23 H-SYNC JUDGE	O24 CHSET COLOR	O25 DEMO	O26 FLAT	O27 F/R-AV	O28 SPEAKER		
	21V1-L	1	0	1	0	1	0	3	0		
	DEF	"0"= DISABLE									

MODEL NAME	21V1-L								
ADJUSTMENT ITEM	BUS SET UP								
ADJUSTMENT POSITION	REFER AS BELOW			STEP RANGE			REFER AS BELOW		
CONTROL	—								
PRE-ADJUST REQUIREMENT	—								
CONTENT	—								
INPUT CONDITION									
OUTPUT	OSD CHECKING								
ADJUSTMENT PROCEDURE	DATA SETUP FOR FIRST AND SECOND STAGE SERVICE DATA								
	FUNCTION	V05 SHARP (PRE)	V06 SHARP (OVER)	V27 VS COR	V29 V-LIN	F02 SHP-AV-PRE	F06 SHP-AV- OVER	F14 VIF-G	F22 TINT-AV
	21V1-L	42	37	44	40	-5	-5	4	-9
	FUNCTION	F23 COL-AV	F26 R-R	F27 R-B	F28 B-R	F29 B-B	F30 GAMMA	F33 SL-TV	F37 VD-TV
	21V1-L	+10	+7	0	-20	+9	3	1	1
	FUNCTION	F38 VD-AV	F39 VD-YUV	F49 OSD POS-H	F50 OSD POS-V50	F51 OSD-POS-V60	F52 OFFSET-ADJ COL	F53 OFFSET-ADJ TINT	F63 BRI AV2 OFFSET
	21V1-L	2	0	17	48	30	+15	+9	+3
	FUNCTION	F65 TRAP	F80 SIF-BPF-WIDE	F86 S-TRAP OFF	F93 AVL OPTION				
	21V1-L	0	1	0	1				
	DEF								

MODEL NAME	21V1-L		
ADJUSTMENT ITEM	<b>H-POSITION</b>		
ADJUSTMENT POSITION	<b>V08</b>	STEP RANGE	0-31
CONTROL	I2C BUS CONTROL		
PRE-ADJUST REQUIREMENT	OPTION SET UP, BUS SET UP, CRT-PURITY		
CONTENT	US 4 CH LION HEAD (MONOSCOPE)		
INPUT CONDITION	AC 220V, US MAGNETIC FIELD		
OUTPUT	CONFIRMATION BY CRT SCREEN		
ADJUSTMENT PROCEDURE	<p>1.ADJUST THE <b>V08</b> BUS DATA TO HAVE A BALANCE POSITION TO SPEC OF <b>A=B</b>.  2.IF CANNOT MAKE IT TO <b>A=B</b>, ADJ FROM THE BEST POINT SO THAT <b>B</b> SLIGHTLY SMALLER THAN <b>A</b></p> <div data-bbox="522 863 992 1136" data-label="Image"> </div>		
	<p><b>[CHECKING SPEC]</b>  LEFT AND RIGHT SYMMETRICAL</p>		

MODEL NAME	21V1-L		
ADJUSTMENT ITEM	<b>V-SIZE</b>		
ADJUSTMENT POSITION	<b>V10</b>	STEP RANGE	0~63
CONTROL	I2C CONTROL		
PRE-ADJUST REQUIREMENT	OPTION SET UP , BUS SET UP, CRT PURITY, V-PHASE , +B ADJUST		
CONTENT	US 4 CH LION HEAD (MONOSCOPE)		
INPUT CONDITION	AC 220		
OUTPUT	CONFIRMATION BY CRT SCREEN		
ADJUSTMENT PROCEDURE	ADJUST THE V10 BUS DATA UNTILL THE OVERSCAN BECOME AS SPECIFIED BELOW. CAUTION:- PLEASE AGING TV MORE THAN 10 MINUTES BEFORE ADJUSTMENT.		
	<b>[CHECKING SPEC]</b> OVERSCAN 10 ± 2.5%		



MODEL NAME	21V1-L		
ADJUSTMENT ITEM	<b>V-PHASE</b>		
ADJUSTMENT POSITION	<b>V07</b>	STEP RANGE	0-7
CONTROL	I2C CONTROL		
PRE-ADJUST REQUIREMENT	OPTION SET UP, BUS SET UP CRT PURITY		
CONTENT	US 4 CH LION HEAD (MONOSCOPE)		
INPUT CONDITION	220 V, RF INPUT, ZERO MAGNETIC FIELD		
OUTPUT	CONFIRMATION ON CRT SCREEN		
ADJUSTMENT PROCEDURE	ADJUST V07 BUS DATA TO HAVE A MOST ACCEPTABLE VERTICAL POSITION.  THE MONOSCOPE PATTERN SHOULD BE BALANCE IN VERTICAL POSITION  <b>NOTE: THE DATA FOR V07 LIMIT AT <math>\leq 04</math> , EVEN POSITION NOT GOOD ENOUGH</b>		
	[CHECKING CONFIRMATION ]		

MODEL NAME	21V1-L		
ADJUSTMENT ITEM	<b>CLOSED CAPTION SET UP</b>		
ADJUSTMENT POSITION	<b>V22</b>	STEP RANGE	0 - 255
CONTROL	I2C CONTROL		
PRE-ADJUST REQUIREMENT	OPTION SET UP, BUS SET UP		
CONTENT	US 4 CH LION HEAD (MONOSCOPE)		
INPUT CONDITION	AC 220		
OUTPUT	CONFIRMATION ON CRT DISPLAY.		
ADJUSTMENT PROCEDURE	1) BY SELECTING THE <b>V22</b> , BOX BLK TEXT WILL BE APPEARED. 2) ADJUST THE <b>V22</b> BUS DATA TO HAVE A BALANCE POSITION TO SPEC OF A=B. <div data-bbox="565 688 954 972" data-label="Image"> </div>		
	<b>[CHECKING SPEC]</b> LEFT AND RIGHT SYMMETRICAL THEN V22 DATA REDUCE 5 STEP.		

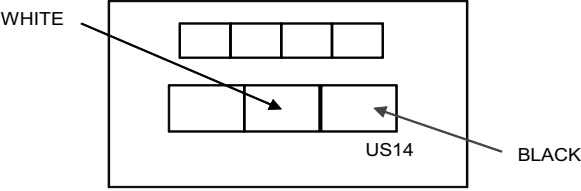
MODEL NAME	21V1-L		
ADJUSTMENT ITEM	<b>H-VCO</b>		
ADJUSTMENT POSITION	<b>V25</b>	STEP RANGE	0 - 7
CONTROL	I2C CONTROL		
PRE-ADJUST REQUIREMENT	OPTION SET UP, BUS SET UP		
CONTENT	NO SIGNAL (RASTER) CONDITION		
INPUT CONDITION	AC 220		
OUTPUT	IC 801 PIN 13 (MANUAL), CONFIRMATION ON CRT DISPLAY (AUTO)		
ADJUSTMENT PROCEDURE	(MANUAL ADJ) 1) GO TO SERVICE MODE 2) GO TO SERVICE DATA <b>V25</b> , ADJ UNTIL FREQUENCY AS BELOW  (SELF ADJ) 1) GO TO SERVICE MODE, BY SELECTING THE SERVICE DATA <b>V25</b> 2) PRESS THE R/C TO OPERATE AUTO H-VCO, OSD APPEAR "OK" AT SCREEN 3) IF APPEAR "NG" PLS REPEAT STEP 2		
	<b>[CHECKING SPEC]</b> <b>FREQ = 15.735 ± .02 KHz</b>		

MODEL NAME	21V1-L		
ADJUSTMENT ITEM	<b>PIF-VCO</b>		
ADJUSTMENT POSITION	<b>V14</b>	STEP RANGE	0 - 63
CONTROL	I2C CONTROL		
PRE-ADJUST REQUIREMENT	OPTION SET UP, BUS SET UP		
CONTENT	NO SIGNAL (RASTER) CONDITION		
INPUT CONDITION	AC 220		
OUTPUT	CONFIRMATION ON CRT DISPLAY(AUTO), IC801 PIN 7 VOLTAGE (MANUAL).		
ADJUST PROCEDURE	(AT SELF ADJUSTMENT MODE) 1)GO INTO SERVICE MODE,BY SELECTING THE SERVICE DATA <b>V14</b> 2)PRESS THE R/C FOR AUTO PIF-VCO KEY, OSD APPEAR "OK" AT SCREEN 3)IF APPEAR "NG" PLS REPEAT STEP 2  (AT MANUAL ADJUSTMENT MODE) 1)GO INTO SERVICE MODE. BY SELECTING THE SERVICE DATA <b>V14</b> 2) ADJUST THE DATA UP/DOWN UNTIL IC801 PIN 7 VOLTAGE BECOME AS SPECIFIED BELOW		
	<b>[CHECKING SPEC]</b> 2.5 ± 0.5 V DC (CHECKING SPEC : 2.50 ± 1.5 V)		

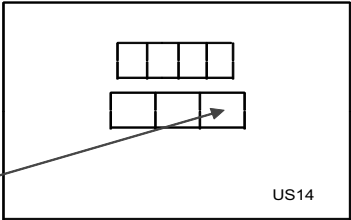
MODEL NAME	21V1-L		
ADJUSTMENT ITEM	<b>RF-AGC</b>		
ADJUSTMENT POSITION	V 09	STEP RANGE	0-127
CONTROL	I2C CONTROL		
PRE-ADJUST REQUIREMENT	OPTION SET UP , BUS SET UP		
CONTENT	US10CH HALF COLOR BAR		
INPUT CONDITION	RF INPUT FIELD STRENGTH <b>56dB<math>\mu</math>V</b> (FIX)		
OUTPUT	TUNER AGC TERMINAL (JA402 ) OR CRT DISPLAY CONFIRMATION		
ADJUSTMENT PROCEDURE	<p><b>(AT SELF ADJUSTMENT MODE)</b></p> <p>1) GO TO SERVICE MODE</p> <p>2) GO TO SERVICE DATA V09, PRESS R/C TO OPEARATE AUTO-AGC KEY AND CONFIRM THE OK DISPLAY ON THE SCREEN.</p> <p>3) IF APPEAR NG PLS REPEAT STEP 2 AGAIN.</p> <p><b>(AT MANUAL ADJUSTMENT MODE)</b></p> <p>1) ADJUST THE V09 BUS DATA UNTIL AGC TERMINAL VOLTAGE BECOME MAXIMUM, THEN DROP 0.1V BELOW MAXIMUM VOLTAGE.</p> <p>2. CHANGE THE ANTENNA INPUT SIGNAL TO 63~67 dB<math>\mu</math>V, AND MAKE SURE THERE IS NO NOISE</p> <p>3. CHANGE THE ANTENNA INPUT SIGNAL TO 90~95 dB<math>\mu</math>V TO BE SURE THAT THERE IS NO CROSS MODULATION BEAT.</p>		
	<p><b>[VOLTAGE CONFIRMATION ]</b></p> <p>MAX - 0.1V dc</p>		

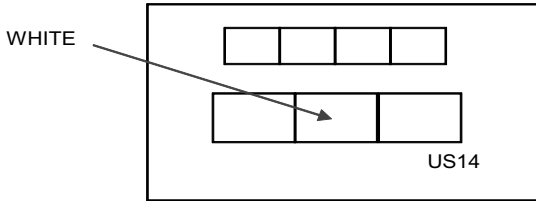
MODEL NAME	21V1-L		
ADJUSTMENT ITEM	<b>S-TRAP</b>		
ADJUSTMENT POSITION	<b>V26</b>	STEP RANGE	0 - 127
CONTROL	I2C CONTROL		
PRE-ADJUST REQUIREMENT	OPTION SET UP , BUS SET UP ,RF-AGC,VIF-VCO		
CONTENT	NO SIGNAL (RASTER) CONDITION		
INPUT CONDITION	AC 220		
OUTPUT	CONFIRMATION ON CRT DISPLAY(AUTO), IC801 PIN 30 OR TP801VOLTAGE (MANUAL)		
ADJUST PROCEDURE	(AT SELF ADJUSTMENT MODE) 1)GO INTO SERVICE MODE.BY SELECTING THE SERVICE DATA <b>V26</b> 2)PRESS THE R/C FOR AUTO S-TRAP KEY, OSD APPEAR "OK" AT SCREEN 3)IF APPEAR "NG" PLS REPEAT STEP 2  (AT MANUAL ADJUSTMENT MODE) 1)GO INTO SERVICE MODE, BY SELECTING THE SERVICE DATA <b>V26</b> 2) ADJUST THE DATA UP/DOWN UNTIL IC801 PIN 30 OR TP801 VOLTAGE BECOME MIN (BELOW 5V)		
	<b>[CHECKING SPEC]</b>		

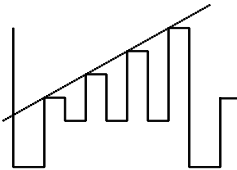
MODEL NAME	21V1-L		
ADJUSTMENT ITEM	<b>SCREEN</b>		
ADJUSTMENT POSITION	<b>V15,V16,V17</b>	STEP RANGE	0~255
CONTROL	I2C CONTROL		
PRE-ADJUST REQUIREMENT	OPTION SET UP, BUS SET UP		
CONTENT	WINDOW PATTERN OR US4CH LION HEAD		
INPUT CONDITION	220 V		
OUTPUT	CONFIRMATION ON CRT DISPLAY.		
ADJUSTMENT PROCEDURE	<p>1) IN SERVICE MODE, SET <b>V04</b> TO 127 AND <b>V15 &amp; V16 &amp; V17</b> TO 127; <b>V18 &amp; V19</b> TO 64 , GET IN Y-MUTE BY R/C AND SET <b>V23</b> TO "1", PICTURE APPEAR IN CUT-OFF CONDITION</p> <p>2)ADJUST THE SCREEN SO THAT CUT-OFF LINE APPEAR IN LOW BRIGHT, THEN JUDGE THAT WHETHER THE CUT-OFF LINE APPEAR IN RED OR GREEN OR BLUE COLOR, IN THIS CONDITION V15= R-CUTOFF,V16=G-CUTOFF,V17=B-CUTOFF, FIX THE DATA OF THE COLOR APPEAR IN CUT-OFF LINE AND USE R/C TO ADJUST THE OTHER TWO CUT-OFF DATA SO THAT CUT-OFF LINE COLOR BECOME WHITE.</p> <p>3)TURN THE SCREEN VR OF FBT SO THAT CUT-OFF LINE JUST DISAPPEAR AND USE R/C TO SET V23 TO "0", NEXT DISABLE THE Y-MUTE SO THAT PICTURE APPEAR IN NORMAL MODE.</p>		
	<b>[VOLTAGE CONFIRMATION ]</b>		

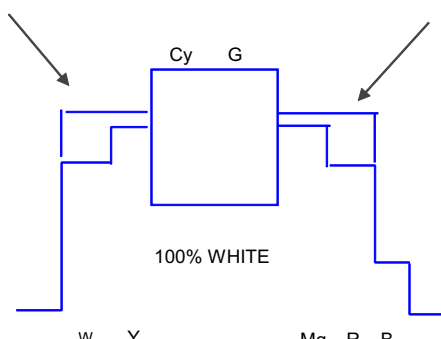
MODEL NAME	21V1-L		
ADJUSTMENT ITEM	WHITE BALANCE		
ADJUSTMENT POSITION	V18,V19,V15,V16,V17	STEP RANGE	0-127, 0~255
CONTROL	I2C BUS CONTROL		
PRE-ADJUST REQUIREMENT	OPTION SET UP, BUS SET UP, SCREEN		
CONTENT	23CH 50IRE WINDOW PATTERN		
INPUT CONDITION	220 V		
OUTPUT	CRT SCREEN DISPLAY .		
ADJUSTMENT PROCEDURE	<p>1)<b>WHITE</b> (HIGH BEAM) FIRST LET THE GUN POINT ATBLACK POSITION (AS DRAWING ATTACH), ADJ <b>V04</b> UNTIL <b>BRIGHTNESS Y</b>BECOME 5 cd/m2 THEN LET THE GUN POINT AT <b>WHITE</b> POSITION (AS DRAWING ATTACH),ADJUST <b>V01</b> UNTIL BRIGHTNESS Y BECOME <b>150 cd/m2</b> ADJUST THE BUS DATA OF <b>V18</b>(R DRIVE),<b>V19</b>(B DRIVE) UNTLL THE AXIS OF COLOUR TEMPERATURE BECOME <u><b>X=0.273.Y=0.280</b></u></p> <p>2)<b>BLACK</b>(LOW BEAM) LET THE GUN POINT AT BLACK POSITION, IF THE VALUE SHIFTED AWAY FROM THE DATA ADJUSTED IN STEP 1), ADJUST AGAIN THE TWO SERVICE DATA WHICH HAVE CHOSEN AT SCREEN ADJUST SO THAT TO OBTAIN THE SIMILAR AXIS AS ABOVE. <b>*WARNING:</b> DO NOT DISTURB THE MINI STEP GUN DATA DURING THIS ADJUSTMENT. <b>**REPEAT STEP 1),2) TO GET A REGULATED POSITION.</b></p> <div></div> <p><b>[CHECKING CONFIRMATION ]</b> X=0.273,Y=0.280 (11,600° K+1 MPCD)</p>		



MODEL NAME	21V1-L		
ADJUSTMENT ITEM	<b>SUB-BRIGHT</b>		
ADJUSTMENT POSITION	<b>V04</b>	STEP RANGE	0-255
CONTROL	I2C CONTROL		
PRE-ADJUST REQUIREMENT	OPTION SET UP, BUS SET UP, SCREEN, WHITE BALANCE		
CONTENT	WINDOW PATTERN		
INPUT CONDITION	220 V		
OUTPUT	CRT SCREEN DISPLAY .		
ADJUSTMENT PROCEDURE	1)LET THE GUN POINT AT BLACK POSITION(AS ATTACH DRAWING), ADJUST <b>V04</b> BUS DATA UNTILL BRIGHTNESS $Y = 0.5 \text{ cd/m}^2$ , <b>THEN STEP DOWN MORE 4 STEP</b>		
			
	<b>[VOLTAGER CONFIRMATION ]</b> BRIGHTNESS $Y = 0.5 \text{ cd/m}^2$ , THEN STEP DOWN MORE 4 STEP		

MODEL NAME	21V1-L		
ADJUSTMENT ITEM	<b>SUB-PICTURE</b>		
ADJUSTMENT POSITION	<b>V01</b>	STEP RANGE	0-127
CONTROL	I2C BUS CONTROL		
PRE-ADJUST REQUIREMENT	OPTION SET UP, BUS SET UP, SCREEN, WHITE BALANCE, SUB-BRIGHTNESS		
CONTENT	WINDOW PATTERN		
INPUT CONDITION	220 V		
OUTPUT	CRT SCREEN DISPLAY		
ADJUSTMENT PROCEDURE	<p>1) LET THE GUN POINT AT WHITE POSITION (AS ATTACH DRAWING), ADJUST <b>V01</b> BUS DATA UNTILL BRIGHTNESS Y = <b>150 cd/m2</b>.  <b>NOTE: ALLOWABLE DATA FOR V01 IS &gt;= 90, EVEN Y CAN'T MATCH THE SPEC</b></p>		
	<div style="text-align: center;">  <p>WHITE</p> <p>US14</p> </div> <p><b>[VOLTAGE CONFIRMATION ]</b>  BRIGHTNESS Y = 150 cd/m2</p>		

MODEL NAME	21V1-L		
ADJUSTMENT ITEM	SUB-TINT		
ADJUSTMENT POSITION	V02	STEP RANGE	0-127
CONTROL	I2C CONTROL		
PRE-ADJUST REQUIREMENT	OPTION SET UP , BUS SET UP , VCO ADJ , RF-AGC		
CONTENT	US 10 CH HALF COLOR BAR PATTERN		
INPUT CONDITION	220 V		
OUTPUT	B-AMP TR BASE (JA410 OR TP853) CONFIRRM WITH OSCILLOSCOPE		
ADJUSTMENT PROCEDURE	1)GET IN Y-MUTE FUNCTION BY R/C . 2)ADJUST THE <b>V02</b> BUS DATA TO GET A WAVEFORM AS BELOW.		
	<div><div></div><div>B-AMP BASE (TP 853)MUST BE IN STEPPING LEVEL</div></div>		
	[CONFIRMATION ]		

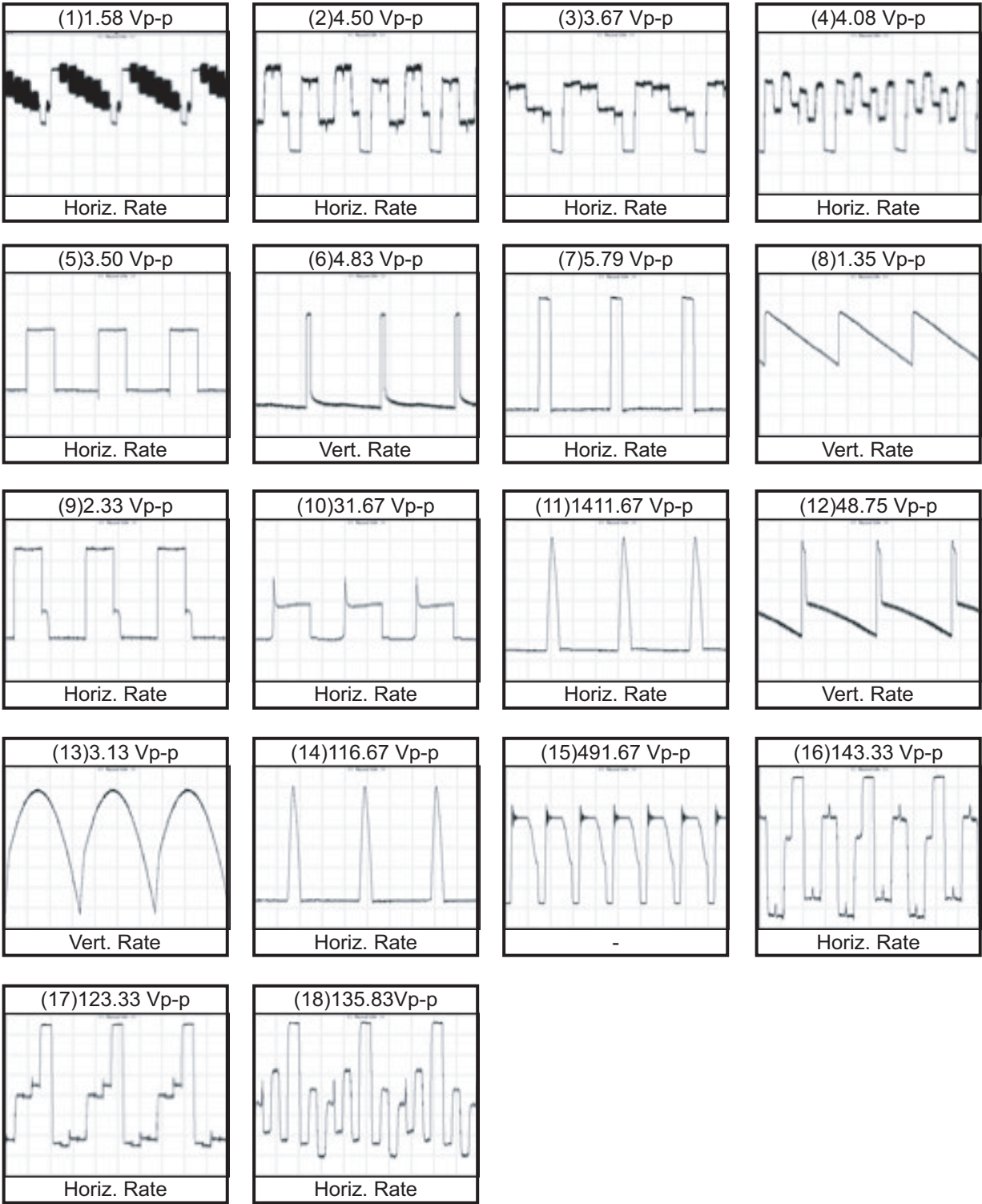
MODEL NAME	21V1-L		
ADJUSTMENT ITEM	<b>SUB-COLOR</b>		
ADJUSTMENT POSITION	<b>V03</b>	STEP RANGE	0-127
CONTROL	I2C BUS CONTROL		
PRE-ADJUST REQUIREMENT	OPTION SET UP, BUS SET UP,VCO ADJ, RF-AGC, <b>SUB-PICT, SUB-TINT</b>		
CONTENT	US 10 CH HALF COLOR BAR PATTERN		
INPUT CONDITION	220 V		
OUTPUT	R-AMP TR BASE (JA401 OR TP851) CONFIRM WITH OSCILLOSCOPE		
ADJUSTMENT PROCEDURE	1)SET THE <b>V03</b> BUS DATA TO GET A WAVEFORM AS BELOW 2)THIS WAVEFORM SHOWS THAT THE 75% WHITE & RED PORTIONS OF COLOR BAR BE AT THE SAME LEVEL  		
	<b>[CHECKING CONFIRMATION ]</b>		

MODEL NAME	21V1-L													
ADJUSTMENT ITEM	X-RAY PROTECTION OPERATING CONFIRMATION													
ADJUSTMENT POSITION	—	STEP RANGE	—											
CONTROL	—													
PRE-ADJUST REQUIREMENT	AFTER ALL ADJUSTMENT FINISHED.													
CONTENT	US 4 CH LION HEAD (MONOSCOPE PATTERN)													
INPUT CONDITION	AC 220V, RF INPUT													
OUTPUT	CONFIRMATION BY THE CRT													
ADJUSTMENT PROCEDURE	SET THE USER CONTROL TO SHIPMENT POSITION.  [VOLTAGE CONFIRMATION] CHECK THE VOLTAGE OF C602 +VE TERMINAL AS SPECIFIED BELOW.  [OPERATION CONFIRMATION] SUPPLY THE DC VOLTAGE TO C602 +VE TERMINAL AND MAKE SURE THE PROTECTOR IS FUNCTIONED , HORIZONTAL OSCILATION STOP AND PICTURE DISAPPEAR.  [RECOVER INFORMATION] PULL OUT THE AC CORD .  [CAUTION] FROM THE RECOVER CONFIRMATION MENTIONED ABOVE,THE AC CODE MUST BE PULLED OUT AT LEAST 4 SECOND BEFORE PLUGGING IN AGAIN. (IN ORDER TO MAKE SURE THE μ - COM HAS BEEN RESET.)													
	<div>[VOLTAGE COMFIRMATION]</div> <table><tr><td>MODEL</td><td>TP VOLTAGE</td><td>OPERATION VOLTAGE</td></tr><tr><td>21V1-L</td><td>26 ± 1.1V DC</td><td>27V</td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></table>			MODEL	TP VOLTAGE	OPERATION VOLTAGE	21V1-L	26 ± 1.1V DC	27V					
MODEL	TP VOLTAGE	OPERATION VOLTAGE												
21V1-L	26 ± 1.1V DC	27V												

MODEL NAME	21V1-L										
ADJUSTMENT ITEM	<b>HIGH VOLTAGE</b>										
ADJUSTMENT POSITION	—	STEP RANGE	—								
CONTROL	—										
PRE-ADJUST REQUIREMENT	AFTER ALL ADJUSTMENT FINISHED.										
CONTENT	US 4 CH LION HEAD (MONOSCOPE PATTERN)										
INPUT CONDITION	AC 220V, RF INPUT										
OUTPUT	CRT ANODE VOLTAGE										
ADJUSTMENT PROCEDURE	<p>SET THE USER CONTROL TO SHIPMENT SETTING POSITION.PUSH ON Y - MUTE BY R/C CONFIRM THE VOLTAGE OF CRT ANODE BY HIGH VOLTAGE METER AND MAKE SURE THE READING IS AS BELOW.</p> <table border="1" data-bbox="394 900 993 1010"> <thead> <tr> <th>MODEL</th><th>HIGH VOLTAGE</th></tr> </thead> <tbody> <tr> <td>21V1-L</td><td>BELOW 27.5kV</td></tr> <tr> <td> </td><td> </td></tr> <tr> <td> </td><td> </td></tr> </tbody> </table>			MODEL	HIGH VOLTAGE	21V1-L	BELOW 27.5kV				
	MODEL	HIGH VOLTAGE									
21V1-L	BELOW 27.5kV										
<p><b>[CAUTION POINT ]</b> USE ELECTROSTATIC HI-VOLTAGE METER AND FOLLOW THE UL / DHHS STANDARD TO MAKE CORRECTION AND CONTROL.</p>											

# CHAPTER 6. WAVEFORMS

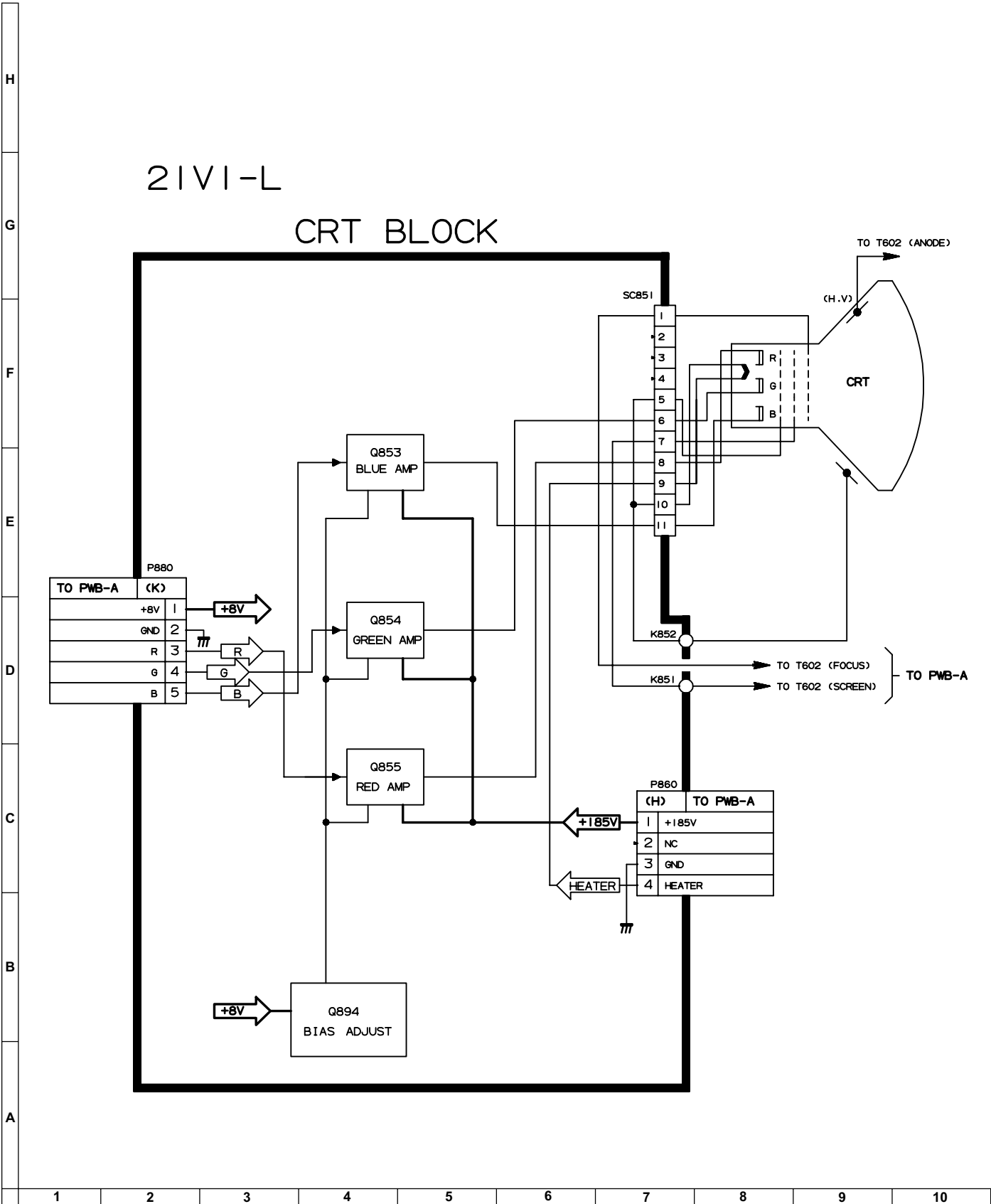
## WAVEFORMS







CHAPTER 8. BLOCK DIAGRAM







## CHAPTER 9. DESCRIPTION OF SCHEMATIC DIAGRAM

### DESCRIPTION OF SCHEMATIC DIAGRAM


#### NOTES:

1. The unit of resistance "ohm" is omitted.  
( $K=k\Omega=1000\Omega$ ,  $M=M\Omega$ )
2. All resistors are 1/16 watt, unless otherwise noted.
3. All capacitors are  $\mu F$ , unless otherwise noted.  
( $P=pF=\mu\mu F$ )
4. (G) indicates  $\pm 2\%$  tolerance may be used.
5.  $\overline{\text{---}}$  indicates line isolated ground.

#### VOLTAGE MEASUREMENT CONDITIONS:

1. All DC voltages are measured with DVM connected between points indicated and chassis ground, line voltage set at 120V AC and all controls set for normal picture unless otherwise indicated.
2. All voltages measured with 1000 $\mu$  V B & W or Color signal.

#### WAVEFORM MEASUREMENT CONDITIONS:

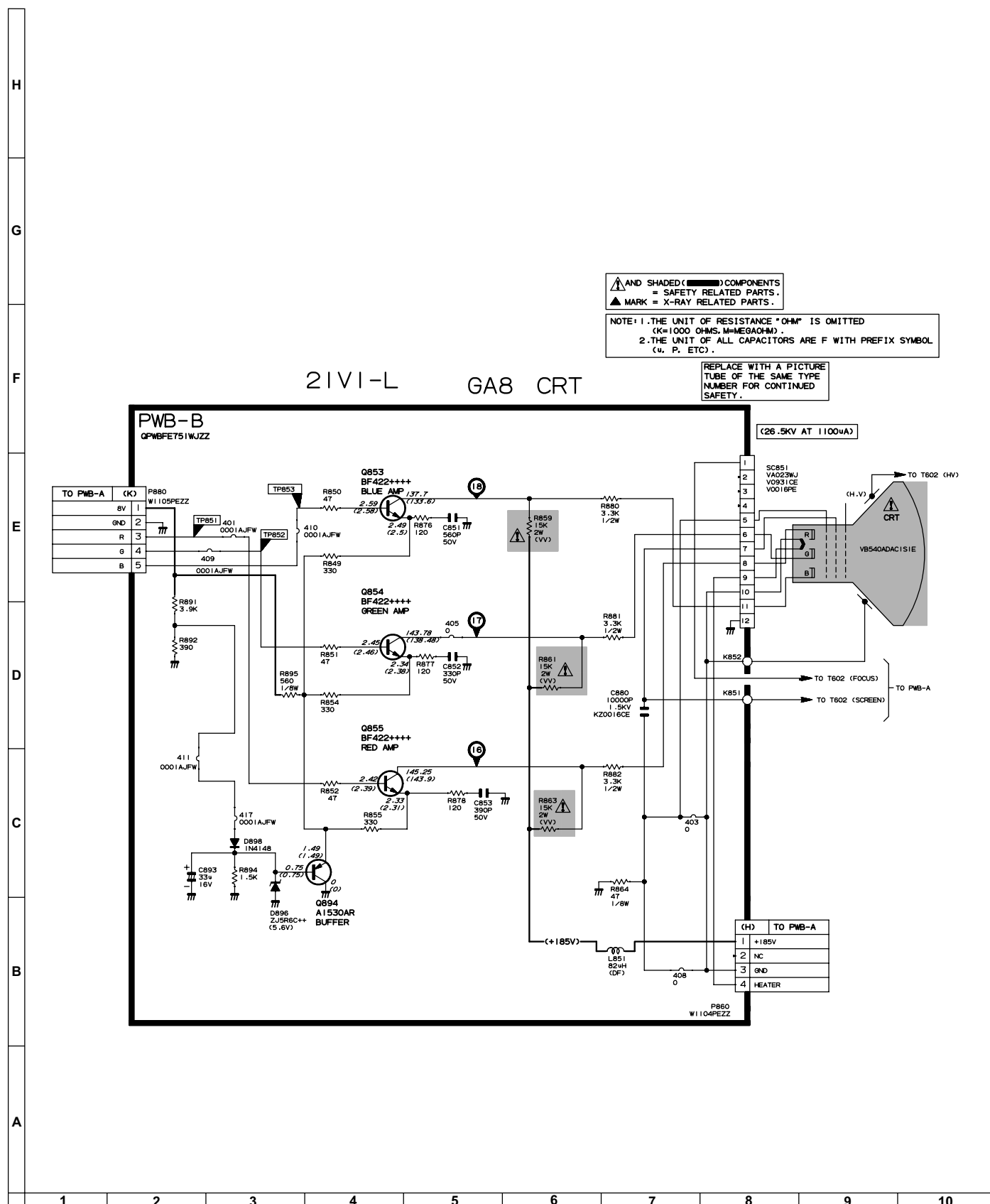
1. Photographs taken on a standard gated color bar signal, the tint setting adjusted for proper color. The wave shapes at the red, green and blue cathodes of the picture tube depend on the tint, color level and picture control.
2.  indicates waveform check points (See chart, waveforms are measured from point indicated to chassis ground.)

 AND SHADED (  ) COMPONENTS  
= SAFETY RELATED PARTS.  
 MARK= X-RAY RELATED PARTS.

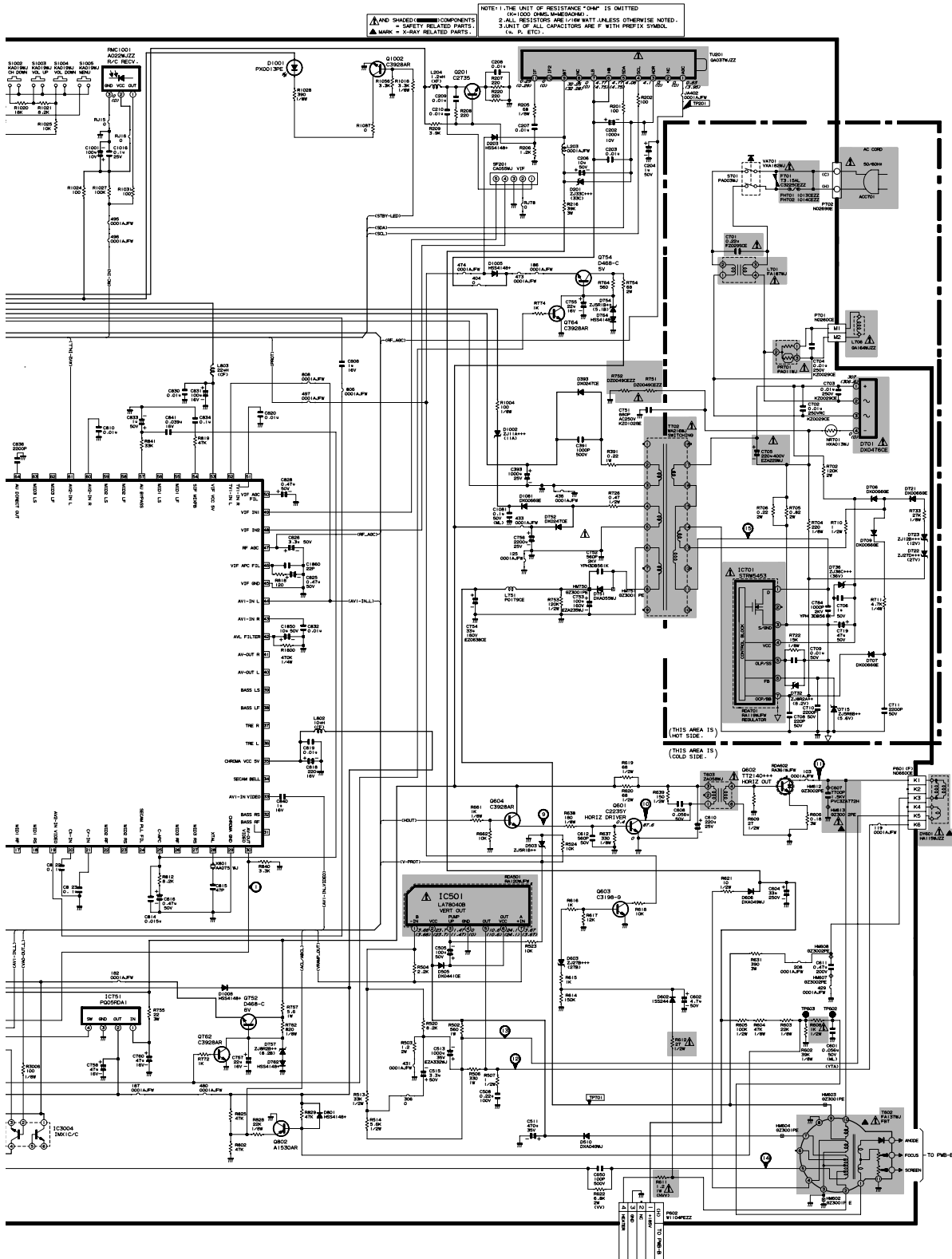
DRGANNES MARQUES  ET HACHRES (  ):  
PIECES RELATIVES A LA SECURITE.  
MARQUE  : PIECS RELATIVE AUX RAYONS X.

This circuit diagram is a standard one, printed circuits may be subject to change for product improvement without prior notice.

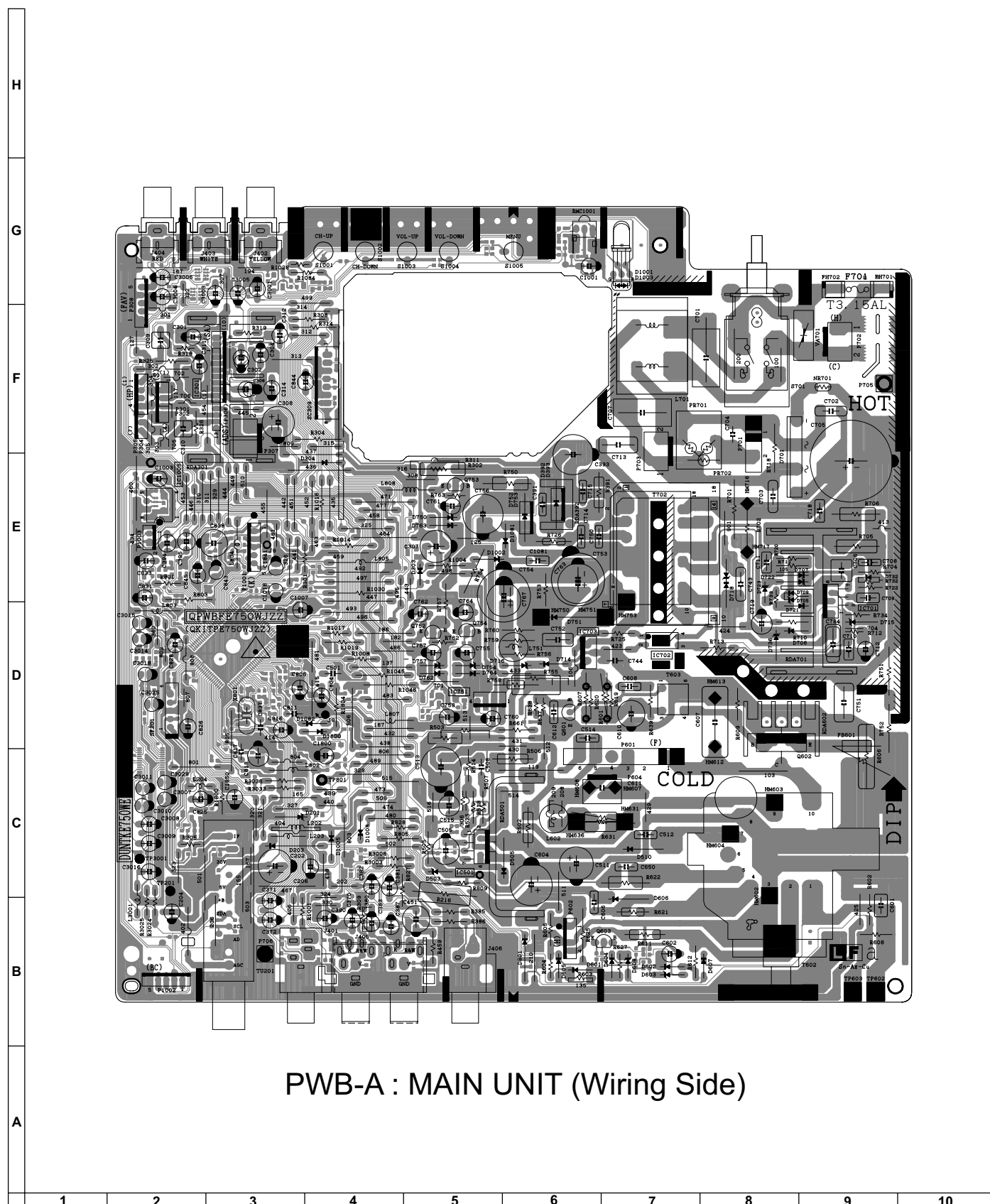
## CHAPTER 10. SCHEMATIC DIAGRAM



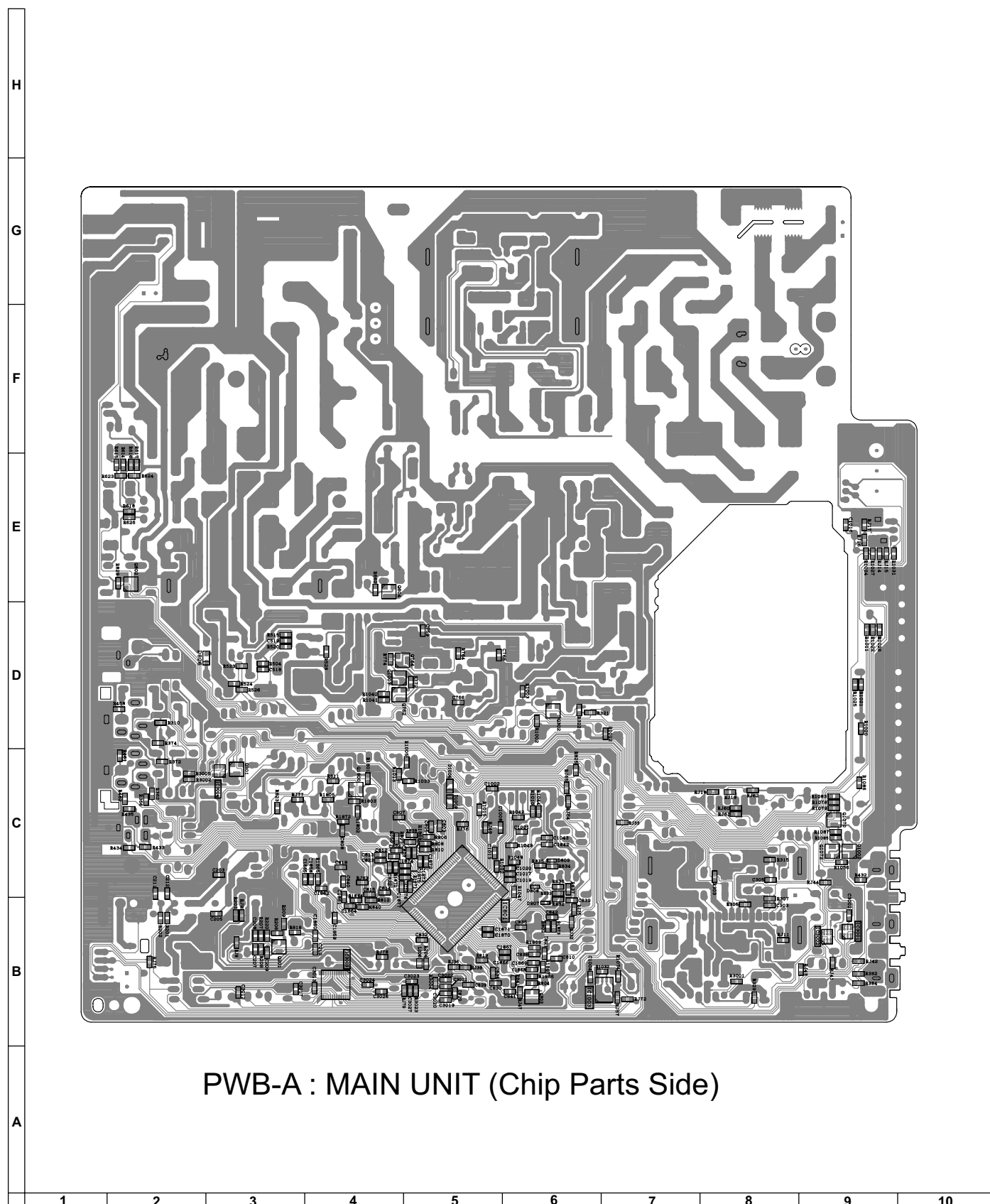




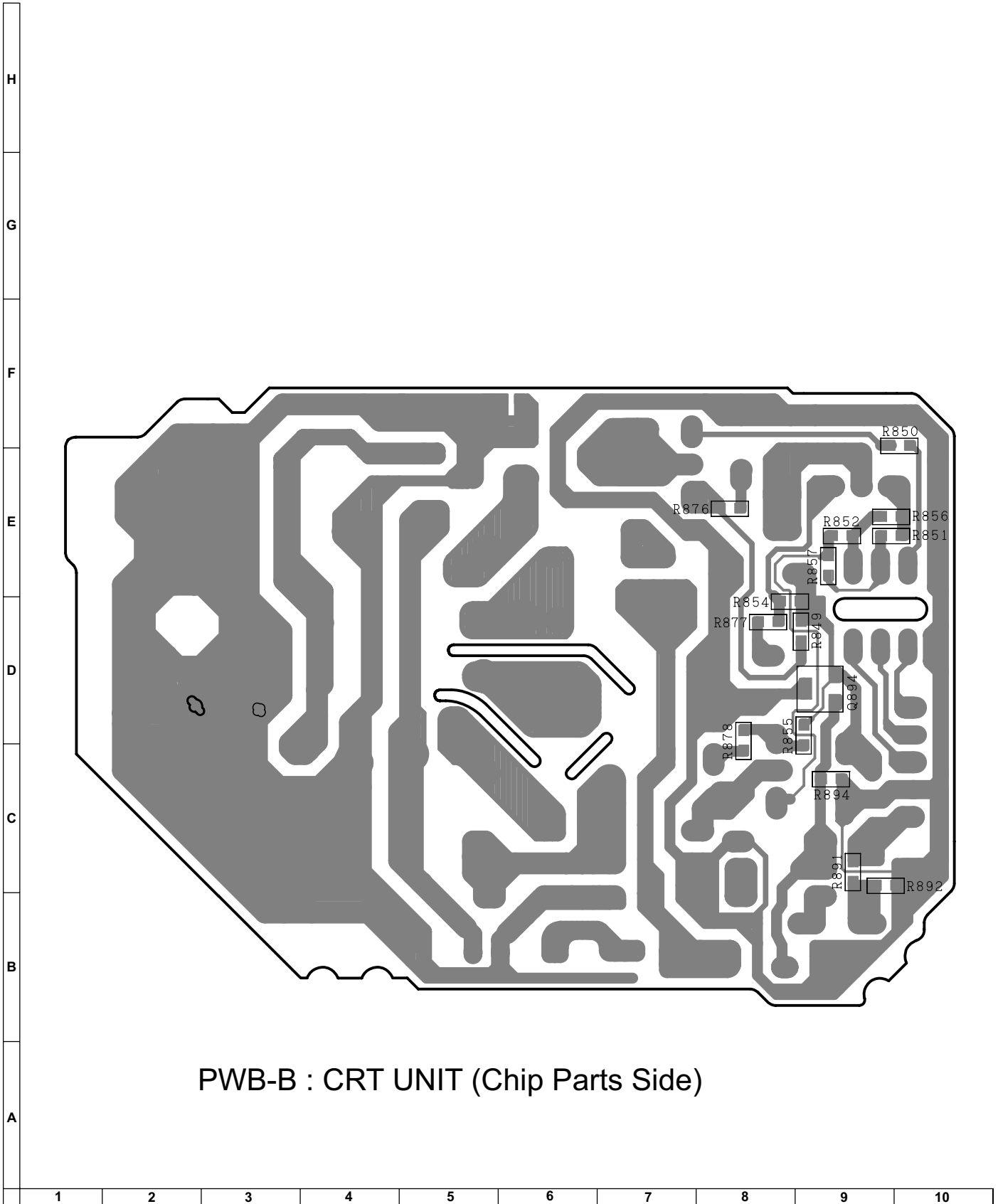
## CHAPTER 11. PRINTED WIRING BOARD ASSEMBLIES











PWB-B : CRT UNIT (Chip Parts Side)

# SHARP PARTS GUIDE

No. S8811021V1L

## MODEL 21V1-L

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Parts marked with "△" are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
<b>[1] PICTURE TUBE</b>					
△	VB540ADAC1S1E			R	SEMI-ITC Picture Tube
△	RCILGA115WJN1			R	Degaussing Coil
	GEARC2107PEZZ	AG		R	Ground-Part
	PMAGF3046CEZZ	AF		R	Magnet
<b>[2] PRINTED WIRING BOARD ASSEMBLIES</b>					
	DUNTKE750WEA0	-		-	MAIN Unit
	DUNTKE751WEA0	-		-	CRT Unit
<b>[3] MAIN UNIT</b>					
△	TU201	RTUNQA037WJZZ		R	Tuner
	IC301	VHILA42031E-1		R	LA42031E-1
△	IC501	VHILA78040B-1	AE	R	LA78040B-1
△	IC701	VHISTRW5453-1	AM	R	I.C.
	IC751	VHIPQ05RDA1-1		R	I.C.
	IC801	RH-IXC528WJZZQ		R	I.C.
	IC1003	VHIM24C08W6-1Y	AE	R	IM24C08W
	IC3004	VSIMXC/C/-1Y		R	I.C.
	Q201	VS2SC2735//1EY		R	2SC2735//1E
	Q601	VS2SC2235Y/1E+	AE	R	2SC2235
	Q602	VSTT2140+++F	AG	R	TT2140
	Q603	VS2SC3198-G-1+	AA	R	2SC3198
	Q604	VS2SC3928AR-1Y	AB	R	2SC3928AR
	Q752	VS2SD468-C/-1+	AD	R	2SD468
	Q753	VS2SD468-C/-1+	AD	R	2SD468
	Q754	VS2SD468-C/-1+	AD	R	2SD468
	Q762	VS2SC3928AR-1Y	AB	R	2SC3928AR
	Q764	VS2SC3928AR-1Y	AB	R	2SC3928AR
	Q801	VS2SC3928AR-1Y	AB	R	2SC3928AR
	Q802	VS2SA1530AR-1Y	AB	R	2SA1530AR
	Q1002	VS2SC3928AR-1Y	AB	R	2SC3928AR
	Q1003	VS2SC3928AR-1Y	AB	R	2SC3928AR
	Q1800	VS2SC3928AR-1Y	AB	R	2SC3928AR
	D201	VHEZJ33C+++1EY	AA	R	Zener Diode , 33V
	D203	VHDHSS4148+-1Y	AA	R	Diode
	D393	RH-DX0302CEZZ	AE	R	Diode , DX0302CE
	D503	VHEZJ5R1B+++1EY	AB	R	Zener Diode , 5.1V
	D505	RH-DX0441CEZZY	AC	R	Diode , DX0441CE
	D510	RH-DX049WJZZY	AC	R	Diode , DX049WJ
	D602	VHD1SS244//1Y	AB	R	Diode , 1SS244
	D603	VHEZJ27B+++1EY	AA	R	Zener Diode , 27V
	D606	RH-DX049WJZZY	AC	R	Diode , DX049WJ
△	D701	RH-DX0476CEZZ	AG	R	Diode , DX0476CE
	D706	RH-DX0066GEZZY	AC	R	Diode , DX0066GE
	D707	RH-DX0066GEZZY	AC	R	Diode , DX0066GE
	D709	RH-DX0066GEZZY	AC	R	Diode , DX0066GE
	D715	VHEZJ5R6B+++1EY	AA	R	Zener Diode , 5.6V
	D721	RH-DX0066GEZZY	AC	R	Diode , DX0066GE
	D722	VHEZJ27D+++1EY	AB	R	Zener Diode , 27V
	D723	VHEZJ12B+++1EY	AA	R	Zener Diode , 12.03V
	D732	VHEZJ8R2A+++1EY	AB	R	Zener Diode , 8.2V
	D736	VHEZJ36C+++1EY	AB	R	Zener Diode , 34.49V
	D750	VHEZJ5R1A+++1EY	AB	R	Zener Diode , 5.1V
	D751	RH-DXA055WJZZ		R	Diode , DXA055WJ
	D752	RH-DX0247CEZZ	AE	R	Diode , DX0247CE
	D754	VHEZJ5R1B+++1EY	AB	R	Zener Diode , 5.1V
	D757	VHEZJ8R2B+++1EY	AB	R	Zener Diode , 8.2V
	D762	VHDHSS4148+-1Y	AA	R	Diode
	D763	VHDHSS4148+-1Y	AA	R	Diode
	D764	VHDHSS4148+-1Y	AA	R	Diode
	D801	VHDHSS4148+-1Y	AA	R	Diode
	D806	RH-EXA520WJZZY	AB	R	Zener Diode
	D807	RH-EXA535WJZZY	AC	R	Zener Diode
	D808	RH-EXA535WJZZY	AC	R	Zener Diode
	D809	RH-EXA535WJZZY	AC	R	Zener Diode
	D898	VHDHSS4148+-1Y	AA	R	Diode
	D1001	RH-PX0013PEZZ	AC	R	Photodiode
	D1002	VHEZJ11A+++1EY	AA	R	Zener Diode , 10.71V
	D1005	VHDHSS4148+-1Y	AA	R	Diode
	D1006	RH-EXA520WJZZY	AB	R	Zener Diode
	D1008	VHDHSS4148+-1Y	AA	R	Diode
	D1009	RH-EXA520WJZZY	AB	R	Zener Diode
	D1081	RH-DX0066GEZZY	AC	R	Diode , DX0066GE
	D1082	VHDHSS4148+-1Y	AA	R	Diode
	D1800	VHDHSS4148+-1Y	AA	R	Diode
	VA701	RH-VXA182WJZZ		R	Varistor
	X801	RCRSAA075WJZZ	AF	R	Crystal
	NR701	RH-HXA013WJZZ		R	
	L203	QJUM-0001AJFWY		R	Jumper wire
	L204	VP-XF2R2K0000Y	AB	R	Peaking 2.2mH
	L602	RCILP0223CEZZ+	AD	R	Coil
	L701	RCILFA187WJZZ	AD	R	Coil
	L751	RCILP0179CEZZ+	AD	R	Coil
	L801	VP-DF100K0000Y	AB	R	Peaking 10mH

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
<b>[3] MAIN UNIT</b>					
L802	VP-CF100K0000Y	AB		R	Peaking 10mH
L803	VP-CF220K0000Y	AB		R	Peaking 22mH
L804	QJUM-0001AJFWY			R	Jumper wire
L805	QJUM-0001AJFWY			R	Jumper wire
L807	QJUM-0001AJFWY			R	Jumper wire
L808	VP-CF100K0000Y	AB		R	Peaking 10mH
SF201	RFILCA055WJQZS			R	Coil
T602	RTRNFA137WJZZ			R	H-Volt Transformer
T603	RTRNZA058WJZZ	AD		R	Transformer
T702	RTRNWA216WJZZ			R	Transformer
C202	VCEA0A1AW108M+	AC		R	1000 10V Electrolytic
C203	VCKYCY1HF103ZY	AA		R	0.01 50V Ceramic
C204	VCEA0A1HW105M+	AB		R	1 50V Electrolytic
C206	VCEA0A1HW106M+	AB		R	10 50V Electrolytic
C207	VCKYCY1HF103ZY	AA		R	0.01 50V Ceramic
C208	VCKYCY1HF103ZY	AA		R	0.01 50V Ceramic
C209	VCKYCY1HF103ZY	AA		R	0.01 50V Ceramic
C210	VCKYCY1HF103ZY	AA		R	0.01 50V Ceramic
C301	VCEA0A1EW476M+	AB		R	47 25V Electrolytic
C304	VCEA0A1HW224M+	AB		R	0.22 50V Electrolytic
C305	VCKYCY1HB472KY	AA		R	4.7 50V Ceramic
C306	VCEA0A1CW226M+	AC		R	22 16V Electrolytic
C308	VCEA0A1EW477M+	AD		R	470 25V Electrolytic
C309	VCFYFA1HA474J+	AE		R	0.47 50V Mylar
C314	VCEA0A1HW475M+	AB		R	4.7 50V Electrolytic
C370	VCEA0A1CW106M+	AC		R	10 16V Electrolytic
C372	VCEA0A1HW225M+	AB		R	2.2 50V Electrolytic
C391	VCKYPA2HB102K+	AA		R	1000p 500V Ceramic
C393	VCEA0A1EW108M+	AD		R	1000 25V Electrolytic
C395	VCEA0A1HW225M+	AB		R	2.2 50V Electrolytic
C451	VCEA0A1CW477M+	AC		R	470 16V Electrolytic
C501	VCFYFA1HA104J+	AE		R	0.10 50V Mylar
C505	VCEA0A1HW107M+	AB		R	100 50V Electrolytic
C508	VCFYAA2AA224J+	AD		R	0.22 100V Mylar
C511	VCEA0A1VW477M+	AB		R	470 35V Electrolytic
C513	RC-EZA332WJZZ+	AD		R	Capacitor
C515	VCEACA1HC335J+	AC		R	3.3 50V Electrolytic
C601	VCQYTA1HM563J+	AB		R	0.56 50V Mylar
C602	VCEA0A1HW475M+	AB		R	4.7 50V Electrolytic
C604	VCEA0A2EW336M+	AD		R	33 250V Electrolytic
C607	VCFPVC3ZA772H	AD		R	7.7 1.8KV Metalized Polypro Film
C608	VCFYFA1HA563J+			R	0.56 50V Mylar
C610	VCEA0A1EW227M+	AB		R	220 25V Electrolytic
C611	VCFPVC2EC474J	AD		R	0.47 200V Metalized Polypro Film
C612	VCKYPA1HB561K+	AB		R	560p 50V Ceramic
C650	VCKYPA2HB101K+	AB		R	100p 500V Ceramic
C701	RC-FZ029SCEZZ	AD		R	220 275V Metalized Plastic Film
C702	RC-KZ0029CEZZ+	AC		R	0.01 250V Ceramic
C703	RC-KZ0029CEZZ+	AC		R	0.01 250V Ceramic
C704	RC-KZ0029CEZZ+	AC		R	0.01 250V Ceramic
C705	RC-EZA229WJZZ	AM		R	220 400V Electrolytic
C706	VCFYSA1HB105J+	AE		R	1 50V Mylar
C708	VCKYPA1HB221K+	AB		R	220p 50V Ceramic
C709	VCQYTA1HM103J+	AB		R	0.01 50V Mylar
C710	VCQYTA1HM222J+	AB		R	2.2 50V Mylar
C711	VCKYPA1HB222K+	AB		R	2200p 50V Ceramic
C719	VCEA0A1HW476M+	AB		R	47 50V Electrolytic
C750	VCKYPA2HB102K+	AA		R	1000p 500V Ceramic
C751	RC-KZ0102GEZZ	AC		R	2kV Ceramic
C752	VCKYPH3DB561K	AC		R	560p 2KV Ceramic
C753	RC-EZA235WJZZ	AD		R	160V Electrolytic
C754	RC-EZ0638CEZZ	AD		R	33 160V Electrolytic
C755	VCEA0A1CW226M+	AB		R	22 16V Electrolytic
C756	VCEA0A1EW228M+	AE		R	2200 25V Electrolytic
C757	VCEA0A1CW226M+	AB		R	22 16V Electrolytic
C758	VCEA0A1CW476M+	AB		R	47 16V Electrolytic
C760	VCEA0A1CW476M+	AB		R	47 16V Electrolytic
C761	VCEA0A1CW226M+	AB		R	22 16V Electrolytic
C784	VCKYPH3DB561K	AC		R	560p 2KV Ceramic
C803	VCKYCY1HB104KY	AA		R	0.10 50V Ceramic
C804	VCEA0A1HW474M+	AB		R	0.47 50V Electrolytic
C805	VCKYCY1HB153KY	AA		R	0.15 50V Ceramic
C806	VCEA0A1CW476M+	AB		R	47 16V Electrolytic
C807	VCKYCY1HB103KY	AA		R	0.01 50V Ceramic
C808	VCKYCY1CF105ZY	AB		R	1 16V Ceramic
C810	VCKYCY1HB103KY	AA		R	0.01 50V Ceramic
C811	VCFYFA1HA224J+	AA		R	0.22 50V Mylar
C814	VCKYCY1HB153KY	AA		R	0.15 50V Ceramic
C815	VCCCCY1HH470JY	AA		R	47p 50V Ceramic
C816	VCEA0A1HW474M+	AB		R	0.47 50V Electrolytic
C818	VCEA0A1CW227M+	AB		R	220 16V Electrolytic
C819	VCKYCY1HB103KY	AA		R	0.01 50V Ceramic
C820	VCKYCY1HB103KY	AA		R	0.01 50V Ceramic
C822	VCKYCY1HB104KY	AA		R	0.1 50V Ceramic
C823	VCKYCY1HB104KY	AA		R	0.1 50V Ceramic

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
<b>[3] MAIN UNIT</b>					
C825	VCEA0A1HW474M+	AB		R	0.47 50V Electrolytic
C826	VCEA0A1HW335M+	AB		R	3.3 50V Electrolytic
C828	VCEA0A1HW474M+	AB		R	0.47 50V Electrolytic
C830	VCKYCY1HB103KY	AA		R	0.01 50V Ceramic
C831	VCEA0A1CW107M+	AB		R	100 16V Electrolytic
C832	VCKYCY1HB103KY	AA		R	0.01 50V Ceramic
C833	VCEA0A1HW105M+	AB		R	1 50V Electrolytic
C834	VCKYCY1HB104KY	AA		R	0.1 50V Ceramic
C835	VCKYCY1HB103KY	AA		R	0.01 50V Ceramic
C836	VCKYCY1HB222KY	AA		R	2.2 50V Ceramic
C838	VCEA0A1CW477M+	AC		R	470 16V Electrolytic
C839	VCKYCY1HB103KY	AA		R	0.01 50V Ceramic
C840	VCKYCY1CF105ZY	AB		R	1 16V Ceramic
C841	VCKYCY1CB393KY	AB		R	3.9 16V Ceramic
C843	VCEA9M1HW475M+	AB		R	4.7 50V Electrolytic
C845	VCEA0A1HW224M+	AB		R	0.22 50V Electrolytic
C1001	VCEA0A1AW107M+	AB		R	100 10V Electrolytic
C1002	VCCCCY1HH101JY	AA		R	100p 50V Ceramic
C1003	VCEA0A1CW107M+	AB		R	100 16V Electrolytic
C1004	VCKYCY1CF474ZY	AB		R	0.47 16V Ceramic
C1007	VCEA0A1CW476M+	AC		R	47 16V Electrolytic
C1008	VCKYCY1HB103KY	AA		R	0.01 50V Ceramic
C1013	VCKYCY1HB103KY	AA		R	0.01 50V Ceramic
C1016	VCKYCY1EF104ZY	AA		R	0.1 25V Ceramic
C1017	VCKYCY1HB221KY	AA		R	220 50V Ceramic
C1018	VCEA9M1HW105M+	AB		R	1 50V Electrolytic
C1019	VCKYCY1HB102KY	AA		R	1 50V Ceramic
C1020	VCKYCY1HB561KY	AA		R	560 50V Ceramic
C1021	VCKYCY1EF104ZY	AA		R	0.1 25V Ceramic
C1043	VCKYCY1HB103KY	AA		R	0.01 50V Ceramic
C1081	VCFYFA1HA104J+	AA		R	0.1 50V Mylar
C1800	VCEA0A1CW336M+	AC		R	33 16V Electrolytic
C1850	VCEA0A1HW106M+	AB		R	10 50V Electrolytic
C1860	VCCCCY1HH220JY	AA		R	22p 50V Ceramic
RJ2	VRS-CY1JF000JY	AA		R	0 1/16W Metal Oxide
RJ15	VRS-CY1JF000JY	AA		R	0 1/16W Metal Oxide
RJ16	VRS-CY1JF000JY	AA		R	0 1/16W Metal Oxide
RJ18	VRS-CY1JF000JY	AA		R	0 1/16W Metal Oxide
RJ19	VRS-CY1JF000JY	AA		R	0 1/16W Metal Oxide
RJ32	VRS-CY1JF000JY	AA		R	0 1/16W Metal Oxide
RJ33	VRS-CY1JF000JY	AA		R	0 1/16W Metal Oxide
RJ35	VRS-CY1JF000JY	AA		R	0 1/16W Metal Oxide
RJ36	VRS-CY1JF000JY	AA		R	0 1/16W Metal Oxide
RJ39	VRS-CY1JF000JY	AA		R	0 1/16W Metal Oxide
RJ42	VRS-CY1JF000JY	AA		R	0 1/16W Metal Oxide
RJ43	VRS-CY1JF000JY	AA		R	0 1/16W Metal Oxide
RJ44	VRS-CY1JF000JY	AA		R	0 1/16W Metal Oxide
RJ49	VRS-CY1JF000JY	AA		R	0 1/16W Metal Oxide
RJ50	VRS-CY1JF000JY	AA		R	0 1/16W Metal Oxide
RJ57	VRS-CY1JF000JY	AA		R	0 1/16W Metal Oxide
RJ62	VRS-CY1JF000JY	AA		R	0 1/16W Metal Oxide
RJ66	VRS-CY1JF000JY	AA		R	0 1/16W Metal Oxide
RJ72	VRS-CY1JF000JY	AA		R	0 1/16W Metal Oxide
RJ75	VRS-CY1JF000JY	AA		R	0 1/16W Metal Oxide
RJ76	VRS-CY1JF000JY	AA		R	0 1/16W Metal Oxide
RJ78	VRS-CY1JF000JY	AA		R	0 1/16W Metal Oxide
R201	VRS-CY1JF101JY	AA		R	100 1/16W Metal Oxide
R202	VRS-CY1JF101JY	AA		R	100 1/16W Metal Oxide
R205	VRD-RA2BE680JY	AA		R	68 1/8W Carbon
R206	VRS-CY1JF122JY	AA		R	1.2K 1/16W Metal Oxide
R207	VRS-CY1JF221JY	AA		R	220 1/16W Metal Oxide
R208	VRS-CY1JF221JY	AA		R	220 1/16W Metal Oxide
R209	VRS-CY1JF392JY	AA		R	3.9K 1/16W Metal Oxide
R216	VRS-VV3LB393J	AC		R	39K 3W Metal Film
R220	VRS-CY1JF221JY	AA		R	220 1/16W Metal Oxide
R301	VRD-RA2BE272JY	AA		R	2.7K 1/8W Carbon
R303	VRS-CY1JF473JY	AA		R	47K 1/16W Metal Oxide
R304	VRD-RA2BE223JY	AA		R	22K 1/8W Carbon
R305	VRS-CY1JF274JY	AA		R	270K 1/16W Metal Oxide
R311	VRS-VV3DBR10J	AC		R	10 2W Metal Film
R314	VRD-RA2BE822JY	AA		R	8.2K 1/8W Carbon
R315	VRS-CY1JF472JY	AA		R	4.7K 1/16W Metal Oxide
R325	VRD-RM2HD1R0JY	AA		R	1 1/2W Carbon
R366	VRS-CY1JF332JY	AA		R	3.3K 1/16W Metal Oxide
R384	VRS-CY1JF332JY	AA		R	3.3K 1/16W Metal Oxide
R391	VRN-RL3ABR22J+	AD		R	22 1W Metal Film
R458	VRS-CY1JF103JY	AA		R	10K 1/16W Metal Oxide
R459	VRD-RA2EE750JY	AA		R	75 1/8W Carbon
R461	VRS-CY1JF750JY	AA		R	75 1/16W Metal Oxide
R462	VRS-CY1JF101JY	AA		R	100 1/16W Metal Oxide
R502	VRS-RG3AB561J+	AB		R	560 1W Metal Oxide
R503	VRN-RL3DB1R2J+	AB		R	1.2 2W Metal Film
R504	VRS-CY1JF222JY	AA		R	2.2K 1/16W Metal Oxide
R506	VRS-RG3AB331J+	AB		R	330 1W Metal Oxide
R507	VRD-RM2HD1R0JY	AA		R	1 1/2W Carbon

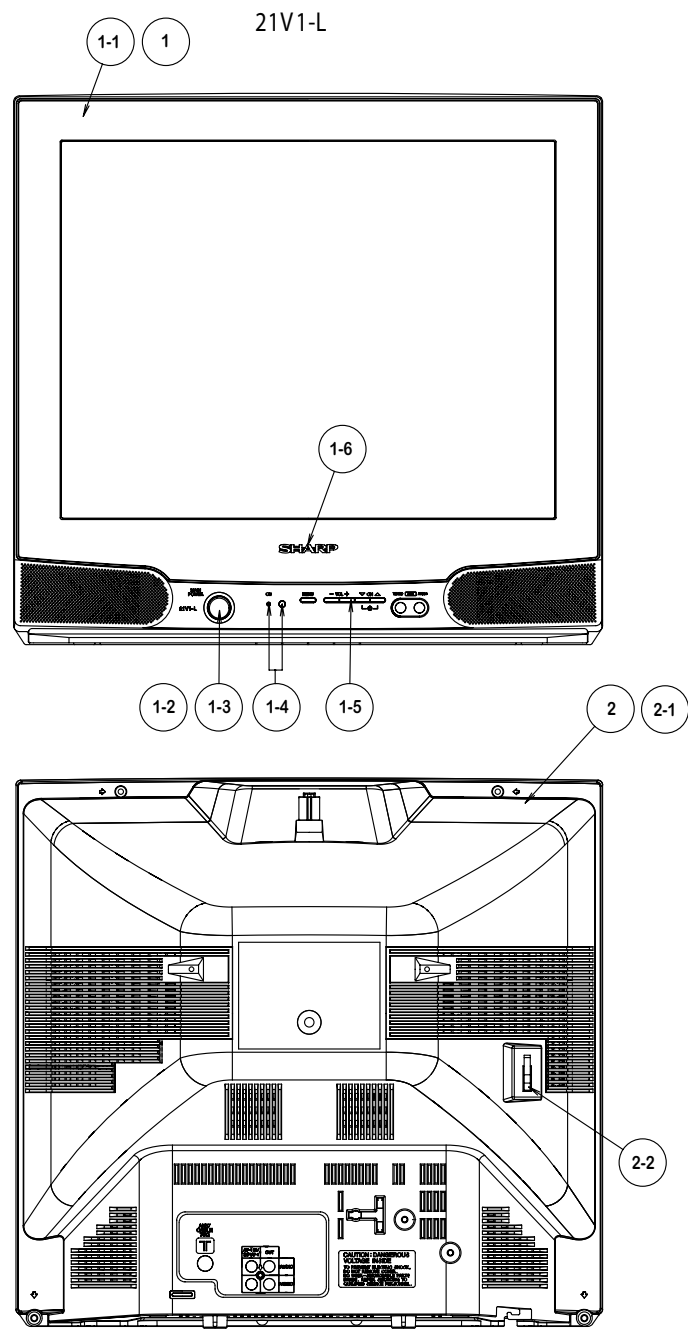
NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
<b>[3] MAIN UNIT</b>					
R513	VRD-RM2HD333JY	AA		R	33K 1/2W Carbon
R514	VRD-RM2HD562JY	AA		R	5.6K 1/2W Carbon
R520	VRS-CY1JF822JY	AA		R	8.2K 1/16W Metal Oxide
R523	VRS-CY1JF103JY	AA		R	10K 1/16W Metal Oxide
R524	VRS-CY1JF103JY	AA		R	10K 1/16W Metal Oxide
R526	VRS-CY1JF000JY	AA		R	0 1/16W Metal Oxide
R602	VRD-RA2BE393JY	AA		R	39K 1/8W Carbon
R603	VRD-RA2BE223JY	AA		R	22K 1/8W Carbon
R604	VRD-RA2BE473JY	AA		R	47K 1/8W Carbon
R605	VRD-RM2HD104JY	AA		R	100K 1/2W Carbon
R606	VRN-RL3LBR18J+	AD		R	18 3W Metal Film
R608	VRD-RM2HD102JY	AA		R	1K 1/2W Carbon
R609	VRD-RM2HD270JY	AA		R	27 1/2W Carbon
R611	VRN-RL3AB1R2J+	AB		R	1.2 1W Metal Film
R612	VRD-RM2HD270JY	AA		R	27 1/2W Carbon
R614	VRD-RA2BE154JY	AA		R	150K 1/8W Carbon
R615	VRS-CY1JF102JY	AA		R	1K 1/16W Metal Oxide
R616	VRS-CY1JF102JY	AA		R	1K 1/16W Metal Oxide
R617	VRS-CY1JF123JY	AA		R	12K 1/16W Metal Oxide
R618	VRS-CY1JF103JY	AA		R	10K 1/16W Metal Oxide
R619	VRD-RM2HD680JY	AA		R	68 1/2W Carbon
R620	VRD-RM2HD680JY	AA		R	68 1/2W Carbon
R621	VRN-RL2HC100J+	AB		R	10 1/2W Metal Oxide
R622	VRS-RG3DB682J+	AB		R	6.8 2W Metal Film
R631	VRS-RG3LB391J+			R	390 3W Metal Oxide
R637	VRD-RA2BE331JY	AA		R	330 1/8W Carbon
R638	VRD-RA2BE181JY	AA		R	180 1/8W Carbon
R639	VRD-RM2HD151JY	AA		R	150 1/2W Carbon
R642	VRN-RL3DB1R0J+	AB		R	1 2W Metal Film
R661	VRD-RA2BE102JY	AA		R	1K 1/8W Carbon
R662	VRS-CY1JF103JY	AA		R	10K 1/16W Metal Oxide
R704	VRD-RA2BE221JY	AA		R	220 1/8W Carbon
R705	VRN-RL3DBR82J+	AB		R	82 2W Metal Film
R706	VRN-RL3DBR22J+	AB		R	22 2W Metal Film
R710	VRD-RM2HD1R0JY	AA		R	1 1/2W Carbon
R711	VRD-RA2EE472JY	AA		R	4.7K 1/4W Carbon
R720	VRD-RA2EE472JY	AA		R	4.7K 1/4W Carbon
R722	VRD-RA2BE153JY	AA		R	15K 1/8W Carbon
R726	VRN-RL2HCR47J+	AB		R	0.47 1/2W Metal Oxide
R733	VRD-RA2BE273JY	AA		R	27K 1/8W Carbon
R750	VRS-RG3AB180J+	AB		R	18 1W Metal Oxide
R751	RR-D20049CEZZY			R	39M 1/2W Carbon Film
R752	RR-D20049CEZZY			R	39M 1/2W Carbon Film
R753	VRD-RM2HD124JY	AA		R	120K 1/2W Carbon
R754	VRS-VV3DB680J	AB		R	8.2 1W Metal Film
R755	VRS-VV3LB220J			R	22 3W Metal Oxide
R757	VRN-VV3AB5R6J	AB		R	5.6 1W Metal Oxide
R762	VRD-RA2BE821JY	AA		R	820 1/8W Carbon
R763	VRD-RA2BE102JY	AA		R	1K 1/8W Carbon
R764	VRS-CY1JF561JY	AA		R	560 1/16W Metal Oxide
R772	VRS-CY1JF102JY	AA		R	1K 1/16W Metal Oxide
R774	VRS-CY1JF102JY	AA		R	1K 1/16W Metal Oxide
R802	VRS-CY1JF473JY	AA		R	47K 1/16W Metal Oxide
R805	VRD-RA2BE101JY	AA		R	100 1/8W Carbon
R806	VRS-CY1JF822JY	AA		R	8.2K 1/16W Metal Oxide
R807	VRS-CY1JF124JY	AA		R	120K 1/16W Metal Oxide
R808	VRS-CY1JF101JY	AA		R	100 1/16W Metal Oxide
R809	QJUM-0001AJFWY			R	Jumper wire
R810	VRS-CY1JF103JY	AA		R	10K 1/16W Metal Oxide
R811	VRS-CY1JF103JY	AA		R	10K 1/16W Metal Oxide
R812	VRS-CY1JF822JY	AA		R	8.2K 1/16W Metal Oxide
R819	VRS-CY1JF473JY	AA		R	47K 1/16W Metal Oxide
R823	VRS-CY1JF101JY	AA		R	100 1/16W Metal Oxide
R825	VRS-CY1JF473JY	AA		R	47K 1/16W Metal Oxide
R827	VRD-RM2HD151JY	AA		R	150 1/2W Carbon
R828	VRD-RA2BE223JY	AA		R	22K 1/8W Carbon
R829	VRS-CY1JF473JY	AA		R	47K 1/16W Metal Oxide
R832	VRS-CY1JF222JY	AA		R	2.2K 1/16W Metal Oxide
R833	VRS-CY1JF222JY	AA		R	2.2K 1/16W Metal Oxide
R834	VRS-CY1JF222JY	AA		R	2.2K 1/16W Metal Oxide
R835	VRS-CY1JF181JY	AA		R	180 1/16W Metal Oxide
R836	VRS-CY1JF181JY	AA		R	180 1/16W Metal Oxide
R837	VRS-CY1JF181JY	AA		R	180 1/16W Metal Oxide
R838	VRS-CY1JF472JY	AA		R	4.7K 1/16W Metal Oxide
R840	VRS-CY1JF332JY	AA		R	3.3K 1/16W Metal Oxide
R841	VRS-CY1JF333JY	AA		R	33K 1/16W Metal Oxide
R849	VRS-CY1JF331JY	AA		R	330 1/16W Metal Oxide
R854	VRS-CY1JF331JY	AA		R	330 1/16W Metal Oxide
R855	VRS-CY1JF331JY	AA		R	330 1/16W Metal Oxide
R891	VRS-CY1JF392JY	AA		R	3.9K 1/16W Metal Oxide
R1003	VRS-CY1JF102JY	AA		R	1K 1/16W Metal Oxide
R1004	VRD-RA2BE101JY	AA		R	100 1/8W Carbon
R1008	VRD-RA2BE101JY	AA		R	100 1/8W Carbon
R1010	VRS-CY1JF104JY	AA		R	100K 1/16W Metal Oxide
R1011	VRS-CY1JF183JY	AA		R	18K 1/16W Metal Oxide



NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
<b>[3] MAIN UNIT</b>					
R1012	VRS-CY1JF183JY	AA		R	18K 1/16W Metal Oxide
R1013	VRS-CY1JF000JY	AA		R	0 1/16W Metal Oxide
R1014	QJUM-0001AJFWY			R	Jumper wire
R1015	VRS-CY1JF000JY	AA		R	0 1/16W Metal Oxide
R1016	VRD-RA2BE332JY	AA		R	3.3K 1/8W Carbon
R1017	VRD-RA2BE101JY	AA		R	100 1/8W Carbon
R1019	VRD-RA2BE101JY	AA		R	100 1/8W Carbon
R1020	VRS-CY1JF183JY	AA		R	18K 1/16W Metal Oxide
R1021	VRS-CY1JF822JY	AA		R	8.2K 1/16W Metal Oxide
R1022	VRS-CY1JF183JY	AA		R	18K 1/16W Metal Oxide
R1024	VRS-CY1JF101JY	AA		R	100 1/16W Metal Oxide
R1025	VRS-CY1JF103JY	AA		R	10K 1/16W Metal Oxide
R1026	VRS-CY1JF183JY	AA		R	18K 1/16W Metal Oxide
R1027	VRS-CY1JF104JY	AA		R	100K 1/16W Metal Oxide
R1028	VRD-RA2BE391JY	AA		R	390 1/8W Carbon
R1030	VRD-RA2BE103JY	AA		R	10K 1/8W Carbon
R1031	VRS-CY1JF101JY	AA		R	100 1/16W Metal Oxide
R1032	VRS-CY1JF103JY	AA		R	10K 1/16W Metal Oxide
R1040	VRS-CY1JF332JY	AA		R	3.3K 1/16W Metal Oxide
R1041	VRS-CY1JF332JY	AA		R	3.3K 1/16W Metal Oxide
R1042	VRS-CY1JF000JY	AA		R	0 1/16W Metal Oxide
R1046	VRD-RA2BE102JY	AA		R	1K 1/8W Carbon
R1047	VRS-CY1JF101JY	AA		R	100 1/16W Metal Oxide
R1048	VRS-CY1JF471JY	AA		R	470 1/16W Metal Oxide
R1049	VRS-CY1JF105JY	AA		R	1M 1/16W Metal Oxide
R1056	VRS-CY1JF332JY	AA		R	3.3K 1/16W Metal Oxide
R1074	VRS-CY1JF103JY	AA		R	10K 1/16W Metal Oxide
R1087	VRS-CY1JF000JY	AA		R	0 1/16W Metal Oxide
R1092	VRS-CY1JF000JY	AA		R	0 1/16W Metal Oxide
R1800	VRD-RA2EE474JY	AA		R	470K 1/4W Carbon
R1801	VRS-CY1JF682JY	AA		R	6.8K 1/16W Metal Oxide
R1802	VRS-CY1JF473JY	AA		R	47K 1/16W Metal Oxide
R1803	VRS-CY1JF473JY	AA		R	47K 1/16W Metal Oxide
R1804	VRD-RA2BE222JY	AA		R	2.2K 1/8W Carbon
R1805	VRS-CY1JF124JY	AA		R	120K 1/16W Metal Oxide
R1872	VRS-CY1JF750JY	AA		R	75 1/16W Metal Oxide
R3002	VRS-CY1JF102JY	AA		R	1K 1/16W Metal Oxide
R3006	VRD-RA2BE101JY	AA		R	100 1/8W Carbon
S701	QSW-PA003WJZZ	AG		R	Switch , POWER
S1001	QSW-KA019WJZZ+	AC		R	Switch , CH UP
S1002	QSW-KA019WJZZ+	AC		R	Switch , CH DOWN
S1003	QSW-KA019WJZZ+	AC		R	Switch , VOL UP
S1004	QSW-KA019WJZZ+	AC		R	Switch , VOL DOWN
S1005	QSW-KA019WJZZ+	AC		R	Switch , MENU
F701	QFS-C3225CEZZ	AC		R	Fuse , 3.15A 250V
FH701	QFSDH1013CEZZ+	AC		R	Fuse Holder
FH702	QFSDH1014CEZZ+	AC		R	Fuse Holder
J402	QJAKEA056WJ04			R	Jack
J403	QJAKEA056WJ09			R	Jack
J405	QJAKH0044AJZZ			R	Jack
P301	QPLGNA107WJZZ	AB		R	Plug ,4Pin(S)
P601	QPLGN0660CEZZ	AC		R	Plug ,6Pin(F)
P602	LHLDW1104PEZZ	AB		R	Plug
P701	QPLGN0260CEZZ	AC		R	Plug ,2Pin(M)
P702	QPLGN0269GEZZ	AB		R	Plug ,2Pin
P1001	LHLDW1105PEZZ	AB		R	Plug
P1002	QPLGNA110WJZZ	AB		R	Plug ,5Pin(BC)
RMC1001	RRMCUA022WJZZ	AG		R	Remote Receiver
RDA301	PRDARA420WJFW			R	Heat Sink for IC301
RDA501	PRDARA120WJFW	AD		R	Heat Sink for IC501
RDA602	PRDARA361WJFW			R	Heat Sink for Q602
RDA701	PRDARA119WJFW	AF		R	Heat Sink for IC701
<b>[4] CRT UNIT</b>					
Q853	RH-TX0110BMZZ+	AC		R	TX0110
Q854	RH-TX0110BMZZ+	AC		R	TX0110
Q855	RH-TX0110BMZZ+	AC		R	TX0110
Q894	VS2SA1530AR-1Y	AB		R	2SA1530AR
D859	VHDHSS4148+-1Y	AA		R	Diode
D896	VHEZJ5R6C++1EY	AA		R	Zener Diode , 5.6V
D898	VHDHSS4148+-1Y	AA		R	Diode
L851	VP-MK820K0000+	AB		R	Peaking 82mH
C851	VCKYPA1HB561K+	AA		R	560p 50V Ceramic
C852	VCKYPA1HB331K+	AB		R	330p 50V Ceramic
C853	VCKYPA1HB391K+	AA		R	390p 50V Ceramic
C880	RC-KZ0016CEZZ	AC		R	10000p 1.5KV Ceramic
C893	VCEA0A1CW336M+	AB		R	33 16V Electrolytic
R849	VRS-CY1JF271JY	AA		R	270 1/16W Metal Oxide
R850	VRS-CY1JF470JY	AA		R	47 1/16W Metal Oxide
R851	VRS-CY1JF470JY	AA		R	47 1/16W Metal Oxide
R852	VRS-CY1JF470JY	AA		R	47 1/16W Metal Oxide
R854	VRS-CY1JF271JY	AA		R	270 1/16W Metal Oxide
R855	VRS-CY1JF271JY	AA		R	270 1/16W Metal Oxide
R859	VRS-VV3DB153J	AA		R	15K 12W Metal Oxide
R861	VRS-VV3DB153J	AA		R	15K 12W Metal Oxide

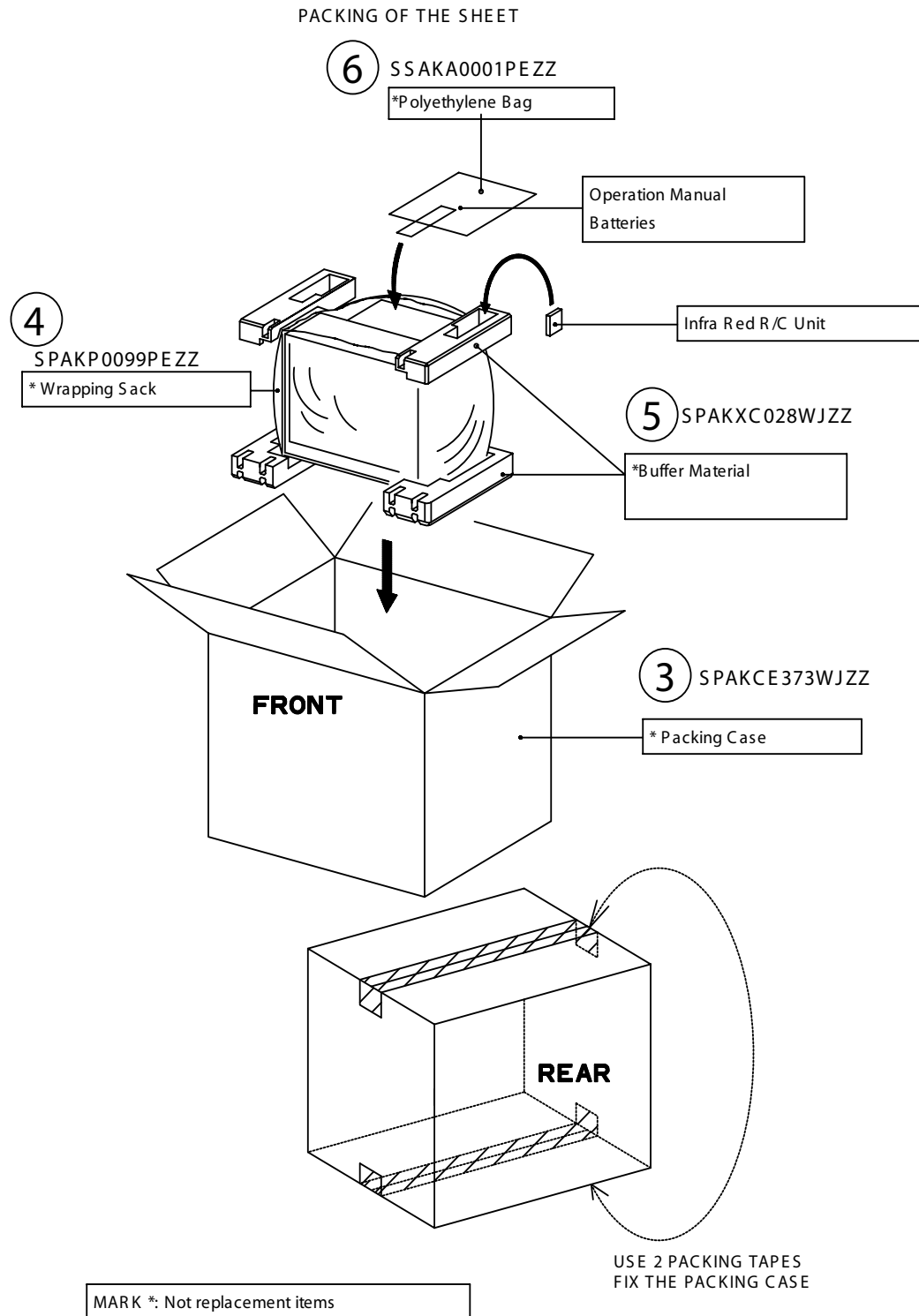
NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
<b>[4] CRT UNIT</b>					
△	R863	VRS-VV3DB153J	AA	R	15K 12W Metal Oxide
△	R864	VRD-RA2BE470JY	AA	R	47 1/8W Carbon
△	R876	VRS-CY1JF121JY	AA	R	120 1/16W Metal Oxide
	R877	VRS-CY1JF121JY	AA	R	120 1/16W Metal Oxide
	R878	VRS-CY1JF121JY	AA	R	120 1/16W Metal Oxide
	R880	VRD-RM2HD332JY	AA	R	3.3K 1/2W Carbon
	R881	VRD-RM2HD332JY	AA	R	3.3K 1/2W Carbon
	R882	VRD-RM2HD332JY	AA	R	3.3K 1/2W Carbon
	R891	VRS-CY1JF152JY	AA	R	1.5K 1/16W Metal Oxide
	R892	VRS-CY1JF391JY	AA	R	390 1/16W Metal Oxide
	R894	VRS-CY1JF152JY	AA	R	1.5K 1/16W Metal Oxide
	R895	VRD-RA2BE561JY	AA	R	560 1/8W Carbon
	P860	LHLDW1104PEZZ	AB	R	Plug 4Pin (H)
	P880	LHLDW1105PEZZ	AB	R	Plug 5Pin (K)
	SC851	QSOCVA023WJZZ	AE	R	Socket , 12Pin
	SP301				
△	ACC701	QACCZA091WJPZ		R	AC Cord
		VSP9050PA02WA	AH	R	SPEAKER 16 OHM
		QCNW-2378PEZZ		R	SP WIRE (+--+)
		QCNW-A230WJZZ	AD	R	H-WIRE
		QCNW-A788WJPZ	AD	R	K-WIRE
<b>[5] SUPPLIED ACCESSORIES</b>					
		RRMCGA257WJSB		R	Infrared Remote Control Unit
		TINS-D796WJZZ		R	Operation Manual
		UBATUA004WJZZ		R	Battery

[6] CABINET PARTS



NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
[6] CABINET PARTS					
1	CCABAC054WEV0	-		R	Front Cabinet Ass'y
1-1	Not Available	-		-	Front Cabinet
1-2	JBTN-A751WJSA	-		R	Power Button
1-3	MSPRC0005PEFW	-		R	Power Button Spring
1-4	GCOVAC834WJSA	-		R	R/C & LED Cover
1-5	JBTN-A752WJSA	-		R	Control Button
1-6	HBDGBA085WJSA	-		R	Sharp Badge
2	CCABBB309WEV0	-		R	Rear Cabinet Ass'y
2-1	Not Available	-		-	Rear Cabinet
2-2	LHLDWA101WJZZ	-		R	AC Cord Hook

## [7] PACKING PARTS



NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
<b>[7] PACKING PARTS</b>					
3	SPAKCE373WJZZ	-		-	Packing Case
4	SPAKP0099PEZZ				Wrapping Sheet
5	SPAKXC028WJZZ	-		-	Buffer Material
6	SSAKA0001PEZZ	-		-	Polyethylene Bag

## ■INDEX

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
<b>[ C ]</b>				
CCABAC054WEV0	6-1	-		R
CCABBB309WEV0	6-2	-		R
<b>[ D ]</b>				
DUNTKE750WEA0	2-	-		-
DUNTKE751WEA0	2-	-		-
<b>[ G ]</b>				
GCOVAC834WJSA	6-1-4	-		R
<b>[ H ]</b>				
HBDGBA085WJSA	6-1-6	-		R
<b>[ J ]</b>				
JBTN-A751WJSA	6-1-2	-		R
JBTN-A752WJSA	6-1-5	-		R
<b>[ L ]</b>				
LHLDW1104PEZZ	3-P602	AB		R
"	4-P860	AB		R
LHLDW1105PEZZ	3-P1001	AB		R
"	4-P880	AB		R
LHLDWA101WJZZ	6-2-2	-		R
<b>[ M ]</b>				
MSPRC0005PEFW	6-1-3	-		R
<b>[ N ]</b>				
Not Available	6-1-1	-		-
"	6-2-1	-		-
<b>[ P ]</b>				
PMAGF3046CEZZ	1-	AF		R
PRDARA119WJFW	3-RDA701	AF		R
PRDARA120WJFW	3-RDA501	AD		R
PRDARA361WJFW	3-RDA602			R
PRDARA420WJFW	3-RDA301			R
<b>[ Q ]</b>				
QACCZA091WJPZ	4-ACC701			R
QCNW-2378PEZZ	4-			R
QCNW-A230WJZZ	4-	AD		R
QCNW-A788WJPZ	4-	AD		R
QEARC2107PEZZ	1-	AG		R
QFS-C3225CEZZ	3-F701	AC		R
QFSDH1013CEZZ+	3-FH701	AC		R
QFSDH1014CEZZ+	3-FH702	AC		R
QJAKEA056WJ04	3-J402			R
QJAKEA056WJ09	3-J403			R
QJAKH0044AJZZ	3-J405			R
QJUM-0001AJFWY	3-L203			R
"	3-L804			R
"	3-L805			R
"	3-L807			R
"	3-R809			R
"	3-R1014			R
QPLGN0260CEZZ	3-P701	AC		R
QPLGN0269GEZZ	3-P702	AB		R
QPLGN0660CEZZ	3-P601	AC		R
QPLGNA107WJZZ	3-P301	AB		R
QPLGNA110WJZZ	3-P1002	AB		R
QSOCA023WJZZ	4-SC851	AE		R
QSW-KA019WJZZ+	3-S1001	AC		R
"	3-S1002	AC		R
"	3-S1003	AC		R
"	3-S1004	AC		R
"	3-S1005	AC		R
QSW-PA003WJZZ	3-S701	AG		R
<b>[ R ]</b>				
RC-EZ0638CEZZ	3-C754	AD		R
RC-EZA229WJZZ	3-C705	AM		R
RC-EZA235WJZZ	3-C753	AD		R
RC-EZA332WJZZ+	3-C513	AD		R
RC-FZ029SCEZZ	3-C701	AD		R
RCILFA187WJZZ	3-L701	AD		R
RCILGA115WJN1	1-			R
RCILP0179CEZZ+	3-L751	AD		R
RCILP0223CEZZ+	3-L602	AD		R
RC-KZ0016CEZZ	4-C880	AC		R
RC-KZ0029CEZZ+	3-C702	AC		R
"	3-C703	AC		R
"	3-C704	AC		R
RC-KZ0102GEZZ	3-C751	AC		R
RCRSA075WJZZ	3-X801	AF		R
RFILCA055WJQZS	3-SF201			R
RH-DX0066GEZZY	3-D706	AC		R
"	3-D707	AC		R
"	3-D709	AC		R

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
"	3-D721	AC		R
"	3-D1081	AC		R
RH-DX0247CEZZ	3-D752	AE		R
RH-DX0302CEZZ	3-D393	AE		R
RH-DX0441CEZZY	3-D505	AC		R
RH-DX0476CEZZ	3-D701	AG		R
RH-DX049WJZZY	3-D510	AC		R
"	3-D606	AC		R
RH-DXA055WJZZ	3-D751			R
RH-EXA520WJZZY	3-D806	AB		R
"	3-D1006	AB		R
"	3-D1009	AB		R
RH-EXA535WJZZY	3-D807	AC		R
"	3-D808	AC		R
"	3-D809	AC		R
RH-HXA013WJZZ	3-NR701			R
RH-IXC528WJZZQ	3-IC801			R
RH-PX0013PEZZ	3-D1001	AC		R
RH-TX0110BMZZ+	4-Q853	AC		R
"	4-Q854	AC		R
"	4-Q855	AC		R
RH-VXA182WJZZ	3-VA701			R
RR-DZ0049CEZZY	3-R751			R
"	3-R752			R
RRMCGA257WJSB	5-			R
RRMCUA022WJZZ	3-RMC1001	AG		R
RTRNFA137WJZZ	3-T602			R
RTRNWA216WJZZ	3-T702			R
RTRNZA058WJZZ	3-T603	AD		R
RTUNQA037WJZZ	3-TU201			R
[ S ]				
SPAKCE373WJZZ	7-3	-		-
SPAKP0099PEZZ	7-4			
SPAKXC028WJZZ	7-5	-		-
SSAKA0001PEZZ	7-6	-		-
[ T ]				
TINS-D796WJZZ	5-			R
[ U ]				
UBATUA004WJZZ	5-			R
[ V ]				
VB540ADAC1S1E	1-			R
VCCCCY1HH101JY	3-C1002	AA		R
VCCCCY1HH220JY	3-C1860	AA		R
VCCCCY1HH470JY	3-C815	AA		R
VCEA0A1AW107M+	3-C1001	AB		R
VCEA0A1AW108M+	3-C202	AC		R
VCEA0A1CW106M+	3-C370	AC		R
VCEA0A1CW107M+	3-C831	AB		R
"	3-C1003	AB		R
VCEA0A1CW226M+	3-C306	AC		R
"	3-C755	AB		R
"	3-C757	AB		R
"	3-C761	AB		R
VCEA0A1CW227M+	3-C818	AB		R
VCEA0A1CW336M+	3-C1800	AC		R
"	4-C893	AB		R
VCEA0A1CW476M+	3-C758	AB		R
"	3-C760	AB		R
"	3-C806	AB		R
"	3-C1007	AC		R
VCEA0A1CW477M+	3-C451	AC		R
"	3-C838	AC		R
VCEA0A1EW108M+	3-C393	AD		R
VCEA0A1EW227M+	3-C610	AB		R
VCEA0A1EW228M+	3-C756	AE		R
VCEA0A1EW476M+	3-C301	AB		R
VCEA0A1EW477M+	3-C308	AD		R
VCEA0A1HW105M+	3-C204	AB		R
"	3-C833	AB		R
VCEA0A1HW106M+	3-C206	AB		R
"	3-C1850	AB		R
VCEA0A1HW107M+	3-C505	AB		R
VCEA0A1HW224M+	3-C304	AB		R
"	3-C845	AB		R
VCEA0A1HW225M+	3-C372	AB		R
"	3-C395	AB		R
VCEA0A1HW335M+	3-C826	AB		R
VCEA0A1HW474M+	3-C804	AB		R
"	3-C816	AB		R
"	3-C825	AB		R
"	3-C828	AB		R
VCEA0A1HW475M+	3-C314	AB		R

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
VCEA0A1HW476M+	3-C719	AB		R
VCEA0A1VW477M+	3-C511	AB		R
VCEA0A2EW336M+	3-C604	AD		R
VCEA9M1HW105M+	3-C1018	AB		R
VCEA9M1HW475M+	3-C843	AB		R
VCEACA1HC335J+	3-C515	AC		R
VCFPVC2EC474J	3-C611	AD		R
VCFPVC3ZA772H	3-C607	AD		R
VCFYAA2AA224J+	3-C508	AD		R
VCFYFA1HA104J+	3-C501	AE		R
"	3-C1081	AA		R
VCFYFA1HA224J+	3-C811	AA		R
VCFYFA1HA474J+	3-C309	AE		R
VCFYFA1HA563J+	3-C608			R
VCFYSA1HB105J+	3-C706	AE		R
VCKYCY1CB393KY	3-C841	AB		R
VCKYCY1CF105ZY	3-C808	AB		R
"	3-C840	AB		R
VCKYCY1CF474ZY	3-C1004	AB		R
VCKYCY1EF104ZY	3-C1016	AA		R
"	3-C1021	AA		R
VCKYCY1HB102KY	3-C1019	AA		R
VCKYCY1HB103KY	3-C807	AA		R
"	3-C810	AA		R
"	3-C819	AA		R
"	3-C820	AA		R
"	3-C830	AA		R
"	3-C832	AA		R
"	3-C835	AA		R
"	3-C839	AA		R
"	3-C1008	AA		R
"	3-C1013	AA		R
"	3-C1043	AA		R
VCKYCY1HB104KY	3-C803	AA		R
"	3-C822	AA		R
"	3-C823	AA		R
"	3-C834	AA		R
VCKYCY1HB153KY	3-C805	AA		R
"	3-C814	AA		R
VCKYCY1HB221KY	3-C1017	AA		R
VCKYCY1HB222KY	3-C836	AA		R
VCKYCY1HB472KY	3-C305	AA		R
VCKYCY1HB561KY	3-C1020	AA		R
VCKYCY1HF103ZY	3-C203	AA		R
"	3-C207	AA		R
"	3-C208	AA		R
"	3-C209	AA		R
"	3-C210	AA		R
VCKYPA1HB221K+	3-C708	AB		R
VCKYPA1HB222K+	3-C711	AB		R
VCKYPA1HB331K+	4-C852	AB		R
VCKYPA1HB391K+	4-C853	AA		R
VCKYPA1HB561K+	3-C612	AB		R
"	4-C851	AA		R
VCKYPA2HB101K+	3-C650	AB		R
VCKYPA2HB102K+	3-C391	AA		R
"	3-C750	AA		R
VCKYPH3DB561K	3-C752	AC		R
"	3-C784	AC		R
VCQYTA1HM103J+	3-C709	AB		R
VCQYTA1HM222J+	3-C710	AB		R
VCQYTA1HM563J+	3-C601	AB		R
VHD1SS244//1Y	3-D602	AB		R
VHDHSS4148+-1Y	3-D203	AA		R
"	3-D762	AA		R
"	3-D763	AA		R
"	3-D764	AA		R
"	3-D801	AA		R
"	3-D898	AA		R
"	3-D1005	AA		R
"	3-D1008	AA		R
"	3-D1082	AA		R
"	3-D1800	AA		R
"	4-D859	AA		R
"	4-D898	AA		R
VHEZJ11A+++1EY	3-D1002	AA		R
VHEZJ12B+++1EY	3-D723	AA		R
VHEZJ27B+++1EY	3-D603	AA		R
VHEZJ27D+++1EY	3-D722	AB		R
VHEZJ33C+++1EY	3-D201	AA		R

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
VHEZJ36C+++1EY	3-D736	AB		R
VHEZJ5R1A+++1EY	3-D750	AB		R
VHEZJ5R1B+++1EY	3-D503	AB		R
"	3-D754	AB		R
VHEZJ5R6B+++1EY	3-D715	AA		R
VHEZJ5R6C+++1EY	4-D896	AA		R
VHEZJ8R2A+++1EY	3-D732	AB		R
VHEZJ8R2B+++1EY	3-D757	AB		R
VHILA42031E-1	3-C301			R
VHILA78040B-1	3-C501	AE		R
VHIM24C08W6-1Y	3-C1003	AE		R
VHIPQ05RDA1-1	3-C751			R
VHISTRW5453-1	3-C701	AM		R
VP-CF100K0000Y	3-L802	AB		R
"	3-L808	AB		R
VP-CF220K0000Y	3-L803	AB		R
VP-DF100K0000Y	3-L801	AB		R
VP-MK820K0000+	4-L851	AB		R
VP-XF2R2K0000Y	3-L204	AB		R
VRD-RA2BE101JY	3-R805	AA		R
"	3-R1004	AA		R
"	3-R1008	AA		R
"	3-R1017	AA		R
"	3-R1019	AA		R
"	3-R3006	AA		R
VRD-RA2BE102JY	3-R661	AA		R
"	3-R763	AA		R
"	3-R1046	AA		R
VRD-RA2BE103JY	3-R1030	AA		R
VRD-RA2BE153JY	3-R722	AA		R
VRD-RA2BE154JY	3-R614	AA		R
VRD-RA2BE181JY	3-R638	AA		R
VRD-RA2BE221JY	3-R704	AA		R
VRD-RA2BE222JY	3-R1804	AA		R
VRD-RA2BE223JY	3-R304	AA		R
"	3-R603	AA		R
"	3-R828	AA		R
VRD-RA2BE272JY	3-R301	AA		R
VRD-RA2BE273JY	3-R733	AA		R
VRD-RA2BE331JY	3-R637	AA		R
VRD-RA2BE332JY	3-R1016	AA		R
VRD-RA2BE391JY	3-R1028	AA		R
VRD-RA2BE393JY	3-R602	AA		R
VRD-RA2BE470JY	4-R864	AA		R
VRD-RA2BE473JY	3-R604	AA		R
VRD-RA2BE561JY	4-R895	AA		R
VRD-RA2BE680JY	3-R205	AA		R
VRD-RA2BE821JY	3-R762	AA		R
VRD-RA2BE822JY	3-R314	AA		R
VRD-RA2EE472JY	3-R711	AA		R
"	3-R720	AA		R
VRD-RA2EE474JY	3-R1800	AA		R
VRD-RA2EE750JY	3-R459	AA		R
VRD-RM2HD102JY	3-R608	AA		R
VRD-RM2HD104JY	3-R605	AA		R
VRD-RM2HD124JY	3-R753	AA		R
VRD-RM2HD151JY	3-R639	AA		R
"	3-R827	AA		R
VRD-RM2HD1R0JY	3-R325	AA		R
"	3-R507	AA		R
"	3-R710	AA		R
VRD-RM2HD270JY	3-R609	AA		R
"	3-R612	AA		R
VRD-RM2HD332JY	4-R880	AA		R
"	4-R881	AA		R
"	4-R882	AA		R
VRD-RM2HD333JY	3-R513	AA		R
VRD-RM2HD562JY	3-R514	AA		R
VRD-RM2HD680JY	3-R619	AA		R
"	3-R620	AA		R
VRN-RL2HC100J+	3-R621	AB		R
VRN-RL2HCR47J+	3-R726	AB		R
VRN-RL3AB1R2J+	3-R611	AB		R
VRN-RL3ABR22J+	3-R391	AD		R
VRN-RL3DB1R0J+	3-R642	AB		R
VRN-RL3DB1R2J+	3-R503	AB		R
VRN-RL3DBR22J+	3-R706	AB		R
VRN-RL3DBR82J+	3-R705	AB		R
VRN-RL3LBR18J+	3-R606	AD		R
VRN-VV3AB5R6J	3-R757	AB		R

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
VRS-CY1JF000JY	3-RJ2	AA		R
"	3-R526	AA		R
"	3-RJ15	AA		R
"	3-RJ16	AA		R
"	3-RJ18	AA		R
"	3-RJ19	AA		R
"	3-RJ32	AA		R
"	3-RJ33	AA		R
"	3-RJ35	AA		R
"	3-RJ36	AA		R
"	3-RJ39	AA		R
"	3-RJ42	AA		R
"	3-RJ43	AA		R
"	3-RJ44	AA		R
"	3-RJ49	AA		R
"	3-RJ50	AA		R
"	3-RJ57	AA		R
"	3-RJ62	AA		R
"	3-RJ66	AA		R
"	3-RJ72	AA		R
"	3-RJ75	AA		R
"	3-RJ76	AA		R
"	3-RJ78	AA		R
"	3-R1013	AA		R
"	3-R1015	AA		R
"	3-R1042	AA		R
"	3-R1087	AA		R
"	3-R1092	AA		R
VRS-CY1JF101JY	3-R201	AA		R
"	3-R202	AA		R
"	3-R462	AA		R
"	3-R808	AA		R
"	3-R823	AA		R
"	3-R1024	AA		R
"	3-R1031	AA		R
"	3-R1047	AA		R
VRS-CY1JF102JY	3-R615	AA		R
"	3-R616	AA		R
"	3-R772	AA		R
"	3-R774	AA		R
"	3-R1003	AA		R
"	3-R3002	AA		R
VRS-CY1JF103JY	3-R458	AA		R
"	3-R523	AA		R
"	3-R524	AA		R
"	3-R618	AA		R
"	3-R662	AA		R
"	3-R810	AA		R
"	3-R811	AA		R
"	3-R1025	AA		R
"	3-R1032	AA		R
"	3-R1074	AA		R
VRS-CY1JF104JY	3-R1010	AA		R
"	3-R1027	AA		R
VRS-CY1JF105JY	3-R1049	AA		R
VRS-CY1JF121JY	4-R876	AA		R
"	4-R877	AA		R
"	4-R878	AA		R
VRS-CY1JF122JY	3-R206	AA		R
VRS-CY1JF123JY	3-R617	AA		R
VRS-CY1JF124JY	3-R807	AA		R
"	3-R1805	AA		R
VRS-CY1JF152JY	4-R891	AA		R
"	4-R894	AA		R
VRS-CY1JF181JY	3-R835	AA		R
"	3-R836	AA		R
"	3-R837	AA		R
VRS-CY1JF183JY	3-R1011	AA		R
"	3-R1012	AA		R
"	3-R1020	AA		R
"	3-R1022	AA		R
"	3-R1026	AA		R
VRS-CY1JF221JY	3-R207	AA		R
"	3-R208	AA		R
"	3-R220	AA		R
VRS-CY1JF222JY	3-R504	AA		R
"	3-R832	AA		R
"	3-R833	AA		R
"	3-R834	AA		R
VRS-CY1JF271JY	4-R849	AA		R
"	4-R854	AA		R
"	4-R855	AA		R

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
VRS-CY1JF274JY	3-R305	AA		R
VRS-CY1JF331JY	3-R849	AA		R
"	3-R854	AA		R
"	3-R855	AA		R
VRS-CY1JF332JY	3-R366	AA		R
"	3-R384	AA		R
"	3-R840	AA		R
"	3-R1040	AA		R
"	3-R1041	AA		R
"	3-R1056	AA		R
VRS-CY1JF333JY	3-R841	AA		R
VRS-CY1JF391JY	4-R892	AA		R
VRS-CY1JF392JY	3-R209	AA		R
"	3-R891	AA		R
VRS-CY1JF470JY	4-R850	AA		R
"	4-R851	AA		R
"	4-R852	AA		R
VRS-CY1JF471JY	3-R1048	AA		R
VRS-CY1JF472JY	3-R315	AA		R
"	3-R838	AA		R
VRS-CY1JF473JY	3-R303	AA		R
"	3-R802	AA		R
"	3-R819	AA		R
"	3-R825	AA		R
"	3-R829	AA		R
"	3-R1802	AA		R
"	3-R1803	AA		R
VRS-CY1JF561JY	3-R764	AA		R
VRS-CY1JF682JY	3-R1801	AA		R
VRS-CY1JF750JY	3-R461	AA		R
"	3-R1872	AA		R
VRS-CY1JF822JY	3-R520	AA		R
"	3-R806	AA		R
"	3-R812	AA		R
"	3-R1021	AA		R
VRS-RG3AB180J+	3-R750	AB		R
VRS-RG3AB331J+	3-R506	AB		R
VRS-RG3AB561J+	3-R502	AB		R
VRS-RG3DB682J+	3-R622	AB		R
VRS-RG3LB391J+	3-R631			R
VRS-VV3DB153J	4-R859	AA		R
"	4-R861	AA		R
"	4-R863	AA		R
VRS-VV3DB680J	3-R754	AB		R
VRS-VV3DBR10J	3-R311	AC		R
VRS-VV3LB220J	3-R755			R
VRS-VV3LB393J	3-R216	AC		R
VS2SA1530AR-1Y	3-Q802	AB		R
"	4-Q894	AB		R
VS2SC2235Y/1E+	3-Q601	AE		R
VS2SC2735//1EY	3-Q201			R
VS2SC3198-G-1+	3-Q603	AA		R
VS2SC3928AR-1Y	3-Q604	AB		R
"	3-Q762	AB		R
"	3-Q764	AB		R
"	3-Q801	AB		R
"	3-Q1002	AB		R
"	3-Q1003	AB		R
"	3-Q1800	AB		R
VS2SD468-C/-1+	3-Q752	AD		R
"	3-Q753	AD		R
"	3-Q754	AD		R
VSIMXC/C/-1Y	3-C3004			R
VSP9050PA02WA	4-	AH		R
VSTT2140+++F	3-Q602	AG		R







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