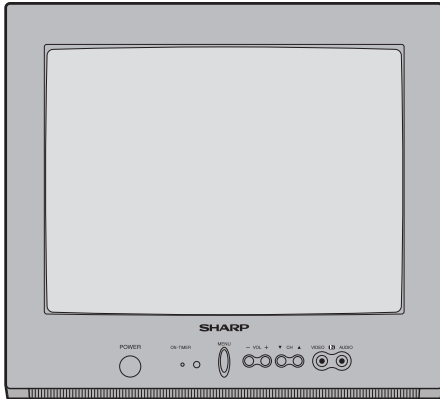


SHARP SERVICE MANUAL



COLOR TELEVISION

Chassis No. MSA

MODEL **14LK11**

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 identical to those specified should be used.

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ELECTRICAL SPECIFICATIONS

POWER INPUT	110-220 V AC 50/60 Hz
POWER RATING	53 W
PICTURE SIZE	574cm ² (88.97sq inch)
CONVERGENCE	Magnetic
SWEEP DEFLECTION	Magnetic
FOCUS	Hi-Bi-Potential 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	0.9W (at 10% distortion)

SPEAKER	
SIZE	8 cm (Round)
VOICE COIL IMPEDANCE	32 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

Specifications are subject to change without prior notice.

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)

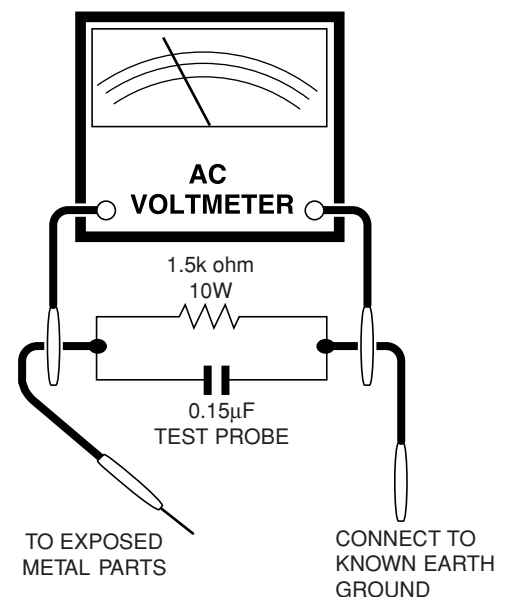
Before returning the receiver to the user, perform the following safety checks.

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 and 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 μ 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 and etc.) and measure the AC voltage drop across the resistor.

All checks must be repeated with the AC ine 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

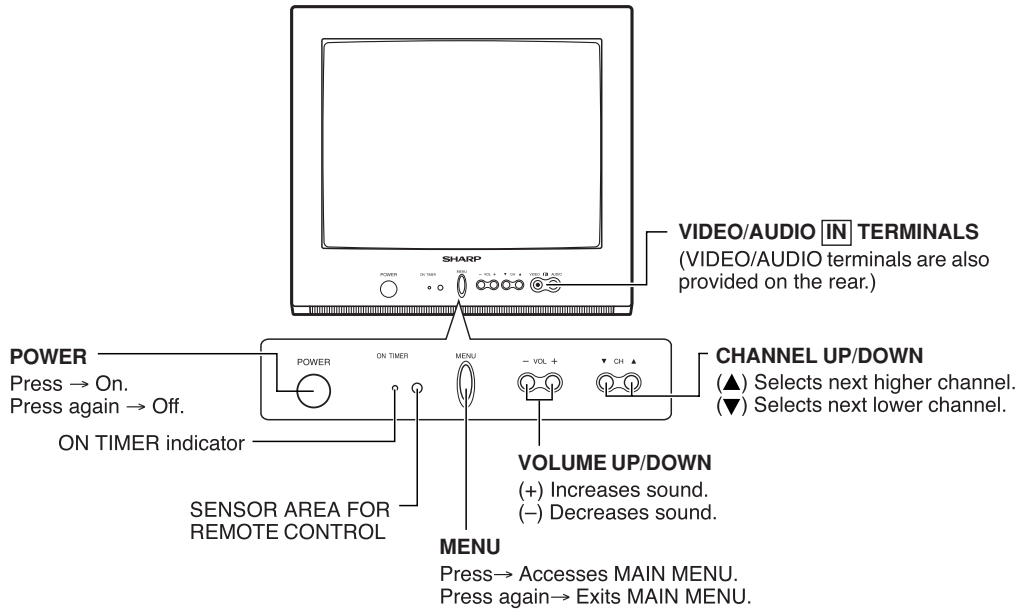
Many electrical and mechanical parts in television receivers have special safety-related characteristics. These characteristics are often not evident from visual inspection, nor can protection afforded by them be necessarily increased by using replacement components rated for higher voltage, wattage,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

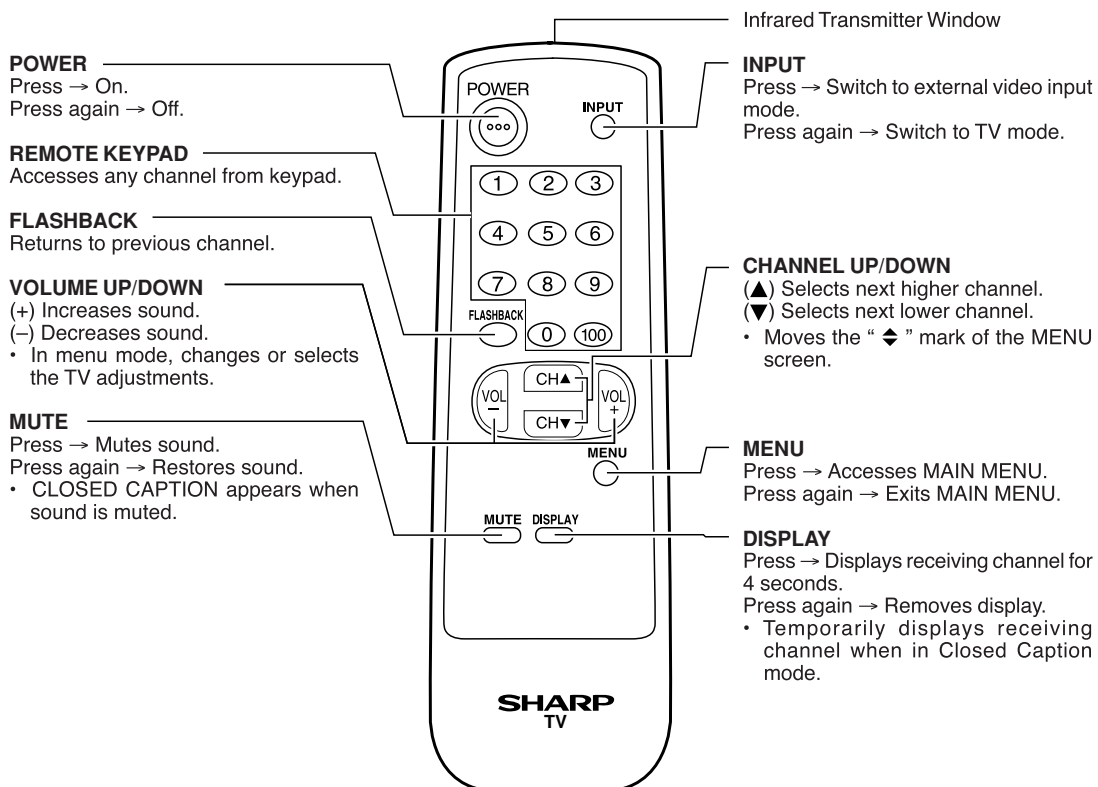
For continued protection, replacement parts must be identical to those used in the original circuit. The use of substitute replacement parts which do not have the same safety characteristics as the factory recommended replacement parts shown in this service manual, may create shock, fire, X-radiation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

LOCATION OF USER'S CONTROL

Front Panel



Basic Remote Control Functions



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.

+B DC REGULATOR CONFIRMATION

The + B DC output voltage adjustment is not included in this circuit. However, should confirmation be required proceed as follows.

1. Actuate receiver with 220V AC input voltage.
2. Receive a local channel.
3. Connect positive lead of digital voltmeter to C754 positive side on PWB-A ; negative lead to chassis ground.
4. Confirm this voltage reading is as below.

CAUTION: The reading should be within $130 \pm 2.0V$ DC to ensure normal function and circuitry reliability.

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 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 TP653 and make sure that the voltmeter reads $21.1 \pm 1.5 V$.
5. Apply external 27.9V DC at TP653 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 TP651 and TP652. 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. Receive a good local channel.
4. The voltage should be approximately, 23.5kV (at picture MAX, Bright center condition).
If a correct reading cannot be obtained, check circuitry for malfunctioning components. After the voltage test, make Y-mute off to the normal mode.

For adjustments of this model, the bus data is converted to various analog signals by the D/A converter circuit.

Note: There are still a few analog adjustments in this series such as focus and master screen voltage. Follow the steps below whenever the service adjustment is required. See "Table-B" to determine, if service adjustments are required.

1. Service mode

Before putting unit into the service mode, check that customer adjustments are in the normal mode. Use the reset function in the video adjustment menu to ensure customer controls are in their proper (reset) position.

2. Service item selection

Once in the service mode, press the Ch-up or Ch-down button on the remote controller or at the set. The service adjustment item will vary in increments of one. Select the item you wish to adjust.

3. Data number selection

Press the Vol-up or down button to adjust the data number.

To enter the service mode and exit service mode.

Short JA137&JA138 for 1 Second and release to switch to the service mode position, and the microprocessor is in input mode.(Adjustment through the I²C bus control.) To exit the service mode, turn the television off by pressing the power button.

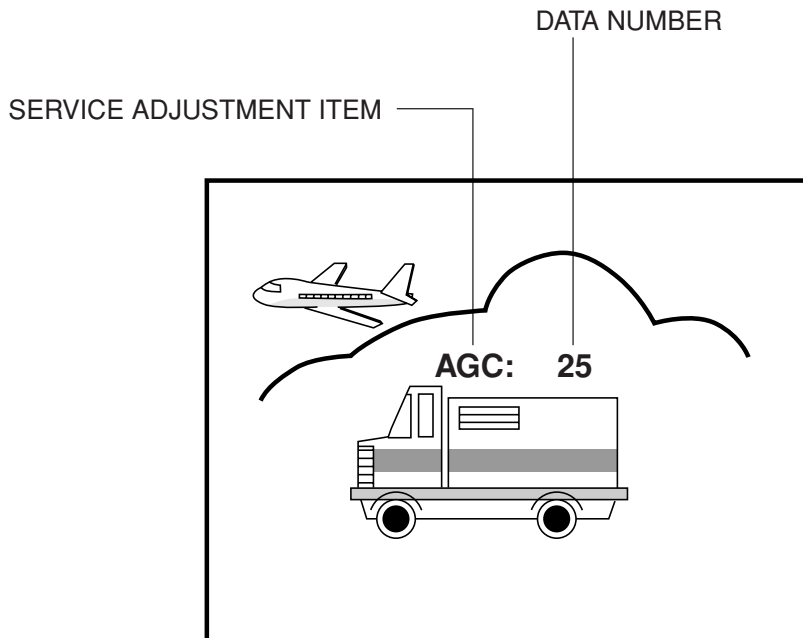
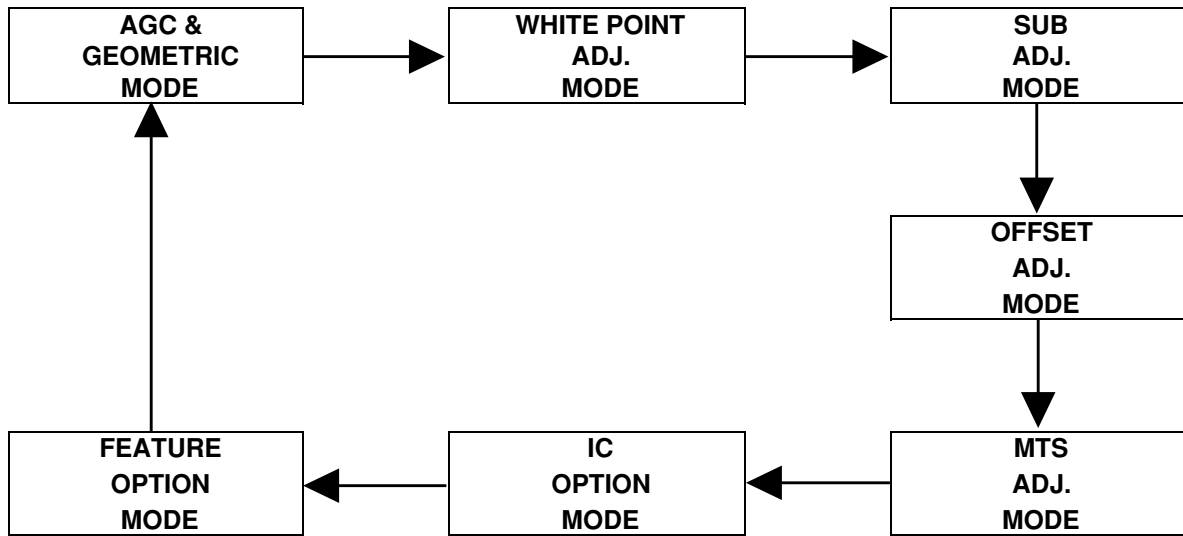


Figure A.

■ SERVICE MODE

(1) In the Service Mode, Key is used to select the mode in the following order.



- AGC & GEOMETRIC MODE**
- ↓ AGC TAKE OVER POINT (AGC)
 - ↓ VERTICAL SLOPE (V-LIN)
 - ↓ VERTICAL AMP (V-AMP)
 - ↓ VERTICAL SHIFT (V-CENT)
 - ↓ VERTICAL ZOOM (V-ZOOM)
 - ↓ HORIZONTAL SHIFT (H-CENT)
 - ↓ EAST-WEST WIDTH (H-SIZE)
 - ↓ HORIZONTAL PARALLELOGRAM (EW//)
 - ↓ EAST-WEST PARABOLA / WIDTH (PARA)
 - ↓ EAST-WEST UPPER CORNER PARABOLA (COR(U))
 - ↓ EAST-WEST LOWER CORNER PARABOLA (COR(L))
 - ↓ EAST-WEST TRAPEZIUM (TRAPE)
 - ↓ HORIZONTAL BOW (HB)
 - ↓ S-CORRECTION (S-COR)

- WHITE POINT ADJ. MODE**
- ↓ W.P. RED OFFSET HIGH / OFFSET BLUE TONE (DRI-R-HI)
 - ↓ W.P. GREEN OFFSET HIGH / OFFSET BLUE TONE (DRI-G-HI)
 - ↓ W.P. BLUE OFFSET HIGH / OFFSET BLUE TONE (DRI-B-HI)
 - ↓ W.P. RED MH / STD (DRI-R-MH)
 - ↓ W.P. GREEN MH / STD (DRI-G-MH)
 - ↓ W.P. BLUE MH / STD (DRI-B-MH)
 - ↓ W.P. RED OFFSET ML / OFFSET RED TONE (DRI-R-ML)
 - ↓ W.P. GREEN OFFSET ML / OFFSET RED TONE (DRI-G-ML)
 - ↓ W.P. BLUE OFFSET ML / OFFSET RED TONE (DRI-B-ML)
 - ↓ W.P. RED OFFSET LOW (DRI-R-LO)
 - ↓ W.P. GREEN OFFSET LOW (DRI-G-LO)
 - ↓ W.P. BLUE OFFSET LOW (DRI-B-LO)

- SUB ADJ. MODE**
- ↓ MAX VOLUME (SUB-VOL)
 - ↓ SUB CONTRAST (SUB-CON)
 - ↓ SUB TINT (SUB-TINT)
 - ↓ SUB COLOUR (SUB-COL)
 - ↓ SUB BRIGHTNESS (SUB-BRI)
 - ↓ SUB SHARPNESS (SUB-SHP)
 - ↓ MAX HOTEL VOLUME (HTL-VOL)
 - ↓ HOTEL PROGRAM NO(HTL-PRG)
 - ↓ BLUE BACK CONTRAST (BB-CON)
 - ↓ OSD GRB REFERENCE (RGB)
 - ↓ BLACK LEVEL OFFSET R(CUT-R)
 - ↓ BLACK LEVEL OFFSET G(CUT-G)
 - ↓ CATHODE DRIVE LEVEL(CDL)



Figure B: ADJUSTMENT CATEGORIES

- ① Press the CH DOWN/UP key on the remote controller to get ready to select the mode one by one.
 - ② Press the CH DOWN/UP key on the remote controller to select the modes reversibly one by one.
 - ③ Using the VOLUME UP/DOWN key on the remote controller, the data can be modified.
- (OSD disturbance can be erased by R/C display key)**

SERVICE MODE

SERVICE POSITION	ADJUST ITEM	DATA			REMARK
		RANGE	INITIAL VALUE	FIX/ADJ	
AGC	AGC TAKE OVER POINT	0~63	14	ADJ	
V-LIN	VERTICAL SLOPE	0~63	32	ADJ	
V-AMP	VERTICAL AMP	0~63	32	ADJ	
V-CENT	VERTICAL SHIFT	0~63	32	ADJ	
V-ZOOM	VERTICAL ZOOM	0~63	32	FIX	
H-CENT	HORIZONTAL SHIFT	0~63	32	ADJ	
H-SIZE	EAST-WEST WIDTH	0~63	32	FIX	
EW//	HORIZONTAL PARALLELOGRAM	0~63	32	FIX	
PARA	EAST-WEST PARABOLA / WIDTH	0~63	32	FIX	
COR(U)	EAST-WEST UPPER CORNER PARABOLA	0~63	32	FIX	
COR(L)	EAST-WEST LOWER CORNER PARABOLA	0~63	32	FIX	
TRAPE	EAST-WEST TRAPEZIUM	0~63	32	FIX	
HB	HORIZONTAL BOW	0~63	32	FIX	
S-COR	S-CORRECTION	0~63	0	FIX	must be "17"
DRI-R-HI	"W,P RED OFFSET HIGH / OFFSET BLUE TONE"	0~63	32	FIX	must be "32"
DRI-G-HI	W.P. GREEN OFFSET HIGH / OFFSET BLUE TONE	0~63	32	FIX	must be "33"
DRI-B-HI	W.P.BLUE OFFSET HIGH / OFFSET BLUE TONE	0~63	32	FIX	must be "37"
DRI-R-MH	W.P. RED MH / STD	0~63	25	FIX	must be "32"
DRI-G-MH	W.P. GREEN MH / STD	0~63	32	ADJ	
DRI-B-MH	W.P. BLUE MH / STD	0~63	32	ADJ	
DRI-R-ML	W.P. RED OFFSET ML / OFFSET RED TONE	0~63	32	FIX	must be "32"
DRI-G-ML	W.P. GREEN OFFSET ML / OFFSET RED TONE	0~63	32	FIX	must be "32"
DRI-B-ML	W.P. BLUE OFFSET ML / OFFSET RED TONE	0~63	32	FIX	must be "25"
DRI-R-LO	W.P. RED OFFSET LOW	0~63	32	FIX	must be "32"
DRI-G-LO	W.P. GREEN OFFSET LOW	0~63	32	FIX	must be "22"
DRI-B-LO	W.P. BLUE OFFSET LOW	0~63	32	FIX	must be "19"
SUB-VOL	MAX VOLUME	0~63	63	FIX	must be "63"
SUB-CON	SUB CONTRAST	0~63	63	FIX	must be "52"
SUB-COL	SUB COLOUR	0~63	32	ADJ	
SUB-BRI	SUB BRIGHTNESS	0~63	32	ADJ	
SUB-TINT	SUB TINT	0~63	32	ADJ	
SUB-SHP	SUB SHARPNESS	0~63	32	FIX	must be "24"
HTL-VOL	MAX HOTEL VOLUME	0~63	32	FIX	
HTL-PRG	HOTEL PROGRAM NO	0~125 or >125 for none	255	FIX	
BB-CON	BLUE BACK CONTRAST	0~15	10	FIX	must be "5"
RGB	OSD GRB REFERENCE	0~15	15	FIX	must be "15"
CUT-R	BLACK LEVEL OFFSET R	0~63	32	ADJ	
CUT-G	BLACK LEVEL OFFSET G	0~63	32	ADJ	
CDL	CATHODE DRIVE LEVEL	0~15	0	FIX	must be "2"
DL-TV	Y-D TIME (TV) [YD]	0~15	12	FIX	must be "2"
DL-AV	Y-D TIME (AV) [YD]	0~15	12	FIX	must be "8"
INIT	INITIAL/DEFAULT LANGUAGE	0(English), 1(Spanish), 2(French)	0	FIX*	
FAO-VOL	FAO-MAX VOLUME	0~63	63	FIX	must be "63"
ESV_OFFS	ENERGY SAVE OFFSET	0~63	10	FIX	must be "20"
CCPOS	CLOSE CAPTION POSITION	0~255	32	ADJ	
ATT	ATTENUATE INPUT SIGNAL LEVEL	0~15	10	FIX	
VCO	VCO FREE RUNNING FREQUENCY ADJ.	0~63	32	FIX	
FILTER	"STEREO, SAP, DBX FILTER ADJ. "	0~63	28	FIX	
WIDEBAND	STEREO SEPARATION ADJUSTMENT (300HZ)	0~63	32	FIX	
SPECTRAL	STEREO SEPARATION ADJUSTMENT (3kHz)	0~63	27	FIX	
BASS	BASS LEVEL	0~15	8	FIX	
TREBLE	TREBLE LEVEL	0~15	8	FIX	
VSD	VERTICAL SCAN DISABLE	0 or 1 when item selected	0	FIX	
BKS	BLACK STRETCH	0(disable) or1(enable)	1	FIX	
AVL	AUTOMATIC VOLUME LEVELLING	0(disable) or1(enable)	1	FIX	
FFI	FAST FILTER IF-PLL	0(disable) or1(enable)	0	FIX	
EVG	ENABLE VERTICAL GUARD	0(disable) or1(enable)	1	FIX	
EHT	EHT TRACKING MODE	0(disable) or1(enable)	1	FIX	
OSO	OVERSCAN SWITCH OFF	0(disable) or1(enable)	0	FIX	
ACL	AUTO COLOUR LIMIT	0(disable) or1(enable)	0	FIX	
FCO	FORCED COLOUR-ON	0(disable) or1(enable)	0	FIX	
VMI	VIDEO MUTE AT IDENT LOSS	0(disable) or1(enable)	1	FIX	
VMC	VIDEO MUTE AT PROGRAM/SOURCE CHANGE	0(disable) or1(enable)	1	FIX	
HTL	HOTEL MODE	0(disable) or1(enable)	0	FIX	
BTSC	GAIN FM DEMODULATOR	0(disable) or1(enable)	0	FIX	
CP	CHARGE PUMP	0(fast tuning) or 1 (moderate speed tuning)	0	FIX	

SERVICE POSITION	ADJUST ITEM	DATA			REMARK
		RANGE	INITIAL VALUE	FIX/ADJ	
FMWS	FM WINDOW SELECTION	0(disable) or1(enable)	0	FIX	
SM0	SOUND MUTE BIT 0 (SM0)	0(disable) or1(enable)	1	FIX	
SM1	SOUND MUTE BIT 1	0(disable) or1(enable)	0	FIX	
AGC0	IF AGC SPEED BIT 0	0(disable) or1(enable)	1	FIX	
AGC1	IF AGC SPEED BIT 1	0(disable) or1(enable)	0	FIX	
FOA-FE	PHI 1 TIME CONSTANT FOR FE	0(disable) or1(enable)	0	FIX	
FOB-FE	PHI 1 TIME CONSTANT FOR FE	0(disable) or1(enable)	0	FIX	
FOA-AV	PHI 1 TIME CONSTANT FOR AV	0(disable) or1(enable)	1	FIX	
FOB-AV	PHI 1 TIME CONSTANT FOR AV	0(disable) or1(enable)	1	FIX	
FSL	FORCED SLICING LEVEL FOR VERTICAL SYNC.	0(disable) or1(enable)	0	FIX	
HP2	SYNCHRONISATION OF OSD/TEXT DISPLAY	0(disable) or1(enable)	0	FIX	
RGBL	RGB BLANK	0(disable) or1(enable)	0	FIX	
V-CHIP	V-CHIP	0(disable) or1(enable)	0	FIX	
MTS	MTS DECODING ENABLED	0(disable) or1(enable)	0	FIX	
DEMO	DEMO MODE	0(disable) or1(enable)	1	FIX	
CLOCK	REAL TIME CLOCK / ON TIMER	0(disable) or1(enable)	1	FIX*	
E-SAVE	ENERGY SAVE	0(disable) or1(enable)	1	FIX	
P PREF	PERSONAL PREFERENCE PROGRAM	0(disable) or1(enable)	0	FIX	
UNIV+	UNIVERSAL PLUS	0(disable) or1(enable)	0	FIX	
SPEAKER	SPEAKER ON/OFF	0(disable) or1(enable)	0	FIX	
FAO	FIXED AUDIO OUT	0(disable) or1(enable)	0	FIX	
VIEW-TM	VIEW TIMER	0(disable) or1(enable)	1	FIX*	
FRENCH	FRENCH LANGUAGE	0(disable) or1(enable)	1	FIX	
EZ-SETUP	EZ SETUP / AUTOPRESET	0(AUTOPRESET) or 1(EZ SETUP)	1	FIX	
W-TEMP	WHITE TEMP OR FAVORITE COLOR	0(FC) or 1(WT)	0	FIX	
AV	AV ENABLED OR DISABLED	0(without ext. source) or 1(with external source)	0	FIX	
AV2	AV2 ENABLED OR DISABLED	0(1 input) or 1(2 input)	0	FIX	
DSK	DYNAMIC SKIN CONTROL	0(disable) or1(enable)	0	FIX	
RPO0	RATIO PRE- AND OVERSHOOT BIT 0	0(disable) or1(enable)	0	FIX	
RPO1	RATIO PRE- AND OVERSHOOT BIT 1	0(disable) or1(enable)	0	FIX	
AGN	GAIN FM DEMODULATOR	0(normal) or1(+6dB)	0	FIX	
AUTO-OFF	AUTO SWITCH OFF ENABLED	0(disable) or1(enable)	1	FIX	

Table - A

Holding down to short JA137 & JA138 and turn on the main power SW will automatically write the initial values into IC1003.

This is only can done when a new EEPROM is used. (Judge with the first 4 bytes.)

PART REPLACED	ADJUSTMENT		NOTES
	NECESSARY	UNNECESSARY	
IC801		X	Data is stored in IC1003.
IC1003	X		Holding down to short JA137 & JA138 and turn on the main power SW will automatically write the initial values into IC1003. This is only can done when a new EEPROM is used. (Judge with the first 4 bytes.)
CRT	X		Adjust items related to picture tube only.

Table - B

■ SERVICE ADJUSTMENT

RF AGC Adjustment

1. Receive a good local channel.
2. Enter the service mode signal category and select the service adjustment "AGC".
3. Set the data value to point where no noise or beat appears.
4. Select another channel to confirm that no noise or beat appears.

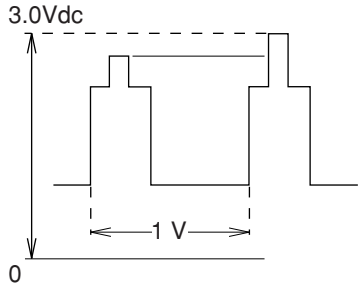

CHROMA ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	SUB-TINT (I²C BUS CONTROL)	<ol style="list-style-type: none"> 1. Receive the "Colour Bar" signal through AV in. 2. Connect the oscilloscope to TP853 (Pin (5) of P882) BLUE-OUT. <ul style="list-style-type: none"> • Range : 100mV/div. (AC)(Use Probe 10:1) • Sweep time : 10 μsec/div. 3. Call the "SUB-TINT" mode in service mode. Adjust the "SUB-TINT" bus data to obtain the waveform shown as Fig 1. 4. "SUB-TINT" bus data decrease 4 steps to get final waveform. (Fig 2.) 5. Clear the SERVICE mode. 	<p>Fig 1</p> <p>Fig 2</p>

HORIZONTAL AND VERTICAL DEFLECTION LOOP ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	V-SLOPE(I²C BUS CONTROL)	<ol style="list-style-type: none"> 1. Receive Monoscope Pattern Signal. 2. Call the "V-LIN" mode. 3. Increase or decrease "V-LIN" by Volume key till the horizontal line in the center of monoscope is just at the position where the blanking starts. 	
2	V-CENTER (I²C BUS CONTROL)	<ol style="list-style-type: none"> 1. Call the "V-CENT" mode. 2. Increase or decrease "V-CENT" by Volume key till the picture is centered. 	
3	V - AMP (I²C BUS CONTROL)	<ol style="list-style-type: none"> 1. Call the "V-AMP" mode. 2. Increase or decrease "V - AMP" by Volume key to set overscan of 10.0% typical. Adjustment Spec 10.0% range ±1%. 	
4	S-CORRECTION (I²C BUS CONTROL)	FIXED DATA, NO NEED TO ADJUST.	
5	H - CENTER	<ol style="list-style-type: none"> 1. Call the "H-CENT" mode. 2. Increase or decrease "H-CENT" by Volume key to center the picture horizontal. 	
6	Focus adjustment	<ol style="list-style-type: none"> 1. Receive the "Monoscope Pattern" signal. 2. Press R/C to set Picture NORMAL condition. 3. Adjust the focus control to get the best focus. 	

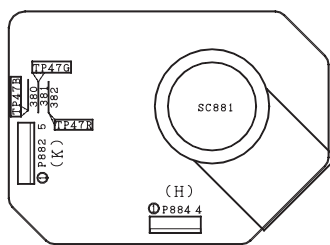
CRT CUT-OFF, BACKGROUND AND SUB-CONTRAST ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	CRT CUTOFF ADJUSTMENT (I²C BUS CONTROL)	1. Switch TV to VIDEO mode, BLUE BACK OFF, with NO VIDEO signal. 2. Press R/C to set Picture Normal condition. 3. Connect the oscilloscope to Red OUT from IC801.(TP47R) <div style="text-align: center;"> Range : 1 V/Div (DC) Sweep : 5 msec/Div </div> 4. Adjust SCREEN VR ,so that the tip of signal reach 3.0 Vdc + 0.1 Vdc.	
2	SUB-BRIGHTNESS ADJUSTMENT (I²C BUS CONTROL)	1. Call " SUB-BRI" in service mode. (Receive Cross-hatch pattern with 5 black level windows) 2. Adjust the " SUB BRIGHT " bus data in order that the line 1, 2 and 3 have the same darkness wherelse line 4 is slightly brighter than line 1, 2 and 3 and finally line 5 will be the brighter than line 4.	 <p>1, 2, 3 are in same black level.</p>
3	WHITE BALANCE SERVICE MODE ADJ. (I²C BUS CONTROL)	1. Receive the "Monoscope Pattern" signal. 2. Press R/C to set Picture NORMAL condition. 3. Connect the DC miliammeter between the TP 602 (-) TP 603 (+). 4. Check Beam current should be around (720μA) 5. Set it to service mode and adjust the DRI-G-MH, & DRI-B-MH data to have a colour temperature of 11,600°K (white). 6. Receive "WHITE" pattern, WITH BURST signal, and set BRIGHTNESS Y by generator, to ** 10 cd/m ² (MINOLTA CA-100) by reducing LUMINATE Y signal. 7. Adjust "CUT-R" & "CUT-G" to get 11,600°K. Then go back NORMAL mode (HIGH BRIGHT**) to check colour temperature. If out of range, back to (1). <p style="text-align: center;">Note: This adjustment must be done after warming up the unit for 30 minutes or longer with a beam current over 500μA.</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> DRI-R-MH=32 (FIXED) DRI-G-MH=33 (FIXED) DRI-B-MH=37 (FIXED) DRI-R-MH=32 (FIXED) </div>	# 11,600° K X : 0.273 Y : 0.280 (MINOLTA COLOUR ANALYZER CA-100) *NOTE: Above DATA can be UP/ DOWN by volume key. <div style="text-align: center;"> LOW HIGH 14" 1.8cd/m² 115cd/m² </div> * 11,600° K DRI-GW="DRI-GS"DATA-5 DRI-BW="DRI-BS" DATA-5
4	Maximum beam check	1. Receive the "Monoscope Pattern" signal. 2. Press R/C to set Picture NORMAL condition. 3. Connect the DC miliammeter between TP603 (+) and TP602 (-). (Full Scale: 3 mA Range) 4. Beam current must be within 720 ± 50 μA.	

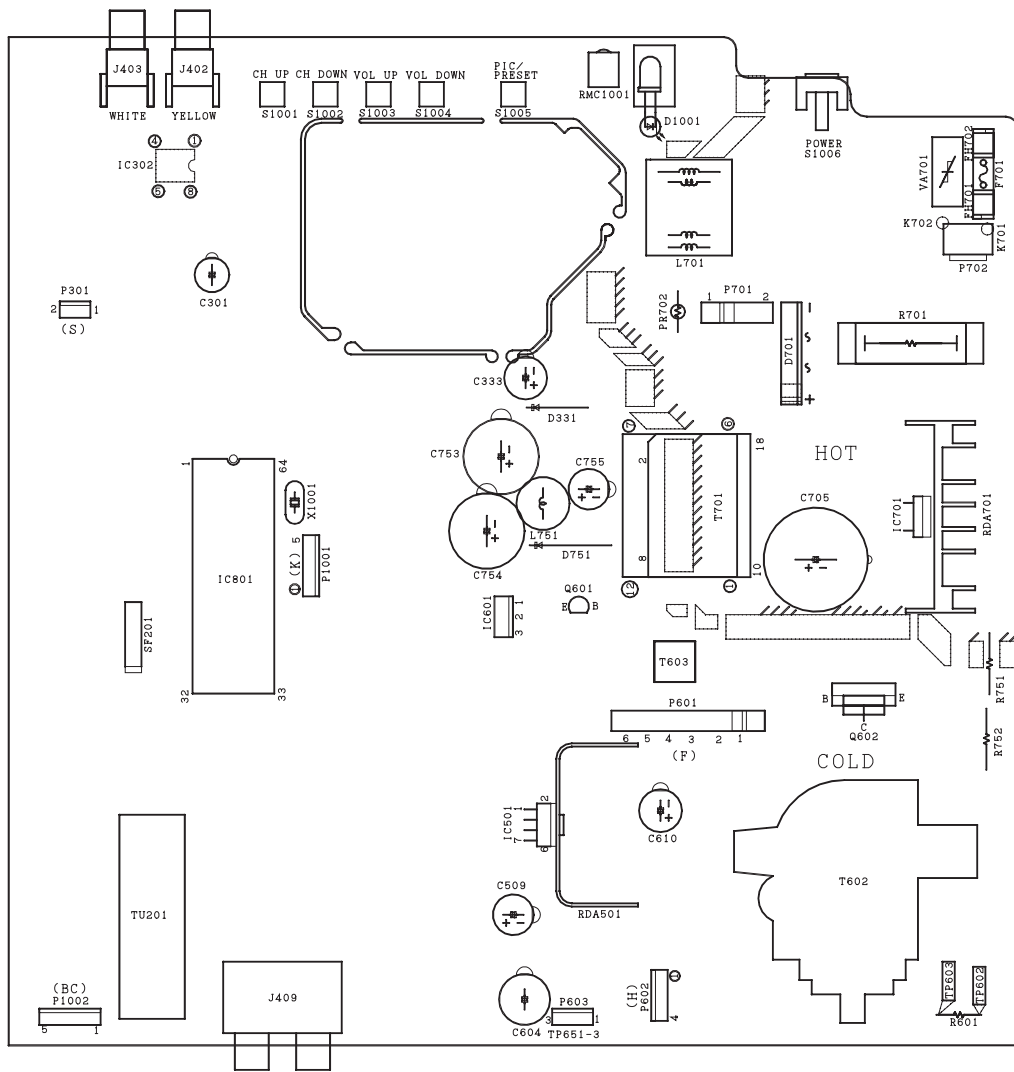
CHASSIS LAYOUT

H
G
F
E
D
C
B
A

PWB - B
DUNTKA542WE
CRT

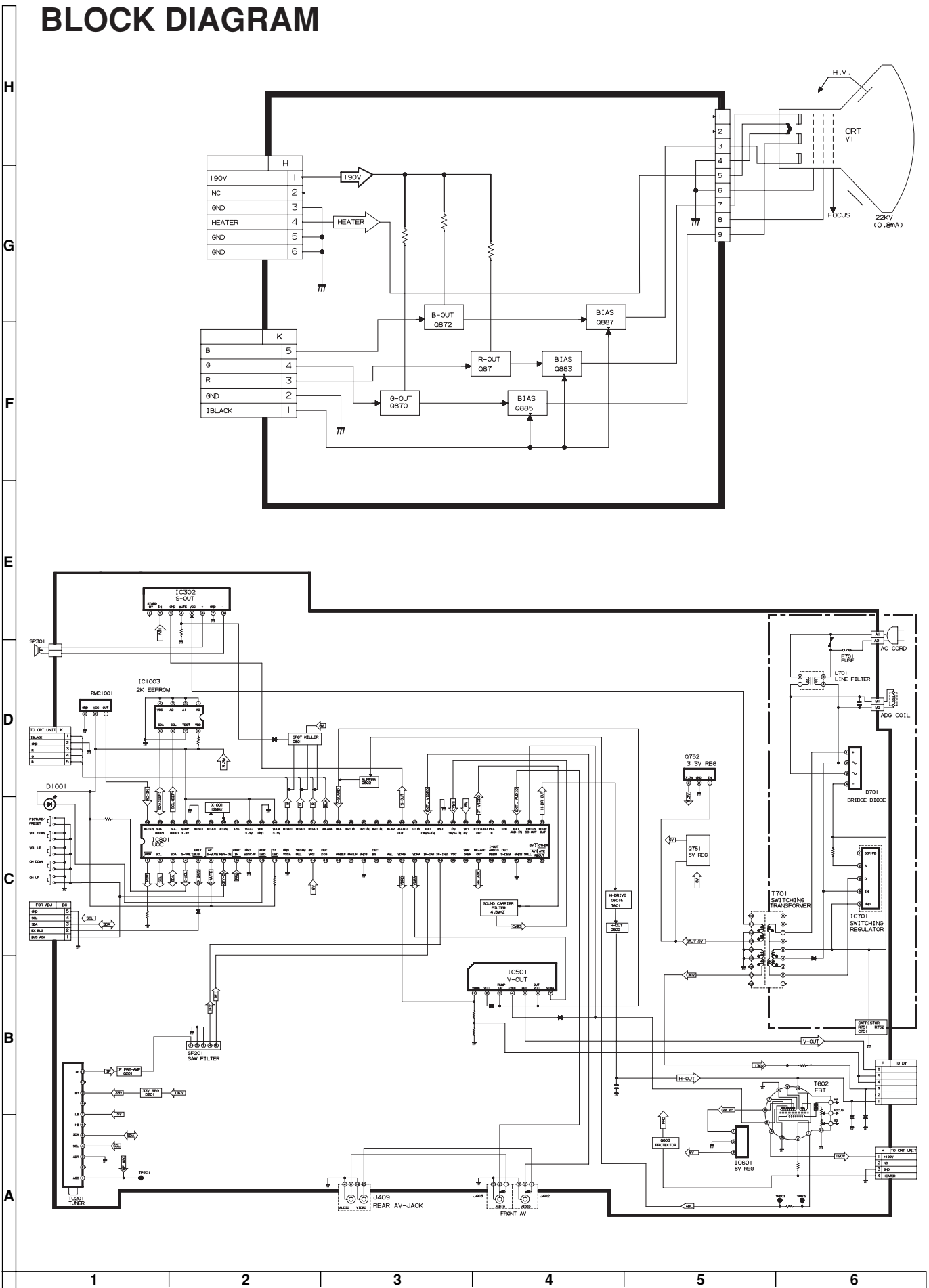


PWB - A
DUNTKA541WE
MAIN



1 2 3 4 5 6

BLOCK 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 μF , unless otherwise noted.
($P=pF=\mu\mu F$)
4. (G) indicates $\pm 2\%$ tolerance may be used.
5. \perp indicates line isolated ground.
6. \downarrow indicates hot ground.

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. \odot indicates waveform check points (See chart, waveforms are measured from point indicated to chassis ground.)

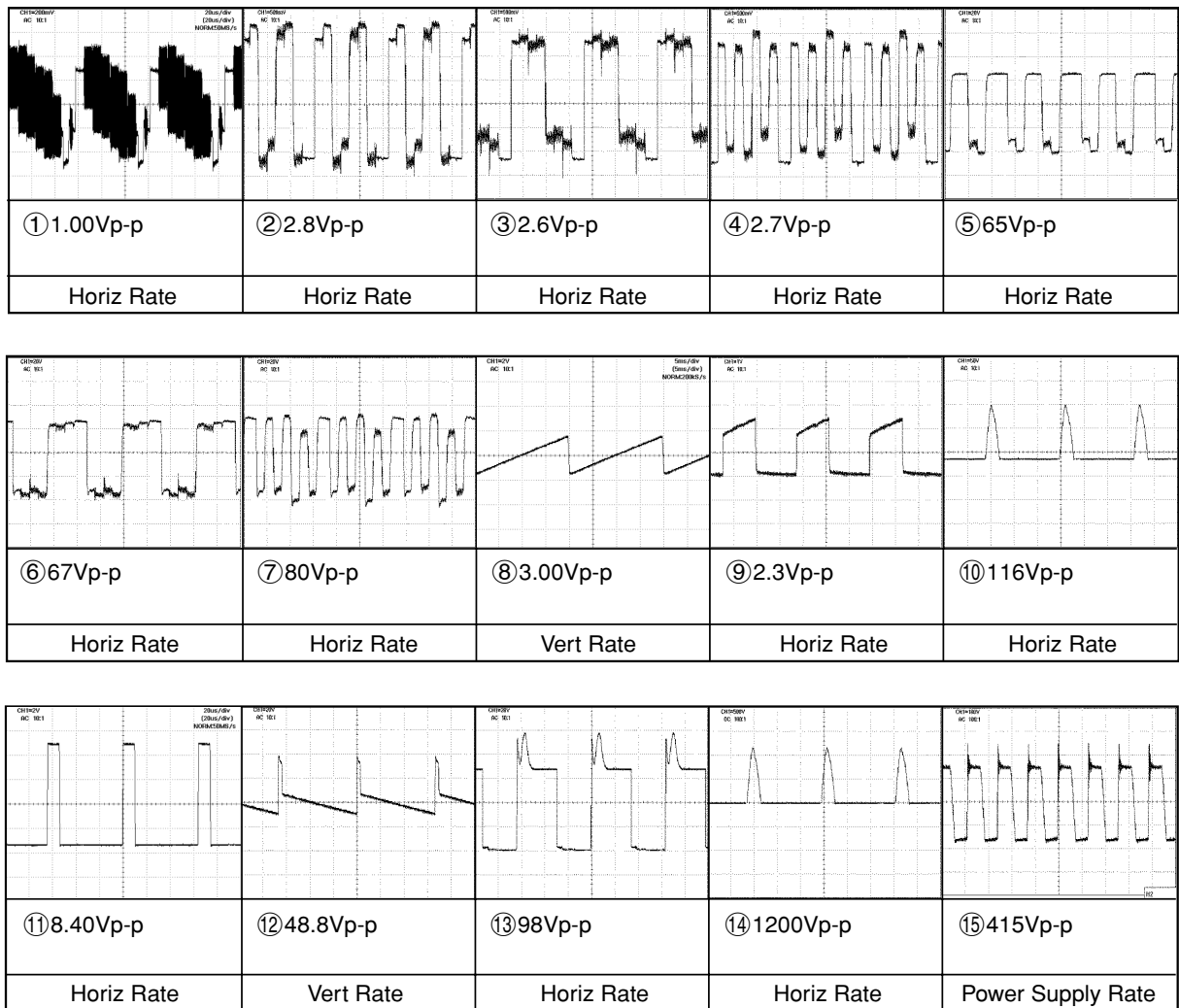
VOLTAGE MEASUREMENT CONDITIONS:

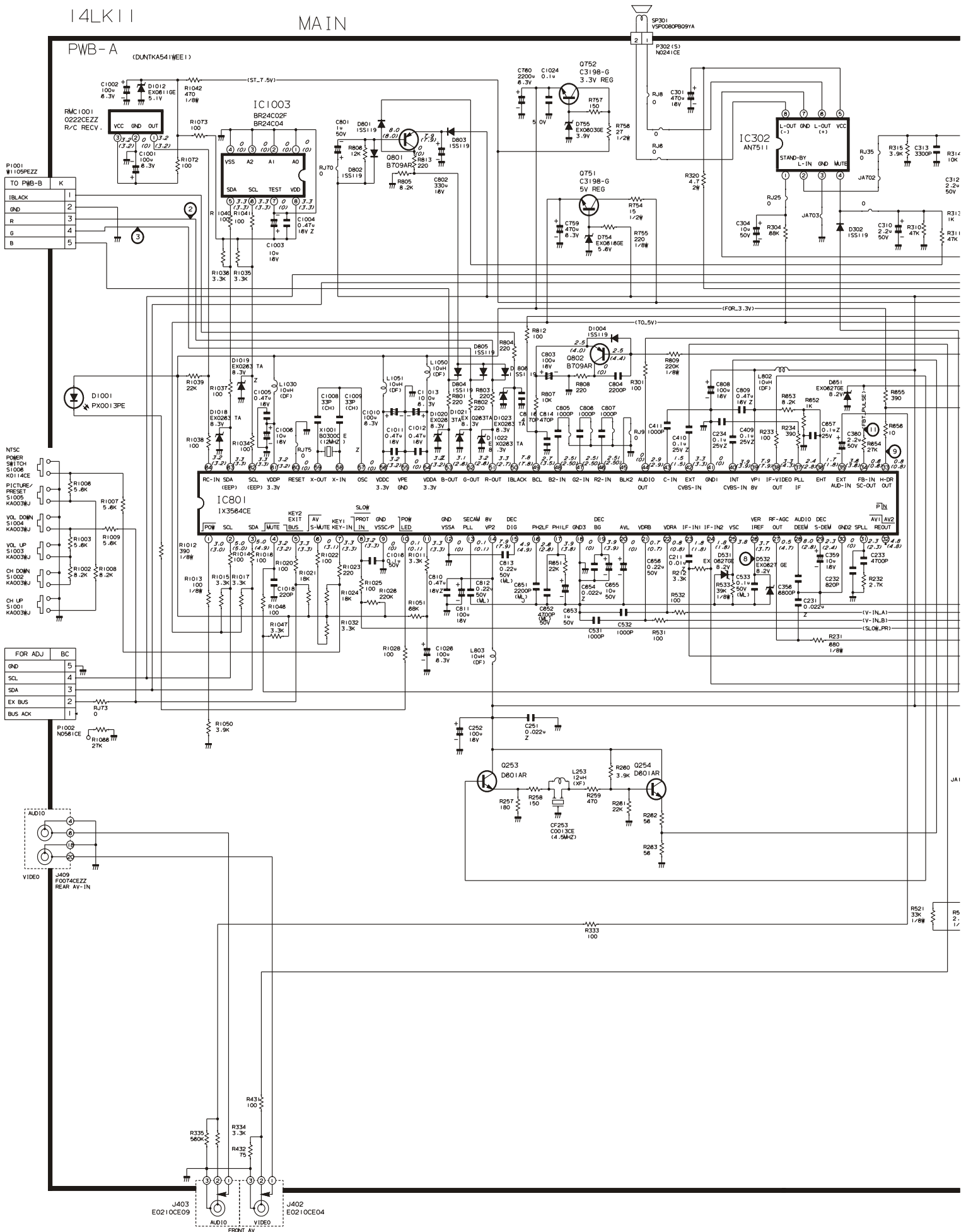
1. All DC voltages are measured with DVM connected between points indicated and chassis ground, line voltage set at 120V AC and all controls set for normal picture unless otherwise indicated.
2. All voltages measured with $1000\mu V$ B & W or Color signal.

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

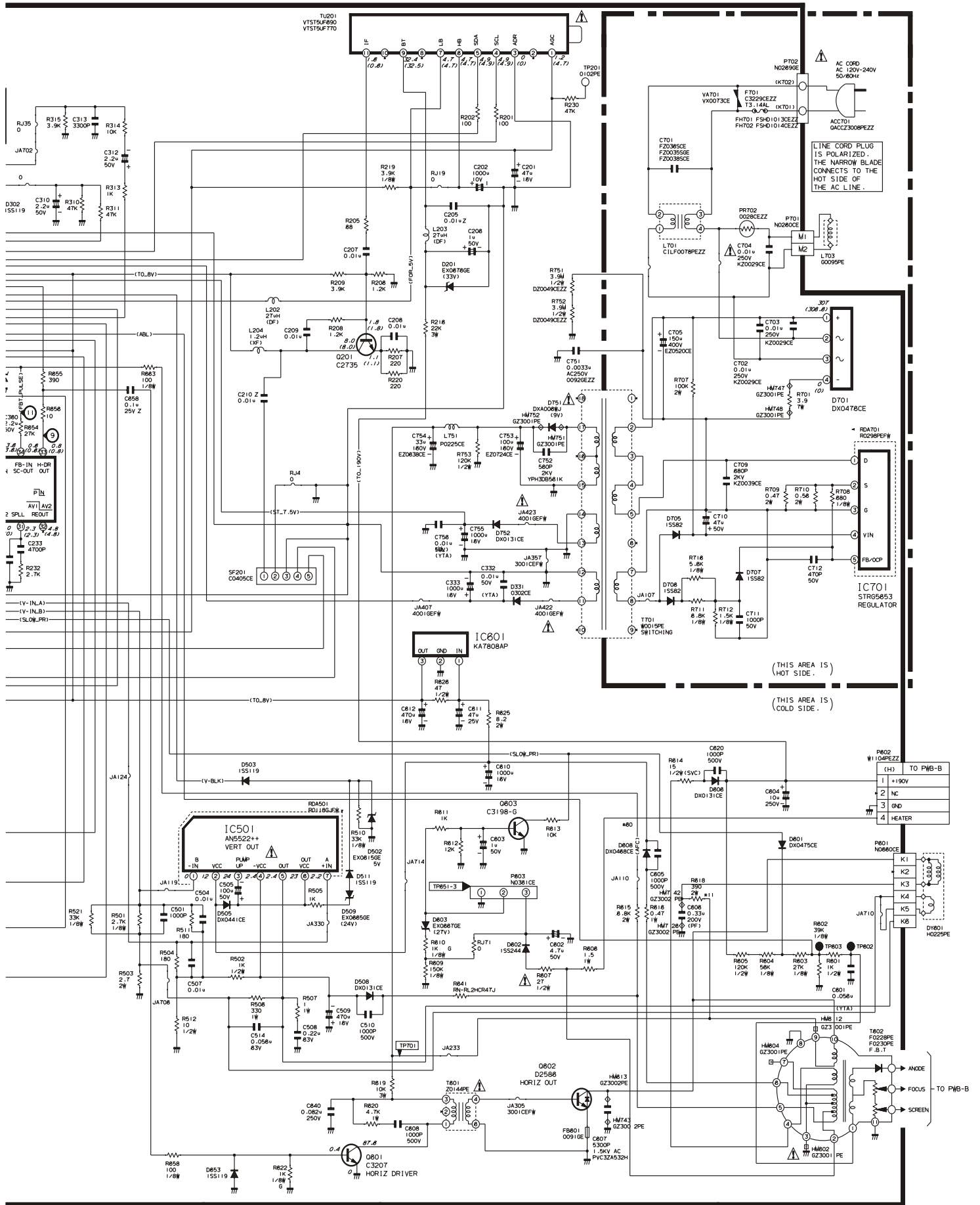
This circuit diagram is a standard one, printed circuits may be subject to change for product improvement without prior notice.

WAVEFORMS





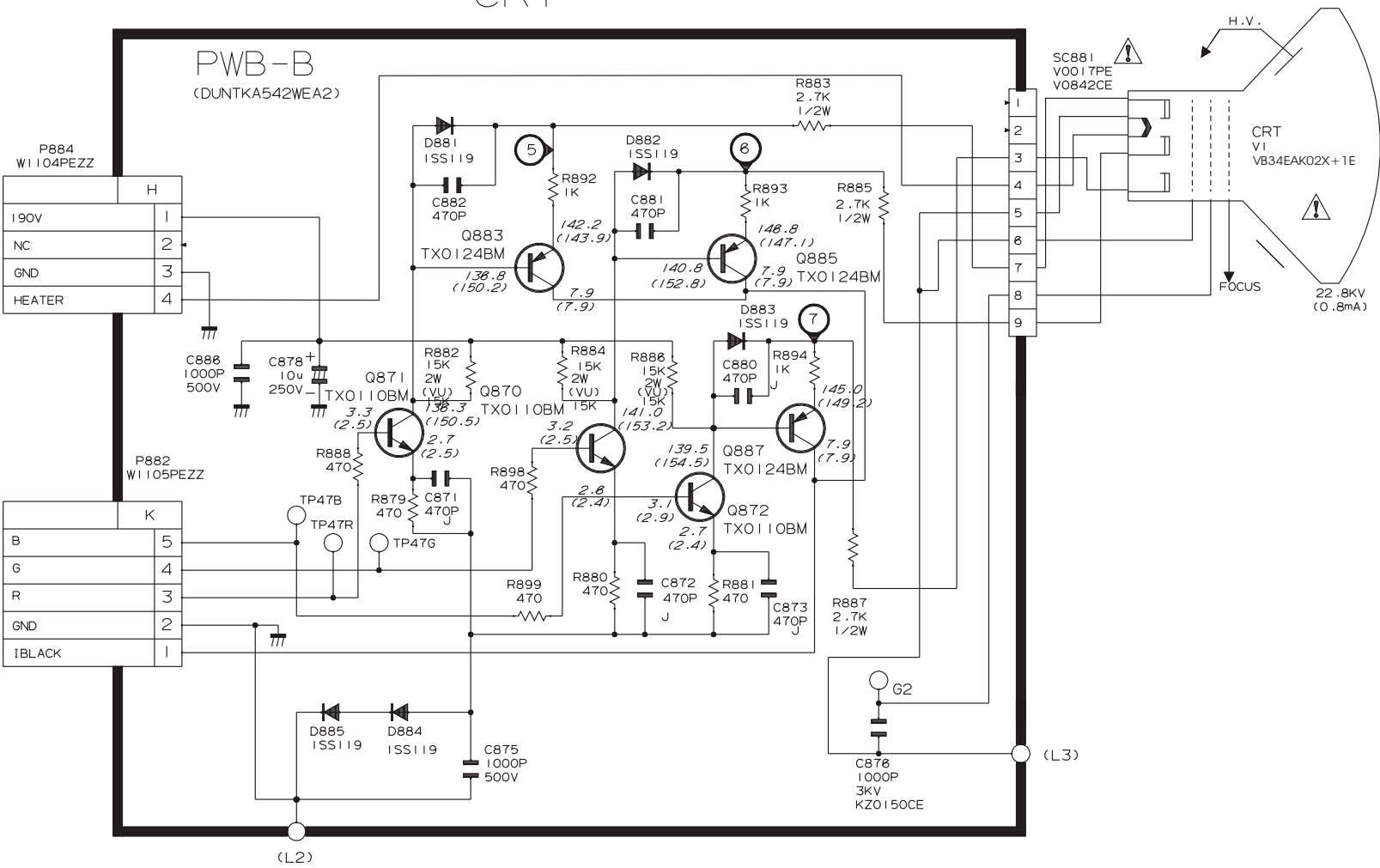
NOTE: 1. THE UNIT OF RESISTANCE "OHM" IS OMITTED
 (K=1000 OHMS, M=MEGAOHM)
 2. ALL RESISTORS ARE 1/16W UNLESS OTHERWISE NOTED.
 3. UNIT OF ALL CAPACITORS ARE F WITH PREFIX SYMBOL
 (u, P, ETC.).



14LK11

CRT

NOTE: 1. THE UNIT OF RESISTANCE "OHM" IS OMITTED
 (K=1000 OHMS, M=MEGAOHM).
 2. ALL RESISTORS ARE 1/18 WATT, UNLESS OTHERWISE NOTED.
 3. UNIT OF ALL CAPACITORS ARE F WITH PREFIX SYMBOL
 (u, P, ETC).



PRINTED WIRING BOARD ASSEMBLIES

H

G

F

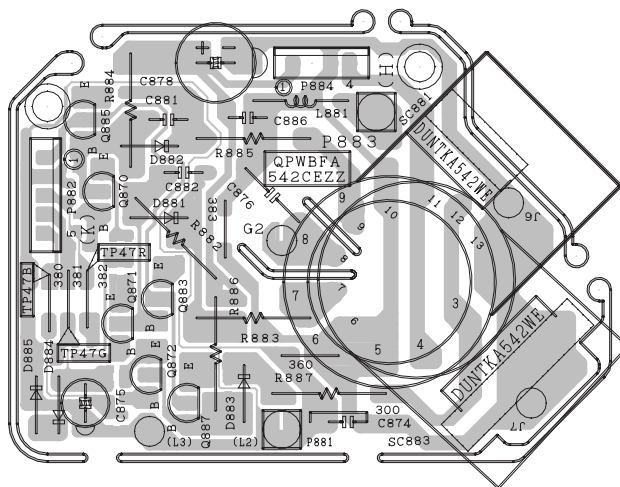
E

D

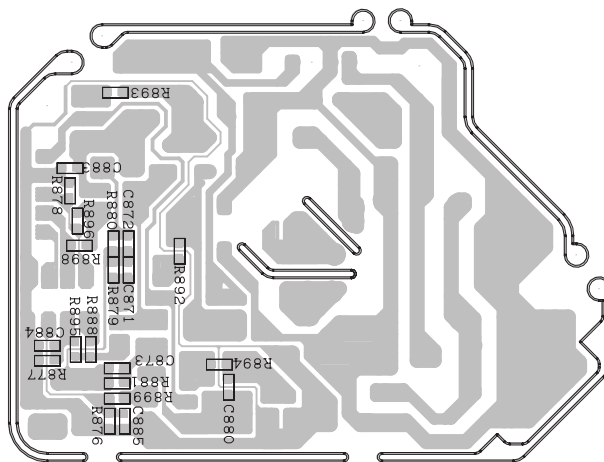
C

B

A



PWB-B: CRT Unit (Wiring Side)



PWB-B: CRT Unit (Chip Parts Side)

1

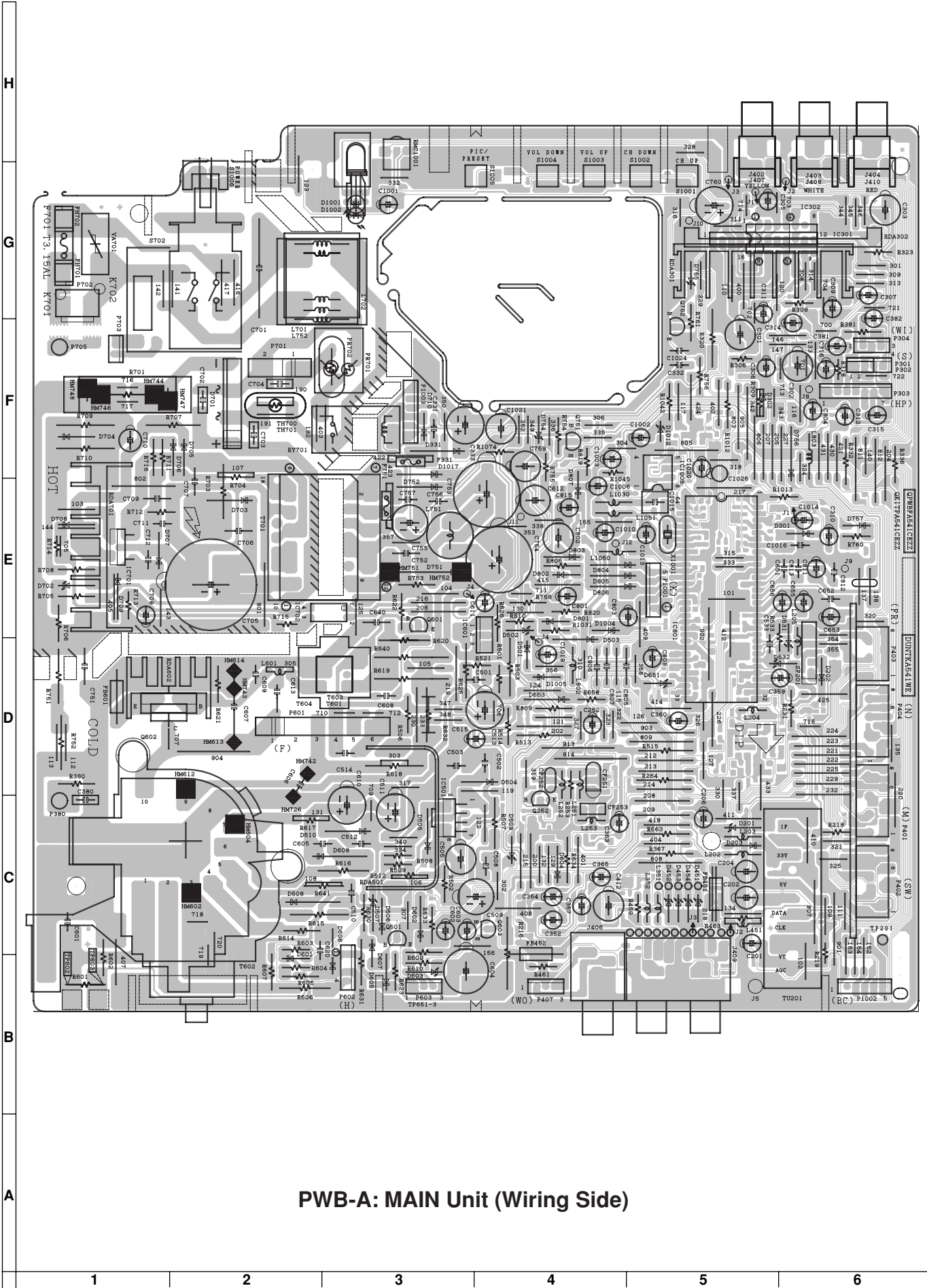
2

3

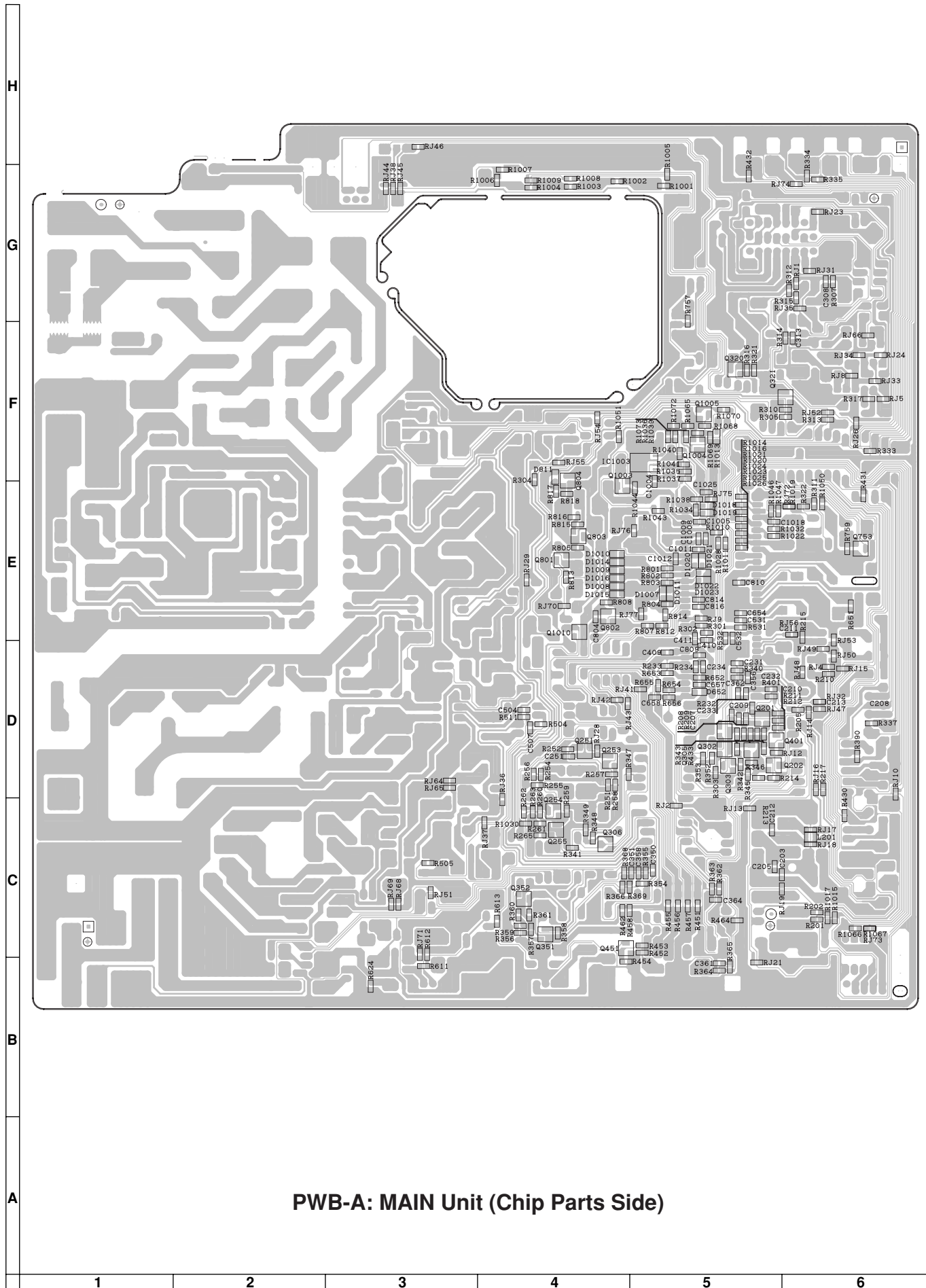
4

5

6



PWB-A: MAIN Unit (Wiring Side)



PWB-A: MAIN Unit (Chip Parts Side)

PARTS LIST

PARTS REPLACEMENT

Replacement parts which have these special safety characteristics identified in this manual; electrical components having such features are identified by Δ and shaded areas in the Replacement Parts Lists and Schematic Diagrams. The use of a substitute replacement part which does not have the same safety characteristic as the factory recommended replacement parts shown in this service manual may create shock, fire or other hazards.

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following informations.

- | | |
|-----------------|----------------|
| 1. MODEL NUMBER | 2. REF. NO. |
| 3. PART NO. | 4. DESCRIPTION |

★ MARK : SPARE PARTS-DELIVERY SECTION

▲ MARK : X- RAY RELATED PARTS

Ref. No.	Part No.	★	Description	Code
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PICTURE TUBE

Δ V101	VB34EAK02X+1E	R	Picture Tube	BM
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Δ L703	RCiLG0068PEZZ	R	Degaussing Coil	AH
Δ DY601	RCiLH0225PEZZ	R	Deflection Yoke	BA
	PMAGF3041CEZZ	J	Degaussing Coil -Purity and Static Convergence	AG
	PSPAG0004PEZZ	R	Wedge(Gum), Yoke	AB
	QEARC1436PEZZ	R	Grounding Strap	AE
	MSPRT0001PEFJ	R	Spring for CRT	AC

CRT	DY
VB3708VBK1S-S	RCiLH0220PEZZ
VB376DA86X/1E	RCiLH0225PEZZ
VB34KPU02X/*S	RCiLH0226PEZZ
VB34JLL90X/*S	RCiLH0221PEZZ
VB34JFQ90X/*S	RCiLH0220PEZZ
VB34LRQ90X/*S	RCiLH0220PEZZ

PRINTED WIRING BOARD ASSEMBLIES (NOT REPLACEMENT ITEM)

PWB-A DUNTKA541WEE1	- MAIN Unit	—
PWB-B DUNTKA542WEA0	- CRT Unit	—

Ref. No. Part No. ★ Description Code

PWB-A: DUNTKA541WEE1 MAIN UNIT

TUNER

NOTE : THE PARTS HERE SHOWN ARE SUPPLIED AS AN ASSEMBLY BUT NOT INDEPENDENTLY.

Δ TU201	VTUENV56D82-1	J	Tuner	AT
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INTEGRATED CIRCUITS

IC302	VHiAN7511//-1	J	An7511	AC
Δ IC501	VHiAN5522++-1	X	An5522	AD
IC601	VHiKA7808AP-1	J	Kia7808api	AC
IC701	VHiSTRG5653-1	X	Strg5653	AH
IC801	RH-iX3564CEZZ	X	I.C.	AT
IC1003	VHiBR24C02F1E*	J	I.C.	AC

TRANSISTORS

You can substitute "VS2SC2462-C-1" for "VS2SD601AR/-1".

Q201	VS2SC2735//1E	J	C2735	
Q253	VS2SD601A/-1	J	D601A	AA
Q254	VS2SD601A/-1	J	D601A	AA
Q601	VS2SC3207//-1	J	C3207	AB
Q602	VS2SD2586//1E	J	D2586	AF
Q603	VS2SC3198-G-1	J	C3198-G	AB
Q751	VS2SC3198-G-1	J	C3198-G	AB
Q752	VS2SC3198-G-1	J	C3198-G	AB
Q801	VS2SB709A/-1	J	B709A	AB
Q802	VS2SB709A/-1	J	B709A	AB

DIODES

D201	RH-EX0676GEZZ	J	Zener Diode, 33V	AB
D302	VHD1SS119//-1	J	Diode	AA
Δ D331	RH-DX0302CEZZ	J	Diode	AB
D502	RH-EX0615GEZZ	J	Zener Diode, 5V	AB
D503	VHD1SS119//-1	J	Diode	AA
D505	RH-DX0441CEZZ	J	Diode	AB
D508	RH-DX0131CEZZ	J	Diode	AB
D509	RH-EX0665GEZZ	J	Zener Diode, 24V	AB
D511	VHD1SS119//-1	J	Diode	AA
D531	RH-EX0627GEZZ	J	Zener Diode, 8.2V	AB
D532	RH-EX0627GEZZ	J	Zener Diode, 8.2V	AB
D601	RH-DX0475CEZZ	J	Diode	AA
Δ D602	VHD1SS244//-1	J	Diode	AB
Δ D603	RH-EX0667GEZZ	J	Zener Diode, 27V	AB
Δ D606	RH-DX0131CEZZ	J	Diode	AB
Δ D608	RH-DX0468CEZZ	J	Diode	AB
D651	RH-EX0627GEZZ	J	Zener Diode, 8.2V	AB
D653	VHD1SS119//-1	J	Diode	AA
D701	RH-DX0476CEZZ	J	Diode	AC
D705	VHD1SS82///1A	J	Diode	AB
D706	VHD1SS82///1A	J	Diode	AB
D707	VHD1SS82///1A	J	Diode	AB
Δ D751	RH-DXA006WJZZ	J	Diode	AB
Δ D752	RH-DX0131CEZZ	J	Diode	AB
D754	RH-EX0616GEZZ	J	Zener Diode, 5.6V	AB
D755	RH-EX0603GEZZ	J	Zener Diode, 3.9V	AB
D801	VHD1SS119//-1	J	Diode	AA
D802	VHD1SS119//-1	J	Diode	AA
D803	VHD1SS119//-1	J	Diode	AA
D804	VHD1SS119//-1	J	Diode	AA
D805	VHD1SS119//-1	J	Diode	AA
D806	VHD1SS119//-1	J	Diode	AA
D1001	RH-PX0013PEZZ	R	Photodiode	AB
D1004	VHD1SS119//-1	J	Diode	AA
D1012	RH-EX0611GEZZ	J	Zener Diode, 5.1V	AB
D1018	RH-EX0263TAZZ	J	Zener Diode, 8.3V	AB
D1019	RH-EX0263TAZZ	J	Zener Diode, 8.3V	AB
D1020	RH-EX0263TAZZ	J	Zener Diode, 8.3V	AB
D1021	RH-EX0263TAZZ	J	Zener Diode, 8.3V	AB

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
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PWB-A: DUNTKA541WEE1 MAIN UNIT (Continued)

RESISTORS

[M-Ox... Metal Oxide, Metal Film... M-Film]

RJ2	VRS-CY1JF000J	J 0	1/16W M-Ox.	AA	R432	VRS-CY1JF750J	J 75	1/16W M-Ox.	AA
RJ4	VRS-CY1JF000J	J 0	1/16W M-Ox.	AA	R501	VRD-RA2BE272J	J 2.7k	1/8W Carbon	AA
RJ8	VRS-CY1JF000J	J 0	1/16W M-Ox.	AA	R502	VRD-RM2HD102J	J 1.0k	1/2W Carbon	AA
RJ9	VRS-CY1JF000J	J 0	1/16W M-Ox.	AA	R503	VRN-RL3DB2R7J+	X 2.7	2W M-Film	AB
RJ10	VRS-CY1JF000J	J 0	1/16W M-Ox.	AA	R504	VRS-CY1JF181J	J 180	1/16W M-Ox.	AA
RJ13	VRS-CY1JF000J	J 0	1/16W M-Ox.	AA	R505	VRS-CY1JF102J	J 1.0k	1/16W M-Ox.	AA
RJ14	VRS-CY1JF000J	J 0	1/16W M-Ox.	AA	R506	VRS-RG3AB331J+	X 330	1W M-Ox.	AB
RJ15	VRS-CY1JF000J	J 0	1/16W M-Ox.	AA	R507	VRN-RL3AB1R0J+	X 1.0	1W M-Film	AB
RJ16	VRS-CY1JF000J	J 0	1/16W M-Ox.	AA	R510	VRD-RA2BE333J	J 33k	1/8W Carbon	AA
RJ17	VRS-CY1JF000J	J 0	1/16W M-Ox.	AA	R511	VRS-CY1JF181J	J 180	1/16W M-Ox.	AA
RJ19	VRS-CY1JF000J	J 0	1/16W M-Ox.	AA	R512	VRD-RM2HD100J	J 10	1/2W Carbon	AA
RJ21	VRS-CY1JF000J	J 0	1/16W M-Ox.	AA	R521	VRD-RA2BE333J	J 33k	1/8W Carbon	AA
RJ26	VRS-CY1JF000J	J 0	1/16W M-Ox.	AA	R531	VRS-CY1JF101J	J 100	1/16W M-Ox.	AA
RJ28	VRS-CY1JF000J	J 0	1/16W M-Ox.	AA	R532	VRS-CY1JF101J	J 100	1/16W M-Ox.	AA
RJ31	VRS-CY1JF000J	J 0	1/16W M-Ox.	AA	R533	VRD-RA2BE393J	J 39k	1/8W Carbon	AA
RJ32	VRS-CY1JF000J	J 0	1/16W M-Ox.	AA	R601	VRS-RG2HC102J	J 1.0k	1/2W M-Ox.	AB
RJ35	VRS-CY1JF000J	J 0	1/16W M-Ox.	AA	R602	VRD-RA2BE393J	J 39k	1/8W Carbon	AA
RJ37	VRS-CY1JF000J	J 0	1/16W M-Ox.	AA	R603	VRD-RA2BE273J	J 27k	1/8W Carbon	AA
RJ38	VRS-CY1JF000J	J 0	1/16W M-Ox.	AA	R604	VRD-RA2BE563J	J 56k	1/8W Carbon	AA
RJ41	VRS-CY1JF000J	J 0	1/16W M-Ox.	AA	R605	VRD-RM2HD124J	J 120k	1/2W Carbon	AA
RJ42	VRS-CY1JF000J	J 0	1/16W M-Ox.	AA	△ R606	VRN-RL3AB1R5J+	X 1.5	1W M-Film	AB
RJ43	VRS-CY1JF000J	J 0	1/16W M-Ox.	AA	△ R607	VRD-RM2HD270J	J 27	1/2W Carbon	AA
RJ46	VRS-CY1JF000J	J 0	1/16W M-Ox.	AA	△ R609	VRD-RA2BE154J	J 150k	1/8W Carbon	AA
RJ49	VRS-CY1JF000J	J 0	1/16W M-Ox.	AA	△ R610	VRD-RA2BE102G	J 1.0k	1/8W Carbon	AB
RJ50	VRS-CY1JF000J	J 0	1/16W M-Ox.	AA	R611	VRS-CY1JF102J	J 1.0k	1/16W M-Ox.	AA
RJ51	VRS-CY1JF000J	J 0	1/16W M-Ox.	AA	R612	VRS-CY1JF123J	J 12k	1/16W M-Ox.	AA
RJ52	VRS-CY1JF000J	J 0	1/16W M-Ox.	AA	R613	VRS-CY1JF103J	J 10k	1/16W M-Ox.	AA
RJ53	VRS-CY1JF000J	J 0	1/16W M-Ox.	AA	△ R614	VRD-RM2HD100J	J 10	1/2W Carbon	AB
RJ70	VRS-CY1JF000J	J 0	1/16W M-Ox.	AA	R615	VRS-RG3DB682J+	X 6.8k	2W M-Ox.	AB
RJ71	VRS-CY1JF000J	J 0	1/16W M-Ox.	AA	R616	VRN-RL3ABR47J+	X 0.47	1W M-Film	AB
RJ72	VRS-CY1JF000J	J 0	1/16W M-Ox.	AA	R618	VRS-RG3DB391J+	X 390	2W M-Ox.	AB
RJ73	VRS-CY1JF000J	J 0	1/16W M-Ox.	AA	R619	VRS-RG3LB103J+	X 10k	3W M-Ox.	AB
RJ75	VRS-CY1JF000J	J 0	1/16W M-Ox.	AA	R620	VRS-RG3AB472J+	X 4.7k	1W M-Ox.	AB
R201	VRS-CY1JF101J	J 100	1/16W M-Ox.	AA	R622	VRD-RA2BE102J	J 1.0k	1/8W Carbon	AA
R202	VRS-CY1JF101J	J 100	1/16W M-Ox.	AA	R625	VRN-VV3DB8R2J	J 8.2	2W M-Film	AB
R205	VRS-CY1JF680J	J 68	1/16W M-Ox.	AA	R626	VRD-RM2HD470J	J 47	1/2W Carbon	AA
R206	VRS-CY1JF122J	J 1.2k	1/16W M-Ox.	AA	R641	VRN-RL2HCR47J+	X 0.47	1/2W M-Film	AB
R207	VRS-CY1JF221J	J 220	1/16W M-Ox.	AA	R651	VRS-CY1JF223J	J 22k	1/16W M-Ox.	AA
R208	VRS-CY1JF122J	J 1.2k	1/16W M-Ox.	AA	R652	VRS-CY1JF102J	J 1.0k	1/16W M-Ox.	AA
R209	VRS-CY1JF392J	J 3.9k	1/16W M-Ox.	AA	R653	VRS-CY1JF822J	J 8.2k	1/16W M-Ox.	AA
R212	VRS-CY1JF332J	J 3.3k	1/16W M-Ox.	AA	R654	VRS-CY1JF273J	J 27k	1/16W M-Ox.	AA
R216	VRS-RG3LB223J+	X 22k	3W M-Ox.	AB	R655	VRS-CY1JF391J	J 390	1/16W M-Ox.	AA
R219	VRD-RA2BE392J	J 3.9k	1/8W Carbon	AA	R656	VRS-CY1JF100J	J 10	1/16W M-Ox.	AA
R230	VRS-CY1JF473J*	J 220	1/16W M-Ox.	AA	R658	VRD-RA2BE101J	J 100	1/8W Carbon	AA
R231	VRD-RA2BE681J	J 680	1/8W Carbon	AA	R663	VRD-RA2BE101J	J 100	1/8W Carbon	AA
R232	VRS-CY1JF272J	J 2.7k	1/16W M-Ox.	AA	R701	VRW-KQ3NC3R9K	J 3.9	7W Cement	AB
R233	VRS-CY1JF101J	J 100	1/16W M-Ox.	AA	R707	VRS-VV3DB104J	J 100k	2W M-Ox.	AB
R234	VRS-CY1JF391J	J 390	1/16W M-Ox.	AA	R708	VRD-RA2BE681J	J 680	1/8W Carbon	AA
R257	VRS-CY1JF181J	J 180	1/16W M-Ox.	AA	R709	VRN-RL3DBR47J+	X 0.47	2W M-Film	AB
R258	VRS-CY1JF151J	J 150	1/16W M-Ox.	AA	R710	VRN-RL3DBR56J+	X 0.56	2W M-Film	AB
R259	VRS-CY1JF471J	J 470	1/16W M-Ox.	AA	R711	VRD-RA2BE682J	J 6.8k	1/8W Carbon	AA
R260	VRS-CY1JF392J	J 3.9k	1/16W M-Ox.	AA	R712	VRD-RA2BE152J	J 1.5k	1/8W Carbon	AA
R261	VRS-CY1JF223J	J 22k	1/16W M-Ox.	AA	R716	VRD-RA2BE562J	J 5.6k	1/8W Carbon	AA
R262	VRS-CY1JF560J	J 56	1/16W M-Ox.	AA	R751	RR-DZ0049CEZZ	J 3.9M	1/2W Solid	AB
R263	VRS-CY1JF560J	J 56	1/16W M-Ox.	AA	R752	RR-DZ0049CEZZ	J 3.9M	1/2W Solid	AB
R301	VRS-CY1JF101J	J 100	1/16W M-Ox.	AA	△ R753	VRD-RM2HD124J	J 120k	1/2W Carbon	AA
R304	VRS-CY1JF683J	J 68k	1/16W M-Ox.	AA	R754	VRD-RM2HD150J	J 15	1/2W Carbon	AA
R310	VRS-CY1JF473J	J 47k	1/16W M-Ox.	AA	R755	VRD-RA2BE221J	J 220	1/8W Carbon	AA
R311	VRS-CY1JF473J	J 47k	1/16W M-Ox.	AA	R756	VRD-RM2HD270J	J 27	1/2W Carbon	AA
R313	VRS-CY1JF102J	J 1.0k	1/16W M-Ox.	AA	R757	VRS-CY1JF151J	J 150	1/16W M-Ox.	AA
R314	VRS-CY1JF103J	J 10k	1/16W M-Ox.	AA	R801	VRS-CY1JF221J	J 220	1/16W M-Ox.	AA
R315	VRS-CY1JF392J	J 3.9k	1/16W M-Ox.	AA	R802	VRS-CY1JF221J	J 220	1/16W M-Ox.	AA
R320	VRN-RL3DB4R7J+	X 4.7	2W M-Film	AB	R803	VRS-CY1JF221J	J 220	1/16W M-Ox.	AA
R333	VRS-CY1JF101J	J 100	1/16W M-Ox.	AA	R804	VRS-CY1JF221J	J 220	1/16W M-Ox.	AA
R334	VRS-CY1JF332J	J 3.3k	1/16W M-Ox.	AA	R805	VRS-CY1JF822J	J 8.2k	1/16W M-Ox.	AA
R335	VRS-CY1JF564J	J 560k	1/16W M-Ox.	AA	R806	VRD-RA2BE123J	J 12k	1/8W Carbon	AA
R364	VRS-CY1JF000J	J 0	1/16W M-Ox.	AA	R807	VRS-CY1JF103J	J 10k	1/16W M-Ox.	AA
R431	VRS-CY1JF101J	J 100	1/16W M-Ox.	AA	R808	VRS-CY1JF221J	J 220	1/16W M-Ox.	AA
					R809	VRD-RA2BE224J	J 220k	1/8W Carbon	AA
					R812	VRS-CY1JF101J	J 100	1/16W M-Ox.	AA
					R813	VRS-CY1JF221J	J 220	1/16W M-Ox.	AA
					R1002	VRS-CY1JF822J	J 8.2k	1/16W M-Ox.	AA
					R1003	VRS-CY1JF562J	J 5.6k	1/16W M-Ox.	AA
					R1006	VRS-CY1JF562J	J 5.6k	1/16W M-Ox.	AA
					R1007	VRS-CY1JF562J	J 5.6k	1/16W M-Ox.	AA
					R1008	VRS-CY1JF822J	J 8.2k	1/16W M-Ox.	AA

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
PWB-A: DUNTKA541WEE1					PWB-B: DUNTKA542WEA0				
MAIN UNIT (Continued)					CRT UNIT				
R1009	VRS-CY1JF562J	J	5.6k 1/16W	M-Ox. AA	TRANSISTORS				
R1011	VRS-CY1JF332J	J	3.3k 1/16W	M-Ox. AA	Q870	RH-TX0110BMZZ+	X	TX0110BM	AB
R1012	VRD-RA2BE391J	J	390 1/8W	Carbon AA	Q871	RH-TX0110BMZZ+	X	TX0110BM	AB
R1013	VRD-RA2BE101J	J	100 1/8W	Carbon AA	Q872	RH-TX0110BMZZ+	X	TX0110BM	AB
R1014	VRS-CY1JF101J	J	100 1/16W	M-Ox. AA	Q883	RH-TX0124BMZZ+	X	TX0124BM	AB
R1015	VRS-CY1JF332J	J	3.3k 1/16W	M-Ox. AA	Q885	RH-TX0124BMZZ+	X	TX0124BM	AB
R1016	VRS-CY1JF101J	J	100 1/16W	M-Ox. AA	Q887	RH-TX0124BMZZ+	X	TX0124BM	AB
R1017	VRS-CY1JF332J	J	3.3k 1/16W	M-Ox. AA	DIODES				
R1020	VRS-CY1JF101J	J	100 1/16W	M-Ox. AA	D881	VHD1SS119//1	J	Diode	AA
R1021	VRS-CY1JF183J	J	18k 1/16W	M-Ox. AA	D882	VHD1SS119//1	J	Diode	AA
R1022	VRS-CY1JF101J	J	100 1/16W	M-Ox. AA	D883	VHD1SS119//1	J	Diode	AA
R1023	VRS-CY1JF221J	J	220 1/16W	M-Ox. AA	D884	VHD1SS119//1	J	Diode	AA
R1024	VRS-CY1JF183J	J	18k 1/16W	M-Ox. AA	D885	VHD1SS119//1	J	Diode	AA
R1025	VRS-CY1JF101J	J	100 1/16W	M-Ox. AA	CAPACITORS				
R1026	VRS-CY1JF224J	J	220k 1/16W	M-Ox. AA	<i>[EL. ... Electrolytic]</i>				
R1028	VRS-CY1JF101J	J	100 1/16W	M-Ox. AA	C871	VCCSCY1HL471J	J	470p 50V	Ceramic AB
R1032	VRS-CY1JF332J	J	3.3k 1/16W	M-Ox. AA	C872	VCCSCY1HL471J	J	470p 50V	Ceramic AB
R1034	VRS-CY1JF101J	J	100 1/16W	M-Ox. AA	C873	VCCSCY1HL471J	J	470p 50V	Ceramic AB
R1035	VRS-CY1JF332J	J	3.3k 1/16W	M-Ox. AA	C875	VCKYPA2HB102K	J	1000p 500V	Ceramic AB
R1036	VRS-CY1JF332J	J	3.3k 1/16W	M-Ox. AA	C876	RC-KZ0150CEZZ	J	1000p 3kV	Ceramic AB
R1037	VRS-CY1JF101J	J	100 1/16W	M-Ox. AA	C878	VCEA0A2EW106M	J	10 250V	EL. AB
R1038	VRS-CY1JF101J	J	100 1/16W	M-Ox. AA	C880	VCCSCY1HL471J	J	470p 50V	Ceramic AB
R1039	VRS-CY1JF223J	J	22k 1/16W	M-Ox. AA	C881	VCKYPA1HB471K	J	470p 50V	Ceramic AA
R1040	VRS-CY1JF101J	J	100 1/16W	M-Ox. AA	C882	VCKYPA1HB471K	J	470p 50V	Ceramic AA
R1041	VRS-CY1JF101J	J	100 1/16W	M-Ox. AA	C886	VCKYPA2HB102K	J	1000p 500V	Ceramic AB
R1042	VRD-RA2BE471J	J	470 1/8W	Carbon AA	RESISTORS				
R1046	VRS-CY1JF101J	J	100 1/16W	M-Ox. AA	<i>[M-Ox. ... Metal Oxide]</i>				
R1047	VRS-CY1JF332J	J	3.3k 1/16W	M-Ox. AA	R879	VRS-CY1JF471J	J	470 1/16W	M-Ox. AA
R1050	VRS-CY1JF392J	J	3.9k 1/16W	M-Ox. AA	R880	VRS-CY1JF471J	J	470 1/16W	M-Ox. AA
R1051	VRS-CY1JF683J	J	68k 1/16W	M-Ox. AA	R881	VRS-CY1JF471J	J	470 1/16W	M-Ox. AA
R1066	VRS-CY1JF472J	J	4.7k 1/16W	M-Ox. AA	R882	VRS-VU3DE153J	J	15k 2W	M-Ox. AB
R1072	VRS-CY1JF101J	J	100 1/16W	M-Ox. AA	R883	VRD-RM2HD272J	J	2.7k 1/2W	Carbon AA
R1073	VRS-CY1JF101J	J	100 1/16W	M-Ox. AA	R884	VRS-VU3DE153J	J	15k 2W	M-Ox. AB
SWITCHES					R885	VRD-RM2HD272J	J	2.7k 1/2W	Carbon AA
S1001	QSW-K0003WJZZ	J	CH-up	AB	R886	VRS-VU3DE153J	J	15k 2W	M-Ox. AB
S1002	QSW-K0003WJZZ	J	CH-down	AB	R887	VRD-RM2HD272J	J	2.7k 1/2W	Carbon AA
S1003	QSW-K0003WJZZ	J	Vol-up	AB	R888	VRS-CY1JF471J	J	470 1/16W	M-Ox. AA
S1004	QSW-K0003WJZZ	J	Vol-down	AB	R892	VRS-CY1JF102J	J	1.0k 1/16W	M-Ox. AA
S1005	QSW-K0003WJZZ	J	Picture/Preset	AB	R893	VRS-CY1JF102J	J	1.0k 1/16W	M-Ox. AA
S1006	QSW-K0114CEZZ	J	Power	AC	R894	VRS-CY1JF102J	J	1.0k 1/16W	M-Ox. AA
MISCELLANEOUS PARTS					R898	VRS-CY1JF471J	J	470 1/16W	M-Ox. AA
F701	QFS-C3229CEZZ	J	Fuse, 3.15A	AB	R899	VRS-CY1JF471J	J	470 1/16W	M-Ox. AA
FB601	RBLN-0091GEZZ	X	Ferrite Bead	AB	MISCELLANEOUS PARTS				
FH701	QFSDH1013CEZZ	J	Fuse Holder	AB	SC881	QSOCV0842CEZZ	J	CRT Socket	AC
FH702	QFSDH1014CEZZ	J	Fuse Holder	AB	P882	LHLDW1105PEZZ	X	Connecting Cord(K-wire)	AB
J402	QJAKE0210CE04	X	Jack, Video-IN	AB	P884	LHLDW1104PEZZ	X	Connecting Cord(H-wire)	AB
J403	QJAKE0210CE09	X	Jack, Audio-IN	AB					
J409	QJAKF0074CEZZ	X	Jack, AV-IN(REAR)	AC					
P302	QPLGN0241CEZZ	J	Plug, 2pin (S)	AB					
P601	QPLGN0660CEZZ	J	Plug, 6pin (F)	AB					
P603	QPLGN0361CEZZ	J	Plug, 3pin (TP651-3)	AB					
P701	QPLGN0260CEZZ	J	Plug, 2pin (M)	AB					
P702	QPLGN0269GEZZ	J	Plug, 2pin (K701-2)	AB					
P1002	QPLGN0561CEZZ	J	Plug, 5pin (BC)	AB					
RMC1001	RRMCU0222CEZZ	J	R/C Receiver	AD					
	LHLDW1104PEZZ	X	H-wire Holder	AB					
	LHLDW1105PEZZ	X	K-wire Holder	AB					
	LX-BZ3000GJFD	J	Screw	AA					
	LX-BZ3049GEFD	J	Screw	AA					
	LX-TZ3004CEFD	J	Screw	AA					
RDA501	PRDAR0118GJFW	X	Heat Sink for IC501	AB					
RDA701	PRDAR0298PEFW	R	Heat Sink for IC701	AB					

Ref. No. Part No. ★ Description Code

MISCELLANEOUS PARTS

△ ACC701	QACCZA020WJPZ	J	AC Cord	AE
SP301	VSP0080PBQ9YA	X	Speaker, 32 ohm	AD
	QCNW-2206PEZZ	R	Connecting Cord	AB

Ref. No. Part No. ★ Description Code

CABINET PARTS

1	CCABA0133WEH1	X	Front Cabinet Ass'y	AW
1-1	<i>Not Available</i>	-	Front Cabinet	-
1-2	JBTN-0112GJSC	X	Power Button	
1-3	MSPRC0005PEFW	R	Power Spring	AA
1-4	JBTN-0111GJSA	X	Control Button	AC
1-5	HDECQ0102GJSA	X	Cover for R/C	
2	GCABB0124GJKA	X	Rear Cabinet	AQ

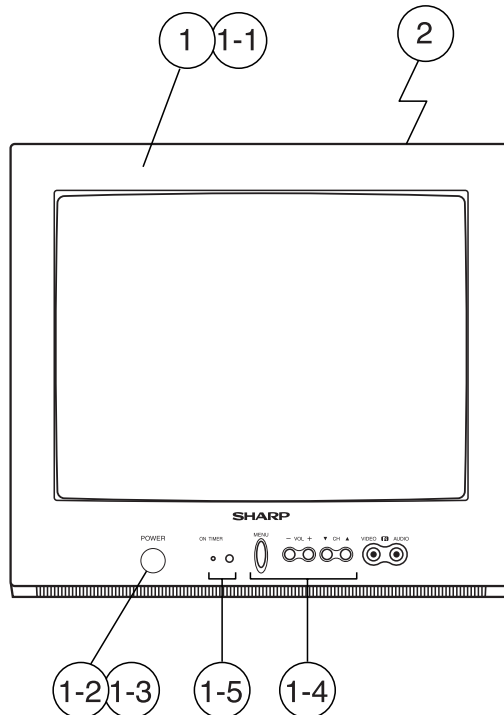
SUPPLIED ACCESSORIES

TINS-A790WJZZ	X	Operation Manual	AN
RRMCG1339CESB	X	Infrared R/C Unit	AH
QPLGA0017CEZZ	J	Plug	AC

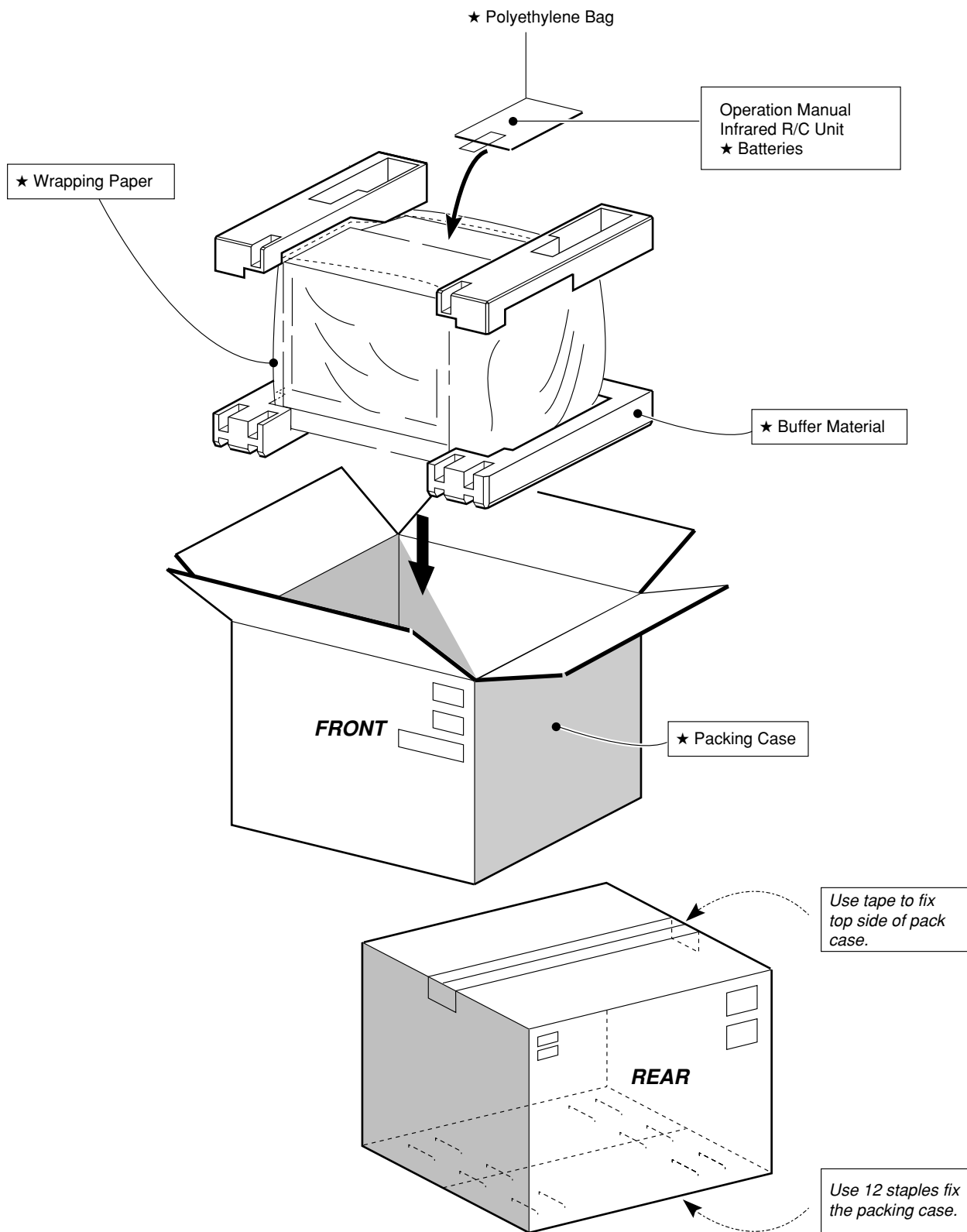
**PACKING PARTS
(NOT REPLACEMENT ITEM)**

SPAKC0206GJZZ	-	Packing Case	AK
SPAKP0104GJZZ	-	Wrapping Paper	AC
SPAKX0123GJZZ	-	Buffer Material	AF

CABINET PARTS LOCATION



PACKING OF THE SET



★ **MARK** : Not Replacement Items.

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Changes : SEMEX

Design and Production Information
Design base : JAPAN
Production : SEMEX

J B

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