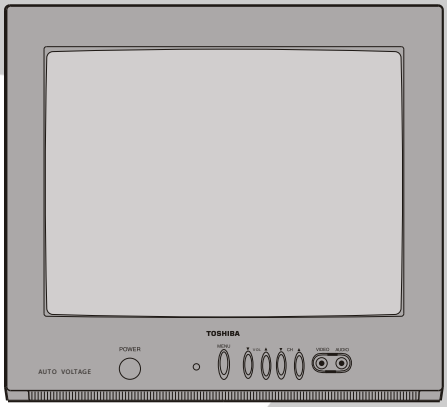
TOSHIBA

FILE NO. 050-200334

SERVICE MANUAL

COLOR TELEVISION

14AR23



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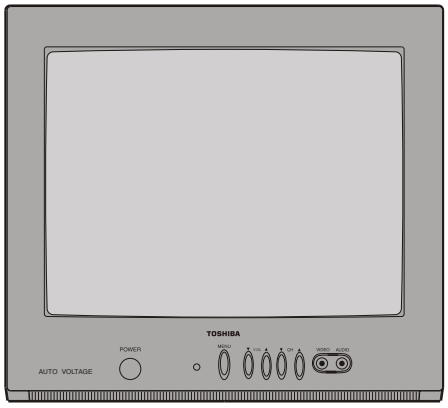


COLOR TELEVISION

Chassis No. MSA

MODEL 14AR23

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.

CONTENTS

ELECTRICAL SPECIFICATIONS

POWER INPUT ..... 110-220 V AC 50/60 Hz
POWER RATING ..... 53 W
PICTURE SIZE ..... 574cm2 (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 R ATING.....1 W (at 10% disto r tion)

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 thr u 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)

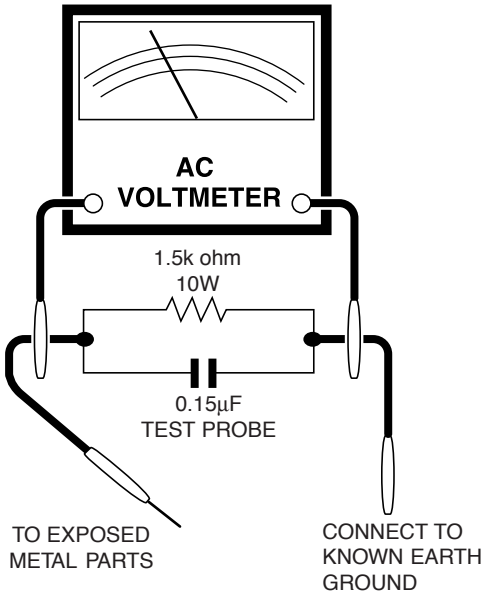
BEFORE RETURNING THE RECEIVER

(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 0.15µF 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.
  AII 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.



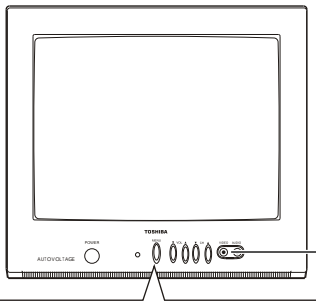
SAFETY NOTICE

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 "⚠" 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



VIDEO/AUDIO TERMINALS
(VIDEO/AUDIO terminals are also provided on the rear.)

POWER
Press ➔ On.
Press again ➔ Off.

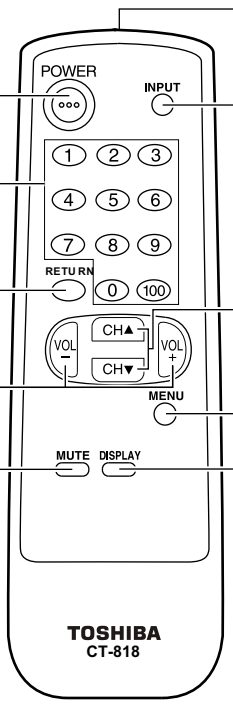
CHANNEL UP/DOWN
(▲) Selects next higher channel.
(▼) Selects next lower channel.

VOLUME UP/DOWN
(▲)Increases sound.
(▼)Decreases sound.

SENSOR AREA FOR REMOTE CONTROL

MENU
Press ➔ Accesses MAIN MENU.
Press again ➔ Exits MAIN MENU.

Basic Remote Control Functions



Infrared Transmitter Window

POWER
Press ➔ On.
Press again ➔ Off.

INPUT
Press ➔ Switch to external video input mode.
Press again ➔ Switch to TV mode.

REMOTE KEYPAD
Accesses any channel from keypad.

RETURN
Returns to previous channel.

VOLUME UP/DOWN
(+) Increases sound.
(–) Decreases sound.
• In menu mode, changes or selects the TV adjustments.

CHANNEL UP/DOWN
(▲) Selects next higher channel.
(▼) Selects next lower channel.
• Moves the " ⬍ " mark of the MENU screen.

MUTE
Press ➔ Mutes sound.
Press again Restores sound.
• CLOSED CAPTION appears when sound is muted.

MENU
Press ➔ Accesses MAIN MENU.
Press again ➔ Exits MAIN MENU.

DISPLAY
Press ➔ Displays receiving channel for 4 seconds.
Press again ➔ Removes display .
• Temporarily displays receiving channel when in Closed Caption mode.

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 reguired 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 ± 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 ± 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 I^2C bus control.) To exit the service mode, turn the television off by pressing the power button.

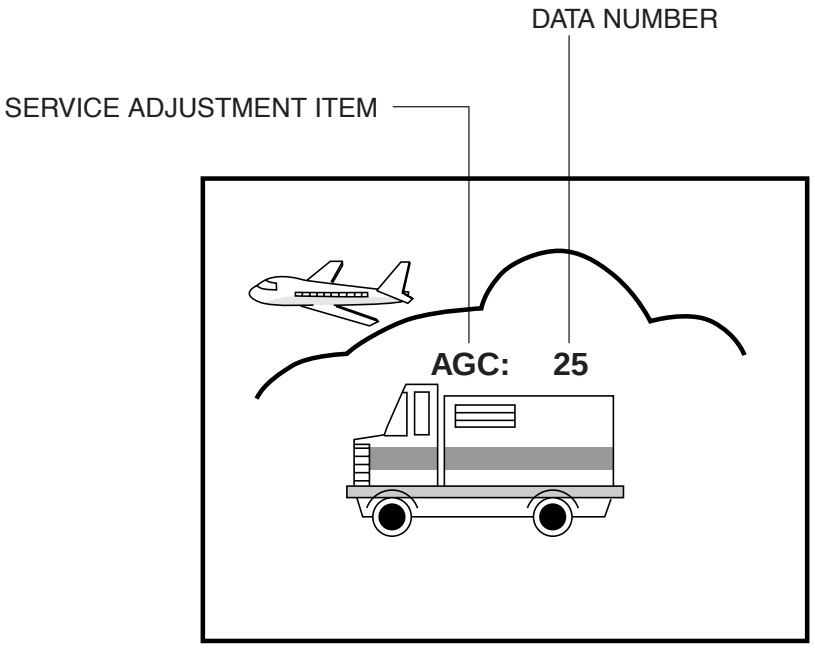
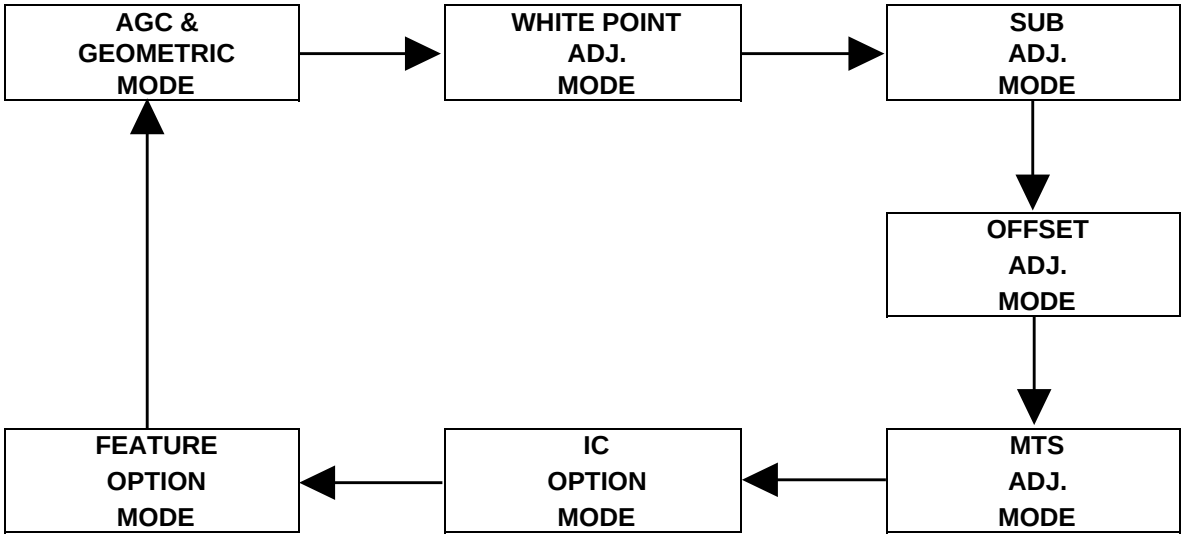


Figure A.

■SERVICE MODE

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



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)

OFFSET ADJ. MODE

- Y-D TIME (TV) [YD] (DL-TV)
- Y-D TIME (AV) [YD] (DL-AV)
- INITIAL/DEFAULT LANGUAGE (INIT)
- FAO-MAX VOLUME (FAO-VOL)
- ENERGY SAVE OFFSET (ESV_OFFS)
- CLOSE CAPTION POSITION (CCPOS)

MTS ADJ. MODE

- ATTENUATE INPUT SIGNAL LEVEL (ATT)
- VCO FREE RUNNING FREQUENCY ADJ. (VCO)
- STEREO, SAP, DBX FILTER ADJ. (FILTER)
- STEREO SEPARATION ADJUSTMENT (300HZ) (WIDEBAND)
- STEREO SEPARATION ADJUSTMENT (3kHZ) (SPECTRAL)
- BASS LEVEL (BASS)
- TREBLE LEVEL (TREBLE)

IC OPTION MODE

- VERTICAL SCAN DISABLE (VSD)
- BLACK STRETCH (BKS)
- AUTOMATIC VOLUME LEVELLING (AVL)
- FAST FILTER IF-PLL (FFI)
- ENABLE VERTICAL GUARD (EVG)
- EHT TRACKING MODE (EHT)
- OVERSCAN SWITCH OFF (OSO)
- AUTO COLOUR LIMIT (ACL)
- FORCED COLOUR-ON (FCO)
- VIDEO MUTE AT IDENT LOSS (VMI)
- VIDEO MUTE AT PROGRAM/SOURCE CHANGE (VMC)
- HOTEL MODE (HTL)
- GAIN FM DEMODULATOR (BTSC)
- CHARGE PUMP (CP)
- FM WINDOW SELECTION (FMWS)
- SOUND MUTE BIT 0 (SM0)
- SOUND MUTE BIT 1 (SM1)
- IF AGC SPEED BIT 0 (AGC0)
- IF AGC SPEED BIT 1 (AGC1)
- PHI 1 TIME CONSTANT FOR FE (FOA-FE)
- PHI 1 TIME CONSTANT FOR FE (FOB-FE)
- PHI 1 TIME CONSTANT FOR AV (FOA-AV)
- PHI 1 TIME CONSTANT FOR AV (FOB-AV)
- FORCED SLICING LEVEL FOR VERTICAL SYNC.(FSL)
- SYNCHRONISATION OF OSD/TEXT DISPLAY (HP2)
- RGB BLANK (RGBL)

FEATURE OPTION MODE

- V-CHIP (V-CHIP)
- MTS DECODING ENABLED (MTS)
- DEMO MODE (DEMO)
- REAL TIME CLOCK / ON TIMER (CLOCK)
- ENERGY SAVE (E-SAVE)
- PERSONAL PREFERENCE PROGRAM (P_PREF)
- UNIVERSAL PLUS (UNIV+)
- SPEAKER ON/OFF (SPEAKER)
- FIXED AUDIO OUT (FAO)
- VIEW TIMER (VIEW-TM)
- FRENCH LANGUAGE (FRENCH)
- EZ SETUP / AUTOPRESET (EZ-SETUP)
- WHITE TEMP OR FAVORITE COLOR (W-TEMP)
- AV ENABLED OR DISABLED (AV)
- AV2 ENABLED OR DISABLED (AV2)
- DYNAMIC SKIN CONTROL (DSK)
- RATIO PRE- AND OVERSHOOT BIT 0 (RPO0)
- RATIO PRE- AND OVERSHOOT BIT 1 (RPO1)
- GAIN FM DEMODULATOR (AGN)
- AUTO SWITCH OFF ENABLED (AUTO-OFF)

FORWARD : CH DOWN KEY
REVERSE : CH UP KEY
( ) means OSD display.

Figure B: ADJUSTMENT CATEGORIES

①Press the CH DOWN/UP key on the remote controller to get ready to select the mode one by one.
②Press the CH DOWN/UP key on the remote controller to select the modes reversibly one by one.
③Using 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*	must be "1"
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*	must be "0"
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*	must be "1"
FRENCH	FRENCH LANGUAGE	0(disable) or1(enable)	0	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.

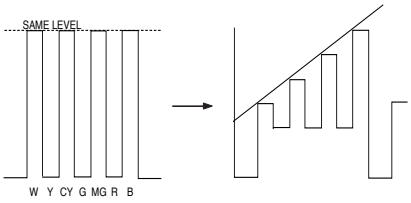
Table - B

■ 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.

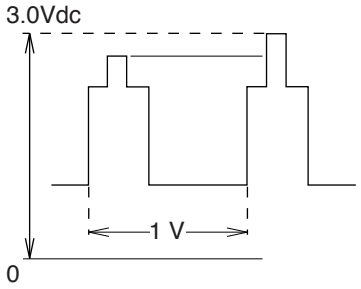
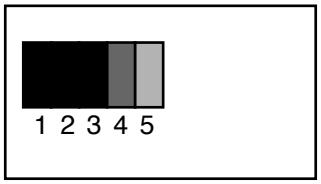
CHROMA ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	**SUB-TINT (I^2C BUS CONTROL)**	1. Receive the "Colour Bar" signal through AV in. 2. Connect the oscilloscope to TP853 (Pin (5) of P882) BLUE-OUT. ● 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.	WAVEFORM 1 / FINAL WAVEFORM  Fig 1 Fig 2

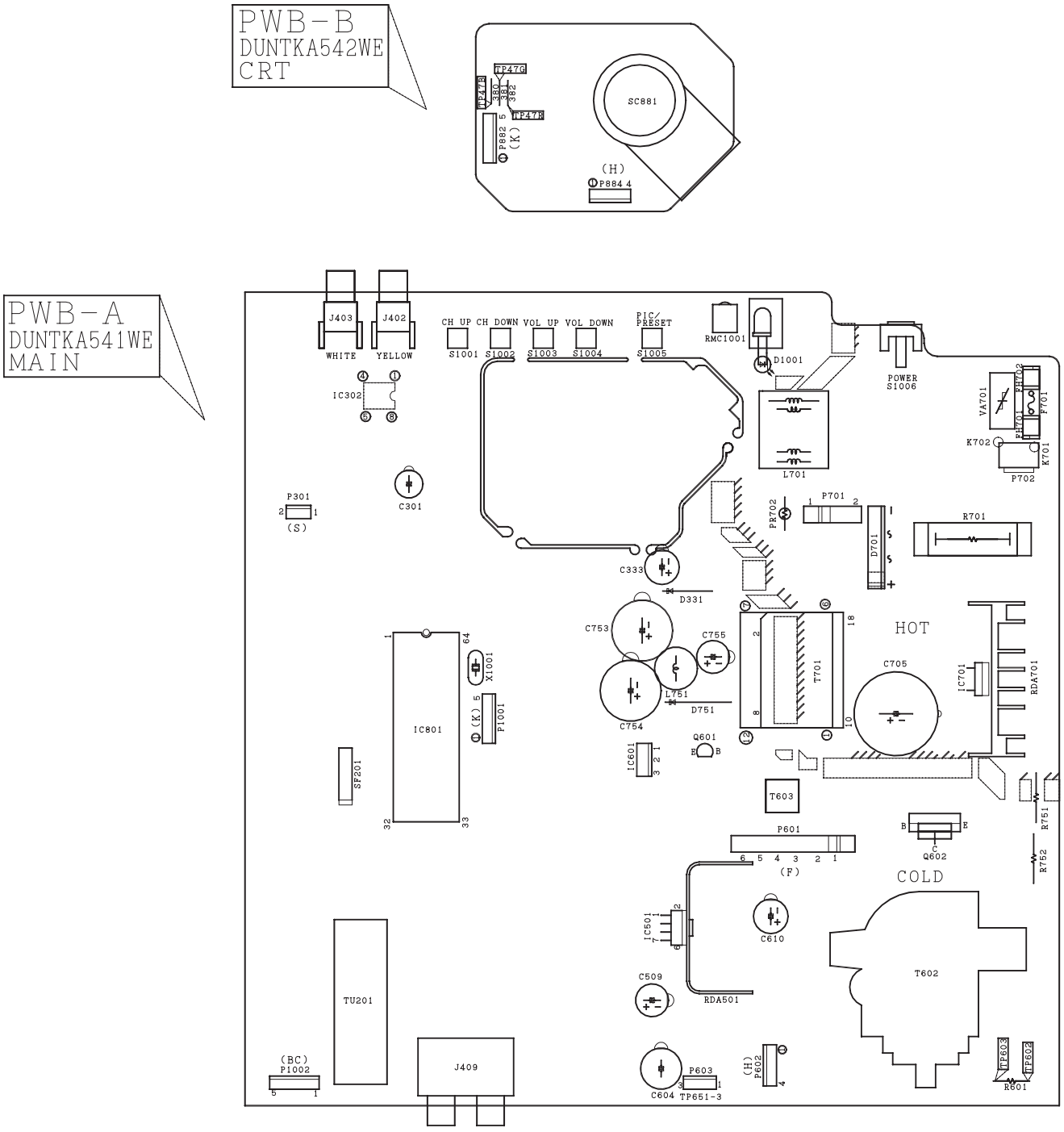
HORIZONTAL AND VERTICAL DEFLECTION LOOP ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	**V-SLOPE(I^2C BUS CONTROL)**	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 (I^2C BUS CONTROL)**	1. Call the "V-CENT" mode. 2. Increase or decrease "V-CENT" by Volume key till the picture is centered.	
3	**V - AMP (I^2C BUS CONTROL)**	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 (I^2C BUS CONTROL)**	**FIXED DATA, NO NEED TO ADJUST.**	
5	**H - CENTER**	1. Call the "H-CENT" mode. 2. Increase or decrease "H-CENT" by Volume key to center the picture horizontal.	
6	**Focus adjustment**	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.	

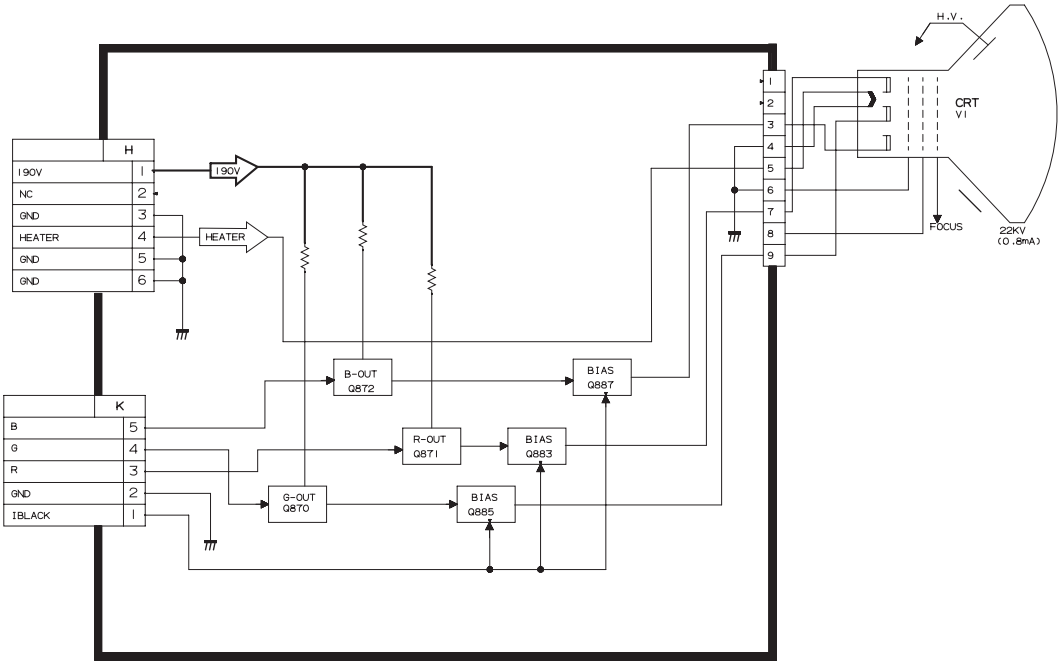
CRT CUT-OFF, BACKGROUND AND SUB-CONTRAST ADJUSTMENT

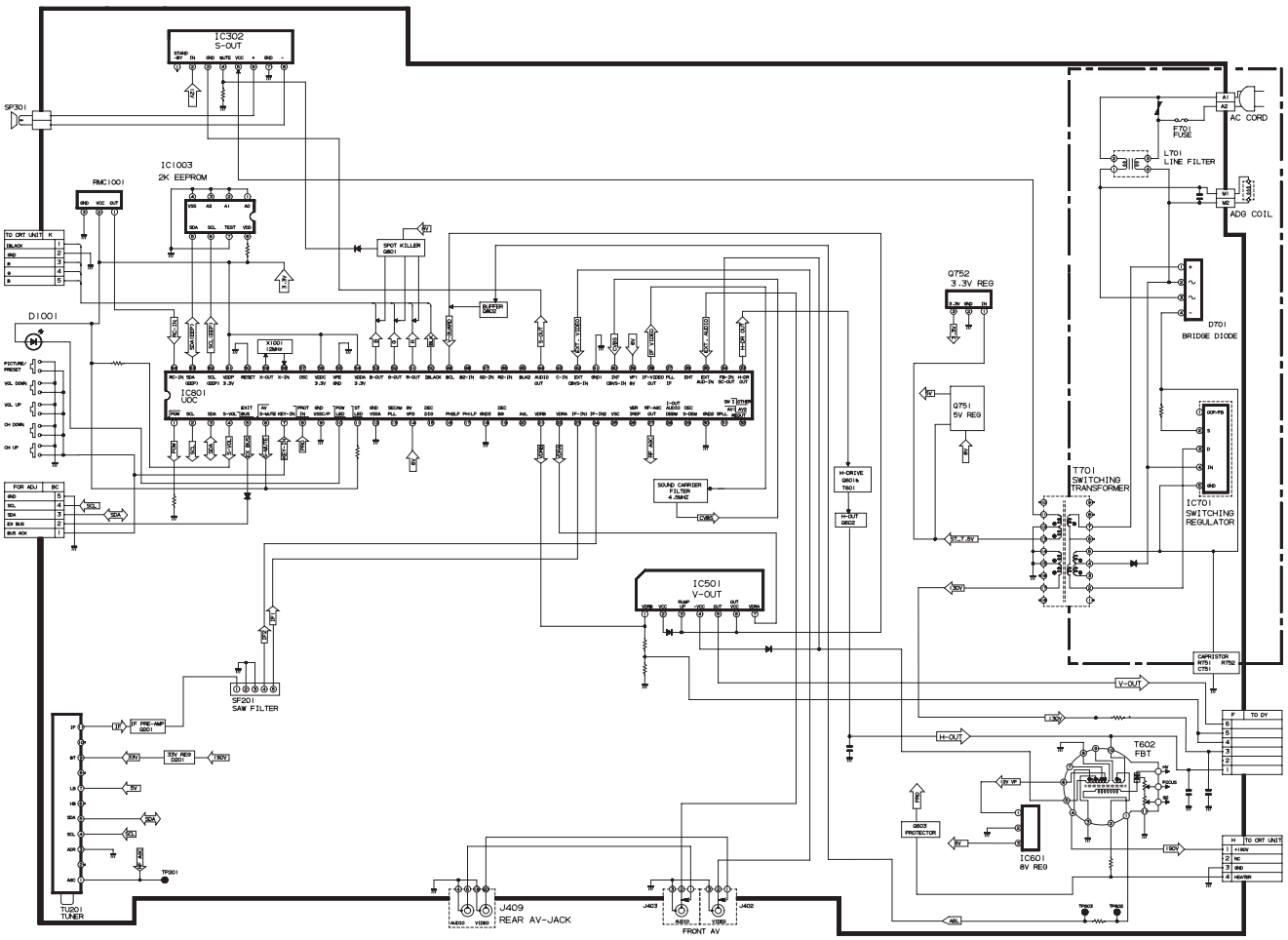
No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	**CRT CUTOFF ADJUSTMENT (I^2C BUS CONTROL)**	1. Switch TV to VIDEO mode,BLUE BACK OFF, with NO VIDEO signal. 2. Press R/C to set Picture Normal condition. 3. Connect the oscilloscope to Red OUT from IC801.(TP47R) Range : 1 V/Div (DC) Sweep : 5 msec/Div 4. Adjust SCREEN VR ,so that the tip of signal reach 3.0 Vdc + 0.1 Vdc.	
2	**SUB-BRIGHT-NESS ADJUSMENT (I^2C 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.	 1, 2, 3 are in same black level.
3	**WHITE BAL-ANCE SERV-ICE 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/m2 (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). **Note: This adjustment must be done after warming up the unit for 30 minutes or longer with a beam current over 500μA.** DRI-R-MH=32 (FIXED) DRI-G-MH=33 (FIXED) DRI-B-MH=37 (FIXED) DRI-R-MH=32 (FIXED)	# 11,600° K X : 0.273 Y : 0.280 (MINOLTA COLOUR ANALYZER CA-100) *NOTE: Above DATA can be UP/ DOWN by volume key. LOW HIGH 14" 1.8cd/m^2 115cd/m^2 * 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



BLOCK DIAGRAM





DESCRIPTION OF SCHEMATIC DIAGRAM

NOTES:

1. *The unit of resistance "ohm" is omitted. (K=kΩ=1000Ω, M=MΩ)*
2. *All resistors are 1/16 watt, unless otherwise noted.*
3. *All capacitors are μ F, unless otherwise noted. (P=pF=μμF)*
4. *(G) indicates ±2% tolerance may be used.*
5. *⏚ indicates line isolated ground.*
6. *⏚ indicates hot 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 1000μ V B & W or Color signal.*

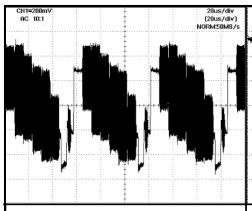
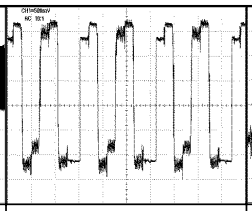
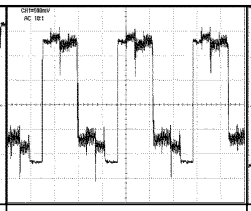
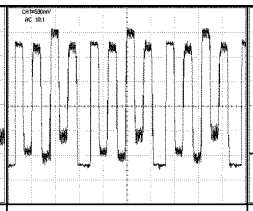
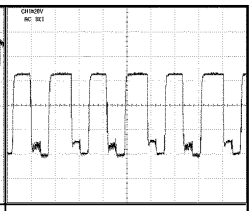
WAVEFORM MEASUREMENT CONDITIONS:

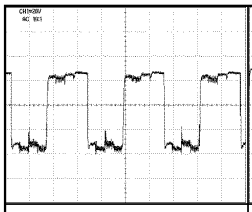
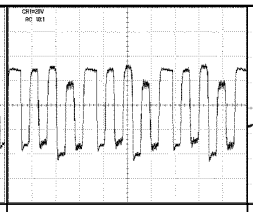
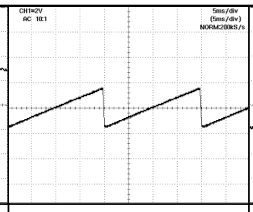
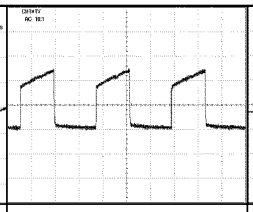
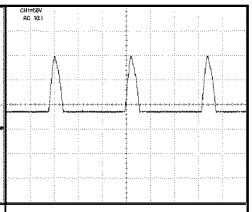
1. *Photographs taken on a standard gated color bar signal, the tint setting adjusted for proper color. The wave shapes at the red, green and blue cathodes of the picture tube depend on the tint, color level and picture control.*
2. *indicates waveform check points (See chart, waveforms are measured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

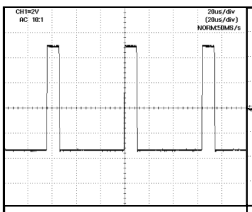
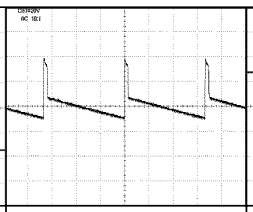
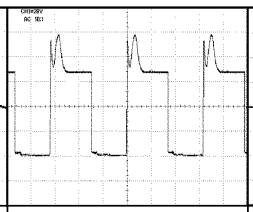
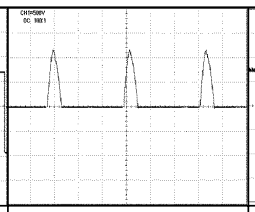
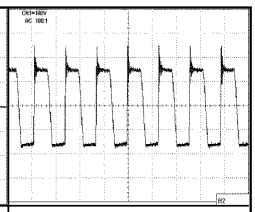
⚠ *AND SHADED ( ) COMPONENTS = SAFETY RELATED PARTS.*
▲ *MARK= X-RAY RELATED PARTS.*

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

WAVEFORMS

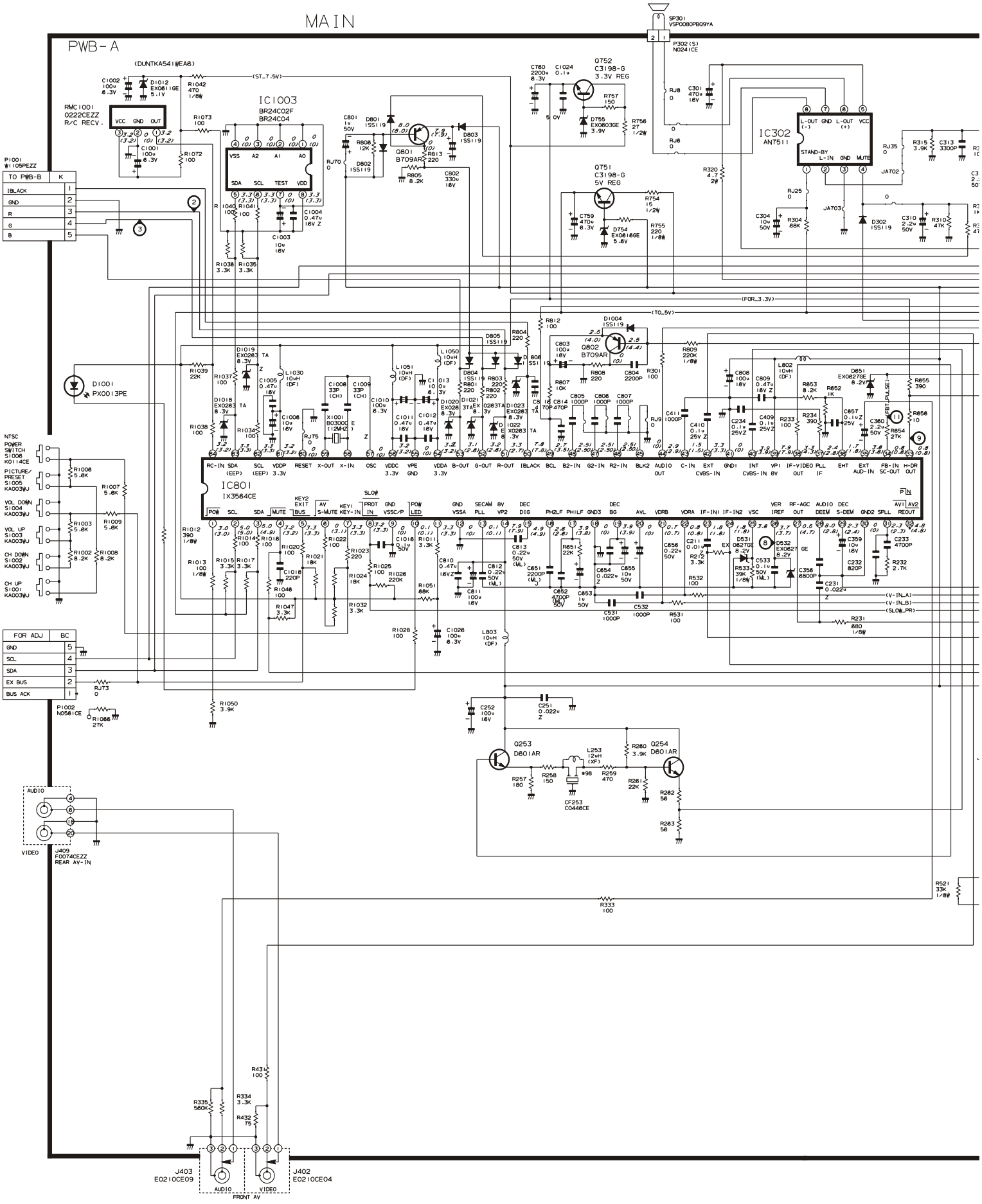
				
①1.00Vp-p	②2.8Vp-p	③2.6Vp-p	④2.7Vp-p	⑤65Vp-p
Horiz Rate	Horiz Rate	Horiz Rate	Horiz Rate	Horiz Rate

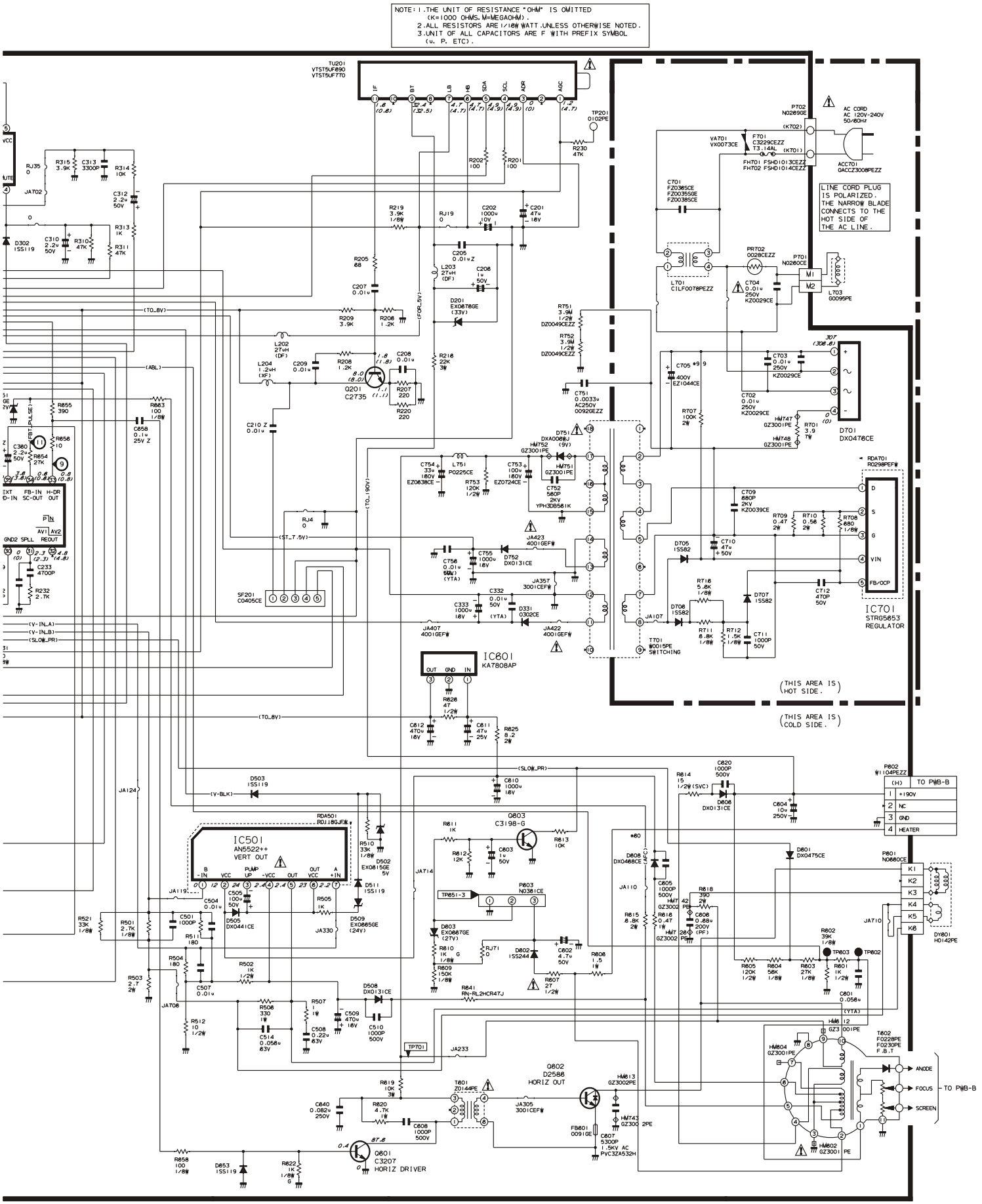
				
⑥67Vp-p	⑦80Vp-p	⑧3.00Vp-p	⑨2.3Vp-p	⑩116Vp-p
Horiz Rate	Horiz Rate	Vert Rate	Horiz Rate	Horiz Rate

				
⑪8.40Vp-p	⑫48.8Vp-p	⑬98Vp-p	⑭1200Vp-p	⑮415Vp-p
Horiz Rate	Vert Rate	Horiz Rate	Horiz Rate	Power Supply Rate

14AR23

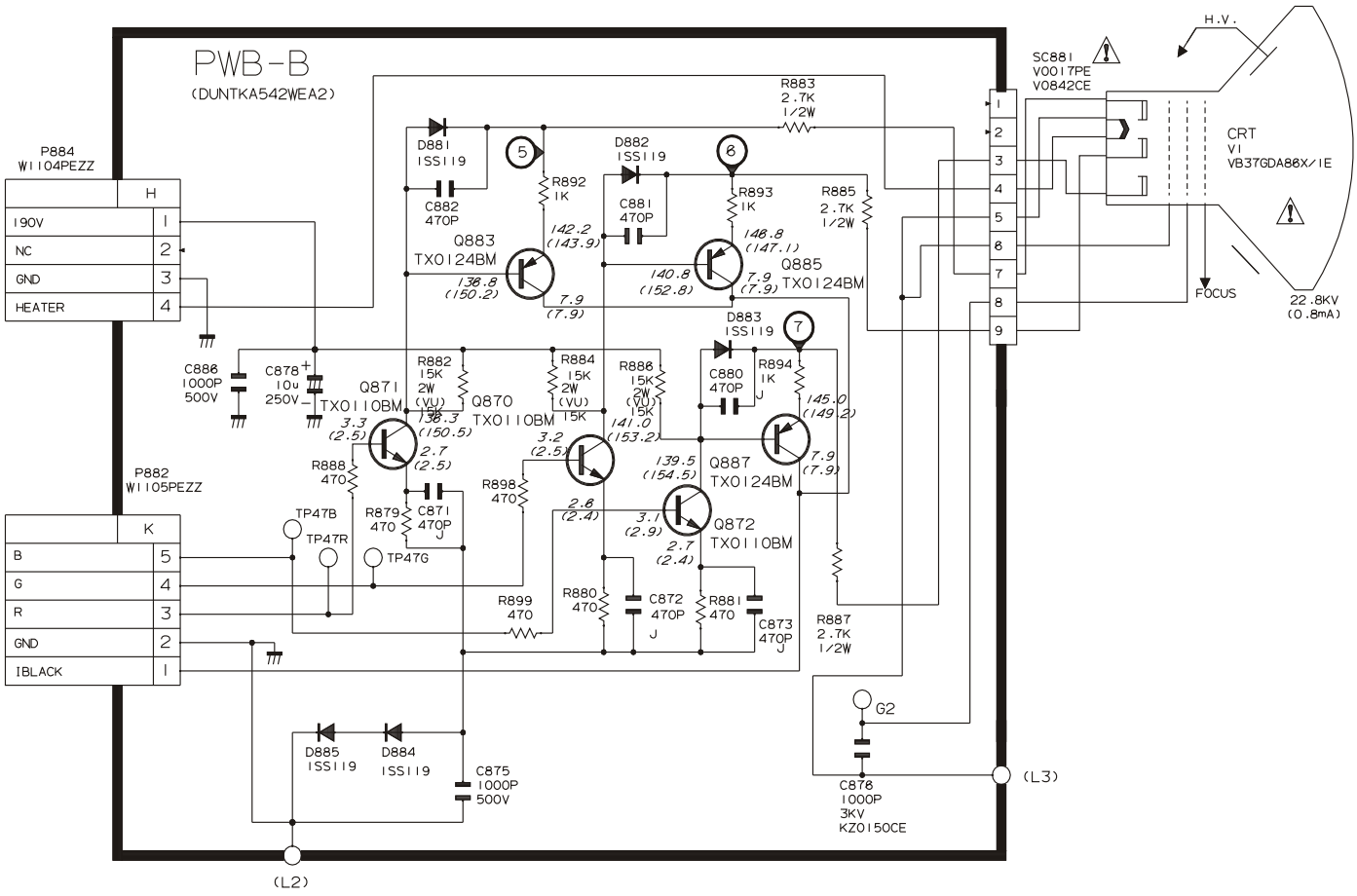
MAIN


PWB-A
IC1003
BR24C02F
BR24C04
IC801
IX3584CE
IC302
AN7511
Q752
C3198-G
3.3V REG
Q751
C3198-G
5V REG
Q801
B709AR
Q802
B709AR
P1001
W1105PEZZ
TO PWB-B
IBLACK
GND
R
G
B
NTSC
POWER SWITCH
S1006
K0114CE
PICTURE/ PRESET
S1005
KA003WJ
VOL DOWN
S1004
KA003WJ
VOL UP
S1003
KA003WJ
CH DOWN
S1002
KA003WJ
CH UP
S1001
KA003WJ
FOR ADJ
GND
SCL
SDA
EX BUS
BUS ACK
P1002
N0581CE
AUDIO
VIDEO
J409
F0074CEZZ
REAR AV-IN
J403
E0210CE09
J402
E0210CE04
FRONT AV
AUDIO
VIDEO
SP301
VSP0080PB09YA
P302(S)
N0241CE
(DUNTKA541WEA8)
(ST_7.5V)
(FOR_3.3V)
(TO_5V)
(V-IN_A)
(V-IN_B)
(SLOW_PR)
RMC1001
0222CEZZ
R/C RECV.
D1001
PX0013PE
L-OUT
GND
L-OUT
VCC
STAND-BY
L-IN
GND
MUTE
RC-IN
SDA
SCL
VDDP
RESET
X-OUT
X-IN
OSC
VDDC
VPE
VDDA
B-OUT
G-OUT
R-OUT
IBLACK
BCL
B2-IN
G2-IN
R2-IN
BLK2
AUDIO OUT
C-IN
EXT CVBS-IN
GND1
INT CVBS-IN
VPI 8V
IF-VIDEO OUT
PLL IF
EHT
EXT AUD-IN
FB-IN SC-OUT
H-DR OUT
POW
SCL
SDA
MUTE
BUS
KEY2 EXIT
AV S-MUTE
KEY1 KEY-IN
PROT IN
GND VSSC/P
POW LED
GND VSSA
SECAM PLL
8V VP2
DEC DIG
PH2LF
PH1LF
GND3
DEC BG
AVL
VDRB
VDRA
IF-IN1
IF-IN2
VSC
VER IREF
RF-AGC OUT
AUDIO DEEM
DEC S-DEM
GND2
SPLL
AV1
AV2
REOUT
Q253
D601AR
Q254
D601AR
CF253
C0446CE

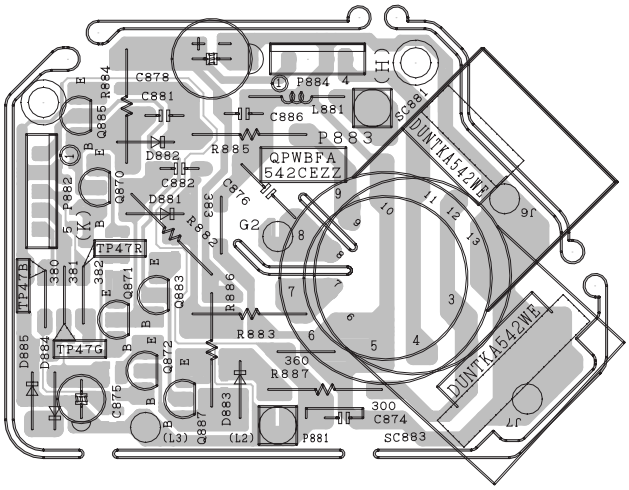

NOTE: 1.THE UNIT OF RESISTANCE "OHM" IS OMITTED
(K=1000 OHMS, M=MEGAOHM).
2.ALL RESISTORS ARE 1/16W WATT.UNLESS OTHERWISE NOTED.
3.UNIT OF ALL CAPACITORS ARE F WITH PREFIX SYMBOL
(u, P, ETC).
TU201
VTST5UF890
VTST5UFT70
IF
BT
LB
MB
SDA
SCL
OSR
AGC
TP201
0102PE
R230
47K
R202
100
R201
100
P702
N0289GE
(K702)
AC CORD
AC 120V-240V
50/60Hz
VA701
VX0073CE
F701
C3229CEZZ
T3.14AL
(K701)
FH701 FSHD1013CEZZ
FH702 FSHD1014CEZZ
ACC701
QACCZ3008PEZZ
LINE CORD PLUG
IS POLARIZED.
THE NARROW BLADE
CONNECTS TO THE
HOT SIDE OF
THE AC LINE.
C701
FZ0365CE
FZ0035S6E
FZ0038SCE
PR702
0028CEZZ
PT701
N0280CE
M1
M2
L703
G0095PE
LT01
C1LF0078PEZZ
C704
0.01u
250V
KZ0029CE
R219
3.9K
1/8W
RJ19
0
C202
1000u
10V
C201
47u
16V
C205
0.01uZ
L203
27uH
(DF)
C208
1u
50V
C207
0.01u
D201
EX0678GE
(33V)
R205
68
R209
3.9K
R208
1.2K
(FOR_5V)
(TO_8V)
L202
27uH
(DF)
L204
1.2uH
(XF)
C209
0.01u
R208
1.2K
C208
0.01u
R218
22K
3W
Q201
C2735
R207
220
R220
220
C210 Z
0.01u
R751
3.9M
1/2W
DZ0049CEZZ
R752
3.9M
1/2W
DZ0049CEZZ
C751
0.0033u
AC250V
0092GEZZ
C705 *9 9
400V
EZ1044CE
R707
100K
2W
C703
0.01u
250V
KZ0029CE
C702
0.01u
250V
KZ0029CE
HM747
GZ3001PE
HM748
GZ3001PE
R701
3.9
7W
D701
DX0478CE
(ABL)
R855
390
R883
100
1/8W
C858
0.1u
25V Z
C380
2.2u
50V
R854
27K
R858
110
FBT_PULSE
EXT
D-IN
FB-IN
SC-OUT
H-DR
OUT
GND2
SPLL
REOUT
AV1
AV2
C233
4700P
R232
2.7K
D751
DXA0088U
(9V)
HM752
GZ3001PE
HM751
GZ3001PE
C754
33u
180V
EZ0638CE
L751
P0225CE
C753
100u
180V
EZ0724CE
C752
680P
2KV
YPH3DB568IK
R753
120K
1/2W
RJ4
0
(TO_190V)
(ST_7.5V)
JA423
4001GEFW
C709
680P
2KV
KZ0039CE
R709
0.47
2W
R710
0.56
2W
R708
680
1/8W
RDAT01
R0298PEFW
D
S
G
VIN
FB/OCP
IC701
STRG5853
REGULATOR
C755
1000u
16V
D752
DX0131CE
C756
0.01u
50V
(YTA)
D705
1SS82
C710
47u
50V
JA357
3001CEFW
C332
0.01u
50V
(YTA)
C333
1000u
16V
D331
0302CE
JA407
4001GEFW
JA422
4001GEFW
R718
5.6K
1/8W
D708
1SS82
JA107
R711
8.8K
1/8W
R712
1.5K
1/8W
C711
1000P
50V
D707
1SS82
C712
470P
50V
T701
W0015PE
SWITCHING
SF201
C0405CE
(V-IN_A)
(V-IN_B)
(SLOW_PR)
IC601
KA7808AP
OUT GND IN
R626
47
1/2W
C612
470u
16V
C611
47u
25V
R825
8.2
2W
(THIS AREA IS
HOT SIDE.
(THIS AREA IS
COLD SIDE.
(TO_8V)
JA124
D503
1SS119
(V-BLK)
C810
1000u
16V
(SLOW_PR)
R814
15
1/2W(SVC)
C820
1000P
500V
D806
DX0131CE
C804
10u
250V
P802
W1104PEZZ
(H)
TO PWB-B
1 +190V
2 NC
3 GND
4 HEATER
RDA501
RDJ163JFK
IC501
AN5522++
VERT OUT
B -IN
VCC
PUMP UP
-VCC
OUT
OUT VCC
A +IN
JA119
C505
100u
50V
C504
0.01u
D505
DX0441CE
R505
1K
JA330
D502
EX0815GE
5V
D511
1SS119
D509
EX0865GE
(24V)
R510
33K
1/8W
Q803
C3198-G
R811
1K
R812
12K
C803
1u
50V
R813
10K
P803
N0381CE
TP651-3
JA114
D803
EX0867GE
(27V)
R810
1K
1/8W
G
R809
150K
1/8W
RJ71
0
D802
1SS244
C802
4.7u
50V
R807
27
1/2W
R808
1.5
1W
R841
RN-RL2HCR47J
JA110
D808
DX0468CE
(FC)
C805
1000P
500V
R815
8.8K
2W
R818
390
2W
C806
0.68u
200V
(PF)
HM7 42
GZ3002 PE
HM7 28
GZ3002 PE
D801
DX0475CE
P801
N0680CE
K1
K2
K3
K4
K5
K6
DY801
H0142PE
JAT10
R802
39K
1/8W
TP803
TP802
R605
120K
1/2W
R804
58K
1/8W
R803
27K
1/8W
R801
1K
1/2W
C801
0.056u
(YTA)
R521
33K
1/8W
R501
2.7K
1/8W
C501
1000P
C511
180
R504
180
R503
2.7
2W
C507
0.01u
R502
1K
1/2W
JA708
R512
10
1/2W
R508
330
1W
C514
0.056u
63V
R507
1
1W
C508
0.22u
63V
C509
470u
16V
C510
1000P
500V
D508
DX0131CE
TP701
JA233
R819
10K
3W
T801
Z0144PE
Q802
D2588
HORIZ OUT
HM813
GZ3002PE
HM743
GZ3002PE
C840
0.082u
250V
R820
4.7K
1W
C808
1000P
500V
JA305
3001CEFW
FB801
0091GE
C807
5300P
1.5KV AC
PVC3ZA532H
0.4
87.8
0
Q801
C3207
HORIZ DRIVER
R858
100
1/8W
D853
1SS119
R822
1K
1/8W
G
HM12
GZ3001PE
HM804
GZ3001PE
T802
F0228PE
F0230PE
F.B.T
ANODE
FOCUS
SCREEN
TO PWB-B
HM802
GZ3001PE

SCHEMA TIC DIAGRAM: CRT Unit

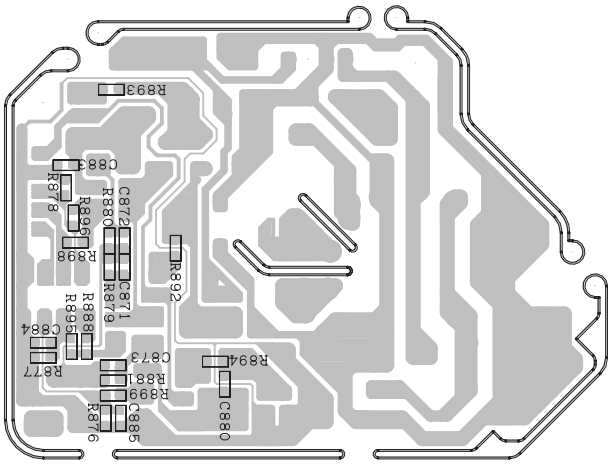
NOTE: 1.THE UNIT OF RESISTANCE "OHM" IS OMITTED
(K=1000 OHMS. M=MEGAOHM).
2.ALL RESISTORS ARE 1/16 WATT.UNLESS OTHERWISE NOTED.
3.UNIT OF ALL CAPACITORS ARE F WITH PREFIX SYMBOL
(u, P, ETC).



PRINTED WIRING BOARD ASSEMBLIES

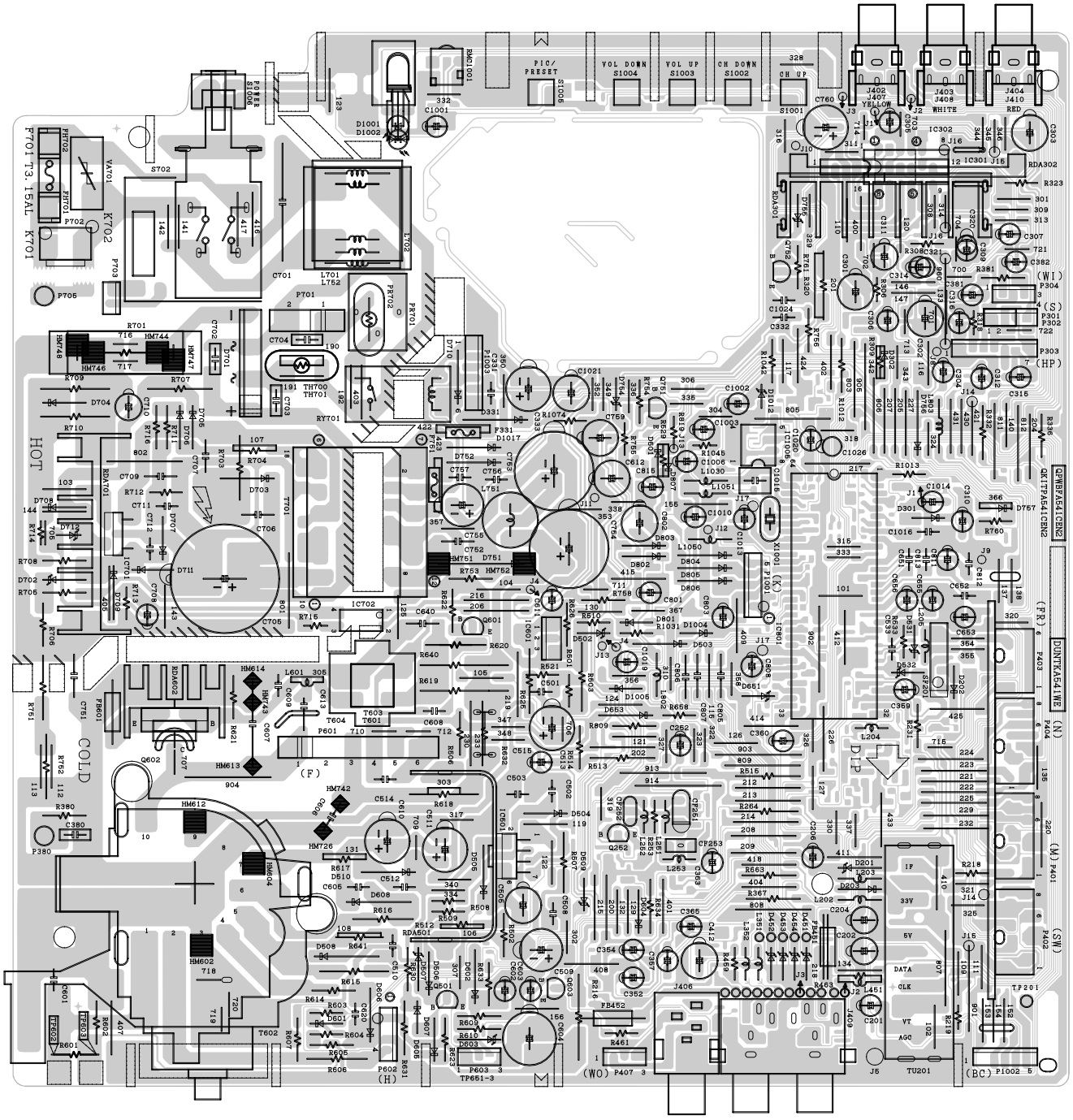


PWB-B: CRT Unit (Wiring Side)

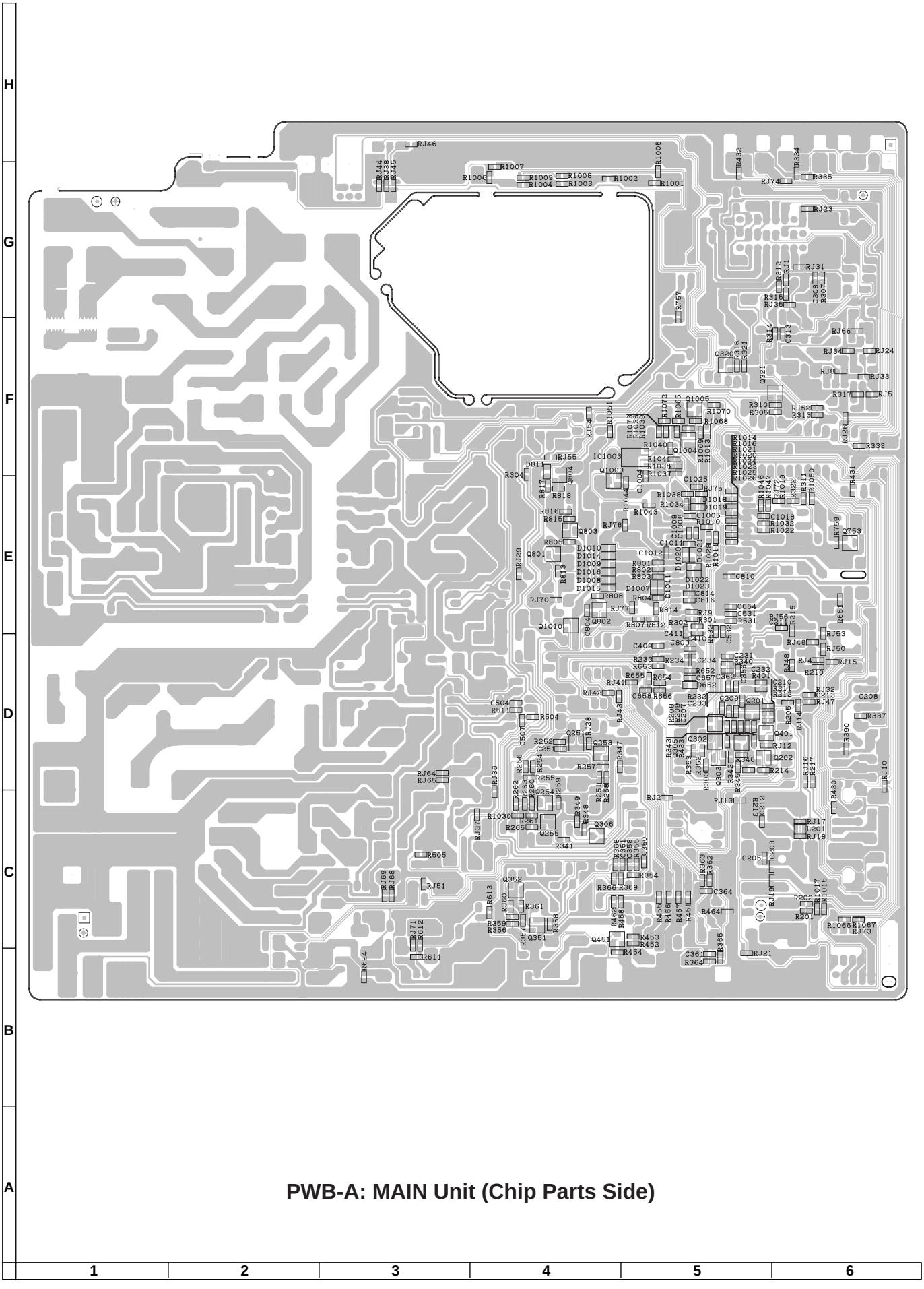


PWB-B: CRT Unit (Chip Parts Side)

PRINTED WIRING BOARD ASSEMBLIES



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 ⚠ and shaded areas in the Replacement Parts Lists and Schematic Diagrams. The use of a substitute replacement part which dose no 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

Toshiba Part No.	Part No.	Ref.No.	Description

PICTURE TUBE

⚠	AD100631	VB37GDA86X/1E	V101	Picture Tube
⚠	AD100603	RCiLG0068PEZZ	L703	Degaussing Coil
⚠	AD100621	RCiLH0142PEZZ	DY601	Deflection Yoke
	AD100611	PMAGF3041CEZZ		Degaussing Coil -Purity and Static Convergence
	AD100612	PSPAG0004PEZZ		Wedge(Gum), Yoke
	AD100666	QEARC1436PEZZ		Grounding Strap
	AD100610	MSPRT0001PEFJ		Spring for CRT

PRINTED WIRING BOARD ASSEMBLIES *(NOT REPLACEMENT ITEM)*

AD100604	DUNTKA541WEA1	PWB-A	MAIN Unit
AD100605	DUNTKA542WEA2	PWB-B	CRT Unit

Toshiba Part No.	Part No.	Ref.No.	Description

PWB-A: DUNTKA541WEA1

MAIN UNIT

TUNER

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

⚠	AD100718	VTUVTST5UF690	TU201	Tuner

INTEGRATED CIRCUITS

	AD100636	VHiAN7511//-1	IC302	An7511
⚠	AD100637	VHiAN5522++-1	IC501	An5522
	AD100640	VHiKA7808AP-1	IC601	Kia7808api
	AD100641	VHiSTRG5653-1	IC701	Strg5653
	AD1006	RH-IX3564CEN3	IC801	I.C.
	AD100639	VHiBR24C02F1E	IC1003	I.C.
		or		
	AD100638	VHiBR24C02/-1		Br24c02

TRANSISTORS

You can substitute "VS2SC2462-C-1 (AD100659)" for "VS2SD601A//-1 (AD100598)".

	AD100655	VS2SC2735//1E	Q201	C2735
	AD100310	VS2SD601AR/-1	Q253	D601A
	AD100310	VS2SD601AR/-1	Q254	D601A
	AD100596	VS2SC3207//-1	Q601	C3207
	AD100597	VS2SD2586//1E	Q602	D2586
	AD100595	VS2SC3198-G-1	Q603	C3198-G
	AD100595	VS2SC3198-G-1	Q751	C3198-G
	AD100595	VS2SC3198-G-1	Q752	C3198-G
	AD100301	VS2SB709AR/-1	Q801	B709A
	AD100301	VS2SB709AR/-1	Q802	B709A

DIODES

	AD100423	RH-EX0676GEZZ	D201	Zener Diode, 33V
	AD100504	VHD1SS119//-1	D302	Diode
⚠	AD100409	RH-DX0302CEZZ	D331	Diode
	AD100417	RH-EX0615GEZZ	D502	Zener Diode, 5V
	AD100504	VHD1SS119//-1	D503	Diode
	AD100410	RH-DX0441CEZZ	D505	Diode
	AD100406	RH-DX0131CEZZ	D508	Diode
	AD100421	RH-EX0665GEZZ	D509	Zener Diode, 24V
	AD100504	VHD1SS119//-1	D511	Diode
	AD100419	RH-EX0627GEZZ	D531	Zener Diode, 8.2V
	AD100419	RH-EX0627GEZZ	D532	Zener Diode, 8.2V
	AD100412	RH-DX0475CEZZ	D601	Diode
⚠	AD100505	VHD1SS244//-1	D602	Diode
⚠	AD100422	RH-EX0667GEZZ	D603	Zener Diode, 27V
⚠	AD100406	RH-DX0131CEZZ	D606	Diode
⚠	AD100411	RH-DX0468CEZZ	D608	Diode
	AD100419	RH-EX0627GEZZ	D651	Zener Diode, 8.2V
	AD100504	VHD1SS119//-1	D653	Diode
	AD100413	RH-DX0476CEZZ	D701	Diode
	AD100506	VHD1SS82///1A	D705	Diode
	AD100506	VHD1SS82///1A	D706	Diode
	AD100506	VHD1SS82///1A	D707	Diode
⚠	AD100407	RH-DX0229CEZZ	D751	Diode
⚠	AD100406	RH-DX0131CEZZ	D752	Diode
	AD100418	RH-EX0616GEZZ	D754	Zener Diode, 5.6V
	AD100415	RH-EX0603GEZZ	D755	Zener Diode, 3.9V
	AD100504	VHD1SS119//-1	D801	Diode
	AD100504	VHD1SS119//-1	D802	Diode
	AD100504	VHD1SS119//-1	D803	Diode
	AD100504	VHD1SS119//-1	D804	Diode
	AD100504	VHD1SS119//-1	D805	Diode
	AD100504	VHD1SS119//-1	D806	Diode
	AD100424	RH-PX0013PEZZ	D1001	R Photodiode
	AD100504	VHD1SS119//-1	D1004	Diode
	AD100416	RH-EX0611GEZZ	D1012	Zener Diode, 5.1V
	AD100414	RH-EX0263TAZZ	D1018	Zener Diode, 8.3V
	AD100414	RH-EX0263TAZZ	D1019	Zener Diode, 8.3V
	AD100414	RH-EX0263TAZZ	D1020	Zener Diode, 8.3V
	AD100414	RH-EX0263TAZZ	D1021	Zener Diode, 8.3V

PWB-A: DUNTKA541WEA1
MAIN UNIT (Continued)

Toshiba Part No.	Part No.	Ref.No.	Description
AD100414	RH-EX0263TAZZ	D1022	Zener Diode, 8.3V
AD100414	RH-EX0263TAZZ	D1023	Zener Diode, 8.3V
⚠ AD100427	RH-VX0073CEZZ	VA701	Varistor
PACKAGED CIRCUITS			
AD100624	RMPTP0028CEZZ	PR702	Packaged Circuit
AD100403	RCRSB0300CEZZ	X1001	Crystal
FILTERS			
AD100721	RFILC0013CEZZ	CF253	Filter
AD100404	RFiLC0405CEZZ	SF201	S.A.W. Filter
COILS			
AD100510	VP-DF270K0000	L202	Peaking 27µH
AD100510	VP-DF270K0000	L203	Peaking 27µH
AD100512	VP-XF1R2K0000	L204	Peaking 1.2µH
AD100511	VP-XF120K0000	L253	Peaking 12µH
⚠ AD100726	RCILF0078PEZZ	L701	Coil
⚠ AD100398	RCiLP0225CEZZ	L751	Coil
AD100509	VP-DF100K0000	L802	Peaking 10µH
AD100509	VP-DF100K0000	L803	Peaking 10µH
AD100509	VP-DF100K0000	L1030	Peaking 10µH
AD100509	VP-DF100K0000	L1050	Peaking 10µH
AD100509	VP-DF100K0000	L1051	Peaking 10µH
TRANSFORMERS			
⚠ AD100435	RTRNZ0144PEZZ	T601	Transformer
⚠ AD100625	RTRNF0228PEZZ	T602	H-Volt Transformer
⚠ AD100662	RTRNW0015PEN1	T701	Transformer

CAPACITORS

[EL.··· Electrolytic, M-Poly.··· Metalized Polypro Film]

Toshiba Part No.	Part No.	Ref.No.			Description
AD100457	VCEA0A1CW476M	C201	47	16V	EL.
AD100719	VCEAGA1CW108M	C202	1000	16V	EL.
AD100491	VCKYCY1HF103Z	C205	0.01	50V	Ceramic
AD100460	VCEA0A1HW105M	C206	1.0	50V	EL.
AD100482	VCKYCY1HB103K	C207	0.01	50V	Ceramic
AD100482	VCKYCY1HB103K	C208	0.01	50V	Ceramic
AD100482	VCKYCY1HB103K	C209	0.01	50V	Ceramic
AD100482	VCKYCY1HF103Z	C210	0.01	50V	Ceramic
AD100482	VCKYCY1HF103Z	C211	0.01	50V	Ceramic
AD100492	VCKYCY1HF223Z	C231	0.022	50V	Ceramic
AD100490	VCKYCY1HB821K	C232	820p	50V	Ceramic
AD100723	VCKYPA1HB472K	C233	4700p	50V	Ceramic
AD100480	VCKYCY1EF104Z	C234	0.1	25V	Ceramic
AD100492	VCKYCY1HF223Z	C251	0.022	50V	Ceramic
AD100453	VCEA0A1CW107M	C252	100	16V	EL.
AD100458	VCEA0A1CW477M	C301	470	16V	EL.
AD100461	VCEA0A1HW106M	C304	10	50V	EL.
AD100464	VCEA0A1HW225M	C310	2.2	50V	EL.
AD100464	VCEA0A1HW225M	C312	2.2	50V	EL.
AD100486	VCKYCY1HB332K	C313	3300p	50V	Ceramic
⚠ AD100498	VCQYTA1HM103J	C332	0.01	50V	Mylar
⚠ AD100454	VCEA0A1CW108M	C333	1000	16V	EL.
AD100724	VCKYCY1HB682K	C356	6800p	50V	Ceramic
AD100452	VCEA0A1CW106M	C359	10	16V	EL.
AD100464	VCEA0A1HW225M	C360	2.2	50V	EL.
AD100480	VCKYCY1EF104Z	C409	0.1	25V	Ceramic
AD100480	VCKYCY1EF104Z	C410	0.1	25V	Ceramic
AD100481	VCKYCY1HB102K	C411	1000p	50V	Ceramic
AD100494	VCKYPA1HB102K	C501	1000p	50V	Ceramic
AD100482	VCKYCY1HB103K	C504	0.01	50V	Ceramic
AD100462	VCEA0A1HW107M	C505	100	50V	EL.
AD100482	VCKYCY1HB103K	C507	0.01	50V	Ceramic
AD100475	VCFYSA1JB224J+	C508	0.22	63V	Ceramic
AD100458	VCEA0A1CW477M	C509	470	16V	EL.
AD100496	VCKYPA2HB102K	C510	1000p	500V	Ceramic
AD100635	VCFYSA1JB563J	C514	0.056	63V	Ceramic
AD100481	VCKYCY1HB102K	C531	1000p	50V	Ceramic
AD100481	VCKYCY1HB102K	C532	1000p	50V	Ceramic
AD100499	VCQYTA1HM104J	C533	0.1	50V	Mylar
AD100503	VCQYTA1HM563J+	C601	0.056	50V	Mylar
AD100465	VCEA0A1HW475M	C602	4.7	50V	EL.
AD100460	VCEA0A1HW105M	C603	1.0	50V	EL.
AD100467	VCEA0A2EW106M	C604	10	250V	EL.
AD100496	VCKYPA2HB102K	C605	1000p	500V	Ceramic
AD100633	VCFPVC2DB684J	C606	0.33	200V	M-Poly.
AD100634	VCFPVC3ZA532H	C607	5300p	1.5kV	M-Poly.
AD100496	VCKYPA2HB102K	C608	1000p	500V	Ceramic
AD100454	VCEA0A1CW108M	C610	1000	16V	EL.
AD100459	VCEA0A1EW476M	C611	47	25V	EL.
AD100458	VCEA0A1CW477M	C612	470	16V	EL.
AD100496	VCKYPA2HB102K	C620	1000p	500V	Ceramic
AD100477	VCFYSB2EB823J	C640	0.082	250V	Ceramic
AD100725	RC-QZA222TAYJ	C651	0.0022	50V	Mylar
AD100502	VCQYTA1HM472J	C652	4700p	50V	Mylar
AD100460	VCEA0A1HW105M	C653	1.0	50V	EL.
AD100492	VCKYCY1HF223Z	C654	0.022	50V	Ceramic
AD100461	VCEA0A1HW106M	C655	10	50V	EL.
AD100463	VCEA0A1HW224M	C656	0.22	50V	EL.
AD100480	VCKYCY1EF104Z	C657	0.1	25V	Ceramic
AD100480	VCKYCY1EF104Z	C658	0.1	25V	Ceramic
AD100394	RC-FZ036SCEZZ	C701	0.1	275V	Ceramic
AD100399	RC-KZ0029CEZZ	C702	0.01	250V	Ceramic
AD100399	RC-KZ0029CEZZ	C703	0.01	250V	Ceramic
AD100399	RC-KZ0029CEZZ	C704	0.01	250V	Ceramic
AD100618	RC-EZ1044CEZZ	C705	150	400V	EL.
AD100400	RC-KZ0039CEZZ	C709	680P	2kV	Ceramic
AD100466	VCEA0A1HW476M	C710	47	50V	EL.
AD100494	VCKYPA1HB102K	C711	1000p	50V	Ceramic
AD100495	VCKYPA1HB471K	C712	470p	50V	Ceramic
AD100401	RC-KZ0092GEZZ	C751	0.01	250V	Ceramic
⚠ AD100497	VCKYPH3DB561K	C752	560p	2kV	Ceramic
⚠ AD100389	RC-EZ0724CEZZ	C753	100	160V	EL.
⚠ AD100388	RC-EZ0638CEZZ	C754	33	160V	EL.
⚠ AD100454	VCEA0A1CW108M	C755	1000	16V	EL.
⚠ AD100498	VCQYTA1HM103J	C756	0.01	50V	Mylar
AD100450	VCEA0A0JW477M	C759	470	6.3V	EL.
AD100449	VCEA0A0JW228M	C760	2200	6.3V	EL.
AD100460	VCEA0A1HW105M	C801	1.0	50V	EL.
AD100456	VCEA0A1CW337M	C802	330	16V	EL.
AD100453	VCEA0A1CW107M	C803	100	16V	EL.
AD100484	VCKYCY1HB222K	C804	2200p	50V	Ceramic
AD100493	VCKYD41HB102K	C805	1000p	50V	Ceramic
AD100493	VCKYD41HB102K	C806	1000p	50V	Ceramic
AD100493	VCKYD41HB102K	C807	1000p	50V	Ceramic
AD100453	VCEA0A1CW107M	C808	100	16V	EL.
AD100479	VCKYCY1CF474Z	C809	0.47	16V	Ceramic
AD100479	VCKYCY1CF474Z	C810	0.47	16V	Ceramic
AD100453	VCEA0A1CW107M	C811	100	16V	EL.
AD100474	VCFYFA1HA224J	C812	0.22	50V	Mylar
AD100474	VCFYFA1HA224J	C813	0.22	50V	Mylar
AD100487	VCKYCY1HB471K	C814	470p	50V	Ceramic
AD100487	VCKYCY1HB471K	C816	470p	50V	Ceramic
AD100448	VCEA0A0JW107M	C1001	100	6.3V	EL.
AD100448	VCEA0A0JW107M	C1002	100	6.3V	EL.
AD100452	VCEA0A1CW106M	C1003	10	16V	EL.
AD100479	VCKYCY1CF474Z	C1004	0.47	16V	Ceramic
AD100479	VCKYCY1CF474Z	C1005	0.47	16V	Ceramic
AD100452	VCEA0A1CW106M	C1006	10	16V	EL.
AD100445	VCCCCY1HH330J	C1008	33p	50V	Ceramic
AD100445	VCCCCY1HH330J	C1009	33p	50V	Ceramic
AD100448	VCEA0A0JW107M	C1010	100	6.3V	EL.
AD100479	VCKYCY1CF474Z	C1011	0.47	16V	Ceramic
AD100479	VCKYCY1CF474Z	C1012	0.47	16V	Ceramic
AD100448	VCEA0A0JW107M	C1013	100	6.3V	EL.
AD100499	VCQYTA1HM104J	C1016	0.1	50V	Mylar
AD100483	VCKYCY1HB221K	C1018	220p	50V	Ceramic
AD100499	VCQYTA1HM104J	C1024	0.1	50V	Mylar
AD100448	VCEA0A0JW107M	C1026	100	6.3V	EL.

PWB-A: DUNTKA541WEA1
MAIN UNIT (Continued)

RESISTORS

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

Toshiba Part No.	Part No.	Ref.No.			
AD100552	VRS-CY1JF000J	RJ2	0	1/16W	M-Ox.
AD100552	VRS-CY1JF000J	RJ4	0	1/16W	M-Ox.
AD100552	VRS-CY1JF000J	RJ8	0	1/16W	M-Ox.
AD100552	VRS-CY1JF000J	RJ9	0	1/16W	M-Ox.
AD100552	VRS-CY1JF000J	RJ10	0	1/16W	M-Ox.
AD100552	VRS-CY1JF000J	RJ13	0	1/16W	M-Ox.
AD100552	VRS-CY1JF000J	RJ14	0	1/16W	M-Ox.
AD100552	VRS-CY1JF000J	RJ15	0	1/16W	M-Ox.
AD100552	VRS-CY1JF000J	RJ16	0	1/16W	M-Ox.
AD100552	VRS-CY1JF000J	RJ17	0	1/16W	M-Ox.
AD100552	VRS-CY1JF000J	RJ19	0	1/16W	M-Ox.
AD100552	VRS-CY1JF000J	RJ21	0	1/16W	M-Ox.
AD100552	VRS-CY1JF000J	RJ26	0	1/16W	M-Ox.
AD100552	VRS-CY1JF000J	RJ28	0	1/16W	M-Ox.
AD100552	VRS-CY1JF000J	RJ31	0	1/16W	M-Ox.
AD100552	VRS-CY1JF000J	RJ32	0	1/16W	M-Ox.
AD100552	VRS-CY1JF000J	RJ35	0	1/16W	M-Ox.
AD100552	VRS-CY1JF000J	RJ37	0	1/16W	M-Ox.
AD100552	VRS-CY1JF000J	RJ38	0	1/16W	M-Ox.
AD100552	VRS-CY1JF000J	RJ41	0	1/16W	M-Ox.
AD100552	VRS-CY1JF000J	RJ42	0	1/16W	M-Ox.
AD100552	VRS-CY1JF000J	RJ43	0	1/16W	M-Ox.
AD100552	VRS-CY1JF000J	RJ46	0	1/16W	M-Ox.
AD100552	VRS-CY1JF000J	RJ49	0	1/16W	M-Ox.
AD100552	VRS-CY1JF000J	RJ50	0	1/16W	M-Ox.
AD100552	VRS-CY1JF000J	RJ51	0	1/16W	M-Ox.
AD100552	VRS-CY1JF000J	RJ52	0	1/16W	M-Ox.
AD100552	VRS-CY1JF000J	RJ53	0	1/16W	M-Ox.
AD100552	VRS-CY1JF000J	RJ70	0	1/16W	M-Ox.
AD100552	VRS-CY1JF000J	RJ71	0	1/16W	M-Ox.
AD100552	VRS-CY1JF000J	RJ72	0	1/16W	M-Ox.
AD100552	VRS-CY1JF000J	RJ73	0	1/16W	M-Ox.
AD100552	VRS-CY1JF000J	RJ75	0	1/16W	M-Ox.
AD100552	VRS-CY1JF000J	RJ76	0	1/16W	M-Ox.
AD100552	VRS-CY1JF000J	RJ77	0	1/16W	M-Ox.
AD100553	VRS-CY1JF101J	R201	100	1/16W	M-Ox.
AD100553	VRS-CY1JF101J	R202	100	1/16W	M-Ox.
AD100580	VRS-CY1JF680J	R205	68	1/16W	M-Ox.
AD100558	VRS-CY1JF122J	R206	1.2k	1/16W	M-Ox.
AD100563	VRS-CY1JF221J	R207	220	1/16W	M-Ox.
AD100558	VRS-CY1JF122J	R208	1.2k	1/16W	M-Ox.
AD100572	VRS-CY1JF392J	R209	3.9k	1/16W	M-Ox.
AD100570	VRS-CY1JF332J	R212	3.3k	1/16W	M-Ox.
AD100589	VRS-RG3LB223J+	R216	22k	3W	M-Ox.
AD100526	VRD-RA2BE392J	R219	3.9k	1/8W	Carbon
AD100563	VRS-CY1JF221J	R220	220	1/16W	M-Ox.
AD100575	VRS-CY1JF473J	R230	47k	1/16W	M-Ox.
AD100532	VRD-RA2BE681J	R231	680	1/8W	Carbon
AD100566	VRS-CY1JF272J	R232	2.7k	1/16W	M-Ox.
AD100553	VRS-CY1JF101J	R233	100	1/16W	M-Ox.
AD100571	VRS-CY1JF391J	R234	390	1/16W	M-Ox.
AD100561	VRS-CY1JF181J	R257	180	1/16W	M-Ox.
AD100560	VRS-CY1JF151J	R258	150	1/16W	M-Ox.
AD100573	VRS-CY1JF471J	R259	470	1/16W	M-Ox.
AD100572	VRS-CY1JF392J	R260	3.9k	1/16W	M-Ox.
AD100564	VRS-CY1JF223J	R261	22k	1/16W	M-Ox.
AD100576	VRS-CY1JF560J	R262	56	1/16W	M-Ox.
AD100576	VRS-CY1JF560J	R263	56	1/16W	M-Ox.
AD100553	VRS-CY1JF101J	R301	100	1/16W	M-Ox.
AD100581	VRS-CY1JF683J	R304	68k	1/16W	M-Ox.
AD100575	VRS-CY1JF473J	R310	47k	1/16W	M-Ox.
AD100575	VRS-CY1JF473J	R311	47k	1/16W	M-Ox.
AD100554	VRS-CY1JF102J	R313	1.0k	1/16W	M-Ox.
AD100555	VRS-CY1JF103J	R314	10k	1/16W	M-Ox.
AD100572	VRS-CY1JF392J	R315	3.9k	1/16W	M-Ox.
AD100649	VRN-RL3DB4R7J	R320	4.7	2W	M-Film
AD100553	VRS-CY1JF101J	R333	100	1/16W	M-Ox.
AD100570	VRS-CY1JF332J	R334	3.3k	1/16W	M-Ox.
AD100578	VRS-CY1JF564J	R335	560k	1/16W	M-Ox.
AD100552	VRS-CY1JF000J	R364	0	1/16W	M-Ox.
AD100553	VRS-CY1JF101J	R431	100	1/16W	M-Ox.
AD100582	VRS-CY1JF750J	R432	75	1/16W	M-Ox.
AD100644	VRD-RA2BE272J	R501	2.7k	1/8W	Carbon
AD100535	VRD-RM2HD102J	R502	1.0k	1/2W	Carbon
AD100648	VRN-RL3DB2R7J	R503	2.7	2W	M-Film
AD100561	VRS-CY1JF181J	R504	180	1/16W	M-Ox.
AD100554	VRS-CY1JF102J	R505	1.0k	1/16W	M-Ox.
AD100653	VRS-RG3AB331J+	R506	330	1W	M-Ox.
AD100544	VRN-RL3AB1R0J+	R507	1.0	1W	M-Film
AD100524	VRD-RA2BE333J	R510	33k	1/8W	Carbon
AD100561	VRS-CY1JF181J	R511	180	1/16W	M-Ox.
AD100534	VRD-RM2HD100J	R512	10	1/2W	Carbon
AD100524	VRD-RA2BE333J	R521	33k	1/8W	Carbon
AD100553	VRS-CY1JF101J	R531	100	1/16W	M-Ox.
AD100553	VRS-CY1JF101J	R532	100	1/16W	M-Ox.
AD100527	VRD-RA2BE393J	R533	39k	1/8W	Carbon
AD100584	VRS-RG2HC102J	R601	1.0k	1/2W	M-Ox.
AD100527	VRD-RA2BE393J	R602	39k	1/8W	Carbon
AD100645	VRD-RA2BE273J	R603	27k	1/8W	Carbon
AD100646	VRD-RA2BE563J	R604	56k	1/8W	Carbon
AD100536	VRD-RM2HD124J	R605	120k	1/2W	Carbon
⚠ AD100647	VRN-RL3AB1R5J	R606	1.5	1W	M-Film
⚠ AD100538	VRD-RM2HD270J	R607	27	1/2W	Carbon
⚠ AD100518	VRD-RA2BE154J	R609	150k	1/8W	Carbon
⚠ AD100514	VRD-RA2BE102G	R610	1.0k	1/8W	Carbon
AD100554	VRS-CY1JF102J	R611	1.0k	1/16W	M-Ox.
AD100559	VRS-CY1JF123J	R612	12k	1/16W	M-Ox.
AD100555	VRS-CY1JF103J	R613	10k	1/16W	M-Ox.
⚠ AD100727	VRS-RG2HC150J	R614	15	1/2W	M-Ox.
AD100588	VRS-RG3DB682J+	R615	6.8k	2W	M-Ox.
AD100546	VRN-RL3ABR47J+	R616	0.47	1W	M-Film
AD100587	VRS-RG3DB391J+	R618	390	2W	M-Ox.
AD100654	VRS-RG3LB103J+	R619	10k	3W	M-Ox.
AD100586	VRS-RG3AB472J+	R620	4.7k	1W	M-Ox.
AD100515	VRD-RA2BE102J	R622	1.0k	1/8W	Carbon
AD100651	VRN-VV3DB8R2J	R625	8.2	2W	M-Film
AD100540	VRD-RM2HD470J	R626	47	1/2W	Carbon
AD100543	VRN-RL2HCR47J+	R641	0.47	1/2W	M-Film
AD100564	VRS-CY1JF223J	R651	22k	1/16W	M-Ox.
AD100554	VRS-CY1JF102J	R652	1.0k	1/16W	M-Ox.
AD100583	VRS-CY1JF822J	R653	8.2k	1/16W	M-Ox.
AD100567	VRS-CY1JF273J	R654	27k	1/16W	M-Ox.
AD100571	VRS-CY1JF391J	R655	390	1/16W	M-Ox.
AD100652	VRS-CY1JF100J	R656	10	1/16W	M-Ox.
AD100513	VRD-RA2BE101J	R658	100	1/8W	Carbon
AD100513	VRD-RA2BE101J	R663	100	1/8W	Carbon
AD100593	VRW-KQ3NC3R9K	R701	3.9	7W	Cement
AD100591	VRS-VV3DB104J	R707	100k	2W	M-Ox.
AD100532	VRD-RA2BE681J	R708	680	1/8W	Carbon
AD100549	VRN-RL3DBR47J+	R709	0.47	2W	M-Film
AD100650	VRN-RL3DBR56J+	R710	0.56	2W	M-Film
AD100533	VRD-RA2BE682J	R711	6.8k	1/8W	Carbon
AD100517	VRD-RA2BE152J	R712	1.5k	1/8W	Carbon
AD100531	VRD-RA2BE562J	R716	5.6k	1/8W	Carbon
AD100429	RR-DZ0049CEZZ	R751	3.9M	1/2W	Solid
AD100429	RR-DZ0049CEZZ	R752	3.9M	1/2W	Solid
⚠ AD100536	VRD-RM2HD124J	R753	120k	1/2W	Carbon
AD100537	VRD-RM2HD150J	R754	15	1/2W	Carbon
AD100519	VRD-RA2BE221J	R755	220	1/8W	Carbon
AD100538	VRD-RM2HD270J	R756	27	1/2W	Carbon
AD100560	VRS-CY1JF151J	R757	150	1/16W	M-Ox.
AD100563	VRS-CY1JF221J	R801	220	1/16W	M-Ox.
AD100563	VRS-CY1JF221J	R802	220	1/16W	M-Ox.
AD100563	VRS-CY1JF221J	R803	220	1/16W	M-Ox.
AD100563	VRS-CY1JF221J	R804	220	1/16W	M-Ox.
AD100583	VRS-CY1JF822J	R805	8.2k	1/16W	M-Ox.
AD100559	VRS-CY1JF123J	R806	12k	1/16W	M-Ox.
AD100555	VRS-CY1JF103J	R807	10k	1/16W	M-Ox.
AD100563	VRS-CY1JF221J	R808	220	1/16W	M-Ox.
AD100522	VRD-RA2BE224J	R809	220k	1/8W	Carbon
AD100553	VRS-CY1JF101J	R812	100	1/16W	M-Ox.
AD100563	VRS-CY1JF221J	R813	220	1/16W	M-Ox.
AD100583	VRS-CY1JF822J	R1002	8.2k	1/16W	M-Ox.
AD100577	VRS-CY1JF562J	R1003	5.6k	1/16W	M-Ox.
AD100577	VRS-CY1JF562J	R1006	5.6k	1/16W	M-Ox.
AD100577	VRS-CY1JF562J	R1007	5.6k	1/16W	M-Ox.
AD100583	VRS-CY1JF822J	R1008	8.2k	1/16W	M-Ox.

PWB-A: DUNTKA541WEA1
MAIN UNIT (Continued)

Toshiba Part No.	Part No.	Ref.No.	Description
AD100577	VRS-CY1JF562J	R1009	5.6k 1/16W M-Ox.
AD100570	VRS-CY1JF332J	R1011	3.3k 1/16W M-Ox.
AD100525	VRD-RA2BE391J	R1012	390 1/8W Carbon
AD100513	VRD-RA2BE101J	R1013	100 1/8W Carbon
AD100553	VRS-CY1JF101J	R1014	100 1/16W M-Ox.
AD100570	VRS-CY1JF332J	R1015	3.3k 1/16W M-Ox.
AD100553	VRS-CY1JF101J	R1016	100 1/16W M-Ox.
AD100570	VRS-CY1JF332J	R1017	3.3k 1/16W M-Ox.
AD100553	VRS-CY1JF101J	R1020	100 1/16W M-Ox.
AD100562	VRS-CY1JF183J	R1021	18k 1/16W M-Ox.
AD100553	VRS-CY1JF101J	R1022	100 1/16W M-Ox.
AD100563	VRS-CY1JF221J	R1023	220 1/16W M-Ox.
AD100562	VRS-CY1JF183J	R1024	18k 1/16W M-Ox.
AD100553	VRS-CY1JF101J	R1025	100 1/16W M-Ox.
AD100565	VRS-CY1JF224J	R1026	220k 1/16W M-Ox.
AD100553	VRS-CY1JF101J	R1028	390 1/8W Carbon
AD100570	VRS-CY1JF332J	R1032	3.3k 1/16W M-Ox.
AD100553	VRS-CY1JF101J	R1034	100 1/16W M-Ox.
AD100570	VRS-CY1JF332J	R1035	3.3k 1/16W M-Ox.
AD100570	VRS-CY1JF332J	R1036	3.3k 1/16W M-Ox.
AD100553	VRS-CY1JF101J	R1037	100 1/16W M-Ox.
AD100553	VRS-CY1JF101J	R1038	100 1/16W M-Ox.
AD100564	VRS-CY1JF223J	R1039	22k 1/16W M-Ox.
AD100553	VRS-CY1JF101J	R1040	100 1/16W M-Ox.
AD100553	VRS-CY1JF101J	R1041	100 1/16W M-Ox.
AD100528	VRD-RA2BE471J	R1042	470 1/8W Carbon
AD100553	VRS-CY1JF101J	R1046	100 1/16W M-Ox.
AD100570	VRS-CY1JF332J	R1047	3.3k 1/16W M-Ox.
AD100572	VRS-CY1JF392J	R1050	3.9k 1/16W M-Ox.
AD100581	VRS-CY1JF683J	R1051	68k 1/16W M-Ox.
AD100567	VRS-CY1JF273J	R1066	27k 1/16W M-Ox.
AD100553	VRS-CY1JF101J	R1072	100 1/16W M-Ox.
AD100553	VRS-CY1JF101J	R1073	100 1/16W M-Ox.

SWITCHES

AD100385	QSW-K0003AJZZ	S1001	CH-up
AD100385	QSW-K0003AJZZ	S1002	CH-down
AD100385	QSW-K0003AJZZ	S1003	Vol-up
AD100385	QSW-K0003AJZZ	S1004	Vol-down
AD100385	QSW-K0003AJZZ	S1005	Picture/Preset
AD100386	QSW-K0114CEZZ	S1006	Power

MISCELLANEOUS PARTS

AD100364	QFS-C3229CEZZ	F701	Fuse, 3.15A
AD100387	RBLN-0091GEZZ	FB601	Ferrite Bead
AD100365	QFSHD1013CEZZ	FH701	Fuse Holder
AD100366	QFSHD1014CEZZ	FH702	Fuse Holder
AD100368	QJAKE0210CE04	J402	Jack, Video-IN
AD100369	QJAKE0210CE09	J403	Jack, Audio-IN
AD100372	QJAKF0074CEZZ	J409	Jack, AV-IN(REAR)
AD100616	QPLGN0241CEZZ	P302	Plug, 2pin (S)
AD100039	QPLGN0660CEZZ	P601	PLUG (6 PINS)
AD100339	LHLDW1104PEZZ	P602	CABLE BASE (4 PINS)
AD100378	QPLGN0361CEZZ	P603	Plug, 3pin (TP651-3)
AD100376	QPLGN0260CEZZ	P701	Plug, 2pin (M)
AD100035	OPLGN0269GEZZ	P702	PLUG (2 PINS)
AD100340	LHLDW1105PEZZ	P1001	CABLE BASE (5
AD100380	QPLGN0561CEZZ	P1002	Plug, 5pin (BC)
AD100431	RRMCU0222CEZZ	RMC1001	R/C Receiver
AD100339	LHLDW1104PEZZ		H-wire Holder
AD100340	LHLDW1105PEZZ		K-wire Holder
AD100344	LX-BZ0086TAFD		Screw
AD100345	LX-BZ3049GEFD		Screw
AD100347	LX-TZ3004CEFD		Screw
AD100351	PRDAR0118GJFW	RDA501	Heat Sink for IC501
AD100355	PRDAR0298PEFW	RDA701	Heat Sink for IC701

PWB-B: DUNTKA542WEA2
CRT UNIT

TRANSISTORS

Toshiba Part No.	Part No.	Ref.No.	Description
AD100425	RH-TX0110BMZZ+	Q870	TX0110BM
AD100425	RH-TX0110BMZZ+	Q871	TX0110BM
AD100425	RH-TX0110BMZZ+	Q872	TX0110BM
AD100426	RH-TX0124BMZZ+	Q883	TX0124BM
AD100426	RH-TX0124BMZZ+	Q885	TX0124BM
AD100426	RH-TX0124BMZZ+	Q887	TX0124BM

DIODES

AD100504	VHD1SS119//-1	D881	Diode
AD100504	VHD1SS119//-1	D882	Diode
AD100504	VHD1SS119//-1	D883	Diode
AD100504	VHD1SS119//-1	D884	Diode
AD100504	VHD1SS119//-1	D885	Diode

CAPACITORS

[EL.··· Electrolytic]

AD100446	VCCSCY1HL471J	C871	470p	50V	Ceramic
AD100446	VCCSCY1HL471J	C872	470p	50V	Ceramic
AD100446	VCCSCY1HL471J	C873	470p	50V	Ceramic
AD100496	VCKYPA2HB102K	C875	1000p	500V	Ceramic
AD100402	RC-KZ0150CEZZ	C876	1000p	3kV	Ceramic
AD100467	VCEA0A2EW106M	C878	10	250V	EL.
AD100446	VCCSCY1HL471J	C880	470p	50V	Ceramic
AD100495	VCKYPA1HB471K	C881	470p	50V	Ceramic
AD100495	VCKYPA1HB471K	C882	470p	50V	Ceramic
AD100496	VCKYPA2HB102K	C886	1000p	500V	Ceramic

RESISTORS

[M-Ox.··· Metal Oxide]

AD100573	VRS-CY1JF471J	R879	470	1/16W	M-Ox.
AD100573	VRS-CY1JF471J	R880	470	1/16W	M-Ox.
AD100573	VRS-CY1JF471J	R881	470	1/16W	M-Ox.
AD100592	VRS-VV3DB153J	R882	15k	2W	M-Ox.
AD100539	VRD-RM2HD272J	R883	2.7k	1/2W	Carbon
AD100592	VRS-VV3DB153J	R884	15k	2W	M-Ox.
AD100539	VRD-RM2HD272J	R885	2.7k	1/2W	Carbon
AD100592	VRS-VV3DB153J	R886	15k	2W	M-Ox.
AD100539	VRD-RM2HD272J	R887	2.7k	1/2W	Carbon
AD100573	VRS-CY1JF471J	R888	470	1/16W	M-Ox.
AD100554	VRS-CY1JF102J	R892	1.0k	1/16W	M-Ox.
AD100554	VRS-CY1JF102J	R893	1.0k	1/16W	M-Ox.
AD100554	VRS-CY1JF102J	R894	1.0k	1/16W	M-Ox.
AD100573	VRS-CY1JF471J	R898	470	1/16W	M-Ox.
AD100573	VRS-CY1JF471J	R899	470	1/16W	M-Ox.

MISCELLANEOUS PARTS

AD100617	QSOCV0842CEZZ	SC881	CRT Socket
AD100340	LHLDW1105PEZZ	P882	Connecting Cord(K-wire)
AD100339	LHLDW1104PEZZ	P884	Connecting Cord(H-wire)

MISCELLANEOUS PARTS

Toshiba Part No.	Part No.	Ref.No.	Description
AD100359	QACCZ3008PEZZ	ACC701	AC Cord
AD100656	VSP0080PBQ9YA	SP301	Spea ker, 32 ohm
AD100613	QCNW-2206PEZZ		Connecting Cord

SUPPLIED ACCESSORIES

AD100802	TINS-A789WJZZ	Operation Manual
AD100430	RRMCG1589CESA	Infrared R/C Unit
AD100375	QPLGA0017CEZZ	Plug

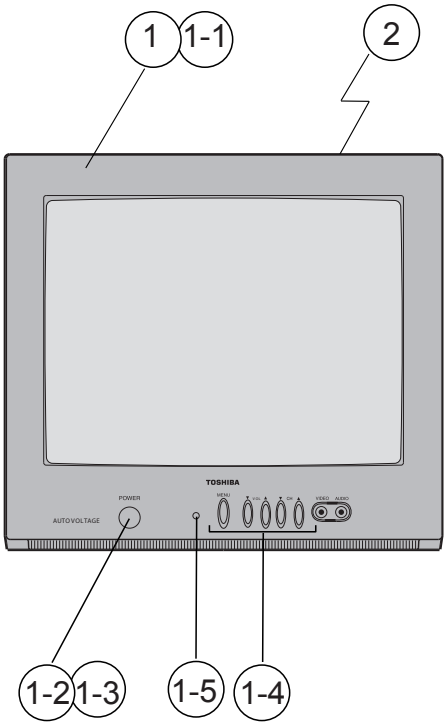
PACKING PARTS
(NOT REPLACEMENT ITEM)

AD100711	SPAKCA760WJZZ	Packing Case
AD100628	SPAKP0104GJZZ	Wrapping Paper
AD100629	SPAKX0123GJZZ	Buffer Material

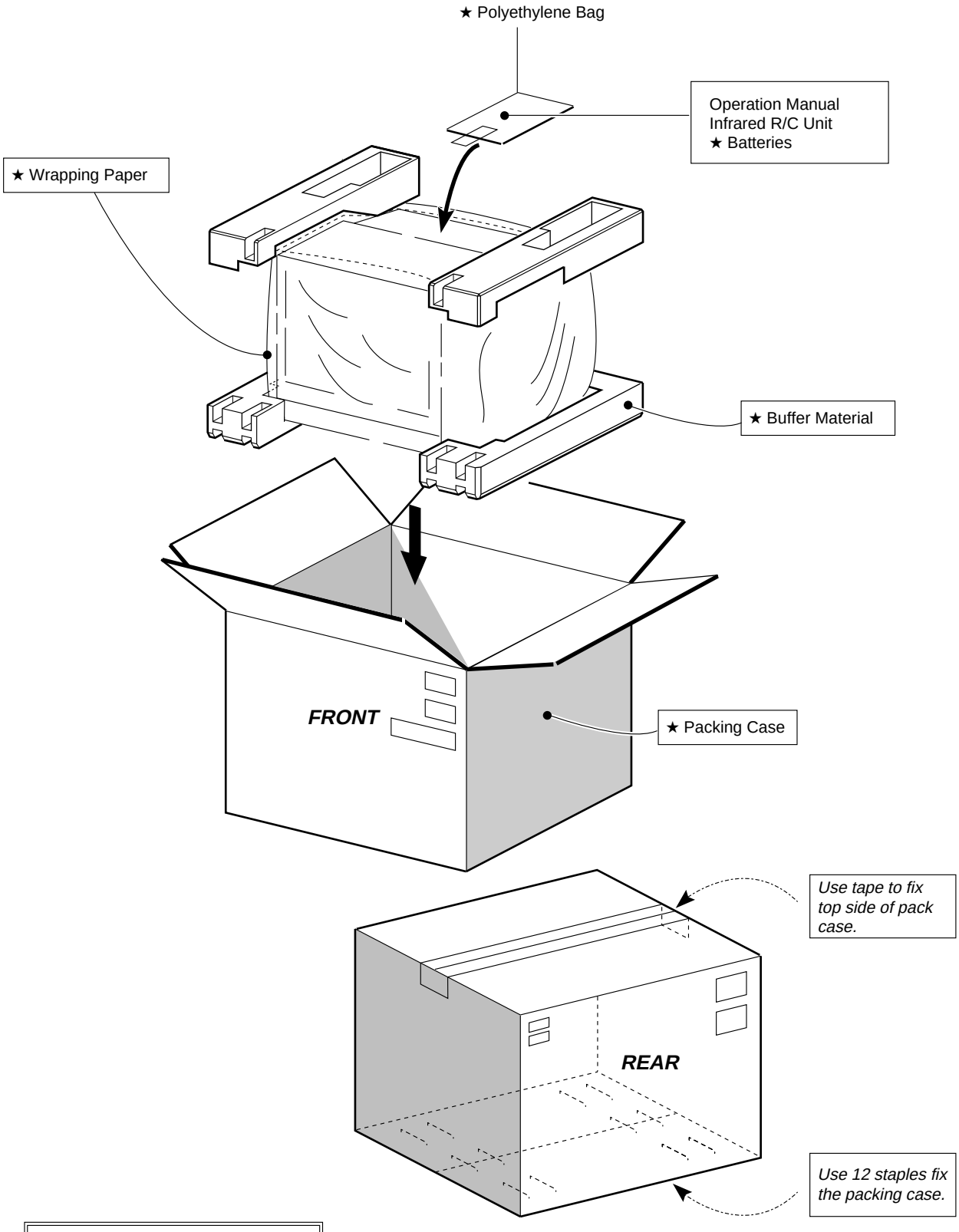
CABINET PARTS

Toshiba Part No.	Part No.	Ref.No.	Description
AD100804	CCABAA354WEH0	1	Front Cabinet Ass'y
	Not Available	1-1	Front Cabinet
AD100609	JBTN-0127GJSB	1-2	Power Button
AD100349	MSPRC0005PEFW	1-3	Power Spring
AD100608	JBTN-0126GJSB	1-4	Control Button
AD100607	HDECQ0102GJSA	1-5	Cover for R/C
AD100668	GCABB0124GJKA	2	Rear Cabinet

CABINET PARTS LOCATION



PACKING OF THE SET



★ **MARK** : Not Replacement Items.

TOSHIBA CORPORATION
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