

TOSHIBA

Toshiba 21VZ5E Service Manual

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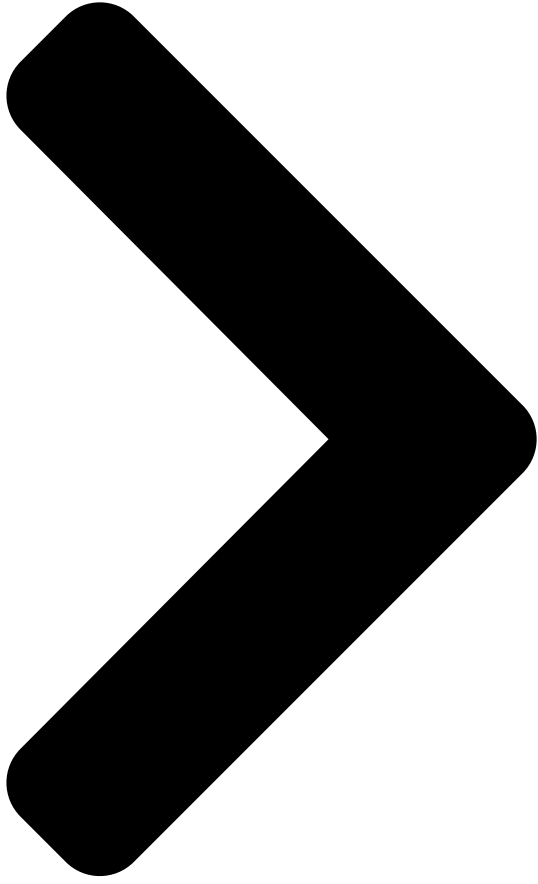
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FILE NO. 060-200219

SERVICE MANUAL

TOSHIBA
COLOUR TELEVISION

S2ES Chassis

21VZ5E, TOSHIBA 21VZ5T

Nov., 2002

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	CHAPTER 2 SPECIFIC INFORMATIONS	

[Page 3: Chapter 1 General Adjustments](#)

CHAPTER 1 GENERAL ADJUSTMENTS SAFETY INSTRUCTIONS WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" INSTRUCTIONS BELOW. X-RAY RADIATION PRECAUTION 1. Excessive high voltage can produce potentially hazard- 2. The only source of X-RAY RADIATION in this TV receiver ous X-RAY RADIATION.

[Page 4: Set-Up Adjustment](#)

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 3 OF THIS MANUAL. SET-UP ADJUSTMENT The following adjustments should be made when a complete realignment is required or a new picture tube is installed. Perform the adjustments in order as follows : 1.

[Page 5](#) CONVERGENCE ADJUSTMENTS CIRCUMFERENCE CONVERGENCE ADJUSTMENT NOTE: Before attempting any convergence adjustments, the 1. Loosen the clamping screw of deflection yoke slightly to receiver should be operated for at least fifteen min- allow the yoke to tilt. utes. 2. Temporarily put a wedge as shown in figure 1. (Do not remove cover paper on adhesive part of the wedge.) CENTER CONVERGENCE ADJUSTMENT 3.

[Page 6: Service Mode](#)

SERVICE MODE 1. ENTERING TO SERVICE MODE 1) Press o button once on 2) Press o button again to 3) While pressing the o button, Remote Control. keep pressing. press MENU button on TV set. Item Data (Service mode display) 2.

[Page 7](#) 4. SELECTING THE ADJUSTING ITEMS 1) Every pressing of CHANNEL s button in the service mode changes the adjustment items in the order of table-2. (t button for reverse order) Refer to table-2 for preset data of adjustment mode. (See SETTING & ADJUSTING DATA on page 13) 5.

[Page 8](#) 8. SELF DIAGNOSTIC FUNCTION 1) Press "9" button on Remote Control during display of adjustment menu in the service mode. The diagnosis will begin to check if interface among IC's are executed properly. 2) During diagnosis, the following displays are shown. Indicated color of mode now selected : Green and Red Indicated color of other modes : White...

[Page 9: Design Mode](#)

DESIGN MODE 1. ENTERING TO DESIGN MODE 3) Press MENU button on TV. 1) Select the Service mode. 2) While pressing o (or CALL) button on Remote and press MENU button on TV. ITEM Press DATA Press (Design mode) (Adjustment mode) When QA02 is initialized, items "OPT0"...

[Page 10: Electrical Adjustments](#)

ELECTRICAL ADJUSTMENTS ITEM ADJUSTMENT PROCEDURE FOCUS VR ADJ 1. Enter the service mode, then select any register item. 2. Press the TV/VIDEO button on the Remote until the black cross-bar pattern ap- pears on the screen. 3. Adjust the FOCUS control (on T461) for well defined scanning lines on the picture screen.

[Page 11](#) ITEM ADJUSTMENT PROCEDURE WHITE BALANCE 1. Set Contrast to 40, and brightness to +20 by picture control. ADJUSTMENT 2. Set the TV in service mode, and get the inside W/B adjusting signal with VIDEO button. • CUTOFF ADJUSTMENT 3. Select RCUT, GCUT and BCUT with CHANNEL s, t buttons, to set individual (RCUT) values to Initial reference data, and to set GDRV and BDRV to Initial reference (GCUT)

[Page 12: Circuit Check](#)

CIRCUIT CHECK HIGH VOLTAGE CHECK CAUTION: There is no HIGH VOLTAGE ADJUSTMENT on this chassis. Checking should be done following the steps below. 1. Connect an accurate high voltage meter to the second anode of the picture tube. 2. Turn on the receiver. Set the BRIGHTNESS and CONTRAST controls to minimum (zero beam current). 3.

[Page 13: Chapter 2 Specific Informations](#)

CHAPTER 2 SPECIFIC INFORMATIONS SETTING & ADJUSTING DATA SAFETY INSTRUCTIONS 21" HIGH VOLTAGE AT ZERO BEAM: 29.1 kV MAX HIGH VOLTAGE: 31.3 kV AC VOLTAGE 110~240 V Table-1 SERVICE MODE ADJUSTING ITEMS AND DATAS IN THE SERVICE MODE: Item Adjustment Reference data Data ←...

[Page 14: Location Of Controls](#)

LOCATION OF CONTROLS Front VIDEO AUDIO MENU Video input terminal Main power on/off Audio input terminal Channel select Headphone jack Volume down/up Remote sensor TV/VIDEO select Power indicator Menu open Remote CALL On-screen on/off Power ON/standby TXT/TV Sound mute Direct select -/-...

[Page 15: Programming Channel Memory](#)

PROGRAMMING CHANNEL MEMORY • For easy Channel selection, the chosen Position should have the same number as Channel stored there. For this operation, you may use the "SEARCH" and "SKIP" functions. Example : Presetting Channel 12 to Position 12 Channel Preset Manual Search and Changing the assigned position Auto search memory (ASM)

[Page 16](#) • Under some reception conditions, fine tuning may be necessary to improve the picture quality. In such cases, adjust the manual fine tuning (MFT). • If the signal frequency is unstable due to environmental conditions, use auto fine tuning. Skip Function Auto fine tuning (AFT) If you set "SKIP ON"...

[Page 17: Chassis And Cabinet Replacement Parts List](#)

C141 24436101 CERAMIC DISC, 50V SL 100PF J C432 24794100 ELECTROLYTIC, 16V 10UF M C150 24232103 CERAMIC DISC, 50V F 0.01UF Z (21VZ5E) C433 24232103 CERAMIC DISC, 50V F 0.01UF Z C166 24232103 CERAMIC DISC, 50V F 0.01UF Z C434 24232103 CERAMIC DISC, 50V F 0.01UF Z...

[Page 18](#) CARBON FILM, 1/6W 220 OHM J C821 24214561 CERAMIC DISC, 500V B 560PF K R113 24366472 CARBON FILM, 1/6W 4.7K OHM J (21VZ5E) C822 24214102 CERAMIC DISC, 500V B 1000PF K R114 24366472 CARBON FILM, 1/6W 4.7K OHM J (21VZ5E)

[Page 19](#) CARBON FILM, 1/6W 47K OHM J R491 24366103 CARBON FILM, 1/6W 10K OHM J R172 24366162 CARBON FILM, 1/6W 1.6K OHM J (21VZ5E) R492 24366154 CARBON FILM, 1/6W 150K OHM J R173 24366102 CARBON FILM, 1/6W 1K OHM J (21VZ5E)

[Page 20](#) T401 23224983 TRANSFORMER, HORIZONTAL DRIVE, RA74 24366103 CARBON FILM, 1/6W 10K OHM J TLN1039 RA75 24366103 CARBON FILM, 1/6W 10K OHM J (21VZ5E) * T461Z 23236612 TRANSFORMER, HORIZ OUTPUT, SERVICE, RA76 24366472 CARBON FILM, 1/6W 4.7K OHM J TFB4159ZD RA77 24366472 CARBON FILM, 1/6W 4.7K OHM J (21VZ5E)

[Page 21](#) IC, P/N 2IN1 VCD MICRO TMPA8827CPNG4 QB43 23114459 TRANSISTOR, RN1205 (21VZ5T) QB60 23314965 TRANSISTOR, KTC3198 Y Q101 23314378 TRANSISTOR, 2SC3355 QB61 23314965 TRANSISTOR, KTC3198 Y (21VZ5E) Q103 23314965 TRANSISTOR, KTC3198 Y QS01 23114623 TRANSISTOR, 2SC2878-A(TEM Q104 23314965 TRANSISTOR, KTC3198 Y QS02 23114623 TRANSISTOR, 2SC2878-A(TEM...

[Page 22](#) Z1153752 CRYSTAL, 8.000 40PPM 50OHM Z101 23303136 CERAMIC TRAP, TCF1097 Z102 23303085 CERAMIC TRAP, TCF1092 Z103 23303271 FILTER, TRAP 4.5MHZ, TCF1138AM (21VZ5E) Z103 23303188 CERAMIC TRAP, TCF1113 (21VZ5T) Z104 23303268 FILTER, TCF1135AM (21VZ5T) Z106 23107856 COIL, FILTER, TCF1030 (21VZ5T) Z130...

[Page 23: Pc Boards Bottom View](#)

SIGNAL BOARD PD0939 (21VZ5E) SIGNAL BOARD PD1027 (21VZ5T) BOTTOM (FOIL) SIDE PD0907 G103 G103 RT29 RT28 RT18 GJ30 GJ30 M501 M501 MCL-437F RA42 RA42 Q101 Q101 RA57 RA57 CT21 CT21 CT20 CT20 RA43 RA43 R102 R102 RA76 RA76 24 23...

[Page 24](#) POW/DEF BOARD PD0909 BOTTOM (FOIL) SIDE - 25 - - 26 -...

[Page 25](#) CRT-D BOARD PD0906 BOTTOM (FOIL) SIDE - 27 -...

[Page 26: Terminal View Of Transistors](#)

TERMINAL VIEW OF TRANSISTORS 2SD2253 2SC3852 2SC752 2SA1788 2SC752GTM (old)
2SD1763A 2SC2482 2SA562TM 2SC1569 2SC5243 2SC2655 2SA1015 2SC4544 2SC4721P
2SC1815 2SA1788 2SC2878 2SA1306 2SC1740S 2SA1186A 2SC2120 2SA9335 ON4409 RN2203
2SD1554 2SD2253 RN2201 RN2004 2SD1556 RN1203 2SC5143 RN1204 2SD2553 RN2204
RN1205 RN1202 RN1201 -...

[Page 27](#) SCHEMATIC DIAGRAM MODEL : 21VZ5E / 21VZ5T WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON THE MANUAL FOR THIS MODEL. CAUTION: The international hazard symbols "*" in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.

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[Page 29: Specifications](#)

SPECIFICATIONS Rated voltage AC 110 V - 240 V, 50/60 Hz Power consumption 109 W (at AC 220 V, 50 Hz) Width 654.0 mm x Height 459.5 mm x Depth 475.7 mm Dimensions Mass 24.0 kg Picture tube TYPE 21 (549.1 mm) Overall picture tube measured diagonally (505.5 mm) Viewable picture tube measured diagonally 90°...

[Page 30](#) TOSHIBA CORPORATION 1-1, SHIBAURA 1- CHOME, MINATO-KU, TOKYO 105-8001, JAPAN...

[Page 31](#) SCHEMATIC DIAGRAM MODEL : 21VZ5E / 21VZ5T WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON THE MANUAL FOR THIS MODEL. CAUTION: The international hazard symbols "*" in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.

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[Page 33](#) SIGNAL / CRT DRIVE...

[Page 41](#) SIGNAL / CRT DRIVE...

[Page 42](#) 0.9 26.6 13.9 DC=0 115.2 1.0V DC=0 115V 26.3 26.9 80Vp-p(H) DC=0 DC=0 1.9V -0.15V 145Vp-p(H) 16.6 155V 115Vp-p(H) 240Vp-p(H) 28Vp-p(H) 1000Vp-p(H) CAUTION: DO NOT USE DIGITAL VOLTMETER FOR MEASURING COLLECTOR VOLTAGE OF Q404. POWER / DEF...

[Page 44](#) 115.2...

[Page 45](#) 0.9 26.6 13.9 DC=0 1.0V DC=0 26.9 26.3...

[Page 46](#) 115V 80Vp-p(H) DC=0...

[Page 48](#) DC=0 16.6...

[Page 49](#) 1.9V -0.15V 16.6 155V 1000Vp-p(H) CAUTION: DO NOT USE DIGITAL VOLTMETER FOR MEASURING COLLECTOR VOLTAGE OF Q404.

[Page 50](#) 145Vp-p(H) 115Vp-p(H) 240Vp-p(H) 28Vp-p(H) POWER / DEF...

[Page 51](#) * MARKS DIFFERENCE REFER TO : SIGNAL 21VZ3E 21VZ5E 21VZ3R 21VZ5MX 21VZ3T 21VZ5T 21VZ3M 21VZ3MJ DIFFERENCE TABLE...

[Page 58](#) * MARKS DIFFERENCE REFER TO : SIGNAL...

This manual is also suitable for:

[21vz5t](#)