

TOSHIBA

Toshiba 13A24 Service Manual

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FILE NO. 050-200408

SERVICE MANUAL

COLOR TELEVISION **TOSHIBA**

13A24

DOCUMENT CREATED IN JAPAN, Mar., 2004

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Summary of Contents for Toshiba 13A24

[Page 1](#) FILE NO. 050-200408 SERVICE MANUAL COLOR TELEVISION 13A24 DOCUMENT
CREATED IN JAPAN, Mar., 2004...

[Page 2: Servicing Notices On Checking](#)

SERVICING NOTICES ON CHECKING 1. KEEP THE NOTICES 6. AVOID AN X-RAY As for the places which need special attentions, Safety is secured against an X-ray by consider- they are indicated with the labels or seals on the ing about the cathode-ray tube and the high cabinet, chassis and parts.

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CONTENTS SERVICING NOTICES ON CHECKING A1-1 HOW TO ORDER PARTS A1-1 IMPORTANTA1-1 CONTENTSA2-1 GENERAL SPECIFICATIONSA3-1~A3-5 DISASSEMBLY INSTRUCTIONS 1.REMOVAL OF ANODE CAPB1-1 2.REMOVAL AND INSTALLATION OF FLAT PACKAGE IC B2-1, B2-2 SERVICE MODE LIST

[Page 4: General Specifications](#)

GENERAL SPECIFICATIONS CRT Size / Visual Size 13 inch / 335.4mmV System CRT Type Normal Deflection degree Magnetic Field BV/BH +0.45G/0.18G Color System NTSC Speaker 1Speaker Position Bottom Size 3 Inch Impedance Sound Output 1.0 W 10%(Typical) 0.8 W NTSC3.58+4.43 /PAL60Hz Tuning Broadcasting System System M...

[Page 5](#) GENERAL SPECIFICATIONS On Screen Menu Display Menu Type Character Picture Contrast Brightness Color Tint Sharpness Audio Bass Treble Balance BBE On/Off Stable Sound On/Off CH Set Up TV/CABLE(CATV) Auto CH Memory Add/ Delete Language V-chip Lock On Timer CH Label Favorite CH Color Stream DVD/DTV Control Level...

[Page 6](#) GENERAL SPECIFICATIONS G-10 Remote Unit RC-EH Control Glow in Dark Remocon Format Toshiba Custom Code 40-BF h Power Source Voltage(D.C) UM size x pcs UM-4 x 2 pcs Total Keys Keys Keys Power CH Up CH Down Volume Up Volume Down...

[Page 7](#) GENERAL SPECIFICATIONS G-11 Features Auto Degauss Auto Shut Off Canal+ CATV Anti-theft Rental Memory(Last CH) Memory(Last Volume) V-Chip Type USA,ORION Type Auto Search CH Allocation Channel Lock Just Clock Function Game Position CH Label VM Circuit Full OSD Premiere Comb Filter Lines Auto CH Memory Hotel Lock...

[Page 8](#) GENERAL SPECIFICATIONS G-13 Interface Switch Front Power System Select Main Power SW Sub Power Channel Up/Reset Channel Down/Enter Volume Up/Set Up Volume Down/Set Down MENU=Volume Up+Volume Down Rear AC/DC TV/CATV Selector Degauss Main Power SW Indicator Power Stand-by On Timer Terminals Front Video Input...

[Page 9: Disassembly Instructions](#)

DISASSEMBLY INSTRUCTIONS 3. After one side is removed, pull in the opposite direction to 1. REMOVAL OF ANODE CAP remove the other. Read the following NOTED items before starting work. NOTE After turning the power off there might still be a potential Take care not to damage the Rubber Cap.

[Page 10: Removal And Installation Of Flat Package Ic](#)

DISASSEMBLY INSTRUCTIONS When IC starts moving back and forth easily after REMOVAL AND INSTALLATION OF desoldering completely, pickup the corner of the IC using a FLAT PACKAGE IC tweezers and remove the IC by moving with the IC desoldering machine. (Refer to Fig. 2-3.) REMOVAL NOTE Put the Masking Tape (cotton tape) around the Flat...

[Page 11](#) DISASSEMBLY INSTRUCTIONS INSTALLATION When bridge-soldering between terminals and/or the soldering amount are not enough, resolder using a Thin-tip Take care of the polarity of new IC and then install the new Soldering Iron. (Refer to Fig. 2-8.) IC fitting on the printed circuit pattern. Then solder each lead on the diagonal positions of IC temporarily.

[Page 12: Service Mode List](#)

SERVICE MODE LIST This unit provided with the following SERVICE MODES so you can repair, examine and adjust easily. To enter the Service Mode, press both set key and remote control key for more than 1 second. Set Key Remocon Key Operations Releasing of V-CHIP PASSWORD.

[Page 13: Electrical Adjustments](#)

ELECTRICAL ADJUSTMENTS 1. ADJUSTMENT PROCEDURE 2. BASIC ADJUSTMENTS Read and perform these adjustments when repairing the 2-1: CUT OFF circuits or replacing electrical parts or PCB assemblies. Adjust the unit to the following settings. CAUTION R.DRIVE=10, B.DRIVE=10, R.BIAS=64, G.BIAS=64, • Use an isolation transformer when performing any service B.BIAS=64, BRI.CENT=120, CONT.MAX=40.

[Page 14](#) ELECTRICAL ADJUSTMENTS 2-6: VERTICAL SIZE Receive the monoscope pattern.

Using the remote control, set the brightness and contrast to normal position. Activate the adjustment mode display of Fig. 1-1 and press the channel button (06) on the remote control to select "V".

[Page 15](#) ELECTRICAL ADJUSTMENTS 3. PURITY AND CONVERGENCE 3-3: STATIC CONVERGENCE ADJUSTMENTS NOTE Adjust after performing adjustments in section 3-2. NOTE Receive the crosshatch pattern from the color bar Turn the unit on and let it warm up for at least 30 generator.

[Page 16](#) ELECTRICAL ADJUSTMENTS 4. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION) CRT PCB CP806 TP022 TU001 CP803A TP023 FB401 CP802B CP801 DEGAUSS COIL CP502 S501B AC IN S501A CD101B SPEAKER CD101A MAIN PCB...

[Page 17: Block Diagram](#)

BLOCK DIAGRAM TU001 11 12 EAR PHONE JACK J1001 CH. DOWN IC1001 AN7511 VOL. DOWN MICON/CHROM IC101 OEC7091B SPEAKER SOUND AMP SP1001 CH. UP RGB Proc.2 VOL. UP Q801 OSD SW CONTRAST BRIGHTNESS RED OUT RGB OUTPUT Stage POWER Chroma DRIVE Proc.

[Page 18: Printed Circuit Boards Main/Crt](#)

PRINTED CIRCUIT BOARDS MAIN/CRT (INSERTED PARTS) SOLDER SIDE D408 CP601 C406 R403 C435 W003 D410 CP803A S101A W002 D405 W008 R410 W007 C403 C448_1 FB401 C434 C401_1 C440 R421 R408 W001 W062 L401 Q402 R542 W011 Q401 W830 HS501 R446 D509 C446 R503...

[Page 19](#) PRINTED CIRCUIT BOARDS MAIN/CRT (CHIP MONUTED PARTS) SOLDER SIDE R704 R128 R101 C112 R610 R609 C627 C626 R627 C1004_2 R108 R105 C609 C104 C102 R129 R104 C501_2 R420 R003 R004 C001...

[Page 20](#) MICON/CHROMA/TUNER SCHEMATIC DIAGRAM (MAIN PCB) H.CTL Q607 KTC3198 R621 220 1/4W R618 FROM/TO DEFLECTION/CRT R608 CLAMP C118 1K 1/4W R110 10K 1/4W P.CON+B C101 6.3V V_OUT R109 10K 1/4W 0.01 C630 V_FEEDBACK AT+5V ABCL H_OUT R124_1 C629 X-RAY 1 CNVSS 41 NC R130 0.01...

[Page 21](#) TV POWER SCHEMATIC DIAGRAM (MAIN PCB) CAUTION :FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE 4A 125V (F501) FUSE. ATTENTION :POUR UNE PROTECTION CONTINUE LES RISQUES 4A 125V D'INCEIE N'UTILISER QUE DES FUSIBLE DE MEME TYPE 4A 125V (F501). TO SOUND/AV R517_1 D505...

[Page 22](#) DEFLECTION/CRT SCHEMATIC DIAGRAM (MAIN PCB) CD802 CP802A B2013H02-5P CP802B B2013H02-5P FROM MICON/CHROMA/TUNER CLAMP CLAMP CLAMP CLAMP CLAMP G.OUT G.OUT G.OUT G.OUT G.OUT R.OUT R.OUT R.OUT R.OUT R.OUT B.OUT B.OUT B.OUT B.OUT B.OUT V-OUT IC IC401 LA78040N-E CD803 CP803A B2013H02-4P CP803B B2013H02-4P HEATER HEATER HEATER...

[Page 23](#) SOUND/AV SCHEMATIC DIAGRAM (MAIN PCB) RCA JACK WHITE TO MICON/CHROMA/TUNER J703 (FRONT) AV1-09D-4 ACCESSORY R703 W811 AUDIO 2 AUDIO_IN A_IN UM-4 BT001 R704 V_IN VIDEO 2 VIDEO_IN R03(AB)E_2P_G RCA JACK YELLOW UM-4 TM101 J702 RC-EH050(CT-859) BT002 R03(AB)E_2P_G AV1-09D-3 EAR PHONE JACK J1001 MSJ-035-12A_PC R1007...

[Page 24: Micon/Chroma/Tuner](#)

WAVEFORMS MICON/CHROMA/TUNER 1 0.5V 2ms/div 6 1V 20µs/div 200V 20µs/div 1V 20µs/div 10V 5ms/div 20V 20µs/div DEFLECTION/CRT 3 200mV 20µs/div 0.5V 5ms/div 10V 5ms/div 0.5V 5ms/div 9 20V 20µs/div 50V 20µs/div 10 2V 20µs/div 15 50V 20µs/div 1V 20µs/div NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

[Page 25: Sound/Av](#)

WAVEFORMS 16 50V 20µs/div SOUND/AV 0.5V 1ms/div 1V 1ms/div 200mV 500µs/div 20 500mV 20µs/div NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

[Page 26: Mechanical Exploded View](#)

MECHANICAL EXPLODED VIEW PCB110 (CRT PCB ASS'Y) 101D PCB010 (MAIN PCB ASS'Y) 101B 101C 101A...

[Page 27](#) MECHANICAL EXPLODED VIEW (PACKING DIAGRAM) 118, 119, 120, TM101...

[Page 28: Mechanical Replacement Parts List](#)

MECHANICAL REPLACEMENT PARTS LIST Location No. TSB P/N Reference No. Description
AE003318 A3M127G720 CABINET,FRONT ASSY 101A AE004096 701WPJC674 CABINET,FRONT
101B AE004097 713WPAA147 GLASS,LED 101C AE004098 713WPAA146 GUIDE,REMOCON 101D
AE004099 735WPBB102 BUTTON,FRAME AE003321 A3M127G740 CABINET,BACK ASSY
BZ710260 899HV3T000 HOLDER,ANODE WIRE AE000006 7220001119 SHEET,CSA WARNING
AE000091...

[Page 29: Electrical Replacement Parts List](#)

ELECTRICAL REPLACEMENT PARTS LIST Location No. TSB P/N Reference No. Description
RESISTORS ! R401 BZ210089 R4X5T6273F R,METAL 27K OHM 1/6W ! R404 AE004065
R615U2151J R,FUSE 150 OHM 1/2W ! R408 BZ210092 R4X5T6103F R,METAL 10K OHM 1/6W !
R409 BZ210089 R4X5T6273F R,METAL 27K OHM 1/6W ! R429...

[Page 30](#) ELECTRICAL REPLACEMENT PARTS LIST Location No. TSB P/N Reference No.
Description DIODES ! D516 AD300731 D2WXN49370 DIODE,SILICON 1N4937 D521 BZ410022
D97U06R81B DIODE,ZENER MTZJ6.8B T-77 D522 BZ410006 D1VT001330 DIODE,SILICON
1SS133T-77 D528 BZ410021 D97U05R61B DIODE,ZENER MTZJ5.6B T-77 D602 BZ410023
D97U09R11B DIODE,ZENER MTZJ9.1B T-77 D603 BZ410006 D1VT001330...

[Page 31](#) ELECTRICAL REPLACEMENT PARTS LIST Location No. TSB P/N Reference No.
Description MISCELLANEOUS EL002 BZ614044 124120301A EYE LET XRY20X30BD ! F501
AD302166 081PC04005 FUSE 51MS040L ! FB401 AE003330 043214050F
TRANSFORMER,FLYBACK FNI14B002_M FH501 AE002634 06710T0009 HOLDER,FUSE EYF-52BCY
FH502 AE002634 06710T0009 HOLDER,FUSE EYF-52BCY OS101 AD301048 0773071001...

[Page 32](#) TOSHIBA CORPORATION 1-1, SHIBAURA 1-CHOME, MINATO-KU, TOKYO 105-8001,
JAPAN...