

TOSHIBA

Toshiba 20AS21 Service Manual

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18

19

20

21

22

23

24

25

26

27

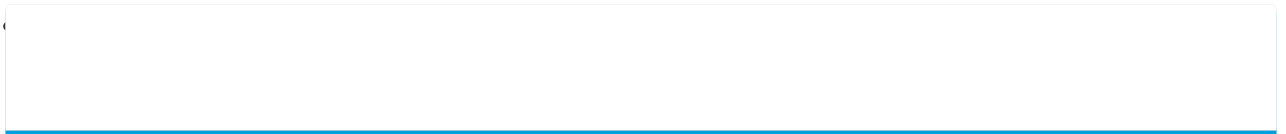
28

29

30

Table Of Contents

31



•

Table of Contents

-

Bookmarks

--

Quick Links

[1 Block Diagram](#)

[Download this manual](#)

See also: [Owner's Manual](#)



FILE NO. 050-200117

SERVICE **TOSHIBA** MANUAL
COLOR TELEVISION
20AS21

DOCUMENT CREATED IN JAPAN, AUG., 2001

Table of Contents

[Next Page](#)

1
2
3
4
5

Related Manuals for Toshiba 20AS21

[CRT TV Toshiba 20AS21 Owner's Manual](#)

Toshiba 20as21: owners manual (9 pages)

[TV Toshiba 20AS26 Owner's Manual](#)

Toshiba color television owner's manual 20as26 (29 pages)

[TV Toshiba 20AS26 Service Manual](#)

(34 pages)

[TV Toshiba 20AS23 Owner's Manual](#)

Toshiba color television owner's manual 20as23 (14 pages)

[TV Toshiba 20AS23 Service Manual](#)

Color television (5 pages)

[TV Toshiba 20AS23 Service Manual](#)

(35 pages)

[TV Toshiba 20AS24 Owner's Manual](#)

Toshiba color television owner's manual 20as24 (28 pages)

[TV Toshiba 20AS24 Service Manual](#)

Color television (32 pages)

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20as22 user's guide (9 pages)

[TV Toshiba 20AS22 Service Manual](#)

(33 pages)

[TV Toshiba 20AS25 Owner's Manual](#)

20as25 user's guide (15 pages)

[TV Toshiba 20AS25 Service Manual](#)

(33 pages)

[TV Toshiba 20AS20 Service Manual](#)

N0e chassis (2 pages)

[TV Toshiba 14AF46C Owner's Manual](#)

Fstpure colorstream color television (56 pages)

[TV Toshiba 20AF44 Service Manual](#)

Color television (41 pages)

[TV Toshiba 20A22 Service Manual](#)

Color television (34 pages)

Summary of Contents for Toshiba 20AS21

[Page 1: Service Manual](#)

FILE NO. 050-200117 SERVICE MANUAL COLOR TELEVISION 20AS21 DOCUMENT CREATED IN JAPAN, AUG., 2001...

[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.

[Page 3: General Specifications](#)

GENERAL SPECIFICATIONS CRT Size / Visual Size 19 inch / 480.0mmV System CRT Type Normal Deflection degree Magnetic Field BV/BH +0.35G/0.30G Color System NTSC Speaker 1Speaker Position Bottom Size 3 Inch Impedance Sound Output 1.5 W 10%(Typical) 1.0 W NTSC3.58+4.43 /PAL60Hz Tuning Broadcasting System System M...

[Page 4](#) Wake Up Timer Timer Back-up (at Power Off Mode) more than 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...

[Page 5](#) 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 6](#) 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 7: Removal Of Anode Cap](#)

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 8: Removal And Installation Of Flat Package Ic](#)

DISASSEMBLY INSTRUCTIONS REMOVAL AND INSTALLATION OF When IC starts moving back and forth easily after desoldering completely, pickup the corner of the IC using FLAT PACKAGE IC a 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 9](#) DISASSEMBLY INSTRUCTIONS INSTALLATION When bridge-soldering between terminals and/or the soldering amount are not enough, resolder using a Thin- Take care of the polarity of new IC and then install the tip Soldering Iron. (Refer to Fig. 2-8.) new IC fitting on the printed circuit pattern. Then solder each lead on the diagonal positions of IC temporarily.

[Page 10: 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. Remocon Key Set Key Operations Releasing of V-CHIP PASSWORD.

[Page 11: Before Making Electrical Adjustments](#)

ELECTRICAL ADJUSTMENTS 2. BASIC ADJUSTMENTS BEFORE MAKING ELECTRICAL ADJUSTMENTS 2-1: RF AGC DELAY Read and perform these adjustments when repairing the Place the set with Aging Test for more than 15 minutes. circuits or replacing electrical parts or PCB assemblies. Receive a 63dB monoscope pattern.

[Page 12](#) ELECTRICAL ADJUSTMENTS 2-9: OSD HORIZONTAL Activate the adjustment mode display of Fig. 1-1. Press the VOL. UP/DOWN button on the remote control until the difference of A and B becomes minimum. (Refer to Fig. 2-3) "A" Fig. 2-1 00 OSD Fig.

[Page 13: Purity And Convergence Adjustments](#)

ELECTRICAL ADJUSTMENTS 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. minutes before performing the following adjustments.

[Page 14: Major Components Location Guide](#)

MAJOR COMPONENTS LOCATION GUIDE R606 TU001 FB401 CP601 FOCUS VOLUME SCREEN

[Page 15: Block Diagram](#)

BLOCK DIAGRAM TU001 CHROMA IC CH UP IC601 M61206FP X602 3.579545MHz IC351 AN7511 VOL UP X' TAL AUDIO OUT Q607 MICON IC SOUND AMP SP351 CH DOWN RF AGC OUT IC101 OEC7063A CF601 POWER ON CONT SAW FILTER VIF IN (1) VOL DOWN P02/AUDIO MUTE Q606...

[Page 16](#) PRINTED CIRCUIT BOARDS MAIN/CRT (INSERTED PARTS) SOLDER SIDE CD501_2_A_V R500_1 D509 D109 CP502 TP002 L501_1 C526_2 OS101 HEATER TP004 FH502 S501A F501 FH501 D504 4A125VOR250V W804 D520 C502 W068 R542 C503 C801 180V Q803_1 Q802_1 CP801_1 FB401 Q502 C511_1...

[Page 17](#) PRINTED CIRCUIT BOARDS MAIN/CRT (CHIP MOUNTED PARTS) SOLDER SIDE R604 R605 R134 C120 R626 C138 C629 C650 IC101 R634 C140 R127 R122 C116 R007 R420 R132 R113 R702 R360 C353 R512 R813...

[Page 18](#) MICON/TUNER SCHEMATIC DIAGRAM ACCESSORY (MAIN PCB) UM-4 BT001 R03(AB)E_20_T TU001 ENV56D66G3 UM-4 TM101 BT002 RC-EH010 R03(AB)E_20_T C003 FROM/TO CHROMA OS101 PIC-28143SY-2 R132 TUNER+5V W837 POWER LED R002 R001 D109 SLR-342VCT32 18K 1/2W 18K 1/2W I2C_OFF MICON IC IC101 OEC7063A C137 R123 OSD_R P50/H.SYNC...

[Page 19](#) CHROMA SCHEMATIC DIAGRAM (MAIN PCB) FROM TV POWER UNREG+12V Q605 Q604 KTC3203_Y KTC3203_Y Q606 KTC3203_Y 11.3 R639 CF604 TPSRA4M50C00-A0 Q603 KTC3203_Y FROM SOUND/AV C647 R615 CF603 VIDEO_IN EFCT4R5Y55A R638 R646 C638_1 R634 FROM/TO SOUND/AV R611 R612 R642 D605 AUDIO_OUT AUDIO OUT ACL/ABCL 100 1/4W 11E1-EIC...

[Page 20](#) 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 D'INCEIE N'UTILISER QUE DES FUSIBLE DE MEME 4A 125V TYPE 4A 125V (F501). TO SOUND/AV R517 D505...

[Page 21](#) DEFLECTION/CRT SCHEMATIC DIAGRAM CP802A CP802B (MAIN PCB) (CRT PCB) B2013H02-10P B2013H02-10P FROM CHROMA CLAMP CLAMP CLAMP CLAMP CLAMP 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 C807 V-OUT IC IC401 AN5522 HEATER HEATER 0.0047 Y HEATER HEATER...

[Page 22](#) SOUND/AV SCHEMATIC DIAGRAM (MAIN PCB) TO CHROMA J703 (FRONT) AV1-09D-4 R703 AUDIO 2 AUDIO_IN A_IN 820 1/4W V_IN VIDEO 2 VIDEO_IN CC002 TP-1S-05 J702 AV1-09D-3 W807 CD351 SPEAKER CH122301 SP OUT L+ SOUND GND SP351 S08F21 8 OHM FROM TV POWER SOUND_GND SOUND+B FROM MICON/TUNER...

[Page 23](#) WAVEFORMS MICON/TUNER 11 1V 20µs/div 200mV 200ms/div 0.5V 20µs/div 12 1V 20µs/div 500mV 20µs/div 0.5V 20µs/div 1V 20µs/div 3 200mV 20µs/div 20V 20µs/div DEFLECTION/CRT 200mV 5ms/div 14 0.5V 5ms/div 9 200mV 20µs/div CHROMA 15 20V 20µs/div 0.5V 5ms/div 0.5V 2ms/div NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

[Page 24](#) WAVEFORMS 16 2V 20µs/div 21 50V 20µs/div 26 500mV 20µs/div 200V 20µs/div 22 50V 20µs/div SOUND/AV 10V 5ms/div 0.5V 1ms/div 10V 5ms/div 1V 1ms/div 50V 20µs/div 25 500mV 1ms/div NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

[Page 25: Mechanical Exploded View](#)

MECHANICAL EXPLODED VIEW J801 PCB110 (CRT PCB) L503 FB401 V801 TU001 PCB010 (MAIN PCB) SP351...

[Page 26: Mechanical Replacement Parts List](#)

MECHANICAL REPLACEMENT PARTS LIST Location No. TSB P/N Reference No. Description
AD300891 A3J911A720 CABINET,FRONT ASSY BZ710009 741WUA0019 SPRING,EARTH
AD300695 713WPAA051 GLASS,LED AD300892 A3J911A740 CABINET,BACK ASSY AD300693
701WPJB223 CABINET,FRONT AD300694 713WPAA050 GUIDE,REMOCON AD300696

735WPBA247 BUTTON,FRAME BZ710260 899HV3T000 HOLDER,ANODE WIRE AD300842
702WPAA176 CABINET,BACK AD300893 722549A034...

[Page 27: Electrical Replacement Parts List](#)

ELECTRICAL REPLACEMENT PARTS LIST Location No. TSB P/N Reference No. Description
RESISTORS ! R401 BZ210013 R4X5T4104F R,METAL 100K OHM 1/4W ! R405 BZ210023
R4X5T4183F R,METAL 18K OHM 1/4W ! R406 AD300655 R903N8222J 2.2K OHM 1/8W ! R407
BZ210052 R002T21R8J 1.8 OHM 1/2W ! R408 BZ210092 R4X5T6103F...

[Page 28](#) ELECTRICAL REPLACEMENT PARTS LIST Location No. TSB P/N Reference No.
Description DIODES D519 BZ410006 D1VT001330 DIODE,SILICON 1SS133T-77 ! D520
BZ410085 D2WXN40050 DIODE,SILICON 1N4005-EIC ! D521 BZ410085 D2WXN40050
DIODE,SILICON 1N4005-EIC ! D522 BZ410085 D2WXN40050 DIODE,SILICON 1N4005-EIC D528
BZ410021 D97U05R61B DIODE,ZENER MTZJ5.6B T-77 D601 BZ410006 D1VT001330...

[Page 29](#) ELECTRICAL REPLACEMENT PARTS LIST Location No. TSB P/N Reference No.
Description MISCELLANEOUS FH502 BZ614005 06710T0006 HOLDER,FUSE EYF-52BC OS101
BZ614171 077Q014003 REMOTE RECEIVER PIC-28143SY-2 S101 AD300889 WHL6032038 FLAT
CABLE AWM2468 A WG26 10C BLACK 320MM ! SP351 AD300689 070Y132018 SPEAKER S08F21
! TH501 BZ410079 DF5EL3R0A0...

[Page 30](#) TOSHIBA AMERICA CONSUMER PRODUCTS,INC. HEAD OFFICE / 82 TOTOWA
ROAD,WAYNE,NEW JERSEY 07470 U.S.A. TOSHIBA HAWAII,INC. HEAD OFFICE / 327 KAMAKEE
STREET,HONOLULU,HAWAII 96814 U.S.A.