



Toshiba FT-8901 Service Manual

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FILE NO. 2B0-200102

SERVICE MANUAL **TOSHIBA**

CORDLESS TELEPHONE

FT-8901

PUBLISHED IN JAPAN, Apr., 2001

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[Page 3: Operating Controls](#)

OPERATING CONTROLS HANDSET CONTROLS AND FUNCTIONS SETTING THE DIAL MODE 1 Press and hold until you hear FLASH Antenna a confirmation tone. 2 To set the dial mode for pulse dialing, press . Or to set the dial mode for tone dialing press .

[Page 4: Answering Machine](#)

ANSWERING MACHINE SETTING THE CLOCK 1. Press twice, then press MENU 2. Select the day of the week by pressing . When the correct day is announced, SELECT SELECT press 3. Select the hour by pressing . When the correct hour is announced, press SELECT SELECT 4.

[Page 5: Alignment Procedure](#)

ALIGNMENT PROCEDURE Base Unit Transmitter Section Connections BASE Unit AF GEN. Test Point Power Meter DC IN TEL Line 1kHz -15dBm 9V Jack Jack Test Point Frequency Counter AC 120V Adapter 60Hz Deviation Meter Preset Press and hold the "ANSWER" key about 5.0 seconds while turning the 7. SEG LED shows "8" . Alignment Procedure step Adjustment...

[Page 6](#) Receiver Section Connections BASE Unit AC Voltmeter RF SG Dummy Load (600-ohm) TEL Line Test Point Jack DC Voltmeter DC IN 9V Jack Test Point AC 120V 60Hz Adapter Preset Place the Base Unit in RX SENS mode (step 11) in accordance with the procedure on page 4. Alignment Procedure step Preset to...

[Page 7](#) Handset Unit Transmitter Section Connections HANDSET Unit AF GEN. Test Point Power Meter J601 Battery 1kHz 9mV MIC+Pin Connector Test Point Frequency Counter DC Power Supply Deviation Meter DC 3.8V Preset a) Connect the handset RF unit to the handset main unit. b) Connect DC power supply to battery connector on the handset unit.

[Page 8](#) Receiver Section Connections HANDSET Unit AC Voltmeter RF SG Dummy Load (150-ohm) Test Point Terminal DC Power Supply J601 DC Voltmeter Battery Test Point Connector DC 3.8V Preset a) Connect the handset RF unit to the handset main unit. b) Connect DC power supply to battery connector on the handset unit. c) Turn the DC power supply ON while pressing "...

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BLOCK DIAGRAMS Base Unit — 8 —...

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SCHEMATIC DIAGRAMS Base Unit — 10 — — 11 —...

[Page 12](#) Handset — 12 — — 13 —...

[Page 13: Troubleshooting Hints](#)

TROUBLESHOOTING HINTS 1. The bell does not ring. Set RINGER volume setting Check RINGER mode setting to Hi or Low. is Hi or Low. See 2. The bell does not ring When the PAGE SW of the & page does not ring. base is pressed, does the ringer on the handset ring? When the TEL SG is joined...

[Page 14](#) 2. The bell does not ring & page does not ring. Can the base and handset be See 3. The base and handset connected? cannot be connected. Press handset DIAL key When the key of the handset is Check IC604. while in TALK MODE.

[Page 15](#) 3. The base and handset cannot be connected. Check whether the base Check IC4 and its is able to set in the test peripheral circuit. mode 8. Check the TX POWER Check base RF unit. and the TX FREQUENCY on the base unit. Set the base in the test Check whether there is a Check RT3, R76, R91,...

[Page 16](#) Set the handset in the Check whether there is a Check RT603, R641, test mode 3, check 250 Hz data waveform at R642, R643, R644, whether deviation of the "MOD" of RF unit. R645 and C653. TX data is app. 9.0 kHz Dev.

[Page 17](#) 4. Cannot make a phone call (pulse). Can the base and handset See 3. The base and handset be connected? cannot be connected. While in TALK MODE, press Check IC4. dial key of the handset. Check whether square waveform from pin 80 of IC4 is fed.

[Page 18](#) 6. Voice cannot be transmitted to other party (outgoing call). Can the base and handset be See 3. The base and handset connected? cannot be connected. The 1 kHz, 9.0mV sine Check Q604 and its wavefor m i s a p l i e d t o peripheral circuit.

[Page 19](#) 7. The voice of the caller cannot be heard (incoming call). Can the base and handset be See 3. The base and handset connected? cannot be connected. The 1 kHz, -15dBm sine Check the base TEL-line waveform is applied to TEL- circuit and REPLAY control line of the base, can the 1 kHz circuit.

[Page 20: Ic And Transistor Voltage Chart](#)

IC AND TRANSISTOR VOLTAGE CHART TRANSISTORS Unit [V] Unit [V] Ref. Ref. STBY Note TALK Note STBY Note TALK Note 2.1-2.5 0.4-0.6 3.1-3.5 2.32 2.6/3.3 1.0-1.3 -3.1/0.6 -3.6/0.8 0-3.6 Q601 0-2.2 PULSE 0-0.7 PULSE 0-0.6 PULSE Q602 0-2.0 PULSE 0-1.0 PULSE 0-3.0 PULSE...

[Page 21](#) Unit [V] IC's Unit [V] Ref. Ref. STBY Note TALK Note STBY Note TALK Note Q610 w/o CHG Q611 Q612 0-0.6 PULSE 0-0.6 PULSE 3.5-0.0 DATA(PULSE) 3.5-0.0 DATA(PULSE) Q613 0-3.8 PULSE 0-0.7 PULSE 3.9-2.5 X'TAL 3.9-2.5 X'TAL 3.1-2.3 X'TAL 3.1-2.3 X'TAL 2.4-2.0 3.4-3.2...

[Page 22](#) IC's Unit [V] Unit [V] Ref. Ref. STBY Note TALK Note STBY Note TALK Note ROW01 ROW01 ROW02 ROW02 TONE_OUT TONE_OUT Dvcc Dvcc DGND DGND 3.5-0.0 DATA_IN 3.5-0.0 DATA_IN RX_MUTE RX_MUTE TX_MUTE TX_MUTE 3.2-0.0 PLENB PLENB 3.2-0.0 PLLDAT PLLDAT 3.2-0.0 PLLCLK PLLCLK TX_CONT...

[Page 23](#) Unit [V] Unit [V] Ref. Ref. STBY Note TALK Note STBY Note TALK Note 0/SineWave 10.1MHz SineWave 10.1MHz 0/SineWave 10.1MHz SineWave 10.1MHz 0-2.4 PULSE ClippedWave 455kHz 0-3.0 PULSE 0-2.6 PULSE SineWave 455kHz 0-2.6 PULSE 0-2.6 PULSE 0-3.0 PULSE Vol:MEDIUM IC601 0.85 NOISE 0-0.7...

[Page 24](#) Unit [V] Ref. STBY Note TALK Note 0-3.6 PULSE Vol:MEDIUM Vol:MEDIUM 1.0-3.0 1.0-3.0 IC604 0-3.0 PULSE 0-3.0 NOISE 0-3.8 PULSE 0-2.5 PULSE 0-0.8 PULSE 0-3.0 PULSE 0-3.0 PULSE 0-3.0 PULSE 0-3.5 PULSE IC605 0-1.3 PULSE PULSE BATT:3.8V BATT:3.8V BATT:3.8V BATT:3.8V IC606...

[Page 25: Semiconductor Lead Identification](#)

SEMICONDUCTOR LEAD IDENTIFICATION DIODES RLS4148 1N4148 ELD406 HZK6C HZ33-2 HZ33CP HZ4B1 Anode Anode Cathode HZ6B2 HZ6C3 HZ11A 16 15 14 13 12 11 10 9 Cathode DIGIT 1 DIGIT 2 SML-310LT RB420D SML-310MT Cathode Anode Cathode Anode (Open) TRANSISTOR 2SD471 2SC2714 2SC2120 2SC1623...

[Page 26](#) D16559 K9F4008WOA CD11 CD12 N.C. N.C. CD13 N.C. N.C. CD14 N.C. N.C. CD15 N.C. N.C. CA10 N.C. N.C. CA11 N.C. N.C. GPIO15 CA12 GPIO14 CA13 N.C. N.C. GPIO13 CA14 N.C. N.C. GPIO12 CA15 N.C. N.C. GPIO11 N.C. N.C. GPIO10 N.C. N.C.

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[Page 31: Exploded View And Mechanical Parts List](#)

EXPLODED VIEW AND MECHANICAL PARTS LIST RF MODULE (HANDSET) HANDSET MAIN PCB ASSY BASE MAIN PCB ASSY SP751 RF MODULE SP801 (BASE) BASE KEY PCB ASSY AT751 — 32

—...

[Page 32](#) LOC. PART NO. REF NO. DESCRIPTION RC009896 GNBZ366565Z BUTTON, FUNCTION RC009557 GNBZ447715Z BUTTON, FUNCTION RC009897 GNBZ467967Z BUTTON, FUNCTION RC009898 GNBZ467968Z BUTTON, PUSH PMMA RC009894 GCAS266581Z CASE, BOTTOM RC009893 GCAS266564Z CASE, TOP RC009325 HTML446079Z CHARGE TERMINAL C5191(PBP) RC009396 GCAS346381Z DISPLAY WINDOW PMMA RC009837 LFUT494200Z...

[Page 33: Parts List](#)

PARTS LIST PRODUCT SAFETY NOTE: Products marked with a have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice of this service manual. Don't degrade the safety of the product through important servicing. Symbol Symbol ±1...

[Page 34](#) LOC. PART NO. REF NO. DESCRIPTION RC005468 BCEQ904706Z ELECTROLYTIC 47UF 6.3V M C-125 RC005202 BCML311045Z CERAMIC M/L 0.1UF 16V K B RC005202 BCML311045Z CERAMIC M/L 0.1UF 16V K B RC008269 BCML316835Z CERAMIC M/L 0.068UF 16V K B RC005202 BCML311045Z CERAMIC M/L 0.1UF 16V K B RC005203 BCML512235Z...

[Page 35](#) LOC. PART NO. REF NO. DESCRIPTION C109 RC005205 BCML811035Z CERAMIC M/L 0.01UF 50V K B C110 RC004445 BCAZ903316Z ELECTROLYTIC 330UF 6.3V M C-156 C111 RC005205 BCML811035Z CERAMIC M/L 0.01UF 50V K B C112 RC001794 BCAZ111016Z ELECTROLYTIC 100UF 10V M C-156 C113 RC005202 BCML311045Z...

[Page 36](#) LOC. PART NO. REF NO. DESCRIPTION C170 RC005401 BCXT111055Z CERAMIC M/L (2125) 1UF 10V K B C171 RC009567 BCXS311055Z CERAMIC M/L (3216) 1UF 16V K B C601 RC005216 BCMM813304Z CERAMIC M/L 33PF 50V J CH C602 RC008731 BCXK311050Z CERAMIC M/L (2125) 1UF 16V Z F C603 RC005202...

[Page 37](#) LOC. PART NO. REF NO. DESCRIPTION C659 RC005216 BCMM813304Z CERAMIC M/L 33PF 50V J CH C660 RC005216 BCMM813304Z CERAMIC M/L 33PF 50V J CH C661 RC009271 BCDB901016Z ELECTROLYTIC 100UF 6.3V M C-326 C662 RC005205 BCML811035Z CERAMIC M/L 0.01UF 50V K B C663 RC005205 BCML811035Z...

[Page 38](#) LOC. PART NO. REF NO. DESCRIPTION D607 RC008448 BDAY1065001 RB420D T146 D608 RC008320 BDAY1092001 SML-310LT T86 FILTERS RC008279 BFLY0971001 CERAMIC FL-971 FFE1054NA11UXL RC008280 BFLY0977001 CERAMIC FL-977 LTF5455B5 FT601 RC008279 BFLY0971001 CERAMIC FL-971 FFE1054NA11UXL FT602 RC009882 BFLY0996001 CERAMIC FL-996 CNS455B6 IC'S RC009438 BDEY3972003 LA8634VU-TLM...

[Page 39](#) LOC. PART NO. REF NO. DESCRIPTION RC003200 BDBD0471111 DB-411 2SD471-L RC003031 BDBC1623648 DB-380 2SC1623-L6 T1B RC003031 BDBC1623648 DB-380 2SC1623-L6 T1B RC003031 BDBC1623648 DB-380 2SC1623-L6 T1B RC003031 BDBC1623648 DB-380 2SC1623-L6 T1B RC003031 BDBC1623648 DB-380 2SC1623-L6 T1B RC003200 BDBD0471111 DB-411 2SD471-L RC000799 BDBC2120124 DB-300 2SC2120-Y RC003200...

[Page 40](#) LOC. PART NO. REF NO. DESCRIPTION RC005361 BRFC168214Z CARBON FIXED CHIP 820 1/16W J RC009037 BRZY0084001 METAL OXIDE (FORMED) RZ-084 150 1WS J (P=12.5) RC005241 BRFC161034Z CARBON FIXED CHIP 10K 1/16W J RC005240 BRFC161024Z CARBON FIXED CHIP 1K 1/16W J RC005248 BRFC162234Z CARBON FIXED CHIP...

[Page 41](#) LOC. PART NO. REF NO. DESCRIPTION RC005240 BRFC161024Z CARBON FIXED CHIP 1K 1/16W J RC005242 BRFC161044Z CARBON FIXED CHIP 100K 1/16W J RC005241 BRFC161034Z CARBON FIXED CHIP 10K 1/16W J RC008479 BRFC161844Z CARBON FIXED CHIP 180K 1/16W J RC005240 BRFC161024Z CARBON FIXED CHIP 1K 1/16W J RC005240...

[Page 42](#) LOC. PART NO. REF NO. DESCRIPTION R146 RC005240 BRFC161024Z CARBON FIXED CHIP 1K 1/16W J R147 RC008735 BRFC166824Z CARBON FIXED CHIP 6.8K 1/16W J R148 RC005242 BRFC161044Z CARBON FIXED CHIP 100K 1/16W J R149 RC005673 BRFC163934Z CARBON FIXED CHIP 39K 1/16W J R150 RC005249 BRFC162244Z...

[Page 43](#) LOC. PART NO. REF NO. DESCRIPTION R610 RC005258 BRFC164744Z CARBON FIXED CHIP 470K 1/16W J R611 RC005259 BRFC166814Z CARBON FIXED CHIP 680 1/16W J R612 RC005281 BRFC162224Z CARBON FIXED CHIP 2.2K 1/16W J R614 RC008027 BRFC161234Z

CARBON FIXED CHIP 12K 1/16W J R615 RC005283 BRFC162734Z...

[Page 44](#) LOC. PART NO. REF NO. DESCRIPTION RC008478 BQXY0724001 CRYSTAL QX-724 10.1MHZ X601 RC008285 BQXY0721001 CRYSTAL QX-721 10.1MHZ X602 RC008325 BQXY0709001 CRYSTAL QX-709 3.579545MHZ OTHER ELECTRICAL PARTS AD901 RC009255 BAY0396001 AC ADAPTOR AD-396 LS-A6010-ADT8 AT751 RC009434 BATY0392001 ANTENNA AT-392 AT-40 B301 RC009431 AC267BHBB RF MODULE, BASE...

[Page 45: Assembly Parts List](#)

ASSEMBLY PARTS LIST NOTE: Following part numbers are not available as replacement parts. Order parts necessary for repair or contact the Toshiba Factory Service Center. LOC. PART NO. REF NO. DESCRIPTION RC009876 AC315BHBA BASE MAIN PCB ASSEMBLY RC009877 AC315BHBC BASE KEY PCB ASSEMBLY...

[Page 46: Specifications](#)

SPECIFICATIONS MEASUREMENT CONDITIONS 1. Standard Voltage: DC 3.8 V ± 0.025 V Portable Unit AC 120 V ± 3 V 60 Hz Base Unit 25 °C ± 5 °C 2. Temperature: 3. Channel: Portable (TX Frequency) Base (TX Frequency) 904.052470 MHz 925.997470 MHz 902.102465 MHz 926.047470 MHz 902.152465 MHz...

[Page 47](#) BASE UNIT RECEIVER Unit Nominal Limit $-115 < -107$ 1. Sensitivity 12 dB SINAD (with CCITT Filter) 2. Frequency Response (Ref: 1 kHz) $-5.0 -9.0 \sim -1.0$ 0.3 kHz $-8.0 -12.0 \sim -4.0$ 3.0 kHz 3. Distortion at 1 mV RF Input $< \dots$

[Page 48](#) HANDSET UNIT RECEIVER Unit Nominal Limit -115 1. Sensitivity 12 dB SINAD (with CCITT Filter) < -107 2. AF Frequency Response (Ref: 1 kHz) 0.3 kHz 1.5 ~ 9.5 $-17.0 -21.0 \sim -13.0$ 3.0 kHz $-7 -10 \sim -4$ 3. Audio Output Level VOL.

[Page 49](#) TOSHIBA AMERICA CONSUMER PRODUCTS, INC. 82 TOTOWA ROAD, WAYNE, N.J. 07470 TOSHIBA HAWAII, INC. 327 KAMAKEE ST., HONOLULU, H.I. 96814...