TOSHIBA

SERVICE MANUAL

COLOUR TELEVISION

15V31D

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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 2 seconds.

Set Key	Remocon Key	Operations
VOL. (-) MIN	0	Reset the user setting items (PICTURE, VOLUME and LANGUAGE) to the initial state for delivery.
VOL. (-) MIN	1	Initialization of the factory. NOTE: Do not use this for the normal servicing. If you set a factory initialization, the memories are reset such as the channel setting, and the POWER ON total hours.
VOL. (-) MIN	6	POWER ON total hours is displayed on the screen. Refer to the "CONFIRMATION OF HOURS USED". Can be checked of the INITIAL DATA of MEMORY IC. Refer to the "WHEN REPLACING EEPROM (MEMORY) IC".
VOL. (-) MIN	8	Writing of EEPROM initial data. NOTE: Do not use this for the normal servicing.
VOL. (-) MIN	9	Display of the Adjustment MENU on the screen. Refer to the "ELECTRICAL ADJUSTMENT" (On-Screen Display Adjustment).

CONFIRMATION OF HOURS USED

POWER ON total hours can be checked on the screen. Total hours are displayed in 16 system of notation.

NOTE: If you set a factory initialization, the total hours is reset to "0".

1. Set the VOLUME to minimum.
2. Press both VOL. DOWN button on the set and Channel button **(6)** on the remote control for more than 2 seconds.
3. After the confirmation of using hours, turn off the power.

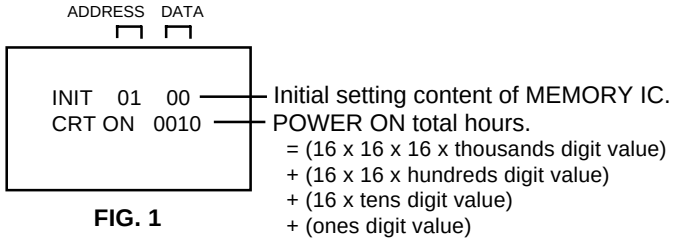


FIG. 1

WHEN REPLACING EEPROM (MEMORY) IC

If a service repair is undertaken where it has been required to change the MEMORY IC, the following steps should be taken to ensure correct data settings while making reference to TABLE 1.

NOTE: No need setting for after INI 16 due to the adjustment value.

INI	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	+F
00	---	00	00	00	00	61	80	60	68	40	27	07	03	00	06	73
10	10	00	80	80	80	BC	00	---	---	---	---	---	---	---	---	---

Table 1

1. Enter DATA SET mode by setting VOLUME to minimum.
2. Press both VOL. DOWN button on the set and Channel button **(6)** on the remote control for more than 2 seconds. ADDRESS and DATA should appear as FIG 1.
3. ADDRESS is now selected and should "blink". Using the VOL. +/- button on the remote, step through the ADDRESS until required ADDRESS to be changed is reached.
4. Press OK to select DATA. When DATA is selected, it will "blink".
5. Again, step through the DATA using VOL. +/- button until required DATA value has been selected.
6. Pressing OK will take you back to ADDRESS for further selection if necessary.
7. Repeat steps 3 to 6 until all data has been checked.
8. When satisfied correct DATA has been entered, turn POWER off (return to STANDBY MODE) to finish DATA input. **After the data input, set to the initializing of shipping.**
9. Turn POWER on.
10. Press both VOL. DOWN button on the set and Channel button **(1)** on the remote control for more than 2 seconds.
11. After the finishing of the initializing of shipping, the unit will turn off automatically.

The unit will now have the correct DATA for the new MEMORY IC.

ELECTRICAL ADJUSTMENTS

1. ADJUSTMENT PROCEDURE

Read and perform these adjustments when repairing the circuits or replacing electrical parts or PCB assemblies.

CAUTION

- Use an isolation transformer when performing any service on this chassis.
- Before removing the anode cap, discharge electricity because it contains high voltage.
- When removing a PCB or related component, after unfastening or changing a wire, be sure to put the wire back in its original position.
- When you exchange IC and Transistor for a heat sink, apply the silicon grease on the contact section of the heat sink. Before applying new silicon grease, remove all the old silicon grease. (Old grease may cause damage to the IC and Transistor).

Prepare the following measurement tools for electrical adjustments.

1. Oscilloscope
2. Digital Voltmeter
3. Pattern Generator

On-Screen Display Adjustment

1. In the condition of NO indication on the screen. Press the VOL. DOWN button on the set and the Channel button **(9)** on the remote control for more than 2 seconds to appear the adjustment mode on the screen as shown in **Fig. 1-1**.

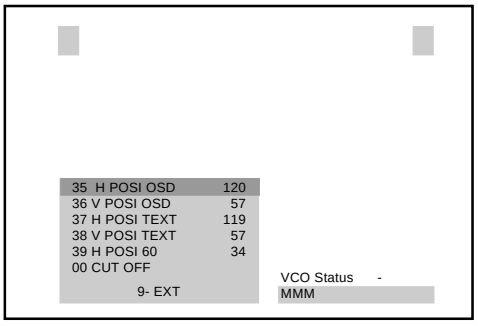


Fig. 1-1

2. Use the Channel button **(0-9)** or Channel UP/DOWN button on the remote control to select the options shown in **Fig. 1-2**.
3. Press the MENU button on the remote control to end the adjustments.

NO.	FUNCTION	NO.	FUNCTION
00	CUT OFF	20	TINT
01	RF AGC	21	SHARP
02	AGC GAIN	22	CONTRAST CENT
03	R DRIVE	23	CONTRAST MAX
04	R CUTOFF	24	CONTRAST MIN
05	G DRIVE	25	COLOR CENT
06	G CUTOFF	26	COLOR MAX
07	B DRIVE	27	COLOR MIN
08	H POSI (50)	28	M R CUT OFF
09	V POSI (50)	29	M G CUT OFF
10	V POSI (60)	30	M B CUT OFF
11	V SIZE (50)	31	CVBS OUT
12	V SIZE (60)	32	APR THRESHOLD
13	VCO COARSE	33	BELL FILTER
14	VCO FINE	34	BANDPASS
15	VCO COARSE L1	35	H POSI OSD
16	VCO FINE L1	36	V POSI OSD
17	BRIGHT CENT	37	H POSI TEXT
18	BRIGHT MAX	38	V POSI TEXT
19	BRIGHT MIN	39	H POSI (60)

Fig. 1-2

2. BASIC ADJUSTMENTS

2-1: CONSTANT VOLTAGE

1. Place the set with Aging Test for more than 5 minutes.
2. Connect the digital voltmeter to **TP501**.
3. Set condition is AV MODE without signal.
4. Adjust the **VR501** until the DC voltage is 117 ± 0.5V.

2-2: VCO

1. Place the set with Aging Test for more than 10 minutes.
2. Connect the oscillator (38.9MHz) to **TP001**.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(13)** on the remote control to select "VCO COARSE".
4. Press the VOL. +/- button on the remote control until the "OK" appear on the screen. If the "OK" is not displayed, select the "+" side on the changed from "+" to "-".
5. Press the Page UP button once to set to "VCO FINE" mode.
6. Press the VOL. +/- button on the remote control to select the 5 step down point from the upper limit on the "OK".
   (Example: In case of the "OK" range 30~41, select 36.)

2-3: AGC VOLTAGE

1. Place the set with Aging Test for more than 15 minutes.
2. Receive the UHF (63 ± 1dB).
3. Connect the digital voltmeter to **pin 5 of CP101**.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(01)** on the remote control to select "RF AGC".
5. Press the VOL. +/- button on the remote control until the digital voltmeter is 2.5 ± 0.05V.

2-4: CUT OFF

1. Set condition is AV MODE without signal.
2. Using the remote control, set the brightness and contrast to normal position.
3. Place the set with Aging Test for more than 15 minutes.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(00)** on the remote control to select "CUT OFF".
5. Adjust the **Screen Volume** until a dim raster is obtained.

2-5: WHITE BALANCE

NOTE: Adjust after performing CUT OFF adjustment.

1. Place the set with Aging Test for more than 15 minutes.
2. Receive the gray scale pattern from the Pattern Generator.
3. Using the remote control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(03)** on the remote control to select "R DRIVE".
5. Press the Page UP/DOWN button on the remote control to select the "R DRIVE", "G DRIVE", "M R CUTOFF" or "M G CUTOFF".
6. Adjust the VOL. +/- button on the remote control to whiten the R DRIVE, G DRIVE, M R CUT OFF, and M G CUT OFF at each step tone sections equally.
7. Perform the above adjustments 5 and 6 until the white color is looked like a white.

ELECTRICAL ADJUSTMENTS

2-6: FOCUS

1. Receive a 70dB monoscope pattern.
2. Turn the Focus Volume fully counterclockwise once.
3. Adjust the **Focus Volume** until picture is distinct.

2-7: HORIZONTAL POSITION

1. Receive the monoscope pattern from the Pattern Generator.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(08)** on the remote control to select "H POSI (50)".
4. Press the VOL. +/- button on the remote control until the SHIFT quantity of the OVER SCAN on right and left becomes minimum.
5. Receive the monoscope pattern of NTSC. (Audio Video Input)
6. Using the remote control, set the brightness and contrast to normal position.
7. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(39)** on the remote control to select "H POSI (60)".
8. Press the VOL. +/- button on the remote control until the SHIFT quantity of the OVER SCAN on right and left becomes minimum.

2-8: VERTICAL SIZE

1. Receive the monoscope pattern from the Pattern Generator.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(11)** on the remote control to select "V SIZE (50)".
4. Adjust by using the VOL. +/- button on the remote control so that the Up/Down OVER SCAN Quantity becomes equal to the Right/Left OVER SCAN Quantity.
5. Receive a broadcast and check if the picture is normal.
6. Receive the monoscope pattern of NTSC. (Audio Video Input)
7. Using the remote control, set the brightness and contrast to normal position.
8. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(12)** on the remote control to select "V SIZE (60)".
9. Adjust by using the VOL. +/- button on the remote control so that the Up/Down OVER SCAN Quantity becomes equal to the Right/Left OVER SCAN Quantity.

2-9: VERTICAL POSITION/VERTICAL LINEARITY

1. Receive the monoscope pattern from the Pattern Generator.
2. Using the remote control, set the brightness and contrast to normal position.
3. Adjust the **VR401** until the horizontal line becomes fit to the notch of the shadow mask.
4. Adjust the **VR420** until the SHIFT quantity of the OVER SCAN on upside and downside becomes minimum.

2-10: BRIGHT CENT

1. Receive the PAL black pattern*. (RF Input)
2. Using the remote control, set the brightness and contrast to normal position.
3. Place the set with Aging Test for more than 15 minutes.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(17)** on the remote control to select "BRIGHT CENT".
5. Press the VOL. +/- button on the remote control until the screen begin to shine.
6 Receive the PAL black pattern*. (Audio Video Input)
7. Set to the AV mode. Then perform the above adjustments 2~5.

*The Black Pattern means the whole black raster signal. Select the "RASTER" of the pattern generator, set to the OFF position for each R, G and B.

2-11: CONTRAST CENT

1. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(22)** on the remote control to select "CONTRAST CENT".
2. Press the VOL. +/- button on the remote control until the contrast step No. becomes "30".
3. Receive a broadcast and check if the picture is normal.
4. Set to the AV mode. Then perform the above adjustments 1~3.

2-12: COLOR CENT

1. Receive the PAL color bar pattern. (RF Input)
2. Using the remote control, set the brightness, contrast and color to normal position.
3. Connect the oscilloscope to **TP022**.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(25)** on the remote control to select "COLOR CENT".
5. Adjust the VOLTS RANGE VARIABLE knob of the oscilloscope until the range between white 100% and 0% is set to 5 scales on the screen of the oscilloscope.
6. Press the VOL. +/- button on the remote control until the red color level is adjusted to 85 ± 10% of the white level. **(Refer to Fig. 2-1)**
7. Receive the PAL color bar pattern. (Audio Video Input)
8. Set to the AV mode. Then perform the above adjustments 2~6.

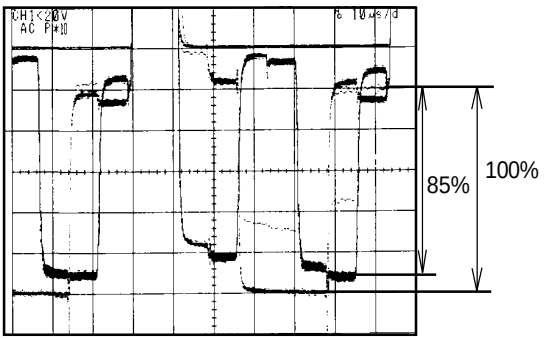


Fig. 2-1

ELECTRICAL ADJUSTMENTS

2-13: TINT

1. Receive the NTSC color bar pattern. (Audio Video Input)
2. Using the remote control, set the brightness and contrast to normal position.
3. Connect the oscilloscope to **TP024**.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(20)** on the remote control to select "TINT".
5. Press the VOL. +/- button on the remote control until the section "A" becomes a straight line. **(Refer to Fig. 2-2)**

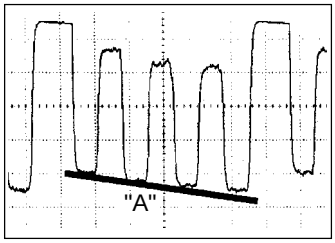


Fig. 2-2

2-14: Confirmation of Fixed Value (Step No.)

Please check if the fixed values of each the adjustment items are set correctly referring below.

NO.	FUNCTION	RF	AV
02	AGC GAIN	00	---
04	R CUTOFF	00	---
06	G CUTOFF	00	---
07	B DRIVE	45	---
09	V POSI (50)	08	---
10	V POSI (60)	08	---
18	BRIGHT MAX	30	30
19	BRIGHT MIN	13	13
20	TINT	32	ADJ.
21	SHARP	02	02
23	CONTRAST MAX	40	40
24	CONTRAST MIN	10	10
26	COLOR MAX	50	50
27	COLOR MIN	10	10
30	M B CUT OFF	127	---
31	CVBS OUT	31	---
32	APR THRESHOLD	00	---
33	BELL FILTER	00	---
34	BANDPASS	00	---
35	H POSI OSD	125	---
36	V POSI OSD	50	---
37	H POSI TEXT	122	---
38	V POSI TEXT	58	---

*To check for the fixed values of the RF (60Hz), indicate the adjustment mode screen while input the 60Hz video signal.

ELECTRICAL ADJUSTMENTS

3. PURITY AND CONVERGENCE ADJUSTMENTS

NOTE

1. Turn the unit on and let it warm up for at least 30 minutes before performing the following adjustments.
2. Place the CRT surface facing east or west to reduce the terrestrial magnetism.
3. Turn ON the unit and demagnetize with a Degauss Coil.

3-1: STATIC CONVERGENCE (ROUGH ADJUSTMENT)

1. Tighten the screw for the magnet. Refer to the adjusted CRT for the position. **(Refer to Fig. 3-1)**
   If the deflection yoke and magnet are in one body, untighten the screw for the body.
2. Receive the green raster pattern from the color bar generator.
3. Slide the deflection yoke until it touches the funnel side of the CRT.
4. Adjust center of screen to green, with red and blue on the sides, using the pair of purity magnets.
5. Switch the color bar generator from the green raster pattern to the crosshatch pattern.
6. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
7. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.
8. Adjust the crosshatch pattern to change to white by repeating steps 6 and 7.

3-2: PURITY

NOTE

Adjust after performing adjustments in section 3-1.

1. Receive the green raster pattern from color bar generator.
2. Adjust the pair of purity magnets to center the color on the screen.
   Adjust the pair of purity magnets so the color at the ends are equally wide.
3. Move the deflection yoke backward (to neck side) slowly, and stop it at the position when the whole screen is green.
4. Confirm red and blue colors.
5. Adjust the slant of the deflection yoke while watching the screen, then tighten the fixing screw.

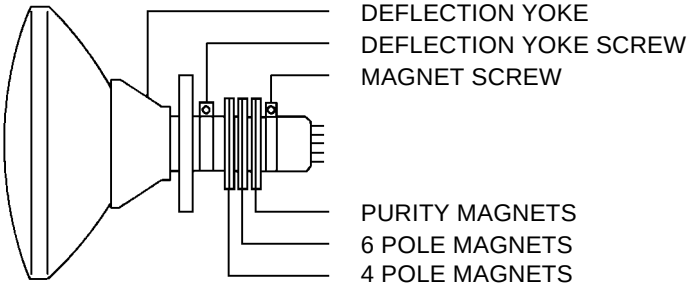


Fig. 3-1

3-3: STATIC CONVERGENCE

NOTE

Adjust after performing adjustments in section 3-2.

1. Receive the crosshatch pattern from the color bar generator.
2. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
3. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.

3-4: DYNAMIC CONVERGENCE

NOTE

Adjust after performing adjustments in section 3-3.

1. Adjust the differences around the screen by moving the deflection yoke upward/downward and right/left. **(Refer to Fig. 3-2-a)**
2. Insert three wedges between the deflection yoke and CRT funnel to fix the deflection yoke. **(Refer to Fig. 3-2-b)**

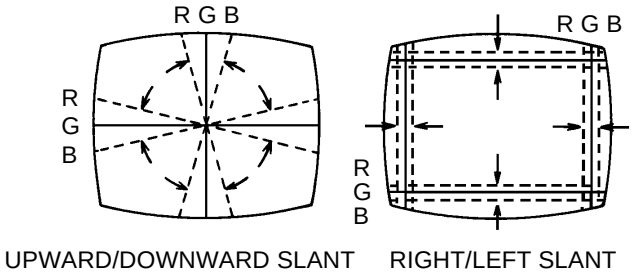


Fig. 3-2-a

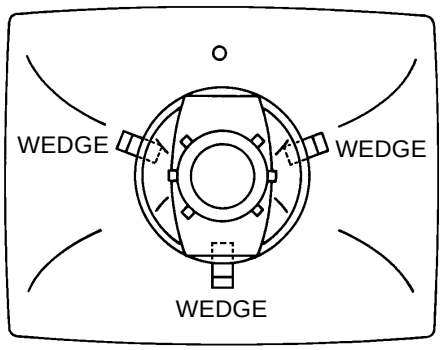
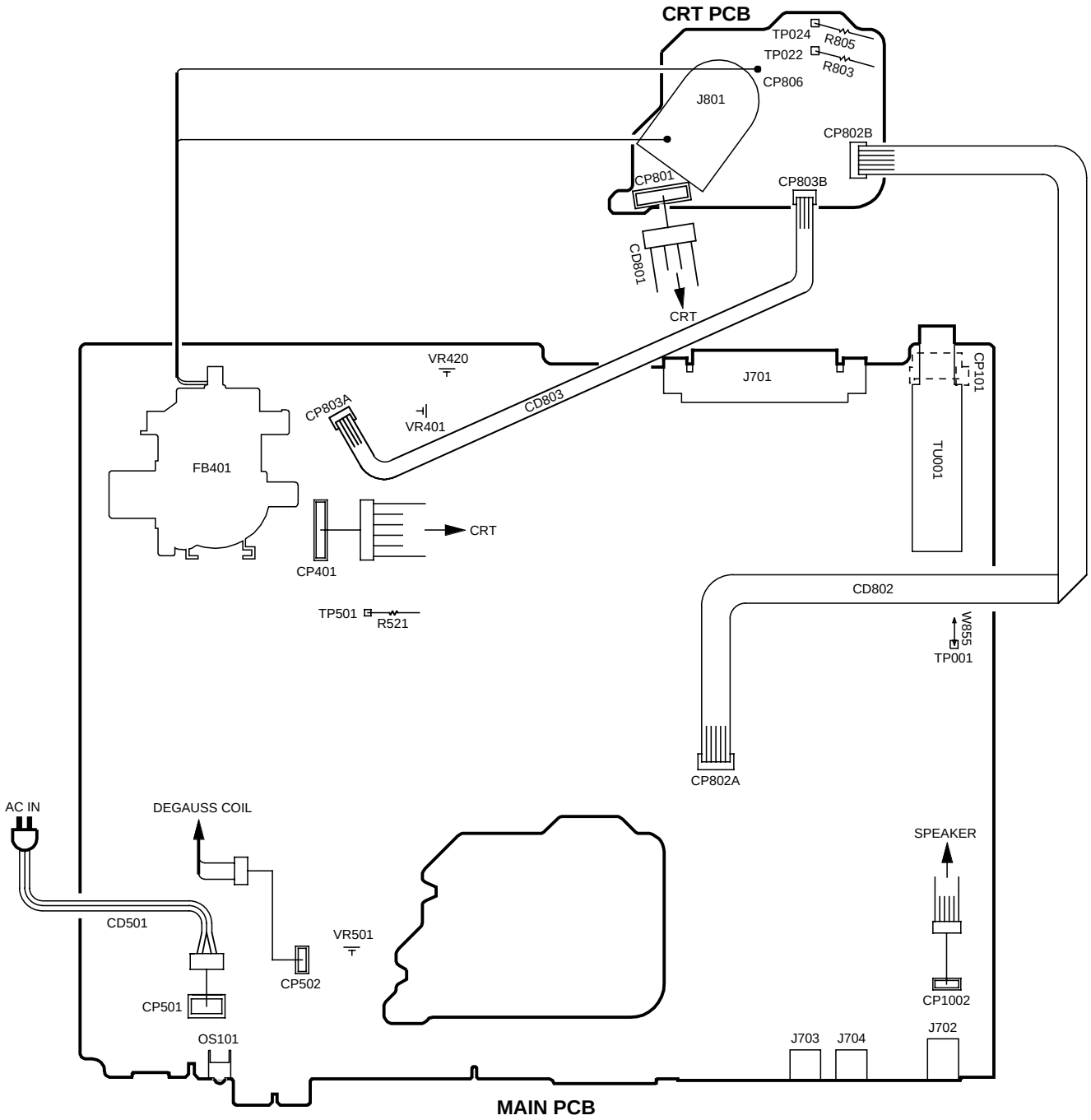


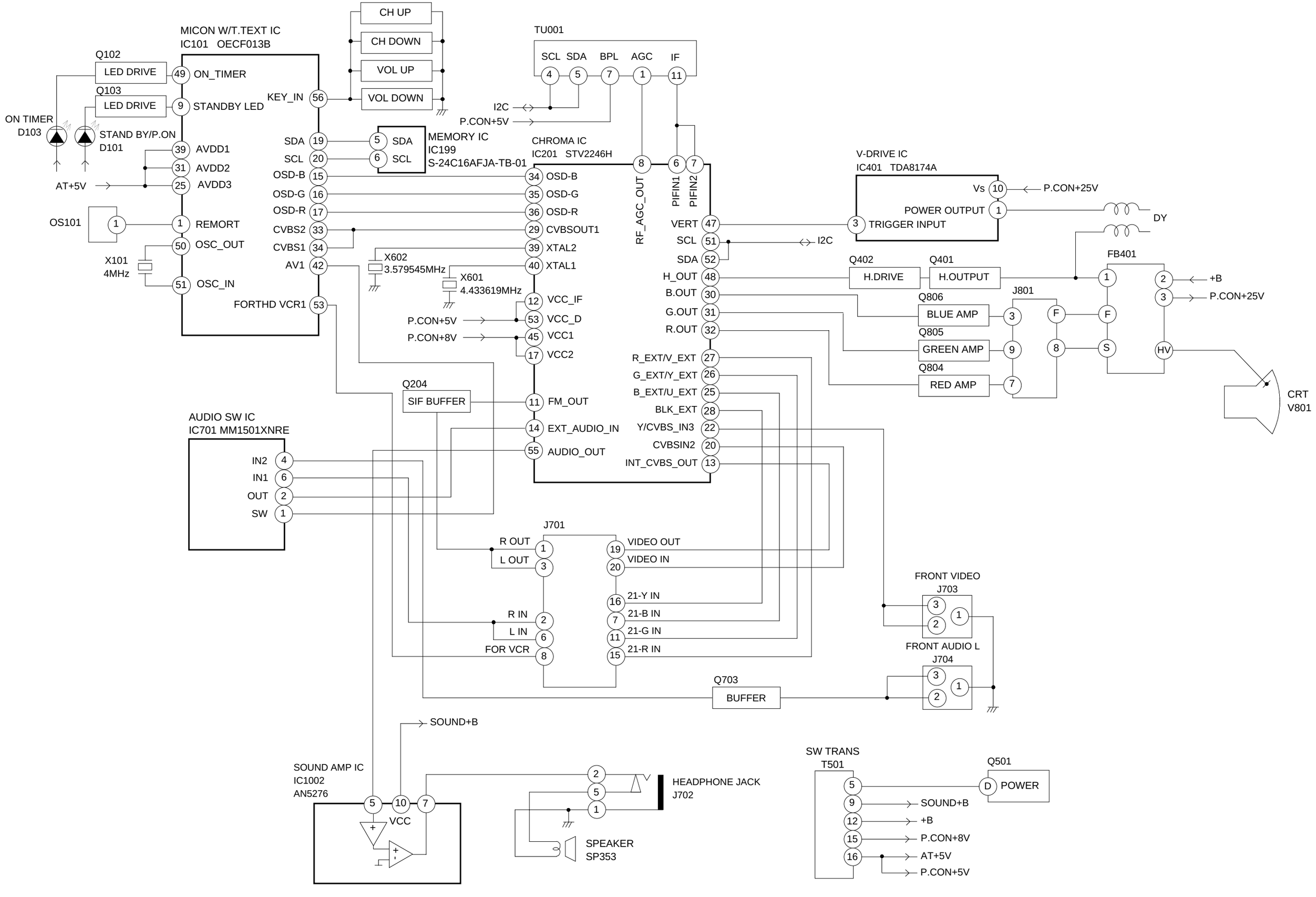
Fig. 3-2-b

ELECTRICAL ADJUSTMENTS

4. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION)

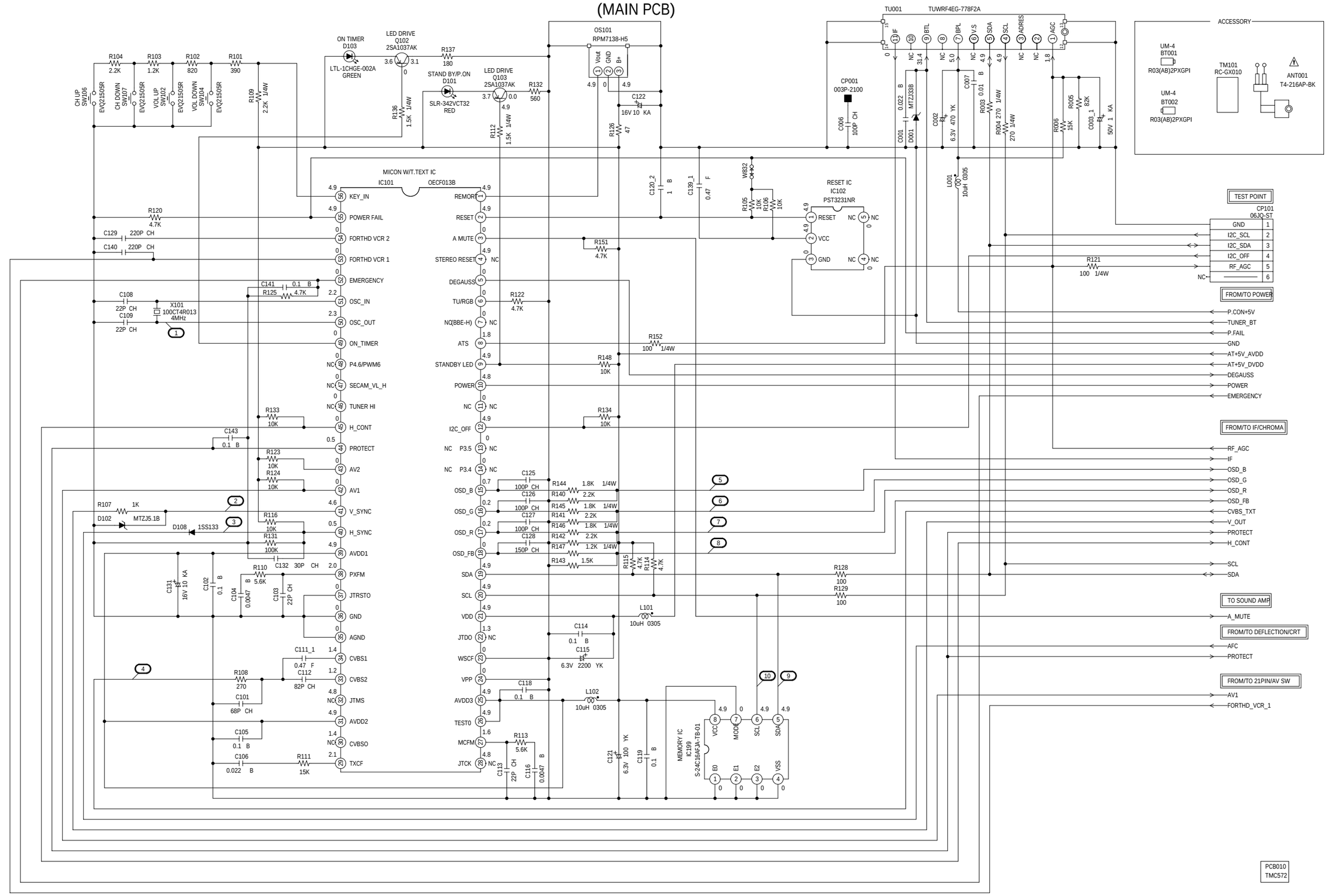


BLOCK DIAGRAM



MICON/TUNER SCHEMATIC DIAGRAM

(MAIN PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

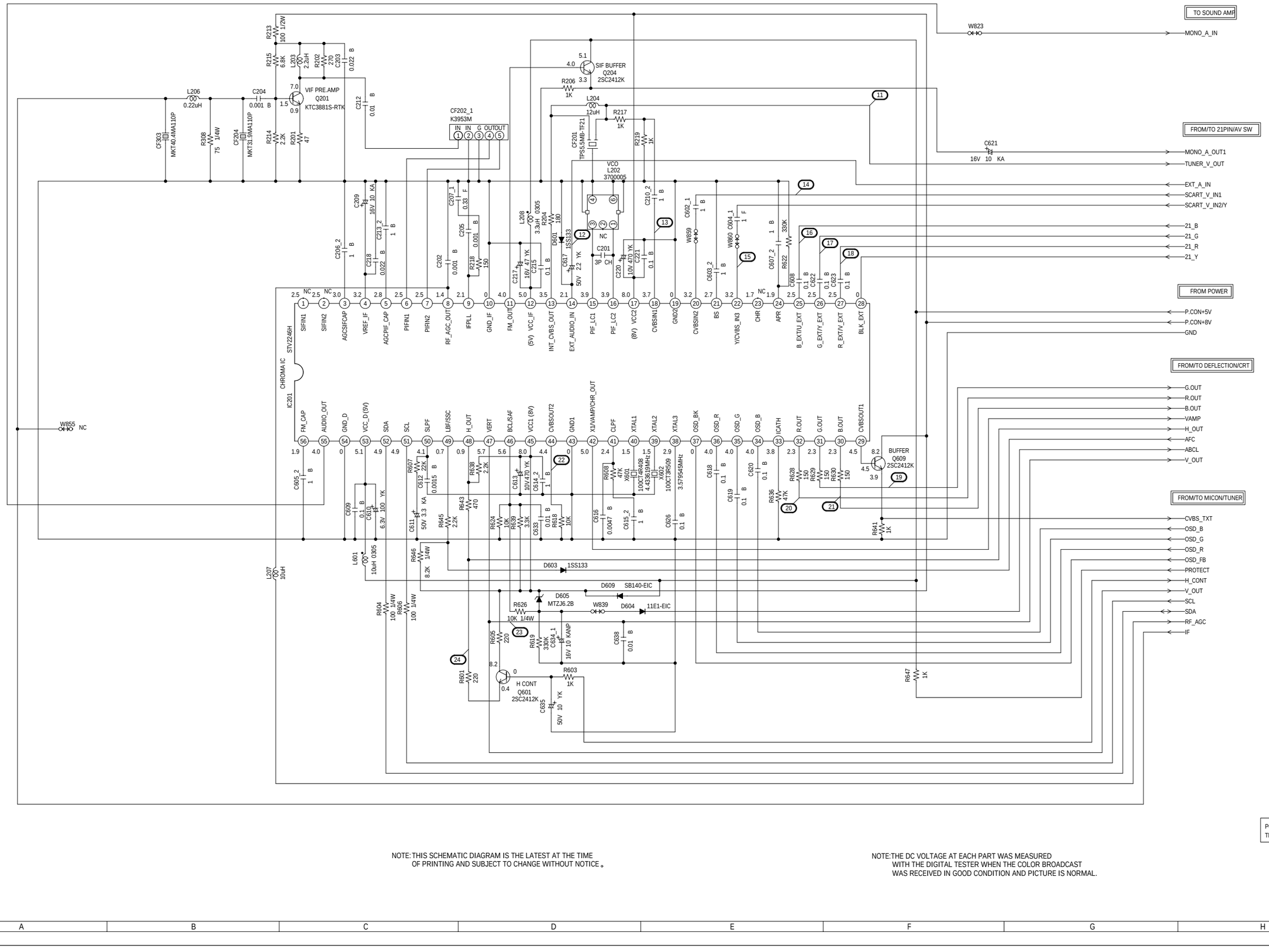
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY 。

IF/CHROMA SCHEMATIC DIAGRAM

(MAIN PCB)

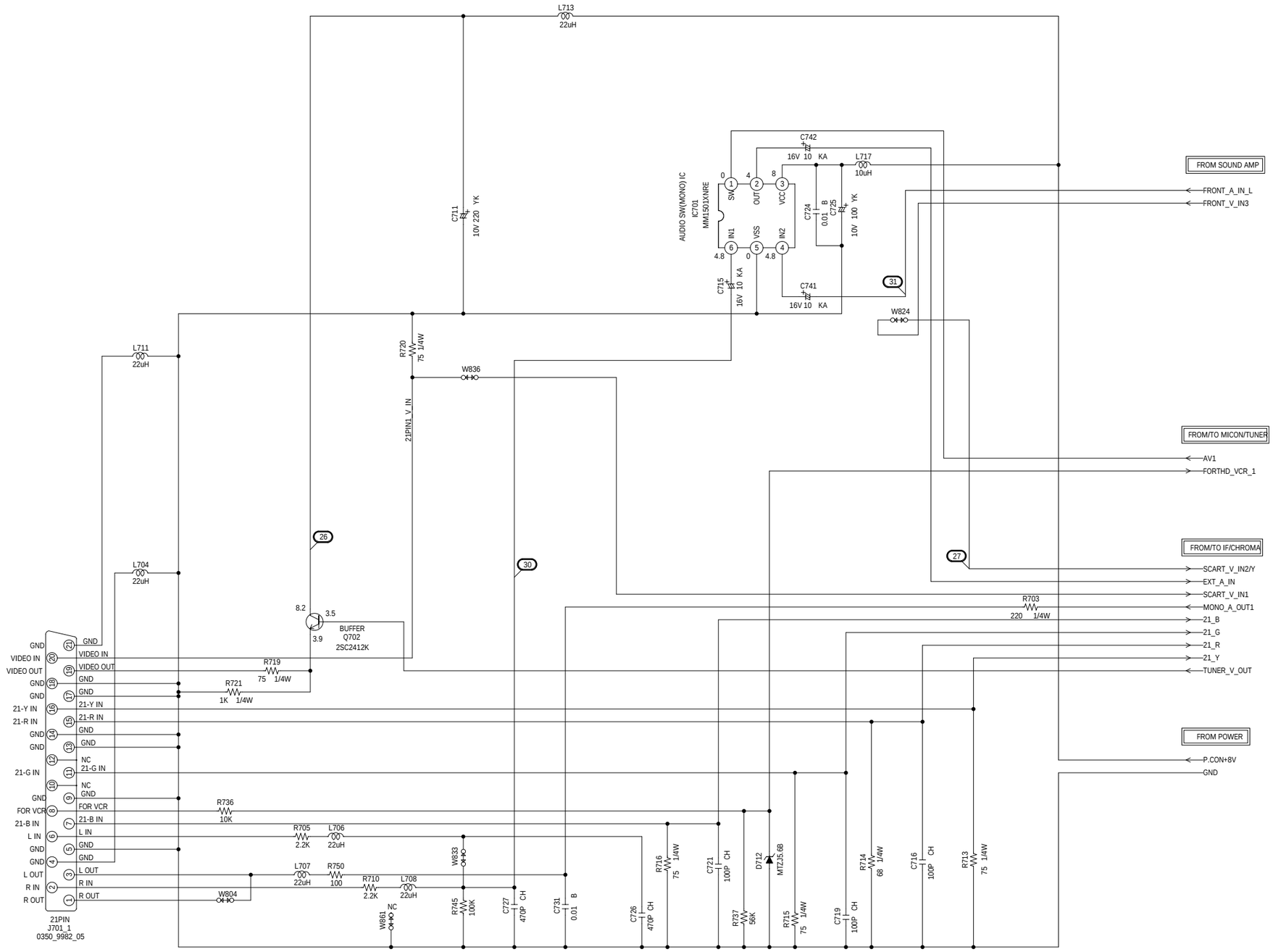


NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

21PIN/AV SW SCHEMATIC DIAGRAM

(MAIN PCB)

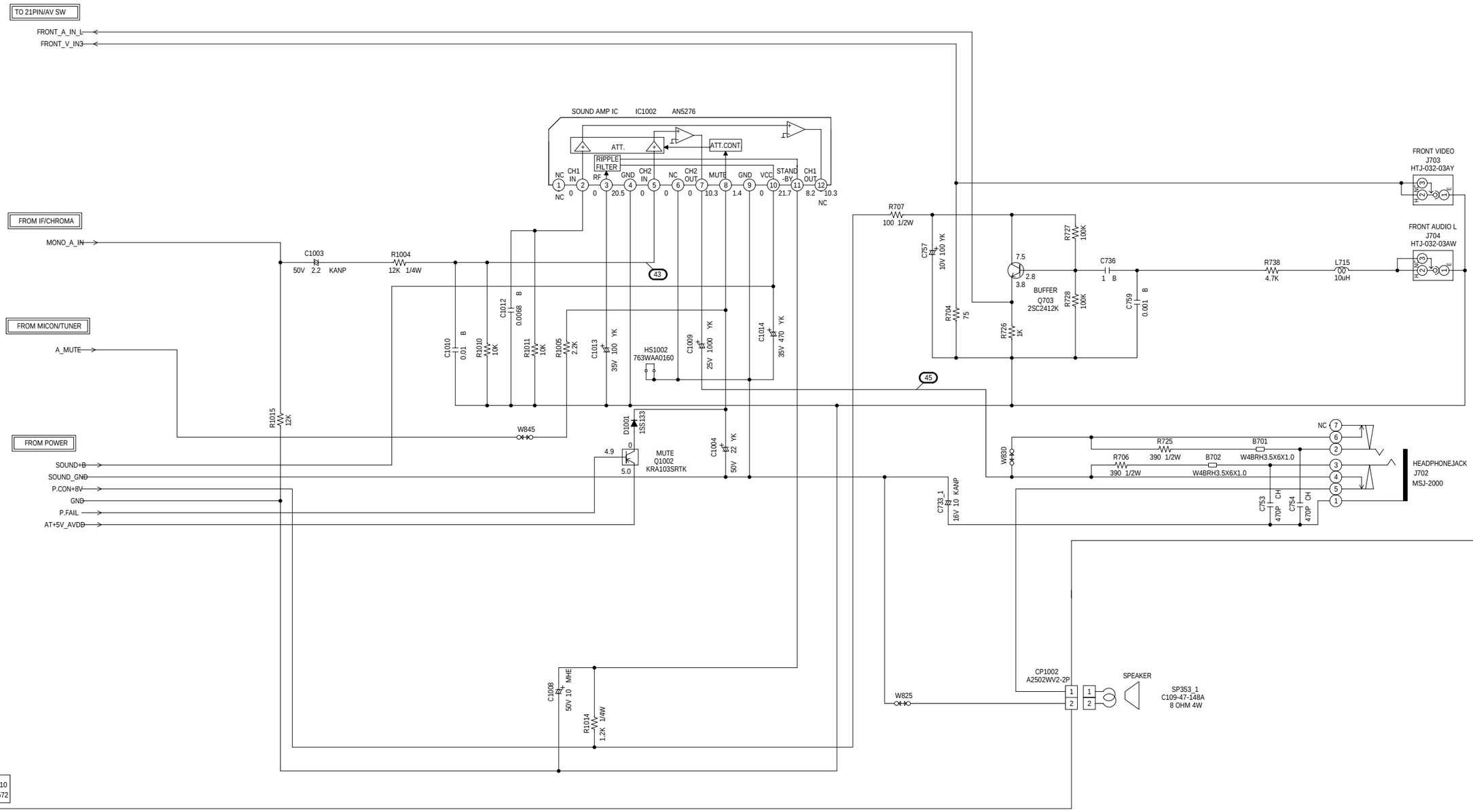


NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

SOUND AMP SCHEMATIC DIAGRAM

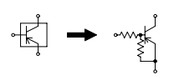
(MAIN PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

CAUTION: DIGITAL TRANSISTOR



DEFLECTION/CRT SCHEMATIC DIAGRAM (MAIN PCB)

FROM/TO IF/CHROMA
B.OUT
R.OUT
G.OUT
AFC
VAMP
V_OUT
ABCL
H_OUT
FROM/TO MICON/TUNER
PROTECT
AFC
R602 560 1/4W
V-DRIVE IC IC401 TDA8174A
POWER OUTPUT
OUTPUT STAGE Vs
TRIGGER INPUT
HEIGHT ADJ.
Vref. DECOUP.
GND
RAMP GENERATOR
BUFFER OUTPUT
INVERTING INPUT
Vs
FB. GENERATOR
16.4 26.5 5.5 6.7 4.5 0 8.9 9.6 4.5 26.0 4.9
R422 220K 1/4W
R423 220K 1/4W
R408 1K 1/4W
C408_1 50V 10 YK
C412 0.047 MMTV
R412 12K 1/4W
D403 11E1-EIC
C414_1 35V 100 YK
PROTECT Q403 DTC114EKA
3.5 0.5 0
CP802A B2013H02-6P
GND 1
CUT OFF 2
B.OUT 3
R.OUT 4
G.OUT 5
PROTECT 6
CP802B B2013H02-6P
CP803A B2013H02-4P
180V 1
NG 2
GND 3
HEATER 4
TO CRT
CP803B B2013H02-4P
NC
FROM DEFLECTION
R426 470 1/2W
R418 47 1/4W
R419 390
R420 18K
R417 3.9K +-1%
C417 50V 22 YK
C418 25V 1000 YK
V.LIN
VR420 470 METAL
R428 1 1/2W
R407 1 1/2W
C422 100V 0.47 MKT
R416 2.2 1/2W
V.POSI
VR401_1 2.2K METAL
R425 560 1/2W
R409 680 1/2W
R401 680 1/2W
D401 MTZJ30B
D402 MTZJ30B
HS401 763WAA0237
CD801_1 SM1510-002-1A
CP801_1 A2361WV2-2P
GND
V801 A36AKJ13X02
CP401 A1561WV2-A5P
L403 20416A
R424 1K 1W
R
G
B
NC
L801_1 100uH 0305
D804 1SS133 R809 4.7K
D805 1SS133 R814 4.7K
D806 1SS133 R811 4.7K
W807 W808 W851 R813 270 1/4W C811 270P CH
W810 W812 W852 R816 270 C810 270P CH
W813 W815 W853 R815 270 1/4W C809 270P CH
120.0 2.5 2.9
RED AMP Q804 KTC4217
GREEN AMP Q805 KTC4217
BLUE AMP Q806 KTC4217
W874 W875 W876
TP022 TP023 TP024
R803 12K 2W R802_1 2.7K 1/4W R806_1 2.7K 1/4W R804 2.7K 1/4W
R807 12K 2W R805 12K 2W
39 40 41
C437_2 250V 0.27 PMS
L401 4.7mH 0909
R411 68 2W
C404 250V 2.2 YK 1/2W
T401_1 ETH09K14BZ
H.DRIVE Q402 2SC1627_Y
16.8 0.5 0
C440_1 100V 0.01 MMTS
C446 50V 22 YK
R446 470 1/2W
R427 100
H.OUTPUT Q401 2SD2499(LBOEC1)
130 0 0
HS402 763WSAA013
C442 1.25KV 0.011 MPP
FROM POWER
GND
P.CON+8V
H.DRV+B
+B
R410 220 1W
D404 11E1-EIC
D408 11EQS04N
R403 1.5K 1/4W
FB401_1 FQI-14B003F
130 COL
119 E180
117 B+
27.2 AFC
NC HEA
7.6 TER
0 GND
38.4 E12
NC
64.0 E27
GND
1.8 E8
NC
H
F
S
GND 0
ABL 24.6
B_SHORT
D406 11E1-EIC
R402 220 2W
D405 AU02A-EIC
D410 AU02A-EIC
C403 35V 470 YK
C448 250V 22 YK
R413 56K 1/4W
R430 100K 1/4W
R421 68K 1/2W
C407 100V 0.1 MK
FOCUS
SCREEN
CP806 005P-2100
CRT SOCKET J801_1 ISMS01S
6.4 101.6 0 101.6 101.6 0
C802 2KV 0.001 B
R819 5.6 2W
PCB010 TMC572
PCB110 TCC433

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

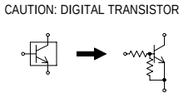
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THE RESISTOR MARKED F IS FUSE RESISTOR. THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP IS NON POLAR ONE.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY 。

CAUTION: DIGITAL TRANSISTOR



POWER SCHEMATIC DIAGRAM

(MAIN PCB)

3A 125V

D526 FE201-6L49 — C531 35V 1000 MHE — ICP502 20P_3000 — R543 0.39 3W

D506 1SS133 — R528 10K 1/4W — 11.5 — 0 — 0 — RELAY SW Q505 KTC3203_Y

RY501 ALKS321

C525 250V 0.001 KX — W814 — TH501 B59209-J80-A10

R503 3.9 7W — D503 RM11C-EIC — R509 0.22 1W

D502 RM11C-EIC — C506 2KV 0.001 B — D501 RM11C-EIC — C507 2KV 0.001 B — D504 RM11C-EIC

C505_2 400V 82 USR

R531 1.5M 1/2W — R552 1.5M 1/2W — D528 MTZJ18B

R501 1.5M 1/2W — C526_1 275V 0.22 ECQUL

COIL,LINE FILTER L501 0R8A393F28Y

C501_1 275V 0.22 ECQUL

FH502 EYF-528C — FH501 EYF-528C — F501 5070040H T4A_L_250V — 4A 250V

MAIN POWER SW SW501 ESB92S22B

BLUE — BROWN — CP501 A3963WV2-3PD — CP502 — A1561WV2-2P

B502 W5RH3.5X5X1.0 — W803 — W844 — W842

D516 SB290S — D513 SB290S

B504 W4BRH3.5X6X1.0 — D520 30DF6-FC — C517 2KV 680P R — C541_1 160V 100 YXF

R521 0.82 3W — R524 47K 1/4W — C503_1 100V 10 YK — EMERGENCY Q509 2SA1624 — R530 5.6K 1/4W

R545 6.8K 1/2W — R544 6.8K 1/2W — R532 22K 1/4W

S801X

P.CON SW Q513 2SA1371 — R546 10K 1/4W — R547 10K 1/4W — P.CON SW Q514 2SC2909 — R548 10K

9V REG.IC — IC502 KIA78R09API — IN OUT GND SW — 11.5 8.9 0 5.1

D527 11E1-EIC

HS502 763WAA0187 — C523 10V 220 YK — C502_2 1 B

C515 16V 1000 YK — C518_1 50V 4.7 YK

7A 125V — ICP501 20P_7000

D517 1N4937 — R550 100 1/2W — R507 2.2K — D511 MTZJ12B

6V REG. IC — IC503 KIA278R06PI — IN OUT GND SW — 8.3 6.0 0 2.6 NC

P.FAIL Q503 2SA1037AK — D509 MTZJ5.1B — R502 10K

C511 16V 2200 YK

D512 SB140-EIC — D515 SB140-EIC

W809

T501_1 — 81350864 — 272 304 304 342 14.5 0 14.5 — 17.3 8.5 NC 0 108.2 0 0 11.2 8.4

B501 W5RH3.5X5X1.0 — C532 2KV 0.0027 R — 343.6 D G S 0.6 — G 4.8 — POWER Q501 2SK2651-01MR

C536_1 0.047 MMTV — R534 330 1W — D530 1SS133 — R510 220 1/4W — D532 1N4937 — R535 2.2K 1/4W

FEED BACK IC506 LTV-817M-VB — 14.8 6.7 0.4 5.6 — R519 270 1/4W

D507 1SS133 — D533 MTZJ6.2B — D508 1SS133 — D521 1SS133 — D519 1SS133

R529 680 1/4W — R536 2W 2K MTZJ15B 1/4W — R516 1.2 1W — C508 B 0.01 — 4.8 — 0 — 0.4 — POWER Q502 KTC3203_Y — C537_3 0.47 MMT — C524 B 0.01

C539 50V 10 YK — R511 1/4W 2.2K — HS501 763WAA0178 — C540 250V 0.0022 KX

FEED BACK SWITCHING Q507 KTC3198 — 5.6 6.1 5.5 — C543 0.001 B — 0.01 B — R512 10K — R517 1.5K 1/4W — R518 120K 1/4W — D514 1SS133 — R540 100

D525 MTZJ5.6B — VR501 R508 5.6K +-1% 2.2K — S801Y

P.CON SW Q511 KTA1281_Y — 5.3 — 5.3 — 0 — C530 0.1 B — R541 27K — C504 0.001 B — EMERGENCY Q508 DTC114TKA — 4.9 — 0 — 0 — EMERGENCY Q512 DTA114EKA — 5.0 — 4.9 — 0

D505 11E1-EIC — R538 10K — R537 560 — R542 1K

C533 6.3V 220 YK — 5.3 — 0 — P.CON SW Q510 DTC124EKA — C522 16V 10 KA

HS503 763WAA0187

PCB010 TMC572

TO DEFLECTION/CRT
- H.DRV+B
- +B
- P.CON+8V
- GND

TO SOUND AMP
- SOUND+B
- SOUND_GND
- P.CON+8V
- AT+5V_AVDD
- P.FAIL
- GND

TO 21PIN/AV SW
- GND
- P.CON+8V

TO IF/CHROMA
- GND
- P.CON+8V
- P.CON+5V

FROM/TO MICON/TUNER
- P.FAIL
- TUNER_BT
- DEGAUSS
- POWER
- AT+5V_AVDD
- AT+5V_DVDD
- P.CON+5V
- EMERGENCY
- GND

BLUE — BROWN — AC230V-240V_50Hz CD501_2 1206655823

L502 W5T29X7.5X19

DEGAUSS COIL L503 8R140027

7A 125V — 3A 125V — 4A 250V

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE 4A 250V(F501)AND 7A 125V(ICP501) 3A 125V(ICP502).

ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES D'INCEIE N'UTILISER QUE DES FUSIBLE DE MEME TYPE 4A 250V(F501) ET 7A 125(ICP501) AND 3A 125V(IC502).

CAUTION: ICP501 IS MANUFACTURED BY SKYGATE CO,LTD. TYPE 20N.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

CAUTION: DIGITAL TRANSISTOR

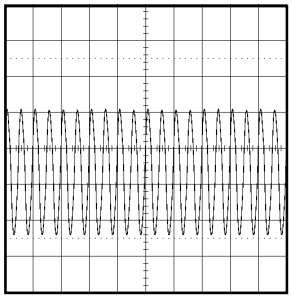
CAUTION: DIGITAL TRANSISTOR

WAVEFORMS

MICON/TUNER

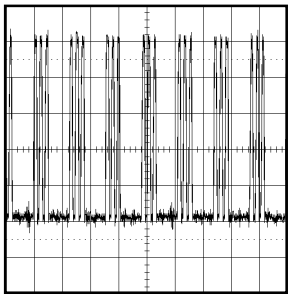
0.5µs
1V

①



50µs
100mV

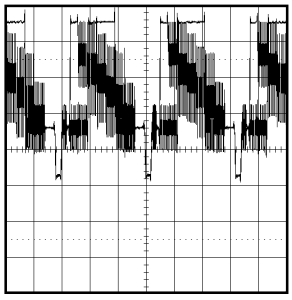
⑥



IF/CHROMA

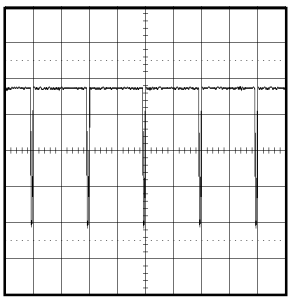
20µs
0.5V

⑪



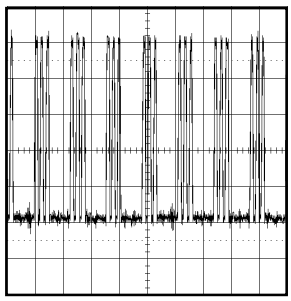
10ms
1V

②



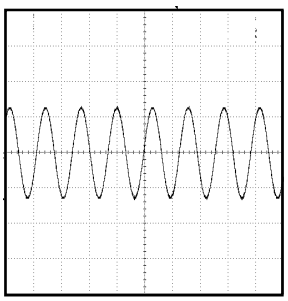
50µs
100mV

⑦



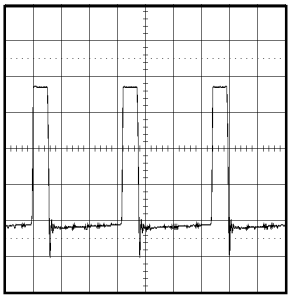
2ms
200mV

⑫



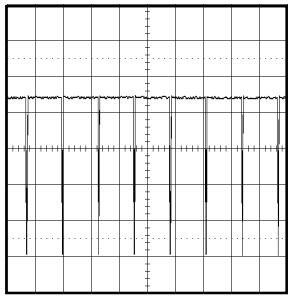
20µs
1V

③



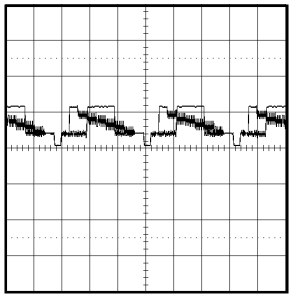
50µs
0.5V

⑧



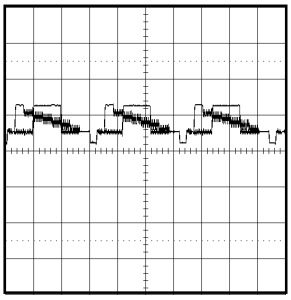
20µs
1V

⑬



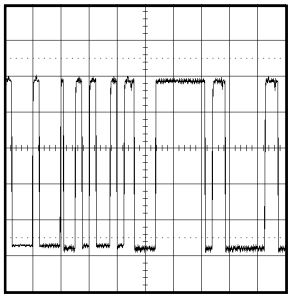
20µs
1V

④



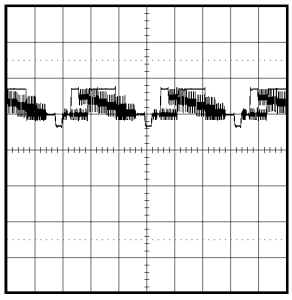
0.2ms
1V

⑨



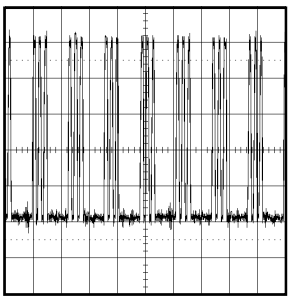
20µs
1V

⑭



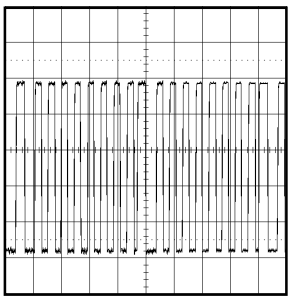
50µs
100mV

⑤



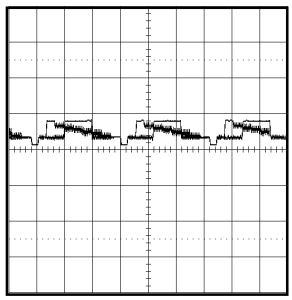
0.2ms
1V

⑩



20µs
1V

⑮

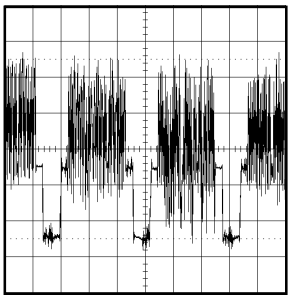


NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

WAVEFORMS

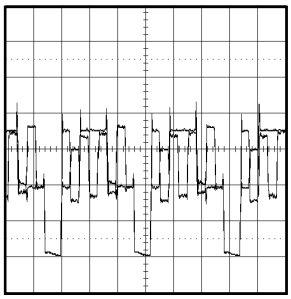
20µs
100mV

⑯



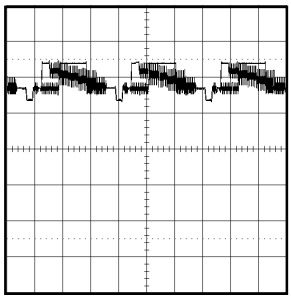
20µs
1V

㉑



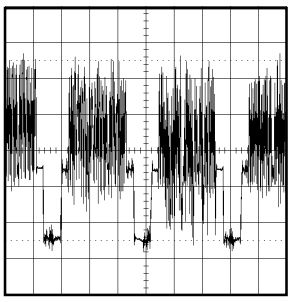
20µs
1V

㉗



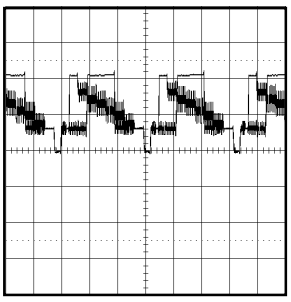
20µs
1V

⑰



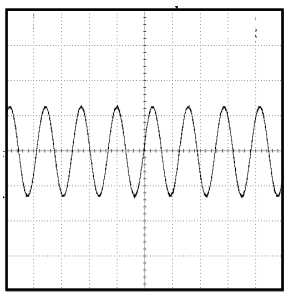
20µs
1V

㉒



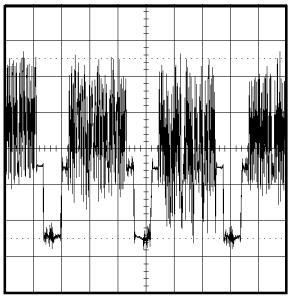
2ms
200mV

㉚



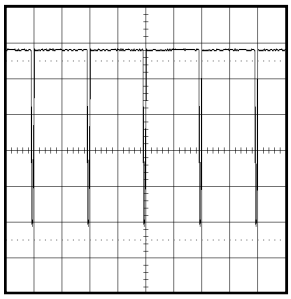
20µs
100mV

⑱



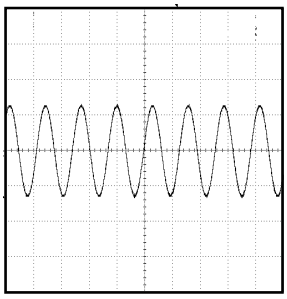
10ms
1V

㉓



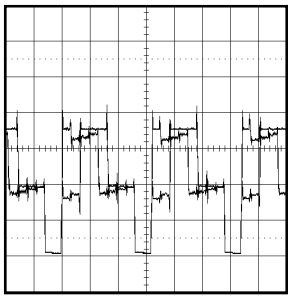
2ms
200mV

㉛



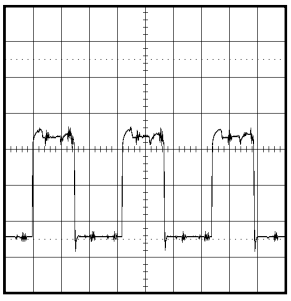
20µs
1V

⑲



20µs
200mV

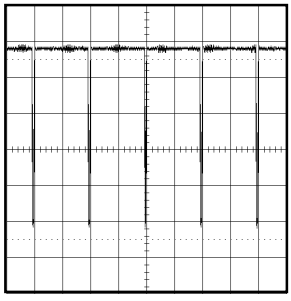
㉔



DEFLECTION/CRT

10ms
1V

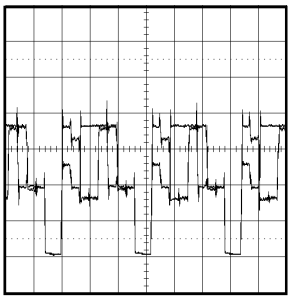
㉝



21PIN/AV SW

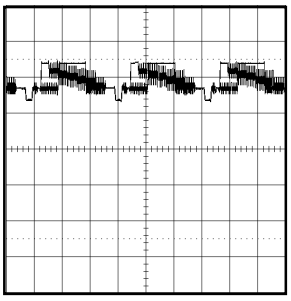
20µs
1V

⑳



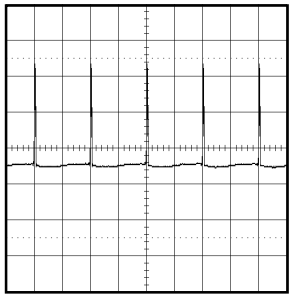
20µs
1V

㉖



10ms
10V

㉞

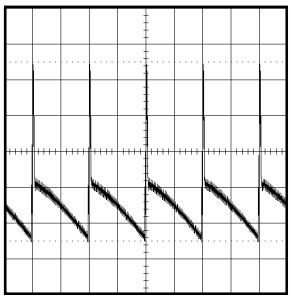


NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

WAVEFORMS

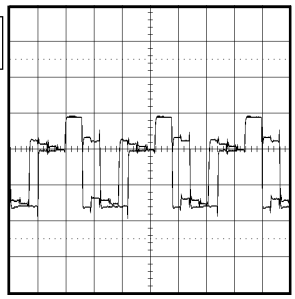
10ms
10V

35



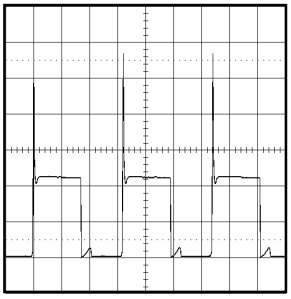
20µs
50V

40



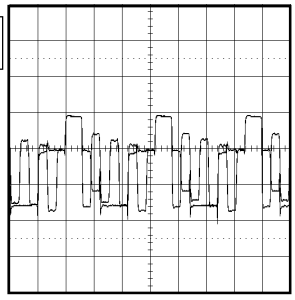
20µs
10V

36



20µs
50V

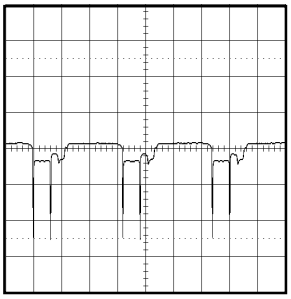
41



SOUND AMP

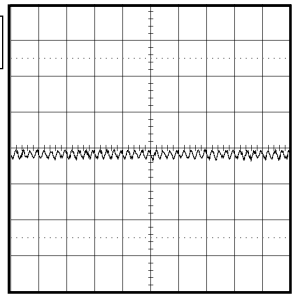
20µs
5V

37



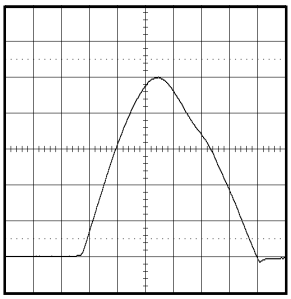
2ms
0.5V

43



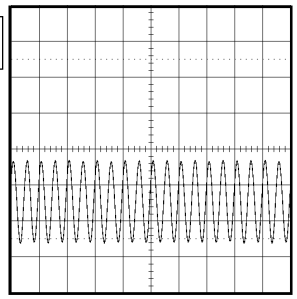
2µs
200V

38



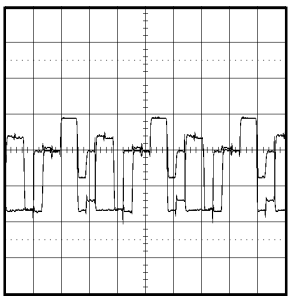
0.2ms
5V

45



20µs
50V

39



NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.