PARKER COLOR TV

SERVICE MANUAL

KVP2021P05

south america

CONTENTS

Note: This service manual is only for professional service personnel's reference. Before servicing the unit, please read the following items carefully.

1 safety instruction

1.1 X-RAY radiation precaution

1.1.1 Excessive voltage will cause harmful X-ray. To avoid this radiation hazard, the high voltage should fall within the limitation. The appliance works at AC 220V, 60Hz. The high voltage of zero beam current (brightness, contrast and color is min) should be within 27kV on condition that the main power (B+) voltage is AC220V. And it should not exceed 28kV in any condition.

When servicing, please refer to the HIGH VOLTAGE CHECK procedure this service manual before check the high voltage and the high voltage meter should be reliable and accurate.

* Keep the main power voltage at 220V when checking the high voltage.

1.1.2 The primary source of X-RAY RADIATION is the CRT. The CRT of this TV set have gotten the approval of safety authentication inspection. The replacement CRT should be exactly the same type and specification CRT which has gotten a similar safety approval, and check the high voltage according to the HIGH VOLTAGE CHECK procedure.

1.2 safety precaution

a. Since the power supply circuit of this receiver is directly connected to the AC power line, an isolation transformer is necessary during dynamic service to avoid possible shock hazard.

b. Always discharge the graphite layer conductor when moving the CRT.

c. Disconnect the power cord before replacing parts.

d. When replacing high-power resistor, keep the resistor 10 mm away from the circuit board.

1.3 Component safety precaution

Many electrical and mechanical parts in the chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection. Replacement parts which have these special safety characteristics are identified in this manual and its supplement electrical components having such features are shaded or marked by ⚠ on the schematic diagram and the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same characteristic as specified in the parts list may create shock, fire, X-RAY RADIATION or other hazards.

2.General instruction

2.1 Copy the standard model data to let EEPROM (N702 24C08)of the chassis have those data before placing it on the unit, do "factory adjustment" if necessary. If use a blank EEPROM directly, you should preset IIC data and then do other common adjustment. Refer to TABLE1 to preset EEPROM.

2.2 the adjustment should be done under following circumstances without additional instruction

a) Alternating current 220V/60Hz

b) Preheat at least 30 min

2.3The unit has auto degaussing circuit, the auto degaussing process can be finished within 2s when the main power. Only when turn on the unit at least 20min after last time turn off TV does the auto degaussing circuit work.

2.4 If the CRT with magnetism affects color purity and convergence, when the auto degaussing eraser. if the color purity and convergence are still not very good, then corresponding adjustment should be done. Refer to picture tube adjustment method for adjustment.

3 Alignment instruction

3.1 Debugging item

a)adjust mode instruction
b)B+ voltage adjustment
c)RFAGC voltage adjustment
d)focus adjustment
e)Screen-grid voltage white balance, sub brightness adjustment
f)filed scan center, line , amplitude adjustment
g)H-scan center adjustment

3.2 Alignment flow

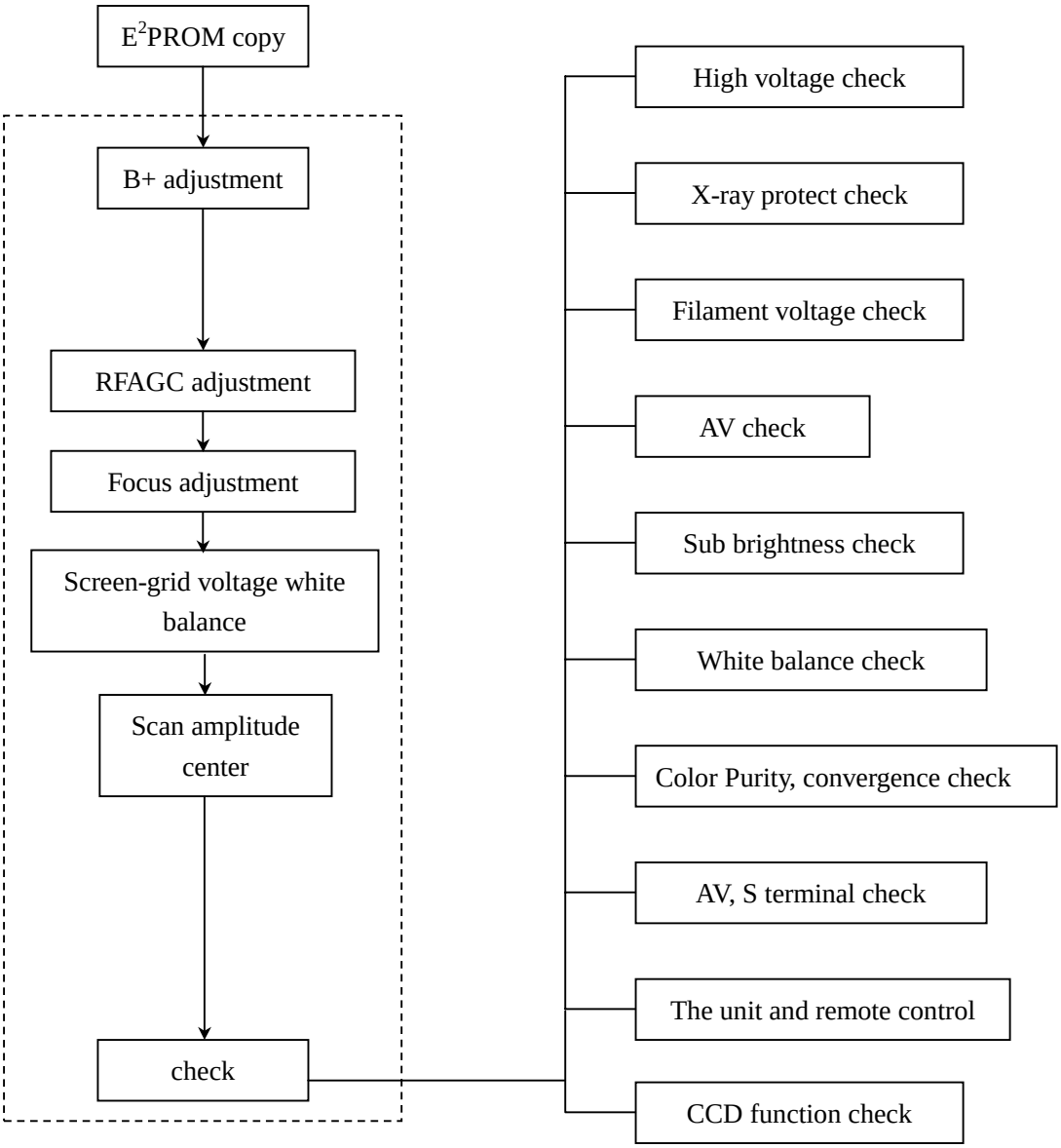


Fig-1 alignment flow

3.3 Enter/exit factory adjustment method

Use remote control, press “MENU” button, then press 6483, “M” will appear on screen to show that you have entered the factory adjustment method, press “STANDBY” to exit it. Use factory remote control, press the “PRESET” and “TEST” button, then the screen display “M” which means you have entered into the factory adjustment mode, press the “TEST” or “STANDBY” to exit.

3.4 select adjustment item and adjust data

After entering factory adjustment mode, press 1-4 number buttons to select menu 1- menu 4; to enter into MENU0, MENU5-MENU9, you may return to MENU1-MENU4 or just after you enter into “M” interface, quickly press “CHILD LOCK” button and then the number button (0,5-9) to enter into relative menus. Press “CH+” and “CH-” to select and “V+” and “V-”to adjust.

3.5 User purview

a). Factory adjustment mode menu1-menu4: only debugging worker, service checker, craftwork technician, designer may operate.

b). Factory adjustment mode menu0, menu5-menu9: only craftwork technician, designer may operate.

4 Alignment methods

4.1 B+ voltage adjustment

a) Connect B+ point with a digital voltmeter to measure the negative pole of VD524
b) Receive PHILIPS test pattern signal and set the picture to standard.
c) Adjust VR501 to let the value of B+ voltage be 110 V ±0.5 V (yongxin super pure flat)

4.2 AGC adjustment

a) receive VHF-H band,60 dB RF signal.
b) Select factory menu2 of “AGC”.
c) Adjust AGC-TOP to let the picture just without noisy, then the voltage of tuner AGC is the required value for adjustment.
d) exit factory menu

4.3 Normal temperature aging

a) do not receive signals.
b) under ”Test” condition, set the accelerator to an appropriate point for aging.

4.4 Accelerator adjustment

a) do not receive signals;
b) select “SC” of factory menu3 to let the field scanning stop working.
c) adjust acceleration potentiometer to let bright lines just appears on screen.
d) exit SC menu.

4.5 High voltage check

Note: the main power voltage (B+=110 V)can affect the high voltage directly, so be sure to let the B+ power voltage accurate. Under any state, the high voltage should not exceed 28 kV.

a) connect an accurate high voltage meter between the second anode cap of picture tube and ground.
b) turn on TV and receive testing card signal.
c) set picture to standard, the high voltage should be 25 kV± 0.5 kV.
d) the high voltage should not exceed 27KV with minimum brightness and contrast.

4.6 Focus adjustment

a) receive A12-PHILIPS (NTSC)signal

b) adjust focus electrode potentiometer on FBT to optimize B area focus of screen.

4.7 White balance adjustment (color temperature 12000°K± 8MPCD,X=0.270± 0.008,Y=0.283± 0.008)

a) receive full white signal, set color is 0

b) select factory menu3

c) on the basis of blue gun ”BD”, select and adjust “RD, GD” item to make white balance respectively at brightness Y=6cd/m^2, Y=80cd/m^2 meet standard (color temperature 12000°K± 8MPCD, x=0.270± 0.008, y=0.283± 0.008)

d)If at brightness Y=6cd/$m^{2,}$ white balance can not meet standard, you may adjust “RB, GB” item, then repeat step C) until white balance meet standard.

4.8 Field scanning adjustment (fig-2)

a) Receive PAL of D35-PHILIPS test pattern signal.

b) select factory menu1

c) adjust V-SLOPE menu to let the horizontal center line of test pattern above blanking.

d) select V-SHIFT menu and adjust to let the vertical center of picture coincide with vertical center of picture tube.

e) Select V-SIZE menu and adjust to let the vertical reproduction ratio of picture acceptable 8%.

f) Adjust V.SC to optimise the vertical S correction of picture.

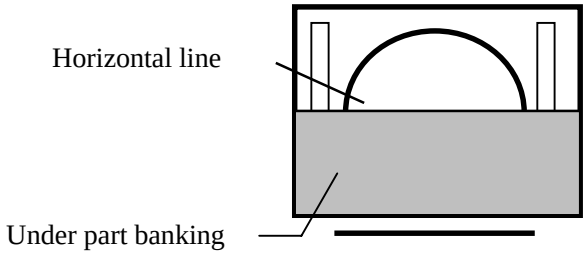


Fig-2 field scan adjustment

4.9 Horizontal scanning adjustment (Fig-3)

a) Receive D35-PHILIPS(PAL) signal

b) Select factory menu1

c) Select H.SHIFT menu and adjust to let the scanning horizontal center coincide with mechanical center of picture tube

d) Exit factory menu

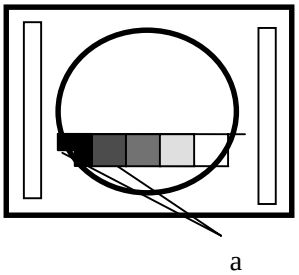


Fig-3 line scan adjustment

4.10 Sub-brightness adjustment

a) Receive A12-PHILIPS(NTSC) signal

b) Select “SB” of factory menu3

c) Adjust “SB” to let things between the sixth and seventh grey scale clear

4.11 OSD adjustment

a) Receive D35-PHILIPS(PAL) signal

b) Select OSD H and OSD V.POS of factory menu4. Adjust OSD H.POS and OSD V.POS to let OSD at

a specified place.

c) Receive A12-PHILIPS(NTSC) signal

d) Select OSD H and OSD V.POS of factory menu4. Adjust OSD H.POS and OSD V.POS to let OSD at a specified place.

e) Exit factory menu

4.12. Checking point

4.12.1 High voltage check

1) Connect High Voltage meter between CRT second anode and GND.

2) Receive A7 signal, set the control to “STANDARD”, measure the high voltage value, the reading should be 25 kV±0. 5 kV

3) Set the brightness and contrast to minimum (zero beam current), measure the high voltage, the reading should not exceed 27kV.

4.12.2 CRT filament voltage check

Receive A7 signal, set user control to “STANDARD” mode, use effective voltage meter to measure CRT filament voltage, the reading should be (6.3±0.3) Vrms

4.12.3 X-ray protection check

1) Receive A7 signal, set user control to “STANDARD” mode.

2) Use voltameter to measure VD482 positive pole to GND voltage, the reading should be between 0.5 V~2.5 V.

3) Use 5.5V DC regulated voltage power with 1K resistor in series to touch TP1 (VD482 positive pole), connect DC regulated voltage power negative pole to GND, X-Ray protection circuit should function, at this time the TV set should be without raster, without sound. Disconnect the DC regulated voltage power, picture and sound should restore to normal.

4.12.4 Picture and sound check

1) Receive standard TV signal.

2) Use picture control buttons to check color, contrast, brightness, sharpness, tint’s function.

3) Use sound control buttons to check volume control function.

4.12.5 Sub-brightness check

Receive A7 signal, set brightness to 75, contrast to 50, color to 0, sharpness to 50, picture left side 1-6 lattices slightly light up.

4.12.6 Color purity and convergence check (in normal way)

4.12.7 AV terminals IN/OUT check, S-VIDEO in check, Y,Cb,Cr in check.

4.12.8 Other buttons on the TV set and remote controller function check.

4.13 Degaussing

a) The unit has and auto degaussing circuit, the degaussing circuit works several seconds after turning on TV

b) If you want to move TV or change the direction, turn off TV and ten minutes later the degaussing circuit will work

c) For better degaussing effect, you can use magnetic eraser
d) Move the magnetic eraser clockwise before your TV, when it is 2m away from your TV, turn off the magnetic eraser. If the effect is still not very good, you can adjust “color purity” and “convergence”

4.14 Color purity correction

a) Turn on your TV
b) At least 15 minutes later, use anti-magnetized coil for degaussing
c) Obtain maximum brightness and contrast
d) Select factory menu3 and adjust to let R and B be zero, then let only green raster appear on the screen at the moment
e) Loosen screws of deflection yoke frame to let vertical green belt appear on screen only
f) Move the rubber wedge
g) Rotate along neck of picture tube and slide color-purity magnets until the green belt at the middle of screen and is vertical at the same time
h) Slowly move the deflection yoke backward of forward until the whole green raster appears on screen, tighten the screws of the deflection yoke
i) Check the color purity of red raster and blue raster
j) Adjust white balance again to obtain white raster

4.15 Convergence correction

4.15.1 Central convergence correction

a) Turn on your TV
b) At least 15 minutes later, receive square test pattern signal
c) Adjust brightness and contrast to get the best picture
d) Adjust the angle of two tetrode magnetic rings to let the red vertical line coincide with the blue vertical line at middle of screen
e) Keep the angle unchanged, move the two tetrode magnetic rings at the same time to let the red and blue horizontal lines coincide at middle of screen
f) Adjust two hexode magnetic rings to let the green line coincide with the mixed line of red and blue. Adjust the angle between them will affect the vertical line, move them together will affect the horizontal line.
g) Repeat d), e), f) and observe the movement of red, green and blue.

4.15.2 Ambient convergence correction

a) Turn on your TV
b) At least 15 minutes later, loosen the screws of the deflection yoke
c) Fixate the rubber wedge temporarily under the deflection yoke
d) Move the deflection yoke upward or downward to get best convergence, push the rubber wedge into space between picture tube and deflection yoke to fixate the deflection yoke temporarily
e) Place the rubber wedge whose overlay paper has been removed at the bottom space
f) Move the deflection yoke left and right to get best convergence
g) Keep the condition unchanged, place another rubber wedge whose overlay paper has been removed also at the upper space at the same time
h) Remove the interim rubber wedge, adhere it to picture tube and deflection yoke
i) After placing three rubber wedges, check all the convergence again
j) Stick three transparent viscous belts to the rubber wedge

4.16 Software adjustment instructions

4.16.1 instructions

This software contain MTS (option), English, Frence and Spanish of OSD, CCD and Parental Control function, FS tuner mode, 181 channel.

4.16.2 turn on the unit in the STANDBY state

Press CH+/CH- buttons turn on in the STANDBY state.

4.16.3 Information of software version

Enter MEU9 of the factory menu in the top.

4.16.4 “STANDARD”, “COLORFUL” and “ SOFTNESS”

a).Enter MENU5 Mode of the factory menu

b).charge their for seemly analog quantity, then return standard option.

4.16.5 Parental control mode switch

a. Enter mode: press the “lock” button to menu, the pre-password is 0000

b. Exit mode: press the “ lock” button again.

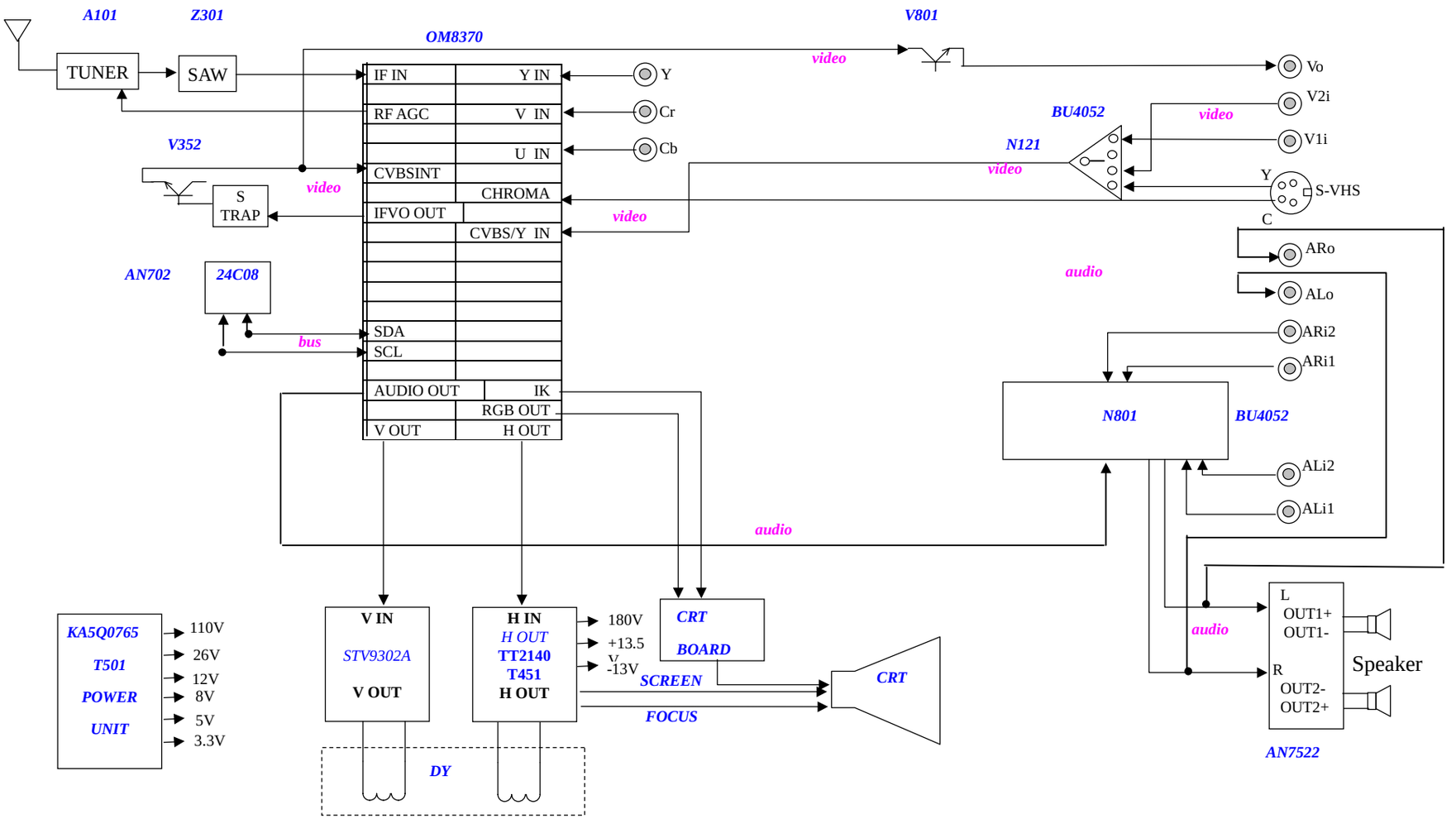
c. Adjustments mode: press the “P+”, “P-“ button to select the menu item, press the “V+”, “V-“ button to adjust the value.

Chart 1: I^2C NOM8370-A-18A EEPROM pre-set data

MI	Items	Range	Preset	
M0	SUBCON	0-63	56-58(sub-contrast)	
	SUBCOL	0-63	56-58(sub-chroma)	
	SUBSHP	0-63	42-48(sub-acutance)	
	SUBTINT	0-63	31(sub-hue)	
	AKB	ON/OFF	ON (black current detection)	
M1			50Hz	60Hz
	V.SLOPE	0-63	36(field center adjustment)	38
	V.SHIFT	0-63	32(field point adjustment)	32
	V.SIZE	0-63	36(field amplitude adjustment)	35
	V.SC	0-63	32(field line)	32
	HSHIFT	0-63	32(line point adjustment)	33
	CHANNEL		35(channel)	12
M2	AGCTAKEOVER	0-63	21(AGC adjustment)	
	SHIPPING		0(leave factory set)	
M3	BT	0-100	75(adjust white balance of brightness)	
	CT	0-100	75(adjust white balance of brightness contrast)	
	SC		0	
	RB	0-63	32(red cut off level adjustment)	
	GB	0-63	32(green cut off level adjustment)	
	RD	0-63	32(red cut off level adjustment)	
	GD	0-63	32(green cut off level adjustment)	
	BD	0-63	32(blue cut off level adjustment)	

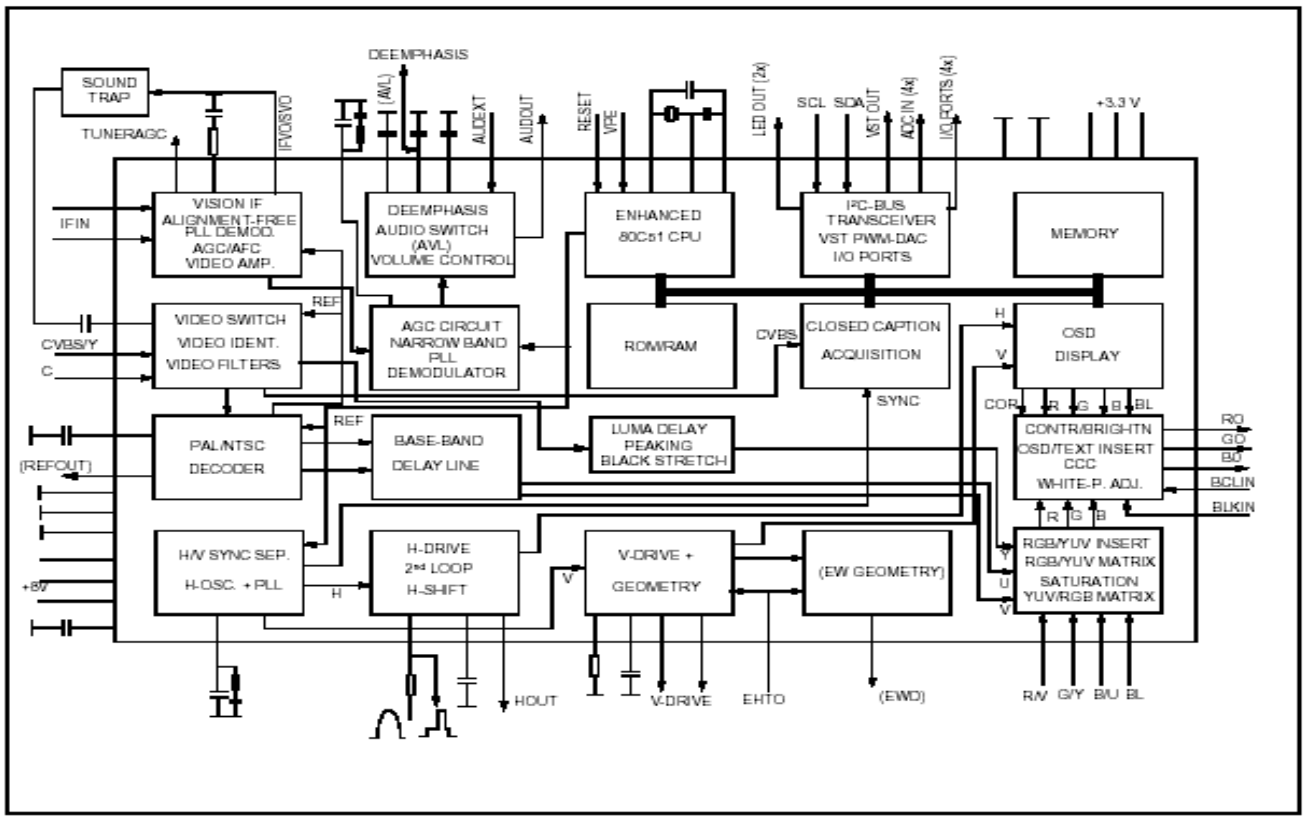
	SB	0-63	40(sub brightness adjustment)	
M4			50Hz	60Hz
	OSD.V.POSITION	0-63	15(OSD position)	18
	OSD.H.POSITION	0-63	25(OSD H-position)	23
	BTSC-AGC	0-15	1	
M5	MODE		STANADARD (standard, soft, floweriness)	
	BRIGHT	0-100	75	
	CONTRAST	0-100	75	
	COLOR	0-100	50	
	SC BRIGHT	0-63	23	
	YDELAYTV	0-15	12	
	YDELAYAV	0-15	12	
M6	OSO	0-1	1(field over-scan switch)	
	AGCSPEED	0-3	1(AGC of speed)	
	FFI	0-1	0(IF PLL SPEED)	
	FMWS	0-1	1(frequency range of sound OFF=225KHZ,ON=450KHZ)	
	RP0	0-3	0(pre-shock and over-shock scale)	
	NTSCMATRIX	USA/JAPAN	USA	
	VOLPIN	0-1	0(1:push-pull output; 0: OC gate output.)	
	SOFT CLIP	0-3	3(white level limit)	
	PEAK WHITE	0-15	15(peak white limit)	
	CORING	0-1	0(coring noise reduction)	
M7	AV2	0/1	1	
	SVHS	0/1	1	
	YUV	0/1	1	
	VOLADJPOING		1(volume value have: 1, 25, 50, 75)	
	VOLVALUE		20(volume curve value: 20, 60, 75, 90)	
M8	CATHOOELEVEL	0-15	6-7(cathode level)	
	FMATT	0-63	45-46(UOC sound output of amplitude) BTSC : 28	
M9	NOM8370-A-18A			
	STARTON	0-2	0(turn on)	
	LOGO	ON/OFF	OFF	
	ON DELAY	0-15	8-10 (turn on time)	
	ON DELAY M	5-15	5-8 (turn on time of factory)	
	OFF-SET IF	0-63	32(IF compensate)	
	TUNER OPTION	0-2	0(BXATB011F---X/ BXATB108F---K) 1 (BXATB017F---K) 2(XXX)	
	AV MEM	ON/OFF	OFF (turn on of the AV memory)	

Block diagram



MAIN IC

NOM 8370-A-18A



ICs functional description

UOC OM8370

SYMBOL	PIN	DESCRIPTION
STAND BY output.	1	In STAND BY mode, high level (Power OFF). For Power ON this pin will be reduced to low.
SCL	2	I^2C-bus clock line
SDA	3	I^2C-bus data line
TUNING	4	NC
P3.0/NTSC SW	5	NC
KEY	6	Control keys input
VOL	7	Sound Volume control PWM output
MUTE	8	Sound mute output
VSSC/P	9	Digit ground for µ-controller core and periphery
BAND1	10	NC
BAND2	11	NC
VSSA	12	Analog ground of teletext decoder and digital ground of TV-processor
SECPLL	13	PLL decoupling
VP2	14	2nd supply voltage TV-processor(+8V)

DECDIG	15	decoupling digital supply of TV-processor
PH2LF	16	Phase-2 filter
PH1LF	17	Phase-1 filter
GND3	18	Ground 3 for TV-processor
DECBG	19	Band gap decoupling
AVL/EWD	20	Automatic volume leveling /EAST-WEST drive output
VDRB	21	Vertical drive B output
VDRA	22	Vertical drive A output
IFIN1	23	IF input 1
IFIN2	24	IF input 2
IREF	25	Reference current input
VSC	26	Vertical sawtooth capacitor
TUNER AGC	27	Tuner AGC output
AUDEEM/SIFIN1 *1	28	Audio deemphasis or SIF input
DECSDEM/SIFIN2	29	decoupling sound demodulator or SIF input 2
GND2	30	ground 2 for TV processor
SNDPLL/SIFAGC *1	31	narrow band PLL filter or AGC sound IF
AVL/SNDIF/REF0/ AMOUT *1	32	Automatic Volume Levelling / sound IF input / subcarrier reference output / audio deemphasis
HOUT	33	horizontal output
FBISO	34	flyback input/sandcastle output
AUDEXT/QSSO/ AMOUT *1	35	external audio output / QSS intercarrier out
EHTO	36	EHT/overvoltage protection input
PLL IF	37	IF-PLL loop filter
IFVO/SVO	38	IF video output / selected CVBS output
VP1	39	supply voltage TV processor
CVBS INT	40	internal CVBS input
GND1	41	ground for TV processor
CVBS/Y	42	CVBS/Y input
CHROMA	43	C input
AUDOUT/AMOUT *1	44	audio output /AM audio output (volume controlled)
INSSW2	45	2nd RGB / YUV insertion input
R2/VIN	46	2nd R input / V (R-Y) input / PR input
G2/YIN	47	2nd G input / Y input
B2/UIN	48	2nd B input / U (B-Y) input / PB input
BCLIN	49	beam current limiter input
BLKIN	50	black current input / V-guard input
RO	51	Red output
GO	52	Green output
BO	53	Blue output
VDDA	54	analog supply of Closed Caption decoder and digital supply of

		TV-processor (3.3 V)
VPE	55	OTP Programming Voltage
VDDC	56	digital supply to core (3.3 V)
OSCGND	57	oscillator ground supply
XTALIN	58	crystal oscillator input
XTALOUT	59	crystal oscillator output
RESET	60	reset
VDDP	61	digital supply to periphery (+3.3 V)
P1.0/INT1	62	TV/AV (AV1) / AV2 /S-VHS mode Output.
P1.1/T0	63	TV/AV (AV1) / AV2 /S-VHS mode Output.
P1.2/INT0	64	Remote control signal input.

AN7522/AN17821A Function : audio output

Symbol	PIN	Function	Symbol	PIN	Function
Vcc	1	Power supply	GND	7	ground
Out 1 (+)	2	Ch 1 output (+)	In 2	8	Ch 2 input
GND(out 1)	3	Ch 1Ground	VOL	9	Volume Control
Out 1 (-)	4	Ch 1 output (-)	Out 2 (-)	10	Ch 2 output (-)
Standby	5	Mute input	GND(out 2)	11	Ch 2 Ground
In 1	6	Ch 1 input	Out 2 (+)	12	Ch 2 output (+)

STV9302A/LA78040 Function : vertical output

Symbol	PIN	Function	Symbol	PIN	Function
INV IN	1	Input	V OUT	5	Vertical output
VCC1	2	Power	VCC2	6	Output power supply
PUMP UP	3	Pump up power	NON INV IN	7	Negative feedback
GND	4	Ground			

IC voltages

TDA(OM)8377

PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
V	2.8	3.8	3.6	3.3	3.5	3.5	0.1	0.1	0	5.4	0.1	0	2.3	8	5	3
PIN	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
V	4	0	4	0.9	0.7	0.8	1.9	1.9	3.9	3.8	1.6	3.2	3.4	0	2.4	0.1
PIN	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
V	0.6	0.5	3.7	1.7	2.4	3.1	8	3.8	0	3.4	1.5	3.6	2.3	2.6	2.6	2.6
PIN	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
V	2.3	7.2	2.7	2.7	2.7	3.5	0	3.5	0.1	1.7	1.8	0	3.5	0.1	0.1	5

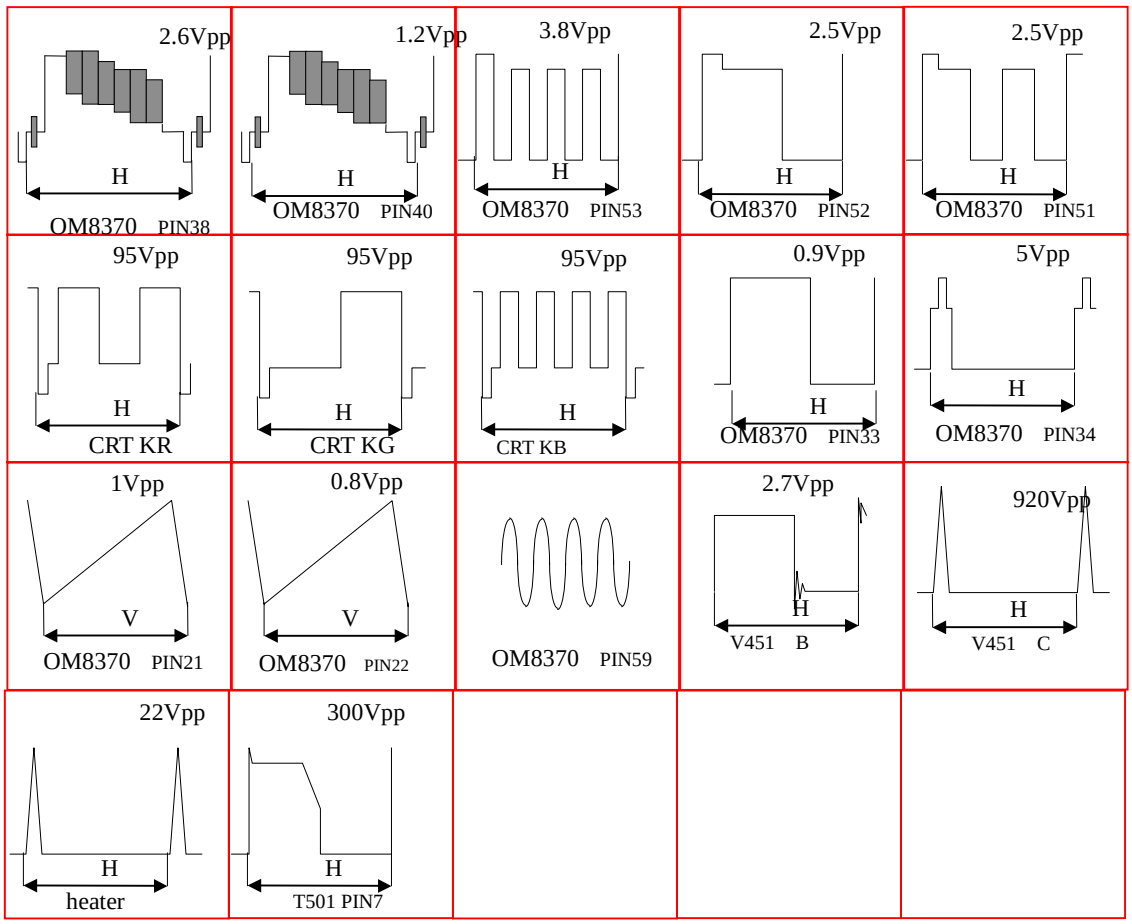
STV9302A/LA78040

PIN	1	2	3	4	5	6	7
V	0.7	15	-12	-15	0.3	15.9	-0.07

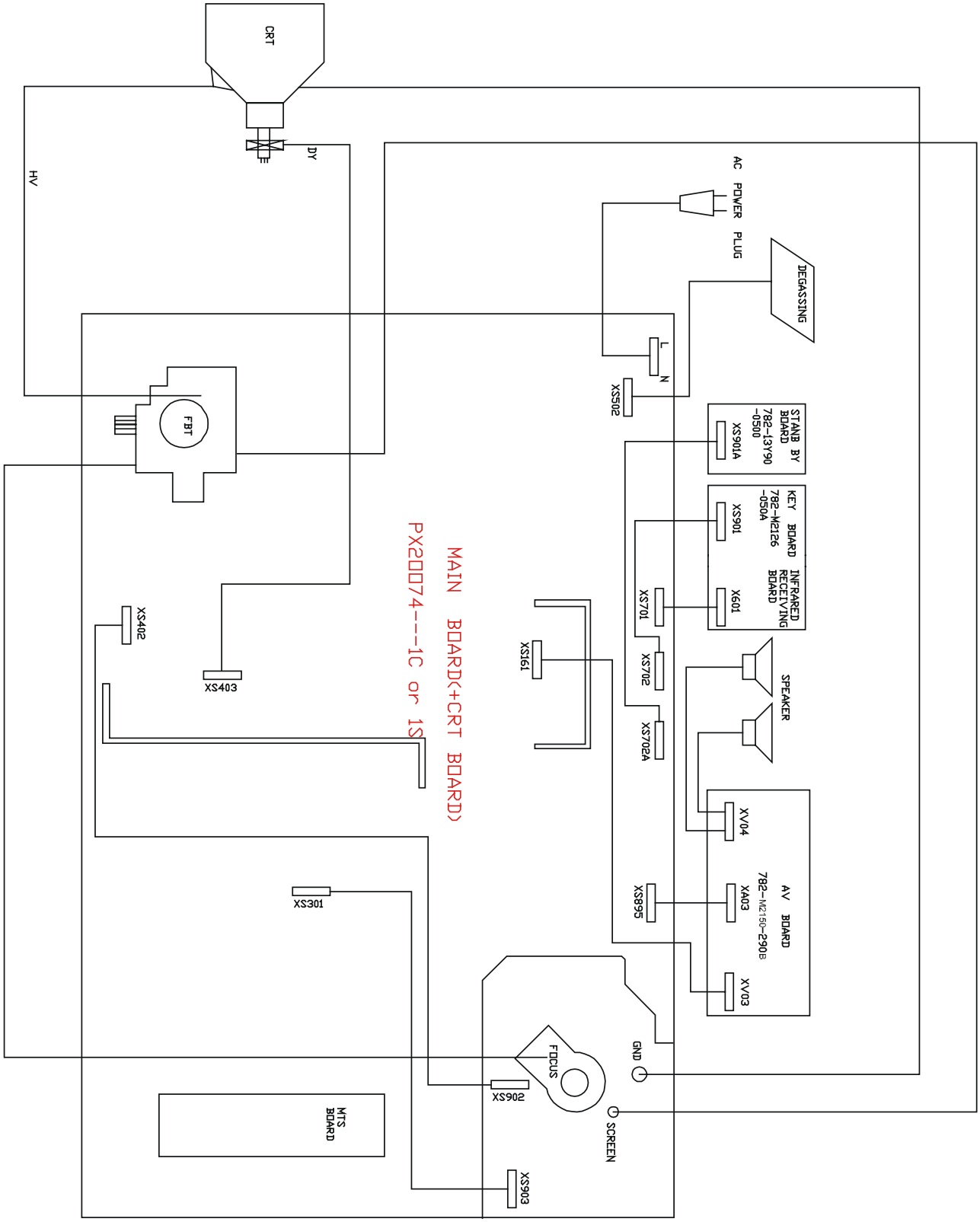
AN 7522/AN17821A

PIN	1	2	3	4	5	6	7	8	9	10	11	12	
V	12	7	0	7	3.3	1.4	0	1.4	0	7	0	7	

6. Test point Waveforms

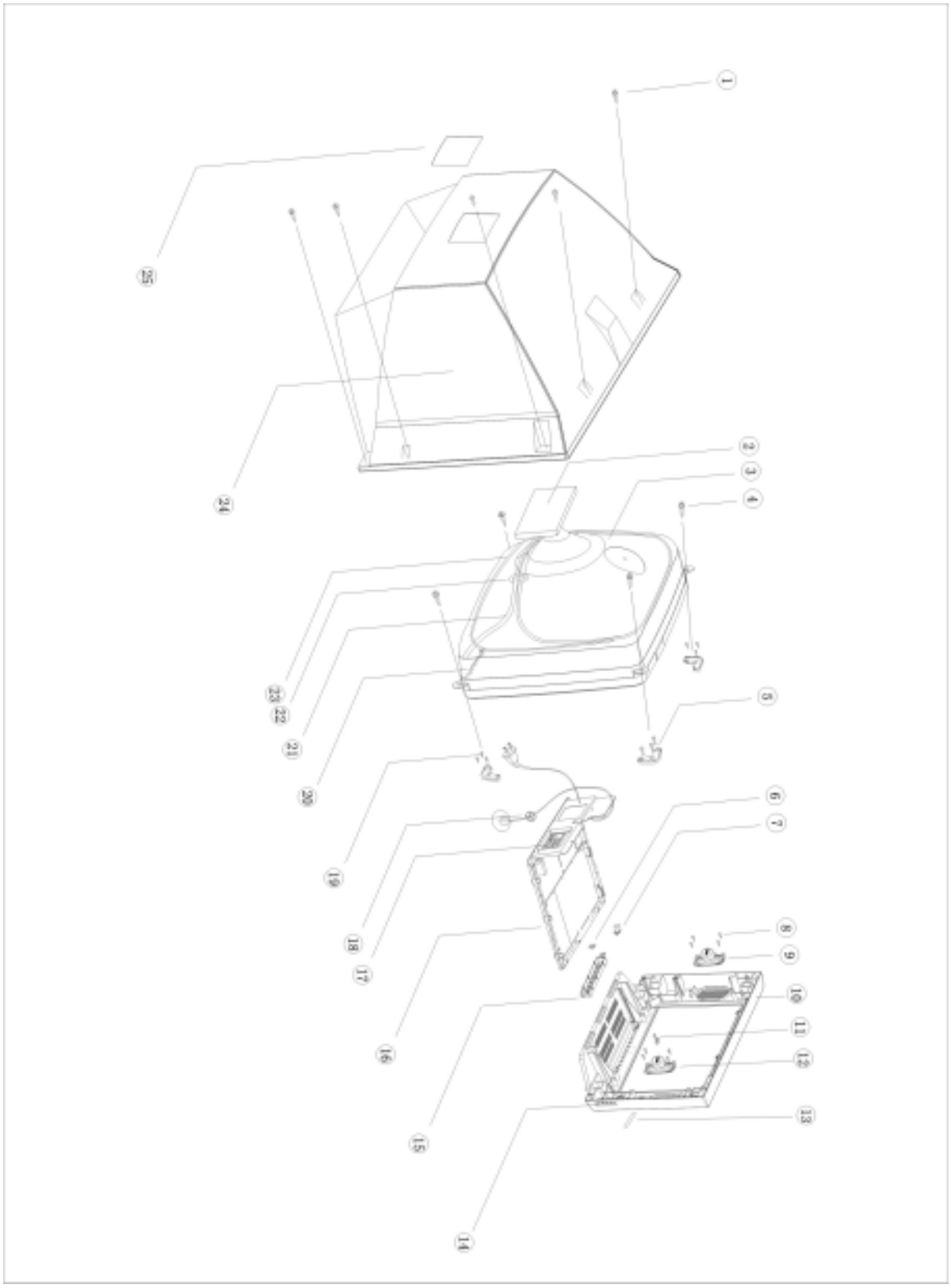


Wiring diagram



Exploded views

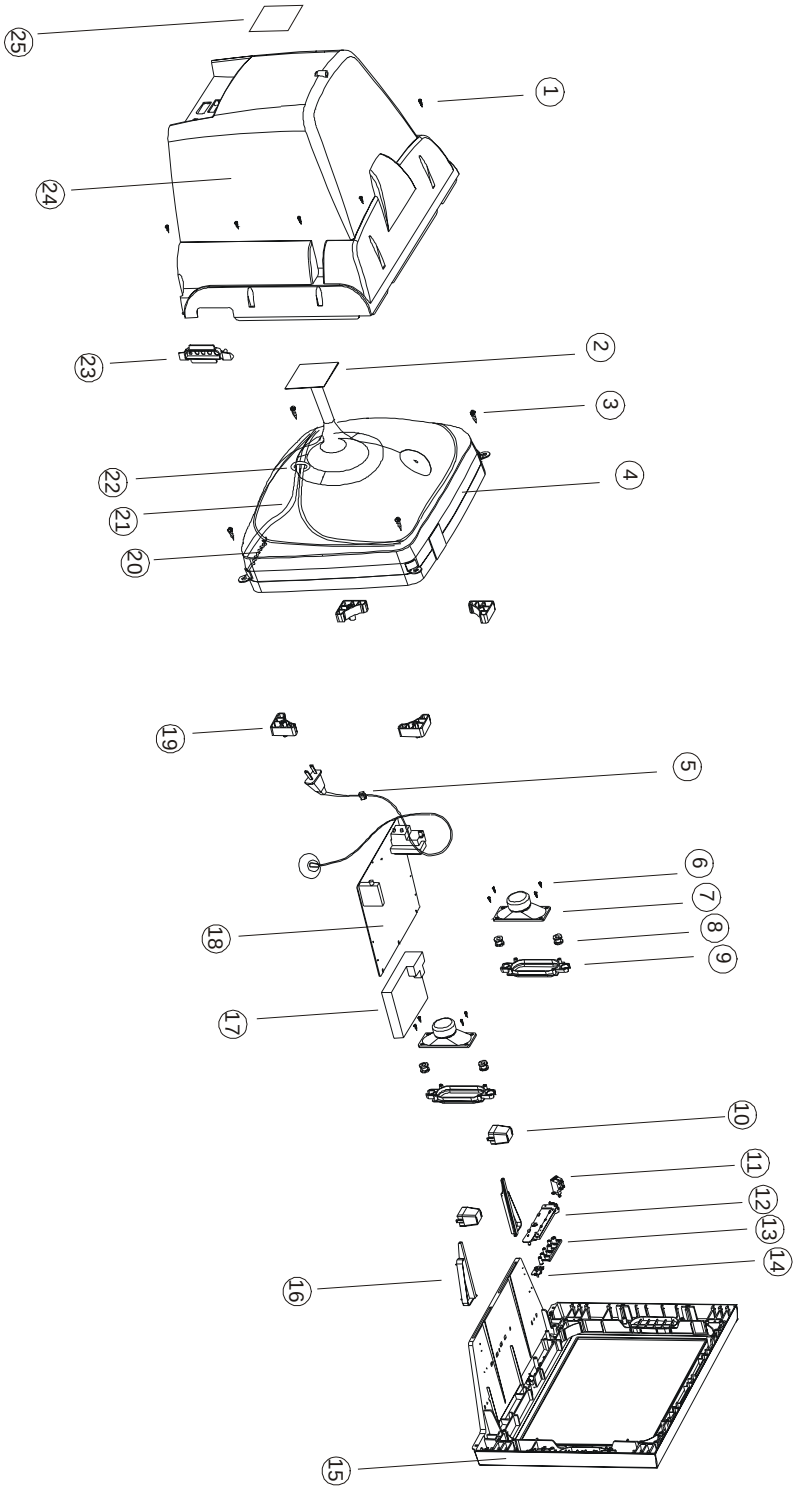
TK1433



TK1433 exploded views list

NO.	DESCRIPTION	NO.	DESCRIPTION
1	SCREW	14	SIDE AV
2	CRT BOARD	15	BUTTON ASSY
3	CRT	16	MAIN BOARD ASSY
4	SCREW	17	REAR PANEL
5	CRT FIXER	18	THREDAD CLASP
6	LED COLUMN	19	SCREW
7	POWER SWITCH	20	BRAIDED PULLING SPRING
8	SCREW	21	DEGAUSSING COIL
9	SPEAKER	22	THREDAD CLASP
10	FRONT CABINET	23	BRAIDED PULLING
11	POWER KEY	24	HOLDER
12	SPEAKER	25	REAR CABINET
13	LOGO	26	LABEL

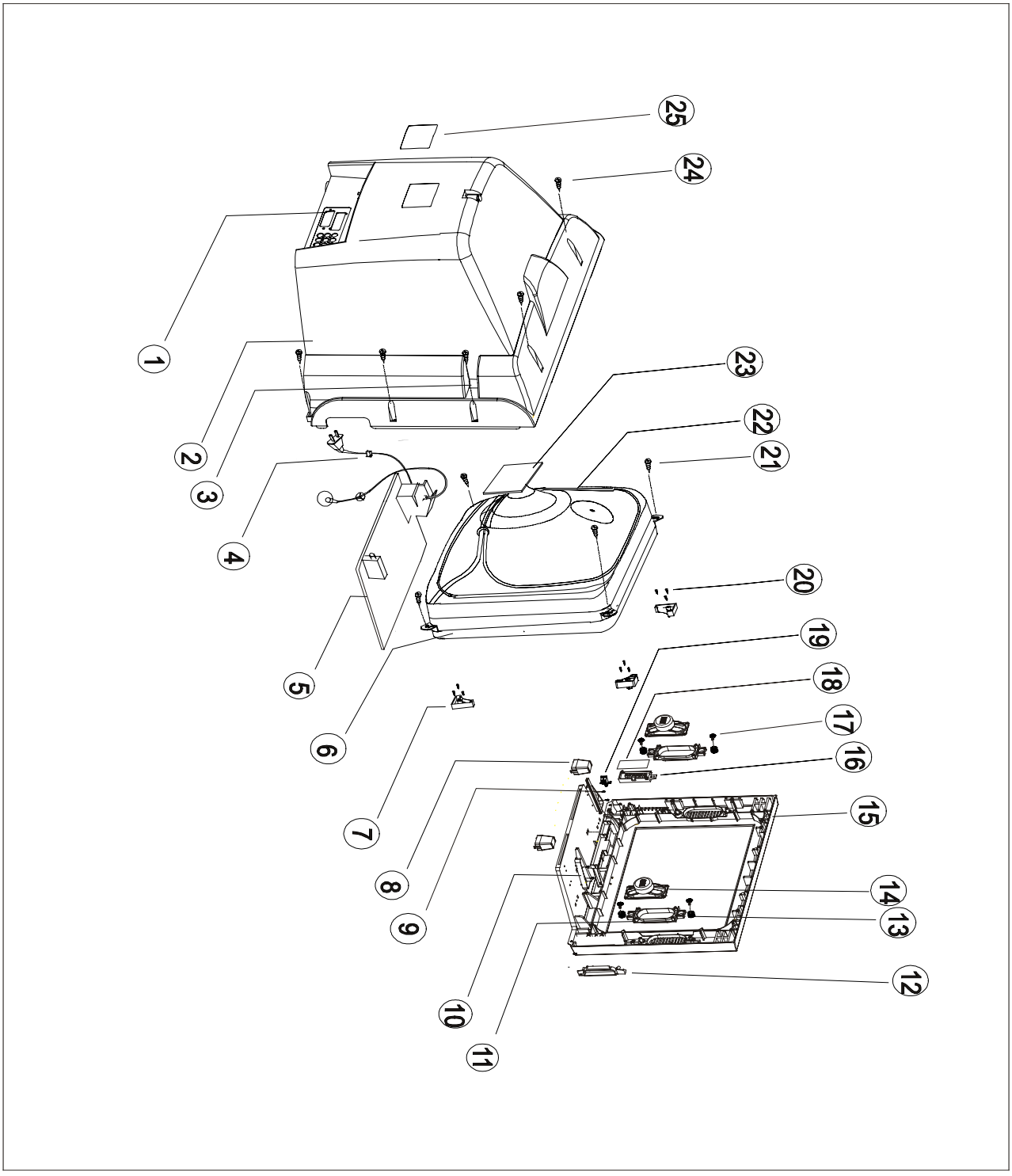
TK2026/2126



TK2026/2126 exploded views list

NO.	DESCRIPTION	NO.	DESCRIPTION
1	SCREW	14	POWER KEY
2	CRT BOARD	15	FRONT CABIET
3	SCREW	16	SUPPORT
4	CRT	17	MAIN BOARD ASSY
5	THREDAD CLASP	18	MAIN BOARD
6	SCREW	19	CRT FIXER
7	SPEAKER	20	BRAIDED PULLING SPRING
8	RUBBER WASHER	21	DEGAUSSING COIL
9	SPEAKER BRACKET	22	THREDAD CLASP
10	SUPPORT	23	SIDE AV
11	LED COLUMN	24	HOLDER
12	SPEAKER	25	LABEL
13	BUTTON ASSY		

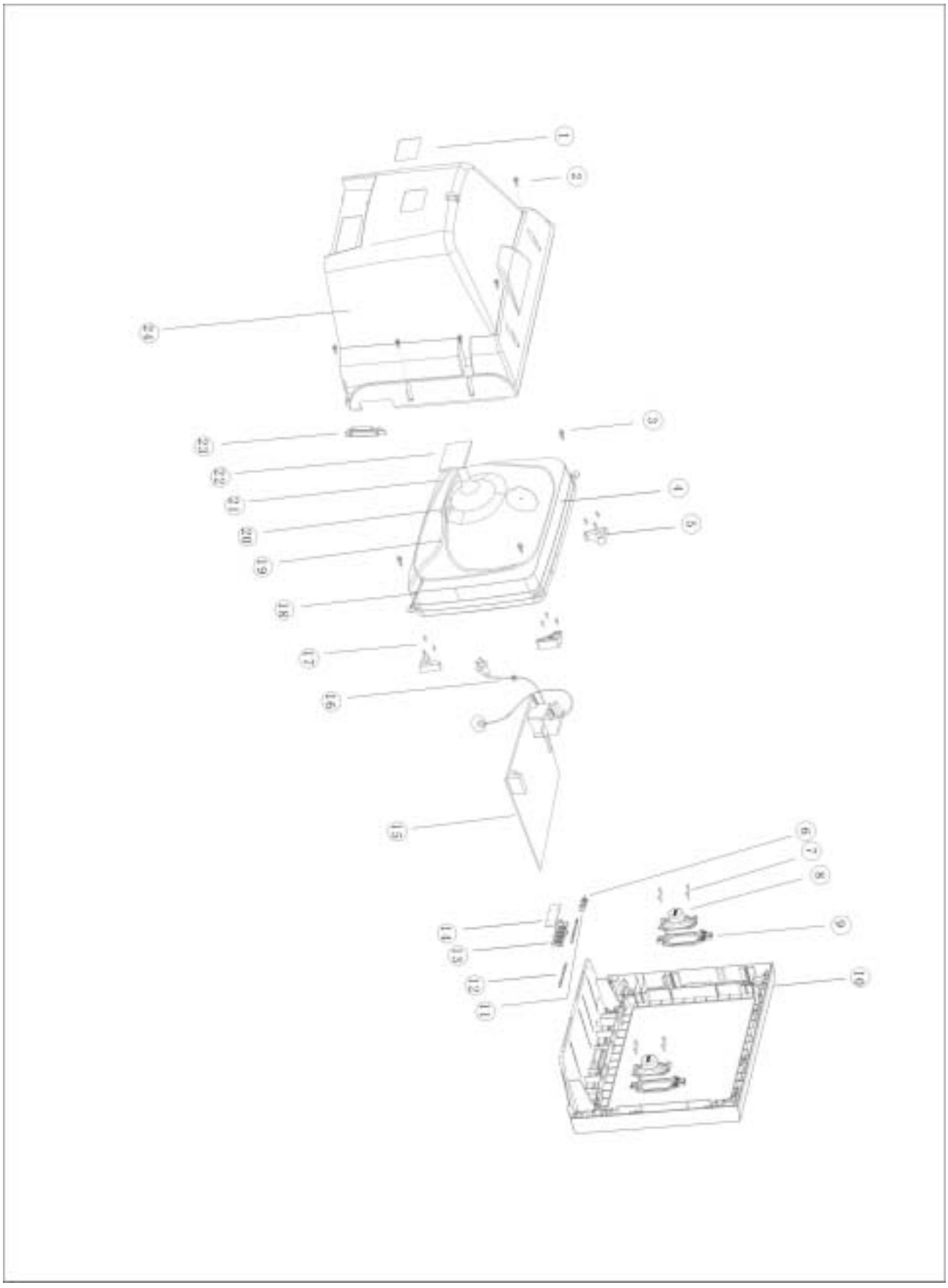
TK2050/TK2051(2150/2151)



TK2050/TK2051(2150/2151) exploded views list

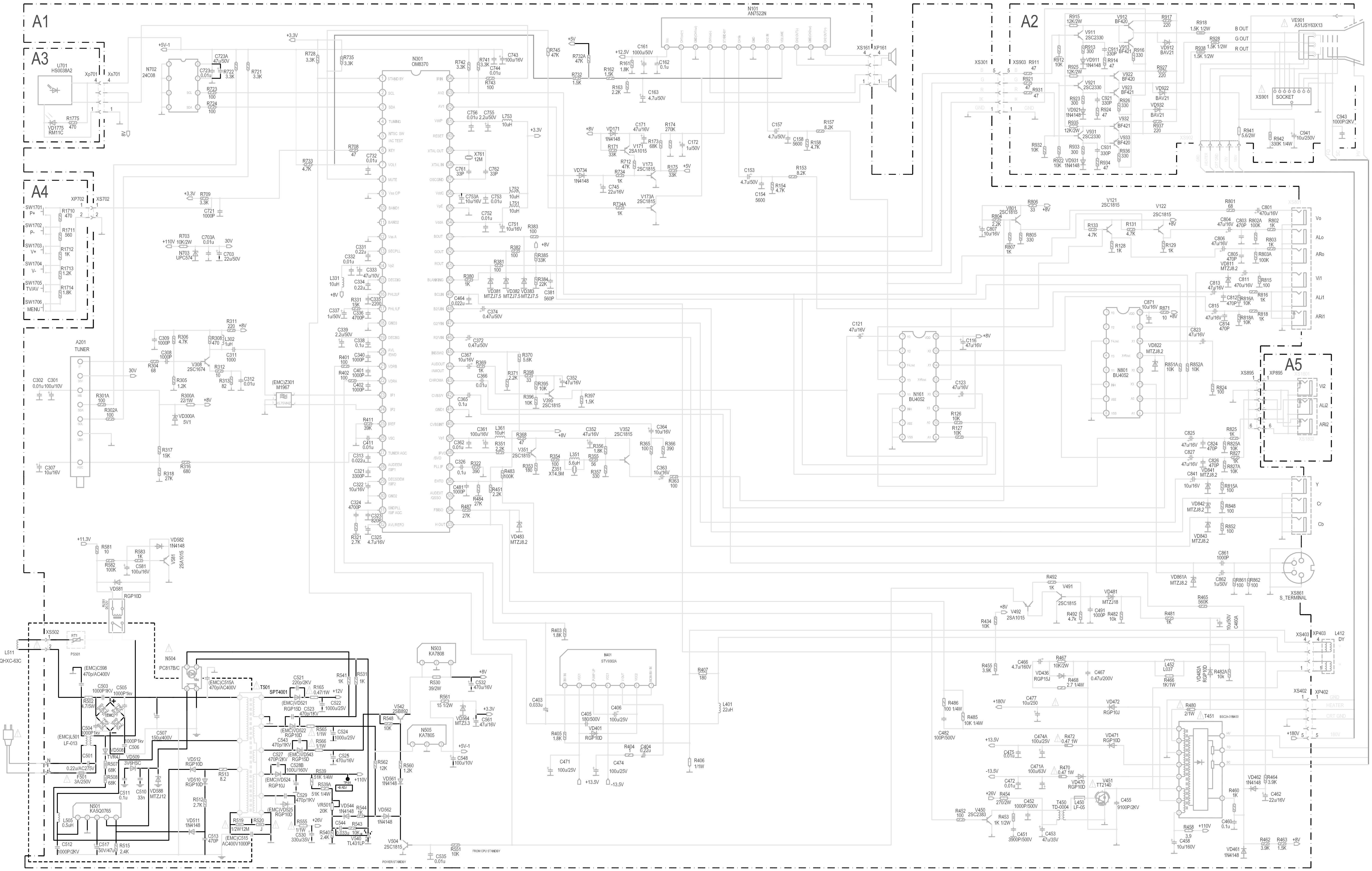
NO.	DESCRIPTION	NO.	DESCRIPTION
1	REAR PANEL	14	SPEAKER
2	BACK CABINET	15	FRONT CABINET
3	HOLDER	16	BUTTON
4	CLASP	17	SCREW
5	MAIN BOARD ASSEMBLY	18	BUTTON BOARD
6	CRT	19	POWER SWITCH
7	CRT FIXER	20	SCREW
8	CRT SUPPORT	21	SCREW
9	SCREW	22	DEGAUSSING COIL
10	MAIN BOARD LEADING TRACK	23	CRT BOARD
11	SPEAKER BRACKET	24	SCREW
12	AV BRACKET	25	LABEL
13	RUBBER WASHER		

TK2053/2153



TK2053/2153 exploded views list

NO.	DESCRIPTION	NO.	DESCRIPTION
1	LABEL	14	BUTTON BOARD
2	SCREW	15	MAIN BOARD
3	SCREW	16	POWER COIL
4	CRT	17	SCREW
5	CRT FIXER	18	BRAIDED PULLING SPRING
6	LIGHT-TOUCH SWITCH	19	BRAIDED PULLING
7	SCREW	20	THREDAD CLASP
8	SPEAKER	21	DEGAUSSING COIL
9	SPEAKER SUPPORT	22	CRT BOARD ASSY
10	FRONT CABINET	23	REAR CABINET
11	LED COLUMN	24	SIDE AV SUPPORT
12	DECORATION PIECE		
13	BUTTON		


A1
A2
A3
A4
A5
N301 OM8370
N101 AN7522N
N401 STV9302A
N161 BU4052
N801 BU4052
N702 24C08
N501 KA5Q0765
N503 KA7808
N505 KA7805
N504 PC817B/C
T501 SPT4001
T451
A201 TUNER
U701 HS0038A2
VE901 A51JSY63X13
XS901 SOCKET
XS861 S_TERMINAL
L412 DY
L511 QHXC-63C

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION "SAFETY PRECAUTION" AND "COMPONENTS SAFETY NOTICE" ON PAGE 1 OF THIS MANUAL.

CAUTION: 1. The shaded areas makes in the schematic diagram and the parts list designate componentswhich have special characteristics important for safety and should be replaced only with type identical tothose in the original circuit or specified in the parts list. Before replacing any of these components,read carefully the COMPONENTS SAFETY NOTICE on page 1.
2. Do not degrade the safety of the receiver through improper servicing.

ELECTRICAL PARTS LIST FOR MAIN BOARD

	MAINBOARD	
	DIODE	
340-00001-00	1N4148	VD911
340-00001-003	1N4148	VD171
340-00001-003	1N4148	VD461
340-00001-003	1N4148	VD462
340-00001-003	1N4148	VD511
340-00001-003	1N4148	VD544
340-00001-003	1N4148	VD561
340-00001-003	1N4148	VD562
340-00001-003	1N4148	VD734
340-00001-003	1N4148	VD921
340-00001-003	1N4148	VD931
	ZENER DIODE	
340-51790-003	HZ18C2	VD481
	CERAMIC CAPACITOR	
459-2133K-90	RBU07SL331K-H46CA	C911
459-2133K-902	RBU07SL331K-H46CA	C921
459-2133K-902	RBU07SL331K-H46CA	C931
459-2147H-90	CC1-12-SL-63V-471J	C732
459-2147H-902	CC1-12-SL-63V-471J	C803
459-2147H-902	CC1-12-SL-63V-471J	C805
459-2147H-902	CC1-12-SL-63V-471J	C812
459-2147H-902	CC1-12-SL-63V-471J	C814
459-2147H-902	CC1-12-SL-63V-471J	C824
459-2147H-902	CC1-12-SL-63V-471J	C826
459-2156K-002	CT1-06-2B4-63V-561K	C381
459-2182K-002	RPU05B821K-H46CA	C323
459-2210K-002	CK45-B1H102KYR	C308
459-2210K-002	CK45-B1H102KYR	C311
459-2210K-002	CK45-B1H102KYR	C401
459-2210K-002	CK45-B1H102KYR	C402
459-2210K-002	CK45-B1H102KYR	C721
459-2210K-002	CK45-B1H102KYR	C861

459-2222K-002	CT1-08-2B4-63V-222K	C335
459-2310R-002	CK45-F1H103ZYR	C309
459-2310R-002	CK45-F1H103ZYR	C313
459-2310R-002	CK45-F1H103ZYR	C332
459-2310R-002	CK45-F1H103ZYR	C362
459-2310R-002	CK45-F1H103ZYR	C399
459-2310R-002	CK45-F1H103ZYR	C472
459-2310R-002	CK45-F1H103ZYR	C475
459-2310R-002	CK45-F1H103ZYR	C535
459-2310R-002	CK45-F1H103ZYR	C723
459-2310R-002	CK45-F1H103ZYR	C744
459-2310R-002	CK45-F1H103ZYR	C752
459-2310R-002	CK45-F1H103ZYR	C756
459-2410R-002	DD308-63F104Z50	C302
459-2410R-002	DD308-63F104Z50	C703A
459-5122K-002	RQC05B221K-6H46UA	C405
459-5147K-002	RQC05B471K-H46CA	C513
459-5210K-002	CK45-B2H102KYR	C452
459-5239K-002	CK45-B2H392KYR	C451
	POLYESTER CAP	
462-00256-H02	CL11-100V-5600PF-J	C154
462-00256-H02	CL11-100V-5600PF-J	C158
462-00333-H02	CL11-100V-0.033uF-J	C403
462-00333-H02	CL11-100V-0.033uF-J	C510
462-00333-H02	CL11-100V-0.033uF-J	C544
462-00410-H02	CL11-100V-0.1uF-J	C460
462-B0233-H02	CL21X-50V-3300PF-J	C321
462-B0422-H02	CL21X-50V-0.22uF-J	C491
	ELECTROLYTIC CAP	
464-60447-M02	CD110-50V-0.47uF-M	C372
464-60447-M02	CD110-50V-0.47uF-M	C374
464-60510-M02	CD110-50V-1uF-M	C163
464-60510-M02	CD110-50V-1uF-M	C337
464-60510-M02	CD110-50V-1uF-M	C841
464-60510-M02	CD110-50V-1uF-M	C862
464-60522-M02	CD110-50V-2.2uF-M	C339
464-60522-M02	CD110-50V-2.2uF-M	C755
464-60547-M0	CD110-50V-4.7uF-M	C340
464-60547-M0	CD110-50V-4.7uF-M	C340
464-60547-M02	CD110-50V-4.7uF-M	C153
464-60547-M02	CD110-50V-4.7uF-M	C157
464-60547-M02	CD110-50V-4.7uF-M	C325
464-60547-M02	CD110-50V-4.7uF-M	C464
464-60547-M02	CD110-50V-4.7uF-M	C481
464-60622-M02	CD110-50V-22uF-M	C703

464-60647-M02	CD110-50V-47uF-M	C462
464-60647-M02	CD110-50V-47uF-M	C517
464-62547-M02	CD288-160V-4.7uF-M	C466
464-6C710-M02	CD110-10V-100uF-M	C301
464-6C710-M02	CD110-10V-100uF-M	C548
464-6D610-M0	CD110-16V-10uF-M	C322
464-6D610-M02	CD110-16V-10uF-M	C163A
464-6D610-M02	CD110-16V-10uF-M	C172
464-6D610-M02	CD110-16V-10uF-M	C307
464-6D610-M02	CD110-16V-10uF-M	C363
464-6D610-M02	CD110-16V-10uF-M	C364
464-6D610-M02	CD110-16V-10uF-M	C367
464-6D610-M02	CD110-16V-10uF-M	C751
464-6D610-M02	CD110-16V-10uF-M	C807
464-6D622-M02	CD110-16V-22uF-M	C352
464-6D622-M02	CD110-16V-22uF-M	C745
464-6D647-M0	CD110-16V-47uF-M	C723A
464-6D647-M02	CD110-16V-47uF-M	C116
464-6D647-M02	CD110-16V-47uF-M	C121
464-6D647-M02	CD110-16V-47uF-M	C123
464-6D647-M02	CD110-16V-47uF-M	C171
464-6D647-M02	CD110-16V-47uF-M	C333
464-6D647-M02	CD110-16V-47uF-M	C561
464-6D647-M02	CD110-16V-47uF-M	C804
464-6D647-M02	CD110-16V-47uF-M	C806
464-6D647-M02	CD110-16V-47uF-M	C811
464-6D647-M02	CD110-16V-47uF-M	C813
464-6D647-M02	CD110-16V-47uF-M	C815
464-6D647-M02	CD110-16V-47uF-M	C823
464-6D647-M02	CD110-16V-47uF-M	C825
464-6D647-M02	CD110-16V-47uF-M	C827
464-6D647-M02	CD110-16V-47uF-M	C871
464-6D710-M0	CD110-16V-100uF-M	C743
464-6D710-M02	CD110-16V-100uF-M	C361
464-6D747-M02	CD110-16V-470uF-M	C525
464-6D747-M02	CD110-16V-470uF-M	C532
464-6D747-M02	CD110-16V-470uF-M	C801
464-6E710-M02	CD110-25V-100uF-M	C471A
464-6E710-M02	CD110-25V-100uF-M	C474A
464-6E722-M02	CD110-25V-220uF-M	C471
464-6E722-M02	CD110-25V-220uF-M	C474
464-6F647-M02	CD110-35V-47uF-M	C453
464-6F647-M02	CD110-35V-47uF-M	C460A
464-6F710-M02	CD110-35V-100uF-M	C406
	CARBON RESISTOR	

467-1C022-H0	1/6W-22Ω-J	R914
467-1C022-H03	1/6W-22Ω-J	R924
467-1C022-H03	1/6W-22Ω-J	R934
467-1C033-H03	1/6W-33Ω-J	R398
467-1C033-H03	1/6W-33Ω-J	R806
467-1C047-H03	1/6W-47Ω-J	R368
467-1C047-H03	1/6W-47Ω-J	R708
467-1C047-H03	1/6W-47Ω-J	R911
467-1C047-H03	1/6W-47Ω-J	R921A
467-1C047-H03	1/6W-47Ω-J	R931A
467-1C056-H03	1/6W-56Ω-J	R354
467-1C056-H03	1/6W-56Ω-J	R355
467-1C056-H03	1/6W-56Ω-J	R801
467-1C068-H03	1/6W-68Ω-J	R304
467-1C082-H03	1/6W-82Ω-J	R313
467-1C082-H03	1/6W-82Ω-J	R815
467-1C082-H03	1/6W-82Ω-J	R824
467-1C110-H03	1/6W-100Ω-J	R301A
467-1C110-H03	1/6W-100Ω-J	R302A
467-1C110-H03	1/6W-100Ω-J	R363
467-1C110-H03	1/6W-100Ω-J	R365
467-1C110-H03	1/6W-100Ω-J	R366
467-1C110-H03	1/6W-100Ω-J	R381
467-1C110-H03	1/6W-100Ω-J	R382
467-1C110-H03	1/6W-100Ω-J	R383
467-1C110-H03	1/6W-100Ω-J	R401
467-1C110-H03	1/6W-100Ω-J	R402
467-1C110-H03	1/6W-100Ω-J	R452
467-1C110-H03	1/6W-100Ω-J	R723
467-1C110-H03	1/6W-100Ω-J	R724
467-1C110-H03	1/6W-100Ω-J	R743
467-1C110-H03	1/6W-100Ω-J	R861
467-1C110-H03	1/6W-100Ω-J	R862
467-1C115-H03	1/6W-150Ω-J	R304A
467-1C115-H03	1/6W-150Ω-J	R815A
467-1C115-H03	1/6W-150Ω-J	R848
467-1C115-H03	1/6W-150Ω-J	R852
467-1C118-H03	1/6W-180Ω-J	R353
467-1C118-H03	1/6W-180Ω-J	R805
467-1C122-H03	1/6W-220Ω-J	R311
467-1C122-H03	1/6W-220Ω-J	R917
467-1C122-H03	1/6W-220Ω-J	R927
467-1C122-H03	1/6W-220Ω-J	R937
467-1C130-H0	1/6W-300Ω-J	R913
467-1C130-H03	1/6W-300Ω-J	R923

467-1C130-H03	1/6W-300Ω-J	R933
467-1C133-H03	1/6W-330Ω-J	R916
467-1C133-H03	1/6W-330Ω-J	R926
467-1C133-H03	1/6W-330Ω-J	R936
467-1C139-H03	1/6W-390Ω-J	R322
467-1C139-H03	1/6W-390Ω-J	R775
467-1C147-H03	1/6W-470Ω-J	R308
467-1C168-H03	1/6W-680Ω-J	R316
467-1C210-H03	1/6W-1K-J	R128
467-1C210-H03	1/6W-1K-J	R129
467-1C210-H03	1/6W-1K-J	R369
467-1C210-H03	1/6W-1K-J	R380
467-1C210-H03	1/6W-1K-J	R464
467-1C210-H03	1/6W-1K-J	R492
467-1C210-H03	1/6W-1K-J	R531
467-1C210-H03	1/6W-1K-J	R541
467-1C210-H03	1/6W-1K-J	R544
467-1C210-H03	1/6W-1K-J	R734
467-1C210-H03	1/6W-1K-J	R802
467-1C210-H03	1/6W-1K-J	R803
467-1C210-H03	1/6W-1K-J	R816
467-1C210-H03	1/6W-1K-J	R818
467-1C210-H03	1/6W-1K-J	R825
467-1C210-H03	1/6W-1K-J	R827
467-1C212-H03	1/6W-1.2K-J	R305
467-1C212-H03	1/6W-1.2K-J	R560
467-1C215-H03	1/6W-1.5K-J	R397
467-1C215-H03	1/6W-1.5K-J	R732
467-1C222-H03	1/6W-2.2K-J	R351
467-1C222-H03	1/6W-2.2K-J	R371
467-1C222-H03	1/6W-2.2K-J	R451
467-1C224-H03	1/6W-2.4K-J	R515
467-1C227-H03	1/6W-2.7K-J	R321
467-1C227-H03	1/6W-2.7K-J	R512
467-1C227-H03	1/6W-2.7K-J	R540
467-1C233-H03	1/6W-3.3K-J	R463
467-1C233-H03	1/6W-3.3K-J	R702
467-1C233-H03	1/6W-3.3K-J	R709
467-1C233-H03	1/6W-3.3K-J	R721
467-1C233-H03	1/6W-3.3K-J	R722
467-1C233-H03	1/6W-3.3K-J	R728
467-1C233-H03	1/6W-3.3K-J	R735
467-1C233-H03	1/6W-3.3K-J	R741
467-1C233-H03	1/6W-3.3K-J	R742
467-1C239-H03	1/6W-3.9K-J	R455

467-1C239-H03	1/6W-3.9K-J	R462
467-1C247-H03	1/6W-4.7K-J	R131
467-1C247-H03	1/6W-4.7K-J	R133
467-1C247-H03	1/6W-4.7K-J	R154
467-1C247-H03	1/6W-4.7K-J	R158
467-1C247-H03	1/6W-4.7K-J	R306
467-1C247-H03	1/6W-4.7K-J	R481
467-1C247-H03	1/6W-4.7K-J	R491
467-1C247-H03	1/6W-4.7K-J	R733
467-1C256-H03	1/6W-5.6K-J	R370
467-1C282-H03	1/6W-8.2K-J	R153A
467-1C282-H03	1/6W-8.2K-J	R157A
467-1C282-H03	1/6W-8.2K-J	R562
467-1C310-H03	1/6W-10K-J	R126
467-1C310-H03	1/6W-10K-J	R127
467-1C310-H03	1/6W-10K-J	R163
467-1C310-H03	1/6W-10K-J	R395
467-1C310-H03	1/6W-10K-J	R396
467-1C310-H03	1/6W-10K-J	R434
467-1C310-H03	1/6W-10K-J	R482A
467-1C310-H03	1/6W-10K-J	R543
467-1C310-H03	1/6W-10K-J	R548
467-1C310-H03	1/6W-10K-J	R551
467-1C310-H03	1/6W-10K-J	R816A
467-1C310-H03	1/6W-10K-J	R818A
467-1C310-H03	1/6W-10K-J	R825A
467-1C310-H03	1/6W-10K-J	R827A
467-1C310-H03	1/6W-10K-J	R851A
467-1C310-H03	1/6W-10K-J	R852A
467-1C310-H03	1/6W-10K-J	R912
467-1C310-H03	1/6W-10K-J	R922
467-1C310-H03	1/6W-10K-J	R932
467-1C315-H03	1/6W-15K-J	R331
467-1C318-H03	1/6W-18K-J	R804
467-1C322-H03	1/6W-22K-J	R162
467-1C322-H03	1/6W-22K-J	R384
467-1C327-H03	1/6W-27K-J	R484
467-1C327-H03	1/6W-27K-J	R487
467-1C333-H03	1/6W-33K-J	R171
467-1C333-H03	1/6W-33K-J	R175
467-1C333-H03	1/6W-33K-J	R317
467-1C333-H03	1/6W-33K-J	R385
467-1C347-H03	1/6W-47K-J	R172
467-1C347-H03	1/6W-47K-J	R732A
467-1C347-H03	1/6W-47K-J	R745

467-1C347-H03	1/6W-47K-J	R807
467-1C368-H03	1/6W-68K-J	R173
467-1C410-H03	1/6W-100K-J	R483
467-1C410-H03	1/6W-100K-J	R802A
467-1C410-H03	1/6W-100K-J	R803A
467-1C415-H03	1/6W-150K-J	R318
467-1C427-H03	1/6W-270K-J	R174
467-1C456-H03	1/6W-560K-J	R465
467-1D001-H03	RT14-1/4W-1Ω-J	R404
467-1D010-H03	RT14-1/4W-10Ω-J	R871
467-1D027-H03	RT14-1/4W-27Ω-J	R561
467-1D110-H03	RT14-1/4W-100Ω-J	R486
467-1D222-H03	RT14-1/4W-2.2K-J	R161
467-1D310-H03	RT14-1/4W-10K-J	R485
467-1D351-H03	RT14-1/4M-51K-J	R539A
467-1D356-H03	RT14-1/4W-56K-J	R539
467-1D433-H03	RT14-1/4W-330K-J	R942
467-1DA27-H03	RT14-1/4W-2.7Ω-J	R468
467-1DA82-H03	RT14-1/4W-8.2Ω-J	R513
	METAL RESISTOR	
467-2C322-G03	1/6W-22K-G	R482
467-2D218-G0	1/4W-1.8K-G	R403
467-2D218-G0	1/4W-1.8K-G	R405
467-2E127-H0	1/2W-270Ω-JL	R407
467-2E210-H0	1/2W-1kΩ-JL	R460
	SOLID RESISTOR	
467-8E522-H0U	1/2W-2.2MΩ-JL!	R588
	PEAKING COIL	
471-2001K-00	SPT0305-1R0K-5	L302
471-2010K-003	SPT0305-100K-5	L331
471-2010K-003	SPT0305-100K-5	L361
471-2010K-003	SPT0305-100K-5	L751
471-2010K-003	SPT0305-100K-5	L752
471-2010K-003	SPT0305-100K-5	L753
471-2A56K-003	SPT0305-5R6K-5	L351
	CERAMIC TRAPE FILTER	
475-25451-00	XT4.5MB	Z351
535-TK2153-01W	other assy	
	BUTTON PCB	
782-M2053-0500	BUTTON PCB	
	TACT SWITCH	
360-10001-00	KFC-A06-4X4.5X5B	S901
360-10001-00	KFC-A06-4X4.5X5B	S902
360-10001-00	KFC-A06-4X4.5X5B	S903

360-10001-00	KFC-A06-4X4.5X5B	S904
360-10001-00	KFC-A06-4X4.5X5B	S905
360-10001-00	KFC-A06-4X4.5X5B	S906
	CARBON RESISTOR	
467-1C212-H0	1/6W-1.2K-J	R905
467-1C218-H0	1/6W-1.8K-J	R906
467-1C210-H0	1/6W-1K-J	R904
467-1C147-H0	1/6W-470Ω-J	R902
467-1C156-H0	1/6W-560Ω-J	R903
	SIDE AV PCB	
782-M2150-290B	SIDE AV PCB	
	ELECTROLYTIC CAP	
464-6D647-M0	CD110-16V-47uF-M	CV01
464-6D647-M0	CD110-16V-47uF-M	CV02
	EARPHONE JACK	
364-11205-00	3F27K	XV05
	CARBON RESISTOR	
467-1D115-H0	RT14-1/4W-150Ω-J	RV01
467-1D115-H0	RT14-1/4W-150Ω-J	RV02
	AV JACK	
364-93202-00	AV306-2	XA01
	IR RECEIVE PCB	
782-J2155-0900	IR RECEIVE PCB	
	LIGHT-EMITTING DIODE	
340-10055-90	HFT505M	VD601
	IC	
352-38060-60	HRM138BB3006(M)	RC601
	CERAMIC CAPACITOR	
459-2310R-00	CT1-08-2F4-63V-103Z	C601
	ELECTROLYTIC CAP	
464-6D647-M0	CD110-16V-47uF-M	C602
	CARBON RESISTOR	
467-1C033-H0	1/6W-33Ω-J	R601
467-1C133-H0	1/6W-330Ω-J	R602
467-1C156-H0	1/6W-560Ω-J	R603