Self Diagnosis
Supported model

SERVICE MANUAL BX1S CHASSIS

MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-BT21M50	RM-W101	GE	SCC-V04A-A
KV-BT21M80	RM-W101	ME	SCC-U90M-A
KV-BT21M81	RM-W100	ME	SCC-U90J-A

MODEL	COMMANDER	DEST.	CHASSIS NO.





RM-W101



RM-W100

TRINITRON ® COLOR TV

SONY ®

SPECIFICATIONS

			Note
Power requirements	110-240 V AC, 50/60 Hz		
Power consumption (W)	Indicated on the rear of the TV		
Television system	B/G, I, D/K, M		
Color system	PAL, PAL 60, SECAM, NTSC3.58, NTSC4.43		
Teletext language	English, Farsi (Persian)		KV-BT21M81 only
Channel coverage			
B/G	VHF: E2 to E12 / UHF: E21 to E69 CATV: S01 to S03, S1 to S41		
I	UHF: B21 to B68 CATV: S01 to S03, S1 to S41		
D/K	VHF: C1 to C12, R1 to R12 / UHF: C13 to C57, R21 to R60 / CATV: S01 to S03, S1 to S41, Z1 to Z39		
M	VHF: A2 to A13 / UHF: A14 to A79 / CATV: A-8 to A-2, A to W+4, W+6 to W+84		
(Antenna)	75-ohm external terminal		
Audio output (Speaker)	3W + 3W		
Number of terminal			
Video	Input: 2 Output: 1	Phono jacks; 1 V_{P-P}, 75 ohms	
Audio	Input: 2 Output: 1	Phono jacks; 500 mVrms	
(Headphone)	Output: 1	Stereo minijack	
Picture tube	21 in.		
Tube size (cm)	54		Measured diagonally
Screen size (cm)	51		Measured diagonally
Dimension (w/h/d, mm)	497 x 461 x 487		
Mass (kg)	23		

Design and specifications are subject to change without notice.

CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

TABLE OF CONTENTS

Section *Title* *Page*

SELF DIAGNOSTIC FUNCTION 4

1. DISASSEMBLY
1-1. Rear Cover Removal 7
1-2. Speaker Removal 7
1-3. Chassis Assy Removal 7
1-4. Service Position 7
1-5. Terminal Bracket Removal 7
1-6. A Board Removal 7
1-7. Picture Tube Removal 8

2. SET-UP ADJUSTMENTS
2-1. Beam Landing 9
2-2. Convergence 10
2-3. Focus Adjustment 12
2-4. G2 (SCREEN) Adjustments 12
2-5 White Balance Adjustment 12
2-6 Sub Bright Adjustment 12

3. CIRCUIT ADJUSTMENTS
3-1. Adjustment With Commander 13
3-2. Adjustment Method 14
3-3. Picture Quality Adjustment 28
3-4. Deflection Adjustment 28
3-5. Drive Adjustment 29
3-6. Picture Distortion Adjustment 30

4. DIAGRAMS
4-1. Block Diagram 31
4-2. Circuit Boards Location 32
4-3. Schematic Diagram 32
4-3-1. C Board Schematic Diagram 33
4-3-2. A Board — Processer (Block A) 34
4-3-3. A Board — Audio (Block B) 36
4-3-4. A Board — Power Supply (Block C) 38
4-3-5. A Board — Deflection (Block D) 40
4-3-6. A Board — Tuner (Block E) 42
4-3-7. A Board — Jack (Block F) 44
4-4. Voltage Measurement and Waveforms 48
4-5. Printed Wiring Boards and Parts Location 51
4-6. Semiconductors 54

5. EXPLODED VIEWS
5-1. Chassis 56

6. ELECTRICAL PARTS LIST 57

INSTRUCTION MANUAL

SELF DIAGNOSTIC FUNCTION

The units in this manual contain a self diagnostic function. If an error occurs, the STANDBY (⏻) indicator will automatically begin to flash. A description of the self-diagnosis function is explained in the instruction manual. The number of times the STANDBY (⏻) indicator flashes translates to a probable source of the problem. If an error symptom cannot be reproduced, the remote commander can be used to review the failure occurrence data stored in memory to reveal past problems and how often these problems occur.

1. DIAGNOSTIC TEST INDICATORS

When an errors occurs, the STANDBY (⏻) indicator will flash a set number of times to indicate the possible cause of the problem. If there is more than one error, the indicator will identify the first of the problem areas.

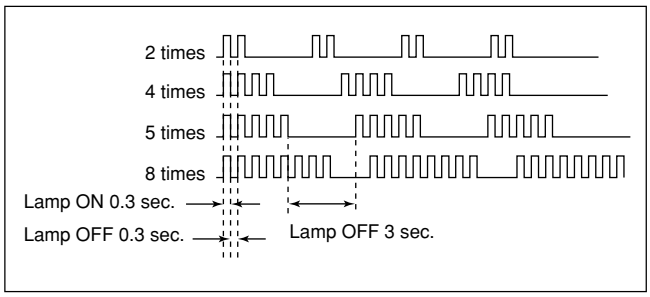
Result for all of the following diagnosis items are displayed on screen. No error has occured if the screen displays a “0”.

Diagnosis Item Description	No. of timer STANDBY (⏻) indicator flashes	Self-Diagnostic display/ Diagnosis result	Probable Cause Location	Detected Symptoms
Power does not turn on	Does not light	–	• Power cord is not plugged in. • Fuse is burned out (F600) A board.	• Power does not turn on. • No power is supplied on TV. • AC Power supply is faulty.
+B overcurrent (OCP)*	2 times	2:0 or 2:1 ~ 255	• H OUT (Q805) is shorted. (A board) • IC751 is shorted. (C board)	• Power does not come on. • Load on power line is shorted.
V-Protect	4 times	4:0 or 4:1 ~ 255	• +13V is not supplied. (A board) • IC804 is faulty. (A board)	• Has entered standby state after horizontal raster. • Vertical deflection pulse is stopped. • Power line is shorted or power supply is shorted.
IK (AKB)	5 times	5:0 or 5:1 ~ 255	• Video OUT (IC1545) is faulty. (A board) • IC001 is faulty. (A board) • Screen (G2) is improperly adjusted.**	• No raster is generated. • CRT Cathode current detection reference pulse output is small.
Power supply NG (+5V) for Video Processor	8 times	8:0 or 8:1 ~ 255	• IC604 faulty. • IC602 faulty.	• No power supply to CRT ANODE. • No RASTER is generated.

* If a +B overcurrent is detected, stoppage of the vertical deflection is detected simultaneously. The symptom that is diagnosed first by the mirco controller is displayed on the screen.

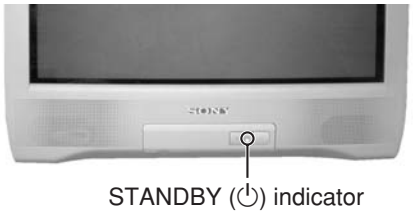
** Refer to Screen (G2) Adjustment in this manual.

2. DISPLAY OF STANDBY (⏻) INDICATOR FLASH COUNT



Diagnostic Item	Flash Count*
+B overcurrent	2 times
V-Protect	4 times
IK (AKB)	5 times
Power Supply NG (+5V) for Video processor	8 times

* One flash count is not used for self-diagnosis.



3. STOPPING THE STANDBY (⏻) INDICATOR FLASH

Turn off the power switch on the TV main unit or unplug the power cord from the outlet to stop the STANDBY (⏻) indicator from flashing.

4. SELF-DIAGNOSTIC SCREEN DISPLAY

For errors with symptoms such as "power sometimes shuts off" or "screen sometimes goes off" that cannot be confirmed, it is possible to bring up past occurrences of failure on the screen for confirmation.

[To Bring Up Screen Test]

In standby mode, press buttons on the remote commander sequentially in rapid succession as shown below:

Display ➡ Channel 5 ➡ Volume − ➡ Power / TV

⇧

Note that this differs from entering the service mode (volume +).

The following screen will be displayed indicating the error count.

SELF DIAGNOSTIC	
2 :	0
3 :	N/A
4 :	0
5 :	1
8 :	0
101 :	N/A

Numeral "0" means that no fault was detected.
Numeral "1" means the number of a fault occurrence (1 ~ 255).

5. HANDLING OF SELF-DIAGNOSTIC SCREEN DISPLAY

Since the diagnostic results displayed on the screen are not automatically cleared, always check the self-diagnostic screen during repairs. When you have completed the repairs, clear the result display to “0”.

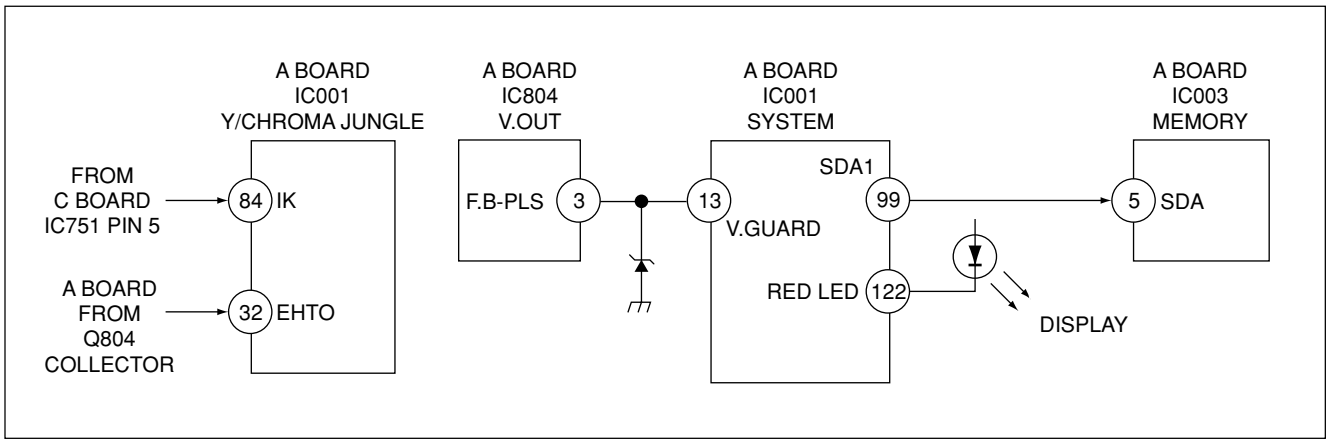
Unless the result display is cleared to “0”, the self-diagnosis function will not be able to detect subsequent faults after completion of the repairs.

[Clearing the result display]
To clear the result display to “0”, press buttons on the remote commander subsequent as shown below when the self-diagnostic screen is being displayed.

[8] ➡ [0]

[Quitting Self-diagnostic screen]
To quit the entire self-diagnostic screen, turn off the power switch on the remote commander or the main unit.

6. SELF-DIAGNOSTIC CIRCUIT

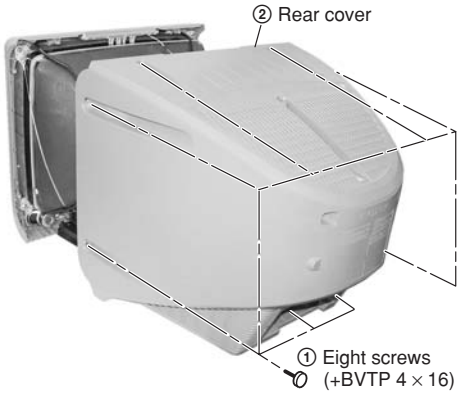


+B overcurrent (OCP)	Occurs when an overcurrent on the +B(135V) line is detected by pin 32 of IC001 (A board). If the voltage of pin 32 of IC001 (A board) is more than 4V, the unit will automatically go to standby.
V-PROTECT	Occurs when an absence of the vertical deflection pulse is detected by pin 13 of IC001 (A board).
IK (AKB)	If the RGB levels* do not balance within 15 sec after the power is turned on, this error will be detected by IC001 (A board). TV will stay on, but there will be 5 times LED blinking.
POWER SUPPLY NG (+5V) for VIDEO PROCESSOR	Occurs when IC001 internal HV protect detects an abnormal H-Pulse (frequency) due to improper power supply to IC001. TV cuts off high voltage power of anode CRT. No picture will be detected. eg: IC602, IC604 go faulty.

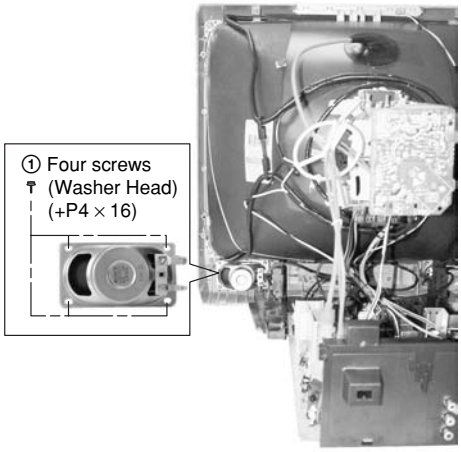
* (Refers to the RGB levels of the AKB detection Ref pulse that detects IK.)

SECTION 1
DISASSEMBLY

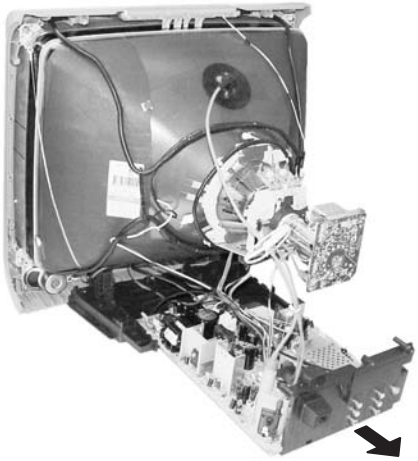
1-1. REAR COVER REMOVAL



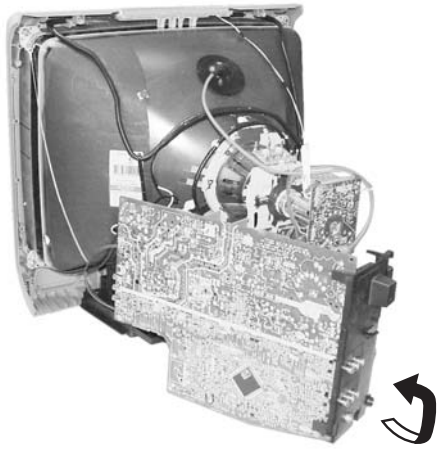
1-2. SPEAKER REMOVAL



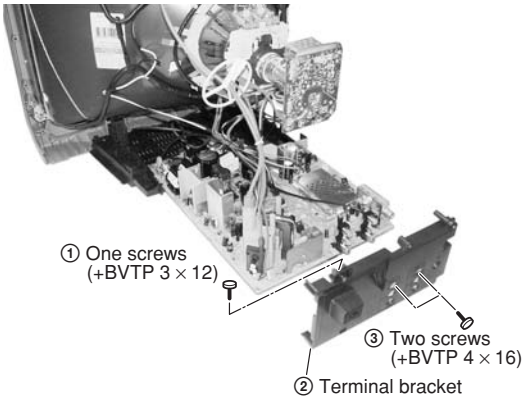
1-3. CHASSIS ASSY REMOVAL



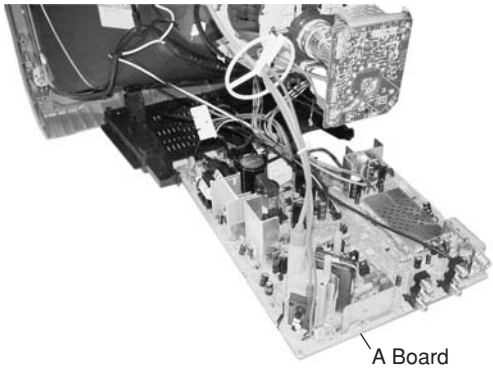
1-4. SERVICE POSITION



1-5. TERMINAL BRACKET REMOVAL



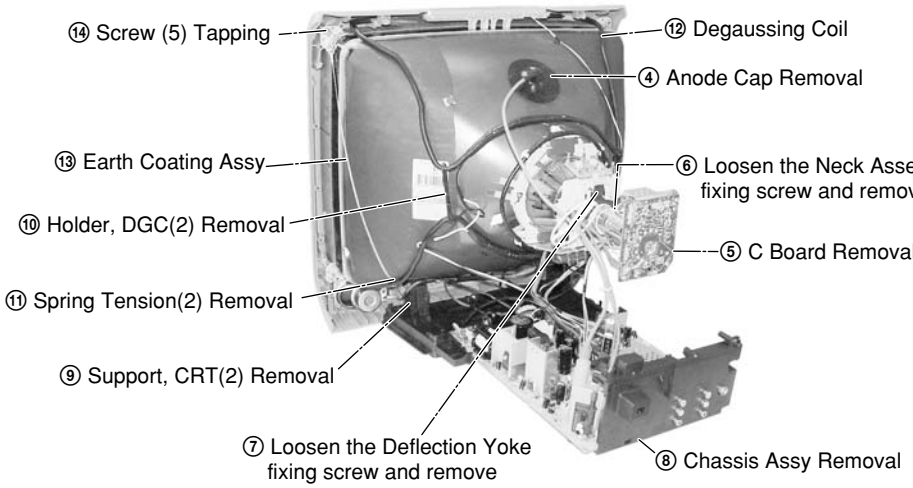
1-6. A BOARD REMOVAL



1-7. PICTURE TUBE REMOVAL

Note:
- Please make sure the TV set is not in standing position before removing necessary CRT support located on bottom right and left.

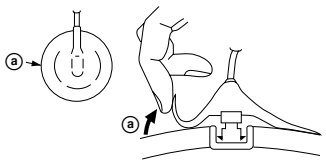
1) Place the TV set with the CRT face down on a cushion jig.
2) Remove the rear cover.
3) Unplug all inter connecting leads from the Deflection Yoke, Degaussing Coil and CRT grounding strap.



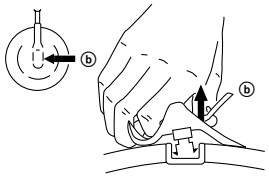
• REMOVAL OF ANODE-CAP

Note:
- After removing the anode, short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT.

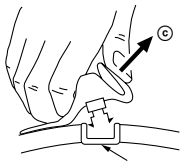
- **REMOVING PROCEDURES**



① Turn up one side of the rubber cap in the direction indicated by the arrow Ⓐ.



② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow Ⓑ.
③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by

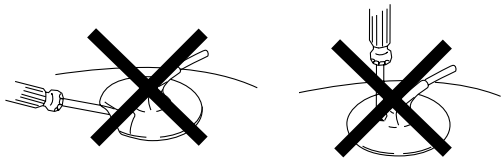


anode button

turning up the rubber cap and pulling it up in the direction of the arrow Ⓒ.

- **HOW TO HANDLE AN ANODE-CAP**

① Do not damage the surface of anode-caps with sharp shaped objects.
② Do not press the rubber too hard so as not to damage the inside of anode-cap.
A metal fitting called the shatter-hook terminal is built into the rubber.
③ Do not turn the foot of rubber over too hard.
The shatter-hook terminal will stick out or damage the rubber.



SECTION 2
SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.

Set the controls as follows unless otherwise noted:
VIDEO model ..... Standard
PICTURE control ..... normal
BRIGHTNESS control ..... normal

Perform the adjustments in the following order :
1. Beam Landing
2. Convergence
3. Focus
4. Screen(G2)
5. White Balance

Note : Test Equipment Required.
1. Pattern Generator
2. Degausser
3. DC Power Supply
4. Digital Multimeter
5. Oscilloscope

Preparation :
- In order to reduce the influence of geomagnetism on the set's picture tube, face it east or west.
- Switch on the set's power and degauss with the degausser.

2-1. BEAM LANDING

Picture Mode: DYNAMIC

1. Input a white signal with the pattern generator.
   Contrast, Brightness } normal
2. Set the pattern generator raster signal to a green raster.
3. Move the deflection yoke to the rear and adjust with purity control so that the green is at the center and the blue and the red take up equally sized areas on each side. (See Figures 2-1 through 2-4.)
4. Move the deflection yoke forward and adjust so that the entire screen is green. (See Figure 2-1.)
5. Switch the raster signal to blue then to red and verify the condition.
6. When the position of the deflection yoke has been decided fasten the deflection yoke with the screws and DY spacers.
7. If the beam does not land correctly in all the corners, use a magnet to adjust it. (See Figure 2-4.)

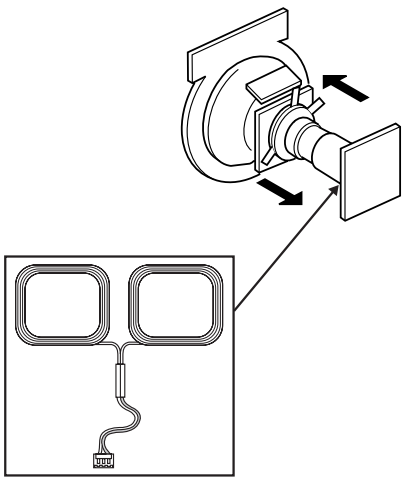


Fig. 2-1

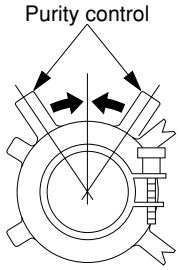


Fig. 2-2

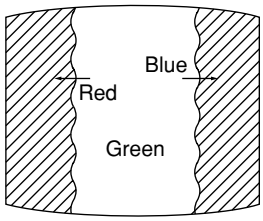


Fig. 2-3

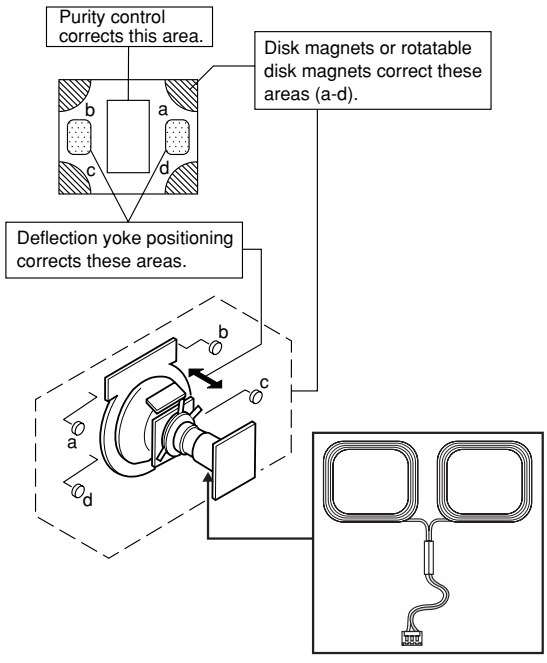
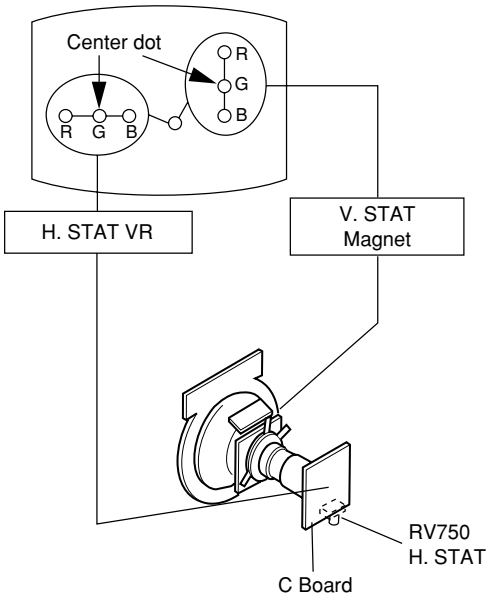


Fig. 2-4

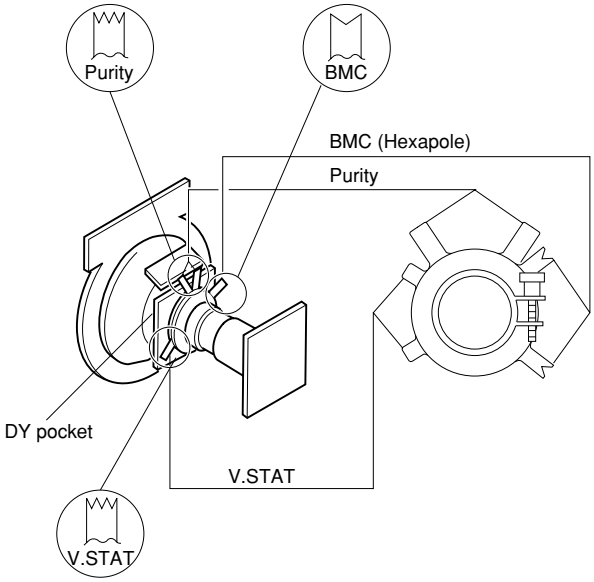
2-2. CONVERGENCE

- Before starting this adjustment, adjust the focus, horizontal size and vertical size.
- Receive dot/hatch signal.
- Pic mode: Soft.

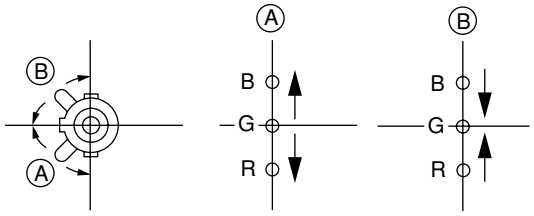
(1) Horizontal and Vertical Static Convergence



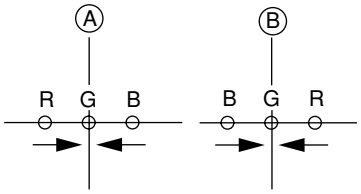
1. (Moving vertically), adjust the V.STAT magnet so that the red, green and blue dots are on top of each other at the center of the screen.
2. (Moving horizontally), adjust the H.STAT control so that the red, green and blue dots are on top of each other at the center of the screen.
3. If the H.STAT variable resistor cannot bring the red, green and blue dots together at the center of the screen, adjust the horizontal convergence with the H.STAT variable resistor and the V.STAT magnet in the manner given below.
   (In this case, the H.STAT variable resistor and the V.STAT magnet influence each other, so be sure to perform adjustments while tracking.)



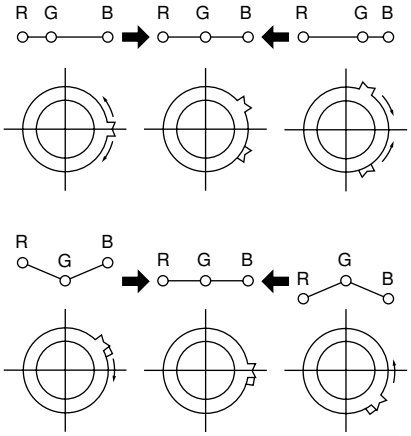
Operation of V. STAT magnet.
If the V.Stat magnet is moved in the "Ⓐ" and "Ⓑ" arrows, the red, green and blue dots moves as shown below.



Moved RV750 H. STAT.
the red, green and blue dots move as shown below.



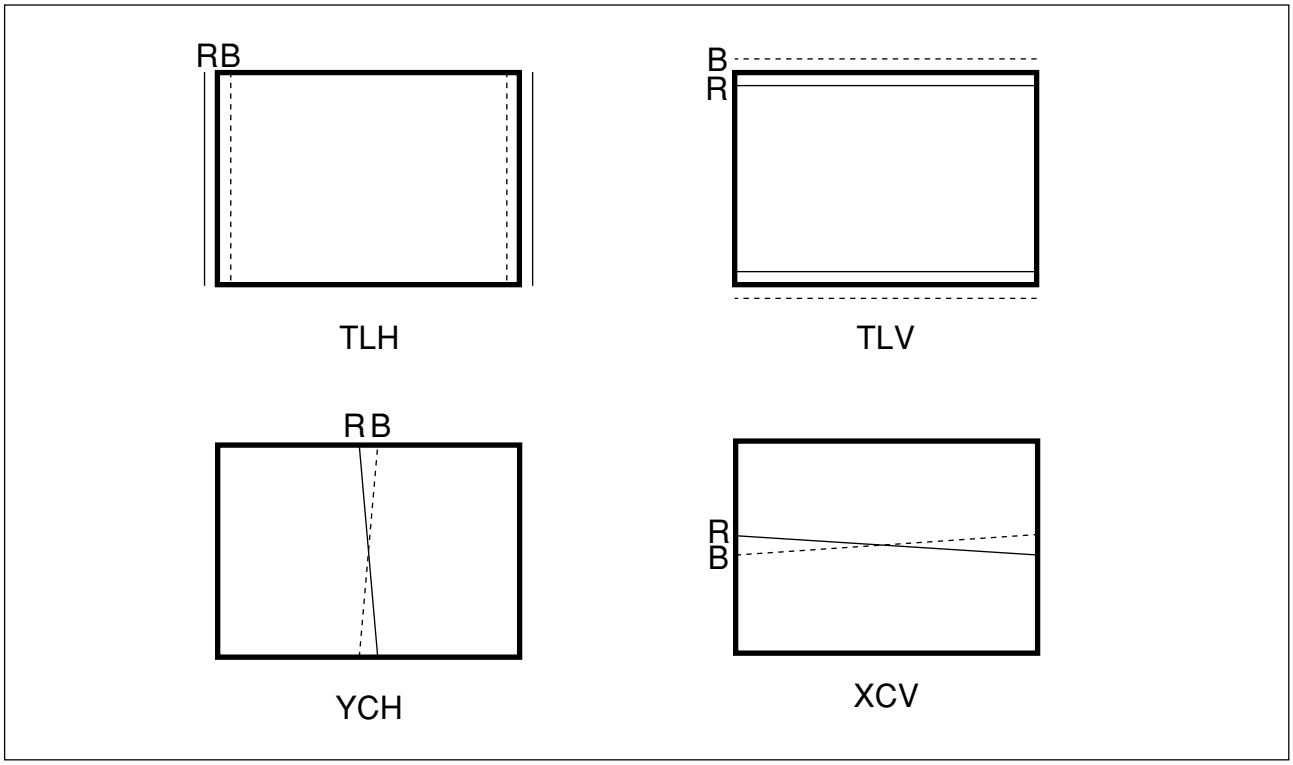
4. BMC (Hexapole) Magnet.
   If the red, green and blue dots are not balanced or aligned, then use the BMC magnet to adjust in the manner described below.



(2) Convergence Rough Adjustment

Preparation:

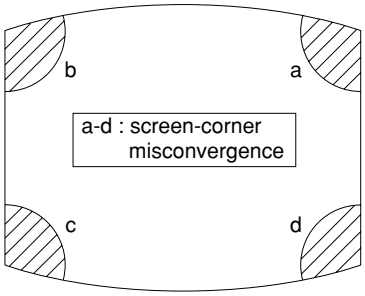
- Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence



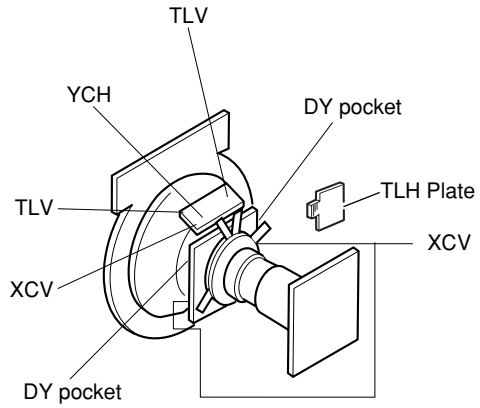
TLH	Insert	TLH	Correction Plate to DY Pocket (Left or Right)
YCH	Insert	YCH	VOL on DY
TLV	Rotate	TLV	VOL on DY
XCV	Rotate	XCV	Adj core on DY

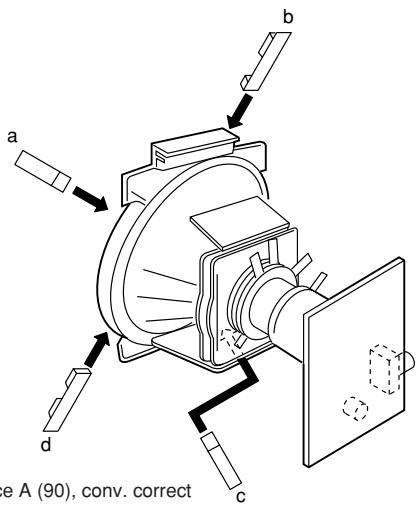
(3) Screen corner Convergence

1. Affix a Piece A (90), conv. correct corresponding to the misconverged areas.



ON DY:



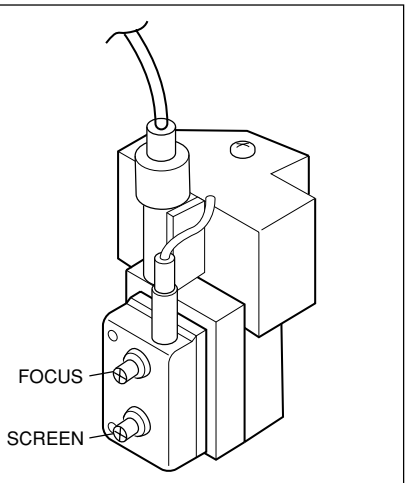


Piece A (90), conv. correct

2-3. FOCUS ADJUSTMENT

FOCUS adjustment should be completed before the W/B adjustment:

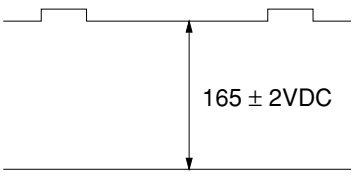
1. Receive digital monoscope pattern.
2. Set picture mode: DYNAMIC.
3. Adjust focus VR to obtain a just focus at the center of the screen.
4. Change receiving signal to white pattern and blue back.
5. Confirm MAGENTA RING is not noticeable. Incase magenta ring is obvious, then adjust FOCUS VR to balance magenta ring and FOCUS.



FLYBACK TRANSFORMER (T802-14")
FLYBACK TRANSFORMER (T801-21")

2-4. G2 (SCREEN) ADJUSTMENTS

1. Set the PICTURE & BRIGHTNESS to STANDARD.
2. Put the Video input mode signal.
3. Connect R,G,B of the C board cathode to oscilloscope.
4. Adjust Brightness to obtain the cathode value to value below.
5. Adjust G2 (screen) on the FBT until picture shows the point before cut off.



2-5. WHITE BALANCE ADJUSTMENT

1. Set to Service Mode (Refer Section 3-1: ADJUSTMENTS WITH COMMANDER)
2. Input white raster signal.
3. Set Picture to <DYNAMIC mode>
4. Select RDRV (02) with [1] and [4] and fixed the value to 25 with [3] and [6].
5. Adjust WHBL GDRV (03) and BDRV (04) with [1] and [4] and adjust the data with [3] and [6] for best white balance in Highlight condition.
6. Write into the memory by pressing [MUTING] then [0].
7. Adjust WHBL BKOR (00) and BKOG (01) with [1] and [4] and adjust the level with [3] and [6] for best white balance cut-off condition.
8. Write into memory by pressing [MUTING] then [0].
9. US model need to apply only for colour temperature in Neutral.

2-6. SUB BRIGHT ADJUSTMENT

1. Set to service mode.
2. Brightness set to 50%, Picture....Minimum
3. Select WHBL SBRT (10) with [1] and [4] and adjust SBRT (10) data with [3] and [6] so that the third stripe from right dimly lit.
4. Write into the memory by pressing [MUTING] then [0].
5. GA models Cut-off : 10 IRE
   Slightly Glimmer : 20 IRE

SECTION 3
CIRCUIT ADJUSTMENTS

3-1. ADJUSTMENTS WITH COMMANDER

Service adjustments to this model can be performed using the supplied remote commander RM-W100/RM-W101.

a. ENTERING SERVICE MODE

With the unit on standby

→ [DISPLAY] → [5] → [VOL (+)] → [POWER]

This operation sequence puts the unit into service mode.
This screen display is:

category	item no. in decimal	item name	service data in decimal	NVM NG	service command	field frequency	channel no./ video input name
GEOM	006	HSIZ	031	■	SERVICE	60	S VIDEO 1

release ID	software version	service data in binary	reserved for factory	color system	power on time (decimal?)
SUS01	0.69U	0001 1111	FF FF	NTSC3	65535

	Flash DCXO	Status Byte #1 SSD	Status Byte #2 SSD
111 11 11 1 7 11	FG	xy 111 000000	000000

VDSP_C Flag
CO_LOCKED
VDSP
Detected Stereo Type (Direct Value from CZ_ Stereo_Mode)

S : for Sony
A : Aiwa
U S : US/Latin/Taiwan
E U : Europe
G A : General Area
J P : Japan
0 1 : serial no. of the M/P release for each destination

[111] Needed for Nicam DCXO aligment Purpose

[xy] Value of x = 0 - Unknown, 1 - BTSC, 2 - A2, 3 - NICAM, 4 - KOREAN, 5 - Japan, 6 - AV Stereo
Value of y = 0 - Mono, 1 - Stereo, 2 - Bilingual, 4 - SAP/Single

b. METHOD OF CANCELLATION FROM SERVICE MODE

Set the standby condition (Press [POWER] button on the commander), then press [POWER] button again, hereupon it becomes TV mode.

c. METHOD OF WRITE INTO MEMORY

1. Set to Service Mode.
2. Press [1] (UP) and [4] (DOWN), to select the adjustment item.
3. Change item by pressing [3], [6].
4. Press [MUTING] button to indicate WRITE on the screen.
5. Press [0] button to write into memory.

[1], [4]	Select the adjustment item.
↓	
[3], [6]	Raise/lower the data value.
↓	
[MUTING]	Writes.
↓	
[0]	Executes the writing.

d. MEMORY WRITE CONFIRMATION METHOD

1. After adjustment, pull out the plug from AC outlet, and then plug into AC outlet again.
2. Turn the power switch ON and set to Service Mode.
3. Call the adjusted items again to confirm adjustments were made.

e. OTHER FUNCTION VIA REMOTE COMMANDER

7, 0	All the data becomes the values in memory.
8, 0	All user control goes to the standard state.
Display, 0	Service data initialization (Be sure not to use usually.)
2, 5	Select Device or Category

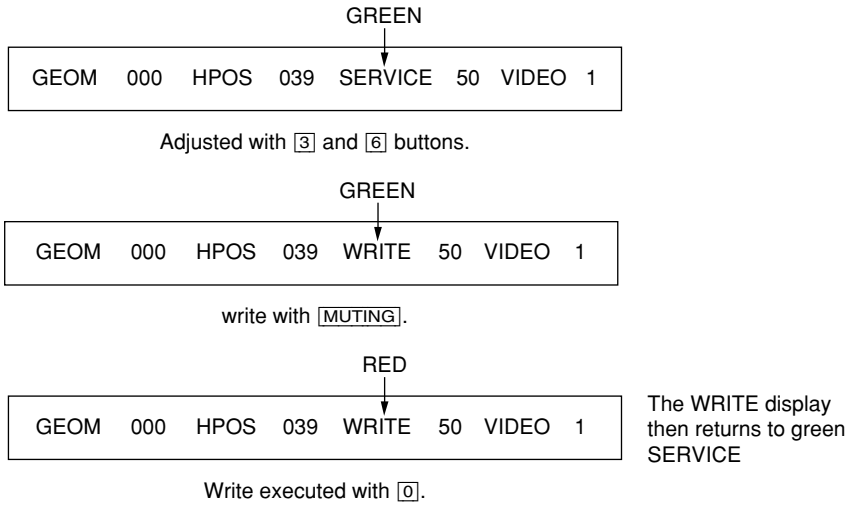
3-2. ADJUSTMENT METHOD

Item Number 000 HPOS

This explanation uses H POSITION as an example.

1. Select "000 HPOS" with the 1 and 4 buttons, or 2 and 5.
2. Raise/lower the data with the 3 and 6 buttons.
3. Select the optimum state. (The standard is IF for PAL reception.)
4. Write with the MUTING button. (The display changes to WRITE.)
5. Execute the writing with the 0 button. (The WRITE display will be changed to red color while excuting, and back to SERVICE.)

Example on screen display :-



Use the same method for all Items. Use 1 and 4 to select the adjustment item, use 3 and 6 to adjust, write with MUTING, then execute the write with 0.

Note : 1. In WRITE, the data for all items are written into memory together.
2. For adjustment items that have different standard data between 50Hz or 60Hz, be sure to use the respective input signal after adjustment.

Adjustment Item Table

TVJ	Functionality		Init.	Range	DATA	Function	Table & Note	Device Name	NVM Address / Initial Value (Detailed)				
Category	No.	Name	Dec	Dec				(Slave Address)	Common	50	60	w50	w60
GEOM	000	HPOS	031	063	ADJUST	Horizontal Shift (HS)	50/60/w50/w60 (+JPN RGB)	TV-Processor		42	42	42	42
	001	HPAR	031	063	ADJUST	Horizontal Parallelogram	50/60/w50/w60	(8Ah)		31	31	31	31
	002	HBOW	031	063	ADJUST	Horizontal Bow	50/60/w50/w60			31	31	31	31
	003	VLIN	031	063	ADJUST	Vertical Linearity	50/60/w50/w60			31	31	31	31
	004	VSCR	031	063	ADJUST	Vertical Scroll	50/60/w50/w60			31	31	31	31
	005	HSIZ	031	063	ADJUST	EW Width (EW)	50/60/w50/w60			25	25	25	25
	006	EWPW	031	063	ADJUST	EW Parabola/Width (PW)	50/60/w50/w60 (+JPN RGB)			31	31	31	31
	007	UCOP	017	063	ADJUST	EW Upper Corner Parabola	50/60/w50/w60			31	31	31	31
	008	LCOP	017	063	ADJUST	EW Lower Corner Parabola	50/60/w50/w60			31	31	31	31
	009	EWTZ	031	063	ADJUST	EW Trapezium	50/60/w50/w60			31	31	31	31
	010	VSLP	031	063	ADJUST	Vertical Slope (VS)	50/60/w50/w60			31	31	31	31
	011	VSIZ	015	063	ADJUST	Vertical Amplitude	50/60/w50/w60			15	15	15	15
	012	SCOR	014	063	ADJUST	S-Correction (SC)	50/60/w50/w60			25	25	25	25
	013	VPOS	031	063	ADJUST	Vertical Shift (VSH)	50/60/w50/w60			31	31	31	31
	014	HBL	000	001	FIX	RGB Blanking Mode	50/60/w50/w60			01	01	01	01
	015	WBF	007	015	FIX	Timing of Wide Blanking (WBF)	50/60/w50/w60			07	07	07	07
	016	WBR	007	015	FIX	Timing of Wide Blanking (WBR)	50/60/w50/w60			10	10	10	10
	017	SBL	000	001	FIX	Service Blanking	none		00				
	018	COPY	000	001	FIX	Copy the GEO data to all 50/60Hz NVM area	none		00				

TVJ	Functionality		Init.	Range	DATA	Function	Table & Note	Device Name	NVM Address / Initial Value (Detailed)															
Category	No.	Name	Dec	Dec				(Slave Address)	Common	Col Temp (HIGH other)	Col Temp (LOW other)	Col Temp (NORM other)	Col Temp (HIGH YUV)	Col Temp (LOW YUV)	Col Temp (NORMAL YUV)	Col Temp (HIGH RGB)	Col Temp (LOW RGB)	Col Temp (NORM RGB)	Others	RGB	YUV	Pic mode 0	Pic mode 1	Pic mode 2	Pic mode 3
WHBL	000	BKOR	031	063	ADJUST	Black Level Offset R	col temp (HIGH/LOW/Normal)*(UV/RGB/Others)	TV-Processor		31	31	31	31	31	31	31	31	31						
	001	BKOG	031	063	ADJUST	Black Level Offset G	col temp (HIGH/LOW/Normal)*(UV/RGB/Others)	(8Ah)		31	31	31	31	31	31	31	31	31						
	002	RDRV	037	063	FIX	White Point R	col temp (HIGH/LOW/Normal)*(UV/RGB/Others)	TV-Pro (8AH)		37	37	37	37	37	37	37	37	37						
	003	GDRV	037	063	ADJUST	White Point G	col temp (HIGH/LOW/Normal)*(UV/RGB/Others)			31	31	31	31	31	31	31	31	31						
	004	BDRV	037	063	ADJUST	White Point B	col temp (HIGH/LOW/Normal)*(UV/RGB/Others)			31	31	31	31	31	31	31	31	31						
	005	LPG	000	001	FIX	RGB Gain Preset	none		01															
	006	PGR	031	127	FIX	Preset Gain R (PGR)	none		**															
	007	PGG	031	127	FIX	Preset Gain G (PGG)	none		**															
	008	PGB	031	127	FIX	Preset Gain B (PGB)	none		**															
	009	GNOF	000	015	FIX	Preset Gain Offset	none	CCC loop	15															
	010	SBRT	031	063	ADJUST	Sub-Brightness	Others/RGB/YUV												31	31	31			
	011	SBRO	000	003	FIX	Sub-Brightness Offset (Intelligent Pic)	none		00															
	012	EGL	000	001	FIX	Enable Gain Loop in CCC System	none		01															
	013	SGL	000	003	FIX	Selection of High Current in CCC System	none		00															
	014	AKB	000	001	FIX	Black Current Stabilization	none		00															
	015	CBS	000	001	FIX	Control Sequence of Beam Current Limiting	none		00															
	016	RGBB	000	003	FIX	RGB Blanking	none		00															
	017	BLBG	000	001	FIX	Blanking of Blue & Green Output	none		00															
	018	OFB	000	001	FIX	Black Level Offset Blue	none		01															
	019	NSBR	000	015	FIX	Non Standard Brightness Offset	none		05															
	020	WBP	000	003	FIX	Color Temp Setting (0:High, 1:Normal, 2,3:Low)	Picture Mode															00	01	02	01

TVJ	Functionality		Init.	Range	DATA	Function	Table & Note	Device Name	NVM Address / Initial Value (Detailed)																							
Category	No.	Name	Dec	Dec				(Slave Address)	Common	YUV	50pal (TV)	50pal (Video)	50secam (TV)	50secam (Video)	60TV	60Video	50YUV	60YUV	50RGB	60RGB	Pic mode 0	Pic mode 1	Pic mode 2	Pic mode 3	Dynamic*Eco std (Jpn)	Dynamic*Eco much (Jpn)	Standard*Eco std (Jpn)	Standard*Eco much (Jpn)	Eco std (Jpn)	Eco much (Jpn)	TV	Video	TV Wide	Video Wide	AVM (Jpn)	AV Wide (Jpn)
SADJ	000	PMAX	063	063	ADJUST	Picture Maximum	(TV / Video)*(Normal / Wide) / <Normal / Wide> (+JPN RGB)	TV-Processor																							37	37	37	37	37	37
	001	SHUE	007	015	ADJUST	Sub-Hue	TV / Video																								07	07				
	002	SSHP	015	063	FIX	Sub-Sharpness	TV / Video / YUV (+JPN RGB)			**																					**	**				
	003	SSHO	000	003	FIX	Sub-Sharpness Offset (Intelligent Pic)	none		02																											
	004	SCOL	031	063	ADJUST	Sub-Color	50pal(tv)/50pal(video)/50secam(tv)/50secam(video)/ 60TV/60video/50YUV/60YUV/50RGB/60RGB				31	31	31	31	31	31	31	31	31	31																
	005	SCOO	000	003	FIX	Sub-Color Offset (Intelligent Pic)	none		02																											
	006	PIC	031	127	FIX	Picture Control [GA:0-100(valid), >100(invalid); Others:0-63(valid); ignore bit 6(invalid)]	Picture Model(GA: Personal = User Reset Data)															100	80	95	100												
	007	COL	031	127	FIX	Color Control [GA:0-100(valid), >100(invalid); Others:0-63(valid); ignore bit 6(invalid)]	Picture Model(GA: Personal = User Reset Data)															56	50	40	50												
	008	BRT	031	127	FIX	Brightness Control [GA:0-100(valid), >100(invalid); Others:0-63(valid); ignore bit 6(invalid)]	Picture Model(GA: Personal = User Reset Data)															50	50	60	50												
	009	HUE	031	127	FIX	Hue Control [GA:0-100(valid), >100(invalid); Others:0-63(valid); ignore bit 6(invalid)]	Picture Model(GA: Personal = User Reset Data)															50	50	50	50												
	010	SHP	031	127	FIX	Sharpness Control [GA:0-100(valid), >100(invalid); Others:0-63(valid); ignore bit 6(invalid)]	Picture Model(GA: Personal = User Reset Data)															60	50	50	50												
	011	PECO	002	003	FIX	Picture data in power save mode (valid for JAPAN only)	Picture Mode * (Eco std/ Eco much)																			00	00	00	00								
	012	PRLV	002	003	FIX	Coefficient of power save mode (valid for JAPAN only)	Eco std / Eco much																							00	00						

TVJ	Functionality		Init.	Range	DATA	Function	Table & Note	Device Name	NVM Address / Initial Value (Detailed)													
Category	No.	Name	Dec	Dec				(Slave Address)	Common	Others	RGB	YUV	PAL(TV)	NTSC(TV)	SECAM(TV)	PAL(Video)	NTSC(Video)	SECAM(Video)	S-INPUT	SECAM	NTSC	TV
YC	000	PFRQ	000	003	FIX	Peaking Center Frequency and Delay		TV-Processor	**													
	001	RPA	####	003	FIX	Ratio Pre & Over Shoot	TV/other			02												02
	002	RPO	002	003	FIX	Ratio of Positive & Negative Peaks	TV/other			02												02
	003	YDLY	012	015	FIX	Y-Delay	(PAL/NTSC/SECAM)*(TV/VIDEO)+YUV/S-INPUT					**	**	**	**	**	**	**	**			
	004	CMAT	000	003	FIX	PAL-SECAM or NTSC (Japan/USA) Matrix	(JPN RGB)		00													
	005	ACL	001	001	FIX	Automatic Color Limiting			01													
	006	CB	000	001	FIX	Chroma Bandpass Center Frequency	valid only with TV (*Video:0 fix)		01													
	007	SBO	001	003	FIX	SECAM Black Offset			00													
	008	CHSE	001	003	FIX	PAL/NTSC Ident Sensitivity			02													
	009	CLO	000	001	FIX	Center Frequency of Cloche(Bell) Filter			00													
	010	CTRP	000	001	FIX	Chroma Trap Mode	SECAM/others			00											01	
	011	BPS	000	001	FIX	Bypass of Chroma Base-band Delay Line	NTSC/others			**												**
	012	FCO	000	001	FIX	Forced Color On			00													
	013	TINT	031	063	FIX	Base-Band Tint Control	YUV/others			31		31										
	014	TUV	000	001	FIX	Tint Control on UV Signals			00													

Item remarks ** please refer to page 24

TVJ	Functionality		Init.	Range	DATA	Function	Table & Note	Device Name	NVM Address / Initial Value (Detailed)									
Category	No.	Name	Dec	Dec				(Slave Address)	Common	50	60	others	YUV	TV	Video	Teletext	TV-ip	No signal
SYNC	000	SYS	000	001	FIX	Synchronization on YSYNC Input			00									
	001	FO	000	003	FIX	Phase 1 Time Constant	TV IP ON/TV IP OFF/Video/Teletext/Auto Tuning or No signal(RF)							03	03	01	00	00
	002	VID	000	001	FIX	Video Ident Mode	50/60			00	00							
	003	FSL	000	001	FIX	Forced Slicing Level for Vertical Sync			00									
	004	SSL	000	001	FIX	Slicing Level Sync Separator	50/60			00	00							
	005	SVID	001	007	FIX	Source Selection for Video Identification	YUV/Others					00	07					
	006	FORF	000	003	FIX	Forced Field Frequency			03									
	007	MVK	000	001	FIX	Macro Vision Keying			01									

TVJ	Functionality		Init.	Range	DATA	Function	Table & Note	Device Name	NVM Address / Initial Value (Detailed)										
Category	No.	Name	Dec	Dec				(Slave Address)	Common	Others	RGB	Live	TV (Dyn)	TV (Others)	Video (Dyn)	Video (Others)	ColorTemp (HIGH)	ColorTemp (Others)	Color Temp(LOW)	Color Temp (NORMAL)
PICT	000	CADL	007	015	FIX	Cathode Drive Level			00											
	001	CFA	000	003	FIX	Comb Filter Mode			**											
	002	SOC	002	003	FIX	Soft Clipping Level		(8Ah)	00											
	003	PWL	001	001	FIX	Peak White Limiting Switch			01											
	004	WHTL	006	015	FIX	Peak White Limiting			00											
	005	GAM	001	001	FIX	Gamma			00											
	006	WTS	001	003	FIX	Gamma Control and White Stretch	Live/Others			01		01								
	007	TFR	000	001	FIX	DC Transfer Ratio of Luminance Signal	Live/Others (+JPN RGB)			01		01								
	008	COR	003	003	FIX	Coring	(TV/Video)*(Dyna/others)						00	00	00	00				
	009	CORO	000	001	FIX	Coring Offset (Intelligent Pic)			00											
	010	BKS	003	003	FIX	Black Stretch	RGB/others			02	02									
	011	AAS	001	001	FIX	Black Area to Switch off the Black Stretch			00											
	012	DSK	000	001	FIX	Dynamic Skin Control			00											
	013	BLS	000	001	FIX	Blue Stretch	col temp (HIGH/OTHERS)										00	00		
	014	NBLS	000	001	FIX	Operation Blue Stretch Circuit			00											
	015	NRR	000	001	FIX	Non Red Reduction	col temp (HIGH/LOW/NORMAL)										01		01	01

Item remarks ** please refer to page 24

TVJ	Functionality		Init.	Range	DATA	Function	Table & Note	Device Name	NVM Address / Initial Value (Detailed)			
Category	No.	Name	Dec	Dec				(Slave Address)	Common	YUV	TV	Video
SW	000	CV2	000	001	FIX	CVBS2 Input Signal Selection			00			
	001	SVO	001	003	FIX	Function of IFVO/SVO/CVBSI Pin @ 48	TV/Video/YUV			02	01	01
	002	DFL	000	001	FIX	Flash Protection			00			

TVJ	Functionality		Init.	Range	DATA	Function	Table & Note	Device Name	Common
Category	No.	Name	Dec	Dec				(Slave Address)	
VIF	000	OIFD	036	063	FIX	Offset IF Demodulator		TV-Processor	36
	001	AGCT	031	063	FIX	AGC Take-over		(8Ah)	31
	002	STM	000	001	FIX	Search Tuning Mode			01
	003	GD	000	001	FIX	Group Delay on CVBS1 Signal			00
	004	AGCS	001	003	FIX	IF AGC Speed			01
	005	FFI	000	001	FIX	Fast Filter IF PLL			00
	006	OAMP	003	003	FIX	Video Output Signal Amplitude (only L & L'System)			03
	007	VAI	000	001	FIX	System I Output Signal Amplitude Correction (only L & L'System)			00

TVJ	Functionality		Init.	Range	DATA	Function	Table & Note	Device Name	NVM Address / Initial Value (Detailed)				
Category	No.	Name	Dec	Dec				(Slave Address)	Common	Pic mode 0	Pic mode 1	Piv mode 2	Pic mode 3
VM	000	RGBD	003	007	FIX	Delayof RGB Output to VM Output	none	TV-Processor	02				
	001	VMA	003	003	FIX	Amplitude of VM Output	none	(8Ah)	**				
	002	VMAP	002	003	FIX	VM setting (0:High, 1:Low, 2,3:OFF)	Picture Mode			00	01	02	00
	003	VMMO	003	003	FIX	VM Mode			01				

Item remarks ** please refer to page 24

TVJ	Functionality		Init.	Range	DATA	Function	Table & Note	Device Name	Common
Category	No.	Name	Dec	Dec				(Slave Address)	
SDEM	000	FMWS	000	003	FIX	Window Selection for FM Demodulator		TV-Processor	02
	001	QSS	001	001	FIX	Quasi Split Sound (QSS) Amplifier Mode (except GA Model)		(8Ah)	01
	002	BPB	000	001	FIX	Bypass of Sound Bandpass Filter			00
	003	AMLO	000	001	FIX	Audio Output Signal for AM Sound			00
	004	HPVC	000	001	FIX	Head Phone Volume Control			00

TVJ	Functionality		Init.	Range	DATA	Function	Table & Note	Device Name	Common
Category	No.	Name	Dec	Dec				(Slave Address)	
TXT	000	TXV	039	063	FIX	Teletext Vertical Position for Philips		Text Decoder	39
	001	THD	005	127	FIX	Teletext H-sunc Active Edge Shift			05
	002	TBR	004	015	FIX	Teletext RGB Brightness			04

TVJ	Functionality		Init.	Range	DATA	Function	Table & Note	Device Name (Slave Address)	NVM Address / Initial Value (Detailed)								
Category	No.	Name	Dec	Dec					Common	TV-L(Euro)	TV	Video	Off	SRS/WOW	Trusurround	Istereo	Imono
SDSP	000	AVM	002	007	FIX	AVL Mode		SSD	02								
	001	AVV	005	015	FIX	AVL Reference Level		(B0h)	09								
	002	BBL	000	015	FIX	BBE Contour			****								
	003	BBH	000	015	FIX	BBE Process			****								
	004	BBLW	000	015	FIX	BBE Contour Offset			****								
	005	SVOF	000	015	FIX	Surround /Effect Mode Volume Offset	Off(SRS/WOW)/Trusurround/Istereo/Imono						00	07	00	02	00
	006	IVOF	000	007	FIX	Master Volume Positive Offset			06								
	007	EVOF	000	007	FIX	Master Volume Negative Offset			06								
	008	LAD	000	031	FIX	Decoder Level Adjust			05								
	009	LAM	000	031	FIX	Mono Level Adjust			05								
	010	LAN	000	031	FIX	Nicam Level Adjust			17								
	011	LAS	000	031	FIX	SAP Level Adjust			08								
	012	LAA	000	031	FIX	ADC Level Adjust	Tv/Video(Non Euro)I TV-L/TV-non L/Video			00	00	00					
	013	SEF	003	007	FIX	Incredible Mono/Stereo Effect	Istereo/Imono									05	03
	014	A1L	000	255	FIX	AUX1 Volume Left			00								
	015	A1R	000	255	FIX	AUX1 Volume Right			00								
	016	BAS	008	015	FIX	Main Bass Offset			****								
	017	TRE	008	015	FIX	Main Treble Offset			****								
	018	EQ1	008	015	FIX	Equalizer Main Channel Band (100 Hz) Offset			****								
	019	EQ2	008	015	FIX	Equalizer Main Channel Band (300 Hz) Offset			****								
	020	EQ3	008	015	FIX	Equalizer Main Channel Band (1000 Hz) Offset			****								
	021	EQ4	008	015	FIX	Equalizer Main Channel Band (3000 Hz) Offset			****								
	022	EQ5	008	015	FIX	Equalizer Main Channel Band (8000 Hz) Offset			****								
	023	BFCT	005	007	FIX	DBE, DUB and BBE Control			****								
	024	SCEN	001	015	FIX	SRS3D Center Control			04								
	025	SSPA	000	015	FIX	SRS3D Space Control			01								
	026	BBHW	000	015	FIX	BBE process offset in WOW mode			****								
	027	STRE	002	007	FIX	Treble Offset for surround mode			****								
	028	BBHT	000	015	FIX	BBE Offset in TV mode			00								
	029	DWA	000	000	FIX	DWA			00								
	030	TTRE	002	007	FIX	Treble Offset in TV Mode			02								

Item remarks ** please refer to page 24

TVJ	Functionality		Init.	Range	DATA	Function	Table & Note	Device Name (Slave Address)	Common
Category	No.	Name	Dec	Dec					
SDEC	000	MPTU	003	015	FIX	Upper Threshold for MPX pilot detection (BTSC)		SSD	02
	001	MPTL	009	015	FIX	Lower Threshold for MPX pilot detection (BTSC)		(B0h)	05
	002	SPTU	003	015	FIX	Upper Threshold for SAP carrier detection			08
	003	SPTL	006	015	FIX	Lower Threshold for SAP carrier detection			15
	004	C1TH	000	031	FIX	Normal Threshold for detection of SC1			00
	005	C1AP	000	031	FIX	Auto Program Threshold for detection of SC1			00
	006	SPTH	000	031	FIX	Noise Threshold for automute of SAP			00
	007	SPHY	004	015	FIX	Hysteresis size for automute of SAP			03
	008	FMTH	000	031	FIX	Noise Threshold for automute of SC2 in FM A2 standard			18
	009	FMHY	004	015	FIX	Hysteresis size for automute of SC2 in FM A2 standard			07
	010	BTTH	000	031	FIX	Noise Threshold for automute of BTSC stereo carrier			00
	011	BTHY	004	015	FIX	Hysteresis size for automute of BTSC stereo			03
	012	EJTH	000	031	FIX	Noise Threshold for automute of EIAJ FM subcarrier			00
	013	EJHY	004	015	FIX	Hysteresis size for automute of EIAJ FM subcarrier			04
	014	ONLY	000	001	FIX	Reproduce only related NICAM on DEC output			00
	015	EXAM	000	001	FIX	Fall back source in case of automute in standard L (DDEP)			00
	016	NIMT	000	001	FIX	NICAM auto mute function depend on bit error rate (DDEP)			00
	017	NILE	100	255	FIX	NICAM lower error limit (DDEP)			50
	018	NIUE	200	255	FIX	NICAM upper error limit (DDEP)			200
	019	EPMD	001	003	FIX	DEMDEC Easy Programming (DDEP)			02
	020	STDS	019	031	FIX	Bits multiplexed for ASD and SSS modes			31
	021	OVMA	001	001	FIX	FM overmodulation adaption			00
	022	FLBW	000	003	FIX	FM/AM demodulator filter bandwidth			03
	023	IDMD	000	003	FIX	FM ident speed in SSS mode			00
	024	FPAL	000	001	FIX	Line fequency for BTSC decoding			00
	025	OVMT	001	002	FIX	Overmodulation level threshold relative to nominal			03
	026	DCXI	000	001	FIX	NICAM DCXO Scaling Control Inverter			**
	027	DCXG	000	007	FIX	NICAM DCXO Scaling Control Gain			**
	028	DCLL	011	015	FIX	NICAM DCXO Scaling Control Limit (L)			00
	029	DCLH	000	031	FIX	NICAM DCXO Scaling Control Limit (H)			**
	030	IDEU	001	003	FIX	IDMOD setting for European A2 STD			00
	031	IDKR	001	003	FIX	IDMOD setting for Korean M STD			00
	032	IDJP	001	003	FIX	IDMOD setting for EIAJ STD			01

Item remarks ** please refer to page 24

TVJ	Functionality		Init.	Range	DATA	Function	Table & Note	Device Name (Slave Address)	NVM Address / Initial Value (Detailed)		
Category	No.	Name	Dec	Dec					Common	50	60
OPTM	000	ASHT	006	007	FIX	Auto shut off timer (data * 5 min)			00		
	001	OSDB	000	015	FIX	OSD brightness		MMR/Micro 60h	00		
	002	OSDH	005	015	FIX	OSD Horizontal Position		MMR/Micro 60h	05		
	003	OSDV	037	063	FIX	OSD Vertical Position	50 / 60	MMR/Micro 60h		63	31
	004	MUTE	000	001	FIX	No Signal Mute Switch (1=enabled)			00		
	005	RFUL	015	015	FIX	RF Signal Change Counter after Unlocked (Disable when 0fh)			04		
	006	RFLK	015	015	FIX	RF Signal Change Counter after Locked (Disable when 0fh)			00		
	007	AVUL	015	015	FIX	AV Signal Change Counter after Unlocked (Disable when 0Fh)			04		
	008	AVLK	015	015	FIX	AV Signal Change Counter after Locked (Disable when 0Fh)			00		
	009	LANG	000	003	FIX	OSD language shipping condition			00		
	010	HTXT	000	001	FIX	Sync seperator sw		TV-Processor(8A)	0		
	011	CMSS	000	001	FIX	Sync sw		TV-Processor(8A)	1		
	012	DCXO	060	295	FIX	DCXO Value		SFR/Micro 60h/DSP	59		
	013	EXBL	000	015	FIX	Extended Blanking Timer to Eliminate White Noise			07		
	014	TSYS	000	003	FIX	Memorize TV Sys in NVM at Test Reset [0:B/G, 1:I, 2:M, 3:D/K] (GA Model)			00		

TVJ	Functionality		Init.	Range	DATA	Function	Table & Note	Device Name (Slave Address)	Common	Note
Category	No.	Name	Dec	Dec						
OPTB	000	IALL	000	001	FIX	Standard Write Switch (not memorized in NVM)			00	
	001	OPB1	000	255	FIX	Option 1 (System related)			*****	For remark *****
	002	OPB2	000	255	FIX	Option 2 (Video Signal related)			*****	Refer to option
	003	OPB3	000	255	FIX	Option 3 (Stereo Decoding related)			*****	Bit setting on
	004	OPB4	000	255	FIX	Option 4 (Miscellaneous)			*****	Page 25 - 27
	005	OPB5	000	255	FIX	Option 5 (Miscellaneous)			*****	
	006	OPB6	000	255	FIX	Option 6 (OSD Language related)			*****	
	007	BSWT	000	015	FIX	Band Switch Wait Time (not memorized in NVM)			00	

NOTE

- shaded items are no data.
- Standard data listed on the Adjustment Item Table are reference values, therefore it may be different for each model and for each mode.
- Note for Different Data Those are the standard data values written on the microprocessor. Therefore, the data values of the modes and stored respectively in the memory. In case of a device replacement, adjustment by rewriting the data value is necessary for some items.

Data Variant depend on models

Category	No	Name	Model	Data
WHBL	006	PGR	Without VM	61
	007	PGG	Without VM	61
	008	PGB	Without VM	61

Category	No	Name	Model	Data
VM	001	VMA	Without VM	00

Category	No	Name	Model	Table							
				PAL (TV)	NTSC (TV)	SECAM (TV)	PAL (VIDEO)	NTSC (VIDEO)	SECAM (VIDEO)	YUV	S-Input
YC	003	YDLY	Non-Comb Model	02	02	10	2	2	2	09	09

Category	No	Name	Model	Table		
				TV	Video	YUV
SADJ	002	SSHP	21"Non-Comb models & All 14" models	35	38	35

Category	No	Name	Model	Data
PICT	000	PFRQ	Non-Comb models	01

Category	No	Name	Model	Data
YC	000	PFRQ	Non-Comb models	00

Category	No	Name	Model	Table	
				NTSC	Others
YC	011	BPS	Non-Comb models	00	00

Category	No	Name	
SDSP	002	BBL	00
	003	BBH	00
	004	BBLW	06
	016	BAS	13
	017	TRE	14
	018	EQ1	09
	019	EQ2	09
	020	EQ3	09
	021	EQ4	10
	022	EQ5	11
	023	BFCT	00
	026	BBHW	00
	027	STRE	01

Category	No	Name	Stereo models	Non-stereo models
SDEC	26	DCXI	01	00
	027	DCXG	03	00
	029	DCLH	06	00

ITEM INFORMATION
No. OPB1

Item	Speed Search		M/N(US)	L'	M	B/G	I	D/K
KV-BT21M50	0	1	0	0	1	1	1	1
KV-BT21M80	0	1	0	0	1	1	1	1
KV-BT21M81	0	1	0	0	1	1	1	1

SPEED SEARCH (Time of speed search) 00 = disabled (original cycle speed)
01 = 4 time speed from the original
10 = 6 time speed from the original
11 = 8 time speed from the original

TV System Selection 0 = disabled, 1 = enabled

No. OPB2

Item	D1(JPN)	AV Multi/ PAM(GA)	Component	Composite (SCART)		SECAM	Color Decording	
KV-BT21M50	0	1	0	1	0	1	0	0
KV-BT21M80	0	0	0	1	0	1	0	0
KV-BT21M81	0	1	0	1	0	1	0	0

D1 (D1 Terminal) 0 = not available, 1 = available
AV Multi/ (AV Multi Terminal) - JP 0 = not available, 1 = available
PAM Portable Audio Mode - GA 0 = not available, 1 = available
Component (Component [YCbCr] Terminals) 0 = not available, 1 = available
Composite (No. of Composite Terminals) 00 = no composite terminal
(Euro:no Scart) BX1L:No Video
(SCART) (No. of SCART Terminals) 01 = 1 composite terminal
(Euro:1 Scart) BX1L:2 Video in
10 = 2 composite terminals
(Euro:2 Scart) BX1L:3 Video in
11 = 3 composite terminals
(Euro:no terminal) BX1L:4 Video in
SECAM (SECAM Color System) 0 = not available, 1 = available
Color decoding (Color Crystal Selection) 00 = PAL/NTSC/SECAM (Multi)
01 = NTSC (3.58MHz)
10 = PAL/NTSC/SECAM (4.43MHz)
11 = PAL/NTSC (Tri-Norma)

No. OPB3

Item	HDEV	NICAM ST	NICAM BI	A2 ST	Thai Bilingual	JP/US ST	Korean ST	MONO
KV-BT21M50	0	0	0	0	0	0	0	0
KV-BT21M80	0	0	0	0	0	0	0	0
KV-BT21M81	0	0	0	0	0	0	0	0

HDEV (High Deviation Mode) 0 = disabled, 1 = enabled
NICAM ST (NICAM Stereo) 0 = disabled, 1 = enabled
NICAM BI (NICAM Stereo) 0 = disabled, 1 = enabled
A2 ST/BI (A2 [West German] Stereo/Bilingual) 0 = disabled, 1 = enabled
Thai Bilingual (A2 [Thai] Bilingual) or Force SAP if JP/US ST is act 0 = disabled, 1 = enabled
JP/US ST (JP/US Stereo) 0 = disabled, 1 = enabled
Korean ST (Korean Stereo) 0 = disabled, 1 = enabled
MONO (Monaural Model) 0 = Stereo (SSD) Model
1 = Monuaral Model

No. OPB4

Item	Firmware/ SMAT	1 spk Models	VM	Equalizer	Surround	V-Chip	Top	Text
KV-BT21M50	0	0	0	0	0	0	0	0
KV-BT21M80	0	0	0	0	0	0	0	0
KV-BT21M81	0	0	0	0	0	0	0	1

Firmware	(SSD Firmware Downloading)	0 = disabled, 1 = enabled
SMAT	Surround Matrix	0 = Active, 1 = Passive
1 spk Models	1 Speaker Models	0 = 2 or 3 Speaker Models, 1 = 1 speaker Models
VM	(Velocity Modulation)	0 = disabled, 1 = enabled
Equalizer	(5-band Equalizer Model)	0 = Bass/Treble Model, 1 = Equalizer Model
Surround	(US/GA Surround Selection)	0 = Off/Simulated/Surround 1 = Off/Simulated/WOW/TruSurround (US) 1 = Off/Simulated/SRS (3D) Surround (GA)
V-Chip	(V-Chip Model)	0 = Channel Block Model (no rating) 1 = Parental Control Model (rating)
TOP	(Forced TOP)	0 = Auto Mode (TOP/FLOF), 1 = Forced TOP
TEXT	(Teletext Model)	0 = Non-Teletext Model, 1 = Teletext Model

No. OPB5

Item	Full Surround	No Surround	Forced 60	ASD	Tilt	IP Plus	IP	Wide
KV-BT21M50	0	0	0	0	0	1	1	0
KV-BT21M80	0	0	0	0	0	1	1	0
KV-BT21M81	0	0	0	0	1	1	1	0

Full Surround	(Full Surround option)	0 = Normal Surround Model 1 = Full Surround Model (Off/simulated/surround/ SRS/WOW/TruSurround)
No Surround	(No Surround Model)	0 = Surround Model, 1 = Non-Surround Model
Forced 60	(Forced 60Hz in no signal)	0 = 50Hz, 1 = 60Hz
ASD	(Automatic Standard Detection)	0 = disabled, 1 = enabled
Tilt	(Tilt Correction/PIC Rotation)	0 = disabled, 1 = enabled
IP Plus	(Intelligent Picture Plus)	0 = disabled, 1 = enabled
IP	(Intelligent Picture)	0 = disabled, 1 = enabled
Wide	(Wide Mode/V-Compressed)	0 = disabled, 1 = enabled

No. OPB6

Item	GA US	Latin	Feature 2	Feature 1	OSD Language Selection			
KV-BT21M50	1	0	0	0	1	0	0	0
KV-BT21M80	1	0	0	0	0	1	0	0
KV-BT21M81	1	0	0	0	0	1	0	0

GA US (US Model Destination)
0 = US/CANADA/Latin
1 = Taiwan/Korea/Philippine
(Wake-up timer enable)
(GA Surround Spec:OFF, SIMULATED, SRS)

Latin (US Model Latin Destination)
0 = US/CANADA (No Volume Figure Display)
1 = Latin (Volume Figure Display)

Feature 2 (Temporary for BX1L)
0 = Comb Not available
1 = Comb available

Feature 1 (Temporary for BX1L)
0 = PiP Not Available
1 = PiP available

OSD Language Selection
(English always available except JP)

US
01xx = French
0x1x = Spanish
0xx1 = Portuguese

US (GA NTSC)
1x1x = Complicated Chinese
1xx1 = Korean

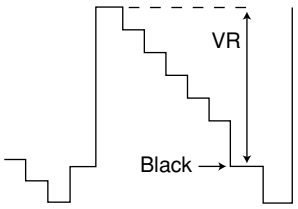
GA
1xxx = Simplified Chinese
x1xx = Arabic
xx1x = Thai
xxx1 = Vietnamese

EU
0000 = Destination ADE
0001 = Destination BL
0010 = Destination KR
0011 = Destination U

3-3. PICTURE QUALITY ADJUSTMENTS

PMX/CONTRAST ADJUSTMENT

1. Select Video Mode.
2. Input PAL CB to TV set.
3. Set PICT 03 "PWL" to 00h and WHBL 21 "BLBG" to 01h.
4. Set the following condition:
   PICTURE 100%, COLOR 0%, BRIGHTNESS 50%.
5. Connect an oscilloscope to pin ④ (R output) of CN004.
6. Set to Service Mode "PWL" to 00h, “BLBG” to 01h.
7. Select SADJ00 "PMX" with [1] and [4] of the commander then adjust VR within spec with [3] and [6].

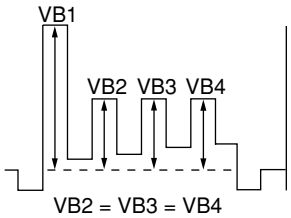


1.23 ± 0.03 Vp-p = for NTSC VM Models
1.46 ± 0.03 Vp-p = for 21" without VM Models
1.65 ± 0.03 Vp-p = with VM Models except NTSC models
1.10 ± 0.03 Vp-p = for 21" NTSC non VM Models
1.38 ± 0.03 Vp-p = for 14" Models

8. Then press [MUTING] → [0] to write the data
9. Set "PWL" and "BLBG" back to initial data repectively.
   (PWL: 01h and BLGG: 00h)

SUB COLOR ADJUSTMENT

1. Select Video and set Picture mode.
2. Input PAL 100% CB to TV set.
3. Set PICT 06 "WTS" to 00h.
4. Set the following condition:
   PICTURE 100%, COLOR 50%, BRIGHTNESS 50%.
5. Connect an oscilloscope to pin ② (B output) of CN004.
6. Select to Service Mode and adjust SADJ04 "SCOL" with [1] and [4] of commander then adjust to VB2 = VB3 = VB4 with [3] and [6].

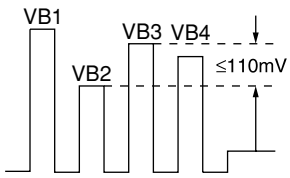


VB2 = VB3 = VB4
(Difference is within 70mV)

7. Then press [MUTING] → [0] to write the data.
8. Set "WTS" back to original data.

SUB HUE ADJUSTMENT

1. Select Video.
2. Input a NTSC 3.58 Color Bar to TV set.
3. Set the following condition:
   PICTURE 100%, COLOR 50%, BRIGHTNESS 50%
4. Connect an oscilloscope to pin ② (B output) of CN004.
5. Set to Service and adjust SADJ01 "SHUE" with [1] and [4] of commander then adjust to VB1 = VB2 = VB3 = VB4 with [3] and [6].
6. Then press [MUTING] → [0] to write the data.



The highest level of VB1, VB2, VB3, VB4 must be aligned at the same time.
The ideal difference between VB2 and VB3 is within ±110mV.

For single system with NTSC 4.43 select TV channel with NTSC 4.43 and repeat 4 → 6.

3-4. DEFLECTION ADJUSTMENT

H-TRAPEZOID ADJUSTMENT

1. Receive cross hatch/dotsignal.
2. Adjust on to make H-Trapezoid distortion best.

NORMAL MODE (50Hz)

1. Set to Service Mode.
2. Input SPCB Signal (Select Video Mode for USA).
3. Using the [1] and [4] button select GEO (Service Mode).
4. Rasie/lower data using the [3] and [6] buttons adjust the following items:-

GEOM :	000	HPOS	Horizontal Shift (HS)
	001	HPAR	Horizontal Parallelogram
	002	HBOW	Horizontal Bow
	003	VLIN	Vertical Linearity
	004	VSCR	Vertical Scroll
	005	HSIZ	EW Width (EW)
	006	EWPW	EW Parabola/Width (PW)
	007	UCOP	EW Upper Corner Parabola
	008	LCOP	EW Lower Corner Parabola
	009	EWTZ	EW Trapezium
	010	VSLP	Vertical Slope (VS)
	011	VSIZ	Vertical Amplitude
	012	SCOR	S-Correction (SC)
	013	VPOS	Vertical Shift (VSH)
	014	HBL	RGB Blanking Mode
	015	WBF	Timing of Wide Blanking (WBF)
	016	WBR	Timing of Wide Blanking (WBR)
	017	SBL	Service Blanking
	018	COPY	Copy the GEO data to all 50/60Hz NVM area

5. Write into memory by pressing [MUTING] then [0] on the remote commander.

WIDE MODE (50Hz)

(V-Compression Adjustment)

1. Input SPCB signal.
2. Adjust condition change to WIDE MODE : ON
3. Copy (Item from normal mode 50Hz) all Normal Mode adjusted data.

NORMAL MODE (60Hz)

1. Input 525/60Hz signal.
2. They can copy 50Hz first.
   ("COPY" under GEOM is set to [1], then [MUTE] + [0])
3. Using the [1] and [4] button, select category GEO (Service Mode).
4. Raise/lower data using the [3] and [6] buttons to obtain optimum image.

GEOM :	000	HPOS	Horizontal Shift (HS)
	001	HPAR	Horizontal Parallelogram
	002	HBOW	Horizontal Bow
	003	VLIN	Vertical Linearity
	004	VSCR	Vertical Scroll
	005	HSIZ	EW Width (EW)
	006	EWPW	EW Parabola/Width (PW)
	007	UCOP	EW Upper Corner Parabola
	008	LCOP	EW Lower Corner Parabola
	009	EWTZ	EW Trapezium
	010	VSLP	Vertical Slope (VS)
	011	VSIZ	Vertical Amplitude
	012	SCOR	S-Correction (SC)
	013	VPOS	Vertical Shift (VSH)
	014	HBL	RGB Blanking Mode
	015	WBF	Timing of Wide Blanking (WBF)
	016	WBR	Timing of Wide Blanking (WBR)
	017	SBL	Service Blanking
	018	COPY	Copy the GEO data to all 50/60Hz NVM area

WIDE MODE (60Hz)

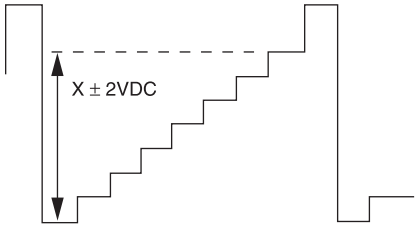
(V-Compression Adjustment)

1. Input mono scope signal.
2. Adjust condition change to WIDE MODE : ON
3. "COPY" is set to [1], then [MUTE] + [0]

3-5. DRIVE ADJUSTMENT

1. Input signal 70% Color Bar (USA)
   100% Color Bar (Other)
2. Make sure only red is active.
3. Set following condition :-
   PICTURE 100%, COLOR 0%, Other 50%
4. Select SADJ00 "PMAX" with [1] and [4] then adjust until voltage in R out X gain [recorded] = SPEC
5. Then press [MUTING] → [0] to write data.
   X±2VDC (R Cathode on C or CV board)

Model	14”	21”
GA	83.0	88.0 - Non VM Models 99.0 - VM Models

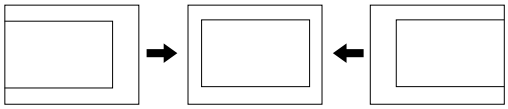


6. Set VIDP 36 BLBG back to 00.

3-6. PICTURE DISTORTION ADJUSTMENT

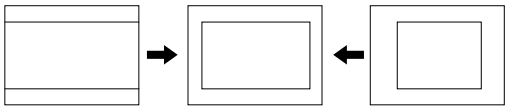
H. CENTER ADJUSTMENT (HPOS)

1. Input Monoscope signal.
2. Activate the Service Adjustment Mode.
3. Select the HPOS item with 1 and 4.
4. Adjust the value of HPOS with 3 and 6 for the best vertical center.
5. Press MUTING then 0 to save into the memory.



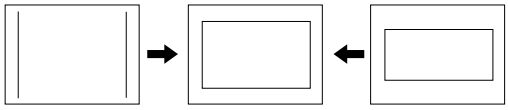
H. SIZE ADJUSTMENT (HSIZ)

1. Input Monoscope signal.
2. Activate the Service Adjustment Mode.
3. Select HSIZ with 1 and 4.
4. Adjust with 3 and 6 for the best horizontal size.
5. Press MUTING then 0 to save into the memory.



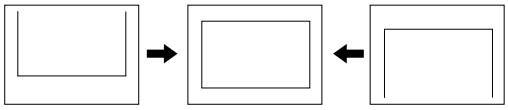
V. SIZE ADJUSTMENT (VSIZ)

1. Input Monoscope signal.
2. Activate the Service Adjustment Mode.
3. Select the VSIZ item with 1 and 4.
4. Adjust value of VPOS with 3 and 6 for the best vertical center.
5. Press MUTING then 0 to save into the memory.



V. CENTER ADJUSTMENT (VPOS)

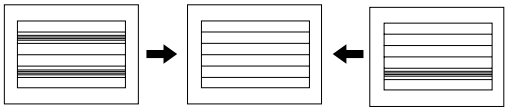
1. Input Monoscope signal.
2. Activate the Service Adjustment Mode.
3. Select the VPOS item with 1 and 4.
4. Adjust value of VPOS with 3 and 6 for the best vertical center.
5. Press MUTING then 0 to save into the memory.



V. LINEARITY (VLIN), V. CORRECTION (SCOR), PIN AMP (EWPW), AND HORIZONTAL TRAPEZOID (EWTZ) ADJUSTMENTS

1. Input Monoscope signal.
2. Activate the Service Adjustment Mode.
3. Select VLIN, SCOR, EWPW, and EWTZ with 1 and 4.
4. Adjust with 3 and 6 for the best horizontal size.
5. Press MUTING then 0 to save into the memory.

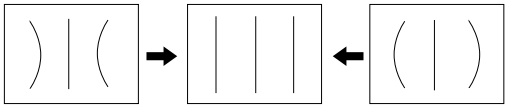
V LINEARITY (VLIN)



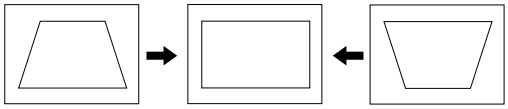
V CORRECTION (SCOR)



PIN AMP (EWPW)



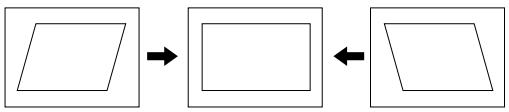
HORIZONTAL TRAPEZOID (EWTZ)



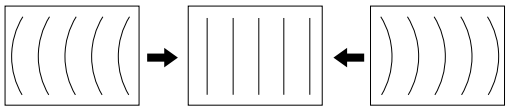
V. ANGLE (HPAR), H. BOW (HBOW), UPPER PIN (UCOP) AND LOW PIN (LCOP) ADJUSTMENTS

1. Input Monoscope signal.
2. Activate the Service Adjustment Mode.
3. Select HPAR, HBOW, UCOP, and LCOP with 1 and 4.
4. Adjust with 3 and 6 for the best picture.
5. Press MUTING then 0 to save into the memory.

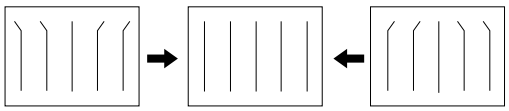
V ANGLE (HPAR)



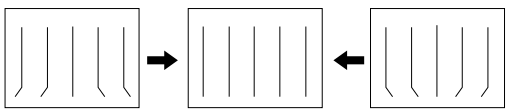
V BOW (HBOW)



UPPER PIN (UCOP)

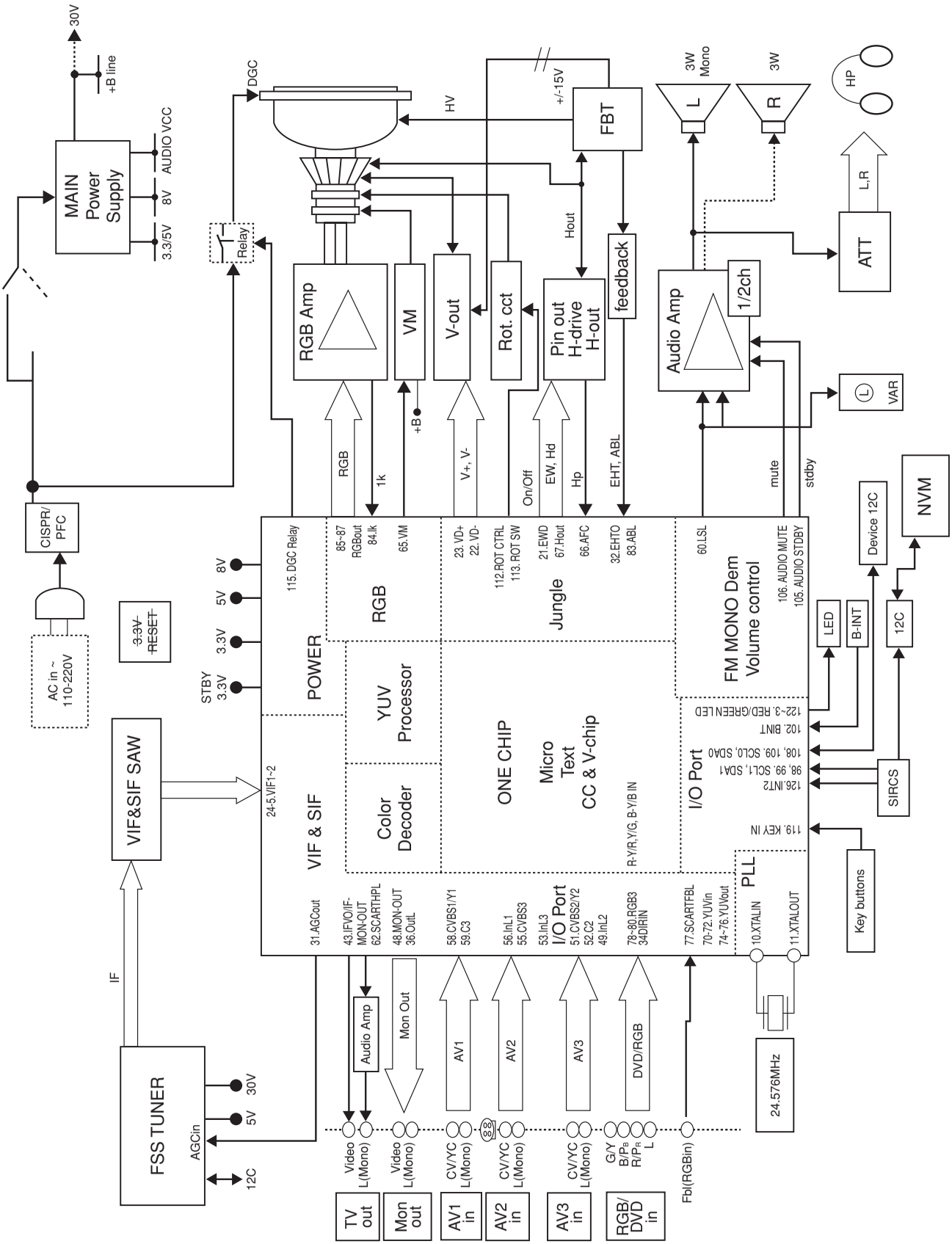


LOW PIN (LCOP)

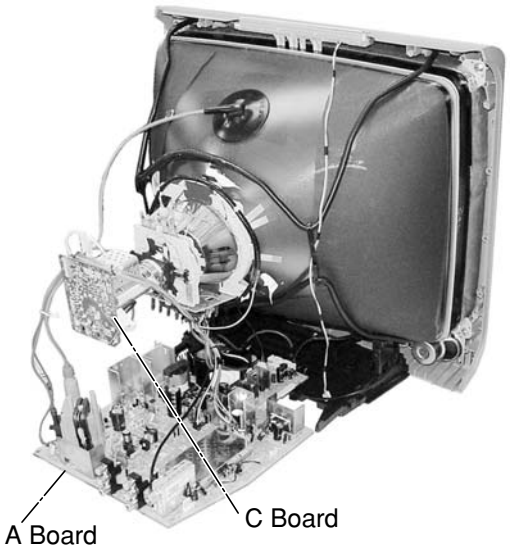


SECTION 4
DIAGRAMS

4-1. BLOCK DIAGRAM



4-2. CIRCUIT BOARDS LOCATION



4-3. SCHEMATIC DIAGRAM

Note:

- All capacitors are in µF unless otherwise noted.
- All electrolytic capacitors are rated at 50V unless otherwise noted.
- All resistors are in ohms.
  kΩ = 1000Ω, MΩ = 1000kΩ
- Indication of resistance which does not have rating electrical power is as follows.

  Pitch: 5 mm
  Rating electrical power 1/4W (CHIP: 1/10W)

- : nonflammable resistor.
- : fusible resistor.
- △ : internal component.
- : panel designation or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B unless otherwise noted.
- **Readings are taken with a color-bar signal input.**
  no mark : Common
  ( ) : PAL
  [ ] : NTSC 3.58
- **Readings are taken with a 10 MΩ digital multimeter.**
- **Voltage are dc with respect to ground unless otherwise noted.**
- **Voltage variations may be noted due to normal production tolerances.**
- **All voltage are in Volt.**
- **✻ : Cannot be measured.**
- **Circled numbers are waveform references.**
- **: B +bus.**
- **: B –bus.**
- **⇨ : signal path.**

Note: The reference number which starts with Wxxx (eg: W003) indicates a wire to wire connection.

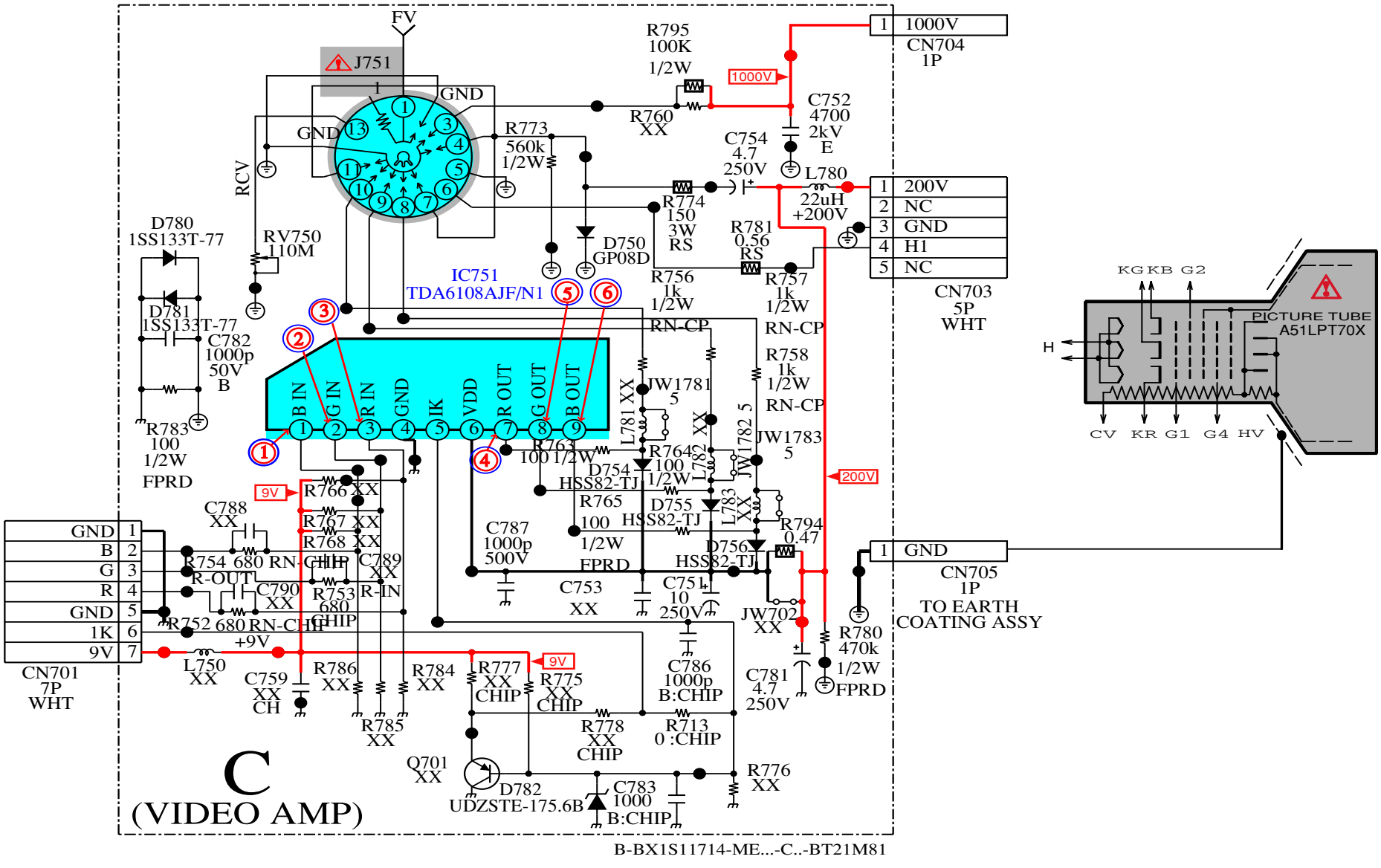
Note: Components marked as XX are not fitted on this model.

Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
	: ✻	ADJUSTMENT RESISTOR
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

Note: The component identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

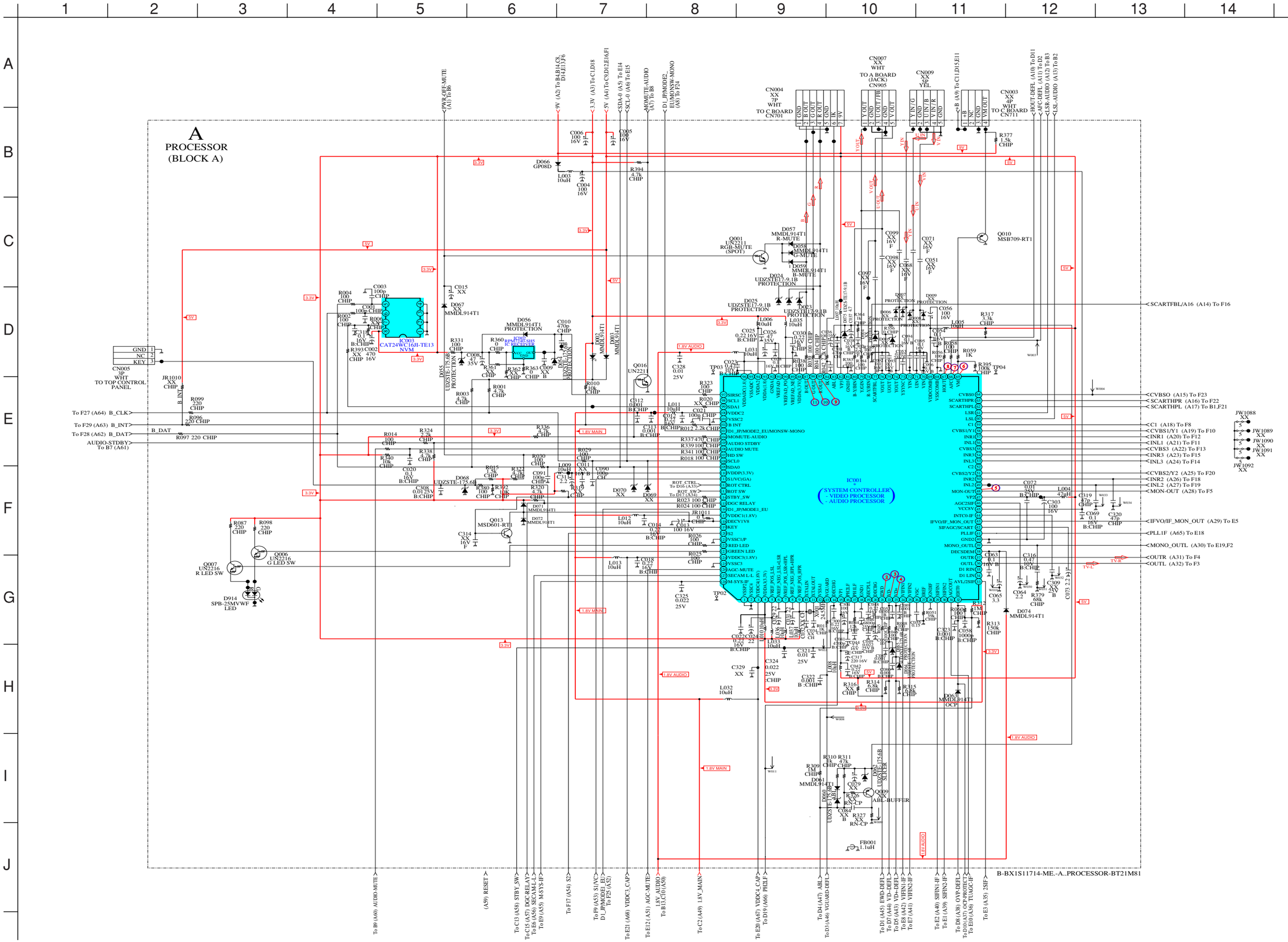
Note: "A" board schematic diagram is divided into 6 blocks. Each block is named by its function and block "alphabet". eg: Processor (Block A)
Joint connection between boards can be identified using the block alphabet followed by sequence numbering.
eg: -<HOUT-DEFL (A10) To D11
Meaning: Block A joint A10 is connected to Block D joint D11



B-BX1S11714-ME...-C..-BT21M81

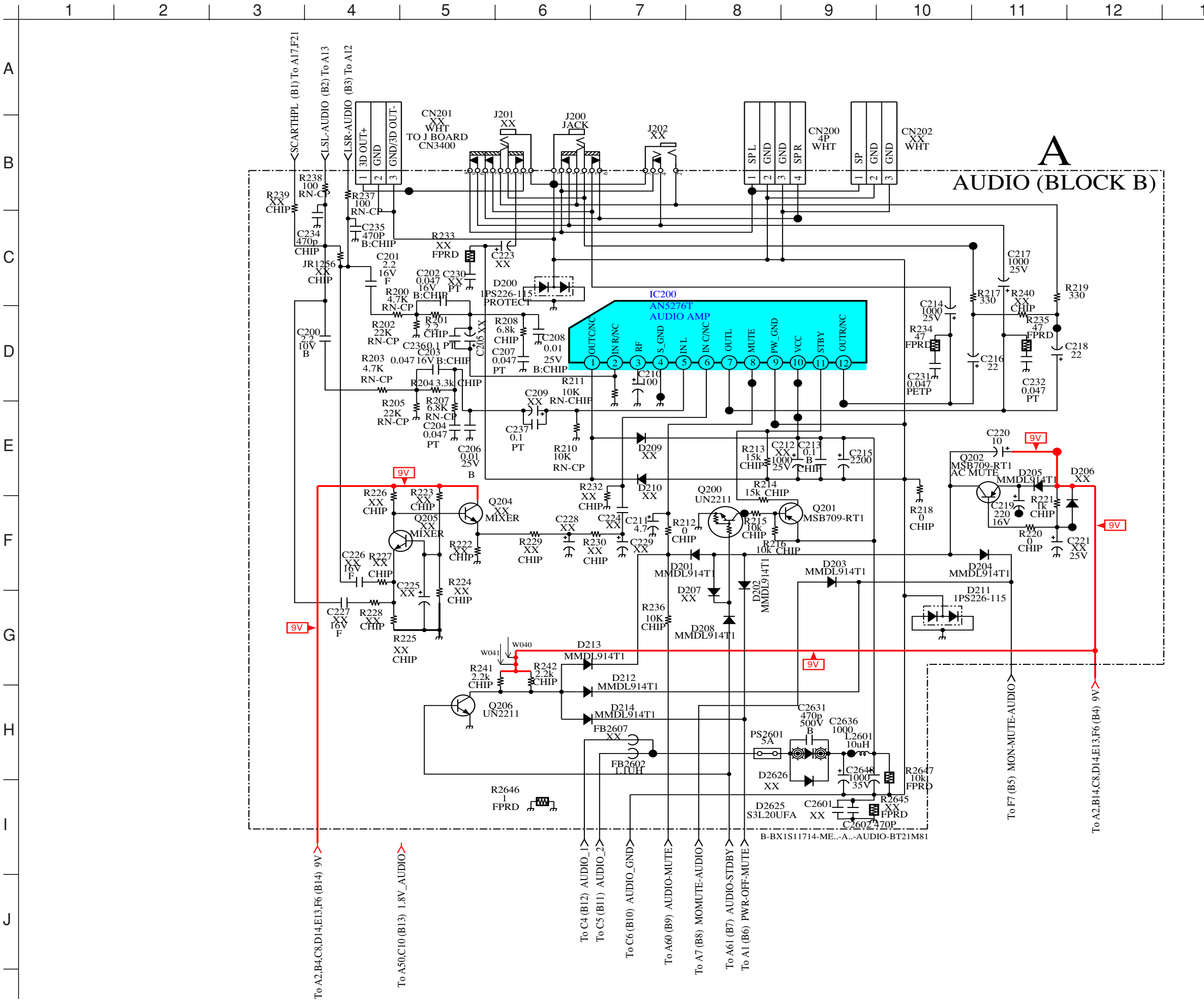
KV-BT21M50/BT21M80/BT21M81 RM-W101 RM-W100

4-3-2. A Board — Processer (Block A)



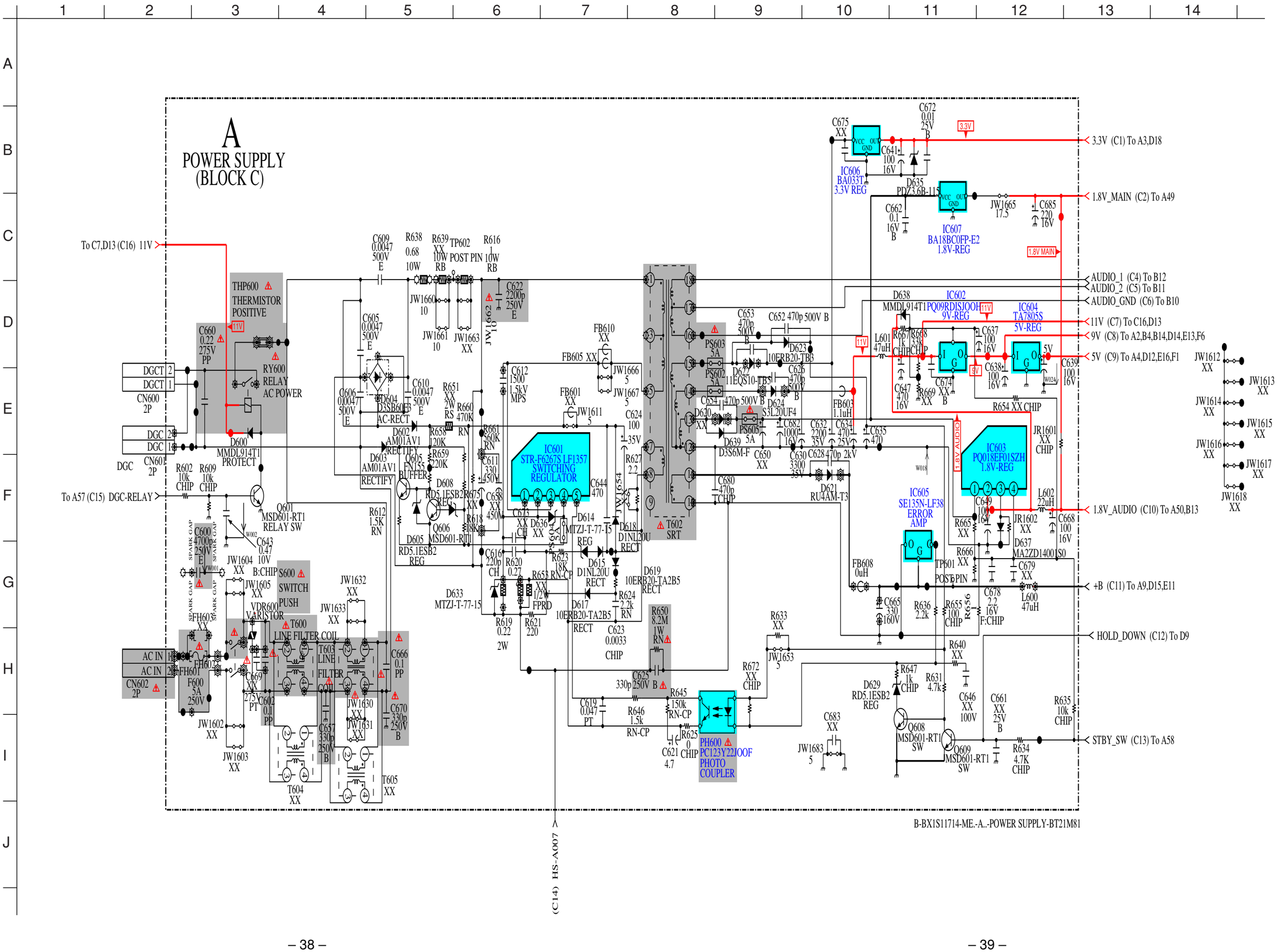
KV-BT21M50/BT21M80/BT21M81 RM-W101 RM-W100

4-3-3. A Board — Audio (Block B)



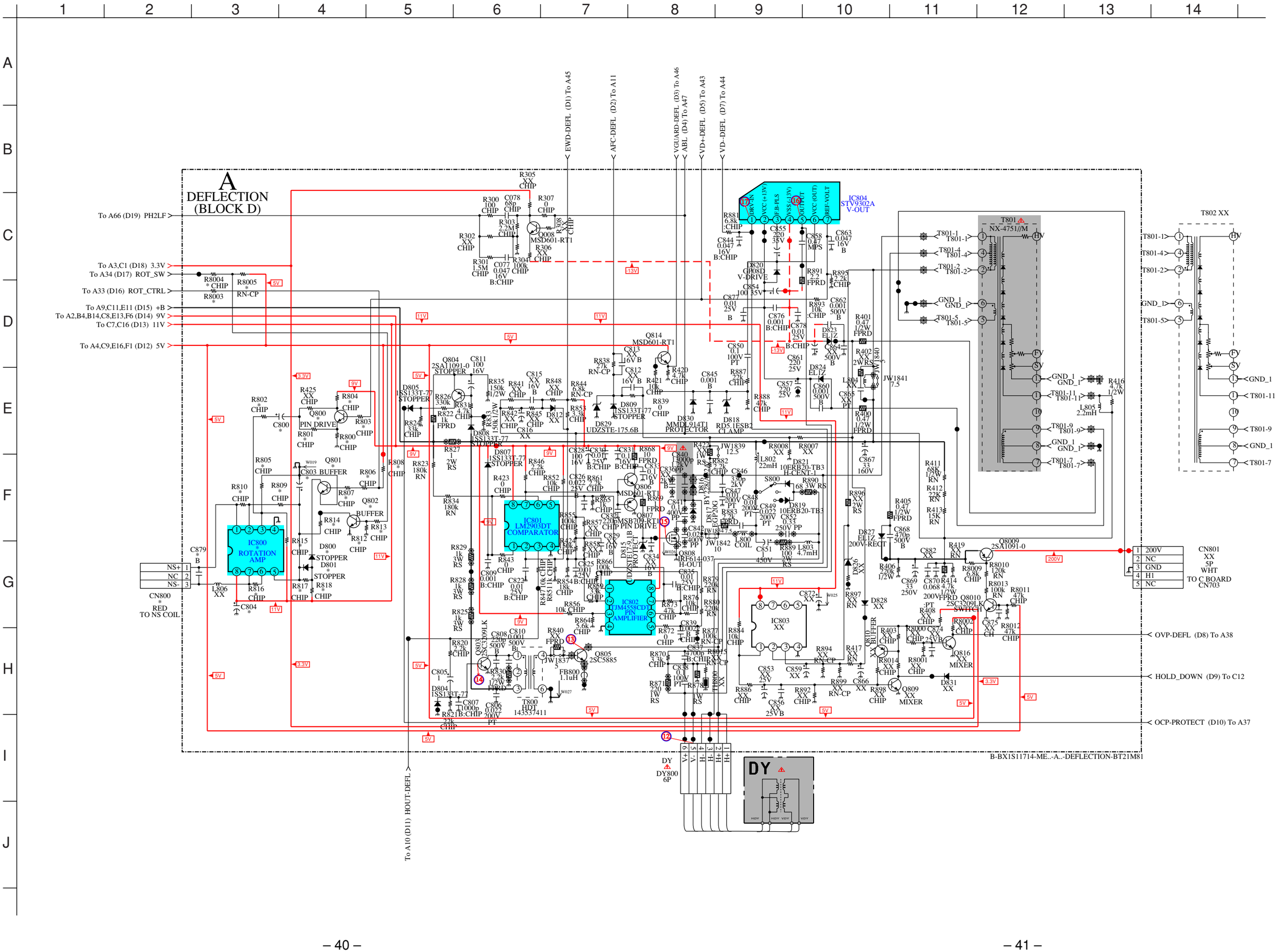
KV-BT21M50/BT21M80/BT21M81 RM-W101 RM-W100

4-3-4. A Board — Power Supply (Block C)



KV-BT21M50/BT21M80/BT21M81 RM-W101 RM-W100

4-3-5. A Board — Deflection (Block D)



KV-BT21M50/BT21M80/BT21M81 RM-W101 RM-W100

4-3-6. A Board — Tuner (Block E)

A
TUNER
(BLOCK E)

TU102 TEDE9
AGC AS SCL SDA MB MB TU2 IF
TU101 XX
AGC AS SCL SDA 5V 30V IF
JR1101 0 CHIP
C100 1000p B:CHIP
R104 XX CHIP
C102 47p CH
C104 47p CH
D109 UDZSTE-175.6B
D108 UDZSTE-175.6B
C120 470 16V
JR1110 0 CHIP
C111 0.01 25V B:CHIP
L102 XX
C112 XX 25V B
CT131 TRAP,CERAMIC
CT139 TRAP,CERAMIC
R103 33 CHIP
R119 33 CHIP
R106 4.7K CHIP
C138 2200P B:CHIP
L101 1.2UH
R108 470 RN-CP
R110 1K CHIP
R111 * CHIP
R112 * CHIP
R114 * CHIP
C115 4700P
C116 4700p B:CHIP
R113 * CHIP
D100 *
Q102 2SC3779C,D-AA
R107 3.9K CHIP
L103 33uH
JR1111 XX CHIP
R109 56 CHIP
C117 56P CH
Q103 * SWITCH
Q104 * SWITCH
C135 0.01 25V B
R126 XX CHIP
JR1112 XX CHIP
JR1100 * CHIP
JR1102 XX CHIP
SWF103 XX SWF
SWF100 * FILTER SURFACE WAVE
SWF101 FILTER SURFACE WAVE
D102 XX MA77-TX
JR1109 XX CHIP
R127 XX CHIP
R128 * CHIP
TP101 1P XX
To F30 (E17) TU-AGC
L106 100uH
R115 100 CHIP
R116 100 CHIP
R152 0 CHIP
R100 1k CHIP
D107 XX
C101 10
Q100 MSD601-RT1 BUFFER
R118 100 CHIP
C106 4.7
L100 100uH
C107 470 16V
C109 4700p B:CHIP
C108 470 16V
D105 XX
D106 XX
C137 1000p B:CHIP
R121 22k 3W RS
C133 XX
D103 UPC574J REGULATOR
C119 0.01 B:CHIP
C118 22
R149 XX :CHIP
R061 680 CHIP
R355 22k CHIP
C057 0.01 25V B:CHIP
R131 * CHIP
L105 *
C1019 XX
C1329 XX 16V B
Q111 MSD601-RT1 BUFFER
R148 * RN-CP
C132 XX 25V B
R153 * RN-CP
CF100 XX BPF FILTER
C131 XX 25V B
R146 * CHIP
R147 * CHIP
CF101 *
C129 XX 16V B
R141 XX CHIP
C1233 *
R150 100 CHIP
C070 0.1 16V B CHIP
C061 * B
R088 * CHIP

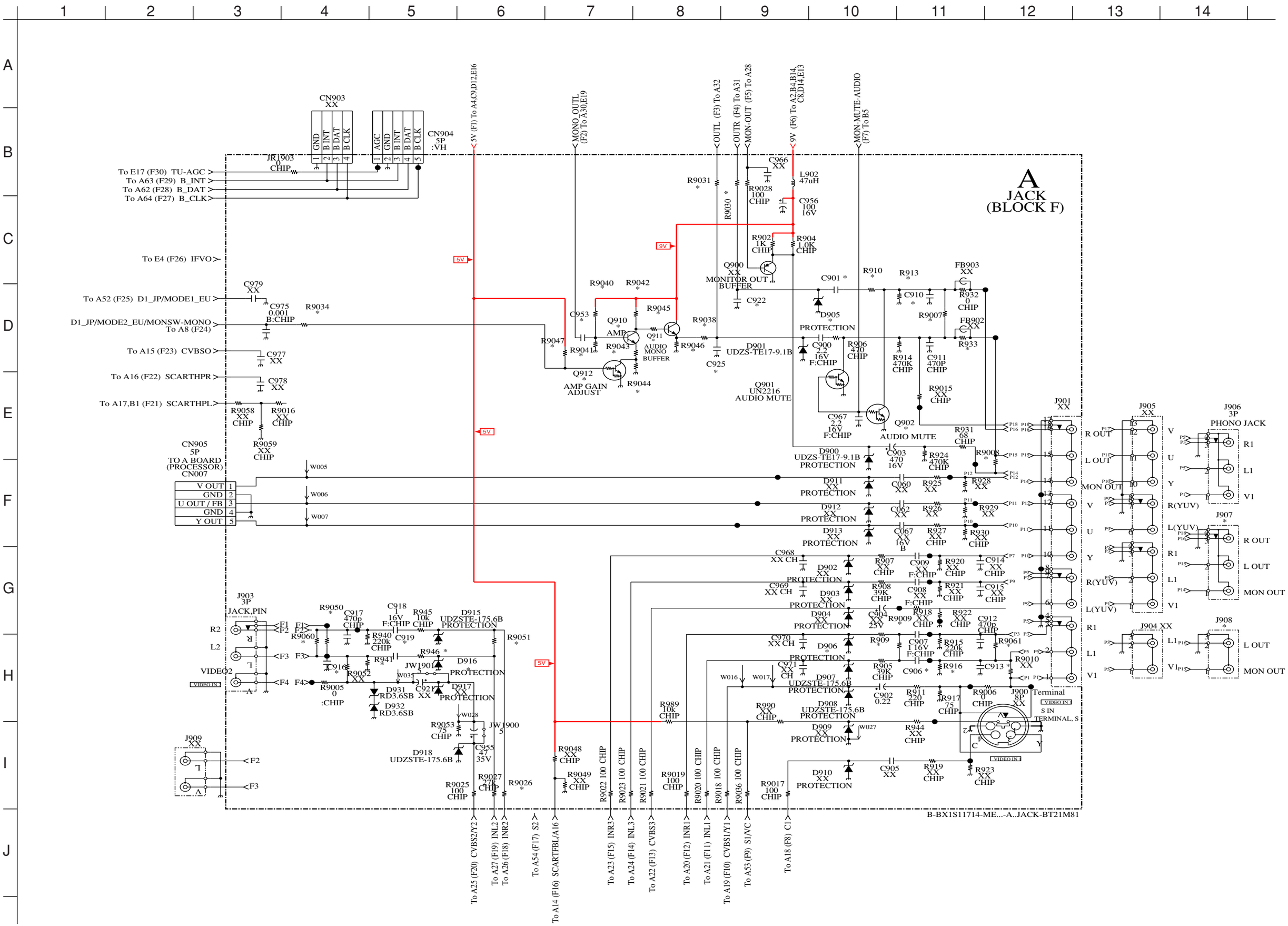
5V 9V 30V

To A4,C9,D12,F1 (E16) 5V
To A6 (E15) SCL-0
To A5 (E14) SDA-0
To A2,B4,B14,C8,D14,F6 (E13) 9V
To A68 (E21) VDDC3_CAP
To A51 (E12) AGC-MUTE
To A9,C11,D15 (E11) +B
To A36 (E10) TUAGC-IF
To A55 (E9) M-SYS-IF
To A67 (E20) VDDC4_CAP
To A42 (E8) VIFIN1-IF
To A41 (E7) VIFIN2-IF
To A56 (E6) SECAM-L-L
To A30,F2 (E19) MONO_OUTL
To A65 (E18) PLLIF
To A26 (E5) IFVO/IF_MON_OUT
To F26 (E4) IFVO
To A35 (E3) 2SIF
To A40 (E2) SIFIN1-IF
To A39 (E1) SIFIN2-IF

B-BX1S11711-E..-A..-TUNER-BT21M40

KV-BT21M50/BT21M80/BT21M81 RM-W101 RM-W100

4-3-7. A Board — Jack (Block F)



A BOARD ✻ MARK LIST

	KV-BT21M50	KVBT21M80	KV-BT21M81
C800	XX	XX	4.7
C803	XX	XX	47 35V
C804	XX	XX	10
C879	XX	XX	0.001 :CHIP
CN800	XX	XX	Plug, Connector 3P
C901	2.2 16V	XX	2.2 16V
C906	1 16V	XX	1 16V
C910	470P	XX	470P
C913	470P	XX	470P
C916	470P	XX	470P
C919	1 16V	XX	1 16V
C922	470P	XX	470P
C925	470P	XX	470P
C953	XX	0.1 16V	XX
D800	XX	XX	MMDL914T1
D801	XX	XX	MMDL914T1
D905	UDZSTE-179.1B	XX	UDZSTE-179.1B
D906	UDZSTE-175.6B	XX	UDZSTE-175.6B
D916	UDZSTE-175.6B	XX	UDZSTE-175.6B
IC001	TDA12067H/N1A0B0A	TDA12067H/N1A0B0A	TDA12077H/N1A0B0Q
IC800	XX	XX	NJM4556AD
J907	Jack	XX	Jack
J908	XX	Jack	XX
JR1012	XX	0: CHIP	XX
L806	XX	XX	10UH
Q800	XX	XX	MSD601-RT1
Q801	XX	XX	MSD601-RT1
Q802	XX	XX	MSD601-RT1
Q902	UN2216	XX	UN2216
Q910	XX	MSD601-RT1	XX
Q911	XX	MSD601-RT1	XX
Q912	XX	UN2211	XX
R800	XX	XX	2.2K :RN-CP
R801	XX	XX	0 :CHIP
R802	XX	XX	0 :CHIP
R803	XX	XX	10K :RN-CP
R804	XX	XX	0 :CHIP
R805	XX	XX	22K :RN-CP
R806	XX	XX	0 :CHIP
R807	XX	XX	680 :RN-CP
R808	XX	XX	10K :RN-CP
R809	XX	XX	10K :RN-CP
R810	XX	XX	10K :RN-CP
R812	XX	XX	22K :RN-CP
R813	XX	XX	22K :RN-CP
R814	XX	XX	100 :RN-CP
R815	XX	XX	22K :RN-CP
R816	XX	XX	0 :CHIP
R817	XX	XX	10K :RN-CP
R818	XX	XX	10K :RN-CP
R909	39K :CHIP	XX	39K :CHIP
R910	470 :CHIP	XX	470 :CHIP
R913	470K :CHIP	XX	470K :CHIP
R916	220K :CHIP	XX	220K :CHIP
R933	0 :CHIP	XX	0 :CHIP
R941	220K :CHIP	XX	220K :CHIP
R946	10K :CHIP	XX	10K :CHIP
R8003	XX	XX	100 :RN-CP
R8004	XX	XX	100 :RN-CP
R8005	XX	XX	10K :RN-CP
R9007	XX	0 :CHIP	XX
R9008	XX	0 :CHIP	XX
R9009	XX	0 :CHIP	XX
R9026	27K :CHIP	XX	27K :CHIP
R9030	100 :CHIP	XX	100 :CHIP
R9031	100 :CHIP	XX	100 :CHIP
R9034	XX	100 :CHIP	XX
R9038	XX	0 :CHIP	XX
R9040	XX	1M	XX
R9041	XX	1M	XX
R9042	XX	3.3K	XX
R9043	XX	1K	XX

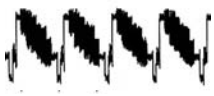
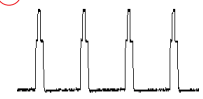
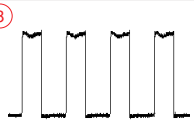
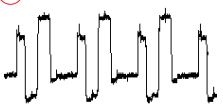
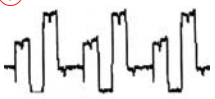
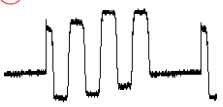
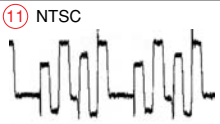
A BOARD ✻ MARK LIST

	KV-BT21M50	KVBT21M80	KV-BT21M81
R9044	XX	470	XX
R9045	XX	100	XX
R9046	XX	2.2K	XX
R9047	XX	10K	XX
R9050	0 :CHIP	XX	0 :CHIP
R9051	XX	0 :CHIP	XX
R9060	XX	0 :CHIP	XX

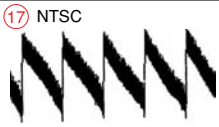
Note: The parts indicated as "XX" in this circuit diagram are not listed here, as they are not used for these models.

4-4. VOLTAGE LIST AND WAVEFORM

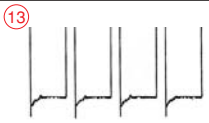
A BOARD VOLTAGE LIST AND WAVEFORM

Ref	Pin No.	Voltage[v]
IC001	1	0
	2	0
	3	1.7
	4	3.3
	5	3.3
	6	0
	7	3.3
	8	0
	9	(3.4)[3.3]
	10	*
	11	*
	12	(0)[1.7]
	13	(1.3)[2.5]
	14	(2.5)[5.0]
	15	(4.2)[2.0]
	16	2.0
	17	2.3
	18	(0)[1.9]
	19	2.3
	20	2.3
	21	(3.4)[4.0]
	② PAL  880.0mVp-p	
	② NTSC  1.0Vp-p	
	22	1.6
	③  1.92Vp-p	
	23	2.0
	④  2.0Vp-p	
	24	(2.0)[1.1]
	25	2.0
	26	2.4
	27	2.0
	28	(0.5)[0]
	29	(2.0)[0.2]
	30	0.2
	31	3.0
	32	0.4
	33	(1.1)[0]
	34	2.2
	35	2.2
	36	(2.1)[3.3]
	37	3.3
	38	(2.3)[0]
	39	2.5
	40	0
	41	(0)[2.0]
	42	(0)[2.0]
	43	(0.4)[1.6]
	44	(1.0)[0]
	45	(1.1)[8.4]
	46	0
	47	(1.3)[4.2]
	48	(1.2)[1.3]
	⑤ PAL  2.24Vp-p	
	⑤ NTSC  2.00Vp-p	
	49	(1.2)[2.2]
	50	(1.2)[2.2]
	51	(1.2)[1.3]
	52	0
	53	1.5
	54	2.0
	55	1.4
	56	(0)[2.2]
	57	2.1
	58	2.1
	59	1.5
	60	(7.4)[6.4]
	61	(7.5)[6.4]
	62	3.3
	63	3.3
	64	(1.4)[1.3]
	65	(3.3)[3.4]
	66	0.4
	⑦  5.52Vp-p	
	67	(0.4)[1.4]
	⑧  3.10Vp-p	
	68	0
	69	5.0
	70	(1.2)[1.3]
	71	(0)[1.3]
	72	1.3
	73	2.0
	74	1.7
	75	1.2
	76	0
	77	(1.3)[4.2]
	78	1.3
	79	1.3
	80	1.3
	81	0
	82	(4.2)[5.0]
	83	2.1
	84	(2.0)[3.1]
	85	1.6
	⑨ PAL  2.6Vp-p	
	⑨ NTSC  3.0Vp-p	
	86	(1.2)[1.3]
	⑩  2.0Vp-p	
	87	2.0
	⑪ PAL  2.4Vp-p	
	⑪ NTSC  2.6Vp-p	
	88	3.3
	89	0
	90	3.3
	91	1.6
	92	0
	93	1.7
	94	3.3
	95	0
	96	(0.6)[1.7]
	97	3.1
	98	(0.7)[0.4]
	99	(3.3)[0.3]
	100	(1.4)[1.7]
	101	0
	102	3.3
	103	0.2
	104	(2.3)[2.4]
	105	2.7
	106	(0.7)[0.2]
	107	3.3
	108	(3.1)[4.2]
	109	4.0
	110	3.3
	111	4.2
	112	0.6
	113	(0.5)[0.2]
	114	0.4
	115	0.3
	116	(0.6)[0.3]
	117	2.0
	118	0
	119	(0.1)[0.4]
	120	4.1
	121	0
	122	0
	123	3.3

A BOARD VOLTAGE LIST AND WAVEFORM

Ref	Pin No.	Voltage[v]
	124	1.7
	125	0
	126	3.3
	127	(0.5)[3.1]
	128	(0)[3.2]
IC002	VCC	3.3
	OUT	3.1
	GRN	0
IC003	1	0
	2	0
	3	0
	4	0
	5	4.0
	6	4.2
	7	0
	8	3.3
IC200	1	2.0
	2	(1.3)[1.5]
	3	2.0
	4	0.0
	5	0.0
	6	(0.5)[1.6]
	7	10.1
	8	0.7
	9	0
	10	21.0
	11	10.5
	12	*
IC601	1	0.5
	2	0.5
	3	(294)[284]
	4	(3.2)[20.7]
	5	1.0
IC602	I	10.3
	G	9.1
	O	0
IC603	I	3.3
	G	0
	O	1.7
IC604	I	9.1
	G	0
	O	5.0
IC605	1	134
	2	21.2
	3	0
IC606	I	2.4
	G	0
	O	3.3
IC607	1	3.3
	2	0
	3	(3.3)[0]
	4	1.7
	5	(1.3)[0.2]
IC800	1	5.7
	2	5.0
	3	5.0
	4	0
	5	4.6
	6	4.6
	7	4.6
	8	10.3
IC801	1	2.3
	2	0.8
	3	1.5
	4	0
	5	2.7
	6	2.3
	7	6.0
	8	9.0
IC802	1	3.5
	2	3.2
	3	3.2
	4	0
	5	4.0
	6	4.0
	7	(0.5)[4.0]
	8	9.1
IC803	1	0
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0
	8	0
IC804	1	0.4
	(17) PAL  664.0mVp-p	
	(17) NTSC  744.0mVp-p	
	2	13.6
	3	-12.0
	4	-13.0
	5	(0.2)[-14.1]
	(16)  51.2Vp-p	
	6	14.01
	7	0.4
PH600	1	24.0
	2	22.5
	3	0.4
	4	2.9
Q001	B	0
	C	(3.4)[1.7]
	E	0
Q006	B	3.3
	C	(1.0)[2.0]
	E	2.0
Q007	B	0
	C	3.3
	E	0.2
Q008	B	(-1.6)[-1.7]
	C	-0.3
	E	1.7
Q009	B	(1.3)[*]
	C	(1.4)[*]
	E	2.1
Q010	B	3.4
	C	0
	E	4.1
Q012	B	0.6
	C	(0.2)[0.13]
	E	0
Q013	B	0.5
	C	1.7
	E	0.1
Q014	B	0
	C	0
	E	0
Q016	B	0
	C	0
	E	0
Q100	B	3.01
	C	9.0
	E	(2.0)[2.2]
Q101	B	0
	C	9.0
	E	0.5
Q102	B	3.06
	C	(2.3)[2.1]
	E	9.0
Q103	B	3.3
	C	(3.2)[0.1]
	E	0
Q104	B	(1.3)[0.1]
	C	0
	E	0
Q105	B	(9.0)[2.0]
	C	(0.4)[1.7]
	E	0
Q106	B	*
	C	*
	E	*
Q111	B	(0.5)[-1.8]
	C	(0.7)[-1.7]
	E	(0.9)[-3.3]
Q200	B	1.9
	C	0.6
	E	0
Q201	B	20.2
	C	20.6
	E	20.6
Q202	B	9.0
	C	0.1
	E	8.9
Q204	B	0
	C	(0)[9.0]
	E	0
Q205	B	1.4
	C	*
	E	1.4
Q601	B	0.4
	C	10.3
	E	0
Q605	B	24.1
	C	(20.0)[199.0]
	E	24.0
Q606	B	*
	C	24.1
	E	21.0
Q608	B	0.2
	C	20.2
	E	0
Q609	B	0.7
	C	0.3
	E	0
Q800	B	(1.7)[0.3]
	C	(8.2)[9.0]
	E	1.1
Q801	B	0.5
	C	1.4
	E	0
Q802	B	0.3
	C	4.2
	E	0
Q803	B	(-0.4)[-4.0]
	C	5.4
	(14)  164.0Vp-p	
	E	-0.5
Q804	B	134
	C	0
	E	134

A BOARD VOLTAGE LIST AND WAVEFORM

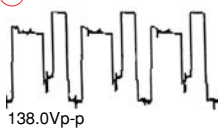
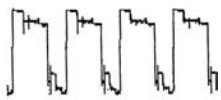
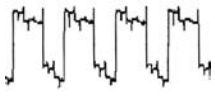
Ref	Pin No.	Voltage[v]
Q805	B	-9.2
	⑬  334.0Vp-p	
	C	134
	E	0.1
Q806	B	6.0
	C	9.0
	E	6.0
Q807	B	6.0
	C	0
	E	(5.0)[6.1]
Q808	S	0
	⑮  9.20Vp-p	
	G	6.0
	D	(13.2)[14.4]
Q809	B	*
	C	*
	E	*
Q810	B	(2.0)[0.6]
	C	(2.0)[0.5]
	E	(1.7)[1.9]

Ref	Pin No.	Voltage[v]
Q814	B	0.7
	C	5.0
	E	2.0
Q816	B	*
	C	(-6.0)[-2.5]
	E	0
Q900	B	1.3
	C	(0)[1.2]
	E	(0)[2.1]
Q901	B	-0.5
	C	(-4.2)[1.5]
	E	0
Q902	B	0
	C	-1.7
	E	0
Q903	B	0
	C	0
	E	0
Q904	B	0
	C	0
	E	0
Q905	B	0
	C	0
	E	0
Q906	B	0
	C	0
	E	0
Q907	B	0
	C	0
	E	0

Ref	Pin No.	Voltage[v]
Q908	B	0
	C	0
	E	0
Q909	B	0
	C	0
	E	0
Q910	B	2.26
	C	(4.3)[5.1]
	E	1.7
Q911	B	5.1
	C	(9.0)[4.9]
	E	4.5
Q912	B	0.1
	C	0.5
	E	0
Q8009	B	196
	C	199
	E	197
Q8010	B	0.5
	C	0.9
	E	0.3
DY800		
	⑩  2.0Vp-p	

C BOARD VOLTAGE LIST AND WAVEFORM

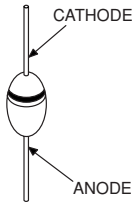
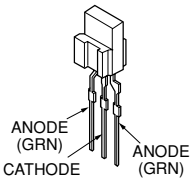
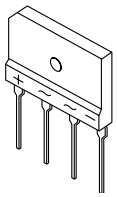
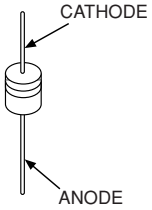
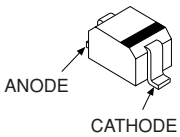
Ref	Pin No.	Voltage[v]
IC751	1	1.8
	① PAL  1.88Vp-p	
	① NTSC  2.0Vp-p	
	2	1.7
	②  1.55Vp-p	
	3	1.8
	③  2.0Vp-p	

Ref	Pin No.	Voltage[v]
	4	0
	5	5.1
	6	(196)[195]
	7	(137)[133]
	④ PAL  138.0Vp-p	
	④ NTSC  152.0Vp-p	
	8	152
	⑤ PAL  106.0Vp-p	
	⑤ NTSC  94.0Vp-p	

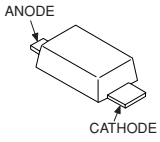
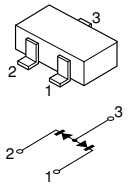
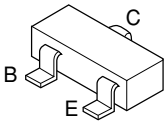
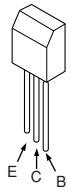
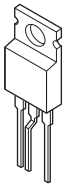
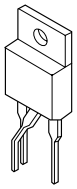
Ref	Pin No.	Voltage[v]
	9	(138)[136]
	⑥ PAL  126.0Vp-p	
	⑥ NTSC  142.0Vp-p	
Q701	B	(5.0)[6.0]
	C	0
	E	1.2
J751	G1-1	0.6
	G1-2	0.6
	G1-3	0
	G2	(288)[285]
	H1	0
	H2	0
	KB	(138)[137]
	KG	151.3
	KR	(137)[133]

4-6. SEMICONDUCTORS

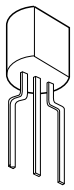
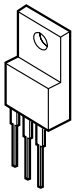
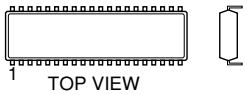
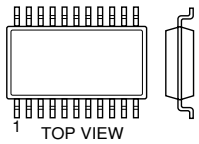
DIODE

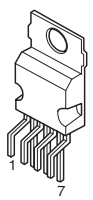
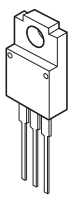
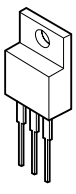
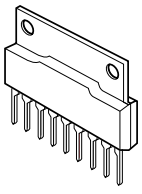
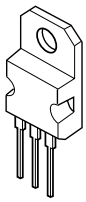
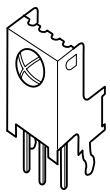
					
BY228/A52A	SPB-25MVWF	D3SB60F3	HSS82-TJ MTZJ-T-77-15 RD5.1ESB2 UPC574J 1SS133T-77	AMO1AV1 D1NL20U EGP20G EL1Z GPO8D RU4AM-T3 S3L20UF4 10ERB20-TB3 11EQS10-TB5	MMDL914T1 RD3.6SB

TRANSISTOR

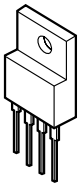
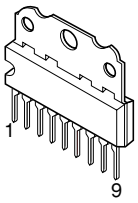
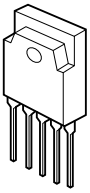
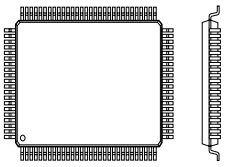
					
MA2ZD1400150 MA77 UDZSTE-175.6B UDZSTE-179.1B	1PS226-115	MSB709-RT1 MSD601-RT1 UN2211 UN2216	2SC3209LK	IRF614-037	FN155

IC

		DIP  TOP VIEW Dual In-line Package Pin 6～98		SOP  TOP VIEW Small Outline L-leaded Package Pin 8～98	
2SA1091-0 2SC3779C-DAA	2SC5885	NJM4556AD		CAT24WC16J1-TE13 LM2903DT TJM4558CDT	

					
STV9302A	BA033T	SE135N-LF38	AN5276T	TA7805S	RPM7240-SH5

IC

			
PQ018EF01SZH PQ09RD1SJ00H BA18BCOFP-E2	TDA6108AJF/N1	STR-F6267S-LF1357	TDA12077H/ N1AOBOAQ

SECTION 5
EXPLODED VIEWS

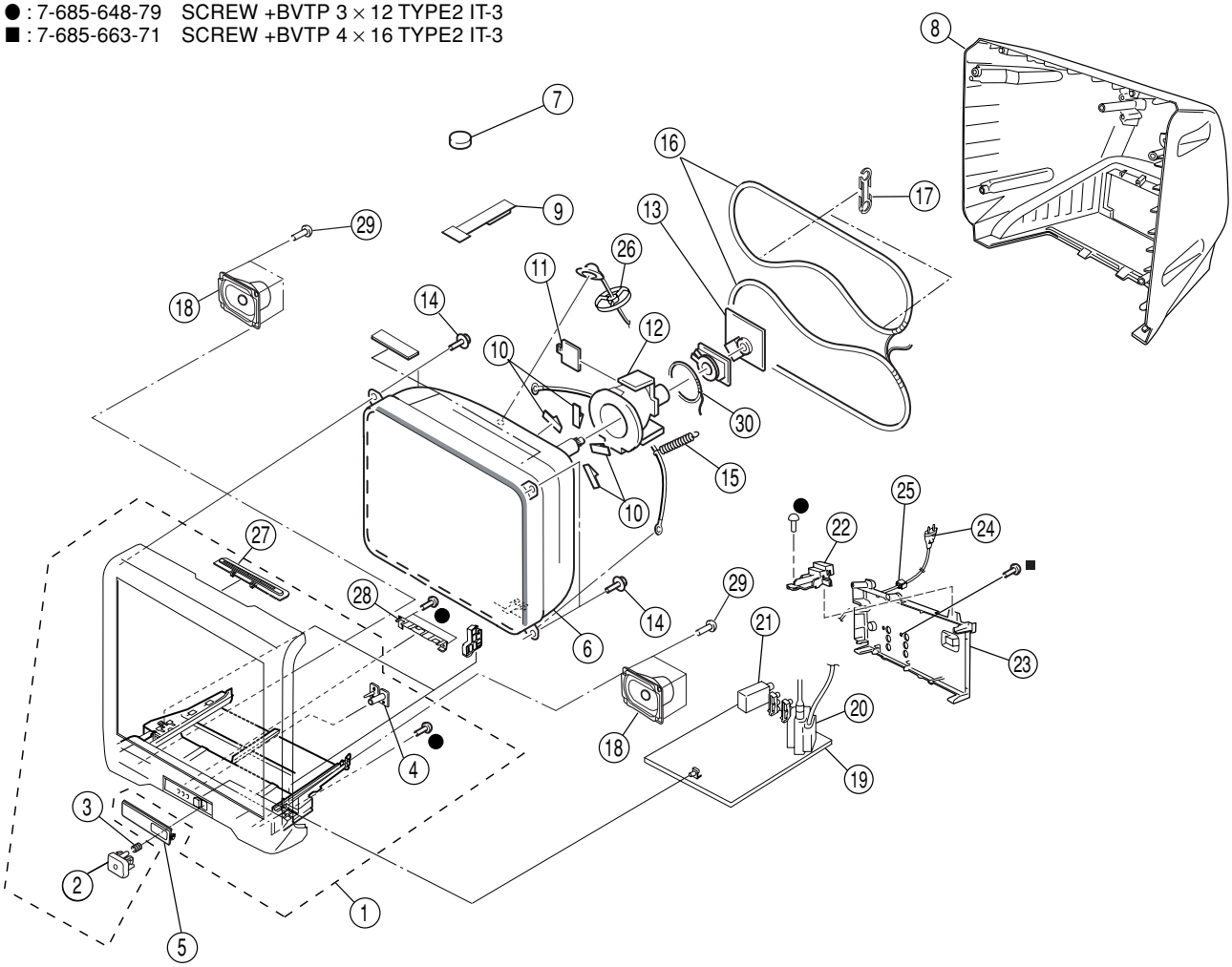
NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

5-1. CHASSIS

● : 7-685-648-79 SCREW +BVTP 3 × 12 TYPE2 IT-3
■ : 7-685-663-71 SCREW +BVTP 4 × 16 TYPE2 IT-3



REF. NO.		PART NO.	DESCRIPTION	REMARK
1		X-4042-307-1	BEZNET ASSY	2 ~ 4, 27
2		4-092-230-01	BUTTON POWER	
3		4-036-405-11	SPRING COMPRESSION	
4	*	4-092-231-01	GUIDE LIGHT	
5		4-093-582-01	DOOR CONTROL	
6	⚠	8-738-812-01	PICTURE TUBE (A51LPT70X) (KV-BT21M50)	
	⚠	8-738-809-05	PICTURE TUBE (A51LPT70X)	
			(KV-BT21M80/KV-BT21M81)	
7		1-452-032-00	MAGNET DISC	
8	⚠	4-092-938-01	COVER REAR (■ 8 SCREWS)	
9		4-094-690-01	PIECE A (90), CONV CORRECT	
10		4-046-600-11	SPACER DY	
11		4-057-714-01	PIECE TLH CONVERGENCE	
12	⚠	8-451-505-21	DEFLECTION YOKE (Y21RSA-0)	
13	*	A-1405-156-A	MOUNTED PWB (VAR), C	
14		4-365-808-12	SCREW (5) TAPPING	
15		4-095-706-01	SPRING EXTENSION	
16	⚠	1-456-280-11	DEGAUSSING COIL	
17		4-093-607-01	HOLDER DGC (2)	
18		1-825-293-11	LOUD SPEAKER (5 X 9 cm)	

REF. NO.		PART NO.	DESCRIPTION	REMARK
19	*	A-1302-520-A	COMPLETE PWB, A (KV-BT21M50)	
	*	A-1302-649-A	COMPLETE PWB, A (KV-BT21M80)	
	*	A-1302-524-A	COMPLETE PWB, A (KV-BT21M81)	
20	⚠	1-453-309-21	TRANSFORMER ASSY FLYBACK	
			(NX-4751//M3A4) (KV-BT21M50)	
	⚠	1-453-329-41	TRANSFORMER ASSY FLYBACK	
			(NX-4751//M3A4) (KV-BT21M80/KV-BT21M81)	
21		1-693-636-11	TUNER (TEDE9)	
22	⚠	4-092-370-01	BRACKET FBT	
23	⚠	4-095-890-41	BRACKET TERMINAL (ICON)	
24	⚠	1-824-968-11	POWER CORD (WITH CONNECTOR)	
25		4-033-115-00	HOLDER AC CORD	
26	*	3-704-372-11	HOLDER HV CABLE	
27	*	4-093-771-01	COVER FRONT PANEL	
28		1-477-678-41	SWITCH BLOCK, TOP	
29		3-701-910-00	SCREW, SPECIAL (DIA. 3.8x20)	
30		1-452-728-81	COIL NA ROTATION (RT-154) (KV-BT21M81)	

SECTION 6
ELECTRICAL PARTS LIST

A

NOTE:

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- All resistors are in ohms
- F : nonflammable

CAPACITORS
- MF : µF, PF : µµF

COILS
- MMH : mH, UH : µH

REF NO.	PART NO.	DESCRIPTION	REMARK
	* A-1302-520-A	COMPLETE PWB, A (KV-BT21M50)	
	* A-1302-649-A	CO MPLETE PWB, A (KV-BT21M80)	
	* A-1302-524-A	COMPLETE PWB, A (KV-BT21M81)	
		**********	
	4-382-854-01	SCREW (M3X8), P, SW (+)	
	4-382-854-21	SCREW (M3X14), P, SW (+)	
* A015	4-055-304-01	HOLDER, LED	
* A016	4-042-408-01	PIN, COATING LEAD	
* A018	4-042-408-01	PIN, COATING LEAD	

COMMON PARTS LIST

<CAPACITOR>

REF NO.	PART NO.	DESCRIPTION			
C001	1-162-927-11	CERAMIC CHIP	100PF	5.00%	50V
C002	1-126-935-11	ELECT	470UF	20.00%	16V
C003	1-162-927-11	CERAMIC CHIP	100PF	5.00%	50V
C004	1-126-933-11	ELECT	100UF	20.00%	16V
C005	1-126-933-11	ELECT	100UF	20.00%	16V
C006	1-126-933-11	ELECT	100UF	20.00%	16V
C008	1-126-947-11	ELECT	47UF	20.00%	35V
C010	1-164-315-11	CERAMIC CHIP	470PF	5.00%	50V
C012	1-127-715-91	CERAMIC CHIP	0.22UF	10%	16V
C013	1-126-933-11	ELECT	100UF	20.00%	16V
C014	1-127-715-91	CERAMIC CHIP	0.22UF	10%	16V
C018	1-127-715-91	CERAMIC CHIP	0.22UF	10%	16V
C020	1-107-826-11	CERAMIC CHIP	0.1UF	10.00%	16V
C021	1-162-927-11	CERAMIC CHIP	100PF	5.00%	50V
C022	1-127-715-91	CERAMIC CHIP	0.22UF	10%	16V
C023	1-125-891-11	CERAMIC CHIP	0.47UF	10.00%	10V
C024	1-126-965-91	ELECT	22UF	20.00%	50V
C025	1-127-715-91	CERAMIC CHIP	0.22UF	10%	16V
C026	1-126-947-11	ELECT	47UF	20.00%	35V
C028	1-107-826-11	CERAMIC CHIP	0.1UF	10.00%	16V
C029	1-126-965-91	ELECT	22UF	20.00%	50V
C030	1-127-715-91	CERAMIC CHIP	0.22UF	10%	16V
C031	1-126-965-91	ELECT	22UF	20.00%	50V
C036	1-126-933-11	ELECT	100UF	20.00%	16V
C037	1-126-963-11	ELECT	4.7UF	20.00%	50V
C038	1-107-826-11	CERAMIC CHIP	0.1UF	10.00%	16V
C041	1-162-968-11	CERAMIC CHIP	0.0047UF	10.00%	50V
C042	1-127-715-91	CERAMIC CHIP	0.22UF	10%	16V
C044	1-164-505-11	CERAMIC CHIP	2.2UF		16V
C046	1-162-969-11	CERAMIC CHIP	0.0068UF	10.00%	25V
C048	1-127-715-91	CERAMIC CHIP	0.22UF	10%	16V
C049	1-164-227-11	CERAMIC CHIP	0.022UF	10.00%	25V
C050	1-126-964-11	ELECT	10UF	20.00%	50V
C052	1-162-964-11	CERAMIC CHIP	0.001UF	10.00%	50V
C053	1-164-227-11	CERAMIC CHIP	0.022UF	10.00%	25V
C054	1-107-826-11	CERAMIC CHIP	0.1UF	10.00%	16V
C055	1-136-167-00	FILM	0.15UF	5.00%	50V
C056	1-126-933-11	ELECT	100UF	20.00%	16V
C057	1-162-970-11	CERAMIC CHIP	0.01UF	10.00%	25V
C058	1-162-964-11	CERAMIC CHIP	0.001UF	10.00%	50V
C061	1-162-968-11	CERAMIC CHIP	0.0047UF	10.00%	50V
C063	1-107-826-11	CERAMIC CHIP	0.1UF	10.00%	16V
C064	1-126-961-11	ELECT	2.2UF	20.00%	50V
C065	1-126-962-11	ELECT	3.3UF	20.00%	50V
C069	1-107-826-11	CERAMIC CHIP	0.1UF	10.00%	16V
C070	1-107-826-11	CERAMIC CHIP	0.1UF	10.00%	16V
C072	1-162-970-11	CERAMIC CHIP	0.01UF	10.00%	25V
C073	1-126-961-11	ELECT	2.2UF	20.00%	50V
C077	1-165-176-11	CERAMIC CHIP	0.047UF	10.00%	16V
C078	1-162-925-11	CERAMIC CHIP	68PF	5.00%	50V
C080	1-162-964-11	CERAMIC CHIP	0.001UF	10.00%	50V
C081	1-162-964-11	CERAMIC CHIP	0.001UF	10.00%	50V
C089	1-162-964-11	CERAMIC CHIP	0.001UF	10.00%	50V
C090	1-162-927-11	CERAMIC CHIP	100PF	5.00%	50V
C091	1-162-927-11	CERAMIC CHIP	100PF	5.00%	50V
C092	1-107-826-11	CERAMIC CHIP	0.1UF	10.00%	16V
C093	1-107-826-11	CERAMIC CHIP	0.1UF	10.00%	16V
C094	1-107-826-11	CERAMIC CHIP	0.1UF	10.00%	16V
C095	1-107-826-11	CERAMIC CHIP	0.1UF	10.00%	16V
C096	1-107-826-11	CERAMIC CHIP	0.1UF	10.00%	16V
C100	1-162-964-11	CERAMIC CHIP	0.001UF	10.00%	50V
C101	1-126-964-11	ELECT	10UF	20.00%	50V
C102	1-162-923-11	CERAMIC CHIP	47PF	5.00%	50V
C104	1-162-923-11	CERAMIC CHIP	47PF	5.00%	50V
C106	1-126-963-11	ELECT	4.7UF	20.00%	50V
C107	1-126-935-11	ELECT	470UF	20.00%	16V
C108	1-126-935-11	ELECT	470UF	20.00%	16V
C109	1-162-968-11	CERAMIC CHIP	0.0047UF	10.00%	50V
C111	1-162-970-11	CERAMIC CHIP	0.01UF	10.00%	25V
C115	1-162-968-11	CERAMIC CHIP	0.0047UF	10.00%	50V
C116	1-162-968-11	CERAMIC CHIP	0.0047UF	10.00%	50V
C117	1-162-924-11	CERAMIC CHIP	56PF	5.00%	50V
C118	1-126-965-91	ELECT	22UF	20.00%	50V
C119	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C120	1-126-935-11	ELECT	470UF	20.00%	16V
C133	1-162-970-11	CERAMIC CHIP	0.01UF	10.00%	25V
C135	1-162-970-11	CERAMIC CHIP	0.01UF	10.00%	25V
C137	1-162-964-11	CERAMIC CHIP	0.001UF	10.00%	50V
C138	1-162-966-11	CERAMIC CHIP	0.0022UF	10.00%	50V
C200	1-125-889-91	CERAMIC CHIP	2.2UF	10%	10V
C201	1-125-889-91	CERAMIC CHIP	2.2UF	10%	10V
C202	1-165-176-11	CERAMIC CHIP	0.047UF	10.00%	16V
C203	1-165-176-11	CERAMIC CHIP	0.047UF	10.00%	16V
C204	1-137-374-11	MYLAR	0.047UF	5.00%	50V
C206	1-162-970-11	CERAMIC CHIP	0.01UF	10.00%	25V
C207	1-137-374-11	MYLAR	0.047UF	5.00%	50V
C208	1-162-970-11	CERAMIC CHIP	0.01UF	10.00%	25V
C210	1-126-968-11	ELECT	100UF	20.00%	50V
C211	1-126-963-11	ELECT	4.7UF	20.00%	50V
C212	1-126-942-61	ELECT	1000UF	20.00%	25V

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Replace only with part number specified.

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REF NO.		PART NO.	DESCRIPTION		REMARK	
C213		1-115-339-11	CERAMIC CHIP	0.1UF	10.00%	50V
C214		1-126-942-61	ELECT	1000UF	20.00%	25V
C216		1-126-965-91	ELECT	22UF	20.00%	50V
C217		1-126-942-61	ELECT	1000UF	20.00%	25V
C218		1-126-965-91	ELECT	22UF	20.00%	50V
C219		1-126-934-11	ELECT	220UF	20.00%	16V
C220		1-126-964-11	ELECT	10UF	20.00%	50V
C231		1-137-374-11	MYLAR	0.047UF	5.00%	50V
C232		1-137-374-11	MYLAR	0.047UF	5.00%	50V
C234		1-164-315-11	CERAMIC CHIP	470PF	5.00%	50V
C235		1-164-315-11	CERAMIC CHIP	470PF	5.00%	50V
C236		1-130-495-00	MYLAR	0.1UF	5.00%	50V
C237		1-130-495-00	MYLAR	0.1UF	5.00%	50V
C300		1-127-715-91	CERAMIC CHIP	0.22UF	10%	16V
C301		1-164-315-11	CERAMIC CHIP	470PF	5.00%	50V
C302		1-164-505-11	CERAMIC CHIP	2.2UF		16V
C303		1-126-933-11	ELECT	100UF	20.00%	16V
C304		1-126-933-11	ELECT	100UF	20.00%	16V
C308		1-162-970-11	CERAMIC CHIP	0.01UF	10.00%	25V
C311		1-126-961-11	ELECT	2.2UF	20.00%	50V
C312		1-162-964-11	CERAMIC CHIP	0.001UF	10.00%	50V
C313		1-162-964-11	CERAMIC CHIP	0.001UF	10.00%	50V
C316		1-125-891-11	CERAMIC CHIP	0.47UF	10.00%	10V
C317		1-126-934-11	ELECT	220UF	20.00%	16V
C318		1-107-826-11	CERAMIC CHIP	0.1UF	10.00%	16V
C319		1-162-923-11	CERAMIC CHIP	47PF	5.00%	50V
C320		1-162-923-11	CERAMIC CHIP	47PF	5.00%	50V
C321		1-162-970-11	CERAMIC CHIP	0.01UF	10.00%	25V
C322		1-162-964-11	CERAMIC CHIP	0.001UF	10.00%	50V
C323		1-162-964-11	CERAMIC CHIP	0.001UF	10.00%	50V
C325		1-164-227-11	CERAMIC CHIP	0.022UF	10.00%	25V
C328		1-162-970-11	CERAMIC CHIP	0.01UF	10.00%	25V
C600	⚠	1-119-895-51	CERAMIC	4700PF	20.00%	250V
C602	⚠	1-165-138-11	FILM	0.1UF	10%	0V
C605		1-161-830-00	CERAMIC	0.0047UF	99%	500V
C606		1-161-830-00	CERAMIC	0.0047UF	99%	500V
C609		1-161-830-00	CERAMIC	0.0047UF	99%	500V
C610		1-161-830-00	CERAMIC	0.0047UF	99%	500V
C611		1-117-752-11	ELECT(BLOCK)	330UF	20.00%	450V
C612		1-117-623-11	FILM	1500PF	3.00%	1.2KV
C616		1-164-230-11	CERAMIC CHIP	220PF	5.00%	50V
C619		1-130-491-00	MYLAR	0.047UF	5.00%	50V
C621		1-126-963-11	ELECT	4.7UF	20.00%	50V
C622	⚠	1-119-894-51	CERAMIC	2200PF	20.00%	250V
C623		1-162-967-11	CERAMIC CHIP	0.0033UF	10.00%	50V
C624		1-126-948-11	ELECT	100UF	20.00%	35V
C625	⚠	1-127-942-51	CERAMIC	330PF	10%	250V
C626		1-102-228-00	CERAMIC	470PF	10.00%	500V
C628		1-117-768-91	CERAMIC	470PF	10.00%	2KV
C630		1-128-549-11	ELECT	3300UF	20.00%	35V
C632		1-126-953-11	ELECT	2200UF	20.00%	35V
C634		1-126-941-11	ELECT	470UF	20.00%	25V
C635		1-126-971-11	ELECT	470UF	20.00%	50V
C637		1-126-933-11	ELECT	100UF	20.00%	16V
C638		1-126-933-11	ELECT	100UF	20.00%	16V
C639		1-126-933-11	ELECT	100UF	20.00%	16V
C641		1-126-933-11	ELECT	100UF	20.00%	16V
C643		1-125-891-11	CERAMIC CHIP	0.47UF	10.00%	10V
C644		1-164-315-11	CERAMIC CHIP	470PF	5.00%	50V
C647		1-126-935-11	ELECT	470UF	20.00%	16V
C649		1-126-933-11	ELECT	100UF	20.00%	16V
C652		1-102-228-00	CERAMIC	470PF	10.00%	500V
C653		1-102-228-00	CERAMIC	470PF	10.00%	500V
C654		1-102-228-00	CERAMIC	470PF	10.00%	500V
C657	⚠	1-127-942-51	CERAMIC	330PF	10%	250V
C660	⚠	1-165-539-11	FILM	0.22UF	10%	275V
C662		1-107-826-11	CERAMIC CHIP	0.1UF	10.00%	16V
C665		1-110-626-11	ELECT	330UF	20.00%	160V
C666	⚠	1-165-538-11	FILM	0.1UF	10%	0V
C668		1-126-933-11	ELECT	100UF	20.00%	16V
C670	⚠	1-127-942-51	CERAMIC	330PF	10%	250V
C672		1-162-970-11	CERAMIC CHIP	0.01UF	10.00%	25V
C678		1-164-505-11	CERAMIC CHIP	2.2UF		16V
C680		1-164-315-11	CERAMIC CHIP	470PF	5.00%	50V
C682		1-115-466-91	ELECT	1000UF	20.00%	16V
C685		1-126-934-11	ELECT	220UF	20.00%	16V
C805		1-126-960-11	ELECT	1UF	20.00%	50V
C806		1-106-375-12	MYLAR	0.022UF	5.00%	200V
C807		1-162-964-11	CERAMIC CHIP	0.001UF	10.00%	50V
C808		1-102-244-00	CERAMIC	220PF	10.00%	500V
C809		1-162-964-11	CERAMIC CHIP	0.001UF	10.00%	50V
C810		1-162-318-11	CERAMIC	0.001UF	10.00%	500V
C811		1-126-933-11	ELECT	100UF	20.00%	16V
C822		1-162-970-11	CERAMIC CHIP	0.01UF	10.00%	25V
C825		1-162-970-11	CERAMIC CHIP	0.01UF	10.00%	25V
C826		1-164-227-11	CERAMIC CHIP	0.022UF	10.00%	25V
C828		1-126-933-11	ELECT	100UF	20.00%	16V
C830		1-162-970-11	CERAMIC CHIP	0.01UF	10.00%	25V
C831		1-107-826-11	CERAMIC CHIP	0.1UF	10.00%	16V
C832		1-164-230-11	CERAMIC CHIP	220PF	5.00%	50V
C833		1-107-826-11	CERAMIC CHIP	0.1UF	10.00%	16V
C835		1-162-970-11	CERAMIC CHIP	0.01UF	10.00%	25V
C837		1-162-968-11	CERAMIC CHIP	0.0047UF	10.00%	50V
C838		1-106-220-00	MYLAR	0.1UF	10.00%	100V
C839		1-162-966-11	CERAMIC CHIP	0.0022UF	10.00%	50V
C840	⚠	1-117-647-11	FILM	13000PF	3.00%	1.2KV
C841		1-107-846-11	FILM	0.1UF	5.00%	400V
C842		1-100-122-21	FILM	0.022UF	5%	400V
C844		1-165-176-11	CERAMIC CHIP	0.047UF	10.00%	16V
C845		1-162-964-11	CERAMIC CHIP	0.001UF	10.00%	50V
C846		1-117-767-91	CERAMIC	330PF	10.00%	2KV
C847		1-107-364-11	MYLAR	0.01UF	10.00%	200V
C848		1-107-364-11	MYLAR	0.01UF	10.00%	200V
C849		1-106-375-12	MYLAR	0.022UF	5.00%	200V
C850		1-106-220-00	MYLAR	0.1UF	10.00%	100V
C851		1-107-675-11	ELECT	1UF	20.00%	450V
C852		1-117-665-11	FILM	0.33UF	5.00%	250V
C854		1-126-948-11	ELECT	100UF	20.00%	35V
C855		1-107-894-11	ELECT	220UF	20.00%	35V
C857		1-104-666-11	ELECT	220UF	20.00%	25V
C858		1-137-194-81	FILM	0.47UF	5.00%	50V
C860		1-162-318-11	CERAMIC	0.001UF	10.00%	500V
C861		1-104-666-11	ELECT	220UF	20.00%	25V
C862		1-162-318-11	CERAMIC	0.001UF	10.00%	500V
C863		1-165-176-11	CERAMIC CHIP	0.047UF	10.00%	16V
C867		1-165-441-81	ELECT	33UF	20%	160V
C868		1-102-228-00	CERAMIC	470PF	10.00%	500V
C869		1-107-654-11	ELECT	33UF	20.00%	250V
C870		1-106-387-00	MYLAR	0.068UF	10.00%	200V
C876		1-162-964-11	CERAMIC CHIP	0.001UF	10.00%	50V
C877		1-162-970-11	CERAMIC CHIP	0.01UF	10.00%	25V
C878		1-162-970-11	CERAMIC CHIP	0.01UF	10.00%	25V
C900		1-164-505-11	CERAMIC CHIP	2.2UF		16V
C902		1-126-957-11	ELECT	0.22UF	20.00%	50V
C903		1-126-935-11	ELECT	470UF	20.00%	16V

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REF NO.	PART NO.	DESCRIPTION			REMARK
C907	1-164-346-11	CERAMIC CHIP	1UF		16V
C911	1-164-315-11	CERAMIC CHIP	470PF	5.00%	50V
C912	1-164-315-11	CERAMIC CHIP	470PF	5.00%	50V
C917	1-164-315-11	CERAMIC CHIP	470PF	5.00%	50V
C918	1-164-346-11	CERAMIC CHIP	1UF		16V
C955	1-126-947-11	ELECT	47UF	20.00%	35V
C956	1-126-933-11	ELECT	100UF	20.00%	16V
C967	1-164-505-11	CERAMIC CHIP	2.2UF		16V
C975	1-162-964-11	CERAMIC CHIP	0.001UF	10.00%	50V
C1019	1-127-715-91	CERAMIC CHIP	0.22UF	10%	16V
C1233	1-126-961-11	ELECT	2.2UF	20.00%	50V
C2602	1-102-114-00	CERAMIC	470PF	10.00%	50V
C2631	1-102-228-00	CERAMIC	470PF	10.00%	500V
C2636	1-126-972-11	ELECT	1000UF	20.00%	50V
C2648	1-126-952-11	ELECT	1000UF	20.00%	35V
		<CONNECTOR>			
* CN005	1-564-506-11	PLUG, CONNECTOR 3P			
* CN200	1-564-507-11	PLUG, CONNECTOR 4P			
* CN600	1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P			
* CN601	1-691-134-11	PIN, CONNECTOR (PC BOARD) 2P			
* CN602 ⚠	1-580-843-11	PIN, CONNECTOR (POWER)			
* CN904	1-508-743-00	PIN, CONNECTOR 5P			
CT131	1-767-774-22	TRAP, CERAMIC			
CT139	1-767-775-22	TRAP, CERAMIC			
		<DIODE>			
D002	8-719-081-97	DIODE MMDL914T1			
D003	8-719-081-97	DIODE MMDL914T1			
D023	8-719-069-60	DIODE UDZSTE-179.1B			
D024	8-719-069-60	DIODE UDZSTE-179.1B			
D025	8-719-069-60	DIODE UDZSTE-179.1B			
D054	8-719-069-55	DIODE UDZSTE-175.6B			
D055	8-719-069-55	DIODE UDZSTE-175.6B			
D056	8-719-081-97	DIODE MMDL914T1			
D057	8-719-081-97	DIODE MMDL914T1			
D058	8-719-081-97	DIODE MMDL914T1			
D059	8-719-081-97	DIODE MMDL914T1			
D060	8-719-069-55	DIODE UDZSTE-175.6B			
D061	8-719-081-97	DIODE MMDL914T1			
D062	8-719-069-55	DIODE UDZSTE-175.6B			
D063	8-719-081-97	DIODE MMDL914T1			
D064	8-719-069-55	DIODE UDZSTE-175.6B			
D065	8-719-069-55	DIODE UDZSTE-175.6B			
D066	8-719-908-03	DIODE GP08D			
D068	8-719-069-55	DIODE UDZSTE-175.6B			
D071	8-719-081-97	DIODE MMDL914T1			
D072	8-719-081-97	DIODE MMDL914T1			
D074	8-719-081-97	DIODE MMDL914T1			
D075	8-719-069-60	DIODE UDZSTE-179.1B			
D100	8-719-421-40	DIODE MA77			
D103	8-759-157-40	IC UPC574J			
D108	8-719-069-55	DIODE UDZSTE-175.6B			
D109	8-719-069-55	DIODE UDZSTE-175.6B			
D200	8-719-062-51	DIODE 1PS226-115			
D201	8-719-081-97	DIODE MMDL914T1			
D202	8-719-081-97	DIODE MMDL914T1			
D203	8-719-081-97	DIODE MMDL914T1			
D204	8-719-081-97	DIODE MMDL914T1			
D205	8-719-081-97	DIODE MMDL914T1			

REF NO.	PART NO.	DESCRIPTION	REMARK
D208	8-719-081-97	DIODE MMDL914T1	
D211	8-719-062-51	DIODE 1PS226-115	
D212	8-719-081-97	DIODE MMDL914T1	
D213	8-719-081-97	DIODE MMDL914T1	
D214	8-719-081-97	DIODE MMDL914T1	
D600	8-719-081-97	DIODE MMDL914T1	
D602	6-500-481-31	DIODE AM01AV1	
D603	6-500-481-31	DIODE AM01AV1	
D604	8-719-077-77	DIODE D3SB60F3	
D605	8-719-109-85	DIODE RD5.1ESB2	
D608	8-719-109-85	DIODE RD5.1ESB2	
D614	8-719-923-86	DIODE MTZJ-T-77-15	
D615	8-719-063-70	DIODE D1NL20U	
D617	6-500-567-11	DIODE 10ERB20-TA2B5	
D618	8-719-063-70	DIODE D1NL20U	
D619	6-500-567-11	DIODE 10ERB20-TA2B5	
D621	8-719-312-10	DIODE RU4AM-T3	
D622	8-719-085-37	DIODE 11EQS10-TB5	
D623	6-500-567-31	DIODE 10ERB20-TB3	
D624	8-719-510-73	DIODE S3L20UF4	
D629	8-719-109-85	DIODE RD5.1ESB2	
D633	8-719-923-86	DIODE MTZJ-T-77-15	
D635	8-719-072-63	DIODE PDZ3.6B-115	
D637	8-719-072-70	DIODE MA2ZD14001S0	
D638	8-719-081-97	DIODE MMDL914T1	
D639	8-719-027-22	DIODE D3S6M-F	
D804	8-719-991-33	DIODE 1SS133T-77	
D805	8-719-991-33	DIODE 1SS133T-77	
D807	8-719-991-33	DIODE 1SS133T-77	
D808	8-719-991-33	DIODE 1SS133T-77	
D809	8-719-991-33	DIODE 1SS133T-77	
D815	8-719-069-60	DIODE UDZSTE-179.1B	
D816	8-719-081-00	DIODE BY228/A52A/	
D817	8-719-979-85	DIODE EGP20G	
D818	8-719-109-85	DIODE RD5.1ESB2	
D819	6-500-567-31	DIODE 10ERB20-TB3	
D820	8-719-908-03	DIODE GP08D	
D821	6-500-567-31	DIODE 10ERB20-TB3	
D823	8-719-302-43	DIODE EL1Z	
D824	8-719-302-43	DIODE EL1Z	
D827	8-719-302-43	DIODE EL1Z	
D829	8-719-069-55	DIODE UDZSTE-175.6B	
D830	8-719-081-97	DIODE MMDL914T1	
D900	8-719-069-60	DIODE UDZSTE-179.1B	
D901	8-719-069-60	DIODE UDZSTE-179.1B	
D907	8-719-069-55	DIODE UDZSTE-175.6B	
D908	8-719-069-55	DIODE UDZSTE-175.6B	
D914	8-719-083-18	DIODE SPB-25MVWF	
D915	8-719-069-55	DIODE UDZSTE-175.6B	
D918	8-719-069-55	DIODE UDZSTE-175.6B	
D931	8-719-157-97	DIODE RD3.6SB	
D932	8-719-157-97	DIODE RD3.6SB	
D2625	8-719-510-73	DIODE S3L20UF4	
		<DY CONNECTOR>	
* DY800	1-580-798-11	CONNECTOR PIN (DY)	6P
		<FUSE>	
F600 ⚠	1-576-232-21	FUSE 5A	250V

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

A

REF NO.	PART NO.	DESCRIPTION		REMARK
		<FERRITE BEAD>		
FB001	1-410-397-21	FERRITE	1.1UH	
FB603	1-410-397-21	FERRITE	1.1UH	
FB608	1-412-911-31	FERRITE	0UH	
FB800	1-410-397-21	FERRITE	1.1UH	
FB2602	1-410-397-21	FERRITE	1.1UH	
		<FUSE HOLDER>		
FH601	1-533-223-11	FUSE HOLDER	0A	0V
FH602	1-533-223-11	FUSE HOLDER	0A	0V
		<IC>		
IC002	6-704-532-01	IC RPM7240-H5		
IC003	8-759-678-07	IC CAT24WC16JI-TE13		
IC200	6-703-475-01	IC AN5276T		
IC601	6-704-263-01	IC STR-F6267S LF1357		
IC602	6-703-479-01	IC PQ09RD1SJ00H		
IC603	6-703-478-01	IC PQ018EF01SZH		
IC604	8-759-231-53	IC TA7805S		
IC605	6-705-063-01	IC SE135N-LF38		
IC606	8-759-445-59	IC BA033T		
IC607	8-759-832-05	IC BA18BC0FP-E2		
IC801	6-703-708-01	IC LM2903DT		
IC802	6-701-937-01	IC TJM4558CDT		
IC804	6-703-470-01	IC STV9302A		
		<JACK>		
J200	1-770-786-22	JACK		
J903	1-770-329-13	JACK, PIN 3P		
J906	1-817-296-11	PHONO JACK 3P		
		<CHIP CONDUCTOR>		
JR001	1-216-864-11	SHORT CHIP	0	
JR004	1-216-864-11	SHORT CHIP	0	
JR005	1-216-864-11	SHORT CHIP	0	
JR007	1-216-864-11	SHORT CHIP	0	
JR008	1-216-864-11	SHORT CHIP	0	
JR009	1-216-864-11	SHORT CHIP	0	
JR012	1-216-864-11	SHORT CHIP	0	
JR013	1-216-864-11	SHORT CHIP	0	
JR014	1-216-864-11	SHORT CHIP	0	
JR015	1-216-864-11	SHORT CHIP	0	
JR016	1-216-864-11	SHORT CHIP	0	
JR017	1-216-864-11	SHORT CHIP	0	
JR018	1-216-864-11	SHORT CHIP	0	
JR019	1-216-864-11	SHORT CHIP	0	
JR020	1-216-864-11	SHORT CHIP	0	
JR024	1-216-864-11	SHORT CHIP	0	
JR025	1-216-864-11	SHORT CHIP	0	
JR026	1-216-864-11	SHORT CHIP	0	
JR027	1-216-864-11	SHORT CHIP	0	
JR036	1-216-864-11	SHORT CHIP	0	
JR037	1-216-864-11	SHORT CHIP	0	
JR038	1-216-864-11	SHORT CHIP	0	
JR040	1-216-864-11	SHORT CHIP	0	
JR041	1-216-864-11	SHORT CHIP	0	
JR042	1-216-864-11	SHORT CHIP	0	
JR043	1-216-864-11	SHORT CHIP	0	
JR046	1-216-864-11	SHORT CHIP	0	
JR047	1-216-864-11	SHORT CHIP	0	
JR049	1-216-864-11	SHORT CHIP	0	
JR050	1-216-864-11	SHORT CHIP	0	
JR051	1-216-864-11	SHORT CHIP	0	
JR300	1-216-864-11	SHORT CHIP	0	
JR301	1-216-864-11	SHORT CHIP	0	
JR302	1-216-864-11	SHORT CHIP	0	
JR600	1-216-864-11	SHORT CHIP	0	
JR601	1-216-864-11	SHORT CHIP	0	
JR602	1-216-864-11	SHORT CHIP	0	
JR1011	1-216-864-11	SHORT CHIP	0	
JR1101	1-216-864-11	SHORT CHIP	0	
JR1110	1-216-864-11	SHORT CHIP	0	
JR1903	1-216-864-11	SHORT CHIP	0	
		<COIL>		
L003	1-414-856-11	INDUCTOR	10UH	
L004	1-414-187-11	INDUCTOR	47UH	
L005	1-414-856-11	INDUCTOR	10UH	
L006	1-414-856-11	INDUCTOR	10UH	
L007	1-414-856-11	INDUCTOR	10UH	
L008	1-414-856-11	INDUCTOR	10UH	
L009	1-414-856-11	INDUCTOR	10UH	
L010	1-469-525-91	INDUCTOR	10UH	
L011	1-469-525-91	INDUCTOR	10UH	
L012	1-412-058-11	INDUCTOR	10UH	
L013	1-469-525-91	INDUCTOR	10UH	
L031	1-469-525-91	INDUCTOR	10UH	
L032	1-469-525-91	INDUCTOR	10UH	
L033	1-469-525-91	INDUCTOR	10UH	
L035	1-469-525-91	INDUCTOR	10UH	
L036	1-469-525-91	INDUCTOR	10UH	
L037	1-469-525-91	INDUCTOR	10UH	
L100	1-414-857-11	INDUCTOR	100UH	
L101	1-410-498-11	INDUCTOR	1.2UH	
L103	1-410-987-42	INDUCTOR	0.33UH	
L106	1-414-189-31	INDUCTOR	100UH	
L600	1-412-533-21	INDUCTOR	47UH	
L601	1-412-533-21	INDUCTOR	47UH	
L602	1-412-529-11	INDUCTOR	22UH	
L800	1-424-796-11	COIL, HORIZONTAL LINEARITY		
L802	1-406-679-11	INDUCTOR	22MH	
L803	1-414-493-41	INDUCTOR	4.7MH	
L805	1-408-947-00	INDUCTOR	2.2MH	
L902	1-414-187-11	INDUCTOR	47UH	
L2601	1-412-525-31	INDUCTOR	10UH	
		<PHOTO COUPLER>		
PH600 ⚠	6-600-187-01	PHOTO COUPLER PC123Y22JOOF		
		<IC LINK>		
PS602 ⚠	1-533-597-41	IC LINK	5A	90V
PS603 ⚠	1-533-597-41	IC LINK	5A	90V
PS604	1-533-597-41	IC LINK	5A	90V
PS605 ⚠	1-533-597-41	IC LINK	5A	90V
PS2601 ⚠	1-533-597-41	IC LINK	5A	90V

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REF NO.	PART NO.	DESCRIPTION	REMARK
		<TRANSISTOR>	
Q001	8-729-421-22	TRANSISTOR UN2211	
Q006	8-729-424-67	TRANSISTOR UN2216	
Q007	8-729-424-67	TRANSISTOR UN2216	
Q008	8-729-010-25	TRANSISTOR MSD601-RT1	
Q010	8-729-010-05	TRANSISTOR MSB709-RT1	
Q013	8-729-010-25	TRANSISTOR MSD601-RT1	
Q016	8-729-421-22	TRANSISTOR UN2211	
Q100	8-729-010-25	TRANSISTOR MSD601-RT1	
Q102	8-729-022-54	TRANSISTOR 2SC3779C,D-AA	
Q103	8-729-424-67	TRANSISTOR UN2216	
Q104	8-729-424-67	TRANSISTOR UN2216	
Q111	8-729-010-25	TRANSISTOR MSD601-RT1	
Q200	8-729-421-22	TRANSISTOR UN2211	
Q201	8-729-010-05	TRANSISTOR MSB709-RT1	
Q202	8-729-010-05	TRANSISTOR MSB709-RT1	
Q206	8-729-421-22	TRANSISTOR UN2211	
Q601	8-729-010-25	TRANSISTOR MSD601-RT1	
Q605	6-550-572-01	TRANSISTOR FN155	
Q606	8-729-010-25	TRANSISTOR MSD601-RT1	
Q608	8-729-010-25	TRANSISTOR MSD601-RT1	
Q609	8-729-010-25	TRANSISTOR MSD601-RT1	
Q803	8-729-140-50	TRANSISTOR 2SC3209LK	
Q804	8-729-200-17	TRANSISTOR 2SA1091-O	
Q805	6-550-410-01	TRANSISTOR 2SC5885	
Q806	8-729-010-25	TRANSISTOR MSD601-RT1	
Q807	8-729-010-05	TRANSISTOR MSB709-RT1	
Q808	8-729-053-33	TRANSISTOR IRF614-037	
Q814	8-729-010-25	TRANSISTOR MSD601-RT1	
Q900	8-729-010-05	TRANSISTOR MSB709-RT1	
Q901	8-729-424-67	TRANSISTOR UN2216	
Q8009	8-729-200-17	TRANSISTOR 2SA1091-O	
Q8010	8-729-140-50	TRANSISTOR 2SC3209LK	

REF NO.	PART NO.	DESCRIPTION			REMARK
		<RESISTOR>			
R001	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R002	1-216-809-11	METAL CHIP	100	5%	1/10W
R003	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R004	1-216-809-11	METAL CHIP	100	5%	1/10W
R010	1-216-833-11	METAL CHIP	10K	5%	1/10W
R011	1-216-821-11	METAL CHIP	1K	5%	1/10W
R012	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R014	1-216-809-11	METAL CHIP	100	5%	1/10W
R015	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R018	1-216-809-11	METAL CHIP	100	5%	1/10W
R020	1-216-809-11	METAL CHIP	100	5%	1/10W
R023	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R024	1-216-809-11	METAL CHIP	100	5%	1/10W
R025	1-216-809-11	METAL CHIP	100	5%	1/10W
R026	1-216-809-11	METAL CHIP	100	5%	1/10W
R029	1-216-809-11	METAL CHIP	100	5%	1/10W
R030	1-216-809-11	METAL CHIP	100	5%	1/10W
R038	1-216-809-11	METAL CHIP	100	5%	1/10W
R039	1-216-809-11	METAL CHIP	100	5%	1/10W
R041	1-216-809-11	METAL CHIP	100	5%	1/10W
R042	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R044	1-216-834-11	METAL CHIP	12K	5%	1/10W
R045	1-216-809-11	METAL CHIP	100	5%	1/10W
R046	1-216-809-11	METAL CHIP	100	5%	1/10W
R048	1-216-809-11	METAL CHIP	100	5%	1/10W
R051	1-218-885-11	METAL CHIP	39K	0.50%	1/10W
R056	1-216-809-11	METAL CHIP	100	5%	1/10W
R058	1-216-809-11	METAL CHIP	100	5%	1/10W
R059	1-216-821-11	METAL CHIP	1K	5%	1/10W
R060	1-216-809-11	METAL CHIP	100	5%	1/10W
R061	1-216-819-11	METAL CHIP	680	5%	1/10W
R087	1-216-813-11	METAL CHIP	220	5%	1/10W
R088	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R096	1-216-813-11	METAL CHIP	220	5%	1/10W
R097	1-216-813-11	METAL CHIP	220	5%	1/10W
R098	1-216-813-11	METAL CHIP	220	5%	1/10W
R099	1-216-813-11	METAL CHIP	220	5%	1/10W
R100	1-216-821-11	METAL CHIP	1K	5%	1/10W
R103	1-211-981-11	METAL CHIP	33	0.50%	1/10W
R106	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R107	1-216-828-11	METAL CHIP	3.9K	5%	1/10W
R108	1-218-839-11	METAL CHIP	470	0.50%	1/10W
R109	1-216-019-00	RES-CHIP	56	5%	1/10W
R110	1-216-821-11	METAL CHIP	1K	5%	1/10W
R111	1-216-833-11	METAL CHIP	10K	5%	1/10W
R112	1-218-867-11	METAL CHIP	6.8K	0.50%	1/10W
R113	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R114	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R115	1-216-809-11	METAL CHIP	100	5%	1/10W
R116	1-216-809-11	METAL CHIP	100	5%	1/10W
R118	1-216-809-11	METAL CHIP	100	5%	1/10W
R119	1-211-981-11	METAL CHIP	33	0.50%	1/10W
R121	1-215-925-11	METAL OXIDE	22K	5%	3W
R131	1-216-809-11	METAL CHIP	100	5%	1/10W
R149	1-216-864-11	SHORT CHIP	0		
R150	1-216-809-11	METAL CHIP	100	5%	1/10W
R152	1-216-864-11	SHORT CHIP	0		
R200	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R201	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R202	1-216-837-11	METAL CHIP	22K	5%	1/10W
R203	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R204	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R205	1-216-837-11	METAL CHIP	22K	5%	1/10W
R207	1-218-867-11	METAL CHIP	6.8K	0.50%	1/10W
R208	1-218-867-11	METAL CHIP	6.8K	0.50%	1/10W
R210	1-216-833-11	METAL CHIP	10K	5%	1/10W
R211	1-216-833-11	METAL CHIP	10K	5%	1/10W
R212	1-216-864-11	SHORT CHIP	0		
R213	1-216-835-11	METAL CHIP	15K	5%	1/10W
R214	1-216-835-11	METAL CHIP	15K	5%	1/10W
R215	1-216-833-11	METAL CHIP	10K	5%	1/10W
R216	1-216-833-11	METAL CHIP	10K	5%	1/10W
R217	1-249-411-11	CARBON	330	5%	1/4W
R218	1-216-295-91	SHORT CHIP	0		
R219	1-249-411-11	CARBON	330	5%	1/4W
R220	1-216-864-11	SHORT CHIP	0		
R221	1-216-821-11	METAL CHIP	1K	5%	1/10W
R234	1-249-401-11	CARBON	47	5%	1/4W
R235	1-249-401-11	CARBON	47	5%	1/4W
R236	1-216-833-11	METAL CHIP	10K	5%	1/10W
R237	1-216-809-11	METAL CHIP	100	5%	1/10W
R238	1-216-809-11	METAL CHIP	100	5%	1/10W
R241	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R242	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R300	1-216-809-11	METAL CHIP	100	5%	1/10W
R301	1-216-859-11	METAL CHIP	1.5M	5%	1/10W
R303	1-216-861-11	METAL CHIP	2.2M	5%	1/10W

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

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REF NO.	PART NO.	DESCRIPTION		REMARK	
R304	1-216-845-11	METAL CHIP	100K	5%	1/10W
R307	1-216-864-11	SHORT CHIP	0		
R309	1-216-857-11	METAL CHIP	1M	5%	1/10W
R310	1-216-821-11	METAL CHIP	1K	5%	1/10W
R311	1-216-841-11	METAL CHIP	47K	5%	1/10W
R312	1-216-857-11	METAL CHIP	1M	5%	1/10W
R313	1-216-847-11	METAL CHIP	150K	5%	1/10W
R314	1-218-867-11	METAL CHIP	6.8K	0.50%	1/10W
R315	1-218-867-11	METAL CHIP	6.8K	0.50%	1/10W
R317	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R320	1-218-863-11	METAL CHIP	4.7K	0.50%	1/10W
R322	1-218-863-11	METAL CHIP	4.7K	0.50%	1/10W
R323	1-216-809-11	METAL CHIP	100	5%	1/10W
R324	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R331	1-216-809-11	METAL CHIP	100	5%	1/10W
R336	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R337	1-216-817-11	METAL CHIP	470	5%	1/10W
R338	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R339	1-216-809-11	METAL CHIP	100	5%	1/10W
R340	1-216-833-11	METAL CHIP	10K	5%	1/10W
R341	1-216-809-11	METAL CHIP	100	5%	1/10W
R355	1-216-837-11	METAL CHIP	22K	5%	1/10W
R356	1-216-864-11	SHORT CHIP	0		
R360	1-216-864-11	SHORT CHIP	0		
R363	1-216-864-11	SHORT CHIP	0		
R364	1-216-821-11	METAL CHIP	1K	5%	1/10W
R377	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R379	1-216-843-11	METAL CHIP	68K	5%	1/10W
R380	1-216-809-11	METAL CHIP	100	5%	1/10W
R384	1-216-809-11	METAL CHIP	100	5%	1/10W
R385	1-216-809-11	METAL CHIP	100	5%	1/10W
R386	1-216-809-11	METAL CHIP	100	5%	1/10W
R392	1-216-833-11	METAL CHIP	10K	5%	1/10W
R393	1-216-809-11	METAL CHIP	100	5%	1/10W
R394	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R395	1-216-845-11	METAL CHIP	100K	5%	1/10W
R400	1-260-288-11	CARBON	0.47	5%	1/2W
R401	1-260-288-11	CARBON	0.47	5%	1/2W
R405	1-260-288-11	CARBON	0.47	5%	1/2W
R406	1-260-127-11	CARBON	220K	5%	1/2W
R411	1-214-909-00	METAL	68K	1%	1/2W
R412	1-214-761-00	METAL	22K	1%	1/4W
R413	1-215-449-00	METAL	15K	1%	1/4W
R414	1-260-336-11	CARBON	4.7K	5%	1/2W
R416	1-260-107-11	CARBON	4.7K	5%	1/2W
R420	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R421	1-216-833-11	METAL CHIP	10K	5%	1/10W
R423	1-216-864-11	SHORT CHIP	0		
R424	1-218-899-11	METAL CHIP	150K	0.50%	1/16W
R602	1-216-833-11	METAL CHIP	10K	5%	1/10W
R609	1-216-833-11	METAL CHIP	10K	5%	1/10W
R612	1-215-425-00	METAL	1.5K	1%	1/4W
R616	1-245-527-11	METAL	1	5%	10W
R618	1-249-432-11	CARBON	18K	5%	1/4W
R619	1-216-361-00	METAL OXIDE	0.22	5%	2W
R620	1-216-362-21	METAL OXIDE	0.27	5%	2W
R621	1-249-409-11	CARBON	220	5%	1/4W
R623	1-218-877-11	METAL CHIP	18K	0.50%	1/10W
R624	1-215-429-00	METAL	2.2K	1%	1/4W
R625	1-216-864-11	SHORT CHIP	0		
R627	1-249-385-11	CARBON	2.2	5%	1/4W
R631	1-249-425-11	CARBON	4.7K	5%	1/4W
R634	1-216-829-11	METAL CHIP	4.7K	5%	1/10W

REF NO.	PART NO.	DESCRIPTION		REMARK	
R635	1-216-833-11	METAL CHIP	10K	5%	1/10W
R636	1-249-421-11	CARBON	2.2K	5%	1/4W
R638	1-245-526-11	METAL	0.68	5%	10W
R645	1-218-899-11	METAL CHIP	150K	0.50%	1/16W
R646	1-218-851-11	METAL CHIP	1.5K	0.50%	1/10W
R647	1-216-821-11	METAL CHIP	1K	5%	1/10W
R650	⚠ 1-240-917-91	METAL	8.2M	5%	1W
R655	1-216-809-11	METAL CHIP	100	5%	1/10W
R656	1-249-381-11	CARBON	1	5%	1/4W
R658	1-245-464-21	METAL	120K	1%	1/4W
R659	1-245-470-21	METAL	220K	1%	1/4W
R660	1-245-478-21	METAL	470K	1%	1/4W
R661	1-245-480-21	METAL	560K	1%	1/4W
R667	1-216-821-11	METAL CHIP	1K	5%	1/10W
R668	1-216-839-11	METAL CHIP	33K	5%	1/10W
R820	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R821	1-216-837-11	METAL CHIP	22K	5%	1/10W
R822	1-249-417-11	CARBON	1K	5%	1/4W
R823	1-245-468-21	METAL	180K	1%	1/4W
R824	1-216-839-11	METAL CHIP	33K	5%	1/10W
R825	1-243-606-71	METAL OXIDE	1K	5%	3W
R826	1-247-891-00	CARBON	330K	5%	1/4W
R827	1-216-369-00	METAL OXIDE	1	5%	2W
R828	1-243-606-71	METAL OXIDE	1K	5%	3W
R829	1-243-606-71	METAL OXIDE	1K	5%	3W
R830	1-260-332-51	CARBON	2.2K	5%	1/2W
R831	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R833	1-260-125-11	CARBON	150K	5%	1/2W
R834	1-245-468-21	METAL	180K	1%	1/4W
R835	1-260-125-11	CARBON	150K	5%	1/2W
R838	1-216-838-11	METAL CHIP	27K	5%	1/10W
R839	1-216-864-11	SHORT CHIP	0		
R843	1-216-864-11	SHORT CHIP	0		
R844	1-218-867-11	METAL CHIP	6.8K	0.50%	1/10W
R846	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R847	1-216-833-11	METAL CHIP	10K	5%	1/10W
R851	1-216-821-11	METAL CHIP	1K	5%	1/10W
R852	1-218-871-11	METAL CHIP	10K	0.50%	1/10W
R853	1-218-859-11	METAL CHIP	3.3K	0.50%	1/10W
R854	1-218-877-11	METAL CHIP	18K	0.50%	1/10W
R855	1-218-871-11	METAL CHIP	10K	0.50%	1/10W
R856	1-218-871-11	METAL CHIP	10K	0.50%	1/10W
R859	1-218-883-11	METAL CHIP	33K	0.50%	1/10W
R861	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R864	1-218-865-11	METAL CHIP	5.6K	0.50%	1/10W
R865	1-216-821-11	METAL CHIP	1K	5%	1/10W
R866	1-218-895-11	METAL CHIP	100K	0.50%	1/10W
R868	1-249-393-11	CARBON	10	5%	1/4W
R869	1-249-381-11	CARBON	1	5%	1/4W
R870	1-218-859-11	METAL CHIP	3.3K	0.50%	1/10W
R871	1-243-692-71	METAL OXIDE	220	5%	1W
R872	1-216-864-11	SHORT CHIP	0		
R873	1-216-841-11	METAL CHIP	47K	5%	1/10W
R876	1-216-833-11	METAL CHIP	10K	5%	1/10W
R877	1-218-895-11	METAL CHIP	100K	0.50%	1/10W
R878	1-216-349-00	METAL OXIDE	1	5%	1W
R879	1-245-470-21	METAL	220K	1%	1/4W
R880	1-245-470-21	METAL	220K	1%	1/4W
R881	1-218-871-11	METAL CHIP	10K	0.50%	1/10W
R882	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R883	1-249-421-11	CARBON	2.2K	5%	1/4W
R887	1-216-837-11	METAL CHIP	22K	5%	1/10W
R888	1-218-887-11	METAL CHIP	47K	0.50%	1/10W

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

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REF NO.	PART NO.	DESCRIPTION		REMARK	
R889	1-243-531-71	METAL OXIDE	100	5%	3W
R890	1-215-910-00	METAL OXIDE	68	5%	3W
R891	1-249-385-11	CARBON	2.2	5%	1/4W
R893	1-218-871-11	METAL CHIP	10K	0.50%	1/10W
R895	1-218-859-11	METAL CHIP	3.3K	0.50%	1/10W
R902	1-216-821-11	METAL CHIP	1K	5%	1/10W
R904	1-216-821-11	METAL CHIP	1K	5%	1/10W
R905	1-216-840-11	METAL CHIP	39K	5%	1/10W
R906	1-216-817-11	METAL CHIP	470	5%	1/10W
R911	1-216-813-11	METAL CHIP	220	5%	1/10W
R914	1-216-853-11	METAL CHIP	470K	5%	1/10W
R915	1-216-849-11	METAL CHIP	220K	5%	1/10W
R917	1-218-285-11	METAL CHIP	75	5%	1/10W
R924	1-216-853-11	METAL CHIP	470K	5%	1/10W
R931	1-216-807-11	METAL CHIP	68	5%	1/10W
R932	1-216-864-11	SHORT CHIP	0		
R940	1-216-849-11	METAL CHIP	220K	5%	1/10W
R945	1-216-833-11	METAL CHIP	10K	5%	1/10W
R989	1-216-833-11	METAL CHIP	10K	5%	1/10W
R2646	1-249-381-11	CARBON	1	5%	1/4W
R2647	1-249-429-11	CARBON	10K	5%	1/4W
R8009	1-218-867-11	METAL CHIP	6.8K	0.50%	1/10W
R8010	1-245-464-21	METAL	120K	1%	1/4W
R8011	1-216-841-11	METAL CHIP	47K	5%	1/10W
R8012	1-216-841-11	METAL CHIP	47K	5%	1/10W
R8013	1-245-462-21	METAL	100K	1%	1/4W
R9005	1-216-864-11	SHORT CHIP	0		
R9006	1-216-864-11	SHORT CHIP	0		
R9017	1-216-809-11	METAL CHIP	100	5%	1/10W
R9018	1-216-809-11	METAL CHIP	100	5%	1/10W
R9019	1-216-809-11	METAL CHIP	100	5%	1/10W
R9020	1-216-809-11	METAL CHIP	100	5%	1/10W
R9021	1-216-809-11	METAL CHIP	100	5%	1/10W
R9022	1-216-809-11	METAL CHIP	100	5%	1/10W
R9023	1-216-809-11	METAL CHIP	100	5%	1/10W
R9025	1-216-809-11	METAL CHIP	100	5%	1/10W
R9027	1-216-838-11	METAL CHIP	27K	5%	1/10W
R9028	1-216-809-11	METAL CHIP	100	5%	1/10W
R9036	1-216-809-11	METAL CHIP	100	5%	1/10W
R9053	1-218-285-11	METAL CHIP	75	5%	1/10W

<RELAY>

RY600	⚠	1-755-198-11	RELAY, AC POWER

<SWITCH>

S600	⚠	1-571-433-21	SWITCH, PUSH (AC POWER)
S800		1-572-707-11	SWITCH, LEVER
SWF100		1-781-042-11	FILTER, SURFACE WAVE

<TRANSFORMER>

T600	⚠	1-456-354-11	LINE FILTER COIL
T602	⚠	1-439-695-11	CONVERTER TRANSFORMER (SRT)
T603	⚠	1-456-354-11	LINE FILTER COIL
T800		1-435-374-11	TRANSFORMER, FERRITE (HDT)
T801	⚠	1-453-309-21	TRANSFORMER ASSY FLY BACK (NX-4751//M3A4) (KV-BT21M50)

REF NO.	PART NO.	DESCRIPTION	REMARK
T801	⚠ 1-453-329-41	TRANSFORMER ASSY FLY BACK (NX-4751//M3A4)	(KV-BT21M80/KV-BT21M81)

<THERMISTOR>

THP600	⚠ 1-804-530-11	THERMISTOR, POSITIVE	
TP02	1-536-354-00	POST PIN	
TP03	1-536-354-00	POST PIN	
TP04	1-536-354-00	POST PIN	
TP601	1-536-354-00	POST PIN	
TP602	1-536-354-00	POST PIN	

<TUNER>

TU102	1-693-636-11	TUNER (TEDE9)	

<VARISTOR>

VDR600	1-804-995-21	VARISTOR	

<CRYSTAL>

X001	1-795-839-21	QUARTZ CRYSTAL UNIT	

VARIANT PARTS LIST

<CAPACITOR>

C800	1-126-963-11	ELECT (KV-BT21M81)	4.7UF	20.00%	50V
C803	1-126-947-11	ELECT (KV-BT21M81)	47UF	20.00%	35V
C804	1-126-964-11	ELECT (KV-BT21M81)	10UF	20.00%	50V
C879	1-162-964-11	CERAMIC CHIP (KV-BT21M81)	0.001UF	10.00%	50V
C901	1-164-505-11	CERAMIC CHIP (KV-BT21M50/M81)	2.2UF		16V
C906	1-164-346-11	CERAMIC CHIP (KV-BT21M50/M81)	1UF		16V
C910	1-164-315-11	CERAMIC CHIP (KV-BT21M50/M81)	470PF	5.00%	50V
C913	1-164-315-11	CERAMIC CHIP (KV-BT21M50/M81)	470PF	5.00%	50V
C916	1-164-315-11	CERAMIC CHIP (KV-BT21M50/M81)	470PF	5.00%	50V
C919	1-164-346-11	CERAMIC CHIP (KV-BT21M50/M81)	1UF		16V
C922	1-164-315-11	CERAMIC CHIP (KV-BT21M50/M81)	470PF	5.00%	50V
C925	1-164-315-11	CERAMIC CHIP (KV-BT21M50/M81)	470PF	5.00%	50V
C953	1-107-826-11	CERAMIC CHIP (KV-BT21M80)	0.1UF	10.00%	16V

<CONNECTOR>

* CN800	1-564-506-11	PLUG, CONNECTOR 3P (KV-BT21M81)	

A

REF NO.	PART NO.	DESCRIPTION	REMARK
		<DIODE>	
D800	8-719-081-97	DIODE MMDL914T1 (KV-BT21M81)	
D801	8-719-081-97	DIODE MMDL914T1 (KV-BT21M81)	
D905	8-719-069-60	DIODE UDZSTE-179.1B (KV-BT21M50/M81)	
D906	8-719-069-55	DIODE UDZSTE-175.6B (KV-BT21M50/M81)	
D916	8-719-069-55	DIODE UDZSTE-175.6B (KV-BT21M50/M81)	
		<IC>	
IC001	6-703-516-01	IC TDA12067H/N1A0B0AV (KV-BT21M50/M80)	
IC001	6-703-517-21	IC TDA12077H/N1A0B0AQ (KV-BT21M81)	
IC800	8-759-356-16	IC NJM4556AD (KV-BT21M81)	
		<JACK>	
J907	1-817-296-11	PHONO JACK 3P (KV-BT21M50/M81)	
J908	1-817-295-11	PHONO JACK 2P (KV-BT21M80)	
		<CHIP CONDUCTOR>	
JR1012	1-216-864-11	SHORT CHIP 0 (KV-BT21M80)	
		<COIL>	
L806	1-469-555-21	INDUCTOR 10UH (KV-BT21M81)	
		<TRANSISTOR>	
Q800	8-729-010-25	TRANSISTOR MSD601-RT1 (KV-BT21M81)	
Q801	8-729-010-25	TRANSISTOR MSD601-RT1 (KV-BT21M81)	
Q802	8-729-010-25	TRANSISTOR MSD601-RT1 (KV-BT21M81)	
Q902	8-729-424-67	TRANSISTOR UN2216 (KV-BT21M50/M81)	
Q910	8-729-010-25	TRANSISTOR MSD601-RT1 (KV-BT21M80)	
Q911	8-729-010-25	TRANSISTOR MSD601-RT1 (KV-BT21M80)	
Q912	8-729-421-22	TRANSISTOR UN2211 (KV-BT21M80)	
		<RESISTOR>	
R800	1-216-825-11	METAL CHIP 2.2K 5% 1/10W (KV-BT21M81)	
R801	1-216-864-11	SHORT CHIP 0 (KV-BT21M81)	
R802	1-216-864-11	SHORT CHIP 0 (KV-BT21M81)	
R803	1-216-833-11	METAL CHIP 10K 5% 1/10W (KV-BT21M81)	
R804	1-216-864-11	SHORT CHIP 0 (KV-BT21M81)	
R805	1-216-837-11	METAL CHIP 22K 5% 1/10W (KV-BT21M81)	
R806	1-216-864-11	SHORT CHIP 0 (KV-BT21M81)	
R807	1-216-819-11	METAL CHIP 680 5% 1/10W (KV-BT21M81)	
R808	1-216-833-11	METAL CHIP 10K 5% 1/10W (KV-BT21M81)	
R809	1-216-833-11	METAL CHIP 10K 5% 1/10W (KV-BT21M81)	
R810	1-216-833-11	METAL CHIP 10K 5% 1/10W (KV-BT21M81)	
R812	1-216-837-11	METAL CHIP 22K 5% 1/10W (KV-BT21M81)	
R813	1-216-837-11	METAL CHIP 22K 5% 1/10W (KV-BT21M81)	
R814	1-216-809-11	METAL CHIP 100 5% 1/10W (KV-BT21M81)	
R815	1-216-837-11	METAL CHIP 22K 5% 1/10W (KV-BT21M81)	
R816	1-216-864-11	SHORT CHIP 0 (KV-BT21M81)	
R817	1-216-833-11	METAL CHIP 10K 5% 1/10W (KV-BT21M81)	
R818	1-216-833-11	METAL CHIP 10K 5% 1/10W (KV-BT21M81)	
R909	1-216-840-11	METAL CHIP 39K 5% 1/10W (KV-BT21M50/M81)	
R910	1-216-817-11	METAL CHIP 470 5% 1/10W (KV-BT21M50/M81)	
R913	1-216-853-11	METAL CHIP 470K 5% 1/10W (KV-BT21M50/M81)	
R916	1-216-849-11	METAL CHIP 220K 5% 1/10W (KV-BT21M50/M81)	
R933	1-216-864-11	SHORT CHIP 0 (KV-BT21M50/M81)	
R941	1-216-849-11	METAL CHIP 220K 5% 1/10W (KV-BT21M50/M81)	
R946	1-216-833-11	METAL CHIP 10K 5% 1/10W (KV-BT21M50/M81)	
R8003	1-216-809-11	METAL CHIP 100 5% 1/10W (KV-BT21M81)	
R8004	1-216-809-11	METAL CHIP 100 5% 1/10W (KV-BT21M81)	
R8005	1-218-871-11	METAL CHIP 10K 0.50% 1/10W (KV-BT21M81)	
R9007	1-216-864-11	SHORT CHIP 0 (KV-BT21M80)	
R9008	1-216-864-11	SHORT CHIP 0 (KV-BT21M80)	
R9009	1-216-864-11	SHORT CHIP 0 (KV-BT21M80)	
R9026	1-216-838-11	METAL CHIP 27K 5% 1/10W (KV-BT21M50/M81)	
R9030	1-216-809-11	METAL CHIP 100 5% 1/10W (KV-BT21M50/M81)	
R9031	1-216-809-11	METAL CHIP 100 5% 1/10W (KV-BT21M50/M81)	
R9034	1-216-809-11	METAL CHIP 100 5% 1/10W (KV-BT21M80)	
R9038	1-216-864-11	SHORT CHIP 0 (KV-BT21M80)	
R9040	1-216-857-11	METAL CHIP 1M 5% 1/10W ' (KV-BT21M80)	
R9041	1-216-857-11	METAL CHIP 1M 5% 1/10W (KV-BT21M80)	
R9042	1-216-827-11	METAL CHIP 3.3K 5% 1/10W (KV-BT21M80)	
R9043	1-216-821-11	METAL CHIP 1K 5% 1/10W (KV-BT21M80)	
R9044	1-216-817-11	METAL CHIP 470 5% 1/10W (KV-BT21M80)	
R9045	1-216-809-11	METAL CHIP 100 5% 1/10W (KV-BT21M80)	
R9046	1-216-825-11	METAL CHIP 2.2K 5% 1/10W (KV-BT21M80)	
R9047	1-216-833-11	METAL CHIP 10K 5% 1/10W (KV-BT21M80)	
R9050	1-216-864-11	SHORT CHIP 0 (KV-BT21M50/M81)	
R9051	1-216-864-11	SHORT CHIP 0 (KV-BT21M80)	
R9060	1-216-864-11	SHORT CHIP 0 (KV-BT21M80)	
R9061	1-216-864-11	SHORT CHIP 0 (KV-BT21M80)	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

C

REF NO.	PART NO.	DESCRIPTION			REMARK
**********					
	* A-1405-156-A	MOUNTED PWB(VAR), C			
		**********			
	4-382-854-01	SCREW (M3X8), P, SW (+)			
		<CAPACITOR>			
C751	1-107-961-91	ELECT	10UF	20.00%	250V
C752	1-115-350-51	CERAMIC 0.0047UF			2KV
C754	1-107-651-11	ELECT	4.7UF	20.00%	250V
C781	1-107-651-11	ELECT	4.7UF	20.00%	250V
C782	1-102-074-00	CERAMIC	0.001UF	10.00%	50V
C783	1-162-964-11	CERAMIC CHIP	0.001UF	10.00%	50V
C786	1-162-964-11	CERAMIC CHIP	0.001UF	10.00%	50V
C787	1-164-645-11	CERAMIC	1000PF	10.00%	500V
		<CONNECTOR>			
* CN701	1-564-510-11	PLUG, CONNECTOR 7P			
* CN703	1-564-508-11	PLUG, CONNECTOR 5P			
CN704	1-695-915-11	TAB (CONTACT)			
CN705	1-695-915-11	TAB (CONTACT)			
		<DIODE>			
D750	8-719-908-03	DIODE GP08D			
D754	8-719-970-83	DIODE HSS82-TJ			
D755	8-719-970-83	DIODE HSS82-TJ			
D756	8-719-970-83	DIODE HSS82-TJ			
D780	8-719-991-33	DIODE 1SS133T-77			
D781	8-719-991-33	DIODE 1SS133T-77			
D782	8-719-069-55	DIODE UDZSTE-175.6B			
		<IC>			
IC751	6-703-482-01	IC TDA6108AJF/N1			
		<JACK>			
J751	⚠ 1-451-544-11	SOCKET, CRT			
		<COIL>			
L780	1-410-667-31	INDUCTOR	22UH		
		<RESISTOR>			
R713	1-216-864-11	SHORT CHIP	0		
R752	1-216-819-11	METAL CHIP	680	5%	1/10W
R753	1-216-819-11	METAL CHIP	680	5%	1/10W
R754	1-216-819-11	METAL CHIP	680	5%	1/10W
R756	1-219-746-11	METAL	1K	5%	1/2W
R757	1-219-746-11	METAL	1K	5%	1/2W
R758	1-219-746-11	METAL	1K	5%	1/2W
R763	1-260-087-11	CARBON	100	5%	1/2W
R764	1-260-087-11	CARBON	100	5%	1/2W
R765	1-260-087-11	CARBON	100	5%	1/2W
R773	1-260-132-11	CARBON	560K	5%	1/2W
R774	1-215-912-11	METAL OXIDE	150	5%	3W
R780	1-260-131-11	CARBON	470K	5%	1/2W
R781	1-243-950-71	RES, OXIDE METAL FILM 0.56			
R783	1-260-087-11	CARBON	100	5%	1/2W
R794	1-249-377-11	CARBON	0.47	5%	1/4W
R795	1-260-352-11	CARBON	100K	5%	1/2W
		<VARIABLE RESISTOR>			
RV750	1-241-656-11	RES, ADJ, METAL FILM 110M			
**********					
		<ACCESSORIES AND PACKING MATERIALS>			
		**********			
	1-417-151-22	MATCHING TRANSFORMER, ANTENNA (KV-BT21M50/M80)			
	1-501-730-11	ANTENNA, TELESCOPIC (KV-BT21M50)			
	1-501-730-41	ANTENNA, TELESCOPIC (KV-BT21M80)			
	1-569-008-22	ADAPTOR, CONVERSION 2P (KV-BT21M80/M81)			
	3-701-910-00	SCREW, SPECIAL (DIA. 3.8X20)			
	* 4-098-964-01	CUSHION, UPPER			
	* 4-098-965-01	CUSHION, LOWER			
	* 4-395-957-01	BAG, PROTECTION			
	* 4-092-242-01	INDIVIDUAL CARTON (KV-BT21M80/M81)			
	4-096-491-11	MANUAL, INSTRUCTION (KV-BT21M50)			
	4-096-628-12	MANUAL, INSTRUCTION (KV-BT21M80/M81)			
	4-392-003-11	BAND, HOLD			
	4-392-004-11	CLIP			
**********					
		<REMOTE COMMANDER>			
		**********			
	1-478-009-11	REMOTE COMMANDER (RM-W101) (KV-BT21M50/M80)			
	1-478-007-11	REMOTE COMMANDER (RM-W100) (KV-BT21M81)			
	4-084-290-01	BATTERY COVER, REMOTE COMMANDER			

Sony Corporation
Sony Technology Malaysia Sdn. Bhd.
Visual Products

9-872-368-01

English
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4-096-491-**11**(1)

Trinitron Color TV

Operating Instructions — GB

- Before operating the unit, please read this manual thoroughly and retain it for future reference.

使用說明書 — CT

- 使用本電視機之前請先詳細閱讀此手冊，並妥善保存以備日後用作參考。

Panduan Pengendalian — MY

- Sebelum mengendalikan unit, sila baca buku panduan ini dengan teliti dan simpan untuk rujukan masa depan.

FD Trinitron WEGA

KV-BT21
KV-BM21
KV-BM14

M50
M40

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■ Specifications

	KV-BT21M50 KV-BT21M40	KV-BM21M40	KV-BM14M40	Note
Power requirements	110-240 V AC, 50/60 Hz			
	220-240 V AC, 50/60 Hz			Malaysia only
Power consumption (W)	Indicated on the rear of the TV			
Television system	B/G, I, D/K, M			
Color system	PAL, PAL 60, SECAM, NTSC3.58, NTSC4.43			
Channel coverage				
B/G	VHF : E2 to E12 UHF : E21 to E69 CATV : S01 to S03, S1 to S41			
I	UHF : B21 to B68 CATV : S01 to S03, S1 to S41			
D/K	VHF : C1 to C12, R1 to R12 UHF : C13 to C57, R21 to R60 CATV : S01 to S03, S1 to S41, Z1 to Z39			
M	VHF : A2 to A13 UHF : A14 to A79 CATV : A-8 to A-2, A to W+4, W+6 to W+84			
(Antenna)	75-ohm external terminal			
Audio output (Speaker)	3 W + 3 W	3 W		
Number of terminal				
(Video)	Input: 2 Output: 1	Phono jacks; 1 Vp-p, 75 ohms		
(Audio)	Input: 2 Output: 1	Phono jacks; 500 mVrms		
(Headphone)	Output: 1	Stereo minijack		KV-BT21M50/ BT21M40 only
(Earphone)	Output: 1	Monaural minijack		KV-BM21M40/ BM14M40 only
Picture tube	21 in.		14 in.	
Tube size (cm)	54		37	Measured diagonally
Screen size (cm)	51		34	Measured diagonally
Dimensions (w/h/d, mm)	497 × 461 × 487		374 × 355 × 420	
Mass (kg)	23		12	

Design and specifications are subject to change without notice.

http://www.sony.net/

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SONY

4-096-628-12(1)

Trinitron Color TV

Operating Instructions — GB

- Before operating the unit, please read this manual thoroughly and retain it for future reference.

Mode d'emploi — FR

- Avant de faire fonctionner cet appareil, lisez attentivement le présent mode d' emploi et conservez-le pour toute référence ultérieure.

دفترچه راهنما — PR

- قبل از تنظیم کردن دستگاه، لطفا دفترچه راهنما را با دقت بخوانید وبه منظور مراجعه بعدی ان رانگه دارید.

تعليمات التشغيل — AR

- قبل تشغيل الجهاز، يرجى قراءة هذا الدليل بصورة كاملة والاحتفاظ به للمراجعة مستقبلاً.

FD Trinitron WEGA

KV-BT21
KV-BM14

M81
M80
M70

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■ Specifications

	KV-BT21M81 KV-BT21M80	KV-BM14M70	Note
Power requirements	110-240 V AC, 50/60 Hz		
Power consumption (W)	Indicated on the rear of the TV		
Television system	B/G, I, D/K, M		
Color system	PAL, PAL 60, SECAM, NTSC3.58, NTSC4.43		
Teletext language	English, Farsi (Persian)		KV-BT21M81 only
Channel coverage			
B/G	VHF : E2 to E12 UHF : E21 to E69 CATV : S01 to S03, S1 to S41		
I	UHF : B21 to B68 CATV : S01 to S03, S1 to S41		
D/K	VHF : C1 to C12, R1 to R12 UHF : C13 to C57, R21 to R60 CATV : S01 to S03, S1 to S41, Z1 to Z39		
M	VHF : A2 to A13 UHF : A14 to A79 CATV : A-8 to A-2, A to W+4, W+6 to W+84		
(Antenna)	75-ohm external terminal		
Audio output (Speaker)	3 W +3 W	3 W	
Number of terminal			
(Video)	Input: 2 Output: 1	Phono jacks; 1 Vp-p, 75 ohms	
(Audio)	Input: 2 Output: 1	Phono jacks; 500 mVrms	
(Headphone)	Output: 1	Stereo minijack	KV-BT21M81/ BT21M80 only
(Earphone)	Output: 1	Monaural minijack	KV-BM14M70 only
Picture tube	21 in.	14 in.	
Tube size (cm)	54	37	Measured diagonally
Screen size (cm)	51	34	Measured diagonally
Dimensions (w/h/d, mm)	497 × 461 × 487	374 × 355 × 420	
Mass (kg)	23	12	

Design and specifications are subject to change without notice.

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