

SERVICE MANUAL

BA-4D CHASSIS

Self Diagnosis
Supported model

<u>MODEL</u>	<u>COMMANDER</u>	<u>DEST</u>	<u>CHASSIS NO.</u>
KV-20M42	RM-Y156	US	SCC-S27A-A
KV-20M42	RM-Y156	CND	SCC-S28B-A
KV-20S42	RM-Y155	US	SCC-S27B-A
KV-20S42	RM-Y155	CND	SCC-S28C-A
KV-20S43	RM-Y156W	US	SCC-S27C-A
KV-20S43	RM-Y156W	CND	SCC-S28D-A
KV-21MB42C	RM-Y156	E	SCC-S25E-A
KV-21MB42M	RM-Y156	MX	SCC-S26A-A
KV-21MB42P	RM-Y156	E	SCC-S25A-A
KV-21ME42	RM-Y156	E	SCC-S25B-A
KV-21ME42C	RM-Y156	E	SCC-S25F-A
KV-21SB42C	RM-Y155	E	SCC-S25G-A
KV-21SB42M	RM-Y155	MX	SCC-S26B-A
KV-21SE42	RM-Y155	E	SCC-S25D-A
KV-21SE42C	RM-Y155	E	SCC-S25H-A
KV-21SE82	RM-Y165	E	SCC-S25J-A
KV-21SE82C	RM-Y165	E	SCC-S25K-A



KV-21SE82



RM-Y155



TRINITRON® COLOR TV
SONY®

SPECIFICATIONS

	KV-20M42	KV-21MB42C, KV-21MB42M, KV-21MB42P	KV-21ME42, KV-21ME42C	KV-20S42, KV-20S43	KV-21SB42C, KV-21SB42M	KV-21SE42, KV-21SE42C	KV-21SE82, KV-21SE82C
Power Requirements	120V 60Hz	AUTO VOLT 120-220V, 50/60 Hz	AUTO VOLT 120-220V, 50/60 Hz	120V 60 Hz	AUTO VOLT 120-220V, 50/60 Hz	AUTO VOLT 120-220V, 50/60 Hz	AUTO VOLT 120-220V, 50/60 Hz
Number of inputs/outputs							
Video ¹⁾	2	2	2	2	2	2	2
Audio Input ²⁾	2	2	2	2	2	2	2
Audio Out ³⁾	-	-	-	-	-	-	1
Speaker Output (W)	3W	3W	3Wx2	3W x 2	3Wx2	4Wx2	5Wx2
Power Consumption (W)							
In Use (Max)	80W	80W	80W	90W	90W	90W	90W
In Standby	1W	1W	1W	1W	1W	1W	1W
Dimensions (W/H/D)							
(mm)	522 x 477 x 479 mm	522 x 477 x 479 mm	522 x 477 x 479 mm	522 x 477 x 479 mm	522 x 477 x 479 mm	522 x 477 x 479 mm	522 x 477 x 479 mm
(in)	20 ⁵ / ₈ x 18 ¹³ / ₁₆ x 18 ⁷ / ₈ in.	20 ⁵ / ₈ x 18 ¹³ / ₁₆ x 18 ⁷ / ₈ in.	20 ⁵ / ₈ x 18 ¹³ / ₁₆ x 18 ⁷ / ₈ in.	20 ⁵ / ₈ x 18 ¹³ / ₁₆ x 18 ⁷ / ₈ in.	20 ⁵ / ₈ x 18 ¹³ / ₁₆ x 18 ⁷ / ₈ in.	20 ⁵ / ₈ x 18 ¹³ / ₁₆ x 18 ⁷ / ₈ in.	20 ⁵ / ₈ x 18 ¹³ / ₁₆ x 18 ⁷ / ₈ in.
Mass							
(kg)	21.6 kg	21.6 kg	21.6 kg	21.6 kg	21.6 kg	21.6 kg	21.6 kg
(lbs)	48 lbs.	48 lbs.	48 lbs.	48 lbs.	48 lbs.	48 lbs.	48 lbs.

¹⁾ 1 Vp-p 75 ohms unbalanced, sync negative

²⁾ 500 mVrms (100% modulation), impedance: 47 kilohms

³⁾ More than 408 mVrms at the maximum volume setting (variable)
More than 408 mVrms (fix), Impedance: 5 kilohms

Television system

American TV standard/NTSC

Picture tube

Trinitron® Tube

Channel coverage

VHF:2-13/UHF:14-69/CATV:1-125

Visible screen size

20" picture measured diagonally

Actual screen size

21" picture measured diagonally

Antenna

75 ohm external terminal for VHF/UHF

Supplied Accessories

- Remote Commander (RM-Y155)
(KV-20S42/21SB42M/42C/21SE42/42C)
- Remote Commander (RM-Y156)
(KV-20M42/21MB42C/42M/42P/21ME42/42C)
- Remote Commander (RM-Y156W)
(KV-20S43)
- Remote Commander (RM-Y165)
(KV-21SE82/82C)
- Size AA (R6) batteries (2)

Optional Accessories

- Dipole antenna
- Connecting cables VMC-810S/820S, VMC-720M,
YC-15V/30V, RK74A
- U/V mixer EAC-66

Design and specifications are subject to change without notice.

● SRS (SOUND RETRIEVAL SYSTEM)

The ● SRS (SOUND RETRIEVAL SYSTEM) is manufactured by Sony Corporation under license from SRS Labs, Inc. It is covered by U.S. Patent No. 4,748,669. Other U.S. and foreign patents pending.

The word 'SRS' and the SRS symbol (●) are registered trademarks of SRS Labs, Inc.

BBE and BBE symbol are trademarks of BBE Sound, Inc. and are licensed by BBE Sound, Inc. under U.S. Patent No. 4,638,258 and 4,482,866.

TABLE OF CONTENTS

<i>Section</i>	<i>Title</i>	<i>Page</i>
	Warnings and Cautions	4
	Self-Diagnostic Function	4
	Safety Check Out Instructions	7
1. GENERAL		8
2. DISASSEMBLY		
2-1.	Rear Cover Removal	12
2-2.	A Board Removal	12
2-3.	Service Position	12
2-4.	Picture Tube Removal	13
3. SET-UP ADJUSTMENTS		
3-1.	Beam Landing	14
3-2.	Convergence	15
3-3.	Focus	16
3-4.	Screen (G2)	16
3-5.	Method of Setting the Service Adjustment Mode	16
3-6.	White Balance Adjustments	16
4. SAFETY RELATED ADJUSTMENTS		
4-1.	☒ R582 Confirmation Method (HV Hold-Down Confirmation and Readjustments)	17
4-2.	B+ Voltage Confirmation and Adjustment	17
5. CIRCUIT ADJUSTMENTS		
5-1.	Setting the Service Adjustment Mode	19
5-2.	Memory Write Confirmation Method	19
5-3.	Adjust Buttons and Indicators	19
5-4.	A Board Adjustments	22
6. DIAGRAMS		
6-1.	Block Diagram	27
6-2.	Circuit Board Location	30
6-3.	Printed Wiring Boards and Schematic Diagrams	33
	• A Board	33
	• C Board	42
6-4.	Semiconductors	43
7. EXPLODED VIEWS		
7-1.	Chassis (KV-20S43/21SE42/42C/82/82C/ME42/42C)	44
7-2.	Chassis (KV-20M42/S42/21MB42C/42M/42P/SB42C/42M)	45
8. ELECTRICAL PARTS LIST		47
	Table of Contents for Parts List	47
	A Board Common Parts Listing.....	48
	C Board Parts List.....	56
	A Board Variant Parts Lists.....	57
	Packaging List and Accessories.....	65

WARNINGS AND CAUTIONS

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.

WARNING!!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS. THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK Δ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS, AND IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL FOR SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

ATTENTION

APRES AVOIR DECONNECTE LE CAP DE L'ANODE, COURT-CIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE OU AU BLINDAGE DU TUBE CATHODIQUE.

ATTENTION!!

AFIN D'EVITER TOUT RESQUE D'ELECTROCUTION PROVENANT D'UN CHÂSSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÉ LORS DE TOUT DÉPANNAGE. LE CHÂSSIS DE CE RÉCÉPTEUR EST DIRECTEMENT RACCORDÉ À L'ALIMENTATION SECTEUR.

ATTENTION AUX COMPOSANTS RELATIFS A LA SECURITE!!

LES COMPOSANTS IDENTIFIES PAR UNE TRAME ET PAR UNE MARQUE Δ SUR LES SCHEMAS DE PRINCIPE, LES VUES EXPLOSEES ET LES LISTES DE PIECES SONT D'UNE IMPORTANCE CRITIQUE POUR LA SECURITE DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMERO DE PIECE EST INDIQUE DANS LE PRESENT MANUEL OU DANS DES SUPPLEMENTS PUBLIES PAR SONY. LES REGLAGES DE CIRCUIT DONT L'IMPORTANCE EST CRITIQUE POUR LA SECURITE DU FONCTIONNEMENT SONT IDENTIFIES DANS LE PRESENT MANUEL. SUIVRE CES PROCEDURES LORS DE CHAQUE REMPLACEMENT DE COMPOSANTS CRITIQUES, OU LORSQU'UN MAUVAIS FONCTIONNEMENT SUSPECTE.

SELF-DIAGNOSTIC FUNCTION

The units in this manual contain a self-diagnostic function. If an error occurs, the STANDBY/TIMER LED will automatically begin to flash. The number of times the LED flashes translates to a probable source of the problem. A definition of the STANDBY/TIMER LED flash indicators is listed in the instruction manual for the user's knowledge and reference. 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.

Diagnostic Test Indicators

When an error occurs, the STANDBY/TIMER LED will flash a set number of times to indicate the possible cause of the problem. If there is more than one error, the LED will identify the first of the problem areas.

Results for all of the following diagnostic items are displayed on screen. No error has occurred if the screen displays a "0".

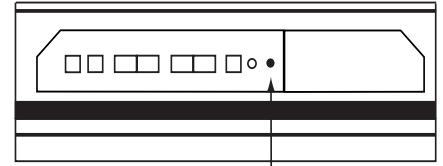
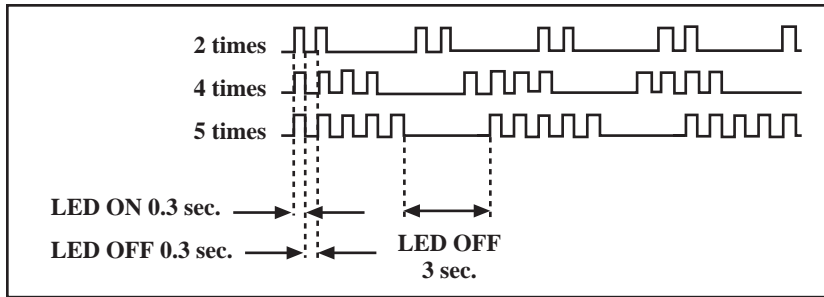
Diagnostic Item Description	No. of Times STANDBY/TIMER LED Flashes	Self-diagnostic Display/ Diagnostic Result	Probable Cause Location	Detected Symptoms
Power does not turn on	Does not light	—	<ul style="list-style-type: none"> Power cord is not plugged in. Fuse is burned out (F601). 	<ul style="list-style-type: none"> Power does not come on. No power is supplied to the TV. AC power supply is faulty.
+B overcurrent (OCP)*	2 times	2:0 or 2:1	<ul style="list-style-type: none"> H.OUT (Q502) is shorted (A Board) IC701 and Q701 (C Board) are shorted. 	<ul style="list-style-type: none"> Power does not come on. Load on power line is shorted.
Vertical deflection stopped*	4 times	4:0 or 4:1	<ul style="list-style-type: none"> +13V is not supplied. (A Board) IC541 is faulty. (A Board) 	<ul style="list-style-type: none"> Has entered standby state after horizontal raster. Vertical deflection pulse is stopped. Power line is shorted or power supply is stopped.
White balance failure (not balanced)	5 times	5:0 or 5:1	<ul style="list-style-type: none"> Video OUT (Q394 to 392) is faulty. (A Board) IC301 is faulty. (A Board) Screen (G2) is improperly adjusted.** 	<ul style="list-style-type: none"> No raster is generated. CRT cathode current detection reference pulse output is small.

* If a +B overcurrent is detected, stoppage of the vertical deflection is detected simultaneously.

The symptom that is diagnosed first by the microcontroller is displayed on the screen.

** Refer to Screen (G2) Adjustments in Sections 3 and 4 of this manual.

Display of Standby/Timer LED Flash Count



STANDBY/TIMER LED

<u>Diagnostic Item</u>	<u>Flash Count*</u>
+B overcurrent	2 times
Vertical deflection stopped	4 times
White balance failure	5 times

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

Stopping the Standby/Timer LED Flash

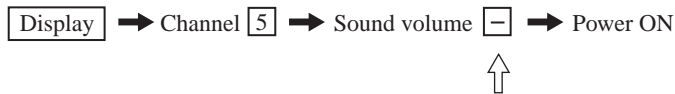
Turn off the power switch on the TV main unit or unplug the power cord from the outlet to stop the STANDBY/TIMER LED from flashing.

Self-Diagnostic Screen Display

For errors with symptoms such as “power sometimes shuts off” or “screen sometimes goes out” 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:



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

Self Diagnostic Screen Display

SELF DIAGNOSTIC			
2:		0	← Numeral “0” means that no fault was detected.
3:	N/A	0	
4:		0	
5:		1	← Numeral “1” means a fault was detected one time only.
101:	N/A	0	

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-diagnostic function will not be able to detect subsequent faults after completion of the repairs.

Clearing the Result Display

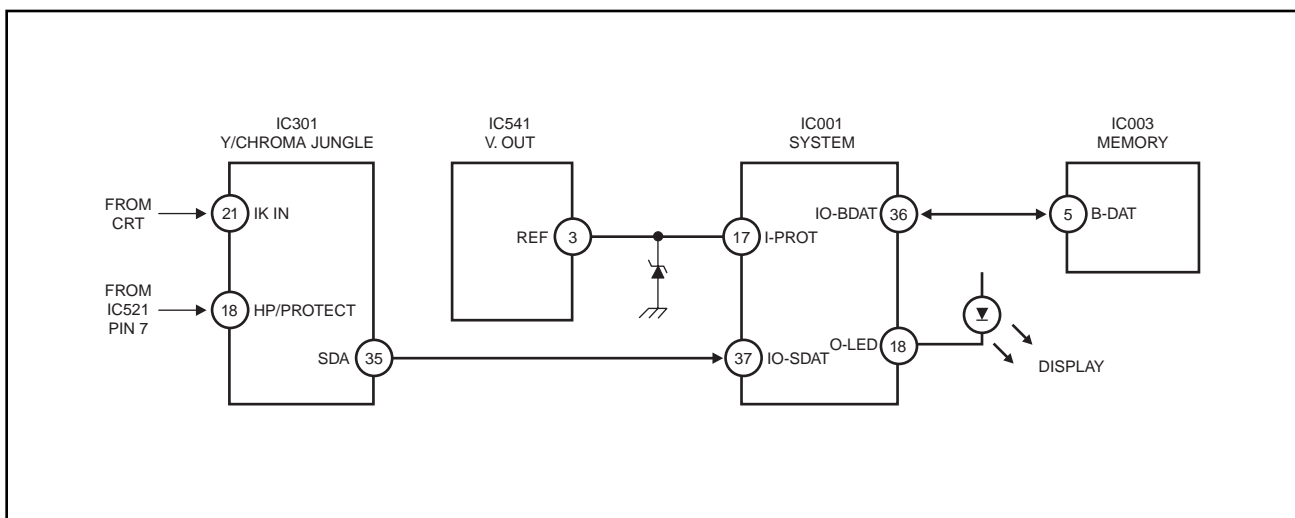
To clear the result display to "0", press buttons on the Remote Commander sequentially when the diagnostic screen is displayed, as shown below:

Channel **8** → **ENTER**

Quitting the Self-Diagnostic Screen

To quit the entire self-diagnostic screen, turn off the power switch on the Remote Commander or the main unit.

Self-diagnostic Circuit



+B overcurrent (OCP)

Occurs when an overcurrent on the +B (115V) line is detected by pin 18 of IC301. If the voltage of pin 18 of IC301 is less than 1V when V.SYNC is more than seven verticals in a period, the unit will automatically turn off.

Vertical deflection stopped

Occurs when an absence of the vertical deflection pulse is detected by pin 17 of IC001. Power supply will shut down when waveform interval exceeds 2 seconds.

White balance failure

If the RGB levels* do not balance within 2 seconds after the power is turned on, this error will be detected by IC301. TV will stay on, but there will be no picture.

*(Refers to the RGB levels of the AKB detection Ref pulse that detects 1K.)

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or touching high-wattage resistors.
3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.
4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
6. Check the line cords for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
7. Check the B+ and HV to see if they are specified values. Make sure your instruments are accurate; be suspicious of your HV meter if sets always have low HV.
8. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

Leakage Test

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampere). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instructions.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low voltage scale. The Simpson's 250 and Sanwa SH-63Trd are examples of passive VOMs that are suitable. Nearly all battery-operated digital multimeters that have a 2 VAC range are suitable (see Figure A).

How to Find a Good Earth Ground

A cold-water pipe is guaranteed earth ground; the cover-plate retaining screw on most AC outlet boxes is also at earth ground. If the retaining screw is to be used as your earth ground, verify that it is at ground by measuring the resistance between it and a cold-water pipe with an ohmmeter. The reading should be zero ohms. If a cold-water pipe is not accessible, connect a 60- to 100-watt trouble light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side on the line; the lamp should light at normal brilliance if the screw is at ground potential (see Figure B).

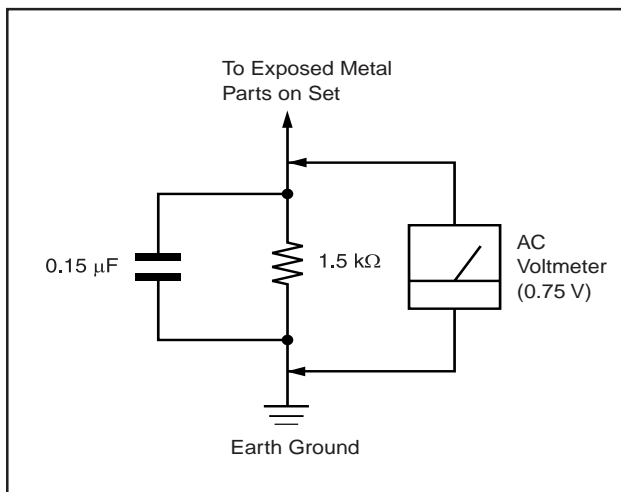


Figure A. Using an AC voltmeter to check AC leakage.

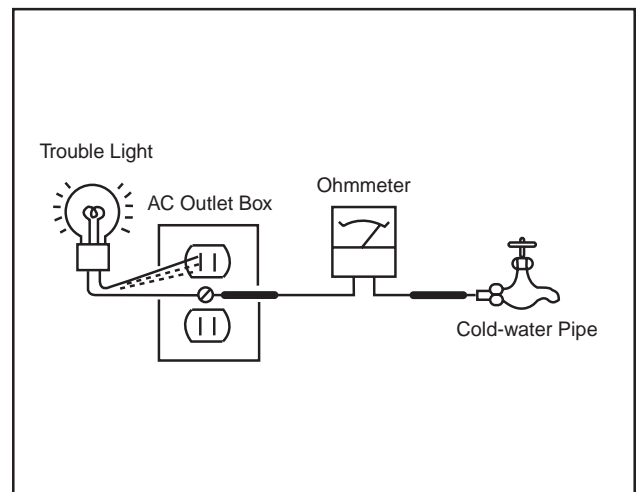


Figure B. Checking for earth ground.

SECTION 1 GENERAL

The instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers shown reflect those of the Operating Instruction Manual.

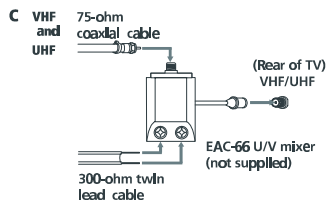
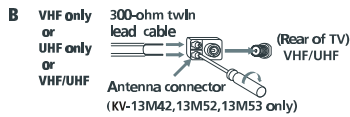
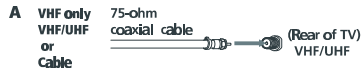
Connecting Your TV

Read this chapter before setting up your TV for the first time. This section covers basic connections in addition to any optional equipment you may be connecting.

Basic Connections

TV with indoor or outdoor antenna, or CATV cable

Depending on the cable available in your home, choose one of the connections below:



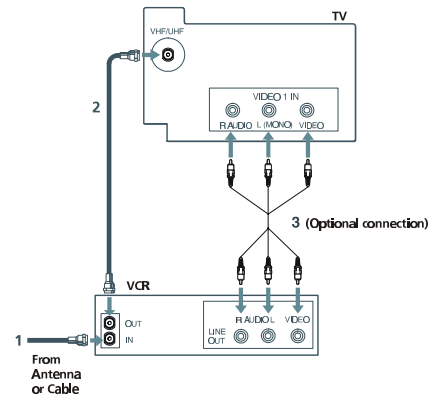
If you are connecting to an indoor or outdoor antenna, it will be necessary to adjust the orientation of the antenna for best reception.

3

User Guide

Connecting Additional Equipment

TV and VCR



- 1 Connect the coaxial cable from your TV antenna or cable TV to the IN jack on your VCR.
- 2 Connect a coaxial cable (not supplied) from the OUT jack on your VCR to the VHF/UHF IN jack on the TV.

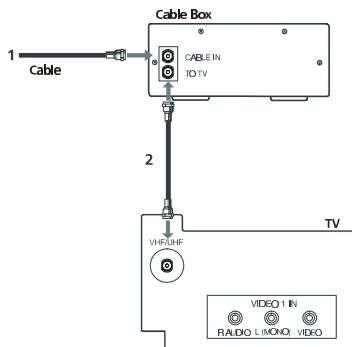
To watch video programs from your VCR, tune your TV to channel 3 or 4 (as set on the rear of your VCR).

(Optional Connection)

- 3 If your VCR is equipped with video inputs, for best picture quality you should connect A/V connectors to AUDIO/VIDEO OUT on your VCR to AUDIO/VIDEO IN on your TV. You can use the button to switch between the TV and VCR inputs.

4

TV and Cable Box

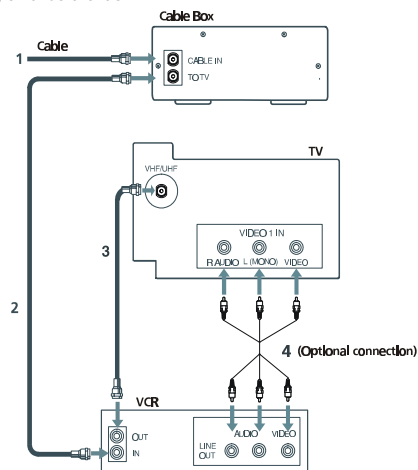


- 1 Connect the coaxial cable from the wall to the IN jack on your cable box.
- 2 Connect a coaxial cable (not supplied) from the OUT jack on your cable box to the VHF/UHF IN jack on the TV.

To view channels from your cable box, tune your TV to channel 3 or 4 (as set on the rear panel of your cable box) and use the cable box's remote control to change channels.

If you will be controlling all channel selection through your cable box, you should consider using the CHANNEL FIX feature on page 17.

TV, VCR, and Cable box



- 1 Connect the coaxial cable from the wall to the IN jack on your cable box.
- 2 Connect a coaxial cable (not supplied) from the OUT jack on your cable box to the IN jack on your VCR.
- 3 Connect a coaxial cable from OUT on your VCR to VHF/UHF IN on your TV.

If you will be controlling all channel selection through your cable box, you should consider using the CHANNEL FIX feature on page 17.

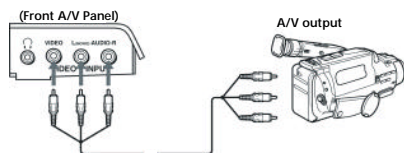
(Optional Connection)

- 4 If your VCR is equipped with video inputs, for best picture quality you should connect A/V connectors to AUDIO/VIDEO OUT on your VCR to AUDIO/VIDEO IN on your TV. You can use the button to switch between the TV and VCR inputs.

Connecting Your TV

Connecting a Camcorder

Using A/V cables, connect AUDIO and VIDEO OUT on your camcorder to AUDIO and VIDEO IN on your TV.



For model KV-13M42, this connection can be made to the A/V input located on the rear of the TV.

Using the Remote Control and Basic Functions

This section shows you how to use more advanced buttons on the remote control and how to use the on-screen menus.

	Turns the TV off automatically in approximately 30, 60 or 90 minutes. Cancel by pressing until SLEEP OFF appears.
	Instantly turns off the sound. Press again or press to restore sound.
	Cycles through the available video inputs.
	Press once to show current time, (if set) and channel number. Press again to activate CAPTION VISION settings, if available. To cancel, press again until DISPLAY OFF appears.
	Cycles through the Multi-Channel TV Sound (MTS) options: STEREO, SAP (Second Audio Programming) and MONO, (KV-20S42, 20S43 only).
	Press for channel selection, the channel will change after 2 seconds.
	Press after selecting a channel using the buttons to immediately activate selection.
	Alternates back and forth between the last two channels selected with the buttons.
	Displays the on-screen menu. Press again to exit the menu at any time.
	Activates highlighted selections in the on-screen menu.
	Moves the cursor in the on-screen menu.
	Press to restore factory settings while in the on-screen menu.

Buttons shown are for remote control RM-Y155, your remote control may not look exactly like the one illustrated.

Other Information

Troubleshooting

If you are having a problem with your TV, try the suggestions below. If the problem persists, contact your nearest Sony dealer.

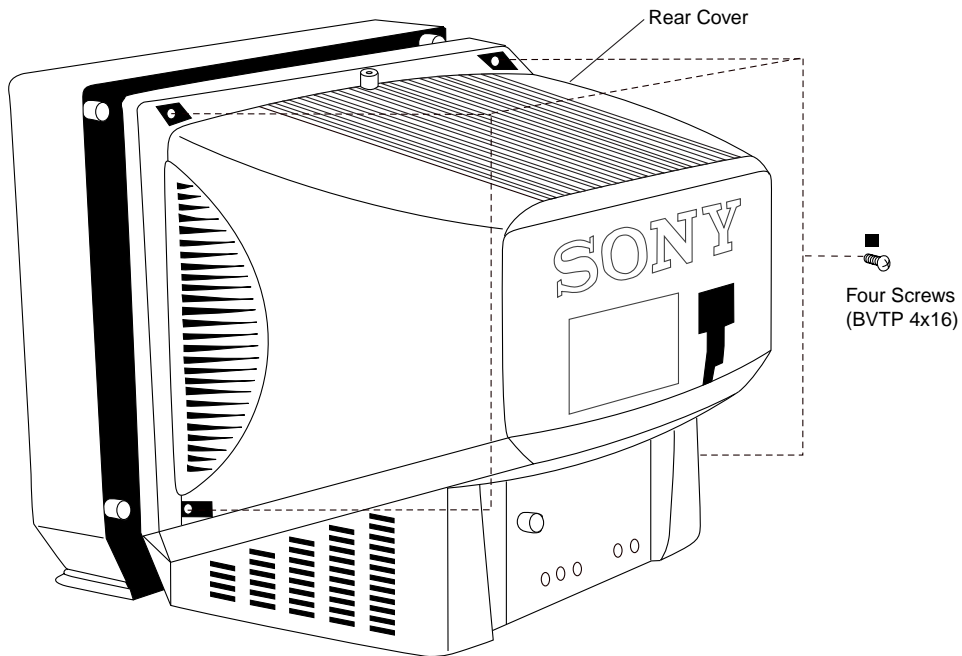
No picture, no sound	<ul style="list-style-type: none"> <input type="checkbox"/> Make sure the power cord is plugged in. <input type="checkbox"/> If a red light is flashing on the front of your TV for more than a few minutes, call your local service center. <input type="checkbox"/> Check the TV/VIDEO settings: when watching TV, set to TV; when watching video equipment, set to VIDEO (page 13). <input type="checkbox"/> Check your PARENTAL CONTROL settings, (see pages 22-23). <input type="checkbox"/> Make sure the batteries have been inserted correctly into the remote control. <input type="checkbox"/> Try another channel, it could be station trouble.
Poor or no picture, good sound	<ul style="list-style-type: none"> <input type="checkbox"/> Adjust PICTURE in the VIDEO menu (page 13). <input type="checkbox"/> Adjust BRIGHTNESS in the VIDEO menu (page 13). <input type="checkbox"/> Check the antenna and/or cable connections (page 3).
Good picture, no sound	<ul style="list-style-type: none"> <input type="checkbox"/> Press MUTING so that MUTING disappears from the screen (page 9). <input type="checkbox"/> Check your AUDIO settings. Your TV may be set to SAP (page 14).
No color	<ul style="list-style-type: none"> <input type="checkbox"/> Adjust COLOR in the VIDEO menu (page 13).
Only snow appears on the screen	<ul style="list-style-type: none"> <input type="checkbox"/> Check the CABLE setting in the SET UP menu (page 17). <input type="checkbox"/> Check the antenna and/or cable connections (page 3). <input type="checkbox"/> Make sure the channel selected is currently broadcasting.
Dotted lines or stripes	<ul style="list-style-type: none"> <input type="checkbox"/> Adjust the antenna. <input type="checkbox"/> Move the TV away from other electronic equipment. Some electronic equipment can create electrical noise, which can interfere with TV reception.
Double images or ghosts	<ul style="list-style-type: none"> <input type="checkbox"/> Check your outdoor antenna or call your cable service.

Cannot receive higher number channels (UHF) when using an antenna	<ul style="list-style-type: none"> <input type="checkbox"/> Make sure CABLE is set to OFF in the SET UP menu (page 17). <input type="checkbox"/> Use AUTO PROGRAM to add channels that are not presently in the memory (page 17).
Cable stations don't seem to work	<ul style="list-style-type: none"> <input type="checkbox"/> Make sure CABLE is set to ON in the SET UP menu (page 16). <input type="checkbox"/> Use AUTO PROGRAM to add channels that are not presently in the memory (page 17).
Remote control does not operate	<ul style="list-style-type: none"> <input type="checkbox"/> Batteries could be weak. Replace them (page 2). <input type="checkbox"/> Move the TV 3-4 feet away from fluorescent lights.
The TV needs to be cleaned	<ul style="list-style-type: none"> <input type="checkbox"/> Clean the TV with a soft dry cloth. Never use strong solvents such as thinner or benzine, which might damage the finish of the cabinet.
Lost password for PARENTAL CONTROL	<ul style="list-style-type: none"> <input type="checkbox"/> In the password screen, enter the following master password: 4357. After using the master password, you must create a new password, it cannot be used to unlock currently blocked programs.

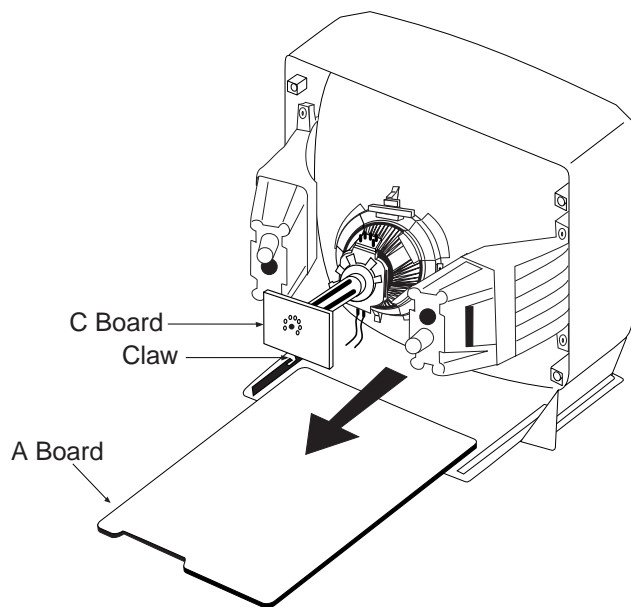
If, after reading these operating instructions, you have additional questions related to the use of your Sony television, please call our Direct Response Center at 1-800-222-SONY (7669) (U.S. customers only) or (416) 499-SONY (7669) (Canadian customers only).

SECTION 2 DISASSEMBLY

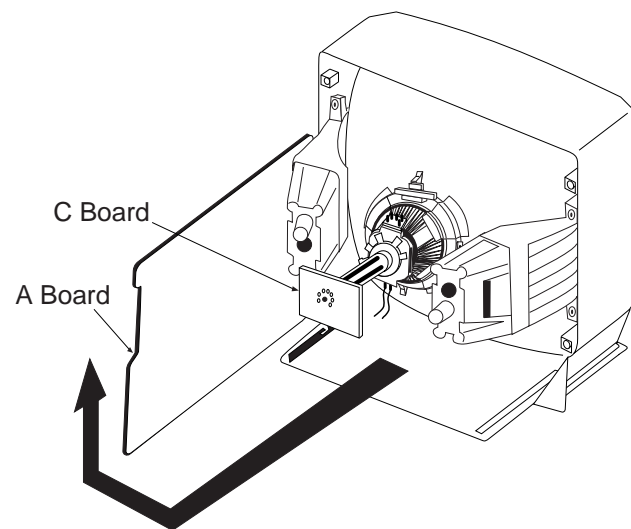
2-1. REAR COVER REMOVAL



2-2. A BOARD REMOVAL



2-3. SERVICE POSITION

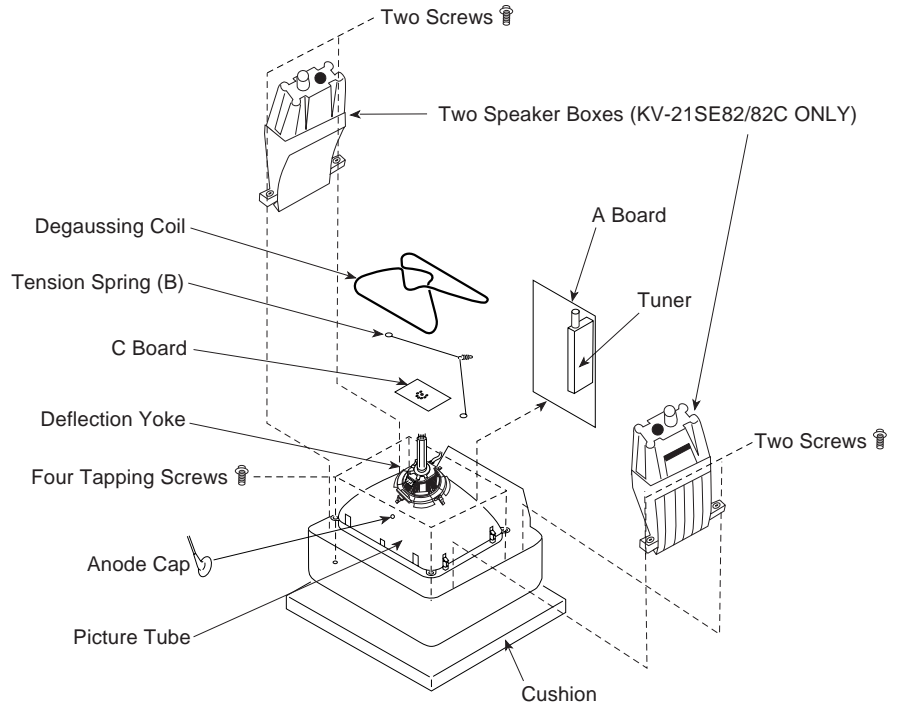
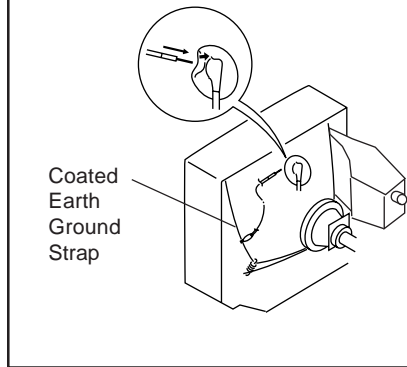


2-4. PICTURE TUBE REMOVAL

WARNING: BEFORE REMOVING THE ANODE CAP

High voltage remains in the CRT even after the power is disconnected.

To avoid electric shock, discharge CRT *before* attempting to remove the anode cap. Short between anode and CRT coated earth ground strap.

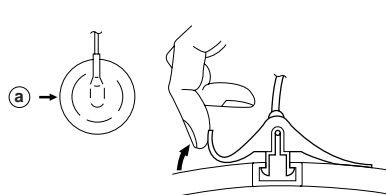


ANODE CAP REMOVAL

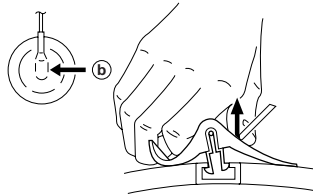
WARNING: High voltage remains in the CRT even after the power is disconnected. To avoid electrical shock, discharge the CRT *before* attempting to remove the anode cap. Short between anode and coated earth ground strap of CRT.

NOTE: After removing the anode, short circuit the anode of the picture tube and the anode cap to either the metal chassis, CRT shield, or carbon painted on the CRT.

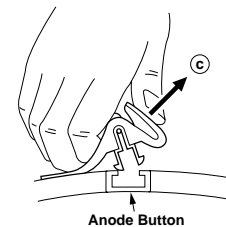
REMOVAL PROCEDURES



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



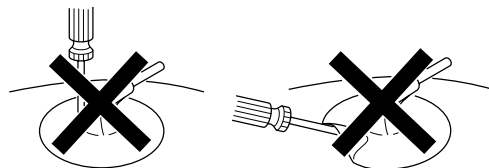
② Use your thumb to pull the rubber cap firmly in the direction indicated by arrow b.



③ When one side of the rubber cap separates from the anode button, the anode cap can be removed by turning the rubber cap and pulling it in the direction of arrow c.

HOW TO HANDLE AN ANODE CAP

- ① Do not use sharp objects which may cause damage to the surface of the anode cap.
- ② To avoid damaging the anode cap, do not squeeze the rubber covering too hard. A material fitting called a shatter-hook terminal is built into the rubber.
- ③ Do not force turn the foot of the rubber cover. This may cause the shatter-hook terminal to protrude and damage the rubber.



SECTION 3 SET-UP ADJUSTMENTS

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

These adjustments should be performed with rated power supply voltage unless otherwise noted.

Set the controls and switch as follows unless otherwise noted.

PICTURE control..... Normal
BRIGHTNESS control..... Normal

Perform the adjustments in order as follows:

1. Beam Landing
2. Convergence
3. Focus
4. Screen (G2)
5. White Balance

Note: Test equipment required:

- Color bar pattern generator
- Degausser
- DC power supply
- Digital multimeter

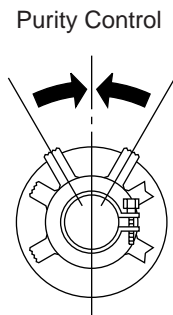
3-1. BEAM LANDING

Before beginning adjustment procedure:

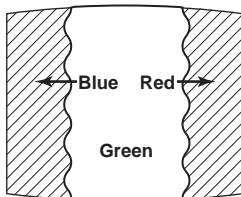
1. Degauss the entire screen.
2. Feed in the white pattern signal.

Adjustment Procedure

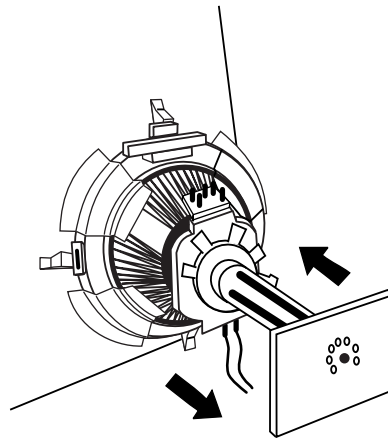
1. Input a raster signal with the pattern generator.
2. Loosen the deflection yoke mounting screw and set the purity control to the center as shown below.



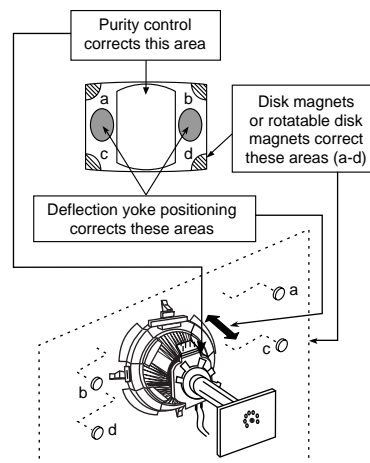
3. Turn the raster signal of the pattern generator to green.
4. Move the deflection yoke backward and adjust the purity control so that green is in the center and red and blue are at the sides evenly.



5. Move the deflection yoke forward and adjust so that the entire screen becomes green.



6. Switch over the raster signal to red and blue and confirm the condition.
7. When the position of the deflection yoke is determined, tighten it with the deflection yoke mounting screw.
8. If landing at the corner is not right, adjust by using the disk magnets.



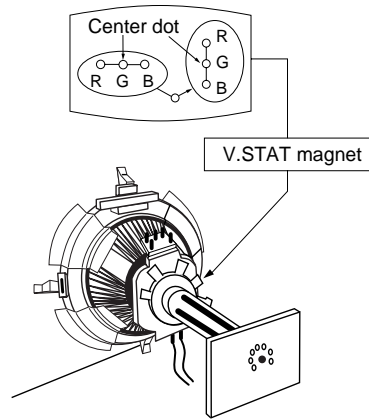
3-2. CONVERGENCE

Before starting convergence adjustments:

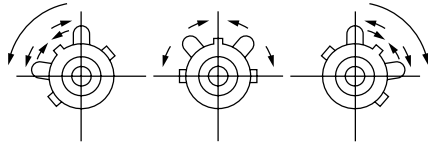
1. Perform FOCUS, V.LIN AND V.SIZE adjustments.
2. Set BRIGHTNESS control to minimum.
3. Feed in dot pattern.

Vertical Static Convergence

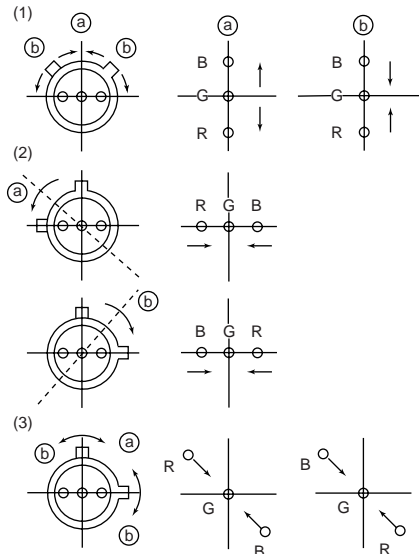
1. Adjust V.STAT magnet to converge red, green and blue dots in the center of the screen (vertical movement).



2. Tilt the V.STAT magnet and adjust static convergence to open or close the V.STAT magnet.

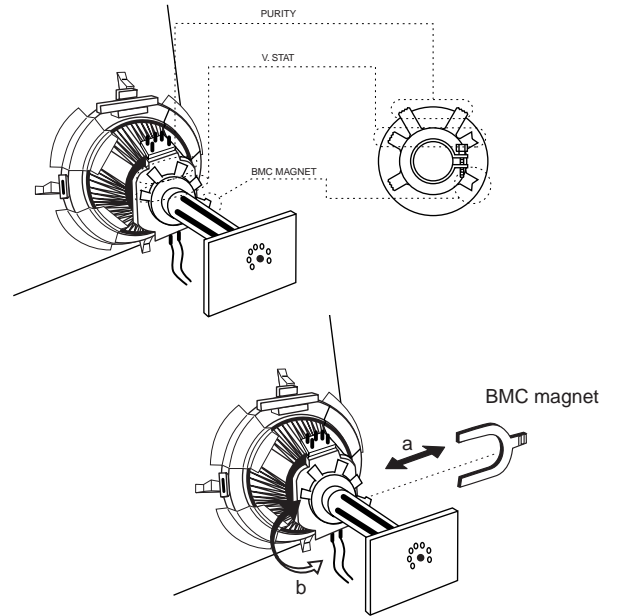


When the V.STAT magnet is moved in the direction of arrows (a) and (b), red, green, and blue dots move as shown below:



If the blue dot does not converge with the red and green dots, perform the following:

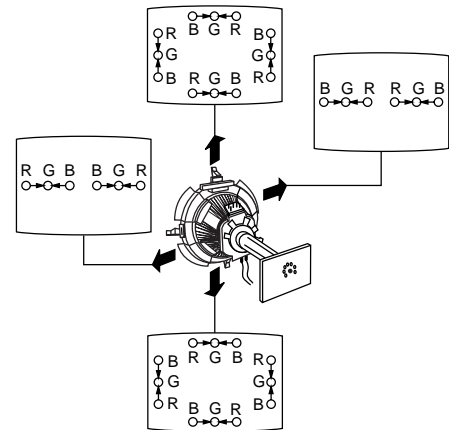
1. Move BMC magnet (a) to correct insufficient H. Static convergence.
2. Rotate BMC magnet (b) to correct insufficient V. Static convergence.
3. In either case, repeat Beam Landing Adjustment.



Dynamic Convergence Adjustment

Before performing this adjustment, perform Horizontal and Vertical Static Convergence Adjustment.

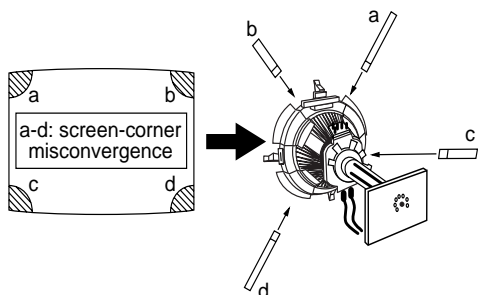
1. Slightly loosen deflection yoke screw.
2. Remove deflection yoke spacers.
3. Move the deflection yoke for best convergence, as shown below:



4. Tighten the deflection yoke screw.
5. Install the deflection yoke spacers.

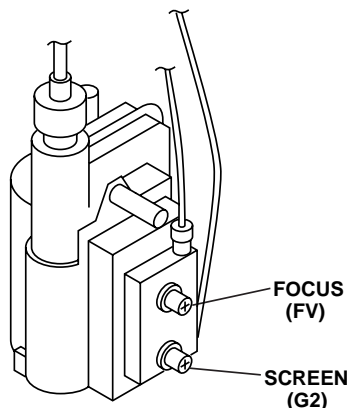
Screen-Corner Convergence

1. Affix a permalloy assembly corresponding to the misconverged areas.



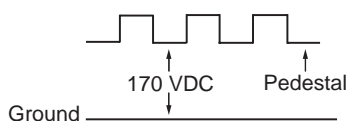
3-3. FOCUS

1. Adjust FOCUS control for best picture.



3-4. SCREEN (G2)

1. Input a dots pattern.
2. Set the PICTURE and BRIGHTNESS controls at minimum and COLOR control at normal.
3. Adjust SBRT, GCUT, BCUT in service mode with an oscilloscope as shown below so that voltages on the red, green, and blue cathodes are 170 VDC.



4. Observe the screen and adjust SCREEN (G2) VR to obtain the faintly visible background of dot signal.

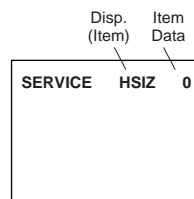
3-5. METHOD OF SETTING THE SERVICE ADJUSTMENT MODE

Service Mode Procedure

1. Standby mode (power off).
2. **Display** → Channel **5** → Sound volume **+** → Power ON on the Remote Commander (press each button within a second).

Service Adjustment Mode In

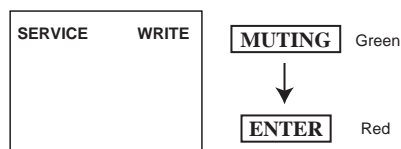
1. The CRT displays the item being adjusted.



2. Press **1** or **4** on the Remote Commander to select the item.
3. Press **3** or **6** on the Remote Commander to change the data.
4. Press **MUTING** then **ENTER** to save into the memory.

Service Adjustment Mode Memory

Turn set off then on to exit service adjustment mode.




3-6. WHITE BALANCE ADJUSTMENTS

1. Input an entire white signal.
2. Set to Service Adjustment Mode.
3. Set DCOL to "0".
4. Set the PICTURE and BRIGHTNESS to minimum.
5. Adjust with SBRT if necessary.
6. Select GCUT and BCUT with **1** and **4**.
7. Adjust with **3** and **6** for the best white balance.
8. Set PICTURE and BRIGHTNESS to maximum.
9. Select GDRV and BDRV with **1** and **4**.
10. Adjust with **3** and **6** for the best white balance.
11. Reset DCOL to "1".
12. To write into memory, press **MUTING** then **ENTER**.

SECTION 4

SAFETY RELATED ADJUSTMENTS

4-1. R582 CONFIRMATION METHOD (HV HOLD-DOWN CONFIRMATION) AND READJUSTMENTS

The following adjustments should always be performed when replacing the following components which are marked with  on the schematic diagram.

DY, C511, C574, C575, D572, D573, D574, R582, R583, R584, R585, R586, R578, R625, R626, R634, R635, T504, IC301, IC521, IC602


Preparation Before Confirmation

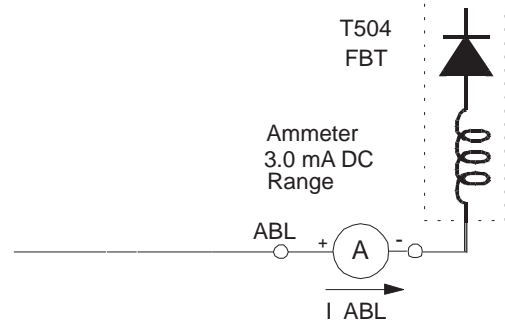
1. Turn the POWER switch ON. Input an entirely white signal and set the PICTURE and BRIGHTNESS controls to maximum.
2. Confirm that the voltage between C574 (+) and ground is more than 99.8 VDC when the set is operating normally with 120.0 ± 2.0 VAC (or $120-220 \pm$ VAC for KV-21MB42C/42M/42P/ME42/42C/SB42C/42M/SE42/42C/82/82C).

Hold-down Operation Confirmation


1. Connect the current meter between Pin 11 of the FBT (T504) and the PCB land where Pin 11 would normally attach. (See Figure 1 on the following page.)
2. Input a dot signal and set PICTURE and BRIGHTNESS to minimum: $I_{ABL} = 95 + 100/-95 \mu A$.
3. Confirm the voltage of A Board TP-600 is 117.0 ± 0.3 VDC.
4. Connect the digital voltmeter and the DC power supply via diode 1SS119 to C574 (+) and ground (See Figure 1 on the following page).
5. Increase the DC power voltage gradually until the picture blanks out.
6. Read the digital voltmeter indication.
7. Turn DC power source off immediately: (standard: less than or equal to 127.3 VDC).
8. Input a white signal and set PICTURE and BRIGHTNESS to maximum: (standard: less than or equal to 127.3 VDC).
9. Repeat steps 4 to 7.

Hold-down Readjustment

If the setting indicated in step 2 of Hold-down Operation Confirmation cannot be met, readjustment should be performed by altering the resistance value of R582, a component marked with .



4-2. B+ VOLTAGE CONFIRMATION AND ADJUSTMENT

Note: The following adjustments should always be performed when replacing the following components, which are marked with  on the schematic diagram.

IC001, IC602, R030, R626, R632, R633, R635, R636, R637, R638, R639

1. Supply 120.0 ± 2.0 VAC (or $120-220 \pm$ VAC for KV-21MB42C/42M/42P/ME42/42C/SB42C/42M/SE42/42C/82/82C) to the set with a variable auto transformer.
2. Input a dot signal.
3. Set the PICTURE and BRIGHTNESS controls to minimum.
4. Set to Service Adjustment Mode.
5. Select PADJ with **[1]** and **[4]**.
6. Adjust with **[6]** to the 0 level.
7. Confirm the voltage of A board TP-600 is less than 125 VDC.
8. If step 7 is not satisfied, replace the components and repeat the above steps.
9. Supply 120.0 ± 2.0 VAC (or $120-220 \pm$ VAC for KV-21MB42C/42M/42P/ME42/42C/SB42C/42M/SE42/42C/82/82C) to the set with a variable auto transformer.
10. Adjust with **[3]** and **[6]** for $117.0 \pm .3$ VDC.
11. Press **[MUTING]** then **[ENTER]** to save into the memory.

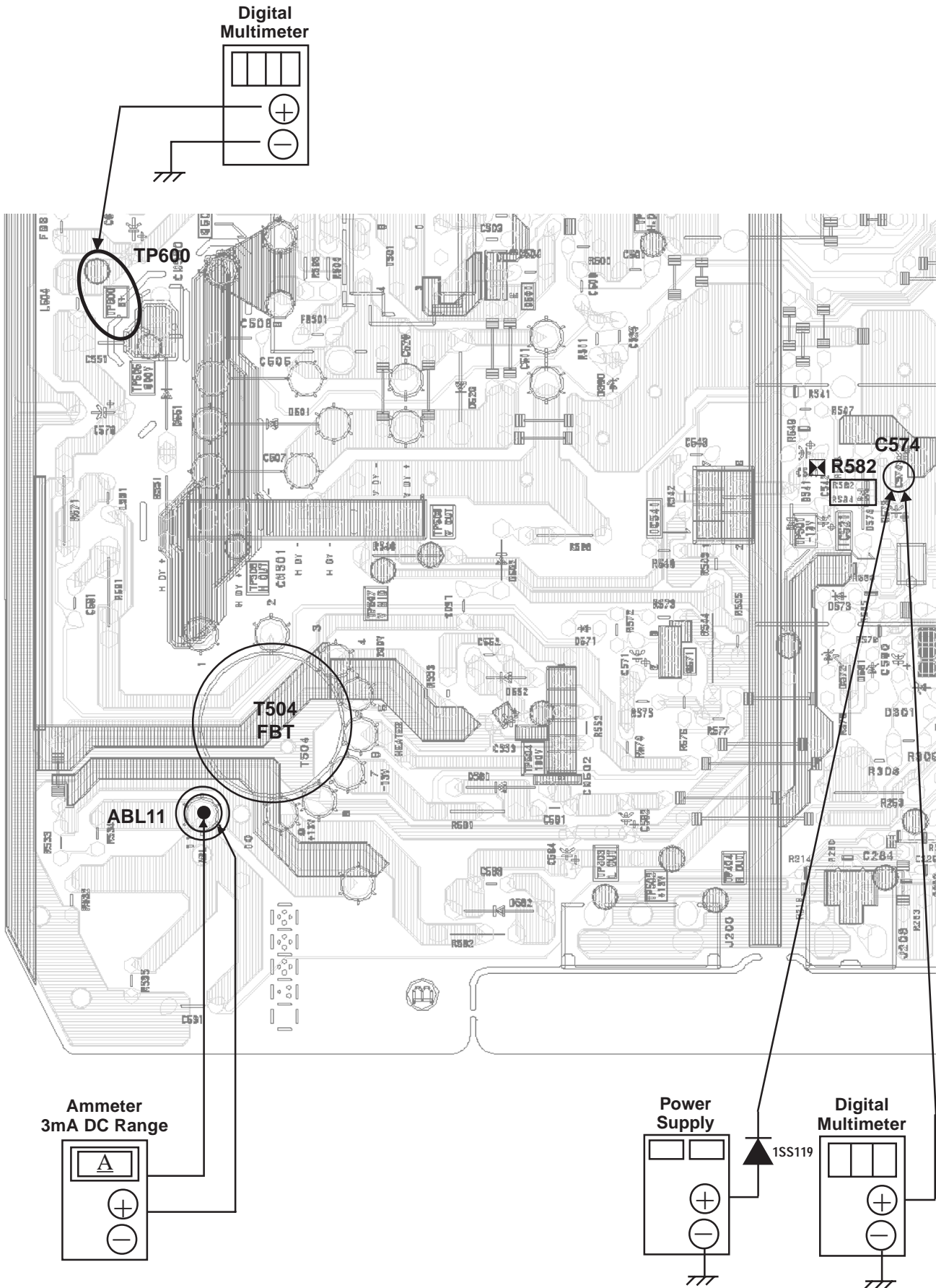


Figure 1

SECTION 5 CIRCUIT ADJUSTMENTS

Electrical Adjustment by Remote Commander

Use the Remote Commander (RM-Y155) to perform the circuit adjustments in this section.

NOTE: Test Equipment Required:

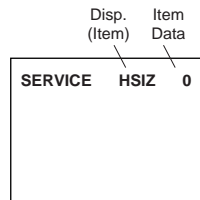
- Pattern generator
- Frequency counter
- Digital multimeter
- Audio oscillator

5-1. Setting the Service Adjustment Mode

1. Standby mode (power off).
2. **Display** → Channel **5** → Sound volume **+** → Power ON
on the Remote Commander (press each button within a second).

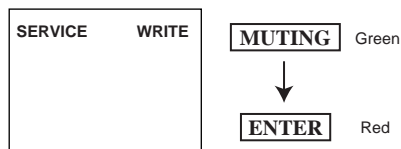
Service Adjustment Mode On

1. The CRT displays the item being adjusted.

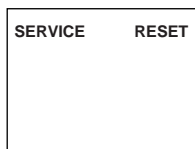


2. Press **1** or **4** on the Remote Commander to select an item.
3. Press **3** or **6** on the Remote Commander to change the data.
4. Press **MUTING** then **ENTER** to save into the memory.

Service Adjustment Mode Memory



1. Press **8** then **ENTER** on the Remote Commander to initialize.



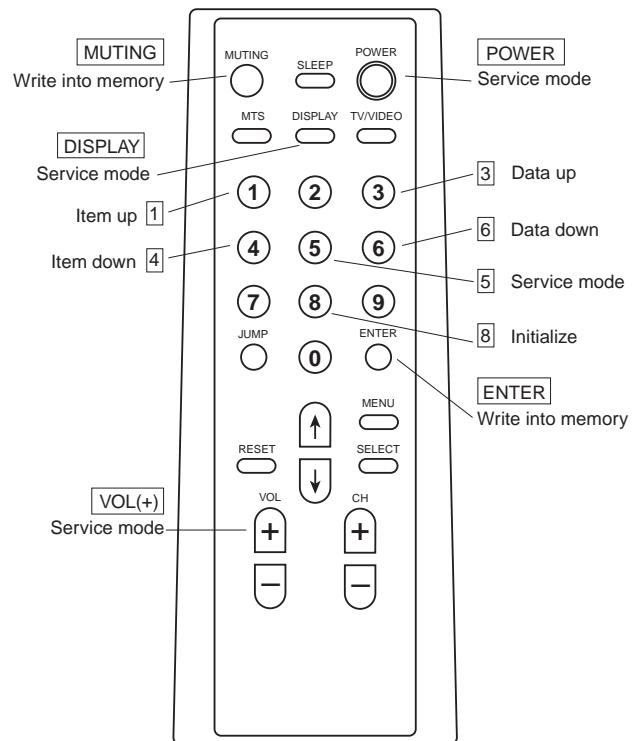
Carry out step 1 when adjusting IDs 0-4 and when replacing and adjusting IC003.

2. Turn set off then on to exit service adjustment mode.

5-2. Memory Write Confirmation Method

1. After adjustment, remove the power plug from the AC outlet, then plug it in again.
2. Turn the power switch ON and set to service mode.
3. Call the adjusted items again to confirm they were adjusted.

5-3. Adjust Buttons and Indicators



Adjustment Items

NO.	ITEM	FUNCTION	DATA RANGE	INITIAL DATA	AVERAGE DATA
1	HSIZ	HORIZONTAL SIZE ADJ.	0-63	31	31
2	HPOS	HORIZONTAL POS. ADJ.	0-63	31	20
3	VBOW	VRT LINE BOWING ADJ.	0-15	7	6
4	VANG	VRT LINE BOW SLANT ADJ.	0-15	7	6
5	TRAP	HORIZ. TRAPEZOID ADJ.	0-15	7	15
6	PAMP	HORIZ. PIN DISTORTION ADJ.	0-63	31	31
7	CPIN	SAME AS PAMP-SCRN TP/BTM	0-63	31	31
8	VSIZ	VERTICAL SIZE ADJ.	0-63	31	37
9	VPOS	VERTICAL POSITION ADJ.	0-63	31	38
10	VLIN	VERTICAL LINEARITY ADJ.	0-15	7	7
11	SCOR	VERTICAL "S" CORRECTION ADJ.	0-15	7	7
12	VZOM	16:9 CRT Z MODE ON/OFF	0, 1	0	0
13	EHT	VRT HI-VOLT. CORRECTION	0-15	7	4
14	ASP	ASPECT RATIO CONTROL	0-63	63	47
15	SCRL	16:9 CRT Z MODE TRANS SCROLL	0-63	31	31
16	HBLK	HORIZONTAL BLANKING ON/OFF	0, 1	0	1
17	LBLK	LEFT BLANKING ADJ.	0-15	7	15
18	RBLK	RIGHT BLANKING ADJ.	0-15	7	3
19	VUSN	V SAW WAVEFORM COMPRESS	0, 1	0	0
20	HDW	H. DRIVE PULSE WIDTH	0, 1	0	0
21	EWDC	"PARABOLA" EW/DC ADJ.	0, 1	0	0
22	LVLN	LOWER SCREEN BTM VRT LIN ADJ.	0-15	0	0
23	UVLN	UPPER SCREEN BTM VRT LIN ADJ.	0-15	0	0
24	RDRV	R OUTPUT DRIVE CONTROL	0-63	31	27
25	GDRV	G OUTPUT DRIVE CONTROL	0-63	31	22
26	BDRV	B OUTPUT DRIVE CONTROL	0-63	31	22
27	RCUT	R OUTPUT CUTOFF CONTROL	0-15	7	9
28	GCUT	G OUTPUT CUTOFF CONTROL	0-15	7	4
29	BCUT	B OUTPUT CUTOFF CONTROL	0-15	7	4
30	DCOL	DYNAMIC COLOR ON/OFF	0, 1	0	0
31	SHUE	SUB HUE	0-31	14	18
32	SCOL	SUB COLOR	0-31	14	18
33	SBRT	SUB BRIGHTNESS	0-31	14	10
34	RON	R OUTPUT ON/OFF	0, 1	0	1
35	GON	G OUTPUT ON/OFF	0, 1	0	1
36	BON	B OUTPUT ON/OFF	0, 1	0	1
37	AXPL	AXIS PAL	0, 1	0	0
38	AXNT	AXIS NTSC	0, 1	0	0
39	CBPF	CHROMA BPF ON/OFF	0, 1	0	1
40	CTRP	Y TRAP FILTER ON/OFF	0, 1	0	1
41	COFF	COLOR ON/OFF	0, 1	0	0
42	KOFF	SET COLOR KILLER	0, 1	0	0
43	SSHP	SUB SHARPNESS	0-15	8	6
44	SHPF	SHARPNESS CIRCUIT F0	0, 1	0/0 *2	0/0 *2
45	PREL	PRE/OVR SHOOT SWITCHING	0, 1	0	1
46	Y-DC	DC TRANS RATIO SWITCHING	0, 1	0	1
47	GAMM	GAMMA CORRECTION AMNT	0-3	0	0
48	ABLM	ABL MODE SWITCHING	0, 1	1	1
49	VTH	ABL CD VHT SWITCHING	0, 1	0	1
50	YDEL	Y DELAY TIME CONTROL	0-15	7	7
51	NCOL	NO COLOR ID	0, 1	0	1
52	FSC	FSC OUT ON/OFF	0, 1	0	1
53	K-ID	KILLER ID CONTROL SW	0, 1	0	0
54	HOSC	H VCO OSCILLATION FREQ	0-15	7	7
55	VSS	V SYNC SLICE LEVEL	0, 1	0	0
56	HSS	H SYNC SLICE LEVEL	0, 1	0	0
57	HMSK	H SYNC MASK WIDTH	0, 1	0	1
58	VTMS	SELECT SIGNAL VTIM PIN	0-3	0	0
59	CDMD	V CNT DWN MODE SWITCHING	0-3	0/1 *2	0/1 *2
60	AFC	AFC LOOP GAIN SWITCHING	0-3	0/0 *2	0/0 *2
61	FIFR	FIELD FREQUENCY	0-3	0	3
62	SBAS	SUB BASS	0-15	7	8
63	STRE		0-15	7	9

NO.	ITEM	FUNCTION	DATA RANGE	INITIAL DATA	AVERAGE DATA
64	SBAL	SUB BALANCE	0-31	14	13
65	DISP	O.S.D DISPLAY POSITION	0-127	0	5
66	PADJ	POWER ADJUSTMENT	0-63	3	42
67	HCHM		0-255	69	69
68	HCLM		0-255	16	16
69	HCHS		0-255	69	69
70	HCLS		0-255	16	16
71	PVCH		0-1	0	0
72	PVON		0-1	0	1
73	PVLN		0-31	17	17
74	PVSB		0-255	64	64
75	PVLV		0-255	130	130
76	ID1	ID1	0-255	3	See ID Map below
77	ID2	ID2	0-255	11	See ID Map below
78	ID3	ID3	0-255	1	See ID Map below
79	ID4	ID4	0-255	23	See ID Map below
80	ID5	ID5	0-255	0	See ID Map below
81	ID6	ID6	0-255	0	See ID Map below
82	ID7	ID7	0-255	64	See ID Map below

*2: TV/VIDEO

Notes:

No. 1-82 show the order that each adjustment mode may be selected while in service mode.

Data Range shows the range of possible settings for each adjustment mode.

Initial Data shows the standard settings for each adjustment mode.

SERVICE	ID0	25

Feature ID Map

MODEL	DEST.	ID-0	ID-1	ID-2	ID-3	ID-4	ID-5	ID-6	ID-7
KV-20M42	US	25	3	0	227	3	1	0	0
KV-20M42	CND	89	3	0	147	3	1	0	0
KV-20S42	US	25	3	1	227	3	1	0	0
KV-20S42	CND	89	3	1	147	3	1	0	0
KV-20S43	US	25	3	1	227	3	1	0	0
KV-20S43	CND	89	3	1	147	3	1	0	0
KV-21MB42C	E	17	3	0	195	115	1	0	0
KV-21MB42M	MX	17	3	0	195	115	1	0	0
KV-21MB42P	E	17	3	0	195	115	1	0	0
KV-21ME42	E	17	3	0	195	115	1	0	0
KV-21ME42C	E	17	3	0	195	115	1	0	0
KV-21SB42C	E	17	3	1	195	115	1	0	0
KV-21SB42M	MX	17	3	1	195	115	1	0	0
KV-21SE42	E	17	3	1	195	115	1	0	0
KV-21SE42C	E	17	3	1	195	115	1	0	0
KV-21SE82	E	17	3	159	195	123	3	0	0
KV-21SE82C	E	17	3	159	195	123	3	0	0

5-4. A BOARD ADJUSTMENTS

H. Frequency Adjustment

1. Input a monoscope signal.
2. Set to Service Adjustment Mode.
3. Connect a frequency counter to base of Q501 (TP-500 H. DRIVE).
4. Select the item of AFC, set to 3 level (free run).
5. Check H. Frequency for the 15735 ± 200 Hz.
6. Select the AFC item again and adjust level to 0.
7. Press **MUTING** then **ENTER** to save into the memory.

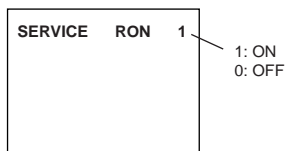
V. Frequency Adustment

1. Select video 1 with no signal input.
2. Set the conditions for a standard setting.
3. Connect the frequency counter across TP-508 or CN501 VDY (+) pin ⑥ connector and ground.
4. Check that V. Frequency shows 60 ± 2 Hz.

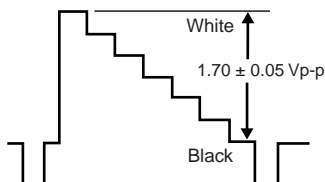
Sub Contrast Adjustment (RDRV)

1. Input a color-bar signal.
2. Set the red color.
3. Set to Service Adjustment Mode.
4. Select the item DCOL level to 0.
5. Set the conditions as follows:

PICTURE: MAX
 COLOR: MIN
 BRIGHT: CENTER
 R ON: ON (1)
 G ON: OFF (0)
 B ON: OFF (0)



6. Connect an oscilloscope probe to CN301 pin ② (R OUT) and ground.
7. Select RDRV with **1** and **4**.
8. Adjust with **3** and **6** for 1.70 ± 0.05 Vp-p



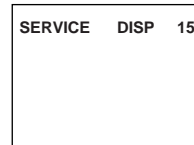
9. Reset the item DCOL to 1.
10. Press **MUTING** then **ENTER** to save into the memory.

11. Return the following back to normal after adjustment.

PICTURE: MAX
 COLOR: CENTER
 BRIGHT: CENTER
 R ON: ON (1)
 G ON: OFF (0)
 B ON: OFF (0)

Display Position Adjustment (DISP)

1. Input a color-bar signal.
2. Set to Service Adjustment Mode.
3. Select DISP with **1** and **4**.
4. Adjust with **3** and **6** to adjust characters to the center.
5. Press **MUTING** then **ENTER** to save into the memory.
6. Check to see if the text is displayed on the screen.

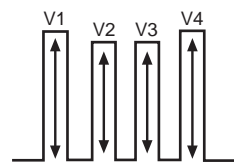


Sub Bright Adjustment (SBRT)

1. Input a crosshatch signal.
2. Set to Service Adjustment Mode.
3. Set the PICTURE and BRIGHTNESS to minimum.
4. Select the SBRT item with **1** and **4**.
5. Adjust with **3** and **6** to obtain a faintly visible crosshatch.
6. Press **MUTING** then **ENTER** to save into the memory.

Sub Hue, Sub Color Adjustment (SHUE, SCOL)

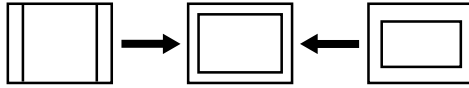
1. Input a color-bar signal.
2. Set to Service Adjustment Mode.
3. Select the DCOL item and set the value to 0.
4. Connect an oscilloscope probe to CN301 Pin ④ (BLUE OUT) and ground.
5. Select SHUE and SCOL with **1** and **4**.
6. Adjust with **3** and **6** for the $V1 = V4 \pm 0.2$ Vp-p (SCOL) and $V2 = V3 \pm 0.2$ Vp-p (SHUE).



7. Reset the DCOL level to 1.
8. Press **MUTING** then **ENTER** to save into the memory.

V. Size Adjustment (VSIZ)

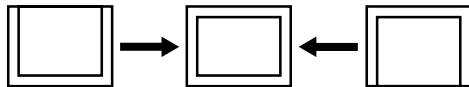
1. Input a crosshatch signal.
2. Set to Service Adjustment Mode.
3. Select the VSIZ item with **[1]** and **[4]**.
4. Adjust value of VPOS with **[3]** and **[6]** for the best vertical center.



5. Press **[MUTING]** then **[ENTER]** to save into the memory.

V. Center Adjustment (VPOS)

1. Input a crosshatch signal.
2. Set to 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.

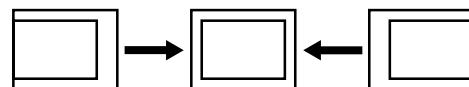


5. Press **[MUTING]** then **[ENTER]** to save into the memory.

H. Center Adjustment (HPOS)

Perform this adjustment after checking H. Frequency.

1. Input a crosshatch signal.
2. Set to 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 horizontal center.

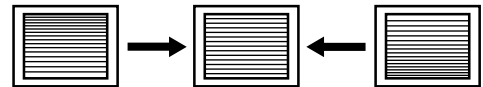


5. Press **[MUTING]** then **[ENTER]** to save into the memory.

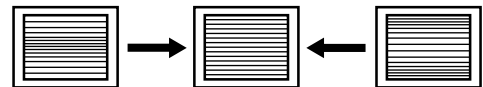
V. Linearity (VLIN), V Correction

1. Input a crosshatch signal.
2. V. correction is automatically adjusted from the circuit and should satisfy the conditions below.

V LINEARITY (VLIN)



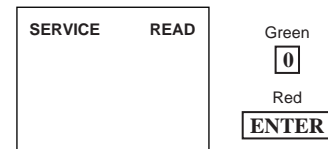
V CORRECTION



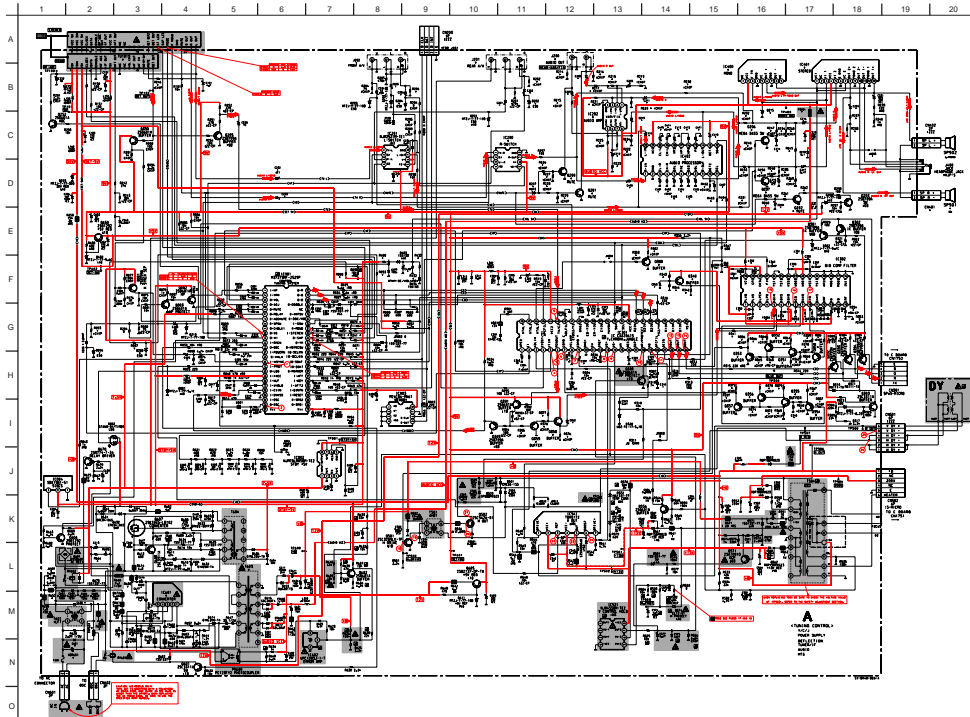
Service Adjustment Mode Memory

1. Change the value of the DCOL item to 1.
2. After completing all adjustments, press **[0]** then **[ENTER]**.

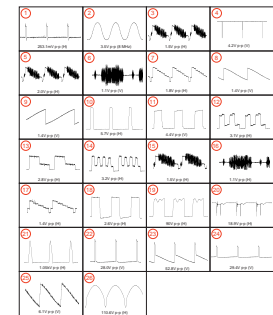
Read From Memory



A BOARD SCHEMATIC DIAGRAM



A BOARD WAVEFORMS



A BOARD IC VOLTAGE LIST

IC No.	IC Name	VCC	VDD	VDD2	VEE	VEE2
1	74VHC04	5.0			0.0	
2	74VHC04	5.0			0.0	
3	74VHC04	5.0			0.0	
4	74VHC04	5.0			0.0	
5	74VHC04	5.0			0.0	
6	74VHC04	5.0			0.0	
7	74VHC04	5.0			0.0	
8	74VHC04	5.0			0.0	
9	74VHC04	5.0			0.0	
10	74VHC04	5.0			0.0	
11	74VHC04	5.0			0.0	
12	74VHC04	5.0			0.0	
13	74VHC04	5.0			0.0	
14	74VHC04	5.0			0.0	
15	74VHC04	5.0			0.0	
16	74VHC04	5.0			0.0	
17	74VHC04	5.0			0.0	
18	74VHC04	5.0			0.0	
19	74VHC04	5.0			0.0	
20	74VHC04	5.0			0.0	
21	74VHC04	5.0			0.0	
22	74VHC04	5.0			0.0	
23	74VHC04	5.0			0.0	
24	74VHC04	5.0			0.0	

A BOARD TRANSISTOR VOLTAGE LIST

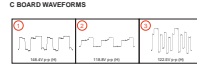
Transistor No.	Transistor Name	VBE	VCE	VEE
1	2N2222	0.0	5.0	0.0
2	2N2222	0.0	5.0	0.0
3	2N2222	0.0	5.0	0.0
4	2N2222	0.0	5.0	0.0
5	2N2222	0.0	5.0	0.0
6	2N2222	0.0	5.0	0.0
7	2N2222	0.0	5.0	0.0
8	2N2222	0.0	5.0	0.0
9	2N2222	0.0	5.0	0.0
10	2N2222	0.0	5.0	0.0
11	2N2222	0.0	5.0	0.0
12	2N2222	0.0	5.0	0.0
13	2N2222	0.0	5.0	0.0
14	2N2222	0.0	5.0	0.0
15	2N2222	0.0	5.0	0.0
16	2N2222	0.0	5.0	0.0
17	2N2222	0.0	5.0	0.0
18	2N2222	0.0	5.0	0.0
19	2N2222	0.0	5.0	0.0
20	2N2222	0.0	5.0	0.0
21	2N2222	0.0	5.0	0.0
22	2N2222	0.0	5.0	0.0
23	2N2222	0.0	5.0	0.0
24	2N2222	0.0	5.0	0.0

KL-3086205SAC2054371MELAC218M48M01MBS1017ME4321ME432
 208A43218M6170A43218A43218A43218A43218A43218A432

NOTE:
 Portions of the circuit marked as shown are high voltage areas. Use care to prevent electric shocks during inspection or repair.

**C BOARD
 IC VOLTAGE LIST**

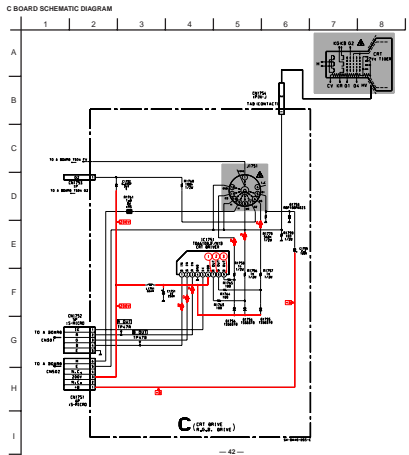
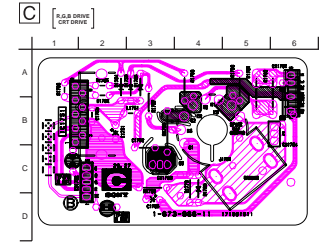
IC	V _{CC}	V _{CC2}	V _{CC3}	V _{CC4}	V _{CC5}	V _{CC6}	V _{CC7}
U101	2.5	5.0	5.0	5.0	5.0	5.0	5.0
U102	2.5	5.0	5.0	5.0	5.0	5.0	5.0
U103	2.5	5.0	5.0	5.0	5.0	5.0	5.0
U104	2.5	5.0	5.0	5.0	5.0	5.0	5.0
U105	2.5	5.0	5.0	5.0	5.0	5.0	5.0



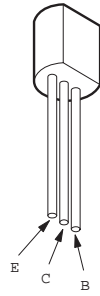
A BOARD (*) MARK-VARIANT LIST

Part No.	Lot	Rev	KL-3086205SAC2054371MELAC218M48M01MBS1017ME4321ME432	KL-3086205SAC2054371MELAC218M48M01MBS1017ME4321ME432	KL-3086205SAC2054371MELAC218M48M01MBS1017ME4321ME432	KL-3086205SAC2054371MELAC218M48M01MBS1017ME4321ME432	KL-3086205SAC2054371MELAC218M48M01MBS1017ME4321ME432	KL-3086205SAC2054371MELAC218M48M01MBS1017ME4321ME432	KL-3086205SAC2054371MELAC218M48M01MBS1017ME4321ME432	KL-3086205SAC2054371MELAC218M48M01MBS1017ME4321ME432
KL-3086205SAC2054371MELAC218M48M01MBS1017ME4321ME432
KL-3086205SAC2054371MELAC218M48M01MBS1017ME4321ME432

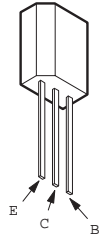
Part No.	Lot	Rev	KL-3086205SAC2054371MELAC218M48M01MBS1017ME4321ME432	KL-3086205SAC2054371MELAC218M48M01MBS1017ME4321ME432	KL-3086205SAC2054371MELAC218M48M01MBS1017ME4321ME432	KL-3086205SAC2054371MELAC218M48M01MBS1017ME4321ME432	KL-3086205SAC2054371MELAC218M48M01MBS1017ME4321ME432	KL-3086205SAC2054371MELAC218M48M01MBS1017ME4321ME432	KL-3086205SAC2054371MELAC218M48M01MBS1017ME4321ME432	KL-3086205SAC2054371MELAC218M48M01MBS1017ME4321ME432
KL-3086205SAC2054371MELAC218M48M01MBS1017ME4321ME432
KL-3086205SAC2054371MELAC218M48M01MBS1017ME4321ME432



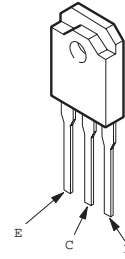
2SA1091
2SD1292



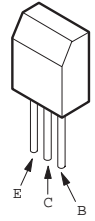
2SD2137



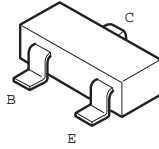
2SC5426



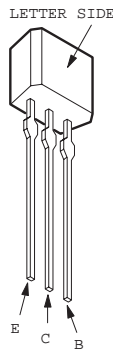
2SC3209
2SD774



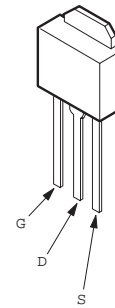
2SB709
2SD601A



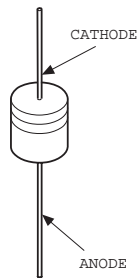
2SC3311A



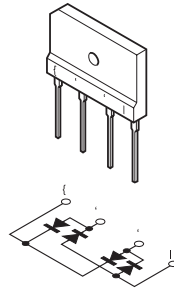
2SK2845



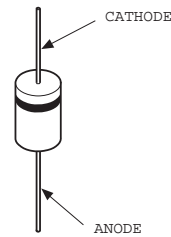
1SS133T-77
D1NS4-TA
D1N20R-TA
RD3.3ES-T1B



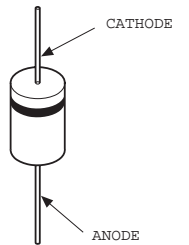
D3SB60F



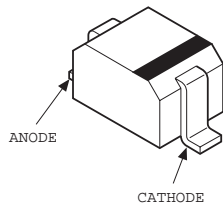
ERC04-06S
MTZJ-T-77-5.1C
MTZJ-T-77-5.6C
MTZJ-T-77-6.2C
MTZJ-T-77-8.2B
MTZJ-T-77-10B
MTZJ-T-77-30D
S2L20UF
S3L20UF4
RU-1P
UDZ-TE-17-5.1B



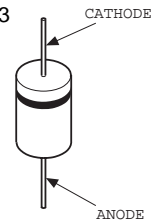
1SS83TD
D1NL20U-TA
EL1Z-V1
ERA22-08TP3
EZ0150AV1
RGP10GPKG23
GP08DPKG23



MA111-TX



RU4AM-T3



SECTION 7 EXPLODED VIEWS

- Items with no part number and no description are not stocked because they are seldom required for routine service.

- The component parts of an assembly are indicated by the reference numbers in the remarks column.

- Items marked “ * ” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Note:

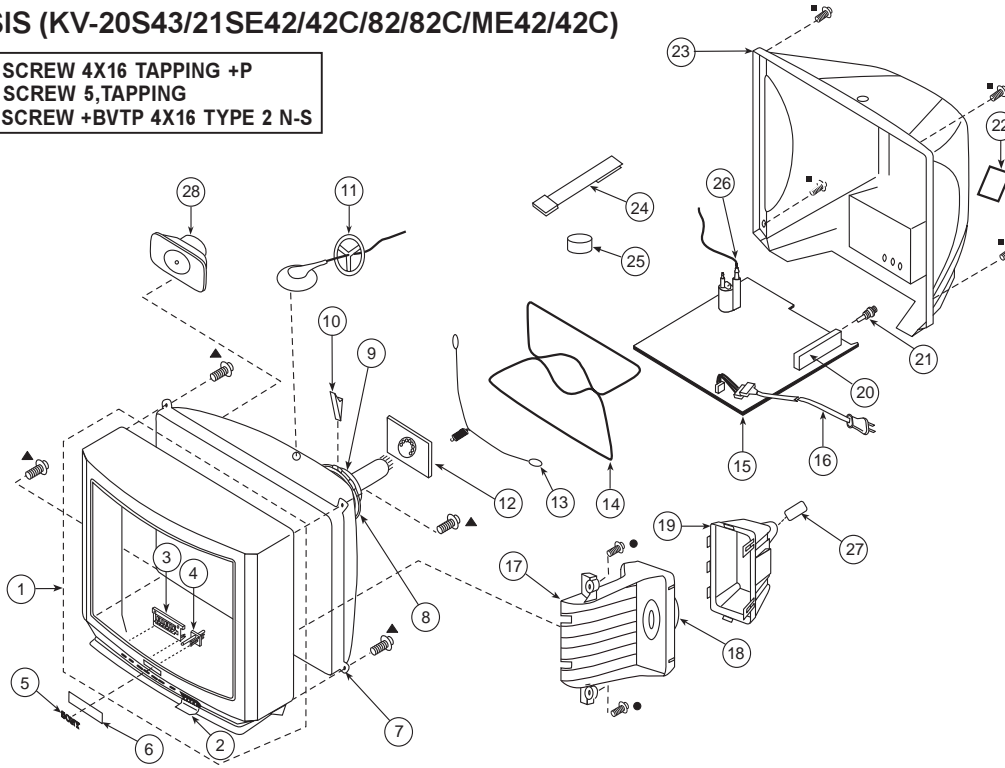
The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

Note:

Les composants identifiés par un trame et une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

7-1. CHASSIS (KV-20S43/21SE42/42C/82/82C/ME42/42C)

- 4-384-096-01 SCREW 4X16 TAPPING +P
- ▲ 4-365-808-01 SCREW 5,TAPPING
- 7-685-663-79 SCREW +BVTP 4X16 TYPE 2 N-S



REF. NO.	PART NO.	DESCRIPTION	REMARK
1	X-1036-731-1	BEZNET ASSY (KV-21ME42/42C)	2-4
1	X-4036-797-1	BEZNET ASSY (KV-20S43)	2-4
1	X-4036-730-1	BEZNET ASSY (KV-21SE42/42C)	2-4
1	X-4035-233-1	BEZNET ASSY (KV-21SE82/82C)	2-4
2	4-062-604-01	DOOR (KV-21SE42/42C/21SE82/82C)	
2	4-062-596-11	DOOR (KV-20S43)	
2	4-062-604-11	DOOR (KV-21ME42/42C)	
3	4-062-597-11	BUTTON, MULTI (KV-20S43)	
3	4-062-603-01	BUTTON, MULTI (KV-21ME42/42C/SE82/82C)	
3	4-062-603-11	BUTTON, MULTI (KV-21SE42/42C)	
4	4-062-607-01	GUIDE, LED (KV-21ME42/42C/SE42/42C/82/82C)	
4	4-062-599-01	GUIDE, LED (KV-20S43)	
5	4-046-161-01	EMBLEM (NO.8), SONY	
6	* 4-031-698-01	SHEET, ADHESIVE	
7	Δ 8-738-768-05	CRT 21NX (SD-275) (KV-20S43/21ME42/SE42/82)	
7	Δ 8-738-781-05	CRT 21NX (SD-275/SA) (KV-21ME42C/SE42C/82C)	
8	1-452-277-00	MAGNET, BMC	
9	Δ 8-451-440-21	DY Y21NXA-X	
10	4-053-005-01	SPACER, DY	
11	3-704-372-31	HOLDER, HV CABLE	
12	* A-1331-917-A	C MOUNTED PC BOARD	
13	* 4-375-394-01	SPRING, TENSION	
14	Δ 1-416-951-11	COIL, DEGAUSS (KV-21ME42/42C/SE42/42C/82/82C)	

REF. NO.	PART NO.	DESCRIPTION	REMARK
14	Δ 1-416-572-21	COIL, DEMAGNETIC (KV-20S43)	
15	* A-1298-885-A	A COMPLETE PC BOARD (KV-21SE82/82C)	
15	* A-1298-893-A	A COMPLETE PC BOARD (KV-20S43)	
15	* A-1298-882-A	A COMPLETE PC BOARD (KV-21ME42/42C)	
15	* A-1298-832-A	A COMPLETE PC BOARD (KV-21SE42/42C)	
16	Δ 1-751-057-11	CORD, POWER (KV-21SE42/82/ME42)	
16	Δ 1-769-796-71	CORD, POWER (KV-21SE42C/82C/ME42C)	
16	Δ 1-790-316-31	CORD, AC POWER (KV-20S43)	
17	* 4-062-609-01	BAFFLE, SPEAKER (KV-21SE82/82C ONLY)	
18	1-505-404-11	SPEAKER (8CM) (KV-21SE82/82C)	
19	X-4033-616-1	COVER ASSY, SPEAKER (KV-21SE82/82C ONLY)	
20	Δ 8-598-430-00	TUNER, FSS BTF-FA401 (KV-21ME42/42C)	
20	Δ 8-598-431-00	TUNER, FSS BTF-WA411 (KV-20S43/21SE42/42C/82/82C)	
21	1-766-374-11	PLUG, F-PIN	
22	4-068-826-01	LABEL, REAR COVER	
23	4-062-610-03	COVER, REAR (KV-21SE82/82C)	
23	4-062-598-44	COVER, REAR (KV-20S43)	
23	4-062-602-03	COVER, REAR (KV-21SE42/42C)	
23	4-062-602-23	COVER, REAR (KV-21ME42/42C)	
24	4-051-735-22	PIECE A(75), CONV. CORRECT	
25	1-452-032-00	MAGNET, DISC	
26	Δ 1-453-283-21	FBT (NX-1744/IX4E4)	
27	* 4-064-221-01	SPONGE, ACOUSTIC (KV-21SE82/82C ONLY)	
28	1-505-831-11	SPEAKER (9X5CM) (KV-20S43/21ME42/42C/)	
28	1-505-930-11	SPEAKER (9X5CM) (KV-21SE42/42C)	

Note:

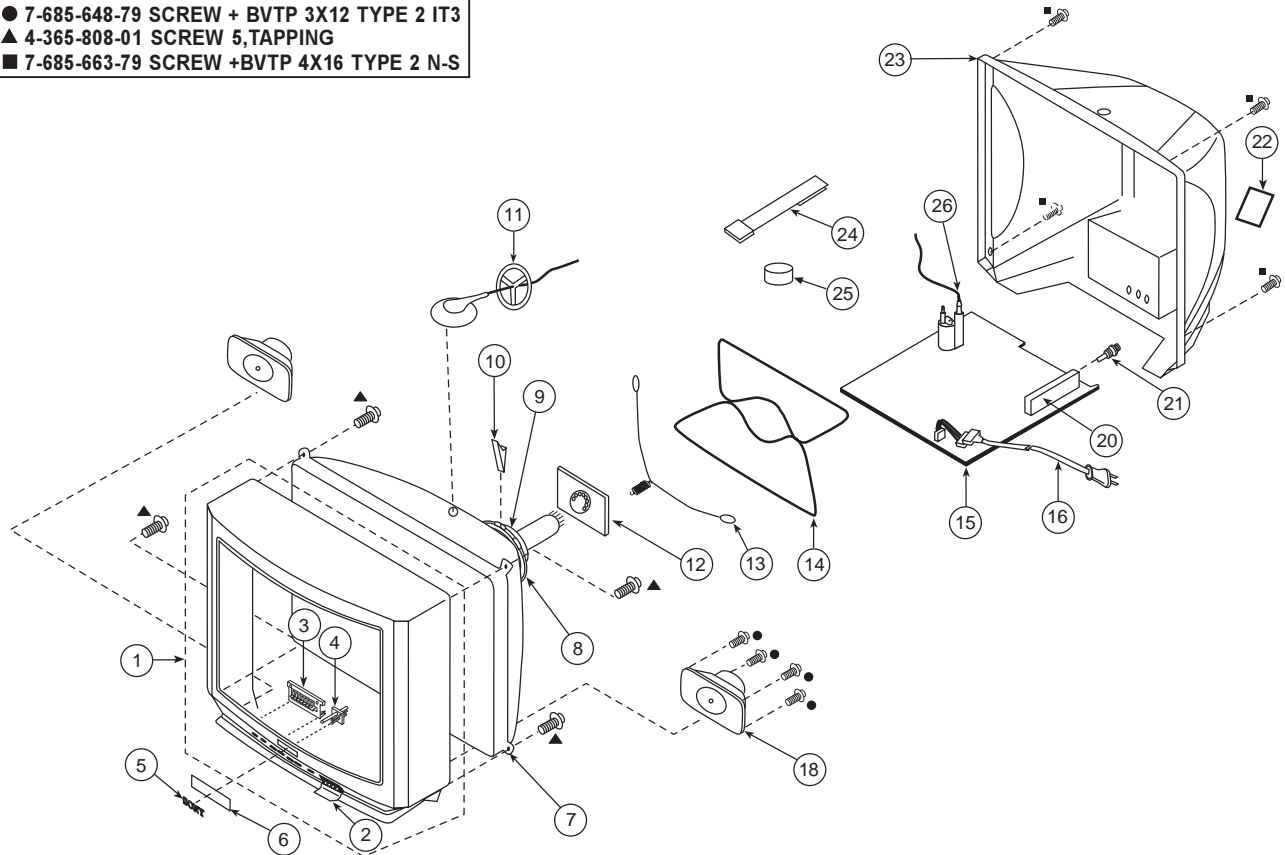
The components identified by shading and mark \triangle are critical for safety. Replace only with part number specified.

Note:

Les composants identifiés per un trame et une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

7-2. CHASSIS (KV-20M42/S42/21MB42C/42M/42P/SB42C/42M)

- 7-685-648-79 SCREW + BVTP 3X12 TYPE 2 IT3
- ▲ 4-365-808-01 SCREW 5,TAPPING
- 7-685-663-79 SCREW +BVTP 4X16 TYPE 2 N-S



REF. NO.	PART NO.	DESCRIPTION	REMARK
1	X-4035-231-1	BEZNET ASSY (KV-20M42/21MB42C)	2-4
1	X-4035-309-1	BEZNET ASSY (KV-20S42/21SB42C/42M)	2-4
1	X-4035-306-1	BEZNET ASSY (KV-21MB42P/42M)	2-4
2	4-062-596-21	DOOR (KV-20S42/21SB42C/42M)	
2	4-062-596-01	DOOR (KV-20M42/21MB42C/42M/42P)	
3	4-062-597-01	BUTTON, MULTI	
4	4-062-599-01	GUIDE, LED	
5	4-046-161-01	EMBLEM (NO.8), SONY	
6	* 4-031-698-01	SHEET, ADHESIVE	
7	\triangle 8-738-768-05	CRT 21NX (SD-275)	
		(KV-20M42/S42/21MB42P/42M/SB42M)	
7	\triangle 8-738-781-05	CRT 21NX (SD-275/SA)	
		(KV-21MB42C/SB42C)	
8	1-452-277-00	MAGNET, BMC	
9	\triangle 8-451-440-21	DY Y21NXA-X	
10	4-053-005-01	SPACER, DY	
11	3-704-372-31	HOLDER, HV CABLE	
12	* A-1331-917-A	C MOUNTED PC BOARD	
13	* 4-375-394-01	SPRING, TENSION	
14	\triangle 1-416-951-11	COIL, DEGAUSS (KV-21MB42C/42M/42P/SB42C/42M)	
14	\triangle 1-416-572-21	COIL, DEMAGNETIC (KV-20M42/S42)	

REF. NO.	PART NO.	DESCRIPTION	REMARK
15	* A-1298-835-A	A COMPLETE PC BOARD (KV-20M42)	
15	* A-1298-883-A	A COMPLETE PC BOARD (KV-21SB42C/42M)	
15	* A-1298-893-A	A COMPLETE PC BOARD (KV-20S42)	
15	* A-1298-881-A	A COMPLETE PC BOARD (KV-21MB42C/42P/42M)	
16	\triangle 1-751-057-11	CORD, POWER (KV-21MB42P/42M/SB42M)	
16	\triangle 1-790-001-21	CORD, AC POWER (KV-20M42/S42)	
16	\triangle 1-769-796-71	CORD, POWER (KV-21SB42C/MB42C)	
18	1-505-831-11	SPEAKER (9X5CM)	
		(KV-20S42/21SB42C/42M)	
18	1-505-270-11	SPEAKER (9X5CM) (KV-20M42/21MB42C/42M/42P)	
20	\triangle 8-598-430-00	TUNER, FSS BTF-FA401	
		(KV-20M42/21MB42C/42M/42P)	
20	\triangle 8-598-431-00	TUNER, FSS BTF-WA411	
		(KV-20S42/21SB42C/42M)	
21	1-766-374-11	PLUG, F-PIN	
22	4-068-826-01	LABEL, REAR COVER	
23	4-062-598-04	COVER, REAR	
		(KV-20M42/S42/21MB42C/42M/42P/SB42C/42M)	
24	4-051-735-22	PIECE A(75), CONV. CORRECT	
25	1-452-032-00	MAGNET, DISC	
26	\triangle 1-453-283-21	FBT (NX-1744//X4E4)	

SECTION 8 ELECTRICAL PARTS LIST

PARTS LISTING TABLE OF CONTENTS

<u>Description</u>	<u>Page</u>
A BOARD COMMON PARTS LIST: Parts common to all models listed in this manual.....	46
A BOARD VARIANT PARTS LIST: Parts that belong only to the model specified.	

Refer to the designated variant parts list when seeking a part indicated by an asterisk (*) on the A board schematic, or by the word "variant" on the common parts list.

<u>Model</u>	<u>Page</u>
KV-20M42	55
KV-20S42/20S43	56
KV-21MB42C/42M/42P.....	57
KV-21ME42/42C	58
KV-21SB42C/42M	59
KV-21SE42/42C	60
KV-21SE82/82C	61
 C BOARD COMPLETE PARTS LIST.....	 54
PACKAGING LIST AND ACCESSORIES.....	63

A

COMMON PARTS LISTING

RESISTORS

- All resistors are in ohms
- F : nonflammable

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

- The components identified by \boxtimes in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- 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.

Note:

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

Note:

Les composants identifiés par un trame et une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
A				C047	1-163-259-91	CERAMIC CHIP	220pF 5% 50V
* A BOARD, COMPLETE				C048	1-163-009-11	CERAMIC CHIP	0.001 μ F 10% 50V
	A-1298-832-A	(KV-21SE42/42C)		C050	1-163-251-11	CERAMIC CHIP	100pF 5% 50V
	A-1298-885-A	(KV-21SE82/82C)		C051	1-163-251-11	CERAMIC CHIP	100pF 5% 50V
	A-1298-893-A	(KV-20S42/20S43)		C052	1-163-251-11	CERAMIC CHIP	100pF 5% 50V
	A-1298-883-A	(KV-21SB42M/42C)		C053	1-163-251-11	CERAMIC CHIP	100pF 5% 50V
	A-1298-882-A	(KV-21ME42/42C)		C055	1-163-251-11	CERAMIC CHIP	100pF 5% 50V
	A-1298-881-A	(KV-21MB42C/42M/42P)		C060	1-163-005-11	CERAMIC CHIP	470pF 10% 50V
	A-1298-835-A	(KV-20M42)		C062	1-164-161-11	CERAMIC CHIP	0.0022 μ F 10% 50V
	1-533-223-11	HOLDER, FUSE		C065	1-163-009-11	CERAMIC CHIP	0.001 μ F 10% 50V
	4-382-854-1	SCREW (M3X10), P, SW (+)		C072	1-163-259-91	CERAMIC CHIP	220pF 5% 50V
	4-382-854-11	SCREW (M3X10), P, SW (+)		C074	1-163-251-11	CERAMIC CHIP	100pF 5% 50V
CAPACITOR				C077	1-163-251-11	CERAMIC CHIP	100pF 5% 50V
C001	1-163-259-91	CERAMIC CHIP	220pF 5% 50V	C091	1-163-231-11	CERAMIC CHIP	15pF 5% 50V
C004	1-104-664-11	ELECT	47 μ F 20% 25V	C092	1-163-231-11	CERAMIC CHIP	15pF 5% 50V
C005	1-126-960-11	ELECT	1 μ F 20% 50V	C101	1-126-963-11	ELECT	4.7 μ F 20% 50V
C006	1-163-035-00	CERAMIC CHIP	0.047 μ F 50V	C150	1-126-935-11	ELECT	470 μ F 20% 16V
C007	1-163-259-91	CERAMIC CHIP	220pF 5% 50V	C151	1-104-664-11	ELECT	47 μ F 20% 25V
C008	1-163-009-11	CERAMIC CHIP	0.001 μ F 10% 50V	C160	1-126-382-11	ELECT	100 μ F 20% 16V
C010	1-163-009-11	CERAMIC CHIP	0.001 μ F 10% 50V	C200	1-107-698-11	ELECT	10 μ F 20% 25V
C011	1-163-009-11	CERAMIC CHIP	0.001 μ F 10% 50V	C201	1-126-960-11	ELECT	1 μ F 20% 50V
C012	1-163-009-11	CERAMIC CHIP	0.001 μ F 10% 50V	C202		VARIANT (SEE VARIANT PARTS LIST)	
C013	1-163-259-91	CERAMIC CHIP	220pF 5% 50V	C203	1-163-009-11	CERAMIC CHIP	0.001 μ F 10% 50V
C014	1-164-004-11	CERAMIC CHIP	0.1 μ F 10% 25V	C204	1-107-698-11	ELECT	10 μ F 20% 25V
C017	1-126-960-11	ELECT	1 μ F 20% 50V	C205	1-126-960-11	ELECT	1 μ F 20% 50V
C019	1-163-135-00	CERAMIC CHIP	560pF 5% 50V	C206		VARIANT (SEE VARIANT PARTS LIST)	
C020	1-130-495-00	FILM	0.1 μ F 5% 50V	C207		VARIANT (SEE VARIANT PARTS LIST)	
C027	1-163-259-91	CERAMIC CHIP	220pF 5% 50V	C208		VARIANT (SEE VARIANT PARTS LIST)	
C028	1-163-005-11	CERAMIC CHIP	470pF 10% 50V	C209		VARIANT (SEE VARIANT PARTS LIST)	
C030	1-163-259-91	CERAMIC CHIP	220pF 5% 50V	C211		VARIANT (SEE VARIANT PARTS LIST)	
C034	1-163-037-11	CERAMIC CHIP	0.022 μ F 10% 50V	C212		VARIANT (SEE VARIANT PARTS LIST)	
C037	1-164-161-11	CERAMIC CHIP	0.0022 μ F 10% 50V	C213		VARIANT (SEE VARIANT PARTS LIST)	
C038	1-126-941-11	ELECT	470 μ F 20% 25V	C214		VARIANT (SEE VARIANT PARTS LIST)	
C039	1-126-964-11	ELECT	10 μ F 20% 50V	C215	1-126-957-11	ELECT	0.22 μ F 20% 50V
C046	1-104-664-11	ELECT	47 μ F 20% 25V	C216		VARIANT (SEE VARIANT PARTS LIST)	
				C217	1-126-959-11	ELECT	0.47 μ F 20% 50V
				C218	1-126-941-11	ELECT	470 μ F 20% 25V
				C219	1-130-495-00	FILM	0.1 μ F 5% 50V
				C220		VARIANT (SEE VARIANT PARTS LIST)	
				C221	1-126-941-11	ELECT	470 μ F 20% 25V

Note:

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

Note:

Les composants identifiés par un trame et une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

COMMON PARTS LISTING

A

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
C222	1-126-964-11	ELECT	10 μ F 20% 50V	C375	1-163-038-91	CERAMIC CHIP	0.1 μ F 25V
C226	1-107-635-11	ELECT	4.7 μ F 20% 160V	C376	1-104-664-11	ELECT	47 μ F 20% 25V
C228	1-126-964-11	ELECT	10 μ F 20% 50V	C390	1-130-495-00	FILM	0.1 μ F 5% 50V
C229		VARIANT (SEE VARIANT PARTS LIST)		C400		VARIANT (SEE VARIANT PARTS LIST)	
C232	1-126-960-11	ELECT	1 μ F 20% 50V	C401		VARIANT (SEE VARIANT PARTS LIST)	
C233		VARIANT (SEE VARIANT PARTS LIST)		C402		VARIANT (SEE VARIANT PARTS LIST)	
C234		VARIANT (SEE VARIANT PARTS LIST)		C403		VARIANT (SEE VARIANT PARTS LIST)	
C236	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V	C404		VARIANT (SEE VARIANT PARTS LIST)	
C243	1-163-017-00	CERAMIC CHIP	0.0047 μ F 10% 50V	C405		VARIANT (SEE VARIANT PARTS LIST)	
C260		VARIANT (SEE VARIANT PARTS LIST)		C406		VARIANT (SEE VARIANT PARTS LIST)	
C301	1-163-233-11	CERAMIC CHIP	18pF 5% 50V	C407		VARIANT (SEE VARIANT PARTS LIST)	
C303	1-126-964-11	ELECT	10 μ F 20% 50V	C410		VARIANT (SEE VARIANT PARTS LIST)	
C304		VARIANT (SEE VARIANT PARTS LIST)		C411		VARIANT (SEE VARIANT PARTS LIST)	
C305	1-164-004-11	CERAMIC CHIP	0.1 μ F 10% 25V	C412		VARIANT (SEE VARIANT PARTS LIST)	
C306	1-164-004-11	CERAMIC CHIP	0.1 μ F 10% 25V	C413		VARIANT (SEE VARIANT PARTS LIST)	
C307		VARIANT (SEE VARIANT PARTS LIST)		C414		VARIANT (SEE VARIANT PARTS LIST)	
C308	1-126-964-11	ELECT	10 μ F 20% 50V	C415		VARIANT (SEE VARIANT PARTS LIST)	
C309	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V	C416		VARIANT (SEE VARIANT PARTS LIST)	
C310	1-126-960-11	ELECT	1 μ F 20% 50V	C418		VARIANT (SEE VARIANT PARTS LIST)	
C311	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V	C502	1-106-371-00	MYLAR	0.015 μ F 20% 200V
C312	1-126-942-61	ELECT	1000 μ F 20% 25V	C504	1-102-228-00	CERAMIC	470pF 10% 500V
C313	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V	C505 Δ	1-117-626-11	FILM	2000pF 3% 1.2KV
C314	1-163-009-11	CERAMIC CHIP	.001 μ F 10% 50V	C507 Δ	1-117-633-11	FILM	3900pF 3% 1.2KV
C316	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V	C508 Δ	1-106-371-00	MYLAR	0.015 μ F 20% 200V
C317	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V	C509 Δ	1-162-115-00	CERAMIC	330pF 10% 2KV
C318	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V	C511 Δ	1-117-665-11	FILM	0.33 μ F 5% 250V
C319	1-126-963-11	ELECT	4.7 μ F 20% 50V	C520	1-129-722-00	FILM	0.047 μ F 5% 630V
C320	1-126-959-11	ELECT	0.47 μ F 20% 50V	C531	1-106-387-00	MYLAR	0.068 μ F 10% 200V
C321	1-163-133-00	CERAMIC CHIP	470pF 5% 50V	C541	1-126-969-11	ELECT	220 μ F 20% 50V
C330	1-163-007-11	CERAMIC CHIP	680pF 10% 50V	C542	1-126-967-11	ELECT	47 μ F 20% 50V
C340		VARIANT (SEE VARIANT PARTS LIST)		C543	1-136-169-00	FILM	0.22 μ F 5% 50V
C348		VARIANT (SEE VARIANT PARTS LIST)		C552	1-102-244-00	CERAMIC	220pF 10% 500V
C350		VARIANT (SEE VARIANT PARTS LIST)		C553	1-107-652-11	ELECT	10 μ F 20% 250V
C351		VARIANT (SEE VARIANT PARTS LIST)		C556	1-164-161-11	CERAMIC CHIP	0.0022 μ F 10% 50V
C352		VARIANT (SEE VARIANT PARTS LIST)		C561	1-102-244-00	CERAMIC	220pF 10% 500V
C353		VARIANT (SEE VARIANT PARTS LIST)		C562	1-126-941-11	ELECT	470 μ F 20% 25V
C354		VARIANT (SEE VARIANT PARTS LIST)		C563	1-137-417-11	MYLAR	0.0047 μ F 10% 200V
C355		VARIANT (SEE VARIANT PARTS LIST)		C564	1-126-941-11	ELECT	470 μ F 20% 25V
C356		VARIANT (SEE VARIANT PARTS LIST)		C571 Δ	1-126-965-11	ELECT	22 μ F 20% 50V
C357		VARIANT (SEE VARIANT PARTS LIST)		C573	1-126-963-11	ELECT	4.7 μ F 20% 50V
C358		VARIANT (SEE VARIANT PARTS LIST)		C574	1-107-635-11	ELECT	4.7 μ F 20% 160V
C359		VARIANT (SEE VARIANT PARTS LIST)		C575 Δ	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V
C360		VARIANT (SEE VARIANT PARTS LIST)		C576	1-123-024-21	ELECT	33 μ F 160V
C361		VARIANT (SEE VARIANT PARTS LIST)		C577 Δ	1-126-959-11	ELECT	0.47 μ F 20% 50V
C362		VARIANT (SEE VARIANT PARTS LIST)		C591 Δ	1-137-150-11	MYLAR	0.01 μ F 10% 100V
C373	1-163-038-91	CERAMIC CHIP	0.1 μ F 25V	C601		VARIANT (SEE VARIANT PARTS LIST)	
C374	1-126-935-11	ELECT	470 μ F 20% 16V	C602 Δ	1-113-941-11	CERAMIC	0.0047 μ F 20% 125V
				C603 Δ	1-113-941-11	CERAMIC	0.0047 μ F 20% 125V

A**COMMON PARTS LISTING****Note:**

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

Note:

Les composants identifiés par un trame et une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

REF. NO.	PART NO.	DESCRIPTION	REMARK
C604	Δ 1-113-941-11	CERAMIC	0.0047 μ F 20% 125V
C605	Δ 1-113-941-11	CERAMIC	0.0047 μ F 20% 125V
C611	1-125-772-91	CERAMIC	1500pF 10% 2KV
C613		VARIANT (SEE VARIANT PARTS LIST)	
C614	1-130-471-00	MYLAR	0.001 μ F 5% 50V
C616		VARIANT (SEE VARIANT PARTS LIST)	
C617		VARIANT (SEE VARIANT PARTS LIST)	
C618	1-136-619-11	FILM	0.0016 μ F 3% 2KV
C620	1-102-114-00	CERAMIC	470pF 10% 50V
C621	1-136-356-11	FILM	470pF 5% 50V
C622	1-136-479-11	FILM	0.001 μ F 5% 50V
C623	1-136-153-00	FILM	0.01 μ F 5% 50V
C626	1-126-959-11	ELECT	0.47 μ F 20% 50V
C628	1-104-665-11	ELECT	100 μ F 20% 25V
C629	1-104-665-11	ELECT	100 μ F 20% 25V
C630	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V
C631	1-126-768-11	ELECT	2200 μ F 20% 16V
C632	1-126-942-61	ELECT	1000 μ F 20% 25V
C633	1-126-967-11	ELECT	47 μ F 20% 50V
C634	1-124-347-00	ELECT	100 μ F 20% 160V
C638		VARIANT (SEE VARIANT PARTS LIST)	
C641	1-102-002-00	CERAMIC	680pF 10% 500V
C643	1-113-924-11	CERAMIC	0.0047 μ F 20% 250V
C644	1-113-924-11	CERAMIC	0.0047 μ F 20% 250V
C645	1-137-605-11	FILM	0.01 μ F 10% 250V
C646	1-107-679-91	ELECT	10 μ F 20% 450V
C647	1-130-467-00	MYLAR	470pF 5% 50V
C648	1-162-318-11	CERAMIC	0.001 μ F 10% 500V
C650	1-130-471-00	MYLAR	0.001 μ F 5% 50V
C651	1-126-382-11	ELECT	100 μ F 20% 16V
C653	1-104-664-11	ELECT	47 μ F 20% 25V
C654	1-126-970-11	ELECT	330 μ F 20% 50V
C656	1-126-965-11	ELECT	22 μ F 20% 50V
C657	1-102-002-00	CERAMIC	680pF 10% 500V
C690	1-126-959-11	ELECT	0.47 μ F 20% 50V
C691	1-126-941-11	ELECT	470 μ F 20% 25V
C692	1-104-664-11	ELECT	47 μ F 20% 25V
C693	1-137-194-81	FILM	0.47 μ F 5% 50V

CONNECTOR

CN203	* 1-560-124-00	PLUG CONNECTOR (2.5MM) 4P
CN301	* 1-564-508-11	PLUG CONNECTOR 5P
CN401		VARIANT (SEE VARIANT PARTS LIST)
CN402	* 1-564-505-11	PLUG CONNECTOR 2P
CN501	* 1-580-798-11	CONNECTOR PIN (DY) 6P
CN502	* 1-564-509-11	PLUG CONNECTOR 6P

REF. NO.	PART NO.	DESCRIPTION	REMARK
CN601	* 1-580-843-11	PIN, CONNECTOR (POWER)	
CN602	* 1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P	

DIODE

D001	8-719-921-44	DIODE MTZJ-5.1C
D002	1-810-039-21	LED UNIT
D003	8-719-991-33	DIODE 1SS133T-77
D004	8-719-991-33	DIODE 1SS133T-77
D201	8-719-110-17	DIODE RD10ESB2
D202		VARIANT (SEE VARIANT PARTS LIST)
D203	8-719-110-17	DIODE RD10ESB2
D204		VARIANT (SEE VARIANT PARTS LIST)
D205	8-719-982-22	DIODE MTZJ-30D
D206		VARIANT (SEE VARIANT PARTS LIST)
D207		VARIANT (SEE VARIANT PARTS LIST)
D208	8-719-110-17	DIODE RD10ESB2
D209	8-719-110-17	DIODE RD10ESB2
D210	8-719-110-17	DIODE RD10ESB2
D215		VARIANT (SEE VARIANT PARTS LIST)
D280		VARIANT (SEE VARIANT PARTS LIST)
D301	8-719-110-08	DIODE RD8.2ESB2
D302	8-719-921-44	DIODE MTZJ-5.1C
D310	8-719-404-50	DIODE MA111-TX
D311	8-719-404-50	DIODE MA111-TX
D320	8-719-976-99	DIODE DTZ5.1B
D403	8-719-991-33	DIODE 1SS133T-77
D434	8-719-991-33	DIODE 1SS133T-77
D501	8-719-945-80	DIODE ERC06-15S
D502	8-719-302-43	DIODE EL1Z
D520	8-719-067-63	DIODE MDV04-600RL
D541	8-719-908-03	DIODE GP08D
D552	8-719-302-43	DIODE EL1Z
D561	8-719-979-85	DIODE EGP20G
D562	8-719-979-85	DIODE EGP20G
D571	Δ 8-719-991-33	DIODE 1SS133T-77
D572	8-719-991-33	DIODE 1SS133T-77
D573	8-719-110-08	DIODE RD8.2ESB2
D574	Δ 8-719-302-43	DIODE EL1Z
D581	Δ 8-719-991-33	DIODE 1SS133T-77
D601	Δ 8-719-510-51	DIODE D3SB60F
D602	8-719-991-33	DIODE 1SS133T-77
D603	8-719-063-70	DIODE D1NL20U
D609		VARIANT (SEE VARIANT PARTS LIST)
D611	8-719-110-17	DIODE RD10ESB2
D613	8-719-063-70	DIODE D1NL20U
D614	8-719-063-70	DIODE D1NL20U

Note:

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

Note:

Les composants identifiés par un trame et une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

COMMON PARTS LISTING**A**

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
D615	8-719-510-02	DIODE D1NS4		IC602	Δ 8-759-198-31	IC UPC1093J-1-T	
D616	8-719-510-73	DIODE S3L20UF4					
D617	8-719-027-43	DIODE S2L20UF					
D620	8-719-057-52	DIODE EZ0150AV1					
D631	8-719-911-55	DIODE U05G					
D632	8-719-911-55	DIODE U05G					
D633	8-719-948-45	DIODE ERA22-08					
D634	8-719-991-33	DIODE 1SS133T-77					
D635	8-719-991-33	DIODE 1SS133T-77					
D636	8-719-063-70	DIODE D1NL20J					
D637	8-719-109-93	DIODE RD6.2ESB2					
D638	8-719-510-48	DIODE D1N20R					
D650	8-719-109-89	DIODE RD5.6ESB2					
D653	8-719-312-10	DIODE RU4AM-T3					
D670	8-719-991-33	DIODE 1SS133T-77					
FUSE							
F601	Δ 1-532-506-51	FUSE 6.3A/250V (except KV-20M42/20S42/20S43)					
F601	Δ 1-533-795-11	FUSE 6.3A/125V (KV-20M42/20S42/20S43 only)					
FERRITE BEAD							
FB501	1-410-396-41	FERRITE	0.45mH				
FB600	1-410-397-21	FERRITE	1.1 μ H				
FB601	1-410-397-21	FERRITE	1.1 μ H				
FB602	1-410-397-21	FERRITE	1.1 μ H				
FB604	1-410-397-21	FERRITE	1.1 μ H				
FB605	1-410-397-21	FERRITE	1.1 μ H				
FB606	1-410-397-21	FERRITE	1.1 μ H				
FB609	1-412-911-11	FERRITE	0 μ H				
FB611	1-410-397-21	FERRITE	1.1 μ H				
IC							
IC001	8-759-576-00	IC M37273MF-252SP					
IC002	8-759-575-47	IC NJM78LR05BM-TE2					
IC003	8-759-527-75	IC M24C04-MN6T					
IC004	8-742-014-11	HYB IC SBX1981-51					
IC200		VARIANT (SEE VARIANT PARTS LIST)					
IC201	8-759-450-93	IC NJM2521M-TE1					
IC202		VARIANT (SEE VARIANT PARTS LIST)					
IC301	8-752-083-09	IC CXA2061S					
IC302		VARIANT (SEE VARIANT PARTS LIST)					
IC400		VARIANT (SEE VARIANT PARTS LIST)					
IC401		VARIANT (SEE VARIANT PARTS LIST)					
IC402		VARIANT (SEE VARIANT PARTS LIST)					
IC521	Δ 8-759-100-96	IC NJM4558M-TE2					
IC541	8-759-980-58	IC TDA8172					
IC601		VARIANT (SEE VARIANT PARTS LIST)					
				JACK			
J200		VARIANT (SEE VARIANT PARTS LIST)					
J201		VARIANT (SEE VARIANT PARTS LIST)					
J202		VARIANT (SEE VARIANT PARTS LIST)					
J400	1-568-267-21	JACK					
				CHIP CONDUCTOR			
JR002	1-216-295-91	SHORT					
JR003	1-216-295-91	SHORT					
				COIL			
L001	1-414-267-11	INDUCTOR	10 μ H				
L002	1-414-273-11	INDUCTOR	100 μ H				
L003	1-414-273-11	INDUCTOR	100 μ H				
L150	1-414-273-11	INDUCTOR	100 μ H				
L151	1-414-267-11	INDUCTOR	10 μ H				
L160	1-414-267-11	INDUCTOR	10 μ H				
L301	1-414-271-11	INDUCTOR	47 μ H				
L302	1-414-267-11	INDUCTOR	10 μ H				
L351		VARIANT (SEE VARIANT PARTS LIST)					
L352		VARIANT (SEE VARIANT PARTS LIST)					
L503	1-412-553-11	INDUCTOR	3.3 μ H				
L504	1-412-533-21	INDUCTOR	47 μ H				
L591	Δ 1-412-531-31	INDUCTOR	33 μ H				
				PHOTO COUPLER			
PH600	Δ 8-749-010-64	PHOTO COUPLER	PC123F2				
				IC LINK			
PS201		VARIANT (SEE VARIANT PARTS LIST)					
				TRANSISTOR			
Q001	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX					
Q002	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX					
Q003	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX					
Q200		VARIANT (SEE VARIANT PARTS LIST)					
Q201		VARIANT (SEE VARIANT PARTS LIST)					
Q202		VARIANT (SEE VARIANT PARTS LIST)					
Q203	8-729-216-22	TRANSISTOR 2SA1162-G					
Q205	8-729-216-22	TRANSISTOR 2SA1162-G					
Q206		VARIANT (SEE VARIANT PARTS LIST)					

Note:

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

Note:

Les composants identifiés par un trame et une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

COMMON PARTS LISTING

A

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
R088	1-216-045-00	RES, CHIP	680 5% 1/10W	R246		VARIANT (SEE VARIANT PARTS LIST)	
R089	1-216-045-00	RES, CHIP	680 5% 1/10W	R247		VARIANT (SEE VARIANT PARTS LIST)	
R090	1-249-429-11	CARBON	10K 5% 1/4W	R248		VARIANT (SEE VARIANT PARTS LIST)	
R091	1-249-429-11	CARBON	10K 5% 1/4W	R249		VARIANT (SEE VARIANT PARTS LIST)	
R092	1-216-051-00	RES, CHIP	1K 5% 1/10W	R250		VARIANT (SEE VARIANT PARTS LIST)	
R093	1-249-425-11	CARBON	4.7K 5% 1/4W	R251	1-216-041-00	RES, CHIP 470 5% 1/10W	
R096	1-216-057-00	RES, CHIP	2.2K 5% 1/10W	R252	1-216-041-00	RES, CHIP 470 5% 1/10W	
R097	1-216-073-00	RES, CHIP	10K 5% 1/10W	R253	1-215-899-11	METAL OXIDE 15K 5% 2W F	
R099	1-249-425-11	CARBON	4.7K 5% 1/4W	R254	1-216-025-91	RES, CHIP 100 5% 1/10W	
R101	1-216-073-00	RES, CHIP	10K 5% 1/10W	R255	1-216-025-91	RES, CHIP 100 5% 1/10W	
R150	1-216-025-91	RES, CHIP	100 5% 1/10W	R256	1-249-425-11	CARBON 4.7K 5% 1/4W	
R151	1-216-025-91	RES, CHIP	100 5% 1/10W	R257	1-216-073-00	RES, CHIP 10K 5% 1/10W	
R201	1-216-113-00	RES, CHIP	470K 5% 1/10W	R260		VARIANT (SEE VARIANT PARTS LIST)	
R202		VARIANT (SEE VARIANT PARTS LIST)		R261		VARIANT (SEE VARIANT PARTS LIST)	
R204	1-216-022-00	RES, CHIP	75 5% 1/10W	R262		VARIANT (SEE VARIANT PARTS LIST)	
R205	1-247-895-91	CARBON	470K 5% 1/4W	R268		VARIANT (SEE VARIANT PARTS LIST)	
R206		VARIANT (SEE VARIANT PARTS LIST)		R269		VARIANT (SEE VARIANT PARTS LIST)	
R214		VARIANT (SEE VARIANT PARTS LIST)		R280	1-216-022-00	RES, CHIP 75 5% 1/10W	
R215		VARIANT (SEE VARIANT PARTS LIST)		R283		VARIANT (SEE VARIANT PARTS LIST)	
R216		VARIANT (SEE VARIANT PARTS LIST)		R284	1-216-295-91	SHORT	
R217		VARIANT (SEE VARIANT PARTS LIST)		R287		VARIANT (SEE VARIANT PARTS LIST)	
R218		VARIANT (SEE VARIANT PARTS LIST)		R288	1-216-295-91	SHORT	
R219		VARIANT (SEE VARIANT PARTS LIST)		R289	1-216-295-91	SHORT	
R220		VARIANT (SEE VARIANT PARTS LIST)		R290	1-216-025-91	RES, CHIP 100 5% 1/10W	
R221		VARIANT (SEE VARIANT PARTS LIST)		R291	1-216-065-91	RES, CHIP 2.2K 5% 1/10W	
R222		VARIANT (SEE VARIANT PARTS LIST)		R293	1-249-429-11	CARBON 10K 5% 1/4W	
R223		VARIANT (SEE VARIANT PARTS LIST)		R294	1-216-295-91	SHORT	
R224		VARIANT (SEE VARIANT PARTS LIST)		R295	1-216-295-91	SHORT	
R225		VARIANT (SEE VARIANT PARTS LIST)		R297	1-247-807-31	CARBON 100 5% 1/4W	
R226		VARIANT (SEE VARIANT PARTS LIST)		R298	1-216-025-91	RES, CHIP 100 5% 1/10W	
R227		VARIANT (SEE VARIANT PARTS LIST)		R301	1-216-295-91	SHORT	
R228		VARIANT (SEE VARIANT PARTS LIST)		R303		VARIANT (SEE VARIANT PARTS LIST)	
R229		VARIANT (SEE VARIANT PARTS LIST)		R304	1-216-073-00	RES, CHIP 10K 5% 1/10W	
R230		VARIANT (SEE VARIANT PARTS LIST)		R306	1-216-675-11	METAL CHIP 10K 0.5% 1/10W	
R231		VARIANT (SEE VARIANT PARTS LIST)		R307	1-216-065-91	RES, CHIP 4.7K 5% 1/10W	
R232		VARIANT (SEE VARIANT PARTS LIST)		R308	1-247-887-00	CARBON 220K 5% 1/4W	
R233		VARIANT (SEE VARIANT PARTS LIST)		R309	1-247-863-91	CARBON 22K 5% 1/4W	
R234		VARIANT (SEE VARIANT PARTS LIST)		R310	1-216-049-91	RES, CHIP 1K 5% 1/10W	
R235		VARIANT (SEE VARIANT PARTS LIST)		R312	1-216-033-00	RES, CHIP 220 5% 1/10W	
R237		VARIANT (SEE VARIANT PARTS LIST)		R313	1-247-815-91	CARBON 220 5% 1/4W	
R238		VARIANT (SEE VARIANT PARTS LIST)		R314	1-247-815-91	CARBON 220 5% 1/4W	
R239	1-247-815-91	CARBON	220 5% 1/4W	R315	1-247-815-91	CARBON 220 5% 1/4W	
R240	1-249-417-11	CARBON	1K 5% 1/4W	R316	1-216-025-91	RES, CHIP 100 5% 1/10W	
R241		VARIANT (SEE VARIANT PARTS LIST)		R317	1-249-421-11	CARBON 2.2K 5% 1/4W	
R242	1-249-434-11	CARBON	27K 5% 1/4W	R318	1-216-073-00	RES, CHIP 10K 5% 1/10W	
R243	1-216-689-11	RES, CHIP	39K 5% 1/10W	R319	1-216-073-00	RES, CHIP 10K 5% 1/10W	
R245		VARIANT (SEE VARIANT PARTS LIST)		R321	1-216-069-00	RES, CHIP 6.8K 5% 1/10W	

A COMMON PARTS LISTING

Note:

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

Note:

Les composants identifiés par un trame et une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
R322	1-216-073-00	RES, CHIP	10K 5% 1/10W	R390	1-216-025-91	RES, CHIP	100 5% 1/10W
R323	1-249-415-11	CARBON	680 5% 1/4W	R391	1-216-049-91	RES, CHIP	1K 5% 1/10W
R324	1-249-425-11	CARBON	4.7K 5% 1/4W	R392	1-216-025-91	RES, CHIP	100 5% 1/10W
R325	1-216-097-91	RES, CHIP	100K 5% 1/10W	R393	1-216-049-91	RES, CHIP	1K 5% 1/10W
R329	1-216-025-91	RES, CHIP	100 5% 1/10W	R394	1-216-025-91	RES, CHIP	100 5% 1/10W
R330	1-216-025-91	RES, CHIP	100 5% 1/10W	R395		VARIANT (SEE VARIANT PARTS LIST)	
R331	1-216-025-91	RES, CHIP	100 5% 1/10W	R396		VARIANT (SEE VARIANT PARTS LIST)	
R341		VARIANT (SEE VARIANT PARTS LIST)		R397		VARIANT (SEE VARIANT PARTS LIST)	
R342		VARIANT (SEE VARIANT PARTS LIST)		R400		VARIANT (SEE VARIANT PARTS LIST)	
R343		VARIANT (SEE VARIANT PARTS LIST)		R402		VARIANT (SEE VARIANT PARTS LIST)	
R344		VARIANT (SEE VARIANT PARTS LIST)		R403		VARIANT (SEE VARIANT PARTS LIST)	
R347	1-216-045-00	RES, CHIP	680 5% 1/10W	R404		VARIANT (SEE VARIANT PARTS LIST)	
R350		VARIANT (SEE VARIANT PARTS LIST)		R432		VARIANT (SEE VARIANT PARTS LIST)	
R351		VARIANT (SEE VARIANT PARTS LIST)		R433		VARIANT (SEE VARIANT PARTS LIST)	
R352		VARIANT (SEE VARIANT PARTS LIST)		R501	1-249-421-11	CARBON	2.2K 5% 1/4W
R353	1-216-295-91	SHORT		R502 Δ	1-215-923-00	METAL OXIDE	10K 5% 3W F
R354		VARIANT (SEE VARIANT PARTS LIST)		R508 Δ	1-215-864-00	METAL OXIDE	150 5% 1W F
R356	1-216-057-00	RES, CHIP	2.2K 5% 1/10W	R532	1-215-437-00	METAL	4.7K 1% 1/4W
R357		VARIANT (SEE VARIANT PARTS LIST)		R533	1-215-461-00	METAL	47K 1% 1/4W
R358		VARIANT (SEE VARIANT PARTS LIST)		R534	1-215-453-00	METAL	22K 1% 1/4W
R359		VARIANT (SEE VARIANT PARTS LIST)		R535	1-249-441-11	CARBON	100K 5% 1/4W
R360		VARIANT (SEE VARIANT PARTS LIST)		R541	1-216-065-91	RES,CHIP	4.7K 5% 1/10W
R361		VARIANT (SEE VARIANT PARTS LIST)		R542	1-249-429-11	CARBON	10K 5% 1/4W
R362		VARIANT (SEE VARIANT PARTS LIST)		R543	1-249-429-11	CARBON	10K 5% 1/4W
R363		VARIANT (SEE VARIANT PARTS LIST)		R544	1-216-377-11	METAL OXIDE	4.7 5% 2W F
R364		VARIANT (SEE VARIANT PARTS LIST)		R546	1-215-890-11	METAL OXIDE	470 5% 2W F
R365		VARIANT (SEE VARIANT PARTS LIST)		R547	1-249-385-11	CARBON	2.2 5% 1/4W F
R366		VARIANT (SEE VARIANT PARTS LIST)		R548	1-249-425-11	CARBON	4.7K 5% 1/4W
R367		VARIANT (SEE VARIANT PARTS LIST)		R549	1-216-073-00	RES, CHIP	10K 5% 1/10W
R368		VARIANT (SEE VARIANT PARTS LIST)		R552	1-247-887-00	CARBON	220K 5% 1/4W
R369		VARIANT (SEE VARIANT PARTS LIST)		R553	1-260-312-11	CARBON	47 5% 1/2W
R370		VARIANT (SEE VARIANT PARTS LIST)		R559	1-216-101-00	RES, CHIP	150K 5% 1/10W
R372		VARIANT (SEE VARIANT PARTS LIST)		R560	1-216-093-91	RES, CHIP	68K 5% 1/10W
R373		VARIANT (SEE VARIANT PARTS LIST)		R561	1-216-349-00	METAL OXIDE	1 5% 1W F
R374		VARIANT (SEE VARIANT PARTS LIST)		R562	1-216-349-00	METAL OXIDE	1 5% 1W F
R375		VARIANT (SEE VARIANT PARTS LIST)		R565	1-216-081-00	RES, CHIP	22K 5% 1/10W
R376		VARIANT (SEE VARIANT PARTS LIST)		R566	1-216-077-00	RES, CHIP	15K 5% 1/10W
R377		VARIANT (SEE VARIANT PARTS LIST)		R567	1-216-065-91	RES, CHIP	4.7K 5% 1/10W
R378		VARIANT (SEE VARIANT PARTS LIST)		R568	1-216-121-91	RES, CHIP	1M 5% 1/10W
R379		VARIANT (SEE VARIANT PARTS LIST)		R571 Δ	1-216-369-00	METAL OXIDE	1 5% 2W F
R380		VARIANT (SEE VARIANT PARTS LIST)		R572 Δ	1-249-421-11	CARBON	2.2K 5% 1/4W
R382		VARIANT (SEE VARIANT PARTS LIST)		R573 Δ	1-247-895-91	CARBON	470K 5% 1/4W
R383	1-216-057-00	RES, CHIP	2.2K 5% 1/10W	R574 Δ	1-249-417-11	CARBON	1K 5% 1/4W F
R384	1-216-057-00	RES, CHIP	2.2K 5% 1/10W	R575 Δ	1-247-891-00	CARBON	330K 5% 1/4W
R385	1-216-057-00	RES, CHIP	2.2K 5% 1/10W	R576 Δ	1-249-441-11	CARBON	100K 5% 1/4W
R387		VARIANT (SEE VARIANT PARTS LIST)		R577	1-249-432-11	CARBON	18K 5% 1/4W
R388		VARIANT (SEE VARIANT PARTS LIST)		R578	1-216-467-11	METAL OXIDE	56K 5% 2W F

C COMPLETE PARTS LISTING

Note:

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

Note:

Les composants identifiés par un trame et une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

REF. NO. PART NO. DESCRIPTION REMARK

C

- * A-1331-917-A C MOUNTED PC BOARD
- 4-382-854-11 SCREW (M3X10), P, SW (+)

CAPACITOR

C1751	1-107-652-11	ELECT	10 μ F	20%	250V
C1752	1-162-114-00	CERAMIC	0.0047 μ F		2KV
C1755	1-107-667-11	ELECT	2.2 μ F	20%	160V

CONNECTOR

CN1751*	1-564-509-11	PLUG CONNECTOR 6P
CN1752*	1-564-508-11	PLUG CONNECTOR 5P
CN1753	1-695-915-11	TAB (CONTACT)
CN1754	1-695-915-11	TAB (CONTACT)

DIODE

D1754	8-719-901-83	DIODE 1SS83
D1755	8-719-901-83	DIODE 1SS83
D1756	8-719-901-83	DIODE 1SS83
D1758	8-719-302-43	DIODE EL1Z

IC

IC1751	8-759-562-43	IC TDA6108JFN1B
--------	--------------	-----------------

JACK

J1751 Δ	1-251-688-11	SOCKET, CRT
----------------	--------------	-------------

COIL

L1751	1-408-613-31	INDUCTOR	68 μ H
-------	--------------	----------	------------

REF. NO. PART NO. DESCRIPTION REMARK

RESISTOR

R1756	1-260-099-11	CARBON	1K	5%	1/2W
R1757	1-260-099-11	CARBON	1K	5%	1/2W
R1758	1-260-099-11	CARBON	1K	5%	1/2W
R1759	1-260-087-11	CARBON	100	5%	1/2W
R1760	1-260-123-11	CARBON	100K	5%	1/2W
R1761	1-216-392-11	METAL OXIDE	1.8	5%	3W F
R1763	1-247-807-31	CARBON	100	5%	1/4W
R1764	1-247-807-31	CARBON	100	5%	1/4W
R1765	1-247-807-31	CARBON	100	5%	1/4W
R1770	1-260-132-11	CARBON	560K	5%	1/2W

Note:

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

Note:

Les composants identifiés par un trame et une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

A**BOARD VARIANT PARTS LIST**

The parts on this page belong to the following model(s) only:

KV-20M42

REF. NO.	PART NO.	DESCRIPTION	REMARK
----------	----------	-------------	--------

**A BOARD VARIANT LIST:
KV-20M42****CAPACITOR**

C234	1-126-964-11	ELECT	10 μ F	20%	50V
C260	1-126-960-11	ELECT	1 μ F	20%	50V
C418	1-126-964-11	ELECT	10 μ F	20%	50V
C601	Δ 1-136-311-51	FILM	0.47 μ F	20%	125V
C613	1-117-893-11	ELECT	470 μ F	20%	250V
C638	1-136-311-11	FILM	0.47 μ F	20%	125V

DIODE

D215	8-719-110-17	DIODE RD10ESB2
------	--------------	----------------

IC

IC400	8-759-490-18	IC TDA7056B/N1
IC601	Δ 8-749-015-60	IC STR-F6624

JACK

J201	1-580-441-71	JACK, PIN 2P
J202	1-580-441-41	JACK, PIN 2P

IC LINK

PS201	Δ 1-532-637-00	LINK, IC 1A/150V
-------	-----------------------	------------------

TRANSISTOR

Q202	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX
------	--------------	---------------------------

RESISTOR

R231	1-216-073-00	RES,CHIP	10K	5%	1/10W
R235	1-208-794-11	RES, CHIP	3.3K	0.5%	1/10W
R246	1-216-295-91	SHORT			
R260	1-216-097-91	RES, CHIP	100K	5%	1/10W
R261	1-216-097-91	RES, CHIP	100K	5%	1/10W
R262	1-216-025-91	RES, CHIP	100	5%	1/10W
R269	1-216-067-00	RES, CHIP	5.6K	5%	1/10W
R400	1-249-438-11	CARBON	56K	5%	1/4W
R432	1-249-435-11	CARBON	33K	5%	1/4W
R433	1-216-083-00	RES, CHIP	27K	5%	1/10W
R651	Δ 1-219-513-11	CARBON	4.7M	5%	1/2W
R664	1-215-483-00	METAL	390K	1%	1/4W

REF. NO.	PART NO.	DESCRIPTION	REMARK
----------	----------	-------------	--------

TRANSFORMER

T603	Δ 1-433-816-11	TRANSFORMER
------	-----------------------	-------------

THERMISTOR

THP601	1-810-597-11	THERMISTOR, POSITIVE
--------	--------------	----------------------

TUNER

TU101	Δ 8-598-430-00	TUNER, FSS BTF-FA401
-------	-----------------------	----------------------

VARISTOR

VDR601	Δ 1-803-585-11	VARISTOR ,ERZV10D271
--------	-----------------------	----------------------

A

BOARD VARIANT PARTS LIST

The parts on this page belong to the following model(s) only:

KV-21MB42C/21MB42M/21MB42P

Note:

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

Note:

Les composants identifiés par un trame et une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

REF. NO.	PART NO.	DESCRIPTION	REMARK
A BOARD VARIANT LIST: KV-21MB42C/21MB42M/21MB42P			
CAPACITOR			
C234	1-126-964-11	ELECT	10 μ F 20% 50V
C260	1-126-960-11	ELECT	1 μ F 20% 50V
C418	1-126-964-11	ELECT	10 μ F 20% 50V
C601 Δ	1-136-311-61	FILM	0.47 μ F 20% 300V
C613	1-128-714-11	ELECT	330 μ F 20% 400V
C616	1-130-202-00	FILM	0.022 μ F 10% 400V
C617	1-107-824-11	CERAMIC	220pF 5% 1KV
DIODE			
D215	8-719-110-17	DIODE RD10ESB2	
D609	8-719-311-31	DIODE RU-1P	
IC			
IC400	8-759-490-18	IC TDA7056B/N1	
IC601 Δ	8-749-013-75	IC STR-F6654	
JACK			
J201	1-580-441-71	JACK, PIN 2P	
J202	1-580-441-41	JACK, PIN 2P	
IC LINK			
PS201 Δ	1-532-637-00	LINK, IC 1A/150V	
TRANSISTOR			
Q202	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
RESISTOR			
R231	1-216-073-00	RES,CHIP	10K 5% 1/10W
R235	1-208-794-11	RES, CHIP	3.3K 0.50% 1/10W
R246	1-216-295-91	SHORT	
R260	1-216-097-91	RES, CHIP	100K 5% 1/10W
R261	1-216-097-91	RES, CHIP	100K 5% 1/10W
R262	1-216-025-91	RES, CHIP	100 5% 1/10W
R269	1-216-069-00	RES, CHIP	6.8K 5% 1/10W
R400	1-249-438-11	CARBON	56K 5% 1/4W
R432	1-249-435-11	CARBON	33K 5% 1/4W
R433	1-216-083-00	RES, CHIP	27K 5% 1/10W

REF. NO.	PART NO.	DESCRIPTION	REMARK
R651 Δ	1-247-289-00	CARBON	8.2M 5% 1W
R652	1-202-961-11	CEMENTED	1.8 5% 10W
R658	1-215-929-11	METAL OXIDE	100K 5% 3W F
R664	1-215-479-00	METAL	270K 1% 1/4W
R698	1-215-479-00	METAL	270K 1% 1/4W
TRANSFORMER			
T603 Δ	1-433-817-11	TRANSFORMER	
THERMISTOR			
THP601	1-803-540-11	THERMISTOR	
TUNER			
TU101 Δ	8-598-430-00	TUNER, FSS BTF-FA401	
VARISTOR			
VDR601 Δ	1-803-585-11	VARISTOR ,ERZV10D271	

Note:

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

Note:

Les composants identifiés par un trame et une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

A**BOARD VARIANT PARTS LIST**

The parts on this page belong to the following model(s) only:

KV-21ME42/42C

REF. NO.	PART NO.	DESCRIPTION	REMARK
A BOARD VARIANT LIST: KV-21ME42/42C			
<u>CAPACITOR</u>			
C216	1-126-959-11	ELECT	0.47 μ F 20% 50V
C220	1-126-941-11	ELECT	470 μ F 20% 25V
C234	1-126-964-11	ELECT	10 μ F 20% 50V
C260	1-126-960-11	ELECT	1 μ F 20% 50V
C418	1-126-964-11	ELECT	10 μ F 20% 50V
C601	Δ 1-136-311-61	FILM	0.47 μ F 20% 300V
C613	1-128-714-11	ELECT	330 μ F 20% 400V
C616	1-130-202-00	FILM	0.022 μ F 10% 400V
C617	1-107-824-11	CERAMIC	220pF 5% 1KV
<u>CONNECTOR</u>			
CN401	* 1-564-505-11	PLUG, CONNECTOR 2P	
<u>DIODE</u>			
D215	8-719-110-17	DIODE RD10ESB2	
D609	8-719-311-31	DIODE RU-1P	
<u>IC</u>			
IC401	8-759-490-17	IC TDA7057AQ/N2	
IC601	Δ 8-749-013-75	IC STR-F6654	
<u>JACK</u>			
J201	1-580-441-71	JACK, PIN 2P	
J202	1-580-441-41	JACK, PIN 2P	
<u>IC LINK</u>			
PS201	Δ 1-532-984-11	LINK, IC 2A/90V	
<u>TRANSISTOR</u>			
Q202	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
<u>RESISTOR</u>			
R231	1-216-073-00	RES,CHIP	10K 5% 1/10W
R235	1-208-794-11	RES, CHIP	3.3K 0.50% 1/10W
R237	1-247-815-91	CARBON	220 5% 1/4W

REF. NO.	PART NO.	DESCRIPTION	REMARK
R238	1-249-417-11	CARBON	1K 5% 1/4W
R245	1-216-295-91	SHORT	
R246	1-216-295-91	SHORT	
R260	1-216-097-91	RES, CHIP	100K 5% 1/10W
R261	1-216-097-91	RES, CHIP	100K 5% 1/10W
R262	1-216-025-91	RES, CHIP	100 5% 1/10W
R269	1-208-794-11	RES, CHIP	3.3K 0.50% 1/10W
R400	1-247-863-91	CARBON	22K 5% 1/4W
R432	1-249-430-11	CARBON	12K 5% 1/4W
R433	1-216-075-00	RES, CHIP	12K 5% 1/10W
R651	Δ 1-247-289-00	CARBON	8.2M 5% 1W
R652	1-202-961-11	CEMENTED	1.8 5% 10W
R658	1-215-929-11	METAL OXIDE	100K 5% 3W F
R664	1-215-479-00	METAL	270K 1% 1/4W
R698	1-215-479-00	METAL	270K 1% 1/4W

TRANSFORMERT603 Δ 1-433-817-11 TRANSFORMER**THERMISTOR**

THP601 1-803-540-11 THERMISTOR

TUNERTU101 Δ 8-598-430-00 TUNER, FSS BTF-FA401

A

BOARD VARIANT PARTS LIST

The parts on this page belong to the following model(s) only:

KV-20S42/20S43

Note:

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

Note:

Les composants identifiés par un trame et une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

REF. NO.	PART NO.	DESCRIPTION	REMARK
A BOARD VARIANT LIST: KV-20S42/20S43			
CAPACITOR			
C202	1-126-960-11	ELECT	1 μ F 20% 50V
C206	1-126-960-11	ELECT	1 μ F 20% 50V
C214	1-126-957-11	ELECT	0.22 μ F 20% 50V
C216	1-126-959-11	ELECT	0.47 μ F 20% 50V
C220	1-126-941-11	ELECT	470 μ F 20% 25V
C233	1-126-960-11	ELECT	1 μ F 20% 50V
C234	1-126-964-11	ELECT	10 μ F 20% 50V
C418	1-126-964-11	ELECT	10 μ F 20% 50V
C601 Δ	1-136-311-51	FILM	0.47 μ F 20% 125V
C613	1-117-893-11	ELECT	470 μ F 20% 250V
C638	1-136-311-11	FILM	0.47 μ F 20% 125V
CONNECTOR			
CN401 *	1-564-505-11	PLUG CONNECTOR 2P	
DIODE			
D202	8-719-110-17	DIODE RD10ESB2	
D204	8-719-110-17	DIODE RD10ESB2	
IC			
IC200	8-759-450-93	IC NJM2521M-TE1	
IC401	8-759-490-17	IC TDA7057AQ/N2	
IC601 Δ	8-749-015-60	IC STR-F6624	
JACK			
J201	1-580-443-11	JACK, PIN 3P	
J202	1-691-110-11	JACK, PIN 3P	
IC LINK			
PS201 Δ	1-532-984-11	LINK, IC 2A/90V	
RESISTOR			
R010	1-216-033-00	RES, CHIP	220 5% 1/10W
R011	1-247-815-91	CARBON	220 5% 1/4W
R051	1-216-033-00	RES, CHIP	220 5% 1/10W
R070	1-249-425-11	CARBON	4.7K 5% 1/4W
R071	1-249-425-11	CARBON	4.7K 5% 1/4W
R202	1-216-113-00	RES, CHIP	470K 5% 1/10W

REF. NO.	PART NO.	DESCRIPTION	REMARK
R206	1-247-895-91	CARBON	470K 5% 1/4W
R230	1-216-075-00	RES, CHIP	12K 5% 1/10W
R231	1-216-075-00	RES, CHIP	12K 5% 1/10W
R234	1-208-794-11	RES, CHIP	3.3K 0.5% 1/10W
R235	1-208-794-11	RES, CHIP	3.3K 0.5% 1/10W
R237	1-247-815-91	CARBON	220 5% 1/4W
R238	1-249-417-11	CARBON	1K 5% 1/4W
R241	1-216-065-91	RES, CHIP	4.7K 5% 1/10W
R268	1-208-794-11	RES, CHIP	3.3K 0.5% 1/10W
R269	1-216-069-00	RES, CHIP	3.3K .5% 1/10W
R400	1-247-863-91	CARBON	22K 5% 1/4W
R432	1-249-430-11	CARBON	12K 5% 1/4W
R433	1-216-075-00	RES, CHIP	12K 5% 1/10W
R651 Δ	1-219-513-11	CARBON	4.7M 5% 1/2W
R664	1-215-483-00	METAL	390K 1% 1/4W
TRANSFORMER			
T603 Δ	1-433-816-11	TRANSFORMER	
THERMISTOR			
THP601	1-810-597-11	THERMISTOR, POSITIVE	
TUNER			
TU101 Δ	8-598-431-00	TUNER, FSS BTF-WA411	
VARISTOR			
VDR601 Δ	1-803-585-11	VARISTOR, ERZV10D271	

Note:

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

Note:

Les composants identifiés par un trame et une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

A**BOARD VARIANT PARTS LIST**

The parts on this page belong to the following model(s) only:

KV-21SB42C/21SB42M

REF. NO.	PART NO.	DESCRIPTION	REMARK			
A BOARD VARIANT LIST: KV-21SB42C/21SB42M						
<u>CAPACITOR</u>						
C202	1-126-960-11	ELECT	1 μ F	20%	50V	
C206	1-126-960-11	ELECT	1 μ F	20%	50V	
C214	1-126-957-11	ELECT	0.22 μ F	20%	50V	
C216	1-126-959-11	ELECT	0.47 μ F	20%	50V	
C220	1-126-941-11	ELECT	470 μ F	20%	25V	
C233	1-126-960-11	ELECT	1 μ F	20%	50V	
C234	1-126-964-11	ELECT	10 μ F	20%	50V	
C418	1-126-964-11	ELECT	10 μ F	20%	50V	
C601	Δ 1-136-311-61	FILM	0.47 μ F	20%	300V	
C613	1-128-714-11	CAPACITOR	330 μ F		400V	
C616	1-130-202-00	FILM	0.022 μ F	10%	400V	
C617	1-107-824-11	CERAMIC	220pF	5%	1KV	
<u>CONNECTOR</u>						
CN401	* 1-564-505-11	PLUG CONNECTOR 2P				
<u>DIODE</u>						
D202	8-719-110-17	DIODE RD10ESB2				
D204	8-719-110-17	DIODE RD10ESB2				
D609	8-719-311-31	DIODE RU-1P				
<u>IC</u>						
IC200	8-759-450-93	IC NJM2521M-TE1				
IC401	8-759-490-17	IC TDA7057AQ/N2				
IC601	Δ 8-749-013-75	IC STR-F6654				
<u>JACK</u>						
J201	1-580-443-11	JACK, PIN 3P				
J202	1-691-110-11	JACK, PIN 3P				
<u>IC LINK</u>						
PS201	Δ 1-532-984-11	LINK, IC 2A/90V				
<u>RESISTOR</u>						
R010	1-216-033-00	RES, CHIP	220	5%	1/10W	
R011	1-247-815-91	CARBON	220	5%	1/4W	
R051	1-216-033-00	RES, CHIP	220	5%	1/10W	

REF. NO.	PART NO.	DESCRIPTION	REMARK			
R070	1-249-425-11	CARBON	4.7K	5%	1/4W	
R071	1-249-425-11	CARBON	4.7K	5%	1/4W	
R202	1-216-113-00	RES, CHIP	470K	5%	1/10W	
R206	1-247-895-91	CARBON	470K	5%	1/4W	
R230	1-216-075-00	RES, CHIP	12K	5%	1/10W	
R231	1-216-075-00	RES, CHIP	12K	5%	1/10W	
R234	1-208-794-11	RES, CHIP	3.3K	0.5%	1/10W	
R235	1-208-794-11	RES, CHIP	3.3K	0.5%	1/10W	
R237	1-247-815-91	CARBON	220	5%	1/4W	
R238	1-249-417-11	CARBON	1K	5%	1/4W	
R241	1-216-065-91	RES, CHIP	4.7K	5%	1/10W	
R268	1-208-794-11	RES, CHIP	3.3K	0.5%	1/10W	
R269	1-208-794-11	RES, CHIP	3.3K	0.5%	1/10W	
R400	1-247-863-91	CARBON	22K	5%	1/4W	
R432	1-249-430-11	CARBON	12K	5%	1/4W	
R433	1-216-075-00	RES, CHIP	12K	5%	1/10W	
R651	Δ 1-247-289-00	CARBON	8.2M	5%	1W	
R652	1-202-961-11	CEMENTED	1.8	5%	10W	
R658	1-215-929-11	METAL OXIDE	100K	5%	3W F	
R664	1-215-479-00	METAL	270K	1%	1/4W	
R698	1-215-479-00	METAL	270K	1%	1/4W	
<u>TRANSFORMER</u>						
T603	Δ 1-433-817-11	TRANSFORMER				
<u>THERMISTOR</u>						
THP601	1-803-540-11	THERMISTOR				
<u>TUNER</u>						
TU101	Δ 8-598-431-00	TUNER, FSS BTF-WA411				
<u>VARISTOR</u>						
VDR601	Δ 1-803-587-11	VARISTOR, ERZV10D471				

A

BOARD VARIANT PARTS LIST

The parts on this page belong to the following model(s) only:

KV-21SE42/21SE42C

Note:

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

Note:

Les composants identifiés par un trame et une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

REF. NO.	PART NO.	DESCRIPTION	REMARK
A BOARD VARIANT LIST: KV-21SE42/21SE42C			
CAPACITOR			
C202	1-126-960-11	ELECT	1MF 20% 50V
C206	1-126-960-11	ELECT	1MF 20% 50V
C214	1-126-957-11	ELECT	0.22MF 20% 50V
C216	1-126-959-11	ELECT	0.47MF 20% 50V
C220	1-126-941-11	ELECT	470MF 20% 25V
C233	1-126-960-11	ELECT	1MF 20% 50V
C234	1-126-964-11	ELECT	10MF 20% 50V
C418	1-126-964-11	ELECT	10MF 20% 50V
C601 Δ	1-136-311-61	FILM	0.47 μ F 20% 300V
C613	1-128-714-11	CAPACITOR	330 μ F 20% 400V
C616	1-130-202-00	FILM	0.022 μ F 10% 400V
C617	1-107-824-11	CERAMIC	220pF 5% 1KV
CONNECTOR			
CN401 *	1-564-505-11	PLUG, CONNECTOR 2P	
DIODE			
D202	8-719-110-17	DIODE RD10ESB2	
D204	8-719-110-17	DIODE RD10ESB2	
D609	8-719-311-31	DIODE RU-1P	
IC			
IC200	8-759-450-93	IC NJM2521M-TE1	
IC401	8-759-490-17	IC TDA7057AQ/N2	
IC601 Δ	8-749-013-75	IC STR-F6654	
JACK			
J201	1-580-443-11	JACK, PIN 3P	
J202	1-691-110-11	JACK, PIN 3P	
IC LINK			
PS201 Δ	1-532-984-11	LINK, IC 2A/90V	
RESISTOR			
R010	1-216-033-00	RES, CHIP	220 5% 1/10W
R011	1-247-815-91	CARBON	220 5% 1/4W
R051	1-216-033-00	RES, CHIP	220 5% 1/10W
R070	1-249-425-11	CARBON	4.7K 5% 1/4W

REF. NO.	PART NO.	DESCRIPTION	REMARK
R071	1-249-425-11	CARBON	4.7K 5% 1/4W
R202	1-216-113-00	RES, CHIP	470K 5% 1/10W
R206	1-247-895-91	CARBON	470K 5% 1/4W
R230	1-216-075-00	RES, CHIP	12K 5% 1/10W
R231	1-216-075-00	RES, CHIP	12K 5% 1/10W
R234	1-208-794-11	RES, CHIP	3.3K 0.5% 1/10W
R235	1-208-794-11	RES, CHIP	3.3K 0.5% 1/10W
R237	1-247-815-91	CARBON	220 5% 1/4W
R238	1-249-417-11	CARBON	1K 5% 1/4W
R241	1-216-065-91	RES, CHIP	4.7K 5% 1/10W
R268	1-208-794-11	RES, CHIP	3.3K 0.5% 1/10W
R269	1-208-794-11	RES, CHIP	3.3K 0.5% 1/10W
R400	1-247-863-91	CARBON	22K 5% 1/4W
R432	1-249-430-11	CARBON	12K 5% 1/4W
R433	1-216-075-00	RES, CHIP	12K 5% 1/10W
R651 Δ	1-247-289-00	CARBON	8.2M 5% 1W
R652	1-202-961-11	CEMENTED	1.8 5% 10W
R658	1-215-929-11	METAL OXIDE	100K 5% 3W F
R664	1-215-479-00	METAL	270K 1% 1/4W
R698	1-215-479-00	METAL	270K 1% 1/4W
TRANSFORMER			
T603 Δ	1-433-817-11	TRANSFORMER	
THERMISTOR			
THP601	1-803-540-11	THERMISTOR	
TUNER			
TU101 Δ	8-598-431-00	TUNER, FSS BTF-WA411	
VARISTOR			
VDR601 Δ	1-803-587-11	VARISTOR, ERZV10D471	

Note:

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

Note:

Les composants identifiés par un trame et une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

A**BOARD VARIANT PARTS LIST**

The parts on this page belong to the following model(s) only:

KV-21SE82/21SE82C

REF. NO.	PART NO.	DESCRIPTION	REMARK			
A BOARD VARIANT LIST: KV-21SE82/21SE82C						
CAPACITOR						
C202	1-126-960-11	ELECT	1 μ F	20%	50V	
C206	1-126-960-11	ELECT	1 μ F	20%	50V	
C207	1-126-959-11	ELECT	0.47 μ F	20%	50V	
C208	1-126-959-11	ELECT	0.47 μ F	20%	50V	
C209	1-126-963-11	ELECT	4.7 μ F	20%	50V	
C211	1-126-964-11	ELECT	10 μ F	20%	50V	
C212	1-126-963-11	ELECT	4.7 μ F	20%	50V	
C213	1-126-964-11	ELECT	10 μ F	20%	50V	
C214	1-126-957-11	ELECT	0.22 μ F	20%	50V	
C216	1-126-959-11	ELECT	0.47 μ F	20%	50V	
C220	1-126-941-11	ELECT	470 μ F	20%	25V	
C229	1-163-021-91	CERAMIC CHIP	0.01 μ F	10%	50V	
C233	1-126-960-11	ELECT	1 μ F	20%	50V	
C304	1-163-038-91	CERAMIC CHIP	0.1 μ F		25V	
C307	1-126-964-11	ELECT	10 μ F	20%	50V	
C340	1-126-960-11	ELECT	1 μ F	20%	50V	
C348	1-163-003-11	CERAMIC CHIP	330pF	10%	50V	
C350	1-163-021-91	CERAMIC CHIP	0.01 μ F	10%	50V	
C351	1-126-964-11	ELECT	10 μ F	20%	50V	
C352	1-163-021-91	CERAMIC CHIP	0.01 μ F	10%	50V	
C353	1-163-038-91	CERAMIC CHIP	0.1 μ F		25V	
C354	1-163-038-91	CERAMIC CHIP	0.1 μ F		25V	
C355	1-164-222-11	CERAMIC CHIP	0.22 μ F		25V	
C356	1-163-038-91	CERAMIC CHIP	0.1 μ F		25V	
C357	1-163-021-91	CERAMIC CHIP	0.01 μ F	10%	50V	
C358	1-104-664-11	ELECT	47 μ F	20%	25V	
C359	1-163-021-91	CERAMIC CHIP	0.01 μ F	10%	50V	
C360	1-163-021-91	CERAMIC CHIP	0.01 μ F	10%	50V	
C361	1-163-037-11	CERAMIC CHIP	0.022 μ F	10%	50V	
C362	1-126-964-11	ELECT	10 μ F	20%	50V	
C400	1-126-963-11	ELECT	4.7 μ F	20%	50V	
C401	1-126-956-91	ELECT	0.1 μ F	20%	50V	
C402	1-163-017-00	CERAMIC CHIP	0.0047 μ F	10%	50V	
C403	1-126-963-11	ELECT	4.7 μ F	20%	50V	
C404	1-126-963-11	ELECT	4.7 μ F	20%	50V	
C405	1-126-963-11	ELECT	4.7 μ F	20%	50V	
C406	1-126-963-11	ELECT	4.7 μ F	20%	50V	
C407	1-126-964-11	ELECT	10 μ F	20%	50V	
C410	1-126-963-11	ELECT	4.7 μ F	20%	50V	
C411	1-126-956-91	ELECT	0.1 μ F	20%	50V	
C412	1-130-495-00	FILM	0.1 μ F	5%	50V	

REF. NO.	PART NO.	DESCRIPTION	REMARK			
C413	1-126-967-11	ELECT	47 μ F	20%	50V	
C414	1-163-017-00	CERAMIC CHIP	0.0047 μ F	10%	50V	
C415	1-126-956-91	ELECT	0.1 μ F	20%	50V	
C416	1-126-963-11	ELECT	4.7 μ F	20%	50V	
C418	1-126-963-11	ELECT	4.7 μ F	20%	50V	
C601	Δ 1-136-311-61	FILM	0.47 μ F	20%	300V	
C613	1-128-713-11	CAPACITOR	330 μ F	20%	400V	
C616	1-130-202-00	FILM	0.022 μ F	10%	400V	
C617	1-107-824-11	CERAMIC	220pF	5%	1KV	
CONNECTOR						
CN401	* 1-564-505-11	PLUG, CONNECTOR 2P				
DIODE						
D202	8-719-110-17	DIODE RD10ESB2				
D204	8-719-110-17	DIODE RD10ESB2				
D206	8-719-110-17	DIODE RD10ESB2				
D207	8-719-109-66	DIODE RD3.3ESB2				
D280	8-719-110-17	DIODE RD10ESB2				
D609	8-719-311-31	DIODE RU-1P				
IC						
IC200	8-759-450-93	IC NJM2521M-TE1				
IC202	8-759-100-96	IC NJM4558M-TE2				
IC302	8-752-385-80	IC CXD2073S				
IC401	8-759-490-17	IC TDA7057AQ/N2				
IC402	8-752-072-39	IC CXA2021S				
IC601	Δ 8-749-013-75	IC STR-F6654				
JACK						
J200	1-580-441-61	JACK, PIN 2P				
J201	1-580-443-11	JACK, PIN 3P				
J202	1-691-110-11	JACK, PIN 3P				
COIL						
L351	1-414-271-11	INDUCTOR	47 μ H			
L352	1-414-267-11	INDUCTOR	10 μ H			
IC LINK						
PS201	Δ 1-532-984-11	LINK, IC 2A/90V				

A

BOARD VARIANT PARTS LIST

The parts on this page belong to the following model(s) only:

KV-21SE82/82C

Note:

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

Note:

Les composants identifiés par un trame et une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

REF. NO.	PART NO.	DESCRIPTION	REMARK
A BOARD VARIANT LIST: KV-21SE82/82C			
TRANSISTOR			
Q200	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q201	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q206	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q207	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q340	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q350	8-729-216-22	TRANSISTOR 2SA1162-G	
Q351	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q352	8-729-216-22	TRANSISTOR 2SA1162-G	
Q353	8-729-216-22	TRANSISTOR 2SA1162-G	
Q354	8-729-216-22	TRANSISTOR 2SA1162-G	
Q355	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q356	8-729-216-22	TRANSISTOR 2SA1162-G	
Q357	8-729-216-22	TRANSISTOR 2SA1162-G	
Q358	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q359	8-729-216-22	TRANSISTOR 2SA1162-G	
Q380	8-729-216-22	TRANSISTOR 2SA1162-G	
RESISTOR			
R010	1-216-033-00	RES, CHIP	220 5% 1/10W
R011	1-247-815-91	CARBON	220 5% 1/4W
R051	1-216-033-00	RES, CHIP	220 5% 1/10W
R053	1-247-815-91	CARBON	220 5% 1/4W
R070	1-249-425-11	CARBON	4.7K 5% 1/4W
R071	1-249-425-11	CARBON	4.7K 5% 1/4W
R080	1-249-429-11	CARBON	10K 5% 1/4W
R202	1-216-113-00	RES, CHIP	470K 5% 1/10W
R206	1-247-895-91	CARBON	470K 5% 1/4W
R214	1-216-113-00	RES, CHIP	470K 5% 1/10W
R215	1-216-033-00	RES, CHIP	220 5% 1/10W
R216	1-216-113-00	RES, CHIP	470K 5% 1/10W
R217	1-216-033-00	RES, CHIP	220 5% 1/10W
R218	1-216-067-00	RES, CHIP	5.6K 5% 1/10W
R219	1-216-073-00	RES, CHIP	10K 5% 1/10W
R220	1-216-073-00	RES, CHIP	10K 5% 1/10W
R221	1-216-073-00	RES, CHIP	10K 5% 1/10W
R222	1-216-067-00	RES, CHIP	5.6K 5% 1/10W
R223	1-249-429-11	CARBON	10K 5% 1/4W
R224	1-249-429-11	CARBON	10K 5% 1/4W
R225	1-216-073-00	RES, CHIP	10K 5% 1/10W
R226	1-216-065-91	RES, CHIP	4.7K 5% 1/10W
R227	1-216-097-91	RES, CHIP	100K 5% 1/10W
R228	1-216-065-91	RES, CHIP	4.7K 5% 1/10W

REF. NO.	PART NO.	DESCRIPTION	REMARK
R229	1-216-097-91	RES, CHIP	100K 5% 1/10W
R232	1-216-073-00	RES, CHIP	10K 5% 1/10W
R233	1-216-073-00	RES, CHIP	10K 5% 1/10W
R234	1-216-057-00	RES, CHIP	2.2K 5% 1/10W
R235	1-216-057-00	RES, CHIP	2.2K 5% 1/10W
R237	1-247-815-91	CARBON	220 5% 1/4W
R238	1-249-417-11	CARBON	1K 5% 1/4W
R241	1-216-065-91	RES, CHIP	4.7K 5% 1/10W
R247	1-216-025-91	RES, CHIP	100 5% 1/10W
R248	1-216-025-91	RES, CHIP	100 5% 1/10W
R249	1-216-081-00	RES, CHIP	22K 5% 1/10W
R250	1-216-081-00	RES, CHIP	22K 5% 1/10W
R268	1-216-081-00	RES, CHIP	22K 5% 1/10W
R269	1-216-081-00	RES, CHIP	22K 5% 1/10W
R283	1-216-022-00	RES, CHIP	75 5% 1/10W
R287	1-216-065-91	RES, CHIP	4.7K 5% 1/10W
R303	1-216-025-91	RES, CHIP	100 5% 1/10W
R341	1-216-017-91	RES, CHIP	47 5% 1/10W
R342	1-216-097-91	RES, CHIP	100K 5% 1/10W
R343	1-216-073-00	RES, CHIP	10K 5% 1/10W
R344	1-216-061-00	RES, CHIP	3.3K 5% 1/10W
R350	1-208-766-11	RES, CHIP	220 0.5% 1/10W
R351	1-208-766-11	RES, CHIP	220 0.5% 1/10W
R352	1-208-794-11	RES, CHIP	3.3K 0.5% 1/10W
R354	1-208-794-11	RES, CHIP	3.3K 0.5% 1/10W
R357	1-216-091-00	RES, CHIP	56K 5% 1/10W
R358	1-216-043-91	RES, CHIP	560 5% 1/10W
R359	1-216-057-00	RES, CHIP	2.2K 5% 1/10W
R360	1-163-001-11	CERAMIC CHIP	220pF 10% 50V
R361	1-216-049-91	RES, CHIP	1K 5% 1/10W
R362	1-216-043-91	RES, CHIP	560 5% 1/10W
R363	1-216-037-00	RES, CHIP	330 5% 1/10W
R364	1-216-025-91	RES, CHIP	100 5% 1/10W
R365	1-216-295-91	SHORT	
R366	1-216-053-00	RES, CHIP	1.5K 5% 1/10W
R367	1-216-057-00	RES, CHIP	2.2K 5% 1/10W
R368	1-216-025-91	RES, CHIP	100 5% 1/10W
R369	1-216-045-00	RES, CHIP	680 5% 1/10W
R370	1-216-033-00	RES, CHIP	220 5% 1/10W
R372	1-216-035-00	RES, CHIP	270 5% 1/10W
R373	1-216-025-91	RES, CHIP	100 5% 1/10W
R374	1-216-025-91	RES, CHIP	100 5% 1/10W
R375	1-216-053-00	RES, CHIP	1.5K 5% 1/10W
R376	1-216-049-91	RES, CHIP	1K 5% 1/10W
R377	1-216-049-91	RES, CHIP	1K 5% 1/10W
R378	1-216-041-00	RES, CHIP	470 5% 1/10W
R379	1-216-049-91	RES, CHIP	1K 5% 1/10W

Note: □

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

Note:

Les composants identifiés par un trame et une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

A**BOARD VARIANT PARTS LIST
PACKAGING LIST & ACCESSORIES**

The variant parts on this page belong to the following model(s) only:

KV-21SE82/82C

REF. NO.	PART NO.	DESCRIPTION	REMARK			
A BOARD VARIANT LIST: KV-21SE82/82C						
R380	1-208-790-11	RES, CHIP	2.2K	0.5%	1/10W	
R382	1-216-053-00	RES, CHIP	1.5K	5%	1/10W	
R387	1-216-025-91	RES, CHIP	100	5%	1/10W	
R388	1-216-025-91	RES, CHIP	100	5%	1/10W	
R395	1-216-025-91	RES, CHIP	100	5%	1/10W	
R396	1-216-025-91	RES, CHIP	100	5%	1/10W	
R397	1-216-025-91	RES, CHIP	100	5%	1/10W	
R400	1-247-863-91	CARBON	22K	5%	1/4W	
R402	1-216-121-91	RES, CHIP	1M	5%	1/10W	
R403	1-247-815-91	CARBON	220	5%	1/4W	
R404	1-247-815-91	CARBON	220	5%	1/4W	
R432	1-249-428-11	CARBON	8.2K	5%	1/4W	
R651	Δ 1-247-289-00	CARBON	8.2M	5%	1W	
R652	1-202-961-11	CEMENTED	1.8	5%	10W	
R658	1-215-929-11	METAL OXIDE	100K	5%	3W	F
R664	1-215-479-00	METAL	270K	1%	1/4W	
R698	1-215-479-00	METAL	270K	1%	1/4W	

TRANSFORMERT603 Δ 1-433-817-11 TRANSFORMER**THERMISTOR**

THP601 1-803-540-11 THERMISTOR

TUNERTU101 Δ 8-598-431-00 TUNER, FSS BTF-WA411**VARISTOR**VDR601 Δ 1-803-587-11 VARISTOR, RZV10D471

REF. NO.	PART NO.	DESCRIPTION	REMARK
PACKAGING LIST AND ACCESSORIES			
1-417-182-11		CONVERTER (EAC-25)	
1-501-730-41		ANTENNA, TELESCOPIC	
3-866-075-41		MANUAL, INSTRUCTION (KV-21SE82/82C)	
3-866-072-21		MANUAL, INSTRUCTION (KV-20M42/S42/S43)	
3-866-073-41		MANUAL, INSTRUCTION (KV-21SB42C/42M/MB42C/42M/42P/ME42/42C/ SB42C/42M/21SE42/42C)	
1-475-801-11		REMOTE COMMANDER (RM-Y165) (KV-21SE82/21SE82C)	
1-475-757-11		REMOTE COMMANDER (RM-Y156) (KV-20M42/21MB42P/42C/42M/21ME42/42C)	
1-475-635-11		REMOTE COMMANDER (RM-Y155) (KV-20S42/21SB42M/42C/21SE42/42C)	
1-475-631-11		REMOTE COMMANDER (RM-Y156W) (KV-20S43)	
9-939-830-11		BATTERY COVER, REMOTE	
4-041-254-01		BAG, PROTECTION	
* 4-061-384-02		CUSHION, (UPPER) (ASSY) (KV-21SE82/82C)	
* 4-061-392-01		CUSHION, (UPPER) (ASSY) (KV-21ME42/42C/SE42/42C)	
* 4-062-747-01		CUSHION, (UPPER) (ASSY) (KV-20M42/S42/S43/21MB42C/42M/42P/SB42C/42M)	
* 4-061-383-02		CUSHION, (LOWER) (ASSY) (KV-21SE82/82C)	
* 4-061-391-01		CUSHION, (LOWER) (ASSY) (KV-21ME42/42C/SE42/42C)	
* 4-062-748-01		CUSHION, (LOWER) (ASSY) (KV-20M42/S42/S43/21MB42C/42M/42P/SB42C/42M)	
* 4-064-000-02		CARTON, INDIVIDUAL (KV-21SE82/82C)	
* 4-052-651-11		CARTON, INDIVIDUAL (KV-20M42/S42/S43)	
* 4-061-395-11		CARTON, INDIVIDUAL (KV-21ME42/42C/21SE42/42C)	
* 4-062-755-11		CARTON, INDIVIDUAL (KV-21MB42C/42M/42P/21SB42C/42M)	

9-965-855-01

Sony Corporation
Sony Technology Center
Product Quality Division
Service Promotion Department

English
99DS74399-1
Printed in U.S.A.
© 1999.4