

# SERVICE MANUAL

## BX1 CHASSIS

<u>MODEL</u>	<u>COMMANDER</u>	<u>DEST.</u>	<u>CHASSIS NO.</u>	<u>MODEL</u>	<u>COMMANDER</u>	<u>DEST.</u>	<u>CHASSIS NO.</u>
KV-21CL1K	RM-W100	OIRT	SCC-U92E-A				
KV-21CL10B	RM-W100	FR	SCC-U89D-A				
KV-21CL10E	RM-W100	ESP	SCC-U91D-A				
KV-21CL10K	RM-W100	OIRT	SCC-U92D-A				
KV-21CL10U	RM-W100	UK	SCC-U93C-A				
KV-21FQ10B	RM-W100	FR	SCC-U89B-A				
KV-21FQ10E	RM-W100	ESP	SCC-U91B-A				
KV-21FQ10K	RM-W100	OIRT	SCC-U92B-A				



KV-21FQ Models













KV-21CL Models



TRINITRON® COLOR TV  
**SONY®**

## SPECIFICATIONS

		Note
<b>TV system</b>	Depending on your country selection: B/G/H, D/K	KV-21FQ10E/FQ10K/CL10E/ CL10K/CL1K
	B/G/H, L, I, D/K	KV-21FQ10B/CL10B
	I	KV-21CL10U
<b>Color system</b>	PAL, SECAM, NTSC3.58, NTSC4.43	only Video In
<b>Intermediate frequency</b>	Mono-Standard F1-Video: 38.9MHz F1-Audio: 33.4MHz Multi-Standard F1-Audio I: 33.4MHz System B/G: F1-AudioII: 33.16 MHz	KV-21FQ10E/21CL10E (only Italy)
<b>Channel coverage</b>	VHF : E2 ~ E12 UHF : E21 ~ E69 CATV: S1 ~ S20 HYPER: S21 ~ S41 D/K: R1 ~ R12, R21 ~ R69	KV-21FQ10E/FQ10K/21CL10E CL10K/CL1K
	VHF : E2 ~ E12 UHF : E21 ~ E69 CATV: S1 ~ S20 HYPER: S21 ~ S41 L: F2 ~ F10, B-Q, F21 ~ F69 I: UHF B21 ~ B69 D/K: R1 ~ R12, R21 ~ R69	KV-21FQ10B/CL10B
	UHF: B21 ~ B69	KV-21CL10U
<b>Picture Tube</b>	Flat Display FD Trinitron	
<b>Rear Terminals</b>		
 1/ 	21-pin Scart connector (CENELEC standard) including audio / video input, RGB input, TV audio / video output	
 2/ 	21-pin Scart connector (CENELEC standard) including audio / video input, S video input, monitor audio / video output	except KV-21CL1K
<b>Front Terminals</b>		
 2  2 	video input – phono jack audio input – phono jack headphones jack	KV-21CL1K
 3  3 	video input – phono jack audio input – phono jack headphones jack	except KV-21CL1K
<b>Sound Output</b>	2 x 6W (music power) 2 x 3W (RMS)	KV-21CL1K
	2 x 10W (music power) 2 x 5W (RMS)	except KV-21CL1K
<b>Power Consumption</b>	66W	
<b>Standby Power Consumption</b>	< 1W	
<b>Dimension (w x h x d)</b>	589 x 463 x 479	KV-21FQ10E/FQ10K/FQ10B
	630 x 460 x 492	KV-21CL10E/CL10K/CL10B CL1K/CL10U
<b>Weight (kg)</b>	26	KV-21FQ10E/FQ10K/FQ10B
	25	KV-21CL10E/CL10K/CL10B CL1K/CL10U
<b>Other features</b>	Teletext, Fasttext, TOPtext Sleep Timer On Timer TV system Autodetection	except KV-21CL1K
	Teletext, Fasttext, TOPtext Sleep Timer On Timer	KV-21CL1K

Design and specifications are subject to change without notice.

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## INSTRUCTION MANUAL

## CAUTION

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

## WARNING !!

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

## SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARKED  $\triangle$  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.

## 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 RISQUE D'ELECTROCUTION PROVENANT D'UN CHÂSSIS SOUS TENTION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÉ LORS DE TOUT DÉPANNAGE LE CHÂSSIS DE CE RÉCEPTEUR EST DIRECTMENT RACCORDÉ À L'ALIMENTATION SECTEUR.

## ATTENTION AUX COMPOSANTS RELATIFS À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET PAR UNE MARQUE  $\triangle$  SUR LES SCHÉMAS DE PRINCIPE, LES VUES EXPLOSÉES ET LES LISTES DE PIÉCES SONT D'UNE IMPORTANCE CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT, NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÈCE EST INDIQUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY.

CAUTION

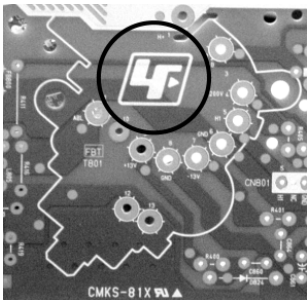
Lead Free Soldered Boards

The circuit boards listed below (Table 1) may have been processed using Lead Free Solder. The boards are identified by the LF logo . e.g A,C board (see example).

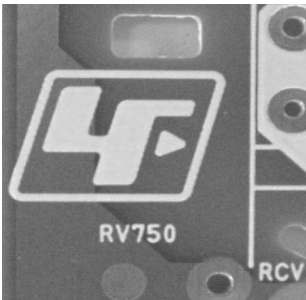
Board	Function
A	ONE CHIP PROCESSOR, DEFLECTION, POWER SUPPLY, AUDIO, TUNER, IF, JACK, SCART TERMINAL
C	RGB AMP

(Table 1)

example 1 (A Board)




example 2 (C Board)



The servicing of these boards requires special precautions to be taken as outlined below:

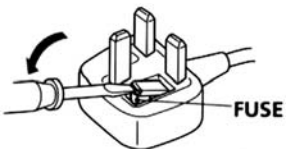
1. It is strongly recommended to use Sony Approved Lead Free Solder material in order to guarantee optimal quality of new solder joints.
2. Due to higher melting point of Lead Free Solder, the soldering iron tip temperature needs to be set to chip (350 degree centigrade) and lead component (380 degree centigrade) for not more than 4 seconds. This requires soldering equipment capable of accurate temperature control coupled with a good heat recovery characteristics.

WARNING  
(FOR EUROPE MODEL WITH “U” (UK) ONLY)  
(KV-21CL10U only)

The flexible mains lead is supplied to connected a B.S. 1363 fused plug having a fuse of 5 AMP rating. Should the fuse need to be replaced, use a 5 AMP FUSE approved by ASTA to BS 1362, i.e one that carries the  mark.

IF THE PLUG SUPPLIED WITH THIS APPLIANCE IS NOT SUITABLE FOR THE OUTLET SOCKETS IN YOUR HOME, IT SHOULD BE CUT OFF AND APPROPRIATE PLUG FITTED. THE PLUG SEVERED FROM THE MAINS LEAD MUST BE DESTROYED AS A PLUG WITH BARED WIRES IS DANGEROUS IF ENGAGED IN A LIVE SOCKET.

When an alternative type of plug is used, it should be fitted with a 5 AMP FUSE, otherwise the circuit should be protected by a 5 AMP FUSE at the distribution board.



How to replace the fuse?  
Open the fuse compartment with a screw driver blade and replace the fuse.

## SELF DIAGNOSTIC FUNCTION

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

### 1. DIAGNOSTIC TEST INDICATORS

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

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

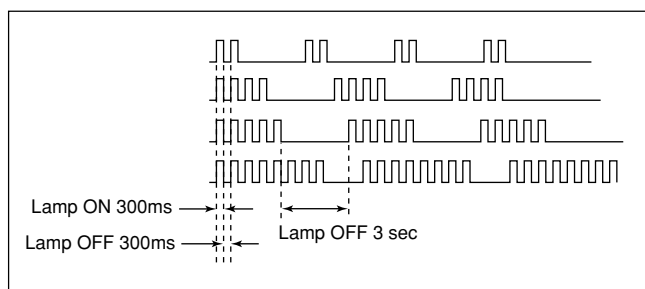
Diagnosis Item Description	No. of timer STANDBY (⏻) indicator flashes	Self-Diagnostic display/ Diagnosis result	Probable Cause Location	Detected Symptoms
Power does not turn on	Does not light	—	<ul style="list-style-type: none"> <li>Power cord is not plugged in.</li> <li>Fuse is burned out (F600) A board.</li> </ul>	<ul style="list-style-type: none"> <li>Power does not come on.</li> <li>No power is supplied on TV.</li> <li>AC Power supply is faulty.</li> </ul>
+B overcurrent (OCP)*	2 times	2:0 or 2:1 ~ 255	<ul style="list-style-type: none"> <li>H OUT (Q805) is shorted. (A board)</li> <li>IC751 is shorted. (C board)</li> </ul>	<ul style="list-style-type: none"> <li>Power does not come on.</li> <li>Load on power line is shorted.</li> </ul>
V-Protect	4 times	4:0 or 4:1 ~ 255	<ul style="list-style-type: none"> <li>+13V is not supplied. (A board)</li> <li>IC804 is faulty. (A board)</li> </ul>	<ul style="list-style-type: none"> <li>Has entered standby state after horizontal raster.</li> <li>Vertical deflection pulse is stopped.</li> <li>Power line is shorted or power supply is shorted.</li> </ul>
IK (AKB)	5 times	5:0 or 5:1 ~ 255	<ul style="list-style-type: none"> <li>Video OUT (IC1545) is faulty. (A board)</li> <li>IC001 is faulty. (A board)</li> <li>Screen (G2) is improperly adjusted.**</li> </ul>	<ul style="list-style-type: none"> <li>No raster is generated.</li> <li>CRT Cathode current detection reference pulse output is small.</li> </ul>
HV Protect	8 times	8:0 or 8:1 ~ 255	<ul style="list-style-type: none"> <li>IC604 faulty.</li> <li>IC602 faulty.</li> </ul>	<ul style="list-style-type: none"> <li>No power supply to CRT ANODE.</li> <li>No RASTER is generated.</li> </ul>

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

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

## 2. DISPLAY OF STANDBY (⏻) INDICATOR

### FLASH COUNT



### Diagnostic Item

### Flash Count\*

+B overcurrent	2 times
V-Protect	4 times
IK (AKB)	5 times
HV Protect	8 times

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



STANDBY ⏻ indicator

## 3. STOPPING THE STANDBY (⏻) INDICATOR FLASH

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

## 4. SELF-DIAGNOSTIC SCREEN DISPLAY

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

### [To Bring Up Screen Test]

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

Display ➡ Channel ➡ Volume ➡ Power / TV



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

The following screen will be displayed indicating the error count.

ERROR MENU	
2 :	0
3 :	N/A
4 :	0
5 :	1
8 :	0
101 :	N/A

Numeral "0" means that no fault was detected.

Numeral "1" means the number of a fault occurrence (1 ~ 255).

## 5. HANDLING OF SELF-DIAGNOSTIC SCREEN DISPLAY

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

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

### [Clearing the result display]

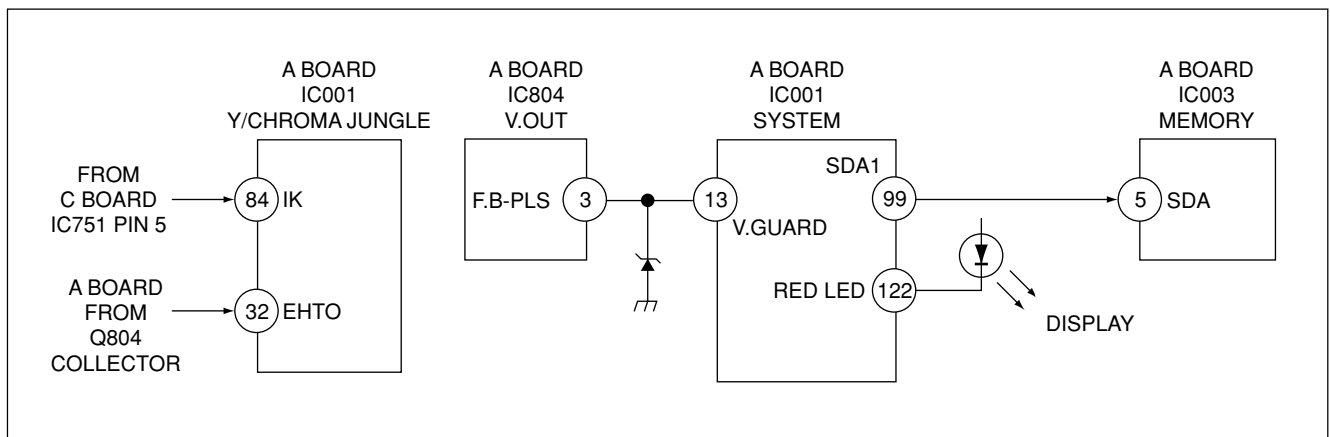
To clear the result display to "0", press buttons on the remote commander subsequent as shown below when the self-diagnostic screen is being displayed.

8 → 0

### [Quitting Self-diagnostic screen]

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

## 6. SELF-DIAGNOSTIC CIRCUIT



### +B overcurrent (OCP)

Occurs when an overcurrent on the +B(135V) line is detected by pin 32 of IC001 (A board). If the voltage of pin 32 of IC001 (A board) is more than 4V, the unit will automatically go to standby.

### V-PROTECT

Occurs when an absence of the vertical deflection pulse is detected by pin 13 of IC001 (A board).

### IK (AKB)

If the RGB levels\* do not balance within 15 sec after the power is turned on, this error will be detected by IC001 (A board). TV will stay on, but there will be 5 times LED blinking.

### HV PROTECT

Occurs when IC001 internal HV protect detects an abnormal H-Pulse (frequency) due to improper power supply to IC001. TV cuts off high voltage power of anode CRT. No picture will be detected. eg: IC602, IC604 go faulty.

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

## SECTION 2 SET-UP ADJUSTMENTS

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

Set the controls as follows unless otherwise noted:

VIDEO MODE ..... STANDARD  
PICTURE CONTROL ..... NORMAL  
BRIGHTNESS CONTROL ..... NORMAL

Perform the adjustments in the following order :

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

Note : Test Equipment Required.

1. Pattern Generator
2. Degausser
3. DC Power Supply
4. Digital Multimeter
5. Oscilloscope

### Preparation:

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

### 2-1. BEAM LANDING

Picture Mode : LIVE

1. Input a white signal with the pattern generator.  
Set the contrast and brightness to normal.
2. Set the pattern generator raster signal to a green raster.
3. Move the deflection yoke to the rear and adjust with the purity control so that the green is at the centre and the blue and red take up equally sized areas on each side of the screen. (see figure 2-1 and figure 2-1-1)

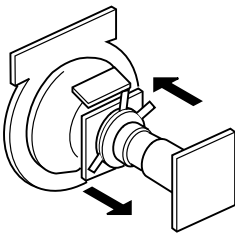


Figure 2-1

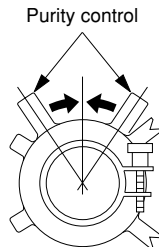


Figure 2-1-1

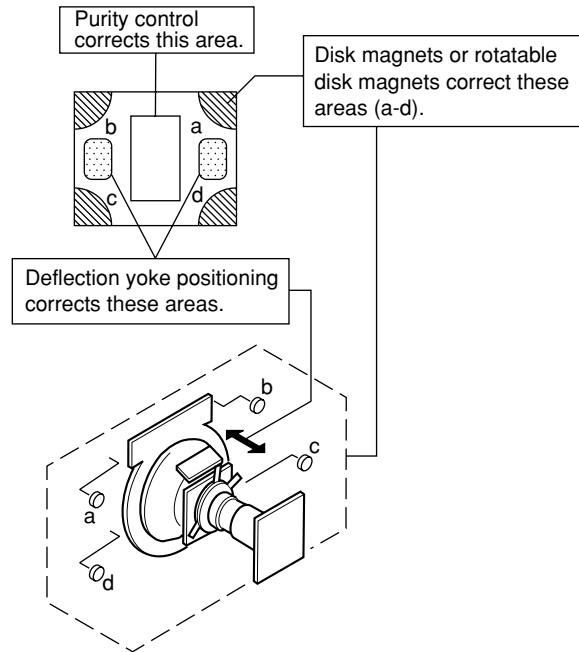


Figure 2-1-3

4. Move the deflection yoke forward and adjust so that the entire screen is green. (see figure 2-1-2)

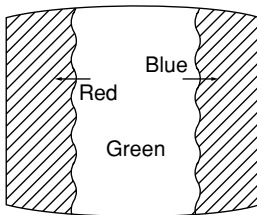


Figure 2-1-2

5. Switch the raster signal to blue, then red and verify the condition.
6. When the position of deflection yoke have been decided, fasten the deflection yoke with the screws and DY spacers.

### Caution:

High voltages are present on the Deflection yoke terminals. Take care when handling the deflection yoke whilst carrying out adjustments.

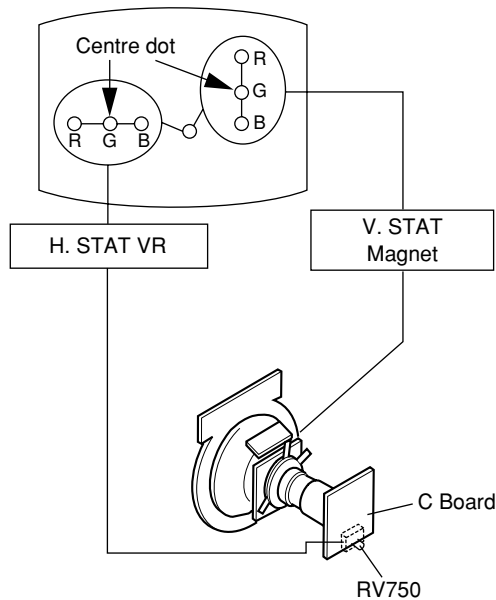


## 2-2. CONVERGENCE

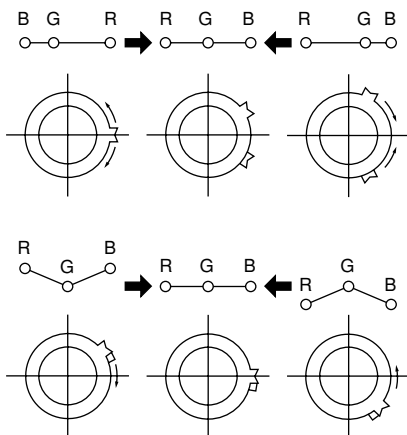
### Preparation:

- Before starting this adjustment, adjust the focus, horizontal size and vertical size.
- Receive dot/hatch signal.
- Picture Mode : MOVIE

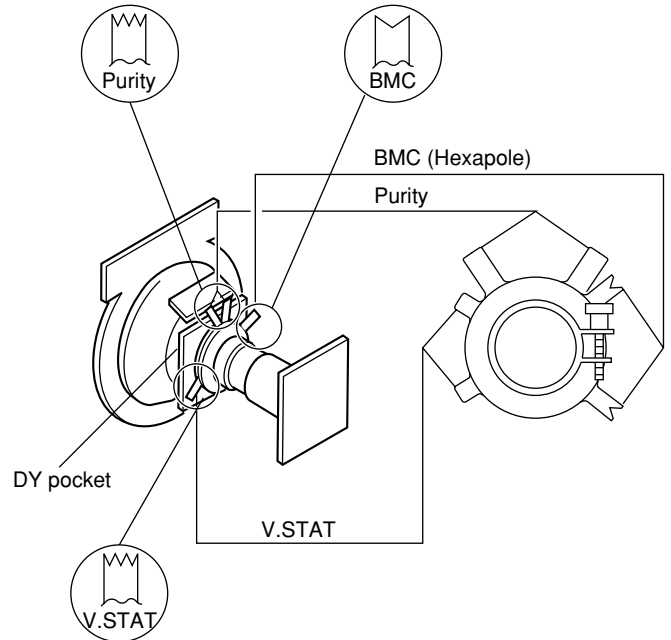
### (A) Horizontal and Vertical Static Convergence



1. (Moving vertically), adjust the V. STAT magnet so that the red, green and blue dots are on top of each other at the centre of the screen.
2. (Moving horizontally), adjust the H. STAT VR control so that the red, green and blue dots are on top of each other at the centre of the screen.
3. BMC (Hexapole) Magnet  
If the red, green and blue dots are not balanced or aligned then use the BMC magnet to adjust in the manner described below.

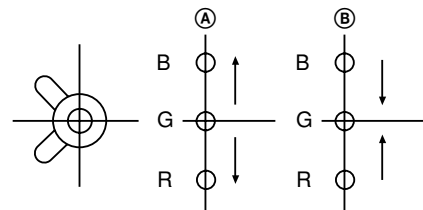


4. If the H. STAT variable resistor cannot bring the red, green and blue dots together at the centre of the screen, adjust the horizontal convergence with the H. STAT variable resistor and the V. STAT magnet in the manner given below.  
(In this case, the H. STAT variable resistor and the V. STAT magnet influence each other, so be sure to perform adjustments while tracking.)

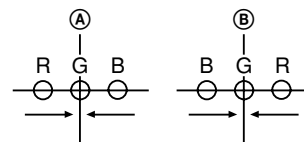


### Operation of V. STAT magnet.

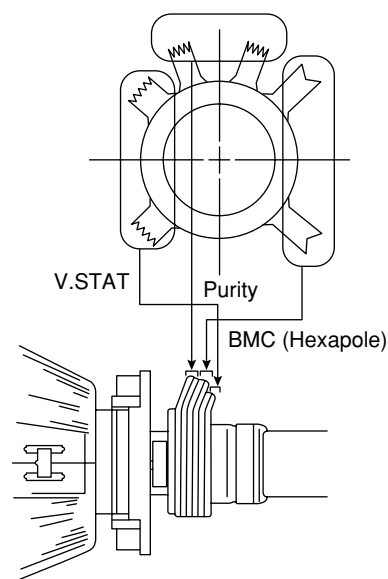
If the V. STAT is moved in the "A" and "B" arrows, the red, green and blue dots moves as shown below.



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



5. Layout of each control.

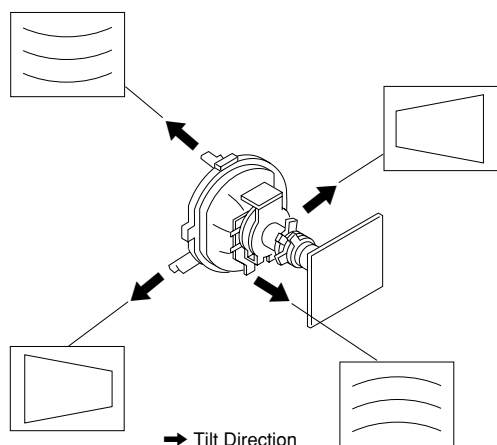


6. Geometry Adjustment.

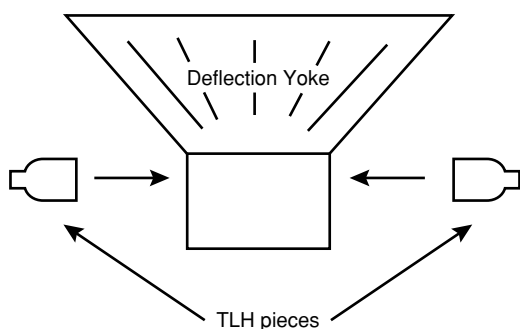
**Preparation:**

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

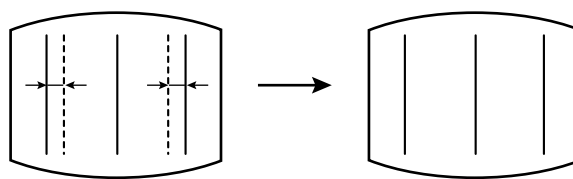
- Remove the deflection yoke spacer.
- Tilt the deflection yoke as indicated in the figure below and optimise the geometry.  
Tilting the DY up and down will balance the upper and lower pin adjustment.  
Tilting the DY left and right will balance the H-Trap adjustment.
- Re-install the deflection yoke spacer.



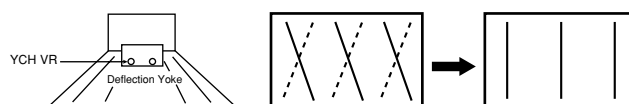
7. H-TILT Adjustment



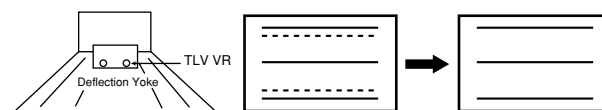
H-TILT correction can be performed by adding a TLH correction assembly to the Deflection Yoke.



8. YCH Adjustment

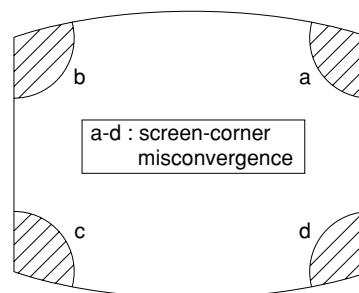


9. TLV Adjustment

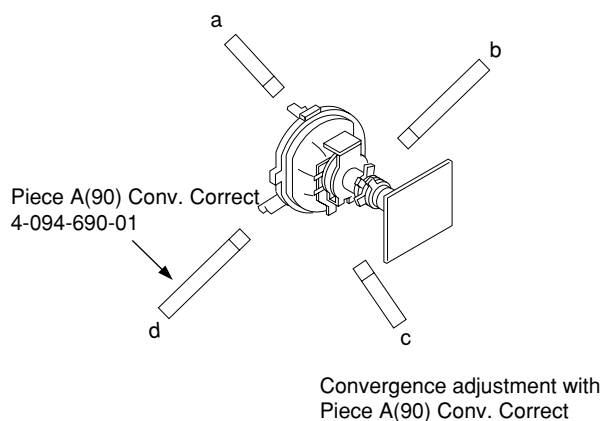


10. Screen Corner Convergence.

If you are unable to adjust the corner convergence properly, this can be corrected with the use of Piece A(90) Conv. Correct.

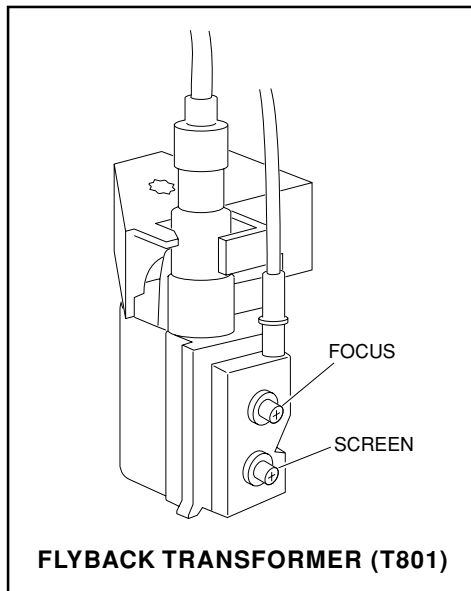


Install the Piece A(90) Conv. Correct assembly for the area that needs correcting.



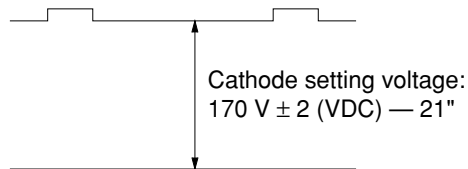
### 2-3. FOCUS ADJUSTMENT

1. Receive digital monoscope pattern.
2. Set Picture Mode to PERSONAL.
3. Adjust focus VR to obtain the best focus at the centre of the screen.
4. Change the receiving signal to white pattern and blue back.
5. Confirm magenta ring is not noticeable. In case magenta is very obvious, adjust the focus VR to take balance of magenta ring and focus.



### 2-4. G2(SCREEN) ADJUSTMENT

1. Input a dot signal from the pattern generator.
2. Set the Picture, Brightness and Colour to minimum.
3. Apply 170V DC from an external power supply to the R,G and B cathodes of the CRT.
4. Adjust brightness to obtain cathode value to value below.
5. Whilst watching the picture, adjust the G2 control [SCREEN] located on the Flyback Transformer to the point just before the flyback return lines disappear.



### 2-5. WHITE BALANCE ADJUSTMENT

1. Enter into Service Menu.
2. Input white pattern signal.
3. Set picture to PERSONAL mode.
4. Select WHBL "RDRV" and fix the value to 25 hex.
5. Adjust WHBL "GDRV" and "BDRV" and adjust the data for best white balance in highlight condition.
6. Adjust WHBL "BKOR" and "BKOG" and adjust the data for best white balance cut-off condition.
7. Set the offset settings for LIVE and GAME mode as stated in the table 1 below:-

OFFSET TABLE (Table 1)

Live	← Personal	← Game
Adjusted value +2	BKOR (adjusted)	Adjusted value
Adjusted value -3	BKOG (adjusted)	Adjusted value
25hex	RDRV (25hex)	25hex
Adjusted value +2	GDRV (adjusted)	Adjusted value -2
Adjusted value +4	BDRV (adjusted)	Adjusted value -6






SECTION 3  
CIRCUIT ADJUSTMENTS

3-1. ADJUSTMENT WITH COMMANDER

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

a. ENTERING SERVICE MODE





With the unit on standby, press the following sequence of buttons on the remote commander.

➡ Display  ➡ Channel  ➡ Volume  ➡ Power  / TV 





'TT –' will appear in the upper right corner of the screen.  
Other status information will also be displayed.

b. Press 'MENU' on the remote commander to obtain service menu on the screen.

GEOM
WHBL
SADJ
YC
SYNC
PICT
SW
VIF

- c. The screen only displays 8 items at one time. To move to the corresponding item use the up  down  buttons on the remote commander.
- d. Press the right  / left  button or ENTER button on the remote commander to enter into the required item.

Item Name	Range	Data
HPOS	(0,63)	52
HPAR	(0,63)	40



- e. The screen only display 12 items at one time. To move to the corresponding item use the up  down  buttons on the remote commander.
- f. Press right  to increase or left  to decrease the data.
- g. Press the 'MENU' button on the remote commander to quit from Service Menu. Screen will still display 'TT –'. To exit from 'TT –' menu, press 0 twice, 'TEST', 'TV' or switch the TV into standby mode.

**Note:**

- After carrying out the service adjustments, to prevent the customer accessing the 'Service Menu' switch the TV set OFF and then ON.

### 3-2. ADJUSTMENT ITEM TABLE

TVJ	Functionality		Initial	Range	Function	Table & Note	Device Name	Common	50	60	w50	w60
Category	No	Name	Dec	Dec								
GEOM	000	HPOS	031	063	Horizontal Shift (HS)	50/60/w50/w60(+ JPN RGB)	TV-Processor		31	31	31	31
	001	HPAR	031	063	Horizontal Parallelogram	50/60/w50/w60			31	31	31	31
	002	HBOW	031	063	Horizontal Bow	50/60/w50/w60			31	31	31	31
	003	VLIN	031	063	Vertical Linearity	50/60/w50/w60			31	31	31	31
	004	VSCR	031	063	Vertical Scroll	50/60/w50/w60			31	31	31	31
	005	HSIZ	031	063	EW Width (EW)	50/60/w50/w60(+ JPN RGB)			31	31	31	31
	006	EWPW	031	063	EW Parabola/Width (PW)	50/60/w50/w60			31	31	31	31
	007	UCOP	017	063	EW Upper Corner Parabola	50/60/w50/w60			17	17	17	17
	008	LCOP	017	063	EW Lower Corner Parabola	50/60/w50/w60			17	17	17	17
	009	EWTZ	031	063	EW Trapezium	50/60/w50/w60			31	31	31	31
	010	VSLP	031	063	Vertical Slope (VS)	50/60/w50/w60			31	31	31	31
	011	VSIZ	015	063	Vertical Amplitude	50/60/w50/w60			15	15	15	15
	012	SCOR	014	063	S-Correction (SC)	50/60/w50/w60			14	14	14	14
	013	VPOS	031	063	Vertical Shift (VSH)	50/60/w50/w60			31	31	31	31
	014	HBL	000	001	RGB Blanking Mode	50/60/w50/w60			01	01	01	01
	015	WBF	007	015	Timing of Wide Blanking (WBF)	50/60/w50/w60			09	09	09	09
	016	WBR	007	015	Timing of Wide Blanking (WBR)	50/60/w50/w60			10	10	10	10
	017	SBL	000	001	Service Blanking	none		00				
	018	COPY	000	001	Copy the GEO data to all 50/60Hz NVM area	none		00				

-  shaded items are adjustable data.
-  no data.



TVJ	Functionality		Initial	Range	Function	Table & Note	Device Name	Common	Live (COOL other)	GAME (WARM other)	MOVIE/ PERSONAL (NEUTRAL other)	LIVE (COOL RGB)	GAME (WARM RGB)	MOVIE/ PERSONAL (NEUTRAL RGB)	Other	RGB	YUV	Pic mode 0 (LIVE)	Pic mode 1 (MOVIE)	Pic mode 2 (GAME)	Pic mode 3 (PERSONAL)
Category	No	Name	Dec	Dec																	
WHBL	000	BKOR	031	063	Black Level Offset R	col temp (HIGH/LOW/Normal)*(UV/RGB/Others)	TV-Processor		31	31	31	31	31	31							
	001	BKOG	031	063	Black Level Offset G	col temp (HIGH/LOW/Normal)*(UV/RGB/Others)			31	31	31	31	31	31							
	002	RDRV	037	063	White Point R	col temp (HIGH/LOW/Normal)*(UV/RGB/Others)			37	37	37	37	37	37							
	003	GDRV	037	063	White Point G	col temp (HIGH/LOW/Normal)*(UV/RGB/Others)			37	37	37	37	37	37							
	004	BDRV	037	063	White Point B	col temp (HIGH/LOW/Normal)*(UV/RGB/Others)			37	37	37	37	37	37							
	005	LPG	000	001	RGB Gain Preset	none		00													
	006	PGR	031	127	Preset Gain R (PGR)	none		45													
	007	PGG	031	127	Preset Gain G (PGG)	none		45													
	008	PGB	031	127	Preset Gain B (PGB)	none		45													
	009	GNOF	000	015	Preset Gain Offset	none	CCC loop	08													
	010	SBRT	031	063	Sub-Brightness	Others/RGB/YUV									34	30					
	011	SBRO	000	003	Sub-Brightness Offset (Intelligent Pic)	none		00													
	012	EGL	000	001	Enable Gain Loop CCC System	none		00													
	013	SGL	000	003	Selection of High Current in CCC System	none		00													
	014	AKB	000	001	Black Current Stabilization	none		00													
	015	CBS	000	001	Control Sequence of Beam Current Limiting	none		00													
	016	RGBB	000	003	RGB Blanking	none		00													
	017	BLBG	000	001	Blanking of Blue & Green Output	none		00													
	018	OFB	000	001	Black Level Offset Blue	none		00													
	019	NSBR	000	015	Non-Standard Brightness Offset	none		05													
	020	WBP	000	003	Color Temp setting (0:High, 1:Normal, 2.3:Low)	Picture Mode												00	01	02	01

TVJ	Functionality		Initial	Range	Function	Table & Note	Device Name	Common	50pal (TV)	50pal (Video)	50secam (TV)	50secam (video)	60TV	60Video	50RGB	60RGB	Pic mode 0 (LIVE)	Pic mode 1 (MOVIE)	Pic mode 2 (GAME)	Pic mode 3 (PERSONAL)	TV-IP ON	Video	RGB	TV Wide	Video Wide
Category	No	Name	Dec	Dec																					
SADJ	000	PMAX	063	063	Picture Maximum	(TV/Video)*(Normal/Wide)<Normal/Wide> (+ JPN RGB)	TV-Processor														34	34		26	26
	001	SHUE	007	015	Sub-Hue	TV/Video															07	08			
	002	SSH	015	063	Sub-Sharpness	TV/Video/YUV (+ JPN RGB)															27	38			
	003	SSHO	000	003	Sub-Sharpness Offset (Intelligent Pic)	none		03																	
	004	SCOL	031	063	Sub-Color	50pal(tv)/50pal(video)/50secam(tv)/50secam(video)/ 60TV/60video/50YUV/60YUV/50RGB/60RGB			25	28	25	28	23	26	28	26									
	005	SCOO	000	003	Sub-Color Offset (Intelligent Pic)	none		02																	
	006	PIC	031	127	Picture Control [GA:0~100(valid); >100(Invalid), Others:0~63(valid); ignore bit 6(Invalid)]	Picture Mode (GA: Personal = User Reset Data)											63	35	38	55					
	007	COL	031	127	Color Control [GA:0~100(valid); >100(Invalid), Others:0~63(valid); ignore bit 6(Invalid)]	Picture Mode (GA: Personal = User Reset Data)											38	31	31	31					
	008	BRT	031	127	Brightness Control [GA:0~100(valid); >100(Invalid), Others:0~63(valid); ignore bit 6(Invalid)]	Picture Mode (GA: Personal = User Reset Data)											31	35	31	31					
	009	HUE	031	127	Hue Control [GA:0~100(valid); >100(Invalid), Others:0~63(valid); ignore bit 6(Invalid)]	Picture Mode (GA: Personal = User Reset Data)											31	31	31	31					
	010	SHP	031	127	Sharpness Control [GA:0~100(valid); >100(Invalid), Others:0~63(valid); ignore bit 6(Invalid)]	Picture Mode (GA: Personal = User Reset Data)											42	28	31	31					
	011	PECO	002	003	Picture data in power save mode (valid for JAPAN only)	Picture Mode* (Eco std/Eco much)																			
	012	PRLV	002	003	Coefficient of power save mode (valid for JAPAN only)	Eco std/Eco much																			

- shaded items are adjustable data.
- no data.



TVJ	Functionality		Initial	Range	Function	Table & Note	Device Name	Common	Others	PAL(TV)	NTSC(TV)	SECAM (TV)	PAL (Video)	NTSC (Video)	SECAM (Video)	S-INPUT	SECAM	NTSC	TV
Category	No	Name	Dec	Dec															
YC	000	PFRQ	000	003	Peaking Center Frequency and Delay		TV-Processor	00											
	001	RPA	001	003	Ratio Pre & Over Shoot	TV/other			02										01
	002	RPO	002	003	Ratio of Positive & Negative Peaks	TV/other			01										01
	003	YDLY	012	015	Y-Delay	(PAL/NTSC/SECAM)*(TV/VIDEO)+YUV/S-INPUT				06	06	06	05	05	05	05			
	004	CMAT	000	003	PAL-SECAM or NTSC (Japan/USA) Matrix	(JPN RGB)		00											
	005	ACL	001	001	Automatic Color Limiting			01											
	006	CB	000	001	Chroma Bandpass Center Frequency	valid only with TV (*Video : 0 fix)		00											
	007	SBO	001	003	SECAM Black Offset			01											
	008	CHSE	001	003	PAL/NTSC Ident Sensitivity			02											
	009	CLO	000	001	Center Frequency of Cloche (Bell) Filter			00											
	010	CTRP	000	001	Chroma Trap Mode	SECAM/others			00								01		
	011	BPS	000	001	Bypass of Chroma Base-band Delay Line	NTSC/others			00									00	
	012	FCO	000	001	Forced Color On			00											
	013	TINT	031	063	Base-Band Tint Control	YUV/Others			31										
	014	TUV	000	001	Tint Control on UV Signals			00											

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

-  shaded items are adjustable data.
-  no data.

TVJ	Functionality		Initial	Range	Function	Table & Note	Device Name	Common	Others	RGB	Picture: Live	TV (Live)	TV (Others)	Video (Live)	Video (Others)	Color Temp (COOL)	Color Temp (Others)	Color Temp (Warm)	Color Temp (Neutral)
Category	No	Name	Dec	Dec															
PICT	000	CADL	007	015	Cathode Drive Level		TV-Processor	04											
	001	CFA	000	003	Comb Filter Mode			01											
	002	SOC	002	003	Soft Clipping Level			00											
	003	PWL	001	001	Peak White Limiting Switch			01											
	004	WHTL	006	015	Peak White Limiting			05											
	005	GAM	001	001	Gamma			01											
	006	WTS	001	003	Gamma Control and White Stretch	Live/Others			00		01								
	007	TFR	000	001	DC Transfer Ratio of Luminance Signal	Live/Others (+ JPN RGB)			00		01								
	008	COR	003	003	Coring	(TV/Video)*(Dyna/others)						02	02	00	01				
	009	CORO	000	001	Coring Offset (Intelligent Pic)			01											
	010	BKS	003	003	Black Stretch	RGB/others			02	02									
	011	AAS	001	001	Black Area to Switch off the Black Stretch			01											
	012	DSK	000	001	Dynamic Skin Control			00											
	013	BLS	000	001	Blue Stretch	col temp (HIGH/OTHERS)										01	00		
	014	NBLS	000	001	Operation Blue Stretch Circuit			00											
	015	NRR	000	001	Non Red Reduction	col temp (HIGH/LOW/NORMAL)										01		00	00

TVJ	Functionality		Initial	Range	Function	Table & Note	Device Name	Common	TV	Video
Category	No	Name	Dec	Dec						
SW	000	CV2	000	001	CVBS2 Input Signal Selection		TV-Processor	00		
	001	SVO	001	003	Function of IFVO/SVO/CVBSI Pin @ 48	TV/Video/YUV			01	01
	002	DFL	000	001	Flash Protection			00		



-  shaded items are adjustable data.
-  no data.



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

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

TVJ	Functionality		Initial	Range	Function	Table & Note	Device Name	Common
Category	No	Name	Dec	Dec				
TXT	000	TXV	039	063	Teletext Vertical Position for Philips		Text Decoder	37
	001	THD	005	127	Teletext H-sync Active Edge Shift			05
	002	TBR	004	015	Teletext RGB Brightness			10

-  shaded items are adjustable data.
-  no data.

(except KV-21CL1K (OIRT))



TVJ	Functionality		Init.	Range	Function	Table & Note	Device Name (Slave Address)	NVM Address / Initial Value (Detailed)									
Category	No.	Name	Dec	Dec				Common	Off	SRS/WOW	Trusurround	Istereo	Imono	TV-L(Euro)	TV	Video	
SDSP	000	AVM	002	007	AVL Mode		SSD	04									
	001	AVV	005	015	AVL Reference Level		(80h)	02									
	002	BBL	000	015	BBE Contour			00									
	003	BBH	000	015	BBE Process			00									
	004	BBLW	000	015	BBE Contour Offset			06									
	005	SVOF	000	015	Surround /Effect Mode Volume Offset	Off(SRS/WOW)/Trusurround/Istereo/Imono		06	00	07	00	02	00				
	006	IVOF	000	007	Master Volume Positive Offset												
	007	EVOF	000	007	Master Volume Negative Offset			06									
	008	LAD	000	031	Decoder Level Adjust			06									
	009	LAM	000	031	Mono Level Adjust			05									
	010	LAN	000	031	Nicam Level Adjust			05									
	011	LAS	000	031	SAP Level Adjust			27									
	012	LAA	000	031	ADC Level Adjust	Tv/Video(Non Euro)I TV-L/TV-non L/Video		08						00	00	00	
	013	SEF	003	007	Incredible Mono/Stereo Effect	Istereo/Imono					05	03					
	014	A1L	000	255	AUX1 Volume Left			00									
	015	A1R	000	255	AUX1 Volume Right			00									
	016	BAS	008	015	Main Bass Offset			14									KV-21CL10B/ 10E/10K/10U
	017	TRE	008	015	Main Treble Offset			11									
	018	EQ1	008	015	Equalizer Main Channel Band (100 Hz) Offset			10									
	019	EQ2	008	015	Equalizer Main Channel Band (300 Hz) Offset			01									
	020	EQ3	008	015	Equalizer Main Channel Band (1000 Hz) Offset			00									
	021	EQ4	008	015	Equalizer Main Channel Band (3000 Hz) Offset			10									
	022	EQ5	008	015	Equalizer Main Channel Band (8000 Hz) Offset			00									
	023	BFCT	005	007	DBE, DUB and BBE Control			00									
	024	SCEN	001	015	SRS3D Center Control			01									
	025	SSPA	000	015	SRS3D Space Control			00									
	026	BBHW	000	015	BBE process offset in WOW mode			00									
	027	STRE	002	007	Treble Offset for surround mode			01									
	028	BBHT	000	015	BBE Offset in TV mode			00									
	029	DWA	000	000	DWA???			00									
030	TTRE	002	007	Treble Offset in TV Mode			00										

TVJ	Functionality		Init.	Range	Function	Table & Note	Device Name (Slave Address)	NVM Address / Initial Value (Detailed)							
Category	No.	Name	Dec	Dec				Common	Off	SRS/WOW	Trusurround	Istereo	Imono	TV-L(Euro)	TV
SDSP	016	BAS	008	015	Main Bass Offset			12							KV-21FQ10B/ 10E/10K
	017	TRE	008	015	Main Treble Offset			00							
	019	EQ2	008	015	Equalizer Main Channel Band (300 Hz) Offset			03							
	020	EQ3	008	015	Equalizer Main Channel Band (1000 Hz) Offset			10							
	021	EQ4	008	015	Equalizer Main Channel Band (3000 Hz) Offset			00							
	022	EQ5	008	015	Equalizer Main Channel Band (8000 Hz) Offset			05							

- shaded items are adjustable data.
- no data.



(except KV-21CL1K (OIRT))

TVJ	Functionality		Init.	Range	Function	Table & Note	Device Name (Slave Address)	Common
Category	No.	Name	Dec	Dec				
SDEC	000	MPTU	003	015	Upper Threshold for MPX pilot detection (BTSC)		SSD	03
	001	MPTL	009	015	Lower Threshold for MPX pilot detection (BTSC)			09
	002	SPTU	003	015	Upper Threshold for SAP carrier detection			03
	003	SPTL	006	015	Lower Threshold for SAP carrier detection			06
	004	C1TH	000	031	Normal Threshold for detection of SC1			00
	005	C1AP	000	031	Auto Program Threshold for detection of SC1			00
	006	SPTH	000	031	Noise Threshold for automute of SAP			00
	007	SPHY	004	015	Hysteresis size for automute of SAP			04
	008	FMTH	000	031	Noise Threshold for automute of SC2 in FM A2 standard			00
	009	FMHY	004	015	Hysteresis size for automute of SC2 in FM A2 standard			04
	010	BTTH	000	031	Noise Threshold for automute of BTSC stereo carrier			00
	011	BTHY	004	015	Hysteresis size for automute of BTSC stereo			04
	012	EJTH	000	031	Noise Threshold for automute of EIAJ FM subcarrier			00
	013	EJHY	004	015	Hysteresis size for automute of EIAJ FM subcarrier			04
	014	ONLY	000	001	Reproduce only related NICAM on DEC output			00
	015	EXAM	000	001	Fall back source in case of automute in standard L (DDEP)			00
	016	NIMT	000	001	NICAM auto mute function depend on bit error rate (DDEP)			00
	017	NILE	100	255	NICAM lower error limit (DDEP)			50
	018	NIUE	200	255	NICAM upper error limit (DDEP)			200
	019	EPMD	001	003	DEMDEC Easy Programming (DDEP)			01
	020	STDS	019	031	Bits multiplexed for ASD and SSS modes			19
	021	OVMA	001	001	FM overmodulation adaption			01
	022	FLBW	000	003	FM/AM demodulator filter bandwidth			00
	023	IDMD	000	003	FM ident speed in SSS mode			00
	024	FPAL	000	001	Line frequency for BTSC decoding			00
	025	OVMT	001	002	Overmodulation level threshold relative to nominal			01
	026	DCXI	000	001	NICAM DCXO Scaling Control Inverter			00
	027	DCXG	000	007	NICAM DCXO Scaling Control Gain			00
	028	DCLL	011	015	NICAM DCXO Scaling Control Limit (L)			11
	029	DCLH	000	031	NICAM DCXO Scaling Control Limit (H)			00
	030	IDEU	001	003	IDMOD setting for European A2 STD			01
	031	IDKR	001	003	IDMOD setting for Korean M STD			01
	032	IDJP	001	003	IDMOD setting for EIAJ STD			01

-  shaded items are adjustable data.
-  no data.

TVJ	Functionality		Initial	Range	Function	Table & Note	Device Name	Common	50	60
Category	No	Name	Dec	Dec						
OPTM	000	ASHT	006	007	auto shut off timer (data*5 min)			06		
	001	OSDB	000	015	OSD Brightness		MMR/Micro 60h	03		
	002	OSDH	005	015	OSD Horizontal Position		MMR/Micro 60h	06		
	003	OSDV	037	063	OSD Vertical Position	50/60	MMR/Micro 60h		61	33
	004	MUTE	000	001	No Signal Mute Switch (1 = enabled)			01		
	005	RFUL	015	015	RF Signal Change Counter after Unlocked (Disable when 0fh)			04		
	006	RFLK	015	015	RF Signal Change Counter after Locked (Disable when 0fh)			00		
	007	AVUL	015	015	AV Signal Change Counter after Unlocked (Disable when 0Fh)			04		
	008	AVLK	015	015	AV Signal Change Counter after Locked (Disable when 0Fh)			00		
	009	LANG	000	003	OSD language shipping condition			01		
	010	HTXT	000	001	sync separator sw		TV-Processor	00		
	011	CMSS	000	001	Sync sw		TV-Processor	01		
	012	DCXO	127	255	DCXO offset from Flash Value		SFR/Micro 60h	70		
	013	EXBL	000	015	Extended Blanking Timer to Eliminate White Noise			07		
	014	TSYS	000	003	Memorize TV System in NVM at Test Reset (GA Model)			00		

TVJ	Functionality		Initial	Range	Function	Table & Note	Device Name	Common
Category	No	Name	Dec	Dec				
OPTB	000	IALL	000	001	Standard Write Switch (not memorized in NVM)			00
	001	OPB1	000	255	Option 1 (System related)			95
	002	OPB2	000	255	Option 2 (Video Signal related)			12
	003	OPB3	000	255	Option 3 (Stereo Decoding related)			01
	004	OPB4	000	255	Option 4 (Miscellaneous)			65
	005	OPB5	000	255	Option 5 (Miscellaneous)			79
	006	OPB6	000	255	Option 6 (OSD Language related)			01
	007	BSWT	000	015	Band Switch Wait Time (not memorized in NVM)			00

-  shaded items are adjustable data.
-  no data.

#### NOTE

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

#### OPTION NOTE

##### OPB1

Item	SPEED SEARCH		M/N	L'	L(Euro), M(GA)	B/G	I	D/K
KV-21FQ10B	0	1	0	1	1	1	1	1
KV-21FQ10E	0	1	0	0	0	1	0	1
KV-21FQ10K	0	1	0	0	0	1	0	1
KV-21CL10B	0	1	0	1	1	1	1	1
KV-21CL10E	0	1	0	0	0	1	0	1
KV-21CL10K	0	1	0	0	0	1	0	1
KV-21CL10U	0	1	0	0	0	0	1	0
KV-21CL1K	0	1	0	0	0	1	1	1

SPEED SEARCH (Time of speed search)

00 = disabled (original cycle speed),  
01 = 4 time speed from the original,  
10 = 6 time speed from the original,  
11 = 8 time speed from the original  
0 = disabled, 1 = enabled

TV System Selection

##### OPB2

Item	D1	AV Multi/PAM(GA)	Component	Composite (SCART)		SECAM	Color decoding	
KV-21FQ10B	0	0	0	1	0	1	0	0
KV-21FQ10E	0	0	0	1	0	1	0	0
KV-21FQ10K	0	0	0	1	0	1	0	0
KV-21CL10B	0	0	0	1	0	1	0	0
KV-21CL10E	0	0	0	1	0	1	0	0
KV-21CL10K	0	0	0	1	0	1	0	0
KV-21CL10U	0	0	0	1	0	1	0	0
KV-21CL1K	0	0	0	0	1	1	0	0

D1 (D1 Terminal)

0 = not available, 1 = available

AV Multi/PAM (AV Multi Terminal) – JP

0 = not available, 1 = available

Portable Audio Mode – GA

0 = not available, 1 = available

Component (Component [YCbCr] Terminals)

0 = not available, 1 = available

Composite (No. of Composite Terminals)

00 = no composite terminal (Euro : no Scart) BX1L: No Video

(SCART) (No. of SCART Terminals)

01 = 1 composite terminal (Euro : 1 Scart) BX1L:2 Video in

10 = 2 composite terminal (Euro : 2 Scart) BX1L:3 Video in

11 = 3 composite terminal (Euro : no terminal BX1L: 4 Video in)

SECAM (SECAM Color System)

0 = disabled, 1 = enabled

Color decoding (Color Crystal Selection)

00 = PAL/NTSC/SECAM (Multi), 01 = NTSC (3.58MHz)

10 = PAL/NTSC/SECAM (4.43MHz), 11 = PAL/NTSC (Tri-Norma)

**KV-21FQ10B/21FQ10E/21FQ10K/21CL10B**  
**KV-21CL10E/21CL10K/21CL10U/21CL1K**  
**RM-W100**

**OPB3**

Item	HDEV	NICAM ST	NICAM BI	A2 ST	Thai Bilingual	JP/US ST	Korean ST	MONO
<b>KV-21FQ10B</b>	0	1	1	1	0	0	0	0
<b>KV-21FQ10E</b>	0	1	1	1	0	0	0	0
<b>KV-21FQ10K</b>	0	1	1	1	0	0	0	0
<b>KV-21CL10B</b>	0	1	1	1	0	0	0	0
<b>KV-21CL10E</b>	0	1	1	1	0	0	0	0
<b>KV-21CL10K</b>	0	1	1	1	0	0	0	0
<b>KV-21CL10U</b>	0	1	1	1	0	0	0	0
<b>KV-21CL1K</b>	0	0	0	0	0	0	0	1

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

**OPB4**

Item	Firmware/SMAT	1 spk Models	VM	Equalizer	Surround	V-Chip	TOP	TEXT
<b>KV-21FQ10B</b>	1	0	0	0	0	0	0	1
<b>KV-21FQ10E</b>	1	0	0	0	0	0	0	1
<b>KV-21FQ10K</b>	1	0	0	0	0	0	0	1
<b>KV-21CL10B</b>	1	0	0	0	0	0	0	1
<b>KV-21CL10E</b>	1	0	0	0	0	0	0	1
<b>KV-21CL10K</b>	1	0	0	0	0	0	0	1
<b>KV-21CL10U</b>	0	0	0	0	0	0	0	1
<b>KV-21CL1K</b>	0	0	0	0	0	0	0	1

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

**OPB5**

Item	Full Surround	No Surround	Forced 60	ASD	Tilt	IP Plus	IP	Wide
<b>KV-21FQ10B</b>	0	0	0	1	1	1	1	1
<b>KV-21FQ10E</b>	0	0	0	1	1	1	1	1
<b>KV-21FQ10K</b>	0	0	0	1	1	1	1	1
<b>KV-21CL10B</b>	0	1	0	1	1	1	1	1
<b>KV-21CL10E</b>	0	1	0	1	1	1	1	1
<b>KV-21CL10K</b>	0	1	0	1	1	1	1	1
<b>KV-21CL10U</b>	0	1	0	1	1	1	1	1
<b>KV-21CL1K</b>	0	1	0	0	1	1	1	1

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

**OPB6**

Item	GA US	Latin	Feature 2	Feature 1	OSD Language Selection			
<b>KV-21FQ10B</b>	0	0	0	0	0	0	0	1
<b>KV-21FQ10E</b>	0	0	0	0	0	0	0	0
<b>KV-21FQ10K</b>	0	0	0	0	0	0	1	0
<b>KV-21CL10B</b>	0	0	0	0	0	0	0	1
<b>KV-21CL10E</b>	0	0	0	0	0	0	0	0
<b>KV-21CL10K</b>	0	0	0	0	0	0	1	0
<b>KV-21CL10U</b>	0	0	0	0	0	0	1	1
<b>KV-21CL1K</b>	0	0	0	0	0	0	1	0

GA US	(US Model Destination)	0 = US/Canada/Latin, 1 = Taiwan/Korea/Philippine
Latin	(US Model Latin Destination)	0 = US/Canada (No Volume Figure Display) 1 = Latin (Volume Figure Display)
Feature 2	(Temporary for BX1L)	0 = Comb Not available 1 = Comb Available
Feature 1	(Temporary for BX1L)	0 = PiP Not available 1 = PiP Available
OSD Language Selection (English always available except JP)	US	01xx = French, 0x1x = Spanish 0xx1 = Portuguese
	US (GA NTSC)	1x1x = Complicated Chinese, 1xx1 = Korean
	GA	1xxx = Simplified Chinese, x1xx = Arabic, xx1x = Thai xxx1 = Vietnamese
	EU	0000 = Destination ADE 0001 = Destination BL 0010 = Destination KR 0011 = Destination U

### 3-3. T-MODE:

T-Mode is available by pressing the 'TEST' button once, OSD 'T' appears. The function described below are available by selecting the indicated keys. The 'T' is released automatically after each command is executed.

KEY	T-MODE FUNCTION
volume +	volume maximum
volume –	volume minimum
picture +	picture maximum
picture –	picture minimum
colour up	colour maximum
colour down	colour minimum
brightness-bright	brightness maximum
brightness-dark	brightness minimum
hue-purplish	hue-purplish
hue-greenish	hue-greenish
sharpness-sharp	sharpness maximum
sharpness-soft	sharpness minimum
balance left	balance full left (only stereo)
balance right	balance full right (only stereo)
treble up	treble maximum (only stereo)
treble down	treble minimum (only stereo)
bass up	bass maximum (only stereo)
bass down	bass minimum (only stereo)

### 3-4. TT-MODE:

TT-Mode is available by pressing the 'TEST' button twice, OSD 'TT – –' appears. The function described below are available by pressing two digits.

00	Exit from TT mode
01	Set Picture Level to Maximun
02	Set Picture Level to Minimum
03	Set Volume to 35%
04	Set Volume to 50%
05	Set Volume to 65%
06	Set Volume to 80%
07	Ageing Mode On
08	Shipping Condition
11	Sub Picture Adjustment
12	Sub Colour Adjustment
13	Sub Brightness Adjustment
14	Text H Position Adjustment
15	Rotation Coil Test
19	Factory Mode Enable/Disable
21	Destination ADEKR
22	Destination BL
24	Destination U
31	Auto Shutoff Disable/Enable
33	Rotation On/Off
41	Re-initialise NVM
43	Select Dual A Sound (only stereo)
44	Select Dual B Sound (only stereo)
45	Select Mono Sound (only stereo)
46	Select Stereo Sound (only stereo)

48	Set NVM as non-virgin
49	Set NVM as virgin
61	Auto AGC Adjustment
64	RGB priority (toggle) On: FS input (Pin 16)is always active Off: FS input is active only in AV1 (Scart)
65	RGB Auto Detection (Toggle) Auto: AV1 or RGB is automatically selected at the change of AV input to AV1 (Scart) by user or mode Pin 8 Off: AV input toggle has AV1 and RGB respectively (TV --> AV1 --> RGB --> AV2 -->...)
67	Manual AGC Adjustment
71	Force PAL Video
72	Un-force PAL (cancel the function above)
73	Enable Zweiton D/K2 System (6.5/6.74) (only stereo)
74	Enable Zweiton D/K3 System (6.5/5.74) (only stereo)
78	Balance Full Left (only stereo)
79	Balance Full Right (only stereo)
81	Auto NICAM DCXO calibration (only stereo)
87	Local Keys Test
93	Set 16:9 zoom mode
95	Set 4:3 Zoom Mode
99	Display Error and Working Time Menu

To release the 'TT-Mode', press 0 twice, press 'TEST', press 'TV' or switch the TV into standby mode.

### 3-5. T-Cyan MODE:





T-Cyan Mode is available by pressing the 'TEST' and 'Cyan' keys. T-Cyan is basically for white balance and geometry adjustments. The functions described below are available by pressing the indicated keys.

In T-Cyan Mode a single 'T' is displayed in cyan colour. To release from this mode, press the 'TV' key once.





KEY	T CYAN FUNCTION
1	Pin Amplitude –
2	Vertical Centre –
3	Pin Amplitude +
4	Vertical Centre +
5	Vertical Size +
6	Horizontal Centre +
7	Horizontal Size –
8	Vertical Centre +
9	Horizontal Size +
0	Vertical Size –
Volume +	Upper Corner Pin +
Volume –	Lower Corner Pin +
Programme +	Upper Corner Pin –
Programme –	Lower Corner Pin –
Cyan	Bow –
Yellow	Pin Phase –
Green	Bow –
Red	Pin Phase +
Video	Vangle +
Information	Vangle –

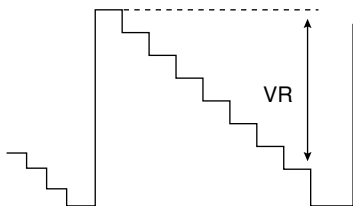


### 3-6. SUB BRIGHTNESS ADJUSTMENT

1. Input a PAL monoscope pattern.
2. Go to Test Mode.
3. Press 'Test' 'Test 13' on the Remote commander.  
PICTURE MINIMUM, BRIGHTNESS 50%
4. Select WHBL "SBRT" by pressing right  or left  button and adjust "SBRT" data. To adjust the data, again press right  to increase or left  to decrease the data until there is barely a difference between 0 IRE and 10 IRE signal levels.

### 3-7. SUB CONTRAST ADJUSTMENT

1. Select Video Mode.
2. Input PAL Colour Bar to TV set.
3. Set the following condition:  
PICTURE 100%, COLOUR 0%, BRIGHTNESS 50%  
(IN PERSONAL MODE)
4. Connect an oscilloscope to pin 4 (R output) of CN004.
5. Enter Service Menu.
6. Set PICT 03 "PWL" to 00 and WHBL 17 "BLBG" to 01.
7. Select SADJ "PMA" with right  or left  button of the commander then adjust VR within spec with right  or left  button.



VR =  $1.50 \pm 0.03$  Vp-p  
(Difference is within 30mV)

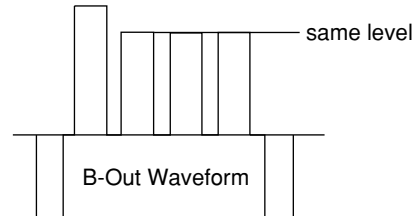
8. Set "PWL" and "BLBG" back to initial data respectively.

**OR**

1. Input a video signal that contains a small 100% white area on a black background.
2. Connect a digital voltmeter to pin 10 of J751 (C board).
3. Adjust the sub-contrast ("TT11") to obtain a voltage of  $86 \pm 5$  V.

### 3-8. SUB COLOUR ADJUSTMENT

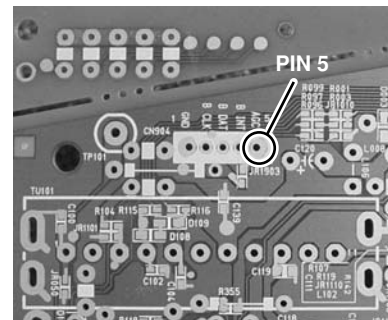
1. Receive a PAL colour bar signal.
2. Connect an oscilloscope to Pin 2 of CN004(A board).
3. Enter into the Service Menu.
4. Set PICT 06 "WTS" to 00.
5. Adjust SADJ "SCOL" data so that the cyan, magenta and blue colour bars are equal level.



### 3-9. TUNER AGC ADJUSTMENT

Note: There should be no need to adjust the AGC as this is pre-adjusted during manufacturing. If the AGC does need adjustment then follow steps 1 to 4 as below.

1. Receive a signal of 61dBuV/75ohm terminated via the tuner antenna socket.
2. Connect a voltmeter to the AGC pin 5 of CN904 (mount side of A board).
3. Confirm that the AGC voltage is 3.2volts  $\pm 0.5$ volts.
4. If adjustment is required, then re-adjust the AGCT in service menu to obtain a voltage of 3.2V  $\pm 0.5$ V.



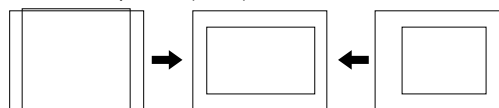
[ Print side of A board ]

### 3-10. DEFLECTION ADJUSTMENT

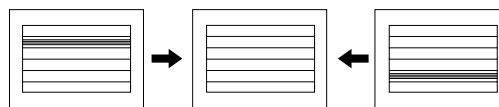
1. Set the TV mode to normal (4:3).
2. Enter into the 'GEOMETRY' service menu.
3. Select and adjust each item in order to obtain the optimum image. (see table below)
4. Repeat the above for 16:9.

GEOMETRY				Remark
HPOS	(0,63)	Adj		Horizontal Shift
HPAR	(0,63)	Adj		Horizontal Parallelogram
HBOW	(0,63)	Adj		Horizontal Bow
VLIN	(0,63)	Adj		Vertical Linearity
VSCR	(0,63)	31		Vertical Scroll
HSIZ	(0,63)	Adj		EW Width
EWPW	(0,63)	Adj		EW Parabola/Width
UCOP	(0,63)	Adj		EW Upper Corner Parabola
LCOP	(0,63)	Adj		EW Lower Corner Parabola
EWTZ	(0,63)	Adj		EW Trapezium
VSLP	(0,63)	31		Vertical Scope
VSIZ	(0,63)	Adj		Vertical Amplitude
SCOR	(0,63)	Adj		S-Correction
VPOS	(0,63)	Adj		Vertical Shift
WBF	(0,63)	06		Timing of Wide Blanking
WBR	(0,63)	06		Timing of Wide Blanking

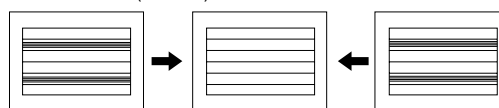
Vertical Amplitude (VSIZ)



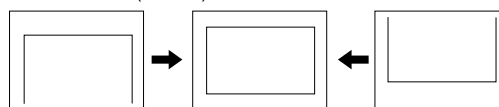
Vertical Linearity (VLIN)



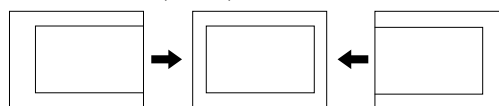
S-Correction (SCOR)



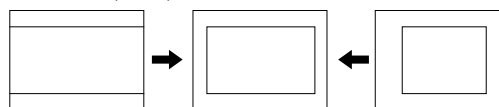
Vertical Shift (VPOS)



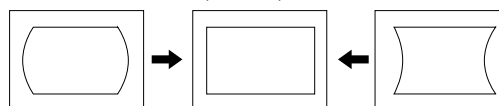
Horizontal Shift (HPOS)



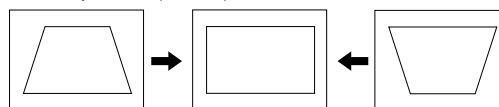
EW Width (HSIZ)



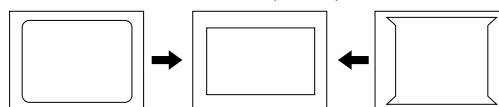
EW Parabola/Width (EWPW)



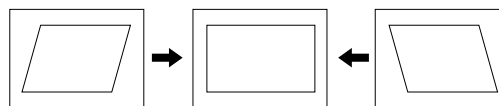
EW Trapezium (EWTZ)



EW Upper Coner Parabola (UCOP)  
EW Lower Coner Parabola (LCOP)

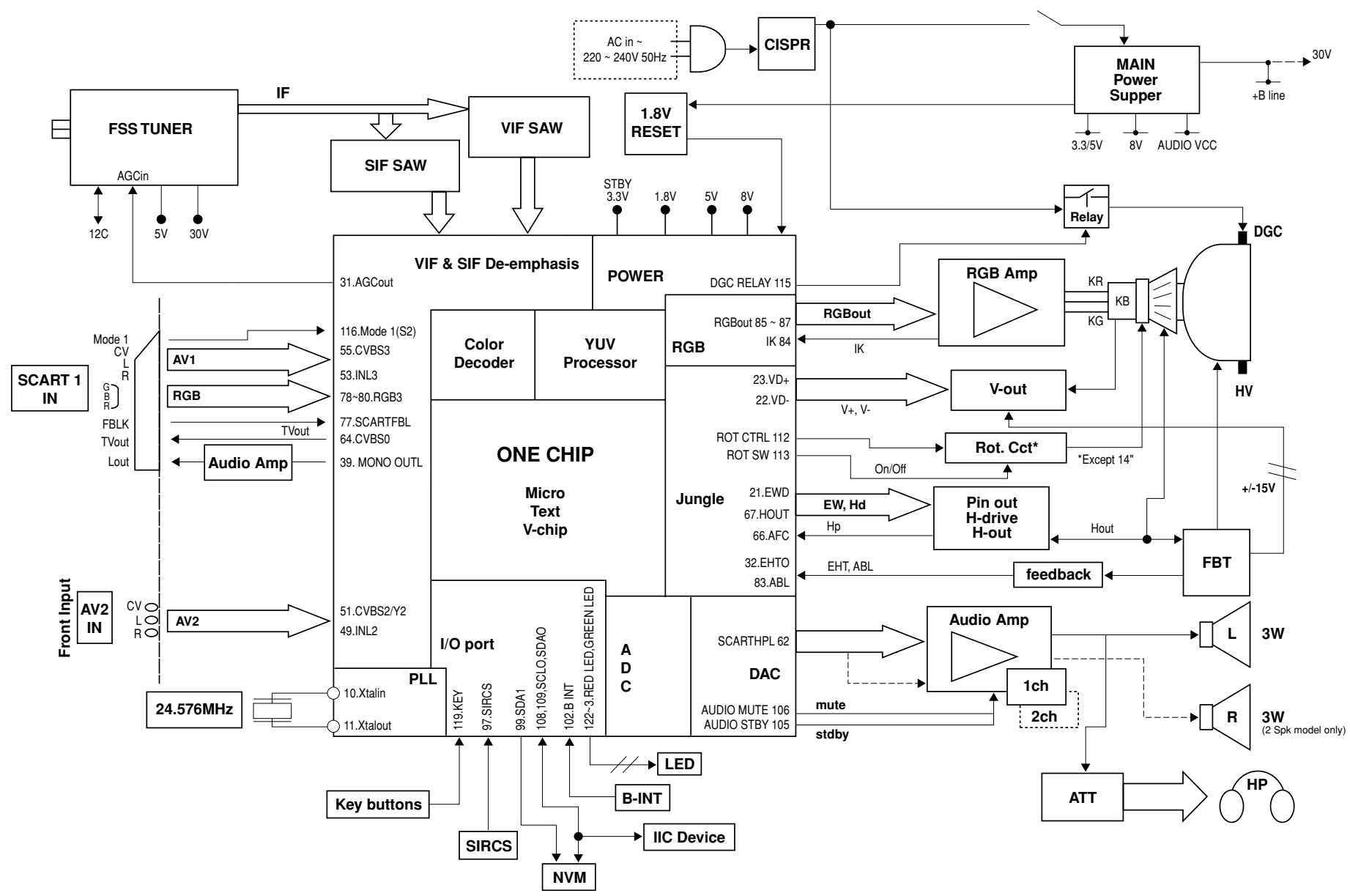


Horizontal Parallelogram (HPAR)

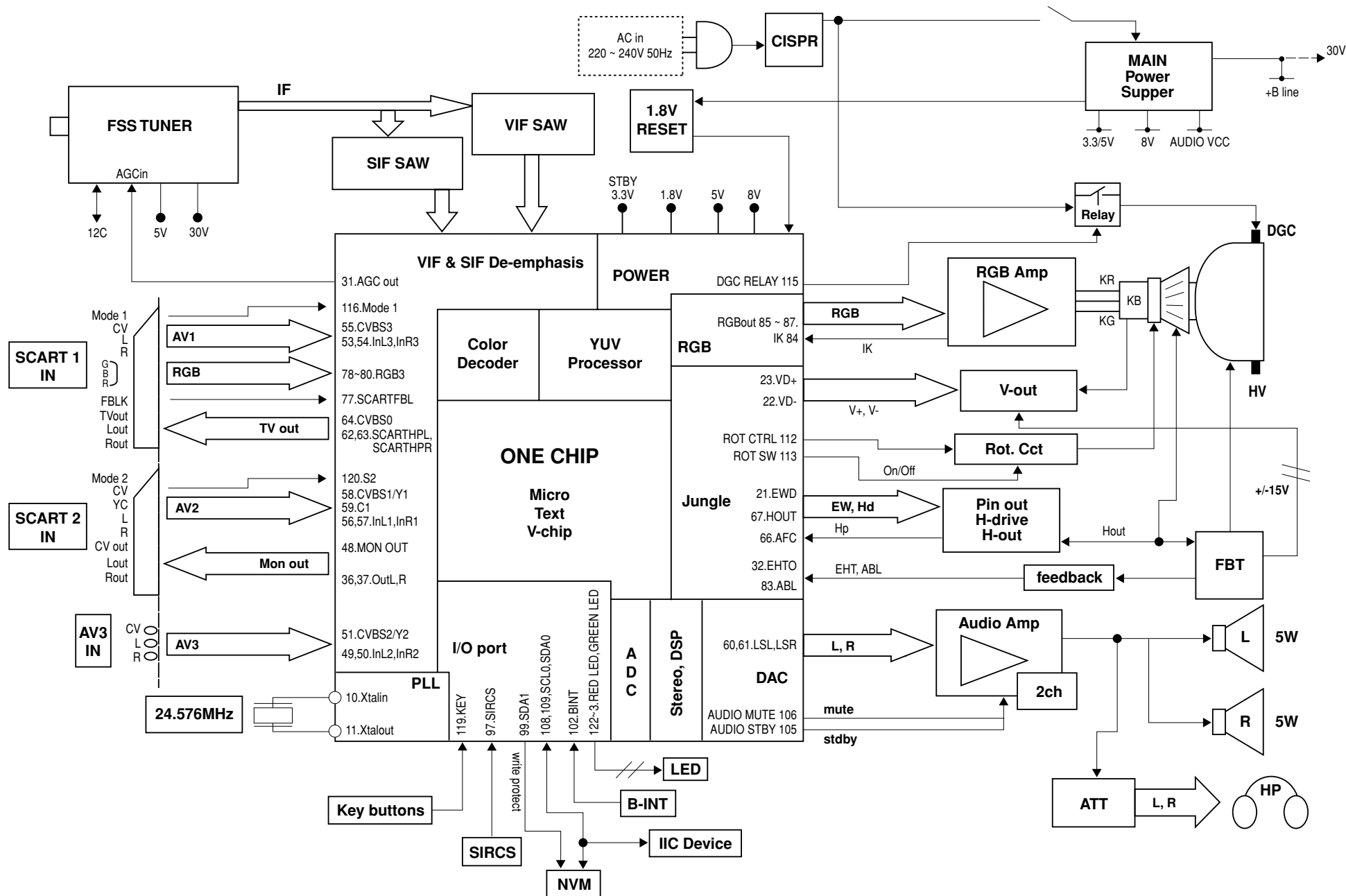


SECTION 4  
DIAGRAMS

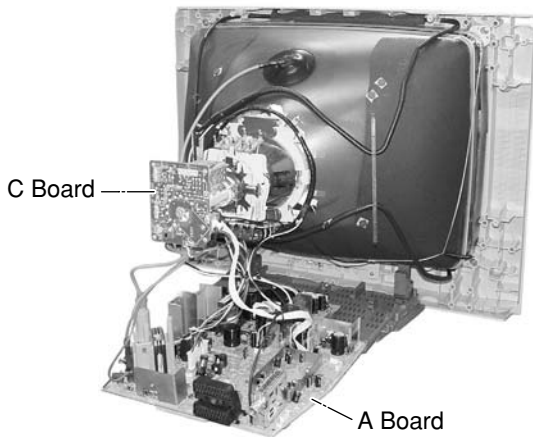
4-1. BLOCK DIAGRAM  
(KV-21CL1K)



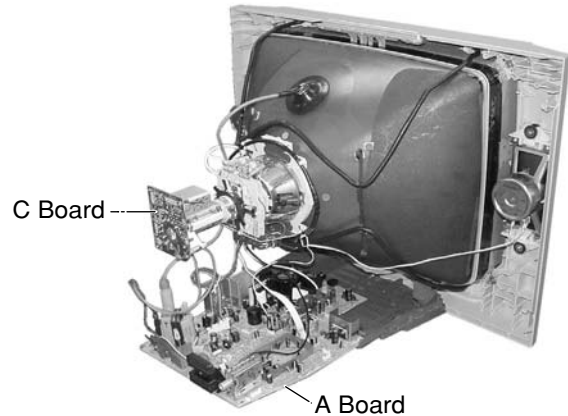
(except KV-21CL1K)



## 4-2. CIRCUIT BOARDS LOCATION



KV-21FQ Models



KV-21CL Models

## 4-3. SCHEMATIC DIAGRAM

### Note:

- All capacitors are in  $\mu\text{F}$  unless otherwise noted.
- All electrolytic capacitors are rated at 50V unless otherwise noted.
- All resistors are in ohms.  
 $\text{k}\Omega = 1000\Omega$ ,  $\text{M}\Omega = 1000\text{k}\Omega$
- Indication of resistance which does not have rating electrical power is as follows.

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

- : nonflammable resistor.
- $\Delta$  : internal component.
- : panel designation or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B unless otherwise noted.
- **Readings are taken with a color-bar signal input.**
- **Readings are taken with a 10  $\text{M}\Omega$  digital multimeter.**
- **Voltage are dc with respect to ground unless otherwise noted.**
- **Voltage variations may be noted due to normal production tolerances.**
- **All voltage are in Volt.**
- \* : Cannot be measured.
- **Circled numbers are waveform references.**
- : B +bus.
- : B -bus.
- : signal path.

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

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

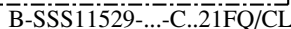
### Reference information

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

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

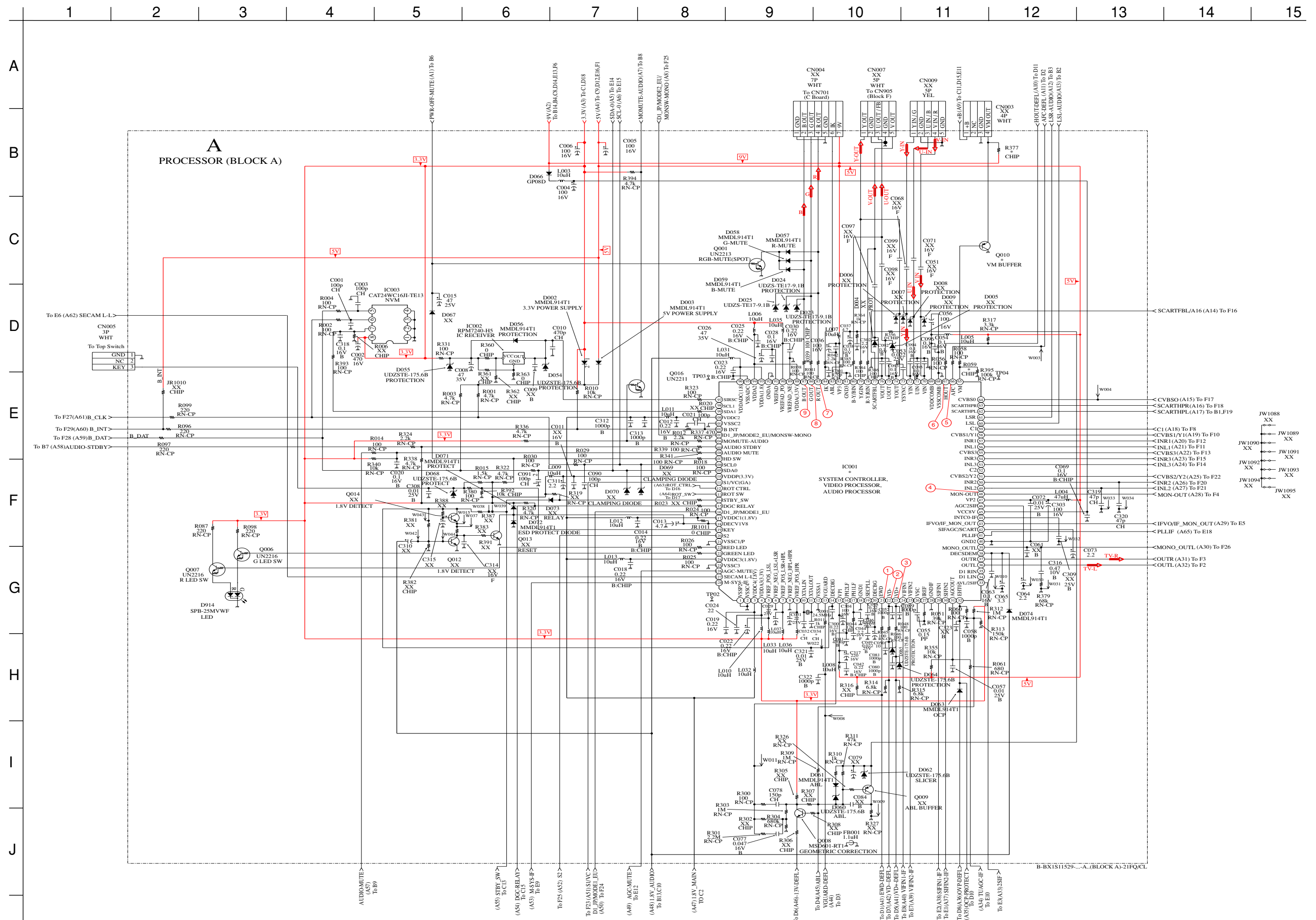
**Note:** "A" board schematic diagram is divided into 6 Block. Each block is named by its function and block "alphabet".  
eg: Processor (Block A)  
Joint connection between boards can be identified using the block alphabet followed by sequence numbering.  
eg: -<HOUT-DEFL (A10) To D11  
Meaning: Block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

1

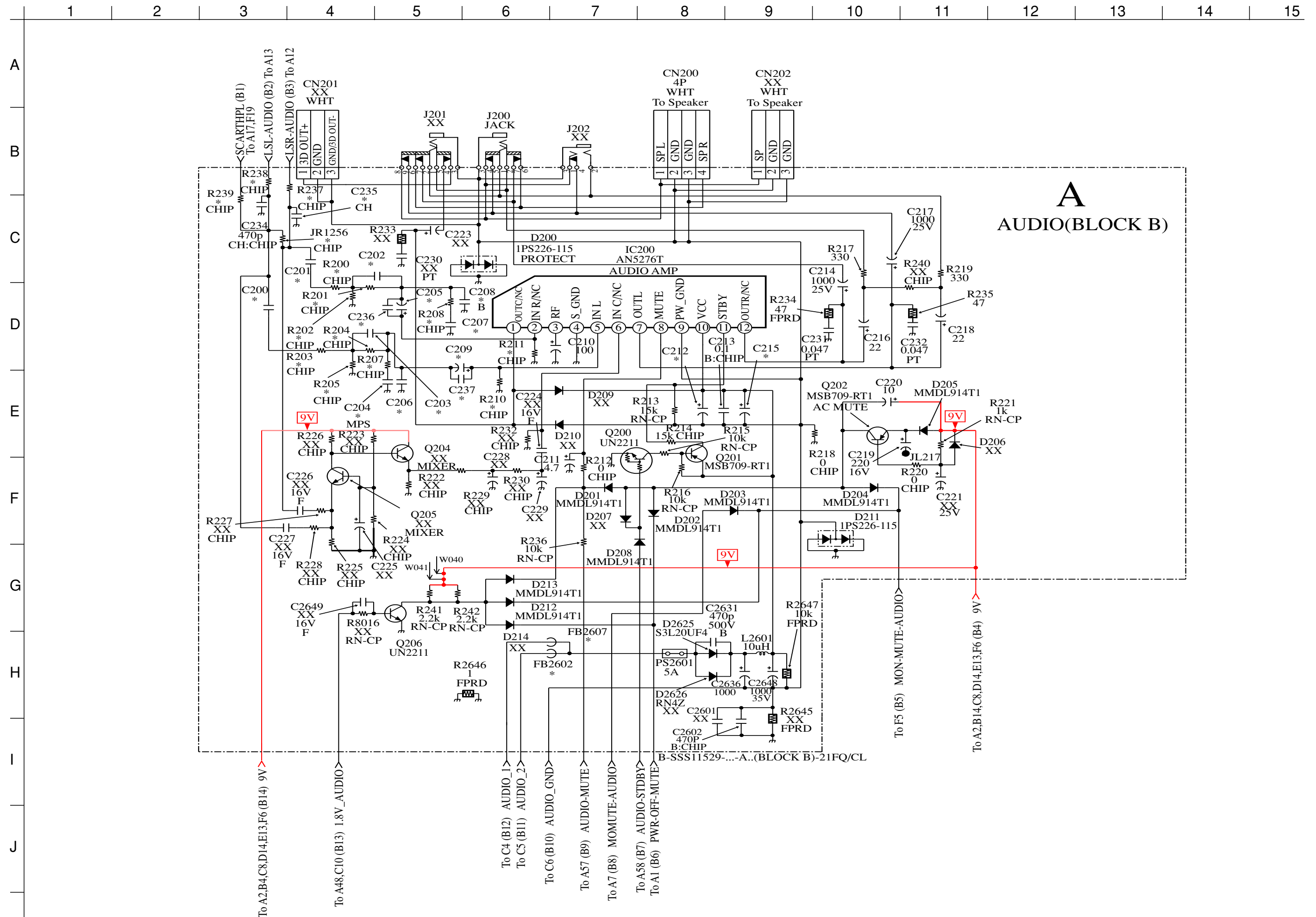


KV-21FQ10B/21FQ10E/21FQ10K/21CL10B  
KV-21CL10E/21CL10K/21CL10U/21CL1K  
RM-W100

4-3-2. A Board – Processor (Block A)



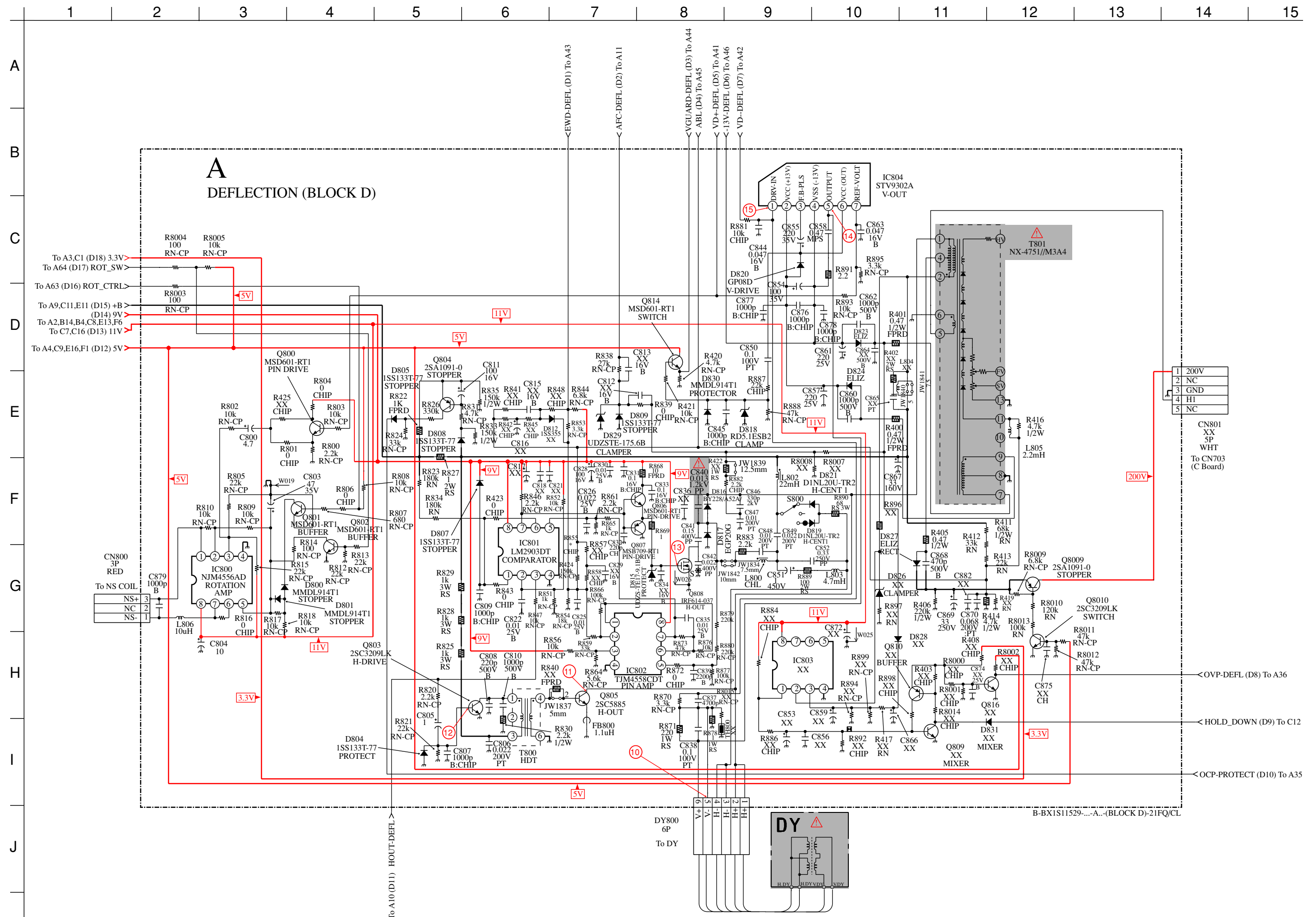
4-3-3. A Board – Audio (Block B)



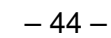




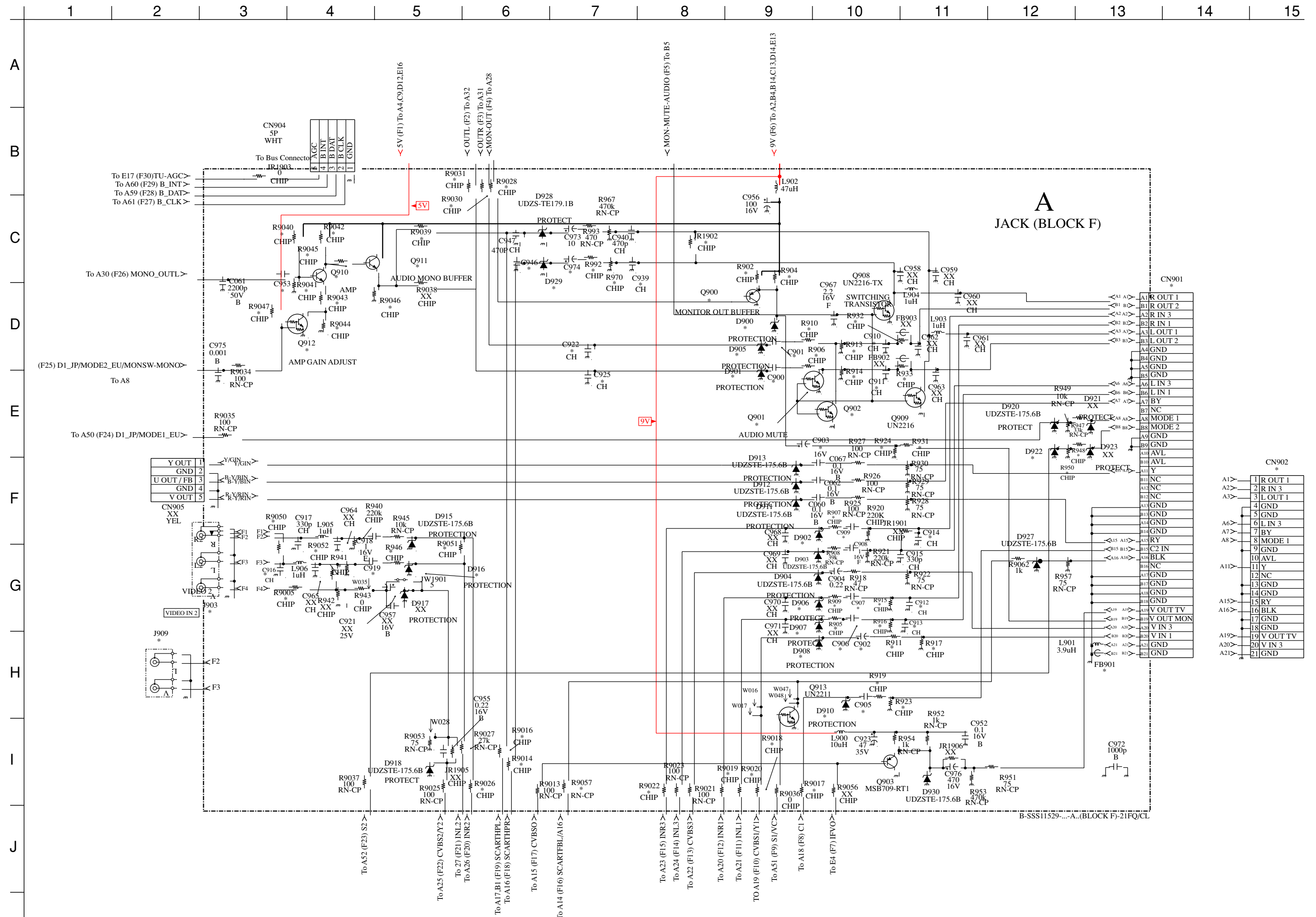
4-3-5. A Board – Deflection (Block D)



A  
—  
B  
—  
C  
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D  
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E  
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F  
—  
G  
—  
H  
—  
I  
—  
J



4-3-7. A Board – Jack, Scart Terminal (Block F)





A BOARD \* MARK LIST

	KV-21CL10B	KV-21CL10E	KV-21CL10K	KV-21CL10U	KV-21CL1K	KV-21FQ10B	KV-21FQ10E	KV-21FQ10K
C032	10P	10P	10P	10P	XX	10P	10P	10P
C034	10P	10P	10P	10P	XX	10P	10P	10P
C200	0.22 16V :CHIP	0.22 16V :CHIP	0.22 16V :CHIP	0.22 16V :CHIP	0.47 10V :CHIP	0.22 16V :CHIP	0.22 16V :CHIP	0.22 16V :CHIP
C201	0.22 16V :CHIP	0.22 16V :CHIP	0.22 16V :CHIP	0.22 16V :CHIP	0.47 10V :CHIP	0.22 16V :CHIP	0.22 16V :CHIP	0.22 16V :CHIP
C202	0.047 16V :CHIP	0.047 16V :CHIP	0.047 16V :CHIP	0.047 16V :CHIP	0.015 25V :CHIP	0.047 16V :CHIP	0.047 16V :CHIP	0.047 16V :CHIP
C203	0.047 16V :CHIP	0.047 16V :CHIP	0.047 16V :CHIP	0.047 16V :CHIP	0.015 25V :CHIP	0.047 16V :CHIP	0.047 16V :CHIP	0.047 16V :CHIP
C204	0.1 :PT	0.1 :PT	0.1 :PT	0.1 :PT	0.15 :PP	0.1 :PT	0.1 :PT	0.1 :PT
C205	0.47	0.47	0.47	0.47	XX	0.47	0.47	0.47
C206	0.01 25V :CHIP	0.01 25V :CHIP	0.01 25V :CHIP	0.01 25V :CHIP	0.022 25V :CHIP	0.01 25V :CHIP	0.01 25V :CHIP	0.01 25V :CHIP
C207	0.1 :PT	0.1 :PT	0.1 :PT	0.1 :PT	0.15 :PP	0.1 :PT	0.1 :PT	0.1 :PT
C208	0.01 25V :CHIP	0.01 25V :CHIP	0.01 25V :CHIP	0.01 25V :CHIP	0.022 25V :CHIP	0.01 25V :CHIP	0.01 25V :CHIP	0.01 25V :CHIP
C209	0.47	0.47	0.47	0.47	XX	0.47	0.47	0.47
C212	XX	XX	XX	XX	1000 25V	XX	XX	XX
C215	2200	2200	2200	2200	XX	2200	2200	2200
C235	470P :CHIP	470P :CHIP	470P :CHIP	470P :CHIP	XX	470P :CHIP	470P :CHIP	470P :CHIP
C236	XX	XX	XX	XX	0.1 :PT	XX	XX	XX
C237	XX	XX	XX	XX	0.1 :PT	XX	XX	XX
C900	4.7 10V :CHIP	4.7 10V :CHIP	4.7 10V :CHIP	4.7 10V :CHIP	XX	4.7 10V :CHIP	4.7 10V :CHIP	4.7 10V :CHIP
C901	4.7 10V :CHIP	4.7 10V :CHIP	4.7 10V :CHIP	4.7 10V :CHIP	XX	4.7 10V :CHIP	4.7 10V :CHIP	4.7 10V :CHIP
C902	0.22	0.22	0.22	0.22	XX	0.22	0.22	0.22
C903	470 16V	470 16V	470 16V	470 16V	XX	470 16V	470 16V	470 16V
C905	0.01 25V :CHIP	0.01 25V :CHIP	0.01 25V :CHIP	0.01 25V :CHIP	XX	0.01 25V :CHIP	0.01 25V :CHIP	0.01 25V :CHIP
C906	1 16V :CHIP	1 16V :CHIP	1 16V :CHIP	1 16V :CHIP	XX	1 16V :CHIP	1 16V :CHIP	1 16V :CHIP
C907	1 16V :CHIP	1 16V :CHIP	1 16V :CHIP	1 16V :CHIP	XX	1 16V :CHIP	1 16V :CHIP	1 16V :CHIP
C909	1 16V :CHIP	1 16V :CHIP	1 16V :CHIP	1 16V :CHIP	XX	1 16V :CHIP	1 16V :CHIP	1 16V :CHIP
C910	470P :CHIP	470P :CHIP	470P :CHIP	470P :CHIP	XX	470P :CHIP	470P :CHIP	470P :CHIP
C911	470P :CHIP	470P :CHIP	470P :CHIP	470P :CHIP	XX	470P :CHIP	470P :CHIP	470P :CHIP
C912	330P :CHIP	330P :CHIP	330P :CHIP	330P :CHIP	XX	330P :CHIP	330P :CHIP	330P :CHIP
C913	330P :CHIP	330P :CHIP	330P :CHIP	330P :CHIP	XX	330P :CHIP	330P :CHIP	330P :CHIP
C914	330P :CHIP	330P :CHIP	330P :CHIP	330P :CHIP	XX	330P :CHIP	330P :CHIP	330P :CHIP
C916	330P :CHIP	330P :CHIP	330P :CHIP	330P :CHIP	XX	330P :CHIP	330P :CHIP	330P :CHIP
C919	1 16V :CHIP	1 16V :CHIP	1 16V :CHIP	1 16V :CHIP	XX	1 16V :CHIP	1 16V :CHIP	1 16V :CHIP
C922	470P :CHIP	470P :CHIP	470P :CHIP	470P :CHIP	XX	470P :CHIP	470P :CHIP	470P :CHIP
C925	470P :CHIP	470P :CHIP	470P :CHIP	470P :CHIP	XX	470P :CHIP	470P :CHIP	470P :CHIP
C939	470P :CHIP	470P :CHIP	470P :CHIP	470P :CHIP	XX	470P :CHIP	470P :CHIP	470P :CHIP
C946	470P :CHIP	470P :CHIP	470P :CHIP	470P :CHIP	XX	470P :CHIP	470P :CHIP	470P :CHIP
C953	XX	XX	XX	XX	0.1 16V :CHIP	XX	XX	XX
C974	10	10	10	10	XX	10	10	10
C1233	XX	XX	XX	XX	4.7	XX	XX	XX
CN901	CONNECTOR, DUAL SCART	CONNECTOR, DUAL SCART	CONNECTOR, DUAL SCART	CONNECTOR, DUAL SCART	XX	CONNECTOR, DUAL SCART	CONNECTOR, DUAL SCART	CONNECTOR, DUAL SCART
CN902	XX	XX	XX	XX	21P	XX	XX	XX
D900	UDZSTE-179.1B	UDZSTE-179.1B	UDZSTE-179.1B	UDZSTE-179.1B	XX	UDZSTE-179.1B	UDZSTE-179.1B	UDZSTE-179.1B
D901	UDZSTE-179.1B	UDZSTE-179.1B	UDZSTE-179.1B	UDZSTE-179.1B	XX	UDZSTE-179.1B	UDZSTE-179.1B	UDZSTE-179.1B
D902	UDZSTE-175.6B	UDZSTE-175.6B	UDZSTE-175.6B	UDZSTE-175.6B	XX	UDZSTE-175.6B	UDZSTE-175.6B	UDZSTE-175.6B
D905	UDZSTE-179.1B	UDZSTE-179.1B	UDZSTE-179.1B	UDZSTE-179.1B	XX	UDZSTE-179.1B	UDZSTE-179.1B	UDZSTE-179.1B
D906	UDZSTE-175.6B	UDZSTE-175.6B	UDZSTE-175.6B	UDZSTE-175.6B	XX	UDZSTE-175.6B	UDZSTE-175.6B	UDZSTE-175.6B
D907	UDZSTE-175.6B	UDZSTE-175.6B	UDZSTE-175.6B	UDZSTE-175.6B	XX	UDZSTE-175.6B	UDZSTE-175.6B	UDZSTE-175.6B
D908	UDZSTE-175.6B	UDZSTE-175.6B	UDZSTE-175.6B	UDZSTE-175.6B	XX	UDZSTE-175.6B	UDZSTE-175.6B	UDZSTE-175.6B
D910	UDZSTE-175.6B	UDZSTE-175.6B	UDZSTE-175.6B	UDZSTE-175.6B	XX	UDZSTE-175.6B	UDZSTE-175.6B	UDZSTE-175.6B
D916	UDZSTE-175.6B	UDZSTE-175.6B	UDZSTE-175.6B	UDZSTE-175.6B	XX	UDZSTE-175.6B	UDZSTE-175.6B	UDZSTE-175.6B
D922	UDZSTE-175.6B	UDZSTE-175.6B	UDZSTE-175.6B	UDZSTE-175.6B	XX	UDZSTE-175.6B	UDZSTE-175.6B	UDZSTE-175.6B
D929	UDZSTE-179.1B	UDZSTE-179.1B	UDZSTE-179.1B	UDZSTE-179.1B	XX	UDZSTE-179.1B	UDZSTE-179.1B	UDZSTE-179.1B
FB901	0uH	0uH	0uH	0uH	XX	0uH	0uH	0uH
FB2602	XX	XX	XX	XX	1.1uH	XX	XX	XX
FB2607	1.1uH	1.1uH	1.1uH	1.1uH	XX	1.1uH	1.1uH	1.1uH
IC001	TDA12027H/N1A0B0AG	TDA12027H/N1A0B0AG	TDA12027H/N1A0B0AG	TDA12027H/N1A0B0AG	TDA11020H/N1A00AK	TDA12027H/N1A0B0AG	TDA12027H/N1A0B0AG	TDA12027H/N1A0B0AG
IC601	STR-F6267-SLF1357	STR-F6267-SLF1357	STR-F6267-SLF1357	STR-F6267-SLF1357	MD160B21USL	STR-F6267-SLF1357	STR-F6267-SLF1357	STR-F6267-SLF1357
J903	3P	3P	3P	3P	XX	3P	3P	3P
J909	XX	XX	XX	XX	2P	XX	XX	XX
JR1902	XX	XX	XX	XX	0:CHIP	XX	XX	XX
JR1256	XX	XX	XX	XX	0:CHIP	XX	XX	XX
Q010	MSB709-RT1	MSB709-RT1	MSB709-RT1	MSB709-RT1	XX	MSB709-RT1	MSB709-RT1	MSB709-RT1
Q900	MSB709-RT1	MSB709-RT1	MSB709-RT1	MSB709-RT1	XX	MSB709-RT1	MSB709-RT1	MSB709-RT1
Q901	UN2216	UN2216	UN2216	UN2216	XX	UN2216	UN2216	UN2216
Q902	UN2216	UN2216	UN2216	UN2216	XX	UN2216	UN2216	UN2216
Q910	XX	XX	XX	XX	MSD601-RT1	XX	XX	XX
Q911	XX	XX	XX	XX	MSD601-RT1	XX	XX	XX
Q912	XX	XX	XX	XX	UN2211	XX	XX	XX
R059	1K :CHIP	1K :CHIP	1K :CHIP	1K :CHIP	XX	1K :CHIP	1K :CHIP	1K :CHIP
R200	3.3K :CHIP	3.3K :CHIP	3.3K :CHIP	3.3K :CHIP	0 :CHIP	3.3K :CHIP	3.3K :CHIP	3.3K :CHIP
R201	3.3K :RN-CP	3.3K :RN-CP	3.3K :RN-CP	3.3K :RN-CP	10K :RN-CP	3.3K :RN-CP	3.3K :RN-CP	3.3K :RN-CP
R202	5.6K :RN-CP	5.6K :RN-CP	5.6K :RN-CP	5.6K :RN-CP	XX	5.6K :RN-CP	5.6K :RN-CP	5.6K :RN-CP
R203	3.3K :RN-CP	3.3K :RN-CP	3.3K :RN-CP	3.3K :RN-CP	0:CHIP	3.3K :RN-CP	3.3K :RN-CP	3.3K :RN-CP


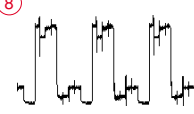
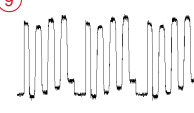

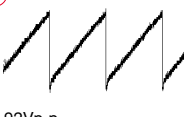
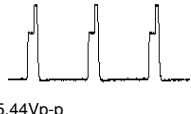
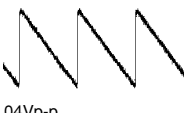
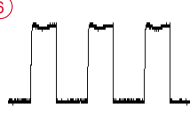
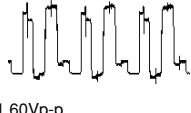
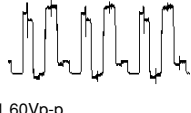
A BOARD \* MARK LIST

	KV-21CL10B	KV-21CL10E	KV-21CL10K	KV-21CL10U	KV-21CL1K	KV-21FQ10B	KV-21FQ10E	KV-21FQ10K
R204	3.3K :RN-CP	3.3K :RN-CP	3.3K :RN-CP	3.3K :RN-CP	10K :RN-CP	3.3K :RN-CP	3.3K :RN-CP	3.3K :RN-CP
R205	5.6K :RN-CP	5.6K :RN-CP	5.6K :RN-CP	5.6K :RN-CP	XX	5.6K :RN-CP	5.6K :RN-CP	5.6K :RN-CP
R207	6.8K :RN-CP	6.8K :RN-CP	6.8K :RN-CP	6.8K :RN-CP	1.5K :RN-CP	6.8K :RN-CP	6.8K :RN-CP	6.8K :RN-CP
R208	6.8K :RN-CP	6.8K :RN-CP	6.8K :RN-CP	6.8K :RN-CP	1.5K :RN-CP	6.8K :RN-CP	6.8K :RN-CP	6.8K :RN-CP
R210	15K :RN-CP	15K :RN-CP	15K :RN-CP	15K :RN-CP	33K :RN-CP	15K :RN-CP	15K :RN-CP	15K :RN-CP
R211	15K :RN-CP	15K :RN-CP	15K :RN-CP	15K :RN-CP	33K :RN-CP	15K :RN-CP	15K :RN-CP	15K :RN-CP
R237	100 :RN-CP	100 :RN-CP	100 :RN-CP	100 :RN-CP	XX	100 :RN-CP	100 :RN-CP	100 :RN-CP
R238	100 :RN-CP	100 :RN-CP	100 :RN-CP	100 :RN-CP	XX	100 :RN-CP	100 :RN-CP	100 :RN-CP
R239	XX	XX	XX	XX	100 :RN-CP	XX	XX	XX
R377	1.5K :RN-CP	1.5K :RN-CP	1.5K :RN-CP	1.5K :RN-CP	XX	1.5K :RN-CP	1.5K :RN-CP	1.5K :RN-CP
R855	33K :CHIP	33K :CHIP	33K :CHIP	33K :CHIP	10K :CHIP	33K :CHIP	33K :CHIP	33K :CHIP
R902	1K :RN-CP	1K :RN-CP	1K :RN-CP	1K :RN-CP	XX	1K :RN-CP	1K :RN-CP	1K :RN-CP
R904	1K :RN-CP	1K :RN-CP	1K :RN-CP	1K :RN-CP	XX	1K :RN-CP	1K :RN-CP	1K :RN-CP
R905	39K :RN-CP	39K :RN-CP	39K :RN-CP	39K :RN-CP	XX	39K :RN-CP	39K :RN-CP	39K :RN-CP
R906	470 :RN-CP	470 :RN-CP	470 :RN-CP	470 :RN-CP	XX	470 :RN-CP	470 :RN-CP	470 :RN-CP
R907	39K :RN-CP	39K :RN-CP	39K :RN-CP	39K :RN-CP	XX	39K :RN-CP	39K :RN-CP	39K :RN-CP
R909	39K :RN-CP	39K :RN-CP	39K :RN-CP	39K :RN-CP	XX	39K :RN-CP	39K :RN-CP	39K :RN-CP
R910	470 :RN-CP	470 :RN-CP	470 :RN-CP	470 :RN-CP	XX	470 :RN-CP	470 :RN-CP	470 :RN-CP
R911	47 :RN-CP	47 :RN-CP	47 :RN-CP	47 :RN-CP	XX	47 :RN-CP	47 :RN-CP	47 :RN-CP
R913	470K :RN-CP	470K :RN-CP	470K :RN-CP	470K :RN-CP	XX	470K :RN-CP	470K :RN-CP	470K :RN-CP
R914	470K :RN-CP	470K :RN-CP	470K :RN-CP	470K :RN-CP	XX	470K :RN-CP	470K :RN-CP	470K :RN-CP
R915	220K :RN-CP	220K :RN-CP	220K :RN-CP	220K :RN-CP	XX	220K :RN-CP	220K :RN-CP	220K :RN-CP
R916	220K :RN-CP	220K :RN-CP	220K :RN-CP	220K :RN-CP	XX	220K :RN-CP	220K :RN-CP	220K :RN-CP
R917	75 :RN-CP	75 :RN-CP	75 :RN-CP	75 :RN-CP	XX	75 :RN-CP	75 :RN-CP	75 :RN-CP
R919	220 :RN-CP	220 :RN-CP	220 :RN-CP	220 :RN-CP	XX	220 :RN-CP	220 :RN-CP	220 :RN-CP
R920	220K :RN-CP	220K :RN-CP	220K :RN-CP	220K :RN-CP	XX	220K :RN-CP	220K :RN-CP	220K :RN-CP
R923	75 :RN-CP	75 :RN-CP	75 :RN-CP	75 :RN-CP	XX	75 :RN-CP	75 :RN-CP	75 :RN-CP
R924	470K :RN-CP	470K :RN-CP	470K :RN-CP	470K :RN-CP	XX	470K :RN-CP	470K :RN-CP	470K :RN-CP
R931	68 :CHIP	68 :CHIP	68 :CHIP	68 :CHIP	XX	68 :CHIP	68 :CHIP	68 :CHIP
R932	0:CHIP	0:CHIP	0:CHIP	0:CHIP	XX	0:CHIP	0:CHIP	0:CHIP
R933	0:CHIP	0:CHIP	0:CHIP	0:CHIP	XX	0:CHIP	0:CHIP	0:CHIP
R941	220K :RN-CP	220K :RN-CP	220K :RN-CP	220K :RN-CP	XX	220K :RN-CP	220K :RN-CP	220K :RN-CP
R946	10K :RN-CP	10K :RN-CP	10K :RN-CP	10K :RN-CP	XX	10K :RN-CP	10K :RN-CP	10K :RN-CP
R948	33K :RN-CP	33K :RN-CP	33K :RN-CP	33K :RN-CP	XX	33K :RN-CP	33K :RN-CP	33K :RN-CP
R950	10K :RN-CP	10K :RN-CP	10K :RN-CP	10K :RN-CP	XX	10K :RN-CP	10K :RN-CP	10K :RN-CP
R970	470K :RN-CP	470K :RN-CP	470K :RN-CP	470K :RN-CP	XX	470K :RN-CP	470K :RN-CP	470K :RN-CP
R992	470 :RN-CP	470 :RN-CP	470 :RN-CP	473 :RN-CP	XX	470 :RN-CP	470 :RN-CP	470 :RN-CP
R1201	XX	XX	XX	XX	470K :CHIP	XX	XX	XX
R9005	0:CHIP	0:CHIP	0:CHIP	0:CHIP	XX	0:CHIP	0:CHIP	0:CHIP
R9014	100 :RN-CP	100 :RN-CP	100 :RN-CP	100 :RN-CP	XX	100 :RN-CP	100 :RN-CP	100 :RN-CP
R9016	100 :RN-CP	100 :RN-CP	100 :RN-CP	100 :RN-CP	XX	100 :RN-CP	100 :RN-CP	100 :RN-CP
R9017	100 :RN-CP	100 :RN-CP	100 :RN-CP	100 :RN-CP	XX	100 :RN-CP	100 :RN-CP	100 :RN-CP
R9018	100 :RN-CP	100 :RN-CP	100 :RN-CP	100 :RN-CP	XX	100 :RN-CP	100 :RN-CP	100 :RN-CP
R9019	100 :RN-CP	100 :RN-CP	100 :RN-CP	100 :RN-CP	XX	100 :RN-CP	100 :RN-CP	100 :RN-CP
R9020	100 :RN-CP	100 :RN-CP	100 :RN-CP	100 :RN-CP	XX	100 :RN-CP	100 :RN-CP	100 :RN-CP
R9022	100 :RN-CP	100 :RN-CP	100 :RN-CP	100 :RN-CP	XX	100 :RN-CP	100 :RN-CP	100 :RN-CP
R9026	27K :RN-CP	27K :RN-CP	27K :RN-CP	27K :RN-CP	XX	27K :RN-CP	27K :RN-CP	27K :RN-CP
R9028	100 :RN-CP	100 :RN-CP	100 :RN-CP	100 :RN-CP	XX	100 :RN-CP	100 :RN-CP	100 :RN-CP
R9030	100 :RN-CP	100 :RN-CP	100 :RN-CP	100 :RN-CP	XX	100 :RN-CP	100 :RN-CP	100 :RN-CP
R9031	100 :RN-CP	100 :RN-CP	100 :RN-CP	100 :RN-CP	XX	100 :RN-CP	100 :RN-CP	100 :RN-CP
R9039	XX	XX	XX	XX	0:CHIP	XX	XX	XX
R9040	XX	XX	XX	XX	1M :RN-CP	XX	XX	XX
R9041	XX	XX	XX	XX	1M :RN-CP	XX	XX	XX
R9042	XX	XX	XX	XX	3.3K :RN-CP	XX	XX	XX
R9043	XX	XX	XX	XX	1K :RN-CP	XX	XX	XX
R9044	XX	XX	XX	XX	470 :RN-CP	XX	XX	XX
R9045	XX	XX	XX	XX	100 :RN-CP	XX	XX	XX
R9046	XX	XX	XX	XX	2.2K :RN-CP	XX	XX	XX
R9047	XX	XX	XX	XX	10K :RN-CP	XX	XX	XX
R9050	0:CHIP	0:CHIP	0:CHIP	0:CHIP	XX	0:CHIP	0:CHIP	0:CHIP
R9051	XX	XX	XX	XX	0:CHIP	XX	XX	XX
R9052	XX	XX	XX	XX	0:CHIP	XX	XX	XX
SWF102	FILTER, SURFACE WAVE	XX	XX	XX	XX	FILTER, SURFACE WAVE	XX	XX
TU101	FSS BTP-AC421	FSS BTP-AC421	FSS BTP-AC421	FSS BTP-AU621	FSS BTP-AC421	FSS BTP-AC421	FSS BTP-AC421	FSS BTP-AC421

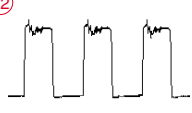
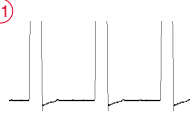


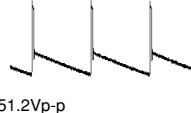

Note: The parts indicated as "XX" in this circuit diagram are not listed here, as they are not used for these models.

#### 4-4. VOLTAGE MEASUREMENT & WAVEFORM

A BOARD VOLTAGE LIST AND WAVEFORM

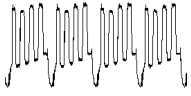

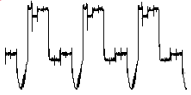

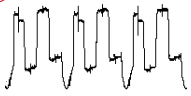
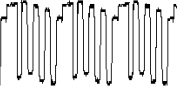
Ref	Pin No.	Voltage[v]	Ref	Pin No.	Voltage[v]	Ref	Pin No.	Voltage[v]	
IC001	1	0.01		48	0.05		86	1.5	
	2	0.01		<div>④</div>  <div>2.16Vp-p</div>	<div>⑧</div>  <div>1.40Vp-p</div>				
	3	0.03							
	4	3.3							
	5	3.3							
	6	0.01							
	7	3.3							
	8	0							
	9	3.3		49	2.2		87	1.6	
	10	—		50	2.2		<div>⑨</div>  <div>1.40Vp-p</div>		
	11	—		51	1.4				
	12	10		52	1.6				
	13	0.17		53	2.2				
	14	2.5		54	2.2				
	15	4.9		55	1.4				
	16	1.9		56	2.2				
	17	2.3		57	2.2				
	18	0.01		58	1.4		88	3.3	
	19	2.3		59	1.6		89	0.01	
	20	2.3		60	3.2		90	3.3	
	21	4.3		61	3.2		91	0.03	
	<div>①</div>  <div>1.08Vp-p</div>	62		3.4	92		0.01		
		63		3.5	93		0.05		
		64		1.3	94		3.3		
		65		3.4	95		0.01		
		66		0.5	96		1.7		
		<div>②</div>  <div>1.92Vp-p</div>		<div>⑤</div>  <div>5.44Vp-p</div>	97		1.5		
					98		3.6		
					99		3.6		
		22		0.05	67		1.4	100	1.8
		<div>③</div>  <div>2.04Vp-p</div>		<div>⑥</div>  <div>3.12Vp-p</div>	101		0.01		
	<div>⑦</div>  <div>1.60Vp-p</div>				102		3.3		
					103		0.73		
		104		0.05					
		105		2.7					
		106		0.03					
		107		3.3					
		108		3.2					
		109		3.6					
		110		3.3					
		24		2.0	68		0	111	0.64
	25	2.0		69	4.9		112	0.03	
	26	2.4		70	1.3		113	0.04	
	27	2.0		71	1.3		114	3.0	
	28	0.05		72	1.3		115	0.03	
	29	0.04		73	2.0		116	0	
	30	1.9		74	1.8		117	0.02	
	31	2.7		75	0.13		118	1.8	
	32	0.55		76	0.01		119	1.8	
	33	0.04		77	0.01		120	0.74	
34	0.04	78	1.3	121	0.01				
35	2.2	79	1.3	122	0.01				
36	3.1	80	1.3	123	3.3				
37	3.1	81	0.03	124	0.05				
38	0.03	82	4.9	125	0.01				
39	2.4	83	2.9	126	3.3				
40	0.01	84	3.2	127	3.4				
41	2.0	85	1.6	128	0.13				
42	1.9	<div>⑦</div>  <div>1.60Vp-p</div>	IC002	VCC	56.2				
43	2.3			G	55.6				
44	0.03			O	55.6				
45	8.5			IC003	1	0			
46	2.3				2	0			
47	4.9				3	0			
					4	0			
					5	3.6			
					6	3.6			
					7	0			
		8	3.3						

A BOARD VOLTAGE LIST AND WAVEFORM

Ref	Pin No.	Voltage[v]	Ref	Pin No.	Voltage[v]	Ref	Pin No.	Voltage[v]	
IC200	1	0.01	PH600	6	14.0	Q805	<div><div>12</div></div>		
	2	(-0.01)[0]		7	0.44			C	55.4
	3	22.6		1	19.1			E	0.01
	4	0		2	18.0				
	5	(-0.01)[0]	3	0.05	B		-0.08		
	6	(0.01)[0.02]	4	2.6	C		135.4		
	7	11.2	Q001	B	0.02		<div><div>11</div></div>		
	8	0.8		C	0.02				
	9	0		E	2.8				
	10	23.8	Q006	B	3.3	Q806		B	6.0
	11	10.4		C	2.1		C	8.9	
	12	11.1		E	2.0		E	5.6	
IC601	1	0.56	Q007	B	0.01		Q807	B	6.0
	2	0.05		C	3.3			C	0
	3	286.6		E	0.34			E	5.6
	4	19.3	Q008	B	-0.44			Q808	S
	5	2.88		C	0.02		<div><div>13</div></div>		
IC602	I	14.2	E	0	Q814				G
	G	-0.01	Q009	B		0			D
	O	8.9		C		2.2		B	0.04
IC604	I	8.9		E	0	Q012	E	4.9	
	G	-0.01	B	0.63	Q807		C	0.22	
	O	4.9	C	0.03			B	1.3	
IC800	1	3.8	E	0		Q808	E	2.0	
	2	7.1	Q013	B	0.04		Q900	B	0.24
	3	7.1		C	1.8			C	0.03
	4	-0.01		E	0	Q901		E	0.01
	5	10.4	Q100	B	2.7		Q902	B	0.24
	6	10.2		C	8.9			C	0.01
	7	10.2		E	2.1	E		0.01	
	8	14.2	Q105	B	0.03	Q903	B	4.3	
IC801	1	2.2		C	4.1		Q814	C	1.4
	2	0.83		E	4.8			E	4.9
	3	1.5	Q106	B	0.03	Q908		B	0.24
	4	0		C	4.8		C	1.1	
	5	2.8		E	0.01		E	0.02	
	6	2.3	Q200	B	1.9	Q909	B	0.25	
	7	6.0		C	0.07		C	1.1	
	8	9.0		E	-0.01		E	0.01	
IC802	1	1.8	Q201	B	23.0	Q910	B	0.01	
	2	3.2		C	24.0		C	0.01	
	3	3.2		E	24.0		E	0.01	
	4	0	Q202	B	8.9	Q902	B	0.24	
	5	2.2		C	0.66		C	0.01	
	6	2.2		E	8.8		E	0.01	
	7	4.1	Q204	B	0	Q903	B	4.3	
	8	8.9		C	8.9		C	1.4	
IC803	1	0.02		E	0.04		Q908	E	4.9
	2	0	Q205	B	0.01	Q909		B	0.24
	3	0.01		C	0.02			C	1.1
	4	0.01		E	0.02		Q910	E	0.02
	5	0.02	Q601	B	0.04	Q901		B	0.25
	6	0		C	14.2			C	1.1
	7	-0.01		E	0		E	0.01	
	8	0.01	Q608	B	0.1	Q912	B	0.37	
IC804	1	0.43		C	15.5		Q8010	C	0.02
	<div><div>15</div></div>	E		0	E			0	
		2	13.6	Q609	B	0.66		Q802	B
			3		-12.0	C	0.01		C
	4		-13.5		E	0	E		0
	5	0.16	Q800	B	1.7	Q803	B	0.05	
	<div><div>14</div></div>	C		8.9	<div><div>10</div></div>		C	0.12	
		E		1.1			E	0.01	



C BOARD VOLTAGE LIST AND WAVEFORM

Ref	Pin No.	Voltage[v]	Ref	Pin No.	Voltage[v]
IC751	1	1.7		7	139.2
	①	 1.56Vp-p		④	 108.0Vp-p
	2	1.6		8	149.0
	②	 1.66Vp-p		⑤	 98.0Vp-p
	3	1.7		9	138.4
	③	 1.64Vp-p		⑥	 98.0Vp-p
	4	0	J751	5	0
	5	4.2		6	0
	6	197.7		8	138.2
				9	150.0
				10	140.0

## 4-6. SEMICONDUCTORS

### TRANSISTOR

MSB709-RT1 MSD601-RT1 UN2211 UN2213 UN2216	2SC3209LK	IRF614-037	FN155	2SA1091-0	BY228/A52A

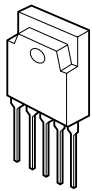
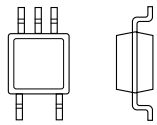
D3SB60F3	HSS82-TJ RD5.1ESB2 MTZJ-T-77-15 UPC574J 1SS133T-77	MMDL914T1 RD3.6SB	AM01AV1 D1NL20U D1NL20U-TR2 EGP20G EL1Z GPO8D RU4AM-T3	S2L20UF S3L20UF4	MA2ZD14001SO UDZSTE-175.6B UDZSTE-179.1B

### IC

1PS226-115	NJM4556AD		CAT24WC16J1-TE13 LM2903DT TJM4558CDT		STV9302A

BA033T	SE135N-LF4	TA7805S	RPM7240-H5	PQ09RD1SJ00H PQ018SEF01SZH	TDA6108A

IC

	 TOP VIEW				
STR-F6264S-LF1357	NJM2872F18(TE2)				

# A

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

- MMH : mH, UH :  $\mu$ H

C214	1-126-942-61	ELECT	1000UF	20.00%	25V
C216	1-126-965-91	ELECT	22UF	20.00%	50V

**KV-21FQ10B/21FQ10E/21FQ10K/21CL10B**  
**KV-21CL10E/21CL10K/21CL10U/21CL1K**  
**RM-W100**

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

**A**

REF NO.	PART NO.	DESCRIPTION	REMARK
C217	1-126-942-61	ELECT	1000UF 20.00% 25V
C218	1-126-965-91	ELECT	22UF 20.00% 50V
C219	1-126-934-11	ELECT	220UF 20.00% 16V
C220	1-126-964-11	ELECT	10UF 20.00% 50V
C231	1-137-374-11	MYLAR	0.047UF 5.00% 50V
C232	1-137-374-11	MYLAR	0.047UF 5.00% 50V
C234	1-164-315-11	CERAMIC CHIP	470PF 5.00% 50V
C300	1-127-715-91	CERAMIC CHIP	0.22UF 10% 16V
C301	1-164-315-11	CERAMIC CHIP	470PF 5.00% 50V
C302	1-164-505-11	CERAMIC CHIP	2.2UF 16V
C303	1-126-933-11	ELECT	100UF 20.00% 16V
C304	1-126-933-11	ELECT	100UF 20.00% 16V
C308	1-162-970-11	CERAMIC CHIP	0.01UF 10.00% 25V
C311	1-126-961-11	ELECT	2.2UF 20.00% 50V
C312	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V
C313	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V
C316	1-125-891-11	CERAMIC CHIP	0.47UF 10.00% 10V
C317	1-126-934-11	ELECT	220UF 20.00% 16V
C318	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V
C319	1-162-923-11	CERAMIC CHIP	47PF 5.00% 50V
C320	1-162-923-11	CERAMIC CHIP	47PF 5.00% 50V
C321	1-162-970-11	CERAMIC CHIP	0.01UF 10.00% 25V
C322	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V
C323	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V
C324	1-164-227-11	CERAMIC CHIP	0.022UF 10.00% 25V
C325	1-164-227-11	CERAMIC CHIP	0.022UF 10.00% 25V
C328	1-162-970-11	CERAMIC CHIP	0.01UF 10.00% 25V
C600	$\Delta$ 1-119-889-51	CERAMIC	4700PF 20.00% 250V
C602	$\Delta$ 1-165-538-11	MYLAR	0.1UF 10 275V
C605	1-161-830-00	CERAMIC	0.0047UF 99% 500V
C606	1-161-830-00	CERAMIC	0.0047UF 99% 500V
C609	1-161-830-00	CERAMIC	0.0047UF 99% 500V
C610	1-161-830-00	CERAMIC	0.0047UF 99% 500V
C611	1-117-751-11	ELECT(BLOCK)	220UF 20.00% 450V
C612	1-125-893-11	FILM	680PF 3.00% 1.5KV
C616	1-164-230-11	CERAMIC CHIP	220PF 5.00% 50V
C619	1-130-491-00	MYLAR	0.047UF 5.00% 50V
C621	1-126-963-11	ELECT	4.7UF 20.00% 50V
C622	$\Delta$ 1-119-894-51	CERAMIC	2200PF 20.00% 250V
C623	1-162-966-11	CERAMIC CHIP	0.0022UF 10.00% 50V
C624	1-126-967-11	ELECT	47UF 20.00% 50V
C625	$\Delta$ 1-127-942-51	CERAMIC	330PF 10% 250V
C626	1-102-228-00	CERAMIC	470PF 10.00% 500V
C628	1-125-772-91	CERAMIC	1500PF 10.00% 2KV
C630	1-128-549-11	ELECT	3300UF 20.00% 35V
C632	1-126-953-11	ELECT	2200UF 20.00% 35V
C634	1-126-941-11	ELECT	470UF 20.00% 25V
C635	1-126-971-11	ELECT	470UF 20.00% 50V
C637	1-126-933-11	ELECT	100UF 20.00% 16V
C638	1-126-933-11	ELECT	100UF 20.00% 16V
C639	1-126-933-11	ELECT	100UF 20.00% 16V
C641	1-126-933-11	ELECT	100UF 20.00% 16V
C643	1-125-891-11	CERAMIC CHIP	0.47UF 10.00% 10V
C644	1-164-315-11	CERAMIC CHIP	470PF 5.00% 50V
C647	1-126-935-11	ELECT	470UF 20.00% 16V
C649	1-126-933-11	ELECT	100UF 20.00% 16V
C652	1-102-228-00	CERAMIC	470PF 10.00% 500V
C653	1-102-228-00	CERAMIC	470PF 10.00% 500V
C654	1-102-228-00	CERAMIC	470PF 10.00% 500V
C657	$\Delta$ 1-127-942-51	CERAMIC	330PF 10% 250V

REF NO.	PART NO.	DESCRIPTION	REMARK
C660	$\Delta$ 1-165-539-11	MYLAR	0.22UF 10 275V
C662	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V
C665	1-110-626-11	ELECT	330UF 20.00% 160V
C666	$\Delta$ 1-165-538-11	MYLAR	0.1UF 10 275V
C668	1-126-933-11	ELECT	100UF 20.00% 16V
C670	$\Delta$ 1-127-942-51	CERAMIC	330PF 10% 250V
C672	1-162-970-11	CERAMIC CHIP	0.01UF 10.00% 25V
C678	1-164-505-11	CERAMIC CHIP	2.2UF 16V
C680	1-164-315-11	CERAMIC CHIP	470PF 5.00% 50V
C682	1-115-466-91	ELECT	1000UF 20.00% 16V
C685	1-126-934-11	ELECT	220UF 20.00% 16V
C800	1-126-963-11	ELECT	4.7UF 20.00% 50V
C803	1-126-947-11	ELECT	47UF 20.00% 25V
C804	1-126-964-11	ELECT	10UF 20.00% 50V
C805	1-126-960-11	ELECT	1UF 20.00% 50V
C806	1-106-375-12	MYLAR	0.022UF 99% 200V
C807	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V
C808	1-102-244-00	CERAMIC	220PF 10.00% 500V
C809	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V
C810	1-162-318-11	CERAMIC	0.001UF 10.00% 500V
C811	1-126-933-11	ELECT	100UF 20.00% 16V
C822	1-162-970-11	CERAMIC CHIP	0.01UF 10.00% 25V
C825	1-162-970-11	CERAMIC CHIP	0.01UF 10.00% 25V
C826	1-164-227-11	CERAMIC CHIP	0.022UF 10.00% 25V
C828	1-126-933-11	ELECT	100UF 20.00% 16V
C830	1-162-970-11	CERAMIC CHIP	0.01UF 10.00% 25V
C831	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V
C832	1-164-230-11	CERAMIC CHIP	220PF 5.00% 50V
C833	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V
C835	1-162-970-11	CERAMIC CHIP	0.01UF 10.00% 25V
C837	1-162-968-11	CERAMIC CHIP	0.0047UF 10.00% 50V
C838	1-106-220-00	MYLAR	0.1UF 10.00% 100V
C839	1-162-966-11	CERAMIC CHIP	0.0022UF 10.00% 50V
C840	$\Delta$ 1-117-647-11	FILM	13000PF 3.00% 1.2KV
C841	1-107-846-11	FILM	0.1UF 5.00% 250V
C842	1-100-122-21	FILM	0.022UF 5% 400V
C844	1-165-176-11	CERAMIC CHIP	0.047UF 10.00% 16V
C845	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V
C846	1-117-767-91	CERAMIC	330PF 10.00% 2KV
C847	1-107-364-11	MYLAR	0.01UF 10.00% 200V
C848	1-107-364-11	MYLAR	0.01UF 10.00% 200V
C849	1-106-375-12	MYLAR	0.022UF 99% 200V
C850	1-106-220-00	MYLAR	0.1UF 10.00% 100V
C851	1-107-675-11	ELECT	1UF 20.00% 450V
C852	1-117-665-11	FILM	0.33UF 5.00% 250V
C854	1-126-948-11	ELECT	100UF 20.00% 35V
C855	1-107-894-11	ELECT	220UF 20.00% 35V
C857	1-104-666-11	ELECT	220UF 20.00% 25V
C858	1-137-194-81	FILM	0.47UF 5.00% 50V
C860	1-162-318-11	CERAMIC	0.001UF 10.00% 500V
C861	1-104-666-11	ELECT	220UF 20.00% 25V
C862	1-162-318-11	CERAMIC	0.001UF 10.00% 500V
C863	1-165-176-11	CERAMIC CHIP	0.047UF 10.00% 16V
C867	1-165-441-81	ELECT	33UF 20% 160V
C868	1-102-228-00	CERAMIC	470PF 10.00% 500V
C869	1-107-654-11	ELECT	33UF 20.00% 250V
C870	1-106-387-00	MYLAR	0.068UF 10.00% 200V
C876	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V
C877	1-162-970-11	CERAMIC CHIP	0.01UF 10.00% 25V
C878	1-162-970-11	CERAMIC CHIP	0.01UF 10.00% 25V
C879	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V

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REF NO.	PART NO.	DESCRIPTION	REMARK
C904	1-126-957-11	ELECT	0.22UF 20.00% 50V
C908	1-164-346-11	CERAMIC CHIP	1UF 16V
C915	1-162-959-11	CERAMIC CHIP	330PF 5.00% 50V
C917	1-162-959-11	CERAMIC CHIP	330PF 5.00% 50V
C918	1-164-346-11	CERAMIC CHIP	1UF 16V
C923	1-126-947-11	ELECT	47UF 20.00% 25V
C940	1-164-315-11	CERAMIC CHIP	470PF 5.00% 50V
C947	1-164-315-11	CERAMIC CHIP	470PF 5.00% 50V
C952	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V
C955	1-127-715-91	CERAMIC CHIP	0.22UF 10% 16V
C956	1-126-933-11	ELECT	100UF 20.00% 16V
C967	1-164-505-11	CERAMIC CHIP	2.2UF 16V
C972	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V
C973	1-126-964-11	ELECT	10UF 20.00% 50V
C975	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V
C976	1-126-935-11	ELECT	470UF 20.00% 16V
C1019	1-127-715-91	CERAMIC CHIP	0.22UF 10% 16V
C2602	1-102-114-00	CERAMIC	470PF 10.00% 50V
C2631	1-102-228-00	CERAMIC	470PF 10.00% 500V
C2636	1-126-972-11	ELECT	1000UF 20.00% 50V
C2648	1-126-952-11	ELECT	1000UF 20.00% 35V
<CONNECTOR>			
CN005	* 1-564-506-11	PLUG, CONNECTOR 3P	
CN200	* 1-564-507-11	PLUG, CONNECTOR 4P	
CN601	* 1-691-134-11	PIN, CONNECTOR (PC BOARD) 2P	
CN602	* 1-580-843-11	PIN, CONNECTOR (POWER)	
CN603	* 1-508-786-13	PIN, CONNECTOR (5MM PITCH) 2P	
CN800	* 1-564-506-11	PLUG, CONNECTOR 3P	
CN904	* 1-564-508-11	PLUG, CONNECTOR 5P	
<DIODE>			
D002	8-719-081-97	MMDL914T1	
D003	8-719-081-97	MMDL914T1	
D023	8-719-069-60	UDZSTE-179.1B	
D024	8-719-069-60	UDZSTE-179.1B	
D025	8-719-069-60	UDZSTE-179.1B	
D054	8-719-069-55	DIODE UDZSTE-175.6B	
D055	8-719-069-55	DIODE UDZSTE-175.6B	
D056	8-719-081-97	MMDL914T1	
D057	8-719-081-97	MMDL914T1	
D058	8-719-081-97	MMDL914T1	
D059	8-719-081-97	MMDL914T1	
D060	8-719-069-55	DIODE UDZSTE-175.6B	
D061	8-719-081-97	MMDL914T1	
D062	8-719-069-55	DIODE UDZSTE-175.6B	
D063	8-719-081-97	MMDL914T1	
D064	8-719-069-55	DIODE UDZSTE-175.6B	
D065	8-719-069-55	DIODE UDZSTE-175.6B	
D066	8-719-908-03	GP08D	
D068	8-719-069-55	DIODE UDZSTE-175.6B	
D071	8-719-081-97	MMDL914T1	
D072	8-719-081-97	MMDL914T1	
D074	8-719-081-97	MMDL914T1	
D101	8-719-066-11	1PS184-115	
D103	8-759-157-40	UPC574J	
D108	8-719-069-55	DIODE UDZSTE-175.6B	
D109	8-719-069-55	DIODE UDZSTE-175.6B	
D200	8-719-062-51	1PS226-115	

REF NO.	PART NO.	DESCRIPTION	REMARK
D201	8-719-081-97	MMDL914T1	
D202	8-719-081-97	MMDL914T1	
D203	8-719-081-97	MMDL914T1	
D204	8-719-081-97	MMDL914T1	
D205	8-719-081-97	MMDL914T1	
D208	8-719-081-97	MMDL914T1	
D211	8-719-062-51	1PS226-115	
D212	8-719-081-97	MMDL914T1	
D213	8-719-081-97	MMDL914T1	
D600	8-719-081-97	MMDL914T1	
D602	6-500-481-31	DIODE AM01AV1	
D603	6-500-481-31	DIODE AM01AV1	
D604	8-719-077-77	D3SB60F3	
D605	8-719-109-85	RD5.1ESB2	
D617	8-719-063-70	D1NL20U	
D618	8-719-063-70	D1NL20U	
D619	8-719-063-70	D1NL20U	
D621	8-719-312-10	RU4AM-T3	
D622	8-719-085-37	11EQS10-TB5	
D623	8-719-063-74	D1NL20U-TR2	
D624	8-719-510-73	S3L20UF4	
D629	8-719-109-85	RD5.1ESB2	
D633	8-719-923-86	MTZJ-T-77-15	
D635	8-719-157-97	RD3.6SB	
D637	8-719-072-70	MA22D14001S0	
D638	8-719-081-97	MMDL914T1	
D639	8-719-027-22	D3S6M-F	
D800	8-719-081-97	MMDL914T1	
D801	8-719-081-97	MMDL914T1	
D804	8-719-991-33	1SS133T-77	
D805	8-719-991-33	1SS133T-77	
D807	8-719-991-33	1SS133T-77	
D808	8-719-991-33	1SS133T-77	
D809	8-719-991-33	1SS133T-77	
D815	8-719-069-60	UDZSTE-179.1B	
D816	8-719-081-00	DIODE BY228/A52A/	
D817	8-719-979-85	EGP20G	
D818	8-719-109-85	RD5.1ESB2	
D819	8-719-063-74	D1NL20U-TR2	
D820	8-719-908-03	GP08D	
D821	8-719-063-74	D1NL20U-TR2	
D823	8-719-302-43	EL1Z	
D824	8-719-302-43	EL1Z	
D827	8-719-302-43	EL1Z	
D829	8-719-069-55	DIODE UDZSTE-175.6B	
D830	8-719-081-97	MMDL914T1	
D903	8-719-069-55	DIODE UDZSTE-175.6B	
D904	8-719-069-55	DIODE UDZSTE-175.6B	
D911	8-719-069-55	DIODE UDZSTE-175.6B	
D912	8-719-069-55	DIODE UDZSTE-175.6B	
D913	8-719-069-55	DIODE UDZSTE-175.6B	
D914	8-719-083-18	DIODE SPB-25MVWF	
D915	8-719-069-55	DIODE UDZSTE-175.6B	
D918	8-719-069-55	DIODE UDZSTE-175.6B	
D920	8-719-069-55	DIODE UDZSTE-175.6B	
D927	8-719-069-55	DIODE UDZSTE-175.6B	
D928	8-719-069-60	UDZSTE-179.1B	
D930	8-719-069-55	DIODE UDZSTE-175.6B	
D931	8-719-157-97	RD3.6SB	
D932	8-719-157-97	RD3.6SB	
D2625	8-719-510-73	S3L20UF4	

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Replace only with part number specified.

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REF NO.	PART NO.	DESCRIPTION	REMARK
		<CONNECTOR>	
DY800	* 1-580-798-11	CONNECTOR PIN (DY) 6P	
		<FUSE>	
F600	$\triangle$ 1-576-232-21	FUSE	5A/250V
		<FERRITE BEAD>	
FB001	1-410-397-21	FERRITE	1.1UH
FB603	1-410-397-21	FERRITE	1.1UH
FB608	1-412-911-31	FERRITE	0UH
FB800	1-410-397-21	FERRITE	1.1UH
FH603	1-533-725-11	FUSE HOLDER	0A 0V
		<IC>	
IC002	6-704-532-01	RPM7240-H5	
IC003	8-759-678-07	CAT24WC16JI-TE1	
IC200	6-703-475-01	IC AN5276T	
IC602	6-703-479-01	IC PQ09RD1SJ00H	
IC603	6-703-478-01	IC PQ018EF01SZH	
IC604	8-759-231-53	TA7805S	
IC605	8-749-016-19	SE135N-LF4	
IC606	8-759-445-59	BA033T	
IC607	8-759-832-05	IC BA18BC0FP-E2	
IC800	8-759-356-16	NJM4556AD	
IC801	6-703-708-01	IC LM2903DT	
IC802	6-701-937-01	IC TJM4558CDT	
IC804	6-703-470-01	IC STV9302A	
		<JACK>	
J200	1-770-786-22	JACK	
		<CHIP CONDUCTOR>	
JR001	1-216-864-11	SHORT CHIP	0
JR002	1-216-864-11	SHORT CHIP	0
JR003	1-216-864-11	SHORT CHIP	0
JR004	1-216-864-11	SHORT CHIP	0
JR005	1-216-864-11	SHORT CHIP	0
JR006	1-216-864-11	SHORT CHIP	0
JR008	1-216-864-11	SHORT CHIP	0
JR009	1-216-864-11	SHORT CHIP	0
JR012	1-216-864-11	SHORT CHIP	0
JR013	1-216-864-11	SHORT CHIP	0
JR014	1-216-864-11	SHORT CHIP	0
JR015	1-216-864-11	SHORT CHIP	0
JR016	1-216-864-11	SHORT CHIP	0
JR017	1-216-864-11	SHORT CHIP	0
JR018	1-216-864-11	SHORT CHIP	0
JR019	1-216-864-11	SHORT CHIP	0
JR020	1-216-864-11	SHORT CHIP	0
JR021	1-216-864-11	SHORT CHIP	0
JR024	1-216-864-11	SHORT CHIP	0
JR025	1-216-864-11	SHORT CHIP	0
JR026	1-216-864-11	SHORT CHIP	0
JR027	1-216-864-11	SHORT CHIP	0

REF NO.	PART NO.	DESCRIPTION	REMARK
JR036	1-216-864-11	SHORT CHIP	0
JR037	1-216-864-11	SHORT CHIP	0
JR038	1-216-864-11	SHORT CHIP	0
JR040	1-216-864-11	SHORT CHIP	0
JR041	1-216-864-11	SHORT CHIP	0
JR050	1-216-864-11	SHORT CHIP	0
JR051	1-216-864-11	SHORT CHIP	0
JR093	1-216-864-11	SHORT CHIP	0
JR096	1-216-864-11	SHORT CHIP	0
JR097	1-216-864-11	SHORT CHIP	0
JR098	1-216-864-11	SHORT CHIP	0
JR111	1-216-864-11	SHORT CHIP	0
JR112	1-216-864-11	SHORT CHIP	0
JR200	1-216-864-11	SHORT CHIP	0
JR300	1-216-864-11	SHORT CHIP	0
JR600	1-216-864-11	SHORT CHIP	0
JR601	1-216-864-11	SHORT CHIP	0
JR602	1-216-864-11	SHORT CHIP	0
JR800	1-216-864-11	SHORT CHIP	0
JR805	1-216-864-11	SHORT CHIP	0
JR901	1-216-864-11	SHORT CHIP	0
JR902	1-216-864-11	SHORT CHIP	0
JR903	1-216-864-11	SHORT CHIP	0
JR904	1-216-864-11	SHORT CHIP	0
JR905	1-216-864-11	SHORT CHIP	0
JR906	1-216-864-11	SHORT CHIP	0
JR907	1-216-864-11	SHORT CHIP	0
JR1011	1-216-864-11	SHORT CHIP	0
JR1100	1-216-864-11	SHORT CHIP	0
JR1101	1-216-864-11	SHORT CHIP	0
JR1107	1-216-864-11	SHORT CHIP	0
JR1108	1-216-864-11	SHORT CHIP	0
JR1903	1-216-864-11	SHORT CHIP	0
		<COIL>	
L003	1-414-856-11	INDUCTOR	10UH
L004	1-414-187-11	INDUCTOR	47UH
L005	1-414-856-11	INDUCTOR	10UH
L006	1-414-856-11	INDUCTOR	10UH
L007	1-414-856-11	INDUCTOR	10UH
L008	1-414-856-11	INDUCTOR	10UH
L009	1-414-856-11	INDUCTOR	10UH
L010	1-469-525-91	INDUCTOR	10UH
L011	1-469-525-91	INDUCTOR	10UH
L012	1-412-058-11	INDUCTOR	10UH
L013	1-469-525-91	INDUCTOR	10UH
L031	1-469-525-91	INDUCTOR	10UH
L032	1-469-525-91	INDUCTOR	10UH
L033	1-469-525-91	INDUCTOR	10UH
L035	1-469-525-91	INDUCTOR	10UH
L036	1-469-525-91	INDUCTOR	10UH
L037	1-469-525-91	INDUCTOR	10UH
L100	1-414-857-11	INDUCTOR	100UH
L104	1-410-989-11	INDUCTOR	0.47UH
L106	1-414-187-11	INDUCTOR	47UH
L600	1-412-533-21	INDUCTOR	47UH
L601	1-412-533-21	INDUCTOR	47UH
L602	1-412-529-11	INDUCTOR	22UH
L800	1-424-796-11	COIL, HORIZONTAL LINEARITY	
L802	1-406-679-11	INDUCTOR	22MH

The components identified by shading  
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Replace only with part number specified.

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REF NO.	PART NO.	DESCRIPTION	REMARK
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L803	1-414-493-41	INDUCTOR	4.7MH
L805	1-408-947-00	INDUCTOR	2.2MH
L806	1-469-555-21	INDUCTOR	10UH
L900	1-469-525-91	INDUCTOR	10UH
L901	1-412-001-31	INDUCTOR	3.9UH

L902	1-414-187-11	INDUCTOR	47UH
L903	1-410-993-42	INDUCTOR	1UH
L904	1-410-993-42	INDUCTOR	1UH
L905	1-410-993-42	INDUCTOR	1UH
L906	1-410-993-42	INDUCTOR	1UH

L2601	1-412-525-31	INDUCTOR	10UH
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&lt;PHOTO COUPLER&gt;

PH600	$\triangle$ 6-600-187-01	PHOTO COUPLER PC123Y22JOOF
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&lt;IC LINK&gt;

PS602	$\triangle$ 1-533-597-41	IC LINK	5A	90V
PS603	$\triangle$ 1-533-597-41	IC LINK	5A	90V
PS604	$\triangle$ 1-533-597-41	IC LINK	5A	90V
PS605	$\triangle$ 1-533-597-41	IC LINK	5A	90V
PS2601	$\triangle$ 1-533-597-41	IC LINK	5A	90V

&lt;TRANSISTOR&gt;

Q001	8-729-421-22	UN2211
Q006	8-729-424-67	UN2216
Q007	8-729-424-67	UN2216
Q008	8-729-010-25	MSD601-RT1
Q013	8-729-010-25	MSD601-RT1

Q016	8-729-421-22	UN2211
Q105	8-729-424-67	UN2216
Q106	8-729-424-67	UN2216
Q200	8-729-421-22	UN2211
Q201	8-729-010-05	MSB709-RT1

Q202	8-729-010-05	MSB709-RT1
Q206	8-729-421-22	UN2211
Q601	8-729-010-25	MSD601-RT1
Q605	6-550-572-01	TRANSISTOR FN155
Q608	8-729-010-25	MSD601-RT1

Q609	8-729-010-25	MSD601-RT1
Q800	8-729-010-25	MSD601-RT1
Q801	8-729-010-25	MSD601-RT1
Q802	8-729-010-25	MSD601-RT1
Q803	8-729-140-50	2SC3209LK

Q804	8-729-200-17	2SA1091-O
Q805	6-550-410-01	TRANSISTOR 2SC5885
Q806	8-729-010-25	MSD601-RT1
Q807	8-729-010-05	MSB709-RT1
Q808	8-729-053-33	IRF614-037

Q814	8-729-010-25	MSD601-RT1
Q903	8-729-010-05	MSB709-RT1
Q908	8-729-424-67	UN2216
Q909	8-729-424-67	UN2216
Q913	8-729-421-22	UN2211

Q8009	8-729-200-17	2SA1091-O
Q8010	8-729-140-50	2SC3209LK

REF NO.	PART NO.	DESCRIPTION	REMARK
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&lt;RESISTOR&gt;

R001	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R002	1-216-809-11	METAL CHIP	100	5%	1/10W
R003	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R004	1-216-809-11	METAL CHIP	100	5%	1/10W
R010	1-216-833-11	METAL CHIP	10K	5%	1/10W

R011	1-216-821-11	METAL CHIP	1K	5%	1/10W
R012	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R014	1-216-809-11	METAL CHIP	100	5%	1/10W
R015	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R018	1-216-809-11	METAL CHIP	100	5%	1/10W

R020	1-216-809-11	METAL CHIP	100	5%	1/10W
R023	1-216-809-11	METAL CHIP	100	5%	1/10W
R024	1-216-809-11	METAL CHIP	100	5%	1/10W
R025	1-216-809-11	METAL CHIP	100	5%	1/10W
R026	1-216-809-11	METAL CHIP	100	5%	1/10W

R029	1-216-809-11	METAL CHIP	100	5%	1/10W
R030	1-216-809-11	METAL CHIP	100	5%	1/10W
R038	1-216-809-11	METAL CHIP	100	5%	1/10W
R039	1-216-809-11	METAL CHIP	100	5%	1/10W
R041	1-216-809-11	METAL CHIP	100	5%	1/10W

R042	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R044	1-216-834-11	METAL CHIP	12K	5%	1/10W
R045	1-216-809-11	METAL CHIP	100	5%	1/10W
R046	1-216-809-11	METAL CHIP	100	5%	1/10W
R048	1-216-809-11	METAL CHIP	100	5%	1/10W

R051	1-218-885-11	METAL CHIP	39K	0.5%	1/10W
R056	1-216-809-11	METAL CHIP	100	5%	1/10W
R058	1-216-809-11	METAL CHIP	100	5%	1/10W
R060	1-216-809-11	METAL CHIP	100	5%	1/10W
R061	1-216-819-11	METAL CHIP	680	5%	1/10W

R087	1-216-813-11	METAL CHIP	220	5%	1/10W
R088	1-216-816-11	METAL CHIP	390	5%	1/10W
R096	1-216-813-11	METAL CHIP	220	5%	1/10W
R097	1-216-813-11	METAL CHIP	220	5%	1/10W
R098	1-216-813-11	METAL CHIP	220	5%	1/10W

R099	1-216-813-11	METAL CHIP	220	5%	1/10W
R115	1-216-809-11	METAL CHIP	100	5%	1/10W
R116	1-216-809-11	METAL CHIP	100	5%	1/10W
R121	1-215-925-11	METAL OXIDE	22K	5%	3W
R122	1-216-825-11	METAL CHIP	2.2K	5%	1/10W

R124	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R125	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R128	1-216-864-11	SHORT CHIP	0		
R130	1-216-809-11	METAL CHIP	100	5%	1/10W
R142	1-216-825-11	METAL CHIP	2.2K	5%	1/10W

R150	1-216-809-11	METAL CHIP	100	5%	1/10W
R152	1-218-713-11	METAL CHIP	7.5K	0.5%	1/10W
R154	1-216-864-11	SHORT CHIP	0		
R212	1-216-864-11	SHORT CHIP	0		
R213	1-216-835-11	METAL CHIP	15K	5%	1/10W

R214	1-216-835-11	METAL CHIP	15K	5%	1/10W
R215	1-216-833-11	METAL CHIP	10K	5%	1/10W
R216	1-216-833-11	METAL CHIP	10K	5%	1/10W
R217	1-249-411-11	CARBON	330	5%	1/4W
R218	1-216-295-91	SHORT CHIP	0		

R219	1-249-411-11	CARBON	330	5%	1/4W
R220	1-216-864-11	SHORT CHIP	0		
R221	1-216-821-11	METAL CHIP	1K	5%	1/10W
R234	1-249-401-11	CARBON	47	5%	1/4W
R235	1-249-401-11	CARBON	47	5%	1/4W



**KV-21FQ10B/21FQ10E/21FQ10K/21CL10B**  
**KV-21CL10E/21CL10K/21CL10U/21CL1K**  
**RM-W100**

**A**

The components identified by shading  
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REF NO.	PART NO.	DESCRIPTION	REMARK
R236	1-216-833-11	METAL CHIP 10K	5% 1/10W
R241	1-216-825-11	METAL CHIP 2.2K	5% 1/10W
R242	1-216-825-11	METAL CHIP 2.2K	5% 1/10W
R300	1-216-809-11	METAL CHIP 100	5% 1/10W
R301	1-216-861-11	METAL CHIP 2.2M	5% 1/10W
R303	1-216-861-11	METAL CHIP 2.2M	5% 1/10W
R304	1-216-851-11	METAL CHIP 330K	5% 1/10W
R307	1-216-864-11	SHORT CHIP 0	
R309	1-216-857-11	METAL CHIP 1M	5% 1/10W
R310	1-216-821-11	METAL CHIP 1K	5% 1/10W
R311	1-216-841-11	METAL CHIP 47K	5% 1/10W
R312	1-216-857-11	METAL CHIP 1M	5% 1/10W
R313	1-216-847-11	METAL CHIP 150K	5% 1/10W
R314	1-218-867-11	METAL CHIP 6.8K	0.5% 1/10W
R315	1-218-867-11	METAL CHIP 6.8K	0.5% 1/10W
R317	1-216-827-11	METAL CHIP 3.3K	5% 1/10W
R319	1-216-825-11	METAL CHIP 2.2K	5% 1/10W
R320	1-218-863-11	METAL CHIP 4.7K	0.5% 1/10W
R322	1-218-863-11	METAL CHIP 4.7K	0.5% 1/10W
R323	1-216-809-11	METAL CHIP 100	5% 1/10W
R324	1-216-825-11	METAL CHIP 2.2K	5% 1/10W
R331	1-216-809-11	METAL CHIP 100	5% 1/10W
R336	1-216-829-11	METAL CHIP 4.7K	5% 1/10W
R337	1-216-817-11	METAL CHIP 470	5% 1/10W
R338	1-216-829-11	METAL CHIP 4.7K	5% 1/10W
R339	1-216-809-11	METAL CHIP 100	5% 1/10W
R340	1-216-833-11	METAL CHIP 10K	5% 1/10W
R341	1-216-809-11	METAL CHIP 100	5% 1/10W
R355	1-218-871-11	METAL CHIP 10K	0.5% 1/10W
R356	1-216-864-11	SHORT CHIP 0	
R360	1-216-864-11	SHORT CHIP 0	
R363	1-216-864-11	SHORT CHIP 0	
R364	1-216-821-11	METAL CHIP 1K	5% 1/10W
R379	1-216-843-11	METAL CHIP 68K	5% 1/10W
R380	1-216-809-11	METAL CHIP 100	5% 1/10W
R384	1-216-809-11	METAL CHIP 100	5% 1/10W
R385	1-216-809-11	METAL CHIP 100	5% 1/10W
R386	1-216-809-11	METAL CHIP 100	5% 1/10W
R392	1-216-833-11	METAL CHIP 10K	5% 1/10W
R393	1-216-809-11	METAL CHIP 100	5% 1/10W
R394	1-216-829-11	METAL CHIP 4.7K	5% 1/10W
R395	1-216-845-11	METAL CHIP 100K	5% 1/10W
R400	1-260-288-11	CARBON 0.47	5% 1/2W
R401	1-260-288-11	CARBON 0.47	5% 1/2W
R405	1-260-288-11	CARBON 0.47	5% 1/2W
R406	1-260-127-11	CARBON 220K	5% 1/2W
R411	1-214-909-00	METAL 68K	1% 1/2W
R412	1-214-765-00	METAL 33K	1% 1/4W
R413	1-215-453-00	METAL 22K	1% 1/4W
R414	1-260-336-11	CARBON 4.7K	5% 1/2W
R416	1-260-107-11	CARBON 4.7K	5% 1/2W
R420	1-216-829-11	METAL CHIP 4.7K	5% 1/10W
R421	1-216-833-11	METAL CHIP 10K	5% 1/10W
R423	1-216-864-11	SHORT CHIP 0	
R424	1-218-899-11	METAL CHIP 150K	0.5% 1/16W
R602	1-216-833-11	METAL CHIP 10K	5% 1/10W
R609	1-216-833-11	METAL CHIP 10K	5% 1/10W
R612	1-215-429-00	METAL 2.2K	1% 1/4W
R616	1-220-820-31	CEMENTED 1.5	5% 10W
R619	1-216-363-21	METAL OXIDE 0.33	5% 2W
R620	1-216-363-21	METAL OXIDE 0.33	5% 2W
R621	1-249-409-11	CARBON 220	5% 1/4W

REF NO.	PART NO.	DESCRIPTION	REMARK
R624	1-215-429-00	METAL 2.2K	1% 1/4W
R625	1-216-864-11	SHORT CHIP 0	
R627	1-249-385-11	CARBON 2.2	5% 1/4W
R631	1-249-425-11	CARBON 4.7K	5% 1/4W
R634	1-216-829-11	METAL CHIP 4.7K	5% 1/10W
R635	1-216-833-11	METAL CHIP 10K	5% 1/10W
R636	1-249-421-11	CARBON 2.2K	5% 1/4W
R639	1-220-820-31	CEMENTED 1.5	5% 10W
R645	1-218-899-11	METAL CHIP 150K	0.5% 1/16W
R646	1-218-851-11	METAL CHIP 1.5K	0.5% 1/10W
R647	1-216-821-11	METAL CHIP 1K	5% 1/10W
R650	$\Delta$ 1-240-917-91	METAL 8.2M	5% 1W
R655	1-216-809-11	METAL CHIP 100	5% 1/10W
R656	1-249-381-11	CARBON 1	5% 1/4W
R658	1-245-480-21	METAL 560K	1% 1/4W
R659	1-245-482-21	METAL 680K	1% 1/4W
R667	1-216-821-11	METAL CHIP 1K	5% 1/10W
R668	1-216-839-11	METAL CHIP 33K	5% 1/10W
R800	1-216-825-11	METAL CHIP 2.2K	5% 1/10W
R801	1-216-864-11	SHORT CHIP 0	
R802	1-216-833-11	METAL CHIP 10K	5% 1/10W
R803	1-216-833-11	METAL CHIP 10K	5% 1/10W
R804	1-216-864-11	SHORT CHIP 0	
R805	1-216-837-11	METAL CHIP 22K	5% 1/10W
R806	1-216-864-11	SHORT CHIP 0	
R807	1-216-819-11	METAL CHIP 680	5% 1/10W
R808	1-216-833-11	METAL CHIP 10K	5% 1/10W
R809	1-216-833-11	METAL CHIP 10K	5% 1/10W
R810	1-216-833-11	METAL CHIP 10K	5% 1/10W
R812	1-216-837-11	METAL CHIP 22K	5% 1/10W
R813	1-216-837-11	METAL CHIP 22K	5% 1/10W
R814	1-216-809-11	METAL CHIP 100	5% 1/10W
R815	1-216-837-11	METAL CHIP 22K	5% 1/10W
R816	1-216-864-11	SHORT CHIP 0	
R817	1-216-833-11	METAL CHIP 10K	5% 1/10W
R818	1-216-833-11	METAL CHIP 10K	5% 1/10W
R820	1-216-825-11	METAL CHIP 2.2K	5% 1/10W
R821	1-216-837-11	METAL CHIP 22K	5% 1/10W
R822	1-249-417-11	CARBON 1K	5% 1/4W
R823	1-245-468-21	METAL 180K	1% 1/4W
R824	1-216-839-11	METAL CHIP 33K	5% 1/10W
R825	1-243-606-71	METAL OXIDE 1K	5% 3W
R826	1-247-891-00	CARBON 330K	5% 1/4W
R827	1-216-369-00	METAL OXIDE 1	5% 2W
R828	1-243-606-71	METAL OXIDE 1K	5% 3W
R829	1-243-606-71	METAL OXIDE 1K	5% 3W
R830	1-260-332-51	CARBON 2.2K	5% 1/2W
R831	1-216-829-11	METAL CHIP 4.7K	5% 1/10W
R833	1-260-125-11	CARBON 150K	5% 1/2W
R834	1-245-468-21	METAL 180K	1% 1/4W
R835	1-260-125-11	CARBON 150K	5% 1/2W
R838	1-216-838-11	METAL CHIP 27K	5% 1/10W
R839	1-216-864-11	SHORT CHIP 0	
R843	1-216-864-11	SHORT CHIP 0	
R844	1-218-867-11	METAL CHIP 6.8K	5% 1/10W
R846	1-216-825-11	METAL CHIP 2.2K	5% 1/10W
R847	1-216-833-11	METAL CHIP 10K	5% 1/10W
R851	1-216-821-11	METAL CHIP 1K	5% 1/10W
R852	1-218-871-11	METAL CHIP 10K	0.5% 1/10W
R853	1-218-859-11	METAL CHIP 3.3K	0.5% 1/10W
R854	1-218-877-11	METAL CHIP 18K	0.5% 1/10W

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REF NO.	PART NO.	DESCRIPTION	REMARK
R856	1-218-871-11	METAL CHIP 10K	0.5% 1/10W
R859	1-218-883-11	METAL CHIP 33K	0.5% 1/10W
R861	1-216-825-11	METAL CHIP 2.2K	5% 1/10W
R864	1-218-865-11	METAL CHIP 5.6K	0.5% 1/10W
R865	1-216-821-11	METAL CHIP 1K	5% 1/10W
R866	1-218-895-11	METAL CHIP 100K	0.5% 1/10W
R868	1-249-393-11	CARBON 10	5% 1/4W
R869	1-249-381-11	CARBON 1	5% 1/4W
R870	1-218-859-11	METAL CHIP 3.3K	0.5% 1/10W
R871	1-243-692-71	METAL OXIDE 220	5% 1W
R872	1-216-864-11	SHORT CHIP 0	
R873	1-216-841-11	METAL CHIP 47K	5% 1/10W
R876	1-216-833-11	METAL CHIP 10K	5% 1/10W
R877	1-218-895-11	METAL CHIP 100K	0.5% 1/10W
R878	1-216-349-00	METAL OXIDE 1	5% 1W
R879	1-245-470-21	METAL 220K	1% 1/4W
R880	1-245-470-21	METAL 220K	1% 1/4W
R881	1-218-871-11	METAL CHIP 10K	0.5% 1/10W
R882	1-216-825-11	METAL CHIP 2.2K	5% 1/10W
R883	1-249-421-11	CARBON 2.2K	5% 1/4W
R887	1-216-837-11	METAL CHIP 22K	5% 1/10W
R888	1-218-887-11	METAL CHIP 47K	0.5% 1/10W
R889	1-243-531-71	METAL OXIDE 100	5% 3W
R890	1-215-910-00	METAL OXIDE 68	5% 3W
R891	1-249-385-11	CARBON 2.2	5% 1/4W
R893	1-218-871-11	METAL CHIP 10K	0.5% 1/10W
R895	1-218-859-11	METAL CHIP 3.3K	0.5% 1/10W
R908	1-216-840-11	METAL CHIP 39K	5% 1/10W
R918	1-216-805-11	METAL CHIP 47	5% 1/10W
R921	1-216-849-11	METAL CHIP 220K	5% 1/10W
R922	1-218-285-11	METAL CHIP 75	5% 1/10W
R925	1-216-809-11	METAL CHIP 100	5% 1/10W
R926	1-216-809-11	METAL CHIP 100	5% 1/10W
R927	1-216-809-11	METAL CHIP 100	5% 1/10W
R928	1-218-285-11	METAL CHIP 75	5% 1/10W
R929	1-218-285-11	METAL CHIP 75	5% 1/10W
R930	1-218-285-11	METAL CHIP 75	5% 1/10W
R940	1-216-849-11	METAL CHIP 220K	5% 1/10W
R945	1-216-833-11	METAL CHIP 10K	5% 1/10W
R947	1-216-839-11	METAL CHIP 33K	5% 1/10W
R949	1-216-833-11	METAL CHIP 10K	5% 1/10W
R951	1-216-021-00	RES-CHIP 68	5% 1/10W
R952	1-216-821-11	METAL CHIP 1K	5% 1/10W
R953	1-216-853-11	METAL CHIP 470K	5% 1/10W
R954	1-216-821-11	METAL CHIP 1K	5% 1/10W
R957	1-218-285-11	METAL CHIP 75	5% 1/10W
R967	1-216-853-11	METAL CHIP 470K	5% 1/10W
R993	1-216-817-11	METAL CHIP 470	5% 1/10W
R1201	1-216-853-11	METAL CHIP 470K	5% 1/10W
R2646	1-249-381-11	CARBON 1	5% 1/4W
R2647	1-249-429-11	CARBON 10K	5% 1/4W
R8003	1-216-809-11	METAL CHIP 100	5% 1/10W
R8004	1-216-809-11	METAL CHIP 100	5% 1/10W
R8005	1-218-871-11	METAL CHIP 10K	0.5% 1/10W
R8009	1-218-867-11	METAL CHIP 6.8K	5% 1/10W
R8010	1-245-464-21	METAL 120K	1% 1/4W
R8011	1-216-841-11	METAL CHIP 47K	5% 1/10W
R8012	1-216-841-11	METAL CHIP 47K	5% 1/10W
R8013	1-245-462-21	METAL 100K	1% 1/4W
R9013	1-216-809-11	METAL CHIP 100	5% 1/10W
R9021	1-216-809-11	METAL CHIP 100	5% 1/10W
R9023	1-216-809-11	METAL CHIP 100	5% 1/10W

REF NO.	PART NO.	DESCRIPTION	REMARK
R9025	1-216-809-11	METAL CHIP 100	5% 1/10W
R9027	1-216-838-11	METAL CHIP 27K	5% 1/10W
R9034	1-216-809-11	METAL CHIP 100	5% 1/10W
R9035	1-216-809-11	METAL CHIP 100	5% 1/10W
R9036	1-216-864-11	SHORT CHIP 0	
R9037	1-216-809-11	METAL CHIP 100	5% 1/10W
R9039	1-216-864-11	SHORT CHIP 0	
R9040	1-216-857-11	METAL CHIP 1M	5% 1/10W
R9041	1-216-857-11	METAL CHIP 1M	5% 1/10W
R9042	1-216-827-11	METAL CHIP 3.3K	5% 1/10W
R9043	1-216-821-11	METAL CHIP 1K	5% 1/10W
R9044	1-216-817-11	METAL CHIP 470	5% 1/10W
R9045	1-216-809-11	METAL CHIP 100	5% 1/10W
R9046	1-216-825-11	METAL CHIP 2.2K	5% 1/10W
R9047	1-216-833-11	METAL CHIP 10K	5% 1/10W
R9051	1-216-864-11	SHORT CHIP 0	
R9052	1-216-864-11	SHORT CHIP 0	
R9053	1-218-285-11	METAL CHIP 75	5% 1/10W
R9057	1-216-809-11	METAL CHIP 100	5% 1/10W
R9062	1-249-417-11	CARBON 1K	5% 1/4W
R9062	1-249-417-11	CARBON 1K	5% 1/4W
<RELAY>			
RY600	$\triangle$ 1-755-198-12	RELAY, AC POWER	
<SWITCH>			
S600	$\triangle$ 1-571-433-21	SWITCH, PUSH (AC POWER)	
S800	1-572-707-11	SWITCH, LEVER	
SWF100	1-579-273-11	FILTER, SURFACE WAVE	
SWF101	1-767-873-11	FILTER, SURFACE WAVE	
<TRANSFORMER>			
T600	$\triangle$ 1-456-354-11	LINE FILTER COIL	
T602	$\triangle$ 1-439-698-11	CONVERTER TRANSFORMER (SRT)	
T603	$\triangle$ 1-456-354-11	LINE FILTER COIL	
T800	1-435-374-11	TRANSFORMER, FERRITE (HDT)	
T801	$\triangle$ 1-453-329-41	TRANSFORMER ASSY FLYBACK (NX-4751/M3A4)	
<THERMISTOR>			
THP600	$\triangle$ 1-804-530-11	THERMISTOR, POSITIVE	
<TEST PIN>			
TP02	1-536-354-00	POST PIN	
TP03	1-536-354-00	POST PIN	
TP04	1-536-354-00	POST PIN	
TP601	1-536-354-00	POST PIN	
<VARISTOR>			
VDR600	1-804-995-11	VARISTOR	
<CRYSTAL>			
X001	1-795-839-21	QUARTZ CRYSTAL UNIT	



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REF NO.	PART NO.	DESCRIPTION	REMARK
<b>VARIANT PARTS LIST</b>			
	1-900-704-31	LEAD ASSY, JUMPER (EXCEPT KV-21CL1K)	
		<CAPACITOR>	
C032	1-162-915-11	CERAMIC CHIP 10PF (EXCEPT KV-21CL1K)	0.50PF 50V
C034	1-162-915-11	CERAMIC CHIP 10PF (EXCEPT KV-21CL1K)	0.50PF 50V
C200	1-127-715-91	CERAMIC CHIP 0.22UF (EXCEPT KV-21CL1K)	10% 16V
C200	1-125-891-11	CERAMIC CHIP 0.47UF (KV-21CL1K)	10.00% 10V
C201	1-125-891-11	CERAMIC CHIP 0.47UF (KV-21CL1K)	10.00% 10V
C201	1-127-715-91	CERAMIC CHIP 0.22UF (EXCEPT KV-21CL1K)	10% 16V
C202	1-164-245-11	CERAMIC CHIP 0.015UF (KV-21CL1K)	10.00% 25V
C202	1-165-176-11	CERAMIC CHIP 0.047UF (EXCEPT KV-21CL1K)	10.00% 16V
C203	1-164-245-11	CERAMIC CHIP 0.015UF (KV-21CL1K)	10.00% 25V
C203	1-165-176-11	CERAMIC CHIP 0.047UF (EXCEPT KV-21CL1K)	10.00% 16V
C204	1-130-495-00	MYLAR 0.1UF (EXCEPT KV-21CL1K)	5.00% 50V
C204	1-136-167-00	FILM 0.15UF (KV-21CL1K)	5.00% 50V
C205	1-126-959-11	ELECT 0.47UF (EXCEPT KV-21CL1K)	20.00% 50V
C206	1-162-970-11	CERAMIC CHIP 0.01UF (EXCEPT KV-21CL1K)	10.00% 25V
C206	1-164-227-11	CERAMIC CHIP 0.022UF (KV-21CL1K)	10.00% 25V
C207	1-130-495-00	MYLAR 0.1UF (EXCEPT KV-21CL1K)	5.00% 50V
C207	1-136-167-00	FILM 0.15UF (KV-21CL1K)	5.00% 50V
C208	1-162-970-11	CERAMIC CHIP 0.01UF (EXCEPT KV-21CL1K)	10.00% 25V
C208	1-164-227-11	CERAMIC CHIP 0.022UF (KV-21CL1K)	10.00% 25V
C209	1-126-959-11	ELECT 0.47UF (EXCEPT KV-21CL1K)	20.00% 50V
C212	1-126-942-61	ELECT 1000UF (KV-21CL1K)	20.00% 25V
C215	1-128-550-11	ELECT 2200UF (EXCEPT KV-21CL1K)	20.00% 50V
C235	1-164-315-11	CERAMIC CHIP 470PF (EXCEPT KV-21CL1K)	5.00% 50V
C236	1-130-495-00	MYLAR 0.1UF (KV-21CL1K)	5.00% 50V
C237	1-130-495-00	MYLAR 0.1UF (KV-21CL1K)	5.00% 50V
C900	1-117-720-11	CERAMIC CHIP 4.7UF (EXCEPT KV-21CL1K)	10V
C901	1-117-720-11	CERAMIC CHIP 4.7UF (EXCEPT KV-21CL1K)	10V
C902	1-126-957-11	ELECT 0.22UF (EXCEPT KV-21CL1K)	20.00% 50V
C903	1-126-935-11	ELECT 470UF (EXCEPT KV-21CL1K)	20.00% 16V
C905	1-162-970-11	CERAMIC CHIP 0.01UF (EXCEPT KV-21CL1K)	10.00% 25V

REF NO.	PART NO.	DESCRIPTION	REMARK
C906	1-164-346-11	CERAMIC CHIP 1UF (EXCEPT KV-21CL1K)	16V
C907	1-164-346-11	CERAMIC CHIP 1UF (EXCEPT KV-21CL1K)	16V
C909	1-164-346-11	CERAMIC CHIP 1UF (EXCEPT KV-21CL1K)	16V
C910	1-164-315-11	CERAMIC CHIP 470PF (EXCEPT KV-21CL1K)	5.00% 50V
C911	1-164-315-11	CERAMIC CHIP 470PF (EXCEPT KV-21CL1K)	5.00% 50V
C912	1-162-959-11	CERAMIC CHIP 330PF (EXCEPT KV-21CL1K)	5.00% 50V
C913	1-162-959-11	CERAMIC CHIP 330PF (EXCEPT KV-21CL1K)	5.00% 50V
C914	1-162-959-11	CERAMIC CHIP 330PF (EXCEPT KV-21CL1K)	5.00% 50V
C916	1-162-959-11	CERAMIC CHIP 330PF (EXCEPT KV-21CL1K)	5.00% 50V
C919	1-164-346-11	CERAMIC CHIP 1UF (EXCEPT KV-21CL1K)	16V
C922	1-164-315-11	CERAMIC CHIP 470PF (EXCEPT KV-21CL1K)	5.00% 50V
C925	1-164-315-11	CERAMIC CHIP 470PF (EXCEPT KV-21CL1K)	5.00% 50V
C939	1-164-315-11	CERAMIC CHIP 470PF (EXCEPT KV-21CL1K)	5.00% 50V
C946	1-164-315-11	CERAMIC CHIP 470PF (EXCEPT KV-21CL1K)	5.00% 50V
C953	1-107-826-11	CERAMIC CHIP 0.1UF (KV-21CL1K)	10.00% 16V
C974	1-126-964-11	ELECT 10UF (EXCEPT KV-21CL1K)	20.00% 50V
C1233	1-126-961-11	ELECT 2.2UF (KV-21CL1K)	20.00% 50V
		<CONNECTOR>	
CN901	* 1-766-296-21	CONNECTOR, DUAL SCART (EXCEPT KV-21CL1K)	
CN902	1-794-656-11	CONNECTOR, SCART 21P (KV-21CL1K)	
		<DIODE>	
D900	8-719-069-60	UDZSTE-179.1B (EXCEPT KV-21CL1K)	
D901	8-719-069-60	UDZSTE-179.1B (EXCEPT KV-21CL1K)	
D902	8-719-069-55	DIODE UDZSTE-175.6B(EXCEPT KV-21CL1K)	
D905	8-719-069-60	UDZSTE-179.1B (EXCEPT KV-21CL1K)	
D906	8-719-069-55	DIODE UDZSTE-175.6B(EXCEPT KV-21CL1K)	
D907	8-719-069-55	DIODE UDZSTE-175.6B(EXCEPT KV-21CL1K)	
D908	8-719-069-55	DIODE UDZSTE-175.6B(EXCEPT KV-21CL1K)	
D910	8-719-069-55	DIODE UDZSTE-175.6B(EXCEPT KV-21CL1K)	
D916	8-719-069-55	DIODE UDZSTE-175.6B(EXCEPT KV-21CL1K)	
D922	8-719-069-55	DIODE UDZSTE-175.6B(EXCEPT KV-21CL1K)	
D929	8-719-069-60	UDZSTE-179.1B(EXCEPT KV-21CL1K)	
		<FERRITE BEAD>	
FB901	1-469-869-21	FERRITE 0UH (EXCEPT KV-21CL1K)	
FB2602	1-410-397-21	FERRITE 1.1UH (KV-21CL1K)	
FB2607	1-410-397-21	FERRITE 1.1UH (EXCEPT KV-21CL1K)	

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A

REF NO.	PART NO.	DESCRIPTION	REMARK	REF NO.	PART NO.	DESCRIPTION	REMARK
<IC>				R211	1-216-839-11	METAL CHIP 33K (KV-21CL1K)	5% 1/10W
IC001	6-703-515-01	IC TDA12027H/N1A0B0AG (EXCEPT KV-21CL1K)		R237	1-216-809-11	METAL CHIP 100 (EXCEPT KV-21CL1K)	5% 1/10W
IC001	6-703-512-01	IC TDA11020H/N1A000AK (KV-21CL1K)		R238	1-216-809-11	METAL CHIP 100 (EXCEPT KV-21CL1K)	5% 1/10W
IC601	6-704-263-01	IC STR-F6267S LF1357 (EXCEPT KV-21CL1K)		R239	1-216-809-11	METAL CHIP 100 (KV-21CL1K)	5% 1/10W
IC601	6-703-263-01	IC MD160B21USL (KV-21CL1K)		R377	1-216-823-11	METAL CHIP 1.5K (EXCEPT KV-21CL1K)	5% 1/10W
<JACK>				R855	1-218-883-11	METAL CHIP 33K (EXCEPT KV-21CL1K)	0.5% 1/10W
J903	1-770-329-13	JACK, PIN 3P (EXCEPT KV-21CL1K)		R855	1-216-833-11	METAL CHIP 10K (KV-21CL1K)	5% 1/10W
J909	1-779-205-11	JACK, PIN 2P (KV-21CL1K)		<CHIP CONDUCTOR>			
JR1256	1-216-864-11	SHORT CHIP 0 (KV-21CL1K)		R902	1-216-821-11	METAL CHIP 1K (EXCEPT KV-21CL1K)	5% 1/10W
JR1902	1-216-864-11	SHORT CHIP 0 (KV-21CL1K)		R904	1-216-821-11	METAL CHIP 1K (EXCEPT KV-21CL1K)	5% 1/10W
<TRANSISTOR>				R905	1-216-840-11	METAL CHIP 39K (EXCEPT KV-21CL1K)	5% 1/10W
Q010	8-729-010-05	MSB709-RT1 (EXCEPT KV-21CL1K)		R906	1-216-817-11	METAL CHIP 470 (EXCEPT KV-21CL1K)	5% 1/10W
Q900	8-729-010-05	MSB709-RT1 (EXCEPT KV-21CL1K)		R907	1-216-840-11	METAL CHIP 39K (EXCEPT KV-21CL1K)	5% 1/10W
Q901	8-729-424-67	UN2216 (EXCEPT KV-21CL1K)		<RESISTOR>			
Q902	8-729-424-67	UN2216 (EXCEPT KV-21CL1K)		R059	1-216-821-11	METAL CHIP 1K (EXCEPT KV-21CL1K)	5% 1/10W
Q910	8-729-010-25	MSD601-RT1 (KV-21CL1K)		R200	1-216-827-11	METAL CHIP 3.3K (EXCEPT KV-21CL1K)	5% 1/10W
Q911	8-729-010-25	MSD601-RT1 (KV-21CL1K)		R200	1-216-864-11	SHORT CHIP 0 (KV-21CL1K)	
Q912	8-729-421-22	UN2211 (KV-21CL1K)		R201	1-216-827-11	METAL CHIP 3.3K (EXCEPT KV-21CL1K)	5% 1/10W
<RESISTOR>				R201	1-216-833-11	METAL CHIP 10K (KV-21CL1K)	5% 1/10W
R059	1-216-821-11	METAL CHIP 1K (EXCEPT KV-21CL1K)	5% 1/10W	R202	1-216-830-11	METAL CHIP 5.6K (EXCEPT KV-21CL1K)	5% 1/10W
R200	1-216-827-11	METAL CHIP 3.3K (EXCEPT KV-21CL1K)	5% 1/10W	R203	1-216-827-11	METAL CHIP 3.3K (EXCEPT KV-21CL1K)	5% 1/10W
R200	1-216-864-11	SHORT CHIP 0 (KV-21CL1K)		R203	1-216-864-11	SHORT CHIP 0 (KV-21CL1K)	
R201	1-216-827-11	METAL CHIP 3.3K (EXCEPT KV-21CL1K)	5% 1/10W	R204	1-216-827-11	METAL CHIP 3.3K (EXCEPT KV-21CL1K)	5% 1/10W
R201	1-216-833-11	METAL CHIP 10K (KV-21CL1K)	5% 1/10W	R204	1-216-833-11	METAL CHIP 10K (KV-21CL1K)	5% 1/10W
R202	1-216-830-11	METAL CHIP 5.6K (EXCEPT KV-21CL1K)	5% 1/10W	R205	1-216-830-11	METAL CHIP 5.6K (EXCEPT KV-21CL1K)	5% 1/10W
R203	1-216-827-11	METAL CHIP 3.3K (EXCEPT KV-21CL1K)	5% 1/10W	R207	1-218-867-11	METAL CHIP 6.8K (EXCEPT KV-21CL1K)	5% 1/10W
R203	1-216-864-11	SHORT CHIP 0 (KV-21CL1K)		R207	1-216-823-11	METAL CHIP 1.5K (KV-21CL1K)	5% 1/10W
R204	1-216-827-11	METAL CHIP 3.3K (EXCEPT KV-21CL1K)	5% 1/10W	R208	1-218-867-11	METAL CHIP 6.8K (EXCEPT KV-21CL1K)	5% 1/10W
R204	1-216-833-11	METAL CHIP 10K (KV-21CL1K)	5% 1/10W	R208	1-216-823-11	METAL CHIP 1.5K (KV-21CL1K)	5% 1/10W
R205	1-216-830-11	METAL CHIP 5.6K (EXCEPT KV-21CL1K)	5% 1/10W	R210	1-216-835-11	METAL CHIP 15K (EXCEPT KV-21CL1K)	5% 1/10W
R207	1-218-867-11	METAL CHIP 6.8K (EXCEPT KV-21CL1K)	5% 1/10W	R210	1-216-839-11	METAL CHIP 33K (KV-21CL1K)	5% 1/10W
R207	1-216-823-11	METAL CHIP 1.5K (KV-21CL1K)	5% 1/10W	R211	1-216-835-11	METAL CHIP 15K (EXCEPT KV-21CL1K)	5% 1/10W
R208	1-218-867-11	METAL CHIP 6.8K (EXCEPT KV-21CL1K)	5% 1/10W	<RESISTOR>			
R208	1-216-823-11	METAL CHIP 1.5K (KV-21CL1K)	5% 1/10W	R913	1-216-853-11	METAL CHIP 470K (EXCEPT KV-21CL1K)	5% 1/10W
R210	1-216-835-11	METAL CHIP 15K (EXCEPT KV-21CL1K)	5% 1/10W	R914	1-216-853-11	METAL CHIP 470K (EXCEPT KV-21CL1K)	5% 1/10W
R210	1-216-839-11	METAL CHIP 33K (KV-21CL1K)	5% 1/10W	R915	1-216-849-11	METAL CHIP 220K (EXCEPT KV-21CL1K)	5% 1/10W
R211	1-216-835-11	METAL CHIP 15K (EXCEPT KV-21CL1K)	5% 1/10W	R916	1-216-849-11	METAL CHIP 220K (EXCEPT KV-21CL1K)	5% 1/10W
<RESISTOR>				R917	1-218-285-11	METAL CHIP 75 (EXCEPT KV-21CL1K)	5% 1/10W
R059	1-216-821-11	METAL CHIP 1K (EXCEPT KV-21CL1K)	5% 1/10W	R919	1-216-813-11	METAL CHIP 220 (EXCEPT KV-21CL1K)	5% 1/10W
R200	1-216-827-11	METAL CHIP 3.3K (EXCEPT KV-21CL1K)	5% 1/10W	R920	1-216-849-11	METAL CHIP 220K (EXCEPT KV-21CL1K)	5% 1/10W
R200	1-216-864-11	SHORT CHIP 0 (KV-21CL1K)		R923	1-218-285-11	METAL CHIP 75 (EXCEPT KV-21CL1K)	5% 1/10W
R201	1-216-827-11	METAL CHIP 3.3K (EXCEPT KV-21CL1K)	5% 1/10W	R924	1-216-853-11	METAL CHIP 470K (EXCEPT KV-21CL1K)	5% 1/10W
R201	1-216-833-11	METAL CHIP 10K (KV-21CL1K)	5% 1/10W	R931	1-216-021-00	RES-CHIP 68 (EXCEPT KV-21CL1K)	5% 1/10W
R202	1-216-830-11	METAL CHIP 5.6K (EXCEPT KV-21CL1K)	5% 1/10W	R932	1-216-864-11	SHORT CHIP 0 (EXCEPT KV-21CL1K)	
R203	1-216-827-11	METAL CHIP 3.3K (EXCEPT KV-21CL1K)	5% 1/10W	R933	1-216-864-11	SHORT CHIP 0 (EXCEPT KV-21CL1K)	
R203	1-216-864-11	SHORT CHIP 0 (KV-21CL1K)		R941	1-216-849-11	METAL CHIP 220K (EXCEPT KV-21CL1K)	5% 1/10W
R204	1-216-827-11	METAL CHIP 3.3K (EXCEPT KV-21CL1K)	5% 1/10W	R946	1-216-833-11	METAL CHIP 10K (EXCEPT KV-21CL1K)	5% 1/10W
R204	1-216-833-11	METAL CHIP 10K (KV-21CL1K)	5% 1/10W	R948	1-216-839-11	METAL CHIP 33K (EXCEPT KV-21CL1K)	5% 1/10W
R205	1-216-830-11	METAL CHIP 5.6K (EXCEPT KV-21CL1K)	5% 1/10W	R950	1-216-833-11	METAL CHIP 10K (EXCEPT KV-21CL1K)	5% 1/10W
R207	1-218-867-11	METAL CHIP 6.8K (EXCEPT KV-21CL1K)	5% 1/10W	R970	1-216-853-11	METAL CHIP 470K (EXCEPT KV-21CL1K)	5% 1/10W
R207	1-216-823-11	METAL CHIP 1.5K (KV-21CL1K)	5% 1/10W	R992	1-216-817-11	METAL CHIP 470 (EXCEPT KV-21CL1K)	5% 1/10W
R208	1-218-867-11	METAL CHIP 6.8K (EXCEPT KV-21CL1K)	5% 1/10W	R1201	1-216-853-11	METAL CHIP 470K (KV-21CL1K)	5% 1/10W
R208	1-216-823-11	METAL CHIP 1.5K (KV-21CL1K)	5% 1/10W	<RESISTOR>			
R210	1-216-835-11	METAL CHIP 15K (EXCEPT KV-21CL1K)	5% 1/10W	R909	1-216-840-11	METAL CHIP 39K (EXCEPT KV-21CL1K)	5% 1/10W
R210	1-216-839-11	METAL CHIP 33K (KV-21CL1K)	5% 1/10W	R910	1-216-817-11	METAL CHIP 470 (EXCEPT KV-21CL1K)	5% 1/10W
R211	1-216-835-11	METAL CHIP 15K (EXCEPT KV-21CL1K)	5% 1/10W	R911	1-216-805-11	METAL CHIP 47 (EXCEPT KV-21CL1K)	5% 1/10W

**KV-21FQ10B/21FQ10E/21FQ10K/21CL10B**  
**KV-21CL10E/21CL10K/21CL10U/21CL1K**  
**RM-W100**

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

**A** **C**

REF NO.	PART NO.	DESCRIPTION	REMARK
R9005	1-216-864-11	SHORT CHIP	0 (EXCEPT KV-21CL1K)
R9014	1-216-809-11	METAL CHIP	100 5% 1/10W (EXCEPT KV-21CL1K)
R9016	1-216-809-11	METAL CHIP	100 5% 1/10W (EXCEPT KV-21CL1K)
R9017	1-216-809-11	METAL CHIP	100 5% 1/10W (EXCEPT KV-21CL1K)
R9018	1-216-809-11	METAL CHIP	100 5% 1/10W (EXCEPT KV-21CL1K)
R9019	1-216-809-11	METAL CHIP	100 5% 1/10W (EXCEPT KV-21CL1K)
R9020	1-216-809-11	METAL CHIP	100 5% 1/10W (EXCEPT KV-21CL1K)
R9022	1-216-809-11	METAL CHIP	100 5% 1/10W (EXCEPT KV-21CL1K)
R9026	1-216-838-11	METAL CHIP	27K 5% 1/10W (EXCEPT KV-21CL1K)
R9028	1-216-809-11	METAL CHIP	100 5% 1/10W (EXCEPT KV-21CL1K)
R9030	1-216-809-11	METAL CHIP	100 5% 1/10W (EXCEPT KV-21CL1K)
R9031	1-216-809-11	METAL CHIP	100 5% 1/10W (EXCEPT KV-21CL1K)
R9039	1-216-864-11	SHORT CHIP	0 (KV-21CL1K)
R9040	1-216-857-11	METAL CHIP	1M 5% 1/10W (KV-21CL1K)
R9041	1-216-857-11	METAL CHIP	1M 5% 1/10W (KV-21CL1K)
R9042	1-216-827-11	METAL CHIP	3.3K 5% 1/10W (KV-21CL1K)
R9043	1-216-821-11	METAL CHIP	1K 5% 1/10W (KV-21CL1K)
R9044	1-216-817-11	METAL CHIP	470 5% 1/10W (KV-21CL1K)
R9045	1-216-809-11	METAL CHIP	100 5% 1/10W (KV-21CL1K)
R9046	1-216-825-11	METAL CHIP	2.2K 5% 1/10W (KV-21CL1K)
R9047	1-216-833-11	METAL CHIP	10K 5% 1/10W (KV-21CL1K)
R9050	1-216-864-11	SHORT CHIP	0 (EXCEPT KV-21CL1K)
R9051	1-216-864-11	SHORT CHIP	0 (KV-21CL1K)
R9052	1-216-864-11	SHORT CHIP	0 (KV-21CL1K)
		<SWITCH>	
SWF102	1-767-083-11	FILTER, SURFACE WAVE	(KV-21CL10B/21FQ10B)
		<TUNER>	
TU101	8-598-623-00	TUNER, FSS BTP-AC421	(EXCEPT KV-21CL10U)
TU101	8-598-624-00	TUNER, FSS BTP-AU621	(KV-21CL10U)

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REF NO.	PART NO.	DESCRIPTION	REMARK
	* A-1405-418-A	MOUNTED PWB (VAR), C	*****
	4-382-854-01	SCREW (M3X8), P, SW (+)	
		<CAPACITOR>	
C751	1-107-961-91	ELECT	10UF 20.00% 250V
C752	1-115-350-51	CERAMIC	0.0047UF 2KV
C754	1-107-651-11	ELECT	4.7UF 20.00% 250V
C781	1-107-651-11	ELECT	4.7UF 20.00% 250V
C782	1-102-074-00	CERAMIC	0.001UF 10.00% 50V
C783	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V
C786	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V
C787	1-164-645-11	CERAMIC	1000PF 10.00% 500V
C788	1-162-923-11	CERAMIC CHIP	47PF 5.00% 50V
C789	1-162-923-11	CERAMIC CHIP	47PF 5.00% 50V
C790	1-162-923-11	CERAMIC CHIP	47PF 5.00% 50V
		<CONNECTOR>	
CN701	* 1-564-510-11	PLUG, CONNECTOR 7P	
CN703	* 1-564-508-11	PLUG, CONNECTOR 5P	
CN704	1-695-915-11	TAB (CONTACT)	
CN705	1-695-915-11	TAB (CONTACT)	
		<DIODE>	
D750	8-719-908-03	GP08D	
D754	8-719-970-83	HSS82-TJ	
D755	8-719-970-83	HSS82-TJ	
D756	8-719-970-83	HSS82-TJ	
D780	8-719-991-33	1SS133T-77	
D781	8-719-991-33	1SS133T-77	
D782	8-719-069-55	DIODE UDZSTE-175.6B	
		<IC>	
IC751	6-703-482-01	IC TDA6108AJF/N1	
		<JACK>	
J751	$\triangle$ 1-451-544-11	SOCKET, CRT	
		<COIL>	
L780	1-410-667-31	INDUCTOR	22UH
L781	1-414-186-31	INDUCTOR	33UH
L782	1-414-186-31	INDUCTOR	33UH
L783	1-414-186-31	INDUCTOR	33UH
		<RESISTOR>	
R713	1-216-864-11	SHORT CHIP	0
R752	1-216-819-11	METAL CHIP	680 5% 1/10W
R753	1-216-819-11	METAL CHIP	680 5% 1/10W
R754	1-216-819-11	METAL CHIP	680 5% 1/10W
R756	1-219-746-11	METAL	1K 5% 1/2W
R757	1-219-746-11	METAL	1K 5% 1/2W
R758	1-219-746-11	METAL	1K 5% 1/2W
R763	1-260-087-11	CARBON	100 5% 1/2W
R764	1-260-087-11	CARBON	100 5% 1/2W
R765	1-260-087-11	CARBON	100 5% 1/2W

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

**C**

REF NO.	PART NO.	DESCRIPTION	REMARK
R773	1-260-132-11	CARBON 560K	5% 1/2W
R774	1-215-912-11	METAL OXIDE 150	5% 3W
R780	1-260-131-11	CARBON 470K	5% 1/2W
R781	1-243-950-71	RES, OXIDE METAL FILM 0.56	
R783	1-260-087-11	CARBON 100	5% 1/2W
R794	1-249-377-11	CARBON 0.47	5% 1/4W
R795	1-260-352-11	CARBON 100K	5% 1/2W

&lt;VARIABLE RESISTOR&gt;

RV750 1-241-656-11 RES, ADJ, METAL FILM 110M

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## ACCESSORIES AND PACKING MATERIALS

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- \* 4-030-594-21 BAG, PROTECTION (KV-21CL10B/CL10E/CL10U)
- \* 4-088-869-01 BAG, PROTECTION (KV-21CL1K)
- \* 4-395-957-01 BAG, PROTECTION (KV-21FQ10B/FQ10E/FQ10K/CL10K)
- \* 4-093-265-01 INDIVIDUAL CARTON (KV-21FQ10B/FQ10E/FQ10K)
- \* 4-094-267-01 INDIVIDUAL CARTON (KV-21CL10B/CL10E/CL10U/CL10K)
- \* 4-096-211-01 INDIVIDUAL CARTON (KV-21CL1K)
- \* 4-093-263-01 CUSHION, UPPER (KV-21FQ10B/FQ10E/FQ10K)
- \* 4-094-268-01 CUSHION, UPPER (KV-21CL10B/CL10E/CL10U/CL10K)

REF NO.	PART NO.	DESCRIPTION	REMARK
*	4-096-212-01	CUSHION, UPPER (KV-21CL1K)	
*	4-093-264-01	CUSHION, LOWER (KV-21FQ10B/FQ10E/FQ10K)	
*	4-094-269-01	CUSHION, LOWER (KV-21CL10B/CL10E/CL10U/CL10K)	
*	4-096-215-01	CUSHION, LOWER (KV-21CL1K)	
	4-093-929-12	MANUAL, INSTRUCTION (KV-21FQ10B/CL10B)	
	4-093-929-22	MANUAL, INSTRUCTION (KV-21FQ10E/CL10E)	
	4-093-929-32	MANUAL, INSTRUCTION (KV-21FQ10E/CL10E)	
	4-093-929-42	MANUAL, INSTRUCTION (KV-21FQ10E/CL10E)	
	4-093-929-52	MANUAL, INSTRUCTION (KV-21FQ10K/CL10K)	
	4-097-194-11	MANUAL, INSTRUCTION (KV-21CL1K)	
	4-093-929-62	MANUAL, INSTRUCTION (KV-21CL10U)	

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## REMOTE COMMANDER

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1-477-861-11 STANDARDTYPE COMMANDER RM-W100