

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>
<i>KV-XR29M50</i>	<i>RM-W104</i>	<i>Malaysia</i>	<i>SCC-U96M-A</i>				
<i>KV-XR29M80</i>	<i>RM-W104</i>	<i>ME</i>	<i>SCC-U90V-A</i>				
<i>KV-XR29M80</i>	<i>RM-W104</i>	<i>Saudi Arabia</i>	<i>SCC-V10J-A</i>				
<i>KV-XR29M80</i>	<i>RM-W104</i>	<i>Russia</i>	<i>SCC-V13A-A</i>				



RM-W104

TRINITRON® COLOR TV
SONY®

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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 CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

SAFETY-RELATED COMPONENT WARNING!!

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

SELF DIAGNOSIS FUNCTION

The units in this manual contain a self diagnosis function. If an error occurs, the STANDBY (⏻) indicator will automatically begin to flash. The number of times the STANDBY (⏻) indicator flasher 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. DIAGNOSIS 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 times STANDBY/TIMER lamp 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"> • Power cord is not plugged in. • Fuse is burned out (F4601) (A Board) 	<ul style="list-style-type: none"> • Power does not come on. • No power is supplied to the TV. • AC power supply is faulty.
• +B overcurrent (OCP)*	2 times	2:0 2:1 ~ 255	<ul style="list-style-type: none"> • H.OUT (Q511) is shorted. (A board) • IC751 is shorted. (C/CV Board) 	<ul style="list-style-type: none"> • Power does not come on. • Load on power line is shorted.
• I-Port	4 times	4:0 4:1 ~ 255	<ul style="list-style-type: none"> • +13V is not supplied. (A Board) • IC503 voltage list is faulty. (A Board) 	<ul style="list-style-type: none"> • Has entered standby state after horizontal raster. • Vertical deflection pulse is stopped. • Power line is shorted or power supply is stopped.
• IK (AKB)	5 times	5:0 5:1 ~ 255	<ul style="list-style-type: none"> • Video OUT (IC751) is faulty. (C Board) • IC001 is faulty. (A Board) • Screen (G2) is improperly adjusted. 	<ul style="list-style-type: none"> • No raster is generated. • CRT cathode current detection reference pulse output is small.
• HV Protect	8 times	8:0 8:1 ~ 255	<ul style="list-style-type: none"> • IC604 faulty. • IC607 faulty. 	<ul style="list-style-type: none"> • No power supply to CRT ANODE. • No RASTER is generated.

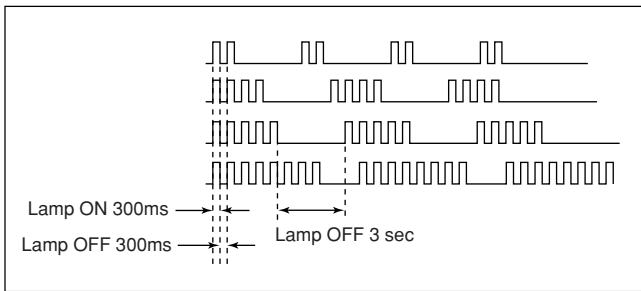
Note 1: If a + B overcurrent is detected, stoppage of the vertical deflection is detected simultaneously.

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

Note 2: Refer to screen (G2) Adjustment in section 2-4 of this manual.

2. DISPLAY OF STANDBY/(⏻) indicator FLASH

COUNT



Diagnosis Item	Flash Count*
+B overcurrent	2 times
I-Prot	4 times
IK (AKB)	5 times
HV Protect	8 times

* One flash count is not used for self-diagnosis.
FLASH RED → Please refer diagnosis item.
FLASH GREEN → OK



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/(⏻) lamp from flashing.

4. SELF-DIAGNOSTIC SCREEN DISPLAY

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

[To Bring Up Screen Test]

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

display → channel [5] → volume [-] → Power [⏻] / TV [TV]

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

Self-Diagnostic screen display

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

Numeral "0" means that no fault was detected.

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

5. HANDLING OF SELF-DIAGNOSTIC SCREEN DISPLAY

Since the diagnosis 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]

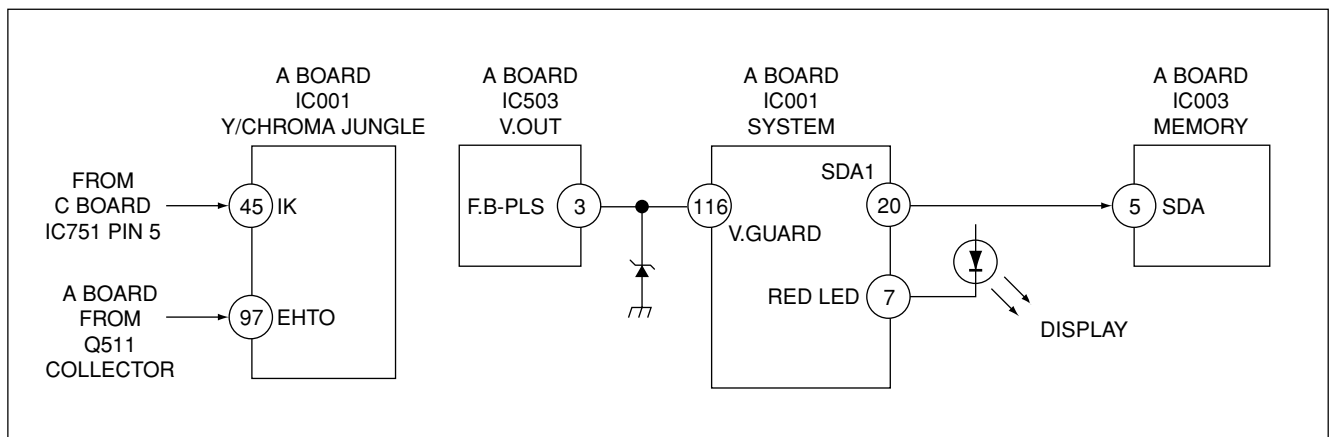
To clear the result display to "0", press buttons on the remote commander sequentially when the self-diagnostic screen is displayed, as shown below:

Channel [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-DIAGNOSIS CIRCUIT



+B overcurrent OCP

Occurs when an overcurrent on the +B (135V) line is detected by pin 97 of IC001 (A Board). If the voltage of pin 97 of IC001 (A Board) is less than 1V when V.SYNC is more than HV, the unit will automatically go to standby.

I-Port

Occurs when an absence of the vertical deflection pulse is detected by pin 116 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, and indicator will start to Blink 5 times.

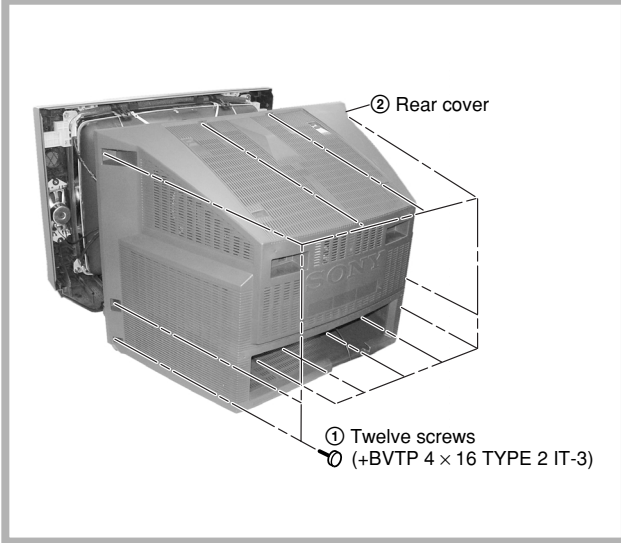
HV Protect

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 IC607, IC604 go faulty.

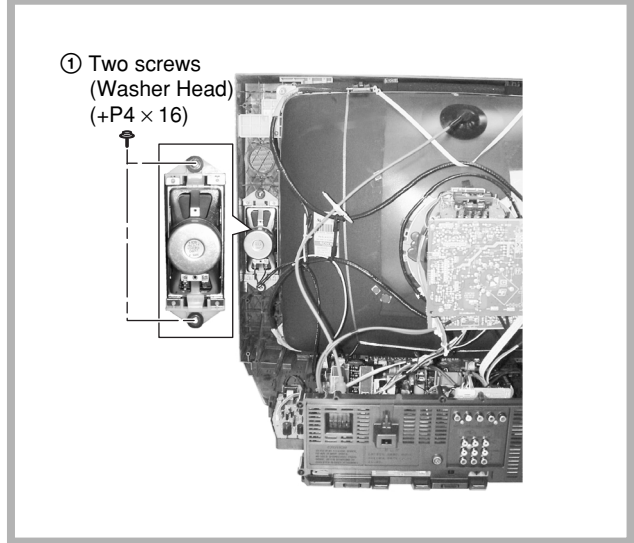
* (Refers to the RGB levels of the AKB detection Ref pulse that detects 1K)

SECTION 1 DISASSEMBLY

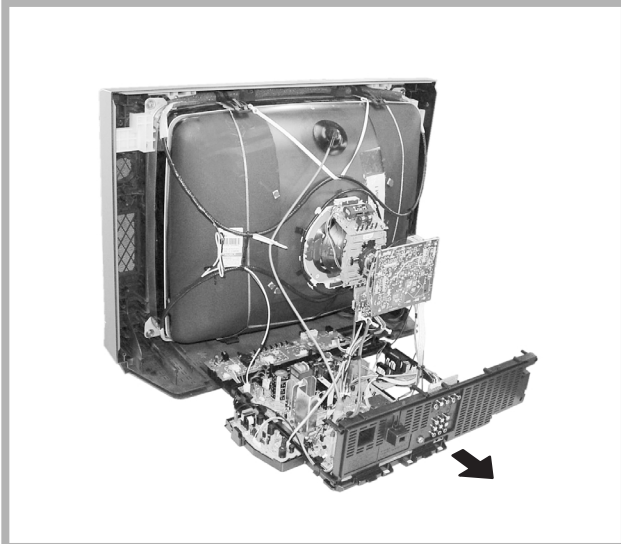
1-1. REAR COVER REMOVAL



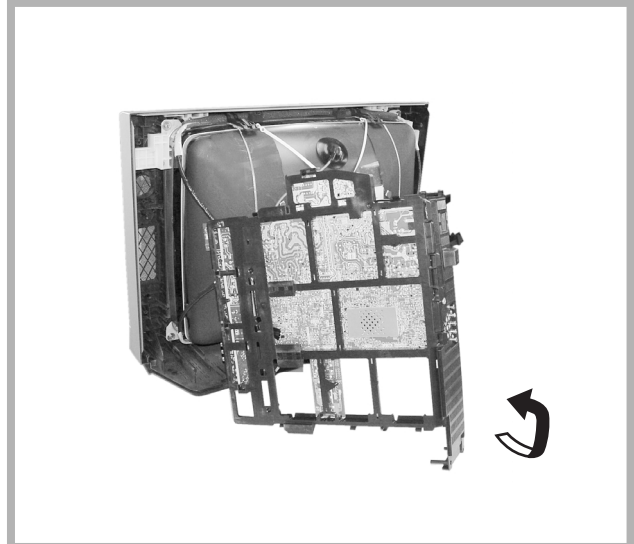
1-2. SPEAKER REMOVAL



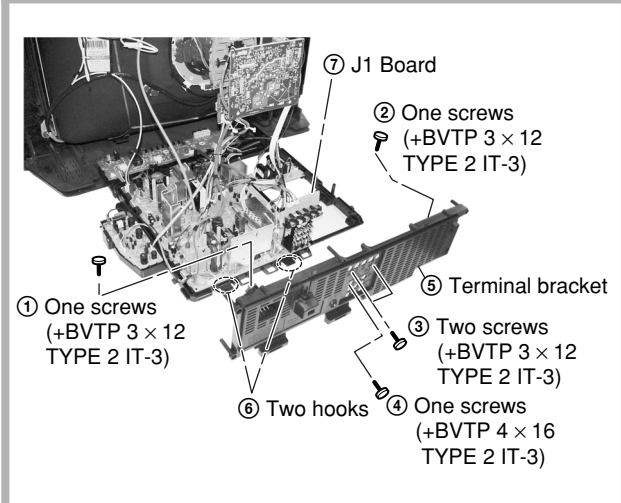
1-3. CHASSIS ASSY REMOVAL



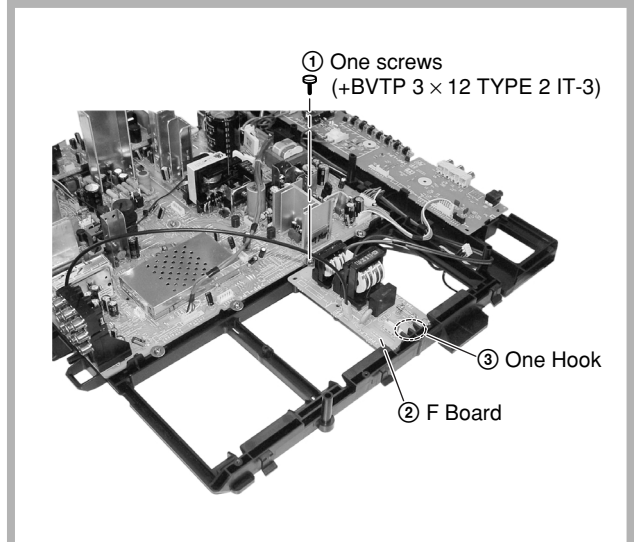
1-4. SERVICE POSITION



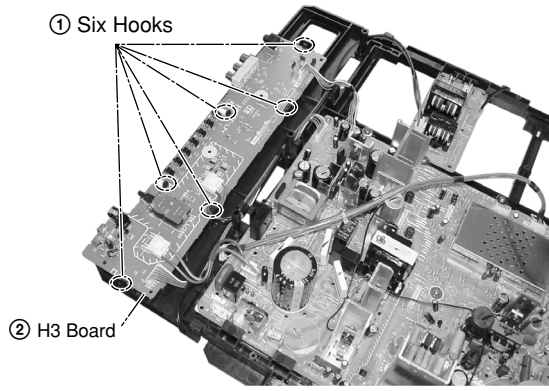
1-5. TERMINAL BRACKET AND J1 BOARD REMOVAL



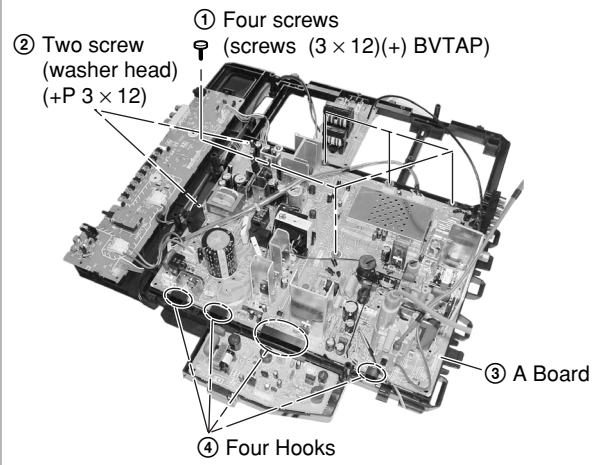
1-6. F BOARD REMOVAL



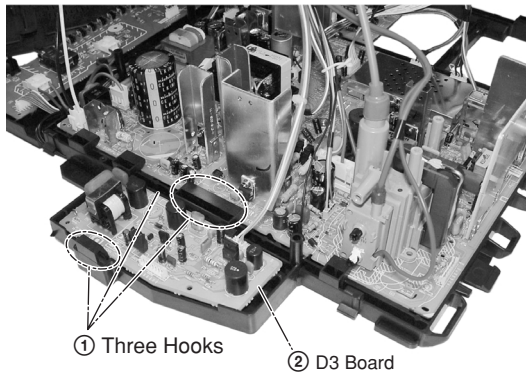
1-7. H3 BOARD REMOVAL



1-8. A BOARD REMOVAL



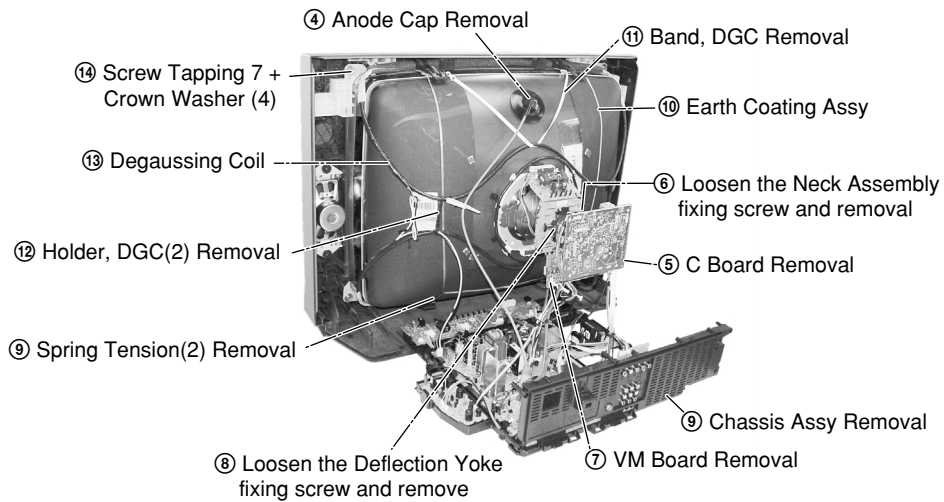
1-9. D3 BOARD REMOVAL



1-10. PICTURE TUBE REMOVAL

Note:

- Please make sure the TV set is not in standing position before removing necessary CRT support located on bottom right and left.
- 1) Place the TV set with the CRT face down on a cushion jig
 - 2) Remove the rear cover.
 - 3) Remove the Speaker Block Assy.

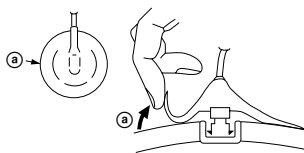


• REMOVAL OF ANODE-CAP

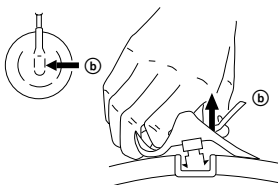
Note:

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

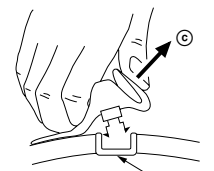
• REMOVING PROCEDURES



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



- ② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow (b).

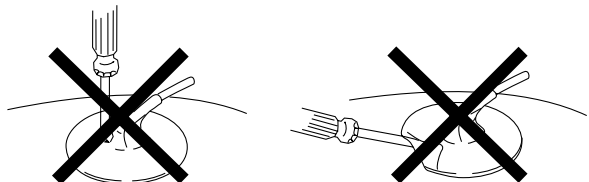


anode button

- ③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling it up in the direction of the arrow (c).

• HOW TO HANDLE AN ANODE-CAP

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



SECTION 2 SET-UP ADJUSTMENTS

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

Set the controls as follows unless otherwise noted:
 VIDEO 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: DYNAMIC

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

Purity control

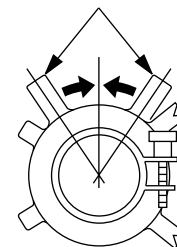


Fig. 2-3

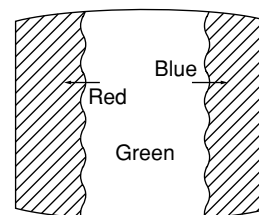


Fig. 2-4

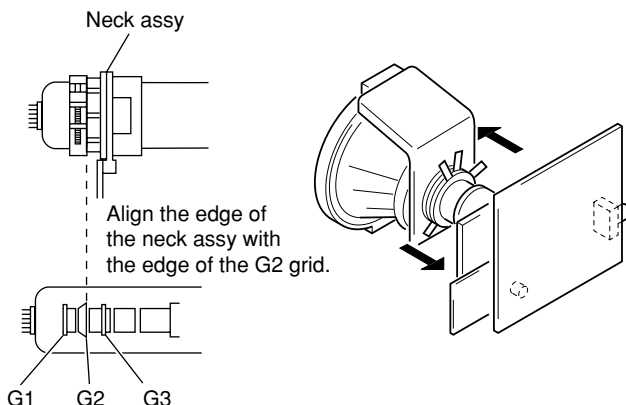


Fig. 2-1

Fig. 2-2

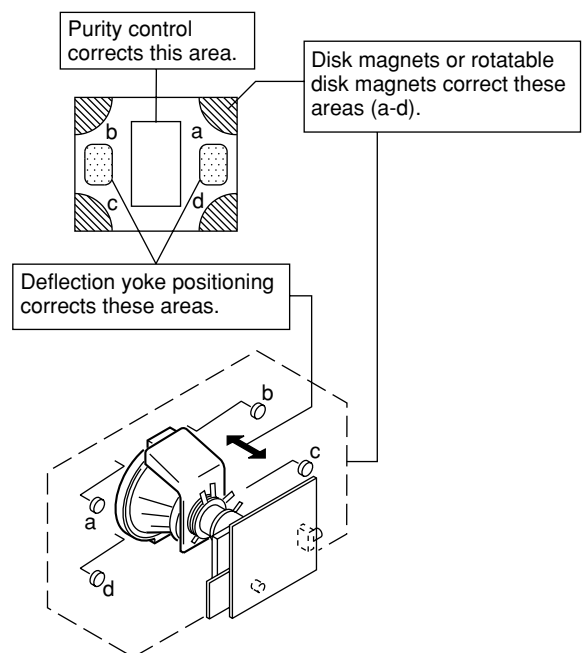
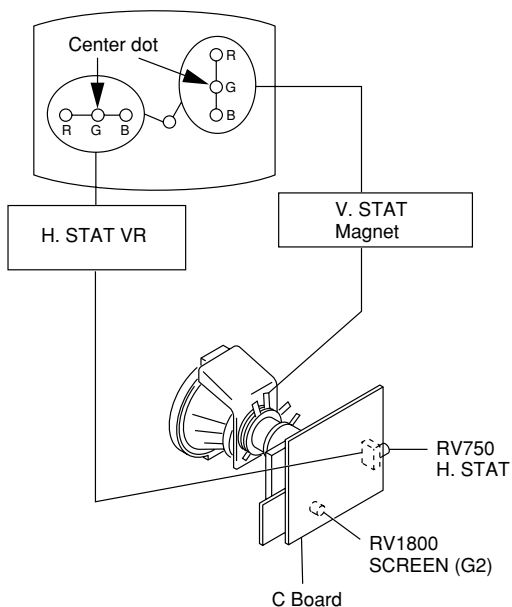


Fig. 2-5

2-2. CONVERGENCE

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



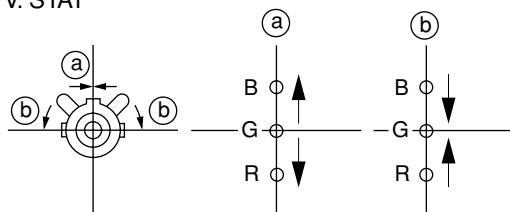
(1) Horizontal and Vertical Static Convergence

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

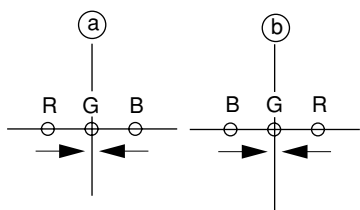
4. BMC (Hexapole) Magnet.

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

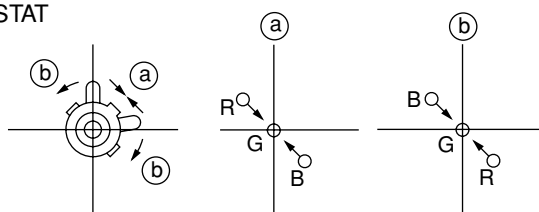
① V. STAT



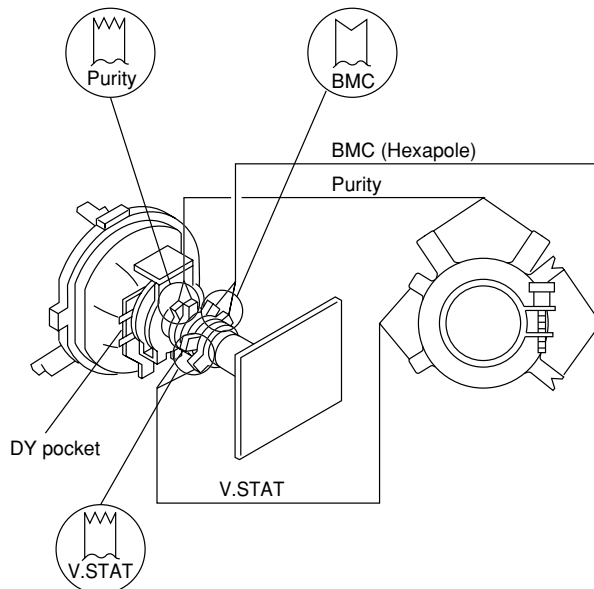
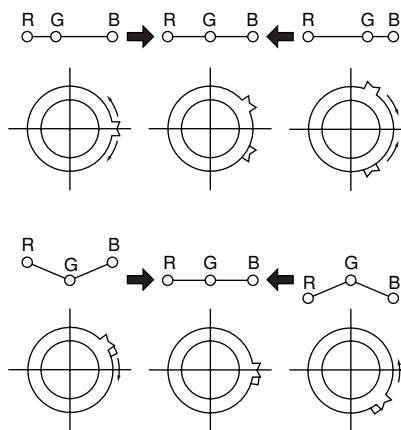
② H. STAT VR



③ H. STAT

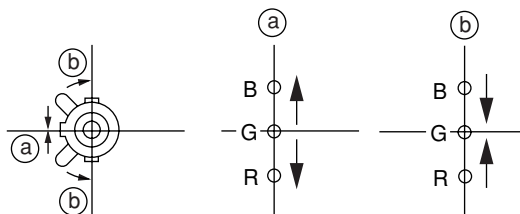


④ BMC (Hexapole) Magnet



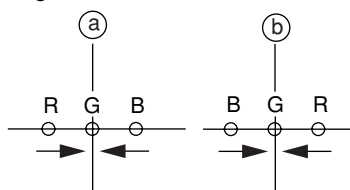
5. Operation of V.STAT magnet

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

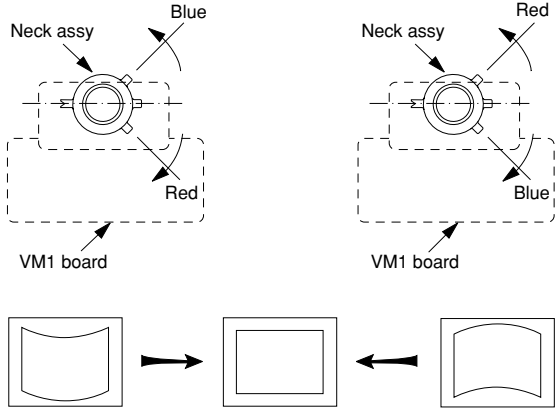


6. Moved RV705 H.STAT.

the red, green and blue dots move as shown below.



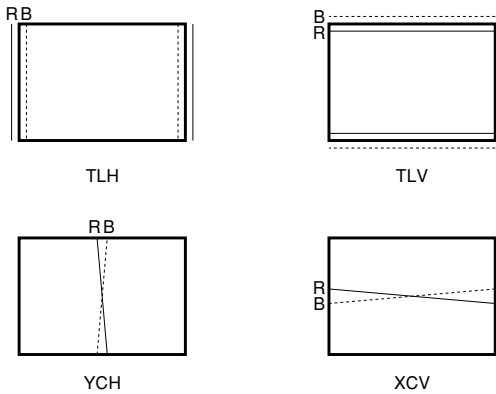
7. Y separation axis correction magnet adjustment.
1. Receive the cross-hatch signal and adjust [PICTURE] to [MIN] and [BRIGHTNESS] to [STANDARD] .
 2. Adjust the Y separation axis correction magnet on the neck assembly so that the horizontal lines at the top and bottom of the screen are straight.



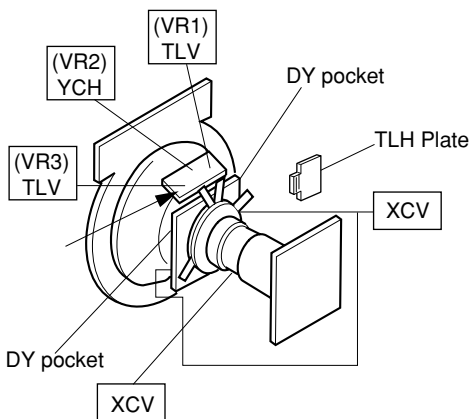
(2) Dynamic Convergence Adjustment

Preparation:

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



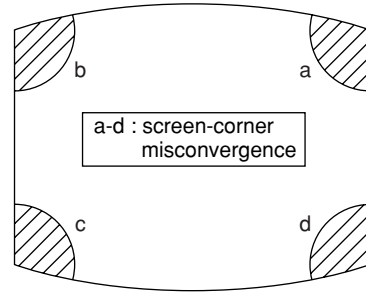
ON DY:



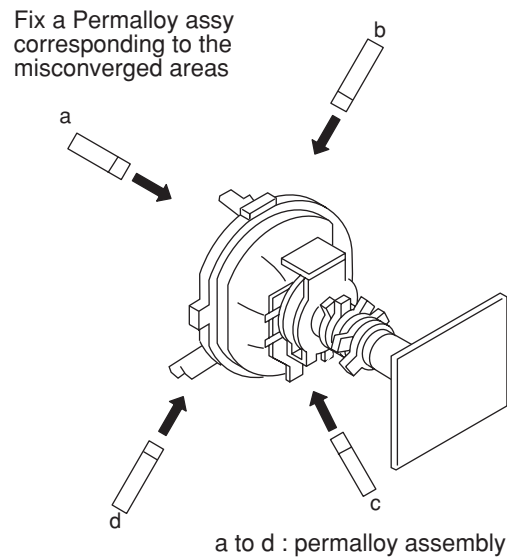
- | | | | | |
|-----|--------|-------|------------------|---------------------------------|
| TLV | Rotate | TLV-2 | VOL (29", 34") | on DY |
| XCV | Rotate | XCV | Adj core | on DY |
| YCH | Rotate | YCH | VOL | on DY |
| TLH | Insert | TLH | Correction Plate | to DY Pocket
(Left or Right) |

(3) Screen-corner Convergence

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



1. Affix the Piece A(90) Conv. Correct corresponding to the misconverged areas.

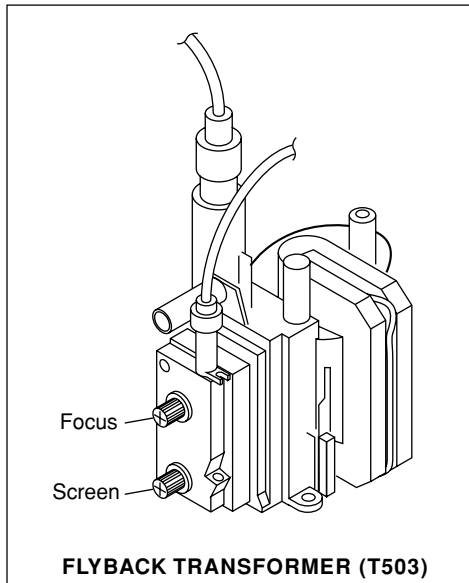


2-3. FOCUS ADJUSTMENT

FOCUS adjustment should be completed before W/B adjustment.

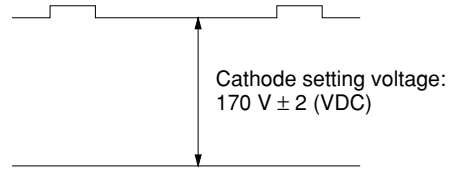
(Except 34")

1. Receive digital monoscope pattern.
2. Set "Picture Mode" to "DYNAMIC".
3. a) Adjust focus VR so that the center of screen becomes just focus(29", 34").
b) Adjust focus VR so that the lion teeth becomes just focus(25").
4. Change the receiving signal to white pattern and blue back.
5. Confirm Magenta ring is not noticeable. In case magenta ring is obvious, adjust FOCUS VR to balance between MAGENTA RING and FOCUS.



2-4. G2 (SCREEN) ADJUSTMENTS

1. Set the PICTURE to Normal.
2. Put the VIDEO input mode without signals
3. Connect R,G,B of the C board cathode to the oscilloscope.
4. Adjust cathode voltage to the value below.
5. Adjust G2 (screen) on the FBT until picture shows the point before cut off.



2-5. WHITE BALANCE ADJUSTMENT

1. Set to Service Mode (Refer Section 3-1: ADJUSTMENTS WITH COMMANDER).
2. Input white raster signal.
3. Set Picture to MINIMUM.
4. Select WHBL 002"RDRV" and adjust the value to 37
5. Select WHBL 003"GDRV" and 004 "BDRV"and adjust the data for the best white balance in highlight condition.
6. Adjust WHBL 000 "BKOR" and 001 "BKOG"and adjust the data for best white balance cut-off condition.
7. Write into the memory by pressing **MUTING** then **0**.

2-6. SUB BRIGHT ADJUSTMENT

1. Set to service mode.
2. Brightness set to 50%, Picture: Minimum.
3. Select WHBL SBRT with **1** and **4**, and adjust 'SBRT' data with **3** and **6** so that the third stripe from right dimly lit.
4. Write into the memory by pressing **MUTING** then **0**.
5. Models cut-off: 0 IRE (25" & 34") 10 IRE (29")
Slightly Glimmer: 10 IRE (25" & 34") 20 IRE (29")

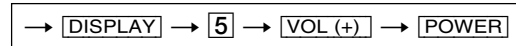
SECTION 3 CIRCUIT ADJUSTMENTS

3-1. ADJUSTMENTS WITH COMMANDER

Service adjustments to this model can be performed using the supplied remote commander RM-W104.

a. ENTERING SERVICE MODE

With the unit on standby



This operation sequence puts the unit into service mode.

This screen display is:

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

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

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

V D S P _ C Flag
C O _ L O C K E D
V D S P
Detected Stereo Type (Direct Value from CZ_ Stereo_Mode)

S : for Sony	111	Needed for Nicam DCXO alignment Purpose
A : Aiwa	xy	Value of x = 0 - Unknown, 1 - BTSC, 2 - A2, 3 - NICAM, 4 - KOREAN, 5 - Japan, 6 - AV Stereo
U S : US/Latin/Taiwan		Value of y = 0 - Mono, 1 - Stereo, 2 - Bilingual, 4 - SAP/Single
E U : Europe		
G A : General Area		
J P : Japan		
0 1 : serial no. of the M/P release for each destination		

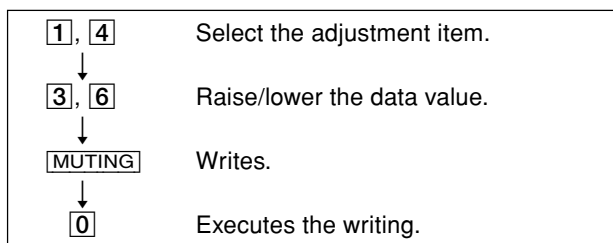
FG

b. METHOD OF CANCELLATION FROM SERVICE MODE

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

c. METHOD OF WRITE INTO MEMORY

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



d. MEMORY WRITE CONFIRMATION METHOD

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

e. OTHER FUNCTION VIA REMOTE COMMANDER

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

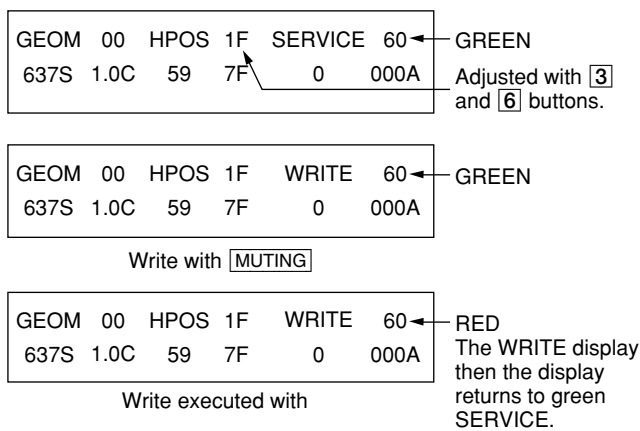
3-2. ADJUSTMENT METHOD

Item Number 000 HPOS

This explanation uses H POSITION as an example.

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

Example on screen display :-



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

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

Adjustment Item Table

TVJ Category	Functionality		Init.	Range	Function	Table & Note	Device Name (Slave Address)	NVM Address / Initial Value (Detailed)				
	No.	Name	Dec	Dec				Common	50	60	w50	w60
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	(8Ah)		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			08	05	08	05
	016	WBR	007	015	Timing of Wide Blanking (WBR)	50/60/w50/w60			09	10	09	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					

TVJ	Functionality		Init.	Range	Function	Table & Note	Device Name (Slave Address)	NVM Address / Initial Value (Detailed)													
	Category	No.						Name	Dec	Dec	Common	Others	YUV	PAL(TV)	NTSC(TV)	SECAM(TV)	PAL(Video)	NTSC(Video)	SECAM(Video)	S-INPUT	SECAM
YC	000	PFRQ	000	003	Peaking Center Frequency and Delay		TV-Processor	00													
	001	RPA	####	003	Ratio Pre & Over Shoot	TV/other			02											00	
	002	RPO	002	003	Ratio of Positive & Negative Peaks	TV/other			01											00	
	003	YDLY	012	015	Y-Delay	(PAL/NTSC/SECAM)*(TV/VIDEO)+YUV/S-INPUT				10	10	10	06	11	09	06	10				
	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				03												
	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											01	
	012	FCO	000	001	Forced Color On				00												
	013	TINT	031	063	Base-Band Tint Control	YUV/others			32	32											
014	TUV	000	001	Tint Control on UV Signals				00													

TVJ	Functionality		Init.	Range	Function	Table & Note	Device Name (Slave Address)	NVM Address / Initial Value (Detailed)													
	Category	No.						Name	Dec	Dec	Common	50	60	Others	YUV	TV	Video	Teletext	TV-ip	No signal	
SYNC	000	SYS	000	001	Synchronization on YSYNC Input			00													
	001	FO	000	003	Phase 1 Time Constant	TV IP ON/TV IP OFF/Video/Teletext/Auto Tuning or No signal(RF)							03	03	01	00	00				
	002	VID	000	001	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	00									
	006	FORF	000	003	Forced Field Frequency				03												
	007	MVK	000	001	Macro Vision Keying				01												
008	AFCT	000	003	AFC Timing switch Control (GA, US: Pin 116, UERO, JPN: PIN 128)				03													

TVJ	Functionality		Init.	Range	Function	Table & Note	Device Name (Slave Address)	NVM Address / Initial Value (Detailed)											
	Category	No.						Name	Dec	Dec	Common	Others	RGB	Live	TV (Dyn)	TV (Others)	Video (Dyn)	Video (Others)	ColorTemp (HIGH)
PICT	000	CADL	007	015	Cathode Drive Level			05											
	001	CFA	000	003	Comb Filter Mode			00											
	002	SOC	002	003	Soft Clipping Level		(8Ah)	02											
	003	PWL	001	001	Peak White Limiting Switch			01											
	004	WHTL	006	015	Peak White Limiting			00											
	005	GAM	001	001	Gamma			01											
	006	WTS	001	003	Gamma Control and White Stretch		Live/Others			01		01							
	007	TFR	000	001	DC Transfer Ratio of Luminance Signal		Live/Others (+JPN RGB)			01		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)									00	00		
	014	NBLS	000	001	Operation Blue Stretch Circuit				00										
015	NRR	000	001	Non Red Reduction		col temp (HIGH/LOW/NORMAL)									01		01	01	

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

TVJ	Functionality		Init.	Range	Function	Table & Note	Device Name (Slave Address)	Common
Category	No.	Name	Dec	Dec				
VIF	000	OIFD	036	063	Offset IF Demodulator		TV-Processor	36
	001	AGCT	031	063	AGC Take-over		(8Ah)	24
	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			01
	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)			00

TVJ	Functionality		Init.	Range	Function	Table & Note	Device Name (Slave Address)	NVM Address / Initial Value (Detailed)				
Category	No.	Name	Dec	Dec				Common	Pic mode 0	Pic mode 1	Pic mode 2	Pic mode 3
VM	000	RGBD	003	007	Delayof RGB Output to VM Output	none	TV-Processor	05				
	001	VMA	003	003	Amplitude of VM Output	none	(8Ah)	03				
	002	VMAP	002	003	VM setting (0:High, 1:Low, 2,3:OFF)	Picture Mode			00	00	01	00
	003	VMMO	003	003	VM Mode			01				

TVJ	Functionality		Init.	Range	Function	Table & Note	Device Name (Slave Address)	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)		(8Ah)	**
	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

NOTE

- Remark '**' refer page 25.

TVJ	Functionality		Init.	Range	Function	Table & Note	Device Name (Slave Address)	Common
Category	No.	Name	Dec	Dec				
TXT	000	TXV	039	063	Teletext Vertical Position for Philips		Text Decoder	39
	001	THD	005	127	Teletext H-sync Active Edge Shift		(60h)	05
	002	TBR	004	015	Teletext RGB Brightness			15
	003	LCB	000	001	Teletext LCB 0: disable 1: enable (setting for FASTEX)			00

TVJ Category	Functionality		Init.	Range	DATA	Function	Table & Note	Device Name (Slave Address)	NVM Address / Initial Value (Detailed)												
	No.	Name	Dec	Dec					Common	TV-L(Euro)	TV	Video	Off	SRS/WOW	Trusurround	Istereo	Imono				
SDSP	000	AVM	002	007	FIX	AVL Mode		SSD	02												
	001	AVV	005	015	FIX	AVL Reference Level		(B0h)	09												
	002	BBL	000	015	FIX	BBE Contour			00												
	003	BBH	000	015	FIX	BBE Process			00												
	004	BBLW	000	015	FIX	BBE Contour Offset			06												
	005	SVOF	000	015	FIX	Surround /Effect Mode Volume Offset	Off(SRS/WOW)/Trusurround/Istereo/Imono						04	11	04	06	04				
	006	IVOF	000	007	FIX	Master Volume Positive Offset			06												
	007	EVOF	000	007	FIX	Master Volume Negative Offset			06												
	008	LAD	000	031	FIX	Decoder Level Adjust			05												
	009	LAM	000	031	FIX	Mono Level Adjust			05												
	010	LAN	000	031	FIX	Nicam Level Adjust			22												
	011	LAS	000	031	FIX	SAP Level Adjust			08												
	012	LAA	000	031	FIX	ADC Level Adjust	Tv/Video(Non Euro) TV-L/TV-non L/Video				00	00	00								
	013	SEF	003	007	FIX	Incredible Mono/Stereo Effect	Istereo/Imono											05	03		
	014	A1L	000	255	FIX	AUX1 Volume Left			00												
	015	A1R	000	255	FIX	AUX1 Volume Right			00												
	016	BAS	008	015	FIX	Main Bass Offset			13												
	017	TRE	008	015	FIX	Main Treble Offset			14												
	018	EQ1	008	015	FIX	Equalizer Main Channel Band (100 Hz) Offset			10												
	019	EQ2	008	015	FIX	Equalizer Main Channel Band (300 Hz) Offset			01												
	020	EQ3	008	015	FIX	Equalizer Main Channel Band (1000 Hz) Offset			00												
	021	EQ4	008	015	FIX	Equalizer Main Channel Band (3000 Hz) Offset			00												
	022	EQ5	008	015	FIX	Equalizer Main Channel Band (8000 Hz) Offset			12												
	023	BFCT	005	007	FIX	DBE, DUB and BBE Control			00												
	024	SCEN	001	015	FIX	SRS3D Center Control			04												
	025	SSPA	000	015	FIX	SRS3D Space Control			01												
	026	BBHW	000	015	FIX	BBE process offset in WOW mode			00												
	027	STRE	002	007	FIX	Treble Offset for surround mode			01												
	028	BBHT	000	015	FIX	BBE Offset in TV mode			00												
	029	DWA	000	000	FIX	DWA			00												
030	TTRE	002	007	FIX	Treble Offset in TV Mode			03													

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	02
	001	MPTL	009	015	Lower Threshold for MPX pilot detection (BTSC)		(B0h)	05
	002	SPTU	003	015	Upper Threshold for SAP carrier detection			08
	003	SPTL	006	015	Lower Threshold for SAP carrier detection			15
	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			03
	008	FMTH	000	031	Noise Threshold for automute of SC2 in FM A2 standard			18
	009	FMHY	004	015	Hysteresis size for automute of SC2 in FM A2 standard			07
	010	BTTH	000	031	Noise Threshold for automute of BTSC stereo carrier			00
	011	BTHY	004	015	Hysteresis size for automute of BTSC stereo			03
	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)			**
	020	STDS	019	031	Bits multiplexed for ASD and SSS modes			**
	021	OVMA	001	001	FM overmodulation adaption			00
	022	FLBW	000	003	FM/AM demodulator filter bandwidth			03
	023	IDMD	000	003	FM ident speed in SSS mode			00
	024	FPAL	000	001	Line fequency for BTSC decoding			00
	025	OVMT	001	002	Overmodulation level threshold relative to nominal			03
	026	DCXI	000	001	NICAM DCXO Scaling Control Inverter			**
	027	DCXG	000	007	NICAM DCXO Scaling Control Gain			**
	028	DCLL	011	015	NICAM DCXO Scaling Control Limit (L)			00
	029	DCLH	000	031	NICAM DCXO Scaling Control Limit (H)			**
	030	IDEU	001	003	IDMOD setting for European A2 STD			00
	031	IDKR	001	003	IDMOD setting for Korean M STD			00
032	IDJP	001	003	IDMOD setting for EIAJ STD			00	

NOTE

- Remark (***) refer page 25.

TVJ Category	Functionality		Init. Dec	Range Dec	Function	Table & Note	Device Name (Slave Address)	NVM Address / Initial Value (Detailed)		
	No.	Name						Common	50	60
OPTM	000	ASHT	006	007	Auto shut off timer (data * 5 min)			00		
	001	OSDB	000	015	OSD brightness		MMR/Micro 60h	15		
	002	OSDH	005	015	OSD Horizontal Position		MMR/Micro 60h	06		
	003	OSDV	037	063	OSD Vertical Position	50 / 60	MMR/Micro 60h		45	30
	004	MUTE	000	001	No Signal Mute Switch (1=enabled)			00		
	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			00		
	010	HTXT	000	001	Sync seperator sw		TV-Processor(8A)	00		
	011	CMSS	000	001	Sync sw		TV-Processor(8A)	01		
	012	DCXO	060	295	DCXO Value		SFR/Micro 60h/DSP	**		
	013	EXBL	000	015	Extended Blanking Timer to Eliminate White Noise			08		
	014	TSYS	000	003	Memorize TV Sys in NVM at Test Reset [0:B/G, 1:I, 2:D/K, 3:M] (GA Model)			00		
	015	TVOU	001	001	TV out mute condition 0:Always mute off, 1:Mute without signal (EURO model)			00		
	016	LBL	001	001	Brightness Reducing At no Signal Condition.			00		
017	HPRO	001	001	Hpara offset for Picture Rotation.			03			

NOTE

- Remark ‘***’ refer page 25.

TVJ Category	Functionality		Init. Dec	Range Dec	Function	Table & Note	Device Name (Slave Address)	Common
	No.	Name						
OPUS	000	SOFF	000	001	Stay off(0:follow last memory with AC on, 1:standby with AC on)			00
	001	CCBR	000	015	CC OSD Brightness		MMR/Micro 60h	00
	002	SPCH	001	127	Channel Number after Shipping Condition			00
	003	SPCA	001	001	Cable Selection after Shipping Condition (1 = Cable On)			00
	004	CTRY	000	001	VCHIP Country shipping selection			00

TVJ	Functionality		Init.	Range	Function	Table & Note	Device Name (Slave Address)	Common
Category	No.	Name	Dec	Dec				
OPAW	000	BEMX	040	084	Maximum volume of "Wake Up Timer" Beeper (0 to 84)		SSD (BOh)	00
	001	BRAT	006	010	Beep to Master Volume ratio (0 to 10) (0% to 100%)		SSD (BOh)	00
	002	BDUR	002	030	Beeper duration (in 50ms step)		SSD (BOh)	00
	003	BFEQ	003	007	Beeper frequency (0 - 7)		SSD (BOh)	00
	004	TCRT	001	001	Trinitron CRT model	none	TV-Processor(8A)	00

TVJ	Functionality		Init.	Range	Function	Table & Note	Device Name (Slave Address)	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)			Please refer
	002	OPB2	000	255	Option 2 (Video Signal related)			to option
	003	OPB3	000	255	Option 3 (Stereo Decoding related)			data refer
	004	OPB4	000	255	Option 4 (Miscellaneous)			page 26
	005	OPB5	000	255	Option 5 (Miscellaneous)			
	006	OPB6	000	255	Option 6 (OSD Language related)			

NOTE

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

Data variant depend on models

NOTE: This data with remark **

Category	No	Name	AV Stereo	Stereo
SDEM	011	QSS	00	01

Category	No	Name	AV Stereo	Stereo
SDEC	019	EPMD	01	02
	020	STDS	13	31
	026	DCXI	00	01
	027	DCXG	00	03
	029	DCLH	00	06

Category	No	Name	AV Stereo	Stereo	XR29M50 MP3 Set
OPTM	012	DCXO	70	50	88

ITEM INFORMATION
No. OPB1

Item	Speed Search		M/N	L'	L(Euro), M(GA)	B/G	I	D/K	Decimal
KV-XR29M50	0	1	0	0	1	1	1	1	79
KV-XR29M80 (ME)	0	1	0	0	1	1	1	1	79
KV-XR29M80 (Saudi Arabia)	0	1	0	0	1	1	1	1	79
KV-XR29M80 (Russia)	0	1	0	0	1	1	1	1	79

SPEED SEARCH (Time of speed search)

00 = disabled (original cycle speed)

01 = 4 time speed from the original

10 = 6 time speed from the original

11 = 8 time speed from the original

TV System Selection

0 = disabled, 1 = enabled

No. OPB2

Item	D1	AV Multi/ PAM (GA)	Component	Composite (SCART)		SECAM	Color Decoding		Decimal
KV-XR29M50	0	0	1	1	1	1	0	0	60
KV-XR29M80 (ME)	0	0	1	1	1	1	0	0	60
KV-XR29M80 (Saudi Arabia)	0	0	1	1	1	1	0	0	60
KV-XR29M80 (Russia)	0	0	1	1	1	1	0	0	60

D1 (D1 Terminal)

0 = not available, 1 = available

AV Multi/ (AV Multi Terminal) - JP

0 = not available, 1 = available

PAM Portable Audio Mode - GA

0 = not available, 1 = available

Component (Component [YCbCr] Terminals)

0 = not available, 1 = available

Composite (No. of Composite Terminals)

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

(SCART) (No. of SCART Terminals)

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

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

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

SECAM (SECAM Color System)

0 = not available, 1 = available

Color decoding (Color Crystal Selection)

00 = PAL/NTSC/SECAM (Multi)

01 = NTSC (3.58MHz)

10 = PAL/NTSC/SECAM (4.43MHz)

11 = PAL/NTSC (Tri-Norma)

No. OPB3

Item	HDEV	NICAM ST	NICAM BI	A2 ST	Thai Bilingual	US ST	JP/Korean ST	MONO	Decimal
KV-XR29M50	0	0	0	0	0	0	0	0	0
KV-XR29M80 (ME)	0	0	0	0	0	0	0	0	0
KV-XR29M80 (Saudi Arabia)	0	0	0	0	0	0	0	0	0
KV-XR29M80 (Russia)	0	0	0	0	0	0	0	0	0

HDEV (High Deviation Mode) 0 = disabled, 1 = enabled
 NICAM ST (NICAM Stereo) 0 = disabled, 1 = enabled
 NICAM BI (NICAM 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 act 0 = disabled, 1 = enabled
 US ST (US Stereo) 0 = disabled, 1 = enabled
 JP/Korean ST (JP/Korean Stereo) 0 = disabled, 1 = enabled
 MONO (Monaural Model) 0 = Stereo (SSD) Model
 1 = Monaural Model

No. OPB4

Item	Firmware/SMAT	1 spk Models	VM	Equalizer	Surround	V-Chip	Top	Text	Decimal
KV-XR29M50	1	0	1	1	0	0	0	0	176
KV-XR29M80 (ME)	1	0	1	1	0	0	0	0	176
KV-XR29M80 (Saudi Arabia)	1	0	1	1	0	0	0	0	176
KV-XR29M80 (Russia)	1	0	1	1	0	0	0	0	176

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

No. OPB5

Item	Full Surround	No Surround	Forced 60	ASD	Tilt	IP Plus	IP	Wide	Decimal
KV-XR29M50	0	0	0	0	1	1	1	1	15
KV-XR29M80 (ME)	0	0	0	0	1	1	1	1	15
KV-XR29M80 (Saudi Arabia)	0	0	0	0	1	1	1	1	15
KV-XR29M80 (Russia)	0	0	0	0	1	1	1	1	15

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

No. OPB6

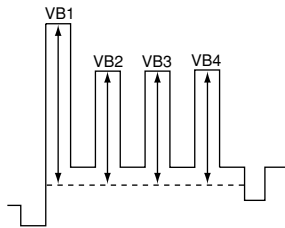
Item	GA US	Latin	Feature 2	Feature 1	OSD Language Selection				Decimal
KV-XR29M50	0	0	0	0	1	0	0	0	8
KV-XR29M80 (ME)	0	0	0	0	0	1	0	0	4
KV-XR29M80 (Saudi Arabia)	0	0	0	0	0	1	0	0	4
KV-XR29M80 (Russia)	0	0	0	0	0	1	0	0	4

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

3-3. PICTURE QUALITY ADJUSTMENT

SUB COLOR ADJUSTMENT

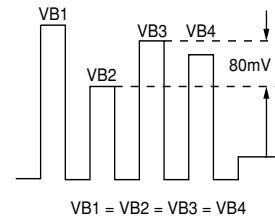
1. Select Video.
2. Input PAL 100% Color Bar.
3. Set to following condition:
PICTURE 100%,COLOR 50%, BRIGHTNESS 50%,
HUE Center, SHP 50%.
4. Set the PICT 06 WTS to 00h.
5. Connect an oscilloscope to pin ② (B OUTPUT) of CN004 A Board.
6. Set the service mode and select SADJ 04 "SCOL" with **[1]** and **[4]** of the commander and write the data below:
Add 2 step to SCOL (PAL)-25" & 29".
Add 6 step to SCOL (PAL)-34".
7. Copy "SCOL 50 PAL(Video)"data to "SCOL 50 SECAM(Video)"
8. Copy "SCOL 50 PAL(Video)" and "SCOL 50 SECAM (Video)" data to "SCOL 50 PAL(TV)" and "SCOL 50 SECAM(TV)" Table.
9. Input NTSC 75% Color Bar to TV set and repeat item 3-5.
10. Set the Service mode and select SADJ 04 "SCOL" with **[1]** and **[4]** of the commander and write data as below:
Add 3 step to SCOL (NTSC)-25" & 29".
Add 6 step to SCOL (NTSC)-34".
11. Copy "SCOL 60 NTSC(Video)"data to "SCOL 60 NTSC(TV)"
12. Copy "SCOL 50 PAL" data to "SCOL 50 YUV" table and "SCOL 60 NTSC" data to "SCOL 60 YUV".
13. Set WTS back to original data.



VB2 = VB3 = VB4(For PAL sub color adjustment)
VB1 = VB4(For NTSC sub color adjustment)
(Difference is within 70mV)

SUB HUE ADJUSTMENT

1. Select Video.
2. Input NTSC 3.58 Color Bar to TV set.
3. Set to following condition:
PICTURE 100%,COLOR 50%, BRIGHTNESS 50%,
HUE Center, SHP 50%.
4. Connect an oscilloscope to pin ② (B output) of CN004.
5. Set the service mode and select SADJ 01 "SHUE" with **[1]** and **[4]** of the commander then adjust to VB1=VB2=VB3=VB4 with **[3]** and **[6]**.
6. Then press **[MUTING]** → **[0]** to write the data.
7. Select TV channel with NTSC 3.58 and repeat 3-6.
8. Single system models with NTSC 4.43, select TV channel with NTSC 4.43 and repeat 3-6.

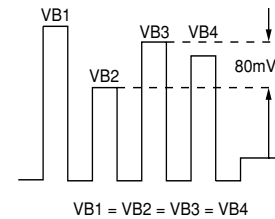


VB1 = VB2 = VB3 = VB4

The highest level of VB1, VB2, VB3, VB4 must be aligned at the same time.
The ideal difference between VB2 and VB3 is within ± 80mV.

Sub Hue Adjustment For YUV input

1. Select YUV input.
2. Input NTSC 3.58 Color Bar into YUV mode.
3. Connect an oscilloscope to pin ① (B output) of CN004.
4. Set the service mode and select YC 13 "TINT" with **[1]** and **[4]** of the commander then adjust to VB1=VB2=VB3=VB4 with **[3]** and **[6]**.
5. Then press **[MUTING]** → **[0]** to write the data.



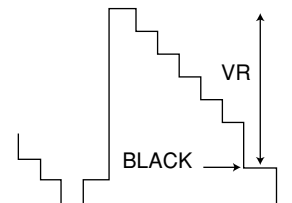
VB1 = VB2 = VB3 = VB4

The highest level of VB1, VB2, VB3, VB4 must be aligned at the same time.
The ideal difference between VB2 and VB3 is within ± 80mV.

PMX/CONTRAST ADJUSTMENT

Picture Mode: Personal.

1. Select Video mode.
2. i)Input PAL Color Bar toTV set. (Other)
ii)Input NTSC 75% Color Bar (NTSC model).
3. Set the following condition:
PICTURE 100%, COLOR 0%,BRIGHTNESS 50%
4. Connect oscilloscope to pin ④ (R Output) of CN004,
5. Set to Servic Mode PWL PICT 03 to 00h and WHBL 017 BLBG to 01h.
6. Select SADJ 00 "PMAx" with **[1]** and **[4]** of the commander then adjust VR within spec with **[3]** and **[6]**.



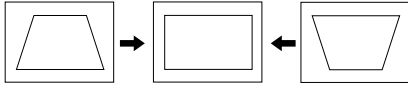
		PAL	NTSC
VR	34"	2.20 ±0.03Vp-p	1.85 ±0.03Vp-p
	29"	1.90 ±0.003Vp-p	1.57 ±0.03Vp-p
	25"	1.50 ±0.003Vp-p	1.18 ±0.03Vp-p

7. Copy PMAx data to TV models.
8. Select "WIDE" mode for TV & Video mode, Write the PMAx Data – 8 steps (for model with V-Compression features only).
9. Set the PWL & BLBG back to (PWL: 01h and BLBG: 00h)

3-4. DEFLECTION ADJUSTMENT

H-TRAPEZOID ADJUSTMENT

1. Receive cross hatch/dot signal
2. Adjust RV1801 on C-Board to make H-Trapezoid distortion best.



NORMAL MODE (50Hz)

1. Set to Service Mode.
2. Input SPCB Signal (For NTSC models select Video Mode)
3. Using the [1] and [4] buttons select category GEO (service mode) Raise/lower data using the [3] and [6] buttons to adjust the following items:-

Service Item

GEOM: 000	HPOS	HORIZONTAL SHIFT (HS)
001	HPAR	HORIZONTAL PARALLELOGRAM
002	HBOW	HORIZONTAL BOW
003	VLIN	VERTICAL LINEARITY
004	VSCR	VERTICAL SCROLL
005	HSIZ	EW WIDTH (EW)
006	EWPW	EW PARABOLA/WIDTH (PW)
007	UCOP	EW UPPER CORNER PARABOLA
008	LCOP	EW LOWER CORNER PARABOLA
009	EWTZ	EW TRAPEZIUM
010	VSLP	VERTICAL SLOPE (VS)
011	VSIZ	VERTICAL AMPLITUDE
012	SCOR	S-CORRECTION (SC)
013	VPOS	VERTICAL SHIFT (VSH)
014	HBL	RGB BLANKING MODE
015	WBF	TIMING OF WIDE BLANKING (WBF)
016	WBR	TIMING OF WIDE BLANKING (WBR)
017	SBL	SERVICE BLANKING
018	COPY	COPY THE GEO DATA TO ALL 50/60Hz NVM AREA

4. For Korea models only:

- a) For GEOM items, copy adjusted 60Hz to 50Hz
- b) Add 6 steps to 50Hz "HPOS" item and save data.
- c) Add 3 steps to 50Hz "HSIZ" item and save data.

WIDE MODE (50Hz)

(V-Compression Adjustment)

1. Input SPCB signal(For NTSC models select Video mode)
2. Adjust condition to WIDE MODE : ON.
3. Copy (item from NORMAL MODE (50Hz) adjusted data for the following items:

Service Item

GEOM: 003	VLIN	VERTICAL LINEARITY
005	HSIZ	EW WIDTH (EW)
011	VSIZ	VERTICAL AMPLITUDE
012	SCOR	S-CORRECTION (SC)

4. Raise/lower data using the [3] and [6] buttons, select and adjust the following item to obtain optimum image.

Service Item

GEOM: 000	HPOS	HORIZONTAL SHIFT (HS)
001	HPAR	HORIZONTAL PARALLELOGRAM
002	HBOW	HORIZONTAL BOW
004	VSCR	VERTICAL SCROLL
006	EWPW	EW PARABOLA/WIDTH (PW)
007	UCOP	EW UPPER CORNER PARABOLA
008	LCOP	EW LOWER CORNER PARABOLA
009	EWTZ	EW TRAPEZIUM
010	VSLP	VERTICAL SLOPE (VS)
013	VPOS	VERTICAL SHIFT (VSH)
014	HBL	RGB BLANKING MODE
015	WBF	TIMING OF WIDE BLANKING (WBF)
016	WBR	TIMING OF WIDE BLANKING (WBR)
017	SBL	SERVICE BLANKING
018	COPY	COPY THE GEO DATA TO ALL 50/60Hz NVM AREA

5. For Korea models only:

- a) Copy adjusted 60Hz data to 50Hz
- b) Add 6 steps to 50Hz "HPS" item and save data.

NORMAL MODE (60Hz)

1. Input 525/60Hz signal.
2. Using the [1] and [4] buttons select category GEOM (Service Mode.)
3. Raise/ lower data using the [3] and [6] buttons to obtain optimum image
Service Item

GEOM: 000	HPOS	HORIZONTAL SHIFT (HS)
001	HPAR	HORIZONTAL PARALLELOGRAM
002	HBOW	HORIZONTAL BOW
003	VLIN	VERTICAL LINEARITY
004	VSCR	VERTICAL SCROLL
005	HSIZ	EW WIDTH (EW)
006	EWPW	EW PARABOLA/WIDTH (PW)
007	UCOP	EW UPPER CORNER PARABOLA
008	LCOP	EW LOWER CORNER PARABOLA
009	EWTZ	EW TRAPEZIUM
010	VSLP	VERTICAL SLOPE (VS)
011	VSIZ	VERTICAL AMPLITUDE
012	SCOR	S-CORRECTION (SC)
013	VPOS	VERTICAL SHIFT (VSH)
014	HBL	RGB BLANKING MODE
015	WBF	TIMING OF WIDE BLANKING (WBF)
016	WBR	TIMING OF WIDE BLANKING (WBR)
017	SBL	SERVICE BLANKING
018	COPY	COPY THE GEO DATA TO ALL 50/60Hz NVM AREA

WIDE MODE (60Hz)

(V-Compression Adjustment)

1. Input mono scope signal
2. Adjust condition to WIDE MODE : ON.
3. Copy (item from NORMAL MODE 60Hz) adjusted data for the following items:
Service Item

GEOM: 003	VLIN	VERTICAL LINEARITY
005	HSIZ	EV WIDTH (EW)
011	VSIZ	VERTICAL AMPLITUDE
012	SCOR	S-CORRECTION (SC)

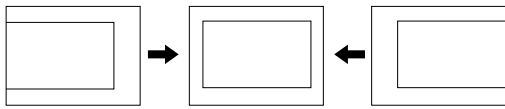
4. Raise/lower data using [3] and [6] buttons, select and adjust the following item to obtain optimum image.
Service Item

GEOM: 000	HPOS	HORIZONTAL SHIFT (HS)
001	HPAR	HORIZONTAL PARALLELOGRAM
002	HBOW	HORIZONTAL BOW
004	VSCR	VERTICAL SCROLL
006	EWPW	EW PARABOLA/ WIDTH (PW)
007	UCOP	EW UPPER CORNER PARABOLA
008	LCOP	EW LOWER CORNER PARABOLA
009	EWTZ	EW TRAPAZIUM
010	VSLP	VERTICAL SLOPE(VS)
013	VPOS	VERTICAL SHIFT (VSH)
014	HBL	RGB BLANKING MODE
015	WBF	TIMING OF WIDE BLANKING (WBF)
016	WBR	TIMING OF WIDE BLANKING (WBR)
017	SBL	SERVICE BLANKING
018	COPY	COPY THE GEO DATA TO ALL 50/60Hz NVM AREA

3-5. PICTURE DISTORTION ADJUSTMENT

H. CENTER ADJUSTMENT (HPOS)

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



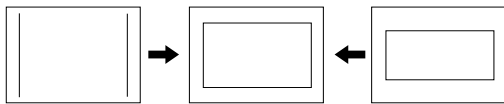
H. SIZE ADJUSTMENT (HSIZ)

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



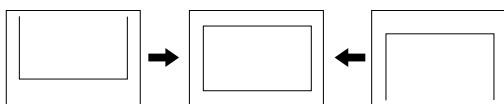
V. SIZE ADJUSTMENT (VSIZ)

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



V. CENTER ADJUSTMENT (VPOS)

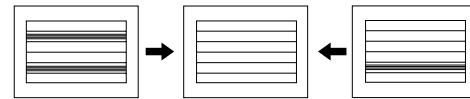
1. Input Monoscope signal.
2. Activate the Service Adjustment Mode.
3. Select VPOS item with [1] and [4].
4. Adjust value of VPOS with [3] and [6] for the best vertical center.
5. Press [MUTING] then [0] to save into the memory.



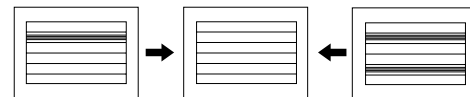
V.LINEARITY (VLIN), S CORRECTION (SCOR), EW PARABOLA/WIDTH (EWPW), AND EW TRAPEZIUM (EWTZ) ADJUSTMENTS

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

V LINEARITY (VLIN)



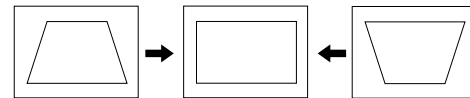
S CORRECTION (SCOR)



EW PARABOLA/WIDTH (EWPW)



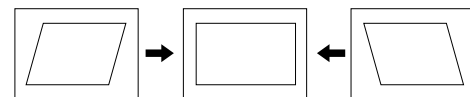
EW TRAPEZIUM (EWTZ)



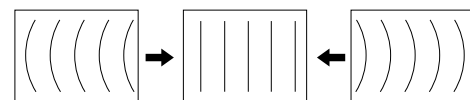
HORIZONTAL PARALLELOGRAM (HPAR), H BOW (HBOW), UPPER PIN (UCOP) AND LOW PIN (LCOP) ADJUSTMENTS

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

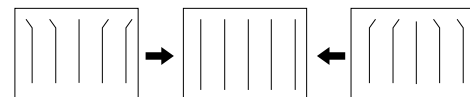
HORIZONTAL PARALLELOGRAM (HPAR)



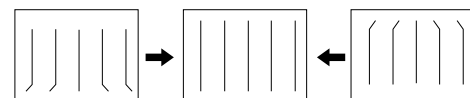
HORIZONTAL BOW (HBOW)

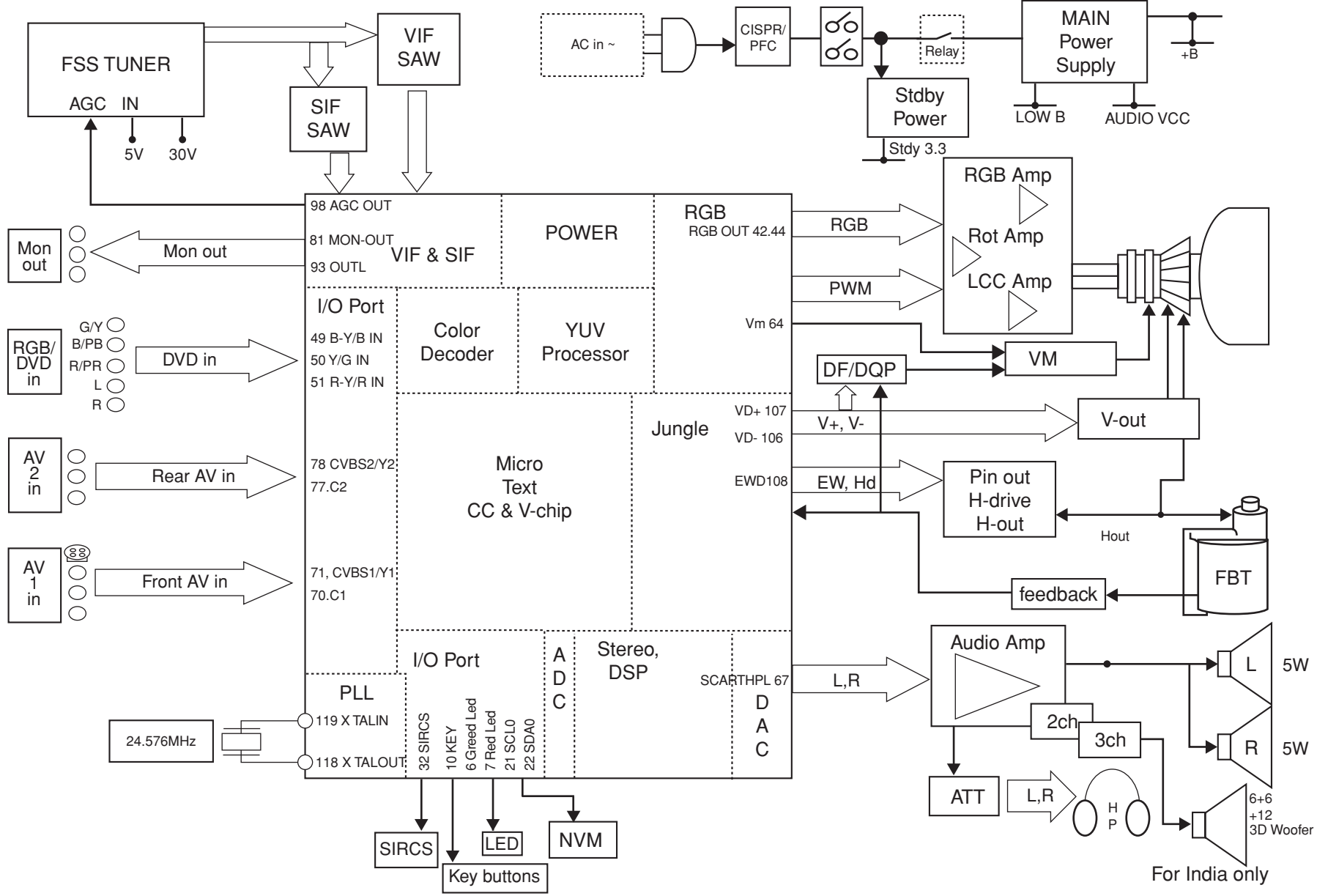


UPPER PIN (UCOP)



LOW PIN (LCOP)

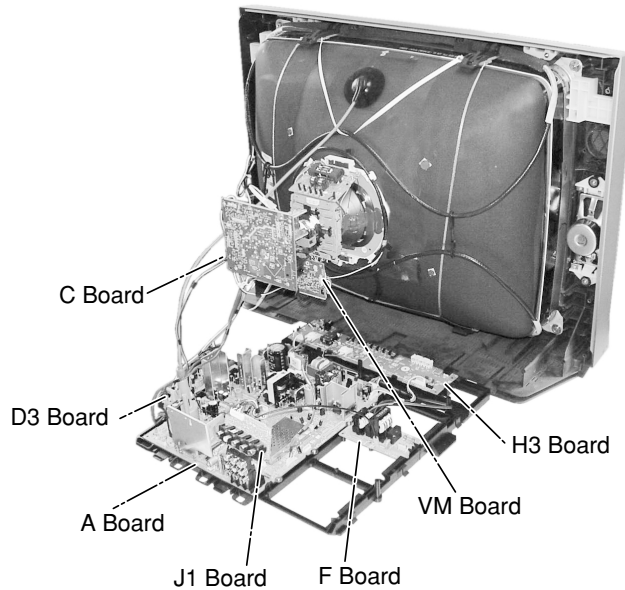




4-1. BLOCK DIAGRAM

SECTION 4
DIAGRAMS

4-2. CIRCUIT BOARDS LOCATION



4-3. SCHEMATIC DIAGRAM INFORMATION

Note:

- All capacitors are in μF 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.
- Δ : internal component.
- : panel designation or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B unless otherwise noted.
- **Readings are taken with a color-bar signal input.**
no mark : Common
() : PAL
[] : NTSC 3.58
- **Readings are taken with a 10M Ω 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.
- \Rightarrow : 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.

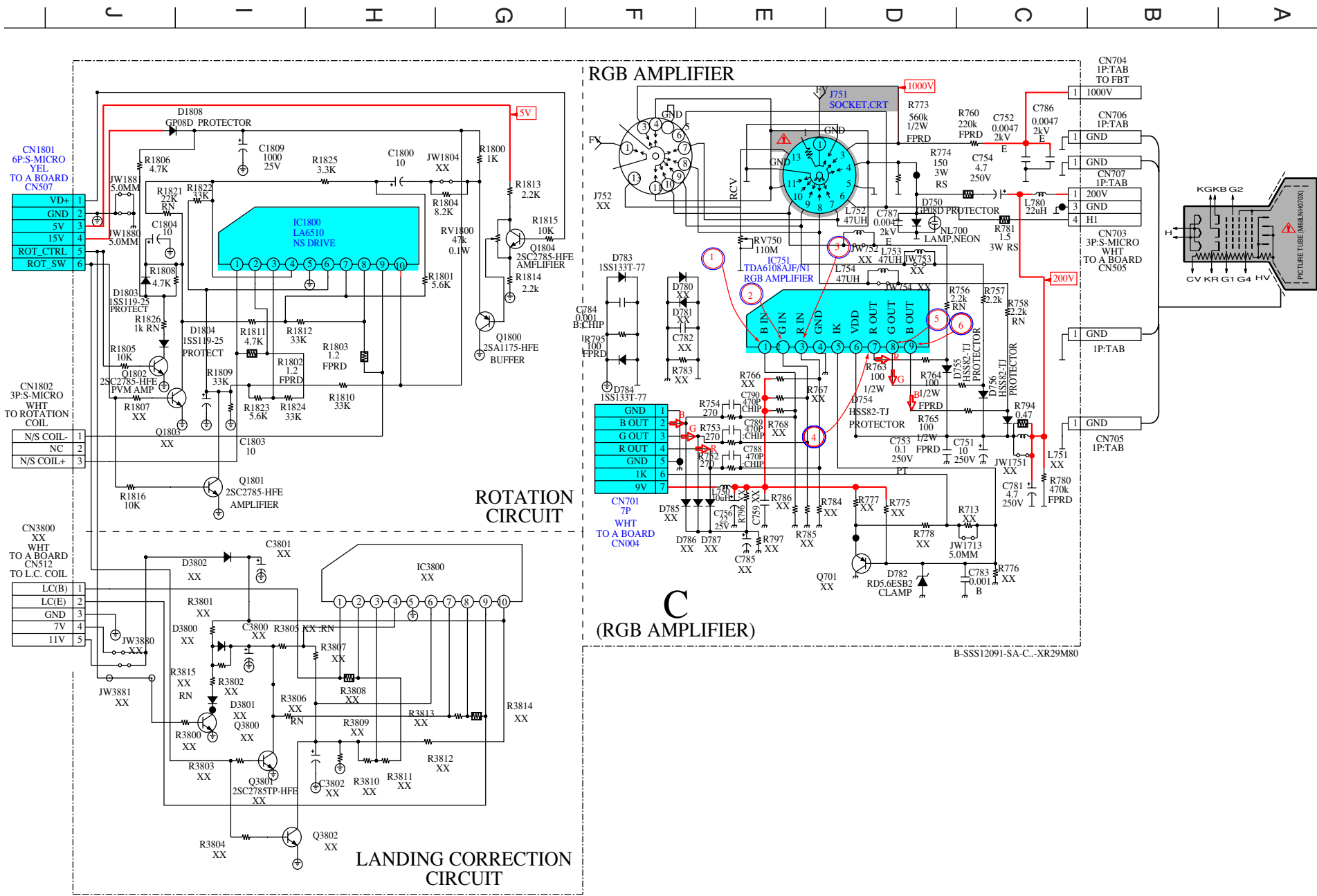
Reference information

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 Δ are critical for safety. Replace only with part number specified.

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

1
2
3
4
5
6
7



RGB AMPLIFIER

ROTATION CIRCUIT

LANDING CORRECTION CIRCUIT

1	GND
2	B OUT
3	G OUT
4	R OUT
5	GND
6	1K
7	9V

CN701
7P
WHT
TO A BOARD
CN004

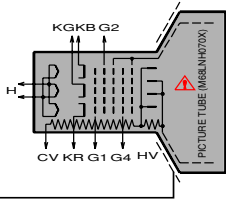
C
(RGB AMPLIFIER)

B-SSS12091-SA-C...XR29M80

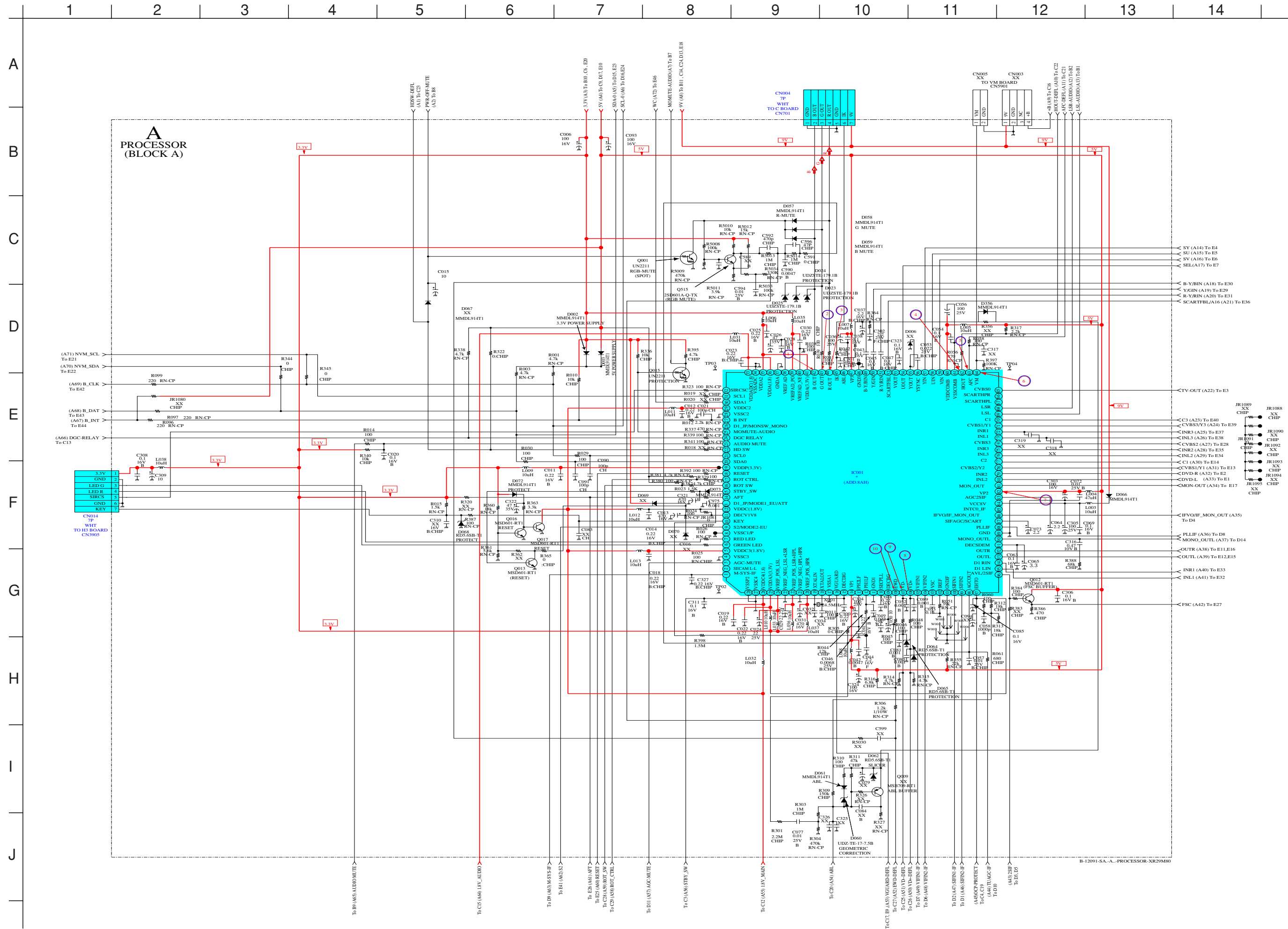
1	VD+
2	GND
3	5V
4	15V
5	ROT_CTRL
6	ROT_SW

1	N/S COIL-
2	NC
3	N/S COIL+

1	LC(B)
2	LC(E)
3	GND
4	7V
5	11V

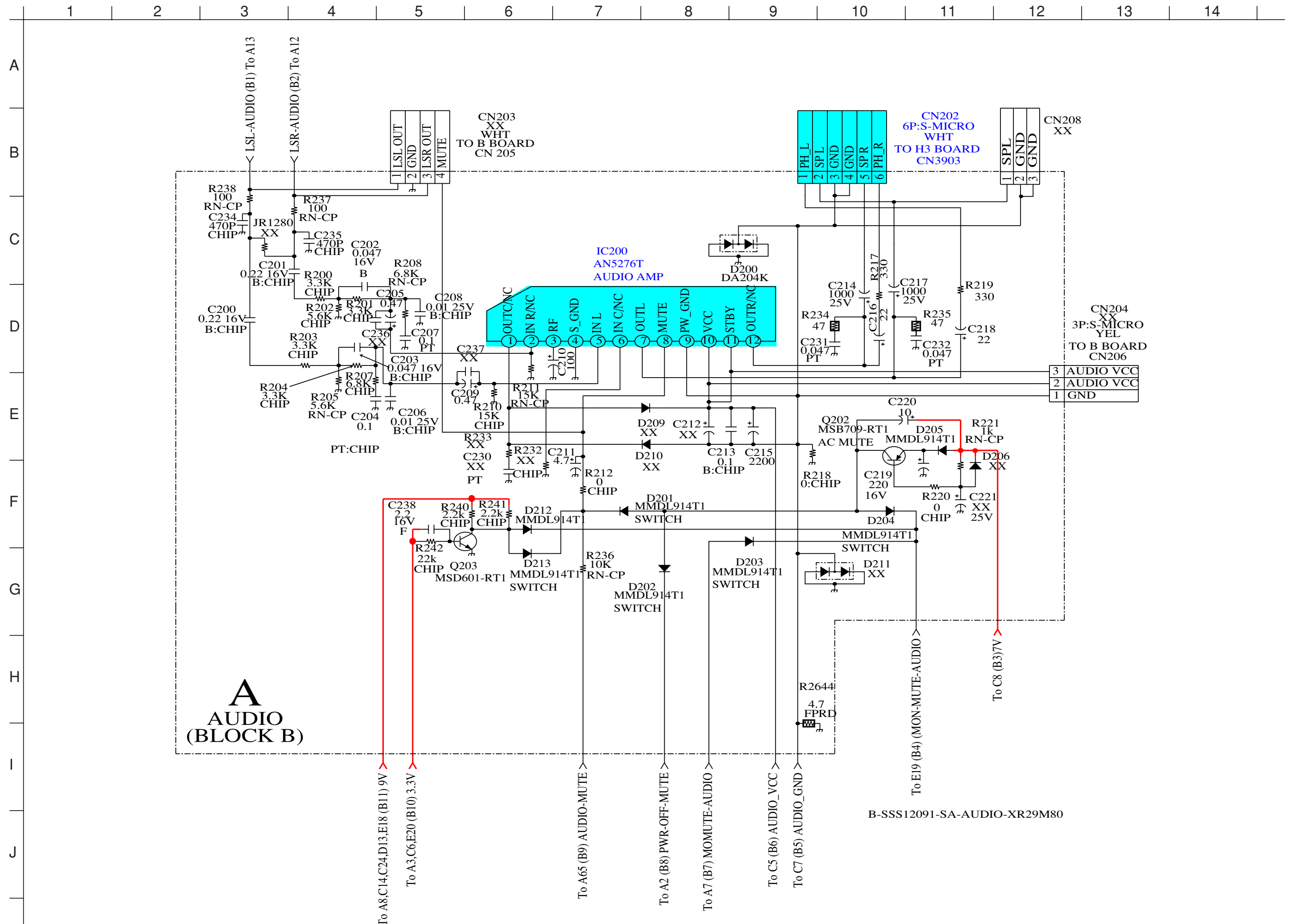


4-3-2. A Board — Processor (Block A)

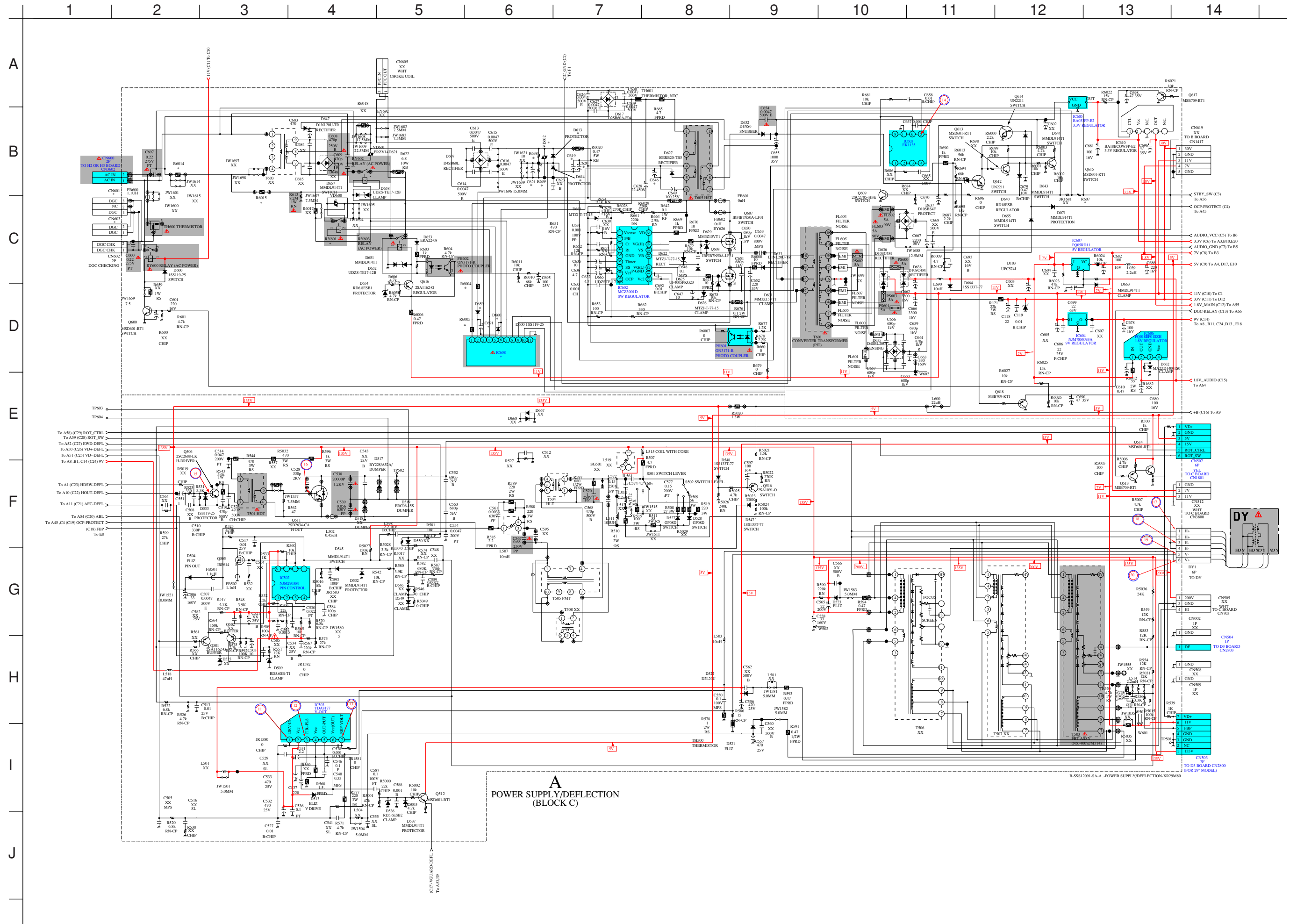


B-12091-SA-A-PROCESSOR-XR29M80

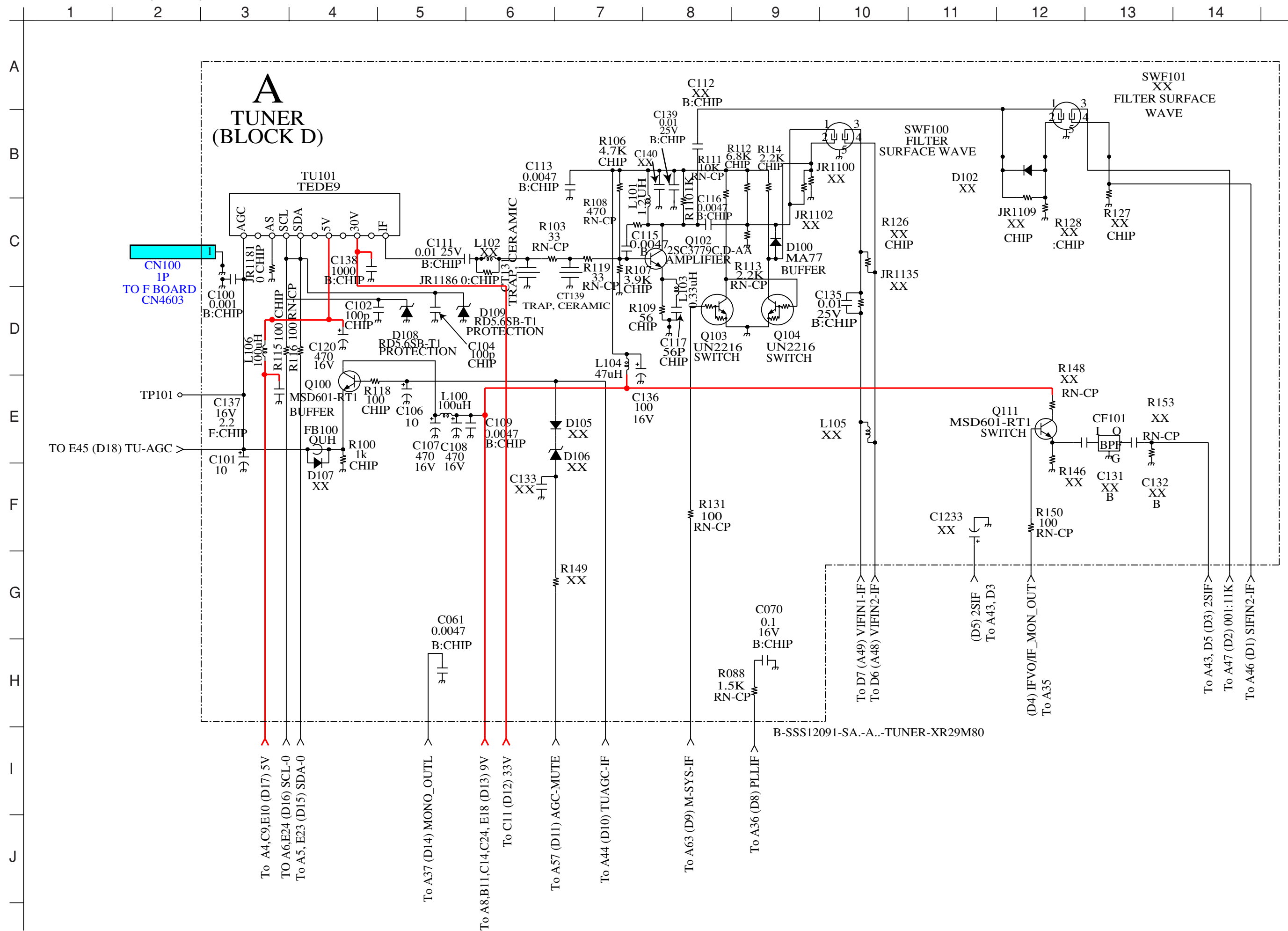
4-3-3. A Board — Audio (Block B)



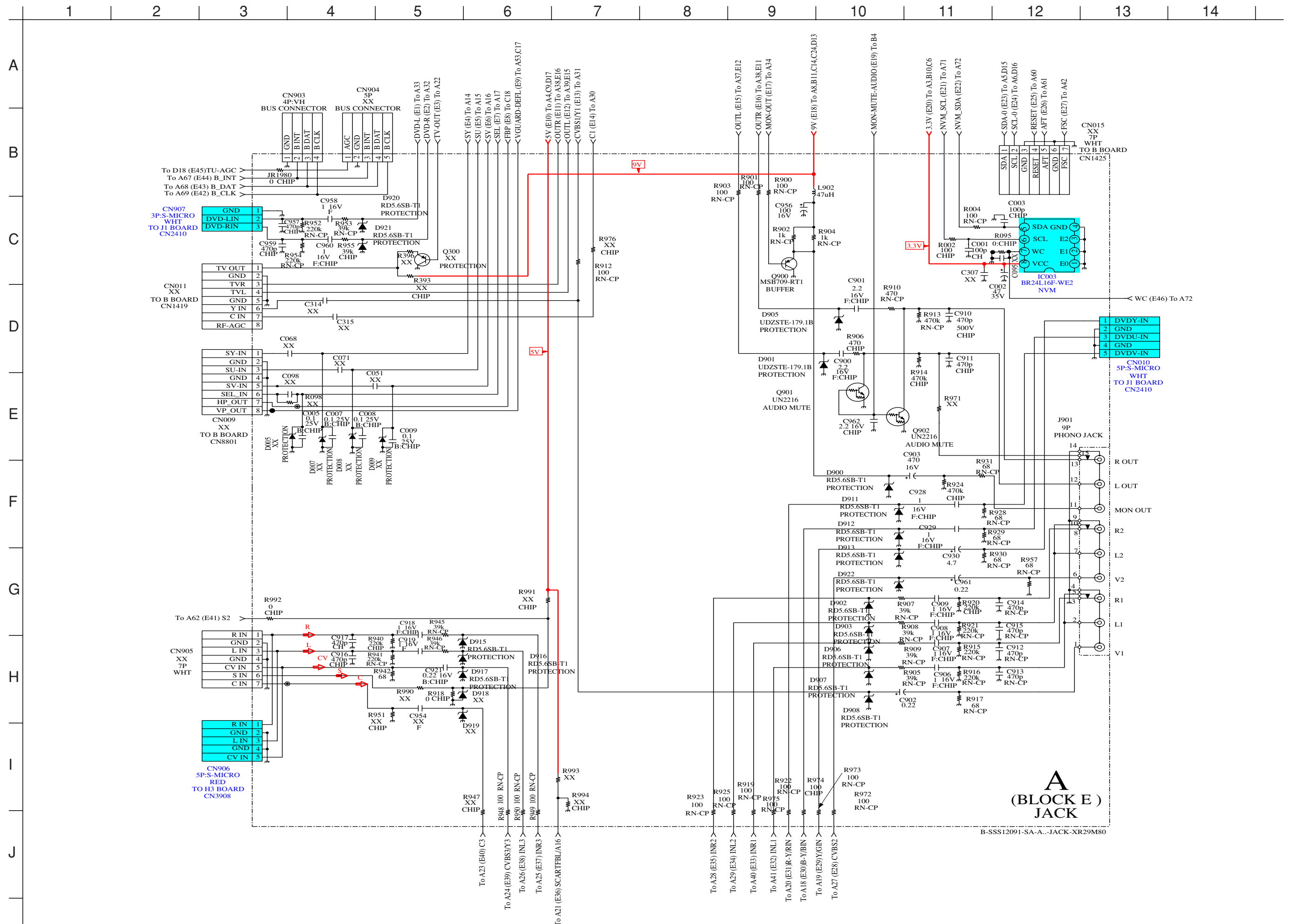
4-3-4. A Board — Power Supply/Deflection (Block C)



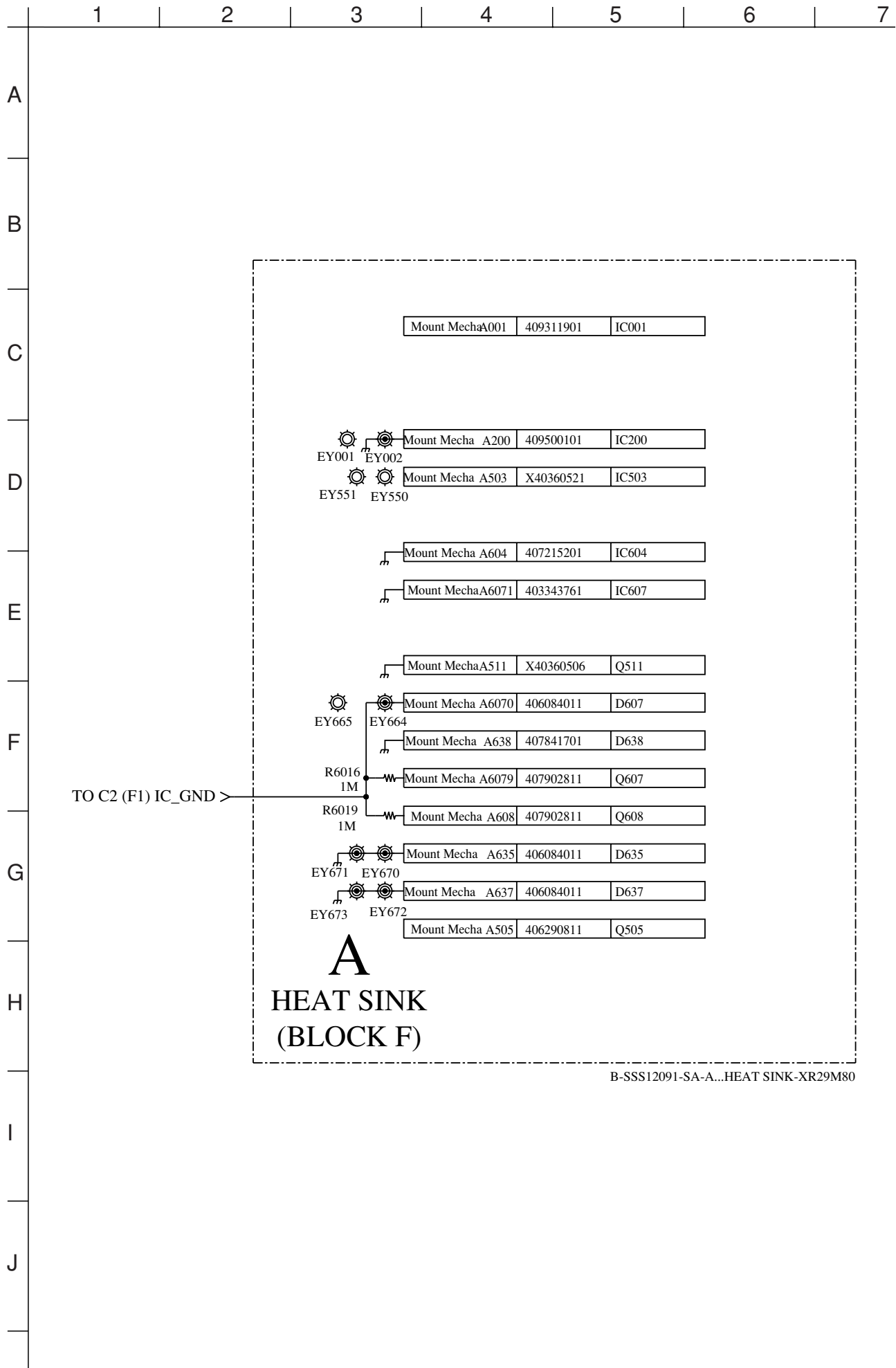
4-3-5. A Board — Tuner (Block D)



4-3-6. A Board — Jack (Block E)

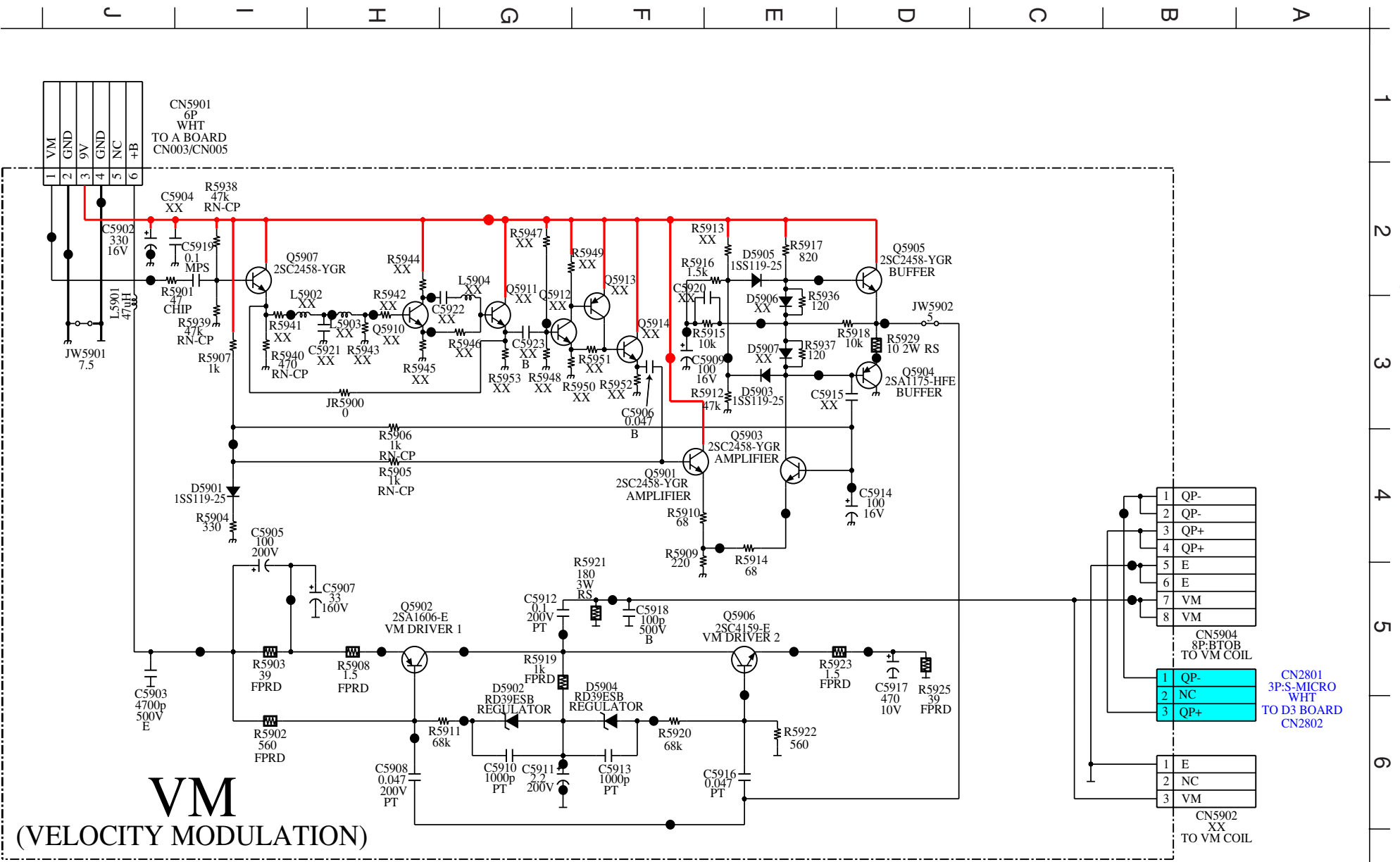


4-3-7. A Board — Heat Sink (Block F)



B-SSS12091-SA-A...HEAT SINK-XR29M80

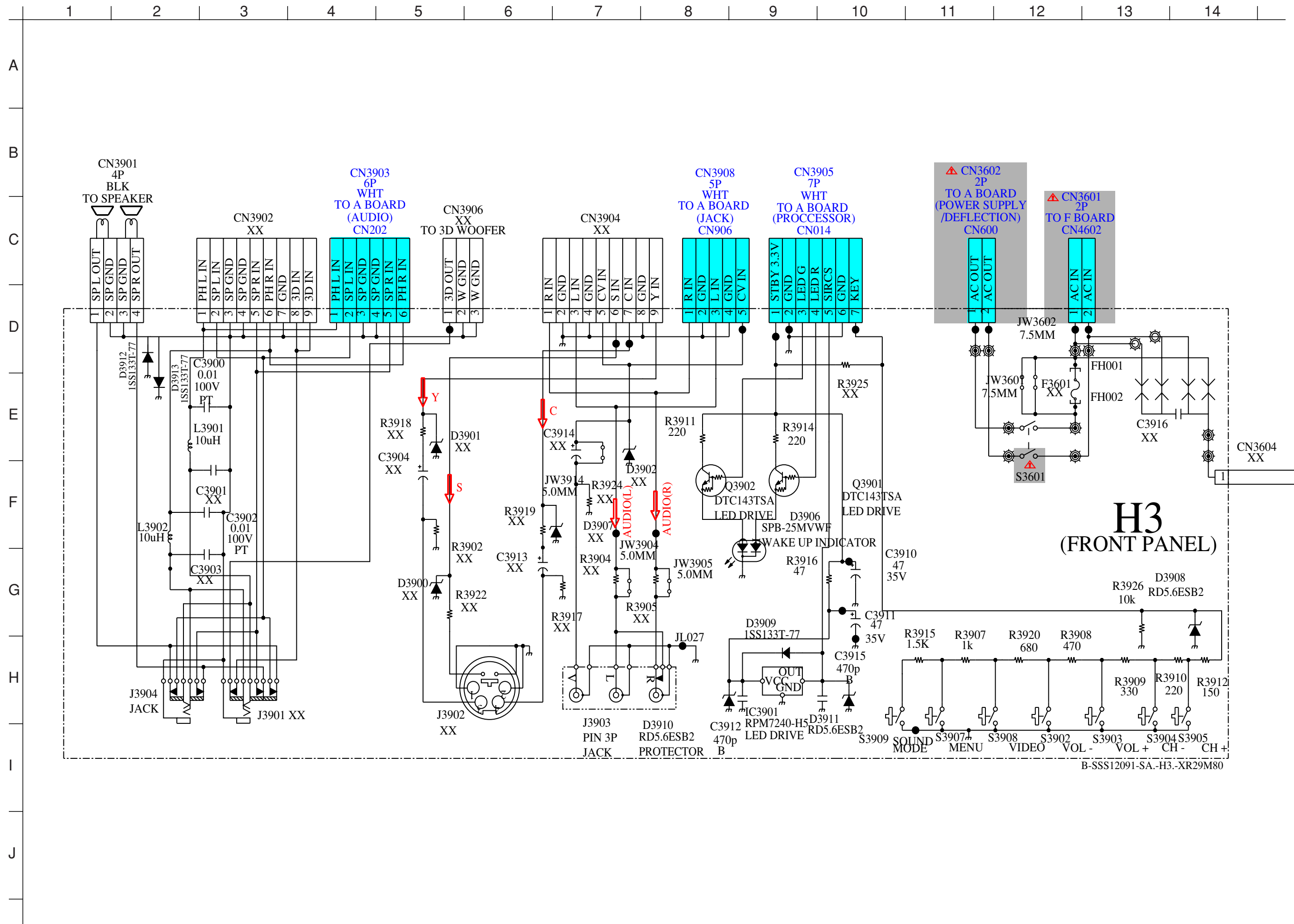
4-3-8. VM Board Schematic Diagram



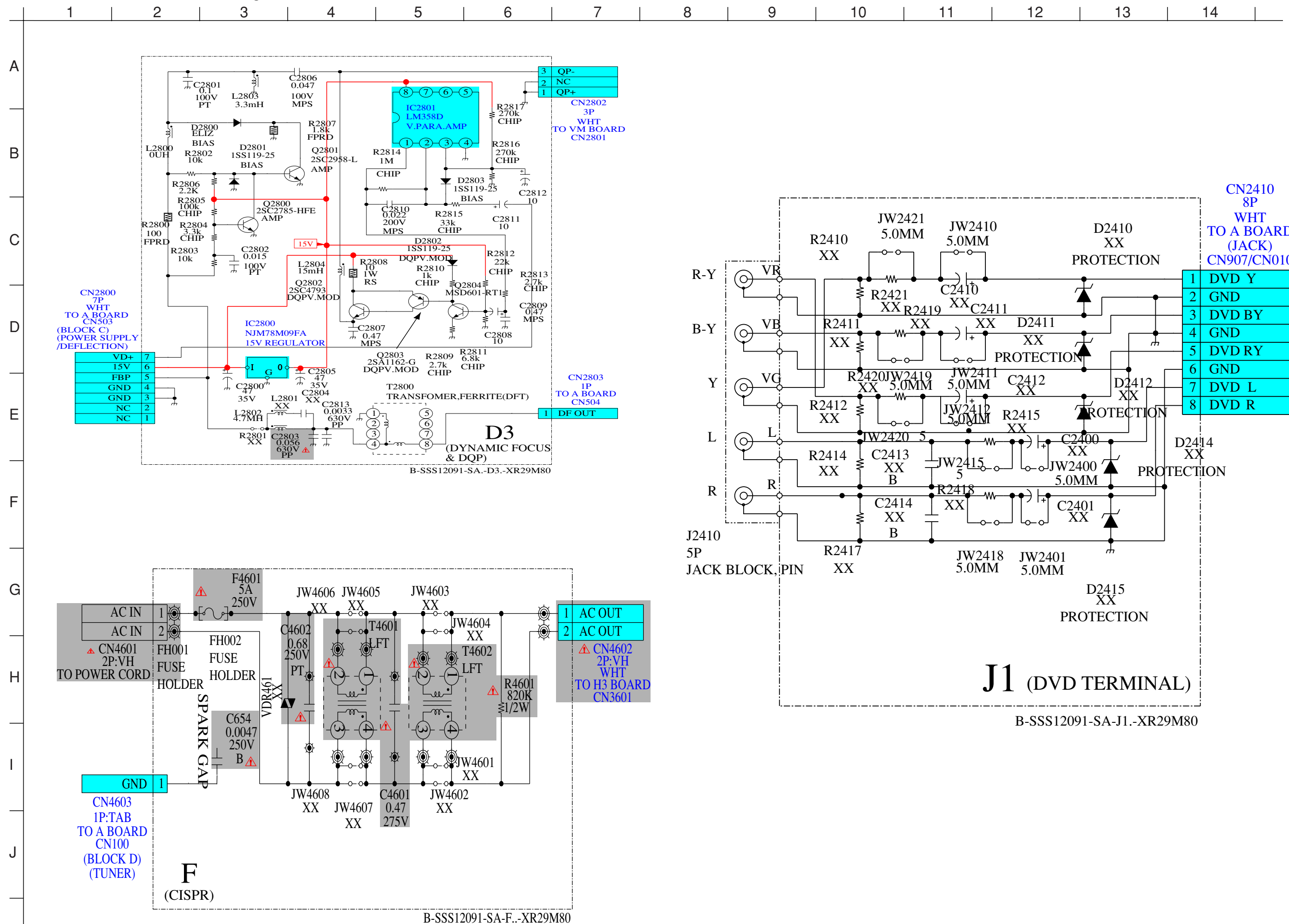
B-SSS12091-SA-VM-XR29M80

VM
(VELOCITY MODULATION)

4-3-9. H3 Board Schematic Diagram



4-3-10. D3, J1 and F Board Schematic Diagram




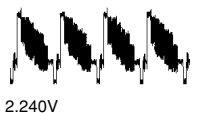
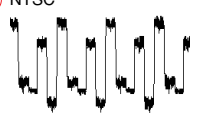
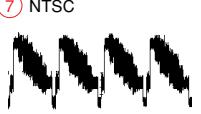

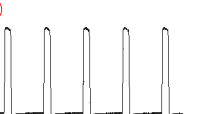

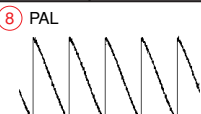
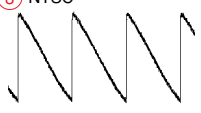
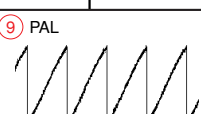
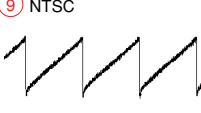
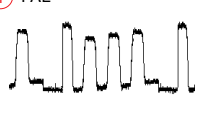
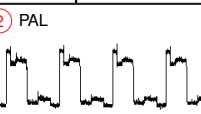
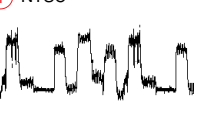
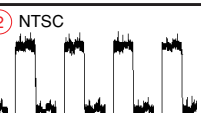
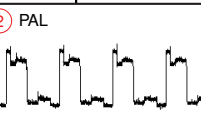
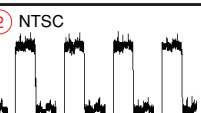
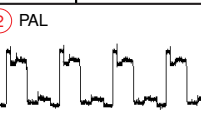
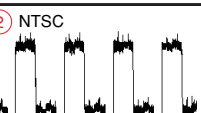
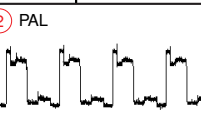
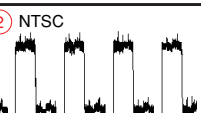
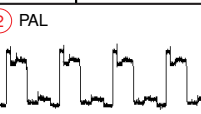
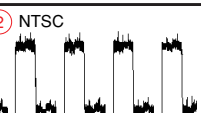
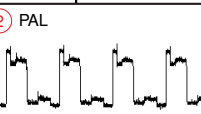
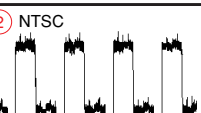
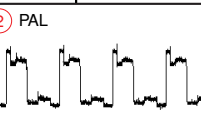
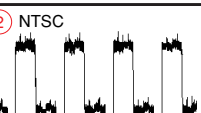
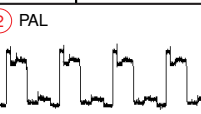
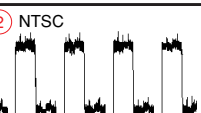
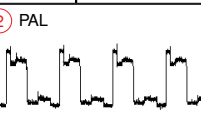
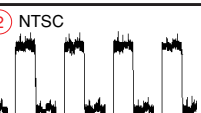
A Board * Mark List

	KV-XR29M80 (SA)	KV-XR29M80 (ME)	KV-XR29M50 (EM)	KV-XR29M80 (Russia)
C619	XX	XX	470 450V	XX
C620	820 250V	820 250V	XX	820 250V
C621	820 250V	820 250V	XX	820 250V
C646	22 25V	22 25V	XX	22 25V
C691	0.47 450V	0.47 450V	XX	0.47 450V
CN601	3P	3P	XX	3P
CN603	XX	XX	2P	XX
D613	U05G	U05G	XX	U05G
D614	U05G	U05G	XX	U05G
D659	U05G	U05G	XX	U05G
D660	MTZJ-T-77-22	MTZJ-T-77-22	XX	MTZJ-T-77-22
IC001	TDA12067H1/N1B0B0KO	TDA12067H1/N1B0B0KO	TDA12067H1/N1B0B0KN	TDA12067H1/N1B0B0KN
IC608	SELECTION UNIT RECTIFIER	SELECTION UNIT RECTIFIER	XX	SELECTION UNIT RECTIFIER
JR1681	XX	XX	0 :CHIP	XX
R607	2.2K :RN-CP	2.2K :RN-CP	0 :CHIP	2.2K :RN-CP
R638	470K 1/2W	470K 1/2W	XX	470K 1/2W
R639	470K 1/2W	470K 1/2W	XX	470K 1/2W
R6004	4.7 1/2W	4.7 1/2W	XX	4.7 1/2W
R6005	4.7 1/2W	4.7 1/2W	XX	4.7 1/2W
R6014	1 10W	1 10W	0.68 10W	0.68 10W
R6015	1 10W	1 10W	0.68 10W	0.68 10W
RY601	RELAY (AC POWER)	RELAY (AC POWER)	XX	RELAY (AC POWER)
VD600	ENE271D-20A	ENE271D-20A	XX	ENE271D-20A
VD602	ENE271D-20A	ENE271D-20A	XX	ENE271D-20A

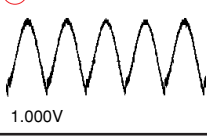
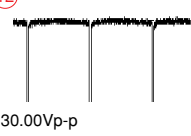
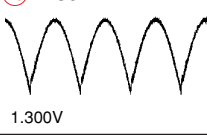
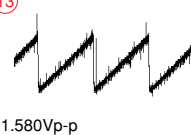

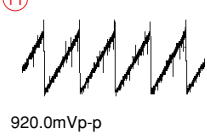
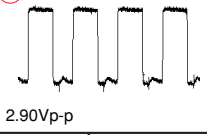
Note: The parts indicated as "XX" in this circuit diagram are not listed here, as they are not used for these models.

4-4. VOLTAGE MEASUREMENT AND WAVEFORMS

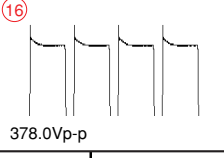
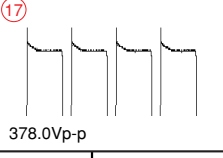
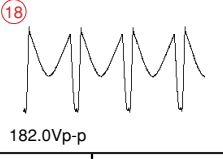
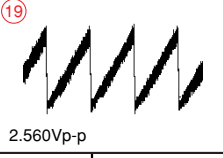
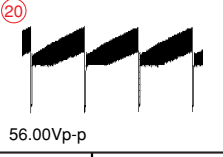
A BOARD VOLTAGE LIST AND WAVEFORM

Ref	Pin No	Voltage[v]	Ref	Pin No.	Voltage[v]	Ref	Pin No.	Voltage[v]
IC001	1	0		44	1.6		79	2.1
	2	3.3		80	2.1			
	3	3.3		81	1.3			
	4	0		82	4.9			
	5	1.7		 <p>2.040V</p>	 <p>2.240V</p>			
	6	3.3						
	7	0		 <p>2.520V</p>	 <p>2.120V</p>			
	8	0						
	9	0		<p>45</p> <p>46</p> <p>47</p> <p>48</p> <p>49</p> <p>50</p> <p>51</p> <p>52</p> <p>53</p> <p>54</p> <p>55</p> <p>56</p> <p>57</p> <p>58</p> <p>59</p> <p>60</p> <p>61</p> <p>62</p>	<p>83</p> <p>84</p> <p>85</p> <p>86</p> <p>87</p> <p>88</p> <p>89</p> <p>90</p> <p>91</p> <p>92</p> <p>93</p> <p>94</p> <p>95</p> <p>96</p> <p>97</p> <p>98</p> <p>99</p> <p>100</p> <p>101</p> <p>102</p> <p>103</p> <p>104</p> <p>105</p> <p>106</p>			
	10	3.3						
	11	(*) [1.7]		 <p>3.440V</p>	 <p>6.640V</p>			
	12	1.7						
	13	(0.9)[0.4]		<p>63</p> <p>0.4</p>	 <p>448.0mVp-p</p>			
	14	(0.9)[0.3]						
	15	3.3		<p>65</p> <p>66</p> <p>67</p> <p>68</p> <p>69</p> <p>70</p> <p>71</p> <p>72</p> <p>73</p> <p>74</p> <p>75</p> <p>76</p> <p>77</p> <p>78</p>	 <p>2.640V</p>			
	16	(32.7)[32.2]						
	17	0.8		 <p>2.800V</p>	<p>107</p> <p>2.1</p>			
	18	(0.8)[0.3]						
	19	3.2		 <p>2.440V</p>	 <p>1.840V</p>			
	20	(3.9)[4.1]						
	21	(3.9)[4.0]		 <p>2.000V</p>	 <p>2.000V</p>			
	22	3.2						
	23	21.2		 <p>2.440V</p>	 <p>1.600V</p>			
	24	33.5						
	25	1.5		<p>43</p> <p>1.7</p>	<p>107</p> <p>2.1</p>			
	26	0						
	27	3.2		 <p>2.000V</p>	 <p>1.600V</p>			
	28	0						
	29	1.7		 <p>2.000V</p>	 <p>1.600V</p>			
	30	(0.9)[1.4]						
	31	0		 <p>2.000V</p>	 <p>1.600V</p>			
	32	2.9						
	33	1.7		 <p>2.000V</p>	 <p>1.600V</p>			
	34	0						
	35	3.2		 <p>2.000V</p>	 <p>1.600V</p>			
	36	1.7						
	37	0		 <p>2.000V</p>	 <p>1.600V</p>			
	38	1.6						
	39	3.2		 <p>2.000V</p>	 <p>1.600V</p>			
	40	(0)[0.1]						
	41	3.2		 <p>2.000V</p>	 <p>1.600V</p>			
	42	1.7						

A BOARD VOLTAGE LIST AND WAVEFORM

Ref	Pin No.	Voltage[v]	Ref	Pin No.	Voltage[v]	Ref	Pin No.	Voltage[v]
	108	4.2		3	-30.0	IC609	1	5.0
	(10) PAL			(12)			2	0
		1.000V			30.00Vp-p		3	5.0
	(10) NTSC			4	-14.8	Q001	B	(0)[-25.5]
		1.300V		5	(0.4)[-116.0]		C	2.1
	109	2.3		6	13.1		E	0
	110	2.3		7	1.5	Q009	B	(0)[2.1]
	111	0		(13)			C	(0)[*]
	112	2.2			1.580Vp-p		E	(2.2)[*]
	113	1.9				Q012	B	2.1
	114	4.9					C	4.8
	115	2.4	IC602	1	72.4		E	1.5
	116	(0)[1.3]		2	72.7	Q013	B	(39.8)[0]
	117	(*)[0]		3	(71.8)[-72.6]		C	1.7
	118	*		4	(71.9)[-72.4]		E	0
	119	*		5	73.2	Q014	B	0.6
	120	3.2		6	(73.1)[-73.0]		C	(39.8)[0]
	121	0		7	(69.2)[-69.5]		E	0
	122	3.2		8	(64.4)[-64.7]	Q100	B	(2.7)[3.5]
	123	*		9	(73.0)[-73.2]		C	8.8
	124	3.2		10	(67.5)[-67.5]	Q101	B	3.2
	125	3.2		11	(73.0)[-73.1]		C	8.8
	126	1.7		12	(70.2)[-70.4]		E	0
	127	0		13	*	Q102	B	3.1
	128	0		14	(0.5)[9.2]		C	2.4
IC003	1	0		15	(5.4)[3.8]		E	(8.4)[7.4]
	2	0		16	(3.0)[6.5]	Q103	B	0
	3	0		17	*		C	3.2
	4	0		18	(-73.0)[73.9]		E	0
	5	(3.9)[3.6]	IC603	1	-10.9	Q104	B	-11.1
	6	3.9		2	11.2		C	4.5
	7	0		3	*		E	-22.2
	8	3.2		4	2.7	Q105	B	0
IC200	1	*		5	2.4		C	(105)[-133]
	2	0		(14)			E	0
	3	19.0			940.0mVp-p	Q106	B	(0)[61.1]
	4	0		6	11.0		C	(0)[113.3]
	5	0		7	0		E	(0)[-22.1]
	6	0		8	0	Q111	B	2.3
	7	9.4	IC604	I	13.5		C	2.6
	8	(0)[0.7]		G	0		E	2.4
	9	0		O	8.8	Q202	B	8.8
	10	20.2					C	(-1.1)[-0.6]
	11	20.2	IC605	1	6.5		E	8.6
	12	9.4		2	0	Q205	B	(0)[*]
IC502	1	0		3	3.3		C	(0)[*]
	2	0.6					E	(0)[*]
	3	0.5	IC606	I	2.9	Q206	B	0
	4	0		G	0		C	0
	5	4.2		O	1.7		E	0
	6	2.3	IC607	I	6.4	Q300	B	1.2
	7	6.8		G	0		C	0
	8	8.8		O	5.0		E	0
IC503	1	(0.5)[0]	IC608	1	(63.8)[71.2]	Q501	B	2.0
	(11)			2	(74.2)[70.6]		C	0
		920.0mVp-p		3	(67.7)[65.9]		E	2.7
	2	13.1		4	(67.5)[70.2]	Q502	B	4.2
				5	(62.3)[2.5]		C	2.3
				6	(68.2)[2.5]		E	2.8
				7	(12.3)[2.5]	Q505	S	0
				8	(2.4)[0]		G	6.7
				9	(2.4)[-2.4]		O	(18.3)[19.8]
				10	(2.4)[-2.4]	Q506	B	0
				11	0		C	2.7
						(15)		
								2.90Vp-p
							E	(71.6)[82.7]

A BOARD VOLTAGE LIST AND WAVEFORM

Ref	Pin No.	Voltage[v]	Ref	Pin No.	Voltage[v]	Ref	Pin No.	Voltage[v]
Q507	B	12.5	Q609	B	0.7	Q912	B	0
	C	0.6		C	(148.3)[1.8]		C	0
	E	13.1		E	0		E	0
Q509	B	0.6	Q610	B	0.5	PH601	1	13.5
	C	(74.1)[66.3]		C	6.4		2	12.4
	E	*		E	0.2		3	*
					4		*	
Q511	B	-149.3	Q611	B	(6.4)[5.5]	DY1	H+	
	C	378.0		C	(0)[1.3]		 378.0Vp-p	
				E	6.5			
			Q612	B	(0)[0.5]			 378.0Vp-p
			C	4.6				
			E	0				
			Q613	B	0.6		H-	
			C	(25.9)[0.2]	 182.0Vp-p			
			E	0				
			Q614	B			(56.6)[36.0]	V-
Q512	B	(104.6)[86.1]	C	0.7	Q615	B	(14.9)[0.1]	 2.560Vp-p
	C	4.9	C	(0)[-31.7]		C	4.6	
	E	(108.2)[137.2]	E	0		E	0	
Q513	B	2.2	Q900	B	1.3	V+	 56.00Vp-p	
	C	(-10.3)[-10.7]		C	(0)[-22.1]			
	E	2.8		E	2.0			
Q514	B	2.8	Q901	B	1.0			
	C	4.9		C	(0)[0.3]			
	E	2.2		E	0			
Q515	B	1.5	Q902	B	1.0			
	C	2.1		C	0			
	E	0.1		E	0			
Q600	B	0	Q910	B	0			
	C	1.2		C	0			
	E	0		E	0			
Q607	B		Q911	B	(0)[0.1]			
	C			C	8.8			
	E			E	(0)[1.2]			
Q608	S	*						
	G	*						
	O	1.2						

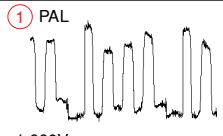
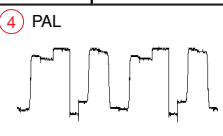
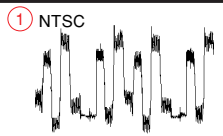
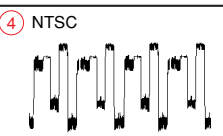
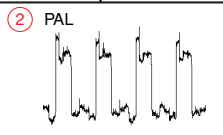
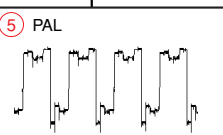
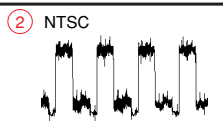
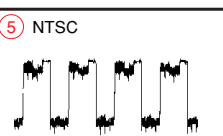
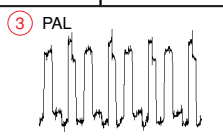
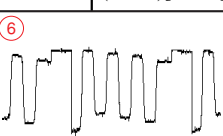
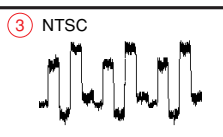
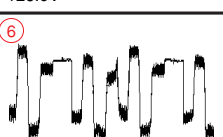
D3 BOARD VOLTAGE LIST

Ref	Pin No.	Voltage[v]	Ref	Pin No.	Voltage[v]
IC2800	I	13.2	Q2801	B	(*)[0.3]
	G	0		C	(3.1)[*]
	O	9.0		E	0
IC2801	1	4.4	Q2802	B	2.4
	2	4.5		C	12.7
	3	4.4		E	1.7
	4	0	Q2803	B	12.1
	5	(1.2)[1.4]		C	2.3
	6	1.2		E	12.7
	7	7.9	Q2804	B	2.0
	8	8.9		C	12.1
Q2800	B	(0.4)[*]	E	1.5	
	C	*			
	E	0			

H3 BOARD VOLTAGE LIST

Ref	Pin No.	Voltage[v]
Q3901	B	0.1
	C	5.0
	E	0.1
Q3902	B	(4.7)(0)
	C	(2.3)(4.9)
	E	(1.8)(0)

C BOARD VOLTAGE LIST AND WAVEFORM

Ref	Pin No.	Voltage[v]	Ref	Pin No.	Voltage[v]	Ref	Pin No.	Voltage[v]
IC751	1	1.9	IC1800	7	138.4	IC3800	5	0
	① PAL			④ PAL			6	5.9
	1.660V			126.0V			7	(5.8)[4.8]
	① NTSC			④ NTSC			8	11.1
	2.020V			160.0V			9	(11.0)[9.6]
	2	1.9		8	(134.1)[131.3]		10	12.5
	② PAL			⑤ PAL			1	3.8
	1.720V			130.0V			2	(3.9)[3.3]
	② NTSC			⑤ NTSC			3	5.3
	1.460V			118.0V			4	(5.3)[4.4]
	3	1.8		9	(130.2)[127.8]		5	0
	③ PAL			⑥ PAL			6	5.5
1.780V		126.0V		7	5.5			
③ NTSC		⑥ NTSC		8	6.2			
2.160V		160.0V		9	6.2			
4	0			10	12.8			
5	4.6			J751	KR	(139.6)[137.3]		
6	0.2				KG	(134)[131.7]		
					KB	(132)[128.5]		
					H1	(0.1)[19.0]		
					H2	(0.2)[20.9]		
				Q701	B	(5.0)[4.6]		
					C	0.2		
					E	*		
				Q1800	B	2.94		
					C	11.1		
					E	3.6		
				Q1801	B	(90.5)[97.3]		
					C	5.92		
					E	11.6		
				Q1802	B	0.4		
					C	2.6		
					E	10.9		
				Q1803	B	*		
					C	5.8		
					E	11.1		
				Q1804	B	2.2		
					C	3.5		
					E	12.6		
				Q3800	B	0.5		
					C	2.4		
					E	0.5		
				Q3801	B	*		
					C	5.1		
					E	12.6		
				Q3802	B	(97.5)[104.5]		
					C	5.5		
					E	13.0		

VM BOARD VOLTAGE LIST

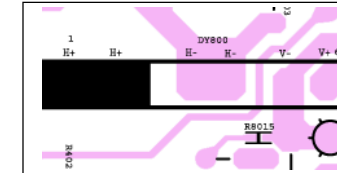
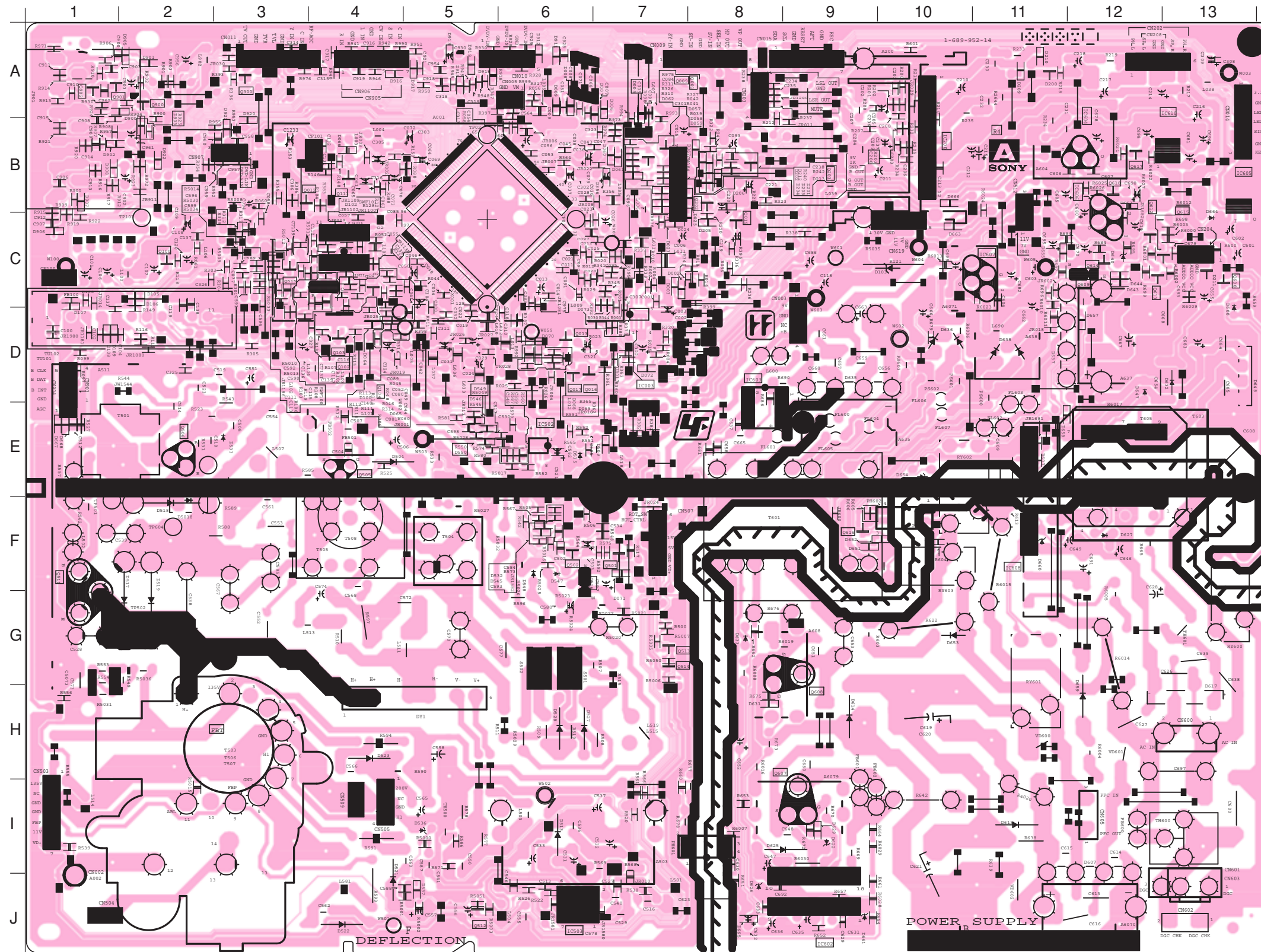
Ref	Pin No.	Voltage[v]	Ref	Pin No.	Voltage[v]
Q5901	B	2.6	Q5905	B	5.6
	C	8.8		C	8.8
	E	2.0		E	5.1
Q5902	B	-0.6	Q5906	B	(-0.1)[0.2]
	C	-0.4		C	(-4.0)[70.3]
	E	(-6.5)[-0.7]		E	(0.1)[18.9]
Q5903	B	2.6	Q5907	B	3.6
	C	3.8		C	(61.4)[8.8]
	E	1.9		E	2.9
Q5904	B	4.6			
	C	(12.0)[0.1]			
	E	5.1			

4-5. PRINTED WIRING BOARDS AND PARTS LOCATION

PRINTED WIRING BOARDS

[Processor, Audio, Power Supply/Deflection, Tuner, Jack, Heat Sink]

- A Board -



NOTE:
The circuit indicated at left contains high voltage of over 1220 Vp-p. Please pay attention when inspecting or repairing it to prevent an electric shock.

A BOARD

IC	D356 B-7	D901 A-2
IC003 D-7	D504 E-4	D902 B-1
IC200 B-10	D509 E-6	D903 A-2
IC502 E-6	D513 I-6	D905 A-2
IC503 J-6	D517 F-2	D906 C-1
IC602 J-9	D519 F-2	D907 B-1
IC603 D-8	D521 I-4	D908 B-1
IC604 A-12	D522 J-4	D911 A-6
IC605 B-13	D523 H-4	D912 A-6
IC606 B-12	D527 H-6	D913 A-5
IC607 C-11	D528 H-6	D915 A-5
IC608 F-11	D532 F-5	D916 A-4
IC610 A-13	D533 E-3	D917 A-5
	D535 E-6	D918 A-5
	D536 I-5	D919 A-5
DIODE	D537 J-5	D920 A-3
D002 C-7	D545 F-5	D921 A-3
D003 C-7	D546 D-5	D922 B-2
D005 A-7	D547 F-6	D5018 F-2
D006 A-7	D548 F-6	
D007 A-7	D549 D-5	TRANSISTOR
D008 A-6	D550 E-5	Q001 A-8
D009 A-6	D600 D-13	Q009 A-7
D023 C-7	D607 I-12	Q013 D-6
D024 C-7	D613 I-11	Q016 D-6
D025 C-8	D614 H-9	Q011 B-4
D057 A-8	D617 G-13	Q012 B-3
D058 A-8	D622 I-9	Q015 B-8
D059 B-8	D625 I-8	Q016 D-6
D060 B-7	D626 J-8	Q017 D-6
D061 B-7	D627 F-12	Q100 C-2
D062 A-7	D629 I-9	Q102 D-4
D064 D-4	D631 H-8	Q103 D-4
D065 E-4	D632 D-12	Q104 D-4
D066 B-4	D633 G-8	Q202 B-8
D067 B-8	D635 D-9	Q203 B-9
D068 D-6	D636 D-10	Q300 A-3
D069 E-6	D637 D-11	Q501 F-7
D070 D-6	D638 D-11	Q502 F-6
D071 G-7	D640 C-12	Q505 E-4
D072 D-7	D643 C-12	Q506 E-2
D073 D-6	D644 C-12	Q511 F-1
D100 D-4	D647 D-12	Q512 J-5
D102 B-4	D648 D-13	Q513 G-7
D103 C-9	D651 F-9	Q514 G-7
D105 C-2	D652 F-9	Q515 C-3
D106 C-2	D653 G-10	Q516 F-6
D107 D-1	D654 E-10	Q600 C-13
D108 D-1	D655 C-11	Q607 H-8
D109 D-1	D657 D-12	Q608 H-9
D200 A-11	D658 E-11	Q609 C-12
D201 B-9	D659 G-12	Q612 B-12
D202 B-9	D660 F-11	Q613 C-12
D203 B-9	D661 J-9	Q614 C-12
D204 B-9	D662 B-12	Q615 C-13
D205 C-8	D663 C-10	Q616 F-9
D206 B-8	D664 C-13	Q617 B-12
D209 A-11	D665 J-8	Q618 B-12
D210 A-11	D666 B-10	Q900 A-2
D211 C-13	D667 E-1	Q901 A-1
D212 B-9	D668 E-1	Q902 A-1
D213 B-9	D900 A-2	

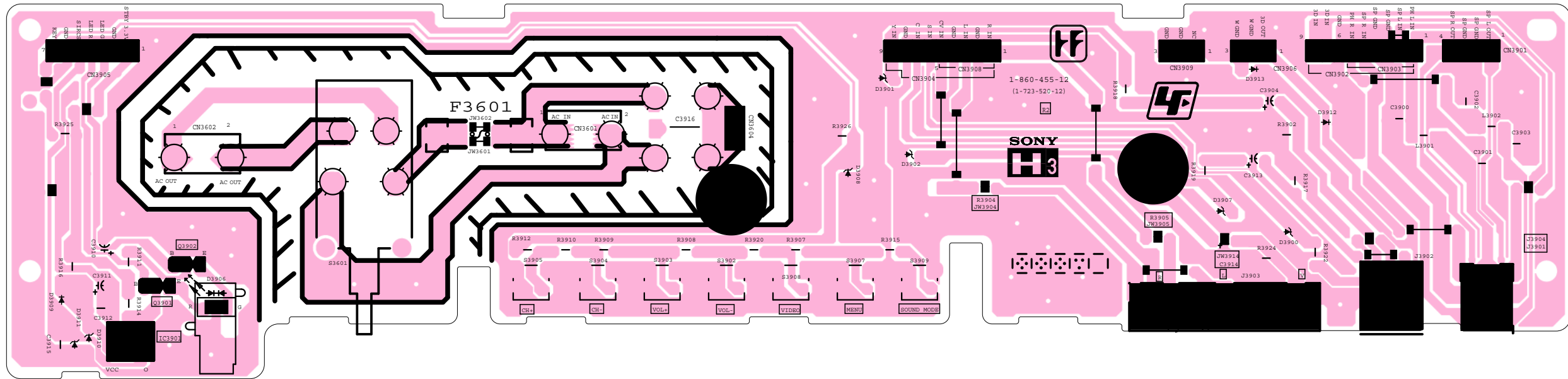
PRINTED WIRING BOARDS

C [RGB AMPLIFIER, ROTATION CIRCUIT, LANDING CORRECTION CIRCUIT]

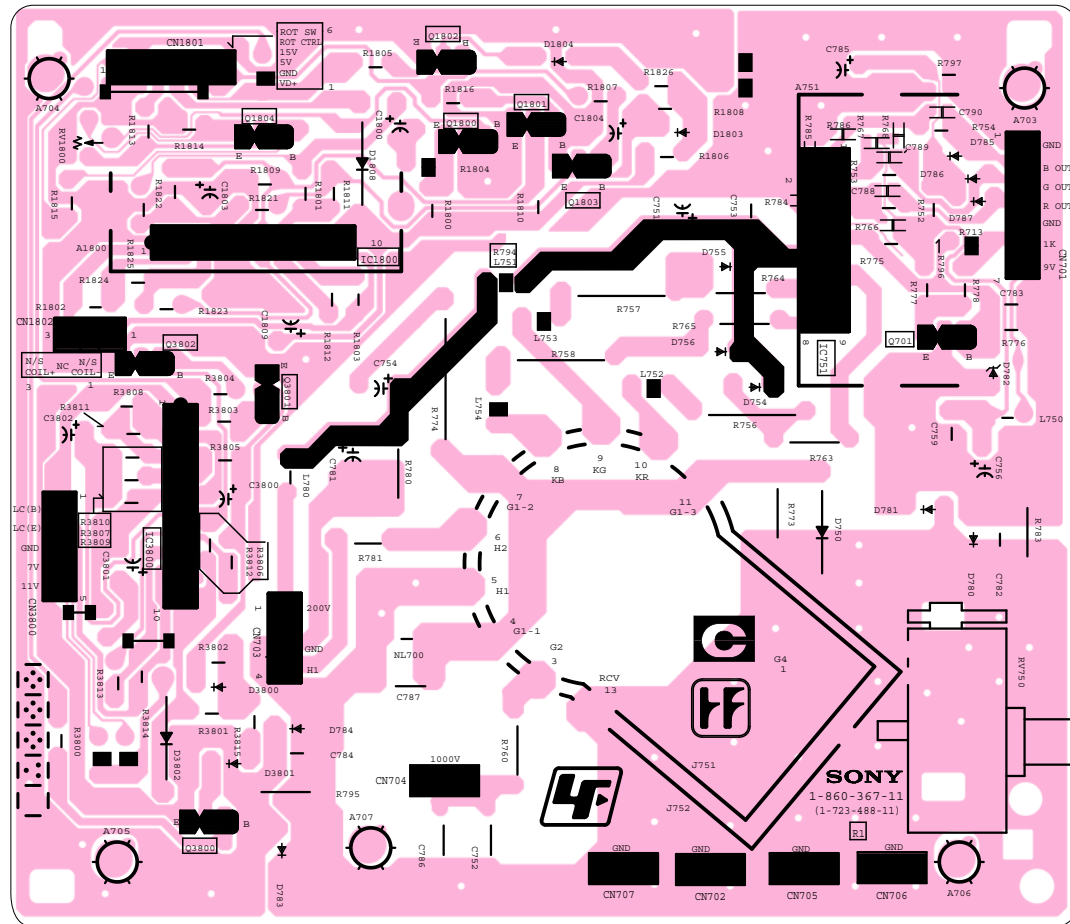
VM [VELOCITY MODULATION]

H3 [FRONT PANEL]

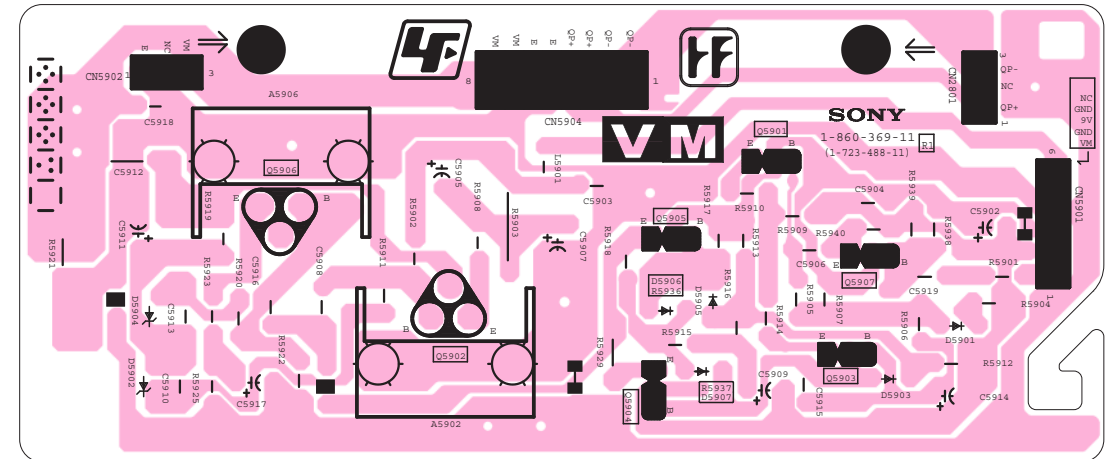
– H3 board –



– C board –



– VM board –



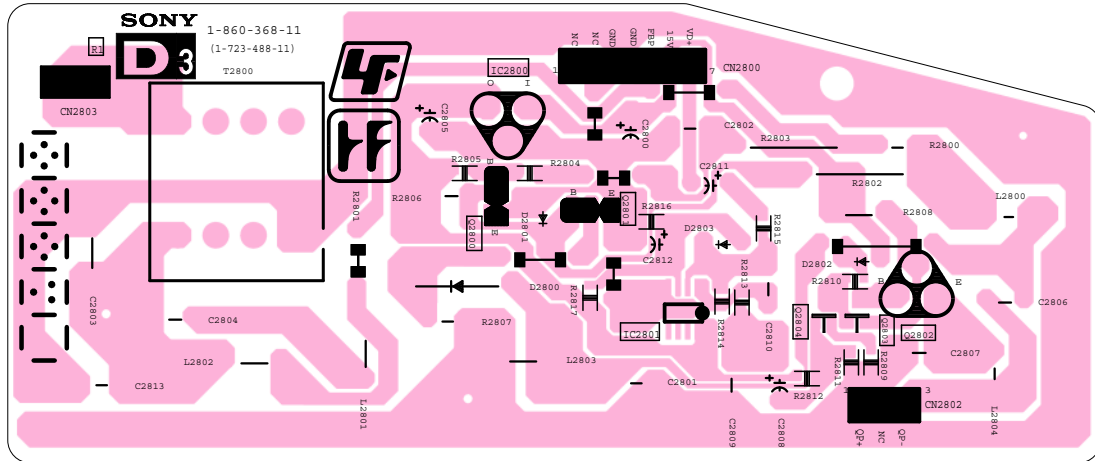
PRINTED WIRING BOARDS

D3 [DYNAMIC FOCUS & DQP]

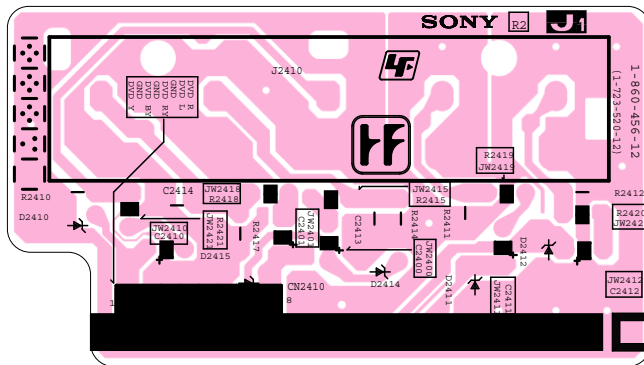
F [CISPR]

J1 [DVD TERMINAL]

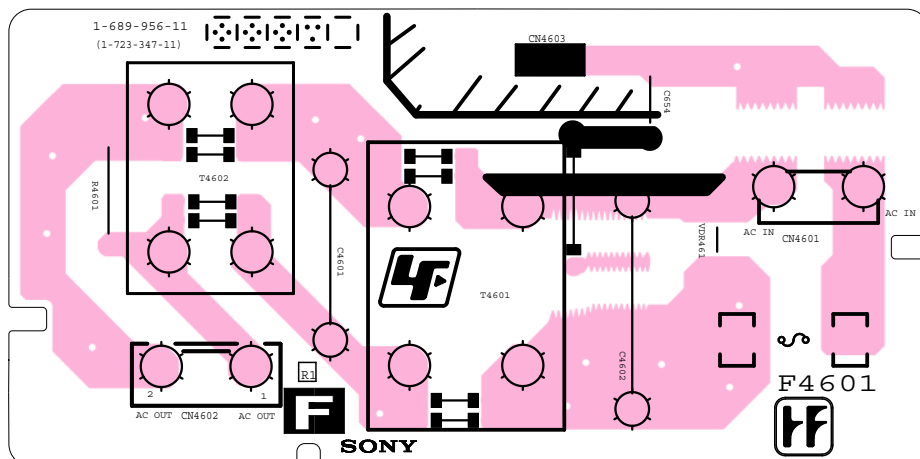
– D3 board –



– J1 board –

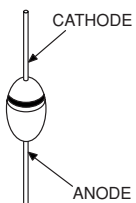
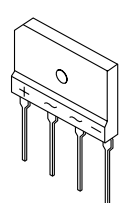
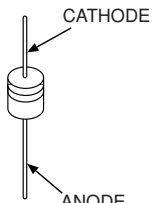

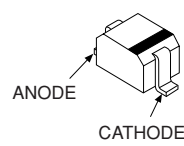
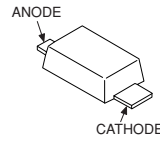


– F board –

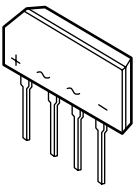
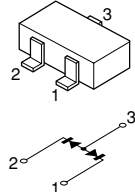
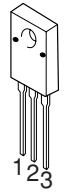
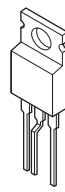
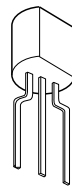
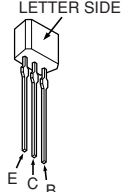


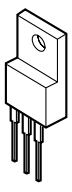
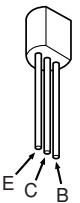
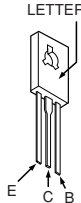
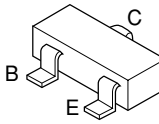
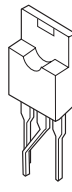
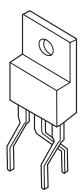
4-6. SEMICONDUCTORS

DIODE

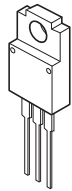
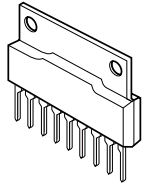
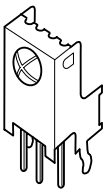
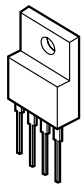
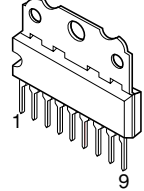
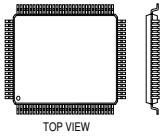
					
ERC06-15S U05G	D4SB60L D4SBL20U D10SBS4F	D2L20U HSS82-TJ MTZJ-T-77-15 MTZJ-T-77-22 RD5.6ESB2 RD6.8ES-B1 RD18ESB RD39ESB UPC574J 1SS119-25 1SS133T-77	D1NL20U-TR D1NS6 EL1Z ERA22-08 GP08D UF4005PKG23 10ERB20-TB5	MMDL914T1 RD5.6SB-T1	MA2ZD14001S0 MA77 UDZSTE-179.1B UDZS-TE17-12B

TRANSISTOR

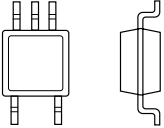
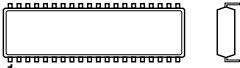
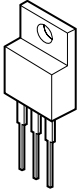
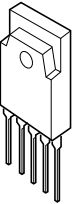
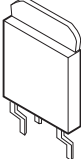
					
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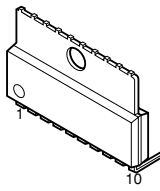
					
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IC

					
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IC

 <p>TOP VIEW</p>	<p>DIP</p>  <p>TOP VIEW</p> <p>Dual In-line Package Pin 6~98</p>				
<p>BA18BCOWFP-E2</p>	<p>LM358D MCZ3001DA</p>		<p>NJM78M09FA</p>	<p>TDA8177</p>	<p>BR24L16F-WE2</p>


<p>LA6510</p>

SECTION 5 EXPLODED VIEWS

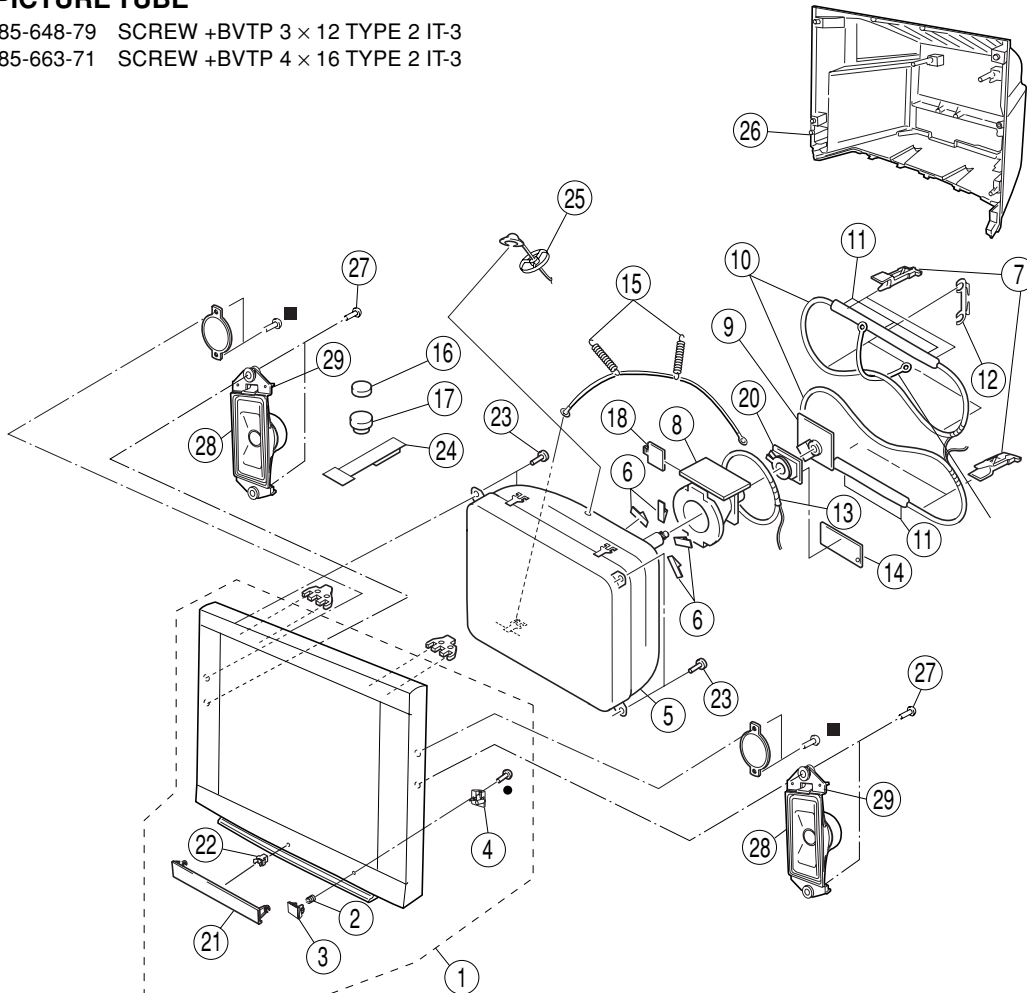
NOTE:

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

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

5-1. PICTURE TUBE

- : 7-685-648-79 SCREW +BVTP 3 × 12 TYPE 2 IT-3
- : 7-685-663-71 SCREW +BVTP 4 × 16 TYPE 2 IT-3

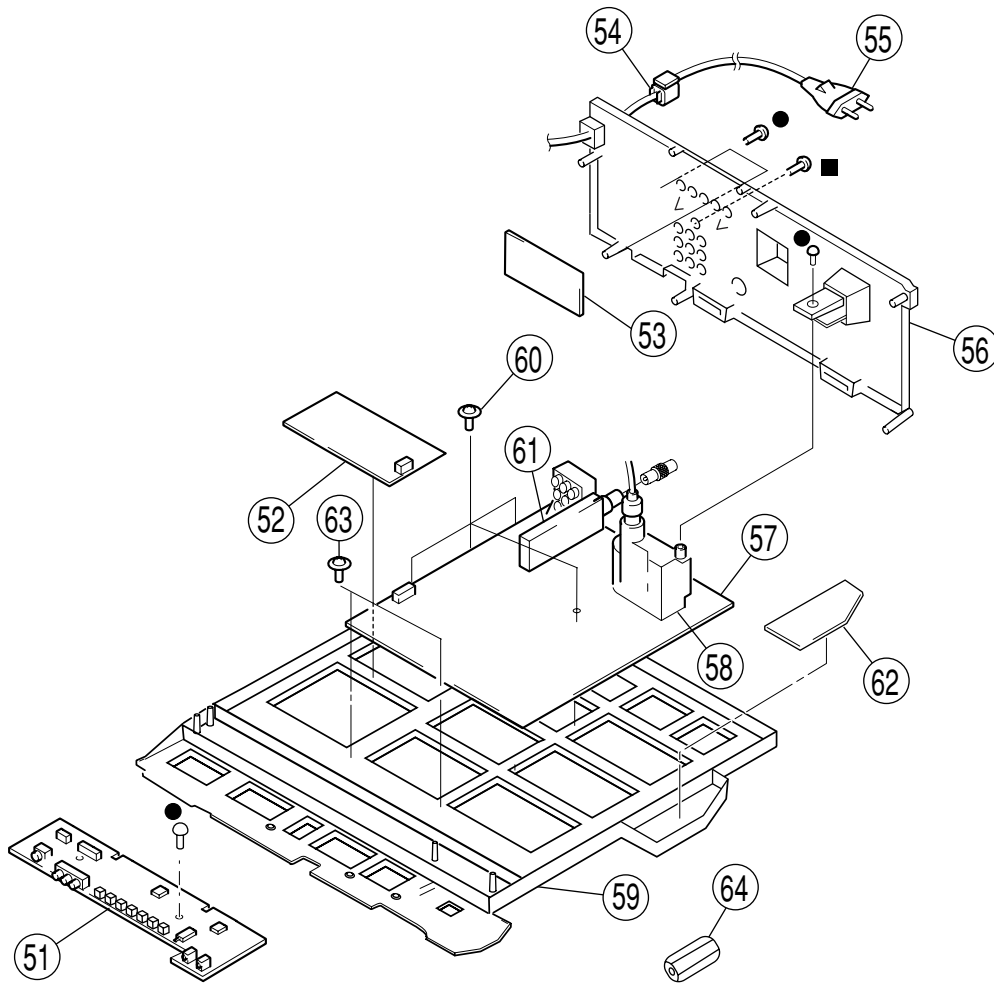


REF. NO.	PART NO.	DESCRIPTION	REMARK
1	X-4042-217-1	BEZNET ASSY	2-4,21,22
2	4-036-405-11	SPRING COMPRESSION	
3	4-075-747-61	BUTTON POWER	
4	* 4-075-749-01	GUIDE LIGHT	
5	\triangle 8-735-056-05	PICTURE TUBE (M68LNH070X) (SDS) (KV-XR29M50)	
	\triangle 8-735-057-05	PICTURE TUBE (M68LNH070X) (except KV-XR29M50)	
6	4-046-600-11	SPACER DY	
7	* 4-062-970-12	CLIP (29 RSN) DGC	
8	\triangle 8-451-494-31	DEFLECTION YOKE (Y29RSA-S)	
9	* A-1410-214-A	MOUNTED PWB (VAR), C	
10	\triangle 1-419-323-11	COIL DEGAUSSING (KV-XR29M50)	
	\triangle 1-419-294-11	COIL DEGAUSSING (except KV-XR29M50)	
11	4-063-935-21	CUSHION (50x550) DGC	
12	4-064-883-03	HOLDER DGC	
13	1-452-896-11	COIL NA ROTATION (RT200)	
14	* A-1410-218-A	MOUNTED PWB, VM	
15	4-369-318-61	SPRING TENSION	

REF. NO.	PART NO.	DESCRIPTION	REMARK
16	1-452-032-00	MAGNET DISC	
17	1-452-094-00	CIRCULAR DISC MAGNET	
18	4-077-228-02	PIECE TLH CONVERGENCE	
19	4-079-376-01	BAND DGC	
20	8-453-021-11	NA2919-M	
21	4-098-501-01	DOOR CONTROL(XR)	
22	4-047-464-01	CATCHER PUSH	
23	4-046-765-12	SCREW TAPPING 7+CROWN WASHER	
24	X-4387-214-3	PERMALOY ASSY CORRECTION	
25	4-084-918-01	HOLDER HV CABLE	
26	\triangle 4-075-454-11	COVER REAR (12 SCREWS ■)	
27	4-302-404-03	SCREW (WASHER HEAD) (+P 4x16)	
28	1-825-691-11	SPEAKER (15x6.5cm)	
29	* 4-046-981-03	BRACKET SPEAKER	

5-2. CHASSIS

- : 7-685-648-79 SCREW +BVTP 3 × 12 TYPE 2 IT-3
- : 7-685-663-71 SCREW +BVTP 4 × 16 TYPE 2 IT-3



REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
51	* A-1410-219-A	MOUNTED PWB, H3		58	△ 1-453-284-11	TRANSFORMER ASSY FLY BACK (NX-4009//M314)	
52	* A-1410-216-A	MOUNTED PWB, F		59	*△ 4-095-842-01	BRACKET MAIN	
53	* A-1410-217-A	MOUNTED PWB, J1		60	4-046-797-01	SCREW (3x12) (+) BVTAP (4 Screws)	
54	△ 4-022-115-00	HOLDER AC CORD		61	△ 1-693-636-11	TUNER (TEDE9)	
55	△ 1-823-478-12	CORD AC POWER (WITH CONNECTOR) (KV-XR29M50/M80 (ME))		62	* A-1410-215-A	MOUNTED PWB, D3	
	△ 1-823-477-11	CORD AC POWER (WITH CONNECTOR) (Saudia Arabia)		63	4-302-428-03	SCREW (WASHER HEAD) (+P 3x12) (2 Screws)	
	△ 1-823-478-12	CORD AC POWER (WITH CONNECTOR) (Russia)		64	1-469-969-11	CLAMP, FERRITE (FOR CONNECTOR; ASSY, 4P VH(1)) CN600 (A BOARD) – CN3602 (H3 BOARD)	
56	*△ 4-095-844-01	BRACKET TERMINAL					
57	* A-1302-875-A	COMPLETE PWB, A (KV-XR29M50)					
	* A-1302-874-A	COMPLETE PWB, A (ME/Saudi Arabia)					
	* A-1302-878-A	COMPLETE PWB, A (Russia)					



SECTION 6 ELECTRICAL PARTS LIST

NOTE:

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

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

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

- All resistors are in ohms
- F : nonflammable

CAPACITORS

- MF : μ F, PF : μ μ F

COILS

- MMH : mH, UH : μ H

REF NO.	PART NO.	DESCRIPTION	REMARK
	* A-1302-875-A	COMPLETE PWB, A (KV-XR29M50)	
	* A-1302-874-A	COMPLETE PWB, A (ME/SAUDI ARABIA)	
	* A-1302-878-A	COMPLETE PWB, A (RUSSIA)	*****
	4-382-854-01	SCREW (M3X8), P, SW (+)	

REF NO.	PART NO.	DESCRIPTION	REMARK
C053	1-164-227-11	CERAMIC CHIP	0.022UF 10.00% 25V
C054	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V
C055	1-100-829-31	FILM	0.15UF 5% 250V
C056	1-104-665-11	ELECT	100UF 20.00% 25V
C057	1-162-970-11	CERAMIC CHIP	0.01UF 10.00% 25V
C058	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V
C061	1-162-968-11	CERAMIC CHIP	0.0047UF 10.00% 50V
C063	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V
C064	1-126-961-11	ELECT	2.2UF 20.00% 50V
C065	1-126-962-11	ELECT	3.3UF 20.00% 50V
C069	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V
C070	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V
C072	1-162-970-11	CERAMIC CHIP	0.01UF 10.00% 25V
C073	1-126-961-11	ELECT	2.2UF 20.00% 50V
C077	1-162-970-11	CERAMIC CHIP	0.01UF 10.00% 25V
C080	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V
C081	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V
C085	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V
C089	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V
C090	1-162-927-11	CERAMIC CHIP	100PF 5.00% 50V
C091	1-162-927-11	CERAMIC CHIP	100PF 5.00% 50V
C093	1-126-933-11	ELECT	100UF 20.00% 16V
C100	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V
C101	1-126-964-11	ELECT	10UF 20.00% 50V
C102	1-162-927-11	CERAMIC CHIP	100PF 5.00% 50V
C104	1-162-927-11	CERAMIC CHIP	100PF 5.00% 50V
C106	1-126-964-11	ELECT	10UF 20.00% 50V
C107	1-126-935-11	ELECT	470UF 20.00% 16V
C108	1-126-935-11	ELECT	470UF 20.00% 16V
C109	1-162-968-11	CERAMIC CHIP	0.0047UF 10.00% 50V
C111	1-162-970-11	CERAMIC CHIP	0.01UF 10.00% 25V
C113	1-162-968-11	CERAMIC CHIP	0.0047UF 10.00% 50V
C115	1-162-968-11	CERAMIC CHIP	0.0047UF 10.00% 50V
C116	1-162-968-11	CERAMIC CHIP	0.0047UF 10.00% 50V
C117	1-162-924-11	CERAMIC CHIP	56PF 5.00% 50V
C118	1-126-965-91	ELECT	22UF 20.00% 50V
C119	1-163-021-91	CERAMIC CHIP	0.01UF 10.00% 50V
C120	1-126-935-11	ELECT	470UF 20.00% 16V
C135	1-162-970-11	CERAMIC CHIP	0.01UF 10.00% 25V
C136	1-126-933-11	ELECT	100UF 20.00% 16V
C137	1-164-505-11	CERAMIC CHIP	2.2UF 16V
C138	1-163-009-91	CERAMIC CHIP	0.001UF 10.00% 50V
C139	1-162-970-11	CERAMIC CHIP	0.01UF 10.00% 25V
C200	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V
C201	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V
C202	1-165-176-11	CERAMIC CHIP	0.047UF 10.00% 16V
C203	1-165-176-11	CERAMIC CHIP	0.047UF 10.00% 16V
C204	1-130-495-00	MYLAR	0.1UF 5.00% 50V
C205	1-126-959-11	ELECT	0.47UF 20.00% 50V
C206	1-162-969-11	CERAMIC CHIP	0.0068UF 10.00% 25V

COMMON PARTS LIST

<CAPACITOR>

C001	1-162-927-11	CERAMIC CHIP	100PF	5.00%	50V
C002	1-126-947-11	ELECT	47UF	20.00%	35V
C003	1-162-927-11	CERAMIC CHIP	100PF	5.00%	50V
C005	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C006	1-126-933-11	ELECT	100UF	20.00%	16V
C007	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C008	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C009	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C011	1-127-715-91	CERAMIC CHIP	0.22UF	10%	16V
C012	1-127-715-91	CERAMIC CHIP	0.22UF	10%	16V
C013	1-126-935-11	ELECT	470UF	20.00%	16V
C014	1-127-715-91	CERAMIC CHIP	0.22UF	10%	16V
C015	1-126-964-11	ELECT	10UF	20.00%	50V
C018	1-127-715-91	CERAMIC CHIP	0.22UF	10%	16V
C019	1-127-715-91	CERAMIC CHIP	0.22UF	10%	16V
C020	1-107-826-11	CERAMIC CHIP	0.1UF	10.00%	16V
C021	1-162-927-11	CERAMIC CHIP	100PF	5.00%	50V
C022	1-127-715-91	CERAMIC CHIP	0.22UF	10%	16V
C023	1-127-715-91	CERAMIC CHIP	0.22UF	10%	16V
C024	1-126-965-91	ELECT	22UF	20.00%	50V
C025	1-127-715-91	CERAMIC CHIP	0.22UF	10%	16V
C026	1-126-947-11	ELECT	47UF	20.00%	35V
C028	1-107-826-11	CERAMIC CHIP	0.1UF	10.00%	16V
C029	1-126-965-91	ELECT	22UF	20.00%	50V
C030	1-127-715-91	CERAMIC CHIP	0.22UF	10%	16V
C031	1-126-935-11	ELECT	470UF	20.00%	16V
C036	1-104-665-11	ELECT	100UF	20.00%	25V
C037	1-164-505-11	CERAMIC CHIP	2.2UF	16V	
C038	1-107-826-11	CERAMIC CHIP	0.1UF	10.00%	16V
C041	1-162-968-11	CERAMIC CHIP	0.0047UF	10.00%	50V
C042	1-127-715-91	CERAMIC CHIP	0.22UF	10%	16V
C043	1-216-864-11	SHORT CHIP	0		
C044	1-164-505-11	CERAMIC CHIP	2.2UF	16V	
C045	1-216-864-11	SHORT CHIP	0		
C046	1-162-969-11	CERAMIC CHIP	0.0068UF	10.00%	25V
C047	1-216-864-11	SHORT CHIP	0		
C048	1-127-715-91	CERAMIC CHIP	0.22UF	10%	16V
C049	1-164-227-11	CERAMIC CHIP	0.022UF	10.00%	25V
C050	1-126-964-11	ELECT	10UF	20.00%	50V
C052	1-162-964-11	CERAMIC CHIP	0.001UF	10.00%	50V

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

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REF NO.	PART NO.	DESCRIPTION	REMARK	REF NO.	PART NO.	DESCRIPTION	REMARK
C207	1-130-495-00	MYLAR	0.1UF 5.00% 50V	C553	1-162-116-00	CERAMIC	680PF 10.00% 2KV
C208	1-162-969-11	CERAMIC CHIP	0.0068UF 10.00% 25V	C554	1-106-359-00	MYLAR	0.0047UF 5.00% 200V
C209	1-126-959-11	ELECT	0.47UF 20.00% 50V	C556	1-128-528-11	ELECT	470UF 20.00% 25V
C210	1-126-968-11	ELECT	100UF 20.00% 50V	C557	1-126-941-11	ELECT	470UF 20.00% 25V
C211	1-126-963-11	ELECT	4.7UF 20.00% 50V	C558	1-165-441-81	ELECT	33UF 20% 160V
C213	1-115-339-11	CERAMIC CHIP	0.1UF 10.00% 50V	C559	1-162-966-11	CERAMIC CHIP	0.0022UF 10.00% 50V
C214	1-126-942-61	ELECT	1000UF 20.00% 25V	C561	1-129-708-91	FILM	0.0033UF 5.00% 630V
C215	1-128-550-11	ELECT	2200UF 20.00% 50V	C565	1-107-645-11	ELECT	22UF 20.00% 200V
C216	1-126-965-91	ELECT	22UF 20.00% 50V	C567 Δ	1-115-520-11	FILM	0.68UF 5.00% 250V
C217	1-126-942-61	ELECT	1000UF 20.00% 25V	C568	1-102-228-00	CERAMIC	470PF 10.00% 500V
C218	1-126-965-91	ELECT	22UF 20.00% 50V	C570 Δ	1-117-671-91	FILM	1UF 5% 250V
C219	1-126-934-11	ELECT	220UF 20.00% 16V	C572	1-117-661-71	FILM	0.15UF 5% 250V
C220	1-126-964-11	ELECT	10UF 20.00% 50V	C574	1-107-635-11	ELECT	4.7UF 20.00% 160V
C231	1-137-374-11	MYLAR	0.047UF 5.00% 50V	C577	1-106-395-00	MYLAR	0.15UF 10.00% 200V
C232	1-137-374-11	MYLAR	0.047UF 5.00% 50V	C578	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V
C234	1-164-315-11	CERAMIC CHIP	470PF 5.00% 50V	C584	1-162-927-11	CERAMIC CHIP	100PF 5.00% 50V
C235	1-164-315-11	CERAMIC CHIP	470PF 5.00% 50V	C587	1-130-777-00	MYLAR	0.1UF 5.00% 100V
C238	1-164-505-11	CERAMIC CHIP	2.2UF 16V	C588	1-163-009-91	CERAMIC CHIP	0.001UF 10.00% 50V
C300	1-127-715-91	CERAMIC CHIP	0.22UF 10% 16V	C590	1-162-968-11	CERAMIC CHIP	0.0047UF 10.00% 50V
C301	1-164-315-11	CERAMIC CHIP	470PF 5.00% 50V	C591	1-216-864-11	SHORT CHIP	0
C302	1-126-964-11	ELECT	10UF 20.00% 50V	C592	1-164-315-11	CERAMIC CHIP	470PF 5.00% 50V
C303	1-126-933-11	ELECT	100UF 20.00% 16V	C593	1-162-927-11	CERAMIC CHIP	100PF 5.00% 50V
C304	1-104-665-11	ELECT	100UF 20.00% 25V	C594	1-162-970-11	CERAMIC CHIP	0.01UF 10.00% 25V
C305	1-104-665-11	ELECT	100UF 20.00% 25V	C596	1-162-923-11	CERAMIC CHIP	47PF 5.00% 50V
C306	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V	C597	1-126-933-11	ELECT	100UF 20.00% 16V
C308	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V	C598	1-125-889-91	CERAMIC CHIP	2.2UF 10% 10V
C309	1-126-964-11	ELECT	10UF 20.00% 50V	C600 Δ	1-165-529-11	MYLAR	0.22UF 10 275V
C311	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V	C601	1-126-934-11	ELECT	220UF 20.00% 16V
C316	1-125-891-11	CERAMIC CHIP	0.47UF 10.00% 10V	C606	1-163-038-91	CERAMIC CHIP	0.1UF 25V
C321	1-126-935-11	ELECT	470UF 20.00% 16V	C608 Δ	1-119-892-51	CERAMIC	470PF 10.00% 250V
C322	1-126-947-11	ELECT	47UF 20.00% 35V	C609 Δ	1-119-892-51	CERAMIC	470PF 10.00% 250V
C323	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V	C610	1-126-959-11	ELECT	0.47UF 20.00% 50V
C324	1-126-933-11	ELECT	100UF 20.00% 16V	C613	1-161-830-00	CERAMIC	0.0047UF 99% 500V
C327	1-127-715-91	CERAMIC CHIP	0.22UF 10% 16V	C614	1-161-830-00	CERAMIC	0.0047UF 500V
C502	1-163-145-00	CERAMIC CHIP	0.0015UF 5.00% 50V	C615	1-161-830-00	CERAMIC	0.0047UF 500V
C503	1-126-964-11	ELECT	10UF 20.00% 50V	C616	1-161-830-00	CERAMIC	0.0047UF 99% 500V
C506	1-107-638-11	ELECT	33UF 20.00% 160V	C626	1-161-830-00	CERAMIC	0.0047UF 99% 500V
C507	1-161-830-00	CERAMIC	0.0047UF 500V	C627	1-161-830-00	CERAMIC	0.0047UF 99% 500V
C510	1-102-112-00	CERAMIC	330PF 10.00% 50V	C628	1-107-680-91	ELECT	22UF 20.00% 450V
C513	1-162-970-11	CERAMIC CHIP	0.01UF 10.00% 25V	C629	1-107-726-91	CERAMIC CHIP	0.01UF 10.00% 16V
C514	1-106-383-00	MYLAR	0.047UF 10.00% 200V	C631	1-136-479-11	FILM	0.001UF 5.00% 100V
C517	1-162-970-11	CERAMIC CHIP	0.01UF 10.00% 25V	C632	1-126-963-11	ELECT	4.7UF 20.00% 50V
C519	1-102-228-00	CERAMIC	470PF 10.00% 500V	C633	1-163-275-11	CERAMIC CHIP	0.001UF 5.00% 50V
C521	1-104-666-11	ELECT	220UF 20.00% 25V	C635	1-126-964-11	ELECT	10UF 20.00% 50V
C523	1-102-228-00	CERAMIC	470PF 10.00% 500V	C636	1-126-963-11	ELECT	4.7UF 20.00% 50V
C527	1-163-021-91	CERAMIC CHIP	0.01UF 10.00% 50V	C637	1-163-009-91	CERAMIC CHIP	0.001UF 10.00% 50V
C528	1-162-115-00	CERAMIC	330PF 10.00% 2KV	C638	1-161-830-00	CERAMIC	0.0047UF 99% 500V
C530	1-137-372-11	MYLAR	0.022UF 5.00% 50V	C639	1-161-830-00	CERAMIC	0.0047UF 99% 500V
C531	1-107-903-11	ELECT	2.2UF 20.00% 50V	C647	1-126-964-11	ELECT	10UF 20.00% 50V
C532	1-126-941-11	ELECT	470UF 20.00% 25V	C648	1-136-497-81	FILM	0.1UF 5.00% 50V
C533	1-126-941-11	ELECT	470UF 20.00% 25V	C649	1-104-665-11	ELECT	100UF 20.00% 25V
C536	1-130-495-00	MYLAR	0.1UF 5.00% 50V	C650	1-125-969-91	CERAMIC	680PF 10.00% 1KV
C537	1-107-911-11	ELECT	220UF 20.00% 50V	C651	1-125-969-91	CERAMIC	680PF 10.00% 1KV
C538 Δ	1-117-651-21	FILM	20000PF 3.00% 1.2KV	C652	1-126-949-11	ELECT	220UF 20.00% 35V
C539 Δ	1-110-541-91	FILM	0.056UF 5.00% 630V	C653	1-165-953-11	FILM	47000PF 3% 800V
C540	1-136-171-00	FILM	0.33UF 5.00% 50V	C654 Δ	1-161-830-00	CERAMIC	0.0047UF 99% 500V
C546	1-165-319-11	CERAMIC CHIP	0.1UF 50V	C655	1-126-952-11	ELECT	1000UF 20.00% 35V
C550	1-106-220-00	MYLAR	0.1UF 10.00% 100V	C656	1-125-969-91	CERAMIC	680PF 10.00% 1KV
C551	1-126-960-11	ELECT	1UF 20.00% 50V	C657	1-125-969-91	CERAMIC	680PF 10.00% 1KV
C552	1-162-116-00	CERAMIC	680PF 10.00% 2KV	C658	1-163-021-91	CERAMIC CHIP	0.01UF 10.00% 50V

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

A

REF NO.	PART NO.	DESCRIPTION	REMARK		
C659	1-125-969-91	CERAMIC	680PF	10.00%	1KV
C660	1-125-969-91	CERAMIC	680PF	10.00%	1KV
C661	1-104-330-91	CERAMIC	470PF	10.00%	1KV
C662	1-126-936-11	ELECT	3300UF	20.00%	16V
C663	1-110-626-11	ELECT	330UF	20.00%	160V
C666	1-126-936-11	ELECT	3300UF	20.00%	16V
C667	1-128-550-11	ELECT	2200UF	20.00%	50V
C670	1-126-960-11	ELECT	1UF	20.00%	50V
C678	1-126-933-11	ELECT	100UF	20.00%	16V
C679	1-125-891-11	CERAMIC CHIP	0.47UF	10.00%	10V
C680	1-126-933-11	ELECT	100UF	20.00%	16V
C681	1-126-933-11	ELECT	100UF	20.00%	16V
C682	1-126-933-11	ELECT	100UF	20.00%	16V
C683	1-126-971-11	ELECT	470UF	20.00%	50V
C686	1-126-934-11	ELECT	220UF	20.00%	16V
C690	1-126-964-11	ELECT	10UF	20.00%	50V
C692	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C695	1-104-665-11	ELECT	100UF	20.00%	25V
C696	1-126-947-11	ELECT	47UF	20.00%	35V
C697	Δ 1-165-529-11	MYLAR	0.22UF	10	275V
C698	1-126-947-11	ELECT	47UF	20.00%	35V
C699	1-126-965-91	ELECT	22UF	20.00%	50V
C900	1-164-505-11	CERAMIC CHIP	2.2UF		16V
C901	1-164-505-11	CERAMIC CHIP	2.2UF		16V
C902	1-126-957-11	ELECT	0.22UF	20.00%	50V
C903	1-126-935-11	ELECT	470UF	20.00%	16V
C906	1-164-346-11	CERAMIC CHIP	1UF		16V
C907	1-164-346-11	CERAMIC CHIP	1UF		16V
C908	1-164-346-11	CERAMIC CHIP	1UF		16V
C909	1-164-346-11	CERAMIC CHIP	1UF		16V
C910	1-164-315-11	CERAMIC CHIP	470PF	5.00%	50V
C911	1-164-315-11	CERAMIC CHIP	470PF	5.00%	50V
C912	1-164-315-11	CERAMIC CHIP	470PF	5.00%	50V
C913	1-164-315-11	CERAMIC CHIP	470PF	5.00%	50V
C914	1-164-315-11	CERAMIC CHIP	470PF	5.00%	50V
C915	1-164-315-11	CERAMIC CHIP	470PF	5.00%	50V
C916	1-164-315-11	CERAMIC CHIP	470PF	5.00%	50V
C917	1-164-315-11	CERAMIC CHIP	470PF	5.00%	50V
C918	1-164-346-11	CERAMIC CHIP	1UF		16V
C919	1-164-346-11	CERAMIC CHIP	1UF		16V
C921	1-127-715-91	CERAMIC CHIP	0.22UF	10%	16V
C928	1-164-346-11	CERAMIC CHIP	1UF		16V
C929	1-164-346-11	CERAMIC CHIP	1UF		16V
C930	1-126-963-11	ELECT	4.7UF	20.00%	50V
C956	1-126-933-11	ELECT	100UF	20.00%	16V
C957	1-164-315-11	CERAMIC CHIP	470PF	5.00%	50V
C958	1-164-346-11	CERAMIC CHIP	1UF		16V
C959	1-164-315-11	CERAMIC CHIP	470PF	5.00%	50V
C960	1-164-346-11	CERAMIC CHIP	1UF		16V
C961	1-126-957-11	ELECT	0.22UF	20.00%	50V
C962	1-164-505-11	CERAMIC CHIP	2.2UF		16V
C975	1-162-964-11	CERAMIC CHIP	0.001UF	10.00%	50V
C5073	1-106-375-12	MYLAR	0.022UF	5.00%	200V
<CONNECTOR>					
* CN004	1-564-510-11	PLUG, CONNECTOR 7P			
* CN010	1-564-508-11	PLUG, CONNECTOR 5P			
* CN014	1-564-510-11	PLUG, CONNECTOR 7P			
CN100	1-695-915-11	TAB (CONTACT)			
* CN202	1-564-509-11	PLUG, CONNECTOR 6P			

REF NO.	PART NO.	DESCRIPTION	REMARK
* CN503	1-564-510-11	PLUG, CONNECTOR 7P	
CN504	1-695-915-11	TAB (CONTACT)	
* CN507	1-564-509-11	PLUG, CONNECTOR 6P	
* CN600	Δ 1-580-843-11	PIN, CONNECTOR (POWER)	
* CN602	1-508-786-00	PIN, CONNECTOR (SMM PITCH) 2P	
* CN903	1-785-608-11	PIN, CONNECTOR 4P	
* CN906	1-564-508-11	PLUG, CONNECTOR 5P	
* CN907	1-564-506-11	PLUG, CONNECTOR 3P	
CT131	1-767-774-22	TRAP, CERAMIC	
CT139	1-767-775-22	TRAP, CERAMIC	
<DIODE>			
D002	8-719-081-97	DIODE MMDL914T1	
D003	8-719-081-97	DIODE MMDL914T1	
D023	8-719-069-60	DIODE UDZSTE-179.1B	
D024	8-719-069-60	DIODE UDZSTE-179.1B	
D025	8-719-069-60	DIODE UDZSTE-179.1B	
D057	8-719-081-97	DIODE MMDL914T1	
D058	8-719-081-97	DIODE MMDL914T1	
D059	8-719-081-97	DIODE MMDL914T1	
D060	8-719-056-84	DIODE UDZ-TE-17-7.5B	
D061	8-719-081-97	DIODE MMDL914T1	
D062	8-719-036-94	DIODE RD5.6SB-T1	
D064	8-719-036-94	DIODE RD5.6SB-T1	
D065	8-719-036-94	DIODE RD5.6SB-T1	
D066	8-719-081-97	DIODE MMDL914T1	
D068	8-719-036-94	DIODE RD5.6SB-T1	
D071	8-719-081-97	DIODE MMDL914T1	
D072	8-719-081-97	DIODE MMDL914T1	
D073	8-719-081-97	DIODE MMDL914T1	
D100	8-719-421-40	DIODE MA77	
D103	8-759-157-40	IC UPC574J	
D108	8-719-036-94	DIODE RD5.6SB-T1	
D109	8-719-036-94	DIODE RD5.6SB-T1	
D200	8-719-914-42	DIODE DA204K	
D201	8-719-081-97	DIODE MMDL914T1	
D202	8-719-081-97	DIODE MMDL914T1	
D203	8-719-081-97	DIODE MMDL914T1	
D204	8-719-081-97	DIODE MMDL914T1	
D205	8-719-081-97	DIODE MMDL914T1	
D212	8-719-081-97	DIODE MMDL914T1	
D213	8-719-081-97	DIODE MMDL914T1	
D356	8-719-081-97	DIODE MMDL914T1	
D504	8-719-302-43	DIODE ELIZ	
D509	8-719-036-94	DIODE RD5.6SB-T1	
D513	8-719-302-43	DIODE ELIZ	
D517	8-719-945-80	DIODE ERC06-15S	
D519	8-719-945-80	DIODE ERC06-15S	
D521	8-719-302-43	DIODE ELIZ	
D522	8-719-028-45	DIODE D2L20U	
D523	8-719-302-43	DIODE ELIZ	
D527	8-719-908-03	DIODE GP08D	
D528	8-719-908-03	DIODE GP08D	
D532	8-719-081-97	DIODE MMDL914T1	
D533	8-719-911-19	DIODE ISS119-25	
D536	8-719-109-89	DIODE RD5.6ESB2	
D537	8-719-081-97	DIODE MMDL914T1	
D545	8-719-081-97	DIODE MMDL914T1	
D547	8-719-991-33	DIODE ISS133T-77	

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

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REF NO.	PART NO.	DESCRIPTION	REMARK	REF NO.	PART NO.	DESCRIPTION	REMARK
D548	8-719-991-33	DIODE ISS133T-77		FB600	1-410-397-21	FERRITE	1.1UH
D600	8-719-911-19	DIODE ISS119-25		FB601	1-412-911-31	FERRITE	0UH
D607	8-719-510-53	DIODE D4SB60L		FB602	1-412-911-31	FERRITE	0UH
D617	8-719-077-76	DIODE D2SB60A-F04					
D622	8-719-923-86	DIODE MTZJ-T-77-15				<FILTER>	
D625	8-719-979-64	DIODE UF4005PKG23		FL600	1-239-358-21	FILTER, NOISE	
D626	8-719-923-86	DIODE MTZJ-T-77-15		FL601	1-239-358-21	FILTER, NOISE	
D627	6-500-567-21	DIODE 10ERB20-TB5		FL602	\triangle 1-533-597-41	IC LINK	5A 90V
D629	8-719-082-03	DIODE MM3Z15VT1		FL603	\triangle 1-533-597-41	IC LINK	5A 90V
D631	8-719-082-03	DIODE MM3Z15VT1		FL604	1-239-358-21	FILTER, NOISE	
D632	8-719-032-12	DIODE D1NS6		FL605	1-239-358-21	FILTER, NOISE	
D633	8-719-063-73	DIODE D1NL20U-TR		FL606	1-239-358-21	FILTER, NOISE	
D635	8-719-050-18	DIODE D4SBL20U		FL607	1-239-358-21	FILTER, NOISE	
D636	8-719-510-12	DIODE D10SC4M				<IC>	
D637	8-719-052-92	DIODE D10SBS4F		IC003	6-704-004-01	IC BR24L16F-WE2	
D638	8-719-510-12	DIODE D10SC4M		IC200	6-703-475-01	IC AN5276T	
D640	8-719-110-47	DIODE RD18ESB		IC502	8-759-700-07	IC NJM2903M	
D643	8-719-081-97	DIODE MMDL914T1		IC503	8-759-339-59	IC TDA8177	
D644	8-719-081-97	DIODE MMDL914T1		IC602	8-759-670-30	IC MCZ3001D	
D647	8-719-063-73	DIODE D1NL20U-TR		IC603	6-704-264-01	IC EK1135	
D651	8-719-081-97	DIODE MMDL914T1		IC604	8-759-701-59	IC NJM78M09FA	
D652	8-719-083-82	DIODE UDZS-TE17-12B		IC605	8-759-460-72	IC BA033FP-E2	
D653	8-719-948-45	DIODE ERA22-08		IC606	6-703-478-01	IC PQ018EF01SZH	
D654	8-719-109-96	DIODE RD6.8ESB1		IC607	8-759-471-81	IC PQ05RD11	
D655	8-719-081-97	DIODE MMDL914T1		IC610	6-702-987-01	IC BA18BCOWFP-E2	
D657	8-719-081-97	DIODE MMDL914T1				<JACK>	
D658	8-719-083-82	DIODE UDZS-TE17-12B		J901	1-817-850-11	PHONO JACK 9P	
D661	8-719-923-86	DIODE MTZJ-T-77-15				<CHIP CONDUCTOR>	
D662	8-719-072-70	DIODE MA2ZD14001S0		JR001	1-216-864-11	SHORT CHIP	0
D663	8-719-081-97	DIODE MMDL914T1		JR002	1-216-864-11	SHORT CHIP	0
D664	8-719-991-33	DIODE ISS133T-77		JR003	1-216-864-11	SHORT CHIP	0
D665	8-719-083-73	DIODE UDZSTE-1736B		JR004	1-216-864-11	SHORT CHIP	0
D666	8-719-991-33	DIODE ISS133T-77		JR006	1-216-295-91	SHORT CHIP	0
D900	8-719-036-94	DIODE RD5.6SB-T1		JR007	1-216-864-11	SHORT CHIP	0
D901	8-719-069-60	DIODE UDZSTE-179.1B		JR008	1-216-864-11	SHORT CHIP	0
D902	8-719-036-94	DIODE RD5.6SB-T1		JR009	1-216-864-11	SHORT CHIP	0
D903	8-719-036-94	DIODE RD5.6SB-T1		JR010	1-216-295-91	SHORT CHIP	0
D905	8-719-069-60	DIODE UDZSTE-179.1B		JR011	1-216-864-11	SHORT CHIP	0
D906	8-719-036-94	DIODE RD5.6SB-T1		JR013	1-216-864-11	SHORT CHIP	0
D907	8-719-036-94	DIODE RD5.6SB-T1		JR014	1-216-864-11	SHORT CHIP	0
D908	8-719-036-94	DIODE RD5.6SB-T1		JR016	1-216-864-11	SHORT CHIP	0
D911	8-719-036-94	DIODE RD5.6SB-T1		JR017	1-216-864-11	SHORT CHIP	0
D912	8-719-036-94	DIODE RD5.6SB-T1		JR018	1-216-864-11	SHORT CHIP	0
D913	8-719-036-94	DIODE RD5.6SB-T1		JR019	1-216-864-11	SHORT CHIP	0
D915	8-719-036-94	DIODE RD5.6SB-T1		JR020	1-216-864-11	SHORT CHIP	0
D916	8-719-036-94	DIODE RD5.6SB-T1		JR021	1-216-864-11	SHORT CHIP	0
D917	8-719-036-94	DIODE RD5.6SB-T1		JR022	1-216-864-11	SHORT CHIP	0
D920	8-719-036-94	DIODE RD5.6SB-T1		JR024	1-216-864-11	SHORT CHIP	0
D921	8-719-036-94	DIODE RD5.6SB-T1		JR025	1-216-864-11	SHORT CHIP	0
D922	8-719-036-94	DIODE RD5.6SB-T1		JR026	1-216-864-11	SHORT CHIP	0
D5018	8-719-053-32	DIODE FMU-G16S		JR027	1-216-864-11	SHORT CHIP	0
		<DY CONNECTOR>		JR028	1-216-864-11	SHORT CHIP	0
* DY1	1-580-798-11	CONNECTOR PIN (DY) 6P		JR029	1-216-864-11	SHORT CHIP	0
		<FERRITE BEAD>					
FB100	1-414-229-11	FERRITE	0UH				
FB501	1-410-397-21	FERRITE	1.1UH				
FB502	1-410-397-21	FERRITE	1.1UH				

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REF NO.	PART NO.	DESCRIPTION	REMARK
JR030	1-216-864-11	SHORT CHIP	0
JR600	1-216-864-11	SHORT CHIP	0
JR602	1-216-864-11	SHORT CHIP	0
JR911	1-216-864-11	SHORT CHIP	0
JR1081	1-216-864-11	SHORT CHIP	0
JR1181	1-216-864-11	SHORT CHIP	0
JR1186	1-216-864-11	SHORT CHIP	0
JR1580	1-216-295-91	SHORT CHIP	0
JR1581	1-216-295-91	SHORT CHIP	0
JR1582	1-216-295-91	SHORT CHIP	0
JR1681	1-216-864-11	SHORT CHIP	0
JR1980	1-216-864-11	SHORT CHIP	0
<COIL>			
L003	1-414-856-11	INDUCTOR	10UH
L004	1-414-187-11	INDUCTOR	47UH
L005	1-469-525-91	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	1-412-058-11	INDUCTOR	10UH
L012	1-469-525-91	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
L038	1-414-856-11	INDUCTOR	10UH
L039	1-414-158-11	INDUCTOR	2.2UH
L100	1-414-857-11	INDUCTOR	100UH
L101	1-408-959-21	INDUCTOR	1.2UH
L103	1-410-987-42	INDUCTOR	0.33UH
L104	1-414-187-11	INDUCTOR	47UH
L106	1-414-189-31	INDUCTOR	100UH
L502	1-410-396-41	FERRITE	0.45UH
L503	1-412-525-31	INDUCTOR	10UH
L507	1-419-633-21	INDUCTOR	10MH
L511	1-406-977-21	INDUCTOR	100UH
L513	1-412-552-11	INDUCTOR	2.2MH
L514	1-408-947-00	INDUCTOR	2.2MH
L515	1-459-104-00	COIL, WITH CORE	
L518	1-414-187-11	INDUCTOR	47UH
L600	1-412-529-11	INDUCTOR	22UH
L690	1-412-525-31	INDUCTOR	10UH
L902	1-414-187-11	INDUCTOR	47UH
<PHOTO COUPLER>			
PH601	\triangle 8-749-924-35	PHOTO COUPLER ON3171-R	
PH602	\triangle 8-749-924-35	PHOTO COUPLER ON3171-R	
<IC LINK>			
PS600	\triangle 1-533-597-41	IC LINK	5A 90V
PS601	\triangle 1-533-597-41	IC LINK	5A 90V
PS602	\triangle 1-533-597-41	IC LINK	5A 90V
PS603	\triangle 1-533-597-41	IC LINK	5A 90V

REF NO.	PART NO.	DESCRIPTION	REMARK
<TRANSISTOR>			
Q001	8-729-421-22	TRANSISTOR UN2211	
Q012	8-729-010-05	TRANSISTOR MSB709-RT1	
Q013	8-729-010-05	TRANSISTOR MSB709-RT1	
Q015	8-729-421-22	TRANSISTOR UN2211	
Q016	8-729-010-05	TRANSISTOR MSB709-RT1	
Q017	8-729-010-05	TRANSISTOR MSB709-RT1	
Q100	8-729-010-05	TRANSISTOR MSB709-RT1	
Q102	8-729-022-54	TRANSISTOR 2SC3779C,D-AA	
Q103	6-550-600-01	TRANSISTOR MUN2216T1	
Q104	6-550-600-01	TRANSISTOR MUN2216T1	
Q111	8-729-010-05	TRANSISTOR MSB709-RT1	
Q202	8-729-010-05	TRANSISTOR MSB709-RT1	
Q203	8-729-010-05	TRANSISTOR MSB709-RT1	
Q501	8-729-216-22	TRANSISTOR 2SA1162-G	
Q505	8-729-931-45	TRANSISTOR IRF614	
Q506	8-729-119-80	TRANSISTOR 2SC2688-LK	
Q511	6-550-020-01	TRANSISTOR 2SD2634-CA	
Q512	8-729-010-05	TRANSISTOR MSB709-RT1	
Q513	8-729-010-05	TRANSISTOR MSB709-RT1	
Q514	8-729-010-05	TRANSISTOR MSB709-RT1	
Q515	8-729-010-05	TRANSISTOR MSB709-RT1	
Q516	8-729-200-17	TRANSISTOR 2SA1091-O	
Q600	8-729-010-05	TRANSISTOR MSB709-RT1	
Q607	8-729-052-32	TRANSISTOR IRFIB7N50A-LF31	
Q608	8-729-052-32	TRANSISTOR IRFIB7N50A-LF31	
Q609	8-729-016-42	TRANSISTOR KTC3199GR-TP	
Q612	8-729-421-22	TRANSISTOR UN2211	
Q613	8-729-010-05	TRANSISTOR MSB709-RT1	
Q614	8-729-421-22	TRANSISTOR UN2211	
Q615	8-729-010-05	TRANSISTOR MSB709-RT1	
Q616	8-729-216-22	TRANSISTOR 2SA1162-G	
Q617	8-729-010-05	TRANSISTOR MSB709-RT1	
Q618	8-729-010-05	TRANSISTOR MSB709-RT1	
Q900	8-729-010-05	TRANSISTOR MSB709-RT1	
Q901	6-550-600-01	TRANSISTOR MUN2216T1	
Q902	6-550-600-01	TRANSISTOR MUN2216T1	
<RESISTOR>			
R001	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R002	1-216-809-11	METAL CHIP	100 5% 1/10W
R003	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R004	1-216-809-11	METAL CHIP	100 5% 1/10W
R010	1-216-833-11	METAL CHIP	10K 5% 1/10W
R011	1-216-809-11	METAL CHIP	100 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	1-218-851-11	METAL CHIP	1.5K 0.50% 1/10W
R023	1-216-823-11	METAL CHIP	1.5K 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

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REF NO.	PART NO.	DESCRIPTION	REMARK	REF NO.	PART NO.	DESCRIPTION	REMARK
R045	1-216-809-11	METAL CHIP	100 5% 1/10W	R309	1-216-847-11	METAL CHIP	150K 5% 1/10W
R046	1-216-809-11	METAL CHIP	100 5% 1/10W	R310	1-216-818-11	METAL CHIP	560 5% 1/10W
R048	1-216-809-11	METAL CHIP	100 5% 1/10W	R311	1-216-841-11	METAL CHIP	47K 5% 1/10W
R051	1-218-885-11	METAL CHIP	39K 0.50% 1/10W	R312	1-216-836-11	METAL CHIP	18K 5% 1/10W
R056	1-216-821-11	METAL CHIP	1K 5% 1/10W	R313	1-216-836-11	METAL CHIP	18K 5% 1/10W
R058	1-216-864-11	SHORT CHIP	0	R314	1-218-863-11	METAL CHIP	4.7K 0.50% 1/10W
R060	1-216-809-11	METAL CHIP	100 5% 1/10W	R315	1-218-863-11	METAL CHIP	4.7K 0.50% 1/10W
R061	1-216-819-11	METAL CHIP	680 5% 1/10W	R316	1-218-867-11	METAL CHIP	6.8K 0.50% 1/10W
R088	1-216-823-11	METAL CHIP	1.5K 5% 1/10W	R317	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
R095	1-216-864-11	SHORT CHIP	0	R322	1-216-864-11	SHORT CHIP	0
R096	1-216-813-11	METAL CHIP	220 5% 1/10W	R323	1-216-809-11	METAL CHIP	100 5% 1/10W
R097	1-216-813-11	METAL CHIP	220 5% 1/10W	R336	1-216-833-11	METAL CHIP	10K 5% 1/10W
R099	1-216-813-11	METAL CHIP	220 5% 1/10W	R337	1-216-817-11	METAL CHIP	470 5% 1/10W
R100	1-216-821-11	METAL CHIP	1K 5% 1/10W	R338	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R103	1-211-981-11	METAL CHIP	33 0.50% 1/10W	R339	1-216-809-11	METAL CHIP	100 5% 1/10W
R106	1-216-829-11	METAL CHIP	4.7K 5% 1/10W	R340	1-216-833-11	METAL CHIP	10K 5% 1/10W
R107	1-216-828-11	METAL CHIP	3.9K 5% 1/10W	R341	1-216-809-11	METAL CHIP	100 5% 1/10W
R108	1-218-839-11	METAL CHIP	470 0.50% 1/10W	R344	1-216-864-11	SHORT CHIP	0
R109	1-216-019-00	RES-CHIP	56 5% 1/10W	R345	1-216-864-11	SHORT CHIP	0
R110	1-216-821-11	METAL CHIP	1K 5% 1/10W	R355	1-216-837-11	METAL CHIP	22K 5% 1/10W
R111	1-216-833-11	METAL CHIP	10K 5% 1/10W	R360	1-218-877-11	METAL CHIP	18K 0.50% 1/10W
R112	1-218-867-11	METAL CHIP	6.8K 0.50% 1/10W	R361	1-216-830-11	METAL CHIP	5.6K 5% 1/10W
R113	1-216-825-11	METAL CHIP	2.2K 5% 1/10W	R363	1-218-859-11	METAL CHIP	3.3K 0.50% 1/10W
R114	1-216-825-11	METAL CHIP	2.2K 5% 1/10W	R364	1-216-817-11	METAL CHIP	470 5% 1/10W
R115	1-216-809-11	METAL CHIP	100 5% 1/10W	R365	1-216-864-11	SHORT CHIP	0
R116	1-216-809-11	METAL CHIP	100 5% 1/10W	R379	1-216-809-11	METAL CHIP	100 5% 1/10W
R118	1-216-809-11	METAL CHIP	100 5% 1/10W	R380	1-216-809-11	METAL CHIP	100 5% 1/10W
R119	1-211-981-11	METAL CHIP	33 0.50% 1/10W	R381	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R121	1-215-925-11	METAL OXIDE	22K 5% 3W	R382	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R131	1-216-809-11	METAL CHIP	100 5% 1/10W	R384	1-216-809-11	METAL CHIP	100 5% 1/10W
R150	1-216-809-11	METAL CHIP	100 5% 1/10W	R386	1-216-817-11	METAL CHIP	470 5% 1/10W
R200	1-216-832-11	METAL CHIP	8.2K 5% 1/10W	R387	1-216-809-11	METAL CHIP	100 5% 1/10W
R201	1-216-827-11	METAL CHIP	3.3K 5% 1/10W	R388	1-216-843-11	METAL CHIP	68K 5% 1/10W
R202	1-216-830-11	METAL CHIP	5.6K 5% 1/10W	R392	1-216-809-11	METAL CHIP	100 5% 1/10W
R203	1-216-832-11	METAL CHIP	8.2K 5% 1/10W	R395	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R204	1-216-827-11	METAL CHIP	3.3K 5% 1/10W	R397	1-216-845-11	METAL CHIP	100K 5% 1/10W
R205	1-216-830-11	METAL CHIP	5.6K 5% 1/10W	R398	1-216-125-00	RES-CHIP	1.5M 5% 1/10W
R207	1-218-867-11	METAL CHIP	6.8K 0.50% 1/10W	R500	1-216-821-11	METAL CHIP	1K 5% 1/10W
R208	1-218-867-11	METAL CHIP	6.8K 0.50% 1/10W	R505	1-218-895-11	METAL CHIP	100K 0.50% 1/10W
R210	1-216-835-11	METAL CHIP	15K 5% 1/10W	R506	1-218-879-11	METAL CHIP	22K 0.50% 1/10W
R211	1-216-835-11	METAL CHIP	15K 5% 1/10W	R507	1-249-389-11	CARBON	4.7 5% 1/4W
R212	1-216-864-11	SHORT CHIP	0	R508	1-216-471-71	METAL OXIDE	27 5% 3W
R217	1-249-411-11	CARBON	330 5% 1/4W	R509	1-243-528-71	METAL OXIDE	56 5% 3W
R218	1-216-864-11	SHORT CHIP	0	R510	1-215-884-11	METAL OXIDE	47 5% 2W
R219	1-249-411-11	CARBON	330 5% 1/4W	R511	1-243-525-71	METAL OXIDE	33 5% 3W
R220	1-216-864-11	SHORT CHIP	0	R515	1-243-531-71	METAL OXIDE	100 5% 3W
R221	1-216-821-11	METAL CHIP	1K 5% 1/10W	R517	1-208-798-11	METAL CHIP	4.7K 0.50% 1/10W
R234	1-249-401-11	CARBON	47 5% 1/4W	R519	1-243-535-71	METAL OXIDE	220 5% 3W
R235	1-249-401-11	CARBON	47 5% 1/4W	R520	1-218-867-11	METAL CHIP	6.8K 0.50% 1/10W
R236	1-216-833-11	METAL CHIP	10K 5% 1/10W	R522	1-218-867-11	METAL CHIP	6.8K 0.50% 1/10W
R237	1-216-809-11	METAL CHIP	100 5% 1/10W	R523	1-249-411-11	CARBON	330 5% 1/4W
R238	1-216-809-11	METAL CHIP	100 5% 1/10W	R525	1-218-911-11	METAL CHIP	470K 0.50% 1/10W
R240	1-216-825-11	METAL CHIP	2.2K 5% 1/10W	R526	1-218-863-11	METAL CHIP	4.7K 0.50% 1/10W
R241	1-216-825-11	METAL CHIP	2.2K 5% 1/10W	R531	1-247-843-11	CARBON	3.3K 5% 1/4W
R242	1-216-837-11	METAL CHIP	22K 5% 1/10W	R533	1-249-417-11	CARBON	1K 5% 1/4W
R301	1-216-861-11	METAL CHIP	2.2M 5% 1/10W	R539	1-216-049-11	RES-CHIP	1K 5% 1/10W
R303	1-216-857-11	METAL CHIP	1M 5% 1/10W	R542	1-216-833-11	METAL CHIP	10K 5% 1/10W
R304	1-216-848-11	METAL CHIP	180K 5% 1/10W	R543	1-216-437-00	METAL OXIDE	5.6K 5% 1W
R305	1-216-864-11	SHORT CHIP	0	R546	1-216-864-11	SHORT CHIP	0
R306	1-218-849-11	METAL CHIP	1.2K 0.50% 1/10W	R548	1-216-665-11	METAL CHIP	3.9K 0.50% 1/10W

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

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REF NO.	PART NO.	DESCRIPTION	REMARK		
R549	1-215-447-00	METAL	12K	1%	1/4W
R550	1-216-864-11	SHORT CHIP	0		
R551	1-215-447-00	METAL	12K	1%	1/4W
R552	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R553	1-215-447-00	METAL	12K	1%	1/4W
R554	1-215-447-00	METAL	12K	1%	1/4W
R555	1-215-873-00	METAL OXIDE	4.7K	5%	1W
R556	1-218-859-11	METAL CHIP	3.3K	0.50%	1/10W
R560	1-216-073-91	RES-CHIP	10K	5%	1/10W
R562	1-249-401-11	CARBON	47	5%	1/4W
R564	1-218-899-11	METAL CHIP	150K	0.50%	1/16W
R565	1-216-836-11	METAL CHIP	18K	5%	1/10W
R567	1-216-849-11	METAL CHIP	220K	5%	1/10W
R568	1-249-383-11	CARBON	1.5	5%	1/4W
R570	1-218-867-11	METAL CHIP	6.8K	0.50%	1/10W
R571	1-218-863-11	METAL CHIP	4.7K	0.50%	1/10W
R573	1-216-838-11	METAL CHIP	27K	5%	1/10W
R575	1-218-857-11	METAL CHIP	2.7K	0.50%	1/10W
R577	1-243-535-71	METAL OXIDE	220	5%	3W
R578	1-216-369-00	METAL OXIDE	1	5%	2W
R580	1-218-861-11	METAL CHIP	3.9K	0.50%	1/10W
R581	1-218-871-11	METAL CHIP	10K	0.50%	1/10W
R582	1-218-915-11	METAL CHIP	680K	0.50%	1/10W
R585	1-249-385-11	CARBON	2.2	5%	1/4W
R586	1-211-973-11	METAL CHIP	15	0.50%	1/10W
R587	1-218-907-11	METAL CHIP	330K	0.50%	1/10W
R588	1-243-535-71	METAL OXIDE	220	5%	3W
R589	1-215-888-00	METAL OXIDE	220	5%	2W
R590	1-245-470-21	METAL	220K	1%	1/4W
R591	1-260-288-11	CARBON	0.47	5%	1/2W
R592	1-218-895-11	METAL CHIP	100K	0.50%	1/10W
R593	1-260-288-11	CARBON	0.47	5%	1/2W
R594	1-260-288-11	CARBON	0.47	5%	1/2W
R596	1-215-916-71	METAL OXIDE	680	5%	3W
R597	1-247-750-11	CARBON	680	5%	1/2W
R599	1-216-838-11	METAL CHIP	27K	5%	1/10W
R601	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R603	1-260-328-11	CARBON	1K	5%	1/2W
R604	1-218-863-11	METAL CHIP	4.7K	0.50%	1/10W
R605	1-218-863-11	METAL CHIP	4.7K	0.50%	1/10W
R606	1-218-863-11	METAL CHIP	4.7K	0.50%	1/10W
R613	Δ 1-240-917-91	METAL	8.2M	5%	1W
R622	1-240-251-11	CEMENTED	6.8	5%	10W
R642	1-242-949-11	FUSIBLE	0.1	10%	1W
R651	1-208-774-11	METAL CHIP	470	0.50%	1/10W
R652	1-218-873-11	METAL CHIP	12K	0.50%	1/10W
R653	1-208-758-11	METAL CHIP	100	0.50%	1/10W
R654	1-208-805-11	METAL CHIP	9.1K	0.50%	1/10W
R660	1-216-295-91	SHORT CHIP	0		
R661	1-218-760-11	METAL CHIP	220K	0.50%	1/10W
R662	1-216-639-11	METAL CHIP	330	0.50%	1/10W
R664	1-208-840-11	METAL CHIP	270K	0.50%	1/10W
R665	1-249-389-11	CARBON	4.7	5%	1/4W
R669	1-249-417-11	CARBON	1K	5%	1/4W
R670	1-249-393-11	CARBON	10	5%	1/4W
R672	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R673	1-249-393-11	CARBON	10	5%	1/4W
R675	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R676	1-217-611-00	METAL	0.1	10%	2W
R677	1-249-418-11	CARBON	1.2K	5%	1/4W

REF NO.	PART NO.	DESCRIPTION	REMARK		
R678	1-249-421-11	CARBON	2.2K	5%	1/4W
R679	1-216-864-11	SHORT CHIP	0		
R681	1-216-073-91	RES-CHIP	10K	5%	1/10W
R687	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R690	1-249-417-11	CARBON	1K	5%	1/4W
R694	1-208-826-11	METAL CHIP	68K	0.50%	1/10W
R695	1-208-812-11	METAL CHIP	18K	0.50%	1/10W
R696	1-216-864-11	SHORT CHIP	0		
R699	1-216-073-91	RES-CHIP	10K	5%	1/10W
R900	1-216-809-11	METAL CHIP	100	5%	1/10W
R901	1-216-809-11	METAL CHIP	100	5%	1/10W
R902	1-216-821-11	METAL CHIP	1K	5%	1/10W
R903	1-216-809-11	METAL CHIP	100	5%	1/10W
R904	1-216-821-11	METAL CHIP	1K	5%	1/10W
R905	1-216-840-11	METAL CHIP	39K	5%	1/10W
R906	1-216-817-11	METAL CHIP	470	5%	1/10W
R907	1-216-840-11	METAL CHIP	39K	5%	1/10W
R908	1-216-840-11	METAL CHIP	39K	5%	1/10W
R909	1-216-840-11	METAL CHIP	39K	5%	1/10W
R910	1-216-817-11	METAL CHIP	470	5%	1/10W
R912	1-216-809-11	METAL CHIP	100	5%	1/10W
R913	1-216-853-11	METAL CHIP	470K	5%	1/10W
R914	1-216-853-11	METAL CHIP	470K	5%	1/10W
R915	1-216-849-11	METAL CHIP	220K	5%	1/10W
R916	1-216-849-11	METAL CHIP	220K	5%	1/10W
R917	1-216-807-11	METAL CHIP	68	5%	1/10W
R918	1-216-295-91	SHORT CHIP	0		
R919	1-216-809-11	METAL CHIP	100	5%	1/10W
R920	1-216-849-11	METAL CHIP	220K	5%	1/10W
R921	1-216-849-11	METAL CHIP	220K	5%	1/10W
R922	1-216-809-11	METAL CHIP	100	5%	1/10W
R923	1-216-809-11	METAL CHIP	100	5%	1/10W
R924	1-216-853-11	METAL CHIP	470K	5%	1/10W
R925	1-216-809-11	METAL CHIP	100	5%	1/10W
R928	1-216-807-11	METAL CHIP	68	5%	1/10W
R929	1-216-807-11	METAL CHIP	68	5%	1/10W
R930	1-216-807-11	METAL CHIP	68	5%	1/10W
R931	1-216-807-11	METAL CHIP	68	5%	1/10W
R940	1-216-849-11	METAL CHIP	220K	5%	1/10W
R941	1-216-849-11	METAL CHIP	220K	5%	1/10W
R942	1-216-807-11	METAL CHIP	68	5%	1/10W
R945	1-216-840-11	METAL CHIP	39K	5%	1/10W
R946	1-216-840-11	METAL CHIP	39K	5%	1/10W
R948	1-216-809-11	METAL CHIP	100	5%	1/10W
R949	1-216-809-11	METAL CHIP	100	5%	1/10W
R950	1-216-809-11	METAL CHIP	100	5%	1/10W
R952	1-216-849-11	METAL CHIP	220K	5%	1/10W
R953	1-216-840-11	METAL CHIP	39K	5%	1/10W
R954	1-216-849-11	METAL CHIP	220K	5%	1/10W
R955	1-216-840-11	METAL CHIP	39K	5%	1/10W
R957	1-216-807-11	METAL CHIP	68	5%	1/10W
R972	1-216-809-11	METAL CHIP	100	5%	1/10W
R973	1-216-809-11	METAL CHIP	100	5%	1/10W
R974	1-216-809-11	METAL CHIP	100	5%	1/10W
R975	1-216-809-11	METAL CHIP	100	5%	1/10W
R992	1-216-864-11	SHORT CHIP	0		
R2644	1-249-389-11	CARBON	4.7	5%	1/4W
R5000	1-216-081-00	RES-CHIP	22K	5%	1/10W
R5001	1-208-822-11	METAL CHIP	47K	0.50%	1/10W
R5002	1-216-073-91	RES-CHIP	10K	5%	1/10W

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

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REF NO.	PART NO.	DESCRIPTION	REMARK		
R5003	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R5005	1-216-809-11	METAL CHIP	100	5%	1/10W
R5006	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R5007	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R5008	1-216-845-11	METAL CHIP	100K	5%	1/10W
R5009	1-216-853-11	METAL CHIP	470K	5%	1/10W
R5010	1-216-833-11	METAL CHIP	10K	5%	1/10W
R5011	1-216-828-11	METAL CHIP	3.9K	5%	1/10W
R5012	1-216-835-11	METAL CHIP	15K	5%	1/10W
R5013	1-216-857-11	METAL CHIP	1M	5%	1/10W
R5014	1-216-857-11	METAL CHIP	1M	5%	1/10W
R5015	1-208-830-11	METAL CHIP	100K	0.50%	1/10W
R5016	1-216-833-11	METAL CHIP	10K	5%	1/10W
R5020	1-216-389-11	METAL OXIDE	1	5%	3W
R5021	1-216-655-11	METAL CHIP	1.5K	0.50%	1/10W
R5022	1-245-472-21	METAL	270K	1%	1/4W
R5023	1-247-891-00	CARBON	330K	5%	1/4W
R5024	1-216-845-11	METAL CHIP	100K	5%	1/10W
R5025	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R5026	1-245-471-21	METAL	240K	1%	1/4W
R5027	1-245-466-21	METAL	150K	1%	1/4W
R5028	1-218-859-11	METAL CHIP	3.3K	0.50%	1/10W
R5031	1-215-447-00	METAL	12K	1%	1/4W
R5032	1-243-606-71	METAL OXIDE	1K	5%	3W
R5033	1-216-809-11	METAL CHIP	100	5%	1/10W
R5034	1-216-851-11	METAL CHIP	330K	5%	1/10W
R5036	1-215-454-00	METAL	24K	1%	1/4W
R5049	1-216-864-11	SHORT CHIP	0		
R6000	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R6001	1-216-073-91	RES-CHIP	10K	5%	1/10W
R6002	1-216-073-91	RES-CHIP	10K	5%	1/10W
R6003	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R6006	1-249-377-11	CARBON	0.47	5%	1/4W
R6007	1-216-864-11	SHORT CHIP	0		
R6008	1-249-393-11	CARBON	10	5%	1/4W
R6009	1-216-793-11	METAL CHIP	4.7	5%	1/10W
R6010	1-216-093-91	RES-CHIP	68K	5%	1/10W
R6011	1-216-073-91	RES-CHIP	10K	5%	1/10W
R6012	1-215-882-00	METAL OXIDE	22	5%	2W
R6013	1-208-824-11	METAL CHIP	56K	0.50%	1/10W
R6016	1-247-903-00	CARBON	1M	5%	1/4W
R6019	1-247-903-00	CARBON	1M	5%	1/4W
R6020	1-217-159-00	METAL	0.68	10%	5W
R6021	1-216-833-11	METAL CHIP	10K	5%	1/10W
R6022	1-216-835-11	METAL CHIP	15K	5%	1/10W
R6023	1-216-841-11	METAL CHIP	47K	5%	1/10W
R6024	1-216-833-11	METAL CHIP	10K	5%	1/10W
R6025	1-216-835-11	METAL CHIP	15K	5%	1/10W
R6026	1-216-833-11	METAL CHIP	10K	5%	1/10W
R6027	1-216-833-11	METAL CHIP	10K	5%	1/10W
R6028	1-208-840-11	METAL CHIP	270K	0.50%	1/10W
R6029	1-218-760-11	METAL CHIP	220K	0.50%	1/10W
<RELAY>					
R600	\triangle 1-755-198-12	RELAY, AC POWER			
R602	\triangle 1-755-395-11	RELAY (AC POWER)			
R603	\triangle 1-755-198-12	RELAY, AC POWER			

REF NO.	PART NO.	DESCRIPTION	REMARK
<SWITCH>			
S501	1-572-707-11	SWITCH, LEVER	
S502	1-572-707-11	SWITCH, LEVER	
SWF100	1-781-042-11	FILTER, SURFACE WAVE	
<TRANSFORMER>			
T501	\triangle 1-437-195-14	TRANSFORMER, HORIZONTAL DRIVE	
T503	\triangle 1-453-284-11	TRANSFORMER ASSY FLYBACK (NX-4009/M314)	
T504	1-433-850-11	TRANSFORMER, HORIZONTAL LINEAR	
T505	1-426-981-11	TRANSFORMER, FERRITE (PMT)	
T601	\triangle 1-443-069-11	CONVERTER TRANSFORMER (PIT)	
T605	\triangle 1-437-851-11	TRANSFORMER ASSY, POWER (HST)	
<THERMISTOR>			
TH500	1-800-193-00	THERMISTOR	
TH600	\triangle 1-803-541-11	THERMISTOR	
TH601	1-803-586-11	THERMISTOR, NTC	
TP02	1-536-354-00	POST PIN	
TP03	1-536-354-00	POST PIN	
TP04	1-536-354-00	POST PIN	
TP101	1-536-354-00	POST PIN	
TP501	1-536-354-00	POST PIN	
TP502	1-536-354-00	POST PIN	
<TUNER>			
TU101	1-693-636-11	TUNER (TEDE9)	
<VARISTOR>			
VD601	1-803-830-11	VARISTOR (ERZV14D621)	
<CRYSTAL>			
X001	1-795-839-21	QUARTZ CRYSTAL UNIT	
VARIANT PARTS LIST			
<CAPACITOR>			
C619	1-117-753-11	ELECT(BLOCK) 470UF	20.00% 450V (KV-XR29M50)
C620	1-113-611-11	ELECT(BLOCK) 820UF	20% 250V (Except KV-XR29M50)
C621	1-113-611-11	ELECT(BLOCK) 820UF	20% 250V (Except KV-XR29M50)
C691	1-107-674-91	ELECT 0.47UF	20% 450V (Except KV-XR29M50)
<CONNECTOR>			
CN601	1-573-963-11	PIN, CONNECTOR (PC BOARD) 3P	(Except KV-XR29M50)
* CN603	1-691-134-11	PIN, CONNECTOR (PC BOARD) 2P	(KV-XR29M50)

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

A **C**

REF NO.	PART NO.	DESCRIPTION	REMARK
		<DIODE>	
D613	8-719-911-55	DIODE U05G (Except KV-XR29M50)	
D614	8-719-911-55	DIODE U05G (Except KV-XR29M50)	
D659	8-719-911-55	DIODE U05G (Except KV-XR29M50)	
D660	8-719-924-11	DIODE MTZJ-T-77-22 (Except KV-XR29M50)	
		<IC>	
IC001	6-705-435-11	IC TDA12067H1/N1B0B0KO (Saudi Arabia/ME)	
IC001	6-705-435-01	IC TDA12067H1/N1B0B0KN (KV-XR29M50/Russia)	
IC608	Δ 1-761-541-11	SELECTION UNIT, RECTIFIER (Except KV-XR29M50)	
		<RESISTOR>	
R607	1-216-864-11	SHORT CHIP 0 (KV-XR29M50)	
R607	1-216-825-11	METAL CHIP 2.2K 5% 1/10 (Except KV-XR29M50)	
R638	1-260-131-11	CARBON 470K 5% 1/2W (Except KV-XR29M50)	
R639	1-260-131-11	CARBON 470K 5% 1/2W (Except KV-XR29M50)	
R6004	1-260-300-11	CARBON 4.7 5% 1/2W (Except KV-XR29M50)	
R6005	1-260-300-11	CARBON 4.7 5% 1/2W (Except KV-XR29M50)	
R6014	1-240-262-11	CEMENTED 0.68 5% 10W (KV-XR29M50/Russia)	
R6014	1-205-998-11	CEMENTED 1 5% 10W (Saudi Arabia/ME)	
R6015	1-205-998-11	CEMENTED 1 5% 10W (Saudi Arabia/ME)	
R6015	1-240-262-11	CEMENTED 0.68 5% 10W (KV-XR29M50/Russia)	
		<RELAY>	
RY601	Δ 1-755-395-11	RELAY (AC POWER) (Except KV-XR29M50)	
		<VARISTOR>	
VD600	1-804-824-11	VARISTOR ENE271D-20A (Except KV-XR29M50)	
VD602	1-803-614-11	VARISTOR ENE471D-20A (Except KV-XR29M50)	
		<CHIP CONDUCTOR>	
JR1681	1-216-864-11	SHORT CHIP 0	

* A-1410-214-A		MOUNTED PWB(VAR), C *****	
1-900-262-86		LEAD ASSY, FOCUS	
4-382-854-01		SCREW (M3X8), P, SW (+)	
		<CAPACITOR>	
C751	1-107-652-11	ELECT 10UF 20.00% 250V	
C752	1-115-350-51	CERAMIC 0.0047UF 2KV	

REF NO.	PART NO.	DESCRIPTION	REMARK
C753	1-136-189-00	MYLAR 0.1UF 10.00% 250V	
C754	1-107-651-11	ELECT 4.7UF 20.00% 250V	
C756	1-126-965-91	ELECT 22UF 20.00% 50V	
C781	1-107-651-11	ELECT 4.7UF 20.00% 250V	
C783	1-102-074-00	CERAMIC 0.001UF 10.00% 50V	
C784	1-102-074-00	CERAMIC 0.001UF 10.00% 50V	
C786	1-115-350-51	CERAMIC 0.0047UF 2KV	
C787	1-115-350-51	CERAMIC 0.0047UF 2KV	
C788	1-164-315-11	CERAMIC CHIP 470PF 5.00% 50V	
C789	1-164-315-11	CERAMIC CHIP 470PF 5.00% 50V	
C790	1-164-315-11	CERAMIC CHIP 470PF 5.00% 50V	
C1800	1-126-964-11	ELECT 10UF 20.00% 50V	
C1803	1-126-964-11	ELECT 10UF 20.00% 50V	
C1804	1-126-964-11	ELECT 10UF 20.00% 50V	
C1809	1-126-942-61	ELECT 1000UF 20.00% 25V	
		<CONNECTOR>	
* CN701	1-564-510-11	PLUG, CONNECTOR 7P	
CN702	1-695-915-11	TAB (CONTACT)	
CN703	1-691-765-11	PLUG (MICRO CONNECTOR) 3P	
CN704	1-695-915-11	TAB (CONTACT)	
CN705	1-695-915-11	TAB (CONTACT)	
CN706	1-695-915-11	TAB (CONTACT)	
CN707	1-695-915-11	TAB (CONTACT)	
* CN1801	1-564-509-11	PLUG, CONNECTOR 6P	
* CN1802	1-564-506-11	PLUG, CONNECTOR 3P	
		<DIODE>	
D750	8-719-908-03	DIODE GP08D	
D754	8-719-970-83	DIODE HSS82-TJ	
D755	8-719-970-83	DIODE HSS82-TJ	
D756	8-719-970-83	DIODE HSS82-TJ	
D782	8-719-109-89	DIODE RD5.6ESB2	
D783	8-719-991-33	DIODE 1SS133T-77	
D784	8-719-991-33	DIODE 1SS133T-77	
D1803	8-719-911-19	DIODE 1SS119-25	
D1804	8-719-911-19	DIODE 1SS119-25	
D1808	8-719-908-03	DIODE GP08D	
		<IC>	
IC751	6-703-482-01	IC TDA6108AJF/N1	
IC1800	8-759-822-38	IC LA6510	
		<JACK>	
J751	Δ 1-451-544-11	SOCKET, CRT	
		<COIL>	
L750	1-414-856-11	INDUCTOR 10UH	
L752	1-414-938-21	INDUCTOR 47UH	
L753	1-414-938-21	INDUCTOR 47UH	
L754	1-414-938-21	INDUCTOR 47UH	
L780	1-414-742-21	INDUCTOR 22UH	
		<NEON LAMP>	
NL700	1-517-778-21	LAMP, NEON	

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C **D3**

REF NO.	PART NO.	DESCRIPTION	REMARK
<TRANSISTOR>			
Q1800	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q1801	8-729-016-42	TRANSISTOR KTC3199GR-TP	
Q1802	8-729-016-42	TRANSISTOR KTC3199GR-TP	
Q1804	8-729-016-42	TRANSISTOR KTC3199GR-TP	
<RESISTOR>			
R752	1-249-410-11	CARBON 270	5% 1/4W
R753	1-249-410-11	CARBON 270	5% 1/4W
R754	1-249-410-11	CARBON 270	5% 1/4W
R756	1-219-747-91	METAL 2.2K	5% 1/2W
R757	1-219-747-91	METAL 2.2K	5% 1/2W
R758	1-219-747-91	METAL 2.2K	5% 1/2W
R760	1-260-123-11	CARBON 100K	5% 1/2W
R763	1-260-087-11	CARBON 100	5% 1/2W
R764	1-260-087-11	CARBON 100	5% 1/2W
R765	1-260-087-11	CARBON 100	5% 1/2W
R773	1-260-132-11	CARBON 560K	5% 1/2W
R774	1-215-912-11	METAL OXIDE 150	5% 3W
R780	1-260-131-11	CARBON 470K	5% 1/2W
R781	1-243-509-71	METAL OXIDE 1.5	5% 3W
R794	1-249-377-11	CARBON 0.47	5% 1/4W
R795	1-260-087-11	CARBON 100	5% 1/2W
R1800	1-249-417-11	CARBON 1K	5% 1/4W
R1801	1-249-426-11	CARBON 5.6K	5% 1/4W
R1802	1-249-382-11	CARBON 1.2	5% 1/4W
R1803	1-249-382-11	CARBON 1.2	5% 1/4W
R1805	1-249-429-11	CARBON 10K	5% 1/4W
R1806	1-249-425-11	CARBON 4.7K	5% 1/4W
R1808	1-249-425-11	CARBON 4.7K	5% 1/4W
R1809	1-249-435-11	CARBON 33K	5% 1/4W
R1810	1-249-435-11	CARBON 33K	5% 1/4W
R1811	1-249-425-11	CARBON 4.7K	5% 1/4W
R1812	1-249-435-11	CARBON 33K	5% 1/4W
R1813	1-249-421-11	CARBON 2.2K	5% 1/4W
R1814	1-249-421-11	CARBON 2.2K	5% 1/4W
R1815	1-249-429-11	CARBON 10K	5% 1/4W
R1816	1-249-429-11	CARBON 10K	5% 1/4W
R1821	1-215-453-00	METAL 22K	1% 1/4W
R1822	1-249-435-11	CARBON 33K	5% 1/4W
R1823	1-249-426-11	CARBON 5.6K	5% 1/4W
R1824	1-249-435-11	CARBON 33K	5% 1/4W
R1825	1-247-843-11	CARBON 3.3K	5% 1/4W
R1826	1-215-421-00	METAL 1K	1% 1/4W
<VARIABLE RESISTOR>			
RV750	1-241-656-11	RES, ADJ, METAL FILM 110M	
RV1800	1-238-019-11	RES, ADJ, CARBON 47K	

* A-1410-215-A MOUNTED PWB, D3			

<CAPACITOR>			
C2800	1-126-947-11	ELECT 47UF	20.00% 35V
C2801	1-106-220-00	MYLAR 0.1UF	10.00% 100V
C2802	1-137-350-11	FILM 0.015UF	5.00% 100V

REF NO.	PART NO.	DESCRIPTION	REMARK
C2803	Δ 1-110-541-91	FILM	0.056UF 5.00% 630V
C2805	1-126-947-11	ELECT	47UF 20.00% 35V
C2806	1-106-383-00	MYLAR	0.047UF 5.00% 100V
C2807	1-137-194-81	FILM	0.47UF 5.00% 50V
C2808	1-126-964-11	ELECT	10UF 20.00% 50V
C2809	1-137-194-81	FILM	0.47UF 5.00% 50V
C2810	1-106-375-12	MYLAR	0.022UF 5.00% 200V
C2811	1-126-964-11	ELECT	10UF 20.00% 50V
C2812	1-126-964-11	ELECT	10UF 20.00% 50V
<CONNECTOR>			
* CN2800	1-564-510-11	PLUG, CONNECTOR 7P	
* CN2802	1-564-506-11	PLUG, CONNECTOR 3P	
CN2803	1-695-915-11	TAB (CONTACT)	
<DIODE>			
D2800	8-719-302-43	DIODE EL1Z	
D2801	8-719-911-19	DIODE 1SS119-25	
D2802	8-719-911-19	DIODE 1SS119-25	
D2803	8-719-911-19	DIODE 1SS119-25	
<IC>			
IC2800	8-759-701-59	IC NJM78M09FA	
IC2801	8-759-998-98	IC LM358D	
<COIL>			
L2800	1-406-989-21	INDUCTOR	10MH
L2802	1-406-987-21	INDUCTOR	4.7MH
L2803	1-406-986-21	INDUCTOR	3.3MH
L2804	1-406-678-11	INDUCTOR	15MH
<TRANSISTOR>			
Q2800	8-729-016-42	TRANSISTOR KTC3199GR-TP	
Q2801	8-729-195-82	TRANSISTOR 2SC2958-L	
Q2802	8-729-017-06	TRANSISTOR 2SC4793	
Q2803	8-729-216-22	TRANSISTOR 2SA1162-G	
Q2804	8-729-010-05	TRANSISTOR MSB709-RT1	
<RESISTOR>			
R2800	1-249-405-11	CARBON 100	5% 1/4W
R2802	1-260-111-11	CARBON 10K	5% 1/2W
R2803	1-260-111-11	CARBON 10K	5% 1/2W
R2804	1-216-061-91	RES-CHIP 3.3K	5% 1/10W
R2805	1-216-097-11	RES-CHIP 100K	5% 1/10W
R2806	1-249-421-11	CARBON 2.2K	5% 1/4W
R2807	1-249-420-11	CARBON 1.8K	5% 1/4W
R2808	1-215-857-71	METAL OXIDE 10	5% 1W
R2809	1-216-059-00	RES-CHIP 2.7K	5% 1/10W
R2810	1-216-049-11	RES-CHIP 1K	5% 1/10W
R2811	1-216-830-11	METAL CHIP 5.6K	5% 1/10W
R2812	1-216-081-00	RES-CHIP 22K	5% 1/10W
R2813	1-216-059-00	RES-CHIP 2.7K	5% 1/10W
R2814	1-216-121-11	RES-CHIP 1M	5% 1/10W
R2815	1-216-841-11	METAL CHIP 47K	5% 1/10W
R2816	1-216-107-00	RES-CHIP 270K	5% 1/10W
R2817	1-216-107-00	RES-CHIP 270K	5% 1/10W

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D3 **F** **H3**

REF NO.	PART NO.	DESCRIPTION	REMARK
		<TRANSFORMER>	
T2800	1-413-059-00	TRANSFORMER, FERRITE (DFT)	

	* A-1410-216-A	MOUNTED PWB, F *****	
		<CAPACITOR>	
C654	Δ 1-117-703-51	CERAMIC	0.0047UF 99% 250V
C4601	Δ 1-165-530-11	MYLAR	0.47UF 10 275V
C4602	Δ 1-109-835-51	MYLAR	0.68UF 20.00% 250V
		<CONNECTOR>	
* CN4601	Δ 1-580-843-11	PIN, CONNECTOR (POWER)	
CN4602	Δ 1-794-577-21	PIN, CONNECTOR (POWER)	
CN4603	1-695-915-11	TAB (CONTACT)	
		<FUSE>	
F4601	Δ 1-576-334-12	FUSE	5A 250V
		<FUSE HOLDER>	
FH001	1-533-223-11	FUSE HOLDER	0A 0V
FH002	1-533-223-11	FUSE HOLDER	0A 0V
		<RESISTOR>	
R4601	Δ 1-245-653-91	METAL	820K 5% 0.5W
		<TRANSFORMER>	
T4601	Δ 1-437-825-11	TRANSFORMER, LINE FILTER	
T4602	Δ 1-435-214-11	TRANSFORMER, LINE FILTER	

	* A-1410-219-A	MOUNTED PWB, H3 *****	
	* A3900	4-055-304-01 HOLDER, LED	
		<CAPACITOR>	
C3900	1-137-150-11	FILM	0.01UF 5.00% 100V
C3902	1-137-150-11	FILM	0.01UF 5.00% 100V
C3910	1-126-947-11	ELECT	47UF 20.00% 35V
C3911	1-126-947-11	ELECT	47UF 20.00% 35V
C3912	1-102-114-00	CERAMIC	470PF 10.00% 50V
C3915	1-102-114-00	CERAMIC	470PF 10.00% 50V
		<CONNECTOR>	
* CN3601	Δ 1-580-844-11	PIN, CONNECTOR (POWER)	
* CN3602	Δ 1-580-844-11	PIN, CONNECTOR (POWER)	

REF NO.	PART NO.	DESCRIPTION	REMARK
* CN3901	1-564-507-11	PLUG, CONNECTOR 4P	
* CN3903	1-564-509-11	PLUG, CONNECTOR 6P	
* CN3905	1-564-510-11	PLUG, CONNECTOR 7P	
* CN3908	1-564-508-11	PLUG, CONNECTOR 5P	
		<DIODE>	
D3906	8-719-083-18	DIODE SPB-25MVWF	
D3908	8-719-109-89	DIODE RD5.6ESB2	
D3909	8-719-991-33	DIODE 1SS133T-77	
D3910	8-719-109-89	DIODE RD5.6ESB2	
D3911	8-719-109-89	DIODE RD5.6ESB2	
D3912	8-719-991-33	DIODE 1SS133T-77	
D3913	8-719-991-33	DIODE 1SS133T-77	
		<IC>	
IC3901	6-704-532-01	IC RPM7240-H5	
		<JACK>	
J3903	1-770-329-13	JACK, PIN 3P	
J3904	1-770-786-22	JACK	
		<COIL>	
L3901	1-414-183-41	INDUCTOR	10UH
L3902	1-414-183-41	INDUCTOR	10UH
		<TRANSISTOR>	
Q3901	8-729-036-80	TRANSISTOR KRC110M	
Q3902	8-729-036-80	TRANSISTOR KRC110M	
		<RESISTOR>	
R3907	1-249-417-11	CARBON	1K 5% 1/4W
R3908	1-249-413-11	CARBON	470 5% 1/4W
R3909	1-249-411-11	CARBON	330 5% 1/4W
R3910	1-249-409-11	CARBON	220 5% 1/4W
R3911	1-249-409-11	CARBON	220 5% 1/4W
R3912	1-249-407-11	CARBON	150 5% 1/4W
R3914	1-249-409-11	CARBON	220 5% 1/4W
R3915	1-249-419-11	CARBON	1.5K 5% 1/4W
R3916	1-249-401-11	CARBON	47 5% 1/4W
R3920	1-249-415-11	CARBON	680 5% 1/4W
R3926	1-249-429-11	CARBON	10K 5% 1/4W
		<SWITCH>	
S3601	Δ 1-571-433-31	SWITCH, PUSH (AC POWER)	
S3902	1-692-431-21	SWITCH, TACTILE	
S3903	1-692-431-21	SWITCH, TACTILE	
S3904	1-692-431-21	SWITCH, TACTILE	
S3905	1-692-431-21	SWITCH, TACTILE	
S3907	1-692-431-21	SWITCH, TACTILE	
S3908	1-692-431-21	SWITCH, TACTILE	
S3909	1-692-431-21	SWITCH, TACTILE	



REF NO.	PART NO.	DESCRIPTION	REMARK	REF NO.	PART NO.	DESCRIPTION	REMARK
	* A-1410-217-A	MOUNTED PWB, J1 *****		Q5906	8-729-809-29	TRANSISTOR 2SC4159-E	
		<CONNECTOR>		Q5907	8-729-230-45	TRANSISTOR 2SC2458-YGR	
						<RESISTOR>	
* CN2410	1-564-523-11	PLUG, CONNECTOR 8P		R5901	1-249-401-11	CARBON	47 5% 1/4W
		<JACK>		R5902	1-249-414-11	CARBON	560 5% 1/4W
J2410	1-817-895-11	JACK BLOCK, PIN		R5903	1-247-734-11	CARBON	39 5% 1/2W
				R5904	1-249-411-11	CARBON	330 5% 1/4W
				R5905	1-249-417-11	CARBON	1K 5% 1/4W
				R5906	1-249-417-11	CARBON	1K 5% 1/4W
				R5907	1-249-417-11	CARBON	1K 5% 1/4W
				R5908	1-249-383-11	CARBON	1.5 5% 1/4W
				R5909	1-249-409-11	CARBON	220 5% 1/4W
				R5910	1-249-403-11	CARBON	68 5% 1/4W
				R5911	1-249-439-11	CARBON	68K 5% 1/4W
				R5912	1-249-437-11	CARBON	47K 5% 1/4W
				R5914	1-249-403-11	CARBON	68 5% 1/4W
				R5915	1-249-429-11	CARBON	10K 5% 1/4W
				R5916	1-249-419-11	CARBON	1.5K 5% 1/4W
				R5917	1-249-416-11	CARBON	820 5% 1/4W
				R5918	1-249-429-11	CARBON	10K 5% 1/4W
				R5919	1-249-417-11	CARBON	1K 5% 1/4W
				R5920	1-249-439-11	CARBON	68K 5% 1/4W
				R5921	1-216-476-11	METAL OXIDE	180 5% 3W
				R5922	1-249-414-11	CARBON	560 5% 1/4W
				R5923	1-249-383-11	CARBON	1.5 5% 1/4W
				R5925	1-249-400-11	CARBON	39 5% 1/4W
				R5929	1-215-880-00	METAL OXIDE	10 5% 2W
				R5936	1-249-406-11	CARBON	120 5% 1/4W
				R5937	1-249-406-11	CARBON	120 5% 1/4W
				R5938	1-249-437-11	CARBON	47K 5% 1/4W
				R5939	1-249-437-11	CARBON	47K 5% 1/4W
				R5940	1-249-413-11	CARBON	470 5% 1/4W
						<ACCESSORIES AND PACKING MATERIALS>	

						3-701-910-00	SCREW, SPECIAL (DIA. 3.8X20)
				* 4-029-168-01		BAG, PROTECTION	
				* 4-054-319-31		TRAY	
				4-065-210-01		JOINT	
				* 4-096-554-01		CUSHION, LOWER	
				* 4-096-555-01		CUSHION, UPPER	
				* 4-098-749-01		INDIVIDUAL CARTON	
				4-100-612-12		MANUAL, INSTRUCTION (KV-XR29M50)	
				4-100-941-11		MANUAL, INSTRUCTION (ME/Saudi Arabia)	
				4-101-845-11		MANUAL, INSTRUCTION	
				4-392-003-11		BAND, HOLD	
				4-392-004-11		CLIP	
						<REMOTE COMMANDER>	

				1-478-346-11		REMOTE COMMANDER (RM-W104)	
				4-084-290-01		REMOTE COMMANDER BATTERY COVER	
						<TRANSISTOR>	
				Q5901	8-729-230-45	TRANSISTOR 2SC2458-YGR	
				Q5902	8-729-809-26	TRANSISTOR 2SA1606-E	
				Q5903	8-729-230-45	TRANSISTOR 2SC2458-YGR	
				Q5904	8-729-119-76	TRANSISTOR 2SA1175-HFE	
				Q5905	8-729-230-45	TRANSISTOR 2SC2458-YGR	

Trinitron Color TV

Operating Instructions _____ **GB**

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

使用說明書 _____ **CT**

- 使用本電視機之前請先詳細閱讀此手冊，並妥善保存以備日後用作參考。

Panduan Pengendalian _____ **MY**

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

FD Trinitron
WEGA

KV-XR34

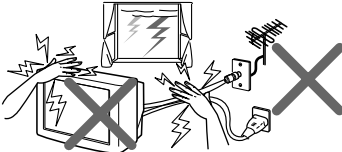

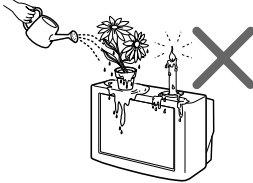
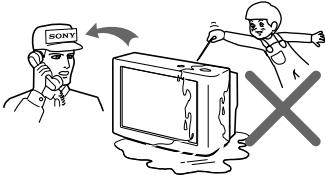
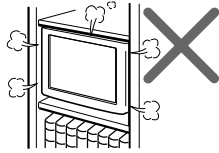
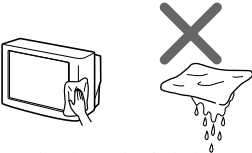
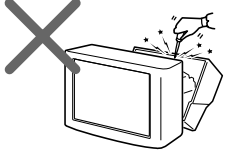
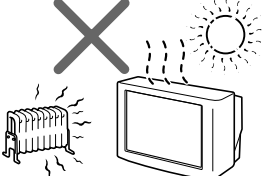
KV-XR29

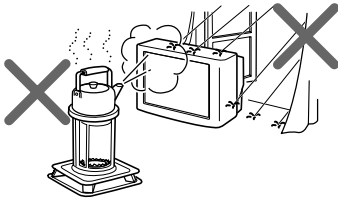
KV-XR25

M61
M50

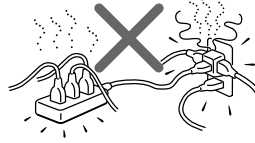
WARNING

- Dangerously high voltages are present inside the TV.
- TV operating voltage: 220 – 240 V AC.
- Do not plug in the power cord until you have completed making all other connections; otherwise a minimum leakage current might flow through the antenna and other terminals to ground.
- To avoid battery leakage and damage to the remote, remove the batteries from the remote if you are not going to use it for several days. If any liquid leaks from the batteries and touches your skin, immediately wash it away with water.

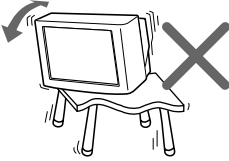
 <p>For your own safety, do not touch any part of the TV, the power cord and the antenna cable during lightning storms.</p>	 <p>For children's safety, do not leave children alone with the TV. Do not allow children to climb on it.</p>
 <p>Do not place any objects on the TV. The apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.</p>	 <p>Do not operate the TV if any liquid or solid object falls into it. Have it checked immediately by qualified personnel only.</p>
 <p>Do not block the ventilation openings of the TV. Do not install the TV in a confined space, such as a bookcase or built-in cabinet.</p>	 <p>Clean the TV with a dry and soft cloth. Do not use benzine, thinner, or any other chemicals to clean the TV. Do not attach anything (e.g., adhesive tape, cellophane tape, glue) on the painted cabinet of the TV. Do not scratch the picture tube.</p>
 <p>Do not open the cabinet and the rear cover of the TV as high voltages and other hazards are present inside the TV. Refer servicing and disposal of the TV to qualified personnel.</p>	 <p>Your TV is recommended for home use only. Do not use the TV in any vehicle or where it may be subject to excessive dust, heat, moisture or vibrations.</p>



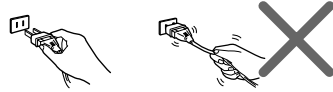
To prevent fire or shock hazard, do not expose the TV to rain or moisture.



Do not plug in too many appliances to the same power socket. Do not damage the power cord.



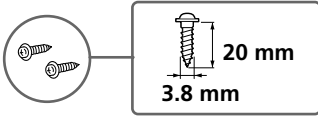
Install the TV on a stable TV stand and floor which can support the TV set weight. Ensure that the TV stand surface is flat and its area is larger than the bottom area of the TV.



Pull the power cord out by the plug. Do not pull the power cord itself. Even if your TV is turned off, it is still connected to the AC power source (mains) as long as the power cord is plugged in. Unplug the TV before moving it or if you are not going to use it for several days.

■ Securing the TV

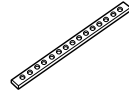
To prevent the TV from falling, use the supplied screws, clamps and band to secure the TV.



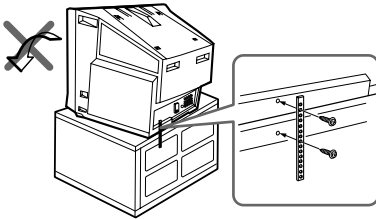
screws



clamps

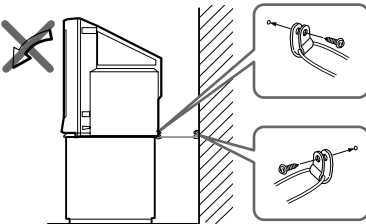


band



Screw the band to the TV stand and to the provided hole at the rear of your TV.

or



- (1) Put a cord or chain through the clamps.
- (2) Screw one clamp to a wall or pillar and the other clamp to the provided hole at the rear of your TV.

Note

- Use only the supplied screws. Use of other screws may damage the TV.

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Menu Adjustment

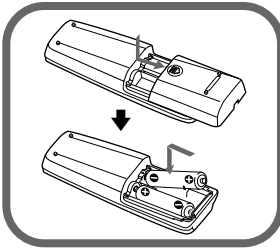
Introducing the menu system	14
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Changing the "Sound" setting	18
Changing the "Timer" setting	20
Changing the "Channel Setup" setting	21
Changing the "Setup" setting	23

Additional Information

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Troubleshooting	26
Specifications	Back cover

GB

■ Getting Started

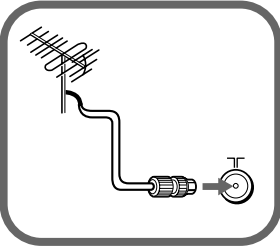


Step 1

Insert the batteries (supplied) into the remote.

Note

- Do not use old or different types of batteries together.

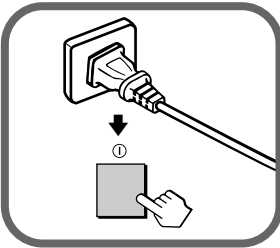


Step 2

Connect the antenna cable (not supplied) to Υ (antenna input) at the rear of the TV.

Tip

- You can also connect your TV to other optional components (see page 24).

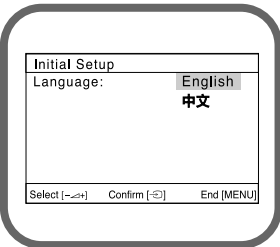


Step 3

Plug in the power cord, then press ⏻ on the TV to turn it on.

Note

- The ⏻ (standby) indicator flashes green for a few seconds when turning on the TV. This does not indicate a malfunction.






Step 4



Set up the TV by following the instructions of the "Initial Setup" menu (see page 7).

■ Setting up your TV ("Initial Setup")

When you turn on your TV for the first time, the "Initial Setup" menu will appear. You may change the menu language, preset the TV channels automatically and adjust the picture position using the buttons on the TV front panel.



Tip

- The MENU,  and ,  buttons on the remote control can also be used for the operations below.


- 1 Press  +/- to select the desired menu language, then press .

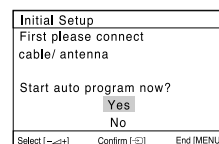
The selected menu language appears.






- 2 Press  +/- to select "Yes", then press  to preset the channels automatically or select "No" to skip automatic channel presetting.

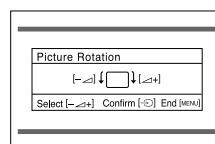
Once you select "Yes", your TV will start searching for all the available channels.




If the message "No channel found. Please connect cable/antenna." appears, check your TV connections, then press .




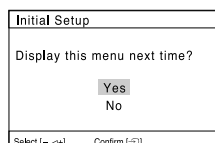
- 3 Press  +/- to adjust the bars on the top and bottom of the menu if they are slanted, then press .

If no adjustment is necessary, then press .



- 4 Press  +/- to select "No", then press . This menu will not appear again the next time you turn on the TV by pressing .

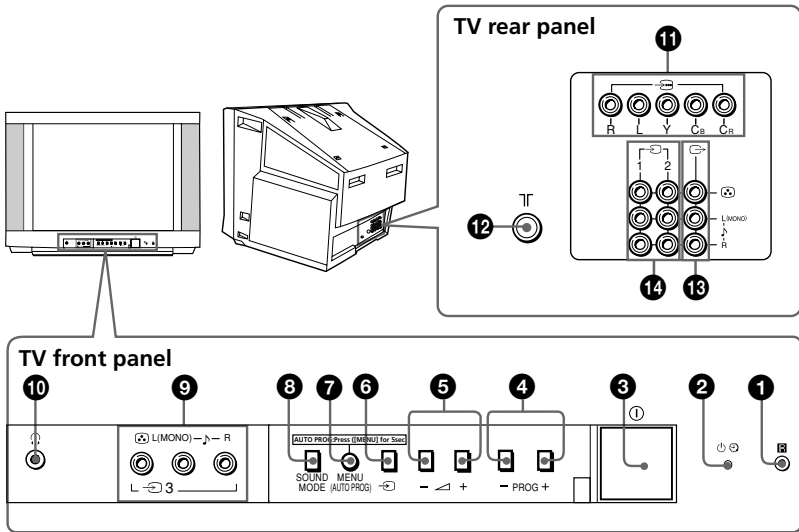
To allow this menu to appear again, select "Yes", then press .



Tips

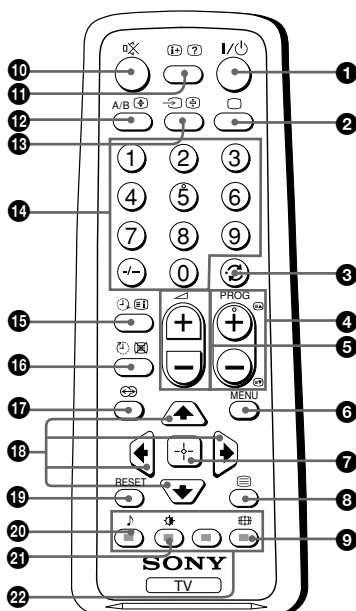
- You can immediately go to the end of the "Initial Setup" menu by pressing MENU.
- You can also set up your TV using the menu system (see page 14).
- You can also preset the channels automatically by pressing MENU (AUTO PROG) button on the TV front panel for about five seconds.

TV front and rear panels



Button/Terminal	Function	Page
1	Remote control sensor.	-
2	Standby indicator.	6
2	Wake Up indicator.	20
3	Turn off or turn on the TV.	6
4	Select program number.	-
5	Adjust volume.	-
6	Select TV or video input.	24
Menu operations		
5	Select and adjust items.	-
6	Confirm selected items.	-
7	Display or cancel the menu.	-
7	Preset channels automatically.	7
8	Select sound mode options. 5-Band Graphic Equalizer display will appear.	11
9	Video input terminal 3.	24
10	Headphone jack.	-
11	Component video input terminal.	25
12	Antenna input terminal.	24
13	Monitor output terminal.	24
14	Video input terminal 1, 2.	24
















■ Using the remote control and basic functions



Button	Description	Page
1 I/⏻	Turn off temporarily or turn on the TV.	–
2 □	Display the TV program.	–
3 ↺	Jump to last program number that has been watched for at least five seconds.	–
4 PROG +/-	Select program number.	–
5 ∇ +/-	Adjust volume.	–
9 ⌘	Change the picture size: “On” (16:9 wide-mode), “Off”.	–
10 ⊘	Mute the sound.	–
11 i+	Display on-screen information.	–
13 ↻	Select TV or video input.	24
14 0 – 9, +/-	Input numbers.	–
17 ⌘	Select surround mode options: “On” (surround), “Simulated” (stereo-like monaural sound), “Off”.	–
19 RESET	Set TV to factory setting.	26

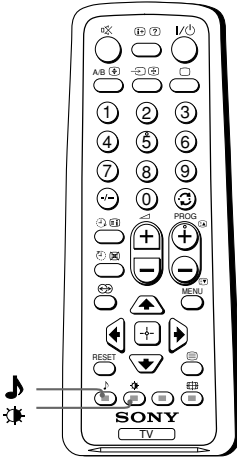
continue

continued

Button	Description	Page
20 	Select sound mode options. 5-Band Graphic Equalizer display will appear.	11
21 	Select picture mode options.	11
Menu operations		
6 MENU	Display or cancel the menu.	16
7 	Confirm selected items.	16
18 	Select and adjust items.	16
Timer operations		
15 	Set TV to turn on automatically.	-
16 	Set TV to turn off automatically.	-
Teletext operations (green label) (KV-XR34M61/XR29M61 only)		
4  	Display the next or previous page.	13
8 	Display Teletext broadcast.	13
11 	Reveal concealed information.	13
12 	Enlarge the Teletext display.	13
13 	Stop Teletext display from scrolling.	13
15 	Display Teletext service contents.	13
16 	Show TV screen while waiting for Teletext page.	13
22  (red, green, yellow, blue)	Access a FASTEXT menu.	13
Stereo/bilingual operations (KV-XR34M61/XR29M61 only)		
12 A/B	Select stereo/bilingual mode	12

■ Selecting the picture and sound modes

You can select picture and sound modes and adjust the setting to your preference in the “Personal” option.





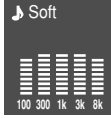
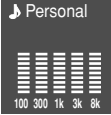
Selecting the picture mode

Press to select the desired picture mode.

Select	To view
“Dynamic”	high contrast pictures.
“Standard”	normal pictures.
“Soft”	mild pictures.
“Personal”	the last adjusted picture setting from the “Picture Adjustment” option in the menu (see page 17).

Selecting the sound mode

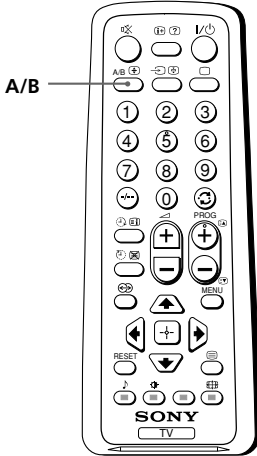
Press (or SOUND MODE on the front panel) to select the desired sound mode. 5-Band Graphic Equalizer display will appear.

Select	To listen to
“Dynamic” 	dynamic and clear sound that emphasizes both the low and high tones.
“Drama” 	sound that emphasizes voice and high tones.
“Soft” 	soft, natural and relaxing sounds.
“Personal” 	the last adjusted sound setting from the “Sound Adjustment” option in the menu (see page 19).

■ Enjoying stereo or bilingual programs

▶ KV-XR34M61/XR29M61 only

You can enjoy stereo sound or bilingual programs of NICAM and A2 stereo systems by using the A/B button.



When receiving a NICAM program

Broadcasting	On-screen display (Selected sound)
NICAM stereo	NICAM (Stereo sound) → Mono (Regular sound)
NICAM bilingual	NICAM Main (Main sound) → NICAM Sub (Sub sound) → Mono (Regular sound)
NICAM monaural	NICAM Main (Main sound) → Mono (Regular sound)

When receiving an A2 program

Broadcasting	On-screen display (Selected sound)
A2 stereo	Stereo (Stereo sound) → Mono (Regular sound)
A2 bilingual	Main (Main sound) → Sub (Sub sound)

Note

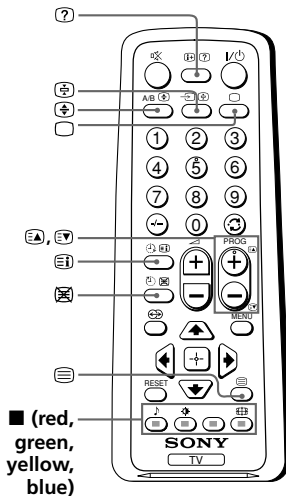
- If the stereo sound is noisy when receiving a stereo program, select “Mono”. The sound becomes monaural but the noise is reduced.

Viewing Teletext

► KV-XR34M61/XR29M61 only

Some TV stations broadcast an information service called Teletext which allows you to receive various information, such as stock market reports and news.

You can use the buttons on the remote to view Teletext.



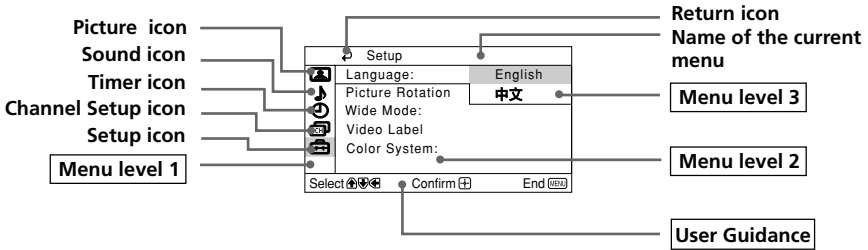
To	Do this
display a Teletext page on the TV picture	Press . Each time you press , the screen changes as follows: Teletext → Teletext and TV → TV. If there is no Teletext broadcast, “100” is displayed at the top left corner of the screen.
check the contents of a Teletext service	Press . An overview of the Teletext contents, including page numbers, appears on the screen.
select a Teletext page	Press the number buttons to enter the three-digit page number of the desired Teletext page. If you make a mistake, reenter the correct page number. To access the next or previous page, press or .
hold (pause) a Teletext display	Press to display the symbol “” at the top left corner of the screen. To resume normal Teletext viewing, press .
reveal concealed information (e.g., an answer to a quiz)	Press . To conceal the information, press the button again.
enlarge the Teletext display	Press . Each time you press , the Teletext display changes as follows: Enlarge upper half → Enlarge lower half → Normal size.
stand by for a Teletext page while watching a TV program	(1) Enter the Teletext page number that you want to refer to, then press . (2) When the page number is displayed, press to show the text.
select a FASTEXT menu or the colored boxes	Press (red, green, yellow and blue) that corresponds to the desired menu or page number.
turn off Teletext	Press .



Note




- The FASTEXT feature can be used only when the FASTEXT broadcast is available.

Introducing the menu system

The MENU button lets you open a menu and change the settings of your TV. The following is an overview of the menu system.

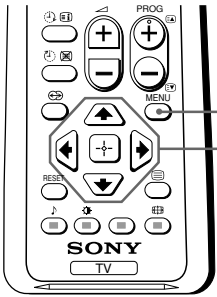


Level 1	Level 2	Level 3/Function	Page
"Picture" 	"Mode"	Select the picture mode: "Dynamic" → "Standard" → "Soft" → "Personal"	17
	"Picture Adjustment"	Adjust the "Personal" option: "Picture" → "Brightness" → "Color" → "Hue" → "Sharpness" → "Reset"	
	"Color Temperature"	Adjust white color tint: "Cool" → "Neutral" → "Warm"	
	"VM"	Sharpen the edges of each object: "High" → "Low" → "Off"	
	"Intelligent Picture"	Optimize picture quality: "On" → "Off"	
"Sound" 	"Mode"	Select the sound mode: "Dynamic" → "Drama" → "Soft" → "Personal"	18
	"Sound Adjustment"	Adjust sound frequency settings of "Personal" option: "Adjust" → "Reset"	
	"Balance"	Select to emphasize the left and right speakers.	
	"Intelligent Volume"	Adjust volume automatically: "On" → "Off"	
	"Surround"	Select the surround mode: "On" → "Simulated" → "Off"	


Level 1	Level 2	Level 3/Function	Page
"Timer" 	"Sleep Timer"	Set TV to turn off automatically.	20
	"Wake Up Timer"	Set TV to turn on automatically.	
"Channel Setup" 	"Auto Program"	Preset channels automatically.	21
	"Manual Program"	Preset channels manually.	
	"TV System"	Select the TV system: "B/G" → "I" → "D/K" → "M"	
	"Program Label"	Label the program number.	
	"Program Block"	Block unwanted programs.	
"Setup" 	"Language"	Change the menu language: "English" → "中文" (Chinese)	23
	"Picture Rotation"	Adjust the picture position.	
	"Wide Mode"	Change the picture size: "On" (16:9 wide-mode) → "Off"	
	"Video Label"	Label the connected equipment.	
	"Color System"	Select the color system: "Auto" → "PAL" → "SECAM" → "NTSC3.58" → "NTSC4.43"	

continued

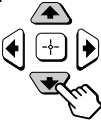
How to use the menu




Press MENU to display the menu.



Press \uparrow or \downarrow to select the desired item.



Press \rightarrow (or \leftarrow) to confirm your selection and go to the next level.



The diagram illustrates the steps to navigate the menu. It shows a Sony TV remote control with callouts pointing to the MENU, arrow, and confirm buttons. The first step shows pressing the MENU button to display the 'Picture' menu. The second step shows pressing the up/down arrow buttons to select 'Picture Adjustment'. The third step shows pressing the right/left arrow buttons to confirm the selection and go to the next level.

Picture

- Mode: Dynamic
- Picture Adjustment
- Color Temperature: Cool
- VM: High
- Intelligent Picture: On

Select Confirm End

Channel Setup

- Auto Program
- Manual Program
- TV System: B/G
- Program Label
- Program Block

Select Confirm End

Channel Setup

- Auto Program
- Manual Program
- TV System: B/G
- Program Label
- Program Block

Select Confirm End

Other menu operations

To	Press
Adjust the setting value	\uparrow , \downarrow , \leftarrow or \rightarrow .
Move to the next/previous menu level	\leftarrow or \rightarrow .
Cancel the menu	MENU.

Tips

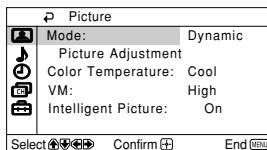
- If you want to exit from Menu level 2 to Menu level 1, press \uparrow or \downarrow until the return icon (\curvearrowright) is highlighted, then press \rightarrow .
- The MENU, \rightarrow and \leftarrow +/- buttons on the TV front panel can also be used for the operations above (see page 8).

■ Changing the “Picture” setting

The “Picture” menu allows you to adjust the picture settings.

1 Press MENU.

2 Make sure the “Picture” icon (🖼️) is selected, then press (↵).



3 Press ↑ or ↓ to select the desired item (e.g., “Mode”), then press (↵).

Select	To
“Mode”	choose either “Dynamic”, “Standard”, “Soft” or “Personal”* (see page 11).
“Color Temperature”	adjust white color tint. Choose either “Cool” (blue tint), “Neutral” (neutral tint) or “Warm” (red tint).
“VM” (Velocity Modulation)	sharpen the edges of each object. Choose either “High”, “Low” or “Off”.
“Intelligent Picture”	optimize picture quality. Press ↑ or ↓ to select “On”, then press (↵). To cancel, select “Off”, then press (↵).

* You can adjust the setting to your personal preference in the “Picture Adjustment”, “Color Temperature” and “VM” options only when the “Personal” mode is selected.

Adjusting the “Picture Adjustment” items under “Personal” mode

1 Press ↑ or ↓ to select either “Picture” (contrast), “Brightness”, “Color”, “Hue” (color tones) or “Sharpness”, then press (↵).

Selecting “Reset” will set your TV to the factory setting.

2 Press ↑, ↓, ← or → to adjust the setting of your selected item, then press (↵).

3 Repeat the above steps to adjust other items.

The adjusted settings will be received when you select “Personal”.


Notes

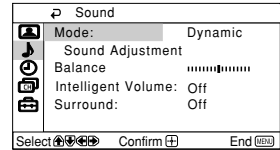
- “Hue” can be adjusted for the NTSC color system only.
- Reducing “Sharpness” can also reduce picture noise.

■ Changing the “Sound” setting

The “Sound” menu allows you to adjust the sound settings.

1 Press MENU.

2 Press **↑** or **↓** to select the “Sound” icon (), then press **↵**.




3 Press **↑** or **↓** to select the desired item (e.g., “Mode”), then press **↵**.

Select	To
“Mode”	choose either “Dynamic”, “Drama”, “Soft” or “Personal”* (see page 11).
“Balance”	Press ↓ or ← to emphasize the left speaker. Press ↑ or → to emphasize the right speaker.
“Intelligent Volume”	adjust the volume of all program numbers and video inputs automatically. Press ↑ or ↓ to select “On”, then press ↵ . To cancel, select “Off”, then press ↵ .
“Surround”	choose either “On”, “Simulated” or “Off” (see page 9).

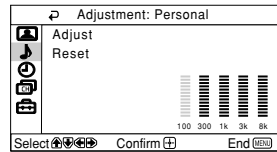
* You can adjust the setting to your personal preference in the “Sound Adjustment” option only when the “Personal” mode is selected (see page 19).






Adjusting the “Sound Adjustment” item under “Personal” mode

The 5-Band Graphic Equalizer feature allows you to adjust sound frequency settings of “Personal” mode in the menu.

- 1 Make sure that “Adjust” is selected, then press .


Selecting “Reset” will set your TV to the factory setting.



- 2 Press  or  to select the desired sound frequency, then press  or  to adjust the setting and press .

The adjusted settings will be received when you select “Personal”.

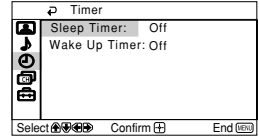
Notes

- Adjusting higher frequency will affect higher pitched sound and adjusting lower frequency will affect lower pitched sound.
- You may display the settings directly using the SOUND MODE button on the TV front panel (see page 8) or  button on the remote control (see page 10).

■ Changing the “Timer” setting

The “Timer” menu allows you to set TV to turn off and turn on automatically.

- 1 Press MENU.
- 2 Press \uparrow or \downarrow to select the “Timer” icon (⌚), then press $\left[\begin{smallmatrix} \uparrow \\ \downarrow \end{smallmatrix} \right]$.



- 3 Press \uparrow or \downarrow to select the desired item (e.g., “Sleep Timer”), then press $\left[\begin{smallmatrix} \uparrow \\ \downarrow \end{smallmatrix} \right]$.

Select	To
“Sleep Timer”	set TV to turn off automatically. Press \uparrow or \downarrow to select the desired period of time (max. of 1 hour and 30 minutes), then press $\left[\begin{smallmatrix} \uparrow \\ \downarrow \end{smallmatrix} \right]$.
“Wake Up Timer”	set TV to turn on automatically. Press \uparrow or \downarrow to select the desired period of time (max. of 12 hours), then press $\left[\begin{smallmatrix} \uparrow \\ \downarrow \end{smallmatrix} \right]$. After the selected length of time, the TV switches on automatically and “Wake Up Timer” will appear on the screen. The ⌚ indicator on the TV lights up amber once you set the “Wake Up Timer”.

Notes

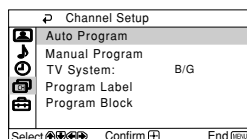
- You can also cancel “Sleep Timer” and “Wake Up Timer” by turning off the TV’s main power.
- If no buttons or controls are pressed for more than one hour after the TV is turned on using the “Wake Up Timer”, the TV automatically goes into standby mode.

■ Changing the “Channel Setup” setting

The “Channel Setup” menu allows you to preset channels automatically, manually preset channels, select the TV system, label the program number and block unwanted programs.

1 Press MENU.

2 Press \uparrow or \downarrow to select the “Channel Setup” icon (☰), then press (↵).



3 Press \uparrow or \downarrow to select the desired item (e.g., “Auto Program”), then press (↵).

Select	To
“Auto Program”	preset channels automatically.
“Manual Program”	manually preset desired channels and channels that cannot be preset automatically (see Presetting channels manually on page 22).
“TV System”	select the TV system. Press \uparrow or \downarrow to select either “B/G”, “I”, “D/K” or “M”, then press (↵).
“Program Label”	label the program number. (1) Select “Program” and press (↵). Press \uparrow or \downarrow to select the program number, then press (↵). (2) Select “Label” and press (↵). Press \uparrow or \downarrow to select alphanumeric characters for the label, then press (↵).
“Program Block”	block unwanted programs. (1) Select “Program” and press (↵). Press \uparrow or \downarrow to select the program number, then press (↵). (2) Select “Block” and press (↵), then press \uparrow or \downarrow to choose either “On” or “Off”. If you preset a blocked program number, that program number will be unblocked automatically.

Note





- During automatic channel presetting, your TV screen will indicate “B/G”, “I”, “D/K” or “M” (KV-XR29M50/XR25M50 only) and “Auto” (KV-XR34M61/XR29M61 only) for the “TV System”.

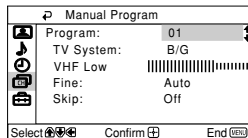
continue

continued


Presetting channels manually

1 After selecting “Manual Program”, select the program number to which you want to preset a channel.







- (1) Make sure “Program” is selected, then press .
- (2) Press  or  until the program number you want to preset appears on the menu, then press .














2 Select the desired channel.

- (1) Make sure either “VHF Low”, “VHF High” or “UHF” is selected, then press .
- (2) Press  or  until the desired channel’s broadcast appears on the TV screen, then press .

3 If the sound of the desired channel is abnormal, select the appropriate TV system.








- (1) Press  or  to select “TV System”, then press .
- (2) Press  or  until the sound becomes normal, then press .

4 If you are not satisfied with the picture and sound quality, you may be able to improve them by using the “Fine” tuning feature.

- (1) Press  or  to select “Fine”, then press .
- (2) Press  or  to select “Manual”, then press .
- (3) Press , ,  or  until the picture and sound quality are optimal, then press .

The + or – icon on the menu flashes while tuning.

5 If you want to skip this program number when using PROG +/- , you can select the “Skip” feature.

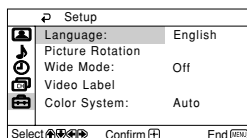
- (1) Press  or  to select “Skip”, then press .
 - (2) Press  or  to select “On”, then press .
- To cancel, select “Off”, then press .

■ Changing the “Setup” setting

The “Setup” menu allows you to change the menu language, adjust the picture position, change the picture size, label the connected equipment and select the color system.

1 Press MENU.

2 Press \uparrow or \downarrow to select the “Setup” icon (⚙️), then press $\left[\begin{smallmatrix} \uparrow \\ \downarrow \end{smallmatrix}\right]$.



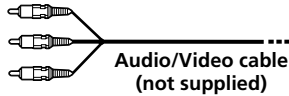
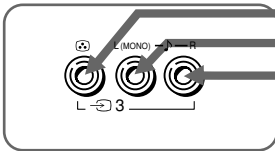
3 Press \uparrow or \downarrow to select the desired item (e.g., “Language”), then press $\left[\begin{smallmatrix} \uparrow \\ \downarrow \end{smallmatrix}\right]$.

Select	To
“Language”	change the menu language. Press \uparrow or \downarrow to select either “English” or “中文” (Chinese), then press $\left[\begin{smallmatrix} \uparrow \\ \downarrow \end{smallmatrix}\right]$.
“Picture Rotation”	adjust the picture position when it is not aligned with the TV screen. Press \leftarrow or \rightarrow to adjust the picture position, then press $\left[\begin{smallmatrix} \uparrow \\ \downarrow \end{smallmatrix}\right]$.
“Wide Mode”	choose either “On” or “Off” (see page 9).
“Video Label”	label the connected equipment. (1) Select “Video Input” and press $\left[\begin{smallmatrix} \uparrow \\ \downarrow \end{smallmatrix}\right]$. Press \uparrow or \downarrow to select the input you want to label, then press $\left[\begin{smallmatrix} \uparrow \\ \downarrow \end{smallmatrix}\right]$. (2) Select “Label” and press $\left[\begin{smallmatrix} \uparrow \\ \downarrow \end{smallmatrix}\right]$, then press \uparrow or \downarrow to select the label options: “Video 1/Video 2/Video 3/DVD”, “VCR”, “SAT”, “Game” or “Edit”*. * You may edit the video label. Press \uparrow or \downarrow to select alphanumeric characters for the label, then press $\left[\begin{smallmatrix} \uparrow \\ \downarrow \end{smallmatrix}\right]$.
“Color System”	select the color system. Press \uparrow or \downarrow to select either “Auto”, “PAL”, “SECAM”, “NTSC3.58” or “NTSC4.43”, then press $\left[\begin{smallmatrix} \uparrow \\ \downarrow \end{smallmatrix}\right]$. Normally, set this to “Auto”.

■ Connecting optional components

Connecting to the video input terminal (→)

TV front panel

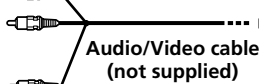
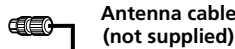
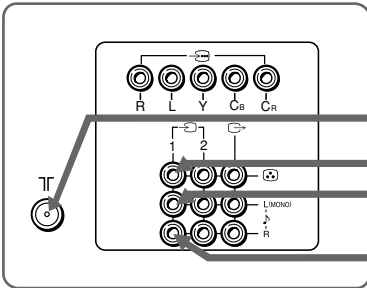


Camcorder



Video game equipment

TV rear panel



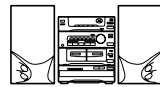
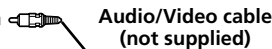
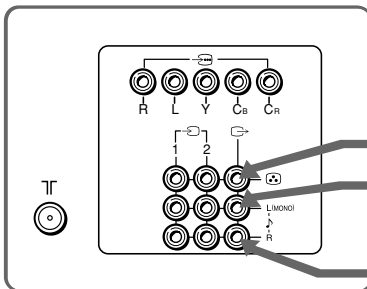
VCR

Notes

- If you connect a VCR to T (antenna input), preset the signal output from the VCR to the program number 0 on the TV (see page 22).

Connecting to the monitor output terminal (⇄)

TV rear panel

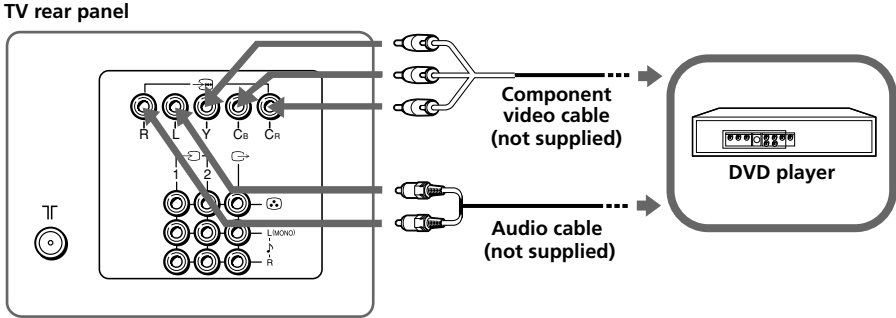


Audio system




VCR


Connecting to the component video input terminal ()



Notes

- If your DVD player can output interlace and progressive mode signals, select the interlace output when connecting to  (component video input) on your TV. Your TV can receive either 525i/60Hz or 625i/50Hz interlace signals.
- Some DVD player terminals may be labeled differently:

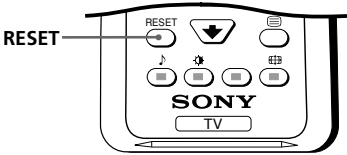
Connect	To (on the DVD player)
Y (green)	Y
C _B (blue)	C _B , P _B , C _b or B-Y
C _R (red)	C _R , P _R , C _r or R-Y

- If you select “DVD” on your TV screen, the signal from the  (monitor output) jacks will not be output properly. This does not indicate a malfunction.

Troubleshooting

If you find any problem while viewing your TV, you can either use the Reset function or check the Troubleshooting guide below. If the problem persists, contact your Sony dealer.

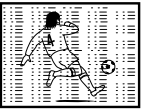





Reset function










Press the RESET button on your remote control. Your TV will go blank for a few seconds then the “Initial Setup” menu will appear.

Pressing RESET will set your TV to the factory setting, but certain problems may be solved.

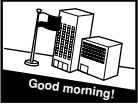

Troubleshooting guide




Symptom	Possible cause	Solutions	Page
Snowy picture 	<ul style="list-style-type: none"> The connection is loose or the cable is damaged. The antenna setup is inappropriate. 	<ul style="list-style-type: none"> Check the antenna cable and connection on the TV, VCR and at the wall. Check the antenna setup. Contact a Sony dealer for advice. 	24 –
Noisy sound 	<ul style="list-style-type: none"> Channel presetting is inappropriate or incomplete. Signal transmission is low. 	<ul style="list-style-type: none"> Display the “Channel Setup” menu and select “Manual Program” to preset the channel again. Try using a booster. 	22 –
Distorted picture 	<ul style="list-style-type: none"> Broadcast signals are too strong. 	<ul style="list-style-type: none"> Turn off or disconnect the booster if it is in use. 	–
Noisy sound 			
Good picture 	<ul style="list-style-type: none"> The TV system setting is inappropriate. 	<ul style="list-style-type: none"> Display the “Channel Setup” menu and select the appropriate “TV System”. 	22
Noisy sound 			

Symptom	Possible cause	Solutions	Page
No picture 	<ul style="list-style-type: none"> The power cord, antenna or VCR is not connected. 	<ul style="list-style-type: none"> Check the power cord, antenna and VCR connections. 	24
No sound 	<ul style="list-style-type: none"> The TV is not turned on. 	<ul style="list-style-type: none"> Press I/⏻ (power). Press ⏻ (main power) on the TV to turn off the TV for about five seconds, then turn it on again. 	9 8
Good picture 	<ul style="list-style-type: none"> The volume level is too low. 	<ul style="list-style-type: none"> Press ▲ + to increase the volume level. 	9
No sound 	<ul style="list-style-type: none"> The sound is muted. 	<ul style="list-style-type: none"> Press 🔇 to cancel the muting. 	9
Dotted lines or stripes 	<ul style="list-style-type: none"> There is local interference from cars, neon signs, hair dryers, power generators, etc. 	<ul style="list-style-type: none"> Do not use a hair dryer or other equipment near the TV. Check the antenna setup. Contact a Sony dealer for advice. 	– –
Double images or "ghosts" 	<ul style="list-style-type: none"> Broadcast signals are reflected by nearby mountains or buildings. 	<ul style="list-style-type: none"> Use a highly directional antenna. Use the fine tuning ("Fine") function. 	– 22
	<ul style="list-style-type: none"> The antenna setup is inappropriate. 	<ul style="list-style-type: none"> Check the antenna setup. Contact a Sony dealer for advice. 	–
	<ul style="list-style-type: none"> Use of a booster is inappropriate. 	<ul style="list-style-type: none"> Turn off or disconnect the booster if it is in use. 	–
No color 	<ul style="list-style-type: none"> The color level setting is too low. 	<ul style="list-style-type: none"> Display the "Picture" menu and select "Personal" of "Mode", then adjust the "Color" level in "Picture Adjustment". 	17
	<ul style="list-style-type: none"> The color system setting is inappropriate. 	<ul style="list-style-type: none"> Display the "Setup" menu and check the "Color System" setting (usually set this to "Auto"). 	23
	<ul style="list-style-type: none"> The antenna setup is inappropriate. 	<ul style="list-style-type: none"> Check the antenna setup. Contact a Sony dealer for advice. 	–

continue

continued

Symptom	Possible cause	Solutions	Page
Picture slant 	<ul style="list-style-type: none"> The magnetic disturbance from external speakers or other equipment, or the direction of the earth's magnetic field may affect the TV. 	<ul style="list-style-type: none"> Keep external speakers or other electrical equipment away from the TV. Display the "Setup" menu and adjust "Picture Rotation" so that the picture position is optimal. 	<p>–</p> <p>23</p>
Abnormal color patches 	<ul style="list-style-type: none"> The magnetic disturbance from external speakers or other equipment, or the direction of the earth's magnetic field may affect the TV. 	<ul style="list-style-type: none"> Keep external speakers or other equipment away from the TV. Do not move the TV while the TV is turned on. Press $\text{\textcircled{O}}$ (main power) on the TV to turn off the TV for about 15 minutes, then turn it on again to demagnetize the TV. 	<p>–</p>
TV cannot receive stereo broadcast sound. or Stereo broadcast sound switches on and off or is distorted (KV-XR34M61/ XR29M61 only).	<ul style="list-style-type: none"> The connection is loose or the cable is damaged. The antenna setup is inappropriate. 	<ul style="list-style-type: none"> Check the antenna cable and connection on the TV, VCR and at the wall. Check the antenna setup. Contact a Sony dealer for advice. 	<p>24</p> <p>–</p>
"100" appears at the top of the screen and there is no Teletext display (KV-XR34M61/ XR29M61 only).	<ul style="list-style-type: none"> The channel carries no Teletext broadcast. 	<p>—</p>	<p>13</p>
Teletext display is incomplete (snowy picture or double images) (KV-XR34M61/ XR29M61 only).	<ul style="list-style-type: none"> Connection is loose or the cable is damaged. The antenna setup is inappropriate. Signal transmission is too low. 	<ul style="list-style-type: none"> Check the antenna cable and connection on the TV, VCR, and at the wall. Check the antenna setup. Contact a Sony dealer for advice. Try using a booster. Use the fine tuning ("Fine") function. 	<p>24</p> <p>–</p> <p>–</p> <p>22</p>

Symptom	Possible cause	Solutions	Page
The  (standby) indicator on your TV flashes red several times after every three seconds.	<ul style="list-style-type: none"> Your TV's self-diagnosis function indicates the possible problems. 	<ul style="list-style-type: none"> Count the number of times the  (standby) indicator flashes. Press  (main power) to turn off your TV. Contact your nearest Sony service center. 	-
TV cabinet creaks.	<ul style="list-style-type: none"> Changes in room temperature sometimes make the TV cabinet expand or contract, causing a noise. This does not indicate a malfunction. 	—	-
A small "boom" sound is heard when the TV is turned on.	<ul style="list-style-type: none"> The TV's demagnetizing function is working. This does not indicate a malfunction. 	—	-

■ Specifications

	KV-XR34M61	KV-XR29M61 KV-XR29M50	KV-XR25M50	Note
Power requirements	220-240 V AC, 50/60 Hz			
Power consumption (W)	Indicated on the rear of the TV			
Television system	B/G, I, D/K, M			
Color system	PAL, PAL 60, SECAM, NTSC3.58, NTSC4.43			
Stereo/Bilingual system	NICAM Stereo/Bilingual B/G, I; A2 Stereo/Bilingual B/G			KV-XR34M61/ XR29M61 only
Teletext Language	English, French			KV-XR34M61/ XR29M61 only
Channel coverage				
B/G	VHF : E2 to E12 UHF : E21 to E69 CATV : S01 to S03, S1 to S41			
I	UHF : B21 to B68 CATV : S01 to S03, S1 to S41			
D/K	VHF : C1 to C12, R1 to R12 UHF : C13 to C57, R21 to R60 CATV : S01 to S03, S1 to S41, Z1 to Z39			
M	VHF : A2 to A13 UHF : A14 to A79 CATV : A-8 to A-2, A to W+4, W+6 to W+84			
⌚ (Antenna)	75-ohm external terminal			
Audio output (Speaker)	5 W + 5 W			
Number of terminal				
📺 (Video)	Input: 3	Output: 1	Phono jacks; 1 Vp-p, 75 ohms	
🎧 (Audio)	Input: 3	Output: 1	Phono jacks; 500 mVrms	
📺 (Component Video)	Input: 1		Phono jacks; Y: 1 Vp-p, 75 ohms, sync negative C _B : 0.7 Vp-p, 75 ohms C _R : 0.7 Vp-p, 75 ohms Audio: 500 mVrms	
🎧 (Headphone)	Output: 1		Stereo minijack	
Picture tube	34 in.	29 in.	25 in.	
Tube size (cm)	86	72	64	Measured diagonally
Screen size (cm)	80	68	60	Measured diagonally
Dimensions (w/h/d, mm)	895 × 674 × 590	772 × 576 × 516	696 × 513 × 499	
Mass (kg)	78	49	38	

Design and specifications are subject to change without notice.

<http://www.sony.net/>

Sony Corporation

Trinitron Color TV

Operating Instructions _____ **GB**

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

Mode d'emploi _____ **FR**

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

دفتريچه راهنما _____ **PR**

- قبل از تنظيم کردن دستگاه، لطفاً دفتريچه راهنما را با دقت بخوانيد و به منظور مراجعه بعدی ان را نگه داريد.

تعليمات التشغيل _____ **AR**

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

FD Trinitron

WEGA

KV-XR34

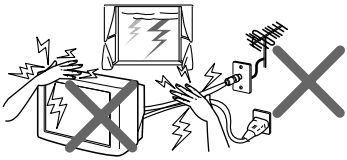

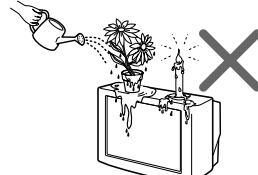
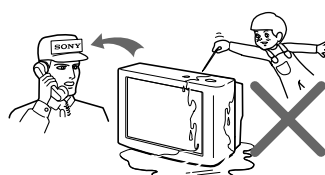
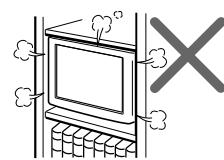
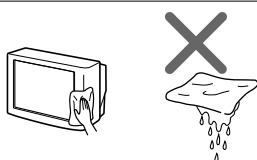
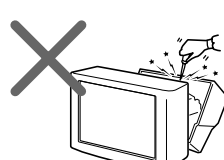
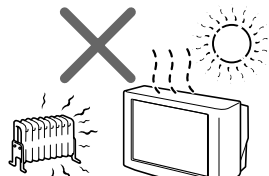
KV-XR29

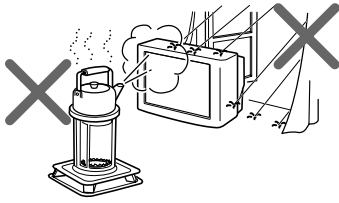
KV-XR25

M81
M80

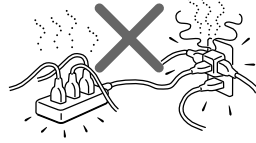
WARNING

- Dangerously high voltages are present inside the TV.
- TV operating voltage: 110 – 240 V AC.
- Do not plug in the power cord until you have completed making all other connections; otherwise a minimum leakage current might flow through the antenna and other terminals to ground.
- To avoid battery leakage and damage to the remote, remove the batteries from the remote if you are not going to use it for several days. If any liquid leaks from the batteries and touches your skin, immediately wash it away with water.

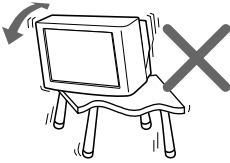
 <p>For your own safety, do not touch any part of the TV, the power cord and the antenna cable during lightning storms.</p>	 <p>For children's safety, do not leave children alone with the TV. Do not allow children to climb onto it.</p>
 <p>Do not place any objects on the TV. The apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.</p>	 <p>Do not operate the TV if any liquid or solid object falls into it. Have it checked immediately by qualified personnel only.</p>
 <p>Do not block the ventilation openings of the TV. Do not install the TV in a confined space, such as a bookcase or built-in cabinet.</p>	 <p>Clean the TV with a dry and soft cloth. Do not use benzine, thinner, or any other chemicals to clean the TV. Do not attach anything (e.g., adhesive tape, cellophane tape, glue) on the painted cabinet of the TV. Do not scratch the picture tube.</p>
 <p>Do not open the cabinet and the rear cover of the TV as high voltages and other hazards are present inside the TV. Refer servicing and disposal of the TV to qualified personnel.</p>	 <p>Your TV is recommended for home use only. Do not use the TV in any vehicle or where it may be subject to excessive dust, heat, moisture or vibrations.</p>



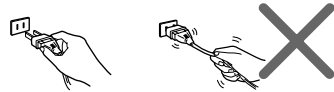
To prevent fire or shock hazard, do not expose the TV to rain or moisture.



Do not plug in too many appliances to the same power socket. Do not damage the power cord.



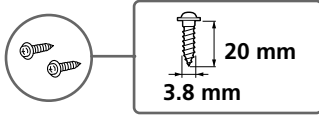
Install the TV on a stable TV stand and floor which can support the TV set weight. Ensure that the TV stand surface is flat and its area is larger than the bottom area of the TV.



Pull the power cord out by the plug. Do not pull the power cord itself. Even if your TV is turned off, it is still connected to the AC power source (mains) as long as the power cord is plugged in. Unplug the TV before moving it or if you are not going to use it for several days.

■ Securing the TV

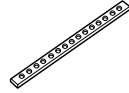
To prevent the TV from falling, use the supplied screws, clamps and band to secure the TV.



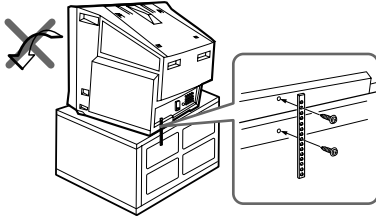
screws



clamps

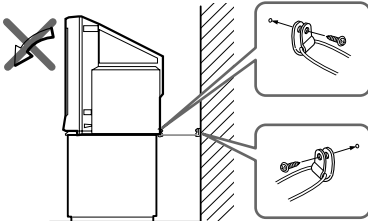


band



Screw the band to the TV stand and to the provided hole at the rear of your TV.

or



- (1) Put a cord or chain through the clamps.
- (2) Screw one clamp to a wall or pillar and the other clamp to the provided hole at the rear of your TV.

Note

- Use only the supplied screws. Use of other screws may damage the TV.

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Menu Adjustment

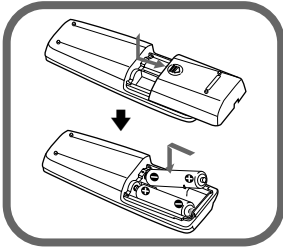
Introducing the menu system	13
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Changing the "Sound" setting	17
Changing the "Timer" setting	19
Changing the "Channel Setup" setting	20
Changing the "Setup" setting	22

Additional Information

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Specifications	Back cover

GB

■ Getting Started

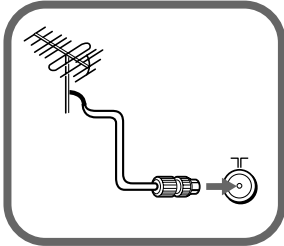


Step 1

Insert the batteries (supplied) into the remote.

Note

- Do not use old or different types of batteries together.

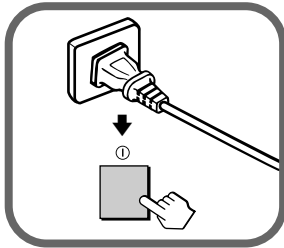


Step 2

Connect the antenna cable (not supplied) to Υ (antenna input) at the rear of the TV.

Tip

- You can also connect your TV to other optional components (see page 23).

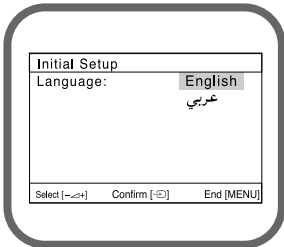


Step 3

Plug in the power cord, then press ⏻ on the TV to turn it on.

Note

- The ⏻ (standby) indicator flashes green for a few seconds when turning on the TV. This does not indicate a malfunction.





Step 4



Set up the TV by following the instructions of the "Initial Setup" menu (see page 7).

■ Setting up your TV ("Initial Setup")

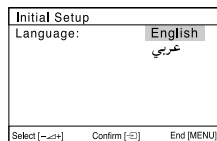
When you turn on your TV for the first time, the "Initial Setup" menu will appear. You may change the menu language, preset the TV channels automatically and adjust the picture position using the buttons on the TV front panel.



Tip

- The MENU,  and  buttons on the remote control can also be used for the operations below.


- 1 Press  +/- to select the desired menu language, then press .

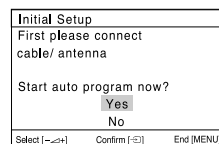
The selected menu language appears.






- 2 Press  +/- to select "Yes", then press  to preset the channels automatically or select "No" to skip automatic channel presetting.

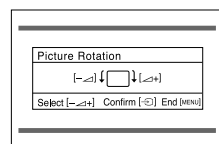
Once you select "Yes", your TV will start searching for all the available channels.




If the message "No channel found. Please connect cable/antenna." appears, check your TV connections, then press .




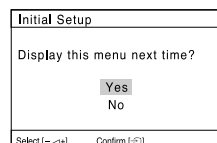
- 3 Press  +/- to adjust the bars on the top and bottom of the menu if they are slanted, then press .

If no adjustment is necessary, then press .



- 4 Press  +/- to select "No", then press . This menu will not appear again the next time you turn on the TV by pressing .

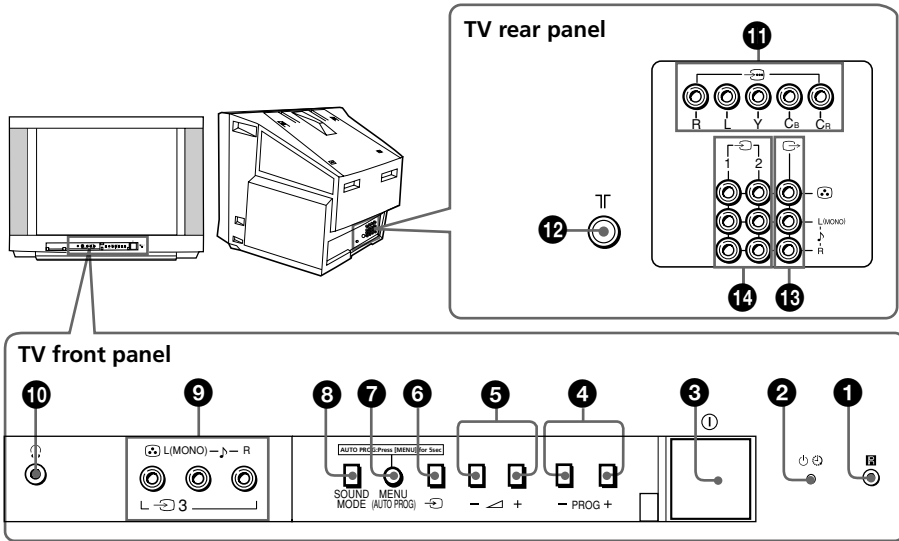
To allow this menu to appear again, select "Yes", then press .



Tips

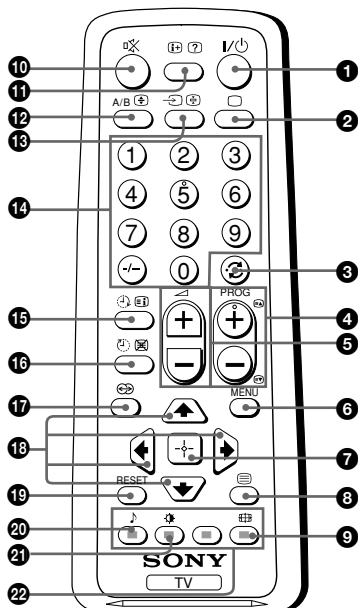
- You can immediately go to the end of the "Initial Setup" menu by pressing MENU.
- You can also set up your TV using the menu system (see page 13).
- You can also preset the channels automatically by pressing MENU (AUTO PROG) button on the TV front panel for about five seconds.

TV front and rear panels



Button/Terminal	Function	Page
1	Remote control sensor.	-
2	Standby indicator.	6
2	Wake Up indicator.	19
3	Turn off or turn on the TV.	6
4 PROG +/-	Select program number.	-
5	Adjust volume.	-
6	Select TV or video input.	23
Menu operations		
5	Select and adjust items.	-
6	Confirm selected items.	-
7 MENU	Display or cancel the menu.	-
7 (AUTO PROG)	Preset channels automatically.	7
8 SOUND MODE	Select sound mode options. 5-Band Graphic Equalizer display will appear.	11
9	Video input terminal 3.	23
10	Headphone jack.	-
11	Component video input terminal.	24
12	Antenna input terminal.	23
13	Monitor output terminal.	23
14	Video input terminal 1, 2.	23

















■ Using the remote control and basic functions



Button	Description	Page
1 I/⏻	Turn off temporarily or turn on the TV.	–
2 □	Display the TV program.	–
3 ⏮	Jump to previous program number.	–
4 PROG +/-	Select program number.	–
5 ∟ +/-	Adjust volume.	–
9 ⊞	Change the picture size: “On” (16:9 wide-mode), “Off”.	–
10 ⊘	Mute the sound.	–
11 i+	Display on-screen information.	–
13 ⌂	Select TV or video input.	23
14 0 – 9, +/-	Input numbers.	–
17 ⊞	Select surround mode options: “On” (surround), “Simulated” (stereo-like monaural sound), “Off”.	–
19 RESET	Set TV to factory setting.	25

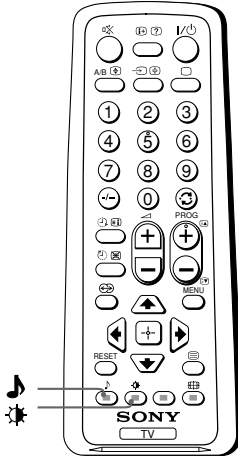
continue

continued

Button Description	Page	
20 	Select sound mode options. "5-Band Graphic Equalizer" display will appear.	11
21 	Select picture mode options.	11
Menu operations		
6  MENU	Display or cancel the menu.	15
7 	Confirm selected items.	15
18 	Select and adjust items.	15
Timer operations		
15 	Set TV to turn on automatically.	-
16 	Set TV to turn off automatically.	-
Teletext operations (green label) (KV-XR34M81/XR29M81/XR25M81 only)		
4 	Display the next or previous page.	12
8 	Display Teletext broadcast.	12
11 	Reveal concealed information.	12
12 	Enlarge the Teletext display.	12
13 	Stop Teletext display from scrolling.	12
15 	Display Teletext service contents.	12
16 	Show TV screen while waiting for Teletext page.	12
22  (red, green, yellow, blue)	Access a FASTEXT menu.	12
Stereo/bilingual operations		
12  A/B	Not function for your TV.	-

■ Selecting the picture and sound modes

You can select picture and sound modes and adjust the setting to your preference in the “Personal” option.



Selecting the picture mode

Press to select the desired picture mode.

Select	To view
“Dynamic”	high contrast pictures.
“Standard”	normal pictures.
“Soft”	mild pictures.
“Personal”	the last adjusted picture setting from the “Picture Adjustment” option in the menu (see page 16).

Selecting the sound mode

Press (or SOUND MODE on the front panel) to select the desired sound mode. 5-Band Graphic Equalizer display will appear.

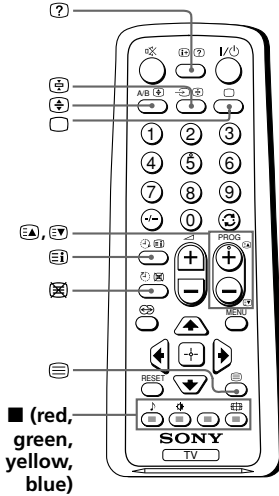
Select	To listen to
“Dynamic” 	dynamic and clear sound that emphasizes both the low and high tones.
“Drama” 	sound that emphasizes voice and high tones.
“Soft” 	soft, natural and relaxing sounds.
“Personal” 	the last adjusted sound setting from the “Sound Adjustment” option in the menu (see page 18).

Viewing Teletext

► KV-XR34M81/XR29M81/XR25M81 only

Some TV stations broadcast an information service called Teletext which allows you to receive various information, such as stock market reports and news.

You can use the buttons on the remote to view Teletext.



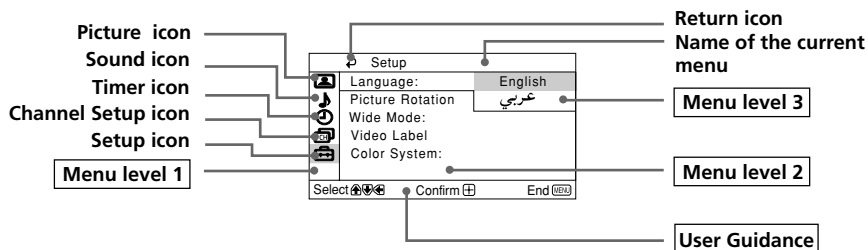
To	Do this
display a Teletext page on the TV picture	Press [List]. Each time you press [List], the screen changes as follows: Teletext → Teletext and TV → TV. If there is no Teletext broadcast, "100" is displayed at the top left corner of the screen.
check the contents of a Teletext service	Press [List]. An overview of the Teletext contents, including page numbers, appears on the screen.
select a Teletext page	Press the number buttons to enter the three-digit page number of the desired Teletext page. If you make a mistake, reenter the correct page number. To access the next or previous page, press [Up] or [Down].
hold (pause) a Teletext display	Press [Pause] to display the symbol "[Pause]" at the top left corner of the screen. To resume normal Teletext viewing, press [Pause].
reveal concealed information (e.g., an answer to a quiz)	Press [Question Mark]. To conceal the information, press the button again.
enlarge the Teletext display	Press [Enlarge]. Each time you press [Enlarge], the Teletext display changes as follows: Enlarge upper half → Enlarge lower half → Normal size.
stand by for a Teletext page while watching a TV program	(1) Enter the Teletext page number that you want to refer to, then press [Lock]. (2) When the page number is displayed, press [List] to show the text.
select a FASTTEXT menu or the colored boxes	Press ■ (red, green, yellow and blue) that corresponds to the desired menu or page number.
turn off Teletext	Press [List].



Note

- The FASTTEXT feature can be used only when the FASTTEXT broadcast is available.

Introducing the menu system




The MENU button lets you open a menu and change the settings of your TV. The following is an overview of the menu system.



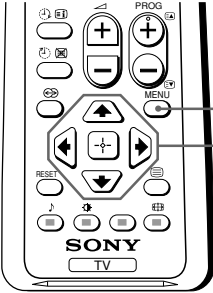
Level 1	Level 2	Level 3/Function	Page
"Picture" 	"Mode"	Select the picture mode: "Dynamic" → "Standard" → "Soft" → "Personal"	16
	"Picture Adjustment"	Adjust the "Personal" option: "Picture" → "Brightness" → "Color" → "Hue" → "Sharpness" → "Reset"	
	"Color Temperature"	Adjust white color tint: "Cool" → "Neutral" → "Warm"	
	"VM"	Sharpen the edges of each object: "High" → "Low" → "Off"	
	"Intelligent Picture"	Optimize picture quality: "On" → "Off"	
"Sound" 	"Mode"	Select the sound mode: "Dynamic" → "Drama" → "Soft" → "Personal"	17
	"Sound Adjustment"	Adjust sound frequency settings of "Personal" option: "Adjust" → "Reset"	
	"Balance"	Select to emphasize the left and right speakers.	
	"Intelligent Volume"	Adjust volume automatically: "On" → "Off"	
	"Surround"	Select the surround mode: "On" → "Simulated" → "Off"	

continue

continued

Level 1	Level 2	Level 3/Function	Page
"Timer" 	"Sleep Timer"	Set TV to turn off automatically.	19
	"Wake Up Timer"	Set TV to turn on automatically.	
"Channel Setup" 	"Auto Program"	Preset channels automatically.	20
	"Manual Program"	Preset channels manually.	
	"TV System"	Select the TV system: "B/G" → "I" → "D/K" → "M"	
	"Program Label"	Label the program number.	
"Setup" 	"Language"	Change the menu language: "English" → "عربي" (Arabic)	22
	"Picture Rotation"	Adjust the picture position.	
	"Wide Mode"	Change the picture size: "On" (16:9 wide-mode) → "Off"	
	"Video Label"	Label the connected equipment.	
	"Color System"	Select the color system: "Auto" → "PAL" → "SECAM" → "NTSC3.58" → "NTSC4.43"	

How to use the menu



Press MENU to display the menu.

MENU →

```

Picture
Mode: Dynamic
Picture Adjustment
Color Temperature: Cool
VM: High
Intelligent Picture: On
Select [Exit] Confirm [Enter] End [Exit]
    
```

Press ↑ or ↓ to select the desired item.

← ↑ ↓ →

```

Channel Setup
Auto Program
Manual Program
TV System: B/G
Program Label
Program Block
Select [Exit] Confirm [Enter] End [Exit]
    
```

Press [Enter] (or →) to confirm your selection and go to the next level.

← ↑ ↓ →

```

Channel Setup
Auto Program
Manual Program
TV System: B/G
Program Label
Program Block
Select [Exit] Confirm [Enter] End [Exit]
    
```

Other menu operations

To	Press
Adjust the setting value	↑, ↓, ← or →.
Move to the next/previous menu level	← or →.
Cancel the menu	MENU.

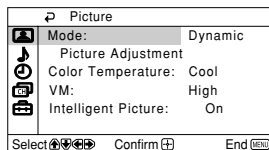
Tips

- If you want to exit from Menu level 2 to Menu level 1, press ↑ or ↓ until the return icon (↶) is highlighted, then press [Enter].
- The MENU, [Exit] and [Enter] +/- buttons on the TV front panel can also be used for the operations above (see page 8).

■ Changing the “Picture” setting

The “Picture” menu allows you to adjust the picture settings.

- 1 Press MENU.
- 2 Make sure the “Picture” icon (🖼️) is selected, then press (⏸️).



- 3 Press ↑ or ↓ to select the desired item (e.g., “Mode”), then press (⏸️).

Select	To
“Mode”	choose either “Dynamic”, “Standard”, “Soft” or “Personal”* (see page 11).
“Color Temperature”	adjust white color tint. Choose either “Cool” (blue tint), “Neutral” (neutral tint) or “Warm” (red tint).
“VM” (Velocity Modulation)	sharpen the edges of each object. Choose either “High”, “Low” or “Off”.
“Intelligent Picture”	optimize picture quality. Press ↑ or ↓ to select “On”, then press (⏸️). To cancel, select “Off”, then press (⏸️).

* You can adjust the setting to your personal preference in the “Picture Adjustment”, “Color Temperature” and “VM” options only when the “Personal” mode is selected.

Adjusting the “Picture Adjustment” items under “Personal” mode

- 1 Press ↑ or ↓ to select either “Picture” (contrast), “Brightness”, “Color”, “Hue” (color tones) or “Sharpness”, then press (⏸️).
Selecting “Reset” will set your TV to the factory setting.
- 2 Press ↑, ↓, ← or → to adjust the setting of your selected item, then press (⏸️).
- 3 Repeat the above steps to adjust other items.
The adjusted settings will be received when you select “Personal”.


Notes

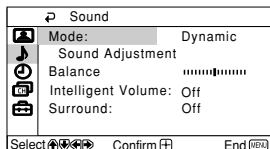
- “Hue” can be adjusted for the NTSC color system only.
- Reducing “Sharpness” can also reduce picture noise.

■ Changing the “Sound” setting

The “Sound” menu allows you to adjust the sound settings.

1 Press MENU.

2 Press **▲** or **▼** to select the “Sound” icon (), then press **⏏**.



3 Press **▲** or **▼** to select the desired item (e.g., “Mode”), then press **⏏**.

Select	To
“Mode”	choose either “Dynamic”, “Drama”, “Soft” or “Personal”* (see page 11).
“Balance”	Press ▼ or ◀ to emphasize the left speaker. Press ▲ or ▶ to emphasize the right speaker.
“Intelligent Volume”	adjust the volume of all program numbers and video inputs automatically. Press ▲ or ▼ to select “On”, then press ⏏ . To cancel, select “Off”, then press ⏏ .
“Surround”	choose either “On”, “Simulated” or “Off” (see page 9).


* You can adjust the setting to your personal preference in the “Sound Adjustment” option only when the “Personal” mode is selected (see page 18).

continue

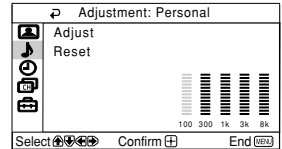
continued






Adjusting the “Sound Adjustment” item under “Personal” mode

The 5-Band Graphic Equalizer feature allows you to adjust sound frequency settings of “Personal” mode in the menu.

- 1 Make sure that “Adjust” is selected, then press .


Selecting “Reset” will set your TV to the factory setting.



- 2 Press  or  to select the desired sound frequency, then press  or  to adjust the setting and press .

The adjusted settings will be received when you select “Personal”.

Notes

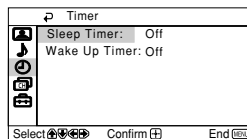
- Adjusting higher frequency will affect higher pitched sound and adjusting lower frequency will affect lower pitched sound.
- You may display the settings directly using the SOUND MODE button on the TV front panel (see page 8) or  button on the remote control (see page 10).

■ Changing the “Timer” setting

The “Timer” menu allows you to set TV to turn off and turn on automatically.

1 Press MENU.

2 Press **▲** or **▼** to select the “Timer” icon (⌚), then press **⏏**.



3 Press **▲** or **▼** to select the desired item (e.g., “Sleep Timer”), then press **⏏**.

Select	To
“Sleep Timer”	set TV to turn off automatically. Press ▲ or ▼ to select the desired period of time (max. of 1 hour and 30 minutes), then press ⏏ .
“Wake Up Timer”	set TV to turn on automatically. Press ▲ or ▼ to select the desired period of time (max. of 12 hours), then press ⏏ . After the selected length of time, the TV switches on automatically and “Wake Up Timer” will appear on the screen. The ⌚ indicator on the TV lights up amber once you set the “Wake Up Timer”.

Notes

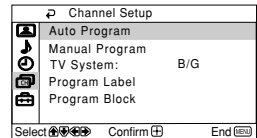
- You can also cancel “Sleep Timer” and “Wake Up Timer” by turning off the TV’s main power.
- If no buttons or controls are pressed for more than one hour after the TV is turned on using the “Wake Up Timer”, the TV automatically goes into standby mode.

■ Changing the “Channel Setup” setting

The “Channel Setup” menu allows you to preset channels automatically, manually preset channels, select the TV system, label the program number and block unwanted programs.

1 Press MENU.

2 Press \uparrow or \downarrow to select the “Channel Setup” icon (📺), then press (📺).



3 Press \uparrow or \downarrow to select the desired item (e.g., “Auto Program”), then press (📺).





Select	To
“Auto Program”	preset channels automatically.
“Manual Program”	manually preset desired channels and channels that cannot be preset automatically (see Presetting channels manually on page 21).
“TV System”	select the TV system. Press \uparrow or \downarrow to select either “B/G”, “I”, “D/K” or “M”, then press (📺).
“Program Label”	label the program number. (1) Select “Program” and press (📺). Press \uparrow or \downarrow to select the program number, then press (📺). (2) Select “Label” and press (📺), then press \uparrow or \downarrow to select alphanumeric characters for the label.
“Program Block”	block unwanted programs. (1) Select “Program” and press (📺). Press \uparrow or \downarrow to select the program number, then press (📺). (2) Select “Block” and press (📺), then press \uparrow or \downarrow to choose either “On” or “Off”. If you preset a blocked program number, that program number will be unblocked automatically.

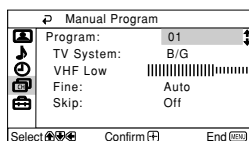
Note

- During automatic channel presetting, your TV screen will indicate “B/G”, “I”, “D/K” or “M” for the “TV System”.




Presetting channels manually

1 After selecting “Manual Program”, select the program number to which you want to preset a channel.







- (1) Make sure “Program” is selected, then press .
- (2) Press  or  until the program number you want to preset appears on the menu, then press .














2 Select the desired channel.

- (1) Make sure either “VHF Low”, “VHF High” or “UHF” is selected, then press .
- (2) Press  or  until the desired channel’s broadcast appears on the TV screen, then press .

3 If the sound of the desired channel is abnormal, select the appropriate TV system.







- (1) Press  or  to select “TV System”, then press .
- (2) Press  or  until the sound becomes normal, then press .


4 If you are not satisfied with the picture and sound quality, you may be able to improve them by using the “Fine” tuning feature.

- (1) Press  or  to select “Fine”, then press .
- (2) Press  or  to select “Manual”, then press .
- (3) Press , ,  or  until the picture and sound quality are optimal, then press .

The + or – icon on the menu flashes while tuning.

5 If you want to skip this program number when using PROG +/-, you can select the “Skip” feature.

- (1) Press  or  to select “Skip”, then press .
- (2) Press  or  to select “On”, then press .

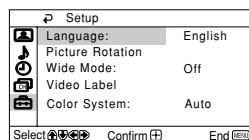
To cancel, select “Off”, then press .

■ Changing the “Setup” setting

The “Setup” menu allows you to change the menu language, adjust the picture position, change the picture size, label the connected equipment and select the color system.

1 Press MENU.

2 Press **▲** or **▼** to select the “Setup” icon (⚙️), then press **⏏**.



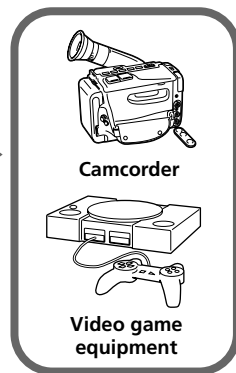
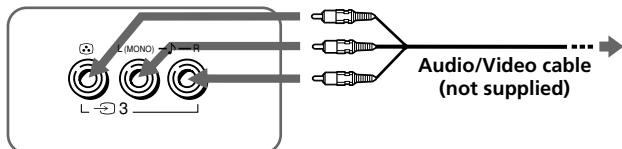
3 Press **▲** or **▼** to select the desired item (e.g., “Language”), then press **⏏**.

Select	To
“Language”	change the menu language. Press ▲ or ▼ to select either “English” or “عربي” (Arabic), then press ⏏ .
“Picture Rotation”	adjust the picture position when it is not aligned with the TV screen. Press ◀ or ▶ to adjust the picture position, then press ⏏ .
“Wide Mode”	choose either “On” or “Off” (see page 9).
“Video Label”	label the connected equipment. (1) Select “Video Input” and press ⏏ . Press ▲ or ▼ to select the input you want to label, then press ⏏ . (2) Select “Label” and press ⏏ , then press ▲ or ▼ to select the label options: “Video 1/Video 2/Video 3/ DVD”, “VCR”, “SAT”, “Game” or “Edit”*. * You may edit the video label by entering alphanumeric characters.
“Color System”	select the color system. Press ▲ or ▼ to select either “Auto”, “PAL”, “SECAM”, “NTSC3.58” or “NTSC4.43”, then press ⏏ . Normally, set this to “Auto”.

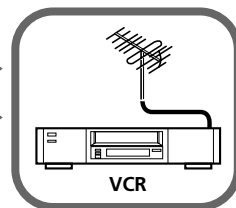
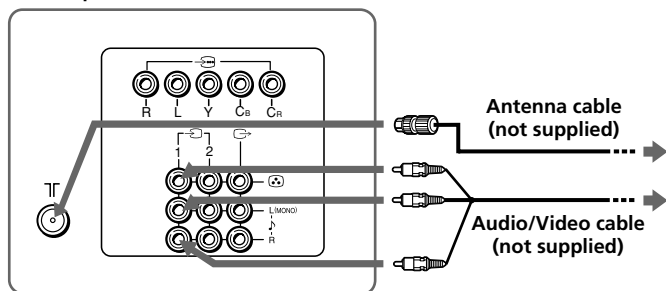
■ Connecting optional components

Connecting to the video input terminal (→)

TV front panel



TV rear panel

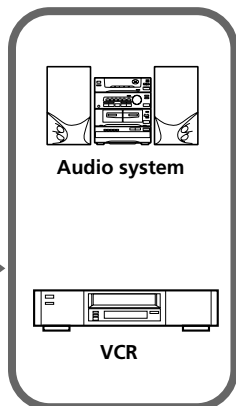
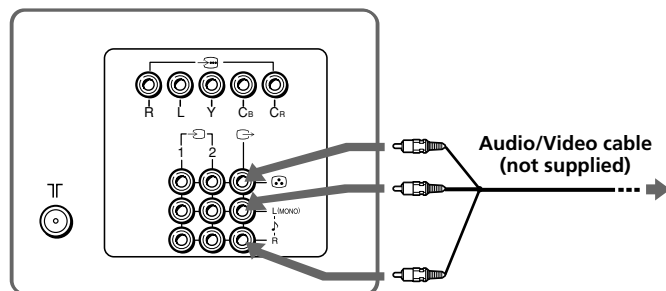


Notes

- If you connect a VCR to T (antenna input), preset the signal output from the VCR to the program number 0 on the TV (see page 21).

Connecting to the monitor output terminal (↔)

TV rear panel

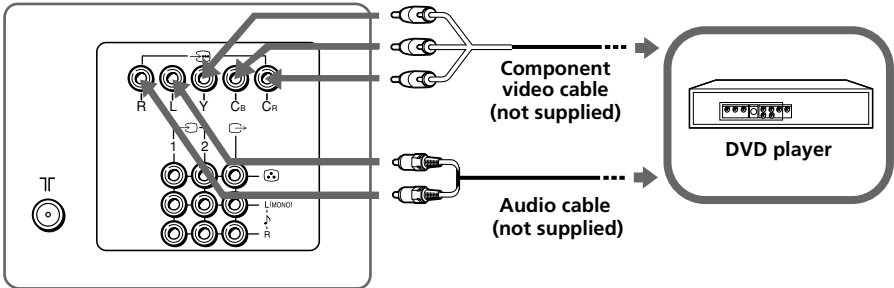


continue


continued

Connecting to the component video input terminal ()


TV rear panel



Notes

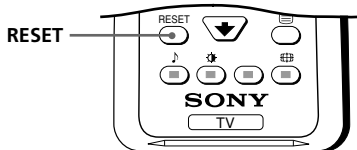
- If your DVD player can output interlace and progressive mode signals, select the interlace output when connecting to  (component video input) on your TV. Your TV can receive either 525i/60Hz or 625i/50Hz interlace signals.
- Some DVD player terminals may be labeled differently:

Connect	To (on the DVD player)
Y (green)	Y
C _B (blue)	C _B , P _B , C _b or B-Y
C _R (red)	C _R , P _R , C _r or R-Y

- If you select "DVD" on your TV screen, the signal from the  (monitor output) jacks will not be output properly. This does not indicate a malfunction.

Troubleshooting

If you find any problem while viewing your TV, you can either use the Reset function or check the Troubleshooting guide below. If the problem persists, contact your Sony dealer.









Reset function

Press the RESET button on your remote control. Your TV will go blank for a few seconds then the "Initial Setup" menu will appear.








Pressing RESET will set your TV to the factory setting, but certain problems may be solved.

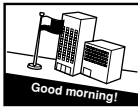

Troubleshooting guide

Symptom	Possible cause	Solutions	Page
Snowy picture 	<ul style="list-style-type: none"> The connection is loose or the cable is damaged. The antenna setup is inappropriate. 	<ul style="list-style-type: none"> Check the antenna cable and connection on the TV, VCR and at the wall. Check the antenna setup. Contact a Sony dealer for advice. 	23 -
Noisy sound 	<ul style="list-style-type: none"> Channel presetting is inappropriate or incomplete. Signal transmission is low. 	<ul style="list-style-type: none"> Display the "Channel Setup" menu and select "Manual Program" to preset the channel again. Try using a booster. 	21 -
Distorted picture 	<ul style="list-style-type: none"> Broadcast signals are too strong. 	<ul style="list-style-type: none"> Turn off or disconnect the booster if it is in use. 	-
Noisy sound 			
Good picture 	<ul style="list-style-type: none"> The TV system setting is inappropriate. 	<ul style="list-style-type: none"> Display the "Channel Setup" menu and select the appropriate "TV System". 	21
Noisy sound 			

continue

continued

Symptom	Possible cause	Solutions	Page
No picture 	<ul style="list-style-type: none"> The power cord, antenna or VCR is not connected. 	<ul style="list-style-type: none"> Check the power cord, antenna and VCR connections. 	23
	<ul style="list-style-type: none"> The TV is not turned on. 	<ul style="list-style-type: none"> Press I/⏻ (power). Press ⏻ (main power) on the TV to turn off the TV for about five seconds, then turn it on again. 	9 8
No sound 			
Good picture 	<ul style="list-style-type: none"> The volume level is too low. 	<ul style="list-style-type: none"> Press ◀ + to increase the volume level. 	9
	<ul style="list-style-type: none"> The sound is muted. 	<ul style="list-style-type: none"> Press 🔇 to cancel the muting. 	9
No sound 			
Dotted lines or stripes 	<ul style="list-style-type: none"> There is local interference from cars, neon signs, hair dryers, power generators, etc. 	<ul style="list-style-type: none"> Do not use a hair dryer or other equipment near the TV. Check the antenna setup. Contact a Sony dealer for advice. 	– –
Double images or "ghosts" 	<ul style="list-style-type: none"> Broadcast signals are reflected by nearby mountains or buildings. 	<ul style="list-style-type: none"> Use a highly directional antenna. Use the fine tuning ("Fine") function. 	– 21
	<ul style="list-style-type: none"> The antenna setup is inappropriate. 	<ul style="list-style-type: none"> Check the antenna setup. Contact a Sony dealer for advice. 	–
	<ul style="list-style-type: none"> Use of a booster is inappropriate. 	<ul style="list-style-type: none"> Turn off or disconnect the booster if it is in use. 	–
No color 	<ul style="list-style-type: none"> The color level setting is too low. 	<ul style="list-style-type: none"> Display the "Picture" menu and select "Personal" or "Mode", then adjust the "Color" level in "Picture Adjustment". 	16
	<ul style="list-style-type: none"> The color system setting is inappropriate. 	<ul style="list-style-type: none"> Display the "Setup" menu and check the "Color System" setting (usually set this to "Auto"). 	22
	<ul style="list-style-type: none"> The antenna setup is inappropriate. 	<ul style="list-style-type: none"> Check the antenna setup. Contact a Sony dealer for advice. 	–

Symptom	Possible cause	Solutions	Page
Picture slant 	<ul style="list-style-type: none"> The magnetic disturbance from external speakers or other equipment, or the direction of the earth's magnetic field may affect the TV. 	<ul style="list-style-type: none"> Keep external speakers or other electrical equipment away from the TV. Display the "Setup" menu and adjust "Picture Rotation" so that the picture position is optimal. 	<p>–</p> <p>22</p>
Abnormal color patches 	<ul style="list-style-type: none"> The magnetic disturbance from external speakers or other equipment, or the direction of the earth's magnetic field may affect the TV. 	<ul style="list-style-type: none"> Keep external speakers or other equipment away from the TV. Do not move the TV while the TV is turned on. Press Ⓚ (main power) on the TV to turn off the TV for about 15 minutes, then turn it on again to demagnetize the TV. 	<p>–</p>
"100" appears at the top of the screen and there is no Teletext display (KV-XR34M81/XR29M81/XR25M81 only).	<ul style="list-style-type: none"> The channel carries no Teletext broadcast. 	<p>—</p>	<p>12</p>
Teletext display is incomplete (snowy picture or double images) (KV-XR34M81/XR29M81/XR25M81 only).	<ul style="list-style-type: none"> Connection is loose or the cable is damaged. 	<ul style="list-style-type: none"> Check the antenna cable and connection on the TV, VCR, and at the wall. 	<p>23</p>
	<ul style="list-style-type: none"> The antenna setup is inappropriate. 	<ul style="list-style-type: none"> Check the antenna setup. Contact a Sony dealer for advice. 	<p>–</p>
	<ul style="list-style-type: none"> Signal transmission is too low. 	<ul style="list-style-type: none"> Try using a booster. Use the fine tuning ("Fine") function. 	<p>–</p> <p>21</p>
The Ⓚ (standby) indicator on your TV flashes red several times after every three seconds.	<ul style="list-style-type: none"> Your TV's self-diagnosis function indicates the possible problems. 	<ul style="list-style-type: none"> Count the number of times the Ⓚ (standby) indicator flashes. Press Ⓚ (main power) to turn off your TV. Contact your nearest Sony service center. 	<p>–</p>
TV cabinet creaks.	<ul style="list-style-type: none"> Changes in room temperature sometimes make the TV cabinet expand or contract, causing a noise. This does not indicate a malfunction. 	<p>—</p>	<p>–</p>
A small "boom" sound is heard when the TV is turned on.	<ul style="list-style-type: none"> The TV's demagnetizing function is working. This does not indicate a malfunction. 	<p>—</p>	<p>–</p>

■ Specifications

	KV-XR34M81	KV-XR29M81 KV-XR29M80	KV-XR25M81 KV-XR25M80	Note
Power requirements	110-240 V AC, 50/60 Hz			
Power consumption (W)	Indicated on the rear of the TV			
Television system	B/G, I, D/K, M			
Color system	PAL, PAL 60, SECAM, NTSC3.58, NTSC4.43			
Teletext language	English, Farsi (Persian)			KV-XR34M81/ XR29M81/XR25M81 only
Channel coverage				
B/G	VHF : E2 to E12 UHF : E21 to E69 CATV : S01 to S03, S1 to S41			
I	UHF : B21 to B68 CATV : S01 to S03, S1 to S41			
D/K	VHF : C1 to C12, R1 to R12 UHF : C13 to C57, R21 to R60 CATV : S01 to S03, S1 to S41, Z1 to Z39			
M	VHF : A2 to A13 UHF : A14 to A79 CATV : A-8 to A-2, A to W+4, W+6 to W+84			
⌚ (Antenna)	75-ohm external terminal			
Audio output (Speaker)	5 W + 5 W			
Number of terminal				
📺 (Video)	Input: 3	Output: 1	Phono jacks; 1 Vp-p, 75 ohms	
🎧 (Audio)	Input: 3	Output: 1	Phono jacks; 500 mVrms	
📺 (Component Video)	Input: 1		Phono jacks; Y: 1 Vp-p, 75 ohms, sync negative Cb: 0.7 Vp-p, 75 ohms Cr: 0.7 Vp-p, 75 ohms Audio: 500 mVrms	
🎧 (Headphone)	Output: 1		Stereo minijack	
Picture tube	34 in.	29 in.	25 in.	
Tube size (cm)	86	72	64	Measured diagonally
Screen size (cm)	80	68	60	Measured diagonally
Dimensions (w/h/d, mm)	895 × 674 × 590	772 × 576 × 516	696 × 513 × 499	
Mass (kg)	78	49	38	

Design and specifications are subject to change without notice.

<http://www.sony.net/>

Sony Corporation

Trinitron Color TV

Operating Instructions _____

GB

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

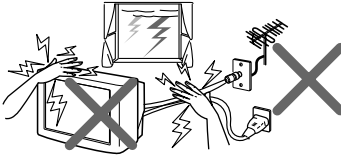

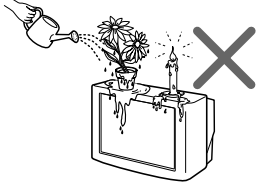
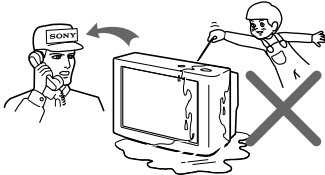
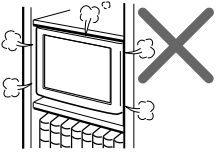
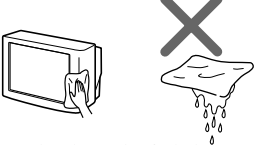
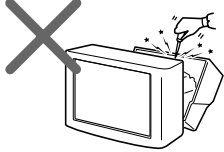
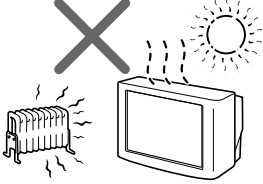
FD Trinitron
WEGA

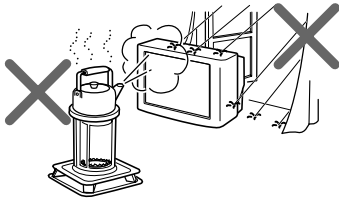
KV-XR29



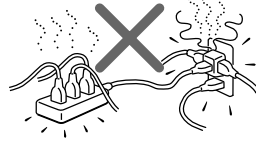
WARNING

- Dangerously high voltages are present inside the TV.
- TV operating voltage: 110 – 240 V AC.
- Do not plug in the power cord until you have completed making all other connections; otherwise a minimum leakage current might flow through the antenna and other terminals to ground.
- To avoid battery leakage and damage to the remote, remove the batteries from the remote if you are not going to use it for several days. If any liquid leaks from the batteries and touches your skin, immediately wash it away with water.

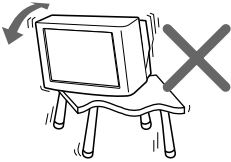
 <p>For your own safety, do not touch any part of the TV, the power cord and the antenna cable during lightning storms.</p>	 <p>For children's safety, do not leave children alone with the TV. Do not allow children to climb onto it.</p>
 <p>Do not place any objects on the TV. The apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.</p>	 <p>Do not operate the TV if any liquid or solid object falls into it. Have it checked immediately by qualified personnel only.</p>
 <p>Do not block the ventilation openings of the TV. Do not install the TV in a confined space, such as a bookcase or built-in cabinet.</p>	 <p>Clean the TV with a dry and soft cloth. Do not use benzene, thinner, or any other chemicals to clean the TV. Do not attach anything (e.g., adhesive tape, cellophane tape, glue) on the painted cabinet of the TV. Do not scratch the picture tube.</p>
 <p>Do not open the cabinet and the rear cover of the TV as high voltages and other hazards are present inside the TV. Refer servicing and disposal of the TV to qualified personnel.</p>	 <p>Your TV is recommended for home use only. Do not use the TV in any vehicle or where it may be subject to excessive dust, heat, moisture or vibrations.</p>



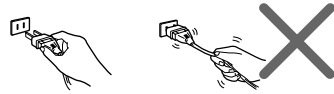
To prevent fire or shock hazard, do not expose the TV to rain or moisture.



Do not plug in too many appliances to the same power socket. Do not damage the power cord.



Install the TV on a stable TV stand and floor which can support the TV set weight. Ensure that the TV stand surface is flat and its area is larger than the bottom area of the TV.



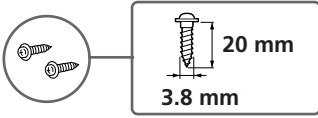
Pull the power cord out by the plug. Do not pull the power cord itself. Even if your TV is turned off, it is still connected to the AC power source (mains) as long as the power cord is plugged in. Unplug the TV before moving it or if you are not going to use it for several days.

Made in Malaysia.

Sony Corporation
6-7-35 Kitashinagawa,
Shinagawa-ku, Tokyo, 141-0001 Japan.

■ Securing the TV

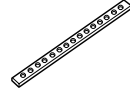
To prevent the TV from falling, use the supplied screws, clamps and band to secure the TV.



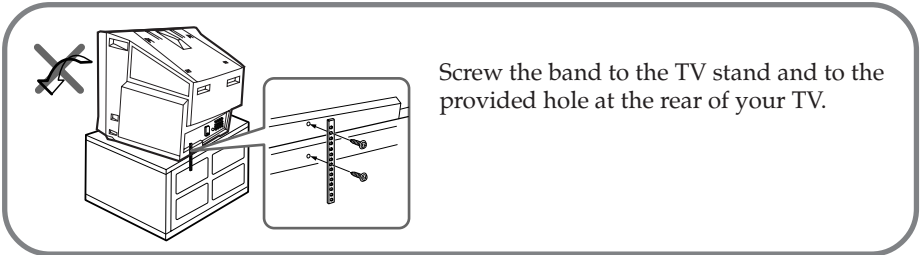
screws



clamps

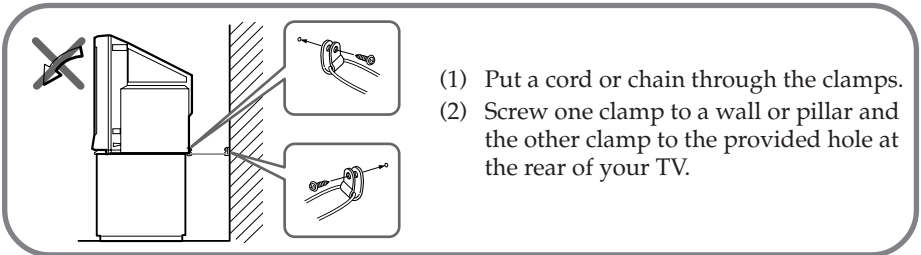


band



Screw the band to the TV stand and to the provided hole at the rear of your TV.

or



- (1) Put a cord or chain through the clamps.
- (2) Screw one clamp to a wall or pillar and the other clamp to the provided hole at the rear of your TV.

Note

- Use only the supplied screws. Use of other screws may damage the TV.

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Menu Adjustment

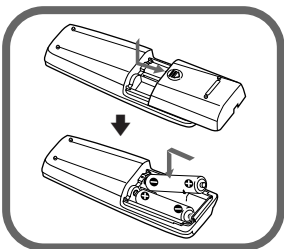
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GB

■ Getting Started

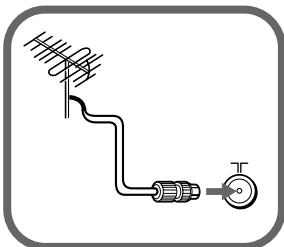


Step 1

Insert the batteries (supplied) into the remote.

Note

- Do not use old or different types of batteries together.

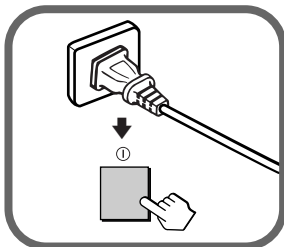


Step 2

Connect the antenna cable (not supplied) to $\overline{\text{T}}$ (antenna input) at the rear of the TV.

Tip

- You can also connect your TV to other optional components (see page 22).

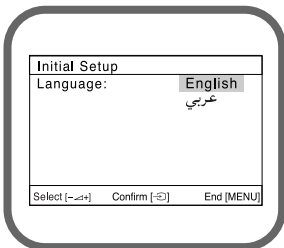


Step 3

Plug in the power cord, then press ⏻ on the TV to turn it on.

Note

- The ⏻ (standby) indicator flashes green for a few seconds when turning on the TV. This does not indicate a malfunction.








Step 4



Set up the TV by following the instructions of the "Initial Setup" menu (see page 7).

■ Setting up your TV ("Initial Setup")

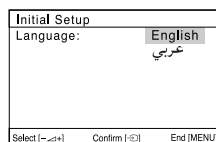
When you turn on your TV for the first time, the "Initial Setup" menu will appear. You may change the menu language, preset the TV channels automatically and adjust the picture position using the buttons on the TV front panel.



Tip

- The MENU,  and , , ,  buttons on the remote control can also be used for the operations below.


- 1 Press  +/- to select the desired menu language, then press .

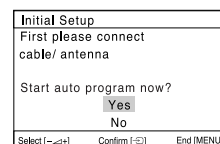
The selected menu language appears.





- 2 Press  +/- to select "Yes", then press  to preset the channels automatically or select "No" to skip automatic channel presetting.

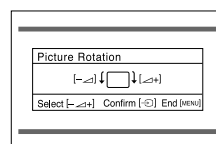
Once you select "Yes", your TV will start searching for all the available channels.




If the message "No channel found. Please connect cable/antenna." appears, check your TV connections, then press .




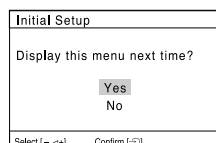
- 3 Press  +/- to adjust the bars on the top and bottom of the menu if they are slanted, then press .

If no adjustment is necessary, then press .



- 4 Press  +/- to select "No", then press . This menu will not appear again the next time you turn on the TV by pressing .

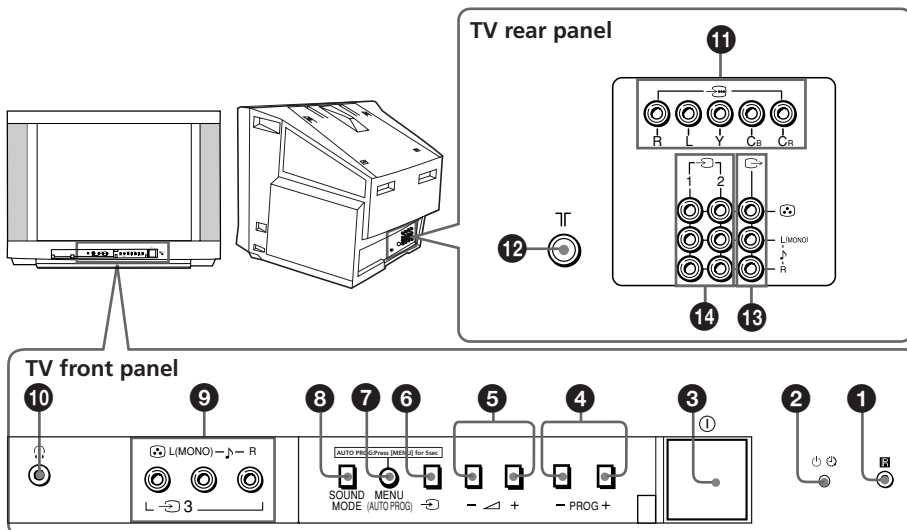
To allow this menu to appear again, select "Yes", then press .



Tips

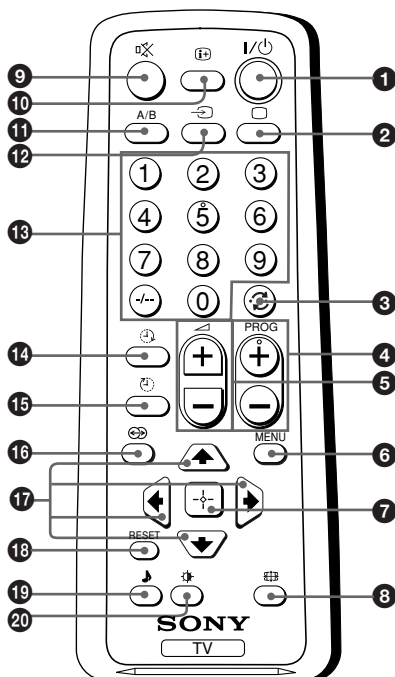
- You can immediately go to the end of the "Initial Setup" menu by pressing MENU.
- You can also set up your TV using the menu system (see page 12).
- You can also preset the channels automatically by pressing MENU (AUTO PROG) button on the TV front panel for about five seconds.

TV front and rear panels



Button/Terminal	Function	Page
1	Remote control sensor.	–
2	Standby indicator.	6
2	Wake Up indicator.	18
3	Turn off or turn on the TV.	6
4 PROG +/-	Select program number.	–
5	Adjust volume.	–
6	Select TV or video input.	22
Menu operations		
5	Select and adjust items.	–
6	Confirm selected items.	–
7 MENU	Display or cancel the menu.	–
7 (AUTO PROG)	Preset channels automatically.	7
8 SOUND MODE	Select sound mode options. 5-Band Graphic Equalizer display will appear.	11
9	Video input terminal 3.	22
10	Headphone jack.	–
11	Component video input terminal.	23
12	Antenna input terminal.	22
13	Monitor output terminal.	22
14	Video input terminal 1, 2.	22







■ Using the remote control and basic functions



Button	Description	Page
1 I/⏻	Turn off temporarily or turn on the TV.	-
2 □	Display the TV program.	-
3 ↺	Jump to previous program number.	-
4 PROG +/-	Select program number.	-
5 ▽ +/-	Adjust volume.	-
8 📺	Change the picture size: "On" (16:9 wide-mode), "Off".	-
9 🔇	Mute the sound.	-
10 ⓘ	Display on-screen information.	-
12 ↶	Select TV or video input.	22
13 0 - 9, -/--	Input numbers.	-
16 ⏸	Select surround mode options: "On" (surround), "Simulated" (stereo-like monaural sound), "Off".	-
18 RESET	Set TV to factory setting.	24

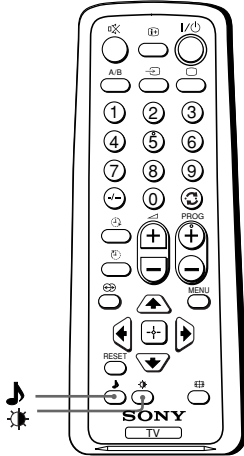
continue

continued

Button	Description	Page
19 	Select sound mode options. 5-Band Graphic Equalizer display will appear.	11
20 	Select picture mode options.	11
Menu operations		
6 MENU	Display or cancel the menu.	14
7 	Confirm selected items.	14
17 	Select and adjust items.	14
Timer operations		
14 	Set TV to turn on automatically.	-
15 	Set TV to turn off automatically.	-
Stereo/bilingual operations		
11 A/B	Not function for your TV	-

■ Selecting the picture and sound modes

You can select picture and sound modes and adjust the setting to your preference in the “Personal” option.





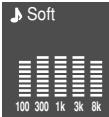
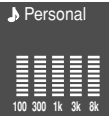
Selecting the picture mode

Press to select the desired picture mode.

Select	To view
“Dynamic”	high contrast pictures.
“Standard”	normal pictures.
“Soft”	mild pictures.
“Personal”	the last adjusted picture setting from the “Picture Adjustment” option in the menu (see page 15).

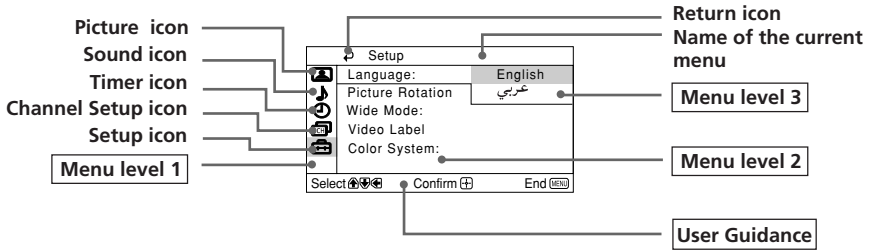
Selecting the sound mode



Press (or SOUND MODE on the front panel) to select the desired sound mode. 5-Band Graphic Equalizer display will appear.




Select	To listen to
“Dynamic” 	dynamic and clear sound that emphasizes both the low and high tones.
“Drama” 	sound that emphasizes voice and high tones.
“Soft” 	soft, natural and relaxing sounds.
“Personal” 	the last adjusted sound setting from the “Sound Adjustment” option in the menu (see page 17).

Introducing the menu system

The MENU button lets you open a menu and change the settings of your TV. The following is an overview of the menu system.

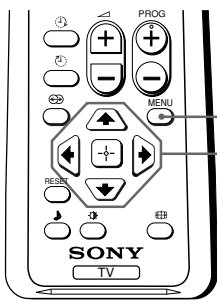


Level 1	Level 2	Level 3/Function	Page
"Picture" 	"Mode"	Select the picture mode: "Dynamic" → "Standard" → "Soft" → "Personal"	15
	"Picture Adjustment"	Adjust the "Personal" option: "Picture" → "Brightness" → "Color" → "Hue" → "Sharpness" → "Reset"	
	"Color Temperature"	Adjust white color tint: "Cool" → "Neutral" → "Warm"	
	"VM"	Sharpen the edges of each object: "High" → "Low" → "Off"	
	"Intelligent Picture"	Optimize picture quality: "On" → "Off"	
"Sound" 	"Mode"	Select the sound mode: "Dynamic" → "Drama" → "Soft" → "Personal"	16
	"Sound Adjustment"	Adjust sound frequency settings of "Personal" option: "Adjust" → "Reset"	
	"Balance"	Select to emphasize the left and right speakers.	
	"Intelligent Volume"	Adjust volume automatically: "On" → "Off"	
	"Surround"	Select the surround mode: "On" → "Simulated" → "Off"	


Level 1	Level 2	Level 3/Function	Page
"Timer" 	"Sleep Timer"	Set TV to turn off automatically.	18
	"Wake Up Timer"	Set TV to turn on automatically.	
"Channel Setup" 	"Auto Program"	Preset channels automatically.	19
	"Manual Program"	Preset channels manually.	
	"TV System"	Select the TV system: "B/G" → "I" → "D/K" → "M"	
	"Program Label"	Label the program number.	
	"Program Block"	Block unwanted programs.	
"Setup" 	"Language"	Change the menu language: "English" → "عربي" (Arabic)	21
	"Picture Rotation"	Adjust the picture position.	
	"Wide Mode"	Change the picture size: "On" (16:9 wide-mode) → "Off"	
	"Video Label"	Label the connected equipment.	
	"Color System"	Select the color system: "Auto" → "PAL" → "SECAM" → "NTSC3.58" → "NTSC4.43"	

continued

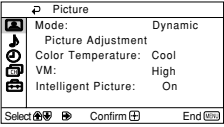
How to use the menu



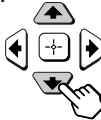
Press MENU to display the menu.



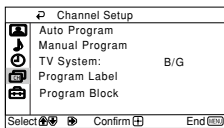
→




Press **↑** or **↓** to select the desired item.



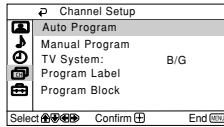
→



Press **⏏** (or **→**) to confirm your selection and go to the next level.



→



Other menu operations

To	Press
Adjust the setting value	↑, ↓, ← or → .
Move to the next/previous menu level	← or → .
Cancel the menu	MENU.

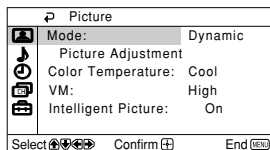
Tips

- If you want to exit from Menu level 2 to Menu level 1, press **↑** or **↓** until the return icon (⏏) is highlighted, then press **⏏**.
- The MENU, **⏏** and **↔** buttons on the TV front panel can also be used for the operations above (see page 8).

■ Changing the “Picture” setting

The “Picture” menu allows you to adjust the picture settings.

- 1 Press MENU.
- 2 Make sure the “Picture” icon (🖼️) is selected, then press (⏪).



- 3 Press ↑ or ↓ to select the desired item (e.g., “Mode”), then press (⏪).

Select	To
“Mode”	choose either “Dynamic”, “Standard”, “Soft” or “Personal”* (see page 11).
“Color Temperature”	adjust white color tint. Choose either “Cool” (blue tint), “Neutral” (neutral tint) or “Warm” (red tint).
“VM” (Velocity Modulation)	sharpen the edges of each object. Choose either “High”, “Low” or “Off”.
“Intelligent Picture”	optimize picture quality. Press ↑ or ↓ to select “On”, then press (⏪). To cancel, select “Off”, then press (⏪).

* You can adjust the setting to your personal preference in the “Picture Adjustment”, “Color Temperature” and “VM” options only when the “Personal” mode is selected.

Adjusting the “Picture Adjustment” items under “Personal” mode

- 1 Press ↑ or ↓ to select either “Picture” (contrast), “Brightness”, “Color”, “Hue” (color tones) or “Sharpness”, then press (⏪).

Selecting “Reset” will set your TV to the factory setting.

- 2 Press ↑, ↓, ← or → to adjust the setting of your selected item, then press (⏪).

- 3 Repeat the above steps to adjust other items.

The adjusted settings will be received when you select “Personal”.


Notes

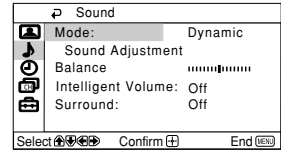
- “Hue” can be adjusted for the NTSC color system only.
- Reducing “Sharpness” can also reduce picture noise.

■ Changing the “Sound” setting

The “Sound” menu allows you to adjust the sound settings.

1 Press MENU.

2 Press **↑** or **↓** to select the “Sound” icon (), then press **[↵]**.




3 Press **↑** or **↓** to select the desired item (e.g., “Mode”), then press **[↵]**.

Select	To
“Mode”	choose either “Dynamic”, “Drama”, “Soft” or “Personal”* (see page 11).
“Balance”	Press ↓ or ← to emphasize the left speaker. Press ↑ or → to emphasize the right speaker.
“Intelligent Volume”	adjust the volume of all program numbers and video inputs automatically. Press ↑ or ↓ to select “On”, then press [↵] . To cancel, select “Off”, then press [↵] .
“Surround”	choose either “On”, “Simulated” or “Off” (see page 9).

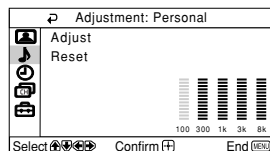
* You can adjust the setting to your personal preference in the “Sound Adjustment” option only when the “Personal” mode is selected (see page 17).






Adjusting the “Sound Adjustment” item under “Personal” mode

The 5-Band Graphic Equalizer feature allows you to adjust sound frequency settings of “Personal” mode in the menu.

- 1 Make sure that “Adjust” is selected, then press .


Selecting “Reset” will set your TV to the factory setting.



- 2 Press  or  to select the desired sound frequency, then press  or  to adjust the setting and press .

The adjusted settings will be received when you select “Personal”.

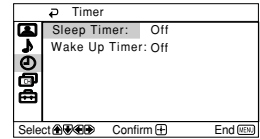
Notes

- Adjusting higher frequency will affect higher pitched sound and adjusting lower frequency will affect lower pitched sound.
- You may display the settings directly using the SOUND MODE button on the TV front panel (see page 8) or  button on the remote control (see page 10).

■ Changing the “Timer” setting

The “Timer” menu allows you to set TV to turn off and turn on automatically.

- 1 Press MENU.
- 2 Press **▲** or **▼** to select the “Timer” icon (⌚), then press **⏏**.



- 3 Press **▲** or **▼** to select the desired item (e.g., “Sleep Timer”), then press **⏏**.

Select	To
“Sleep Timer”	set TV to turn off automatically. Press ▲ or ▼ to select the desired period of time (max. of 1 hour and 30 minutes), then press ⏏ .
“Wake Up Timer”	set TV to turn on automatically. Press ▲ or ▼ to select the desired period of time (max. of 12 hours), then press ⏏ . After the selected length of time, the TV switches on automatically and “Wake Up Timer” will appear on the screen. The ⌚ indicator on the TV lights up amber once you set the “Wake Up Timer”.


Notes

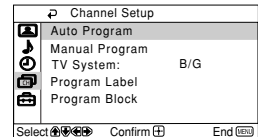
- You can also cancel “Sleep Timer” and “Wake Up Timer” by turning off the TV’s main power.
- If no buttons or controls are pressed for more than one hour after the TV is turned on using the “Wake Up Timer”, the TV automatically goes into standby mode.

■ Changing the “Channel Setup” setting

The “Channel Setup” menu allows you to preset channels automatically, manually preset channels, select the TV system, label the program number and block unwanted programs.

1 Press MENU.

2 Press **▲** or **▼** to select the “Channel Setup” icon (), then press **↵**.



3 Press **▲** or **▼** to select the desired item (e.g., “Auto Program”), then press **↵**.





Select	To
“Auto Program”	preset channels automatically.
“Manual Program”	manually preset desired channels and channels that cannot be preset automatically (see Presetting channels manually on page 20).
“TV System”	select the TV system. Press ▲ or ▼ to select either “B/G”, “I”, “D/K” or “M”, then press ↵ .
“Program Label”	label the program number. (1) Select “Program” and press ↵ . Press ▲ or ▼ to select the program number, then press ↵ . (2) Select “Label” and press ↵ , then press ▲ or ▼ to select alphanumeric characters for the label.
“Program Block”	block unwanted programs. (1) Select “Program” and press ↵ . Press ▲ or ▼ to select the program number, then press ↵ . (2) Select “Block” and press ↵ , then press ▲ or ▼ to choose either “On” or “Off”. If you preset a blocked program number, that program number will be unblocked automatically.

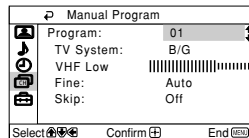
continue

continued



Presetting channels manually

1 After selecting “Manual Program”, select the program number to which you want to preset a channel.







- (1) Make sure “Program” is selected, then press .
- (2) Press  or  until the program number you want to preset appears on the menu, then press .














2 Select the desired channel.

- (1) Make sure either “VHF Low”, “VHF High” or “UHF” is selected, then press .
- (2) Press  or  until the desired channel’s broadcast appears on the TV screen, then press .

3 If the sound of the desired channel is abnormal, select the appropriate TV system.








- (1) Press  or  to select “TV System”, then press .
- (2) Press  or  until the sound becomes normal, then press .

4 If you are not satisfied with the picture and sound quality, you may be able to improve them by using the “Fine” tuning feature.

- (1) Press  or  to select “Fine”, then press .
- (2) Press  or  to select “Manual”, then press .
- (3) Press , ,  or  until the picture and sound quality are optimal, then press .

The + or – icon on the menu flashes while tuning.

5 If you want to skip this program number when using PROG +/- , you can select the “Skip” feature.

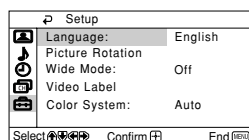
- (1) Press  or  to select “Skip”, then press .
 - (2) Press  or  to select “On”, then press .
- To cancel, select “Off”, then press .

■ Changing the “Setup” setting

The “Setup” menu allows you to change the menu language, adjust the picture position, change the picture size, label the connected equipment and select the color system.

1 Press MENU.

2 Press \uparrow or \downarrow to select the “Setup” icon (⚙️), then press $\left[\begin{smallmatrix} \uparrow \\ \downarrow \end{smallmatrix} \right]$.

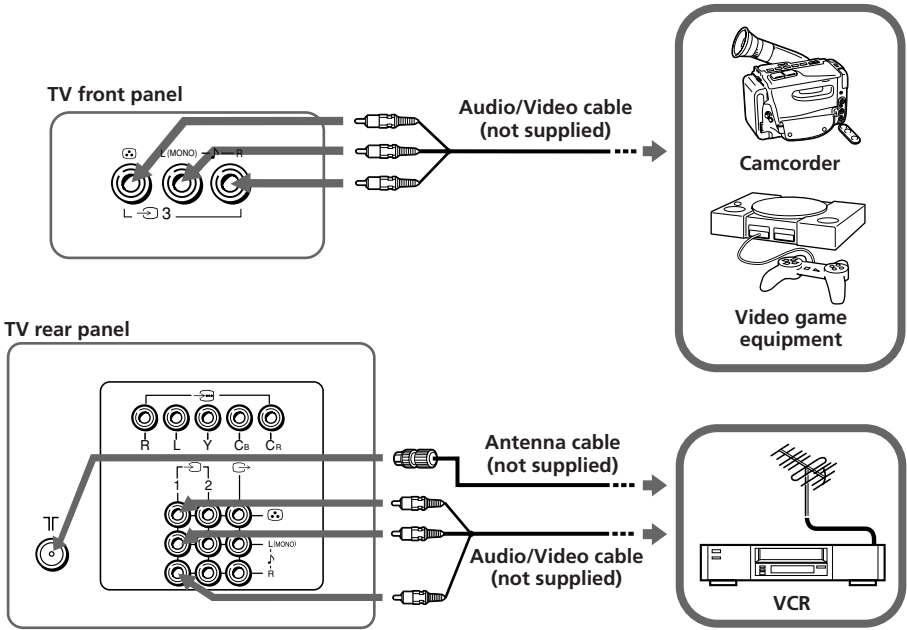


3 Press \uparrow or \downarrow to select the desired item (e.g., “Language”), then press $\left[\begin{smallmatrix} \uparrow \\ \downarrow \end{smallmatrix} \right]$.

Select	To
“Language”	change the menu language. Press \uparrow or \downarrow to select either “English” or “عربي” (Arabic), then press $\left[\begin{smallmatrix} \uparrow \\ \downarrow \end{smallmatrix} \right]$.
“Picture Rotation”	adjust the picture position when it is not aligned with the TV screen. Press \leftarrow or \rightarrow to adjust the picture position, then press $\left[\begin{smallmatrix} \uparrow \\ \downarrow \end{smallmatrix} \right]$.
“Wide Mode”	choose either “On” or “Off” (see page 9).
“Video Label”	label the connected equipment. (1) Select “Video Input” and press $\left[\begin{smallmatrix} \uparrow \\ \downarrow \end{smallmatrix} \right]$. Press \uparrow or \downarrow to select the input you want to label, then press $\left[\begin{smallmatrix} \uparrow \\ \downarrow \end{smallmatrix} \right]$. (2) Select “Label” and press $\left[\begin{smallmatrix} \uparrow \\ \downarrow \end{smallmatrix} \right]$, then press \uparrow or \downarrow to select the label options: “Video 1/Video 2/Video 3/DVD”, “VCR”, “SAT”, “Game” or “Edit”*. * You may edit the video label by entering alphanumeric characters.
“Color System”	select the color system. Press \uparrow or \downarrow to select either “Auto”, “PAL”, “SECAM”, “NTSC3.58” or “NTSC4.43”, then press $\left[\begin{smallmatrix} \uparrow \\ \downarrow \end{smallmatrix} \right]$. Normally, set this to “Auto”.

■ Connecting optional components

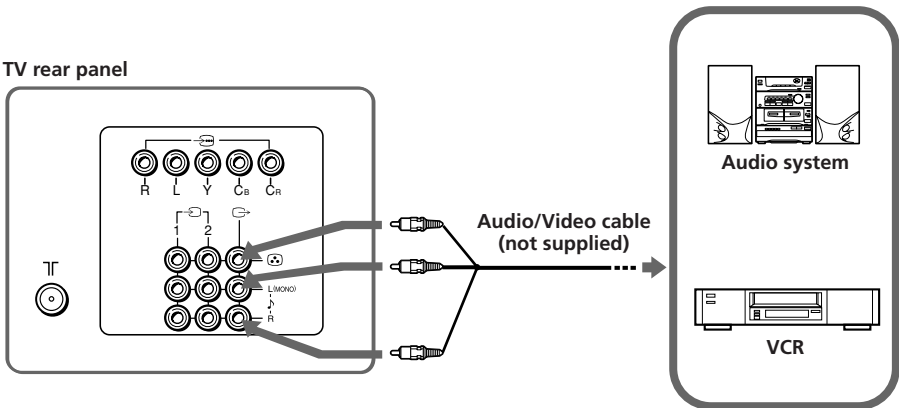
Connecting to the video input terminal (→)



Notes

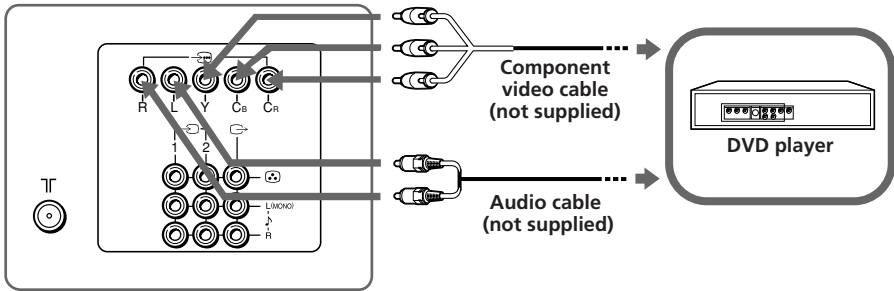
- If you connect a VCR to T (antenna input), preset the signal output from the VCR to the program number 0 on the TV (see page 20).

Connecting to the monitor output terminal (→)




Connecting to the component video input terminal ()

TV rear panel



Notes

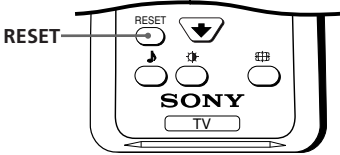
- If your DVD player can output interlace and progressive mode signals, select the interlace output when connecting to  (component video input) on your TV. Your TV can receive either 525i/60Hz or 625i/50Hz interlace signals.
- Some DVD player terminals may be labeled differently:

Connect	To (on the DVD player)
Y (green)	Y
C _B (blue)	C _B , P _B , C _b or B-Y
C _R (red)	C _R , P _R , C _r or R-Y

- If you select “DVD” on your TV screen, the signal from the  (monitor output) jacks will not be output properly. This does not indicate a malfunction.

Troubleshooting

If you find any problem while viewing your TV, you can either use the Reset function or check the Troubleshooting guide below. If the problem persists, contact your Sony dealer.

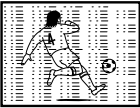














Reset function

Press the RESET button on your remote control. Your TV will go blank for a few seconds then the “Initial Setup” menu will appear.

Pressing RESET will set your TV to the factory setting, but certain problems may be solved.

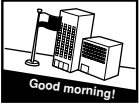

Troubleshooting guide

Symptom	Possible cause	Solutions	Page
Snowy picture 	<ul style="list-style-type: none"> The connection is loose or the cable is damaged. The antenna setup is inappropriate. 	<ul style="list-style-type: none"> Check the antenna cable and connection on the TV, VCR and at the wall. Check the antenna setup. Contact a Sony dealer for advice. 	22 –
Noisy sound 	<ul style="list-style-type: none"> Channel presetting is inappropriate or incomplete. Signal transmission is low. 	<ul style="list-style-type: none"> Display the “Channel Setup” menu and select “Manual Program” to preset the channel again. Try using a booster. 	20 –
Distorted picture 	<ul style="list-style-type: none"> Broadcast signals are too strong. 	<ul style="list-style-type: none"> Turn off or disconnect the booster if it is in use. 	–
Noisy sound 			
Good picture 	<ul style="list-style-type: none"> The TV system setting is inappropriate. 	<ul style="list-style-type: none"> Display the “Channel Setup” menu and select the appropriate “TV System”. 	20
Noisy sound 			

Symptom	Possible cause	Solutions	Page
No picture 	<ul style="list-style-type: none"> The power cord, antenna or VCR is not connected. 	<ul style="list-style-type: none"> Check the power cord, antenna and VCR connections. 	22
No sound 	<ul style="list-style-type: none"> The TV is not turned on. 	<ul style="list-style-type: none"> Press I/⏻ (power). Press ⏻ (main power) on the TV to turn off the TV for about five seconds, then turn it on again. 	9 8
Good picture 	<ul style="list-style-type: none"> The volume level is too low. 	<ul style="list-style-type: none"> Press ▲ + to increase the volume level. 	9
No sound 	<ul style="list-style-type: none"> The sound is muted. 	<ul style="list-style-type: none"> Press 🔇 to cancel the muting. 	9
Dotted lines or stripes 	<ul style="list-style-type: none"> There is local interference from cars, neon signs, hair dryers, power generators, etc. 	<ul style="list-style-type: none"> Do not use a hair dryer or other equipment near the TV. Check the antenna setup. Contact a Sony dealer for advice. 	- -
Double images or "ghosts" 	<ul style="list-style-type: none"> Broadcast signals are reflected by nearby mountains or buildings. 	<ul style="list-style-type: none"> Use a highly directional antenna. Use the fine tuning ("Fine") function. 	- 20
	<ul style="list-style-type: none"> The antenna setup is inappropriate. 	<ul style="list-style-type: none"> Check the antenna setup. Contact a Sony dealer for advice. 	-
	<ul style="list-style-type: none"> Use of a booster is inappropriate. 	<ul style="list-style-type: none"> Turn off or disconnect the booster if it is in use. 	-
No color 	<ul style="list-style-type: none"> The color level setting is too low. 	<ul style="list-style-type: none"> Display the "Picture" menu and select "Personal" or "Mode", then adjust the "Color" level in "Picture Adjustment". 	15
	<ul style="list-style-type: none"> The color system setting is inappropriate. 	<ul style="list-style-type: none"> Display the "Setup" menu and check the "Color System" setting (usually set this to "Auto"). 	21
	<ul style="list-style-type: none"> The antenna setup is inappropriate. 	<ul style="list-style-type: none"> Check the antenna setup. Contact a Sony dealer for advice. 	-

continue

continued

Symptom	Possible cause	Solutions	Page
<p>Picture slant</p> 	<ul style="list-style-type: none"> The magnetic disturbance from external speakers or other equipment, or the direction of the earth's magnetic field may affect the TV. 	<ul style="list-style-type: none"> Keep external speakers or other electrical equipment away from the TV. Display the "Setup" menu and adjust "Picture Rotation" so that the picture position is optimal. 	<p>–</p> <p>21</p>
<p>Abnormal color patches</p> 	<ul style="list-style-type: none"> The magnetic disturbance from external speakers or other equipment, or the direction of the earth's magnetic field may affect the TV. 	<ul style="list-style-type: none"> Keep external speakers or other equipment away from the TV. Do not move the TV while the TV is turned on. Press Ⓚ (main power) on the TV to turn off the TV for about 15 minutes, then turn it on again to demagnetize the TV. 	<p>–</p>
<p>The Ⓚ (standby) indicator on your TV flashes red several times after every three seconds.</p>	<ul style="list-style-type: none"> Your TV's self-diagnosis function indicates the possible problems. 	<ul style="list-style-type: none"> Count the number of times the Ⓚ (standby) indicator flashes. Press Ⓚ (main power) to turn off your TV. Contact your nearest Sony service center. 	<p>–</p>
<p>TV cabinet creaks.</p>	<ul style="list-style-type: none"> Changes in room temperature sometimes make the TV cabinet expand or contract, causing a noise. This does not indicate a malfunction. 	<p>—</p>	<p>–</p>
<p>A small "boom" sound is heard when the TV is turned on.</p>	<ul style="list-style-type: none"> The TV's demagnetizing function is working. This does not indicate a malfunction. 	<p>—</p>	<p>–</p>

Specifications

	KV-XR29M80	Note
Power requirements	110-240 V AC, 50/60 Hz	
Power consumption (W)	Indicated on the rear of the TV	
Television system	B/G, I, D/K, M	
Color system	PAL, PAL 60, SECAM, NTSC3.58, NTSC4.43	
Channel coverage		
B/G	VHF : E2 to E12 UHF : E21 to E69 CATV : S01 to S03, S1 to S41	
I	UHF : B21 to B68 CATV : S01 to S03, S1 to S41	
D/K	VHF : C1 to C12, R1 to R12 UHF : C13 to C57, R21 to R60 CATV : S01 to S03, S1 to S41, Z1 to Z39	
M	VHF : A2 to A13 UHF : A14 to A79 CATV : A-8 to A-2, A to W+4, W+6 to W+84	
⌚ (Antenna)	75-ohm external terminal	
Audio output (Speaker)	5 W + 5 W	
Number of terminal		
📺 (Video)	Input: 3 Output: 1 Phono jacks; 1 Vp-p, 75 ohms	
🎧 (Audio)	Input: 3 Output: 1 Phono jacks; 500 mVrms	
📺 (Component Video)	Input: 1 Phono jacks; Y: 1 Vp-p, 75 ohms, sync negative Cb: 0.7 Vp-p, 75 ohms Cr: 0.7 Vp-p, 75 ohms Audio: 500 mVrms	
🎧 (Headphone)	Output: 1 Stereo minijack	
Picture tube	29 in.	
Tube size (cm)	72	Measured diagonally
Screen size (cm)	68	Measured diagonally
Dimensions (w/h/d, mm)	772 x 576 x 516	
Mass (kg)	49	

Design and specifications are subject to change without notice.

<http://www.sony.net/>

Sony Corporation