

SERVICE MANUAL

DX-1A CHASSIS

<i>MODEL NAME</i>	<i>REMOTE COMMANDER</i>	<i>DESTINATION</i>	<i>CHASSIS NO.</i>
KV-32HS20	RM-Y183	US	SCC-S47F-A
KV-36HS20	RM-Y183	US	SCC-S47E-A
KV-36HS20H	RM-Y183	HAWAII	SCC-S54C-A
KV-32XBR450	RM-Y184	US	SCC-S47D-A
KV-32XBR450	RM-Y184	CND	SCC-S48D-A
KV-36XBR450	RM-Y184	US	SCC-S47C-A
KV-36XBR450	RM-Y184	CND	SCC-S48C-A
KV-36XBR450H	RM-Y184	HAWAII	SCC-S54B-A



KV-32XBR450



RM-Y184

TRINITRON® COLOR TELEVISION

SONY®

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SPECIFICATIONS

	KV-32HS20 KV-32XBR450	KV-36HS20 KV-36HS20H KV-36XBR450 KV-36XBR450H
Power Requirements	120V, 60Hz	
Number of Inputs/Outputs		
Video ¹⁾	4	
S Video ²⁾	3	
Y, PB, PR ³⁾	2	
Audio ⁴⁾	6	
Audio Out ⁵⁾	2	
Monitor Out	1	
Control-S (in/out)	YES	
Speaker Output (W)	7.5W x 4	
Power Consumption (W)		
In Use (Max)	245W	
In Standby	2W	
Dimensions (W x H x D)		
mm	898 x 678 x 579.5 mm	994 x 754.5 x 622 mm
in	35 ^{3/8} x 26 ^{3/4} x 27 ^{7/8} in	39 ^{9/64} x 29 ^{45/64} x 24 ^{1/2} in
Mass		
kg	84 kg	108 kg
lbs	185 lbs.	238 lbs.

Television system

American TV standard, NTSC

Channel coverage

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

Picture tube

FD Trinitron[®] tube

Visible screen size

32-inch picture measured diagonally (KV-32HS20/32XBR450 ONLY)
36-inch picture measured diagonally (All Except KV-32HS20/32XBR450)

Actual screen size

34-inch measured diagonally (KV-32HS20/32XBR450 ONLY)
38-inch measured diagonally (All Except KV-32HS20/32XBR450)

Antenna

75 ohm external terminal for VHF/UHF

Supplied Accessories

Remote Commander RM-Y183 (KV-32HS20/36HS20/36HS20H ONLY)
Remote Commander RM-Y184 (KV-32XBR450/36XBR450/36XBR450H ONLY)
Two Size AA (R6) Batteries

Optional Accessories

Connecting cables: RK-74A, VMC-810S/820/830HGS, VMC-720M,
VMC-810S/820S, YC-15V/30V, YC-15/30HG, RKG69HG, RKC-515HG
U/V mixer: EAC-66
TV Stand: SU-32HS2 (KV-32HS20 ONLY)
SU-36HS2 (KV-36HS20/36HS20H ONLY)
SU-32XBR45 (KV-32XBR450 ONLY)
SU-36XBR45 (KV-36XBR450/36XBR450H ONLY)

- 1) 1 Vp-p 75 ohms unbalanced, sync negative
2) Y: 1 Vp-p 75 ohms unbalanced, sync negative
C: 0.286 Vp-p (Burst signal), 75 ohms
3) Y: 1.0 Vp-p, 75 ohms, sync negative;
PB: 0.7 Vp-p, 75 ohms
PR: Vp-p, 75 ohms
4) 500 mVrms (100% modulation), Impedance: 47 kilohms
5) More than 408 mVrms at the maximum volume setting (variable)
More than 408 mVrms (fix)

XBR

TruSurround[™]
by SRS (●)®

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

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Design and specifications are subject to change without notice.

WARNINGS AND CAUTIONS


CAUTION

Short circuit the anode of the picture tube and the anode cap to the metal chassis, crt shield, or carbon painted on the crt, after removing the anode.

WARNING!!

An isolation transformer should be used during any service to avoid possible shock hazard, because of live chassis. The chassis of this receiver is directly connected to the ac power line.

SAFETY-RELATED COMPONENT WARNING!!


Components identified by shading and  mark on the schematic diagrams, exploded views, and in the parts list are critical for safe operation. Replace these components with sony parts whose part numbers appear as shown in this manual or in supplements published by sony. Circuit adjustments that are critical for safe operation are identified in this manual. Follow these procedures whenever critical components are replaced or improper operation is suspected.

ATTENTION!!

Après avoir déconnecté le cap de l'anode, court-circuiter l'anode du tube cathodique et celui de l'anode du cap au châssis métallique de l'appareil, ou la couche de carbone peinte sur le tube cathodique ou au blindage du tube cathodique.

Afin d'éviter tout risque d'électrocution provenant d'un châssis sous tension, un transformateur d'isolement doit être utilisé lors de tout dépannage. Le châssis de ce récepteur est directement raccordé à l'alimentation du secteur.

ATTENTION AUX COMPOSANTS RELATIFS A LA SECURITE!!

Les composants identifiés par une trame et par une marque  sur les schémas de principe, les vues explosées et les listes de pièces sont d'une importance critique pour la sécurité du fonctionnement. Ne les remplacer que par des composants sony dont le numéro de pièce est indiqué dans le présent manuel ou dans des suppléments publiés par sony. Les réglages de circuit dont l'importance est critique pour la sécurité du fonctionnement sont identifiés dans le présent manuel. Suivre ces procédures lors de chaque remplacement de composants critiques, ou lorsqu'un mauvais fonctionnement suspecte.

SAFETY CHECK-OUT

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

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

Leakage Test

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

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

How to Find a Good Earth Ground

A cold-water pipe is a guaranteed earth ground; the cover-plate retaining screw on most AC outlet boxes is also at earth ground. If the retaining screw is to be used as your earth ground, verify that it is at ground by measuring the resistance between it and a cold-water pipe with an ohmmeter. The reading should be zero ohms.

If a cold-water pipe is not accessible, connect a 60- to 100-watt trouble-light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side on the line; the lamp should light at normal brilliance if the screw is at ground potential (see Figure B).

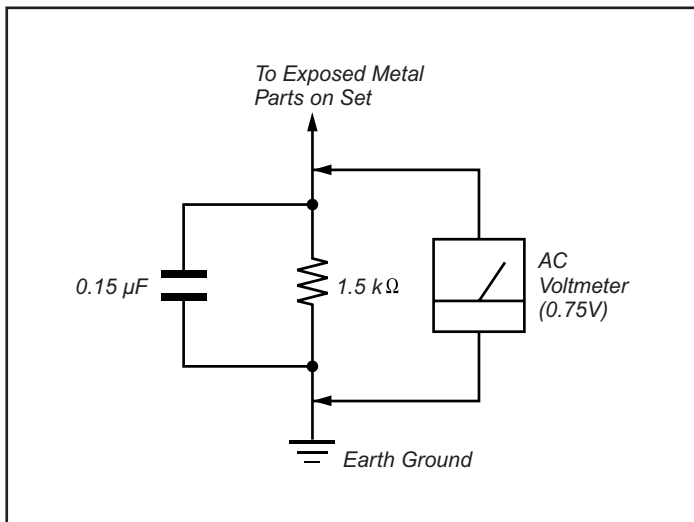


Figure A. Using an AC voltmeter to check AC leakage.

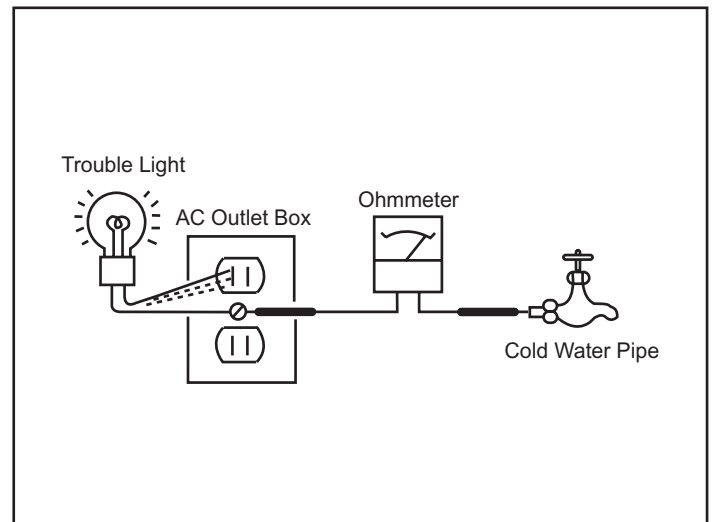


Figure B. Checking for earth ground.

SELF-DIAGNOSTIC FUNCTION

Self Diagnosis
Supported model

The units in this manual contain a self-diagnostic function. If an error occurs, the STANDBY/STEREO LED will automatically begin to flash. The number of times the LED flashes translates to a probable source of the problem. A definition of the STANDBY/STEREO LED flash indicators is listed in the instruction manual for the user's knowledge and reference. If an error symptom cannot be reproduced, the Remote Commander can be used to review the failure occurrence data stored in memory to reveal past problems and how often these problems occur.

Diagnostic Test Indicators

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

Results for all of the following diagnostic items are displayed on screen. If the screen displays a "0", and error has occurred.

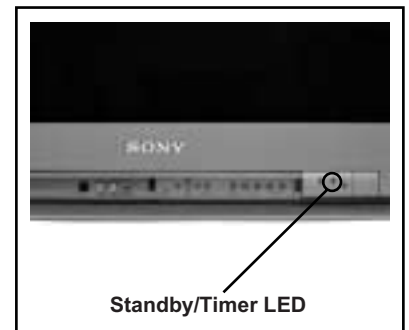
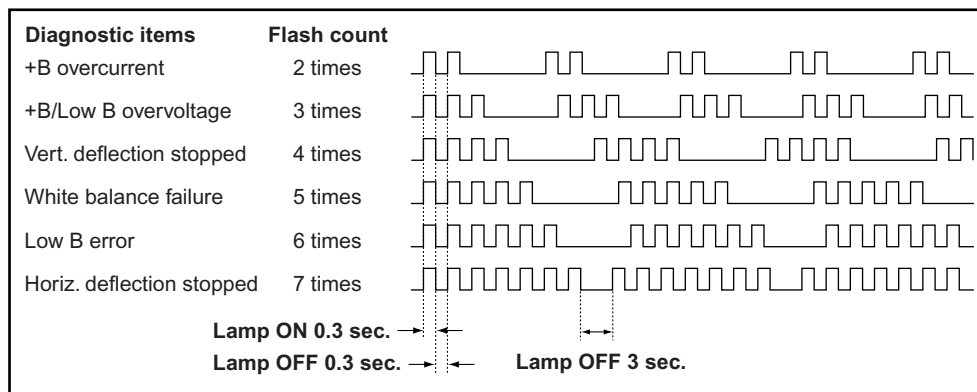
Diagnostic Item	No. of times STANDBY/STEREO lamp flashes	Display Result	Probable Cause Location	Detected Symptoms
Power does not turn on	Does not light		<ul style="list-style-type: none"> Power cord is not plugged in. Fuse is burned out (F5501) 	<ul style="list-style-type: none"> Power does not come on. No power is supplied to the TV. AC power supply is faulty.
+B overcurrent (OCP) (see Note 1)	2 times	2:0 or 2:1	<ul style="list-style-type: none"> H.OUT (Q5030) is shorted. (D Board) +B PWM (Q5003) is shorted (D Board) IC9001, IC9002, IC9003 is shorted (C Board) 	<ul style="list-style-type: none"> Power does not come on. Load on power line is shorted.
Low B overvoltage (OVP)	3 times	3:0 or 3:1	<ul style="list-style-type: none"> IC6505 is faulty. (D Board) 	<ul style="list-style-type: none"> Has entered standby mode.
Vertical deflection stopped	4 times	4:0 or 4:1	<ul style="list-style-type: none"> ± 15V is not supplied. (D Board) IC5004 is faulty. (D Board) 	<ul style="list-style-type: none"> Has entered standby state after horizontal raster. Vertical deflection pulse is stopped. Power line is shorted or power supply is stopped.
White balance failure (not balanced)	5 times	5:0 or 5:1	<ul style="list-style-type: none"> Video OUT (IC9001-IC9003) is faulty. (C Board) CRT drive (IC201) is faulty. (A Board) G2 is improperly adjusted. (see Note 2) 	<ul style="list-style-type: none"> No raster is generated. CRT cathode current detection reference pulse output is small.
LOW B OCP/OVP (overcurrent/overvoltage) (see Note 3)	6 times	6:0 or 6:1	<ul style="list-style-type: none"> +5 line is overloaded. (A, B Boards) +5 line is shorted. (A, B Boards) IC6007 is faulty. (A Board) 	<ul style="list-style-type: none"> No picture
Horizontal Deflection stopped	7 times	7:0 or 7:1		<ul style="list-style-type: none"> No picture

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 screen.

Note 2: Refer to Screen (G2) Adjustment in Section 3-4 of this manual.

Note 3: If STANDBY/STEREO LED flashes six (6) times, unplug the unit and wait 10 seconds before performing the adjustment

Display of Standby/Timer LED Flash Count



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

Stopping the Standby/Timer LED Flash

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

Self-Diagnostic Screen Display

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

To Bring Up Screen Test

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

DISPLAY → Channel **5** → Sound volume **0** → Power ON.

SELF DIAGNOSIS

2: +B OCP	N/A
3: +B OVP	N/A
4: VSTOP	0
5: AKB	1
101: WDT	24

Numeral "0" means that no fault was detected.

Numeral "1" means a fault was detected one time only.

Handling of Self-Diagnostic Screen Display

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

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

Clearing the Result Display

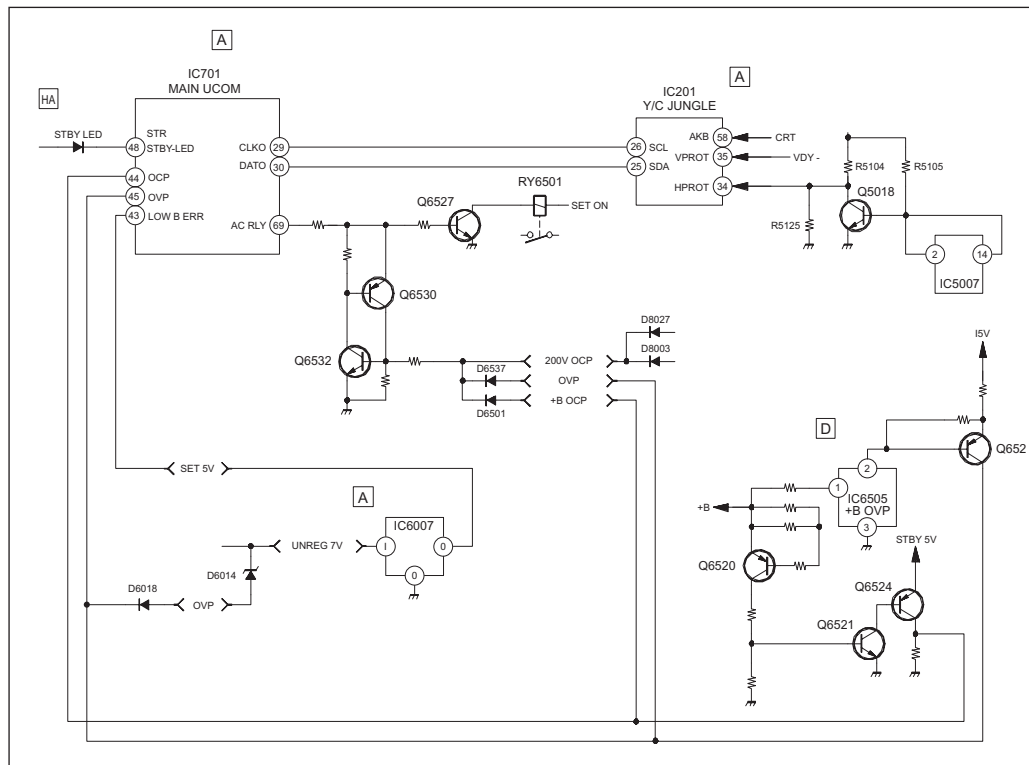
To clear the result display to "0", press buttons on the Remote Commander sequentially when the diagnostic screen is displayed, as shown below:

Channel **8** → **ENTER**

Quitting the Self-Diagnostic Screen

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

Self-Diagnostic Circuit



+B overcurrent (OCP)

Occurs when an overcurrent (more than 6A) on the +B (135V) line is detected by R6598/R6591. It will cause Q6520 to turn on and force the AC relay to turn off through Q6532 and Q6530.

+B overvoltage (OVP)

Occurs when 1) overvoltage (more than +140V) on the +B (135V) line is detected by IC6505, or 2) an overvoltage (more than 7.5 V) on the unreg 7V line is detected by D6014. The AC relay will turn off through Q6532 and Q6530.

Vertical Deflection Stopped

Occurs when an absence of the vertical deflection pulse is detected by IC201. Power supply will shut down when waveform interval exceeds 2 seconds.

White Balance Failure

If the RGB levels* do not balance within 2 seconds after the power is turned on, this error will be detected by IC201. TV will stay on, but there will be no picture.

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

Low B Error

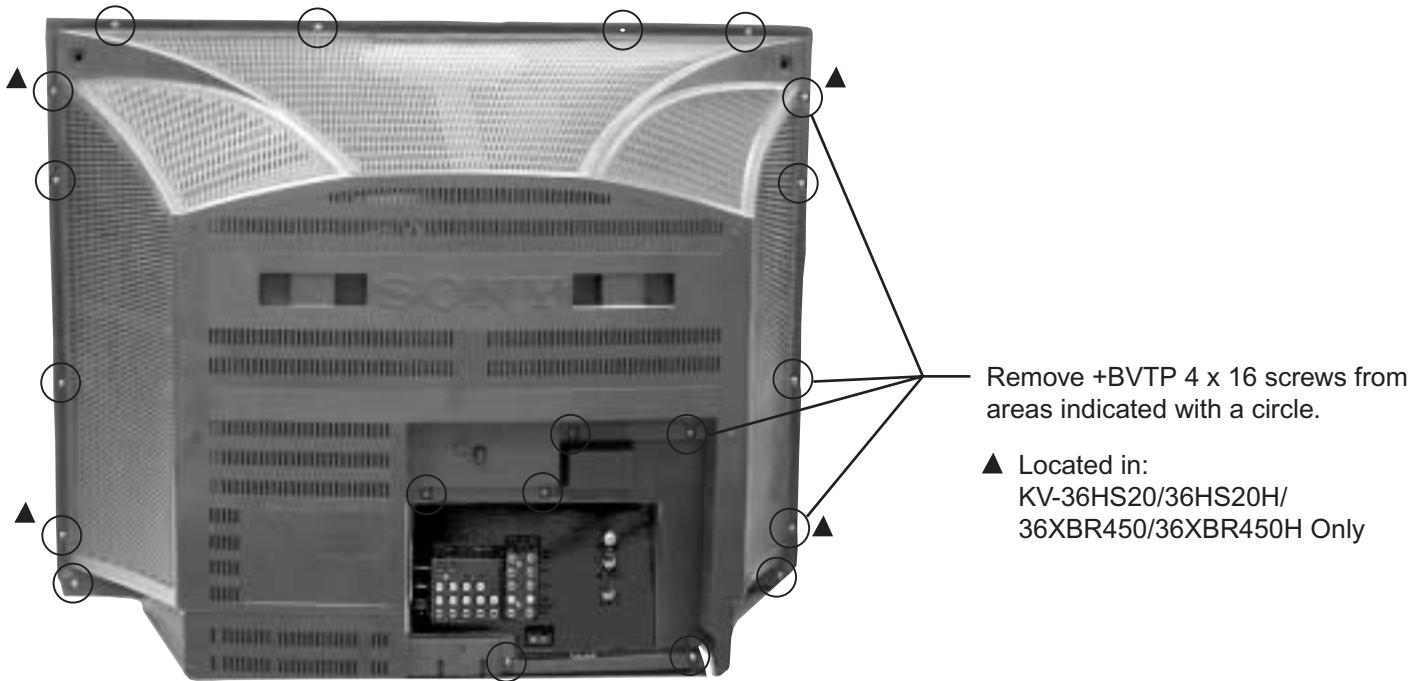
Occurs when set 5V is out.

Horizontal Deflection Stopped

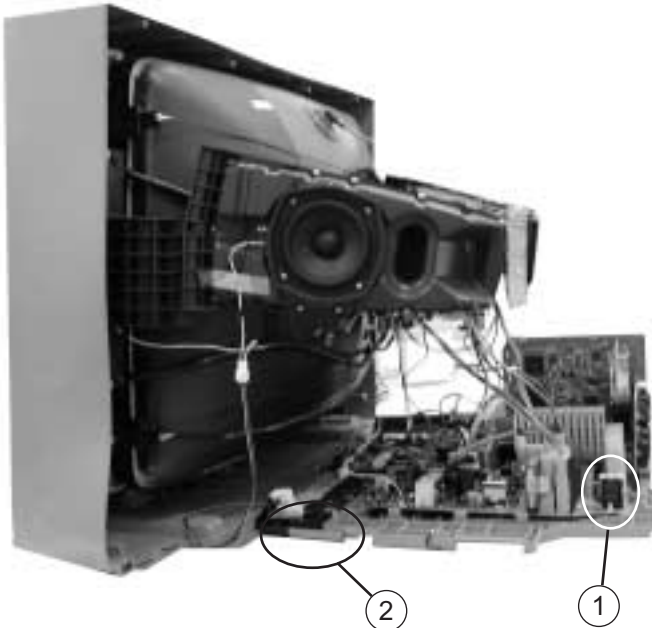
Occurs when either: 1) a +B overcurrent is detected (IC5007), or 2) overheating is detected (Thermistor TH5002).

SECTION 1: DISASSEMBLY

1-1. REAR COVER REMOVAL



1-2. CHASSIS ASSEMBLY REMOVAL



- ① **CAUTION!** - Heat sink on IC5004 is -15V. Care must be taken not to allow heat sink to touch any other components.
- ② Lift lever up on the right and left sides of the chassis bracket and gently pull the chassis assembly away from the bezel.

1-3. SERVICE POSITION

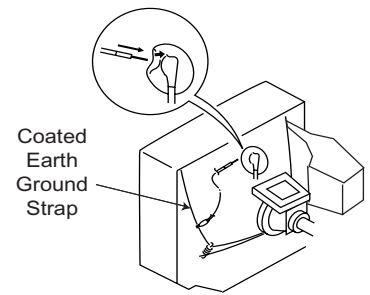


- ① Pull up and rotate both the A and D boards in order to service the unit.

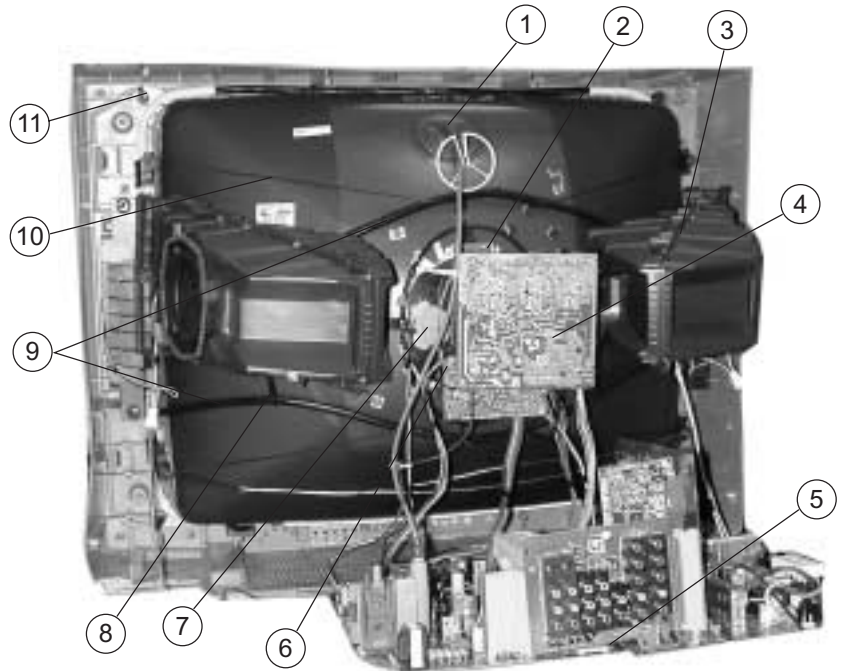
1-4. PICTURE TUBE REMOVAL

WARNING: BEFORE REMOVING THE ANODE CAP

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



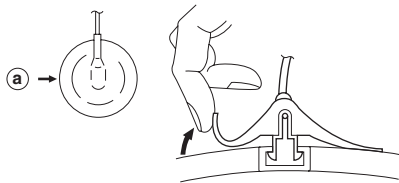
- ① Discharge the anode of the CRT and remove the anode cap.
- ② Unplug all interconnecting leads from the deflection yoke, neck assembly, degaussing coils and CRT grounding strap.
- ③ Remove the Speaker Assemblies.
- ④ Remove the C Board from the CRT.
- ⑤ Remove the chassis assembly.
- ⑥ Loosen the neck assembly fixing screw and remove.
- ⑦ Loosen the deflection yoke fixing screw and remove.
- ⑧ Place the set with the CRT face down on a cushion and remove the degaussing coil holders.
- ⑨ Remove the degaussing coils.
- ⑩ Remove the CRT grounding strap and spring tension devices.
- ⑪ Unscrew the four CRT fixing screws [located on each CRT corner] and remove the CRT [Take care not to handle the CRT by the neck].



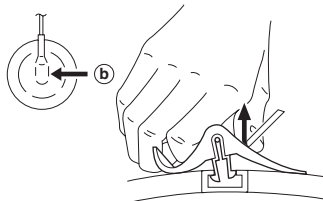
ANODE CAP REMOVAL PROCEDURE

WARNING: High voltage remains in the CRT even after the power is disconnected. To avoid electric shock, discharge CRT before attempting to remove the anode cap. After removing the anode cap, short circuit to either the metal chassis, CRT shield, or carbon painted on the CRT.

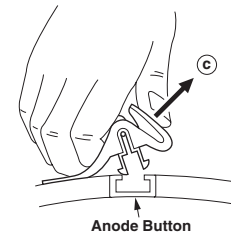
REMOVAL PROCEDURES



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



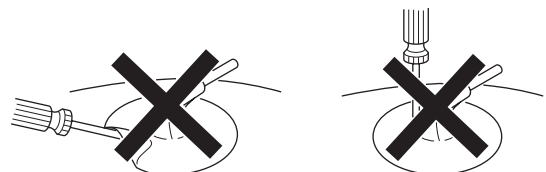
Use your thumb to pull the rubber cap firmly in the direction indicated by arrow ②.



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

HOW TO HANDLE AN ANODE CAP

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



SECTION 2: SET-UP ADJUSTMENTS

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

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

The controls and switch should be set as follows unless otherwise noted:

VIDEO MODE: STANDARD (RESET)

Perform the adjustments in order as follows:

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

Test Equipment Required:

1. Color Bar Pattern Generator
2. Degausser
3. DC Power Supply
4. Digital Multimeter

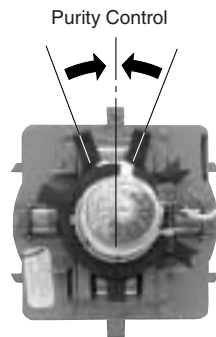
2-1. BEAM LANDING

Preparation:

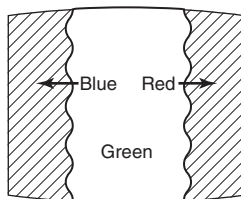
- Input a white pattern signal.
- Face the picture tube in an East or West direction to reduce the influence of geomagnetism.

NOTE: Do not use the hand degausser; it magnetizes the CRT .

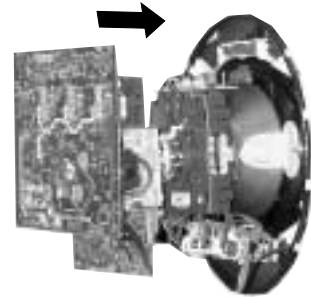
1. Input white pattern from pattern generator. Set the PICTURE control to maximum, and the BRIGTHNESS control to standard.
2. Perform Focus, G2 and White Balance adjustments.
3. Loosen the deflection yoke mounting screw, and set the purity control to the center as shown below:



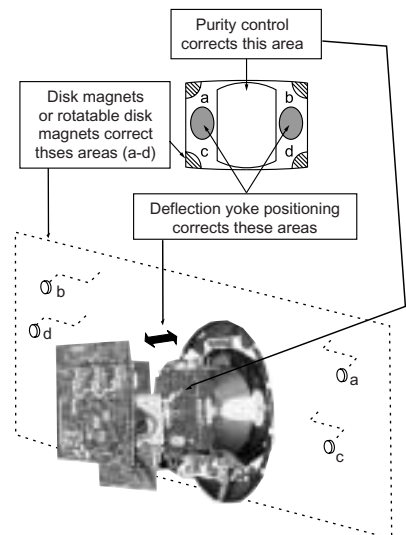
4. Input a green pattern from the pattern generator.
5. Move the deflection yoke backwards, and adjust with the purity control so that green is in the center and red and blue are even on both sides.



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



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



2-2. V-PIN AND V-CEN ADJUSTMENT

Preparation:

- Input a cross hatch pattern signal.
- Face the picture tube in a North/South direction and correct rotation.
- Set Video Mode to: Standard (Reset)

1. Adjust service mode CXA2150D-1 04 VCEN so that the top pin and bottom pin are symmetrical from top to bottom.
2. Adjust service mode CXA2150D-1 05 VPIN so that the top pin and bottom pin are symmetrical from top to bottom.
3. Lines should be straight from left to right. Check landing for side effect.

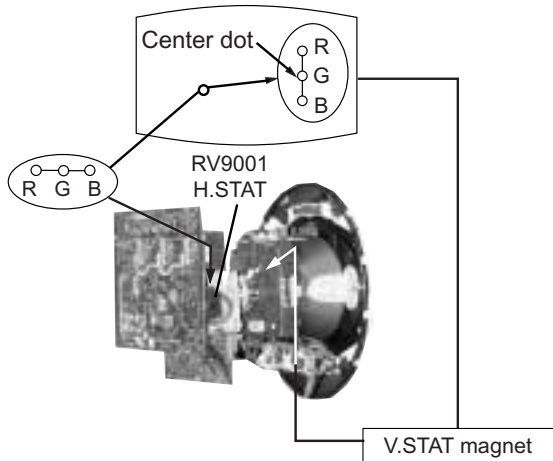
2-3. CONVERGENCE

Preparation:

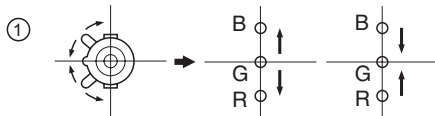
- Set the CONTRAST and BRIGHTNESS control to 50%
- Input dot pattern signal.

2-3.1. VERTICAL AND HORIZONTAL STATIC CONVERGENCE

1. Disconnect the dynamic convergence before adjusting static convergence (CN5510), except for minor touch-up.
2. Adjust H.STAT convergence, RV9001, to converge red, green, and blue dots in the center of the screen.
3. Adjust V. STAT magnet to converge red, green and blue dots in the center of the screen.



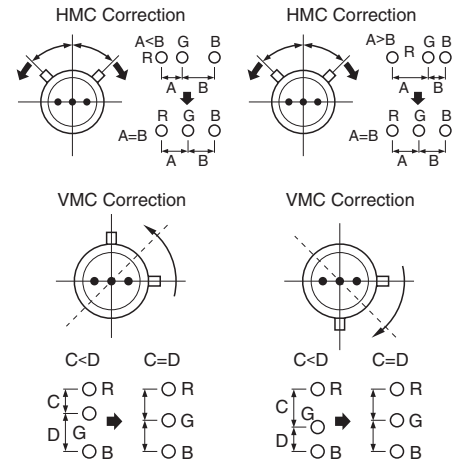
4. Tilt the V. STAT magnet and adjust static convergence to open or close the V. STAT magnet.



2-3.2. OPERATION OF BMC (HEXAPOLE) MAGNET

The respective dot positions resulting from moving each magnet interact. So, perform the following adjustments while tracking.

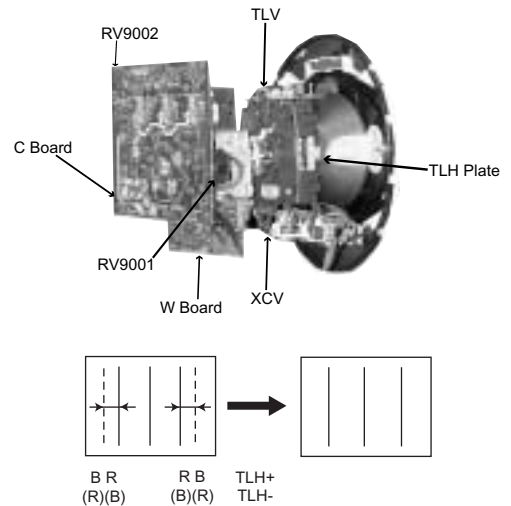
1. Use the V.STAT tabs to adjust the red, green and blue dots so that they line up at the center of the screen (move the dots in a horizontal direction).



2-3.3. TLH PLATE ADJUSTMENT

Preparation:

- Input a cross hatch pattern signal.
- Adjust unbalanced horizontal convergence of red and blue dots by adjusting the TLH plate on the deflection yoke.



1. Adjust XCV core to balance X axis.
2. Adjust the vertical red and blue convergence with V.TILT (TLV VR).

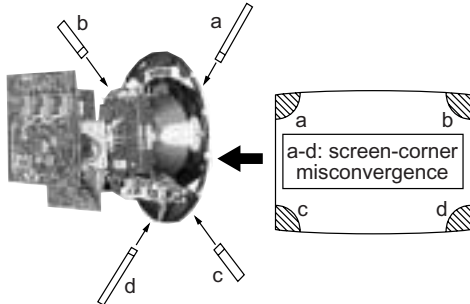
Note: Perform adjustments while tracking item 1.

2-3.4. SCREEN-CORNER CONVERGENCE

Preparation:

- Input a cross hatch pattern signal.

- Affix a permalloy assembly corresponding to the misconverged areas:



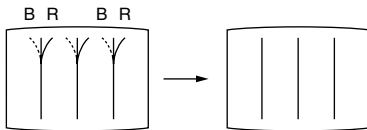
2-3.5. DYNAMIC CONVERGENCE ADJUSTMENTS

Set dynamic convergence using the following service mode adjustment data:

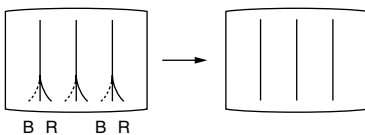
CXA 8070 AP

NO.	Register	Function	Data Length	Initial Data
1	YBWU	VCA9	0-63	31
2	YBWL	VCA10	0-63	31
3	RSAP	DC-AMP1	0-63	31
4	RUBW	VCA5	0-63	31
5	RLBW	VCA6	0-63	31
6	LSAP	DC-AMP2	0-63	31
7	LUBW	VCA10	0-63	31
8	LLBW	VCA2	0-63	31

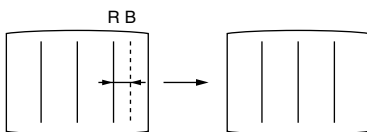
- YBWU (Upper Y-BOW)



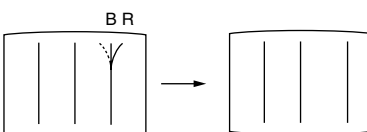
- YBWL (Bottom BOW)



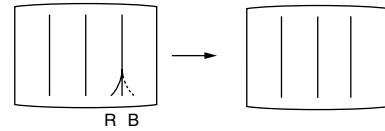
- RSAP (Right AMP)



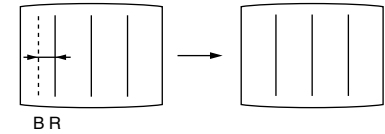
- RUBW (Right Side Upper C-BOW)



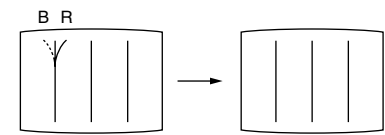
- RLBW (Right Side Bottom C-BOW)



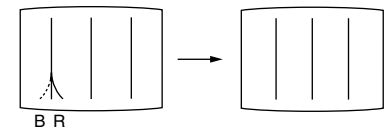
- LSAP (Left AMP)



- LUBW (Left Side Upper C-BOW)

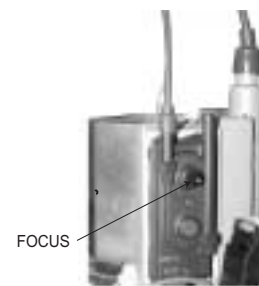


- LLBW (Left Side Bottom C-BOW)



2-4. FOCUS ADJUSTMENT

- Input monoscope signal.
- Set video mode to STANDARD.
- Adjust focus VR counter-clockwise to confirm that the dot's shape is centered.
- Confirm center focus with focus VR.



2-5. SCREEN (G2)

- Input a monoscope pattern (NTSC)
- Set to service mode and adjust as follows:

CXA 2150P-2

NO.	Disp.	Item	Avg.
0	ALBK	ALL_BLK	0

- Adjust RV9002 on the C Board so that the voltage on red, green and blue cathodes is 170.0 0.5 V DC.
- Adjust the horizontal line at the top of the screen so it is cut off.

Note: Never set ALBK to 1 when external power supply is connected to cathode.

2-6. PICTURE QUALITY ADJUSTMENTS

Preparation:

- Set PRO MODE (Picture: MAX, GAMMA: 0)
- Dynamic-color: Off (=Trinitron: MID).
- Set the service mode to the following:

C2150P-4

NO.	Name	Control Function	Avg. Data
06	UDCL	Dynamic Color: OFF	0
08	UGRAM	GRAMMA	0
15	DCTR	DC-TRAN	0
16	DPIC	DYNAMIC PIC: OFF	0

1. Input signal (480i):
 - Color Bar Video 75IRE (White) 75% modulation 7.5% Set-up
 - Color Bar RF 75IRE (White) 75% modulation 7.5% Set-up

2-6.1. VIDEO INPUT - TWO PICTURE SUB CONTRAST ADJUSTMENT

Preparation:

- Input a Color Bar signal to VIDEO 1 (75 IRE 75%).
- Set picture mode: P&P (PRO MODE).

1. Set to service mode and adjust as follows:

2150P-4

NO.	Name	Control Function	Avg. Data
00	UPIC	PICTURE	63
02	UCOL	COLOR	0

2150P-2

NO.	Name	Control Function	Avg. Data
01	RGBS	R ON	4

INITIAL DATA (IMPORTANT)

2150P-4

NO.	Name	Control Function	Avg. Data
23	SCON	SUB-CONT	9

2103-1

NO.	Name	Control Function	Avg. Data
00	YLEV	Y-OUT	23

2103-2

NO.	Name	Control Function	Avg. Data
00	YLEV	Y-OUT	23

2. Connect oscilloscope to Pin 1 of CN9001 (R.DRV) on the C Board
3. Adjust MAIN (left) side contrast according to service mode fro SCON.

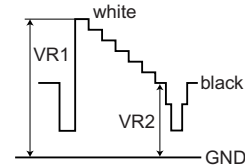
2103-1

NO.	Name	Control Function
02	SCON	SUB-CONT

4. Adjust SUB (right) side contrast according to service mode for SCON.

2103-2

NO.	Name	Control Function
02	SCON	SUB-CONT



32": VR1-VR2 = $\Delta VR = 1.92 \pm 0.05$ Vp-p

36": VR1-VR2 = $\Delta VR = 2.00 \pm 0.05$ Vp-p

5. Write data from steps 3 and 4 above, into memory.

2-6.2. VIDEO INPUT - SUB HUE/SUB COLOR ADJUSTMENT

Preparation:

- Input a Color Bar signal to VIDEO 1 (75 IRE 75%).
- Set picture mode: P&P (PRO MODE).

1. Set to service mode and adjust as follows:

2150P-4

NO.	Name	Control Function	Avg. Data
00	UPIC	PICTURE	63
02	UCOL	COLOR	31

2150P-2

NO.	Name	Control Function	Avg. Data
01	RGBS	R ON	7

2. Connect an oscilloscope to pin 5 of CN9001 (B. DRV) on the C Board.
3. Adjust MAIN (left) side color according to service mode for SCOL.
4. Adjust MAIN (left) side color according to service mode for SHUE.

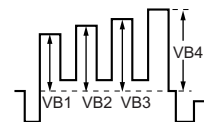
2103-1

NO.	Name	Control Function
03	SCOL	SUB-COL
04	SHUE	SUB-HUE

5. Adjust SUB (right) side color according to service mode for SCOL.
6. Adjust SUB (right) side color according to service mode for SHUE.

2103-2

NO.	Name	Control Function
03	SCOL	SUB-COL
04	SHUE	SUB-HUE



COLOR: VB1 \leq VB4 (=VB1 + 0~90 MV)

HUE: VB2 \leq VB3 (=VB2 + 0~90 MV)

(HUE: Adjust data - 2 STEP)

7. Write data into memory.

2-6.3. RF INPUT - TWO PICTURE SUB CONTRAST ADJUSTMENT

Preparation:

- Input a Color Bar signal to RF (75 IRE 75%).
- Set picture mode: P&P (PRO MODE).

1. Set to service mode and adjust as follows:

2150P-4

NO.	Name	Control Function	Avg. Data
00	UPIC	PICTURE	63
02	UCOL	COLOR	0

2150P-2

NO.	Name	Control Function	Avg. Data
01	RGBS	R ON	4

INITIAL DATA (IMPORTANT)

2150P-4

NO.	Name	Control Function	Avg. Data
23	SCON	SUB-CONT	9

2103-1

NO.	Name	Control Function	Avg. Data
00	YLEV	Y-OUT	23

2103-2

NO.	Name	Control Function	Avg. Data
00	YLEV	Y-OUT	23

Note: Use the same average data as 2-6.1, items 3 and 4 after the adjustment

2. Connect an oscilloscope to pin 1 of CN9001 (R. DRV) on the C Board.
3. Adjust MAIN (left) side contrast according to service mode fro SCON.

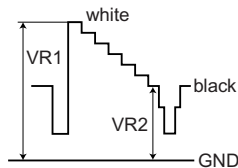
2103-1

NO.	Name	Control Function
02	SCON	SUB-CONT

4. Adjust SUB (right) side contrast according to service mode for SCON.

2103-2

NO.	Name	Control Function
02	SCON	SUB-CONT



32": $VR1-VR2 = \Delta VR = 1.92 \pm 0.05$ Vp-p

36": $VR1-VR2 = \Delta VR = 2.00 \pm 0.05$ Vp-p

5. Write data from steps 3 and 4 above, into memory.

2-6.4. RF INPUT - SUB HUE/SUB COLOR ADJUSTMENT

Preparation:

- Input a Color Bar signal to RF (75 IRE 75%).
- Set picture mode: P&P (PRO MODE).

1. Set to service mode and adjust as follows:

2150P-4

NO.	Name	Control Function	Avg. Data
00	UPIC	PICTURE	63
02	UCOL	COLOR	31

2150P-4

NO.	Name	Control Function	Avg. Data
01	RGBS	R ON	7

INITIAL DATA (IMPORTANT)

2150P-4

NO.	Name	Control Function	Avg. Data
24	CLOF	OFFSET for UCOL	8
25	HUOF	OFFSET for UHUE	4

2103-1

NO.	Name	Control Function	Avg. Data
01	CLEV	CB & CR-OUT	17
20	CBOF	CB-OFFSET	31
21	CROF	CR-OFFSET	31

2103-2

NO.	Name	Control Function	Avg. Data
01	CLEV	CB & CR-OUT	17
20	CBOF	CB-OFFSET	31
21	CROF	CR-OFFSET	31

Note: Use the same average data as 2-6.2, items 3-6 after the adjustment.

2. Connect an oscilloscope to pin 5 of CN9001 (B. DRV) on the C Board.
3. Adjust MAIN (left) side color according to service mode for SCOL.
4. Adjust MAIN (left) side color according to service mode for SHUE.

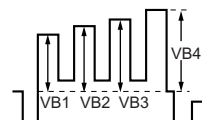
2103-1

NO.	Name	Control Function
03	SCOL	SUB COLOR
04	SHUE	SUB HUE

5. Adjust SUB (right) side color according to service mode for SCOL.
6. Adjust SUB (right) side color according to service mode for SHUE.

2103-2

NO.	Name	Control Function
03	SCOL	SUB COLOR
04	SHUE	SUB HUE



COLOR: VB1 ≤ VB4 (=VB1 + 0~90 MV)

HUE: VB2 ≤ VB3 (=VB2 + 0~90 MV)

(HUE: Adjust data - 2 STEP)

7. Write data into memory.

2-7. WHITE BALANCE (CRT) AND SUB BRIGHT ADJUSTMENT

Preparation

- Input an all white 480i (15.734 KHz) signal into the VIDEO 1 input terminal to perform the white balance (highlight, cut-off) adjustments. The parameters to adjust are in the CXA2150P in service mode.

1. Set the following:

Picture: Full Mode
Pro Mode
Color: Center

2. Adjust white balance in the service mode and set the following data:

2150P-1

NO.	Name	Control Function	Avg. Data
05	RDRV	R-DRIVE	Fix: 41
06	GDRV	G-DRIVE	Adjust
07	BDRV	B-DRIVE	Adjust
08	RCUT	R-CUT OFF	Fix: 41
09	GCUT	G-CUT OFF	Adjust
10	BCUT	B-CUT OFF	Adjust

3. Adjust sub brightness: Input an all black signal (to IRE 7.5% set up) 480i (15.75 KHz) signal into the VIDEO 1 input terminal and adjust the following parameter of CXA2150P-1:

CXA2150P-1

NO.	Name	Control Function	Avg. Data
04	SBRT	SUB-BRIGHT	Adjust

INITIAL DATA (IMPORTANT)

2150P-1

NO.	Name	Control Function	Avg. Data
00	SBOT	SUB-BRT OFFSET	7
12	SBOF	SUB-BRT OFFSET	63

4. Repeat steps 2-3.

2-8. RASTER CENTER ADJUSTMENT

Preparation:

- Input a monoscope signal.
- Set to NTSC (DRC) mode.

1. Set to service mode and adjust as follows:

CXA2150P-2

NO.	Name	Control Function	Avg. Data
06	AGNG	AGING 1, AGING 2	2

CXA2150P-2

NO.	Name	Control Function	Avg. Data
02	HSIZ	Horiz Size	31

CXA2150P-3

NO.	Name	Control Function	Avg. Data
00	HBLK	Blanking Enable	0

- Reduce HSIZ to see sides of raster.
- Adjust H-Center with CXA2150D-2 00.
- Adjust to the best screen position with H-CENT and write data.
- Resotore aging, HSIZ and HBLK to original condition.

2-9. PICTURE DISTORTION ADJUSTMENTS

2-9.1. NTSC (DRC) FULL MODE ADJUSTMENT

- Face the picture tube in an east-west direction.
- Complete VPIN and VCEN adjsuments first (A2150-D1 o5 VPIN, A2150-D1 04 VCEN)
- Input a monoscope and crosshatch signal. Adjust the picture distortion with the following service parameters to balance the best condition for these two signals.

A2150-D1	00	VPOS
A2150-D1	01	VSIZ
A2150-D1	02	VLIN
A2150-D1	03	VSCO
A2150-D1	04	SCEN
A2150-D1	05	VPIN
A2150-D1	06	HTPZ

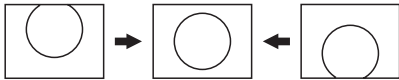
A2150-D2	01	HPOS
A2150-D2	02	HSIZ
A2150-D2	03	SLIN
A2150-D2	04	PIN
A2150-D2	05	UCP
A2150-D2	06	LCP
A2150-D2	07	PPHA
A2150-D2	08	VANG
A2150-D2	09	LANG
A2150-D2	10	VBOW
A2150-D2	11	LBOW

Note: Make sure that the picture size is within specs. Vertical size is 11.8 sq. and horizontal size is 15.8 sq.

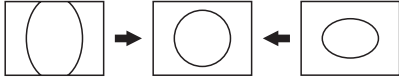
4. Write data into memory and then set the screen to 1080i mode.

CXA2150D-1

0. VPOS (V-POSITION)



1. VSIZ (V-SIZE)



2. VLIN (V-LINE)



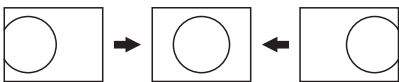
3. VSCO (VS-COR)



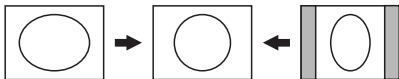
7. HTPZ (H-TRAPEZOID)

**CXA2150D-2**

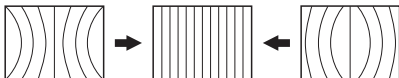
1. HPOS (H-POSITION)



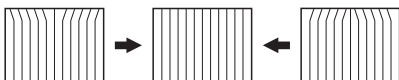
2. HSIZ (H-SIZE)



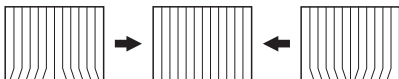
5. PIN (PIN AMP)



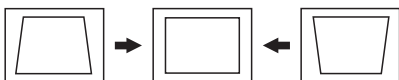
6. UCP (UP COR PIN COR)



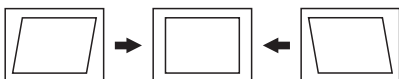
7. LCP (LOW CO PIN COR)



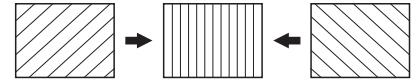
13. PPHA (PIN PHASE)



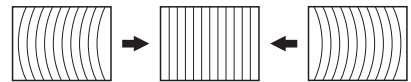
14. VANG (AFC-ANGLE)



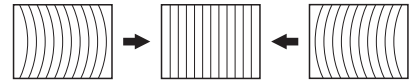
15. LANG (L-ANGLE)



16. VBOW (AFC-BOW)



17. LBOW (L-BOW)

**2-9.2. 1080i HD MODE ADJUSTMENT**

1. Input a 1080i cross-hatch signal and an HD monoscope signal that contains overscan markers.
2. Adjust the raster position per section 3-8, only if this procedure was not performed for full mode.
3. Adjust the geometry similar to Fill DRC mode. Vertical size is 11.8 sq. and horizontal size is 15.8 sq., if monoscope signal is available. Otherwise, set the vertical size to 91.5% scan and horizontal size as 90% scan.
4. Use the following register to adjust the horizontal parameter:

A2150-D2	01	HPOS
----------	----	------

Note: If necessary, touch up the geometry using the data register listed above for Full mode.

5. Write the data into memory.

2-9.3. VERTICAL COMPRESSES MODE CHECK AND CONFIRMATION

1. Input a monoscope and crosshatch signal.
2. Check vertical compressed mode.

SECTION 3: SAFETY RELATED ADJUSTMENTS

3-1. RV8001, RV8002 CONFIRMATION METHOD AND HV SERVICE ADJUSTMENTS

3-2. B+ MAX CONFIRMATION

Standard..... 135.3 \pm 1 VCD

Check Condition:

AC input voltage: 120 (\pm 2) VAC at Board Adjustment Process
 130 (\pm 2) VAC at QC
 ... 120 (\pm 2) VAC at Overall Adjustment (after aging)

Note: If using a stabilized power supply, make sure that the distortion factor is 3% or less.

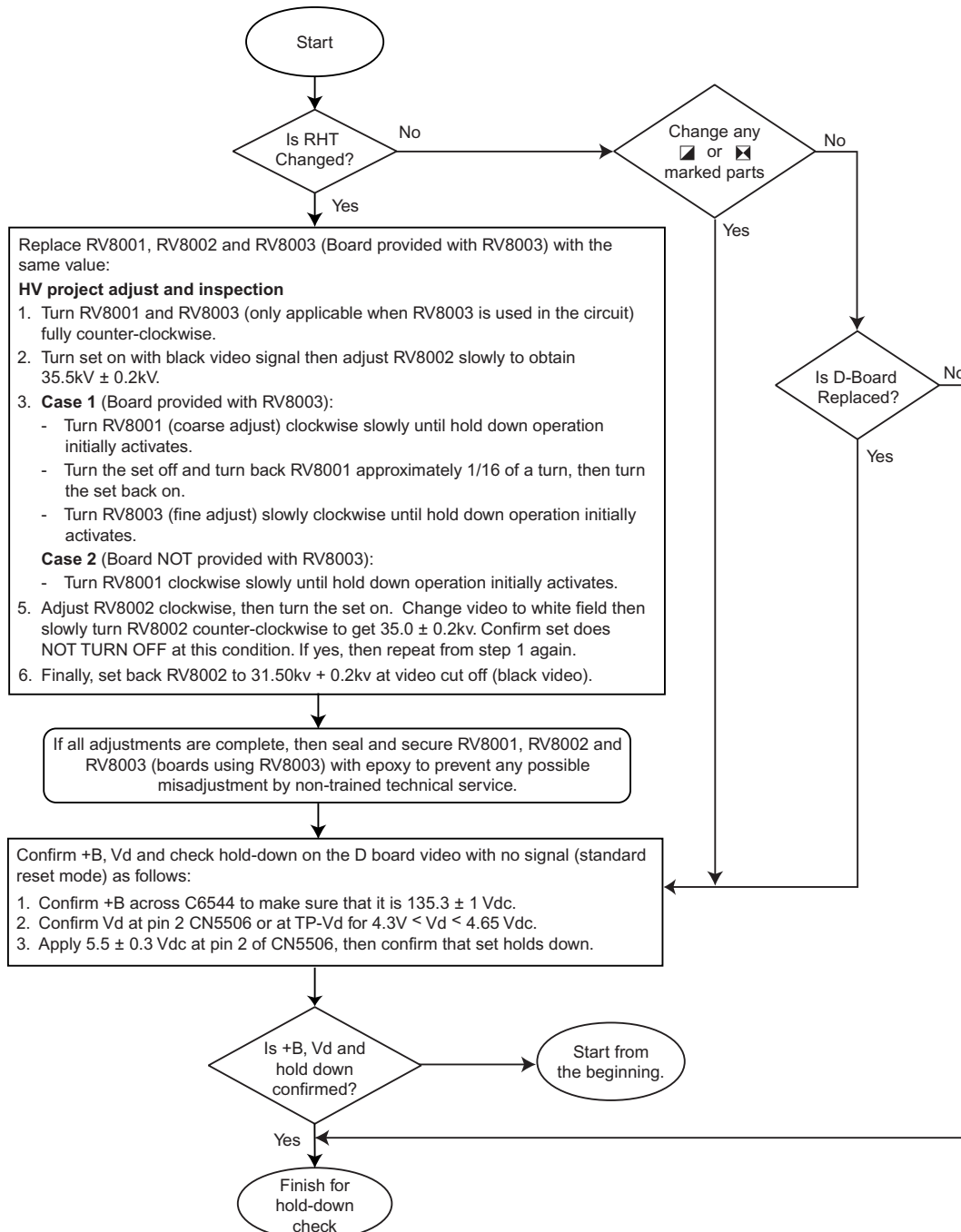
Setting mode: Full mode

Signal input: Cross-hatch of NTSC at QC

Initial setting: Reset condition at QC

Confirm point: Across C6544 for B+ of D Board

3-3. HV SERVICE FLOWCHART



SECTION 4: CIRCUIT ADJUSTMENTS

ELECTRICAL ADJUSTMENTS BY REMOTE COMMANDER

Use the Remote Commander (RM-Y183, RM-Y184) to perform the circuit adjustments in this section.

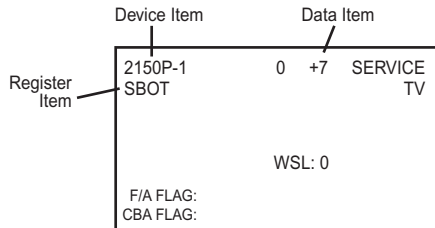
Test Equipment Required: 1. Pattern generator 2. Frequency counter 3. Digital multimeter 4. Audio oscillator

4-1. SETTING THE SERVICE ADJUSTMENT MODE

- Standby mode (Power off).
- Press the following buttons on the remote commander within one second of each other:

DISPLAY → Channel **5** → Sound Volume **+** → Power

SERVICE ADJUSTMENT MODE VIEW



READING THE MEMORY

- Enter into service mode.
- Press **0** on the remote commander.
- Press **ENTER** to read memory.

ADJUSTING THE PICTURE

- Enter into service mode
- Press **2** or **5** on the remote to select the device item.
- Press **1** or **4** on the remote to select an item.
- Press **3** or **6** on the remote to change the data.
- Press **MUTING** then **ENTER** to write into memory.

4-1.1 RESETTING THE DATA

Note: Be careful when using the remote! It will clear and re-initialize ALL NVM data including deflection adjustment data if not reset properly as follows:

RESETTING THE DEFLECTION NVM DATA

- Enter into service mode.
- Press **7**, then **MENU**, and then press **ENTER** on the remote.

RESETTING THE SYSTEM NVM DATA

- Enter into service mode.
- Press **7**, then **9**, and then press **ENTER** on the remote.

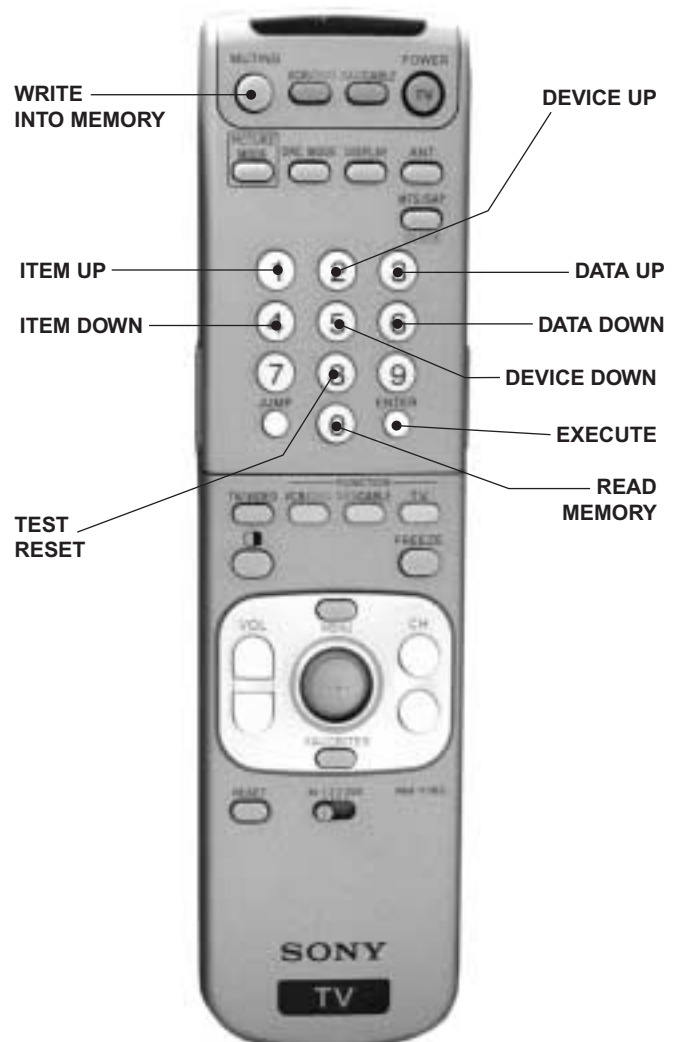
RESETTING THE SYSTEM NVM DATA

- Enter into service mode.
- Press **8** and then press **ENTER** on the remote.

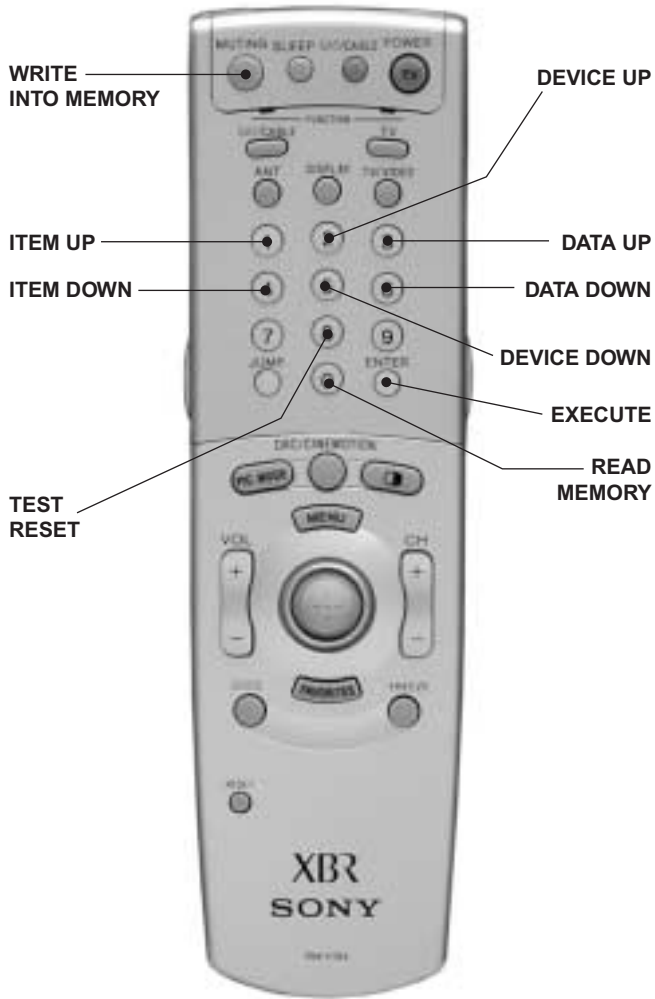
4-2. MEMORY WRITE CONFIRMATION METHOD

- After adjustment, pull out the plug from the AC outlet, then replace the plug in the AC outlet again.
- Turn the power switch ON and set to Service Mode.
- Call the adjusted items again to confirm they were adjusted.

4-3. REMOTE ADJUSTMENT BUTTONS AND INDICATORS



RM-Y183
(KV-32HS20/36HS20/36HS20H ONLY)



RM-Y184
(KV-32XBR450/36XBR450/36XBR450H ONLY)

SERVICE DATA LISTS

DX1A-2001* Service List ----- Contents & Notes				
Category Number & Name	Device Name	Device Reference Number	Slave Address	Comment
# 1	3D-COMB	IC3501 / BC-board	B8h (W) & B9h (R)	W&R: Write & Read
# 2-1	CXA2103-1 (Main)	IC3048 (Main) / B-board	9Ah	
# 2-2	CXA2103-2 (Sub)	IC3110 (Sub) / B-board	9Eh	
# 3-1	CXA2150P-1	IC201 / A-board	86h	
# 3-2	CXA2150P-2			
# 3-3	CXA2150P-3			
# 3-4	CXA2150P-4			
# 4-1	CXA2150D-1	IC201 / A-board	86h	
# 4-2	CXA2150D-2			
# 4-3	CXA2150D-3			
# 5	CXA2151	IC3001 / B-board	84h	
# 6	D-CONV	IC5513 / D-board	DEh	
# 7	CXA2026	IC5511 / D-board	8Eh	
# 8	AP	BH3868AFS	82h	
# 9	TRUS	NJM2180M	2Eh	Controlled through CXA1315M (IC4103 / S-board / 48h)
# 10	MID1	CXD9509AQ	2Eh	Controlled through MID-XA Micro (IC3090 / B-board / 64h)
# 11	MID2	CXD9509AQ	2Eh	Controlled through MID-XA Micro (IC3090 / B-board / 64h)
# 12	MID3	CXD9509AQ	2Eh	Controlled through MID-XA Micro (IC3090 / B-board / 64h)
# 13	MID5	CXD9509AQ	2Eh	Controlled through MID-XA Micro (IC3090 / B-board / 64h)
# 14	OSD	M306V2ME-153FP	60h	DX1A-2001 System Micro {V1.0}
# 15	SNNR	mPD64082	B8h (W) & B9h (R)	
		CXA2103Q	9Ah	
		CXA2150Q	86h	
# 16	ID1	CXD2085M	40h	
# 17	CCD&VCHIP	CXP85840A-039Q	68h (Main)	CCD&Vchip Micro (V2.14)
			6Ch (Sub)	
# 18	OP	M306V2ME-153FP	60h	DX1A-2001 System Micro {V1.0}
# 19	ID	M306V2ME-153FP	60h	DX1A-2001 System Micro {V1.0}
DX1A-2001 System Micro & Notes for Services				
M306V2ME-153FP (MASK), Software Version 1.0, IC701/A-board (Slave Address: 60h) The system micro name, software&patch versions, and the status of NVM devices are displayed only when in the service category				
DX1A-2001 MID-XA Micro				
MB94918RPF-G-137-BND (MASK), Software Version 12/08/00, IC3090/B-board (Slave Address: 64h)				
DX1A-2001 CCD&Vchip Micros				
CXP85840A-039Q (MASK), Software Version 2.14, IC3602/B-board (Main/Slave Address: 68h) & IC3601/B-board (Sub/Slave Address: 6				
Note:				
* This service list is used for DX1A-2001 ONLY. Some service data is the same in DX1A-2001 & 2000, as noted in the data sheets.				

DX1A-2001&2000 SERVICE LIST (#1): 3D-COMB / mPD64082 (Part-1/4)

Device Name: mPD64082GF { 3D-Comb Filter / NEC } / IC3501 (BC-board) / P/N: 8-759-594-44 (SB#: V7372)

Slave Address: B8h (Write Address) / B9h (Read Address)

Register No & Name	Control Register Function & Link	Data Type	Data Range	Data Initial/Average Setting (32V&36V CRTs)				Comment
				UHF/VHF & CVideo	SVVideo	Standard	Non-standard	
0	NRMD		0~3	0	1	3	3	CVideo (CV): CVideo1~4 inputs SVVideo (SV): SVVideo1~3 inputs C: Common data
1	YAPS	C	0~3	3				
2	CLKS	C	0~3	1				
				UHF/VHF & CVideo				
				Standard	Non-standard	Standard	Non-standard	
3	NSDS		0~3	0	0	0	0	
4	MSS	C	0~3	0				
5	KILS	C	0~3	1				
6	CDL	C	0~7	3				
				UHF/VHF & CVideo				
				Standard	Non-standard	Standard	Non-standard	
7	DYCO		0~15	NRMD = 0	NRMD = 1	NRMD = 2	NRMD = 3	
8	DYGA		0~15	2	2	2	2	
9	DCCO		0~15	10	10	10	10	
10	DCGA		0~15	5	5	5	5	
11	YNRL	C	0~3	5	5	5	5	
12	CNRL	C	0~3	1				
				Video5&6				
				Video1~4	Video5&6			Video1~4: CVideo1~4 & SVVideo1~3 inputs Video5&6: YPbPr-480i/480p/1080i inputs
13	VTRH		0~3	1	1	1	1	
14	VTRR		0~3	1	1	1	1	
15	LDSR		0~3	2	2	2	2	
				VAPG1 Data Based on MENU/VM Setting				
				VM = Off	VM = Low	VM = Mid	VM = High	This setting continues to the next page.
16	VAPG		0~7	0	2	3	4	
17	VAPI		0~31	4	4	4	4	4 (32V) OR 8 (36V) (Initial/CBA Data = 8)
				SNMR Setting (-Offset)				
				SNMR = 0	SNMR = 1	SNMR = 2	SNMR = 3	
18	YPFT		0~3	0	0	0	0	
19	YPPG		0~15	7	0	1	2	3

Note: The same 3D-COMB service data is used for DX1A-2001&2000.

DX1A-2001&2000 SERVICE LIST (#1): 3D-COMB / mPD64082 (Part-2/4)

Register No & Name	Data Initial/Average Setting (32V&36V CRTs)	Data Type	Data Range	Control Register Function & Link	Comment
	0	0	0	0	

Note: The same 3D-COMB service data is used for DX1A-2001&2000.

DX1A-2001&2000 SERVICE LIST (#1): 3D-COMB / mPD64082 (Part-3/4)

Register No. & Name	Control Register Function & Link	Data Type	Data Range	Data Initial/Average Setting (32V&36V CRTs)	Comment
	SNNR Setting-based Control Table for YHCO & YHCG			SNNR = 0 SNNR = 1 SNNR = 2 SNNR = 3	(Not SNNR Offset Data)
20 YHCO	Y output high frequency component coring		0~3	1	YHCO&YHCG settings are sent directly to 3D-Comb device.
21 YHCG	Y output high frequency component coring gain		0, 1	0	
22 HSSL	Hsync slice level	C	0~15	0	
23 VSSL	Vsync slice level	C	0~15	12	C: Common data
24 ADCL	ADC clock delay	C	0~3	8	
	NRMD Setting-based Control Table for D2GA			NRMD = 0 NRMD = 1 NRMD = 2 NRMD = 3	
25 D2GA	Moving detection gain		0~7	4	
26 KILR	Killer detection reference	C	0~15	4	
27 OP1	Option 1: Selection of comb filter & recursive noise reduction types	C	0, 1	3	
28 NR1	Noise reduction on/off		0, 1	1	This setting continues to the next page.
29 NR2	SNNR control on/off	C	0, 1	0	
30 WSL	Noise level detection data		0~255	0	
31 HPLL	H-PLL filter (Must be set to 1 when MN signal is input.)	C	0, 1	1	
32 BPLL	Burst PLL filter	C	0, 1	1	
33 FSCF	Burst extraction gain	C	0, 1	0	
34 PLLF	PLL loop gain	C	0, 1	1	
35 CC3N	Selection of a line-comb filter C separation filter characteristic		0, 1	Video1~4 Video5&6 Video1~4 & SVideo1~3 inputs 0 0 0	
36 HDP	Fine adjustment of the system H-phase	C	0~7	0	Video5&6: YPbPr-480/480p/1080i inputs
37 BGPS	Internal burst gate start position {Gate Start Position from Hsync center = 0.25 x BGPS + 2}	C	0~15	5	
38 BGPW	Internal burst gate width {Gate Width = 0.25 x BGPW + 0.5 (ms)}	C	0~15	4	
39 TEST	Test bit {0: Normal mode, 1: Test mode (forbidden setting)}	C	0, 1	10	
40 WSC	Amount of noise detection coring	C	0~3	0	
41 LIND	DRC-M line-doubling setting for non-standard signals	Micro	0~63	UHF/VHF & Video1~4 Video5&6	This setting is used for non-standard signals such as Play Station signals.
42 PFGO	(YFPG offset at GR on) --- Not used for DX1A	---	0~7	0 2	(Not used for DX1A)

Note: The same 3D-COMB service data is used for DX1A-2001&2000.

Register No. & Name	Data Initial/Average Setting (32V&36V CRTs)			Comment
#28 NR1 (cont.)	CVideo2	SVideo2	CVideo3	SVideo3
	0	1	0	1

Note: The same 3D-COMB service data is used for DX1A-2001&2000.

DX1A-2001&2000 SERVICE LIST (#2-1): CXA2103-1 {Main}

Device Name: CXA2103Q { NTSC-YCT (Chroma Decoder) / SONY } / IC3048 (B-board) / P/N: 8-752-089-50 (SBorSD#: NA)

Slave Address: 9Ah { Main }

Register No & Name	Control Register Function & Link	Data Type	Data Range	Data Initial Setting & [Average Data] (32V&36V CRTs)	Data Initial/Average Setting (32V&36V CRTs)	Note	
0	Y-Out gain		0~63	UHF/VHF & Video P&P-Left (M)-DRC 23 P&P-Left (M)-1080I 27* YBPPr-480I P&P-Left (M)-480I 31*	Video: CVideo1~4 & SVideo1~3 Inputs P&P-Left (M)-1080I&480I: If P&P-Left is 1080I/480p signal, the signal from the main chroma decoder is sent to MID/VDO input. *: Settings not used		
1	Cb&Cr-Out gains		0~63	UHF/VHF 17 55* 32 31*			
2	Sub contrast	Adj.	0~15	UHF/VHF 7 [7]			
3	Sub color	Adj.	0~15	UHF/VHF 7 [7]			
4	Sub hue	Adj.	0~15	7 [Adj.-2steps]			
5	Y/C delay time		0~3	0			
6	SHAP	SNR Data-related Settings			UHF/VHF 6 4 4 4	SNNR=0 (-offset) 0 SNNR=1 (-offset) 1 SNNR=2 (-offset) 2 SNNR=3 (-offset) 3	
7	SHF0		0~15	0			
8	PREO		0~3	0			
9	BPF0		0~3	3			
10	BPFQ		0~3	3			
11	BPSW		0, 1	1			
12	TRAP		0, 1	0			
13	LPF		0, 1	0			
14	AF CG		0, 1	1			
15	CDMD		0~3	3			
16	SSMD		0~3	0			
17	HMSK		0, 1	1			
18	HALI		0, 1	0			
19	PPHA		0~15	7			
20	CBOF		0~(31)~63	UHF/VHF & Video P&P-Left (M)-DRC 31 P&P-Left (M)-1080I 31* YBPPr-480I P&P-Left (M)-480I 31*			
21	CROF		0~(31)~63	31 31*			
22	ATPD	CXA2150P-4/#13 UBLK Setting-related Controls for ATPD & DCTR			UHF/VHF & Video P&P-Left (M)-DRC 1 P&P-Left (M)-1080I 1 YBPPr-480I P&P-Left (M)-480I 1	P&P & Favorite UBLK=4 2 UBLK=5 2 UBLK=6 3 UBLK=7 2	Single UBLK=0~7 0
23	DCTR		0~3	0			

Note: The same CXA2103 service data (Main&Sub) is used for DX1A-2001&2000.

DX1A-2001&2000 SERVICE LIST (#2-2): CXA2103-2 {Sub}

Device Name: CXA2103Q { NTSC-YCT (Chroma Decoder) / SONY } / IC3110 (B-board) / P/N: 8-752-089-50 (SBorSD#: NA)
 Slave Address: 9Eh { Sub }

Register No & Name	Control Register Function & Link	Data Type	Data Range	Data Initial Setting & [Average Data] (32V&36V CRTs)	Data Initial/Average Setting (32V&36V CRTs)	Note
0	Y-Out gain		0~63	UHF/VHF & Video P&P-Right (S) 23 P&P-Right (S)-DRC 22	V _{video} : CVideo1~4 & SVideo1~3 Inputs P&P-Right (S)-DRC: If P&P-Left is 1080i/480p signal, the signal from the sub chroma decoder is switched to DRC path.	
1	Cb&Cr-Out gains		0~63	18 UHF/VHF Video 7 [7]		
2	Sub contrast	Adj.	0~15	7 [7]		
3	Sub color	Adj.	0~15	7 [7]		
4	Sub hue	Adj.	0~15	7 [Adj.-2steps]		
5	Y/C delay time		0~3	0		
	SNMR Data-related Settings					
6	SHAP Sharpness		0~15	UHF/VHF CVideo SVideo 6 4 4	SNMR=0 (-offset) 0 SNMR=1 (-offset) 1 SNMR=2 (-offset) 2 SNMR=3 (-offset) 3	
7	SHF0 Sharpness f0 selector		0~3	0		
8	PREO Sharpness pre/over-shoot ratio		0~3	3		
9	BPF0 Chroma band filter f0 setting		0~3	0		
10	BPFQ Chroma band filter Q setting		0~3	0		
11	BPSW Chroma band filter on/off		0, 1	0		
12	TRAP Y bolck chroma trap filter on/off		0, 1	0		
13	LPF YPbPr-Output LPF on/off		0, 1	0		
	UHF/VHF Video					
14	AFCG AFC Loop Gain		0, 1	1		
15	CDMD V countdown system mode selector		0~3	3		
16	SSMD H&Vsync slide level setting		0~3	0		
17	HMSK Masking of macrovision signal on/off		0, 1	1		
18	HALI H automatic adjustment on/off		0, 1	0		
19	PPHA H TIM phase adjustment for video		0~15	7		
	UHF/VHF & CVideo YPbPr-480i					
				P&P-Right (S) 31 P&P-Right (S)-DRC 31*		
20	CBOF Cb-Offset1 of Cb IN (Pin34)		0~(31)~63	31		
				31		
21	CROF Cr-Offset1 of Cr IN (Pin35)		0~(31)~63	31		
				31		
	CXA2150P-4#13 UBLK Setting-related Controls for ATPD & DCTR					
22	ATPD Auto-pedestal Inflection Point		0~3	UHF/VHF & CVideo P&P-Right (S) 0 P&P-Right (S)-DRC 1	UBLK=4 1 UBLK=5 2 UBLK=6 3 UBLK=7 2	Single UBLK=0~7 0
23	DCTR DC Transmission Ratio		0~3	0		0

Note: The same CXA2103 service data (Main&Sub) is used for DX1A-2001&2000.

DX1A-2001&2000 SERVICE LIST (#3-2): CXA2150P-2 {Picture Controls: P2}

Device Name: CXA2150AQ { CRT Driver / SONY } / IC201 (A-board) / P/N: 8-752-093-35 (SBorSD#: NA)

Slave Address: 86h

Register No & Name	Control Register Function & Link	Data Type	Data Range	Data Initial/Average Settings (32V&36V CRTs)	Comment
0 ALBK	PIC_ON: RGB output including AKB reference pulse on/off (Setting = 0 for power on reset) --- G2 adjustment register setting	C	0, 1	1	
1 RGBS	R_ON/G_ON/B_ON: R/G/B outputs on/off (AKB reference pulse can not be turned on/off.) (0,1/0,1/0,1)	C	0~7	7	
2 BLKB	BLK_BTM: RGB output bottom limit level (Black Limit) (AKB reference pulse DC-voltage)	C	0~3	3	
3 LIML	PLIMIT_LEV: Threshold level for excessively high inputs (White Limit)	C	0~3	0	
4 PABL	P_ABL: DC-level in RGB output detection for PEAK ABL	C	0~15	15	
5 SABL	S_ABL: S_ABL_gain	C	0~3	0	
6 AGNG	AGING_W/AGING_B: AGING_W/AGING_B modes on/off (Set luminance to 80/01IRE flat-field signal.)	C	0~3 (0,1/0,1)	0	
7 AKBO	AKBOFF: Automatic/Manual-Cutoff setting	C	0, 1	0	
				U/V/HF & Video1~4	
				YPbPr 480i	
				YPbPr 480p	
				YPbPr 1080i	
				P&P	
8 SYPH	SYNC_PHASE: Hsync delay with respect to Video (100%: H-period)		0~3	0	Video1~4:
9 CLPH	CLP_PHASE: Internal clamp pulse phase (100%: H-period)		0~3	0	CVideo1~4 &
10 CLGA	CLP_GATE: Switch for the gated internal clamp pulse with Hsync input		0, 1	3	SVideo1~3
11 JAXS	JAXIS: Color axis switch		0, 1	0	
12 BLKO	BLKO: Blanking switch		0, 1	0	

Note:

The same CXA2150 service data is used for DX1A-2001&2000.

DX1A-2001&2000 SERVICE LIST (#3-3): CXA2150P-3 {Picture Controls: P3} (Part-1/3)

Device Name: CXA2150AQ { CRT Driver / SONY } / IC201 (A-board) / P/N: 8-752-093-35 (SBorSD#: NA)

Slave Address: 86h

Register No & Name	Control Register Function & Link	Data Type	Data Range	Data Initial/Average Settings (32V&36V CRTs)										Comment		
				UHF VHF	CV	SV	YPbPr 480i	YPbPr 480p	YPbPr 1080i	P&P						
0	SYSTEM: Signal bandwidth setting		0~3	1	1	1	1	1	1	2	2					
1	VM LEV: VM_OUT level	C	0~3	3												
2	VM MO System Micro pin#40		0, 1	0	0	0	0	0	0	0	0	0	0	0	0	0
3	VM CR VM COR: VM_OUT coring level		0~3	3	3	3	3	3	3	3	3	3	3	3	3	3
4	VM LM VM LMT: VM_OUT limit level		0~3	3	3	3	3	3	3	3	3	3	3	3	3	3
5	VM F0 VM F0		0~3	2	2	2	2	2	2	2	2	2	2	2	2	2
6	VMDL VM DLY: VM_OUT phase (defined by phase difference from R_OUT)		0~3	3	3	3	3	3	3	3	3	3	3	3	3	3
7	SHOF Offset for USHP = SHOF x 4		0~3	2	2	2	2	2	2	2	2	2	2	2	2	2
8	SHF0 SHP F0: Sharpness circuit f0		0, 1	1	1	1	1	1	1	1	1	1	1	1	1	1
9	PROV PRE/OVER: Y signal pre/over-shoot ratio		0~3	3	3	3	3	3	3	3	3	3	3	3	3	3
10	FILV SHP F1: Sharpness for higher f0 (4.2/5.6 MHz @ NORMAL mode)		0~3	0	3	3	3	3	3	3	3	3	3	3	3	3
11	CDSP SHP CD: Sharpness in part of high color saturation		0~3	3	3	3	3	3	3	3	3	3	3	3	3	3
12	LTLV LTI LEV: Luminance transient improvement (LTI)		0~3	3	3	3	3	3	3	3	3	3	3	3	3	3
13	LTMD LTI MODE: LTI mode setting		0~3	0	0	0	0	0	0	0	0	0	0	0	0	1
14	CTLV CTI LEV: Chrominance transient improvement (CTI)		0~3	0	0	0	0	0	0	0	0	0	0	0	0	0
15	CTMD CTI MODE: CTI mode setting		0~3	0	0	0	0	0	0	0	0	0	0	0	0	0
16	UBOF Offset for UBRT (Picture clarity adjustment)		0~(7)~15	7	7	7	7	7	7	7	7	7	7	10	7	7
17	UCOF Offset for UCOL = UCOF x 2 (Picture clarity adjustment)		0~3	3	3	3	3	3	3	3	3	3	3	3	3	3
18	UHOF Offset for UHUE (Picture clarity adjustment)		0~3	0	0	0	0	0	0	0	0	0	0	0	0	0
19	MIDE MID enhancement setting		0~15	3	3	3	7	11	11	11	11	11	11	11	11	---

Note:

The same CXA2150 service data are used for DX1A-2001&2000.

These settings continue to the next page.

CV: CVideo1~4
SV: SVideo1~3
C: Common data
(): Settings at center

DX1A-2001&2000 SERVICE LIST (#3-3): CXA2150P-3 {Picture Controls: P3} (Part-2/3)

Register No & Name	Data Initial/Average Settings (32V&36V CRTs)										Data Initial/Average Settings (32V&36V CRTs)										Data Initial/Average Settings (32V&36V CRTs)										Note
	Picture Mode: Standard					Picture Mode: Movie					Picture Mode: Proto					Picture Mode: Standard					Picture Mode: Movie					Picture Mode: Proto					
	UHF VHF	CV	SV	YPbPr 480i	YPbPr 480p	YPbPr 1080i	P&P	UHF VHF	CV	SV	YPbPr 480i	YPbPr 480p	YPbPr 1080i	P&P	UHF VHF	CV	SV	YPbPr 480i	YPbPr 480p	YPbPr 1080i	P&P	UHF VHF	CV	SV	YPbPr 480i	YPbPr 480p	YPbPr 1080i	P&P			
#0 SYSM (cont.)	1	1	1	1	1	2	2	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	2	2			
#1 UVML (cont.)	3							0							0																
#2 VMML (cont.)	0	0	0	0	0	0	0	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3			
#3 VMCR (cont.)	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3			
#4 VMLM (cont.)	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2			
#5 VMF0 (cont.)	1	3	3	3	3	1	3	1	1	1	1	1	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	3			
#6 VMDL (cont.)	0	3	3	3	3	0	2	0	3	3	3	3	0	3	0	3	3	3	3	0	3	0	3	3	3	0	3	1			
#7 SHOF (cont.)	0	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
#8 SHF0 (cont.)	3	3	3	3	3	0	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3			
#9 PROV (cont.)	0	3	3	3	3	3	3	0	3	3	3	3	3	3	0	3	3	3	3	3	3	3	3	3	3	3	3	3			
#10 F1LV (cont.)	3	3	3	3	3	3	3	0	3	3	3	3	3	3	0	3	3	3	3	3	3	3	3	3	3	3	3	3			
#11 CDSP (cont.)	3	3	3	3	3	3	3	0	3	3	3	3	3	3	0	3	3	3	3	3	3	3	3	3	3	3	3	3			
#12 LTLV (cont.)	2	2	2	2	2	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
#13 LTMD (cont.)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
#14 CTLV (cont.)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
#15 CTMD (cont.)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
#16 UBOF (cont.)	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7			
#17 UCOF (cont.)	3	3	3	3	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
#18 UHOF (cont.)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
#19 MIDE (cont.)	2	2	2	6	10	---	---	1	1	1	1	5	9	---	1	1	1	1	4	8	---	---	---	---	---	---	---	---			

Note:
The same CXA2150 service data are used for DX1A-2001&2000.

See next page

DX1A-2001&2000 SERVICE LIST (#3-3): CXA2150P-3 {Picture Controls: P3} (Part-3/3)

Register No & Name	Data Initial/Average Settings (32V&36V CRTs)				Comment
	SNMR=0 (Offset)	SNMR=1 (Offset)	SNMR=2 (Offset)	SNMR=3 (Offset)	
#1 UVML (cont.)	0	0	0	0	
#3 VMCR (cont.)	0	+1	+2	+3	
#10 F1LV (cont.)	0	-1	-2	-3	
#11 CDSP (cont.)	0	0	0	0	
#12 LTLV (cont.)	0	0	0	0	
#14 CTLV (cont.)	0	0	0	0	
#19 MIDE (cont.)	0	0	0	0	

Note:
The same CXA2150 service data are used for DX1A-2001&2000.

DX1A-2001&2000 SERVICE LIST (#3-4): CXA2150P-4 {Picture Controls: P4} (Part-1/4)

Device Name: CXA2150AQ { CRT Driver / SONY } / IC201 (A-board) / P/N: 8-752-093-35 (SBorSD#: NA) **Slave Address:** 86h
Device Name: CXD2085M { ID-1 Decoder / SONY } / IC3603 (B-board) / P/N: 8-752-395-13 (SD#: S98511B) **Slave Address:** 40h

Register No & Name	Control Register Function & Link	Data Type	Data Range	Data Initial/Average Settings (32V&36V CRTs)							Comment
				Vivid		Standard		Movie	Pro		
0	UPIC	PICTURE: Picture	0~63	32V	36V	32V	36V	32&36V	Pro	Settings for 36V CRTs are used for initial settings.	
1	UBRT	BRIGHT: Brightness	0~63	63	42	46	31	31	31		
2	UCOL	COLOR: Color	0~63	25	22	28	26	28	31		
3	UHUE	HUE: Hue	0~63	34	38	33	33	33	31	This setting continues to the next page.	
		SNR Setting-related Controls for USHP		31	31	31	31	31	31		
4	USHP	SHARPNESS: Sharpness	0~63								
5	UTMP	Color Temperature (0: Warm, 1: Neutral, 2: Cool)	0~2	38	42	44	48	34	31	These settings continue to the next page.	
6	UDCL	DCOL: Dynamic color setting	0~3	2	2	1	1	0	1		
				2	2	2	2	2	0		
7	AXIS	COL_AXIS: Color matrix setting	0~3	Picture Mode: Vivid / Standard / Movie							These settings continue to the next page.
				Picture Mode: Vivid		Picture Mode: Standard		Picture Mode: Movie			
				UHF/VHF Video1~4	YPbPr 480i	YPbPr 480p	YPbPr 1080i	P&P	P&P		
8	UGAM	GAMMA/GAMMA_L: RGB output GAMMA correction setting (B ₇₋₆) GAMMA L: Slight GAMMA correction on/off (B ₀)	0~7 (0~3/0,1) 0~7 (0~3/0,1)	5	5	5	5	5	5	Video1~4: CVideo1~4 & SVideo1~3	
9	AGAM	GAMMA/GAMMA_L (Av Pro user control) --- Void Data		---							
		UGAM Setting-related Controls for GSBO, GCOO, GHUO		UGAM =7	UGAM =6	UGAM =5	UGAM =4	UGAM =3	UGAM =2		UGAM =1
10	GSBO	Offset for SBRT (8 types of GSBO data based on UGAM values)	0~3	0	0	0	0	0	0	These settings continue to the next page.	
11	GCOO	Offset for UCOL	0~3	0	0	0	0	0	0		
12	GHUO	Offset for UHUE	0~3	0	0	0	0	0	0		
13	UBLK	Item # 15~18 pack FI data controls	0~7	Picture Mode: Vivid							These settings continue to the next page. (): Settings at center
14	ABLK	(Av Pro user control) --- Void Data	0~7	UHF/VHF Video1~4	YPbPr 480i	YPbPr 480p	YPbPr 1080i	P&P	P&P		
		UBLK Setting-related Controls for DCTR		7	7	7	7	7	7		
15	DCTR	DC_TRAN: Y signal DC transmission (8 types of DCTR data based on UBLK values)	0~3	0 (Void data)							
16	DPIC	DPIC_LEV: Y signal AUTO PEDESTAL level	0~3	3	3	3	3	3	2	These settings continue to the next page. (): Settings at center	
17	DSBO	Offset for SBRT	0~(7)~15	2	2	2	2	2	1		
18	ABLM	ABL_MODE: ABL mode	0~3	7	7	7	7	7	7		
				1	1	1	1	1	1		

Note:
The same CXA2150 service data are used for DX1A-2001&2000.

DX1A-2001&2000 SERVICE LIST (#3-4): CXA2150P-4 {Picture Controls: P4} (Part-3/4)									
Register No & Name	Data Initial/Average Settings (32V&36V CRTs)								
	UBLK = 7	UBLK = 6	UBLK = 5	UBLK = 4	UBLK = 3	UBLK = 2	UBLK = 1	UBLK = 0	Comment
#15 DCTR (Cont.)	3	2	2	2	1	1	1	1	
#16 DPIC (Cont.)	2	3	2	1	3	2	1	0	
#17 DSBO (Cont.)	7	7	7	7	7	7	7	7	
#18 ABLM (Cont.)	1	0	0	1	0	0	0	0	

Note:
The same CXA2150 service data are used for DX1A-2001&2000.

DX1A-2001&2000 SERVICE LIST (#3-4): CXA2150P-4 {Picture Controls: P4} (Part-4/4)										
Register No & Name	Control Register Function & Link	Data Type	Data Range	Data Initial/Average Settings (32V&36V CRTs)						Comment
19 ABLT	ABL_TH: ABL current detection Vth control		0~15	0	Vcomp1		Vcomp2		Full: 480p/960i (4x3)	
20 ABLC	Control of CXA2026 {0Ch -- DAC0} (*)		0~255	0	66				Vcomp1: 480p/960i (16x9)	
21 EPOF	Offset for UPIC = EPOF x (UPIC/63) (for power save) --- Void Data	---	0~31							Vcomp2: 1080i (16x9)
22 SPOF	ID-1 and P&P Modes									(): Settings at center
	Offset for UPIC = SPOF x (UPIC/64) --- Data Not Used	---	0~31							C: Common data
23 SCON	SUB CONTRAST: SUB PICTURE		0~15	0 (Not used)	YPbPr 480p	YPbPr 1080i	YPbPr 1080i	P&P		
24 CLOF	Offset for UCOL		0~(7)~15	9	8	11	10	9		
25 HUOF	Offset for UHUE		0~7~15	8	8	9	7	8		
26 IDSW	CXD2085 Service Controls			4	3	3	3	4		
	Switch for activating the selection in #27 DATA	C	0, 1	0	Vcomp1		Vcomp2			
27 DATA	Selection of geometry-forced vertical compression modes	C	0~3	Full	1		2			

Note:
The same CXA2150 service data are used for DX1A-2001&2000.

DX1A-2001&2000 SERVICE LIST (#4-1): CXA2150D-1 {Deflection Controls: D1}

Device Name: CXA2150AQ { CRT Driver / SONY } / IC201 (A-board) / P/N: 8-752-093-35 (SBorSD#: NA)

Slave Address: 86h

Register No & Name	Control Register Function & Link	Data Type	Data Range	Data Initial Settings & [Average Data]			Comment
				Full	Vcomp1	Vcomp2	
0	V_POSITION: Vertical position (V_DRV signal DC-bias)	Adj.	0~(31)~63				Fuji: 480p/960i (4x3) display Vcomp1: 480p/960i (16x9) display Vcomp2: 1080i (16x9) display
1	V_SIZE: Vertical size (V_DRV signal gain)	Adj.	0~(31)~63	26 [26]			
2	V_LINEARITY: Vertical linearity (Gain for V_DRV signal secondary component)	Adj.	0~(7)~15	19 [19]			
3	S_CORRECTION: Vertical S-correction	Adj.	0~(7)~15	9 [9]			Adj.: Adjusted data (): Settings at center
4	VSAW0_DCH/VSAW0_DCL: Vertical center adjustment VSAW0_DCH: VSAW0 waveform DC component (high 2-bits) VSAW0_DCL: VSAW0 waveform DC component (low 4-bits)	Adj.	0~(31)~63	8 [8]			VCEN-L (Low bit) VCEN-H (High bit)
5	VSAW0_AMP: Vertical PIN adjustment VSAW0 waveform SAW component amplitude	Adj.	0~(15)~31	31 [31]			[Copy1]: Copy the adjusted data for Full mode.
6	VSAW1_DC: Rotation	Adj.	0~(7)~15	15 [15]	15 [Copty1]		Either 7 or 8 can be used as the average NSCO data. (If both of them are not good, please feedback to / check with the DY attachment process.)
7	VSAW1_AMP: Horizontal trapezoid	Adj.	0~(15)~31	7 [7]			
8	ZOOM_SW: Zoom switch		0, 1	15 [15]			
9	ASP_SW: Aspect switch		0, 1	0	0		
10	V_ASPECT: Aspect ratio	Adj.	0~63	1	1	0	
11	V_SCROLL: Vertical scroll	Adj.	0~(31)~63	47	47	47	
12	UP_VLIN: Upper vertical linearity	Adj.	0~15	31	32	32	
13	LO_VLIN: Lower vertical linearity		0~15	0	0	0	

Note:

The same CXA2150 service data is used for DX1A-2001&2000.

DX1A-2001&2000 SERVICE LIST (#4-2): CXA2150D-2 {Deflection Controls: D2}

Device Name: CXA2150AQ { CRT Driver / SONY } / IC201 (A-board) / P/N: 8-752-093-35 (SBorSD#: NA)

Slave Address: 86h

Register No & Name	Control Register Function & Link	Data Type	Data Range	Data Initial Settings & [Average Data]			Comment
				Full	Vcomp1	Vcomp2	
0	HCNT HC_PARA DC: Horizontal center	Adj.	0~(31)~63	31	31 [31]	Vcomp2	Full: 480p/960i (4x3) display Vcomp1: 480p/960i (16x9) display Vcomp2: 1080i (16x9) display (): Settings at center
1	HPOS H_POSITION: Horizontal position	Adj.	0~(31)~63	31	[31]	31	[Adj.-6steps]
2	HSIZ H_SIZE: Horizontal size	Adj.	0~(31)~63	45	[45]		
3	SLIN MP_PARA DC: Horizontal S-correction	Adj.	0~15	3	[3]		Adj.: Adjusted data [Adj.-6steps]: The adj. data for Vcomp2 mode = The adj. data for Full/Vcomp1 modes - 6 steps
4	MPIN MP_PARA AMP: Horizontal middle pin		0~15	9 ^(32V) or 7 ^(36V)			
5	PIN PIN AMP: Horizontal pin	Adj.	0~(31)~63	35	[35]		
6	UCP UP_CPIN: Upper corner pin	Adj.	0~(31)~63	38	[38]		
7	LCP LO_CPIN: Lower corner pin	Adj.	0~(31)~63	42	[42]		
8	UXCG UP_UCG: Upper extra corner pin gain		0~3	2 ^(32V) or 1 ^(36V)			Data ^(32Vor36V) : The data for 36V are used as the Initial & CBA data.
9	LXCG LO_UCG: Lower extra corner pin gain		0~3	2			
10	UXCP UP_UCP: Upper extra corner pin position		0~3	2			
11	LXCP LO_UCP: Lower extra corner pin position		0~3	2			
12	XCPP UC_POL: Extra corner pin polarity		0, 1	0			From the system micro (V2.0), the deflection control-related initial settings are the same as their average data.
13	PPHA PIN_PHASE: Pin phase	Adj.	0~(31)~63	15	[15]		
14	VANG AFC_ANGLE: AFC angle	Adj.	0~(31)~63	31	[31]		
15	LANG HC_PARA_PHASE: Linearity angle	Adj.	0~(31)~63	31	[31]		
16	VBOW AFC_BOW: AFC bow	Adj.	0~(31)~63	31	[31]		
17	LBOW HC_PARA AMP: Linearity bow	Adj.	0~(31)~63	31	[31]		
18	CPY1 Copy Function 1: (Set CPY1=1, then press MUTE + Enter.) Copy all CXA2150D-2 data for Full mode to Vcomp1&2	Micro	0, 1	0			For engineering design use only

Note:

The same CXA2150 service data is used for DX1A-2001&2000.

DX1A-2001&2000 SERVICE LIST (#4-3): CXA2150D-3 {Deflection Controls: D3}						
Device Name: CXA2150AQ { CRT Driver / SONY } / IC201 (A-board) / P/N: 8-752-093-35 (SBorSD#: NA)						
Slave Address: 86h						
Register No & Name	Control Register Function & Link	Data Type	Data Range	Data Initial/Average Settings (32V&36V CRTs)		Comment
				Full	Vcomp1	Vcomp2
0	HBLK SW: Horizontal blanking switch		0, 1		1	
1	LBLK SW: Left blanking		0~63	45		50
2	RBLK SW: Right blanking		0~63	24		27
3	VBLK SW: Vertical blanking switch		0, 1	1	1	
4	UP BLK: Top blanking		0~(7)~15	1	8	12
5	LO BLK: Bottom blanking		0~(7)~15	0	13	13
6	V_COMP: Vertical compensation		0~15	0	0	0
7	H_COMP: Horizontal compensation		0~15	0	0	0
8	AFC_COMP: AFC compensation		0~7	0	0	0
9	PIN_COMP: Pin compensation		0~7	0	0	0
10	AFC_MODE: AFC loop gain		0~3	3		2
11	V_FREQ: Vertical frequency		0~3		1	
12	V_ON: Vertical drive on		0, 1		1	
13	JMP_SW: Reference pulse jump switch		0, 1	0		1
14	VDRV_SW: Vertical drive jump switch		0, 1	0	0	1
15	RST_SW: Vertical drive start switch		0, 1	0	0	1
16	EW_DC: Pin DC level shift		0, 1	0		0
17	AKBTIM: AKB timing		0~31	20	20	10

Note:
The same CXA2150 service data is used for DX1A-2001&2000.

DX1A-2001&2000 SERVICE LIST (#5): CXA2151Q

Device Name: CXA2151Q { Component I/F & Sync Separation / SONY } / IC3001 (B-board) / P/N: 8-752-093-84 (SD#: S00302B)
 Slave Address: 84h

Register No & Name	Control Register Function & Link	Data Type	Data Range	Data Initial/Average Settings (32V&36V CRTs)			Comment
0	MTRX MAT_OUT: Selection of color matrix conversion types	Micro	0~3	480i (15.75 KHz)	480p (31.50 KHz)	1080i (33.75 KHz)	Video5&6: YPbPr-480i/480p/1080i inputs Sub: 480i input from the sub-channel
1	GAIN GAIN_SEL: Selection of output signals for SELYOUT, SELCBOUT, SELCROUT YGAIN, CBGAIN, CRGAIN:	C	0~3	0	0	1	Full: 480p/960i (4x3) display Vcomp1: 480p/960i (16x9) display Vcomp2: 1080i (16x9) display
2	CBGN The gain control of SELYOUT, SELCBOUT, & SELCROUT	C	0~15	9			C: Common data
3	VTC V TC: Setting of Vsync separation time constant	C	0~3	1			
4	HWID H WIDTH: Setting of the output pulsewidth of SELHOUT	C	0~3	1			
5	HSEP HSEP_SEL: Setting for the sync separation system		0, 1	Video5	Video6	Sub	
6	TEST TEST: Test mode selection (for device tests)	C	0, 1	0	0	0	
7	FRGB The forced RGB selection (for tests) {0: MAT_OUT = MTRX (#0), 1: MAT_OUT = MTRX (#3)}	C	0, 1	0			
8	HMSK Hsync masking in vertical retrace		0, 1	Full	Vcomp1	Vcomp2	
				1		0	

Note:

The same CXA2151 service data is used for DX1A-2001&2000.

DX1A-2001&2000 SERVICE LIST (#6): D-CONV / CXA8070

Device Name: CXA8070AP { DY-Convergence Control / SONY } / IC5513 (D-board) / P/N: 8-759-595-52 (SB#: V1718)

Slave Address: DEh

Register No & Name	Control Register Function & Link	Data Type	Data Range	Data Initial Settings & [Average Data] (32V&36V CRTs)				Comment
				Full	Vcomp1	Vcomp2		
0	SBHS	DC AMP3: DC shift	Adj. 0-63	31	31	31		Full: 480p/960i (4x3) display mode Vcomp1: 480p/960i (16x9) display mode Vcomp2: 1080i (16x9) display mode Adj.: Adjusted data From the system micro (V 2.0), the deflection control-related initial settings are the same as their average data.
1	YBWU	VCA9: Upper Y-bow	Adj. 0-63	31	31	31		
2	YBWL	VCA10: Lower Y-bow	Adj. 0-63	31	31	31		
3	RSAP	DC AMP2: Right H-AMP	Adj. 0-63	31	31	31		
4	RUBW	VCA5: Right upper bow	Adj. 0-63	31	31	31		
5	RLBW	VCA6: Right lower bow	Adj. 0-63	31	31	31		
6	LSAP	DC AMP1: Left H-AMP	Adj. 0-63	31	31	31		
7	LUBW	VCA1: Left upper bow	Adj. 0-63	31	31	31		
8	LLBW	VCA2: Left lower bow	Adj. 0-63	31	31	31		
9	CADJ	DC AMP4: Offset adjustment (ADJ)	Adj. 0-63	48	48			
10	CPY2	Copy Function 2: (Set CPY2=1, then press MUTE + Enter.)	Micro 0, 1	0			For engineering design use only	

Note:

The same CXA8070 service data is used for DX1A-2001&2000.

DX1A-2001&2000 SERVICE LIST (#7): CXA2026AS

Device Name: CXA2026AS { DQP Control / SONY } / IC5511 (D-board) / PIN: 8-752-074-64 (SD#: S95610B)

Slave Address: 8Eh

Register No & Name	Control Register Function & Link	Data Type	Data Range	Data Initial Settings & [Average Data] (32V&36V CRTs)			Comment
				Full	Vcomp1	Vcomp2	
0	DFON SW0: DF on/off switch	C	0, 1	0			Full: 480p/960i (4x3) display mode Vcomp1: 480p/960i (16x9) display mode Vcomp2: 1080i (16x9) display mode
1	DQP PWM: DQP phase	Adj.	0~63	23 [23]	23 [23]		C: Common data Adj.: Adjusted data
2	DF DAC1: DF phase	Adj.	0~63	25 [25]	25 [25]		
3	DQPD H-AMP: DQP dc-level	Adj.	0~63	34 [34]	34 [34]		
4	QPDV U.CBOW, L.CBOW: DQP dc-level vertical modulation		0~63	51	47		U.CBOW = QPDV + DVS L.CBOW = QPDV - DVS
5	DVS U.CBOW, L.CBOW: DQP dc-level tilt		0~(3)~7	0	0		(): Settings at center
6	QPDY U.MBH,L.MBH: DQP dc-level at top & bottom areas		0~63	7	7		Data (36V) are used as Initial/CBA data. From the system micro (V 2.0), most deflection control-related initial settings are the same as their average data.
7	DQPA DC SHIFT: DQP amplitude	Adj.	0~63	22 [27] (32V) or 13 [15] (36V)	22 [27] (32V) or 13 [15] (36V)	22 [27] (32V) or 13 [15] (36V)	U.YBOW = QPAV + AVS L.YBOW = QPAV - AVS
8	QPAV U.YBOW, LYBOW: DQP amplitude vertical modulation		0~63	38	34		
9	AVS U.YBOW, LYBOW: DQP amplitude tilt		0~7	3	3		
10	NORM SW1:		0, 1	0	0		
11	CPY3 Copy Function 3: (Set CPY3=1, then press MUTE + Enter.)	Micro	0, 1	0			For engineering design use only
12	200V H.DUTY, H.TILT: 200V regulator adjustment	Adj.	0~63	31 [31]			

Note:

The same CXA2026 service data is used for DX1A-2001&2000.

DX1A-2001&2000 SERVICE LIST (#8): Audio Processing (AP) / BH3868AFS

Device Name: BH3868AFS { Audio Processor / ROHM } / IC7001 (A-board) / P/N: 8-759-678-92 (SBorSD#: NA)
Slave Address: 82h

Register No & Name	Control Register Function & Link	Data Type	Data Range	Data Initial/Average Setting (32V&36V CRTs)	Comment
0	SVOL	Volume: Offset for Volume	0~3	0	
1	SBAL	Balance: Offset for Balance	0~(3)~7	7	(): Settings at center
2	SBAS	Bass: Offset for Bass	0~(3)~7	7	
3	STRE	Treble: Offset for Treble	0~(3)~7	7	
4	BBLP	BBE lowpass filter	0~15	0	
5	BBHP	BBE highpass filter	0~15	2	
6	SREF	Surround effect	0~7	11	
7	AGC	Auto gain control	0, 1	0	
8	BBE	BBE on/off	0, 1	1	

Note:
 The same AP service data is used for DX1A-2001&2000.

DX1A-2001&2000 SERVICE LIST (#9): TruSurround (TRUS) / NJM2180

Device Name: NJM2180M { TruSurround 3D-Audio Processor / JRC } / IC4101 (S-board) / P/N: 8-759-686-15 (SB#: V9072)
Device Control: Controlled via CXA1315M (Audio Control D/A, IC4103/S-board, Slave Address: 48h) / P/N: 8-752-059-23 (SD#: S88Z45B)

Register No & Name	Control Register Function & Link	Data Type	Data Range	Data Initial/Average Setting (32V&36V CRTs)	Comment
0	TS	TruSurround effect selection	0~3	2	C: Common data
1	DMY1	Dummy data (No functions)	C 0~255	0	DMY1 is used to fulfill the minimum requirement of 2 control items in each service control category.

Note:
 The same TRUS service data is used for DX1A-2001&2000.

DX1A-2001 * SERVICE LIST (#10): MID1 (Common Data)

Device Name: CXD9509AQ { MID-XA / Fujitsu & SONY } / IC3408 (B-board) / P/N: 8-759-672-57 (SBoRSD#: NA)

Slave Address: 2Eh { Controlled through MID-XA Micro (IC3090/B-board, Slave Address: 64h) / P/N: 6-800-050-01 (SB#: V4216) }

MID-XA Micro (MASK type): MB94918RPF-G-137-BND, MID-XA Software: Version 12/08/00, (P/N: 6-800-050-01)

Register No & Name	Control Register Function & Link	Register Name (Software)	Data Type	Data Range	Data Initial/Average Setting (32V/36V/40V CRTs)	Comment
0	DHPH	Horizontal phase of the active display area	C	0~255	MID Mode: All (Single & P&P & Favorite) 91	C: Common data
1	DVPH	Vertical phase of the active display area	C	0~63	20	
2	DHAR	Horizontal size of the active display area	C	0~255	240	
3	DVAR	Vertical size of the active display area	C	0~255	135	
4	DHPW	Horizontal pulse width	C	0~63	27	
5	DVPW	Vertical pulse width	C	0~7	7	
6	DYCD	Delay of YC signal output	C	0~63	2	
7	DYSD	Delay of YS signal output	C	0~7	1	
					MID Mode: Single & Favorite Single 480i&p 1080i 33 Favorite 12	
8	MDHP	Horizontal position of the main picture		0~255	32	
9	MDVP	Vertical position of the main picture		0~255	8	
10	MDHS	Horizontal size of the main picture		0~255	230	
11	MDVS	Vertical size of the main picture		0~255	120	
					MID Mode: P&P & Favorite 54 31	
12	MLHP	(Horizontal position of the multi pictures)		0~255		
13	MLVP	(Vertical position of the multi pictures)		0~255		
					MID Mode: Favorite 172	
14	SDHP	Horizontal position of the sub picture		0~255	14	
15	SDVP	Vertical position of the sub picture		0~255	61	
16	SDHS	Horizontal size of the sub picture		0~255	41	
17	SDVS	Vertical size of the sub picture		0~255		
					MID Mode: All (Single & P&P & Favorite) 0	0: MUST be used in DX1A-2001, 1: Used in DX1A-2000
18	DPSW	Switch of display output PLL	C	0, 1	0	
19	MDL0	Model selection 0 (0: 16x9, 1: 4x3)	C	0, 1	0	

Note:

* These MID1 settings are used for DX1A-2001 ONLY. The DPSW setting was changed from 1 in DX1A-2000 to 0 in DX1A-2001.

DX1A-2001&2000 SERVICE LIST (#11): MID2 (DRC-in Data)

Device Name: CXD9509AQ { MID-XA / Fujitsu & SONY } / IC3408 (B-board) / P/N: 8-759-672-57 (SBorSD#: NA)
 Slave Address: 2Eh { Controlled through MID-XA Micro (IC3090/B-board, Slave Address: 64h) / P/N: 6-800-050-01 (SB#: V4216) }
 MID-XA Micro (MASK type): MB94918RPF-G-137-BND, MID-XA Software: Version 12/08/00, (P/N: 6-800-050-01)

Register No & Name	Control Register Function & Link	Register Name (Software)	Data Type	Data Range	Data Initial/Average Setting (32V&36V CRTs)					
					MID Mode: Single		MID Mode: P&P & Favorite		MID Mode: Freeze	
					YC 480i	YPbPr 480i	YC 480i(R)	YPbPr 480i	YC 480i	YPbPr 480i
0	DRHP	Horizontal position of the active display area (DRC-in)	drc_hactv_pos	0~255	120	116	131	129	138	136
1	DRHS	Hsize of the active display area (DRC-in)	drc_hactv_siz	0~255	174	174	167	167	165	165
2	DRVP	Vposition of the active display area (DRC-in)	drc_vactv_pos	0~63	38	38	53	53	53	53
3	DRVS	Vertical size of the active display area (DRC-in)	drc_vactv_siz	0~255	120	120	112	112	112	112

Note:

The same MID2 service data is used for DX1A-2001&2000.

DX1A-2001&2000 SERVICE LIST (#12): MID3 (VDO-in Data) (Part-1/2)

Device Name: CXD9509AQ { MID-XA / Fujitsu & SONY } / IC3408 (B-board) / P/N: 8-759-672-57 (SBorSD#: NA)
 Slave Address: 2Eh { Controlled through MID-XA Micro (IC3090/B-board, Slave Address: 64h) / P/N: 6-800-050-01 (SB#: V4216) }
 MID-XA Micro (MASK type): MB94918RPF-G-137-BND, MID-XA Software: Version 12/08/00, (P/N: 6-800-050-01)

Register No & Name	Control Register Function & Link	Register Name (Software)	Data Type	Data Range	Data Initial/Average Setting (32V&36V CRTs)						Comment
					MID Mode: Single		MID Mode: P&P & Favorite		MID Mode: Freeze		
					YC 480i	YPbPr 480i	YC 480i(R)	YPbPr 480i	YC 480i	YPbPr 480i	
0	VDHP	Horizontal position of the active display area (VDO-in)	vdo_hactv_pos	0~255							Dummy-480i settings are used for No Signal cases. These settings continue to the next page.
1	VDHS	Horizontal pixel size of the active display area (VDO-in)	vdo_hactv_pos	0~255	122	122	159	159	179	179	
2	VDVE	Vertical even position of the active display area (VDO-in)	vdo_vactv_evn	0~63	39	39	24	24	24	24	
3	VDVS	Vertical line size of the active display area (VDO-in)	vdo_vactv_pos	0~255	129	129			56	56	
4	VDVO	Vertical odd position of the active display area (VDO-in)	vdo_vactv_odd	0~3	0	0	0	0	0	0	
5	VCPO	Clamp pulse output timing (VDO-in)	vdo_clp_pos	0~255	95	70	40	40	90	90	
6	VCWD	Clamp pulse width (VDO-in)	vdo_clp_wdt	0~7	3	3	3	3	3	3	
7	VYCD	Analog input YC delay (VDO-in)	vdo_yc_delay	0~63	0	0	0	0	0	0	
8	VSTP	PD stop line count of external PLL (VDO-in)	vdo_pll_stop	0~255							
9	VSTT	PD start line count of external PLL (VDO-in)	vdo_pll_strt	0~15							
10	VHSC	Horizontal sync cycle (VDO-in)	vdo_hsync_cyc	0~255							MID Mode: All (Single & P&P & Favorite) 130

Note:

The same MID3 service data is used for DX1A-2001&2000.

DX1A-2001&2000 SERVICE LIST (#12): MID3 (VDO-in Data) (Part-2/2)										
Register No & Name	Data Initial Setting (32V&36V CRTs)					Data Initial Setting (32V&36V CRTs)				
Comment										
	MID Mode: P&P / Favorite					MID Mode: FREEZE				
	YC 480i	YPbPr 480P	YPbPr 1080i	Dummy 480i	Dummy 480i	YPbPr 480P	YPbPr 1080i	Dummy 480i	Dummy 480i	
#0 VDHP (cont.)	197	127	91	179	179	131	98	179	179	Dummy-480i settings are used for No Signal cases.
#1 VDHS (cont.)	219	154	151	199	199	153	149	199	199	
#2 VDVE (cont.)	24	53	37	24	24	53	37	24	24	
#3 VDVS (cont.)	56	112	126	56	56	112	126	56	56	
Note: The same MID3 service data is used for DX1A-2001&2000.										

DX1A-2001&2000 SERVICE LIST (#13): MID5 (Picture Data: MIDE) (Part-1/4)														
Register No & Name	Control Register Function & Link					Data Range	Data Initial/Average Setting (32V&36V CRTs)			Data Initial/Average Setting (32V&36V CRTs)				
Settings for P&P (Main)														
0 POP	Selection of service data tables (Table #: 0~15)					0~15	Pro	Movie	Standard	Vivid	Pro	Movie	Standard	Vivid
1 MHLY	Y coefficient code of Horizontal LPF (M)					0~3	0	1	2	3	4	5	6	7
2 MHLC	C coefficient code of Horizontal LPF (M)					0~3	1	1	1	1	1	1	1	1
3 MVLY	Y coefficient code of Vertical LPF (M)					0~3	3	3	3	3	3	3	3	3
4 MVLC	C coefficient code of Vertical LPF (M)					0~3	0	0	0	0	0	0	0	0
5 MHYR	Y coreing code of horizontal enhancement (M)					0~3	0	0	0	0	0	0	0	0
6 MHYL	Y clipping code of horizontal enhancement (M)					0~3	1	1	1	1	1	1	1	1
7 MHYE	Y level code of horizontal enhancement (M)					0~7	4	0	0	0	3	0	0	0
8 MHYO	Y coefficient code of horizontal enhancement (M)					0, 1	1	1	1	1	1	1	1	1
9 MHCR	C coreing code of horizontal enhancement (M)					0~3	0	0	0	0	0	0	0	0
10 MHCL	C clipping code of horizontal enhancement (M)					0~3	1	1	1	1	1	1	1	1
11 MHCE	C level code of horizontal enhancement (M)					0~7	0	0	0	0	0	0	0	0
12 MHCO	C coefficient code of horizontal enhancement (M)					0, 1	1	1	1	1	1	1	1	1
13 MVYR	Y coreing code of vertical enhancement (M)					0~3	0	0	0	0	0	0	2	2
14 MVYL	Y clipping code of vertical enhancement (M)					0~3	1	1	1	1	1	1	1	1
15 MVYE	Y level code of vertical enhancement (M)					0~7	0	0	0	0	0	0	2	5
16 MVCR	C coreing code of vertical enhancement (M)					0~3	0	0	0	0	0	0	0	0
17 MVCL	C clipping code of vertical enhancement (M)					0~3	1	1	1	1	1	1	1	1
18 MVCE	C level code of vertical enhancement (M)					0~7	0	0	0	0	0	0	0	0
Note: The same MID5 service data is used for DX1A-2001&2000.											See the next page.			

DX1A-2001&2000 SERVICE LIST (#13): MID5 (Picture Data: MIDE) (Part-2/4)

Register No & Name	Data Initial/Average Setting (32V&36V CRTs)				Data Initial/Average Setting (32V&36V CRTs)				Comment
	Pro	Movie	Standard	Vivid	Pro	Movie	Standard	Vivid	
	YPbPr-480p				YPbPr-1080i				
#0 POP (cont.)	8	9	10	11	12	13	14	15	
#1 MHLY (cont.)	1	1	1	1	1	1	1	1	
#2 MHLC (cont.)	3	3	3	3	3	3	3	3	
#3 MVLY (cont.)	0	0	0	0	0	0	0	0	
#4 MVLC (cont.)	0	0	0	0	0	0	0	0	
#5 MHYR (cont.)	0	0	0	0	0	0	0	0	
#6 MHYL (cont.)	1	1	1	1	1	1	1	1	
#7 MHYE (cont.)	4	0	0	0	4	0	0	0	
#8 MHYO (cont.)	1	1	1	1	1	1	1	1	
#9 MHCR (cont.)	0	0	0	0	0	0	0	0	
#10 MHCL (cont.)	1	1	1	1	1	1	1	1	
#11 MHCE (cont.)	0	0	0	0	0	0	0	0	
#12 MHCO (cont.)	1	1	1	1	1	1	1	1	
#13 MVYR (cont.)	0	0	2	2	0	0	0	0	
#14 MVYL (cont.)	1	1	1	1	1	1	1	1	
#15 MVYE (cont.)	0	0	2	5	0	0	0	0	
#16 MVCR (cont.)	0	0	0	0	0	0	0	0	
#17 MVCL (cont.)	1	1	1	1	1	1	1	1	
#18 MVCE (cont.)	0	0	0	0	0	0	0	0	

Note:

The same MID5 service data are used for DX1A-2001&2000.

DX1A-2001&2000 SERVICE LIST (#13): MID5 (Picture Data: MIDE) (Part-3/4)

Register No.&Name	Control Register Function & Link	Register Name (Software)	Data Type	Data Range	Data Initial/Average Setting (32V&36V CRTs)				Data Initial/Average Setting (32V&36V CRTs)					
					Pro	Movie	Standard	Vivid	Pro	Movie	Standard	Vivid		
	Settings for P&P (Sub)													
0	POP	Selection of service data tables (Table #: 0~15)												
19	SHLY	Y coefficient code of Horizontal LPF (S)	s_hlpf_ycoef		0~15	0	1	2	3	0	0	0	0	0
20	SHLC	C coefficient code of Horizontal LPF (S)	s_hlpf_cccoef		0~7	0	0	0	0	0	0	0	0	0
21	SVLY	Y coefficient code of Vertical LPF (S)	s_vlpf_ycoef		0~7	0	0	0	0	0	0	0	0	0
22	SVLC	C coefficient code of Vertical LPF (S)	s_vlpf_cccoef		0~7	0	0	0	0	0	0	0	0	0
23	SHYR	Y coreing code of horizontal enhancement (S)	s_henh_ycore		0~3	0	0	0	0	0	0	0	0	0
24	SHYL	Y clipping code of horizontal enhancement (S)	s_henh_yclip		0~3	0	0	0	0	0	0	0	0	0
25	SHYE	Y level code of horizontal enhancement (S)	s_henh_yenh		0~7	0	0	0	0	0	0	0	0	0
26	SHYO	Y coefficient code of horizontal enhancement (S)	s_henh_ycof		0, 1	0	0	0	0	0	0	0	0	0
27	SHCR	C coreing code of horizontal enhancement (S)	s_henh_ccore		0~3	0	0	0	0	0	0	0	0	0
28	SHCL	C clipping code of horizontal enhancement (S)	s_henh_cclip		0~3	0	0	0	0	0	0	0	0	0
29	SHCE	C level code of horizontal enhancement (S)	s_henh_cenh		0~7	0	0	0	0	0	0	0	0	0
30	SHCO	C coefficient code of horizontal enhancement (S)	s_henh_ccof		0, 1	0	0	0	0	0	0	0	0	0
31	SVYR	Y coreing code of vertical enhancement (S)	s_venh_ycore		0~3	0	0	0	0	0	0	0	0	0
32	SVYL	Y clipping code of vertical enhancement (S)	s_venh_yclip		0~3	0	0	0	0	0	0	0	0	0
33	SVYE	Y level code of vertical enhancement (S)	s_venh_yenh		0~7	0	0	0	0	0	0	0	0	0
34	SVCR	C coreing code of vertical enhancement (S)	s_venh_ccore		0~3	0	0	0	0	0	0	0	0	0
35	SVCL	C clipping code of vertical enhancement (S)	s_venh_cclip		0~3	0	0	0	0	0	0	0	0	0
36	SVCE	C level code of vertical enhancement (S)	s_venh_cenh		0~7	0	0	0	0	0	0	0	0	0

See the next page.

Note:
The same MID5 service data is used for DX1A-2001&2000.

DX1A-2001&2000 SERVICE LIST (#13): MID5 (Picture Data: MIDE) (Part-4/4)

Register No.&Name	Data Initial/Average Setting (32V&36V CRTs)				Data Initial/Average Setting (32V&36V CRTs)				Comment
	Pro	Movie	Standard	Vivid	Pro	Movie	Standard	Vivid	
	YPbPr-480p								
#0 POP (cont.)	8	9	10	11					
#19 SHLY (cont.)	0	0	0	0					
#20 SHLC (cont.)	0	0	0	0					
#21 SVLY (cont.)	0	0	0	0					
#22 SVLC (cont.)	0	0	0	0					
#23 SHYR (cont.)	0	0	0	0					
#24 SHYL (cont.)	0	0	0	0					
#25 SHYE (cont.)	0	0	0	0					
#26 SHYO (cont.)	0	0	0	0					
#27 SHCR (cont.)	0	0	0	0					
#28 SHCL (cont.)	0	0	0	0					
#29 SHCE (cont.)	0	0	0	0					
#30 SHCO (cont.)	0	0	0	0					
#31 SVYR (cont.)	0	0	0	0					
#32 SVYL (cont.)	0	0	0	0					
#33 SVYE (cont.)	0	0	0	0					
#34 SVCR (cont.)	0	0	0	0					
#35 SVCL (cont.)	0	0	0	0					
#36 SVCE (cont.)	0	0	0	0					
Note: The same MID5 service data are used for DX1A-2001&2000.									

DX1A-2001* SERVICE LIST (#14): On-Screen Display (OSD)

Device Name: M306V2ME-153FP (V1.0) { System Micro (MASK type) / Mitsubishi } / IC701 (A-board)					
Slave Address: 60h					
System Micro (MASK type): M306V2ME-153FP, Sys-Software: Version 1.0, P/N: 6-800-051-01 (SB#: V9091)					
Register No & Name	Control Register Function & Link	Data Type	Data Range	Data Initial/Average Setting (32V&36V CRTs)	Comment
0	HPOS	OSD horizontal position	C	0~255	23
1	HPOF	Horizontal position for Favorite mode	C	0~255	33
2	VPOS	OSD vertical position	C	0~255	5
3	VPOT	Vertical position for P&P (Twin) mode	C	0~255	32
Note: * This OSD settings are used for DX1A-2001 ONLY. (DX1A-2000 uses two OSD settings based on two versions of system micros.)					

DX1A-2001&2000 SERVICE LIST (#15): SNNR

Related Control Devices:

mPD64082 { 3D-Comb / NEC } / IC3501 (BC-board) / Slave Address: B8h
 CXA2103Q { Chroma Decoder / SONY } / IC3048 (B-board) / Slave Address: 9Ah (Main)
 CXA2150Q { CRT Driver / SONY } / IC201 (A-board) / Slave Address: 86h

Register No & Name	Control Register Function & Link	Data Type	Data Range	Data Initial/Average Setting 32V&36V CRTs	Comment
0	SNNR SNNR data setting Selection of SNNR data settings; 0: Set SNNR automatically according to WSLT value (read data)	C	0~3 0, 1	0	C: Comon data
2	WSLT Noise level detection data thresholds for SNNR data (read data)		0~255	WSLT Data / Threshold Range 0~30 31~62 63~126 127~255	
	SNNR data used as the (-) offset settings			SNNR Settings Based on WSLT Data (- Offset Data)	
3	CPFG SNNR = 0/1/2/3 @ WSLT £ 0/31/63/127, respectively		0~3	0 1 2 3	
4	CPFT Related to 3D-COMB (mPD64082) / #19 YPFG settings		-----	0 1 2 3	
	SNNR data used as the direct settings		-----	0 0 0 0	
5	CCOR Related to 3D-COMB (mPD64082) / #20 YHCO settings		-----	0 1 1 1	
6	CHCG Related to 3D-COMB (mPD64082) / #21 YHCG settings		-----	1 1 1 1	
	SNNR data used as the (-) offset settings				
7	CAPG Related to 3D-COMB (mPD64082) / #16 VAPG settings		-----	0 0 0 0	
8	3SHP Related to CXA2103 / #6 SHAP settings		-----	0 1 2 3	
9	MIDD Related to CXA2150P-3 / #19 MIDE settings		-----	0 1 2 3	
10	5SHP Related to CXA2150P-4 / #4 USHP settings		-----	0 1 3 4	
11	5YF1 Related to CXA2150P-3 / #10 F1LV settings		-----	0 1 2 3	
12	5CDS Related to CXA2150P-3 / #11 CDSP settings		-----	0 0 0 0	
13	5LTI Related to CXA2150P-3 / #12 LTLV settings		-----	0 0 0 0	
14	5CTI Related to CXA2150P-3 / #14 CTLV settings		-----	0 0 0 0	
15	5VML Related to CXA2150P-3 / #1 UVML settings		-----	0 0 0 0	
	SNNR data used as the (+) offset settings			SNNR Settings Based on WSLT Data (+ Offset Data)	
16	5VMC Related to CXA2150P-3 / #3 VMCR settings		-----	0 +1 +2 +3	

Note:

The same SNNR service data is used for DX1A-2001&2000.
 Please refer to the part numbers and SBoSD numbers given in the service list for these devices.

DX1A-2001&2000 SERVICE LIST (#16): ID-1 Detection (ID1)

Device Name: CXD2085M { ID-1 Decoder / SONY } / IC3603 (B-board) / P/N: 8-752-395-13 (SD#: S98511B)

Slave Address: 40h

Register No & Name	Control Register Function & Link	Data Type	Data Range	Data Initial/Average Setting (32V&36V CRTs)	Comment
0 XJGL	XJGLK: Setting for memorizing or not the ID-1 detection status	C	0, 1	0	C: Common data
1 LNJI	LNJ1: Setting for the multi/single-line ID-1 detection	C	0, 1	0	

Note:

The same ID1 service data are used for DX1A-2001&2000.

Other service controls related to CXD2085 (IDSW & DATA) are listed in Service List (CXA2150P-4) for easier engineering adjustment.

DX1A-2001&2000 SERVICE LIST (#17): Closed Caption Display & Parental Control (CCD&VCHIP)

Device Name: CXP85840A-039Q { CCD&Vchip Micro (MASK type) / SONY } / IC3602 (Main) & IC3601 (Sub) (B-board) / P/N: 8-752-916-40 (SD#: S97739B)

Slave Address: 68h (Main) & 6Ch (Sub)

CCD&Vchip Micro Software: Version 2.14

Register No & Name	Control Register Function & Link	Data Type	Data Range	Data Initial/Average Setting (32V&36V CRTs)	Comment
0 HPRM	Horizontal position of CCD (Main)	C	0~255	46	C: Common data
1 HPRS	Horizontal position of CCD (Sub)	C	0~255	46	
2 RND	OSD rounding control	C	0, 1	1	
3 CCDI	Interruption control	C	0~7	3	
4 CRIP	CRI count & parity count	C	0~7	4	
5 CRIT	Charge/Discharge timing control for slice voltage level	C	0, 1	0	0: MASK-type micro, 1: OTP-type micro
6 CHMK	Horizontal mask width	C	0~63	42	
7 FPOL	Field polarity selection	C	0, 1	1	
8 LANG		C	0~3	0	
9 DATA	Switch for CCD service/test data	C	0, 1	0	
10 VCHIP	Selection of Vchip controls	C	0, 1	0	

Note:

The same CCD&VCHIP service data is used for DX1A-2001&2000.

DX1A-2001&2000 SERVICE LIST (#18): OPTIONS (OP)

Device Name: M306V2ME-153FP (V1.0) { System Micro (MASK type) / Mitsubishi } / IC701 (A-board)
 Slave Address: 60h

System Micro (MASK type): M306V2ME-153FP, Sys-Software: Version 1.0, P/N: 6-800-051-01 (SB#: V9091)

Register No & Name	Control Register Function & Link	Data Type	Data Range	Data Initial/Average Setting (32V&36V CRTs)	Comment
0 DLY1	AC-RLY to MAIN-RLY timing = DLY1 x 50 ms	C	0~15	4	C: Common data
1 DLY2	Power-On Mute timing = DLY2 x 50 ms	C	0~31	12	
2 DLY3	DGC-RLY to MAIN-RLY timing = DLY3 x 50 ms	C	0~15	7	
3 RAMW	RAM monitor on/off	C	0, 1	0	

Note:

The same OP service data is used for DX1A-2001&2000.

DX1A-2001* SERVICE LIST (#19): IDENTIFICATION (ID)

Device Name: M306V2ME-153FP (V1.0) { System Micro (MASK type) / Mitsubishi } / IC701 (A-board)

Slave Address: 60h

System Micro (MASK type): M306V2ME-153FP, Sys-Software: Version 1.0, P/N: 6-800-051-01 (SB#: V9091)

Register No & Name	Control Register Function & Link	Data Type	Data Range	Data Initial/Average Setting (32V/36V/40V CRTs)	Comment
	Shipping Destination-related Settings			KV-32HS20 KV-36HS20 KV-32HS20H	KV-32XBR450C KV-36XBR450C KV-36XBR450H
0 ID0	Selection of OSD languages & color systems		0~255	89	89
1 ID1	Selection of composite & s-video inputs		0~255	127	127
2 ID2	Selection of audio-related controls		0~255	239	255
3 ID3	Selection of basic system settings		0~255	98	106 90
4 ID4	Selection of basic system settings		0~255	203	203
5 ID5	Selection of advanced system settings		0~255	177	177
6 ID6	Selection of sub picture-related settings		0~255	54	54
7 ID7	Selection of some reserved settings		0~255	24	24

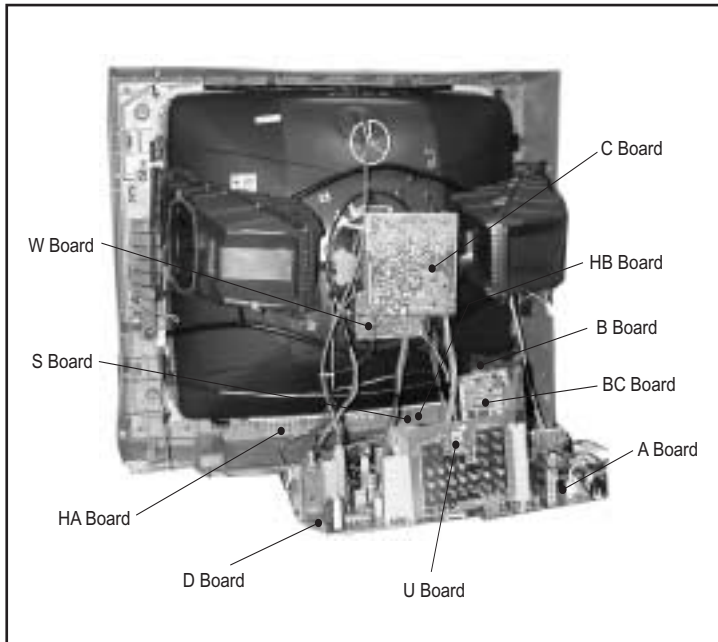
Note:

* These ID settings are used for DX1A-2001 ONLY. (DX1A-2000 uses different ID settings.)

The system micro name, software&patch versions, and the status of NVM devices are displayed only when in this service category (#19): ID.

SECTION 5: DIAGRAMS

5-1. CIRCUIT BOARDS LOCATION



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

The symbol \square indicates a fast operating fuse and is displayed on the component side of the board. Replace only with fuse of the same rating as marked.

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

Le symbole \square indique une fusible à action rapide. Doit être remplacé par une fusible de même valeur, comme marqué.

The components identified by \blacksquare in this basic schematic diagram have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be necessary, replace only with the value originally used (Refer to Safety Related Adjustments on page 17).

When replacing components identified by \blacksquare , make the necessary adjustments as indicated. If the results do not meet the specified value, change the component identified by \blacksquare and repeat the adjustment until the specified value is achieved.

When replacing the parts listed in the table below, it is important to perform the related adjustments.

5-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

All capacitors are in μF unless otherwise noted. pF : μF 50WV or less are not indicated except for electrolytics and tantalums.

All electrolytics are in 50V unless otherwise specified.

All resistors are in ohms. K = 1000, M = 1000K.

Indication of resistance, which does not have one for rating electrical power, is as follows: Pitch : 5mm

Rating electrical power : $\frac{1}{4}$ W

$\frac{1}{4}$ W in resistance, $\frac{1}{10}$ W and $\frac{1}{8}$ W in chip resistance.

\square : nonflammable resistor.

\square : fusible resistor.

\triangle : internal component.

\square : panel designation and adjustment for repair.

All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

Readings are taken with a color-bar signal input.

Readings are taken with a 10M digital multimeter.

Voltages are DC with respect to ground unless otherwise noted.

Voltage variations may be noted due to normal production tolerances.

All voltages are in V.

S : Measurement impossibility.

--- : B+line.

--- \square V : B-line. (Actual measured value may be different).

\Rightarrow : signal path. (RF)

Circled numbers are waveform references.

Part Replaced (\blacksquare)	Adjustment (\blacksquare)
D BOARD: D8004, D8014, IC6503, IC8001, IC8003, IC8004, R6590, R8016, R8021, R8028, R8041, R8042, R8044, R8072, R8073, R8074, R8077, R8078, R8080, R8081, R8082, R8091, R8095	D BOARD: RV8001, RV8002

REFERENCE INFORMATION

RESISTOR

: RN METAL FILM
 : RC SOLID
 : FPRD NONFLAMMABLE CARBON
 : FUSE NONFLAMMABLE FUSIBLE
 : RW NONFLAMMABLE WIREWOUND
 : RS NONFLAMMABLE METAL OXIDE
 : RB NONFLAMMABLE CEMENT
 : \otimes ADJUSTMENT RESISTOR

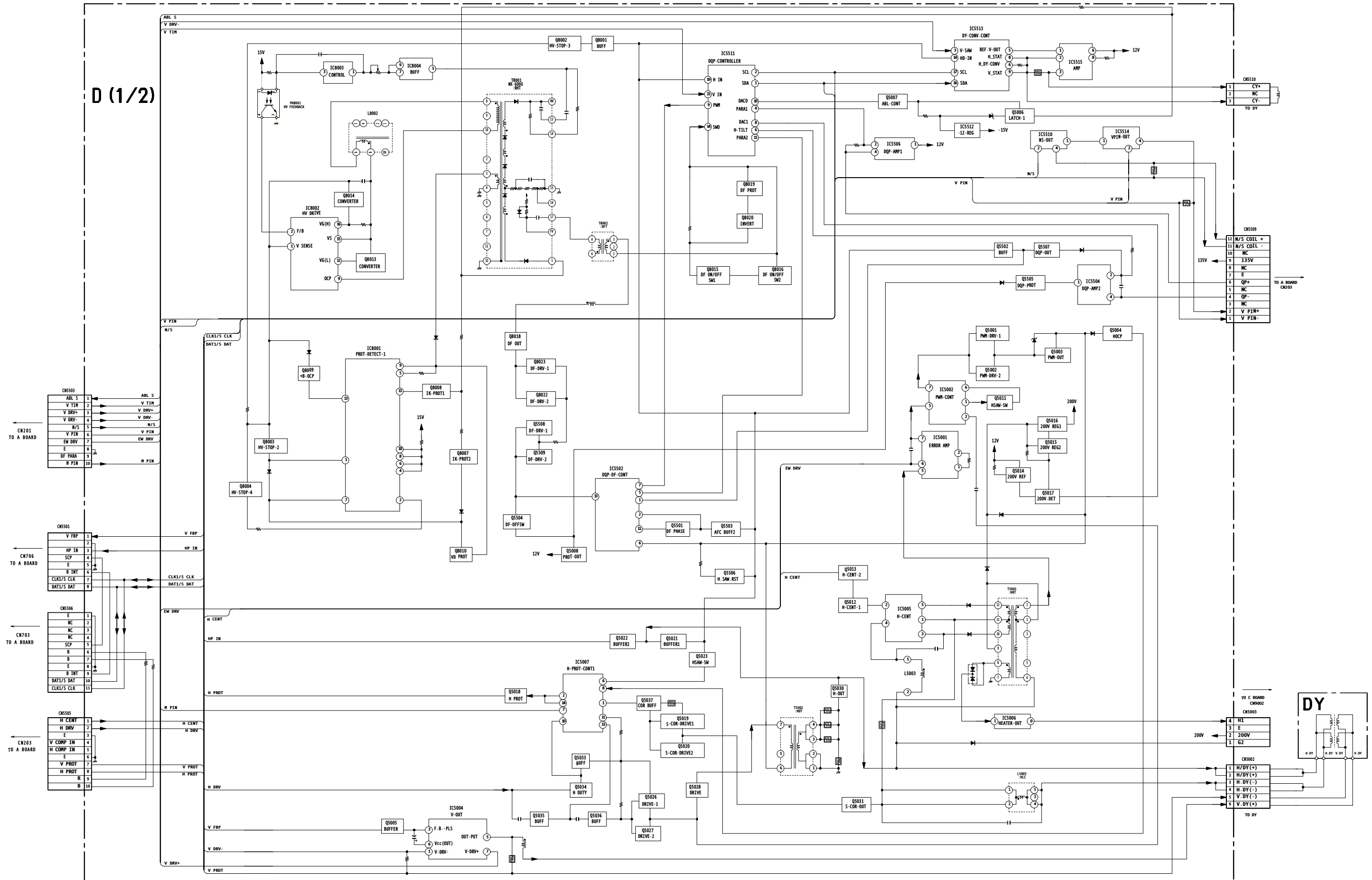
CAPACITOR

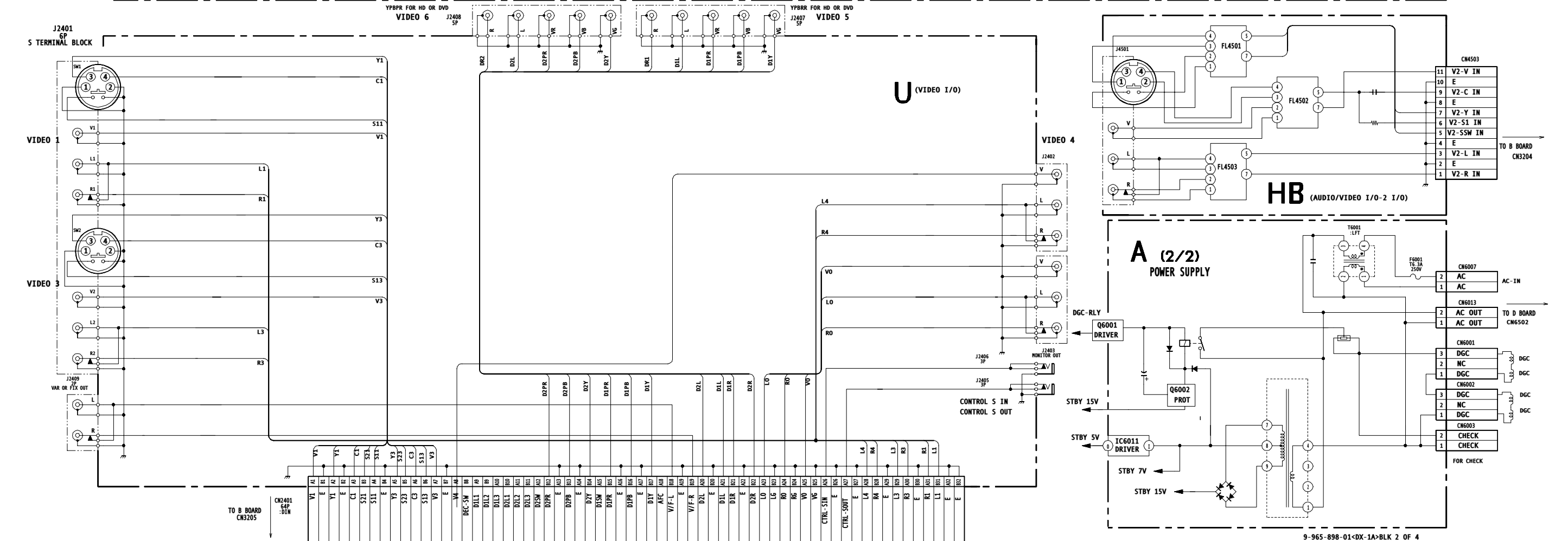
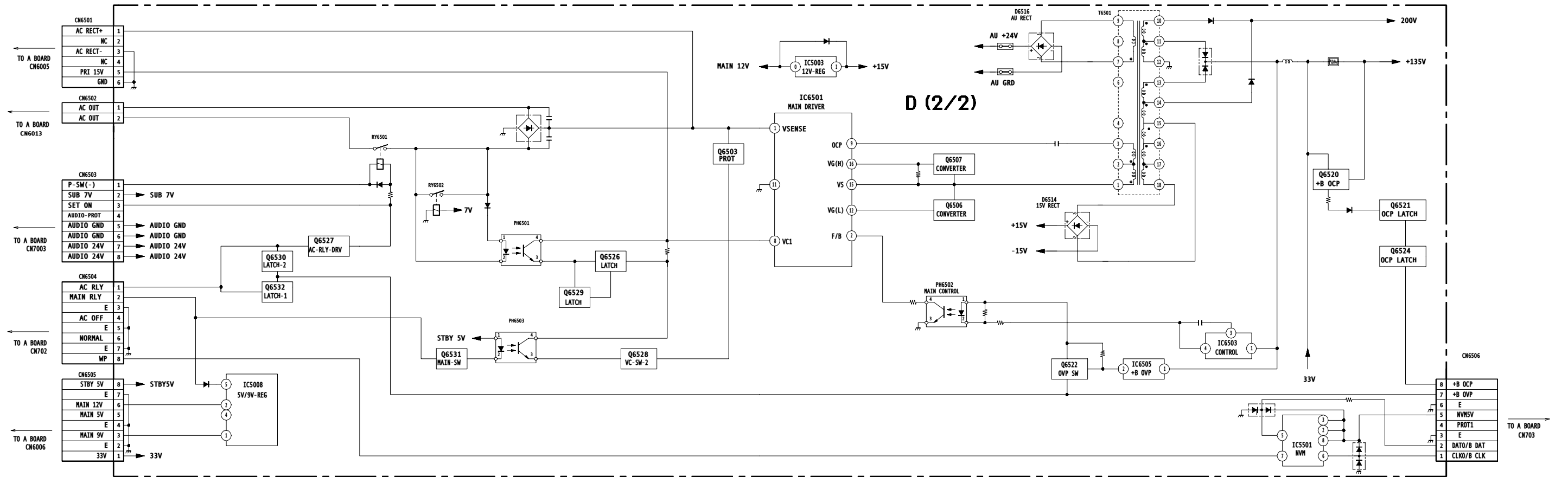
: TA TANTALUM
 : PS STYROL
 : PP POLYPROPYLENE
 : PT MYLAR
 : MPS METALIZED POLYESTER
 : MPP METALIZED POLYPROPYLENE
 : ALB BIPOLAR
 : ALT HIGH TEMPERATURE
 : ALR HIGH RIPPLE

COIL

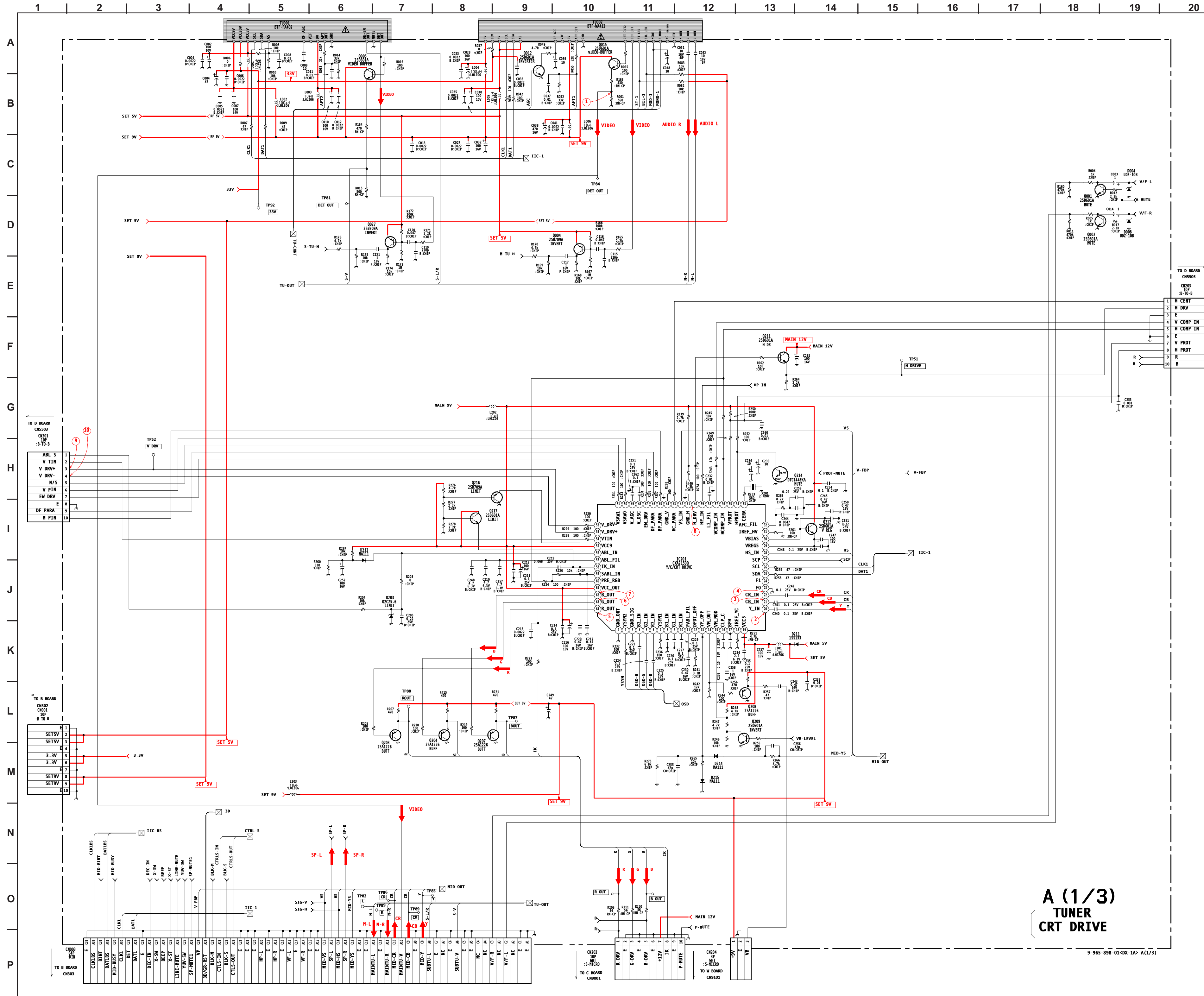
: LF-8L MICRO INDUCTOR

BLOCK DIAGRAM (1 OF 4)

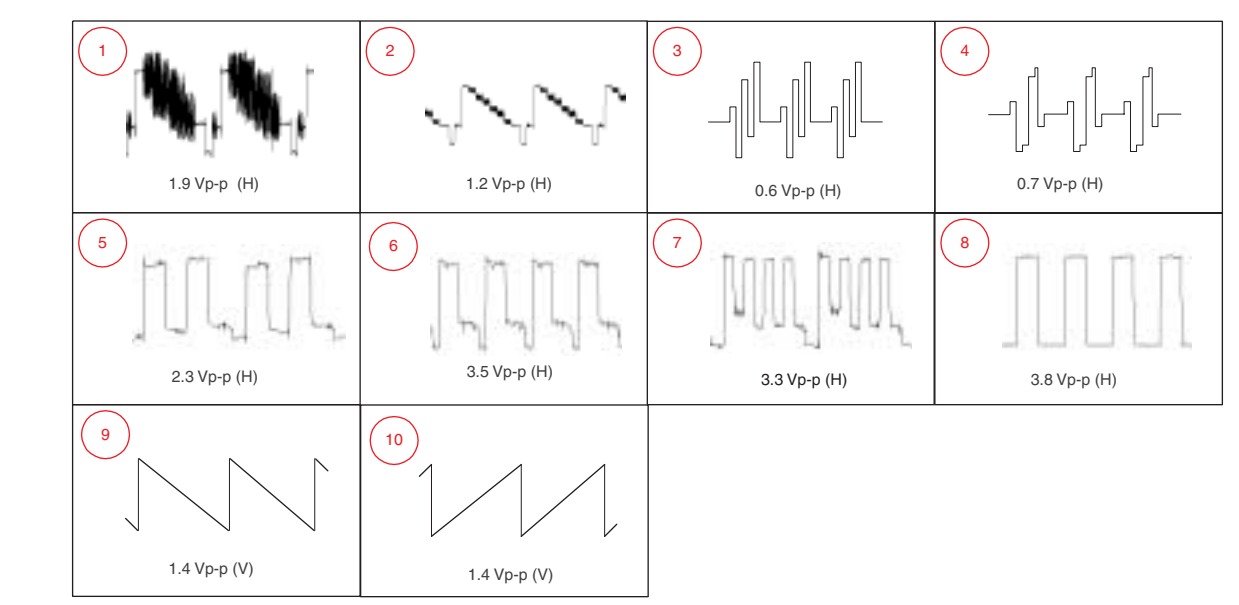




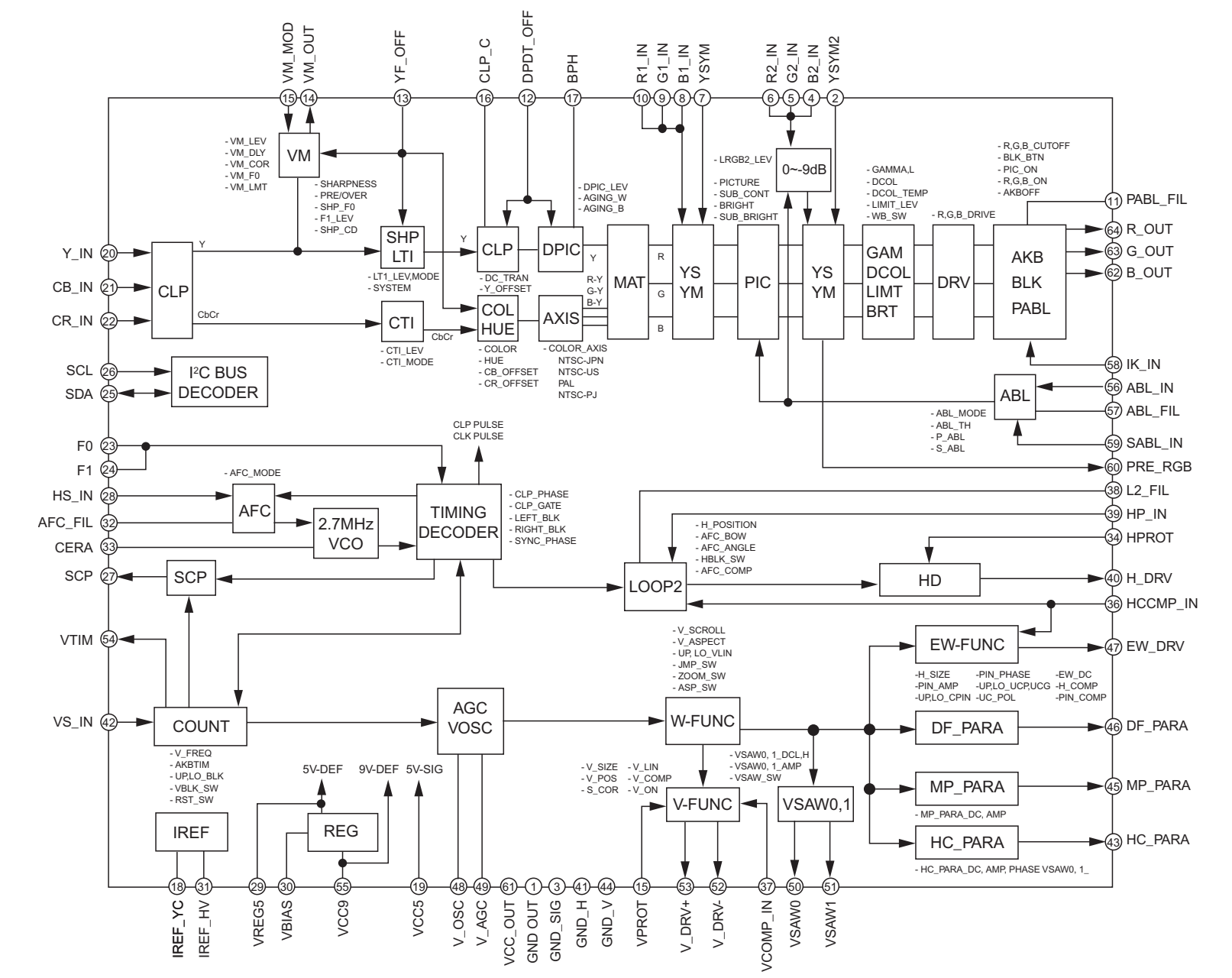
A BOARD SCHEMATIC DIAGRAM (1 OF 3)



A BOARD WAVEFORMS

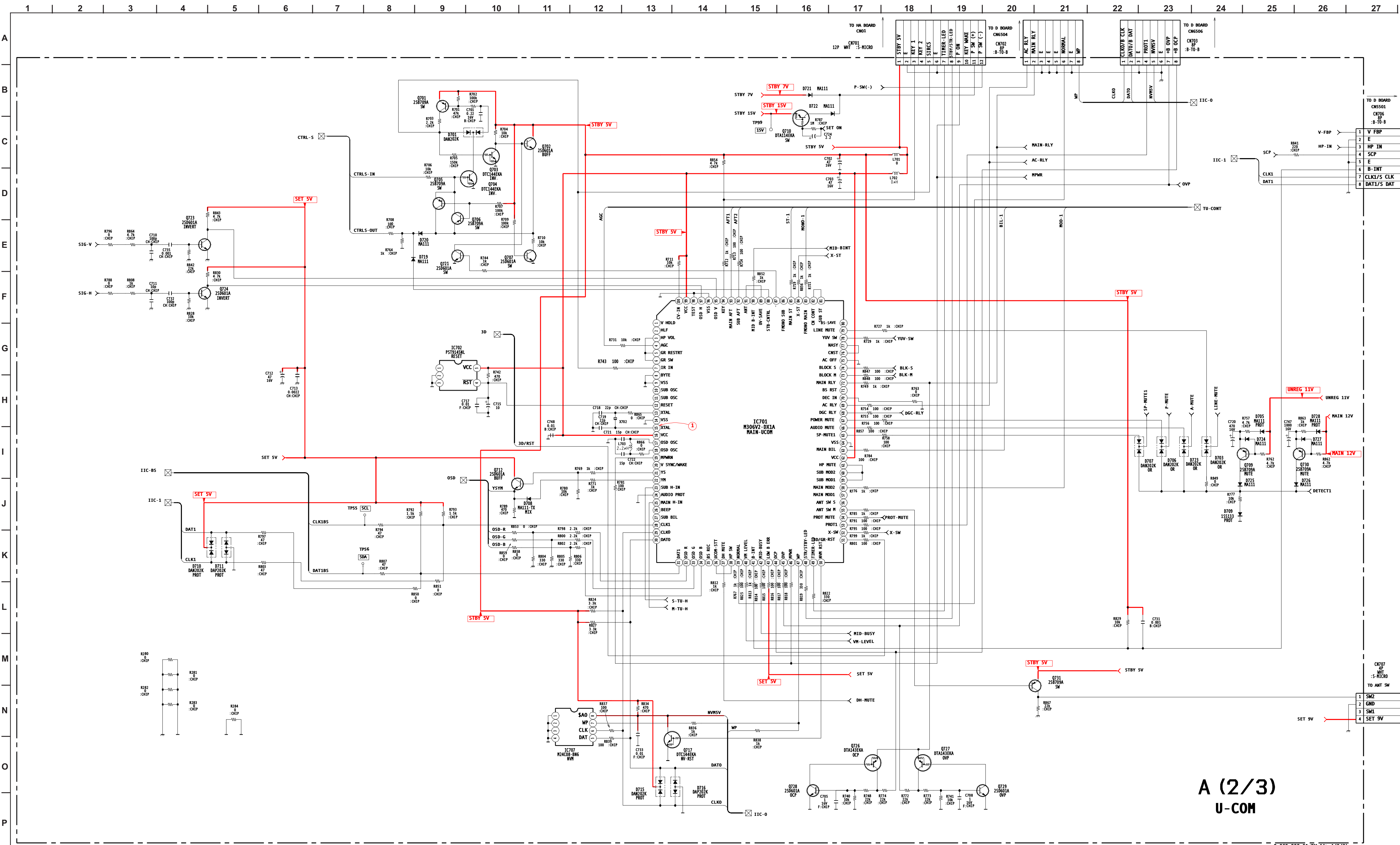


A BOARD: IC CXA2150Q



A (1/3)
TUNER
CRT DRIVE

A BOARD SCHEMATIC DIAGRAM (2 OF 3)

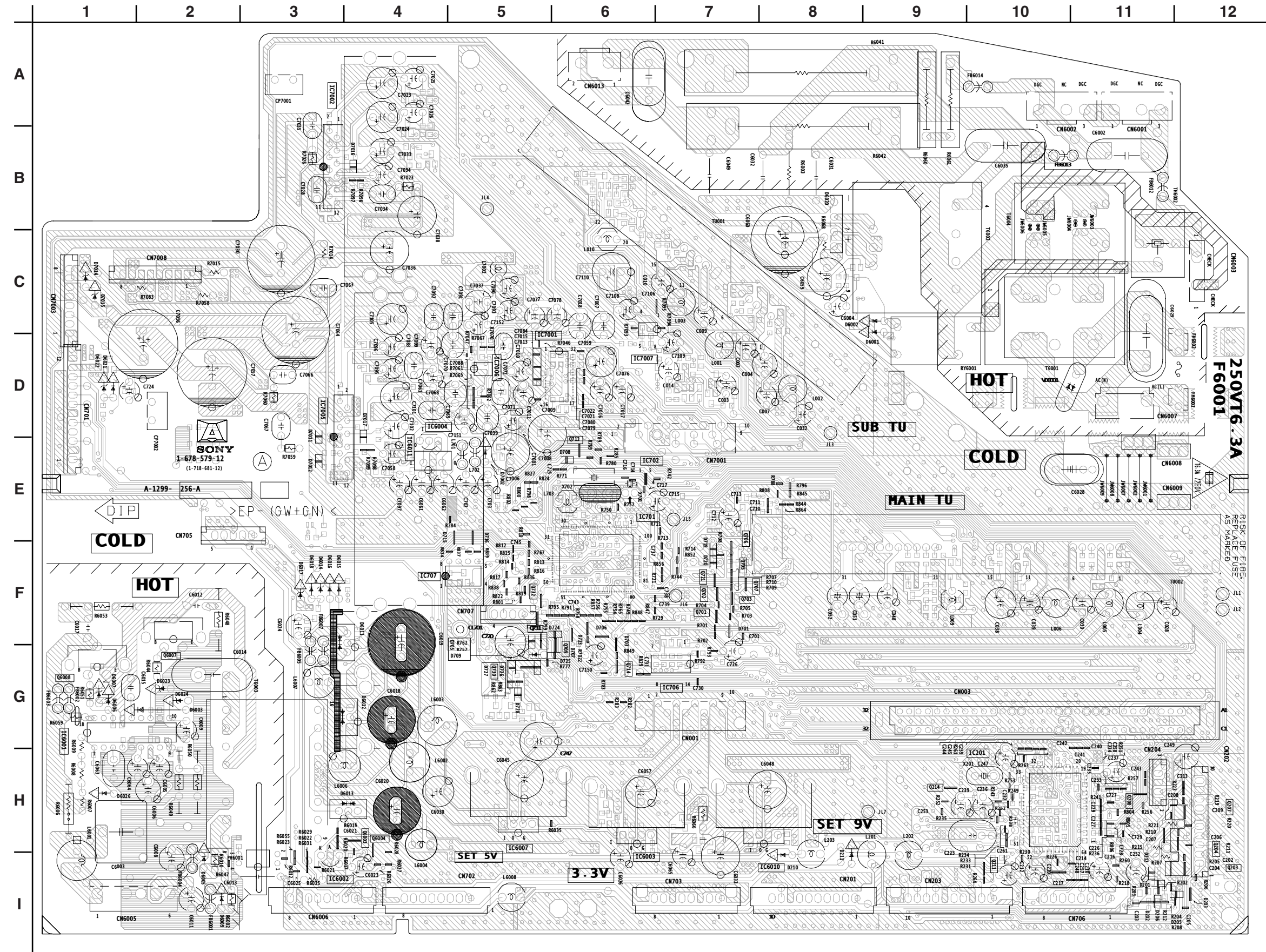


A (2/3)
U-COM

A

[TUNER, CRT DRIVE, U-COM, AC/DC POWER, AUDIO POWER]

KV-32HS20/36HS20/36HS20H/32XBR450/36XBR450/36XBR450H

COMPONENT SIDE**A BOARD LOCATOR LIST
(COMPONENT SIDE)**

DIODE		IC	
D203	I-12	IC201	H-10
D211	I-8	IC701	E-6
D212	H-8	IC702	E-6
D701	D-4	IC707	F-4
D703	F-6	IC6001	G-1
D705	F-4	IC6002	I-4
D706	F-6	IC6003	I-7
D707	G-6	IC6007	H-5
D708	E-6	IC6010	I-8
D709	G-5	IC6011	E-4
D715	E-4	IC7001	D-6
D716	E-5	IC7002	A-3
D719	F-7	IC7005	D-3
D720	F-7	IC7006	D-5
D723	F-6	IC7007	D-6
D724	F-5	TRANSISTOR	
D725	G-6	Q203	I-12
D726	G-5	Q204	I-12
D727	G-5	Q207	H-12
D728	G-5	Q208	H-11
D6001	C-9	Q211	I-10
D6002	C-8	Q214	H-9
D6003	G-2	Q701	F-7
D6005	I-2	Q702	F-7
D6009	I-2	Q703	F-7
D6011	F-4	Q705	F-7
D6012	G-4	Q706	F-7
D6013	H-4	Q707	F-7
D6014	F-3	Q709	G-6
D6017	F-3	Q712	D-6
D6020	B-8	Q721	F-7
D7002	E-5	Q730	G-5
D7011	D-3	Q731	F-5
D7012	E-3	Q6007	G-2
D7014	C-1	Q6008	G-1
D7016	B-4		
D7017	D-4		

A BOARD IC VOLTAGE LIST (1 OF 3)

IC201		14	2.3	29	5.0	44	GND	59	1.7
pin	volt	15	3.7	30	5.6	45	2.8	60	1.7
1	GND	16	2.7	31	1.3	46	3.6	61	9.0
2	0.0	17	2.6	32	3.0	47	3.9	62	2.3
3	GND	18	1.1	33	1.6	48	4.4	63	2.5
4	3.1	19	4.9	34	0.0	49	5.4	64	2.3
5	3.1	20	3.6	35	0.0	50	3.5	All voltages are in V.	
6	3.1	21	3.4	36	0.2	51	3.8		
7	0.0	22	3.4	37	0.0	52	3.4		
8	3.6	23	GND	38	3.2	53	3.5		
9	3.6	24	N/C	39	1.1	54	1.0		
10	3.6	25	4.6	40	2.8	55	9.0		
11	0.0	26	4.6	41	GND	56	1.0		
12	0.5	27	0.7	42	0.0	57	4.3		
13	0.5	28	0.0	43	3.8	58	3.9		

A BOARD TRANSISTOR VOLTAGE LIST (1 OF 3)

	B	C	E
Q001	0.4	0.0	GND
Q002	0.4	0.0	GND
Q004	4.6	1.1	5.0
Q005	4.3	9.0	3.6
Q012	0.1	7.5	GND
Q015	6.2	9.0	5.5
Q027	4.5	0.0	5.0
Q203	2.3	GND	3.2
Q204	2.5	GND	3.2
Q205	2.3	3.4	GND
Q206	3.4	4.1	3.5
Q207	2.3	GND	3.2
Q208	2.3	GND	3.2
Q209	0.8	2.2	GND
Q211	2.8	11.5	2.3
Q212	5.6	9.0	5.0
Q214	0.0	0.0	GND
Q216	4.5	GND	3.9
Q217	4.4	8.7	3.9

All voltages are in V.

A BOARD IC VOLTAGE LIST (2 OF 3)

IC701		17	0.0	35	N/C	53	3.0	71	N/C	89	0.0	5	4.9
pin	volt	18	0.0	36	0.0	54	0.0	72	6.3	90	0.0	IC707	
1	N/C	19	0.0	37	4.6	55	0.0	73	0.0	91	0.0	pin	volt
2	N/C	20	2.8	38	0.0	56	0.0	74	0.0	92	0.0	1	GND
3	0.0	21	0.0	39	0.0	57	N/C	75	GND	93	0.0	2	GND
4	0.0	22	0.0	40	0.0	58	0.0	76	0.0	94	4.6	3	GND
5	0.0	23	0.0	41	2.3	59	0.0	77	0.0	95	4.6	4	GND
6	0.0	24	GND	42	0.0	60	0.0	78	0.0	96	GND	5	4.6
7	4.7	25	0.0	43	4.6	61	0.0	79	0.0	97	4.6	6	4.6
8	GND	26	N/C	44	2.8	62	4.9	80	N/C	98	GND	7	5.0
9	GND	27	N/C	45	0.1	63	4.9	81	0.0	99	4.9	8	5.0
10	N/C	28	4.4	46	0.0	64	GND	82	0.0	100	4.6	All voltages are in V.	
11	N/C	29	4.9	47	4.6	65	0.0	83	0.0	IC702			
12	4.9	30	4.9	48	5.0	66	N/C	84	0.0	pin	volt		
13	2.3	31	4.4	49	5.0	67	0.0	85	0.0	1	N/C		
14	GND	32	0.0	50	0.0	68	0.0	86	N/C	2	GND		
15	2.4	33	0.0	51	5.0	69	7.3	87	0.0	3	GND		
16	4.9	34	0.0	52	0.0	70	0.0	88	0.0	4	4.9		

A BOARD TRANSISTOR VOLTAGE LIST (2 OF 3)

	B	C	E
Q701	4.7	4.7	5.0
Q702	0.1	5.0	0.0
Q703	4.6	5.0	GND
Q704	0.0	4.4	GND
Q705	5.0	0.0	0.0
Q706	5.0	0.0	0.0
Q707	0.5	0.0	GND
Q709	10.4	0.7	10.2
Q710	19.5	0.0	19.9
Q712	0.0	5.0	0.0
Q717	0.0	5.0	GND
Q719	0.6	4.5	GND
Q720	4.5	0.0	4.5
Q721	0.0	0.0	GND
Q723	0.2	4.6	GND
Q724	0.5	4.6	GND
Q731	0.0	0.0	5.0

All voltages are in V.

A BOARD IC VOLTAGE LIST (3 OF 3)

IC6001		14	160.6	IC6007		IC7001		14	1.9	29	4.4	10	0.0	11	4.2
pin	volt	15	150.4	pin	volt	pin	volt	15	9.0	30	4.5	11	4.1	12	10.5
1	3.3	16	154.6	I	6.3	1	GND	16	9.0	31	2.8	12	10.5	IC7006	
2	1.8	17	N/C	G	GND	2	0.0	17	4.5	32	4.4	IC7005		pin	volt
3	2.2	18	303.1	O	5.0	3	4.5	18	4.6	IC7002		pin	volt	1	4.5
4	2.5	IC6002		IC6010		4	4.4	19	1.9	pin	volt	1	1.6	2	4.5
5	GND	pin	volt	pin	volt	5	4.4	20	0.8	1	1.6	2	0.0	3	4.5
6	0.0	1	7.3	I	10.9	6	4.4	21	4.4	2	0.0	3	0.0	4	GND
7	4.6	2	GND	G	GND	7	4.4	22	4.4	3	0.0	4	0.0	5	4.5
8	17.3	3	2.5	O	9.0	8	4.4	23	4.4	4	0.0	5	1.6	6	4.5
9	0.0	IC6003		IC6011		9	4.4	24	4.4	5	1.6	6	8.0	7	4.5
10	10.4	pin	volt	pin	volt	10	4.4	25	4.4	6	8.0	7	11.0	8	9.0
11	GND	I	5.7	I	8.1	11	4.4	26	4.4	7	4.0	8	5.0	All voltages are in V.	
12	4.7	G	GND	G	GND	12	4.4	27	4.4	8	5.0	9	23.7		
13	N/C	O	3.3	O	5.0	13	0.8	28	4.4	9	23.7	10	0.0		

A BOARD TRANSISTOR VOLTAGE LIST (3 OF 3)

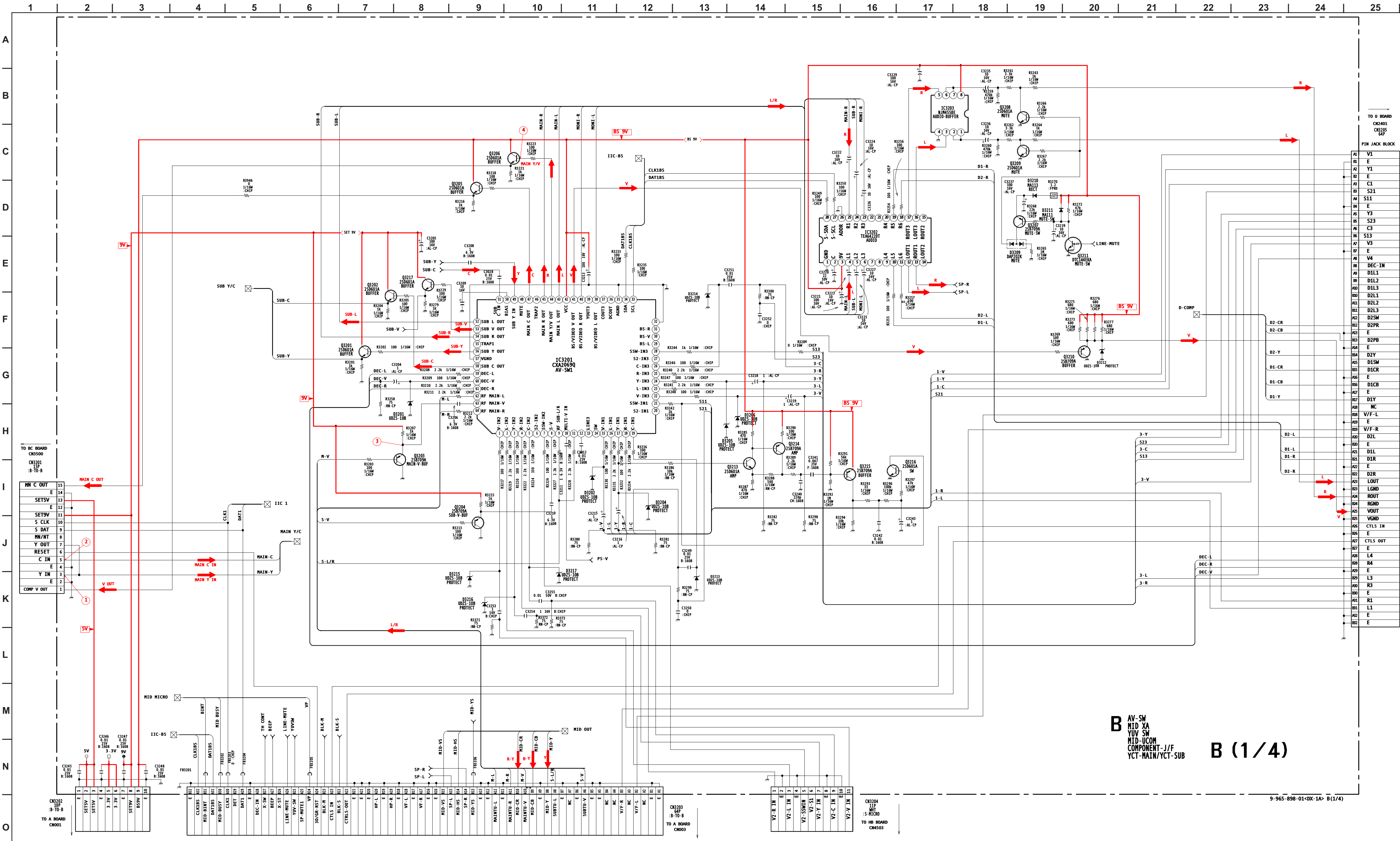
	B	C	E
Q6001	0.0	18.0	GND
Q6002	19.7	18.5	19.8
Q6003	-0.5	0.0	GND
Q7001	0.3	0.0	0.0
Q7002	-0.1	9.0	GND
Q7003	9.0	0.0	9.0
Q7004	0.3	8.0	GND
Q7005	0.0	0.0	GND
Q7009	0.3	8.0	GND
Q7010	0.0	0.7	GND
Q7011	0.0	-0.1	0.0
Q7014	0.0	4.1	GND
Q7016	0.0	4.2	GND

All voltages are in V.

	D	G	S
Q6007	150.4	4.7	0.0
Q6008	303.0	154.6	150.0

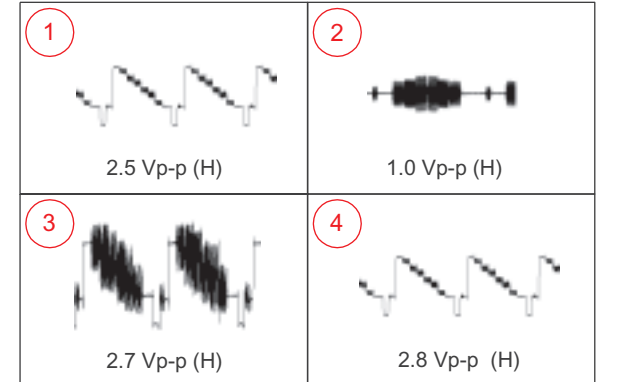
All voltages are in V.

B BOARD SCHEMATIC DIAGRAM (1 OF 4)



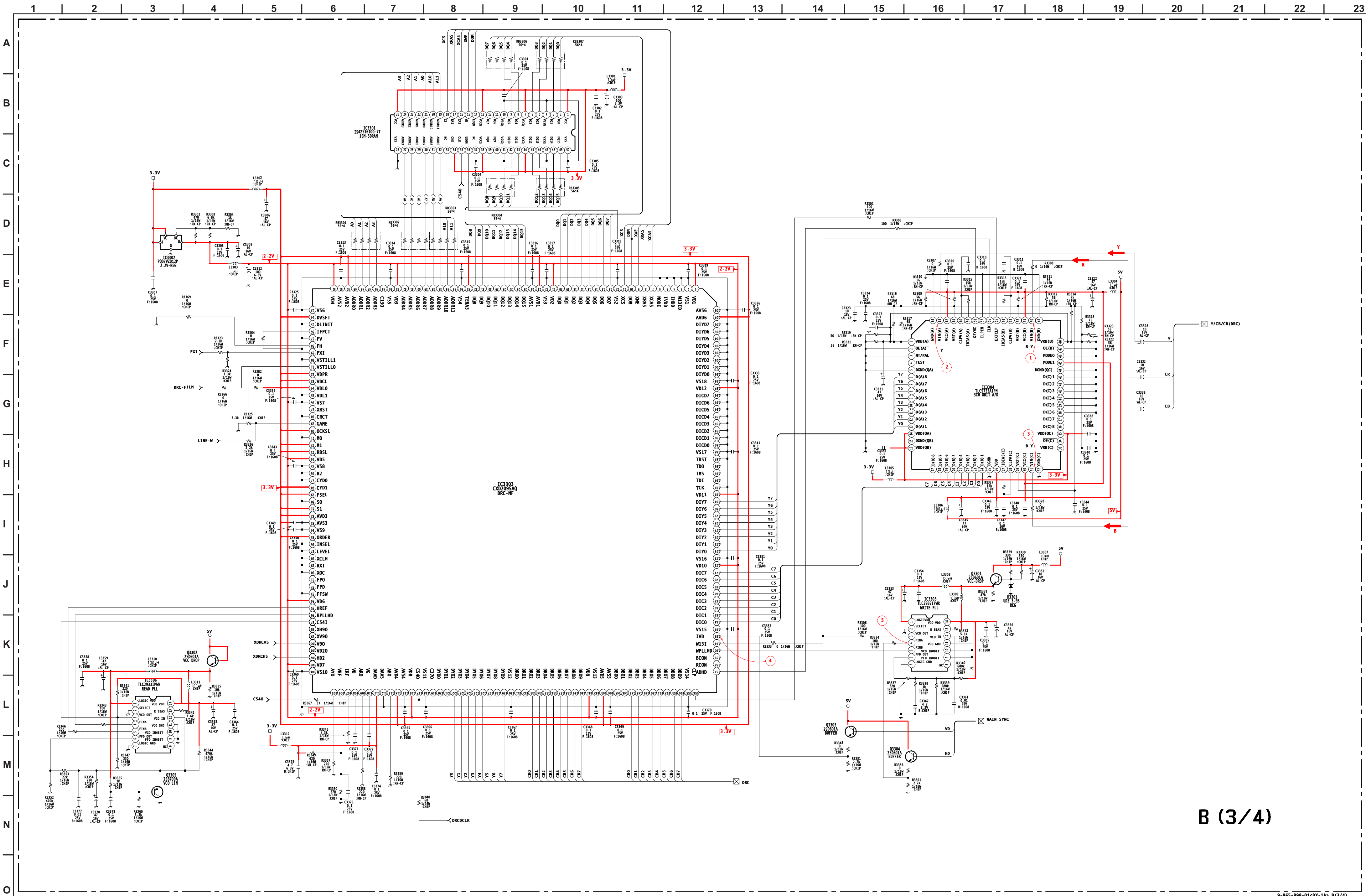
B AV-SM
 MID-XA
 YUV-SM
 MID-UCON
 COMPONENT-J/F
 YCT-MAIN/YCT-SUB
B (1/4)

B BOARD WAVEFORMS (1 OF 4)

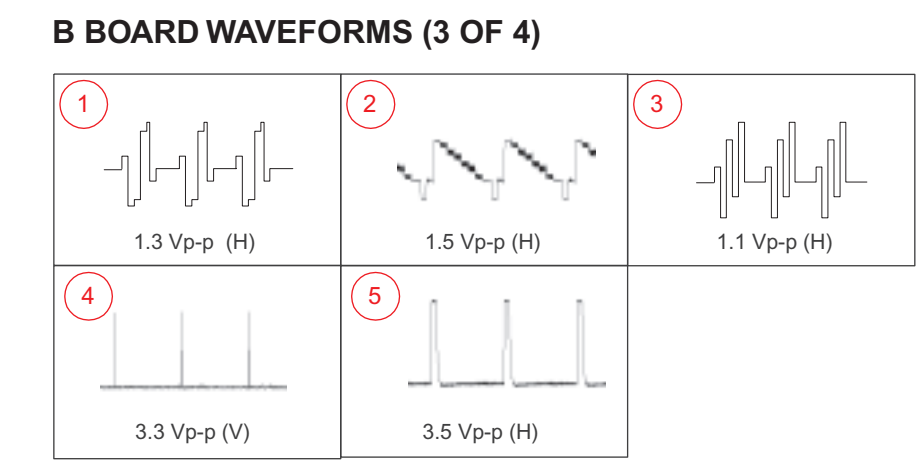


9-965-898-01-0X-1A) B(1/4)

B BOARD SCHEMATIC DIAGRAM (3 OF 4)



B (3/4)

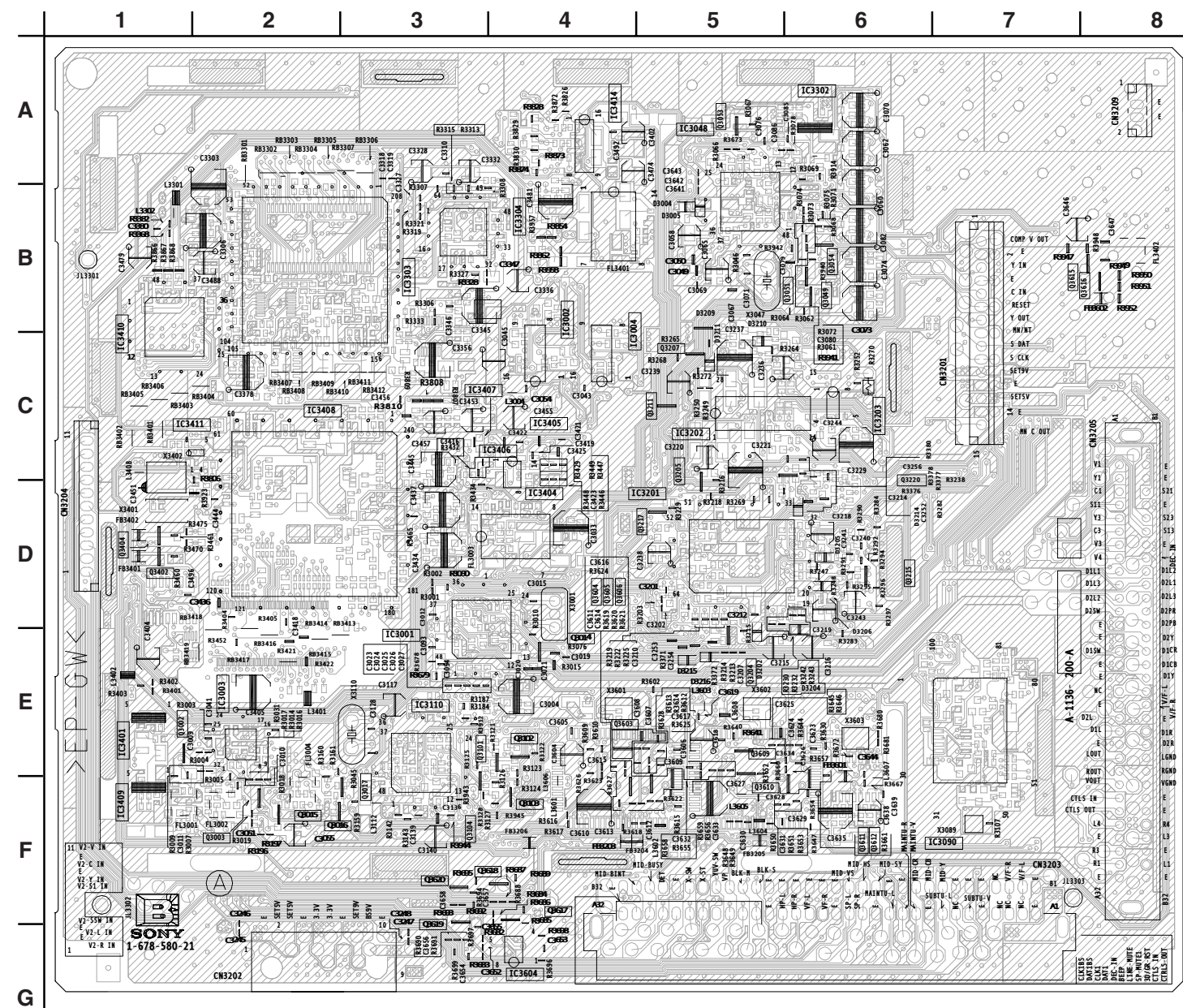


B

[AV-SW1, AUDIO SW, MID-UCOM, YCT-MAIN, MAIN-CCD V-CHIP, SUB-CCD V-CHIP, 3CH 8 BIT A/D, DRC-MF, MID-XA, A/D]

KV-32HS20/36HS20/36HS20H/32XBR450/36XBR450/36XBR450H

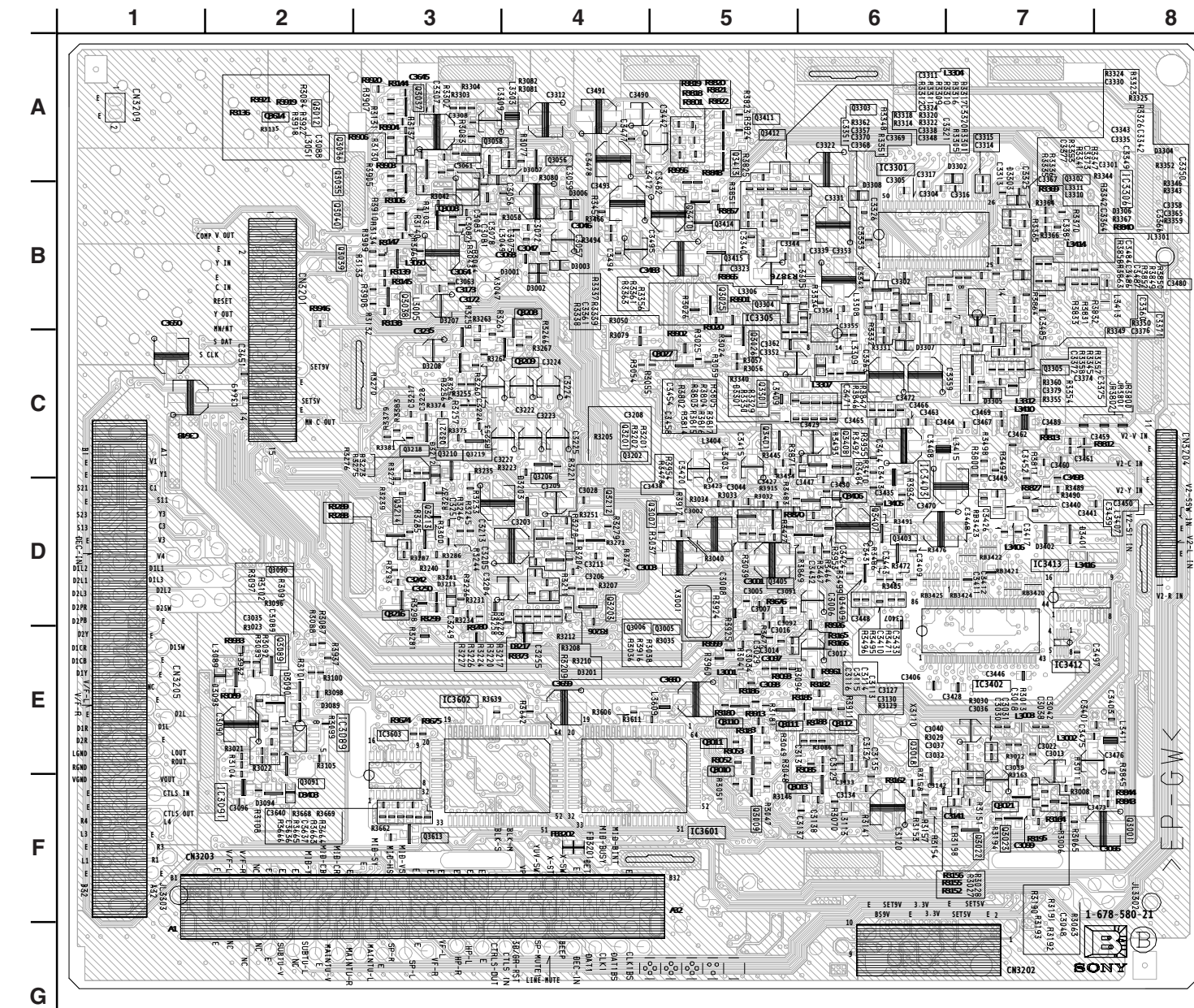
COMPONENT SIDE



**B BOARD LOCATOR LIST
(COMPONENT SIDE)**

DIODE	IC	IC3302	A-6	IC3411	C-2	Q3051	B-6	Q3215	D-6	Q3612	F-6
D3004	B-5	IC3001	E-3	IC3303	B-3	IC3414	A-4	Q3053	A-5	Q3217	D-5
D3005	B-5	IC3002	B-4	IC3304	B-4	IC3604	G-4	Q3054	B-6	Q3402	D-1
D3006	B-4	IC3305	B-5	Q3009	F-5	Q3040	B-2	Q3210	C-3	Q3409	D-6
D3202	E-5	IC3003	E-2	IC3401	E-1	TRANSISTOR	Q3101	E-4	Q3404	D-1	Q3619
D3204	E-6	IC3004	C-5	IC3404	D-4	Q3002	E-1	Q3102	E-4	Q3603	E-4
D3205	D-6	IC3048	A-5	IC3405	C-4	Q3003	F-2	Q3103	F-4	Q3604	D-4
D3206	E-6	IC3090	F-7	IC3406	C-4	Q3014	E-4	Q3104	F-3	Q3605	D-4
D3209	B-5	IC3110	E-3	IC3407	C-4	Q3015	F-2	Q3204	E-5	Q3606	D-4
D3210	B-5	IC3201	D-5	IC3408	C-2	Q3016	F-2	Q3205	C-5	Q3609	E-5
D3211	B-5	IC3202	C-5	IC3409	F-1	Q3017	F-3	Q3207	C-5	Q3610	F-5
D3214	D-6	IC3203	C-6	IC3410	C-1	Q3049	B-6	Q3211	C-5	Q3611	F-6

CONDUCTOR SIDE



**B BOARD LOCATOR LIST
(CONDUCTOR SIDE)**

DIODE	IC	Q3005	E-5	Q3036	A-2	Q3203	D-4	Q3405	D-5
D3001	B-4	IC3089	E-2	Q3006	E-5	Q3037	A-3	Q3206	C-4
D3002	B-4	IC3091	F-2	Q3007	D-5	Q3038	B-3	Q3208	B-4
D3003	B-4	IC3301	B-6	Q3008	B-3	Q3039	B-2	Q3209	C-4
D3006	B-4	IC3305	B-5	Q3009	F-5	Q3040	B-2	Q3210	C-3
D3007	B-4	IC3306	B-8	Q3010	E-5	Q3056	A-4	Q3213	D-3
D3089	E-2	IC3402	E-7	Q3011	E-5	Q3058	A-3	Q3214	D-3
D3090	E-2	IC3403	C-6	Q3018	E-6	Q3089	E-2	Q3216	D-3
D3201	E-4	IC3412	E-8	Q3021	F-7	Q3090	D-2	Q3301	C-5
D3212	C-3	IC3413	D-7	Q3022	F-7	Q3091	F-2	Q3302	A-7
D3213	D-3	IC3601	F-5	Q3023	F-7	Q3110	E-5	Q3303	A-6
D3301	C-5	IC3602	E-3	Q3025	B-5	Q3111	E-5	Q3304	B-5
D3401	D-7	IC3603	E-3	Q3026	B-5	Q3112	E-6	Q3305	C-7
D3402	D-7	TRANSISTOR	Q3027	B-5	Q3201	C-4	Q3401	C-5	
D3403	F-2	Q3001	F-8	Q3035	B-2	Q3202	C-4	Q3403	D-6

B BOARD TRANSISTOR VOLTAGE LIST (1 OF 4)

	B	C	E
Q3201	4.6	2.9	2.5
Q3202	2.7	9.0	2.3
Q3203	3.1	GND	3.7
Q3204	1.8	GND	2.2
Q3205	4.4	9.0	3.8
Q3206	4.9	9.0	4.3
Q3207	8.9	-1.0	8.9
Q3208	-0.3	0	GND
Q3209	-0.3	0	GND
Q3210	2.7	GND	3.1
Q3211	0.4	8.9	GND
Q3213	3.8	7.9	3.2
Q3214	7.9	5.8	8.5
Q3215	8.5	0	9.0
Q3216	0.1	4.9	0
Q3217	3.6	9.0	3.1

All voltages are in V.

B BOARD TRANSISTOR VOLTAGE LIST (3 OF 4)

	B	C	E
Q3301	3.9	4.9	3.4
Q3302	4.9	4.9	3.4
Q3303	0.5	4.9	0.1
Q3304	0.5	4.9	0.2
Q3305	3.2	GND	2.3

All voltages are in V.

B BOARD TRANSISTOR VOLTAGE LIST (4 OF 4)

	B	C	E
Q3401	0	4.9	0
Q3402	3.3	4.6	3.1
Q3403	1.0	4.9	0.5
Q3404	3.3	4.6	3.1
Q3405	2.3	GND	3.0
Q3406	2.3	GND	3.0
Q3407	1.7	4.9	1.2
Q3408	2.3	GND	3.0
Q3409	1.7	4.9	1.2
Q3410	0.5	GND	1.2
Q3411	1.5	GND	2.2
Q3412	1.5	GND	2.2
Q3413	1.5	GND	2.2
Q3414	0.8	GND	1.5
Q3415	1.4	GND	2.0

All voltages are in V.

B BOARD TRANSISTOR VOLTAGE LIST (2 OF 4)

	B	C	E
Q3001	4.1	9.0	3.4
Q3002	5.1	9.0	5.7
Q3003	1.8	GND	5.4
Q3005	2.2	4.9	1.6
Q3006	2.9	4.9	2.2
Q3007	2.9	4.8	2.3
Q3008	1.0	GND	1.6
Q3009	2.0	GND	0
Q3010	2.0	GND	0
Q3011	1.2	GND	0
Q3014	2.7	GND	3.3
Q3015	1.0	GND	1.6
Q3016	1.1	GND	1.7
Q3017	4.1	4.8	0.7
Q3018	1.5	4.1	0.9
Q3021	2.9	9.0	0.7
Q3022	7.9	9.0	0
Q3023	0.7	7.9	0.3
Q3025	2.5	5.0	1.4
Q3026	2.7	5.0	1.4
Q3027	2.8	5.0	1.4
Q3035	5.1	9.0	4.3
Q3036	5.1	9.0	4.3
Q3037	5.1	9.0	4.3
Q3038	4.9	9.0	4.1
Q3039	4.9	9.0	4.1
Q3040	4.9	9.0	4.1
Q3049	5.3	8.9	4.7
Q3051	2.3	GND	3.0
Q3053	2.0	GND	2.6
Q3054	5.7	8.9	5.1
Q3056	2.1	GND	2.8
Q3058	1.9	GND	2.5
Q3089	4.1	4.7	4.7
Q3090	4.1	4.7	4.7
Q3091	0	8.9	GND
Q3101	3.7	9.0	3.1
Q3102	2.8	9.0	2.2
Q3103	1.1	GND	1.7
Q3104	1.5	GND	2.1
Q3110	0.8	GND	1.5
Q3111	1.2	GND	1.8
Q3112	1.2	GND	1.8
Q3603	1	4.9	0.3
Q3604	0	9.0	0
Q3605	0	9.0	0
Q3606	0	9.0	0
Q3609	1.9	4.9	1.3
Q3610	0	9.0	0
Q3611	0	9.0	0
Q3612	0	9.0	0
Q3613	3.7	4.9	3.0
Q3617	0.5	4.7	GND
Q3618	0.2	4.7	GND
Q3619	0.5	0.1	GND
Q3620	0.2	0.2	GND

All voltages are in V.

B BOARD IC VOLTAGE LIST (1 OF 4)

IC3201		26	4.4	53	3.8	14	4.4
pin	volt	27	0.1	54	4.5	15	4.4
1	3.9	28	4.9	55	N/C	16	4.4
2	4.4	29	N/C	56	3.4	17	4.4
3	3.9	30	N/C	57	GND	18	4.4
4	4.4	31	N/C	58	4.3	19	4.4
5	4.4	32	GND	59	4.4	20	N/C
6	0.1	33	4.4	60	3.9	21	N/C
7	4.9	34	4.6	61	4.4	22	N/C
8	4.0	35	0.0	62	4.4	23	4.4
9	4.5	36	N/C	63	4.8	24	4.4
10	4.4	37	N/C	64	4.4	25	4.4
11	4.5	38	4.5	IC3202		26	GND
12	4.4	39	N/C	pin	volt	27	4.6
13	N/C	40	4.5	1	GND	28	4.6
14	N/C	41	4.5	2	4.4	IC3203	
15	4.4	42	9.0	3	9.0	pin	volt
16	4.4	43	4.5	4	4.4	1	4.4
17	3.9	44	4.4	5	4.4	2	4.4
18	4.4	45	4.5	6	4.4	3	4.4
19	4.4	46	N/C	7	N/C	4	GND
20	0.1	47	4.4	8	N/C	5	4.4
21	4.9	48	N/C	9	N/C	6	4.4
22	4.3	49	4.1	10	4.4	7	4.4
23	4.4	50	4.5	11	4.4	8	9.0
24	3.9	51	4.4	12	4.4	All voltages are in V	
25	4.4	52	4.5	13	4.4		

B BOARD IC VOLTAGE LIST (2 OF 4)

IC3001		13	2.6	7	4.9	11	N/C	75	GND	30	N/C	44	N/C		GND
pin	volt	14	2.7	8	2.8	12	N/C	76	N/C	31	N/C	45	N/C	43	GND
1	3.2	15	2.5	9	N/C	13	N/C	77	N/C	32	4.8	46	N/C	44	N/C
2	3.2	16	4.9	10	N/C	14	N/C	78	N/C	33	N/C	47	N/C	45	N/C
3	3.2	IC3003		11	2.3	15	N/C	79	N/C	34	N/C	48	4.6	46	N/C
4	1.2	pin	volt	12	N/C	16	N/C	80	N/C	35	N/C	49	N/C	47	N/C
5	1.0	1	1.0	13	GND	17	N/C	81	N/C	36	2.6	50	4.6	48	4.6
6	GND	2	0.0	14	N/C	18	N/C	82	N/C	37	N/C	51	N/C	49	N/C
7	N/C	3	4.8	15	0.5	19	N/C	83	GND	38	N/C	52	N/C	50	4.6
8	N/C	4	1.0	16	2.4	20	N/C	84	GND	39	N/C	53	N/C	51	N/C
9	N/C	5	N/C	17	2.0	21	N/C	85	GND	40	1.7	54	N/C	52	N/C
10	1.0	6	4.8	18	3.1	22	N/C	86	GND	41	1.8	55	N/C	53	N/C
11	0.9	7	0.5	19	N/C	23	N/C	87	N/C	42	2.4	56	N/C	54	N/C
12	4.8	8	0.0	20	0.5	24	N/C	88	N/C	43	0.0	57	N/C	55	GND
13	4.0	9	1.9	21	0.0	25	GND	89	5.0	44	2.4	58	N/C	56	GND
14	4.0	10	2.6	22	1.8	26	GND	90	GND	45	3.4	59	N/C	57	GND
15	2.7	11	0.9	23	2.1	27	N/C	91	N/C	46	2.4	60	N/C	58	GND
16	2.3	12	2.0	24	2.0	28	N/C	92	N/C	47	4.8	61	N/C	59	GND
17	1.0	13	GND	25	3.4	29	N/C	93	GND	48	3.1	62	N/C	60	GND
18	2.8	14	0.0	26	3.4	30	N/C	94	N/C	IC3601		63	N/C	61	N/C
19	0.0	15	GND	27	3.4	31	N/C	95	2.9	pin	volt	64	N/C	62	N/C
20	2.7	16	GND	28	0.0	32	0.0	96	0.0	1	N/C	IC3602		63	N/C
21	0.0	17	0.0	29	N/C	33	0.0	97	2.9	2	N/C	pin	volt	64	N/C
22	0.3	18	0.0	30	N/C	34	N/C	98	4.3	3	N/C	1	N/C	IC3603	
23	0.0	19	4.9	31	N/C	35	N/C	99	2.9	4	N/C	2	N/C	pin	volt
24	GND	20	N/C	32	4.8	36	N/C	100	4.3	5	N/C	3	N/C	1	4.9
25	2.9	21	4.9	33	3.4	37	N/C	IC3091		6	N/C	4	N/C	2	GND
26	2.8	22	0.0	34	3.1	38	N/C	pin	volt	7	0.2	5	N/C	3	GND
27	2.2	23	N/C	35	0.0	39	N/C	1	N/C	8	0.1	6	N/C	4	1.4
28	4.8	24	GND	36	2.6	40	N/C	2	GND	9	4.9	7	0.2	5	4.9
29	GND	25	2.4	37	3.4	41	0.0	3	GND	10	GND	8	0.1	6	1.9
30	4.6	26	4.8	38	3.1	42	0.0	4	4.9	11	2.4	9	4.9	7	1.6
31	4.6	27	2.2	39	3.1	43	5.0	5	4.9	12	2.1	10	GND	8	GND
32	GND	28	2.2	40	1.7	44	0.0	IC3110		13	GND	11	2.4	9	4.6
33	3.1	29	4.8	41	1.7	45	GND	pin	volt	14	GND	12	2.2	10	4.6
34	3.1	30	GND	42	2.4	46	GND	1	1.0	15	GND	13	GND	11	4.9
35	3.1	31	GND	43	0.0	47	GND	2	4.6	16	4.9	14	GND	12	2.6
36	3.2	32	1.0	44	N/C	48	N/C	3	4.6	17	4.9	15	GND	13	2.4
37	3.2	IC3004		45	3.1	49	N/C	4	4.6	18	GND	16	4.9	14	GND
38	3.3	pin	volt	46	2.8	50	N/C	5	GND	19	GND	17	GND	15	N/C
39	2.4	1	0.6	47	4.8	51	N/C	6	N/C	20	1.6	18	GND	16	N/C
40	4.8	2	0.5	48	3.1	52	N/C	7	4.9	21	2.4	19	GND	All voltages are in V	
41	3.1	3	0.5	IC3089		53	0.0	8	2.6	22	1.5	20	1.7		
42	3.1	4	0.5	pin	volt	54	N/C	9	N/C	23	4.9	21	2.5		
43	3.1	5	GND	1	GND	55	0.0	10	N/C	24	0.0	22	2.5		
44	3.3	6	GND	2	GND	56	N/C	11	2.4	25	N/C	23	4.9		
45	3.2	7	GND	3	0.0	57	0.0	12	N/C	26	N/C	24	N/C		
46	3.2	8	GND	4	GND	58	N/C	13	GND	27	N/C	25	N/C		
47	2.4	9	4.9	5	4.6	59	N/C	14	N/C	28	N/C	26	N/C		
48	GND	10	4.9	6	4.6	60	N/C	15	0.5	29	N/C	27	N/C		
IC3002		11	0.0	7	4.9	61	N/C	16	N/C	30	N/C	28	N/C		
pin	volt	12	0.3	8	4.9	62	N/C	17	1.6	31	0.0	29	N/C		
1	2.4	13	0.6	IC3090		63	N/C	18	2.8	32	0.0	30	N/C		
2	0.0	14	0.3	pin	volt	64	N/C	19	N/C	33	0.0	31	0.0		
3	2.7	15	0.6	1	0.0	65	2.6	20	0.5	34	0.0	32	0.0		
4	2.8	16	4.9	2	0.0	66	N/C	21	0.0	35	N/C	33	0.0		
5	0.0	IC3048		3	0.0	67	N/C	22	1.2	36	0.0	34	0.0		
6	GND	pin	volt	4	N/C	68	N/C	23	2.0	37	N/C	35	N/C		
7	GND	1	1.7	5	N/C	69	N/C	24	1.9	38	2.4	36	0.0		
8	GND	2	0.2	6	N/C	70	N/C	25	3.4	39	2.4	37	N/C		
9	4.9	3	4.6	7	N/C	71	N/C	26	3.4	40	4.9	38	2.4		
10	4.9	4	4.6	8	N/C	72	N/C	27	3.4	41	4.9	39	2.4		
11	4.9	5	GND	9	0.0	73	GND	28	N/C	42	GND	40	4.9		
12	0.1	6	N/C	10	0.0	74	5.0	29	N/C	43	GND	41	4.9		

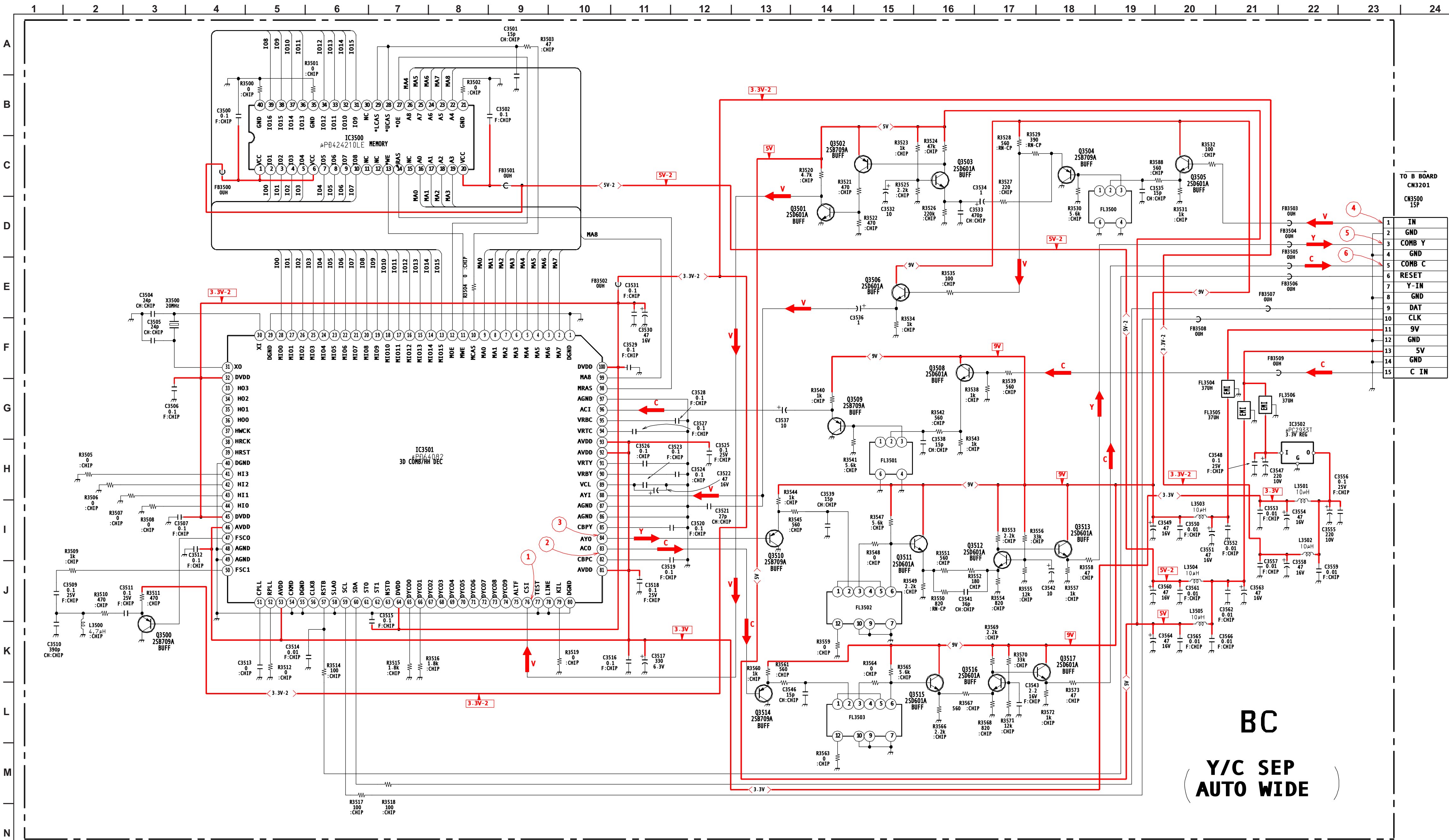
B BOARD IC VOLTAGE LIST (3 OF 4)

IC3301		IC3302		45	N/C	98	N/C	151	2.3	204	GND	47	0.0
pin	volt	pin	volt	46	0.0	99	N/C	152	2.3	205	GND	48	1.5
1	3.3	I	3.3	47	0.0	100	0.0	153	2.0	206	GND	49	0.0
2	1.5	G	GND	48	0.0	101	N/C	154	1.2	207	3.3	50	0.0
3	1.6	O	1.2	49	0.0	102	0.2	155	GND	208	GND	51	4.8
4	GND	VC	3.3	50	3.3	103	2.2	156	1.6	IC3304		52	4.4
5	1.5	N/C		51	GND	104	GND	157	3.3	pin	volt	53	2.4
6	1.5	IC3303		52	2.2	105	0.4	158	N/C	1	1.6	54	2.4
7	3.3	pin	volt	53	GND	106	1.0	159	N/C	2	0.0	55	1.6
8	1.9	1	2.2	54	3.3	107	1.0	160	0.8	3	0.0	56	0.5
9	GND	2	1.9	55	GND	108	1.0	161	0.9	4	0.0	57	0.0
10	1.8	3	GND	56	0.0	109	0.5	162	0.0	5	0.0	58	3.3
11	1.2	4	GND	57	GND	110	2.2	163	GND	6	1.2	59	3.3
12	3.3	5	GND	58	GND	111	3.3	164	1.4	7	1.2	60	1.6
13	0.5	6	GND	59	0.0	112	GND	165	1.9	8	0.0	61	3.2
14	3.2	7	1.9	60	GND	113	0.5	166	1.8	9	1.9	62	4.8
15	3.2	8	2.0	61	0.0	114	3.3	167	1.9	10	0.1	63	2.1
16	3.2	9	2.0	62	3.3	115	GND	168	1.9	11	0.8	64	0.0
17	3.2	10	0.3	63	3.3	116	2.2	169	1.9	12	2.0	IC3305	
18	3.2	11	1.9	64	3.3	117	0.0	170	1.9	13	1.6	pin	volt
19	0.0	12	GND	65	GND	118	GND	171	1.3	14	3.3	1	3.4
20	0.0	13	0.6	66	GND	119	N/C	172	2.2	15	0.0	2	GND
21	0.0	14	1.0	67	3.3	120	N/C	173	GND	16	3.3	3	1.6
22	0.0	15	1.9	68	GND	121	N/C	174	1.5	17	0.0	4	0.2
23	0.0	16	1.3	69	0.0	122	1.4	175	1.6	18	3.2	5	1.3
24	0.0	17	1.0	70	3.3	123	1.3	176	1.3	19	3.2	6	1.4
25	3.3	18	1.0	71	GND	124	1.4	177	1.0	20	3.2	7	GND
26	GND	19	1.2	72	3.3	125	1.4	178	2.3	21	3.2	8	N/C
27	0.0	20	1.0	73	3.3	126	1.0	179	0.7	22	3.2	9	GND
28	0.0	21	1.2	74	2.2	127	0.9	180	1.6	23	2.0	10	GND
29	0.0	22	GND	75	GND	128	1.1	181	0.8	24	1.1	11	GND
30	0.0	23	3.3	76	GND	129	0.9	182	2.2	25	GND	12	1.4
31	0.0	24	GND	77	GND	130	GND	183	GND	26	4.8	13	2.2
32	0.0	25	0.8	78	3.3	131	N/C	184	N/C	27	2.4	14	3.4
33	N/C	26	0.8	79	3.3	132	N/C	185	N/C	28	2.4	IC3306	
34	3.3	27	0.6	80	GND	133	1.6	186	N/C	29	3.2	pin	volt
35	1.7	28	1.2	81	3.3	134	1.6	187	GND	30	4.8	1	4.2
36	0.5	29	0.7	82	3.3	135	2.2	188	GND	31	2.4	2	GND
37	N/C	30	0.9	83	GND	136	2.2	189	GND	32	GND	3	1.9
38	3.3	31	1.0	84	GND	137	2.2	190	GND	33	1.5	4	3.3
39	1.6	32	0.9	85	3.3	138	2.1	191	GND	34	0.0	5	1.6
40	1.6	33	3.3	86	GND	139	2.2	192	GND	35	3.3	6	2.2
41	GND	34	GND	87	GND	140	1.1	193	GND	36	N/C	7	GND
42	1.5	35	0.0	88	GND	141	2.2	194	GND	37	N/C	8	N/C
43	1.5	36	0.0	89	GND	142	GND	195	GND	38	0.0	9	GND
44	3.3	37	0.0	90	GND	143	3.3	196	GND	39	0.0	10	GND
45	1.8	38	0.0	91	N/C	144	GND	197	2.2	40	0.0	11	GND
46	2.0	39	0.0	92	N/C	145	N/C	198	GND	41	0.0	12	2.3
47	GND	40	0.0	93	GND	146	N/C	199	GND	42	0.0	13	2.1
48	1.7	41	0.0	94	2.2	147	1.6	200	GND	43	0.0	14	4.2
49	1.2	42	0.0	95	1.0	148	1.6	201	GND	44	0.0	All voltages are in V	
50	GND	43	2.2	96	2.0	149	2.2	202	GND	45	4.9		
		44	GND	97	1.3	150	2.4	203	GND	46	0.0		

B BOARD IC VOLTAGE LIST (4 OF 4)

IC3401		50	1.0	13	3.6	34	1.4	92	3.3	150	GND	208	1.0	17	2.4	15	GND		
pin	volt	51	1.6	14	4.8	35	1.4	93	3.0	151	0.9	209	2.4	18	0.7	16	4.9		
I	3.3	52	GND	IC3405				36	2.4	94	3.0	152	2.2	210	1.0	19	1.0	IC3414	
G	GND	53	0.9	pin	volt	37	1.8	95	GND	153	2.4	211	GND	20	0.8	pin	volt		
O	1.2	54	0.9	1	4.8	38	GND	96	3.3	154	0.7	212	N/C	21	GND	1	4.6		
VC	3.3	55	3.3	2	0.3	39	1.4	97	GND	155	1.3	213	N/C	22	GND	2	5.0		
NC		56	1.1	3	GND	40	1.4	98	3.3	156	2.5	214	2.4	23	1.4	3	3.1		
IC3402		57	NC	4	0.3	41	1.5	99	1.1	157	1.8	215	1.0	24	1.5	4	GND		
pin	volt	58	GND	5	4.8	42	2.4	100	0.9	158	1.1	216	GND	25	1.5	5	3.1		
1	3.3	59	2.4	IC3406				43	GND	101	2.5	159	2.8	217	GND	26	1.5	6	3.1
2	1.8	60	0	pin	volt	44	0.8	102	GND	160	1.6	218	GND	27	1.5	7	5.0		
3	3.3	61	2.4	1	4.8	45	1.0	103	0.9	161	0.7	219	GND	28	1.5	8	4.6		
4	1.3	62	2.2	2	0	46	0.7	104	1.6	162	2.5	220	GND	29	1.5	9	4.6		
5	0.9	63	1.7	3	GND	47	2.4	105	1.0	163	GND	221	1.2	30	1.9	10	GND		
6	GND	64	1.7	4	0	48	0.9	106	1.4	164	2.5	222	GND	31	1.6	11	4.6		
7	2.4	65	1.8	5	4.8	49	1.0	107	3.3	165	0.7	223	GND	32	1.7	12	5.0		
8	2.2	66	0.1	IC3407				50	1.1	108	1.7	166	1.3	224	GND	33	1.6	13	8.9
9	3.3	67	2.9	pin	volt	51	1.2	109	1.7	167	1.8	225	GND	34	GND	14	4.6		
10	0.9	68	1.8	1	4.8	52	1.9	110	1.1	168	0.9	226	GND	35	1.0	15	GND		
11	2.8	69	NC	2	1.0	53	1.4	111	1.7	169	1.1	227	GND	36	0	16	4.6		
12	GND	70	NC	3	GND	54	3.3	112	0.9	170	1.1	228	GND	37	2.0	All voltages are in V			
13	0.9	71	0.1	4	2.4	55	GND	113	1.7	171	GND	229	GND	38	2.6				
14	NC	72	GND	5	4.8	56	1.6	114	3.3	172	GND	230	GND	39	4.8				
15	3.3	73	NC	IC3408				57	1.6	115	GND	173	GND	231	GND	40	4.8		
16	0.1	74	1.8	pin	volt	58	1.5	116	1.6	174	3.3	232	GND	41	4.8				
17	3.1	75	3.3	1	GND	59	1.5	117	1.3	175	GND	233	GND	42	1.0				
18	2.9	76	1.3	2	GND	60	1.5	118	1.6	176	GND	234	GND	43	0				
19	3.3	77	0.7	3	NC	61	1.4	119	1.7	177	GND	235	GND	44	0.5				
20	2.8	78	GND	4	NC	62	2.4	120	0	178	GND	236	GND	45	0				
21	NC	79	2.5	5	NC	63	0.9	121	2.4	179	GND	237	GND	46	0				
22	1.7	80	0.7	6	3.3	64	0.8	122	2.2	180	GND	238	GND	47	0				
23	1.7	81	3.3	7	GND	65	0.9	123	1.7	181	GND	239	GND	48	4.8				
24	0.1	82	1.0	8	GND	66	3.3	124	1.7	182	GND	240	GND	IC3411					
25	0.1	83	2.8	9	0	67	GND	125	1.8	183	GND	IC3409							
26	2.3	84	GND	10	0.2	68	0.8	126	3.3	184	GND	pin	volt	1	3.2				
27	0.1	85	1.1	11	0	69	0.6	127	GND	185	GND	I	3.3	2	NC				
28	2.4	86	GND	12	0	70	0.9	128	0.1	186	GND	G	3.3	3	3.2				
29	3.3	IC3403				13	0	71	0.9	129	0.1	187	GND	O	2.5	4	GND		
30	NC	pin	volt	14	0	72	3.2	130	2.3	188	GND	VC	1.2	5	0.0				
31	1.7	1	NC	15	0	73	3.2	131	0.1	189	GND	NC	0	6	3.3				
32	GND	2	GND	16	2.3	74	0.9	132	0.1	190	GND	IC3410				7	0		
33	1.6	3	GND	17	1.6	75	GND	133	1.7	191	GND	pin	volt	8	3.3				
34	1.3	4	1.7	18	3.3	76	3.3	134	1.7	192	GND	1	GND	IC3413					
35	3.3	5	2.5	19	GND	77	2.5	135	2.8	193	3.3	2	GND	pin	volt				
36	1.6	IC3404				20	0.6	78	GND	136	GND	194	2.4	3	0.9	1	GND		
37	1.7	pin	volt	21	1.1	79	1.7	137	1.6	195	2.4	4	0.9	2	GND				
38	GND	1	4.8	22	2.2	80	3.3	138	3.3	196	0	5	0.6	3	0.1				
39	0.9	2	GND	23	2.2	81	NC	139	GND	197	2.4	6	0.8	4	0.1				
40	1.7	3	2.3	24	2.4	82	2.5	140	1.5	198	GND	7	0.9	5	0.3				
41	3.3	4	0.3	25	2.4	83	2.3	141	0	199	1.0	8	0.8	6	GND				
42	1.1	5	2.4	26	2.3	84	0.4	142	2.6	200	NC	9	0.9	7	GND				
43	3.3	6	0.9	27	2.2	85	0	143	3.0	201	0	10	2.4	8	GND				
44	GND	7	GND	28	1.6	86	0	144	3.1	202	1.0	11	GND	9	5.0				
45	1.7	8	NC	29	0.9	87	2.3	145	2.5	203	GND	12	GND	10	5.0				
46	GND	9	0	30	GND	88	1.6	146	0	204	GND	13	1.2	11	5.0				
47	1.7	10	GND	31	1.1	89	2.5	147	0	205	NC	14	1.1	12	0				
48	1.4	11	GND	32	1.0	90	GND	148	0.9	206	2.4	15	1.0	13	0				
49	3.3	12	0.9	33	1.5	91	1.2	149	2.8	207	GND	16	0.9	14	0				

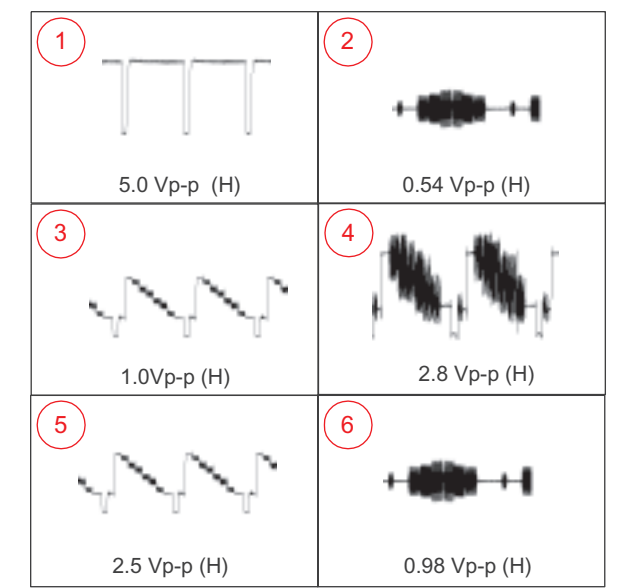
BC BOARD SCHEMATIC DIAGRAM



TO B BOARD
CN3201

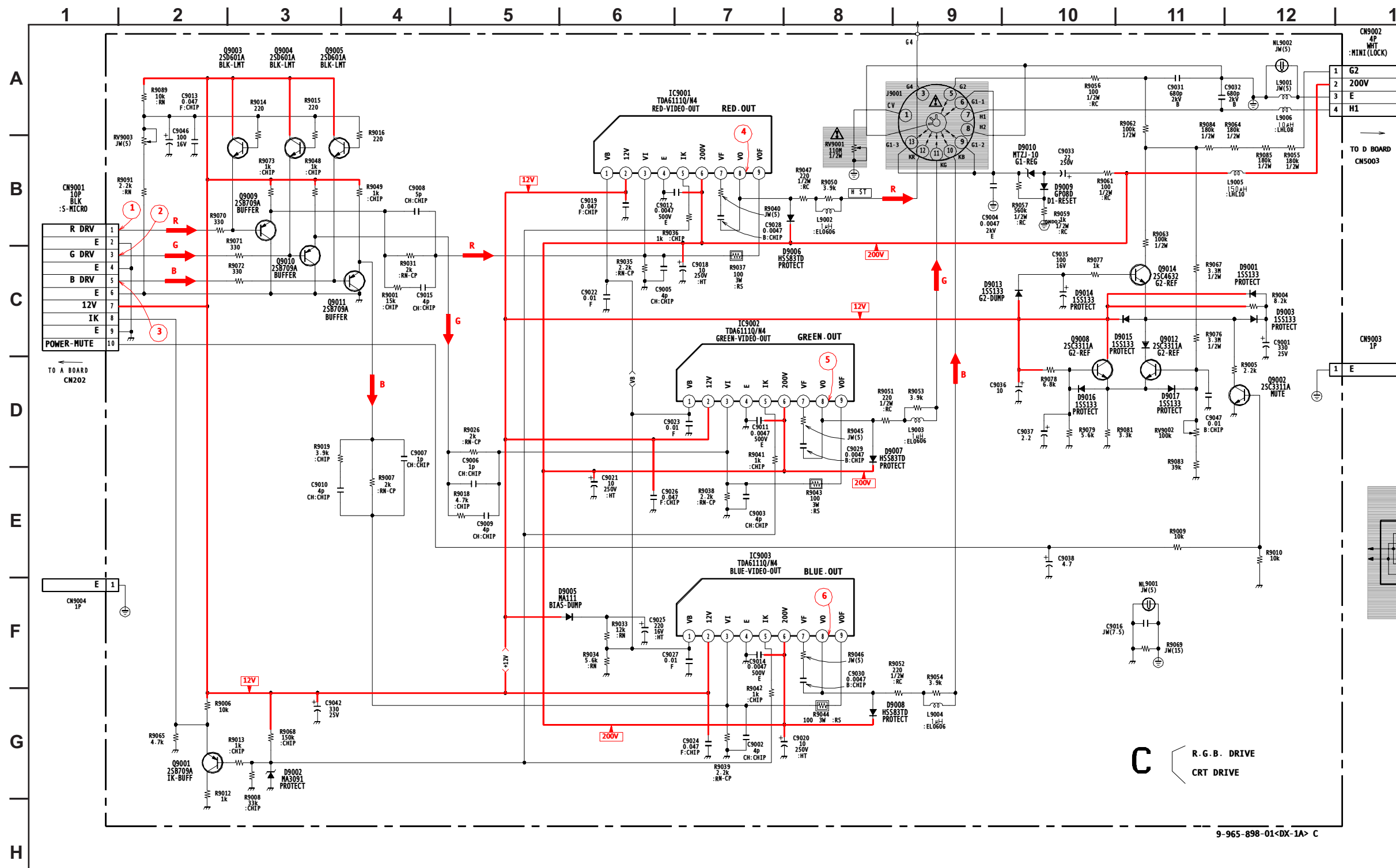
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2	GND
3	COMB Y
4	GND
5	COMB C
6	RESET
7	Y-IN
8	GND
9	DAT
10	CLK
11	9V
12	GND
13	5V
14	GND
15	C IN

BC BOARD WAVEFORMS



BC
(Y/C SEP
AUTO WIDE)

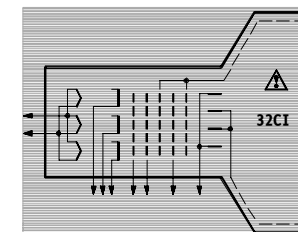
C BOARD SCHEMATIC DIAGRAM



C BOARD TRANSISTOR VOLTAGE LIST

	B	C	E
Q9001	7.5	GND	3.6
Q9002	0.2	11.1	GND
Q9003	2.1	12.0	3.2
Q9004	2.1	12.0	3.2
Q9005	3.2	12.0	2.1
Q9008	5.4	12.0	4.8
Q9009	3.2	GND	3.9
Q9010	3.2	GND	4.0
Q9011	3.2	GND	3.9
Q9012	5.4	10.5	4.8
Q9014	11.7	450.0	11.1

All voltages are in V.



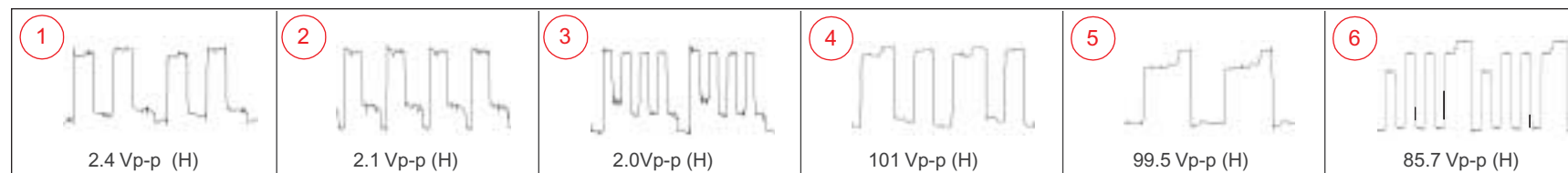
C R.G.B. DRIVE
CRT DRIVE

C BOARD IC VOLTAGE LIST

IC9001		IC9002		IC9003	
pin	volt	pin	volt	pin	volt
1	3.5	1	3.5	1	3.5
2	12.0	2	12.0	2	12.0
3	3.5	3	3.5	3	3.5
4	GND	4	GND	4	GND
5	8.0	5	7.8	5	7.8
6	203.0	6	203.0	6	203.0
7	145.0	7	142.6	7	147.0
8	158.0	8	164.0	8	163.0
9	144.0	9	142.0	9	146.0

All voltages are in V.

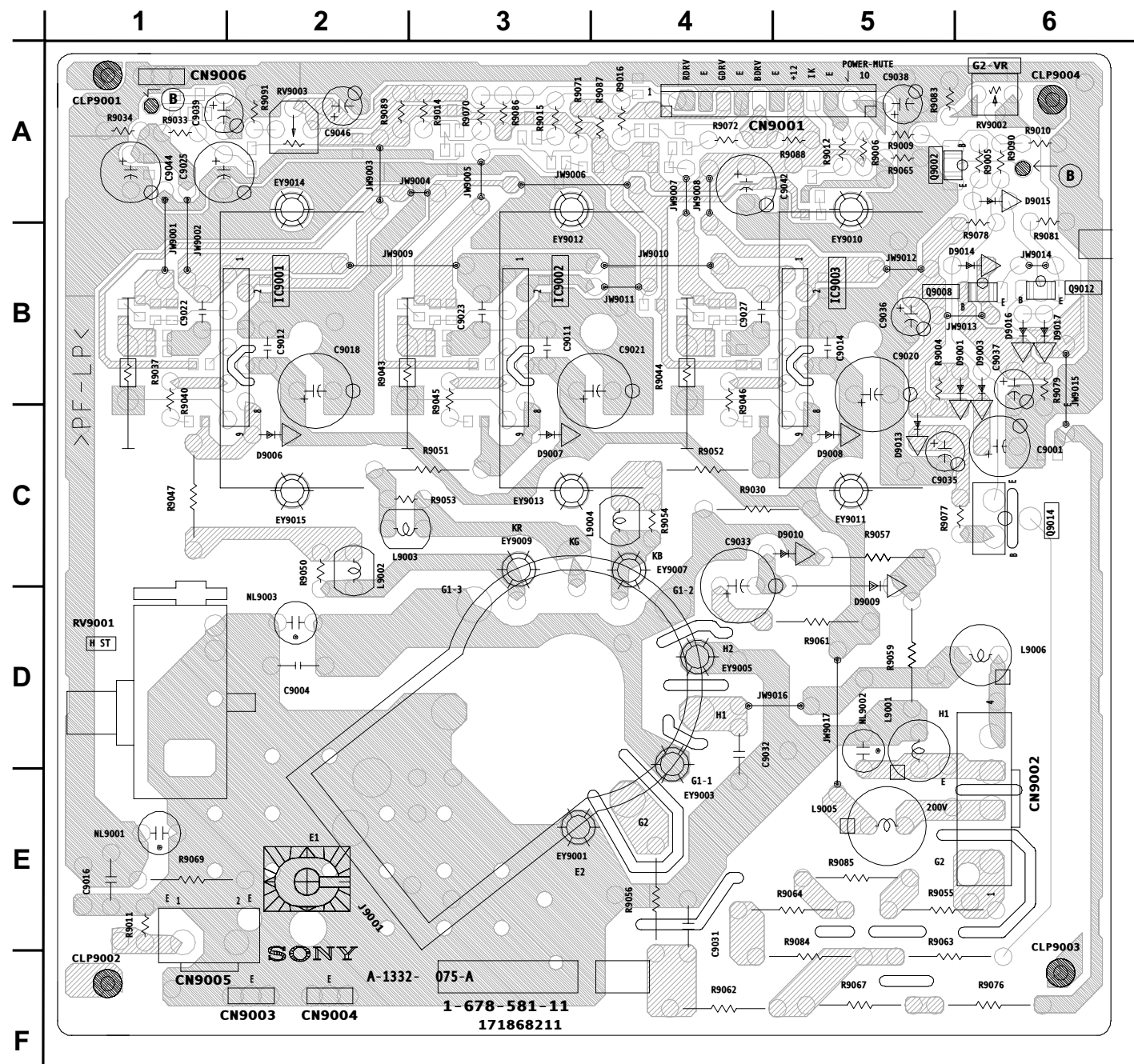
C BOARD WAVEFORMS



C

[TUNER, CRT DRIVE, MAIN UCOM, POWER SUPPLY, AUDIO]

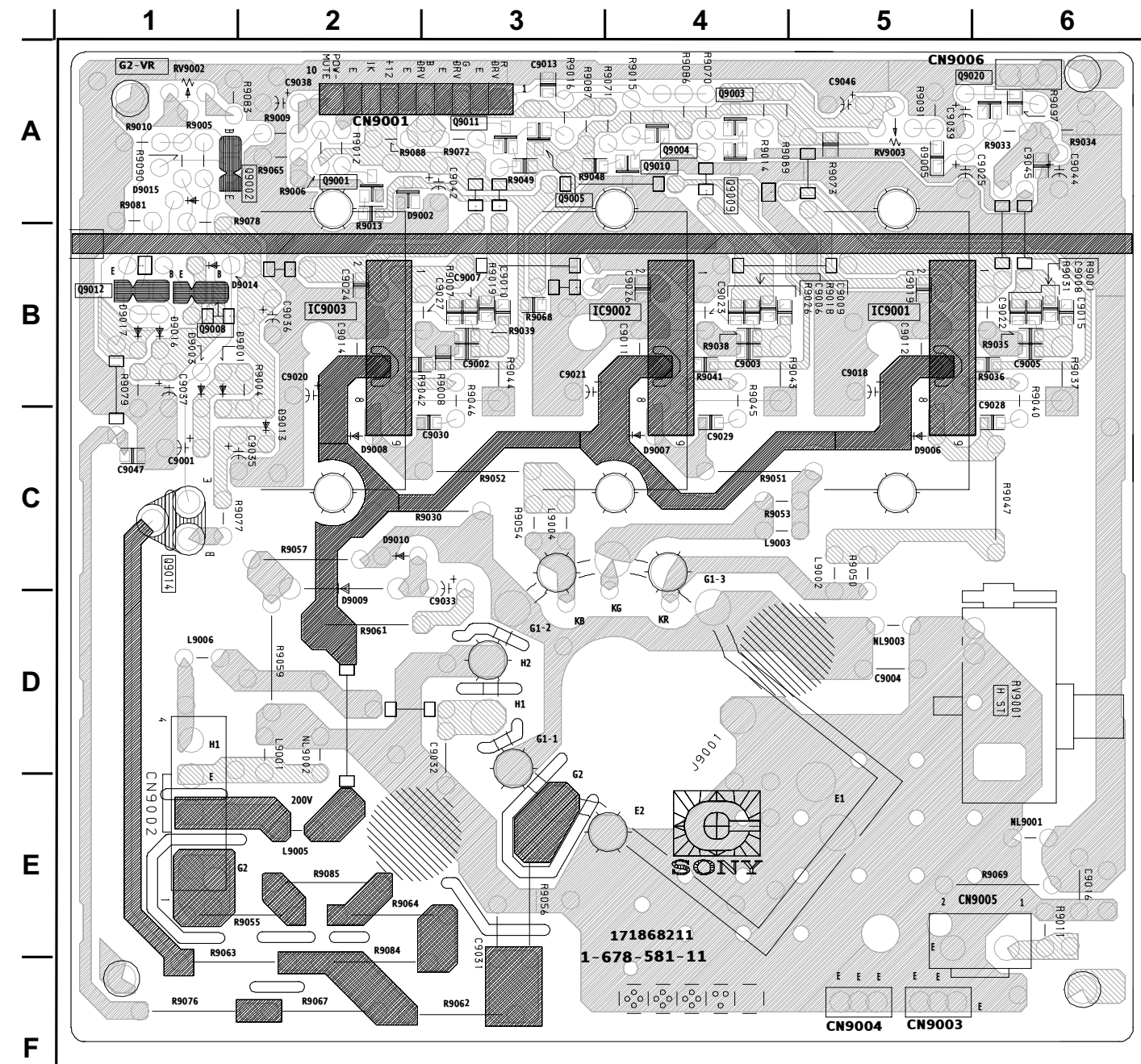
COMPONENT SIDE



C BOARD LOCATOR LIST (COMPONENT SIDE)

DIODE	D9016	B-6	
D9001	B-6	D9017	B-6
D9003	B-6	IC	
D9007	C-3	IC9001	B-2
D9008	C-5	IC9002	B-3
D9009	D-5	IC9003	B-5
D9010	C-5	TRANSISTOR	
D9013	C-5	Q9002	A-5
D9014	B-6	Q9014	C-6
D9015	A-6		

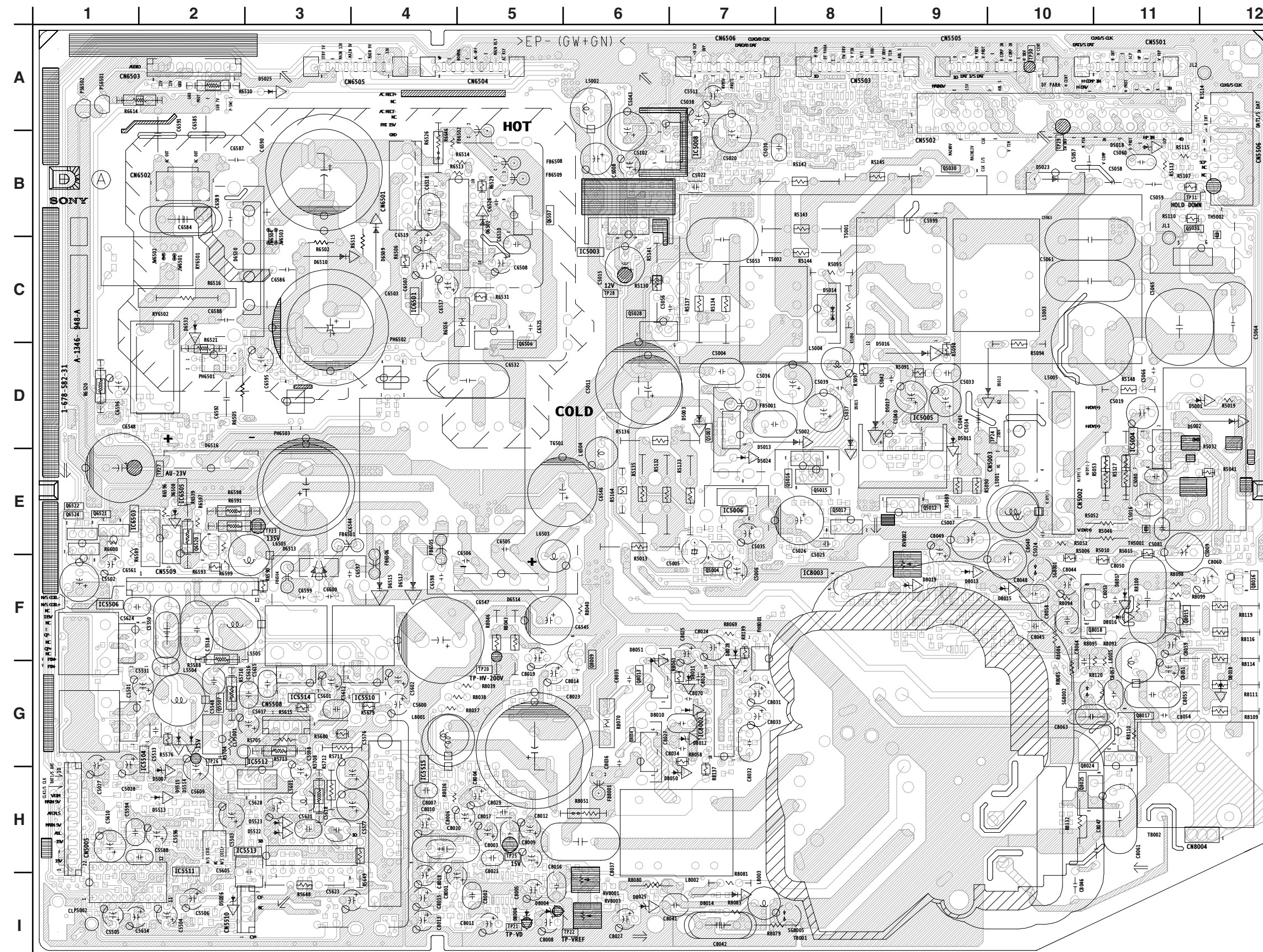
CONDUCTOR SIDE



C BOARD LOCATOR LIST (CONDUCTOR SIDE)

DIODE	Q9004	A-4	
D9002	A-2	Q9005	A-3
D9005	A-5	Q9008	B-1
D9006	C-5	Q9009	A-4
TRANSISTOR		Q9010	A-4
Q9001	A-2	Q9011	A-3
Q9003	A-4	Q9012	B-1

COMPONENT SIDE

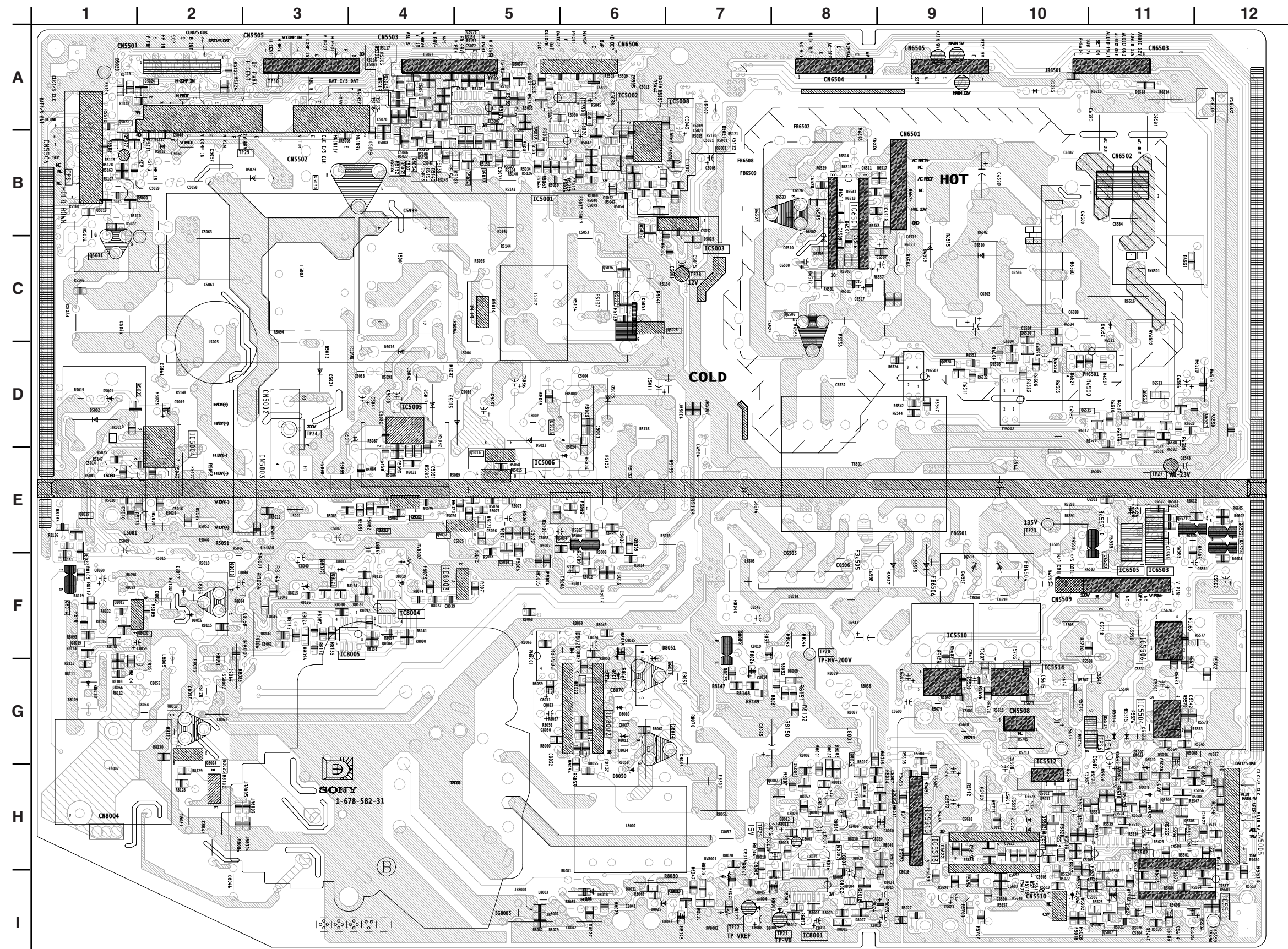


**D BOARD LOCATOR LIST
(COMPONENT SIDE)**

DIODE		IC	
D5001	D-12	IC5004	D-11
D5002	D-12	IC5005	D-9
D5003	D-7	IC5006	E-7
D5006	I-2	IC5504	H-2
D5007	H-2	IC5506	F-1
D5011	D-9	IC5510	G-4
D5012	D-10	IC5511	I-2
D5013	D-7	IC5512	H-3
D5014	C-8	IC5513	H-3
D5015	D-8	IC5514	G-3
D5016	C-9	IC5515	H-4
D5017	D-9	IC6501	C-4
D5018	B-11	IC6503	E-2
D5023	B-10	IC6505	E-2
D5024	E-7	IC8002	G-7
D5025	A-3	IC8003	F-8
D5513	H-2	TRANSISTOR	
D5514	H-2	Q5003	D-7
D5515	H-2	Q5004	F-7
D5522	H-3	Q5030	B-9
D5523	H-3	Q5031	B-11
D6502	C-5	Q5507	G-2
D6508	E-2	Q6507	B-5
D6509	C-4	Q6521	E-1
D6510	C-3	Q6522	E-1
D6513	F-3	Q6524	E-1
D6514	G-6	Q8009	G-6
D6515	F-4	Q8013	G-6
D6516	D-2	Q8014	G-6
D6517	F-4	Q8015	F-11
D6532	C-2	Q8018	F-11
D8004	I-5		
D8006	I-5		
D8017	F-11		
D8018	G-12		
D8019	F-9		
D8025	I-6		

D [POWER SUPPLY, AC RECT, H/V DRIVE, H/V DY, DEFLECTION]

CONDUCTOR SIDE



**D BOARD LOCATOR LIST
(CONDUCTOR SIDE)**

DIODE		D8021	I-6	Q5033	B-4
D5004	E-6	D8022	G-6	Q5034	B-4
D5005	F-6	D8026	G-5	Q5035	B-4
D5008	H-12	D8027	G-8	Q5036	B-5
D5009	H-12	IC		Q5037	A-5
D5010	H-11	IC5001	B-5	Q5501	H-10
D5019	B-3	IC5002	A-6	Q5502	H-10
D5021	B-6	IC5003	C-7	Q5503	H-10
D5026	B-4	IC5007	A-5	Q5504	H-11
D5027	B-4	IC5008	A-7	Q5505	H-11
D5028	B-4	IC5501	A-6	Q5506	H-12
D5029	C-7	IC5502	H-11	Q5508	H-11
D5031	H-10	IC8001	I-8	Q5509	H-11
D5032	E-4	IC8004	F-4	Q6503	D-10
D5501	I-12	TRANSISTOR		Q6506	D-7
D5502	I-11	Q5001	B-7	Q6520	F-11
D5503	I-12	Q5002	B-7	Q6526	C-10
D5505	A-6	Q5005	D-2	Q6527	D-11
D5506	H-11	Q5006	I-11	Q6528	D-9
D5507	B-5	Q5007	I-11	Q6529	D-11
D6501	D-11	Q5008	G-12	Q6530	D-11
D6507	B-8	Q5011	A-6	Q6531	D-10
D6522	E-11	Q5012	E-4	Q6532	D-11
D6530	C-10	Q5013	E-4	Q8001	H-8
D6531	C-11	Q5014	E-4	Q8002	H-8
D6533	D-11	Q5015	E-5	Q8003	H-8
D6537	E-11	Q5016	E-5	Q8004	H-8
D8002	I-8	Q5017	E-4	Q8007	H-8
D8003	I-8	Q5018	B-5	Q8008	I-8
D8005	I-8	Q5019	B-1	Q8010	I-7
D8007	I-8	Q5020	B-2	Q8016	F-1
D8009	G-7	Q5021	B-2	Q8019	F-1
D8010	G-6	Q5022	B-2	Q8020	F-2
D8013	F-4	Q5023	A-4	Q8022	F-4
D8014	I-6	Q5026	C-6	Q8023	F-4
D8016	F-2	Q5027	C-6		
D8020	I-7	Q5028	C-7		

D BOARD IC VOLTAGE LIST (1 OF 3)

IC6501		11	0.0	3	2.5
pin	volt	12	4.6	4	11.8
1	2.5	13	N/C	5	GND
2	1.8	14	163.6	IC6505	
3	2.2	15	153.5	pin	volt
4	2.5	16	157.6	1	134.9
5	GND	17	N/C	2	15.7
6	0.0	18	1.7	3	GND
7	4.0	IC6503		All voltages are in V.	
8	17.2	pin	volt		
9	GND	1	134.0		
10	10.4	2	N/C		

D BOARD TRANSISTOR VOLTAGE LIST (1 OF 3)

	B	C	E
Q6503	0.0	2.5	0.0
Q6520	131.0	0.0	132.0
Q6521	0.0	2.1	GND
Q6522	15.7	GND	15.7
Q6524	2.1	0.4	4.9
Q6526	5.9	0.0	5.9
Q6527	0.6	0.0	0.0
Q6528	0.6	0.0	0.0
Q6529	0.0	5.9	0.0
Q6530	4.7	0.0	4.7
Q6531	0.6	0.0	GND
Q6532	0.0	4.7	GND

	D	G	S
Q6506	4.7	149.2	0.0
Q6507	154.4	303.3	150.0

All voltages are in V.

D BOARD IC VOLTAGE LIST (2 OF 3)

IC5001		5	0.2	14	0.6	12	GND	6	4.2	8	5.0
pin	volt	6	16.2	IC5008		13	3.7	7	GND	9	5.0
1	11.0	7	1.2	pin	volt	14	0.0	8	4.2	10	12.1
2	11.0	IC5005		1	9.1	IC5504		9	1.9	11	4.0
3	1.7	pin	volt	2	12.0	pin	volt	10	4.4	12	5.0
4	GND	1	100.0	3	GND	1	4.2	11	4.4	13	5.0
5	4.0	2	99.7	4	5.0	2	4.2	12	6.4	14	0.5
6	4.0	3	95.3	5	5.2	3	GND	13	N/C	15	1.1
7	5.9	4	100.0	IC5501		4	5.5	14	8.2	16	4.6
8	12.1	5	104.6	pin	volt	5	9.0	15	1.9	17	4.6
IC5002		IC5006		1	GND	IC5506		16	4.0	18	GND
pin	volt	pin	volt	2	5.0	pin	volt	17	4.9	IC5514	
1	0.1	I	7.8	3	5.0	1	4.3	18	N/C	pin	volt
2	6.0	G	GND	4	GND	2	4.3	19	3.6	1	0.3
3	3.8	O	6.3	5	4.6	3	-15.5	20	9.0	2	0.3
4	GND	VCC	2.7	6	4.6	4	4.4	21	0.9	3	-12.0
5	2.3	IC5007		7	5.0	5	9.0	22	3.4	4	0.7
6	3.7	pin	volt	8	5.0	IC5510		IC5512		5	9.0
7	2.9	1	3.1	IC5502		pin	volt	pin	volt	IC5515	
8	12.1	2	0.6	pin	volt	1	0.6	I	-15.8	pin	volt
IC5003		3	12.1	1	5.4	2	0.6	G	GND	1	3.4
pin	volt	4	1.5	2	2.4	3	-11.9	O	-12.0	2	3.4
I	15.6	5	2.3	3	12.1	4	2.4	IC5513		3	-9.6
G	GND	6	3.9	4	3.6	5	12.1	pin	volt	4	-15.3
O	12.1	7	2.8	5	3.4	IC5511		1	4.5	5	GND
IC5004		8	0.0	6	3.4	pin	volt	2	4.9	6	12.0
pin	volt	9	3.0	7	3.9	1	4.6	3	4.9	7	-14.0
1	1.2	10	1.4	8	1.0	2	4.6	4	4.6	8	2.7
2	15.6	11	6.1	9	1.0	3	4.0	5	5.0	9	GND
3	-12.6	12	GND	10	0.0	4	4.2	6	5.0	All voltages are in V.	
4	-14.5	13	2.5	11	0.0	5	9.0	7	N/C		

D BOARD TRANSISTOR VOLTAGE LIST (2 OF 3)

	B	C	E		B	C	E		B	C	E		B	C	E
Q5001	2.9	12.0	3.3	Q5014	6.6	12.1	6.1	Q5027	5.2	0.0	5.2	Q5505	0.0	4.2	GND
Q5002	2.9	GND	3.3	Q5015	202.8	212.4	203.2	Q5030	132.0	0.0	GND	Q5506	0.3	3.6	GND
Q5003	127.4	134.1	23.3	Q5016	203.2	212.4	202.6	Q5033	10.0	1.4	10.5	Q5508	4.0	12.1	4.6
Q5004	132.0	0.0	133.0	Q5017	6.5	164.8	6.1	Q5034	0.0	1.4	GND	Q5509	4.0	GND	4.6
Q5005	-0.5	15.6	0.1	Q5018	0.6	1.9	GND	Q5035	0.0	2.5	GND	All voltages are in V.			
Q5006	-12.0	1.0	-12.6	Q5019	3.7	12.1	2.9	Q5036	0.1	5.2	GND				
Q5007	4.4	-12.6	4.8	Q5020	3.7	GND	2.9	Q5037	3.1	12.1	GND		D	G	S
Q5008	11.9	0.0	10.7	Q5021	0.4	9.0	0.5	Q5501	2.4	12.1	3.7	Q5028	5.2	33.5	0.0
Q5011	0.1	3.9	GND	Q5022	0.4	GND	1.1	Q5502	0.5	5.4	GND	Q5031	2.9	12.6	GND
Q5012	3.7	97.7	3.2	Q5023	0.4	3.9	GND	Q5503	0.5	2.4	GND	Q5507	5.4	6.9	GND
Q5013	3.1	GND	3.7	Q5026	5.2	12.1	5.2	Q5504	0.0	4.0	GND	All voltages are in V.			

D BOARD IC VOLTAGE LIST (3 OF 3)

IC8001		10	5.0	5	GND	16	99.0	2	0.9
pin	volt	11	0.1	6	0.0	17	N/C	3	0.9
1	0.1	12	GND	7	4.7	18	198.0	4	GND
2	0.0	13	0.1	8	15.6	IC8003		5	7.1
3	15.6	14	0.1	9	0.0	pin	volt	6	7.1
4	5.0	IC8002		10	10.4	1	2.4	7	7.1
5	0.0	pin	volt	11	GND	2	GND	8	15.2
6	5.0	1	1.6	12	4.5	3	11.0	All voltages are in V.	
7	0.0	2	1.8	13	N/C	IC8004			
8	5.0	3	2.2	14	104.8	pin	volt		
9	4.2	4	2.5	15	94.8	1	14.0		

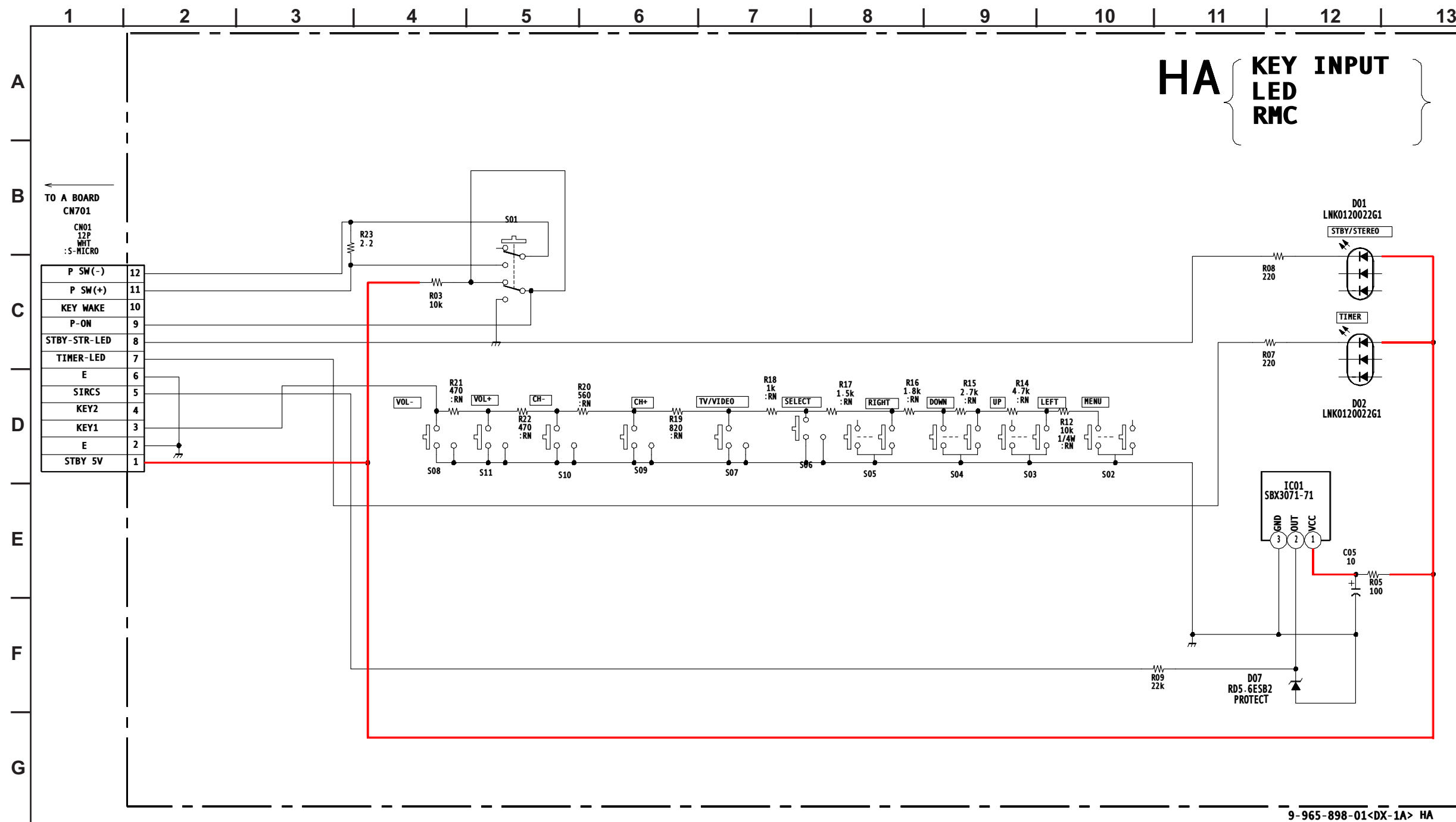
D BOARD TRANSISTOR VOLTAGE LIST (3 OF 3)

	B	C	E
Q8001	0.1	0.0	GND
Q8002	0.0	1.6	GND
Q8003	0.2	1.6	GND
Q8004	0.0	1.6	GND
Q8007	0.6	0.0	GND
Q8008	0.6	0.0	GND
Q8009	196.0	0.0	196.0
Q8010	2.1	0.0	GND
Q8015	0.5	0.0	GND
Q8016	134.5	134.7	135.1
Q8018	-5.5	94.4	GND
Q8019	3.5	0.0	GND
Q8020	0.0	0.5	GND
Q8022	4.6	GND	4.9
Q8023	4.6	15.5	4.9

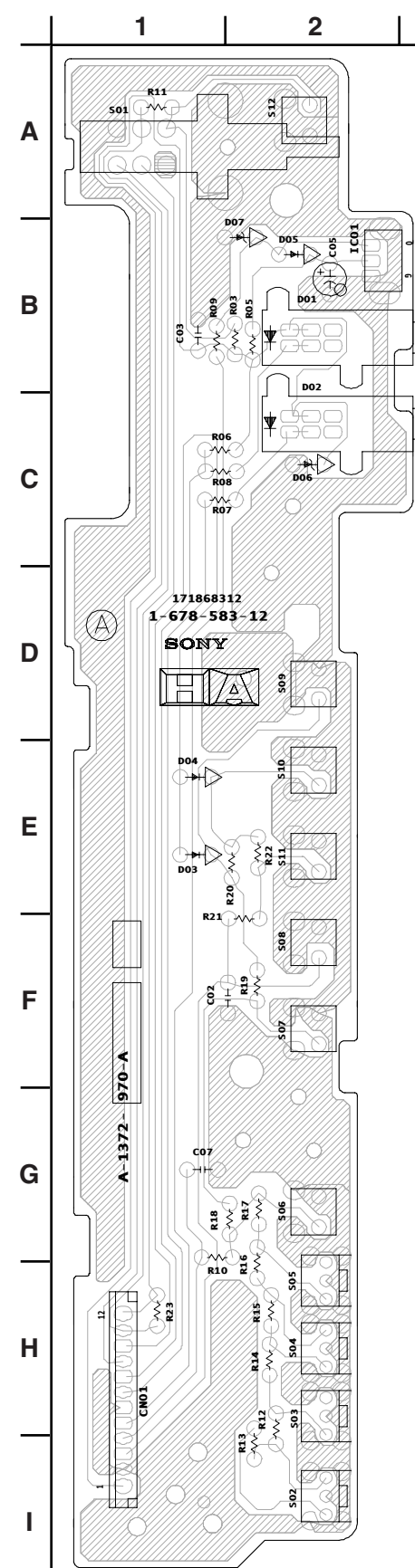
	D	G	S
Q8013	4.6	94.8	GND
Q8014	99.0	198.0	93.2

All voltages are in V.

HA BOARD SCHEMATIC DIAGRAM



HA [KEY INPUT, LED, RMC]

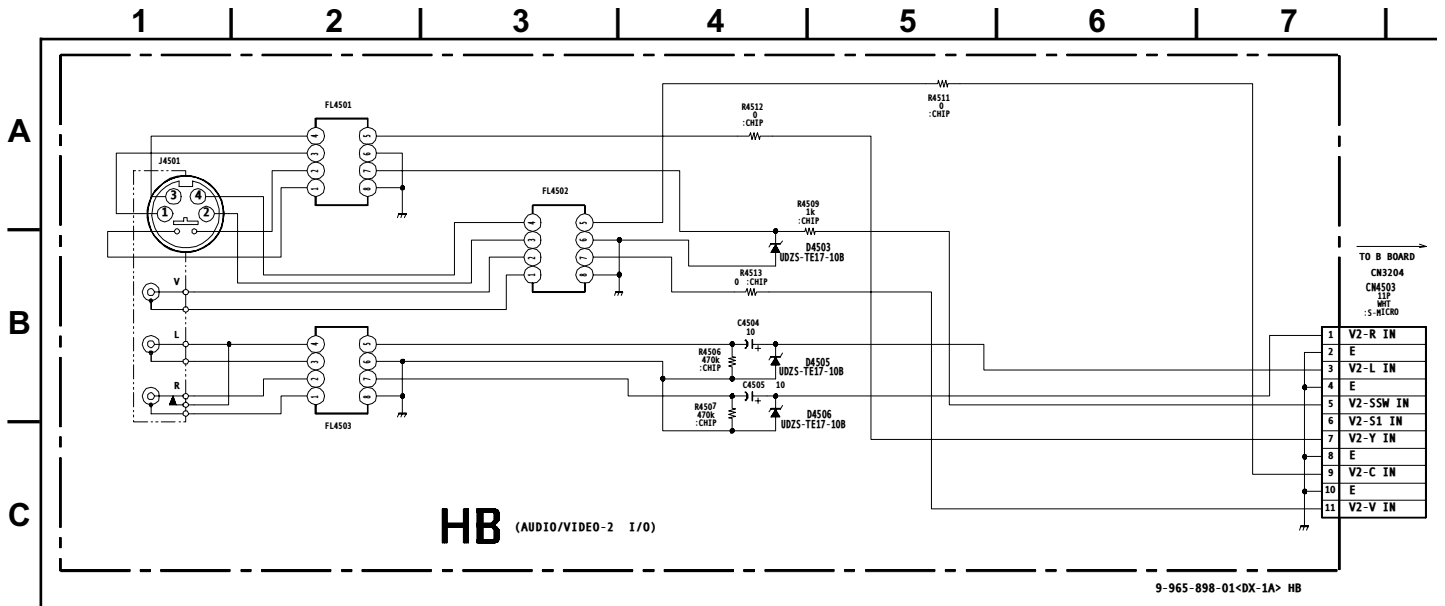


HA BOARD IC VOLTAGE LIST

IC01	
pin	volt
1	4.9
2	0.0
3	4.3

All voltages are in V.

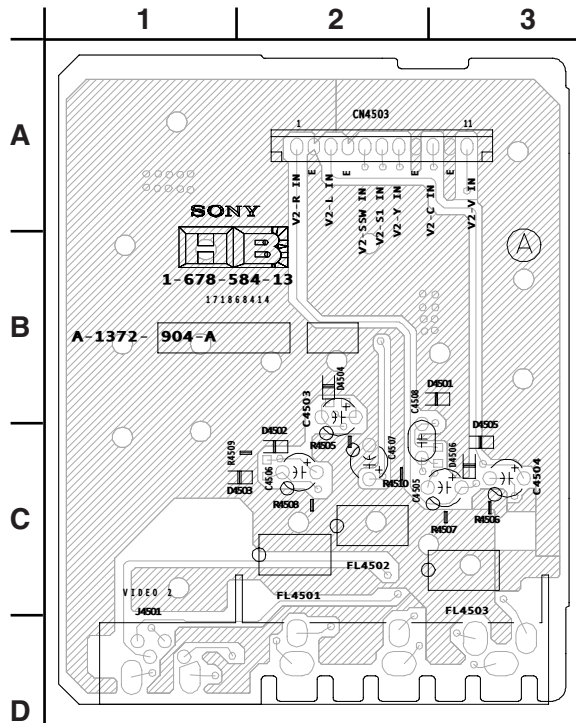
HB BOARD SCHEMATIC DIAGRAM



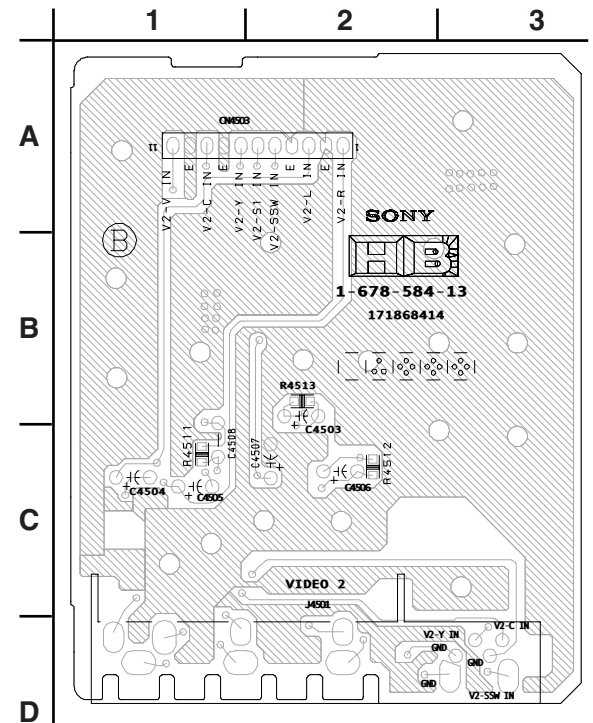
HB

 [AUDIO/VIDEO 2, I/O]

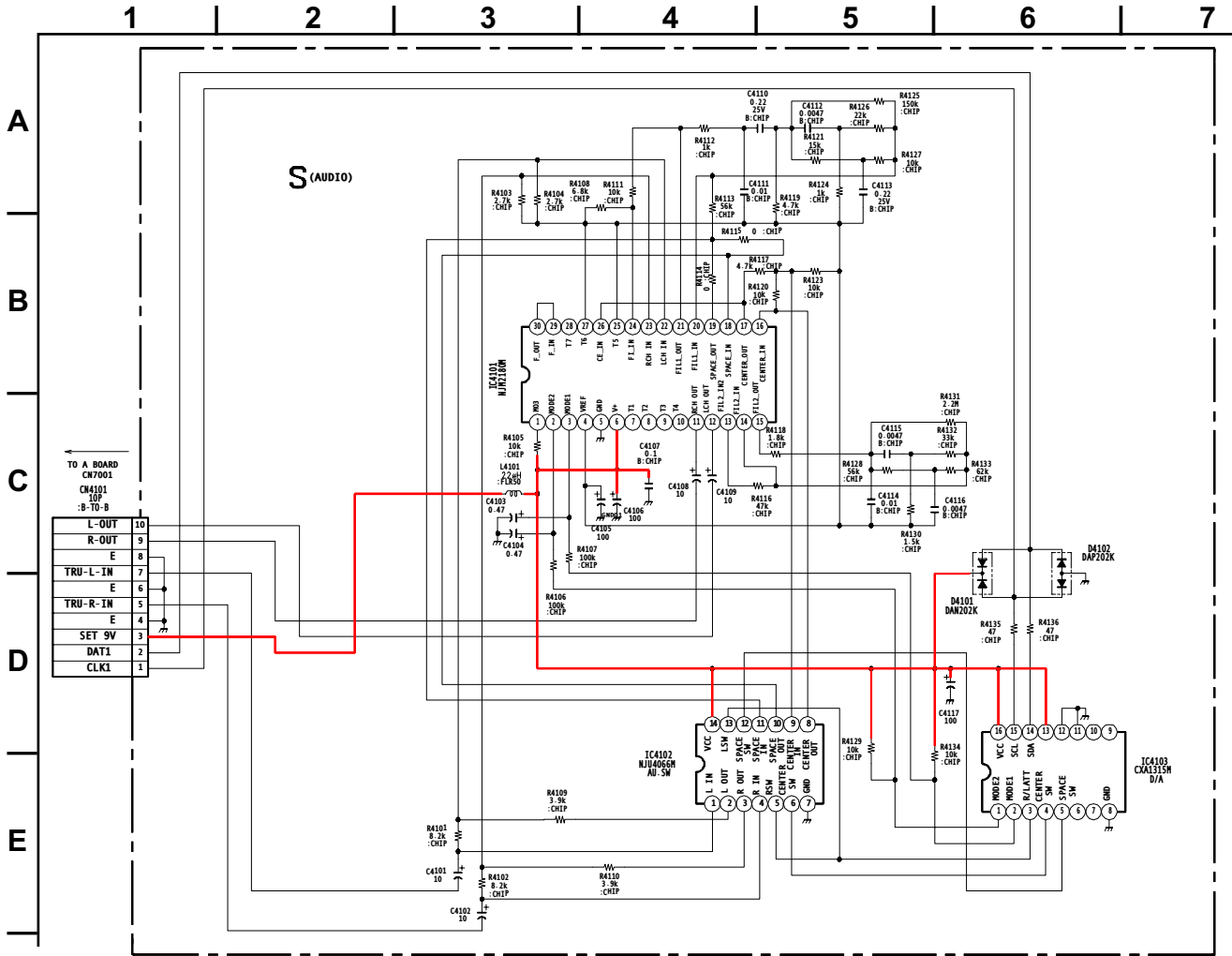
COMPONENT SIDE



CONDUCTOR SIDE



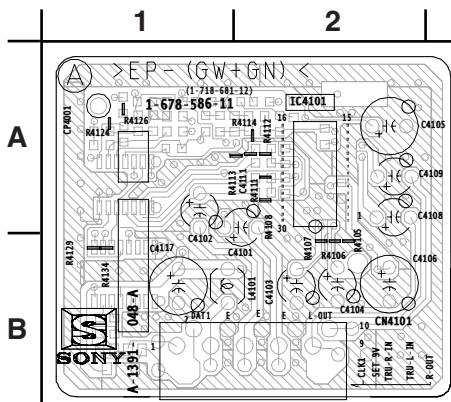
S BOARD SCHEMATIC DIAGRAM



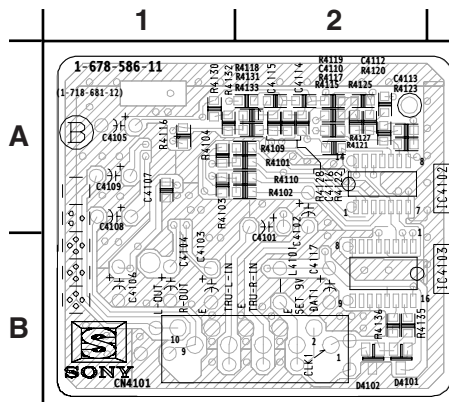
9-965-898-01<DX-1A> S



COMPONENT SIDE



CONDUCTOR SIDE



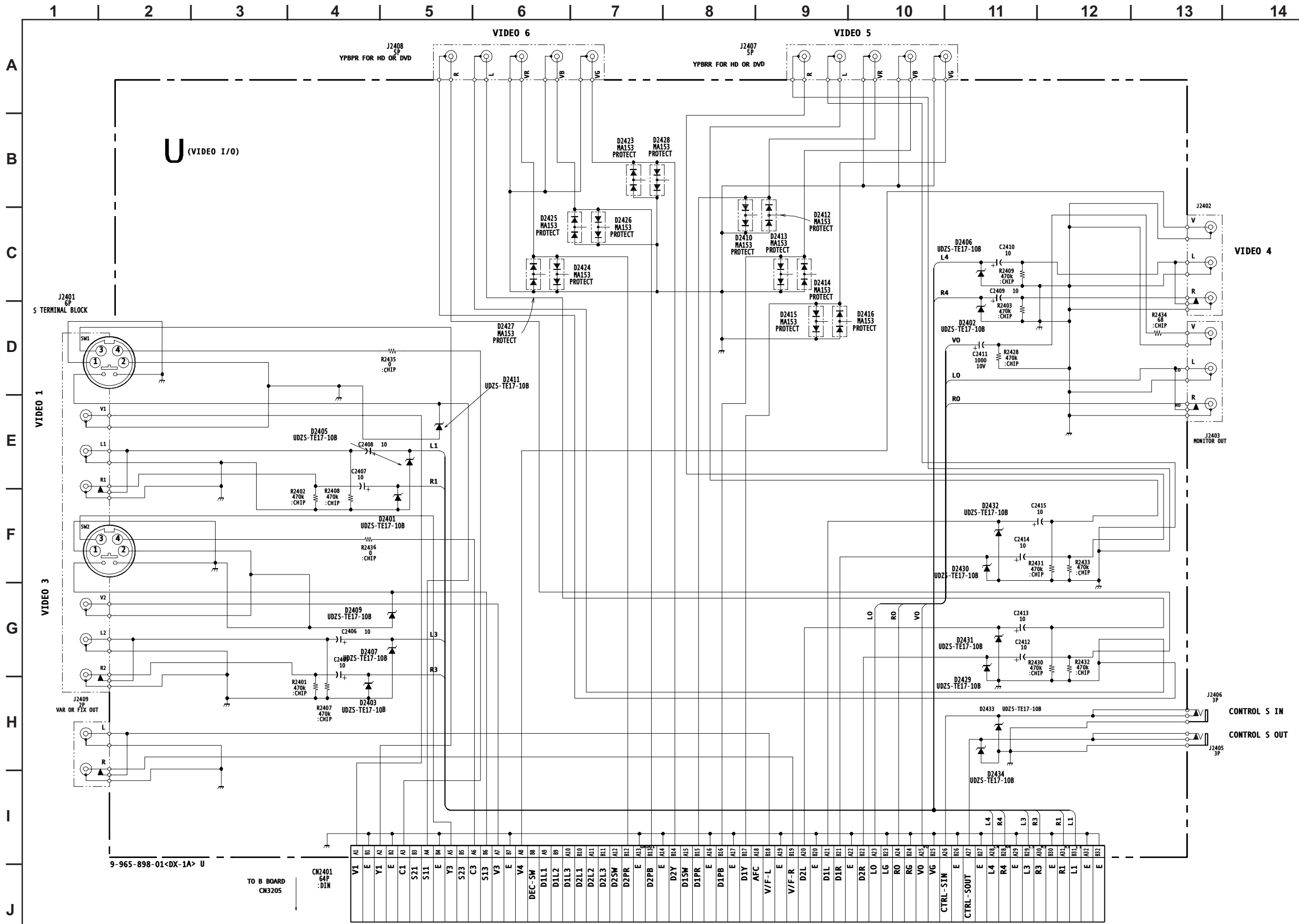
S BOARD IC VOLTAGE LIST

IC4101	pin	volt	IC4102	pin	volt
	22	4.5		13	8.6
	23	4.5		14	9.0
	24	4.5		15	9.0
	25	4.5		16	9.0
	26	4.5		17	4.5
	27	4.5		18	4.5
	28	NC		19	4.5
	29	4.5		20	4.5
	30	4.5		21	4.5
	31	4.5		22	4.5
	32	4.5		23	4.5
	33	4.5		24	4.5
	34	4.5		25	4.5
	35	4.5		26	4.5
	36	4.5		27	4.5
	37	4.5		28	4.5
	38	4.5		29	4.5
	39	4.5		30	4.5
	40	4.5		31	4.5
	41	4.5		32	4.5
	42	4.5		33	4.5
	43	4.5		34	4.5
	44	4.5		35	4.5
	45	4.5		36	4.5
	46	4.5		37	4.5
	47	4.5		38	4.5
	48	4.5		39	4.5
	49	4.5		40	4.5
	50	4.5		41	4.5
	51	4.5		42	4.5
	52	4.5		43	4.5
	53	4.5		44	4.5
	54	4.5		45	4.5
	55	4.5		46	4.5
	56	4.5		47	4.5
	57	4.5		48	4.5
	58	4.5		49	4.5
	59	4.5		50	4.5
	60	4.5		51	4.5
	61	4.5		52	4.5
	62	4.5		53	4.5
	63	4.5		54	4.5
	64	4.5		55	4.5
	65	4.5		56	4.5
	66	4.5		57	4.5
	67	4.5		58	4.5
	68	4.5		59	4.5
	69	4.5		60	4.5
	70	4.5		61	4.5
	71	4.5		62	4.5
	72	4.5		63	4.5
	73	4.5		64	4.5
	74	4.5		65	4.5
	75	4.5		66	4.5
	76	4.5		67	4.5
	77	4.5		68	4.5
	78	4.5		69	4.5
	79	4.5		70	4.5
	80	4.5		71	4.5
	81	4.5		72	4.5
	82	4.5		73	4.5
	83	4.5		74	4.5
	84	4.5		75	4.5
	85	4.5		76	4.5
	86	4.5		77	4.5
	87	4.5		78	4.5
	88	4.5		79	4.5
	89	4.5		80	4.5
	90	4.5		81	4.5
	91	4.5		82	4.5
	92	4.5		83	4.5
	93	4.5		84	4.5
	94	4.5		85	4.5
	95	4.5		86	4.5
	96	4.5		87	4.5
	97	4.5		88	4.5
	98	4.5		89	4.5
	99	4.5		90	4.5
	100	4.5		91	4.5
	101	4.5		92	4.5
	102	4.5		93	4.5
	103	4.5		94	4.5
	104	4.5		95	4.5
	105	4.5		96	4.5
	106	4.5		97	4.5
	107	4.5		98	4.5
	108	4.5		99	4.5
	109	4.5		100	4.5
	110	4.5		101	4.5
	111	4.5		102	4.5
	112	4.5		103	4.5
	113	4.5		104	4.5
	114	4.5		105	4.5
	115	4.5		106	4.5
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	122	4.5		113	4.5
	123	4.5		114	4.5
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	125	4.5		116	4.5
	126	4.5		117	4.5
	127	4.5		118	4.5
	128	4.5		119	4.5
	129	4.5		120	4.5
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	131	4.5		122	4.5
	132	4.5		123	4.5
	133	4.5		124	4.5
	134	4.5		125	4.5
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	138	4.5		129	4.5
	139	4.5		130	4.5
	140	4.5		131	4.5
	141	4.5		132	4.5
	142	4.5		133	4.5
	143	4.5		134	4.5
	144	4.5		135	4.5
	145	4.5		136	4.5
	146	4.5		137	4.5
	147	4.5		138	4.5
	148	4.5		139	4.5
	149	4.5		140	4.5
	150	4.5		141	4.5
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	153	4.5		144	4.5
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	155	4.5		146	4.5
	156	4.5		147	4.5
	157	4.5		148	4.5
	158	4.5		149	4.5
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	165	4.5		156	4.5
	166	4.5		157	4.5
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	172	4.5		163	4.5
	173	4.5		164	4.5
	174	4.5		165	4.5
	175	4.5		166	4.5
	176	4.5		167	4.5
	177	4.5		168	4.5
	178	4.5		169	4.5
	179	4.5		170	4.5
	180	4.5		171	4.5
	181	4.5		172	4.5
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	183	4.5		174	4.5
	184	4.5		175	4.5
	185	4.5		176	4.5
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	187	4.5		178	4.5
	188	4.5		179	4.5
	189	4.5		180	4.5
	190	4.5		181	4.5
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	192	4.5		183	4.5
	193	4.5		184	4.5
	194	4.5		185	4.5
	195	4.5		186	4.5
	196	4.5		187	4.5
	197	4.5		188	4.5
	198	4.5		189	4.5
	199	4.5		190	4.5
	200	4.5		191	4.5
	201	4.5		192	4.5
	202	4.5		193	4.5
	203	4.5		194	4.5
	204	4.5		195	4.5
	205	4.5		196	4.5
	206	4.5		197	4.5
	207	4.5		198	4.5
	208	4.5		199	4.5
	209	4.5		200	4.5
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	211	4.5		202	4.5
	212	4.5		203	4.5

All voltages are in V.

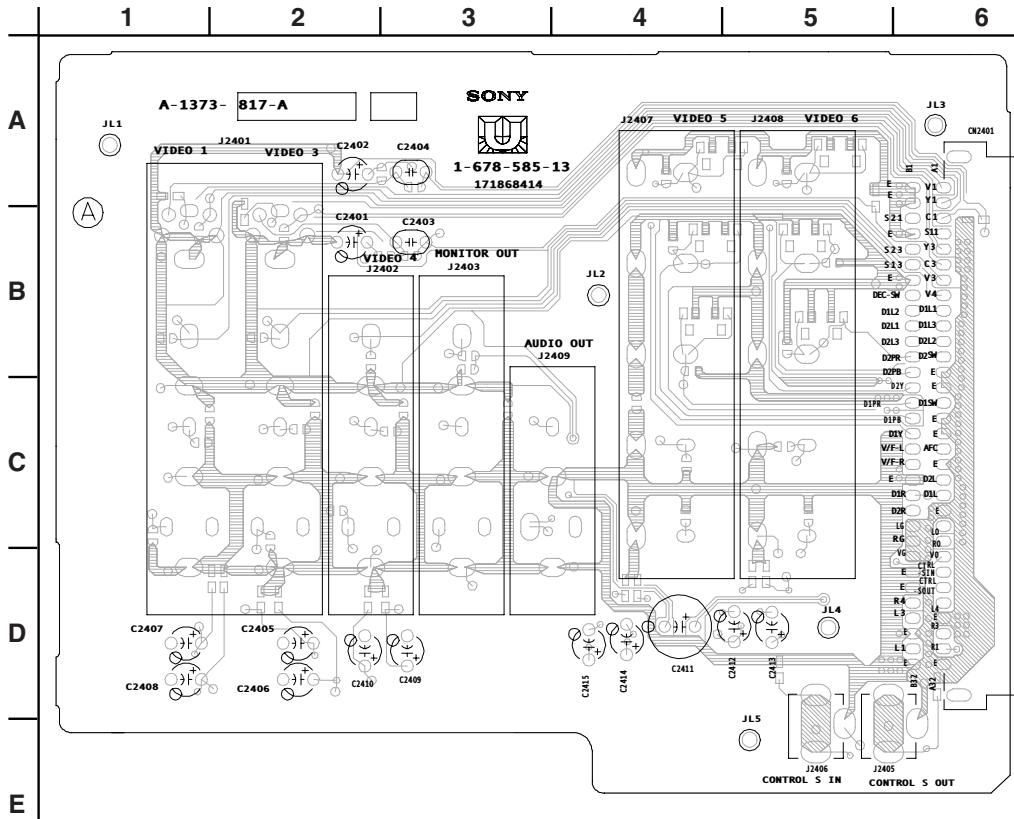
U BOARD SCHEMATIC DIAGRAM

KV-32HS20/36HS20/36HS20H/32XBR450/36XBR450/36XBR450H

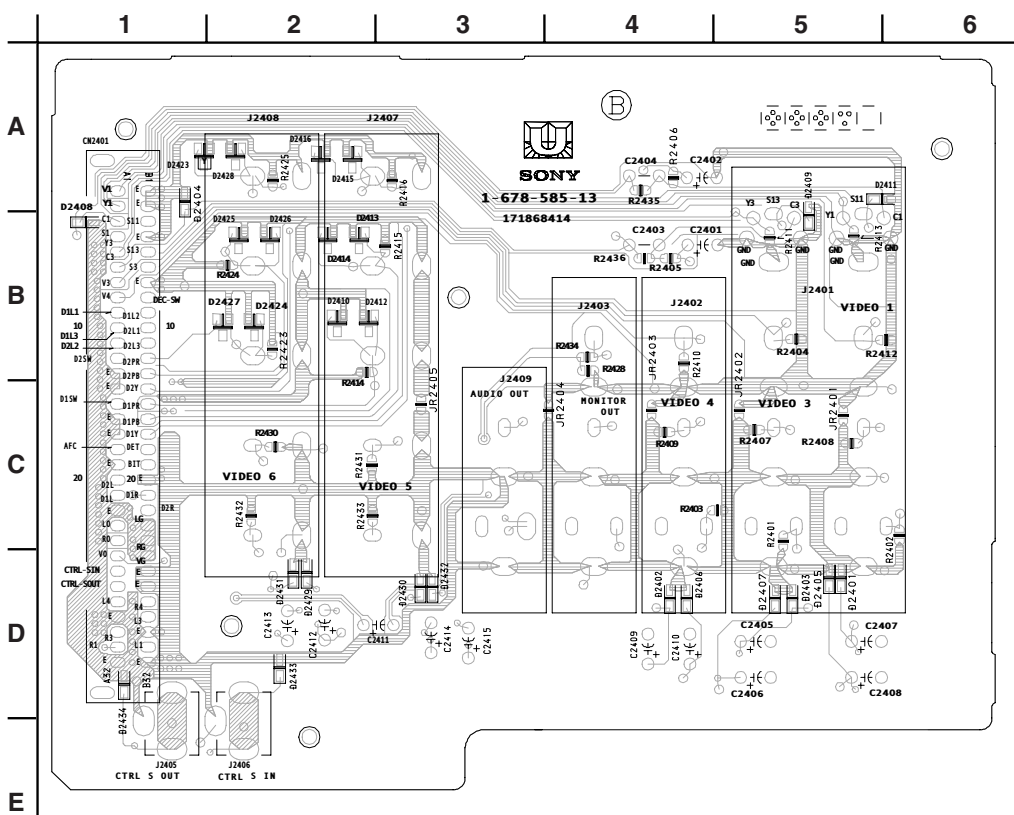


U [VIDEO I/O]

COMPONENT SIDE



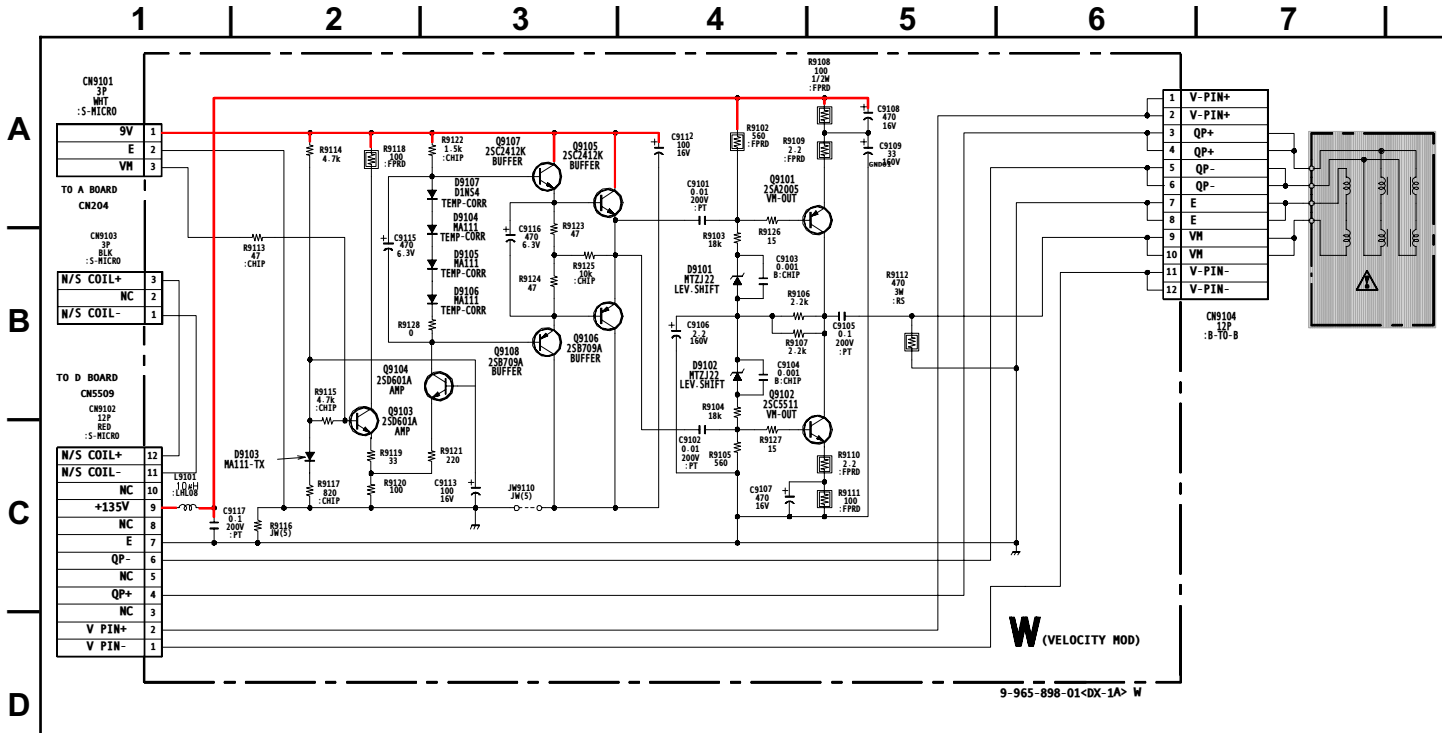
CONDUCTOR SIDE



U BOARD LOCATOR LIST

DIODE		D2416	A-2
D2401	D-5	D2423	A-1
D2402	D-4	D2424	B-2
D2403	D-5	D2425	B-2
D2405	D-5	D2426	B-2
D2406	D-4	D2427	B-2
D2407	D-5	D2428	A-2
D2409	A-5	D2429	D-2
D2410	B-2	D2430	D-3
D2411	A-5	D2431	D-2
D2412	B-2	D2432	D-3
D2413	B-2	D2433	D-2
D2414	B-2	D2434	D-1
D2415	A-2		

W BOARD SCHEMATIC DIAGRAM

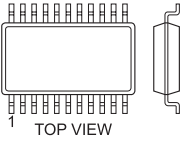
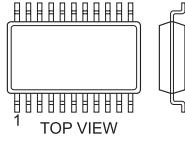
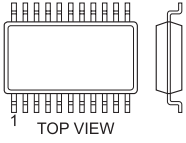
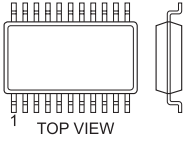
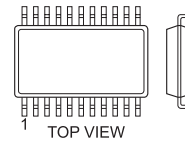
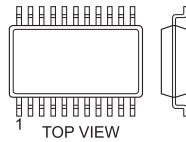
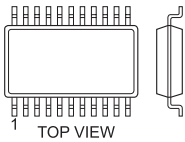
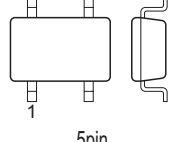
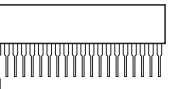
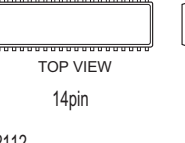

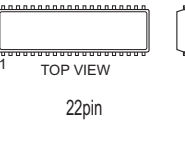
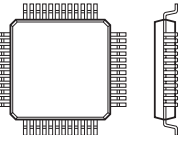
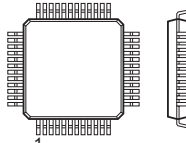
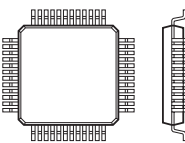
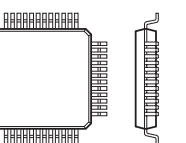
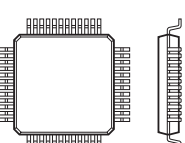
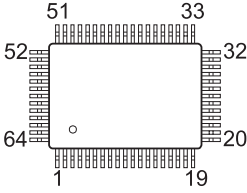
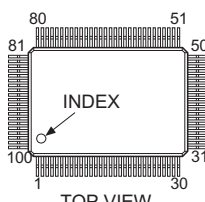
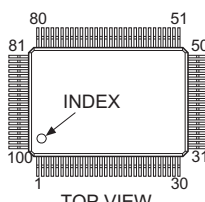


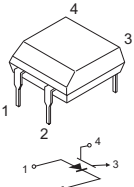
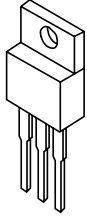
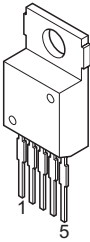
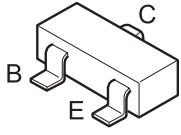
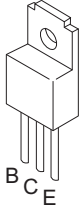
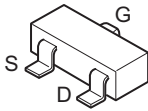
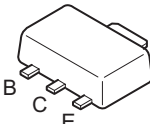
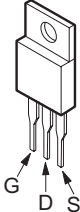
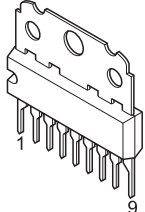
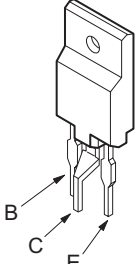
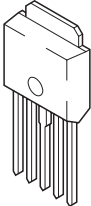
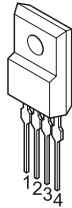
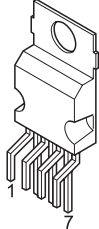
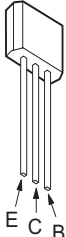
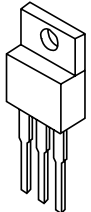
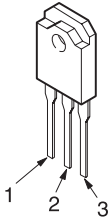
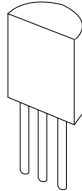
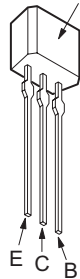
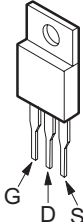
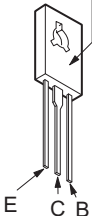
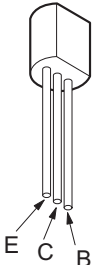
W BOARD TRANSISTOR VOLTAGE LIST

	B	C	E
Q9101	133.8	67.5	134.3
Q9102	1.3	67.5	0.8
Q9103	2.9	0	9.0
Q9104	9.0	5.1	0
Q9105	5.1	9.0	4.7
Q9106	4.1	GND	4.7
Q9107	5.9	9.0	5.1
Q9108	3.5	GND	4.1
Q9109	2.9	GND	3.5

All voltages are in V.

5-4. SEMICONDUCTORS

 <p>8pin</p>	<p>BR24C04F-WE2 BR24C08 NJM2901M-TE2 NJM2903M NJM2904M NJM4558E(TE2) TC7WU04FU(TE12R) TDA2822D</p>	 <p>14pin</p>	 <p>16pin</p>	 <p>28pin</p>
 <p>32pin</p> <p>BH3868AFS-E2</p>	 <p>50pin</p> <p>MSM56V16160F-10TS-K</p>	 <p>86pin</p> <p>MB81F643242B-10FN</p>	 <p>5pin</p> <p>PST9120NL PST9145NL TC7SET08FU(TE85L)</p>	<p>MARKING SIDE VIEW</p>  <p>8pin</p> <p>UPC1406HA</p>
 <p>14pin</p> <p>IR2112</p>	 <p>18pin</p> <p>MCZ3001D</p>	 <p>22pin</p> <p>CXA2026AS</p>	 <p>32pin</p> <p>CXD2073Q-T4</p>	 <p>48pin</p> <p>CXA2103Q CXA2150Q CXD2309Q</p>
 <p>64pin</p> <p>TLC5733AIPM</p>	 <p>208pin</p> <p>CXD2090Q</p>	 <p>240pin</p> <p>CXD9509AQ</p>	 <p>51 33</p> <p>52 32</p> <p>64 20</p> <p>1 19</p> <p>TOP VIEW</p> <p>CXA2069Q</p>	
 <p>81 100</p> <p>80 51</p> <p>50 31</p> <p>INDEX</p> <p>TOP VIEW</p> <p>CXA2150Q</p>		 <p>81 100</p> <p>80 51</p> <p>50 31</p> <p>INDEX</p> <p>TOP VIEW</p> <p>MB94918-DX1MID M306V2ME-102FP</p>		


 <p>PC123FV2</p>	 <p>NJM79M12FA</p>	 <p>LA6500-FA</p>	 <p>DTA114EKA-T146 DTA143EK DTA144EKA-T146 DTC114EK</p> <p>DTC114TKA-T146 DTC143EKA-T146 DTC144EKA-T146 2SA1162-G 2SA1226 2SC1623-L5L6 2SC4081-R 2SD601A-Q 2SD601A-Q-TX 2SD601A-S</p>	
 <p>2SA2005 2SC5511</p>	 <p>2SK1572S</p>	 <p>2SK2036(TE85L)</p>	 <p>IRF614 IRF644 IMB12-140-F153A</p>	 <p>TDA6111Q/N4</p>
 <p>2SC4632LS-CB7</p>	 <p>PQ07VZ012P</p>	 <p>PQ09RD21 PQ05RF21 PQ09RF21 PQ12RF21 PQ30RF21</p>	 <p>STV9379</p>	 <p>2SA1776TV2Q</p>
 <p>UPC2412AHF</p>	 <p>2SC3997S-SONY</p>	 <p>UPC1093J</p>	<p>LETTER SIDE</p>  <p>2SA1175-HFE 2SC3311A-QRSTA</p>	
 <p>IRFI9630GS</p>	<p>LETTER SIDE</p>  <p>2SC2688-LK 2SC3840(3)</p>		 <p>2SA1208S-TP</p>	


SECTION 6: EXPLODED VIEWS

Components not identified by a part number or description are not stocked because they are seldom required for routine service.

The component parts of an assembly are indicated by the reference numbers in the far right column of the parts list and within the dotted lines of the diagram.

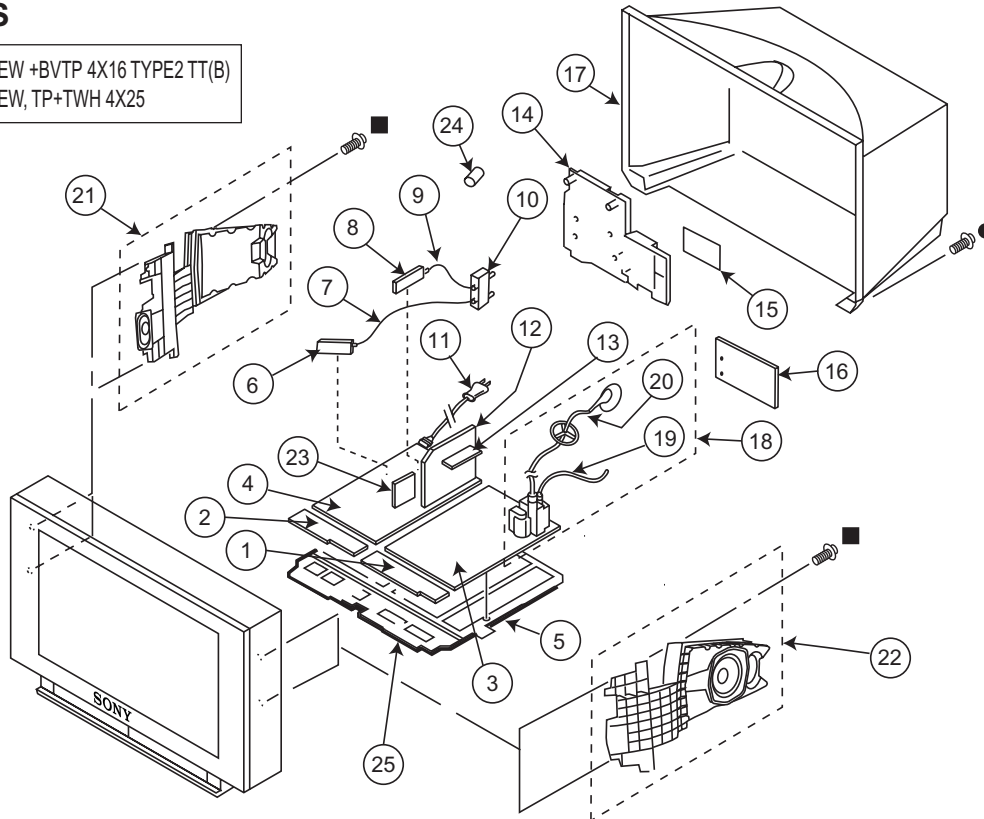
* Items marked with an asterisk are not stocked since they are seldom required for routine service. Expect some delay when ordering these components.








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

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

6-1. CHASSIS

- 7-685-663-79 SCREW +BVTP 4X16 TYPE2 TT(B)
- 4-064-929-02 SCREW, TP+TWH 4X25

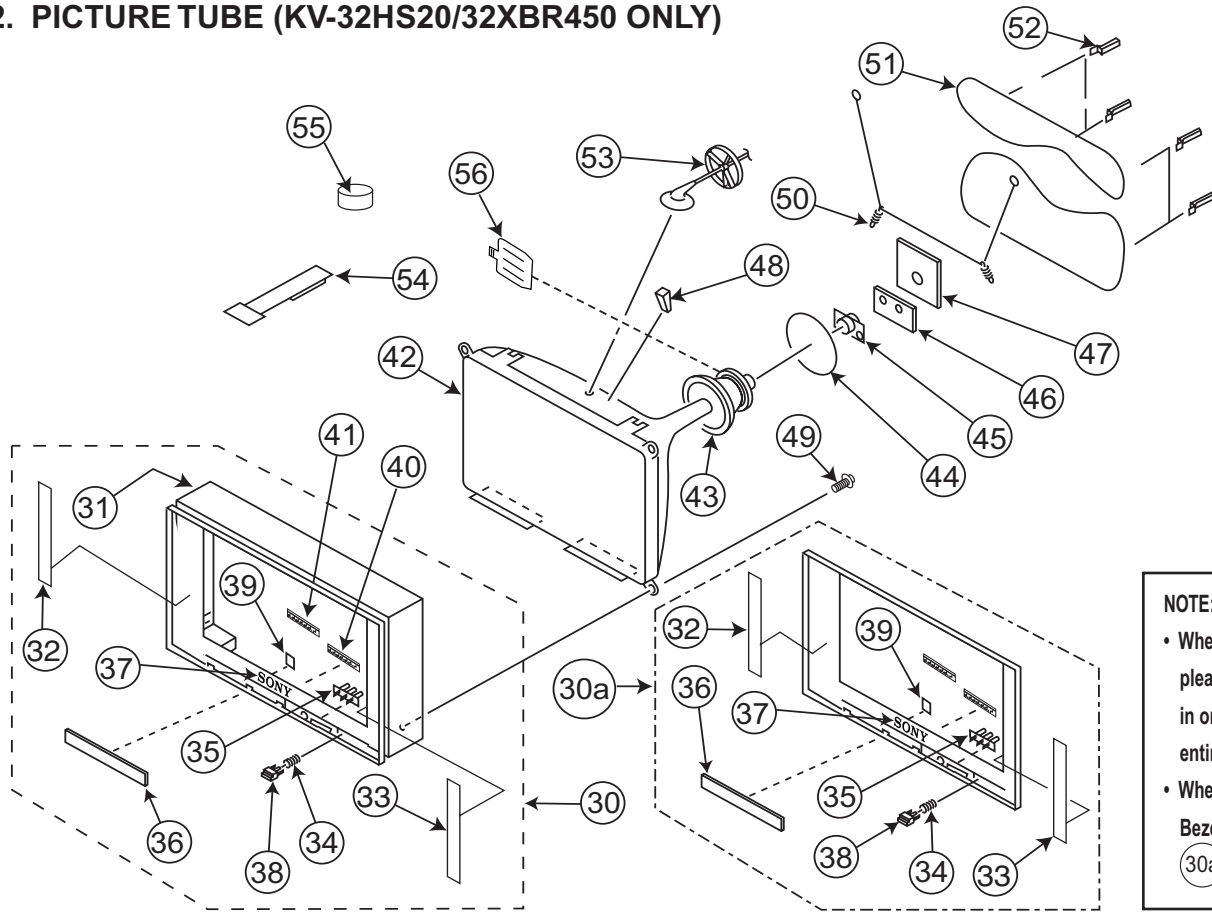


REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION	[Assembly Includes]
* 1	A-1372-970-A	HA BOARD, MOUNTED	15	4-077-820-01	LABEL, TERMINAL	
* 2	A-1372-904-A	HB (COM) BOARD, MOUNTED	* 16	A-1373-817-A	U (COM) BOARD, MOUNTED	
* 3	A-1346-947-A	D BOARD, COMPLETE (KV-32HS20/32XBR450 ONLY) The high voltage leads associated with the FBT on this board are not included and must be ordered separately (see 19-20).	17	4-075-833-01	COVER, REAR (ALL EXCEPT KV-32HS20/32XBR450)	
* 3	A-1346-948-A	D BOARD, COMPLETE (ALL EXCEPT KV-32HS20/32XBR450) The high voltage leads associated with the FBT on this board are not included and must be ordered separately (see 19-20).	17	4-075-821-01	COVER, REAR (KV-32HS20/32XBR450 ONLY)	
* 4	A-1299-481-A	A BOARD, COMPLETE	 18	1-453-346-11	FBT ASSY NX-6000/J1J4	19-20
* 5	4-075-828-01	BRACKET, MAIN	 19	1-900-805-19	WIRE ASSY, FOCUS HV	
 6	8-598-501-30	TUNER (BTF-FA402)	 20	1-251-715-22	CAP ASSY, HIGH-VOLTAGE	
* 7	1-555-400-00	CABLE, PIN	21	1-529-812-31	SPEAKER BOX LEFT (ALL EXCEPT KV-32HS20/32XBR450)	
 8	8-598-542-20	TUNER (BTF-WA412)	21	1-529-811-31	SPEAKER BOX LEFT (KV-32HS20/32XBR450 ONLY)	
* 9	1-557-009-31	CABLE, P-P	22	1-529-812-41	SPEAKER BOX RIGHT (ALL EXCEPT KV-32HS20/32XBR450)	
10	1-771-787-11	SWITCH, RF ANTENNA	22	1-529-811-41	SPEAKER BOX RIGHT (KV-32HS20/32XBR450 ONLY)	
 11	1-790-316-21	CORD, AC POWER(WITH CONNECTOR)	* 23	A-1391-048-A	S BOARD, MOUNTED	
* 12	A-1136-200-A	B BOARD, COMPLETE	24	1-500-386-11	FILTER, CLAMP (FERRITE CORE)	
* 13	A-1136-117-A	BC BOARD, COMPLETE	* 25	4-075-830-02	BRACKET, H	
 14	4-075-829-01	BRACKET, U				

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

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

6-2. PICTURE TUBE (KV-32HS20/32XBR450 ONLY)



NOTE:

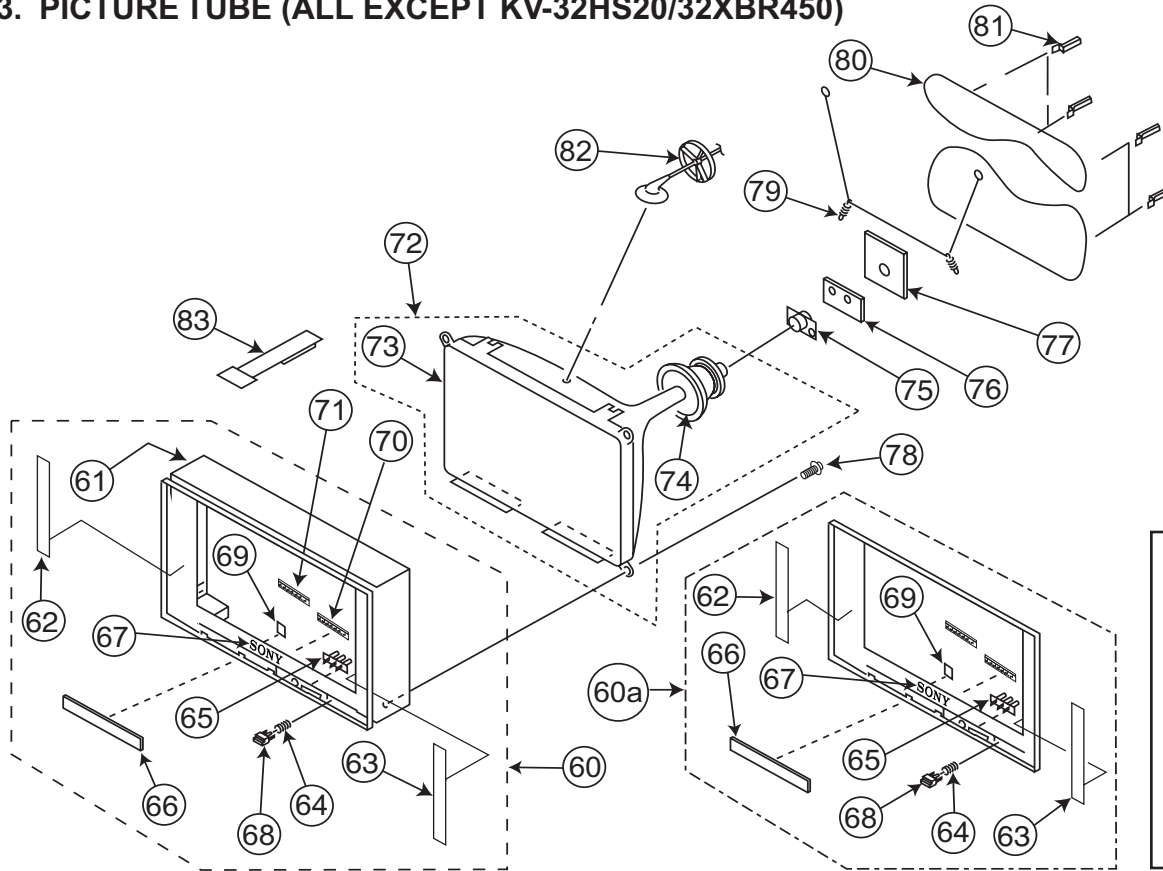
- When replacing the CRT, please order Item (30) in order to replace the entire Beznets.
- When replacing only the Bezel, please order Item (30a) only.

REF.NO.	PART NO.	DESCRIPTION	[Assembly Includes]	REF.NO.	PART NO.	DESCRIPTION	
30	A-1017-303-A	BEZNET COMPLETE ASSY (KV-32XBR450 ONLY)	31-39	38	4-075-824-21	BUTTON, POWER (KV-32XBR450 ONLY)	
30	X-4038-873-1	BEZNET ASSY (KV-32HS20 ONLY)	31-39	38	4-075-824-31	BUTTON, POWER (KV-32HS20 ONLY)	
30a	A-1501-900-A	BEZEL COMPLETE ASSY (KV-32XBR450 ONLY)	32-39	39	4-076-673-02	DAMPER, DOOR	
30a	X-4038-979-1	BEZEL ASSY (KV-32HS20 ONLY)	34-39	40	4-075-825-01	BUTTON, MULTI	
*	31	4-075-820-01	CABINET	41	4-075-826-01	BUTTON, MENU	
32		GRILL, SPEAKER (L) (KV-32XBR450 ONLY)		\triangle 42	8-735-047-05	CRT 34RSN	
33		GRILL, SPEAKER (R) (KV-32XBR450 ONLY)		\triangle 43	8-451-512-21	DY Y34RSC-Y	
34	4-042-593-11	SPRING, COMPRESSION		44	1-451-498-21	COIL, NA ROTATION	
35	4-075-823-01	GUIDE, LED		\triangle 45	8-453-009-21	NA325-M2	
36	4-075-822-21	DOOR, PAINTED (KV-32XBR450 ONLY)		*	46	A-1372-833-A	W BOARD, MOUNTED
36	4-075-822-31	DOOR, PAINTED (KV-32HS20 ONLY)		*	47	A-1332-075-A	C BOARD, MOUNTED
37	3-704-179-01	EMBLEM (NO.9), SONY (KV-32XBR450 ONLY)		48	4-053-005-01	SPACER, DY	
37	3-704-179-02	EMBLEM (NO.9), SONY (KV-32HS20 ONLY)		49	4-046-765-12	SCREW, TAPPING 7+CROWN WASHER	
				50	4-036-329-01	SPRING (B), TENSION	
				\triangle 51	1-416-827-21	COIL, DEGAUSSING	
				52	4-065-895-11	HOLDER, DGC	
				53	3-704-372-71	HOLDER, HV CABLE	
				54	4-062-047-02	PIECE A(110), CONV CORRECT	
				55	1-452-885-11	MAGNET, LANDING	
				56	4-057-714-01	PIECE TLH CONVERGENCE	

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

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

6-3. PICTURE TUBE (ALL EXCEPT KV-32HS20/32XBR450)



NOTE:

- When replacing the CRT, please order Item (60) in order to replace the entire Beznat.
- When replacing only the Bezel, please order Item (60a) only.

REF.NO.	PART NO.	DESCRIPTION	[Assembly Includes]	REF.NO.	PART NO.	DESCRIPTION	[Assembly Includes]
60	A-1017-301-A	BEZNET COMPLETE ASSY (KV-36XBR450/36XBR450H ONLY)	61-69	68	4-075-824-31	BUTTON, POWER (KV-36HS20/36HS20H ONLY)	
60	X-4038-872-1	BEZNET ASSY (KV-36HS20/36HS20H ONLY)	61-69	69	4-076-673-02	DAMPER, DOOR	
60a	A-1501-902-A	BEZEL COMPLETE ASSY (KV-36XBR450/36XBR450H ONLY)	62-69	70	4-075-825-01	BUTTON, MULTI	
60a	X-4038-981-1	BEZEL ASSY (KV-36HS20/36HS20H ONLY)	64-69	71	4-075-826-01	BUTTON, MENU	
61	4-075-832-01	CABINET		⚠ 72	8-735-048-62	ITC 38RSN-C1 (KV-36HS20/36XBR450 ONLY)	73-74
62		GRILL, SPEAKER (L) (KV-36XBR450/36XBR450H ONLY)		⚠ 72	8-735-081-62	ITC 38RSN-C1M (KV-36HS20H/36XBR450H ONLY)	73-74
63		GRILL, SPEAKER (R) (KV-36XBR450/36XBR450H ONLY)		⚠ 73	8-735-048-05	CRT 38RSN (KV-36HS20/36XBR450 ONLY)	
64	4-042-593-11	SPRING, COMPRESSION		⚠ 73	8-735-081-05	CRT 38RSN (KV-36HS20H/36XBR450H ONLY)	
65	4-075-823-01	GUIDE, LED		⚠ 74	8-451-516-11	DY Y38RSC-X	
66	4-075-822-21	DOOR, PAINTED (KV-36XBR450/36XBR450H ONLY)		⚠ 75	8-453-009-21	NA325-M2	
66	4-075-822-31	DOOR, PAINTED (KV-36HS20/36HS20H ONLY)		*	76	A-1372-833-A	W BOARD, MOUNTED
67	3-704-179-81	EMBLEM (NO.9), SONY (KV-36XBR450/36XBR450H ONLY)		*	77	A-1332-075-A	C BOARD, MOUNTED
67	3-704-179-02	EMBLEM (NO.9), SONY (KV-36HS20/36HS20H ONLY)		78	4-046-765-12	SCREW, TAPPING 7+CROWN WASHER	
68	4-075-824-21	BUTTON, POWER (KV-36XBR450/36XBR450H ONLY)		79	4-036-329-01	SPRING (B), TENSION	
				⚠ 80	1-416-828-41	COIL, DEGAUSS	
				81	4-065-895-11	HOLDER, DGC	
				82	3-704-372-71	HOLDER, HV CABLE	
				83	4-062-047-02	PIECE A(110), CONV CORRECT	



REF.NO.	PART NO.	DESCRIPTION	VALUES	REF.NO.	PART NO.	DESCRIPTION	VALUES
	CONNECTOR						
*	CN3500	1-691-632-21	CONNECTOR, BOARD TO BOARD 15P	Q3505	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
	FERRITE BEAD			Q3506	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
FB3500	1-414-234-22	FERRITE	0μH	Q3508	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
FB3501	1-414-234-22	FERRITE	0μH	Q3509	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX	
FB3502	1-414-234-22	FERRITE	0μH	Q3510	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX	
FB3503	1-414-234-22	FERRITE	0μH	Q3511	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
FB3504	1-414-234-22	FERRITE	0μH	Q3512	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
FB3505	1-414-234-22	FERRITE	0μH	Q3513	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
FB3506	1-414-234-22	FERRITE	0μH	Q3514	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX	
FB3507	1-414-234-22	FERRITE	0μH	Q3515	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
FB3508	1-414-234-22	FERRITE	0μH	Q3516	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
FB3509	1-414-234-22	FERRITE	0μH	Q3517	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
	FILTER					RESISTOR	
FL3500	1-239-848-21	FILTER, LOW PASS		R3503	1-216-017-91	RES-CHIP	47 5% 1/10W
FL3501	1-239-848-21	FILTER, LOW PASS		R3504	1-216-295-91	SHORT	
FL3502	1-239-848-21	FILTER, LOW PASS		R3505	1-216-295-91	SHORT	
FL3503	1-239-848-21	FILTER, LOW PASS		R3506	1-216-295-91	SHORT	
FL3504	1-233-512-21	FERRITE	37μH	R3507	1-216-295-91	SHORT	
FL3505	1-233-512-21	FERRITE	37μH	R3508	1-216-295-91	SHORT	
FL3506	1-233-512-21	FERRITE	37μH	R3509	1-216-049-11	RES-CHIP	1K 5% 1/10W
	IC			R3510	1-216-041-00	RES-CHIP	470 5% 1/10W
IC3500	8-759-568-27	IC UPD424210LE-60-E2		R3511	1-216-041-00	RES-CHIP	470 5% 1/10W
IC3501	8-759-594-44	IC UPD64082GF-3BA		R3512	1-216-295-91	SHORT	
IC3502	8-759-583-47	IC UPC2933T-E1		R3514	1-216-025-11	RES-CHIP	100 5% 1/10W
	COIL			R3515	1-216-055-00	RES-CHIP	1.8K 5% 1/10W
L3500	1-414-265-21	INDUCTOR	4.7μH	R3516	1-216-055-00	RES-CHIP	1.8K 5% 1/10W
L3501	1-412-058-11	INDUCTOR	10μH	R3517	1-216-025-11	RES-CHIP	100 5% 1/10W
L3502	1-412-058-11	INDUCTOR	10μH	R3518	1-216-025-11	RES-CHIP	100 5% 1/10W
L3503	1-412-058-11	INDUCTOR	10μH	R3519	1-216-295-91	SHORT	
L3504	1-412-058-11	INDUCTOR	10μH	R3520	1-216-065-91	RES-CHIP	4.7K 5% 1/10W
L3505	1-412-058-11	INDUCTOR	10μH	R3521	1-216-041-00	RES-CHIP	470 5% 1/10W
	TRANSISTOR			R3522	1-216-041-00	RES-CHIP	470 5% 1/10W
Q3500	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX		R3523	1-216-049-11	RES-CHIP	1K 5% 1/10W
Q3501	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX		R3524	1-216-089-91	RES-CHIP	47K 5% 1/10W
Q3502	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX		R3525	1-216-057-00	RES-CHIP	2.2K 5% 1/10W
Q3503	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX		R3526	1-216-105-91	RES-CHIP	220K 5% 1/10W
Q3504	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX		R3527	1-216-033-00	RES-CHIP	220 5% 1/10W
				R3528	1-208-776-11	METAL CHIP	560 0.50% 1/10W
				R3529	1-208-772-11	METAL CHIP	390 0.50% 1/10W
				R3530	1-216-067-00	RES-CHIP	5.6K 5% 1/10W
				R3531	1-216-049-11	RES-CHIP	1K 5% 1/10W
				R3532	1-216-025-11	RES-CHIP	100 5% 1/10W
				R3534	1-216-049-11	RES-CHIP	1K 5% 1/10W



REF.NO.	PART NO.	DESCRIPTION	VALUES			REF.NO.	PART NO.	DESCRIPTION	VALUES			
R3535	1-216-025-11	RES-CHIP	100	5%	1/10W	<div style="border: 1px solid black; padding: 5px; display: inline-block; font-size: 2em; font-weight: bold; margin-bottom: 5px;">B</div> *	A-1136-200-A	B BOARD, COMPLETE				
R3538	1-216-049-11	RES-CHIP	1K	5%	1/10W		CAPACITOR					
R3539	1-216-043-91	RES-CHIP	560	5%	1/10W		C3001	1-128-453-21	ELECT CHIP	47μF	20%	6.3V
R3540	1-216-049-11	RES-CHIP	1K	5%	1/10W		C3002	1-128-453-21	ELECT CHIP	47μF	20%	6.3V
R3541	1-216-067-00	RES-CHIP	5.6K	5%	1/10W		C3003	1-128-453-21	ELECT CHIP	47μF	20%	6.3V
R3542	1-216-043-91	RES-CHIP	560	5%	1/10W		C3004	1-126-206-11	ELECT CHIP	100μF	20%	6.3V
R3543	1-216-049-11	RES-CHIP	1K	5%	1/10W		C3005	1-164-156-11	CERAMIC CHIP	0.1μF		25V
R3544	1-216-049-11	RES-CHIP	1K	5%	1/10W		C3006	1-124-779-00	ELECT CHIP	10μF	20%	16V
R3545	1-216-043-91	RES-CHIP	560	5%	1/10W		C3007	1-125-891-11	CERAMIC CHIP	0.47μF	10%	10V
R3547	1-216-067-00	RES-CHIP	5.6K	5%	1/10W		C3008	1-125-891-11	CERAMIC CHIP	0.47μF	10%	10V
R3548	1-216-295-91	SHORT				C3009	1-164-227-11	CERAMIC CHIP	0.022μF	10%	25V	
R3549	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	C3010	1-164-156-11	CERAMIC CHIP	0.1μF		25V	
R3550	1-208-780-11	METAL CHIP	820	0.50%	1/10W	C3011	1-162-917-11	CERAMIC CHIP	15pF	5%	50V	
R3551	1-216-043-91	RES-CHIP	560	5%	1/10W	C3012	1-164-156-11	CERAMIC CHIP	0.1μF		25V	
R3552	1-216-031-00	RES-CHIP	180	5%	1/10W	C3013	1-104-601-11	ELECT CHIP	10μF	20%	10V	
R3553	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	C3014	1-125-891-11	CERAMIC CHIP	0.47μF	10%	10V	
R3554	1-216-047-91	RES-CHIP	820	5%	1/10W	C3015	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V	
R3555	1-216-075-00	RES-CHIP	12K	5%	1/10W	C3016	1-125-891-11	CERAMIC CHIP	0.47μF	10%	10V	
R3556	1-216-085-91	RES-CHIP	33K	5%	1/10W	C3017	1-124-779-00	ELECT CHIP	10μF	20%	16V	
R3557	1-216-049-11	RES-CHIP	1K	5%	1/10W	C3018	1-164-156-11	CERAMIC CHIP	0.1μF		25V	
R3558	1-216-017-91	RES-CHIP	47	5%	1/10W	C3019	1-164-156-11	CERAMIC CHIP	0.1μF		25V	
R3559	1-216-295-91	SHORT				C3020	1-125-837-91	CERAMIC CHIP	1μF	10%	6.3V	
R3560	1-216-049-11	RES-CHIP	1K	5%	1/10W	C3021	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V	
R3561	1-216-043-91	RES-CHIP	560	5%	1/10W	C3022	1-164-156-11	CERAMIC CHIP	0.1μF		25V	
R3563	1-216-295-91	SHORT				C3023	1-125-891-11	CERAMIC CHIP	0.47μF	10%	10V	
R3564	1-216-295-91	SHORT				C3024	1-125-891-11	CERAMIC CHIP	0.47μF	10%	10V	
R3565	1-216-067-00	RES-CHIP	5.6K	5%	1/10W	C3025	1-125-891-11	CERAMIC CHIP	0.47μF	10%	10V	
R3566	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	C3026	1-125-891-11	CERAMIC CHIP	0.47μF	10%	10V	
R3567	1-216-043-91	RES-CHIP	560	5%	1/10W	C3027	1-125-891-11	CERAMIC CHIP	0.47μF	10%	10V	
R3568	1-216-047-91	RES-CHIP	820	5%	1/10W	C3028	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V	
R3569	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	C3030	1-164-156-11	CERAMIC CHIP	0.1μF		25V	
R3570	1-216-085-91	RES-CHIP	33K	5%	1/10W	C3031	1-164-156-11	CERAMIC CHIP	0.1μF		25V	
R3571	1-216-075-00	RES-CHIP	12K	5%	1/10W	C3032	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V	
R3572	1-216-049-11	RES-CHIP	1K	5%	1/10W	C3033	1-126-206-11	ELECT CHIP	100μF	20%	6.3V	
R3573	1-216-017-91	RES-CHIP	47	5%	1/10W	C3034	1-164-156-11	CERAMIC CHIP	0.1μF		25V	
R3588	1-216-043-91	RES-CHIP	560	5%	1/10W	C3035	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V	
R3589	1-216-105-91	RES-CHIP	220K	5%	1/10W	C3036	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V	
CRYSTAL						C3037	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V	
X3500	1-767-606-11	VIBRATOR, CRYSTAL				C3039	1-124-779-00	ELECT CHIP	10μF	20%	16V	
						C3040	1-124-779-00	ELECT CHIP	10μF	20%	16V	



REF.NO.	PART NO.	DESCRIPTION	VALUES			REF.NO.	PART NO.	DESCRIPTION	VALUES		
C3041	1-162-964-11	CERAMIC CHIP	0.001μF	10%	50V	C3092	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3043	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3093	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3044	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V	C3094	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3045	1-124-779-00	ELECT CHIP	10μF	20%	16V	C3096	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V
C3046	1-164-004-11	CERAMIC CHIP	0.1μF	10%	25V	C3097	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3047	1-164-004-11	CERAMIC CHIP	0.1μF	10%	25V	C3098	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3048	1-163-038-91	CERAMIC CHIP	0.1μF		25V	C3099	1-162-919-11	CERAMIC CHIP	22pF	5%	50V
C3049	1-164-004-11	CERAMIC CHIP	0.1μF	10%	25V	C3113	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3050	1-164-004-11	CERAMIC CHIP	0.1μF	10%	25V	C3114	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V
C3051	1-162-917-11	CERAMIC CHIP	15pF	5%	50V	C3115	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V
C3054	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3116	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V
C3055	1-124-779-00	ELECT CHIP	10μF	20%	16V	C3117	1-126-603-11	ELECT CHIP	4.7μF	20%	35V
C3056	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3120	1-126-206-11	ELECT CHIP	100μF	20%	6.3V
C3057	1-126-603-11	ELECT CHIP	4.7μF	20%	35V	C3127	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V
C3059	1-126-206-11	ELECT CHIP	100μF	20%	6.3V	C3128	1-162-916-11	CERAMIC CHIP	12pF	5%	50V
C3060	1-126-204-11	ELECT CHIP	47μF	20%	16V	C3129	1-125-891-11	CERAMIC CHIP	0.47μF	10%	10V
C3061	1-125-891-11	CERAMIC CHIP	0.47μF	10%	10V	C3130	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
C3062	1-126-204-11	ELECT CHIP	47μF	20%	16V	C3131	1-125-891-11	CERAMIC CHIP	0.47μF	10%	10V
C3063	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3132	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V
C3064	1-117-681-11	ELECT CHIP	100μF	20%	16V	C3133	1-125-838-11	CERAMIC CHIP	2.2μF	10%	6.3V
C3066	1-126-204-11	ELECT CHIP	47μF	20%	16V	C3134	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V
C3067	1-164-004-11	CERAMIC CHIP	0.1μF	10%	25V	C3135	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3068	1-164-004-11	CERAMIC CHIP	0.1μF	10%	25V	C3136	1-107-823-11	CERAMIC CHIP	0.47μF	10%	16V
C3069	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V	C3137	1-125-837-91	CERAMIC CHIP	1μF	10%	6.3V
C3070	1-126-204-11	ELECT CHIP	47μF	20%	16V	C3138	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V
C3071	1-162-916-11	CERAMIC CHIP	12pF	5%	50V	C3139	1-125-891-11	CERAMIC CHIP	0.47μF	10%	10V
C3072	1-125-891-11	CERAMIC CHIP	0.47μF	10%	10V	C3140	1-124-779-00	ELECT CHIP	10μF	20%	16V
C3073	1-126-204-11	ELECT CHIP	47μF	20%	16V	C3141	1-162-917-11	CERAMIC CHIP	15pF	5%	50V
C3074	1-126-204-11	ELECT CHIP	47μF	20%	16V	C3142	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V
C3075	1-164-315-11	CERAMIC CHIP	470pF	5%	50V	C3172	1-124-779-00	ELECT CHIP	10μF	20%	16V
C3076	1-125-891-11	CERAMIC CHIP	0.47μF	10%	10V	C3173	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3078	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V	C3204	1-126-193-11	ELECT CHIP	1μF	20%	50V
C3079	1-125-838-11	CERAMIC CHIP	2.2μF	10%	6.3V	C3205	1-117-681-11	ELECT CHIP	100μF	20%	16V
C3080	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V	C3206	1-125-837-91	CERAMIC CHIP	1μF	10%	6.3V
C3081	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3208	1-125-837-91	CERAMIC CHIP	1μF	10%	6.3V
C3082	1-126-204-11	ELECT CHIP	47μF	20%	16V	C3209	1-124-779-00	ELECT CHIP	10μF	20%	16V
C3083	1-107-823-11	CERAMIC CHIP	0.47μF	10%	16V	C3210	1-125-837-91	CERAMIC CHIP	1μF	10%	6.3V
C3085	1-125-837-91	CERAMIC CHIP	1μF	10%	6.3V	C3211	1-125-837-91	CERAMIC CHIP	1μF	10%	6.3V
C3086	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V	C3212	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V
C3087	1-125-891-11	CERAMIC CHIP	0.47μF	10%	10V	C3213	1-117-681-11	ELECT CHIP	100μF	20%	16V
C3088	1-124-779-00	ELECT CHIP	10μF	20%	16V	C3215	1-126-401-21	ELECT CHIP	1μF	20%	50V
C3089	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V	C3216	1-126-193-11	ELECT CHIP	1μF	20%	50V
C3090	1-126-204-11	ELECT CHIP	47μF	20%	16V	C3218	1-126-193-11	ELECT CHIP	1μF	20%	50V
C3091	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3219	1-126-193-11	ELECT CHIP	1μF	20%	50V



REF.NO.	PART NO.	DESCRIPTION	VALUES			REF.NO.	PART NO.	DESCRIPTION	VALUES		
C3220	1-128-993-21	ELECT CHIP	22μF	20%	10V	C3317	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3221	1-117-681-11	ELECT CHIP	100μF	20%	16V	C3318	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3222	1-124-779-00	ELECT CHIP	10μF	20%	16V	C3319	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3223	1-124-779-00	ELECT CHIP	10μF	20%	16V	C3320	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3224	1-124-779-00	ELECT CHIP	10μF	20%	16V	C3321	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3225	1-124-779-00	ELECT CHIP	10μF	20%	16V	C3322	1-126-204-11	ELECT CHIP	47μF	20%	16V
C3226	1-124-779-00	ELECT CHIP	10μF	20%	16V	C3323	1-124-779-00	ELECT CHIP	10μF	20%	16V
C3227	1-124-779-00	ELECT CHIP	10μF	20%	16V	C3324	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3229	1-117-681-11	ELECT CHIP	100μF	20%	16V	C3325	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3235	1-124-779-00	ELECT CHIP	10μF	20%	16V	C3326	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3236	1-124-779-00	ELECT CHIP	10μF	20%	16V	C3327	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3237	1-117-681-11	ELECT CHIP	100μF	20%	16V	C3328	1-124-779-00	ELECT CHIP	10μF	20%	16V
C3239	1-124-779-00	ELECT CHIP	10μF	20%	16V	C3331	1-126-204-11	ELECT CHIP	47μF	20%	16V
C3240	1-164-230-11	CERAMIC CHIP	220pF	5%	50V	C3332	1-124-779-00	ELECT CHIP	10μF	20%	16V
C3241	1-164-361-11	CERAMIC CHIP	0.047μF		25V	C3333	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3242	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V	C3335	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3243	1-126-193-11	ELECT CHIP	1μF	20%	50V	C3336	1-124-779-00	ELECT CHIP	10μF	20%	16V
C3245	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V	C3338	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3246	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V	C3339	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3247	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V	C3340	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3248	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V	C3341	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3249	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V	C3343	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3250	1-216-295-91	SHORT				C3344	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3251	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V	C3345	1-126-204-11	ELECT CHIP	47μF	20%	16V
C3252	1-216-295-91	SHORT				C3346	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3253	1-127-573-11	CERAMIC CHIP	1μF	10%	16V	C3347	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V
C3254	1-127-573-11	CERAMIC CHIP	1μF	10%	16V	C3348	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3255	1-163-021-91	CERAMIC CHIP	0.01μF	10%	50V	C3349	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3301	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3350	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3302	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3351	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3303	1-126-206-11	ELECT CHIP	100μF	20%	6.3V	C3352	1-124-779-00	ELECT CHIP	10μF	20%	16V
C3304	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3353	1-126-204-11	ELECT CHIP	47μF	20%	16V
C3305	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3354	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3306	1-126-204-11	ELECT CHIP	47μF	20%	16V	C3355	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3307	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3356	1-126-204-11	ELECT CHIP	47μF	20%	16V
C3308	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3357	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3309	1-124-779-00	ELECT CHIP	10μF	20%	16V	C3358	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3310	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V	C3359	1-126-204-11	ELECT CHIP	47μF	20%	16V
C3311	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V	C3360	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3312	1-126-206-11	ELECT CHIP	100μF	20%	6.3V	C3361	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V
C3313	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3362	1-127-760-11	CERAMIC CHIP	4.7μF	10%	6.3V
C3314	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3363	1-126-204-11	ELECT CHIP	47μF	20%	16V
C3315	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3364	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3316	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3365	1-164-156-11	CERAMIC CHIP	0.1μF		25V



REF.NO.	PART NO.	DESCRIPTION	VALUES			REF.NO.	PART NO.	DESCRIPTION	VALUES		
C3366	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3433	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V
C3367	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3434	1-126-204-11	ELECT CHIP	47μF	20%	16V
C3368	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3435	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3369	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3436	1-163-021-91	CERAMIC CHIP	0.01μF	10%	50V
C3370	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3437	1-126-204-11	ELECT CHIP	47μF	20%	16V
C3371	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3438	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V
C3372	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3439	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3374	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3440	1-162-916-11	CERAMIC CHIP	12pF	5%	50V
C3375	1-127-760-11	CERAMIC CHIP	4.7μF	10%	6.3V	C3441	1-162-916-11	CERAMIC CHIP	12pF	5%	50V
C3376	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3442	1-124-779-00	ELECT CHIP	10μF	20%	16V
C3377	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V	C3443	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V
C3378	1-126-204-11	ELECT CHIP	47μF	20%	16V	C3444	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3379	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3445	1-126-204-11	ELECT CHIP	47μF	20%	16V
C3401	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3446	1-163-021-91	CERAMIC CHIP	0.01μF	10%	50V
C3402	1-124-779-00	ELECT CHIP	10μF	20%	16V	C3447	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V
C3403	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3448	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V
C3404	1-124-779-00	ELECT CHIP	10μF	20%	16V	C3449	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V
C3405	1-126-206-11	ELECT CHIP	100μF	20%	6.3V	C3450	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3406	1-163-021-91	CERAMIC CHIP	0.01μF	10%	50V	C3452	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3407	1-163-021-91	CERAMIC CHIP	0.01μF	10%	50V	C3453	1-124-779-00	ELECT CHIP	10μF	20%	16V
C3408	1-126-206-11	ELECT CHIP	100μF	20%	6.3V	C3454	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3409	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3455	1-124-779-00	ELECT CHIP	10μF	20%	16V
C3410	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3456	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3411	1-163-038-91	CERAMIC CHIP	0.1μF		25V	C3457	1-124-779-00	ELECT CHIP	10μF	20%	16V
C3412	1-163-038-91	CERAMIC CHIP	0.1μF		25V	C3458	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3413	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3460	1-162-923-11	CERAMIC CHIP	47pF	5%	50V
C3414	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V	C3462	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3415	1-124-779-00	ELECT CHIP	10μF	20%	16V	C3463	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3416	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3464	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3417	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3465	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3418	1-163-021-91	CERAMIC CHIP	0.01μF	10%	50V	C3466	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3419	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3467	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3420	1-124-779-00	ELECT CHIP	10μF	20%	16V	C3468	1-126-206-11	ELECT CHIP	100μF	20%	6.3V
C3421	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3469	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3422	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3470	1-126-206-11	ELECT CHIP	100μF	20%	6.3V
C3423	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V	C3473	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3424	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3474	1-124-779-00	ELECT CHIP	10μF	20%	16V
C3425	1-107-823-11	CERAMIC CHIP	0.47μF	10%	16V	C3475	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3426	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3476	1-124-779-00	ELECT CHIP	10μF	20%	16V
C3428	1-163-021-91	CERAMIC CHIP	0.01μF	10%	50V	C3477	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3429	1-124-779-00	ELECT CHIP	10μF	20%	16V	C3478	1-126-204-11	ELECT CHIP	47μF	20%	16V
C3430	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3479	1-124-779-00	ELECT CHIP	10μF	20%	16V
C3431	1-126-204-11	ELECT CHIP	47μF	20%	16V	C3480	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3432	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V	C3481	1-117-681-11	ELECT CHIP	100μF	20%	16V



REF.NO.	PART NO.	DESCRIPTION	VALUES			REF.NO.	PART NO.	DESCRIPTION	VALUES		
C3482	1-117-681-11	ELECT CHIP	100μF	20%	16V	C3644	1-164-156-11	CERAMIC CHIP	0.1μF		25V
C3483	1-117-681-11	ELECT CHIP	100μF	20%	16V	C3652	1-162-974-11	CERAMIC CHIP	0.01μF		50V
C3484	1-125-837-91	CERAMIC CHIP	1μF	10%	6.3V	C3653	1-164-230-11	CERAMIC CHIP	220pF	5%	50V
C3485	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3654	1-164-230-11	CERAMIC CHIP	220pF	5%	50V
C3486	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3655	1-164-816-11	CERAMIC CHIP	220pF	2%	50V
C3487	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3656	1-164-230-11	CERAMIC CHIP	220pF	5%	50V
C3488	1-124-779-00	ELECT CHIP	10μF	20%	16V	C3657	1-162-964-11	CERAMIC CHIP	0.001μF	10%	50V
C3489	1-164-156-11	CERAMIC CHIP	0.1μF		25V	C3658	1-162-964-11	CERAMIC CHIP	0.001μF	10%	50V
C3490	1-124-779-00	ELECT CHIP	10μF	20%	16V	C3659	1-126-204-11	ELECT CHIP	47μF	20%	16V
C3491	1-126-204-11	ELECT CHIP	47μF	20%	16V	C3660	1-126-204-11	ELECT CHIP	47μF	20%	16V
C3492	1-164-156-11	CERAMIC CHIP	0.1μF		25V	CONNECTOR					
C3493	1-126-204-11	ELECT CHIP	47μF	20%	16V	* CN3201	1-691-616-21	CONNECTOR, BOARD TO BOARD		15P	
C3494	1-164-156-11	CERAMIC CHIP	0.1μF		25V	CN3202	1-573-299-21	CONNECTOR, BOARD TO BOARD		10P	
C3495	1-124-779-00	ELECT CHIP	10μF	20%	16V	* CN3203	1-785-303-11	CONNECTOR, DIN (PLUG)		64P	
C3496	1-164-156-11	CERAMIC CHIP	0.1μF		25V	* CN3204	1-564-526-11	PLUG,CONNECTOR		11P	
C3604	1-124-779-00	ELECT CHIP	10μF	20%	16V	* CN3205	1-785-304-11	CONNECTOR, DIN (RECEPTACLE)		64	
C3605	1-164-156-11	CERAMIC CHIP	0.1μF		25V	DIODE					
C3606	1-125-891-11	CERAMIC CHIP	0.47μF	10%	10V	D3001	8-719-978-33	DIODE UDZSTE-176.8B			
C3607	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V	D3002	8-719-978-33	DIODE UDZSTE-176.8B			
C3608	1-163-275-11	CERAMIC CHIP	0.001μF	5%	50V	D3003	8-719-978-33	DIODE UDZSTE-176.8B			
C3609	1-162-968-11	CERAMIC CHIP	.0047μF	10%	50V	D3004	8-719-978-33	DIODE UDZSTE-176.8B			
C3610	1-126-204-11	ELECT CHIP	47μF	20%	16V	D3005	8-719-978-33	DIODE UDZSTE-176.8B			
C3611	1-164-156-11	CERAMIC CHIP	0.1μF		25V	D3006	8-719-978-33	DIODE UDZSTE-176.8B			
C3612	1-162-917-11	CERAMIC CHIP	15pF	5%	50V	D3007	8-719-978-33	DIODE UDZSTE-176.8B			
C3613	1-162-917-11	CERAMIC CHIP	15pF	5%	50V	D3089	8-719-800-76	DIODE MA153-TX			
C3618	1-124-779-00	ELECT CHIP	10μF	20%	16V	D3090	8-719-800-76	DIODE MA153-TX			
C3619	1-164-156-11	CERAMIC CHIP	0.1μF		25V	D3201	8-719-977-28	DIODE UDZSTE-1710B			
C3623	1-125-891-11	CERAMIC CHIP	0.47μF	10%	10V	D3202	8-719-977-28	DIODE UDZSTE-1710B			
C3624	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V	D3204	8-719-977-28	DIODE UDZSTE-1710B			
C3625	1-163-275-11	CERAMIC CHIP	0.001μF	5%	50V	D3205	8-719-977-28	DIODE UDZSTE-1710B			
C3626	1-162-968-11	CERAMIC CHIP	.0047μF	10%	50V	D3206	8-719-977-28	DIODE UDZSTE-1710B			
C3627	1-126-204-11	ELECT CHIP	47μF	20%	16V	D3209	8-719-914-44	DIODE DAP202K-T-146			
C3628	1-164-156-11	CERAMIC CHIP	0.1μF		25V	D3210	8-719-041-97	DIODE MA113-(TX)			
C3629	1-162-917-11	CERAMIC CHIP	15pF	5%	50V	D3211	8-719-404-50	DIODE MA111-TX			
C3630	1-162-917-11	CERAMIC CHIP	15pF	5%	50V	D3212	8-719-977-28	DIODE UDZSTE-1710B			
C3635	1-126-204-11	ELECT CHIP	47μF	20%	16V	D3213	8-719-977-28	DIODE UDZSTE-1710B			
C3636	1-125-837-91	CERAMIC CHIP	1μF	10%	6.3V	D3214	8-719-977-28	DIODE UDZSTE-1710B			
C3637	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V	D3215	8-719-977-28	DIODE UDZSTE-1710B			
C3638	1-124-779-00	ELECT CHIP	10μF	20%	16V	D3216	8-719-977-28	DIODE UDZSTE-1710B			
C3639	1-164-156-11	CERAMIC CHIP	0.1μF		25V	D3217	8-719-977-28	DIODE UDZSTE-1710B			
C3640	1-162-964-11	CERAMIC CHIP	0.001μF	10%	50V	D3301	8-719-056-77	DIODE UDZ-TE-17-3.9B			
C3641	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V	D3401	8-719-914-43	DIODE DAN202K-T-146			
C3642	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V						
C3643	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V						



REF.NO.	PART NO.	DESCRIPTION	VALUES	REF.NO.	PART NO.	DESCRIPTION	VALUES
L3405	1-469-555-21	INDUCTOR	10μH	Q3037	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
L3406	1-469-555-21	INDUCTOR	10μH	Q3038	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
L3407	1-469-555-21	INDUCTOR	10μH	Q3039	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
L3409	1-469-555-21	INDUCTOR	10μH	Q3040	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
L3410	1-412-052-21	INDUCTOR	1μH	Q3049	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
L3411	1-412-058-11	INDUCTOR	10μH	Q3051	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX	
L3412	1-469-555-21	INDUCTOR	10μH	Q3053	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX	
L3413	1-469-555-21	INDUCTOR	10μH	Q3054	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
L3414	1-469-555-21	INDUCTOR	10μH	Q3056	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX	
L3416	1-469-555-21	INDUCTOR	10μH	Q3058	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX	
L3601	1-469-555-21	INDUCTOR	10μH	Q3089	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX	
L3602	1-412-951-11	INDUCTOR	10μH	Q3090	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX	
L3603	1-469-555-21	INDUCTOR	10μH	Q3091	1-801-806-11	TRANSISTOR DTC144EKA-T146	
L3604	1-412-951-11	INDUCTOR	10μH	Q3101	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
L3605	1-469-555-21	INDUCTOR	10μH	Q3102	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
L3606	1-469-555-21	INDUCTOR	10μH	Q3103	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX	
L3607	1-469-555-21	INDUCTOR	10μH	Q3104	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX	
L3608	1-414-754-11	INDUCTOR	10μH	Q3110	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX	
L3609	1-414-754-11	INDUCTOR	10μH	Q3111	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX	
	TRANSISTOR			Q3112	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX	
Q3001	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX		Q3201	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
Q3002	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX		Q3202	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
Q3003	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX		Q3203	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX	
Q3005	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX		Q3204	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX	
Q3006	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX		Q3205	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
Q3007	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX		Q3206	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
Q3008	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX		Q3207	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX	
Q3009	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX		Q3208	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
Q3010	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX		Q3209	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
Q3011	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX		Q3210	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX	
Q3014	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX		Q3211	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q3015	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX		Q3213	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
Q3016	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX		Q3214	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX	
Q3017	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX		Q3215	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX	
Q3018	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX		Q3216	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
Q3021	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX		Q3217	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
Q3022	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX		Q3301	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
Q3023	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX		Q3302	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
Q3025	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX		Q3303	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
Q3026	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX		Q3304	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
Q3027	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX		Q3305	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX	
Q3035	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX		Q3401	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
Q3036	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX		Q3402	8-729-028-28	TRANSISTOR 2SK2036(TE85L)	
				Q3403	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	



REF.NO.	PART NO.	DESCRIPTION	VALUES			REF.NO.	PART NO.	DESCRIPTION	VALUES		
Q3404	8-729-028-28	TRANSISTOR 2SK2036(TE85L)				R3020	1-216-809-11	RES-CHIP	100	5%	1/16W
Q3405	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX				R3021	1-216-809-11	RES-CHIP	100	5%	1/16W
Q3406	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX				R3022	1-216-809-11	RES-CHIP	100	5%	1/16W
Q3407	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX				R3023	1-216-833-11	RES-CHIP	10K	5%	1/16W
Q3408	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX				R3024	1-216-809-11	RES-CHIP	100	5%	1/16W
Q3409	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX				R3025	1-216-809-11	RES-CHIP	100	5%	1/16W
Q3410	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX				R3026	1-216-035-00	RES-CHIP	270	5%	1/10W
Q3411	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX				R3027	1-218-684-11	METAL CHIP	470	0.50%	1/16W
Q3412	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX				R3028	1-218-688-11	METAL CHIP	680	0.50%	1/16W
Q3413	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX				R3029	1-218-704-11	METAL CHIP	3.3K	0.50%	1/16W
Q3414	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX				R3030	1-216-864-11	SHORT			
Q3415	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX				R3035	1-216-809-11	RES-CHIP	100	5%	1/16W
Q3603	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX				R3036	1-216-809-11	RES-CHIP	100	5%	1/16W
Q3604	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX				R3037	1-216-809-11	RES-CHIP	100	5%	1/16W
Q3605	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX				R3038	1-218-686-11	METAL CHIP	560	0.50%	1/16W
Q3606	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX				R3039	1-218-686-11	METAL CHIP	560	0.50%	1/16W
Q3609	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX				R3040	1-218-686-11	METAL CHIP	560	0.50%	1/16W
Q3610	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX				R3042	1-216-821-11	RES-CHIP	1K	5%	1/16W
Q3611	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX				R3043	1-216-837-11	RES-CHIP	22K	5%	1/16W
Q3612	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX				R3044	1-216-837-11	RES-CHIP	22K	5%	1/16W
Q3613	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX				R3045	1-216-817-11	RES-CHIP	470	5%	1/16W
Q3617	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX				R3046	1-216-817-11	RES-CHIP	470	5%	1/16W
Q3618	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX				R3047	1-216-809-11	RES-CHIP	100	5%	1/16W
Q3619	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX				R3048	1-216-809-11	RES-CHIP	100	5%	1/16W
Q3620	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX				R3049	1-216-809-11	RES-CHIP	100	5%	1/16W
		RESISTOR				R3050	1-216-809-11	RES-CHIP	100	5%	1/16W
R3001	1-216-805-11	RES-CHIP	47	5%	1/16W	R3051	1-216-845-11	RES-CHIP	100K	5%	1/16W
R3002	1-216-805-11	RES-CHIP	47	5%	1/16W	R3052	1-216-845-11	RES-CHIP	100K	5%	1/16W
R3003	1-216-842-11	RES-CHIP	56K	5%	1/16W	R3053	1-216-845-11	RES-CHIP	100K	5%	1/16W
R3004	1-216-818-11	RES-CHIP	560	5%	1/16W	R3056	1-216-817-11	RES-CHIP	470	5%	1/16W
R3005	1-216-821-11	RES-CHIP	1K	5%	1/16W	R3057	1-216-817-11	RES-CHIP	470	5%	1/16W
R3006	1-216-817-11	RES-CHIP	470	5%	1/16W	R3058	1-216-835-11	RES-CHIP	15K	5%	1/16W
R3007	1-218-686-11	METAL CHIP	560	0.50%	1/16W	R3059	1-216-817-11	RES-CHIP	470	5%	1/16W
R3009	1-218-710-11	METAL CHIP	5.6K	0.50%	1/16W	R3060	1-216-809-11	RES-CHIP	100	5%	1/16W
R3010	1-218-716-11	METAL CHIP	10K	0.50%	1/16W	R3061	1-216-829-11	RES-CHIP	4.7K	5%	1/16W
R3011	1-216-821-11	RES-CHIP	1K	5%	1/16W	R3062	1-218-697-11	METAL CHIP	1.6K	0.50%	1/16W
R3012	1-216-864-11	SHORT				R3063	1-218-716-11	METAL CHIP	10K	0.50%	1/16W
R3013	1-216-813-11	RES-CHIP	220	5%	1/16W	R3064	1-218-696-11	METAL CHIP	1.5K	0.50%	1/16W
R3014	1-218-676-11	METAL CHIP	220	0.50%	1/16W	R3066	1-216-809-11	RES-CHIP	100	5%	1/16W
R3015	1-216-864-11	SHORT				R3067	1-216-845-11	RES-CHIP	100K	5%	1/16W
R3017	1-216-809-11	RES-CHIP	100	5%	1/16W	R3068	1-216-809-11	RES-CHIP	100	5%	1/16W
R3018	1-216-817-11	RES-CHIP	470	5%	1/16W	R3071	1-216-821-11	RES-CHIP	1K	5%	1/16W
R3019	1-218-686-11	METAL CHIP	560	0.50%	1/16W	R3072	1-216-833-11	RES-CHIP	10K	5%	1/16W
						R3073	1-216-805-11	RES-CHIP	47	5%	1/16W



REF.NO.	PART NO.	DESCRIPTION	VALUES			REF.NO.	PART NO.	DESCRIPTION	VALUES		
R3074	1-216-805-11	RES-CHIP	47	5%	1/16W	R3130	1-216-837-11	RES-CHIP	22K	5%	1/16W
R3075	1-216-821-11	RES-CHIP	1K	5%	1/16W	R3131	1-216-837-11	RES-CHIP	22K	5%	1/16W
R3076	1-216-821-11	RES-CHIP	1K	5%	1/16W	R3132	1-216-837-11	RES-CHIP	22K	5%	1/16W
R3077	1-216-809-11	RES-CHIP	100	5%	1/16W	R3133	1-216-837-11	RES-CHIP	22K	5%	1/16W
R3078	1-216-832-11	RES-CHIP	8.2K	5%	1/16W	R3134	1-216-837-11	RES-CHIP	22K	5%	1/16W
R3079	1-216-049-11	RES-CHIP	1K	5%	1/10W	R3135	1-216-821-11	RES-CHIP	1K	5%	1/16W
R3080	1-216-845-11	RES-CHIP	100K	5%	1/16W	R3136	1-216-821-11	RES-CHIP	1K	5%	1/16W
R3081	1-216-809-11	RES-CHIP	100	5%	1/16W	R3137	1-216-821-11	RES-CHIP	1K	5%	1/16W
R3082	1-216-845-11	RES-CHIP	100K	5%	1/16W	R3138	1-216-821-11	RES-CHIP	1K	5%	1/16W
R3083	1-216-864-11	SHORT				R3139	1-216-821-11	RES-CHIP	1K	5%	1/16W
R3084	1-216-864-11	SHORT				R3140	1-216-821-11	RES-CHIP	1K	5%	1/16W
R3085	1-216-864-11	SHORT				R3141	1-216-833-11	RES-CHIP	10K	5%	1/16W
R3086	1-216-864-11	SHORT				R3142	1-216-805-11	RES-CHIP	47	5%	1/16W
R3087	1-216-864-11	SHORT				R3143	1-216-805-11	RES-CHIP	47	5%	1/16W
R3088	1-216-864-11	SHORT				R3144	1-216-837-11	RES-CHIP	22K	5%	1/16W
R3089	1-216-864-11	SHORT				R3145	1-216-837-11	RES-CHIP	22K	5%	1/16W
R3090	1-216-861-11	RES-CHIP	2.2M	5%	1/16W	R3146	1-216-832-11	RES-CHIP	8.2K	5%	1/16W
R3091	1-216-825-11	RES-CHIP	2.2K	5%	1/16W	R3147	1-216-837-11	RES-CHIP	22K	5%	1/16W
R3092	1-216-825-11	RES-CHIP	2.2K	5%	1/16W	R3151	1-216-825-11	RES-CHIP	2.2K	5%	1/16W
R3093	1-216-809-11	RES-CHIP	100	5%	1/16W	R3152	1-216-818-11	RES-CHIP	560	5%	1/16W
R3094	1-216-809-11	RES-CHIP	100	5%	1/16W	R3154	1-216-832-11	RES-CHIP	8.2K	5%	1/16W
R3095	1-216-845-11	RES-CHIP	100K	5%	1/16W	R3155	1-216-841-11	RES-CHIP	47K	5%	1/16W
R3096	1-216-817-11	RES-CHIP	470	5%	1/16W	R3156	1-216-837-11	RES-CHIP	22K	5%	1/16W
R3097	1-216-845-11	RES-CHIP	100K	5%	1/16W	R3157	1-216-817-11	RES-CHIP	470	5%	1/16W
R3098	1-216-805-11	RES-CHIP	47	5%	1/16W	R3158	1-216-817-11	RES-CHIP	470	5%	1/16W
R3099	1-216-805-11	RES-CHIP	47	5%	1/16W	R3159	1-216-825-11	RES-CHIP	2.2K	5%	1/16W
R3100	1-216-809-11	RES-CHIP	100	5%	1/16W	R3160	1-216-821-11	RES-CHIP	1K	5%	1/16W
R3101	1-216-809-11	RES-CHIP	100	5%	1/16W	R3161	1-216-809-11	RES-CHIP	100	5%	1/16W
R3102	1-216-809-11	RES-CHIP	100	5%	1/16W	R3162	1-216-815-11	RES-CHIP	330	5%	1/16W
R3103	1-216-837-11	RES-CHIP	22K	5%	1/16W	R3163	1-218-710-11	METAL CHIP	5.6K	0.50%	1/16W
R3104	1-216-809-11	RES-CHIP	100	5%	1/16W	R3164	1-218-710-11	METAL CHIP	5.6K	0.50%	1/16W
R3105	1-216-809-11	RES-CHIP	100	5%	1/16W	R3165	1-216-861-11	RES-CHIP	2.2M	5%	1/16W
R3106	1-216-837-11	RES-CHIP	22K	5%	1/16W	R3166	1-216-861-11	RES-CHIP	2.2M	5%	1/16W
R3107	1-216-864-11	SHORT				R3180	1-218-673-11	METAL CHIP	160	0.50%	1/16W
R3108	1-216-817-11	RES-CHIP	470	5%	1/16W	R3181	1-218-673-11	METAL CHIP	160	0.50%	1/16W
R3121	1-216-809-11	RES-CHIP	100	5%	1/16W	R3182	1-218-673-11	METAL CHIP	160	0.50%	1/16W
R3122	1-216-809-11	RES-CHIP	100	5%	1/16W	R3183	1-216-809-11	RES-CHIP	100	5%	1/16W
R3123	1-218-696-11	METAL CHIP	1.5K	0.50%	1/16W	R3184	1-216-809-11	RES-CHIP	100	5%	1/16W
R3124	1-218-696-11	METAL CHIP	1.5K	0.50%	1/16W	R3185	1-216-809-11	RES-CHIP	100	5%	1/16W
R3125	1-216-823-11	RES-CHIP	1.5K	5%	1/16W	R3186	1-218-674-11	METAL CHIP	180	0.50%	1/16W
R3126	1-216-823-11	RES-CHIP	1.5K	5%	1/16W	R3187	1-218-674-11	METAL CHIP	180	0.50%	1/16W
R3127	1-216-829-11	RES-CHIP	4.7K	5%	1/16W	R3188	1-218-674-11	METAL CHIP	180	0.50%	1/16W
R3128	1-216-829-11	RES-CHIP	4.7K	5%	1/16W	R3190	1-216-825-11	RES-CHIP	2.2K	5%	1/16W
R3129	1-216-835-11	RES-CHIP	15K	5%	1/16W	R3191	1-218-694-11	METAL CHIP	1.2K	0.50%	1/16W



REF.NO.	PART NO.	DESCRIPTION	VALUES			REF.NO.	PART NO.	DESCRIPTION	VALUES		
R3192	1-216-814-11	RES-CHIP	270	5%	1/16W	R3246	1-216-809-11	RES-CHIP	100	5%	1/16W
R3193	1-218-698-11	METAL CHIP	1.8K	0.50%	1/16W	R3247	1-216-809-11	RES-CHIP	100	5%	1/16W
R3194	1-216-825-11	RES-CHIP	2.2K	5%	1/16W	R3248	1-216-809-11	RES-CHIP	100	5%	1/16W
R3195	1-216-816-11	RES-CHIP	390	5%	1/16W	R3249	1-216-809-11	RES-CHIP	100	5%	1/16W
R3196	1-216-833-11	RES-CHIP	10K	5%	1/16W	R3250	1-216-809-11	RES-CHIP	100	5%	1/16W
R3197	1-216-825-11	RES-CHIP	2.2K	5%	1/16W	R3254	1-216-809-11	RES-CHIP	100	5%	1/16W
R3198	1-216-821-11	RES-CHIP	1K	5%	1/16W	R3255	1-216-809-11	RES-CHIP	100	5%	1/16W
R3201	1-216-821-11	RES-CHIP	1K	5%	1/16W	R3256	1-216-809-11	RES-CHIP	100	5%	1/16W
R3202	1-216-809-11	RES-CHIP	100	5%	1/16W	R3257	1-216-809-11	RES-CHIP	100	5%	1/16W
R3203	1-216-809-11	RES-CHIP	100	5%	1/16W	R3258	1-208-755-11	METAL CHIP	75	0.50%	1/10W
R3204	1-216-821-11	RES-CHIP	1K	5%	1/16W	R3259	1-216-853-11	RES-CHIP	470K	5%	1/16W
R3205	1-216-809-11	RES-CHIP	100	5%	1/16W	R3260	1-216-853-11	RES-CHIP	470K	5%	1/16W
R3207	1-216-821-11	RES-CHIP	1K	5%	1/16W	R3261	1-216-827-11	RES-CHIP	3.3K	5%	1/16W
R3208	1-216-825-11	RES-CHIP	2.2K	5%	1/16W	R3262	1-216-827-11	RES-CHIP	3.3K	5%	1/16W
R3209	1-216-809-11	RES-CHIP	100	5%	1/16W	R3263	1-216-821-11	RES-CHIP	1K	5%	1/16W
R3210	1-216-825-11	RES-CHIP	2.2K	5%	1/16W	R3264	1-216-821-11	RES-CHIP	1K	5%	1/16W
R3211	1-216-825-11	RES-CHIP	2.2K	5%	1/16W	R3265	1-216-857-11	RES-CHIP	1M	5%	1/16W
R3212	1-216-825-11	RES-CHIP	2.2K	5%	1/16W	R3266	1-216-825-11	RES-CHIP	2.2K	5%	1/16W
R3213	1-216-809-11	RES-CHIP	100	5%	1/16W	R3267	1-216-825-11	RES-CHIP	2.2K	5%	1/16W
R3215	1-216-821-11	RES-CHIP	1K	5%	1/16W	R3268	1-216-837-11	RES-CHIP	22K	5%	1/16W
R3216	1-216-821-11	RES-CHIP	1K	5%	1/16W	R3269	1-216-809-11	RES-CHIP	100	5%	1/16W
R3217	1-216-809-11	RES-CHIP	100	5%	1/16W	R3270	1-249-382-11	CARBON	1.2	5%	1/4W
R3218	1-216-809-11	RES-CHIP	100	5%	1/16W	R3272	1-216-841-11	RES-CHIP	47K	5%	1/16W
R3219	1-216-825-11	RES-CHIP	2.2K	5%	1/16W	R3273	1-216-819-11	RES-CHIP	680	5%	1/16W
R3220	1-216-809-11	RES-CHIP	100	5%	1/16W	R3275	1-216-819-11	RES-CHIP	680	5%	1/16W
R3221	1-216-821-11	RES-CHIP	1K	5%	1/16W	R3276	1-216-819-11	RES-CHIP	680	5%	1/16W
R3222	1-216-825-11	RES-CHIP	2.2K	5%	1/16W	R3277	1-216-819-11	RES-CHIP	680	5%	1/16W
R3223	1-216-809-11	RES-CHIP	100	5%	1/16W	R3279	1-216-821-11	RES-CHIP	1K	5%	1/16W
R3224	1-216-815-11	RES-CHIP	330	5%	1/16W	R3280	1-208-755-11	METAL CHIP	75	0.50%	1/10W
R3226	1-216-809-11	RES-CHIP	100	5%	1/16W	R3281	1-208-755-11	METAL CHIP	75	0.50%	1/10W
R3227	1-216-825-11	RES-CHIP	2.2K	5%	1/16W	R3282	1-208-755-11	METAL CHIP	75	0.50%	1/10W
R3228	1-216-825-11	RES-CHIP	2.2K	5%	1/16W	R3284	1-216-864-11	SHORT			
R3229	1-216-809-11	RES-CHIP	100	5%	1/16W	R3285	1-216-817-11	RES-CHIP	470	5%	1/16W
R3230	1-216-809-11	RES-CHIP	100	5%	1/16W	R3286	1-218-716-11	METAL CHIP	10K	0.50%	1/16W
R3231	1-216-825-11	RES-CHIP	2.2K	5%	1/16W	R3287	1-216-817-11	RES-CHIP	470	5%	1/16W
R3232	1-216-809-11	RES-CHIP	100	5%	1/16W	R3288	1-218-686-11	METAL CHIP	560	0.50%	1/16W
R3233	1-216-809-11	RES-CHIP	100	5%	1/16W	R3289	1-216-825-11	RES-CHIP	2.2K	5%	1/16W
R3234	1-216-825-11	RES-CHIP	2.2K	5%	1/16W	R3290	1-216-809-11	RES-CHIP	100	5%	1/16W
R3235	1-216-809-11	RES-CHIP	100	5%	1/16W	R3291	1-216-842-11	RES-CHIP	56K	5%	1/16W
R3236	1-216-809-11	RES-CHIP	100	5%	1/16W	R3292	1-216-857-11	RES-CHIP	1M	5%	1/16W
R3240	1-216-825-11	RES-CHIP	2.2K	5%	1/16W	R3293	1-216-803-11	RES-CHIP	33	5%	1/16W
R3241	1-216-825-11	RES-CHIP	2.2K	5%	1/16W	R3294	1-216-833-11	RES-CHIP	10K	5%	1/16W
R3242	1-216-821-11	RES-CHIP	1K	5%	1/16W	R3296	1-216-845-11	RES-CHIP	100K	5%	1/16W
R3244	1-216-821-11	RES-CHIP	1K	5%	1/16W	R3297	1-216-841-11	RES-CHIP	47K	5%	1/16W



REF.NO.	PART NO.	DESCRIPTION	VALUES			REF.NO.	PART NO.	DESCRIPTION	VALUES		
R3298	1-208-755-11	METAL CHIP	75	0.50%	1/10W	R3343	1-216-809-11	RES-CHIP	100	5%	1/16W
R3299	1-208-755-11	METAL CHIP	75	0.50%	1/10W	R3344	1-216-853-11	RES-CHIP	470K	5%	1/16W
R3300	1-208-755-11	METAL CHIP	75	0.50%	1/10W	R3345	1-218-704-11	METAL CHIP	3.3K	0.50%	1/16W
R3301	1-216-809-11	RES-CHIP	100	5%	1/16W	R3346	1-216-809-11	RES-CHIP	100	5%	1/16W
R3302	1-218-684-11	METAL CHIP	470	0.50%	1/16W	R3347	1-216-815-11	RES-CHIP	330	5%	1/16W
R3303	1-218-712-11	METAL CHIP	6.8K	0.50%	1/16W	R3348	1-216-864-11	SHORT			
R3304	1-218-692-11	METAL CHIP	1K	0.50%	1/16W	R3349	1-218-687-11	METAL CHIP	620	0.50%	1/16W
R3305	1-216-809-11	RES-CHIP	100	5%	1/16W	R3350	1-216-814-11	RES-CHIP	270	5%	1/16W
R3306	1-216-809-11	RES-CHIP	100	5%	1/16W	R3351	1-216-825-11	RES-CHIP	2.2K	5%	1/16W
R3307	1-216-864-11	SHORT				R3352	1-216-853-11	RES-CHIP	470K	5%	1/16W
R3308	1-216-864-11	SHORT				R3353	1-216-837-11	RES-CHIP	22K	5%	1/16W
R3309	1-211-987-11	METAL CHIP	56	0.50%	1/16W	R3354	1-216-813-11	RES-CHIP	220	5%	1/16W
R3310	1-211-987-11	METAL CHIP	56	0.50%	1/16W	R3355	1-216-821-11	RES-CHIP	1K	5%	1/16W
R3311	1-211-987-11	METAL CHIP	56	0.50%	1/16W	R3356	1-216-864-11	SHORT			
R3312	1-211-987-11	METAL CHIP	56	0.50%	1/16W	R3357	1-218-676-11	METAL CHIP	220	0.50%	1/16W
R3313	1-216-835-11	RES-CHIP	15K	5%	1/16W	R3358	1-218-676-11	METAL CHIP	220	0.50%	1/16W
R3314	1-211-990-11	METAL CHIP	75	0.50%	1/16W	R3359	1-218-676-11	METAL CHIP	220	0.50%	1/16W
R3315	1-216-835-11	RES-CHIP	15K	5%	1/16W	R3360	1-216-827-11	RES-CHIP	3.3K	5%	1/16W
R3316	1-211-989-11	METAL CHIP	68	0.50%	1/16W	R3361	1-216-825-11	RES-CHIP	2.2K	5%	1/16W
R3317	1-211-989-11	METAL CHIP	68	0.50%	1/16W	R3364	1-216-864-11	SHORT			
R3318	1-211-990-11	METAL CHIP	75	0.50%	1/16W	R3366	1-216-864-11	SHORT			
R3319	1-211-987-11	METAL CHIP	56	0.50%	1/16W	R3367	1-216-803-11	RES-CHIP	33	5%	1/16W
R3320	1-211-987-11	METAL CHIP	56	0.50%	1/16W	R3369	1-216-864-11	SHORT			
R3321	1-211-987-11	METAL CHIP	56	0.50%	1/16W	R3371	1-216-624-11	METAL CHIP	75	0.50%	1/10W
R3322	1-211-987-11	METAL CHIP	56	0.50%	1/16W	R3372	1-216-624-11	METAL CHIP	75	0.50%	1/10W
R3323	1-216-825-11	RES-CHIP	2.2K	5%	1/16W	R3373	1-216-624-11	METAL CHIP	75	0.50%	1/10W
R3324	1-216-827-11	RES-CHIP	3.3K	5%	1/16W	R3382	1-216-864-11	SHORT			
R3325	1-216-827-11	RES-CHIP	3.3K	5%	1/16W	R3401	1-218-694-11	METAL CHIP	1.2K	0.50%	1/16W
R3326	1-216-825-11	RES-CHIP	2.2K	5%	1/16W	R3403	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R3327	1-216-835-11	RES-CHIP	15K	5%	1/16W	R3404	1-216-864-11	SHORT			
R3328	1-216-864-11	SHORT				R3405	1-216-864-11	SHORT			
R3329	1-216-815-11	RES-CHIP	330	5%	1/16W	R3410	1-216-833-11	RES-CHIP	10K	5%	1/16W
R3330	1-216-815-11	RES-CHIP	330	5%	1/16W	R3421	1-216-295-91	SHORT			
R3331	1-216-841-11	RES-CHIP	47K	5%	1/16W	R3422	1-216-295-91	SHORT			
R3332	1-218-272-11	RES-CHIP	5.1K	5%	1/16W	R3423	1-216-813-11	RES-CHIP	220	5%	1/16W
R3333	1-216-864-11	SHORT				R3429	1-216-823-11	RES-CHIP	1.5K	5%	1/16W
R3334	1-216-809-11	RES-CHIP	100	5%	1/16W	R3432	1-216-815-11	RES-CHIP	330	5%	1/16W
R3335	1-216-833-11	RES-CHIP	10K	5%	1/16W	R3434	1-216-809-11	RES-CHIP	100	5%	1/16W
R3337	1-216-820-11	RES-CHIP	820	5%	1/16W	R3445	1-216-864-11	SHORT			
R3338	1-216-821-11	RES-CHIP	1K	5%	1/16W	R3446	1-216-821-11	RES-CHIP	1K	5%	1/16W
R3339	1-216-855-11	RES-CHIP	680K	5%	1/16W	R3447	1-216-819-11	RES-CHIP	680	5%	1/16W
R3340	1-216-855-11	RES-CHIP	680K	5%	1/16W	R3448	1-216-855-11	RES-CHIP	680K	5%	1/16W
R3341	1-216-813-11	RES-CHIP	220	5%	1/16W	R3452	1-216-295-91	SHORT			
R3342	1-220-158-11	RES-CHIP	3.6K	5%	1/16W	R3454	1-216-825-11	RES-CHIP	2.2K	5%	1/16W



REF.NO.	PART NO.	DESCRIPTION	VALUES			REF.NO.	PART NO.	DESCRIPTION	VALUES		
R3460	1-216-833-11	RES-CHIP	10K	5%	1/16W	R3625	1-216-825-11	RES-CHIP	2.2K	5%	1/16W
R3461	1-216-833-11	RES-CHIP	10K	5%	1/16W	R3626	1-216-815-11	RES-CHIP	330	5%	1/16W
R3464	1-216-821-11	RES-CHIP	1K	5%	1/16W	R3627	1-216-815-11	RES-CHIP	330	5%	1/16W
R3465	1-216-821-11	RES-CHIP	1K	5%	1/16W	R3628	1-216-815-11	RES-CHIP	330	5%	1/16W
R3467	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	R3630	1-216-809-11	RES-CHIP	100	5%	1/16W
R3470	1-216-809-11	RES-CHIP	100	5%	1/16W	R3639	1-216-864-11	SHORT			
R3471	1-216-821-11	RES-CHIP	1K	5%	1/16W	R3640	1-216-821-11	RES-CHIP	1K	5%	1/16W
R3472	1-216-801-11	RES-CHIP	22	5%	1/16W	R3641	1-216-821-11	RES-CHIP	1K	5%	1/16W
R3475	1-216-809-11	RES-CHIP	100	5%	1/16W	R3642	1-216-833-11	RES-CHIP	10K	5%	1/16W
R3476	1-216-821-11	RES-CHIP	1K	5%	1/16W	R3644	1-216-857-11	RES-CHIP	1M	5%	1/16W
R3477	1-218-701-11	METAL CHIP	2.4K	0.50%	1/16W	R3645	1-216-821-11	RES-CHIP	1K	5%	1/16W
R3478	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	R3646	1-216-813-11	RES-CHIP	220	5%	1/16W
R3483	1-218-701-11	METAL CHIP	2.4K	0.50%	1/16W	R3647	1-216-809-11	RES-CHIP	100	5%	1/16W
R3484	1-216-821-11	RES-CHIP	1K	5%	1/16W	R3648	1-216-805-11	RES-CHIP	47	5%	1/16W
R3485	1-216-821-11	RES-CHIP	1K	5%	1/16W	R3649	1-216-805-11	RES-CHIP	47	5%	1/16W
R3486	1-216-801-11	RES-CHIP	22	5%	1/16W	R3650	1-216-817-11	RES-CHIP	470	5%	1/16W
R3489	1-216-864-11	SHORT				R3651	1-216-809-11	RES-CHIP	100	5%	1/16W
R3490	1-216-864-11	SHORT				R3652	1-216-813-11	RES-CHIP	220	5%	1/16W
R3491	1-216-821-11	RES-CHIP	1K	5%	1/16W	R3653	1-216-813-11	RES-CHIP	220	5%	1/16W
R3492	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	R3654	1-216-813-11	RES-CHIP	220	5%	1/16W
R3493	1-218-701-11	METAL CHIP	2.4K	0.50%	1/16W	R3655	1-216-825-11	RES-CHIP	2.2K	5%	1/16W
R3495	1-216-821-11	RES-CHIP	1K	5%	1/16W	R3656	1-216-825-11	RES-CHIP	2.2K	5%	1/16W
R3496	1-216-801-11	RES-CHIP	22	5%	1/16W	R3657	1-216-825-11	RES-CHIP	2.2K	5%	1/16W
R3497	1-216-829-11	RES-CHIP	4.7K	5%	1/16W	R3658	1-216-815-11	RES-CHIP	330	5%	1/16W
R3498	1-216-818-11	RES-CHIP	560	5%	1/16W	R3659	1-216-815-11	RES-CHIP	330	5%	1/16W
R3499	1-216-821-11	RES-CHIP	1K	5%	1/16W	R3660	1-216-815-11	RES-CHIP	330	5%	1/16W
R3602	1-216-809-11	RES-CHIP	100	5%	1/16W	R3661	1-216-809-11	RES-CHIP	100	5%	1/16W
R3606	1-216-864-11	SHORT				R3662	1-216-837-11	RES-CHIP	22K	5%	1/16W
R3609	1-216-821-11	RES-CHIP	1K	5%	1/16W	R3663	1-216-837-11	RES-CHIP	22K	5%	1/16W
R3610	1-216-821-11	RES-CHIP	1K	5%	1/16W	R3664	1-216-841-11	RES-CHIP	47K	5%	1/16W
R3611	1-216-833-11	RES-CHIP	10K	5%	1/16W	R3665	1-216-817-11	RES-CHIP	470	5%	1/16W
R3612	1-216-857-11	RES-CHIP	1M	5%	1/16W	R3666	1-216-809-11	RES-CHIP	100	5%	1/16W
R3613	1-216-821-11	RES-CHIP	1K	5%	1/16W	R3667	1-216-839-11	RES-CHIP	33K	5%	1/16W
R3614	1-216-813-11	RES-CHIP	220	5%	1/16W	R3668	1-216-797-11	RES-CHIP	10	5%	1/16W
R3615	1-216-809-11	RES-CHIP	100	5%	1/16W	R3669	1-216-809-11	RES-CHIP	100	5%	1/16W
R3616	1-216-805-11	RES-CHIP	47	5%	1/16W	R3672	1-216-864-11	SHORT			
R3617	1-216-805-11	RES-CHIP	47	5%	1/16W	R3673	1-216-809-11	RES-CHIP	100	5%	1/16W
R3618	1-216-817-11	RES-CHIP	470	5%	1/16W	R3674	1-216-813-11	RES-CHIP	220	5%	1/16W
R3619	1-216-809-11	RES-CHIP	100	5%	1/16W	R3675	1-216-813-11	RES-CHIP	220	5%	1/16W
R3620	1-216-813-11	RES-CHIP	220	5%	1/16W	R3676	1-216-809-11	RES-CHIP	100	5%	1/16W
R3621	1-216-813-11	RES-CHIP	220	5%	1/16W	R3677	1-216-809-11	RES-CHIP	100	5%	1/16W
R3622	1-216-813-11	RES-CHIP	220	5%	1/16W	R3678	1-216-809-11	RES-CHIP	100	5%	1/16W
R3623	1-216-825-11	RES-CHIP	2.2K	5%	1/16W	R3679	1-216-809-11	RES-CHIP	100	5%	1/16W
R3624	1-216-825-11	RES-CHIP	2.2K	5%	1/16W	R3680	1-216-833-11	RES-CHIP	10K	5%	1/16W



REF.NO.	PART NO.	DESCRIPTION	VALUES			REF.NO.	PART NO.	DESCRIPTION	VALUES		
R3681	1-216-833-11	RES-CHIP	10K	5%	1/16W	R3829	1-218-684-11	METAL CHIP	470	0.50%	1/16W
R3682	1-216-837-11	RES-CHIP	22K	5%	1/16W	R3830	1-218-684-11	METAL CHIP	470	0.50%	1/16W
R3683	1-216-837-11	RES-CHIP	22K	5%	1/16W	R3831	1-216-864-11	SHORT			
R3684	1-216-833-11	RES-CHIP	10K	5%	1/16W	R3832	1-216-864-11	SHORT			
R3685	1-216-833-11	RES-CHIP	10K	5%	1/16W	R3833	1-216-864-11	SHORT			
R3686	1-216-833-11	RES-CHIP	10K	5%	1/16W	R3840	1-216-807-11	RES-CHIP	68	5%	1/16W
R3687	1-216-833-11	RES-CHIP	10K	5%	1/16W	R3843	1-218-694-11	METAL CHIP	1.2K	0.50%	1/16W
R3688	1-216-833-11	RES-CHIP	10K	5%	1/16W	R3844	1-218-712-11	METAL CHIP	6.8K	0.50%	1/16W
R3689	1-216-833-11	RES-CHIP	10K	5%	1/16W	R3845	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R3690	1-216-833-11	RES-CHIP	10K	5%	1/16W	R3846	1-216-801-11	RES-CHIP	22	5%	1/16W
R3691	1-216-833-11	RES-CHIP	10K	5%	1/16W	R3847	1-216-801-11	RES-CHIP	22	5%	1/16W
R3692	1-216-833-11	RES-CHIP	10K	5%	1/16W	R3848	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R3693	1-216-833-11	RES-CHIP	10K	5%	1/16W	R3849	1-218-675-11	METAL CHIP	200	0.50%	1/16W
R3694	1-216-833-11	RES-CHIP	10K	5%	1/16W	R3850	1-218-675-11	METAL CHIP	200	0.50%	1/16W
R3695	1-216-833-11	RES-CHIP	10K	5%	1/16W	R3851	1-216-809-11	RES-CHIP	100	5%	1/16W
R3696	1-216-833-11	RES-CHIP	10K	5%	1/16W	R3852	1-218-675-11	METAL CHIP	200	0.50%	1/16W
R3697	1-216-833-11	RES-CHIP	10K	5%	1/16W	R3854	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R3698	1-216-845-11	RES-CHIP	100K	5%	1/16W	R3857	1-216-809-11	RES-CHIP	100	5%	1/16W
R3699	1-216-845-11	RES-CHIP	100K	5%	1/16W	R3858	1-218-704-11	METAL CHIP	3.3K	0.50%	1/16W
R3800	1-216-864-11	SHORT				R3862	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R3802	1-208-762-11	METAL CHIP	150	0.50%	1/10W	R3863	1-218-700-11	METAL CHIP	2.2K	0.50%	1/16W
R3803	1-208-762-11	METAL CHIP	150	0.50%	1/10W	R3864	1-216-827-11	RES-CHIP	3.3K	5%	1/16W
R3804	1-208-762-11	METAL CHIP	150	0.50%	1/10W	R3865	1-216-809-11	RES-CHIP	100	5%	1/16W
R3805	1-208-762-11	METAL CHIP	150	0.50%	1/10W	R3866	1-414-234-22	FERRITE	0μH		
R3806	1-218-662-11	METAL CHIP	56	0.50%	1/16W	R3867	1-414-234-22	FERRITE	0μH		
R3807	1-208-754-11	METAL CHIP	68	0.50%	1/10W	R3868	1-414-234-22	FERRITE	0μH		
R3808	1-208-755-11	METAL CHIP	75	0.50%	1/10W	R3869	1-218-719-11	METAL CHIP	13K	0.50%	1/16W
R3809	1-208-755-11	METAL CHIP	75	0.50%	1/10W	R3870	1-218-719-11	METAL CHIP	13K	0.50%	1/16W
R3810	1-208-758-11	METAL CHIP	100	0.50%	1/10W	R3871	1-218-719-11	METAL CHIP	13K	0.50%	1/16W
R3811	1-216-809-11	RES-CHIP	100	5%	1/16W	R3872	1-211-990-11	METAL CHIP	75	0.50%	1/16W
R3812	1-216-809-11	RES-CHIP	100	5%	1/16W	R3873	1-211-990-11	METAL CHIP	75	0.50%	1/16W
R3813	1-216-809-11	RES-CHIP	100	5%	1/16W	R3874	1-211-990-11	METAL CHIP	75	0.50%	1/16W
R3814	1-211-969-11	METAL CHIP	10	0.50%	1/16W	R3876	1-208-762-11	METAL CHIP	150	0.50%	1/10W
R3815	1-211-973-11	METAL CHIP	15	0.50%	1/16W	R3901	1-216-035-00	RES-CHIP	270	5%	1/10W
R3816	1-211-977-11	METAL CHIP	22	0.50%	1/16W	R3902	1-216-035-00	RES-CHIP	270	5%	1/10W
R3817	1-211-977-11	METAL CHIP	22	0.50%	1/16W	R3903	1-216-837-11	RES-CHIP	22K	5%	1/16W
R3820	1-218-684-11	METAL CHIP	470	0.50%	1/16W	R3904	1-216-837-11	RES-CHIP	22K	5%	1/16W
R3821	1-218-684-11	METAL CHIP	470	0.50%	1/16W	R3905	1-216-809-11	RES-CHIP	100	5%	1/16W
R3822	1-218-684-11	METAL CHIP	470	0.50%	1/16W	R3906	1-216-809-11	RES-CHIP	100	5%	1/16W
R3823	1-216-826-11	RES-CHIP	2.7K	5%	1/16W	R3907	1-216-809-11	RES-CHIP	100	5%	1/16W
R3824	1-216-826-11	RES-CHIP	2.7K	5%	1/16W	R3908	1-216-809-11	RES-CHIP	100	5%	1/16W
R3825	1-216-826-11	RES-CHIP	2.7K	5%	1/16W	R3909	1-216-809-11	RES-CHIP	100	5%	1/16W
R3826	1-216-809-11	RES-CHIP	100	5%	1/16W	R3910	1-216-809-11	RES-CHIP	100	5%	1/16W
R3828	1-218-684-11	METAL CHIP	470	0.50%	1/16W	R3914	1-216-864-11	SHORT			



REF.NO.	PART NO.	DESCRIPTION	VALUES	REF.NO.	PART NO.	DESCRIPTION	VALUES
C023	1-164-161-11	CERAMIC CHIP	0.0022μF 10% 50V	C238	1-163-021-91	CERAMIC CHIP	0.01μF 10% 50V
C025	1-164-161-11	CERAMIC CHIP	0.0022μF 10% 50V	C239	1-126-964-11	ELECT	10μF 20% 50V
C027	1-164-161-11	CERAMIC CHIP	0.0022μF 10% 50V	C240	1-164-004-11	CERAMIC CHIP	0.1μF 10% 25V
C028	1-126-933-11	ELECT	100μF 20% 16V	C241	1-164-004-11	CERAMIC CHIP	0.1μF 10% 25V
C030	1-104-665-11	ELECT	100μF 20% 10V	C242	1-164-004-11	CERAMIC CHIP	0.1μF 10% 25V
C032	1-126-933-11	ELECT	100μF 20% 16V	C243	1-107-823-11	CERAMIC CHIP	0.47μF 10% 16V
C035	1-164-161-11	CERAMIC CHIP	0.0022μF 10% 50V	C244	1-163-017-00	CERAMIC CHIP	.0047μF 10% 50V
C037	1-163-021-91	CERAMIC CHIP	0.01μF 10% 50V	C245	1-107-823-11	CERAMIC CHIP	0.47μF 10% 16V
C038	1-126-935-11	ELECT	470μF 20% 16V	C246	1-164-004-11	CERAMIC CHIP	0.1μF 10% 25V
C039	1-126-964-11	ELECT	10μF 20% 50V	C247	1-126-933-11	ELECT	100μF 20% 16V
C041	1-164-161-11	CERAMIC CHIP	0.0022μF 10% 50V	C248	1-127-760-11	CERAMIC CHIP	4.7μF 10% 6.3V
C048	1-126-964-11	ELECT	10μF 20% 50V	C249	1-126-967-11	ELECT	47μF 20% 50V
C051	1-107-714-11	ELECT	10μF 20% 16V	C250	1-107-823-11	CERAMIC CHIP	0.47μF 10% 16V
C052	1-107-714-11	ELECT	10μF 20% 16V	C251	1-115-340-11	CERAMIC CHIP	0.22μF 10% 25V
C115	1-163-001-11	CERAMIC CHIP	220pF 10% 50V	C252	1-126-933-11	ELECT	100μF 20% 16V
C116	1-104-760-11	CERAMIC CHIP	0.047μF 10% 50V	C253	1-163-009-91	CERAMIC CHIP	0.001μF 10% 50V
C117	1-164-346-11	CERAMIC CHIP	1μF 16V	C254	1-115-339-11	CERAMIC CHIP	0.1μF 10% 50V
C119	1-163-001-11	CERAMIC CHIP	220pF 10% 50V	C255	1-163-243-11	CERAMIC CHIP	47pF 5% 50V
C120	1-104-760-11	CERAMIC CHIP	0.047μF 10% 50V	C256	1-163-243-11	CERAMIC CHIP	47pF 5% 50V
C121	1-164-346-11	CERAMIC CHIP	1μF 16V	C257	1-127-760-11	CERAMIC CHIP	4.7μF 10% 6.3V
C205	1-115-340-11	CERAMIC CHIP	0.22μF 10% 25V	C258	1-164-346-11	CERAMIC CHIP	1μF 16V
C210	1-127-760-11	CERAMIC CHIP	4.7μF 10% 6.3V	C259	1-115-340-11	CERAMIC CHIP	0.22μF 10% 25V
C211	1-164-004-11	CERAMIC CHIP	0.1μF 10% 25V	C260	1-163-021-91	CERAMIC CHIP	0.01μF 10% 50V
C212	1-126-933-11	ELECT	100μF 20% 16V	C261	1-126-933-11	ELECT	100μF 20% 16V
C213	1-164-161-11	CERAMIC CHIP	0.0022μF 10% 50V	C262	1-164-004-11	CERAMIC CHIP	0.1μF 10% 25V
C214	1-164-004-11	CERAMIC CHIP	0.1μF 10% 25V	C701	1-164-489-11	CERAMIC CHIP	0.22μF 10% 16V
C216	1-126-933-11	ELECT	100μF 20% 16V	C702	1-104-660-91	ELECT	47μF 20% 16V
C217	1-107-823-11	CERAMIC CHIP	0.47μF 10% 16V	C703	1-104-660-91	ELECT	47μF 20% 16V
C219	1-164-344-11	CERAMIC CHIP	0.068μF 10% 25V	C705	1-164-346-11	CERAMIC CHIP	1μF 16V
C220	1-107-823-11	CERAMIC CHIP	0.47μF 10% 16V	C708	1-164-346-11	CERAMIC CHIP	1μF 16V
C221	1-164-004-11	CERAMIC CHIP	0.1μF 10% 25V	C710	1-163-251-11	CERAMIC CHIP	100pF 5% 50V
C222	1-164-004-11	CERAMIC CHIP	0.1μF 10% 25V	C711	1-163-227-11	CERAMIC CHIP	10pF 0.50pF 50V
C224	1-164-004-11	CERAMIC CHIP	0.1μF 10% 25V	C712	1-104-660-91	ELECT	47μF 20% 16V
C225	1-164-004-11	CERAMIC CHIP	0.1μF 10% 25V	C713	1-164-690-91	CERAMIC CHIP	0.0022μF 5% 50V
C226	1-164-004-11	CERAMIC CHIP	0.1μF 10% 25V	C715	1-126-964-11	ELECT	10μF 20% 50V
C227	1-164-004-11	CERAMIC CHIP	0.1μF 10% 25V	C717	1-163-031-91	CERAMIC CHIP	0.01μF 50V
C229	1-164-004-11	CERAMIC CHIP	0.1μF 10% 25V	C718	1-163-235-11	CERAMIC CHIP	22pF 5% 50V
C230	1-107-823-11	CERAMIC CHIP	0.47μF 10% 16V	C719	1-163-235-11	CERAMIC CHIP	22pF 5% 50V
C232	1-163-021-91	CERAMIC CHIP	0.01μF 10% 50V	C720	1-126-935-11	ELECT	470μF 20% 16V
C233	1-164-492-11	CERAMIC CHIP	0.15μF 10% 16V	C721	1-163-231-11	CERAMIC CHIP	15pF 5% 50V
C234	1-125-838-11	CERAMIC CHIP	2.2μF 10% 6.3V	C722	1-163-231-11	CERAMIC CHIP	15pF 5% 50V
C235	1-164-004-11	CERAMIC CHIP	0.1μF 10% 25V	C724	1-126-961-11	ELECT	2.2μF 20% 50V
C236	1-126-964-11	ELECT	10μF 20% 50V	C731	1-163-009-91	CERAMIC CHIP	0.001μF 10% 50V
C237	1-126-933-11	ELECT	100μF 20% 16V	C732	1-163-251-11	CERAMIC CHIP	100pF 5% 50V

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

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




REF.NO.	PART NO.	DESCRIPTION	VALUES		REF.NO.	PART NO.	DESCRIPTION	VALUES	
C733	1-163-031-91	CERAMIC CHIP	0.01 μ F	50V	C7013	1-164-182-11	CERAMIC CHIP	0.0033 μ F	10% 50V
C735	1-163-275-11	CERAMIC CHIP	0.001 μ F	5% 50V	C7014	1-163-989-11	CERAMIC CHIP	0.033 μ F	10% 25V
C747	1-126-767-11	ELECT	1000 μ F	20% 16V	C7015	1-163-989-11	CERAMIC CHIP	0.033 μ F	10% 25V
C748	1-163-021-91	CERAMIC CHIP	0.01 μ F	10% 50V	C7016	1-126-959-11	ELECT	0.47 μ F	20% 50V
\triangle C6002	1-136-346-21	MYLAR	0.22 μ F	20% 125V	C7017	1-126-963-11	ELECT	4.7 μ F	20% 50V
C6003	1-117-227-11	MYLAR	1 μ F	10% 450V	C7018	1-136-169-00	FILM	0.22 μ F	5% 50V
C6004	1-126-961-11	ELECT	2.2 μ F	20% 50V	C7019	1-163-017-00	CERAMIC CHIP	.0047 μ F	10% 50V
C6005	1-126-961-11	ELECT	2.2 μ F	20% 50V	C7020	1-163-989-11	CERAMIC CHIP	0.033 μ F	10% 25V
C6006	1-126-967-11	ELECT	47 μ F	20% 50V	C7021	1-164-182-11	CERAMIC CHIP	0.0033 μ F	10% 50V
C6007	1-163-009-91	CERAMIC CHIP	0.001 μ F	10% 50V	C7022	1-163-989-11	CERAMIC CHIP	0.033 μ F	10% 25V
C6008	1-126-968-11	ELECT	100 μ F	20% 50V	C7023	1-126-935-11	ELECT	470 μ F	20% 16V
C6009	1-104-664-11	ELECT	47 μ F	20% 25V	C7024	1-126-935-11	ELECT	470 μ F	20% 16V
C6011	1-126-968-11	ELECT	100 μ F	20% 50V	C7025	1-126-960-11	ELECT	1 μ F	20% 50V
C6013	1-119-887-51	CERAMIC	1000pF	20% 250V	C7026	1-126-960-11	ELECT	1 μ F	20% 50V
C6014	1-135-945-21	FILM	10000pF	3% 800V	C7028	1-136-165-00	FILM	0.1 μ F	5% 50V
C6015	1-137-399-11	MYLAR	0.1 μ F	5% 100V	C7029	1-163-009-91	CERAMIC CHIP	0.001 μ F	10% 50V
C6017	1-125-969-91	CERAMIC	680pF	10% 1KV	C7030	1-126-953-11	ELECT	2200 μ F	20% 35V
C6018	1-126-929-11	ELECT	4700 μ F	20% 10V	C7032	1-163-038-91	CERAMIC CHIP	0.1 μ F	25V
C6019	1-128-546-11	ELECT	10000 μ F	20% 10V	C7033	1-126-934-11	ELECT	220 μ F	20% 16V
C6020	1-126-936-11	ELECT	3300 μ F	20% 16V	C7034	1-136-165-00	FILM	0.1 μ F	5% 50V
C6021	1-163-021-91	CERAMIC CHIP	0.01 μ F	10% 50V	C7035	1-136-165-00	FILM	0.1 μ F	5% 50V
C6026	1-126-933-11	ELECT	100 μ F	20% 16V	C7036	1-126-942-61	ELECT	1000 μ F	20% 25V
C6027	1-163-021-91	CERAMIC CHIP	0.01 μ F	10% 50V	C7037	1-136-160-00	FILM	0.039 μ F	5% 50V
\triangle C6029	1-136-311-11	MYLAR	0.47 μ F	20% 125V	C7038	1-126-942-61	ELECT	1000 μ F	20% 25V
C6030	1-126-935-11	ELECT	470 μ F	20% 16V	C7039	1-136-160-00	FILM	0.039 μ F	5% 50V
C6033	1-126-941-11	ELECT	470 μ F	20% 25V	C7056	1-126-953-11	ELECT	2200 μ F	20% 35V
C6045	1-126-926-11	ELECT	1000 μ F	20% 10V	C7057	1-126-953-11	ELECT	2200 μ F	20% 35V
C6048	1-126-767-11	ELECT	1000 μ F	20% 16V	C7058	1-126-960-11	ELECT	1 μ F	20% 50V
C6057	1-126-916-11	ELECT	1000 μ F	20% 6.3V	C7059	1-164-004-11	CERAMIC CHIP	0.1 μ F	10% 25V
C6059	1-126-971-11	ELECT	470 μ F	20% 50V	C7061	1-126-964-11	ELECT	10 μ F	20% 50V
C6060	1-135-573-91	ELECT	1500 μ F	20% 25V	C7062	1-163-009-91	CERAMIC CHIP	0.001 μ F	10% 50V
C6061	1-126-960-11	ELECT	1 μ F	20% 50V	C7063	1-136-165-00	FILM	0.1 μ F	5% 50V
C6062	1-104-664-11	ELECT	47 μ F	20% 25V	C7064	1-126-953-11	ELECT	2200 μ F	20% 35V
C6063	1-136-479-11	FILM	0.001 μ F	2% 50V	C7066	1-136-165-00	FILM	0.1 μ F	5% 50V
C6064	1-126-964-11	ELECT	10 μ F	20% 50V	C7067	1-136-165-00	FILM	0.1 μ F	5% 50V
C6065	1-126-933-11	ELECT	100 μ F	20% 16V	C7069	1-136-165-00	FILM	0.1 μ F	5% 50V
C7001	1-126-961-11	ELECT	2.2 μ F	20% 50V	C7070	1-136-165-00	FILM	0.1 μ F	5% 50V
C7006	1-126-767-11	ELECT	1000 μ F	20% 16V	C7071	1-137-437-11	MYLAR	0.0056 μ F	5% 50V
C7007	1-136-169-00	FILM	0.22 μ F	5% 50V	C7072	1-137-437-11	MYLAR	0.0056 μ F	5% 50V
C7008	1-126-767-11	ELECT	1000 μ F	20% 16V	C7074	1-164-004-11	CERAMIC CHIP	0.1 μ F	10% 25V
C7009	1-164-004-11	CERAMIC CHIP	0.1 μ F	10% 25V	C7075	1-164-004-11	CERAMIC CHIP	0.1 μ F	10% 25V
C7010	1-126-963-11	ELECT	4.7 μ F	20% 50V	C7076	1-126-968-11	ELECT	100 μ F	20% 50V
C7011	1-126-959-11	ELECT	0.47 μ F	20% 50V	C7077	1-126-960-11	ELECT	1 μ F	20% 50V
C7012	1-163-017-00	CERAMIC CHIP	.0047 μ F	10% 50V	C7078	1-126-960-11	ELECT	1 μ F	20% 50V




REF.NO.	PART NO.	DESCRIPTION	VALUES	REF.NO.	PART NO.	DESCRIPTION	VALUES
C7084	1-163-017-00	CERAMIC CHIP	.0047μF 10% 50V	DIODE			
C7088	1-163-251-11	CERAMIC CHIP	100pF 5% 50V	D004	8-719-977-28	DIODE UDZSTE-1710B	
C7089	1-163-251-11	CERAMIC CHIP	100pF 5% 50V	D008	8-719-977-28	DIODE UDZSTE-1710B	
C7090	1-104-664-11	ELECT	47μF 20% 25V	D203	8-719-025-31	DIODE 02CZ5.6-TE85L	
C7094	1-126-960-11	ELECT	1μF 20% 50V	D211	8-719-991-33	DIODE 1SS133T-77	
C7095	1-126-960-11	ELECT	1μF 20% 50V	D212	8-719-404-50	DIODE MA111-TX	
C7096	1-126-960-11	ELECT	1μF 20% 50V	D214	8-719-404-50	DIODE MA111-TX	
C7099	1-126-964-11	ELECT	10μF 20% 50V	D215	8-719-404-50	DIODE MA111-TX	
C7101	1-126-935-11	ELECT	470μF 20% 16V	D701	8-719-914-43	DIODE DAN202K-T-146	
C7102	1-126-934-11	ELECT	220μF 20% 16V	D703	8-719-914-43	DIODE DAN202K-T-146	
C7103	1-163-038-91	CERAMIC CHIP	0.1μF 25V	D705	8-719-404-50	DIODE MA111-TX	
C7105	1-126-935-11	ELECT	470μF 20% 16V	D706	8-719-914-43	DIODE DAN202K-T-146	
C7108	1-126-961-11	ELECT	2.2μF 20% 50V	D707	8-719-914-43	DIODE DAN202K-T-146	
C7109	1-126-961-11	ELECT	2.2μF 20% 50V	D708	8-719-404-50	DIODE MA111-TX	
C7110	1-126-941-11	ELECT	470μF 20% 25V	D709	8-719-991-33	DIODE 1SS133T-77	
C7151	1-126-967-11	ELECT	47μF 20% 50V	D710	8-719-914-43	DIODE DAN202K-T-146	
C7152	1-126-967-11	ELECT	47μF 20% 50V	D711	8-719-914-44	DIODE DAP202K-T-146	
CONNECTOR				D715	8-719-914-43	DIODE DAN202K-T-146	
*	CN001	1-573-296-21	CONNECTOR, BOARD TO BOARD	10P	D716	8-719-914-44	DIODE DAP202K-T-146
*	CN003	1-785-304-11	CONNECTOR, DIN (RECEPTACLE)	64	D719	8-719-404-50	DIODE MA111-TX
*	CN201	1-779-892-11	CONNECTOR, BOARD TO BOARD	10P	D720	8-719-404-50	DIODE MA111-TX
*	CN202	1-764-333-11	PLUG,CONNECTOR	10P	D721	8-719-404-50	DIODE MA111-TX
*	CN203	1-779-892-11	CONNECTOR, BOARD TO BOARD	10P	D722	8-719-404-50	DIODE MA111-TX
*	CN204	1-564-506-11	PLUG,CONNECTOR	3P	D723	8-719-914-43	DIODE DAN202K-T-146
*	CN701	1-564-515-11	PLUG,CONNECTOR	12P	D724	8-719-404-50	DIODE MA111-TX
*	CN702	1-779-891-11	CONNECTOR, BOARD TO BOARD	8P	D725	8-719-404-50	DIODE MA111-TX
*	CN703	1-779-891-11	CONNECTOR, BOARD TO BOARD	8P	D726	8-719-404-50	DIODE MA111-TX
*	CN706	1-779-891-11	CONNECTOR, BOARD TO BOARD	8P	D727	8-719-404-50	DIODE MA111-TX
*	CN707	1-564-507-11	PLUG,CONNECTOR	4P	D728	8-719-404-50	DIODE MA111-TX
*	CN6001	1-766-241-11	PIN,CONNECTOR (PC BOARD)	3P	D6001	8-719-991-33	DIODE 1SS133T-77
*	CN6002	1-766-241-11	PIN,CONNECTOR (PC BOARD)	3P	D6002	8-719-991-33	DIODE 1SS133T-77
*	CN6003	1-508-786-00	PIN,CONNECTOR (5MM PITCH)	2P	D6003	8-719-979-64	DIODE μF4005PKG23
*	CN6005	1-766-176-11	PIN,CONNECTOR (PC BOARD)	6P	D6005	8-719-063-73	DIODE D1NL20U-TR
*	CN6006	1-779-891-11	CONNECTOR, BOARD TO BOARD	8P	D6009	8-719-063-73	DIODE D1NL20U-TR
	CN6007	1-580-843-11	PIN,CONNECTOR (POWER)		D6011	8-719-031-79	DIODE D5SC4M
*	CN6013	1-766-240-11	PIN,CONNECTOR (PC BOARD)	2P	D6012	8-719-031-79	DIODE D5SC4M
*	CN7001	1-573-296-21	CONNECTOR, BOARD TO BOARD	10P	D6013	8-719-031-79	DIODE D5SC4M
*	CN7003	1-564-511-11	PLUG,CONNECTOR	8P	D6014	8-719-921-63	DIODE MTZJ-T-77-7.5B
*	CN7008	1-564-511-61	PLUG,CONNECTOR	8P	D6017	8-719-921-37	DIODE MTZJ-T-77-4.7
					D6018	8-719-991-33	DIODE 1SS133T-77
					D6020	8-719-511-40	DIODE S1VB20
					D6025	8-719-404-50	DIODE MA111-TX
					D7002	8-719-991-33	DIODE 1SS133T-77







REF.NO.	PART NO.	DESCRIPTION	VALUES			REF.NO.	PART NO.	DESCRIPTION	VALUES		
R221	1-249-413-11	CARBON	470	5%	1/4W	R275	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R223	1-216-025-11	RES-CHIP	100	5%	1/10W	R276	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R224	1-216-025-11	RES-CHIP	100	5%	1/10W	R277	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R226	1-216-073-91	RES-CHIP	10K	5%	1/10W	R278	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R228	1-216-025-11	RES-CHIP	100	5%	1/10W	R280	1-216-295-91	SHORT			
R229	1-216-025-11	RES-CHIP	100	5%	1/10W	R281	1-216-295-91	SHORT			
R230	1-216-025-11	RES-CHIP	100	5%	1/10W	R282	1-216-295-91	SHORT			
R231	1-216-025-11	RES-CHIP	100	5%	1/10W	R283	1-216-295-91	SHORT			
R232	1-216-025-11	RES-CHIP	100	5%	1/10W	R284	1-216-295-91	SHORT			
R233	1-216-025-11	RES-CHIP	100	5%	1/10W	R701	1-216-089-91	RES-CHIP	47K	5%	1/10W
R234	1-216-025-11	RES-CHIP	100	5%	1/10W	R702	1-216-097-11	RES-CHIP	100K	5%	1/10W
R235	1-216-025-11	RES-CHIP	100	5%	1/10W	R703	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R236	1-216-025-11	RES-CHIP	100	5%	1/10W	R704	1-216-073-91	RES-CHIP	10K	5%	1/10W
R237	1-216-025-11	RES-CHIP	100	5%	1/10W	R705	1-216-101-00	RES-CHIP	150K	5%	1/10W
R238	1-216-025-11	RES-CHIP	100	5%	1/10W	R706	1-216-073-91	RES-CHIP	10K	5%	1/10W
R239	1-216-059-00	RES-CHIP	2.7K	5%	1/10W	R707	1-216-097-11	RES-CHIP	100K	5%	1/10W
R240	1-216-061-91	RES-CHIP	3.3K	5%	1/10W	R708	1-216-025-11	RES-CHIP	100	5%	1/10W
R241	1-216-133-91	RES-CHIP	3.3M	5%	1/10W	R709	1-216-097-11	RES-CHIP	100K	5%	1/10W
R242	1-216-075-00	RES-CHIP	12K	5%	1/10W	R710	1-216-073-91	RES-CHIP	10K	5%	1/10W
R243	1-216-073-91	RES-CHIP	10K	5%	1/10W	R711	1-216-073-91	RES-CHIP	10K	5%	1/10W
R244	1-216-025-11	RES-CHIP	100	5%	1/10W	R712	1-216-049-11	RES-CHIP	1K	5%	1/10W
R245	1-216-073-91	RES-CHIP	10K	5%	1/10W	R713	1-216-025-11	RES-CHIP	100	5%	1/10W
R246	1-216-073-91	RES-CHIP	10K	5%	1/10W	R714	1-216-025-11	RES-CHIP	100	5%	1/10W
R247	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	R719	1-216-049-11	RES-CHIP	1K	5%	1/10W
R248	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	R721	1-216-049-11	RES-CHIP	1K	5%	1/10W
R249	1-216-025-11	RES-CHIP	100	5%	1/10W	R727	1-216-049-11	RES-CHIP	1K	5%	1/10W
R250	1-216-097-11	RES-CHIP	100K	5%	1/10W	R729	1-216-049-11	RES-CHIP	1K	5%	1/10W
R251	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	R731	1-216-073-91	RES-CHIP	10K	5%	1/10W
R252	1-216-025-11	RES-CHIP	100	5%	1/10W	R740	1-216-073-91	RES-CHIP	10K	5%	1/10W
R253	1-216-043-91	RES-CHIP	560	5%	1/10W	R741	1-216-073-91	RES-CHIP	10K	5%	1/10W
R255	1-216-025-11	RES-CHIP	100	5%	1/10W	R742	1-216-041-00	RES-CHIP	470	5%	1/10W
R256	1-216-041-00	RES-CHIP	470	5%	1/10W	R743	1-216-025-11	RES-CHIP	100	5%	1/10W
R257	1-216-017-91	RES-CHIP	47	5%	1/10W	R744	1-216-049-11	RES-CHIP	1K	5%	1/10W
R258	1-216-017-91	RES-CHIP	47	5%	1/10W	R748	1-216-081-00	RES-CHIP	22K	5%	1/10W
R259	1-216-017-91	RES-CHIP	47	5%	1/10W	R749	1-216-049-11	RES-CHIP	1K	5%	1/10W
R260	1-216-037-00	RES-CHIP	330	5%	1/10W	R754	1-216-025-11	RES-CHIP	100	5%	1/10W
R261	1-208-806-11	METAL CHIP	10K	0.50%	1/10W	R755	1-216-025-11	RES-CHIP	100	5%	1/10W
R262	1-216-025-11	RES-CHIP	100	5%	1/10W	R756	1-216-025-11	RES-CHIP	100	5%	1/10W
R263	1-216-071-00	RES-CHIP	8.2K	5%	1/10W	R757	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R264	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	R758	1-216-025-11	RES-CHIP	100	5%	1/10W
R265	1-216-073-91	RES-CHIP	10K	5%	1/10W	R762	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R266	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	R763	1-216-295-91	SHORT			
R267	1-216-073-91	RES-CHIP	10K	5%	1/10W	R764	1-216-049-11	RES-CHIP	1K	5%	1/10W
R274	1-216-025-11	RES-CHIP	100	5%	1/10W	R767	1-216-049-11	RES-CHIP	1K	5%	1/10W


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REF.NO.	PART NO.	DESCRIPTION	VALUES			REF.NO.	PART NO.	DESCRIPTION	VALUES		
R769	1-216-049-11	RES-CHIP	1K	5%	1/10W	R828	1-216-073-91	RES-CHIP	10K	5%	1/10W
R771	1-216-049-11	RES-CHIP	1K	5%	1/10W	R829	1-216-073-91	RES-CHIP	10K	5%	1/10W
R772	1-216-081-00	RES-CHIP	22K	5%	1/10W	R830	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R773	1-216-081-00	RES-CHIP	22K	5%	1/10W	R834	1-216-041-00	RES-CHIP	470	5%	1/10W
R774	1-216-081-00	RES-CHIP	22K	5%	1/10W	R836	1-216-049-11	RES-CHIP	1K	5%	1/10W
R776	1-216-049-11	RES-CHIP	1K	5%	1/10W	R837	1-216-025-11	RES-CHIP	100	5%	1/10W
R777	1-216-073-91	RES-CHIP	10K	5%	1/10W	R838	1-216-049-11	RES-CHIP	1K	5%	1/10W
R780	1-216-073-91	RES-CHIP	10K	5%	1/10W	R839	1-216-025-11	RES-CHIP	100	5%	1/10W
R781	1-216-025-11	RES-CHIP	100	5%	1/10W	R841	1-216-033-00	RES-CHIP	220	5%	1/10W
R784	1-216-025-11	RES-CHIP	100	5%	1/10W	R842	1-216-081-00	RES-CHIP	22K	5%	1/10W
R785	1-216-049-11	RES-CHIP	1K	5%	1/10W	R843	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R787	1-216-121-11	RES-CHIP	1M	5%	1/10W	R847	1-216-025-11	RES-CHIP	100	5%	1/10W
R788	1-216-295-91	SHORT				R848	1-216-025-11	RES-CHIP	100	5%	1/10W
R789	1-216-041-00	RES-CHIP	470	5%	1/10W	R849	1-216-295-91	SHORT			
R791	1-216-025-11	RES-CHIP	100	5%	1/10W	R850	1-216-295-91	SHORT			
R792	1-216-053-00	RES-CHIP	1.5K	5%	1/10W	R851	1-216-295-91	SHORT			
R793	1-216-053-00	RES-CHIP	1.5K	5%	1/10W	R852	1-216-049-11	RES-CHIP	1K	5%	1/10W
R794	1-216-017-91	RES-CHIP	47	5%	1/10W	R853	1-216-295-91	SHORT			
R795	1-216-025-11	RES-CHIP	100	5%	1/10W	R854	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R796	1-216-295-91	SHORT				R856	1-216-049-11	RES-CHIP	1K	5%	1/10W
R797	1-216-017-91	RES-CHIP	47	5%	1/10W	R857	1-216-025-11	RES-CHIP	100	5%	1/10W
R798	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	R858	1-216-295-91	SHORT			
R799	1-216-049-11	RES-CHIP	1K	5%	1/10W	R859	1-216-295-91	SHORT			
R800	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	R860	1-216-689-11	RES-CHIP	39K	5%	1/10W
R801	1-216-025-11	RES-CHIP	100	5%	1/10W	R861	1-216-689-11	RES-CHIP	39K	5%	1/10W
R802	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	R862	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R803	1-216-017-91	RES-CHIP	47	5%	1/10W	R863	1-216-049-11	RES-CHIP	1K	5%	1/10W
R804	1-216-037-00	RES-CHIP	330	5%	1/10W	R864	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R805	1-216-037-00	RES-CHIP	330	5%	1/10W	R865	1-216-295-91	SHORT			
R806	1-216-037-00	RES-CHIP	330	5%	1/10W	R866	1-216-295-91	SHORT			
R807	1-216-017-91	RES-CHIP	47	5%	1/10W	R867	1-216-081-00	RES-CHIP	22K	5%	1/10W
R808	1-216-049-11	RES-CHIP	1K	5%	1/10W	R6001	1-216-073-91	RES-CHIP	10K	5%	1/10W
R812	1-216-049-11	RES-CHIP	1K	5%	1/10W	 R6002	1-249-393-11	CARBON	10	5%	1/4W
R813	1-216-049-11	RES-CHIP	1K	5%	1/10W	 R6003	1-219-776-11	CARBON	2.2M	10%	1/2W
R814	1-216-025-11	RES-CHIP	100	5%	1/10W	R6004	1-216-121-11	RES-CHIP	1M	5%	1/10W
R815	1-216-025-11	RES-CHIP	100	5%	1/10W	 R6006	1-220-926-11	FUSIBLE	0.47	10%	1/2W
R816	1-216-025-11	RES-CHIP	100	5%	1/10W	R6007	1-215-481-00	METAL	330K	1%	1/4W
R817	1-216-025-11	RES-CHIP	100	5%	1/10W	R6008	1-215-481-00	METAL	330K	1%	1/4W
R818	1-216-025-11	RES-CHIP	100	5%	1/10W	R6009	1-215-481-00	METAL	330K	1%	1/4W
R819	1-216-037-00	RES-CHIP	330	5%	1/10W	R6010	1-249-393-11	CARBON	10	5%	1/4W
R822	1-216-037-00	RES-CHIP	330	5%	1/10W	R6011	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R824	1-216-061-91	RES-CHIP	3.3K	5%	1/10W	R6012	1-216-049-11	RES-CHIP	1K	5%	1/10W
R825	1-216-025-11	RES-CHIP	100	5%	1/10W	R6015	1-216-049-11	RES-CHIP	1K	5%	1/10W
R827	1-216-061-91	RES-CHIP	3.3K	5%	1/10W	R6019	1-216-073-91	RES-CHIP	10K	5%	1/10W

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REF.NO.	PART NO.	DESCRIPTION	VALUES			REF.NO.	PART NO.	DESCRIPTION	VALUES		
R6020	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	R7016	1-216-073-91	RES-CHIP	10K	5%	1/10W
R6021	1-208-798-11	METAL CHIP	4.7K	0.50%	1/10W	R7017	1-216-073-91	RES-CHIP	10K	5%	1/10W
R6022	1-208-803-11	METAL CHIP	7.5K	0.50%	1/10W	R7018	1-216-073-91	RES-CHIP	10K	5%	1/10W
R6025	1-249-417-11	CARBON	1K	5%	1/4W	R7019	1-216-073-91	RES-CHIP	10K	5%	1/10W
R6029	1-216-105-91	RES-CHIP	220K	5%	1/10W	R7021	1-216-049-11	RES-CHIP	1K	5%	1/10W
R6038	1-208-806-11	METAL CHIP	10K	0.50%	1/10W	R7022	1-216-073-91	RES-CHIP	10K	5%	1/10W
R6039	1-208-812-11	METAL CHIP	18K	0.50%	1/10W	R7023	1-249-385-11	CARBON	2.2	5%	1/4W
R6040	1-208-840-11	METAL CHIP	270K	0.50%	1/10W	R7024	1-216-049-11	RES-CHIP	1K	5%	1/10W
 R6041	1-240-241-11	CEMENTED	0.47	5%	20W	R7025	1-216-049-11	RES-CHIP	1K	5%	1/10W
 R6042	1-240-241-11	CEMENTED	0.47	5%	20W	R7026	1-249-385-11	CARBON	2.2	5%	1/4W
R6043	1-211-964-11	METAL CHIP	33	0.50%	1/10W	R7045	1-216-081-00	RES-CHIP	22K	5%	1/10W
R6044	1-249-393-11	CARBON	10	5%	1/4W	R7046	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R6046	1-216-073-91	RES-CHIP	10K	5%	1/10W	R7047	1-216-041-00	RES-CHIP	470	5%	1/10W
R6047	1-216-041-00	RES-CHIP	470	5%	1/10W	R7048	1-216-041-00	RES-CHIP	470	5%	1/10W
R6049	1-216-363-00	METAL OXIDE	0.33	5%	2W	R7051	1-216-295-91	SHORT			
R6050	1-216-363-00	METAL OXIDE	0.33	5%	2W	R7052	1-216-077-91	RES-CHIP	15K	5%	1/10W
R6051	1-249-393-11	CARBON	10	5%	1/4W	R7053	1-216-049-11	RES-CHIP	1K	5%	1/10W
R6052	1-216-073-91	RES-CHIP	10K	5%	1/10W	R7054	1-216-295-91	SHORT			
R6053	1-215-907-11	METAL OXIDE	22	5%	3W	R7055	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R6055	1-216-295-91	SHORT				R7056	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R6056	1-208-810-11	METAL CHIP	15K	0.50%	1/10W	R7058	1-249-429-11	CARBON	10K	5%	1/4W
R6058	1-208-758-11	METAL CHIP	100	0.50%	1/10W	R7059	1-249-385-11	CARBON	2.2	5%	1/4W
R6059	1-249-417-11	CARBON	1K	5%	1/4W	R7060	1-249-385-11	CARBON	2.2	5%	1/4W
R6062	1-216-295-91	SHORT				R7061	1-216-295-91	SHORT			
R6063	1-216-073-91	RES-CHIP	10K	5%	1/10W	R7063	1-216-689-11	RES-CHIP	39K	5%	1/10W
R6064	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	R7064	1-216-049-11	RES-CHIP	1K	5%	1/10W
R6065	1-216-049-11	RES-CHIP	1K	5%	1/10W	R7065	1-216-041-00	RES-CHIP	470	5%	1/10W
 R6066	1-216-343-00	METAL OXIDE	0.33	5%	1W	R7067	1-216-049-11	RES-CHIP	1K	5%	1/10W
R6067	1-216-049-11	RES-CHIP	1K	5%	1/10W	R7068	1-216-041-00	RES-CHIP	470	5%	1/10W
R6068	1-249-433-11	CARBON	22K	5%	1/4W	R7070	1-216-689-11	RES-CHIP	39K	5%	1/10W
R7002	1-216-097-11	RES-CHIP	100K	5%	1/10W	R7071	1-216-121-11	RES-CHIP	1M	5%	1/10W
R7003	1-216-689-11	RES-CHIP	39K	5%	1/10W	R7083	1-249-429-11	CARBON	10K	5%	1/4W
R7004	1-216-689-11	RES-CHIP	39K	5%	1/10W	R7086	1-216-295-91	SHORT			
R7005	1-216-121-11	RES-CHIP	1M	5%	1/10W	R7088	1-216-295-91	SHORT			
R7006	1-216-089-91	RES-CHIP	47K	5%	1/10W	R7090	1-216-089-91	RES-CHIP	47K	5%	1/10W
R7007	1-216-017-91	RES-CHIP	47	5%	1/10W	R7091	1-216-081-00	RES-CHIP	22K	5%	1/10W
R7008	1-216-085-91	RES-CHIP	33K	5%	1/10W	R7092	1-216-025-11	RES-CHIP	100	5%	1/10W
R7009	1-216-295-91	SHORT				R7093	1-216-025-11	RES-CHIP	100	5%	1/10W
R7010	1-216-295-91	SHORT				R7094	1-216-081-00	RES-CHIP	22K	5%	1/10W
R7011	1-216-061-91	RES-CHIP	3.3K	5%	1/10W	R7095	1-216-089-91	RES-CHIP	47K	5%	1/10W
R7012	1-216-061-91	RES-CHIP	3.3K	5%	1/10W	R7096	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R7013	1-216-077-91	RES-CHIP	15K	5%	1/10W	R7097	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R7014	1-249-429-11	CARBON	10K	5%	1/4W	R7098	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R7015	1-249-429-11	CARBON	10K	5%	1/4W	R7099	1-216-065-91	RES-CHIP	4.7K	5%	1/10W

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REF.NO.	PART NO.	DESCRIPTION	VALUES	REF.NO.	PART NO.	DESCRIPTION	VALUES
D9013	8-719-991-33	DIODE 1SS133T-77		R9014	1-249-409-11	CARBON	220 5% 1/4W
D9014	8-719-991-33	DIODE 1SS133T-77		R9015	1-249-409-11	CARBON	220 5% 1/4W
D9015	8-719-991-33	DIODE 1SS133T-77		R9016	1-249-409-11	CARBON	220 5% 1/4W
D9016	8-719-991-33	DIODE 1SS133T-77		R9018	1-216-065-91	RES-CHIP	4.7K 5% 1/10W
D9017	8-719-991-33	DIODE 1SS133T-77		R9019	1-216-212-00	RES-CHIP	3.9K 5% 1/8W
IC				R9026	1-208-789-11	METAL CHIP	2K 0.50% 1/10W
IC9001	8-759-360-83	IC TDA6111Q/N4		R9031	1-208-789-11	METAL CHIP	2K 0.50% 1/10W
IC9002	8-759-360-83	IC TDA6111Q/N4		R9033	1-215-447-00	METAL	12K 1% 1/4W
IC9003	8-759-360-83	IC TDA6111Q/N4		R9034	1-215-439-00	METAL	5.6K 1% 1/4W
JACK				R9035	1-208-790-11	METAL CHIP	2.2K 0.50% 1/10W
\triangle J9001	1-451-470-21	SOCKET, CRT		R9036	1-216-049-11	RES-CHIP	1K 5% 1/10W
COIL				R9037	1-240-233-71	METAL OXIDE	100 5% 3W
L9002	1-408-591-11	INDUCTOR	1 μ H	R9038	1-208-790-11	METAL CHIP	2.2K 0.50% 1/10W
L9003	1-408-591-11	INDUCTOR	1 μ H	R9039	1-208-790-11	METAL CHIP	2.2K 0.50% 1/10W
L9004	1-408-591-11	INDUCTOR	1 μ H	R9041	1-216-049-11	RES-CHIP	1K 5% 1/10W
L9005	1-406-666-21	INDUCTOR	150 μ H	R9042	1-216-049-11	RES-CHIP	1K 5% 1/10W
L9006	1-412-525-31	INDUCTOR	10 μ H	R9043	1-240-233-71	METAL OXIDE	100 5% 3W
TRANSISTOR				R9044	1-240-233-71	METAL OXIDE	100 5% 3W
Q9001	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX		R9047	1-202-557-00	SOLID	220 20% 1/2W
Q9002	8-729-423-33	TRANSISTOR 2SC3311A-QRSTA		R9048	1-216-049-11	RES-CHIP	1K 5% 1/10W
Q9003	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX		R9049	1-216-049-11	RES-CHIP	1K 5% 1/10W
Q9004	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX		R9050	1-249-424-11	CARBON	3.9K 5% 1/4W
Q9005	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX		R9051	1-202-557-00	SOLID	220 20% 1/2W
Q9008	8-729-423-33	TRANSISTOR 2SC3311A-QRSTA		R9052	1-202-557-00	SOLID	220 20% 1/2W
Q9009	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX		R9053	1-249-424-11	CARBON	3.9K 5% 1/4W
Q9010	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX		R9054	1-249-424-11	CARBON	3.9K 5% 1/4W
Q9011	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX		R9055	1-260-126-81	CARBON	180K 5% 1/2W
Q9012	8-729-423-33	TRANSISTOR 2SC3311A-QRSTA		R9056	1-202-549-00	SOLID	100 20% 1/2W
Q9014	8-729-823-81	TRANSISTOR 2SC4632LS-CB7		R9057	1-202-847-00	SOLID	560K 20% 1/2W
RESISTOR				R9059	1-202-818-00	SOLID	1K 20% 1/2W
R9001	1-216-226-00	RES-CHIP	15K 5% 1/8W	R9061	1-202-549-00	SOLID	100 20% 1/2W
R9004	1-249-428-11	CARBON	8.2K 5% 1/4W	R9062	1-260-123-11	CARBON	100K 5% 1/2W
R9005	1-249-421-11	CARBON	2.2K 5% 1/4W	R9063	1-260-123-11	CARBON	100K 5% 1/2W
R9006	1-249-429-11	CARBON	10K 5% 1/4W	R9064	1-260-126-81	CARBON	180K 5% 1/2W
R9007	1-208-789-11	METAL CHIP	2K 0.50% 1/10W	R9065	1-249-425-11	CARBON	4.7K 5% 1/4W
R9008	1-216-085-91	RES-CHIP	33K 5% 1/10W	R9067	1-219-769-11	CARBON	3.3M 5% 1/2W
R9009	1-249-429-11	CARBON	10K 5% 1/4W	R9068	1-216-101-00	RES-CHIP	150K 5% 1/10W
R9010	1-249-429-11	CARBON	10K 5% 1/4W	R9070	1-249-411-11	CARBON	330 5% 1/4W
R9012	1-249-417-11	CARBON	1K 5% 1/4W	R9071	1-249-411-11	CARBON	330 5% 1/4W
R9013	1-216-049-11	RES-CHIP	1K 5% 1/10W	R9072	1-249-411-11	CARBON	330 5% 1/4W
				R9073	1-216-049-11	RES-CHIP	1K 5% 1/10W
				R9076	1-219-769-11	CARBON	3.3M 5% 1/2W
				R9077	1-249-417-11	CARBON	1K 5% 1/4W
				R9078	1-249-427-11	CARBON	6.8K 5% 1/4W




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REF.NO.	PART NO.	DESCRIPTION	VALUES	REF.NO.	PART NO.	DESCRIPTION	VALUES
R9079	1-249-426-11	CARBON	5.6K 5% 1/4W	C5019	1-126-968-11	ELECT	100 μ F 20% 50V
R9081	1-247-843-11	CARBON	3.3K 5% 1/4W	C5020	1-126-767-11	ELECT	1000 μ F 20% 16V
R9083	1-249-436-11	CARBON	39K 5% 1/4W	C5021	1-163-133-00	CERAMIC CHIP	470pF 5% 50V
R9084	1-260-126-81	CARBON	180K 5% 1/2W	C5022	1-137-368-11	MYLAR	.0047 μ F 5% 50V
R9085	1-260-126-81	CARBON	180K 5% 1/2W	C5023	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V
R9089	1-215-445-00	METAL	10K 1% 1/4W	C5024	1-102-038-00	CERAMIC	0.001 μ F 500V
R9091	1-215-429-00	METAL	2.2K 1% 1/4W	C5025	1-130-471-00	MYLAR	0.001 μ F 5% 50V
VARIABLE RESISTOR				C5026	1-107-655-11	ELECT	47 μ F 20% 250V
\triangle RV9001	1-241-714-11	RES, ADJ, METAL FILM	110M	C5027	1-126-963-11	ELECT	4.7 μ F 20% 50V
RV9002	1-241-788-11	RES, ADJ, CARBON	100K	C5028	1-126-963-11	ELECT	4.7 μ F 20% 50V
D				C5030	1-136-153-00	FILM	0.01 μ F 5% 50V
*	A-1346-947-A D BOARD, COMPLETE			C5031	1-163-011-11	CERAMIC CHIP	0.0015 μ F 10% 50V
	(KV-32HS20/32XBR450 only)			C5032	1-104-760-11	CERAMIC CHIP	0.047 μ F 10% 50V
*	A-1346-948-A D BOARD, COMPLETE			C5033	1-136-165-00	FILM	0.1 μ F 5% 50V
	(KV-36HS20/36HS20H/32XBR450C/36XBR450/36XBR450H only)			C5034	1-162-114-00	CERAMIC	.0047 μ F 2KV
	3-710-578-01	COVER, VOLUME, 6 MOLD		C5035	1-126-933-11	ELECT	100 μ F 20% 16V
	4-382-854-01	SCREW (M3X8), P, SW (+)		C5036	1-126-941-11	ELECT	470 μ F 20% 25V
	4-382-854-21	SCREW (M3X14), P, SW (+)		C5037	1-107-670-11	ELECT	10 μ F 20% 400V
	The high-voltage leads associated with the FBT on this board are not included and must be ordered separately. Order the following leads when requesting this D Board:			C5038	1-104-660-91	ELECT	47 μ F 20% 16V
\triangle	1-251-715-22	CAP ASSY, HIGH-VOLTAGE		C5040	1-126-935-11	ELECT	470 μ F 20% 16V
\triangle	1-900-805-19	WIRE ASSY, FOCUS HV		C5041	1-126-935-11	ELECT	470 μ F 20% 16V
CAPACITOR				C5043	1-126-767-11	ELECT	1000 μ F 20% 16V
C5001	1-164-161-11	CERAMIC CHIP	0.0022 μ F 10% 50V	C5044	1-165-319-11	CERAMIC CHIP	0.1 μ F 50V
C5002	1-106-383-00	MYLAR	0.047 μ F 10% 200V	C5045	1-165-319-11	CERAMIC CHIP	0.1 μ F 50V
C5004	1-106-383-00	MYLAR	0.047 μ F 10% 200V	C5046	1-163-025-11	CERAMIC CHIP	0.001 μ F 50V
C5005	1-126-235-11	ELECT	100 μ F 20% 6.3V	C5047	1-163-025-11	CERAMIC CHIP	0.001 μ F 50V
C5006	1-126-964-11	ELECT	10 μ F 20% 50V	C5049	1-163-009-91	CERAMIC CHIP	0.001 μ F 10% 50V
C5007	1-126-941-11	ELECT	470 μ F 20% 25V	C5050	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V
C5008	1-126-940-11	ELECT	330 μ F 20% 25V	C5051	1-115-339-11	CERAMIC CHIP	0.1 μ F 10% 50V
C5009	1-126-941-11	ELECT	470 μ F 20% 25V	C5052	1-115-339-11	CERAMIC CHIP	0.1 μ F 10% 50V
C5011	1-107-641-11	ELECT	220 μ F 20% 160V	C5053	1-107-372-11	MYLAR	0.22 μ F 10% 200V
C5012	1-163-017-00	CERAMIC CHIP	.0047 μ F 10% 50V	C5056	1-162-318-11	CERAMIC	0.001 μ F 10% 500V
C5013	1-164-161-11	CERAMIC CHIP	0.0022 μ F 10% 50V	C5057	1-162-134-11	CERAMIC	470pF 10% 2KV
C5015	1-107-884-11	ELECT	1000 μ F 20% 16V	C5058	1-162-116-00	CERAMIC	680pF 10% 2KV
C5016	1-136-171-00	FILM	0.33 μ F 5% 50V	C5059	1-162-116-00	CERAMIC	680pF 10% 2KV
C5017	1-115-185-11	CERAMIC CHIP	0.033 μ F 10% 50V	C5060	1-137-417-11	MYLAR	.0047 μ F 10% 200V
C5018	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V	C5061	1-117-839-11	FILM	9100pF 3% 1.5KV
				C5063	1-117-839-11	FILM	9100pF 3% 1.5KV
				C5064	1-115-520-11	FILM	0.68 μ F 5% 250V
				C5065	1-107-506-11	FILM	0.68 μ F 3% 400V
				C5066	1-109-921-11	CERAMIC	0.0015 μ F 10% 500V
				C5069	1-115-339-11	CERAMIC CHIP	0.1 μ F 10% 50V
				C5070	1-115-339-11	CERAMIC CHIP	0.1 μ F 10% 50V
				C5071	1-115-339-11	CERAMIC CHIP	0.1 μ F 10% 50V


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REF.NO.	PART NO.	DESCRIPTION	VALUES			REF.NO.	PART NO.	DESCRIPTION	VALUES		
C5072	1-163-021-91	CERAMIC CHIP	0.01μF	10%	50V	C5611	1-163-038-91	CERAMIC CHIP	0.1μF		25V
C5073	1-164-161-11	CERAMIC CHIP	0.0022μF	10%	50V	C5612	1-126-964-11	ELECT	10μF	20%	50V
C5075	1-115-339-11	CERAMIC CHIP	0.1μF	10%	50V	C5613	1-115-185-11	CERAMIC CHIP	0.033μF	10%	50V
C5076	1-115-339-11	CERAMIC CHIP	0.1μF	10%	50V	C5614	1-126-964-11	ELECT	10μF	20%	50V
C5077	1-115-339-11	CERAMIC CHIP	0.1μF	10%	50V	C5616	1-136-165-00	FILM	0.1μF	5%	50V
C5079	1-163-021-91	CERAMIC CHIP	0.01μF	10%	50V	C5617	1-104-660-91	ELECT	47μF	20%	16V
C5080	1-137-372-11	MYLAR	0.022μF	5%	50V	C5618	1-136-171-00	FILM	0.33μF	5%	50V
C5081	1-137-372-11	MYLAR	0.022μF	5%	50V	C5619	1-163-127-00	CERAMIC CHIP	270pF	5%	50V
C5102	1-107-888-11	ELECT	47μF	20%	25V	C5621	1-136-165-00	FILM	0.1μF	5%	50V
C5501	1-107-888-11	ELECT	47μF	20%	25V	C5623	1-126-933-11	ELECT	100μF	20%	16V
C5502	1-126-941-11	ELECT	470μF	20%	25V	C5625	1-163-251-11	CERAMIC CHIP	100pF	5%	50V
C5503	1-104-665-11	ELECT	100μF	20%	25V	C5628	1-126-933-11	ELECT	100μF	20%	16V
C5504	1-104-660-91	ELECT	47μF	20%	16V	C6503	1-131-940-11	ELECT	1200μF	20%	250V
C5505	1-126-964-11	ELECT	10μF	20%	50V	C6504	1-163-021-91	CERAMIC CHIP	0.01μF	10%	50V
C5506	1-126-963-11	ELECT	4.7μF	20%	50V	C6507	1-126-967-11	ELECT	47μF	20%	50V
C5507	1-163-141-00	CERAMIC CHIP	0.001μF	5%	50V	C6508	1-104-664-11	ELECT	47μF	20%	25V
C5508	1-163-031-91	CERAMIC CHIP	0.01μF		50V	C6510	1-130-495-00	MYLAR	0.1μF	5%	50V
C5509	1-163-263-11	CERAMIC CHIP	330pF	5%	50V	C6511	1-163-021-91	CERAMIC CHIP	0.01μF	10%	50V
C5511	1-126-933-11	ELECT	100μF	20%	16V	C6516	1-163-009-91	CERAMIC CHIP	0.001μF	10%	50V
C5514	1-163-021-91	CERAMIC CHIP	0.01μF	10%	50V	C6517	1-126-963-11	ELECT	4.7μF	20%	50V
C5518	1-129-709-61	FILM	0.0039μF	5%	630V	C6518	1-136-479-11	FILM	0.001μF	2%	50V
C5519	1-104-760-11	CERAMIC CHIP	0.047μF	10%	50V	C6519	1-126-964-11	ELECT	10μF	20%	50V
C5522	1-163-275-11	CERAMIC CHIP	0.001μF	5%	50V	C6525	1-164-143-11	CERAMIC	0.001μF	10%	1KV
C5531	1-136-165-00	FILM	0.1μF	5%	50V	C6526	1-164-143-11	CERAMIC	0.001μF	10%	1KV
C5542	1-164-182-11	CERAMIC CHIP	0.0033μF	10%	50V	C6532	1-135-998-21	FILM	56000pF	3%	800V
C5548	1-137-194-81	FILM	0.47μF	5%	50V	C6544	1-107-855-12	ELECT(BLOCK)	330μF		160V
C5550	1-129-716-00	FILM	0.015μF	5%	200V	C6545	1-126-943-11	ELECT	2200μF	20%	25V
C5576	1-104-666-11	ELECT	220μF	20%	25V	C6546	1-128-548-11	ELECT	4700μF	20%	25V
C5577	1-104-666-11	ELECT	220μF	20%	25V	C6547	1-113-610-11	ELECT(BLOCK)	220μF	20%	250V
C5587	1-104-760-11	CERAMIC CHIP	0.047μF	10%	50V	C6548	1-128-549-11	ELECT	3300μF	20%	35V
C5588	1-136-153-00	FILM	0.01μF	5%	50V	C6551	1-163-037-11	CERAMIC CHIP	0.022μF	10%	50V
C5590	1-163-263-11	CERAMIC CHIP	330pF	5%	50V	C6561	1-126-960-11	ELECT	1μF	20%	50V
C5592	1-115-339-11	CERAMIC CHIP	0.1μF	10%	50V	 C6584	1-136-344-11	MYLAR	0.047μF	20%	125V
C5594	1-136-165-00	FILM	0.1μF	5%	50V	 C6585	1-119-899-51	CERAMIC	1000pF	10%	250V
C5596	1-126-960-11	ELECT	1μF	20%	50V	C6586	1-113-924-11	CERAMIC	.0047μF	20%	125V
C5598	1-104-660-91	ELECT	47μF	20%	16V	C6587	1-113-924-11	CERAMIC	.0047μF	20%	125V
C5600	1-104-660-91	ELECT	47μF	20%	16V	C6588	1-113-924-11	CERAMIC	.0047μF	20%	125V
C5601	1-136-165-00	FILM	0.1μF	5%	50V	C6589	1-113-924-11	CERAMIC	.0047μF	20%	125V
C5602	1-104-660-91	ELECT	47μF	20%	16V	C6590	1-131-940-11	ELECT	1200μF	20%	250V
C5603	1-163-017-00	CERAMIC CHIP	.0047μF	10%	50V	 C6591	1-119-899-51	CERAMIC	1000pF	10%	250V
C5605	1-136-177-00	FILM	1μF	5%	50V	C6594	1-164-004-11	CERAMIC CHIP	0.1μF	10%	25V
C5607	1-115-185-11	CERAMIC CHIP	0.033μF	10%	50V	C6595	1-104-665-11	ELECT	100μF	20%	25V
C5609	1-104-665-11	ELECT	100μF	20%	25V	C6596	1-126-960-11	ELECT	1μF	20%	50V
C5610	1-126-935-11	ELECT	470μF	20%	16V	C8002	1-136-169-00	FILM	0.22μF	5%	50V


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
REF.NO.	PART NO.	DESCRIPTION	VALUES	REF.NO.	PART NO.	DESCRIPTION	VALUES
D5025	8-719-510-02	DIODE D1NS4-TR		D8014	8-719-302-43	DIODE RGP10GPKG23	
D5026	8-719-404-50	DIODE MA111-TX		D8016	8-719-948-45	DIODE ERA22-08TP3	
D5027	8-719-404-50	DIODE MA111-TX		D8017	8-719-948-45	DIODE ERA22-08TP3	
D5028	8-719-404-50	DIODE MA111-TX		D8018	8-719-052-90	DIODE D1NL40-TA2	
D5029	8-719-404-50	DIODE MA111-TX		 D8019	8-719-110-41	DIODE MTZJ-T-77-15B	
D5031	8-719-977-28	DIODE UDZSTE-1710B		D8020	8-719-404-50	DIODE MA111-TX	
D5032	8-719-404-50	DIODE MA111-TX		D8021	8-719-404-50	DIODE MA111-TX	
D5501	8-719-404-50	DIODE MA111-TX		D8022	8-719-404-50	DIODE MA111-TX	
D5502	8-719-404-50	DIODE MA111-TX		D8025	8-719-982-26	DIODE MTZJ-T-77-33B	
D5503	8-719-404-50	DIODE MA111-TX		D8026	8-719-404-50	DIODE MA111-TX	
D5505	8-719-800-76	DIODE MA153-TX		D8027	8-719-404-50	DIODE MA111-TX	
D5506	8-719-404-50	DIODE MA111-TX		D8028	8-719-991-33	DIODE 1SS133T-77	
D5507	8-719-800-76	DIODE MA153-TX		 D8050	8-719-923-86	DIODE MTZJ-T-77-15	
D5513	8-719-991-33	DIODE 1SS133T-77		 D8051	8-719-923-86	DIODE MTZJ-T-77-15	
D5514	8-719-063-70	DIODE D1NL20U-TA2		FERRITE BEAD			
D5515	8-719-063-70	DIODE D1NL20U-TA2		FB5001	1-410-397-21	FERRITE	1.1μH
D5522	8-719-923-78	DIODE MTZJ-T-77-12		FB5002	1-543-298-11	FERRITE	0μH
D5523	8-719-923-78	DIODE MTZJ-T-77-12		FB6501	1-410-397-21	FERRITE	1.1μH
D6501	8-719-404-50	DIODE MA111-TX		FB6502	1-410-396-41	FERRITE	0.45μH
D6502	8-719-979-64	DIODE μF4005PKG23		FB6504	1-410-397-21	FERRITE	1.1μH
D6507	1-216-295-91	SHORT		FB6505	1-412-911-11	FERRITE	0μH
D6508	8-719-982-27	DIODE MTZJ-T-77-33C		FB6506	1-412-911-11	FERRITE	0μH
D6509	8-719-068-00	DIODE ERC04-06SE		FB6508	1-410-396-41	FERRITE	0.45μH
D6510	8-719-068-00	DIODE ERC04-06SE		FB6509	1-410-396-41	FERRITE	0.45μH
D6513	8-719-500-71	DIODE D8LC40F		FB8001	1-410-396-41	FERRITE	0.45μH
 D6514	8-719-060-89	DIODE D4SBS6-F		IC			
D6515	8-719-060-90	DIODE S2L60F		IC5001	8-759-701-01	IC NJM2904M(TE2)	
D6516	8-719-060-89	DIODE D4SBS6-F		IC5002	8-759-700-07	IC NJM2903M-TE2	
D6517	8-719-060-90	DIODE S2L60F		IC5003	8-759-518-68	IC PQ12RF21	
D6522	8-719-404-50	DIODE MA111-TX		 IC5004	8-759-192-71	IC STV9379	
D6530	8-719-022-99	DIODE D6SB60L		 IC5005	8-759-803-42	IC LA6500-FA	
D6531	8-719-404-50	DIODE MA111-TX		IC5006	8-749-013-76	IC PQ6RD83B	
D6532	8-719-948-45	DIODE ERA22-08TP3		IC5007	8-759-981-61	IC NJM2901M-TE2	
D6533	8-719-404-50	DIODE MA111-TX		IC5008	8-759-675-90	IC BA51W12ST-V5	
D6537	8-719-404-50	DIODE MA111-TX		IC5501	6-700-149-01	IC M24C04-MN6T(A)	
D8002	8-719-404-50	DIODE MA111-TX		IC5502	8-759-981-61	IC NJM2901M-TE2	
D8003	8-719-404-50	DIODE MA111-TX		IC5504	8-759-803-42	IC LA6500-FA	
 D8004	8-719-109-85	DIODE MTZJ-T-77-5.1B		IC5506	8-759-803-42	IC LA6500-FA	
D8005	8-719-404-50	DIODE MA111-TX		 IC5510	8-759-803-42	IC LA6500-FA	
D8006	8-719-921-89	DIODE MTZJ-T-77-13C		IC5511	8-752-074-64	IC CXA2026AS	
D8007	8-719-404-50	DIODE MA111-TX		IC5512	8-759-929-65	IC NJM79M12FA	
D8009	8-719-404-50	DIODE MA111-TX					
D8010	8-719-052-90	DIODE D1NL40-TA2					
 D8013	8-719-063-70	DIODE D1NL20U-TA2					


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REF.NO.	PART NO.	DESCRIPTION	VALUES			REF.NO.	PART NO.	DESCRIPTION	VALUES		
Q5505	1-801-806-11	TRANSISTOR DTC144EKA-T146				R5007	1-216-099-00	RES-CHIP	120K	5%	1/10W
Q5506	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX				R5008	1-216-073-91	RES-CHIP	10K	5%	1/10W
Q5507	8-729-931-45	TRANSISTOR IRF614				R5009	1-216-099-00	RES-CHIP	120K	5%	1/10W
Q5508	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX				R5011	1-216-099-00	RES-CHIP	120K	5%	1/10W
Q5509	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX				R5012	1-208-814-91	METAL CHIP	22K	0.50%	1/10W
Q6503	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX				R5013	1-216-393-00	METAL OXIDE	2.2	5%	3W
 Q6506	8-729-052-32	TRANSISTOR IRFIB7N50A-LF31				R5014	1-208-790-11	METAL CHIP	2.2K	0.50%	1/10W
 Q6507	8-729-052-32	TRANSISTOR IRFIB7N50A-LF31				R5016	1-208-832-11	METAL CHIP	120K	0.50%	1/10W
Q6520	8-729-019-57	TRANSISTOR 2SA1208S-TP				R5017	1-208-832-11	METAL CHIP	120K	0.50%	1/10W
Q6521	8-729-423-33	TRANSISTOR 2SC3311A-QRSTA				R5018	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
Q6522	8-729-119-76	TRANSISTOR 2SA1309A-QRSTA				R5019	1-249-429-11	CARBON	10K	5%	1/4W
Q6524	8-729-119-76	TRANSISTOR 2SA1309A-QRSTA				R5020	1-208-800-11	METAL CHIP	5.6K	0.50%	1/10W
Q6526	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX				R5021	1-208-826-11	METAL CHIP	68K	0.50%	1/10W
Q6527	8-729-023-22	TRANSISTOR 2SD2114KT146				R5022	1-208-816-11	METAL CHIP	27K	0.50%	1/10W
Q6528	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX				R5023	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
Q6529	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX				R5024	1-216-089-91	RES-CHIP	47K	5%	1/10W
Q6530	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX				R5025	1-208-800-11	METAL CHIP	5.6K	0.50%	1/10W
Q6531	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX				R5026	1-216-049-11	RES-CHIP	1K	5%	1/10W
Q6532	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX				R5027	1-208-826-11	METAL CHIP	68K	0.50%	1/10W
Q8001	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX				R5028	1-208-822-11	METAL CHIP	47K	0.50%	1/10W
Q8002	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX				R5029	1-208-798-11	METAL CHIP	4.7K	0.50%	1/10W
Q8003	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX				R5030	1-216-295-91	SHORT			
Q8004	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX				R5031	1-208-782-11	METAL CHIP	1K	0.50%	1/10W
Q8007	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX				R5033	1-216-025-11	RES-CHIP	100	5%	1/10W
Q8008	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX				R5036	1-216-085-91	RES-CHIP	33K	5%	1/10W
Q8009	8-729-200-17	TRANSISTOR 2SA1091O-TPE2				R5037	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
Q8010	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX				R5038	1-216-075-00	RES-CHIP	12K	5%	1/10W
 Q8013	8-729-044-42	TRANSISTOR IRFI644G-LF36				R5039	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
 Q8014	8-729-044-42	TRANSISTOR IRFI644G-LF36				R5040	1-216-089-91	RES-CHIP	47K	5%	1/10W
Q8015	8-729-119-80	TRANSISTOR 2SC2688-LK				R5041	1-249-383-11	CARBON	1.5	5%	1/4W
Q8016	8-729-045-65	TRANSISTOR 2SA1776TV2Q				R5042	1-216-081-00	RES-CHIP	22K	5%	1/10W
Q8018	8-729-043-95	TRANSISTOR 2SC3840K				R5043	1-208-798-11	METAL CHIP	4.7K	0.50%	1/10W
Q8019	1-801-806-11	TRANSISTOR DTC144EKA-T146				R5044	1-216-073-91	RES-CHIP	10K	5%	1/10W
Q8020	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX				R5045	1-216-073-91	RES-CHIP	10K	5%	1/10W
Q8022	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX				R5046	1-214-798-21	METAL	1.8	1%	1/2W
Q8023	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX				R5047	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
RESISTOR						R5048	1-208-802-11	METAL CHIP	6.8K	0.50%	1/10W
R5001	1-216-001-00	RES-CHIP	10	5%	1/10W	R5049	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R5002	1-216-033-00	RES-CHIP	220	5%	1/10W	R5050	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R5003	1-216-073-91	RES-CHIP	10K	5%	1/10W	R5051	1-249-414-11	CARBON	560	5%	1/4W
R5004	1-216-099-00	RES-CHIP	120K	5%	1/10W	R5052	1-214-796-00	METAL	1.5	1%	1/2W
R5005	1-216-033-00	RES-CHIP	220	5%	1/10W	R5053	1-215-890-11	METAL OXIDE	470	5%	2W
						R5054	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
						R5055	1-216-073-91	RES-CHIP	10K	5%	1/10W


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REF.NO.	PART NO.	DESCRIPTION	VALUES			REF.NO.	PART NO.	DESCRIPTION	VALUES		
R5056	1-216-105-91	RES-CHIP	220K	5%	1/10W	R5104	1-216-073-91	RES-CHIP	10K	5%	1/10W
R5057	1-216-073-91	RES-CHIP	10K	5%	1/10W	R5105	1-216-089-91	RES-CHIP	47K	5%	1/10W
R5058	1-216-113-00	RES-CHIP	470K	5%	1/10W	R5106	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R5059	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	R5107	1-249-401-11	CARBON	47	5%	1/4W
R5063	1-208-813-11	METAL CHIP	20K	0.50%	1/10W	R5108	1-208-819-11	METAL CHIP	36K	0.50%	1/10W
R5064	1-218-761-11	METAL CHIP	240K	0.50%	1/10W	R5109	1-208-808-11	METAL CHIP	12K	0.50%	1/10W
R5065	1-218-761-11	METAL CHIP	240K	0.50%	1/10W	R5110	1-249-401-11	CARBON	47	5%	1/4W
R5066	1-208-792-11	METAL CHIP	2.7K	0.50%	1/10W	R5111	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R5067	1-208-794-11	METAL CHIP	3.3K	0.50%	1/10W	R5112	1-216-033-00	RES-CHIP	220	5%	1/10W
R5068	1-216-105-91	RES-CHIP	220K	5%	1/10W	R5113	1-249-425-11	CARBON	4.7K	5%	1/4W
R5069	1-216-113-00	RES-CHIP	470K	5%	1/10W	R5114	1-249-425-11	CARBON	4.7K	5%	1/4W
R5070	1-216-113-00	RES-CHIP	470K	5%	1/10W	R5115	1-249-417-11	CARBON	1K	5%	1/4W
R5071	1-208-810-11	METAL CHIP	15K	0.50%	1/10W	R5116	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R5072	1-208-810-11	METAL CHIP	15K	0.50%	1/10W	R5117	1-216-055-00	RES-CHIP	1.8K	5%	1/10W
R5073	1-208-830-11	METAL CHIP	100K	0.50%	1/10W	R5120	1-216-049-11	RES-CHIP	1K	5%	1/10W
R5074	1-208-830-11	METAL CHIP	100K	0.50%	1/10W	R5121	1-216-073-91	RES-CHIP	10K	5%	1/10W
R5075	1-208-830-11	METAL CHIP	100K	0.50%	1/10W	R5122	1-216-073-91	RES-CHIP	10K	5%	1/10W
R5076	1-208-830-11	METAL CHIP	100K	0.50%	1/10W	R5123	1-216-295-91	SHORT			
R5077	1-208-816-11	METAL CHIP	27K	0.50%	1/10W	R5124	1-216-295-91	SHORT			
R5078	1-208-830-11	METAL CHIP	100K	0.50%	1/10W	R5125	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R5079	1-208-810-11	METAL CHIP	15K	0.50%	1/10W	R5126	1-216-025-11	RES-CHIP	100	5%	1/10W
R5080	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	R5127	1-215-890-11	METAL OXIDE	470	5%	2W
R5081	1-208-830-11	METAL CHIP	100K	0.50%	1/10W	R5128	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R5082	1-208-806-11	METAL CHIP	10K	0.50%	1/10W	R5129	1-216-025-11	RES-CHIP	100	5%	1/10W
R5083	1-208-790-11	METAL CHIP	2.2K	0.50%	1/10W	R5130	1-249-401-11	CARBON	47	5%	1/4W
R5084	1-216-073-91	RES-CHIP	10K	5%	1/10W	R5131	1-208-794-11	METAL CHIP	3.3K	0.50%	1/10W
R5085	1-216-113-00	RES-CHIP	470K	5%	1/10W	R5132	1-216-481-11	METAL OXIDE	1.2K	5%	3W
R5086	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	R5133	1-216-481-11	METAL OXIDE	1.2K	5%	3W
R5087	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	R5134	1-216-481-11	METAL OXIDE	1.2K	5%	3W
R5088	1-216-049-11	RES-CHIP	1K	5%	1/10W	R5135	1-216-481-11	METAL OXIDE	1.2K	5%	3W
R5089	1-216-372-11	METAL OXIDE	1.8	5%	2W	R5136	1-216-481-11	METAL OXIDE	1.2K	5%	3W
R5090	1-216-372-11	METAL OXIDE	1.8	5%	2W	R5137	1-216-481-11	METAL OXIDE	1.2K	5%	3W
 R5091	1-249-389-11	CARBON	4.7	5%	1/4W	R5138	1-216-049-11	RES-CHIP	1K	5%	1/10W
R5092	1-216-049-11	RES-CHIP	1K	5%	1/10W	R5139	1-216-049-11	RES-CHIP	1K	5%	1/10W
R5093	1-208-807-11	METAL CHIP	11K	0.50%	1/10W	R5140	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R5094	1-215-869-11	METAL OXIDE	1K	5%	1W	R5141	1-215-915-11	METAL OXIDE	470	5%	3W
 R5095	1-249-443-11	CARBON	0.47	5%	1/4W	R5142	1-216-386-11	METAL OXIDE	0.56	5%	3W
 R5096	1-249-443-11	CARBON	0.47	5%	1/4W	R5143	1-216-385-11	METAL OXIDE	0.47	5%	3W
 R5097	1-249-380-11	CARBON	0.82	5%	1/4W	R5144	1-216-385-11	METAL OXIDE	0.47	5%	3W
 R5098	1-249-379-11	CARBON	0.68	5%	1/4W	R5145	1-215-880-00	METAL OXIDE	10	5%	2W
R5101	1-208-798-11	METAL CHIP	4.7K	0.50%	1/10W	R5146	1-216-089-91	RES-CHIP	47K	5%	1/10W
R5102	1-208-782-11	METAL CHIP	1K	0.50%	1/10W	R5147	1-208-794-11	METAL CHIP	3.3K	0.50%	1/10W
R5103	1-208-790-11	METAL CHIP	2.2K	0.50%	1/10W	R5148	1-215-865-11	METAL OXIDE	220	5%	1W
						R5149	1-216-065-91	RES-CHIP	4.7K	5%	1/10W


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R5150	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	R5536	1-208-810-11	METAL CHIP	15K	0.50%	1/10W
R5151	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	R5544	1-208-812-11	METAL CHIP	18K	0.50%	1/10W
R5152	1-216-073-91	RES-CHIP	10K	5%	1/10W	R5545	1-208-818-11	METAL CHIP	33K	0.50%	1/10W
R5153	1-216-073-91	RES-CHIP	10K	5%	1/10W	R5547	1-216-081-00	RES-CHIP	22K	5%	1/10W
R5154	1-216-073-91	RES-CHIP	10K	5%	1/10W	R5548	1-216-089-91	RES-CHIP	47K	5%	1/10W
R5155	1-216-081-00	RES-CHIP	22K	5%	1/10W	R5554	1-208-812-11	METAL CHIP	18K	0.50%	1/10W
R5156	1-216-089-91	RES-CHIP	47K	5%	1/10W	R5563	1-208-801-11	METAL CHIP	6.2K	0.50%	1/10W
R5157	1-216-089-91	RES-CHIP	47K	5%	1/10W	R5564	1-208-830-11	METAL CHIP	100K	0.50%	1/10W
R5158	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	R5565	1-208-830-11	METAL CHIP	100K	0.50%	1/10W
R5159	1-216-025-11	RES-CHIP	100	5%	1/10W	R5573	1-216-081-00	RES-CHIP	22K	5%	1/10W
R5160	1-216-025-11	RES-CHIP	100	5%	1/10W	R5576	1-249-395-11	CARBON	15	5%	1/4W
R5161	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	R5577	1-208-836-11	METAL CHIP	180K	0.50%	1/10W
R5163	1-216-063-91	RES-CHIP	3.9K	5%	1/10W	R5578	1-208-812-11	METAL CHIP	18K	0.50%	1/10W
R5164	1-260-288-11	CARBON	0.47	5%	1/2W	R5579	1-216-113-00	RES-CHIP	470K	5%	1/10W
R5501	1-216-033-00	RES-CHIP	220	5%	1/10W	R5581	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R5502	1-216-295-91	SHORT				R5585	1-208-846-11	METAL CHIP	470K	0.50%	1/10W
R5503	1-216-017-91	RES-CHIP	47	5%	1/10W	R5588	1-216-353-00	METAL OXIDE	2.2	5%	1W
R5504	1-208-840-11	METAL CHIP	270K	0.50%	1/10W	R5599	1-216-073-91	RES-CHIP	10K	5%	1/10W
R5505	1-208-840-11	METAL CHIP	270K	0.50%	1/10W	 R5615	1-249-395-11	CARBON	15	5%	1/4W
R5506	1-216-073-91	RES-CHIP	10K	5%	1/10W	R5623	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R5507	1-216-017-91	RES-CHIP	47	5%	1/10W	R5645	1-216-089-91	RES-CHIP	47K	5%	1/10W
R5508	1-216-025-11	RES-CHIP	100	5%	1/10W	R5647	1-208-758-11	METAL CHIP	100	0.50%	1/10W
R5509	1-216-025-11	RES-CHIP	100	5%	1/10W	R5648	1-216-385-11	METAL OXIDE	0.47	5%	3W
R5510	1-216-025-11	RES-CHIP	100	5%	1/10W	R5649	1-215-886-11	METAL OXIDE	100	5%	2W
R5511	1-216-295-91	SHORT				R5650	1-216-089-91	RES-CHIP	47K	5%	1/10W
R5512	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	R5657	1-208-798-11	METAL CHIP	4.7K	0.50%	1/10W
R5513	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	R5666	1-216-091-00	RES-CHIP	56K	5%	1/10W
R5514	1-216-295-91	SHORT				R5669	1-208-789-11	METAL CHIP	2K	0.50%	1/10W
R5516	1-208-792-11	METAL CHIP	2.7K	0.50%	1/10W	R5670	1-208-820-11	METAL CHIP	39K	0.50%	1/10W
R5518	1-208-822-11	METAL CHIP	47K	0.50%	1/10W	R5672	1-216-109-00	RES-CHIP	330K	5%	1/10W
R5519	1-208-822-11	METAL CHIP	47K	0.50%	1/10W	R5678	1-208-804-11	METAL CHIP	8.2K	0.50%	1/10W
R5520	1-208-816-11	METAL CHIP	27K	0.50%	1/10W	 R5679	1-249-395-11	CARBON	15	5%	1/4W
R5521	1-216-073-91	RES-CHIP	10K	5%	1/10W	R5680	1-249-383-11	CARBON	1.5	5%	1/4W
R5522	1-216-073-91	RES-CHIP	10K	5%	1/10W	R5684	1-208-798-11	METAL CHIP	4.7K	0.50%	1/10W
R5523	1-208-822-11	METAL CHIP	47K	0.50%	1/10W	R5685	1-216-655-11	METAL CHIP	1.5K	0.50%	1/10W
R5525	1-208-806-11	METAL CHIP	10K	0.50%	1/10W	R5686	1-208-778-11	METAL CHIP	680	0.50%	1/10W
R5526	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	R5688	1-208-782-11	METAL CHIP	1K	0.50%	1/10W
R5527	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	R5689	1-216-017-91	RES-CHIP	47	5%	1/10W
R5528	1-216-081-00	RES-CHIP	22K	5%	1/10W	R5690	1-216-017-91	RES-CHIP	47	5%	1/10W
R5529	1-216-073-91	RES-CHIP	10K	5%	1/10W	 R5692	1-216-655-11	METAL CHIP	1.5K	0.50%	1/10W
R5530	1-216-025-11	RES-CHIP	100	5%	1/10W	R5693	1-208-798-11	METAL CHIP	4.7K	0.50%	1/10W
R5531	1-216-001-00	RES-CHIP	10	5%	1/10W	R5694	1-208-798-11	METAL CHIP	4.7K	0.50%	1/10W
R5532	1-216-001-00	RES-CHIP	10	5%	1/10W	R5696	1-208-804-11	METAL CHIP	8.2K	0.50%	1/10W
R5535	1-208-806-11	METAL CHIP	10K	0.50%	1/10W	R5697	1-208-764-11	METAL CHIP	180	0.50%	1/10W

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

NOTE: Les composants identifiés par un trame et une  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifique.




REF.NO.	PART NO.	DESCRIPTION	VALUES			REF.NO.	PART NO.	DESCRIPTION	VALUES		
R5698	1-208-801-11	METAL CHIP	6.2K	0.50%	1/10W	R6530	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R5699	1-216-081-00	RES-CHIP	22K	5%	1/10W	R6531	1-249-393-11	CARBON	10	5%	1/4W
R5700	1-208-810-11	METAL CHIP	15K	0.50%	1/10W	R6532	1-216-073-91	RES-CHIP	10K	5%	1/10W
R5702	1-208-782-11	METAL CHIP	1K	0.50%	1/10W	R6533	1-216-073-91	RES-CHIP	10K	5%	1/10W
R5704	1-214-657-11	METAL	1	1%	1/4W	R6534	1-216-085-91	RES-CHIP	33K	5%	1/10W
R5705	1-214-657-11	METAL	1	1%	1/4W	R6535	1-216-073-91	RES-CHIP	10K	5%	1/10W
R5707	1-216-017-91	RES-CHIP	47	5%	1/10W	R6536	1-216-073-91	RES-CHIP	10K	5%	1/10W
R5708	1-216-429-00	METAL OXIDE	270	5%	1W	R6537	1-216-073-91	RES-CHIP	10K	5%	1/10W
R5709	1-216-017-91	RES-CHIP	47	5%	1/10W	R6538	1-216-073-91	RES-CHIP	10K	5%	1/10W
R5710	1-216-429-00	METAL OXIDE	270	5%	1W	R6539	1-215-900-11	METAL OXIDE	22K	5%	2W
R5711	1-260-288-11	CARBON	0.47	5%	1/2W	R6540	1-216-049-11	RES-CHIP	1K	5%	1/10W
R5712	1-260-288-11	CARBON	0.47	5%	1/2W	R6541	1-216-077-91	RES-CHIP	15K	5%	1/10W
R5713	1-215-867-00	METAL OXIDE	470	5%	1W	R6542	1-216-049-11	RES-CHIP	1K	5%	1/10W
R5714	1-216-097-11	RES-CHIP	100K	5%	1/10W	R6543	1-208-842-11	METAL CHIP	330K	0.50%	1/10W
R5715	1-216-097-11	RES-CHIP	100K	5%	1/10W	R6544	1-216-295-91	SHORT			
R5716	1-216-049-11	RES-CHIP	1K	5%	1/10W	R6547	1-216-053-00	RES-CHIP	1.5K	5%	1/10W
R5717	1-216-093-91	RES-CHIP	68K	5%	1/10W	R6550	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R6501	1-208-757-11	METAL CHIP	91	0.50%	1/10W	R6552	1-216-081-00	RES-CHIP	22K	5%	1/10W
R6502	1-260-131-11	CARBON	470K	5%	1/2W	R6553	1-216-109-00	RES-CHIP	330K	5%	1/10W
R6503	1-208-758-11	METAL CHIP	100	0.50%	1/10W	R6556	1-217-625-00	METAL	0.05	10%	2W
R6504	1-216-073-91	RES-CHIP	10K	5%	1/10W	R6557	1-216-097-11	RES-CHIP	100K	5%	1/10W
R6506	1-249-377-11	CARBON	0.47	5%	1/4W	R6583	1-216-077-91	RES-CHIP	15K	5%	1/10W
R6507	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	 R6590	1-249-415-11	CARBON	680	5%	1/4W
R6508	1-216-073-91	RES-CHIP	10K	5%	1/10W	R6591	1-216-341-11	METAL OXIDE	0.22	5%	1W
R6509	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	 R6593	1-249-405-11	CARBON	100	5%	1/4W
R6510	1-215-859-00	METAL OXIDE	22	5%	1W	R6596	1-215-445-00	METAL	10K	1%	1/4W
R6511	1-216-073-91	RES-CHIP	10K	5%	1/10W	R6597	1-215-469-00	METAL	100K	1%	1/4W
R6512	1-216-073-91	RES-CHIP	10K	5%	1/10W	R6598	1-216-342-21	METAL OXIDE	0.27	5%	1W
R6513	1-215-481-00	METAL	330K	1%	1/4W	R6599	1-249-417-11	CARBON	1K	5%	1/4W
R6514	1-215-481-00	METAL	330K	1%	1/4W	R6600	1-215-445-00	METAL	10K	1%	1/4W
R6515	1-260-131-11	CARBON	470K	5%	1/2W	R6602	1-216-049-11	RES-CHIP	1K	5%	1/10W
 R6516	1-202-962-11	CEMENTED	3.3	5%	10W	R6603	1-216-073-91	RES-CHIP	10K	5%	1/10W
R6517	1-208-804-11	METAL CHIP	8.2K	0.50%	1/10W	R6604	1-216-073-91	RES-CHIP	10K	5%	1/10W
R6518	1-208-810-11	METAL CHIP	15K	0.50%	1/10W	R6605	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R6519	1-216-295-91	SHORT				R6612	1-216-089-91	RES-CHIP	47K	5%	1/10W
R6521	1-260-328-11	CARBON	1K	5%	1/2W	R6614	1-260-298-51	CARBON	3.3	5%	1/2W
R6522	1-216-073-91	RES-CHIP	10K	5%	1/10W	R6646	1-215-481-00	METAL	330K	1%	1/4W
R6523	1-216-081-00	RES-CHIP	22K	5%	1/10W	R8001	1-216-073-91	RES-CHIP	10K	5%	1/10W
R6524	1-216-295-91	SHORT				R8002	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R6525	1-216-041-00	RES-CHIP	470	5%	1/10W	R8003	1-216-081-00	RES-CHIP	22K	5%	1/10W
 R6526	1-202-933-61	FUSIBLE	0.1	10%	1/2W	R8004	1-216-081-00	RES-CHIP	22K	5%	1/10W
R6527	1-216-093-91	RES-CHIP	68K	5%	1/10W	R8005	1-216-081-00	RES-CHIP	22K	5%	1/10W
R6528	1-216-025-11	RES-CHIP	100	5%	1/10W	R8006	1-216-105-91	RES-CHIP	220K	5%	1/10W
R6529	1-249-393-11	CARBON	10	5%	1/4W	R8007	1-216-089-91	RES-CHIP	47K	5%	1/10W


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

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














REF.NO.	PART NO.	DESCRIPTION	VALUES			REF.NO.	PART NO.	DESCRIPTION	VALUES		
R8008	1-216-081-00	RES-CHIP	22K	5%	1/10W	R8059	1-216-295-91	SHORT			
R8009	1-216-105-91	RES-CHIP	220K	5%	1/10W	R8060	1-208-774-11	METAL CHIP	470	0.50%	1/10W
R8010	1-216-105-91	RES-CHIP	220K	5%	1/10W	R8061	1-249-393-11	CARBON	10	5%	1/4W
R8011	1-216-105-91	RES-CHIP	220K	5%	1/10W	\triangle R8062	1-216-073-91	RES-CHIP	10K	5%	1/10W
R8013	1-216-295-91	SHORT				\triangle R8063	1-216-073-91	RES-CHIP	10K	5%	1/10W
R8016	1-216-061-91	RES-CHIP	3.3K	5%	1/10W	R8065	1-216-089-91	RES-CHIP	47K	5%	1/10W
R8017	1-216-295-91	SHORT				R8066	1-216-049-11	RES-CHIP	1K	5%	1/10W
R8018	1-216-081-00	RES-CHIP	22K	5%	1/10W	R8068	1-216-295-91	SHORT			
R8019	1-216-089-91	RES-CHIP	47K	5%	1/10W	R8069	1-249-419-11	CARBON	1.5K	5%	1/4W
R8020	1-216-081-00	RES-CHIP	22K	5%	1/10W	R8070	1-217-611-00	METAL	0.1	10%	2W
R8021	1-216-049-11	RES-CHIP	1K	5%	1/10W	R8071	1-216-073-91	RES-CHIP	10K	5%	1/10W
R8022	1-216-073-91	RES-CHIP	10K	5%	1/10W	R8072	1-208-782-11	METAL CHIP	1K	0.50%	1/10W
R8023	1-216-081-00	RES-CHIP	22K	5%	1/10W	R8073	1-208-790-11	METAL CHIP	2.2K	0.50%	1/10W
R8024	1-216-073-91	RES-CHIP	10K	5%	1/10W	R8074	1-208-793-11	METAL CHIP	3K	0.50%	1/10W
R8025	1-208-826-11	METAL CHIP	68K	0.50%	1/10W	R8077	1-208-838-91	METAL CHIP	220K	0.50%	1/10W
R8026	1-216-105-91	RES-CHIP	220K	5%	1/10W	R8078	1-208-838-91	METAL CHIP	220K	0.50%	1/10W
R8027	1-208-826-11	METAL CHIP	68K	0.50%	1/10W	R8080	1-249-431-11	CARBON	15K	5%	1/4W
R8028	1-208-818-11	METAL CHIP	33K	0.50%	1/10W	\triangle R8081	1-249-377-11	CARBON	0.47	5%	1/4W
R8029	1-208-826-11	METAL CHIP	68K	0.50%	1/10W	R8082	1-216-133-91	RES-CHIP	3.3M	5%	1/10W
R8030	1-208-830-11	METAL CHIP	100K	0.50%	1/10W	R8085	1-219-749-91	CARBON	10K	5%	1/2W
R8031	1-208-830-11	METAL CHIP	100K	0.50%	1/10W	R8086	1-219-751-91	CARBON	47K	5%	1/2W
R8032	1-216-073-91	RES-CHIP	10K	5%	1/10W	R8087	1-216-295-91	SHORT			
R8033	1-208-781-11	METAL CHIP	910	0.50%	1/10W	R8089	1-216-089-91	RES-CHIP	47K	5%	1/10W
R8034	1-216-091-00	RES-CHIP	56K	5%	1/10W	R8091	1-215-485-00	METAL	470K	1%	1/4W
\triangle R8035	1-208-804-11	METAL CHIP	8.2K	0.50%	1/10W	R8093	1-216-101-00	RES-CHIP	150K	5%	1/10W
\triangle R8036	1-215-444-00	METAL	9.1K	1%	1/4W	R8095	1-215-485-00	METAL	470K	1%	1/4W
\triangle R8037	1-215-444-00	METAL	9.1K	1%	1/4W	R8096	1-216-295-91	SHORT			
\triangle R8038	1-215-444-00	METAL	9.1K	1%	1/4W	R8098	1-249-441-11	CARBON	100K	5%	1/4W
\triangle R8039	1-215-444-00	METAL	9.1K	1%	1/4W	R8099	1-249-441-11	CARBON	100K	5%	1/4W
\triangle R8040	1-215-444-00	METAL	9.1K	1%	1/4W	R8100	1-249-441-11	CARBON	100K	5%	1/4W
R8041	1-208-782-11	METAL CHIP	1K	0.50%	1/10W	R8101	1-216-101-00	RES-CHIP	150K	5%	1/10W
R8042	1-208-806-11	METAL CHIP	10K	0.50%	1/10W	R8102	1-216-081-00	RES-CHIP	22K	5%	1/10W
R8043	1-216-349-00	METAL OXIDE	1	5%	1W	R8103	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R8044	1-208-837-11	METAL CHIP	200K	0.50%	1/10W	R8104	1-216-089-91	RES-CHIP	47K	5%	1/10W
R8047	1-216-097-11	RES-CHIP	100K	5%	1/10W	R8108	1-216-097-11	RES-CHIP	100K	5%	1/10W
R8049	1-208-758-11	METAL CHIP	100	0.50%	1/10W	R8109	1-215-922-11	METAL OXIDE	6.8K	5%	3W
R8050	1-211-964-11	METAL CHIP	33	0.50%	1/10W	R8111	1-215-922-11	METAL OXIDE	6.8K	5%	3W
\triangle R8051	1-220-926-11	FUSIBLE	0.47	10%	1/2W	R8112	1-216-097-11	RES-CHIP	100K	5%	1/10W
R8053	1-208-842-11	METAL CHIP	330K	0.50%	1/10W	R8113	1-216-117-00	RES-CHIP	680K	5%	1/10W
R8054	1-208-842-11	METAL CHIP	330K	0.50%	1/10W	R8114	1-215-922-11	METAL OXIDE	6.8K	5%	3W
R8055	1-208-842-11	METAL CHIP	330K	0.50%	1/10W	R8115	1-216-049-11	RES-CHIP	1K	5%	1/10W
R8056	1-208-804-11	METAL CHIP	8.2K	0.50%	1/10W	R8116	1-216-486-21	METAL OXIDE	8.2K	5%	3W
R8057	1-208-809-11	METAL CHIP	13K	0.50%	1/10W	R8117	1-216-097-11	RES-CHIP	100K	5%	1/10W
R8058	1-249-393-11	CARBON	10	5%	1/4W	R8118	1-216-085-91	RES-CHIP	33K	5%	1/10W


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

A component identified by this  symbol indicates that it has been carefully factory-selected to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

D **HB** **HA**

REF.NO.	PART NO.	DESCRIPTION	VALUES			REF.NO.	PART NO.	DESCRIPTION	VALUES		
R8119	1-216-486-21	METAL OXIDE	8.2K	5%	3W						
R8123	1-216-025-11	RES-CHIP	100	5%	1/10W						
R8124	1-216-073-91	RES-CHIP	10K	5%	1/10W						
R8125	1-216-001-00	RES-CHIP	10	5%	1/10W						
R8126	1-216-001-00	RES-CHIP	10	5%	1/10W						
 R8127	1-216-295-91	SHORT									
 R8137	1-249-417-11	CARBON	1K	5%	1/4W						
R8144	1-216-025-11	RES-CHIP	100	5%	1/10W						
R8145	1-216-025-11	RES-CHIP	100	5%	1/10W						
R8146	1-216-049-11	RES-CHIP	1K	5%	1/10W						
R8147	1-208-826-11	METAL CHIP	68K	0.50%	1/10W						
R8148	1-208-826-11	METAL CHIP	68K	0.50%	1/10W						
R8149	1-208-822-11	METAL CHIP	47K	0.50%	1/10W						
R8150	1-216-091-00	RES-CHIP	56K	5%	1/10W						
R8151	1-216-091-00	RES-CHIP	56K	5%	1/10W						
R8152	1-216-091-00	RES-CHIP	56K	5%	1/10W						
R8199	1-249-389-11	CARBON	4.7	5%	1/4W						
VARIABLE RESISTOR											
  RV8001	1-225-630-91	RES, VAR, ADJ, CERMET	20K								
  RV8002	1-225-627-91	RES, VAR, ADJ, CERMET	2K								
RELAY											
 RY6501	1-755-395-11	RELAY (AC POWER)									
 RY6502	1-755-214-11	RELAY, AC POWER									
SPARK GAP											
SG8002	1-517-499-21	GAP, SPARK									
SG8005	1-517-499-21	GAP, SPARK									
TRANSFORMER											
 T5001	1-435-621-11	TRANSFORMER, HORIZONTAL OUTPUT									
T5002	1-435-636-11	TRANSFORMER, HORIZONTAL DRIVE									
 T6501	1-435-576-12	TRANSFORMER, CONVERTER (PIT)									
 T8001	1-453-346-11	FBT ASSY NX-6000//J1J4									
T8002	1-433-934-11	TRANSFORMER, FERRITE (DFT)									
THERMISTOR											
TH5001	1-800-193-00	THERMISTOR									
TH5002	1-807-796-11	THERMISTOR									
						HB					
						*	A-1372-904-A	HB (COM) BOARD, MOUNTED			
							CAPACITOR				
						C4504	1-126-964-11	ELECT	10µF	20%	50V
						C4505	1-126-964-11	ELECT	10µF	20%	50V
							CONNECTOR				
						CN4503	1-764-334-11	PLUG,CONNECTOR	11P		
							DIODE				
						D4503	8-719-977-28	DIODE UDJSTE-1710B			
						D4505	8-719-977-28	DIODE UDJSTE-1710B			
						D4506	8-719-977-28	DIODE UDJSTE-1710B			
							FILTER				
						FL4501	1-239-583-21	FILTER, EMI			
						FL4502	1-239-583-21	FILTER, EMI			
						FL4503	1-239-583-21	FILTER, EMI			
							JACK				
						J4501	1-770-053-11	TERMINAL BLOCK, S(LIGHT ANGLE)			
							RESISTOR				
						R4506	1-216-113-00	RES-CHIP	470K	5%	1/10W
						R4507	1-216-113-00	RES-CHIP	470K	5%	1/10W
						R4509	1-216-049-11	RES-CHIP	1K	5%	1/10W
						R4511	1-216-295-91	SHORT			
						R4512	1-216-295-91	SHORT			
						R4513	1-216-295-91	SHORT			
							HA				
						*	A-1372-970-A	HA BOARD, MOUNTED			
							CAPACITOR				
						C05	1-126-964-11	ELECT	10µF	20%	50V
							CONNECTOR				
						CN01	*1-564-515-11	PLUG,CONNECTOR	12P		

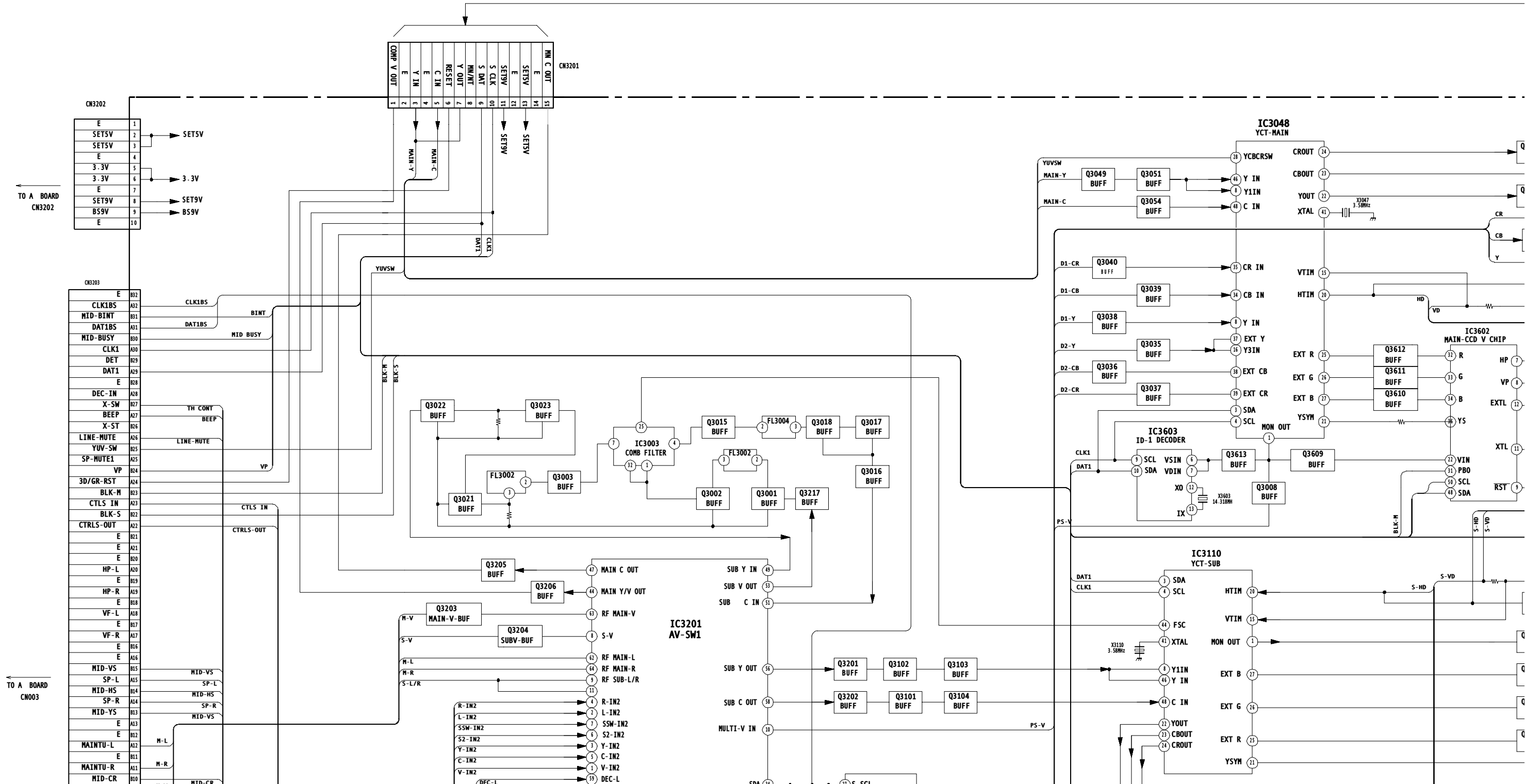


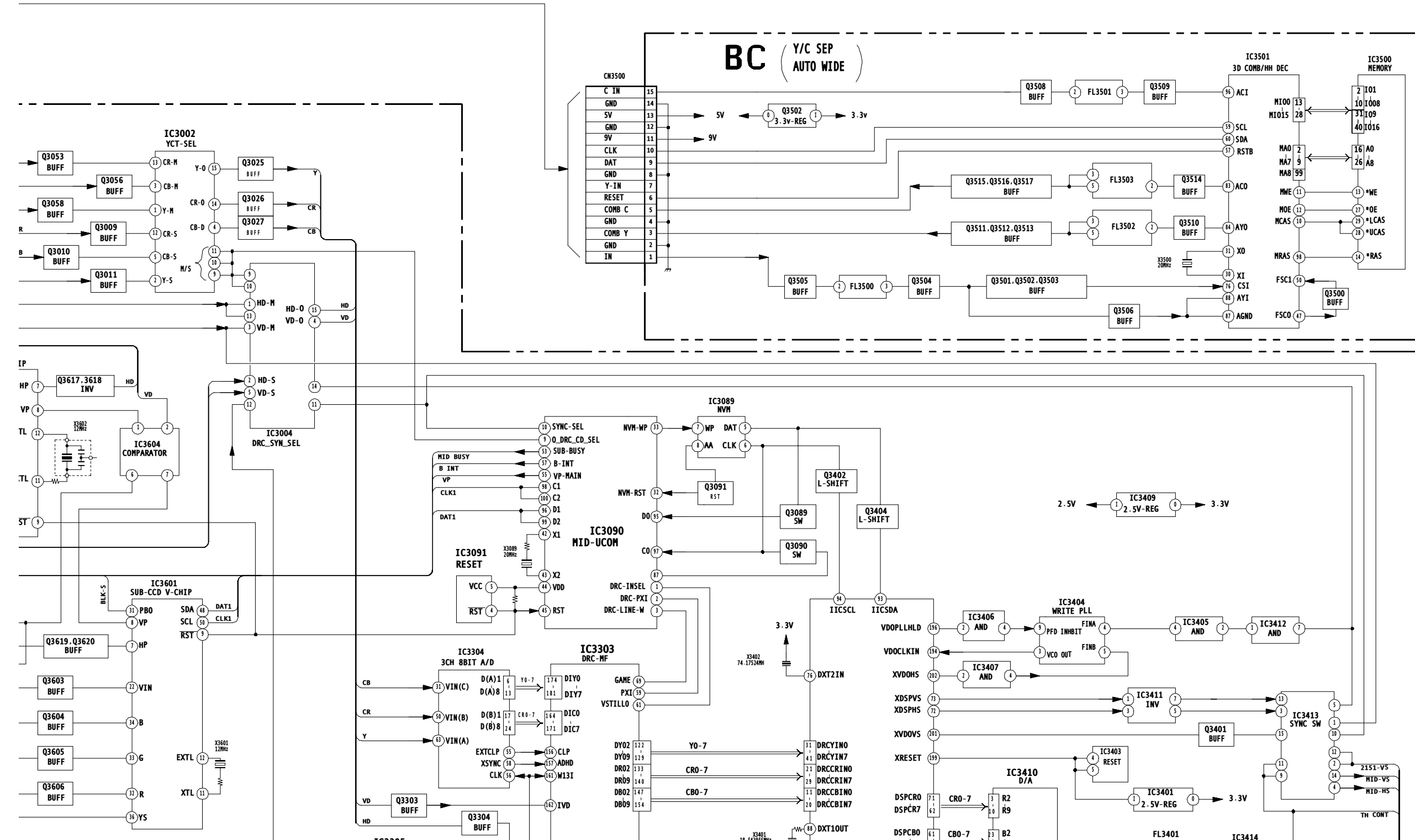
REF.NO.	PART NO.	DESCRIPTION	VALUES			REF.NO.	PART NO.	DESCRIPTION	VALUES			
DIODE						 *	A-1373-817-A U (COM) BOARD, MOUNTED					
CAPACITOR							C2405	1-126-964-11	ELECT	10μF	20%	50V
D01	8-719-074-84	DIODE LNK0120022G1					C2406	1-126-791-11	ELECT	10μF	20%	16V
D02	8-719-074-84	DIODE LNK0120022G1					C2407	1-126-964-11	ELECT	10μF	20%	50V
D07	8-719-109-89	DIODE RD5.6ES-T1B2					C2408	1-126-791-11	ELECT	10μF	20%	16V
IC							C2409	1-126-964-11	ELECT	10μF	20%	50V
IC01	8-742-212-20	HYB IC SBX3081-71					C2410	1-126-964-11	ELECT	10μF	20%	50V
RESISTOR							C2411	1-126-926-11	ELECT	1000μF	20%	10V
R03	1-249-429-11	CARBON	10K	5%	1/4W		C2412	1-126-964-11	ELECT	10μF	20%	50V
R05	1-247-807-31	CARBON	100	5%	1/4W		C2413	1-126-964-11	ELECT	10μF	20%	50V
R07	1-249-409-11	CARBON	220	5%	1/4W		C2414	1-126-791-11	ELECT	10μF	20%	16V
R08	1-249-409-11	CARBON	220	5%	1/4W		C2415	1-126-964-11	ELECT	10μF	20%	50V
R09	1-249-433-11	CARBON	22K	5%	1/4W		CONNECTOR					
R12	1-215-445-00	METAL	10K	1%	1/4W		* CN2401	1-785-303-11	CONNECTOR, DIN (PLUG)			64P
R14	1-215-437-00	METAL	4.7K	1%	1/4W		DIODE					
R15	1-215-431-00	METAL	2.7K	1%	1/4W		D2401	8-719-977-28	DIODE UDZSTE-1710B			
R16	1-215-427-00	METAL	1.8K	1%	1/4W		D2402	8-719-977-28	DIODE UDZSTE-1710B			
R17	1-215-425-00	METAL	1.5K	1%	1/4W		D2403	8-719-977-28	DIODE UDZSTE-1710B			
R18	1-215-421-00	METAL	1K	1%	1/4W		D2405	8-719-977-28	DIODE UDZSTE-1710B			
R19	1-215-419-00	METAL	820	1%	1/4W		D2406	8-719-977-28	DIODE UDZSTE-1710B			
R20	1-215-415-00	METAL	560	1%	1/4W		D2407	8-719-977-28	DIODE UDZSTE-1710B			
R21	1-215-413-00	METAL	470	1%	1/4W		D2409	8-719-977-28	DIODE UDZSTE-1710B			
R22	1-215-413-00	METAL	470	1%	1/4W		D2410	8-719-800-76	DIODE MA153-TX			
R23	1-249-385-11	CARBON	2.2	5%	1/4W	D2411	8-719-977-28	DIODE UDZSTE-1710B				
SWITCH						D2412	8-719-800-76	DIODE MA153-TX				
S01	1-571-032-41	SWITCH PUSH (1 KEY)				D2413	8-719-800-76	DIODE MA153-TX				
S02	1-762-837-11	SWITCH TACTILE				D2414	8-719-800-76	DIODE MA153-TX				
S03	1-762-837-11	SWITCH TACTILE				D2415	8-719-800-76	DIODE MA153-TX				
S04	1-762-837-11	SWITCH TACTILE				D2416	8-719-800-76	DIODE MA153-TX				
S05	1-762-837-11	SWITCH TACTILE				D2423	8-719-800-76	DIODE MA153-TX				
S06	1-692-431-21	SWITCH TACTILE				D2424	8-719-800-76	DIODE MA153-TX				
S07	1-692-431-21	SWITCH TACTILE				D2425	8-719-800-76	DIODE MA153-TX				
S08	1-692-431-21	SWITCH TACTILE				D2426	8-719-800-76	DIODE MA153-TX				
S09	1-692-431-21	SWITCH TACTILE				D2427	8-719-800-76	DIODE MA153-TX				
S10	1-692-431-21	SWITCH TACTILE				D2428	8-719-800-76	DIODE MA153-TX				
S11	1-692-431-21	SWITCH TACTILE				D2429	8-719-977-28	DIODE UDZSTE-1710B				
						D2430	8-719-977-28	DIODE UDZSTE-1710B				

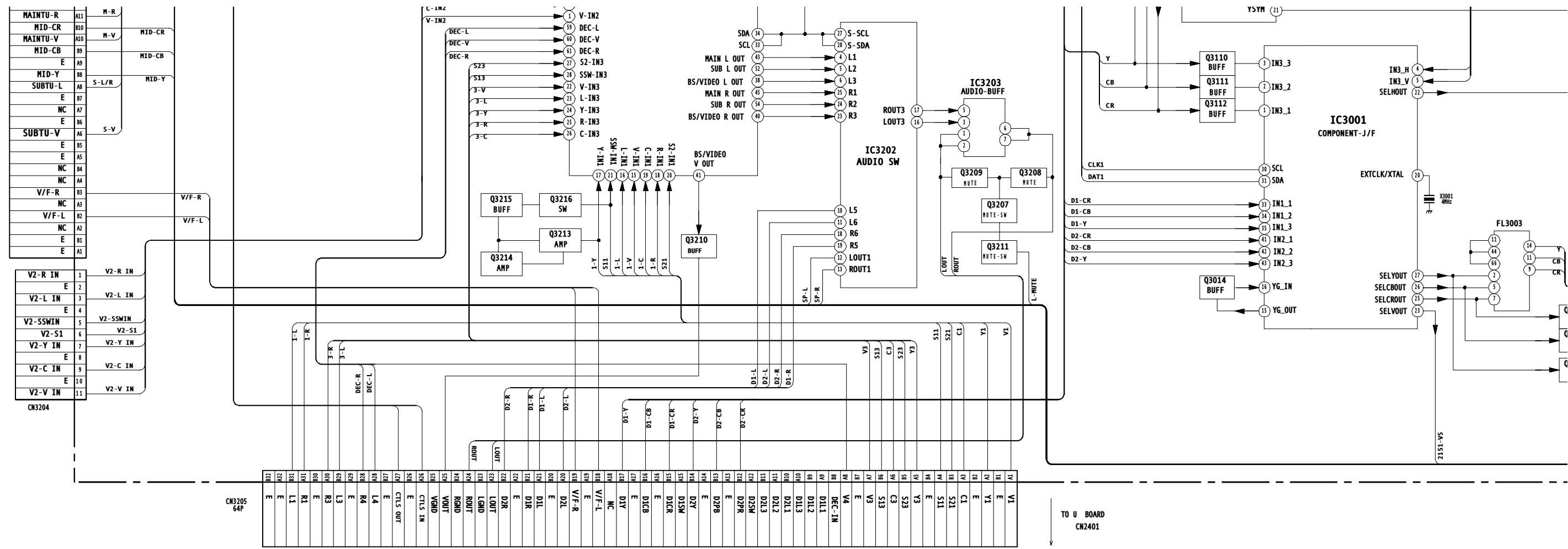


REF.NO.	PART NO.	DESCRIPTION	VALUES	REF.NO.	PART NO.	DESCRIPTION	VALUES
R9123	1-249-401-11	CARBON	47 5% 1/4W				
R9124	1-249-401-11	CARBON	47 5% 1/4W				
R9125	1-216-073-91	RES-CHIP	10K 5% 1/10W				
R9126	1-249-395-11	CARBON	15 5% 1/4W				
R9127	1-216-005-00	RES-CHIP	15 5% 1/10W				
R9128	1-216-295-91	SHORT					
						ACCESSORIES AND PACKING MATERIALS	
				*	4-066-646-02	BAG, PROTECTION (ALL EXCEPT KV-32HS20/32XBR450)	
				*	4-066-845-02	BAG, PROTECTION (KV-32HS20/32XBR450 ONLY)	
				*	4-082-476-01	CARTON, HSC (KV-36XBR450/36XBR450H ONLY)	
				*	4-082-491-01	CARTON, HSC (KV-36HS20/36HS20H ONLY)	
				*	4-082-587-01	CARTON, INDIVIDUAL (KV-32HS20 ONLY)	
				*	4-075-743-04	CARTON, INDIVIDUAL (KV-32XBR450 ONLY)	
				*	4-082-401-01	CUSHION ASSY, FRONT (UPPER) (ALL EXCEPT KV-32HS20/32XBR450)	
				*	4-081-768-01	CUSHION ASSY, LOWER (ALL EXCEPT KV-32HS20/32XBR450)	
				*	4-075-733-03	CUSHION ASSY, UPPER (REAR) (KV-32HS20/32XBR450 ONLY)	
				*	4-075-734-02	CUSHION ASSY, UPPER (KV-32HS20/32XBR450 ONLY)	
				*	4-075-735-03	CUSHION ASSY, LOWER (KV-32HS20/32XBR450 ONLY)	
					4-082-506-21	MANUAL, INSTRUCTION (ENGLISH) (ALL EXCEPT KV-32HS20/36HS20/36HS20H)	
					4-082-506-31	MANUAL, INSTRUCTION (FRENCH) (KV-32XBR450C/36XBR450C ONLY)	
					4-082-507-21	MANUAL, INSTRUCTION (KV-32HS20/36HS20/36HS20H ONLY)	
					4-396-077-01	JOINT (ALL EXCEPT KV-32HS20/32XBR450)	
						REMOTE COMMANDER	
					1-476-683-11	REMOTE COMMANDER (RM-Y184) (ALL EXCEPT KV-32HS20/36HS20/36HS20H)	
					4-081-888-01	BATTERY COVER FOR RM-Y184 (ALL EXCEPT KV-32HS20/36HS20/36HS20H)	
					1-476-682-11	REMOTE COMMANDER (RM-Y183) (KV-32HS20/36HS20/36HS20H ONLY)	
					4-978-977-01	BATTERY COVER FOR RM-Y183 (KV-32HS20/36HS20/36HS20H ONLY)	

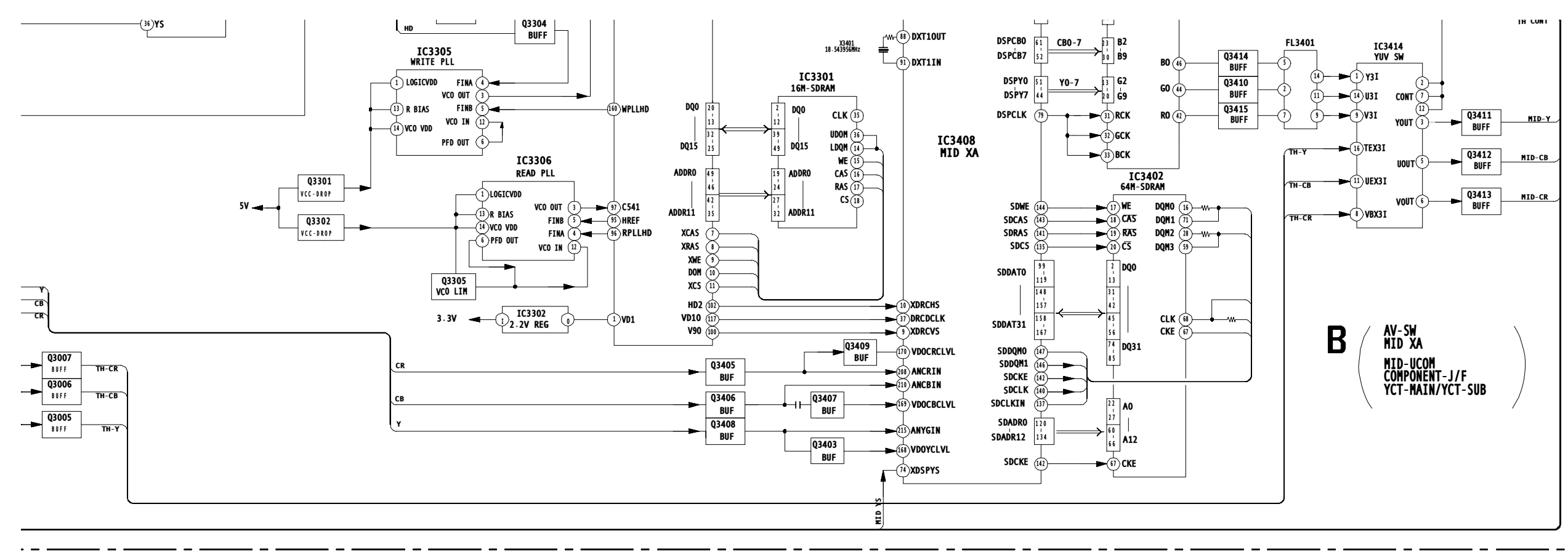
BLOCK DIAGRAM (3 OF 4)





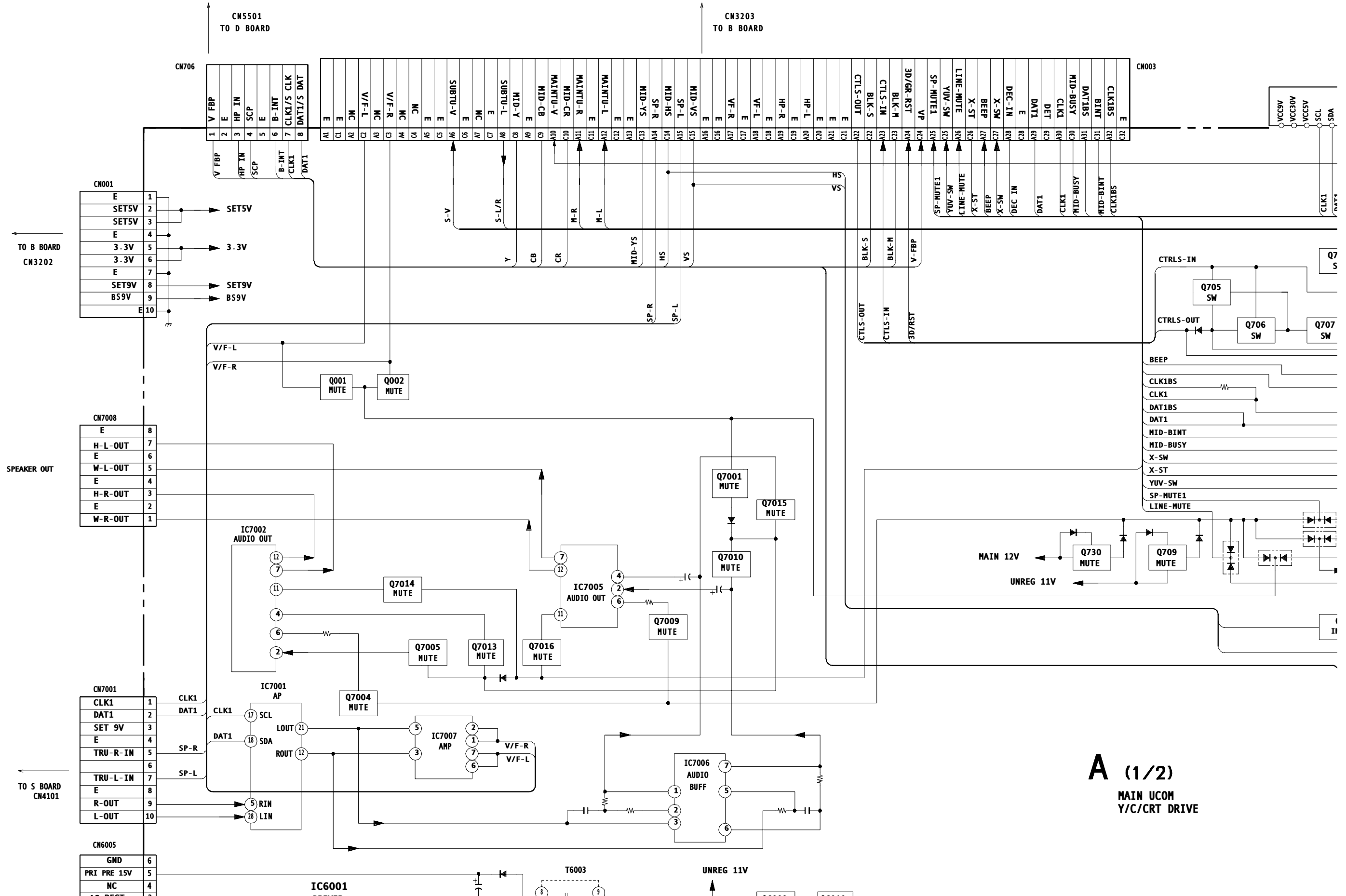


TO U BOARD
CN2401

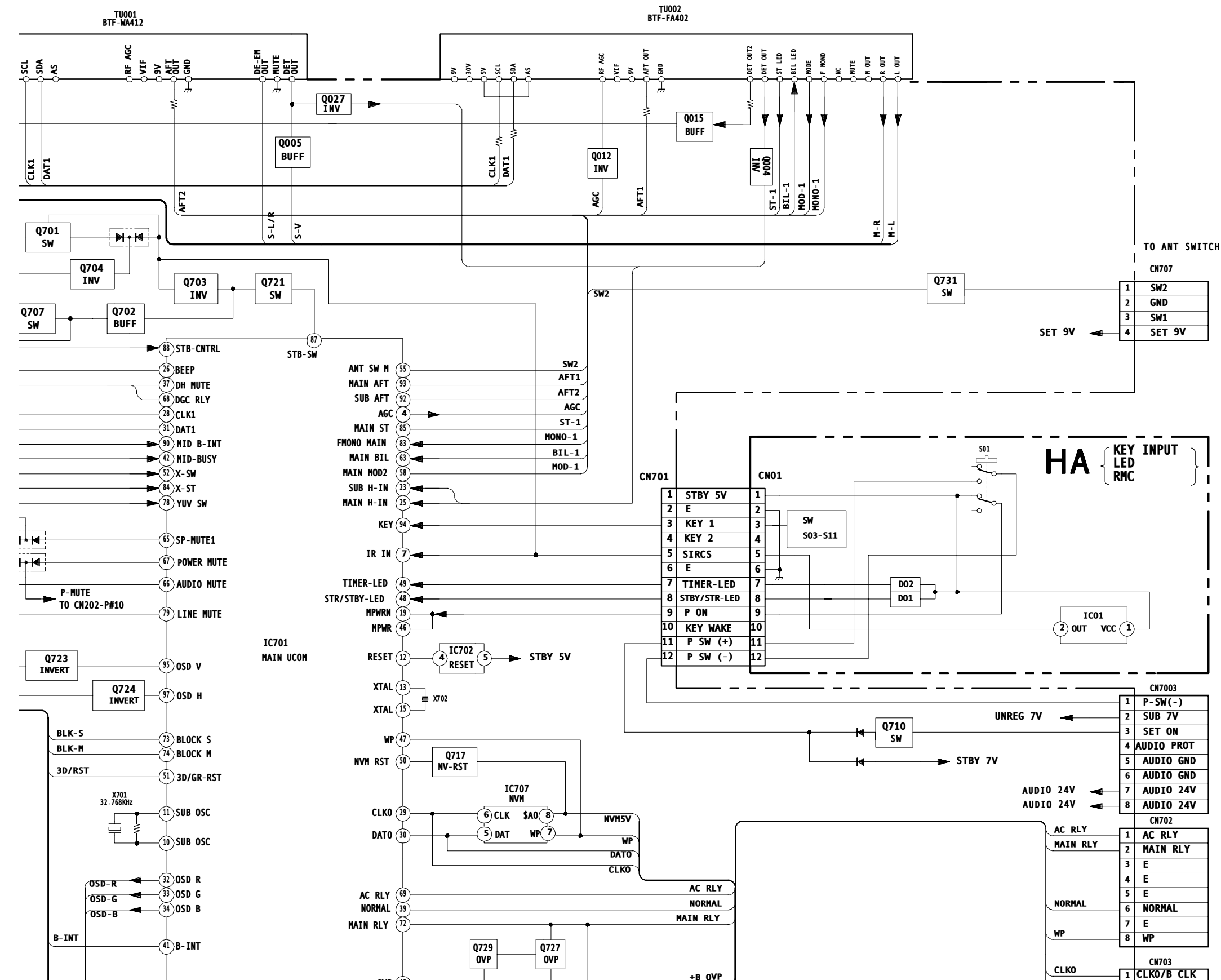


B (AV-SW
MID XA
MID-UCOM
COMPONENT-J/F
YCT-MAIN/YCT-SUB)

BLOCK DIAGRAM (4 OF 4)

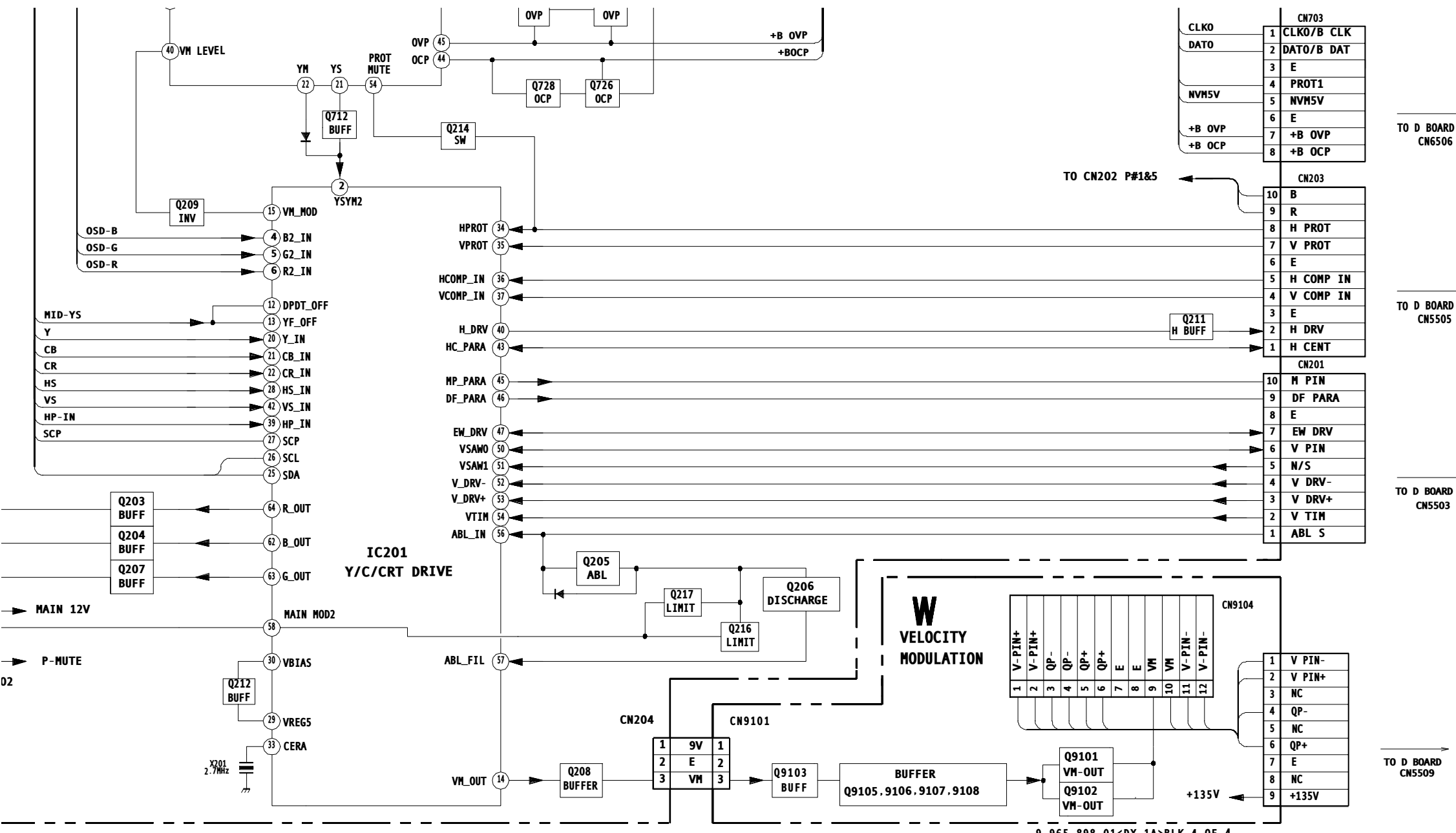


A (1/2)
MAIN UCOM
Y/C/CRT DRIVE



TO D BOARD
CN6503

TO D BOARD
CN6504



CN703	
1	CLKO/B CLK
2	DATO/B DAT
3	E
4	PROT1
5	NVH5V
6	E
7	+B OVP
8	+B OCP

TO D BOARD
CN6506

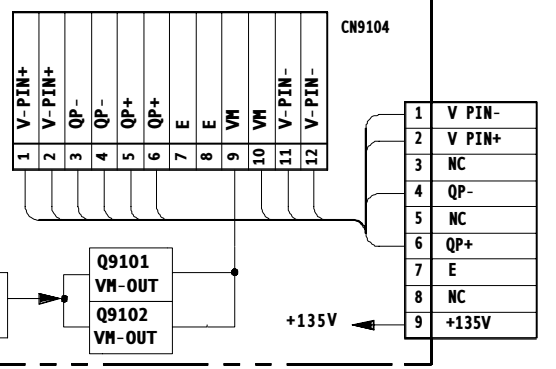
TO CN202 P#1&5

CN203	
10	B
9	R
8	H PROT
7	V PROT
6	E
5	H COMP IN
4	V COMP IN
3	E
2	H DRV
1	H CENT

TO D BOARD
CN5505

CN201	
10	M PIN
9	DF PARA
8	E
7	EW DRV
6	V PIN
5	N/S
4	V DRV-
3	V DRV+
2	V TIM
1	ABL S

TO D BOARD
CN5503

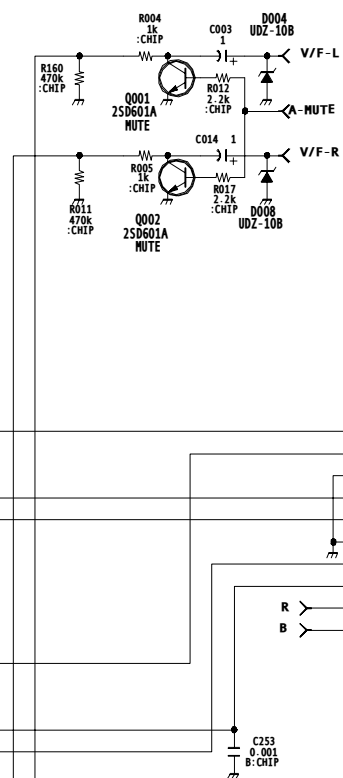
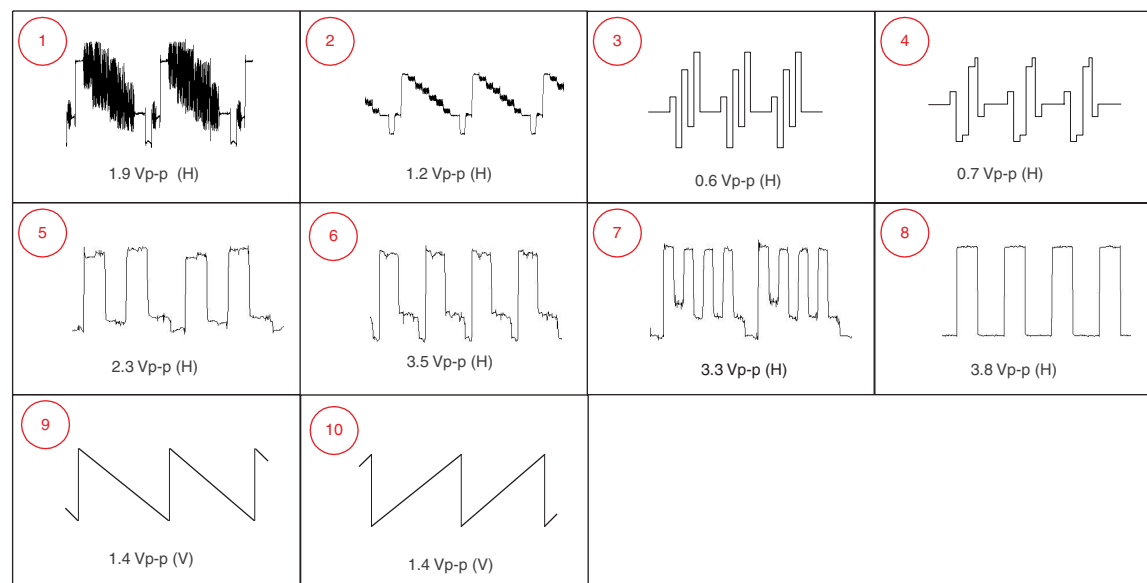


TO D BOARD
CN5509

9-965-898-01<DX-1A>BLK 4 OF 4

16 | 17 | 18 | 19 | 20

A BOARD WAVEFORMS



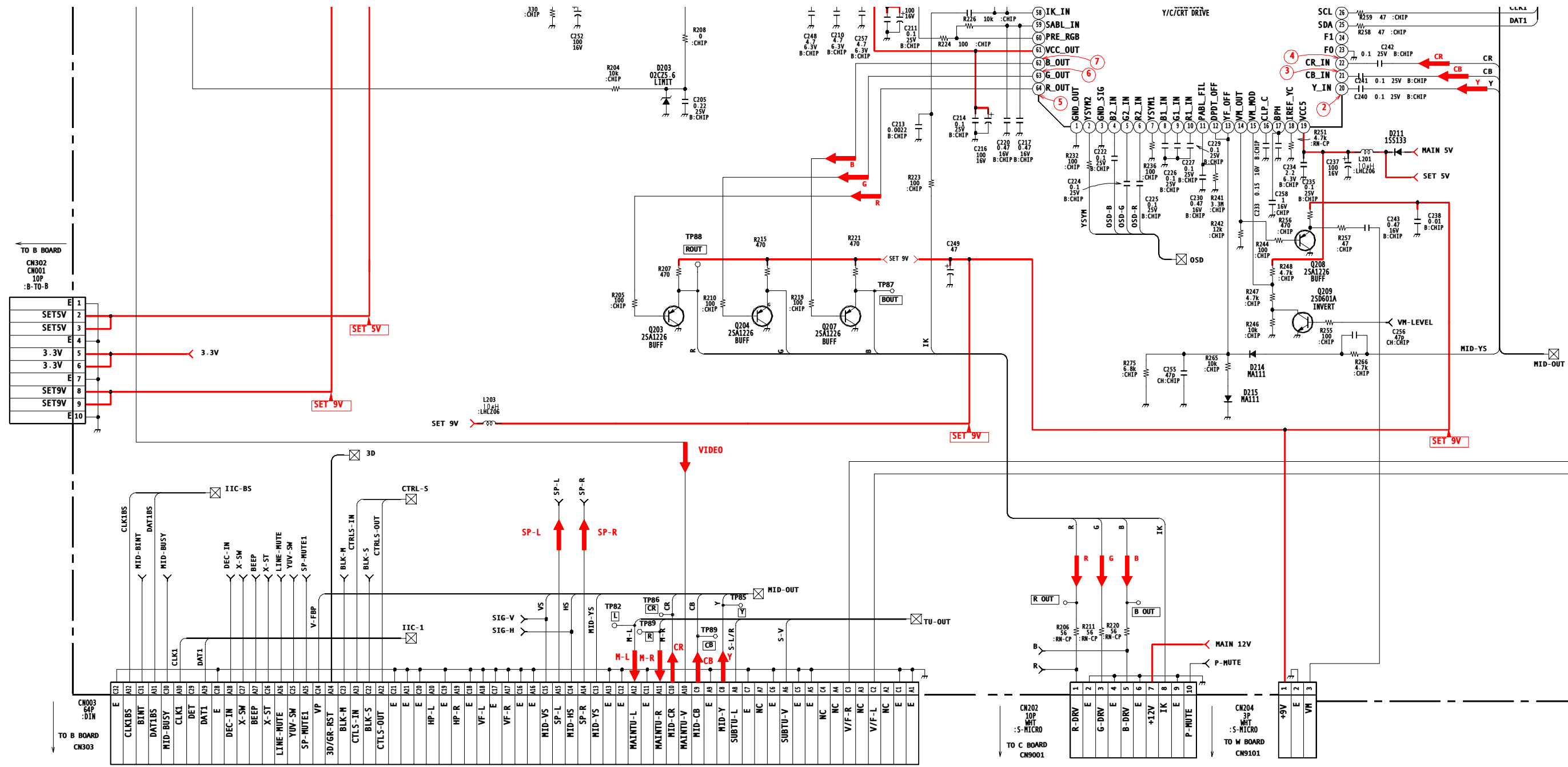
TO D BOARD
CN5505

1	H CENT
2	H DRV
3	E
4	V COMP IN
5	H COMP IN
6	E
7	V PROT
8	H PROT
9	R
10	B

A BOARD: IC CXA2150Q

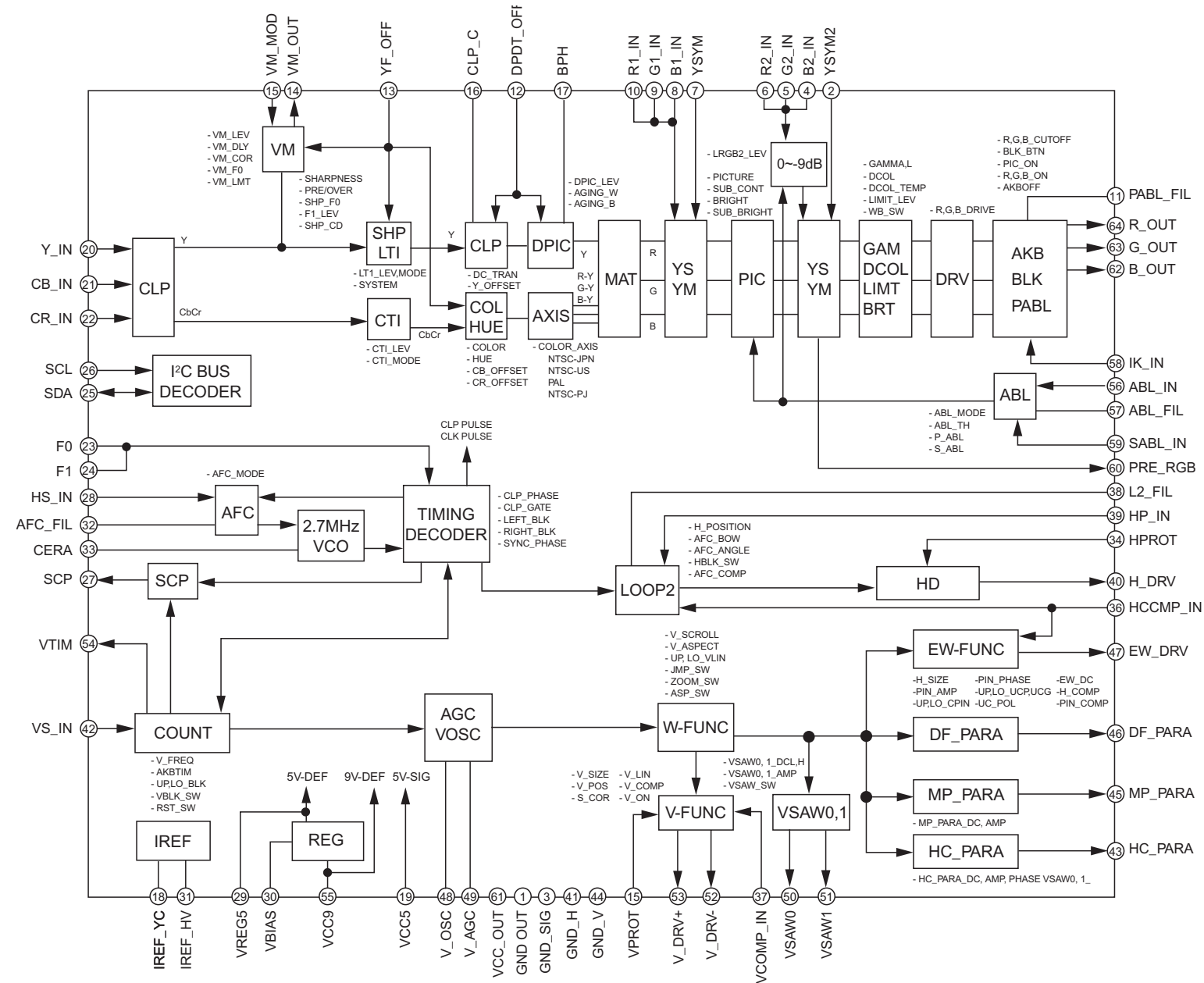
MOD DUT JFF . C T_OFF > > > S > > > 0/2

J
K
L
M
N
O
P

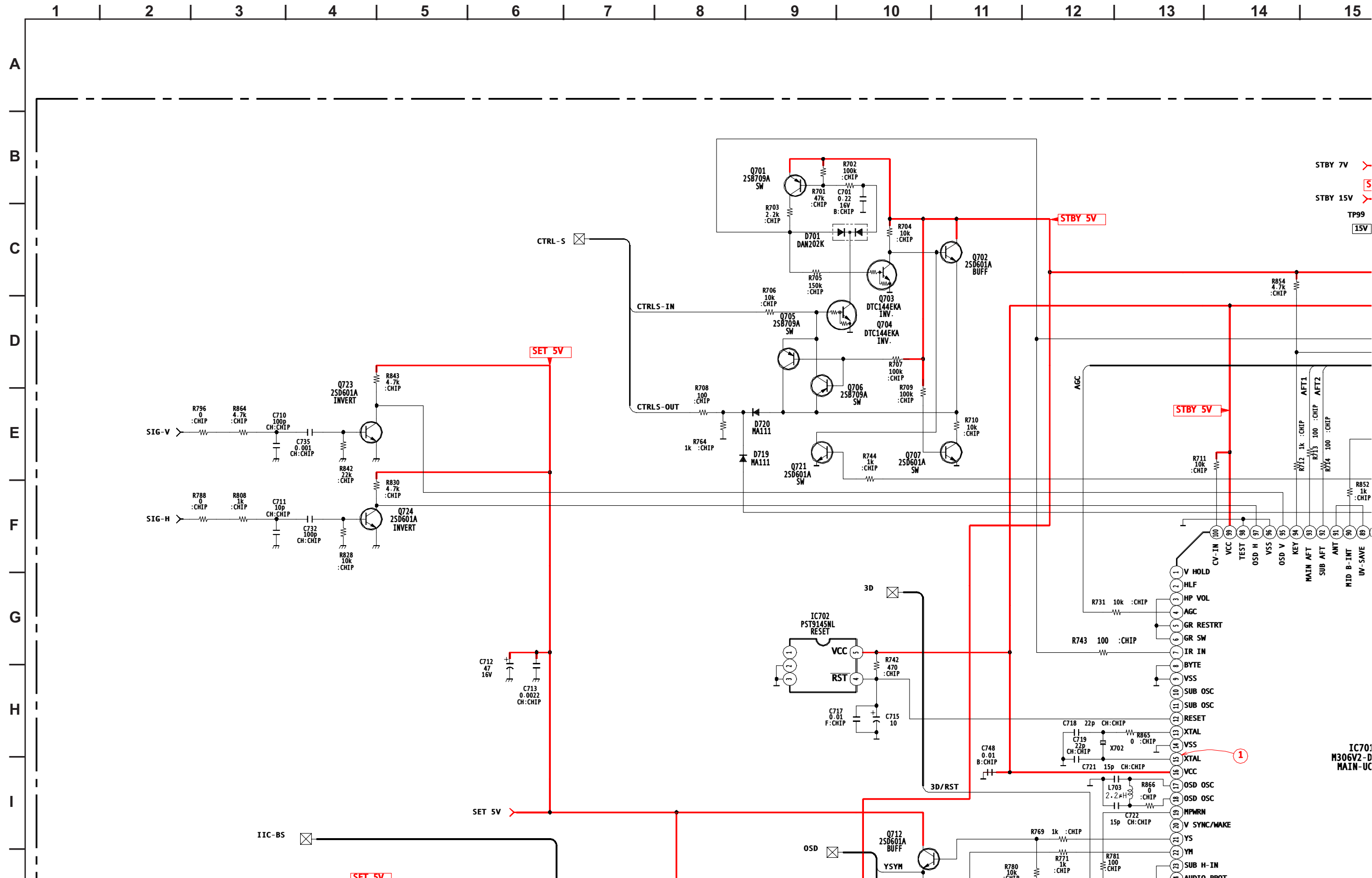


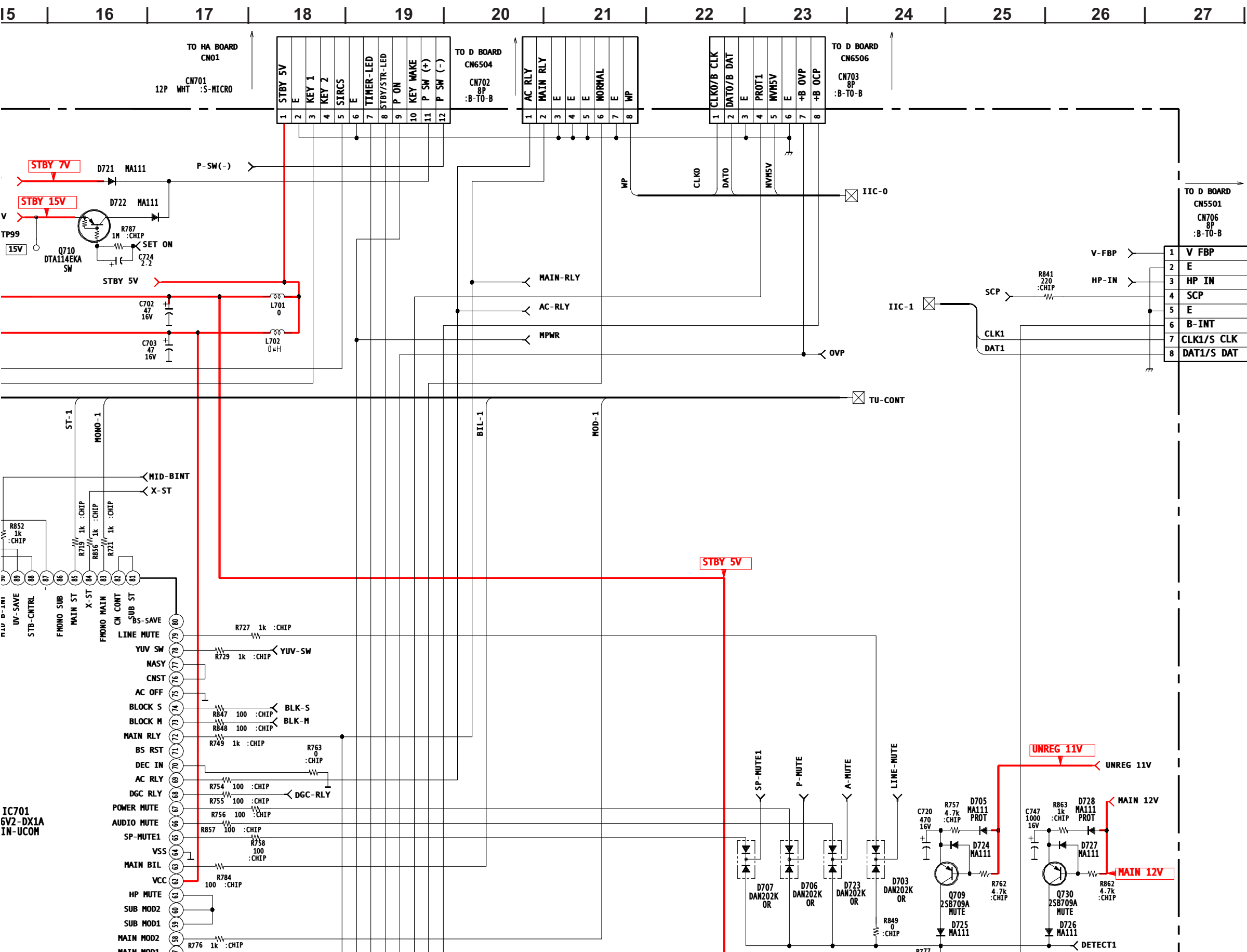
A (1/3) TUNER CRT DRIVE

9-965-898-01<DX-1A> A(1/3)



A BOARD SCHEMATIC DIAGRAM (2 OF 3)

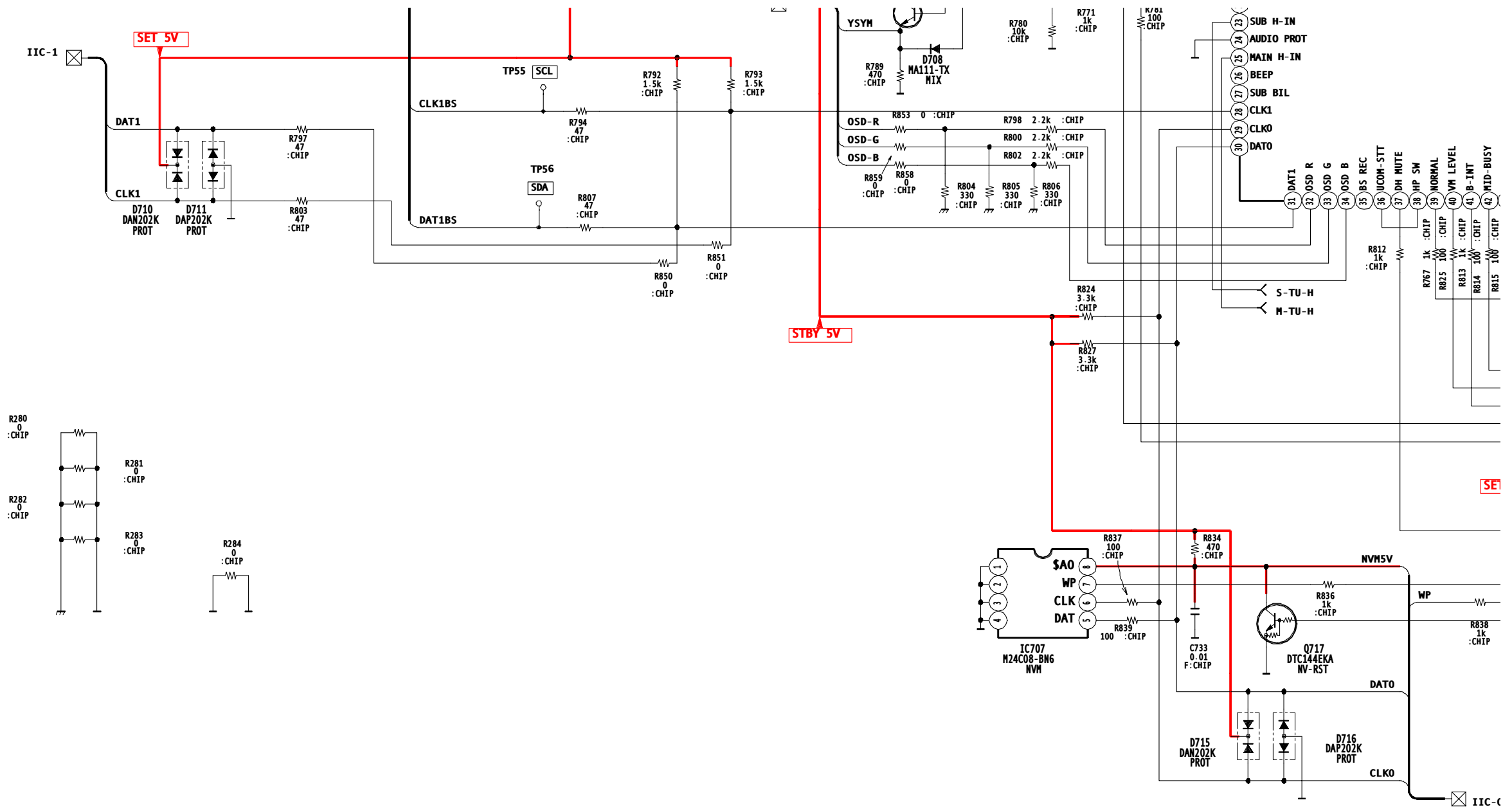


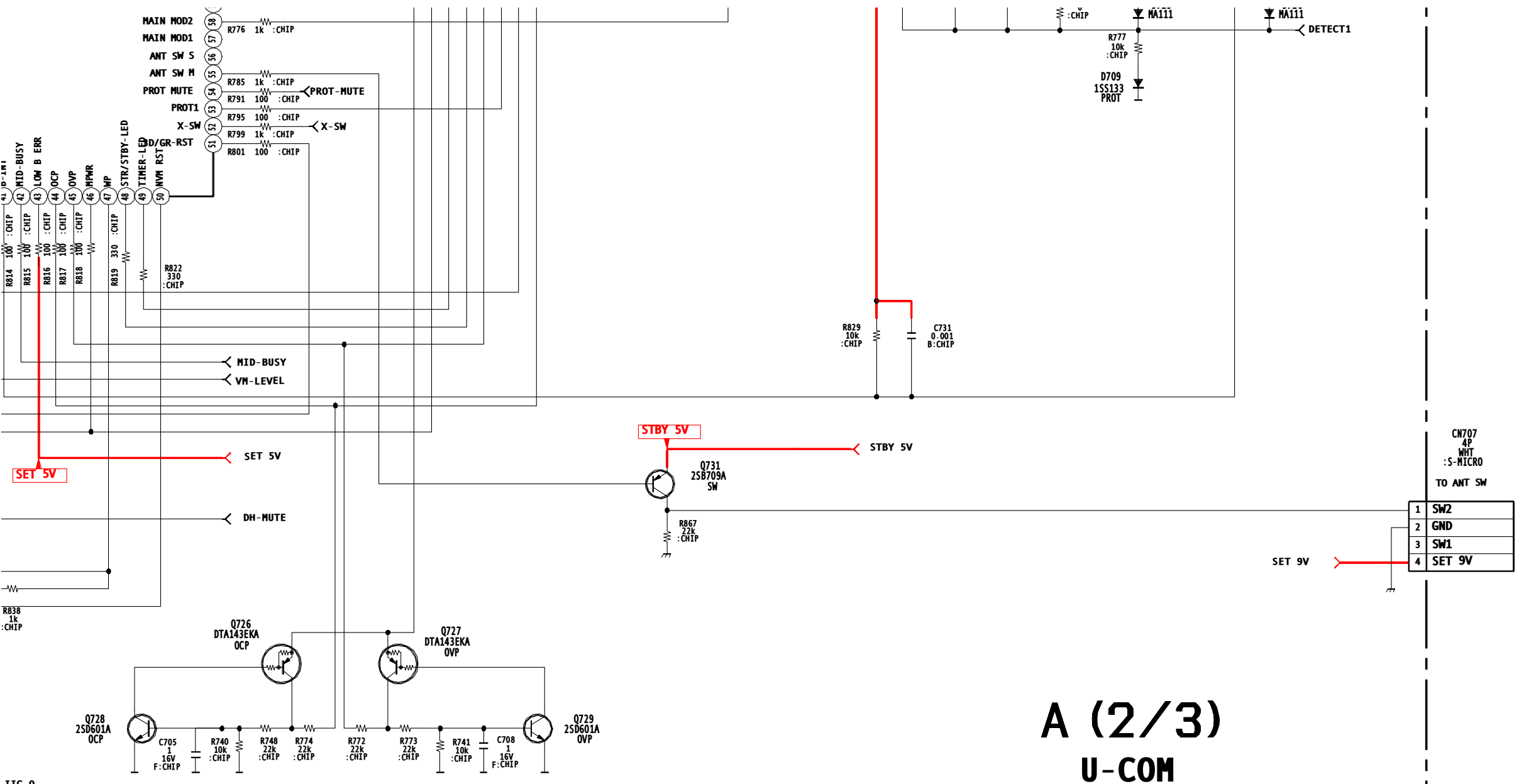


TO D BOARD
CN5501
CN706
8P
:B-T0-B

1	V FBP
2	E
3	HP IN
4	SCP
5	E
6	B-INT
7	CLK1/S CLK
8	DAT1/S DAT

J
K
L
M
N
O
P

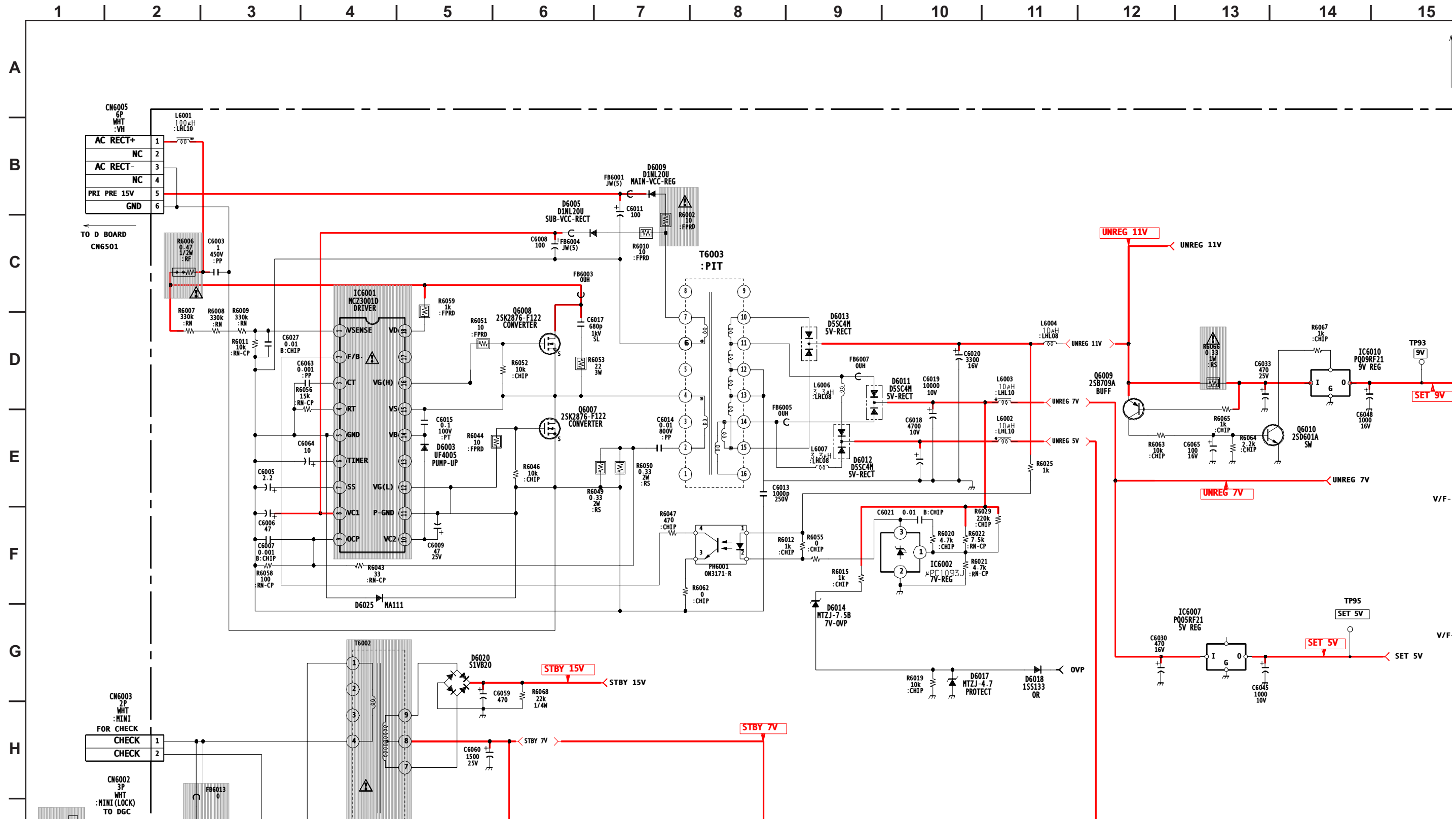


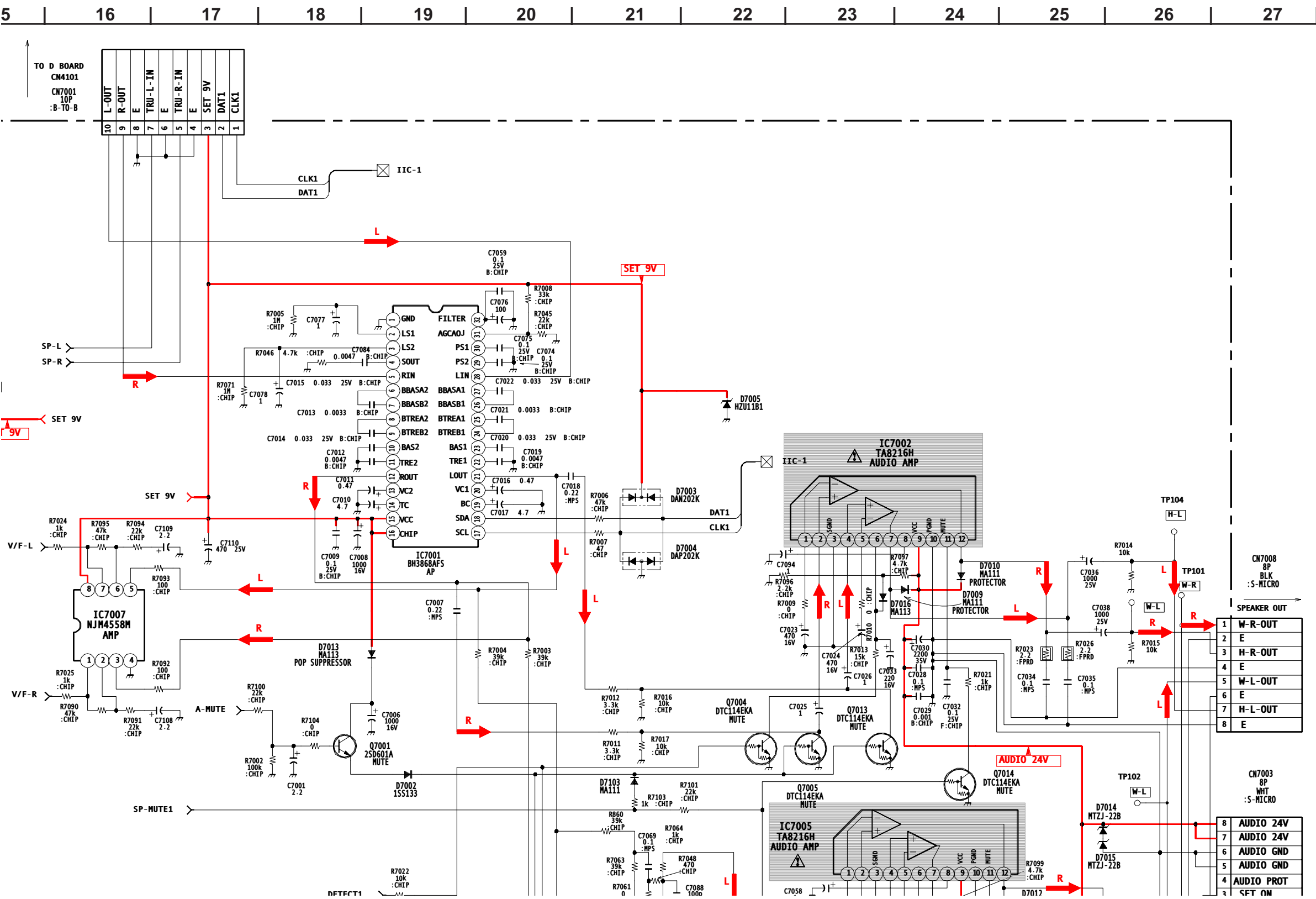


A (2/3)

U-COM

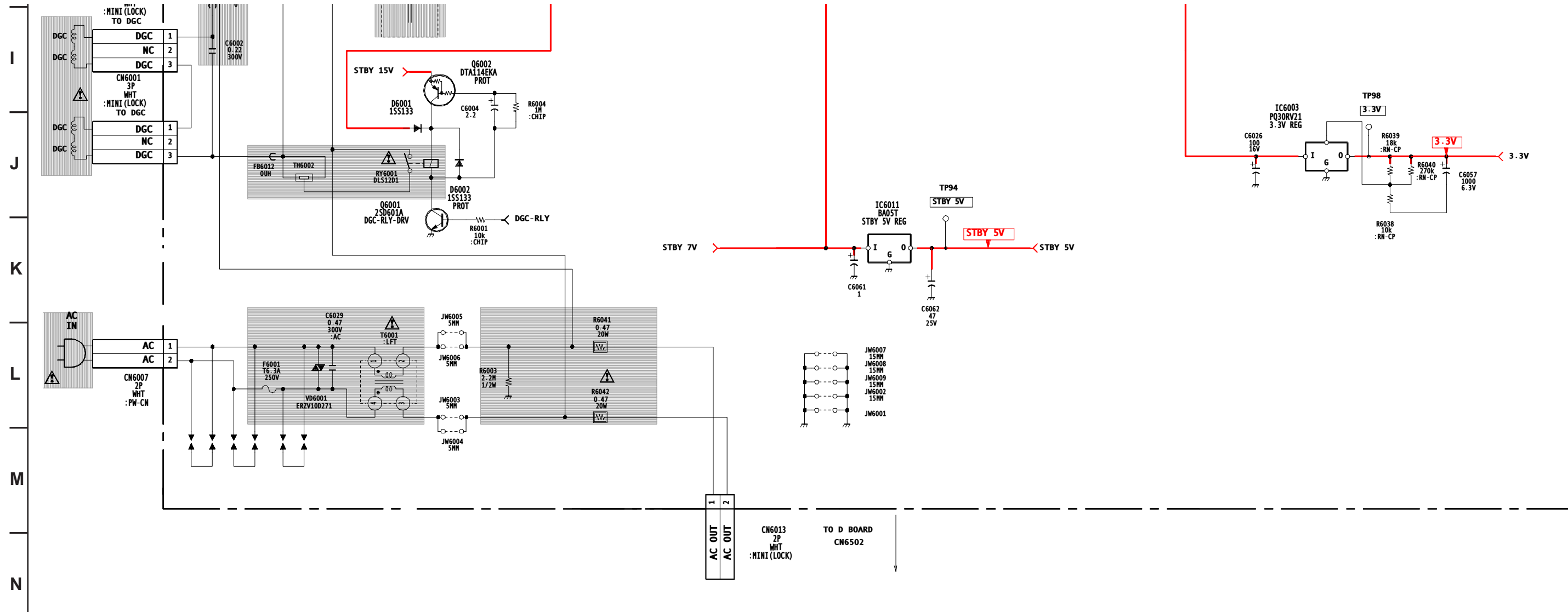
A BOARD SCHEMATIC DIAGRAM (3 OF 3)

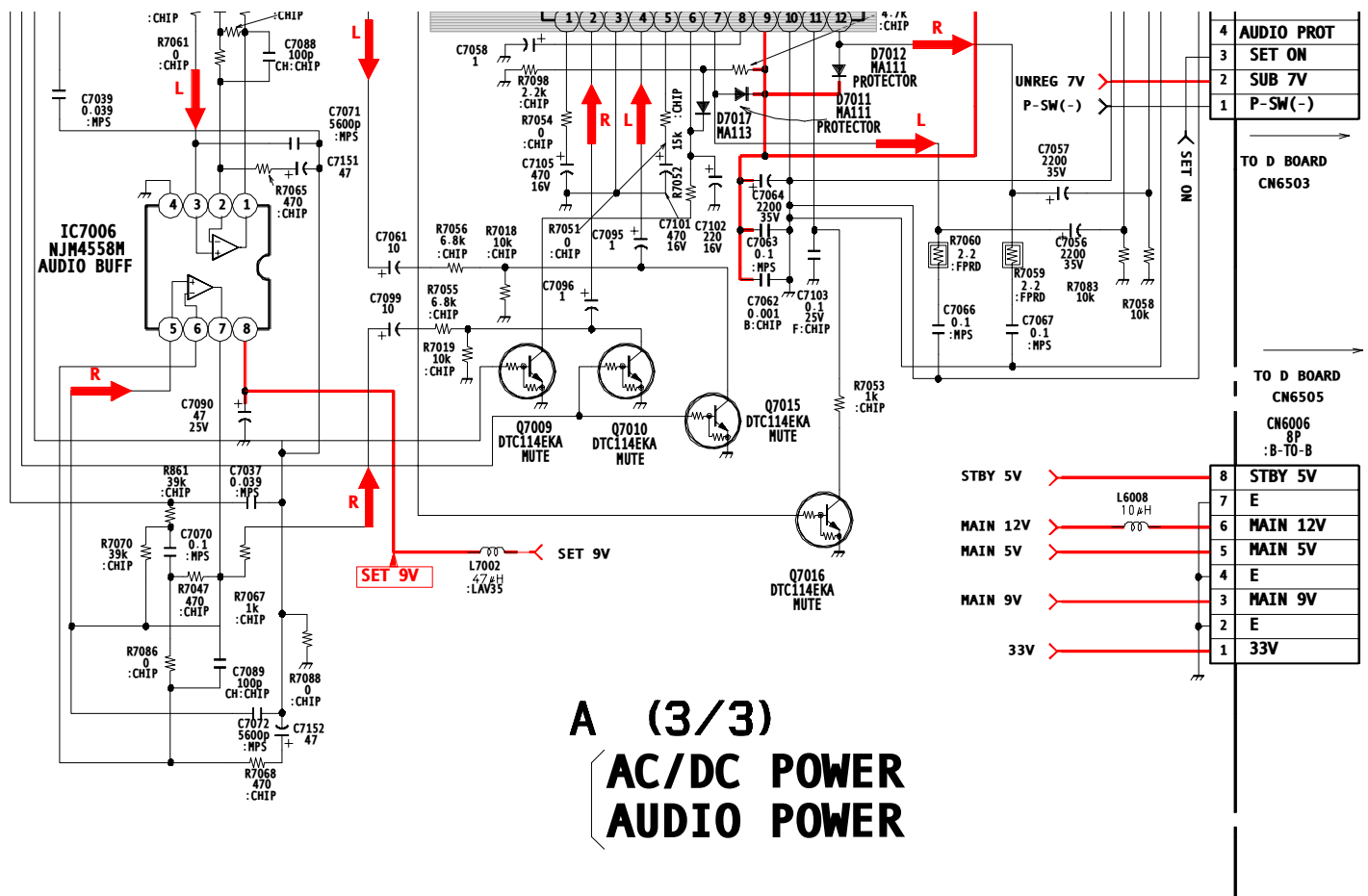
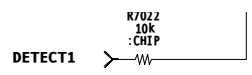




1	W-R-OUT
2	E
3	H-R-OUT
4	E
5	W-L-OUT
6	E
7	H-L-OUT
8	E

8	AUDIO 24V
7	AUDIO 24V
6	AUDIO GND
5	AUDIO GND
4	AUDIO PROT
3	SFT ON





A (3/3)
AC/DC POWER
AUDIO POWER

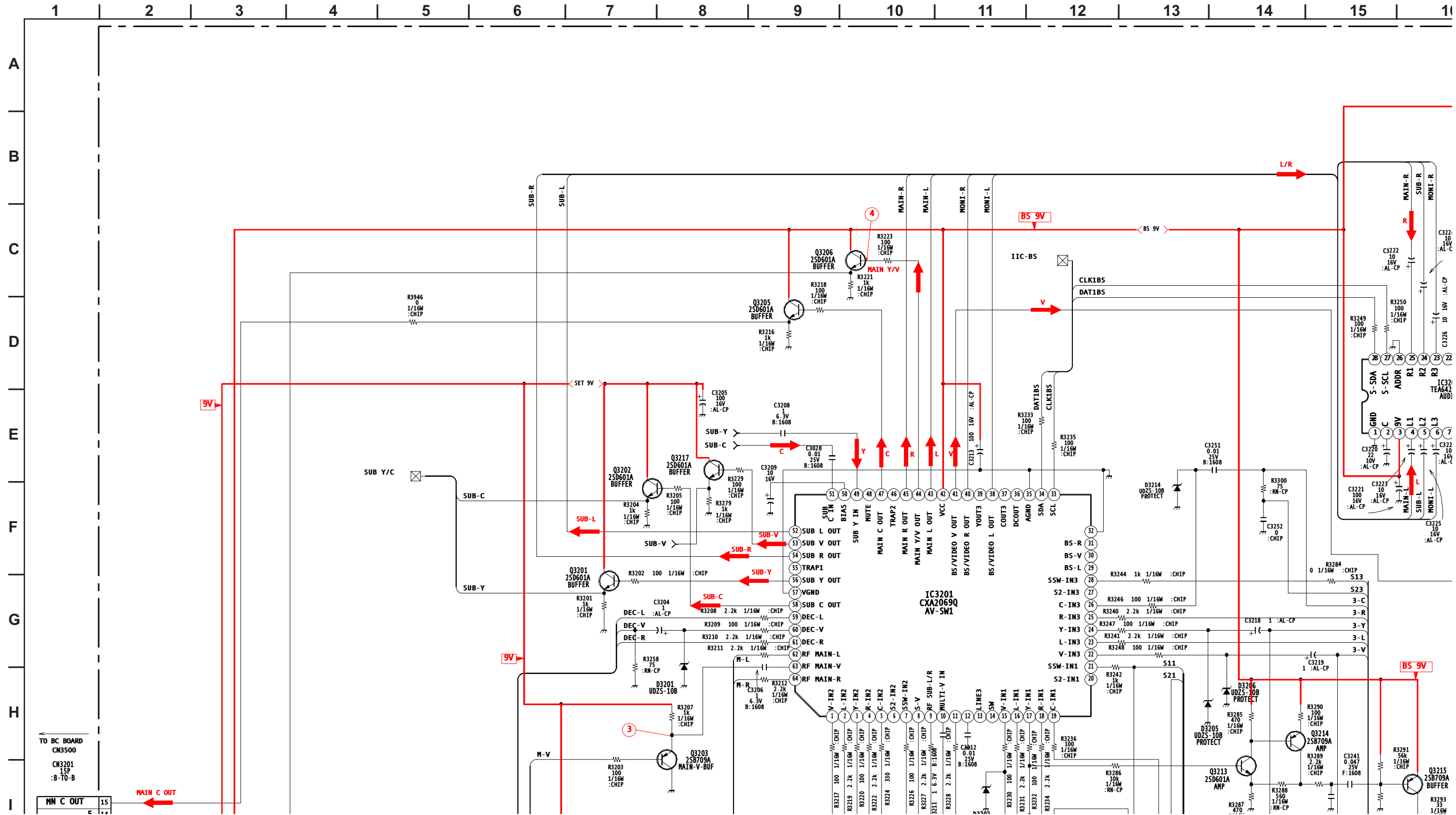
4	AUDIO PROT
3	SET ON
2	SUB 7V
1	P-SW(-)

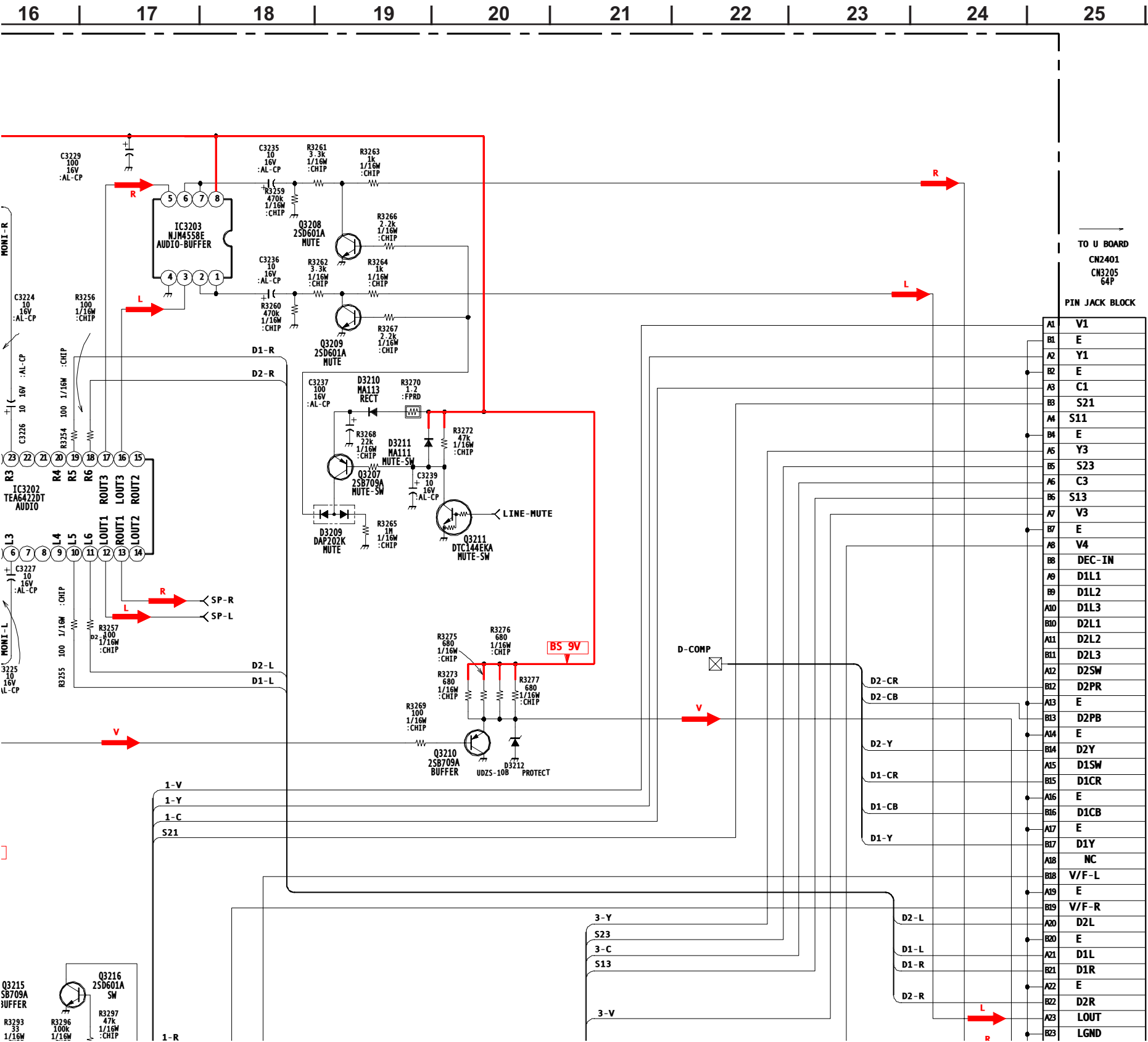
TO D BOARD
CN6503

8	STBY 5V
7	E
6	MAIN 12V
5	MAIN 5V
4	E
3	MAIN 9V
2	E
1	33V

TO D BOARD
CN6505
CN6006
8P
:B-TO-B

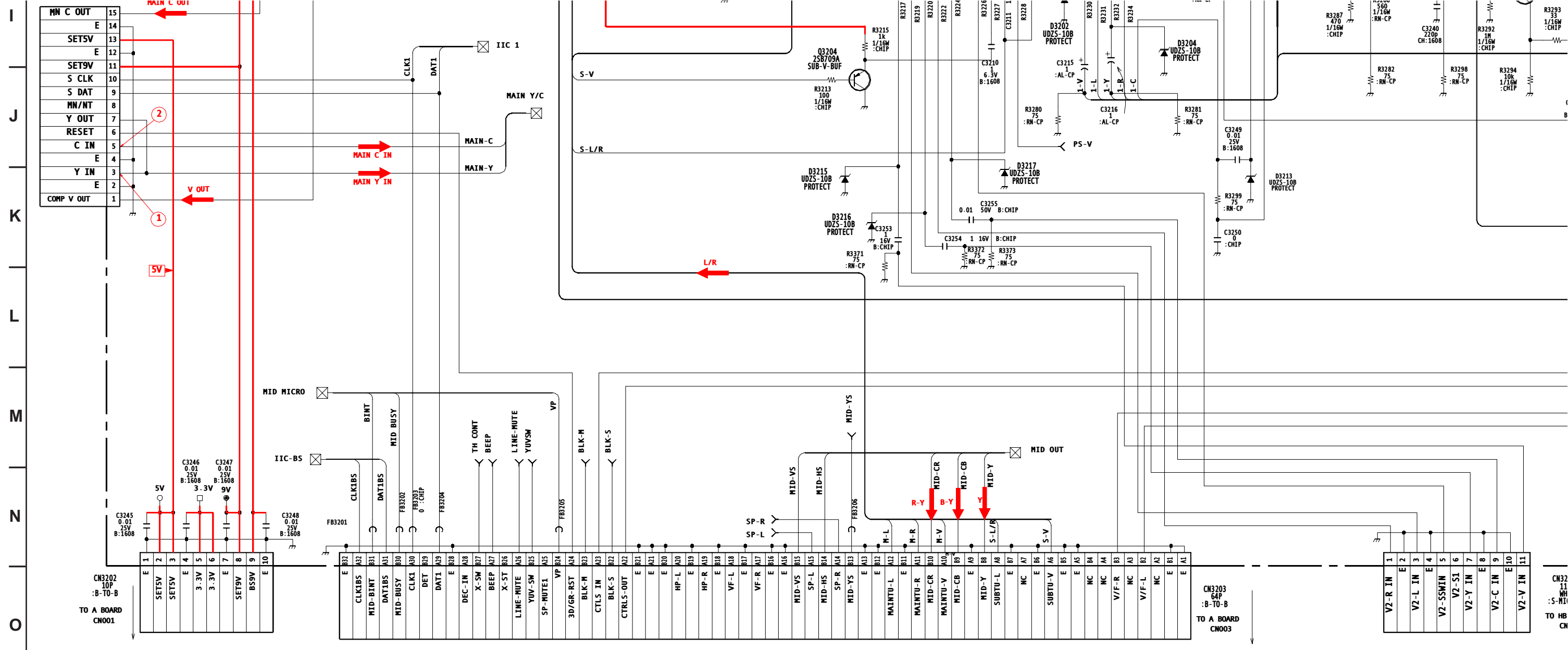
B BOARD SCHEMATIC DIAGRAM (1 OF 4)

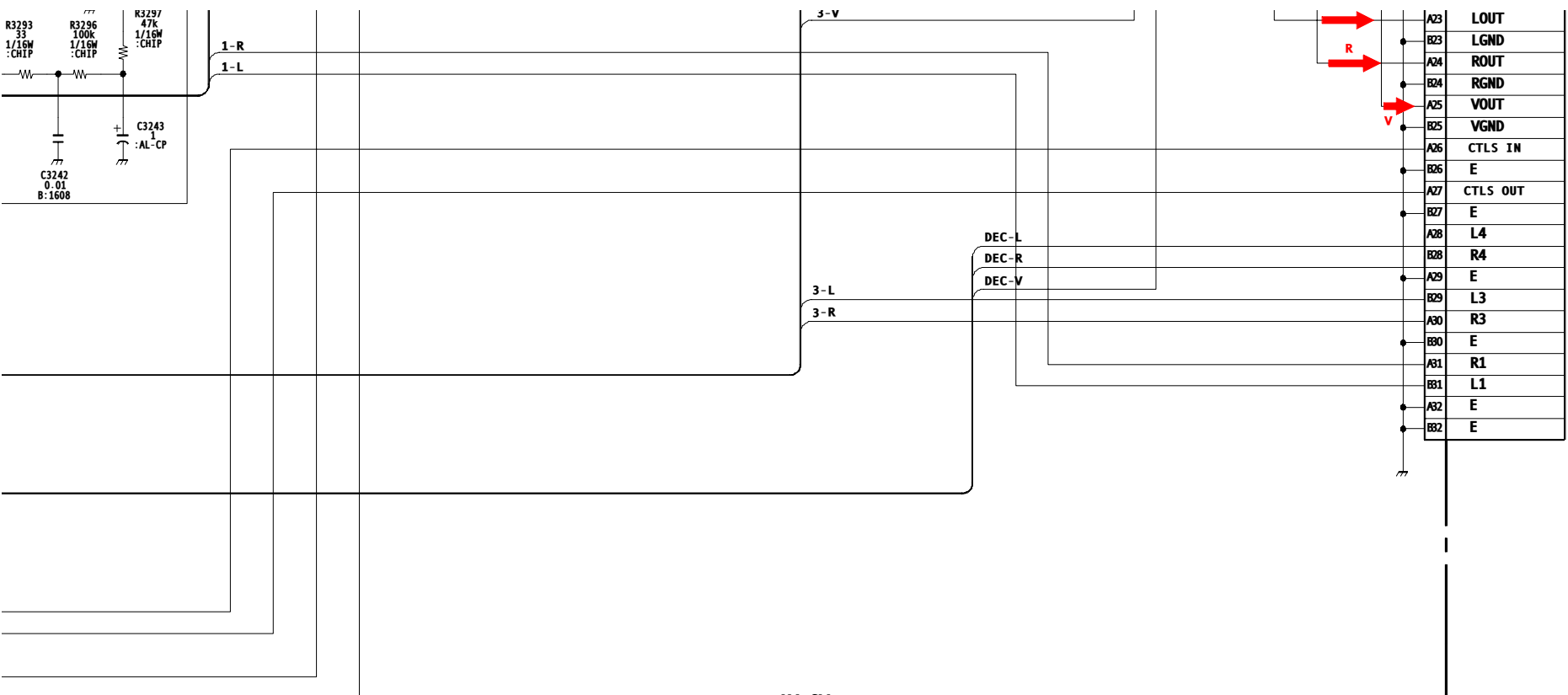




TO U BOARD
CN2401
CN3205
64P
PIN JACK BLOCK

A1	V1
B1	E
A2	Y1
B2	E
A3	C1
B3	S21
A4	S11
B4	E
A5	Y3
B5	S23
A6	C3
B6	S13
A7	V3
B7	E
A8	V4
B8	DEC-IN
A9	D1L1
B9	D1L2
A10	D1L3
B10	D2L1
A11	D2L2
B11	D2L3
A12	D25W
B12	D2PR
A13	E
B13	D2PB
A14	E
B14	D2Y
A15	D15W
B15	D1CR
A16	E
B16	D1CB
A17	E
B17	D1Y
A18	NC
B18	V/F-L
A19	E
B19	V/F-R
A20	D2L
B20	E
A21	D1L
B21	D1R
A22	E
B22	D2R
A23	LOUT
B23	LGND





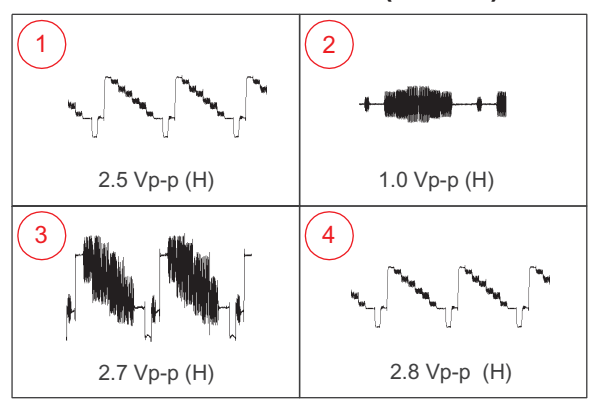
B AV-SW
 MID XA
 YUV SW
 MID-UCOM
 COMPONENT-J/F
 YCT-MAIN/YCT-SUB

B (1/4)

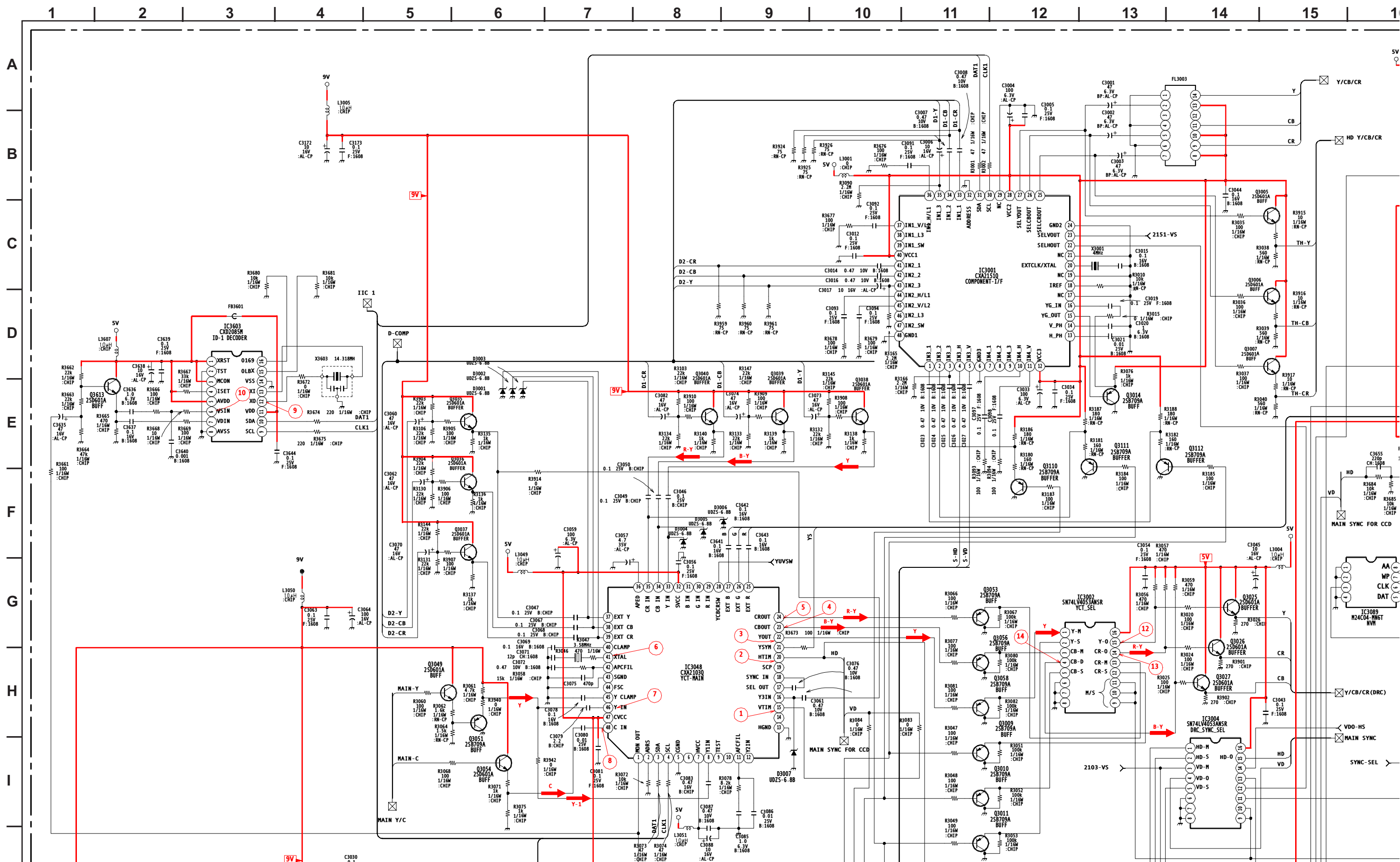
9-965-898-01<DX-1A> B(1/4)

CN3204
 11P
 MHT
 :S-MICRO
 TO HB BOARD
 CM4503

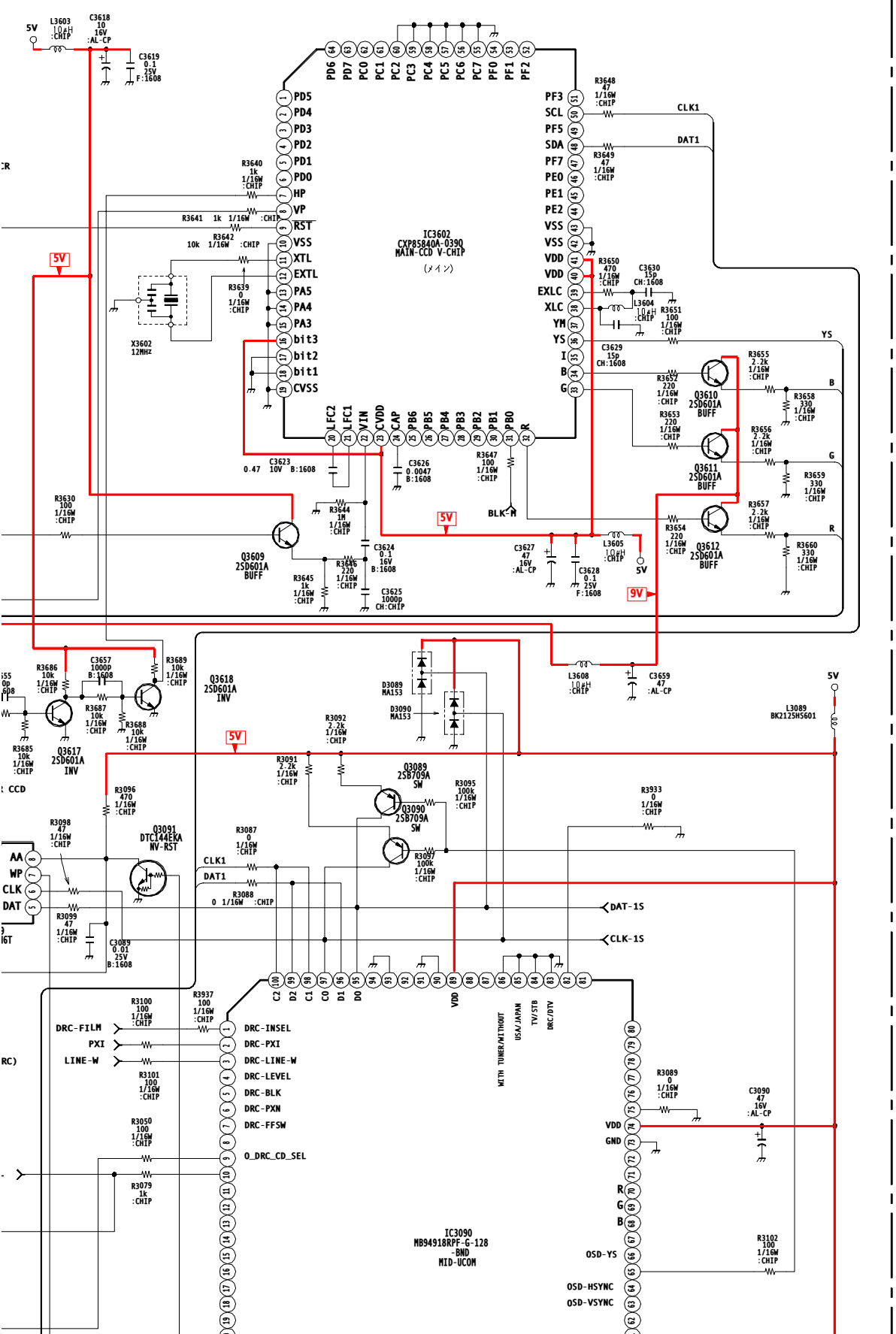
B BOARD WAVEFORMS (1 OF 4)



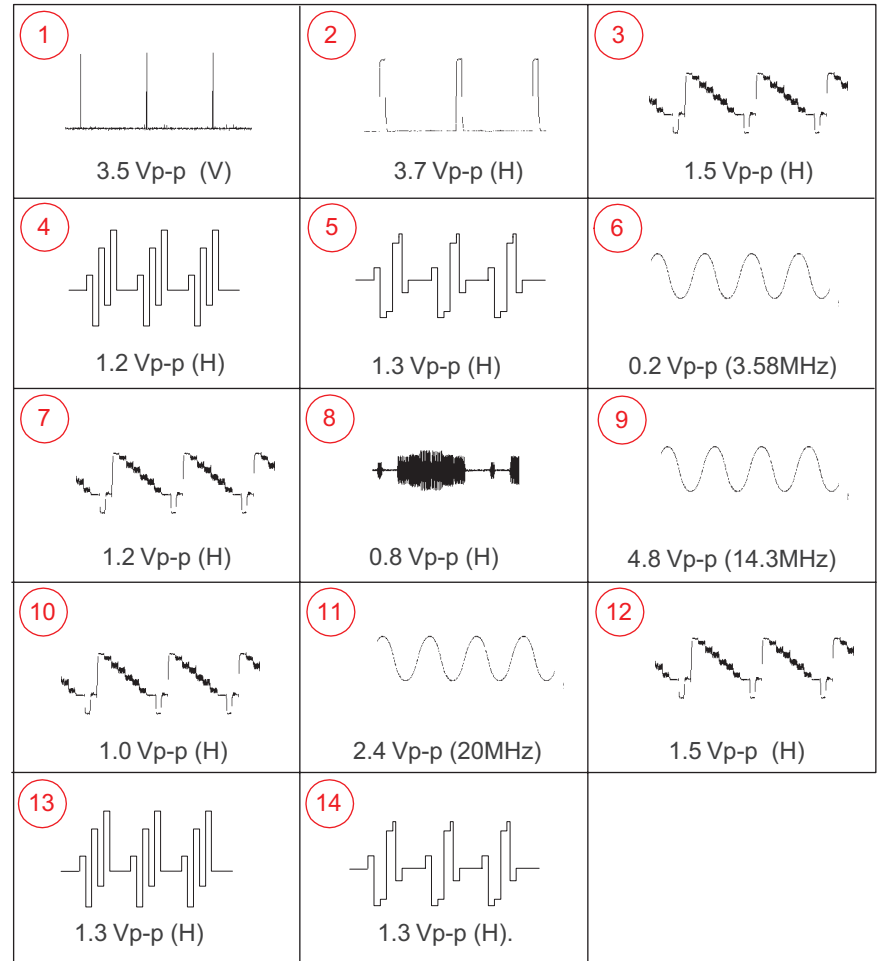
B BOARD SCHEMATIC DIAGRAM (2 OF 4)



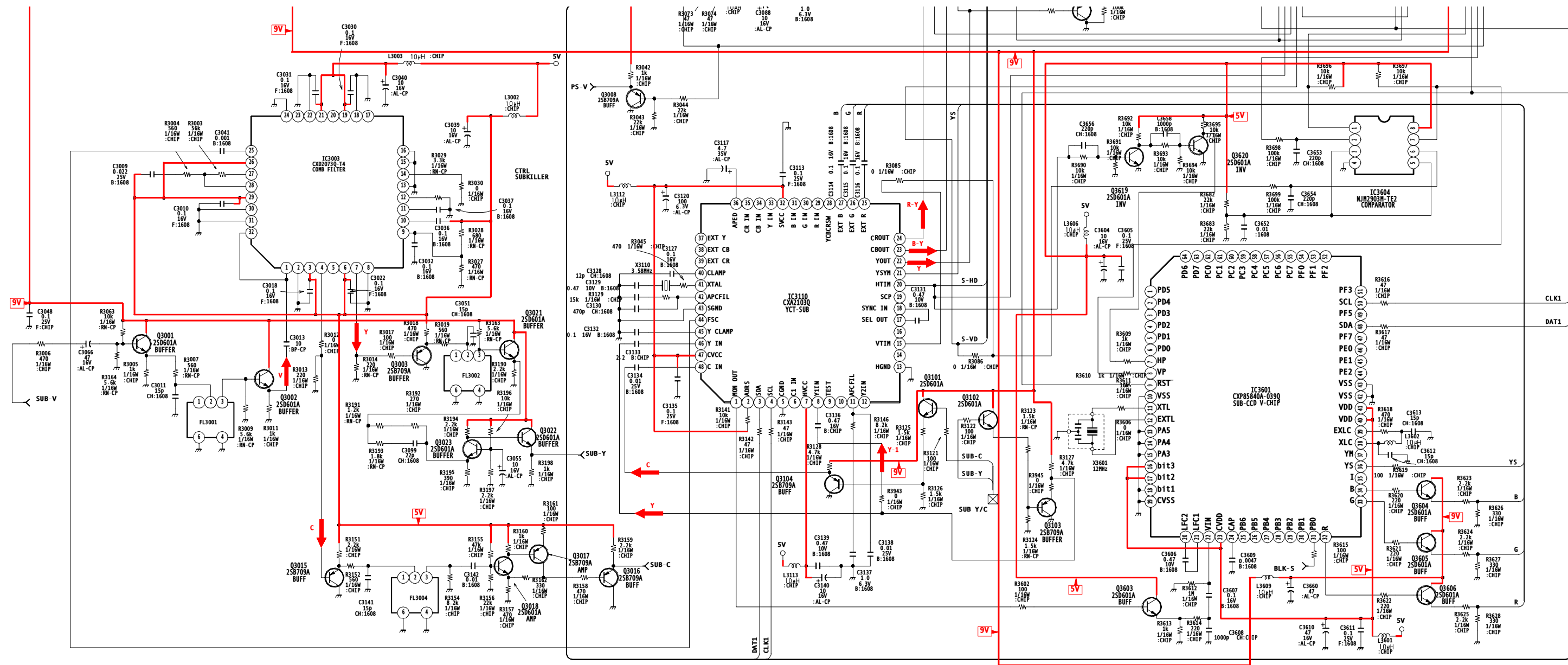
16 | 17 | 18 | 19 | 20 | 21 | 22

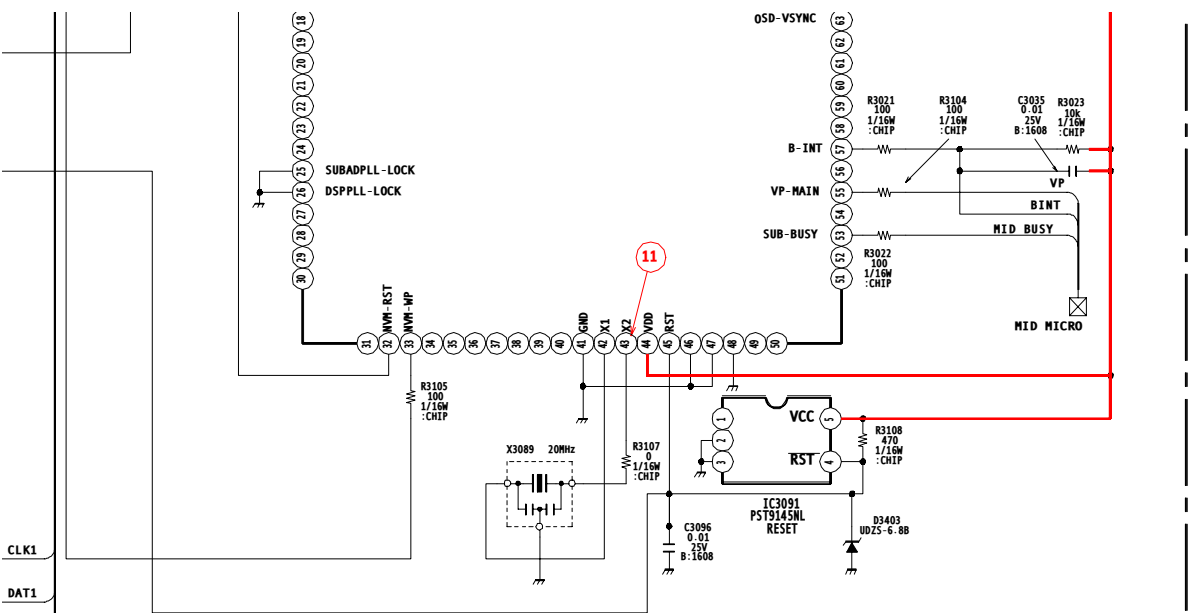


B BOARD WAVEFORMS (2 OF 4)



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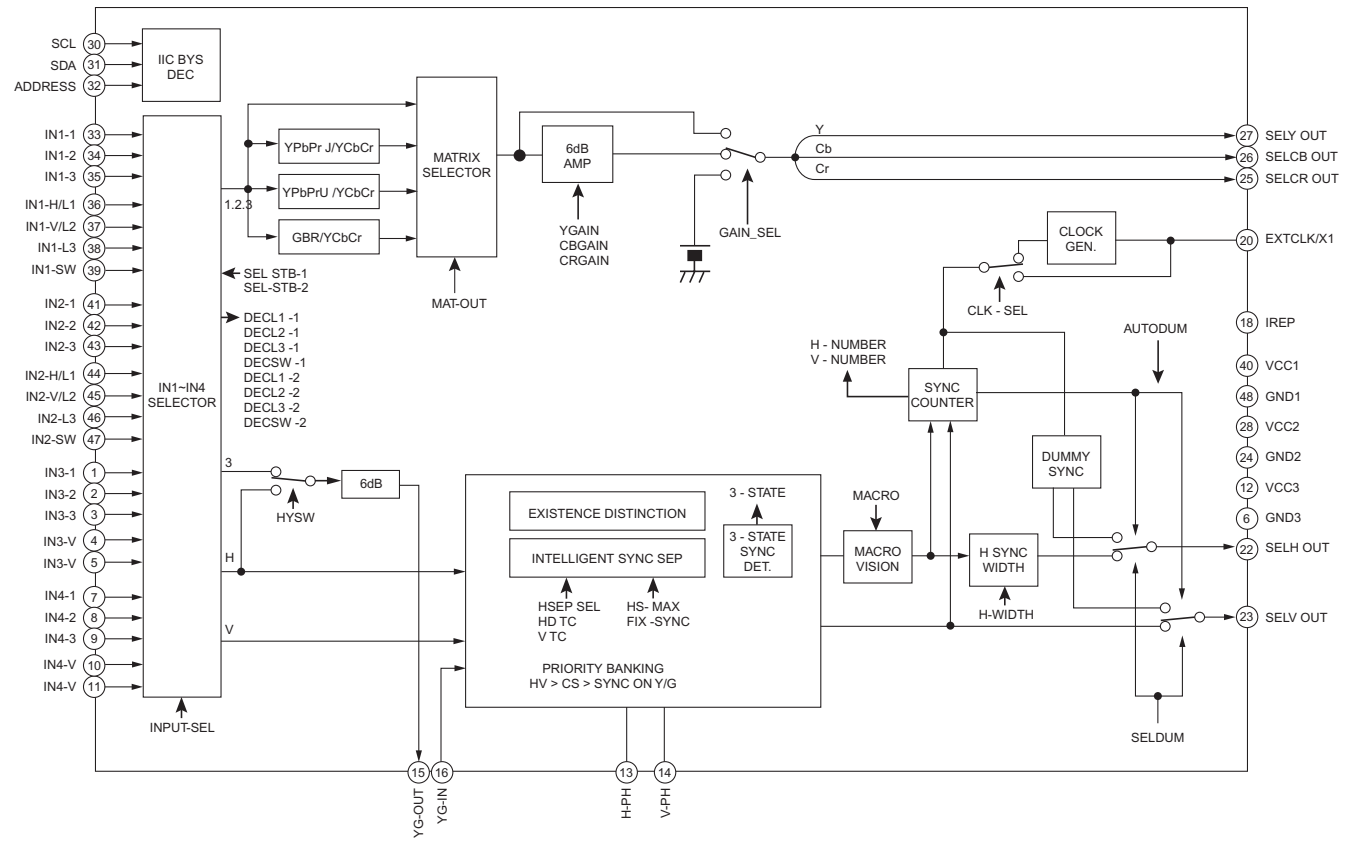




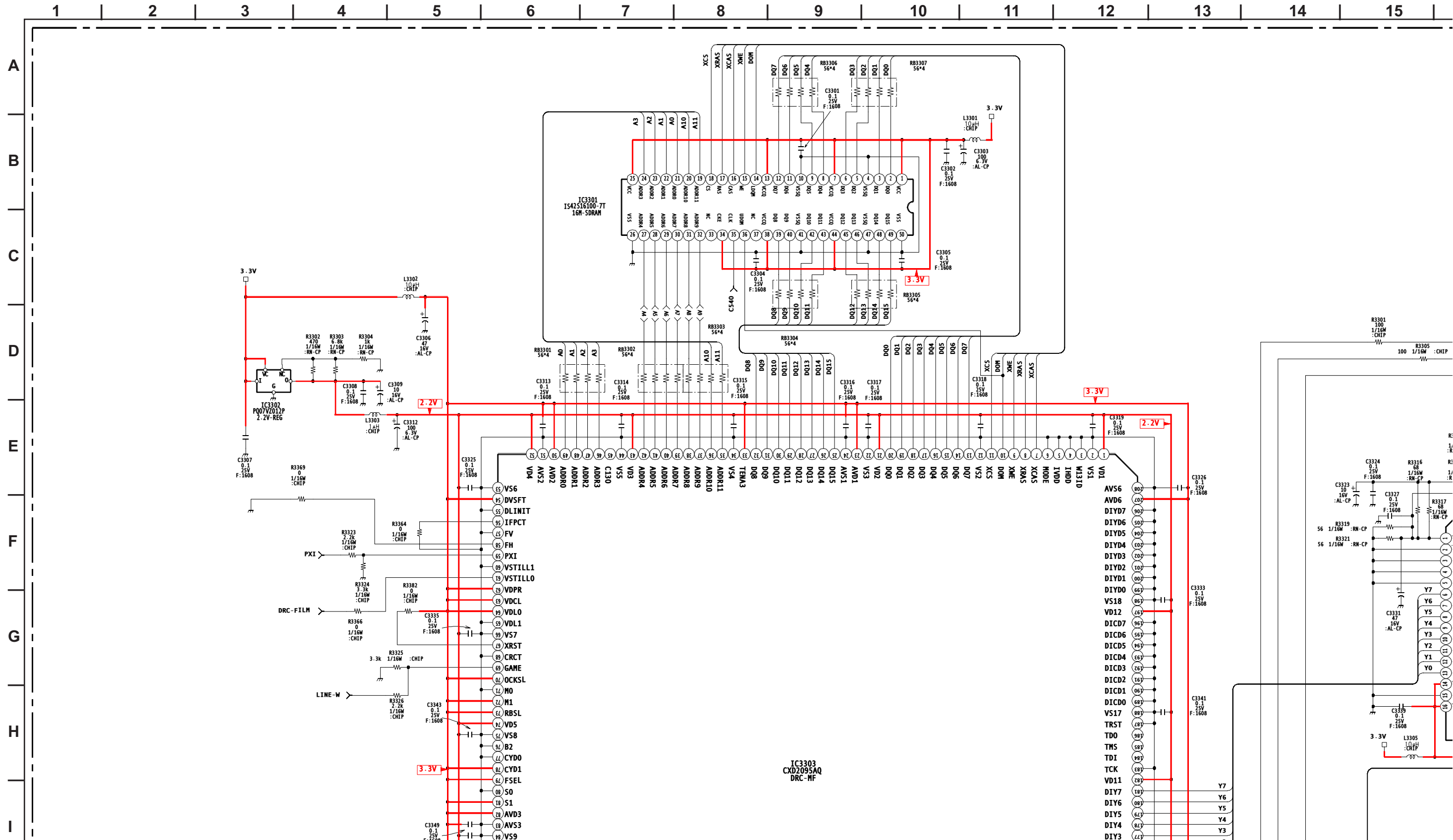
B (2/4)

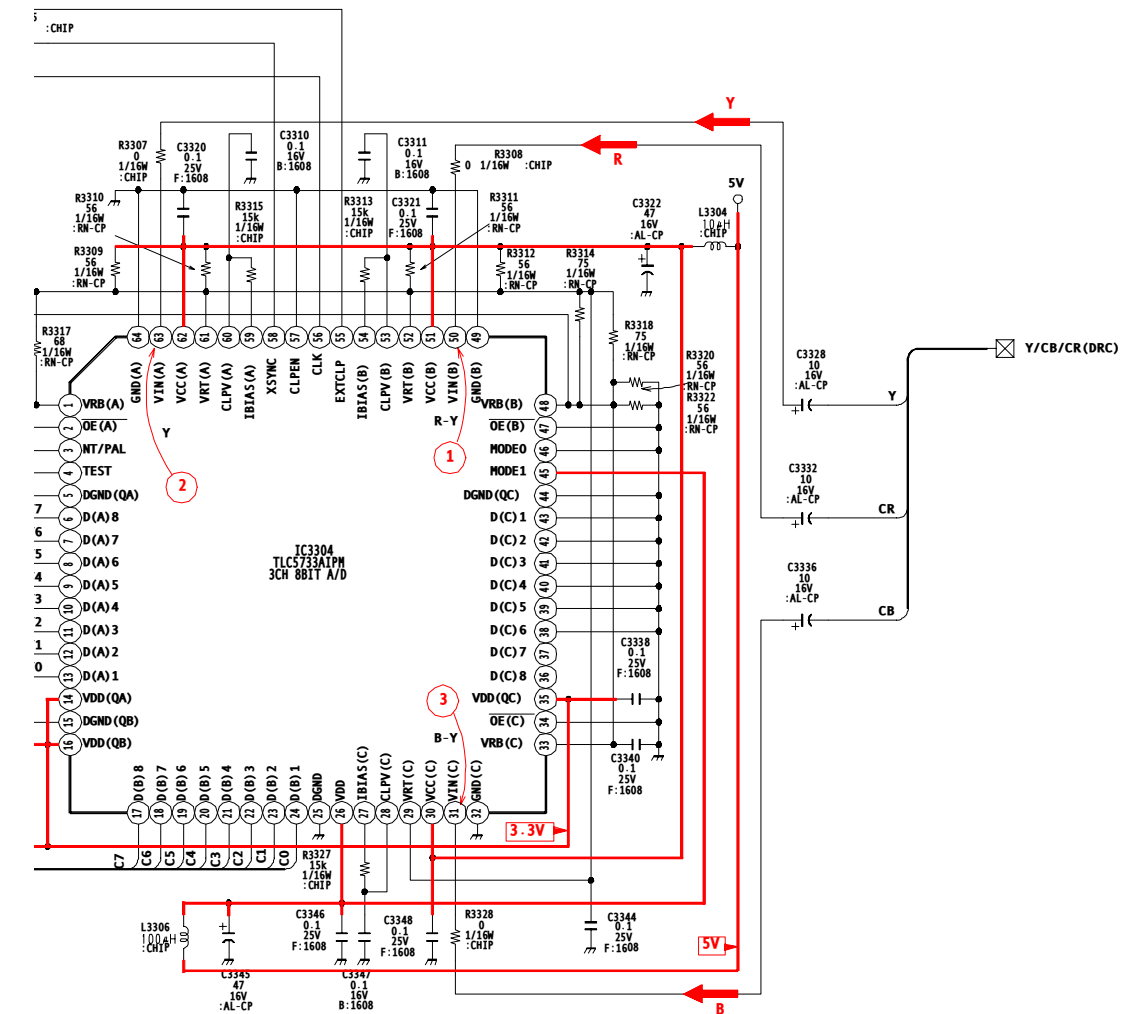
9-965-898-01<DX-1A> B(2/4)

B BOARD: IC3001 CXA2151Q

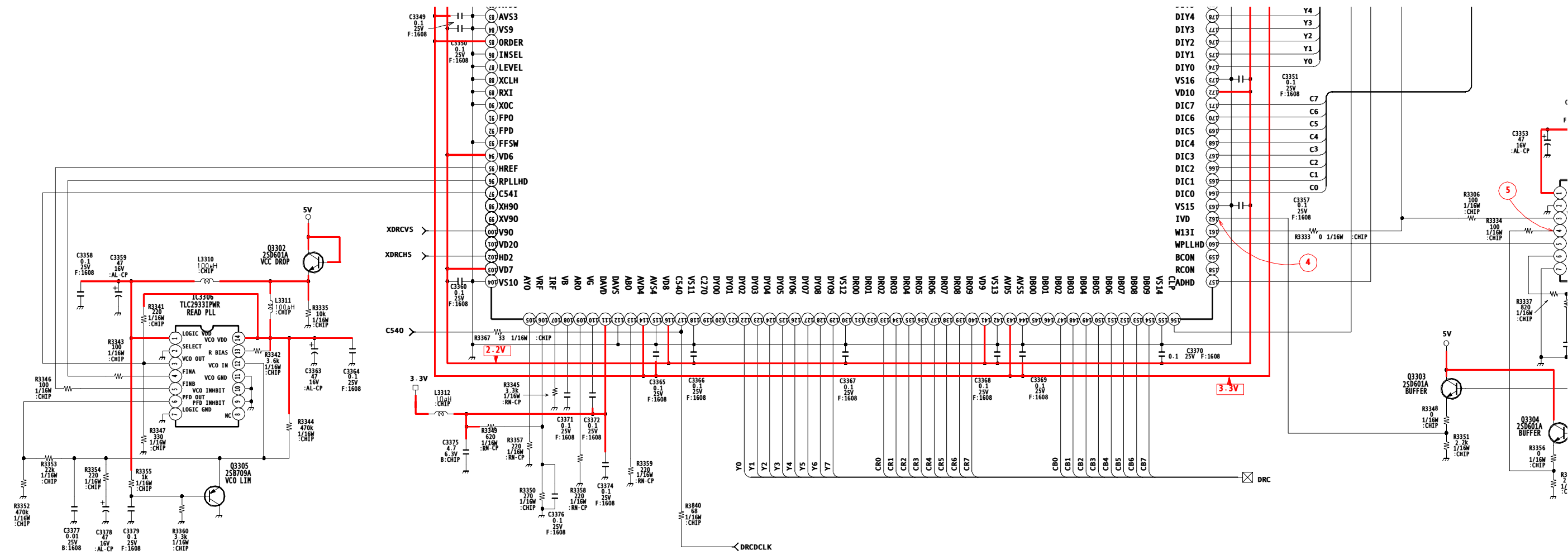


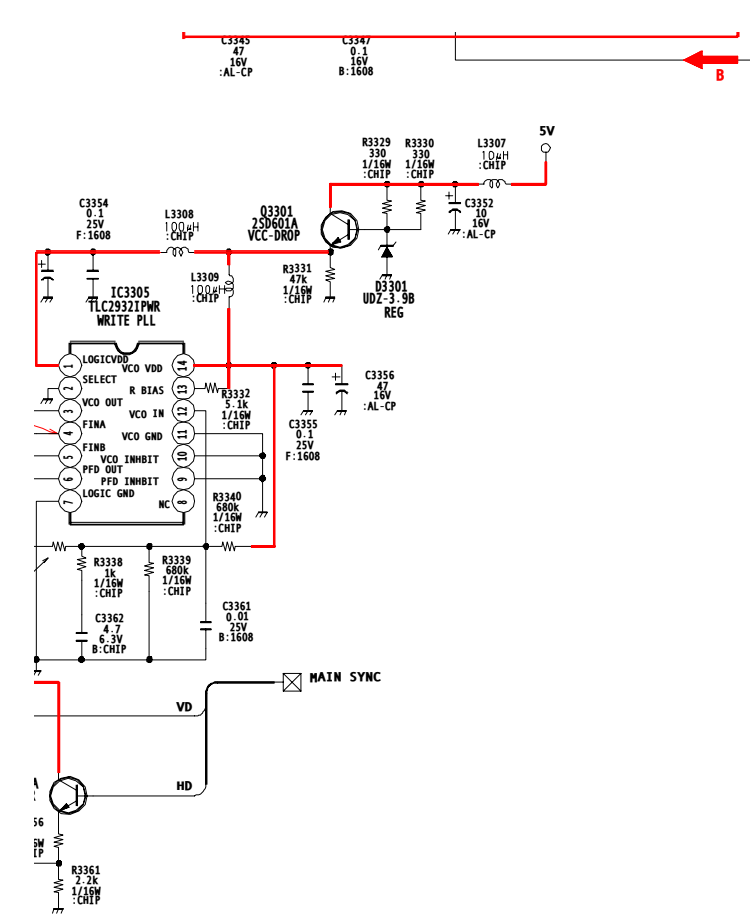
B BOARD SCHEMATIC DIAGRAM (3 OF 4)





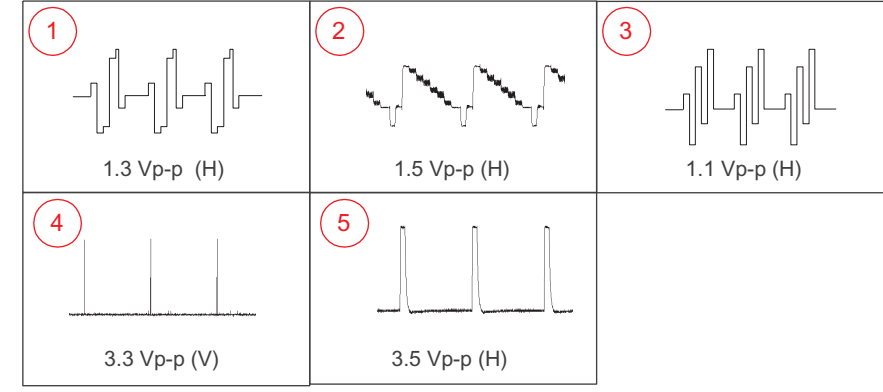
I
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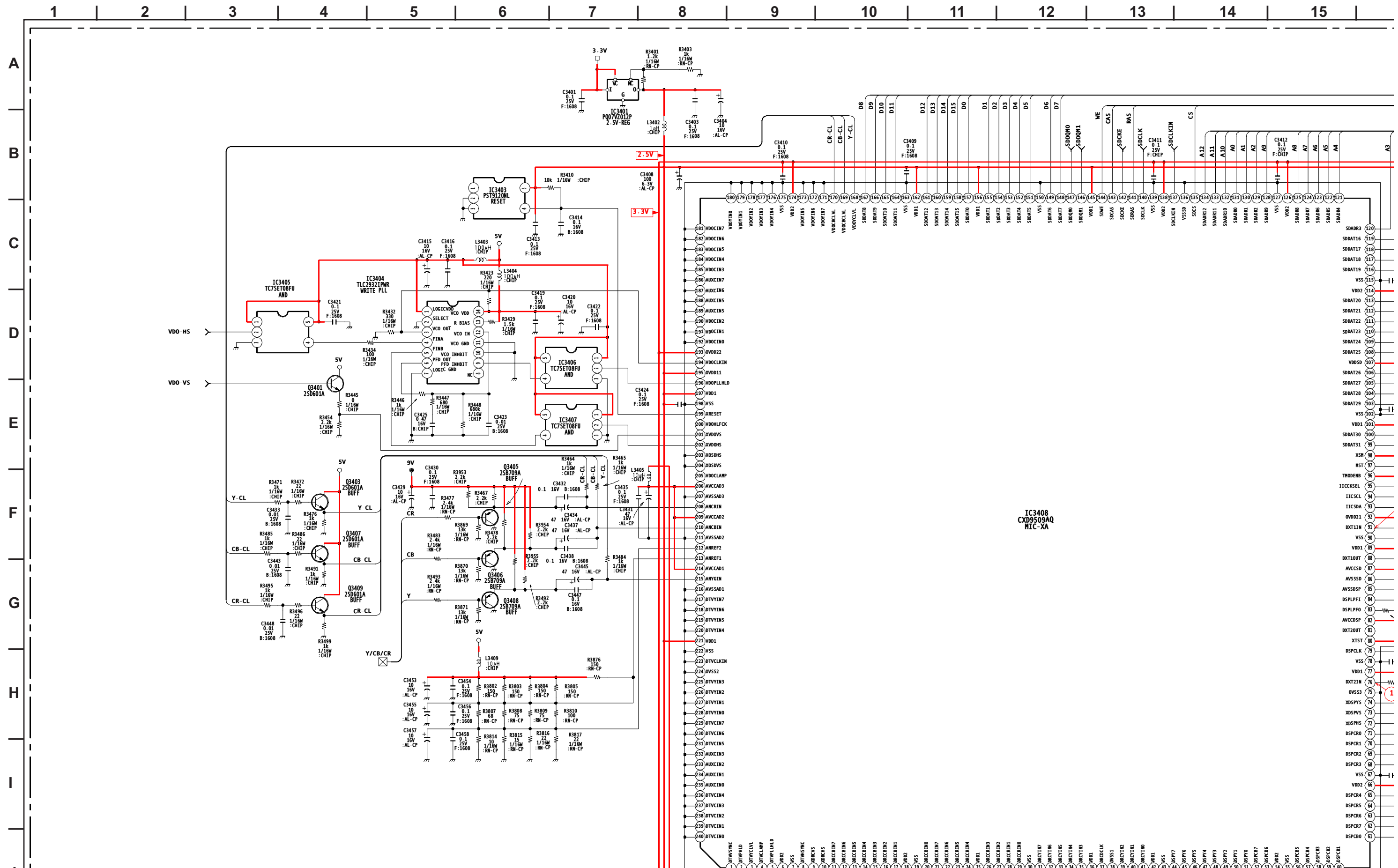


B (3/4)

B BOARD WAVEFORMS (3 OF 4)

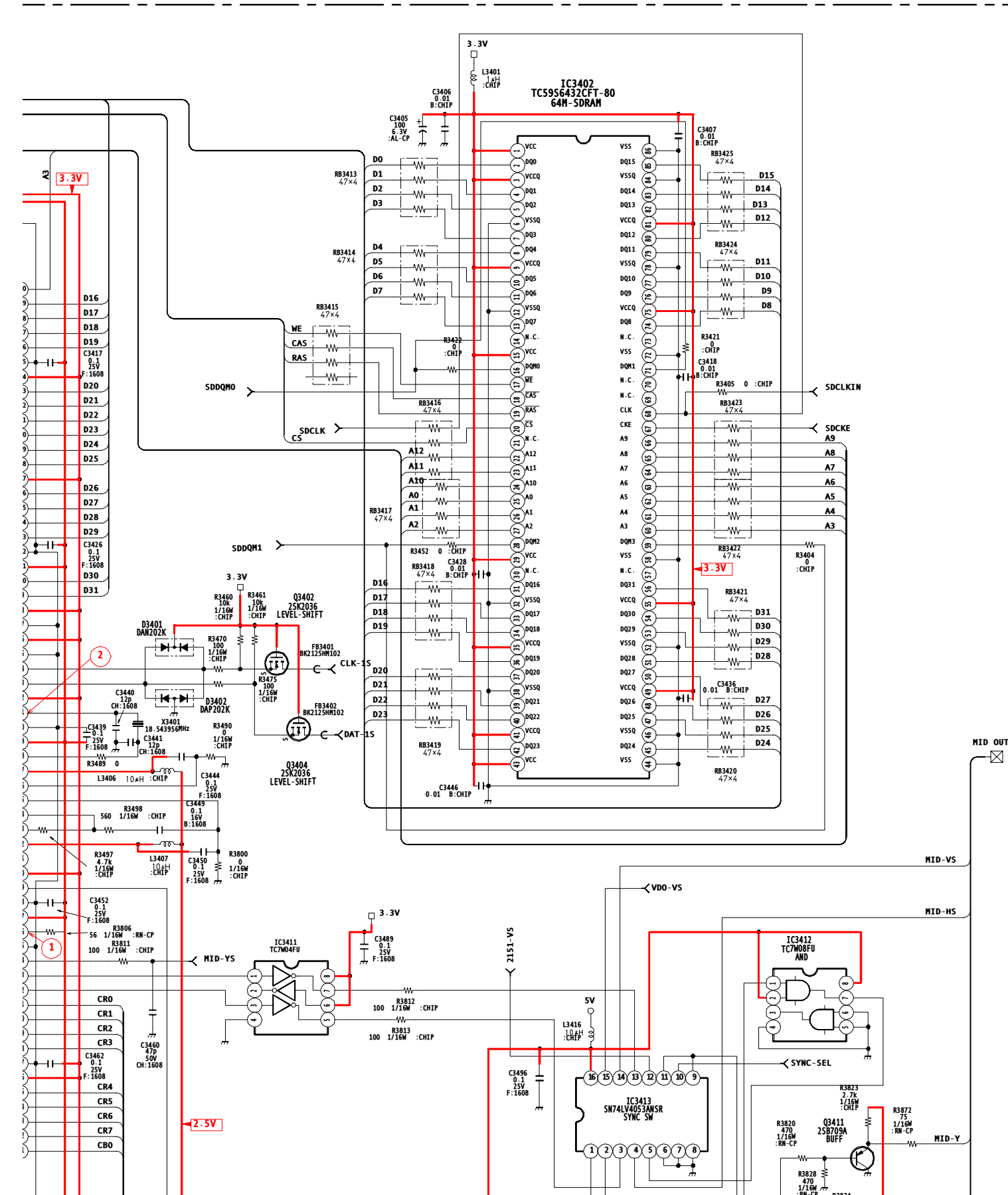
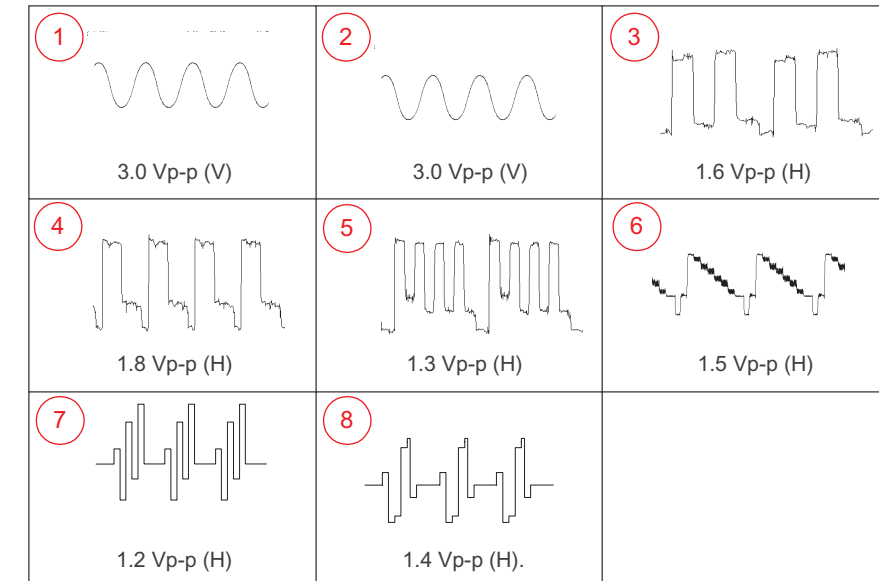


B BOARD SCHEMATIC DIAGRAM (4 OF 4)

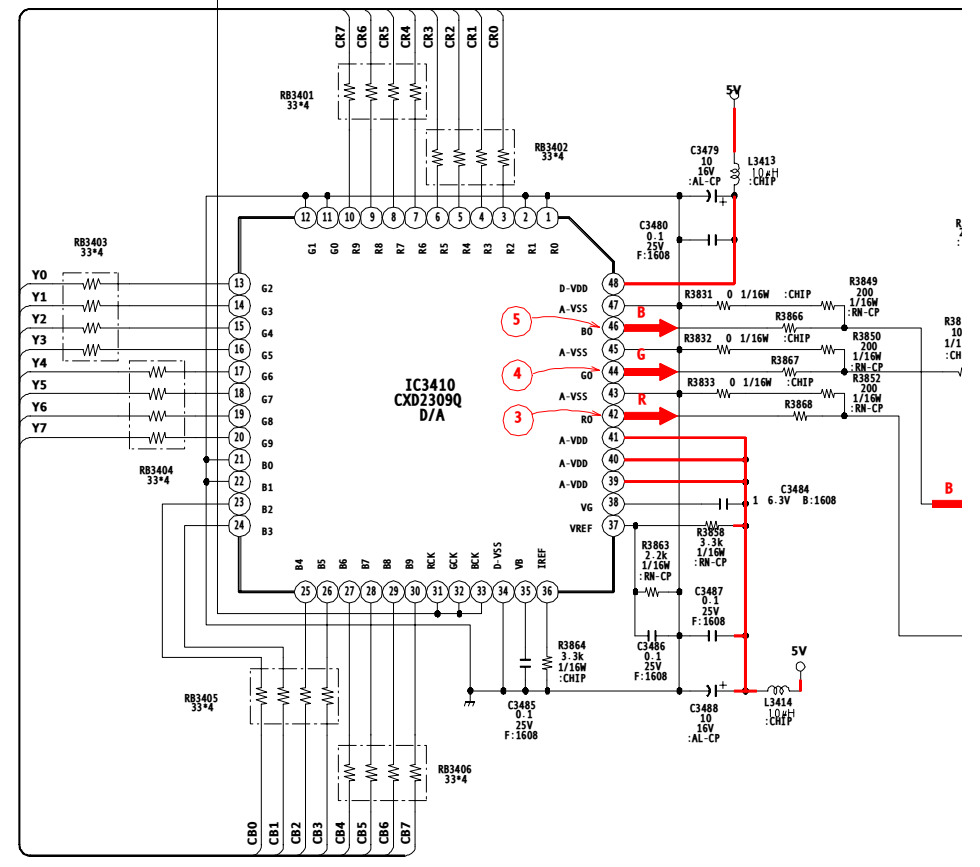
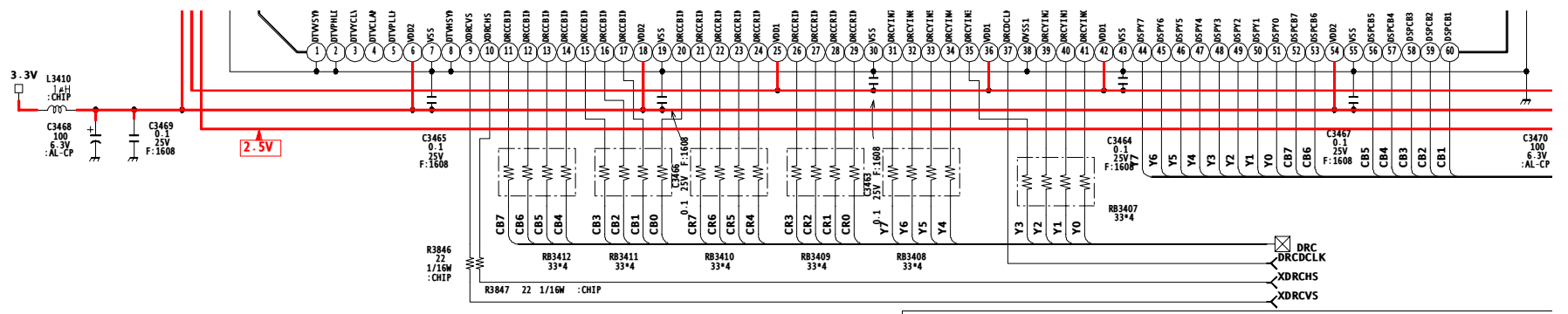


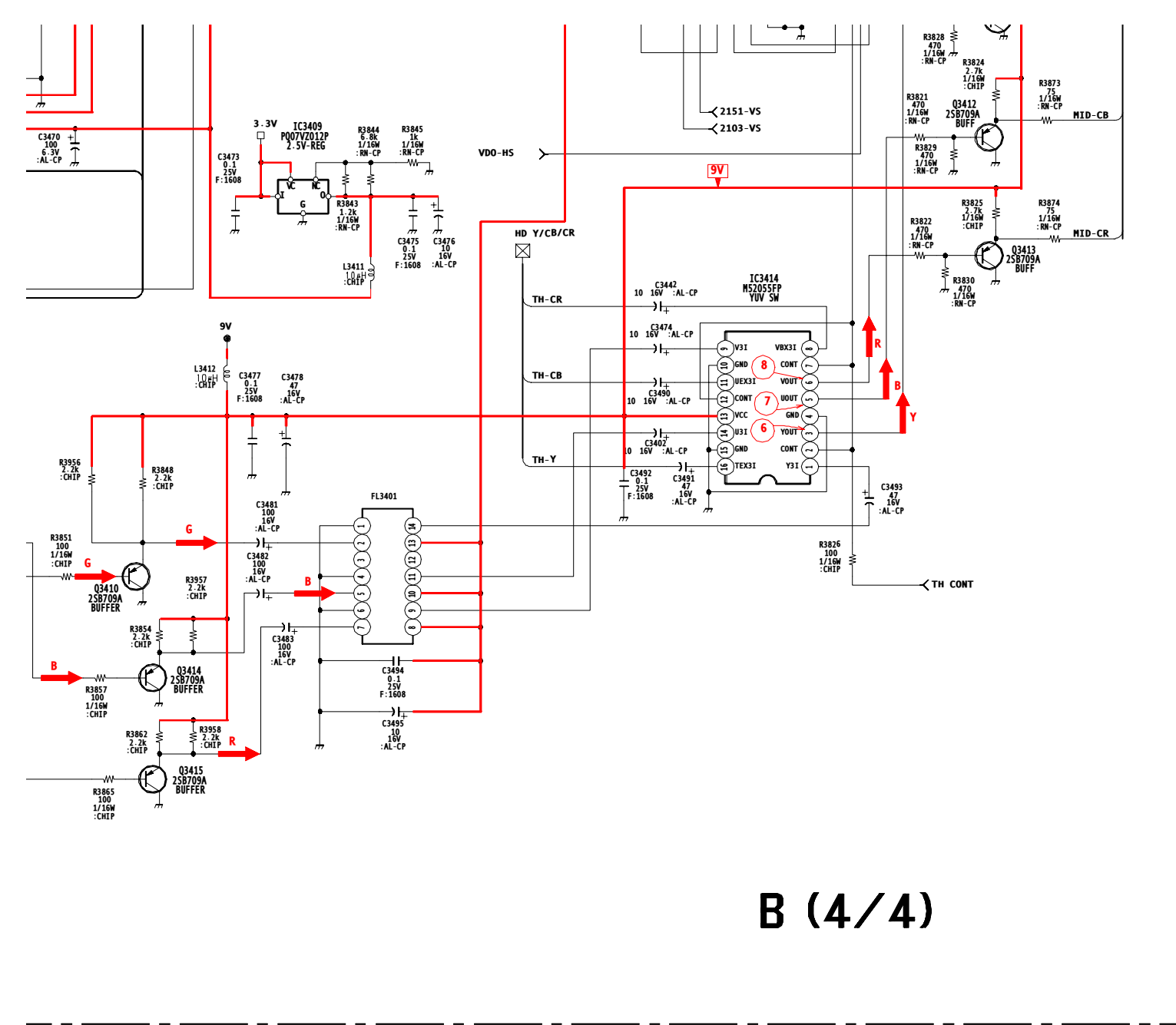
16 17 18 19 20 21 22 23

B BOARD WAVEFORMS (4 OF 4)



J
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O
P

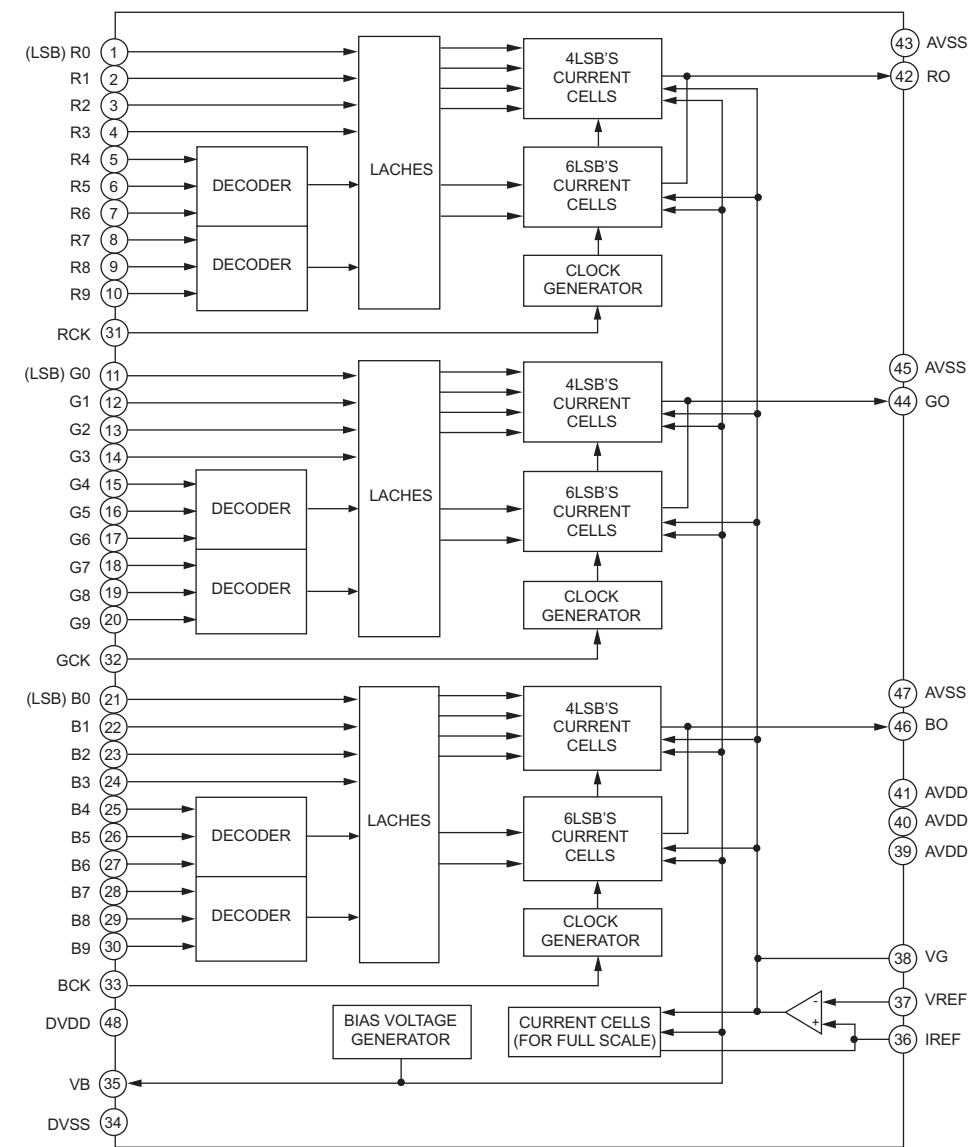




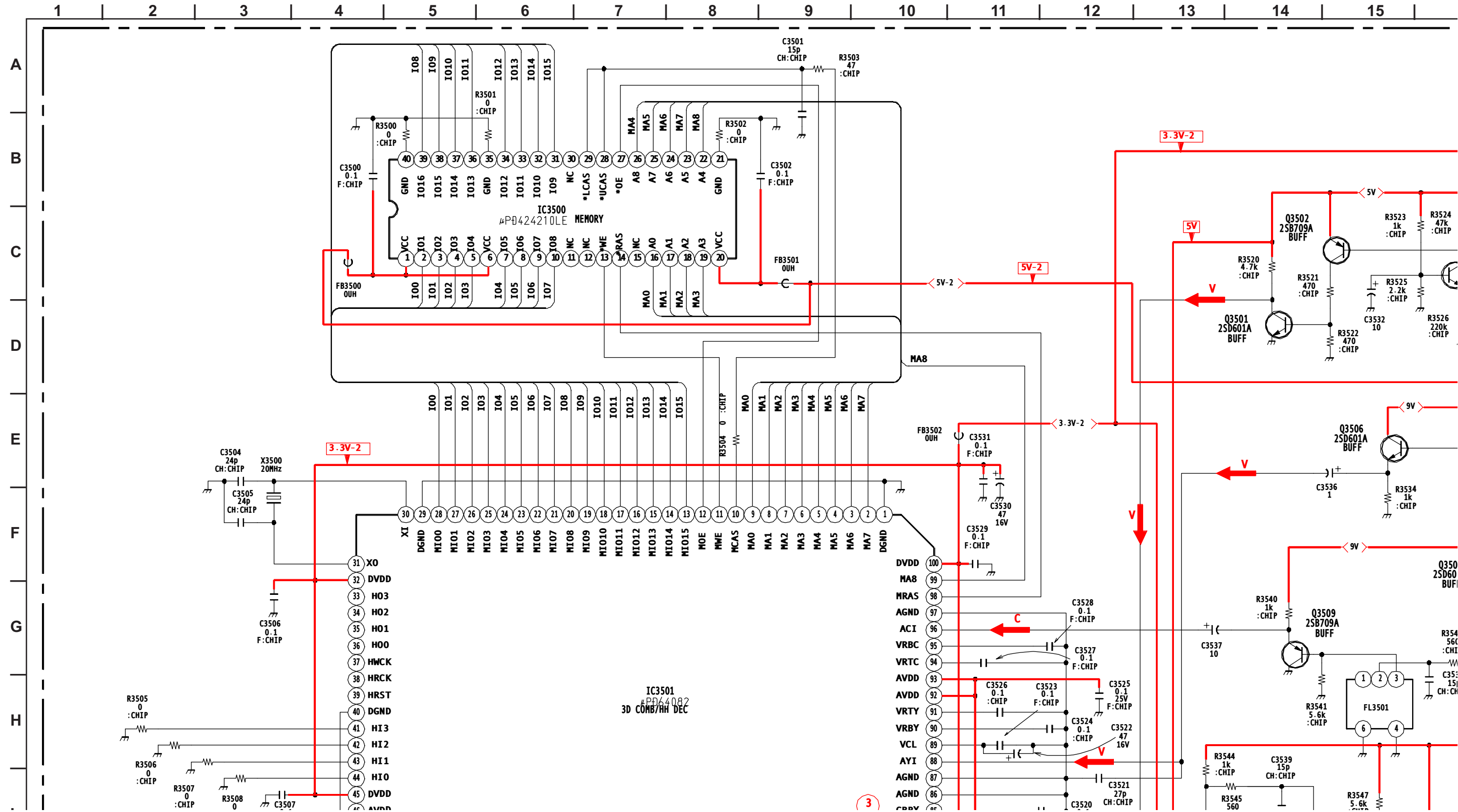
B (4/4)

9-965-898-01-DX-1A> B(4/4)

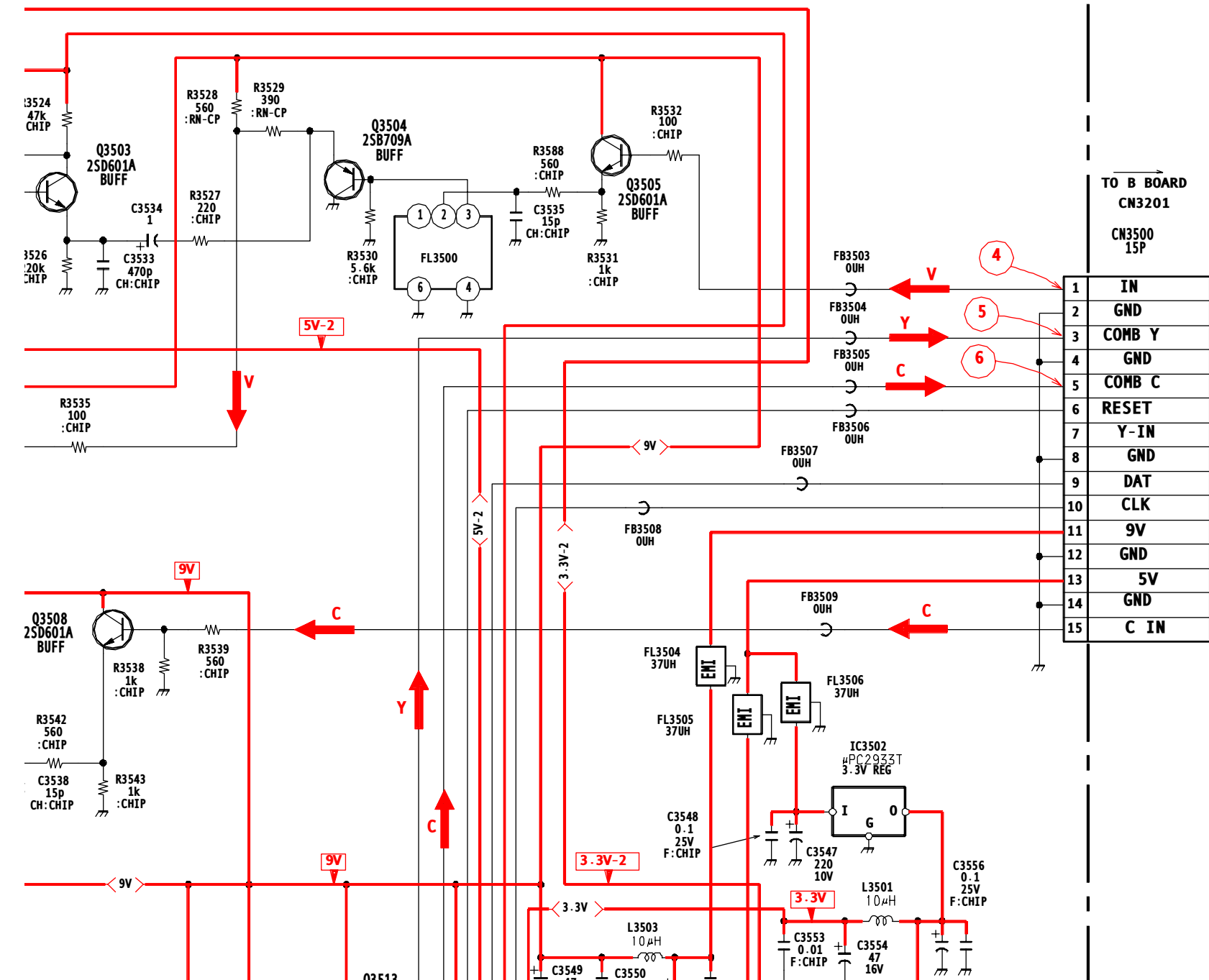
B BOARD: IC2309Q



BC BOARD SCHEMATIC DIAGRAM



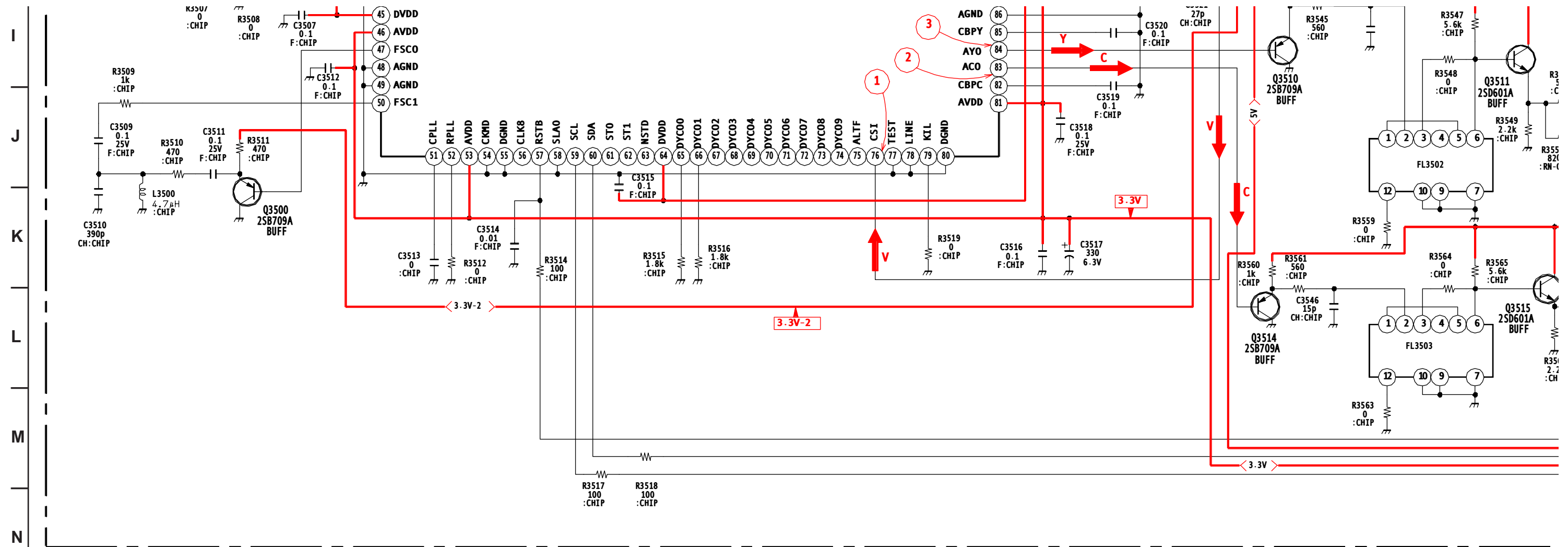
16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24

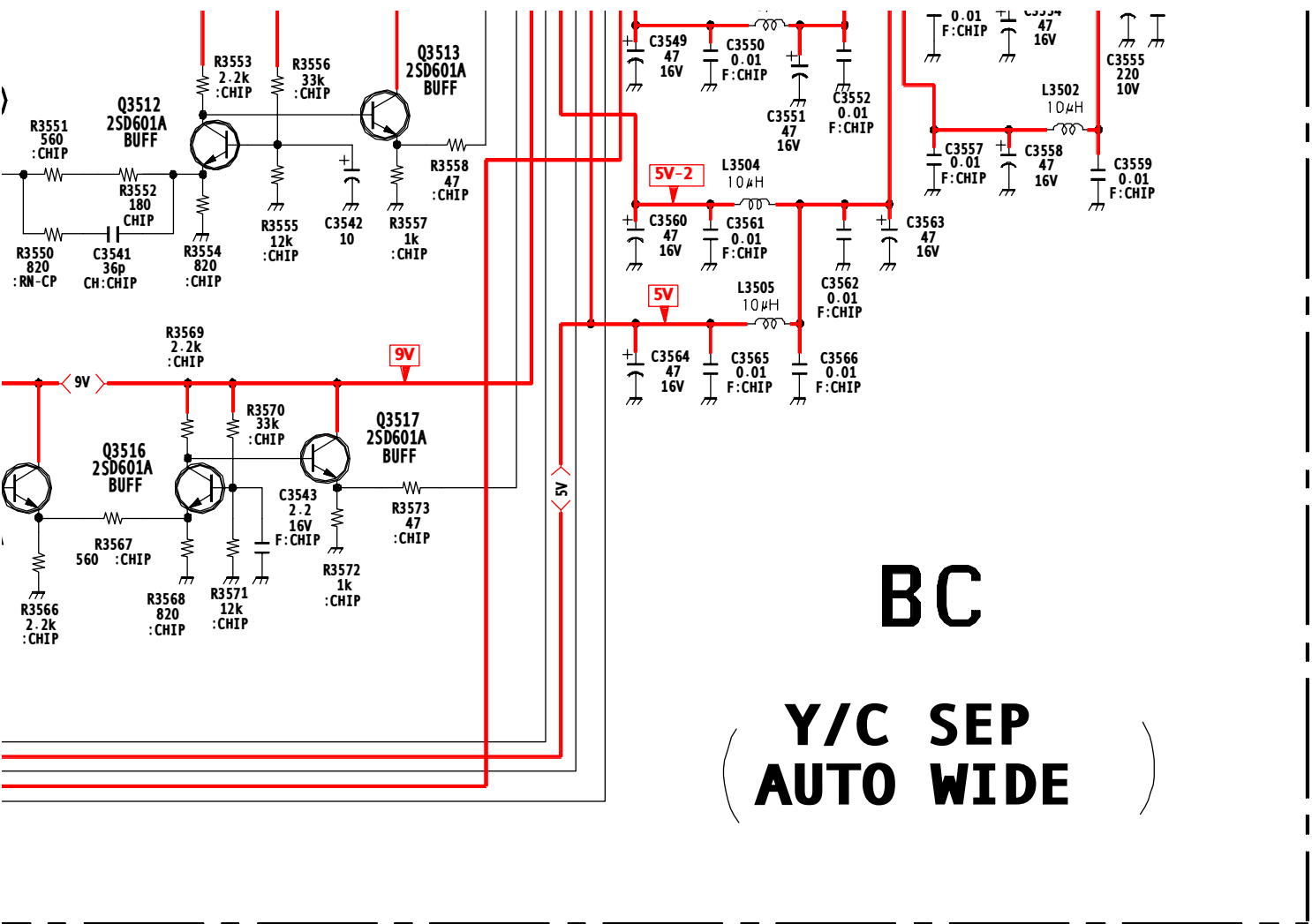


TO B BOARD
CN3201

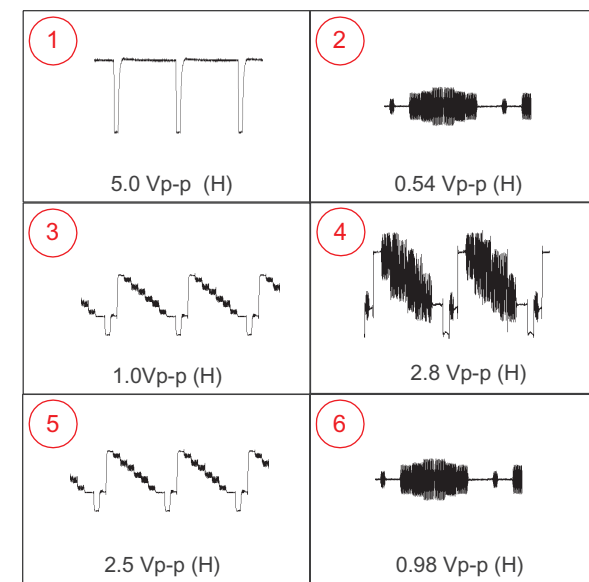
1	IN
2	GND
3	COMB Y
4	GND
5	COMB C
6	RESET
7	Y-IN
8	GND
9	DAT
10	CLK
11	9V
12	GND
13	5V
14	GND
15	C IN

CN3500
15P

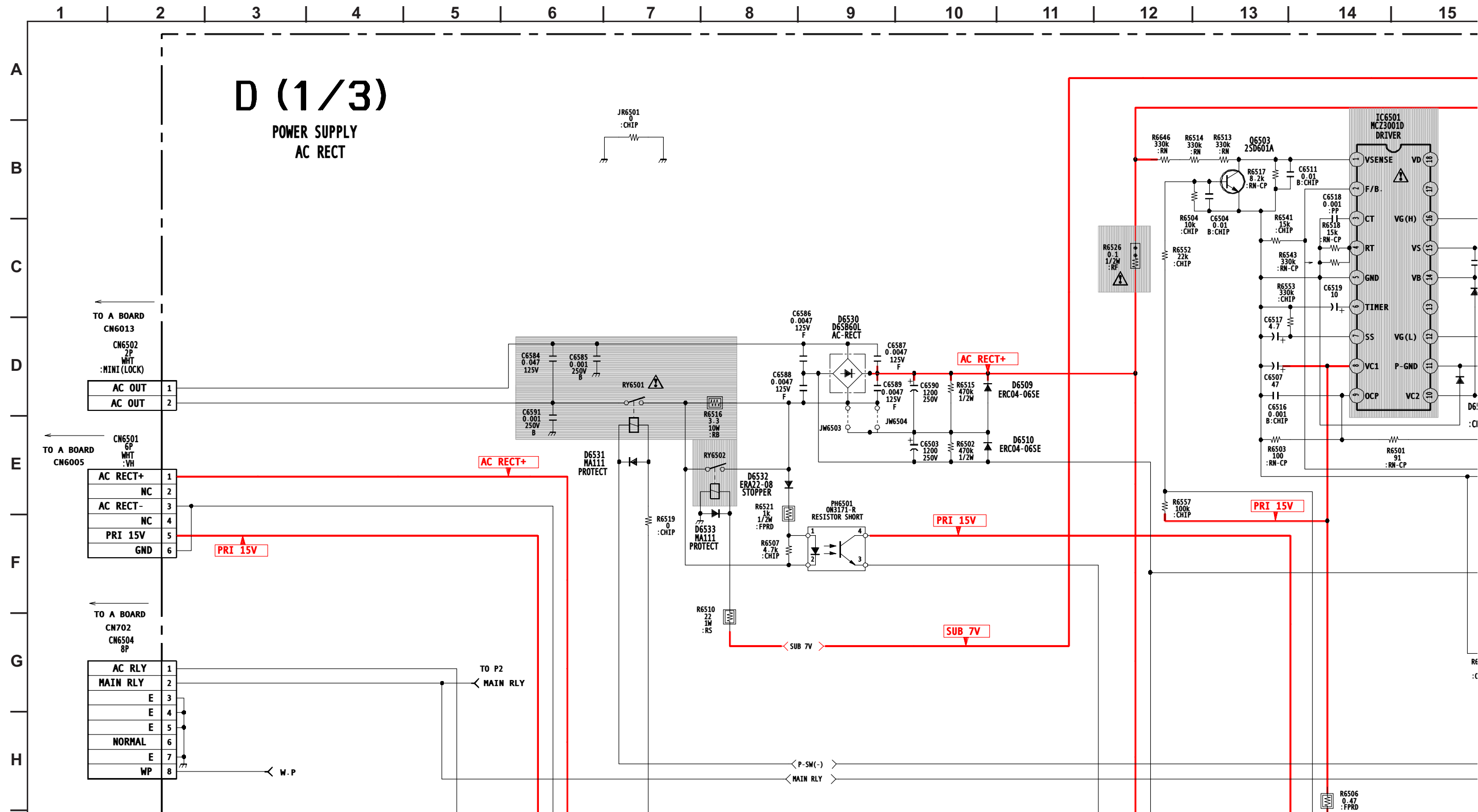


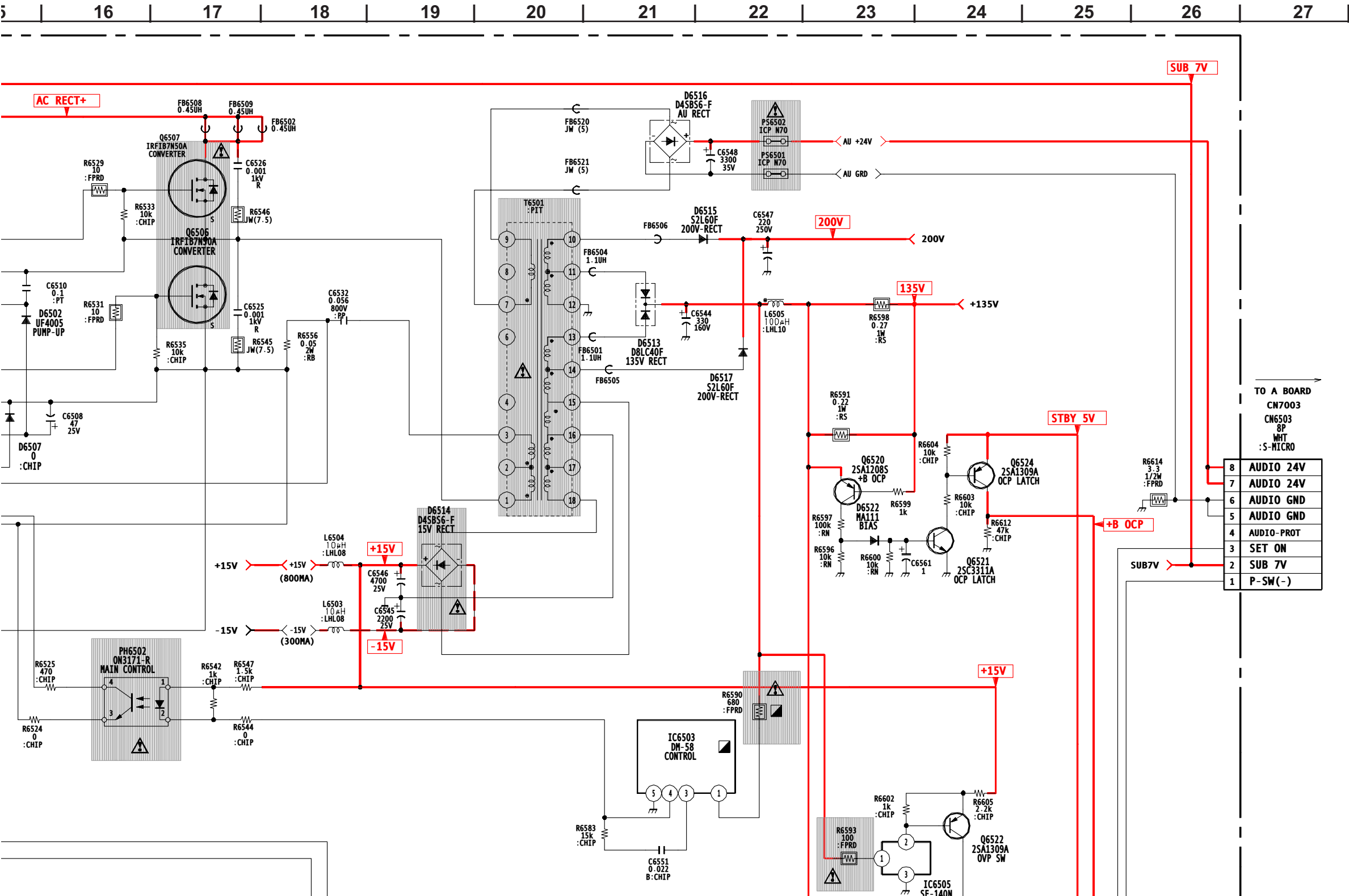


BC BOARD WAVEFORMS



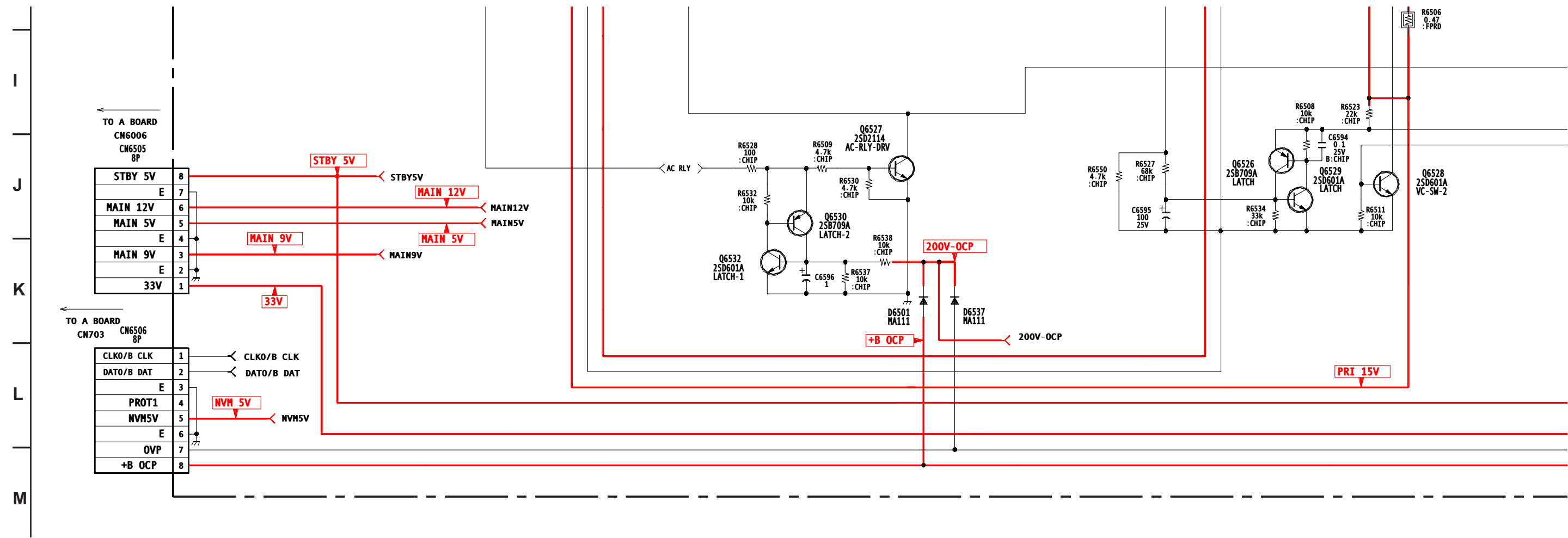
D BOARD SCHEMATIC DIAGRAM (1 OF 3)



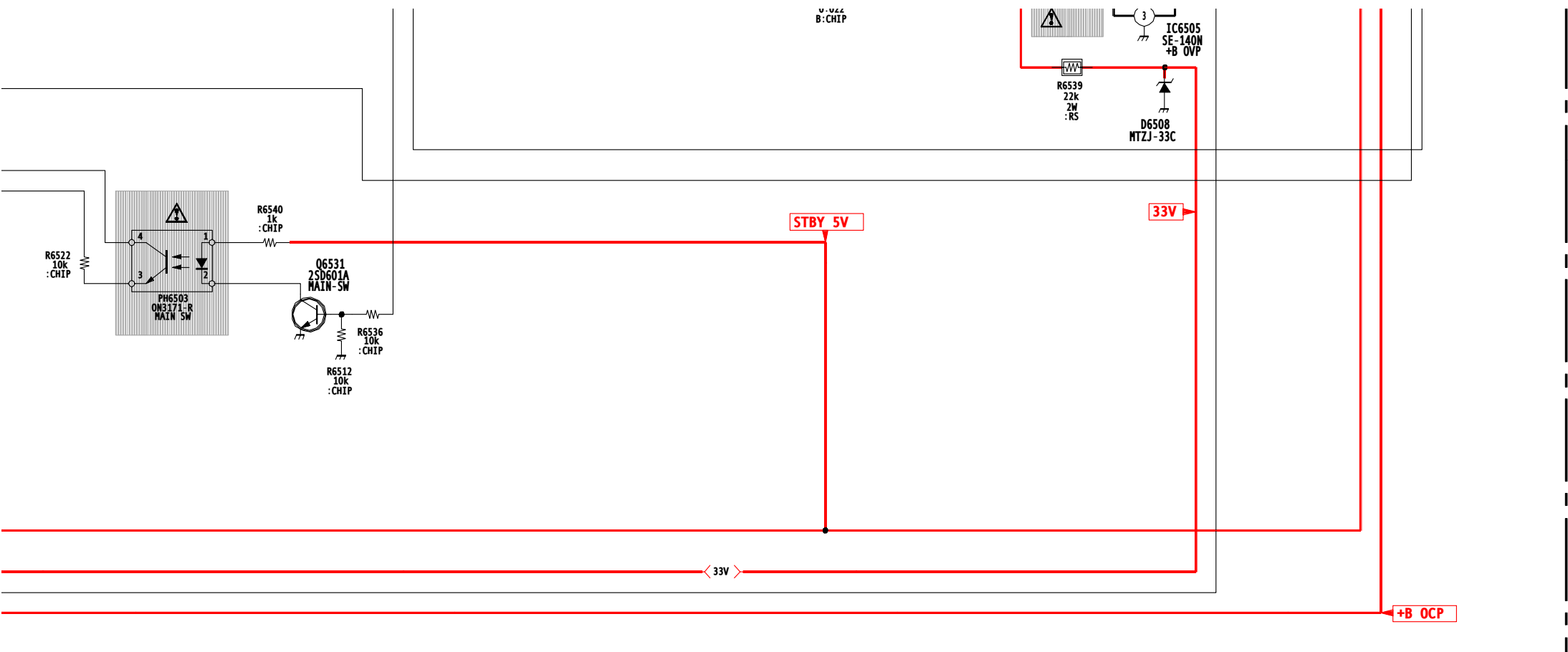


TO A BOARD
CN7003
CN6503
8P
WHT
:S-MICRO

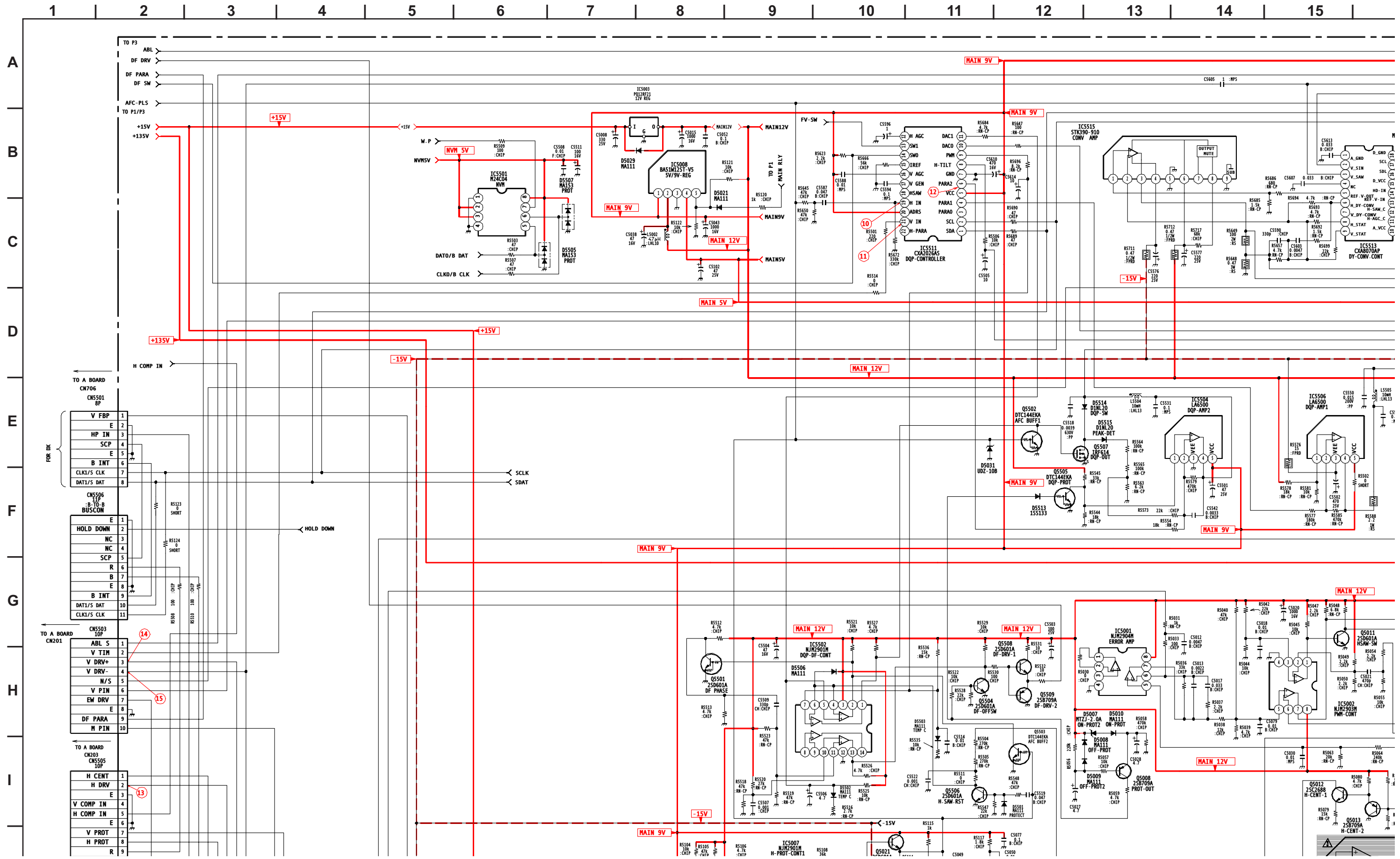
8	AUDIO 24V
7	AUDIO 24V
6	AUDIO GND
5	AUDIO GND
4	AUDIO-PROT
3	SET ON
2	SUB 7V
1	P-SW (-)



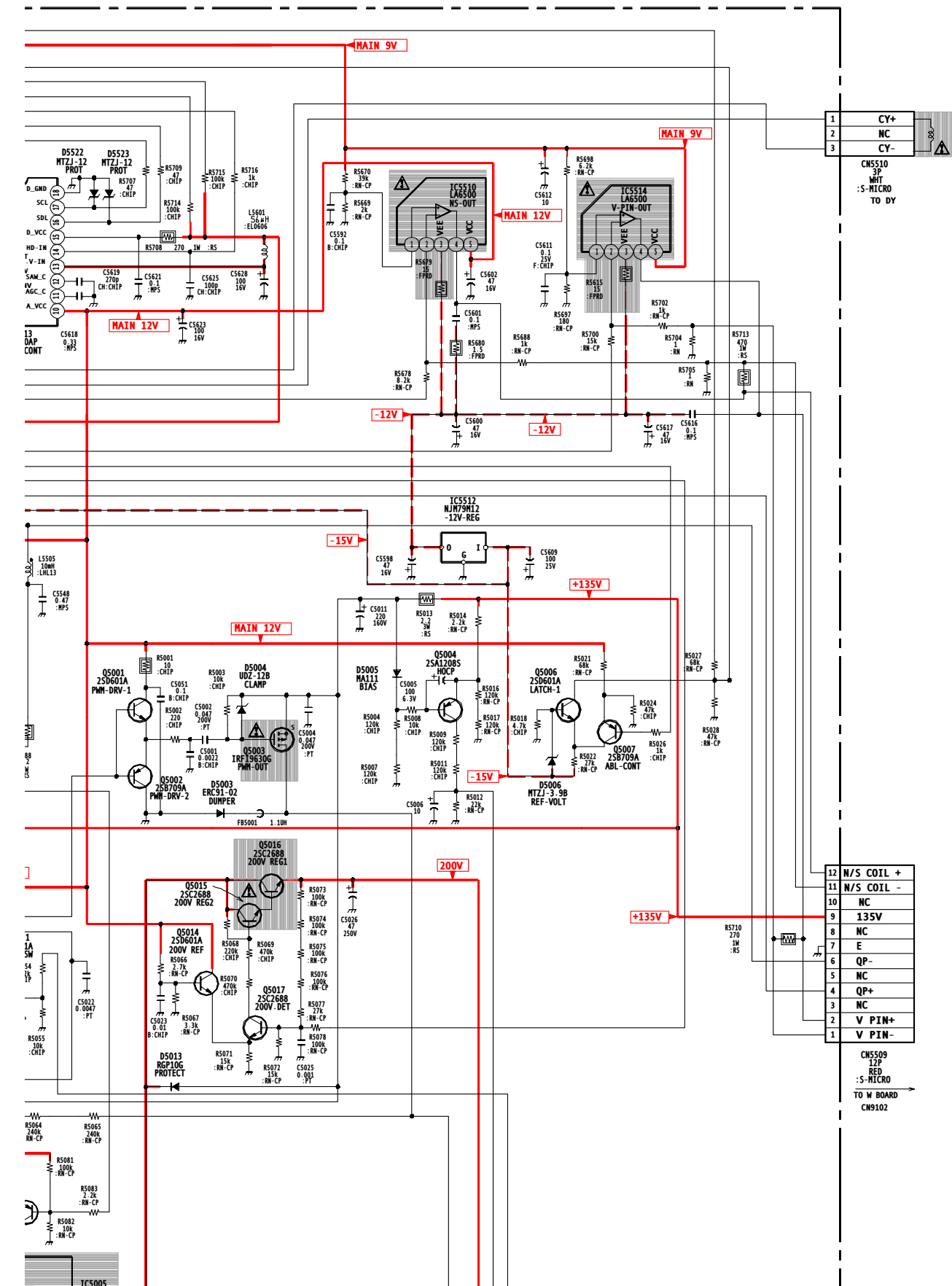
V-044
B:CHIP



D BOARD SCHEMATIC DIAGRAM (2 OF 3)



16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24



1	CY+
2	NC
3	CY-

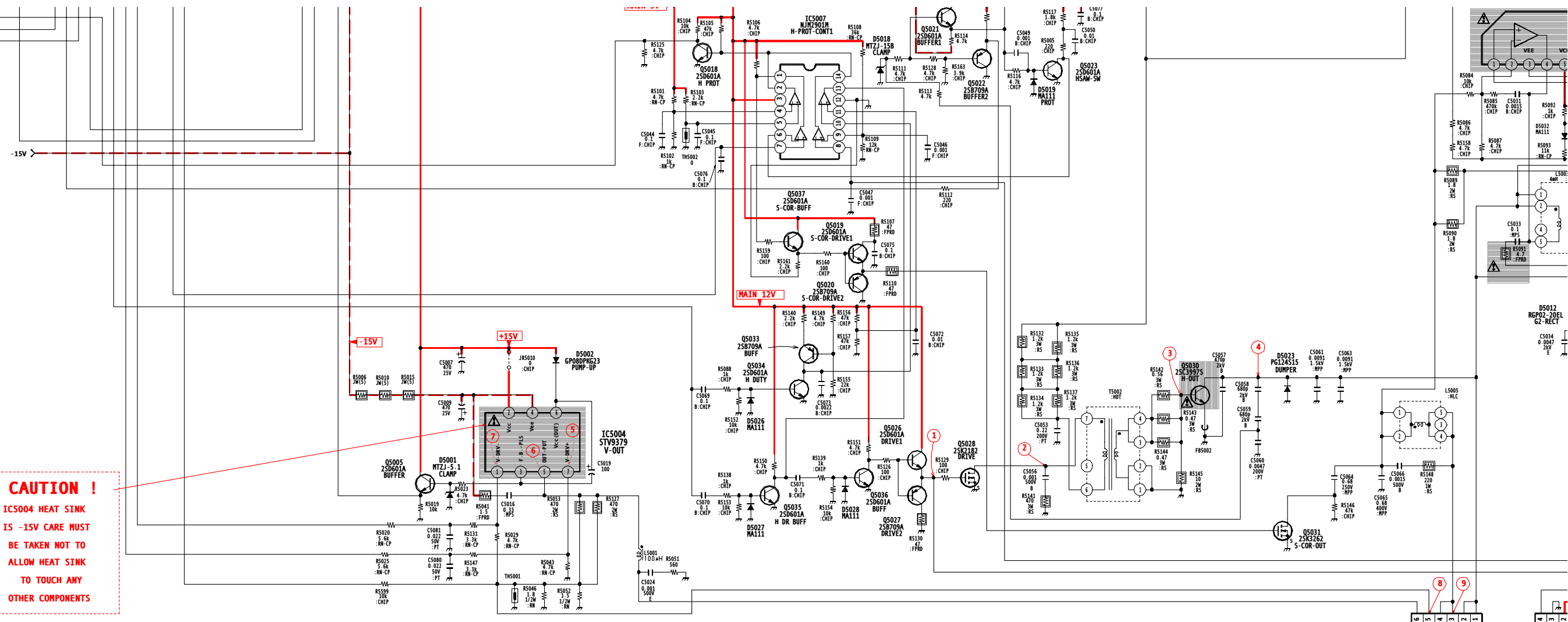
CN5510
3P
WHT
:S-MICRO
TO DY

12	N/S COIL +
11	N/S COIL -
10	NC
9	135V
8	NC
7	E
6	QP-
5	NC
4	QP+
3	NC
2	V PIN+
1	V PIN-

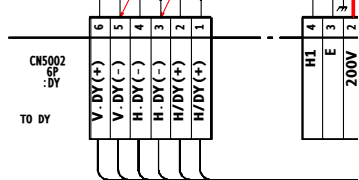
CN5509
11P
RED
:S-MICRO
TO W BOARD
CN9102

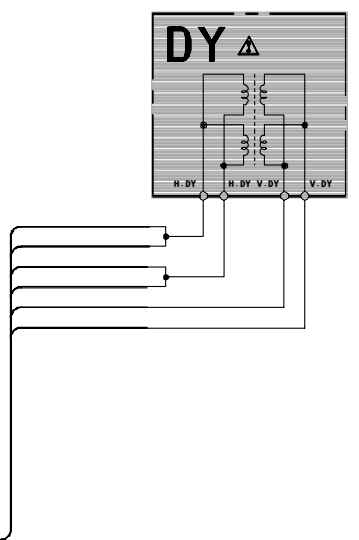
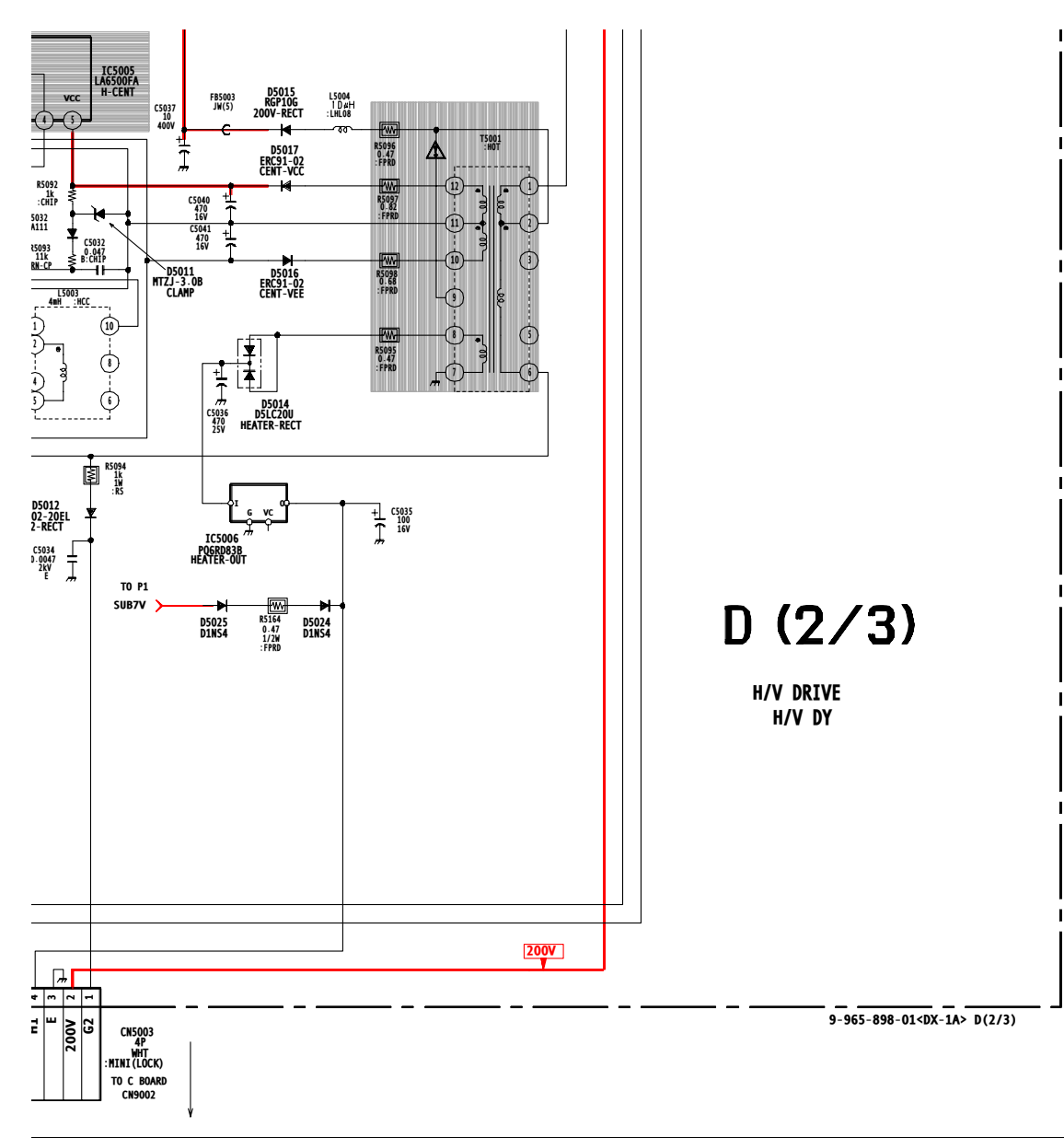
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H PROT	8
R	9
B	10

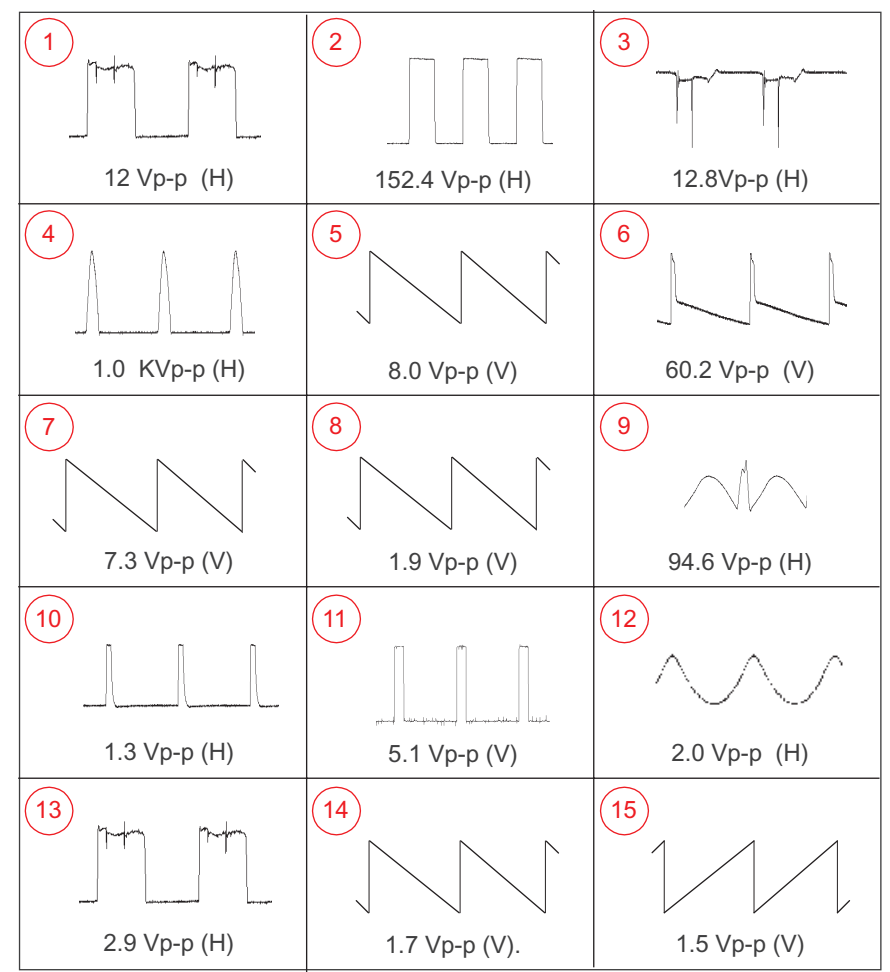


CAUTION !
 IC5004 HEAT SINK
 IS -15V CARE MUST
 BE TAKEN NOT TO
 ALLOW HEAT SINK
 TO TOUCH ANY
 OTHER COMPONENTS

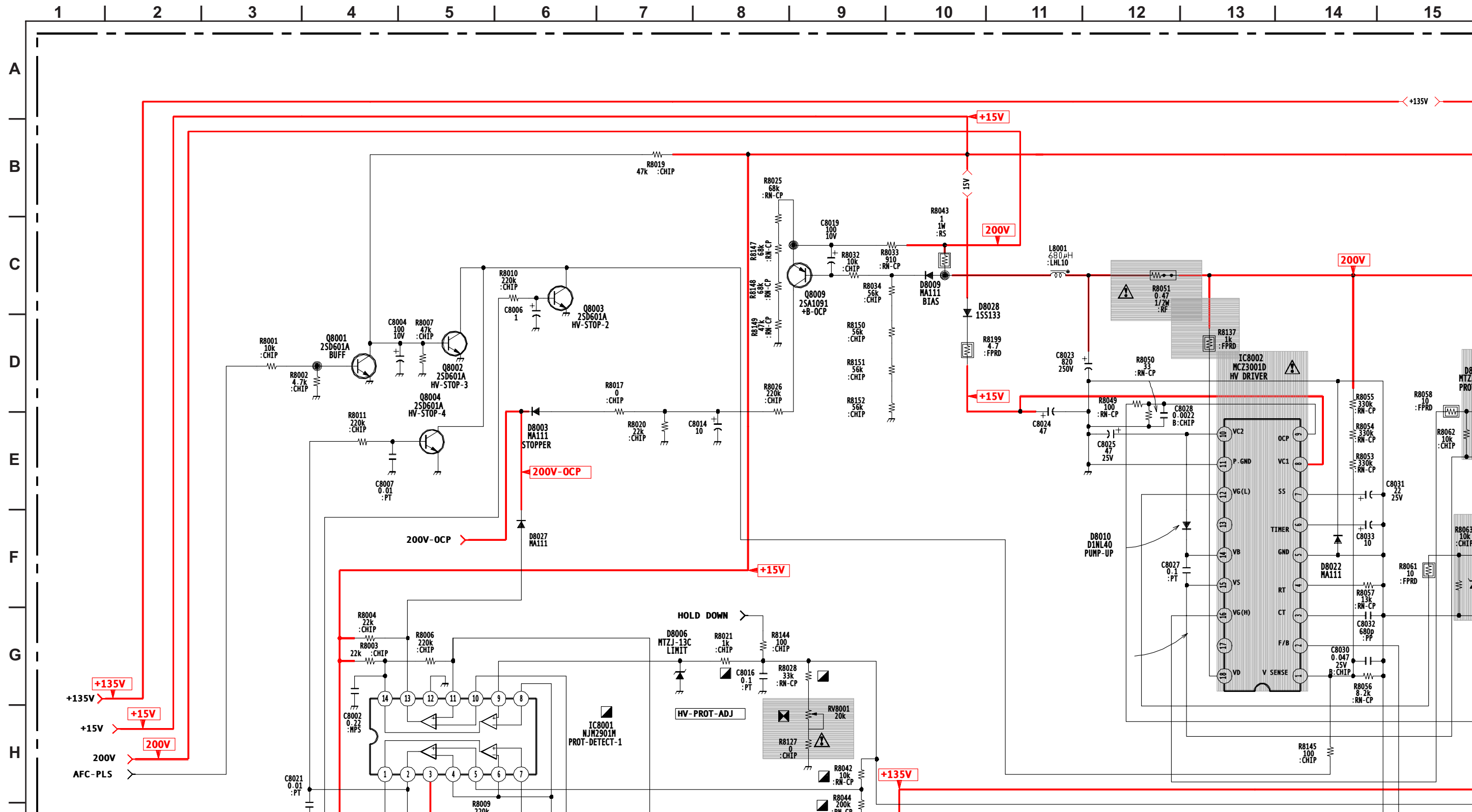




D BOARD WAVEFORMS



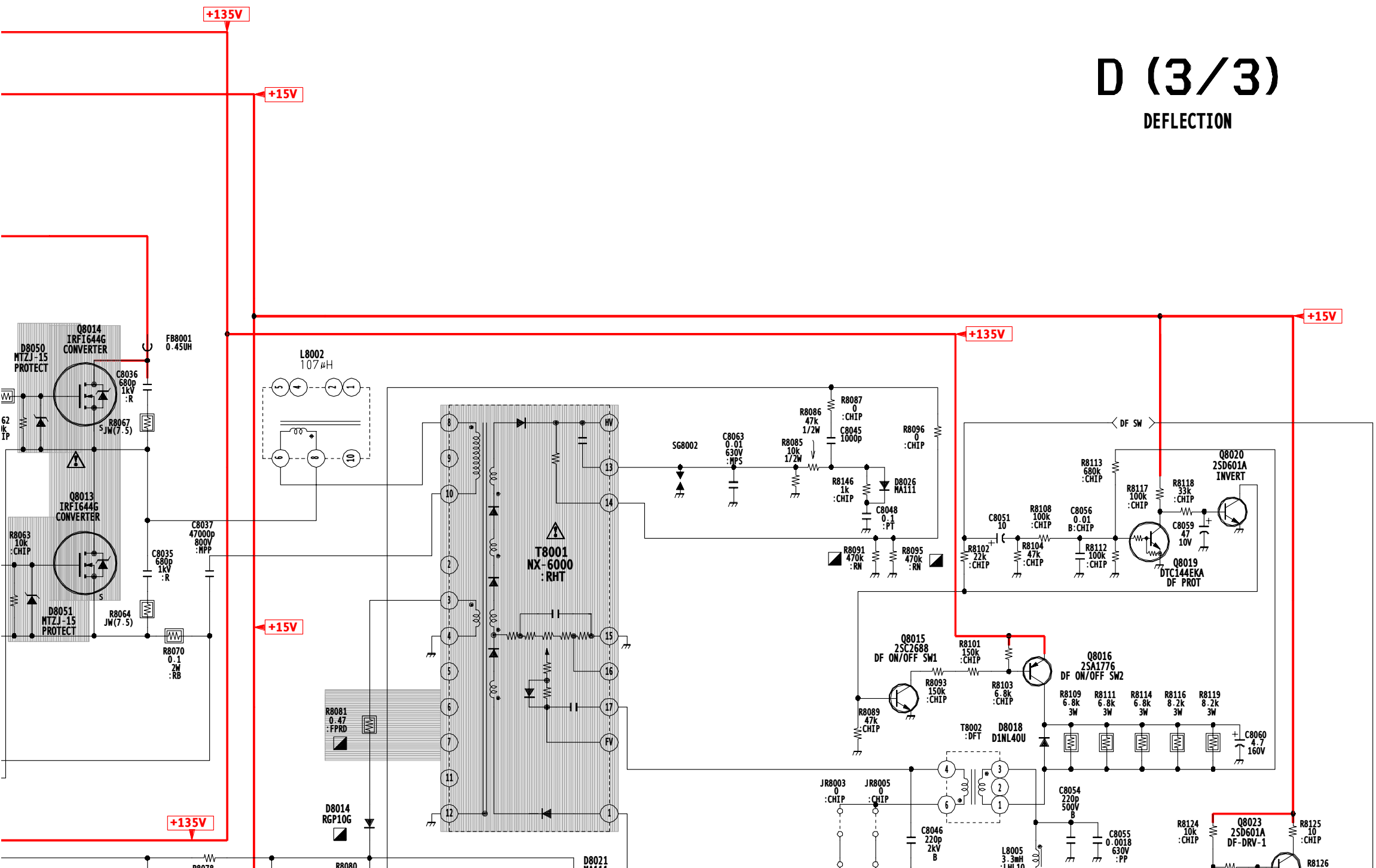
D BOARD SCHEMATIC DIAGRAM (3 OF 3)



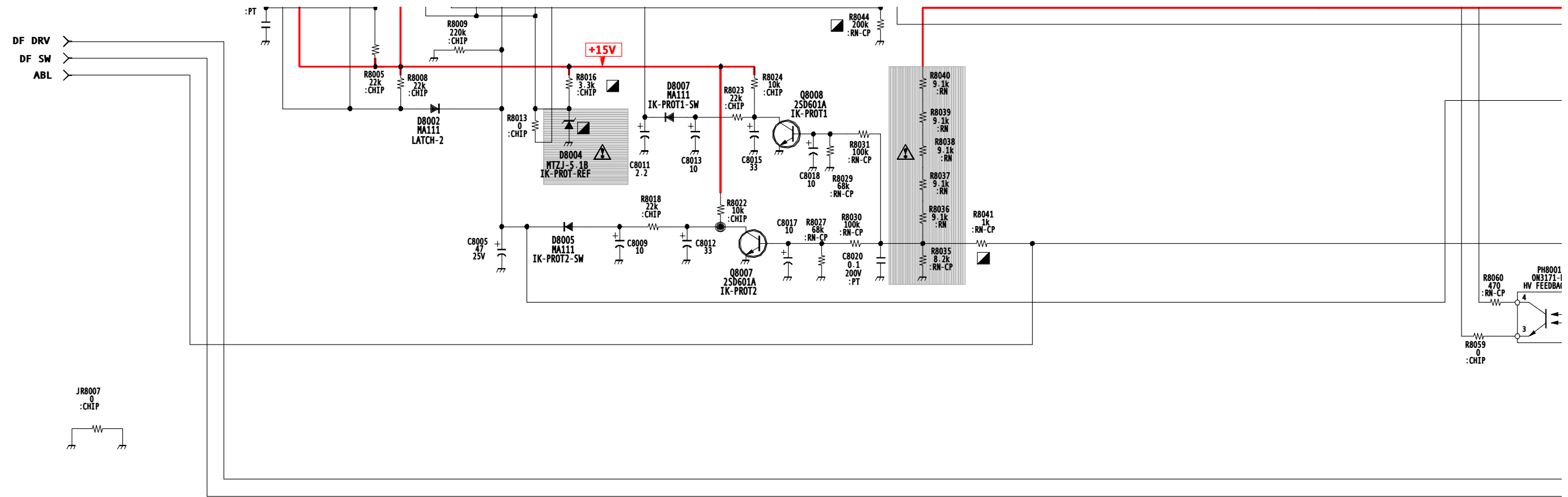
16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28

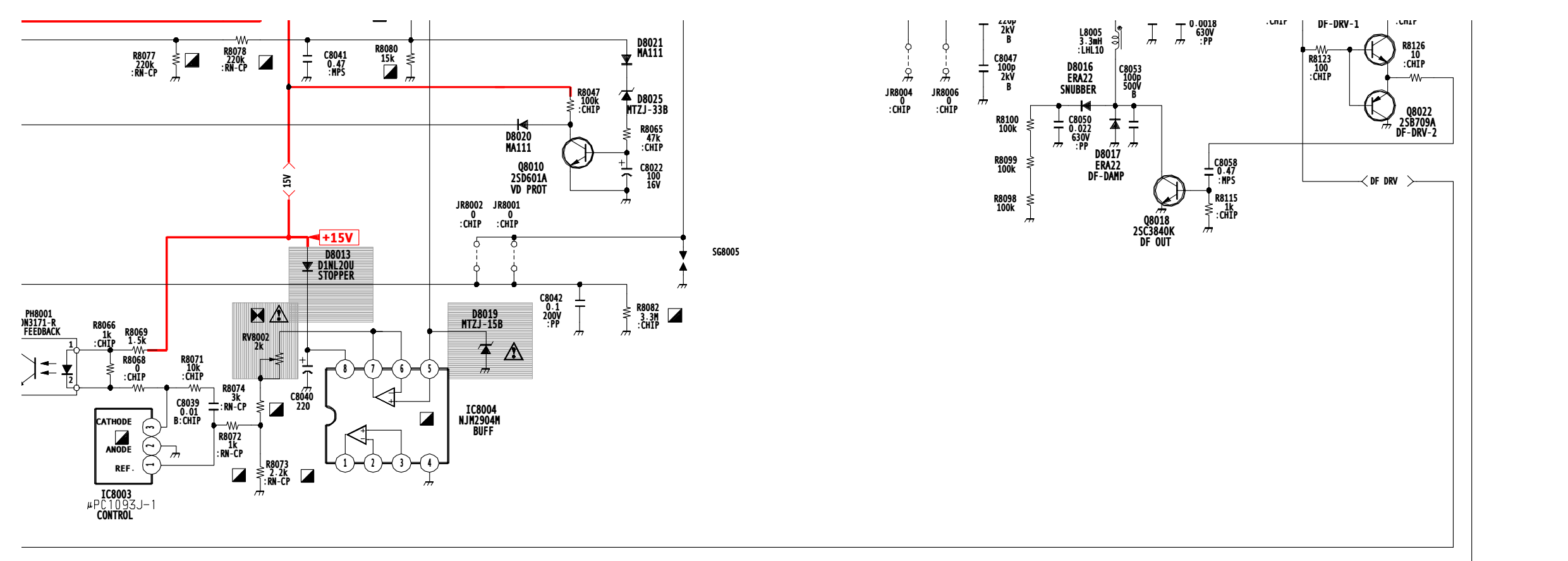
D (3/3)

DEFLECTION



I
J
K
L
M
N





PRINTING THE SERVICE MANUAL

The PDF of this service manual is not designed to be printed from cover to cover. The pages vary in size, and must therefore be printed in sections based on page dimensions.

NON-SCHEMATIC PAGES

Data that does NOT INCLUDE schematic diagrams are formatted to 8.5 x 11 inches and can be printed on standard letter-size and/or A4-sized paper.

SCHEMATIC DIAGRAMS

The schematic diagram pages are provided in two ways, full size and tiled. The full-sized schematic diagrams are formatted on paper sizes between 8.5" x 11" and 18" x 30" depending upon each individual diagram size. Those diagrams that are LARGER than 11" x 17" in full-size mode have been tiled for your convenience and can be printed on standard 11" x 17" (tabloid-size) paper, and reassembled.

TO PRINT FULL SIZE SCHEMATIC DIAGRAMS

If you have access to a large paper plotter or printer capable of outputting the full-sized diagrams, output as follows:

- 1) Note the page size(s) of the schematics you want to output as indicated in the middle window at the bottom of the viewing screen.
- 2) Go to the File menu and select Print Set-up. Choose the printer name and driver for your large format printer. Confirm that the printer settings are set to output the indicated page size or larger.
- 3) Close the Print Set Up screen and return to the File menu. Select "Print..." Input the page number of the schematic(s) you want to print in the print range window. Choose OK.

TO PRINT TILED VERSION OF SCHEMATICS



Schematic pages that are larger than 11" x 17" full-size are provided in a 11" x 17" printable tiled format near the end of the document. These can be printed to tabloid-sized paper and assembled to full-size for easy viewing.


If you have access to a printer capable of outputting the tabloid size (11" x 17") paper, then output the tiled version of the diagram as follows:

- 1) Note the page number(s) of the schematics you want to output as indicated in the middle window at the bottom of the viewing screen.
- 2) Go to the File menu and select Print Set-up. Choose the printer name and driver for your printer. Confirm that the plotter settings are set to output 11" x 17", or tabloid size paper in landscape () mode.
- 3) Close the Print Set Up screen and return to the File menu. Select "Print..." Input the page number of the schematic(s) you want to print in the print range window. Choose OK.

TO PRINT SPECIFIC SECTIONS OF A SCHEMATIC

To print just a particular section of a PDF, rather than a full page, access the Graphics Select tool in the Acrobat Reader tool bar.

- 1) To view the Graphics Select Tool, press the mouse button over the Text Select Tool which looks like: . This tool will expand to reveal to additional tools. Choose the Graphics Select tool by placing the cursor over the button on of the far right that looks like: .
- 2) After selecting the Graphics Select Tool, place your cursor in the document window and the cursor will change to a plus (+) symbol. Click and drag the cursor over the area you want to print. When you release the mouse button, a marquee (or dotted lined box) will be displayed outlining the area you selected.
- 3) With the marquee in place, go to the file menu and select the "Print..." option. When the print window appears, choose the option under the section called "Print Range" which says "Selected Graphic".

Select OK and the output will print only the area that you outlined with the marquee. 

(continued >)

ON-SCREEN SEARCH OPTION

All of the text within the service manual PDF is content searchable. This means that you can enter any text, word, phrase or reference number that appears in the manual, and the PDF software will search, find and move the cursor to the location where you requested text first appears. This feature can be particularly useful in locating components on a specific schematic or printed wire circuit board (PWB) diagrams.

Follow these steps to effectively locate a component on a schematic diagram:

- 1) Locate the schematic you want to search by clicking on the corresponding bookmark on the left side of the screen. The view on the right of the screen will then jump to the desired schematic page.
- 2) Magnify the diagram to at least 400% before conducting a component search. This will enable you to easily view the reference number when it is highlighted on screen. To do this, click on the magnifying glass button on the tool bar at the top of the screen. Move the cursor over the diagram and RIGHT click you mouse. Select the 400% magnification option on the pop-up menu. Click on the button with the icon of the open hand to deactivate the magnification tool
- 3) Search the diagram (or the entire manual) by clicking on the binocular button tool at the top of the screen. The "Find" window will appear and allow you to type in your desired text. Type in a reference designator, such as R502, and click on the "Find" button. If the component is not on the diagram, but is listed anywhere else in the manual, the cursor will jump to the first location the text is found in the file. To find another instance of that same text, click on the binocular button again and select "Find Again."

SONY[®]

4-082-506-21



FD Trinitron
WEGATM

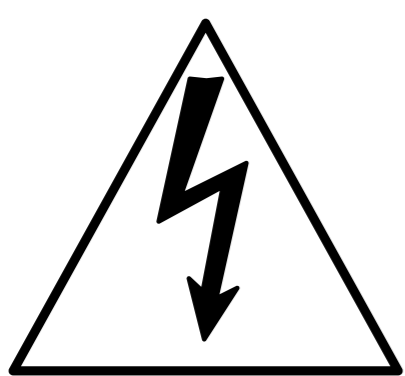
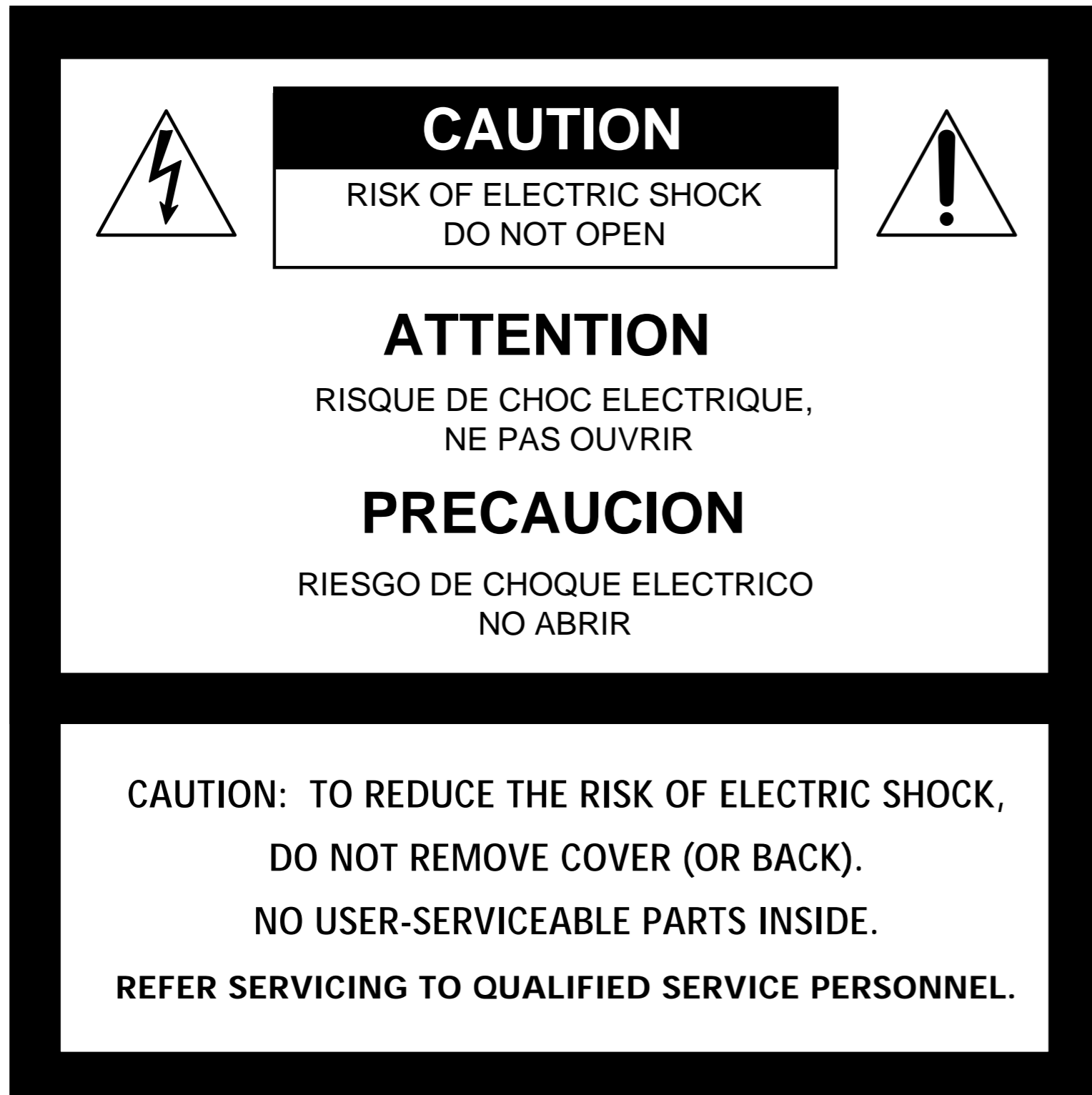


Operating Instructions

KV-32XBR450 KV-36XBR450

WARNING

To reduce the risk of fire or shock hazard, do not expose the TV to rain or moisture.



This symbol is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

CAUTION

TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

CAUTION

When using TV games, computers, and similar products with your TV, keep the brightness and contrast functions at low settings. If a fixed (non-moving) pattern is left on the screen for long periods of time at a high brightness or contrast setting, the image can be permanently imprinted onto the screen. Continuously watching the same program can cause the imprint of station logos onto the TV screen. These types of imprints are not covered by your warranty because they are the result of misuse.

Note on Caption Vision

This television receiver provides display of television closed captioning in accordance with §15.119 of the FCC rules.

Note on Cleaning the TV

Clean the TV with a soft dry cloth. Never use strong solvents such as thinner or benzine, which might damage the finish of the cabinet.

Note to CATV System Installer

This reminder is provided to call the CATV system installer’s attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

Use of this television receiver for other than private viewing of programs broadcast on UHF or VHF or transmitted by cable companies for the use of the general public may require authorization from the broadcaster/cable company and/or program owner.

NOTIFICATION

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference with radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

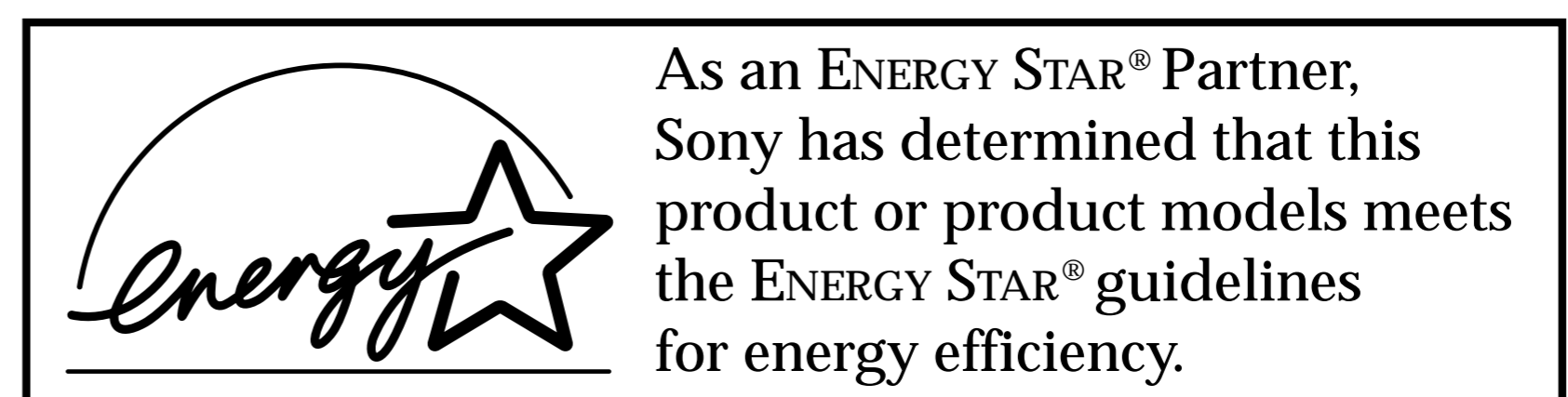
- Reorient or relocate the receiving antennas.
 - Increase the separation between the equipment and receiver.
 - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
 - Consult the dealer or an experienced radio/TV technician for help.
- You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

Safety

- Operate the TV only on 120 V AC.
- The plug is designed, for safety purposes, to fit into the wall outlet only one way. If you are unable to insert the plug fully into the outlet, contact your dealer.
- If any liquid or solid object should fall inside the cabinet, unplug the TV immediately and have it checked by qualified service personnel before operating it further.

Installing

- To prevent internal heat buildup, do not block the ventilation openings.
- Do not install the TV in a hot or humid place, or in a place subject to excessive dust or mechanical vibration.
- The AC power cord is attached to the rear of the TV with hooks. Do not attempt to remove the cord from these hooks. Doing so could cause damage to the TV.



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XBR

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by **SRS** (●)®

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FD Trinitron and the Wega logo are trademarks of Sony Corporation.

Owner’s Record

The model and serial numbers are provided on the front of this instruction manual and at the rear of the TV. Refer to them whenever you call upon your Sony dealer regarding this product.

Important Safeguards

For your protection, please read these instructions completely, and keep this manual for future reference.

Carefully observe and comply with all warnings, cautions and instructions placed on the set or described in the operating instructions or service manual.

WARNING

To guard against injury, the following basic safety precautions should be observed in the installation, use and servicing of the set.

Use

Power Sources

This set should be operated only from the type of power source indicated on the serial/model plate. If you are not sure of the type of electrical power supplied to your home, consult your dealer or local power company. For those sets designed to operate from battery power, refer to the operating instructions.

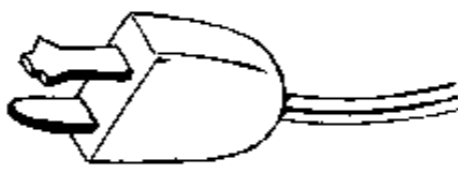


Grounding or Polarization

This set is equipped with a polarized AC power cord plug (a plug having one blade wider than the other), or with a three-wire grounding type plug (a plug having a third pin for grounding). Follow the instructions below:

For the set with a polarized AC power cord plug

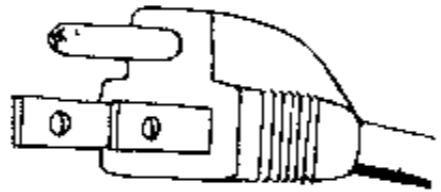
This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug still fails to fit, contact your electrician to have a suitable outlet installed. Do not defeat the safety purpose of the polarized plug by forcing it in.



Alternate Warning

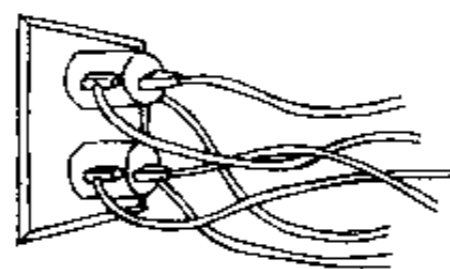
For the set with a three-wire grounding type AC plug

This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to have a suitable outlet installed. Do not defeat the safety purpose of the grounding plug.

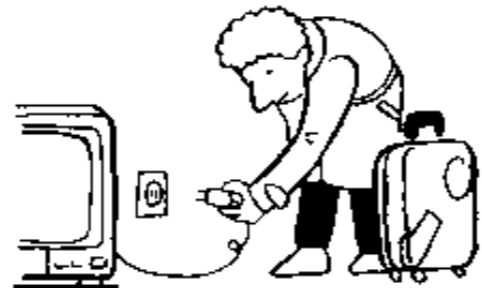


Overloading

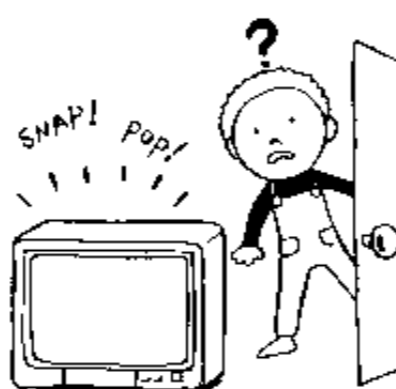
Do not overload wall outlets, extension cords or convenience receptacles beyond their capacity, since this can result in fire or electric shock.



Always turn the set off when it is not being used. When the set is left unattended and unused for long periods of time, unplug it from the wall outlet as a precaution against the possibility of an internal malfunction that could create a fire hazard.

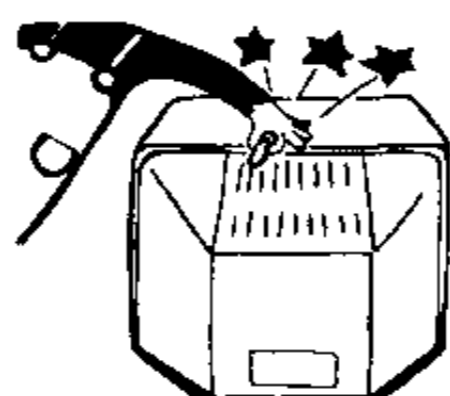


If a snapping or popping sound from a TV set is continuous or frequent while the TV is operating, unplug the TV and consult your dealer or service technician. It is normal for some TV sets to make occasional snapping or popping sounds, particularly when being turned on or off.



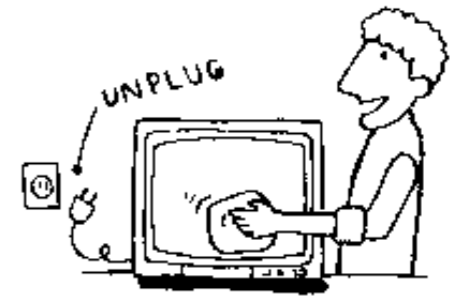
Object and Liquid Entry

Never push objects of any kind into the set through the cabinet slots as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the set.



Cleaning

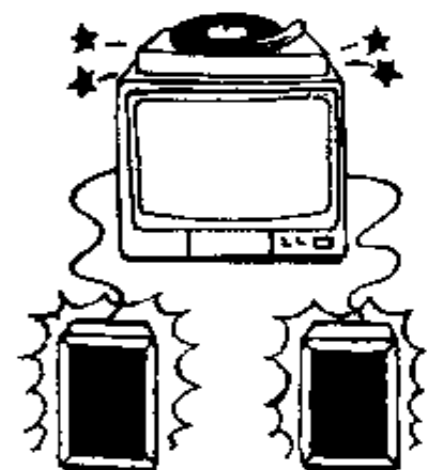
Unplug the set from the wall outlet before cleaning or polishing it. Do not use liquid cleaners or aerosol cleaners. Use a cloth lightly dampened with water for cleaning the exterior of the set.



Installation

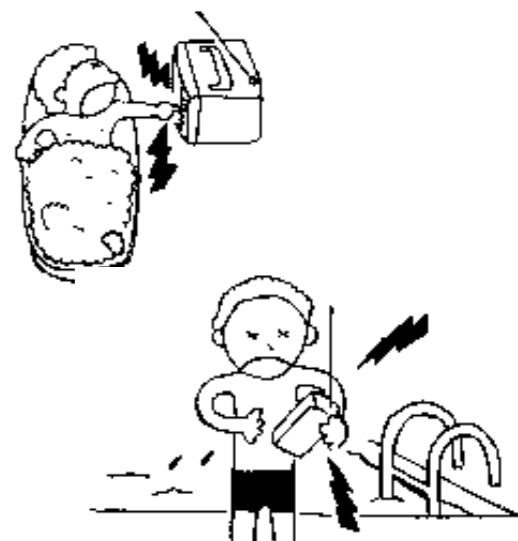
Attachments

Do not use attachments not recommended by the manufacturer, as they may cause hazards.



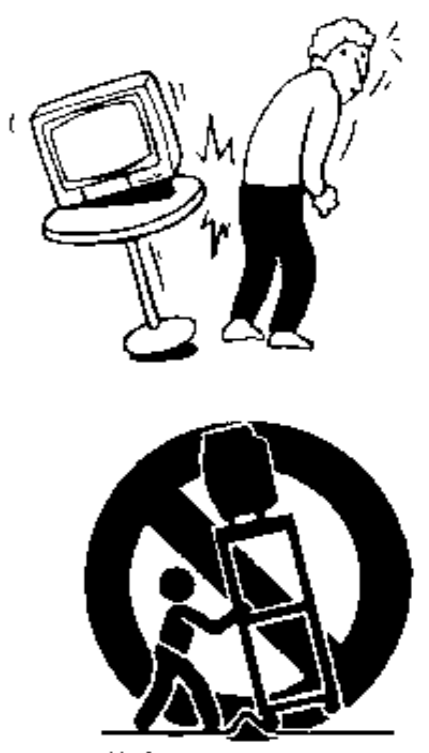
Water and Moisture

Do not use power-line operated sets near water — for example, near a bathtub, washbowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, etc.



Accessories

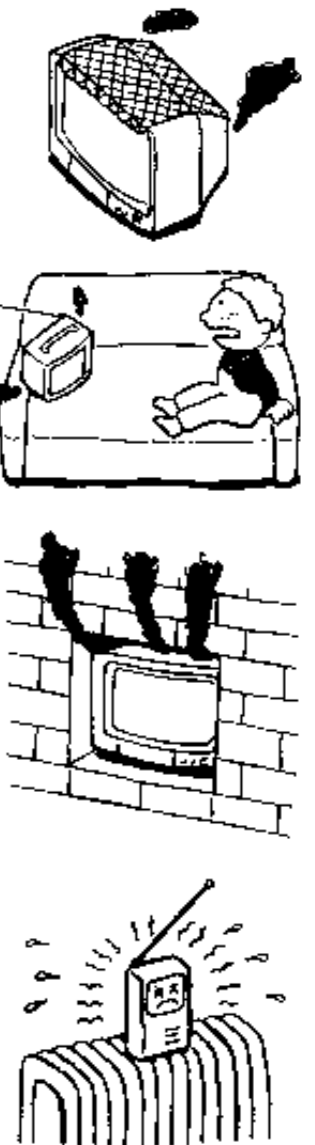
Do not place the set on an unstable cart, stand, table or shelf. The set may fall, causing serious injury to a child or an adult and serious damage to the set. Use only a cart or stand recommended by Sony for the specific model of TV. No part of the TV set should overhang any edge of the TV cart or stand; any overhanging edge is a safety hazard. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.



Ventilation

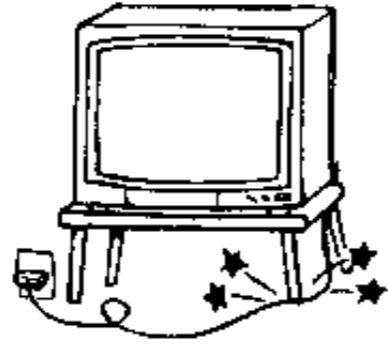
The slots and openings in the cabinet and in the back or bottom are provided for necessary ventilation. To ensure reliable operation of the set, and to protect it from overheating, these slots and openings must never be blocked or covered.

- ❑ Never cover the slots and openings with a cloth or other materials.
- ❑ Never block the slots and openings by placing the set on a bed, sofa, rug or other similar surface.
- ❑ Never place the set in a confined space, such as a bookcase or built-in cabinet, unless proper ventilation is provided.
- ❑ Do not place the set near or over a radiator or heat register, or where it is exposed to direct sunlight.



Power-Cord Protection

Do not allow anything to rest on or roll over the power cord, and do not place the set where the power cord is subject to wear or abuse.



Antennas

Outdoor Antenna Grounding

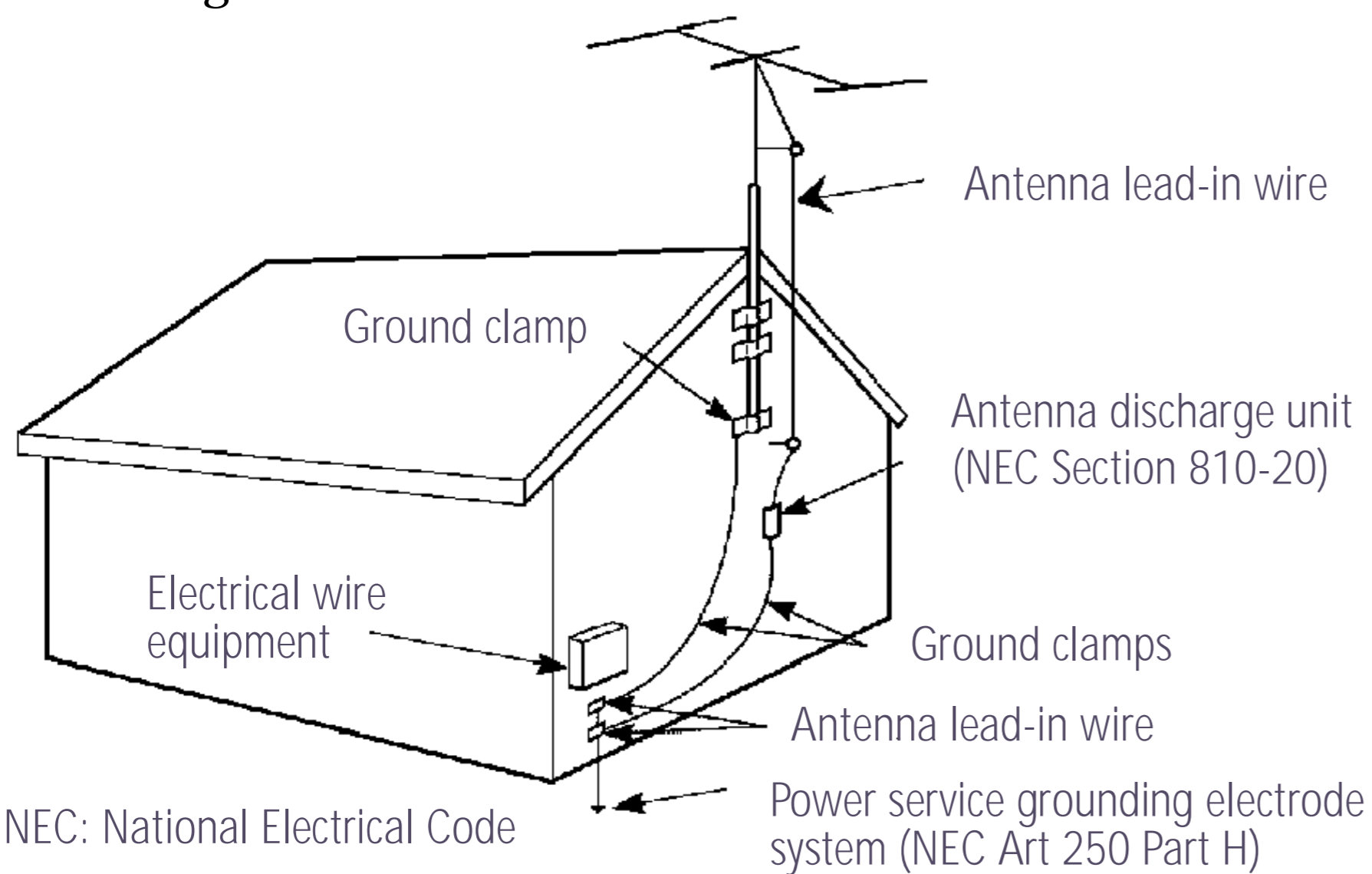
If an outdoor antenna is installed, follow the precautions below. An outdoor antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can come in contact with such power lines or circuits.

WHEN INSTALLING AN OUTDOOR ANTENNA SYSTEM, EXTREME CARE SHOULD BE TAKEN TO KEEP FROM CONTACTING SUCH POWER LINES OR CIRCUITS AS CONTACT WITH THEM IS ALMOST INVARIABLY FATAL.

Be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code (NEC) in USA and Section 54 of the Canadian Electrical Code in Canada provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

Antenna Grounding According to the NEC

Refer to section 54-300 of Canadian Electrical Code for Antenna Grounding.



Lightning

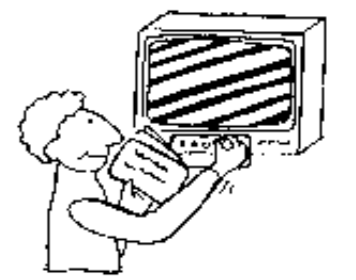
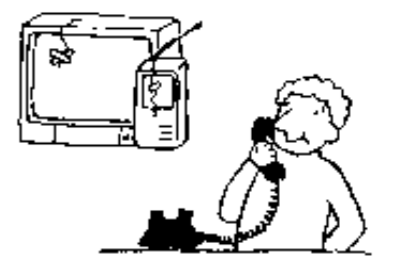
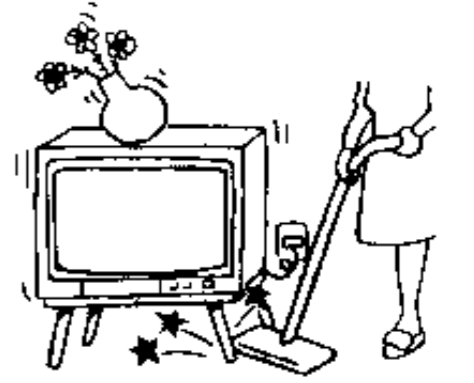
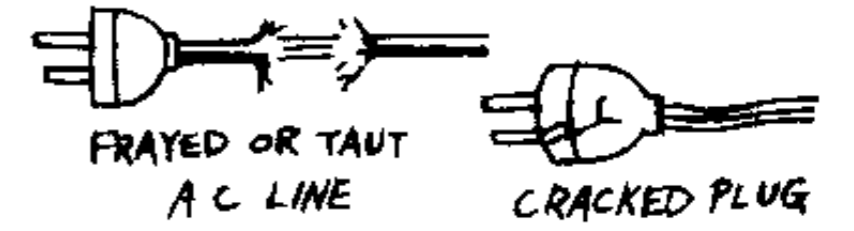
For added protection for this television receiver during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna. This will prevent damage to the receiver due to lightning and power-line surges.

Service

Damage Requiring Service

Unplug the set from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- When the power cord or plug is damaged or frayed.
- If liquid has been spilled into the set.
- If the set has been exposed to rain or water.
- If the set has been subject to excessive shock by being dropped, or the cabinet has been damaged.
- If the set does not operate normally when following the operating instructions. Adjust only those controls that are specified in the operating instructions. Improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the set to normal operation.
- When the set exhibits a distinct change in performance, it indicates a need for service.



Servicing

Do not attempt to service the set yourself since opening the cabinet may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.



Replacement Parts

When replacement parts are required, be sure the service technician certifies in writing that he has used replacement parts specified by the manufacturer that have the same characteristics as the original parts.

Unauthorized substitutions may result in fire, electric shock or other hazards.

Safety Check

Upon completion of any service or repairs to the set, ask the service technician to perform routine safety checks (as specified by the manufacturer) to determine that the set is in safe operating condition, and to so certify. When the set reaches the end of its useful life, improper disposal could result in a picture tube implosion. Ask a qualified service technician to dispose of the set.



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Introducing the FD Trinitron Wega

Overview

This chapter defines the contents of your Wega TV and provides an overview of how to set up and use basic features.

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Presenting the FD Trinitron Wega

The FD Trinitron Wega (pronounced VAY-GAH) is characterized by outstanding contrast, uncompromising accuracy, and corner-to-corner detail.

You'll recognize the superiority of Wega technology almost immediately. The first thing you'll notice is minimal glare from the flat picture tube. This flat-screen technology improves picture detail without distortion, unlike conventional curved screens. The FD Trinitron delivers outstanding image detail not only at the screen center, but also at the corners — so you can enjoy a bright, clear picture from any location in a room.

Features

Some of the features that you will enjoy with your new TV include:

- ❑ **DRC Mode (Digital Reality Creation):** Unlike conventional line doublers, the DRC feature doubles vertical and horizontal lines, resulting in four times the density for quality sources such as DVD, Satellite and Digital camcorder.
- ❑ **Cinemotion:** Provides an optimized display by automatically detecting film content and applying a reverse 3/2 pulldown process. Moving pictures will appear clearer and more natural-looking.
- ❑ **Twin View™:** Using Multi-Image Driver (MIDX), Twin View allows you to watch two programs side by side, with the ability to zoom in one picture. You can watch pictures from two different sources simultaneously.
- ❑ **16:9 Enhancement:** Vertical Compression technology that maximizes picture resolution on “anamorphic” or “enhanced for widescreen” sources, including selected DVDs.
- ❑ **Velocity Modulation:** Vertical line enhancement that sharpens picture definition.
- ❑ **Steady Sound:** Equalizes volume levels so there is consistent output between programs and commercials.
- ❑ **Parental Control:** V-Chip technology allows parents to block unsuitable programming for younger viewers.
- ❑ **Component Video Inputs:** Offers the best video quality for DVD (480p, 480i), and Digital Set-top box (HD1080i) connections.
- ❑ **S VIDEO Inputs:** Provides a high-quality video signal from connected equipment.
- ❑ **Favorite Channel Preview:** Preview up to eight favorite channels without leaving the current channel.

Package Contents

Along with your new Trinitron TV, the packaging box contains a remote control and two AA batteries. These items are all you need to set it up and operate the TV in its basic configuration.

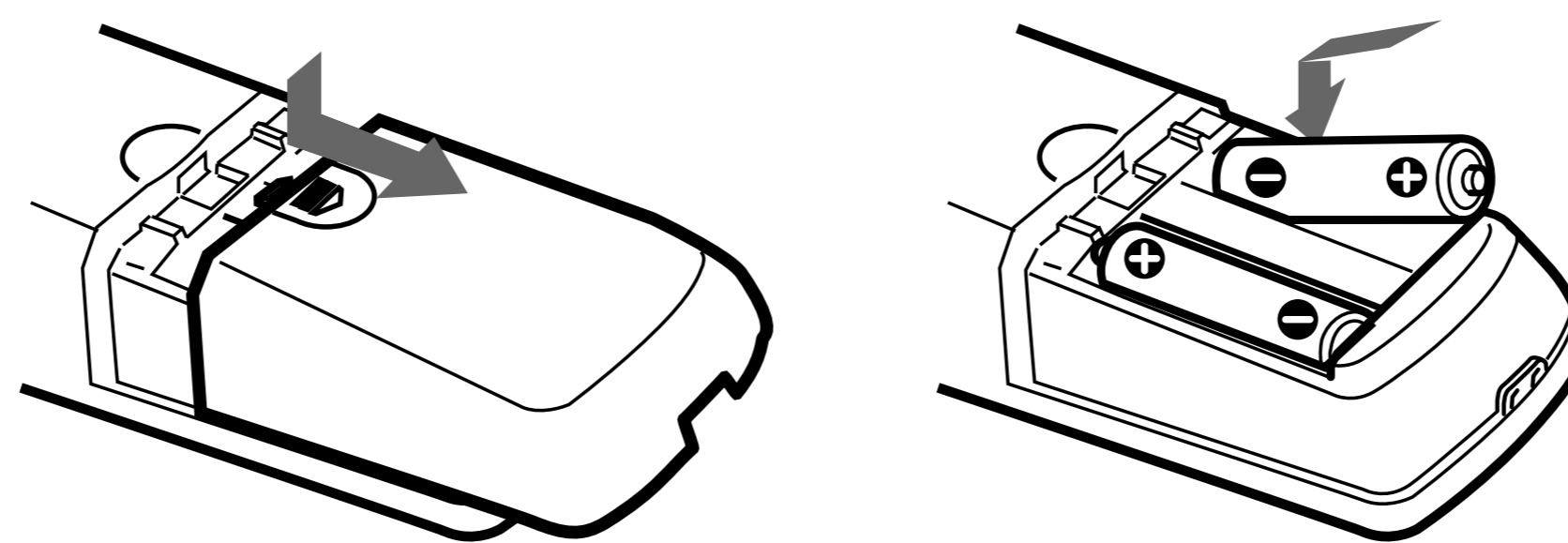
Most peripherals come with the necessary cables to connect them. If you want to set up special configurations, you may need to buy extra cables or connectors. It is best to ensure that you have all needed materials on hand before beginning a special-connection project.


Using the Remote Control

The remote control is the primary mechanism for controlling your TV. Handle the remote control with care; avoid dropping it, getting it wet, placing it in direct sunlight, near a heater, or where the humidity is high.

Inserting Batteries

Insert two size AA (R6) batteries (supplied) by matching the + and – on the batteries to the diagram inside the battery compartment.

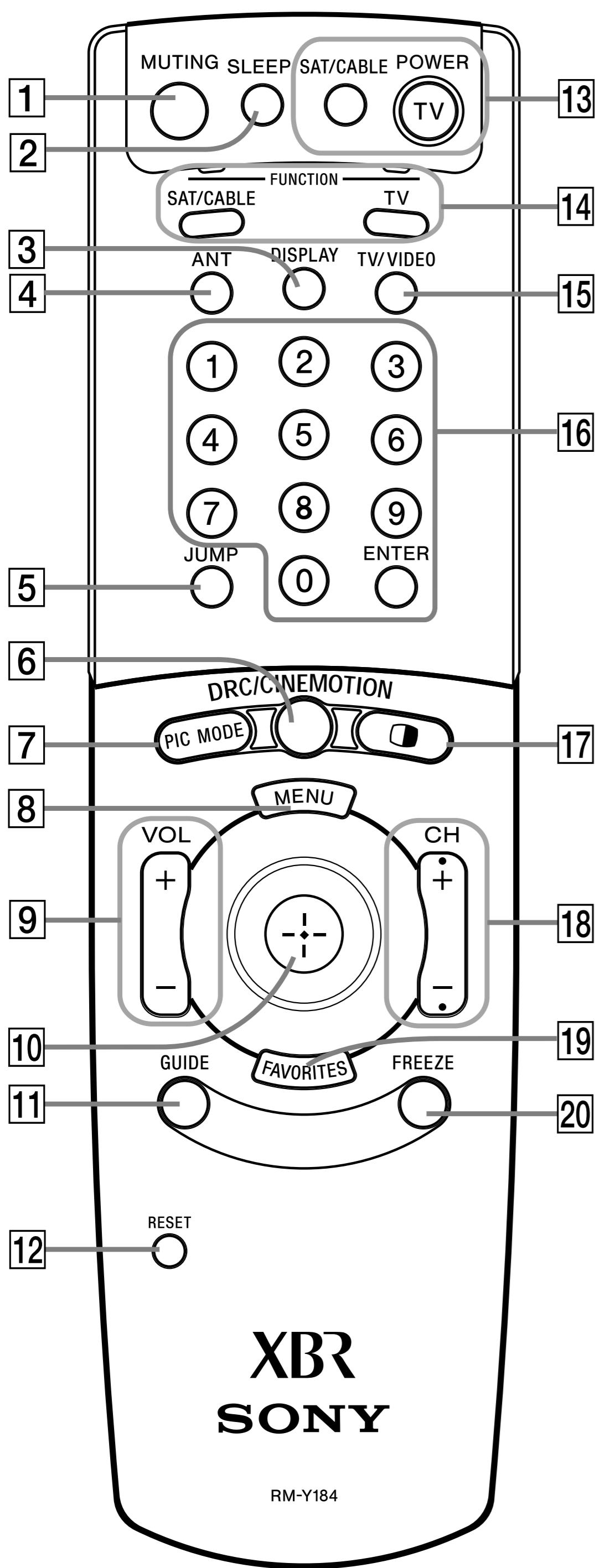



 Remove the batteries to avoid damage from possible battery leakage whenever you anticipate that the remote control will not be used for an extended period.

The following table describes the buttons on the remote control that are for more advanced functions.

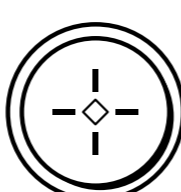
 Main Power button must be turned ON to activate the Remote Control.

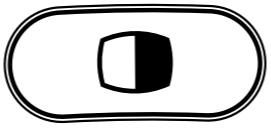
Button Descriptions

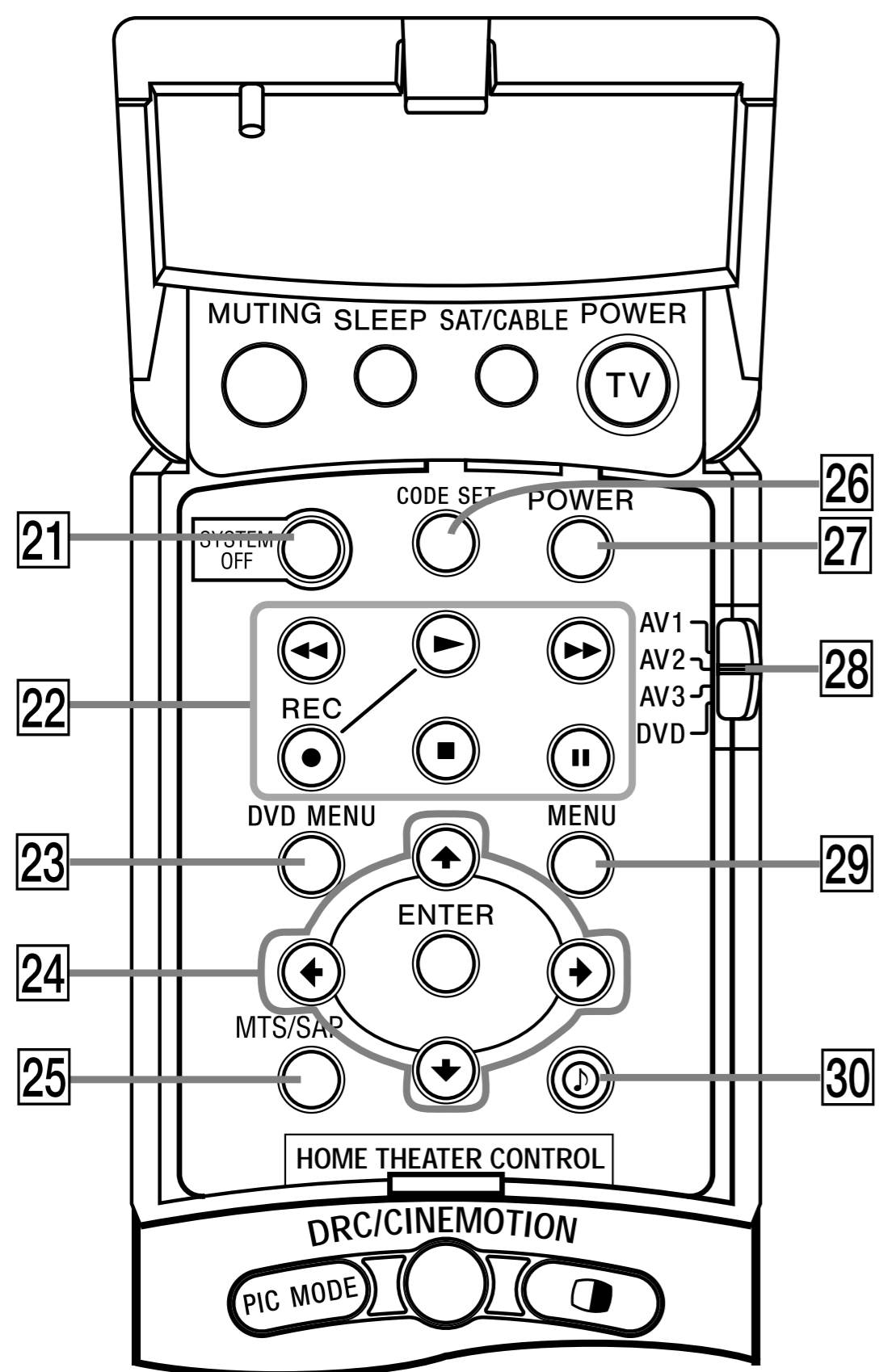


 To scan rapidly through the channels, press and hold down the CH+ or CH- button.

Outside Panel

Button	Description
1 MUTING	Press to mute the sound. Press again or press VOL + to restore the sound.
2 SLEEP	Press repeatedly until the TV displays the time in minutes (15, 30, 45, 60, or 90) that you want the TV to remain on before shutting off automatically. Cancel by pressing until SLEEP OFF appears. While Sleep feature is set, press once to view remaining time
3 DISPLAY	Press once to display the current time and channel label (if set) and channel number. Press again to turn Display off. See page 46 for details on setting the time.
4 ANT	Changes between the VHF/UHF input to the AUX input.
5 JUMP	Press to jump back and forth between two channels. The TV alternates between the current channel and the last channel that was selected.
6 DRC/ CINEMOTION	For high quality sources (i.e., DVD player, Satellite Receiver), this button cycles through the available high-resolution picture modes: Interlaced, Progressive, Cinemotion. Also available in the Video menu. For details, see "Selecting Video Options" on page 36.
7 PIC MODE	Cycles through the available video picture modes: Vivid, Standard, Pro, Movie. Also available in the Video menu. For details, see "Selecting Video Options" on page 36.
8 MENU	Press to display the TV on-screen menu. Press again to exit from the menus.
9 VOL +/-	Adjusts the volume.
10 	Joystick allows for movement of the on-screen cursor. Pressing down on the center of the joystick selects the item.
11 GUIDE	Displays the program guide of your satellite antenna.
12 RESET	Press when in a menu to reset the settings to the factory defaults.
13 POWER buttons (GREEN)	Turn on and off the TV and SAT/CABLE equipment you have programmed into the remote control. For instructions, see "Programming the Remote Control" on page 50.

<i>Button</i>	<i>Description</i>
14 FUNCTION buttons	Select the equipment (TV or SAT/CABLE) that you want to operate. The indicator lights up momentarily when pushed to show which device the remote control is operating.
15 TV/VIDEO	Cycles through the video equipment connected to you TV's video inputs: TV, VIDEO 1, VIDEO 2, VIDEO 3, VIDEO 4, VIDEO 5, VIDEO 6.
16 0 – 9 and ENTER	Press 0 - 9 to select a channel, the channel changes after 2 seconds. Press ENTER to select immediately.
17 	Turns on/off Twin View. For details, see "Using Twin View" on page 31.
18 CH +/-	Scan through channels.
19 FAVORITES	Displays the Favorite Channels list. For details, see "Using Favorite Channels" on page 30.
20 FREEZE	Freezes the window picture. Press again to restore the picture.



Inside Panel

21	SYSTEM OFF	Powers off all Sony equipment at once. (This feature may not work with older Sony equipment.)
22	VCR/DVD CONTROLS	
	◀◀	Rewind
	REC	Record
	▶▶	Fast-forward
	▶	Play
	■	Stop
	⏸	Pause
23	DVD MENU	Displays the DVD Disc menu
24	◀ ▶ ⬅ ➡ and ENTER	Used for DVD on-screen menu movement and selection
25	MTS/SAP	Cycles through the Multi-channel TV Sound (MTS) options: Stereo, Auto-SAP (Second Audio Program), and Mono. For details, see “Using the Audio Menu” on page 38.
26	CODE SET	Used for programming the remote control to operate non-Sony video equipment. For details, see “Programming the Remote Control” on page 50.
27	POWER	Turn on and off the VCR/DVD equipment you have programmed into the remote control. For instructions, see “Programming the Remote Control” on page 50.
28	AV1 AV2 AV3 DVD	Use to switch control for connected video equipment. You can program one video source for each switch position. (For details, see “Programming the Remote Control” on page 50.)
29	MENU	Used for DVD player setup menu.
30	🎵	Provides quick access to change available audio settings. For details, see “Selecting Audio Options” on page 38.

Installing the TV

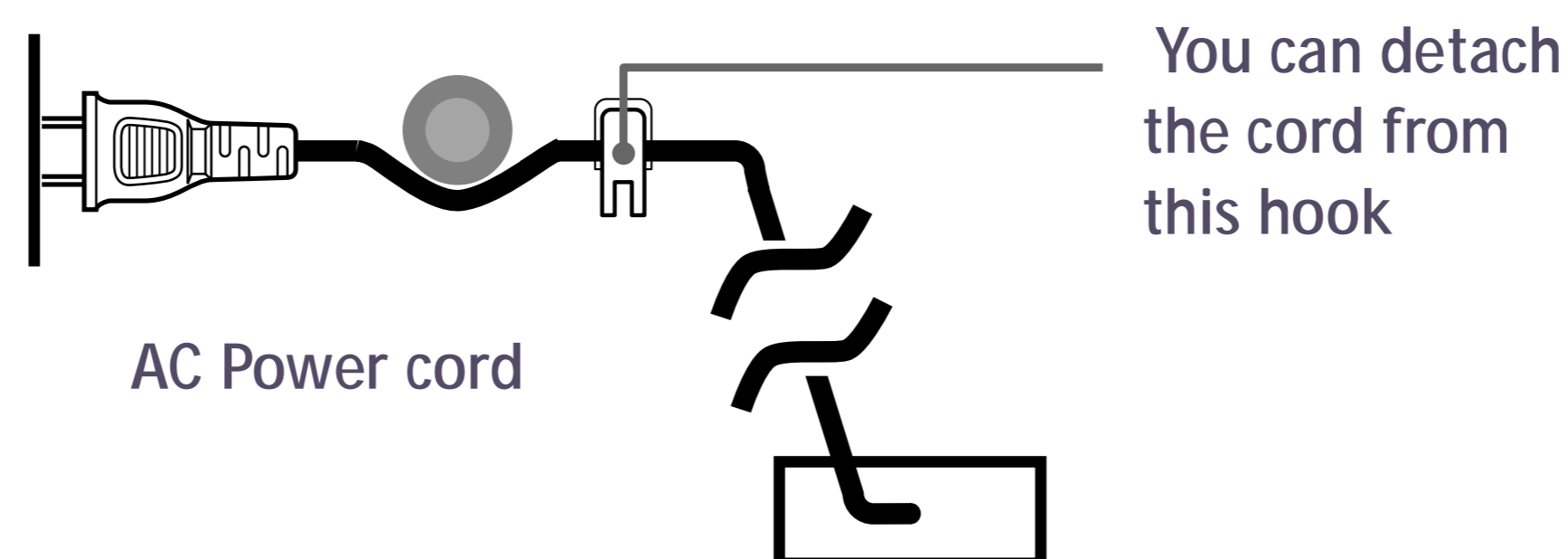
Overview

This chapter includes illustrated instructions for setting up your TV.

<i>Topic</i>	<i>Page</i>
TV Controls and Connectors	8
Basic Connection (Connecting Cable TV or Antenna)	10
Connecting a VCR and Cable	14
Connecting a VCR and Cable Box	15
Connecting Two VCRs for Tape Editing	18
Connecting a Satellite Receiver	19
Connecting a Satellite Receiver with a VCR	20
Connecting an Audio Receiver	22
Connecting a DVD Player with Component Video Connectors	23
Connecting a DVD Player with A/V Connectors	24
Connecting a Digital TV Receiver	25
Using the CONTROL S Feature	27
Setting Up the TV Automatically	28

Note About the AC Power Cord

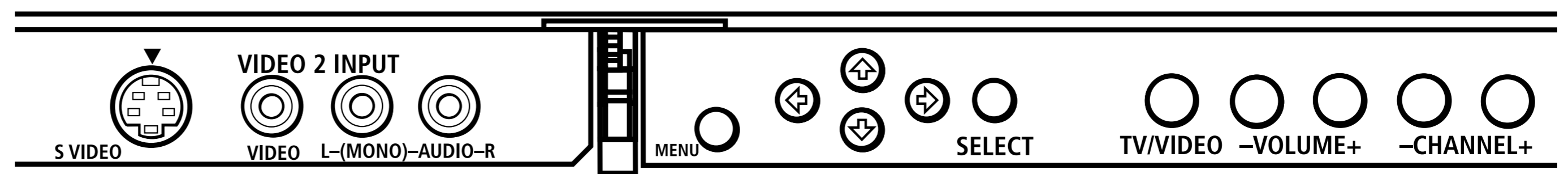
The AC power cord is attached to the rear of the TV with a hook. Use caution when removing the AC plug from its holder. Gently slide the plug in the upward direction to remove from hook. Once removed, the AC power plug should automatically disengage from its stored location.



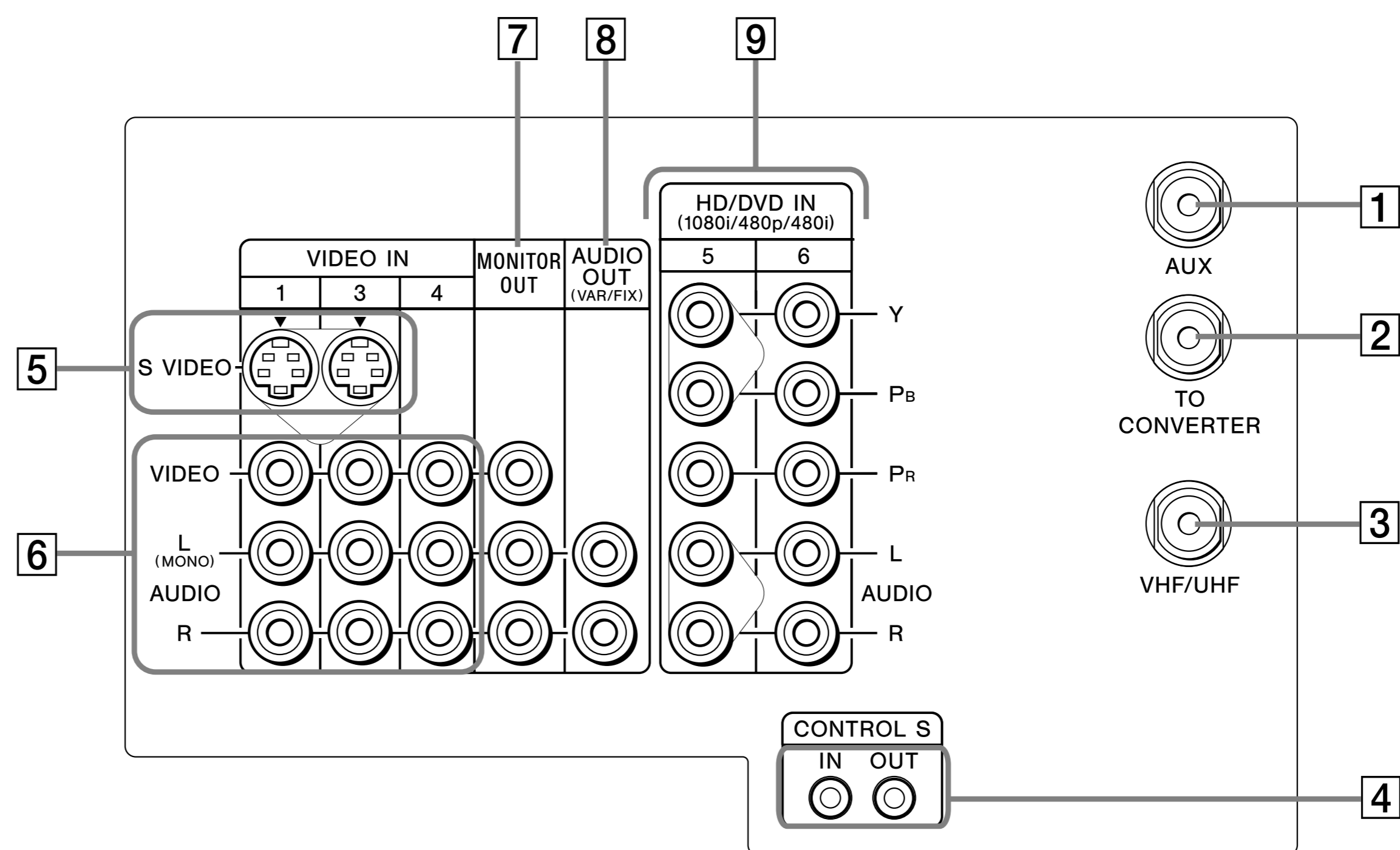
TV Controls and Connectors

Front Panel Menu Controls

The front panel menu controls allow access to the on-screen menus without the use of a remote control. Pressing the MENU button brings up the on-screen menus. The arrow buttons move the on-screen cursor in the menus and the SELECT button selects the menu item.



TV Rear Panel



Connection	Description
1 AUX	Allows you to view local and cable channels if your cable provider does not feature local channels. You can switch between local and cable channels by pressing ANT on the remote control. Devices connected to the AUX input can be viewed only in the Twin View left picture.
2 TO CONVERTER	This is a VHF/UHF OUT jack that lets you set up your TV to switch between scrambled channels (through a cable box) and normal cable channels (CATV). Use this jack instead of a splitter to get better picture quality when switching between scrambled and unscrambled cable channels.

<i>Connection</i>	<i>Description</i>
3 VHF/UHF	Connects to your VHF/UHF antenna or cable.
4 CONTROL S IN/OUT	Allows the TV to receive (IN) and send (OUT) remote control signals to other Sony infrared-controlled audio or video equipment.
5 S VIDEO	Connects to the S VIDEO OUT jack of your VCR or other S VIDEO-equipped video equipment. Provides better picture quality than the VHF/UHF jacks or the Video IN jack.
6 VIDEO/AUDIO(L/R)	Connect to the audio and video OUT jacks on your VCR or other video equipment. A video input (VIDEO 2) is located on the front panel of the TV. The Audio and Video IN jacks provide better picture quality than the VHF/UHF IN jack.
7 MONITOR OUT	Lets you record the program you are watching to a VCR. When two VCRs are connected, you can use your TV as a monitor for tape-to-tape editing (not available with 480p or 1080i when the input is to VIDEO 5 or 6).
8 AUDIO OUT (VAR/FIX) L (MONO)/R	Connect to the left and right audio inputs of your audio or video equipment.
9 HD/DVD IN (1080i/480p/480i)	Connect to your DVD player's or Digital Set-top box's component video (Y, PB, PR) and audio (L/R) jacks.

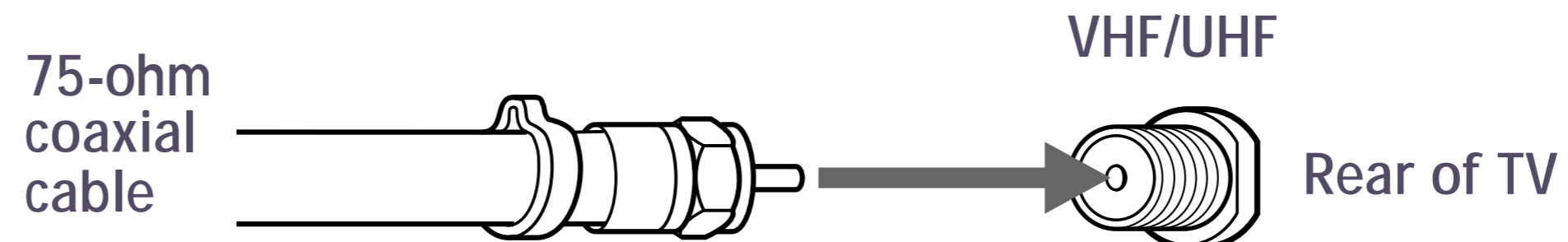
Basic Connection (Connecting Cable TV or Antenna)

Connecting Directly to Cable or to an Antenna

The connection you choose depends on the cable found in your home.

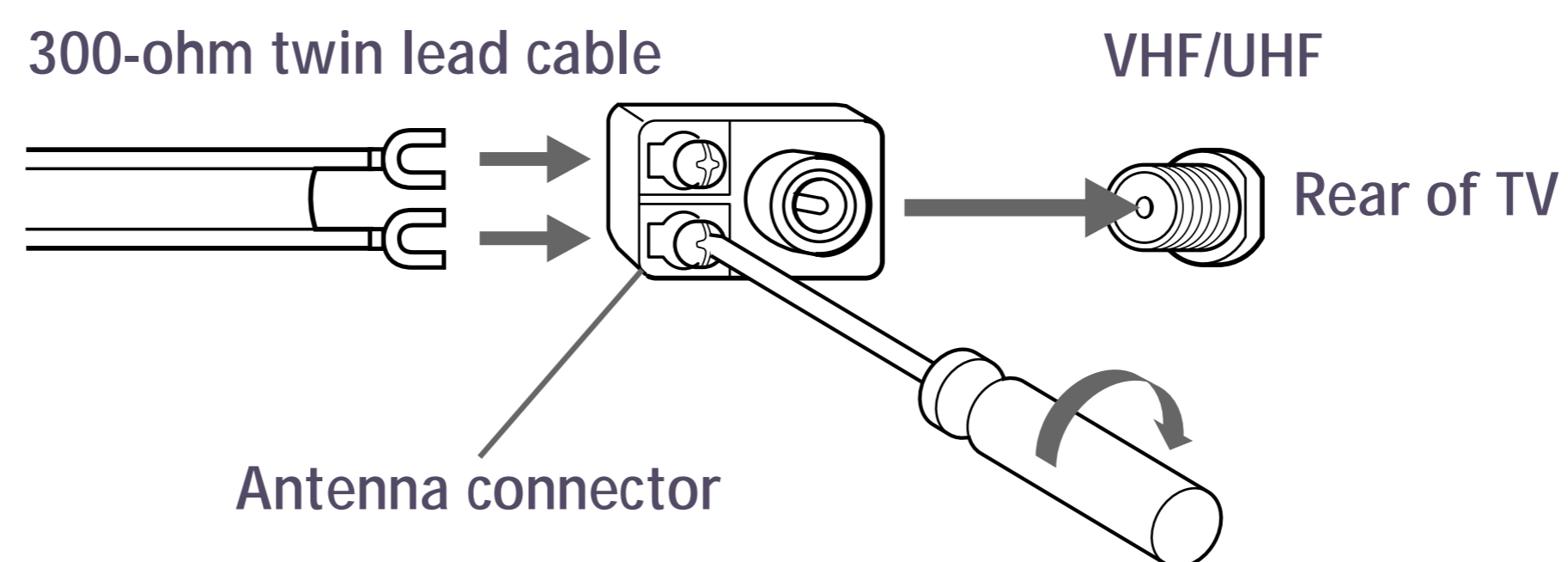
Newer homes are usually equipped with standard coaxial cable:

VHF Only or VHF/UHF or Cable



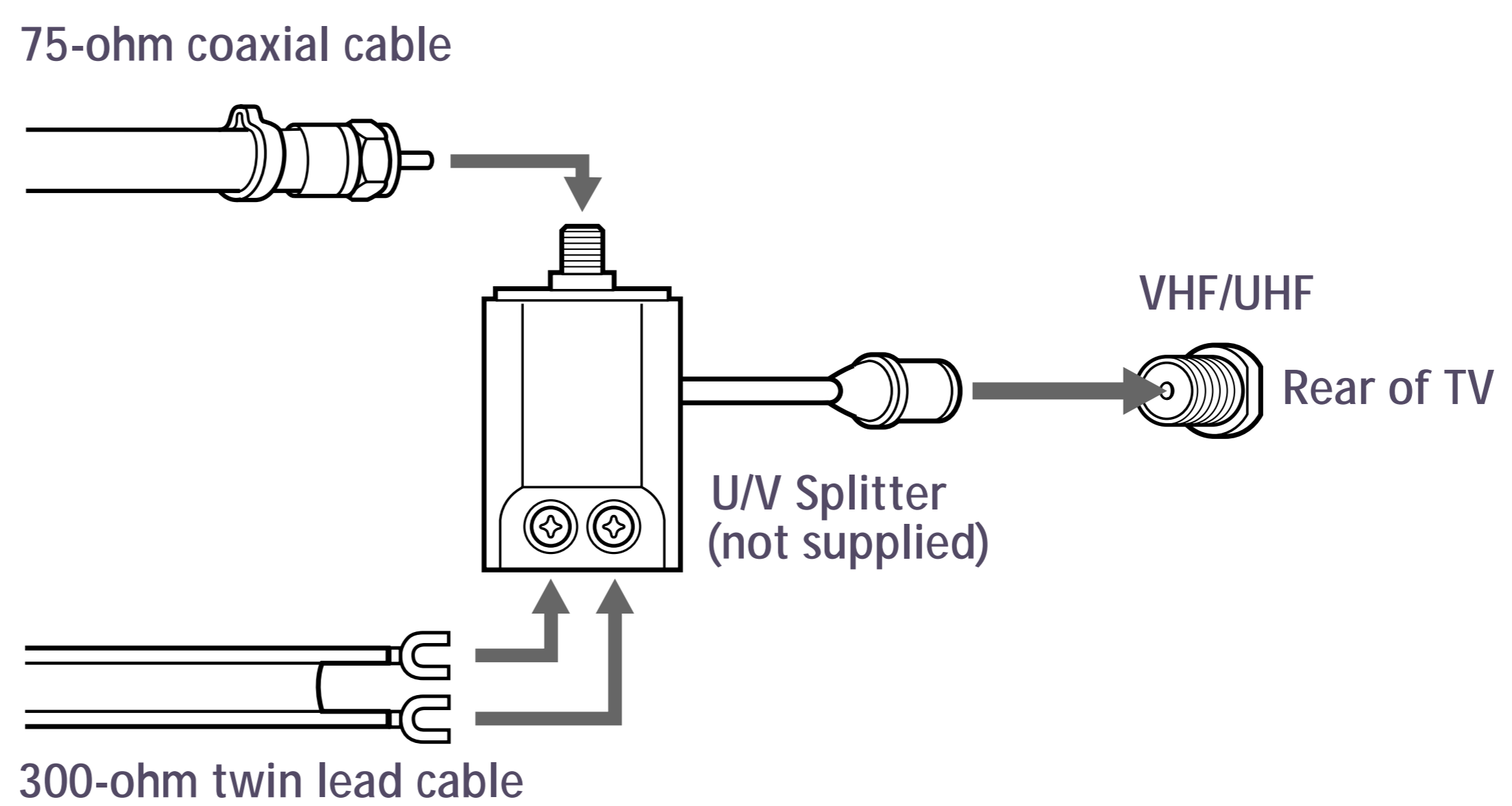
Older homes may have 300-ohm twin lead cable:

VHF Only or UHF Only or VHF/UHF



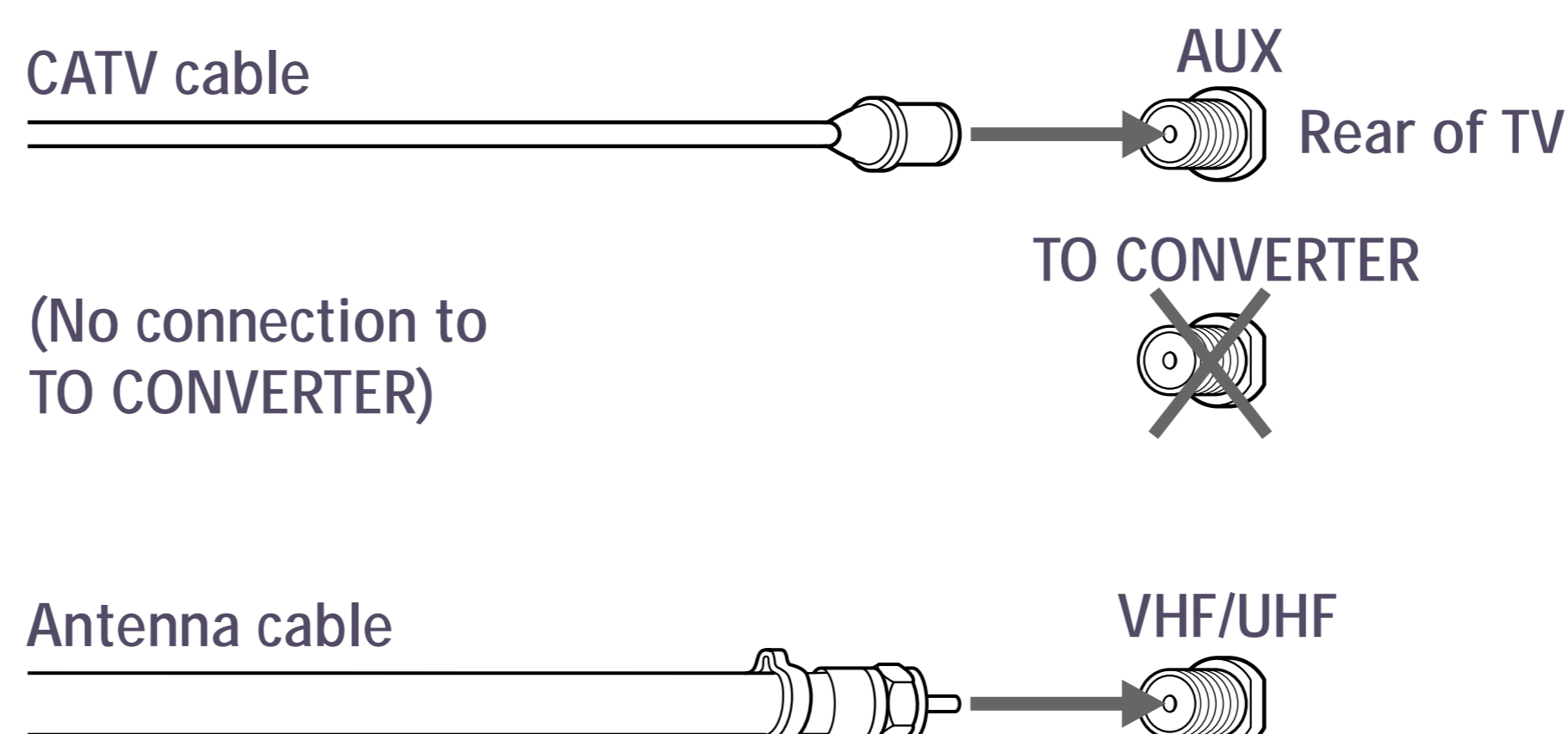
Some homes may have both:

VHF and UHF



Cable and Antenna

If your cable provider does not feature local channels, you may find this set-up convenient.



Select CABLE or antenna (ANT) mode by pressing ANT on the remote control.

To receive channels using an antenna, instead of the CATV cable:

- 1 Select antenna mode by pressing ANT on the remote control.
- 2 Turn the cable to OFF (see page 40).
- 3 Perform the Auto Program function (see page 40).

Cable Box Connections

Cable Box and Cable

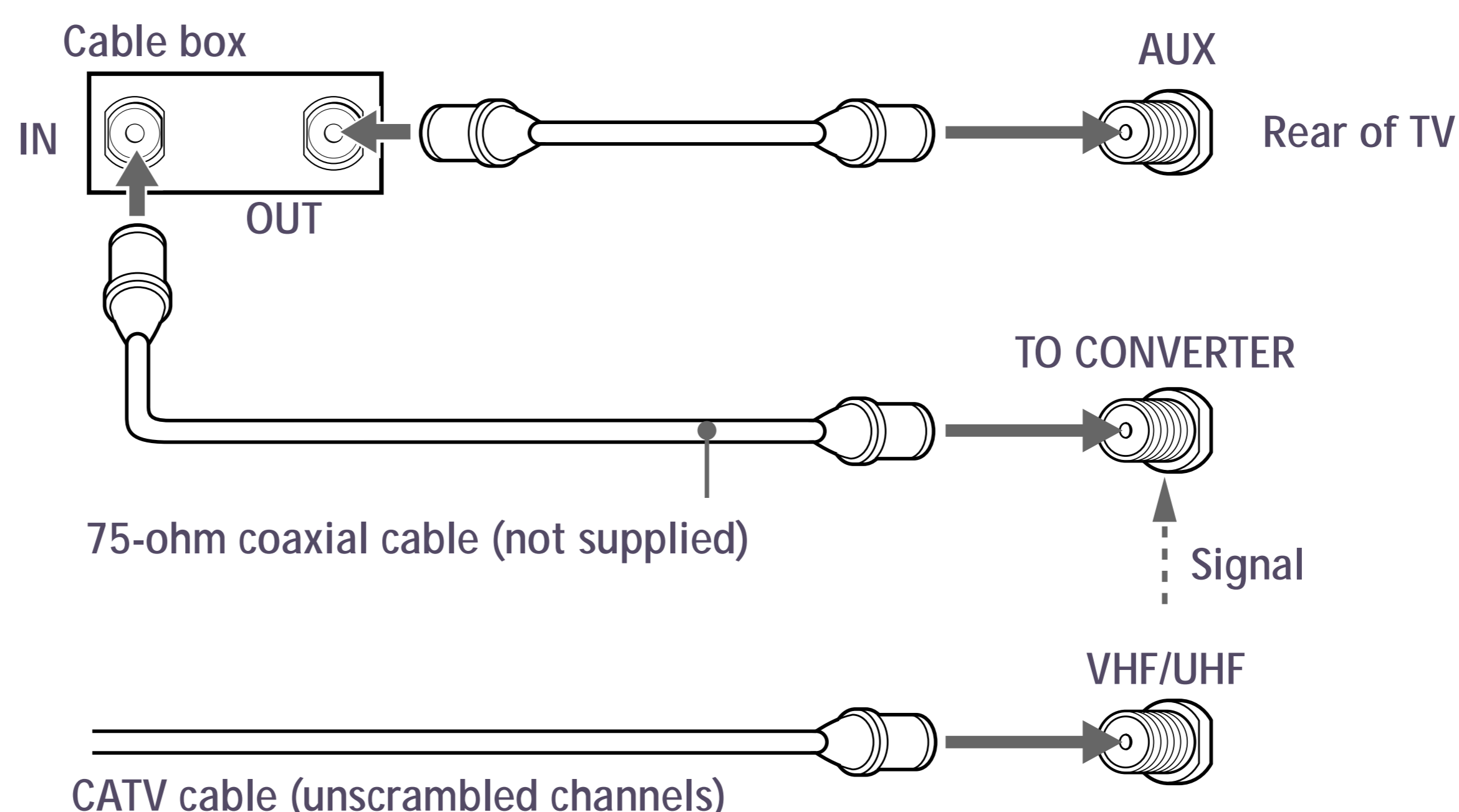
This is the preferred basic cable TV hookup to use if your cable TV company scrambles some channels, but not all of them (pay channels vs. regular cable channels), so you need to use a cable box.

With this setup you can:

- Use the TV remote control to change channels using your cable box when the signal is scrambled.
- Use the TV remote control to change channels using your TV when the signal is not scrambled. (Your TV's tuner provides a better signal than the cable box.)
- Use the Twin View feature. (When all channels are routed through your cable box, only one signal is sent to the TV, so you can not use the Twin View feature.)
- Use the Twin View feature normally with the CATV input.
- Use the Twin View feature partially with the cable box. (When you switch the TV input to AUX - to use the cable box - the unscrambled picture from the cable box will display. You can display the signal from both AUX and VHF/UHF inputs in the left Twin View picture, but you can display only the signal from the VHF/UHF input in the right Twin View picture.)

To set up your TV to use both a Cable Box and a direct-connect CATV cable:

- 1 Connect the Cable TV cable to the TV's VHF/UHF jack.
- 2 Using a coaxial cable, connect the TV's TO CONVERTER jack to the cable box's IN jack. The TV's internal converter allows you to switch between unscrambled signals coming straight into the TV and scrambled signals coming in through the cable box, eliminating the need for an external splitter.
- 3 Using a coaxial cable, connect the cable box's OUT jack to the TV's AUX jack.



To switch between channels from Cable Box and channels coming directly into TV

- Press the ANT button on the TV remote control.

To use the TV remote control to switch channels on the cable box

- Program the remote control as necessary. (See "Programming the Remote Control" on page 50.)

To use the cable box

- Have your TV tuner set to channel 3 or 4 (as appropriate) and then use the Cable Box to change channels.

To prevent the accidental switching of TV channels

- When using the VCR of Cable Box, you can use the Channel Fix feature to lock in a channel. The Channel Fix feature is under the Channel menu. (See "Using the Channel Menu" on page 40.)

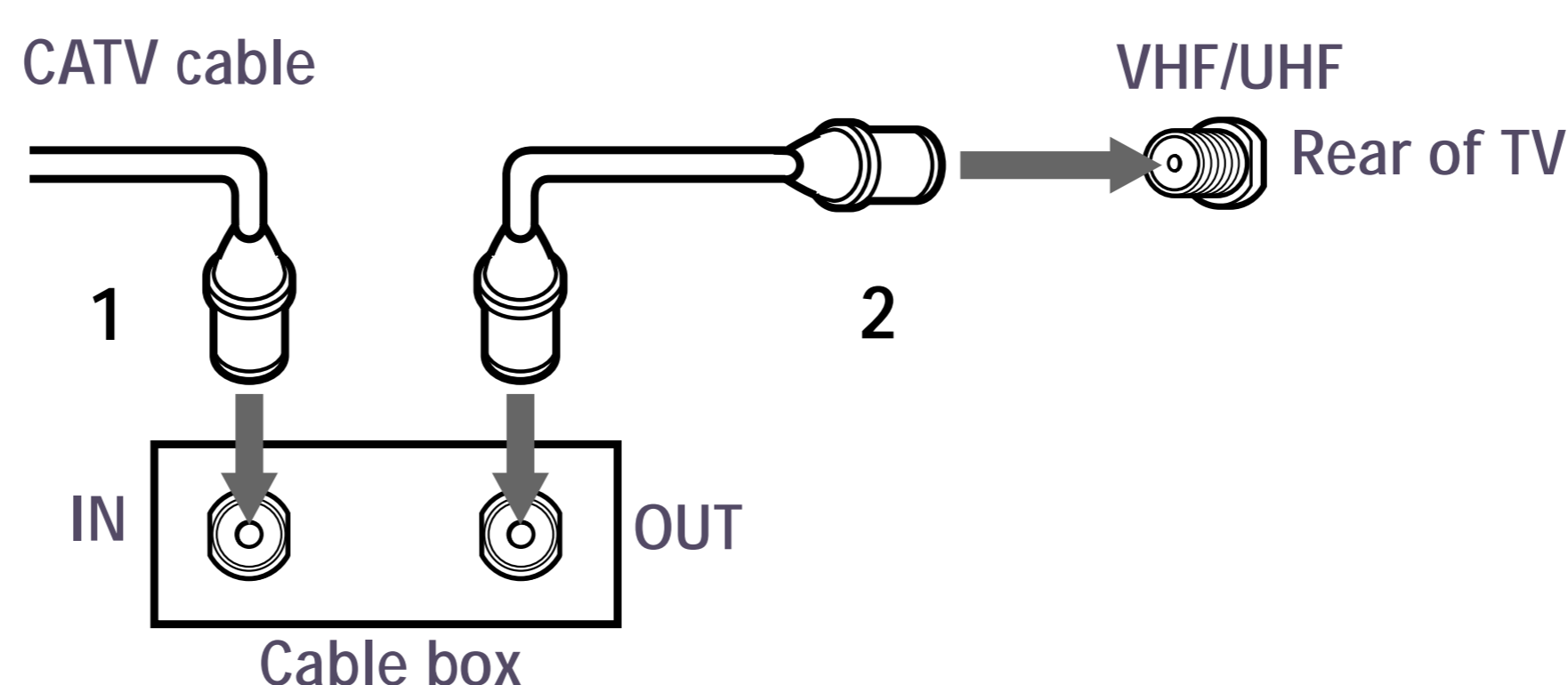
Cable Box Only

Use this hookup if:

- You subscribe to a cable TV system that uses scrambled or encoded signals requiring a cable box to view all channels, and
- You do not intend to hook up any other audio or video equipment to your TV.

When all channels are routed through your cable box, only one unscrambled signal is sent to the TV, so you cannot use the Twin View feature. If some channels are scrambled, but others are not, consider using the hookup on page 12 instead.

- 1 Connect the coaxial connector from your cable service to the cable box's IN jack.
- 2 Using a coaxial cable, connect the cable box's OUT jack to the TV's VHF/UHF jack.

**To use the cable box**

- Have the TV tuner set to channel 3 or 4 (as appropriate) and then use the cable box to change channels.

To use the TV remote control to switch channels on the cable box

- Program the remote control as necessary. For details, see “Programming the Remote Control” on page 50.


To prevent accidental switching of TV channels

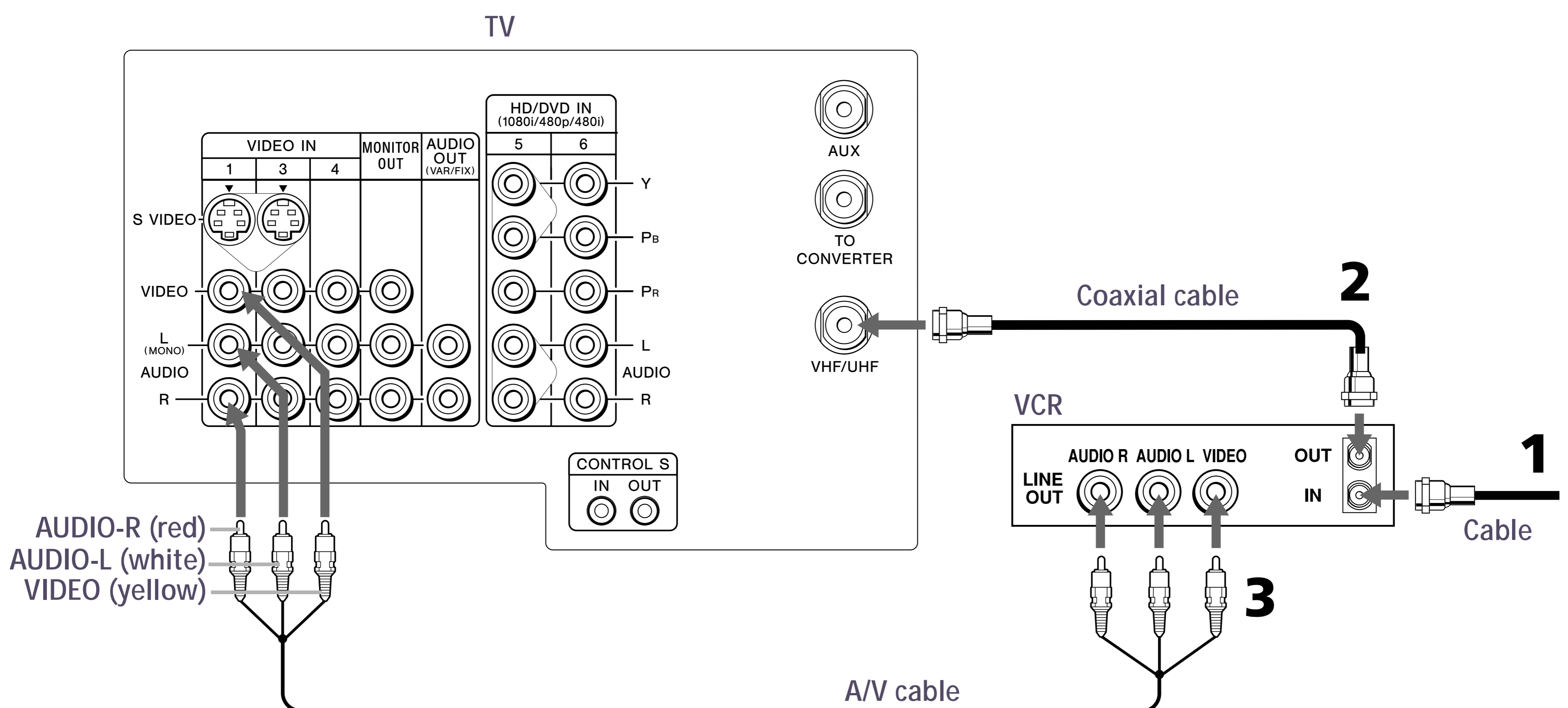
- Use the Channel Fix feature to lock in a channel. The Channel Fix feature is under the Channel menu. For details, see “Using the Channel Menu” on page 40.

Connecting a VCR and Cable

Use this hookup if you have cable TV that does not require a cable box.

- 1 Connect the cable TV cable to the VCR's IN jack.
- 2 Using a coaxial cable, connect the VCR's OUT jack to the TV's VHF/UHF jack.
- 3 Using an A/V cable, connect the VCR's Audio and Video OUT jacks to the TV's Audio and Video IN jacks.

 If the VCR you are connecting has an S VIDEO jack, you can use an S VIDEO cable for improved picture quality (compared to a combination audio/video cable). Because an S VIDEO cable carries only the video signal, you will need audio cables for sound.



Connecting a VCR and Cable Box

Use this hookup if:


- ❑ Your cable TV company scrambles some channels, but not all of them (pay channels vs. regular cable channels), so you need to use a cable box, and
- ❑ You want to use the Twin View feature.

With this setup you can:

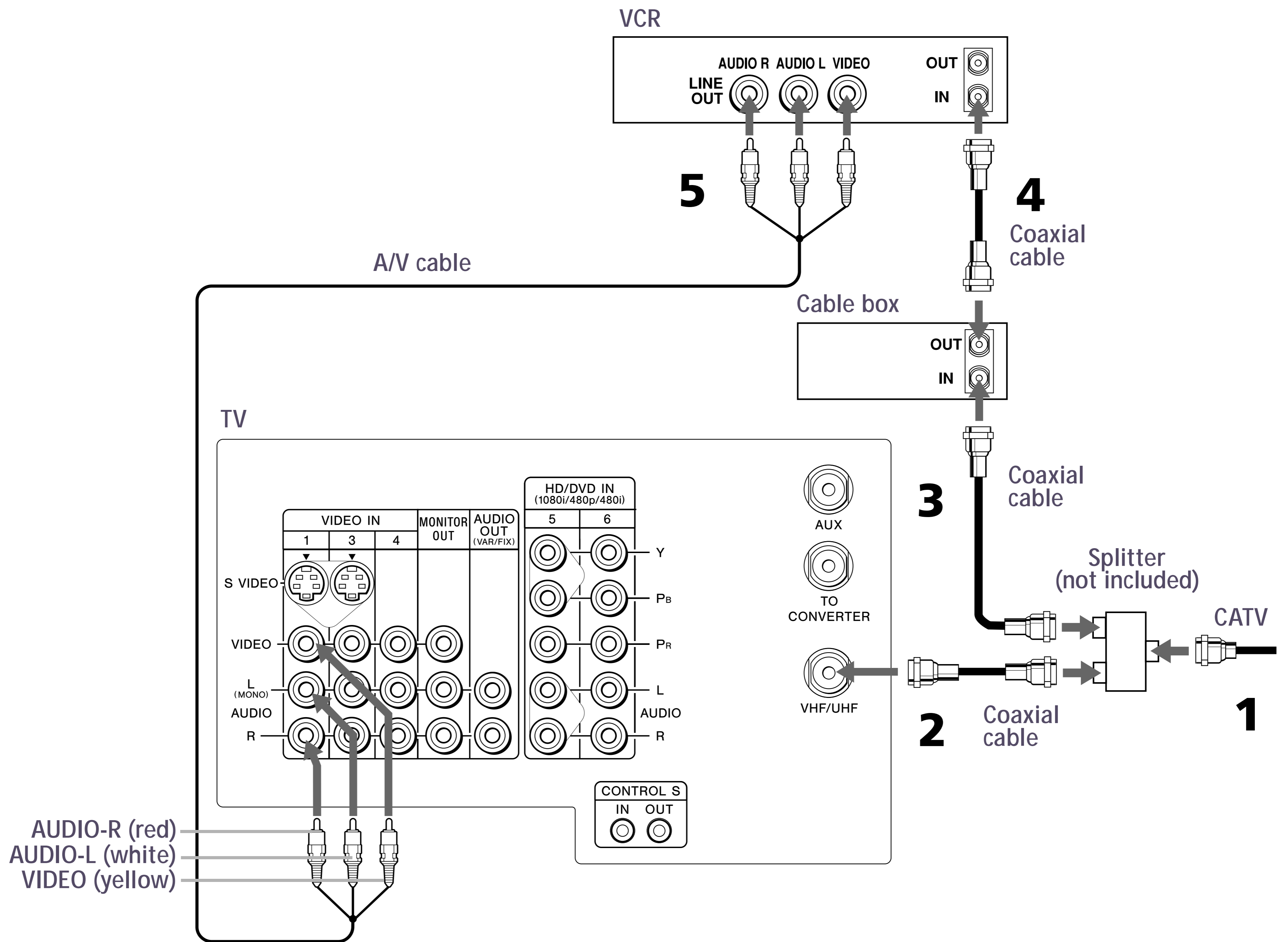
- ❑ Use the TV remote control to change channels using your cable box when the signal is scrambled.
- ❑ Use the TV remote control to change channels using your TV when the signal is not scrambled. (Your TV's tuner provides a better signal than the cable box.)
- ❑ Use the Twin View feature.
- ❑ Record both regular CATV and scrambled channels.

To connect a cable box and a VCR, you will need:

- ❑ A small, inexpensive device known as a splitter.
 - ❑ Three coaxial cables.
 - ❑ Either a combination audio/video cable, or an S VIDEO cable and audio cables.
- 1 Connect the CATV cable to the single (input) jack of the splitter.
 - 2 Use a coaxial cable to connect one of the two output jacks of the splitter to the TV's VHF/UHF jack.
 - 3 Use a coaxial cable to connect the other output jack of the splitter to the input jack of the cable box.
 - 4 Use a coaxial cable to connect the output jack of the cable box to the input jack of the VCR.
 - 5 Use the video line (yellow) of a combination audio/video (A/V) cable to connect the video output jack of the VCR to the video input jack of the TV.

 If your VCR has an S VIDEO jack, you can substitute an S VIDEO cable for the video line of an A/V cable. The S VIDEO cable will provide improved video signal quality. (You will need audio cables for sound.)

Connect the left (white) and right (red) audio output channels of the VCR to the respective input channels on the TV.



To switch between channels from cable box and channels from CATV

- Press the ANT button on the TV remote control.

To use the TV remote control to change channels on the VCR

- Program the remote control as necessary. (By default, the remote control is set for a Sony VCR; to change to another brand, see “Programming the Remote Control” on page 50.) Then use the VCR buttons on the remote control to change channels.

To use the TV remote control to change channels on the cable box

- Program the remote control as necessary. (For details, see “Programming the Remote Control” on page 50.) Then use the remote control to change the cable box channels.

To view cable box channels


- Set your TV to channel 3 or 4 (as appropriate) and then change channels on the cable box.

To prevent accidental switching of TV channels while using the cable box

- ❑ It is a good idea to use the Channel Fix feature of your TV when using the VCR or cable box. The Channel Fix feature locks the TV tuner to a specific channel (such as 3 or 4). The Channel Fix feature is under the Channel menu. (For details, see “Using the Channel Menu” on page 40.)

To use Twin View with the cable box

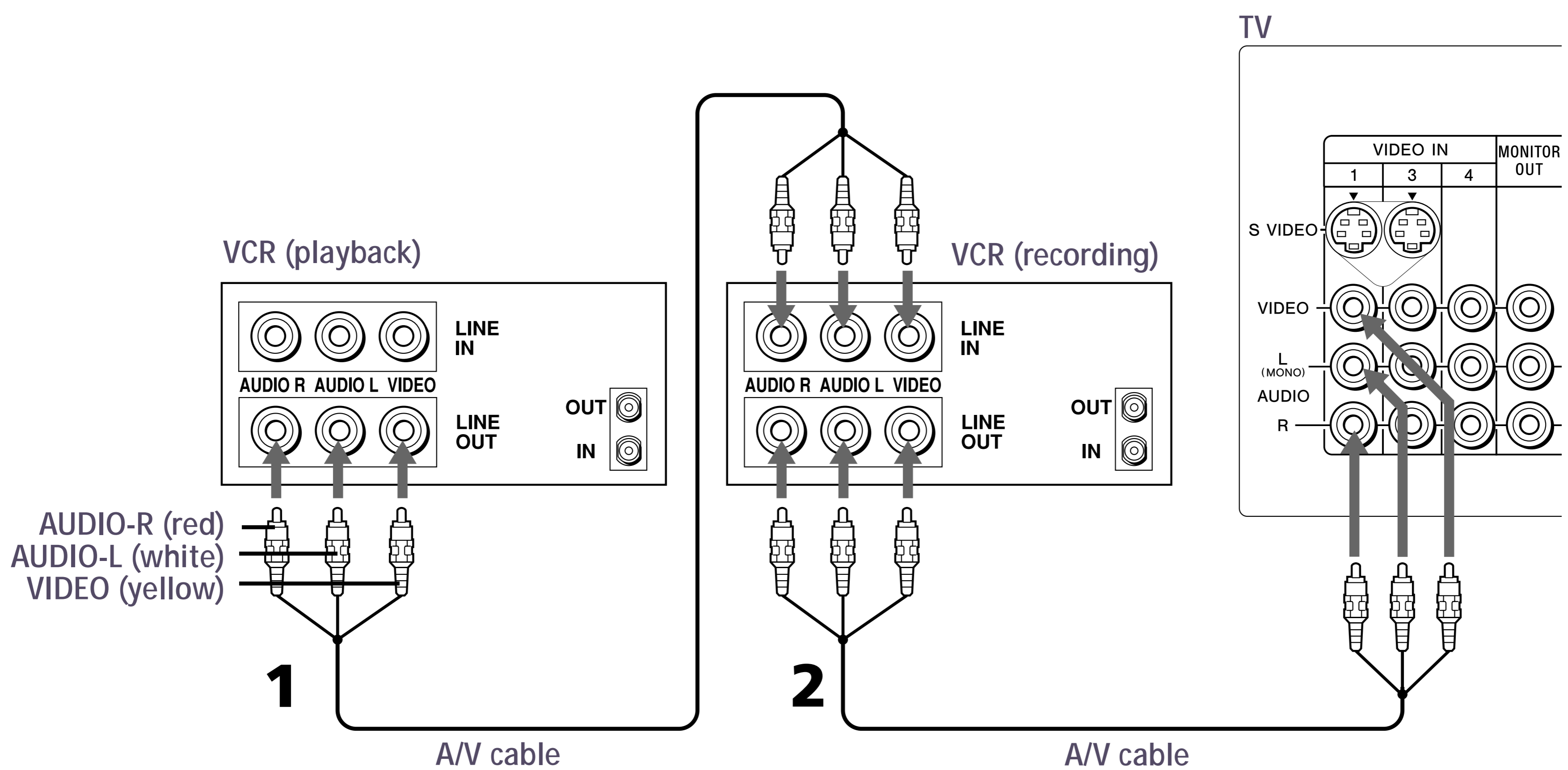
- ❑ Turn on the VCR. Use the remote control’s TV/VIDEO button to set the Twin View output to VIDEO 1. Change the Twin View channel via the VCR. (The VCR’s tuner is used as one of the Twin View picture sources; if you do not turn on the VCR, the Twin View will not work.)

 This system is needed because the cable box unscrambles only one channel at a time (unlike the CATV cable, which makes all channels available concurrently).

Connecting Two VCRs for Tape Editing

If you connect two VCRs, so you can record from one to the other, you can connect the recording VCR into your TV to monitor what is being recorded. The procedure below shows you how to do this.

- 1 Using an A/V cable, connect the playback VCR's Audio and Video OUT jacks to the recording VCR's Audio and Video IN jacks.
- 2 Using an A/V cable, connect the recording VCR's Audio and Video OUT jacks to the TV's Audio and Video IN jacks.




To change the video input of the VCR

- ❑ See your VCR's user guide for instructions.


To view what is being recorded

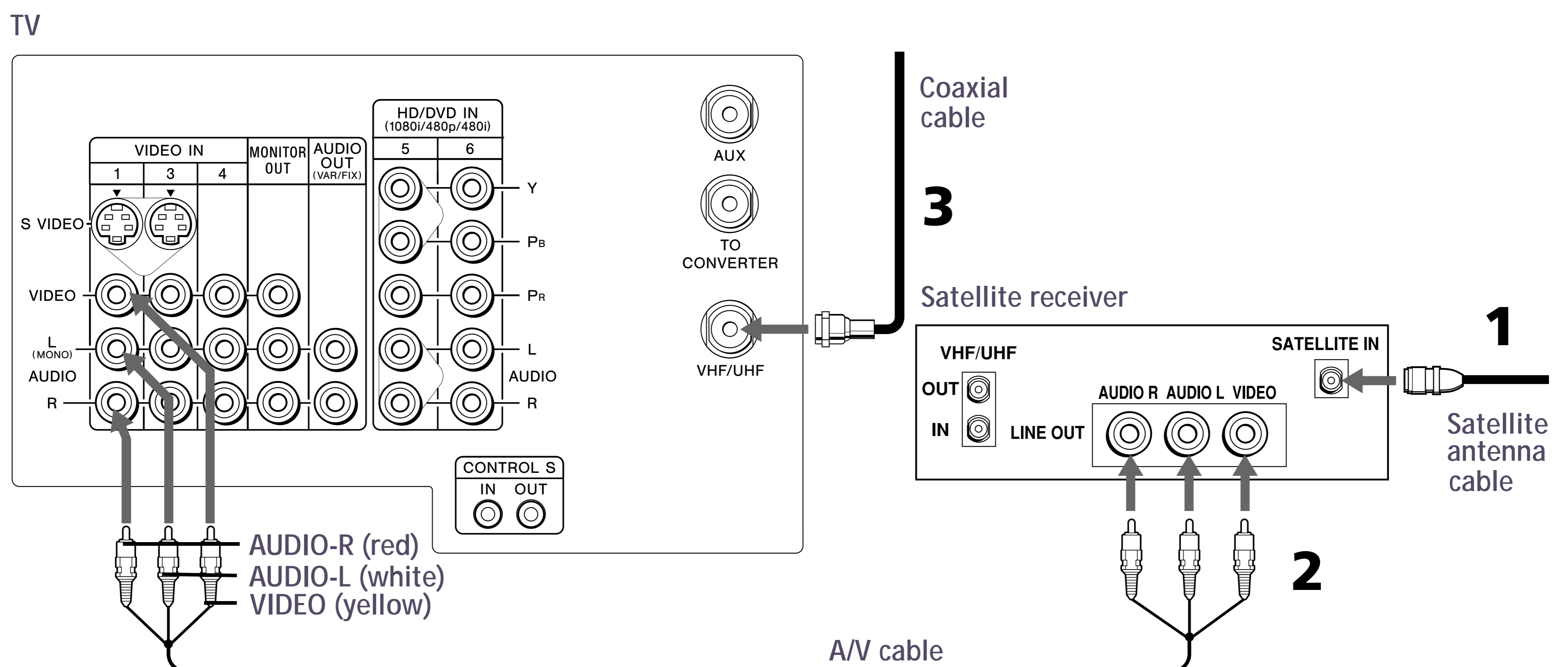
- ❑ Use the remote control to set the TV to the video input to which the recording VCR is connected. (VIDEO 1 in the illustration above.)

 If the VCRs you are connecting have S VIDEO jacks, you can use S VIDEO cables for improved picture quality (compared to a combination audio/video cable). Because S VIDEO cables carry only the video signal, you will need audio cables for sound.

Connecting a Satellite Receiver

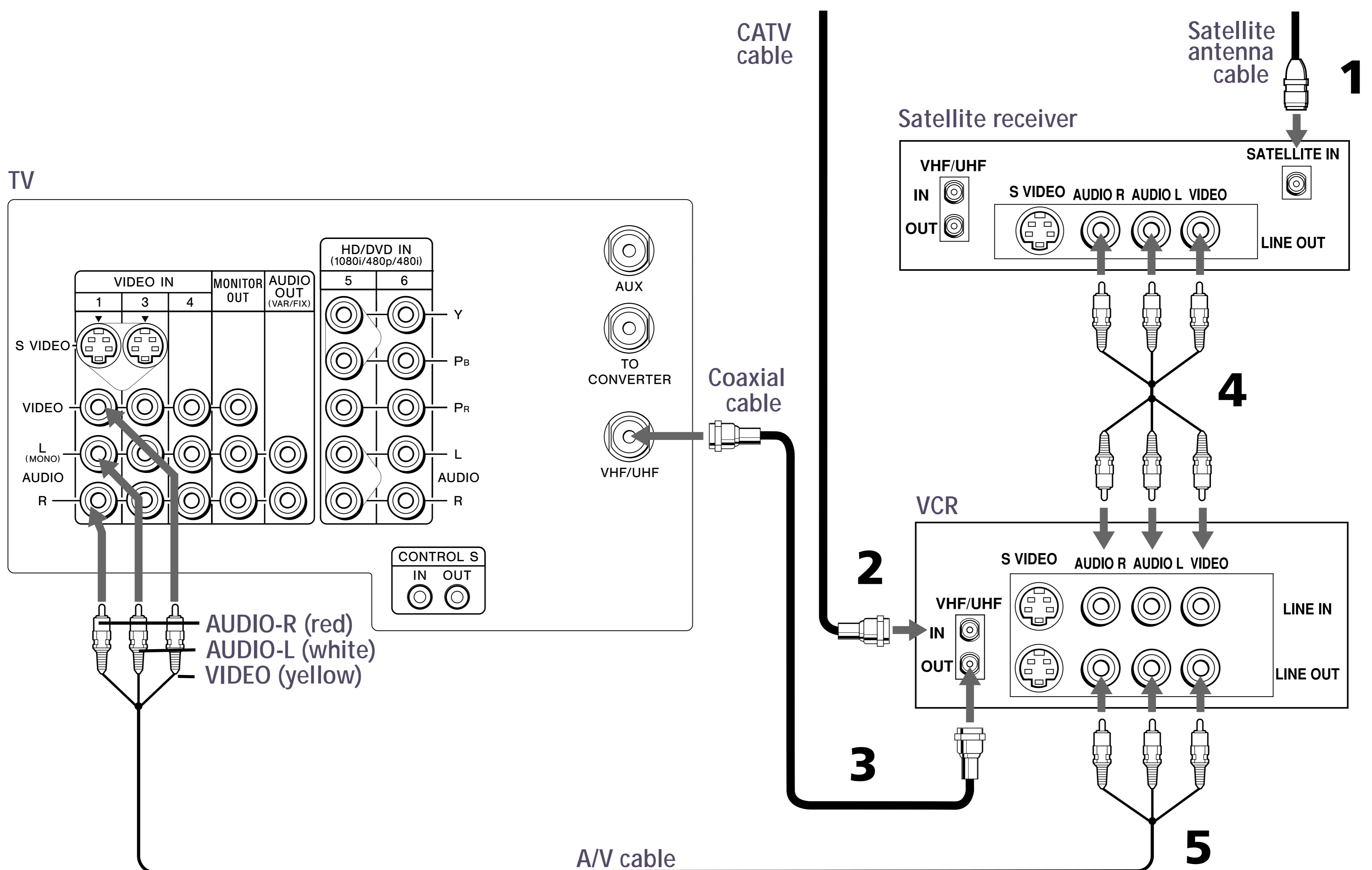
- 1 Connect the satellite antenna cable to the satellite receiver's SATELLITE IN jack.
- 2 Using an A/V cable, connect the satellite receiver's Audio and Video OUT jacks to the TV's Audio and Video IN jacks.
- 3 Connect a coaxial cable from your cable or antenna to the TV's VHF/UHF jack.


 If the receiver you are connecting has an S VIDEO jack, you can use an S VIDEO cable for improved picture quality (compared to a combination audio/video cable). Because S VIDEO cables carry only the video signal, you will need audio cables for sound.



Connecting a Satellite Receiver with a VCR

- 1 Connect the satellite antenna cable to the satellite receiver's SATELLITE IN jack.
- 2 Connect the CATV cable to the VCR's VHF/UHF IN jack.
- 3 Using a coaxial cable, connect the VCR's OUT jack to the TV's VHF/UHF jack.
- 4 Using an A/V cable, connect the satellite receiver's Audio and Video OUT jacks to the VCR's Audio and Video IN jacks.
- 5 Using an A/V cable, connect the VCR's Audio and Video OUT jacks to the TV's Audio and Video IN jacks.



 If the peripherals you are connecting have S VIDEO jacks, you can use S VIDEO cables for improved picture quality (compared to combination audio/video cables). Because S VIDEO cables carry only the video signal, you will need audio cables for sound.

- 6** If necessary, change the video input on your VCR. (See your VCR's user's guide for instructions on how to do that.)

To watch satellite TV, or the VCR

- Press TV/VIDEO on the remote control to select VIDEO 1.

To watch cable TV

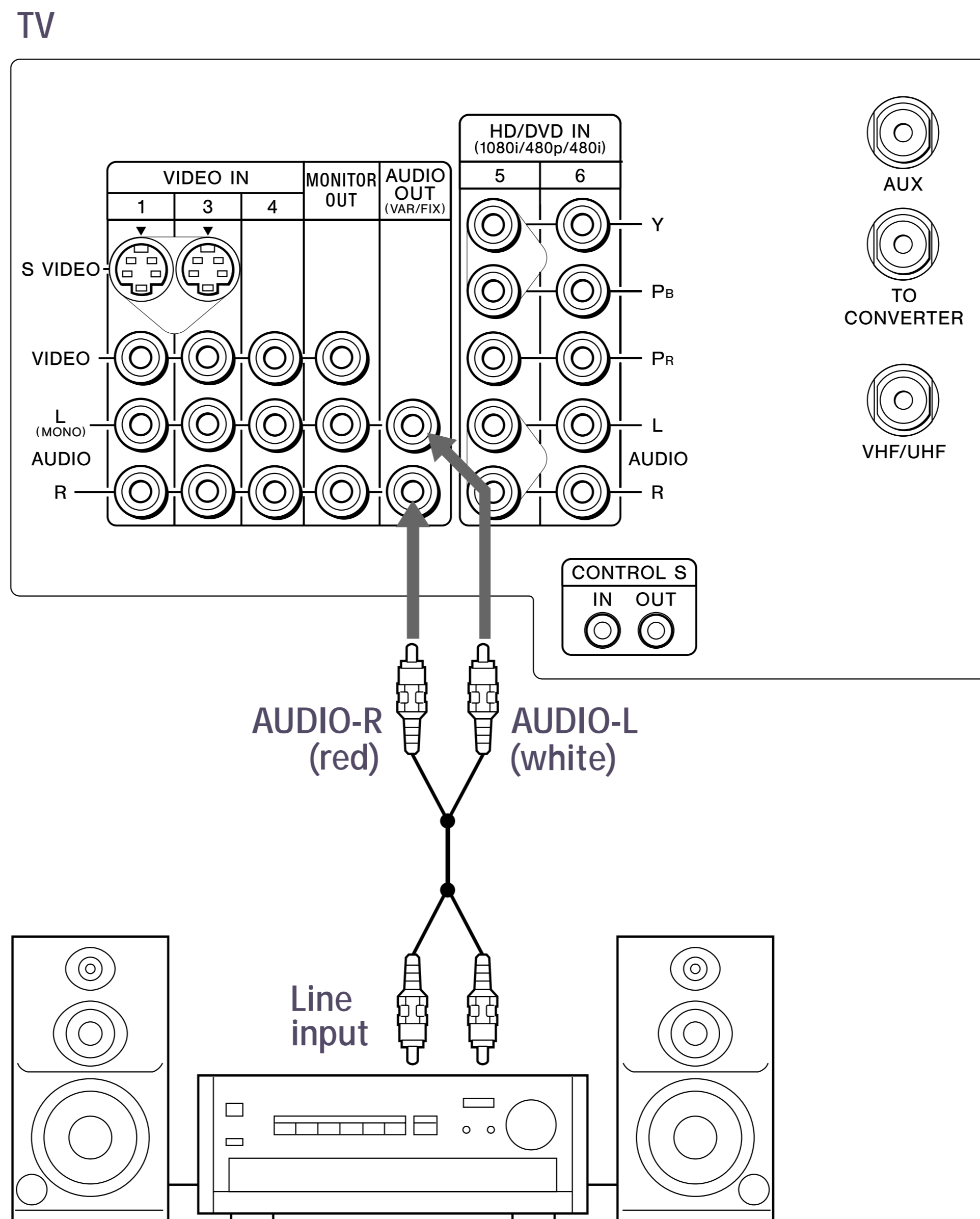
- Press TV/VIDEO on the remote control to select VHF/UHF (to select the CATV cable on the TV).

Connecting an Audio Receiver

For better sound quality, you may want to connect your TV to your stereo system's audio receiver.

To connect to an audio receiver


- Use audio cables to connect the TV's Audio OUT jacks to the audio receiver's audio LINE IN jacks.



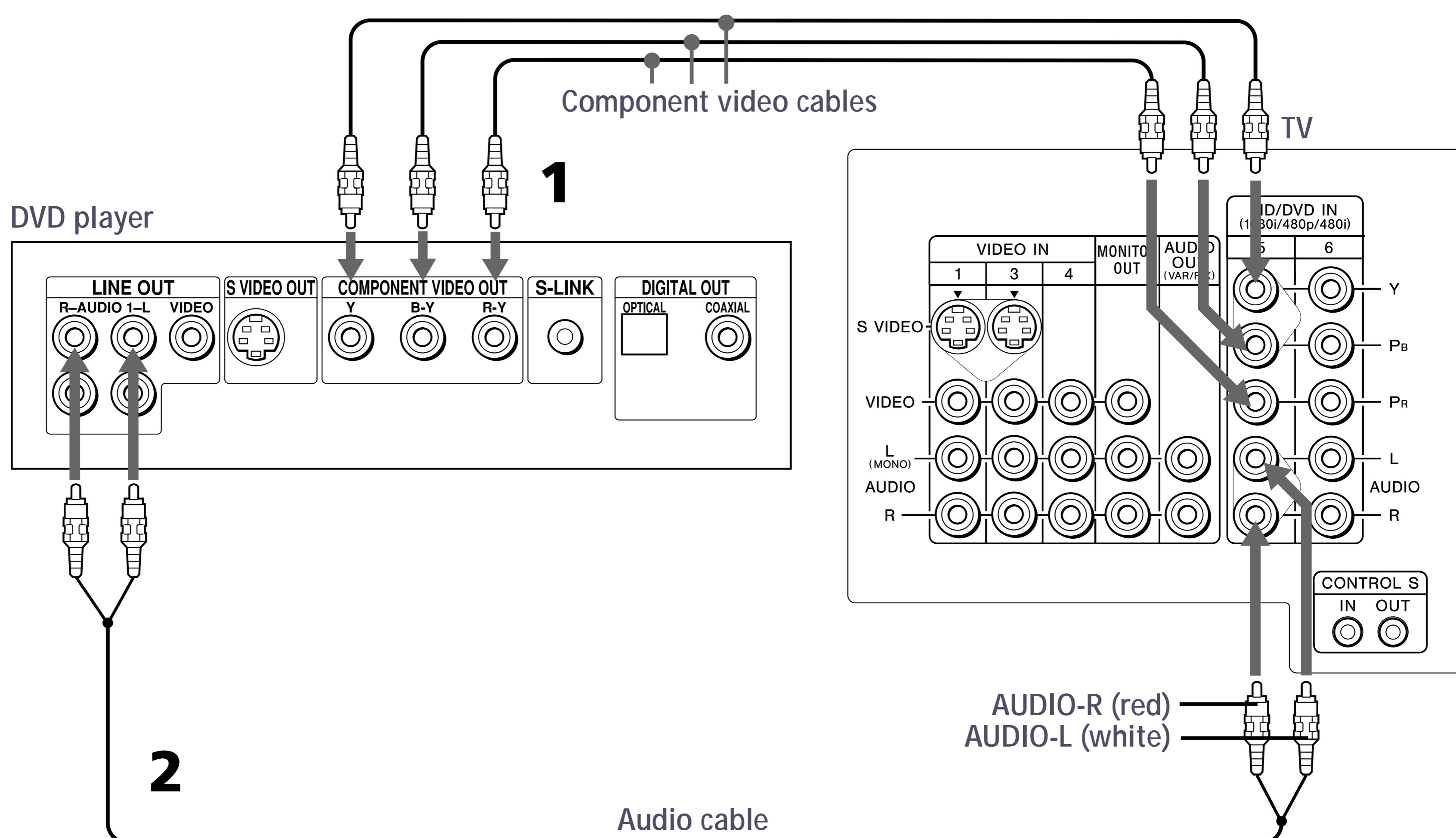
Connecting a DVD Player with Component Video Connectors


This is the preferred hookup to use if your DVD player has component (Y, PB, PR) jacks.

- 1 Using three separate component video cables, connect the DVD player's Y, PB and PR jacks to the Y, PB and PR jacks on the TV — the number 5 or 6 connections under HD/DVD IN.

 The Y, PB and PR jacks on your DVD player are sometimes labeled Y, CB and CR, or Y, B-Y and R-Y. If so, connect the cables to like colors.


- 2 Using an audio cable, connect the DVD player's Audio OUT jacks to the TV's Audio IN jacks. Be sure to use the same column of inputs that you used for the video connection (HD/DVD IN 5 or 6).



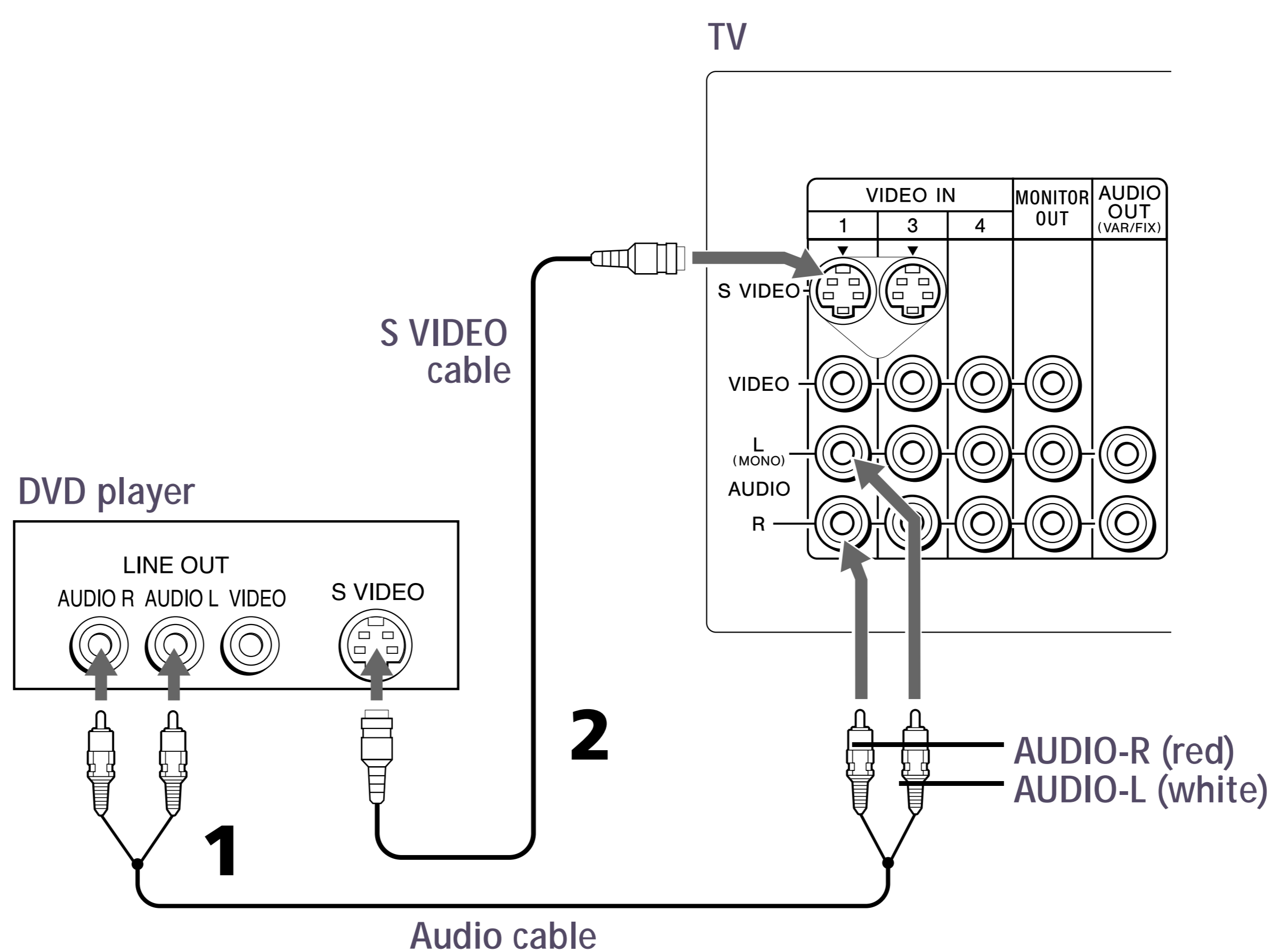
 You cannot use the MONITOR OUT jacks to record the signal from any equipment connected into the Y, PB, PR jacks.

Connecting a DVD Player with A/V Connectors

Use this hookup if your DVD player does not have component (Y, PB, PR) jacks.

 An S VIDEO connection will give a good-quality video signal, but if your DVD player has component video, that connection (described on the previous page) will give an even better signal.


- 1 Using audio cables, connect the DVD player's Audio OUT jacks to the TV's Audio IN jacks.
- 2 Using an S VIDEO cable, connect the DVD player's S VIDEO jack to the TV's S VIDEO jack.




To switch between your TV and DVD

- Use the TV/VIDEO button on the TV's remote control to switch from one input device to another.

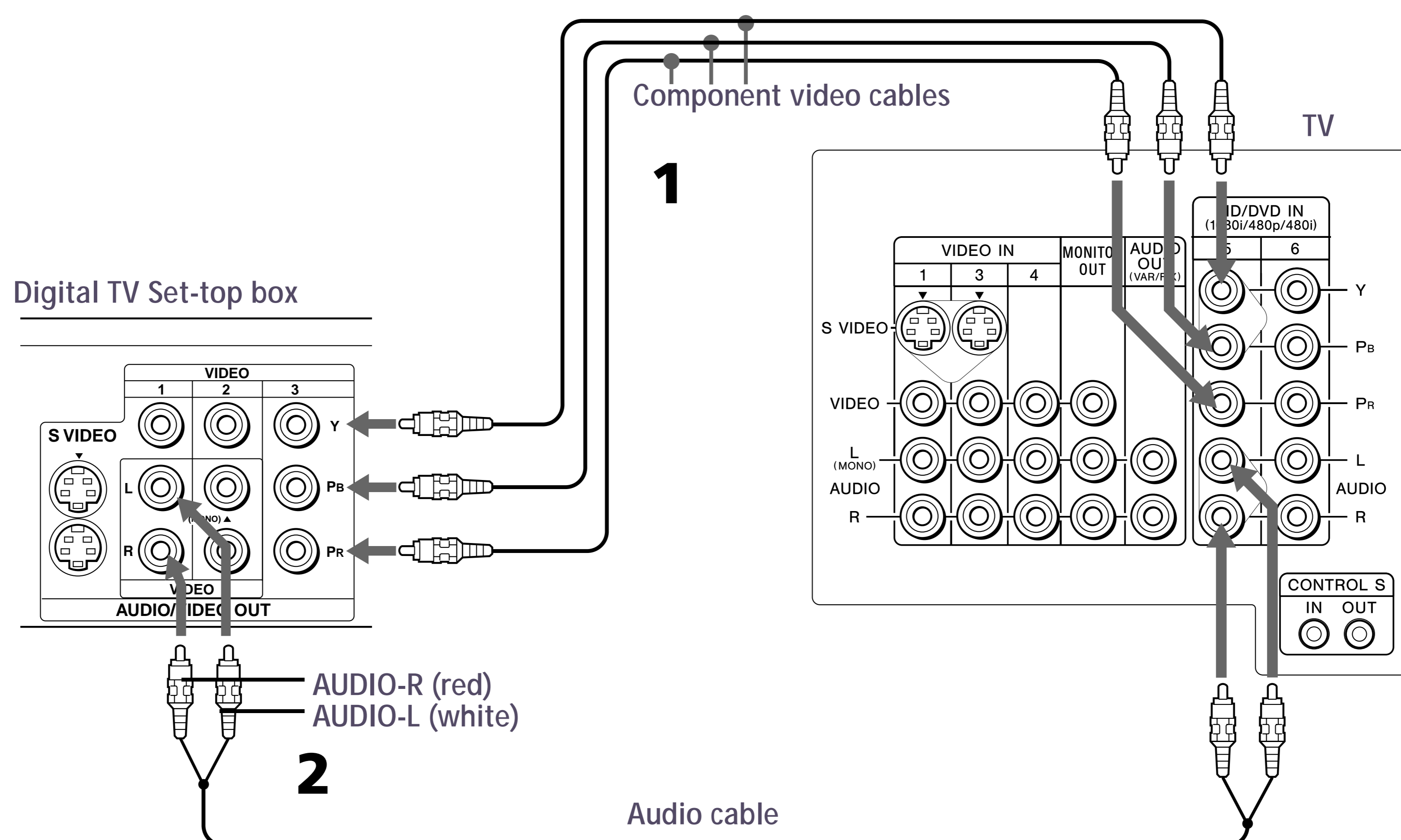
Connecting a Digital TV Receiver

 Be sure to read the manual for the Set-top box.

- 1 Using three separate component video cables, connect the Digital TV Set-top box's Y, P_B and P_R jacks to the TV.

 If you prefer, you can use an S VIDEO cable instead of the Y, P_B and P_R connections. The Y, P_B and P_R connections will provide the best-quality picture, but you cannot record the signal from any equipment connected to the Y, P_B and P_R inputs.

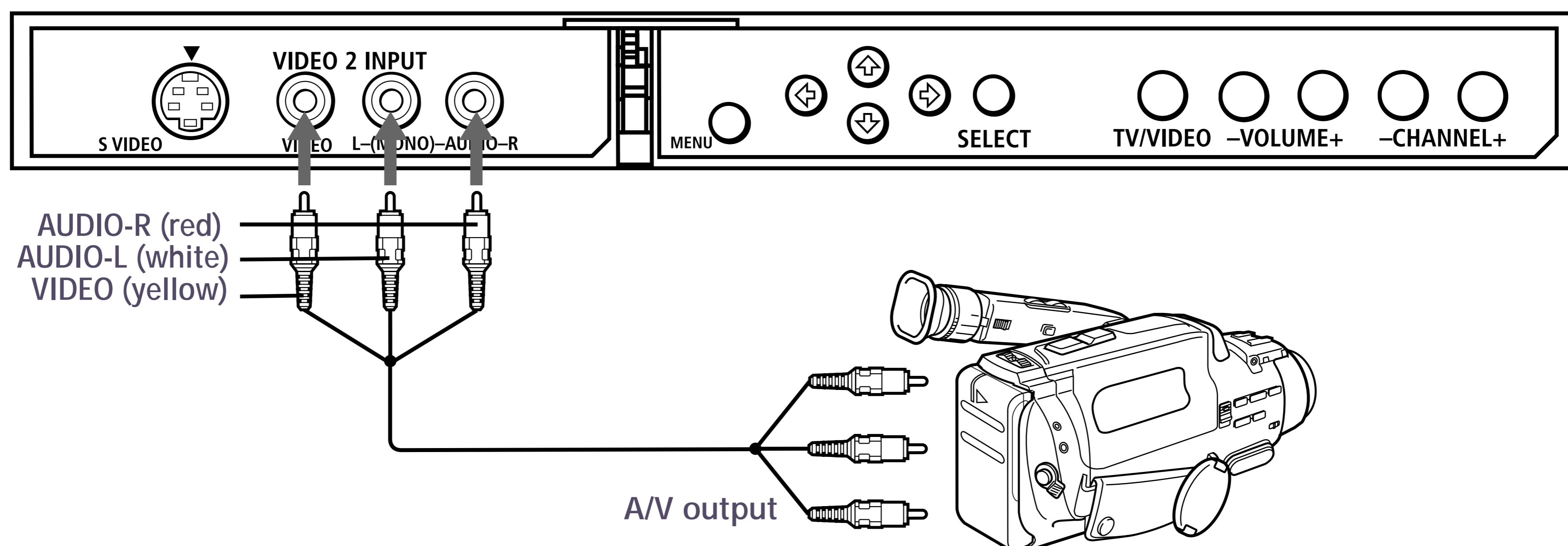
- 2 Using an audio cable, connect the Digital TV Set-top box's Audio OUT jacks to the TV's Audio IN jacks.




Connecting a Camcorder

For easy connection of the camcorder, the TV has front Audio and Video inputs (shown below). If you prefer, you can connect the camcorder to the TV's rear Audio and Video IN jacks.

- 1 Using A/V cables, connect the camcorder's Audio and Video OUT jacks to the TV's Audio and Video IN jacks.



If you have a mono camcorder, connect its audio output to the TV's AUDIO L jack.

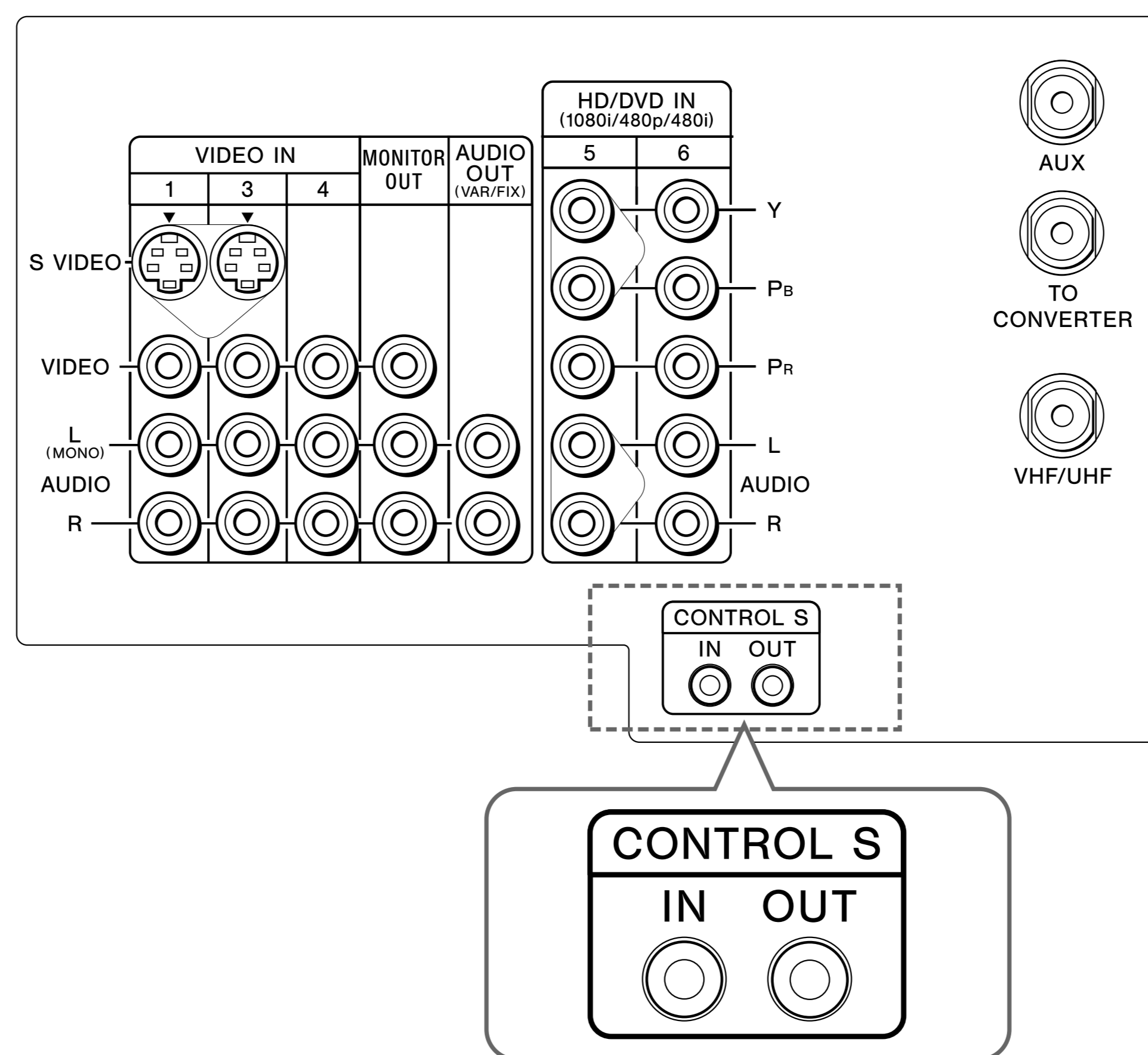
 If the camcorder you are connecting has an S VIDEO jack, you can use an S VIDEO cable for improved picture quality (compared to a combination audio/video cable). Because S VIDEO cables carry only the video signal, you will also need audio cables for sound.

To view the camera's output

- Use the TV/VIDEO button on the front panel of the TV (or on the remote control) to set the TV to the video input to which the camcorder is connected. (VIDEO 2 in the illustration above.)

Using the CONTROL S Feature

The CONTROL S feature allows you to control your TV, plus other Sony equipment (such as a DVD player or VCR) connected to the TV, using only the TV's remote control. In addition to allowing you to control multiple devices with one remote control, the CONTROL S feature allows you to always point your remote control at your TV, instead of having to point it at the other equipment, which might be hidden or out of direct line of sight.



Setting Up the TV Automatically

After you finish connecting your TV, you can run Auto Setup to set up your channels. The Auto Setup screen appears when you turn your TV on for the first time after installing it. If you do not want to set up the channels at this time, you can do it later by using the Auto Program feature in the Channel menu (see page 40 for information regarding Channel menu).

 The Auto Setup feature does not apply for installations that use a cable box for all channel selection.

Using Auto Setup

- 1 Turn on the TV.
- 2 Press the TV button on the remote control.
- 3 Using the main set of buttons on the remote control, press CH+ to run Auto Setup.
- 4 After Auto Setup has run, press CH- to exit.

Reset TV to Factory Settings

To reset your TV to the factory settings

- 1 Turn on the TV.
- 2 Hold down the RESET button on the remote control.
- 3 Press and release the POWER button on the TV. (The TV will turn itself off, then back on.)
- 4 Release the RESET button.

Using the Features

Overview

This chapter describes how to use features of your TV.

<i>Topic</i>	<i>Page</i>
Using Favorite Channels	30
Using Twin View	31
Using the Freeze Function	34

Using Favorite Channels

The Favorite Channel feature lets you select programs from a list of favorite channels that you previously specified.

To display a list of your favorite channels:

- 1 If you have not already done so, create a list of favorite channels. (For information on setting up Favorite Channels see “Selecting Channel Options” on page 40.)
- 2 Press the FAVORITES button on the remote control.



- 3 Move the joystick **▲** or **▼** to highlight the channel you want to watch. The program on that channel appears in the preview window.
- 4 Press the FAVORITES button on the remote control to select the channel.

Using Twin View

Twin view lets you see two pictures — from an antenna, a VCR, a DVD, etc. — on the screen at the same time. (You can only hear the sound associated with one of the pictures however. You choose which picture's sound is selected.) You can change the relative size of each of the pictures.

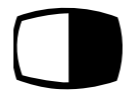
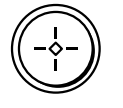
Displaying Twin Pictures

To display twin pictures

- 1 Press the  button. (A second picture-window appears.)




- 2 To cancel twin pictures

- Press the  button
- or
- Press the  button.

Activating the Picture

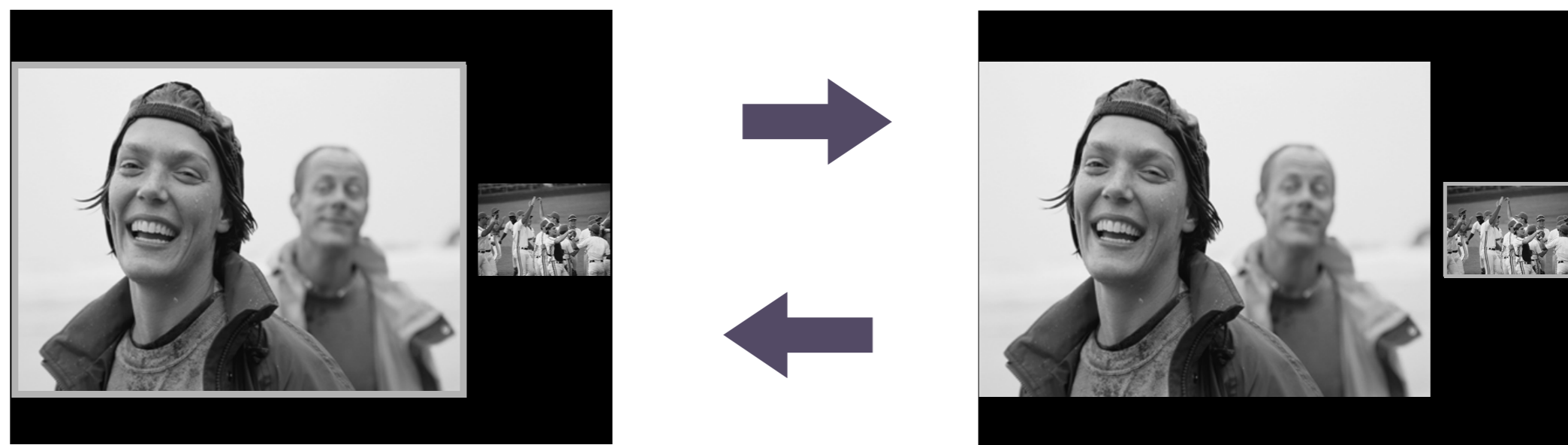
With Twin View, the picture highlighted with a blue frame is active. In the active picture, you can:

- Change channels
- Adjust the volume.
- Switch the input sources (to go from UHF/VHF to CATV cable, for example, press TV/VIDEO on the remote control).
- Change the picture size by pressing \uparrow/\downarrow on the joystick.

 Normally the TV memorizes the last-used sizes; when Twin View is turned off, then back on, the last-used sizes are displayed. If you are using the enhanced 16:9 picture, however, the aspect ratio changes to 4:3 in Twin View, and the picture is reformatted to that ratio.

To activate the right picture

- Move the joystick to the right (without pressing down on it).



To activate the left picture

- Move the joystick to the left (without pressing down on it).

Factors affecting Twin View include:

- Equipment connected to the AUX and HD/DVD IN (numbers 5 and 6) inputs cannot be displayed in the right Twin View picture.

Changing the Picture Size

The zoom feature lets you vary the relative size of the left and right pictures.

- 1 Activate the picture whose size you want to change.
- 2 Press **▲** on the joystick to enlarge the picture.
- 3 Press **▼** on the joystick to make the picture smaller.



When you adjust the twin screen sizes, the TV memorizes the change. The next time you use the Twin View function, the memorized sizes appear.

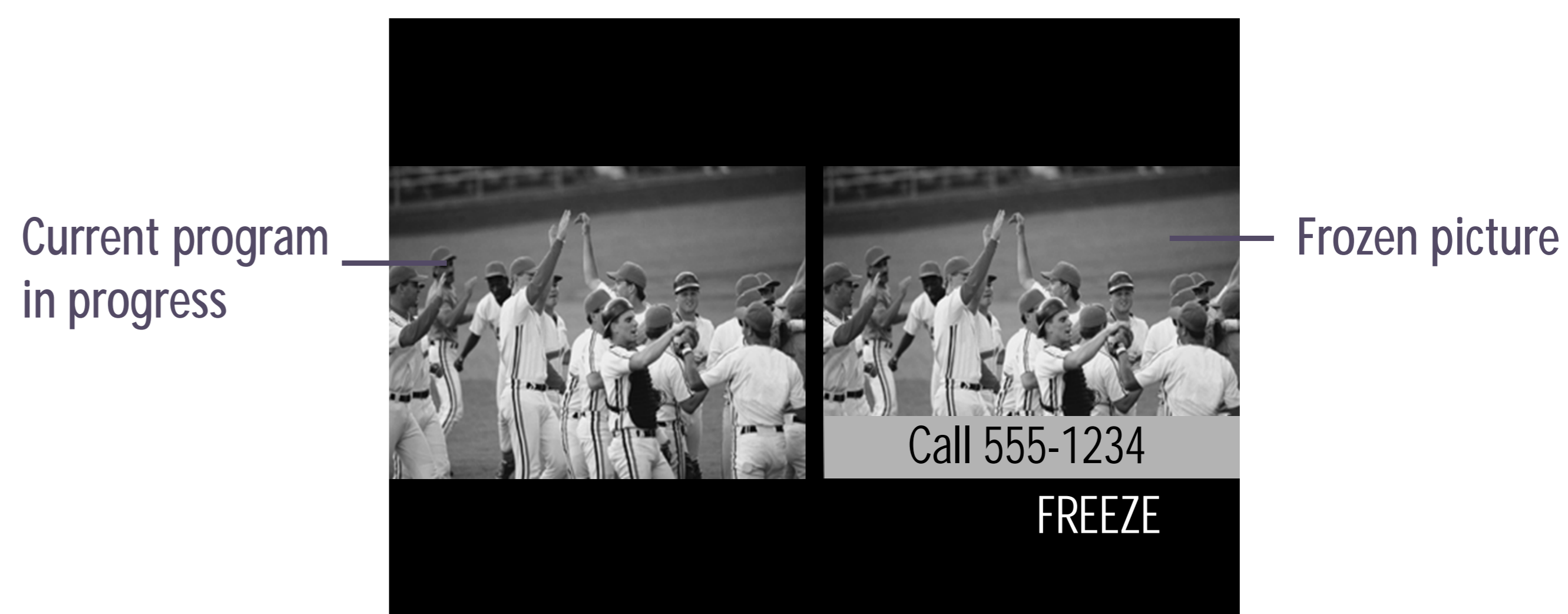
Using the Freeze Function

The FREEZE button allows you to temporarily capture a program's picture. You can use this feature to write down information such as phone numbers, recipes, etc.

The FREEZE feature works only in normal view; if you are in TWIN VIEW, it will not work.

To use the FREEZE function

- 1 When the program information you want to capture is displayed, press the FREEZE button, on the remote control.
- 2 The TV switches to Twin View mode and displays the "frozen" picture on the right, while the current program continues on the left.




- 3 To cancel and return to normal viewing, press the FREEZE button.







Using the Menus

Overview


Opening and choosing a menu:

- 1 Press the MENU button to display the Menu screen.
- 2 Move the joystick to the desired menu icon and press  to select it.
- 3 Use the joystick to scroll through the features.
- 4 See the specific menu page for instructions on moving through the menu.

The Menu gives you access to the following features:

<i>Menu Icon</i>	<i>Description</i>	<i>Page</i>
	VIDEO allows you to make adjustments to your picture settings. It also allows you to customize the Picture Mode based on the type of program you are viewing.	36
	AUDIO offers enhanced audio options such as listening to second audio programming (SAP), or customizing the effect of the sound on your TV.	38
	CHANNEL allows you to set up a Favorite Channel list, run the Auto Program function, and more.	40
	PARENT lets you control the viewing of programs based on their ratings.	42
	TIMER lets you set the clock on your TV and allows you to program your TV for scheduled viewing using the Timers.	46
	SETUP provides several options for setting up your channels, labeling your video inputs, and selecting the language of the on-screen menus.	47


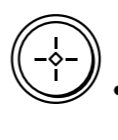

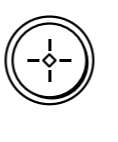
To end a menu session:
Press MENU again.

To end one menu session
and move to another:
Move the joystick upward
to return to the menu
icons.
Move the joystick to
choose the next menu icon
and press  to select it.



Using the Video Menu

To select the Video Menu


- 1 Press MENU.
- 2 Move the joystick to the Video icon  and press .
- 3 Use the joystick to scroll through the features.
- 4 Press  to select a feature. That feature's adjustment appears.
- 5 Use the joystick to make the desired adjustments.
- 6 Press  to select/set.
- 7 Press MENU to exit the menu screen.




To restore the factory default settings for Picture, Brightness, Color, Hue, and Sharpness, Color Temp and VM.

- Press RESET on the remote control when in the Video menu.

Selecting Video Options

 To change from one Video Mode to another, use the PICTURE MODE button on the remote control.

The Video Menu includes the following options.



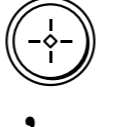
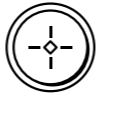
Option	Description
Mode <i>Customized picture viewing</i>	Vivid Select for enhanced picture contrast and sharpness.
	Standard Recommended for normal viewing conditions.
	Movie Select for soft, film like, picture.
	Pro Select for professional monitor like appearance.
 You can alter the Video Menu settings (Picture, Brightness, Color, etc.) for each Mode.	
Picture	Adjust to increase picture contrast and deepen the color or decrease picture contrast and soften the color.
Brightness	Adjust to brighten or darken the picture.
Color	Adjust to increase or decrease color intensity.
Hue	Adjust to increase or decrease the green tones.
Sharpness	Adjust to sharpen or soften the picture.

<i>Option</i>	<i>Description</i>
Color Temp	Choose from three color temperatures:
<i>White intensity adjustment</i>	Cool Select to give the white colors a blue tint.
	Neutral Select to give the white colors a neutral tint.
	Warm Select to give the white colors a red tint (NTSC-Standard).
VM	Sharpens picture definition to give every object a sharp, clean edge. Select from High, Medium, Low, Off.
<i>Velocity Modulation</i>	
DRC Mode	Creates a high-resolution picture with 4x density, for high quality sources (i.e., DVD player, Satellite receiver). Select from Interlaced, Progressive, or CineMotion.
<i>Digital Reality Creation-Multi Function</i>	Interlaced Recommended for moving pictures.
	Progressive Recommended for still images and text.
	CineMotion Provides an optimized display by automatically detecting film content and applying a reverse 3/2 pulldown process. Moving pictures will appear clearer and more natural-looking.



Using the Audio Menu

To select the Audio Menu

- 1 Press MENU.
- 2 Move the joystick to the Audio icon  and press .
- 3 Use the joystick to scroll through the options.
- 4 Press  to select an option. That option's settings appear.
- 5 Use the joystick to scroll through the settings.
- 6 Press  to select the desired setting.
- 7 Press MENU to exit the menu screen.



To restore the factory default settings for Treble, Bass, and Balance

- Press RESET on the remote control when in the Audio menu.

Selecting Audio Options

The Audio Menu includes the following options:


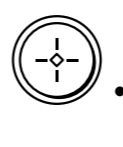

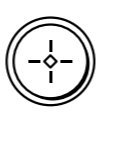
<i>Option</i>	<i>Description</i>	
Treble	Adjust to increase or decrease higher-pitched sounds.	
Bass	Adjust to increase or decrease lower-pitched sounds.	
Balance	Adjust to emphasize left or right speaker balance.	
Steady Sound	ON	Select to stabilize the volume.
	OFF	Select to turn off Steady Sound.
Effect	TruSurround	Select for surround sound (for stereo programs only).
	Simulated	Adds a surround-like effect to mono programs.
	OFF	Normal stereo or mono reception.

<i>Option</i>	<i>Description</i>	
MTS <i>Enjoy stereo, bilingual and mono programs</i>	Stereo	Select for stereo reception when viewing a program broadcast in stereo.
	Auto-SAP	Select to automatically switch the TV to second audio programs when a signal is received. (If no SAP signal is present, the TV remains in Stereo mode.)
	Mono	Select for mono reception. (Use to reduce noise during weak stereo broadcasts.)
Speaker	ON	Select to turn on the TV speakers.
	OFF	Select to turn off the TV speakers and listen to the TV's sound only through your external audio system speakers.
Audio Out <i>Easy control of volume adjustments</i>	This option can be set only when the Speaker option is set to OFF.	
	Variable	Sound output varies according to the TV settings. Useful when you want to use the TV's remote control to adjust the output through a separate audio system.
	Fixed	Sound output is held at a fixed level. Use your audio receiver's remote control to adjust the volume.



Using the Channel Menu




To select the Channel Menu



- 1 Press MENU.
- 2 Move the joystick to the Channel icon  and press .
- 3 Use the joystick to scroll through the features.
- 4 Press  to select a feature. That feature's options appear.
- 5 Use the joystick to scroll through the options.
- 6 Press  to select the desired option.
- 7 Press MENU to exit the menu screen.



Selecting Channel Options

The Channel Menu includes the following options:

Option	Description
Favorite Channel	<ol style="list-style-type: none"> 1 Press  to select a favorite channel number. 2 Use the joystick to scroll through the channels until you find the channel you want to add to your favorites. 3 Press  to select it.
Cable	<p>ON Select if you are receiving cable channels with a CATV cable.</p> <p>OFF Select if you are using an antenna.</p>
<p> You should run Auto Program after changing the cable setting.</p>	
Channel Fix	<p>2-6 "Fix" your TV's channel setting to 3 or 4 and use the cable box, VCR or satellite receiver to change channels. Select one of these settings if you have connected the device to the VHF/UHF jack.</p> <p><i>Useful when you have a cable box or satellite receiver connected</i></p>
	<p>AUX 2-6 Same as 2-6, except you select one of these settings if you have connected the device to the AUX jack (see page 8).</p>
	<p>VIDEO 1 Use this setting if you have connected the device to the Audio and Video IN jacks.</p>
Auto Program	Automatically programs the TV for all receivable channels from both VHF/UHF and AUX inputs.



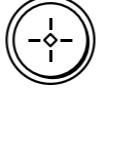
<i>Option</i>	<i>Description</i>
Channel Skip/Add	<p>Removes and adds viewable channels.</p> <ol style="list-style-type: none">1 Use the joystick to scroll through the channels until you find the channel you want to skip/add.2 Press  to select it.3 Press the joystick (↕/↔) to toggle between “Add” and “Skip.”4 Press  to select.
Channel Label	Label up to 20 channels with their station call letters.



Using the Parent Menu

The Parent menu allows you to set up the TV to block programs according to their content and rating levels. These ratings are assigned by a federal rating board. Not all programs are rated. Using the Parental Lock blocks programs with a specific rating, but it does not block an entire channel.


To select the Parent Menu


- 1 Press MENU.
- 2 Move the joystick to the Parent icon  and press .
- 3 Use the 0-9 buttons on the remote control to enter your four-digit password.
- 4 Confirm your password by entering it again. (The Parent menu options appear.)
- 5 Use the joystick to scroll through the settings.
- 6 Press  to select the desired option.
- 7 Press MENU to exit the menu screen.



 You need your password for any future access into the Parent menu. If you lose your password, see "Lost password" on page 56.

Using the Parent Menu


 If you are not familiar with the Parental Guideline rating system, you should select Child, Youth, or Young Adult to help simplify the rating selection. To set more restrictive ratings, select Custom.


 For descriptions of Child, Youth, and Young Adult ratings, see page 44.


The Parent menu includes the following options.

<i>Option</i>	<i>Description</i>
Parental Lock	OFF Parental lock is off. No programs are blocked from viewing.
<i>Turn ratings on/off and select a rating system</i>	<p>Child Maximum ratings permitted are:</p> <ul style="list-style-type: none"> <input type="checkbox"/> US: TV-Y, TV-G, G <input type="checkbox"/> Canada: TV-Y, C, G <p>Youth Maximum ratings permitted are:</p> <ul style="list-style-type: none"> <input type="checkbox"/> US: TV-PG, PG <input type="checkbox"/> Canada: TV-PG, PG, 8 ans+ <p>Young Adult Maximum ratings permitted are:</p> <ul style="list-style-type: none"> <input type="checkbox"/> US: TV-14, PG-13 <input type="checkbox"/> Canada: TV-14, 14+, 13 ans+ <p>Custom Select to set ratings manually.</p> <ul style="list-style-type: none"> <input type="checkbox"/> US: See page 44 for details. <input type="checkbox"/> Canada: See page 45 for details.
Change Password	For changing your password.

US Models: Selecting Custom Rating Options

 The content ratings will increase depending on the level of the age-based rating. For example, a program with a TV-PG V (Violence) rating may contain moderate violence, while a TV-14 V (Violence) rating may contain more intense violence.

 To ensure maximum blocking capability, the age-based ratings should be blocked.

 If you block unrated TV programs, be aware that the following types of programs may be blocked: emergency broadcasts, political programs, sports, news, public service announcements, religious programs and weather.

For US models, the Custom Rating Menu includes the following options. (For Canadian models, see page 45.)

<i>Option</i>	<i>Description</i>	
Movie Rating	G	All children and General Audience.
	PG	Parental Guidance suggested.
	PG-13	Parental Guidance for children under 13.
	R	Restricted viewing, parental guidance is suggested for children under 17.
	NC-17 and X	No one 17 and under allowed.
TV Rating	Age-Based Options	
Block programs by their rating, content or both	TV-Y	All children.
	TV-Y7	Directed to older children.
	TV-G	General Audience.
	TV-PG	Parental Guidance suggested.
	TV-14	Parents Strongly cautioned.
	TV-MA	Mature Audience only.
		Content-Based Options
	FV	Fantasy Violence.
	D	Suggestive Dialogue.
	L	Strong Language.
	S	Sexual situations.
	V	Violence.
Unrated	Block	Blocks all programs and movies that are broadcast without a rating.
	Block programs or movies that are broadcast without a rating	Allow

Canadian Models: Selecting Custom Rating Options

For Canadian models, the Custom Rating Menu includes the following options. (For US models, see page 44.)

<i>Option</i>	<i>Description</i>	
English Rating	C	All children.
	C8+	Children 8 years and older.
	G	General programming.
	PG	Parental Guidance.
	14+	Viewers 14 and older.
	18+	Adult programming.
French Rating	G	General programming.
	8 ans+	Not recommended for young children.
	13 ans+	Not recommended for ages under 13.
	16 ans+	Not recommended for ages under 16.
	18 ans+	Programming restricted to adults.
USA Rating	See "US Models" on page 44 for details.	

Viewing Blocked Programs

You can view a blocked program by entering the password. Press the ENTER button when tuned to a blocked program. This temporarily switches off the Parental Lock. To reactivate the Parental Lock settings, turn off the TV. When the TV is turned on again, your Parental Controls settings are reactivated.





Using the Timer Menu

To select the Timer menu

- 1 Press MENU.
- 2 Use the joystick to move to the Timer icon  and press .





To set the Current Time

- 1 Use the joystick to select “Current Time”, then press .
- 2 If it is currently Daylight Savings Time, be sure to set that mode to “ON”. (Daylight Savings Time starts in the Spring and ends in the Fall.)
- 3 Use the joystick to enter the correct time, then press .
- 4 Press MENU to exit the menu screen.

To set the Timer

Before setting the timer, be sure to set your TV’s clock to the current time (and, if appropriate, Daylight Savings Mode). To check the TV’s time setting, press the DISPLAY button on the remote control.

- 1 Move the joystick to “Timer 1” or “Timer 2”, then press .
- 2 Use the joystick to enter your date, time and channel preferences, then press  to select each one.
- 3 Press MENU to exit the menu screen.

To reset the Clock or Timers

- Press RESET on the remote control after selecting that option in the Timer menu. This resets to the factory defaults.

Selecting Timer Options



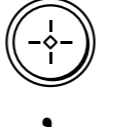
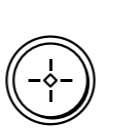
The Timer Menu includes the following options:

Option	Description
Timer 1 Timer 2	Program Select to set the Timer by day, time, duration, and channel.
	OFF Select to turn off the Timer. (Your previous settings will be saved.)
Current Time	Set the current time.
Daylight Savings	ON Select in the spring to turn on this mode during Daylight Saving Time.
	OFF Select in the fall to turn of this mode at the end of Daylight Saving Time.



Using the Setup Menu

To select the Setup Menu

- 1 Press MENU.
- 2 Use the joystick to move to the Setup icon  and press .
- 3 Use the joystick to scroll through the features.
- 4 Press  to select a feature. (That feature's options appear.)
- 5 Use the joystick to scroll through the options.
- 6 Press  to select the desired option.
- 7 Press MENU to exit the menu screen.







Selecting Setup Options

The Setup Menu includes the following options:

<i>Option</i>	<i>Description</i>
Caption Vision	Allows you to select from three closed-caption modes (for programs that are broadcast with closed caption).
CC1, CC2, CC3, CC4	Displays a printed version of the dialog or sound effects of a program. (Should be set to CC1 for most programs.)
TEXT1, TEXT2, TEXT3, TEXT4	Displays network/station information presented using either half or the whole screen (if available). For closed captioning, set to CC1.
XDS (Extended Data Service)	Displays a network name, program name, program length, and time of the show (if the broadcaster offers this service).
OFF	Turns off Caption Vision.

(Continued on the next page)

<i>Option</i>	<i>Description</i>
Video Label	Allows you to label the audio/video components you connected to the TV so you can identify them when using the TV/VIDEO button. When in the Setup menu's Video Label feature, use the joystick to highlight an input to label, then press  to select it. Use the joystick to scroll through the labels. Press  to select the component you connected to each of the input jacks on the back of your TV. Select "Skip" if you do not have a component connected to a particular set of input jacks.
VIDEO 1/2/3/4	VHS, 8mm, Beta, LD, Game, SAT, DVD, Web, Receiver, DTV, Skip
VIDEO 5/6	HD, DVD, DTV, Skip
	 If you select "Skip", your TV skips this connection when you press the TV/VIDEO button.
Tilt Correction	Allows you to correct any tilt of the picture.
Language	Select to display all on-screen menus in your language of choice.
16:9 Enhanced	Provides enhanced picture resolution for widescreen sources, such as selected DVD titles (only available when the TV is in VIDEO mode). Press TV/VIDEO and select from one of the following options:
AUTO	To activate automatically when a 16:9 signal is received.
ON	To activate manually.
Demo	Runs a demonstration of on-screen menus.

 To use this feature with widescreen DVDs, set your DVD player to 16:9 aspect ratio.

 AUTO/ON will appear when TV is in video mode 1-6.
ON/OFF will appear when TV is in VIDEO mode 5-6 and the 480p signal occurs.

Other Information

Overview

This chapter includes the following topics:


<i>Topic</i>	<i>Page</i>
Programming the Remote Control	50
Operating Other Equipment with Your TV Remote Control	53
Troubleshooting	55
Specifications	57
Index	59

Programming the Remote Control

The remote control is preset to operate Sony brand video equipment.

Sony Equipment	Switch Position on Remote Control	Programmable Code Number
Beta, ED Beta VCRs	AV1	303
8 mm VCR	AV2	302
VHS VCR	AV3	301
DVD Player	DVD	751

If you have video equipment other than Sony brand that you want to control with the TV's remote control, use the following procedures to program the remote control.

 The equipment must have infrared (IR) remote capability in order to be used with the remote control.

1 Check the list of the "Manufacturer's Codes" listed on page 52, and find the three-digit code number for the manufacturer's code for your equipment. (If more than one code number is listed, start with the number listed first.)

2 Open the cover of the remote control and move the slide switch to the desired equipment type.

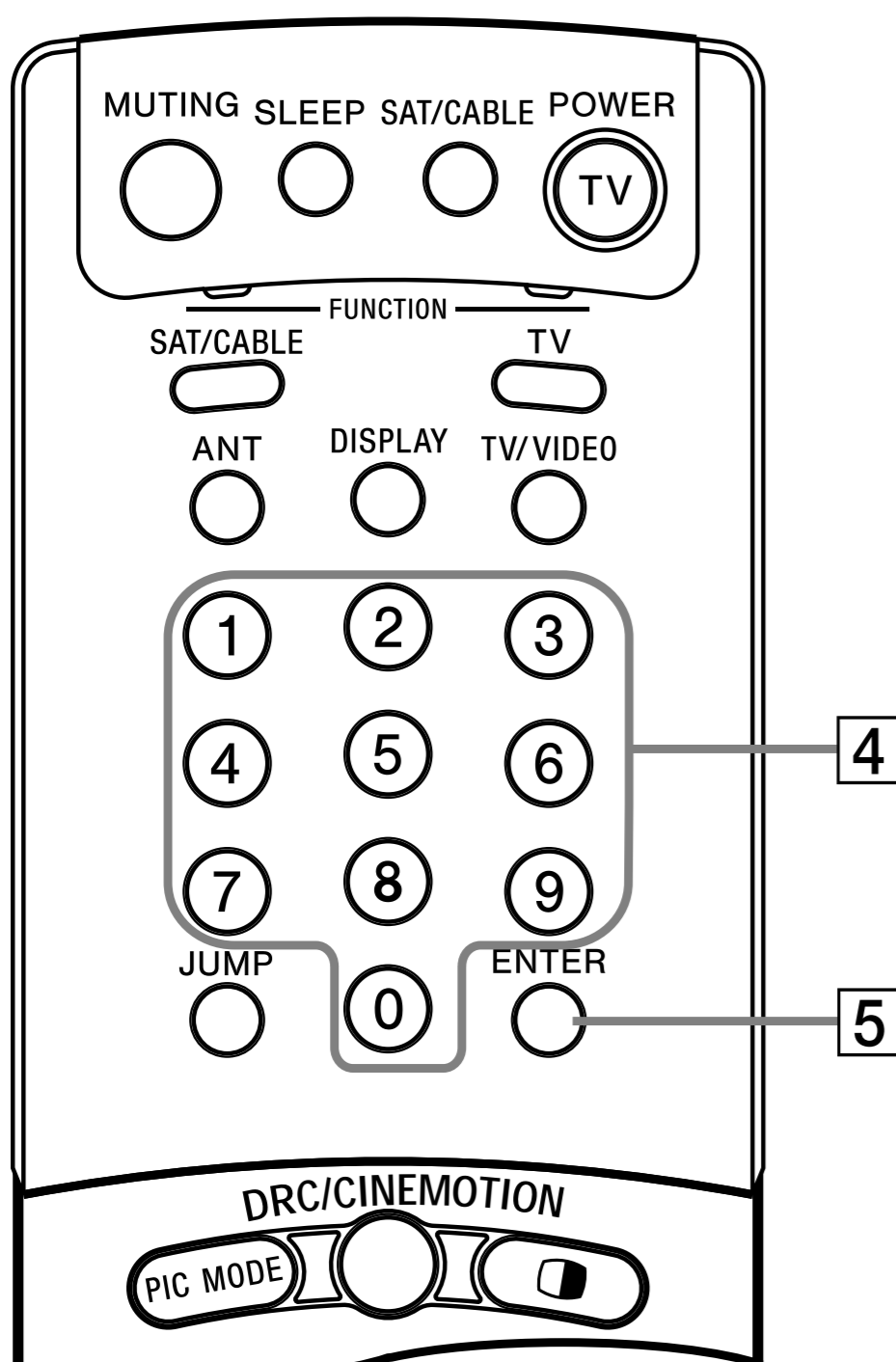
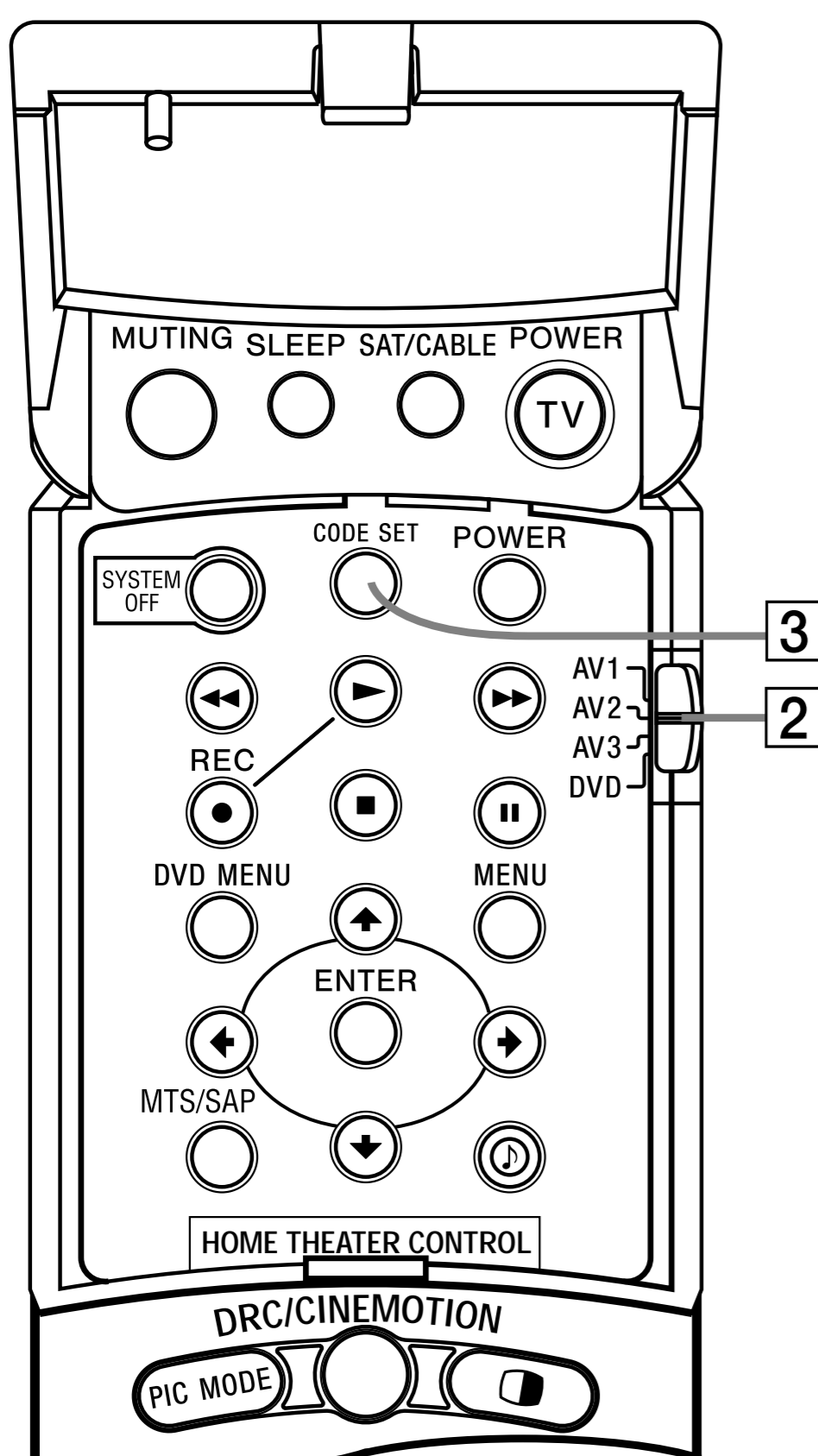
3 Press CODE SET and close the cover of the remote control.

 You must do step 4 within 10 seconds of step 3, or you must redo steps 2 and 3.

4 Enter the three-digit manufacturer's code number.

5 Press ENTER.

6 To check if the code number works, aim the TV's remote control at the equipment and press the green POWER button that corresponds with that equipment. If it responds, you are done. If not, try using another code listed for that manufacturer.



Tips

- ❑ If more than one code number is listed, try entering them one by one until you come to the correct code for your equipment.
- ❑ If you enter a new code number, the code number you previously entered at that setting is erased.
- ❑ In some cases, you may not be able to operate your equipment with the Sony remote control. In such cases, use the equipment's own remote control unit.
- ❑ Whenever you remove the batteries to replace them, the code numbers may revert to the factory setting and must be reset.

Other Information

Manufacturer's Codes

VCRs

<i>Manufacturer</i>	<i>Code</i>
Sony	301
Admiral (M. Ward)	327
Aiwa	338, 344
Audio Dynamic	314, 337
Broksonic	319, 317
Canon	309, 308
Citizen	332
Craig	302, 332
Criterion	315
Curtis Mathes	304, 338, 309
Daewoo	341, 312, 309
DBX	314, 336, 337
Dimensia	304
Emerson	319, 320, 316, 317, 318, 341
Fisher	330, 335
Funai	338
General Electric	329, 304, 309
Go Video	322, 339, 340
Goldstar	332
Hitachi	306, 304, 305, 338
Instant Replay	309, 308
JC Penney	309, 305, 304, 330, 314, 336, 337
JVC	314, 336, 337, 345, 346, 347
Kenwood	314, 336, 332, 337
LXI (Sears)	332, 305, 330, 335, 338
Magnavox	308, 309, 310
Marantz	314, 336, 337
Marta	332
Memorex	309, 335
Minolta	305, 304
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Multitech	325, 338, 321
NEC	314, 336, 337
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Optimus	327

<i>Manufacturer</i>	<i>Code</i>
Orion	317
Panasonic	308, 309, 306, 307
Pentax	305, 304
Philco	308, 309
Philips	308, 309, 310
Pioneer	308
Quasar	308, 309, 306
RCA/ PROSCAN	304, 305, 308, 309, 311, 312, 313, 310, 329
Realistic	309, 330, 328, 335, 324, 338
Sansui	314
Samsung	322, 313, 321
Sanyo	330, 335
Scott	312, 313, 321, 335, 323, 324, 325, 326
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Wards	327, 328, 335, 331, 332
Yamaha	314, 330, 336, 337
Zenith	331

Laserdisc Players

<i>Manufacturer</i>	<i>Code</i>
Sony	701
Panasonic	704, 710
Pioneer	702

DVD Players

<i>Manufacturer</i>	<i>Code</i>
Sony	751
GE	755
Hitachi	758
JVC	756
Magnavox	757
Mitsubishi	761
Oritron	759
Panasonic	753
Philips	757
Pioneer	752
RCA/ PROSCAN	755
Samsung	758
Toshiba	754
Zenith	760

Cable Boxes

<i>Manufacturer</i>	<i>Code</i>
Sony	230
Hamlin/Regal	222, 223, 224, 225, 226
Jerrold/G. I.	201, 202, 203, 204, 205, 206, 207, 208, 218
Oak	227, 228, 229
Panasonic	219, 220, 221
Pioneer	214, 215
Scientific Atlanta	209, 210, 211
Tocom	216, 217
Zenith	212, 213

Satellite Receivers

<i>Manufacturer</i>	<i>Code</i>
Sony	801
Dish Network	810
Echostar	810
General Electric	802
Hitachi	805
Hughes	804
Mitsubishi	809
Panasonic	803
RCA/ PROSCAN	802, 808
Toshiba	806, 807

Operating Other Equipment with Your TV Remote Control

Operating a VCR

Open the cover of the remote control and move the slide switch to the AV input you coded for the VCR.

<i>To Do This ...</i>	<i>Press</i>
Turn on/off	green POWER button
Change channels	CH +/-
Record	▶ and REC simultaneously.
Play	▶
Stop	■
Fast forward	▶▶
Rewind the tape	◀◀
Pause	
Search the picture forward or backward	▶▶ or ◀◀ during playback (release to resume normal playback)

Operating a DVD Player


Open the cover of the remote control and move the slide switch to the AV input you coded for the DVD player.

<i>To Do This ...</i>	<i>Press</i>
Turn on/off	green POWER button
Play	▶
Stop	■
Pause	
Step through different tracks of an audio disc	▶▶ to step forward or ◀◀ to step backward
Step through different chapters of a video disc	CH+ to step forward or CH- to step backward
Display the DVD menu	DVD MENU
Display the menu (Setup)	MENU

Operating a Cable Box






<i>To Do This ...</i>	<i>Press</i>
Turn on/off	SAT/CABLE (green POWER button)
Select cable box	SAT/CABLE (FUNCTION button)
Select a channel	0-9 buttons, ENTER
Change channels	CH +/-
Back to previous channel	JUMP

Operating a Satellite Receiver

<i>To Do This ...</i>	<i>Press</i>
Turn on/off	SAT/CABLE (green POWER button)
Select satellite receiver	SAT/CABLE (FUNCTION button)
Select a channel	0-9 buttons, ENTER
Change channels	CH +/-
Back to previous channel	JUMP
Display channel number	DISPLAY
Display DBS guide	GUIDE
Display DBS menu	MENU
Move highlight (cursor)	Joystick
Select item	 button

Operating an MDP (Laserdisc Player)

Open the cover of the remote control and move the slide switch to the AV input you coded for the MDP.

<i>To Do This ...</i>	<i>Press</i>
Turn on/off	green POWER button
Play	
Stop	
Pause	
Search the picture forward or backward	 or  during playback (release to resume normal playback)
Search a chapter forward or backward	CH +/-

Troubleshooting

<i>Problem</i>	<i>Possible Remedies</i>
No picture (screen not lit), no sound	<ul style="list-style-type: none"> <input type="checkbox"/> If your TV does not turn on, and a red light keeps flashing, your TV may need service. Call your local Sony Service Center. <input type="checkbox"/> Make sure the power cord is plugged in. <input type="checkbox"/> Push the power button on the front of the TV. <input type="checkbox"/> Check to see if the TV/VIDEO setting is correct: when watching TV, set to TV; when watching connected equipment, set to VIDEO 1, 2, 3, 4, 5 or 6, as appropriate. <input type="checkbox"/> Try another channel; it could be station trouble.
Remote control does not operate	<ul style="list-style-type: none"> <input type="checkbox"/> Batteries could be weak. Check the batteries and replace as necessary. <input type="checkbox"/> Press TV (FUNCTION) when operating your TV. <input type="checkbox"/> Make sure the TV's power cord is connected securely to the wall outlet. <input type="checkbox"/> Locate the TV at least 3-4 feet away from fluorescent lights. <input type="checkbox"/> Check the orientation of the batteries.
Dark, poor or no picture (screen lit), good sound	<ul style="list-style-type: none"> <input type="checkbox"/> Adjust the Picture setting in the Video menu (see page 36). <input type="checkbox"/> Adjust the Brightness setting in the Video menu (see page 36). <input type="checkbox"/> Check antenna/cable connections.
Good picture, no sound	<ul style="list-style-type: none"> <input type="checkbox"/> Press MUTING so that "MUTING" disappears from the screen (see page 4). <input type="checkbox"/> Make sure Speaker is set to ON in the Audio menu (see page 38).
Cannot receive upper channels (UHF) when using an antenna	<ul style="list-style-type: none"> <input type="checkbox"/> Change Cable to OFF (see page 40). <input type="checkbox"/> Use Auto Program in the Channel menu to add receivable channels that are not presently in memory (see page 40).
No color	<ul style="list-style-type: none"> <input type="checkbox"/> Adjust the Color settings in the Video menu (see page 36).
Only snow and noise appear on the screen	<ul style="list-style-type: none"> <input type="checkbox"/> Check the antenna/cable connections. <input type="checkbox"/> Try another channel (it could be station trouble). <input type="checkbox"/> Press ANT to change the input mode (see page 40).
Dotted lines or stripes	<ul style="list-style-type: none"> <input type="checkbox"/> Adjust the antenna. <input type="checkbox"/> Move the TV away from noise sources such as cars, neon signs, or hair-dryers.
TV is fixed to one channel	<ul style="list-style-type: none"> <input type="checkbox"/> Use Auto Program in the Channel menu to add receivable channels that are not presently in the TV's memory (see page 40). <input type="checkbox"/> Check your Channel Fix settings (see page 40).
Double images or ghosts	<ul style="list-style-type: none"> <input type="checkbox"/> Use a highly directional outdoor antenna or a cable (if the problem is caused by reflections from nearby mountains or tall buildings).
Cannot operate menu	<ul style="list-style-type: none"> <input type="checkbox"/> If the item you want to choose appears in gray, you cannot select it.
Cannot receive any channels when using cable TV	<ul style="list-style-type: none"> <input type="checkbox"/> Use Auto Program in the Channel menu to add receivable channels that are not presently in the TV's memory (see page 40). <input type="checkbox"/> Check your cable settings. <input type="checkbox"/> Make sure Cable is set to ON in the Channel menu (see page 40).

Other Information

<i>Problem</i>	<i>Possible Remedies</i>
Cannot gain enough volume when using a cable box	<input type="checkbox"/> Increase the volume of the cable box using the cable box's remote control. Then press TV (FUNCTION) and adjust the TV's volume.
Cannot receive channels	<input type="checkbox"/> Use Auto Program in the Channel menu to add receivable TV channels that are not presently in TV memory (see page 40).
Unable to select a channel	<input type="checkbox"/> Use Auto Program in the Channel menu to add receivable TV channels that are not presently in TV memory (see page 40).
Lost password	<input type="checkbox"/> In the password screen (see page 42), enter the following master password: 4357. The master password clears your previous password; it cannot be used to temporarily unblock channels.
Cannot change channels with the remote control	<input type="checkbox"/> Be sure you have not inadvertently switched your TV from channel 3 or 4 setting if you are using another device to change channels. <input type="checkbox"/> If you are using another device to control channels, be sure the "function" button for that device has been pressed.
Cannot cycle through the other video equipment connected to the TV	<input type="checkbox"/> Be sure the Video Label feature has not been set to Skip (see page 48).
There is a black box on the screen	<input type="checkbox"/> You have selected a text option in the Setup menu and no text is available. (See page 47 to reset Setup selections.) To turn this feature off, select OFF in the Caption Vision option. If you were trying to get closed captioning, select CC1 instead of Text 1-4.
There is no twin picture or it is just static	<input type="checkbox"/> Be sure your twin picture is set to a video source/channel that has a program airing. <input type="checkbox"/> You may be tuned to a video input with nothing connected to it. Try cycling through your video inputs using the TV/VIDEO button. <input type="checkbox"/> Twin View is not set to receive a signal from the AUX input. If you have connected a VCR or satellite receiver to the AUX input on the TV, it will not show in the second picture.
I get the same program in the window picture as in the main picture	<input type="checkbox"/> Both may be set to the same channel. Try changing channels in either the main picture or the window picture. <input type="checkbox"/> You may be running all your channels through a cable box. The cable box will only unscramble one signal at a time, so you cannot use the Twin View feature. If possible, run a direct cable to your TV's VHF/UHF input. (This will only work if your cable system provides an unscrambled signal.)
I cannot get anything but TV channels in my second picture	<input type="checkbox"/> Be sure the video label has not been set to skip your video inputs. See the Setup menu on page 48.

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

Specifications

All Models (General)

Picture Tube	FD Trinitron® tube	
Antenna	75 ohm external terminal for VHF/UHF	
Television System	NTSC, American TV Standard	
Channel Coverage		
VHF	2-13	
UHF	14-69	
CATV	1-125	
Power Requirements	120V, 60 Hz	
Number of Inputs/Outputs		
Video (IN)	4	1 Vp-p, 75 ohms unbalanced, sync negative
S Video (IN)	3	Y: 1 Vp-p, 75 ohms unbalanced, sync negative C: 0.286 Vp-p (Burst signal), 75 ohms
Audio (IN)	6	500 mVrms (100% modulation) Impedance: 47 kilohm
Audio (OUT)	1	More than 408 mVrms at the maximum volume setting (Variable) More than 408 mVrms (Fixed) Impedance (output): 2 kilohms
Monitor Out	1	1 Vp-p, 75 ohms unbalanced, sync negative
CONTROL S (IN/OUT)	1	
Component Video Input	2 (Y, P _B , P _R)	Y: 1.0 Vp-p, 75 ohms unbalanced, sync negative; P _B : 0.7 Vp-p, 75 ohms P _R : 0.7 Vp-p, 75 ohms

Other Information

KV-32XBR450

Supplied Accessories	
Remote Control	RM-Y184
AA (R6) Batteries	2 supplied for remote control
Optional Accessories	
AV Cable	VMC-810/820/830 HG
Audio Cable	RKC-515HG
S-LINK Cable	RK-G69HG
Component Video Cable	VMC-10/30 HG
TV Stand	SU-32XBR45 (also SU-32HS2 in Canada)
Visible Screen Size	32 in (812.8 mm) picture measured diagonally
Actual CRT Size	34 in (863.4 mm) picture measured diagonally
Speaker Output	15W x 2
Dimensions (W x H x D)	898.0 x 678.0 x 579.5 mm (35 3/8 x 26 3/4 x 27 7/8 in)
Mass	84 kg (185 lbs)
Power Consumption	
In Use	245 W
In Standby	2 W

KV-36XBR450

Supplied Accessories	
Remote Control	RM-Y184
AA (R6) Batteries	2 supplied for remote control
Optional Accessories	
AV Cable	VMC-810/820/830 HG
Audio Cable	RKC-515HG
Component Video Cable	VMC-10/30 HG
TV Stand	SU-36XBR45 (also SU-36HS2 in Canada)
Visible Screen Size	36 in (914 mm) picture measured diagonally
Actual CRT Size	38 in (965.2 mm) picture measured diagonally
Speaker Output	15W x 2
Dimensions (W x H x D)	994 x 754.5 x 622 mm (39 1/4 x 29 3/4 x 24 1/2 in)
Mass	108 kg (238 lbs)
Power Consumption	
In Use	245 W
In Standby	2 W

Design and specifications are subject to change without notice.

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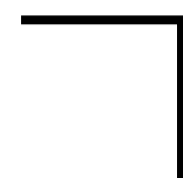
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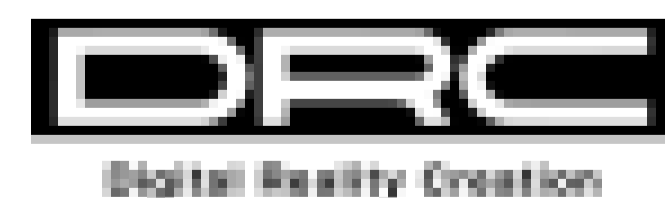
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WEGATM

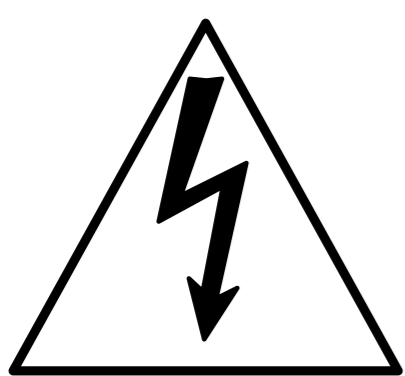
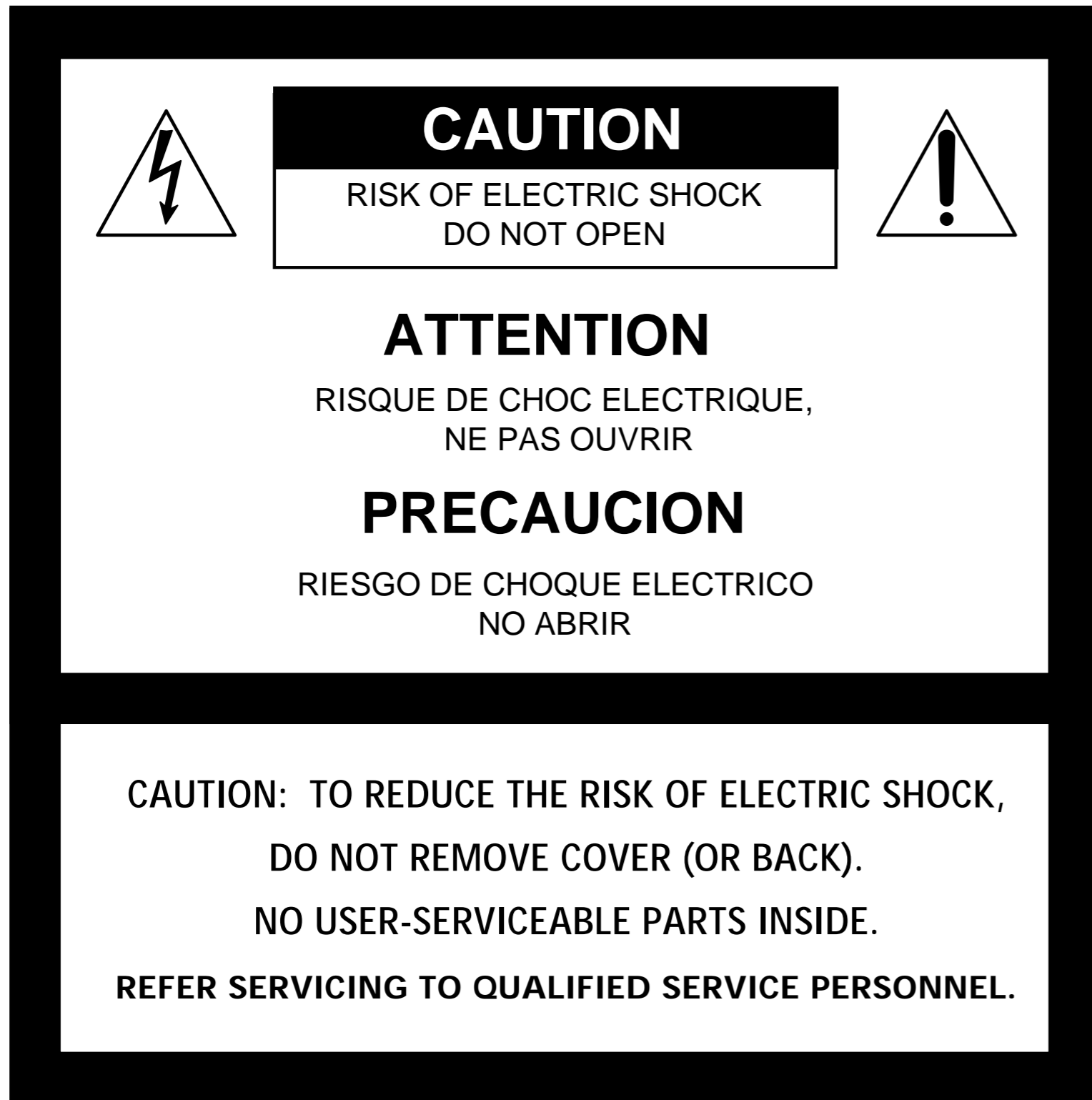


Operating Instructions

KV-32HS20 KV-36HS20 KV-36HS20H

WARNING

To reduce the risk of fire or shock hazard, do not expose the TV to rain or moisture.



This symbol is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

CAUTION

TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

CAUTION

When using TV games, computers, and similar products with your TV, keep the brightness and contrast functions at low settings. If a fixed (non-moving) pattern is left on the screen for long periods of time at a high brightness or contrast setting, the image can be permanently imprinted onto the screen. Continuously watching the same program can cause the imprint of station logos onto the TV screen. These types of imprints are not covered by your warranty because they are the result of misuse.

Note on Caption Vision

This television receiver provides display of television closed captioning in accordance with §15.119 of the FCC rules.

Note on Cleaning the TV

Clean the TV with a soft dry cloth. Never use strong solvents such as thinner or benzine, which might damage the finish of the cabinet.

Note to CATV System Installer

This reminder is provided to call the CATV system installer’s attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

Use of this television receiver for other than private viewing of programs broadcast on UHF or VHF or transmitted by cable companies for the use of the general public may require authorization from the broadcaster/cable company and/or program owner.

NOTIFICATION

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference with radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

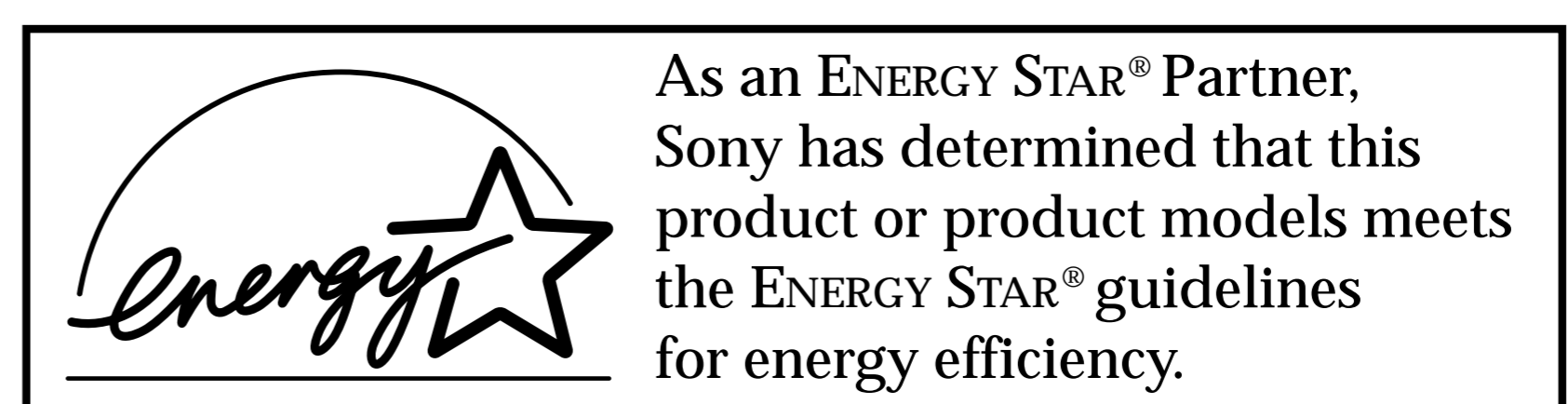
- Reorient or relocate the receiving antennas.
 - Increase the separation between the equipment and receiver.
 - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
 - Consult the dealer or an experienced radio/TV technician for help.
- You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

Safety

- Operate the TV only on 120 V AC.
- The plug is designed, for safety purposes, to fit into the wall outlet only one way. If you are unable to insert the plug fully into the outlet, contact your dealer.
- If any liquid or solid object should fall inside the cabinet, unplug the TV immediately and have it checked by qualified service personnel before operating it further.

Installing

- To prevent internal heat buildup, do not block the ventilation openings.
- Do not install the TV in a hot or humid place, or in a place subject to excessive dust or mechanical vibration.
- The AC power cord is attached to the rear of the TV with hooks. Do not attempt to remove the cord from these hooks. Doing so could cause damage to the TV.



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●® SRS Sound Retrieval System

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Owner’s Record

The model and serial numbers are provided on the front of this instruction manual and at the rear of the TV. Refer to them whenever you call upon your Sony dealer regarding this product.

Important Safeguards

For your protection, please read these instructions completely, and keep this manual for future reference.

Carefully observe and comply with all warnings, cautions and instructions placed on the set or described in the operating instructions or service manual.

WARNING

To guard against injury, the following basic safety precautions should be observed in the installation, use and servicing of the set.

Use

Power Sources

This set should be operated only from the type of power source indicated on the serial/model plate. If you are not sure of the type of electrical power supplied to your home, consult your dealer or local power company. For those sets designed to operate from battery power, refer to the operating instructions.

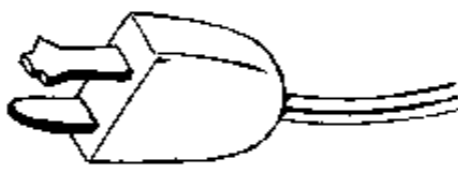


Grounding or Polarization

This set is equipped with a polarized AC power cord plug (a plug having one blade wider than the other), or with a three-wire grounding type plug (a plug having a third pin for grounding). Follow the instructions below:

For the set with a polarized AC power cord plug

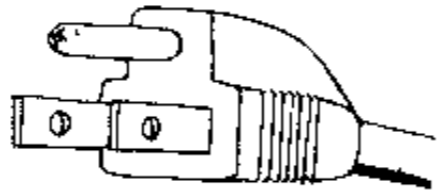
This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug still fails to fit, contact your electrician to have a suitable outlet installed. Do not defeat the safety purpose of the polarized plug by forcing it in.



Alternate Warning

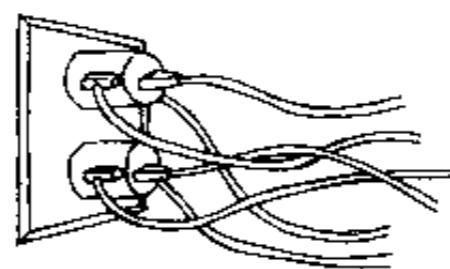
For the set with a three-wire grounding type AC plug

This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to have a suitable outlet installed. Do not defeat the safety purpose of the grounding plug.

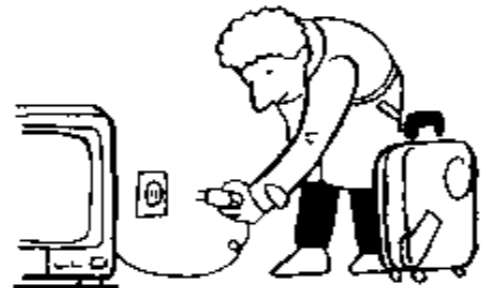


Overloading

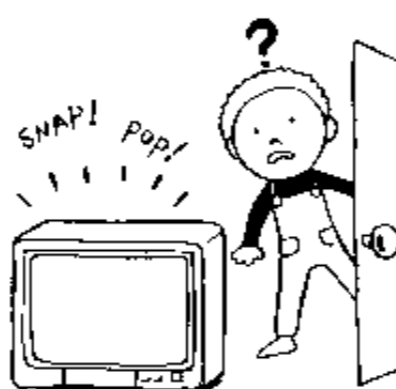
Do not overload wall outlets, extension cords or convenience receptacles beyond their capacity, since this can result in fire or electric shock.



Always turn the set off when it is not being used. When the set is left unattended and unused for long periods of time, unplug it from the wall outlet as a precaution against the possibility of an internal malfunction that could create a fire hazard.

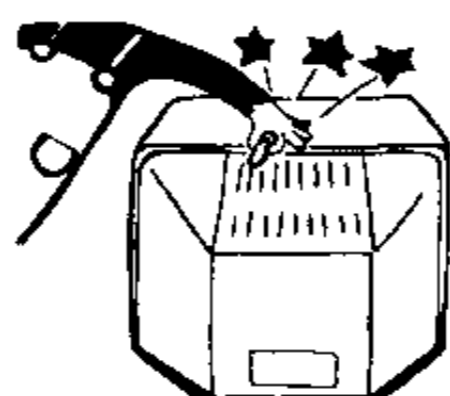


If a snapping or popping sound from a TV set is continuous or frequent while the TV is operating, unplug the TV and consult your dealer or service technician. It is normal for some TV sets to make occasional snapping or popping sounds, particularly when being turned on or off.



Object and Liquid Entry

Never push objects of any kind into the set through the cabinet slots as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the set.



Cleaning

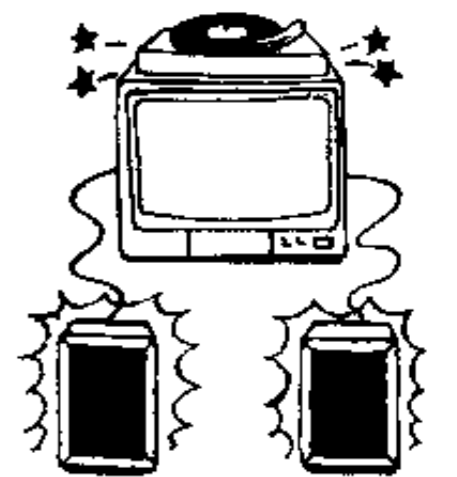
Unplug the set from the wall outlet before cleaning or polishing it. Do not use liquid cleaners or aerosol cleaners. Use a cloth lightly dampened with water for cleaning the exterior of the set.



Installation

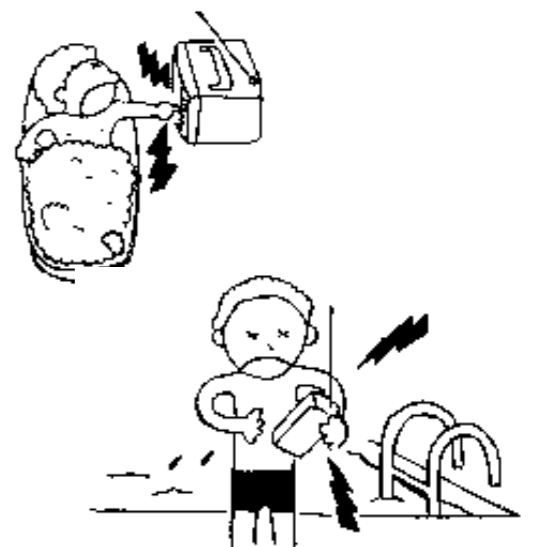
Attachments

Do not use attachments not recommended by the manufacturer, as they may cause hazards.



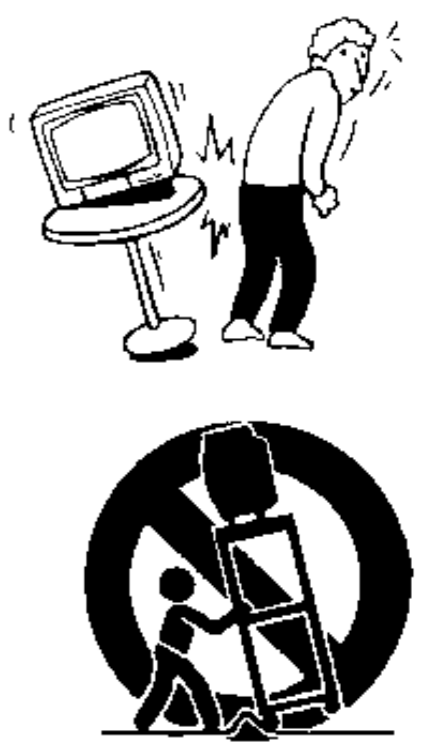
Water and Moisture

Do not use power-line operated sets near water — for example, near a bathtub, washbowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, etc.



Accessories

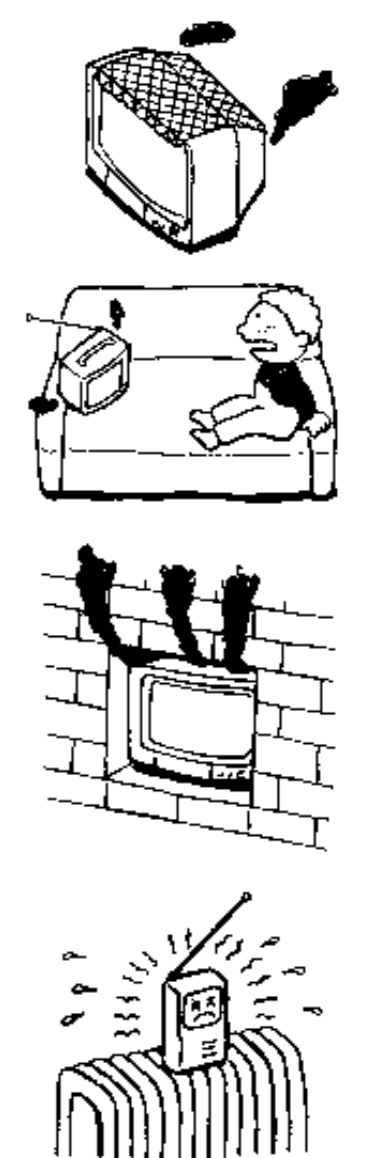
Do not place the set on an unstable cart, stand, table or shelf. The set may fall, causing serious injury to a child or an adult and serious damage to the set. Use only a cart or stand recommended by Sony for the specific model of TV. No part of the TV set should overhang any edge of the TV cart or stand; any overhanging edge is a safety hazard. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.



Ventilation

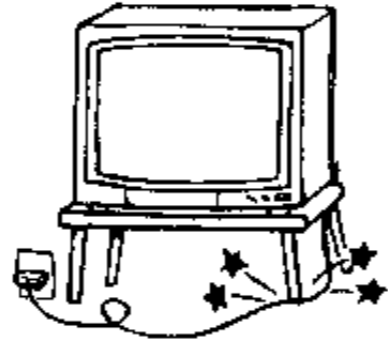
The slots and openings in the cabinet and in the back or bottom are provided for necessary ventilation. To ensure reliable operation of the set, and to protect it from overheating, these slots and openings must never be blocked or covered.

- ❑ Never cover the slots and openings with a cloth or other materials.
- ❑ Never block the slots and openings by placing the set on a bed, sofa, rug or other similar surface.
- ❑ Never place the set in a confined space, such as a bookcase or built-in cabinet, unless proper ventilation is provided.
- ❑ Do not place the set near or over a radiator or heat register, or where it is exposed to direct sunlight.



Power-Cord Protection

Do not allow anything to rest on or roll over the power cord, and do not place the set where the power cord is subject to wear or abuse.



Antennas

Outdoor Antenna Grounding

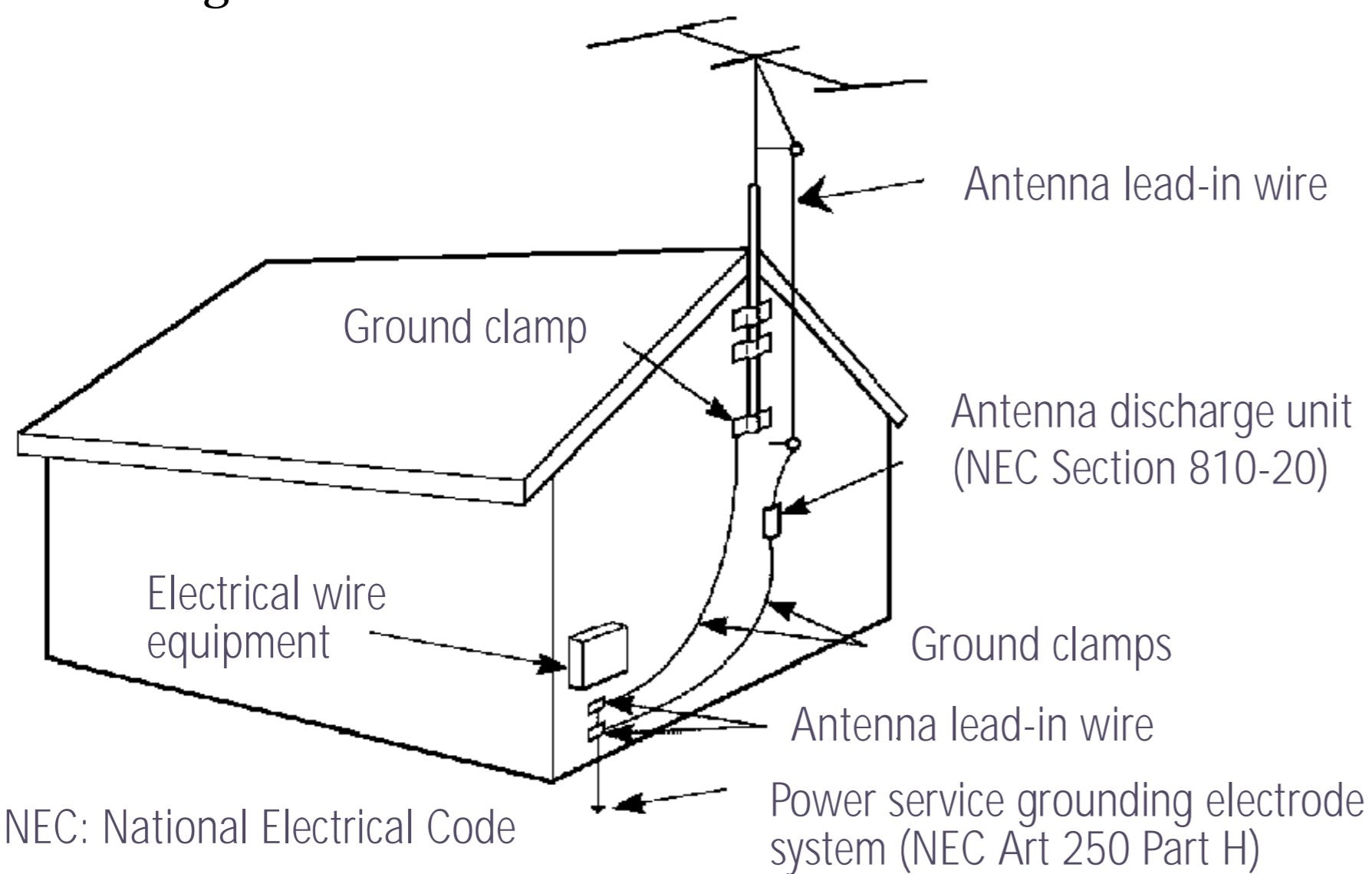
If an outdoor antenna is installed, follow the precautions below. An outdoor antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can come in contact with such power lines or circuits.

WHEN INSTALLING AN OUTDOOR ANTENNA SYSTEM, EXTREME CARE SHOULD BE TAKEN TO KEEP FROM CONTACTING SUCH POWER LINES OR CIRCUITS AS CONTACT WITH THEM IS ALMOST INVARIABLY FATAL.

Be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code (NEC) in USA and Section 54 of the Canadian Electrical Code in Canada provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

Antenna Grounding According to the NEC

Refer to section 54-300 of Canadian Electrical Code for Antenna Grounding.



Lightning

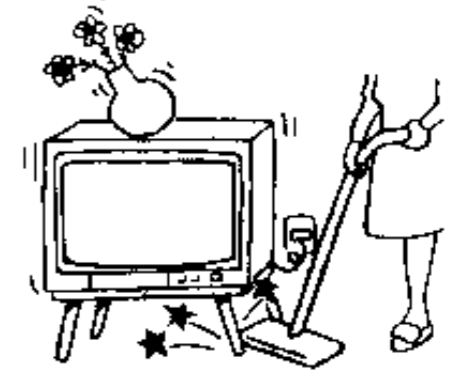
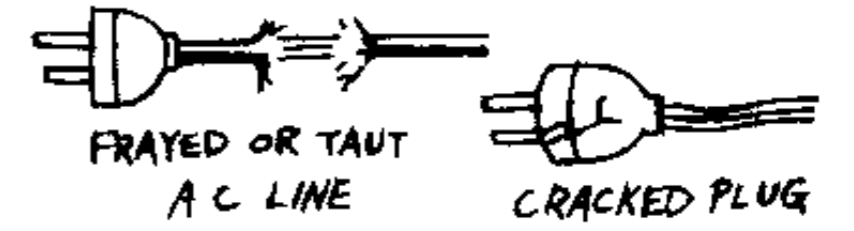
For added protection for this television receiver during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna. This will prevent damage to the receiver due to lightning and power-line surges.

Service

Damage Requiring Service

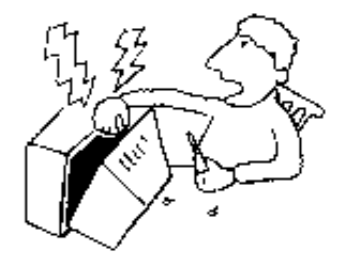
Unplug the set from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- When the power cord or plug is damaged or frayed.
- If liquid has been spilled into the set.
- If the set has been exposed to rain or water.
- If the set has been subject to excessive shock by being dropped, or the cabinet has been damaged.
- If the set does not operate normally when following the operating instructions. Adjust only those controls that are specified in the operating instructions. Improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the set to normal operation.
- When the set exhibits a distinct change in performance, it indicates a need for service.



Servicing

Do not attempt to service the set yourself since opening the cabinet may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.



Replacement Parts

When replacement parts are required, be sure the service technician certifies in writing that he has used replacement parts specified by the manufacturer that have the same characteristics as the original parts.

Unauthorized substitutions may result in fire, electric shock or other hazards.

Safety Check

Upon completion of any service or repairs to the set, ask the service technician to perform routine safety checks (as specified by the manufacturer) to determine that the set is in safe operating condition, and to so certify. When the set reaches the end of its useful life, improper disposal could result in a picture tube implosion. Ask a qualified service technician to dispose of the set.



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Introducing the FD Trinitron Wega

Overview

This chapter defines the contents of your Wega TV and provides an overview of how to set up and use basic features.

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Presenting the FD Trinitron Wega

The FD Trinitron Wega (pronounced VAY-GAH) is characterized by outstanding contrast, uncompromising accuracy, and corner-to-corner detail.

You'll recognize the superiority of Wega technology almost immediately. The first thing you'll notice is minimal glare from the flat picture tube. This flat-screen technology improves picture detail without distortion, unlike conventional curved screens. The FD Trinitron delivers outstanding image detail not only at the screen center, but also at the corners — so you can enjoy a bright, clear picture from any location in a room.

Features

Some of the features that you will enjoy with your new TV include:

- ❑ **DRC Mode (Digital Reality Creation):** Unlike conventional line doublers, the DRC feature doubles vertical and horizontal lines, resulting in four times the density for quality sources such as DVD player, Satellite and Digital camcorder.
- ❑ **Twin View™:** Using Multi-Image Driver (MIDX), Twin View allows you to watch two programs side by side, with the ability to zoom in one picture. You can watch pictures from two different sources simultaneously.
- ❑ **16:9 Enhancement:** Vertical Compression technology that maximizes picture resolution on “anamorphic” or “enhanced for widescreen” sources, including selected DVDs.
- ❑ **Velocity Modulation:** Vertical line enhancement that sharpens picture definition.
- ❑ **Steady Sound:** Equalizes volume levels so there is consistent output between programs and commercials.
- ❑ **Parental Control:** V-Chip technology allows parents to block unsuitable programming for younger viewers.
- ❑ **Component Video Inputs:** Offers the best video quality for DVD (480p, 480i), and Digital Set-top box (HD1080i) connections.
- ❑ **S VIDEO Inputs:** Provides a high-quality video signal from connected equipment.
- ❑ **Favorite Channel Preview:** Preview up to eight favorite channels without leaving the current channel.

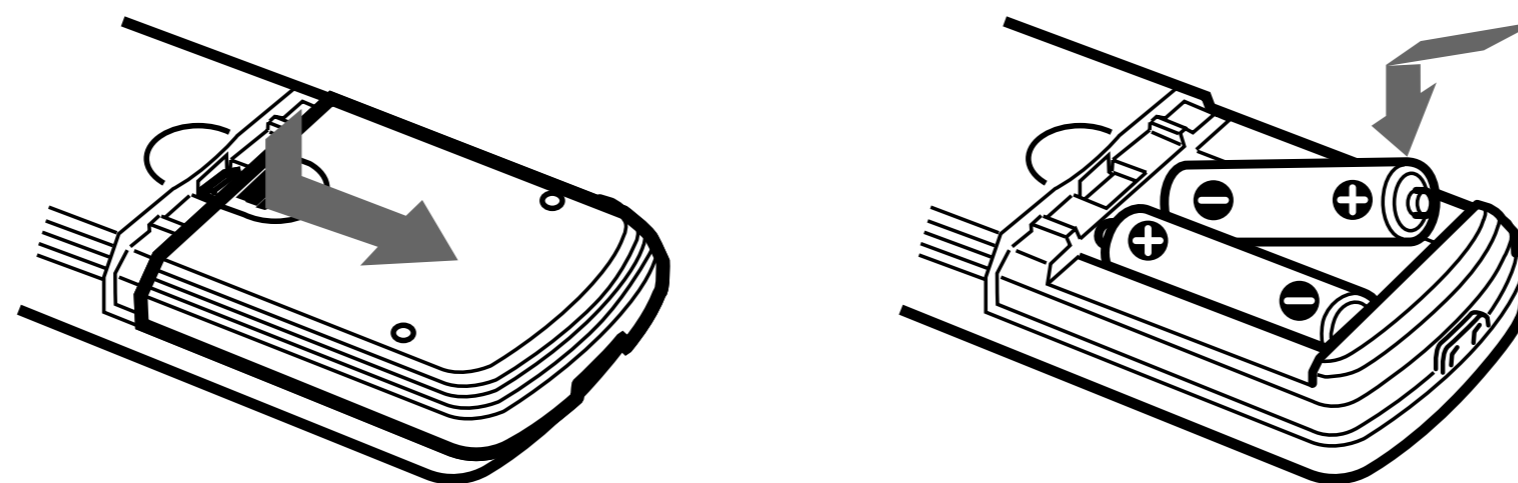
Package Contents

Your box contains your new Trinitron TV, a remote control and two AA batteries. No peripheral cables are included. If you intend to add additional equipment to your TV, please check the hookup instructions for your desired setup before you begin. You may need to purchase cables and/or splitters to complete the hookup properly.

Using the Remote Control

Inserting Batteries

Insert two size AA (R6) batteries (supplied) by matching the + and – on the batteries to the diagram inside the battery compartment.

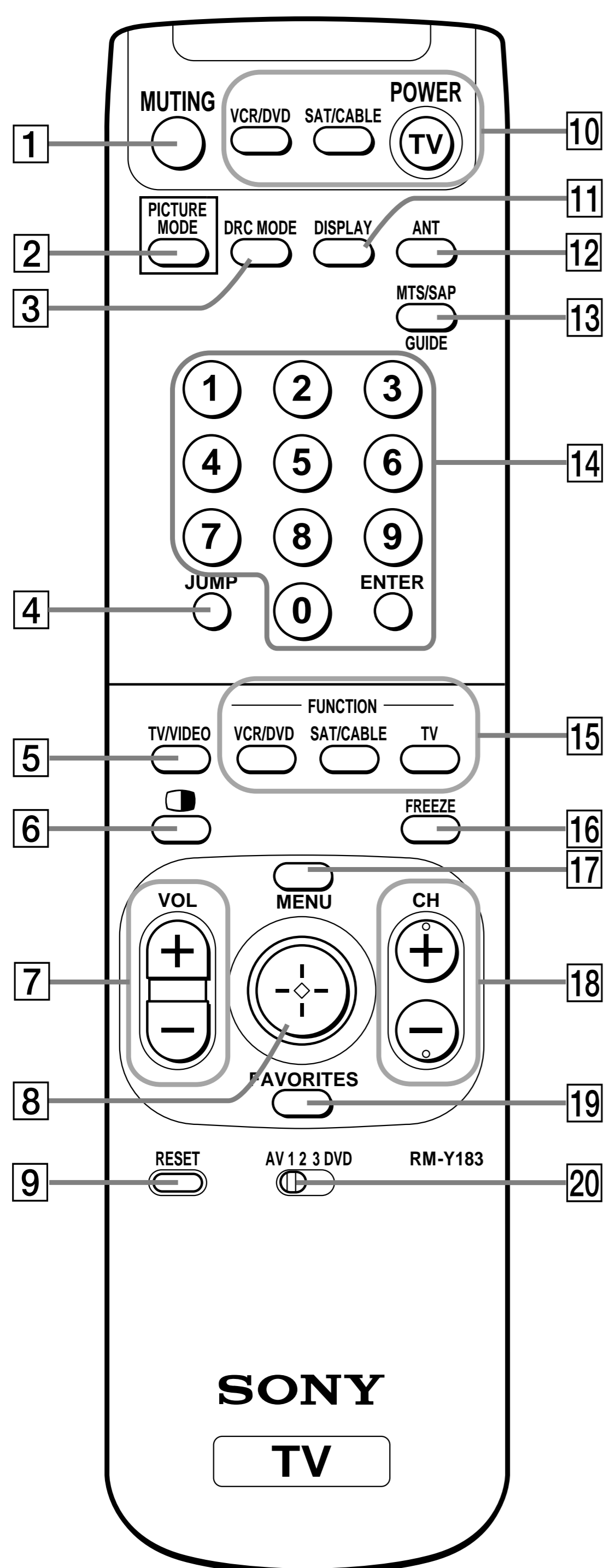



- Remove the batteries to avoid damage from possible battery leakage whenever you anticipate that the remote control will not be used for an extended period. Handle the remote control with care. Avoid dropping it, getting it wet, or placing it in direct sunlight, near a heater, or where the humidity is high.

The following table describes the buttons on the remote control that are for more advanced functions.

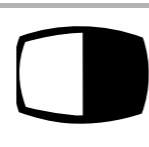
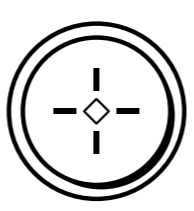
 Main Power button must be turned ON to activate the Remote Control.

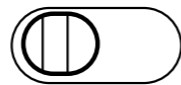
Button Descriptions

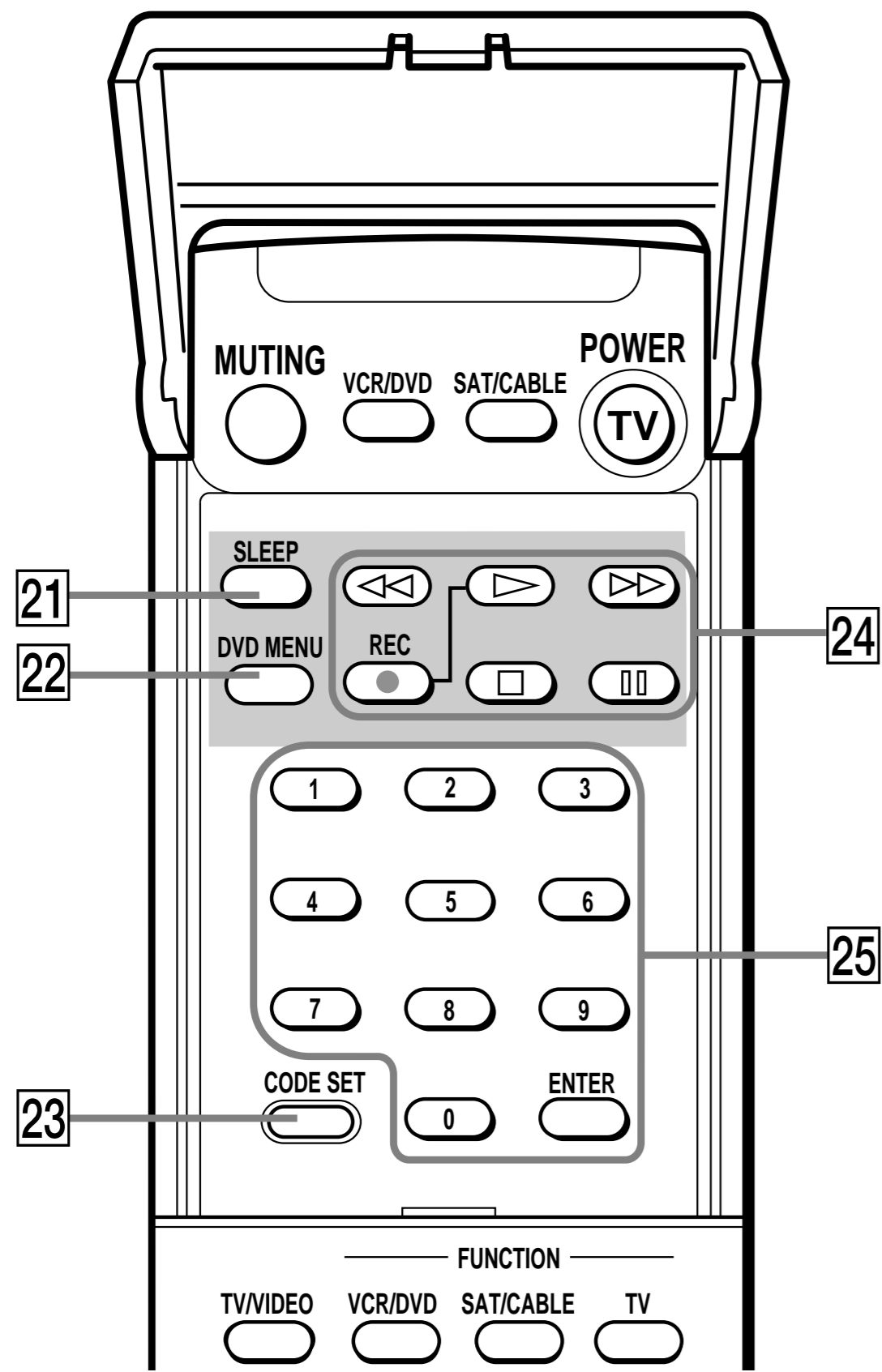


 To scan rapidly through the channels, press and hold down the CH+ or CH- button.

Outside Panel

Button	Description
1 MUTING	Press to mute the sound. Press again or press VOL + to restore the sound.
2 PICTURE MODE	Press repeatedly to step through the available video picture modes: Vivid, Standard, Movie, Pro. Also available in the Video menu. For details, see “Selecting Video Options” on page 36.
3 DRC MODE	For high quality sources (i.e., DVD player, Satellite Receiver), this button cycles through the available high-resolution picture modes: Interlaced, Progressive. Also available in the Video menu. For details, see “Selecting Video Options” on page 36.
4 JUMP	Press to jump back and forth between two channels. The TV alternates between the current channel and the last channel that was selected.
5 TV/VIDEO	Cycles through the video equipment connected to you TV’s video inputs: TV, VIDEO 1, VIDEO 2, VIDEO 3, VIDEO 4, VIDEO 5, VIDEO 6.
6 	Turns on/off Twin View. For details, see “Using Twin View” on page 31.
7 VOL +/-	Adjusts the volume.
8 	Joystick allows for movement of the on-screen cursor. Pressing down on the center of the joystick selects the item.
9 RESET	Press when in a menu to reset the settings to the factory defaults.
10 POWER buttons (GREEN)	Turn on and off the TV and other audio/video equipment you have programmed into the remote control. For instructions, see “Programming the Remote Control” on page 50.
11 DISPLAY	Press once to display the current time and channel label (if set) and channel number. Press again to turn Display off. See page 46 for details on setting the time.
12 ANT	Changes between the VHF/UHF input to the AUX input.

<i>Button</i>	<i>Description</i>
13 MTS/SAP	Press the TV FUNCTION button first, then press MTS/SAP to cycle through the Multi-channel TV Sound (MTS) options: Stereo, Auto-SAP (Second Audio Program), and Mono. For details, see “Using the Audio Menu” on page 38.
GUIDE	Press the SAT/CABLE FUNCTION button first, then press GUIDE to display the program guide of your satellite antenna.
14 0 – 9 and ENTER	Press 0 - 9 to select a channel, the channel changes after 2 seconds. Press ENTER to select immediately.
15 FUNCTION buttons (WHITE)	Select the equipment (TV, VCR/DVD, SAT/CABLE) that you want to operate. The indicator lights up momentarily when pushed to show which device the remote control is operating.
16 FREEZE	Freezes the window picture. Press again to restore the picture.
17 MENU	Press to display the TV on-screen menu. Press again to exit from the menus.
18 CH +/-	Scan through channels.
19 FAVORITES	Displays the Favorite Channels list. For details, see “Using Favorite Channels” on page 30.
20 AV 1 2 3 DVD 	Use to switch control for connected video equipment. You can program one video source for each switch position (For details, see “Programming the Remote Control” on page 50).



Inside Panel

- 21 SLEEP Press repeatedly until the TV displays the time in minutes (15, 30, 45, 60, or 90) that you want the TV to remain on before shutting off automatically. Cancel by pressing until SLEEP OFF appears. While Sleep feature is set, press once to view remaining time
- 22 DVD MENU Displays the DVD menu.
- 23 CODE SET Used for programming the remote control to operate non-Sony video equipment. For details, see “Programming the Remote Control” on page 50.
- 24 VCR/DVD CONTROLS
 - Rewind
 - REC Record
 - Play
 - Fast-forward
 - Pause
 - Stop
- 25 0 – 9 and ENTER Press 0 – 9 to select a VCR channel, the channel changes after 2 seconds. Press ENTER to select immediately.

Installing the TV

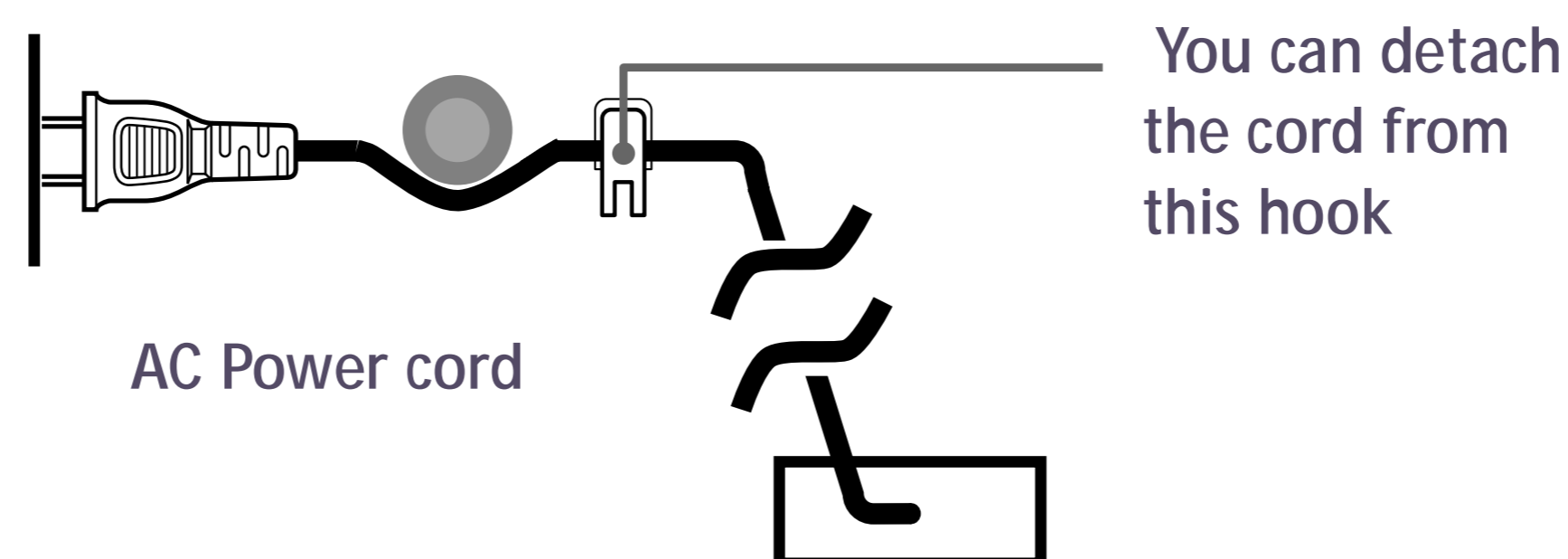
Overview

This chapter includes illustrated instructions for setting up your TV.

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Note About the AC Power Cord

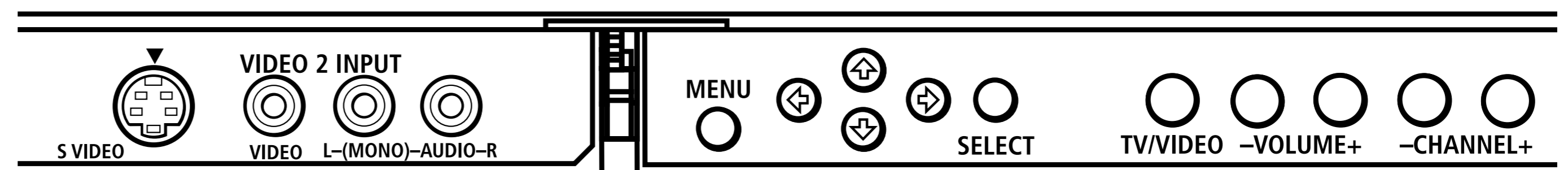
The AC power cord is attached to the rear of the TV with a hook. Use caution when removing the AC plug from its holder. Gently slide the plug in the upward direction to remove from hook. Once removed, the AC power plug should automatically disengage from its stored location.



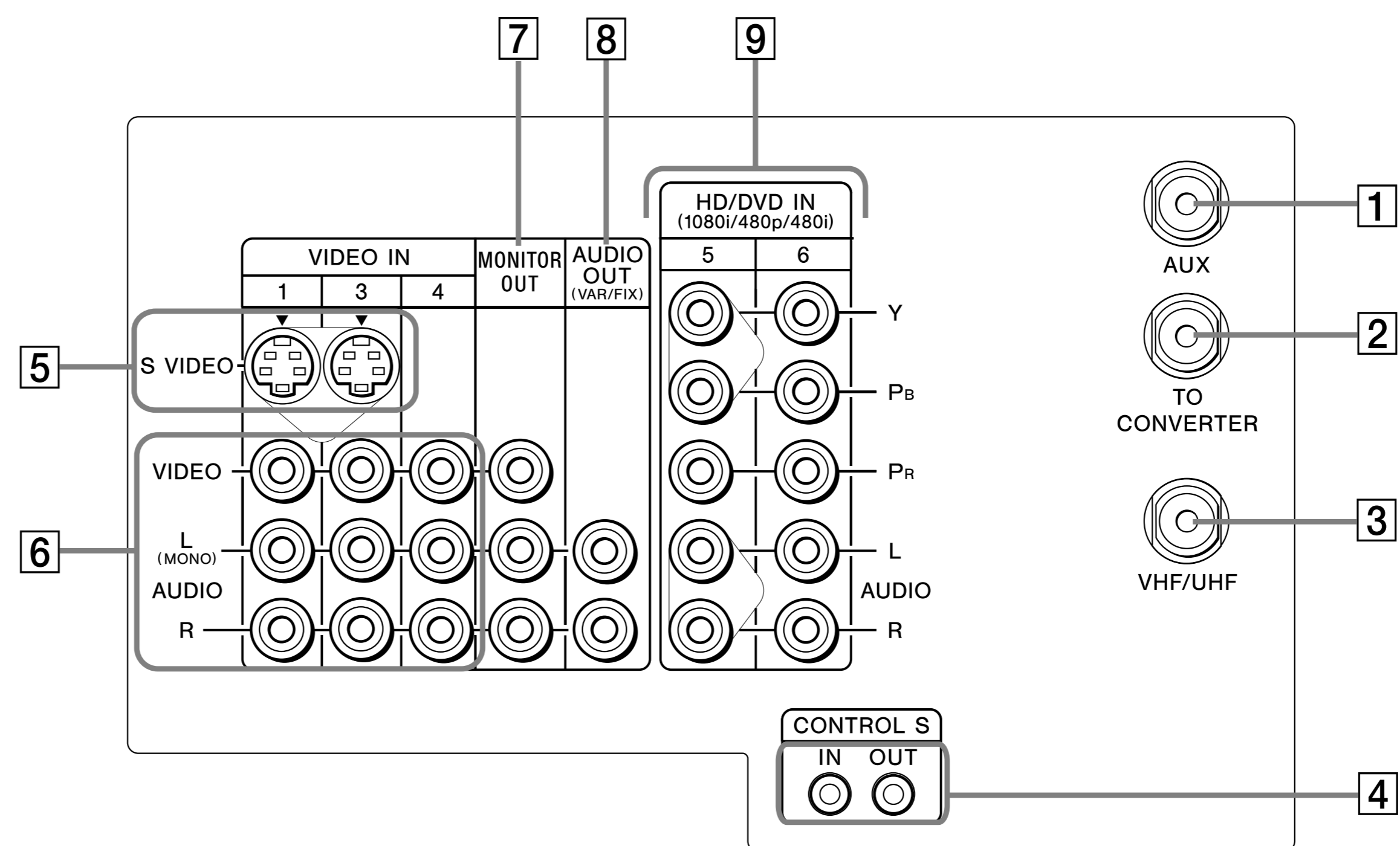
TV Controls and Connectors

Front Panel Menu Controls

The front panel menu controls allow access to the on-screen menus without the use of a remote control. Pressing the MENU button brings up the on-screen menus. The arrow buttons move the on-screen cursor in the menus and the SELECT button selects the menu item.



TV Rear Panel



Connection	Description
1 AUX	Allows you to view local and cable channels if your cable provider does not feature local channels. You can switch between local and cable channels by pressing ANT on the remote control. Devices connected to the AUX input can be viewed only in the Twin View left picture.
2 TO CONVERTER	This is a VHF/UHF OUT jack that lets you set up your TV to switch between scrambled channels (through a cable box) and normal cable channels (CATV). Use this jack instead of a splitter to get better picture quality when switching between scrambled and unscrambled cable channels.

<i>Connection</i>	<i>Description</i>
3 VHF/UHF	Connects to your VHF/UHF antenna or cable.
4 CONTROL S IN/OUT	Allows the TV to receive (IN) and send (OUT) remote control signals to other Sony infrared-controlled audio or video equipment.
5 S VIDEO	Connects to the S VIDEO OUT jack of your VCR or other S VIDEO-equipped video equipment. Provides better picture quality than the VHF/UHF jacks or the Video IN jack.
6 VIDEO/AUDIO(L/R)	Connect to the audio and video OUT jacks on your VCR or other video equipment. A video input (VIDEO 2) is located on the front panel of the TV. The Audio and Video IN jacks provide better picture quality than the VHF/UHF IN jack.
7 MONITOR OUT	Lets you record the program you are watching to a VCR. When two VCRs are connected, you can use your TV as a monitor for tape-to-tape editing (not available with 480p or 1080i when the input is to VIDEO 5 or 6).
8 AUDIO OUT (VAR/FIX) L (MONO)/R	Connect to the left and right audio inputs of your audio or video equipment.
9 HD/DVD IN (1080i/480p/480i)	Connect to your DVD player's or Digital Set-top box's component video (Y, PB, PR) and audio (L/R) jacks.

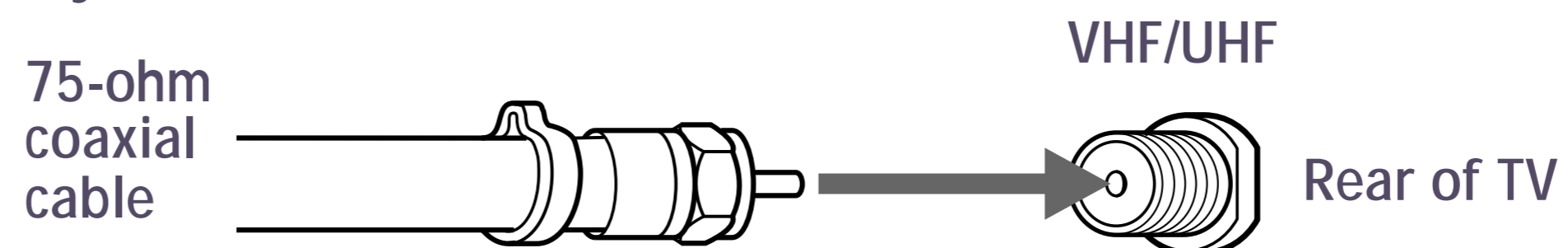
Basic Connection (Connecting Cable TV or Antenna)

Connecting Directly to Cable or to an Antenna

The connection you choose depends on the cable found in your home.

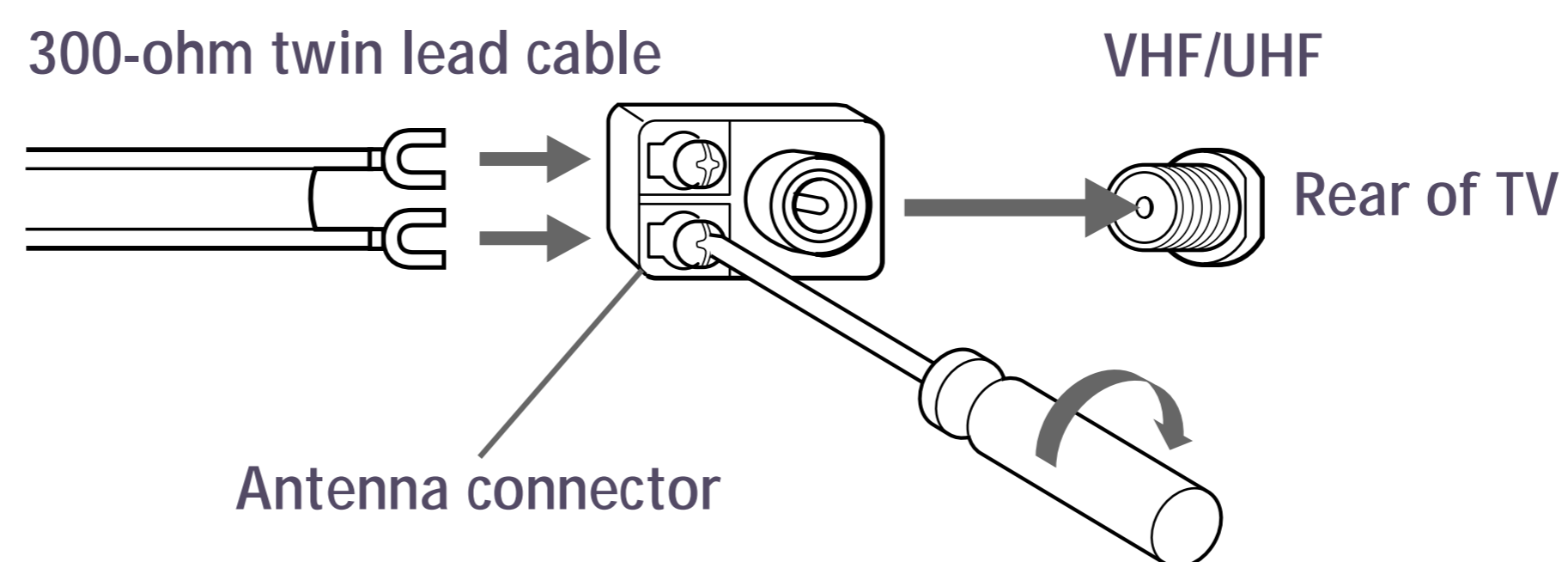
Newer homes are usually equipped with standard coaxial cable:

VHF Only or VHF/UHF or Cable



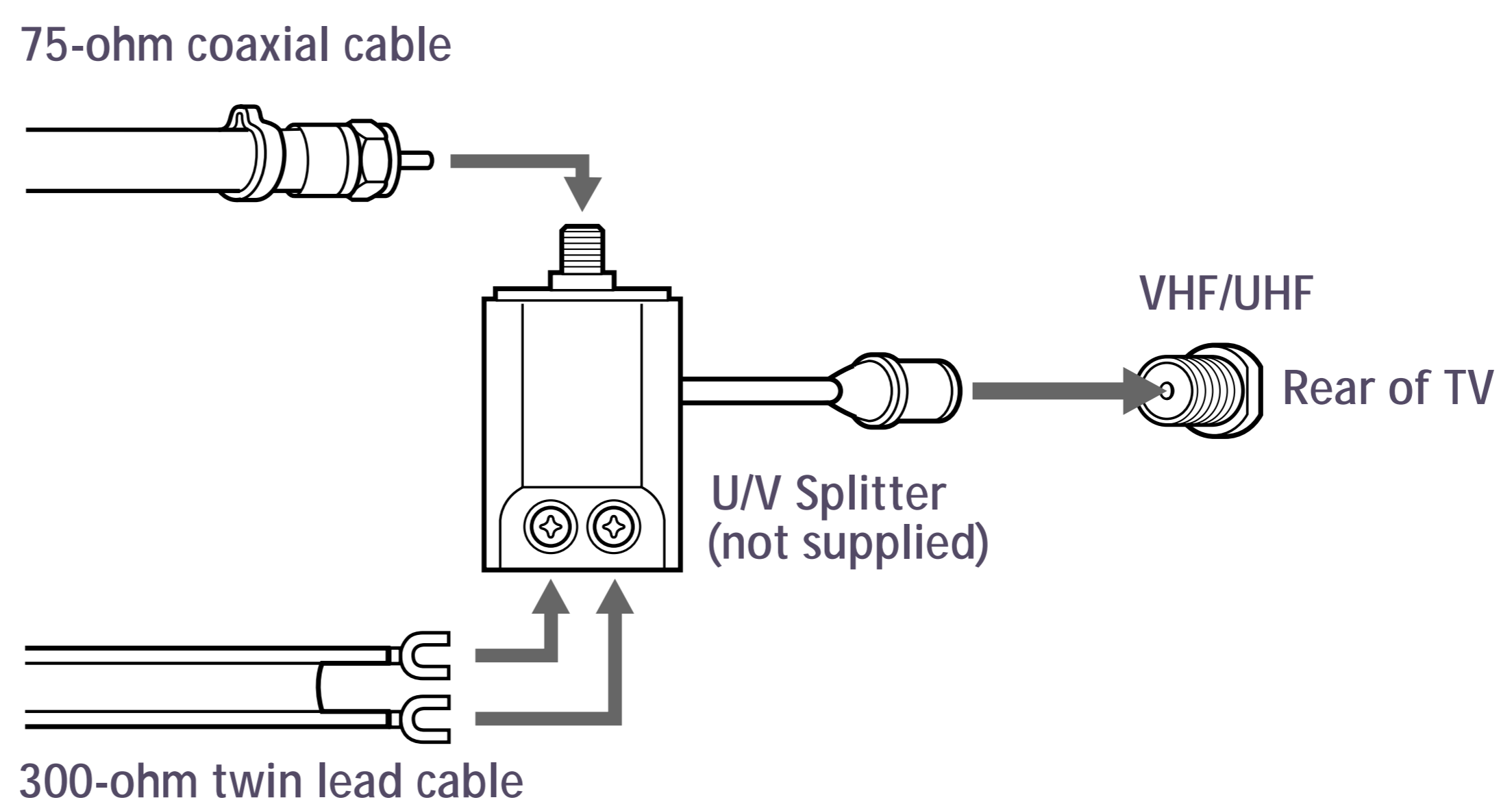
Older homes may have 300-ohm twin lead cable:

VHF Only or UHF Only or VHF/UHF



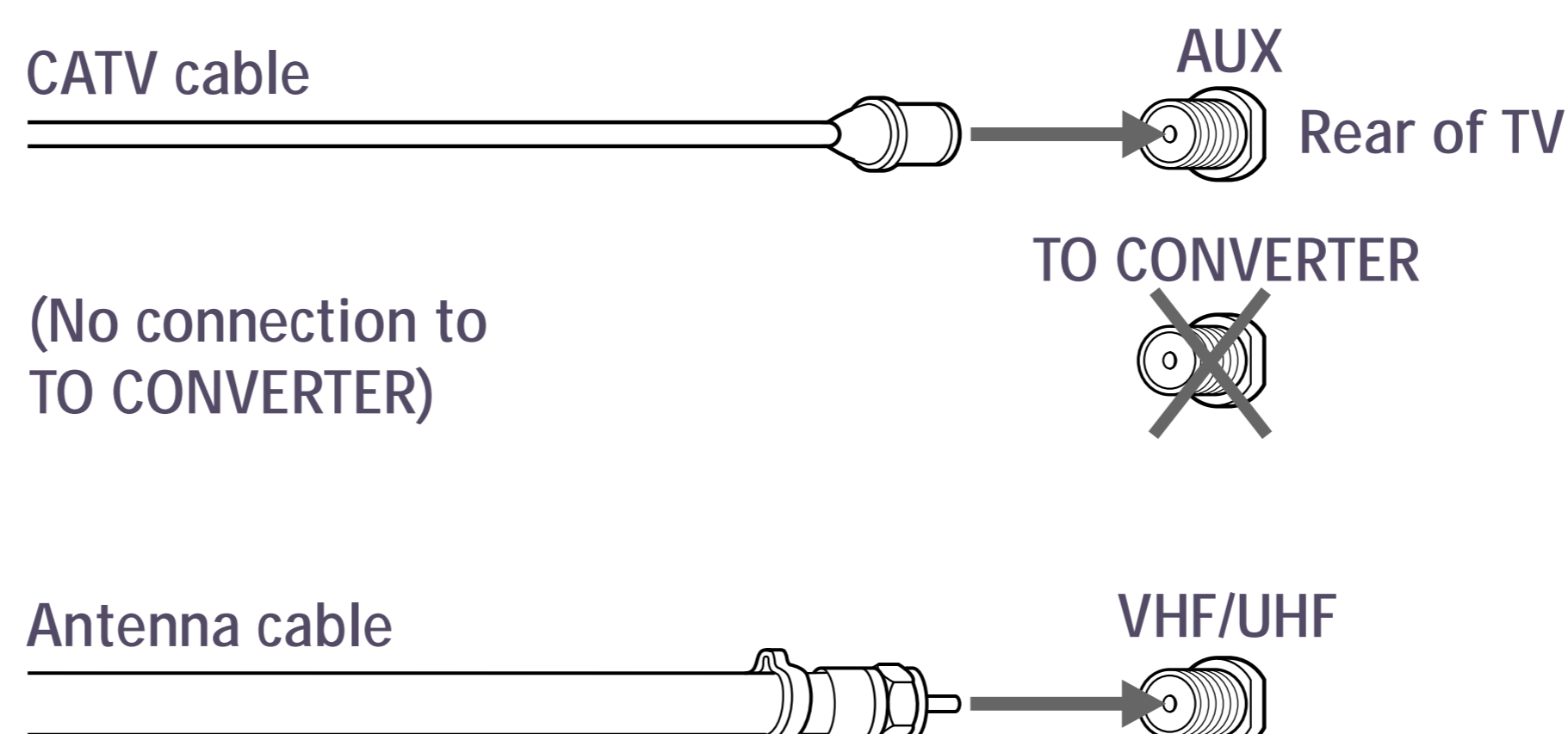
Some homes may have both:

VHF and UHF



Cable and Antenna

If your cable provider does not feature local channels, you may find this set-up convenient.



Select CABLE or antenna (ANT) mode by pressing ANT on the remote control.

To receive channels using an antenna, instead of the CATV cable:

- 1 Select antenna mode by pressing ANT on the remote control.
- 2 Turn the cable to OFF (see page 40).
- 3 Perform the Auto Program function (see page 40).

Cable Box Connections

Cable Box and Cable

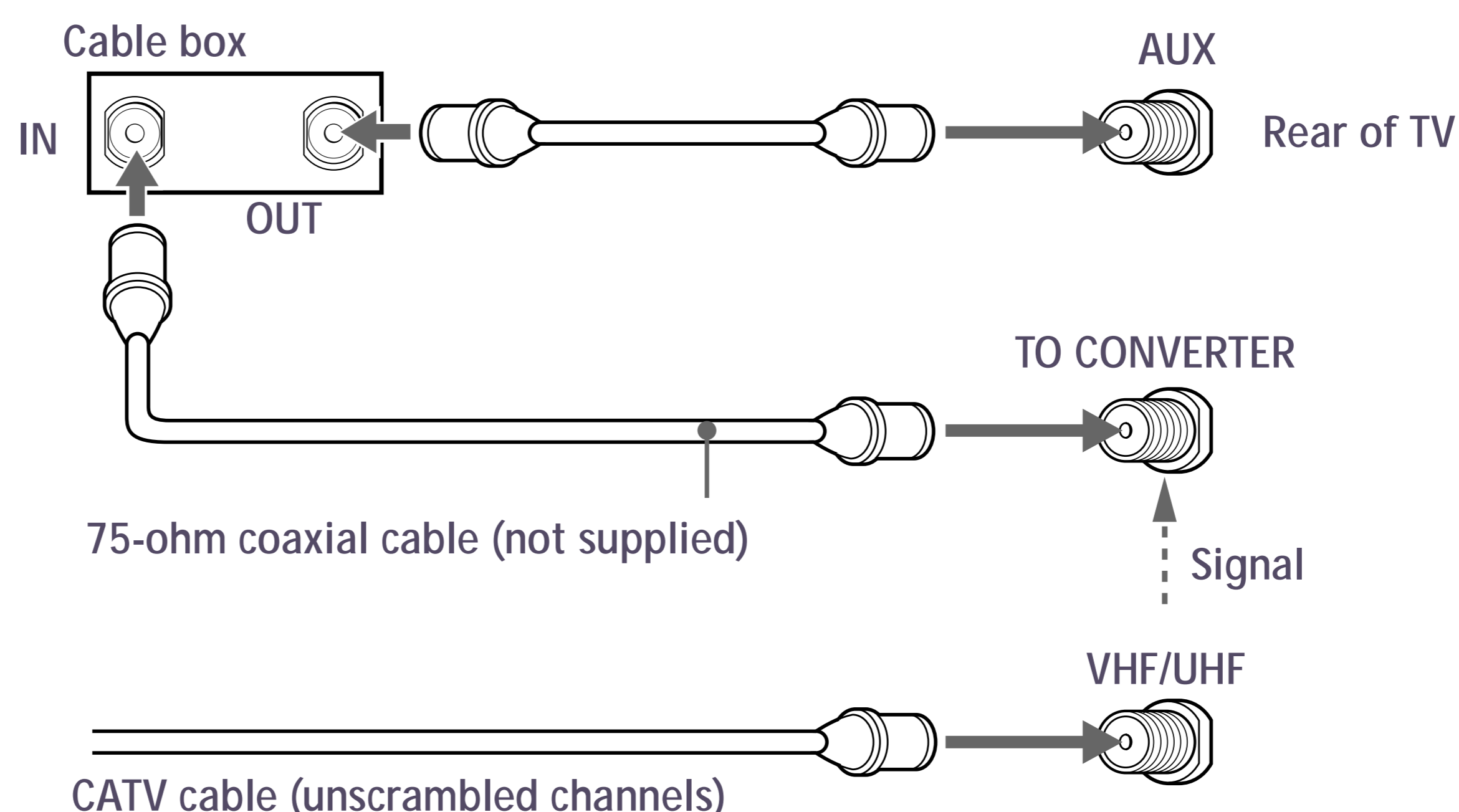
This is the preferred basic cable TV hookup to use if your cable TV company scrambles some channels, but not all of them (pay channels vs. regular cable channels), so you need to use a cable box.

With this setup you can:

- Use the TV remote control to change channels using your cable box when the signal is scrambled.
- Use the TV remote control to change channels using your TV when the signal is not scrambled. (Your TV's tuner provides a better signal than the cable box.)
- Use the Twin View feature. (When all channels are routed through your cable box, only one signal is sent to the TV, so you can not use the Twin View feature.)
- Use the Twin View feature normally with the CATV input.
- Use the Twin View feature partially with the cable box. When you switch the TV input to AUX — to use the cable box — the unscrambled picture from the cable box will display. You can display the signal from both AUX and VHF/UHF inputs in the left Twin View picture, but you can display only the signal from the VHF/UHF input in the right Twin View picture.

To set up your TV to use both a Cable Box and a direct-connect CATV cable:

- 1 Connect the Cable TV cable to the TV's VHF/UHF jack.
- 2 Using a coaxial cable, connect the TV's TO CONVERTER jack to the cable box's IN jack. The TV's internal converter allows you to switch between unscrambled signals coming straight into the TV and scrambled signals coming in through the cable box, eliminating the need for an external splitter.
- 3 Using a coaxial cable, connect the cable box's OUT jack to the TV's AUX jack.



To switch between channels from Cable Box and channels coming directly into TV

- Press the ANT button on the TV remote control.

To use the TV remote control to switch channels on the cable box

- Program the remote control as necessary. (See "Programming the Remote Control" on page 50.)

To use the cable box

- Have your TV tuner set to channel 3 or 4 (as appropriate) and then use the Cable Box to change channels.

To prevent the accidental switching of TV channels

- When using the VCR of Cable Box, you can use the Channel Fix feature to lock in a channel. The Channel Fix feature is under the Channel menu. (See "Using the Channel Menu" on page 40.)

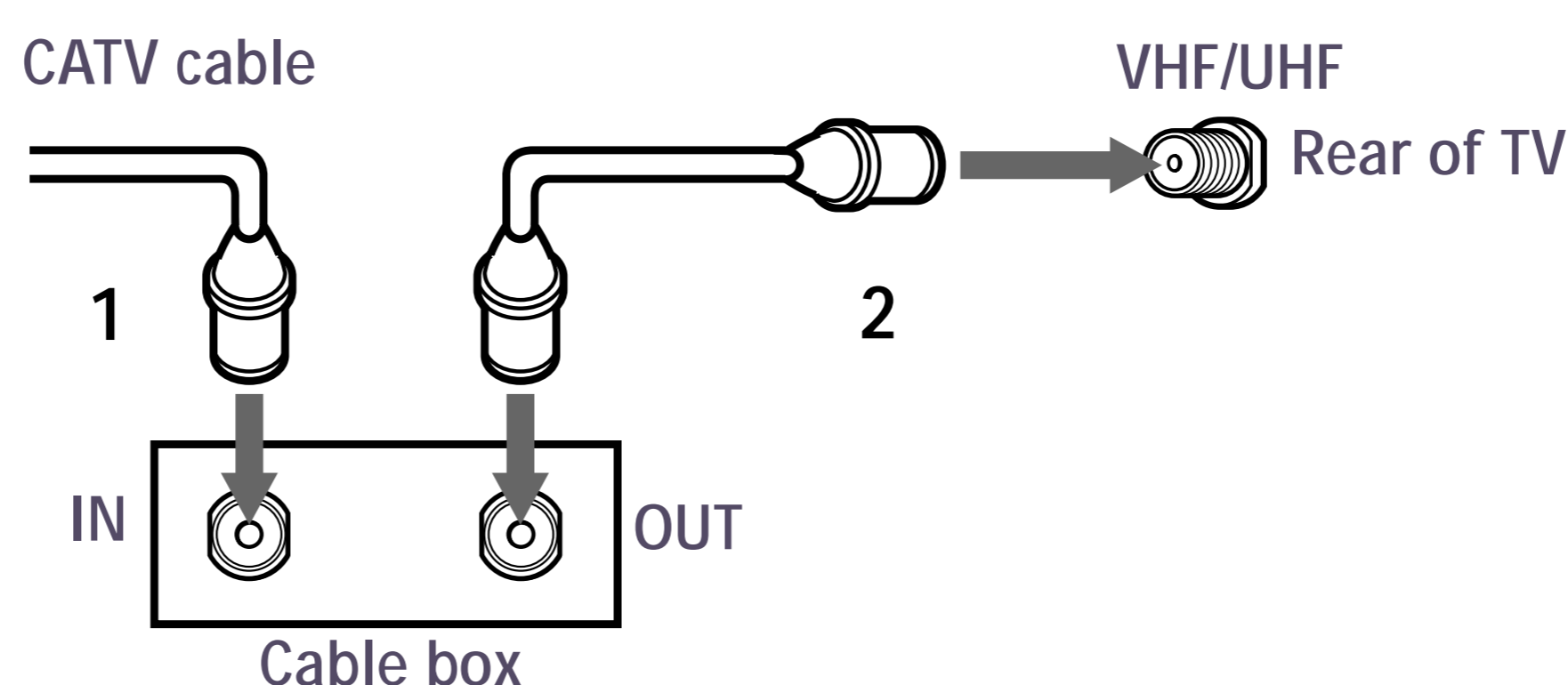
Cable Box Only

Use this hookup if:

- You subscribe to a cable TV system that uses scrambled or encoded signals requiring a cable box to view all channels, and
- You do not intend to hook up any other audio or video equipment to your TV.

When all channels are routed through your cable box, only one unscrambled signal is sent to the TV, so you cannot use the Twin View feature. If some channels are scrambled, but others are not, consider using the hookup on page 12 instead.

- 1 Connect the coaxial connector from your cable service to the cable box's IN jack.
- 2 Using a coaxial cable, connect the cable box's OUT jack to the TV's VHF/UHF jack.

**To use the cable box**

- Have the TV tuner set to channel 3 or 4 (as appropriate) and then use the cable box to change channels.

To use the TV remote control to switch channels on the cable box

- Program the remote control as necessary. For details, see “Programming the Remote Control” on page 50.


To prevent accidental switching of TV channels

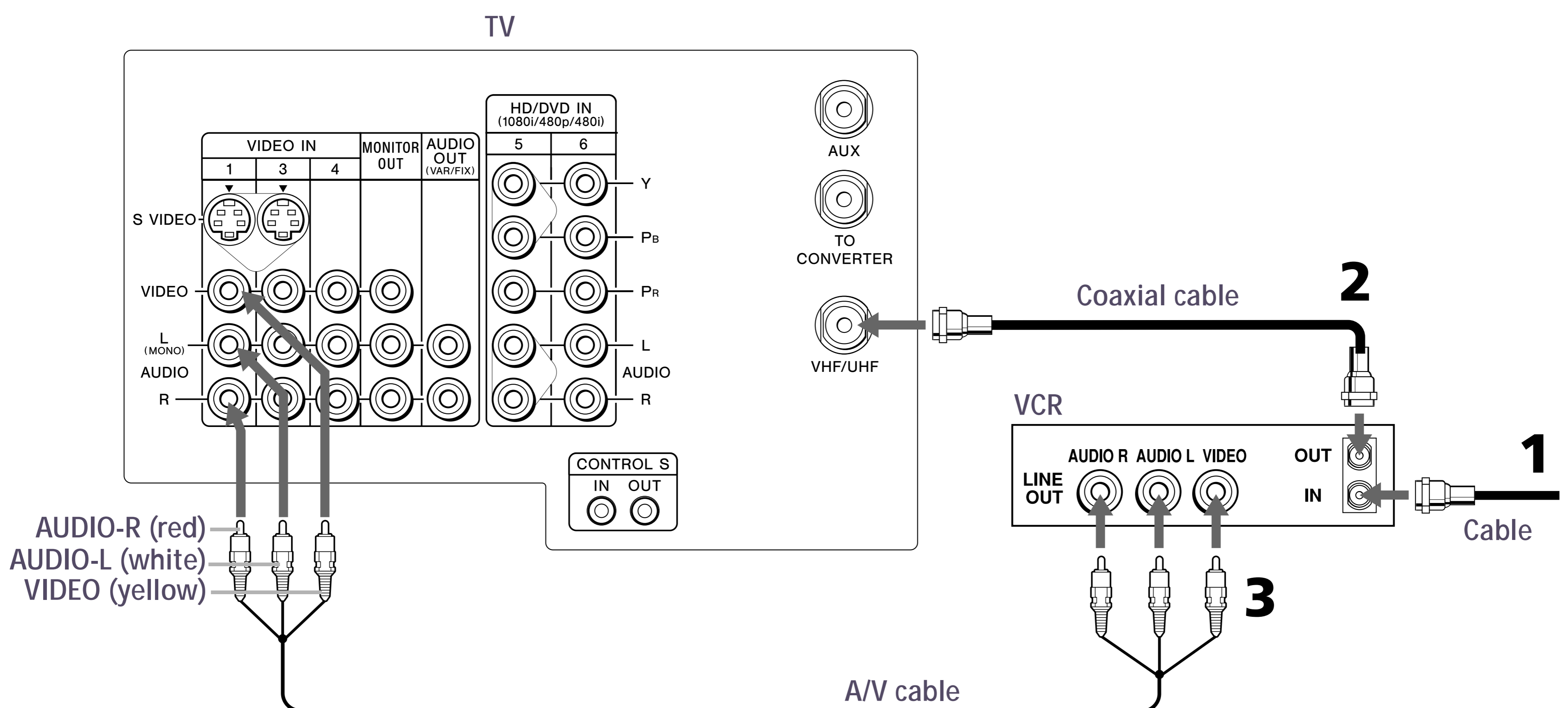
- Use the Channel Fix feature to lock in a channel. The Channel Fix feature is under the Channel menu. For details, see “Using the Channel Menu” on page 40.

Connecting a VCR and Cable

Use this hookup if you have cable TV that does not require a cable box.

- 1 Connect the cable TV cable to the VCR's IN jack.
- 2 Using a coaxial cable, connect the VCR's OUT jack to the TV's VHF/UHF jack.
- 3 Using an A/V cable, connect the VCR's Audio and Video OUT jacks to the TV's Audio and Video IN jacks.

 If the VCR you are connecting has an S VIDEO jack, you can use an S VIDEO cable for improved picture quality (compared to a combination audio/video cable). Because an S VIDEO cable carries only the video signal, you will need audio cables for sound.



Connecting a VCR and Cable Box

Use this hookup if:


- ❑ Your cable TV company scrambles some channels, but not all of them (pay channels vs. regular cable channels), so you need to use a cable box, and
- ❑ You want to use the Twin View feature.

With this setup you can:

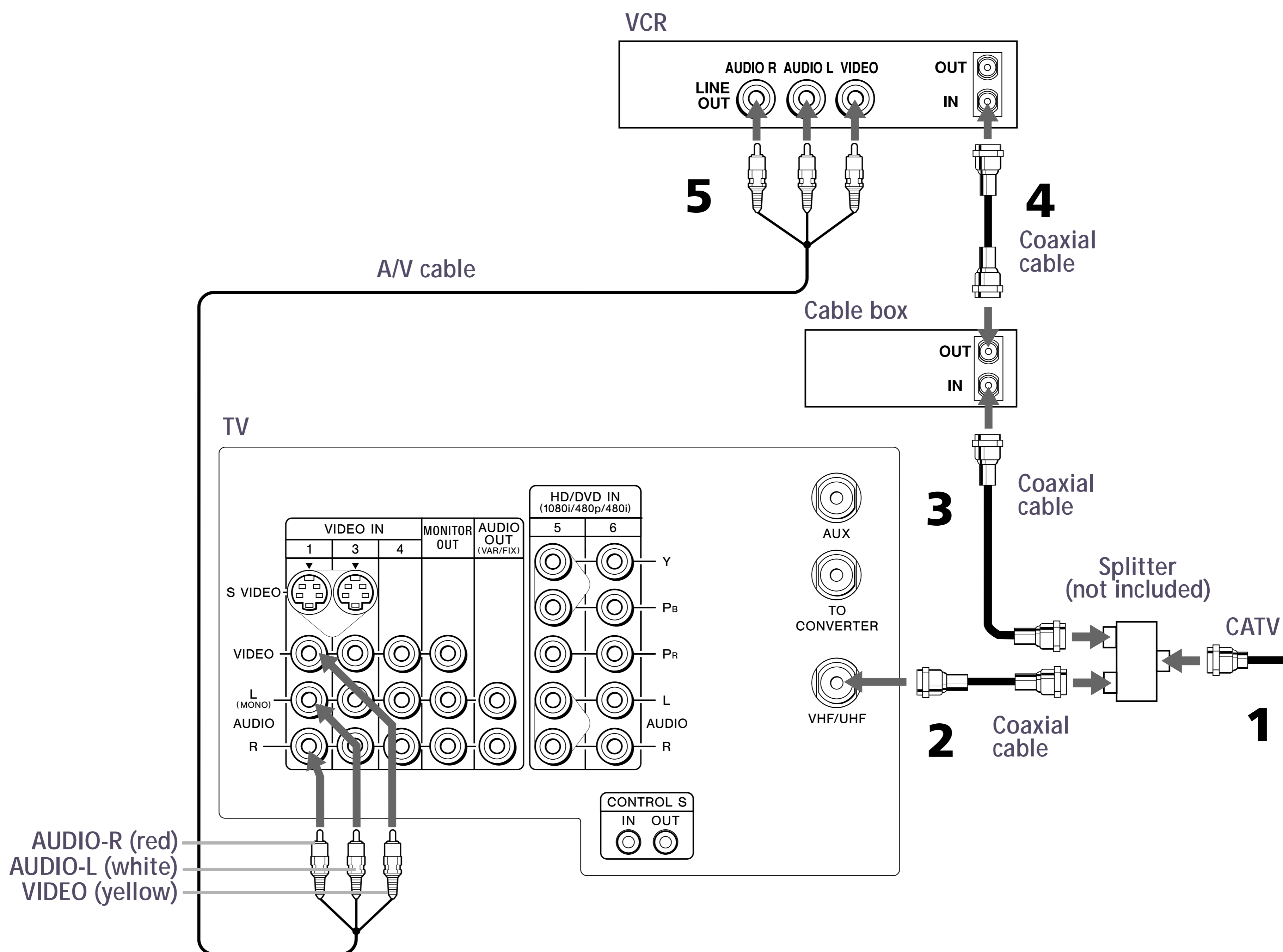
- ❑ Use the TV remote control to change channels using your cable box when the signal is scrambled.
- ❑ Use the TV remote control to change channels using your TV when the signal is not scrambled. (Your TV's tuner provides a better signal than the cable box.)
- ❑ Use the Twin View feature.
- ❑ Record both regular CATV and scrambled channels.

To connect a cable box and a VCR, you will need:

- ❑ A small, inexpensive device known as a splitter.
 - ❑ Three coaxial cables.
 - ❑ Either a combination audio/video cable, or an S VIDEO cable and audio cables.
- 1 Connect the CATV cable to the single (input) jack of the splitter.
 - 2 Use a coaxial cable to connect one of the two output jacks of the splitter to the TV's VHF/UHF jack.
 - 3 Use a coaxial cable to connect the other output jack of the splitter to the input jack of the cable box.
 - 4 Use a coaxial cable to connect the output jack of the cable box to the input jack of the VCR.
 - 5 Use the video line (yellow) of a combination audio/video (A/V) cable to connect the video output jack of the VCR to the video input jack of the TV.

 If your VCR has an S VIDEO jack, you can substitute an S VIDEO cable for the video line of an A/V cable. The S VIDEO cable will provide improved video signal quality. (You will need audio cables for sound.)

Connect the left (white) and right (red) audio output channels of the VCR to the respective input channels on the TV.



To switch between channels from cable box and channels from CATV

- Press the ANT button on the TV remote control.

To use the TV remote control to change channels on the VCR

- Program the remote control as necessary. (By default, the remote control is set for a Sony VCR; to change to another brand, see “Programming the Remote Control” on page 50.) Then use the VCR buttons on the remote control to change channels.

To use the TV remote control to change channels on the cable box

- Program the remote control as necessary. (For details, see “Programming the Remote Control” on page 50.) Then use the remote control to change the cable box channels.

To view cable box channels


- Set your TV to channel 3 or 4 (as appropriate) and then change channels on the cable box.

To prevent accidental switching of TV channels while using the cable box

- ❑ It is a good idea to use the Channel Fix feature of your TV when using the VCR or cable box. The Channel Fix feature locks the TV tuner to a specific channel (such as 3 or 4). The Channel Fix feature is under the Channel menu. (For details, see “Using the Channel Menu” on page 40.)

To use Twin View with the cable box

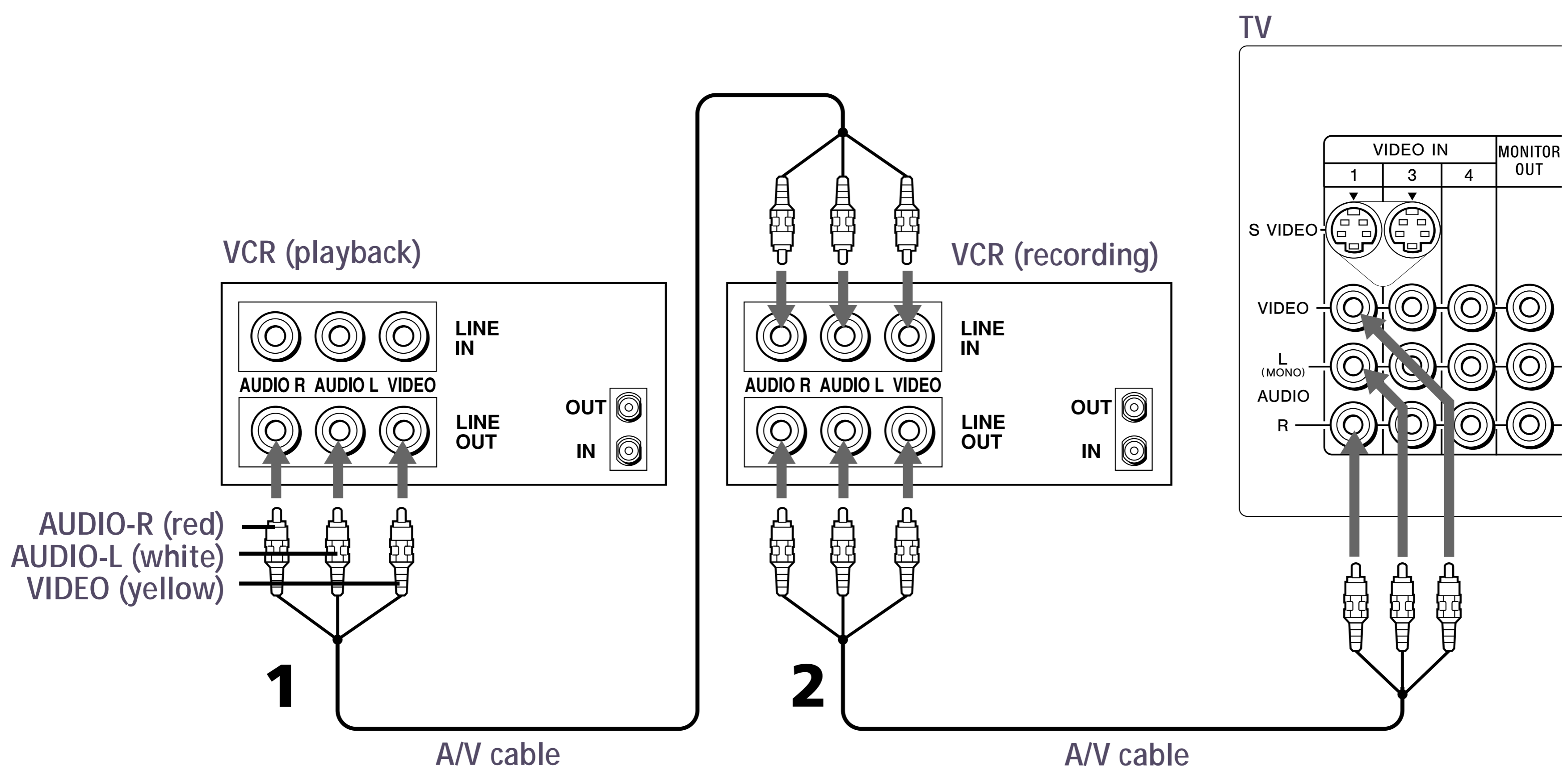
- ❑ Turn on the VCR. Use the remote control’s TV/VIDEO button to set the Twin View output to VIDEO 1. Change the Twin View channel via the VCR. (The VCR’s tuner is used as one of the Twin View picture sources; if you do not turn on the VCR, the Twin View will not work.)

 This system is needed because the cable box unscrambles only one channel at a time (unlike the CATV cable, which makes all channels available concurrently).

Connecting Two VCRs for Tape Editing

If you connect two VCRs, so you can record from one to the other, you can connect the recording VCR into your TV to monitor what is being recorded. The procedure below shows you how to do this.

- 1 Using an A/V cable, connect the playback VCR's Audio and Video OUT jacks to the recording VCR's Audio and Video IN jacks.
- 2 Using an A/V cable, connect the recording VCR's Audio and Video OUT jacks to the TV's Audio and Video IN jacks.




To change the video input of the VCR

- See your VCR's user guide for instructions.


To view what is being recorded

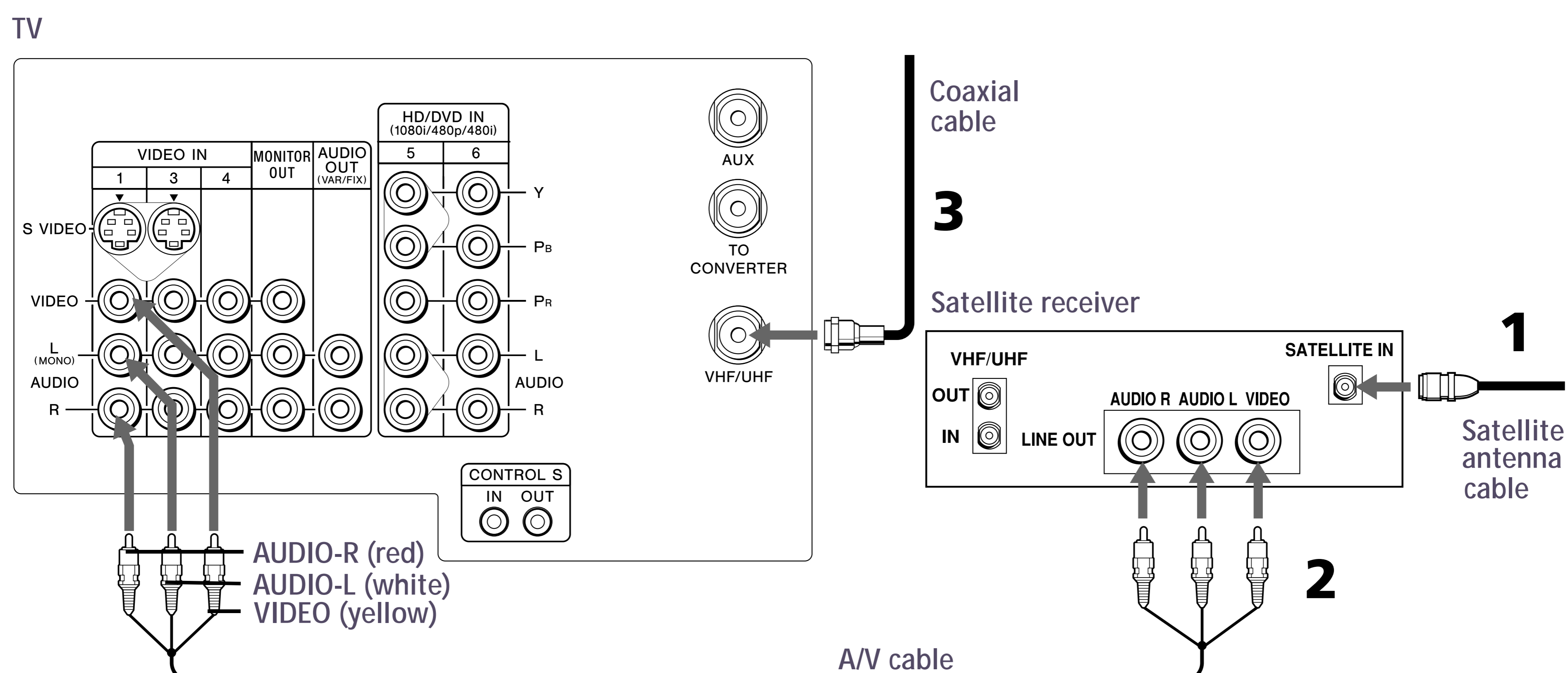
- Use the remote control to set the TV to the video input to which the recording VCR is connected. (VIDEO 1 in the illustration above.)

 If the VCRs you are connecting have S VIDEO jacks, you can use S VIDEO cables for improved picture quality (compared to a combination audio/video cable). Because S VIDEO cables carry only the video signal, you will need audio cables for sound.

Connecting a Satellite Receiver

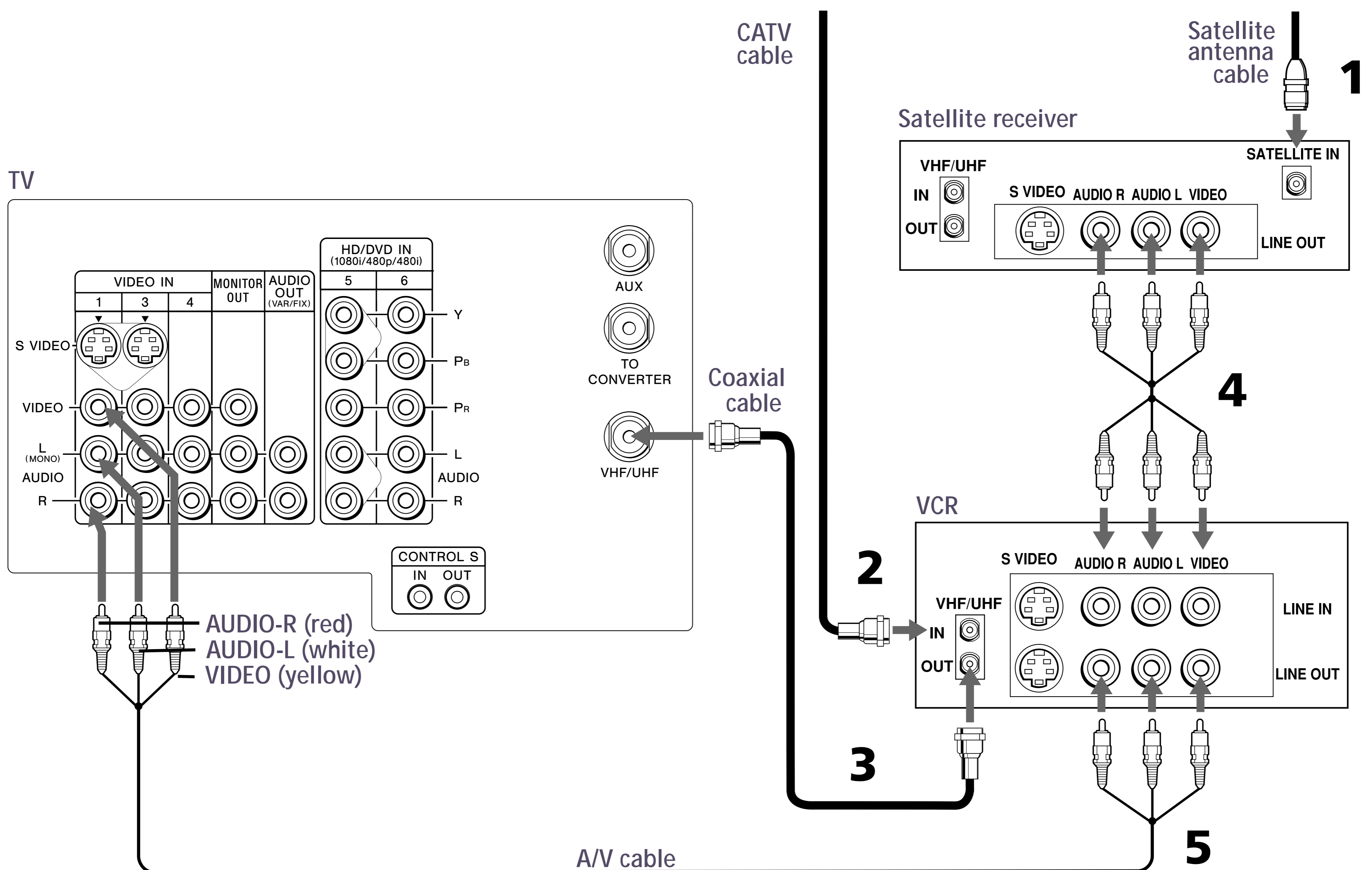
- 1 Connect the satellite antenna cable to the satellite receiver's SATELLITE IN jack.
- 2 Using an A/V cable, connect the satellite receiver's Audio and Video OUT jacks to the TV's Audio and Video IN jacks.
- 3 Connect a coaxial cable from your cable or antenna to the TV's VHF/UHF jack.


 If the receiver you are connecting has an S VIDEO jack, you can use an S VIDEO cable for improved picture quality (compared to a combination audio/video cable). Because S VIDEO cables carry only the video signal, you will need audio cables for sound.



Connecting a Satellite Receiver with a VCR

- 1 Connect the satellite antenna cable to the satellite receiver's SATELLITE IN jack.
- 2 Connect the CATV cable to the VCR's VHF/UHF IN jack.
- 3 Using a coaxial cable, connect the VCR's OUT jack to the TV's VHF/UHF jack.
- 4 Using an A/V cable, connect the satellite receiver's Audio and Video OUT jacks to the VCR's Audio and Video IN jacks.
- 5 Using an A/V cable, connect the VCR's Audio and Video OUT jacks to the TV's Audio and Video IN jacks.



 If the peripherals you are connecting have S VIDEO jacks, you can use S VIDEO cables for improved picture quality (compared to combination audio/video cables). Because S VIDEO cables carry only the video signal, you will need audio cables for sound.

- 6** If necessary, change the video input on your VCR. (See your VCR's user's guide for instructions on how to do that.)

To watch satellite TV, or the VCR

- Press TV/VIDEO on the remote control to select VIDEO 1.

To watch cable TV

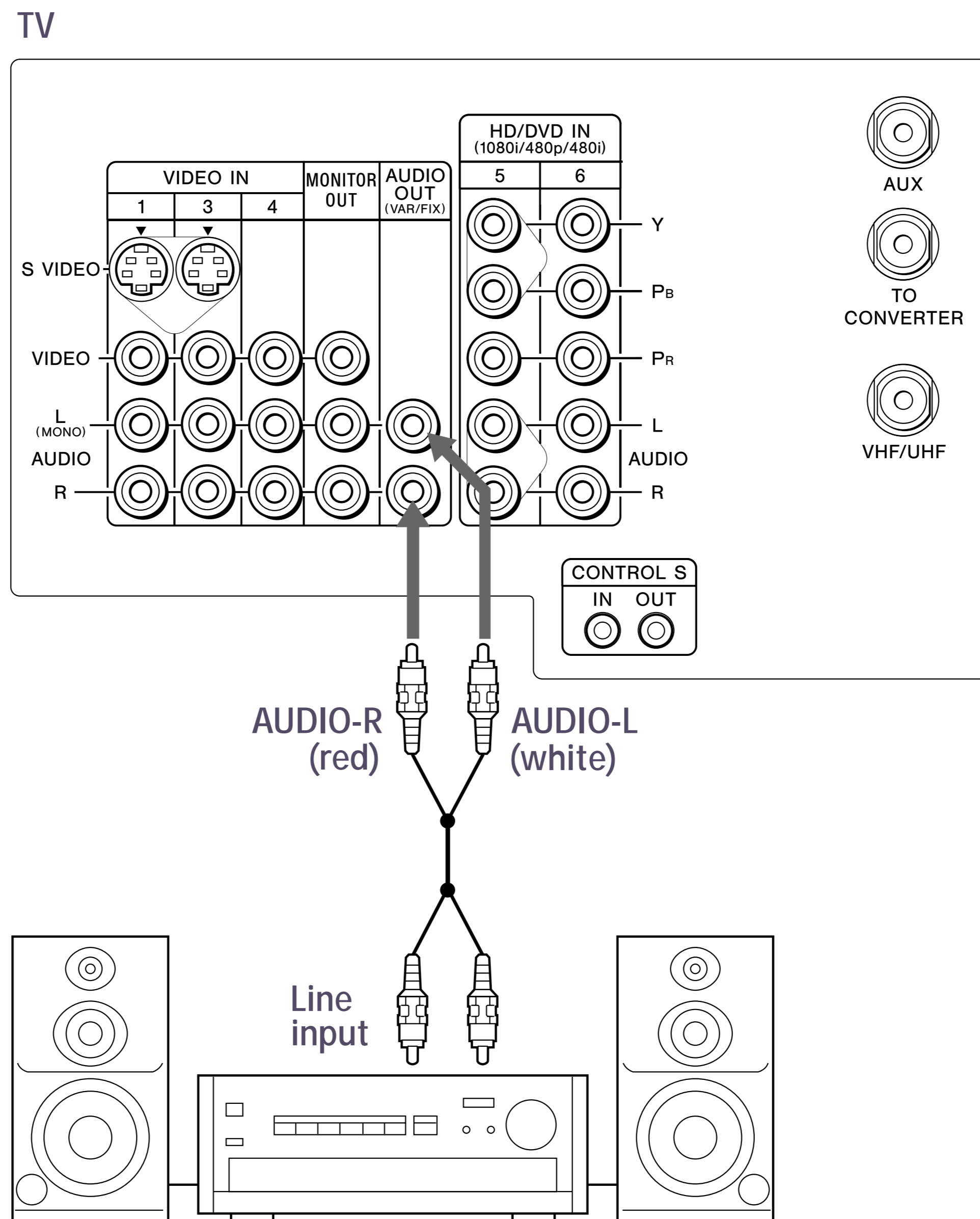
- Press TV/VIDEO on the remote control to select VHF/UHF (to select the CATV cable on the TV).

Connecting an Audio Receiver

For better sound quality, you may want to connect your TV to your stereo system's audio receiver.

To connect to an audio receiver

- Use audio cables to connect the TV's Audio OUT jacks to the audio receiver's audio LINE IN jacks.



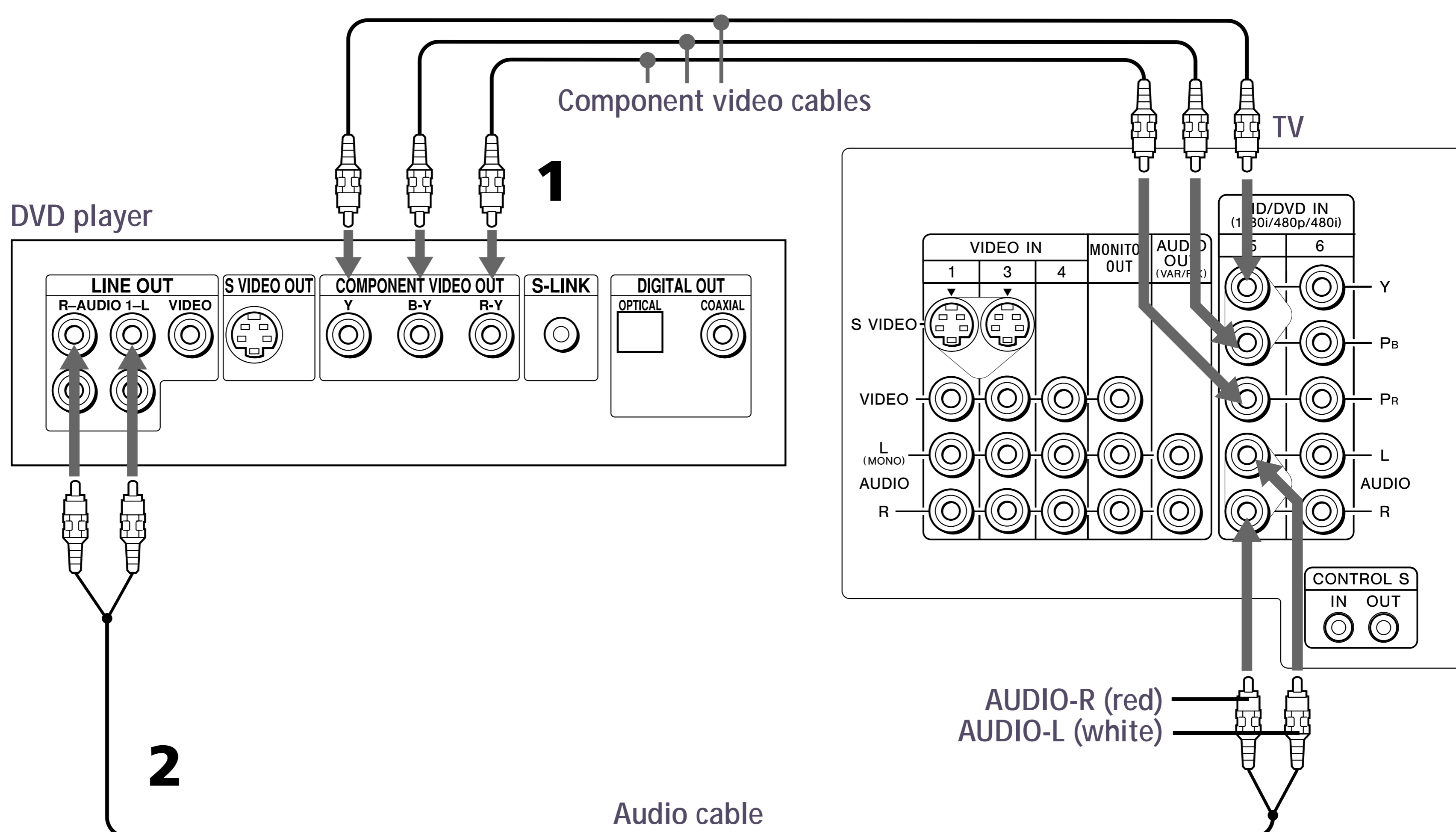
Connecting a DVD Player with Component Video Connectors


This is the preferred hookup to use if your DVD player has component (Y, PB, PR) jacks.

- 1 Using three separate component video cables, connect the DVD player's Y, PB and PR jacks to the Y, PB and PR jacks on the TV — the number 5 or 6 connections under HD/DVD IN.

 The Y, PB and PR jacks on your DVD player are sometimes labeled Y, CB and CR, or Y, B-Y and R-Y. If so, connect the cables to like colors.


- 2 Using an audio cable, connect the DVD player's Audio OUT jacks to the TV's Audio IN jacks. Be sure to use the same column of inputs that you used for the video connection (HD/DVD IN 5 or 6).



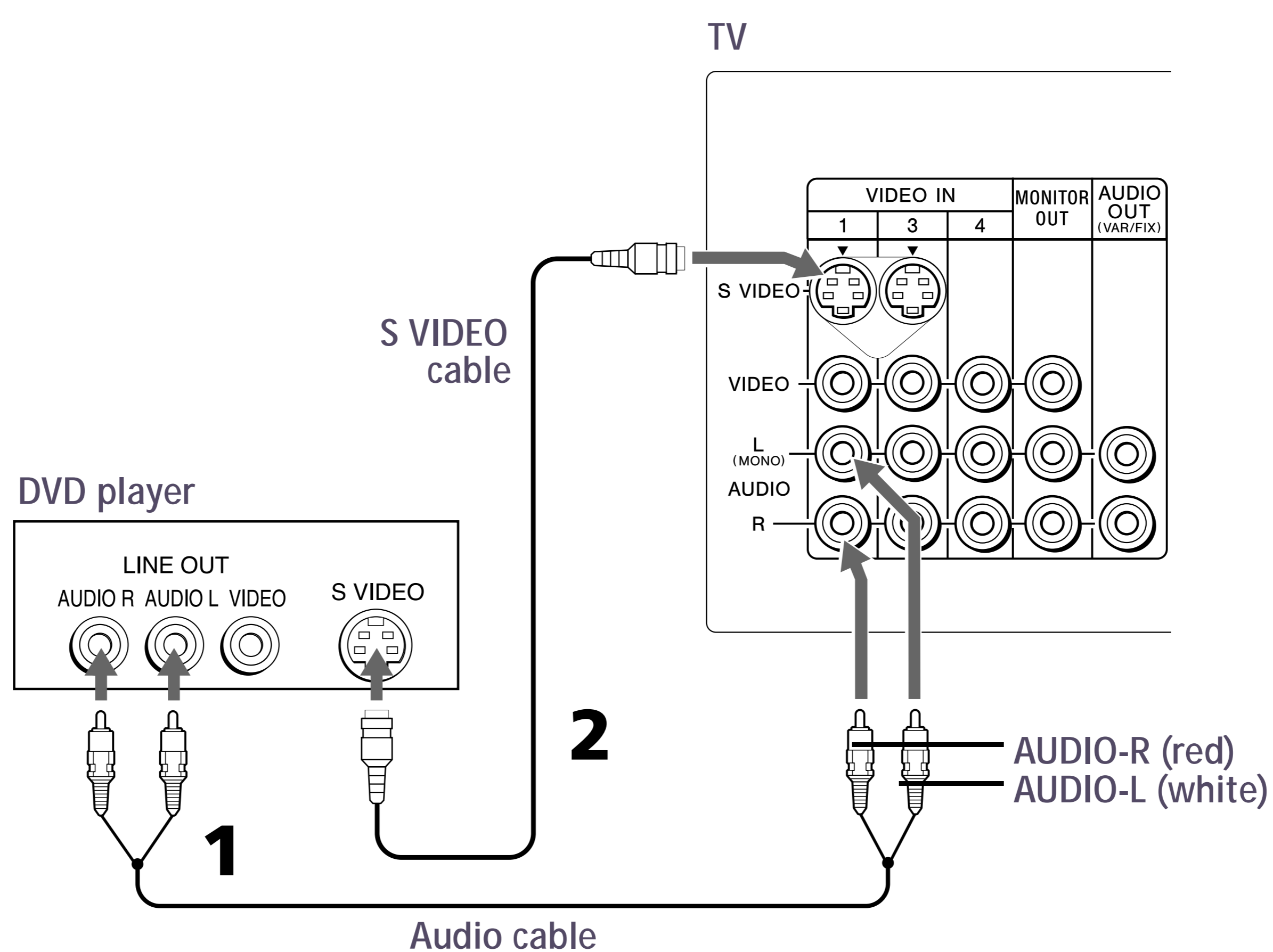
 You cannot use the MONITOR OUT jacks to record the signal from any equipment connected into the Y, PB, PR jacks.

Connecting a DVD Player with A/V Connectors

Use this hookup if your DVD player does not have component (Y, PB, PR) jacks.

 An S VIDEO connection will give a good-quality video signal, but if your DVD player has component video, that connection (described on the previous page) will give an even better signal.


- 1 Using audio cables, connect the DVD player's Audio OUT jacks to the TV's Audio IN jacks.
- 2 Using an S VIDEO cable, connect the DVD player's S VIDEO jack to the TV's S VIDEO jack.




To switch between your TV and DVD

- Use the TV/VIDEO button on the TV's remote control to switch from one input device to another.

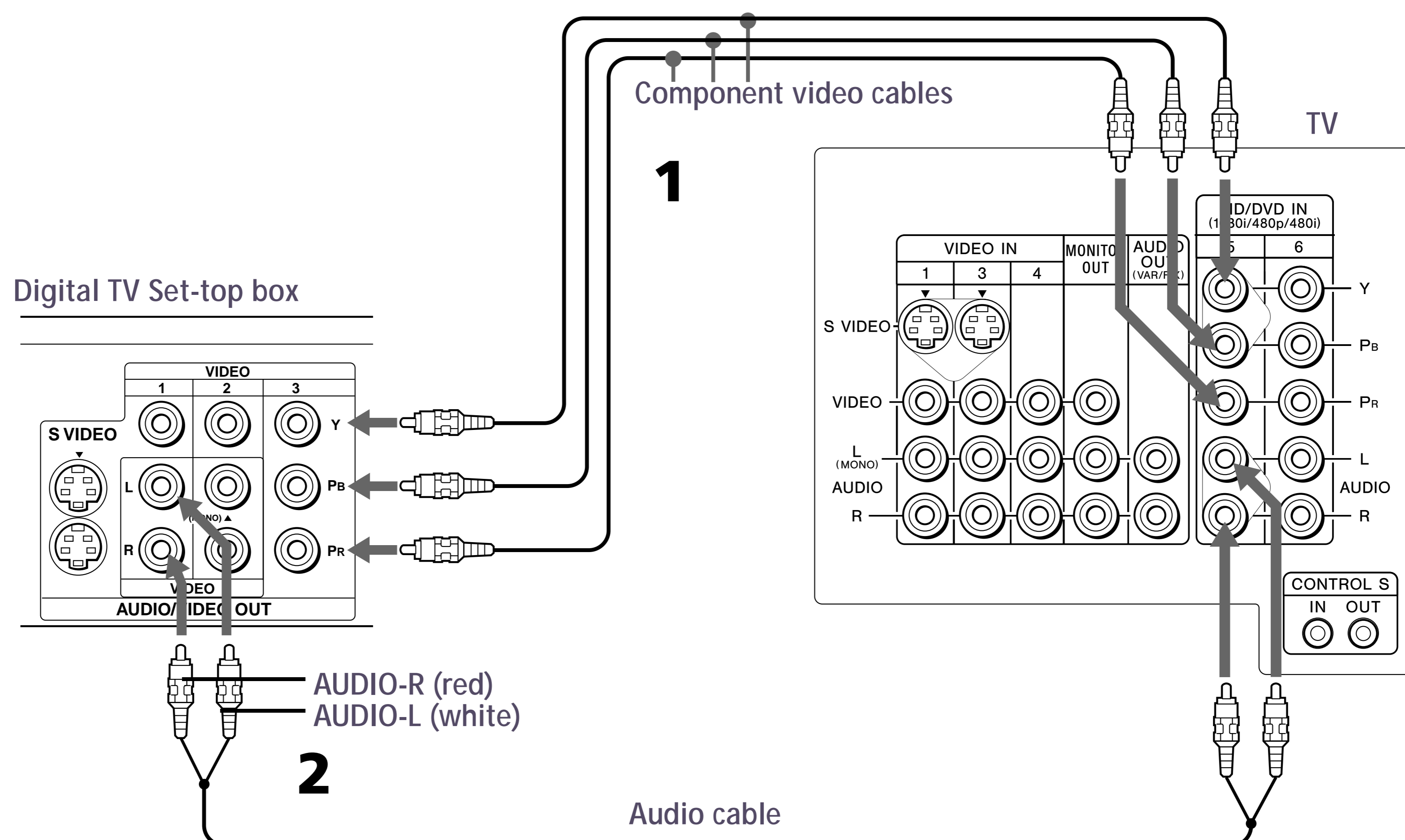
Connecting a Digital TV Receiver

 Be sure to read the manual for the Set-top box.

- 1 Using three separate component video cables, connect the Digital TV Set-top box's Y, P_B and P_R jacks to the TV.

 If you prefer, you can use an S VIDEO cable instead of the Y, P_B and P_R connections. The Y, P_B and P_R connections will provide the best-quality picture, but you cannot record the signal from any equipment connected to the Y, P_B and P_R inputs.

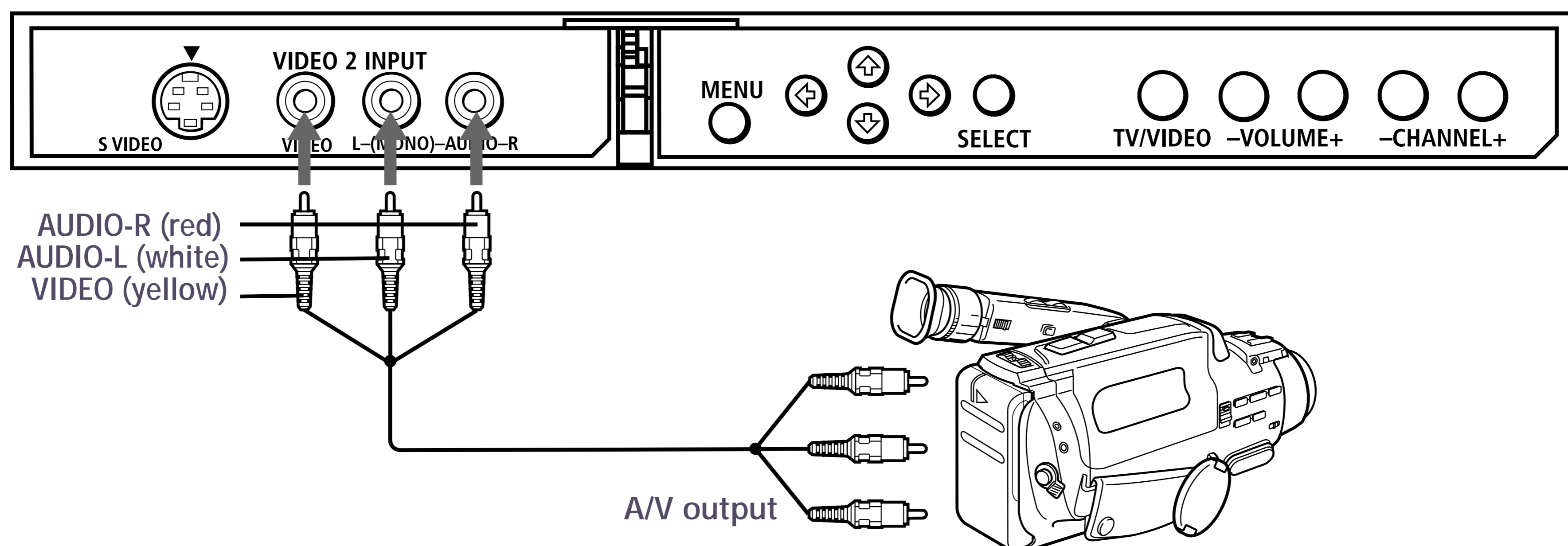
- 2 Using an audio cable, connect the Digital TV Set-top box's Audio OUT jacks to the TV's Audio IN jacks.




Connecting a Camcorder

For easy connection of the camcorder, the TV has front Audio and Video inputs (shown below). If you prefer, you can connect the camcorder to the TV's rear Audio and Video IN jacks.

- 1 Using A/V cables, connect the camcorder's Audio and Video OUT jacks to the TV's Audio and Video IN jacks.



If you have a mono camcorder, connect its audio output to the TV's AUDIO L jack.

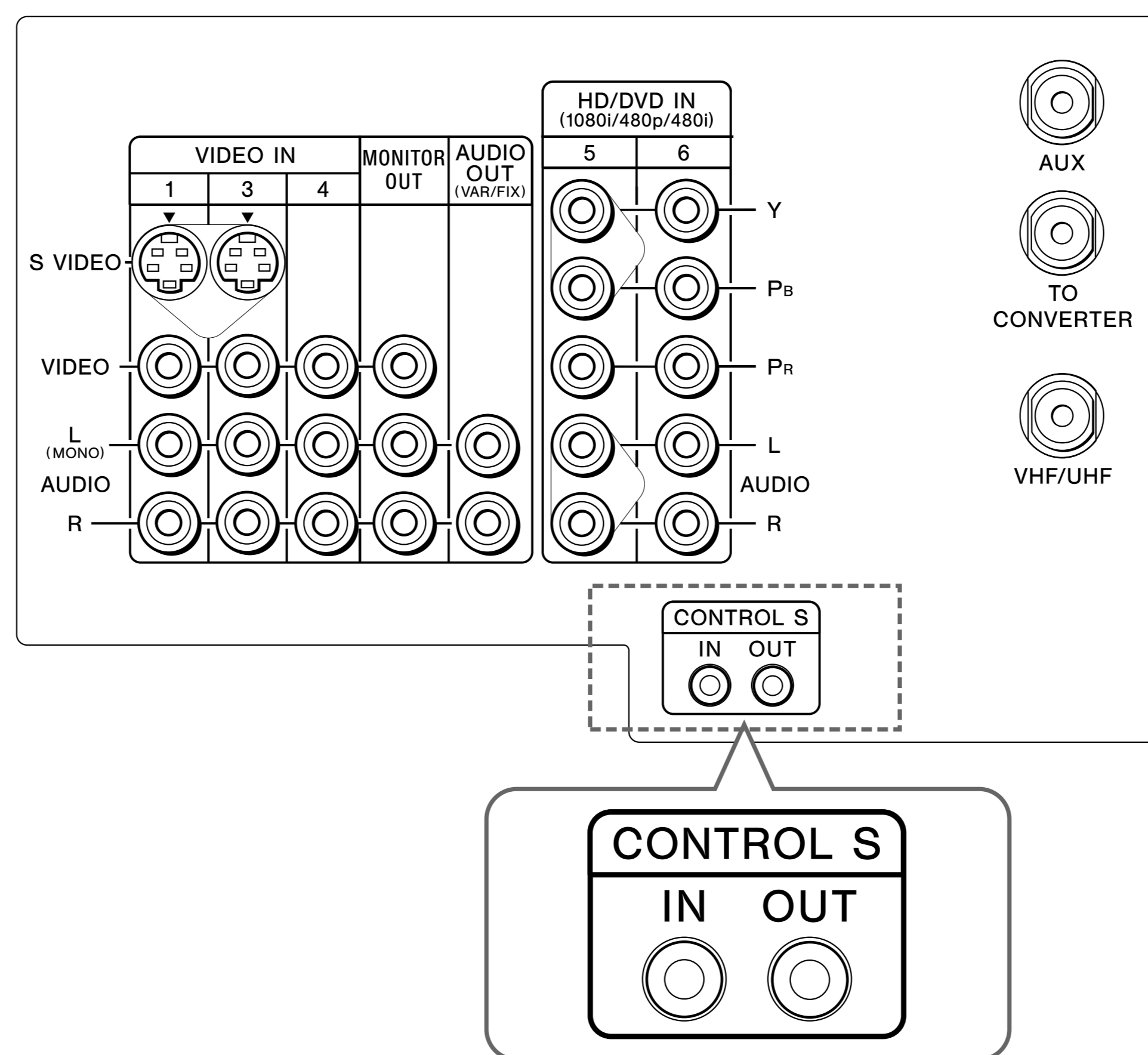
 If the camcorder you are connecting has an S VIDEO jack, you can use an S VIDEO cable for improved picture quality (compared to a combination audio/video cable). Because S VIDEO cables carry only the video signal, you will also need audio cables for sound.

To view the camera's output

- Use the TV/VIDEO button on the front panel of the TV (or on the remote control) to set the TV to the video input to which the camcorder is connected. (VIDEO 2 in the illustration above.)

Using the CONTROL S Feature

The CONTROL S feature allows you to control your TV, plus other Sony equipment (such as a DVD player or VCR) connected to the TV, using only the TV's remote control. In addition to allowing you to control multiple devices with one remote control, the CONTROL S feature allows you to always point your remote control at your TV, instead of having to point it at the other equipment, which might be hidden or out of direct line of sight.



Setting Up the TV Automatically

After you finish connecting your TV, you can run Auto Setup to set up your channels. The Auto Setup screen appears when you turn your TV on for the first time after installing it. If you do not want to set up the channels at this time, you can do it later by using the Auto Program feature in the Channel menu (see page 40 for information regarding Channel menu).

 The Auto Setup feature does not apply for installations that use a cable box for all channel selection.

Using Auto Setup

- 1 Turn on the TV.
- 2 Press the TV button on the remote control.
- 3 Using the main set of buttons on the remote control, press CH+ to run Auto Setup.
- 4 After Auto Setup has run, press CH- to exit.

Reset TV to Factory Settings

To reset your TV to the factory settings

- 1 Turn on the TV.
- 2 Hold down the RESET button on the remote control.
- 3 Press and release the POWER button on the TV. (The TV will turn itself off, then back on.)
- 4 Release the RESET button.

Using the Features

Overview

This chapter describes how to use features of your TV.

<i>Topic</i>	<i>Page</i>
Using Favorite Channels	30
Using Twin View	31
Using the Freeze Function	34

Using Favorite Channels

The Favorite Channel feature lets you select programs from a list of favorite channels that you previously specified.

To display a list of your favorite channels:

- 1 If you have not already done so, create a list of favorite channels. (For information on setting up Favorite Channels see “Selecting Channel Options” on page 40.)
- 2 Press the FAVORITES button on the remote control.



- 3 Move the joystick **▲** or **▼** to highlight the channel you want to watch. The program on that channel appears in the preview window.
- 4 Press the FAVORITES button on the remote control to select the channel.

Using Twin View

Twin view lets you see two pictures — from an antenna, a VCR, a DVD, etc. — on the screen at the same time. (You can only hear the sound associated with one of the pictures however. You choose which picture's sound is selected.) You can change the relative size of each of the pictures.

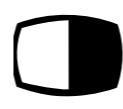
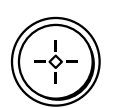
Displaying Twin Pictures

To display twin pictures

- 1 Press the  button. (A second picture-window appears.)




- 2 To cancel twin pictures

- Press the  button
- or
- Press the  button.

Activating the Picture

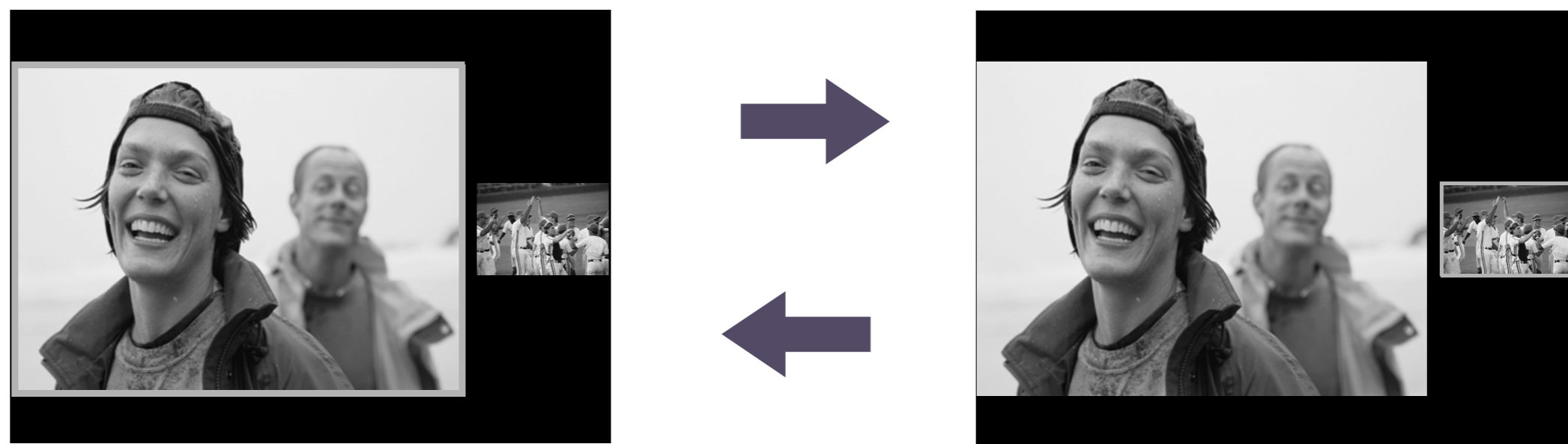
With Twin View, the picture highlighted with a blue frame is active. In the active picture, you can:

- Change channels
- Adjust the volume.
- Switch the input sources (to go from UHF/VHF to CATV cable, for example, press TV/VIDEO on the remote control).
- Change the picture size by pressing \uparrow/\downarrow on the joystick.

 Normally the TV memorizes the last-used sizes; when Twin View is turned off, then back on, the last-used sizes are displayed. If you are using the enhanced 16:9 picture, however, the aspect ratio changes to 4:3 in Twin View, and the picture is reformatted to that ratio.

To activate the right picture

- Move the joystick to the right (without pressing down on it).



To activate the left picture

- Move the joystick to the left (without pressing down on it).

Factors affecting Twin View include:

- Equipment connected to the AUX and HD/DVD IN (numbers 5 and 6) inputs cannot be displayed in the right Twin View picture.

Changing the Picture Size

The zoom feature lets you vary the relative size of the left and right pictures.

- 1 Activate the picture whose size you want to change.
- 2 Press **▲** on the joystick to enlarge the picture.
- 3 Press **▼** on the joystick to make the picture smaller.



When you adjust the twin screen sizes, the TV memorizes the change. The next time you use the Twin View function, the memorized sizes appear.

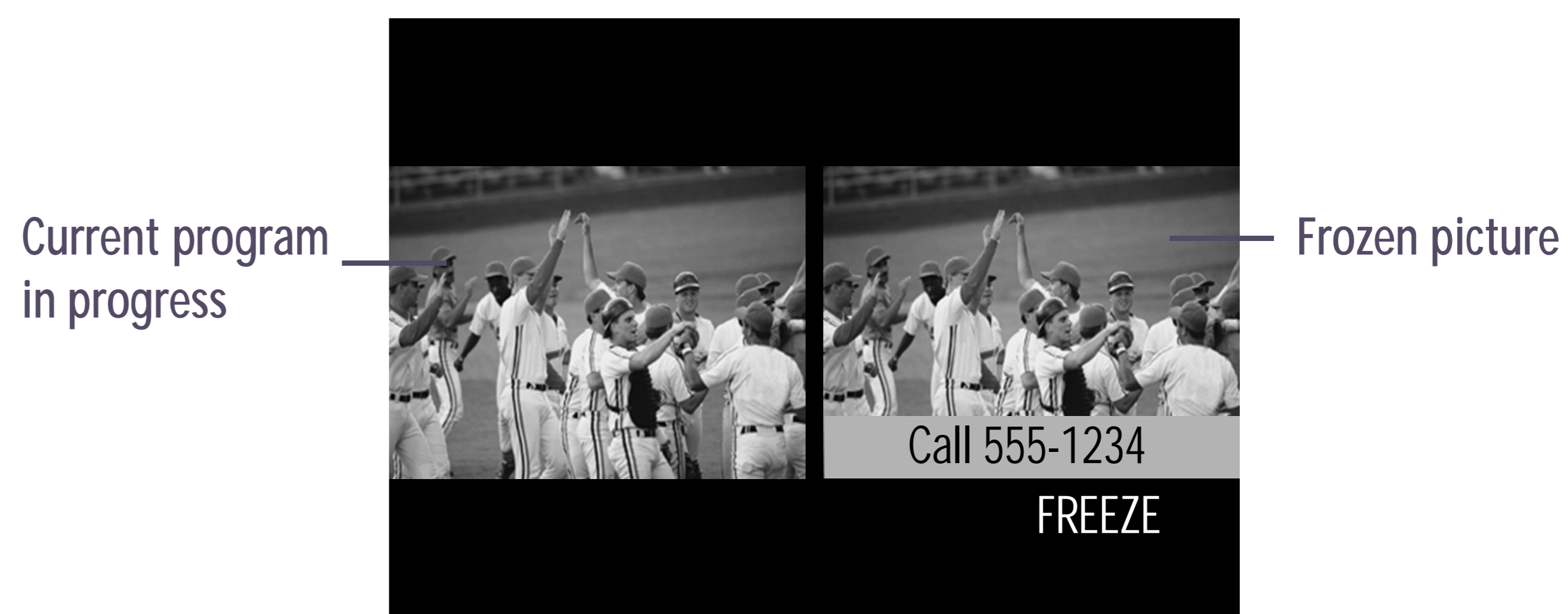
Using the Freeze Function

The FREEZE button allows you to temporarily capture a program's picture. You can use this feature to write down information such as phone numbers, recipes, etc.

The FREEZE feature works only in normal view; if you are in TWIN VIEW, it will not work.

To use the FREEZE function

- 1 When the program information you want to capture is displayed, press the FREEZE button, on the remote control.
- 2 The TV switches to Twin View mode and displays the "frozen" picture on the right, while the current program continues on the left.




- 3 To cancel and return to normal viewing, press the FREEZE button.







Using the Menus

Overview


Opening and choosing a menu:

- 1 Press the MENU button to display the Menu screen.
- 2 Move the joystick to the desired menu icon and press  to select it.
- 3 Use the joystick to scroll through the features.
- 4 See the specific menu page for instructions on moving through the menu.

The Menu gives you access to the following features:

<i>Menu Icon</i>	<i>Description</i>	<i>Page</i>
	VIDEO allows you to make adjustments to your picture settings. It also allows you to customize the Picture Mode based on the type of program you are viewing.	36
	AUDIO offers enhanced audio options such as listening to second audio programming (SAP), or customizing the effect of the sound on your TV.	38
	CHANNEL allows you to set up a Favorite Channel list, run the Auto Program function, and more.	40
	PARENT lets you control the viewing of programs based on their ratings.	42
	TIMER lets you set the clock on your TV and allows you to program your TV for scheduled viewing using the Timers.	46
	SETUP provides several options for setting up your channels, labeling your video inputs, and selecting the language of the on-screen menus.	47


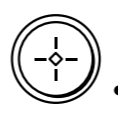

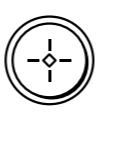
To end a menu session:
Press MENU again.

To end one menu session
and move to another:
Move the joystick upward
to return to the menu
icons.
Move the joystick to
choose the next menu icon
and press  to select it.



Using the Video Menu

To select the Video Menu


- 1 Press MENU.
- 2 Move the joystick to the Video icon  and press .
- 3 Use the joystick to scroll through the features.
- 4 Press  to select a feature. That feature's adjustment appears.
- 5 Use the joystick to make the desired adjustments.
- 6 Press  to select/set.
- 7 Press MENU to exit the menu screen.




To restore the factory default settings for Picture, Brightness, Color, Hue, and Sharpness, Color Temp and VM.

- Press RESET on the remote control when in the Video menu.

Selecting Video Options

 To change from one Video Mode to another, use the PICTURE MODE button on the remote control.

The Video Menu includes the following options.



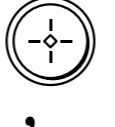
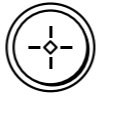
Option	Description
Mode <i>Customized picture viewing</i>	Vivid Select for enhanced picture contrast and sharpness.
	Standard Recommended for normal viewing conditions.
	Movie Select for soft, film like, picture.
	Pro Select for professional monitor like appearance.
 You can alter the Video Menu settings (Picture, Brightness, Color, etc.) for each Mode.	
Picture	Adjust to increase picture contrast and deepen the color or decrease picture contrast and soften the color.
Brightness	Adjust to brighten or darken the picture.
Color	Adjust to increase or decrease color intensity.
Hue	Adjust to increase or decrease the green tones.
Sharpness	Adjust to sharpen or soften the picture.

<i>Option</i>	<i>Description</i>
Color Temp	Choose from three color temperatures:
<i>White intensity adjustment</i>	Cool Select to give the white colors a blue tint.
	Neutral Select to give the white colors a neutral tint.
	Warm Select to give the white colors a red tint (NTSC-Standard).
VM	Sharpens picture definition to give every object a sharp, clean edge. Select from High, Medium, Low, Off.
<i>Velocity Modulation</i>	
DRC Mode	Creates a high-resolution picture with 4x density, for high quality sources (i.e., DVD player, Satellite receiver). Select from Interlaced or Progressive.
<i>Digital Reality Creation-Multi Function</i>	Interlaced Recommended for moving pictures.
	Progressive Recommended for still images and text.



Using the Audio Menu

To select the Audio Menu

- 1 Press MENU.
- 2 Move the joystick to the Audio icon  and press .
- 3 Use the joystick to scroll through the options.
- 4 Press  to select an option. That option's settings appear.
- 5 Use the joystick to scroll through the settings.
- 6 Press  to select the desired setting.
- 7 Press MENU to exit the menu screen.



To restore the factory default settings for Treble, Bass, and Balance

- Press RESET on the remote control when in the Audio menu.

Selecting Audio Options

The Audio Menu includes the following options:


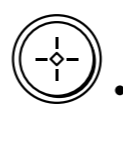

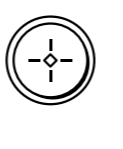
<i>Option</i>	<i>Description</i>	
Treble	Adjust to increase or decrease higher-pitched sounds.	
Bass	Adjust to increase or decrease lower-pitched sounds.	
Balance	Adjust to emphasize left or right speaker balance.	
Steady Sound	ON	Select to stabilize the volume.
	OFF	Select to turn off Steady Sound.
Effect	SRS	Produces a dynamic three-dimensional sound for stereo signals.
	Simulated	Adds a surround-like effect to mono programs.
	OFF	Normal stereo or mono reception.

<i>Option</i>	<i>Description</i>	
MTS <i>Enjoy stereo, bilingual and mono programs</i>	Stereo	Select for stereo reception when viewing a program broadcast in stereo.
	Auto-SAP	Select to automatically switch the TV to second audio programs when a signal is received. (If no SAP signal is present, the TV remains in Stereo mode.)
	Mono	Select for mono reception. (Use to reduce noise during weak stereo broadcasts.)
Speaker	ON	Select to turn on the TV speakers.
	OFF	Select to turn off the TV speakers and listen to the TV's sound only through your external audio system speakers.
Audio Out <i>Easy control of volume adjustments</i>	This option can be set only when the Speaker option is set to OFF.	
	Variable	Sound output varies according to the TV settings. Useful when you want to use the TV's remote control to adjust the output through a separate audio system.
	Fixed	Sound output is held at a fixed level. Use your audio receiver's remote control to adjust the volume.



Using the Channel Menu




To select the Channel Menu



- 1 Press MENU.
- 2 Move the joystick to the Channel icon  and press .
- 3 Use the joystick to scroll through the features.
- 4 Press  to select a feature. That feature's options appear.
- 5 Use the joystick to scroll through the options.
- 6 Press  to select the desired option.
- 7 Press MENU to exit the menu screen.



Selecting Channel Options

The Channel Menu includes the following options:

Option	Description
Favorite Channel	<ol style="list-style-type: none"> 1 Press  to select a favorite channel number. 2 Use the joystick to scroll through the channels until you find the channel you want to add to your favorites. 3 Press  to select it.
Cable	<p>ON Select if you are receiving cable channels with a CATV cable.</p> <p>OFF Select if you are using an antenna.</p>
 You should run Auto Program after changing the cable setting.	
Channel Fix	<p>2-6 "Fix" your TV's channel setting to 3 or 4 and use the cable box, VCR or satellite receiver to change channels. Select one of these settings if you have connected the device to the VHF/UHF jack.</p> <p><i>Useful when you have a cable box or satellite receiver connected</i></p>
	<p>AUX 2-6 Same as 2-6, except you select one of these settings if you have connected the device to the AUX jack (see page 8).</p>
	<p>VIDEO 1 Use this setting if you have connected the device to the Audio and Video IN jacks.</p>
Auto Program	Automatically programs the TV for all receivable channels from both VHF/UHF and AUX inputs.



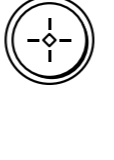
<i>Option</i>	<i>Description</i>
Channel Skip/Add	<p>Removes and adds viewable channels.</p> <ol style="list-style-type: none">1 Use the joystick to scroll through the channels until you find the channel you want to skip/add.2 Press  to select it.3 Press the joystick (↕/↔) to toggle between “Add” and “Skip.”4 Press  to select.
Channel Label	Label up to 20 channels with their station call letters.




Using the Parent Menu

The Parent menu allows you to set up the TV to block programs according to their content and rating levels. These ratings are assigned by a federal rating board. Not all programs are rated. Using the Parental Lock blocks programs with a specific rating, but it does not block an entire channel.


To select the Parent Menu


- 1 Press MENU.
- 2 Move the joystick to the Parent icon  and press .
- 3 Use the 0-9 buttons on the remote control to enter your four-digit password.
- 4 Confirm your password by entering it again. (The Parent menu options appear.)
- 5 Use the joystick to scroll through the settings.
- 6 Press  to select the desired option.
- 7 Press MENU to exit the menu screen.



 You need your password for any future access into the Parent menu. If you lose your password, see "Lost password" on page 56.

Using the Parent Menu


 If you are not familiar with the Parental Guideline rating system, you should select Child, Youth, or Young Adult to help simplify the rating selection. To set more restrictive ratings, select Custom.


 For descriptions of Child, Youth, and Young Adult ratings, see page 44.


The Parent menu includes the following options.

<i>Option</i>	<i>Description</i>
Parental Lock	OFF Parental lock is off. No programs are blocked from viewing.
<i>Turn ratings on/off and select a rating system</i>	Child Maximum ratings permitted are: <input type="checkbox"/> US: TV-Y, TV-G, G <input type="checkbox"/> Canada: TV-Y, C, G
	Youth Maximum ratings permitted are: <input type="checkbox"/> US: TV-PG, PG <input type="checkbox"/> Canada: TV-PG, PG, 8 ans+
	Young Adult Maximum ratings permitted are: <input type="checkbox"/> US: TV-14, PG-13 <input type="checkbox"/> Canada: TV-14, 14+, 13 ans+
	Custom Select to set ratings manually. <input type="checkbox"/> US: See page 44 for details. <input type="checkbox"/> Canada: See page 45 for details.
Change Password	For changing your password.

US Models: Selecting Custom Rating Options

 The content ratings will increase depending on the level of the age-based rating. For example, a program with a TV-PG V (Violence) rating may contain moderate violence, while a TV-14 V (Violence) rating may contain more intense violence.

 To ensure maximum blocking capability, the age-based ratings should be blocked.

 If you block unrated TV programs, be aware that the following types of programs may be blocked: emergency broadcasts, political programs, sports, news, public service announcements, religious programs and weather.

For US models, the Custom Rating Menu includes the following options. (For Canadian models, see page 45.)

<i>Option</i>	<i>Description</i>	
Movie Rating	G	All children and General Audience.
	PG	Parental Guidance suggested.
	PG-13	Parental Guidance for children under 13.
	R	Restricted viewing, parental guidance is suggested for children under 17.
	NC-17 and X	No one 17 and under allowed.
TV Rating	Age-Based Options	
<i>Block programs by their rating, content or both</i>	TV-Y	All children.
	TV-Y7	Directed to older children.
	TV-G	General Audience.
	TV-PG	Parental Guidance suggested.
	TV-14	Parents Strongly cautioned.
	TV-MA	Mature Audience only.
		Content-Based Options
	FV	Fantasy Violence.
	D	Suggestive Dialogue.
	L	Strong Language.
	S	Sexual situations.
	V	Violence.
Unrated	Block	Blocks all programs and movies that are broadcast without a rating.
	<i>Block programs or movies that are broadcast without a rating</i>	Allow

Canadian Models: Selecting Custom Rating Options

For Canadian models, the Custom Rating Menu includes the following options. (For US models, see page 44.)

<i>Option</i>	<i>Description</i>	
English Rating	C	All children.
	C8+	Children 8 years and older.
	G	General programming.
	PG	Parental Guidance.
	14+	Viewers 14 and older.
	18+	Adult programming.
French Rating	G	General programming.
	8 ans+	Not recommended for young children.
	13 ans+	Not recommended for ages under 13.
	16 ans+	Not recommended for ages under 16.
	18 ans+	Programming restricted to adults.
USA Rating	See "US Models" on page 44 for details.	

Viewing Blocked Programs

You can view a blocked program by entering the password. Press the ENTER button when tuned to a blocked program. This temporarily switches off the Parental Lock. To reactivate the Parental Lock settings, turn off the TV. When the TV is turned on again, your Parental Controls settings are reactivated.





Using the Timer Menu

To select the Timer menu

- 1 Press MENU.
- 2 Use the joystick to move to the Timer icon  and press .





To set the Current Time

- 1 Use the joystick to select “Current Time”, then press .
- 2 If it is currently Daylight Savings Time, be sure to set that mode to “ON”. (Daylight Savings Time starts in the Spring and ends in the Fall.)
- 3 Use the joystick to enter the correct time, then press .
- 4 Press MENU to exit the menu screen.

To set the Timer

Before setting the timer, be sure to set your TV’s clock to the current time (and, if appropriate, Daylight Savings Mode). To check the TV’s time setting, press the DISPLAY button on the remote control.

- 1 Move the joystick to “Timer 1” or “Timer 2”, then press .
- 2 Use the joystick to enter your date, time and channel preferences, then press  to select each one.
- 3 Press MENU to exit the menu screen.

To reset the Clock or Timers

- Press RESET on the remote control after selecting that option in the Timer menu. This resets to the factory defaults.

Selecting Timer Options



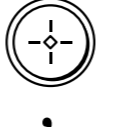

The Timer Menu includes the following options:

Option	Description
Timer 1 Timer 2	Program Select to set the Timer by day, time, duration, and channel.
	OFF Select to turn off the Timer. (Your previous settings will be saved.)
Current Time	Set the current time.
Daylight Savings	ON Select in the spring to turn on this mode during Daylight Saving Time.
	OFF Select in the fall to turn of this mode at the end of Daylight Saving Time.



Using the Setup Menu

To select the Setup Menu

- 1 Press MENU.
- 2 Use the joystick to move to the Setup icon  and press .
- 3 Use the joystick to scroll through the features.
- 4 Press  to select a feature. (That feature's options appear.)
- 5 Use the joystick to scroll through the options.
- 6 Press  to select the desired option.
- 7 Press MENU to exit the menu screen.







Selecting Setup Options

The Setup Menu includes the following options:

<i>Option</i>	<i>Description</i>
Caption Vision	Allows you to select from three closed-caption modes (for programs that are broadcast with closed caption).
CC1, CC2, CC3, CC4	Displays a printed version of the dialog or sound effects of a program. (Should be set to CC1 for most programs.)
TEXT1, TEXT2, TEXT3, TEXT4	Displays network/station information presented using either half or the whole screen (if available). For closed captioning, set to CC1.
XDS (Extended Data Service)	Displays a network name, program name, program length, and time of the show (if the broadcaster offers this service).
OFF	Turns off Caption Vision.

(Continued on the next page)

<i>Option</i>	<i>Description</i>
Video Label	Allows you to label the audio/video components you connected to the TV so you can identify them when using the TV/VIDEO button. When in the Setup menu's Video Label feature, use the joystick to highlight an input to label, then press  to select it. Use the joystick to scroll through the labels. Press  to select the component you connected to each of the input jacks on the back of your TV. Select "Skip" if you do not have a component connected to a particular set of input jacks.
VIDEO 1/2/3/4	VHS, 8mm, Beta, LD, Game, SAT, DVD, Web, Receiver, DTV, Skip
VIDEO 5/6	HD, DVD, DTV, Skip
	 If you select "Skip", your TV skips this connection when you press the TV/VIDEO button.
Tilt Correction	Allows you to correct any tilt of the picture.
Language	Select to display all on-screen menus in your language of choice.
16:9 Enhanced	Provides enhanced picture resolution for widescreen sources, such as selected DVD titles (only available when the TV is in VIDEO mode). Press TV/VIDEO and select from one of the following options:
AUTO	To activate automatically when a 16:9 signal is received.
ON	To activate manually.
Demo	Runs a demonstration of on-screen menus.

 To use this feature with widescreen DVDs, set your DVD player to 16:9 aspect ratio.

 AUTO/ON will appear when TV is in video mode 1-6.
ON/OFF will appear when TV is in VIDEO mode 5-6 and the 480p signal occurs.

Other Information

Overview

This chapter includes the following topics:


<i>Topic</i>	<i>Page</i>
Programming the Remote Control	50
Operating Other Equipment with Your TV Remote Control	53
Troubleshooting	55
Specifications	57
Index	59

Programming the Remote Control

The remote control is preset to operate Sony brand video equipment.

Sony Equipment	Switch Position on Remote Control	Programmable Code Number
Beta, ED Beta VCRs	AV1	303
8 mm VCR	AV2	302
VHS VCR	AV3	301
DVD Player	DVD	751

If you have video equipment other than Sony brand that you want to control with the TV's remote control, use the following procedures to program the remote control.

 The equipment must have infrared (IR) remote capability in order to be used with the remote control.

From the "Manufacturer's Codes" listed on page 52, select the three-digit code number for the manufacturer's code for your component. If more than one code number is listed, start with the number listed first. Use the code number to complete the following procedure.

1 Move the slide switch to the desired component type (skip this step if you are programming a cable box or satellite receiver).

2 Press CODE SET.

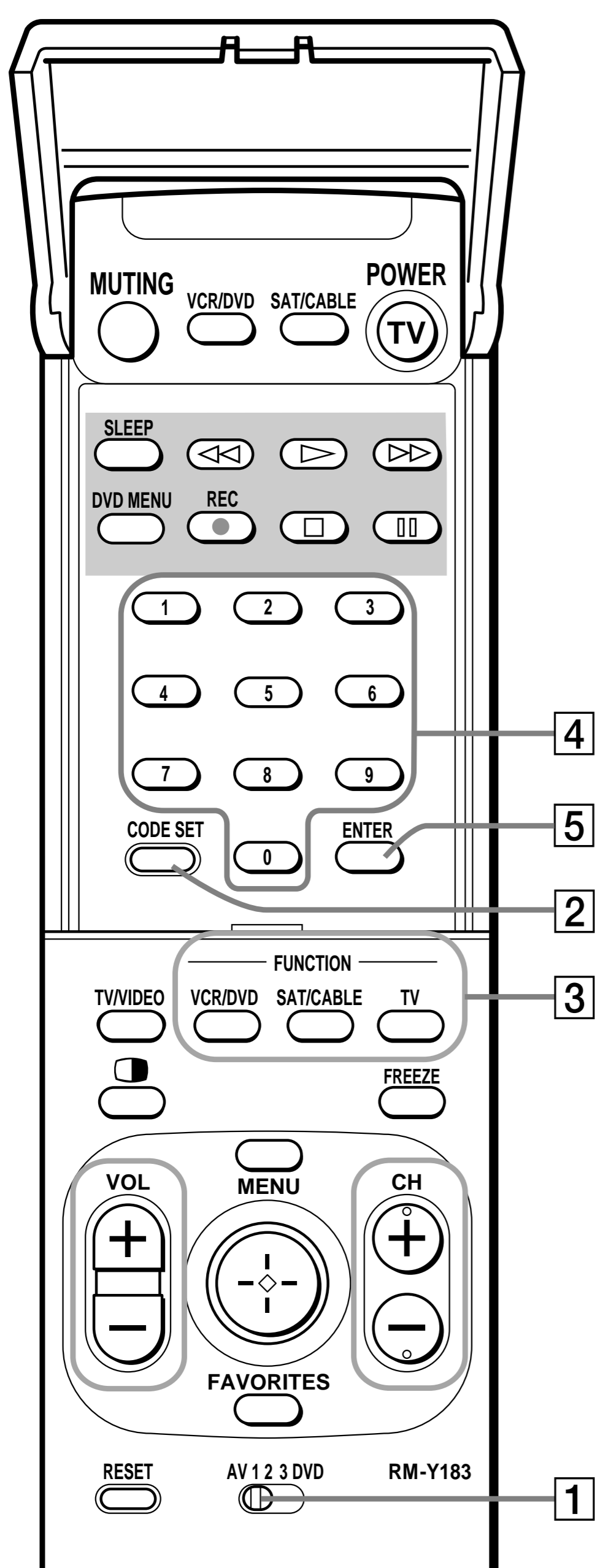
 You must perform step 3 within 10 seconds of step 2, or you must start again from step 2.

3 Press the white function button for the type of component you want to control with the TV's remote control (VCR/DVD or SAT/CABLE).

4 Enter the three-digit manufacturer's code number.

5 Press ENTER.

6 To check if the code number works, aim the TV's remote control at the component and press the green POWER button that corresponds with that component. If it responds, you are done. If not, try using the other codes listed for that manufacturer.



Tips

- ❑ If more than one code number is listed, try entering them one by one until you come to the correct code for your equipment.
- ❑ If you enter a new code number, the code number you previously entered at that setting is erased.
- ❑ In some cases, you may not be able to operate your equipment with the Sony remote control. In such cases, use the equipment's own remote control unit.
- ❑ Whenever you remove the batteries to replace them, the code numbers may revert to the factory setting and must be reset.

Other Information

Manufacturer's Codes

VCRs

<i>Manufacturer</i>	<i>Code</i>
Sony	301
Admiral (M. Ward)	327
Aiwa	338, 344
Audio Dynamic	314, 337
Broksonic	319, 317
Canon	309, 308
Citizen	332
Craig	302, 332
Criterion	315
Curtis Mathes	304, 338, 309
Daewoo	341, 312, 309
DBX	314, 336, 337
Dimensia	304
Emerson	319, 320, 316, 317, 318, 341
Fisher	330, 335
Funai	338
General Electric	329, 304, 309
Go Video	322, 339, 340
Goldstar	332
Hitachi	306, 304, 305, 338
Instant Replay	309, 308
JC Penney	309, 305, 304, 330, 314, 336, 337
JVC	314, 336, 337, 345, 346, 347
Kenwood	314, 336, 332, 337
LXI (Sears)	332, 305, 330, 335, 338
Magnavox	308, 309, 310
Marantz	314, 336, 337
Marta	332
Memorex	309, 335
Minolta	305, 304
Mitsubishi/ MGA	323, 324, 325, 326
Multitech	325, 338, 321
NEC	314, 336, 337
Olympic	309, 308
Optimus	327

<i>Manufacturer</i>	<i>Code</i>
Orion	317
Panasonic	308, 309, 306, 307
Pentax	305, 304
Philco	308, 309
Philips	308, 309, 310
Pioneer	308
Quasar	308, 309, 306
RCA/ PROSCAN	304, 305, 308, 309, 311, 312, 313, 310, 329
Realistic	309, 330, 328, 335, 324, 338
Sansui	314
Samsung	322, 313, 321
Sanyo	330, 335
Scott	312, 313, 321, 335, 323, 324, 325, 326
Sharp	327, 328
Shintom	315
Signature 2000 (M. Ward)	338, 327
SV2000	338
Sylvania	308, 309, 338, 310
Symphonic	338
Tashiro	332
Tatung	314, 336, 337
Teac	314, 336, 338, 337
Technics	309, 308
Toshiba	312, 311
Wards	327, 328, 335, 331, 332
Yamaha	314, 330, 336, 337
Zenith	331

Laserdisc Players

<i>Manufacturer</i>	<i>Code</i>
Sony	701
Panasonic	704, 710
Pioneer	702

DVD Players

<i>Manufacturer</i>	<i>Code</i>
Sony	751
GE	755
Hitachi	758
JVC	756
Magnavox	757
Mitsubishi	761
Oritron	759
Panasonic	753
Philips	757
Pioneer	752
RCA/ PROSCAN	755
Samsung	758
Toshiba	754
Zenith	760

Cable Boxes

<i>Manufacturer</i>	<i>Code</i>
Sony	230
Hamlin/Regal	222, 223, 224, 225, 226
Jerrold/G. I.	201, 202, 203, 204, 205, 206, 207, 208, 218
Oak	227, 228, 229
Panasonic	219, 220, 221
Pioneer	214, 215
Scientific Atlanta	209, 210, 211
Tocom	216, 217
Zenith	212, 213

Satellite Receivers

<i>Manufacturer</i>	<i>Code</i>
Sony	801
Dish Network	810
Echostar	810
General Electric	802
Hitachi	805
Hughes	804
Mitsubishi	809
Panasonic	803
RCA/ PROSCAN	802, 808
Toshiba	806, 807

Operating Other Equipment with Your TV Remote Control

Operating a VCR

Move the slide switch to the AV input you coded for this device.

<i>To Do This ...</i>	<i>Press</i>
Turn on/off	VCR/DVD (green POWER button)
Select VCR	VCR/DVD (white FUNCTION button)
Change channels	CH +/-
Record	▶ and REC simultaneously.
Play	▶
Stop	■
Fast forward	▶▶
Rewind the tape	◀◀
Pause	
Search the picture forward or backward	▶▶ or ◀◀ during playback (release to resume normal playback)

Operating a DVD Player


Move the slide switch to the AV input you coded for this device.

<i>To Do This ...</i>	<i>Press</i>
Turn on/off	VCR/DVD (green POWER button)
Select DVD	VCR/DVD (white FUNCTION button)
Play	▶
Stop	■
Pause	
Step through different tracks of an audio disc	▶▶ to step forward or ◀◀ to step backward
Step through different chapters of a video disc	CH+ to step forward or CH- to step backward
Display the DVD menu	DVD MENU
Select tracks directly	0-9 buttons

Operating a Cable Box






<i>To Do This ...</i>	<i>Press</i>
Turn on/off	SAT/CABLE (green POWER button)
Select Cable Box	SAT/CABLE (white FUNCTION button)
Select a channel	0-9 buttons, ENTER
Change channels	CH +/-
Back to previous channel	JUMP

Operating a Satellite Receiver

<i>To Do This ...</i>	<i>Press</i>
Turn on/off	SAT/CABLE (green POWER button)
Select Satellite Receiver	SAT/CABLE (white FUNCTION button)
Select a channel	0-9 buttons, ENTER
Change channels	CH +/-
Back to previous channel	JUMP
Display channel number	DISPLAY
Display SAT guide	GUIDE
Display SAT menu	MENU
Move highlight (cursor)	Joystick or arrows
Select item	 button

Operating an MDP (Laserdisc Player)

Move the slide switch to the AV input you coded for this device.

<i>To Do This ...</i>	<i>Press</i>
Turn on/off	VCR/DVD (green POWER button)
Select MDP	VCR/DVD (white FUNCTION button)
Play	
Stop	
Pause	
Search the picture forward or backward	 or  during playback (release to resume normal playback)
Search a chapter forward or backward	CH +/-

Troubleshooting

<i>Problem</i>	<i>Possible Remedies</i>
No picture (screen not lit), no sound	<ul style="list-style-type: none"> <input type="checkbox"/> If your TV does not turn on, and a red light keeps flashing, your TV may need service. Call your local Sony Service Center. <input type="checkbox"/> Make sure the power cord is plugged in. <input type="checkbox"/> Push the power button on the front of the TV. <input type="checkbox"/> Check to see if the TV/VIDEO setting is correct: when watching TV, set to TV; when watching connected equipment, set to VIDEO 1, 2, 3, 4, 5 or 6, as appropriate. <input type="checkbox"/> Try another channel; it could be station trouble.
Remote control does not operate	<ul style="list-style-type: none"> <input type="checkbox"/> Batteries could be weak. Check the batteries and replace as necessary. <input type="checkbox"/> Press TV (FUNCTION) when operating your TV. <input type="checkbox"/> Make sure the TV's power cord is connected securely to the wall outlet. <input type="checkbox"/> Locate the TV at least 3-4 feet away from fluorescent lights. <input type="checkbox"/> Check the orientation of the batteries.
Dark, poor or no picture (screen lit), good sound	<ul style="list-style-type: none"> <input type="checkbox"/> Adjust the Picture setting in the Video menu (see page 36). <input type="checkbox"/> Adjust the Brightness setting in the Video menu (see page 36). <input type="checkbox"/> Check antenna/cable connections.
Good picture, no sound	<ul style="list-style-type: none"> <input type="checkbox"/> Press MUTING so that "MUTING" disappears from the screen (see page 4). <input type="checkbox"/> Make sure Speaker is set to ON in the Audio menu (see page 38).
Cannot receive upper channels (UHF) when using an antenna	<ul style="list-style-type: none"> <input type="checkbox"/> Change Cable to OFF (see page 40). <input type="checkbox"/> Use Auto Program in the Channel menu to add receivable channels that are not presently in memory (see page 40).
No color	<ul style="list-style-type: none"> <input type="checkbox"/> Adjust the Color settings in the Video menu (see page 36).
Only snow and noise appear on the screen	<ul style="list-style-type: none"> <input type="checkbox"/> Check the antenna/cable connections. <input type="checkbox"/> Try another channel (it could be station trouble). <input type="checkbox"/> Press ANT to change the input mode (see page 40).
Dotted lines or stripes	<ul style="list-style-type: none"> <input type="checkbox"/> Adjust the antenna. <input type="checkbox"/> Move the TV away from noise sources such as cars, neon signs, or hair-dryers.
TV is fixed to one channel	<ul style="list-style-type: none"> <input type="checkbox"/> Use Auto Program in the Channel menu to add receivable channels that are not presently in the TV's memory (see page 40). <input type="checkbox"/> Check your Channel Fix settings (see page 40).
Double images or ghosts	<ul style="list-style-type: none"> <input type="checkbox"/> Use a highly directional outdoor antenna or a cable (if the problem is caused by reflections from nearby mountains or tall buildings).
Cannot operate menu	<ul style="list-style-type: none"> <input type="checkbox"/> If the item you want to choose appears in gray, you cannot select it.
Cannot receive any channels when using cable TV	<ul style="list-style-type: none"> <input type="checkbox"/> Use Auto Program in the Channel menu to add receivable channels that are not presently in the TV's memory (see page 40). <input type="checkbox"/> Check your cable settings. <input type="checkbox"/> Make sure Cable is set to ON in the Channel menu (see page 40).

Other Information

<i>Problem</i>	<i>Possible Remedies</i>
Cannot gain enough volume when using a cable box	<input type="checkbox"/> Increase the volume of the cable box using the cable box's remote control. Then press TV (FUNCTION) and adjust the TV's volume.
Cannot receive channels	<input type="checkbox"/> Use Auto Program in the Channel menu to add receivable TV channels that are not presently in TV memory (see page 40).
Unable to select a channel	<input type="checkbox"/> Use Auto Program in the Channel menu to add receivable TV channels that are not presently in TV memory (see page 40).
Lost password	<input type="checkbox"/> In the password screen (see page 42), enter the following master password: 4357. The master password clears your previous password; it cannot be used to temporarily unblock channels.
Cannot change channels with the remote control	<input type="checkbox"/> Be sure you have not inadvertently switched your TV from channel 3 or 4 setting if you are using another device to change channels. <input type="checkbox"/> If you are using another device to control channels, be sure the "function" button for that device has been pressed.
Cannot cycle through the other video equipment connected to the TV	<input type="checkbox"/> Be sure the Video Label feature has not been set to Skip (see page 48).
There is a black box on the screen	<input type="checkbox"/> You have selected a text option in the Setup menu and no text is available. (See page 47 to reset Setup selections.) To turn this feature off, select OFF in the Caption Vision option. If you were trying to get closed captioning, select CC1 instead of Text 1-4.
There is no twin picture or it is just static	<input type="checkbox"/> Be sure your twin picture is set to a video source/channel that has a program airing. <input type="checkbox"/> You may be tuned to a video input with nothing connected to it. Try cycling through your video inputs using the TV/VIDEO button. <input type="checkbox"/> Twin View is not set to receive a signal from the AUX input. If you have connected a VCR or satellite receiver to the AUX input on the TV, it will not show in the second picture.
I get the same program in the window picture as in the main picture	<input type="checkbox"/> Both may be set to the same channel. Try changing channels in either the main picture or the window picture. <input type="checkbox"/> You may be running all your channels through a cable box. The cable box will only unscramble one signal at a time, so you cannot use the Twin View feature. If possible, run a direct cable to your TV's VHF/UHF input. (This will only work if your cable system provides an unscrambled signal.)
I cannot get anything but TV channels in my second picture	<input type="checkbox"/> Be sure the video label has not been set to skip your video inputs. See the Setup menu on page 48.

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

Specifications

All Models (General)

Picture Tube	FD Trinitron® tube	
Antenna	75 ohm external terminal for VHF/UHF	
Television System	NTSC, American TV Standard	
Channel Coverage		
VHF	2-13	
UHF	14-69	
CATV	1-125	
Power Requirements	120V, 60 Hz	
Number of Inputs/Outputs		
Video (IN)	4	1 Vp-p, 75 ohms unbalanced, sync negative
S Video (IN)	3	Y: 1 Vp-p, 75 ohms unbalanced, sync negative C: 0.286 Vp-p (Burst signal), 75 ohms
Audio (IN)	6	500 mVrms (100% modulation) Impedance: 47 kilohm
Audio (OUT)	1	More than 408 mVrms at the maximum volume setting (Variable) More than 408 mVrms (Fixed) Impedance (output): 2 kilohms
Monitor Out	1	1 Vp-p, 75 ohms unbalanced, sync negative
CONTROL S (IN/OUT)	1	
Component Video Input	2 (Y, P _B , P _R)	Y: 1.0 Vp-p, 75 ohms unbalanced, sync negative; P _B : 0.7 Vp-p, 75 ohms P _R : 0.7 Vp-p, 75 ohms

Other Information

KV-32HS20

Supplied Accessories	
Remote Control	RM-Y183
AA (R6) Batteries	2 supplied for remote control
Optional Accessories	
AV Cable	VMC-810/820/830 HG
Audio Cable	RKC-515HG
S-LINK Cable	RK-G69HG
Component Video Cable	VMC-10/30 HG
TV Stand	SU-32HS2
Visible Screen Size	32 in (812.8 mm) picture measured diagonally
Actual CRT Size	34 in (863.4 mm) picture measured diagonally
Speaker Output	15W x 2
Dimensions (W x H x D)	898.0 x 678.0 x 579.5 mm (35 3/8 x 26 3/4 x 27 7/8 in)
Mass	84 kg (185 lbs)
Power Consumption	
In Use	245 W
In Standby	2 W

KV-36HS20 and KV-36HS20H

Supplied Accessories	
Remote Control	RM-Y183
AA (R6) Batteries	2 supplied for remote control
Optional Accessories	
AV Cable	VMC-810/820/830 HG
Audio Cable	RKC-515HG
Component Video Cable	VMC-10/30 HG
TV Stand	SU-36HS2
Visible Screen Size	36 in (914 mm) picture measured diagonally
Actual CRT Size	38 in (965.2 mm) picture measured diagonally
Speaker Output	15W x 2
Dimensions (W x H x D)	994 x 754.5 x 622 mm (39 1/4 x 29 3/4 x 24 1/2 in)
Mass	108 kg (238 lbs)
Power Consumption	
In Use	245 W
In Standby	2 W

Design and specifications are subject to change without notice.

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