

# JVC

# SCHEMATIC DIAGRAMS

## COLOR TELEVISION

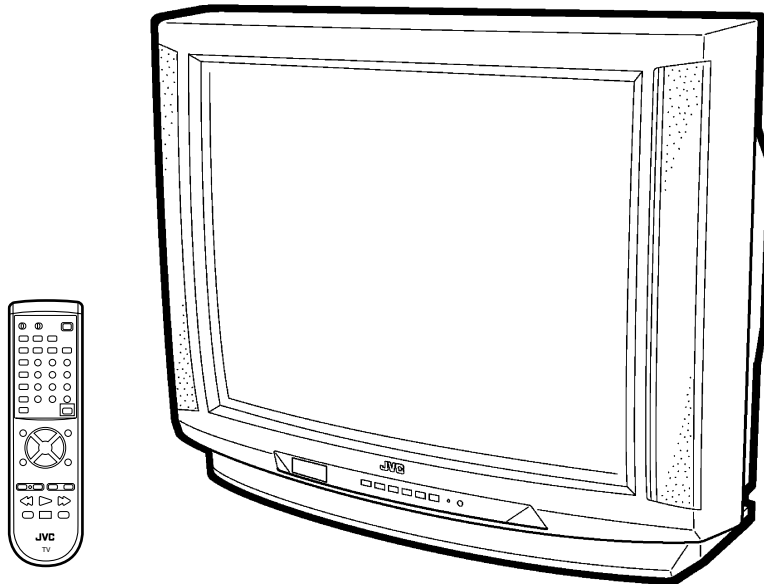
BASIC CHASSIS
---------------

AC
----

# AV-27D502 /R

# AV-27D502 /S

CD-ROM No. SML200103



# AV-27D502 /R AV-27D502 /S STANDARD CIRCUIT DIAGRAM

## NOTE ON USING CIRCUIT DIAGRAMS

### 1. SAFETY

The components identified by the  $\triangle$  symbol and shading are critical for safety. For continued safety replace safety critical components only with manufactures recommended parts.

### 2. SPECIFIED VOLTAGE AND WAVEFORM VALUES

The voltage and waveform values have been measured under the following conditions.

- (1) Input signal : Color bar signal
- (2) Setting positions of each knob/button and variable resistor : Original setting position when shipped
- (3) Internal resistance of tester : DC 20k $\Omega$ /V
- (4) Oscilloscope sweeping time : H  $\Rightarrow$  20 $\mu$ S/div  
: V  $\Rightarrow$  5mS/div  
: Others  $\Rightarrow$  Sweeping time is specified
- (5) Voltage values : All DC voltage values

\* Since the voltage values of signal circuit vary to some extent according to adjustments, use them as reference values.

### 3. INDICATION OF PARTS SYMBOL [EXAMPLE]

- In the PW board : R1209  $\rightarrow$  R209

### 4. INDICATIONS ON THE CIRCUIT DIAGRAM

#### (1) Resistors

##### ● Resistance value

- No unit : [ $\Omega$ ]
- k : [k $\Omega$ ]
- M : [M $\Omega$ ]

##### ● Rated allowable power

- No indication : 1/10 [W]
- Others : As specified

##### ● Type

- No indication : Carbon resistor
- OMR : Oxide metal film resistor
- MFR : Metal film resistor
- MPR : Metal plate resistor
- UNFR : Uninflammable resistor
- FR : Fusible resistor

\* Composition resistor 1/2 [W] is specified as 1/2S or Comp.

#### (2) Capacitors

##### ● Capacitance value

- 1 or higher : [pF]
- less than 1 : [ $\mu$ F]

##### ● Withstand voltage

- No indication : DC50[V]
- AC indicated : AC withstand voltage [V]
- Others : DC withstand voltage [V]

\* Electrolytic Capacitors

47/50[Example] : Capacitance value [ $\mu$ F]/withstand voltage[V]





##### ● Type

- No indication : Ceramic capacitor
- MY : Mylar capacitor
- MM : Metalized mylar capacitor
- PP : Polypropylene capacitor
- MPP : Metalized polypropylene capacitor
- MF : Metalized film capacitor
- TF : Thin film capacitor
- BP : Bipolar electrolytic capacitor
- TAN : Tantalum capacitor

### (3) Coils



- No unit : [ $\mu$ H]
- Others : As specified

### (4) Power Supply



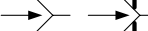
-  : B1
-  : B2(12V)
-  : 9V
-  : 5V

\* Respective voltage values are indicated





### (5) Test point

-  : Test point
-  : Only test point display

### (6) Connecting method

-  : Connector
-  : Wrapping or soldering
-  : Receptacle

### (7) Ground symbol

-  : LIVE side ground
-  : ISOLATED(NEUTRAL) side ground
-  : EARTH ground
-  : DIGITAL ground

## 5. NOTE FOR REPAIRING SERVICE

This model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : ( $\perp$ ) side GND and the ISOLATED(NEUTRAL) : ( $\text{⏏}$ ) side GND. Therefore, care must be taken for the following points.

- (1) Do not touch the LIVE side GND or the LIVE side GND and the ISOLATED(NEUTRAL) side GND simultaneously. If the above caution is not respected, an electric shock may be caused. Therefore, make sure that the power cord is surely removed from the receptacle when, for example, the chassis is pulled out.
- (2) Do not short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or never measure with a measuring apparatus (oscilloscope, etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND at the same time. If the above precaution is not respected, a fuse or any parts will be broken.

● Since the circuit diagram is a standard one, the circuit and circuit constants may be subject to change for improvement without any notice.

# CONTENTS

**SEMICONDUCTOR SHAPES** ..... 2-2

**BLOCK DIAGRAM** ..... 2-3

**CIRCUIT DIAGRAMS** ..... 2-5

**MAIN PWB CIRCUIT DIAGRAM** ..... 2-5

**MAIN, FRONT CONTROL AND FRONT AV INPUT PWB CIRCUIT DIAGRAMS** ..... 2-9

**PIP PWB CIRCUIT DIAGRAM** ..... 2-11

**AV SELECTOR PWB CIRCUIT DIAGRAM** ..... 2-13

**CRT SOCKET PWB CIRCUIT DIAGRAM** ..... 2-15

**LF PWB CIRCUIT DIAGRAM** ..... 2-16

**PATTERN DIAGRAMS** ..... 2-17

**MAIN PWB PATTERN** ..... 2-17

**AV SELECTOR PWB PATTERN** ..... 2-19

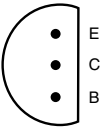

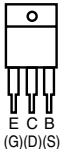
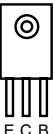

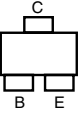
**CRT SOCKET AND PIP PWB PATTERNS** ..... 2-21

**FRONT CONTROL, FRONT AV INPUT AND LF PWB PATTERNS** ..... 2-23

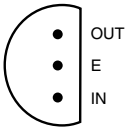
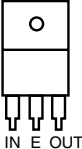
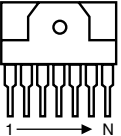
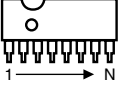
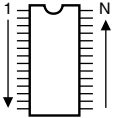
**CHANNEL CHART (US/CA)** ..... 2-25

## SEMICONDUCTOR SHAPES

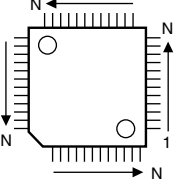
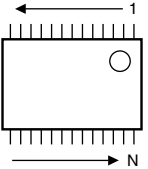
### TRANSISTOR

BOTTOM VIEW	FRONT VIEW				TOP VIEW
					CHIP TR 

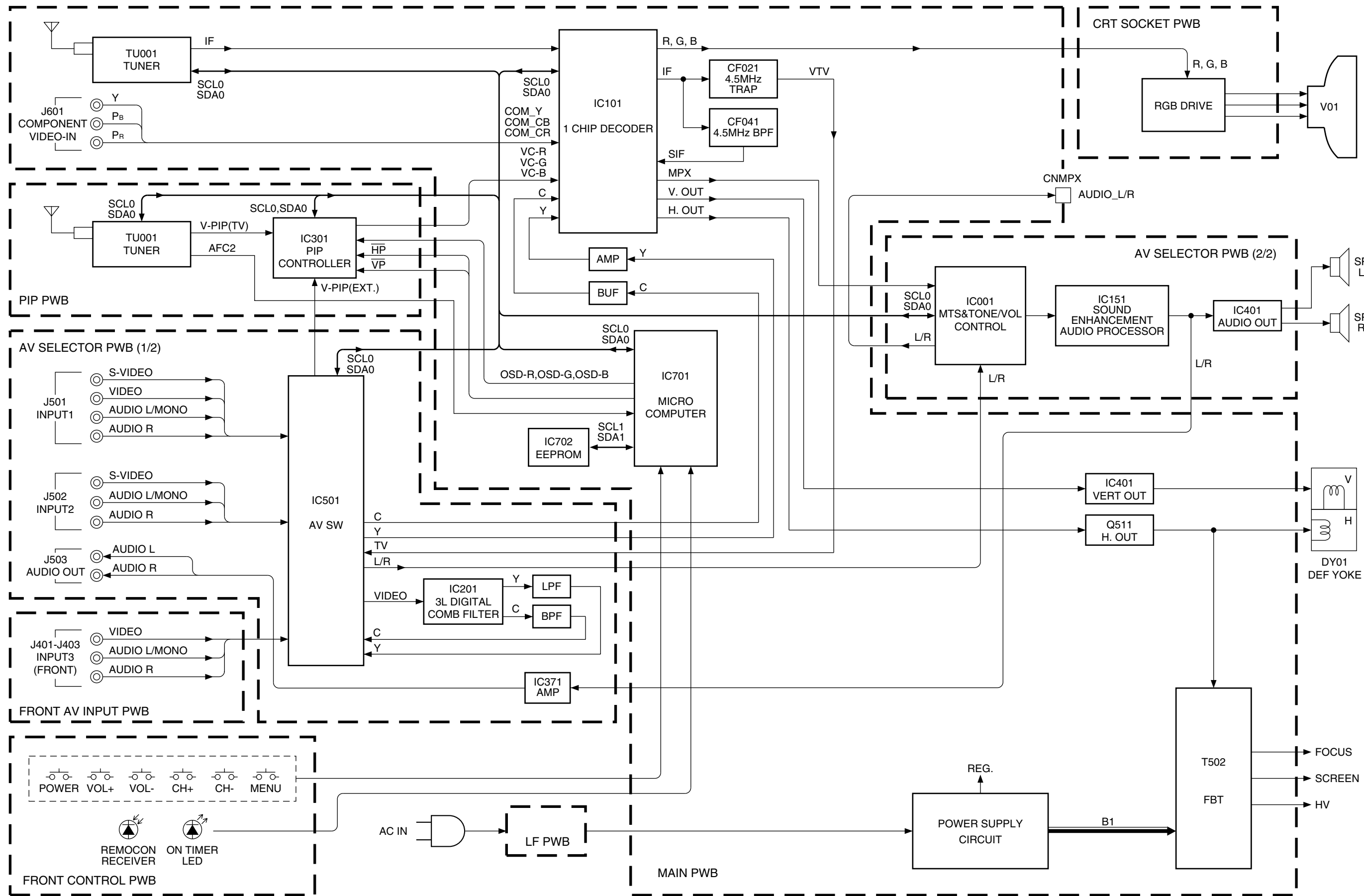
### IC

BOTTOM VIEW	FRONT VIEW			TOP VIEW
				

### CHIP IC

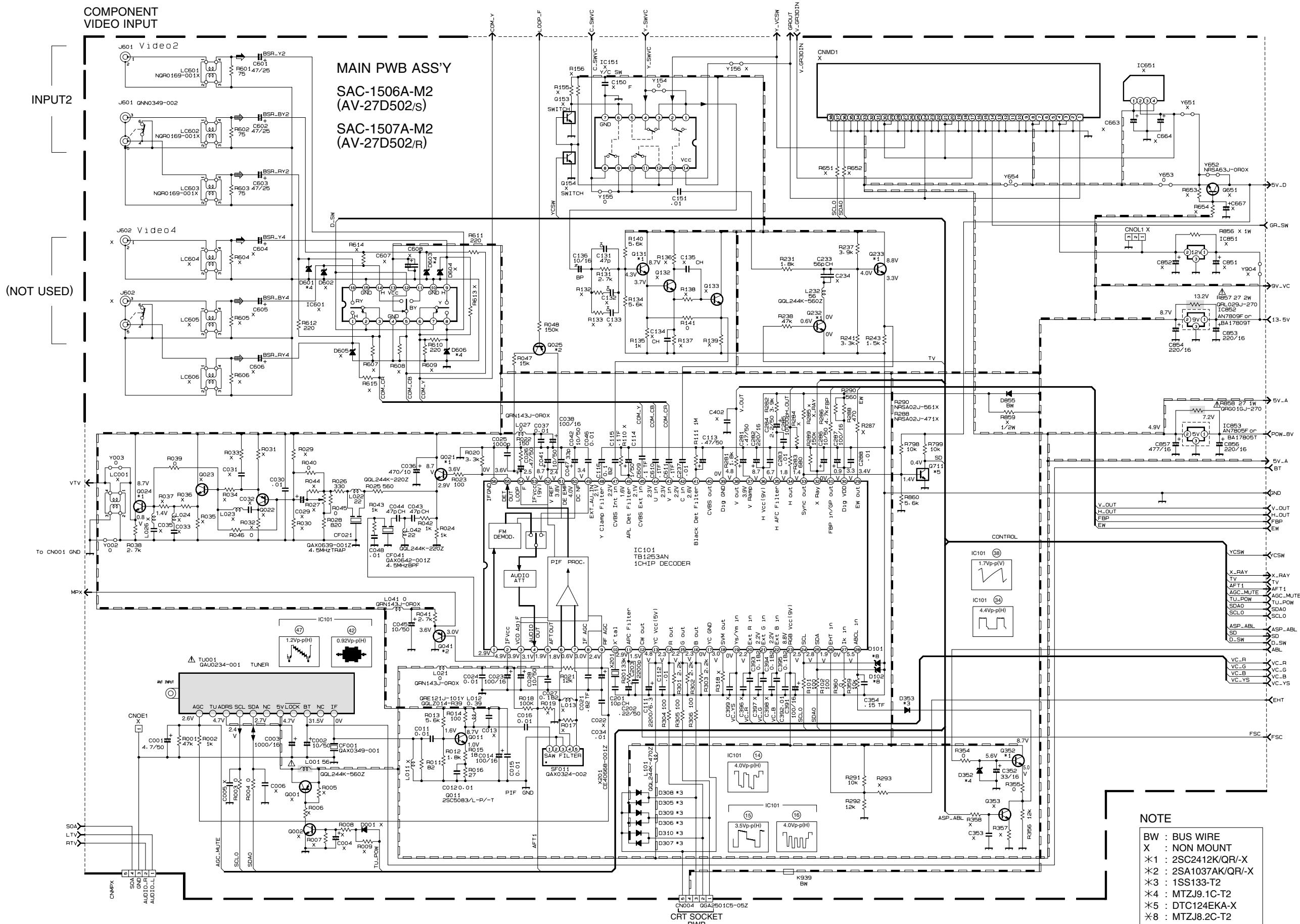
TOP VIEW	
	

# BLOCK DIAGRAM



# CIRCUIT DIAGRAMS

## MAIN PWB CIRCUIT DIAGRAM



No.51797

2-5

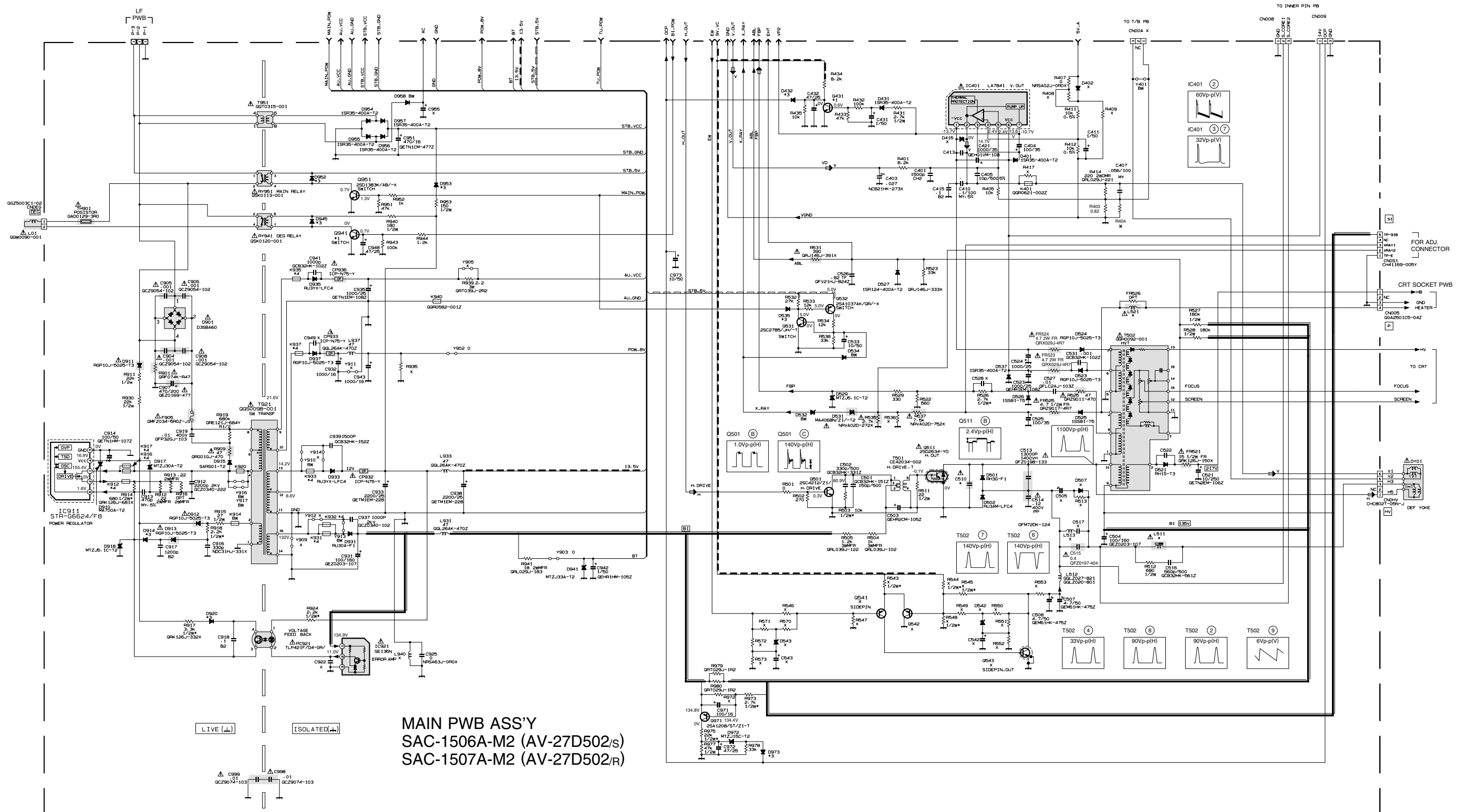
2-6

No.51797

**NOTE**

- BW : BUS WIRE
- X : NON MOUNT
- \*1 : 2SC2412K/QR/-X
- \*2 : 2SA1037AK/QR/-X
- \*3 : 1SS133-T2
- \*4 : MTZJ9.1C-T2
- \*5 : DTC124EKA-X
- \*8 : MTZJ8.2C-T2

MAIN PWB CIRCUIT DIAGRAM



MAIN PWB ASS'Y  
SAC-1506A-M2 (AV-27D502/S)  
SAC-1507A-M2 (AV-27D502/R)

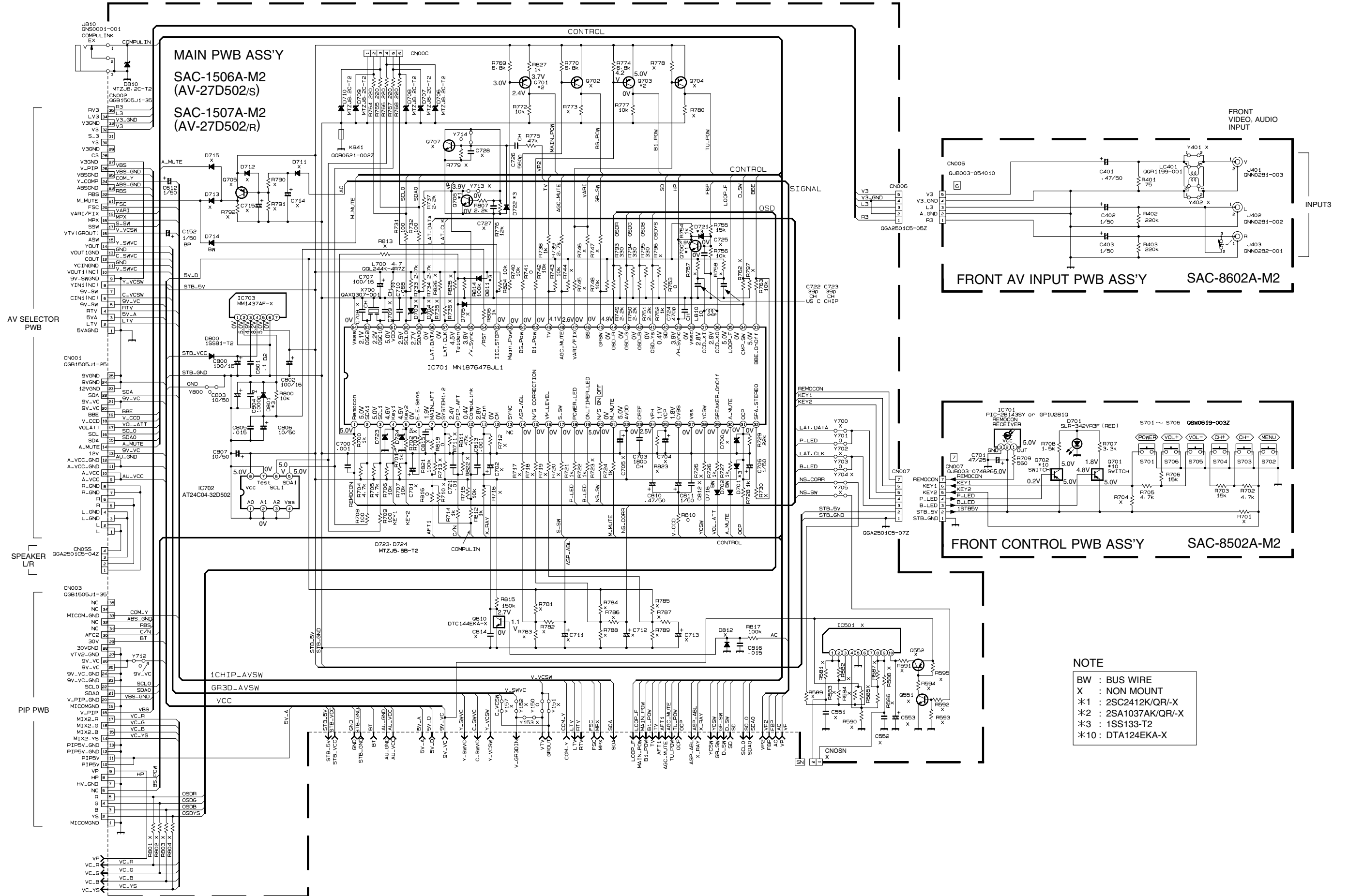
\*DIFFERENCE LIST ( \*PARTS)

	R404	L511	L521	C510
SAC-1506A-M2	NOT USED	QQR1027-004	88#S#H QQLZ026-880	4500pF QFZ0196-452
SAC-1507A-M2	10#?# QRE121J-100Y	QQR1027-002	43#S#H QQLZ026-430	3500pF QFZ0196-352

NOTE

- BW : BUS WIRE
- X : NON MOUNT
- \*1 : 2SC2412K/QR/-X
- \*2 : 2SA1037AK/QR/-X
- \*3 : 1SS133-T2
- \*4 : QQR0582-001Z

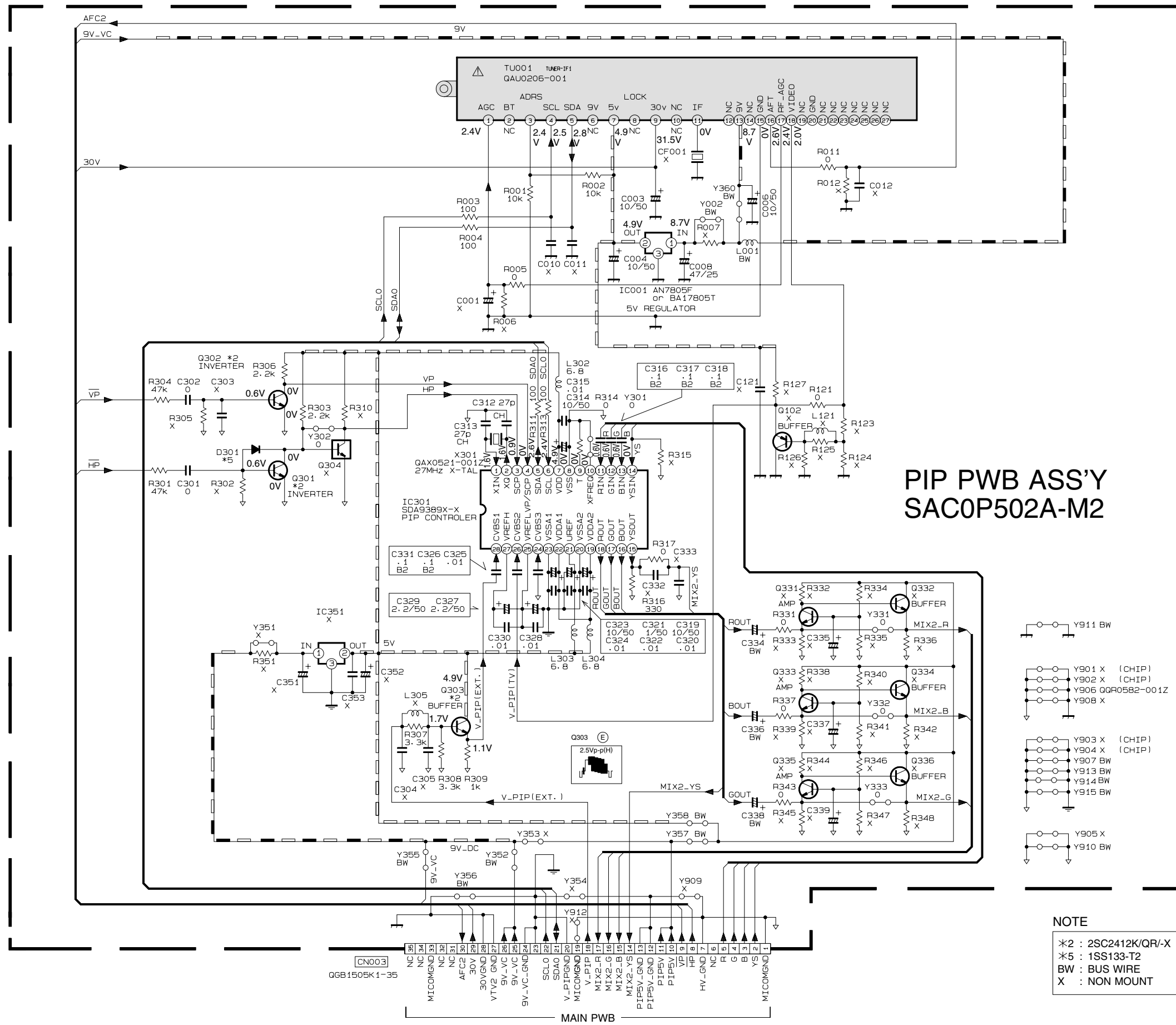
MAIN, FRONT CONTROL AND FRONT AV INPUT PWB CIRCUIT DIAGRAMS



**NOTE**

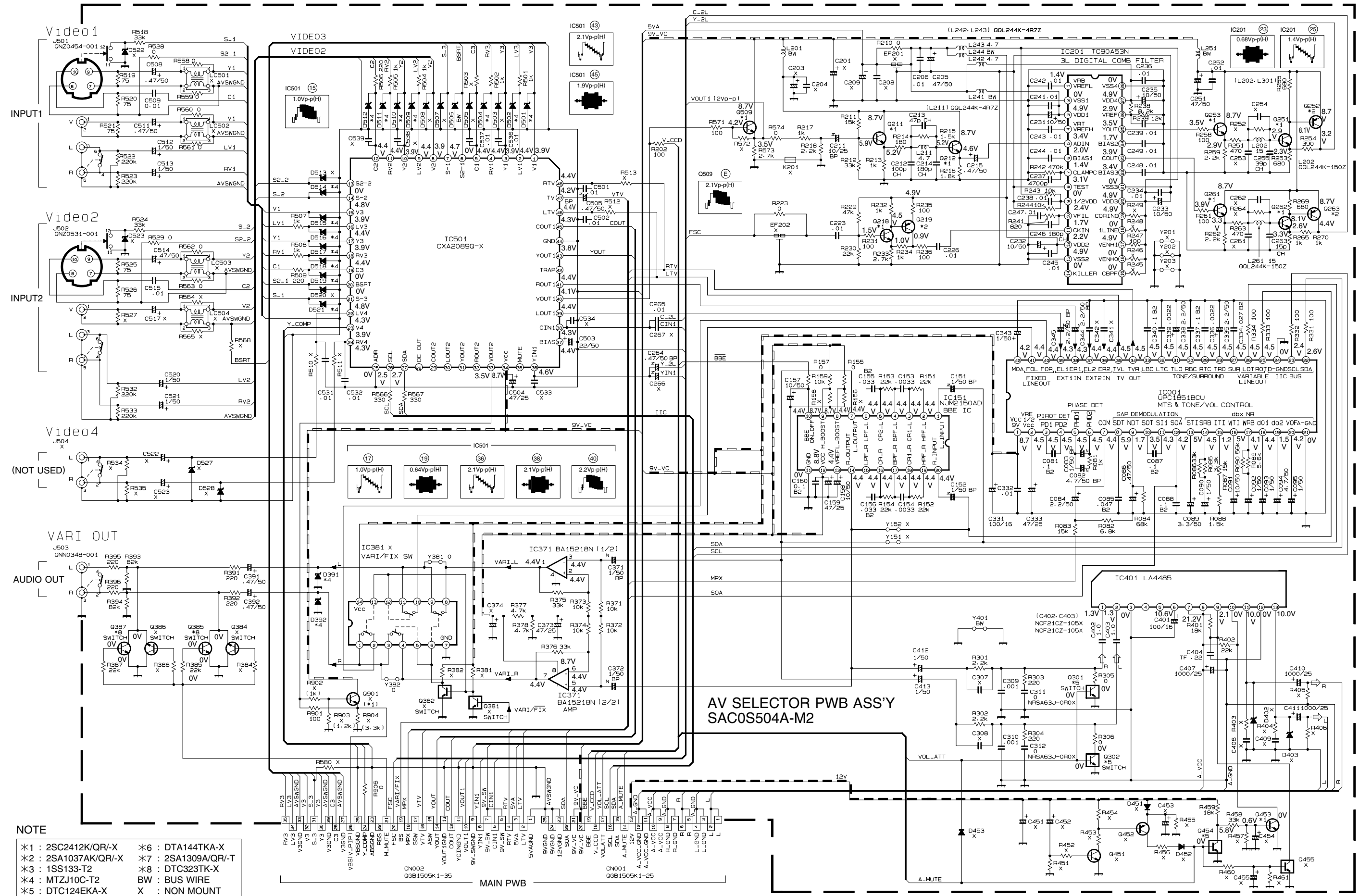
- BW : BUS WIRE
- X : NON MOUNT
- \*1 : 2SC2412K/QR-/X
- \*2 : 2SA1037AK/QR-/X
- \*3 : 1SS133-T2
- \*10 : DTA124EKA-X

PIP PWB CIRCUIT DIAGRAM





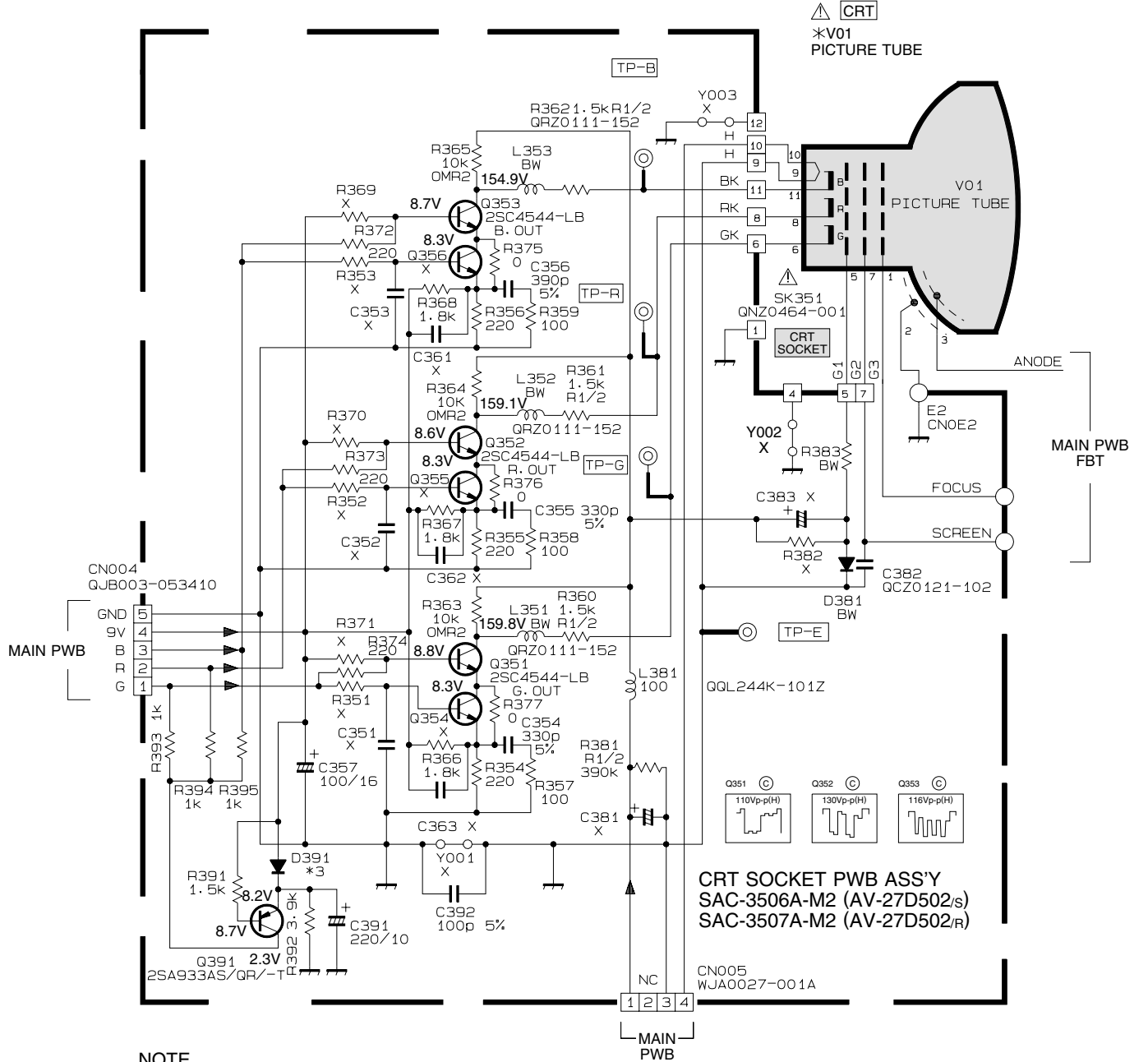
AV SELECTOR PWB CIRCUIT DIAGRAM



**NOTE**

*1 : 2SC2412K/QR-X	*6 : DTA144TKA-X
*2 : 2SA1037AK/QR-X	*7 : 2SA1309A/QR-T
*3 : 1SS133-T2	*8 : DTC323TK-X
*4 : MTZJ10C-T2	BW : BUS WIRE
*5 : DTC124EKA-X	X : NON MOUNT

**CRT SOCKET PWB CIRCUIT DIAGRAM**



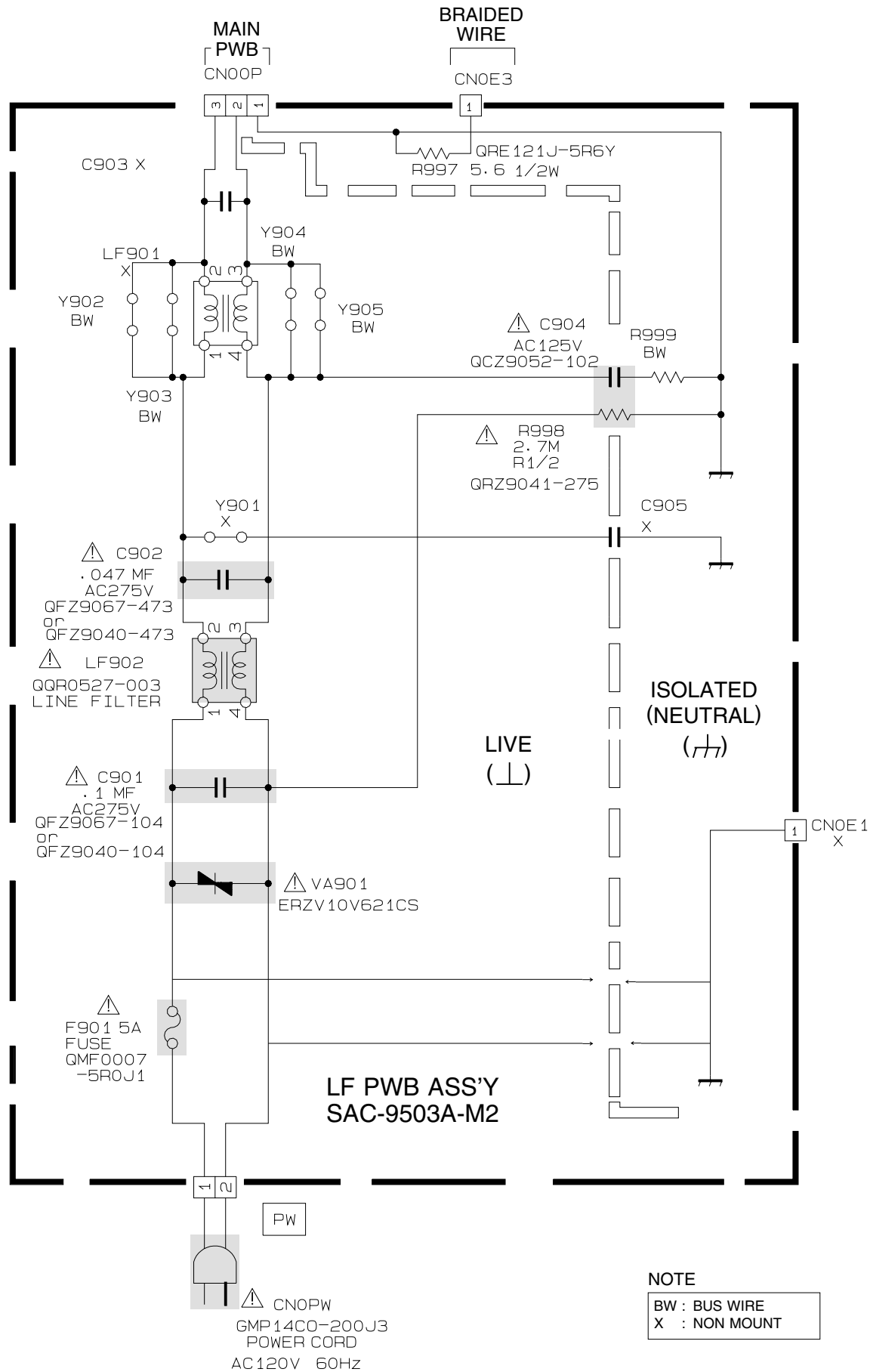
**NOTE**

BW : BUS WIRE  
 X : NON MOUNT  
 \*3 : 1SS133-T2

**\*DIFFERENCE LIST ( \*PARTS)**

	△ V01 (PICTURE TUBE)
SAC-3506A-M2	A68QDN891X001
SAC-3507A-M2	AD68ADT25X01

**LF PWB CIRCUIT DIAGRAM**

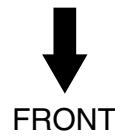
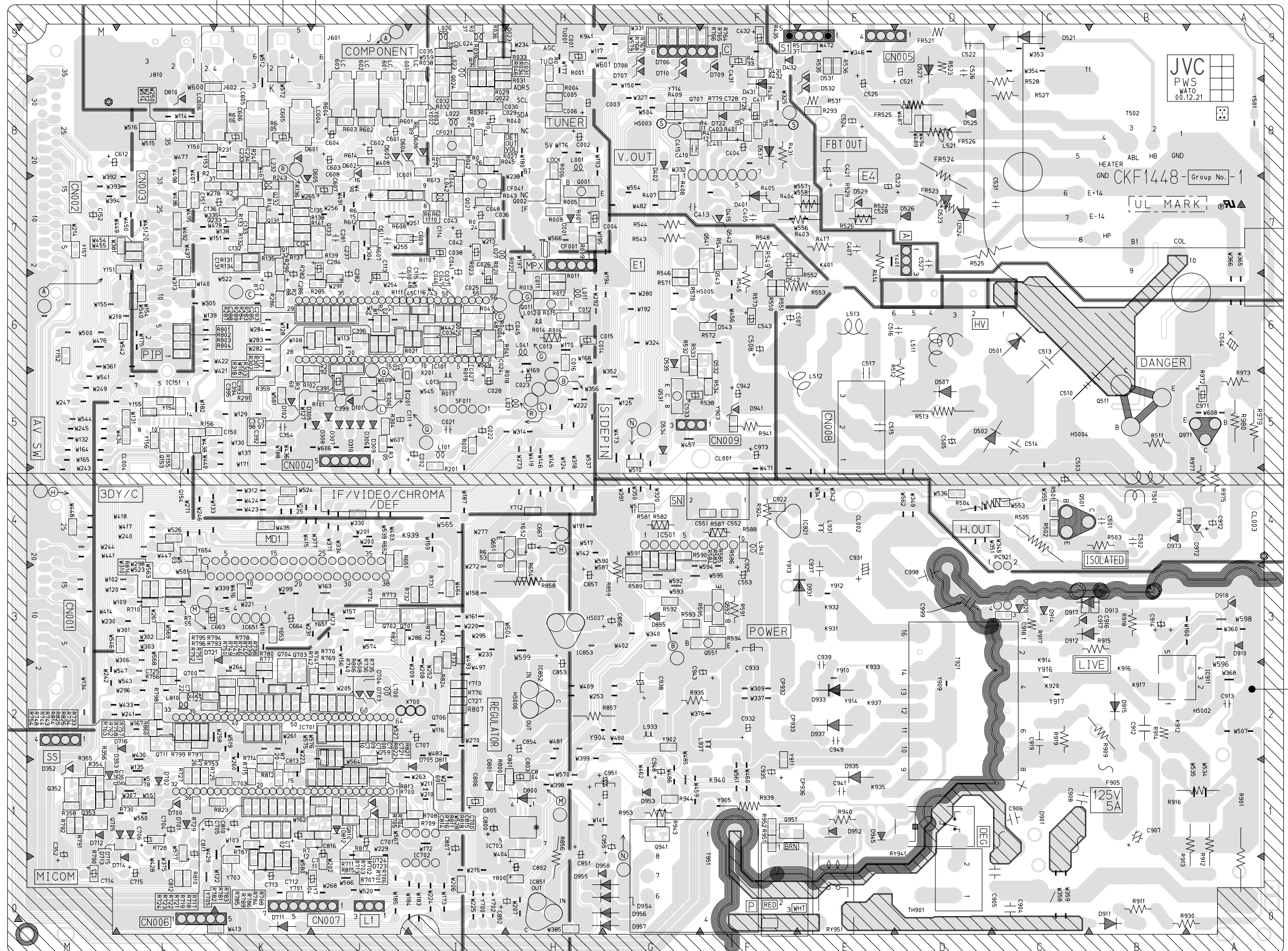


**PATTERN DIAGRAMS**  
**MAIN PWB PATTERN**

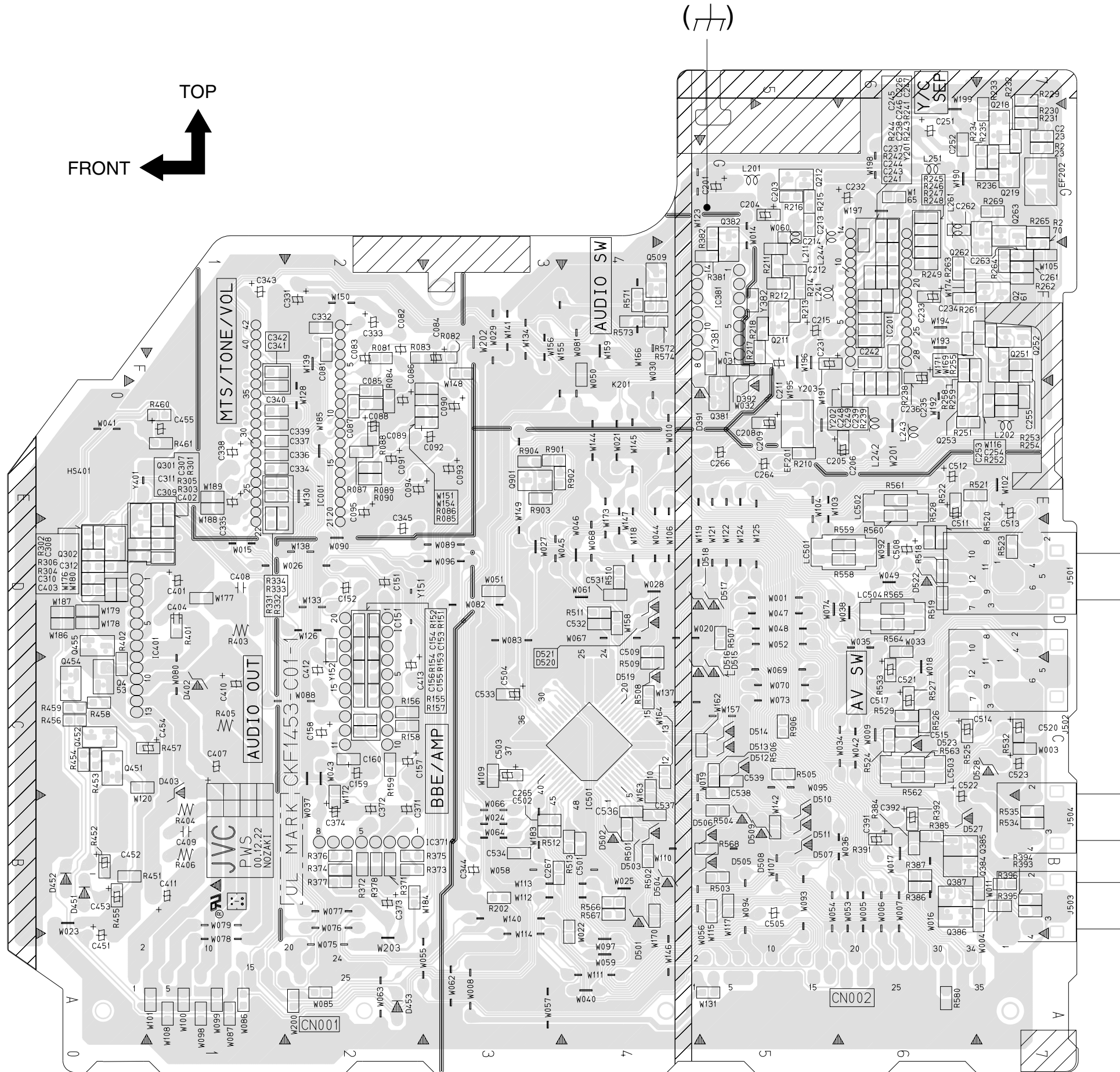
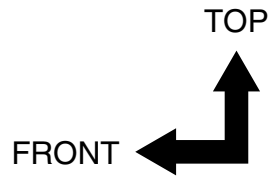
TP-91B(B1) (TP-E)



CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH SAME TYPE AND RATED FUSE(S) AND ROHM'S MFR'S TYPE CP(S).

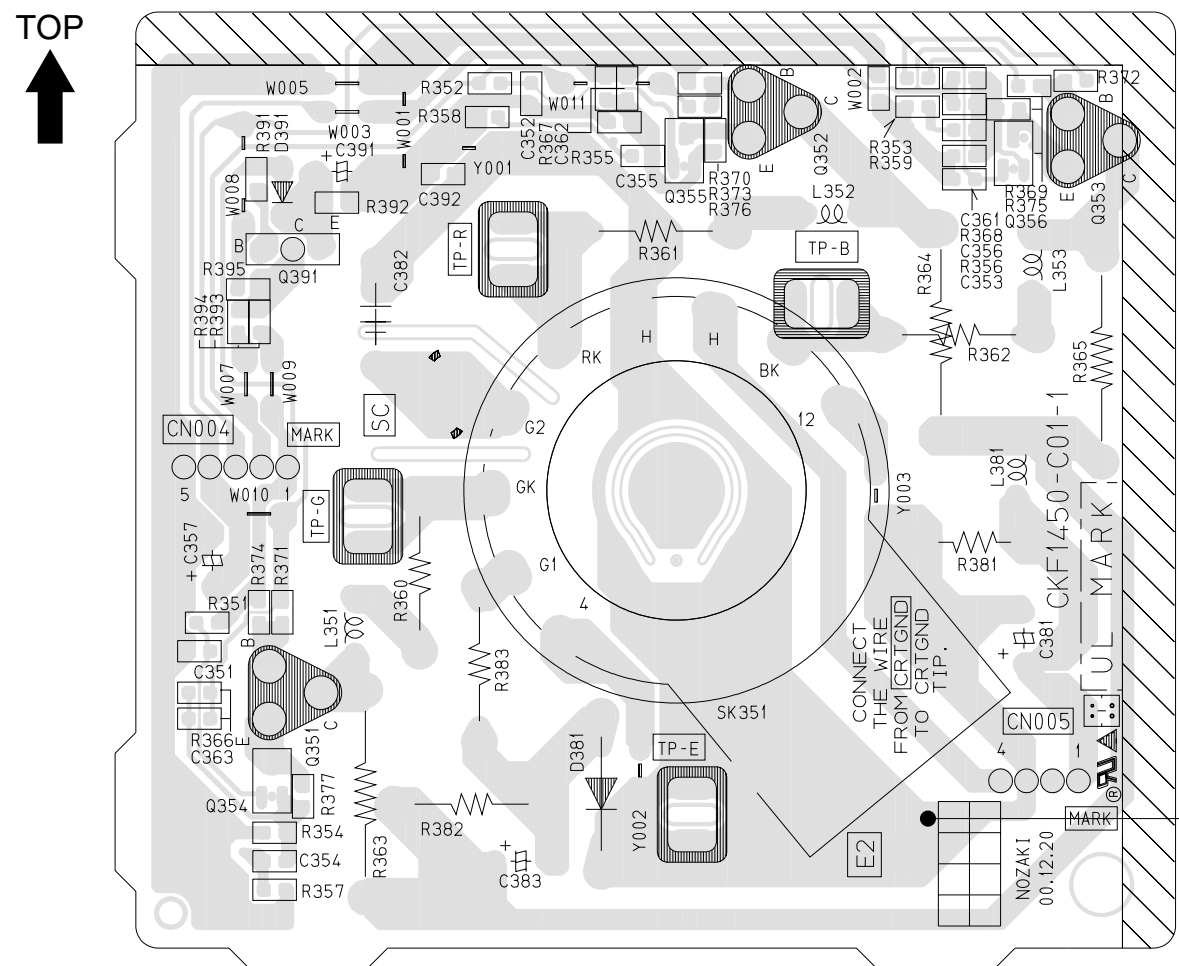


AV SELECTOR PWB PATTERN

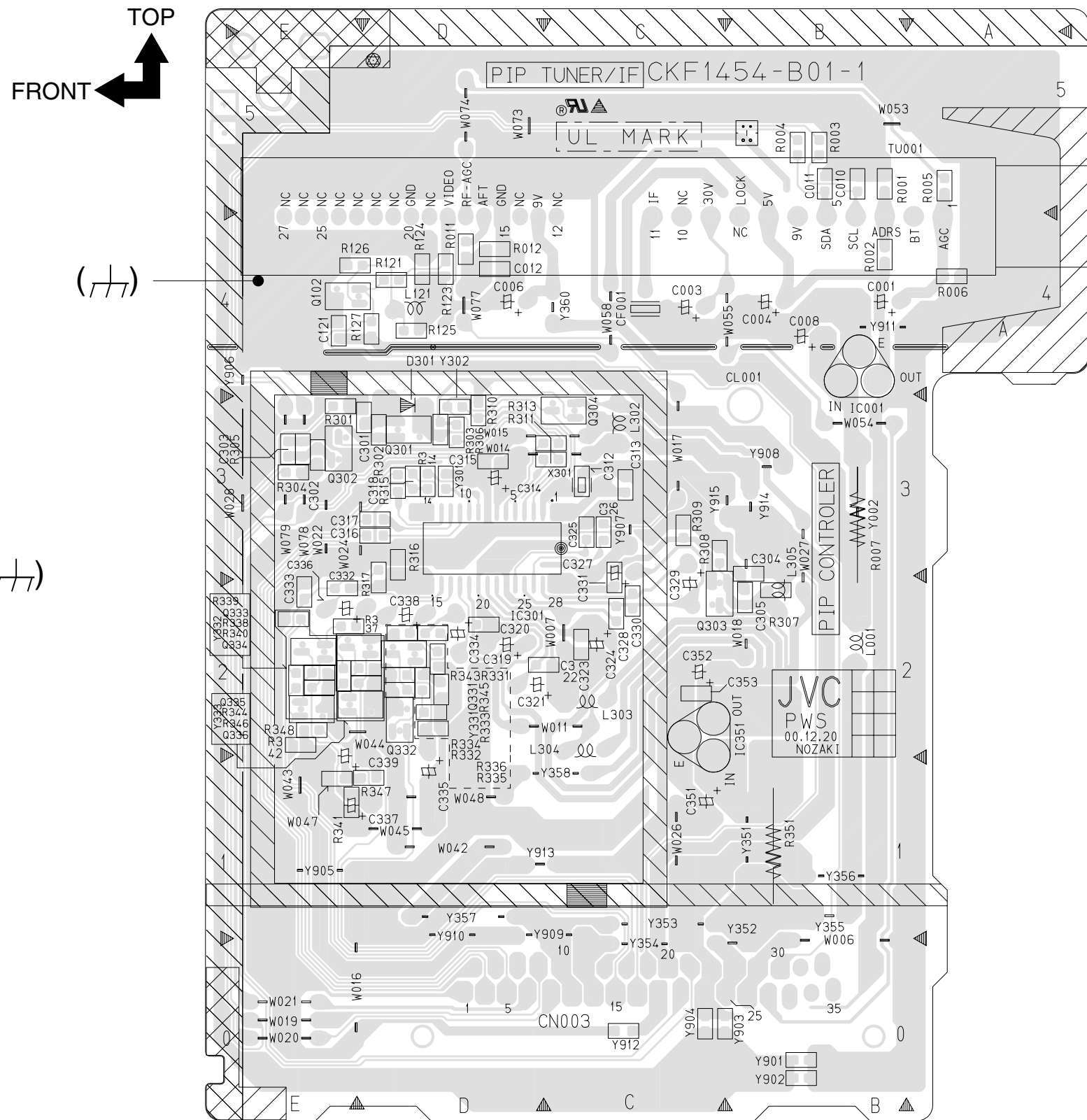


CRT SOCKET AND PIP PWB PATTERNS

- CRT SOCKET -

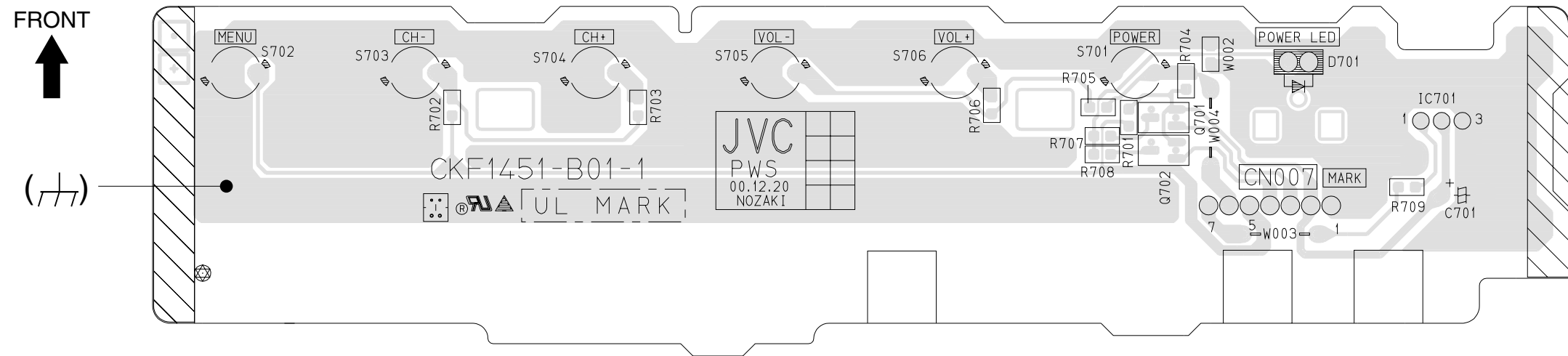


- PIP -

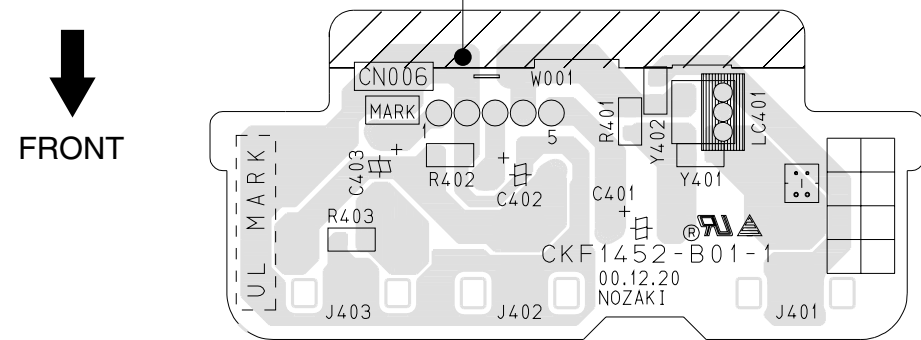


FRONT CONTROL, FRONT AV INPUT AND LF PWB PATTERNS

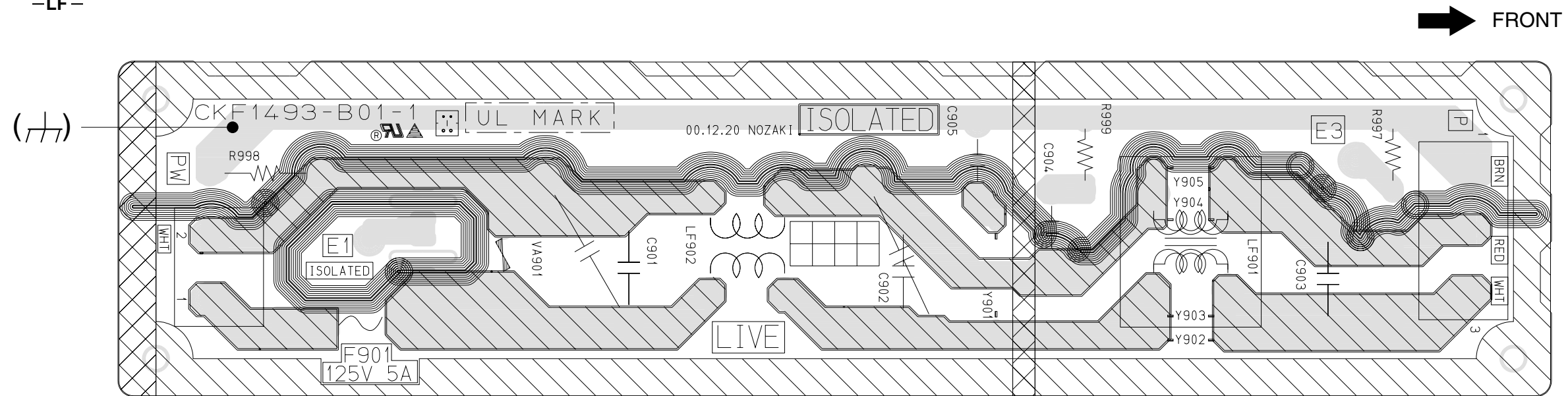
-FRONT CONTROL-



-FRONT AV INPUT-



-LF-



# CHANNEL CHART (US)

MODE		BAND	CHANNEL		TUNER BAND	
TV	CATV		REAL	DISP.		
○	○	VL	02	I		
			03			
			04			
			05			
			06			
			07			
		VH	08	II		
			09			
			10			
			11			
			12			
			13			
			×		○	MID
B 15						
C 16						
D 17						
E 18						
F 19						
G 20						
H 21						
I 22						
SUPER	J 23	II				
	K 24					
	L 25					
	M 26					
	N 27					
	O 28					
	P 29					
	Q 30					
	R 31					
	S 32					
	T 33					
	U 34					
	V 35					
	W 36					
	HYPER			W+1 37		IV
				W+2 38		
				W+3 39		
W+4 40						
W+5 41						
W+6 42						
W+7 43						
W+8 44						
W+9 45						
W+10 46						
W+11 47						
ULTRA	W+12 48					
	W+13 49					
	W+14 50					
	W+15 51					
	W+16 52					
	W+17 53					
	W+18 54					
	W+19 55					
	W+20 56					
	W+21 57					
	W+22 58					
	W+23 59					
W+24 60						
W+25 61						
W+26 62						
W+27 63						
W+28 64						
W+29 65						
W+30 66						
W+31 67						
W+32 68						
W+33 69						
W+34 70						

MODE		BAND	CHANNEL		TUNER BAND
TV	CATV		REAL	DISP.	
×	○	ULTRA	W+35 71	IV	
			W+36 72		
			W+37 73		
			W+38 74		
			W+39 75		
			W+40 76		
			W+41 77		
			W+42 78		
			W+43 79		
			W+44 80		
			W+45 81		
			W+46 82		
			W+47 83		
			W+48 84		
			W+49 85		
			W+50 86		
			W+51 87		
			W+52 88		
			W+53 89		
			W+54 90		
			W+55 91		
			W+56 92		
			W+57 93		
			W+58 94		
			W+59 100		
			W+60 101		
			W+61 102		
			W+62 103		
			W+63 104		
			W+64 105		
			W+65 106		
			W+66 107		
			W+67 108		
			W+68 109		
			W+69 110		
			W+70 111		
W+71 112					
W+72 113					
W+73 114					
W+74 115					
W+75 116					
W+76 117					
W+77 118					
W+78 119					
W+79 120					
W+80 121					
W+81 122					
W+82 123					
W+83 124					
W+84 125					
○	×	SUB MID	A-8 01	I	
			A-4 96		
			A-3 97		
			A-2 98		
○	×	UHF	14	IV	
			69		
TOTAL 180CH { VHF 124CH { UHF 56CH					
NOTE: TO RECEIVE THE SUBSCRIPTION OR PREMIUM PROGRAMMING FROM CERTAIN CABLE COMPANIES. SPECIAL ADAPTERS MAY BE REQUIRED.					



# CHANNEL CHART (CA)

MODE		BAND	CHANNEL		TUNER BAND
TV	CATV		REAL	DISP.	
○	○	VL	02	I	
			03		
			04		
			05		
			06		
			07		
		VH	08		
			09		
			10		
			11		
			12		
			13		
			×	○	MID
B 15					
C 16					
D 17					
E 18					
F 19					
G 20					
H 21					
I 22					
SUPER	J 23				
	K 24				
	L 25				
	M 26				
	N 27				
HYPER	O 28	III			
	P 29				
	Q 30				
	R 31				
	S 32				
	T 33				
	U 34				
	V 35				
	W 36				
	W+1 37				
W+2 38					
W+3 39					
W+4 40					
W+5 41					
W+6 42					
W+7 43					
W+8 44					
W+9 45					
W+10 46					
W+11 47					
W+12 48					
W+13 49					
W+14 50					
W+15 51					
W+16 52					
W+17 53					
W+18 54					
W+19 55					
W+20 56					
W+21 57					
W+22 58					
W+23 59					
W+24 60					
W+25 61					
W+26 62					
W+27 63					
W+28 64					
ULTRA	W+29 65	IV			
	W+30 66				
	W+31 67				
	W+32 68				
	W+33 69				
	W+34 70				

MODE		BAND	CHANNEL		TUNER BAND
TV	CATV		REAL	DISP.	
×	○	ULTRA	W+35 71	IV	
			W+36 72		
			W+37 73		
			W+38 74		
			W+39 75		
			W+40 76		
			W+41 77		
			W+42 78		
			W+43 79		
			W+44 80		
			W+45 81		
			W+46 82		
			W+47 83		
			W+48 84		
			W+49 85		
			W+50 86		
			W+51 87		
			W+52 88		
			W+53 89		
			W+54 90		
			W+55 91		
			W+56 92		
			W+57 93		
			W+58 94		
			W+59 100		
W+60 101					
W+61 102					
W+62 103					
W+63 104					
W+64 105					
W+65 106					
W+66 107					
W+67 108					
W+68 109					
W+69 110					
W+70 111					
W+71 112					
W+72 113					
W+73 114					
W+74 115					
W+75 116					
W+76 117					
W+77 118					
W+78 119					
W+79 120					
W+80 121					
W+81 122					
W+82 123					
W+83 124					
W+84 125					
○	×	SUB MID	A-8 01	I	
			A-4 96		
			A-3 97		
			A-2 98		
○	×	UHF	14	IV	
			69		
TOTAL 180CH { VHF 124CH { UHF 56CH					
NOTE: TO RECEIVE THE SUBSCRIPTION OR PREMIUM PROGRAMMING FROM CERTAIN CABLE COMPANIES. SPECIAL ADAPTERS MAY BE REQUIRED.					

# JVC SERVICE & ENGINEERING COMPANY OF AMERICA

## DIVISION OF JVC AMERICAS CORP.

<b>Head office</b>	: 1700 Valley Road, Wayne, New Jersey 07470	(973)315-5000
<b>East Coast</b>	: 10 New Maple Avenue, Pine Brook, New Jersey 07058	(973)396-1000
<b>Midwest</b>	: 705 Enterprise St. Aurora, Illinois 60504	(630)851-7855
<b>West Coast</b>	: 5665 Corporate Avenue, Cypress, California 90630	(714)229-8011
<b>Southwest</b>	: 10700 Hammerly, Suite 105, Houston, Texas 77043	(713)935-9331
<b>Hawaii</b>	: 2969 Mapunapuna Place, Honolulu, Hawaii 96819	(808)833-5828
<b>Southeast</b>	: 1500 Lakes Parkway, Lawrenceville, Georgia 30243	(770)339-2582

## JVC CANADA INC.

<b>Head office</b>	: 21 Finchdene Square Scarborough, Ontario M1X 1A7	(416)293-1311
<b>Vancouver</b>	: 13040 Worster Court Richmond B.C. V6V 2B3	(604)270-1311

# JVC®