

# JVC

# SCHEMATIC DIAGRAMS

## COLOR TELEVISION

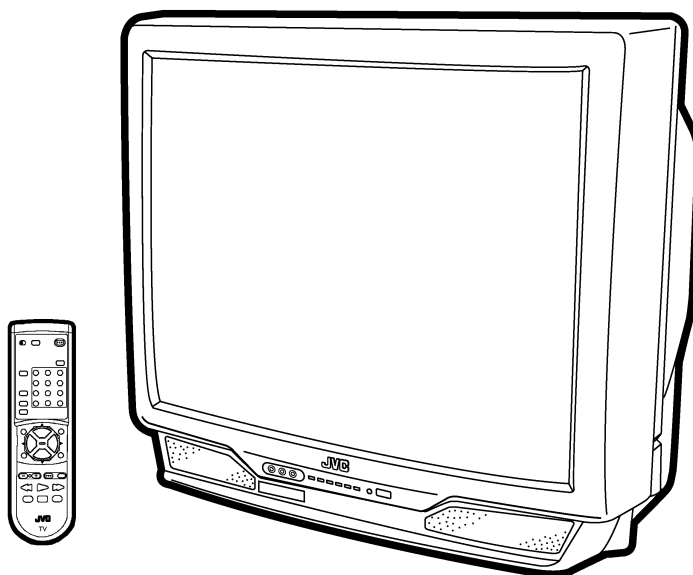
BASIC CHASSIS
GF3

### AV-32220<sub>/G</sub>

### AV-32220<sub>/H</sub>

### AV-32220<sub>/M</sub>

CD-ROM No.SML200102



## CONTENTS

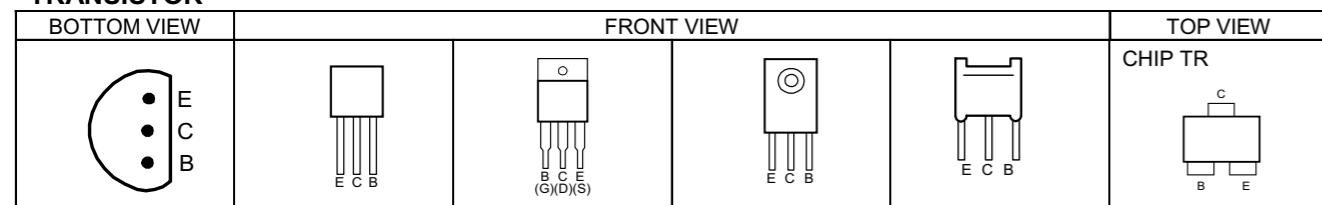
■ NOTE ON USING CIRCUIT DIAGRAMS .....	2-1
■ SEMICONDUCTOR SHAPES .....	2-2
■ BLOCK DIAGRAMS .....	2-3
■ CIRCUIT DIAGRAMS .....	2-5
■ PATTERN DIAGRAMS .....	2-11
■ CHANNEL CHART .....	2-17

# CONTENTS

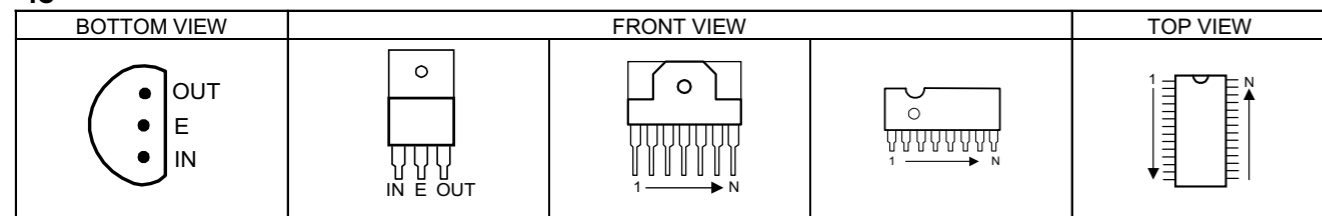
- SEMICONDUCTOR SHAPES ..... 2-2
- BLOCK DIAGRAM ..... 2-3
- CIRCUIT DIAGRAMS
  - MAIN PWB & FRONT CONTROL PWB CIRCUIT DIAGRAM ..... 2-5
  - MAIN PWB & CRT SOCKET PWB CIRCUIT DIAGRAM ..... 2-7
  - AV SELECTOR & FRONT JACK PWB CIRCUIT DIAGRAM ..... 2-9
- PATTERN DIAGRAMS
  - MAIN PWB PATTERN ..... 2-11
  - AV SELECTOR PWB PATTERN ..... 2-13
  - CRT SOCKET PWB PATTERN / FRONT JACK PWB PATTERN ..... 2-15
  - FRONT CONTROL PWB PATTERN ..... 2-16
- CHANNEL CHART
  - [US] ..... 2-17
  - [CA] ..... 2-18

## SEMICONDUCTOR SHAPES

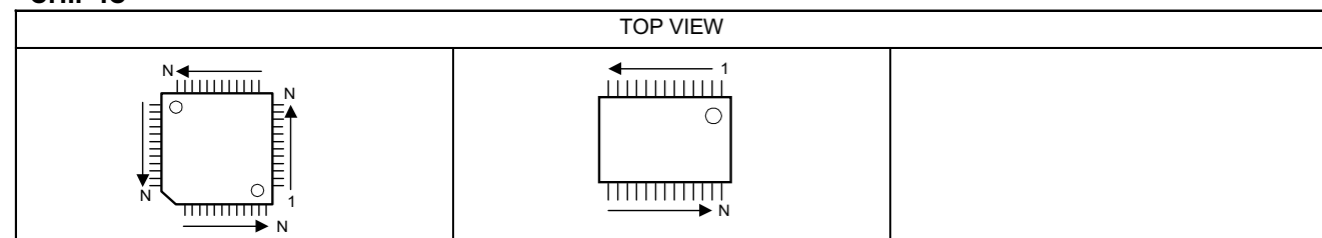
### TRANSISTOR



### IC



### CHIP IC



# AV-32220<sub>G</sub> / AV-32220<sub>H</sub> / AV-32220<sub>M</sub> STANDARD CIRCUIT DIAGRAM

## NOTE ON USING CIRCUIT DIAGRAMS

### 1.SAFETY

The components identified by the  $\Delta$  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→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 :Unflammable 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]
    - Others :DC withstand voltage [V]
    - AC indicated :AC 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
- :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

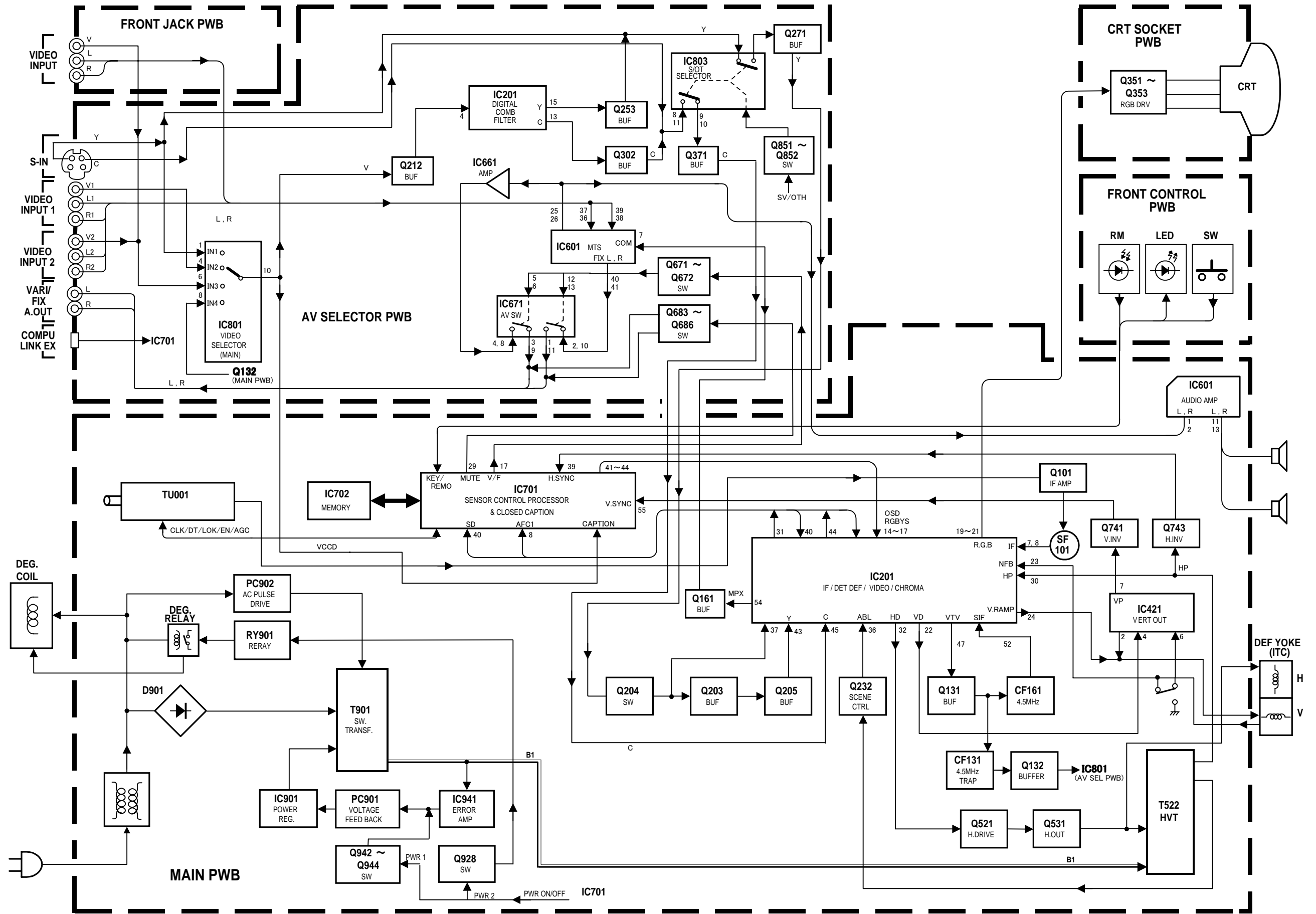
## 5.NOTE FOR REPAIRING SERVICE

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.

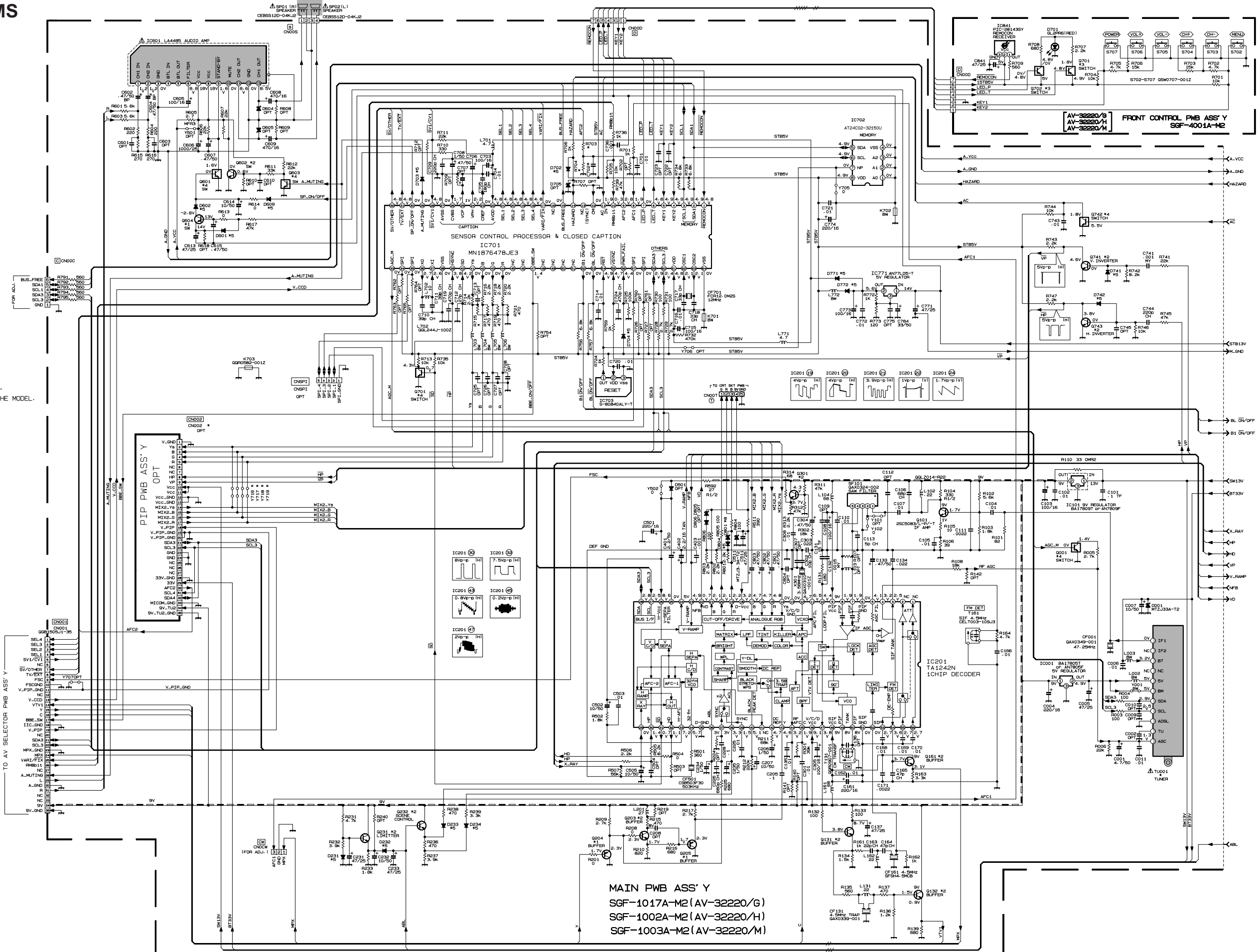
◇ Since the circuit diagram is a standard one, the circuit and circuit constants may be subject to change for improvement without any notice.

# BLOCK DIAGRAM



# CIRCUIT DIAGRAMS

## MAIN PWB & FRONT CONTROL PWB CIRCUIT DIAGRAM



CAUTION:  
PLEASE REFER 'THE DIFFERENCE LIST'  
FOR \* MARKED PARTS DEPENDING ON THE MODEL.

\* DIFFERENCE LIST (\*PARTS)

AV-32220/H	AV-32220/M	AV-32220/G
TU001	GA001780	GA001780
R006	22k	22k
R136	560	560
R137	470	470
R703	OPT	OPT
R704	0	100k
R715	6.8k	6.8k
C702	OPT	OPT
Y716	BW	BW
Y717	BW	BW
Y718	BW	BW
Y719	BW	BW
CH002	OPT	OPT

NOTE  
\*1 : 2SA1037AK/QR/-X  
\*2 : 2SC2412K/QR/-X  
\*3 : DTA124EKA-X  
\*4 : DTC124EKA-X  
\*5 : SSI133-T2  
\*6 : MTZJ5-1C-T2  
\*7 : MTZJ5-6B-T2  
\*8 : MTZJ5-1B-T2  
BW : BUS WIRE (06)  
OPT : NON MOUNT (0P01)  
0 : CHIP BUS WIRE (06)

MAIN PWB ASS'Y  
SGF-1017A-M2 (AV-32220/G)  
SGF-1002A-M2 (AV-32220/H)  
SGF-1003A-M2 (AV-32220/M)

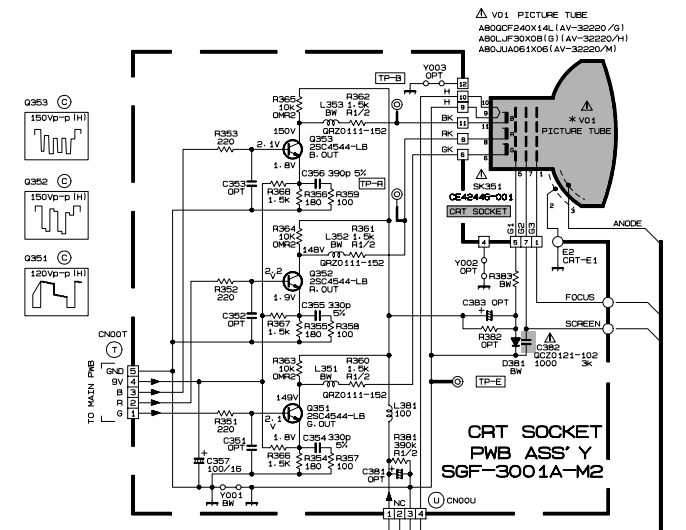
MAIN PWB & CRT SOCKET PWB CIRCUIT DIAGRAM

\* DIFFERENCE LIST (\*PARTS)

MODEL	AV-32220/H	AV-32220/M	AV-32220/G
R431	OPT	10R1/2	15R1/2
R583	1.5K	560	1.5K
R584	1.5K	1.5K	1.5K
R587	3.3K	3.3K	5.6K
C536	20197	20197	20197
C572	.015 MY	.022MY	.039 MY
L591	DLZ026	DLZ026	DLZ026
C531	Z0197	Z0197	Z0197
C533	223	223	183
R524	10002	10002	10002
R525	10002	10002	10002
C531	223	223	183
L531	1003	1003	1004

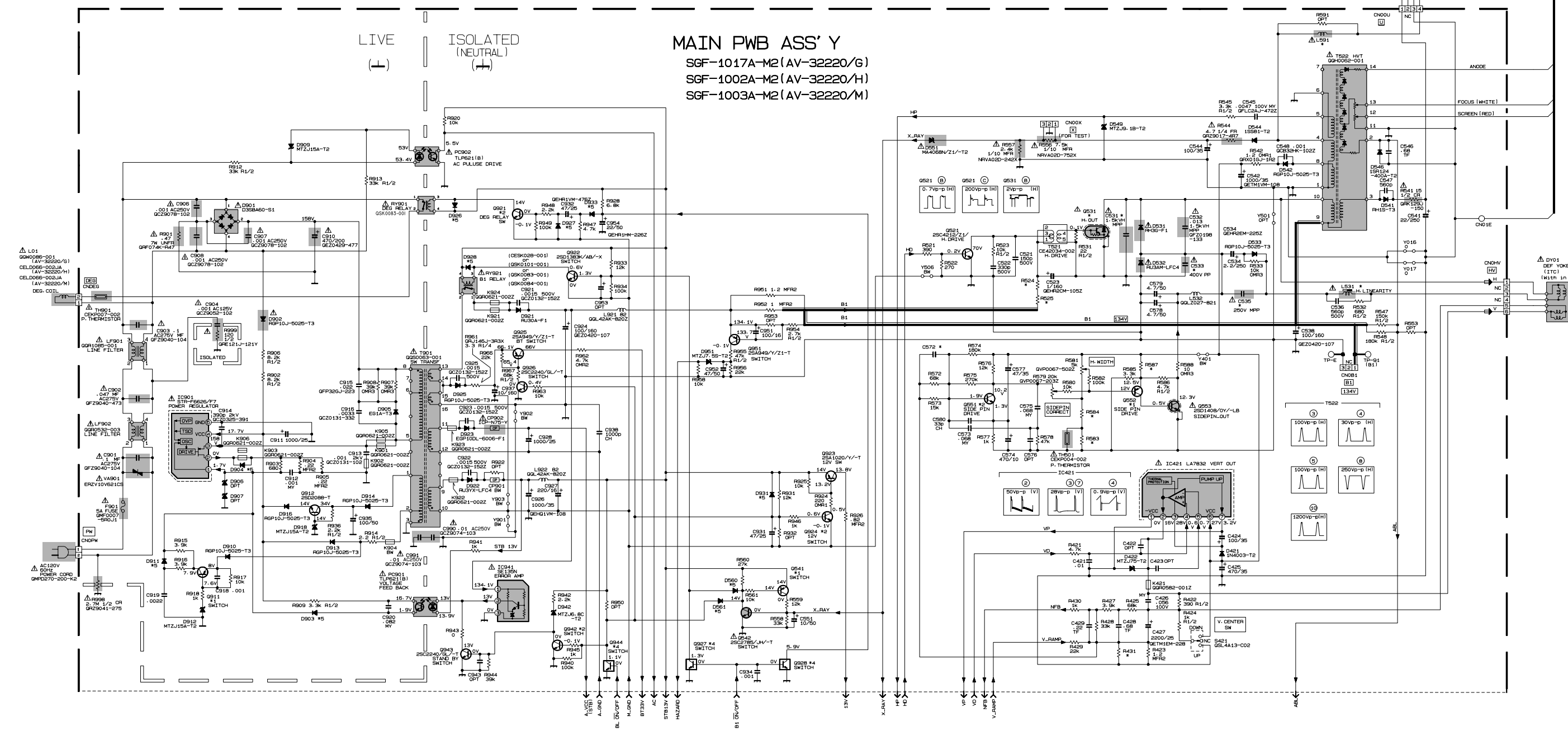
CAUTION: PLEASE REFER THE DIFFERENCE LIST FOR \* MARKED PARTS DEPENDING ON THE MODEL.

- NOTE
- \*1 : 2SA1037AK/GR-X
  - \*2 : 2SC2412K/GR-X
  - \*3 : DT1242KA-X
  - \*4 : DT1242KA-X
  - \*5 : 1SS133-T2
  - \*6 : MTZJ9.1C-T2
  - \*7 : MTZJ5.6B-T2
  - BW : BUS WIRE
  - OPT : NON MOUNT (OPEN)
  - 0 : CHIP BUS WIRE (0.4)



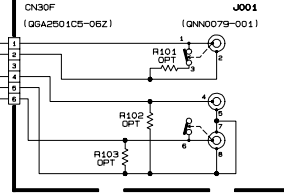
LIVE (⊥) ISOLATED (NEUTRAL) (⊥)

MAIN PWB ASS' Y SGF-1017A-M2 (AV-32220/G) SGF-1002A-M2 (AV-32220/H) SGF-1003A-M2 (AV-32220/M)



AV SELECTOR & FRONT JACK PWB CIRCUIT DIAGRAM

FRONT JACK PWB  
SGF-8305A-M2



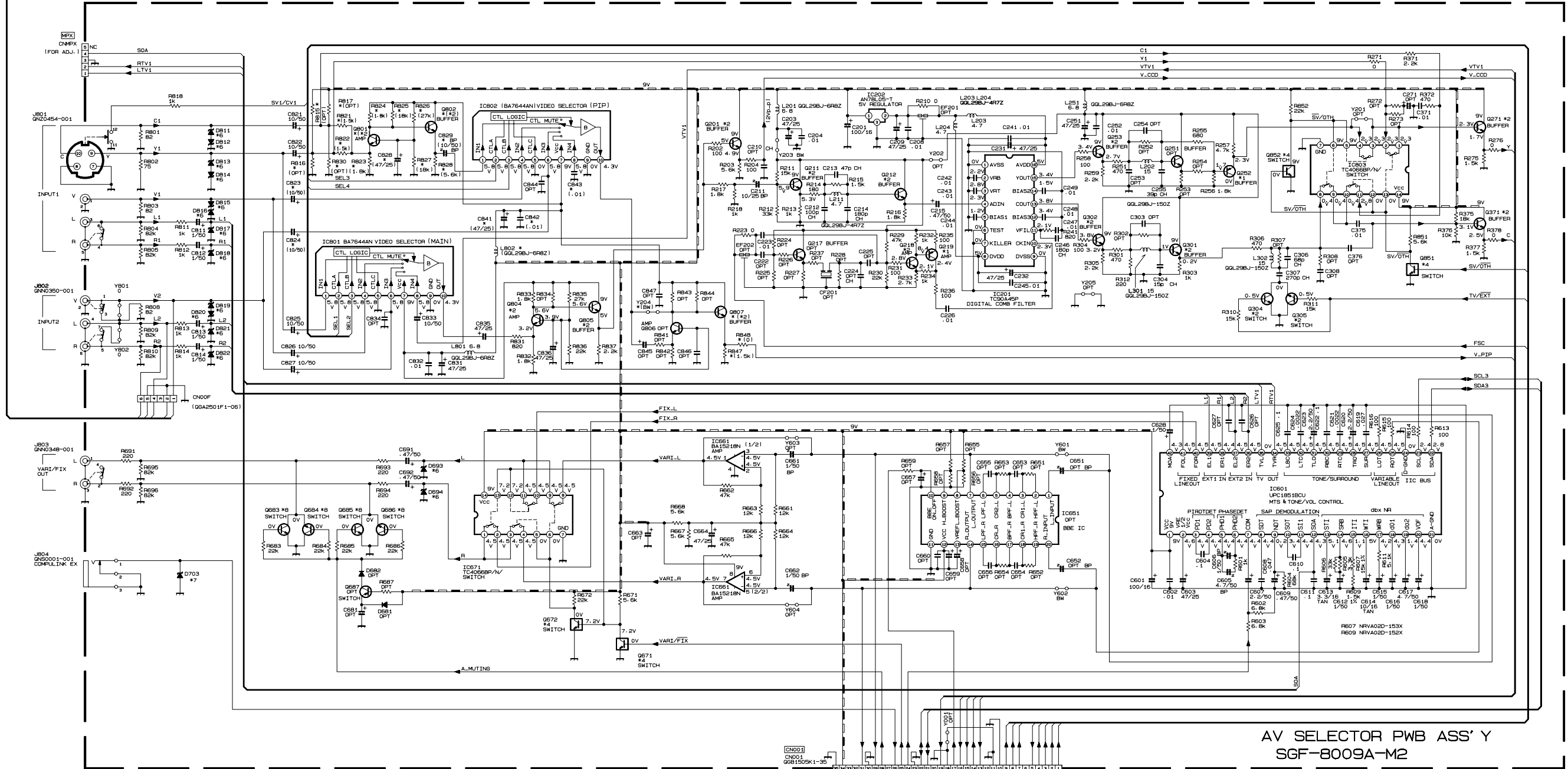
CAUTION:  
PLEASE REFER TO THE DIFFERENCE LIST  
FOR \* MARKED PARTS DEPENDING ON THE MODEL.

NOTE

- \*1 : 2SA1037AK/GR/-X
- \*2 : 2SC2412K/GR/-X
- \*3 : DT124EKA-X
- \*4 : DT124EKA-X
- \*5 : 1SS133-T2
- \*6 : MT2J9-1C-T2
- \*7 : MT2J5-6B-T2
- \*8 : DT323TK-X
- BW : BUS WIRE (0Ω)
- OPT : NON MOUNT (OPEN)
- 0 : CHIP BUS WIRE (0Ω)

DIFFERENCE LIST (\* PARTS)

SGF-8305A-M2	SGF-8305A-M2
RB15	15k OPT
RB16	10k OPT
RB17	15k OPT
RB21	1.5k
RB22	OPT 1.5k
RB23	OPT 1.8k
RB24	OPT 1.8k
RB25	OPT 18k
RB26	OPT 27k
RB27	OPT 18k
RB28	OPT 5.6k
RB30	10k OPT
RB47	OPT 1.5k
RB48	OPT 0
CB23	OPT 10/50
CB24	OPT 10/50
CB28	OPT 47/25
CB29	OPT 10/25 BP
CB41	OPT 47/25
CB42	OPT .01
CB43	OPT .01
Y204	OPT 9W
LB02	OPT GQL29BJ-6R8Z
QB01	OPT *2
QB02	OPT *2
QB07	OPT *2
IC802	OPT BA7644 AN

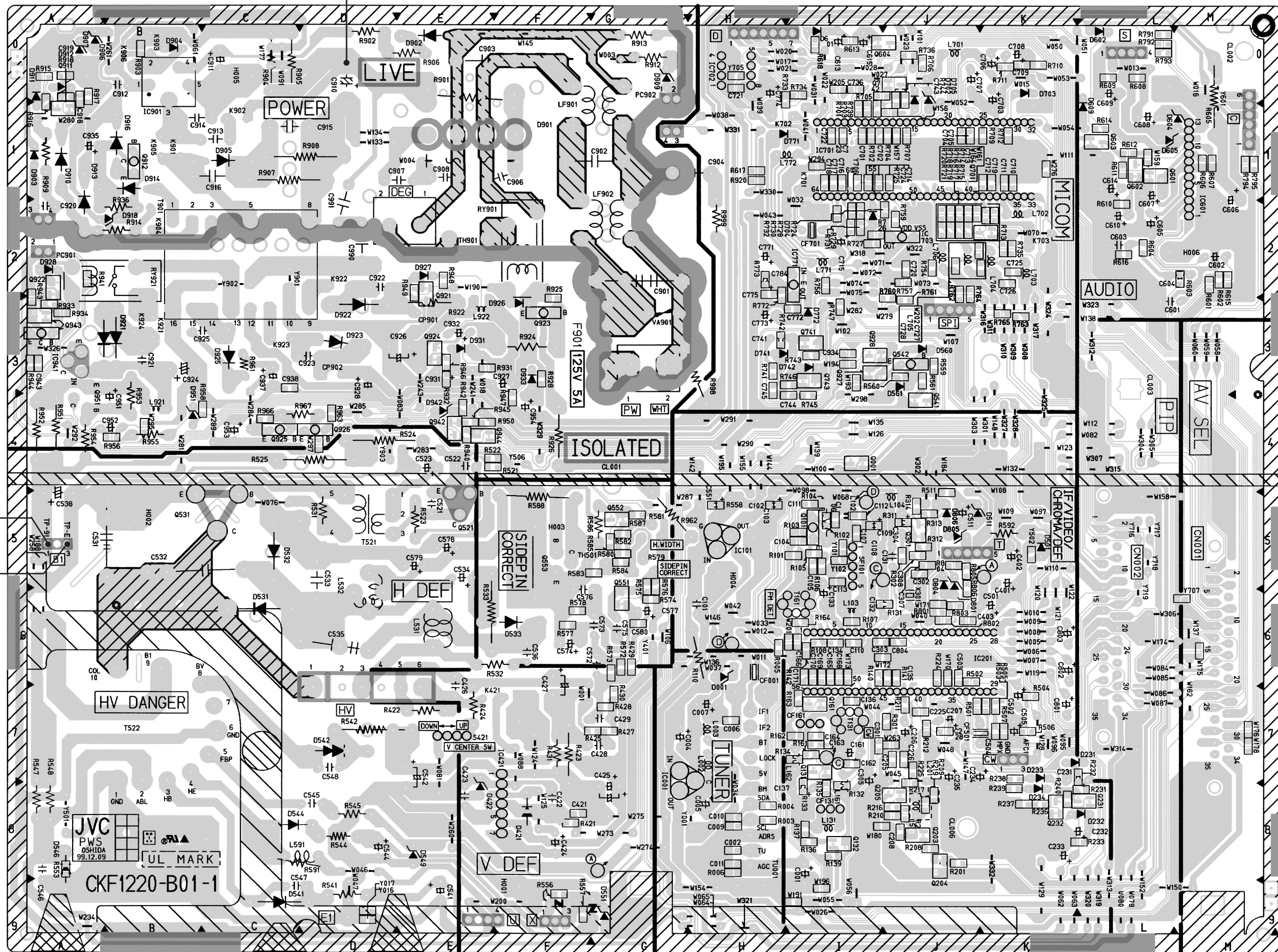


AV SELECTOR PWB ASS'Y  
SGF-8009A-M2

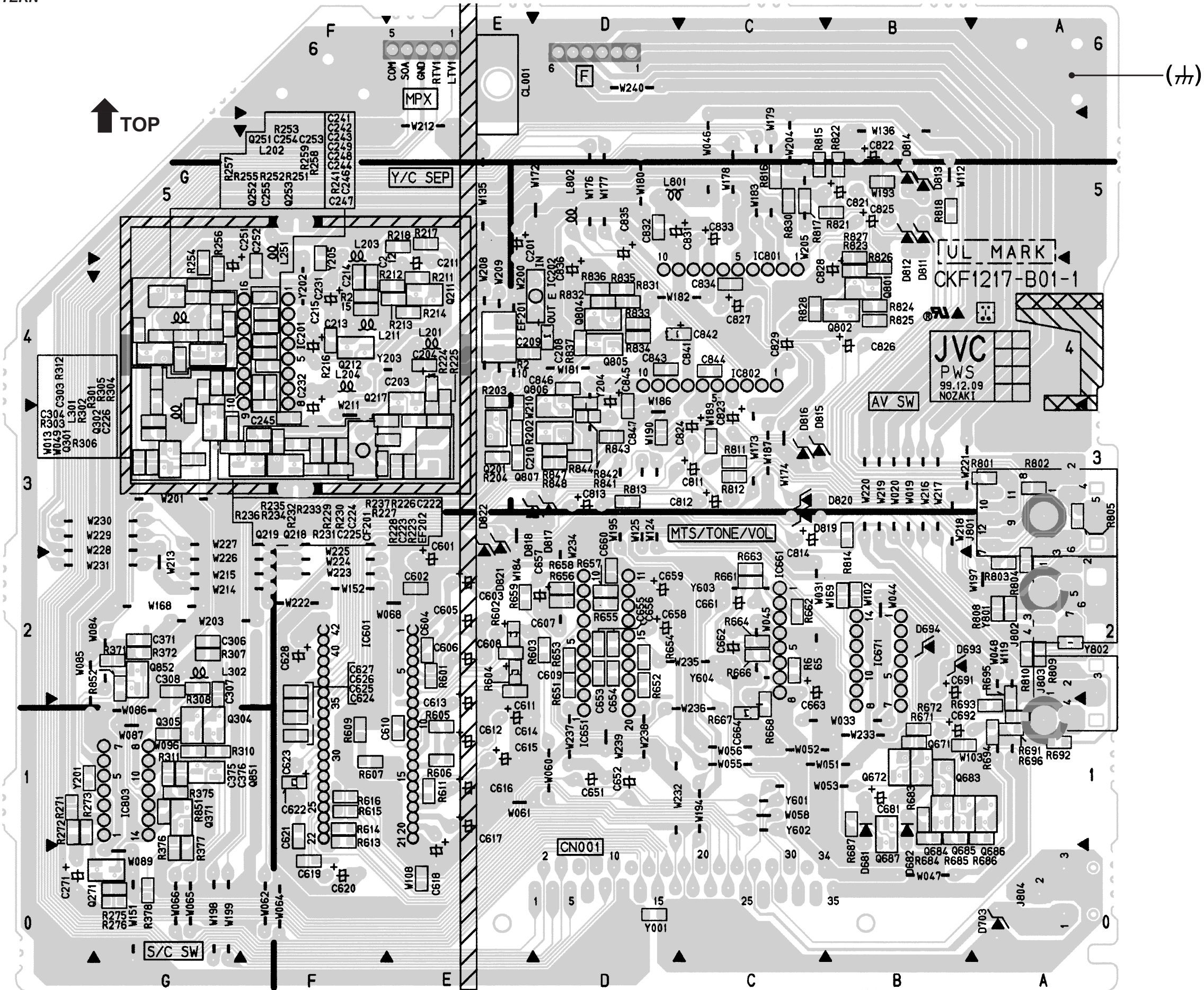
PATTERN DIAGRAMS MAIN PWB PATTERN

(L)

FRONT



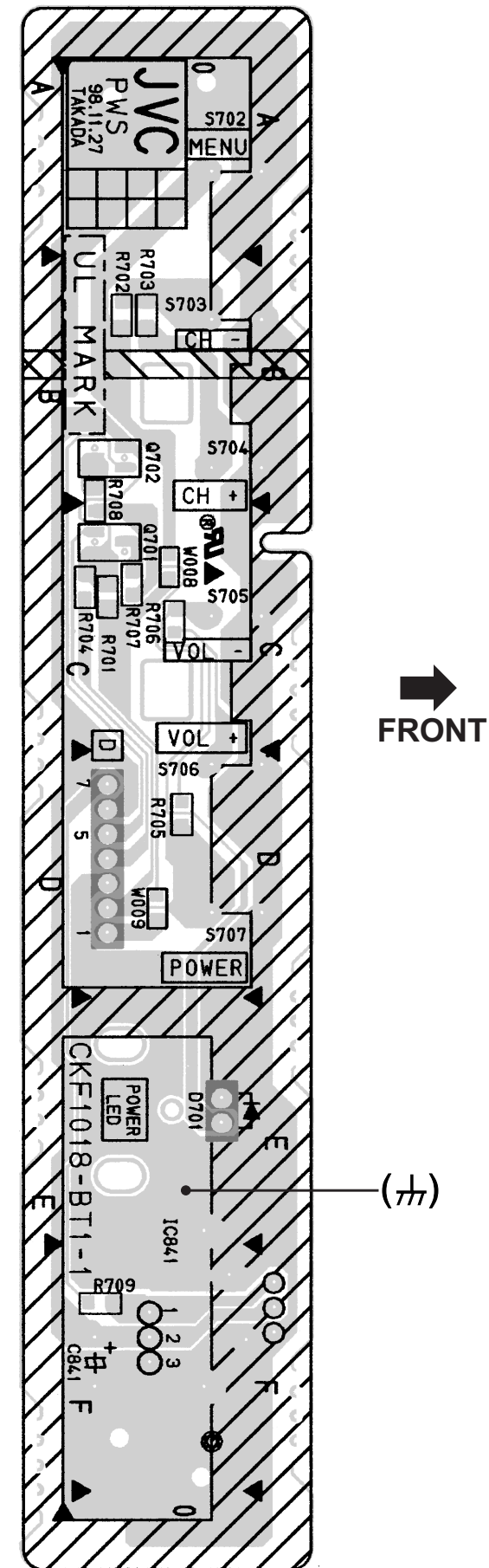
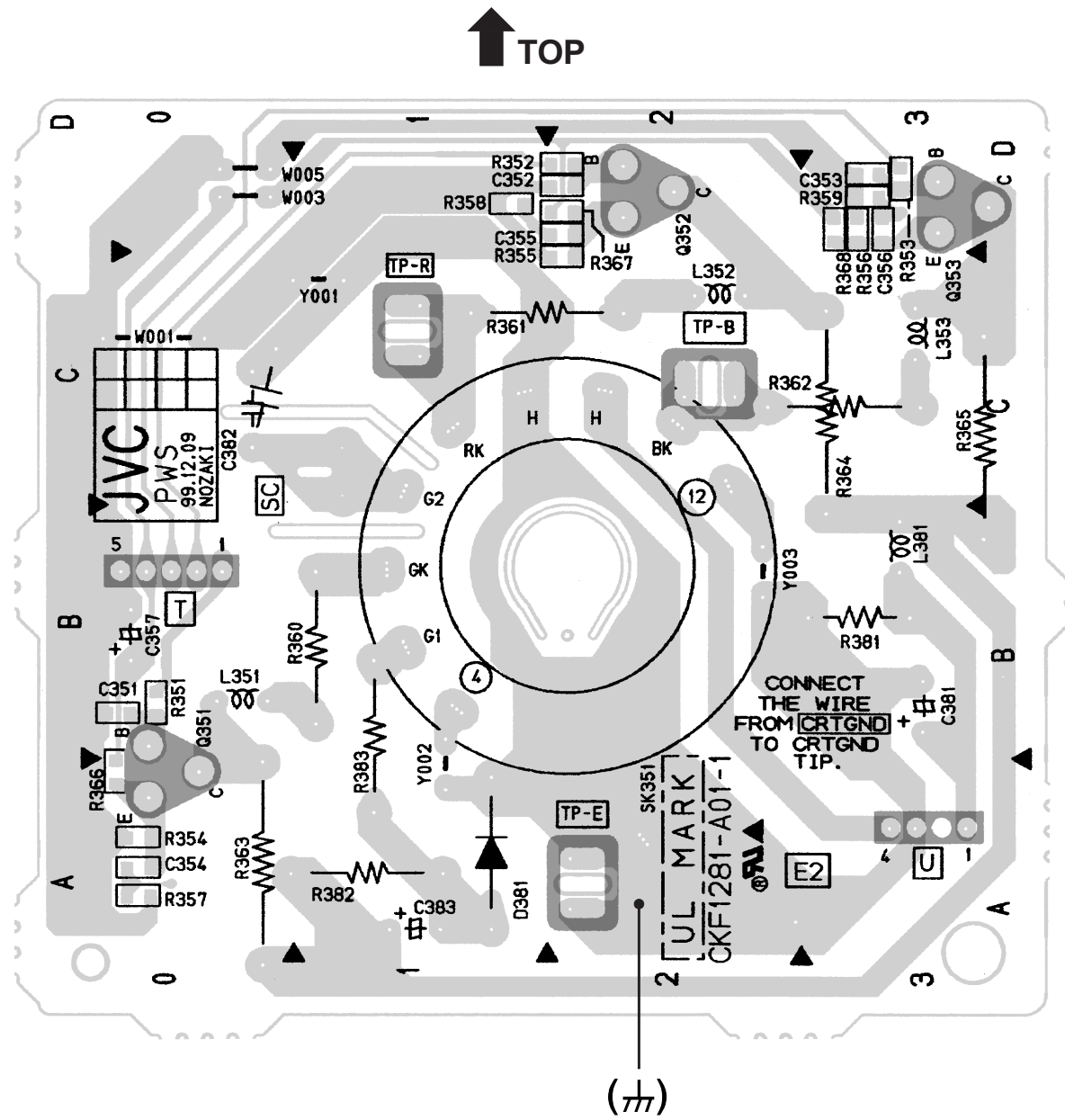
AV SELECTOR PWB PATTERN



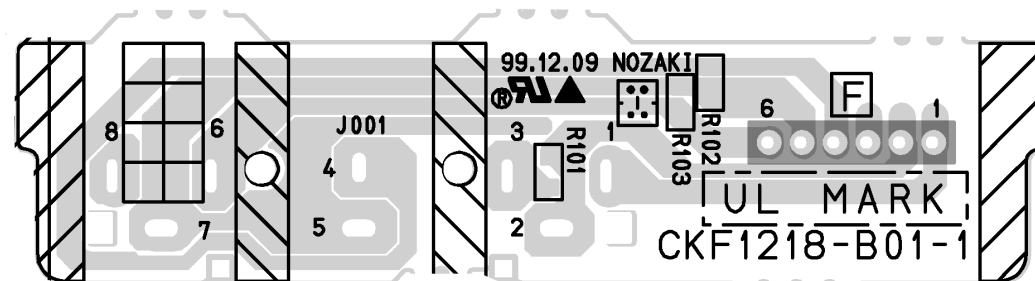


CRT SOCKET PWB PATTERN

FRONT CONTROL PWB PATTERN



FRONT JACK PWB PATTERN



■ 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						
				x	○		MID	A	14	I
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									
W+12	48									
W+13	49									
W+14	50									
W+15	51									
W+16	52									
○	○	ULTRA		W+17			53	IV		
				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						
○	○	ULTRA	W+27	63	IV					
			W+28	64						
			W+29	65						
			W+30	66						
			W+31	67						
			W+32	68						
			W+33	69						
			W+34	70						

■ CHANNEL CHART (CA)

MODE		BAND	CHANNEL		TUNER BAND			
TV	CATV		REAL	DISP.				
x	○	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				
○	x	SUB MID	A-8	01	I			
			A-4	96				
			A-3	97				
			A-2	98				
			A-1	99				
			○	x		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.					

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					
				x	○		MID	A	14
B	15								
C	16								
D	17								
E	18								
F	19								
G	20								
H	21								
I	22								
○	○	SUPER	J		23	III			
			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	III
							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								
○	○	ULTRA				W+17	53	IV	
						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					
○	○	ULTRA	W+27	63	IV				
			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.				
x	○	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				
○	x	SUB MID	A-8	01	I			
			A-4	96				
			A-3	97				
			A-2	98				
			A-1	99				
			○	x		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.					