

# AUDIO VIDEO SURROUND RECEIVER

# KR-V999D/1090VR

## SERVICE MANUAL

# KENWOOD

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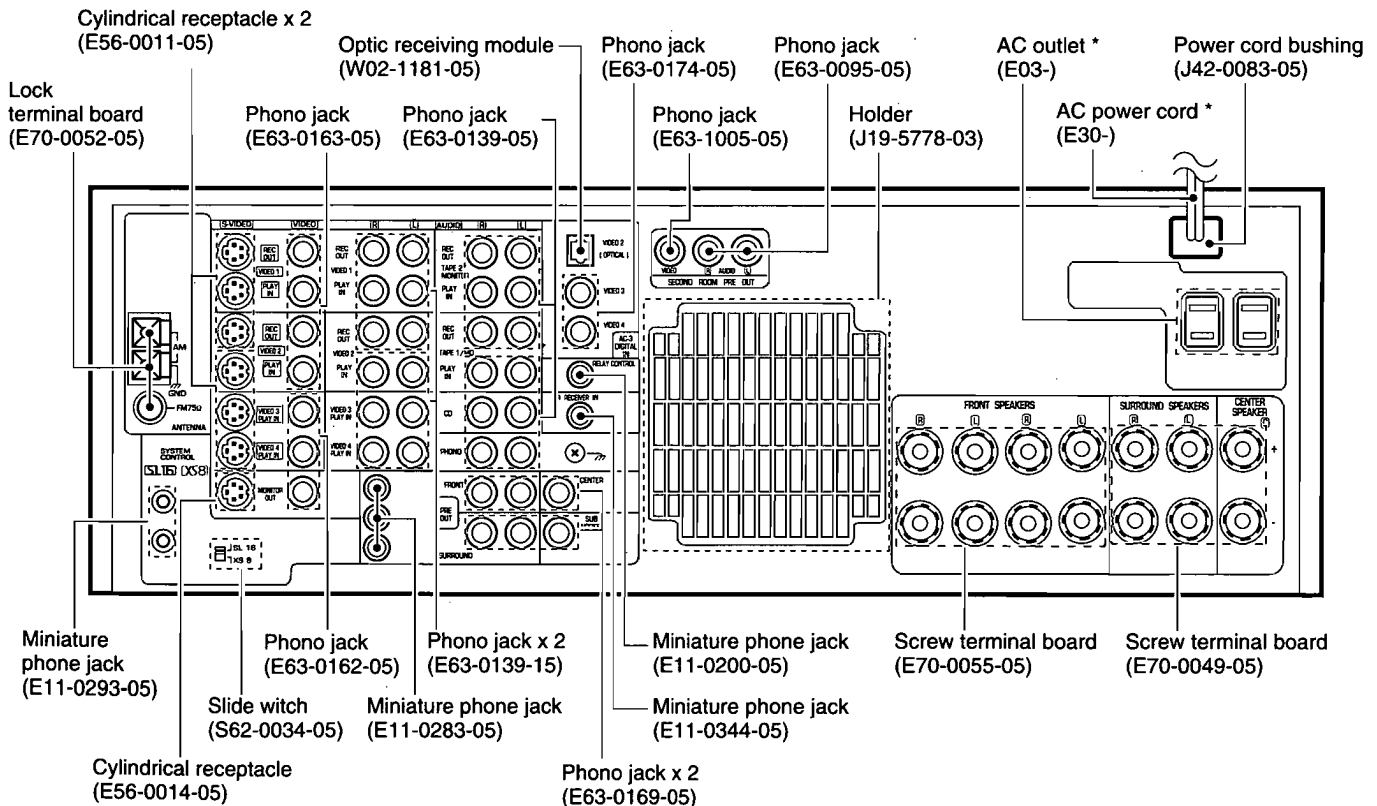
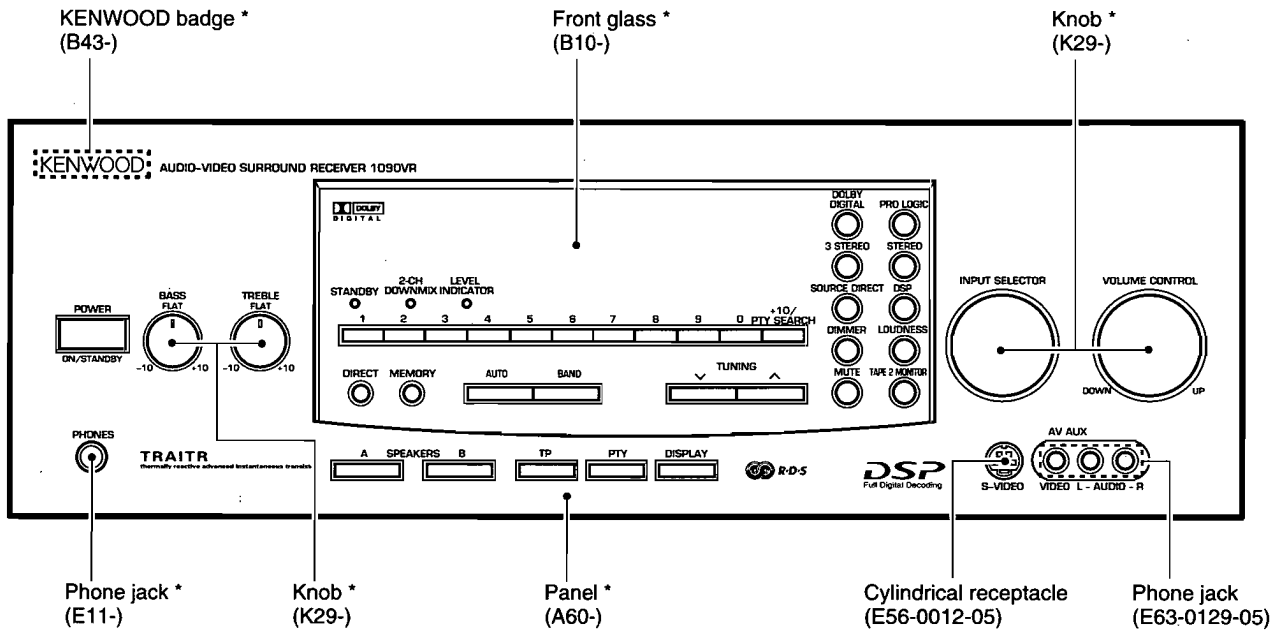


Illustration is KR-1090VR.

\* Refer to parts list on page 67.

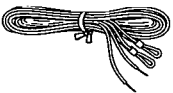
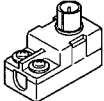
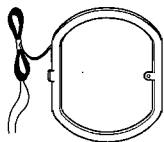
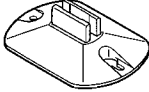
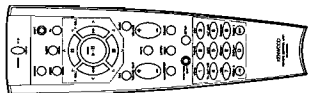
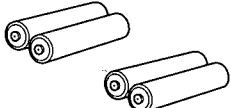

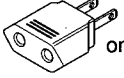
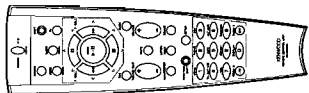
# KR-V999D/1090VR

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### Accessories

FM indoor antenna (1) (T90-0176-05) 	Antenna adaptor (1) (T90-0185-05) 	AM loop antenna (1) (T90-0820-05) 	Loop antenna stand (1) (J19-3645-05) 
Remote control unit (1) (A70-1114-05): RC-R0905 	Batteries (R03/AAA) (4) 	RF DEMODULATOR (1) (DEM-999D)  only M,C,T type	AC adaptor (1) (E03-0343-05)  only M type
Battery cover(A09-0366-08) 			Power cord (1) RCA pin cord (2)

Refer to service manual of model names **DEM-999D(part number B51-5294-00)**, when **RF DEMODULATOR(DEM-999D)** is repaired.

**1090VR** is a model name of case that the destination of **KR-V999D** is KPY.

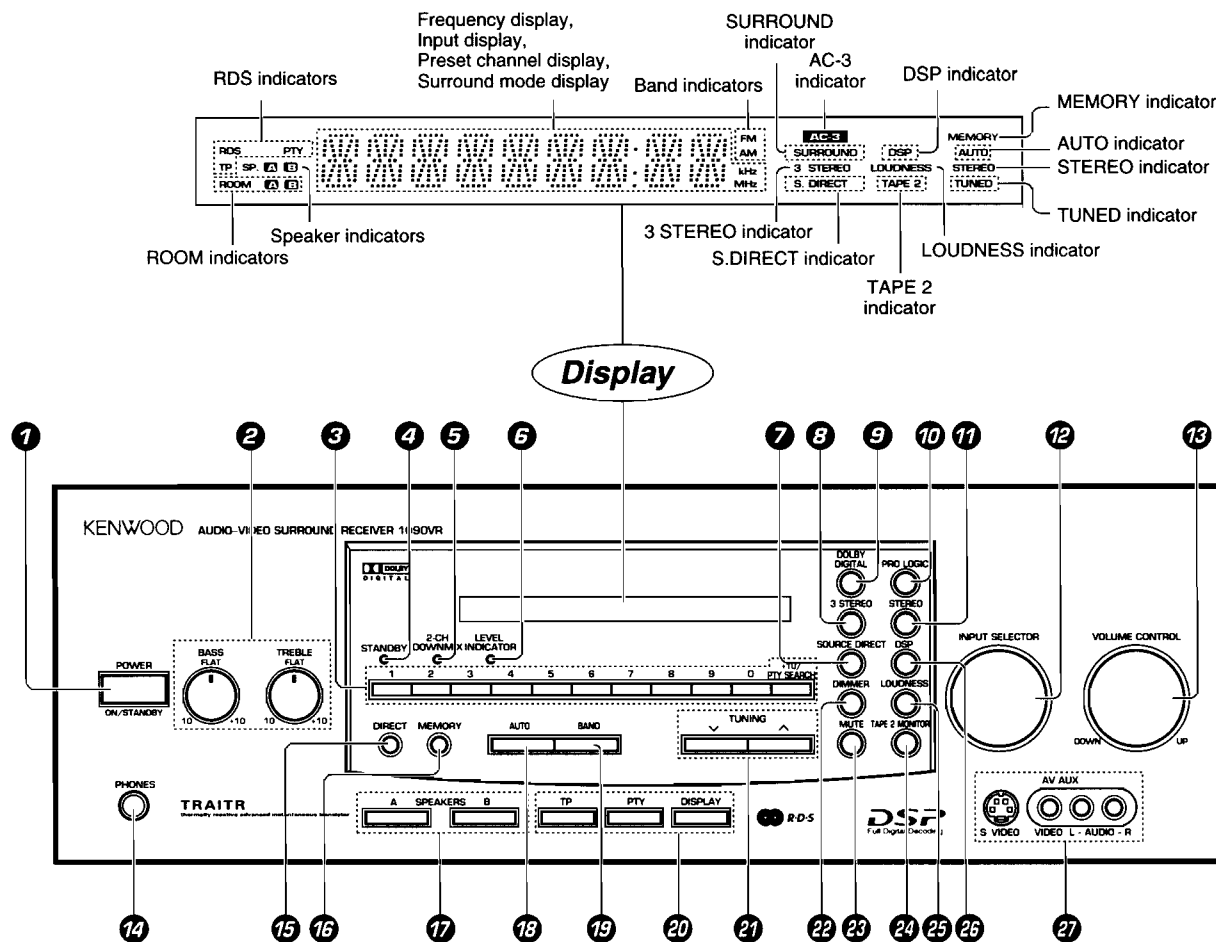
In a circuit explanation part, **1090VR** is expressing as **KR-V999D**.

# KR-V999D/1090VR

## CONTROLS

# KR-V999D/1090VR

## REMOTE CONTROL



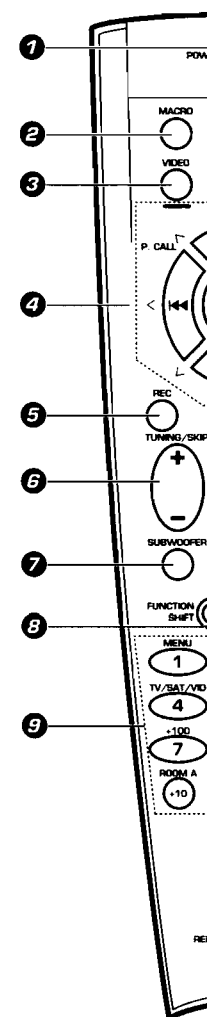
- 1 POWER key**  
Use to switch the power ON/STANDBY.
- 2 Tone Control knobs**
- 3 Numeric keys**
- 4 STANDBY indicator**
- 5 2 CH DOWNMIX indicator**  
Lights when an DOLBY DIGITAL (AC-3) format signal is being downmixed to 2 channel stereo.
- 6 LEVEL indicator**  
Lights when the level of the signal being input is too high.
- 7 SOURCE DIRECT key**
- 8 DOLBY 3 STEREO key**  
Use to turn on the DOLBY 3 STEREO mode.
- 9 DOLBY DIGITAL key**  
Use to turn on the DOLBY DIGITAL (AC-3) mode.

- 10 PRO LOGIC key**  
Use to turn on the DOLBY PRO LOGIC mode.
- 11 STEREO key**  
Use to cancel the surround mode.
- 12 INPUT SELECTOR knob**  
Use to select the input sources.
- 13 VOLUME CONTROL knob**
- 14 PHONES jack**  
Use for headphone listening.
- 15 DIRECT key**  
Use to tune radio stations directly by numerical input.
- 16 MEMORY key**  
Use to store radio stations in the preset memory.
- 17 SPEAKERS A/B keys**  
Use to turn the speakers ON/OFF.
- 18 AUTO key**  
Use to select the auto tuning mode.

- 19 BAND key**  
Use to select the broadcast band.
- 20 RDS keys**
- 21 TUNING keys**  
Use to tune in radio broadcasts.
- 22 DIMMER key**  
Use to adjust the brightness of the display.
- 23 MUTE key**  
Use to mute the sound.
- 24 TAPE 2 MONITOR key**  
Use to monitor a recording.
- 25 LOUDNESS key**  
Use to activate the frequency weighting network.
- 26 DSP key**  
Use to turn on, or switch, the DSP mode.
- 27 AV AUX jacks**

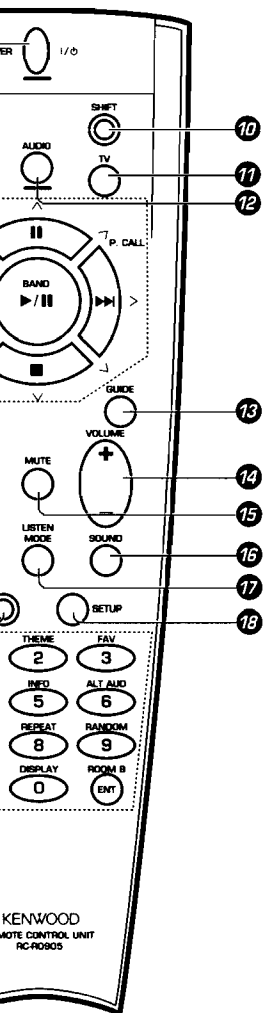
### About the STANDBY indicator

This unit has a **STANDBY** indicator. When the **STANDBY** indicator is lit, the unit consumes a small amount of power to preserve the memory. This is called STANDBY mode. This mode also lets you turn the power ON using the remote control.



- 1 POWER key**  
Use to turn the receiver on and off.  
Use in combination with the input selector (AUDIO, VIDEO, or TV) keys and SHIFT key to turn various components on and off.
- 2 MACRO key**  
Use in combination with the AUDIO, VIDEO, or TV keys to execute a series of commands automatically (MACRO PLAY).
- 3 VIDEO selector key**  
Selects the video inputs (VIDEO 1, VIDEO 2, VIDEO 3, VIDEO 4, AV AUX) and sets the remote to operate the component registered at the respective input.
- 4 Multi control keys**  
Use to operate the selected component and to operate the on-screen display.
- 5 REC key**  
Use to operate the selected component.
- 6 TUNING/SKIP key**  
Use during the setup procedure to specify various settings. Use to operate the tuner or selected component.

- 7 SUBWOOFER key**  
Use in combination with the AUDIO, VIDEO, or TV keys to adjust the subwoofer.
- 8 FUNCTION SHIFT key**  
Use in combination with the VIDEO keys to execute alternate functions.
- 9 Numeric key**  
Provide functions for the selected component you are currently operating. To access the functions, Press with the FUNCTION SHIFT key, Press with the numeric key, Press with the FUNCTION SHIFT key. The availability varies by component.
- 10 SHIFT key**  
Use in combination with the VIDEO keys to operate the selected component without changing the mode without changing the mode or in combination with the FUNCTION SHIFT key to turn on and off the component into the remote.
- 11 TV selector key**  
Sets the remote control to operate the TV box (TV 1, TV 2, TV 3, TV 4) or not change the receiver.



**POWER key**  
Operation with the VOLUME +/-  
Adjust the volume of the

**SHIFT key**  
Operation with the numeric keys  
Execute remote commands.

**GUIDE key**  
Operations identical to those of the  
remote control supplied with the compo-  
nent.

**VOLUME key**  
Operations printed above the  
remote control within 3 seconds of pressing  
the ON SHIFT key. Function  
keys for each component.

**AUDIO key**  
Operation with the AUDIO and  
change the remote control  
changing the input selector  
Operation with the POWER key to  
components programmed

**TV key**  
Use to operate a TV or cable  
(2, CABLE). This key does  
the input selector on the re-

## 12 AUDIO selector key

Selects the audio inputs (CD, TAPE1/MD, TUNER, PHONO) and sets the remote to operate the respective KENWOOD audio component.

If you connect audio components from KENWOOD and other makers to the TAPE1/MD or CD jacks, you can set the remote to operate these components by registering the appropriate setup code at the respective input.

## 13 GUIDE key

Use to activate the OSD menu functions of registered components.

## 14 VOLUME key

Use to adjust the receiver volume.

## 15 MUTE key

Use to temporarily mute the sound.

## 16 SOUND key

Use to activate the Sound OSD and set the remote to OSD control mode.

## 17 LISTEN MODE key

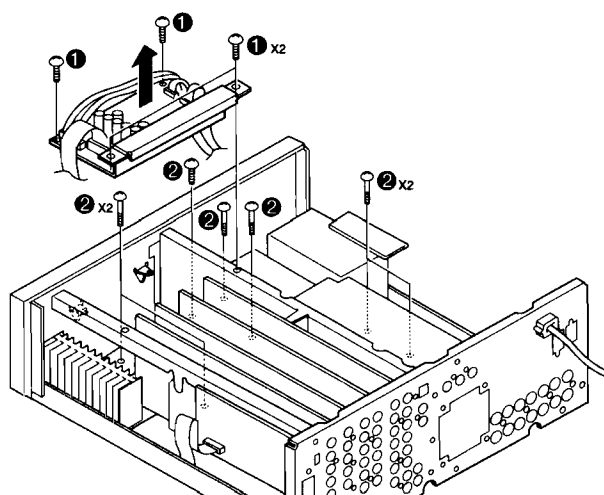
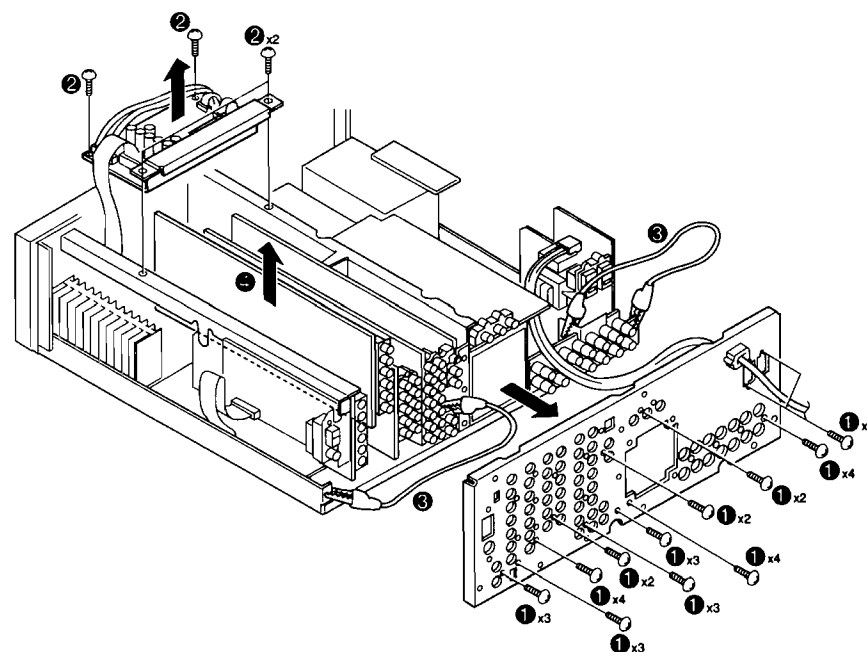
Use to select the desired surround mode.

## 18 SETUP key

Use to activate the Setup OSD and set the remote to OSD control mode.

## Check the vertical PCB.

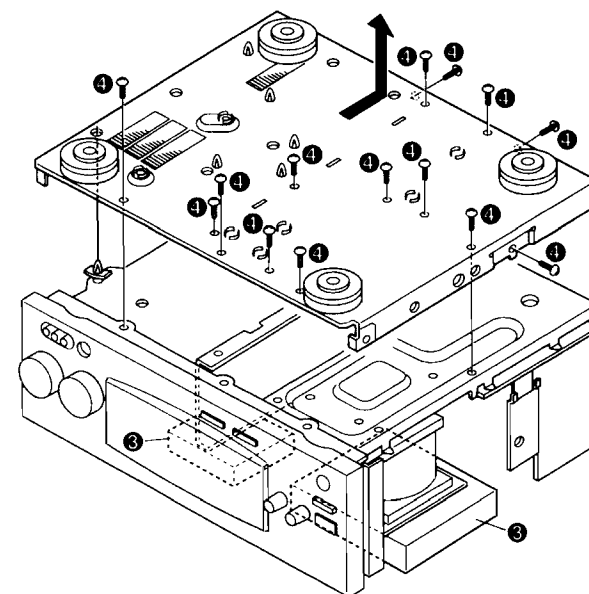
1. Remove the 32 screws (1), then remove the rear panel.
2. Remove the 4 screws (2), then remove the fuse PCB.
3. Connect the GND of the vertical PCB and the chassis, the GND of the speaker terminal and the chassis with 2 alligator clip (3).
4. Remove a vertical PCB (4), then check the vertical PCB.



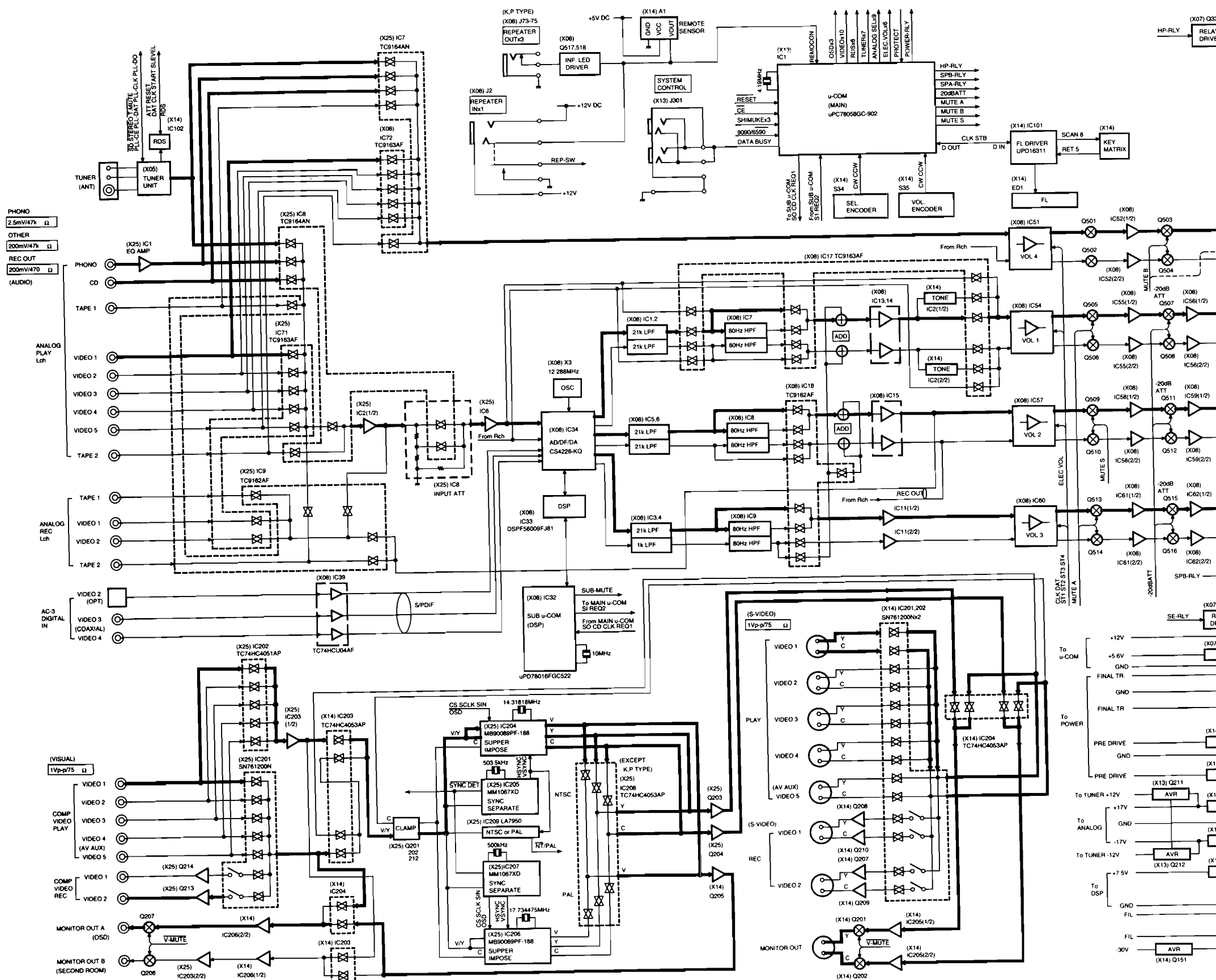
## Remove the bottom plate.

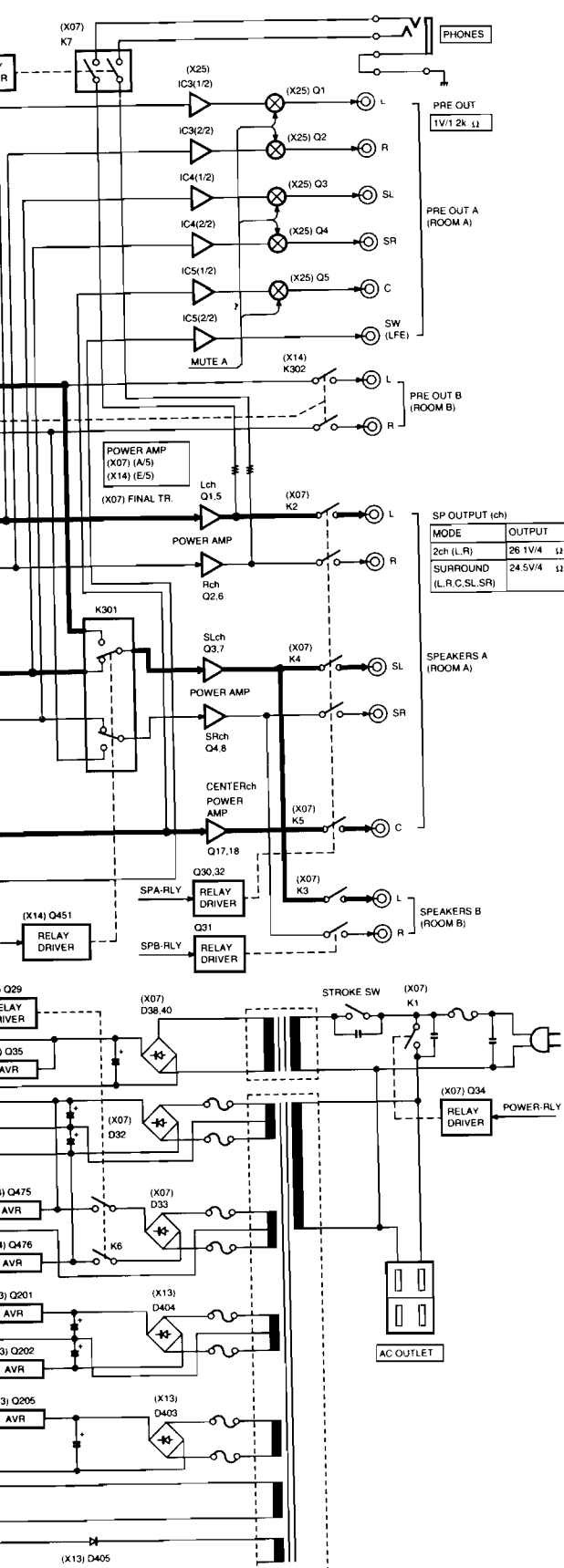
Make use of the changing final transistor etc.

1. Remove the 4 screws (1), then remove the fuse PCB.
2. Remove the 7 screws (2), then assemble the fuse PCB and the 4 screws (1).
3. Lay the 2 boxes (3), then upside down the KR-V999D.
4. Remove the 14 screws (4) and PCB support, then remove the bottom plate.



## BLOCK DIAGRAM





KR-V999D,1090VR

### 1. A initialization condition

POWER ON/OFF	: OFF
MAIN VOLUME LEVEL	: -66dB
SOUND INPUT SELECTOR (KR-V999D : ROOM A,B )	: TUNER
PICTURE SIGNAL INPUT SELECTOR (KR-V999D : ROOM A,B )	: VIDEO 1
SPEAKER A	: ON
SPEAKER B	: OFF
TAPE 2 / MONITOR (KR-V999D ONLY)	: OFF
SOURCE DIRECT	: OFF
DIMMER	: DIMMER 1
LOUDNESS	: OFF
OSD DISPLAY MODE	: ON
FL DISPLAY MODE	: SELECTOR
SURROUND MODE	: STEREO
FRONT SPEAKER	: LARGE
CENTER SPEAKER	: LARGE
REAR SPEAKER	: LARGE
SUB WOOFER	: OFF
EACH CHANNEL LEVEL	: 0dB
TONE BASS (KR-V888 ONLY )	: 0dB
TONE TREBLE (KR-V888 ONLY )	: 0dB
TUNING MODE	: AUTO
PRESET MEMORY	: TEST FREQUENCY (MAKER MEMORY )
LAST BAND	: FM
FM LAST FREQUENCY	: 87.5MHz (Except J) : 76.0MHz (J)
AM LAST FREQUENCY	: 531kHz (CH.SP 9kHz) : 530kHz (CH.SP 10kHz)
LAST P.ch	: —ch
PTY SELECT MODE	: OFF
PTY SEARCH MODE	: OFF
TP SEARCH MODE	: OFF
RDS DISPLAY MODE	: PS MODE
TA / NEWS / INFO.	: OFF
OSD RT DISPLAY MODE	: ON

### 2. The condition which each memory becomes the initial state.

- When fixation data is not a specified value, each memory becomes the initial state.
- When a test mode flag and all illumination flag are not set up at the time of a reset, each memory becomes the initial state.
- When KR-V999D is reset while pressing POWER switch, each memory becomes the initial state. (When AC plug is connected to an outlet)
- If the destination of a tuner is changing when KR-V999D is reset, each memory becomes the initial state. Or, if the condition of CH.SPACE switch is changing when KR-V999D is reset, each memory becomes the initial state.
- If all electron volume data are back-up previous condition, when KR-V999D is reset, each memory becomes the initial state.
- If the data of all electron volume is not agreeing completely when KR-V999D is reset, each memory becomes the initial state.
- When KR-V999D is reset the value of a memory is added. Or the value of a memory is added when back-up is done. And, a checksum is calculated. And, if the checksum that was calculated does not agree, each memory becomes the initial state.

# KR-V999D/1090VR

## CIRCUIT DESCRIPTION

### 3. TUNER PRESET MEMORY FREQUENCY(INITIALIZE)

Channel	BAND	K1 TYPE	BAND	K2 TYPE	BAND	E1/E3 TYPE	BAND	Q TYPE
01ch	FM	87.50MHz	FM	87.50MHz	FM	87.50MHz	FM	87.50MHz
02ch	FM	98.00MHz	FM	98.00MHz	FM	98.00MHz	FM	98.00MHz
03ch	FM	108.00MHz	FM	108.00MHz	FM	108.00MHz	FM	108.00MHz
04ch	AM	630kHz	AM	630kHz	AM	630kHz	AM	630kHz
05ch	AM	1000kHz	AM	1000kHz	AM	999kHz	AM	999kHz
06ch	AM	1440kHz	AM	1440kHz	AM	1440kHz	AM	1440kHz
07ch	FM	87.50MHz	FM	87.50MHz	FM	87.50MHz	FML	74.00MHz
08ch	FM	87.50MHz	FM	87.50MHz	FM	87.50MHz	FML	65.00MHz
09ch	FM	87.50MHz	FM	87.50MHz	FM	87.50MHz	FML	69.00MHz
10ch	FM	89.10MHz	FM	89.10MHz	FM	89.10MHz	FM	89.10MHz
11ch	FM	90.00MHz	FM	90.00MHz	FM	90.00MHz	FM	90.00MHz
12ch	FM	97.50MHz	FM	97.50MHz	FM	97.50MHz	FM	97.50MHz
13ch	FM	98.50MHz	FM	98.50MHz	FM	98.50MHz	FM	98.50MHz
14ch	FM	106.00MHz	FM	106.00MHz	FM	106.00MHz	FM	106.00MHz
15ch	AM	530kHz	AM	530kHz	AM	531kHz	AM	531kHz
16ch	AM	990kHz	AM	990kHz	AM	990kHz	AM	990kHz
17ch	AM	1700kHz	AM	1610kHz	AM	1602kHz	AM	1602kHz
18ch	FM	87.50MHz	FM	87.50MHz	FM	87.50MHz	FM	87.50MHz
19ch	FM	87.50MHz	FM	87.50MHz	FM	87.50MHz	FM	87.50MHz
20ch	FM	87.50MHz	FM	87.50MHz	FM	87.50MHz	FM	87.50MHz
21~40ch	FM	76.00MHz	FM	87.50MHz	FM	87.50MHz	FM	87.50MHz

The initial setting is performed in a following event :

1. When backup memory data is destroyed when reset is applied to the microprocessor.
2. When the power cord is plugged in to the AC wall outlet while pressing the POWER key.

### 4. Condition by the destination or model

Type	BAND	Reception frequency	Channel space	IF	PLL standard frequency	Destination switch				
						4 (65)	3 (62)	26 (26)	25 (25)	24 (24)
K1(1700) (RBDS)	FM	87.5MHz - 108.0MHz	100kHz	+10.7MHz	50kHz	0	0	1	0	0
	AM	530kHz - 1700kHz	10kHz	+450kHz	10kHz					
K2 (1610)	FM	87.5MHz - 108.0MHz	100kHz	+10.7MHz	50kHz	0	1	0	1	0
	AM	530kHz - 1610kHz	10kHz	+450kHz	10kHz					
K3(1610) (RBDS)	FM	87.5MHz - 108.0MHz	100kHz	+10.7MHz	50kHz	1	0	0	1	0
	AM	530kHz - 1610kHz	10kHz	+450kHz	10kHz					
E1	FM	87.5MHz - 108.0MHz	50kHz	+10.7MHz	50kHz	0 or 1	0 or 1	0	1	0
	AM	531kHz - 1602kHz	9kHz	+450kHz	9kHz					
E2 (RDS)	FM	87.5MHz - 108.0MHz	50kHz	+10.7MHz	50kHz	0	0	1	1	0
	AM	531kHz - 1602kHz	9kHz	+450kHz	9kHz					
M	K2/E1 is switched with only the setting of TSW3. (TSW3=1: K2 type, 0: E1 type)					0	X	0	1	0
Y	K3/E1 is switched with only the setting of TSW3. (TSW3=1: E1 type, 0: K3 type)					1	X	0	1	0
Q (RDS)	FM L	65.0MHz - 74.0MHz	10kHz	+10.7MHz	5kHz	*	*	*	*	*
	FM H	87.5MHz - 108.0MHz	50kHz	+10.7MHz	5kHz					
	AM	531kHz - 1602kHz	9kHz	+450kHz	9kHz					

※ The number inside ○ is a terminal number of a main microprocessor.

# KR-V999D/1090VR

## CIRCUIT DESCRIPTION

### 5. Test mode

#### (1) Test mode setting method

Turn on the power supply while pressing TUNING-DOWN key, to make a set in test mode condition.

When a set is set up in test mode condition a set becomes the following condition.

Automatic POWER ON

All indicator tubes and also LED are lighted. (This condition can be canceled by pressing the key of the set.)

A backup at the thing except ON/OFF of POWER is initialized.

#### (2) Test mode cancellation method

The power supply is turned off.

#### (3) A tuner function.

When a selector is set to the tuner, the following key is not usual function and operates by the special function.

The function to summon the channel of the presetting

① The following channel is summoned when not operating +10 keys.

1ch ~ 9ch (1 ~ 9key)

10ch (0key)

② When +10 keys are pressed once, the following channel is summoned.

11ch ~ 19ch (1 ~ 9key)

20ch (0key)

③ When +10 keys are pressed twice, the following channel is summoned.

21ch ~ 29ch (1 ~ 9key)

30ch (0key)

④ When +10 keys are pressed three times, the following channel is summoned.

31ch ~ 39ch (1 ~ 9key)

40ch (0key)

⑤ When +10 keys are pressed four times, it gets to do the function which is the same as the condition which doesn't press +10 keys.

- The S level hexadecimal DATA display and the ATT ON/OFF function

When a selector is set to the tuner, it repeats the following operation cyclically when operating the PTY key of the set.

a) When ATT is in the OFF condition, it displays as follows.

"ATT OFF display" + "Signal level display by the tuner (HEX DATA)"

b) When ATT is in the ON condition, it displays as follows.

"ATT ON display" + "Signal level display by the tuner (HEX DATA)"

c) At the time of the ATT OFF condition, the set becomes usual display.

- ☆ When the key of a set is pressed a signal level display of a tuner continues to display the value of when that ATT works.

- The display changes by pressing TA•INFO•NEWS key, RDS DISPLAY key and TP key irrespective of the condition of AUTO-MEMORY.

- ☆ When it is inputting RDS signal the work of TP key is not able to be confirmed.

(TP display has changed by RDS signal.)

- MUTE signal output  
Because TUNER-MUTE always becomes OFF condition, it isn't possible to do control.

- RDS display mode.  
RDS-PS display works by pressing PRO-LOGIC key irrespective of TUNED. Then, "SURROUND" of an indicator tube is lighted. (It is able to cancel it by pressing PRO-LOGIC key.)

- By pressing MEMORY key, it is possible to do the work of all the lighting-up / usual lighting-up cyclically.

#### (4) An amplifier function.

- The value in the first of the speaker setting by the test mode is full equipment.

- When a selector is set to the thing except TUNER, the following key works by the special function.

When a selector is set to TUNER, the following key does usual work.

- ① It is possible to set as follows by operating with the rotary encoder and the stoat key when a selector is set to the thing except TUNER.

Setting item	Ten-key that operates	Master volume
Maximum	2	0dB
Middle	3	-30dB
Minimum	1	-98dB

- ② The following work is done by operating a ten-key, when a selector is set up other than TUNER.

Condition which displayed	Ten-key that operates	
The setting initial state is a master volume.		
INPUT LEVEL (IL)	4	After pressing the ten-key which was written on the left, press "1" "2" or "3" of the ten-key.
SPEAKER DELAY TIME (DL)	5	
SPEAKER LEVEL FRONT L (L)	6	
SPEAKER LEVEL FRONT R (R)	7	
SPEAKER LEVEL CENTER (C)	8	
SPEAKER LEVEL REAR L (SL)	9	
SPEAKER LEVEL FRONT R (SR)	0	
SPEAKER LEVEL WOOFER (SW)	+10	

#### ③ Test tone operation

While displaying as follows every time it presses DIRECT key when dolby surround is working, it switches a speaker and TEST-TONE is output.

By pressing STEREO key, this work and dolby surround can be canceled.

Lch → Cch → Rch → RSch → LSch → SWch



# KR-V999D/1090VR

## CIRCUIT DESCRIPTION

### ④ Mute signal output

Because the analog mute always becomes OFF condition, it isn't possible to control absolutely. however, when the value with front volume is the minimum, it becomes an analog mute ON condition.

### ⑤ Sub microprocessor mute work

A sub microprocessor mute works, by pressing AUTO/MANUAL key. The work of a sub microprocessor mute is cancelled cyclically, by pressing AUTO/MANUAL key after that.

- The display to this work is not displayed to an indicator tube.

### ⑥ Midnight work function.

The following work is done cyclically, each time TUNING-UP key is pressed.

### ⑦ Dolby System surround center mode function

The following display is displayed cyclically each time TUNING-UP key is pressed.

### ⑧ The sub woofer speaker ON/OFF setting

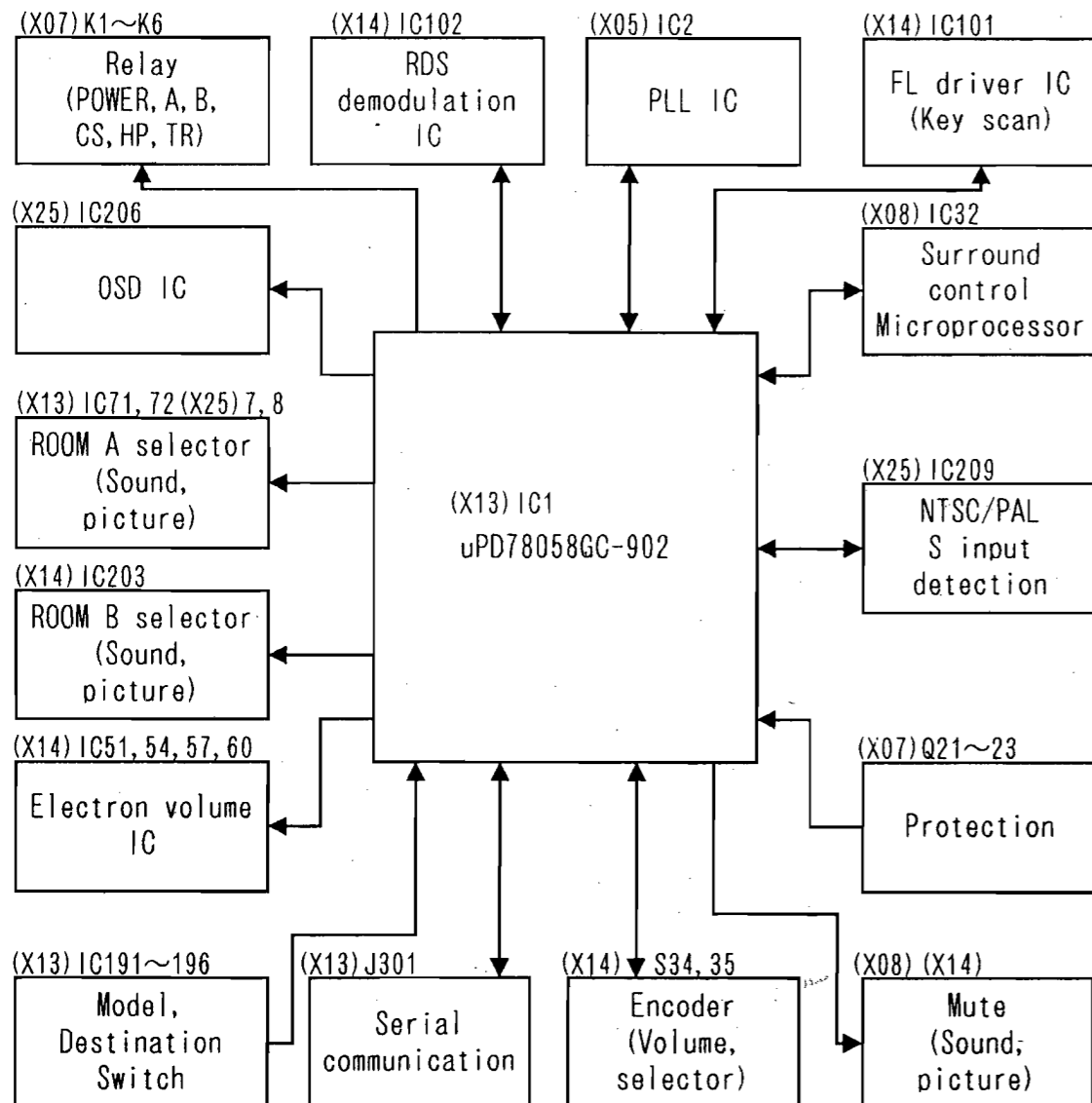
The setting of the existence or non-existence of a sub woofer speaker is able to set up cyclically each time MEMORY key is pressed.

### ⑨ TONE BASS/TREBLE. (KR-V888D/1080VR only)

The following display are done cyclically by pressing TONE BASS/TREBLE, when a test mode is working.

## 6. Microprocessor uPD78058GC-902 (X13-, IC1)

### 6-1 Microprocessor periphery block diagram



# KR-V999D/1090VR

## CIRCUIT DESCRIPTION

### 6-2. Terminal explanation

Pin No.	Name	I/O	Description
1	RELAY_TR	O	Relay Secondary side of the transformer
2	RELAY_HP	O	Relay HEAD PHONE
3	PROTECT	I	Protection input
4	AVSS	—	GND for A/D
5	SUB_RESET	O	Sub microprocessor RESET
6	OSD_CS1	O	MB90089 CS1 for NTSC
7	AVREF1	—	Unuse
8	8/16	I	Serial 8/16 bit judgement terminals
9	OSD_SIN	O	MB90089 SIN
10	OSD_SCLK	O	MB90089 SCLK
11	SUB_SI	I	Control microprocessor communication SI
12	SUB_SO	O	Control microprocessor communication SO
13	SUB_CLK	O	Control microprocessor CLK
14	SUB_REQ1	O	Control microprocessor REQ1
15	SUB_REQ2	I	Control microprocessor REQ2
16	FL_DOUT	I	UPD16311 DOUT (key scan)
17	FL_DIN	O	UPD16311 DIN (display data output)
18	FL_CLK	O	uPD16311 CLK
19	999D/888D	I	KR-V999D/888D switching switch
20,21	SEL_1,SEL_2	I	Selector encoder input 1 input 2
22,23	VOL_1, VOL_2	I	Volume encoder input 1 input 2
24 - 26	TSW_0 - TSW_2	I	Destination switching switch 0 - switch 2
27	FL_STB	O	uPD16311 STB
28	VSEL_DATA	O	NJU3713 (expansion IC for picture selector) DATA
29	VSEL_CLK	O	NJU3713 (expansion IC for picture selector) CLK
30	VSEL_STB	O	NJU3713 (expansion IC for picture selector) STB
31	—	—	Unuse
32	S_SW	I	S detection
33	VSS	—	
34	OSD_CS2	O	MB90089 CS2 for PAL
35	NTSC_PAL_OUT	O	NTSC/PAL switching output
36	NTSC_PAL_IN	I	NTSC/PAL switching input
37	LOUDNESS	O	LOUDNESS control
38,39	—	—	Unuse
40	SEL_STB1	O	NJU731x STB for ROOM A
41	SEL_STB2	O	NJU731x STB for ROOM B
42	VOL_CE	O	TC9412 CE
43	COM_DATA	O	TC916x,TC9412 DATA
44	COM_CLK	O	TC916x,TC9412 CLK
45	SBUSY	I/O	Serial BUSY
46	SDATA	I/O	Serial DATA
47	MUTE_A	O	ROOM A mute
48	MUTE_B	O	ROOM B mute
49	SYNC_DET	I	OSD picture synchronous signal detection
50	V_MUTE	O	VIDEO MUTE

# KR-V999D/1090VR

## CIRCUIT DESCRIPTION

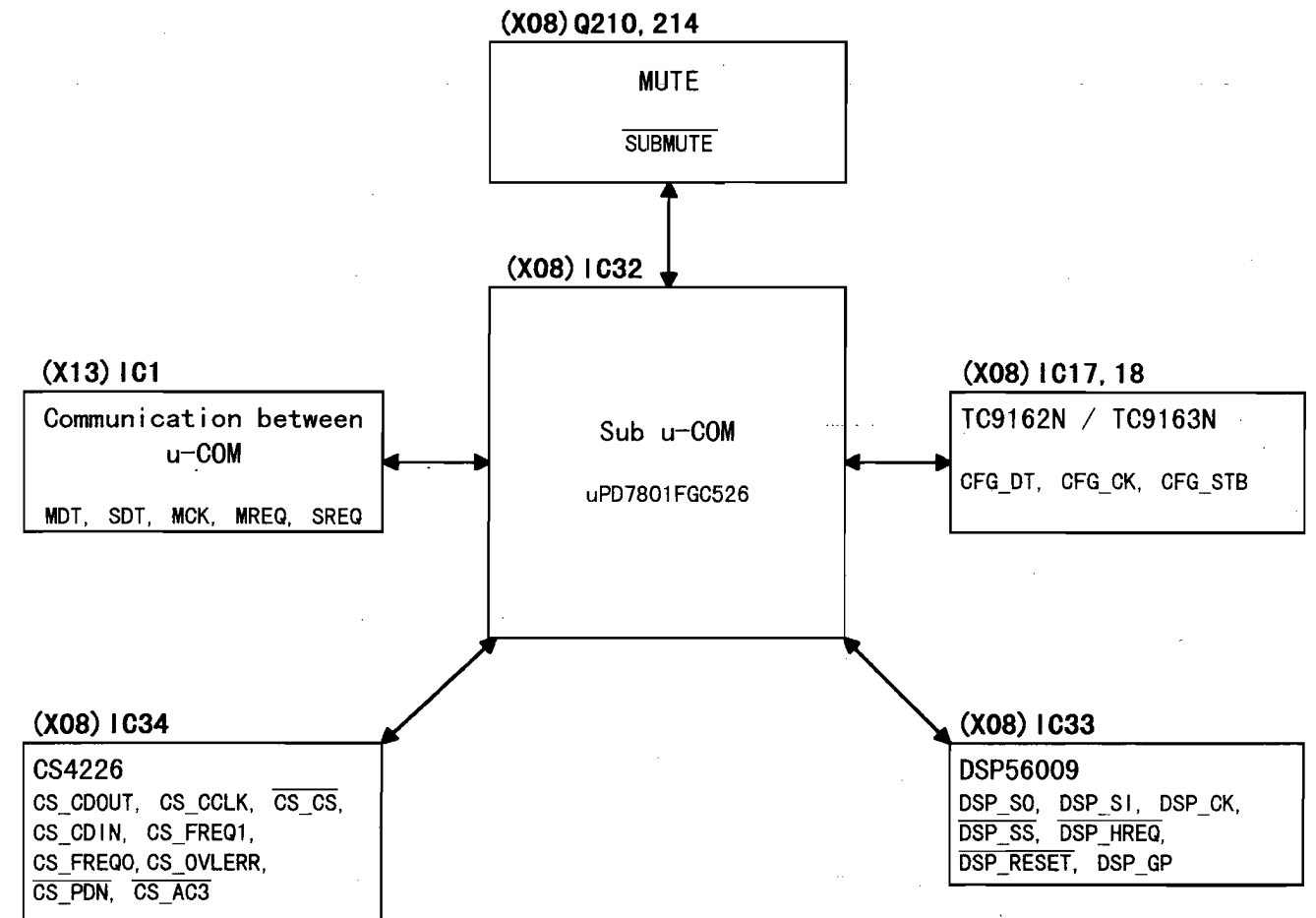
Pin No.	Name	I/O	Description
51	-20dB_MUTE	O	-20dB MUTE
52	EXT_OUT	O	EXTERNAL OUT
53	T_MUTE	O	Tuner mute
54	PLL_CLK	O	LC72131 CLK
55	PLL_DATA	O	LC72131 DATA
56	PLL_CE	O	LC72131 CE
57	SD	I	SD input
58	STEREO	I	STEREO input
59	PLL_DO	I	LC72131 DO
60	RESET	I	Reset
61	REMOCON	I	Remote controller input
62	TSW_3	I	Destination switching switch 3 (CH, SPACE)
63	RDS_DATA	I	RDS DATA
64	RDS_CLK	I	RDS CLK
65	TSW_4	I	Destination switching switch 4
66	—	—	Unuse
67	CE	I	Backup
68	VDD	—	Power supply+5V
69	X2	—	System clock connection
70	X1	I	System clock connection
71 - 73	—	—	Unuse
74	AVDD	—	Analogue power supply for A/D
75	AVREF0	—	Standard voltage input for A/D
76	RDS_SLEVEL	I	RDS S_LEVEL
77	RELAY_POWER	O	Relay POWER
78	RELAY_A	O	Relay ROOM A
79	RELAY_B	O	Relay ROOM B
80	RELAY_CS	O	Relay CENTER SURROUND

# KR-V999D/1090VR

## CIRCUIT DESCRIPTION

### 7. Sub-microprocessor uPD7801FGC526 (X08-: IC32)

#### 7-1 Microprocessor periphery block diagram



#### 7-2 Terminal explanation (submicroprocessor)

PIN NO.	NAME	I/O	DESCRIPTION
1	DSP_SS	O	DSP56009 SS
2	DSP_HREQ	I	DSP56009 HREQ
3	DSP_RESET	O	DSP56009 RESET
4,5	NC	I	UNUSE
6	CFG_DT	O	TC9162N/TC9163N DATA
7	CFG_CK	O	TC9162N/TC9163N CLOCK
8	CFG_STB	O	TC9162N/TC9163N STROBE
9	VSS		GND
10-12	NC	O	UNUSE
13	AD_SEL	O	ST.PCM/AC3 2ch DOWN MIX :L ELSE : H
14-17	NC	O	UNUSE
18	CS_CDOUT	I	CS4226 DATA IN
19	CS_CCLK	O	CS4226 CLOCK
20	CS_CS	O	CS4226 CHIP SELECT

# KR-V999D/1090VR

## CIRCUIT DESCRIPTION

PIN NO.	NAME	I/O	DESCRIPTION
21	CS_CDIN	O	CS4226 DATA OUT
22	CS_FREQ1	I	CS4226 FS CHECK
23	CS_FREQ0	I	CS4226 FS CHECK
24	VSS		GND
25	CS_PDN	O	CS4226 POWER DOWN PORT
26	CS_AUDIO	I	CS4226 AUDIO
27-30	NC	I	UNUSE
31	CS_OVL/ERR	I	CS4226 OVER LOAD//ERROR DETECT
32	SUBMUTE	O	ANALOG MUTE CONTROL
33,34	NC	I	UNUSE
35	RESET	I	u-COM RESET
36	CS_AC3	I	CS4226 AC3
37-39	NC	I	UNUSE
40	VDD		+5V
41	X2	O	CERAMICS
42	X1	I	CERAMICS
43	IC(VPP)		GND
44	XT2		OPEN
45	NC	I	+5V
46	AVSS		GND
47,48	NC	I	UNUSE
49	TEST_T	O	TEST TONE OFF/ON ON : LOW / OFF : HIGH
50-53	NC	I	UNUSE
54	DSP_GP	O	DSP56009 GP10PIN
55	AVDD		+5V
56	AVREF	I	GND
57	MDT	I	Communication between u-COM MASTER DATA
58	SDT	O	Communication between u-COM SLAVE DATA
59	MCK	I	Communication between u-COM MASTER CLOCK
60	MREQ	I	Communication between u-COM MASTER REQUEST
61	SREQ	O	Communication between u-COM SLAVE REQUEST
62	DSP_SQ	I	DSP56009 DATA IN
63	DSP_SI	O	DSP56009 DATA OUT
64	DSP_CK	O	DSP56009 CLOCK

### Key matrix table

	⑬ KS0	⑫ KS1	⑪ KS2	⑩ KS3
⑮ KS1	—	DOLBY PROLOGIC	DOLBY 3 STEREO	DOLBY AC-3
⑯ KS2	STEREO	DSP	SOURCE DIRECT	—
⑰ KS3	LOUDNESS	MUTE	DIMMER	TAPE2
⑱ KS4	TUNING DOWN	0	9	+10
⑲ KS5	8	TUNING UP	6	7
⑳ KS6	BAND	AUTO / MANUAL	4	5
㉑ KS7	—	PTY	RDS DISPLAY	TA / NEWS / INFO.
㉒ KS8	SPEAKER A	MEMORY	2	3
㉓ KS9	POWER	SPEAKER B	1	DIRECT

※ The number inside ○ is a terminal number of IC101(X14).

# KR-V999D/1090VR

## CIRCUIT DESCRIPTION

### 8. Control list for the switch and the port

(1) Sound system selector ROOM A (0 : SW OFF / 1 : SW ON)

		X25(IC9)		(X08)IC71				(X08)IC72				(X25)IC8							
		②	⑲	⑲	⑳	㉑	㉒	⑲	⑳	㉑	㉒	⑲	⑳	㉑	㉒				
TAPE 2 OFF	TUNER	1	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	1	0
	PHONO	1	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	1	0
	CD	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	1	0
	TAPE1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1	0
	VIDEO1	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0
	VIDEO2	1	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0
	VIDEO3	1	0	0	0	0	1	1	1	0	0	1	0	0	0	0	0	1	0
	VIDEO4	1	0	0	0	0	1	1	0	1	0	0	1	0	0	0	0	1	0
AV AUX	1	0	0	0	0	1	1	0	0	1	0	0	1	0	0	0	1	0	
TAPE 2 ON	TUNER	1	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	1
	PHONO	1	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	1
	CD	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	1
	TAPE1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	1
	VIDEO1	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	VIDEO2	1	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1
	VIDEO3	1	0	0	0	0	1	1	1	0	0	1	0	0	0	0	0	0	1
	VIDEO4	1	0	0	0	0	1	1	0	1	0	0	1	0	0	0	0	0	1
AV AUX	1	0	0	0	0	1	1	0	0	1	0	0	1	0	0	0	0	1	

(2) Sound system selector ROOM B (0 : SW OFF / 1 : SW ON)

	(X08)IC71						(X08)IC72						(X25)IC27										
	②	③	⑥	⑦	⑩	⑪	②	③	④	⑥	⑦	⑧	②	⑲	③	⑳	④	㉑	⑥	㉒	⑧	㉓	
TUNER	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
PHONO	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
CD	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
TAPE1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
VIDEO1	1	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VIDEO2	0	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VIDEO3	0	0	0	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
VIDEO4	0	0	0	0	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
AV AUX	0	0	0	0	1	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0

(3) Picture system selector ROOM A (0 : L / 1 : H)

	(X13)IC7				
	⑭	⑮	⑯	⑰	⑱
VIDEO1	0	0	0	0	0
VIDEO2	1	0	1	0	0
VIDEO3	1	1	1	1	1
VIDEO4	1	1	1	1	0
AV AUX	0	1	0	1	0

# KR-V999D/1090VR

## CIRCUIT DESCRIPTION

(4) Picture system selector ROOM B (0 : L / 1 : H)

VIDEO OUT	(X13)IC7		
	②	③	④
VIDEO1	0	0	0
VIDEO2	1	0	0
VIDEO3	0	1	0
VIDEO4	0	0	1
AV AUX	1	1	0

(5) Relay switching (0 : RELAY OFF / 1 : RELAY ON)

SPEAKER A	SPEAKER B	SURROUND	(X07)RELAY				
			A(K2)	B(K3)	CS(K4) (K5)	TR(K6)	HP(K7)
OFF	OFF	OFF	0	0	0	1	1
ON	OFF	OFF	1	0	0	1	0
ON	OFF	ON	1	0	1	1	0
OFF	ON	OFF	0	1	0	1	0
ON	ON	OFF	1	1	0	0	0

(6) OSD switching (0 : L / 1 : H)

S_SW	OSD A/B	(X13)IC7		
		⑥	⑦	⑧
L	A	0	0	1
L	B	0	1	0
H	A	1	1	1
H	B	0	1	0

(7) Input level switching (0 : SW OFF / 1 : SW ON)

	(X25)IC8			
	⑩	⑲	⑪	⑱
INPUT LEVEL ATT 0dB	1	0		
INPUT LEVEL ATT -3dB	0	0		
INPUT LEVEL ATT -6dB	0	1		

(8) Digital REC switching (0 : SW OFF / 1 : SW ON)

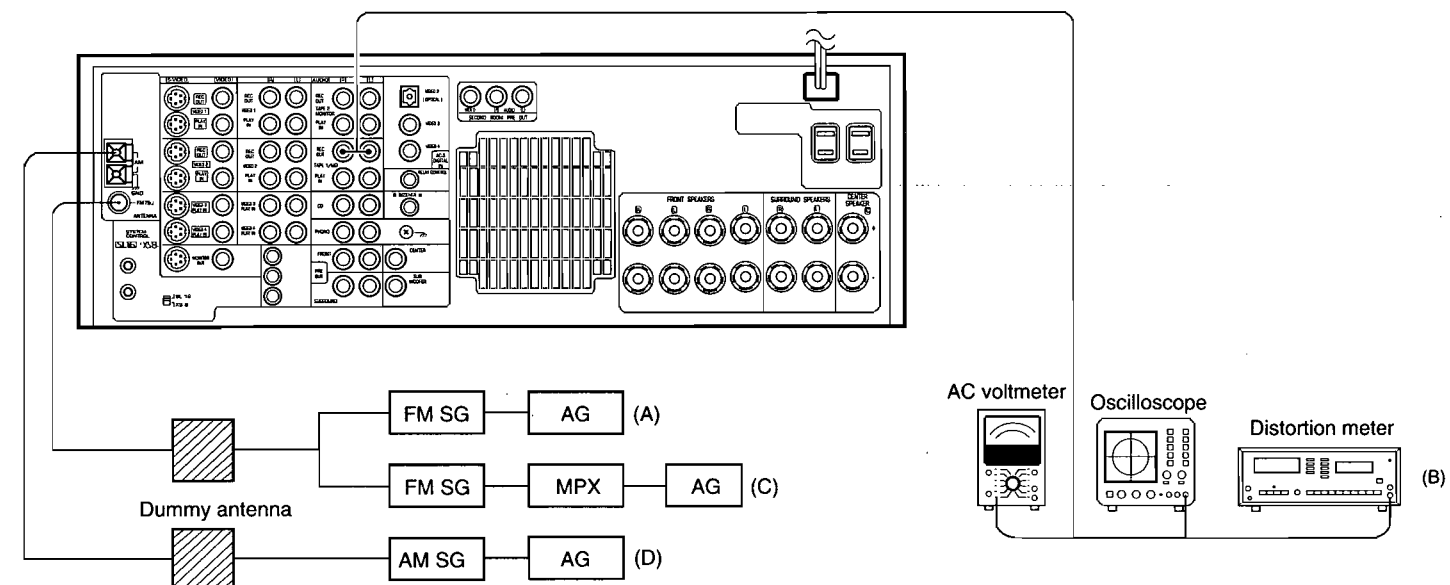
	(X25)IC9				
	③ ⑳	⑤ ㉔	⑥ ㉓	⑧ ㉑	⑨ ㉒
DIGITAL REC	0	1	1	0	0
Except for DIGITAL REC	1	0	0	1	1

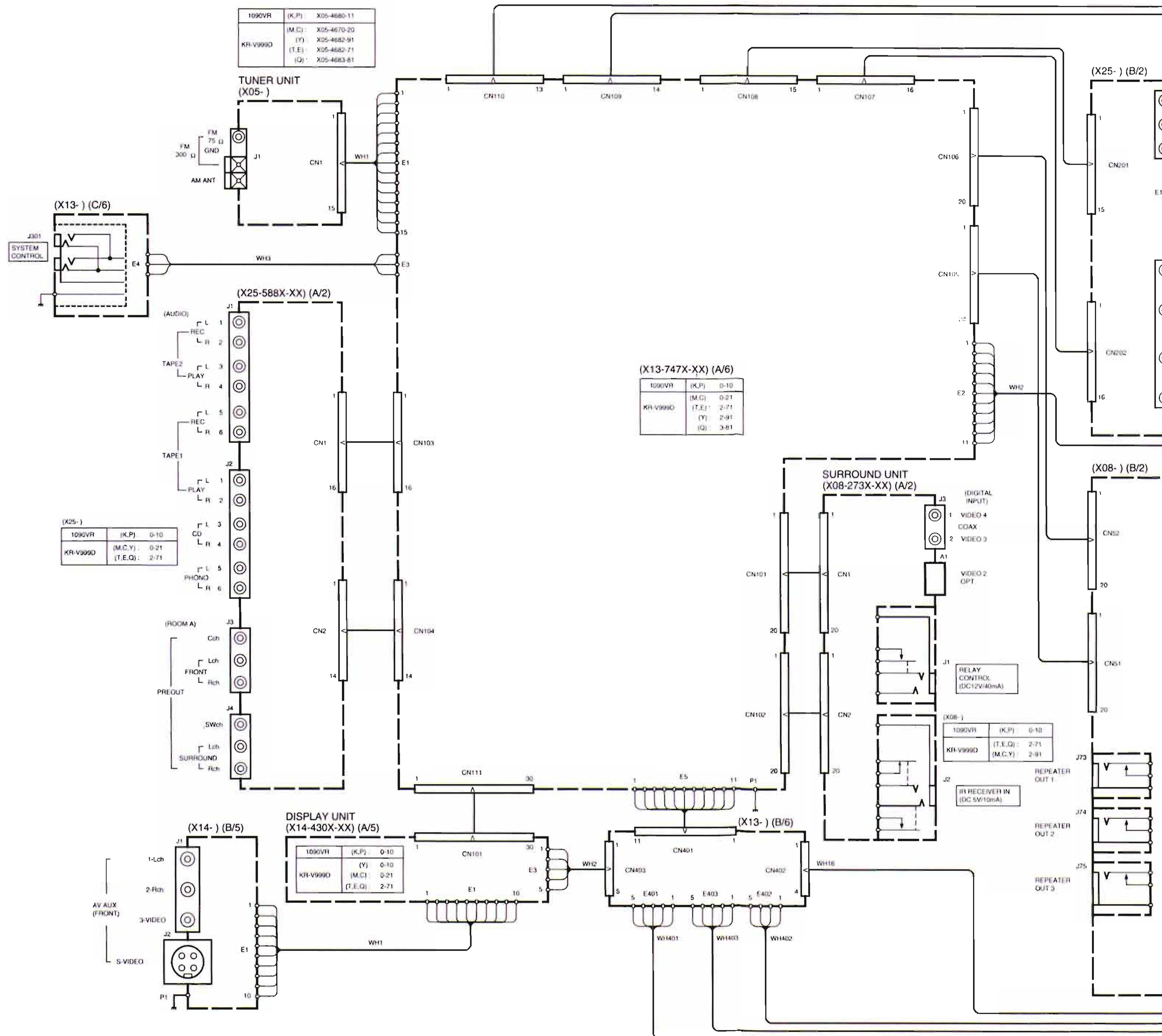
# KR-V999D/1090VR

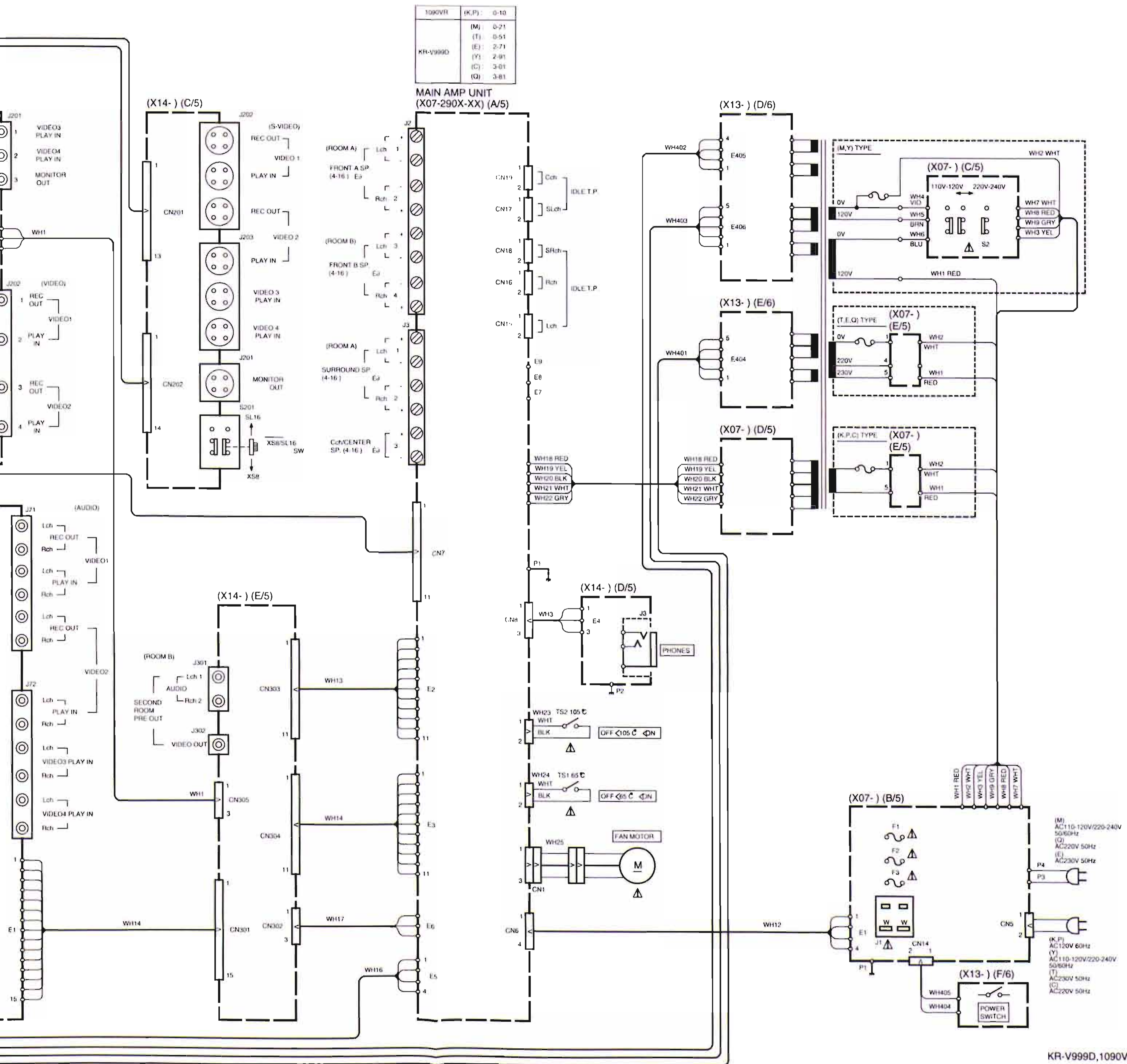
## ADJUSTMENT

No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	TUNER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
<b>FM SECTION (E,T type) SELECTOR : FM</b>							
1	DISCRIMINATOR L31 ↔ L32 (E, T, Q only)	(A) 98.0MHz 1kHz, ±40kHz dev. 60dBμ(ANT input)	Connect a DC voltmeter between TP3 of CN2 (X05-)	AUTO 98.0MHz	L31 (X05-)  L32 (X05-)	0V  Minimum distortion	(a)
2	DISTORTION (STEREO)	(C) 98.0MHz 1kHz, ±40kHz dev. Pilot: ±6kHz dev. 60dBμ(ANT input)	(B)	AUTO 98.0MHz	IFT (W02-)	Minimum distortion	(a)
<b>AUDIO SECTION SPEAKER : A PREOUT : OFF PROLOGIC : ON</b>							
<1>	IDLE CURRENT	—	Connect a DC voltmeter across CP1 or CN15(L) CN16(R) CN9(CENTER) CN20(SR) or CN17(SL) (X07-)	Volume:0	VR1(L) VR2(R) VR3(SL) VR4(SR) VR5(CENTER) (X07-)	13mV	
<2>	ON SCREEN Color burst frequency	After take a single PCB, conner supply between TP(+5V) and GND (x25-)(B/2)	Connect a frequency counter between port 10 (check round of HSYNC) of IC204(or 206) and GND (X25-)(B/2)	After power ON (stand-by), input Low CS(24pin) of IC204(or 206) four time(cancel inner reset); then input Low TEST(24pin)	TC201(NTSC) TC1(X14-) TC202(PAL) (X25-)	(TC201) 3.57954MHz (TC202) 4.433619MHz	

(a)



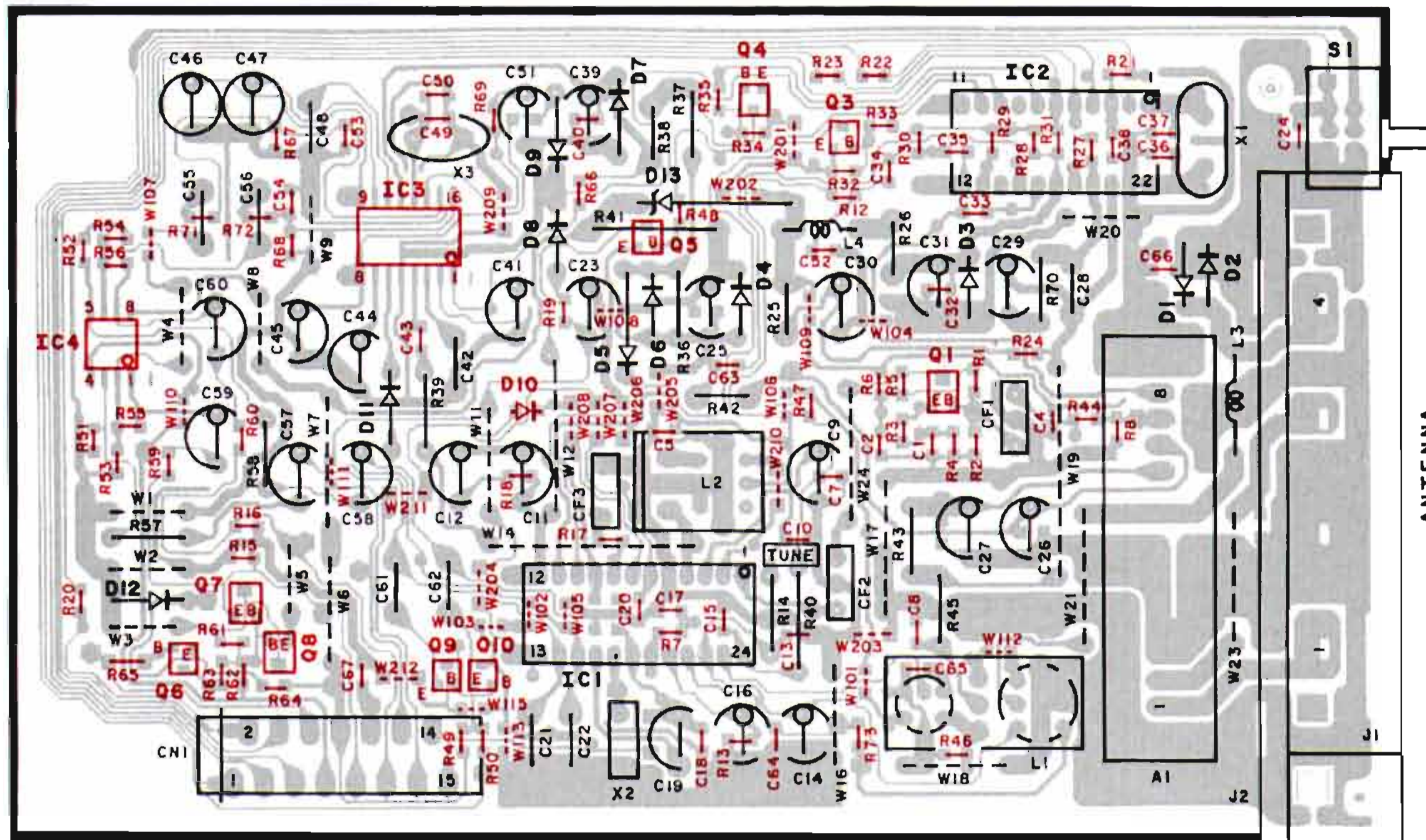




# PC BOARD(Component side view)

TUNER UNIT(X05-4670-20); CM(KR-V999D)

(X05-4670-20) J70-0959-11



SURROUND UNIT(X08-273X-XX)

0-10: KP(1090VR)

2-71: EQT(KR-V999D)

2-91: Y(1090VR)

CM(KR-V999D)

REC OUT

VIDEO 1

PLAY IN

REC OUT

VIDEO 2

PLAY IN

VIDEO 3

PLAY IN

VIDEO 4

PLAY IN

PRE OUT 1

PRE OUT 2

PRE OUT 3

TUNER UNIT(X05-468X-XX)

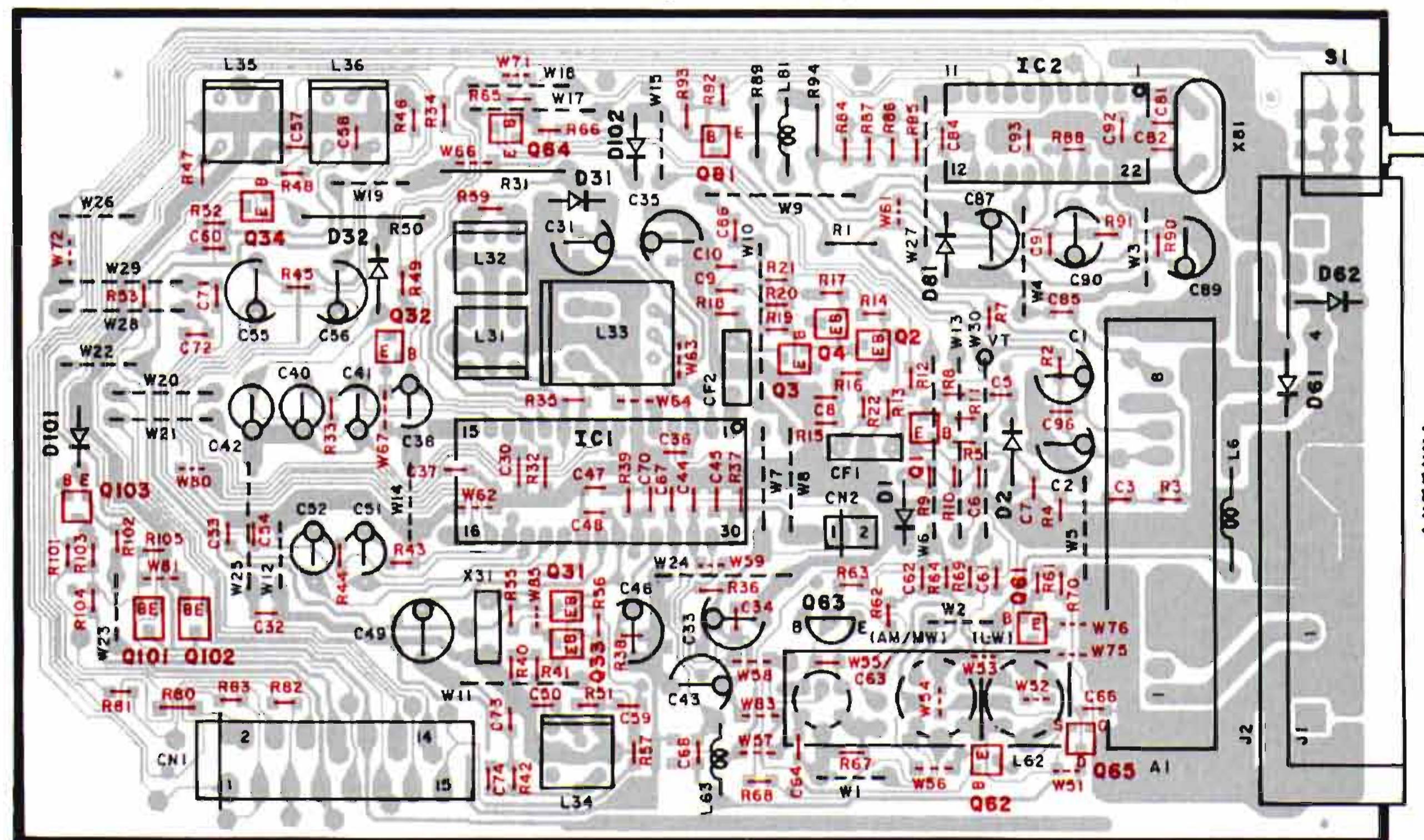
0-11: KP(1090VR)

3-81: Q(KR-V999D)

(X05-468X-XX) J70-0960-21

2-71: TE(KR-V999D)

2-91: Y(1090VR)

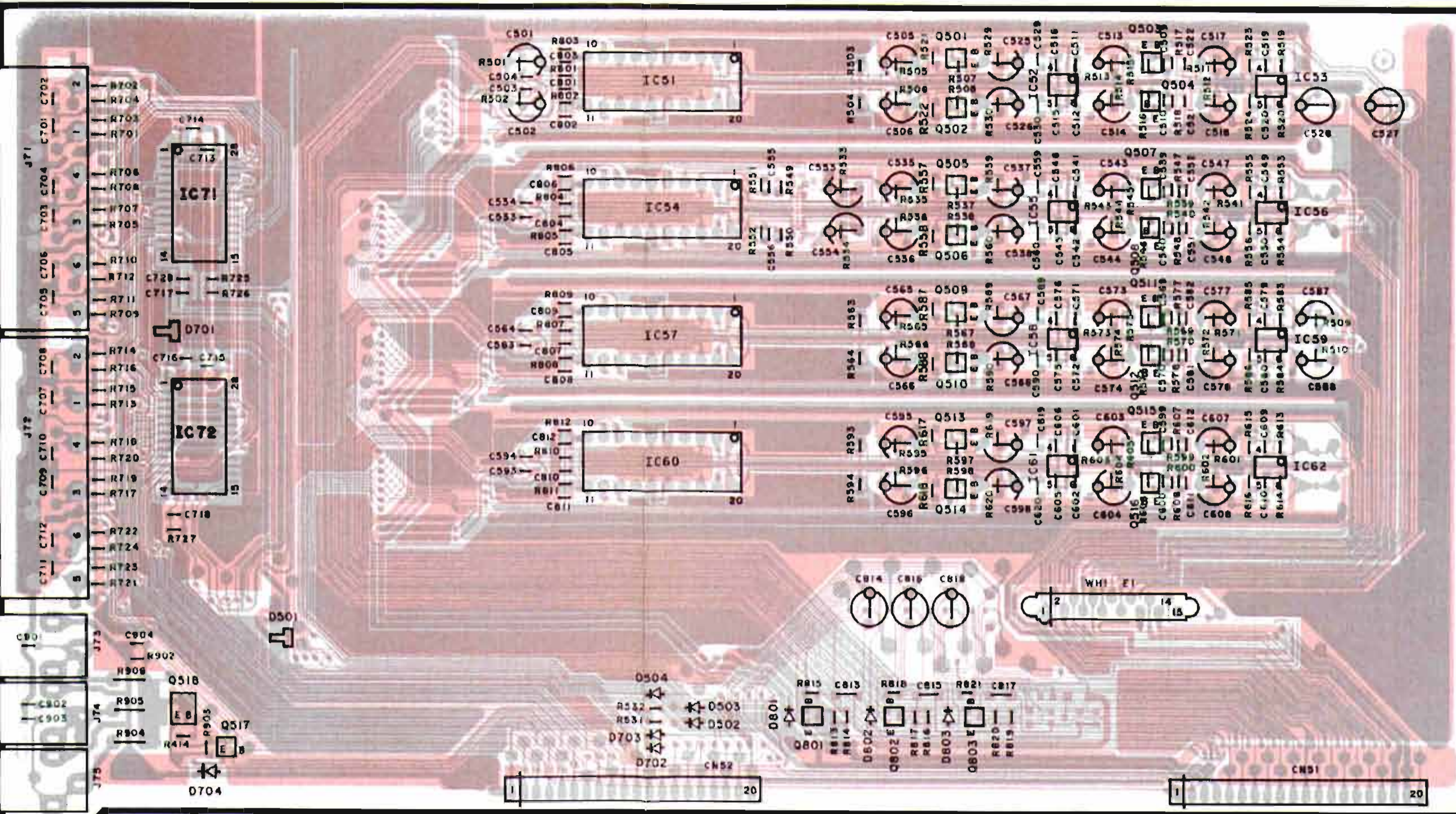


VIDEO 4

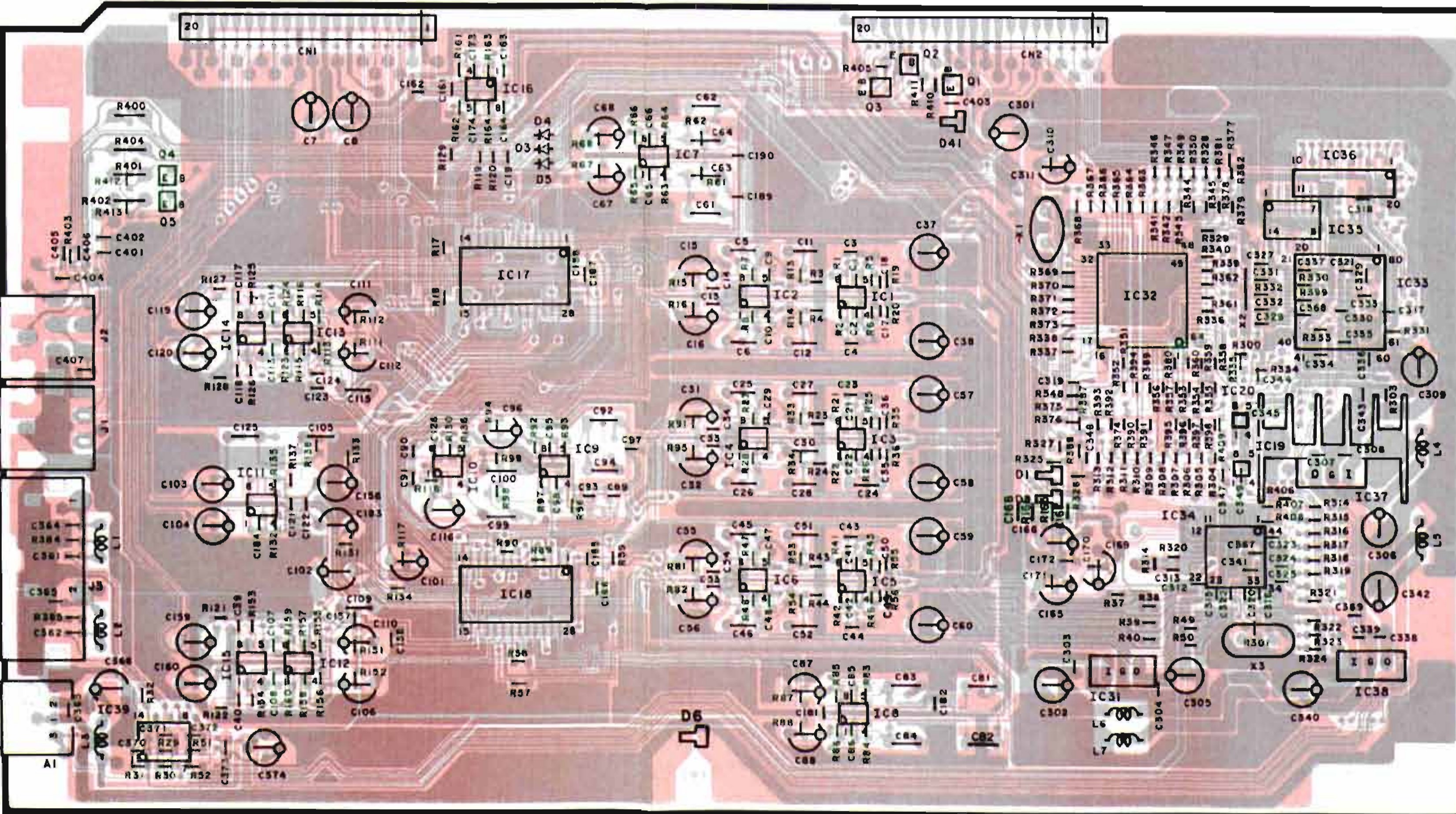
VIDEO 3

VIDEO 2 (OPTICAL)

(X08-) (B/2)



(X08-2730-10) (A/2) J70-0975-21

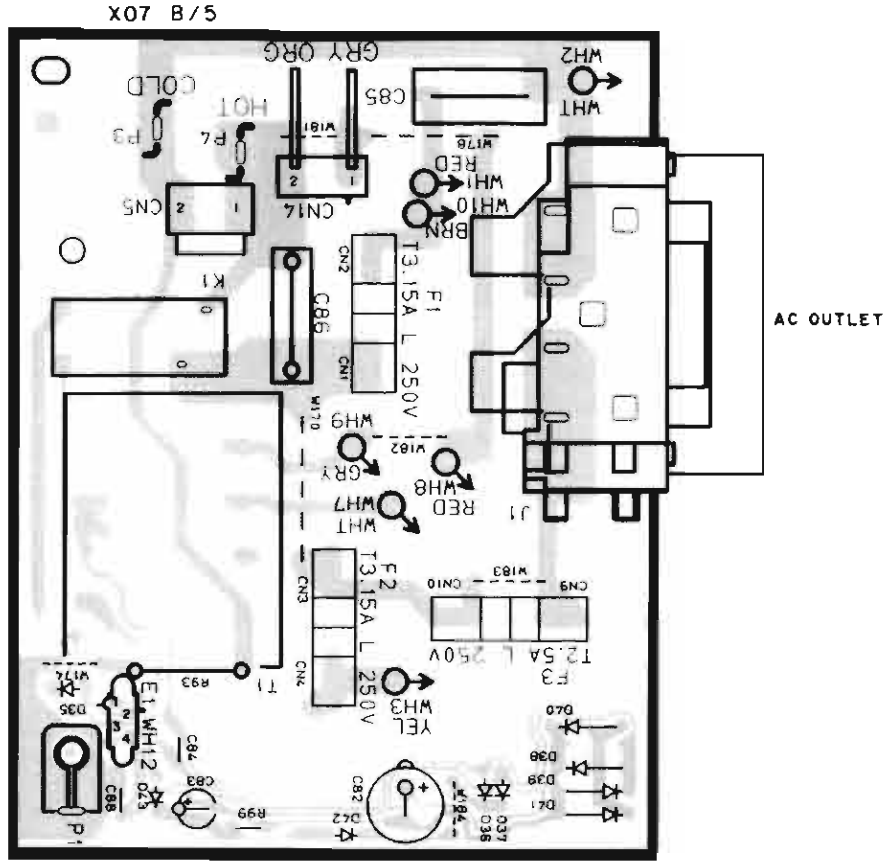




# PC BOARD(Component side view)

## POWER AMPLIFIER UNIT(X07-290X-XX)

- 0-10: KP(1090VR)
- 0-21: M(KR-V999D)
- 0-51: T(KR-V999D)
- 2-71: E(KR-V999D)
- 2-91: Y(1090VR)
- 3-01: C(KR-V999D)
- 3-81: Q(KR-V999D)

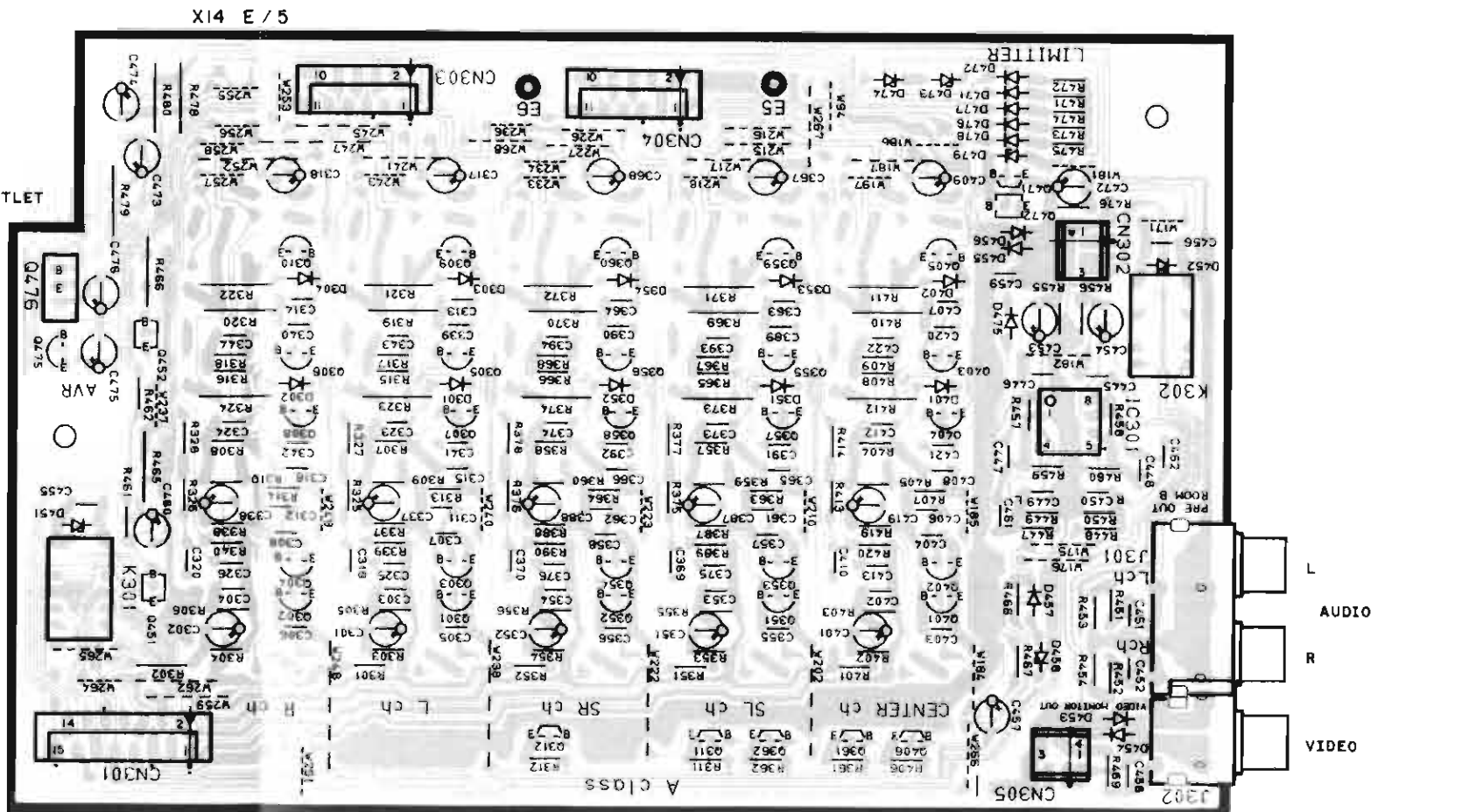
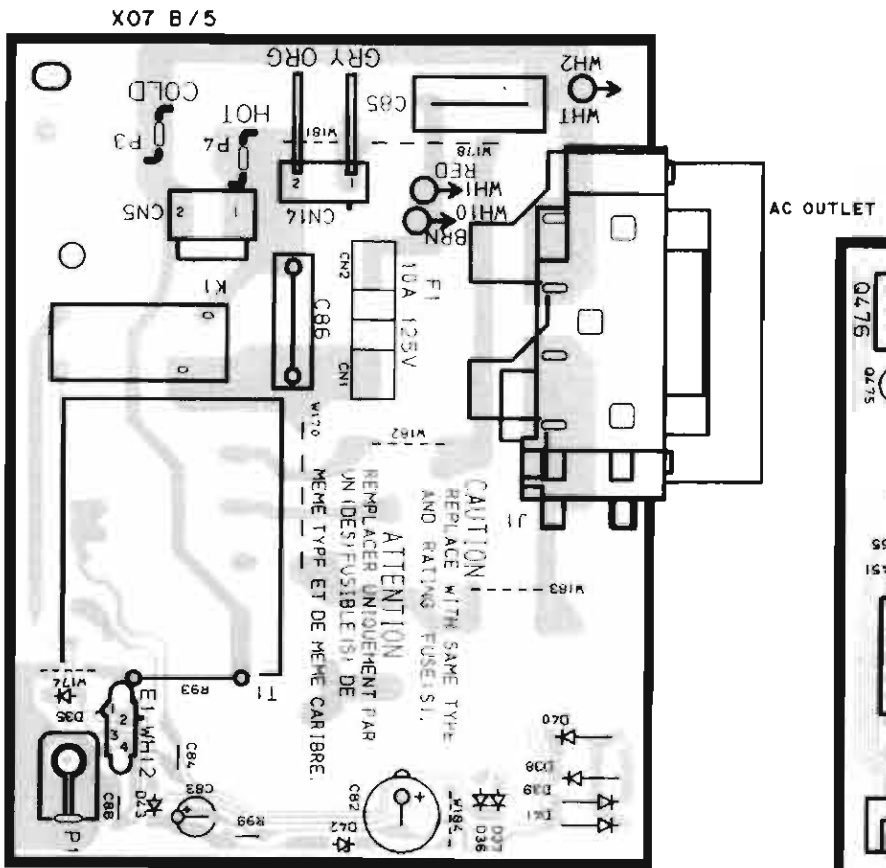
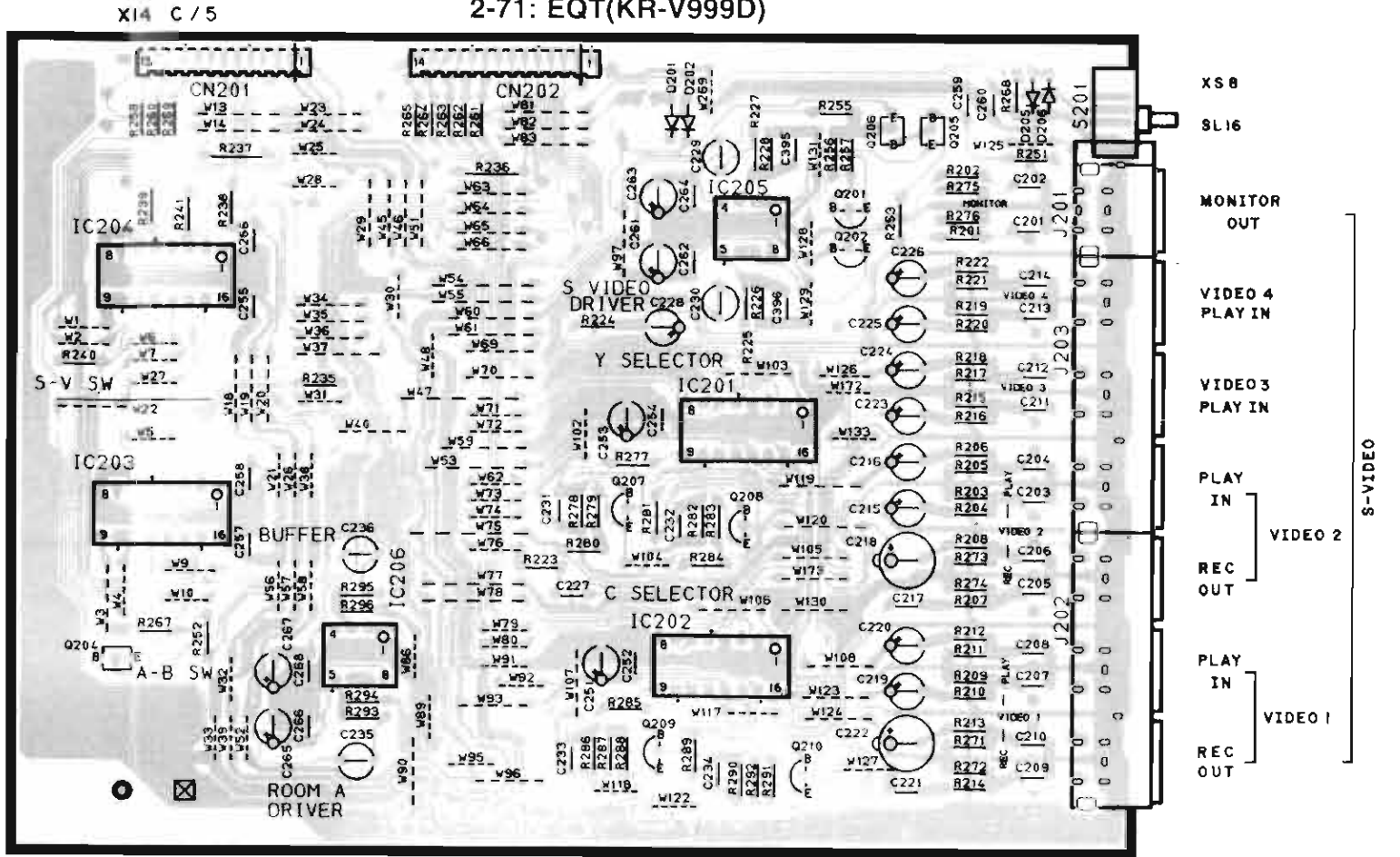


## DISPLAY UNIT (X14-430X-XX)

## 0-10: KPY(only 1090VR)

## 0-21: CM(KR-V999D)

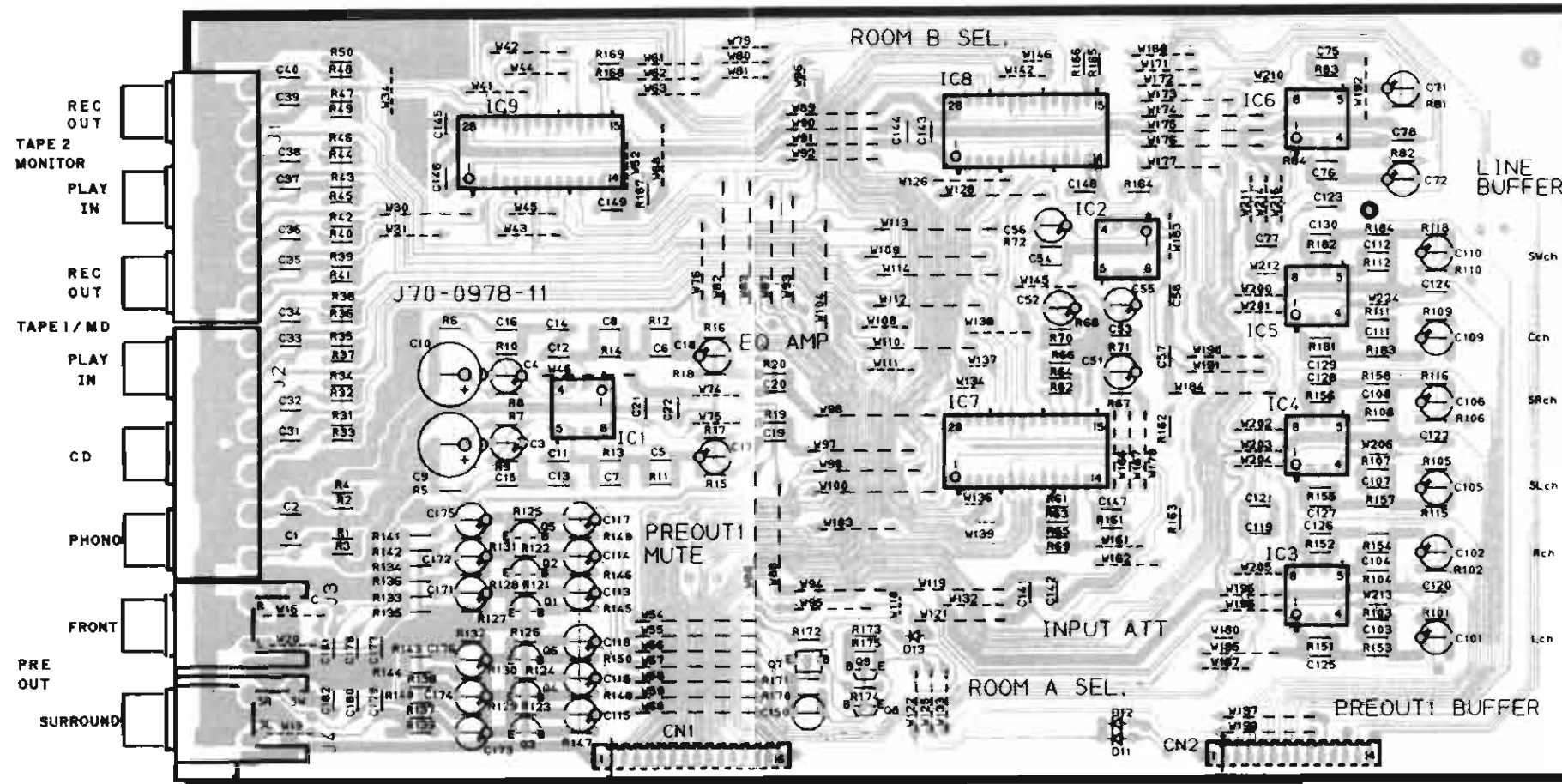
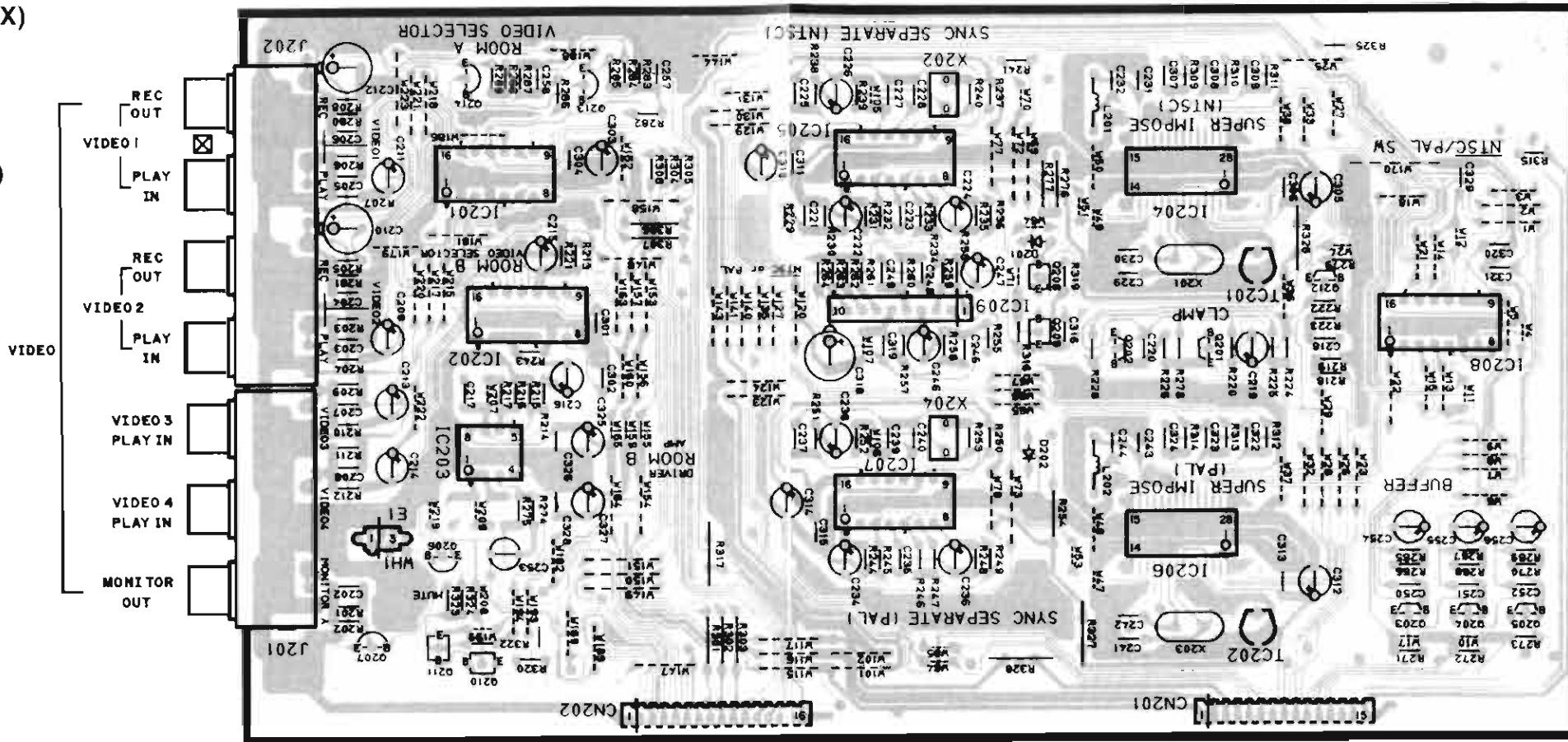
## 2-71: EQT(KR-V999D)



# PC BOARD(Component side view)

## SWITCH UNIT(X25-588X-XX)

- 0-10: KP(1090VR)
- 0-21: Y(1090VR)
- CM(KR-V999D)
- 2-71: EQT(KR-V999D)

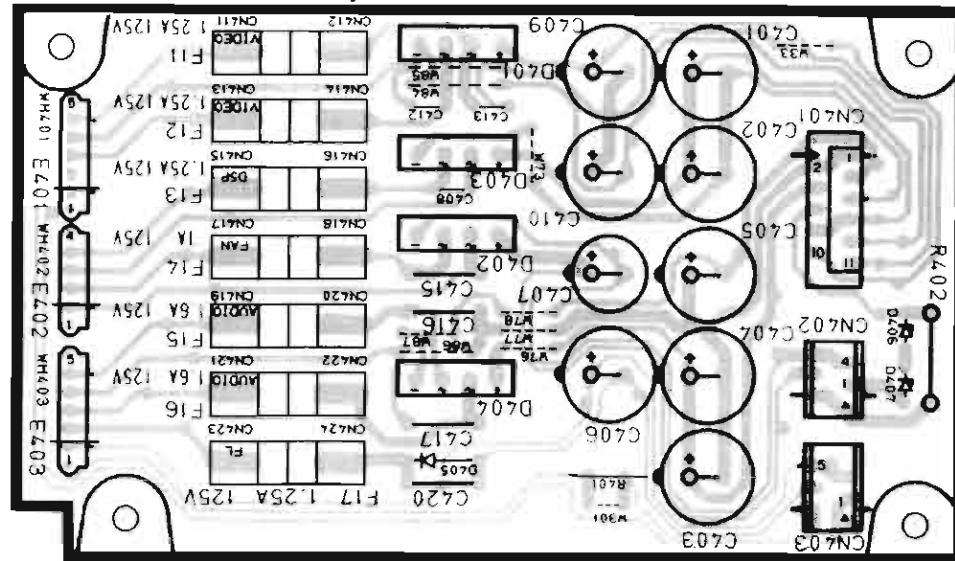


X25-588X-XX A / 2

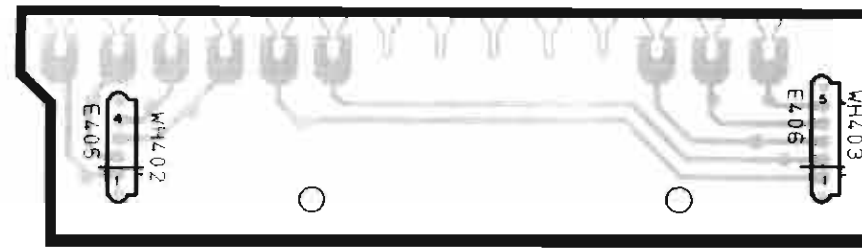
# PC BOARD(Component side view)

SUB CIRCUIT UNIT  
(X13-747X-XX)

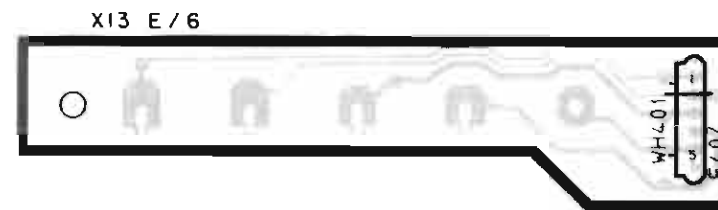
- 0-10: KP(1090)
- 0-21: C(KR-V999D)
- 2-71: ET(KR-V999D)
- 2-91: Y(1090VR)
- 3-81: Q(KR-V999D)



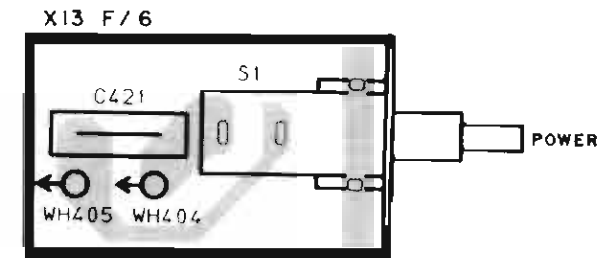
X13 B / 6



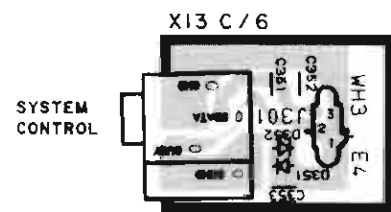
X13 D / 6



X13 E / 6

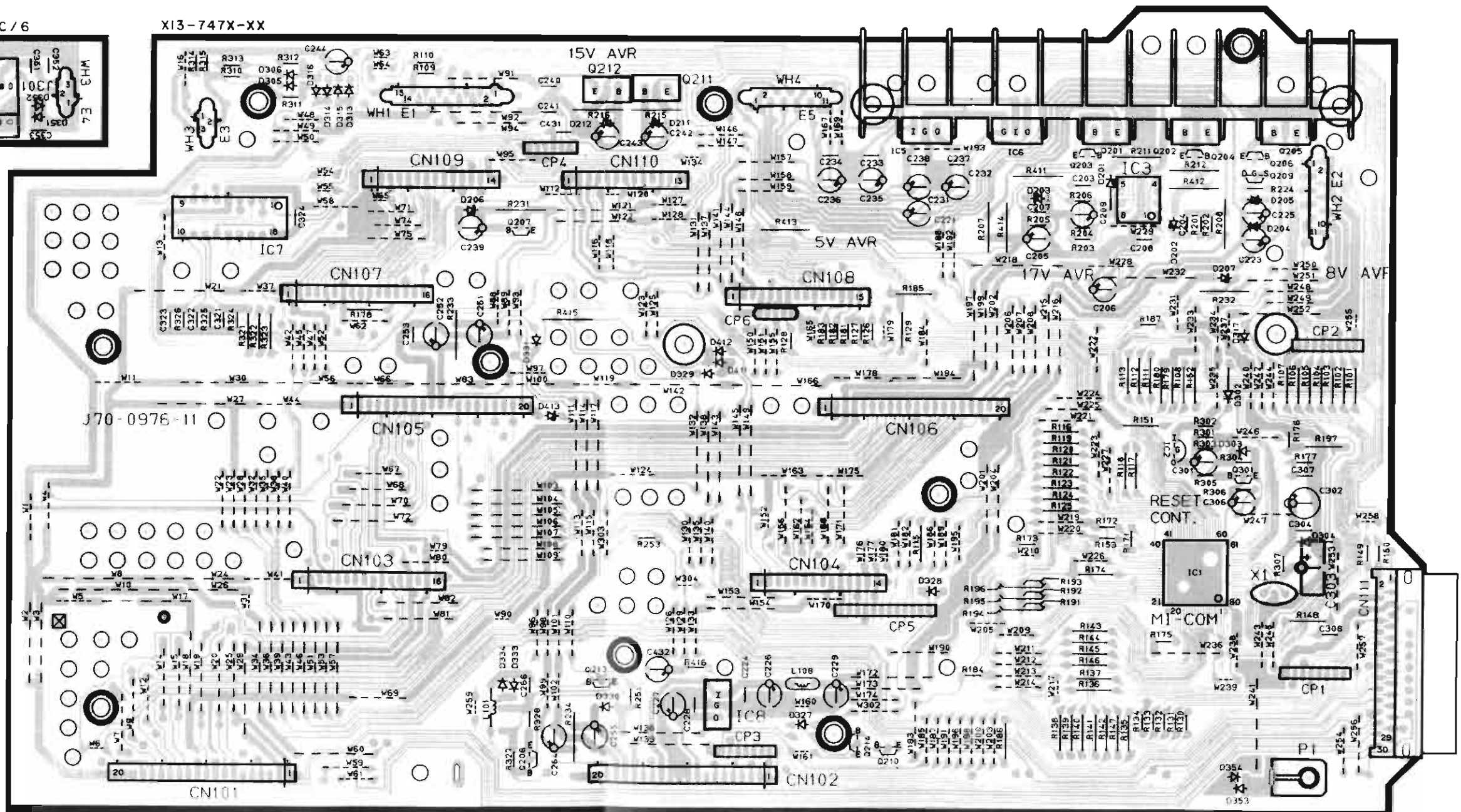


X13 F / 6



X13 C / 6

X13-747X-XX



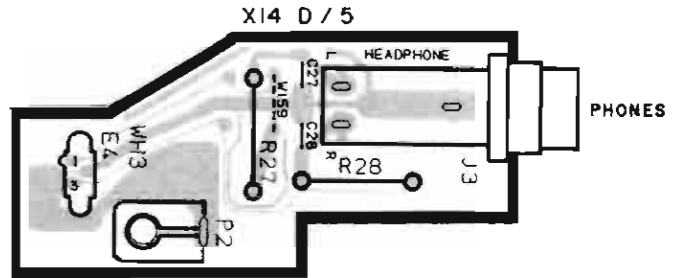
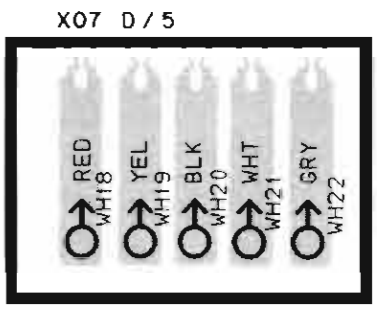
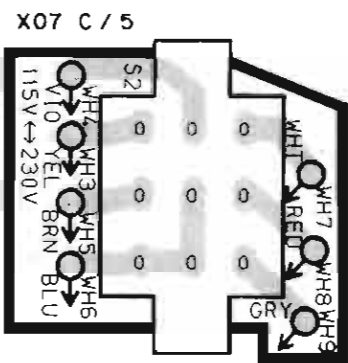
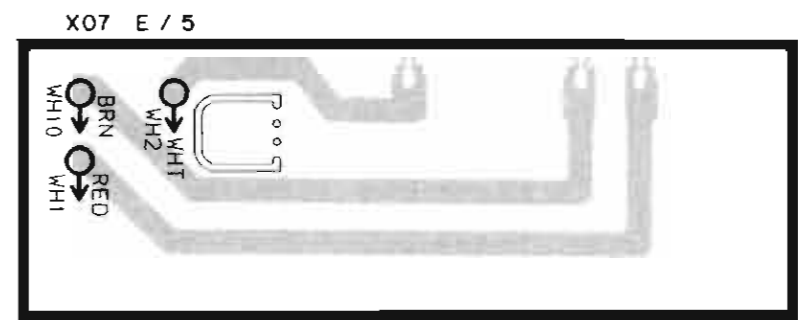
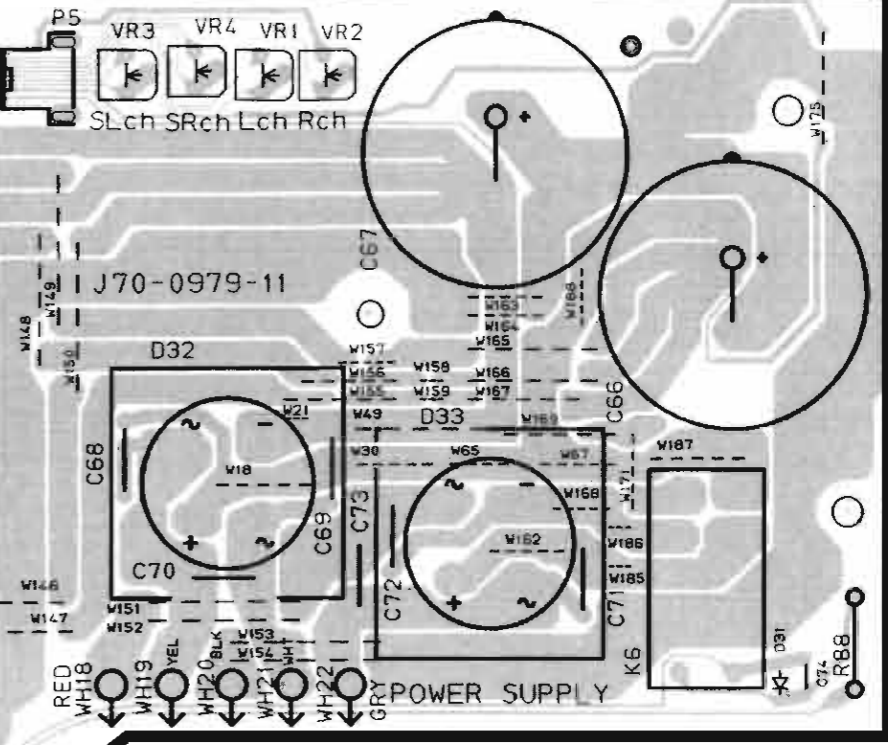
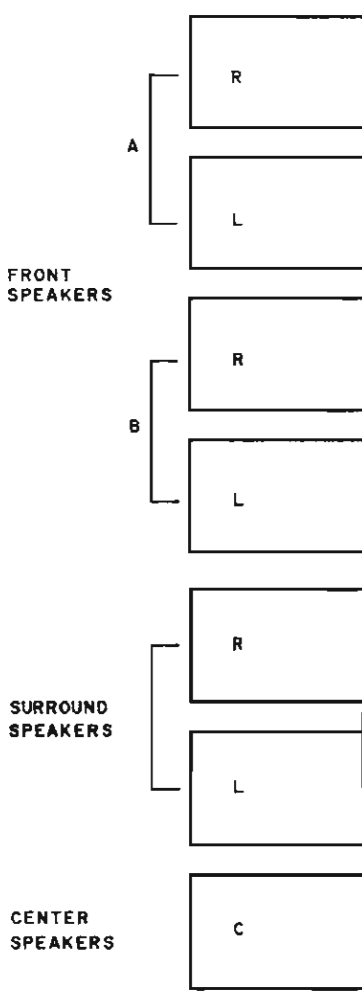
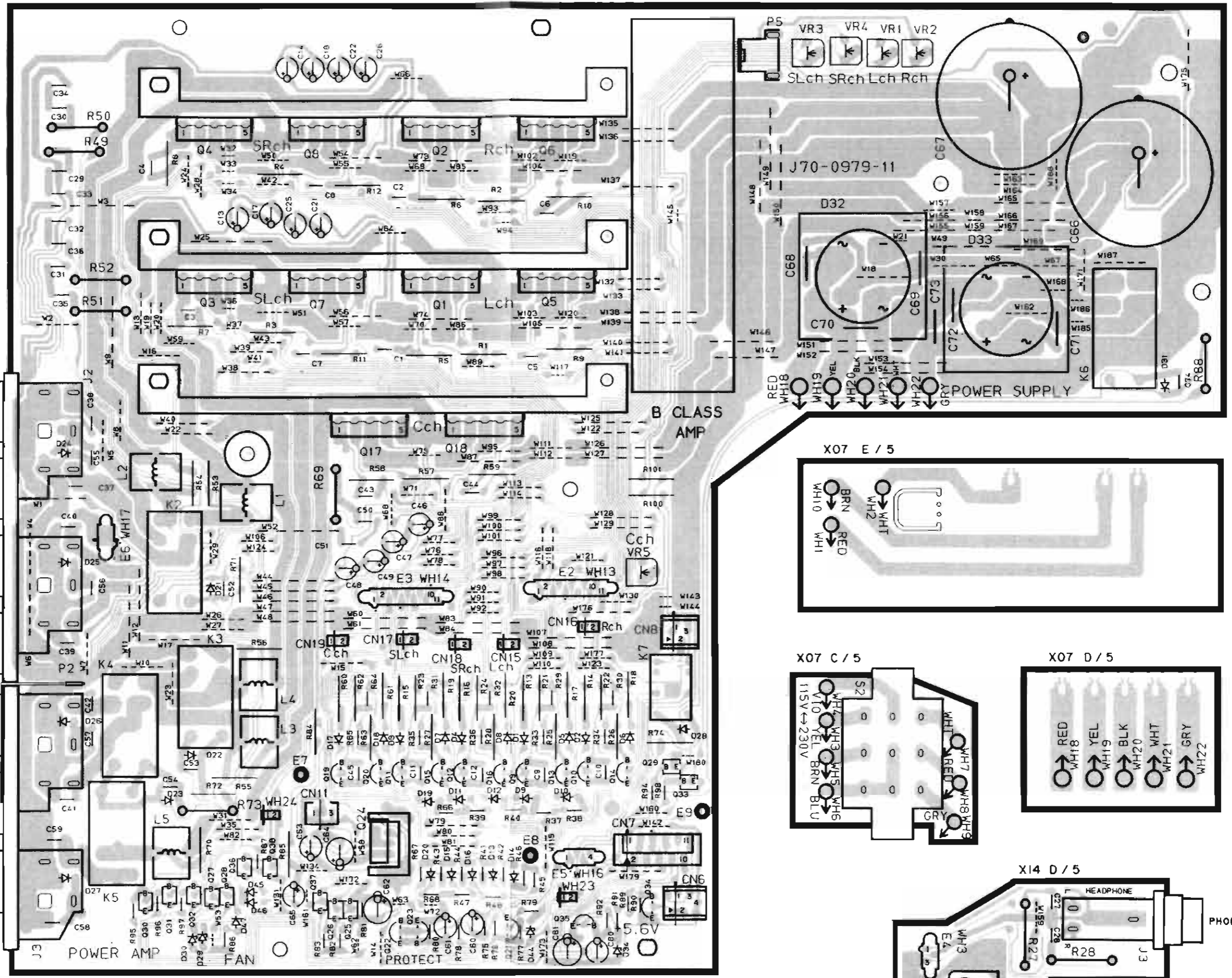
6  
7

# PC BOARD(Component side view)

X07-290X-XX A / 5

## POWER AMPLIFIER UNIT (X07-290X-XX)

- 0-10: KP(1090VR)
- 0-21: M(KR-V999D)
- 0-51: T(KR-V999D)
- 2-71: E(KR-V999D)
- 2-91: Y(1090VR)
- 3-01: C(KR-V999D)
- 3-81: Q(KR-V999D)



Refer to the schematic diagram for the value of resistors and capacitors.

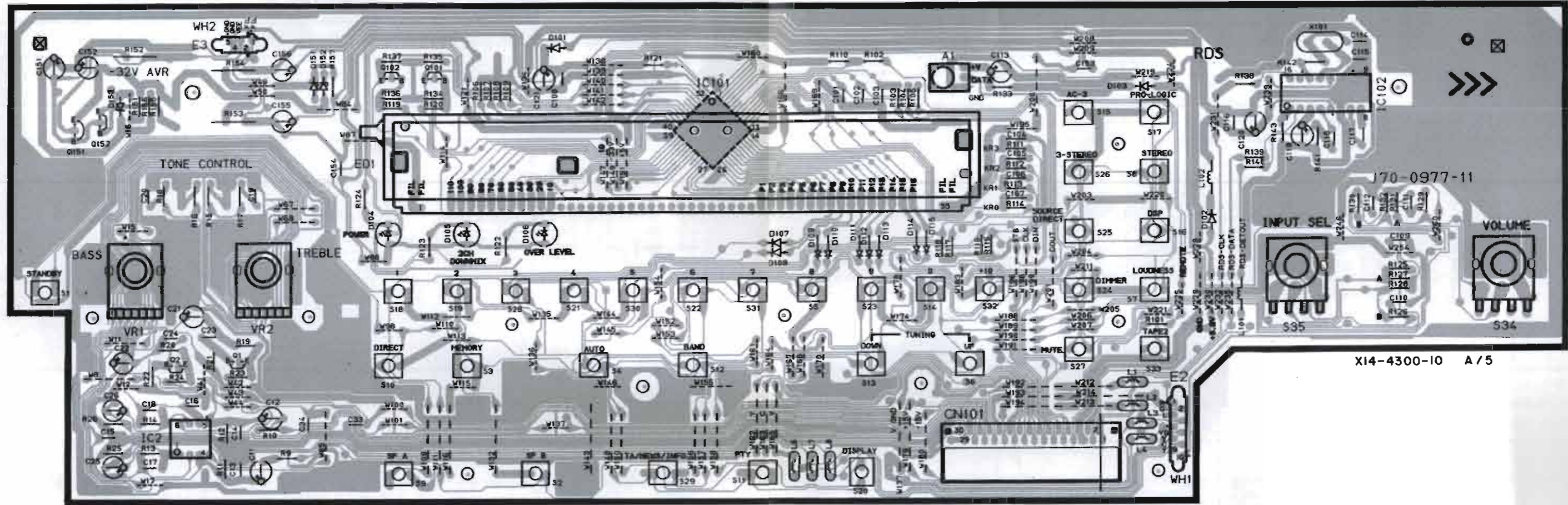
# PC BOARD(Component side view)

DISPLAY UNIT(X14-430X-XX)

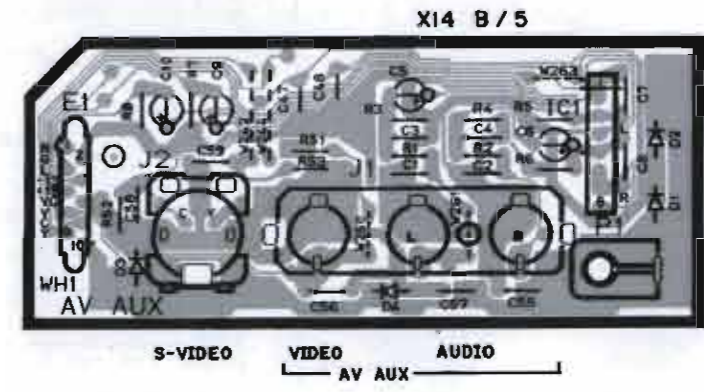
0-10: KPY(only 1090VR)

0-21: CM(KR-V999D)

2-71: EQT(KR-V999D)

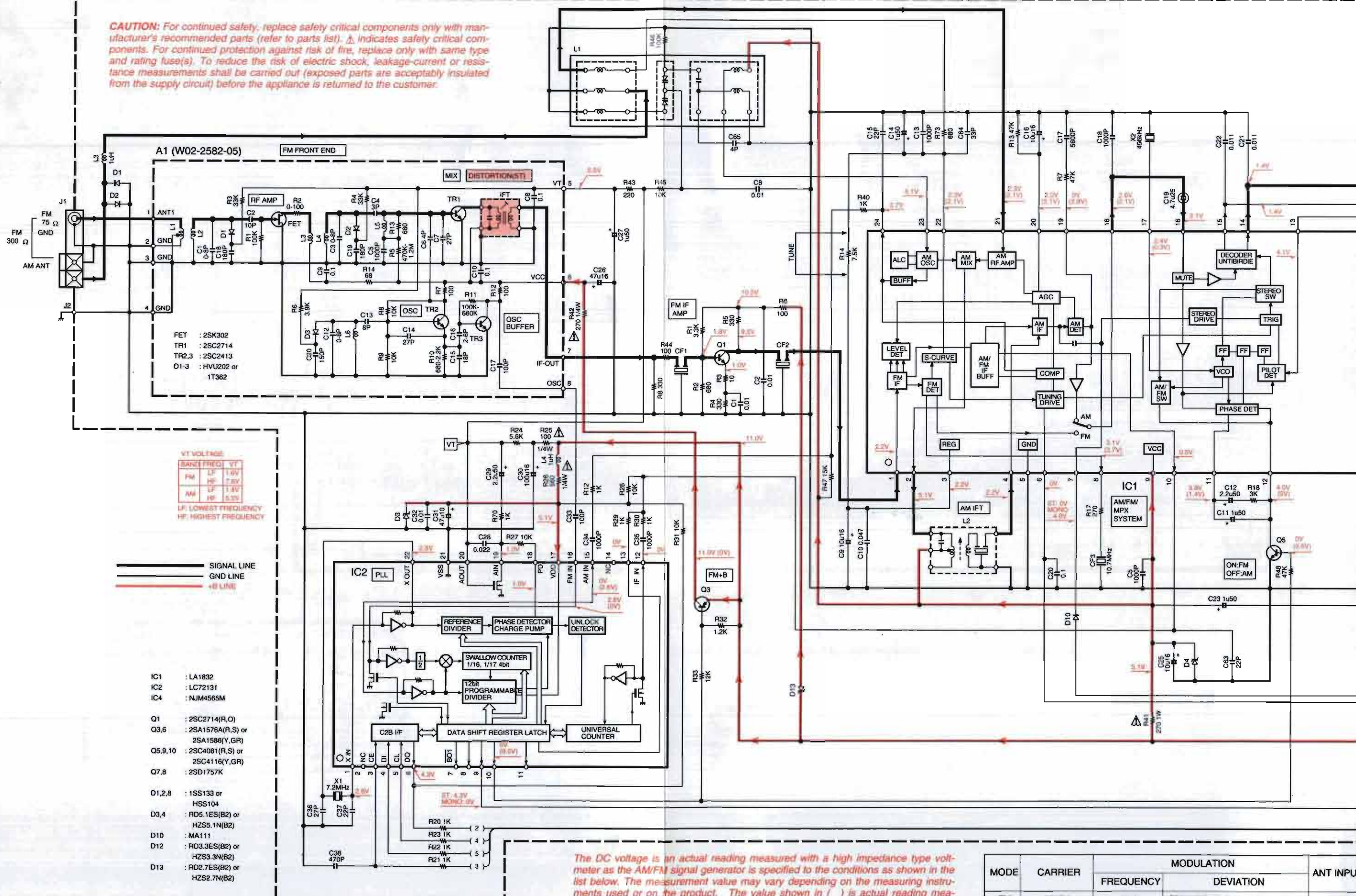


X14-4300-10 A/5



X14 B/5

**CAUTION:** For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list).  $\Delta$  indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.



- FET : 2SK302  
 TR1 : 2SC2714  
 TR2,3 : 2SC2413  
 D1-3 : HVU202 or 1T362

VT VOLTAGE

MODE	FREQ.	VT
FM	LF	1.0V
	HF	2.5V
AM	LF	1.5V
	HF	5.3V

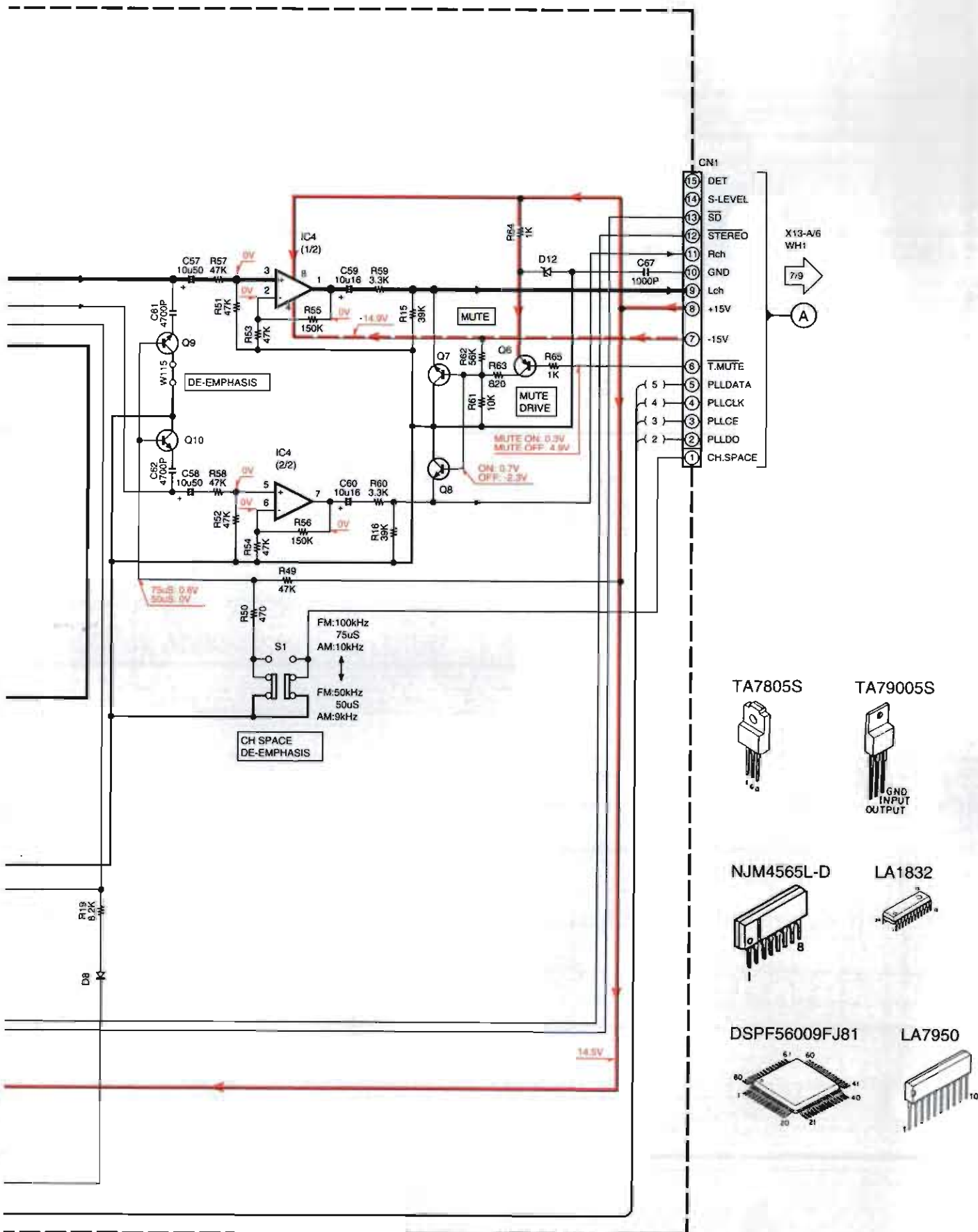
LF, LOWEST FREQUENCY  
 HF, HIGHEST FREQUENCY

— SIGNAL LINE  
 — GND LINE  
 — +B LINE

- IC1 : LA1832  
 IC2 : LC72131  
 IC4 : NJM4565M
- Q1 : 2SC2714(R,O)  
 Q3,6 : 2SA1576A(R,S) or 2SA1586(Y,GR)  
 Q5,9,10 : 2SC4081(R,S) or 2SC4116(Y,GR)  
 Q7,8 : 2SD1757K
- D1,2,8 : 1SS133 or HSS104  
 D3,4 : RD5.1ES(B2) or HZS5.1N(B2)  
 D10 : MA111  
 D12 : RD3.3ES(B2) or HZS3.3N(B2)  
 D13 : RD2.7ES(B2) or HZS2.7N(B2)

The DC voltage is an actual reading measured with a high impedance type voltmeter as the AM/FM signal generator is specified to the conditions as shown in the list below. The measurement value may vary depending on the measuring instruments used or on the product. The value shown in ( ) is actual reading measured in the AM mode.

MODE	CARRIER	MODULATION		ANT INPUT
		FREQUENCY	DEVIATION	
FM	98MHz	1kHz	STEREO 67.5kHz 7.5kHz(Pilot)	60dB
AM	1000(999)kHz	400Hz	MONO 30% MOD	60dB

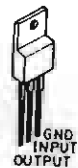


KR-V999D,1090VR(C) (1/9)

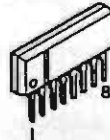
TA7805S



TA79005S



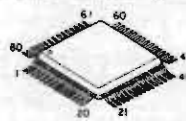
NJM4565L-D



LA1832



DSPF56009FJ81



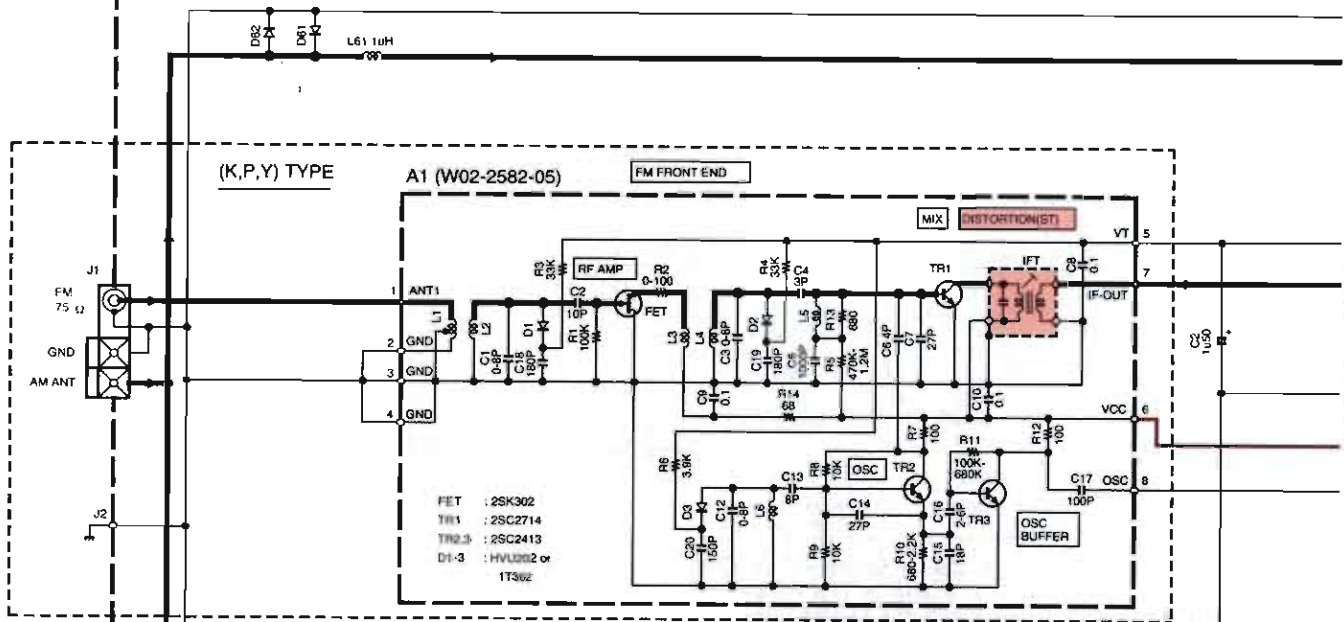
LA7950



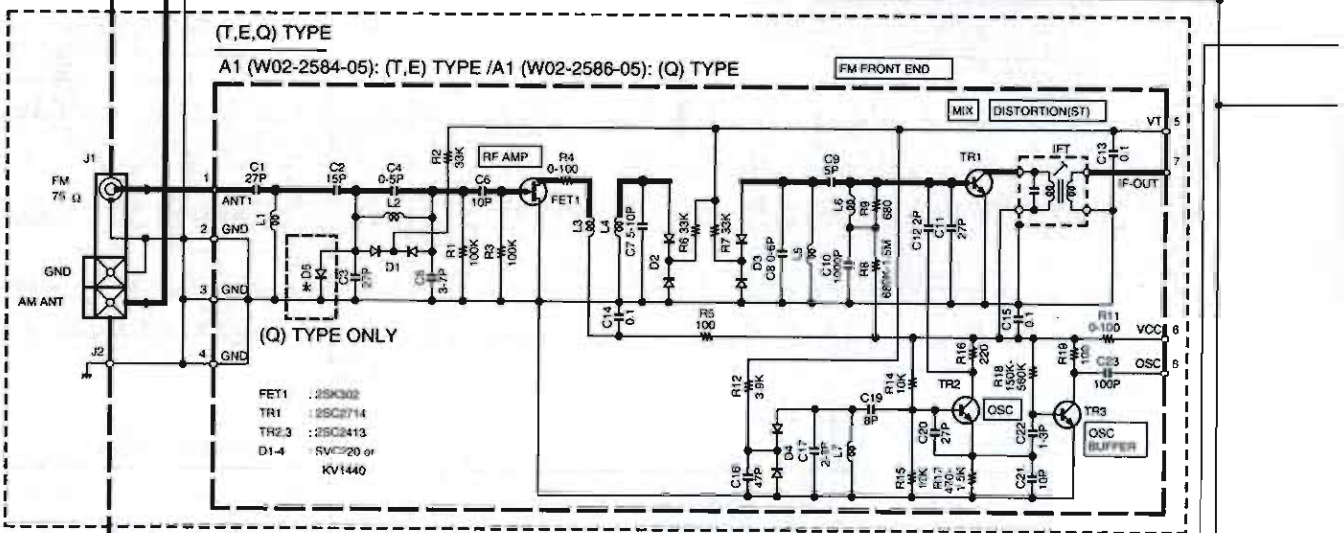
(X05-468X-XX) (K,P,T,E,Q,Y) TYPE

The DC voltage is an actual reading measured with a high impedance type voltmeter as the AM/FM signal generator is specified to the conditions as shown in the list below. The measurement value may vary depending on the measuring instruments used or on the product. The value shown in ( ) is actual reading measured in the AM mode.

MODE	CARRIER	MODULATION		ANT INPUT
		FREQUENCY	DEVIATION	
FM	98MHz	1kHz	STEREO 67.5kHz 7.5kHz(Pilot)	60dB
AM	1000(999)kHz	400Hz	MONO 30% MOD	60dB



- FET : 2SK302
- TR1 : 2SC2714
- TR2,3 : 2SC2413
- D1-3 : HVLD02 or 1T362



- FET1 : 2SK302
- TR1 : 2SC2714
- TR2,3 : 2SC2413
- D1-4 : SVF20 or KV1440

- IC1 : LA1836
- IC2 : LC72131
- Q1,2,4,31-34 : 2SC4081(R,S) or 2SC4110(V,GR)
- Q3,61,103 : 2SA1875A(R,S) or 2SA1886(Y,GR)
- Q101,102 : 2SD1757K
- D1,2,32,61,62 : 1SS133 or HSS104
- D31 : RD6.2E(S(B2)) or HZSR.2N(B2)
- D81 : RD5.1E(S(B2)) or HZSS.1(B2)
- D101 : RD3.3E(S(B2)) or HZS3.3N(B2)
- D102 : RD2.7E(S(B2)) or HZS2.7N(B2)

VT VOLTAGE		
BAND	FREQ	VT
FM	LF: 1.0V	HF: 7.0V
AM	LF: 1.3V	HF: 5.0V

LF: LOWEST FREQUENCY  
HF: HIGHEST FREQUENCY

1090VR (X05-468X-XX)

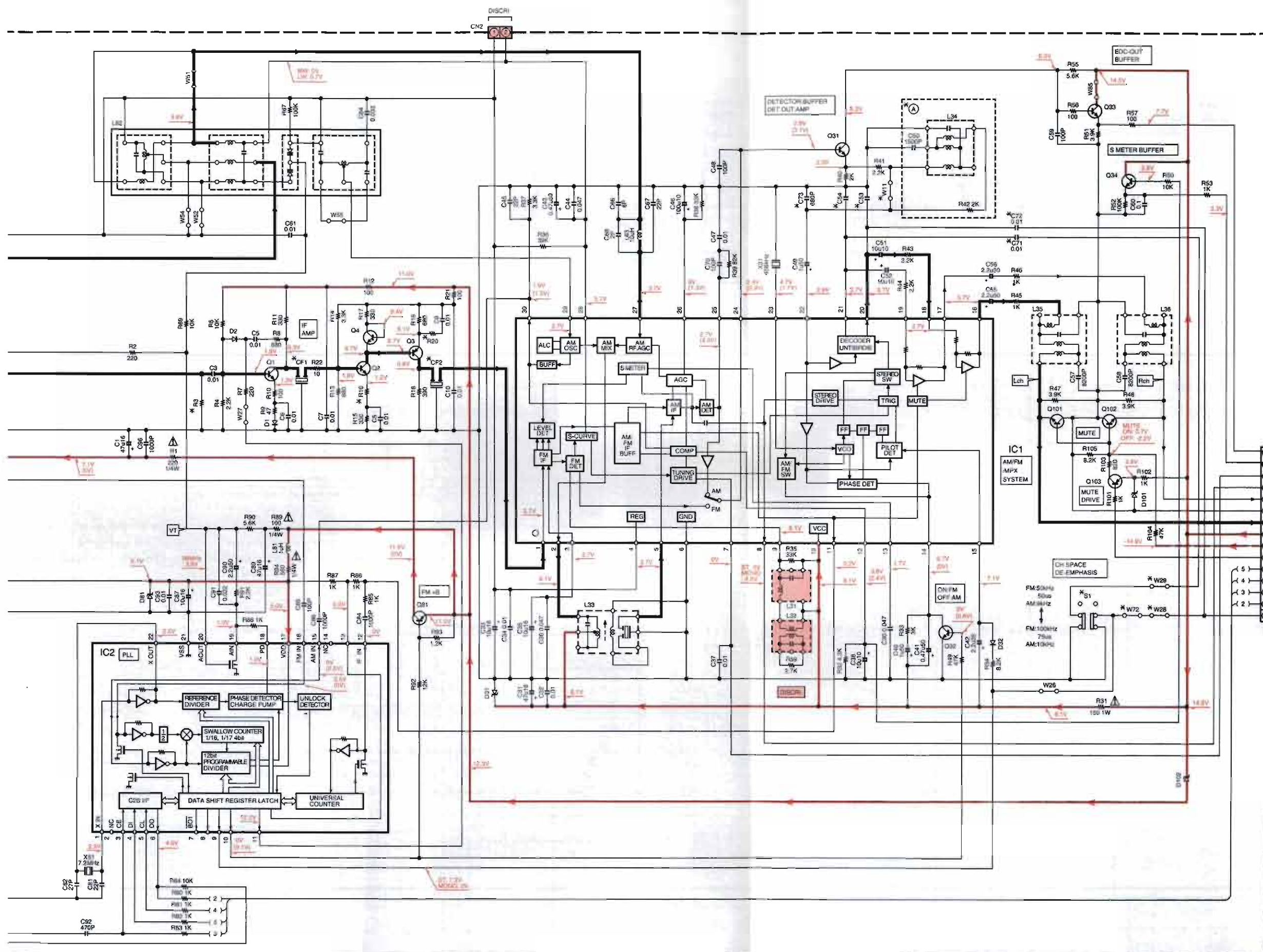
DESTINATION COUNTRY ABB	UNIT No.	R3	R16, 20	C53, 54	C71, 72	C73	CF1, 2	S1	W11	W28, 29, 72		
U.S.A.	K	0-11	NO	560	15	0.033	NO	YES	L72-0596	NO	YES	NO
CANADA	P											

KRV-9990 (X05-468X-XX)

DESTINATION COUNTRY ABB	UNIT No.	R3	R16, 20	C53, 54	C71, 72	C73	CF1, 2	S1	W11	W28, 29, 72		
U.K.	E	2-7	YES	1.8K	10	0.022	NO	NO	L72-0536	NO	NO	NO
EUROPE	T											
RUSSIA	O	3-61										
PX	Y	2-91	NO	560	15		YES	YES	L72-0596	YES	YES	YES

**CAUTION:** For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list).  $\Delta$  indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.



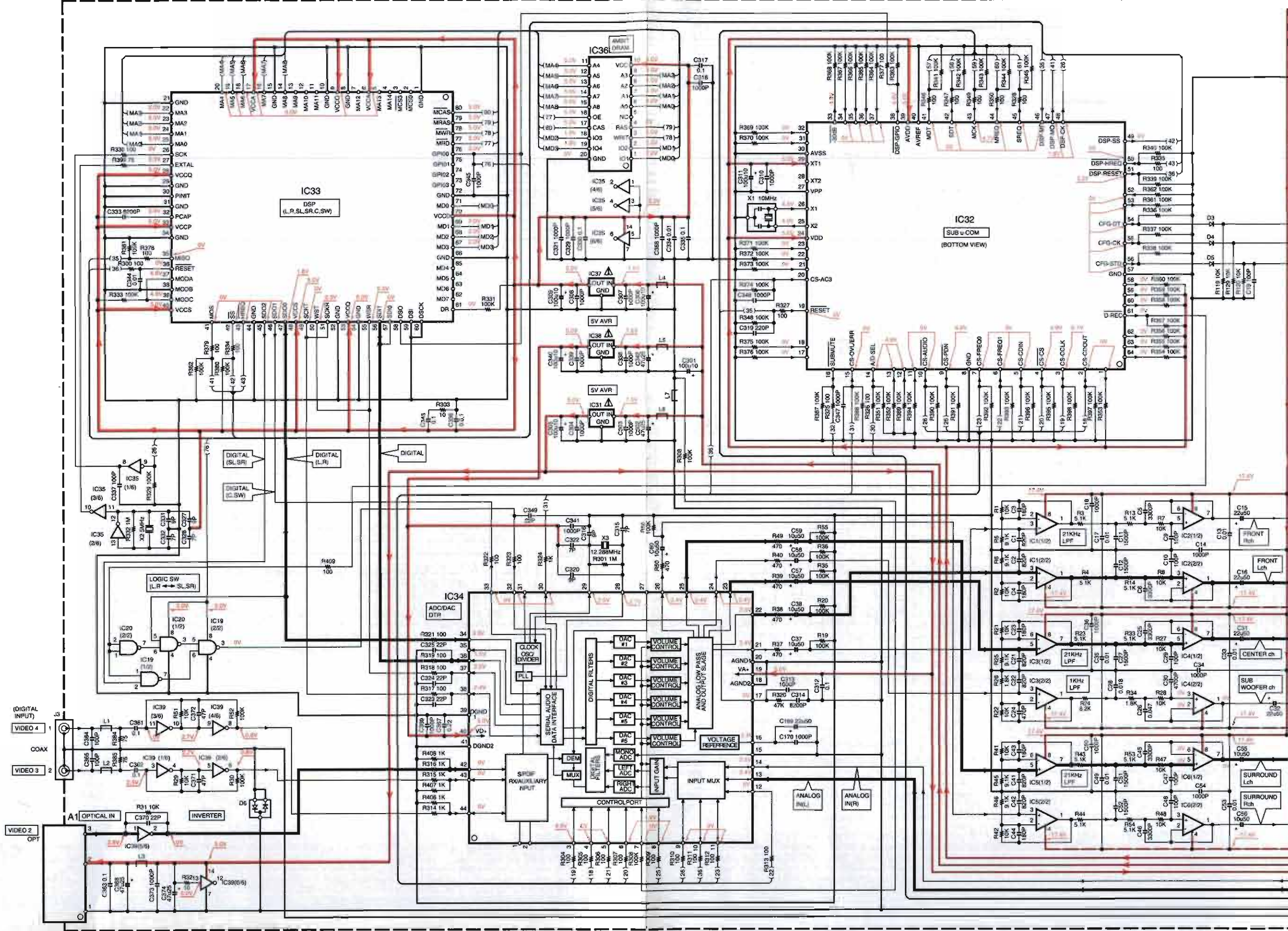


KR-V999D,1090VR(K) (2/9)

# KR-V999D/1090VR

Y05-3300-10

KENWOOD



2

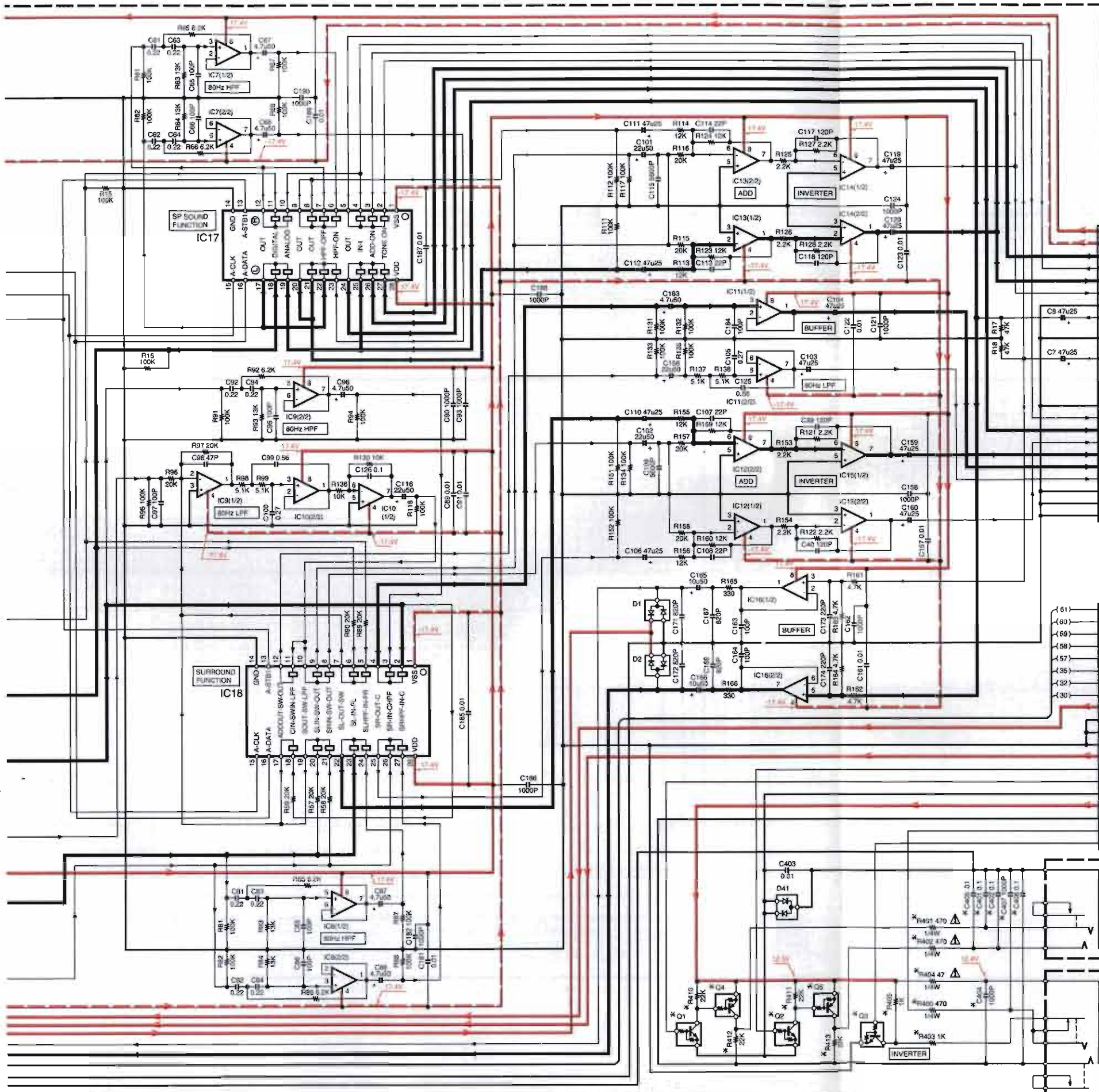
3

4

5

6

7



KR-V999D (X08-273X-XX)

DESTINATION	COUNTRY	ABB	UNIT NO.	J1,2	D1-S	C401,402,404-407	C401,402,404-407
EUROPE	RUSSIA	E O	2-71	NO	NO	NO	NO
GENERAL MARKET	CHINA	M C Y	2-91				

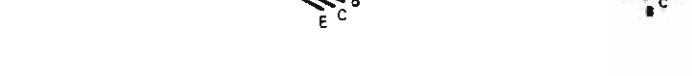
1090VR (X08-273X-XX)

DESTINATION	COUNTRY	ABB	UNIT NO.	J1,2	D1-S	C401,402,404-407	C401,402,404-407
USA	USA	P	0-10	YES	YES	YES	YES
CANADA							

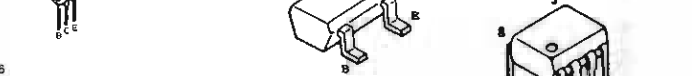
- (X08-) (A/2)
- IC1-16 : NJM4580E or NJM4580E
  - IC17 : TC9163AF
  - IC18 : TC9162AF
  - IC19,20 : TC7W00FU
  - IC31,37,38 : TA7805S or uPC7805AHF
  - IC32 : uPD78016FGC522
  - IC33 : DSPF56009FJ1
  - IC34 : CS4226-KQ
  - IC35,39 : TC74HC04AF
  - IC36 : LH64256CK-70
  - Q1-3 : UN5212 or DTC124EUA
  - Q4,5 : UN5112 or DTA124EUA
  - D1,2,6,41 : DA204K
  - D3-5 : MA110



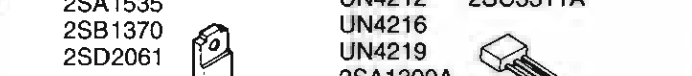
- 2SA1123
- 2SA1534
- 2SA992
- 2SC1845
- 2SC2003
- 2SC2631
- 2SC28782S
- C3940A2S
- D863
- DTA113ZSA
- DTA124ESA
- DTC124ESA
- DTC143TSA
- UN4112
- 2SA1048
- 2SC2458



- 2SD2012
- 2SD1757K
- NJM4565D-DNJM4580E



- 2SA1535
- 2SB1370
- 2SD2061
- UN4212
- UN4216
- UN4219
- 2SA1309A
- 2SC3311A



**CAUTION:** For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list).  $\Delta$  indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

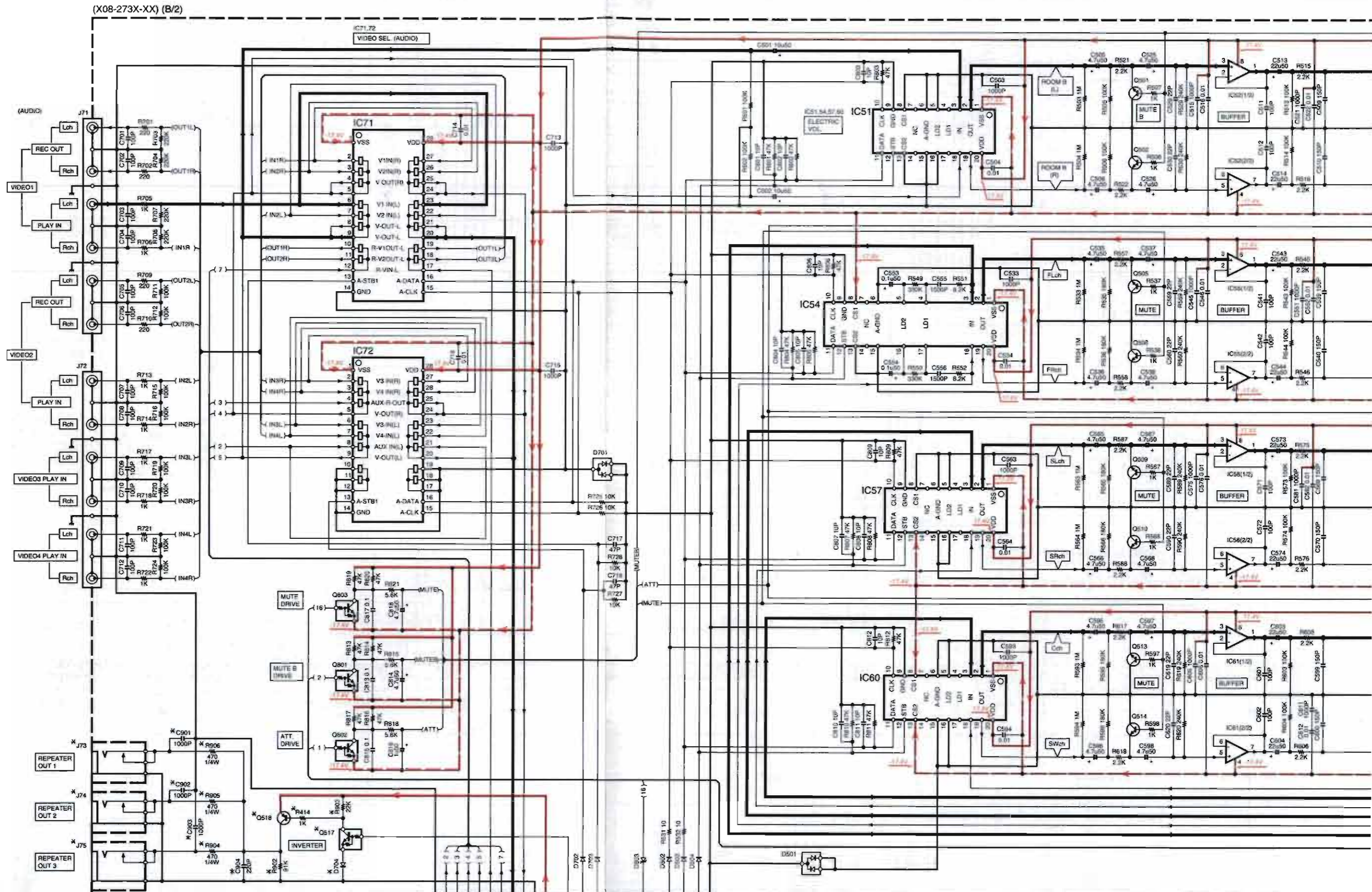
The DC voltage is an actual reading measured with a high impedance type voltmeter with no signal input. The measurement value may vary depending on the measuring instruments used or on the product.

KR-V999D,1090VR(K) (3/9)

Y05-3300-10

# KR-V999D/1090VR

KENWOOD



(X08-273X-XX) (B/2)

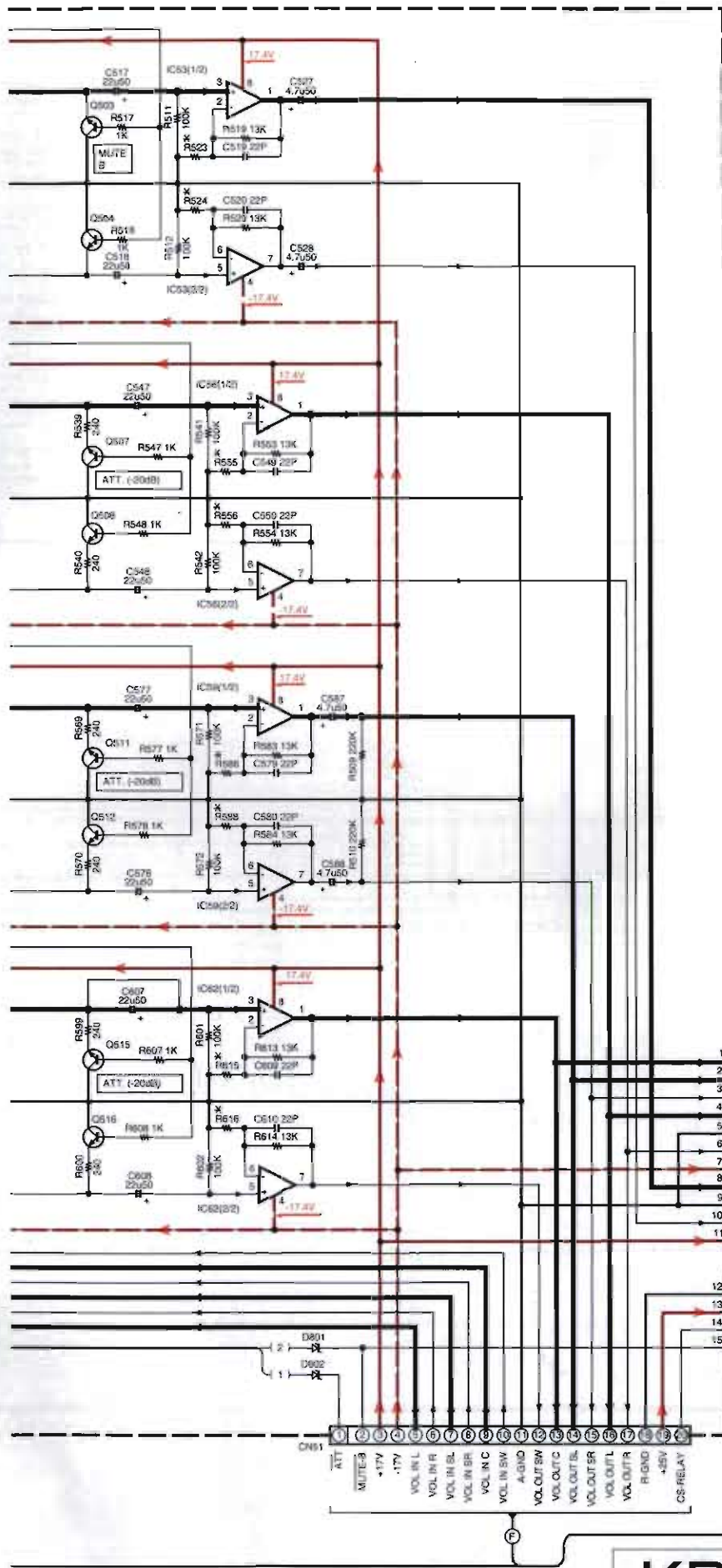
IC71,72  
VIDEO SEL (AUDIO)

KR-V999D (X08-273X-XX)

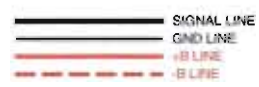
DESTINATION COUNTRY	UNIT No	J73-75	C517,818	D704	C971-904	R114,302,965	R523,524,646,650,583,586,615,616
UK	Q	2-71					3.6K
RUSSIA	Q						
EUROPE	Q						
GENERAL MARKET	M	NO	NO	NO	NO	NO	
CHINA	C	0-91					2.7K
PK	Y						

1090VR (X08-273X-XX)

DESTINATION COUNTRY	UNIT No	J73-75	C517,818	D704	C901-904	R114,302,965	R523,524,646,650,583,586,615,616
U.S.A.	K	0-10	YES	YES	YES	YES	2.7K
CANADA	P						



- (X09-1) (R07)
- IC51,54,57,60 : TC9412AP
- IC52,53,55,56,58,59,61,62 : NJM4580ED or NJM4580E
- IC71,72 : TC9163AF
- Q501-516 : 2SC4213(B)
- Q517 : UN5212 or DTC134EUA
- Q518 : 2SB1306(Q,M)
- Q501-803 : UN5219 or DTC113ZUA
- D501,701 : DA204K
- D502-504,702-704 : MA310
- D501-803 : UDZ188



**CAUTION:** For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

The DC voltage is an actual reading measured with a high impedance type voltmeter with no signal input. The measurement value may vary depending on the measuring instruments used or on the product.

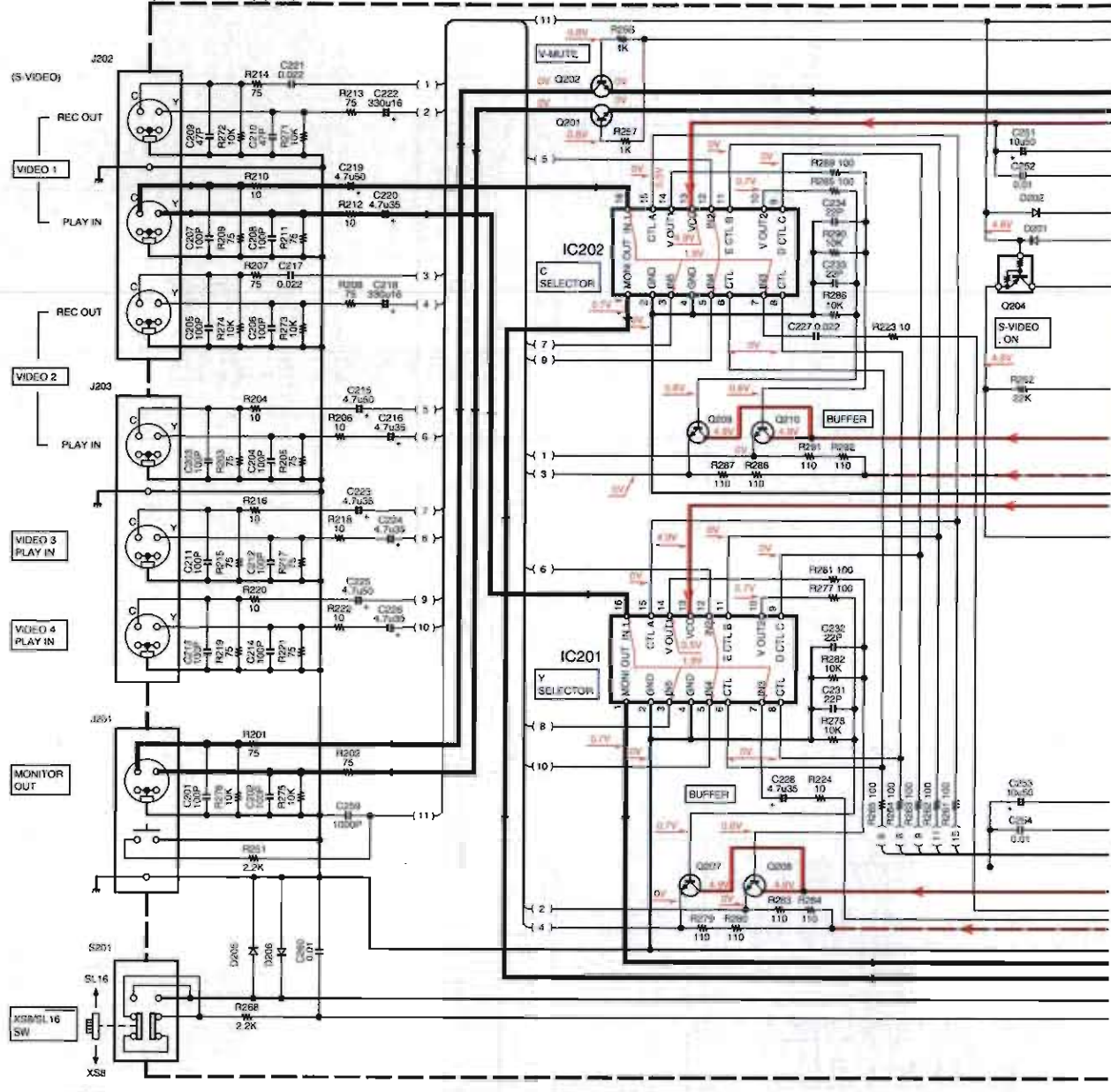
KR-V999D,1090VR(K) (4/9)

Y05-3300-10

# KR-V999D/1090VR

KENWOOD

(X14-430X-XX) (C/5)



- IC201,202 : SN761200N
- IC203,204 : TC74HC4053MP
- IC205,206 : MC14577CP
- IC207 : NMM486D-D
- Q201,202 : 2SC2678(B)
- Q204,206 : UN4119 or DTA113ZSA
- Q208,451,452 : UN4219 or DTC113ZSA
- Q207,210 : 2SC2003(L,K)
- Q251-304,351-354,401,402 : 2SA989(F,E)
- Q205-308,355-358,403,404 : 2SC2831(R,S)
- Q309,310,358,360,408 : 2SA1123(R,S)
- Q311,312,361,362,406,471 : 2SA1048(Y,G) or 2SA1303A(Q,R)
- Q472 : UN4212 or DTC124E5A
- Q475 : 2SC1843(F,E)
- Q476 : 2SA1536(R,S)

1890VH (X14-430X-XX)

DESTINATION COUNTRY ABB.	UNIT No.	D474	D476	R459, R460	R473	R476	W94	W266	
U.S.A.	K	0-10	RD16ES(B2) or HZS16N(3E)	YES	NO	47K	33K	NO	YES
CANADA	P								

KR-V998D (X14-430X-XX)

DESTINATION COUNTRY ABB.	UNIT No.	D474	D476	R459, R460	R473	R476	W94	W266	
CHINA	M	0-21	RD16ES(B2) or HZS16N(3E)	YES	NO	YES	33K	NO	YES
FX	Y								
U.K.	T								
EUROPE	E	2-71	RD16ES(B2) or HZS16N(3E)	NO	YES	NO	62K	YES	NO
RUSSIA	O								

IC201,202,205,206

301-304,351-354,401,402,453-457,475

: 1S5133 or HSS104

D471,472,478-479

: HSS104A or 1S5131

D479 : RD11ES(B2) or HZS11N(3E)

D451,452 : RD14ES(B2) or HZS14N(3E)

D458 : RD5.14S(B2) or HZS5.14S(3E)

D473 : RD16ES(B2) or HZS16N(3E)

D474 \*

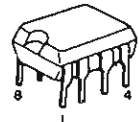


The DC voltage is an actual reading measured with a high impedance type voltmeter with no signal input. The measurement value may vary depending on the measuring instruments used or on the product.

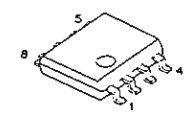
**CAUTION:** For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list).  $\Delta$  indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

The DC voltage is an actual reading measured with a high impedance type voltmeter with no signal input. The measurement value may vary depending on the measuring instruments used or on the product.

MC14577CP  
NJM4580DNJ  
M4580D-D



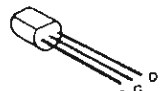
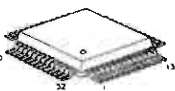
NJM4565M  
NJM4580ED  
TC7W00FU



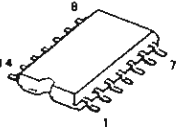
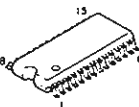
UPC7805AHF DA204K UN5212



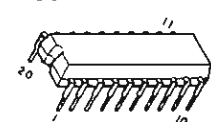
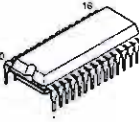
UPD16311 2SK246



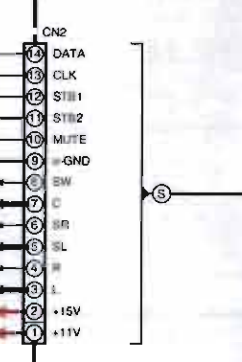
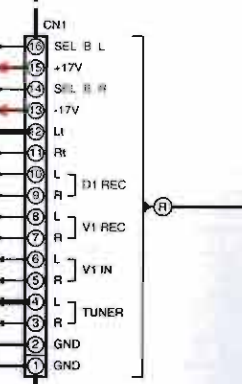
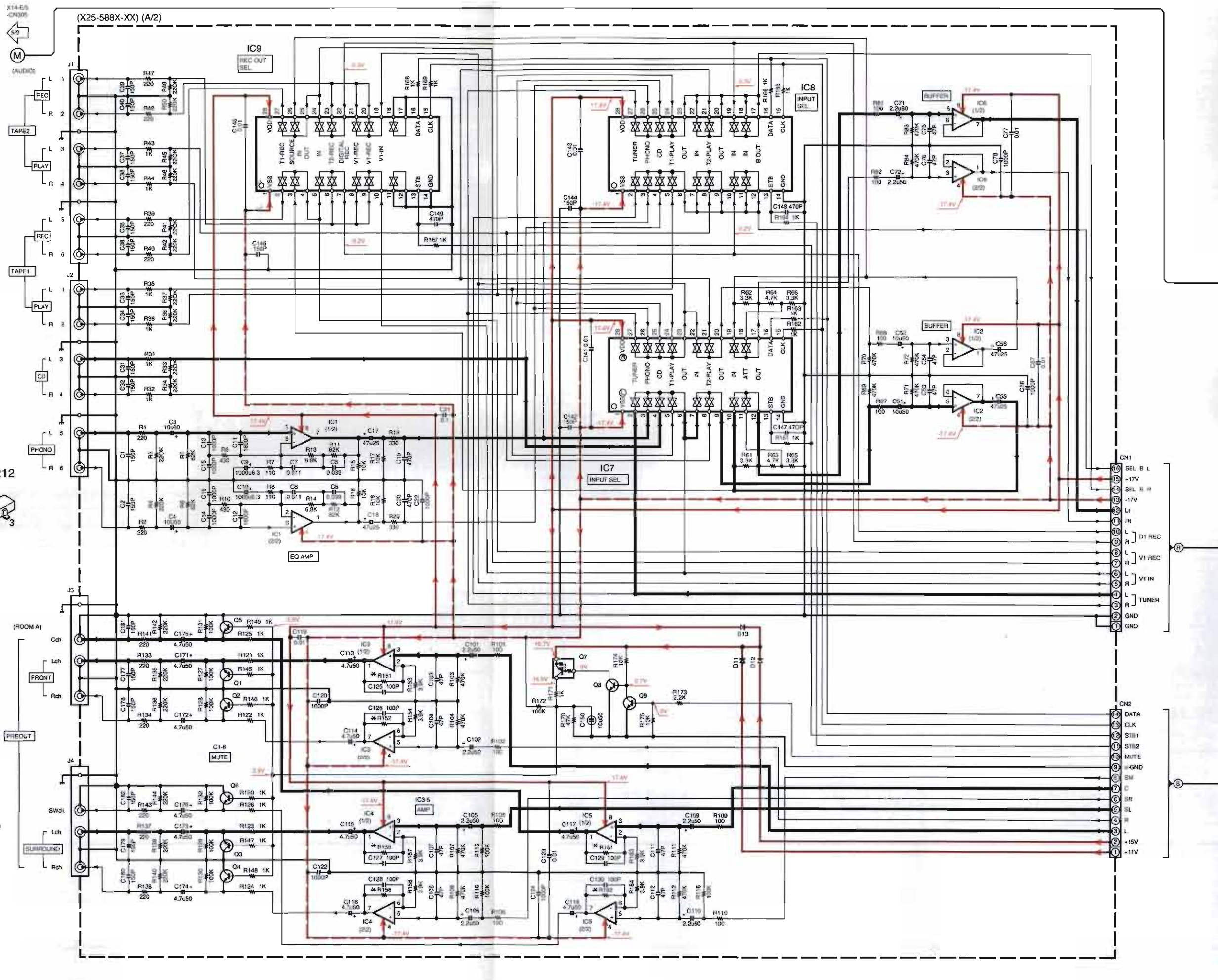
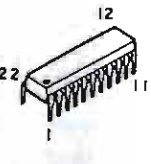
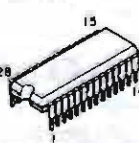
TC9162AF TC9163AF TC74HCU04AF

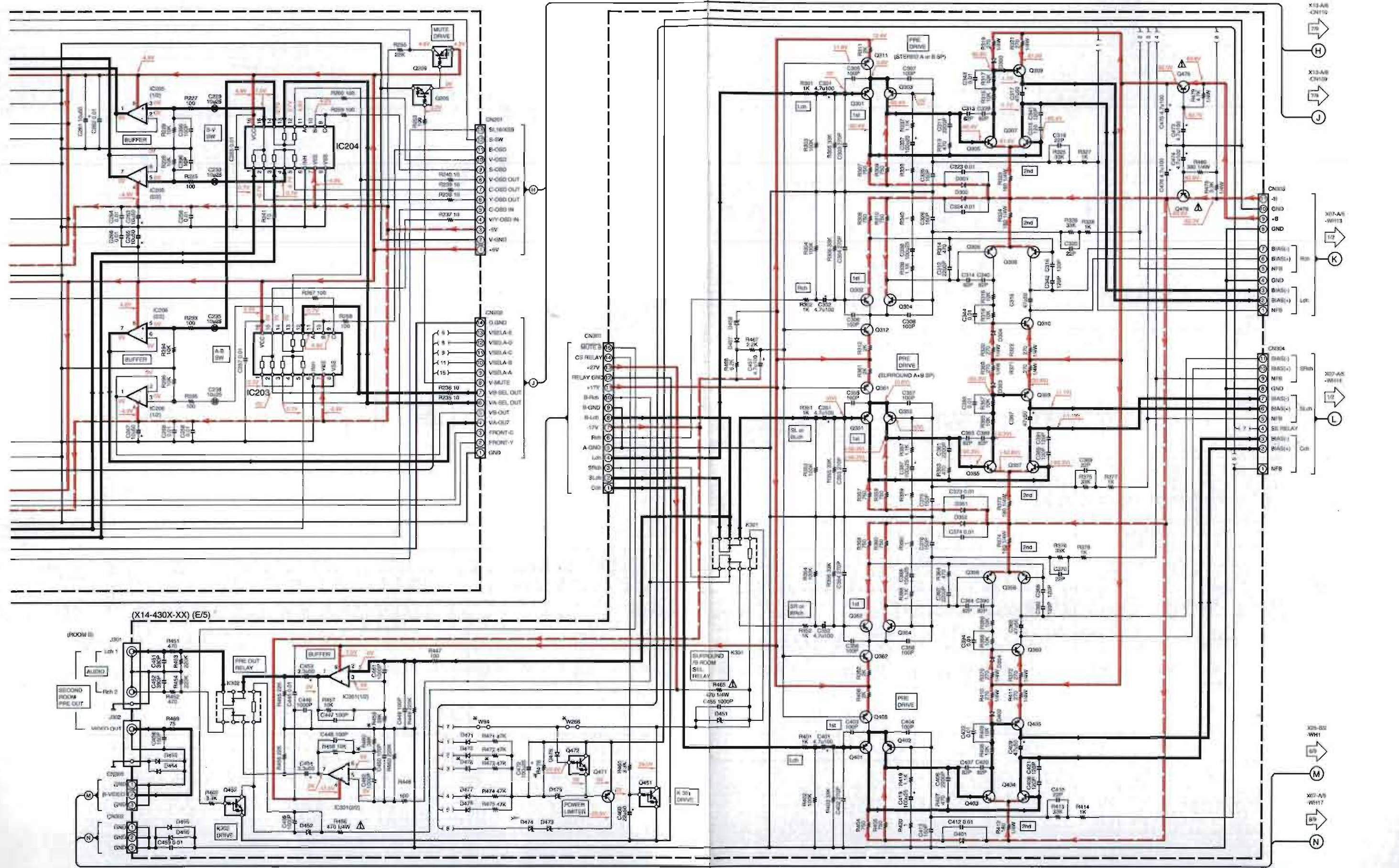


LA1836 TC9412APA



TC9162N TC9164N LC72131





**CAUTION:** For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list).  $\Delta$  indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

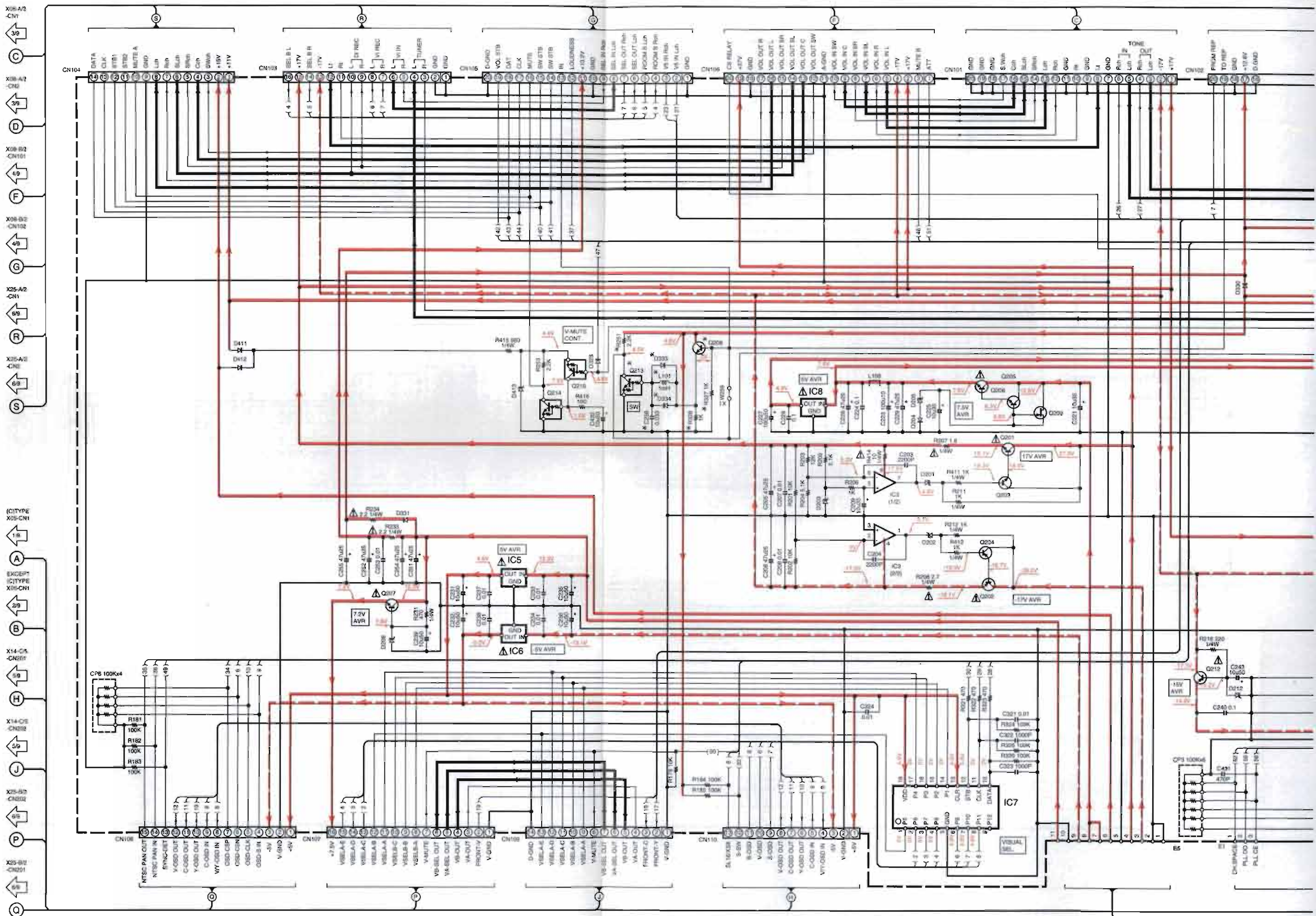
KR-V999D.1090VR(K) (5/9)

# KR-V999D/1090VR

KENWOOD

Y05-3300-10

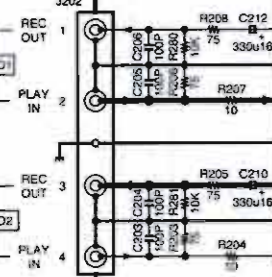
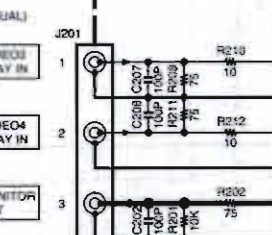
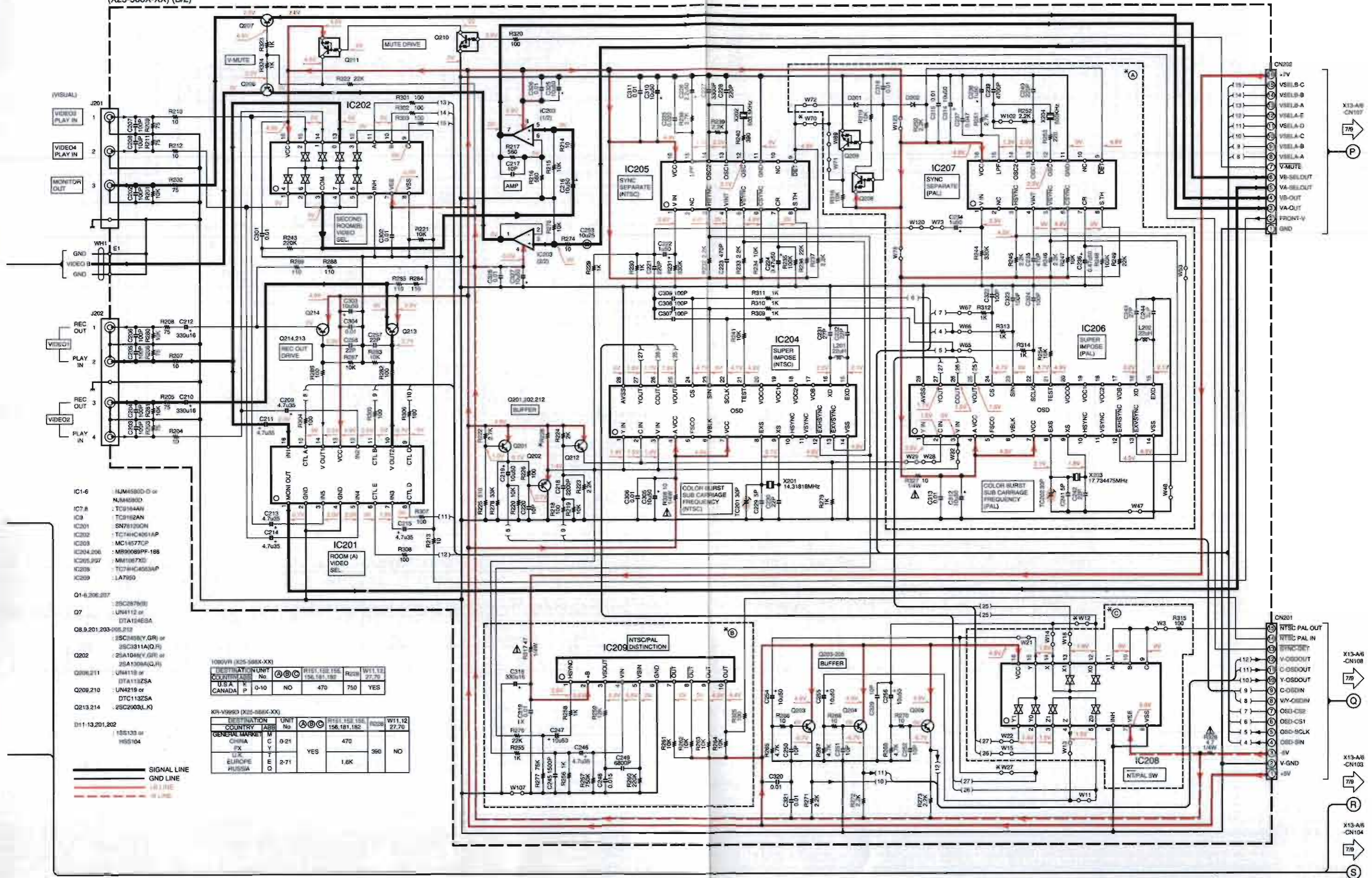




- X08-A2 - CN1
- X08-A2 - CN2
- X08-B2 - CN101
- X08-B2 - CN102
- X25-A2 - CN1
- X25-A2 - CN2
- (C)TYPE X05-CN1
- EXCEPT (C)TYPE X05-CN1
- X14-C5 - CN201
- X14-C5 - CN202
- X25-B2 - CN202
- X25-B2 - CN201

The DC voltage is an actual reading measured with a high impedance type voltmeter with no signal input. The measurement value may vary depending on the measuring instruments used or on the product.

(X25-588X-XX) (B/2)



- IC1-6 : MUM4580D or NMM4890D
- IC7.A : TC9164AN
- IC8 : TC9162AN
- IC201 : SN78150CN
- IC202 : TC74HC4051AP
- IC203 : MC14577CP
- IC204,206 : MR90089PF-188
- IC205,207 : MM1087XD
- IC208 : TC74HC4053AP
- IC209 : LA7950
- Q1-6,206,207 : 2SC2876(B)
- Q7 : UN4112 or DT4184ESA
- Q8,9,201,203-205,212 : 2SC2458(Y,GR) or 3SC311A(Q,R)
- Q202 : 2SA104M(Y,GR) or 2SA109M(Q,R)
- Q206,211 : UN4118 or DT4118ZSA
- Q209,210 : UN4219 or DTC113ZSA
- Q213,214 : 2SC2003(L,K)
- D11-13,201,202 : 1S5133 or H55104

1090VR (X25-588X-XX)

DESTINATION	UNIT	①	②	③	R151, 152, 155, 156, 181, 182	R228	W11, 12
U.S.A	0-10	NO	470	750	YES		
CANADA	p	NO	470	750	YES		

KR-V999D (X25-588X-XX)

DESTINATION	UNIT	①	②	③	R151, 155, 156, 181, 182	R228	W11, 12
CHINA	C	0-21	470	360	NO		
EUROPE	E	2-71	1,6K				
RUSSIA	Q						

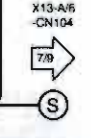
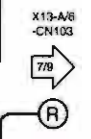
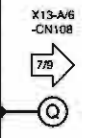
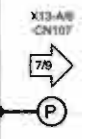


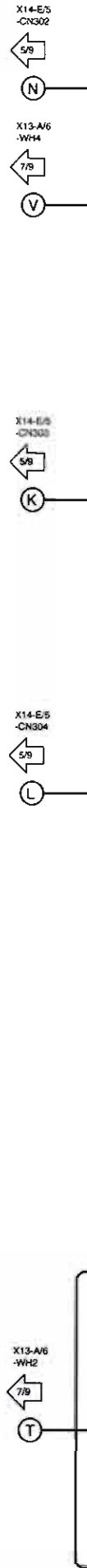
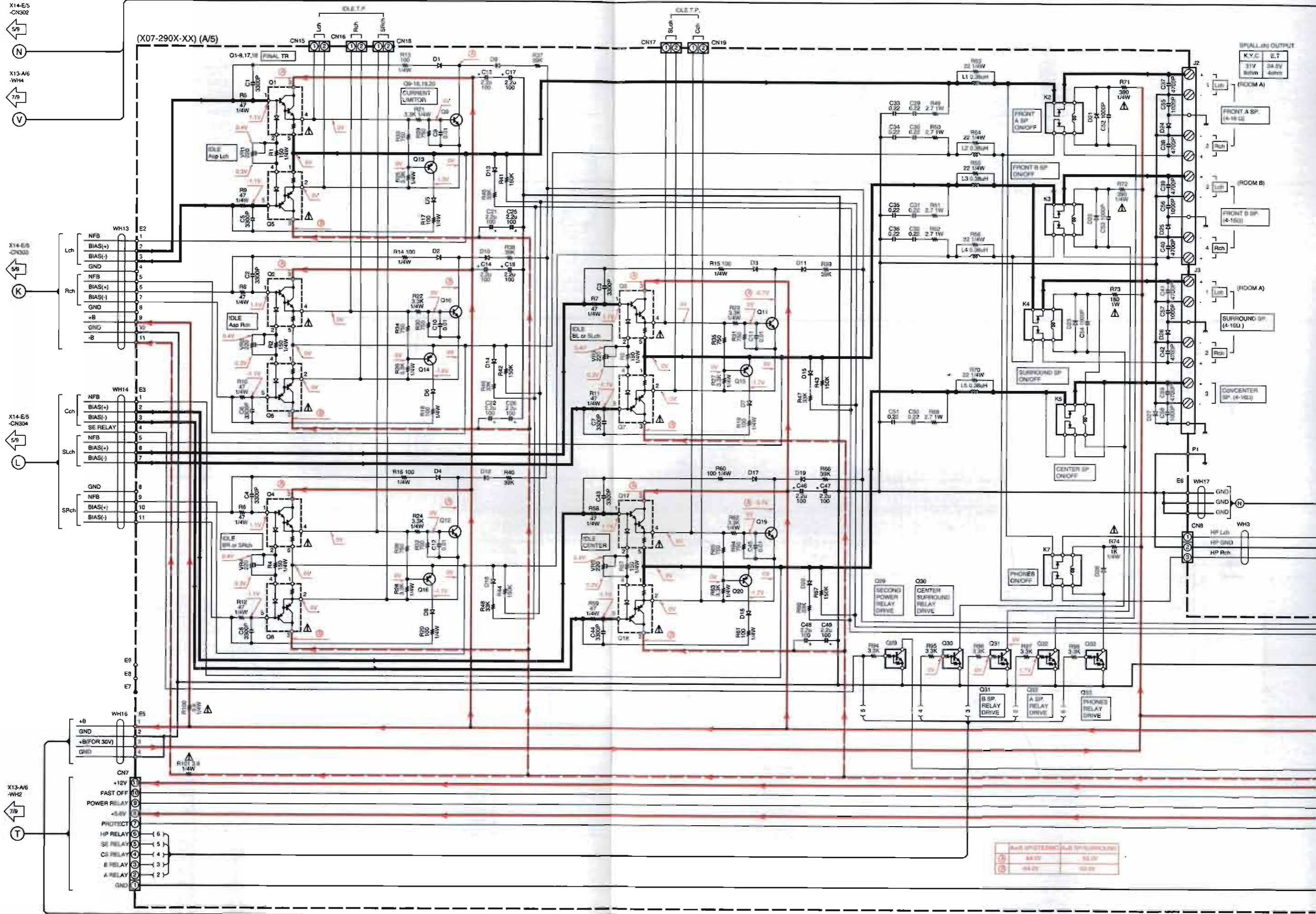
KR-V999D,1090VR(K) (6/9)

# KR-V999D/1090VR

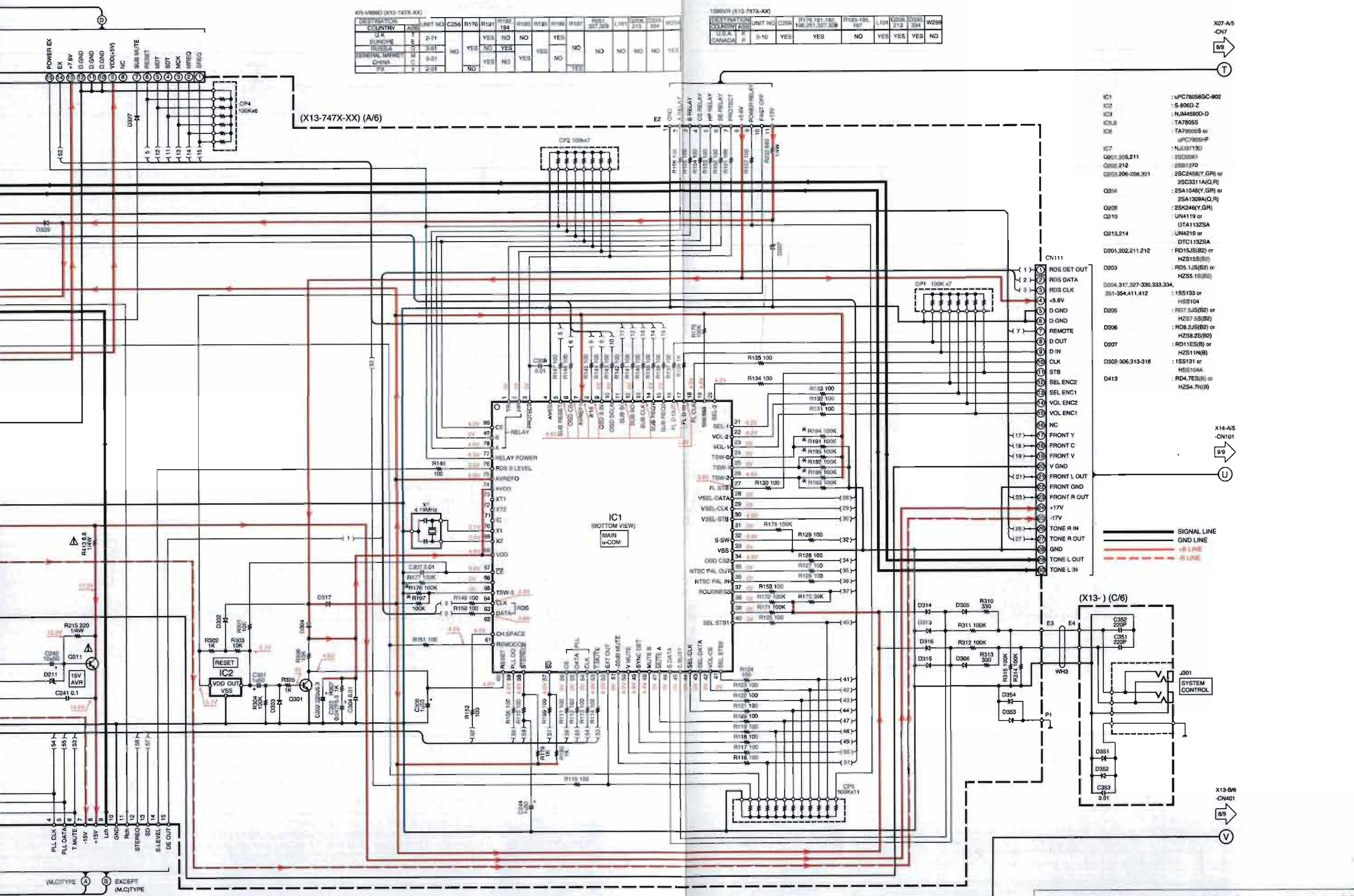
Y05-3300-10

KENWOOD





A/5 (STEREO) (A/5) (STEREO)	
(1)	40.0V 100.0V
(2)	40.0V 100.0V
(3)	40.0V 100.0V



KR-V999D (X13-747X-XX)

DESTINATION	COUNTRY	UNIT NO	C256	R176	R191	R194	R193	R192	R191	R190	R187	R185	LIB1	Q206	Q234	W259
J,K	EUROPE	2-71		YES	YES	NO	NO	YES	YES	NO	NO	NO	NO	NO	NO	YES
L	RUSSIA	3-81	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
M	GENERAL MARKET	9-21		YES	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO
N	CHINA			NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
P		2-91		NO							YES					

1090VR (X13-747X-XX)

DESTINATION	COUNTRY	UNIT NO	C256	R176	R191	R194	R193	R192	R191	R190	R187	R185	LIB1	Q206	Q234	W259
J,K	EUROPE	2-71		YES	YES	NO	NO	YES	YES	NO	NO	NO	NO	NO	NO	YES
L	RUSSIA	3-81	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
M	GENERAL MARKET	9-21		YES	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO
N	CHINA			NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
P		2-91		NO							YES					

- IC1 : uPC78058GC-902
- IC2 : S-806D-Z
- IC3 : NJM4580D
- IC4 : TA7805
- IC5 : TA7805 or TA7905F
- IC6 : uPC7905F
- IC7 : NJL0313D
- IC8 : S8D0081
- IC9 : S8B1370
- IC10 : 2SC2458(Y,GR) or 2SC3311A(Q,R)
- IC11 : 2SA1048(Y,GR) or 2SA1309A(Q,R)
- IC12 : 2SK248(Y,GR)
- IC13 : UN4119 or DTA113ZSA
- IC14 : UN4219 or DTC113ZSA
- IC15 : RD15J(SB2) or HZS15S(B)
- IC16 : RD5.1J(SB2) or HZS5.1S(B)
- IC17 : S8S133 or S8S104
- IC18 : RD7.5J(SB2) or HZS7.5S(B)
- IC19 : RD9.2J(SB2) or HZS9.2S(B)
- IC20 : RD11ES(B) or HZS11N(B)
- IC21 : S8S131 or S8S104A
- IC22 : RD4.7ES(B) or HZS4.7N(B)

— SIGNAL LINE  
 — GND LINE  
 — +B LINE  
 — -B LINE

**CAUTION:** For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list).  $\Delta$  indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuses. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

KR-V999D,1090VR(K) (7/9)

Y05-3300-10

# KR-V999D/1090VR

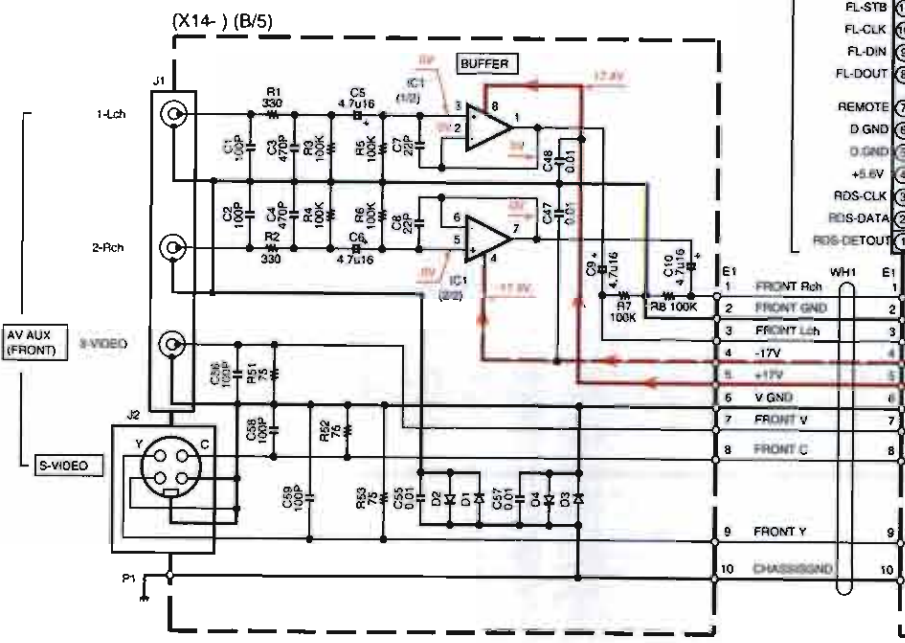
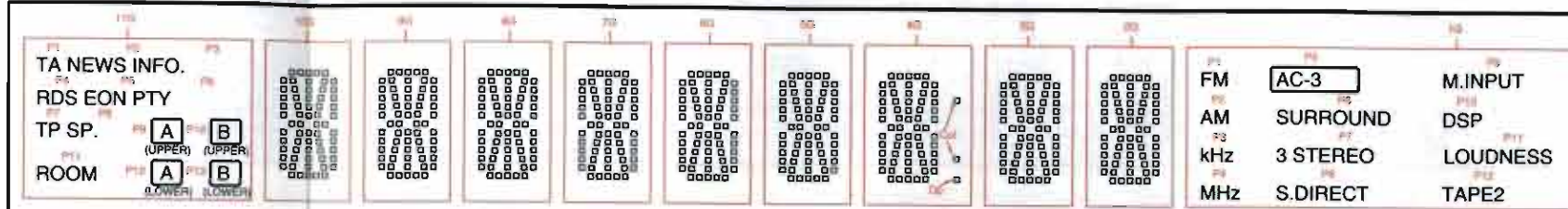
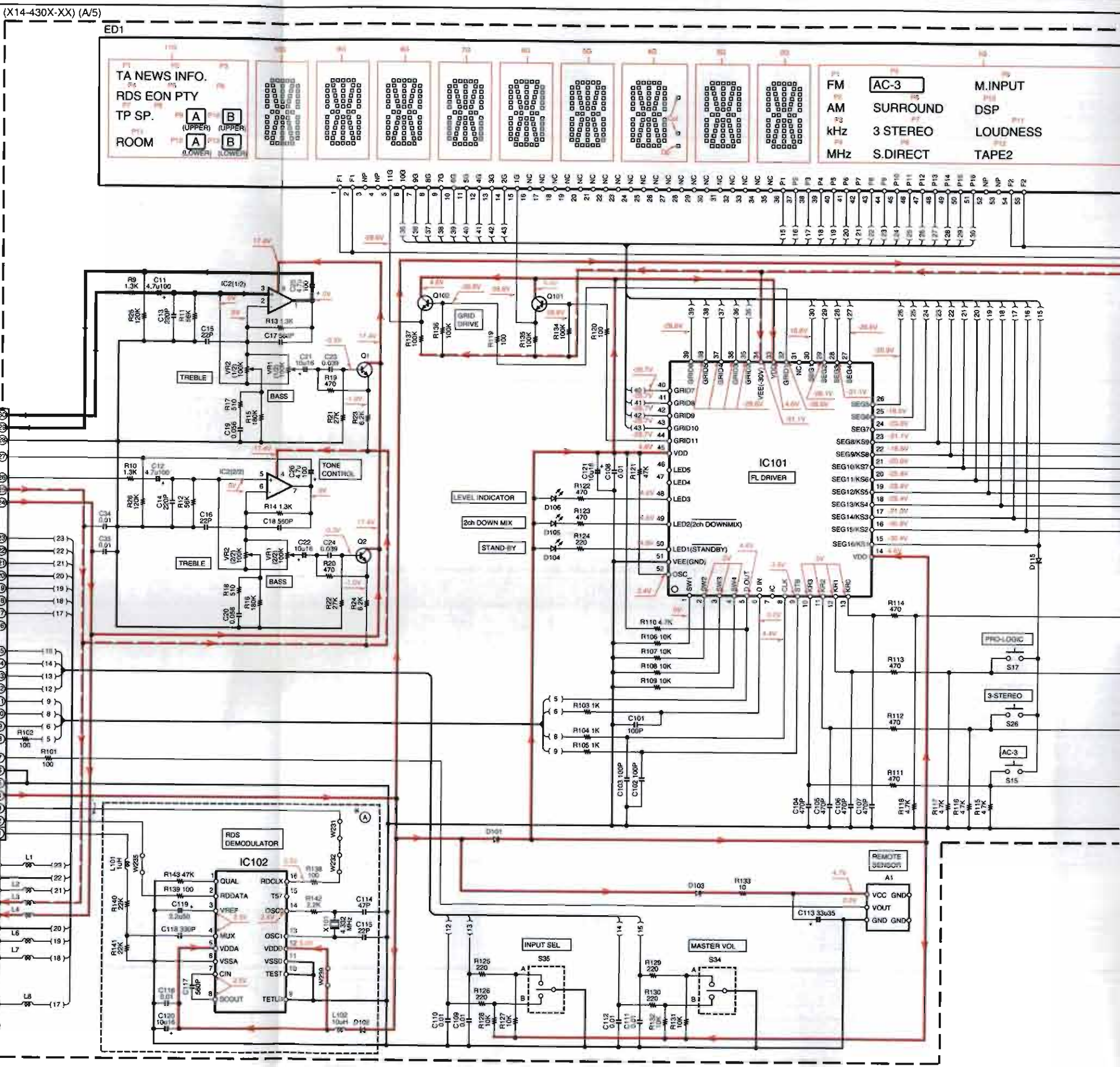
## KENWOOD



**ANODE CONNECTION**

	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	TA	a	a	a	a	a	a	a	a	a	FM
P2	NEWS	i	i	i	i	i	i	i	i	i	AM
P3	INFO	h	h	h	h	h	h	h	h	h	MHz
P4	REIS	k	k	k	k	k	k	k	k	k	AC-3
P5	SON	b	b	b	b	b	b	b	b	b	
P6	PTY	f	f	f	f	f	f	f	f	f	SURROUND
P7	TP	g	g	g	g	g	g	g	g	g	STEREO
P8	SP	m	m	m	m	m	m	m	m	m	S.DIRECT
P9	(UPPER)	c	c	c	c	c	c	c	c	c	M.INPUT
P10	(LOWER)	e	e	e	e	e	e	e	e	e	DSP
P11	ROOM	r	r	r	r	r	r	r	r	r	LOUDNESS
P12	(LOWER)	n	n	n	n	n	n	n	n	n	TAPE 2
P13	(LOWER)	p	p	p	p	p	p	p	p	p	MEMORY
P14	-	d	d	d	d	d	d	d	d	d	AUTO
P15	-	-	-	-	-	-	-	-	-	-	STEREO
P16	-	-	-	-	-	-	-	-	-	-	TUNED

- IC1 : NJM4558L-D
- IC2 : NJM4558D-D
- IC101 : UPD16311
- IC102 : SA48579
- Q1,2,101,102 : 2SC2458(Y,GR) or 2SC3311A(Q,R)
- Q151 : 2SC1534A(R,S)
- Q152 : 2SA1048(Y,GR) or 2SA1309A(Q,R)
- D1-4,102,107-115 : 1S8133 or H8S104
- D101,103 : 1S8131 or H8S104A
- D104-106 : B30-2509-05
- D151,152 : RD3.3E5B2 or HZS3.3N(B2)
- D153 : RD11E5B2 or HZS11N(B2)
- A1 : W02-2801-05
- ED : 11-MT-1106K



KR-V999D (X07-290X-XX)

DESTINATION COUNTRY	ABB	UNIT No	F1	F2	F3	T1	J1	R83	WH1	WH2	W181	W182	W183	CN5	CN14	P3.4	CN3.4	K1
GENERAL MARKET	M	0-21	T3 15AL 250V			L07-0865-05 E03-0149-05			E35-1325-05	E35-1325-05	NO	NO	NO	NO	YES	YES	YES	S76-0070-05 TV-5
CHINA	C	3-01		NO	NO	L07-2114-05 E03-0330-05			E35-1325-05	E35-1325-05	YES	NO	NO	NO	NO	NO	NO	
PX	Y	2-91	T3 15AL 250V			L07-0865-05 E03-0149-05			E35-1325-05	E35-1325-05	NO	NO	NO	NO	NO	NO	NO	
U.K.	T	0-51				L07-0865-05 E03-0310-05			E35-1426-05	E35-1828-05	NO	YES	NO	NO	NO	NO	NO	
EUROPE	E	2-71		NO		L07-0867-05 E03-0149-05			E35-1426-05	E35-1828-05	NO	YES	NO	NO	YES	YES	YES	
RUSSIA	O	3-81				L07-2114-05 E03-0149-05			NO	NO	NO	YES	NO	NO	NO	NO	NO	

KR-V999D (X13-747X-XX)

DESTINATION COUNTRY	ABB	UNIT No	C421	R401	W30	WH404 405	F11-13, 17	F14	F15, 16	S1
U.K.	T	2-71	YES	NO	YES	YES	T1.25A L 250V	T500mA L 250V	T1.6A L 250V	YES
EUROPE	M	0-21	YES	NO	YES	YES				YES
CHINA	C	3-01	NO	NO	NO	NO				NO
RUSSIA	O	3-81	NO	NO	NO	NO				NO
PX	Y	2-91	NO	NO	NO	NO				NO

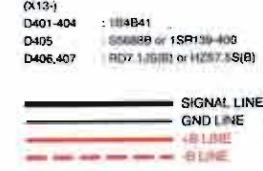
1090VR (X07-290X-XX)

DESTINATION COUNTRY	ABB	UNIT No	F1	F2	F3	T1	J1	R83	WH1	WH2	W181	W182	W183	CN5	CN14	P3.4	CN3.4	K1
U.S.A.	K	0-10	10A 125V	NO	NO	L07-0864-05 E03-0149-05		YES	E35-1426-05	E35-1828-05	YES	YES	YES	YES	NO	NO	NO	S76-0065-05 TV-8
CANADA	P	0-10		NO	NO													

1090VR (X13-747X-XX)

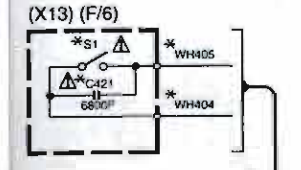
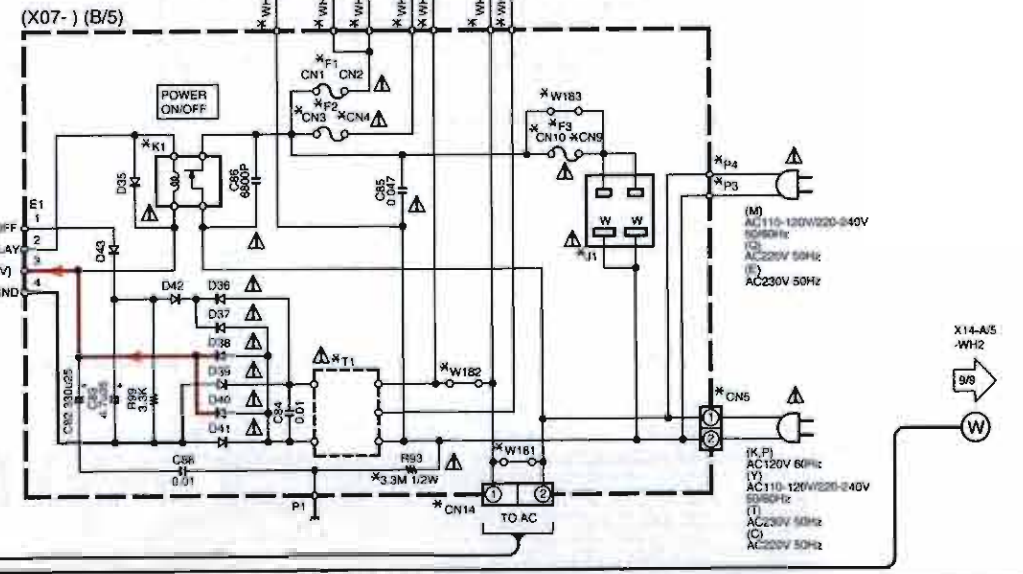
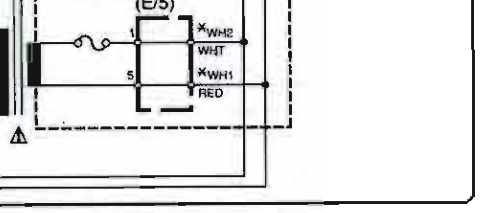
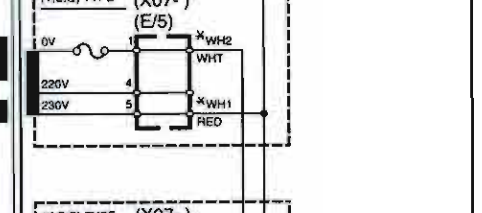
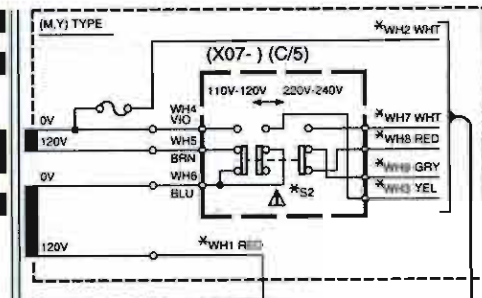
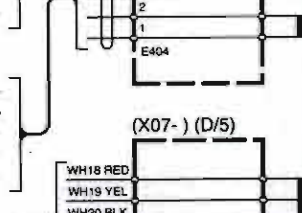
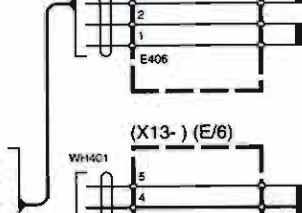
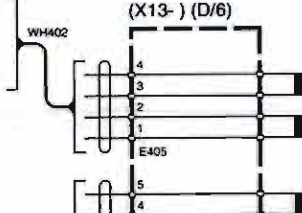
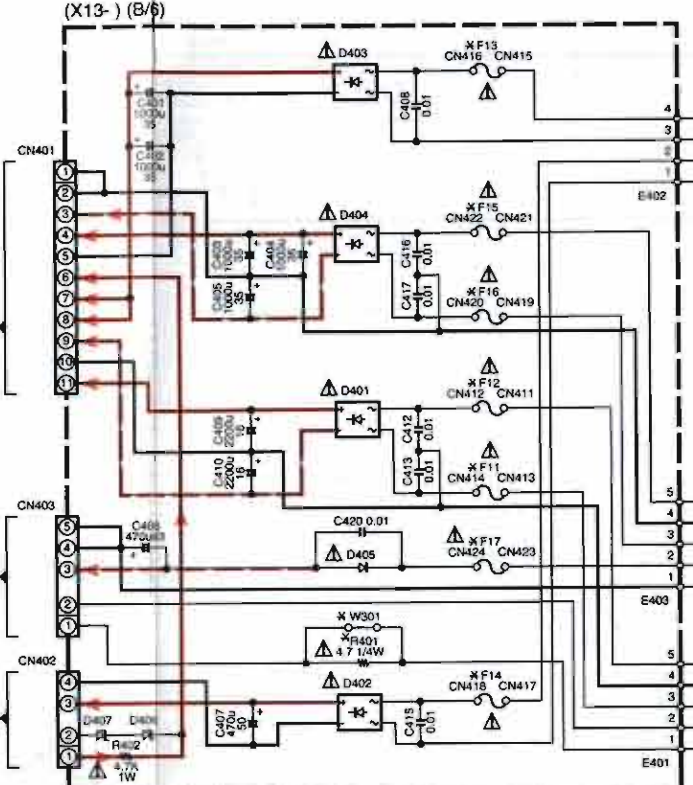
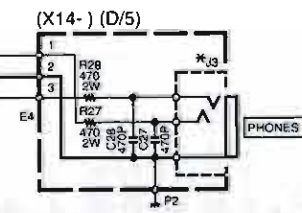
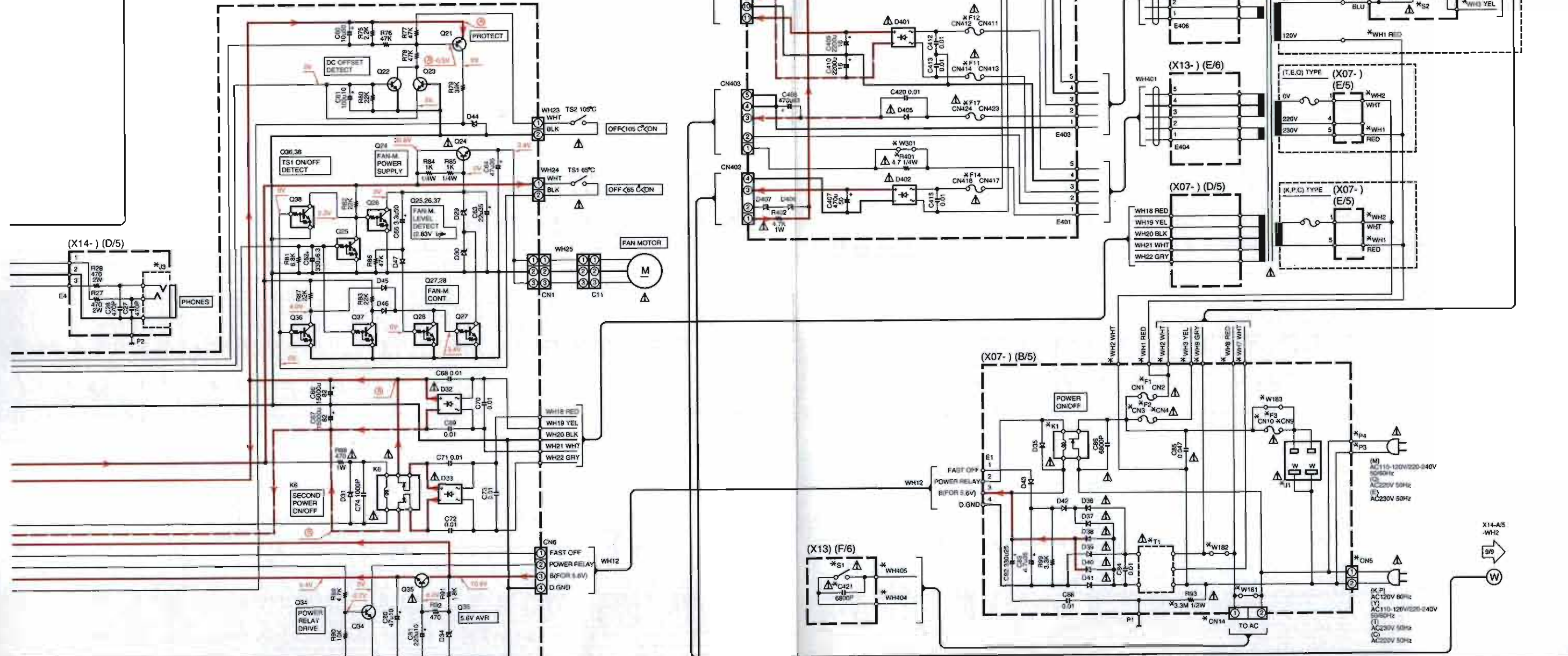
DESTINATION COUNTRY	ABB	UNIT No	C421	R401	W30	WH404 405	F11-13, 17	F14	F15, 16	S1
U.S.A.	K	0-10	NO	YES	NO	NO	1.25A 125V	1A 125V	1.6A 125V	NO
CANADA	P	0-10	NO	YES	NO	NO				NO

- (R07-)  
Q1-4,17 : TRAITRAN 5 \*  
Q5-8,18 : TRAITR4P 5 \*  
Q9-12,19 : 2SD2831(R,S)  
Q13-16,20,21 : SA992(F,E)  
Q22,23 : 2SC1845(F,E)  
Q24 : 2SD2061(R,F) or 2SD2012  
Q25,37 : LM4216 or DTC143T5A  
Q26,27,29-32 : LM4219 or DTC113Z5A  
Q28,36,38 : LM4212 or DTC124ESA  
Q34 : 2SC2003(L,H)  
Q35 : 2SC3940A(H,S) or 2SD863(E,F)
- D1-28,31,35-37 : 43-45-47  
D29 : 029  
D30 : D30  
D32,33 : D32,33  
D34 : D34  
D38-41,405 : D38-41,405  
D42 : D42  
D44 : D44  
D401-404 : D401-404  
D406,407 : D406,407
- : 1SD191 or HZS104A  
: RD11EB(S2) or HZS11N(S2)  
: RD15EB(S2) or HZS15N(S2)  
: DSF155-400(L2)  
: FCR2E(S2) or HZS6.2N(S2)  
: S50885 or 1SR139-400  
: RD2.7ES(S2) or HZS2.7N(S2)  
: RD3.1ES(S2) or HZS3.1S(S2)  
1B48(H)  
: RD7.5-6(S) or HZS7.5S(S)



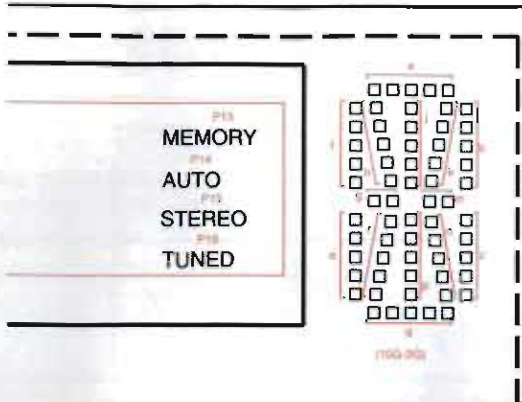
**CAUTION:** For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). Δ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

The DC voltage is an actual reading measured with a high impedance type voltmeter with no signal input. The measurement value may vary depending on the measuring instruments used or on the product.



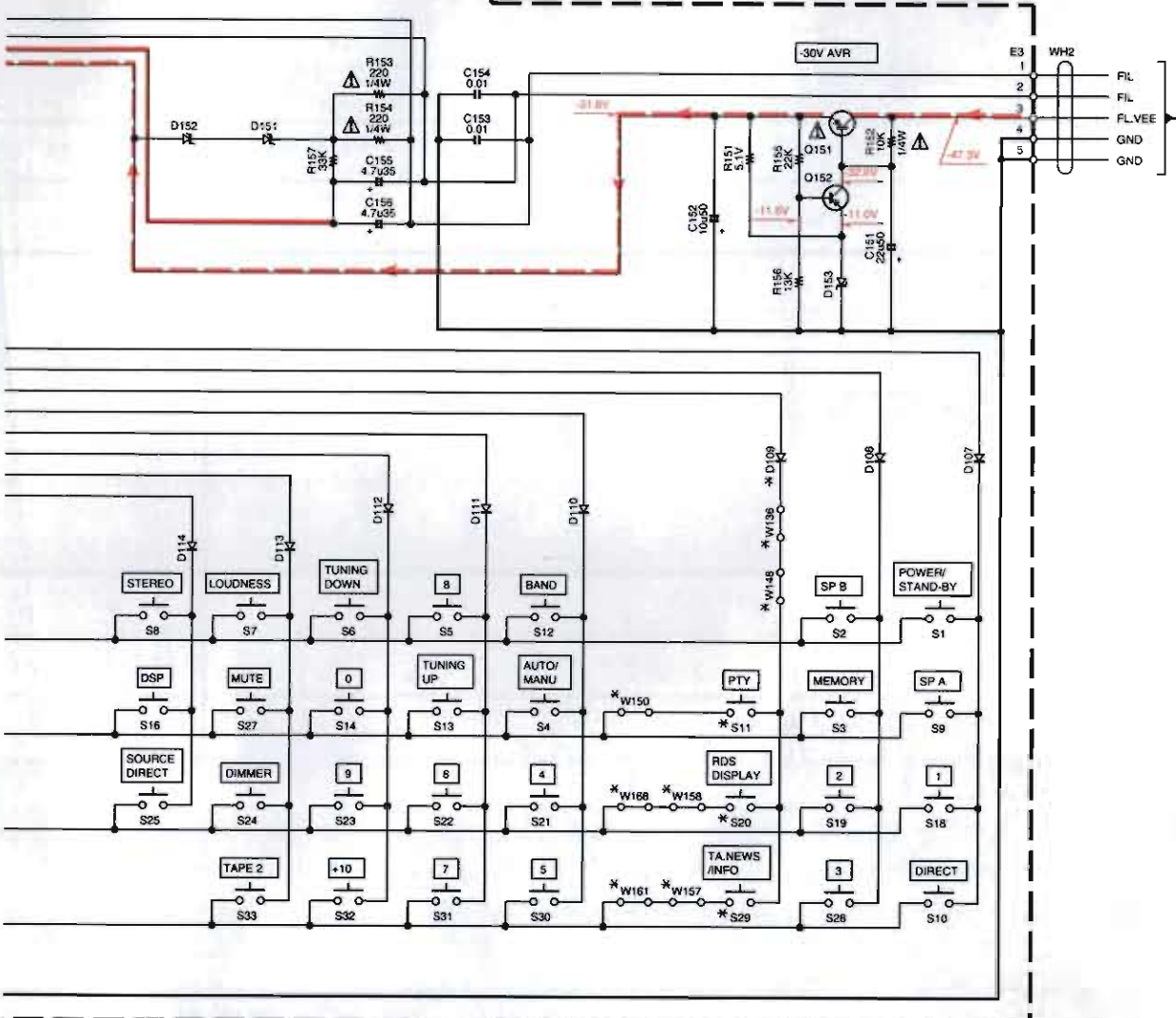
KR-V999D,1090VR(K) (8/9)

KR-V999D/1090VR



**CAUTION:** For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

The DC voltage is an actual reading measured with a high impedance type voltmeter with no signal input. The measurement value may vary depending on the measuring instruments used or on the product.



1090VR (X14-433X-XX)

DESTINATION	COUNTRY	ABB	UNIT No.	(A)	D109	S11,20,29	W136,148,150,157,158,161,168
U.S.A.	K	P	0-10	YES	YES	YES	YES
CANADA	K	P	0-10	YES	YES	YES	YES

KR-V999D (X14-433X-XX)

DESTINATION	COUNTRY	ABB	UNIT No.	(A)	D109	S11,20,29	W136,148,150,157,158,161,168
GENERAL MARKET	M	C	0-21	NO	NO	NO	NO
CHINA	C	Y	0-21	NO	NO	NO	NO
PX	C	Y	0-21	NO	NO	NO	NO
U.K.	T	E	2-71	YES	YES	YES	YES
EUROPE	T	E	2-71	YES	YES	YES	YES
RUSSIA	T	E	2-71	YES	YES	YES	YES

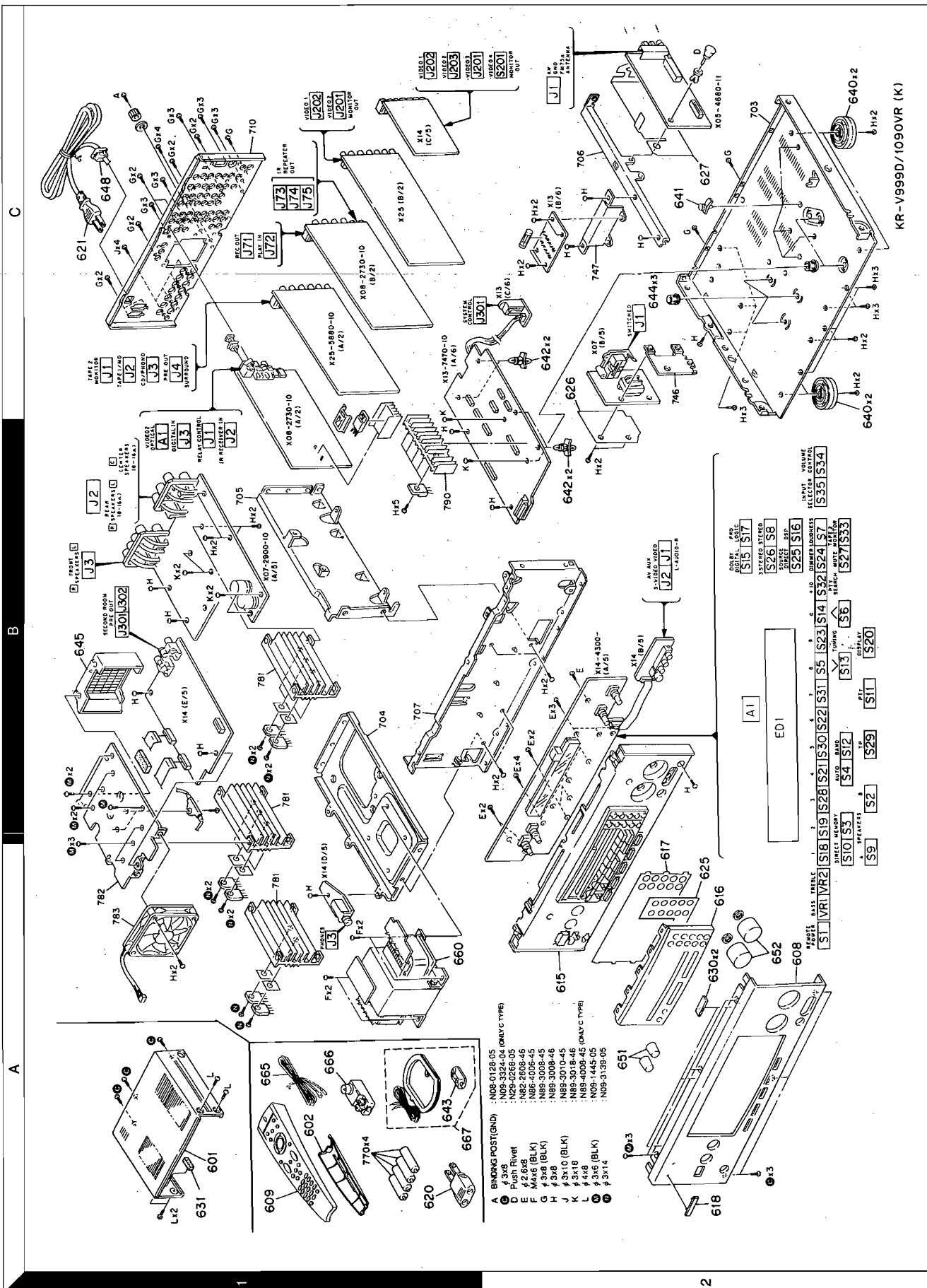


KR-V999D,1090VR(K) (9/9)

# KR-V999D/1090VR

# KR-V999D/1090VR

## EXPLODED VIEW (UNIT)



KR-V999D/1090VR (K)



# KR-V999D/1090VR

## PARTS LIST

\* New Parts  
Parts without **Parts No.** are not supplied.  
Les articles non mentionnés dans le **Parts No.** ne sont pas fournis.  
Teile ohne **Parts No.** werden nicht geliefert.

2

Ref. No	Add-ress	New Parts	Parts No.	Description	Desti-nation	Re-marks
621	1C		E30-2825-05	AC POWER CORD	C	
625	2A	*	F19-1076-03	BLIND PLATE	C	
626	2C	*	F20-3503-14	INSULATING BOARD		
627	2C	*	F20-3504-03	INSULATING BOARD		
630	2A		G11-0155-14	SOFT TAPE (40X9X2)		
631	1A		G11-1167-04	SOFT TAPE		
-	-	*	H10-7312-02	POLYSTYRENE FOAMED FIXTURE	CTM	
-	-	*	H10-7313-02	POLYSTYRENE FOAMED FIXTURE	KPYMCE	
-	-	*	H12-2328-04	PACKING FIXTURE	Q	
-	-	*	H25-0232-04	PROTECTION BAG (235X350X0.03)	T	
-	-	*	H25-0232-04	PROTECTION BAG (235X350X0.03)	KPY	
-	-	*	H25-0651-04	PROTECTION BAG	E	
-	-	*	H25-0661-04	PROTECTION BAG	T	
-	-	*	H50-2196-04	ITEM CARTON CASE	KPY	
-	-	*	H50-2197-04	ITEM CARTON CASE	E	
-	-	*	H50-2260-04	ITEM CARTON CASE	T	
-	-	*	H50-2402-04	ITEM CARTON CASE	M	
-	-	*	H50-2403-04	ITEM CARTON CASE	C	
-	-	*	H50-2480-04	ITEM CARTON CASE	Q	
640	2B 2C	*	J02-1147-13	FOOT (D=46,H=18.5)	KPYMTE	
640	2B 2C	*	J02-1147-13	FOOT (D=46,H=18.5)	Q	
640	2B 2C	*	J02-1170-03	FOOT	C	
641	2C	*	J19-3300-05	UNIT HOLDER		
642	2C	*	J19-3324-15	UNIT HOLDER		
643	1A	*	J19-3645-05	ANT HOLDER		
644	2C	*	J19-3732-04	UNIT HOLDER		
645	1B	*	J19-5778-03	HOLDER		
648	1C	*	J42-0083-05	POWER CORD BUSHING		
-	-	*	J61-0098-05	WIRE BAND		
-	-	*	J61-0307-05	WIRE BAND	M	
651	2A	*	K29-6249-04	KNOB	KPYMTE	
651	2A	*	K29-6249-04	KNOB	Q	
651	2A	*	K29-6556-04	KNOB (GOLD)	KPYMTE	
652	2A	*	K29-6281-04	KNOB	Q	
652	2A	*	K29-6281-04	KNOB	Q	
652	2A	*	K29-6557-04	KNOB (GOLD)	C	
-	-	*	K27-2176-04	KNOB (BUTTON : GOLD)	MTEQ	
-	-	*	K27-2177-04	KNOB (BUTTON : GOLD)	C	
660	1A	*	L07-2272-05	POWER TRANSFORMER	KP	
660	1A	*	L07-2273-05	POWER TRANSFORMER	YM	
660	1A	*	L07-2274-05	POWER TRANSFORMER	TEQ	
660	1A	*	L07-2355-05	POWER TRANSFORMER	C	
665	1A	*	T90-0176-05	T TYPE ANTENNA		
666	1A	*	T90-0185-05	ANTENNA ADAPTOR		
667	1A	*	T90-0820-05	LOOP ANTENNA		

### TUNER UNIT (X05-467X-XX)

C1 2			CK73FB1H103K	CHIP C		0.010UF K
C5			CK73FB1H102K	CHIP C		1000PF K
C8			CK73FB1H103K	CHIP C		0.010UF K
C9			CE04LW1C100M	ELECTRO		10UF 16WV K
C10			CK73FB1H473K	CHIP C		0.047UF K

\* New Parts  
Parts without **Parts No.** are not supplied.  
Les articles non mentionnés dans le **Parts No.** ne sont pas fournis.  
Teile ohne **Parts No.** werden nicht geliefert.

1

Ref. No	Add-ress	New Parts	Parts No.	Description	Desti-nation	Re-marks
<b>KR-V999D/1090VR</b>						
601	1A	*	A01-3394-11	METALLIC CABINET(GOLD)	C	
601	1A	*	A01-3396-01	METALLIC CABINET(BLACK)	KPYMTE	
601	1A	*	A01-3396-01	METALLIC CABINET(BLACK)	Q	
602	1A	*	A09-0366-08	BATTERY COVER (FOR RC-R0905)		
608	2A	*	A60-1046-12	PANEL (TITAN)	KPY	
608	2A	*	A60-1047-02	PANEL (BLACK)	TEQ	
608	2A	*	A60-1076-02	PANEL (BLACK)	M	
608	2A	*	A60-1077-02	PANEL (GOLD)	C	
609	2A	*	A70-1114-05	REMOTE CONTROLLER (RC-R0905)		
615	2A	*	B01-0525-11	PANEL ESCUTCHEON	M	
615	2A	*	B01-0527-11	PANEL ESCUTCHEON	KPYTEQ	
615	2A	*	B01-0532-11	PANEL ESCUTCHEON	C	
616	2A	*	B10-2287-02	FRONT GLASS	KPYTEQ	
616	2A	*	B10-2296-02	FRONT GLASS	M	
616	2A	*	B10-2332-02	FRONT GLASS	C	
617	1A	*	B11-0295-03	COLOR FILTER	KPYMTE	
617	1A	*	B11-0295-03	COLOR FILTER	Q	
617	1A	*	B11-0344-13	COLOR FILTER	C	
618	2A	*	B43-0302-04	KENWOOD BADGE	KPYMTE	
618	2A	*	B43-0305-04	KENWOOD BADGE	Q	
-	-	*	B46-0197-00	QUESTIONNAIRE CARD	C	
-	-	*	B46-0310-03	WARRANTY CARD	K	
-	-	*	B46-0326-03	WARRANTY CARD	TEQ	
-	-	*	B46-0330-03	WARRANTY CARD	C	
-	-	*	B46-0336-03	WARRANTY CARD	KY	
-	-	*	B58-0513-04	CAUTION CARD (PRESET220-240)	P	
-	-	*	B58-0964-13	CAUTION CARD (UL)	Y	
-	-	*	B58-0965-13	CAUTION CARD (T,X,PL)	KY	
-	-	*	B58-0966-13	CAUTION CARD (ELM,PL)	T	
-	-	*	B58-0967-03	CAUTION CARD (P,PL)	CE	
-	-	*	B58-1526-03	SERVICE DIRECTORY	P	
-	-	*	B59-1104-00	INSTRUCTION MANUAL(ENGLISH)	Q	
-	-	*	B60-3008-00	INSTRUCTION MANUAL(ENGLISH)	Q	
-	-	*	B60-3009-00	INSTRUCTION MANUAL(ENGLISH)	KPY	
-	-	*	B60-3010-00	INSTRUCTION MANUAL(FRENCH)	T	
-	-	*	B60-3011-00	INSTRUCTION MANUAL(FRENCH)	CM	
-	-	*	B60-3012-00	INSTRUCTION MANUAL(SPANISH)	P	
-	-	*	B60-3013-00	INSTRUCTION MANUAL(SPANISH)	E	
-	-	*	B60-3014-00	INSTRUCTION MANUAL(ITALIAN)	M	
-	-	*	B60-3124-00	INSTRUCTION MANUAL(GERMAN)	E	
-	-	*	B60-3125-00	INSTRUCTION MANUAL(CHINESE)	E	
-	-	*	B60-3127-00	INSTRUCTION MANUAL(CHINESE)	M	
-	-	*	B60-3251-00	INSTRUCTION MANUAL(DUTCH)	C	
-	-	*	B60-3252-00	INSTRUCTION MANUAL(SPANISH)	E	
-	-	*	B60-3299-00	INSTRUCTION MANUAL(RUSSIAN)	Q	
-	-	*	B60-3300-00	INSTRUCTION MANUAL(POLISH)	Q	
620	1A	*	E03-0943-05	AC PLUG ADAPTER	M	
621	1C	*	E30-2579-05	AC POWER CORD	EQM	
621	1C	*	E30-2739-05	AC POWER CORD	Y	
621	1C	*	E30-2787-05	AC POWER CORD	KP	
621	1C	*	E30-2791-05	AC POWER CORD	T	

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Ref. No	Add-ress	New Parts	Parts No.	Description	Designation	Re-marks
C11			CE04LW1H010M	1.0UF	ELECTRO	
C12			CE04LW1H2R2M	2.2UF	ELECTRO	
C13			CK73FB1H102K	1000PF	CHIP C	
C14			CE04LW1H010M	1.0UF	ELECTRO	
C15			CC73FCH1H220J	22PF	CHIP C	
C16			CE04LW1C100M	10UF	ELECTRO	
C17			CK73FB1H562K	5600PF	CHIP C	
C18			CK73FB1H102K	1000PF	CHIP C	
C19			CE04HW1E4R7M	4.7UF	NP-ELEC	
C20			CK73FB1E104K	0.10UF	CHIP C	
C21, 22			CQ93FMG1H113J	0.011UF	MYLAR	
C23			CE04LW1H010M	1.0UF	ELECTRO	
C25			CE04LW1C100M	10UF	ELECTRO	
C26			CE04LW1C470M	47UF	ELECTRO	
C27			CE04LW1H010M	1.0UF	ELECTRO	
C28			CQ93FMG1H223J	0.022UF	MYLAR	
C29			CE04LW1H2R2M	2.2UF	ELECTRO	
C30			CE04LW1C101M	100UF	ELECTRO	
C31			CE04LW1A470M	47UF	ELECTRO	
C32			CK73FB1H103K	0.010UF	CHIP C	
C33			CC73FSL1H101J	100PF	CHIP C	
C34, 35			CK73FB1H102K	1000PF	CHIP C	
C36			CC73FCH1H220J	22PF	CHIP C	
C37			CC73FCH1H220J	22PF	CHIP C	
C38			CK73FB1H471K	470PF	CHIP C	
C57, 58			CE04LW1H010M	1.0UF	ELECTRO	
C59, 60			CE04LW1C100M	10UF	ELECTRO	
C61, 62			CQ93FMG1H472J	4700PF	MYLAR	
C63			CK73FCH1H220J	22PF	CHIP C	
C64			CC73FCH1H830J	33PF	CHIP C	
C65			CC73FCH1H040C	4.0PF	CHIP C	
C67			CK73FB1H102K	1000PF	CHIP C	
CN1			E40-4609-05		PIN ASSY	
J1			E70-0052-05		LOCK TERMINAL BOARD	
CF1, 2			L72-0531-05		CERAMIC FILTER	
CF3			L72-0538-05		CERAMIC FILTER	
L1			L38-1348-05		COMBINATION COIL	
L2			L30-0911-05		AM IFT	
L3, 4			L40-1091-17		SMALL FIXED INDUCTOR(1UH)	
X1			* L77-2159-05		CRYSTAL RESONATOR(7.2MHZ)	
X2			L78-0637-05		RESONATOR (456KHZ)	
R1			RK73FB2A332J	3.3K	CHIP R	
R2			RK73FB2A681J	680	CHIP R	
R3			RK73FB2A100J	10	CHIP R	
R4, 5			RK73FB2A331J	330	CHIP R	
R6			RK73FB2A101J	100	CHIP R	
R7			RK73FB2A473J	47K	CHIP R	
R8			RK73FB2A331J	330	CHIP R	
R12			RK73FB2A102J	1.0K	CHIP R	
R13			RK73FB2A473J	47K	CHIP R	
R15, 16			RK73FB2A393J	39K	CHIP R	
R17			RK73FB2A271J	270	CHIP R	
R18			RK73FB2A302J	3.0K	CHIP R	

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R19			RK73FB2A822J	8.2K	CHIP R	
R20, 23			RK73FB2A102J	1.0K	CHIP R	
R24			RK73FB2A562J	5.6K	CHIP R	
R25			RD14NB2E101J	100	RD	
R26			RD14NB2E561J	560	RD	
R27, 28			RK73FB2A103J	10K	CHIP R	
R29, 30			RK73FB2A102J	1.0K	CHIP R	
R31			RK73FB2A103J	10K	CHIP R	
R32			RK73FB2A122J	1.2K	CHIP R	
R33			RK73FB2A123J	1.2K	CHIP R	
R41			RS14KB3A271JFR	270	FL-PROOF RS	
R42			RD14NB2E271J	270	RD	
R44			RK73FB2A101J	100	CHIP R	
R46			RK73FB2A104J	100K	CHIP R	
R47			RK73FB2A153J	15K	CHIP R	
R48, 49			RK73FB2A473J	47K	CHIP R	
R50			RK73FB2A471J	470	CHIP R	
R51, 54			RK73FB2A473J	47K	CHIP R	
R55, 56			RK73FB2A154J	150K	CHIP R	
R59, 60			RK73FB2A332J	3.3K	CHIP R	
R61			RK73FB2A103J	10K	CHIP R	
R62			RK73FB2A563J	56K	CHIP R	
R63			RK73FB2A821J	820	CHIP R	
R64			RK73FB2A102J	1.0K	CHIP R	
R65			RK73EB2B102J	1.0K	CHIP R	
R73			RK73FB2A681J	680	CHIP R	
W101-106			R92-0670-05	0 OHM	CHIP R	
W108-113			R92-0670-05	0 OHM	CHIP R	
W115			R92-0670-05	0 OHM	CHIP R	
W201-212			R92-0679-05	0 OHM	CHIP R	
S1			S62-0034-05		SLIDE SWITCH	
D1, 2			HSS104		DIODE	
D1, 2			1SS133		DIODE	
D3, 4			HZS5.1N(B2)		ZENER DIODE	
D3, 4			RD5.1ES(B2)		ZENER DIODE	
D8			HSS104		DIODE	
D8			1SS133		DIODE	
D10			MA111		DIODE	
D12			HZS3.3N(B2)		ZENER DIODE	
D12			RD3.3ES(B2)		ZENER DIODE	
D13			HZS2.7N(B2)		ZENER DIODE	
D13			RD2.7ES(B2)		ZENER DIODE	
IC1			LA1832		ANALOGUE IC	
IC2			LC72131		MOS-IC	
IC4			NJM4565M		IC(OP AMP X2)	
Q1			2SC2714(R,O)		TRANSISTOR	
Q3			2SA1576A(R,S)		TRANSISTOR	
Q3			2SA1586(Y,GR)		TRANSISTOR	
Q5			2SC4081(R,S)		TRANSISTOR	
Q5			2SC4116(Y,GR)		TRANSISTOR	
Q6			2SA1576A(R,S)		TRANSISTOR	
Q6			2SA1586(Y,GR)		TRANSISTOR	
C7, 8			ZSD1757K		TRANSISTOR	
C9, 10			ZSC4081(R,S)		TRANSISTOR	

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C96			CK73FB1H102K	CHIP C		
CN1			E40-4609-05	PIN ASSY		
CN2			E40-4871-05	PIN ASSY		
J1			E70-0052-05	LOCK TERMINAL BOARD		
CF1_2			L72-0536-05	CERAMIC FILTER	TEQ	
CF1_2			L72-0596-05	CERAMIC FILTER	KPY	
L31			L30-0943-05	FM IFT		
L32			L30-0944-05	FM IFT		
L33			L30-0911-05	AM IFT		
L34			L79-1240-05	LC FILTER	TEQ	
L35_36			L79-1239-05	LC FILTER		
L61			L40-1091-17	SMALL FIXED INDUCTOR(1UH)		
L62			L39-1351-05	COMBINATION COIL		
L63			L40-1001-17	SMALL FIXED INDUCTOR(10UH,K)		
L81			L40-1091-17	SMALL FIXED INDUCTOR(1UH)		
X31			L78-0637-05	RESONATOR (456KHZ)		
X81			L77-2159-05	CRYSTAL RESONATOR(7.2MHZ)		
R1			RD14NB2E221J	RD		
R2			RK73FB2A221J	CHIP R	1/4W	
R3			RK73FB2A182J	CHIP R	1/10W	
R4			RK73FB2A561J	CHIP R	1/10W	
R5			RK73FB2A222J	CHIP R	1/10W	
R6			RK73FB2A103J	CHIP R	1/10W	
R7			RK73FB2A221J	CHIP R	1/10W	
R8			RK73FB2A681J	CHIP R	1/10W	
R9			RK73FB2A681J	CHIP R	1/10W	
R10			RK73FB2A470J	CHIP R	1/10W	
R11			RK73FB2A101J	CHIP R	1/10W	
R12			RK73FB2A331J	CHIP R	1/10W	
R13			RK73FB2A681J	CHIP R	1/10W	
R14			RK73FB2A332J	CHIP R	1/10W	
R15			RK73FB2A331J	CHIP R	1/10W	
R16			RK73FB2A100J	CHIP R	1/10W	
R16			RK73FB2A150J	CHIP R	1/10W	
R17			RK73FB2A331J	CHIP R	1/10W	
R18			RK73FB2A381J	CHIP R	1/10W	
R19			RK73FB2A681J	CHIP R	1/10W	
R20			RK73FB2A100J	CHIP R	1/10W	
R20			RK73FB2A150J	CHIP R	1/10W	
R21			RK73FB2A101J	CHIP R	1/10W	
R22			RK73FB2A100J	CHIP R	1/10W	
R31			RS14KB3A151JFR	FL-PROOF RS	1W	
R32		*	RK73EB2B432J	CHIP R	1/8W	
R33			RK73FB2A302J	CHIP R	3.0K	
R34			RK73FB2A822J	CHIP R	8.2K	
R35			RK73FB2A333J	CHIP R	33K	
R36			RK73FB2A393J	CHIP R	39K	
R37			RK73FB2A332J	CHIP R	3.3K	
R38			RK73FB2A333J	CHIP R	33K	
R39			RK73FB2A823J	CHIP R	82K	
R40			RK73FB2A202J	CHIP R	2.0K	
R41			RK73FB2A222J	CHIP R	2.2K	
F42			RK73FB2A202J	CHIP R	2.0K	

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Ref. No	Add-ress	New Parts	Parts No.	Description	Desti-nation	Re-marks
C9_10			2SC4116(Y,GR)	TRANSISTOR		
A1			W02-2582-05	FM FRONT-END ASSY		
<b>TUNER UNIT (X05-468X-XX)</b>						
C1			CE04LW1C470M	ELECTRO	16WV	
C2			CE04LW1H010M	ELECTRO	50WV	
C3			CK73FB1H103K	CHIP C	0.010UF	
C5_10			CK73FB1H103K	CHIP C	0.010UF	
C30			CK73EB1E473K	CHIP C	0.047UF	
C31			CE04LW1C470M	ELECTRO	47UF	
C32			CK73FB1H103K	CHIP C	0.010UF	
C33			CE04LW1C100M	ELECTRO	10UF	
C34			CK73FB1H103K	CHIP C	0.010UF	
C35			CE04LW1C100M	ELECTRO	10UF	
C36			CK73FB1E473K	CHIP C	0.047UF	
C37			CK73FB1H103K	CHIP C	0.010UF	
C38			C90-3217-05	ELECTRO	10UF	
C40			C90-3253-05	ELECTRO	1.0UF	
C41			C90-3251-05	ELECTRO	0.47UF	
C42			C90-3240-05	ELECTRO	2.2UF	
C43			CE04LW1HR47M	ELECTRO	0.47UF	
C44			CK73FB1E473K	CHIP C	0.047UF	
C45			CK73FCH1H220J	CHIP C	22PF	
C46			CE04LW1A101M	ELECTRO	100UF	
C47			CK73FB1H103K	CHIP C	0.010UF	
C48			CK73FSL1H101J	CHIP C	100PF	
C49			CE04LW1H010M	ELECTRO	1.0UF	
C50			CK73FB1H52K	CHIP C	1500PF	
C51_52			C90-3217-05	ELECTRO	10UF	
C53_54			CK73FB1H223K	CHIP C	0.022UF	
C53_54			CK73FB1H333K	CHIP C	0.033UF	
C55_56			CE04LW1H2R2M	ELECTRO	2.2UF	
C57_58			CK73FB1H822K	CHIP C	8200PF	
C59			CK73FSL1H101J	CHIP C	100PF	
C60			CK73FB1E104K	CHIP C	0.10UF	
C61			CK73FB1H103K	CHIP C	0.010UF	
C64			CK73FB1H333K	CHIP C	0.033UF	
C66			CK73FCH1H060D	CHIP C	6.0PF	
C67			CK73FCH1H220J	CHIP C	22PF	
C68			CK73FSL1H020C	CHIP C	2.0PF	
C70			CK73FSL1H101J	CHIP C	100PF	
C71_72			CK73FB1H103K	CHIP C	0.010UF	
C73			CK73FB1H681K	CHIP C	680PF	
C81			CK73FCH1H220J	CHIP C	22PF	
C82			CK73FCH1H270J	CHIP C	27PF	
C84			CK73FB1H102K	CHIP C	1000PF	
C85			CK73FSL1H101J	CHIP C	100PF	
C86			CK73FB1H102K	CHIP C	1000PF	
C87			CE04LW1C100M	ELECTRO	10UF	
C89			CE04LW1C470M	ELECTRO	47UF	
C90			CE04LW1H2R2M	ELECTRO	2.2UF	
C91			CK73FB1H223K	CHIP C	0.022UF	
C92			CK73FSL1H471J	CHIP C	470PF	
C93			CK73FB1H103K	CHIP C	0.010UF	

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IC2			LC72131	MOS-IC		
O1_2			2SC4081(R,S)	TRANSISTOR		
O1_2			2SC4116(Y,GR)	TRANSISTOR		
O3			2SA1576A(R,S)	TRANSISTOR		
O3			2SA1586(Y,GR)	TRANSISTOR		
Q4			2SC4081(R,S)	TRANSISTOR		
Q4			2SC4116(Y,GR)	TRANSISTOR		
Q31-34			2SC4081(R,S)	TRANSISTOR		
Q31-34			2SC4116(Y,GR)	TRANSISTOR		
Q81			2SA1576A(R,S)	TRANSISTOR		
Q81			2SA1586(Y,GR)	TRANSISTOR		
Q103			2SD1757K	TRANSISTOR		
Q103			2SA1576A(R,S)	TRANSISTOR		
Q103			2SA1586(Y,GR)	TRANSISTOR		
A1			W02-2582-05	FM FRONT-END ASSY		KPY
A1			W02-2584-05	FM FRONT-END ASSY		TE
A1			W02-2586-05	FM FRONT-END ASSY		Q
<b>POWER AMPLIFIER UNIT (X07-290X-XX)</b>						
C1-8		*	CK45FB1H332KMM	CERAMIC		K
C9-12			CK45FF1H103ZMM	CERAMIC		3300PF
C13-14			CE04KW2A2R2M	ELECTRO		0.010UF
C17-18			CE04KW2A2R2M	ELECTRO		2.2UF
C21-22			CE04KW2A2R2M	ELECTRO		2.2UF
C25-26			CE04KW2A2R2M	ELECTRO		2.2UF
C29-36			CF92EV1H224J	MF-C		0.22UF
C37-42			CO93FMG1H472J	MYLAR		4700PF
C43-44		*	CK45FB1H332KMM	CERAMIC		3300PF
C45		*	CK45FF1H103ZMM	CERAMIC		0.010UF
C46-49			CE04KW2A2R2M	ELECTRO		2.2UF
C50-51			CF92FV1H224J	MF-C		0.22UF
C52-58			CO93FMG1H102J	MYLAR		1000PF
C59			CO93FMG1H472J	MYLAR		4700PF
C60			CE04KW1H100M	ELECTRO		10UF
C61			CE04KW1A101M	ELECTRO		100UF
C62			CE04KW0J331M	ELECTRO		6.3KV
C63			CE04KW1V20M	ELECTRO		22UF
C64			CE04KW1V470M	ELECTRO		47UF
C65			CE04KW1H3R3M	ELECTRO		3.3UF
C66-67			C90-3600-05	ELECTRO		15000UF
C68-73		*	CK45FE2H103PM	CERAMIC		0.010UF
C74			CO93FMG1H102J	MYLAR		1000PF
C80			CE04KW1A470M	ELECTRO		47UF
C81			CE04KW1A221M	ELECTRO		220UF
C82			CE04DW1E331M	ELECTRO		330UF
C83			CE04KW1V4R7M	ELECTRO		4.7UF
C84			CK45FF1H103ZMM	CERAMIC		0.010UF
C85			C91-1444-05	MF		0.047UF
C86			C91-1488-05	MF		6800PF
C88		*	CK45FF1H103ZMM	CERAMIC		0.010UF
CN5			E40-4245-05	PIN ASSY		
CN6			E40-4294-05	FLAT CABLE CONNECTOR		
CN7			E40-4608-05	PIN ASSY		
CN8			E40-4293-05	FLAT CABLE CONNECTOR		
CN11			E40-3247-05	PIN ASSY		

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R43-44			RK73FB2A222J	CHIP R	1/10W	
R45-46			RK73FB2A102J	CHIP R	J	
R47-48			RK73FB2A392J	CHIP R	J	
R49			RK73FB2A473J	CHIP R	J	
R51			RK73FB2A392J	CHIP R	J	
R52			RK73FB2A104J	CHIP R	J	
R53			RK73FB2A102J	CHIP R	J	
R55			RK73FB2A582J	CHIP R	J	
R56-57			RK73FB2A101J	CHIP R	J	
R59			RK73FB2A272J	CHIP R	J	
R67			RK73FB2A104J	CHIP R	J	
R69			RK73FB2A103J	CHIP R	J	
R80			RK73EB2B102J	CHIP R	J	
R81-83			RK73FB2A102J	CHIP R	J	
R84			RK73FB2A103J	CHIP R	J	
R85-88			RK73FB2A102J	CHIP R	J	
R89			RD14NB2E101J	RD	J	
R90			RK73FB2A582J	CHIP R	J	
R91			RK73FB2A222J	CHIP R	J	
R92			RK73FB2A123J	CHIP R	J	
R93			RK73FB2A122J	CHIP R	J	
R94			RD14NB2E561J	RD	J	
R101,102			RK73FB2A102J	CHIP R	J	
R103			RK73FB2A821J	CHIP R	J	
R104			RK73FB2A473J	CHIP R	J	
R105			RK73FB2A822J	CHIP R	J	
W51-55			R92-0670-05	0 OHM		
W57-58			R92-0679-05	0 OHM		
W59			R92-0670-05	0 OHM		
W61			R92-0670-05	0 OHM		
W62-64			R92-0679-05	0 OHM		
W66-67			R92-0679-05	0 OHM		
W71			R92-0670-05	0 OHM		
W72			R92-0670-05	0 OHM		
W75			R92-0670-05	0 OHM		
W81			R92-0679-05	0 OHM		
W83			R92-0679-05	0 OHM		
W85			R92-0670-05	0 OHM		
S1			S62-0034-05	SLIDE SWITCH		
D1_2			HSS104	DIODE		
D1_2			1SS133	DIODE		
D31			HZS8.2N(B2)	ZENER DIODE		
D31			RD8.2ES(B2)	ZENER DIODE		
D32			HSS104	DIODE		
D32			1SS133	DIODE		
D61-62			HSS104	DIODE		
D61-62			1SS133	DIODE		
D81			HZS5.1N(B2)	ZENER DIODE		
D81			RD5.1ES(B2)	ZENER DIODE		
D101			HZS3.3N(B2)	ZENER DIODE		
D101			RD3.3ES(B2)	ZENER DIODE		
D102			HZS2.7N(B2)	ZENER DIODE		
D102			RD2.7ES(B2)	ZENER DIODE		
IC1			LA1836	ANALOGUE IC		

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Ref. No	Add-ress	New Parts	Parts No.	Description	Designation	Re-marks
D29			RD11ES(B2)	ZENER DIODE		
D30			HZS15N(B2)	ZENER DIODE		
D31			RD15ES(B2)	ZENER DIODE		
D31			HSS104A	DIODE		
D31			1SS131	DIODE		
D32,33			D5FB20-4002-L2	DIODE		
D34			HZS6.2N(B2)	ZENER DIODE		
D35-37			RD6.2ES(B2)	ZENER DIODE		
D35-37			HSS104A	DIODE		
D35-37			1SS131	DIODE		
D38-41			S5688B	DIODE		
D38-41			1SR139-400	DIODE		
D42			HZS2.7N(B2)	ZENER DIODE		
D42			RD2.7ES(B2)	ZENER DIODE		
D43			HSS104A	DIODE		
D43			1SS131	DIODE		
D44			HZS5.1S(B2)	ZENER DIODE		
D44			RD5.1S(B2)	ZENER DIODE		
D45-47			HSS104A	DIODE		
D45-47			1SS131	DIODE		
Q1-4			TRAITR4N*5	TRANSISTOR		
Q5-8			TRAITR4P*5	TRANSISTOR		
Q9-12			2SC2631(R,S)	TRANSISTOR		
Q13-16			2SA992(F,E)	TRANSISTOR		
Q17			TRAITR4N*5	TRANSISTOR		
Q18			TRAITR4P*5	TRANSISTOR		
Q19			2SC2631(R,S)	TRANSISTOR		
Q20,21			2SA992(F,E)	TRANSISTOR		
Q22,23			2SC1845(F,E)	TRANSISTOR		
Q24			2SD2012	TRANSISTOR		
Q24			2SC2061(E,F)	TRANSISTOR		
Q25			DTC143TSA	DIGITAL TRANSISTOR		
Q25			UN4216	DIGITAL TRANSISTOR		
Q26,27			DTC113ZSA	DIGITAL TRANSISTOR		
Q26,27			UN4219	DIGITAL TRANSISTOR		
Q28			DTC124ESA	DIGITAL TRANSISTOR		
Q28			UN4212	DIGITAL TRANSISTOR		
Q29-33			DTC113ZSA	DIGITAL TRANSISTOR		
Q29-33			UN4219	DIGITAL TRANSISTOR		
Q34			2SC2003(L,K)	TRANSISTOR		
Q35			2SC3940A(R,S)	TRANSISTOR		
Q35			2SD863(E,F)	TRANSISTOR		
Q36			DTC124ESA	DIGITAL TRANSISTOR		
Q36			UN4212	DIGITAL TRANSISTOR		
Q37			DTC143TSA	DIGITAL TRANSISTOR		
Q37			UN4216	DIGITAL TRANSISTOR		
Q38			DTC124ESA	DIGITAL TRANSISTOR		
Q38			UN4212	DIGITAL TRANSISTOR		
<b>SURROUND UNIT (X08-273X-XX)</b>						
C1,2			CC73FS11H821J	CHIP C		820PF J
C3,4			CC73FS11H181J	CHIP C		180PF J
C5,6			CO98FM31H332J	MYLAR		3300PF J
C7,8			CE04KW1E470M	ELECTRO		47UF 25WV
C9,10			CC73FSL1H101J	CHIP C		100PF J

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△ CN14			E40-3385-05	PIN ASSY	MCTEQ	
△ CN15-19			E40-4871-05	PIN ASSY	KPY	
△ J1			E03-0148-05	AC OUTLET	EQM	
△ J1			E03-0149-05	AC OUTLET	T	
△ J1			E03-0310-05	AC OUTLET		
△ J1		*	E03-0330-05	AC OUTLET	C	
△ J2			E70-0055-05	SCREW TERMINAL BOARD		
△ J3			E70-0049-05	SCREW TERMINAL BOARD		
△ P2		*	E29-1625-04	LEAD PLATE		
△ F1			F05-3121-05	FUSE (SEMKO)	CTEQ	
△ F1			F05-0078-05	FUSE(GX20)	KP	
△ F1,2			F05-3121-05	FUSE (SEMKO)	MY	
△ F3			F05-2525-05	FUSE (SEMKO)	E	
△ CN1,2			J61-0098-05	WIRE BAND	MY	
△ CN3,4			J13-0075-05	FUSE CLIP	E	
△ CN9,10			J13-0075-05	FUSE CLIP		
△ E7-9			J11-0808-05	WIRE CLAMPER		
△ L1-5			L39-0085-05	PHASE COMPENSATION COIL	KP	
△ T1			L07-0864-05	POWER TRANSFORMER	YMY	
△ T1			L07-0865-05	POWER TRANSFORMER	TE	
△ T1			L07-0867-05	POWER TRANSFORMER	CO	
△ T1			L07-2114-05	POWER TRANSFORMER		
R1-4			RD14NB2E151J	RD	150	1/4W
R5-12			RD14NB2E470J	RD	47	1/4W
R13-20			RD14NB2E101J	RD	100	1/4W
R21-28			RD14NB2E332J	RD	3.3K	1/4W
R49-52		*	RS14KB3A2R7JFR	FL-PROOF RS	2.7	1W
R53-56			RD14NB2E220J	RD	22	1/4W
R57			RD14NB2E151J	RD	150	1/4W
R58-59			RD14NB2E470J	RD	47	1/4W
R60-61			RD14NB2E101J	RD	100	1/4W
R62-63			RD14NB2E332J	RD	3.3K	1/4W
R69		*	RS14KB3A2R7JFR	FL-PROOF RS	2.7	1W
R70			RD14NB2E220J	RD	22	1/4W
△ R71,72			RD14NB2E391J	RD	390	1/4W
△ R73		*	RS14KB3A181JFR	FL-PROOF RS	180	1W
△ R74			RD14NB2E102J	RD	1.0K	1/4W
R84,85			RD14NB2E102J	RD	1.0K	1/4W
△ R88			RS14KB3A471JFR	FL-PROOF RS	470	1W
△ R93			R92-1844-05	CARBON	3.3M	1/2W
R100,101			RD14NB2E3R9J	RD	3.9	1/4W
VR1-5			R12-0605-05	TRIMMING POT.(220 7#)		
△ K1			S76-0085-05	MAGNETIC RELAY	KP	
△ K1			S76-0070-05	MAGNETIC RELAY		
△ K2-5			S76-0061-05	MAGNETIC RELAY	KP	
△ K6			S76-0063-05	MAGNETIC RELAY		
△ K7			S76-0028-05	MAGNETIC RELAY		
△ S2			S31-3010-05	SLIDE SWITCH	KP	
△ TS1			S59-1080-05	THERMAL SWITCH	MYCTEQ	
△ TS2			S79-0020-05	THERMAL SWITCH		
D1-28			HSS104A	DIODE		
D1-28			1SS131	DIODE		
D29			HZS11N(B2)	ZENER DIODE		

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C107,108			CC73FCH1H220J	CHIP C		
C109			CQ93FMG1H562J	MYLAR		
C110-112			CE04KW1E470M	ELECTRO		J
C113,114			CC73FCH1H220J	CHIP C		25WV
C115			CQ93FMG1H562J	MYLAR		J
C116			CE04KW1H220M	ELECTRO		50WV
C117,118			CC73FSL1H121J	CHIP C		J
C119,120			CE04KW1E470M	ELECTRO		25WV
C121			CK73FB1H102K	CHIP C		K
C122,123			CK73FB1H103K	CHIP C		K
C124			CK73FB1H102K	CHIP C		K
C125			CF92FV1H564J	MF-C		0.56UF
C126			CK73FB1E104K	CHIP C		0.10UF
C156			CE04KW1H220M	ELECTRO		50WV
C157			CK73FB1H103K	CHIP C		0.010UF
C158			CK73FB1H102K	CHIP C		1000PF
C159,160			CE04KW1E470M	ELECTRO		47UF
C161			CK73FB1H103K	CHIP C		0.010UF
C162			CK73FB1H102K	CHIP C		1000PF
C163,164			CC73FSL1H101J	CHIP C		J
C165,166			CE04KW1H100M	ELECTRO		10UF
C167,168			CC73FSL1H821J	CHIP C		820PF
C169			CE04KW1H220M	ELECTRO		22UF
C170			CK73FB1H102K	CHIP C		1000PF
C171,172			CC73FSL1H821J	CHIP C		820PF
C173,174			CC73FSL1H221J	CHIP C		220PF
C181			CK73FB1H103K	CHIP C		0.010UF
C182			CK73FB1H102K	CHIP C		1000PF
C183			CE04KW1H4R7M	ELECTRO		4.7UF
C184			CC73FSL1H101J	CHIP C		100PF
C185			CK73FB1H103K	CHIP C		0.010UF
C186			CK73FB1H102K	CHIP C		1000PF
C187			CK73FB1H103K	CHIP C		0.010UF
C188			CK73FB1H102K	CHIP C		1000PF
C189			CK73FB1H103K	CHIP C		0.010UF
C190			CK73FB1H102K	CHIP C		1000PF
C301			CE04KW1A101M	ELECTRO		10WV
C302			CE04KW1E470M	ELECTRO		47UF
C303,304			CK73FB1H102K	CHIP C		1000PF
C305,306			CE04KW1A101M	ELECTRO		10WV
C307,308			CK73FB1H102K	CHIP C		1000PF
C309			CE04KW1A101M	ELECTRO		10WV
C310			CK73FB1H102K	CHIP C		1000PF
C311			CE04KW1A101M	ELECTRO		10WV
C312			CK73FB1E104K	CHIP C		0.10UF
C313			CC73FCH1H102J	CHIP C		1000PF
C314			CK73FB1H822K	CHIP C		820PF
C315			CC73FCH1H070D	CHIP C		7.0PF
C316			CK73FCH1H090D	CHIP C		9.0PF
C317			CK73FB1E104K	CHIP C		0.10UF
C318			CK73FB1H102K	CHIP C		1000PF
C319			CC73FSL1H221J	CHIP C		220PF
C320			CC73FCH1H090D	CHIP C		9.0PF
C321			CK73FB1H102K	CHIP C		1000PF
C322			CC73FCH1H070D	CHIP C		7.0PF

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Ref. No	Add. res	New Parts	Parts No.	Description	Desti- nation	Re- marks
C11,12			CQ93FMG1H152J	MYLAR		J
C13			CK73FB1H103K	CHIP C		K
C14			CK73FB1H102K	CHIP C		K
C15,16			CE04KW1H220M	ELECTRO		50WV
C17			CK73FB1H103K	CHIP C		K
C18			CK73FB1H102K	CHIP C		J
C19			CC73FSL1H101J	CHIP C		K
C21,22			CC73FSL1H821J	CHIP C		J
C23			CC73FSL1H181J	CHIP C		J
C24			CQ93FMG1H471J	MYLAR		J
C25			CQ93FMG1H332J	MYLAR		J
C26			CQ93FMG1H473J	MYLAR		J
C27			CQ93FMG1H152J	MYLAR		J
C28			CQ93FMG1H183J	MYLAR		J
C29			CC73FSL1H101J	CHIP C		J
C30			CQ93FMG1H472J	MYLAR		J
C31,32			CE04KW1H220M	ELECTRO		50WV
C33			CK73FB1H103K	CHIP C		K
C34			CK73FB1H102K	CHIP C		K
C35			CK73FB1H103K	CHIP C		K
C36			CK73FB1H102K	CHIP C		K
C37,38			CE04KW1H100M	ELECTRO		10UF
C39,40			CC73FSL1H121J	CHIP C		120PF
C41,42			CC73FSL1H821J	CHIP C		820PF
C43,44			CC73FSL1H181J	CHIP C		180PF
C45,46			CQ93FMG1H332J	MYLAR		J
C47,48			CC73FSL1H101J	CHIP C		100PF
C49			CK73FB1H103K	CHIP C		0.010UF
C50			CK73FB1H102K	CHIP C		1000PF
C51,52			CQ93FMG1H152J	MYLAR		J
C53			CK73FB1H103K	CHIP C		0.010UF
C54			CK73FB1H102K	CHIP C		1000PF
C55,60			CE04KW1H100M	ELECTRO		10UF
C61,64			CF92FV1H244J	MF-C		0.22UF
C65,66			CC73FSL1H101J	CHIP C		100PF
C67,68			CE04KW1H4R7M	ELECTRO		4.7UF
C81,84			CF92FV1H224J	MF-C		0.22UF
C85,86			CC73FSL1H101J	CHIP C		100PF
C87,88			CE04KW1H4R7M	ELECTRO		4.7UF
C89			CK73FB1H103K	CHIP C		0.010UF
C90			CK73FB1H102K	CHIP C		1000PF
C91			CK73FB1H103K	CHIP C		0.010UF
C92			CF92FV1H224J	MF-C		0.22UF
C93			CK73FB1H102K	CHIP C		1000PF
C94			CF92FV1H224J	MF-C		0.22UF
C95			CC73FSL1H101J	CHIP C		100PF
C96			CE04KW1H4R7M	ELECTRO		4.7UF
C97			CC73FSL1H101J	CHIP C		100PF
C98			CC73FSL1H470J	CHIP C		47PF
C99			CF92FV1H564J	MF-C		0.56UF
C100			CF92FV1H274J	MF-C		0.27UF
C101,102			CE04KW1H220M	ELECTRO		50WV
C103,104			CE04KW1E470M	ELECTRO		47UF
C105			CF92FV1H274J	MF-C		0.27UF
C106			CE04KW1E470M	ELECTRO		47UF

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C543,544			CE04KW1H220M	ELECTRO	
C545			CK73FB1H102K	CHIP C	50WV
C546			CK73FB1H103K	CHIP C	K
C547,548			CE04KW1H220M	ELECTRO	0,010UF
C549,550			CC73FCH1H220J	CHIP C	50WV
C551			CK73FB1H102K	CHIP C	J
C552			CK73FB1H103K	CHIP C	K
C553,554			CE04KW1H0R1M	ELECTRO	0,1UF
C555,556			CK73FB1H152K	CHIP C	50WV
C559,560			CC73FCH1H220J	CHIP C	1500PF
C563			CK73FB1H102K	CHIP C	22PF
C564			CK73FB1H103K	CHIP C	K
C565,568			CE04KW1H4R7M	ELECTRO	1000PF
C569,570			CC73FSL1H151J	CHIP C	4,7UF
C571,572			CC73FSL1H101J	CHIP C	50WV
C573,574			CE04KW1H220M	ELECTRO	100PF
C575			CK73FB1H102K	CHIP C	22UF
C576			CK73FB1H103K	CHIP C	K
C577,578			CE04KW1H220M	ELECTRO	0,010UF
C579,580			CC73FCH1H220J	CHIP C	50WV
C581			CK73FB1H102K	CHIP C	J
C582			CK73FB1H103K	CHIP C	K
C587,588			CE04KW1H4R7M	ELECTRO	1000PF
C589,590			CC73FCH1H220J	CHIP C	4,7UF
C593			CK73FB1H102K	CHIP C	22PF
C594			CK73FB1H103K	CHIP C	K
C595,598			CE04KW1H4R7M	ELECTRO	1000PF
C599,600			CC73FSL1H151J	CHIP C	4,7UF
C601,602			CC73FSL1H101J	CHIP C	50WV
C603,604			CE04KW1H220M	ELECTRO	22UF
C605			CK73FB1H102K	CHIP C	1000PF
C606			CK73FB1H103K	CHIP C	K
C607,608			CE04KW1H220M	ELECTRO	0,010UF
C609,610			CC73FCH1H220J	CHIP C	22UF
C611			CK73FB1H102K	CHIP C	22PF
C612			CK73FB1H103K	CHIP C	K
C615,620			CE04KW1H220J	ELECTRO	0,010UF
C701-712			CC73FSL1H101J	CHIP C	22PF
C713			CK73FB1H102K	CHIP C	J
C714			CK73FB1H103K	CHIP C	K
C715			CK73FB1H102K	CHIP C	K
C716			CK73FB1H103K	CHIP C	K
C717,718			CC73FSL1H470J	CHIP C	47PF
C801-812			CC73FCH1H100D	CHIP C	10PF
C813			CK73EB1H104K	CHIP C	0,10UF
C814			CE04KW1H4R7M	ELECTRO	4,7UF
C815			CK73EB1H104K	CHIP C	0,10UF
C816			CE04KW1H101M	ELECTRO	1,0UF
C817			CK73EB1H104K	CHIP C	0,10UF
C818			CE04KW1H4R7M	ELECTRO	4,7UF
C901-903			CK73FB1H102K	CHIP C	1000PF
C904			CC73FSL1H221J	CHIP C	220PF
CN1,2		*	E40-9836-05	SOCKET FOR PIN ASSY	KP
CN51,52		*	E40-9836-05	SOCKET FOR PIN ASSY	KP

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C323-325			CC73FCH1H220J	CHIP C	J
C327			CC73FCH1H090D	CHIP C	D
C328			CC73FCH1H070D	CHIP C	D
C329			CK73FB1H102K	CHIP C	K
C330			CK73FB1E104K	CHIP C	K
C331			CC73FCH1H090D	CHIP C	D
C332			CC73FCH1H070D	CHIP C	D
C333			CK73FB1H822K	CHIP C	K
C334			CK73FB1H103K	CHIP C	K
C335			CK73FB1E104K	CHIP C	K
C336			CK73FB1H103K	CHIP C	K
C337			CK73FSL1H101J	CHIP C	K
C338,339			CC73FSL1H102K	CHIP C	J
C340			CE04KW1A101M	ELECTRO	10WV
C341			CK73FB1H102K	CHIP C	K
C342			CE04KW1E470M	ELECTRO	25WV
C343			CK73FB1E104K	CHIP C	K
C344			CK73FB1H103K	CHIP C	K
C345			CK73FB1H102K	CHIP C	K
C347,348			CK73FB1H102K	CHIP C	K
C349			CC73FCH1H220J	CHIP C	J
C361-363			CK73FB1E104K	CHIP C	K
C364,365			CC73FSL1H101J	CHIP C	J
C366			CE04KW1E470M	ELECTRO	25WV
C367			CK73FE1C224Z	CHIP C	Z
C368,369			CK73FB1H102K	CHIP C	K
C370			CC73FCH1H220J	CHIP C	J
C371,372			CC73FSL1H470J	CHIP C	47PF
C373			CK73FB1H102K	CHIP C	K
C374			CE04KW1E470M	ELECTRO	47UF
C401,402			CK73FB1E104K	CHIP C	K
C403			CK73FB1H103K	CHIP C	KP
C404			CK73FB1H102K	CHIP C	KP
C405,406			CK73FB1E104K	CHIP C	KP
C407			CK73FB1H102K	CHIP C	KP
C501,502			CE04KW1H100M	ELECTRO	10UF
C503			CK73FB1H103K	CHIP C	50WV
C504			CK73FB1H102K	CHIP C	K
C505,506			CE04KW1H4R7M	ELECTRO	0,010UF
C509,510			CC73FSL1H151J	CHIP C	50WV
C511,512			CC73FSL1H101J	CHIP C	J
C513,514			CE04KW1H220M	ELECTRO	22UF
C515			CK73FB1H102K	CHIP C	K
C516			CK73FB1H103K	CHIP C	K
C517,518			CE04KW1H220M	ELECTRO	22UF
C519,520			CC73FCH1H220J	CHIP C	J
C521			CK73FB1H102K	CHIP C	K
C522			CK73FB1H103K	CHIP C	K
C525,528			CE04KW1H4R7M	ELECTRO	0,010UF
C529,530			CC73FCH1H220J	CHIP C	50WV
C533			CK73FB1H102K	CHIP C	K
C534			CK73FB1H103K	CHIP C	K
C535-538			CE04KW1H4R7M	ELECTRO	0,010UF
C539,540			CC73FSL1H151J	CHIP C	150PF
C541,542			CC73FSL1H101J	CHIP C	100PF

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# KR-V999D/1090VR

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Ref. No	Add-ress	New Parts	Parts No.	Description	Desig-nation	Re-marks
R88_99			RK73FB2A512J	CHIP R	CHIP R	1/10W
R111_112			RK73FB2A104J	CHIP R	CHIP R	1/10W
R113_114			RK73FB2A123J	CHIP R	CHIP R	1/10W
R115_116			RK73FB2A203J	CHIP R	CHIP R	1/10W
R117_118			RK73FB2A104J	CHIP R	CHIP R	1/10W
R119_120			RK73FB2A103J	CHIP R	CHIP R	1/10W
R121_122			RK73FB2A222J	CHIP R	CHIP R	1/10W
R123_124			RK73FB2A123J	CHIP R	CHIP R	1/10W
R125_128			RK73FB2A222J	CHIP R	CHIP R	1/10W
R129_130			RK73FB2A103J	CHIP R	CHIP R	1/10W
R131-135			RK73FB2A104J	CHIP R	CHIP R	1/10W
R136			RK73FB2A103J	CHIP R	CHIP R	1/10W
R137_138			RK73FB2A512J	CHIP R	CHIP R	1/10W
R151_152			RK73FB2A104J	CHIP R	CHIP R	1/10W
R153_154			RK73FB2A222J	CHIP R	CHIP R	1/10W
R155_156			RK73FB2A123J	CHIP R	CHIP R	1/10W
R157_158			RK73FB2A203J	CHIP R	CHIP R	1/10W
R159_160			RK73FB2A123J	CHIP R	CHIP R	1/10W
R161-164			RK73FB2A472J	CHIP R	CHIP R	1/10W
R165_166			RK73FB2A331J	CHIP R	CHIP R	1/10W
R300			RK73FB2A101J	CHIP R	CHIP R	1/10W
R301			RK73FB2A105J	CHIP R	CHIP R	1/10W
R303			RK73FB2A100J	CHIP R	CHIP R	1/10W
R304-307			RK73FB2A101J	CHIP R	CHIP R	1/10W
R308			RK73FB2A104J	CHIP R	CHIP R	1/10W
R309-313			RK73FB2A101J	CHIP R	CHIP R	1/10W
R314-316			RK73FB2A102J	CHIP R	CHIP R	1/10W
R317-319			RK73FB2A101J	CHIP R	CHIP R	1/10W
R320			RK73FB2A473J	CHIP R	CHIP R	1/10W
R321-323			RK73FB2A101J	CHIP R	CHIP R	1/10W
R324			RK73FB2A102J	CHIP R	CHIP R	1/10W
R325-328			RK73FB2A101J	CHIP R	CHIP R	1/10W
R329			RK73FB2A104J	CHIP R	CHIP R	1/10W
R330			RK73FB2A101J	CHIP R	CHIP R	1/10W
R331			RK73FB2A104J	CHIP R	CHIP R	1/10W
R332			RK73FB2A105J	CHIP R	CHIP R	1/10W
R333			RK73FB2A104J	CHIP R	CHIP R	1/10W
R334_335			RK73FB2A101J	CHIP R	CHIP R	1/10W
R338-345			RK73FB2A104J	CHIP R	CHIP R	1/10W
R346_347			RK73FB2A101J	CHIP R	CHIP R	1/10W
R348			RK73FB2A104J	CHIP R	CHIP R	1/10W
R349_350			RK73FB2A101J	CHIP R	CHIP R	1/10W
R351-376			RK73FB2A104J	CHIP R	CHIP R	1/10W
R377-379			RK73FB2A101J	CHIP R	CHIP R	1/10W
R380-382			RK73FB2A104J	CHIP R	CHIP R	1/10W
R384_385			RK73FB2A750J	CHIP R	CHIP R	1/10W
R387-398			RK73FB2A104J	CHIP R	CHIP R	1/10W
R399			RK73FB2A750J	CHIP R	CHIP R	1/10W
R400-402			RD14NB2E471J	RD	RD	1/4W
R403			RK73FB2A102J	CHIP R	CHIP R	1/10W
R404			RD14NB2E470J	RD	RD	1/4W
R405			RK73FB2A102J	CHIP R	CHIP R	1/10W
R406-408			RK73FB2A102J	CHIP R	CHIP R	1/10W
R409			RK73FB2A101J	CHIP R	CHIP R	1/10W
R410-413			RK73FB2A223J	CHIP R	CHIP R	1/10W

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J1			E11-0200-05	MINIATURE PHONE JACK(5P)	KP	
J2			E11-0344-05	MINIATURE PHONE JACK	KP	
J3			E63-0174-05	PHONO JACK		
J71_72			E63-0139-15	MINIATURE PHONE JACK(3P)	KP	
J73-75			E11-0289-05	MINIATURE PHONE JACK(3P)		
L1-7			L92-0044-05	FERRITE CORE		
X1			L78-0294-05	RESONATOR (10.000M)		
X2		*	L77-2194-05	CRYSTAL RESONATOR(5.00M)		
X3		*	L77-2192-05	CRYSTAL RESONATOR(12.288M)		
R1_2			RK73FB2A103J	CHIP R	CHIP R	1/10W
R3_4			RK73FB2A512J	CHIP R	CHIP R	1/10W
R5_6			RK73FB2A912J	CHIP R	CHIP R	1/10W
R7_8			RK73FB2A103J	CHIP R	CHIP R	1/10W
R13_14			RK73FB2A512J	CHIP R	CHIP R	1/10W
R15_16			RK73FB2A104J	CHIP R	CHIP R	1/10W
R17_18			RK73FB2A473J	CHIP R	CHIP R	1/10W
R19_20			RK73FB2A104J	CHIP R	CHIP R	1/10W
R21_22			RK73FB2A103J	CHIP R	CHIP R	1/10W
R23			RK73FB2A512J	CHIP R	CHIP R	1/10W
R24			RK73FB2A822J	CHIP R	CHIP R	1/10W
R25			RK73FB2A912J	CHIP R	CHIP R	1/10W
R26			RK73FB2A182J	CHIP R	CHIP R	1/10W
R27-29			RK73FB2A103J	CHIP R	CHIP R	1/10W
R30			RK73FB2A104J	CHIP R	CHIP R	1/10W
R31			RK73FB2A103J	CHIP R	CHIP R	1/10W
R32			RK73FB2A100J	CHIP R	CHIP R	1/10W
R33			RK73FB2A512J	CHIP R	CHIP R	1/10W
R34			RK73FB2A182J	CHIP R	CHIP R	1/10W
R35_36			RK73FB2A104J	CHIP R	CHIP R	1/10W
R37-40			RK73FB2A471J	CHIP R	CHIP R	1/10W
R41_42			RK73FB2A103J	CHIP R	CHIP R	1/10W
R43_44			RK73FB2A512J	CHIP R	CHIP R	1/10W
R45_46			RK73FB2A912J	CHIP R	CHIP R	1/10W
R47_48			RK73FB2A103J	CHIP R	CHIP R	1/10W
R49_50			RK73FB2A471J	CHIP R	CHIP R	1/10W
R51			RK73FB2A103J	CHIP R	CHIP R	1/10W
R52			RK73FB2A104J	CHIP R	CHIP R	1/10W
R53_54			RK73FB2A512J	CHIP R	CHIP R	1/10W
R55_56			RK73FB2A104J	CHIP R	CHIP R	1/10W
R57-59			RK73FB2A203J	CHIP R	CHIP R	1/10W
R61_62			RK73FB2A104J	CHIP R	CHIP R	1/10W
R63_64			RK73FB2A133J	CHIP R	CHIP R	1/10W
R65_66			RK73FB2A622J	CHIP R	CHIP R	1/10W
R67_68			RK73FB2A104J	CHIP R	CHIP R	1/10W
R81_82			RK73FB2A104J	CHIP R	CHIP R	1/10W
R83_84			RK73FB2A133J	CHIP R	CHIP R	1/10W
R85_86			RK73FB2A622J	CHIP R	CHIP R	1/10W
R87_88			RK73FB2A104J	CHIP R	CHIP R	1/10W
R89_90			RK73FB2A203J	CHIP R	CHIP R	1/10W
R91			RK73FB2A104J	CHIP R	CHIP R	1/10W
R92			RK73FB2A622J	CHIP R	CHIP R	1/10W
R93			RK73FB2A133J	CHIP R	CHIP R	1/10W
R94_95			RK73FB2A104J	CHIP R	CHIP R	1/10W
R96_97			RK73FB2A203J	CHIP R	CHIP R	1/10W

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Ref. No	Add-ress	New Parts	Parts No.	Description	Desti-nation	Re-marks
R705.706			RK73FB2A102J	CHIP R		
R707.708			RK73FB2A224J	CHIP R		
R709.710			RK73FB2A221J	CHIP R		
R711.712			RK73FB2A104J	CHIP R		
R713.714			RK73FB2A102J	CHIP R		
R715.716			RK73FB2A104J	CHIP R		
R717.718			RK73FB2A102J	CHIP R		
R719.720			RK73FB2A104J	CHIP R		
R721.722			RK73FB2A102J	CHIP R		
R723.724			RK73FB2A104J	CHIP R		
R725.728			RK73FB2A103J	CHIP R		
R801-814			RK73FB2A473J	CHIP R		
R815			RK73FB2A562J	CHIP R		
R816.817			RK73FB2A473J	CHIP R		
R818			RK73FB2A562J	CHIP R		
R819.820			RK73FB2A473J	CHIP R		
R821			RK73FB2A562J	CHIP R		
R802			RK73FB2A913J	CHIP R		
R903			RK73FB2A223J	CHIP R		
R904-906			RD14NB2E471J	RD		
D1 .2			DA204K	DIODE		
D3 -5			DA110	DIODE		
D6			DA204K	DIODE		
D41			DA204K	DIODE		
D501			DA204K	DIODE		
D502-504			MA110	DIODE		
D701			DA204K	DIODE		
D702.703			MA110	DIODE		
D704			MA110	DIODE		
D801-803		*	UDZ18B	ZENER DIODE		
IC1 -16			NUM4580E	ANALOGUE IC		
IC1 -16			NUM4580ED	ANALOGUE IC		
IC17			TC9163AF	MOS-IC		
IC18			TC9162AF	MOS-IC		
IC19.20			TC7W00FU	MOS-IC		
IC31			TA7805S	IC(VOLTAGE REGULATOR/ +5V)		
IC31			UPC7805AHF	ANALOGUE IC		
IC32		*	UPD78016FGC522	MI-COM IC		
IC33		*	DSPF56009FJ81	MOS-IC		
IC34		*	CS4226-KQ	MOS-IC		
IC35			TC74HC1U04F	IC(HEX INVERTER SMD)		
IC35		*	LH64256CK-70	MEMORY IC		
IC37.38			TA7805S	IC(VOLTAGE REGULATOR/ +5V)		
IC37.38			UPC7805AHF	ANALOGUE IC		
IC39			TC74HC0U04F	IC(HEX INVERTER SMD)		
IC51		*	TC9412AP	MOS-IC		
IC52.53			NUM4580E	ANALOGUE IC		
IC52.53			NUM4580ED	ANALOGUE IC		
IC54		*	TC9412AP	MOS-IC		
IC55.56			NUM4580E	ANALOGUE IC		
IC55.56			NUM4580ED	ANALOGUE IC		
IC57		*	TC9412AP	MOS-IC		
IC58.59			NUM4580E	ANALOGUE IC		
IC58.59			NUM4580ED	ANALOGUE IC		
IC60		*	TC9412AP	MOS-IC		

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R414			RK73FB2A102J	CHIP R		
R501.502			RK73FB2A104J	CHIP R		
R503.504			RK73FB2A105J	CHIP R		
R505.506			RK73FB2A104J	CHIP R		
R507.508			RK73FB2A102J	CHIP R		
R509.510			RK73FB2A224J	CHIP R		
R511-514			RK73FB2A104J	CHIP R		
R515.516			RK73FB2A222J	CHIP R		
R517.518			RK73FB2A102J	CHIP R		
R519.520			RK73FB2A133J	CHIP R		
R521.522			RK73FB2A222J	CHIP R		
R523.524			RK73FB2A272J	CHIP R		
R525.524			RK73FB2A362J	CHIP R		
R529.530			RK73FB2A244J	CHIP R		
R531.532			RK73FB2A100J	CHIP R		
R533.534			RK73FB2A105J	CHIP R		
R535.536			RK73FB2A184J	CHIP R		
R537.538			RK73FB2A102J	CHIP R		
R539.540			RK73FB2A241J	CHIP R		
R541-544			RK73FB2A104J	CHIP R		
R545.546			RK73FB2A222J	CHIP R		
R547.548			RK73FB2A102J	CHIP R		
R549.550			RK73FB2A334J	CHIP R		
R551.552			RK73FB2A822J	CHIP R		
R553.554			RK73FB2A133J	CHIP R		
R555.556			RK73FB2A272J	CHIP R		
R557.556			RK73FB2A362J	CHIP R		
R557.558			RK73FB2A222J	CHIP R		
R559.560			RK73FB2A244J	CHIP R		
R563.564			RK73FB2A105J	CHIP R		
R565.566			RK73FB2A184J	CHIP R		
R567.568			RK73FB2A102J	CHIP R		
R569.570			RK73FB2A241J	CHIP R		
R571-574			RK73FB2A104J	CHIP R		
R575.576			RK73FB2A222J	CHIP R		
R577.578			RK73FB2A102J	CHIP R		
R583.584			RK73FB2A133J	CHIP R		
R585.586			RK73FB2A272J	CHIP R		
R585.586			RK73FB2A362J	CHIP R		
R587.588			RK73FB2A222J	CHIP R		
R589.590			RK73FB2A244J	CHIP R		
R593.594			RK73FB2A105J	CHIP R		
R595.596			RK73FB2A184J	CHIP R		
R597.598			RK73FB2A102J	CHIP R		
R599.600			RK73FB2A241J	CHIP R		
R601-604			RK73FB2A104J	CHIP R		
R605.606			RK73FB2A222J	CHIP R		
R607.608			RK73FB2A102J	CHIP R		
R613.614			RK73FB2A133J	CHIP R		
R615.616			RK73FB2A272J	CHIP R		
R615.616			RK73FB2A362J	CHIP R		
R617.618			RK73FB2A222J	CHIP R		
R619.620			RK73FB2A244J	CHIP R		
R701.702			RK73FB2A221J	CHIP R		
R703.704			RK73FB2A224J	CHIP R		

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C412,413		*	CK45FF1H103ZMM	CERAMIC		
C415-417			CK45FE2H103PMM	CERAMIC	Z	
C420			CK45FE2H103PMM	CERAMIC	P	
C421			C91-1488-05	MF	0.010UF	
C431			CK45FB1H471KMM	CERAMIC	6800PF	MCTEQ
					470PF	
					K	
C432			CE04KW1H100M	ELECTRO	10UF	50WV
CN101,102			E40-9853-05	PIN ASSY		
CN103			E40-9849-05	PIN ASSY		
CN104			E40-9847-05	PIN ASSY		
CN105,106			E40-9853-05	PIN ASSY		
			E40-9849-05	PIN ASSY		
CN108			E40-9848-05	PIN ASSY		
CN109			E40-9847-05	PIN ASSY		
CN110			E40-9846-05	PIN ASSY		
CN111		*	E40-4804-05	SOCKET FOR PIN ASSY		
CN401			E40-4808-05	PIN ASSY		
CN402			E40-4204-05	FLAT CABLE CONNECTOR		
CN403			E40-4295-05	FLAT CABLE CONNECTOR		
J301			E11-0293-05	MINIATURE PHONE JACK(2P 3#)		
F11-13			F05-1222-05	FUSE (SEMKO)	(250V T1.25A L)	MYCTEQ
F14			F05-0067-05	FUSE (5X20)		KP
F15,16			F05-5016-05	FUSE (SEMKO)	(250V T500MA)	MYCTEQ
F17			F05-0066-05	FUSE (5X20)		KP
F17			F05-1623-05	FUSE (SEMKO)	(250V T1.6AL)	MYCTEQ
F17		*	F05-0068-05	FUSE (5X20)		KP
F17			F05-1222-05	FUSE (SEMKO)	(250V T1.25A L)	MYCTEQ
F17			F05-0067-05	FUSE (5X20)		KP
CN411-424			J13-0075-05	FUSE CLIP		
L101			L40-1021-14	SMALL FIXED INDUCTOR(1.0MH,K)		KP
L108			L92-0044-05	FERRITE CORE		
X1			L78-0267-05	RESONATOR	(4.194MHZ)	
CP1,2			R90-0803-05	MULTI-COMP	100KX7	1/4W
CP3			R90-0500-05	MULTI-COMP	100KX6	1/4W
CP4			R90-0855-05	MULTI-COMP	100KX5	
CP5			R90-0851-05	MULTI-COMP	100KX11	
CP6			R90-0482-05	MULTI-COMP	100KX4	1/6W
R207		*	RD14NB2E1R8J	RD	1.8	1/4W
R208			RD14NB2E2R7J	RD	2.7	1/4W
R211,212			RD14NB2E102J	RD	1.0K	1/4W
R215,216			RD14NB2E221J	RD	220	1/4W
R231			RD14NB2E471J	RD	470	1/4W
R232			RD14NB2E681J	RD	680	1/4W
R233,234			RD14NB2E2R2J	RD	2.2	1/4W
R401			RS14KB3A472JFR	FL-PROOF RS	4.7K	1W
R402		*	RD14NB2E102J	RD	1.0K	1/4W
R411,412			RD14NB2E681J	RD	6.8	1/4W
R413			RD14NB2E681J	RD	10	1/4W
R414			RD14NB2E100J	RD	10	1/4W
R415			RD14NB2E681J	RD	680	1/4W
S1			S40-1138-05	PUSH SWITCH (POWER TYPE)		MCTEQ
D201,202			HZS15S(B)	ZENER DIODE		

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Ref. No	Add-ress	New Parts	Parts No.	Description	Desig-nation	Re-marks
IC61,62			NUM4580E	ANALOGUE IC		
IC61,62			NUM4580ED	ANALOGUE IC		
IC71,72			TC9163AF	MOS-IC		KP
Q1-3			DTIC124EUA	DIGITAL TRANSISTOR		KP
Q1-3			UN5212	DIGITAL TRANSISTOR		
Q4,5			DTA124EUA	DIGITAL TRANSISTOR		KP
Q4,5			UN5112	DIGITAL TRANSISTOR		KP
Q501-516			2SC4213(B)	TRANSISTOR		KP
Q517			DTIC124EUA	DIGITAL TRANSISTOR		KP
Q517			UN5212	DIGITAL TRANSISTOR		KP
Q518			2SB1308(Q,R)	TRANSISTOR		KP
Q801-803			DTIC113ZUA	DIGITAL TRANSISTOR		
Q801-803			UN5219	DIGITAL TRANSISTOR		
A1			W02-1181-05	OPTIC RECEIVING MODULE		
<b>SUB CIRCUIT UNIT (X13-747X-XX)</b>						
C203,204		*	CK45FB1H222KMM	CERAMIC	2200PF	K
C205,206			CE04KW1E470M	ELECTRO	47UF	25WV
C207,208			CK45FE1H103ZMM	CERAMIC	0.010UF	Z
C209			CE04KW1V100M	ELECTRO	10UF	35WV
C221			CE04KW1V100M	ELECTRO	10UF	35WV
C223			CE04KW1A101M	ELECTRO	100UF	10WV
C224			CF92FV1H104J	MF-C	0.10UF	J
C225			CE04KW1V100M	ELECTRO	10UF	35WV
C226			CE04KW1E470M	ELECTRO	47UF	25WV
C227			CE04KW1A101M	ELECTRO	100UF	10WV
C228			CF92FV1H104J	MF-C	0.10UF	J
C229			CE04KW1E470M	ELECTRO	47UF	25WV
C231,232			CE04KW1H100M	ELECTRO	10UF	50WV
C233,234			CK45FE1H103ZMM	CERAMIC	0.010UF	Z
C235,236			CE04KW1H100M	ELECTRO	10UF	50WV
C237,238			CK45FE1H103ZMM	CERAMIC	0.010UF	Z
C239			CE04KW1H100M	ELECTRO	10UF	50WV
C240,241			CF92FV1H104J	MF-C	0.10UF	J
C242,243			CE04KW1H100M	ELECTRO	10UF	50WV
C251,252			CE04KW1E470M	ELECTRO	47UF	25WV
C253			CF92FV1H104J	MF-C	0.10UF	J
C254,255			CE04KW1E470M	ELECTRO	47UF	25WV
C256			CF92FV1H333J	MF-C	0.033UF	J
C301			CE04KW1H010M	ELECTRO	1.0UF	6.3WV
C302			CE04KW0J221M	ELECTRO	220UF	50WV
C303			C90-1826-05	BACKUP-C	0.047F	5.5WV
C304			CK45FE1H103ZMM	CERAMIC	0.010UF	Z
C306			CE04KW1H010M	ELECTRO	1.0UF	50WV
C307,308		*	CK45FE1H103ZMM	CERAMIC	0.010UF	Z
C321		*	CK45FF1H103ZMM	CERAMIC	0.010UF	Z
C322,323		*	CK45FB1H02KMM	CERAMIC	1000PF	K
C324		*	CK45FF1H103ZMM	CERAMIC	0.010UF	Z
C351,352		*	CC45FSL1H221JN	CERAMIC	220PF	J
C353		*	CK45FF1H103ZMM	CERAMIC	0.010UF	Z
C401-405		*	CE04KW1V102M	ELECTRO	1000UF	35WV
C406			CE04KW1J471M	ELECTRO	470UF	63WV
C407			CE04KW1V471M	ELECTRO	470UF	35WV
C408			CK45FE1H103ZMM	CERAMIC	0.010UF	Z
C409,410			CE04KW1C222M	ELECTRO	2200UF	16WV

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# KR-V999D/1090VR

## PARTS LIST

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Ref. No	Add. res	New Parts	Parts No.	Description	Desti- nation	Re- marks
Q202			2SA1048(Y,GR)	TRANSISTOR		
Q203-205			2SA1309(A,Q,R)	TRANSISTOR		
Q203-205			2SC2458(Y,GR)	TRANSISTOR		
Q206,207			2SC3311(A,Q,R)	TRANSISTOR		
Q208			2SC2878(B)	TRANSISTOR		
Q208			DTA113ZSA	DIGITAL TRANSISTOR	MYCTEQ	
Q209			UN4119	DIGITAL TRANSISTOR	MYCTEQ	
Q209			DTA113ZSA	DIGITAL TRANSISTOR	MYCTEQ	
Q210			UN4219	DIGITAL TRANSISTOR	MYCTEQ	
Q210			DTA113ZSA	DIGITAL TRANSISTOR		
Q211			UN4119	DIGITAL TRANSISTOR		
Q212			2SC2458(Y,GR)	TRANSISTOR		
Q212			2SC3311(A,Q,R)	TRANSISTOR		
Q213,214			2SC2003(L,K)	TRANSISTOR		

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Ref. No	Add. res	New Parts	Parts No.	Description	Desti- nation	Re- marks
C318			CE04KW1C331M	ELECTRO	MYCTEQ	
C319		*	CK45FF1H103ZMM	CERAMIC	MYCTEQ	
C320,321		*	CK45FF1H103ZMM	CERAMIC		
C322-324		*	CC45FSL1H101JN	CERAMIC		
C325		*	CE04KW1H100M	ELECTRO	MYCTEQ	
C326		*	CK45FF1H103ZMM	CERAMIC		
C327		*	CE04KW1H100M	ELECTRO		
C328		*	CK45FF1H103ZMM	CERAMIC		
C329		*	CC45FSL1H100DN	CERAMIC		
TC201			C05-0097-05	CERAMIC TRIMMER CAPACITOR(30PF)		
TC202			C05-0097-05	CERAMIC TRIMMER CAPACITOR(30PF)	MYCTEQ	
CN1			E40-9832-05	SOCKET FOR PIN ASSY		
CN2			E40-9830-05	SOCKET FOR PIN ASSY		
CN201			E40-9831-05	SOCKET FOR PIN ASSY		
CN202			E40-9832-05	SOCKET FOR PIN ASSY		
J1_2			E63-0139-15	PHONO JACK		
J3_4			E63-0169-05	PHONO JACK		
J201			E63-0162-05	PHONO JACK		
J202			E63-0163-05	PHONO JACK		
L201			L40-2201-17	SMALL FIXED INDUCTOR(22UH,K)	MYCTEQ	
L202			L40-2201-17	SMALL FIXED INDUCTOR(22UH,K)		
X201		*	L77-2201-05	CRYSTAL RESONATOR(4.31818MHz)		
X202			L78-0272-05	RESONATOR (503.5K)	MYCTEQ	
X203		*	L77-2202-05	CRYSTAL RESONATOR(17.73447MHz)		
X204			L78-0300-05	RESONATOR (500K)	MYCTEQ	
R317			RD14NB2E470J	RD	MYCTEQ	
R326			RD14NB2E100J	RD	MYCTEQ	
R327			RD14NB2E100J	RD	MYCTEQ	
R328			RD14NB2E4R7J	RD	MYCTEQ	
D11-13			HSS104	DIODE		
D11-13			ISS133	DIODE		
D201,202			HSS104	DIODE	MYCTEQ	
D201,202			ISS133	DIODE	MYCTEQ	
IC1-6			NUM4580D	IC(OP AMP X2)		
IC1-6			NUM4580-D	IC(OP AMP X2)		
IC7_8			TC9164N	MOS-IC		
IC9			TC9162N	MOS-IC		
IC201		*	SN761200N	ANALOGUE IC		
IC202			TC74HC4051AP	IC(ANALOG MULTIPLEXER)		
IC203			MC14577CP	ANALOGUE IC		
IC204		*	MB90089PF-188	CUSTOM IC		
IC205		*	MM1067XD	IC(SYNC SEPARATION)	MYCTEQ	
IC206		*	MB90089PF-188	CUSTOM IC	MYCTEQ	
IC207			MM1067XD	IC(SYNC SEPARATION)		
IC208		*	TC74HC4053AP	IC(ANALOG MULTIPLEXER)	MYCTEQ	
IC209			LA7950	ANALOGUE IC	MYCTEQ	
Q1-6			2SC2878(B)	TRANSISTOR		
Q7			DTA124ESA	DIGITAL TRANSISTOR		
Q7			UN4112	DIGITAL TRANSISTOR		
Q8_9			2SC2458(Y,GR)	TRANSISTOR		
Q8_9			2SC3311(A,Q,R)	TRANSISTOR		
Q201			2SC2458(Y,GR)	TRANSISTOR		
Q201			2SC3311(A,Q,R)	TRANSISTOR		

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# KR-V999D/1090VR

## SPECIFICATIONS

### AUDIO section

Rated power output during STEREO operation

150 watts per channel minimum RMS, both channels driven, at 6 Ω from 20 Hz to 20 kHz with no more than 0.03 % total harmonic distortion.(FTC)

Rated power output during SURROUND operation

**FRONT**  
(1kHz, 0.7% T.H.D. at 6 Ω) ..... 150 W + 150 W  
**CENTER**  
(1kHz, 0.7% T.H.D. at 6 Ω) ..... 150 W  
**SURROUND**  
(1kHz, 0.7% T.H.D. at 6 Ω) ..... 150 W + 150 W

Total harmonic distortion ..... 0.003%(1 kHz, 75W, 6 Ω)

Frequency response  
CD ..... 5 Hz ~ 85 kHz, +0.5 dB, -3 dB

Signal to noise ratio (IHF'66)  
PHONO (MM) ..... 77 dB  
CD ..... 97 dB

Input sensitivity / impedance  
PHONO (MM) ..... 2.5 mV / 47 kΩ  
CD ..... 200 mV / 47 kΩ

Output level / impedance  
TAPE REC ..... 200 mV / 470 Ω  
PRE OUT (FRONT, CENTER, SURROUND, SUBWOOFER)  
..... 1 V / 1.2 kΩ

Tone control  
BASS ..... ±10 dB (at 100 Hz)  
TREBLE ..... ±10 dB (at 10 kHz)

LOUDNESS control  
VOLUME at -40dB level ...+7 dB(100 Hz), +3 dB(10 kHz)

### DIGITAL AUDIO section

Sampling frequency ..... 32 kHz, 44.1 kHz, 48 kHz

Input level / impedance / wave length  
Optical ..... -15 dBm ~ -21 dBm, 600 nm ±30nm  
Coaxial ..... 0.5 Vp-p / 75 Ω

### VIDEO section

Video format ..... NTSC

VIDEO inputs / outputs

VIDEO (composite) ..... 1 Vp-p / 75 Ω  
S-VIDEO (luminance signal) ..... 1 Vp-p / 75 Ω  
(chrominance signal) ..... 0.286 Vp-p / 75 Ω

### FM tuner section

Tuning frequency range ..... 87.5 MHz ~ 108 MHz

Usable sensitivity (MONO)  
..... 1.6uV (75 Ω)/ 15.2 dBf (75 kHz DEV., SINAD 30 dB)

50dB quieting sensitivity  
STEREO ..... 31.6uV (75 W)/ 41.2 dBf

Total harmonic distortion (1 kHz)  
(for U.S.A. and Canada)

MONO ..... 0.2 % (65 dBf input)  
STEREO ..... 0.5 % (65 dBf input)  
(except for U.S.A. and Canada)  
MONO ..... 0.6 % (65 dBf input)  
STEREO ..... 0.7 % (65 dBf input)

Signal to noise ratio (1 kHz, 75 kHz DEV.)

MONO ..... 75 dB (65 dBf input)

STEREO ..... 68 dB (65 dBf input)

Stereo separation (1 kHz) ..... 40 dB

Selectivity (±400 kHz)

(for U.S.A. and Canada) ..... 70 dB

(except for U.S.A. and Canada) ..... 50 dB

Frequency response ..... 30 Hz ~ 15kHz,+0.5 dB, -3.0 dB

### AM tuner section

Tuning frequency range (for U.S.A. and Canada)

10 kHz step ..... 530 kHz ~ 1,700 kHz

Tuning frequency range (except for U.S.A. and Canada)

9 kHz step ..... 531 kHz ~ 1.602 kHz

10 kHz step ..... 530 kHz ~ 1.610 kHz

Usable sensitivity (30% mod., S/N 20 dB)

..... 16 uV / (600 uV/m)

Signal to noise ratio (30 % mod. 1 mV input) ..... 48 dB

Relay and IR IN/OUT section (for U.S.A. and Canada only)

RELAY CONTROL terminal

Maximum output current ..... 20 mA

Operating voltage ..... 12 V

Output impedance ..... 470 Ω

IR RECEIVER IN terminal

Maximum output current ..... 20 mA

Operating voltage ..... 12 V

Output impedance ..... 470 Ω

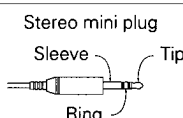
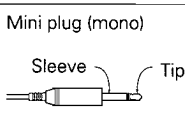
IR REPEATER CONTROL terminals

Maximum output current ..... 20 mA

Operating voltage ..... 12 V

Output impedance ..... 470 Ω

Shape of plug to be connected

IR RECEIVER IN and RELAY CONTROL	IR REPEATER OUT
	

IR IN/OUT specification

Terminal	IR RECEIVER IN	IR REPEATER OUT
To Tip	Signal	Signal
To Ring	Ground	—
To Sleeve	+12 V	Ground

RELAY CONTROL specification

Status	Power off	Power on	Power on and when switch to video input
To Tip	0 V	0 V	+12 V
To Ring	0 V	+12 V	+12 V
To Sleeve	Ground	Ground	Ground

# KR-V999D/1090VR

## SPECIFICATIONS

### **GENERAL**

Power consumption ..... 4 A  
 AC outlet  
     SWITCHED ..... 2 (total 90 W, 0.75 A max.)  
 Dimensions ..... W : 440 mm (17-5/16")  
                                     H : 162 mm (6-3/8")  
                                     D : 392 mm (15-7/16")  
 Weight (Net) ..... 13 kg (28.7 lb)

### **RF Demodulator (DEM-999D)** (only KR-V999D C,M,T type)

Input level  
     AC-3 RF ..... 50 mV p-p ~ 200 mV p-p  
 RF Frequency response ..... 2.88 MHz ~ ±144 kHz  
 Output level / Impedance  
     Coaxial ..... 0.5 Vp-p / 75 Ω  
 Dimensions ..... W : 89 mm  
                                     H : 35 mm  
                                     D : 101 mm  
 Weight (Net) ..... 200 g



KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

# KR-V999D/1090VR

**Note:**

Component and circuit are subject to modification to insure best operation under differing local conditions. This manual is based on Europe (E) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

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