

AUDIO VIDEO SURROUND RECEIVER

KR-V999D/1090VR

SERVICE MANUAL

KENWOOD

© 1997-4/B51-5303-00 (K/K) 3513

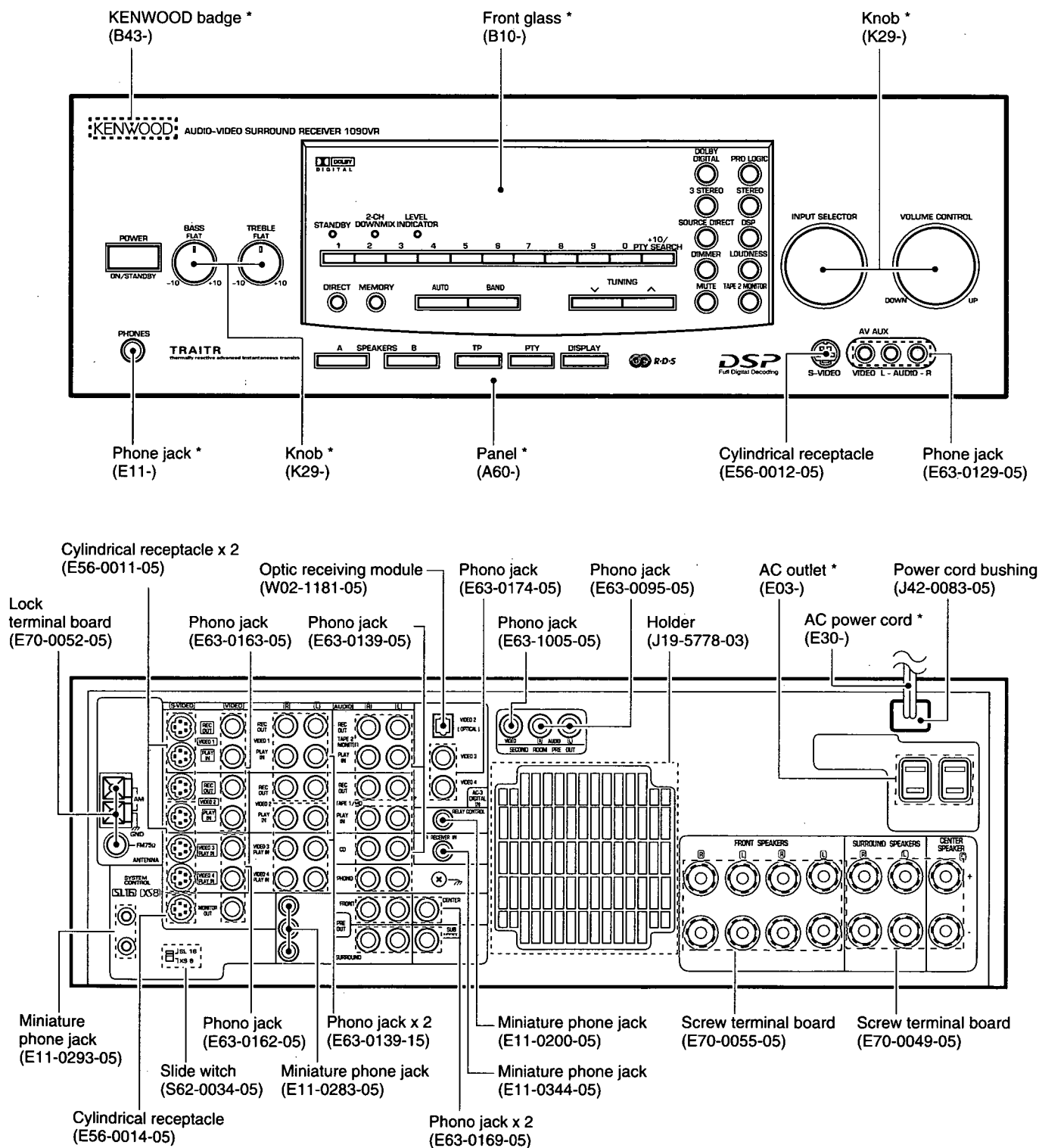


Illustration is KR-1090VR.

* Refer to parts list on page 67.

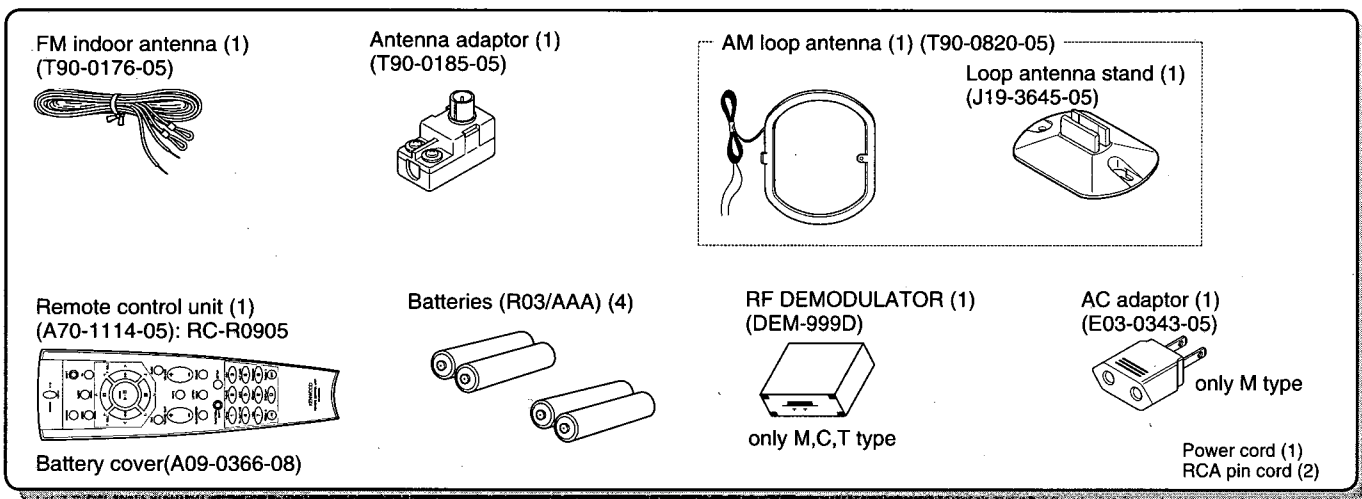
KR-V999D/1090VR

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Accessories



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.

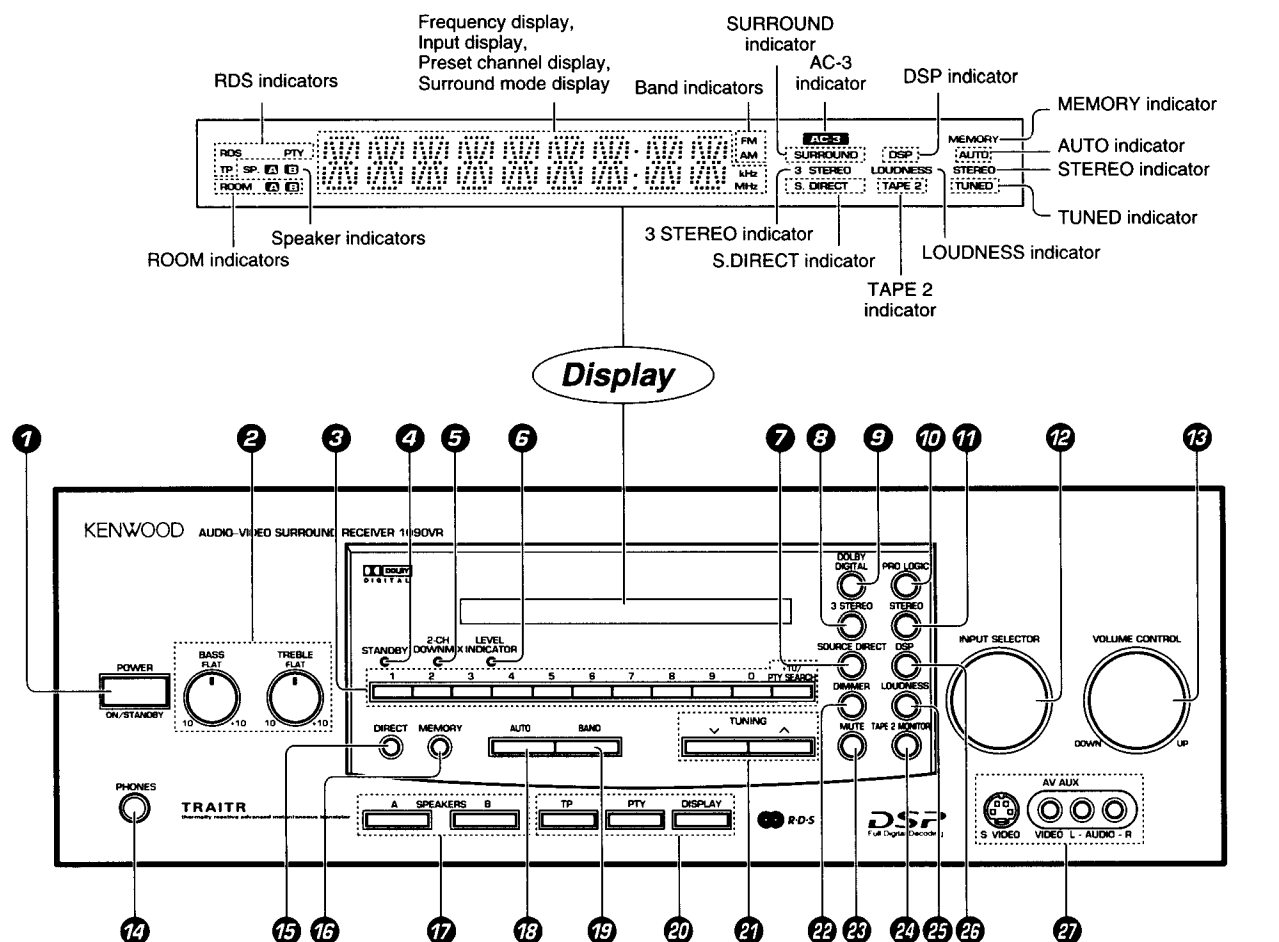
In a circuit explanation part, **1090VR** is expressing as **KR-V999D**.

KR-V999D/1090VR

CONTROLS

KR-V999D/1090VR

REMOTE CONTROLS



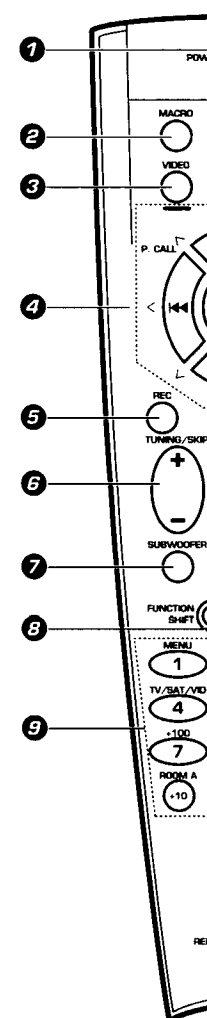
- 1 POWER key**
Use to switch the power ON/STANDBY.
- 2 Tone Control knobs**
- 3 Numeric keys**
- 4 STANDBY indicator**
- 5 2 CH DOWNMIX indicator**
Lights when an DOLBY DIGITAL (AC-3) format signal is being downmixed to 2 channel stereo.
- 6 LEVEL indicator**
Lights when the level of the signal being 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**

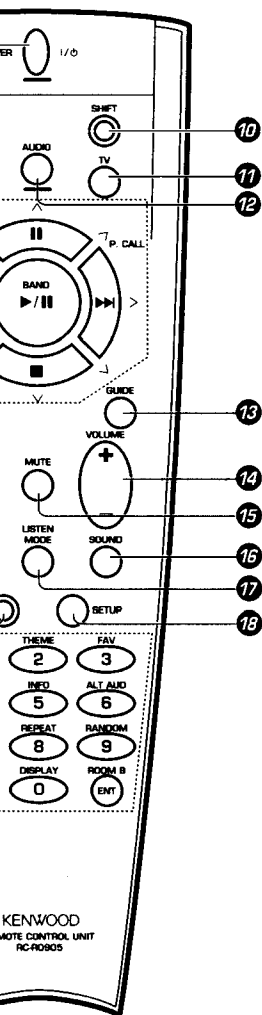
About the STANDBY indicator

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 input selector keys to adjust subwoofer.
- 8 FUNCTION SHIFT key**
Use in combination with the input selector keys to execute alternate functions.
- 9 Numeric key**
Provide functions for the original remote control you are controlling. To access the functions, Press with the numeric keys, Press with the FUNCTION SHIFT key, or in combination with the FUNCTION SHIFT key to turn on and off the receiver into the remote.
- 10 SHIFT key**
Use in combination with the VIDEO keys to turn on the mode without the remote control, or in combination with the FUNCTION SHIFT key to turn on and off the receiver into the remote.
- 11 TV selector key**
Sets the remote control to operate the TV box (TV 1, TV 2, TV 3, TV 4, TV 5, TV 6, TV 7, TV 8, TV 9, TV 10, TV 11, TV 12, TV 13, TV 14, TV 15, TV 16, TV 17, TV 18, TV 19, TV 20, TV 21, TV 22, TV 23, TV 24, TV 25, TV 26, TV 27, TV 28, TV 29, TV 30, TV 31, TV 32, TV 33, TV 34, TV 35, TV 36, TV 37, TV 38, TV 39, TV 40, TV 41, TV 42, TV 43, TV 44, TV 45, TV 46, TV 47, TV 48, TV 49, TV 50, TV 51, TV 52, TV 53, TV 54, TV 55, TV 56, TV 57, TV 58, TV 59, TV 60, TV 61, TV 62, TV 63, TV 64, TV 65, TV 66, TV 67, TV 68, TV 69, TV 70, TV 71, TV 72, TV 73, TV 74, TV 75, TV 76, TV 77, TV 78, TV 79, TV 80, TV 81, TV 82, TV 83, TV 84, TV 85, TV 86, TV 87, TV 88, TV 89, TV 90, TV 91, TV 92, TV 93, TV 94, TV 95, TV 96, TV 97, TV 98, TV 99, TV 100, TV 101, TV 102, TV 103, TV 104, TV 105, TV 106, TV 107, TV 108, TV 109, TV 110, TV 111, TV 112, TV 113, TV 114, TV 115, TV 116, TV 117, TV 118, TV 119, TV 120, TV 121, TV 122, TV 123, TV 124, TV 125, TV 126, TV 127, TV 128, TV 129, TV 130, TV 131, TV 132, TV 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1562, TV 1563, TV 1564, TV 1565, TV 1566, TV 1567, TV 1568, TV 1569, TV 1570, TV 1571, TV 1572, TV 1573, TV 1574, TV 1575, TV 1576, TV 1577, TV 1578, TV 1579, TV 1580, TV 1581, TV 1582, TV 1583, TV 1584, TV 1585, TV 1586, TV 1587, TV 1588, TV 1589, TV 1590, TV 1591, TV 1592, TV 1593, TV 1594, TV 1595, TV 1596, TV 1597, TV 1598, TV 1599, TV 1600, TV 1601, TV 1602, TV 1603, TV 1604, TV 1605, TV 1606, TV 1607, TV 160



POWER key
Operation with the VOLUME +/- keys to adjust the volume of the receiver.

SHIFT key
Operation with the numeric keys to execute remote commands.

Buttons
Buttons identical to those of the remote control supplied with the component.

Buttons
Functions printed above the buttons are executed within 3 seconds of pressing the button or the SHIFT key. Function keys for each component.

Buttons
Operation with the AUDIO and TV keys to change the remote control function by changing the input selector. Operation with the POWER key to set components programmed.

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

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

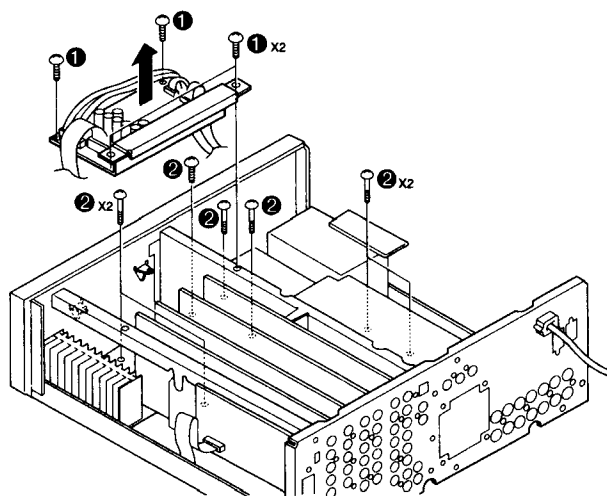
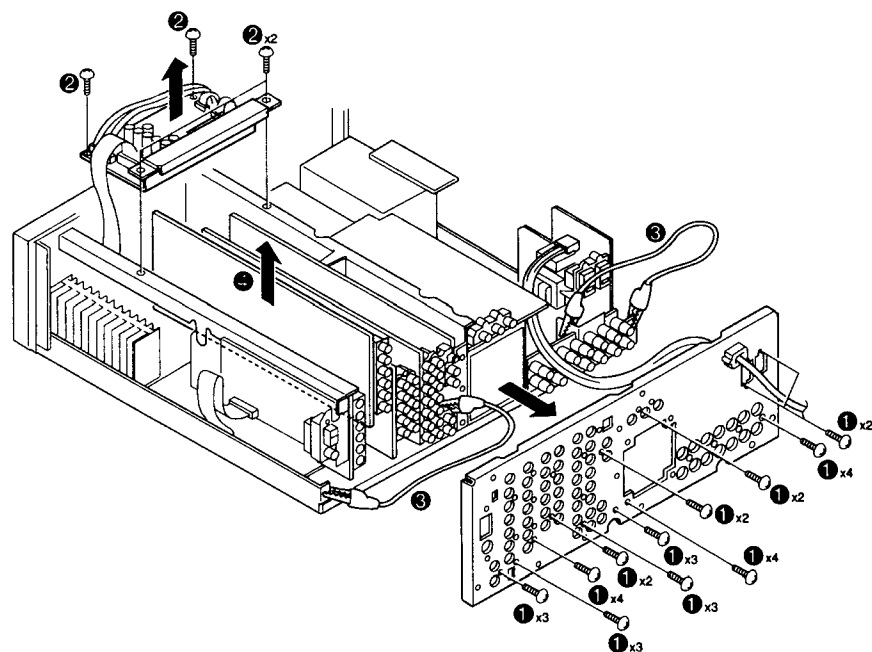
Use to select the desired surround mode.

18 SETUP key

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

Check the vertical PCB.

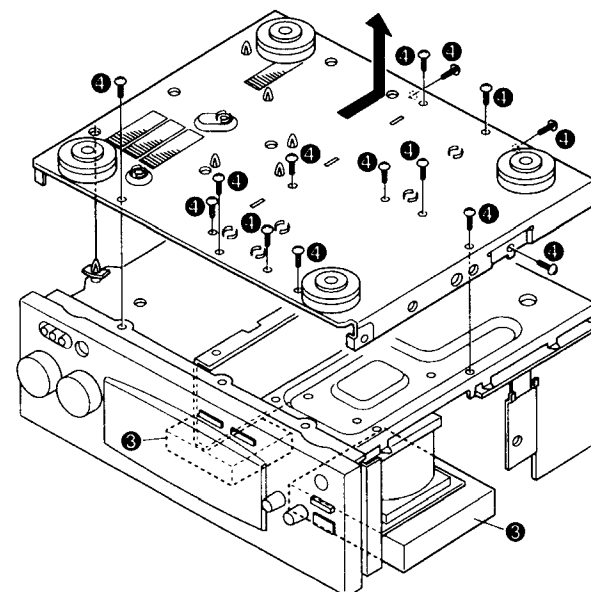
1. Remove the 32 screws (1), then remove the rear panel.
2. Remove the 4 screws (2), then remove the fuse PCB.
3. Connect the GND of the vertical PCB and the chassis, the GND of the speaker terminal and the chassis with 2 alligator clip (3).
4. Remove a vertical PCB (4), then check the vertical PCB.



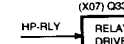
Remove the bottom plate.

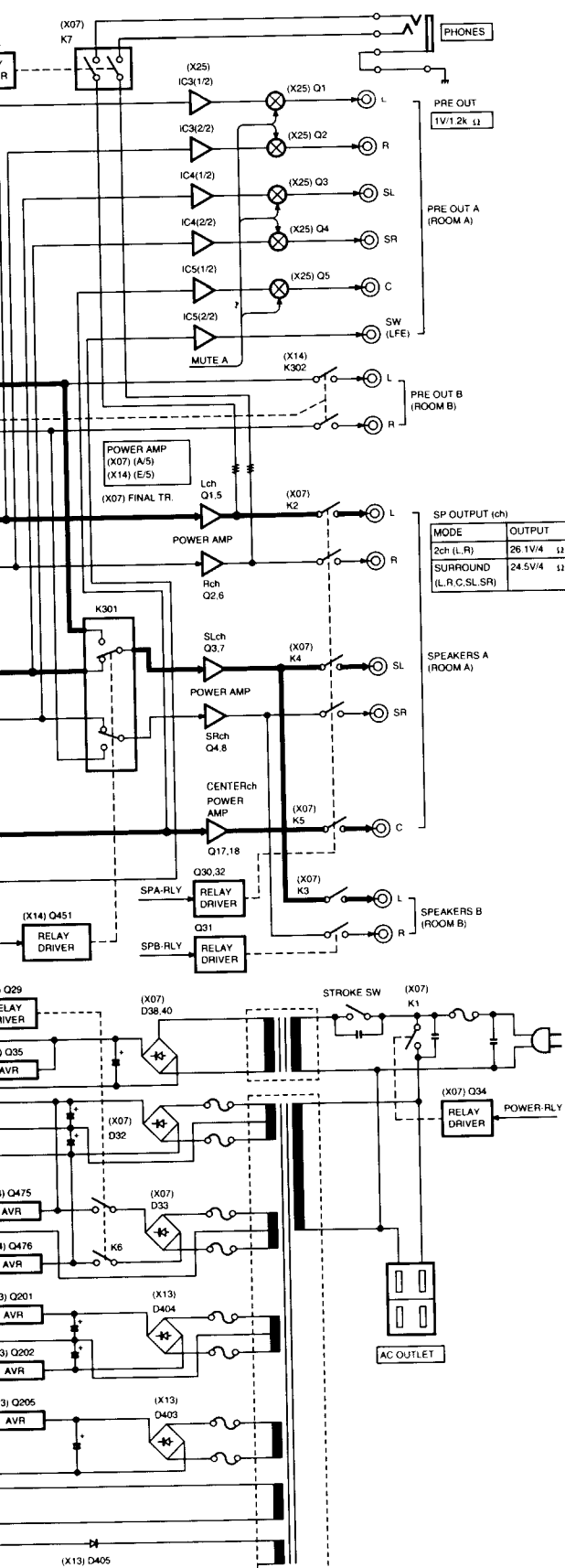
Make use of the changing final transistor etc.

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.



HP-RLY





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.					0	X	0	1	0
	(TSW3=1: K2 type, 0: E1 type)									
Y	K3/E1 is switched with only the setting of TSW3.					1	X	0	1	0
	(TSW3=1: E1 type, 0: K3 type)									
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

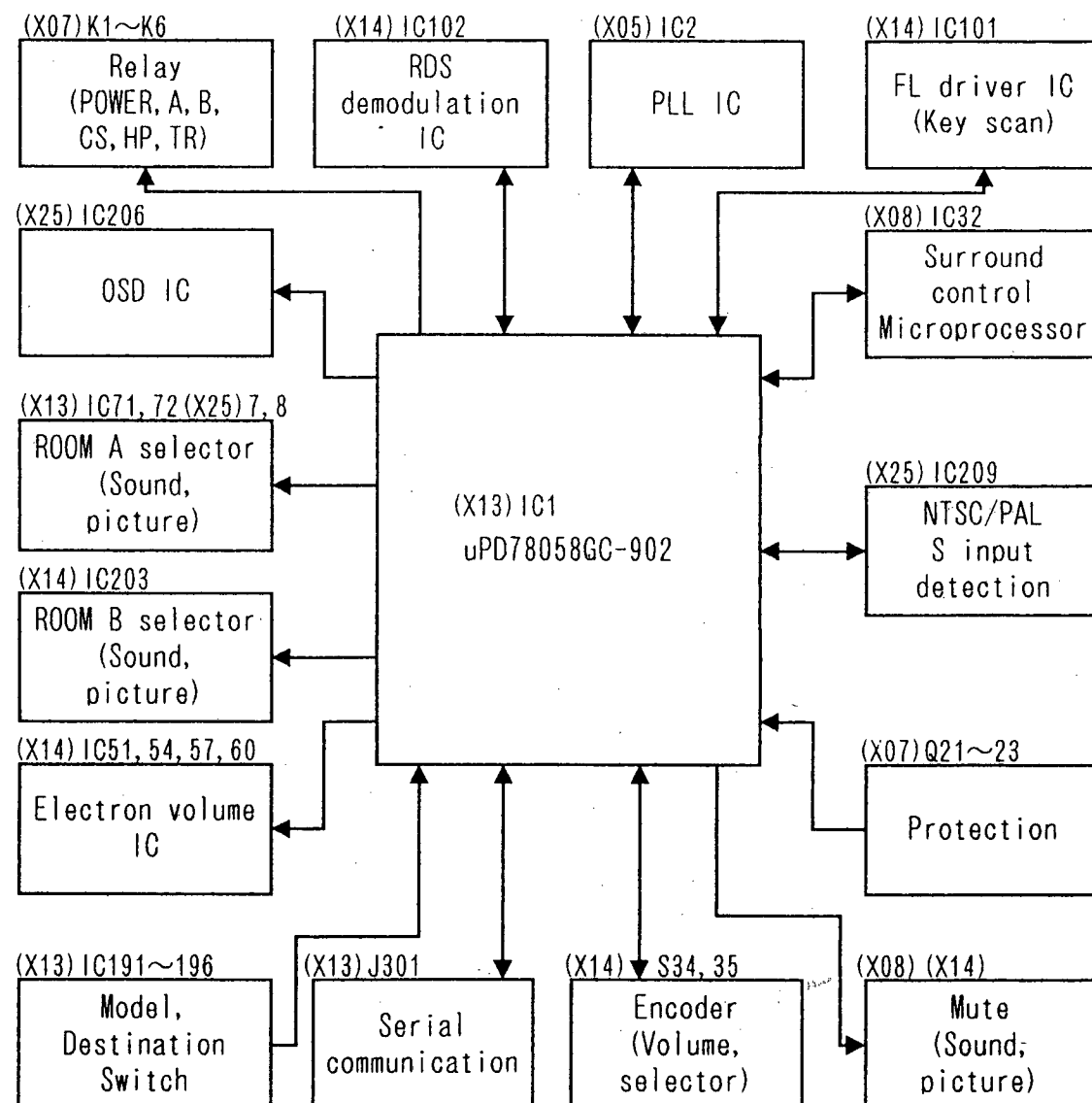
The setting of the existence or non-existence of a sub woofer speaker is able to set up cyclically each time MEMORY key is pressed.

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

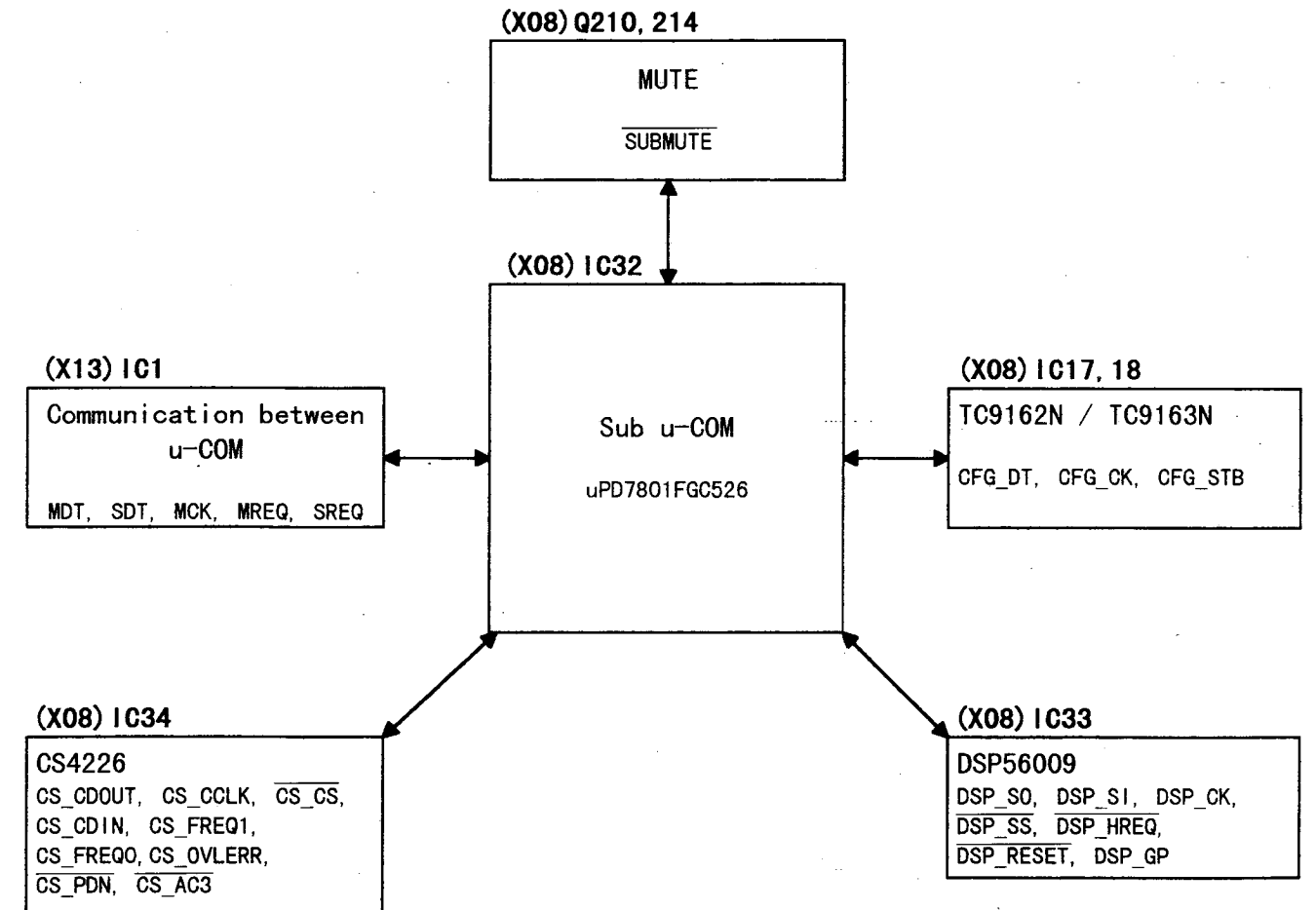
Pin No.	Name	I/O	Description
51	-20dB_MUTE	O	-20dB MUTE
52	EXT_OUT	O	EXTERNAL OUT
53	T_MUTE	O	Tuner mute
54	PLL_CLK	O	LC72131 CLK
55	PLL_DATA	O	LC72131 DATA
56	PLL_CE	O	LC72131 CE
57	SD	I	SD input
58	STEREO	I	STEREO input
59	PLL_DO	I	LC72131 DO
60	RESET	I	Reset
61	REMOCON	I	Remote controller input
62	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 ②7	②7	②6	②3	②2	①9	①8	②7	②6	②5	②3	②2	②1	② ②7	③ ②6	④ ②5	⑤ ②4	⑦ ②2	⑧ ②1
TAPE 2 OFF	TUNER	1	0	0	0	0	1	1	0	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	0	1	0	0	1	0
	CD	1	0	0	0	0	1	1	0	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	0	1	1	0
	VIDEO1	1	1	0	1	0	0	1	0	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	0	1	0
	VIDEO3	1	0	0	0	0	1	1	1	0	0	1	0	0	0	0	0	0	1	0
	VIDEO4	1	0	0	0	0	1	1	0	1	0	0	1	0	0	0	0	0	1	0
TAPE 2 ON	AV AUX	1	0	0	0	0	1	1	0	0	1	0	0	1	0	0	0	0	1	0
	TUNER	1	0	0	0	0	1	1	0	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	0	1	0	0	0	1
	CD	1	0	0	0	0	1	1	0	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	0	1	0	1
	VIDEO1	1	1	0	1	0	0	1	0	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	0	1
	VIDEO3	1	0	0	0	0	1	1	1	0	0	1	0	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	0	1
	AV AUX	1	0	0	0	0	1	1	0	0	1	0	0	1	0	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 27	③ 26	④ 25	⑥ 23	⑧ 21	
TUNER	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	
PHONO	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	
CD	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	
TAPE1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	
VIDEO1	1	0	1	0	1	1	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	
VIDEO3	0	0	0	0	1	1	1	0	0	1	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	
AV AUX	0	0	0	0	1	1	0	0	1	0	0	1	0	0	0	0	0	

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

		(X13)IC7				
		⑭	⑮	⑯	⑰	①
	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	⑰	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)

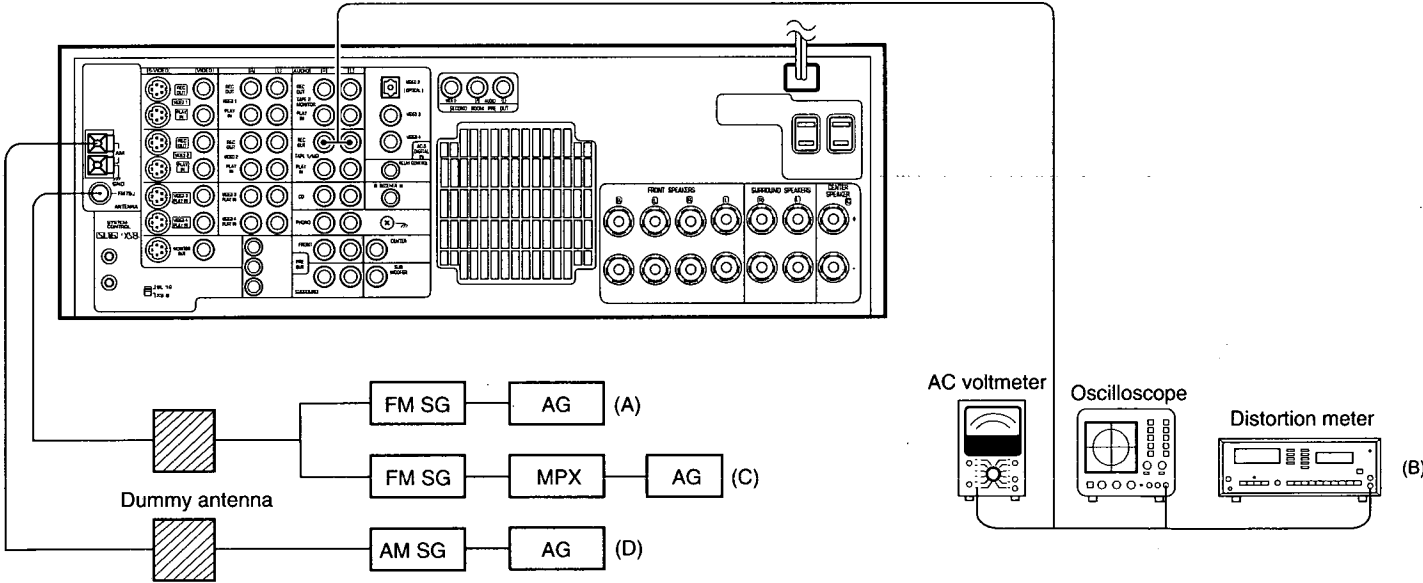
	(X25)IC9				
	③ 26	⑤ 24	⑥ 23	⑧ 21	⑨ 20
DIGITAL REC	0	1	1	0	0
Except for DIGITAL REC	1	0	0	1	1

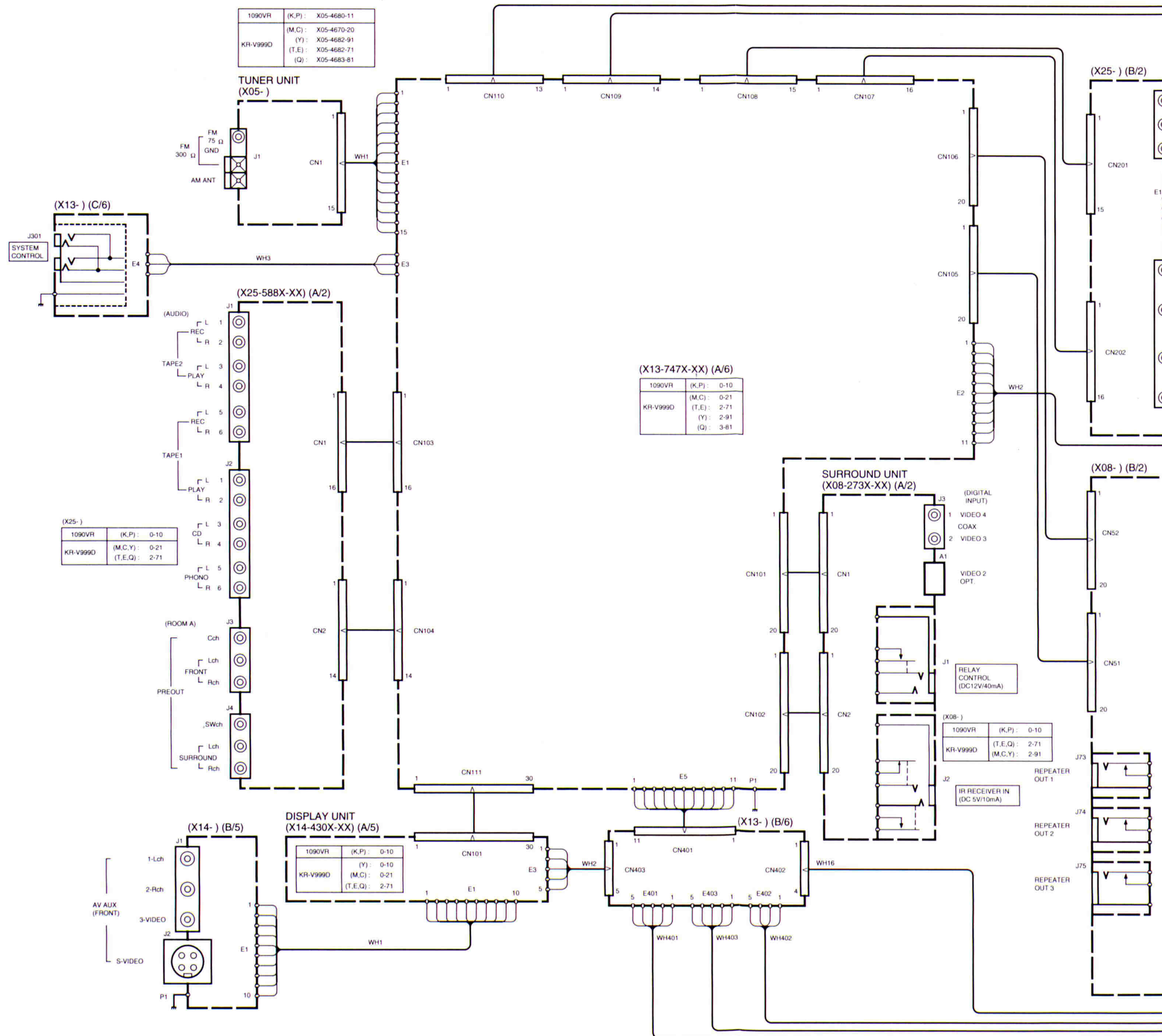
KR-V999D/1090VR

ADJUSTMENT

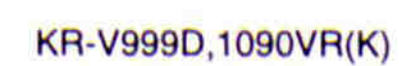
No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	TUNER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
FM SECTION (E,T type) SELECTOR : FM							
1	DISCRIMINATOR L31 ↔ L32 (E,T,Q only)	(A) 98.0MHz 1kHz, ±40kHz dev. 60dBμ(ANT input)	Connect a DC voltmeter between TP3 of CN2 (X05-)	AUTO 98.0MHz	L31 (X05-) L32 (X05-)	0V 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)
AUDIO SECTION SPEAKER : A PREOUT : OFF PROLOGIC : ON							
<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)





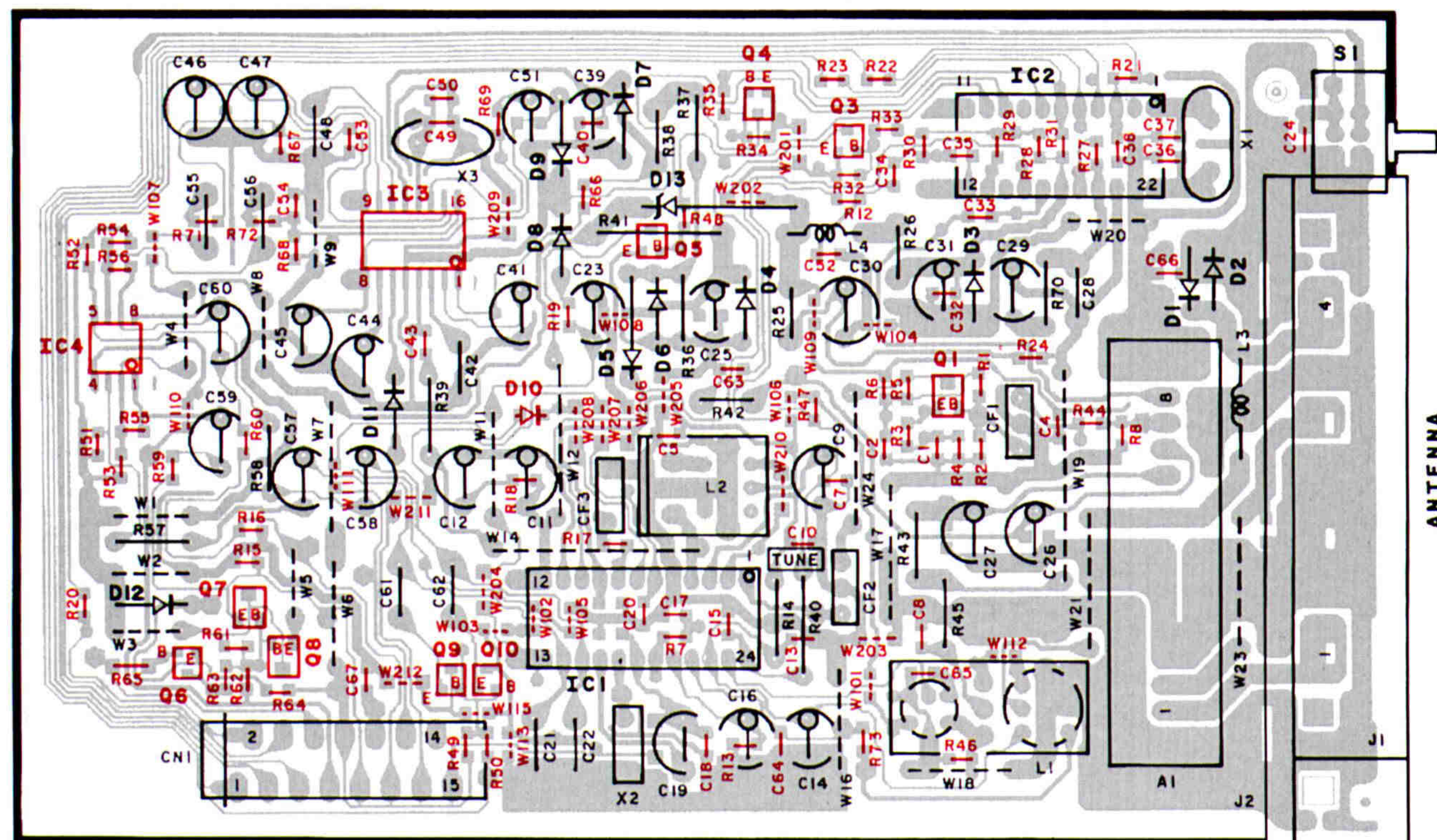
KR-V999D/1090VR



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

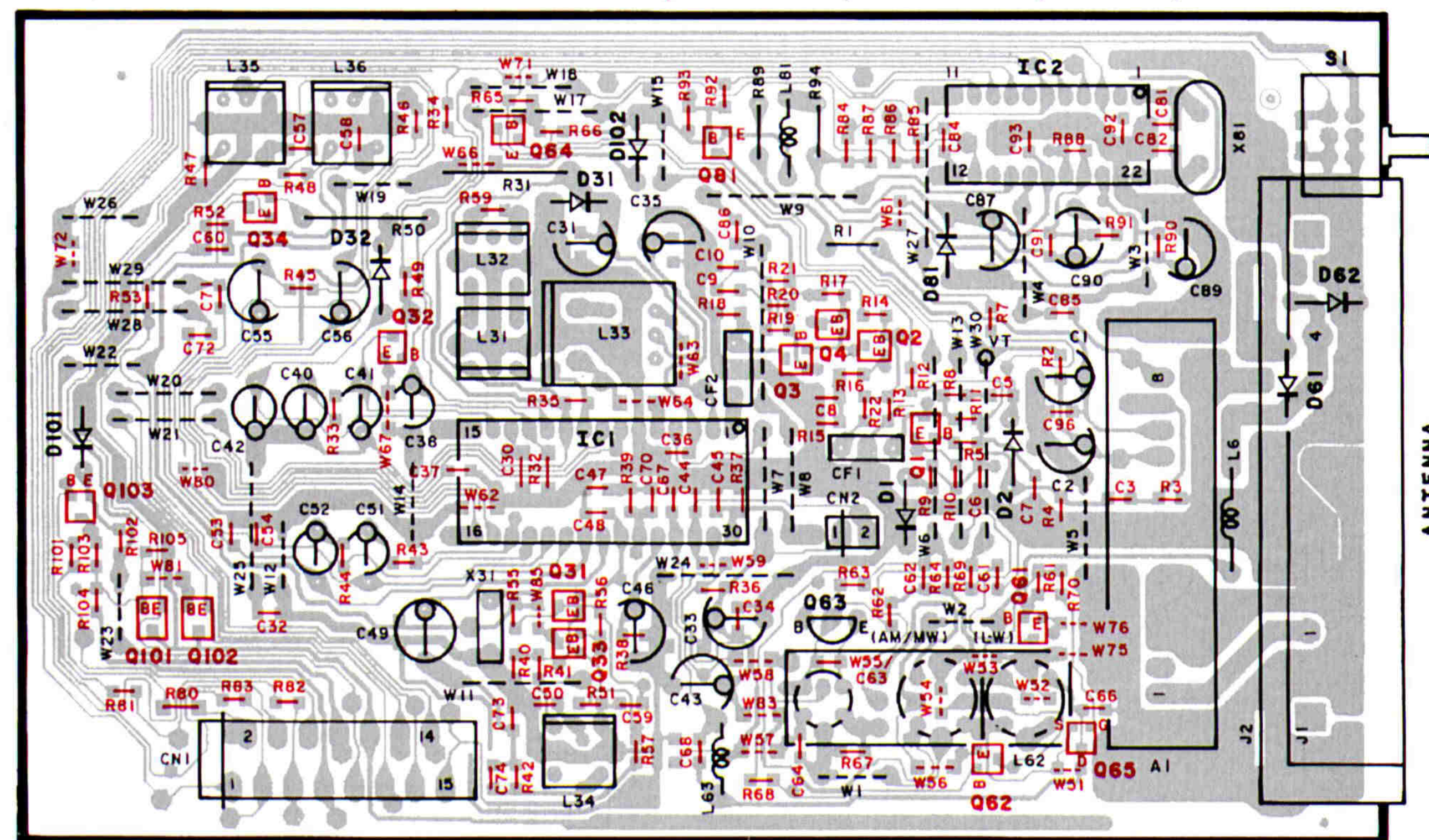
PRE OUT 1

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)

This is a detailed electronic circuit board layout for a 16-bit parallel adder. The board is populated with several integrated circuits (ICs) including IC51, IC54, IC57, IC60, IC55, IC56, IC58, IC59, and IC62. It also features various passive components like resistors (R501-R909), capacitors (C501-C608), and diodes (D501-D504). The layout includes a complex network of traces and a large central area labeled 'CN52'. The board is labeled with 'J71' through 'J75' and 'CN51' through 'CN52'.

PC BOARD(Component side view)

POWER AMPLIFIER UNIT(X07-290X-XX)

0-10: KP(1090VR)

0-21: M(KR-V999D)

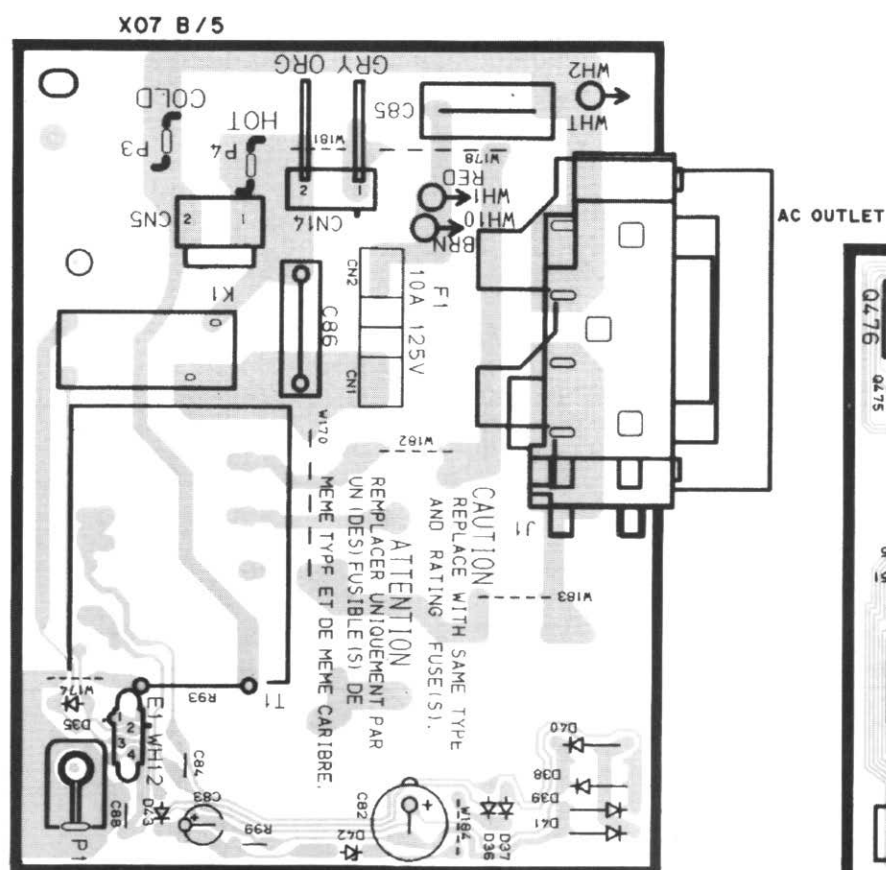
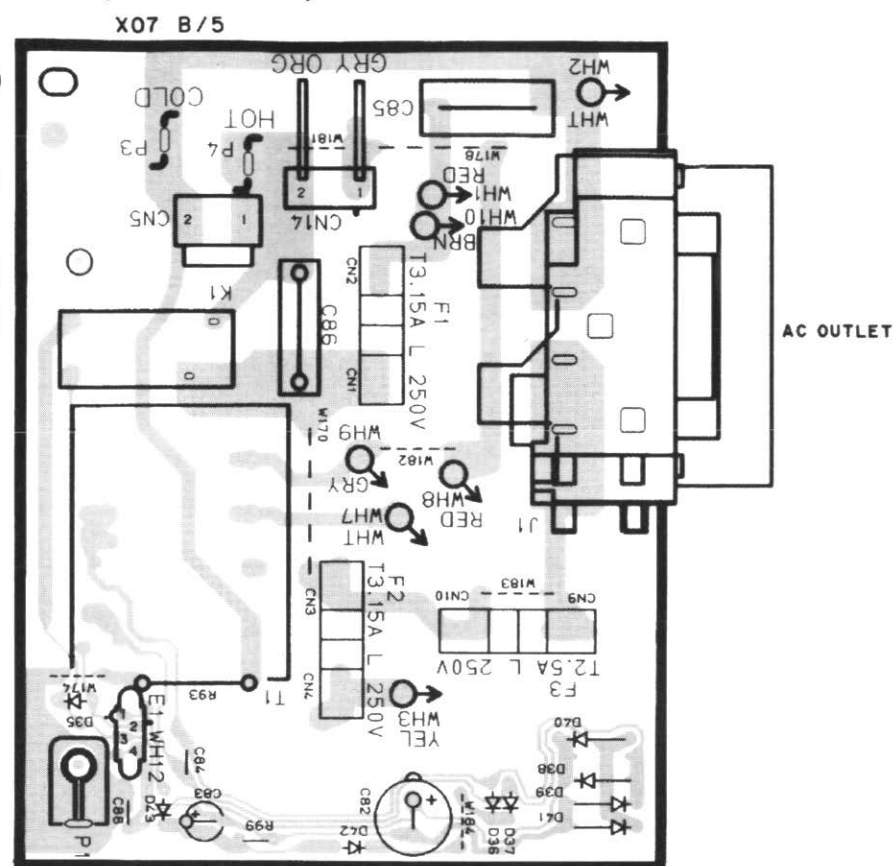
0-51: T(KR-V999D)

2-71: E(KR-V999D)

2-91: Y(1090VR)

3-01: C(KR-V999D)

3-81: Q(KR-V999D)



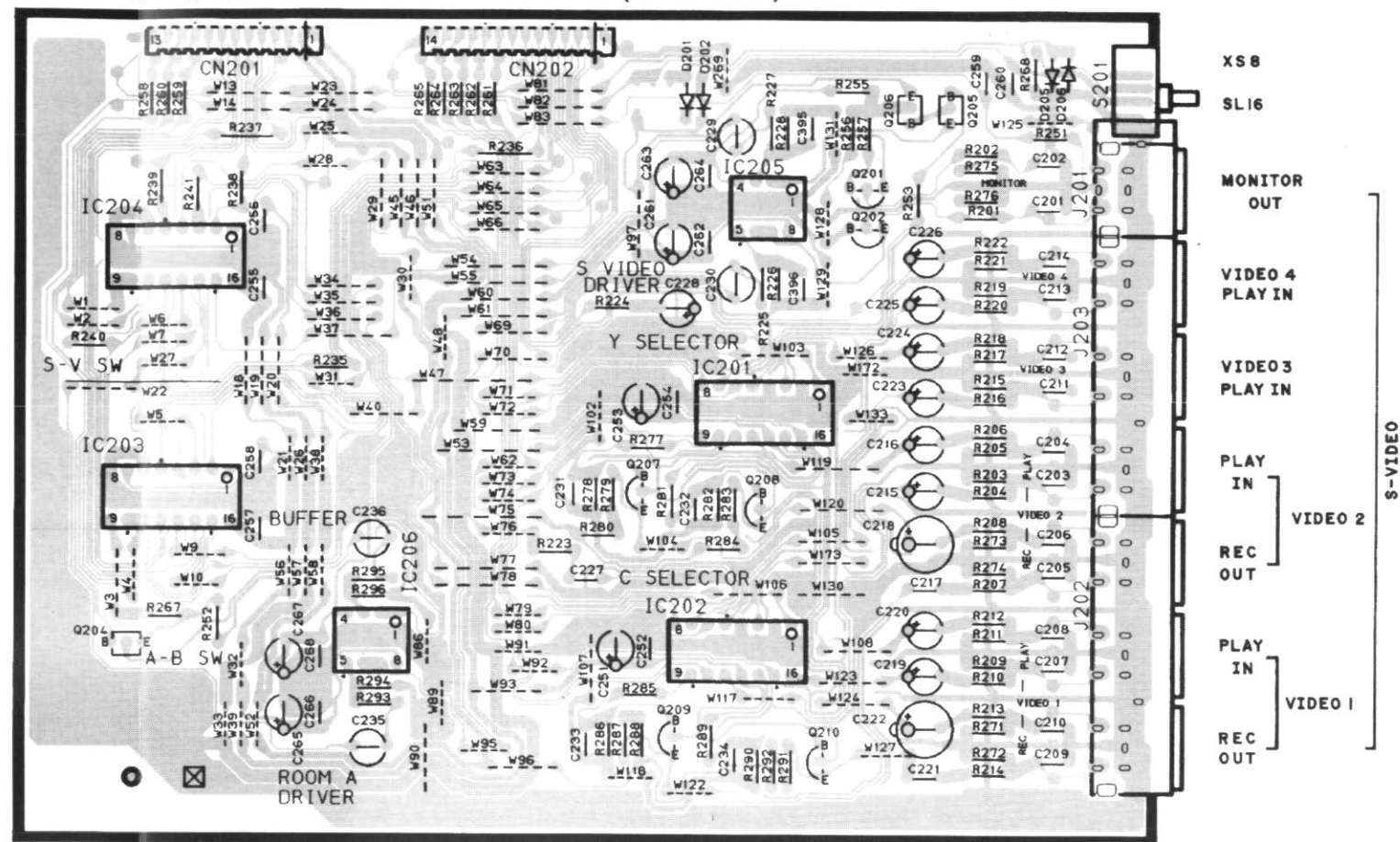
DISPLAY UNIT (X14-430X-XX)

0-10: KPY(only 1090VR)

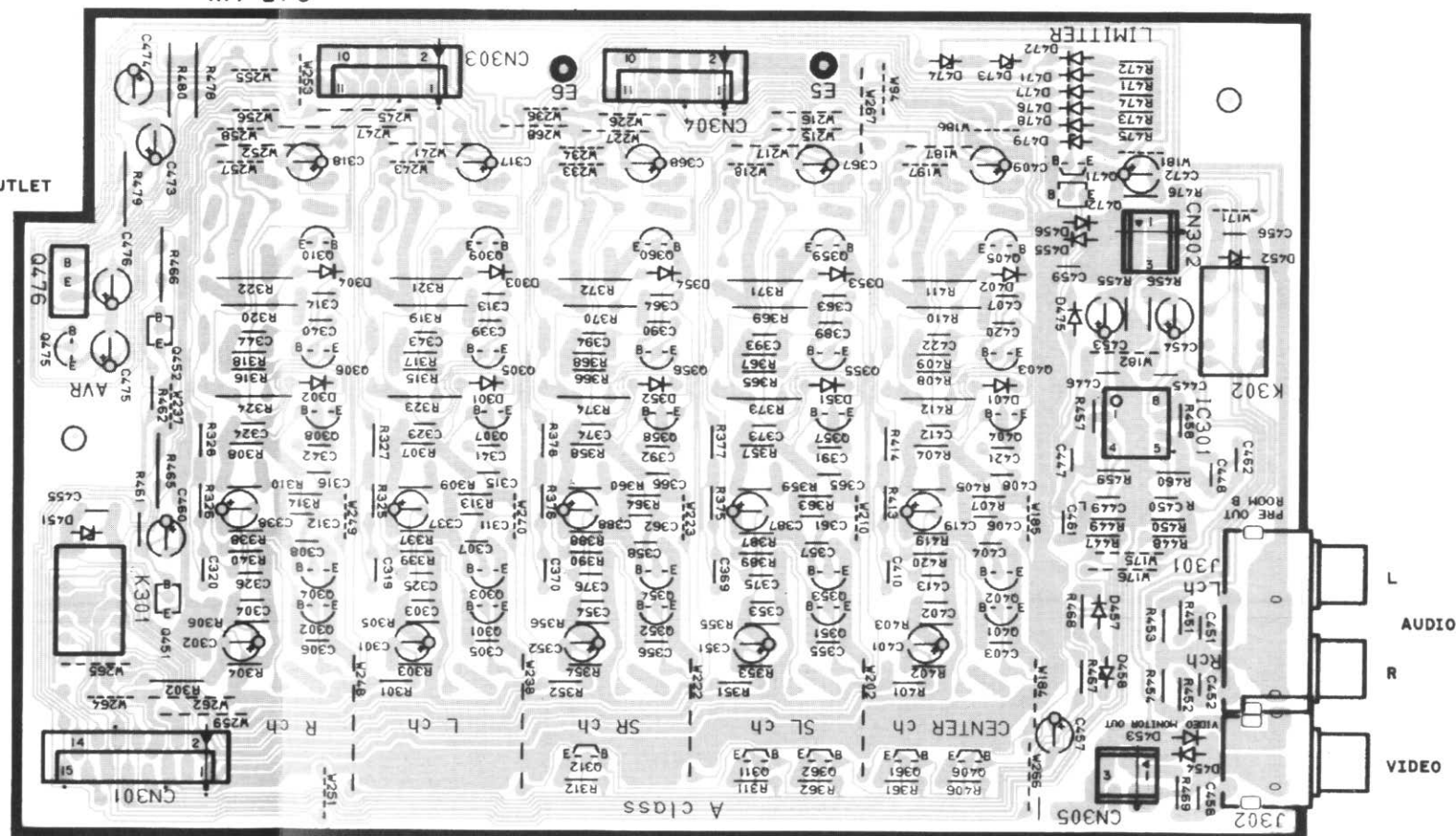
0-21: CM(KR-V999D)

2-71: EQT(KR-V999D)

X14 C/5



X14 E/5



PC BOARD(Component side view)

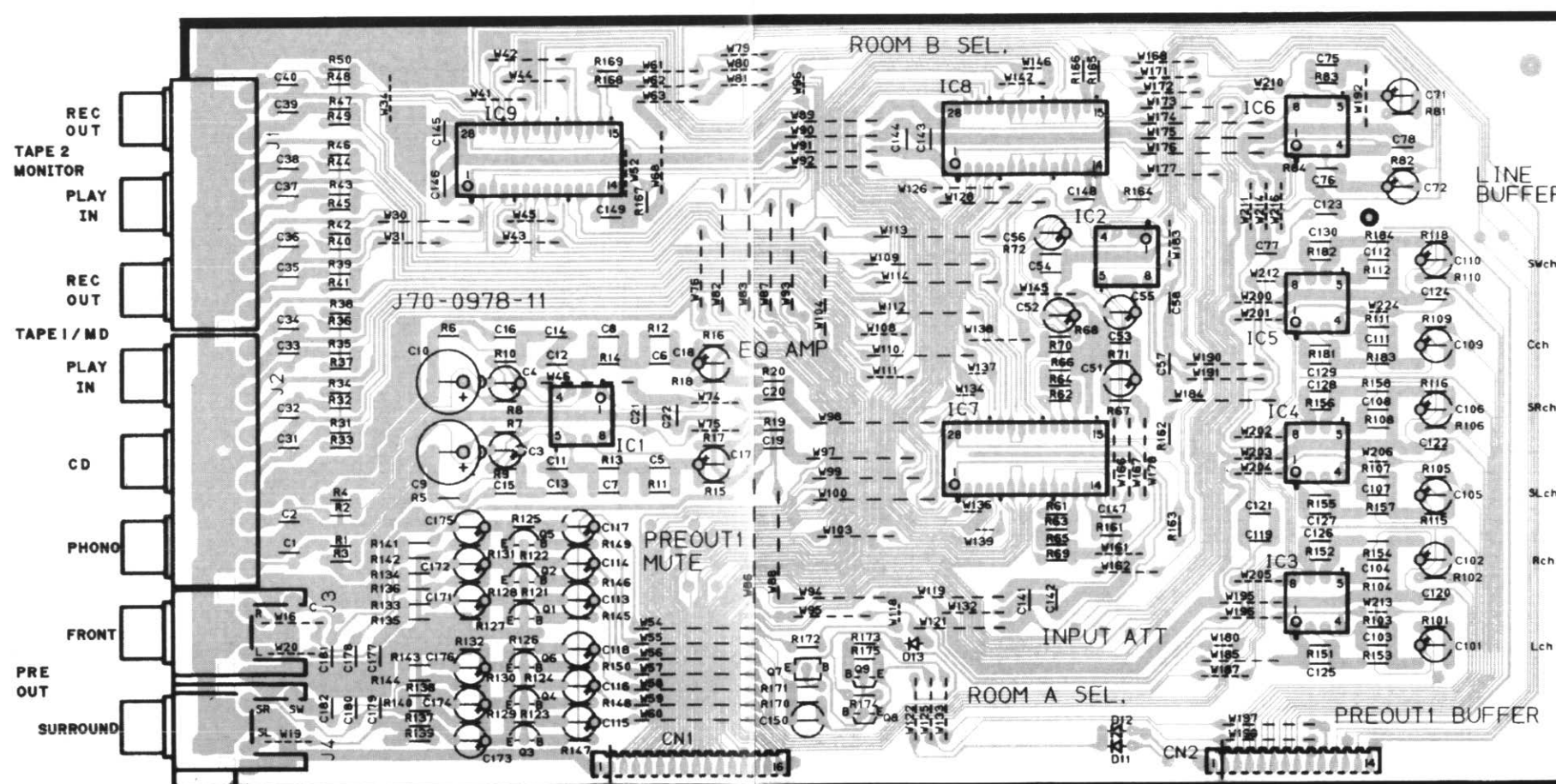
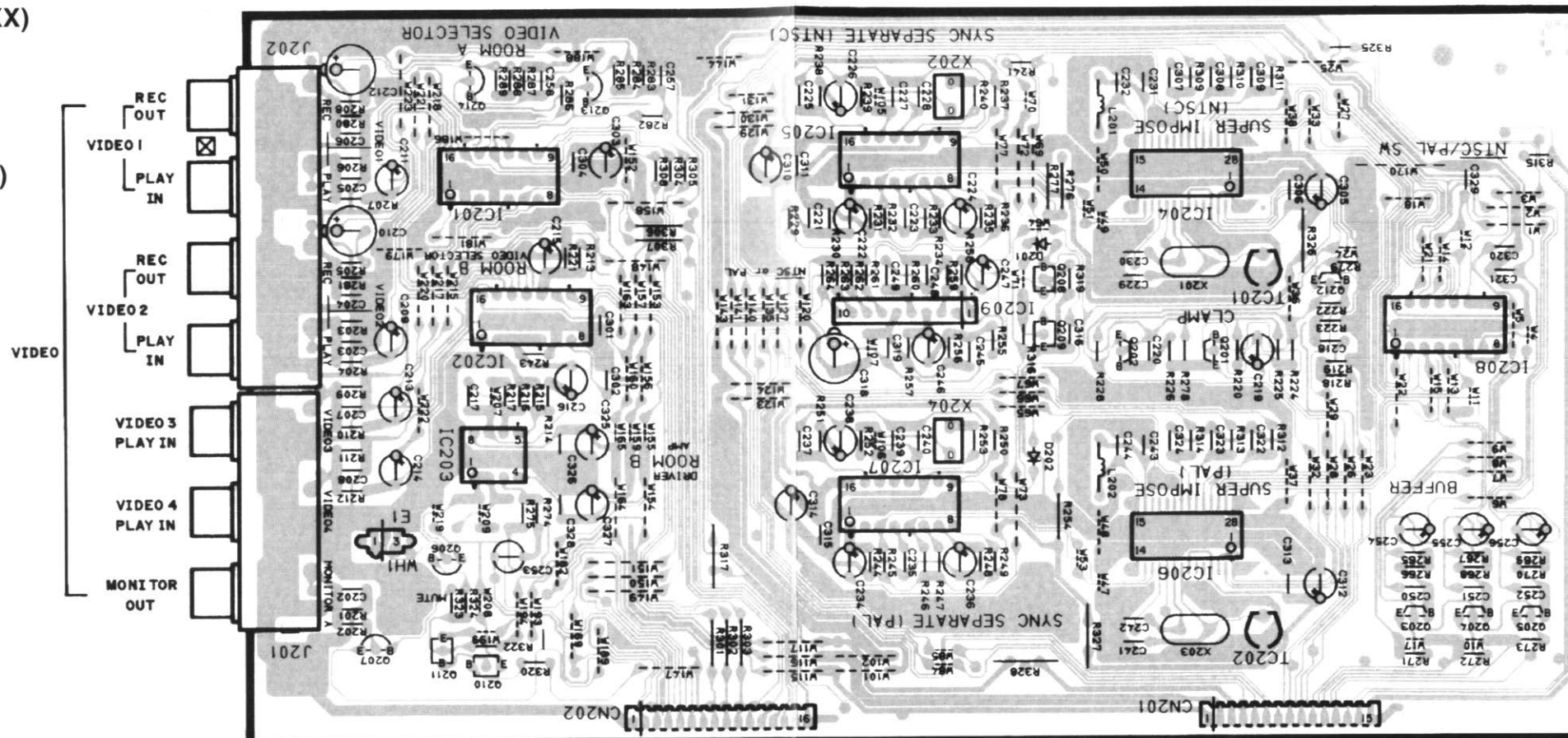
SWITCH UNIT(X25-588X-XX)

0-10: KP(1090VR)

0-21: Y(1090VR)

CM(KR-V999D)

2-71: EQT(KR-V999D)



X25-588X-XX A / 2

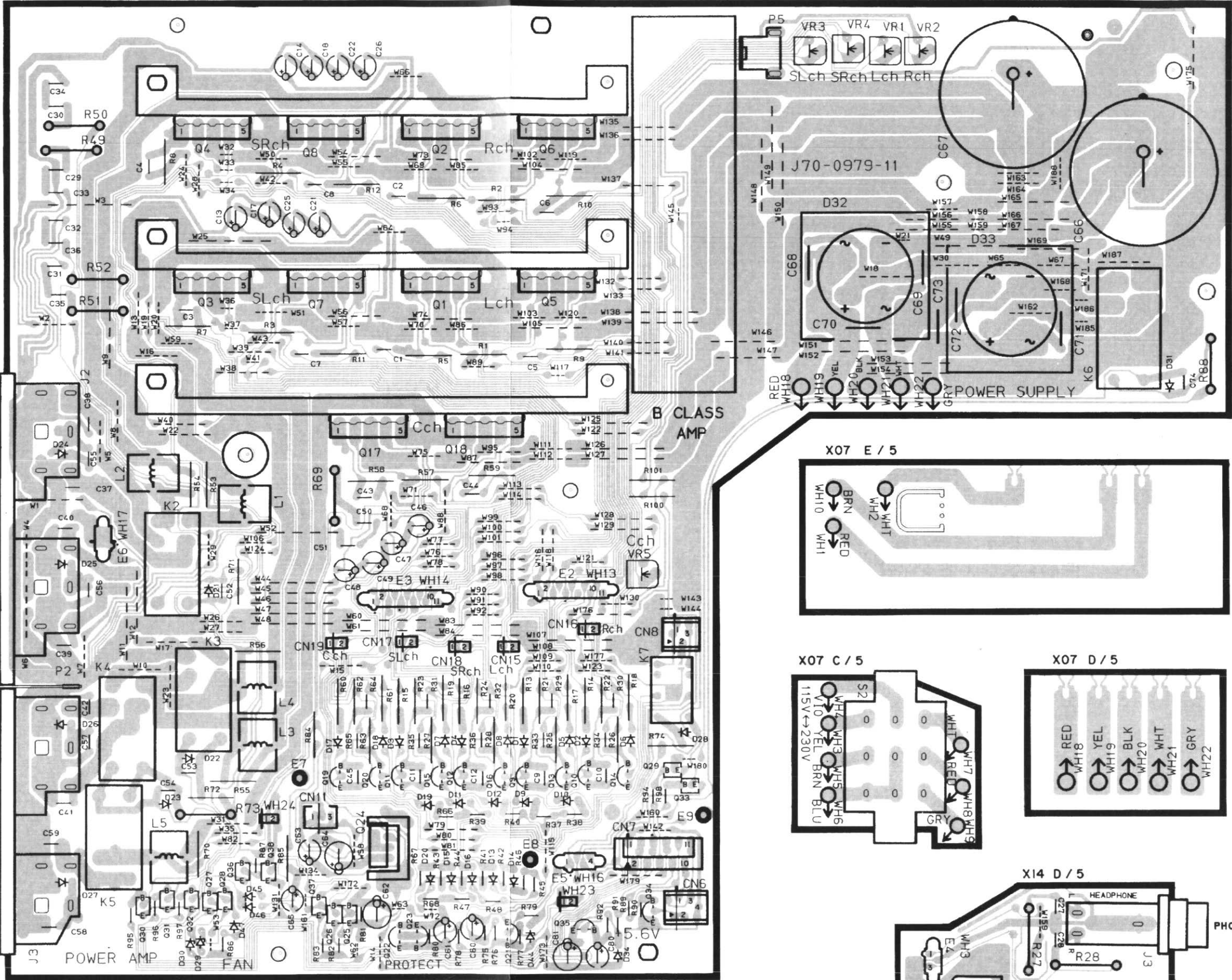
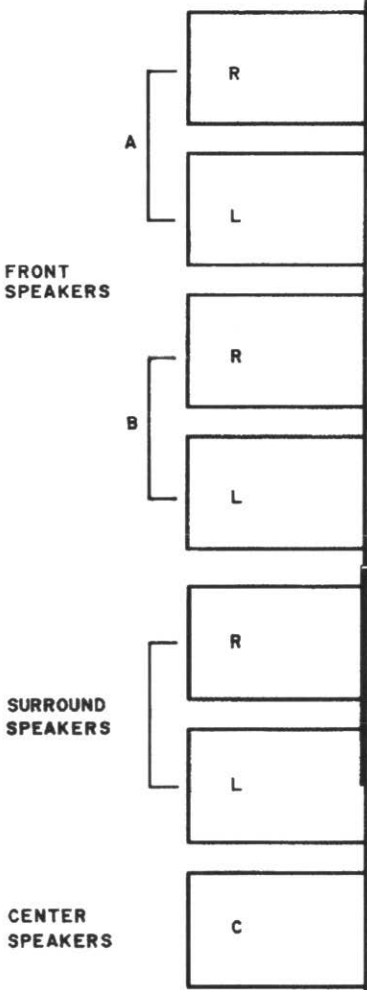
28

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

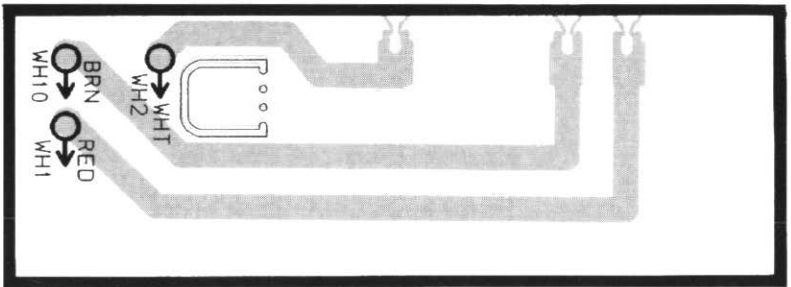
PC BOARD(Component side view)

POWER AMPLIFIER UNIT (X07-290X-XX)

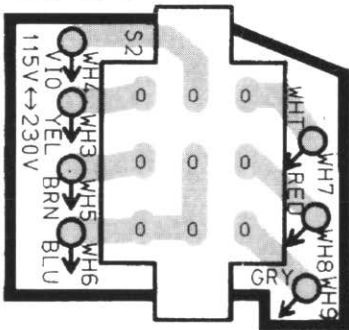
- 0-10: KP(1090VR)
- 0-21: M(KR-V999D)
- 0-51: T(KR-V999D)
- 2-71: E(KR-V999D)
- 2-91: Y(1090VR)
- 3-01: C(KR-V999D)
- 3-81: Q(KR-V999D)



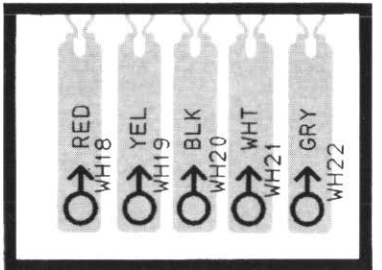
X07 E / 5



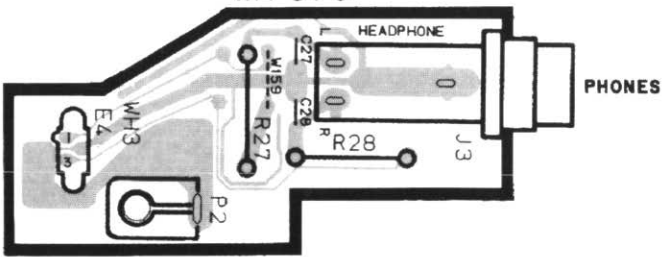
X07 C / 5



X07 D / 5



X14 D / 5



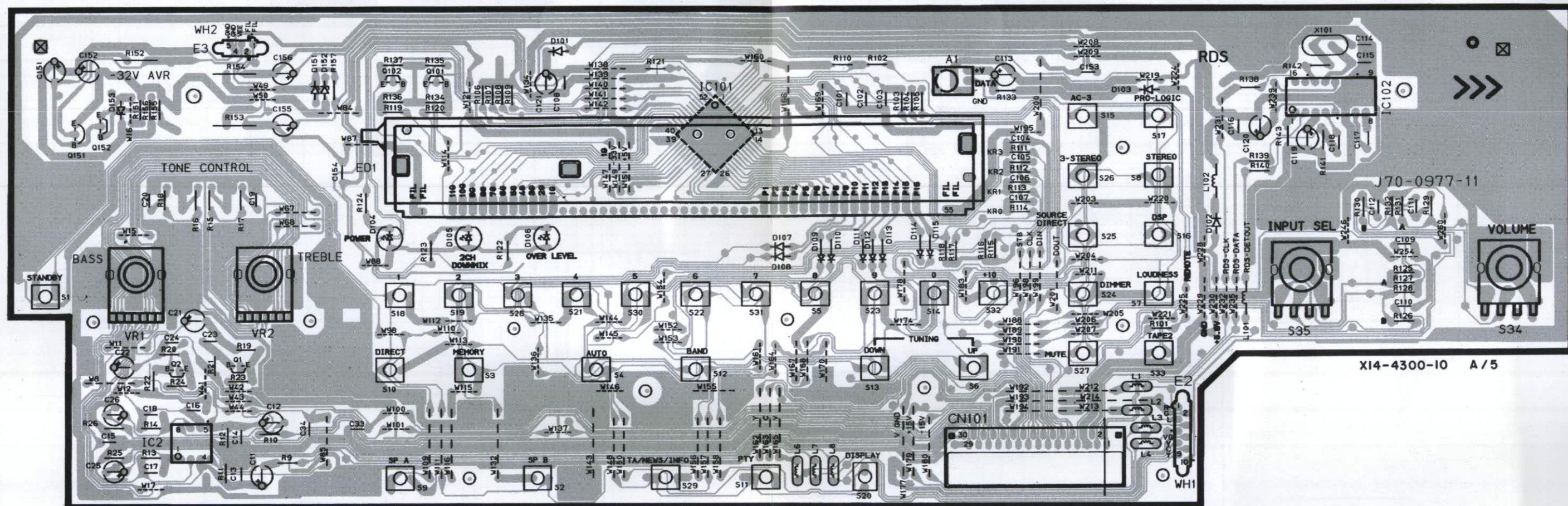
PC BOARD(Component side view)

DISPLAY UNIT(X14-430X-XX)

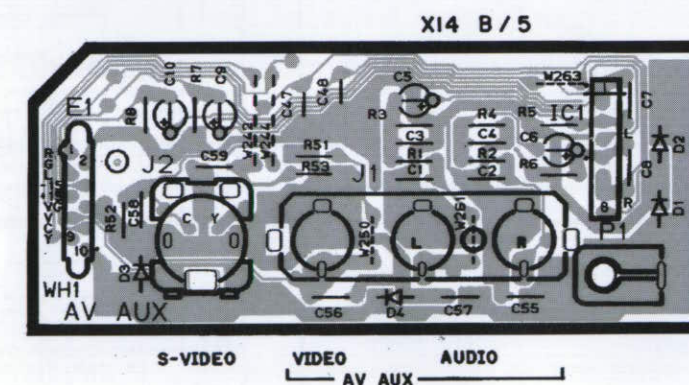
0-10: KPY(only 1090VR)

0-21: CM(KR-V999D)

2-71: EQT(KR-V999D)

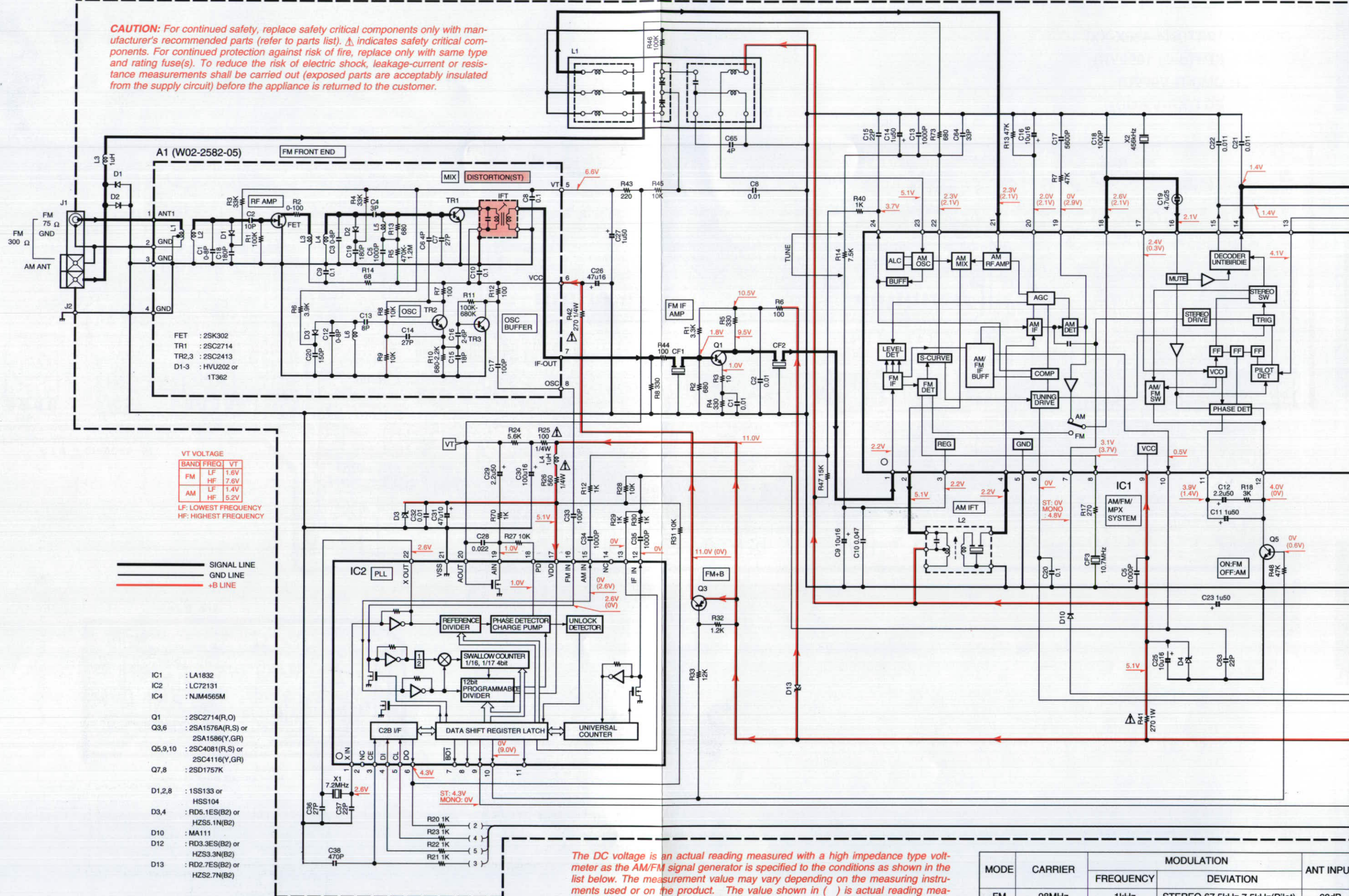


X14-4300-10 A/5

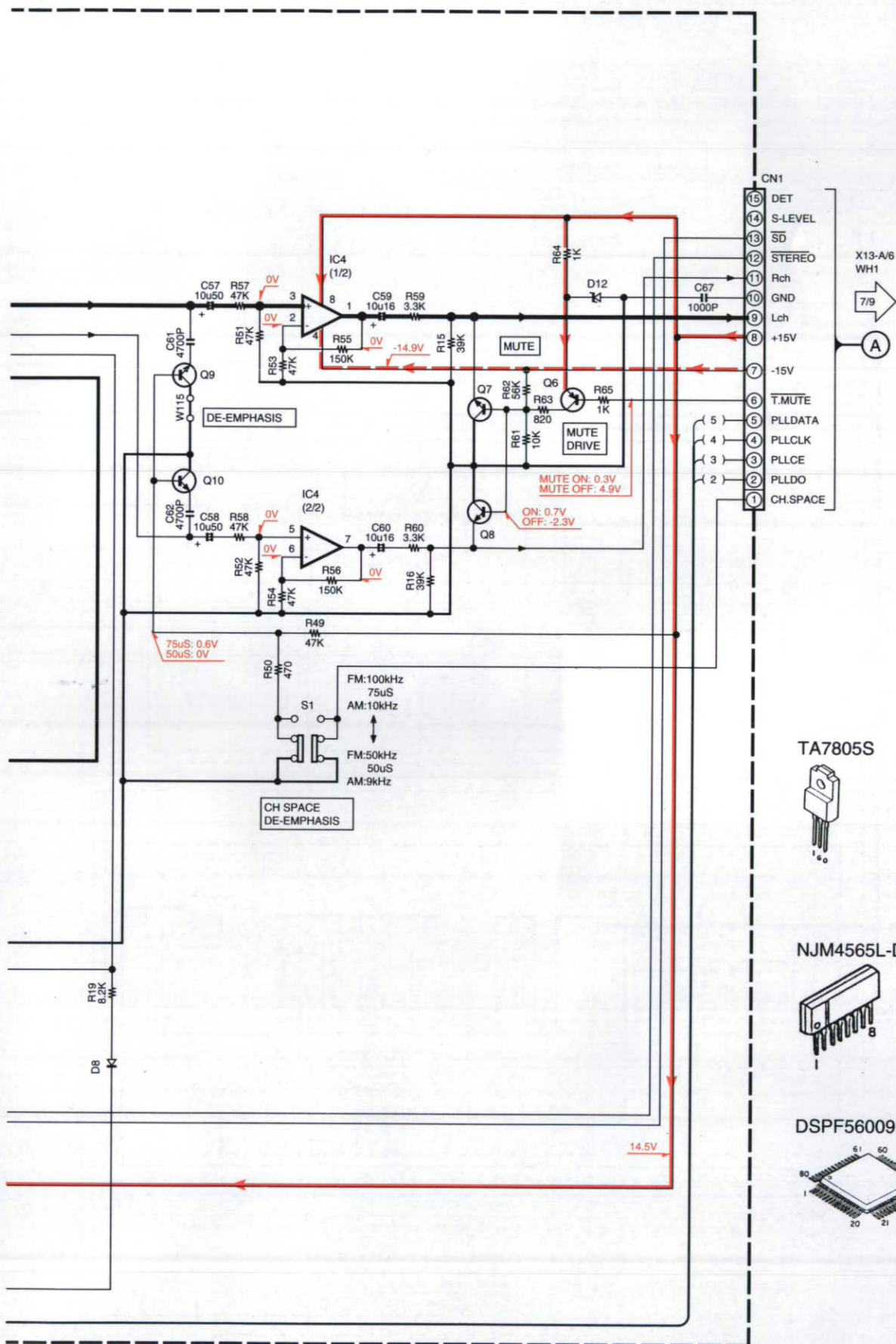


S-VIDEO VIDEO AUDIO
AV AUX

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.



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)

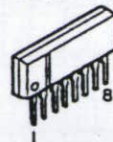
TA7805S



TA79005S



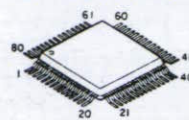
NJM4565L-D



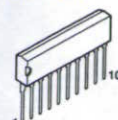
LA1832



DSPF56009FJ81



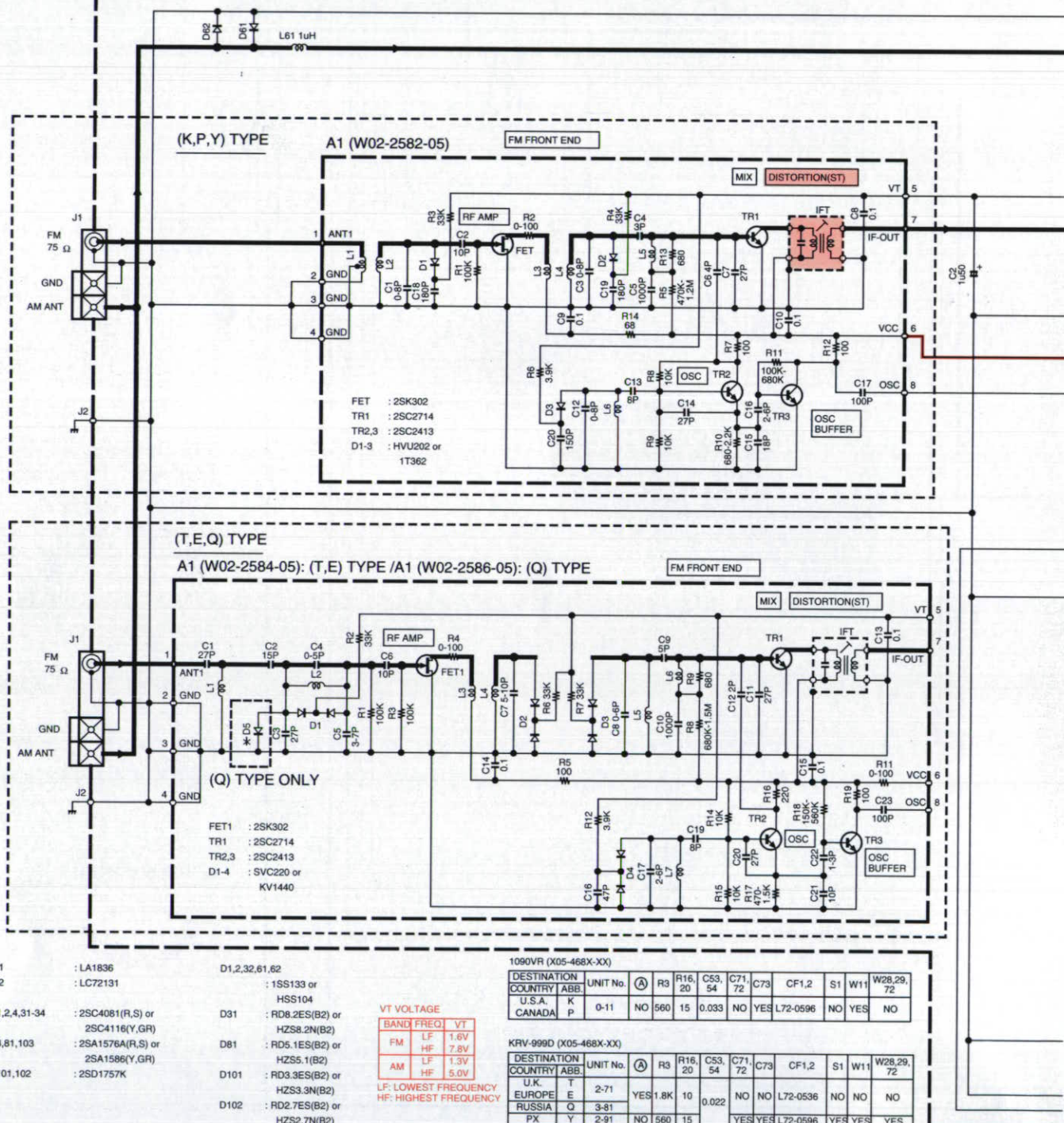
LA7950



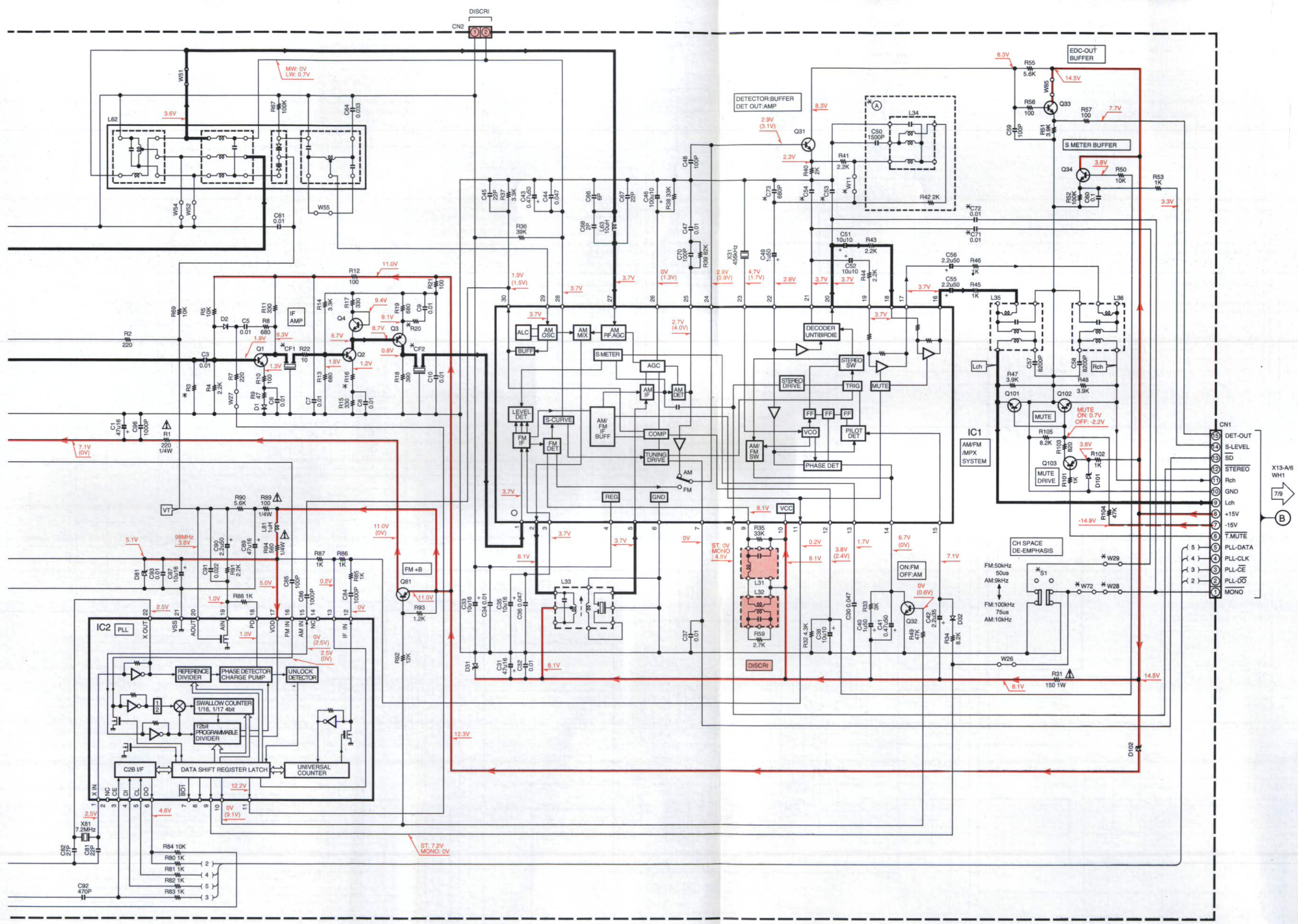
(X05-468X-XX) (K,P,T,E,Q,Y) TYPE

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



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.



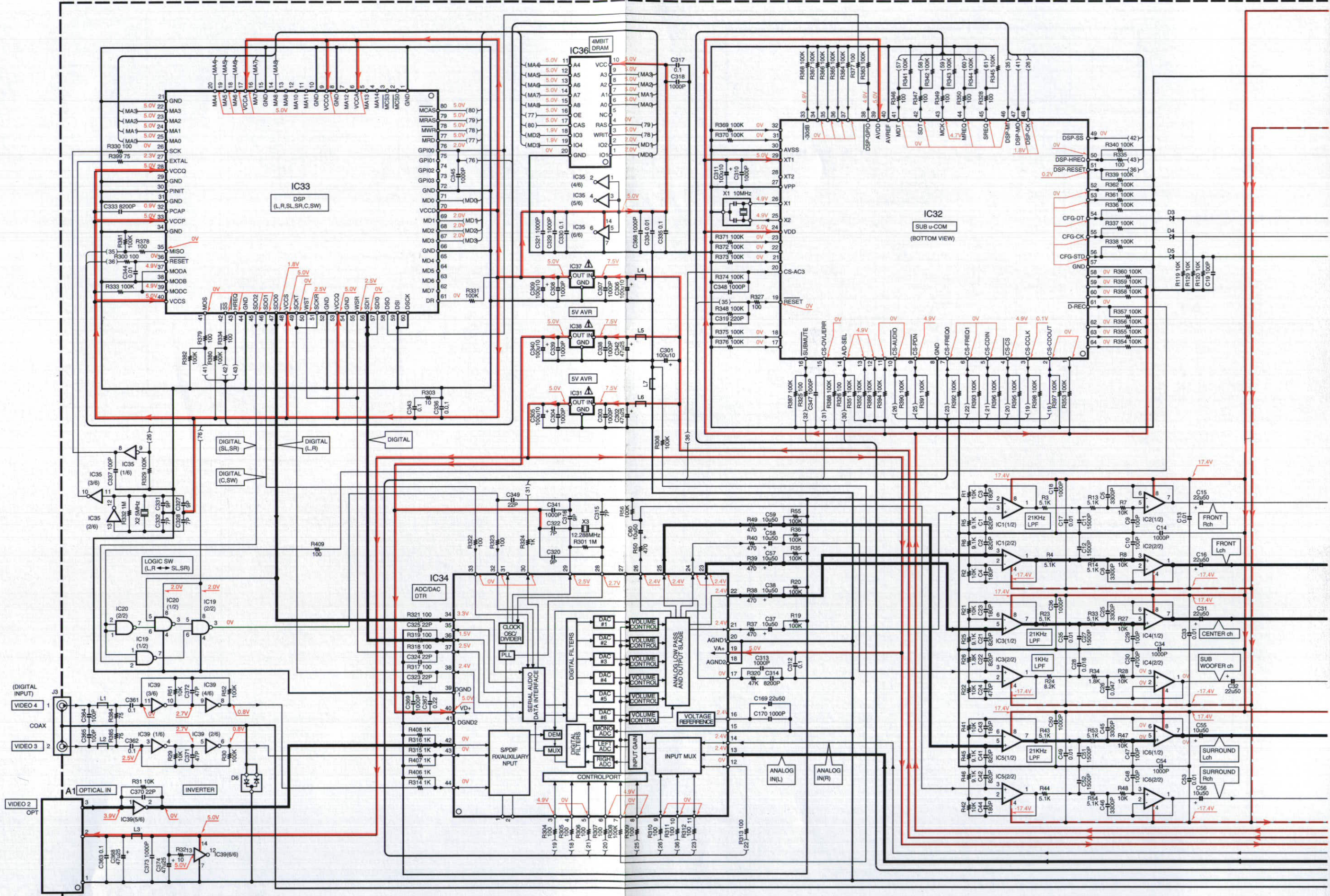
KR-V999D,1090VR(K) (2/9)

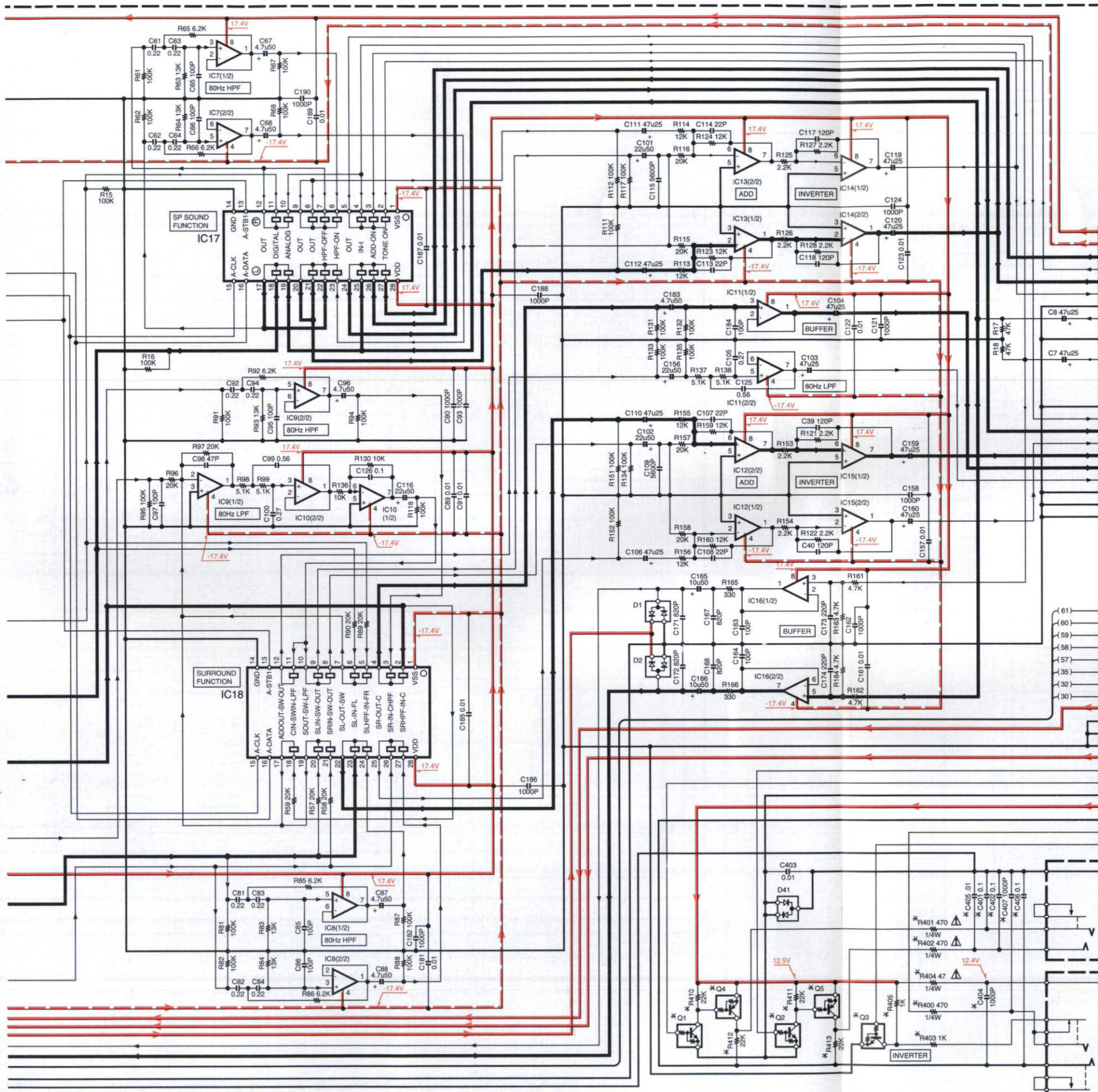
KR-V999D/1090VR

Y05-3300-10

KENWOOD

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





KR-V999D (X08-273X-XX)							
DESTINATION		UNIT NO	J1.2	D1-5	C401 402, 404-407	C401 404-407	
COUNTRY	ABB						
U.K.	A	2-71	NO	NO	NO	NO	
EUROPE	E						
RUSSIA	Q						
GENERAL MARKET	M	2-91	NO	NO	NO	NO	
CHINA	C						
PX	Y						

1090VR (X08-273X-XX)							
DESTINATION		UNIT NO	J1.2	D1-5	C401 402, 404-407	C401 402, 404-407	
COUNTRY	ABB						
U.S.A.	K	0-10	YES	YES	YES	YES	
CANADA	P						

- | | |
|--------------|-------------------------|
| (X08-) (A/2) | |
| IC1-16 | : NJM4580ED or NJM4580E |
| IC17 | : TC9163AF |
| IC18 | : TC9162AF |
| IC19,20 | : TC7W00FU |
| IC31,37,38 | : TA7805S or uPC7805AHF |
| IC32 | : uPD78018FGC5 |
| IC33 | : DSPF66009J81 |
| IC34 | : CS4225-KC |
| IC35,39 | : TC74HC04AF |
| IC36 | : LH64256CK-70 |
| Q1-3 | : UN5212 or DT5124EUA |
| Q4,5 | : UN5112 or DTA124EUA |
| DI2,6,41 | : DA204K |
| DS-5 | : MA110 |

 SIGNAL LINE
 GND LINE
 +B LINE
 -B LINE

2SA1123
2SA1534A
2SA992
2SC1845
2SC2003
2SC2631

2SC28782S
C3940A2S
D863

DTA113ZSA 2SA1048
DTA124ESA 2SC2458
DTC124ESA
DTC143TSA
UN4112

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). ⚠ 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.

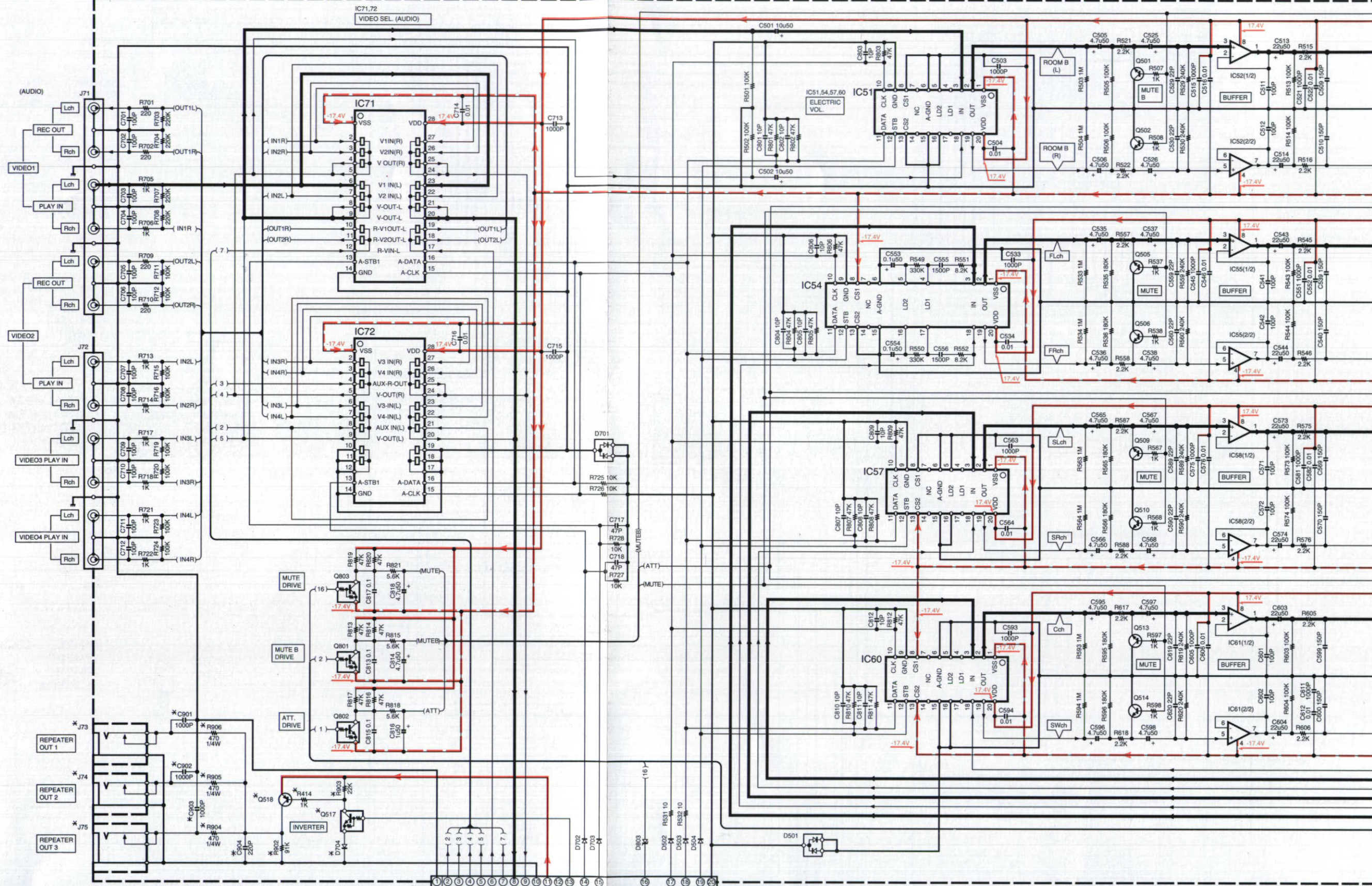
KR-V999D,1090VR(K) (3/9)

Y05-3300-10

KR-V999D/1090VR

KENWOOD

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

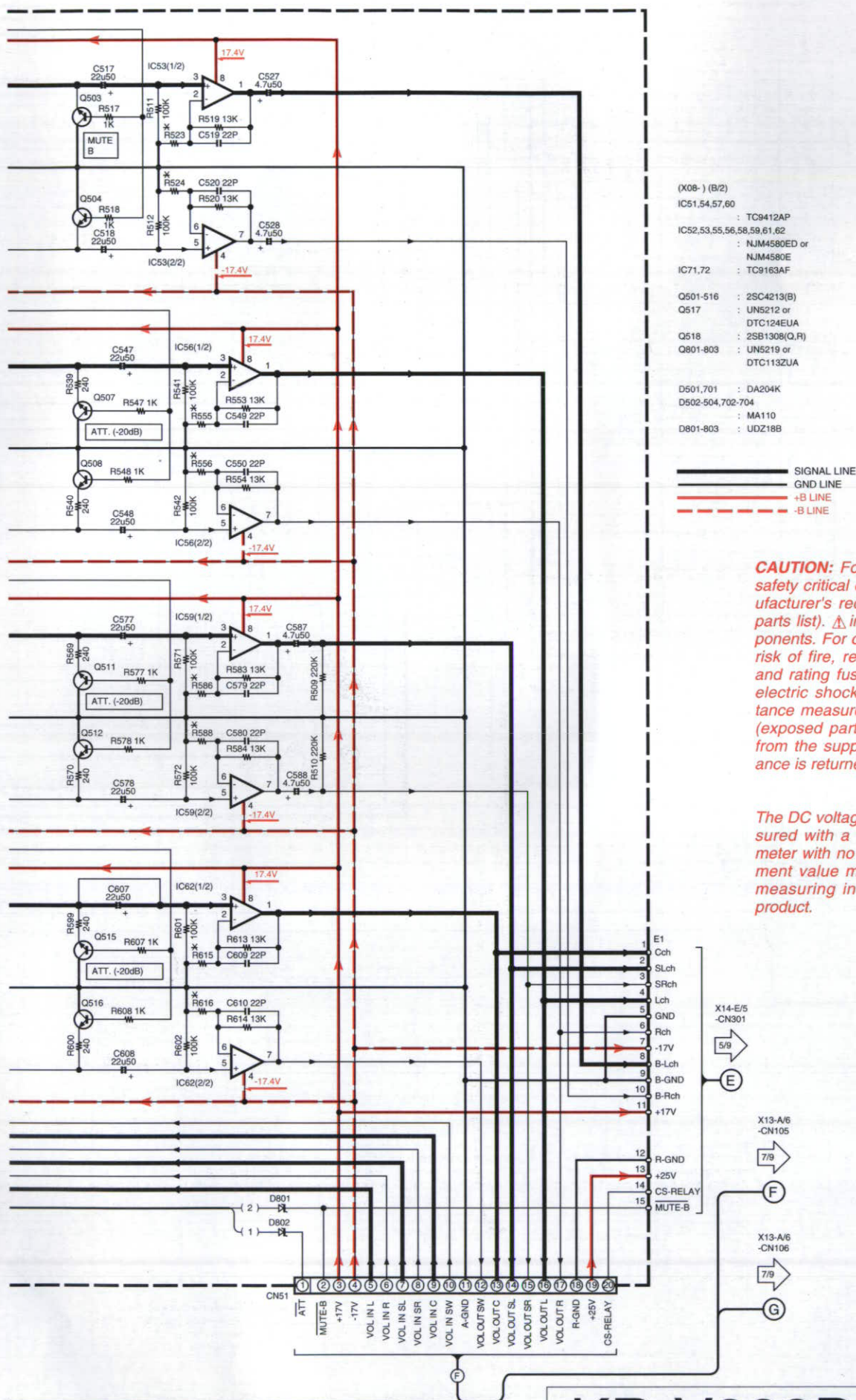


KR-V999D (X08-273X-XX)

DESTINATION	UNIT No.	J73-75	Q517.518	D704	C901-904	R414.902	R523.524.555.556	R585.586.615.616
U.K.	T	2-71	NO	NO	NO	NO	3.6K	
RUSSIA	O							
EUROPE	E							
GENERAL MARKET	M							
CHINA	C	2-91					2.7K	
PX	Y							

1090VR (X08-273X-XX)

DESTINATION	UNIT No.	J73-75	Q517.518	D704	C901-904	R414.902	R523.524.555.556	R585.586.615.616
U.S.A.	O	0-10	YES	YES	YES	YES	2.7K	
CANADA	P							

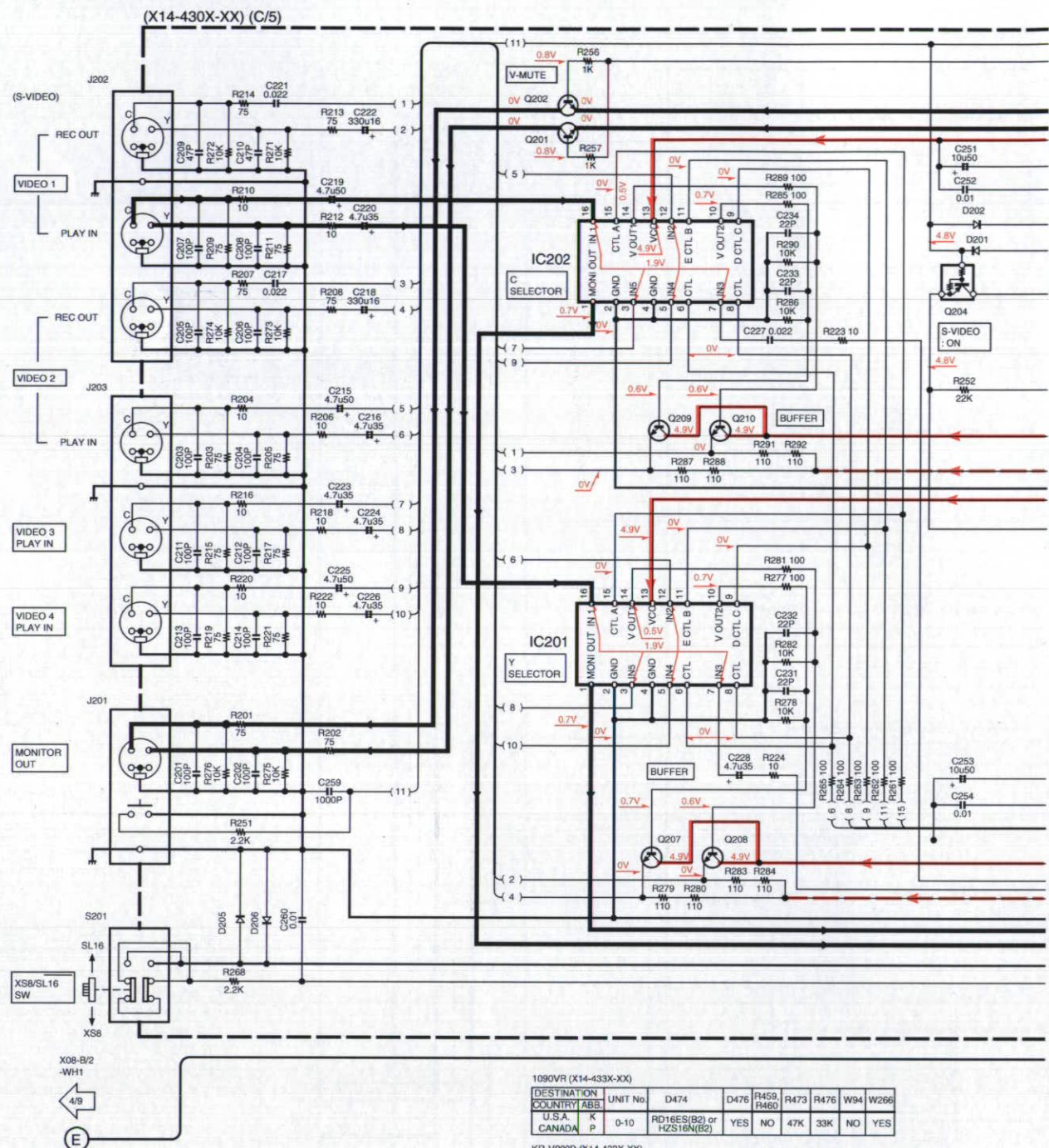


KR-V999D,1090VR(K) (4/9)

Y05-3300-10

KR-V999D/1090VR

KENWOOD



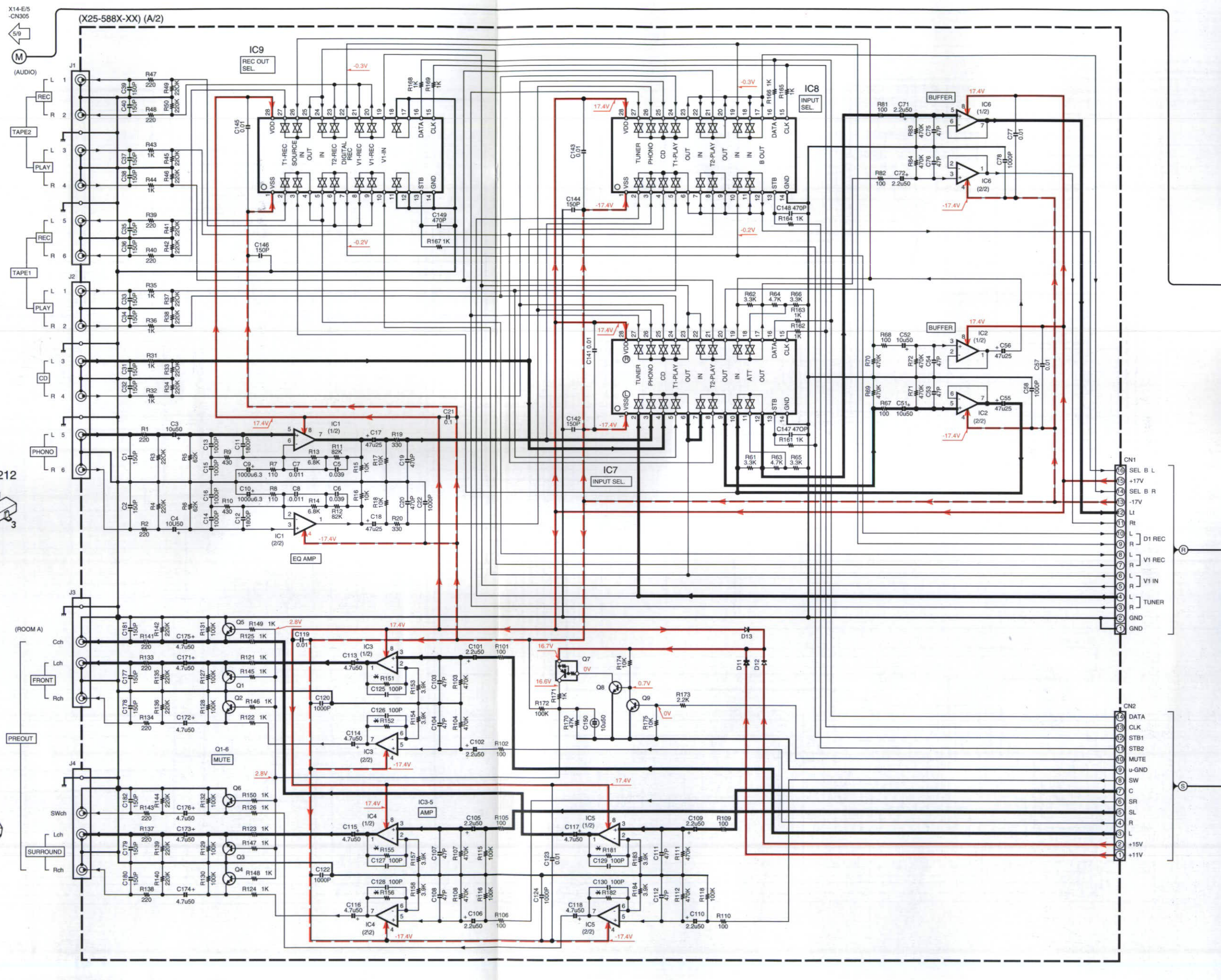
The DC voltage is an actual reading measured with a high impedance type voltmeter with no signal input. The measurement value may vary depending on the measuring instruments used or on the product.

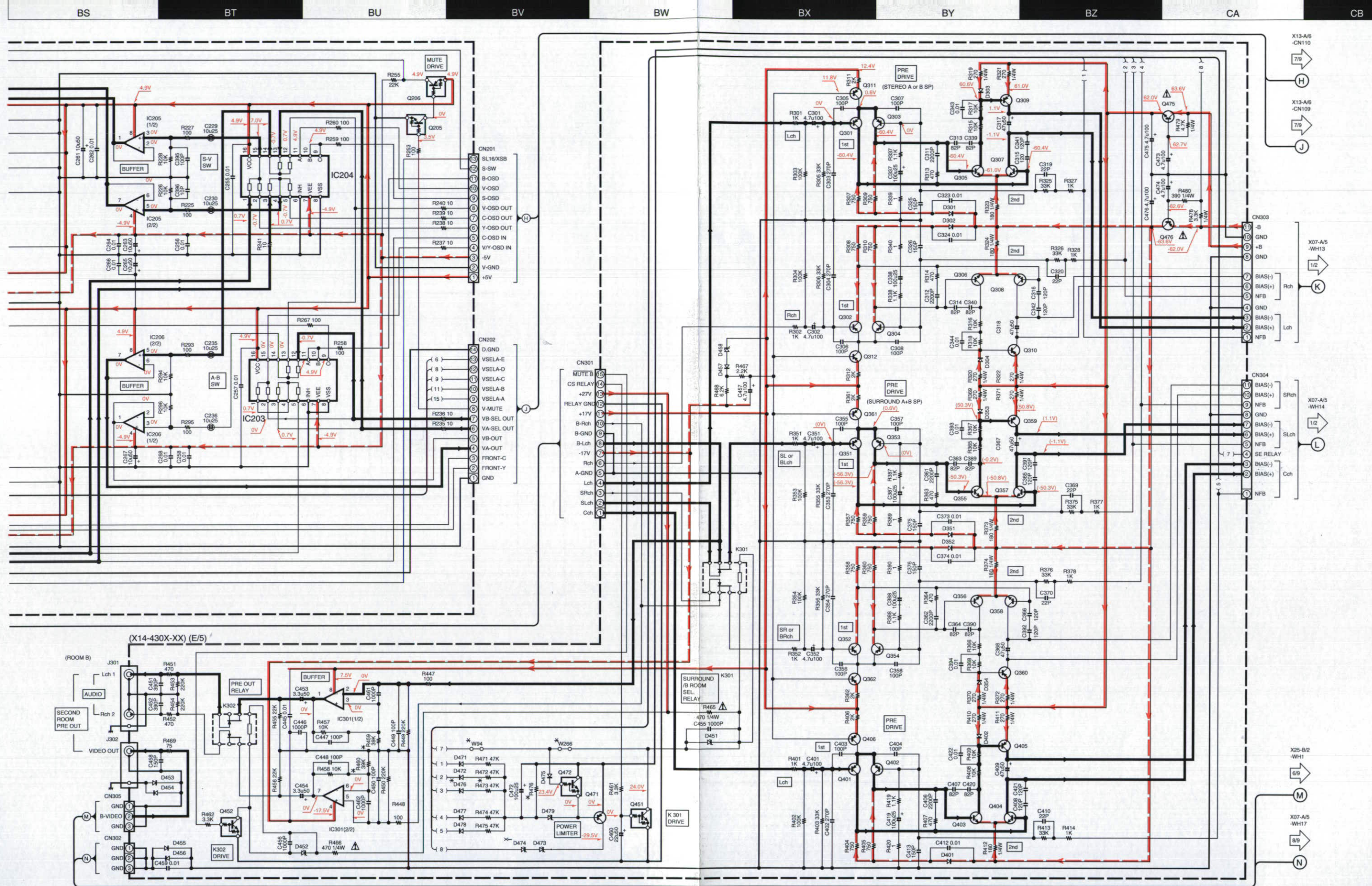
— SIGNAL LINE
— GND LINE
— +B LINE
— -B LINE

CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). 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.

- MC14577CP
NJM4580DNJ
M4580D-D
- NJM4565M
NJM4580ED
TC7W00FU
- UPC7805AHF
DA204K
UN5212
- UPD16311
2SK246
- TC9162AF
TC9163AF
- TC74HCU04AF
- LA1836
TC9412APA
- TC9162N
TC9164N
- LC72131





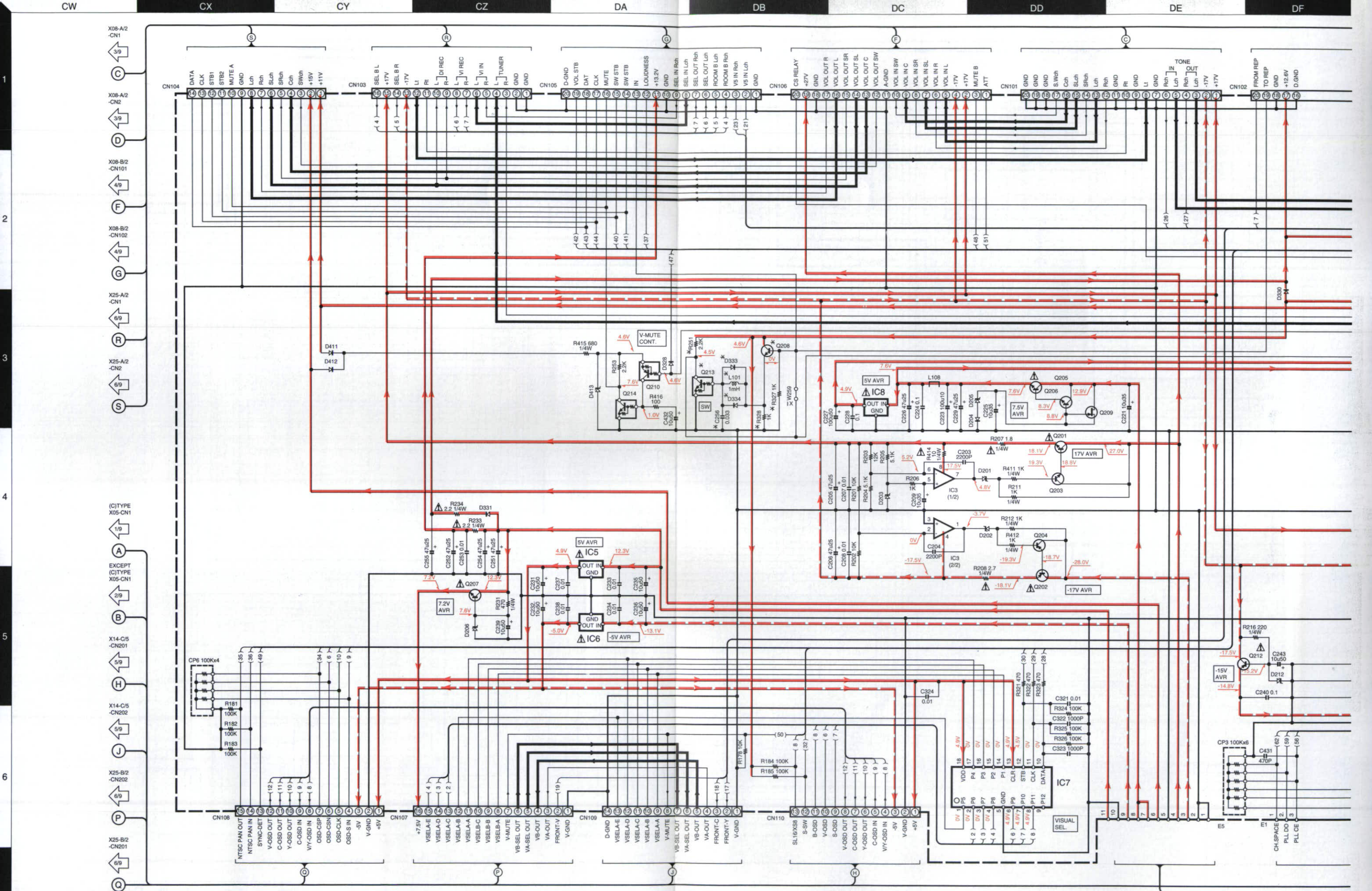
CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). Δ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, 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.

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

KR-V999D/1090VR

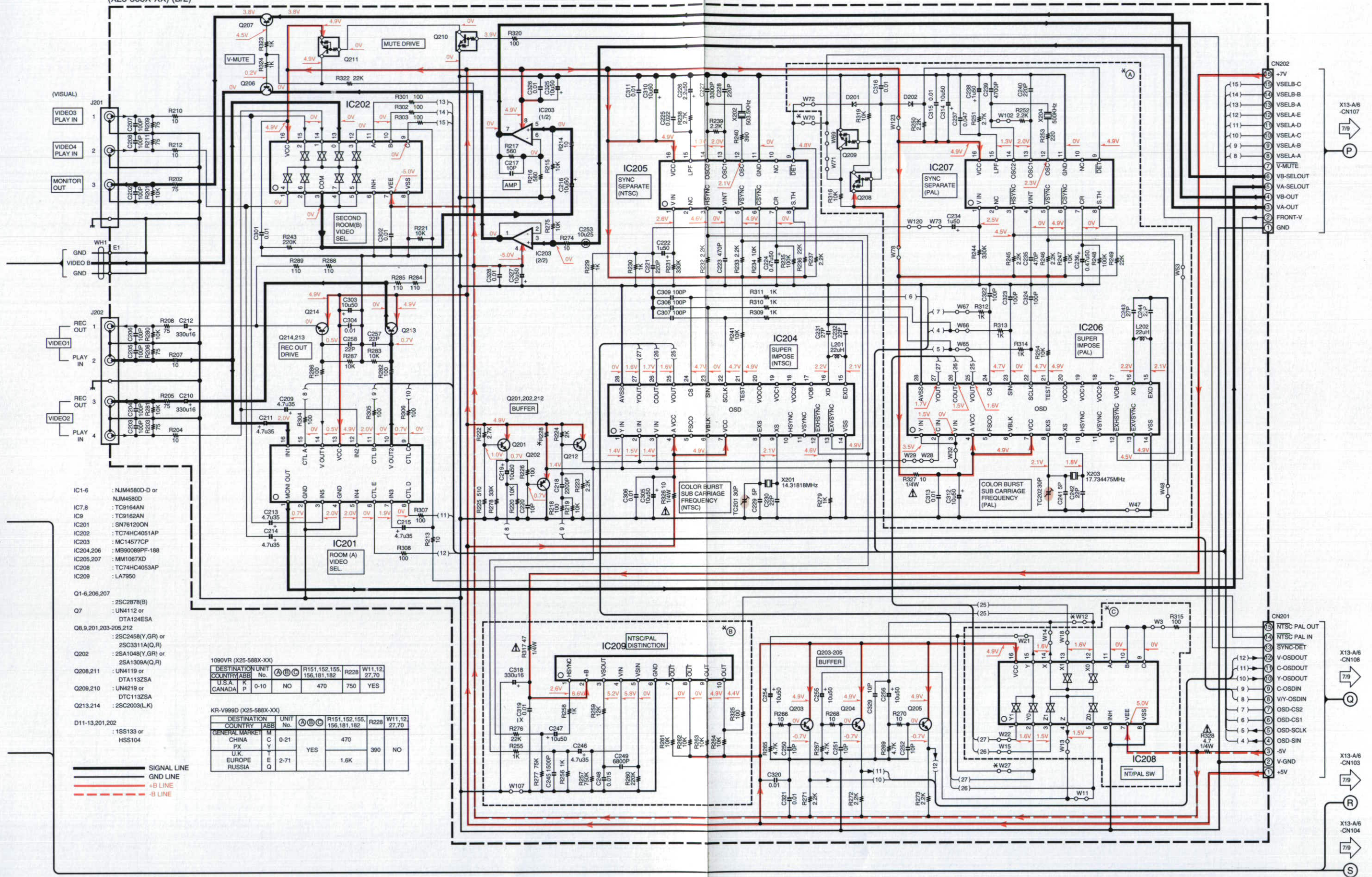
Y05-3300-10

KENWOOD



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)

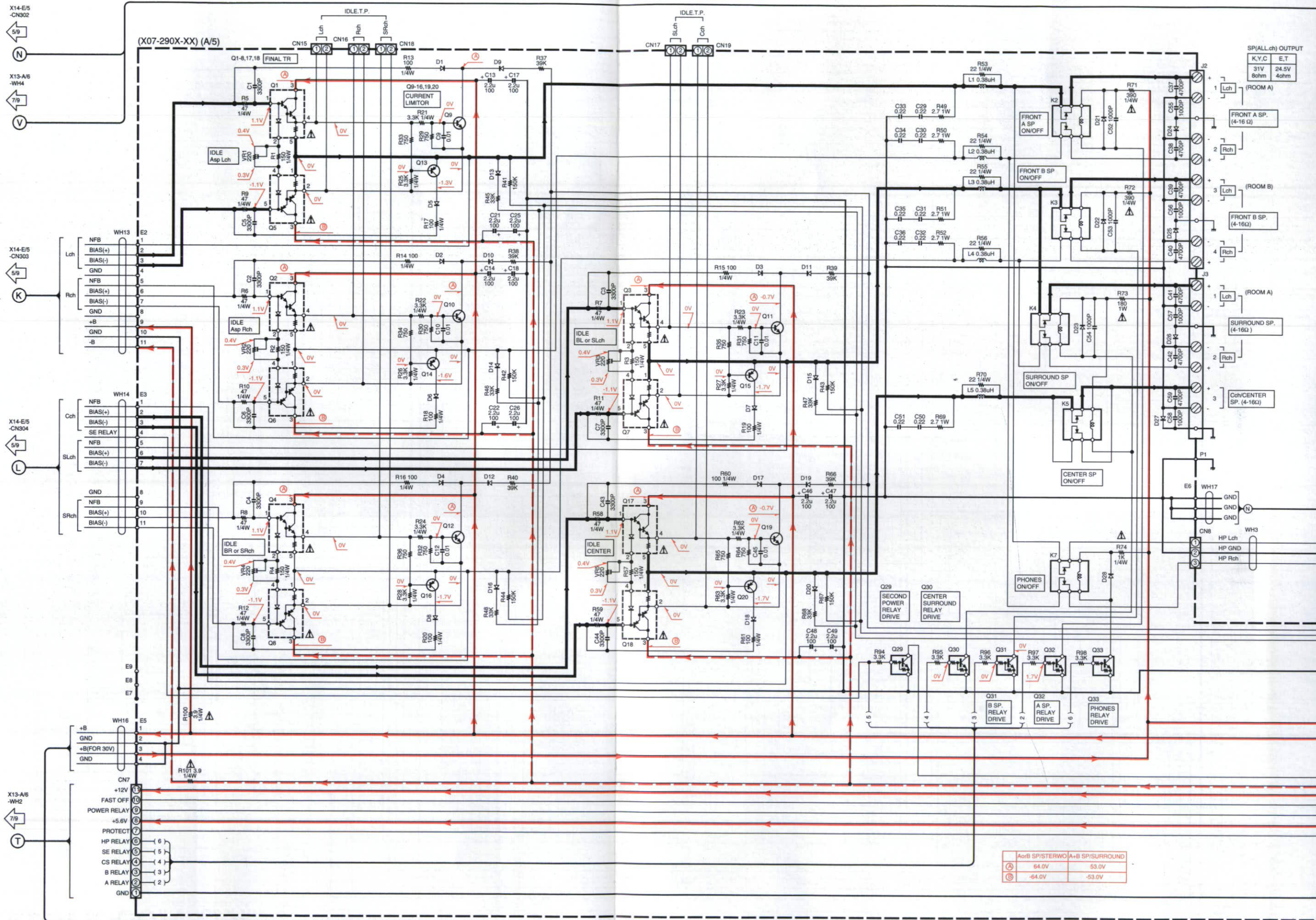


KR-V999D,1090VR(K) (6/9)

Y05-3300-10

KR-V999D/1090VR

KENWOOD



A or B SP/STEREO		A or B SP/SURROUND	
A	64.0V	B	53.0V
B	-64.0V	C	-53.0V

X13-B/6
-CN403

7/9

W

X13-A/6
-CN111

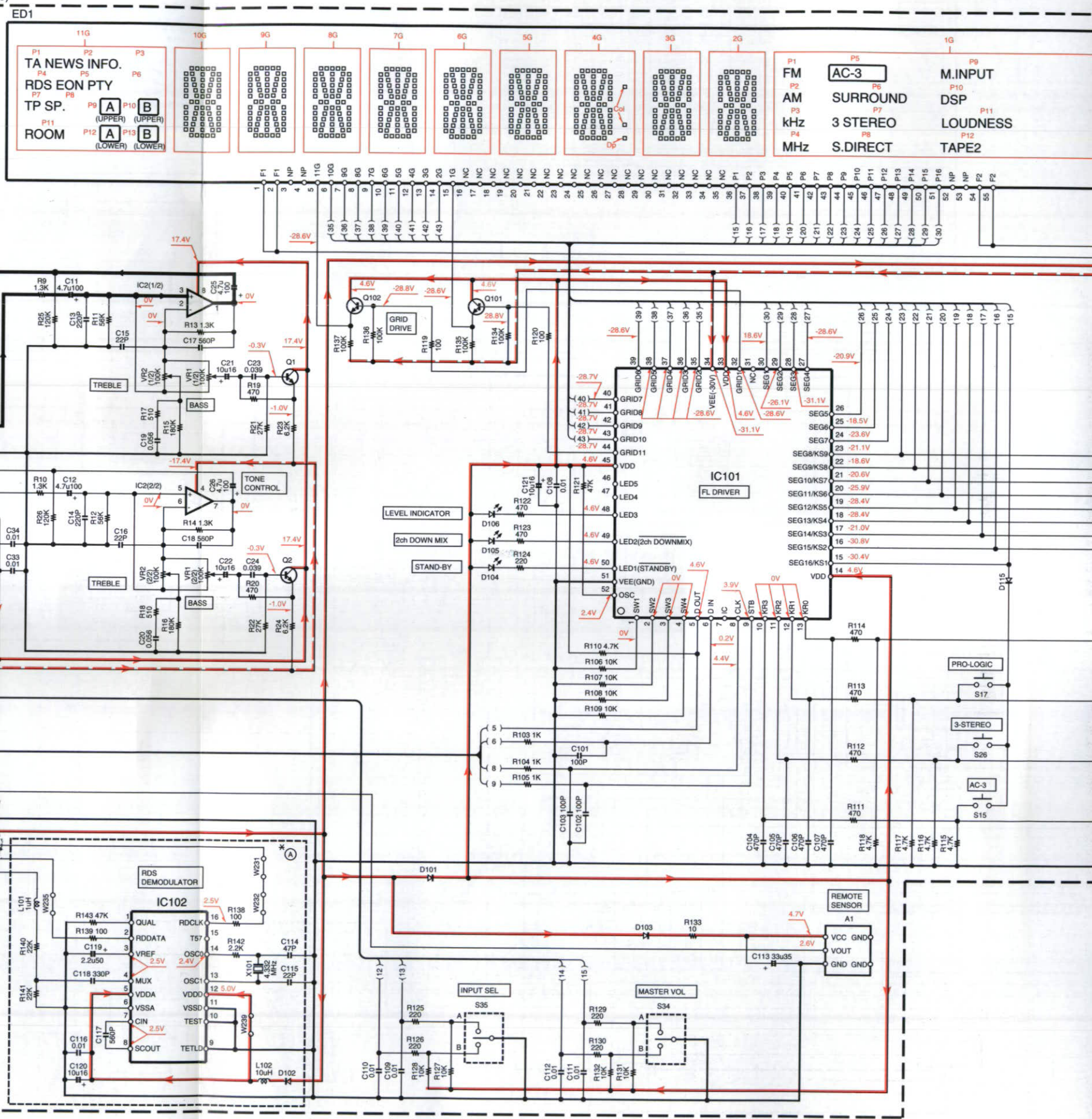
7/9

U

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	j	j	j	j	j	j	j	j	j	AM				
P3	INFO.	h	h	h	h	h	h	h	h	h	kHz				
P4	RDS	k	k	k	k	k	k	k	k	k	MHz				
P5	EON	b	b	b	b	b	b	b	b	b	AC-3				
P6	PTY	f	f	f	f	f	f	f	f	f	SURROUND				
P7	TP	g	g	g	g	g	g	g	g	g	3 STEREO				
P8	SP.	m	m	m	m	m	m	m	m	m	S.DIRECT				
P9	(A) (UPPER)	c	c	c	c	c	c	c	c	c	M.INPUT				
P10	(B) (UPPER)	e	e	e	e	e	e	e	e	e	DSP				
P11	ROOM	r	r	r	r	r	r	r	r	r	LOUDNESS				
P12	(A) (LOWER)	n	n	n	n	n	n	n	n	n	TAPE 2				
P13	(B) (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 : NJM4565L-D
IC2 : NJM4565D-D
IC101 : UPD16311
IC102 : SAA6579
- 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 : 1SS133 or
HSS104
D101,103 : 1SS131 or
HSS104A
D104-106 : B30-2509-05
D151,152 : RD3.3ES(B2) or
HZS3.3N(B2)
D153 : RD11ES(B2) or
HZS11N(B2)
A1 : W02-2561-05
ED : 11-MT-110GK

(X14-30X-XX) (A/5)



KR-V999D (X07-290X-XX)

DESTINATION	COUNTRY	ABB	UNIT No.	F1	F2	F3	T1	J1	R93	WH1	WH2	W181	W182	W183	CN5	CN14	P3,4	CN3,4	K1
GENERAL MARKET	CHINA	C	3-01		T3 15AL 250V	NO	NO	L07-2114-05 E03-0149-05	NO	E35-1325-05 E35-1326-05	NO	NO	NO	NO	NO	YES	YES	YES	
PX	U.K.	Y	2-91		T3 15AL 250V	NO	NO	L07-0865-05 E03-0330-05	NO	E35-1426-05 E35-1828-05	NO	YES	NO	YES	NO	NO	NO	NO	S76-0070-05 TV-5
U.K.	U.K.	T	0-51		T3 15AL 250V	NO	NO	L07-0867-05 E03-0310-05	NO	E35-1426-05 E35-1828-05	NO	YES	NO	YES	NO	NO	NO	NO	
EUROPE	EUROPE	E	2-71		T3 15AL 250V	NO	NO	L07-0867-05 E03-0310-05	NO	E35-1426-05 E35-1828-05	NO	YES	NO	YES	NO	NO	NO	NO	
RUSSIA	RUSSIA	Q	3-81		T3 15AL 250V	NO	NO	L07-2114-05 E03-0149-05	NO	E35-1325-05 E35-1326-05	NO	NO	NO	NO	NO	YES	YES	YES	

KR-V999D (X13-747X-XX)

DESTINATION	COUNTRY	ABB	UNIT No.	C421	R401	W301	WH404	F11-13	F14	F15	S1
U.K.	U.K.	T	2-71	YES	NO	YES	YES	T1.25A L 250V	T500mA L 250V	T1.6A L 250V	YES
GENERAL MARKET	CHINA	M	0-21	YES	NO	YES	YES	T1.25A L 250V	T500mA L 250V	T1.6A L 250V	YES
RUSSIA	RUSSIA	Q	3-81	YES	NO	YES	YES	T1.25A L 250V	T500mA L 250V	T1.6A L 250V	YES
PX	PX	Y	2-91	NO	NO	NO	NO				NO

1090VR (X07-290X-XX)

DESTINATION	COUNTRY	ABB	UNIT No.	F1	F2	F3	T1	J1	R93	WH1	WH2	W181	W182	W183	CN5	CN14	P3,4	CN3,4	K1
U.S.A.	U.S.A.	K	0-10		10A 125V	NO	NO	L07-0864-05 E03-0148-05	YES	E35-1426-05 E35-1828-05	YES	YES	YES	YES	YES	NO	NO	NO	S76-0065-05 TV-6
CANADA	CANADA	P	0-10		10A 125V	NO	NO	L07-0864-05 E03-0148-05	YES	E35-1426-05 E35-1828-05	YES	YES	YES	YES	YES	NO	NO	NO	

1090VR (X13-747X-XX)

DESTINATION	COUNTRY	ABB	UNIT No.	C421	R401	W301	WH404	F11-13	F14	F15	S1
U.S.A.	U.S.A.	K	0-10	NO	YES	NO	NO	1.25A 125V	1A 125V	1.6A 125V	NO
CANADA	CANADA	P	0-10	NO	YES	NO	NO	1.25A 125V	1A 125V	1.6A 125V	NO

(X07-)
Q1-4,17
Q5-8,18
Q9-12,19
Q13-16,20,21
Q22,23
Q24
Q25,37
Q26,27,29-33
Q28,36,38
Q34
Q35

TRAIR4N 5*
TRAIR4P 5*
2SC2631(R,S)
2SA992(F,E)
2SC1845(F,E)
2SD2061(E,F) or 2SD2012
UM4216 or DTC143TSA
UM4219 or DTC113ZSA
UM4212 or DTC124ESA
2SC2003(L,K)
2SC3940A(R,S) or 2SD863(E,F)

D1-28,31,35-37,
43,45-47
D29
D30
D32,33
D34
D38-41,405
D42
D44
D401-404
D406,407

: 1SS131 or HSS104A
: RD11ES(B2) or HZS11N(B2)
: RD15ES(B2) or HZS15N(B2)
: D5FB20-4002-L2
: RD6.2ES(B2) or HZS6.2N(B2)
: S5688B or 1SR139-400
: RD2.7ES(B2) or HZS2.7N(B2)
: RD5.1JS(B2) or HZS5.1S(B2)
: 1B4B41
: RD7.5JS(B) or HZS7.5S(B)

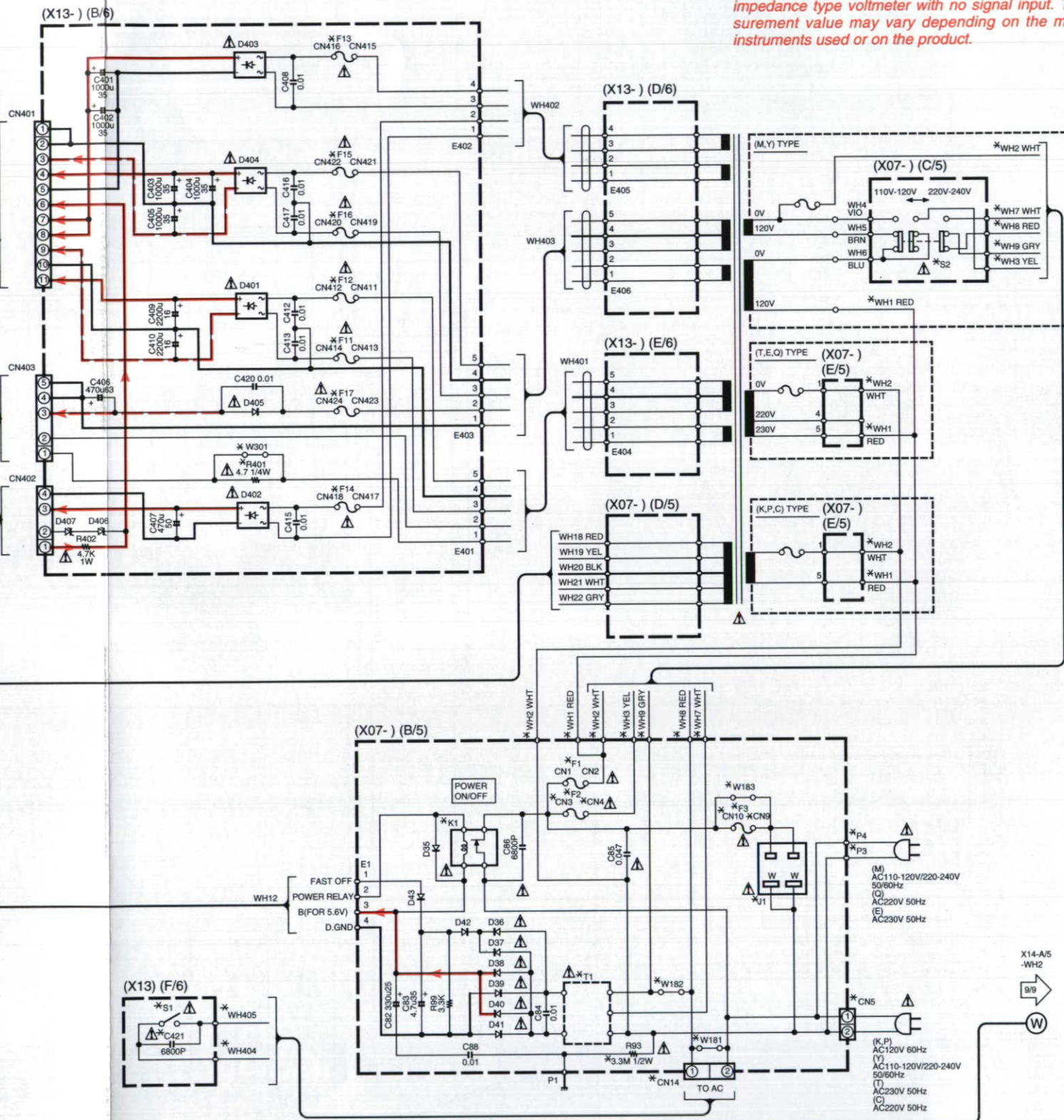
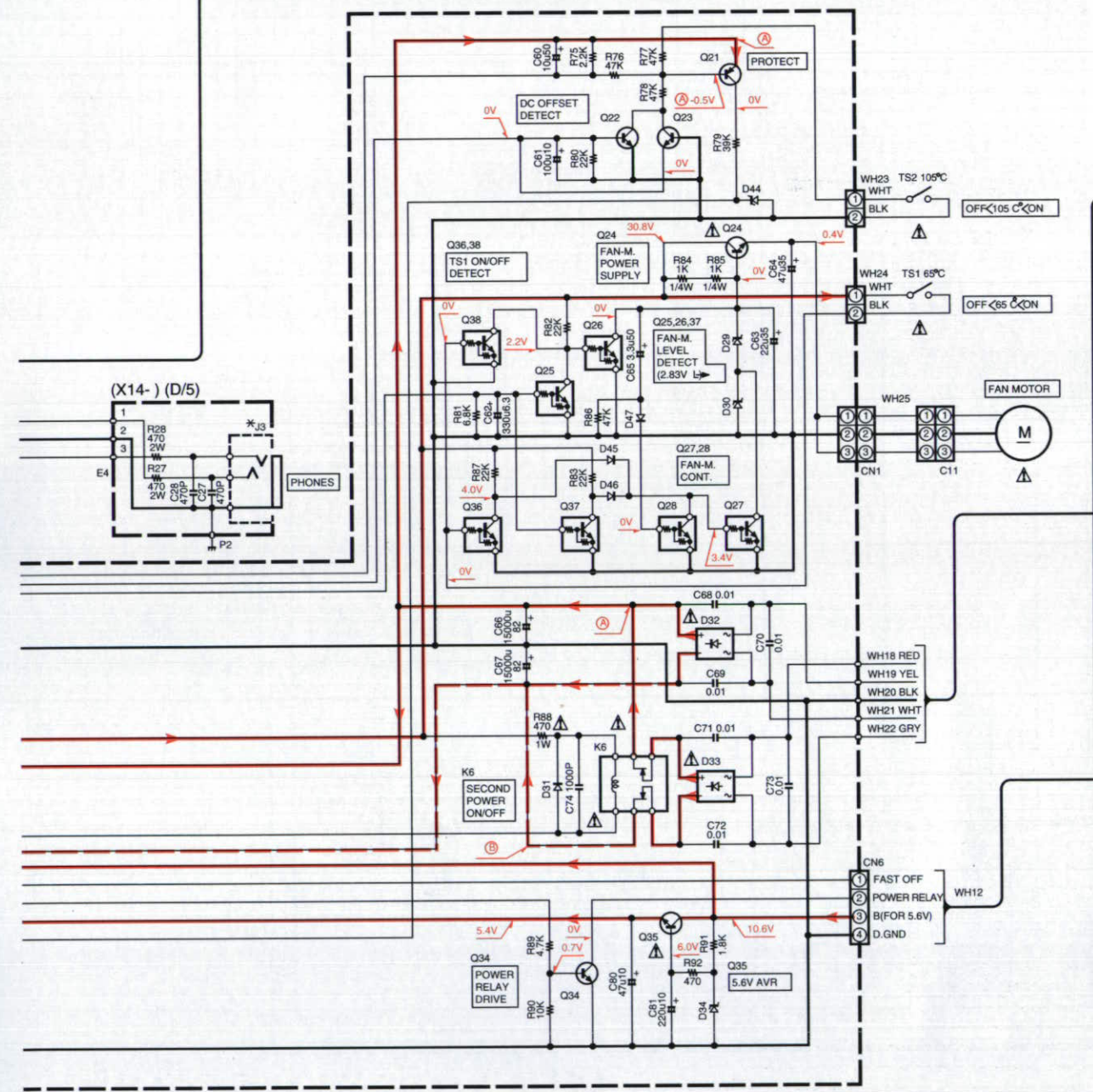
(X13-)

D401-404 : 1B4B41
D405 : S5688B or 1SR139-400
D406,407 : RD7.1JS(B) or HZS7.1S(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). 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.

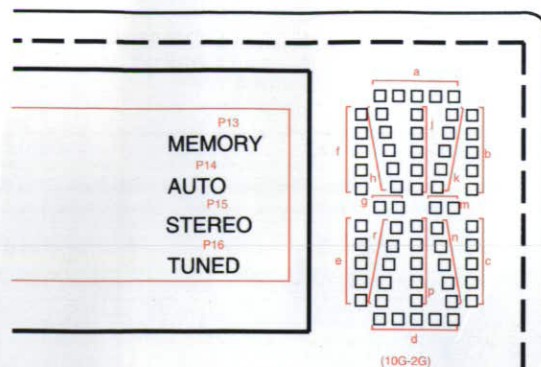


KR-V999D, 1090VR(K) (8/9)

Y05-3300-10

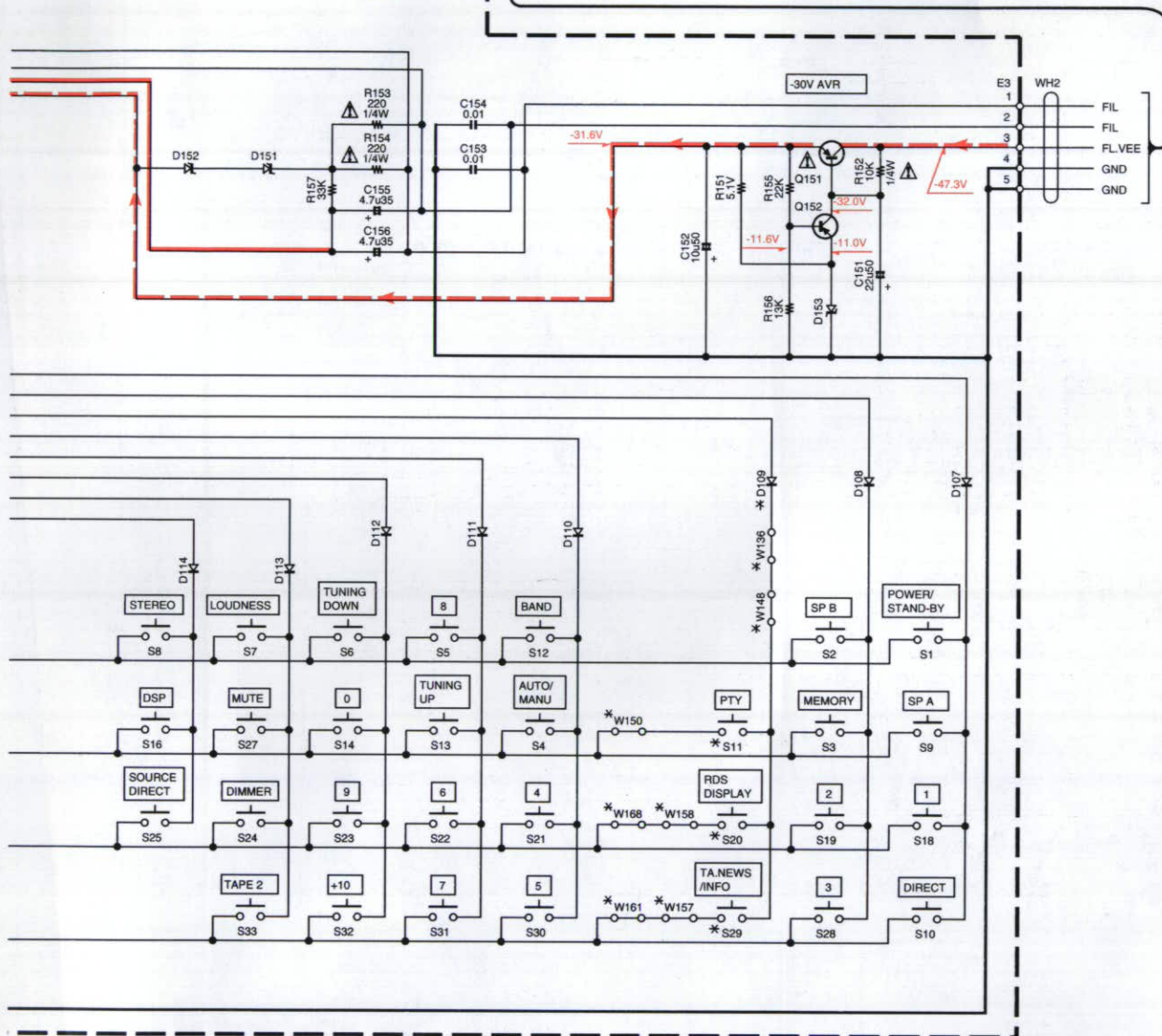
KR-V999D/1090VR

KENWOOD



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

KR-V999D (X14-433X-XX)

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

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

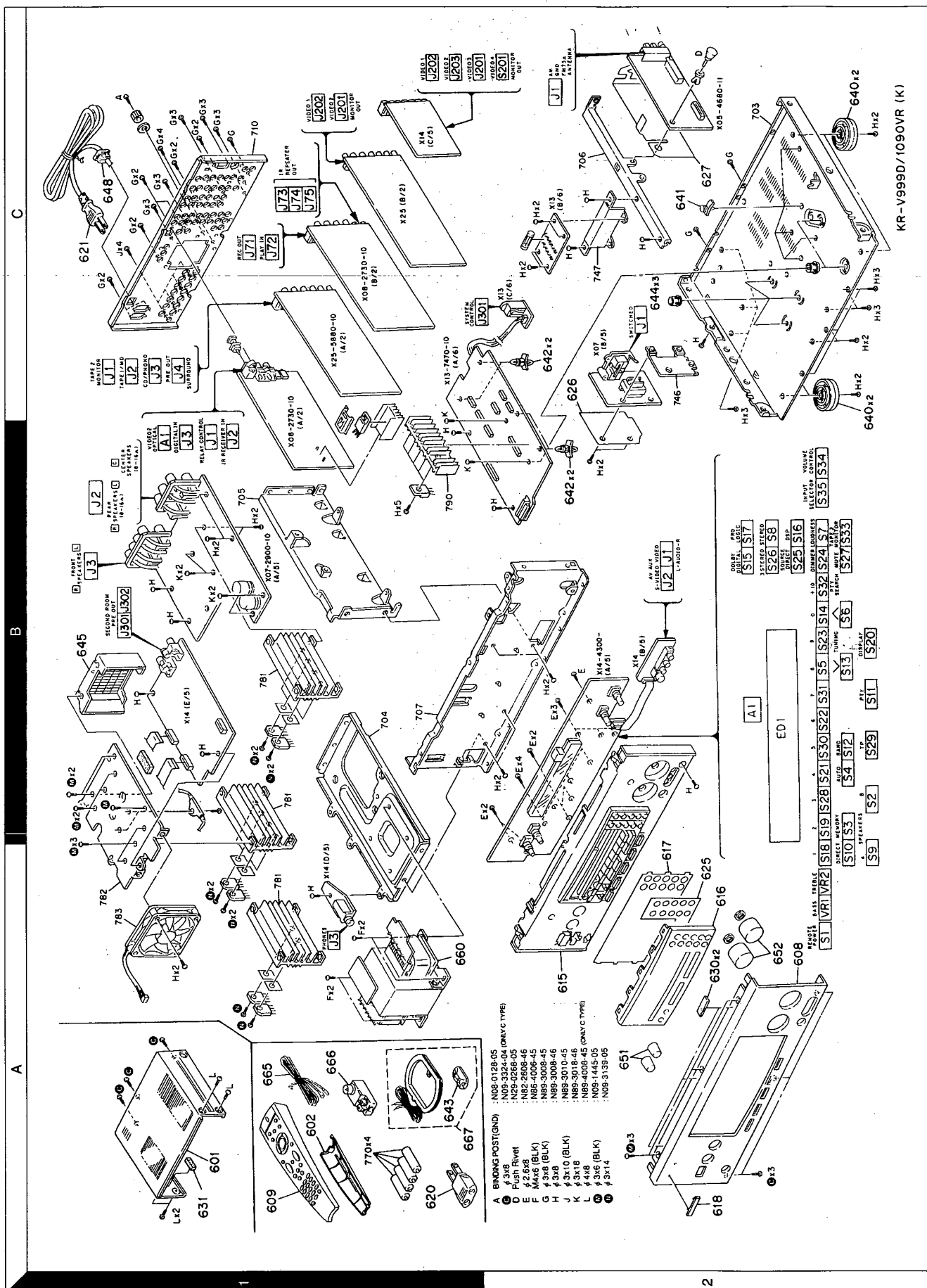
KR-V999D, 1090VR(K) (9/9)

KR-V999D/1090VR

Y05-3300-10

KENWOOD

EXPLODED VIEW (UNIT)



KR-V999D/1090VR

PARTS LIST

* New Parts
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⑦

Ref. No	Add-ress	New Parts	Parts No.	Description	Desti-nation	Re-marks
KR-V999D/1090VR						
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)	KPY	
608	2A	*	A60-1046-12	PANEL (TITAN)		
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	*	B10-2237-02	FRONT GLASS	KPYTEQ	
616	2A	*	B10-2238-02	FRONT GLASS	M	
616	2A	*	B10-2298-02	FRONT GLASS	C	
617	2A	*	B10-2332-02	FRONT GLASS	KPYMTE	
617	1A	*	B11-0295-03	COLOR FILTER	Q	
617	1A	*	B11-0295-03	COLOR FILTER	C	
617	1A	*	B11-0344-13	COLOR FILTER	KPYMTE	
618	2A	*	B43-0302-04	KENWOOD BADGE		
618	2A	*	B43-0302-04	KENWOOD BADGE	Q	
618	2A	*	B43-0305-04	KENWOOD BADGE	C	
-	-	-	B46-0197-00	QUESTIONNAIRE CARD	K	
-	-	-	B46-0310-03	WARRANTY CARD	TEQ	
-	-	-	B46-0326-03	WARRANTY CARD	C	
-	-	-	B46-0330-03	WARRANTY CARD	KY	
-	-	-	B46-0336-03	WARRANTY CARD	P	
-	-	-	B58-0513-04	CAUTION CARD (PRESET220-240)	Q	
-	-	-	B58-0513-04	CAUTION CARD (UL)	Y	
-	-	-	B58-0964-13	CAUTION CARD (T.X PL)	KY	
-	-	-	B58-0965-13	CAUTION CARD (T.X PL)	T	
-	-	-	B58-0966-13	CAUTION CARD (ELM PL)	CE	
-	-	-	B58-0967-03	CAUTION CARD (P PL)	P	
-	-	-	B58-1526-03	CAUTION CARD (P4 ORI.A4.1(Q)	Q	
-	-	-	B59-1104-00	SERVICE DIRECTORY	Y	
-	-	-	B60-3008-00	INSTRUCTION MANUAL(ENGLISH)	KPY	
-	-	-	B60-3009-00	INSTRUCTION MANUAL(ENGLISH)	T	
-	-	-	B60-3010-00	INSTRUCTION MANUAL(ENGLISH)	CM	
-	-	-	B60-3011-00	INSTRUCTION MANUAL(FRENCH)	P	
-	-	-	B60-3012-00	INSTRUCTION MANUAL(FRENCH)	E	
-	-	-	B60-3013-00	INSTRUCTION MANUAL(SPANISH)	M	
-	-	-	B60-3014-00	INSTRUCTION MANUAL(ITALIAN)	E	
-	-	-	B60-3124-00	INSTRUCTION MANUAL(GERMAN)	E	
-	-	-	B60-3126-00	INSTRUCTION MANUAL(CHINESE)	M	
-	-	-	B60-3127-00	INSTRUCTION MANUAL(CHINESE)	C	
-	-	-	B60-3251-00	INSTRUCTION MANUAL(DUTCH)	E	
-	-	-	B60-3252-00	INSTRUCTION MANUAL(SPANISH)	E	
-	-	-	B60-3259-00	INSTRUCTION MANUAL(RUSSIAN)	Q	
-	-	-	B60-3300-00	INSTRUCTION MANUAL(POLISH)	Q	
620	1A	*	E03-0343-05	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	

L : Scandinavia
Y : PX(Far East, Hawaii)
Y : AAFES(Europe)
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②

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621	1C	*	E30-2825-05	AC POWER CORD	C	
625	2A	*	F19-1076-03	BLIND PLATE	C	
627	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	UNIT HOLDER	C	
641	2C	*	J19-3300-05	UNIT HOLDER		
642	2C	*	J19-3324-15	UNIT HOLDER		
643	1A	*	J19-3645-05	ANT HOLDER	M	
644	2C	*	J19-3732-04	UNIT HOLDER	KPYMTE	
645	1B	*	J19-5778-03	HOLDER	Q	
648	1C	*	J42-0083-05	POWER CORD BUSHING	C	
-	-	-	J61-0098-05	WIRE BAND	KPYMTE	
-	-	-	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)	C	
652	2A	*	K29-6251-04	KNOB	KPYMTE	
652	2A	*	K29-6251-04	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	K	
C5			CK73FB1H102K	CHIP C	0.010UF	
C8			CK73FB1H103K	CHIP C	1000PF	
C9			CE04LW1C100M	ELECTRO	0.010UF	
C10			CK73FB1H473K	CHIP C	10UF 16WV	

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KR-V999D/1090VR

PARTS LIST

3						4					
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Ref. No	Add-ress	New Parts	Parts No.	Description	Re- marks	Ref. No	Add-ress	New Parts	Parts No.	Description	Re- marks
C11			CE04LW1H010M	ELECTRO		R19			RK73FB2A822J	CHIP R	
C12			CE04LW1H2R2M	ELECTRO		R20 ,23			RK73FB2A102J	CHIP R	1/10W
C13			CK73FB1H102K	CHIP C		R24			RK73FB2A562J	CHIP R	1/10W
C14			CE04LW1H010M	ELECTRO		R25			RD14NB2E101J	RD	1/4W
C15			CK73FCH1H220J	CHIP C		R26			RD14NB2E561J	RD	1/4W
C16			CE04LW1C100M	ELECTRO		R27 ,28			RK73FB2A103J	CHIP R	1/10W
C17			CK73FB1H562K	CHIP C		R29 ,30			RK73FB2A103J	CHIP R	1/10W
C18			CK73FB1H102K	CHIP C		R31			RK73FB2A103J	CHIP R	1/10W
C19			CK04HW1E4R7M	NP-ELEC		R32			RK73FB2A122J	CHIP R	1/10W
C20			CK73FB1E104K	CHIP C		R33			RK73FB2A123J	CHIP R	1/10W
C21 ,22			CQ93FMG1H113J	MYLAR		R41			RS14KB3A271JFR	FL-PROOF RS	1W
C23			CE04LW1H010M	ELECTRO		R42			RD14NB2E271J	RD	1/4W
C25			CE04LW1C100M	ELECTRO		R44			RK73FB2A101J	CHIP R	1/10W
C26			CE04LW1C470M	ELECTRO		R46			RK73FB2A104J	CHIP R	1/10W
C27			CE04LW1H010M	ELECTRO		R47			RK73FB2A153J	CHIP R	1/10W
C28			CQ93FMG1H223J	MYLAR		R48 ,49			RK73FB2A473J	CHIP R	1/10W
C29			CE04LW1H2R2M	ELECTRO		R50			RK73FB2A471J	CHIP R	1/10W
C30			CE04LW1C101M	ELECTRO		R51 ,54			RK73FB2A473J	CHIP R	1/10W
C31			CE04LW1A470M	ELECTRO		R55 ,56			RK73FB2A154J	CHIP R	1/10W
C32			CK73FB1H103K	CHIP C		R59 ,60			RK73FB2A332J	CHIP R	1/10W
C33			CK73FSL1H101J	CHIP C		R61			RK73FB2A103J	CHIP R	1/10W
C34 ,35			CK73FB1H102K	CHIP C		R62			RK73FB2A563J	CHIP R	1/10W
C36			CK73FCH1H270J	CHIP C		R63			RK73FB2A821J	CHIP R	1/10W
C37			CK73FCH1H220J	CHIP C		R64			RK73FB2A102J	CHIP R	1/10W
C38			CK73FB1H471K	CHIP C		R65			RK73FB2B102J	CHIP R	1/8W
C57 ,58			CE04LW1H010M	ELECTRO		R73			RK73FB2A681J	CHIP R	1/10W
C59 ,60			CE04LW1C100M	ELECTRO		W101 ,106			R92-0670-05	CHIP R	0 OHM
C61 ,62			CQ93FMG1H472J	MYLAR	CM	W108-113			R92-0670-05	CHIP R	0 OHM
C63			CK73FCH1H220J	CHIP C		W115			R92-0670-05	CHIP R	0 OHM
C64			CK73FCH1H330J	CHIP C		W201-212			R92-0679-05	CHIP R	0 OHM
C65			CK73FCH1H040C	CHIP C		S1			S62-0034-05	SLIDE SWITCH	
C67			CK73FB1H102K	CHIP C		D1 ,2			HSS104	DIODE	
CN1			E40-4609-05	PIN ASSY		D3 ,4			1SS133	DIODE	
CN1			E70-0052-05	LOCK TERMINAL BOARD		D8			HZS5.1N(B2)	ZENER DIODE	
CF1 ,2			L72-0531-05	CERAMIC FILTER		D8			RD5.1ES(B2)	ZENER DIODE	
CF3			L72-0593-05	CERAMIC FILTER		D8			HSS104	DIODE	
L1			L39-1348-05	COMBINATION COIL		D10			1SS133	DIODE	
L2			L30-0911-05	AM IFT		D12			MA111	DIODE	
L3 ,4			L40-1091-17	SMALL FIXED INDUCTOR(1UH)		D13			HZS3.3N(B2)	ZENER DIODE	
X1			L77-2159-05	CRYSTAL RESONATOR(7.2MHZ)		D12			RD3.3ES(B2)	ZENER DIODE	
X2			L78-0637-05	RESONATOR (456KHZ)		D13			HZS2.7N(B2)	ZENER DIODE	
R1			RK73FB2A332J	CHIP R		D13			RD2.7ES(B2)	ZENER DIODE	
R2			RK73FB2A681J	CHIP R		IC1			LA1832	ANALOGUE IC	
R3			RK73FB2A100J	CHIP R		IC2			LC72131	MOS-IC	
R4			RK73FB2A331J	CHIP R		IC4			NJM4565M	IC(OP AMP X2)	
R6			RK73FB2A101J	CHIP R		Q1			2SC2714(R.O)	TRANSISTOR	
R7			RK73FB2A473J	CHIP R		Q3			2SA1576A(R.S)	TRANSISTOR	
R8			RK73FB2A331J	CHIP R		Q3			2SA1586(Y.GR)	TRANSISTOR	
R12			RK73FB2A102J	CHIP R		Q5			2SC4081(R.S)	TRANSISTOR	
R13			RK73FB2A473J	CHIP R		Q5			2SC4081(R.S)	TRANSISTOR	
R15 ,16			RK73FB2A393J	CHIP R		Q6			2SC4116(Y.GR)	TRANSISTOR	
R17			RK73FB2A271J	CHIP R		Q7 ,8			2SA1576A(R.S)	TRANSISTOR	
R18			RK73FB2A302J	CHIP R		Q9 ,10			2SA1586(Y.GR)	TRANSISTOR	
									2SD1757K	TRANSISTOR	
									2SC4081(R.S)	TRANSISTOR	

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Ref. No	Add- ress	New Parts	Parts No.	Description	Desti- nation	Re- marks
C96			CK73FB1H102K	CHIP C	1000PF K	
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	
L31			L72-0596-05	CERAMIC FILTER	KPY	
L32			L30-0943-05	FM IFT		
L33			L30-0944-05	FM IFT		
			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(10UH)		
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		
X81			L77-2159-05	CRYSTAL RESONATOR(7.2MHZ)		
R1			RD14NB2E221J	RD	220 J	1/4W
R2			RK73FB2A221J	CHIP R	220 J	1/10W
R3			RK73FB2A182J	CHIP R	1.8K J	1/10W
R4			RK73FB2A561J	CHIP R	560 J	1/10W
R5			RK73FB2A222J	CHIP R	2.2K J	1/10W
R6			RK73FB2A103J	CHIP R	10K J	1/10W
R7			RK73FB2A221J	CHIP R	220 J	1/10W
R8			RK73FB2A681J	CHIP R	680 J	1/10W
R9			RK73FB2A470J	CHIP R	47 J	1/10W
R10			RK73FB2A101J	CHIP R	100 J	1/10W
R11			RK73FB2A331J	CHIP R	330 J	1/10W
R12			RK73FB2A101J	CHIP R	100 J	1/10W
R13			RK73FB2A681J	CHIP R	680 J	1/10W
R14			RK73FB2A332J	CHIP R	3.3K J	1/10W
R15			RK73FB2A331J	CHIP R	330 J	1/10W
R16			RK73FB2A100J	CHIP R	10 J	1/10W
R17			RK73FB2A150J	CHIP R	15 J	1/10W
R18			RK73FB2A331J	CHIP R	330 J	1/10W
R19			RK73FB2A391J	CHIP R	390 J	1/10W
R20			RK73FB2A681J	CHIP R	680 J	1/10W
R21			RK73FB2A100J	CHIP R	10 J	1/10W
R22			RK73FB2A101J	CHIP R	100 J	1/10W
R23			RS14KB3A151JFR	FL-PROOF RS	150 J	1W
R32			RK73FB2B432J	CHIP R	4.3K J	1/8W
R33			RK73FB2A302J	CHIP R	3.0K J	1/10W
R34			RK73FB2A822J	CHIP R	8.2K J	1/10W
R35			RK73FB2A333J	CHIP R	33K J	1/10W
R36			RK73FB2A993J	CHIP R	39K J	1/10W
R37			RK73FB2A332J	CHIP R	3.3K J	1/10W
R38			RK73FB2A333J	CHIP R	33K J	1/10W
R39			RK73FB2A823J	CHIP R	82K J	1/10W
R40			RK73FB2A202J	CHIP R	2.0K J	1/10W
R41			RK73FB2A222J	CHIP R	2.2K J	1/10W
R42			RK73FB2A202J	CHIP R	2.0K J	1/10W

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Ref. No	Add- ress	New Parts	Parts No.	Description	Desti- nation	Re- marks
Q9_10			2SC4116(Y,GR)	TRANSISTOR		
A1			W02-2582-05	FM FRONT-END ASSY		
TUNER UNIT (X05-468X-XX)						
C1			CE04LW1C470M	ELECTRO	47UF	16WV
C2			CE04LW1H010M	ELECTRO	10UF	50WV
C3			CK73FB1H103K	CHIP C	0.010UF	K
C5			CK73FB1H103K	CHIP C	0.010UF	K
C30			CK73EB1E473K	CHIP C	0.047UF	K
C31			CE04LW1C470M	ELECTRO	47UF	16WV
C32			CK73FB1H103K	CHIP C	0.010UF	K
C33			CE04LW1C100M	ELECTRO	10UF	16WV
C34			CK73FB1H103K	CHIP C	0.010UF	K
C35			CE04LW1C100M	ELECTRO	10UF	16WV
C36			CK73FB1E473K	CHIP C	0.047UF	K
C37			CK73FB1H103K	CHIP C	0.010UF	K
C38			C90-3217-05	ELECTRO	10UF	10WV
C40			C90-3253-05	ELECTRO	1.0UF	50WV
C41			C90-3251-05	ELECTRO	0.47UF	50WV
C42			C90-3240-05	ELECTRO	2.2UF	35WV
C43			CE04LW1HR47M	ELECTRO	0.47UF	50WV
C44			CK73FB1E473K	CHIP C	0.047UF	K
C45			CK73FCH1H220J	CHIP C	22PF	J
C46			CE04LW1A101M	ELECTRO	100UF	10WV
C47			CK73FB1H103K	CHIP C	0.010UF	K
C48			CK73FSL1H101J	CHIP C	100PF	J
C49			CE04LW1H010M	ELECTRO	1.0UF	50WV
C50			CK73FB1H152K	CHIP C	1500PF	K
C51_52			C90-3217-05	ELECTRO	10UF	10WV
C53_54			CK73FB1H223K	CHIP C	0.022UF	K
C53_54			CK73FB1H333K	CHIP C	0.033UF	K
C55_56			CE04LW1H2R2M	ELECTRO	2.2UF	50WV
C57_58			CK73FB1H822K	CHIP C	8200PF	K
C59			CK73FSL1H101J	CHIP C	100PF	J
C60			CK73FB1E104K	CHIP C	0.10UF	K
C61			CK73FB1H103K	CHIP C	0.010UF	K
C64			CK73FB1H333K	CHIP C	0.033UF	K
C65			CK73FCH1H060D	CHIP C	6.0PF	D
C67			CK73FCH1H220J	CHIP C	22PF	J
C68			CK73FSL1H020C	CHIP C	2.0PF	C
C70			CK73FSL1H101J	CHIP C	100PF	J
C71_72			CK73FB1H103K	CHIP C	0.010UF	K
C73			CK73FB1H681K	CHIP C	680PF	K
C81			CK73FCH1H220J	CHIP C	22PF	J
C82			CK73FCH1H270J	CHIP C	27PF	J
C84			CK73FB1H102K	CHIP C	100PF	K
C85			CK73FSL1H101J	CHIP C	100PF	J
C86			CK73FB1H102K	CHIP C	1000PF	K
C87			CE04LW1C100M	ELECTRO	10UF	16WV
C89			CE04LW1C470M	ELECTRO	47UF	16WV
C90			CE04LW1H2R2M	ELECTRO	2.2UF	50WV
C91			CK73FB1H223K	CHIP C	0.022UF	K
C92			CK73FSL1H471J	CHIP C	470PF	J
C93			CK73FB1H103K	CHIP C	0.010UF	K

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Ref. No	Add-ress	New Parts	Parts No.	Description	Designation	Re-marks
IC2			LC72131	MOS-IC		
Q1			2SC4081(R,S)	TRANSISTOR		
Q1			2SC4116(Y,GR)	TRANSISTOR		
Q3			2SA1576A(R,S)	TRANSISTOR		
Q3			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		
Q101,102			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
POWER AMPLIFIER UNIT (X07-290X-XX)						
C1-8		*	CK45FB1H332KMM	CERAMIC	3300PF	K
C9-12			CK45FF1H103ZMM	CERAMIC	0.010UF	Z
C13,14			CE04KW2A2R2M	ELECTRO	2.2UF	100WV
C17,18			CE04KW2A2R2M	ELECTRO	2.2UF	100WV
C21,22			CE04KW2A2R2M	ELECTRO	2.2UF	100WV
C25,26			CE04KW2A2R2M	ELECTRO	2.2UF	100WV
C29-36			CF92FV1H224J	MF-C	0.22UF	J
C37-42			CQ93FMG1H472J	MYLAR	4700PF	J
C43,44		*	CK45FB1H332KMM	CERAMIC	3300PF	K
C45		*	CK45FF1H103ZMM	CERAMIC	0.010UF	Z
C46-49			CE04KW2A2R2M	ELECTRO	2.2UF	100WV
C50,51			CF92FV1H224J	MF-C	0.22UF	J
C52-58			CQ93FMG1H102J	MYLAR	1000PF	J
C59			CQ93FMG1H472J	MYLAR	4700PF	J
C60			CE04KW1H100M	ELECTRO	10UF	50WV
C61			CE04KW1A101M	ELECTRO	100UF	10WV
C62			CE04KW0J331M	ELECTRO	330UF	63WV
C63			CE04KW1V220M	ELECTRO	22UF	35WV
C64			CE04KW1V470M	ELECTRO	47UF	35WV
C65			CE04KW1H3R3M	ELECTRO	3.3UF	50WV
C66,67			C90-3600-05	ELECTRO	15000UF	82WV
C68-73		*	CK45FE2H103PMM	CERAMIC	0.010UF	P
C74			CQ93FMG1H102J	MYLAR	1000PF	J
C80			CE04KW1A470M	ELECTRO	47UF	10WV
C81			CE04KW1A221M	ELECTRO	220UF	10WV
C82			CE04DW1E331M	ELECTRO	330UF	25WV
C83			CE04KW1V4R7M	ELECTRO	4.7UF	35WV
C84			CK45FF1H103ZMM	CERAMIC	0.010UF	Z
C85			C91-1444-05	MF	0.047UF	250VAC
C86			C91-1488-05	MF	6800PF	250VAC
C88		*	CK45FF1H103ZMM	CERAMIC	0.010UF	Z
CN5			E40-4245-05	PIN ASSY		CTKPY
CN6			E40-4294-05	FLAT CABLE CONNECTOR		
CN7			E40-4808-05	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	1/10W	
R47,48			RK73FB2A392J	CHIP R	1/10W	
R49			RK73FB2A473J	CHIP R	1/10W	
R51			RK73FB2A392J	CHIP R	1/10W	
R52			RK73FB2A104J	CHIP R	1/10W	
R53			RK73FB2A102J	CHIP R	1/10W	
R55			RK73FB2A562J	CHIP R	1/10W	
R56,57			RK73FB2A101J	CHIP R	1/10W	
R59			RK73FB2A272J	CHIP R	1/10W	
R67			RK73FB2A104J	CHIP R	1/10W	
R69			RK73FB2A103J	CHIP R	1/10W	
R80			RK73EB2B102J	CHIP R	1/8W	
R81-83			RK73FB2A102J	CHIP R	1/10W	
R84			RK73FB2A103J	CHIP R	1/10W	
R85-88			RK73FB2A102J	CHIP R	1/10W	
R89			RD14NB2E101J	RD	1/4W	
R90			RK73FB2A562J	CHIP R	1/10W	
R91			RK73FB2A222J	CHIP R	1/10W	
R92			RK73FB2A123J	CHIP R	1/10W	
R93			RK73FB2A122J	CHIP R	1/10W	
R94			RD14NB2E561J	RD	1/4W	
R101,102			RK73FB2A102J	CHIP R	1/10W	
R103			RK73FB2A821J	CHIP R	1/10W	
R104			RK73FB2A473J	CHIP R	1/10W	
R105			RK73FB2A822J	CHIP R	1/10W	
W51,55			R92-0670-05	CHIP R	0 OHM	
W57,58			R92-0679-05	CHIP R	0 OHM	
W59			R92-0670-05	CHIP R	0 OHM	
W61			R92-0670-05	CHIP R	0 OHM	
W62-64			R92-0679-05	CHIP R	0 OHM	
W66,67			R92-0679-05	CHIP R	0 OHM	
W71			R92-0670-05	CHIP R	0 OHM	
W72			R92-0670-05	CHIP R	0 OHM	
W75			R92-0670-05	CHIP R	0 OHM	
W81			R92-0679-05	CHIP R	0 OHM	
W83			R92-0679-05	CHIP R	0 OHM	
W85			R92-0670-05	CHIP R	0 OHM	
S1			S62-0034-05	SLIDE SWITCH		
D1,2			HSS104	DIODE		
D1,2			1SS133	DIODE		
D31			HZS6.2N(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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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		
D34			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			RD5.1US(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			2SD2061(E,F)	TRANSISTOR		
Q25			DTCT143TSA	DIGITAL TRANSISTOR		
Q26 .27			UN4216	DIGITAL TRANSISTOR		
Q26 .27			DTCT13ZSA	DIGITAL TRANSISTOR		
Q26 .27			UN4219	DIGITAL TRANSISTOR		
Q28			DTCT124ESA	DIGITAL TRANSISTOR		
Q28			UN4212	DIGITAL TRANSISTOR		
Q29 -33			DTCT13ZSA	DIGITAL TRANSISTOR		
Q29 -33			UN4219	DIGITAL TRANSISTOR		
Q34			2SC2003(L,K)	TRANSISTOR		
Q35			2SC3940A(R,S)	TRANSISTOR		
Q35			2SD863(E,F)	TRANSISTOR		
Q36			DTCT124ESA	DIGITAL TRANSISTOR		
Q36			UN4212	DIGITAL TRANSISTOR		
Q37			DTCT143TSA	DIGITAL TRANSISTOR		
Q37			UN4216	DIGITAL TRANSISTOR		
Q38			DTCT124ESA	DIGITAL TRANSISTOR		
Q38			UN4212	DIGITAL TRANSISTOR		
SURROUND UNIT (X08-273X-XX)						
C1 .2			CC73FSL1H821J	CHIP C		
C3 .4			CC73FSL1H181J	CHIP C		
C5 .6			CC93FMGH1332J	MYLAR		
C7 .8			CE04KWTE470M	ELECTRO		
C9 .10			CC73FSL1H101J	CHIP C		

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CN14			PIN ASSY	PIN ASSY	MCTEQ	
CN15-19			PIN ASSY	PIN ASSY	KPY	
J1			AC OUTLET	AC OUTLET	EQM	
J1			AC OUTLET	AC OUTLET	T	
J1			AC OUTLET	AC OUTLET	C	
J1			AC OUTLET	AC OUTLET		
J2			SCREW TERMINAL BOARD	SCREW TERMINAL BOARD		
J3			LEAD PLATE	LEAD PLATE		
P2			FUSE (SEMKO)	FUSE (SEMKO)		
F1			FUSE (SEMKO)	FUSE (SEMKO)		
F1			FUSE (SEMKO)	FUSE (SEMKO)		
F1			FUSE (SEMKO)	FUSE (SEMKO)		
F3			FUSE (SEMKO)	FUSE (SEMKO)		
CN1 .2			WIRE BAND	WIRE BAND		
CN3 .4			FUSE CLIP	FUSE CLIP		
CN9 .10			FUSE CLIP	FUSE CLIP		
E7 -9			WIRE CLAMPER	WIRE CLAMPER		
L1 -5			PHASE COMPENSATION COIL	PHASE COMPENSATION COIL		
T1			POWER TRANSFORMER	POWER TRANSFORMER		
T1			POWER TRANSFORMER	POWER TRANSFORMER		
T1			POWER TRANSFORMER	POWER TRANSFORMER		
T1			POWER TRANSFORMER	POWER TRANSFORMER		
R1 -4			RD14NB2E151J	RD		
R5 -12			RD14NB2E470J	RD		
R13 -20			RD14NB2E101J	RD		
R21 -28			RD14NB2E332J	RD		
R49 -52			RS14KB3A2R7JFR	FL-PROOF RS		
R53 -56			RD14NB2E220J	RD		
R57			RD14NB2E151J	RD		
R58 .59			RD14NB2E470J	RD		
R60 .61			RD14NB2E101J	RD		
R62 .63			RD14NB2E332J	RD		
R69			RS14KB3A2R7JFR	FL-PROOF RS		
R70			RD14NB2E220J	RD		
R71 .72			RD14NB2E391J	RD		
R73			RS14KB3A181JFR	FL-PROOF RS		
R74			RD14NB2E102J	RD		
R84 .85			RD14NB2E102J	RD		
R88			RS14KB3A471JFR	FL-PROOF RS		
R93			R92-1844-05	CARBON		
R100.101			RD14NB2E3R9J	RD		
VR1 -5			R12-0605-05	TRIMMING POT. (220 7e)		
K1			S76-0065-05	MAGNETIC RELAY		
K1			S76-0070-05	MAGNETIC RELAY		
K2 -5			S76-0061-05	MAGNETIC RELAY		
K6			S76-0063-05	MAGNETIC RELAY		
K7			S76-0028-05	MAGNETIC RELAY		
S2			S31-3010-05	SLIDE SWITCH		
T2			S59-1080-05	THERMAL SWITCH		
T2			S79-0020-05	THERMAL SWITCH		
D1 -28			HSS104A	DIODE		
D1 -28			1SS131	DIODE		
D29			HZS11N(B2)	ZENER DIODE		

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KR-V999D/1090VR

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Ref. No	Add-ress	New Parts	Parts No.	Description	Re- marks
C107, 108			CC73FCH1H220J	CHIP C	
C109			CC93FMG1H562J	MYLAR	J
C110-112			CE04KW1E470M	ELECTRO	25WV
C113, 114			CC73FCH1H220J	CHIP C	22PF
C115			CC93FMG1H562J	MYLAR	5600PF
C116			CE04KW1H220M	ELECTRO	22UF
C117, 118			CC73FSL1H121J	CHIP C	50WV
C119, 120			CE04KW1E470M	ELECTRO	25WV
C121			CK73FB1H102K	CHIP C	1000PF
C122, 123			CK73FB1H103K	CHIP C	0.010UF
C124			CK73FB1H102K	CHIP C	1000PF
C125			CF92FV1H564J	MF-C	0.56UF
C126			CK73FB1E104K	CHIP C	0.10UF
C156			CE04KW1H220M	ELECTRO	22UF
C157			CK73FB1H102K	CHIP C	0.010UF
C158			CK73FB1H102K	CHIP C	1000PF
C159, 160			CE04KW1E470M	ELECTRO	25WV
C161			CK73FB1H103K	CHIP C	0.010UF
C162			CK73FB1H102K	CHIP C	1000PF
C163, 164			CC73FSL1H101J	CHIP C	1000PF
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			CE04KW1H470M	ELECTRO	47UF
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	100UF
C302			CE04KW1E470M	ELECTRO	47UF
C303, 304			CK73FB1H102K	CHIP C	1000PF
C305, 306			CE04KW1A101M	ELECTRO	100UF
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	8200PF
C315			CC73FCH1H070D	CHIP C	7.0PF
C316			CC73FCH1H090D	CHIP C	9.0PF
C317			CK73FB1E104K	CHIP C	0.10UF
C318			CK73FB1H102K	CHIP C	1000PF
C319			CC73FSL1H221J	CHIP C	220PF
C320			CK73FCH1H090D	CHIP C	9.0PF
C321			CK73FB1H102K	CHIP C	1000PF
C322			CC73FCH1H070D	CHIP C	7.0PF

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C11, 12			CC93FMG1H152J	MYLAR	1500PF
C13			CK73FB1H103K	CHIP C	0.010UF
C14			CK73FB1H102K	CHIP C	1000PF
C15, 16			CE04KW1H220M	ELECTRO	22UF
C17			CK73FB1H103K	CHIP C	0.010UF
C18			CK73FB1H102K	CHIP C	1000PF
C19			CC73FSL1H101J	CHIP C	100PF
C21, 22			CC73FSL1H821J	CHIP C	820PF
C23			CC73FSL1H181J	CHIP C	180PF
C24			CC93FMG1H471J	MYLAR	470PF
C25			CC93FMG1H332J	MYLAR	3300PF
C26			CC93FMG1H473J	MYLAR	0.047UF
C27			CC93FMG1H152J	MYLAR	1500PF
C28			CC93FMG1H183J	MYLAR	0.018UF
C29			CC73FSL1H101J	CHIP C	100PF
C30			CC93FMG1H472J	MYLAR	4700PF
C31, 32			CE04KW1H220M	ELECTRO	22UF
C33			CK73FB1H103K	CHIP C	0.010UF
C34			CK73FB1H102K	CHIP C	1000PF
C35			CK73FB1H103K	CHIP C	0.010UF
C36			CK73FB1H102K	CHIP C	1000PF
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			CC93FMG1H332J	MYLAR	3300PF
C47, 48			CC73FSL1H101J	CHIP C	100PF
C49			CK73FB1H103K	CHIP C	0.010UF
C50			CK73FB1H102K	CHIP C	1000PF
C51, 52			CC93FMG1H152J	MYLAR	1500PF
C53			CK73FB1H103K	CHIP C	0.010UF
C54			CK73FB1H102K	CHIP C	1000PF
C55-60			CE04KW1H100M	ELECTRO	10UF
C61-64			CF92FV1H224J	MF-C	0.22UF
C65, 66			CC73FSL1H101J	CHIP C	100PF
C67, 68			CE04KW1H470M	ELECTRO	47UF
C81-84			CF92FV1H224J	MF-C	0.22UF
C85, 86			CC73FSL1H101J	CHIP C	100PF
C87, 88			CE04KW1H470M	ELECTRO	47UF
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			CE04KW1H470M	ELECTRO	47UF
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	22UF
C103, 104			CE04KW1E470M	ELECTRO	47UF
C105			CF92FV1H274J	MF-C	0.27UF
C106			CE04KW1E470M	ELECTRO	47UF

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Ref. No	Add-ress	New Parts	Parts No.	Description	Desti-nation	Re-marks
C543,544			CE04KW1H220M	ELECTRO		
C545			CK73FB1H102K	CHIP C	50WV	
C546			CK73FB1H103K	CHIP C	0.010UF	
C547,548			CE04KW1H220M	ELECTRO	50WV	
C549,550			CK73FCH1H220J	CHIP C		
C551			CK73FB1H102K	CHIP C	1000PF	
C552			CK73FB1H103K	CHIP C	0.010UF	
C553,554			CE04KW1H0R1M	ELECTRO	0.1UF	
C555,556			CK73FB1H152K	CHIP C	50WV	
C559,560			CK73FCH1H220J	CHIP C	1500PF	
C563			CK73FB1H102K	CHIP C	22PF	
C564			CK73FB1H103K	CHIP C	1000PF	
C565,568			CE04KW1H4R7M	ELECTRO	0.010UF	
C569,570			CK73FSL1H151J	CHIP C	4.7UF	
C571,572			CK73FSL1H101J	CHIP C	150PF	
C573,574			CE04KW1H220M	ELECTRO	100PF	
C575			CK73FB1H102K	CHIP C	50WV	
C576			CK73FB1H103K	CHIP C	22UF	
C577,578			CE04KW1H220M	ELECTRO	0.010UF	
C579,580			CK73FCH1H220J	CHIP C	22UF	
C581			CK73FB1H102K	CHIP C	22PF	
C582			CK73FB1H103K	CHIP C	1000PF	
C587,588			CE04KW1H4R7M	ELECTRO	0.010UF	
C589,590			CK73FCH1H220J	CHIP C	4.7UF	
C593			CK73FB1H102K	CHIP C	22PF	
C594			CK73FB1H103K	CHIP C	1000PF	
C595,598			CE04KW1H4R7M	ELECTRO	0.010UF	
C599,600			CK73FSL1H151J	CHIP C	4.7UF	
C601,602			CK73FSL1H101J	CHIP C	150PF	
C603,604			CE04KW1H220M	ELECTRO	22UF	
C605			CK73FB1H102K	CHIP C	1000PF	
C606			CK73FB1H103K	CHIP C	0.010UF	
C607,608			CE04KW1H220M	ELECTRO	0.010UF	
C609,610			CK73FCH1H220J	CHIP C	22UF	
C611			CK73FB1H102K	CHIP C	1000PF	
C612			CK73FB1H103K	CHIP C	1000PF	
C619,620			CK73FCH1H220J	CHIP C	0.010UF	
C701,712			CK73FSL1H101J	CHIP C	22PF	
C713			CK73FB1H102K	CHIP C	100PF	
C714			CK73FB1H103K	CHIP C	0.010UF	
C715			CK73FB1H102K	CHIP C	1000PF	
C716			CK73FB1H103K	CHIP C	0.010UF	
C717,718			CK73FSL1H470J	CHIP C	47PF	
C801-812			CK73FCH1H100D	CHIP C	10PF	
C813			CK73EB1H104K	CHIP C	0.10UF	
C814			CE04KW1H4R7M	ELECTRO	4.7UF	
C815			CK73EB1H104K	CHIP C	0.10UF	
C816			CE04KW1H0T0M	ELECTRO	1.0UF	
C817			CK73EB1H104K	CHIP C	50WV	
C818			CE04KW1H4R7M	ELECTRO	0.10UF	
C901-903			CK73FB1H102K	CHIP C	1000PF	
C904			CK73FSL1H221J	CHIP C	220PF	
CN1,2			E40-9836-05	SOCKET FOR PIN ASSY		
CN51,52			E40-9836-05	SOCKET FOR PIN ASSY		

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Ref. No	Add-ress	New Parts	Parts No.	Description	Desti-nation	Re-marks
C323-325			CK73FCH1H220J	CHIP C	J	
C327			CK73FCH1H090D	CHIP C	D	
C328			CK73FCH1H070D	CHIP C	D	
C329			CK73FB1H102K	CHIP C	K	
C330			CK73FB1E104K	CHIP C	0.10UF	
C331			CK73FCH1H090D	CHIP C	D	
C332			CK73FCH1H070D	CHIP C	D	
C333			CK73FB1H822K	CHIP C	7.0PF	
C334			CK73FB1H103K	CHIP C	8200PF	
C335			CK73FB1E104K	CHIP C	0.010UF	
C336			CK73FB1E104K	CHIP C	0.10UF	
C337			CK73FB1H103K	CHIP C	0.010UF	
C338,339			CK73FSL1H101J	CHIP C	100PF	
C340			CE04KW1A101M	ELECTRO	10WV	
C341			CK73FB1H102K	CHIP C	1000PF	
C342			CE04KW1E470M	ELECTRO	25WV	
C343			CK73FB1E104K	CHIP C	47UF	
C344			CK73FB1H103K	CHIP C	0.10UF	
C345			CK73FB1H102K	CHIP C	0.010UF	
C347,348			CK73FB1H102K	CHIP C	1000PF	
C349			CK73FCH1H220J	CHIP C	22PF	
C351-363			CK73FB1E104K	CHIP C	J	
C354,365			CK73FSL1H101J	CHIP C	K	
C366			CE04KW1E470M	ELECTRO	25WV	
C367			CK73FE1C22Z	CHIP C	Z	
C368,369			CK73FB1H102K	CHIP C	1000PF	
C371,372			CK73FCH1H220J	CHIP C	22PF	
C373			CK73FSL1H470J	CHIP C	47PF	
C374			CE04KW1E470M	ELECTRO	1000PF	
C401,402			CK73FB1E104K	CHIP C	0.10UF	KP
C403			CK73FB1H103K	CHIP C	0.010UF	
C404			CK73FB1H102K	CHIP C	1000PF	KP
C405,406			CK73FB1E104K	CHIP C	0.10UF	KP
C407			CK73FB1H102K	CHIP C	1000PF	KP
C501,502			CE04KW1H100M	ELECTRO	10UF	
C503			CK73FB1H102K	CHIP C	50WV	
C504			CK73FB1H103K	CHIP C	K	
C505,506			CE04KW1H4R7M	ELECTRO	0.010UF	
C509,510			CK73FSL1H151J	CHIP C	4.7UF	
C511,512			CK73FSL1H101J	CHIP C	150PF	
C513,514			CE04KW1H220M	ELECTRO	100PF	
C515			CK73FB1H102K	CHIP C	J	
C516			CK73FB1H103K	CHIP C	50WV	
C517,518			CE04KW1H220M	ELECTRO	K	
C519,520			CK73FCH1H220J	CHIP C	22UF	
C521			CK73FB1H102K	CHIP C	J	
C522			CK73FB1H103K	CHIP C	K	
C525-528			CE04KW1H4R7M	ELECTRO	0.010UF	
C529,530			CK73FCH1H220J	CHIP C	4.7UF	
C533			CK73FB1H102K	CHIP C	22PF	
C534			CK73FB1H103K	CHIP C	1000PF	
C535-538			CE04KW1H4R7M	ELECTRO	0.010UF	
C539,540			CK73FSL1H151J	CHIP C	4.7UF	
C541,542			CK73FSL1H101J	CHIP C	150PF	

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R98_99			RK73FB2A512J	CHIP R	1/10W
R111_112			RK73FB2A104J	CHIP R	1/10W
R113_114			RK73FB2A123J	CHIP R	1/10W
R115_116			RK73FB2A203J	CHIP R	1/10W
R117_118			RK73FB2A104J	CHIP R	1/10W
R119_120			RK73FB2A103J	CHIP R	1/10W
R121_122			RK73FB2A222J	CHIP R	1/10W
R123_124			RK73FB2A123J	CHIP R	1/10W
R125_128			RK73FB2A222J	CHIP R	1/10W
R129_130			RK73FB2A103J	CHIP R	1/10W
R131_135			RK73FB2A104J	CHIP R	1/10W
R136			RK73FB2A103J	CHIP R	1/10W
R137_138			RK73FB2A12J	CHIP R	1/10W
R151_152			RK73FB2A104J	CHIP R	1/10W
R153_154			RK73FB2A222J	CHIP R	1/10W
R155_156			RK73FB2A123J	CHIP R	1/10W
R157_158			RK73FB2A203J	CHIP R	1/10W
R159_160			RK73FB2A123J	CHIP R	1/10W
R161_164			RK73FB2A472J	CHIP R	1/10W
R165_166			RK73FB2A331J	CHIP R	1/10W
R300			RK73FB2A101J	CHIP R	1/10W
R301			RK73FB2A105J	CHIP R	1/10W
R303			RK73FB2A100J	CHIP R	1/10W
R304-307			RK73FB2A101J	CHIP R	1/10W
R308			RK73FB2A104J	CHIP R	1/10W
R309-313			RK73FB2A101J	CHIP R	1/10W
R314-316			RK73FB2A102J	CHIP R	1/10W
R317-319			RK73FB2A101J	CHIP R	1/10W
R320			RK73FB2A473J	CHIP R	1/10W
R321-323			RK73FB2A101J	CHIP R	1/10W
R324			RK73FB2A102J	CHIP R	1/10W
R325-328			RK73FB2A101J	CHIP R	1/10W
R329			RK73FB2A104J	CHIP R	1/10W
R330			RK73FB2A101J	CHIP R	1/10W
R331			RK73FB2A104J	CHIP R	1/10W
R332			RK73FB2A105J	CHIP R	1/10W
R333			RK73FB2A104J	CHIP R	1/10W
R334_335			RK73FB2A101J	CHIP R	1/10W
R336-345			RK73FB2A104J	CHIP R	1/10W
R346_347			RK73FB2A101J	CHIP R	1/10W
R348			RK73FB2A104J	CHIP R	1/10W
R349_350			RK73FB2A101J	CHIP R	1/10W
R351-376			RK73FB2A104J	CHIP R	1/10W
R377-379			RK73FB2A101J	CHIP R	1/10W
R380-382			RK73FB2A104J	CHIP R	1/10W
R384_385			RK73FB2A750J	CHIP R	1/10W
R387_398			RK73FB2A104J	CHIP R	1/10W
R399			RK73FB2A750J	CHIP R	1/10W
R400-402			RD14NB2E471J	RD	1/4W
R403			RK73FB2A102J	CHIP R	1/10W
R404			RD14NB2E470J	RD	1/4W
R405			RK73FB2A102J	CHIP R	1/10W
R406-408			RK73FB2A102J	CHIP R	1/10W
R409			RK73FB2A101J	CHIP R	1/10W
R410-413			RK73FB2A223J	CHIP R	1/10W

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J1			E11-0200-05	MINIATURE PHONE JACK(SF)	KP
J2			E11-0344-05	MINIATURE PHONE JACK	KP
J3			E63-0174-05	PHONO JACK	
J71_72			E63-0139-15	MINIATURE PHONE JACK(SF)	KP
J73_75			E11-0283-05		
L1_7			L92-0044-05	FERRITE CORE	
X1			L78-0294-05	CRYSTAL RESONATOR(10.000M)	
X2			L77-2194-05	CRYSTAL RESONATOR(5.0M)	
X3			L77-2192-05	CRYSTAL RESONATOR(12.288M)	
R1_2			RK73FB2A103J	CHIP R	1/10W
R3_4			RK73FB2A512J	CHIP R	1/10W
R5_6			RK73FB2A912J	CHIP R	1/10W
R7_8			RK73FB2A103J	CHIP R	1/10W
R13_14			RK73FB2A512J	CHIP R	1/10W
R15_16			RK73FB2A104J	CHIP R	1/10W
R17_18			RK73FB2A473J	CHIP R	1/10W
R19_20			RK73FB2A104J	CHIP R	1/10W
R21_22			RK73FB2A103J	CHIP R	1/10W
R23			RK73FB2A512J	CHIP R	1/10W
R24			RK73FB2A822J	CHIP R	1/10W
R25			RK73FB2A912J	CHIP R	1/10W
R26			RK73FB2A182J	CHIP R	1/10W
R27_29			RK73FB2A103J	CHIP R	1/10W
R30			RK73FB2A104J	CHIP R	1/10W
R31			RK73FB2A103J	CHIP R	1/10W
R32			RK73FB2A100J	CHIP R	1/10W
R33			RK73FB2A512J	CHIP R	1/10W
R34			RK73FB2A182J	CHIP R	1/10W
R35_36			RK73FB2A104J	CHIP R	1/10W
R37_40			RK73FB2A471J	CHIP R	1/10W
R41_42			RK73FB2A103J	CHIP R	1/10W
R43_44			RK73FB2A512J	CHIP R	1/10W
R45_46			RK73FB2A912J	CHIP R	1/10W
R47_48			RK73FB2A103J	CHIP R	1/10W
R49_50			RK73FB2A471J	CHIP R	1/10W
R51			RK73FB2A103J	CHIP R	1/10W
R52			RK73FB2A104J	CHIP R	1/10W
R53_54			RK73FB2A512J	CHIP R	1/10W
R55_56			RK73FB2A104J	CHIP R	1/10W
R57_59			RK73FB2A203J	CHIP R	1/10W
R61_62			RK73FB2A104J	CHIP R	1/10W
R63_64			RK73FB2A133J	CHIP R	1/10W
R65_66			RK73FB2A622J	CHIP R	1/10W
R67_68			RK73FB2A104J	CHIP R	1/10W
R81_82			RK73FB2A104J	CHIP R	1/10W
R83_84			RK73FB2A133J	CHIP R	1/10W
R85_86			RK73FB2A622J	CHIP R	1/10W
R87_88			RK73FB2A104J	CHIP R	1/10W
R89_90			RK73FB2A203J	CHIP R	1/10W
R91			RK73FB2A104J	CHIP R	1/10W
R92			RK73FB2A622J	CHIP R	1/10W
R93			RK73FB2A133J	CHIP R	1/10W
R94_95			RK73FB2A104J	CHIP R	1/10W
R96_97			RK73FB2A203J	CHIP R	1/10W

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R705.706			RK73FB2A102J	CHIP R	1/10W
R707.708			RK73FB2A224J	CHIP R	1/10W
R709.710			RK73FB2A221J	CHIP R	1/10W
R711.712			RK73FB2A104J	CHIP R	1/10W
R713.714			RK73FB2A102J	CHIP R	1/10W
R715.716			RK73FB2A104J	CHIP R	1/10W
R717.718			RK73FB2A102J	CHIP R	1/10W
R719.720			RK73FB2A104J	CHIP R	1/10W
R721.722			RK73FB2A102J	CHIP R	1/10W
R723.724			RK73FB2A104J	CHIP R	1/10W
R725.728			RK73FB2A103J	CHIP R	1/10W
R801.814			RK73FB2A473J	CHIP R	1/10W
R815			RK73FB2A562J	CHIP R	1/10W
R818.817			RK73FB2A473J	CHIP R	1/10W
R818			RK73FB2A562J	CHIP R	1/10W
R819.820			RK73FB2A473J	CHIP R	1/10W
R821			RK73FB2A562J	CHIP R	1/10W
R902			RK73FB2A913J	CHIP R	1/10W
R903			RK73FB2A223J	CHIP R	1/10W
R904.906			RD14NB2E471J	RD	1/4W
D1.2			DA204K	DIODE	
D3.-5			MA110	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			NJM4580E	ANALOGUE IC	
IC17			NJM4580ED	ANALOGUE IC	
IC18			TC9163AF	MOS-IC	
IC19.20			TC9162AF	MOS-IC	
IC31			TC7W00FU	IC(VOLTAGE REGULATOR/ +5V)	
IC31			UPD7805SAHF	ANALOGUE IC	
IC32			UPD78016FGC522	MI-COM IC	
IC33			DSPE56009FJ81	MOS-IC	
IC34			CS4226-KQ	MOS-IC	
IC35			TC74HC04AF	IC(HEX INVERTER SMD)	
IC36			LH64256CK-70	MEMORY IC	
IC37.38			TA7805S	IC(VOLTAGE REGULATOR/ +5V)	
IC37.38			UPC7805SAHF	ANALOGUE IC	
IC39			TC74HC04AF	IC(HEX INVERTER SMD)	
IC51			TC9412AP	MOS-IC	
IC52.53			NJM4580E	ANALOGUE IC	
IC52.53			NJM4580ED	ANALOGUE IC	
IC54			TC9412AP	MOS-IC	
IC55.56			NJM4580E	ANALOGUE IC	
IC55.56			NJM4580ED	ANALOGUE IC	
IC57			TC9412AP	MOS-IC	
IC58.59			NJM4580E	ANALOGUE IC	
IC58.59			NJM4580ED	ANALOGUE IC	
IC60			TC9412AP	MOS-IC	

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R414			RK73FB2A102J	CHIP R	1/10W
R501.502			RK73FB2A104J	CHIP R	1/10W
R503.504			RK73FB2A105J	CHIP R	1/10W
R505.506			RK73FB2A104J	CHIP R	1/10W
R507.508			RK73FB2A102J	CHIP R	1/10W
R509.510			RK73FB2A224J	CHIP R	1/10W
R511.514			RK73FB2A104J	CHIP R	1/10W
R515.516			RK73FB2A222J	CHIP R	1/10W
R517.518			RK73FB2A102J	CHIP R	1/10W
R519.520			RK73FB2A133J	CHIP R	1/10W
R521.522			RK73FB2A222J	CHIP R	1/10W
R523.524			RK73FB2A272J	CHIP R	1/10W
R523.524			RK73FB2A362J	CHIP R	1/10W
R529.530			RK73FB2A244J	CHIP R	1/10W
R531.532			RK73FB2A100J	CHIP R	1/10W
R533.534			RK73FB2A105J	CHIP R	1/10W
R535.536			RK73FB2A184J	CHIP R	1/10W
R537.538			RK73FB2A102J	CHIP R	1/10W
R539.540			RK73FB2A241J	CHIP R	1/10W
R541.544			RK73FB2A104J	CHIP R	1/10W
R545.546			RK73FB2A222J	CHIP R	1/10W
R547.548			RK73FB2A102J	CHIP R	1/10W
R549.550			RK73FB2A334J	CHIP R	1/10W
R551.552			RK73FB2A822J	CHIP R	1/10W
R553.554			RK73FB2A133J	CHIP R	1/10W
R555.556			RK73FB2A272J	CHIP R	1/10W
R555.556			RK73FB2A362J	CHIP R	1/10W
R557.558			RK73FB2A222J	CHIP R	1/10W
R559.560			RK73FB2A244J	CHIP R	1/10W
R563.564			RK73FB2A105J	CHIP R	1/10W
R565.566			RK73FB2A184J	CHIP R	1/10W
R567.568			RK73FB2A102J	CHIP R	1/10W
R569.570			RK73FB2A241J	CHIP R	1/10W
R571.574			RK73FB2A104J	CHIP R	1/10W
R575.576			RK73FB2A222J	CHIP R	1/10W
R577.578			RK73FB2A102J	CHIP R	1/10W
R583.584			RK73FB2A133J	CHIP R	1/10W
R585.586			RK73FB2A272J	CHIP R	1/10W
R585.586			RK73FB2A362J	CHIP R	1/10W
R587.588			RK73FB2A222J	CHIP R	1/10W
R589.590			RK73FB2A244J	CHIP R	1/10W
R593.594			RK73FB2A105J	CHIP R	1/10W
R595.596			RK73FB2A184J	CHIP R	1/10W
R597.598			RK73FB2A102J	CHIP R	1/10W
R599.600			RK73FB2A241J	CHIP R	1/10W
R601.604			RK73FB2A104J	CHIP R	1/10W
R605.606			RK73FB2A222J	CHIP R	1/10W
R607.608			RK73FB2A102J	CHIP R	1/10W
R613.614			RK73FB2A133J	CHIP R	1/10W
R615.616			RK73FB2A272J	CHIP R	1/10W
R615.616			RK73FB2A362J	CHIP R	1/10W
R617.618			RK73FB2A222J	CHIP R	1/10W
R619.620			RK73FB2A244J	CHIP R	1/10W
R701.702			RK73FB2A221J	CHIP R	1/10W
R703.704			RK73FB2A224J	CHIP R	1/10W

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C412,413		*	CK45FF1H103ZMM	CERAMIC		
C415-417			CK45FE2H103PMM	CERAMIC		
C420			CK45FE2H103PMM	CERAMIC		
C421			C91-1488-05	MF		
C431			CK45FB1H471KMM	CERAMIC		
C432			CE04KW1H100M	ELECTRO		
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		
CN107			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			E40-4284-05	FLAT CABLE CONNECTOR		
CN403			E40-4285-05	FLAT CABLE CONNECTOR		
J301			E11-0293-05	MINIATURE PHONE JACK(2P 3P)		
F11 -13			F05-1222-05	FUSE (SEMKO)		
F14			F50-0067-05	FUSE(5X20)		
F14			F05-5016-05	FUSE (SEMKO)		
F14			F50-0066-05	FUSE(5X20)		
F15,16			F05-1623-05	FUSE (SEMKO)		
F15,16			F50-0068-05	FUSE(5X20)		
F17			F05-1222-05	FUSE (SEMKO)		
F17			F50-0067-05	FUSE(5X20)		
CN411-424			J13-0075-05	FUSE CLIP		
L101			L40-1021-14	SMALL FIXED INDUCTOR(1.0MH,K)		
L108			L92-0044-05	FERRITE CORE		
X1			L78-0267-05	RESONATOR		
CP1,2			R90-0803-05	MULTI-COMP		
CP3			R90-0500-05	MULTI-COMP		
CP4			R90-0855-05	MULTI-COMP		
CP5			R90-0851-05	MULTI-COMP		
CP6			R90-0482-05	MULTI-COMP		
R207			RD14NB2E1R8J	RD		
R208			RD14NB2E2R7J	RD		
R211,212			RD14NB2E102J	RD		
R215,216			RD14NB2E221J	RD		
R231			RD14NB2E471J	RD		
R232			RD14NB2E681J	RD		
R233,234			RD14NB2E2R2J	RD		
R401			RD14NB2E4R7J	RD		
R402			RS14KB3A472JFR	FL-PROOF RS		
R411,412			RD14NB2E102J	RD		
R413			RD14NB2E6R8J	RD		
R414			RD14NB2E100J	RD		
R415			RD14NB2E681J	RD		
S1			S40-1138-05	PUSH SWITCH (POWER TYPE)		
D201,202			HZS15S(B)	ZENER DIODE		

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IC61,62			NJM4580E	ANALOGUE IC		
IC61,62			NJM4580ED	ANALOGUE IC		
IC71,72			TC9163AF	MOS-IC		
Q1 -3			DTIC124EUA	DIGITAL TRANSISTOR		
Q1 -3			UN5212	DIGITAL TRANSISTOR		
Q4,5			DTA124EUA	DIGITAL TRANSISTOR		
Q4,5			UN5112	DIGITAL TRANSISTOR		
Q501-516			2SC4213(B)	TRANSISTOR		
Q517			DTIC124EUA	DIGITAL TRANSISTOR		
Q517			UN5212	DIGITAL TRANSISTOR		
Q518			2SB1308(Q,R)	TRANSISTOR		
Q801-803			DTIC1132UA	DIGITAL TRANSISTOR		
Q801-803			UN5219	DIGITAL TRANSISTOR		
A1			W02-1181-05	OPTIC RECEIVING MODULE		
SUB CIRCUIT UNIT (X13-747X-XX)						
C203,204		*	CK45FB1H222KMM	CERAMIC		
C205,206			CE04KW1E470M	ELECTRO		
C207,208			CK45FF1H103ZMM	CERAMIC		
C209			CE04KW1V100M	ELECTRO		
C221			CE04KW1V100M	ELECTRO		
C223			CE04KW1A101M	ELECTRO		
C224			CF92FV1H104J	MF-C		
C225			CE04KW1V100M	ELECTRO		
C226			CE04KW1E470M	ELECTRO		
C227			CE04KW1A101M	ELECTRO		
C228			CF92FV1H104J	MF-C		
C229			CE04KW1E470M	ELECTRO		
C231,232			CE04KW1H103ZMM	ELECTRO		
C233,234			CK45FF1H103ZMM	CERAMIC		
C235,236			CE04KW1H100M	ELECTRO		
C237,238			CK45FF1H103ZMM	CERAMIC		
C239			CE04KW1H100M	ELECTRO		
C240,241			CF92FV1H104J	MF-C		
C242,243			CE04KW1H100M	ELECTRO		
C251,252			CE04KW1E470M	ELECTRO		
C253			CF92FV1H104J	MF-C		
C254,255			CF92FV1H333J	MF-C		
C301			CE04KW1H010M	ELECTRO		
C302			CE04KW0J221M	ELECTRO		
C303			C90-1826-05	BACKUP-C		
C304			CK45FF1H103ZMM	CERAMIC		
C306			CE04KW1H010M	ELECTRO		
C307,308			CK45FF1H103ZMM	CERAMIC		
C321		*	CK45FF1H103ZMM	CERAMIC		
C322,323		*	CK45FB1H102KMM	CERAMIC		
C324		*	CK45FF1H103ZMM	CERAMIC		
C351,352		*	CO45FSL1H221JN	CERAMIC		
C353		*	CK45FF1H103ZMM	CERAMIC		
C401-405		*	CE04KW1V102M	ELECTRO		
C406			CE04KW1J471M	ELECTRO		
C407			CE04KW1V471M	ELECTRO		
C408			CK45FF1H103ZMM	CERAMIC		
C409,410			CE04KW1C222M	ELECTRO		

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R369-372			RD14NB2E271J	270	J	1/4W
R373-374			RD14NB2E181J	180	J	1/4W
R410-411			RD14NB2E271J	270	J	1/4W
R412			RD14NB2E181J	180	J	1/4W
R465-466			RD14NB2E471J	470	J	1/4W
R478			RD14NB2E332J	330	J	1/4W
R479			RD14NB2E472J	470	J	1/4W
R480			RD14NB2E391J	390	J	1/4W
VR1-2			R31-0063-05	VARIABLE RESISTOR		
K301-302			S76-0028-05	MAGNETIC RELAY		
S1-10			S70-0031-05	TACT SWITCH		KPYTEQ
S11			S70-0031-05	TACT SWITCH		KPYTEQ
S12-19			S70-0031-05	TACT SWITCH		KPYTEQ
S20			S70-0031-05	TACT SWITCH		KPYTEQ
S21-28			S70-0031-05	TACT SWITCH		KPYTEQ
S29			S70-0031-05	TACT SWITCH		KPYTEQ
S30-33			S70-0031-05	TACT SWITCH		KPYTEQ
S201			S62-0034-05	SLIDE SWITCH		KPYTEQ
S34			T99-0559-05	ROTARY ENCODER		KPYTEQ
S35			T99-0571-05	ROTARY ENCODER		KPYTEQ
D1-4			HSS104	DIODE		KPYTEQ
D1-4			HSS133	DIODE		KPYTEQ
D101			HSS104A	DIODE		KPYTEQ
D101			HSS131	DIODE		KPYTEQ
D102			HSS104	DIODE		KPYTEQ
D102			HSS133	DIODE		KPYTEQ
D103			HSS104A	DIODE		KPYTEQ
D103			HSS131	DIODE		KPYTEQ
D107-108			HSS104	DIODE		KPYTEQ
D107-108			HSS133	DIODE		KPYTEQ
D109			HSS104	DIODE		KPYTEQ
D109			HSS133	DIODE		KPYTEQ
D110-115			HSS104	DIODE		KPYTEQ
D110-115			HSS133	DIODE		KPYTEQ
D151-152			HSS104	DIODE		KPYTEQ
D151-152			HSS133	DIODE		KPYTEQ
D153			HSS104	DIODE		KPYTEQ
D153			HSS133	DIODE		KPYTEQ
D201-202			HSS104	DIODE		KPYTEQ
D201-202			HSS133	DIODE		KPYTEQ
D205-206			HSS104	DIODE		KPYTEQ
D205-206			HSS133	DIODE		KPYTEQ
D301-304			HSS104	DIODE		KPYTEQ
D301-304			HSS133	DIODE		KPYTEQ
D351-354			HSS104	DIODE		KPYTEQ
D351-354			HSS133	DIODE		KPYTEQ
D401-402			HSS104	DIODE		KPYTEQ
D401-402			HSS133	DIODE		KPYTEQ
D451-452			HSS104	DIODE		KPYTEQ
D451-452			HSS133	DIODE		KPYTEQ
D453-457			HSS104	DIODE		KPYTEQ
D453-457			HSS133	DIODE		KPYTEQ
D458			HSS104	DIODE		KPYTEQ
D458			HSS133	DIODE		KPYTEQ

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D471-472			HSS104A	DIODE		KPYCM
D471-472			1SS131	DIODE		KPYCM
D473			HZS18N(B2)	ZENER DIODE		KPYCM
D473			RD18ES(B2)	ZENER DIODE		KPYCM
D474			HZS16N(B2)	ZENER DIODE		KPYCM
D474			HZS8-2N(B2)	ZENER DIODE		KPYCM
D474			RD16ES(B2)	ZENER DIODE		KPYCM
D474			RD8-2ES(B2)	ZENER DIODE		KPYCM
D475			HSS104	DIODE		KPYCM
D475			1SS133	DIODE		KPYCM
D476			HSS104A	DIODE		KPYCM
D476			1SS131	DIODE		KPYCM
D477-478			HSS104A	DIODE		KPYCM
D477-478			1SS131	DIODE		KPYCM
D479			HZS11N(B2)	ZENER DIODE		KPYCM
D479			RD11ES(B2)	ZENER DIODE		KPYCM
ED1			11-MT-110GK	INDICATOR TUBE		KPYCM
IC1			NJM4565L-D	ANALOGUE IC		KPYCM
IC2			NJM4565D-D	IC(OP AMP X2)		KPYCM
IC101			UPD16311	MOS-IC		KPYCM
IC102			SAA6579	ANALOGUE IC		KPYCM
IC201-202			SN761200N	ANALOGUE IC		KPYCM
IC203-204			TC74HC4053AP	IC(ANALOG MULTIPLEXER)		KPYCM
IC205-206			MC14577CP	ANALOGUE IC		KPYCM
IC301			NJM4565D-D	IC(OP AMP X2)		KPYCM
Q1-2			2SC2458(Y GR)	TRANSISTOR		KPYCM
Q101-102			2SC3311A(Q,R)	TRANSISTOR		KPYCM
Q101-102			2SC3311A(Q,R)	TRANSISTOR		KPYCM
Q151			2SA1534A(R,S)	TRANSISTOR		KPYCM
Q152			2SA1048(Y GR)	TRANSISTOR		KPYCM
Q152			2SA1309A(Q,R)	TRANSISTOR		KPYCM
Q201-202			2SC2878(B)	DIGITAL TRANSISTOR		KPYCM
Q204			UN4119	DIGITAL TRANSISTOR		KPYCM
Q205			DTC113ZSA	DIGITAL TRANSISTOR		KPYCM
Q205			UN4219	DIGITAL TRANSISTOR		KPYCM
Q206			DTA113ZSA	DIGITAL TRANSISTOR		KPYCM
Q206			UN4119	DIGITAL TRANSISTOR		KPYCM
Q207-210			2SC2003(L,K)	TRANSISTOR		KPYCM
Q301-304			2SA992(F,E)	TRANSISTOR		KPYCM
Q305-308			2SC2631(R,S)	TRANSISTOR		KPYCM
Q309-310			2SA1123(R,S)	TRANSISTOR		KPYCM
Q311-312			2SA1048(Y GR)	TRANSISTOR		KPYCM
Q311-312			2SA1309A(Q,R)	TRANSISTOR		KPYCM
Q351-354			2SA992(F,E)	TRANSISTOR		KPYCM
Q355-358			2SC2631(R,S)	TRANSISTOR		KPYCM
Q359-360			2SA1123(R,S)	TRANSISTOR		KPYCM
Q361-362			2SA1048(Y GR)	TRANSISTOR		KPYCM
Q361-362			2SA1309A(Q,R)	TRANSISTOR		KPYCM
Q401-402			2SA992(F,E)	TRANSISTOR		KPYCM
Q403-404			2SC2631(R,S)	TRANSISTOR		KPYCM
Q405			2SA1123(R,S)	TRANSISTOR		KPYCM
Q406			2SA1048(Y GR)	TRANSISTOR		KPYCM
Q406			2SA1309A(Q,R)	TRANSISTOR		KPYCM

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Ref. No	Add-ress	New Parts	Parts No.	Description	Desti-nation	Re-marks
Q451-452			DTC113ZSA	DIGITAL TRANSISTOR		
Q451-452			UN4219	DIGITAL TRANSISTOR		
Q471			2SA1048(Y GR)	TRANSISTOR		
Q471			2SA1309A(Q,R)	TRANSISTOR		
Q472			DTC124ESA	DIGITAL TRANSISTOR		
Q472			UN4212	DIGITAL TRANSISTOR		
Q475			2SC1845(F,E)	TRANSISTOR		
Q476			2SA1535(R,S)	TRANSISTOR		
A1			W02-2561-05	ELECTRIC CIRCUIT MODULE		
C1-2			CC45FSL1H151JN	CERAMIC		
C3-4			CC45FSL1H100M	ELECTRO		
C5-6			CC45FSL1H333J	MYLAR		
C7-8			CC45FSL1H100M	MYLAR		
C9-10			CC45FSL1H100M	MYLAR		
C11-12			CC45FSL1H100M	MYLAR		
C13-16			CC45FSL1H100M	MYLAR		
C17-18			CC45FSL1H100M	MYLAR		
C19-20			CC45FSL1H100M	MYLAR		
C21			CC45FSL1H100M	MYLAR		
C22			CC45FSL1H100M	MYLAR		
C31-40			CC45FSL1H100M	MYLAR		
C51-52			CC45FSL1H100M	MYLAR		
C53-54			CC45FSL1H100M	MYLAR		
C55-56			CC45FSL1H100M	MYLAR		
C57			CC45FSL1H100M	MYLAR		
C58			CC45FSL1H100M	MYLAR		
C71-72			CC45FSL1H100M	MYLAR		
C75-76			CC45FSL1H100M	MYLAR		
C77			CC45FSL1H100M	MYLAR		
C78			CC45FSL1H100M	MYLAR		
C101-102			CC45FSL1H100M	MYLAR		
C103-104			CC45FSL1H100M	MYLAR		
C105-106			CC45FSL1H100M	MYLAR		
C107-108			CC45FSL1H100M	MYLAR		
C109-110			CC45FSL1H100M	MYLAR		
C111-112			CC45FSL1H100M	MYLAR		
C113-118			CC45FSL1H100M	MYLAR		
C119			CC45FSL1H100M	MYLAR		
C120			CC45FSL1H100M	MYLAR		
C122			CC45FSL1H100M	MYLAR		
C123			CC45FSL1H100M	MYLAR		
C124			CC45FSL1H100M	MYLAR		
C125-130			CC45FSL1H100M	MYLAR		
C141			CC45FSL1H100M	MYLAR		
C142			CC45FSL1H100M	MYLAR		
C143			CC45FSL1H100M	MYLAR		
C144			CC45FSL1H100M	MYLAR		
C145			CC45FSL1H100M	MYLAR		
C146			CC45FSL1H100M	MYLAR		
C147-149			CC45FSL1H100M	MYLAR		
C150			CC45FSL1H100M	MYLAR		
C171-176			CC45FSL1H100M	MYLAR		
C177-182			CC45FSL1H100M	MYLAR		

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Ref. No	Add-ress	New Parts	Parts No.	Description	Desti-nation	Re-marks
D201,202			RD15JS(B)	ZENER DIODE		
D203			HZS5,1S(B2)	ZENER DIODE		
D203			RD5,1JS(B2)	ZENER DIODE		
D204			HSS104A	DIODE		
D204			1SS131	DIODE		
D205			HZS8,2S(B2)	ZENER DIODE		
D205			RD8,2JS(B2)	ZENER DIODE		
D206			HZS7,3S(B)	ZENER DIODE		
D206			RD7,3JS(B)	ZENER DIODE		
D207			HZS11N(B)	ZENER DIODE		
D207			RD11ES(B)	ZENER DIODE		
D211,212			HZS15S(B)	ZENER DIODE		
D211,212			RD15JS(B)	ZENER DIODE		
D302,306			HSS104A	DIODE		
D302,306			1SS131	DIODE		
D313,317			HSS104	DIODE		
D313,317			1SS133	DIODE		
D327,331			HSS104	DIODE		
D327,331			1SS133	DIODE		
D333,334			HSS104	DIODE		
D333,334			1SS133	DIODE		
D351,354			HSS104	DIODE		
D351,354			1SS133	DIODE		
D401,404			1B4B41	DIODE		
D405			S5688B	DIODE		
D405			1SR139-400	DIODE		
D406,407			HZS7,3S(B)	ZENER DIODE		
D406,407			RD7,3JS(B)	ZENER DIODE		
D411,412			HSS104	DIODE		
D411,412			1SS133	DIODE		
D413			HZS4,7N(B)	ZENER DIODE		
D413			RD4,7ES(B)	ZENER DIODE		
IC1		*	UPD7805GC-902	MI-COM IC		
IC2			S-806D-Z	ANALOGUE IC		
IC3			NUM4580D-D	IC(OP AMP X2)		
IC5			TA7805S	IC(VOLTAGE REGULATOR/ +5V)		
IC5			UPC7805AHF	ANALOGUE IC		
IC6			TA7900SS	IC(VOLTAGE REGULATOR/ -5V)		
IC7			NU3713D	MOS-IC		
IC8			TA7805S	IC(VOLTAGE REGULATOR/ +5V)		
IC8			UPC7805AHF	ANALOGUE IC		
Q201			2SD2061	TRANSISTOR		
Q202			2SB1370	TRANSISTOR		
Q203			2SC2458(Y,GR)	TRANSISTOR		
Q203			2SC3311A(Q,R)	TRANSISTOR		
Q204			2SA1048(Y,GR)	TRANSISTOR		
Q204			2SA1309A(Q,R)	TRANSISTOR		
Q205			2SD2061	TRANSISTOR		
Q206,207			2SC2458(Y,GR)	TRANSISTOR		
Q206,207			2SC3311A(Q,R)	TRANSISTOR		
Q208			2SC2458(Y,GR)	TRANSISTOR		
Q208			2SC3311A(Q,R)	TRANSISTOR		
Q209			2SK246(Y,GR)	FET		
Q210			DTA113ZSA	DIGITAL TRANSISTOR		
Q210			UN4119	DIGITAL TRANSISTOR		

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Q211			2SD2061	TRANSISTOR		
Q212			2SB1370	TRANSISTOR		
Q213			DT113ZSA	DIGITAL TRANSISTOR		
Q214			UN4219	DIGITAL TRANSISTOR		
Q214			DT113ZSA	DIGITAL TRANSISTOR		
Q301			UN4219	DIGITAL TRANSISTOR		
Q301			2SC2458(Y,GR)	TRANSISTOR		
Q301			2SC3311A(Q,R)	TRANSISTOR		
DISPLAY UNIT (X14-430X-XX)						
D104-106		*	B30-2509-05	LED(RED)		
C1,2			C91-0745-05	CERAMIC		
C3,4			C91-0753-05	CHIP C		
C5,6			C90-3224-05	ELECTRO		
C7,8			C91-0729-05	CERAMIC		
C9,10			C90-3224-05	ELECTRO		
C11,12			CE04KW2A4R7M	ELECTRO		
C13,14		*	CC45FSL1H221JN	CERAMIC		
C15,16		*	CC45FSL1H220JN	CERAMIC		
C17,18		*	CK45FB1H561KMM	CERAMIC		
C19,20		*	CQ93FMG1H563J	MYLAR		
C21,22			CE04KW1C100M	ELECTRO		
C23,24			CQ93FMG1H93J	MYLAR		
C25,26			CE04KW2A4R7M	ELECTRO		
C27,28			CK45FB1H471KMM	CERAMIC		
C33,34			CQ93FMG1H103J	MYLAR		
C47,48			CQ93FMG1H103J	MYLAR		
C55			C91-0769-05	CERAMIC		
C56			C91-0745-05	CERAMIC		
C57			C91-0769-05	CERAMIC		
C58,59			C91-0745-05	CERAMIC		
C101-103		*	CC45FSL1H101JN	CERAMIC		
C104-107			C91-0753-05	CHIP C		
C108-112			CK45FF1H103ZMM	CERAMIC		
C113		*	CE04KW1V30M	ELECTRO		
C114		*	CC45FCH1H470JN	CERAMIC		
C115		*	CC45FCH1H220JN	CERAMIC		
C116		*	CK45FF1H103ZMM	CERAMIC		
C117		*	CK45FB1H561KMM	CERAMIC		
C118		*	CC45FSL1H331JN	CERAMIC		
C119		*	CE04KW1H2R2M	ELECTRO		
C120			CE04KW1C100M	ELECTRO		
C121			CE04KW1C100M	ELECTRO		
C151			CE04KW1H220M	ELECTRO		
C152			CE04KW1H100M	ELECTRO		
C153,154			CK45FF1H103ZMM	CERAMIC		
C155,156		*	CE04KW1V4R7M	ELECTRO		
C201-214		*	CC45FSL1H101JN	CERAMIC		
C215			CE04KW1H4R7M	ELECTRO		
C216			CE04KW1V4R7M	ELECTRO		
C217			CQ93FMG1H223J	MYLAR		
C218			CE04KW1C331M	ELECTRO		
C219			CE04KW1H4R7M	ELECTRO		
C220			CE04KW1V4R7M	ELECTRO		
C221			CQ93FMG1H223J	MYLAR		

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Ref. No	Add-ress	New Parts	Parts No.	Description	Desti-nation	Re-marks
C222			CE04KW1C331M	ELECTRO		
C223			CE04KW1H4R7M	ELECTRO		
C224			CE04KW1V4R7M	ELECTRO		
C225			CE04KW1H4R7M	ELECTRO		
C226			CE04KW1V4R7M	ELECTRO		
C227			CQ93FMG1H223J	MYLAR		
C228			CE04KW1V4R7M	ELECTRO		
C229,230			CE04HW1E100M	NP-ELEC		
C231,234		*	CC45FSL1H220JN	CERAMIC		
C235,236			CE04HW1E100M	NP-ELEC		
C251			CE04KW1H100M	ELECTRO		
C252		*	CK45FF1H103ZMM	CERAMIC		
C253		*	CE04KW1H100M	ELECTRO		
C254,258		*	CK45FF1H103ZMM	CERAMIC		
C259		*	CK45FB1H102KMM	CERAMIC		
C260		*	CK45FF1H103ZMM	CERAMIC		
C261		*	CE04KW1H100M	ELECTRO		
C262		*	CK45FF1H103ZMM	CERAMIC		
C263		*	CE04KW1H100M	ELECTRO		
C264		*	CK45FF1H103ZMM	CERAMIC		
C265		*	CE04KW1H100M	ELECTRO		
C266		*	CK45FF1H103ZMM	CERAMIC		
C267		*	CE04KW1H100M	ELECTRO		
C268		*	CK45FF1H103ZMM	CERAMIC		
C301,302		*	CE04KW2A4R7M	ELECTRO		
C303,304		*	CC45FSL1H271JN	CERAMIC		
C305,308		*	CC45FSL1H101JN	CERAMIC		
C311,312		*	CQ93FMG1H222J	MYLAR		
C313,314		*	CC45FSL1H151JN	CERAMIC		
C315,316		*	CE04KW1E101M	ELECTRO		
C317,318		*	CE04KW1H470M	ELECTRO		
C319,320		*	CC45FSL1H220JN	CERAMIC		
C323,324		*	CQ93FMG1H103J	MYLAR		
C325,326		*	CC45FSL1H151JN	CERAMIC		
C337,338		*	CE04KW1E101M	ELECTRO		
C339,340		*	CC45FSL1H820JN	CERAMIC		
C341,342		*	CC45FSL1H121JN	CERAMIC		
C343,344		*	CQ93FMG1H103J	MYLAR		
C351,352		*	CE04KW2A4R7M	ELECTRO		
C353,354		*	CC45FSL1H271JN	CERAMIC		
C355-358		*	CC45FSL1H101JN	CERAMIC		
C361,362		*	CQ93FMG1H222J	MYLAR		
C363,364		*	CC45FSL1H820JN	CERAMIC		
C365,366		*	CC45FSL1H121JN	CERAMIC		
C367,368		*	CE04KW1H470M	ELECTRO		
C369,370		*	CC45FSL1H220JN	CERAMIC		
C373,374		*	CQ93FMG1H103J	MYLAR		
C375,376		*	CC45FSL1H151JN	CERAMIC		
C377,378		*	CE04KW1E101M	ELECTRO		
C389,390		*	CC45FSL1H820JN	CERAMIC		
C391,392		*	CC45FSL1H121JN	CERAMIC		
C393,394		*	CQ93FMG1H103J	MYLAR		
C395		*	CC45FSL1H101JN	CERAMIC		
C396		*	CC45FSL1H100JN	CERAMIC		
C401		*	CE04KW2A4R7M	ELECTRO		

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Q202			2SA1048(Y,GR)	TRANSISTOR		
Q203			2SA1309A(Q,R)	TRANSISTOR		
Q203-205			2SC2458(Y,GR)	TRANSISTOR		
Q203-205			2SC3311A(Q,R)	TRANSISTOR		
Q206,207			2SC2878(B)	TRANSISTOR		
Q208			DTA113ZSA	DIGITAL TRANSISTOR	MYCTEQ	
Q208			UN4119	DIGITAL TRANSISTOR	MYCTEQ	
Q209			DTC113ZSA	DIGITAL TRANSISTOR	MYCTEQ	
Q209			UN4219	DIGITAL TRANSISTOR	MYCTEQ	
Q210			DTC113ZSA	DIGITAL TRANSISTOR		
Q211			UN4119	DIGITAL TRANSISTOR		
Q212			2SC2458(Y,GR)	TRANSISTOR		
Q212			2SC3311A(Q,R)	TRANSISTOR		
Q213,214			2SC2003(L,K)	TRANSISTOR		

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C318			CE04KW1C331M	ELECTRO	MYCTEQ	
C319			CK45FF1H103ZMM	CERAMIC	MYCTEQ	
C320,321			CK45FF1H103ZMM	CERAMIC		
C322-324			CC45FSL1H101JN	CERAMIC	MYCTEQ	
C325			CE04KW1H100M	ELECTRO		
C326			CK45FF1H103ZMM	CERAMIC		
C327			CE04KW1H100M	ELECTRO		
C328			CK45FF1H103ZMM	CERAMIC		
C329			CC45FSL1H100DN	10PF		
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(14.31818M)		
X202			L78-0272-05	RESONATOR (503.5K)	MYCTEQ	
X203			L77-2202-05	CRYSTAL RESONATOR(17.73447M)		
X204			L78-0300-05	RESONATOR (500K)	MYCTEQ	
R317			RD14NB2E470J	RD 47 J 1/4W	MYCTEQ	
R326			RD14NB2E100J	RD 10 J 1/4W	MYCTEQ	
R327			RD14NB2E100J	RD 10 J 1/4W	MYCTEQ	
R328			RD14NB2E47J	RD 4.7 J 1/4W	MYCTEQ	
D11-13			HSS104	DIODE		
D11-13			ISS133	DIODE		
D201,202			HSS104	DIODE		
D201,202			ISS133	DIODE		
IC1-6			NJM4580D	IC(OP AMP X2)	MYCTEQ	
IC1-6			NJM4580D-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)		
IC206			MB90089PF-188	CUSTOM IC		
IC207			MM1067XD	IC(SYNC SEPARATION)	MYCTEQ	
IC208			TC74HC4053AP	IC(ANALOG MULTIPLEXER)	MYCTEQ	
IC209			LA7950	ANALOGUE IC	MYCTEQ	
Q1-6			2SC2878(B)	TRANSISTOR		
Q7			DTA124ESA	DIGITAL TRANSISTOR		
Q8_9			UN4112	DIGITAL TRANSISTOR		
Q8_9			2SC2458(Y,GR)	TRANSISTOR		
Q201			2SC3311A(Q,R)	TRANSISTOR		
Q201			2SC2458(Y,GR)	TRANSISTOR		
Q201			2SC3311A(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 k Ω

CD 200 mV / 47 k Ω

Output level / impedance

TAPE REC 200 mV / 470 Ω

PRE OUT (FRONT, CENTER, SURROUND, SUBWOOFER)

..... 1 V / 1.2 k Ω

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 ± 30 nm

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)

..... 1.6 μ V (75 Ω) / 15.2 dBf (75 kHz DEV., SINAD 30 dB)

50dB quieting sensitivity

STEREO 31.6 μ V (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 μ V / (600 μ V/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

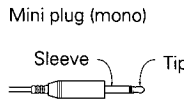
IR REPEATER CONTROL terminals

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

SPECIFICATIONS

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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