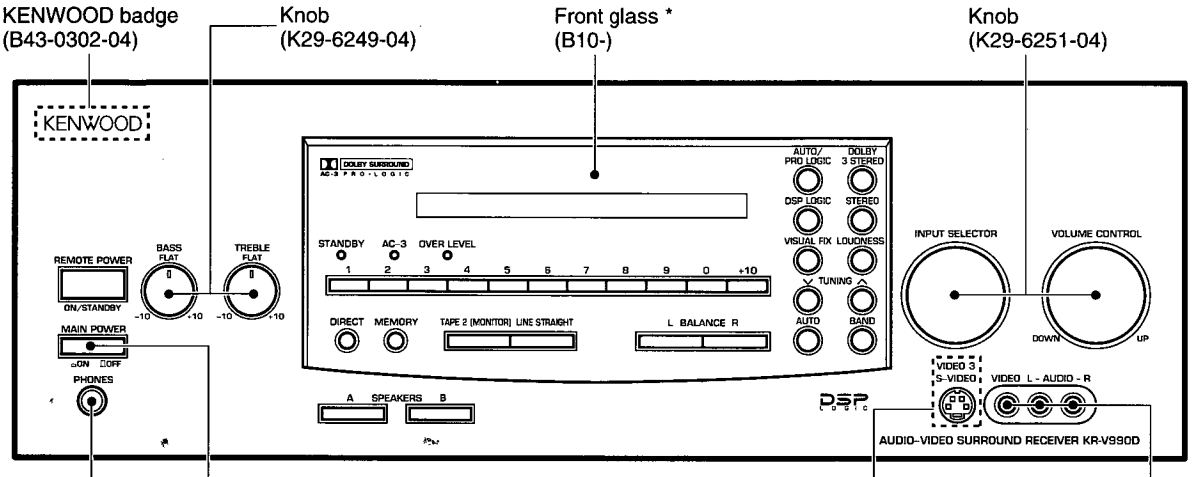
AUDIO-VIDEO SURROUND RECEIVER

KR-V990D/V9080

SERVICE MANUAL

KENWOOD

B51-5166-00



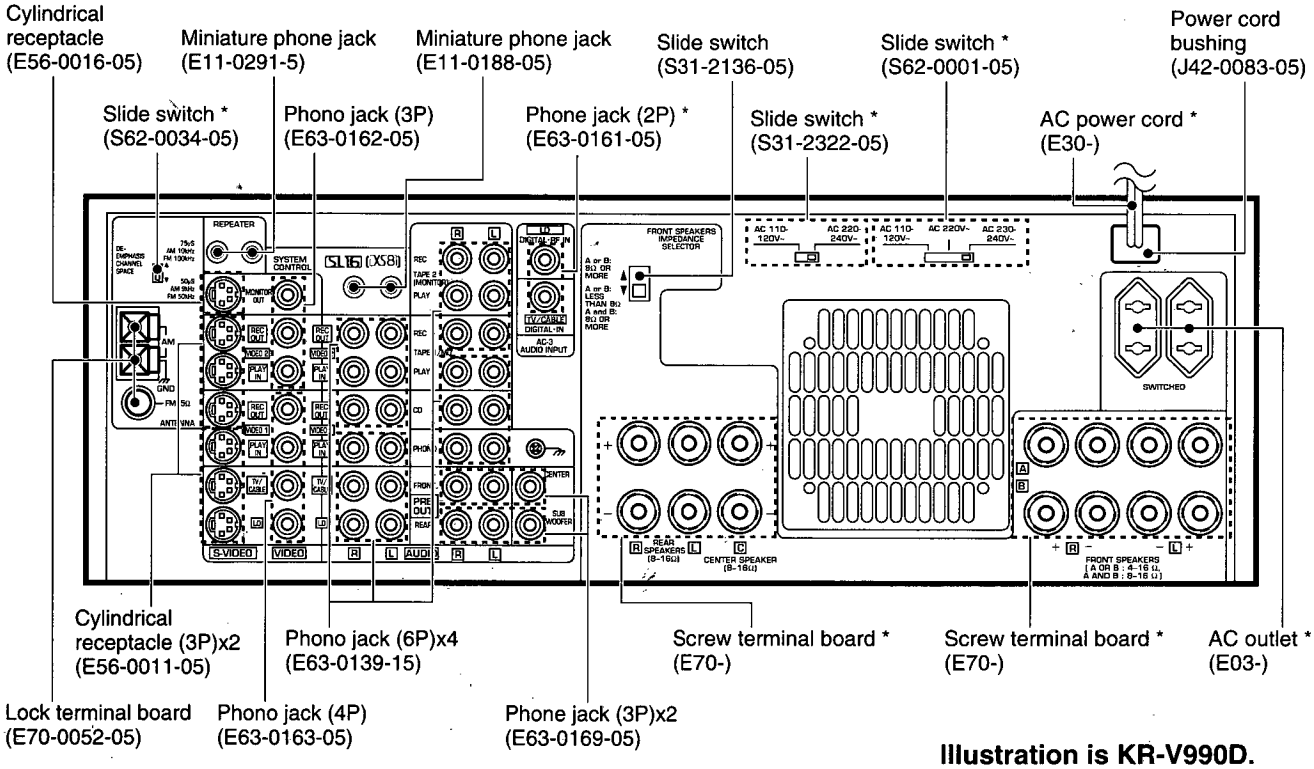


Illustration is KR-V990D.

*** Refer to parts list on page 89.**

PRECAUTIONS FOR REPAIR

- Can not use jig **KSJ-0816** for the transmission frequency 455 ± 2.2kHz of remote controller.
- For the serial test mode of the **CIRCUIT DESCRIPTION**, see Service Manual **(B51-5162-00)** of **KR-V7080/V8080.**

KR-V990D/V9080

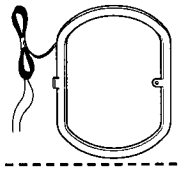
CONTENTS / ACCESSORIES

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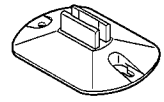
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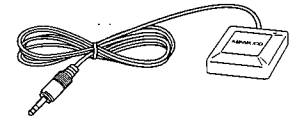
AM loop antenna assy (1)
(T90-0820-05)



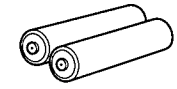
Loop antenna stand (1)
(J19-3645-05)



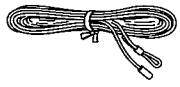
Repeater (1)
(W02-2542-05)



Batteries (R6/AA) (2)



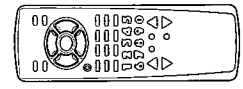
FM indoor antenna (1)
(T90-0810-05)



Double-sided tape (1)
(J69-0087-08)

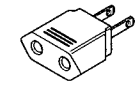


Remote control unit (1)
(A70-1038-05) : RC-R0903



Battery cover : (A09-0169-08)

AC plug adaptor (1)
(E03-0115-05) : M type only



SWITCHING FROM [XS8] TO [SL16]

You can easily change the system control mode with the following operation. Do this operation after completing all connections.

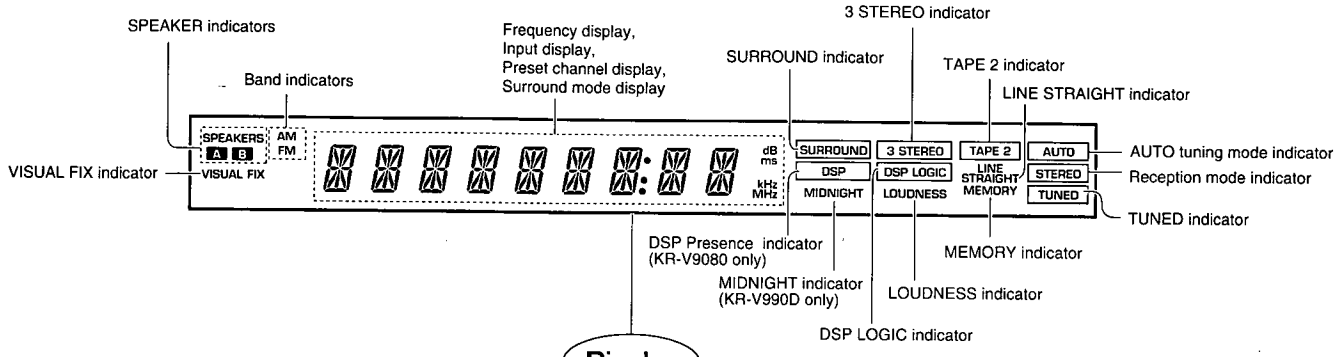
Switching to [SL16] : Hold down the AUTO key and switch the MAIN POWER key from OFF to ON.
Switching back to [XS8] : Hold down the BAND key and switch the MAIN POWER key from OFF to ON.

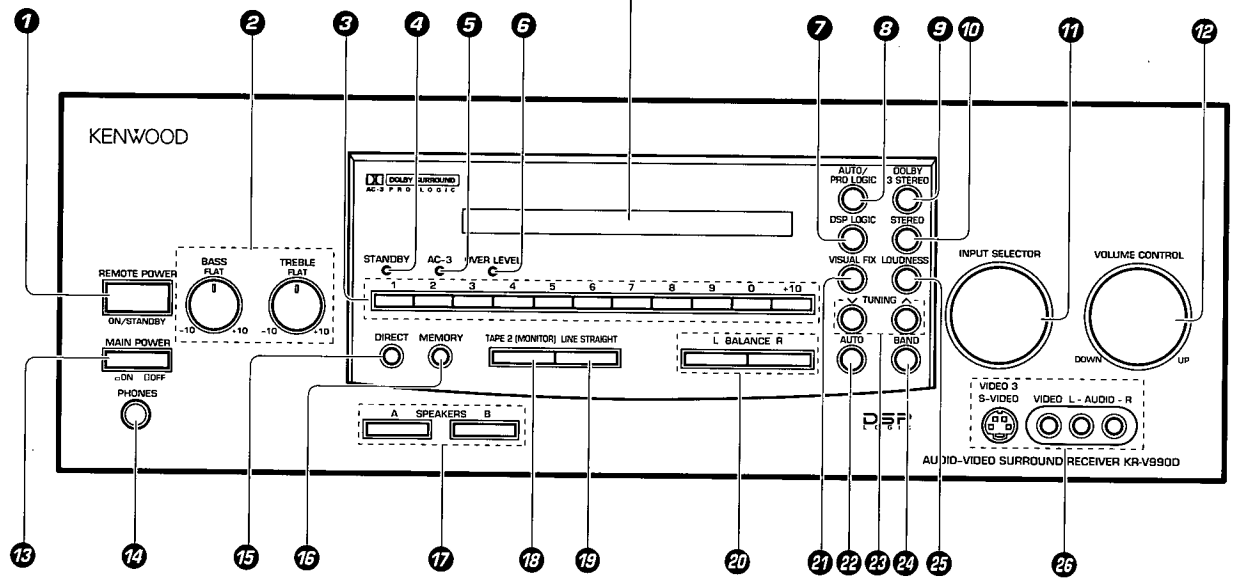
• This operation will not affect items stored in the memory.

Note : The system control mode will revert to [XS8] if the unit is not turned on for three consecutive days. If you would like to make the unit completely (and permanently) [SL16] compatible, please consult your nearest retailer or the Kenwood Marketing Department.

μ-COM (hard) match : Can be set 8pin of main μ-COM (UPD78058GC-XXX).

CONTROLS





❶ REMOTE POWER key
Use to switch the power ON/STANDBY when the MAIN POWER is turned ON.

❷ Tone Control knobs

❸ Numeric keys

❹ STANDBY indicator

❺ AC-3 indicator (KR-V990D only)
Lights when an AC-3 format signal is being played back.

❻ OVER LEVEL indicator (KR-V990D only)
Lights when the level of the signal being input is too high.

❼ DSP LOGIC key (KR-V990D)
DSP/DSP LOGIC key (KR-V9080)
Use to turn on, or switch, the DSP LOGIC mode.

❽ AUTO/PRO LOGIC key (KR-V990D)
DOLBY PRO LOGIC key (KR-V9080)
Use to turn on, or switch, the DOLBY SURROUND mode.

❾ DOLBY 3 STEREO key
Use to turn on the DOLBY 3 STEREO mode.

❿ STEREO key
Use to cancel the surround mode.

⓫ INPUT SELECTOR knob
Use to select the input sources.

⓬ VOLUME CONTROL knob

⓭ MAIN POWER key
Use to turn the POWER ON/OFF.

⓮ PHONES jack
Use for headphone listening.

⓯ DIRECT key
Use to tune radio stations directly by numerical input.

⓰ MEMORY key
Use to store radio stations in the preset memory.

⓱ SPEAKERS A/B keys
Use to turn the speakers ON/OFF.

⓲ TAPE 2[MONITOR] key
Use to monitor a recording.

⓳ LINE STRAIGHT key
Use to listen with high quality sound.

⓴ BALANCE keys
Use to adjust the volume balance between left and right.

㉑ VISUAL FIX key
Use to lock on to the current video input.

㉒ AUTO key
Use to select the auto tuning mode.

㉓ TUNING keys
Use to tune in radio broadcasts.

㉔ BAND key
Use to select the broadcast band.

㉕ LOUDNESS key
Use to emphasize deep base sounds.

㉖ VIDEO-3 terminals

REMOTE POWER switch STANDBY mode

When the receiver's power cord is plugged in to an AC outlet and the **MAIN POWER** key is turned ON, the **STANDBY** indicator will remain lit, regardless of the ON/STANDBY setting of the **REMOTE POWER** switch. This indicates that a small amount of current is being supplied to the receiver in order to back up the memory contents. This is called the Standby mode. When the standby indicator is lit, the receiver can be switched ON/STANDBY from the remote control.

KR-V990D/V9080

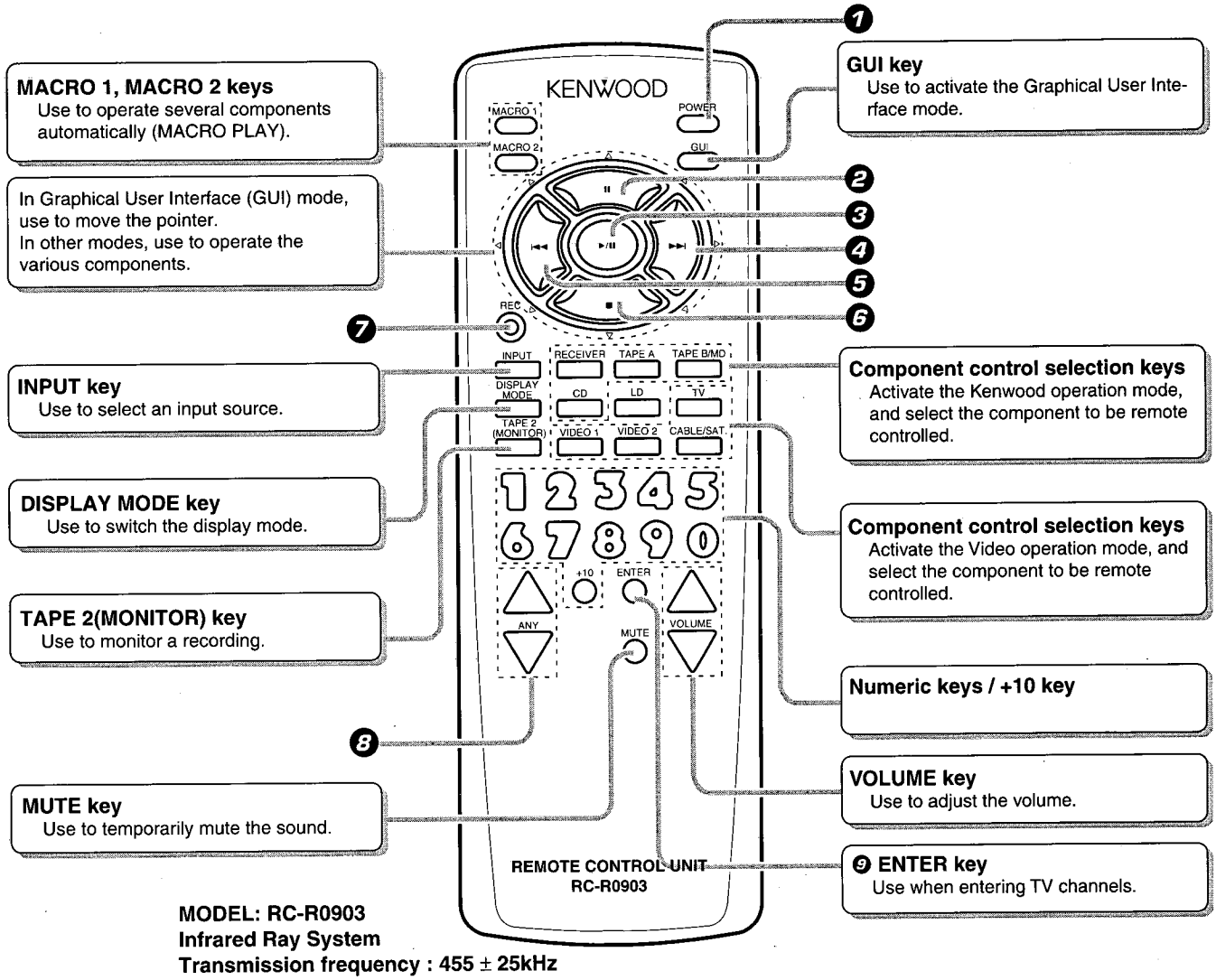
REMOTE CONTROL OPERATION

The remote control unit provided with unit functions in the following two modes so that it can be used to control other KENWOOD system components as well as video components from other manufacturers.

KENWOOD component control mode ..... This mode is used to control the KENWOOD source components including cassette decks and a CD player. (The controlled components must be connected to this unit through system control cords.)

Video component control mode ..... This mode allows to control the basic operations of video components from KENWOOD as well as other manufacturers.

Some of the keys act in different ways depending on the modes described above. Therefore, be sure to adjust the required mode before pressing these keys.



MACRO 1, MACRO 2 keys
Use to operate several components automatically (MACRO PLAY).

In Graphical User Interface (GUI) mode, use to move the pointer.
In other modes, use to operate the various components.

INPUT key
Use to select an input source.

DISPLAY MODE key
Use to switch the display mode.

TAPE 2(MONITOR) key
Use to monitor a recording.

MUTE key
Use to temporarily mute the sound.

GUI key
Use to activate the Graphical User Interface mode.

Component control selection keys
Activate the Kenwood operation mode, and select the component to be remote controlled.

Component control selection keys
Activate the Video operation mode, and select the component to be remote controlled.

Numeric keys / +10 key

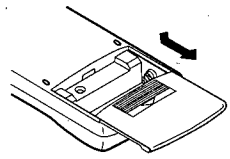
VOLUME key
Use to adjust the volume.

❾ ENTER key
Use when entering TV channels.

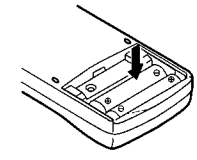
MODEL: RC-R0903
Infrared Ray System
Transmission frequency : 455 ± 25kHz

Loading batteries

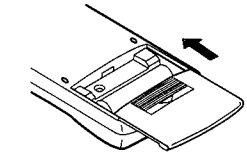
①Remove the cover.



②Insert batteries.



③Close the cover.



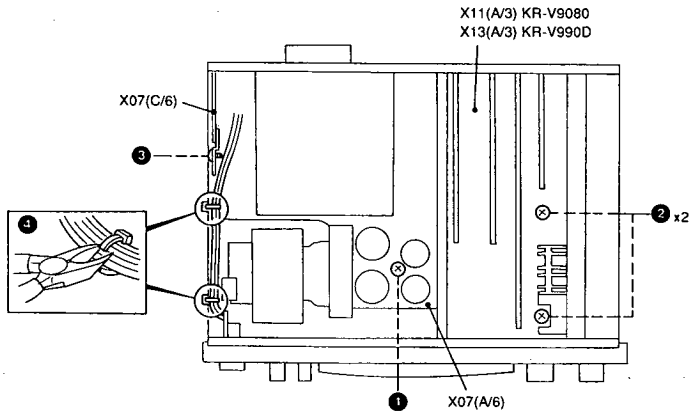
- Insert two AA-size (R6 / SUM-3) batteries as indicated by the polarity markings.

DISASSEMBLY FOR REPAIR

1. How to remove the Power transistor

Illust. 1

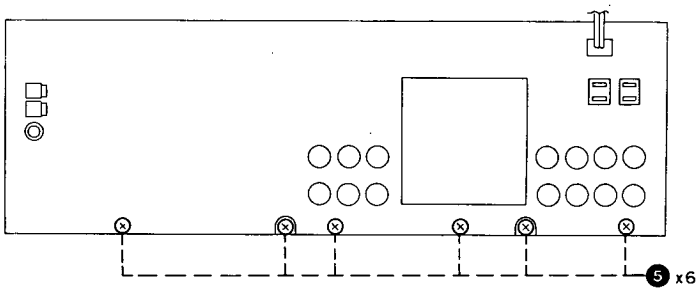
1. Remove the one screw ❶, two screws ❷ and the one screw ❸ on the Mounting hardware.
2. Cut the two Wire bands ❹ with the Cutting nipper, etc.



Illust. 1

Illust. 2

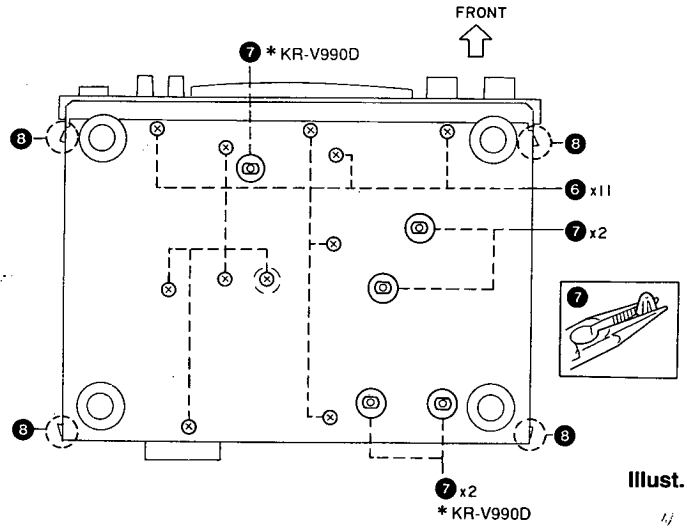
3. Remove the six screws ❺ on the Rear panel.



Illust. 2

Illust. 3

4. Remove the eleven screws ❻ at the bottom.
5. Remove the Unit holders ❼ while pushing them with the Pliers, etc.
6. Remove the Bottom plate while pushing the four clicks ❽.

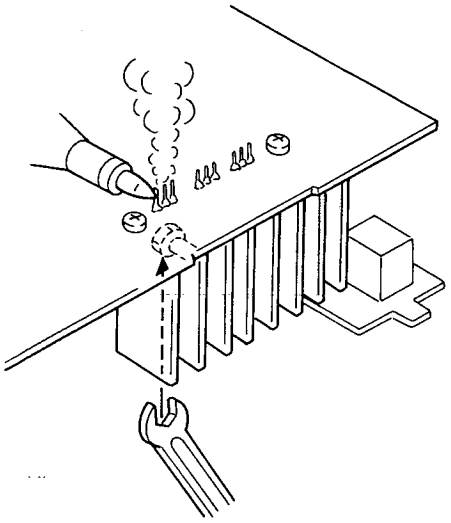


Illust. 3

DISASSEMBLY FOR REPAIR

Illust. 4

7. Remove the Power transistors with the Soldering iron.
8. Remove the screws on the Power transistors with the Hexagon wrench.

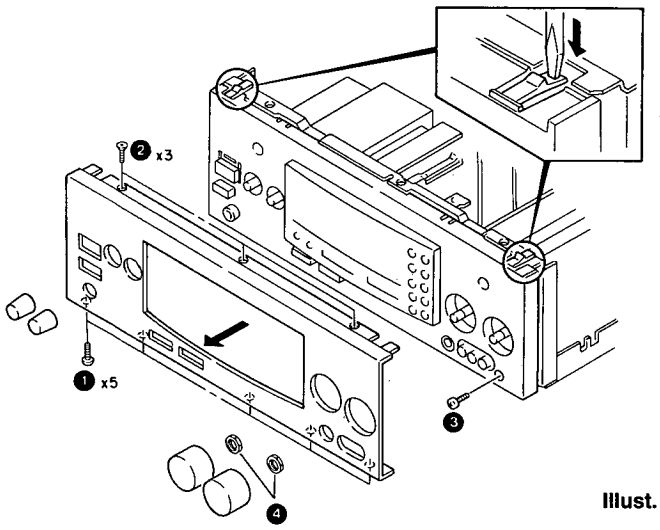


Illust. 4

2. How to remove the Display unit (X14-, A/6)

Illust. 5

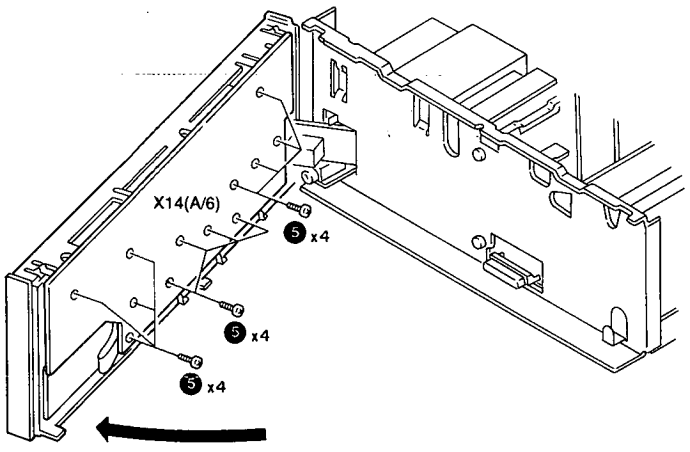
1. Remove the five screws ❶ at the bottom and the three screws ❷ at the top.
2. Remove the following Knobs; VOLUME CONTROL, INPUT SELECTOR, TREBLE, BASS.
3. Remove the Front panel while pushing the clicks.
4. Remove the one screw ❸, then remove the Sub panel.



Illust. 5

Illust. 5 / Illust. 6

5. Remove the two Hexagon nuts ❹, the twelve screws ❺, then remove the Display unit (X14-, A/6).

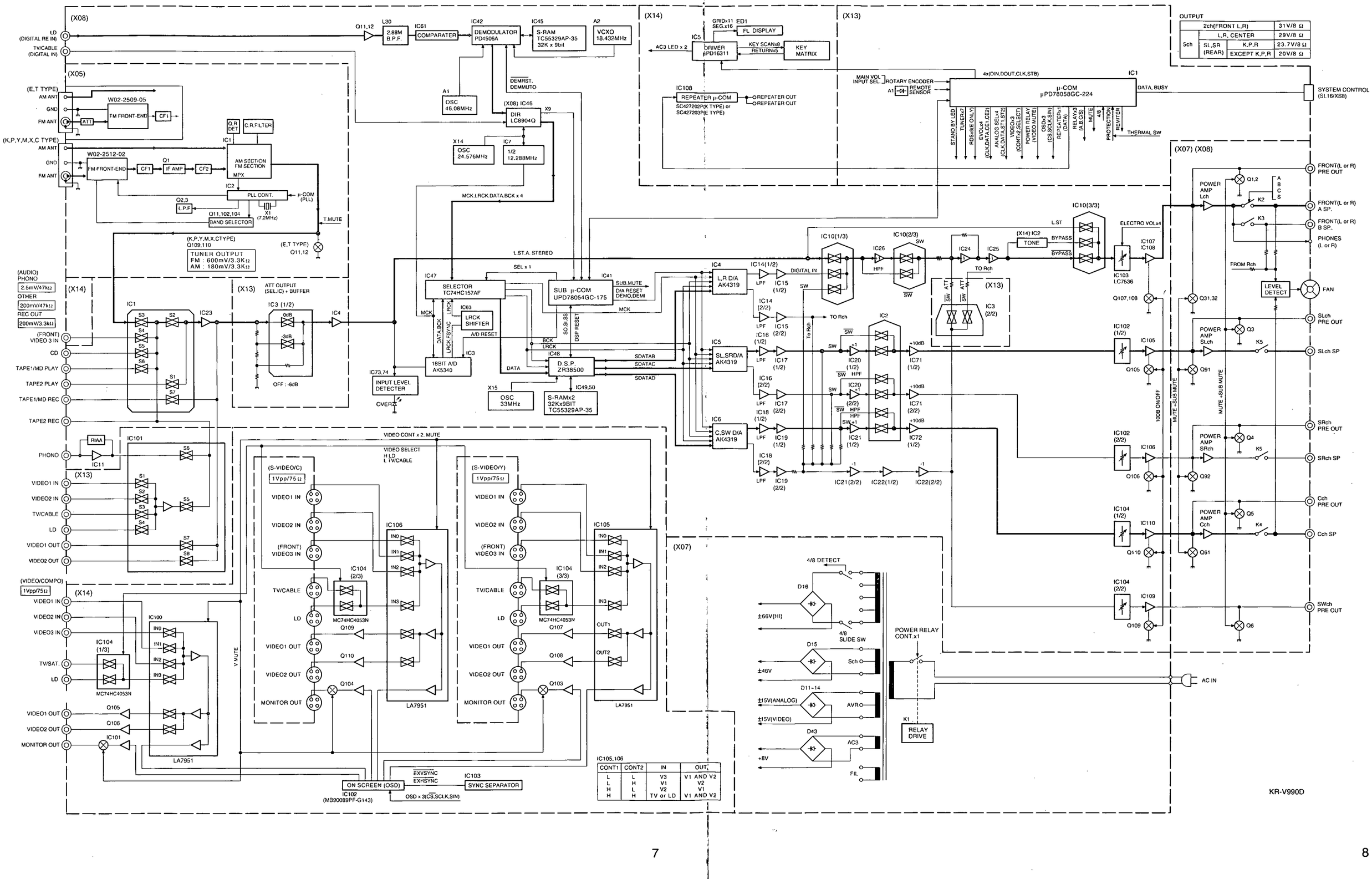


Illust. 6

KR-V990D/V9080

BLOCK DIAGRAM

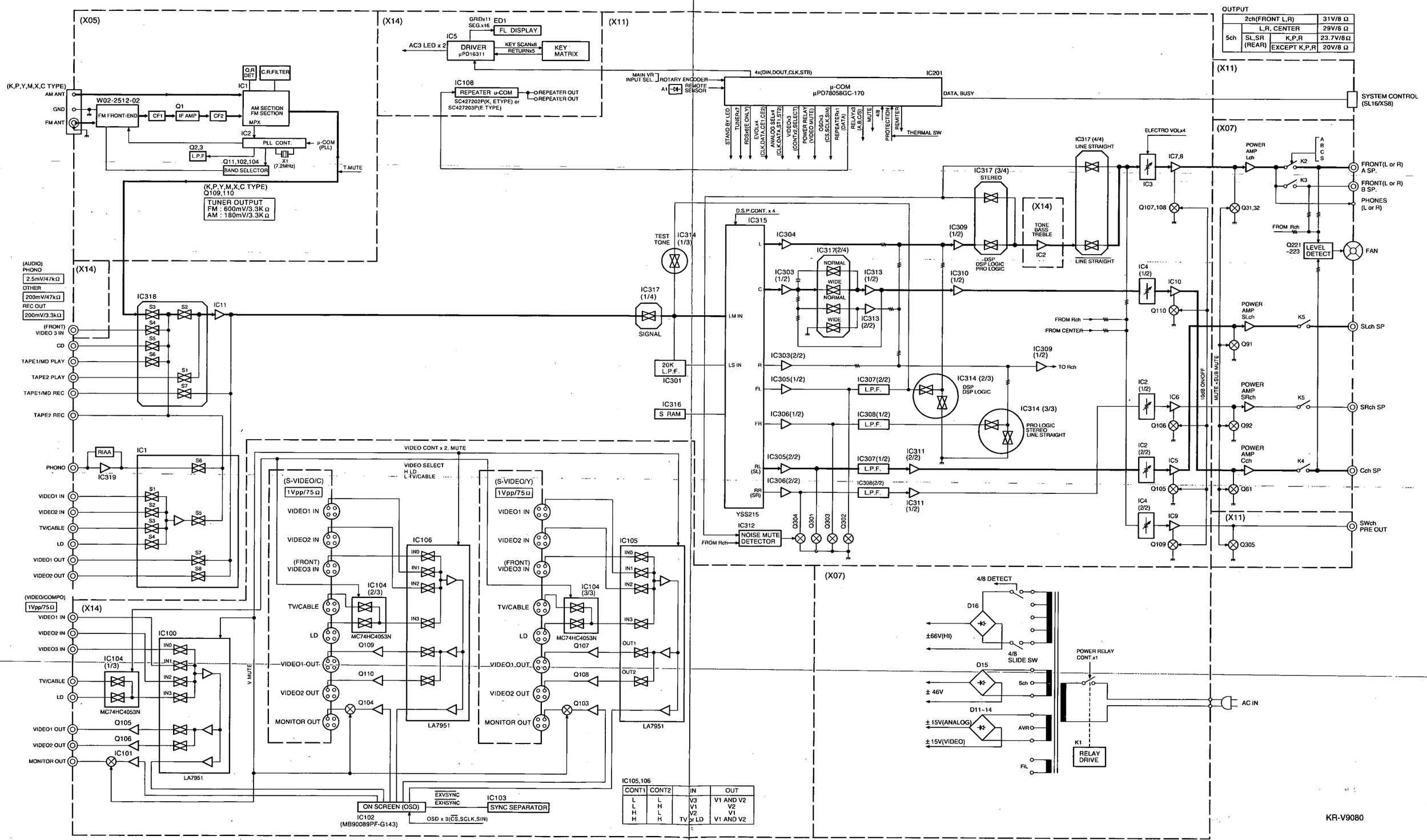
KR-V990D



KR-V990D/V9080

BLOCK DIAGRAM

KR-V9080



CIRCUIT DESCRIPTION

1. Function

1-1. XS8/SL16 system changeover

Implements an additional operation by the system in order to shift a system operated by XS8 to SL16.

1-1-1. SL16

Easy operation one way amplifier and receiver. Other source devices are compatible with one-way and two-way easy operation. Operation is 16-bit. Operation is two way and compatible with operating mode display. Also, adding MD to input selector makes it compatible with easy operation. Apart from TUNER, source devices are operating mode display compatible and input selector MD compatible. Since it is not possible for the amplifier and receiver to be always compatible with operating mode displays, they are only input selector MD compatible and SL16 compatible.

1-1-2. Addition of a selector source

Adding a system operation adds selector sources MD and controls MD system operation.

(1) Selector source switching

MD are switched as TAPE1 background modes separately from the normal selector functions.

- Switch the selector source by holding down the AUTO panel key for at least two seconds.
  TAPE1'MD
  (If another key is entered while the key is being entered, the key input is set to off and the key is made ineffective.)
  When a MD is used, the MD is connected to the RCA Pin of TAPE1.
- The operation of the system controls only the currently selected source and as no control whatsoever over the operation of the side which is not selected. For example, while MD is selected, even if the "Deck B Play" serial code is received, MD will remain selected without switching from MD to TAPE1.

(2) Settings during microprocessor backup or initialization

- During microprocessor initialization the selector is set to TAPE1. The current selector mode (TAPE1/MD) is maintained except when the backup is disrupted.

(3) Other items be noted

- This selector switching function has been developed in accordance with new serial codes. Therefore, if XS8 is used, since there is no code for MD, the selector source function will not work if the 8/16-bit serial mode is 8-bit. It words only in 16-bit mode. Also, if serial mode has been switched from 16-bit to 8-bit when MD are being selected, it will force a switch to TAPE1.

1-2. GUI (Graphic User Interface) function

This function enables the user to control each unit from the screen by combining the OSD-IC (On-Screen Display-IC) with a split (arrow on the screen) and the remote controller with a direction key that moves a split.

1-3. OSD (On Screen Display) display by new 16-bit serial communication

In a new 16-bit system, the current state of other models (CD deck, etc.) that communicate data in series can be displayed on the OSD screen.

1-4. Repeater function

This function enables the units (television, video, etc.) of other companies to be controlled using remote control code libraries and external remote control output units in the world that the UEI company (U.S.A.) has.

1-5. Macro play

This function enables the user to continuously output the preset remote control code. (Two channels)

1-6. Outline of AC-3 (KR-V990D)

1-6-1. Introduction

The sound in major motion pictures such as "Forest Gump" is recorded on film with AC-3, a highly efficient coding system developed by the Dolby Corporation called Dolby SR-D. To be precise, the sound on these movies is recorded on both a 4-channel Dolby optical track and a 5.1-channel Dolby SR-D digital track. Up to now, when a motion picture is recorded on video cassette, laser disc player, etc., the optically recorded 4-channel track has been matrix encoded to two channels and recorded on the video cassette or laser disc. On playback the channels were passed though a decoder called Pro Logic which restored the original four channels for surround playback.

CIRCUIT DESCRIPTION



Figure 1 : Channel configuration

With AC-3, the 5.1-channel SR-D track is recorded to laser disc without change (actually the bit rate is slightly altered) and the AC-3 decoder restores the original 5.1-channels. The important factor here is that with AC-3, the original channel conditions are not changed by any transmission circuit. In other words, even with a directional booster circuit, the best inter-channel separation obtainable with Pro Logic was about 30 dB but with AC-3, the original separation can be reproduced without change. AC-3 is not only for motion pictures. It is scheduled to be available for use with the currently topical DVD (SD standard) and it is said that it can also be used with a variety of other media.

1-6-2. Comparison with Other Types

Table shows a comparison with the currently topical MD and DCC bit compression systems.

System	PASC	ATRAC	AC-3
Number of channels	2	2	≦3+2+0.1
Bit rate	384kbps	256kbps	384kbps
Processing Type	Sub-band	Transform	Transform
Application	DCC	MD	CATC/HDTV

Table 1 : High efficient digital audio coders for general use

AC-3 uses adaptive transform coding which is closer to MD's ATRAC than it is to the PASC used by digital compact cassettes. Even here, their greatest feature is that the are multi-channel based. That is to say, if we use appropriate words, it means that the bit allocation comforms to the number of channels. It means that if the source has two channels, compression in respect of those two channels is applied not independently but as if they were one channel. In other words, if at an time there is more information on one channel than on the other channel, more bits are allocated to the channel with more information and less bits to the other channel. In total, the bit rate is held at a certain fixed level. This is given by the number of source channels up to a maximum of 5.1-channels. This is called global bit allocation and the most important feature of AC-3. Despite AC-3 being multi-channel, this enables a low bit rate to be achieved, but if the signal conditions are such that processing at the prescribed bit rate is not possible, the high frequency component only is separated into an envelope component and a carrier component and the envelope data is coded with great accuracy. This is based on the psychological nature of sound perceived from the envelope derived from the signal itself, positioned at the high end of the human bearing system.

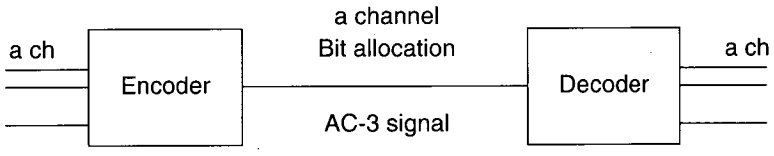


Figure 2 : Bit allocation complies with number of channels

1-6-3. AC-3 Performance

AC-3 is capable of compressed transmissions up to a maximum of 24 bits but at present most actual transmissions seem to be 16-bit compressed transmissions. No formal specifications have been released yet but the following representative specifications have been extracted from data issued by the Dolby Corporation.

CIRCUIT DESCRIPTION

Frequency characteristics	L, C, R, SI, Sr ch	: 20~20 kHz ± 0.5 dB (–3 dB : 3 Hz, 20.3 kHz)
	LFE ch	: 20~120 Hz ± 0.5 dB (–3 dB : 3 Hz, 121 Hz)
THD		: 0.1% or less @ 1 kHz
Dynamic range		: 120 dB or more
Separation		: 90 dB or more
Sampling frequency		: 48, 44.1, 32 kHz
Quantification		: 16, 18, 20, 24 bits/sample
Bit rate		: 32 kbps ~ 640 kbps

1-6-4. AC-3 Features

AC-3 has a number of interesting features other than global bit allocation. These are shown below.

(1) Dynamic Range Control

People watching a movie at home late at night may wish to reduce the sound volume when there is an explosion scene, for instance. But they want a level at which they can listen to dialog. To satisfy these conflicting demands, AC-3 is equipped with two functions called dynamic range control and dialog normalization. These are joined by two modes, "Line-out mode" and "RF mode". The first has comparatively little compression and the extent to which it is applied is selectable by the user. The second applies strong compression and has no provision for user selection. Since it changes the gain setting, a gain shift of +11 dB occurs. Since AC-3 holds in its bit stream the information on the dB count of the dialog level when the signal was recorded, this information can also be used to adjust the electronic volume and set the playback level automatically.

(2) Output Configurations

It is stipulated that products which incorporate AC-3 decoders must have the following two configurations.

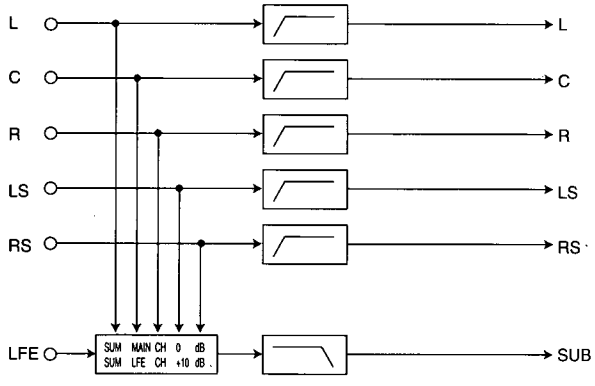


Figure 3 : Output configuration 1

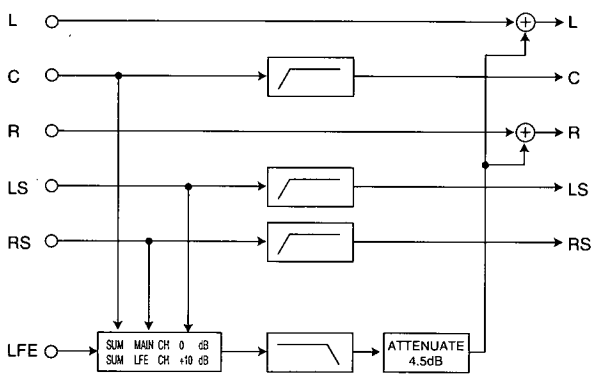


Figure 4 : Output configuration 2

As we can see from Figures 3 and 4, it is not the low frequency effect (LFE) channel alone which is output to the sub-woofer. It is mixed with the low register components of the other channels and output to the sub-woofer. In effect, this LFE channel was conceived originally to supply independent bass sound from 70 mm movie film to a sub-woofer behind the screen. Consequently, base signals appear on the LFE channel only when there are earth-shaking base notes from scenes such as explosions or earthquakes. In effect, it can be considered to be a channel which serves to preserve the bass sounds. This channel is probably called a 0.1 channel because it handles only a band of low frequencies which seldom appear. In configuration 1, all the speakers are small and all contribute base sounds to a sub-woofer. Configuration 2 is a case where the left and right speakers are large, there is not sub-woofer, and the bass notes are handled by the channels with left and right type speakers. Other than these, a configuration 3 has been stipulated as an option in which the speakers other than the center speaker are large. (These output configurations have not been formalized. They are liable to be changed.)

(3) Down-Mixing

Concerning 5.1-channel audio, since not all users will use a 5.1-channel (that is a 6-channel) system for playback, it is extremely convenient to provide for 2-channel stereo or monaural playback. The AC-3 decoder system has a mode which is used when the system is being set up, to enter the number of speakers which the user has. In accordance with this information, the DSP automatically down-mixes the 5.1-channels into the channels which can be played back. Also, since normal tape output is 2-channel, this down-mixing is essential for outputting a 5.1-channel source. However, at the same

CIRCUIT DESCRIPTION

time, it is inconvenient for 5.1-channel playback. For this reason, the use of 2-channel analog input is recommended at such times. Therefore, when connecting the signal lead from the source device to a product which incorporates the AC-3 decoder, it is essential to have analog and digital cables as well as a RF cable which can transmit the AC-3 bit stream. Down-mixing is also required when listening to 5.1-channel sound through headphones but then it is not possible to have surround playback. This inconvenience would disappear if a DSP engine with the power to handle 5.1-channel playback and down-mixing at the same time could be achieved but this would require an extremely fast DSP IC. Figure 5 shows the configuration of a laser disc player. Existing laser discs have the same audio signal recorded on a 2-channel analog FM track and a digital track which has the same format as a 16-bit compact disc. An AC-3 compatible laser disc uses the right channel of the analog FM track to record the AC-3 bit stream signal. Therefore, when the analog track is played back, a buzzing noise is heard from the right channel. But nearly all laser disc players which are being sold now will select the digital track if one is present, do a DA conversion and send out the analog output, so there is no problem with hearing noise.

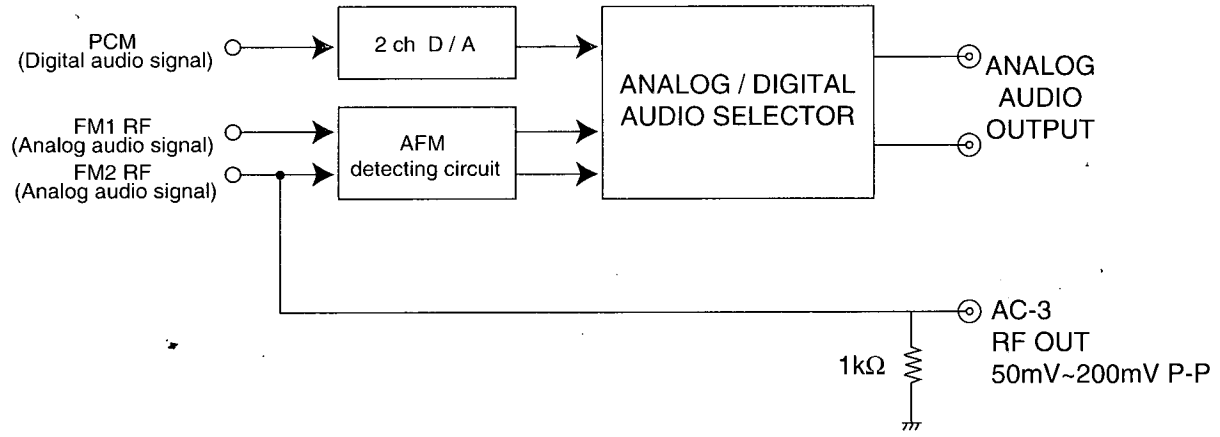


Figure 5 : Basic configuration of a laser disc player

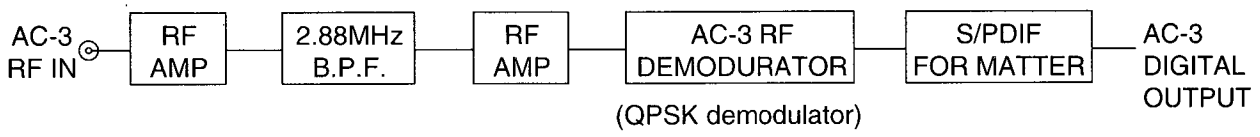


Figure 6 : Essential block for LD side

Since the AC-3 bit stream is designed to be mounted in the IEC-958 S/PDIF format, it should really be output as a bit stream in the digital output but the demodulator IC to do this is still expensive and, ostensibly to avoid high cost in LD players, it is output as a RF signal fro the LD player. The RF output from the LD player will probably disappear when mass production makes this demodulator IC cheaper.

(4) Bit Stream Data

The AC-3 synchronization frame sequence is as shown in the diagram below.

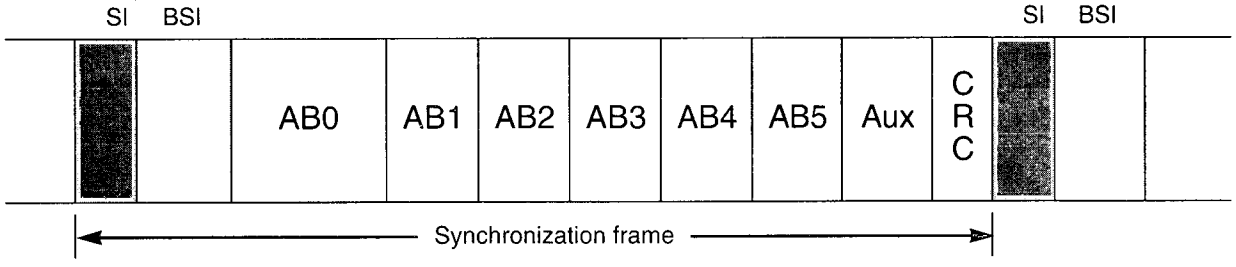


Figure 7 : AC-3 synchronization frame

CIRCUIT DESCRIPTION

Various data other than audio can enter into the BSI. Here we pick up and describe some characteristic features.

- Bit stream mode, the main service, has a three bit code to distinguish between quasi-services and, in the case of quasi-services, apart from dialog and commentaries, to notify those with impaired sight and hearing or to give warning of an emergency.
- Audio coding mode, a 3-bit code, contains code to identify the channel which a particular signal is occupying.
- Bit stream data can carry and 8-bit language code to identify the languages of 128 world countries. By looking at this data, it is possible to know which language is being used for that AC-3 signal. DVD (SD standard) allows up to 8 languages to be entered on a disc at the same time. However, playback is limited to one language at a time. Only one language may be entered at one time on a laser disc.
- 2-bit data giving the size of the mixing room which was used for final mixing.
- It is also possible to enter data to tell whether a bit stream is original of copied from another bit stream (a 1-bit code identifying whether a signal has been Dolby surround encoded).

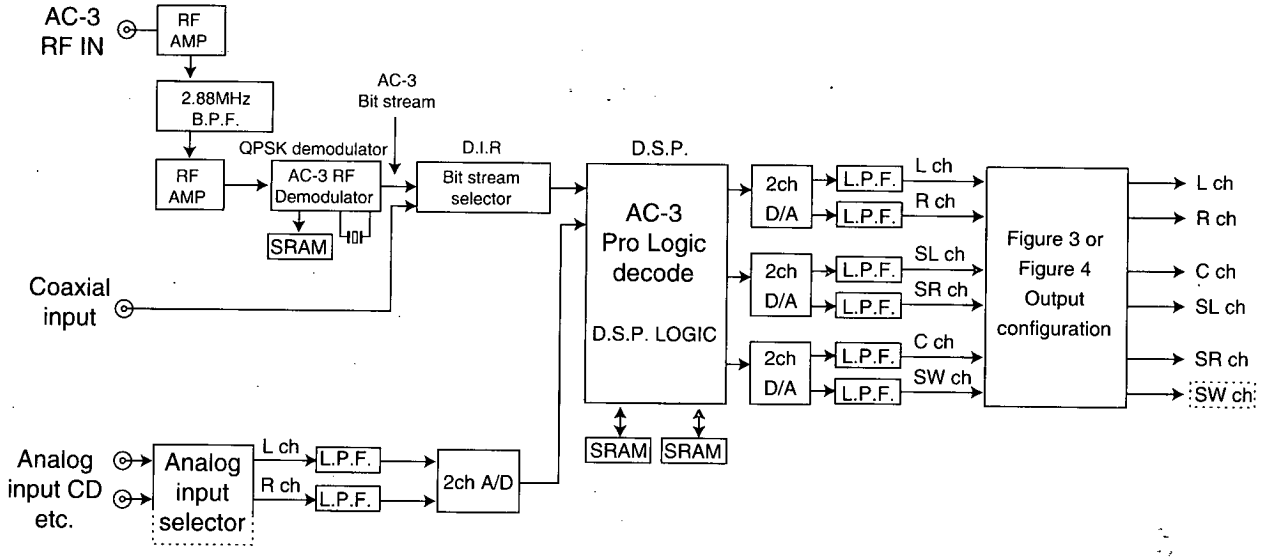


Figure 8 : KR-V990D AC-3 related block diagram

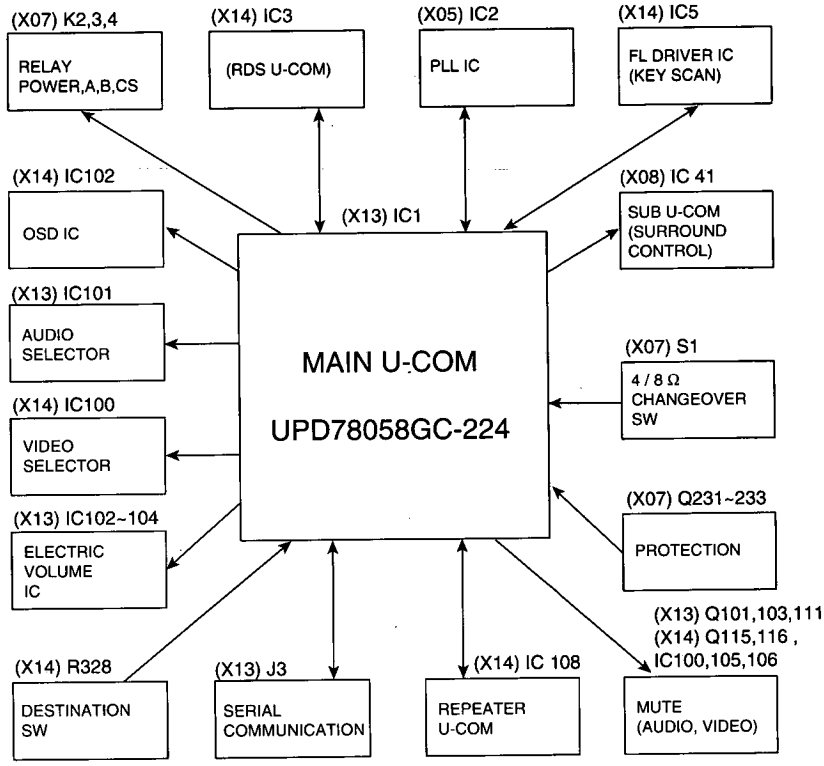
KR-V990D/V9080

CIRCUIT DESCRIPTION

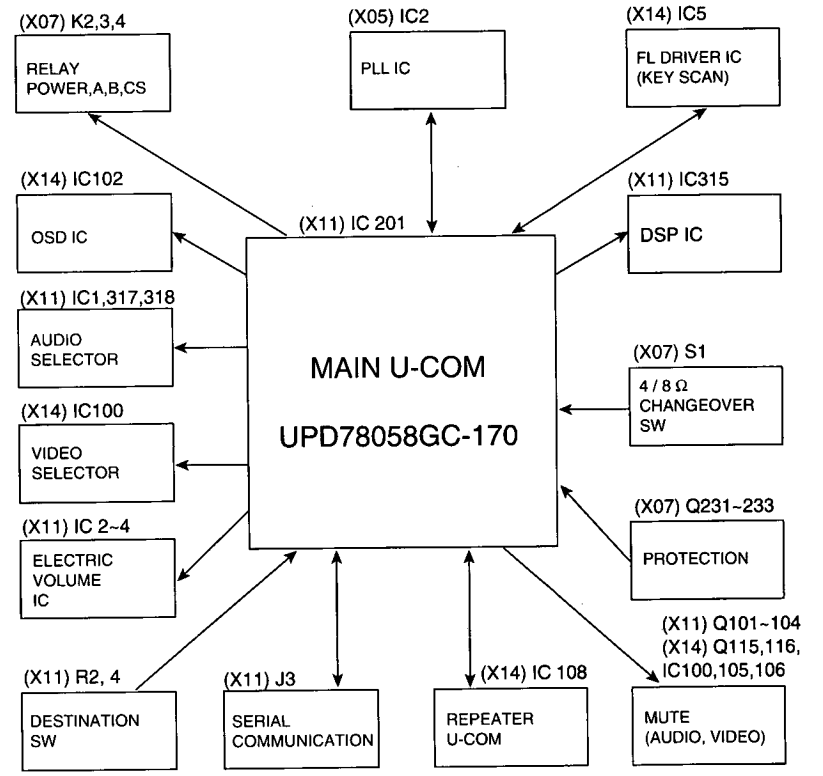
2. Main microprocessor KR-V990D: UPD78058GC-224(X13:IC1)
*KR-V9080: UPD78058GC-170(X11:IC201)

2-1. Microprocessor periphery block diagram

(KR-V990D)



(KR-V9080)



CIRCUIT DESCRIPTION

2-2. Pin description

Pin No.	Name	I/O	Description
1	PROTECT	I	Protection input
2	4/8	I	4/8 changeover input
3	LIMITER	I	Limiter input
4	AVSS		A/D GND
5	SUB RELAY	O	+5V (sub u-com,DSP) relay control
*5			Unused
6	OSD CS	O	MB90089 CS
7	AVREF1		Unused
8	8/$\overline{16}$	I	Serial XS8/SL16 Bit distinction
9	OSD SIN	O	MB90089 SIN
10	OSD SCLK	O	MB90089 SCLK
11	SUB SI	I	Control u-com communication SI
*11			Unused
12	SUB SO	O	Control u-cum communication SO
*12	YSS215 CD	O	YSS215 CD
13	SUB CLK	O	Control u-com communication CLK
*13	YSS215 BCK	O	YSS215 BCK
14	SUB REQ1	O	Control u-com communication REQ1
*14	YSS215 WCK	O	YSS215 WCK
15	SUB REQ2	I	Control u-com communication REQ2
*15	YSS215 IC	O	YSS215 IC
16	FL DOUT	I	UPD16311 DOUT (key scan input)
17	FL DIN	O	UPD16311 DIN (display data output)
18	FL CLK	O	UPD16311 clock
19	990D/$\overline{9080}$	I	KR-V990D/V8090 changeover SW
20,21	SEL 2,1	I	Selector encoder input2,1
22,23	VOL 2,1	I	Volume encoder input2,1
24-26	TSW0-2	I	Destination changeover SW0,SW1(CH.SPACE),SW2
27	FL STB	O	UPD16311 strobe
28-30	9215 C-A	O	TC9215 C,B,A,
31,32	4035 B,A	O	TC4053 B,A
33	VSS		GND
34	SEL STB	O	NJU7311-7313 strobe
35	SEL DATA	O	NJU7311-7313 data
36	$\overline{\text{MUTE 10DB}}$	O	Å[10dB mute
37	TSW3	I	Destination changeover SW3
*37			Unused
38	V SELECT	O	TA4053 video select
39			Unused
40	SEL CLK	O	NJU7311-7313 clock

CIRCUIT DESCRIPTION

Pin No.	Name	I/O	Description
41,42	VOL CE2,1	O	Electric volume CE2,CE1
43	VOL DATA	O	Electric volume data
44	VOL CLK	O	Electric volume clock
45	SBUSY	I/O	Serial busy
46	SDATA	I/O	Serial data
47	MUTE	O	Mute
48	REPEATER	O	Repeater output
49	SYNC DET	I	OSD video comparison signal detection
50	V MUTE	O	Video mute
51,52	V CONT 2,1	O	LA7951 video control 2,1
53	T MUTE	O	Tuner mute
54	PLL CLK	O	LC7218 clock
55	PLL DATA	O	LC7218 data
56	PLL CE	O	LC7218 CE
57	SD	I	SD input
58	STEREO	I	Stereo input
59	PLL DO	I	LC7218 DO
60	RESET	I	Reset
61	REMOCON	I	Remote control input
*62-66			Unused
62	RDS START	I	RDS start
63	RDS DATA	I	RDS data
64	RDS CLK	I	RDS clock
65	RDS ATT	O	RDS attenuater
66	RDS RST	O	RDS reset
67	CE	I	CE (backup)
68	VDD		Power supply (+5V)
69.70	X1,X2	I	Connected to system clock
71-73			Unused
74	AVSS		A/D analog power supply
75	AVREF0		A/D reference voltage input (+5V)
76	RDS SLEVEL	I	RDS signal level
77	RELAY POWER	O	Relay POWER control
78-80	RELAY A,B,CS	O	Relay Asp,Bsp,C/Ssp control

CIRCUIT DESCRIPTION

2-3. Initial state

POWER ON/OFF	: OFF
MAIN VOLUME LEVEL	: -65dB
L/R BALANCE	: CENTER
AUDIO INPUT SELECTOR	: TUNER
VIDEO INPUT SELECTOR	: VIDEO1
SPEAKER A	: ON
SPEAKER B	: OFF
TAPE2 / MONITOR	: OFF
LINE STRAIGHT	: OFF
DIMMER	: DIMMER 1
VISUAL FIX	: OFF
OSD DISPLAY MODE	: OFF
FL DISPLAY MODE	: INPUT SELECTOR
SURROUND MODE	: STEREO
CENTER SPEAKER	: ON
REAR SPEAKER	: ON
SUB WOOFER (KR-V990D)	: OFF
SUB WOOFER (KR-V9080)	: ON
TUNING MODE	: AUTO
PRESET MEMORY	: TEST PRESET FREQUENCY
LAST BAND	: FM
FM FREQUENCY	: 87.5 MHz
AM FREQUENCY	: CH SPACE 9K 531 kHz : CH SPACE 10K 530 kHz
P. CH DISPLAY	: [- -ch]
PTY SELECT MODE	: OFF
PTY SEARCH MODE	: OFF
RDS DISPLAY MODE	: FREQUENCY DISPLAY
TA / NEWS / INFO.	: OFF
SYSTEM CONTROL	: XS8

• **TEST PRESET FREQUENCY**

Channel	BAND	K1 TYPE	BAND	K2 TYPE	BAND	E TYPE
01ch	FM	87.50MHz	FM	87.50MHz	FM	87.50MHz
02ch	FM	98.00MHz	FM	98.00MHz	FM	98.00MHz
03ch	FM	108.00MHz	FM	108.00MHz	FM	108.00MHz
04ch	AM	630kHz	AM	630kHz	AM	630kHz
05ch	AM	1000kHz	AM	1000kHz	AM	999kHz
06ch	AM	1440kHz	AM	1440kHz	AM	1440kHz
07ch	FM	87.50MHz	FM	87.50MHz	FM	87.50MHz
08ch	FM	87.50MHz	FM	87.50MHz	FM	87.50MHz
09ch	FM	87.50MHz	FM	87.50MHz	FM	87.50MHz
10ch	FM	89.10MHz	FM	89.10MHz	FM	89.10MHz
11ch	FM	90.00MHz	FM	90.00MHz	FM	90.00MHz
12ch	FM	97.50MHz	FM	97.50MHz	FM	97.50MHz
13ch	FM	98.50MHz	FM	98.50MHz	FM	98.50MHz
14ch	FM	106.00MHz	FM	106.00MHz	FM	106.00MHz
15ch	AM	530kHz	AM	530kHz	AM	531kHz
16ch	AM	990kHz	AM	990kHz	AM	990kHz
17ch	AM	1700kHz	AM	1610kHz	AM	1602kHz
18ch	FM	87.50MHz	FM	87.50MHz	FM	87.50MHz
19ch	FM	87.50MHz	FM	87.50MHz	FM	87.50MHz
20ch	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.

2-4. Contens of backup data to be held

POWER ON/OFF
MAIN VOLUME LEVEL
L/R BALANCE
AUDIO INPUT SELECTOR
VIDEO INPUT SELECTOR

SPEAKER A ON/OFF
SPEAKER B ON/OFF
TAPE2/MONITOR ON/OFF
LINE STRAIGHT ON/OFF
DIMMER MODE
VISUAL FIX ON/OFF

DISPLAY MODE
SURROUND MODE
CH. LEVEL
SPEAKER SETTING

INPUT LEVEL

CIRCUIT DESCRIPTION

TUNING MODE
PRESET MEMORY 1~40ch
LAST BAND
LAST CHANNEL
LAST FM FREQUENCY
LAST FM CHANNEL
LAST AM FREQUENCY
LAST AM CHANNEL

2-5. Destination and model list

MODEL		KR-V990D	KR-V9080
Function \ Destination		K P M X Y E T	K P M X Y
AMP	DSP	○○○○○○○	○○○○○
	AC-3	○○○○○○○	X X X X X
TUNER	K1	X○X X X X X	X○X X X
	K2	○○○X○X X	○○○X○
	E1	X X○○○○○	X X○○○
	E3 (RDS)	X X X X X○○	X X X X X

○ : YES X : NO

2-6. Destination list of tuner

Destination	BAND	Receive frequency range	channel space	iF	PLL reference frequency	destination TSW(X13- or X11-) TSW2 P26	TSW1 P25	TSW0 P24
K1	FM	87.5MHz ~ 108.0 MHz	100kHz	10.7MHz	50kHz	0	1	0
	AM	530kHz ~ 1700kHz	10kHz	450kHz	10kHz			
K2	FM	87.5MHz ~ 108.0MHz	100kHz	10.7MHz	50kHz	*1		
	AM	530kHz ~ 1610kHz	10kHz	450kHz	10kHz			
E1	FM	87.5MHz ~ 108.0MHz	50kHz	10.7MHz	50kHz	0	0	1
	AM	531kHz ~ 1602kHz	9kHz	450kHz	9kHz			
E3	FM	87.5MHz ~ 108.0MHz	50kHz	10.7MHz	50kHz	1	1	1
	AM	531kHz ~ 1602kHz	9kHz	450kHz	9kHz			

*1 Set as K2 for except when the data for destination description is K1, E1, and E3.

(0 : PORT PULL DOWN
1 : PORT PULL UP)

※ **ATTENTION**

The RDS PTY AF search always corresponds to a span search of 50kHz.

CIRCUIT DESCRIPTION

2-7. Key matrix

No. of ◯ : (X14) IC5 Port No.

	⑩ KR1	⑪ KR2	⑫ KR3	⑬ KR4
⑮ KS1	DOLBY SURROUND	DSP LOGIC	DOLBY 3 STEREO	–
⑯ KS2	–	VISUAL FIX	LOUDNESS	STEREO
⑰ KS3	BAND	DOWN	AUTO	UP
⑱ KS4	+10	9	0	BALANCE R
⑲ KS5	7	6	BALANCE L	8
⑳ KS6	5	4	TAPE2	LINE STRAIGHT
㉑ KS7	DISPLAY	PTY	TA / NEWS / INFO.	–
㉒ KS8	3	2	MEMORY	SPEAKER B
㉓ KS9	DIRECT	1	SPEAKER A	POWER

2-8. KR-V990D Switching port control table

(1) AUDIO SELECTOR

		NJU7311AL (X08 : IC1)							NJU7313AL (X13 : IC 101)							
		② ㉗	③ ㉖	⑤ ㉔	⑥ ㉓	⑧ ㉑	⑨ ⑳	⑪ ⑱	② ㉗	③ ㉖	④ ㉕	⑤ ㉔	⑦ ㉒	⑧ ㉑	⑩ ⑲	⑪ ⑱
		L1R1	L2R2	L3R3	L4R4	L5R5	L6R6	L7R7	L1R1	L2R2	L3R3	L4R4	L5R5	L6R6	L7R7	L8R8
TAPE 2 OFF	TUNER	0	1	1	0	0	0	1	0	0	0	0	0	0	1	1
	PHONO	0	1	0	0	0	0	1	0	0	0	0	0	1	1	1
	CD	0	1	0	0	1	0	1	0	0	0	0	0	0	1	1
	TAPE1	0	1	0	0	0	1	0	0	0	0	0	0	0	1	1
	VIDEO1	0	1	0	0	0	0	1	1	0	0	0	1	0	0	1
	VIDEO2	0	1	0	0	0	0	1	0	1	0	0	1	0	1	0
	VIDEO3	0	1	0	1	0	0	1	0	0	0	0	0	0	1	1
	LD	0	1	0	0	0	0	1	0	0	0	1	1	0	1	1
	TV /CABLE	0	1	0	0	0	0	1	0	0	1	0	1	0	1	1
TAPE 2 ON	TUNER	1	0	1	0	0	0	1	0	0	0	0	0	0	1	1
	PHONO	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1
	CD	1	0	0	0	1	0	1	0	0	0	0	0	0	1	1
	TAPE1	1	0	0	0	0	1	0	0	0	0	0	0	0	1	1
	VIDEO1	1	0	0	0	0	0	1	1	0	0	0	1	0	0	1
	VIDEO2	1	0	0	0	0	0	1	0	1	0	0	1	0	1	0
	VIDEO3	1	0	0	1	0	0	1	0	0	0	0	0	0	1	1
	LD	1	0	0	0	0	0	1	0	0	0	1	1	0	1	1
	TV /CABLE	1	0	0	0	0	0	1	0	0	1	0	1	0	1	1

(0 : OFF , 1 : ON)

(2) VIDEO SELECTOR

	LA7951 (X14:IC105,106)		MC74HC4053N (X14 : IC104)		
	⑬	⑨			
	CONT1	CONT2	A	B	C
VIDEO1	L	H	*	*	*
VIDEO2	H	L	*	*	*
VIDEO3	L	L	*	*	*
LD	H	H	L	L	L
TV/CABLE	H	H	H	H	H

*Don't care

(3) INPUT LEVEL CHANGEOVER

	TC9215P (X13 : IC3)	
	⑫	②
	A	C
INPUT LEVEL ATT 0dB	L	L
INPUT LEVEL ATT -3dB	H	L
INPUT LEVEL ATT -6dB	L	H

CIRCUIT DESCRIPTION

2-9. KR-V9080 Switching port control table

(1) AUDIO SELECTOR

		NJU7312AL (X11 : IC318)								NJU7313AL (X11 : IC1)							
		②㉗	③㉖	④㉕	⑥㉓	⑦㉒	⑧㉑	⑩⑲	⑪⑱	②㉗	③㉖	④㉕	⑤㉔	⑦㉒	⑧㉑	⑩⑲	⑪⑱
		L1R1	L2R2	L3R3	L4R4	L5R5	L6R6	L7R7	L8R8	L1R1	L2R2	L3R3	L4R4	L5R5	L6R6	L7R7	L8R8
TAPE 2 OFF	TUNER	0	0	0	1	0	0	1	0	0	0	0	0	1	0	1	1
	PHONO	0	0	1	0	0	0	1	0	0	0	0	0	1	0	1	1
	CD	0	1	0	0	0	0	1	0	0	0	0	0	1	0	1	1
	TAPE1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
	VEDEO1	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	1
	VIDEO2	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0
	VIDEO3	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	1
	LD	0	0	0	0	0	0	1	0	0	0	0	1	1	0	1	1
	TV /CABLE	0	0	0	0	0	0	1	0	0	0	1	0	1	0	1	1
TAPE 2 ON	TUNER	0	0	0	1	0	0	1	0	0	0	0	0	0	1	1	1
	PHONO	0	0	1	0	0	0	1	0	0	0	0	0	0	1	1	1
	CD	0	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1
	TAPE1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
	VIDEO1	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	1
	VIDEO2	0	0	0	0	0	0	1	0	0	1	0	0	0	1	1	0
	VIDEO3	0	0	0	0	1	0	1	0	0	0	0	0	0	1	1	1
	LD	0	0	0	0	0	0	1	0	0	0	0	1	0	1	1	1
	TV /CABLE	0	0	0	0	0	0	1	0	0	0	1	0	0	1	1	1

(0 : OFF , 1 : ON)

(2) VIDEO SELECTOR

	LA7951 (X14: IC105,106)		MC74HC4053N (X14: IC104)		
	⑬	⑨	⑪	⑩	⑨
	CONT1	CONT2	A	B	C
VIDEO1	L	H	*	*	*
VIDEO2	H	L	*	*	*
VIDEO3	L	L	*	*	*
LD	H	H	L	L	L
TV/CABLE	H	H	H	H	H

* Don't care

(3) LINE STRAIGHT CHANGEOVER

	NJU7311AL (X11: IC317)	
	⑤㉒	⑥㉓
	L3R3	L4R4
LINE ST. ON	1	0
LINE ST. OFF	0	1

(0 : OFF , 1 : ON)

(4) TEST TONE CHANGEOVER

	NJU7311AL (X11: IC317)	TC92159P (X11: IC314)
	⑪⑱	
	L7R7	⑤
TEST TONE ON	0	H
TEST TONE OFF	1	L

(5) SURROUND CHANGEOVER

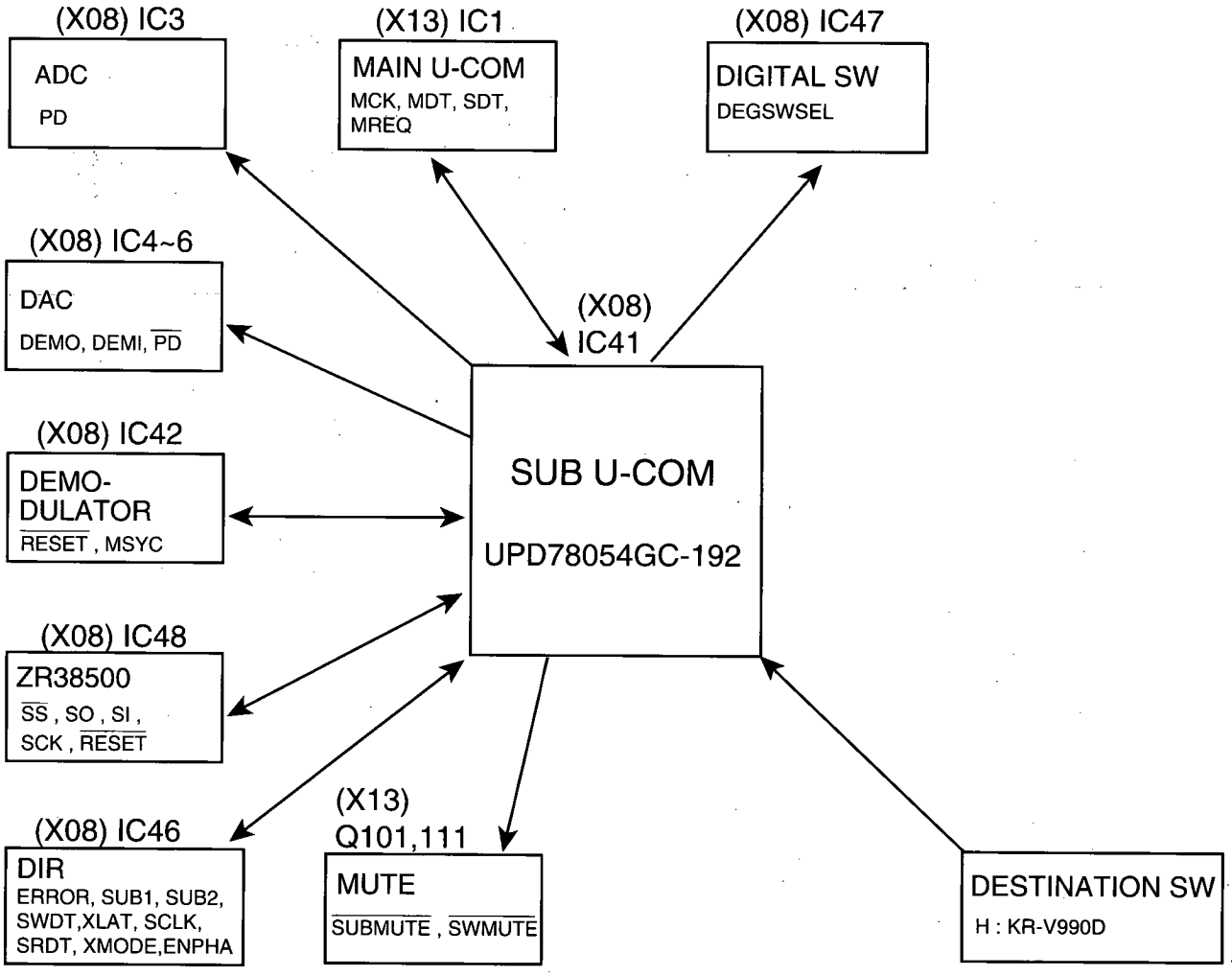
	NJU7311AL (X11 : IC317)				TC9215P (X11: IC314)
	②㉗	③㉖	⑧㉑	⑨⑳	
	L1R1	L2R2	L5R5	L6R6	⑫
STEREO	0	1	1	0	H
AUTO (WIDE)	0	1	0	1	H
AUTO (Except for WIDE)	1	0	0	1	H
PRO LOGIC (WIDE)	0	1	0	1	H
PRO LOGIC (Except for WIDE)	1	0	0	1	H
3 STEREO (WIDE)	0	1	0	1	H
3 STEREO (Except for WIDE)	1	0	0	1	H
DSP/DSP LOGIC	0	1	0	1	L

(0 : OFF , 1 : ON)

CIRCUIT DESCRIPTION

3. Sub microprocessor : UPD78054GC-192 (X08 : IC41) : KR-V990D only

3-1. Microprocessor periphery block diagram



CIRCUIT DESCRIPTION

3-2. Pin description

Pin No.	Name	I/O	Description		
1-3			Unused		
4	AVSS		A/D reference voltage (GND)		
5,6		O	Unused		
7	AVREF1		A/D reference voltage (VDD)		
8-10			Unused		
11	MDT	I	Master data (communicated with main u-com)		
12	SDT	O	Slave data (communicated with main u-com)		
13	MCK	I	Master clock (communicated with main u-com)		
14	MREQ	I	Master request (communicated with main u-com)		
15	SREQ	O	Slave request (communicated with main u-com)		
16	ZRSI	I	ZR38500 slave data		
17	ZRSO	O	ZR38500 master data		
18	ZRCK	O	ZR38500 master clock		
19	$\overline{\text{ZRSS}}$	O	ZR38500 strobe		
20	$\overline{\text{ZRRST}}$	O	ZR38500 reset		
21	ADPD	O	ADC AK 5340 power down		
22,23	DADEMO0,1	O	DAC PCM1702/AK4319 sample rate select		
24	$\overline{\text{DAPD}}$	O	DAC PCM1702/AK4319 reset		
25	$\overline{\text{DEMRST}}$	O	Demodulator reset		
26		I	Unused		
27	DEMMSYC	I	Demodulator AC3 data sync check	L: AC3 SYNCRO	H: ERROR
28-31		I	Unused		
32	$\overline{\text{PLLMUTE}}$	I	PLL lock/unlock detect		
33	VSS	I	GND		
34	$\overline{\text{SUBMUTE}}$	O	Sub mute		
35	$\overline{\text{SWMUTE}}$	O	SW.mute (controlled with TEST TONE)		
36-40		I	Unused		
41	DIRSRDT	I	DIR LC8904Q channel status output (32Bit)		
42	DIRSCLK	O	DIR LC8904Q clock		
43	DIRXLAT	O	DIR LC8904Q data latch		
44	DIRSWDT	O	DIR LC8904Q data		
45,46	DIRSUB1,2	I	DIR LC8904Q sampling frequency output		
47	DIRERROR	I	DIR LC8904Q error check	L: PCM	H: ERROR
48	DIRXMODE	O	DIR LC8904Q reset		
49	DIRENPHA	I	DIR LC8904Q emphasis		
50-54			Unused		
55	DEGSWSEL	O	TC74HC157 analog/digital select	L: ANALOG	H: DIGITAL
56,57			Unused		
58	TYPESEL	I	Model distinction	L: KR-V990D	
59		I	Unused		
60	$\overline{\text{RESET}}$	I	Sub u-com reset		
61-67		I	Unused		
68	VDD		Power supply (+5V)		
69-70	X2,X1		4.19MHz ceramics		
71	IC(VPP)		GND		
72-80			Unused		

CIRCUIT DESCRIPTION

4. Test mode

4-1. Test mode of main unit

(1) Setting the test mode

The main unit is put into the test mode when the AC power is turned ON while pressing the "TUNING DOWN" key. The following state is obtained when the test mode of the main unit is set.

- The power is turned ON automatically.
- All the fluorescent display indicators and LEDs light. (The all-illuminated state is cleared by pressing any main unit key.)
- The backup state except when the power is turned ON and OFF is initialized.

(2) Canceling the test mode

Turn OFF the AC power.

(3) Tuner functions

- Preset channel call function

1) Calls channels 1 to 9 (keys 1 to 9) and channel 10 (key 0) when the +10 key is not operated.
2) Calls channels 11 to 19 (keys 1 to 9) and channel 20 (key 0) when the +10 key is operated once.
3) Calls channels 21 to 29 (keys 1 to 9) and channel 30 (key 0) when the +10 key is operated two times and calls channels 31 to 39 (keys 1 to 9) and channel 40 (key 0) when the +10 key is operated three times.
4) Shifts to the operation obtained when the +10 key is not operated if it is operated four times.

- S level hexadecimal data display function (E, T type)

With the selector on TUNER, when the "AUTO/DOLBY PRO LOGIC" or "DOLBY PRO LOGIC" key on the main unit is operated, the frequency display ceases and the S level is displayed in hexadecimal while the key is pressed.

When "3 STEREO" is operated, the display is switched to restore the normal display.

- MUTE signal output

The tuner MUTE signal is set to OFF at all times and is not controlled at all.

- RDS display mode

Pressing the "DSP LOGIC" key enables the RDS display operation irrespective of the tuned operation.

To return to the normal display, press any key of the main unit.

- Repeater (IR remote control) pin check mode

Pressing the "BAL-L" key enables the POWER ON remote control code of an LD (KENWOOD) to be output from the repeater pin. Message "LD ON" is then displayed on the fluorescent indicator tube.

To return to the normal display, press any key of the main unit.

- E2PROM check mode

Pressing the "BAL-R" key enables data to be written in E2PROM. If the data read from the area in which data was written is the same as the written data, the operation is proper. If it is different from the written data, message "NG" is displayed on the fluorescent indicator tube.

To return to the normal display, press any key of the main unit.

- Total go-off function

Pressing the "MEMORY" key enables the total go-off operation and normal lighting operation to be performed cyclically.

- Dimmer operation function

Pressing the "VISUAL FIX" key enables the dimmer operation. After that, the cyclic operation that cancels the dimmer operation is performed when the "VISUAL FIX" key is pressed.

- RDS attenuater (E, T type)

With the selector on TUNER, when the "SP A" key on the main unit is operated, the "SP A" display is erased and ATT is on. If the "SP A" on the main unit is operated again after that, "SP A" is displayed and ATT is switched off. The SP A operation and ATT operation work together and are combined with switching the ATT display on and off.

The ATT operation is done from ATT off.

If SP A was turned off with the selector on something other than TUNER, it will come on when TUNER is selected.

(4) AMP function

The original function of each key is executed when the SELECTOR mode is set to TUNER. The test mode operation is not performed in this case.

- One touch max, mid, min setting for Main VOL. input level, Speaker distance and Speaker level. If the selector is on something other than TUNER, max, mid, min settings can be made with the operation rotary encoder and the number keys. (All channel working mode)

(a) Max is number key "3".
(b) Mid is number key "2".
(c) Min is number key "1".

- One touch setting for Main VOL. input level, Speaker distance and Speaker level items. The items of 1) can be specified with respective keys and, if the selector is on something other the TUNER, direct settings can be made with the number keys. (Initial state is Main VOL.)

(a) Input level is number key "4" + key of 1) :IL
(b) Speaker distance is number key "5" + key of 1) : SD
(c) Speaker level FRONT L is number key "6" + key of 1) : IL
(d) Speaker level FRONT R is number key "7" + key of 1) : FR
(e) Speaker level CENTER is number key "8" + key of 1) : C

CIRCUIT DESCRIPTION

(f) Speaker level REAR L is number key "9" + key of 1) : SL

(g) Speaker level REAR R is number key "0" + key of 1) : SR

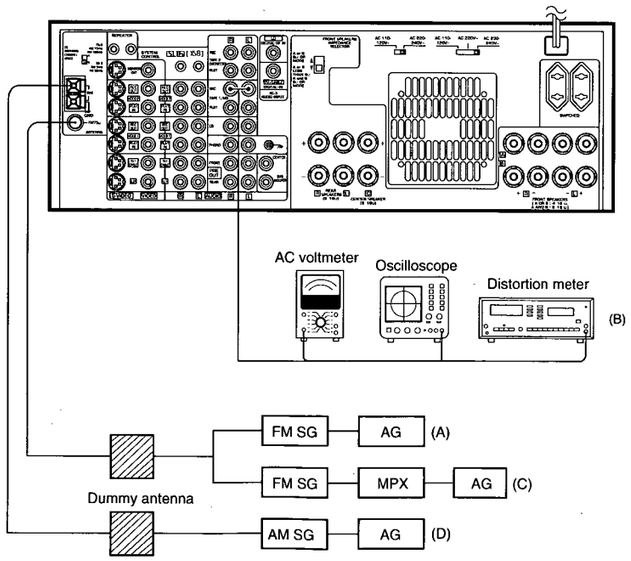
(h) Speaker level Sub woofer is number key "+10" + key of 1) : SW

- Mute operation
  Pressing the "AUTO" key enables the mute operation. After that, the cyclic operation that cancels the mute operation is performed when the "AUTO" key is pressed.
- Midnight operation function
  Pressing the "TUNING UP" key enables the midnight operation. After that, the cyclic operation that cancels the midnight operation is performed when the "TUNING UP" key is pressed.
- Dolby surround center mode function
  Pressing the "TUNING DOWN" key enables the Dolby surround key to be cyclically changed in the order of normal ' phantom ' normal ' .....
- Balance L and R setting in a one-touch motion
  Pressing the "BAL-L" key enables the unit to enter the L-channel balance MAX state. After that, the balance center state is returned when the "BAL-L" key is pressed. The cyclic operation is then performed.
  Pressing the "BAL-R" key enables the unit to enter the R-channel balance MAX state. After that, the balance center state is returned when the "BAL-R" key is pressed. The cyclic operation is then performed.
- Unconditional AC-3 digital input function (KR-V990D)
  This function is used when the AC-3 digital signal based on the DAT source is received. Pressing the "BAND" key enables the unit to enter the unconditional AC-3 digital input state. The "TUNED" lamp on the fluorescent indicator tube then lights. To return to the normal state, press the "BAND" key.
- Sub-woofer SP ON/OFF setting
  The sub-woofer ON/OFF operation is set by the cyclic operation every time the "MEMORY" key is pressed. The "SPEAKERS" display on the fluorescent indicator tube disappears when the switch is turned off.
- TEST TONE operation
  Uses the "DIRECT" key instead of the "TEST TONE" key.

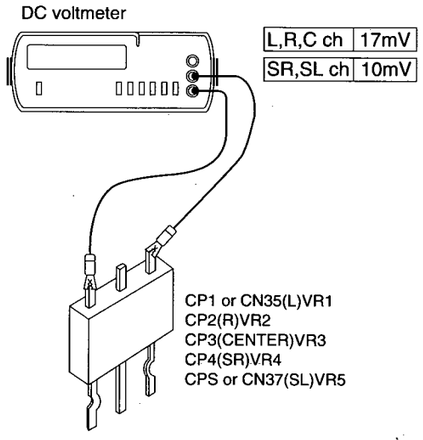
ADJUSTMENT

No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	TUNER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
FM SECTION (E,T type)		**SELECTOR : FM**					
1	DISCRIMINATOR	(A) 98.0MHz 1kHz,±40kHz dev. (E,T type) 60dBμ (ANT input)	Connect a DC voltmeter between TP3 and TP4 (X05-)	AUTO or MONO 98.0MHz	1.3 (X05-)	0V	(a)
2	DISTORTION (STEREO)	(C) 98.0MHz 1kHz, ±40kHz dev. Pilot: ±6kHz dev. (E,T type) 60dBμ (ANT input)	(B)	AUTO 98.0MHz	IFT (W02-)	Minimum distortion.	(a)
AUDIO SECTION							
<1>	IDLE CURRENT	—	(E) Connect a DC voltmeter across CP1 or CN35(L) CP2(R) CP3(CENTER) CP4(SR) CP5 or CN37(SL) (X07-)	Volume:0	VR1(L) VR2(R) VR3(CENTER) VR4(SR) VR5(SL) (X07-)	(L,R,CENTER) 17mv (SR,SL) 10mv	(b)
<2>	ON SCREEN Color burst frequency	—	Connect a frequency counter between port 10 (check round of $\overline{\text{HSYNC}}$) of IC102 and GND (X14-)	After power ON, connect port 21 (check round of $\overline{\text{TEST}}$) of IC102 and GND (X14-)	TC1 (X14-)	3.57954MHz ±25Hz	

(a)



(b)



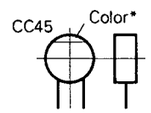
KR-V990D/V9080

PARTS DESCRIPTIONS

CAPACITORS

CC 45 TH 1H 220 J
1 2 3 4 5 6

1 = Type ... ceramic, electrolytic, etc.
2 = Shape ... round, square, ect.
3 = Temp. coefficient
4 = Voltage rating
5 = Value
6 = Tolerance



• Capacitor value

010 = 1pF
100 = 10pF
101 = 100pF
102 = 1000pF = 0.001μF
103 = 0.01μF

2 2 0 = 22pF
Multiplier
2nd number
1st number

• Temperature coefficient

1st Word	C	L	P	R	S	T	U
Color*	Black	Red	Orange	Yellow	Green	Blue	Violet
ppm/°C	0	-80	-150	-220	-330	-470	-750

2nd Word	G	H	J	K	L
ppm/°C	±30	±60	±120	±250	±500

Example : CC45TH = -470 ± 60ppm/°C

• Tolerance (More than 10pF)

Code	C	D	G	J	K	M	X	Z	P	No code
(%)	±0.25	±0.5	±2	±5	±10	±20	+40 -20	+80 -20	+100 -0	More than 10μF - 10 ~ +50 Less than 4.7μF -10 ~ +75

(Less than 10pF)

Code	B	C	D	F	G
(pF)	±0.1	±0.25	±0.5	±1	±2

• Voltage rating

1st word \ 2nd word	A	B	C	D	E	F	G	H	J	K	V
0	1.0	1.25	1.6	2.0	2.5	3.15	4.0	5.0	6.3	8.0	–
1	10	12.5	16	20	25	31.5	40	50	63	80	35
2	100	125	160	200	250	315	400	500	630	800	–
3	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	–

• Chip capacitors

(EX) C C 7 3 F S L 1 H 0 0 0 J
1 2 3 4 5 6 7
(Chip) (CH, RH, UJ, SL)

(EX) C K 7 3 F F 1 H 0 0 0 Z
1 2 3 4 5 6 7
(Chip) (B, F)

Refer to the table above.
1 = Type
2 = Shape
3 = Dimension
4 = Temp. coefficient
5 = Voltage rating
6 = Value
7 = Tolerance

Dimension (Chip capacitors)

Dimension code	L	W	T
Empty	5.6 ± 0.5	5.0 ± 0.5	Less than 2.0
A	4.5 ± 0.5	3.2 ± 0.4	Less than 2.0
B	4.5 ± 0.5	2.0 ± 0.3	Less than 2.0
C	4.5 ± 0.5	1.25 ± 0.2	Less than 1.25
D	3.2 ± 0.4	2.5 ± 0.3	Less than 1.5
E	3.2 ± 0.2	1.6 ± 0.2	Less than 1.25
F	2.0 ± 0.3	1.25 ± 0.2	Less than 1.25
G	1.6 ± 0.2	0.8 ± 0.2	Less than 1.0

RESISTORS

• Chip resistor (Carbon)

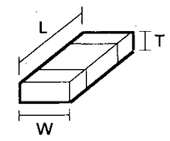
(EX) R K 7 3 E B 2 B 0 0 0 J
1 2 3 4 5 6 7
(Chip) (B,F)

• Carbon resistor (Normal type)

(EX) R D 1 4 B B 2 C 0 0 0 J
1 2 3 4 5 6 7

1 = Type
2 = Shape
3 = Dimension
4 = Temp. coefficient
5 = Rating wattage
6 = Value
7 = Tolerance

Dimension



Dimension (Chip resistor)

Dimension code	L	W	T
E	3.2 ± 0.2	1.6 ± 0.2	1.0
F	2.0 ± 0.3	1.25 ± 0.2	1.0
G	1.6±0.2	0.8±0.2	0.5±0.1

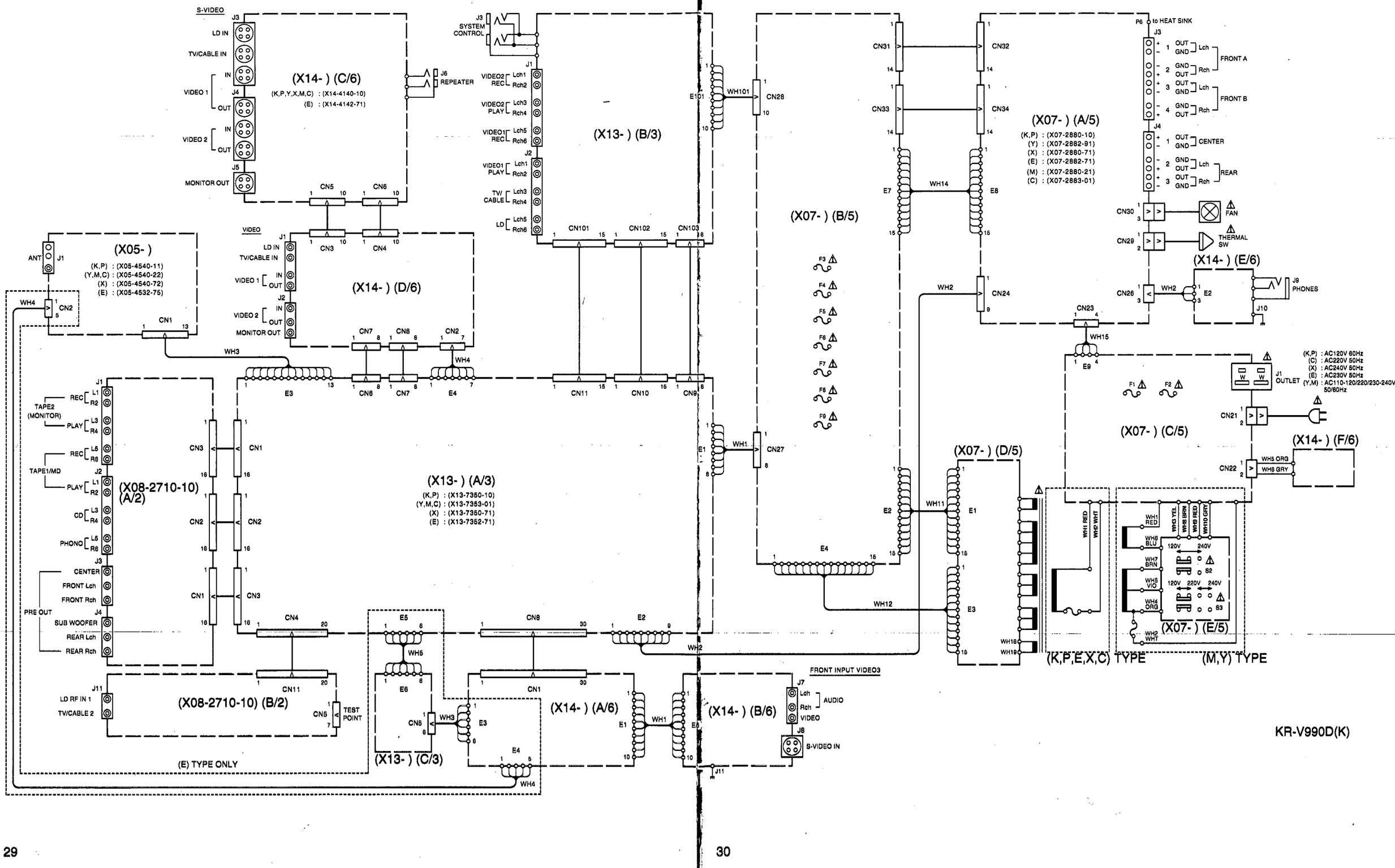
Rating wattage

Code	Wattage	Code	Wattage	Code	Wattage
1J	1/16W	2C	1/6W	3A	1W
2A	1/10W	2E	1/4W	3D	2W
2B	1/8W	2H	1/2W		

KR-V990D/V9080

WIRING DIAGRAM

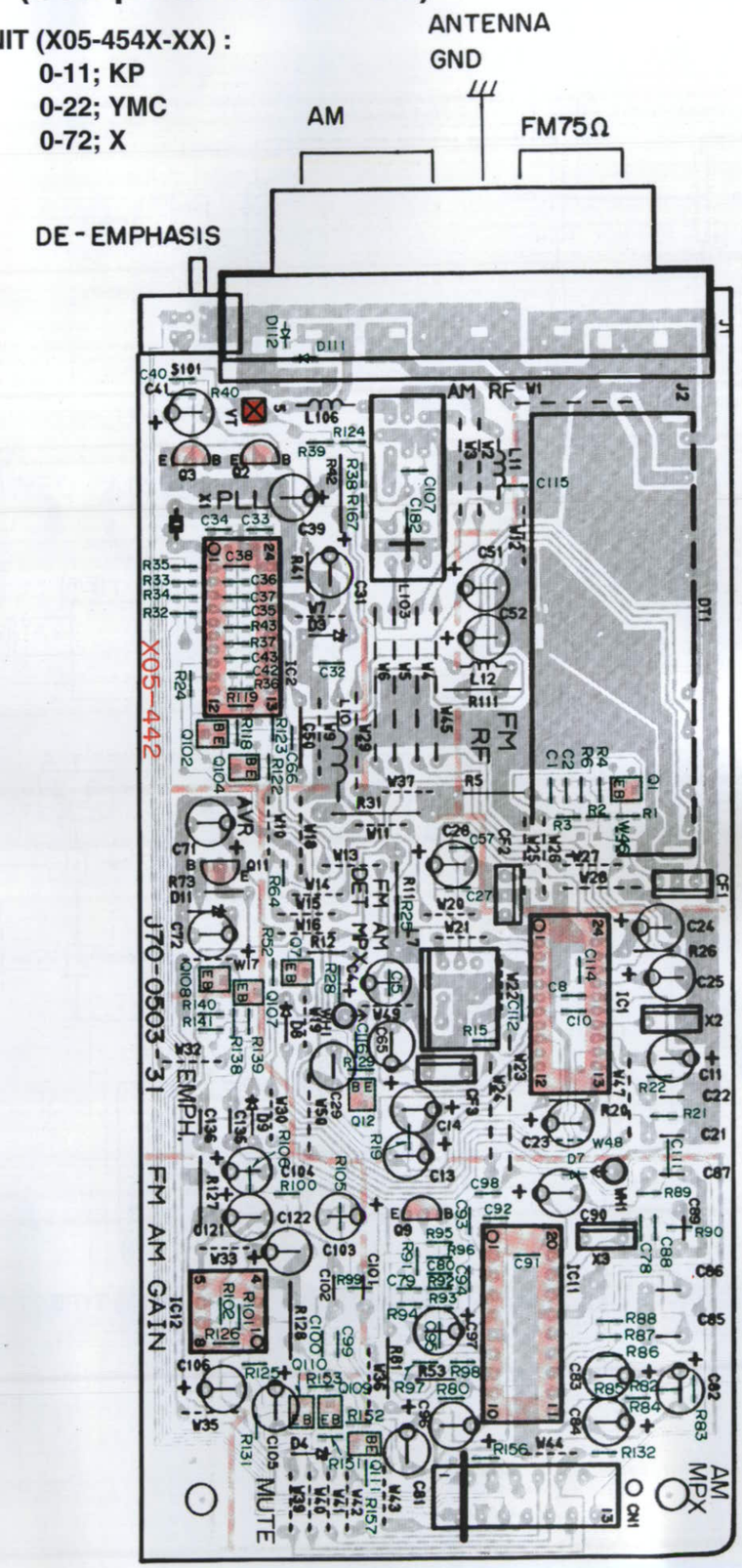
KR-V990D



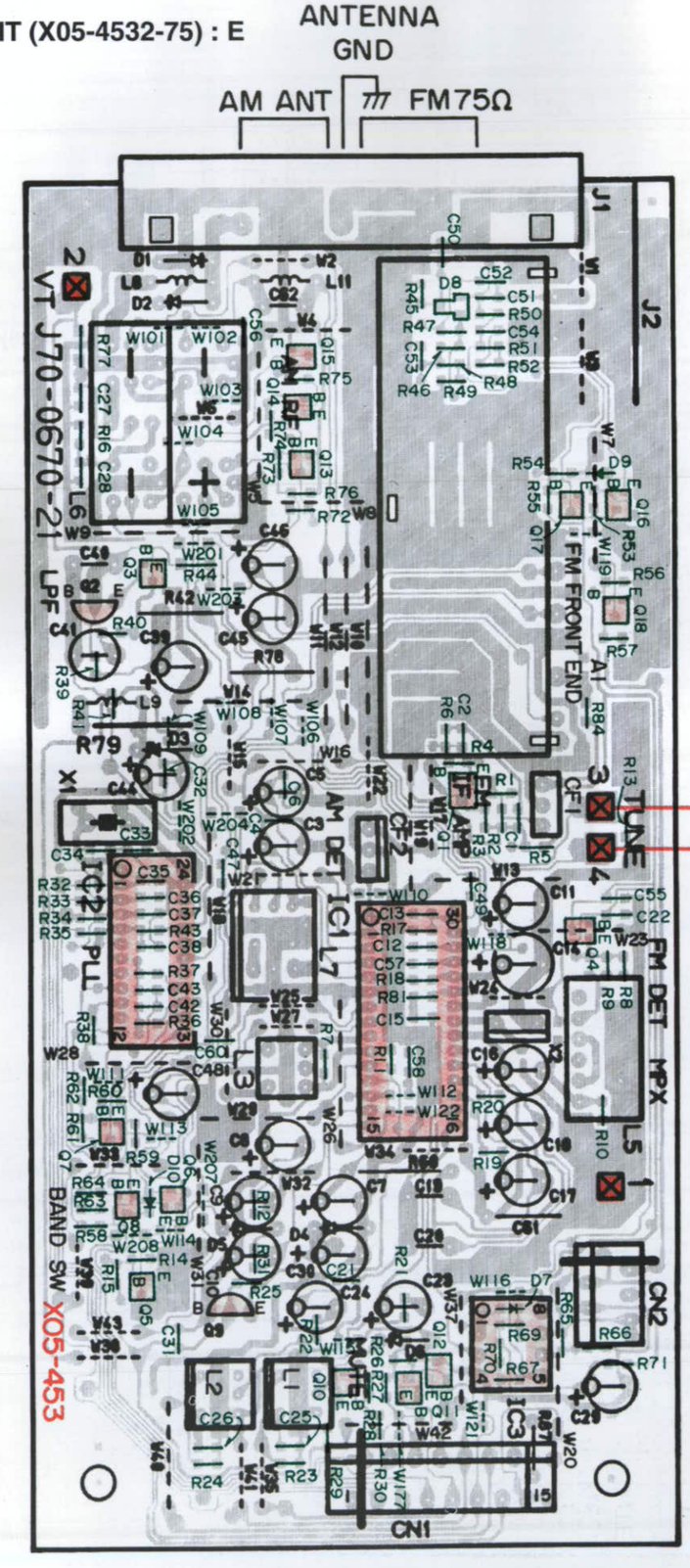
PC BOARD (Component side view)

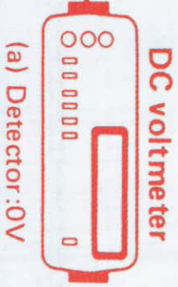
TUNER UNIT (X05-454X-XX) :

0-11; KP
0-22; YMC
0-72; X



TUNER UNIT (X05-4532-75) : E



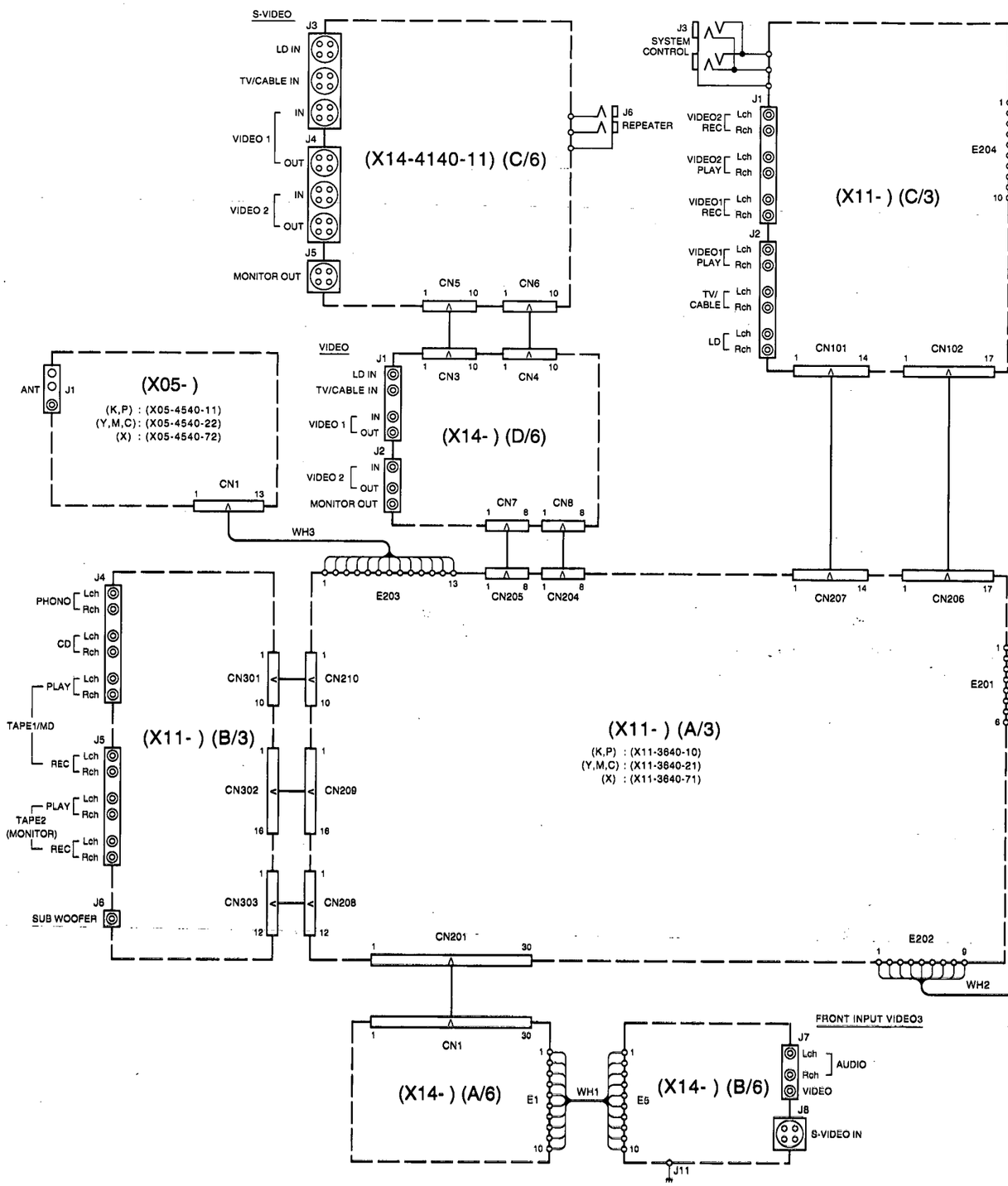


Refer to the schematic diagram for the values of resistors and capacitors.

KR-V990D/V9080

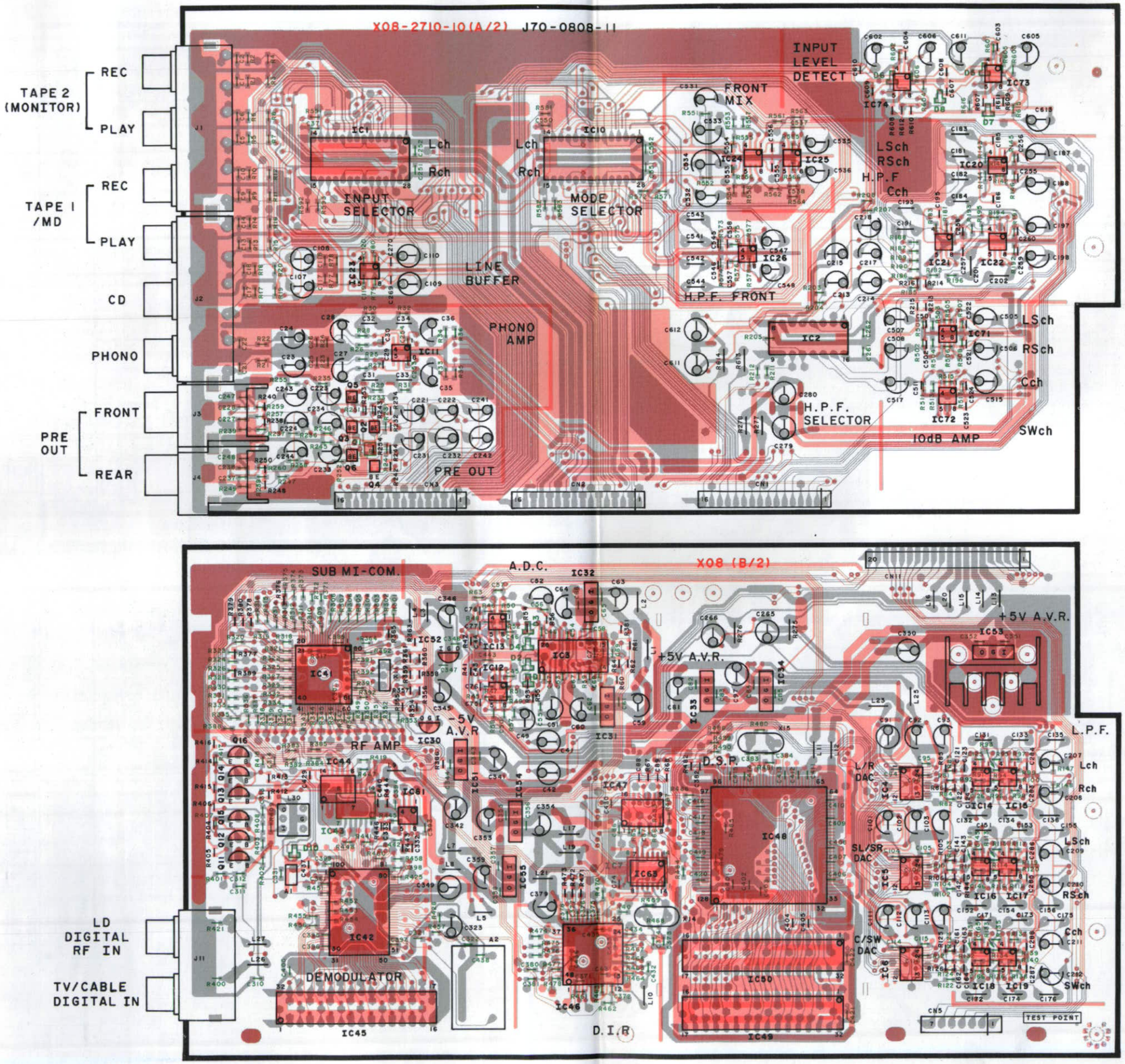
WIRING DIAGRAM

KR-V9080



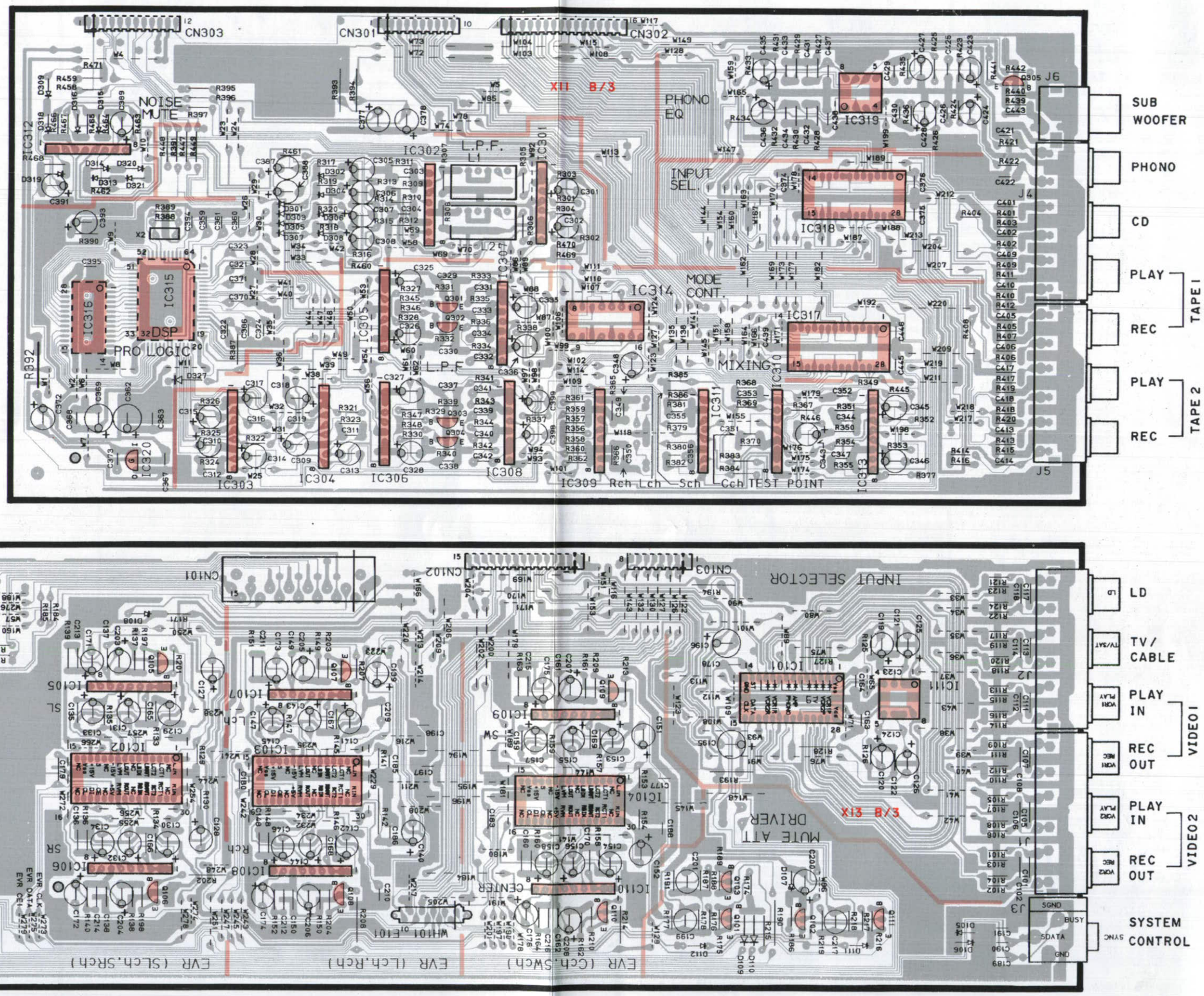
KR-V9080(K)

PC BOARD (Component side view) SURROUND UNIT X08-2710-10 (KR-V990D only)



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

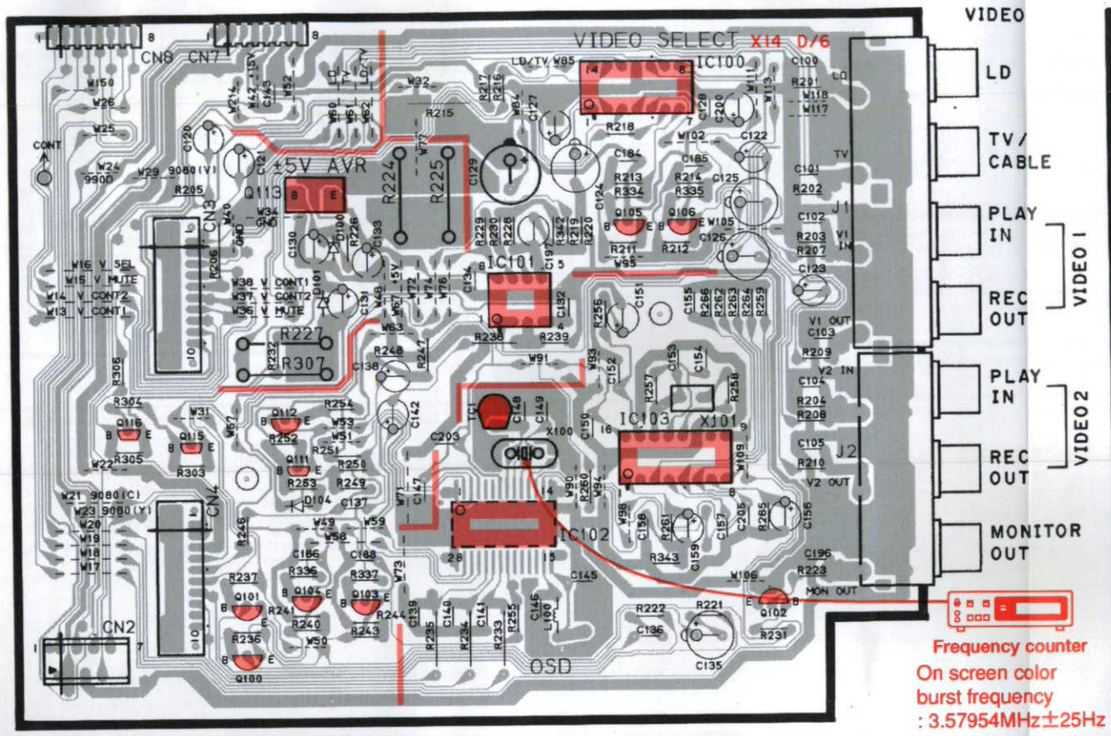
PC BOARD (Component side view)

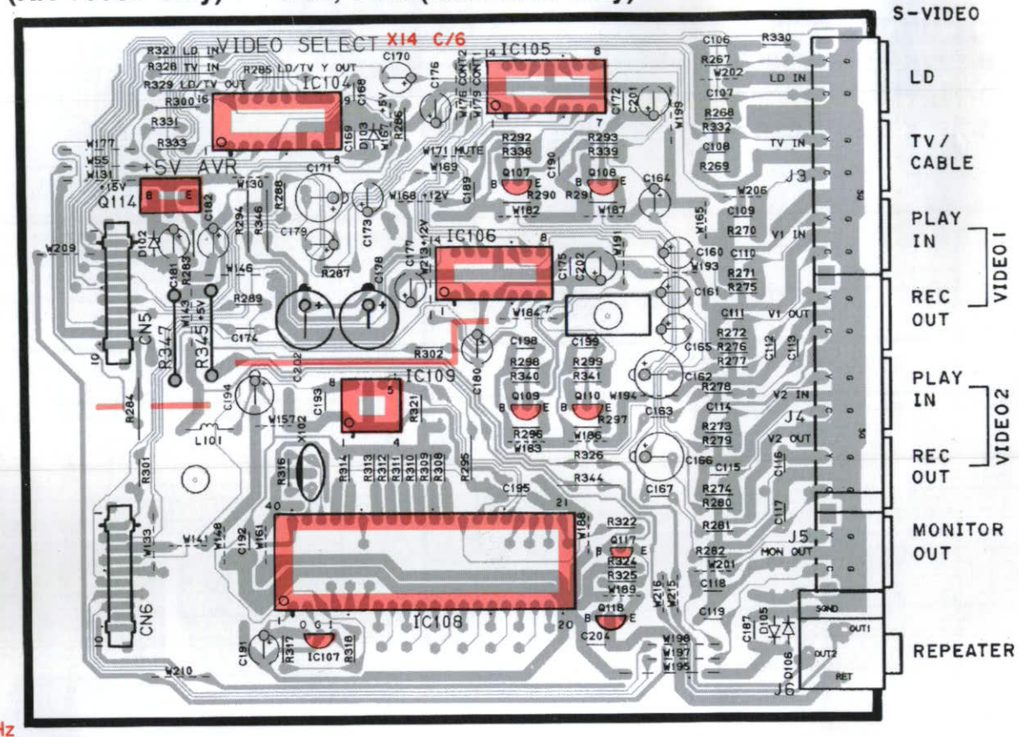


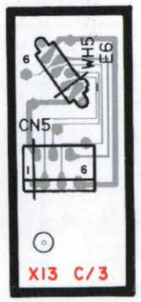
Refer to the schematic diagram for the values of resistors and capacitors.

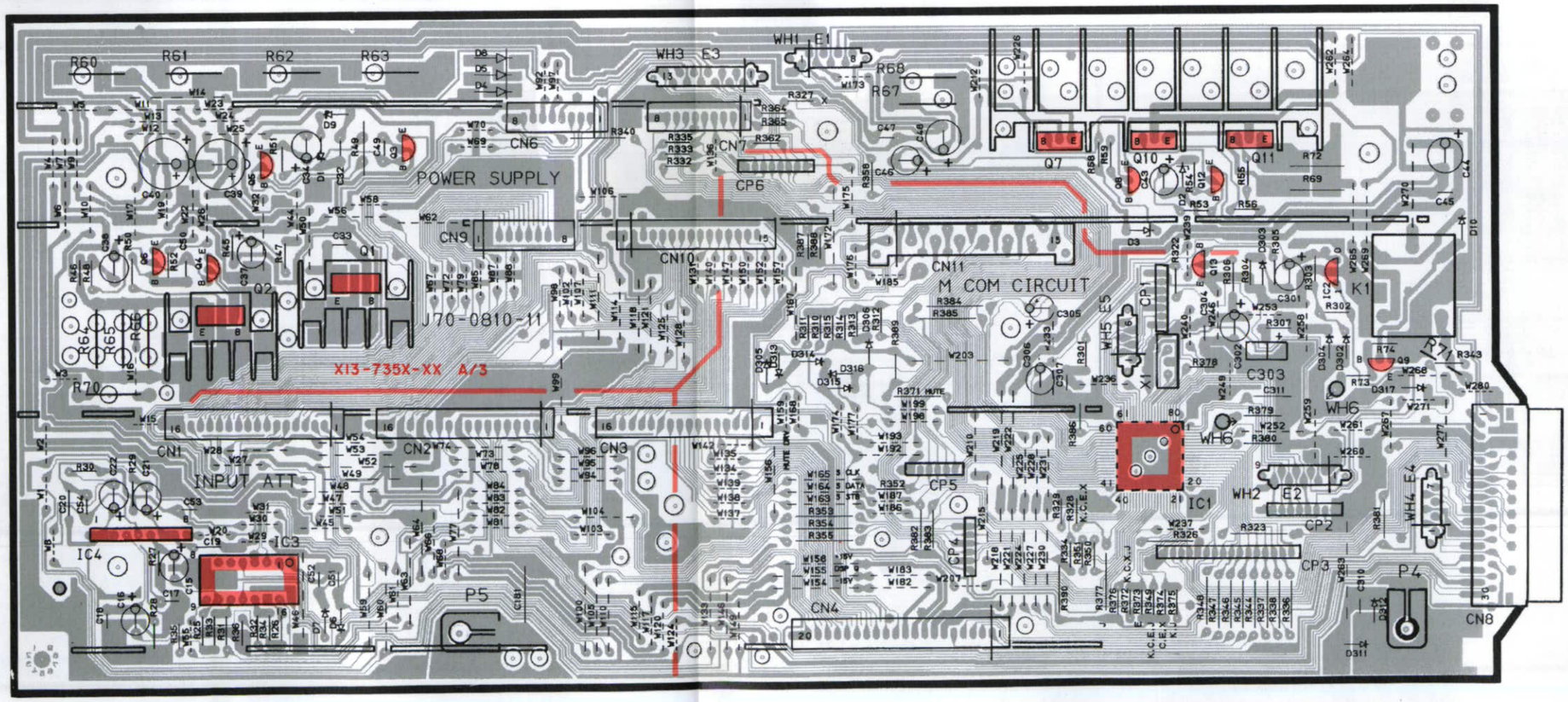
PC BOARD (Component side view) SUB-CIRCUIT UNIT (X13-735X-XX)

0-10; KP (KR-V990D only) 0-71; X (KR-V990D only)
2-71; E (KR-V990D only) 3-01; YMC (KR-V990D only)





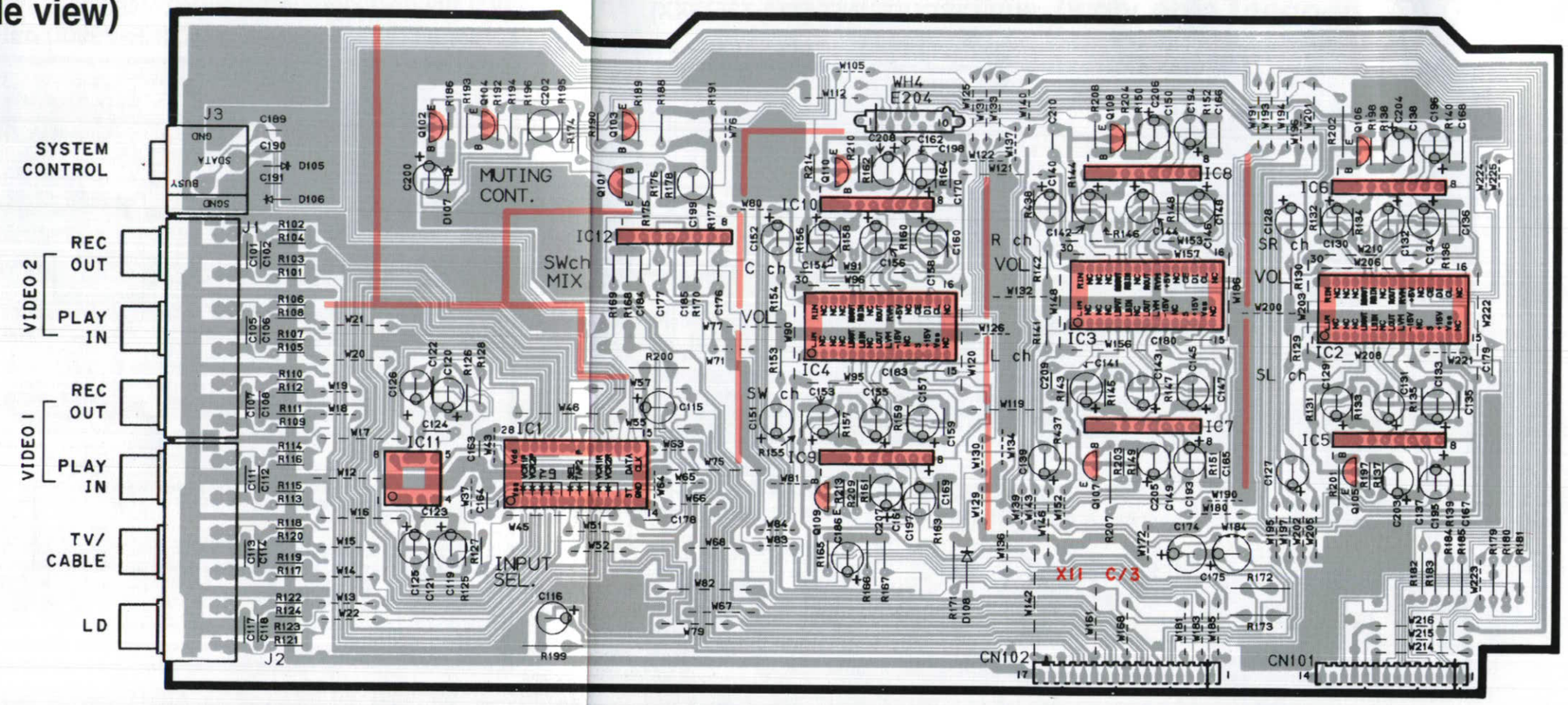


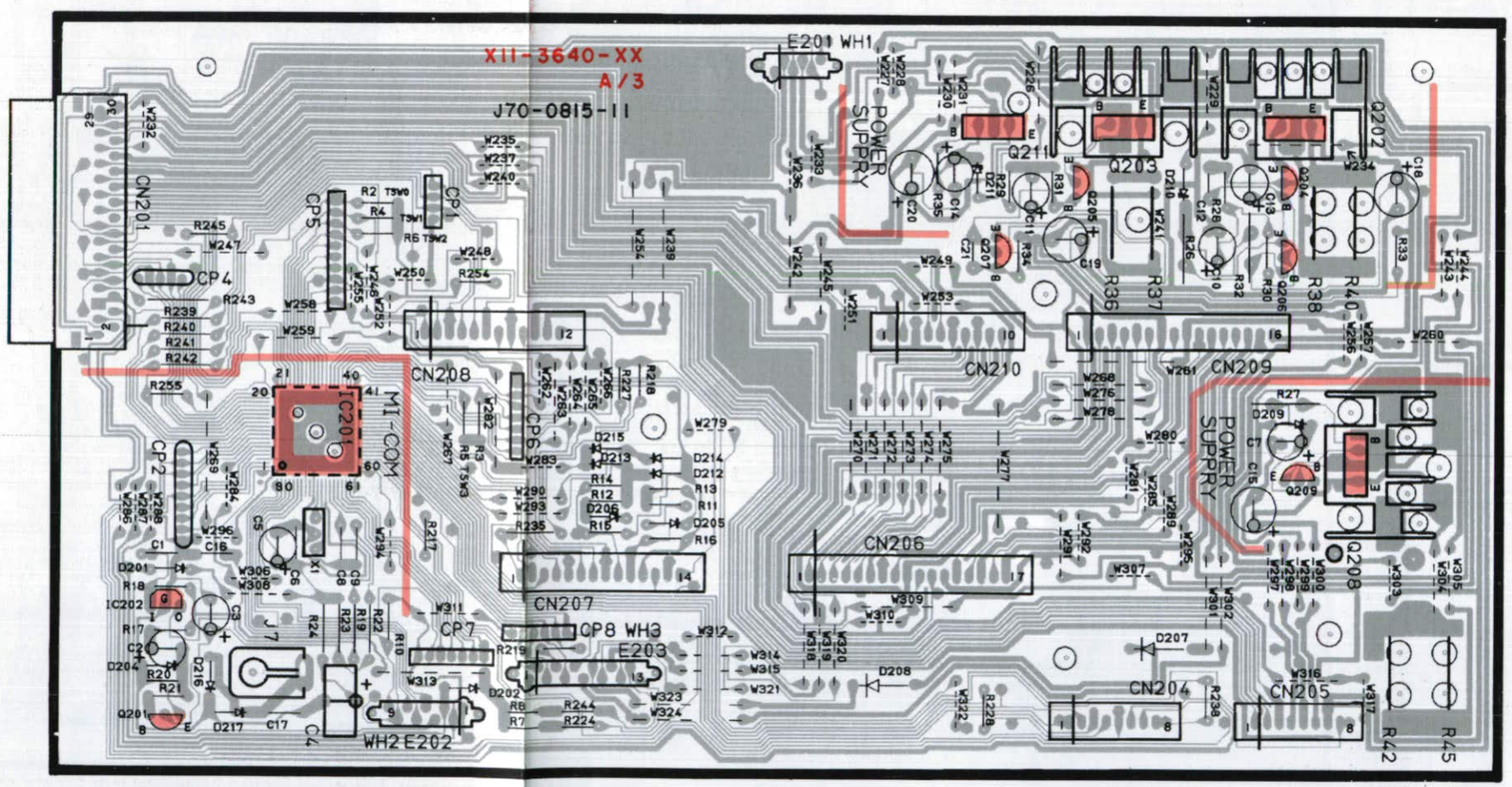


Refer to the schematic diagram for the values of resistors and capacitors.

PC BOARD (Component side view)

CONTROL UNIT (X11-364X-XX)
0-10; KP (KR-V9080 only)
0-21; YMC (KR-V9080 only)
0-71; X (KR-V9080 only)

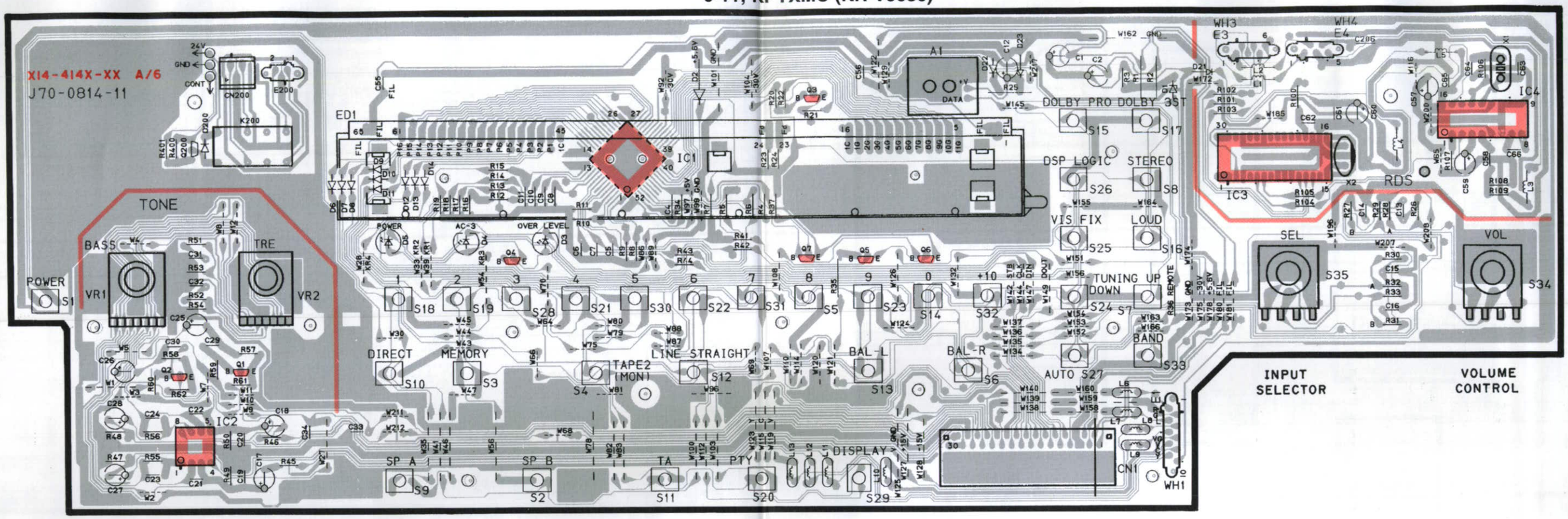


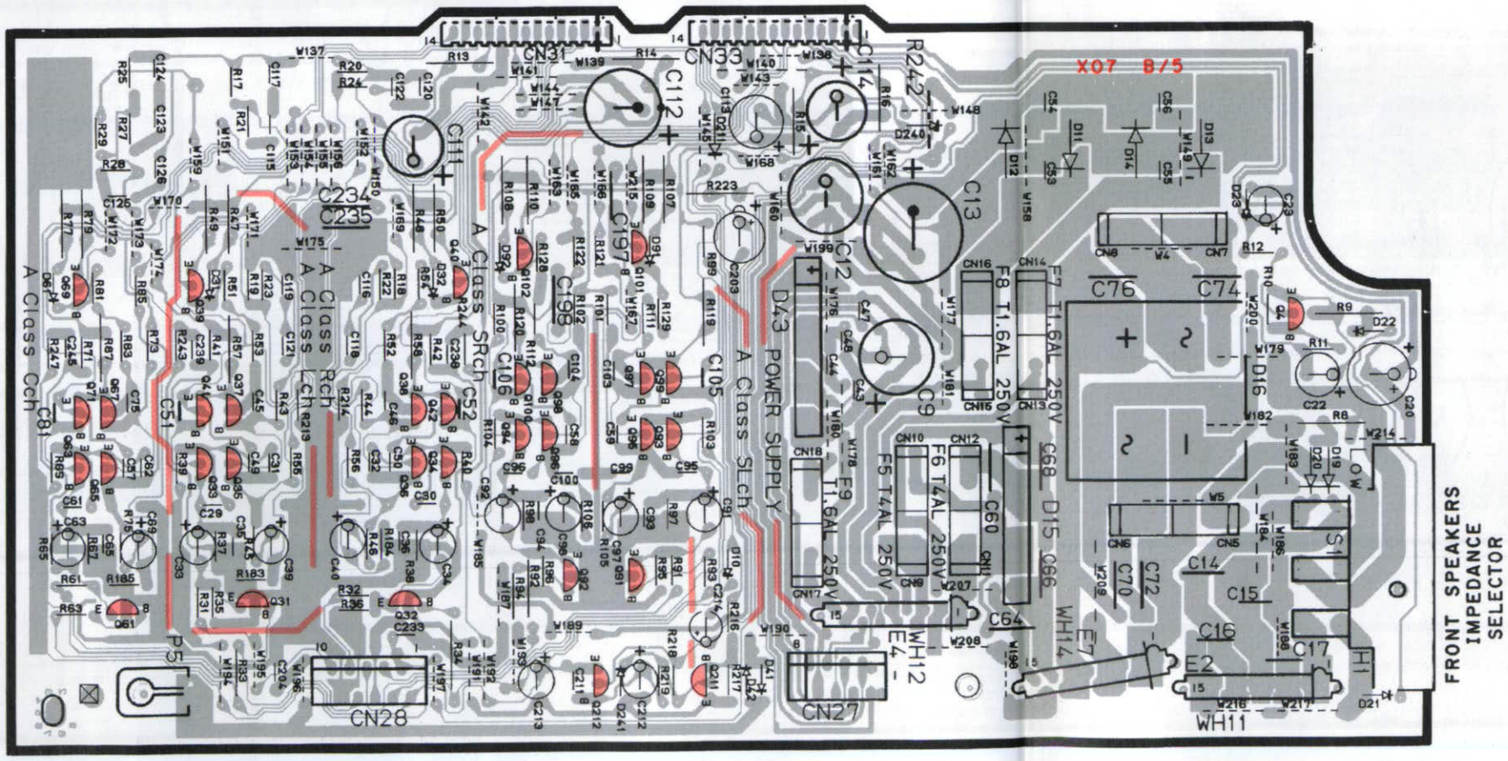


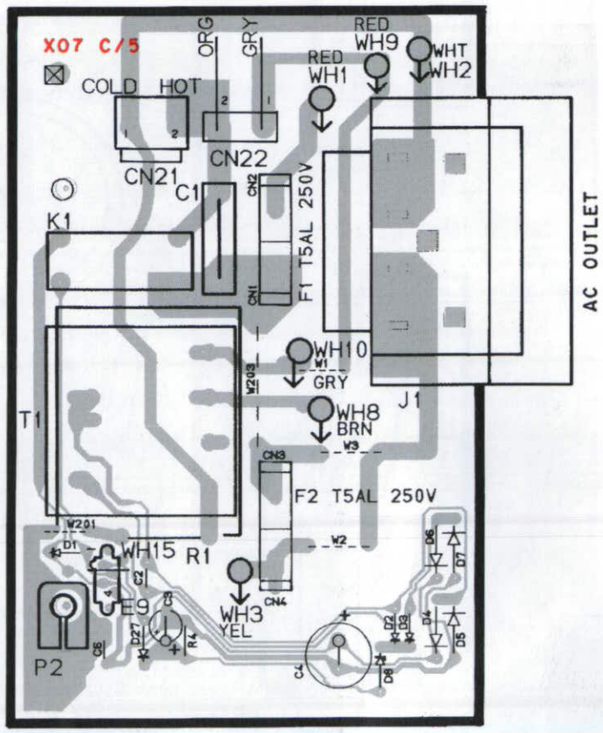
Refer to the schematic diagram for the values of resistors and capacitors.

PC BOARD (Component side view)

DISPLAY UNIT (X14-414X-XX) **0-10; KPYXMC (KR-V990D)** **0-11; KPYXMC (KR-V9080)** **2-71; E (KR-V990D)**



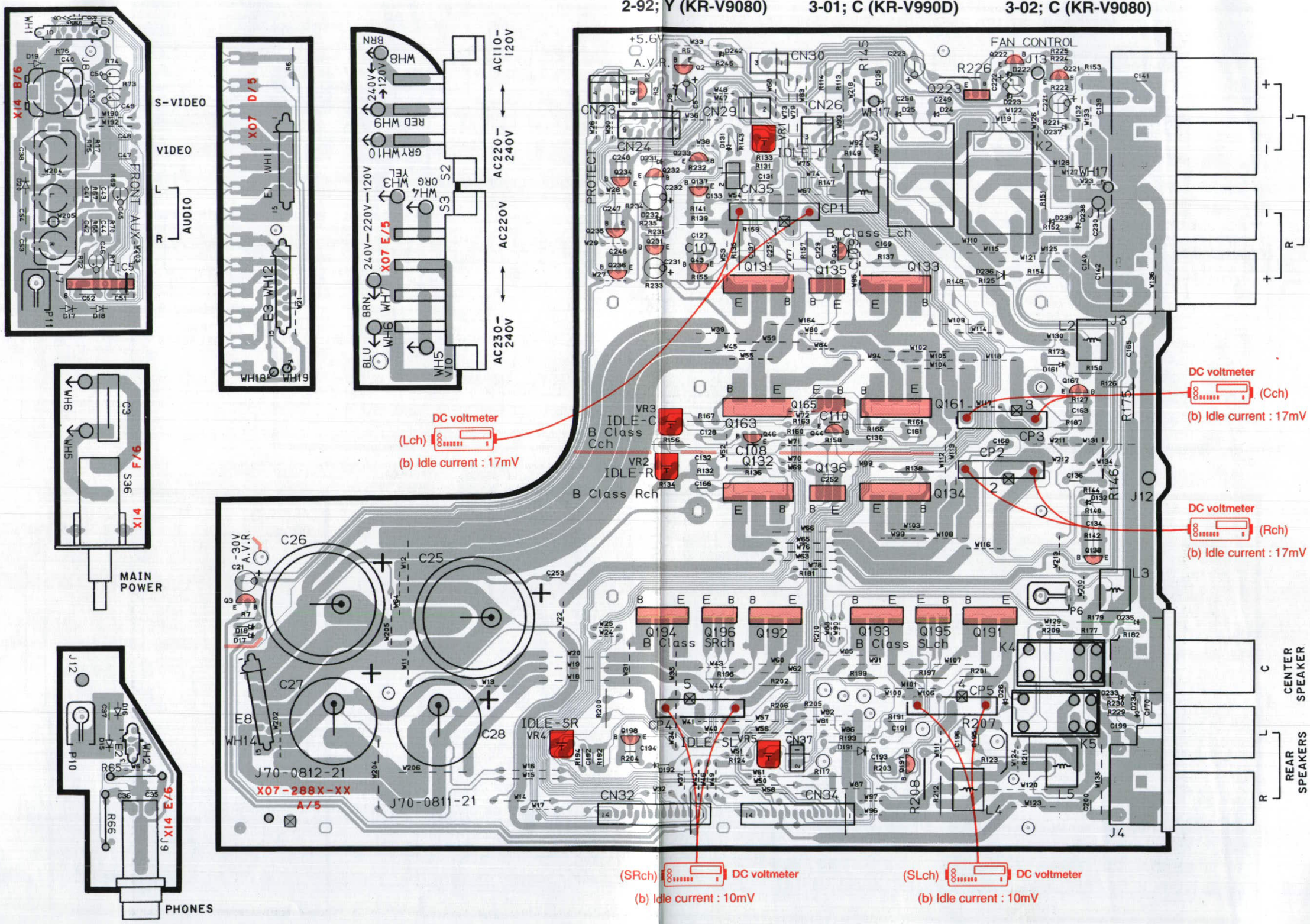




Refer to the schematic diagram for the values of resistors and capacitors.

PC BOARD (Component side view)

MAIN AMP UNIT (X07-288X-XX) 0-10; KP (KR-V990D) 0-11; KP (KR-V9080) 0-21; M (KR-V990D) 0-22; M (KR-V9080)
0-71; X (KR-V990D) 0-72; X (KR-V9080) 2-71; E (KR-V990D) 2-91; Y (KR-V990D)
2-92; Y (KR-V9080) 3-01; C (KR-V990D) 3-02; C (KR-V9080)



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

DISPLAY UNIT(X14-414X-XX) (C/6)

(X14-414X-XX) (D/6)

KR-V990D/V9080(K) (6/10)

KR-V990D
(X14-414X-XX)

DESTINATION		UNIT No.	CN2	W24	W21,23,29	IC108
COUNTRY	ABB					
U.S.A.	K					
CANADA	P					
PX	Y	0-10	YES	YES	NO	SC42720
GENERAL MARKET	M					
AUSTRALIA	X					
CHINA	C					
EUROPE	E	2-71	YES	YES	NO	SC42720

KR-V9080
(X14-414X-XX)

DESTINATION		UNIT No.	CN2	W24	W21,23,29	IC108
COUNTRY	ABB					
U.S.A.	K					
CANADA	P					
PX	Y	0-11	NO	NO	YES	SC42720
GENERAL MARKET	M					
AUSTRALIA	X					
CHINA	C					

IC100,105,106 : LA7951
IC101 : MC14577CP
IC102 : MB90089PF-G143
IC103 : MM1067XD
IC104 : MC74HC4053N
IC107 : S-806D-Z or PST993D-T
IC108 : ※
IC109 : XL24C01AP

Q100~102 : 2SC2878(B)
Q103~110,112 : 2SC2003(L,K)
Q111,116,117 : 2SC2458(Y,GR) or 2SC3311A(Q,R)
Q113,114 : 2SD2061 or 2SD2012
Q115 : 2SA1048(Y,GR) or 2SA1309A(Q,R)
Q118 : 2SC3940A(R,S) or 2SD863(E,F)

D100,102 : RD5.6ES(B2) or HZS5.6N(B2)
D101,103 : RD5.1ES(B2) or HZS5.1N(B2)
D104 : 1SS131 or HSS104A
D105,106 : 1SS133 or HSS104

IC105,106

⑬CONT1	⑨CONT2	IN	OUT
L	L	V3	V1 AND V2
L	H	V1	V2
H	L	V2	V1
H	H	TV or LD	V1 AND V2

SIGNAL LINE
GND LINE
+B LINE
-B LINE

DM	DN	DO	DP	DQ	DR	DS	DT	DU	DV

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 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

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(9080)
X11-A/3
-CN205
4/10
F

X13-A/3
-E4
7/10
G

(9080)
X11-A/3
-CN204
4/10
H

SUB-CIRCUIT UNIT (X13-735X-XX)(B/3) KR-V990D ONLY

IC101 INPUT SELECTOR

IC102 ELECTRIC VR (SURROUND) (BOTTOM VIEW)

IC103 ELECTRIC VR (FRONT) (BOTTOM VIEW)

IC104 ELECTRIC VR (CENTER,S/W) (BOTTOM VIEW)

IC105 (2/2) SLch

IC106 (2/2) SRch

IC107 (2/2) Lch

IC108 (2/2) Rch

IC109 (2/2) SWch

IC110 (2/2) Cch

IC111 (2/2)

IC111 (1/2) LINE BUFFER

IC105 (1/2) SLch AMP

IC106 (1/2) SRch AMP

IC107 (1/2) Lch AMP

IC108 (1/2) Rch AMP

IC109 (1/2) SWch AMP

IC110 (1/2) Cch AMP

PRE MUTE DRV

MUTE DRV

-10dB MUTE DRV

LINE BUFFER

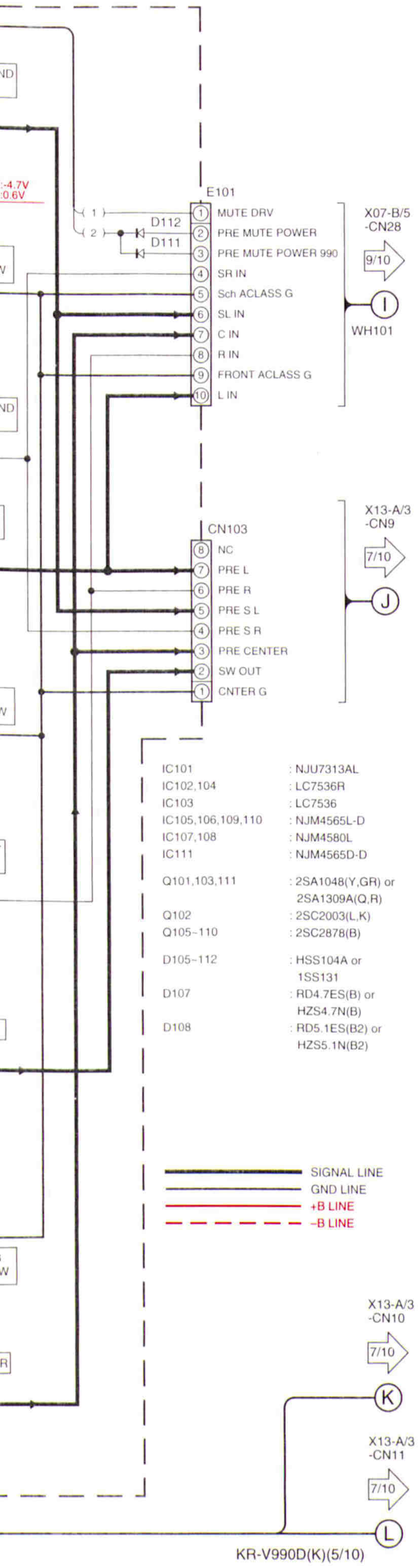
J1 VIDEO2 REC OUT / VIDEO2 PLAY IN / VIDEO1 REC OUT

J2 VIDEO1 PLAY IN / TV/CABLE / LD

J3 SYSTEM CONTROL

CN101 MUTE DRV, NC, -10dB MUTE, SYNC GND, SYNC BUSY, SYNC DATA, SEL STB, SEL DATA, SEL CLK, EV CE2, EV CE1, EV DATA, EV CLK, MUTE, SUB MUTE

CN102 +15V, G, -15V, VIDEO REC L, VIDEO REC R, PHONO L, PHONO R, SEL L, SEL R, L IN, R IN, SL IN, SR IN, C IN, SW IN



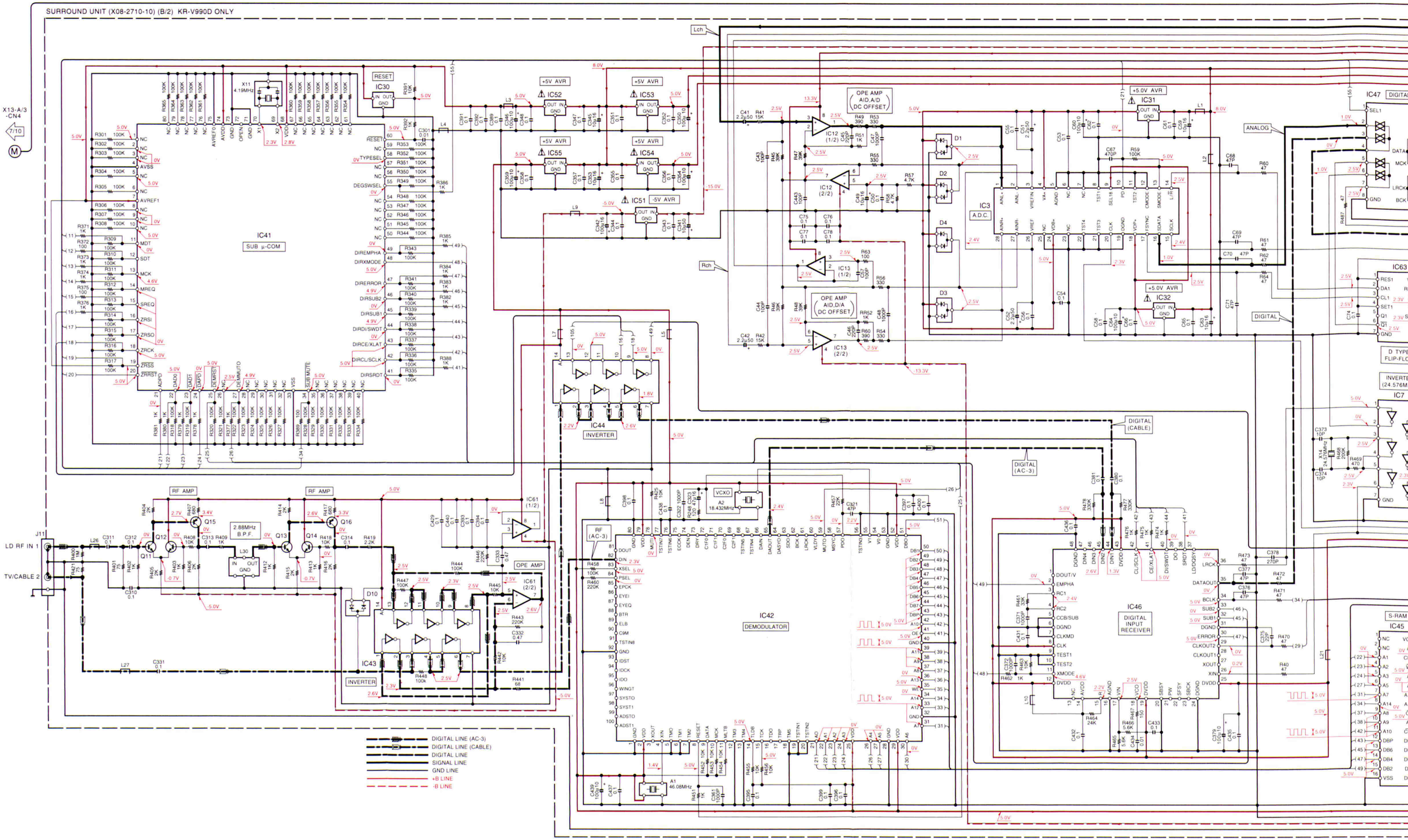
CAUTION: *For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock,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

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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

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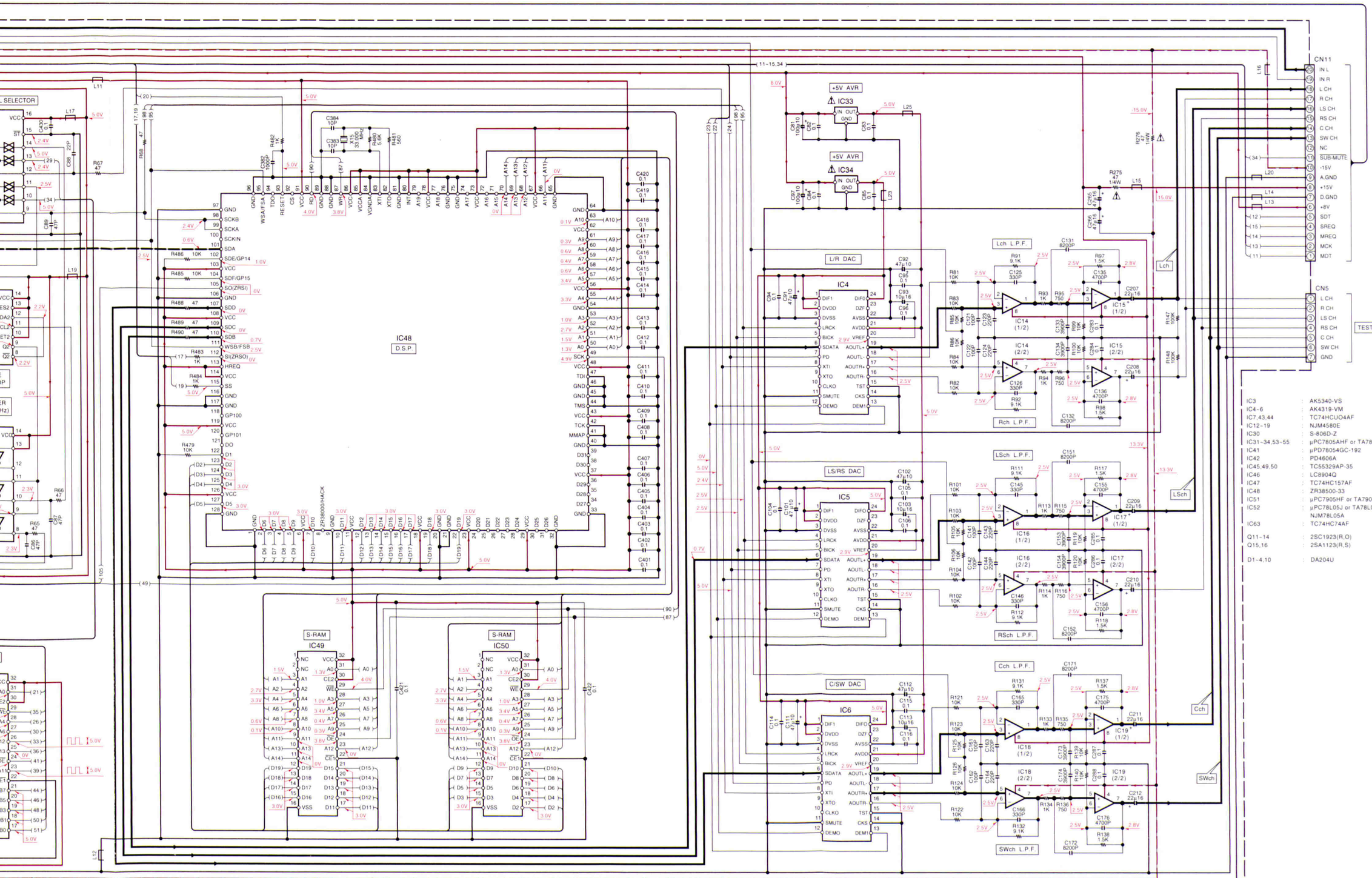
SURROUND UNIT (X08-2710-10) (B/2) KR-V990D ONLY



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 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	FRE
FM	98MHz	
AM	1000(999)kHz	



IC3	:	AK5340-VS
IC4-6	:	AK4319-VM
IC7,43,44	:	TC74HCUO4AF
IC12-19	:	NJM4580E
IC30	:	S-806D-Z
IC31-34,53-55	:	μPC7805AHF or TA7805S
IC41	:	μPD78054GC-192
IC42	:	PD4606A
IC45,49,50	:	TC55329AP-35
IC46	:	LC8904Q
IC47	:	TC74HC157AF
IC48	:	ZR38500-33
IC51	:	μPC7905HF or TA79005S
IC52	:	μPC78L05J or TA78L005AP or NJM78L05A
IC63	:	TC74HC74AF
Q11-14	:	2SC1923(R,O)
Q15,16	:	2SA1123(R,S)
D1-4,10	:	DA204U

KR-V990D(K) (8/10)

MODULATION		ANT INPUT
EQUENCY	DEVIATION	
1kHz	STEREO 67.5kHz 7.5kHz(Pilot)	60dB
400Hz	MONO 30% MOD	60dB

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Y05-3070-10

KR-V990D-V9080

KENWOOD

DW DX DY DZ EA EB EC ED EE EF

SUB-CIRCUIT UNIT (X13-735X-XX) (A/3) KR-V990D ONLY

IC3 ANALOG SELECTOR (S/W ON/OFF INPUT ATTENUATER)

A.T.T OUTPUT BUF

RESET IC

IC1 (BOTTOM VIEW) μ-COM

CN1 A.L. IN, A.R. IN, SELOUT R, SELOUT L, AV AUX L, AV AUX R, TUNER R, TUNER L, PRE SW, PRE C, PRE SR, PRE SL, PRE R, PRE L, MUTE DRV, CENTER G

CN9 CENTER G, SW OUT, PRE CENTER, PRE SR, PRE SL, PRE R, PRE L, G

E3 CH SPASE, DO, CE, CLK, DATA, T.MUTE, -15V, +12V, Lch, G, Rch, STEREO, SD

CN3 L OUT, R OUT, SL OUT, SR OUT, C OUT, SW OUT, L.P.F. OUT, NC, XRU4053BC CONT, OL LED

CN10 +15V, EVR G, -15V, VIDEO REC L, VIDEO REC R, PHONO L, PHONO R, SEL L, SEL R, L IN, R IN, SL IN, SR IN, C IN, SW IN

X08-A/2 -CN3 3/10 (E)

X13-B/3 -CN103 5/10 (J)

X05-CN1 1/10 (A) WH3

X08-A/2 -CN1 3/10 (C)

X13-B/3 -CN102 5/10 (K)

X08-A/2 -CN2 3/10 (D)

X14-D/6 -CN7 6/10 (F)

X14-D/6 -CN2 6/10 (G)

X14-D/6 -CN8 6/10 (H)

X13-B/3 -CN101 5/10 (L)

CN7 VCCN1, VCCN2, VMUTE, VSEL, OSD CS, OSD SCLK, OSD SIN, SYNC DET (H)

CN6 FRONT AUX R, FRONT AUX L, REPEATER G, -15V, +15V VIDEO, VIDEO G, REPEATER (F)

CN11 MUTE DRV, NC, +10B, MUTE, SYNC GND, SYNC BUSY, SYNC DATA, SEL STB, SEL DATA, SEL CLK, EV CE1, EV CE2, EV DATA, EV CLK, MUTE, SUB MUTE (L)

CN2 SEL L, REG G, SEL R, -15V, PHONO R, EVR G, PHONO L, +15V, 9215 OUT, TONE IN L, TONE OUT L, TONE OUT R, TONE IN R, SEL STB, SEL DATA, SEL CK (D)

P5

CP2 100K x7

CP6 100K x7

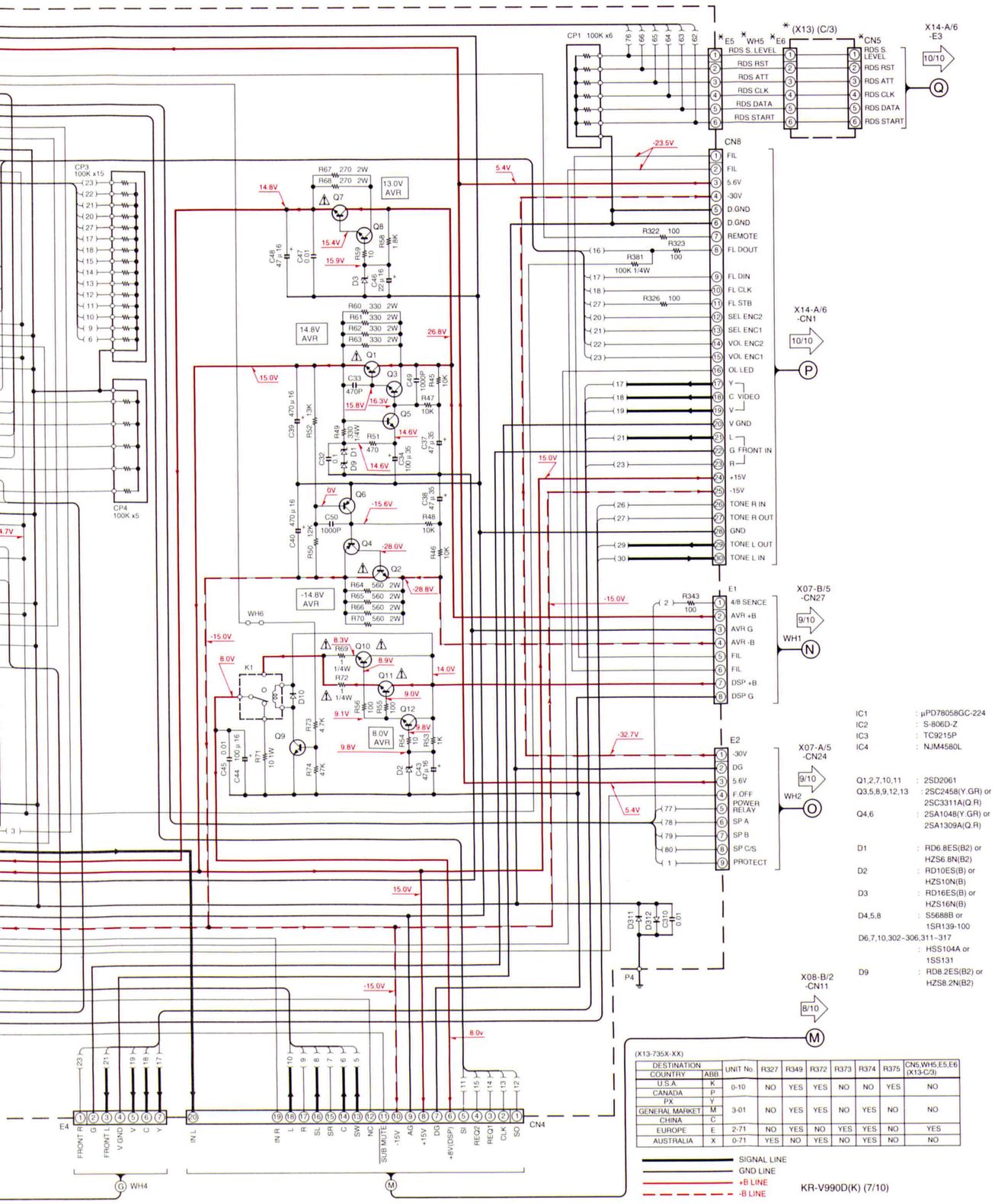
CP5 100K x5

RELAY, RELAY POWER, RDS SLEVEL, RDS

ON:0V OFF:4.7V

ON:4.2V OFF:4.5V

MUTE ON:2.0V OFF:-7.5V



(X13-735X-XX)

DESTINATION		UNIT No.	R327	R349	R372	R373	R374	R375	CN5,WH5,E5,E6 (X13-C/3)
COUNTRY	ABB								
U.S.A.	K	0-10	NO	YES	YES	NO	NO	YES	NO
CANADA	P								
PX	Y								
GENERAL MARKET	M	3-01	NO	YES	YES	NO	YES	NO	NO
CHINA	C								
EUROPE	E	2-71	NO	YES	NO	YES	YES	NO	YES
AUSTRALIA	X	0-71	YES	NO	YES	NO	YES	NO	NO

SIGNAL LINE
GND LINE
+B LINE
-B LINE

KR-V990D(K) (7/10)

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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

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IC1 : µPD78058GC-224
IC2 : S-806D-Z
IC3 : TC9215P
IC4 : NJM4580L

Q1,2,7,10,11 : 2SD2061
Q3,5,8,9,12,13 : 2SC2458(Y.GR) or 2SC3311A(Q.R)
Q4,6 : 2SA1048(Y.GR) or 2SA1309A(Q.R)

D1 : RD6.8ES(B2) or HZS6.8N(B2)
D2 : RD10ES(B) or HZS10N(B)
D3 : RD16ES(B) or HZS16N(B)
D4,5,8 : S5688B or 1SR139-100
D6,7,10,302~306,311~317 : HSS104A or 1SS131
D9 : RD8.2ES(B2) or HZS8.2N(B2)

KR-V990D/V9080

KENWOOD

MAIN AMP UNIT (X07-288X-XX) (B/5)

(X07-288X-XX) (A/5)

TEST POINT IDLE Lch TEST POINT IDLE SLch
CN35 CN37

CN31 CN32
Lch-
Lch+
Lch NF
FRONT +B
ACLASS GND
FRONT -B
Rch NF
Rch+
Rch-
Cch+
Cch-
Cch NF
MUTE B(990D)
ACLASS F.OFF

CN33 CN34
-30 GND
-49V
CONST +B
CONST -B
CONST GND
SLch-
SLch+
SLch NF
Sch-B
ACLASS GND
Sch+B
SRch NF
SRch-
SRch+

CN28
L IN
FRONT P GND
R IN
C IN
SL IN
REAR P GND
SR IN
MUTE B
MUTE B
MUTE

(990D) X13-B/3 -E101 5/10
(9080) X11-C/3 -E204 4/10
(990D) X13-A/3 -E1 7/10
(9080) X11-A/3 -E201 4/10
(990D) X13-A/3 -E2 7/10
(9080) X11-A/3 -E202 4/10

Q31,32 MUTE
Q61,91 MUTE
CURRENT MIRROR
Q101,102 CURRENT MIRROR
Q40,69 CURRENT MIRROR
ON 3.3V OFF -2.4V
B CLASS Lch
B CLASS Rch
B CLASS Cch
B CLASS SLch
B CLASS SRch
IDLE Lch
IDLE Rch
IDLE Cch
IDLE SLch
IDLE SRch
4/8 SENSOR CONST +B CONST -B CONST -B FIL +B DSP GND
TO X13-A/3-E1
TO X11-A/3-E201

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MODE	CARRIER	MODU	
		FREQUENCY	
FM	98MHz	1kHz	STER
AM	1000(999)kHz	400Hz	MONO

KR-V990D

DESTINATION / COUNTRY	ABB	UNIT No.	F1	F2	F3,4	F5,6	F7,8	F9	CN3,4	CN5-8	C14 -17	C25,26	C43,44,47,48,137,166, 168,169,251,252	C99,100,139-142, 170,199,200	C127 -130	D41 -43	CN27	R1	R113,114, 117	W1	W2	W3	W4,5
U.S.A.	K	X07-2880-10	10A 125V	NO	YES	5A 125V	2A 250V	1.6A 250V	NO	YES	NO	8200μ80	YES	NO	NO	YES	8pin	YES	10 1/4W	YES	NO	YES	NO
CANADA	P																						
PX	Y	X07-2882-91	T5AL 250V	T5AL 250V	NO	T4AL 250V	T1.6AL 250V	T1.6AL 250V	YES	NO	YES			NO				NO	33 1/4W	NO	NO	YES	YES
GENERAL MARKET	M	X07-2880-21		NO					NO														
AUSTRALIA	X	X07-2880-71	T5AL 250V	T5AL 250V	NO	T4AL 250V	T1.6AL 250V	T1.6AL 250V	YES	NO	NO			NO				NO	10 1/4W	YES	NO	YES	YES
EUROPE	E	X07-2882-71	T5AL 250V	T2.5AL 250V							YES			YES							YES	NO	
CHINA	C	X07-2883-01	T5AL 250V	NO	NO	T4AL 250V	T1.6AL 250V	T1.6AL 250V	NO	NO	YES			NO				NO	10 1/4W	YES	NO	YES	YES

KR-V9080

DESTINATION / COUNTRY	ABB	UNIT No.	F1	F2	F3,4	F5,6	F7,8	F9	CN3,4	CN5-8	C14 -17	C25,26	C43,44,47,48,137,166, 168,169,251,252	C99,100,139-142, 170,199,200	C127 -130	D41 -43	CN27	R1	R113,114, 117	W1	W2	W3	W4,5
U.S.A.	K	X07-2880-11	10A 125V	NO	YES	5A 125V	2A 250V		NO	YES	NO	7500μ80	NO	NO	YES	NO	6pin	YES	10 1/4W	YES	NO	YES	NO
CANADA	P																						
PX	Y	X07-2882-92	T5AL 250V	T5AL 250V	NO	T4AL 250V	T1.6AL 250V	NO	YES	NO	YES			NO				NO	33 1/4W	NO	NO	YES	YES
GENERAL MARKET	M	X07-2880-22							NO														
AUSTRALIA	X	X07-2880-72	T5AL 250V	NO		T4AL 250V	T1.6AL 250V		YES	NO	NO			NO				NO	10 1/4W	YES	NO	YES	YES
CHINA	C	X07-2883-02	T5AL 250V		NO	T4AL 250V	T1.6AL 250V		NO	NO	YES			NO				NO	10 1/4W	YES	NO	YES	YES

(X07-) (D/5)

(Y,M) TYPE

(K,P,X,C) TYPE

Q1 : 2SC2003(L,K)
Q2 : 2SC3940A(R,S)
Q3 : 2SA1534A(R,S)
Q4,33-36,63,65,93-96,101,102, 221,231 : 2SA992(F,E)
Q31,32,61,91,92 : 2SC2878(B)
Q37,38,41-43,46,67,71 : 2SC2631(R,S)
Q39,40,44,45,69 : 2SA1123(R,S)
Q97-100,137,138,167,197,198, 232,233 : 2SC1845(F,E)
Q131,132,161 : 2SD2222
Q133,134,163 : 2SB1470
Q135,136,165,195,196 : 2SC4137(V,W)
Q191,192 : 2SD2389
Q193,194 : 2SB1559
Q211,212 : 2SC2458(Y,GR) or 2SC3311A(Q,R)
Q222 : 2SA1048(Y,GR) or 2SA1309A(Q,R)
Q223 : 2SB1375 or 2SB1370
Q234-236 : UN4219 or DTC113ZS

D1,24-27,41,42,211,233-239 : 1SS133 or HSS104
D2,3,21,22,31,32,61,91,92,131,132, 161,191,192,231 : 1SS131 or HSS104A
D4-7,11-14,19,20 : S5688B or 1SR139-100
D8 : RD2.7ES(B2) or HZS2.7N(B2)
D9 : RD6.2ES(B2) or HZS6.2N(B2)
D10,223 : RD8.2ES(B2) or HZS8.2N(B2)
D15,43 : D5SBA20F03
D16 : D5FB20-4002-L1
D17,222 : RD16ES(B2) or HZS16N(B2)
D18 : RD18ES(B2) or HZS18N(B2)
D23 : RD5.1ES(B2) or HZS5.1N(B2)
D232 : RD4.7ES(B2) or HZS4.7N(B2)
D240,242 : RD3.9ES(B2) or HZS3.9N(B2)
D241 : RD13ES(B2) or HZS13N(B2)

IMPEDANCE (Ω)	Ⓐ	Ⓑ
LESS THAN 8Ω	58.5V	-58.5V
8Ω or MORE	67.5V	-67.5V

SIGNAL LINE
GND LINE
+B LINE
-B LINE

ULATION / DEVIATION	ANT INPUT
EO 67.5kHz 7.5kHz(Pilot)	60dB
D 30% MOD	60dB

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(9080) X11-A/3 -CN201 4/10

(990D) X13-A/3 -CN8 7/10

DISPLAY UNIT (X14-414X-XX) (A/6)

CN1 FIL FIL +5.6V -30V D.GND D.GND REMOTE DOUT DIN CLK STB SEL ENC2 SEL ENC1 VOL ENC2 VOL ENC1 LED

11G 10G 9G 8G 7G 6G 5G 4G 3G 2G 1G

SPEAKERS P1 FM P9
P2 A B P3 AM P10
VISUAL FIX P14 RDS P13
TA NEWS INFO. EON P11
P5 P6 P7 PTY P12

Col Dp

dB P1 SURROUND P5 3 STEREO P6 TAPE 2 P8 AUTO P11
ms P2 DSP P14 DSP LOSIC P15 LINE STRAIGHT P9 STEREO P12
kHz P3 MIDNIGHT P16 LOUDNESS P7 MEMORY P10 TUNED P13
MHz P4

ED1 -23.5V

(10G-2G)

R23 27K R24 27K 4.6V -29.6V

Q3 FL DRIVER -32.7V

OVER LEVEL D3 R4 270 Q4~7 AC-3 LED DRIVER -29.6V Q5 Q4 Q6 R37 10K R35 100 Q7

R22 100K R21 100K R20 100

D1 D2 R1 220 1/4W R2 220 1/4W R3 33K C1 4.7µ35 C2 4.7µ35 C56 0.01 C55 0.01

AC6.6V -23.5V

R36 100 R41 100

-29.4V -22.0V -32.0V -29.6V

SEG13 SEG14 SEG15 SEG16 NC GRID11 VDD VEE(-30V) GRID10 GRID9 GRID8 GRID7 GRID6

SEG12 SEG11 -24.3V SEG10 SEG9/KS9 SEG8/KS8 -19.4V SEG7/KS7 -19.0V SEG6/KS6 -16.7V SEG5/KS5 -19.2V SEG4/KS4 -26.8V SEG3/KS3 -29.3V SEG2/KS2 -26.8V SEG1/KS1 -16.3V VDD

GRID5 GRID4 GRID3 GRID2 GRID1 VDD LED5 LED4 LED3 LED2 LED1 VSS(GND) OSC

IC1 BOTTOM VIEW FL DRIVER

C4 0.01 0V 4.6V 0V 2.5V R34 47K R7 4.7K

AC3 R5 270 D4 STAND BY R6 560 D5

5.4V

KEY4 KEY3 KEY2 KEY1 STB CLK IC D IN D OUT SW4 SW3 SW2 SW1

3.7V 4.5V 4.5V 0V 0V

R15 470 R14 470 R13 470 R12 470

R11 10K R10 10K R9 10K R8 10K

C11 100P C10 100P C9 100P C8 100P C6 100P C7 100P C5 100P

R19 4.7K R18 4.7K R17 4.7K R16 4.7K

R42 1K R43 1K R44 1K

A1 4.6V R25 10 1/4W D22 C12 33µ16 S34 E VOL R26 220 R27 220 R28 10K R29 10K C13 0.01 C14 0.01 S35 SELECTOR R30 220 R31 220 R32 10K R33 10K C15 0.01 C16 0.01

D6 D7 D8 D9 D10 D11 D12 D13 D14

POWER S1 SP B S2 LINE STRAIGHT S12 8 S5 BALANCE R S6 UP S7 STEREO S8

SP A S9 MEMORY S3 TA S11 TAPE 2 S4 BALANCE L S13 0 S14 AUTO S27 LOUD S16 3 STEREO S17

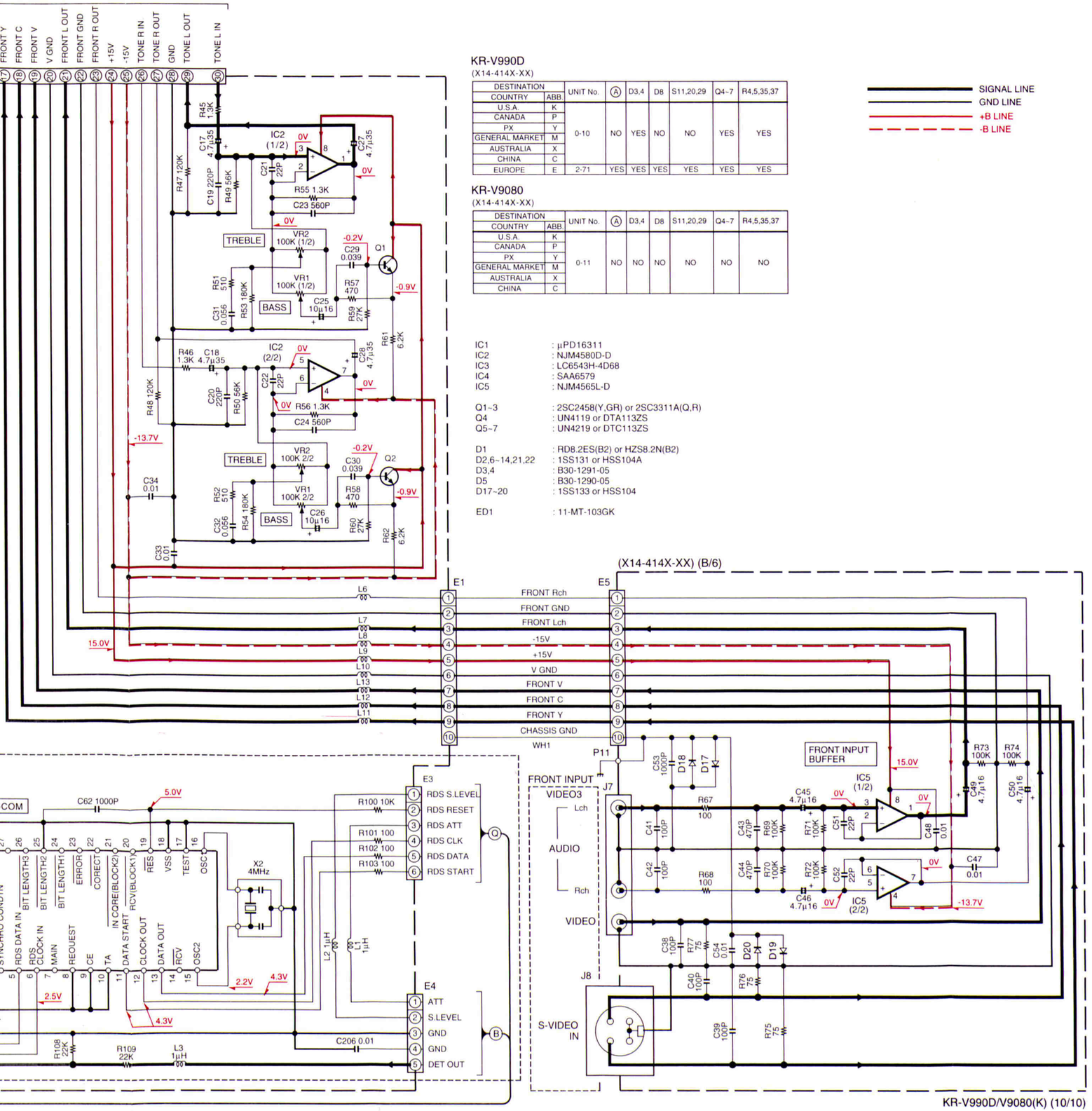
1 S18 2 S19 PTY S20 4 S21 6 S22 9 S23 DOWN S24 VISUAL FIX S25 DSP LOGIC S26

DIRECT S10 3 S28 DISPLAY S29 5 S30 7 S31 +10 S32 BAND S33 PRO LOGIC S15

X05-CN2 1/10 B

X13-C/3 -CN5 7/10 Q

(A) C64 47P C63 22P X1 4.332 MHz RDS DATA SYSTEM DEMODULATOR L5 10µH D21 IC4 2.5V 2.4V 2.1V 5.0V R106 2.2K R105 100 R107 47K R104 100 C58 2.2µ50 C66 560P C65 0.01 C57 10µ16 C61 0.01 C60 10µ16 L4 10µH IC3 RDS



KR-V990D

(X14-414X-XX)

DESTINATION		UNIT No.	Ⓐ	D3,4	D8	S11,20,29	Q4~7	R4,5,35,37
COUNTRY	ABB.							
U.S.A.	K	0-10	NO	YES	NO	NO	YES	YES
CANADA	P							
PX	Y							
GENERAL MARKET	M							
AUSTRALIA	X							
CHINA	C							
EUROPE	E	2-71	YES	YES	YES	YES	YES	YES

KR-V9080

(X14-414X-XX)

DESTINATION		UNIT No.	Ⓐ	D3,4	D8	S11,20,29	Q4~7	R4,5,35,37
COUNTRY	ABB.							
U.S.A.	K	0-11	NO	NO	NO	NO	NO	NO
CANADA	P							
PX	Y							
GENERAL MARKET	M							
AUSTRALIA	X							
CHINA	C							

IC1 : μPD16311
IC2 : NJM4580D-D
IC3 : LC6543H-4D68
IC4 : SAA6579
IC5 : NJM4565L-D

Q1~3 : 2SC2458(Y,GR) or 2SC3311A(Q,R)
Q4 : UN4119 or DTA113ZS
Q5~7 : UN4219 or DTC113ZS

D1 : RD8.2ES(B2) or HZS8.2N(B2)
D2,6~14,21,22 : 1SS131 or HSS104A
D3,4 : B30-1291-05
D5 : B30-1290-05
D17~20 : 1SS133 or HSS104

ED1 : 11-MT-103GK

SIGNAL LINE
GND LINE
+B LINE
-B LINE

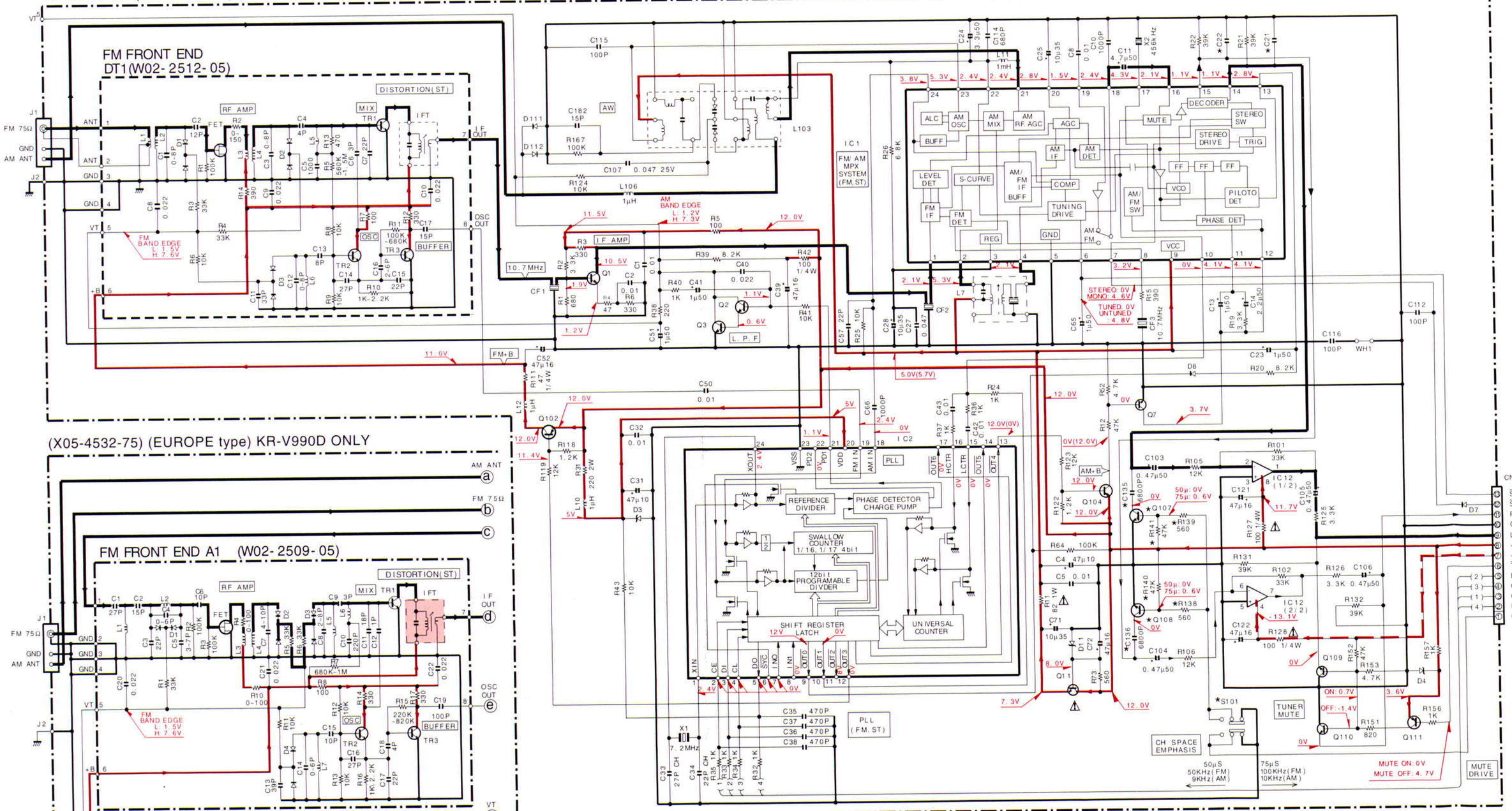
CAUTION: *For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock,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

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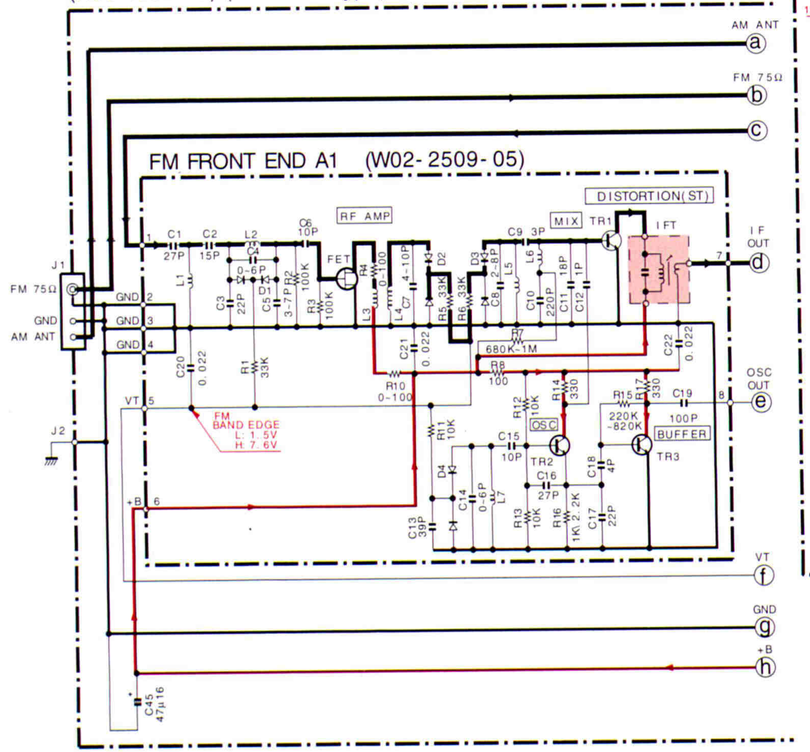
MODE	CARRIER	MODULATION		ANT INPUT
		FREQUENCY	DEVIATION	
FM	98MHz	1kHz	STEREO 67.5kHz 7.5kHz(Pilot)	60dB
AM	1000(999)kHz	400Hz	MONO 30% MOD	60dB

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TUNER UNIT (X05-4540-XX) (Except for EUROPE type)



(X05-4532-75) (EUROPE type) KR-V990D ONLY



I C1	: LA1831A- KEN
I C2	: LC7218
I C12	: NJM4565D
Q1	: 2SC2714(R, O)
Q2	: 2SC1845(F, E) or 2SC2389(S,E)
Q3	: 2SC1740S(Q, R) or 2SC2785(F, E)
Q7, 107~110	: 2SC2412K
Q11	: 2SD863(E, F)
Q102, 104, 111	: 2SA1037K
D3	: HZS5. 1N(B2) or RD5. 1ES(B2)
D4	: HZS3. 3N(B2) or RD3. 3ES(B2)
D7, 111, 112	: MA111
D8	: HSS104 or 1SS133
D11	: HZS8. 2N(B2) or RD8. 2ES(B2)

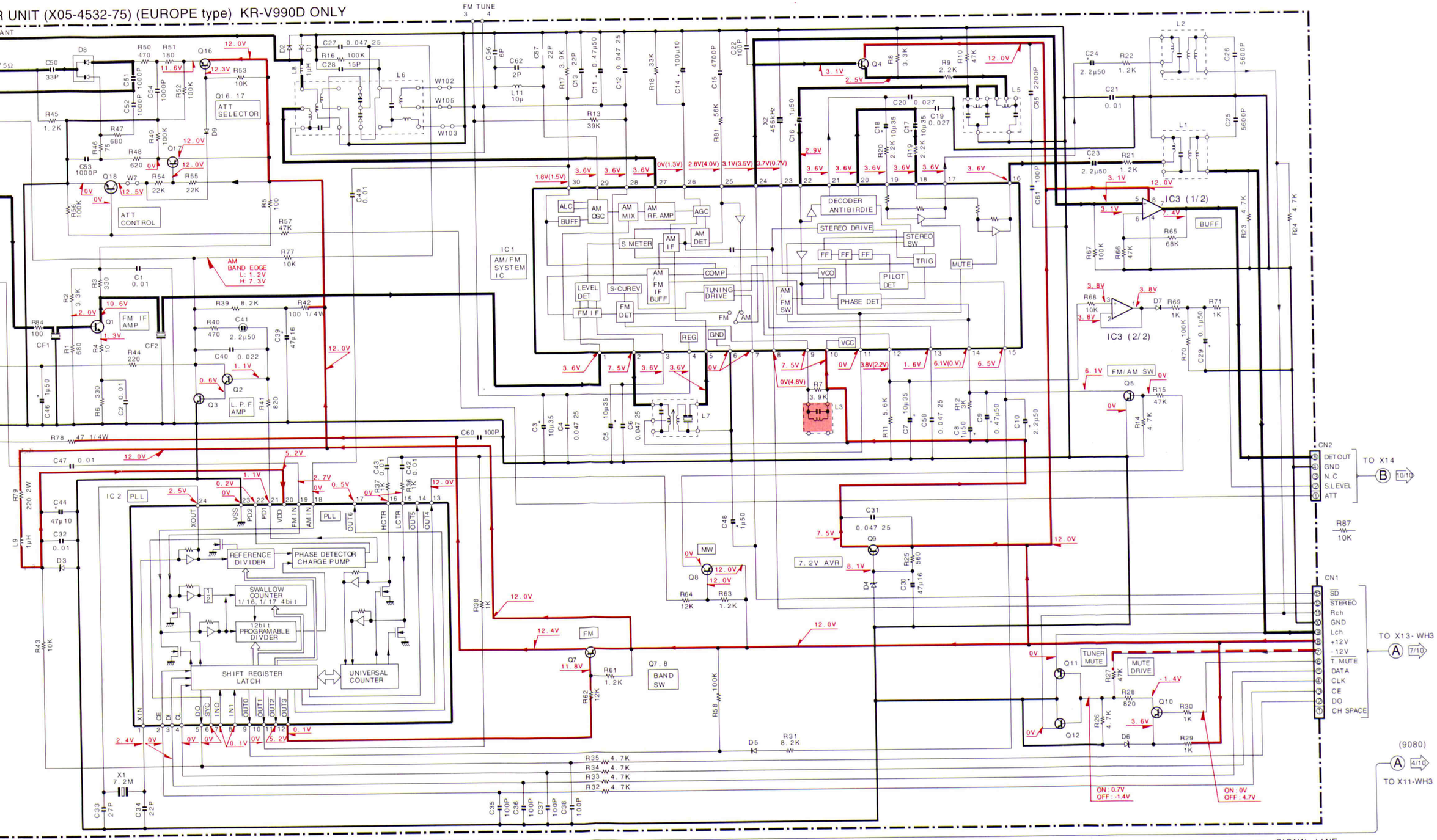
	UNIT	ABB	Q107, 108	C21, 22	C135, 136	R138~141	S101
X05- 454X- XX	0- 11	K, P	NO	0. 024	NO	NO	NO
	0- 22	Y,M,C	YES	0. 016	YES	YES	YES
	0- 72	X	NO	0. 016	NO	NO	NO

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.*

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MODE	CARRIER	MODUL	
		FREQUENCY	
FM	98MHz	1kHz	STEREO
AM	1000(999)kHz	400Hz	MONO

R UNIT (X05-4532-75) (EUROPE type) KR-V990D ONLY



IC1	: LA1836
IC2	: LC7218
IC3	: M5223P

Q1	: 2SC2714(R, O)
Q2	: 2SC1845(F, E)
Q3, 4, 5, 16, 18	: 2SC4081(R, S)
Q7, 8, 10, 17	: 2SA1576(R, S)
Q9	: 2SD863(E, F)
Q11, 12	: 2SD1757K

D1, 2, 5	: 1SS133 or HSS104
D3	: RD5.1ES(B2) or HZS5.1N(B2)
D4	: RD8.2ES(B2) or HZS8.2N(B2)
D6	: RD3.3ES(B2) or HZS3.3N(B2)
D7, 9	: MA111
D8	: 1SS268

KR-V990D/V9080 (1/10)

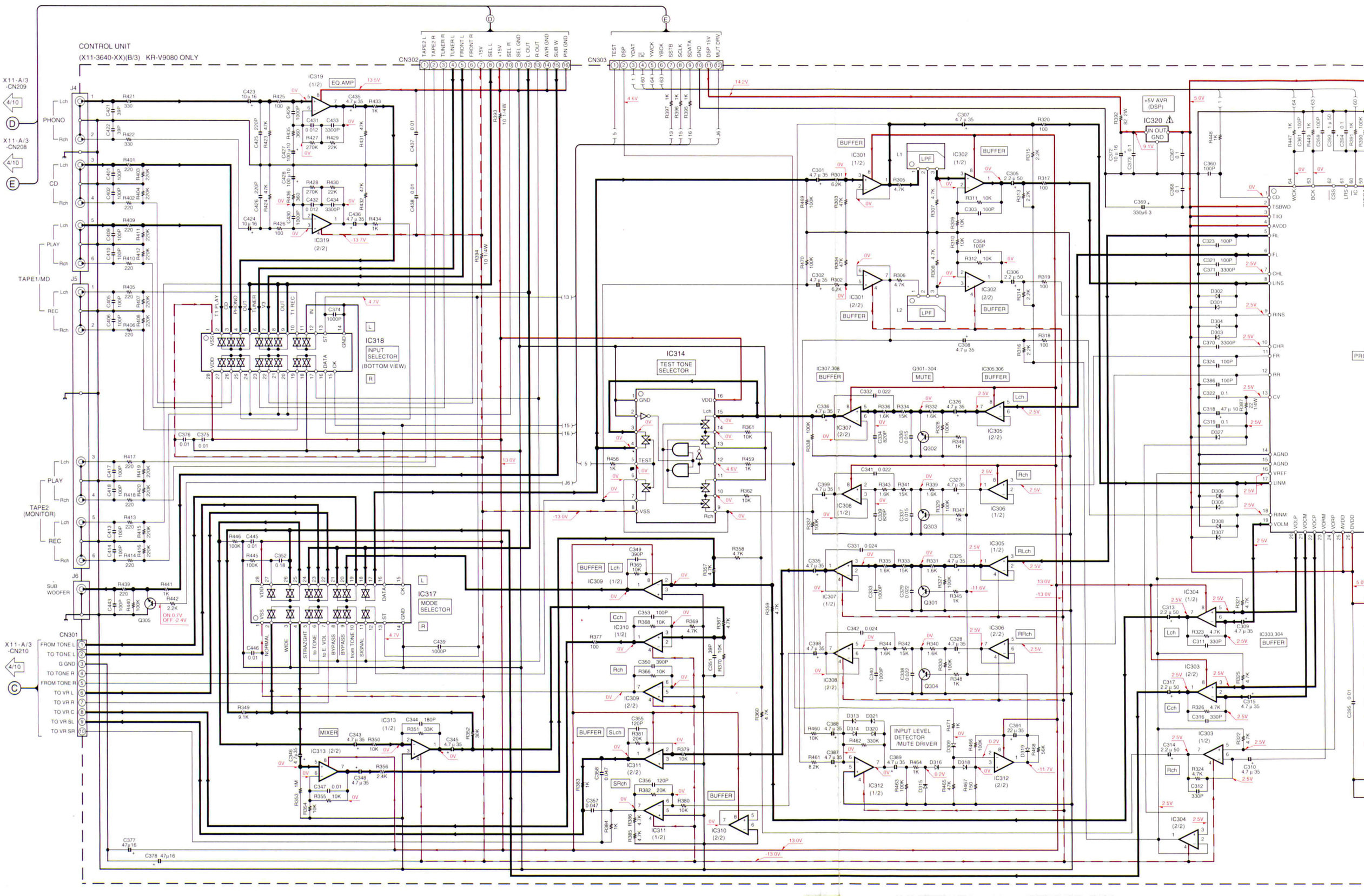
SIGNAL LINE
GND LINE
+B LINE
-B LINE

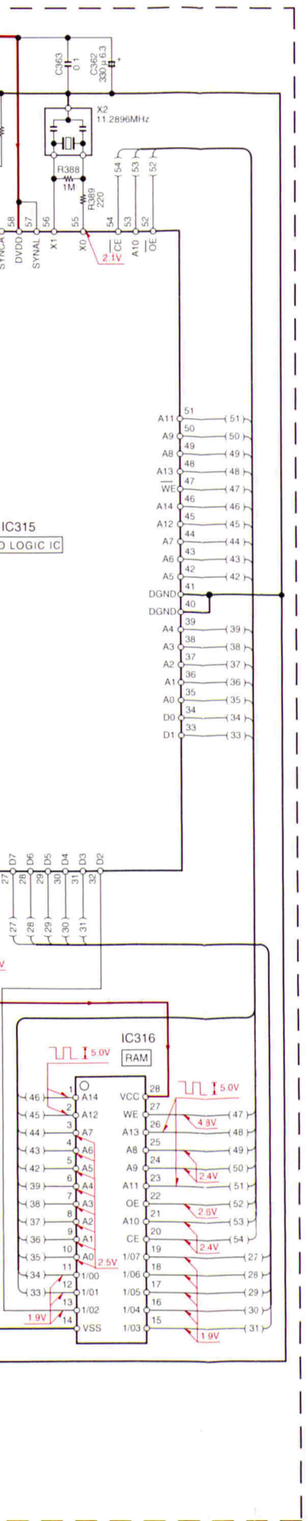
ATION	ANT INPUT
DEVIATION	
0 67.5kHz 7.5kHz(Pilot)	60dB
80% MOD	60dB

Y05-3070-10

KR-V990D/V9080

KENWOOD


CONTROL UNIT
(X11-3640-XX)(B/3) KR-V9080 ONLY
CN302
CN303
TAPE2 L
TAPE2 R
TUNER R
TUNER L
FRONT L
FRONT R
-15V
SEL L
+15V
SEL R
SEL GND
L OUT
R OUT
AVR GND
SUB W
P/N GND
TEST
DSP
YDAT
I/C
YWCK
YBCK
SSTB
SCLK
SDATA
GND
DSP 15V
MUT DRV
X11-A/3 -CN209
X11-A/3 -CN208
X11-A/3 -CN210
PHONO
CD
PLAY
TAPE1/MD
REC
TAPE2 (MONITOR)
SUB WOOFER
IC319 (1/2) EQ AMP
IC319 (2/2)
IC318 INPUT SELECTOR (BOTTOM VIEW)
IC317 MODE SELECTOR
IC314 TEST TONE SELECTOR
IC313 (1/2)
IC313 (2/2) MIXER
IC309 (1/2)
IC310 (1/2)
IC309 (2/2)
IC310 (2/2)
IC311 (1/2)
IC311 (2/2)
IC312 (1/2)
IC312 (2/2)
IC307 (2/2)
IC308 (1/2)
IC308 (2/2)
IC307.308 BUFFER
IC305.306 BUFFER
Q301-304 MUTE
INPUT LEVEL DETECTOR /MUTE DRIVER
+5V AVR (DSP)
IC320
IN OUT GND
9.1V
14.2V
4.6V
13.5V
4.7V
13.7V
13.0V
-13.0V
5.0V
-11.6V
-11.7V
ON 0.7V OFF 2.4V



IC301,302,307-313 : NJM4565L
IC303,304: NJM4580L
IC305,306: NJM072BL or NJM2082L
IC314 : TC9215P
IC315 : YSS215-F
IC316 : HM65256BLFP-10
IC317 : NJU7311AL
IC318 : NJU7312AL
IC319 : NJM4580D-D
IC320 : NJM78L05A

Q301-305: 2SC2878(B)

D301-309,313-316, 318-321,327 : HSS104 or 1SS133

SIGNAL LINE
GND LINE
+B LINE
-B LINE

KR-V9080(K) (2/10)

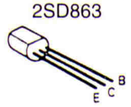
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MODE	CARRIER	MODULATION		ANT INPUT
		FREQUENCY	DEVIATION	
FM	98MHz	1kHz	STEREO 67.5kHz 7.5kHz(Pilot)	60dB
AM	1000(999)kHz	400Hz	MONO 30% MOD	60dB

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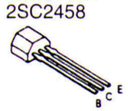
2SA1123
2SA1534A
2SA992
2SC1845
2SC1923
2SC2003
2SC2631
2SC2878
2SC3940A
2SD863



2SC2785



2SA1048
2SC1740S
2SC2458



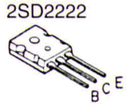
2SA1037K
2SA1576
2SC2412K
2SC2714
2SC4081
2SD1757K



2SC4137



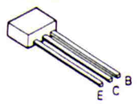
2SB1470
2SD2222



2SB1370
2SD2061



UN4219
2SA1309A
2SC3311A



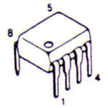
2SB1375
2SD2012



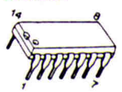
2SB1559
2SD2389



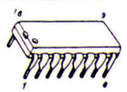
NJM4565D
NJM4565D-D
NJM4580E



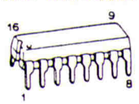
LA7951



MM1067XD



MC74HC4053N



KR-V990D/V9080

KENWOOD

AQ AR AS AT AU AV AW AX AY AZ BA

1 2 3 4 5 6 7

SURROUND UNIT (X08-2710-10) (A/2) KR-V990D ONLY

CN3
CENTER GND 16
MUTE 15
PRE L 14
PRE R 13
PRE LS 12
PRE RS 11
PRE C 10
PRE SW 9
TUNER L 8
TUNER R 7
AV AUX R 6
AV AUX L 5
OUT L 4
OUT R 3
A.R IN 2
A.L IN 1

J1
REC L1 R2
TAPE2 (MONITOR) L3 R4
PLAY L5 R6
TAPE1/MD J2
REC L1 R2
PLAY L3 R4
CD L5 R6
PHONO L6 R6

LINE BUFFER
IC23 (1/2)
IC23 (2/2)

IC1 INPUT SELECTOR
FROM BUFFER
TAPE1 REC
TAPE1 PLAY
CD
AV AUX PLAY
TUNER
TO BUFFER
TAPE2 PLAY

IC11 (1/2)
IC11 (2/2)
PHONO AMP

Lch H.P.F.
Rch H.P.F.
IC26 (1/2)
IC26 (2/2)

IC10 MODE SELECTOR
DIGITAL IN
A.STEREO
DIGITAL LST
BYPASS
A. LINE ST

IC24 (1/2)
IC25 (1/2)
IC24 (2/2)
IC25 (2/2)
FRONT MIX

LSch H.P.F.
RSch H.P.F.
IC20 (1/2)
IC20 (2/2)

IC2 H.P.F. SELECT

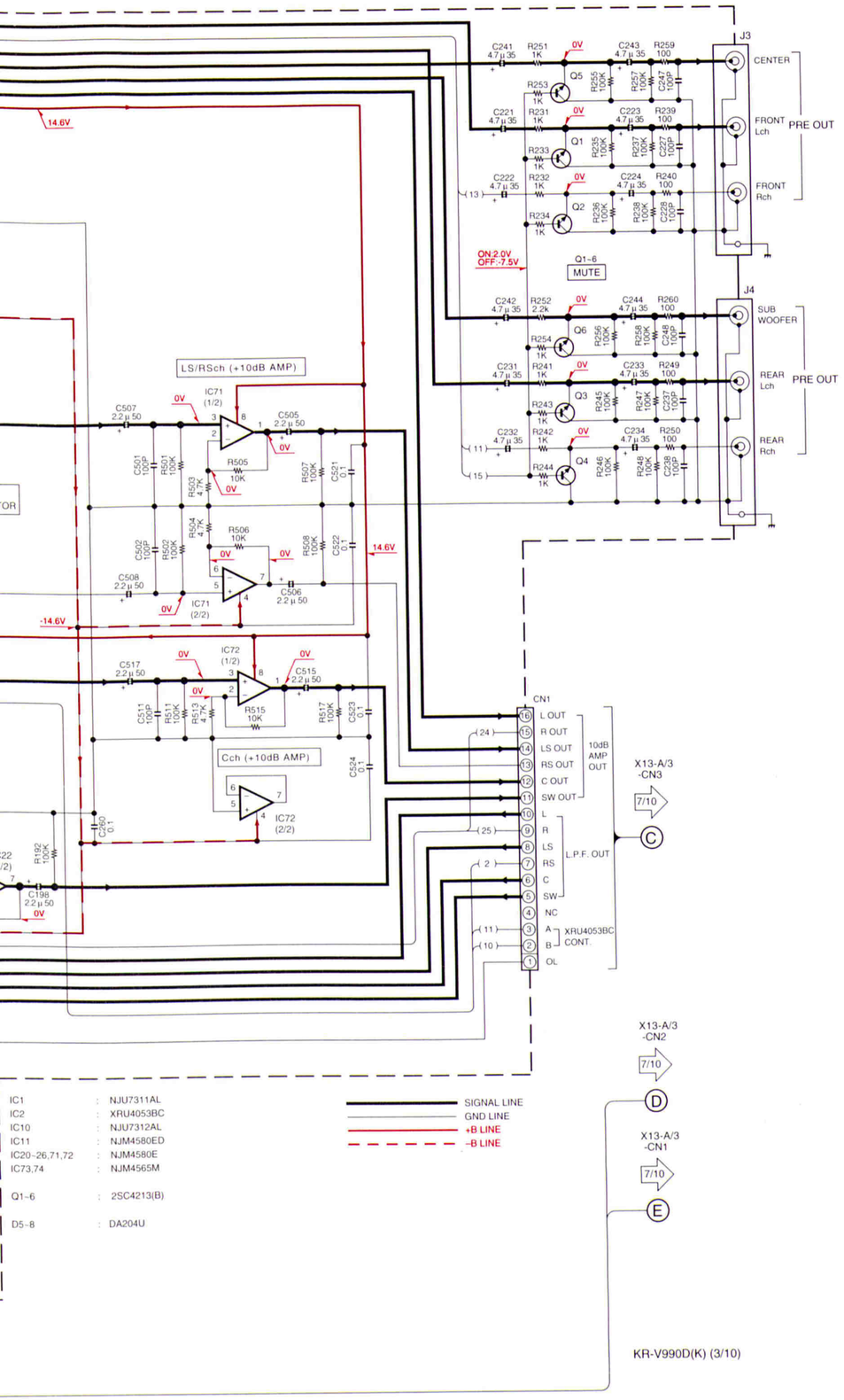
Cch H.P.F.
IC21 (1/2)
IC21 (2/2)
SW MIX

IC22 (1/2)

BUFFER AMP
IC73 (1/2)
INPUT LEVEL DETECTOR
IC74 (1/2)

CN2
IN L
GND
IN R
-15V
PHONO R
VOL GND
PHONO L
+15V
9215 OUT
TONE IN L
TONE OUT L
TONE OUT R
TONE IN R
SEL ST
SEL DATA
SEL CK

0V 4.6V 4.4V 4.1V 0.2V 14.6V -14.6V 15.0V -15.0V



KR-V990D(K) (3/10)

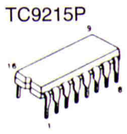
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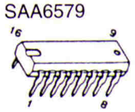
MODE	CARRIER	MODULATION		ANT INPUT
		FREQUENCY	DEVIATION	
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AM	1000(999)kHz	400Hz	MONO 30% MOD	60dB

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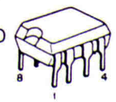
TC9215P



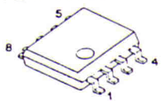
SAA6579



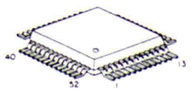
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M5223P
NJM4580D-D
NJM4580L
XL24C01AP



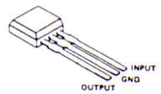
NJM4565M
NJM4580ED



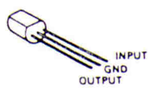
UPD16311



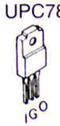
UPC78L05J



NJM78L05A
TA78L005AP



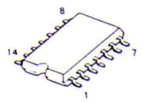
UPC7805AHF



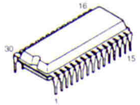
DA204U



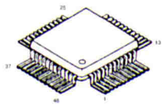
TC74HCU04AF
TC74HC74AF



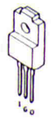
LA1836
LC7536



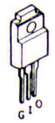
LC8904Q



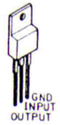
TA7805S



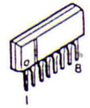
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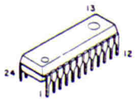
TA79005S



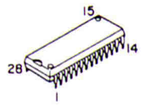
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NJM2082L
NJM4565L
NJM4565L-D



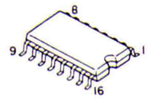
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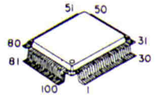
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NJU7312AL
NJU7313AL



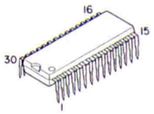
TC74HC157AF



PD4606A



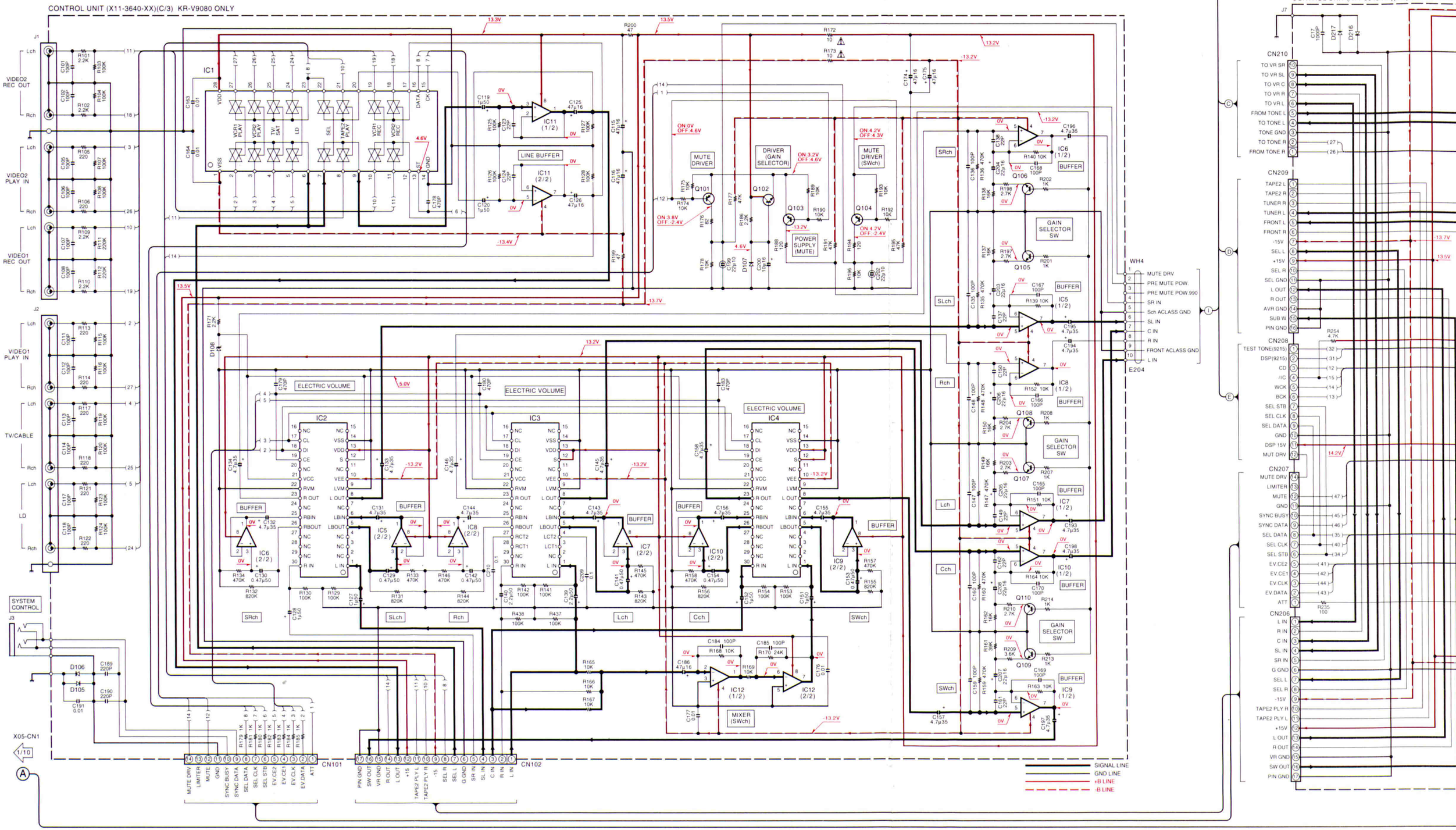
LC7536R

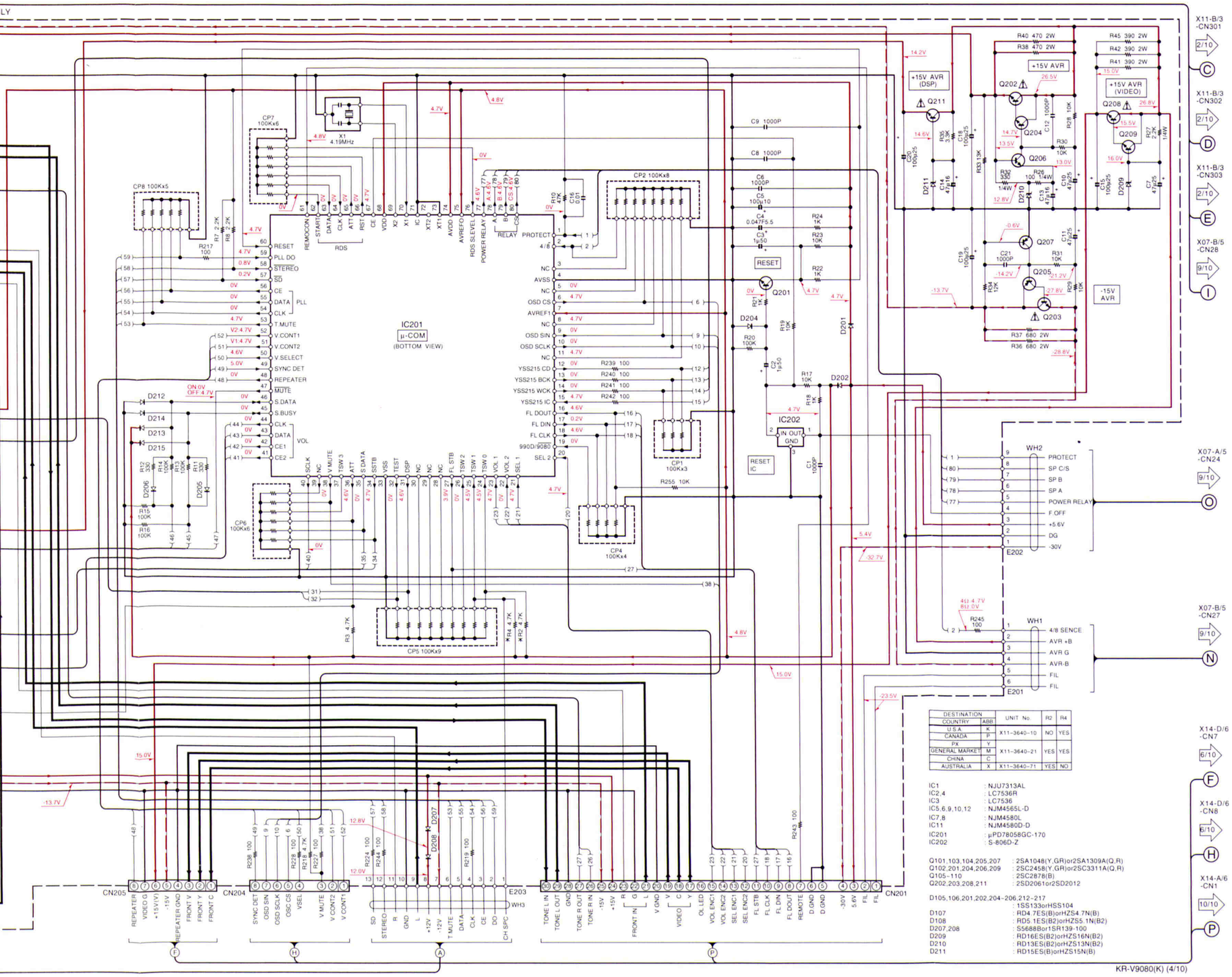


Y05-3070-10

KR-V990D/V9080

KENWOOD


CONTROL UNIT (X11-3640-XX)(C/3) KR-V9080 ONLY
CONTROL UNIT (X11-3640-XX)(A/3) KR-V9080 ON
VIDEO2 REC OUT
VIDEO2 PLAY IN
VIDEO1 REC OUT
VIDEO1 PLAY IN
TV/CABLE
LD
SYSTEM CONTROL
IC1
IC2
IC3
IC4
IC5 (2/2)
IC6 (2/2)
IC7 (2/2)
IC8 (2/2)
IC9 (2/2)
IC10 (2/2)
IC11 (1/2)
IC12 (1/2)
ELECTRIC VOLUME
LINE BUFFER
MUTE DRIVER
DRIVER (GAIN SELECTOR)
MUTE DRIVER (SWch)
POWER SUPPLY (MUTE)
GAIN SELECTOR SW
BUFFER
MIXER (SWch)
SRch
SLch
Rch
Lch
Cch
SWch
WH4
E204
CN101
CN102
CN210
CN209
CN208
CN207
CN206
X05-CN1
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). ⚠ 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 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

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DESTINATION		UNIT No.	R2	R4
COUNTRY	ABB			
U.S.A.	K	X11-3640-10	NO	YES
CANADA	P			
PX	Y			
GENERAL MARKET	M	X11-3640-21	YES	YES
CHINA	C			
AUSTRALIA	X	X11-3640-71	YES	NO

IC1 : NJU7313AL
IC2,4 : LC7536R
IC3 : LC7536
IC5,6,9,10,12 : NJM4565L-D
IC7,8 : NJM4580L
IC11 : NJM4580D-D
IC201 : μPD78058GC-170
IC202 : S-806D-Z

Q101,103,104,205,207 : 2SA1048(Y,GR)or2SA1309A(Q,R)
Q102,201,204,206,209 : 2SC2458(Y,GR)or2SC3311A(Q,R)
Q105-110 : 2SC2878(B)
Q202,203,208,211 : 2SD2061or2SD2012

D105,106,201,202,204-206,212-217 : 1SS133orHSS104
D107 : RD4.7ES(B)orHZS4.7N(B)
D108 : RD5.1ES(B2)orHZS5.1N(B2)
D207,208 : S5688Bor1SR139-100
D209 : RD16ES(B2)orHZS16N(B2)
D210 : RD13ES(B2)orHZS13N(B2)
D211 : RD15ES(B)orHZS15N(B)

Y05-3070-10

KR-V990D/V9080

KENWOOD

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❶

Ref. No	Add-ress	New Parts	Parts No.	Description	Desti-nation	Re-marks
			KR-V990D/V9080			
601	1A	*	A01-3271-01	METALLIC CABINET	YXEMC	
601	1A	*	A01-3283-01	METALLIC CABINET	KP	
602	1A		A09-0169-08	BATTERY COVER		
608	3A	*	A60-0799-22	PANEL	KPY	D
608	3A	*	A60-0801-22	PANEL	KPY	9
608	3A	*	A60-0802-22	PANEL	XMC	9
608	3A	*	A60-0830-22	PANEL	E	D
608	3A	*	A60-0893-22	PANEL	XMC	D
609	1A	*	A70-1038-05	REMO-CON ASSY (RC-R0903)		
615	3B	*	B01-0525-01	PANEL ESCUTCHEON	KPYXMC	
615	3B	*	B01-0527-01	PANEL ESCUTCHEON	E	
616	3A	*	B10-2171-02	FRONT GLASS	KPYXMC	D
616	3A	*	B10-2172-02	FRONT GLASS		9
616	3A	*	B10-2252-02	FRONT GLASS	E	D
617	3B	*	B11-0295-03	COLOR FILTER		
618	3A		B43-0302-04	KENWOOD BADGE		
-		*	B46-0092-43	WARRANTY CARD	KY	
-			B46-0096-53	WARRANTY CARD	X	
-			B46-0121-33	WARRANTY CARD	P	
-			B46-0197-00	QUESTIONNAIRE CARD	K	
-			B46-0310-03	WARRANTY CARD	E	
-		*	B46-0326-03	WARRANTY CARD	C	
-			B58-0964-13	CAUTION CARD (CAUTION UL)	KY	
-		*	B58-0965-13	CAUTION CARD (TX TYPE PL)	X	
-		*	B58-0966-13	CAUTION CARD (ELM TYPE PL)	EMC	
-		*	B58-0967-03	CAUTION CARD (P TYPE PL)	P	
-		*	B58-0968-04	CAUTION CARD	Y	
-			B59-1104-00	SERVICE DIRECTORY	Y	
-		*	B60-2390-10	INST.MANUAL (KR-V990D EN)	KPYXMC	D
-		*	B60-2391-10	INST.MANUAL (KR-V990D FR)	P	D
-		*	B60-2392-00	INST.MANUAL (KR-V990D C)	MC	D
-		*	B60-2393-10	INST.MANUAL (KR-V990D SP/IT)	E	D
-		*	B60-2394-00	INST.MANUAL (KR-V990D TAIWAN)	M	D
-		*	B60-2499-10	INST.MANUAL (KR-V990D FR/D)	E	D
-		*	B60-2500-10	INST.MANUAL (KR-V990D GER)	E	D
-		*	B60-2501-00	INST.MANUAL (KR-V990D SP)	M	D
-		*	B60-2503-10	I.MANUAL (CARD/KR-V9080 EN)		9
-		*	B60-2503-10	I.MANUAL (CARD/KR-V990D EN)	KPYXMC	D
-		*	B60-2505-10	I.MANUAL (CARD/KR-V990D D)	E	D
-		*	B60-2506-10	I.MANUAL (CARD/KR-V990D GER)	E	D
-		*	B60-2507-10	I.MANUAL (CARD/KR-V990D IT)	E	D
-		*	B60-2508-10	I.MANUAL (CARD/KR-V9080 SP)	M	9
-		*	B60-2508-10	I.MANUAL (CARD/KR-V990D SP)	EM	D
-		*	B60-2509-10	I.MANUAL (CARD/KR-V9080 FR)	P	9
-		*	B60-2509-10	I.MANUAL (CARD/KR-V990D FR)	PE	D
-		*	B60-2510-00	I.MANUAL (CARD/KR-V9080 C)	MC	9
-		*	B60-2510-00	I.MANUAL (CARD/KR-V990D C)	MC	D
-		*	B60-2512-10	INST.MANUAL (KR-V9080 EN)		9
-		*	B60-2513-10	INST.MANUAL (KR-V9080 FR)	P	9
-		*	B60-2514-00	INST.MANUAL (KR-V9080 SP)	M	9
-		*	B60-2515-00	INST.MANUAL (KR-V9080 C)	MC	9
-		*	B60-2516-00	INST.MANUAL (KR-V9080 TAIWAN)	M	9

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❷

Ref. No	Add-ress	New Parts	Parts No.	Description	Desti-nation	Re-marks
620	2A		E03-0115-05	AC PLUG ADAPTER	M	
⚠ 621	1D		E30-2592-15	AC POWER CORD	M	
⚠ 621	1D		E30-2739-05	AC POWER CORD	Y	
⚠ 621	1D		E30-2787-05	AC POWER CORD	KP	
⚠ 621	1D		E30-2788-05	AC POWER CORD	E	
⚠ 621	1D		E30-2790-05	AC POWER CORD	X	
⚠ 621	1D	*	E30-2825-05	AC POWER CORD	C	
625	1D	*	F07-0769-13	COVER		
⚠ 626	1D	*	F09-0100-05	FAN	KP	
⚠ 626	1D	*	F09-0102-05	FAN	YXEMC	
627	1C	*	F20-1462-14	INSULATING BOARD	YXEMC	
628	2D	*	F20-1464-13	INSULATING BOARD		
630	2D		G11-0132-04	SOFT TAPE (15X10X8)		
631	3A		G11-0155-14	SOFT TAPE (40X9X2)		
632	1D		G11-1052-04	SOFT TAPE		
634	1A	*	G11-1167-04	SOFT TAPE		
-		*	H10-7101-12	POLYSTYRENE FOAMED FIXTURE (L)		
-		*	H10-7102-02	POLYSTYRENE FOAMED FIXTURE (R)		
-		*	H13-0223-04	CARTON BOARD	X	
-			H25-0232-04	PROTECTION BAG (235X350X0.03)		
-			H25-0661-04	PROTECTION BAG		
-		*	H50-1675-14	ITEM CARTON CASE (KR-V990D)	KPYXE	D
-		*	H50-1676-14	ITEM CARTON CASE (KR-V990D)	M	D
-		*	H50-1678-14	ITEM CARTON CASE (KR-V9080)	KPYX	9
-		*	H50-1705-14	ITEM CARTON CASE (KR-V9080)	M	9
-		*	H50-1884-14	ITEM CARTON CASE (KR-V990D)	C	D
-		*	H50-1885-14	ITEM CARTON CASE (KR-V9080)	C	9
640	3C,3D	*	J02-1147-13	FOOT (D=46,H=18.5)		
641	3D		J19-3300-05	UNIT HOLDER		D
642	3C		J19-3324-15	UNIT HOLDER		
643	2D		J19-3325-05	UNIT HOLDER		
644	1C		J19-3385-05	UNIT HOLDER		D
645	3C	*	J19-3732-04	UNIT HOLDER		
⚠ 649	1D		J42-0083-05	POWER CORD BUSHING		
652	2A	*	J69-0087-08	ADHESIVE DOUBLE-COATED TAPE		
-			J61-0098-05	WIRE BAND		
-			J61-0307-05	WIRE BAND	MC	
655	2A	*	K27-2176-04	KNOB (BUTTON)		
656	3A	*	K29-6249-04	KNOB		
657	3A	*	K29-6251-04	KNOB		
660	2A	*	L07-2038-05	POWER TRANSFORMER	KP	D
660	2A	*	L07-2039-05	POWER TRANSFORMER	Y	D
660	2A	*	L07-2040-05	POWER TRANSFORMER	E	D
660	2A	*	L07-2041-05	POWER TRANSFORMER	X	D
660	2A	*	L07-2043-05	POWER TRANSFORMER	KP	9
660	2A	*	L07-2044-05	POWER TRANSFORMER	Y	9
660	2A	*	L07-2064-05	POWER TRANSFORMER	X	9
660	2A	*	L07-2103-05	POWER TRANSFORMER	M	D
660	2A	*	L07-2104-05	POWER TRANSFORMER	C	D
660	2A	*	L07-2145-05	POWER TRANSFORMER	C	9
660	2A	*	L07-2147-05	POWER TRANSFORMER	M	9
665	2A		T90-0820-05	LOOP ANTENNA		

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❸

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666	2A		J19-3645-05	ANTENNA STAND		
667	1A	*	T90-0810-05	JEAD WIRE ANTENNA		
670	2A	*	W02-2542-05	TRANSMITTING ASSY		
			TUNER UNIT (X05-4532-75) EUROPE type only			
C1,2			CK73FB1H103K	CHIP C 0.010UF K		
C3			CE04LW1V100M	ELECTRO 10UF 35WV		
C4			CK73FB1E473K	CHIP C 0.047UF K		
C5			CE04LW1V100M	ELECTRO 10UF 35WV		
C6			CK73FB1E473K	CHIP C 0.047UF K		
C7			CE04LW1V100M	ELECTRO 10UF 35WV		
C8			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C9			CE04LW1HR47M	ELECTRO 0.47UF 50WV		
C10			CE04LW1H2R2M	ELECTRO 2.2UF 50WV		
C11			CE04LW1HR47M	ELECTRO 0.47UF 50WV		
C12			CK73FB1E473K	CHIP C 0.047UF K		
C13			CC73FCH1H220J	CHIP C 22PF J		
C14			CE04LW1A101M	ELECTRO 100UF 10WV		
C15			CK73FB1H472K	CHIP C 4700PF K		
C16			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C17 ,18			CE04LW1V100M	ELECTRO 10UF 35WV		
C19 ,20			CQ92FM1H273J	MYLAR 0.027UF J		
C21			CK73FB1H103K	CHIP C 0.010UF K		
C22			CC73FSL1H101J	CHIP C 100PF J		
C23 ,24			CE04LW1H2R2M	ELECTRO 2.2UF 50WV		
C25 ,26			CK73FB1H562K	CHIP C 5600PF K		
C27			CK73FB1E473K	CHIP C 0.047UF K		
C28			CC73FSL1H150J	CHIP C 15PF J		
C29			CE04LW1H0R1M	ELECTRO 0.1UF 50WV		
C30			CE04LW1C470M	ELECTRO 47UF 16WV		
C31			CK73FB1E473K	CHIP C 0.047UF K		
C32			CK73FB1H103K	CHIP C 0.010UF K		
C33			CC73FCH1H270J	CHIP C 27PF J		
C34			CC73FCH1H220J	CHIP C 22PF J		
C35 -38			CC73FSL1H101J	CHIP C 100PF J		
C39			CE04LW1C470M	ELECTRO 47UF 16WV		
C40			CQ92FM1H223J	MYLAR 0.022UF J		
C41			CE04HW1H2R2M	NP-ELEC 2.2UF 50WV		
C42 ,43			CK73FB1H103K	CHIP C 0.010UF K		
C44			CE04LW1A470M	ELECTRO 47UF 10WV		
C45			CE04LW1C470M	ELECTRO 47UF 16WV		
C46			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C47			CK73FB1H103K	CHIP C 0.010UF K		
C48			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C49			CK73FB1H103K	CHIP C 0.010UF K		
C50			CC73FCH1H330J	CHIP C 33PF J		
C51 -54			CK73FB1H102K	CHIP C 1000PF K		
C55			CK73FB1H222K	CHIP C 2200PF K		
C56			CC73FCH1H060D	CHIP C 6.0PF D		
C57			CC73FCH1H220J	CHIP C 22PF J		
C58			CK73FB1E473K	CHIP C 0.047UF K		
C60			CC73FSL1H101J	CHIP C 100PF J		
C61			C91-0745-05	CERAMIC 100PF K		
C62			CC45FSL1H020C	CERAMIC 2.0PF C		
C63			CC45SL1H101J	CERAMIC 100PF J		

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❹

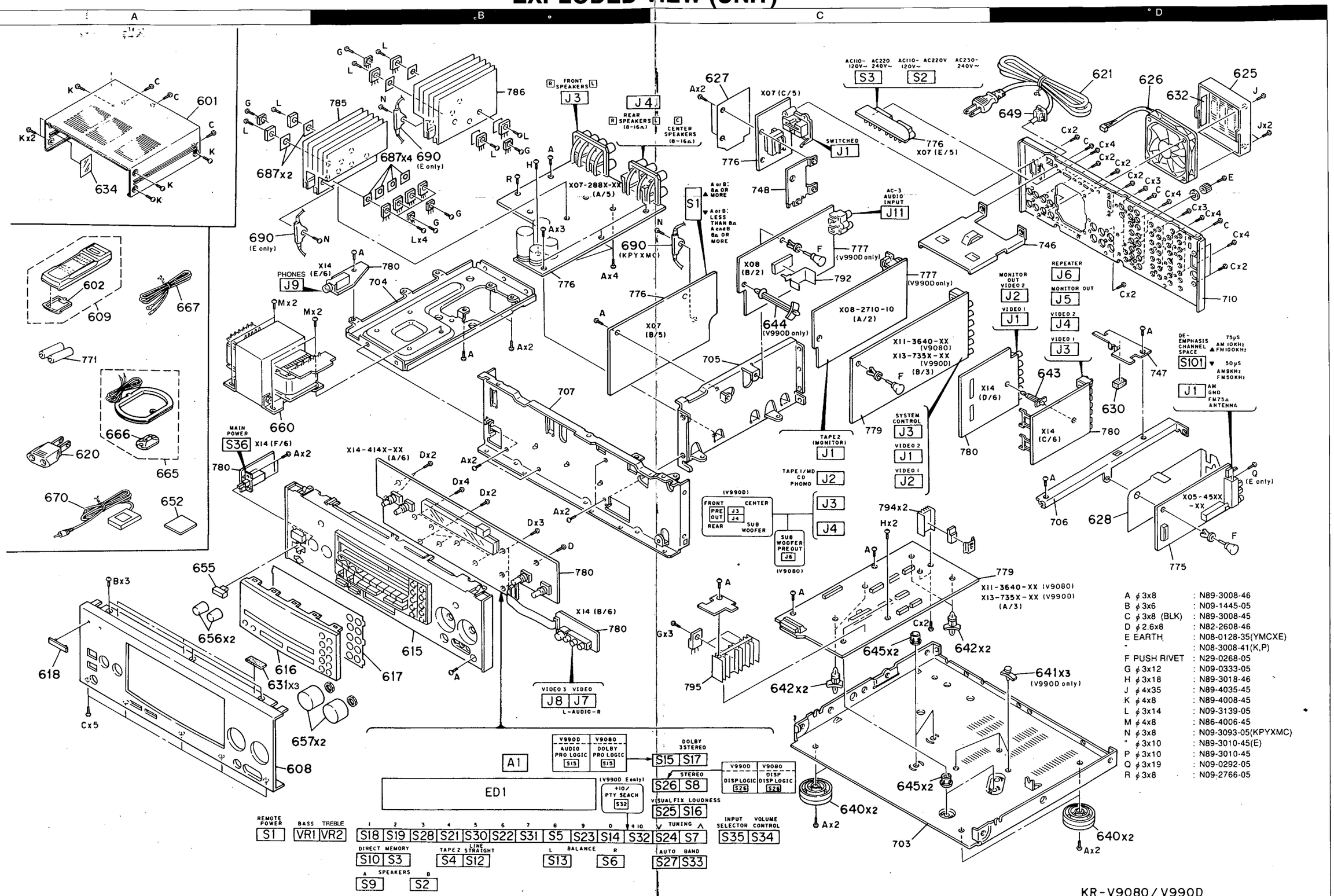
Ref. No	Add-ress	New Parts	Parts No.	Description	Desti-nation	Re-marks
CN1			E40-4234-05	FLAT CABLE CONNECTOR (13P)		
CN2			E40-4295-05	FLAT CABLE CONNECTOR (5P)		
J1			E70-0052-05	LOCK TERMINAL BOARD(ANTENNA)		
CF1 ,2			L72-0536-05	CERAMIC FILTER		
L1,2			L79-1219-05	LC FILTER		
L3			L30-0910-05	FM IFT		
L5			L79-0125-05	LC FILTER		
L6			L39-1328-05	COMBINATION COIL		
L7			L30-0467-05	AM IFT		
L8,9			L40-1091-17	SMALL FIXED INDUCTOR(1UH)		
L11			L40-1001-17	SMALL FIXED INDUCTOR(10UH,K)		
X1		*	L77-2159-05	CRYSTAL RESONATOR(7.2MHZ)		
X2			L78-0295-05	RESONATOR (456KHZ)		
R1			RK73FB2A681J	CHIP R 680 J 1/10W		
R2			RK73FB2A332J	CHIP R 3.3K J 1/10W		
R3			RK73FB2A331J	CHIP R 330 J 1/10W		
R4			RK73FB2A100J	CHIP R 10 J 1/10W		
R5			RK73FB2A101J	CHIP R 100 J 1/10W		
R6			RK73FB2A331J	CHIP R 330 J 1/10W		
R7			RK73FB2A392J	CHIP R 3.9K J 1/10W		
R8			RK73FB2A332J	CHIP R 3.3K J 1/10W		
R9			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R10			RK73FB2A473J	CHIP R 47K J 1/10W		
R11			RK73FB2A562J	CHIP R 5.6K J 1/10W		
R12			RK73FB2A302J	CHIP R 3.0K J 1/10W		
R13			RK73FB2A393J	CHIP R 39K J 1/10W		
R14			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R15			RK73FB2A473J	CHIP R 47K J 1/10W		
R16			RK73FB2A104J	CHIP R 100K J 1/10W		
R17			RK73FB2A392J	CHIP R 3.9K J 1/10W		
R18			RK73FB2A333J	CHIP R 33K J 1/10W		
R19 ,20			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R21 ,22			RK73FB2A122J	CHIP R 1.2K J 1/10W		
R23 ,24			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R25			RK73FB2A561J	CHIP R 560 J 1/10W		
R26			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R27			RK73FB2A473J	CHIP R 47K J 1/10W		
R28			RK73FB2A821J	CHIP R 820 J 1/10W		
R29 ,30			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R31			RK73FB2A822J	CHIP R 8.2K J 1/10W		
R32 -35			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R36 -38			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R39			RK73FB2A822J	CHIP R 8.2K J 1/10W		
R40			RK73FB2A471J	CHIP R 470 J 1/10W		
R41			RK73FB2A821J	CHIP R 820 J 1/10W		
R42			RD14NB2E101J	RD 100 J 1/4W		
R43			RK73FB2A103J	CHIP R 10K J 1/10W		
R44			RK73EB2B221J	CHIP R 220 J 1/8W		
R45			RK73FB2A122J	CHIP R 1.2K J 1/10W		
R46			RK73FB2A750J	CHIP R 75 J 1/10W		
R47			RK73FB2A681J	CHIP R 680 J 1/10W		
R48			RK73FB2A621J	CHIP R 620 J 1/10W		
R49			RK73FB2A104J	CHIP R 100K J 1/10W		
R50			RK73FB2A471J	CHIP R 470 J 1/10W		

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KR-V990D/V9080

EXPLODED VIEW (UNIT)



A	φ3x8	: N89-3008-46
B	φ3x6	: N09-1445-05
C	φ3x8 (BLK)	: N89-3008-45
D	φ2.6x8	: N82-2608-46
E	EARTH	: N08-0128-35(YMCXE)
"		: N08-3008-41(K,P)
F	PUSH RIVET	: N29-0268-05
G	φ3x12	: N09-0333-05
H	φ3x18	: N89-3018-46
J	φ4x35	: N89-4035-45
K	φ4x8	: N89-4008-45
L	φ3x14	: N09-3139-05
M	φ4x8	: N86-4006-45
N	φ3x8	: N09-3093-05(KPYXMC)
"	φ3x10	: N89-3010-45(E)
P	φ3x10	: N89-3010-45
Q	φ3x19	: N09-0292-05
R	φ3x8	: N09-2766-05

KR-V9080/V990D

Parts with the exploded numbers larger than 700 are not supplied.

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Teile ohne **Parts No.** werden nicht geliefert.

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Ref. No	Address	New Parts	Parts No.	Description			Destination	Remarks
R51			RK73FB2A181J	CHIP R 180	J	1/10W		
R52			RK73FB2A104J	CHIP R 100K	J	1/10W		
R53			RK73FB2A103J	CHIP R 10K	J	1/10W		
R54 ,55			RK73FB2A223J	CHIP R 22K	J	1/10W		
R56			RK73FB2A104J	CHIP R 100K	J	1/10W		
R57			RK73FB2A473J	CHIP R 47K	J	1/10W		
R58			RK73FB2A104J	CHIP R 100K	J	1/10W		
R61			RK73FB2A122J	CHIP R 1.2K	J	1/10W		
R62			RK73FB2A123J	CHIP R 12K	J	1/10W		
R63			RK73FB2A122J	CHIP R 1.2K	J	1/10W		
R64			RK73FB2A123J	CHIP R 12K	J	1/10W		
R65			RK73FB2A683J	CHIP R 68K	J	1/10W		
R66			RK73FB2A473J	CHIP R 47K	J	1/10W		
R67			RK73FB2A104J	CHIP R 100K	J	1/10W		
R69			RK73FB2A102J	CHIP R 1.0K	J	1/10W		
R70			RK73FB2A104J	CHIP R 100K	J	1/10W		
R71			RK73FB2A102J	CHIP R 1.0K	J	1/10W		
R77			RK73EB2B103J	CHIP R 10K	J	1/8W		
R78			RD14NB2E470J	RD 47	J	1/4W		
R79			RS14KB3D221J	FL-PROOF RS 220	J	2W		
R81			RK73FB2A563J	CHIP R 56K	J	1/10W		
R84			RK73FB2A101J	CHIP R 100	J	1/10W		
W101-106			R92-0670-05	CHIP R 0 OHM				
W108-112			R92-0670-05	CHIP R 0 OHM				
W114-119			R92-0670-05	CHIP R 0 OHM				
W121,122			R92-0670-05	CHIP R 0 OHM				
W201-203			R92-0679-05	CHIP R 0 OHM				
W207,208			R92-0679-05	CHIP R 0 OHM				
D1,2			HSS104	DIODE				
D1,2			1SS133	DIODE				
D3			HZS5.1N(B2)	ZENER DIODE				
D3			RD5.1ES(B2)	ZENER DIODE				
D4			HZS8.2N(B2)	ZENER DIODE				
D4			RD8.2ES(B2)	ZENER DIODE				
D5			HSS104	DIODE				
D5			1SS133	DIODE				
D6			HZS3.3N(B2)	ZENER DIODE				
D6			RD3.3ES(B2)	ZENER DIODE				
D7			MA111	DIODE				
D8			1SS268	DIODE				
D9			MA111	DIODE				
IC1			LA1836	ANALOGUE IC				
IC2			LC7218	IC(PLL FREQUENCY SYNTHESIZER)				
IC3			M5223P	IC(OP AMP X2)				
Q1			2SC2714(R,O)	TRANSISTOR				
Q2			2SC1845(F,E)	TRANSISTOR				
Q3-5			2SC4081(R,S)	TRANSISTOR				
Q7,8			2SA1576(R,S)	TRANSISTOR				
Q9			2SD863(E,F)	TRANSISTOR				
Q10			2SA1576(R,S)	TRANSISTOR				
Q11 ,12			2SD1757K	TRANSISTOR				
Q16			2SC4081(R,S)	TRANSISTOR				
Q17			2SA1576(R,S)	TRANSISTOR				
Q18			2SC4081(R,S)	TRANSISTOR				

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Ref. No	Address	New Parts	Parts No.	Description	Destination	Remarks
A1			W02-2509-05	FM FRONT-END ASSY		
TUNER UNIT (X05-454X-XX) Except for EUROPE type						
C1,2			CK73FB1H103K	CHIP C 0.010UF K		
C4			CE04LW1A470M	ELECTRO 47UF 10WV		
C5			CK73FB1H103K	CHIP C 0.010UF K		
C8			CK73FB1H103K	CHIP C 0.010UF K		
C10			CK73FB1H102K	CHIP C 1000PF K		
C11			CE04LW1H4R7M	ELECTRO 4.7UF 50WV		
C13			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C14			CE04LW1H2R2M	ELECTRO 2.2UF 50WV		
C21 ,22			CQ92FM1H163J	MYLAR 0.016UF J		YXMC
C21 ,22			CQ92FM1H243J	MYLAR 0.024UF J		KP
C23			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C24			CE04LW1H3R3M	ELECTRO 3.3UF 50WV		
C25			CE04LW1V100M	ELECTRO 10UF 35WV		
C27			CK73FB1E473K	CHIP C 0.047UF K		
C28			CE04LW1V100M	ELECTRO 10UF 35WV		
C31			CE04LW1A470M	ELECTRO 47UF 10WV		
C32			CK73FB1H103K	CHIP C 0.010UF K		
C33			CC73FCH1H270J	CHIP C 27PF J		
C34			CC73FCH1H220J	CHIP C 22PF J		
C35 -38			CK73FB1H471K	CHIP C 470PF K		
C39			CE04LW1C470M	ELECTRO 47UF 16WV		
C40			CK73FB1H223K	CHIP C 0.022UF K		
C41			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C42 ,43			CK73FB1H103K	CHIP C 0.010UF K		
C50			C91-0769-05	CERAMIC 0.010UF K		
C51			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C52			CE04LW1C470M	ELECTRO 47UF 16WV		
C57			CC73FSL1H220J	CHIP C 22PF J		
C65			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C66			CK73FB1H102K	CHIP C 1000PF K		
C71			CE04LW1V100M	ELECTRO 10UF 35WV		
C72			CE04LW1C470M	ELECTRO 47UF 16WV		
C103-106			CE04LW1HR47M	ELECTRO 0.47UF 50WV		
C107			CK73FB1E473K	CHIP C 0.047UF K		
C112			CC73FSL1H101J	CHIP C 100PF J		
C114			CK73FB1H681K	CHIP C 680PF K		
C115,116			CC73FSL1H101J	CHIP C 100PF J		
C121,122			CE04LW1C470M	ELECTRO 47UF 16WV		
C135,136			CQ92FM1H682J	MYLAR 6800PF J		YMC
C182			CC73FSL1H150J	CHIP C 15PF J		
CN1			E40-4234-05	FLAT CABLE CONNECTOR (13P)		
J1			E70-0052-05	LOCK TERMINAL BOARD(ANTENNA)		
CF1 ,2			L72-0531-05	CERAMIC FILTER		
CF3			L72-0574-05	CERAMIC FILTER (10.7MHZ)		
L7			L30-0467-05	AM IFT		
L10			L40-1091-17	SMALL FIXED INDUCTOR(1UH)		
L11			L40-1021-14	SMALL FIXED INDUCTOR(1.0MH,K)		
L12			L40-1091-17	SMALL FIXED INDUCTOR(1UH)		
L103			L39-1328-05	COMBINATION COIL		
L106			L40-1091-17	SMALL FIXED INDUCTOR(1UH)		
X1		*	L77-2159-05	CRYSTAL RESONATOR(7.2MHZ)		
X2			L78-0295-05	RESONATOR (456KHZ)		

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Ref. No	Address	New Parts	Parts No.	Description			Destination	Remarks
R1			RK73FB2A681J	CHIP R	680	J 1/10W		
R2			RK73FB2A332J	CHIP R	3.3K	J 1/10W		
R3			RK73FB2A331J	CHIP R	330	J 1/10W		
R4			RK73FB2A470J	CHIP R	47	J 1/10W		
R6			RK73FB2A331J	CHIP R	330	J 1/10W		
⚠ R11			RS14KB3A820J	FL-PROOF RS	82	J 1W		
R15			RK73FB2A391J	CHIP R	390	J 1/10W		
R19			RK73FB2A332J	CHIP R	3.3K	J 1/10W		
R21 ,22			RK73FB2A393J	CHIP R	39K	J 1/10W		
R24			RK73FB2A102J	CHIP R	1.0K	J 1/10W		
R25			RK73FB2A103J	CHIP R	10K	J 1/10W		
R31			RS14KB3D221J	FL-PROOF RS	220	J 2W		
R32 -37			RK73FB2A102J	CHIP R	1.0K	J 1/10W		
R38			RK73FB2A221J	CHIP R	220	J 1/10W		
R39			RK73FB2A822J	CHIP R	8.2K	J 1/10W		
R40			RK73FB2A102J	CHIP R	1.0K	J 1/10W		
R42			RD14NB2E101J	RD	100	J 1/4W		
R43			RK73FB2A103J	CHIP R	10K	J 1/10W		
R52			RK73FB2A472J	CHIP R	4.7K	J 1/10W		
R64			RK73FB2A104J	CHIP R	100K	J 1/10W		
R101,102			RK73FB2A333J	CHIP R	33K	J 1/10W		
R105,106			RK73FB2A123J	CHIP R	12K	J 1/10W		
R111			RD14NB2E470J	RD	47	J 1/4W		
R118			RK73FB2A122J	CHIP R	1.2K	J 1/10W		
R119			RK73FB2A123J	CHIP R	12K	J 1/10W		
R122			RK73FB2A122J	CHIP R	1.2K	J 1/10W		
R123			RK73FB2A123J	CHIP R	12K	J 1/10W		
R124			RK73FB2A103J	CHIP R	10K	J 1/10W		
R125,126			RK73FB2A332J	CHIP R	3.3K	J 1/10W		
⚠ R127,128			RD14NB2E101J	RD	100	J 1/4W		
R131,132			RK73FB2A393J	CHIP R	39K	J 1/10W		
R138,139			RK73FB2A561J	CHIP R	560	J 1/10W	YMC	
R140,141			RK73FB2A473J	CHIP R	47K	J 1/10W	YMC	
R151			RK73FB2A821J	CHIP R	820	J 1/10W		
R152			RK73FB2A473J	CHIP R	47K	J 1/10W		
R153			RK73FB2A472J	CHIP R	4.7K	J 1/10W		
R156,157			RK73FB2A102J	CHIP R	1.0K	J 1/10W		
R167			RK73FB2A104J	CHIP R	100K	J 1/10W		
W46			R92-0670-05	CHIP R	0 OHM			
W48			R92-0670-05	CHIP R	0 OHM			
S101			S62-0034-05	SLIDE SWITCH (DE-EMPHASIS)			YMC	
D3			HZS5.1N(B2)	ZENER DIODE				
D3			RD5.1ES(B2)	ZENER DIODE				
D4			HZS3.3N(B2)	ZENER DIODE				
D4			RD3.3ES(B2)	ZENER DIODE				
D7			MA111	DIODE				
D8			HSS104	DIODE				
D8			1SS133	DIODE				
D11			HZS8.2N(B2)	ZENER DIODE				
D11			RD8.2ES(B2)	ZENER DIODE				
D111,112			MA111	DIODE				
IC1			LA1831A-KEN	ANALOGUE IC				
IC2			LC7218	IC(PLL FREQUENCY SYNTHESIZER)				
IC12			NJM4565D	IC(OP AMP X2)				

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Ref. No	Address	New Parts	Parts No.	Description			Destination	Remarks
Q1			2SC2714(R,O)	TRANSISTOR				
Q2			2SC1845(F,E)	TRANSISTOR				
Q2			2SC2389S(S,E)	TRANSISTOR				
Q3			2SC1740S(Q,R)	TRANSISTOR				
Q3			2SC2785(F,E)	TRANSISTOR				
Q7			2SC2412K	TRANSISTOR				
⚠ Q11			2SD863(E,F)	TRANSISTOR				
Q102			2SA1037K	TRANSISTOR				
Q104			2SA1037K	TRANSISTOR				
Q107,108			2SC2412K	TRANSISTOR			YMC	
Q109,110			2SC2412K	TRANSISTOR				
Q111			2SA1037K	TRANSISTOR				
DT1			W02-2512-05	FM FRONT-END ASSY				

MAIN AMP UNIT (X07-288X-XX)

⚠ C1			C91-1488-05	MF	6800PF	250VAC		
C2			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C3			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C4			CE04DW1E331M	ELECTRO	330UF	25WV		
C5			CE04KW1A470M	ELECTRO	47UF	10WV		
C6			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C9		*	C90-3379-05	ELECTRO	2200UF	16WV		D
C12			CE04KW1V102M	ELECTRO	1000UF	35WV		
C13			CE04KW1V222M	ELECTRO	2200UF	35WV		
C14 ,15			C91-1416-05	MP	0.010UF	250VDC	XEMC	
C16 ,17			C91-1422-05	MP	0.10UF	250WV	XEMC	
C20			CE04DW1J101M	ELECTRO	100UF	63WV		
C21			CE04KW1V220M	ELECTRO	22UF	35WV		
C22			CE04KW1C101M	ELECTRO	100UF	16WV		
C23			CE04KW1V220M	ELECTRO	22UF	35WV		
C25 ,26		*	C90-3609-05	ELECTRO	8200UF	80WV		D
C25 ,26		*	C90-3610-05	ELECTRO	7500UF	80WV		9
C27 ,28		*	C90-3611-05	ELECTRO	3300UF	63WV		
C29 -32		*	CQ93FMG1H101K	MYLAR	100PF	K		
C33 ,34			CE04KW1C100M	ELECTRO	10UF	16WV		
C35 ,36			CC45FSL1H271J	CERAMIC	270PF	J		
C39 ,40			CE04KW1A470M	ELECTRO	47UF	10WV		
C43 ,44			CK45FF1H103Z	CERAMIC	0.010UF	Z		D
C45 ,46			CC45FSL1H680J	CERAMIC	68PF	J		
C47 ,48			CK45FF1H103Z	CERAMIC	0.010UF	Z		D
C49 ,50			CC45FSL1H220J	CERAMIC	22PF	J		
C51 ,52		*	CC45FSL2H020C	CERAMIC	2.0PF	C		
C53 -56			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C57			CC45FSL1H150J	CERAMIC	15PF	J		
C58 ,59			CC45FSL1H100D	CERAMIC	10PF	D		
C60			CK45FE2H103P	CERAMIC	0.010UF	P		
C61 ,62		*	CQ93FMG1H101K	MYLAR	100PF	K		
C63			CE04KW1C100M	ELECTRO	10UF	16WV		
C64			CK45FE2H103P	CERAMIC	0.010UF	P		
C65			CC45FSL1H271J	CERAMIC	270PF	J		
C66			CK45FE2H103P	CERAMIC	0.010UF	P		
C68			CK45FE2H103P	CERAMIC	0.010UF	P		
C69			CE04KW1A470M	ELECTRO	47UF	10WV		
C70			CK45FE2H103P	CERAMIC	0.010UF	P		
C72			CK45FE2H103P	CERAMIC	0.010UF	P		

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Ref. No	Address	New Parts	Parts No.	Description			Destination	Remarks
C74			CK45FE2H103P	CERAMIC	0.010UF	P		
C75			CC45FSL1H680J	CERAMIC	68PF	J		
C76			CK45FE2H103P	CERAMIC	0.010UF	P		
C81			CC45FSL2H180J	CERAMIC	18PF	J		
C91 ,92			CE04KW1C100M	ELECTRO	10UF	16WV		
C93 ,94			CC45FSL1H271J	CERAMIC	270PF	J		
C95 ,96			CC45FSL1H101J	CERAMIC	100PF	J		
C97 ,98			CE04KW1A470M	ELECTRO	47UF	10WV		
C99 ,100			CC45FSL1H221J	CERAMIC	220PF	J	E	
C103,104			CC45FSL1H680J	CERAMIC	68PF	J		
C105,106			CC45FSL2H220J	CERAMIC	22PF	J		
C107-110			CC45FSL2H680J	CERAMIC	68PF	J		
C111			CE04KW2A470M	ELECTRO	47UF	100WV		
C112			CE04KW2A101M	ELECTRO	100UF	100WV		
C113			CE04KW2A100M	ELECTRO	10UF	100WV		
C114			CE04KW2A470M	ELECTRO	47UF	100WV		
C115			CQ93FMG1H152J	MYLAR	1500PF	J		
C116			CQ93FMG1H103J	MYLAR	0.010UF	J		
C117			CQ93FMG1H682J	MYLAR	6800PF	J		
C118			CQ93FMG1H472J	MYLAR	4700PF	J		
C119			CQ93FMG1H103J	MYLAR	0.010UF	J		
C120			CQ93FMG1H152J	MYLAR	1500PF	J		
C121			CQ93FMG1H472J	MYLAR	4700PF	J		
C122			CQ93FMG1H682J	MYLAR	6800PF	J		
C123			CQ93FMG1H152J	MYLAR	1500PF	J		
C124			CQ93FMG1H472J	MYLAR	4700PF	J		
C125		*	CQ93FMG1H271K	MYLAR	270PF	K		
C126			CQ93FMG1H471J	MYLAR	470PF	J		
C127-130			CC45FSL1H101J	CERAMIC	100PF	J		9
C131-134			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C135,136			CQ93FMG1H104J	MYLAR	0.10UF	J		
C137			CC45FSL1H101J	CERAMIC	100PF	J		9
C137		*	CQ93FMG1H101K	MYLAR	100PF	K		D
C139-142			CQ93FMG1H562J	MYLAR	5600PF	J	E	
C161			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C163			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C165			CQ93FMG1H104J	MYLAR	0.10UF	J		
C166			CC45FSL1H101J	CERAMIC	100PF	J		9
C166		*	CQ93FMG1H101K	MYLAR	100PF	K		D
C168,169			CC45FSL1H101J	CERAMIC	100PF	J		9
C168,169		*	CQ93FMG1H101K	MYLAR	100PF	K		D
C170			CQ93FMG1H822J	MYLAR	8200PF	J	E	
C191-194			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C195,196			CQ93FMG1H104J	MYLAR	0.10UF	J		
C197,198			CK45FE2H103P	CERAMIC	0.010UF	P		
C199,200			CQ93FMG1H682J	MYLAR	6800PF	J	E	
C203			CE04KW1V101M	ELECTRO	100UF	35WV		
C204			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C211			CQ93FMG1H104J	MYLAR	0.10UF	J		
C212-214			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C221			CE04KW1A470M	ELECTRO	47UF	10WV		
C222			CE04KW1H100M	ELECTRO	10UF	50WV		
C223			CE04KW1E470M	ELECTRO	47UF	25WV		
C230			CQ93FMG1H104J	MYLAR	0.10UF	J		
C231			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		

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Ref. No	Address	New Parts	Parts No.	Description			Destination	Remarks
C232			CE04KW0J221M	ELECTRO	220UF	6.3WV		
C233			CQ93FMG1H104J	MYLAR	0.10UF	J		
C234,235			CK45FE2H103P	CERAMIC	0.010UF	P		
C238,239		*	CQ93FMG1H151K	MYLAR	150PF	K		
C245		*	CQ93FMG1H121K	MYLAR	120PF	K		
C246-250			CQ93FMG1H102J	MYLAR	1000PF	J		
C251,252		*	CQ93FMG1H101K	MYLAR	100PF	K		D
C253			CQ93FMG1H104J	MYLAR	0.10UF	J		
CN21			E40-4245-05	PIN ASSY	(2P)			
⚠ CN22		*	E40-3385-05	PIN ASSY	(2P)			
CN23			E40-4294-05	FLAT CABLE CONNECTOR (4P)				
CN24			E40-4807-05	PIN ASSY	(9P)			
CN26			E40-4293-05	FLAT CABLE CONNECTOR (3P)				
CN27			E40-4233-05	FLAT CABLE CONNECTOR (8P)				D
CN27			E40-4296-05	FLAT CABLE CONNECTOR (8P)				9
CN28			E40-4284-05	FLAT CABLE CONNECTOR (10P)				
CN29			E40-3246-05	PIN ASSY	(2P)			
CN30			E40-3247-05	PIN ASSY	(3P)			
CN31		*	E40-9830-05	SOCKET FOR PIN ASSY (14P)				
CN32		*	E40-9847-05	PIN ASSY	(14P)			
CN33		*	E40-9830-05	SOCKET FOR PIN ASSY (14P)				
CN34		*	E40-9847-05	PIN ASSY	(14P)			
CN35			E40-0211-05	PIN ASSY	(2P)			
CN37			E40-0211-05	PIN ASSY	(2P)			
⚠ J1		*	E03-0148-05	AC OUTLET	(SWITCHED)		KPY	
⚠ J1			E03-0149-05	AC OUTLET	(SWITCHED)		EM	
⚠ J1		*	E03-0325-05	AC OUTLET	(SWITCHED)		X	
⚠ J1		*	E03-0330-05	AC OUTLET	(SWITCHED)		C	
J3			E70-0018-05	SCREW TERMINAL BOARD(FRONT.A,B)			KP	
J3		*	E70-0063-05	SCREW TERMINAL BOARD(FRONT.A,B)			YXEMC	
J4			E70-0049-05	SCREW TERMINAL BOARD(CENT/REAR)			KP	
J4		*	E70-0064-05	SCREW TERMINAL BOARD(CENT/REAR)			YXEMC	
687	1A		F20-1322-15	INSULATING BOARD				
⚠ F1			F05-5025-05	FUSE (SEMKO)	(250V T5A L)		YXEMC	
⚠ F1		*	F50-0078-05	FUSE(5X20)	(125V 10A)		KP	
⚠ F2			F05-2525-05	FUSE (SEMKO)	(250V T2.5AL)		E	
⚠ F2			F05-5025-05	FUSE (SEMKO)	(250V T5A L)		YM	
⚠ F3,4		*	F50-0078-05	FUSE(5X20)	(125V 10A)		KP	
⚠ F5,6			F05-4025-05	FUSE (SEMKO)	(250V T4A L)		YXEMC	
⚠ F5,6		*	F50-0074-05	FUSE(5X20)	(125V 5A)		KP	
⚠ F7,8			F04-2025-05	FUSE (UL)	(250V 2A)		KP	
⚠ F7,8			F05-1623-05	FUSE (SEMKO)	(250V T1.6AL)		YXEMC	
⚠ F9			F05-1623-05	FUSE (SEMKO)	(250V T1.6AL)		YXEMC	D
⚠ F9			F05-1628-05	FUSE (UL)	(250V 1.6A)		KP	D
CN1 ,2			J13-0075-05	FUSE CLIP				
CN3 ,4			J13-0075-05	FUSE CLIP			YM	9
CN5 -8			J13-0075-05	FUSE CLIP			KP	
CN9 -16			J13-0075-05	FUSE CLIP				
CN17,18			J13-0075-05	FUSE CLIP				D
J11 -13			J11-0808-05	WIRE CLAMPER				
L1-5			L39-0085-05	PHASE COMPENSATION COIL				
⚠ T1			L07-0864-05	POWER TRANSFORMER			KP	
⚠ T1			L07-0865-05	POWER TRANSFORMER			YM	

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PARTS LIST

KR-V990D/V9080

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Ref. No	Address	New Parts	Parts No.	Description				Destination	Remarks
⚠ T1			L07-0866-05	POWER TRANSFORMER				X	
⚠ T1			L07-0867-05	POWER TRANSFORMER				E	
⚠ T1		*	L07-2114-05	POWER TRANSFORMER				C	
CP1 -3			R90-0888-05	MULTI-COMP	0.33X2	J	5W		
CP4 ,5			R90-0186-05	MULTI-COMP	0.47X2	K	5W		
⚠ R1			R92-1769-05	CARBON	3.3M	J	1/2W	KP	
⚠ R6			RD14NB2E4R7J	RD	4.7	J	1/4W		
⚠ R8			RD14NB2E221J	RD	220	J	1/4W		
⚠ R9			RD14NB2E4R7J	RD	4.7	J	1/4W		
⚠ R13			RD14NB2E151J	RD	150	J	1/4W		
⚠ R14 -16			RD14NB2E470J	RD	47	J	1/4W		
R47 -50			RD14NB2E221J	RD	220	J	1/4W		
R57 ,58			RD14NB2E101J	RD	100	J	1/4W		
R77			RD14NB2E221J	RD	220	J	1/4W		
R79			RD14NB2E221J	RD	220	J	1/4W		
R87			RD14NB2E101J	RD	100	J	1/4W		
R107-110			RD14NB2E221J	RD	220	J	1/4W		
R113,114			RD14NB2E100J	RD	10	J	1/4W	KPXEC	
R113,114			RD14NB2E330J	RD	33	J	1/4W	YM	
R117			RD14NB2E100J	RD	10	J	1/4W	KPXEC	
R117			RD14NB2E330J	RD	33	J	1/4W	YM	
R119,120			RD14NB2E101J	RD	100	J	1/4W		
R135-138			RD14NB2E220J	RD	22	J	1/4W		
R139,140			RD14NB2E332J	RD	3.3K	J	1/4W		
R145,146			RS14KB3D4R7J	FL-PROOF RS	4.7	J	2W		
R149,150			RD14NB2E100J	RD	10	J	1/4W		
R155-158			RD14NB2E101J	RD	100	J	1/4W		
R165			RD14NB2E220J	RD	22	J	1/4W		
R167			RD14NB2E220J	RD	22	J	1/4W		
R175			RS14KB3D4R7J	FL-PROOF RS	4.7	J	2W		
R179			RD14NB2E100J	RD	10	J	1/4W		
R187			RD14NB2E332J	RD	3.3K	J	1/4W		
R197-200			RD14NB2E220J	RD	22	J	1/4W		
R201,202			RD14NB2E332J	RD	3.3K	J	1/4W		
R207,208			RS14KB3D4R7J	FL-PROOF RS	4.7	J	2W		
R211,212			RD14NB2E100J	RD	10	J	1/4W		
⚠ R223			RD14NB2E101J	RD	100	J	1/4W		
R226			RS14KB3D102J	FL-PROOF RS	1.0K	J	2W		
R242			RS14KB3A332J	FL-PROOF RS	3.3K	J	1W		
⚠ R245			RD14NB2E561J	RD	560	J	1/4W		
VR1 ,2			R12-1616-05	TRIMMING POT.(1K)					
VR3			R12-1617-05	TRIMMING POT.(2.2K)					
VR4 ,5			R12-1616-05	TRIMMING POT.(1K)					
690	1A,1B		S79-0013-05	THERMAL SWITCH				E	
690	1C	*	S79-0025-05	THERMAL SWITCH				KP	
690	1C	*	S79-0026-05	THERMAL SWITCH				YXMC	
⚠ K1			S76-0002-05	MAGNETIC RELAY					
K2,3			S51-2088-05	MAGNETIC RELAY					
K4		*	S76-0038-05	MAGNETIC RELAY					
K4		*	S76-0045-05	MAGNETIC RELAY					
K5			S76-0005-05	MAGNETIC RELAY					
K5		*	S76-0045-05	MAGNETIC RELAY					
⚠ S1			S31-2136-05	SLIDE SWITCH (POWER TYPE)					
⚠ S2			S62-0001-05	SLIDE SWITCH (AC VOLTAGE SEL)				YM	

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Ref. No	Address	New Parts	Parts No.	Description	Destination	Remarks
⚠ S3			S31-2322-05	SLIDE SWITCH (AC VOLTAGE SEL)	YM	
D1			HSS104	DIODE		
D1			1SS133	DIODE		
⚠ D2,3			HSS104A	DIODE		
⚠ D2,3			1SS131	DIODE		
⚠ D4-7			S5688B	DIODE		
⚠ D4-7			1SR139-100	DIODE		
D8			HZS2.7N(B2)	ZENER DIODE		
D8			RD2.7ES(B2)	ZENER DIODE		
D9			HZS6.2N(B2)	ZENER DIODE		
D9			RD6.2ES(B2)	ZENER DIODE		
D10			HZS8.2N(B2)	ZENER DIODE		
D10			RD8.2ES(B2)	ZENER DIODE		
⚠ D11 -14			S5688B	DIODE		
⚠ D11 -14			1SR139-100	DIODE		
⚠ D15			D5SBA20F03	DIODE		
⚠ D16			D5FB20-4002-L1	DIODE		
D17			HZS16N(B2)	ZENER DIODE		
D17			RD16ES(B2)	ZENER DIODE		
D18			HZS18N(B2)	ZENER DIODE		
D18			RD18ES(B2)	ZENER DIODE		
⚠ D19 ,20			S5688B	DIODE		
⚠ D19 ,20			1SR139-100	DIODE		
⚠ D21 ,22			HSS104A	DIODE		
⚠ D21 ,22			1SS131	DIODE		
D23			HZS5.1N(B2)	ZENER DIODE		
D23			RD5.1ES(B2)	ZENER DIODE		
D24 -27			HSS104	DIODE		
D24 -27			1SS133	DIODE		
D31 ,32			HSS104A	DIODE		
D31 ,32			1SS131	DIODE		
D41 ,42			HSS104	DIODE		D
D41 ,42			1SS133	DIODE		D
⚠ D43			D5SBA20F03	DIODE		
D61			HSS104A	DIODE		
D61			1SS131	DIODE		
D91 ,92			HSS104A	DIODE		
D91 ,92			1SS131	DIODE		
D131,132			HSS104A	DIODE		
D131,132			1SS131	DIODE		
D161			HSS104A	DIODE		
D161			1SS131	DIODE		
D191,192			HSS104A	DIODE		
D191,192			1SS131	DIODE		
D211			HSS104	DIODE		
D211			1SS133	DIODE		
D222			HZS16N(B2)	ZENER DIODE		
D222			RD16ES(B2)	ZENER DIODE		
D223			HZS8.2N(B2)	ZENER DIODE		
D223			RD8.2ES(B2)	ZENER DIODE		
D231			HSS104A	DIODE		
D231			1SS131	DIODE		
D232			HZS4.7N(B2)	ZENER DIODE		
D232			RD4.7ES(B2)	ZENER DIODE		

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Ref. No	Address	New Parts	Parts No.	Description	Destination	Remarks
D233-239			HSS104	DIODE		
D233-239			1SS133	DIODE		
D240			HZS3.9N(B2)	ZENER DIODE		
D240			RD3.9ES(B2)	ZENER DIODE		
D241			HZS13N(B2)	ZENER DIODE		
D241			RD13ES(B2)	ZENER DIODE		
D242			HZS3.9N(B2)	ZENER DIODE		
D242			RD3.9ES(B2)	ZENER DIODE		
Q1			2SC2003(L,K)	TRANSISTOR		
⚠ Q2			2SC3940A(R,S)	TRANSISTOR		
⚠ Q3			2SA1534A(R,S)	TRANSISTOR		
Q4			2SA992(F,E)	TRANSISTOR		
Q31 ,32			2SC2878(B)	TRANSISTOR		
Q33 -36			2SA992(F,E)	TRANSISTOR		
Q37 ,38			2SC2631(R,S)	TRANSISTOR		
Q39 ,40			2SA1123(R,S)	TRANSISTOR		
Q41 -43			2SC2631(R,S)	TRANSISTOR		
Q44 ,45			2SA1123(R,S)	TRANSISTOR		
Q46			2SC2631(R,S)	TRANSISTOR		
Q61			2SC2878(B)	TRANSISTOR		
Q63			2SA992(F,E)	TRANSISTOR		
Q65			2SA992(F,E)	TRANSISTOR		
Q67			2SC2631(R,S)	TRANSISTOR		
Q69			2SA1123(R,S)	TRANSISTOR		
Q71			2SC2631(R,S)	TRANSISTOR		
Q91 ,92			2SC2878(B)	TRANSISTOR		
Q93 -96			2SA992(F,E)	TRANSISTOR		
Q97 -100			2SC1845(F,E)	TRANSISTOR		
Q101,102			2SA992(F,E)	TRANSISTOR		
⚠ Q131,132	✻		2SD2222	TRANSISTOR		
⚠ Q133,134	✻		2SB1470	TRANSISTOR		
Q135,136			2SC4137(V,W)	TRANSISTOR		
Q137,138			2SC1845(F,E)	TRANSISTOR		
⚠ Q161	✻		2SD2222	TRANSISTOR		
⚠ Q163	✻		2SB1470	TRANSISTOR		
Q165			2SC4137(V,W)	TRANSISTOR		
Q167			2SC1845(F,E)	TRANSISTOR		
⚠ Q191,192			2SD2389	TRANSISTOR		
⚠ Q193,194			2SB1559	TRANSISTOR		
Q195,196			2SC4137(V,W)	TRANSISTOR		
Q197,198			2SC1845(F,E)	TRANSISTOR		
Q211,212			2SC2458(Y,GR)	TRANSISTOR		
Q211,212			2SC3311A(Q,R)	TRANSISTOR		
Q221			2SA992(F,E)	TRANSISTOR		
Q222			2SA1048(Y,GR)	TRANSISTOR		
Q222			2SA1309A(Q,R)	TRANSISTOR		
⚠ Q223			2SB1370	TRANSISTOR		
⚠ Q223			2SB1375	TRANSISTOR		
Q231			2SA992(F,E)	TRANSISTOR		
Q232,233			2SC1845(F,E)	TRANSISTOR		
Q234-236			DTC113ZS	DIGITAL TRANSISTOR		
Q234-236			UN4219	TRANSISTOR		
SURROUND UNIT (X08-2710-10) KR-V990D only						
C1,2			CC73FSL1H101J	CHIP C 100PF J		

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Ref. No	Address	New Parts	Parts No.	Description	Destination	Remarks
C5,6			CC73FSL1H101J	CHIP C 100PF J		
C9,10			CC73FSL1H101J	CHIP C 100PF J		
C13 ,14			CC73FSL1H101J	CHIP C 100PF J		
C17 ,18			CC73FSL1H101J	CHIP C 100PF J		
C21 ,22			CC73FSL1H390J	CHIP C 39PF J		
C23 ,24			CE04KW1C100M	ELECTRO 10UF 16WV		
C25 ,26			CC73FSL1H221J	CHIP C 220PF J		
C27 ,28			CE04KW1A101M	ELECTRO 100UF 10WV		
C29 ,30			CK73FB1H102K	CHIP C 1000PF K		
C31 ,32			CQ93FMG1H123J	MYLAR 0.012UF J		
C33 ,34			CQ93FMG1H332J	MYLAR 3300PF J		
C35 ,36			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		
C37			CK73FB1H102K	CHIP C 1000PF K		
C41 ,42			CE04KW1H2R2M	ELECTRO 2.2UF 50WV		
C43 ,44			CC73FSL1H101J	CHIP C 100PF J		
C45 ,46			CC73FSL1H221J	CHIP C 220PF J		
C47 ,48			CK73FB1H102K	CHIP C 1000PF K		
C49			CE04KW1C100M	ELECTRO 10UF 16WV		
C50			CK73FF1E104Z	CHIP C 0.10UF Z		
C51 ,52			CE04KW1H2R2M	ELECTRO 2.2UF 50WV		
C53 -56			CK73FF1E104Z	CHIP C 0.10UF Z		
C57			CC73FSL1H101J	CHIP C 100PF J		
C58			CK73FF1E104Z	CHIP C 0.10UF Z		
C59			CE04KW1C100M	ELECTRO 10UF 16WV		
C60			CE04KW1A101M	ELECTRO 100UF 10WV		
C61 ,62			CK73FF1E104Z	CHIP C 0.10UF Z		
C63			CE04KW1C100M	ELECTRO 10UF 16WV		
C64			CE04KW1A101M	ELECTRO 100UF 10WV		
C65 ,66			CK73FF1E104Z	CHIP C 0.10UF Z		
C67			CK73FB1H471K	CHIP C 470PF K		
C68 -71			CC73FCH1H470J	CHIP C 47PF J		
C74 -78			CK73FF1E104Z	CHIP C 0.10UF Z		
C81			CE04KW1A101M	ELECTRO 100UF 10WV		
C82 -85			CK73FF1E104Z	CHIP C 0.10UF Z		
C86 ,87			CC73FCH1H470J	CHIP C 47PF J		
C88			CC73FCH1H220J	CHIP C 22PF J		
C89			CC73FCH1H470J	CHIP C 47PF J		
C91 ,92			CE04KW1A470M	ELECTRO 47UF 10WV		
C93			CE04KW1C100M	ELECTRO 10UF 16WV		
C94 -96			CK73FF1E104Z	CHIP C 0.10UF Z		
C97			CE04KW1A101M	ELECTRO 100UF 10WV		
C101,102			CE04KW1A470M	ELECTRO 47UF 10WV		
C103			CE04KW1C100M	ELECTRO 10UF 16WV		
C104-106			CK73FF1E104Z	CHIP C 0.10UF Z		
C107,108			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C109,110			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		
C111,112			CE04KW1A470M	ELECTRO 47UF 10WV		
C113			CE04KW1C100M	ELECTRO 10UF 16WV		
C114-116			CK73FF1E104Z	CHIP C 0.10UF Z		
C117,118			CC73FSL1H221J	CHIP C 220PF J		
C119,120			CC73FCH1H220J	CHIP C 22PF J		
C121,122			CC73FSL1H101J	CHIP C 100PF J		
C123,124			CC73FSL1H221J	CHIP C 220PF J		
C125,126			CC73FSL1H331J	CHIP C 330PF J		
C131,132			CQ93FMG1H822J	MYLAR 8200PF J		

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Ref. No	Address	New Parts	Parts No.	Description			Destination	Remarks
C133,134			CQ93FMG1H392J	MYLAR	3900PF	J		
C135,136			CQ93FMG1H472J	MYLAR	4700PF	J		
C141,142			CC73FSL1H101J	CHIP C	100PF	J		
C143,144			CC73FSL1H221J	CHIP C	220PF	J		
C145,146			CC73FSL1H331J	CHIP C	330PF	J		
C151,152			CQ93FMG1H822J	MYLAR	8200PF	J		
C153,154			CQ93FMG1H392J	MYLAR	3900PF	J		
C155,156			CQ93FMG1H472J	MYLAR	4700PF	J		
C161,162			CC73FSL1H101J	CHIP C	100PF	J		
C163,164			CC73FSL1H221J	CHIP C	220PF	J		
C165,166			CC73FSL1H331J	CHIP C	330PF	J		
C171,172			CQ93FMG1H822J	MYLAR	8200PF	J		
C173,174			CQ93FMG1H392J	MYLAR	3900PF	J		
C175,176			CQ93FMG1H472J	MYLAR	4700PF	J		
C181-184			CQ93FMG1H104J	MYLAR	0.10UF	J		
C185,186			CC73FSL1H101J	CHIP C	100PF	J		
C187,188			CE04KW1H2R2M	ELECTRO	2.2UF	50WV		
C191			CQ93FMG1H104J	MYLAR	0.10UF	J		
C193			CQ93FMG1H104J	MYLAR	0.10UF	J		
C195			CC73FSL1H101J	CHIP C	100PF	J		
C197,198			CE04KW1H2R2M	ELECTRO	2.2UF	50WV		
C201			CQ93FMG1H333J	MYLAR	0.033UF	J		
C202			CQ93FMG1H104J	MYLAR	0.10UF	J		
C207-212			CE04KW1C220M	ELECTRO	22UF	16WV		
C213-215			CE04KW1H2R2M	ELECTRO	2.2UF	50WV		
C217,218			CE04KW1H2R2M	ELECTRO	2.2UF	50WV		
C221-224			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C227,228			CC73FSL1H101J	CHIP C	100PF	J		
C231-234			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C237,238			CC73FSL1H101J	CHIP C	100PF	J		
C241-244			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C247,248			CC73FSL1H101J	CHIP C	100PF	J		
C251,252			CK73FF1E104Z	CHIP C	0.10UF	Z		
C253,254			CK73FB1H103K	CHIP C	0.010UF	K		
C255-262			CK73FF1E104Z	CHIP C	0.10UF	Z		
C265,266			CE04KW1C470M	ELECTRO	47UF	16WV		
C269,270			CK73FF1E104Z	CHIP C	0.10UF	Z		
C279,280			CE04KW1C470M	ELECTRO	47UF	16WV		
C283-288			CK73FF1E104Z	CHIP C	0.10UF	Z		
C301			CK73FB1H103K	CHIP C	0.010UF	K		
C310-314			CK73FF1E104Z	CHIP C	0.10UF	Z		
C321			CC73FCH1H470J	CHIP C	47PF	J		
C322			CK73FB1H102K	CHIP C	1000PF	K		
C323			CE04KW1C470M	ELECTRO	47UF	16WV		
C331			CK73FF1E104Z	CHIP C	0.10UF	Z		
C332,333			CK73FF1E474Z	CHIP C	0.47UF	Z		
C341			CE04KW1H100M	ELECTRO	10UF	50WV		
C342			CE04KW1C101M	ELECTRO	100UF	16WV		
C343,344			CK73FF1E104Z	CHIP C	0.10UF	Z		
C345			CE04KW1C100M	ELECTRO	10UF	16WV		
C346			CE04KW1A101M	ELECTRO	100UF	10WV		
C347,348			CK73FF1E104Z	CHIP C	0.10UF	Z		
C350			CE04KW1A101M	ELECTRO	100UF	10WV		
C351,352			CK73FF1E104Z	CHIP C	0.10UF	Z		
C353			CE04KW1C100M	ELECTRO	10UF	16WV		

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C354			CE04KW1A101M	ELECTRO	100UF	10WV		
C355-358			CK73FF1E104Z	CHIP C	0.10UF	Z		
C359			CE04KW1A101M	ELECTRO	100UF	10WV		
C361			CK73FB1H102K	CHIP C	1000PF	K		
C371,372			CK73FB1H102K	CHIP C	1000PF	K		
C373,374			CC73FCH1H100D	CHIP C	10PF	D		
C375			CC73FCH1H220J	CHIP C	22PF	J		
C376,377			CC73FCH1H470J	CHIP C	47PF	J		
C378			CC73FCH1H271J	CHIP C	270PF	J		
C379			CE04KW1A101M	ELECTRO	100UF	10WV		
C380,381			CK73FF1E104Z	CHIP C	0.10UF	Z		
C382			CK73FB1H102K	CHIP C	1000PF	K		
C383,384			CC73FCH1H100D	CHIP C	10PF	D		
C389			CK73FF1E104Z	CHIP C	0.10UF	Z		
C391-422			CK73FF1E104Z	CHIP C	0.10UF	Z		
C429-433			CK73FF1E104Z	CHIP C	0.10UF	Z		
C434			CK73FB1H103K	CHIP C	0.010UF	K		
C435-438			CK73FF1E104Z	CHIP C	0.10UF	Z		
C439			CE04KW1A101M	ELECTRO	100UF	10WV		
C440			CK73FF1E104Z	CHIP C	0.10UF	Z		
C443			CC73FSL1H101J	CHIP C	100PF	J		
C501,502			CC73FSL1H101J	CHIP C	100PF	J		
C505-508			CE04KW1H2R2M	ELECTRO	2.2UF	50WV		
C511			CC73FSL1H101J	CHIP C	100PF	J		
C515			CE04KW1H2R2M	ELECTRO	2.2UF	50WV		
C517			CE04KW1H2R2M	ELECTRO	2.2UF	50WV		
C521-524			CK73FF1E104Z	CHIP C	0.10UF	Z		
C531,532			CE04KW1V220M	ELECTRO	22UF	35WV		
C533,534			CE04KW1V470M	ELECTRO	47UF	35WV		
C535,536			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C537,538			CC73FSL1H101J	CHIP C	100PF	J		
C541-544			CQ93FMG1H104J	MYLAR	0.10UF	J		
C545,546			CC73FSL1H101J	CHIP C	100PF	J		
C547,548			CE04KW1H2R2M	ELECTRO	2.2UF	50WV		
C550			CK73FB1H102K	CHIP C	1000PF	K		
C551,552			CK73FB1H103K	CHIP C	0.010UF	K		
C553-558			CK73FF1E104Z	CHIP C	0.10UF	Z		
C601,602			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C603,604			CC73FCH1H220J	CHIP C	22PF	J		
C605,606			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C607-610			CK73FF1E104Z	CHIP C	0.10UF	Z		
C611-613			CE04KW1C470M	ELECTRO	47UF	16WV		
CN1 -3		*	E40-9832-05	SOCKET FOR PIN ASSY (16P)				
CN11		*	E40-9836-05	SOCKET FOR PIN ASSY (20P)				
J1,2			E63-0139-15	PHONO JACK(6P/TAPE1,2/CD/PHONO)				
J3,4		*	E63-0169-05	PHONO JACK (3P/PRE OUT)				
J11		*	E63-0161-05	PHONO JACK(2P/AC3 AUDIO INPUT)				
L1-5			L92-0044-05	FERRITE CORE				
L7-17			L92-0044-05	FERRITE CORE				
L19 -21			L92-0044-05	FERRITE CORE				
L23			L92-0044-05	FERRITE CORE				
L25 -27			L92-0044-05	FERRITE CORE				
L30			L79-0788-05	LC FILTER				
X11			L78-0267-05	RESONATOR	(4.194MHZ)			

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X14			L77-1125-05	CRYSTAL RESONATOR(24.576MHZ)					
X15		*	L77-2158-05	CRYSTAL RESONATOR(33MHZ)					
R1,2			RK73FB2A222J	CHIP R	2.2K	J	1/10W		
R3,4			RK73FB2A474J	CHIP R	470K	J	1/10W		
R5,6			RK73FB2A221J	CHIP R	220	J	1/10W		
R7,8			RK73FB2A224J	CHIP R	220K	J	1/10W		
R9,10			RK73FB2A102J	CHIP R	1.0K	J	1/10W		
R11 ,12			RK73FB2A224J	CHIP R	220K	J	1/10W		
R13 ,14			RK73FB2A221J	CHIP R	220	J	1/10W		
R15 ,16			RK73FB2A224J	CHIP R	220K	J	1/10W		
R17 ,18			RK73FB2A221J	CHIP R	220	J	1/10W		
R19 ,20			RK73FB2A224J	CHIP R	220K	J	1/10W		
R21 ,22			RK73FB2A331J	CHIP R	330	J	1/10W		
R23 ,24			RK73FB2A473J	CHIP R	47K	J	1/10W		
R25 ,26			RK73FB2A101J	CHIP R	100	J	1/10W		
R27 ,28			RK73FB2A361J	CHIP R	360	J	1/10W		
R29 ,30			RK73FB2A274J	CHIP R	270K	J	1/10W		
R31 ,32			RK73FB2A223J	CHIP R	22K	J	1/10W		
R33 ,34			RK73FB2A473J	CHIP R	47K	J	1/10W		
R35 ,36			RK73FB2A102J	CHIP R	1.0K	J	1/10W		
R40			RK73FB2A470J	CHIP R	47	J	1/10W		
R41 ,42			RK73FB2A153J	CHIP R	15K	J	1/10W		
R45 -48			RK73FB2A393J	CHIP R	39K	J	1/10W		
R49 ,50			RK73FB2A391J	CHIP R	390	J	1/10W		
R51 ,52			RK73FB2A102J	CHIP R	1.0K	J	1/10W		
R53 -56			RK73FB2A331J	CHIP R	330	J	1/10W		
R57 ,58			RK73FB2A472J	CHIP R	4.7K	J	1/10W		
R59			RK73FB2A104J	CHIP R	100K	J	1/10W		
R60 -62			RK73FB2A470J	CHIP R	47	J	1/10W		
R63			RK73FB2A101J	CHIP R	100	J	1/10W		
R64 -68			RK73FB2A470J	CHIP R	47	J	1/10W		
R77 -80			RK73FB2A104J	CHIP R	100K	J	1/10W		
R81 -86			RK73FB2A103J	CHIP R	10K	J	1/10W		
R91 ,92			RK73FB2A912J	CHIP R	9.1K	J	1/10W		
R93 ,94			RK73FB2A102J	CHIP R	1.0K	J	1/10W		
R95 ,96			RK73FB2A751J	CHIP R	750	J	1/10W		
R97 ,98			RK73FB2A152J	CHIP R	1.5K	J	1/10W		
R99 -106			RK73FB2A103J	CHIP R	10K	J	1/10W		
R111,112			RK73FB2A912J	CHIP R	9.1K	J	1/10W		
R113,114			RK73FB2A102J	CHIP R	1.0K	J	1/10W		
R115,116			RK73FB2A751J	CHIP R	750	J	1/10W		
R117,118			RK73FB2A152J	CHIP R	1.5K	J	1/10W		
R119-126			RK73FB2A103J	CHIP R	10K	J	1/10W		
R131,132			RK73FB2A912J	CHIP R	9.1K	J	1/10W		
R133,134			RK73FB2A102J	CHIP R	1.0K	J	1/10W		
R135,136			RK73FB2A751J	CHIP R	750	J	1/10W		
R137,138			RK73FB2A152J	CHIP R	1.5K	J	1/10W		
R139-142			RK73FB2A103J	CHIP R	10K	J	1/10W		
R143,144			RK73FB2A223J	CHIP R	22K	J	1/10W		
R145-148			RK73FB2A104J	CHIP R	100K	J	1/10W		
R181			RK73FB2A103J	CHIP R	10K	J	1/10W		
R182			RK73FB2A243J	CHIP R	24K	J	1/10W		
R183			RK73FB2A223J	CHIP R	22K	J	1/10W		
R185-189			RK73FB2A333J	CHIP R	33K	J	1/10W		

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R190			RK73FB2A103J	CHIP R	10K	J	1/10W		
R191,192			RK73FB2A104J	CHIP R	100K	J	1/10W		
R193,194			RK73FB2A472J	CHIP R	4.7K	J	1/10W		
R195			RK73FB2A153J	CHIP R	15K	J	1/10W		
R196			RK73FB2A513J	CHIP R	51K	J	1/10W		
R203-205			RK73FB2A104J	CHIP R	100K	J	1/10W		
R207,208			RK73FB2A104J	CHIP R	100K	J	1/10W		
R211,212			RK73FB2A101J	CHIP R	100	J	1/10W		
R213,214			RK73FB2A103J	CHIP R	10K	J	1/10W		
R215,216			RK73FB2A472J	CHIP R	4.7K	J	1/10W		
R231-234			RK73FB2A102J	CHIP R	1.0K	J	1/10W		
R235-238			RK73FB2A104J	CHIP R	100K	J	1/10W		
R239,240			RK73FB2A101J	CHIP R	100	J	1/10W		
R241-244			RK73FB2A102J	CHIP R	1.0K	J	1/10W		
R245-248			RK73FB2A104J	CHIP R	100K	J	1/10W		
R249,250			RK73FB2A101J	CHIP R	100	J	1/10W		
R251			RK73FB2A102J	CHIP R	1.0K	J	1/10W		
R252			RK73FB2A222J	CHIP R	2.2K	J	1/10W		
R253,254			RK73FB2A102J	CHIP R	1.0K	J	1/10W		
R255-258			RK73FB2A104J	CHIP R	100K	J	1/10W		
R259,260			RK73FB2A101J	CHIP R	100	J	1/10W		
⚠ R275-278			RD14NB2E470J	RD	47	J	1/4W		
R301-341			RK73FB2A104J	CHIP R	100K	J	1/10W		
R343-365			RK73FB2A104J	CHIP R	100K	J	1/10W		
R371			RK73FB2A102J	CHIP R	1.0K	J	1/10W		
R372			RK73FB2A101J	CHIP R	100	J	1/10W		
R373,374			RK73FB2A102J	CHIP R	1.0K	J	1/10W		
R375			RK73FB2A101J	CHIP R	100	J	1/10W		
R376-386			RK73FB2A102J	CHIP R	1.0K	J	1/10W		
R388			RK73FB2A102J	CHIP R	1.0K	J	1/10W		
R389			RK73FB2A101J	CHIP R	100	J	1/10W		
R391			RK73FB2A103J	CHIP R	10K	J	1/10W		
R392			RK73FB2A102J	CHIP R	1.0K	J	1/10W		
R400			RK73FB2A105J	CHIP R	1.0M	J	1/10W		
R401			RK73FB2A750J	CHIP R	75	J	1/10W		
R402,403			RK73FB2A102J	CHIP R	1.0K	J	1/10W		
R404-406			RK73FB2A202J	CHIP R	2.0K	J	1/10W		
R407			RK73FB2A681J	CHIP R	680	J	1/10W		
R408			RK73FB2A103J	CHIP R	10K	J	1/10W		
R409			RK73FB2A102J	CHIP R	1.0K	J	1/10W		
R412,413			RK73FB2A102J	CHIP R	1.0K	J	1/10W		
R414-416			RK73FB2A202J	CHIP R	2.0K	J	1/10W		
R417			RK73FB2A681J	CHIP R	680	J	1/10W		
R418			RK73FB2A103J	CHIP R	10K	J	1/10W		
R419			RK73FB2A222J	CHIP R	2.2K	J	1/10W		
R421			RK73FB2A750J	CHIP R	75	J	1/10W		
R425			RK73FB2A103J	CHIP R	10K	J	1/10W		
R428			RK73FB2A121J	CHIP R	120	J	1/10W		
R441			RK73FB2A680J	CHIP R	68	J	1/10W		
R442			RK73FB2A103J	CHIP R	10K	J	1/10W		
R443			RK73FB2A224J	CHIP R	220K	J	1/10W		
R444			RK73FB2A104J	CHIP R	100K	J	1/10W		
R445			RK73FB2A103J	CHIP R	10K	J	1/10W		
R446			RK73FB2A224J	CHIP R	220K	J	1/10W		
R447,448			RK73FB2A104J	CHIP R	100K	J	1/10W		

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R451			RK73FB2A102J	CHIP R	1.0K	J 1/10W		
R452-456			RK73FB2A103J	CHIP R	10K	J 1/10W		
R457			RK73FB2A223J	CHIP R	22K	J 1/10W		
R458			RK73FB2A104J	CHIP R	100K	J 1/10W		
R460			RK73FB2A224J	CHIP R	220K	J 1/10W		
R461			RK73FB2A333J	CHIP R	33K	J 1/10W		
R462			RK73FB2A102J	CHIP R	1.0K	J 1/10W		
R463			RK73FB2A103J	CHIP R	10K	J 1/10W		
R464			RK73FB2A243J	CHIP R	24K	J 1/10W		
R465,466			RK73FB2A562J	CHIP R	5.6K	J 1/10W		
R467			RK73FB2A151J	CHIP R	150	J 1/10W		
R468			RK73FB2A204J	CHIP R	200K	J 1/10W		
R469			RK73FB2A471J	CHIP R	470	J 1/10W		
R470-473			RK73FB2A470J	CHIP R	47	J 1/10W		
R474-476			RK73FB2A102J	CHIP R	1.0K	J 1/10W		
R477,478			RK73FB2A334J	CHIP R	330K	J 1/10W		
R479			RK73FB2A103J	CHIP R	10K	J 1/10W		
R480			RK73FB2A562J	CHIP R	5.6K	J 1/10W		
R481			RK73FB2A561J	CHIP R	560	J 1/10W		
R482-484			RK73FB2A102J	CHIP R	1.0K	J 1/10W		
R485,486			RK73FB2A103J	CHIP R	10K	J 1/10W		
R487-490			RK73FB2A470J	CHIP R	47	J 1/10W		
R501,502			RK73FB2A104J	CHIP R	100K	J 1/10W		
R503,504			RK73FB2A472J	CHIP R	4.7K	J 1/10W		
R505,506			RK73FB2A103J	CHIP R	10K	J 1/10W		
R507,508			RK73FB2A104J	CHIP R	100K	J 1/10W		
R511			RK73FB2A104J	CHIP R	100K	J 1/10W		
R513			RK73FB2A472J	CHIP R	4.7K	J 1/10W		
R515			RK73FB2A103J	CHIP R	10K	J 1/10W		
R517			RK73FB2A104J	CHIP R	100K	J 1/10W		
R551,552			RK73FB2A224J	CHIP R	220K	J 1/10W		
R553,554			RK73FB2A393J	CHIP R	39K	J 1/10W		
R555,556			RK73FB2A303J	CHIP R	30K	J 1/10W		
R557,558			RK73FB2A243J	CHIP R	24K	J 1/10W		
R561-564			RK73FB2A103J	CHIP R	10K	J 1/10W		
R565,566			RK73FB2A104J	CHIP R	100K	J 1/10W		
R571,572			RK73FB2A224J	CHIP R	220K	J 1/10W		
R573,574			RK73FB2A223J	CHIP R	22K	J 1/10W		
R575,576			RK73FB2A103J	CHIP R	10K	J 1/10W		
R577,578			RK73FB2A104J	CHIP R	100K	J 1/10W		
R581-583			RK73FB2A102J	CHIP R	1.0K	J 1/10W		
R591-593			RK73FB2A102J	CHIP R	1.0K	J 1/10W		
R601-604			RK73FB2A104J	CHIP R	100K	J 1/10W		
R605,606			RK73FB2A102J	CHIP R	1.0K	J 1/10W		
R607,608			RK73FB2A473J	CHIP R	47K	J 1/10W		
R609,610			RK73FB2A104J	CHIP R	100K	J 1/10W		
R611,612			RK73FB2A393J	CHIP R	39K	J 1/10W		
⚠ R613,614			RD14NB2E470J	RD	47	J 1/4W		
R615,616			RK73FB2A103J	CHIP R	10K	J 1/10W		
D1-8			DA204U	DIODE				
D10			DA204U	DIODE				
IC1			NJU7311AL	ANALOGUE IC				
IC2		*	XRU4053BC	MOS-IC				
IC3			AK5340-VS	MOS-IC				

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IC4 -6		*	AK4319-VM	MOS-IC				
IC7			TC74HCU04AF	IC(HEX INVERTER SMD)				
IC10			NJU7312AL	ANALOGUE IC				
IC11			NJM4580ED	ANALOGUE IC				
IC12-26			NJM4580E	ANALOGUE IC				
IC30			S-806D-Z	ANALOGUE IC				
⚠ IC31-34			TA7805S	IC(VOLTAGE REGULATOR/ +5V)				
⚠ IC31-34			UPC7805AHF	IC(VOLTAGE REGULATOR/ +5V)				
IC41		*	UPD78054GC-192	MI-COM IC				
IC42		*	PD4606A	MOS-IC				
IC43,44			TC74HCU04AF	IC(HEX INVERTER SMD)				
IC45		*	TC55329AP-35	MEMORY IC				
IC46		*	LC8904Q	MOS-IC				
IC47			TC74HC157AF	MOS-IC				
IC48		*	ZR38500-33	MOS-IC				
IC49,50		*	TC55329AP-35	MEMORY IC				
⚠ IC51			TA79005S	IC(VOLTAGE REGULATOR/ -5V)				
⚠ IC51			UPC7905HF	IC(VOLTAGE REGULATOR/ -5V)				
⚠ IC52			NJM78L05A	IC(VOLTAGE REGULATOR/ +5V)				
⚠ IC52			TA78L005AP	IC(VOLTAGE REGULATOR/ +5V)				
⚠ IC52			UPC78L05J	IC(VOLTAGE REGULATOR/ +5V)				
⚠ IC53-55			TA7805S	IC(VOLTAGE REGULATOR/ +5V)				
⚠ IC53-55			UPC7805AHF	IC(VOLTAGE REGULATOR/ +5V)				
IC61			NJM4565M	IC(OP AMP X2)				
IC63			TC74HC74AF	IC(DUAL D-TYPE FLIP FLOP)				
IC71,72			NJM4580E	ANALOGUE IC				
IC73,74			NJM4565M	IC(OP AMP X2)				
Q1-6			2SC4213(B)	TRANSISTOR				
Q11 -14			2SC1923(R,O)	TRANSISTOR				
Q15 ,16			2SA1123(R,S)	TRANSISTOR				
A1		*	W02-2560-05	OSCILLATING MODULE (46.08MHZ)				
A2		*	W02-2544-05	OSCILLATING MODULE (18.432MHZ)				
CONTROL UNIT (X11-364X-XX) KR-V9080 only								
C1			C91-0757-05	CERAMIC	1000PF	K		
C2,3			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C4			C90-1826-05	BACKUP-C	0.047F	5.5WV		
C5			CE04KW1A101M	ELECTRO	100UF	10WV		
C6			C91-0757-05	CERAMIC	1000PF	K		
C7			CE04KW1E470M	ELECTRO	47UF	25WV		
C8,9			C91-0757-05	CERAMIC	1000PF	K		
C10 ,11			CE04KW1E470M	ELECTRO	47UF	25WV		
C12			CK45FB1H102K	CERAMIC	1000PF	K		
C13 ,14			CE04KW1C470M	ELECTRO	47UF	16WV		
C15			CE04KW1E101M	ELECTRO	100UF	25WV		
C16			C91-0769-05	CERAMIC	0.010UF	K		
C17			C91-0757-05	CERAMIC	1000PF	K		
C18 -20			CE04KW1E101M	ELECTRO	100UF	25WV		
C21			CK45FB1H102K	CERAMIC	1000PF	K		
C101,102			C91-0745-05	CERAMIC	100PF	K		
C105-108			C91-0745-05	CERAMIC	100PF	K		
C111-114			C91-0745-05	CERAMIC	100PF	K		
C115,116			CE04KW1C470M	ELECTRO	47UF	16WV		
C117,118			C91-0745-05	CERAMIC	100PF	K		
C119,120			CE04KW1H010M	ELECTRO	1.0UF	50WV		

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Ref. No	Address	New Parts	Parts No.	Description			Destination	Remarks
C123,124			C91-0729-05	CERAMIC	22PF	J		
C125,126			CE04KW1C470M	ELECTRO	47UF	16WV		
C127,128			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C129,130			CE04KW1HR47M	ELECTRO	0.47UF	50WV		
C131-134			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C135,136			C91-0745-05	CERAMIC	100PF	K		
C137,138			C91-0729-05	CERAMIC	22PF	J		
C139,140			CE04KW1H2R2M	ELECTRO	2.2UF	50WV		
C141,142			CE04KW1HR47M	ELECTRO	0.47UF	50WV		
C143-146			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C147,148			C91-0745-05	CERAMIC	100PF	K		
C149,150			C91-0729-05	CERAMIC	22PF	J		
C151,152			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C153,154			CE04KW1HR47M	ELECTRO	0.47UF	50WV		
C155-158			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C159,160			C91-0745-05	CERAMIC	100PF	K		
C161,162			C91-0729-05	CERAMIC	22PF	J		
C163,164			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C165-170			C91-0745-05	CERAMIC	100PF	K		
C174,175			CE04KW1C470M	ELECTRO	47UF	16WV		
C176,177			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C178			CK45FB1H471K	CERAMIC	470PF	K		
C179,180			C91-0753-05	CHIP C	470PF	K		
C183			C91-0753-05	CHIP C	470PF	K		
C184,185			C91-0745-05	CERAMIC	100PF	K		
C186			CE04KW1C470M	ELECTRO	47UF	16WV		
C189,190			CC45FSL1H221J	CERAMIC	220PF	J		
C191			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C193-198			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C199			CE04HW1A220M	NP-ELEC	22UF	10WV		
C200			CE04KW1C100M	ELECTRO	10UF	16WV		
C202			CE04HW1A220M	NP-ELEC	22UF	10WV		
C203-208			CE04KW1C220M	ELECTRO	22UF	16WV		
C209,210			CQ93FMG1H104J	MYLAR	0.10UF	J		
C301,302			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C303,304			CC45FSL1H101J	CERAMIC	100PF	J		
C305,306			CE04KW1H2R2M	ELECTRO	2.2UF	50WV		
C307-310			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C311,312			CC45FSL1H331J	CERAMIC	330PF	J		
C313,314			CE04KW1H2R2M	ELECTRO	2.2UF	50WV		
C315			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C316			CC45FSL1H331J	CERAMIC	330PF	J		
C317			CE04KW1H2R2M	ELECTRO	2.2UF	50WV		
C318			CE04KW1A470M	ELECTRO	47UF	10WV		
C319			CQ93FMG1H104J	MYLAR	0.10UF	J		
C321			CC45FSL1H101J	CERAMIC	100PF	J		
C322			CQ93FMG1H104J	MYLAR	0.10UF	J		
C323,324			CC45FSL1H101J	CERAMIC	100PF	J		
C325-328			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C329			CQ93FMG1H223J	MYLAR	0.022UF	J		
C330			CQ93FMG1H153J	MYLAR	0.015UF	J		
C331			CQ93FMG1H243J	MYLAR	0.024UF	J		
C332			CQ93FMG1H223J	MYLAR	0.022UF	J		
C333			CK45FB1H102K	CERAMIC	1000PF	K		
C334			CK45FB1H821K	CERAMIC	820PF	K		

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Ref. No	Address	New Parts	Parts No.	Description			Destination	Remarks
C335,336			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C337			CQ93FMG1H153J	MYLAR	0.015UF	J		
C338			CQ93FMG1H223J	MYLAR	0.022UF	J		
C339			CK45FB1H821K	CERAMIC	820PF	K		
C340			CK45FB1H102K	CERAMIC	1000PF	K		
C341			CQ93FMG1H223J	MYLAR	0.022UF	J		
C342			CQ93FMG1H243J	MYLAR	0.024UF	J		
C343			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C344			CC45FSL1H181J	CERAMIC	180PF	J		
C345,346			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C347			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C348			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C349,350			CK45FB1H391K	CERAMIC	390PF	K		
C351			CC45FSL1H390J	CERAMIC	39PF	J		
C352			CF92FV1H184J	MF-C	0.18UF	J		
C353			C91-0745-05	CERAMIC	100PF	K		
C355,356			CC45FSL1H121J	CERAMIC	120PF	J		
C357,358			CQ93FMG1H473J	MYLAR	0.047UF	J		
C359-361			CC45FSL1H101J	CERAMIC	100PF	J		
C362			CE04KW0J331M	ELECTRO	330UF	6.3WV		
C363			CQ93FMG1H104J	MYLAR	0.10UF	J		
C367,368			CQ93FMG1H104J	MYLAR	0.10UF	J		
C369			CE04KW0J331M	ELECTRO	330UF	6.3WV		
C370,371			CK45FB1H332K	CERAMIC	3300PF	K		
C372			CE04KW1C100M	ELECTRO	10UF	16WV		
C373			CQ93FMG1H104J	MYLAR	0.10UF	J		
C374			CK45FB1H102K	CERAMIC	1000PF	K		
C375,376			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C377,378			CE04KW1C470M	ELECTRO	47UF	16WV		
C386			CC45FSL1H101J	CERAMIC	100PF	J		
C387-389			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C391			CE04KW1V220M	ELECTRO	22UF	35WV		
C393			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C394			CQ93FMG1H104J	MYLAR	0.10UF	J		
C395			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C398,399			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C401,402			C91-0745-05	CERAMIC	100PF	K		
C405,406			C91-0745-05	CERAMIC	100PF	K		
C409,410			C91-0745-05	CERAMIC	100PF	K		
C413,414			C91-0745-05	CERAMIC	100PF	K		
C417,418			C91-0745-05	CERAMIC	100PF	K		
C421,422			CC45FSL1H390J	CERAMIC	39PF	J		
C423,424			CE04KW1C100M	ELECTRO	10UF	16WV		
C425,426			CC45FSL1H221J	CERAMIC	220PF	J		
C427,428			CE04KW1A101M	ELECTRO	100UF	10WV		
C429,430			CK45FB1H102K	CERAMIC	1000PF	K		
C431,432			CQ93FMG1H123J	MYLAR	0.012UF	J		
C433,434			CQ93FMG1H332J	MYLAR	3300PF	J		
C435,436			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C437,438			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C439			CK45FB1H102K	CERAMIC	1000PF	K		
C443			C91-0745-05	CERAMIC	100PF	K		
C445,446			CK45FF1H103Z	CERAMIC	0.010UF	Z		
CN101		*	E40-9830-05	SOCKET FOR PIN ASSY (14P)				

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Ref. No	Address	New Parts	Parts No.	Description	Destination	Remarks
CN102		*	E40-9833-05	SOCKET FOR PIN ASSY (17P)		
CN201			E40-4804-05	SOCKET FOR PIN ASSY (30P)		
CN204,205		*	E40-9841-05	PIN ASSY (8P)		
CN206		*	E40-9850-05	PIN ASSY (17P)		
CN207		*	E40-9847-05	PIN ASSY (14P)		
CN208		*	E40-9845-05	PIN ASSY (12P)		
CN209		*	E40-9849-05	PIN ASSY (16P)		
CN210		*	E40-9843-05	PIN ASSY (10P)		
CN301		*	E40-9826-05	SOCKET FOR PIN ASSY (10P)		
CN302		*	E40-9832-05	SOCKET FOR PIN ASSY (16P)		
CN303		*	E40-9828-05	SOCKET FOR PIN ASSY (12P)		
J1,2			E63-0139-15	PHONO JACK(6P/VIDEO1,2/TV/LD)		
J3			E11-0188-05	MINIATURE PHONE JACK(2P/SYSTEM		
J4,5			E63-0139-15	PHONO JACK(6P/TAPE1,2/CD/PHONO		
J6		*	E63-0164-05	PHONO JACK(1P/SUB WOOFER)		
L1,2			L79-0799-05	LC FILTER		
X1			L78-0267-05	RESONATOR (4.194MHZ)		
X2			L78-0291-05	RESONATOR (11.2896MHZ)		
CP1			R90-0850-05	MULTI-COMP 100KX3 J 1/6W		
CP2			R90-0492-05	MULTI-COMP 100KX8 J 1/6W		
CP4			R90-0482-05	MULTI-COMP 100KX4 J 1/6W		
CP5			R90-0493-05	MULTI-COMP 100KX9 J 1/6W		
CP6 ,7			R90-0500-05	MULTI-COMP 100KX6 J 1/4W		
CP8			R90-0855-05	MULTI-COMP 100KX5 J		
R26			RD14NB2E101J	RD 100 J 1/4W		
R27			RD14NB2E222J	RD 2.2K J 1/4W		
R32			RD14NB2E331J	RD 330 J 1/4W		
R36 ,37			RS14KB3D681J	FL-PROOF RS 680 J 2W		
R38			RS14KB3D471J	FL-PROOF RS 470 J 2W		
R40			RS14KB3D471J	FL-PROOF RS 470 J 2W		
R41			RS14KB3D391J	FL-PROOF RS 390 J 2W		
R42			RS14KB3D331J	FL-PROOF RS 330 J 2W		
R45			RS14KB3D331J	FL-PROOF RS 330 J 2W		
R172,173			RD14NB2E100J	RD 10 J 1/4W		
R199,200			RD14NB2E470J	RD 47 J 1/4W		
R392			RS14KB3D820J	FL-PROOF RS 82 J 2W		
R393,394			RD14NB2E100J	RD 10 J 1/4W		
D105,106			HSS104	DIODE		
D105,106			1SS133	DIODE		
D107			HZS4.7N(B)	ZENER DIODE		
D107			RD4.7ES(B)	ZENER DIODE		
D108			HZS5.1N(B2)	ZENER DIODE		
D108			RD5.1ES(B2)	ZENER DIODE		
D201,202			HSS104	DIODE		
D201,202			1SS133	DIODE		
D204-206			HSS104	DIODE		
D204-206			1SS133	DIODE		
D207,208			S5688B	DIODE		
D207,208			1SR139-100	DIODE		
D209			HZS16N(B2)	ZENER DIODE		
D209			RD16ES(B2)	ZENER DIODE		
D210			HZS13N(B2)	ZENER DIODE		
D210			RD13ES(B2)	ZENER DIODE		
D211			HZS15N(B)	ZENER DIODE		

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Ref. No	Address	New Parts	Parts No.	Description	Destination	Remarks
D211			RD15ES(B)	ZENER DIODE		
D212-217			HSS104	DIODE		
D212-217			1SS133	DIODE		
D301-309			HSS104	DIODE		
D301-309			1SS133	DIODE		
D313-316			HSS104	DIODE		
D313-316			1SS133	DIODE		
D318-321			HSS104	DIODE		
D318-321			1SS133	DIODE		
D327			HSS104	DIODE		
D327			1SS133	DIODE		
IC1			NJU7313AL	ANALOGUE IC		
IC2			LC7536R	ANALOGUE IC		
IC3			LC7536	ANALOGUE IC		
IC4			LC7536R	ANALOGUE IC		
IC5 ,6			NJM4565L-D	ANALOGUE IC		
IC7 ,8			NJM4580L	IC(OP AMP X2)		
IC9 ,10			NJM4565L-D	ANALOGUE IC		
IC11			NJM4580D-D	IC(OP AMP X2)		
IC12			NJM4565L-D	ANALOGUE IC		
IC201		*	UPD78058GC-170	MI-COM IC		
IC202			S-806D-Z	ANALOGUE IC		
IC301,302			NJM4565L	ANALOGUE IC		
IC303,304			NJM4580L	IC(OP AMP X2)		
IC305,306			NJM072BL	IC(OP AMP)		
IC305,306			NJM2082L	ANALOGUE IC		
IC307-313			NJM4565L	ANALOGUE IC		
IC314			TC9215P	IC(ANALOG SWITCH X 6)		
IC315			YSS215-F	IC(DOLBY PROLOGIC)		
IC316			HM65256BLFP-10	IC(8bit MICROPROCESSOR)		
IC317			NJU7311AL	ANALOGUE IC		
IC318			NJU7312AL	ANALOGUE IC		
IC319			NJM4580D-D	IC(OP AMP X2)		
⚠ IC320			NJM78L05A	IC(VOLTAGE REGULATOR/ +5V)		
Q101			2SA1048(Y,GR)	TRANSISTOR		
Q101			2SA1309A(Q,R)	TRANSISTOR		
Q102			2SC2458(Y,GR)	TRANSISTOR		
Q102			2SC3311A(Q,R)	TRANSISTOR		
Q103,104			2SA1048(Y,GR)	TRANSISTOR		
Q103,104			2SA1309A(Q,R)	TRANSISTOR		
Q105-110			2SC2878(B)	TRANSISTOR		
Q201			2SC2458(Y,GR)	TRANSISTOR		
Q201			2SC3311A(Q,R)	TRANSISTOR		
⚠ Q202,203			2SD2012	TRANSISTOR		
⚠ Q202,203			2SD2061	TRANSISTOR		
Q204			2SC2458(Y,GR)	TRANSISTOR		
Q204			2SC3311A(Q,R)	TRANSISTOR		
Q205			2SA1048(Y,GR)	TRANSISTOR		
Q205			2SA1309A(Q,R)	TRANSISTOR		
Q206			2SC2458(Y,GR)	TRANSISTOR		
Q206			2SC3311A(Q,R)	TRANSISTOR		
Q207			2SA1048(Y,GR)	TRANSISTOR		
Q207			2SA1309A(Q,R)	TRANSISTOR		
⚠ Q208			2SD2012	TRANSISTOR		
⚠ Q208			2SD2061	TRANSISTOR		

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Q209			2SC2458(Y,GR)	TRANSISTOR				
Q209			2SC3311A(Q,R)	TRANSISTOR				
⚠ Q211			2SD2012	TRANSISTOR				
⚠ Q211			2SD2061	TRANSISTOR				
Q301-305			2SC2878(B)	TRANSISTOR				
SUB-CIRCUIT UNIT (X13-735X-XX) KR-V990D only								
C15 ,16			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C17 ,18			CC45FSL1H101J	CERAMIC	100PF	J		
C19 ,20			C91-0729-05	CERAMIC	22PF	J		
C21 ,22			CE04KW1C220M	ELECTRO	22UF	16WV		
C32			CF92FV1H104J	MF-C	0.10UF	J		
C33			CQ93FMG1H471J	MYLAR	470PF	J		
C34			CE04KW1V101M	ELECTRO	100UF	35WV		
C37 ,38			CE04KW1V470M	ELECTRO	47UF	35WV		
C39 ,40			CE04KW1C471M	ELECTRO	470UF	16WV		
C43			CE04KW1C470M	ELECTRO	47UF	16WV		
C44			CE04KW1C101M	ELECTRO	100UF	16WV		
C45			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C46			CE04KW1C220M	ELECTRO	22UF	16WV		
C47			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C48			CE04KW1C470M	ELECTRO	47UF	16WV		
C49 ,50			CK45FB1H102K	CERAMIC	1000PF	K		
C51 -54			CQ93FMG1H103J	MYLAR	0.010UF	J		
C101,102			C91-0745-05	CERAMIC	100PF	K		
C105-108			C91-0745-05	CERAMIC	100PF	K		
C111-114			C91-0745-05	CERAMIC	100PF	K		
C117,118			C91-0745-05	CERAMIC	100PF	K		
C119,120			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C121,122			C91-0749-05	CERAMIC	220PF	K		
C123,124			C91-0729-05	CERAMIC	22PF	J		
C125,126			CE04KW1C220M	ELECTRO	22UF	16WV		
C127,128			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C129,130			CE04KW1HR47M	ELECTRO	0.47UF	50WV		
C131-134			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C135,136			C91-0745-05	CERAMIC	100PF	K		
C137,138			C91-0729-05	CERAMIC	22PF	J		
C139,140			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C141,142			CE04KW1HR47M	ELECTRO	0.47UF	50WV		
C143-146			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C147,148			C91-0745-05	CERAMIC	100PF	K		
C149,150			C91-0729-05	CERAMIC	22PF	J		
C151,152			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C153,154			CE04KW1HR47M	ELECTRO	0.47UF	50WV		
C155-158			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C159,160			C91-0745-05	CERAMIC	100PF	K		
C161,162			C91-0729-05	CERAMIC	22PF	J		
C163,164			CQ93FMG1H103J	MYLAR	0.010UF	J		
C165-170			C91-0729-05	CERAMIC	22PF	J		
C171-176			CE04KW1H100M	ELECTRO	10UF	50WV		
C177			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C178			CK45FB1H471K	CERAMIC	470PF	K		
C179,180			C91-0749-05	CERAMIC	220PF	K		
C181			C91-0769-05	CERAMIC	0.010UF	K		
C183			C91-0749-05	CERAMIC	220PF	K		
C185,186		*	CQ93FMG1H101K	MYLAR	100PF	K		

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C188		*	CQ93FMG1H101K	MYLAR	100PF	K		
C189,190			CC45FSL1H221J	CERAMIC	220PF	J		
C191			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C195,196			CE04KW1C470M	ELECTRO	47UF	16WV		
C197,198			CQ93FMG1H103J	MYLAR	0.010UF	J		
C199			CE04HW1A220M	NP-ELEC	22UF	10WV		
C200			CE04KW1H100M	ELECTRO	10UF	50WV		
C201			CE04HW1H0R1M	NP-ELEC	0.1UF	50WV		
C203-208			CE04KW1C470M	ELECTRO	47UF	16WV		
C209,210			CF92FV1H104J	MF-C	0.10UF	J		
C211-216			C91-0745-05	CERAMIC	100PF	K		
C217			CE04HW1E4R7M	NP-ELEC	4.7UF	25WV		
C301			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C302			CE04KW0J221M	ELECTRO	220UF	6.3WV		
C303			C90-1826-05	BACKUP-C	0.047F	5.5WV		
C304			CQ93FMG1H103J	MYLAR	0.010UF	J		
C306			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C307			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C310			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C311			C91-0769-05	CERAMIC	0.010UF	K		
CN1 -3		*	E40-9849-05	PIN ASS'Y	(16P)			
CN4		*	E40-9853-05	PIN ASS'Y	(20P)			
CN5			E40-4296-05	FLAT CABLE CONNECTOR (6P)			E	
CN6 ,7		*	E40-9841-05	PIN ASS'Y	(8P)			
CN8			E40-4804-05	SOCKET FOR PIN ASS'Y (30P)				
CN9		*	E40-9841-05	PIN ASS'Y	(8P)			
CN10		*	E40-9848-05	PIN ASS'Y	(15P)			
CN11			E40-4634-05	PIN ASS'Y	(15P)			
CN101			E40-4636-05	SOCKET FOR PIN ASS'Y (15P)				
CN102		*	E40-9831-05	SOCKET FOR PIN ASS'Y (15P)				
CN103		*	E40-9824-05	SOCKET FOR PIN ASS'Y (8P)				
J1,2			E63-0139-15	PHONO JACK(6P/VIDEO/TV/LD)				
J3			E11-0188-05	MINIATURE PHONE JACK(2P/SYSTEM)				
X1			L78-0267-05	RESONATOR	(4.194MHZ)			
CP1			R90-0500-05	MULTI-COMP	100KX6	J 1/4W		
CP2			R90-0803-05	MULTI-COMP	100KX7	J 1/4W		
CP3			R90-0875-05	MULTI-COMP	100KX15			
CP4 ,5			R90-0855-05	MULTI-COMP	100KX5	J		
CP6			R90-0803-05	MULTI-COMP	100KX7	J 1/4W		
R49			RD14NB2E331J	RD	330	J 1/4W		
R60 -63			RS14KB3D331J	FL-PROOF RS	330	J 2W		
R64 -66			RS14KB3D561J	FL-PROOF RS	560	J 2W		
R67 ,68			RS14KB3D271J	FL-PROOF RS	270	J 2W		
⚠ R69			RD14NB2E1R0J	RD	1.0	J 1/4W		
R70			RS14KB3D561J	FL-PROOF RS	560	J 2W		
R71			RS14KB3A100J	FL-PROOF RS	10	J 1W		
⚠ R72			RD14NB2E1R0J	RD	1.0	J 1/4W		
⚠ R193,194			RD14NB2E470J	RD	47	J 1/4W		
K1		*	S76-0050-05	MAGNETIC RELAY				
D1			HZS6.8N(B2)	ZENER DIODE				
D1			RD6.8ES(B2)	ZENER DIODE				
D2			HZS10N(B)	ZENER DIODE				
D2			RD10ES(B)	ZENER DIODE				

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Ref. No	Address	New Parts	Parts No.	Description	Destination	Remarks
D3			HZS16N(B)	ZENER DIODE		
D3			RD16ES(B)	ZENER DIODE		
D4,5			S5688B	DIODE		
D4,5			1SR139-100	DIODE		
D6,7			HSS104A	DIODE		
D6,7			1SS131	DIODE		
D8			S5688B	DIODE		
D8			1SR139-100	DIODE		
D9			HZS8.2N(B2)	ZENER DIODE		
D9			RD8.2ES(B2)	ZENER DIODE		
D10			HSS104A	DIODE		
D10			1SS131	DIODE		
D105,106			HSS104A	DIODE		
D105,106			1SS131	DIODE		
D107			HZS4.7N(B)	ZENER DIODE		
D107			RD4.7ES(B)	ZENER DIODE		
D108			HZS5.1N(B2)	ZENER DIODE		
D108			RD5.1ES(B2)	ZENER DIODE		
D109-112			HSS104A	DIODE		
D109-112			1SS131	DIODE		
D302-306			HSS104A	DIODE		
D302-306			1SS131	DIODE		
D311-317			HSS104A	DIODE		
D311-317			1SS131	DIODE		
IC1		*	UPD78058GC-224	MI-COM IC		
IC2			S-806D-Z	ANALOGUE IC		
IC3			TC9215P	IC(ANALOG SWITCH X 6)		
IC4			NJM4580L	IC(OP AMP X2)		
IC101			NJU7313AL	ANALOGUE IC		
IC102			LC7536R	ANALOGUE IC		
IC103			LC7536	ANALOGUE IC		
IC104			LC7536R	ANALOGUE IC		
IC105,106			NJM4565L-D	ANALOGUE IC		
IC107,108			NJM4580L	IC(OP AMP X2)		
IC109,110			NJM4565L-D	ANALOGUE IC		
IC111			NJM4565D-D	IC(OP AMP X2)		
⚠ Q1,2			2SD2061	TRANSISTOR		
Q3			2SC2458(Y,GR)	TRANSISTOR		
Q3			2SC3311A(Q,R)	TRANSISTOR		
Q4			2SA1048(Y,GR)	TRANSISTOR		
Q4			2SA1309A(Q,R)	TRANSISTOR		
Q5			2SC2458(Y,GR)	TRANSISTOR		
Q5			2SC3311A(Q,R)	TRANSISTOR		
Q6			2SA1048(Y,GR)	TRANSISTOR		
Q6			2SA1309A(Q,R)	TRANSISTOR		
⚠ Q7			2SD2061	TRANSISTOR		
Q8,9			2SC2458(Y,GR)	TRANSISTOR		
Q8,9			2SC3311A(Q,R)	TRANSISTOR		
⚠ Q10,11			2SD2061	TRANSISTOR		
Q12,13			2SC2458(Y,GR)	TRANSISTOR		
Q12,13			2SC3311A(Q,R)	TRANSISTOR		
Q101			2SA1048(Y,GR)	TRANSISTOR		
Q101			2SA1309A(Q,R)	TRANSISTOR		
⚠ Q102			2SC2003(L,K)	TRANSISTOR		
Q103			2SA1048(Y,GR)	TRANSISTOR		

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Q103			2SA1309A(Q,R)	TRANSISTOR				
Q105-110			2SC2878(B)	TRANSISTOR				
Q111			2SA1048(Y,GR)	TRANSISTOR				
Q111			2SA1309A(Q,R)	TRANSISTOR				
DISPLAY UNIT (X14-414X-XX)								
D3,4			B30-1291-05	LED				D
D5			B30-1290-05	LED				
C1,2			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
⚠ C3			C91-1488-05	MF	6800PF	250VAC		
C4			C91-0769-05	CERAMIC	0.010UF	K		
C5-7			CC45FSL1H101J	CERAMIC	100PF	J		
C8-11			C91-0745-05	CERAMIC	100PF	K		
C12			CE04KW1C330M	ELECTRO	33UF	16WV		
C13-16			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C17,18			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C19,20			CC45FSL1H221J	CERAMIC	220PF	J		
C21,22			CC45FSL1H220J	CERAMIC	22PF	J		
C23,24			CK45FB1H561K	CERAMIC	560PF	K		
C25,26			CE04KW1C100M	ELECTRO	10UF	16WV		
C27,28			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C29,30			CQ93FMG1H393J	MYLAR	0.039UF	J		
C31,32			CQ93FMG1H563J	MYLAR	0.056UF	J		
C33,34			CQ93FMG1H103J	MYLAR	0.010UF	J		
C35,36			CK45FB1H471K	CERAMIC	470PF	K		
C37			C91-0769-05	CERAMIC	0.010UF	K		
C38-42			C91-0745-05	CERAMIC	100PF	K		
C43,44			C91-0753-05	CHIP C	470PF	K		
C45,46			C90-3224-05	ELECTRO	4.7UF	16WV		
C47,48			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C49,50			C90-3224-05	ELECTRO	4.7UF	16WV		
C51,52			C91-0729-05	CERAMIC	22PF	J		
C53			C91-0757-05	CERAMIC	1000PF	K		
C54			C91-0769-05	CERAMIC	0.010UF	K		
C55,56			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C57			C90-3225-05	ELECTRO	10UF	16WV	E	
C58			CC45FSL1H331J	CERAMIC	330PF	J	E	
C59			CE04KW1H2R2M	ELECTRO	2.2UF	50WV	E	
C60			C90-3225-05	ELECTRO	10UF	16WV	E	
C61			CK45FF1H103Z	CERAMIC	0.010UF	Z	E	
C62			CK45FB1H102K	CERAMIC	1000PF	K	E	
C63			CC45FCH1H220J	CERAMIC	22PF	J	E	
C64			CC45FCH1H470J	CERAMIC	47PF	J	E	
C65			CK45FF1H103Z	CERAMIC	0.010UF	Z	E	
C66			CK45FB1H561K	CERAMIC	560PF	K	E	
C100-119			CC45FSL1H101J	CERAMIC	100PF	J		
C120-123			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C124-126			CE04KW1C331M	ELECTRO	330UF	16WV		
C127			CE04KW1C100M	ELECTRO	10UF	16WV		
C128			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C129			CE04KW1E471M	ELECTRO	470UF	25WV		
C130,131			CE04KW1C470M	ELECTRO	47UF	16WV		
C132			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C133			CE04KW1C470M	ELECTRO	47UF	16WV		
C134			CK45FF1H103Z	CERAMIC	0.010UF	Z		

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C135			CE04KW1C331M	ELECTRO 330UF 16WV		
C136			CK45FF1H223Z	CERAMIC 0.022UF Z		
C137			CK45FB1H222K	CERAMIC 2200PF K		
C138			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		
C139-141			CC45FSL1H101J	CERAMIC 100PF J		
C142			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		
C143			CF92FV1H105J	MF-C 1.0UF J		
C145			CC45FSL1H220J	CERAMIC 22PF J		
C146			CC45FSL1H270J	CERAMIC 27PF J		
C148			CC45FCH1H050C	CERAMIC 5.0PF C		
C149			CC45FCH1H220J	CERAMIC 22PF J		
C150			CF92FV1H105J	MF-C 1.0UF J		
C151			CE04KW1H2R2M	ELECTRO 2.2UF 50WV		
C152			CK45FF1H223Z	CERAMIC 0.022UF Z		
C153			CK45FB1H332K	CERAMIC 3300PF K		
C154			CC45FSL1H221J	CERAMIC 220PF J		
C155			CK45FF1H103Z	CERAMIC 0.010UF Z		
C156			CE04KW1HR47M	ELECTRO 0.47UF 50WV		
C157			CK45FB1H471K	CERAMIC 470PF K		
C158			CK45FB1H561K	CERAMIC 560PF K		
C159			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C160,161			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		
C162			CE04KW1C331M	ELECTRO 330UF 16WV		
C163			CK45FF1H223Z	CERAMIC 0.022UF Z		
C164,165			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		
C166			CE04KW1C331M	ELECTRO 330UF 16WV		
C167			CK45FF1H223Z	CERAMIC 0.022UF Z		
C168,169			CK45FF1H103Z	CERAMIC 0.010UF Z		
C170			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		
C171			CE04KW1C331M	ELECTRO 330UF 16WV		
C172			CK45FF1H103Z	CERAMIC 0.010UF Z		
C173			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		
C174			CK45FF1H223Z	CERAMIC 0.022UF Z		
C175			CK45FF1H103Z	CERAMIC 0.010UF Z		
C176,177			CE04KW1C100M	ELECTRO 10UF 16WV		
C178			CE04KW1E471M	ELECTRO 470UF 25WV		
C179,180			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		
C181,182			CE04KW1C470M	ELECTRO 47UF 16WV		
C183			CE04KW1E471M	ELECTRO 470UF 25WV		
C184-190			CK45FF1H103Z	CERAMIC 0.010UF Z		
C191			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C192,193			CK45FF1H103Z	CERAMIC 0.010UF Z		
C194			CE04KW1C101M	ELECTRO 100UF 16WV		
C195,196			CC45FSL1H101J	CERAMIC 100PF J		
C197			CE04HW1E100M	NP-ELEC 10UF 25WV		
C198,199			CK45FF1H103Z	CERAMIC 0.010UF Z		
C200-202			CE04KW1H100M	ELECTRO 10UF 50WV		
C203			CF92FV1H105J	MF-C 1.0UF J		
C204			CK45FF1H103Z	CERAMIC 0.010UF Z		
C205			CC45FSL1H470J	CERAMIC 47PF J		
C206			C91-0769-05	CERAMIC 0.010UF K	E	
TC1			C05-0097-05	CERAMIC TRIMMER CAPACITOR(30PF)		
CN1			E40-4796-05	PIN ASS'Y (30P)		
CN2			E40-4297-05	FLAT CABLE CONNECTOR (7P)		

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CN3 ,4			E40-4738-05	SOCKET FOR PIN ASS'Y (10P)		
CN5 ,6		∗	E40-4730-05	PIN ASS'Y (10P)		
CN7 ,8		∗	E40-9824-05	SOCKET FOR PIN ASS'Y (8P)		
J1		∗	E63-0163-05	PHONO JACK(4P/VIDEO1/TV/LD)		
J2		∗	E63-0162-05	PHONO JACK(3P/VIDEO2/MONITOR)		
J3,4			E56-0011-05	CYLINDRICAL RECEPTACLE(3P)		
J5		∗	E56-0016-05	CYLINDRICAL RECEPTACLE(1P/MOMI)		
J6		∗	E11-0291-05	MINIATURE PHONE JACK(2P/REPEAT)		
J7			E63-0129-05	PHONO JACK(3P/VIDEO3/AUDIO)		
J8			E56-0012-05	CYLINDRICAL RECEPTACLE(1P/SVID)		
J9			E11-0272-05	PHONE JACK		
J12			J11-0808-05	WIRE CLAMPER		
L1-3			L40-1091-17	SMALL FIXED INDUCTOR(1UH)	E	
L4,5			L40-1001-17	SMALL FIXED INDUCTOR(10UH,K)	E	
L6-13			L92-0044-05	FERRITE CORE		
L100			L40-2201-17	SMALL FIXED INDUCTOR(22UH,K)		
L101			L40-1091-17	SMALL FIXED INDUCTOR(1UH)		
X1			L77-2002-05	CRYSTAL RESONATOR(4.332MHZ)	E	
X2			L78-0244-05	RESONATOR (4.000M)	E	
X100			L77-1182-05	CRYSTAL RESONATOR(14.31818M)		
X101			L78-0272-05	RESONATOR (503.5K)		
X102			L78-0244-05	RESONATOR (4.000M)		
R1,2			RD14NB2E221J	RD 220 J 1/4W		
R25			RD14NB2E100J	RD 10 J 1/4W		
R65 ,66			RS14KB3D471J	FL-PROOF RS 470 J 2W		
⚠ R215			RD14NB2E270J	RD 27 J 1/4W		
R224,225			RS14KB3D271J	FL-PROOF RS 270 J 2W		
R227			RS14KB3D221J	FL-PROOF RS 220 J 2W		
⚠ R284			RD14NB2E222J	RD 2.2K J 1/4W		
⚠ R294			RD14NB2E270J	RD 27 J 1/4W		
R307			RS14KB3D181J	FL-PROOF RS 180 J 2W		
R326			RD14NB2E2R2J	RD 2.2 J 1/4W		
R344			RD14NB2E2R2J	RD 2.2 J 1/4W		
R345			RS14KB3D100J	FL-PROOF RS 10 J 2W		
⚠ R346			RD14NB2E270J	RD 27 J 1/4W		
R347			RS14KB3D100J	FL-PROOF RS 10 J 2W		
VR1 ,2		∗	R31-0063-05	VARIABLE RESISTOR		
S1-10			S70-0031-05	TACT SWITCH		
S11			S70-0031-05	TACT SWITCH	E	
S12 -19			S70-0031-05	TACT SWITCH		
S20			S70-0031-05	TACT SWITCH	E	
S21 -28			S70-0031-05	TACT SWITCH		
S29			S70-0031-05	TACT SWITCH	E	
S30 -33			S70-0031-05	TACT SWITCH		
⚠ S36			S40-1138-05	PUSH SWITCH (POWER)		
S34			T99-0559-05	ROTARY ENCODER (VOLUME)		
S35		∗	T99-0571-05	ROTARY ENCODER (INPUT SEL)		
D1			HZS8.2N(B2)	ZENER DIODE		
D1			RD8.2ES(B2)	ZENER DIODE		
D2			HSS104A	DIODE		
D2			1SS131	DIODE		
D6,7			HSS104A	DIODE		

L : Scandinavia **K** : USA **P** : Canada **R** : Mexico **D** : KR-V990D
Y : PX(Far East, Hawaii) **T** : Europe **E** : Europe **G** : Germany **9** : KR-V9080
Y : AAFES(Europe) **X** : Australia **M** : Other Areas **C** : CHINA

⚠ indicates safety critical components.

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

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Ref. No	Address	New Parts	Parts No.	Description	Destination	Remarks
D6,7			1SS131	DIODE		
D8			HSS104A	DIODE	E	
D8			1SS131	DIODE	E	
D9-14			HSS104A	DIODE		
D9-14			1SS131	DIODE		
D15 -20			HSS104	DIODE		
D15 -20			1SS133	DIODE		
D21			HSS104A	DIODE	E	
D21			1SS131	DIODE	E	
D22			HSS104A	DIODE		
D22			1SS131	DIODE		
D100			HZS5.6N(B2)	ZENER DIODE		
D100			RD5.6ES(B2)	ZENER DIODE		
D101			HZS5.1N(B2)	ZENER DIODE		
D101			RD5.1ES(B2)	ZENER DIODE		
D102			HZS5.6N(B2)	ZENER DIODE		
D102			RD5.6ES(B2)	ZENER DIODE		
D103			HZS5.1N(B2)	ZENER DIODE		
D103			RD5.1ES(B2)	ZENER DIODE		
D104			HSS104A	DIODE		
D104			1SS131	DIODE		
D105,106			HSS104	DIODE		
D105,106			1SS133	DIODE		
ED1		*	11-MT-103GK	INDICATOR TUBE		
IC1			UPD16311	MOS-IC		
IC2			NJM4580D-D	IC(OP AMP X2)		
IC3			LC6543H-4D68	MI-COM IC	E	
IC4			SAA6579	ANALOGUE IC	E	
IC5			NJM4565L-D	ANALOGUE IC		
IC100			LA7951	IC(AV SELECTOR)		
IC101			MC14577CP	ANALOGUE IC		
IC102		*	MB90089PF-G143	CUSTOM IC		
IC103			MM1067XD	IC(SYNC SEPARATION)		
IC104			MC74HC4053N	IC(2ch MULTIPLEXER X3)		
IC105,106			LA7951	IC(AV SELECTOR)		
IC107			PST993D-T	ANALOGUE IC		
IC107			S-806D-Z	ANALOGUE IC		
IC108		*	SC427202P	CUSTOM IC	KPYXMC	
IC108		*	SC427203P	CUSTOM IC	E	
IC109			XL24C01AP	MEMORY IC		
Q1-3			2SC2458(Y,GR)	TRANSISTOR		
Q1-3			2SC3311A(Q,R)	TRANSISTOR		
Q4			DTA113ZS	DIGITAL TRANSISTOR		D
Q4			UN4119	TRANSISTOR		D
Q5-7			DTC113ZS	DIGITAL TRANSISTOR		D
Q5-7			UN4219	TRANSISTOR		D
Q100-102			2SC2878(B)	TRANSISTOR		
Q103-110			2SC2003(L,K)	TRANSISTOR		
Q111			2SC2458(Y,GR)	TRANSISTOR		
Q111			2SC3311A(Q,R)	TRANSISTOR		
Q112			2SC2003(L,K)	TRANSISTOR		
⚠ Q113,114			2SD2012	TRANSISTOR		
⚠ Q113,114			2SD2061	TRANSISTOR		
Q115			2SA1048(Y,GR)	TRANSISTOR		
Q115			2SA1309A(Q,R)	TRANSISTOR		

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Ref. No	Address	New Parts	Parts No.	Description	Destination	Remarks
Q116,117			2SC2458(Y,GR)	TRANSISTOR		
Q116,117			2SC3311A(Q,R)	TRANSISTOR		
Q118			2SC3940A(R,S)	TRANSISTOR		
Q118			2SD863(E,F)	TRANSISTOR		
A1		*	W02-2541-05	ELECTRIC CIRCUIT MODULE		

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KR-V990D/V9080

SPECIFICATIONS

For U.S.A. and Canada

Rated power output during STEREO operation

120 watts per channel minimum RMS, both channels driven, at 8 Ω from 20 Hz to 20 kHz with no more than 0.03 % total harmonic distortion. (FTC)

Rated power output during SURROUND operation

Front

105 watts per channel minimum RMS, both channels driven, at 8 Ω, 1kHz with no more than 0.7 % total harmonic distortion.

Center

105 minimum RMS at 8 Ω, 1kHz with no more than 0.7 % total harmonic distortion.

Rear

70 watts per channel minimum RMS, both channels driven, at 8 Ω, 1kHz with no more than 0.7 % total harmonic distortion.

Total harmonic distortion.....0.005%(1 kHz, 60W, 8Ω)
Frequency response
LINE(CD, AUX, TAPE).....10 Hz ~ 75 kHz, + 0 dB, -3 dB
Signal to noise ratio (IHF'66)
PHONO (MM).....75 dB
LINE (CD, AUX, TAPE).....98 dB
Input sensitivity / impedance
PHONO (MM).....2.5 mV / 47 kΩ
LINE (CD, AUX, TAPE).....200 mV / 47 kΩ
Output level / impedance
TAPE REC.....200 mV / 2.2 kΩ
PRE OUT (SUBWOOFER).....1V / 1 kΩ (KR-V9080)
PRE OUT (FRONT, CENTER, REAR, SUBWOOFER)
.....1V / 1kΩ (KR-V990D)
Tone Control
BASS.....±10 dB (at 100 Hz)
TREBLE.....±10 dB (at 10 kHz)
LOUDNESS control
VOLUME at -30 dB level.....+8 dB (at 100 Hz)

DIGITAL AUDIO section (KR-V990D)
Sampling frequency.....32 kHz, 44.1 kHz, 48 kHz
Input level / impedance
Coaxial (TV / CABLE).....0.5 Vp-p / 75 Ω

VIDEO section
TELEVISION 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)
.....1.2μV (75 Ω) / 13.2 dBf (75 kHz DEV., S/N 30 dB)
50dB quieting sensitivity
STEREO.....32μV (75 Ω) / 41.2 dBf (75 kHz DEV.)
Total harmonic distortion (1 kHz)
MONO.....0.6 % (65.2 dBf input)
STEREO.....0.7 % (65.2 dBf input)
Signal to noise ratio (1 kHz, 75 kHz DEV.)
MONO.....75 dB (65.2 dBf input)
STEREO.....68 dB (65.2 dBf input)
Selectivity (±400 kHz).....50 dB
Stereo separation (1 kHz).....40 dB
Frequency response.....30 Hz ~ 15 kHz, +0.5 dB, -3.0 dB

AM tuner section
Tuning frequency range.....530 kHz ~ 1,700 kHz
Usable sensitivity (30% mod., S/N 20 dB)
.....16μV / (500 μV / m)
Total harmonic distortion.....0.7 %
Signal to noise ratio (30 % mod. 1mV input).....45 dB
Selectivity.....30 dB

GENERAL
Power consumption.....5.2 A
AC outlet
SWITCHED.....2 (total 150 W, 1.2 A max.)
Dimensions.....W : 440 mm (17 - 5 / 16")
H : 162 mm (6-3 / 8")
D : 396 mm (15 - 9 / 16")
Weight (Net).....12.8 kg (28.2 lb) KR-V9080
13.1 kg (28.9 lb) KR-V990D

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

KR-V990D/V9080

Note:
Component and circuity are subject to modification to insure best operation under differing local conditions. This manual is based on the U.S.A. (K) 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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