

## ADJUSTMENT

### FM SECTION INPUT SELECTOR : FM MODE X05-4700

NO.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	TUNER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
1	DISCRIMINATOR	(A) 98 MHz, 60dBμ (ANT INPUT) 1 kHz, ±40 kHz DEV : E/T/Q TYPE 1 kHz, ±75 kHz DEV (OTHER TYPE)	Connect a DC voltmeter between pin 1 and pin2 of CN2.	MONO 98.0 MHz	L31	0V	(a)
					L32 (EXCEPT K/P)	Minimum distortion.	
2	DISTORTION (STEREO)	(B) 98 MHz, 60dBμ (ANT INPUT) 1 kHz, ±40 kHz DEV : E/T/Q TYPE 1 kHz, ±67.5 kHz DEV PILOT ±7.5 kHz DEV OTHER TYPE	(E)	AUTO 98.0 MHz	T 1 (A1)	Minimum distortion.	(a)

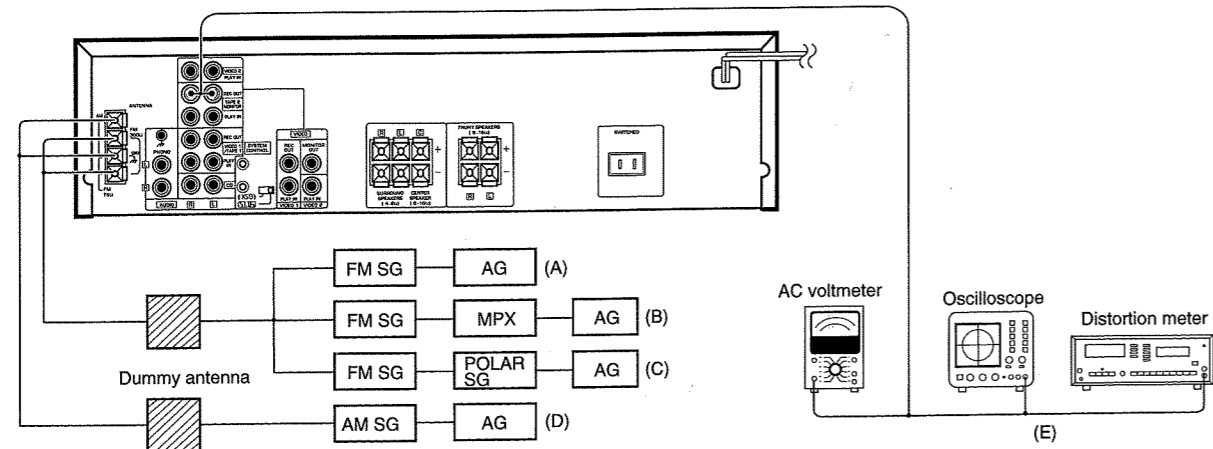
### X05-4690

NO.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	TUNER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
1	DISTORTION (STEREO)	(B) 98 MHz, 60dBμ (ANT INPUT) 1 kHz, ±67.5 kHz DEV PILOT: ±7.5 kHz DEV	(E)	AUTO 98.0 MHz	T1 (A1)	Minimum distortion.	(a)

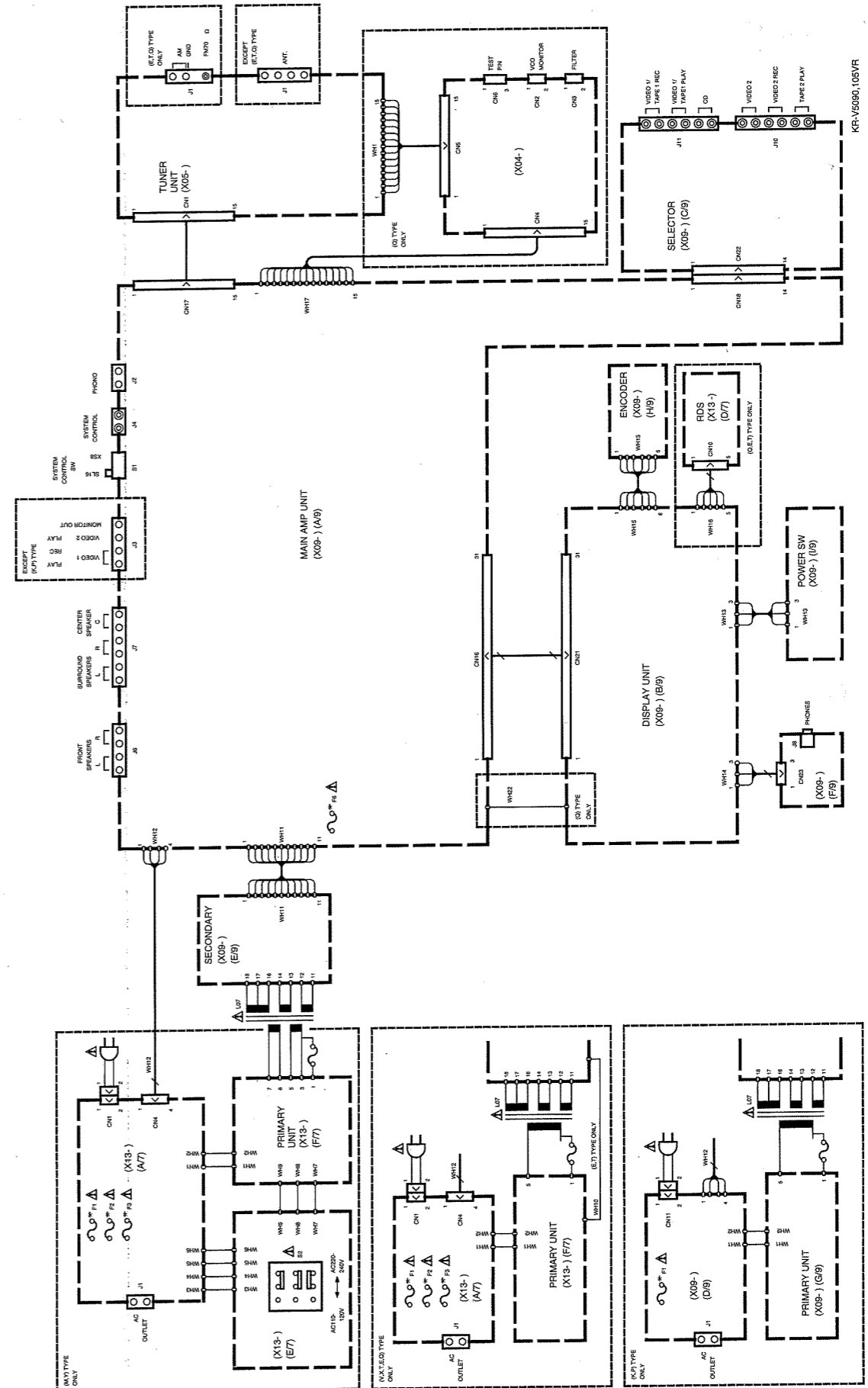
### POLAR UNIT X04-1313 Q TYPE (65MHz~74MHz BAND)

NO.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	TUNER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
1	VCO	(C) 69 MHz, 60dBμ (ANT INPUT) 1 kHz, 0 kHz DEV SUB, 0 kHz DEV	Connect a frequency counter to VCO monitor (CN2).	AUTO 69 MHz	VR 2	Adjust it the frequency counter reads 31.25 kHz ±100 kHz.	
2	SEPARATION	(C) 69 MHz, 60dBμ (ANT INPUT) 1 kHz, 40 kHz DEV SUB, 10 kHz DEV Select : L or R	Connect a oscilloscope to TUNER OUT (CN6).	AUTO 69 MHz	TC 1	Minimum crosstalk.	
3	SEPARATION	(C) SAME AS ABOVE	Connect a oscilloscope to TUNER OUT (CN6).	AUTO 69 MHz	VR 1	Minimum crosstalk.	

### INSTRUMENT CONNECTION



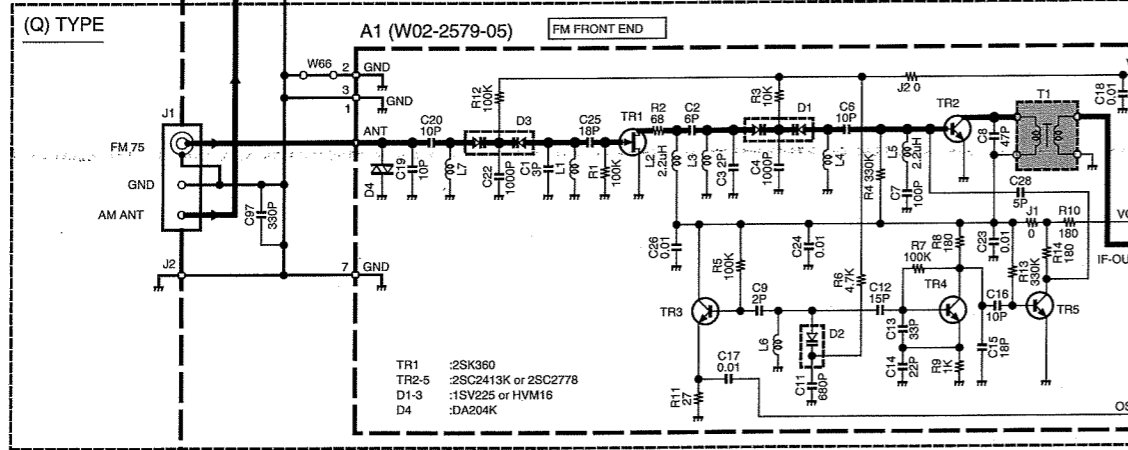
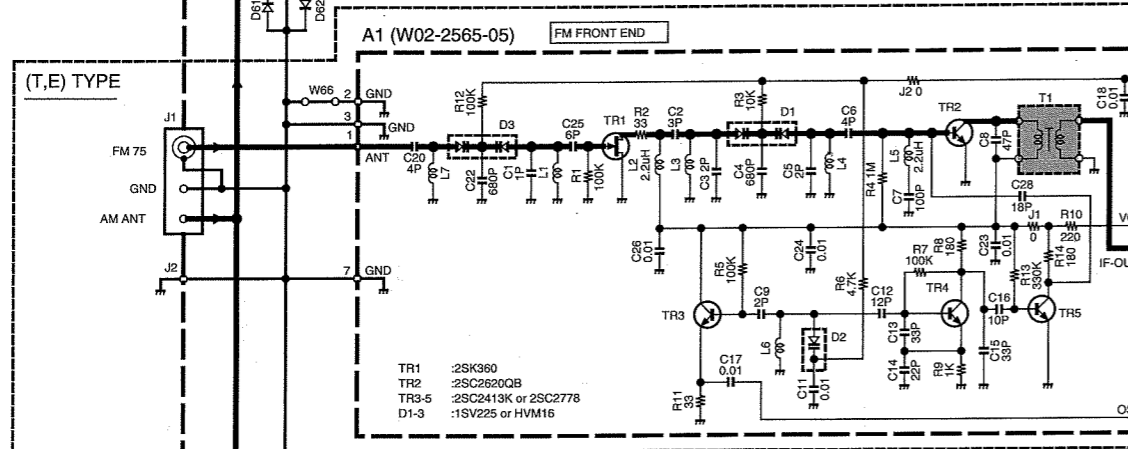
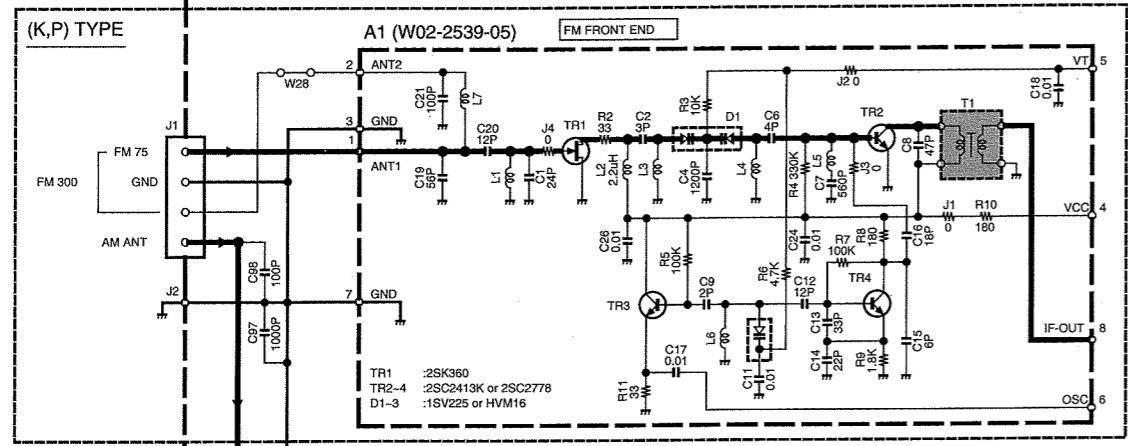
## WIRING DIAGRAM



(X05-470X-XX) : K,P,T,E,Q TYPE

KR-V5090 (X05-470X-XX)

DESTINATION COUNTRY	UNIT No.	⊕	⊙	C7,8, 86-88	C29,59 103	C39,59, 99,100	C47	C48	C63,64	C57, 58	C102	L31	L32, L35, 36	Q2, R3	R6	R10-16, 59	R22	R35, 36	R37	R39	R43, 44,41	R45	R46	R47, 48	R88	W68, 92	W76, 77	CF1,2	CN1	WH1		
U.K.	E	2-71	YES	YES	NO	NO	6800P	1000P	0.022	YES	NO	L30-0929-05	YES	YES	YES	3.3K	22	YES	W61	33K	3K	47K	2.2K	1.2K	1.2K	3.9K	1K	NO	NO	L72-0596-05	YES	NO
EUHOPE	E	2-71	YES	YES	NO	NO	6800P	1000P	0.022	YES	NO	L30-0929-05	YES	YES	YES	3.3K	22	YES	W61	33K	3K	47K	2.2K	1.2K	1.2K	3.9K	1K	NO	NO	L72-0596-05	YES	NO
RUSSIA	Q	3-81	NO	NO	YES	YES	6800P	100P	0.022	NO	1000P																YES	YES		NO	YES	



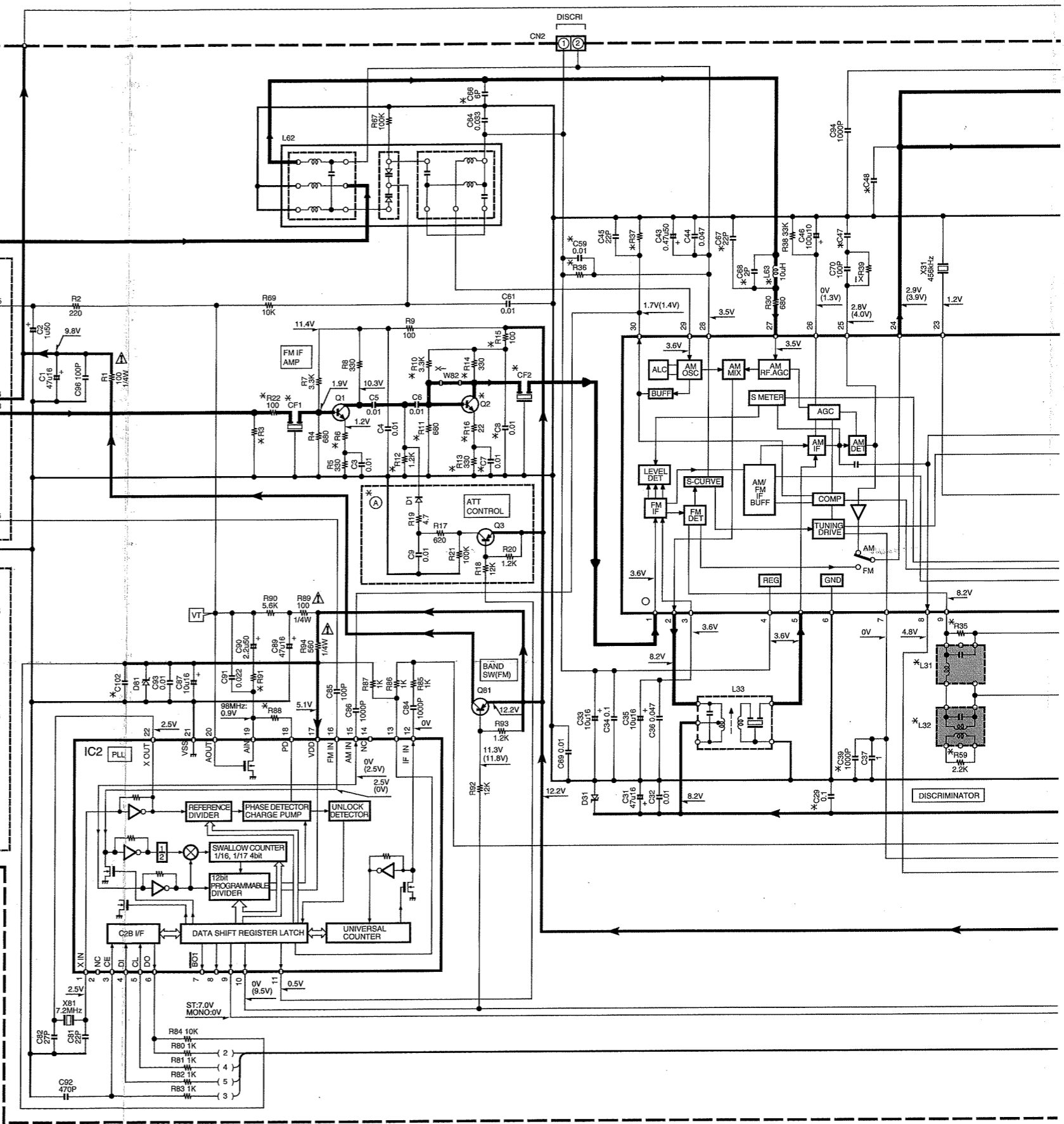
**CAUTION:** For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). Δ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric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

The DC voltage is an actual reading measured with a high impedance type voltmeter 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

- IC1 : LA1836
- IC2 : LC72131
- IC3 : NJM2904M
- Q1,2 : 2SC2714(R,Q)
- Q3,61,103 : 2SA1578A(R,S)
- Q31,32 : 2SC4081(R,S)
- Q101,102 : 2SD1328
- D1,33,61,62 : 1SS133
- D31 : MTZJ6.2(B)
- D32 : MA111
- D81 : MTZJ5.1(B)
- D101 : MTZJ3.3(B)

BAND	FREQ	VT
FM	LF	2.2V(0.8V)
FM	HF	7.5V
AM	LF	1.2V
AM	HF	4.8V



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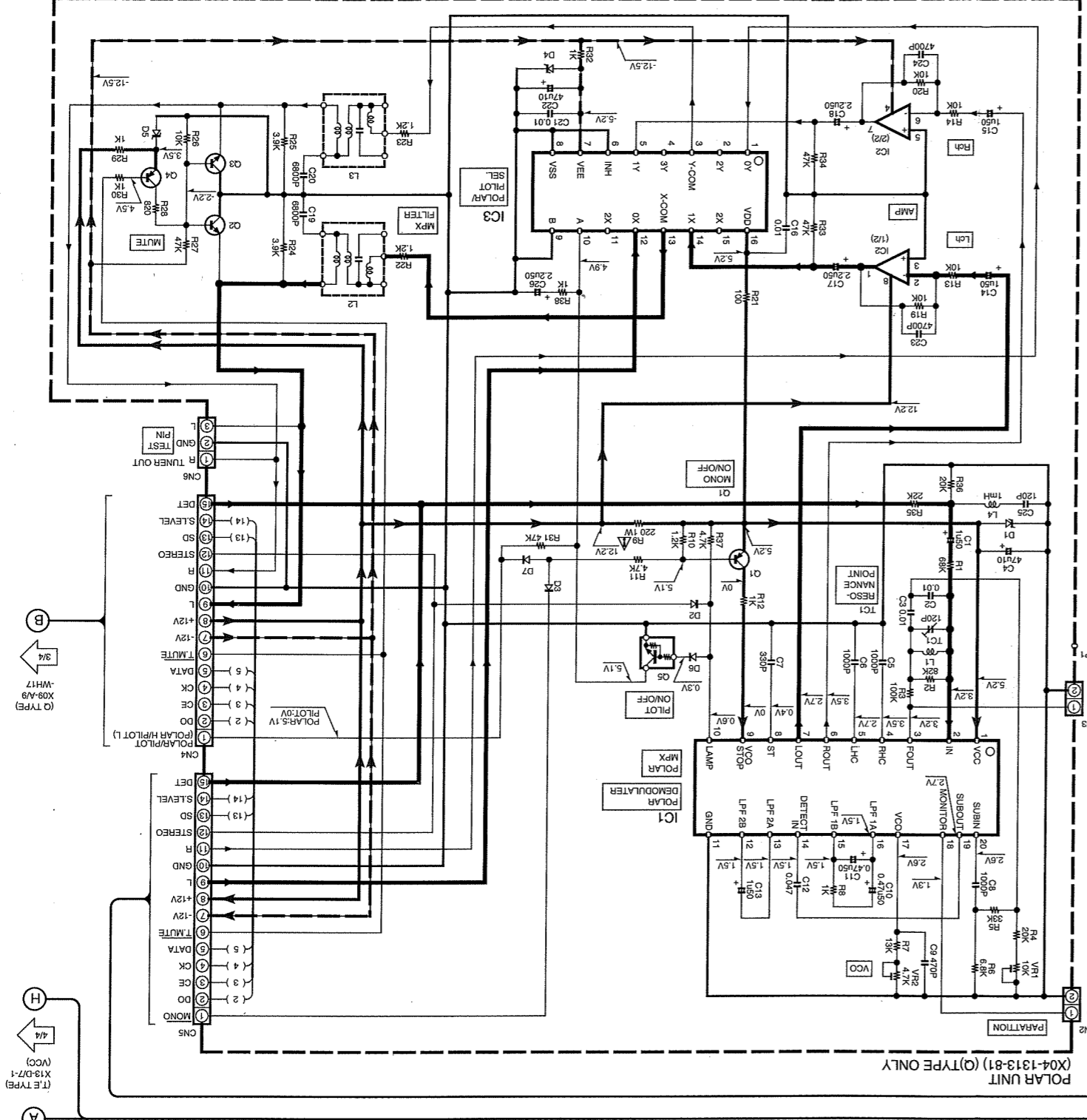
# 105VR/KR-V5090

Y05-3270-10

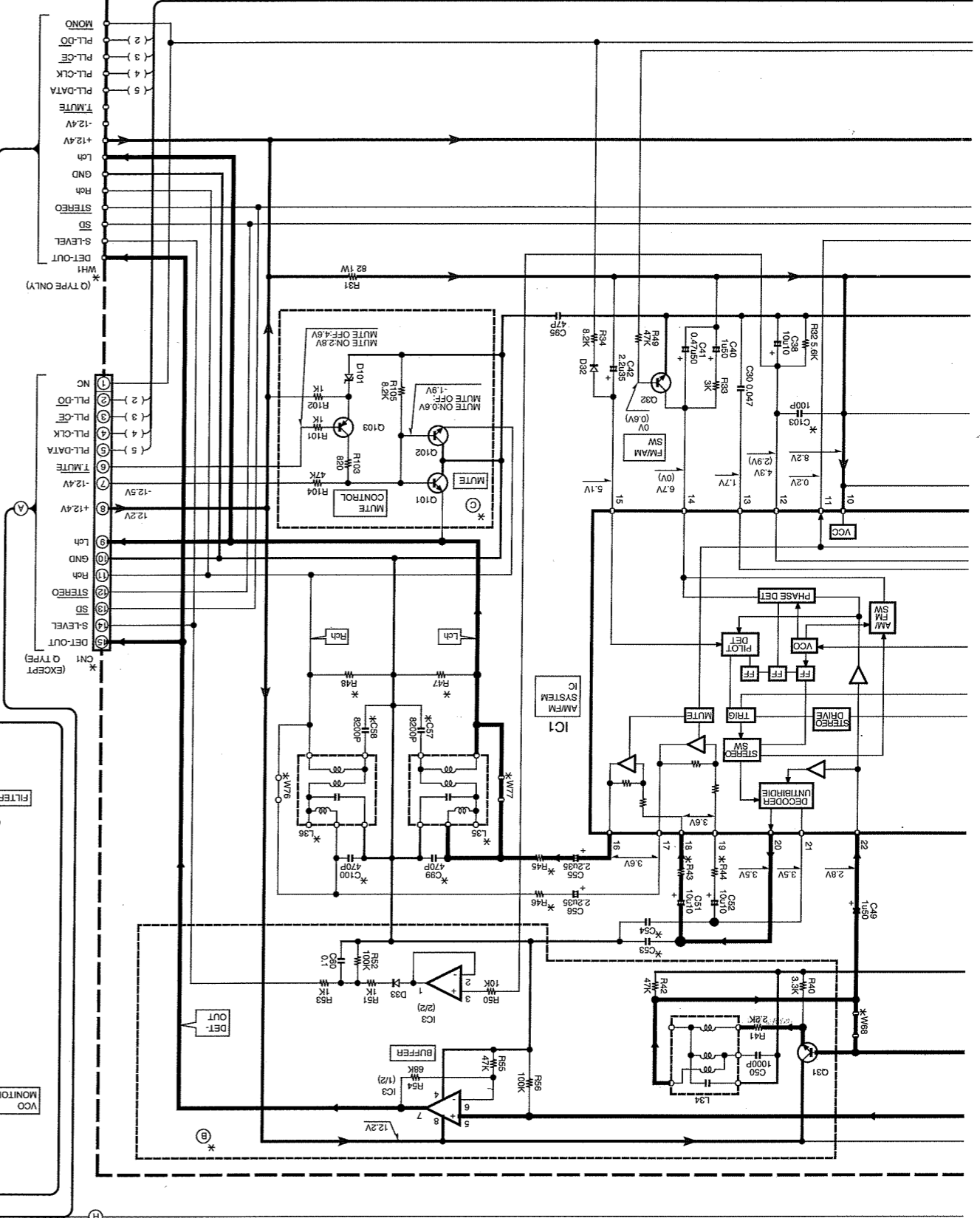
SIGNAL LINE  
 GND LINE  
 +B LINE  
 -B LINE

KR-V5090/105VR(K) (1/4)

- (X4) IC1 : IR3R42
- IC2 : NJM4565D
- IC3 : TC4052BP
- Q1,4 : 2SA93A(S,Q,R) or 2SA117F(F,E)
- Q2,3 : 2SC287B(B)
- Q5 : DTC1245A or UN4212
- D1,4 : MTJ5,1(B) or UZ-5,1BSB
- D2,3,6,7 : MTJ3,3(B) or UZ-3,3BSB



POLAR UNIT (X04-1313-81) (Q) TYPE ONLY



(K,P,T,E TYPE)  
X09-A9  
-CN17

(T,E TYPE)  
X13-D7-1  
-VCC1

3/4

4/4

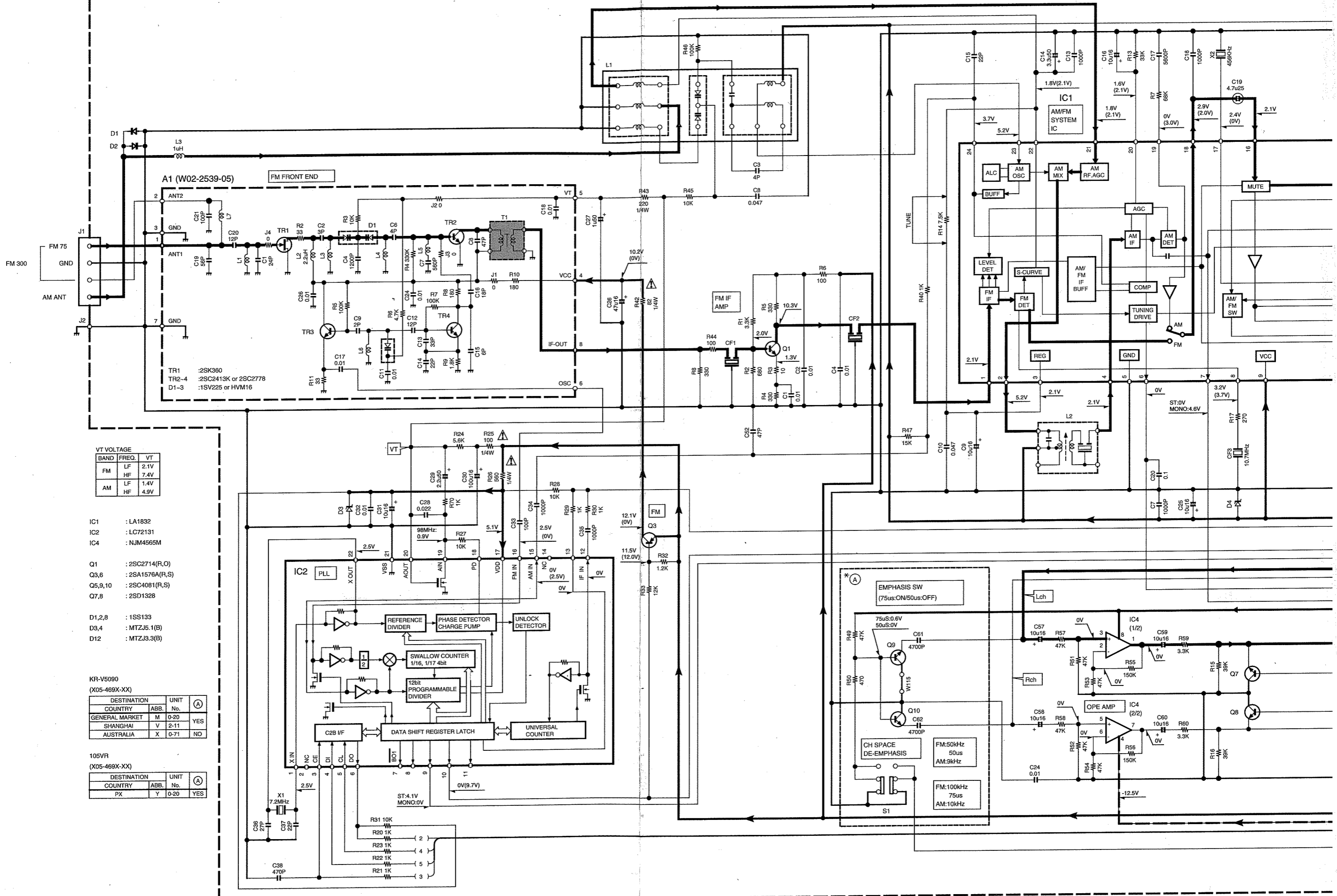
(Q TYPE)  
X03-A9  
-WH17

3/4

DESTINATION	UNIT	LABB No.	COUNTRY	U.S.A.	CANADA
C7 A5/7,58	(A) (B)	88-68	NO	YES	NO
C29,38,58	(C)	99,100,103	NO	YES	NO
C47	(C)	5600P	NO	YES	NO
C48	(C)	1200P	NO	YES	NO
C53,54	(C)	0.033	NO	YES	NO
C102	(C)	180P	NO	YES	NO
L31	(L)	L80-0910-05	NO	YES	NO
L32	(L)	L92	NO	YES	NO
L63	(L)	W26	NO	YES	NO
C2	(C)	R10-16	NO	YES	NO
R3	(R)	59	NO	YES	NO
R6	(R)	R22	NO	YES	NO
R8	(R)	R35	NO	YES	NO
R9	(R)	R43,44	NO	YES	NO
R36	(R)	24K	NO	YES	NO
R37	(R)	22K	NO	YES	NO
R38	(R)	3.6K	NO	YES	NO
R47	(R)	3.9K	NO	YES	NO
R48	(R)	3.9K	NO	YES	NO
R88	(R)	10K	NO	YES	NO
R91	(R)	10K	NO	YES	NO
R92	(R)	1K	NO	YES	NO
CF-1,2	(C)	W88,76	NO	YES	NO
CN1	(C)	L72-0586-05	NO	YES	NO
CN1	(C)	77,82	NO	YES	NO
CN1	(C)	1K	NO	YES	NO

KENWOOD

(X05-469X-XX) : M,V,X,Y TYPE



**A1 (W02-2539-05) FM FRONT END**

TR1 : 2SK360  
 TR2-4 : 2SC2413K or 2SC2778  
 D1-3 : 1SV225 or HVM16

**VT VOLTAGE**

BAND	FREQ.	VT
FM	LF	2.1V
	HF	7.4V
AM	LF	1.4V
	HF	4.9V

- IC1 : LA1832
- IC2 : LC72131
- IC4 : NJM4565M
- Q1 : 2SC2714(R,O)
- Q3,6 : 2SA1576A(R,S)
- Q5,9,10 : 2SC4081(R,S)
- Q7,8 : 2SD1328
- D1,2,8 : 1SS133
- D3,4 : MTZJ5.1(B)
- D12 : MTZJ3.3(B)

**KR-V5090 (X05-469X-XX)**

DESTINATION	UNIT	(A)
COUNTRY	ABB. No.	
GENERAL MARKET	M 0-20	YES
SHANGHAI	V 2-11	
AUSTRALIA	X 0-71	NO

**105VR (X05-469X-XX)**

DESTINATION	UNIT	(A)
COUNTRY	ABB. No.	
PX	Y 0-20	YES

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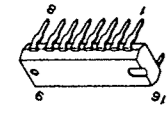
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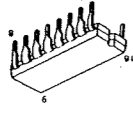
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# KENWOOD 105VR/KR-V5090

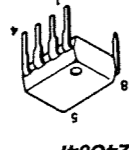
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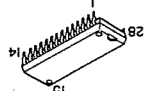
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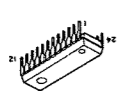
TC4052BP



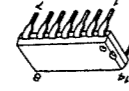
NJM4565D  
X24C04P



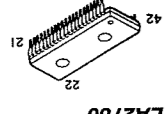
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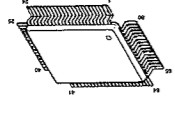
LV1016



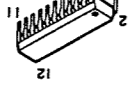
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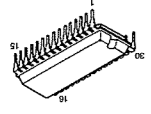
LA2786



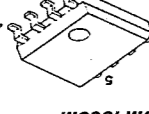
M62430FP



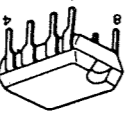
LC72131



LA1836



NJM4565M



NJM4580D-D

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

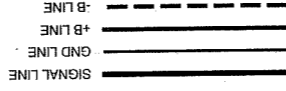
The DC voltage is an actual reading measured with a high impedance type voltmeter as the AM/FM signal generator is specified to the conditions as shown in the list below. The measurement value may vary depending on the measuring instruments used or on the product. The value shown in ( ) is actual reading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

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

KR-V5090,105VR(M) (2/4)



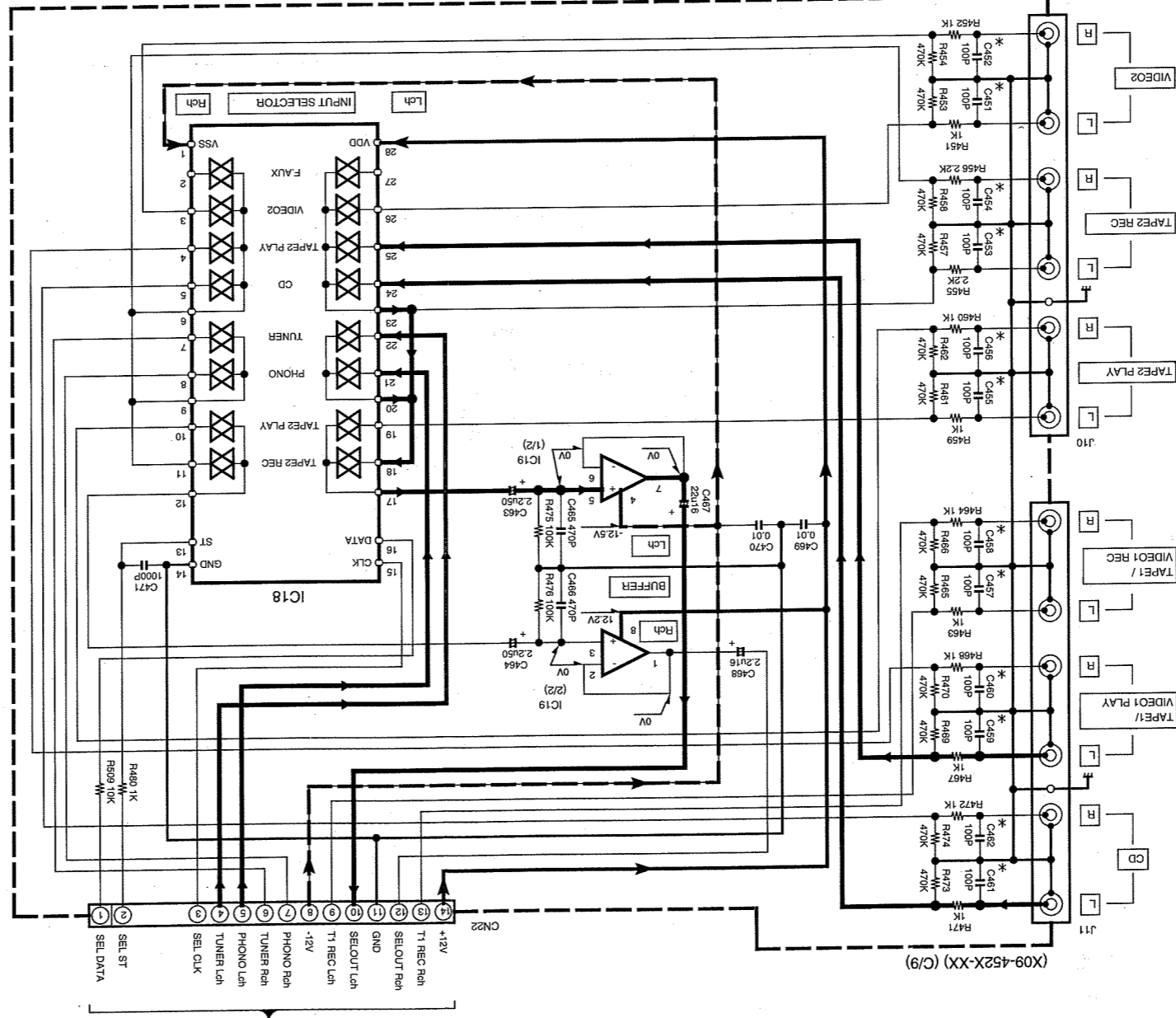
X09-A7



IC18 : NJU7313AL

IC19 : NJM4565D-D

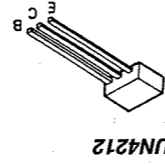
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RUSSIA	O	3-81				
EUROPE	E	2-71				
U.K.	T					
AUSTRALIA	X	0-71				
SHANGHAI	V	2-11				
GENERAL MARKET	M	0-21				
COUNTRY	ABB. No.					
DESTINATION	UNIT					
C451-462						
105VR (X09-452X-XX)						



(X09-452X-XX) (C/9)



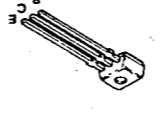
X09-A9



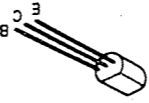
UN4212



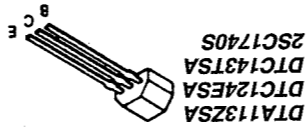
ZSD1328  
ZSC4081  
ZSC2714



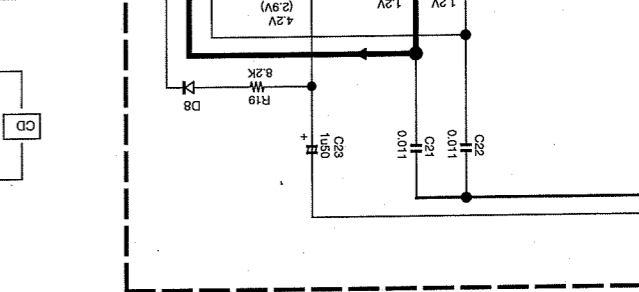
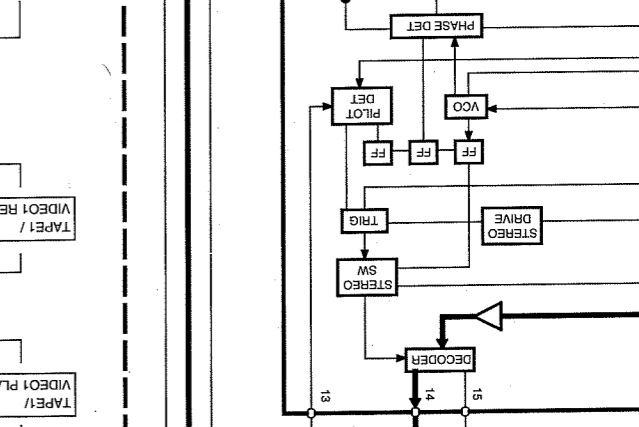
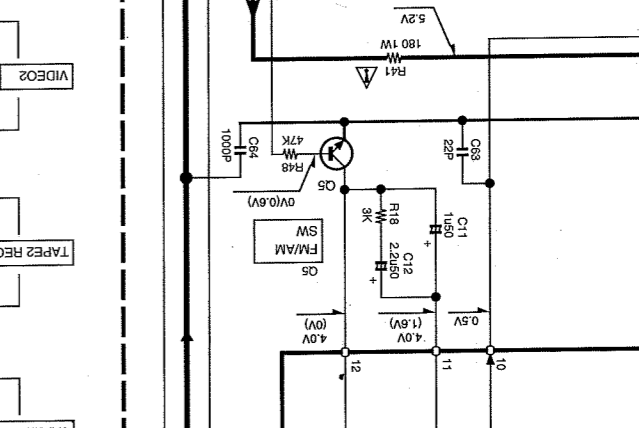
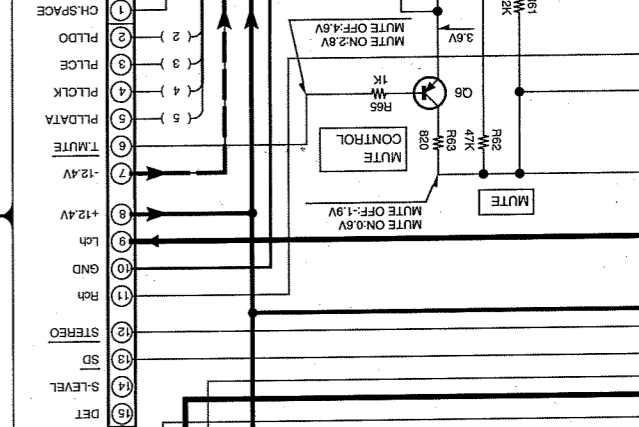
ZSA1175



ZSA1534A  
ZSA992  
ZSC1845  
ZSC2003  
ZSC2878  
ZSC3940A



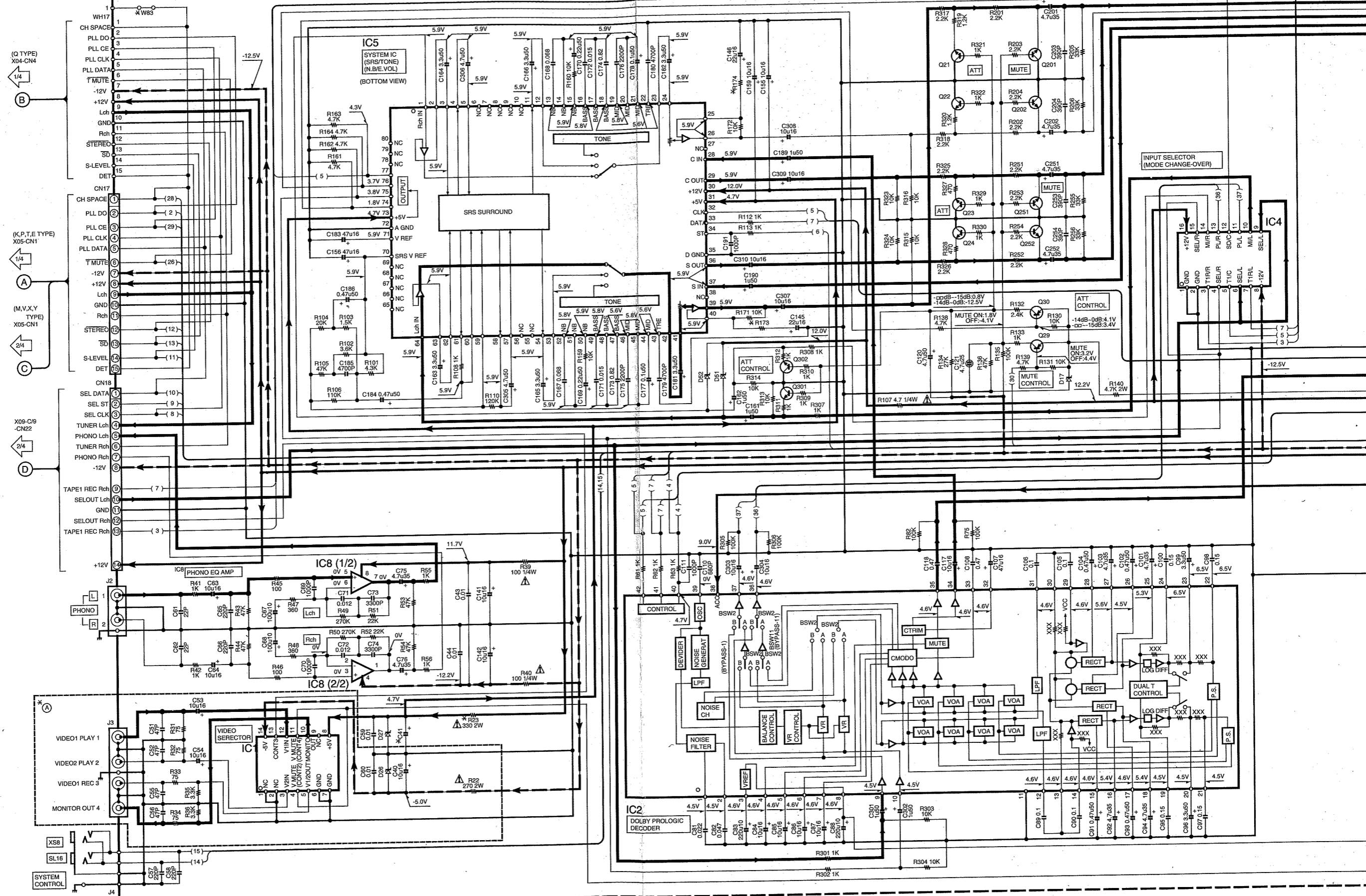
DTA132SA  
DTC1437SA  
ZSC1740S



AN AL AK AU AI AH AG AF AE



(X09-452X-XX) (A/9)



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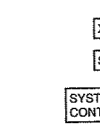
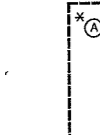
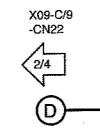
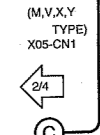
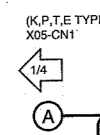
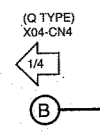
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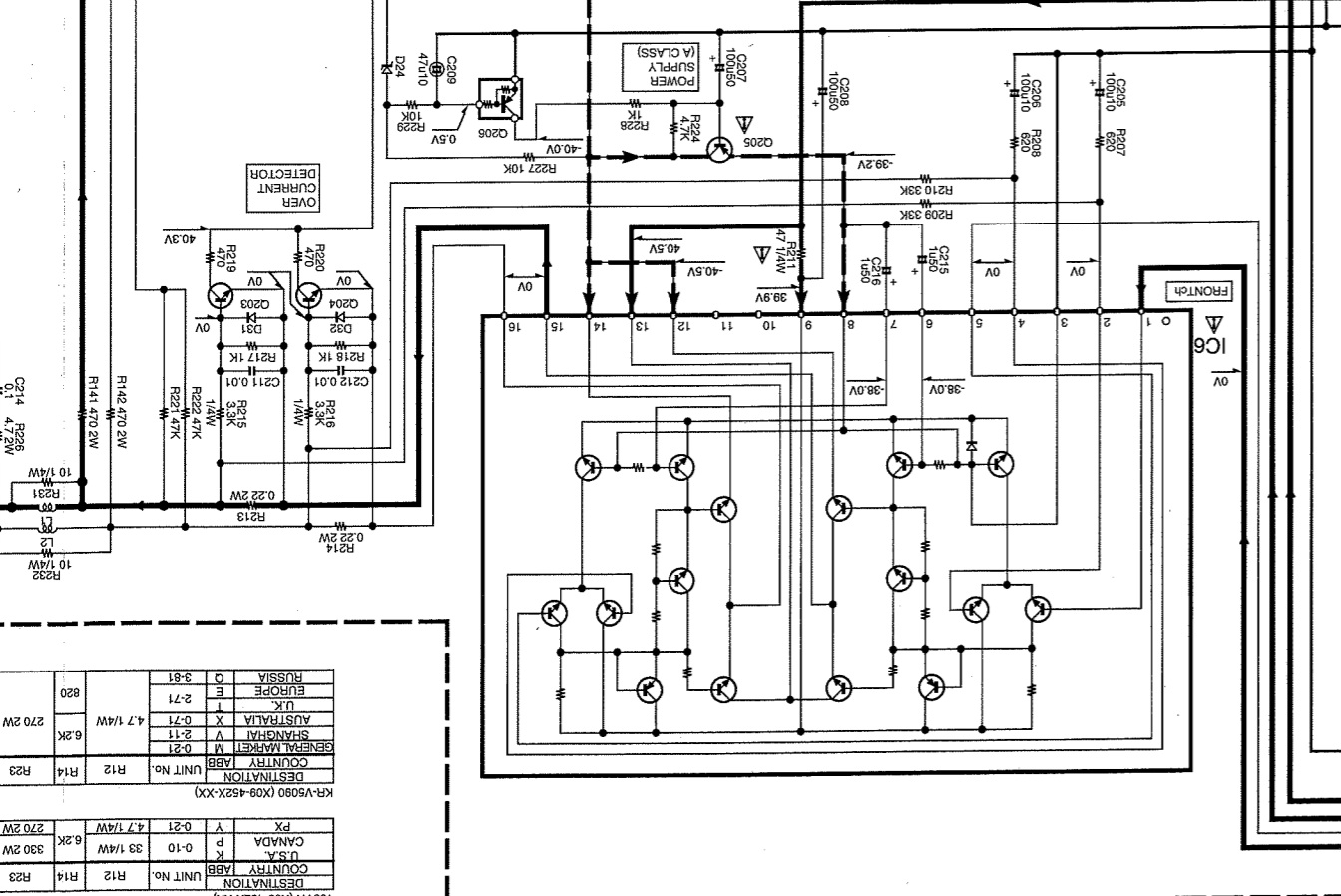
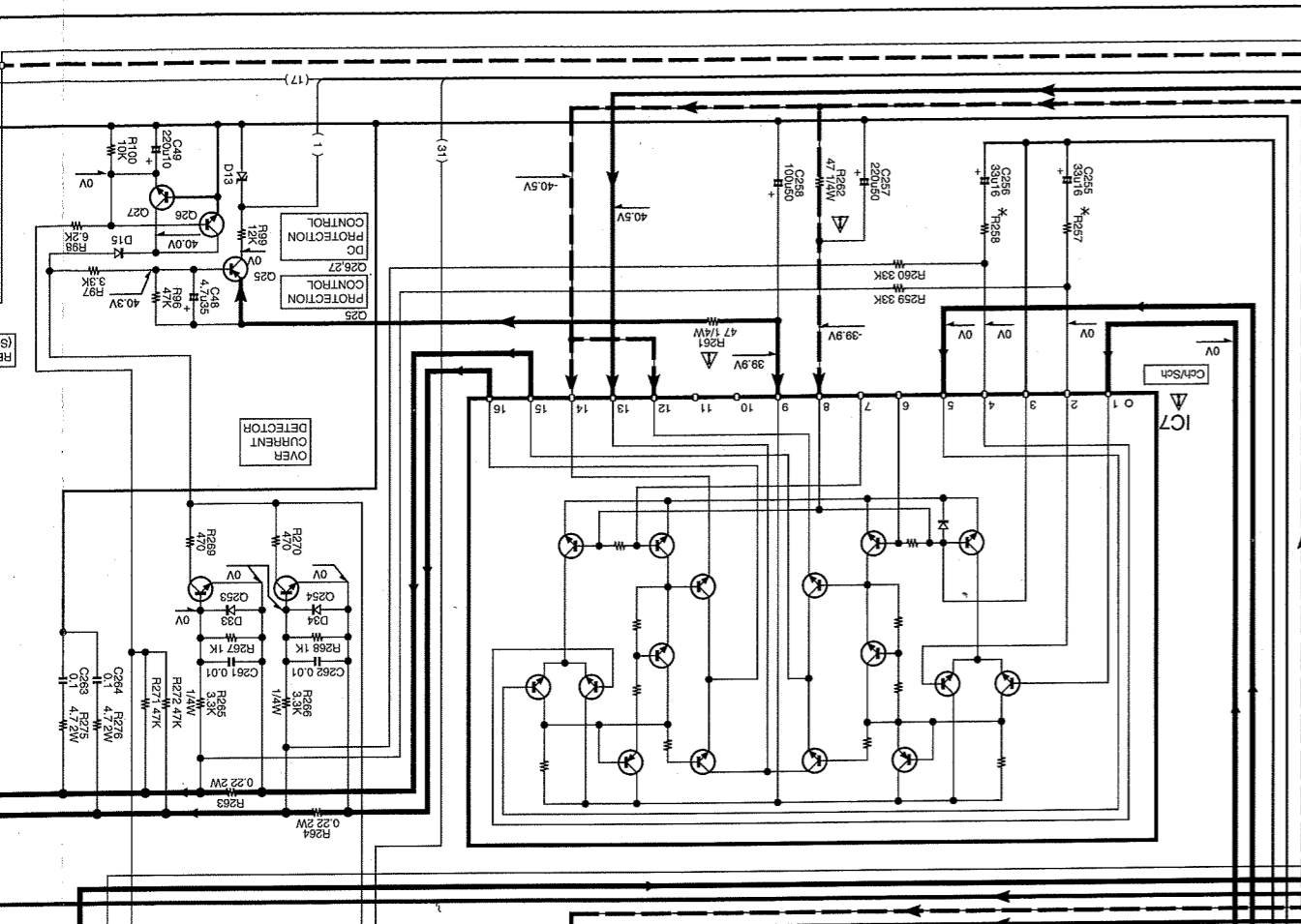
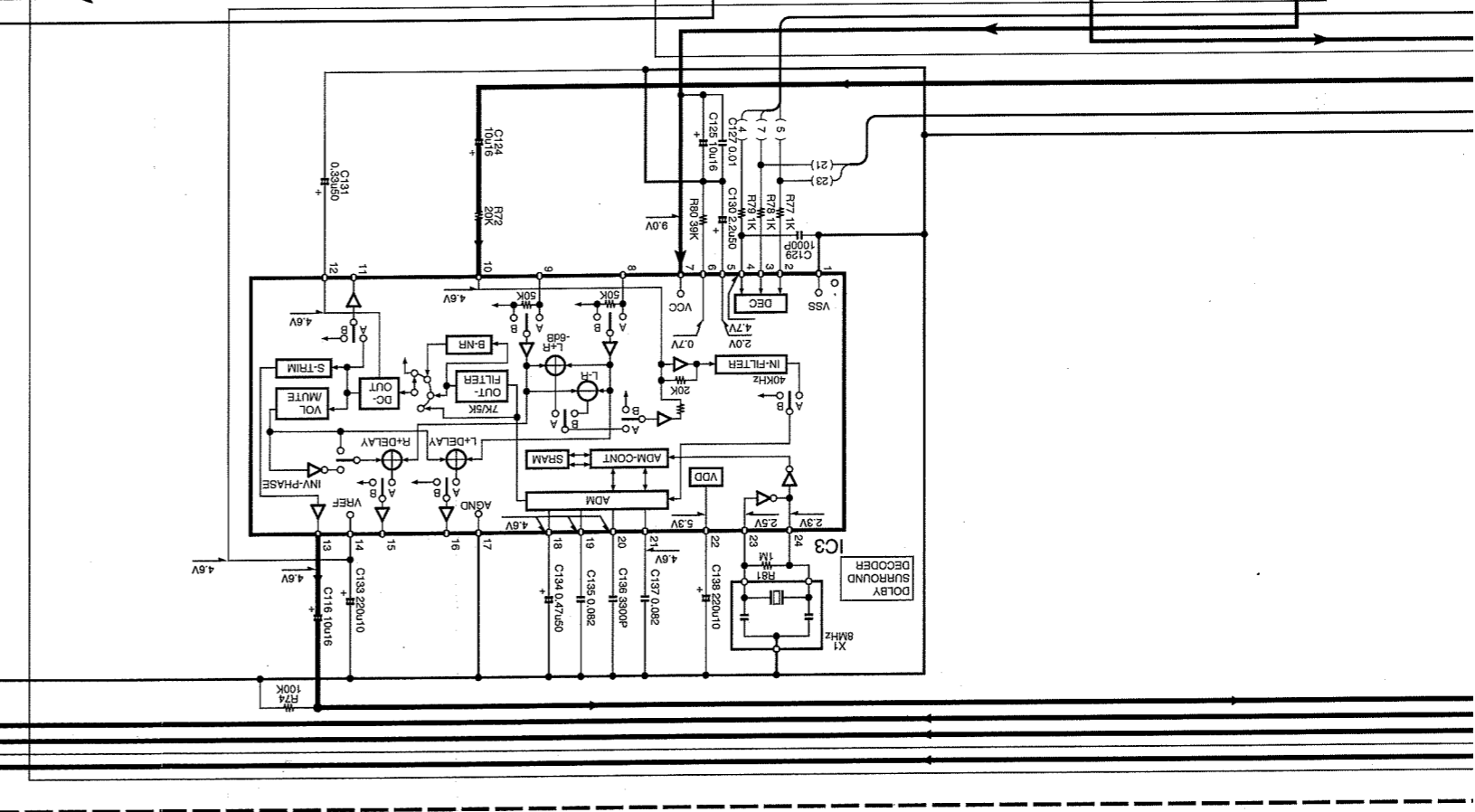
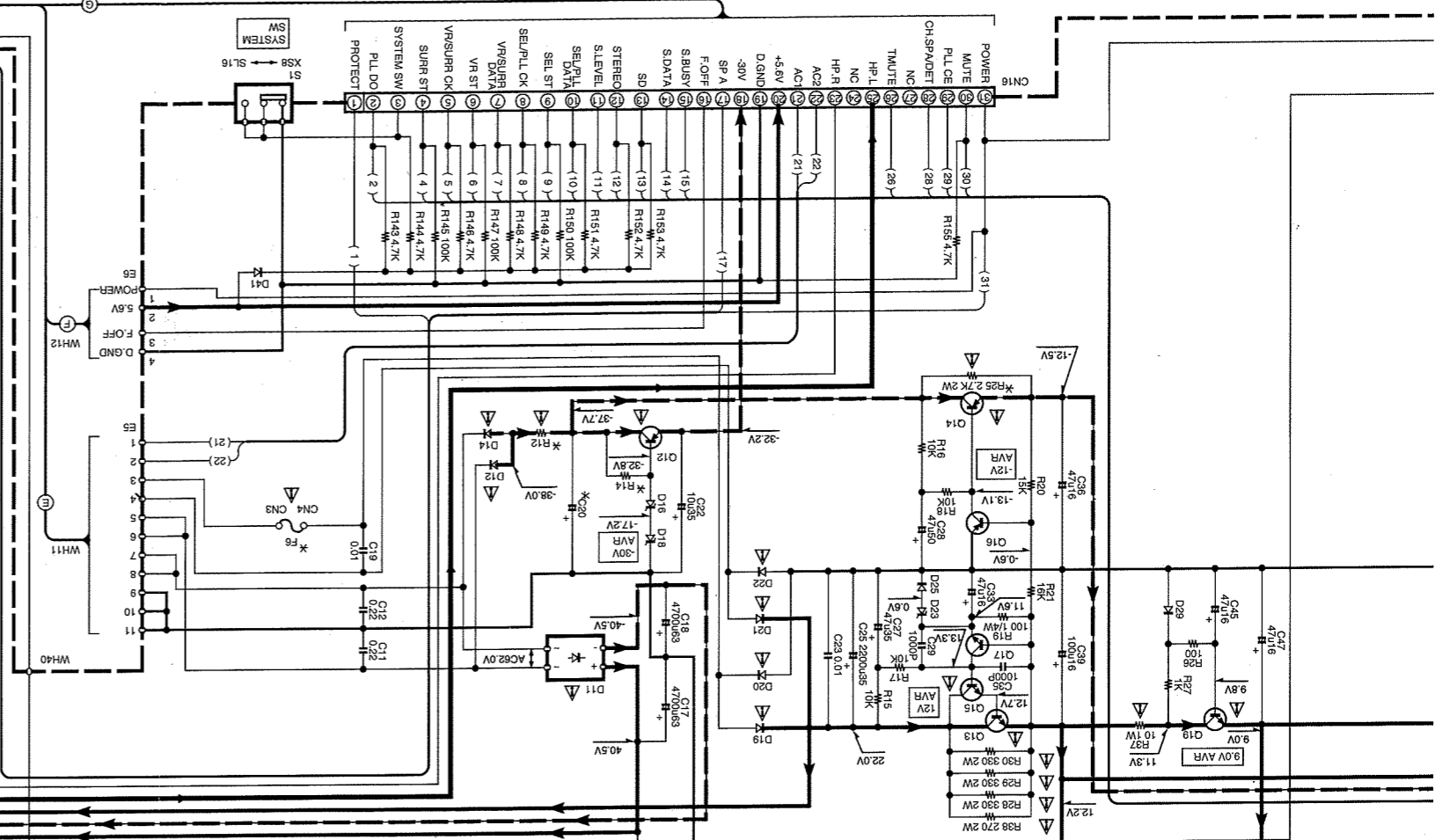
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105VR (X09-452X-XX)

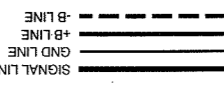
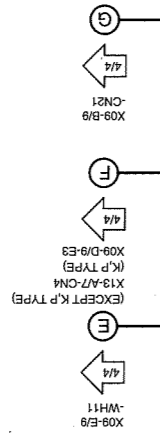
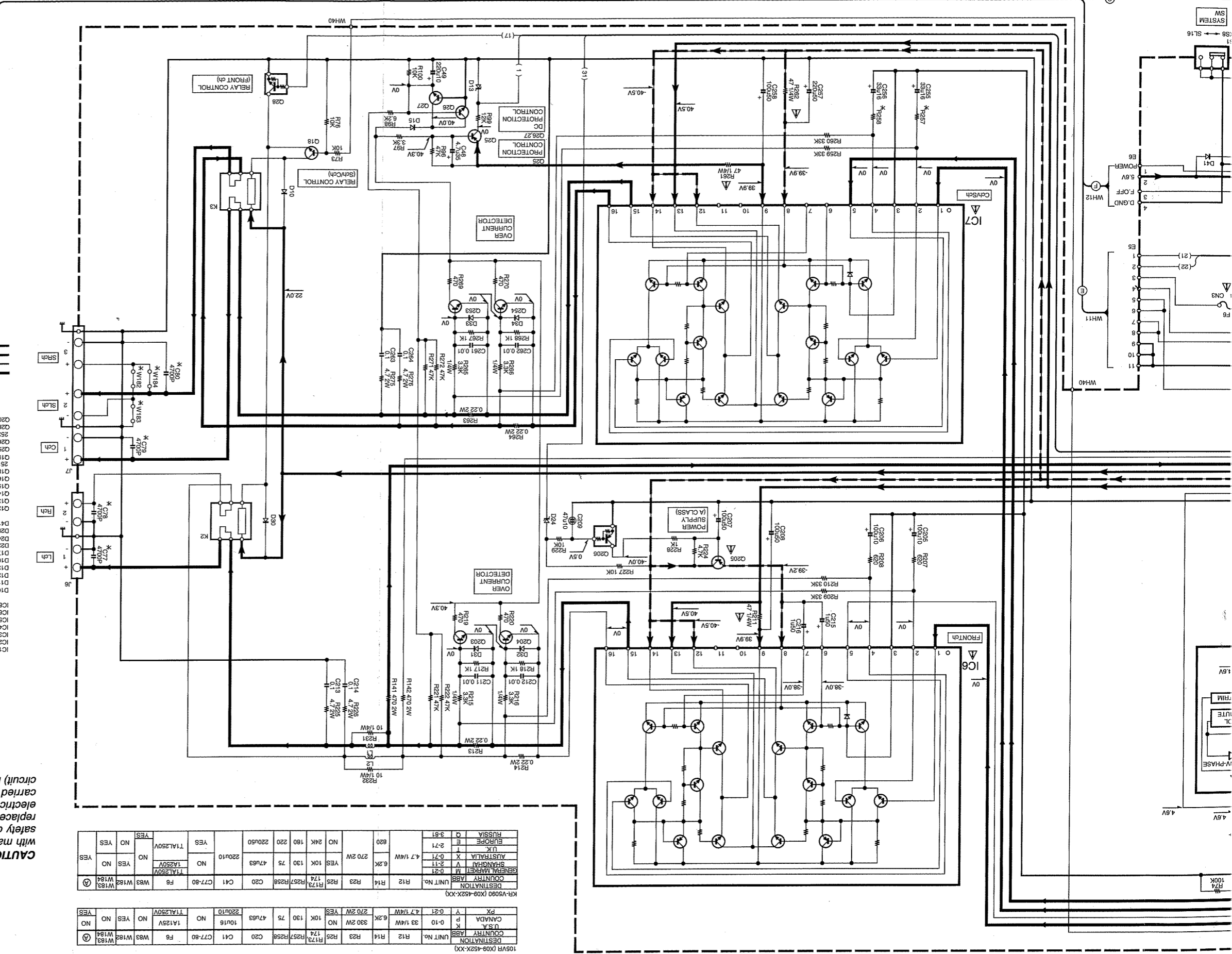
DESTINATION	UNIT No.	R12	R14	R23
COUNTRY	LABB			
U.S.A.	K			
CANADA	P	0-10	33 1/W	6.2K 330 2W
PX	Y	0-21	4.7 1/W	6.2K 270 2W

KR-V5090 (X09-452X-XX)

DESTINATION	UNIT No.	R12	R14	R23
COUNTRY	LABB			
U.S.A.	K			
CANADA	P	0-10	33 1/W	6.2K 330 2W
PX	Y	0-21	4.7 1/W	6.2K 270 2W

# KENWOOD 105VR/KR-V5090

Y05-3270-10 KR-V5090,105VR(M) (3/4)



- IC1 : NJM279D
- IC2 : LA785
- IC3 : LV1016
- IC4 : TC9215AP
- IC5 : M62430FP
- IC6 : STK499-070
- IC8 : NJM450D-D
- IC9 : 15S131
- D11 : RBV-802FA
- D12,14,18-22 : S568B or 15R139-400
- D13,26,27 : MTJ25.1(B)
- D16,18 : MTJ25.1(B)
- D17 : MY23.9(B)
- D18 : MTZ1.1(B)
- D24 : MTZ1.1(B)
- D25,51,52 : MTZ2.2(B)
- D26 : MTZ1.1(B)
- D28 : MTZ1.0(B)
- D29 : 15S133
- O12 : 25A15344(R,S)
- O13 : 25D25
- O14 : 25B140
- O15,17 : 25C17405(O,R)
- O16,29,30 : 25A9345(O,R)
- O18,21,24,24.201,202 : 25C2878(B)
- O19 : 25C3940(R,S)
- O20,203 : 25A992(F,E)
- O25,205 : 25C27203.204
- O26,27,203.204 : 25C1845(F,E)
- O28 : DTC132SA
- O208 : DTA132SA

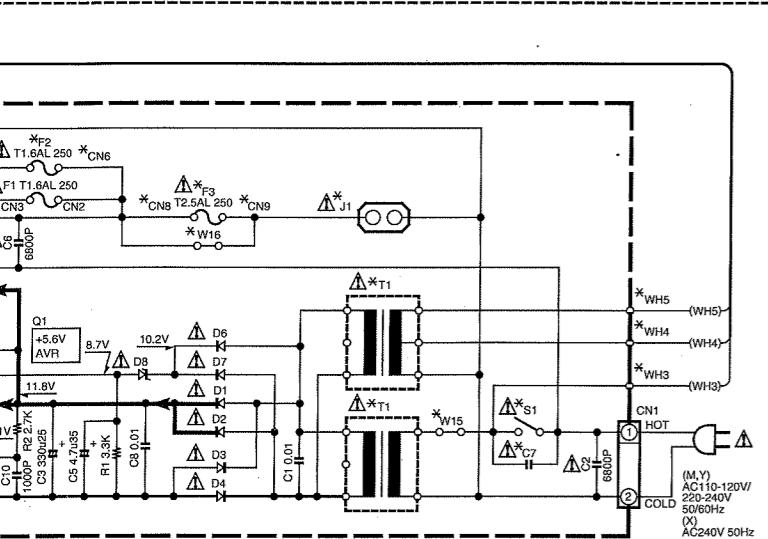
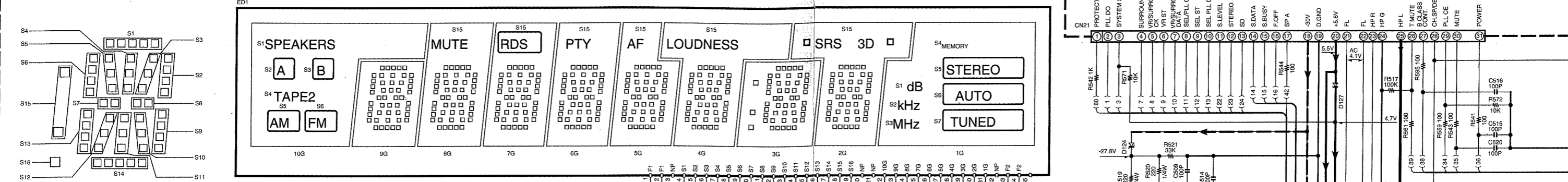


DESTINATION	105VR (X09-452X-XX)		KR-V5090 (X09-452X-XX)	
	COUNTRY	ABB	UNIT No.	ABB
PX	Y	0-21	4.7 1/W	820
CANADA	P	0-10	33 1/W	6.2K
U.S.A.	K	930 2W	NO	10K
			NO	130
			75	47u8
			220u10	NO
			T1A250V	YES
			T1A250V	NO
			YES	NO
			NO	YES
			YES	YES

**CAUTION:** For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). Δ indicates safety critical components. For continued protection against risk of fire, 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.

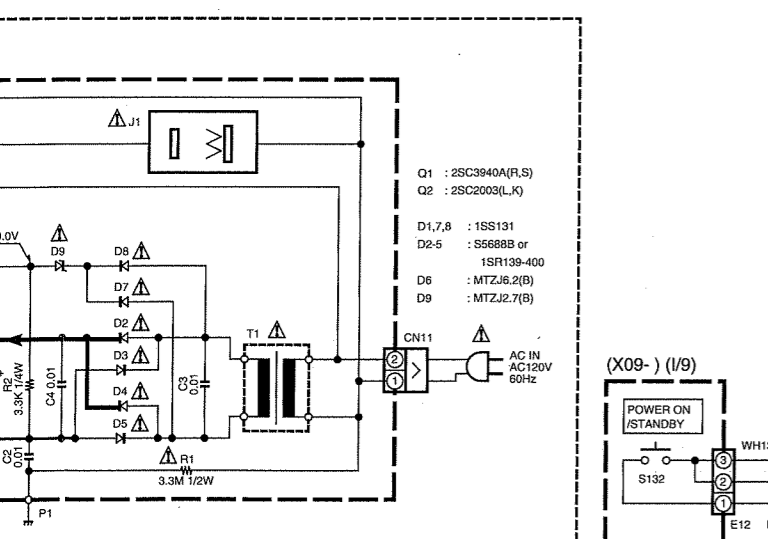


(X09-452X-XX) (B/9)



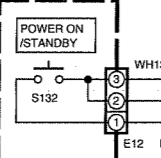
B or 9-400 D5 : MTZJ6.2(B) D8 : MTZJ2.7(B)  
 D6,7 : 1SS131 D10 : 1SS133

(M,Y) AC110-120V 220-240V 50/60Hz  
 (L,E) AC240V 50Hz  
 (V,C) AC230V 50Hz  
 AC220V 50Hz

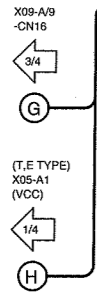


Q1 : 2SC3940A(RLS)  
 Q2 : 2SC2003(L,K)  
 D1,7,8 : 1SS131  
 D2-5 : S5688B or 1SR139-400  
 D6 : MTZJ6.2(B)  
 D9 : MTZJ2.7(B)

(X09- ) (I/9)



POWER ON / STANDBY  
 S132



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

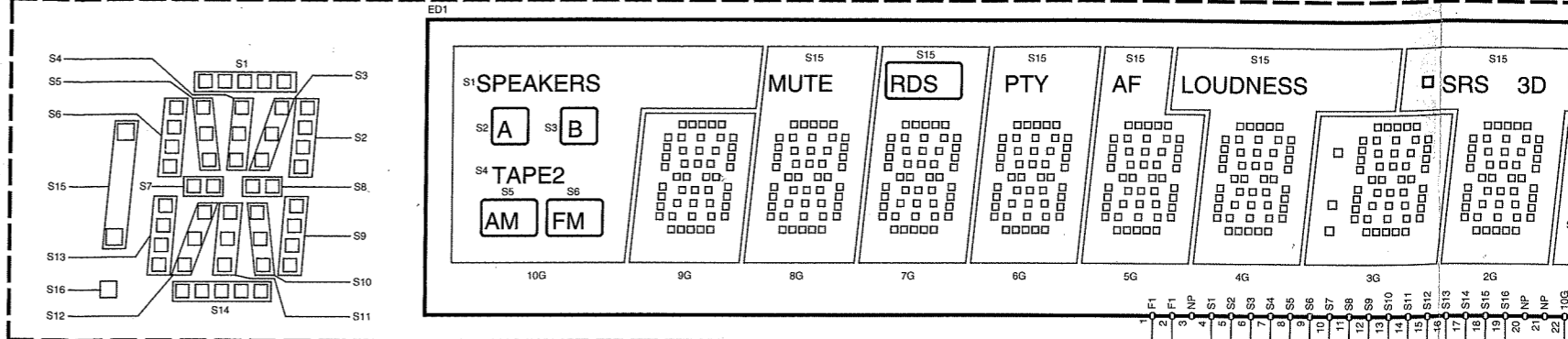
KR-V5090 (X13-745X-XX)

DESTINATION	UNIT	WH3-9	WH10	S1	S2	W14	W15	W16	W19	T1	F2	F3	CN6,7	CN8,9	C7	X13-D7	J1
GENERAL MARKET	M 0-20	YES	NO	YES	NO	NO	NO	NO	NO	L07-2128-05	YES	NO	YES	NO	NO	NO	E03-0305-05
SHANGHAI	V 2-11	NO	NO	NO	NO	NO	NO	NO	NO	L07-2128-05	NO	NO	NO	NO	NO	NO	E03-0337-05
AUSTRALIA	X 0-71	NO	NO	NO	NO	NO	NO	NO	NO	L07-2128-05	NO	NO	NO	NO	NO	NO	E03-0325-05
U.K.	T 0-51	NO	NO	NO	NO	NO	NO	NO	NO	L07-2128-05	NO	NO	NO	NO	NO	NO	E03-0109-05
EUROPE	E 2-71	YES	NO	NO	NO	NO	NO	NO	NO	L07-2128-05	YES	NO	YES	NO	NO	NO	E03-0305-05
RUSSIA	Q 2-71	NO	NO	NO	NO	NO	NO	NO	NO	L07-2128-05	NO	NO	NO	NO	NO	NO	E03-0305-05

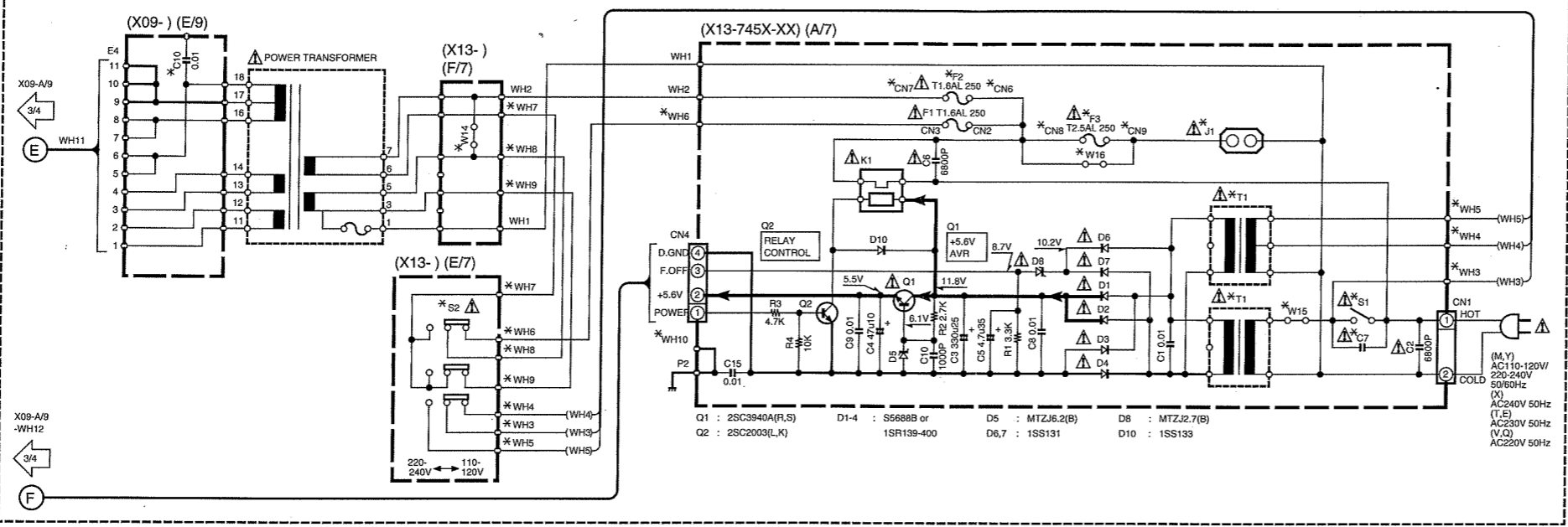
105VR (X13-745X-XX)

DESTINATION	UNIT	WH3-9	WH10	S1	S2	W14	W15	W16	W19	T1	F2	F3	CN6,7	CN8,9	C7	X13-D7	J1
GENERAL MARKET	Y 2-91	YES	NO	NO	YES	NO	YES	NO	YES	L07-2128-05	YES	NO	YES	NO	NO	NO	E03-0318-05

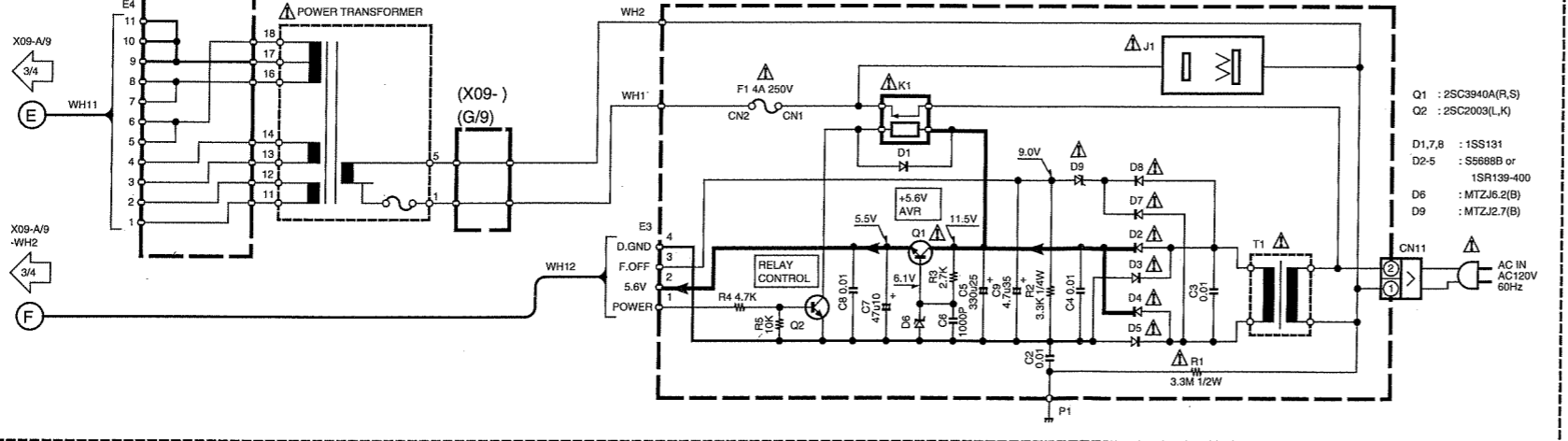
(X09-452X-XX) (B/9)



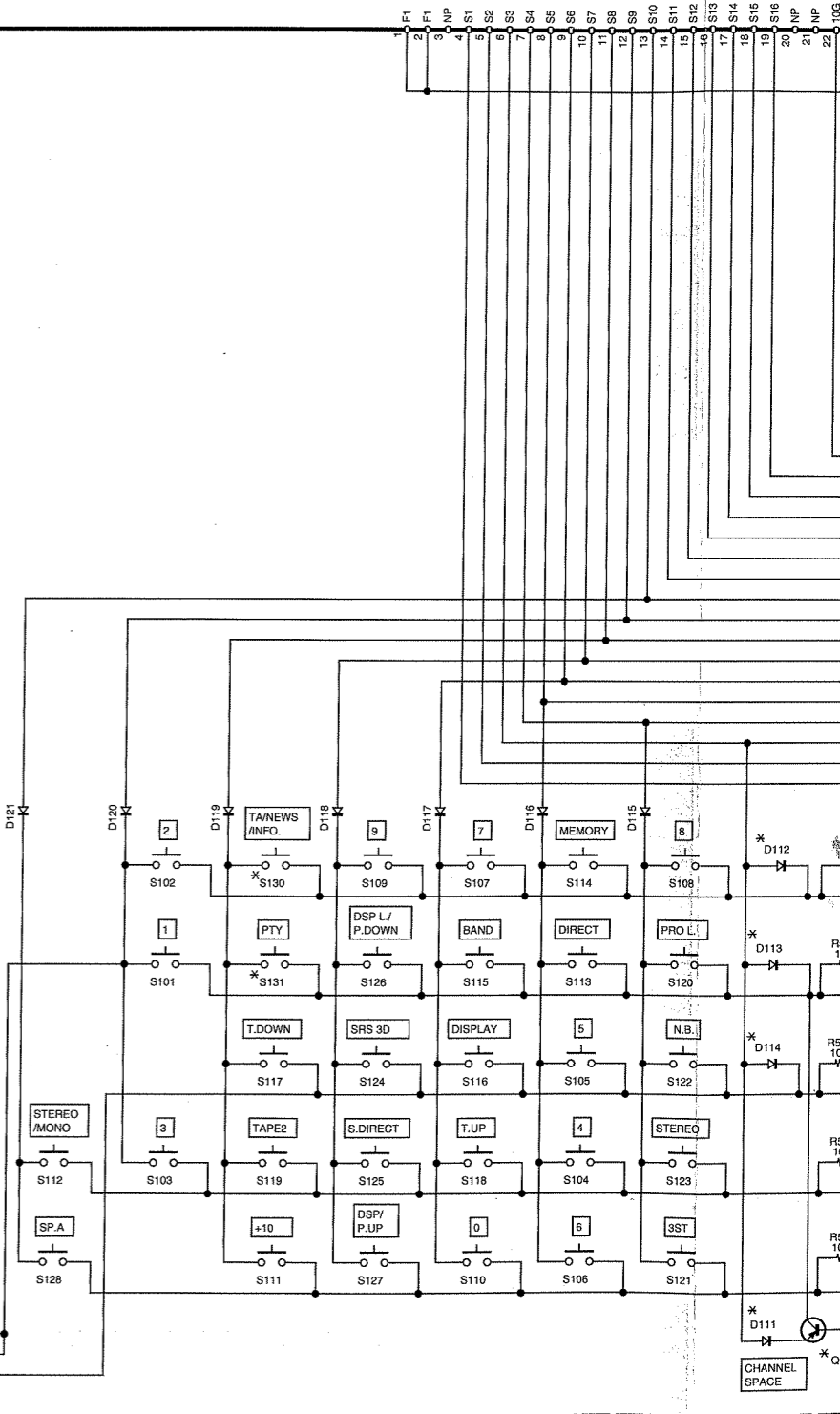
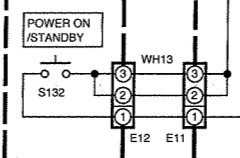
EXCEPT (K,P) TYPE



(K,P) TYPE



(X09-) (I/9)



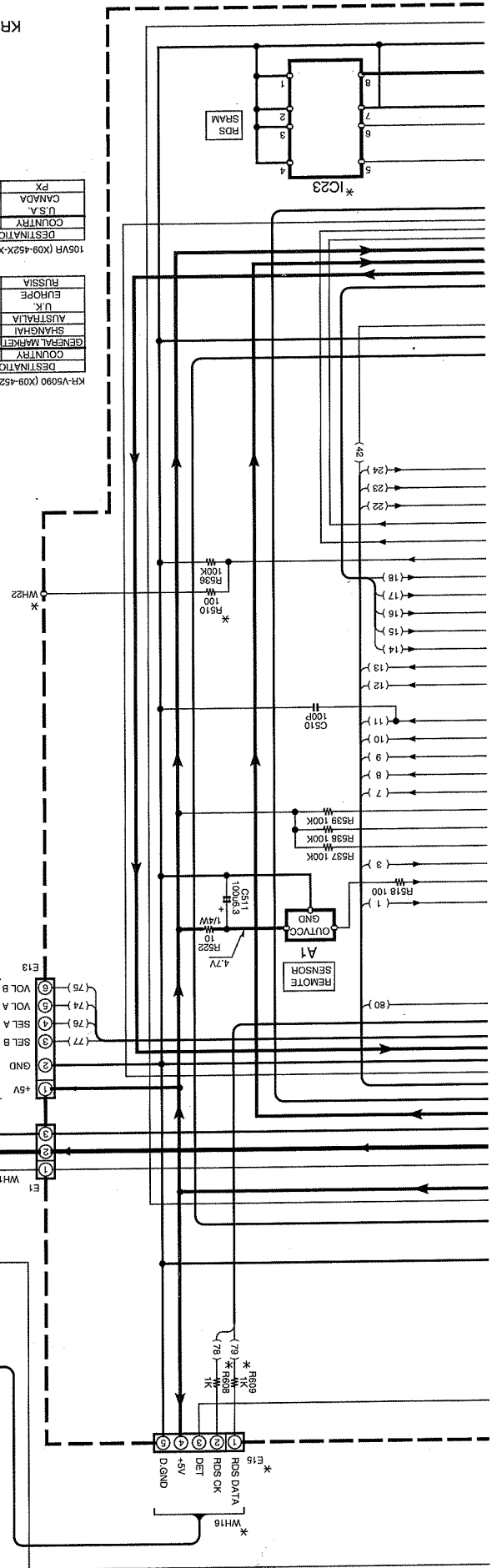
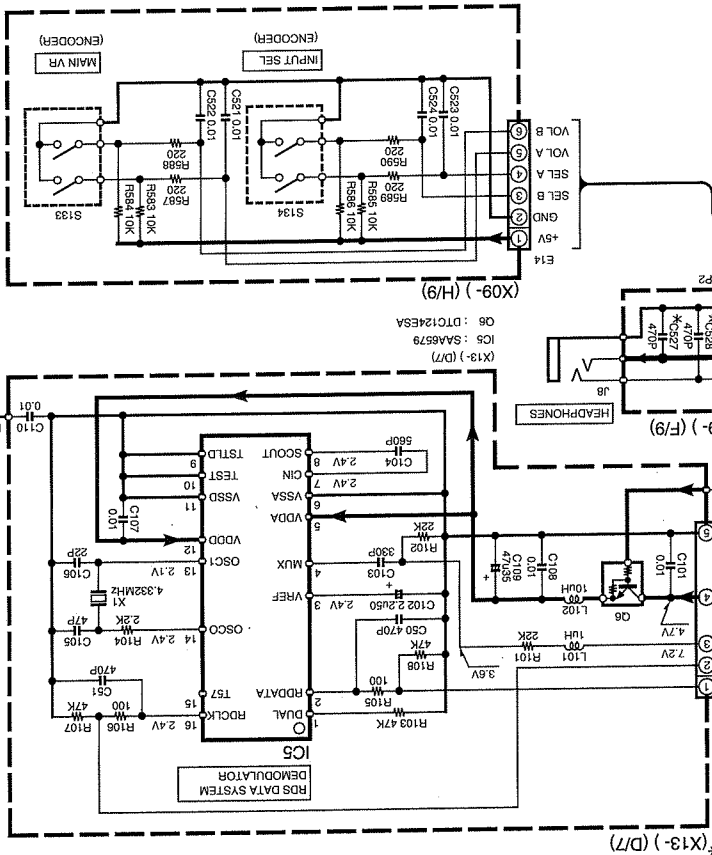
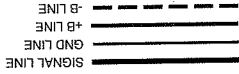
2  
3  
4  
5  
6  
7

KR-V5090,105VR(M) (4/4)

DESTINATION UNIT	COUNTRY ABB.	NO.	IC21	IC23	Q107	D111	D113	D114	S130	S139	C506	C10	H510	H521	E15	WH16	X10
RUSSIA	O	3-81	CXP82540-152Q						YES								
EUROPE	E	2-71	CXP82540-152Q						NO								
U.K.	T	2-71	CXP82540-152Q						NO								
AUSTRALIA	X	0-21	CXP82522-151Q						NO								
SHANGHAI	V	2-11	CXP82522-151Q						NO								
GENERAL MARKET	M	0-21	CXP82522-151Q						NO								
COUNTRY ABB.	No.																
IC21																	
IC23																	
Q107																	
D111																	
D113																	
D114																	
S130																	
S139																	
C506																	
C10																	
H510																	
H521																	
E15																	
WH16																	
X10																	

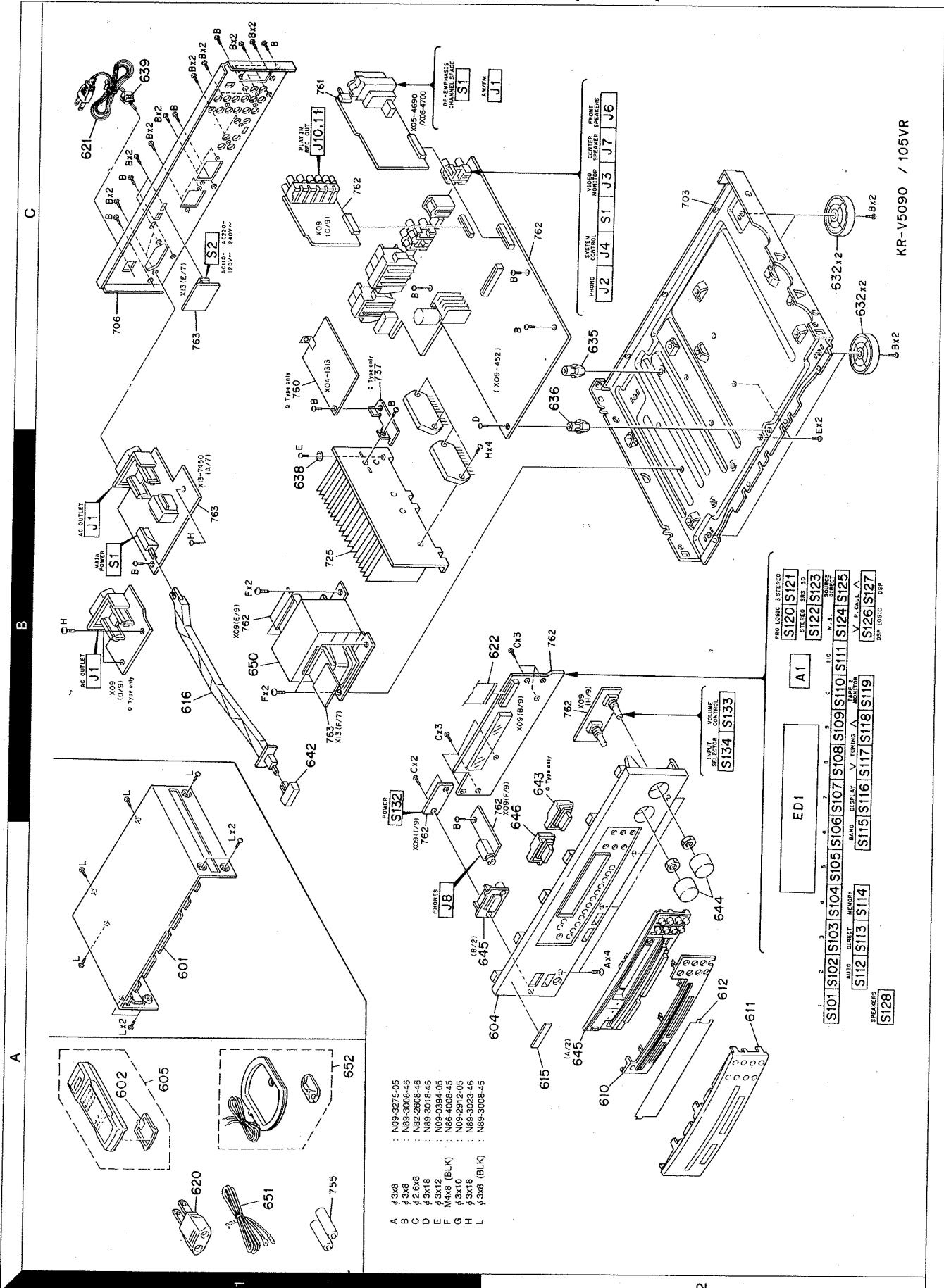
DESTINATION UNIT	COUNTRY ABB.	NO.	IC21	IC23	Q107	D111	D112	D113	D114	S130	S139	C506	C10	H510	H521	E15	WH16	WH22	X10
RUSSIA	O	3-81	CXP82540-152Q							YES									
EUROPE	E	2-71	CXP82540-152Q							NO									
U.K.	T	2-71	CXP82540-152Q							NO									
AUSTRALIA	X	0-21	CXP82522-151Q							NO									
SHANGHAI	V	2-11	CXP82522-151Q							NO									
GENERAL MARKET	M	0-21	CXP82522-151Q							NO									
COUNTRY ABB.	No.																		
IC21																			
IC23																			
Q107																			
D111																			
D112																			
D113																			
D114																			
S130																			
S139																			
C506																			
C10																			
H510																			
H521																			
E15																			
WH16																			
WH22																			
X10																			

- A1 : W02-2583-05
- IC21 : S-808D-Z
- IC22 : X24C04P
- IC23 : 1SS133
- D111-121 : MTZJ5.6(g)
- D124 : B30-2493-05
- D131-133 : 25C1740S(O,F)
- Q103-105 : DTC143TSA
- Q107 : 2SA933AS(G,F)
- (X09-) (B/F) : \*



# 105VR/KR-V5090

## EXPLODED VIEW (UNIT)



KR-V5090 / 105VR

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