

AV RECEIVER RX-V673/HTR-6065/ RX-A720 SERVICE MANUAL

Note: When the DIGITAL P.C.B. or IC82 on DIGITAL P.C.B. is replaced, this unit will display "Internal Error" and will not operate at all without additional setting.

In such a case, report the serial number of this unit to the following e-mail address.

Yamaha Corporation will reply providing the setting procedure to make this unit operate properly.

E-mail: ycav-ysiss@gmx.yamaha.com

IMPORTANT NOTICE

This manual has been provided for the use of authorized YAMAHA Retailers and their service personnel.

It has been assumed that basic service procedures inherent to the industry, and more specifically YAMAHA Products, are already known and understood by the users, and have therefore not been restated.

WARNING: Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components, and failure of the product to perform as specified. For these reasons, we advise all YAMAHA product owners that any service required should be performed by an authorized YAMAHA Retailer or the appointed service representative.

IMPORTANT: The presentation or sale of this manual to any individual or firm does not constitute authorization, certification or recognition of any applicable technical capabilities, or establish a principle-agent relationship of any form.

The data provided is believed to be accurate and applicable to the unit(s) indicated on the cover. The research, engineering, and service departments of YAMAHA are continually striving to improve YAMAHA products. Modifications are, therefore, inevitable and specifications are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

WARNING: Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground buss in the unit (heavy gauge black wires connect to this buss).

IMPORTANT: Turn the unit OFF during disassembly and part replacement. Recheck all work before you apply power to the unit.

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■ TO SERVICE PERSONNEL

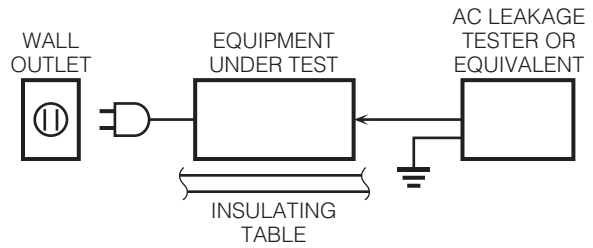
1. Critical Components Information

Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.

2. Leakage Current Measurement (For 120V Models Only)

When service has been completed, it is imperative to verify that all exposed conductive surfaces are properly insulated from supply circuits.

- Meter impedance should be equivalent to 1500 ohms shunted by 0.15 μ F.



- Leakage current must not exceed 0.5mA.
- Be sure to test for leakage with the AC plug in both polarities.



For U model "CAUTION"

"F3702: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE 8A, 125V FUSE."

For C model CAUTION

F3702: REPLACE WITH SAME TYPE 8A, 125V FUSE.

ATTENTION

F3702: UTILISER UN FUSIBLE DE RECHANGE DE MÊME TYPE DE 8A, 125V.

WARNING: CHEMICAL CONTENT NOTICE!

This product contains chemicals known to the State of California to cause cancer, or birth defects or other reproductive harm.

DO NOT PLACE SOLDER, ELECTRICAL/ELECTRONIC OR PLASTIC COMPONENTS IN YOUR MOUTH FOR ANY REASON WHATSOEVER!

Avoid prolonged, unprotected contact between solder and your skin! When soldering, do not inhale solder fumes or expose eyes to solder/flux vapor!

If you come in contact with solder or components located inside the enclosure of this product, wash your hands before handling food.

About lead free solder

All of the P.C.B.s installed in this unit and solder joints are soldered using the lead free solder.

Among some types of lead free solder currently available, it is recommended to use one of the following types for the repair work.

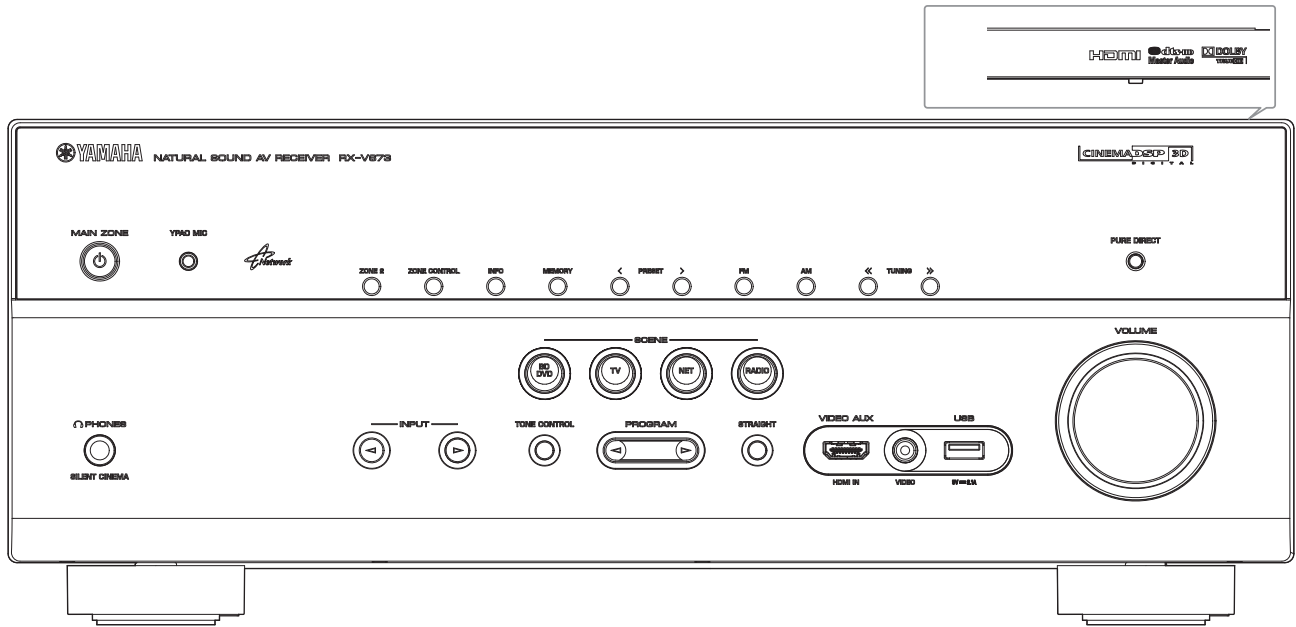
- Sn + Ag + Cu (tin + silver + copper)
- Sn + Cu (tin + copper)
- Sn + Zn + Bi (tin + zinc + bismuth)

Caution:

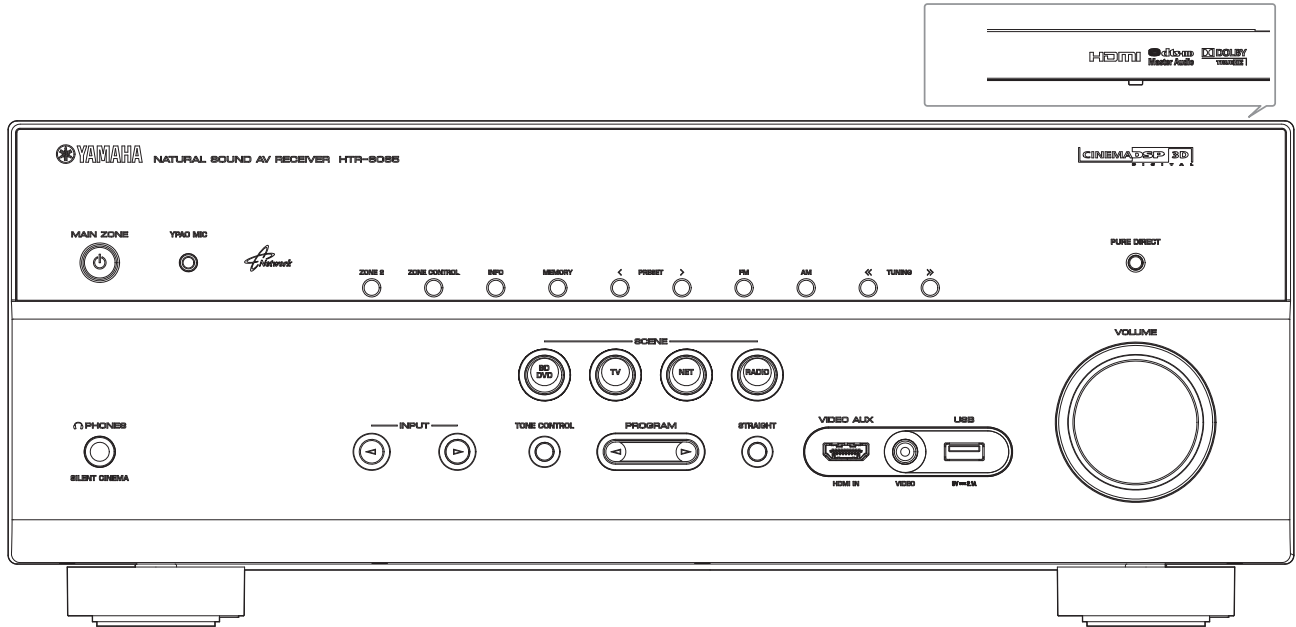
As the melting point temperature of the lead free solder is about 30°C to 40°C (50°F to 70°F) higher than that of the lead solder, be sure to use a soldering iron suitable to each solder.

FRONT PANELS

RX-V673 (U, C, R, T, K, A, B, G, F, L, S, H models)

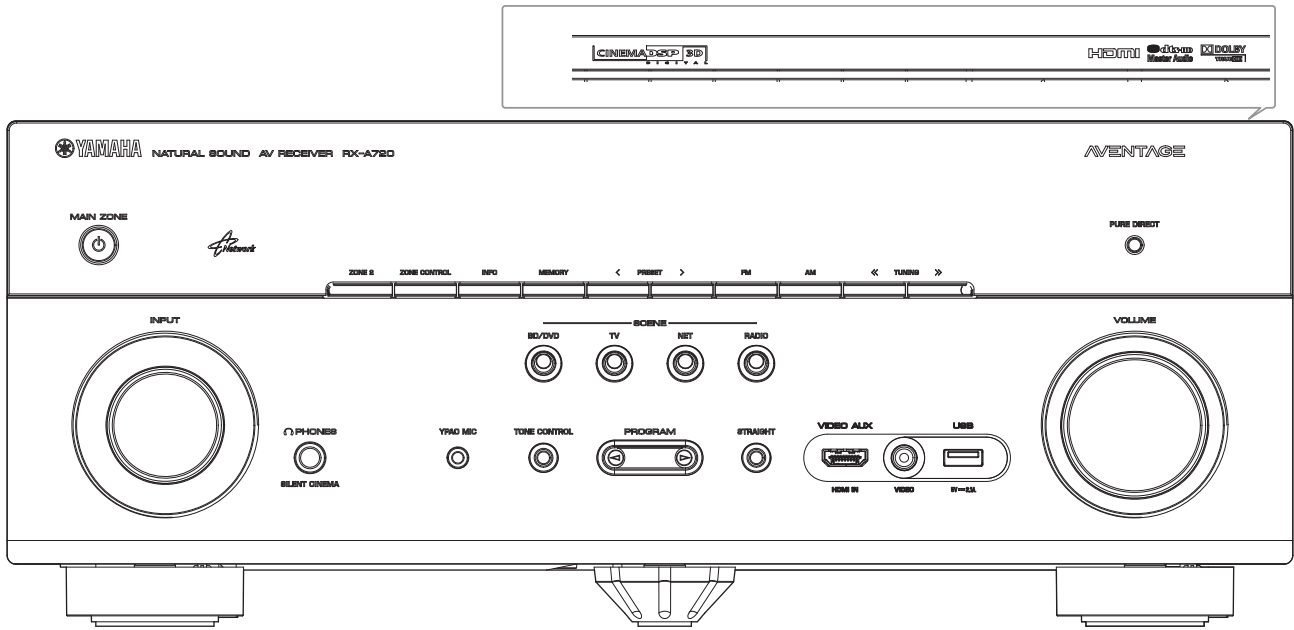


HTR-6065 (A, F models)



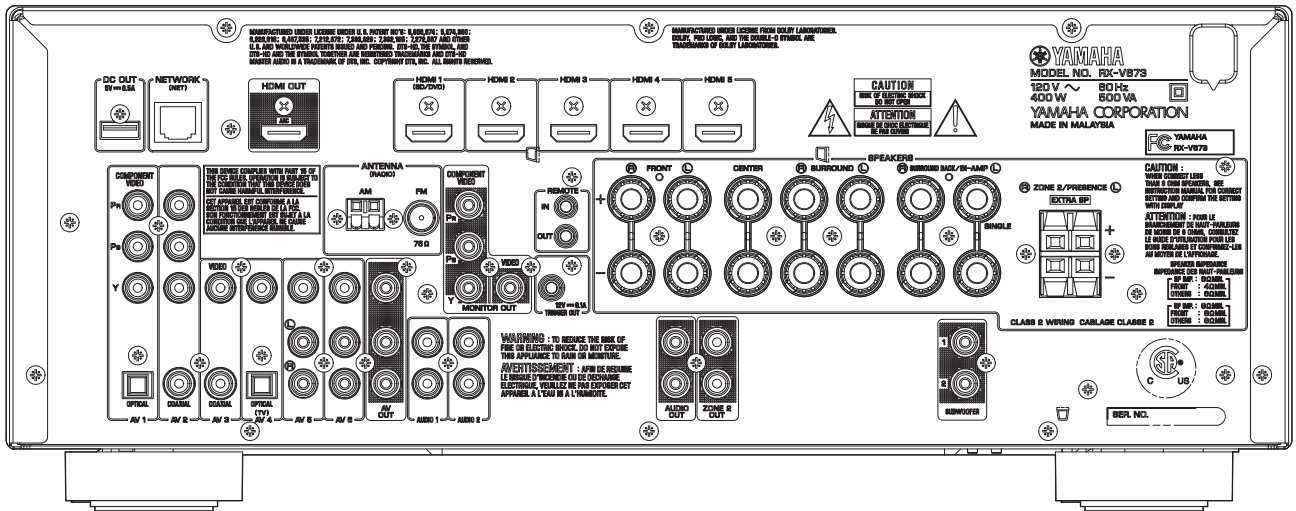
RX-V673/HTR-6065/
RX-A720

RX-A720 (U, C, A models)

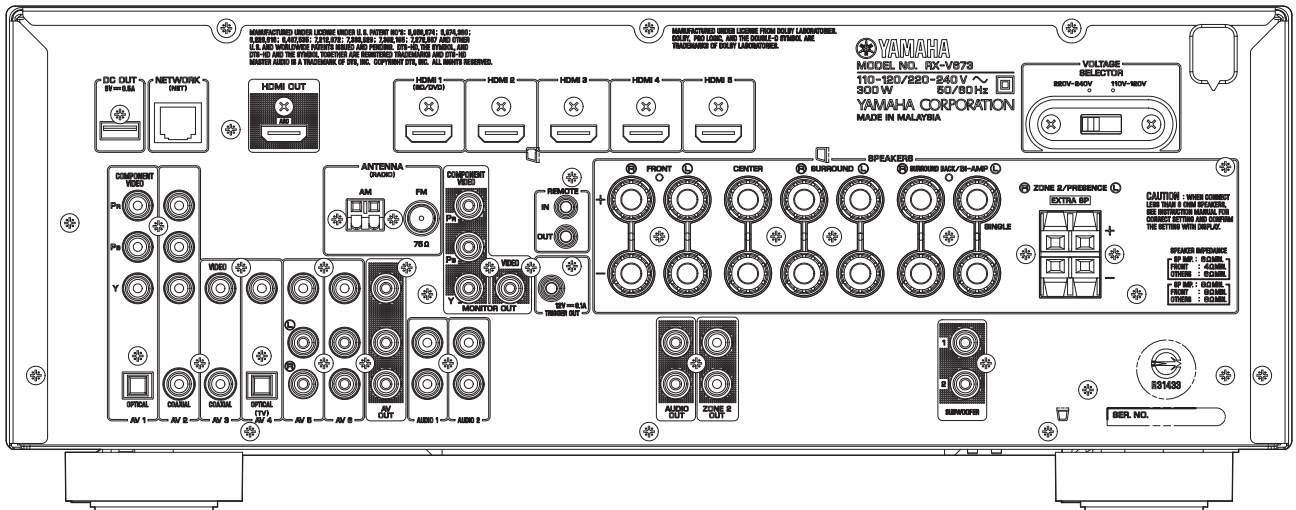


REAR PANELS

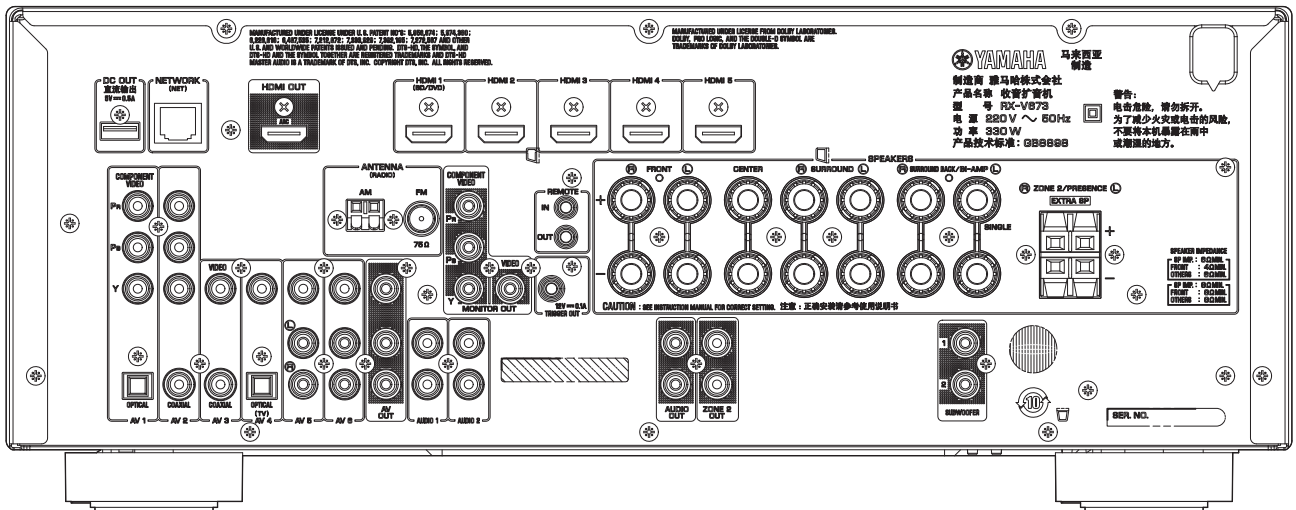
RX-V673 (U, C models)



RX-V673 (R, S models)

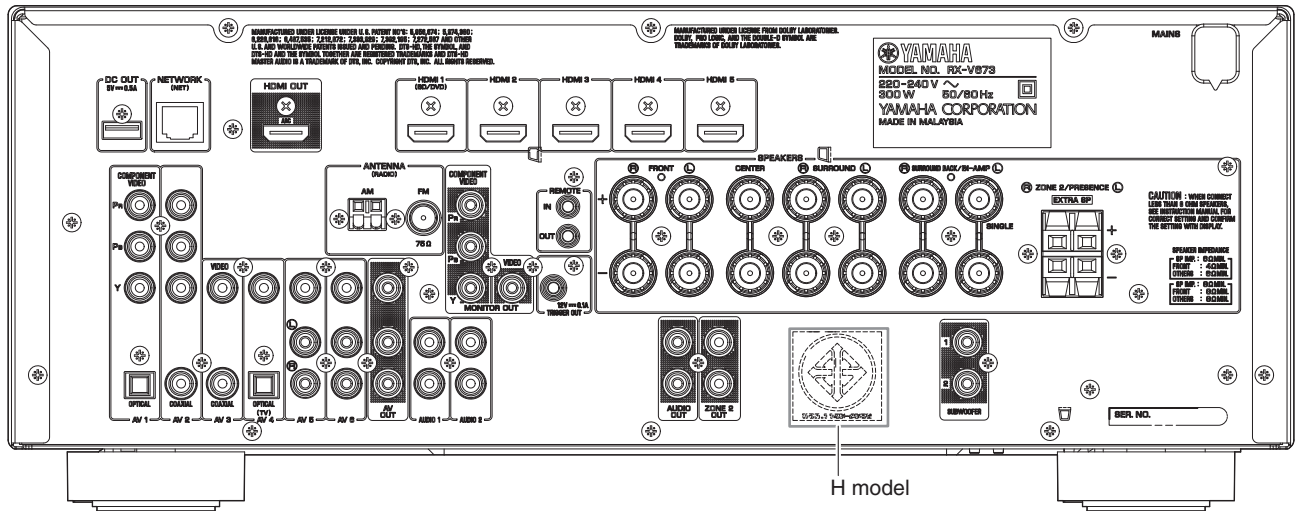


RX-V673 (T model)

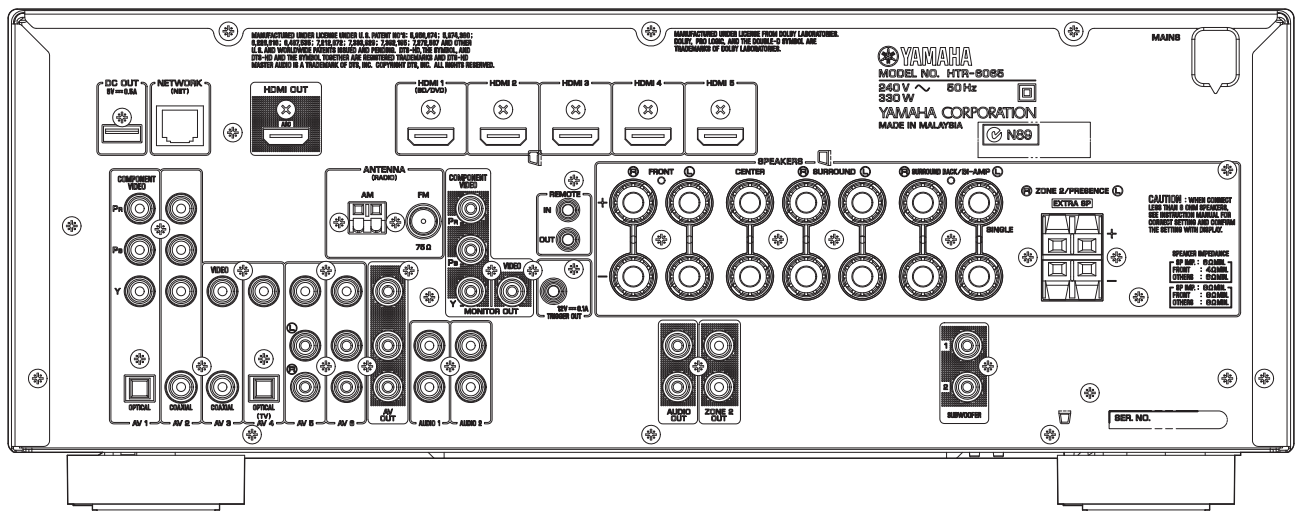


RX-V673/HTR-6065/
RX-A720

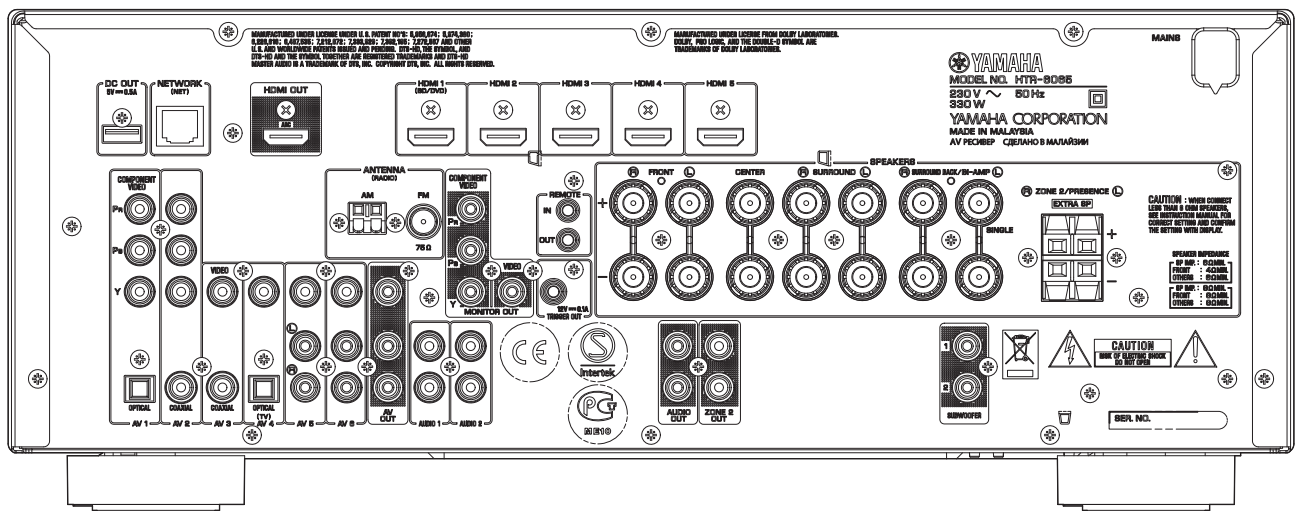
RX-V673 (L, H models)



HTR-6065 (A model)

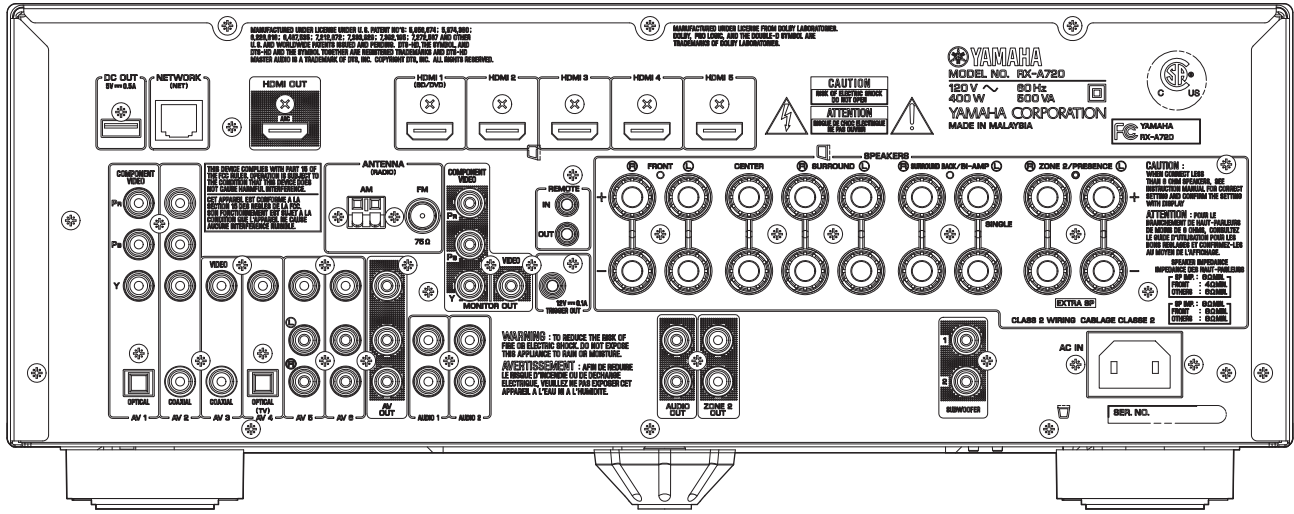


HTR-6065 (F model)

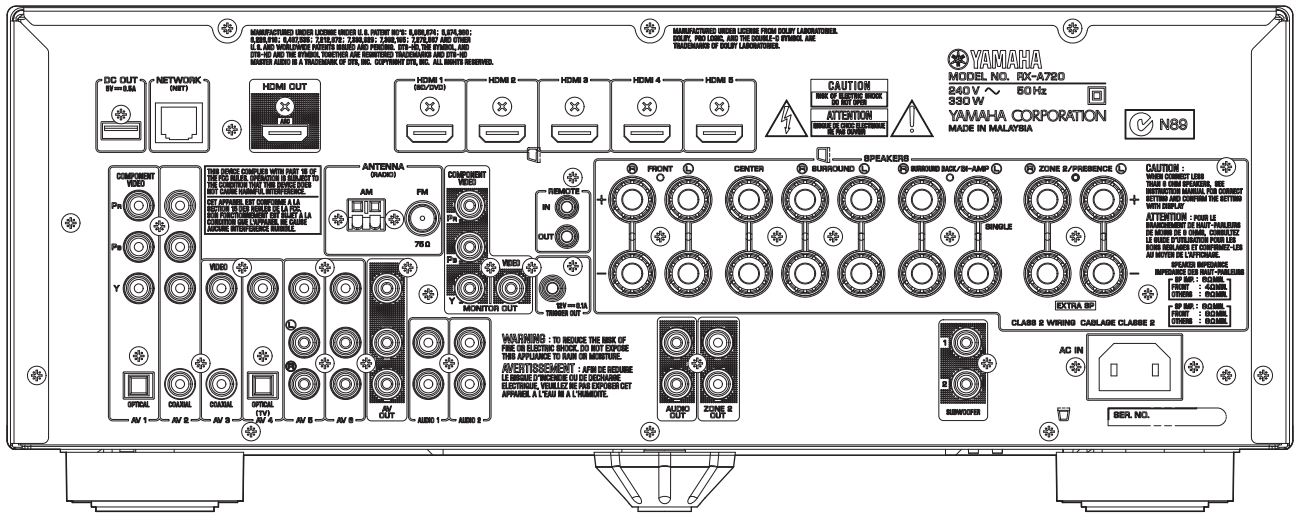


RX-V673/HTR-6065/
RX-A720

RX-A720 (U, C models)



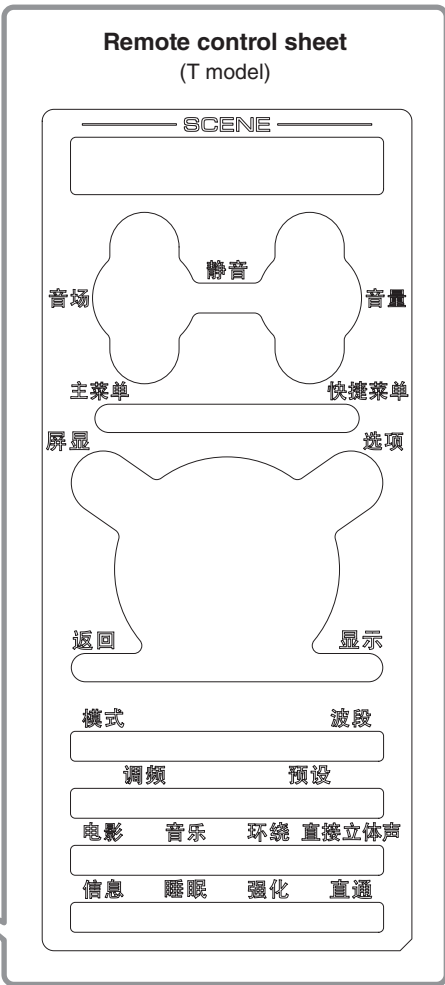
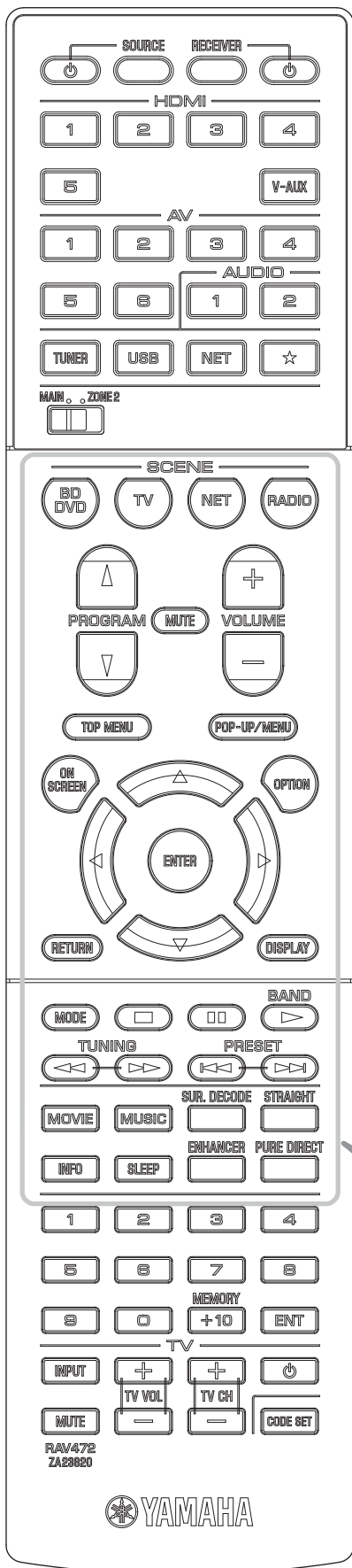
RX-A720 (A model)



RX-V673/HTR-6065/
RX-A720

REMOTE CONTROL PANEL

RAV472



RX-V673/HTR-6065/
RX-A720

■ SPECIFICATIONS

■ Audio Section

Rated Output Power (Power Amp. Section)

(1 kHz, 0.9 % THD)

– 1 channel driven –

U, C, R, T, K, A, B, G, F, L, S, H models (8 ohms)	
FRONT L/R	125 W/ch
CENTER	125 W
SURROUND L/R	125 W/ch
SURROUND BACK L/R	125 W/ch

B, G, F models (4 ohms)

FRONT L/R	150 W/ch
-----------	----------

– 2 channels driven simultaneously –

U, C, R, T, K, A, B, G, F, L, S, H models (8 ohms)	
FRONT L/R	105 W + 105 W
CENTER	105 W
SURROUND L/R	105 W + 105 W
SURROUND BACK L/R	105 W + 105 W

(20 Hz to 20 kHz, 0.09 % THD)

– 2 channels driven simultaneously –

U, C, R, T, K, A, B, G, F, L, S, H models (8 ohms)	
FRONT L/R	90 W + 90 W

Maximum Effective Output Power (JEITA) [R, T, K, L, S, H models]

(1 channel driven, 1 kHz, 10 % THD, 8 ohms)

FRONT L/R	150 W/ch
CENTER	150 W
SURROUND L/R	150 W/ch
SURROUND BACK L/R	150 W/ch

Dynamic Power Per Channel (IHF)

FRONT L/R (1 channel driven)	
(8 / 6 / 4 / 2 ohms)	130 / 170 / 200 / 240 W

Damping Factor (20 Hz to 20 kHz, 8 ohms)

FRONT L/R to SPEAKER-A	100 or more
------------------------	-------------

Input Sensitivity/Input Impedance (1 kHz, 100 W/8 ohms)

AV5 etc.	200 mV / 47 k-ohms
----------	--------------------

Maximum Input Signal (1 kHz, 0.5 % THD)

AV5 etc. (EFFECT ON)	2.3 V
----------------------	-------

Output Level/Output Impedance

AUDIO OUT	200 mV / 1.2 k-ohms
SUBWOOFER (2 ch stereo and FRONT SP: small)	
	1 V / 1.2 k-ohms
ZONE2 OUT	200 mV / 1.2 k-ohms

Headphone Jack Rated Output/Output Impedance

(1 kHz, 50 mV, 8 ohms)	
AV5 etc. input	100 mV / 560 ohms

Frequency Response (10 Hz to 100 kHz)

AV5 etc., FRONT	0 / -3 dB
-----------------	-----------

Total Harmonic Distortion (20 Hz to 20 kHz, 50 W/8 ohms)

AV5 etc. (PURE DIRECT) to FRONT SP OUT	0.06 % or less
----------------------------------------	----------------

Signal to Noise Ratio (IHF-A Network) (Input shorted 250 mV)

AV5 etc. (PURE DIRECT) to SP OUT	100 dB or more
----------------------------------	----------------

Residual Noise (IHF-A Network)

FRONT L/R to SP OUT	150 μ V or less
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Channel Separation (1 kHz / 10 kHz)

AV5 etc. (Input 5.1 k-ohms shorted)	
	60 dB or more / 45 dB or more

Volume Control/Step

	MUTE / -80 dB to +16.5 dB / 0.5 dB step
--	-----------------------------------------

Tone Control Characteristics

Bass	
Boost/Cut	± 6 dB / 0.5 dB step, at 50 Hz
Turnover frequency	350 Hz
Treble	
Boost/Cut	± 6 dB / 0.5 dB step, at 20 kHz
Turnover frequency	3.5 kHz

Filter Characteristics

FRONT, CENTER, SURROUND, SURROUND BACK small (H.P.F.)	
	fc=40/60/80/90/100/110/120/160/200 Hz, 12 dB/oct.
SUBWOOFER small (L.P.F.)	
	fc=40/60/80/90/100/110/120/160/200 Hz, 24 dB/oct.

Optical Jack, Coaxial Jack Support Frequencies

	32 kHz to 96 kHz
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■ Video Section

Video Signal Type

Monitor out (Wall paper)	
U, C, R, K models	NTSC
T, A, B, G, F, L, S, H models	PAL
Video conversion	
	NTSC/PAL

Composite Video Signal Level

	1 Vp-p / 75 ohms
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Component Video Signal Level

Y	1 Vp-p / 75 ohms
Pb/Pr	0.7 Vp-p / 75 ohms

Video Maximum Input Level (VIDEO Conversion Off)

	1.5 Vp-p or more
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Video Signal to Noise Ratio

	50 dB or more
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Monitor Out Frequency Response (VIDEO Conversion Off)

Component video signal level	5 Hz to 60 MHz, -3 dB
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■ FM Section

Tuning Range

U, C models	87.5 to 107.9 MHz
R, L, S, H models	87.5 to 108.0 / 87.50 to 108.00 MHz
T, K, A, B, G, F models	87.50 to 108.00 MHz

50 dB Quieting Sensitivity (IHF) (1 kHz, 100 % MOD.)

Mono	3 μ V (20.8 dBf)
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Signal to Noise Ratio (IHF)

Mono	71 dB
Stereo	69 dB

Harmonic Distortion (1 kHz)

Mono	0.3 %
Stereo	0.5 %

Antenna Input

	75 ohms unbalanced
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■ AM Section

Tuning Range

U, C models	530 to 1,710 kHz
R, L, S, H models	530 to 1,710 / 531 to 1,611 kHz
T, K, A, B, G, F models	531 to 1,611 kHz

Antenna

.....	Loop antenna
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■ General

Power Supply

U, C models	AC 120 V, 60 Hz
R, S models	AC 110–120/220–240 V, 50/60 Hz
T model	AC 220 V, 50 Hz
K model	AC 220 V, 60 Hz
A model	AC 240 V, 50 Hz
B, G, F models	AC 230 V, 50 Hz
L, H models	AC 220–240 V, 50/60 Hz

Power Consumption

U, C models	400 W / 500 VA
R, L, S, H models	300 W
T, K, A, B, G, F models	330 W

Standby Power Consumption (reference data)

HDMI control: OFF / Standby through: OFF	0.1 W (typical)
HDMI control: ON / Standby through: ON INPUT: HDMI1 (HDMI no signal)	3.0 W (typical)
Network standby: ON	2.0 W (typical)

Maximum Power Consumption [R, L, S, H models]

.....	590 W
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Dimensions (W x H x D)

[RX-V673/HTR-6065]	435 x 171 x 364 mm (17-1/8" x 6-3/4" x 14-3/8")
[RX-A720]	435 x 171 x 367 mm (17-1/8" x 6-3/4" x 14-1/2")

Weight

[RX-V673/HTR-6065]	10.2 kg (22.5 lbs.)
[RX-A720]	10.7 kg (23.6 lbs.)

Finish

[RX-V673]	
T model	Gold color
U, C, R, T, K, A, B, G, F, L, S, H models	Black color
R, B, G, F, L, H models	Titanium color
[HTR-6065]	
A, F models	Black color
[RX-A720]	
U, C, A models	Black color

Accessories

Remote control	x 1
Batteries (R03, AAA, UM-4)	x 2
FM antenna (1.4 m)	x 1
AM antenna (1.0 m)	x 1
YPAO microphone (6.0 m)	x 1
Remote control sheet (T model)	x 1
Power cable (2.0 m) (RX-A720)	x 1

* Specifications are subject to change without notice.

U	U.S.A. model	B	British model
C	Canadian model	G	European model
R	General model	F	Russian model
T	Chinese model	L	Singapore model
K	Korean model	S	Brazilian model
A	Australian model	H	Thai model



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This receiver supports network connections.



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RX-A720

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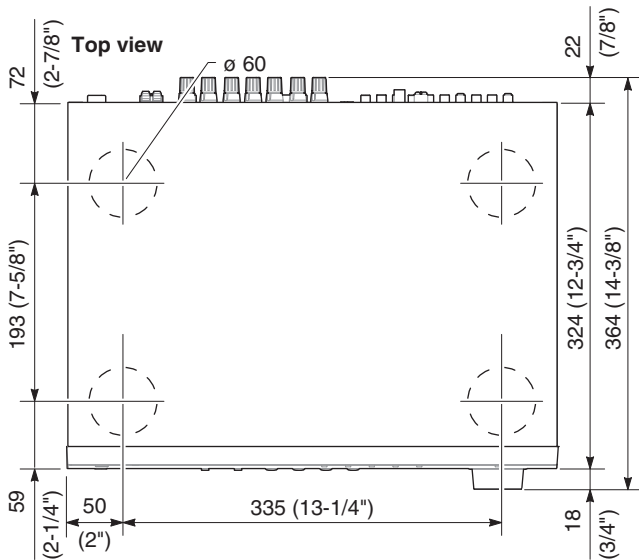
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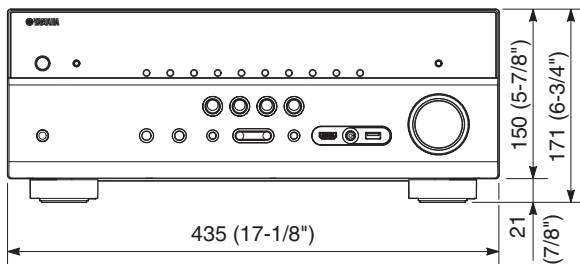
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• DIMENSIONS

RX-V673/HTR-6065

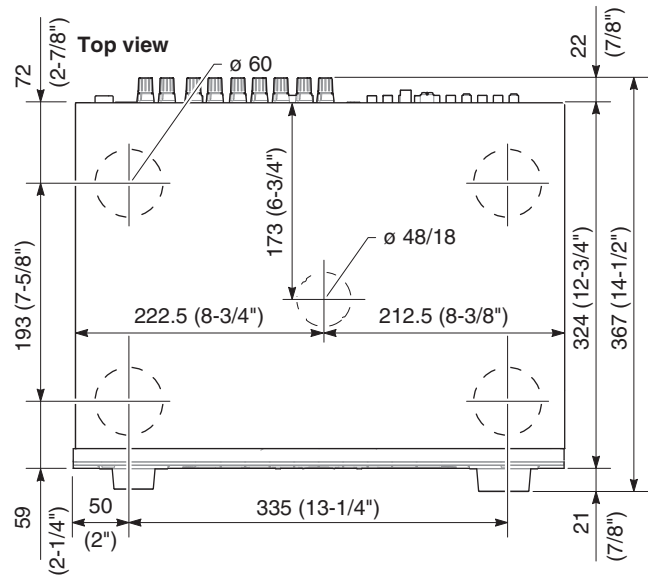


Front view

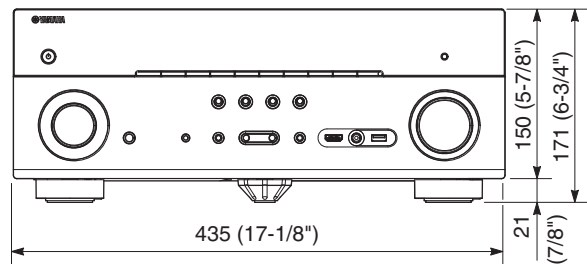


Unit: mm (inch)

RX-A720



Front view



Unit: mm (inch)

RX-V673/HTR-6065/
RX-A720

• **SELECT MENU**

Sound field parameters

Category	Program	Parameter																				
		Decode Type (*1)	DSP Level: -6 to +3 dB, [0]	Initial Delay: 1 to 99 ms	Surround Initial Delay: 1 to 49 ms	Surround Back Initial Delay: 1 to 49 ms	Room Size: 0.1 to 2.0	Surround Room Size: 0.1 to 2.0	Surround Back Room Size: 0.1 to 2.0	Liveness: 0 to 10	Surround Liveness: 0 to 10	Surround Back Liveness: 0 to 10	Reverb Time: 1.0 to 5.0 s	Reverb Delay: 0 to 250 ms	Reverb Level: 0 to 100 %	Direct: Auto / Off, [Auto]	Level: -5 to +5, [0]	Front/Rear Balance: -5 to +5, [0]	Left/Right Balance: -5 to +5, [0]	Height Balance: 0 to 10, [5]	Monaural Mix: Off / On, [Off]	Reset
MOVIE THEATER	Standard	●	●		●	○		●	○		●	○										●
	Spectacle	●	●	●	●	○	●	●	○													●
	Sci-Fi	●	●	●	●	○	●	●	○													●
	Adventure	●	●	●	●	○	●	●	○													●
	Drama	●	●	●	●	○	●	●	○													●
	Mono Movie		●	●			●			●		●	●	●								●
ENTERTAINMENT	Sports		●	●	●	○	●	●	○													●
	Action Game		●	●	●	○	●	●	○													●
	Roleplaying Game		●	●	●	○	●	●	○													●
	Music Video		●	●	●	○	●	●	○													●
CLASSICAL	Hall in Munich		●	●			●			●												●
	Hall in Vienna		●	●			●			●												●
	Chamber		●	●						●		●	●	●								●
LIVE/CLUB	Cellar Club		●	●			●			●												●
	The Roxy Theatre		●	●			●			●		●	●	●								●
	The Bottom Line		●	●			●			●												●
STEREO	2ch Stereo															●						●
	7ch Stereo																●	●	●	●	●	●
SUR. DECODE	SURROUND DECODER	●																				●
STRAIGHT																						

*1 Surround Decoder

Decode Type	Panorama	Center Width	Dimension	Center Image
	Off / On, [Off]	0 to 7, [3]	-3 to +3, [0]	0.0 to 1.0, [0.3]
<input checked="" type="checkbox"/> Pro Logic				
<input checked="" type="checkbox"/> PL IIx Movie / <input checked="" type="checkbox"/> PL II Movie				
<input checked="" type="checkbox"/> PL IIx Music /	●	●	●	
<input checked="" type="checkbox"/> PL II Music				
<input checked="" type="checkbox"/> PL IIx Game / <input checked="" type="checkbox"/> PL II Game				
Neo:6 Cinema				
Neo:6 Music				●

RX-V673/HTR-6065/
RX-A720

• SET MENU TABLE

MAIN MENU	SUB-MENU	PARAMETER	VALUE [INITIAL VALUE]			
Speaker Setup	Auto	Measure	Optimizes the speaker configuration automatically using YPAO.			
		Result	Not Available			
	Manual	Power Amp Assign		[Basic] / 7ch +1ZONE / 5ch BI-AMP		
		Configuration	Front	Large / [Small] * When "Subwoofer" is set to "None", "Front" is disabled.		
			Center	Large / [Small] / None		
			Surround	Large / [Small] / None		
			Surround Back	Large x1 / Large x2 / Small x1 / [Small x2] / None		
			Front Presence	[Use] / None		
			Subwoofer	[Use] / None ____ [Normal] / Reverse		
			Extra Bass	Not Available		
			Bass Cross Over	40 / 60 / [80] / 90 / 100 / 110 / 120 / 160 / 200 Hz		
			Distance		Meter / Feet	
		Front L		0.30 to 24.00 m, [3.00 m], 0.05 m step 1.0 to 80.0 ft, [10.0 ft], 0.2 ft step		
		Front R				
		Center				
		Surround L				
		Surround R				
		Surround Back L				
		Surround Back R				
		Front Presence L				
		Front Presence R				
		Subwoofer				
		Level			Front L	-10.0 to +10.0 dB, [0.0 dB], 0.5 dB step
					Front R	
					Center	
			Surround L			
			Surround R			
			Surround Back L			
			Surround Back R			
	Front Presence L					
	Front Presence R					
	Parametric EQ		Manual / YPAO : Flat / YPAO : Front / YPAO : Natural / [Through] * Select "ENTER"			
		Front L	Band	▶ Band: #1 to #7		
Front R			/ Gain	▲ Gain: -20.0 to +6.0 dB, [0.0 dB], 0.5 dB step		
			Center			
Surround L		Frequency	▶ Frequency: 31.3 Hz to 16.0 kHz, [62.5 Hz]			
		Surround R	/ Gain	▲ Gain: -20.0 to +6.0 dB, [0.0 dB], 0.5 dB step		
			Surround Back L			
Surround Back R		Q	▶ Q: 0.500 to 10.080, [1.000]			
		Front Presence L	/ Gain	▲ Gain: -20.0 to +6.0 dB, [0.0 dB], 0.5 dB step		
			Front Presence R			
PEQ Data Copy		Flat > Manual / Front > Manual / Natural > Manual * Select "ENTER"				
PEQ Data Clear		OK / CANCEL * Select "ENTER"				
Test Tone		[Off] / On				
Sound Setup	Lipsync	Delay Enable	HDMI1 / HDMI2 / HDMI3 / HDMI4 / HDMI5 / AV1 / AV2 / AV3 / AV4 / AV5 / AV6 / AUDIO1 / AUDIO2 Disable / [Enable]			
		Auto/Manual Select	[Auto] / Manual			
		Adjustment	0 to 500 ms, [0 ms], 1 ms step			

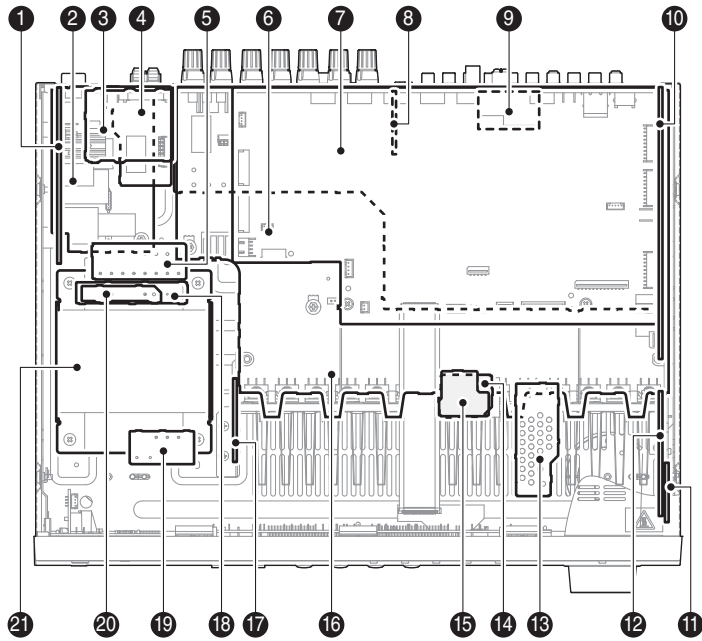
RX-V673/HTR-6065/
RX-A720

MAIN MENU	SUB-MENU	PARAMETER	VALUE [INITIAL VALUE]
Sound Setup	Dynamic Range		[Maximum] / Standard / Minimum/Auto
	Max. Volume		-30.0 to +16.5 dB (Maximum volume), [+16.5 dB], 5.0 dB step
	Initial Volume		[Off] / On
		Select "On"	Mute, -80 to +16.5 dB, 0.5 dB step
	Adaptive DSP Level		Off / [On]
Video Setup	Video Mode		[Direct] / Processing
	Select "Processing"	Resolution	Through / [Auto] / 576p / 720p / 1080i / 1080p / 4K * Select "ENTER"
		Aspect	[Through] / 16:9 Normal
HDMI Setup	HDMI Control		[Off] / On
		TV Audio Input	AV1 / AV2 / AV3 / [AV4] / AV5 / AV6 / AUDIO1 / AUDIO2
		ARC (Audio Return Channel)	Off / [On]
		Standby Sync	Off / On / [Auto]
	Audio Output	Amp	Off / [On]
		HDMI OUT (TV)	[Off] / On
	Standby Through		[Off] / On * When HDMI Control is set to "On", "Standby Through" is disabled.
Network Setup	IP Address	DHCP	[Off] / On
		IP Address	xxx.xxx.xxx. x
		Subnet Mask	xxx.xxx.xxx. x
		Default Gateway	xxx.xxx.xxx. x
		DNS Server (P) Primary	x. x. x. x
		DNS Server (S) Secondary	x. x. x. x
	Network Standby		[Off] / On
	MAC Address	Filter	[Off] / On
	Filter	MAC Address 1-5 6-10	xx : xx : xx : xx : xx : xx
Network Name		Input is possible to 15 characters	
Multi Zone Setup	Main Zone Set	Zone Rename	Input is possible to 9 characters
	Zone2 Set	Max. Volume	-30.0 to +16.5 dB (Maximum volume), [+16.5 dB], 5.0dB step
		Initial Volume	[Off] / On
		Select "On"	Mute, -80 to +16.5 dB, 0.5 dB step
	Zone Rename		Input is possible to 9 characters
Function Setup	Display Set	Dimmer (Front Display)	-4 to 0
		Short Message	[On] / Off
		Wall Paper	Picture1 / Picture2 / Picture3 / Gray
	Trigger Output	Trigger Mode	[Power] / Source / Manual
		Select "Source"	HDMI1-5, AV1-6, V-AUX, AUDIO1-2, TUNER, AirPlay, SERVER, NET RADIO, USB Low / [High]
		Target Zone	Main / Zone2 / [All]
Memory Guard		[Off] / On	
ECO Setup	Auto Power Down		Off / 2 Hours / 4 Hours / 8 Hours / 12 Hours U, C, R, T, K, A, L, S, H models: [Off] B, G, F models: [8 Hours]
	ECO Mode		[Off] / On
Language Setup	[English (English)] / 日本語 (Japanese) / Français (French) / Deutsch (German) / Español (Spanish) / Русский (Russian) / 中文 (Chinese)		

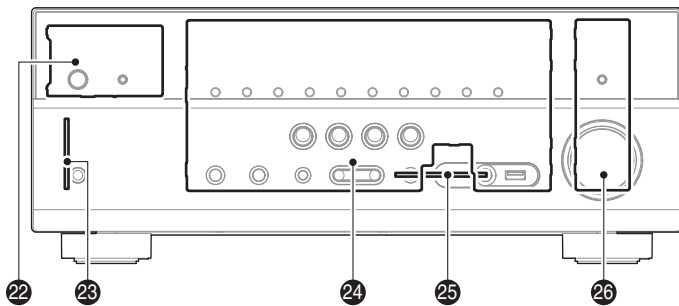
INTERNAL VIEW

RX-V673/HTR-6065

Top view



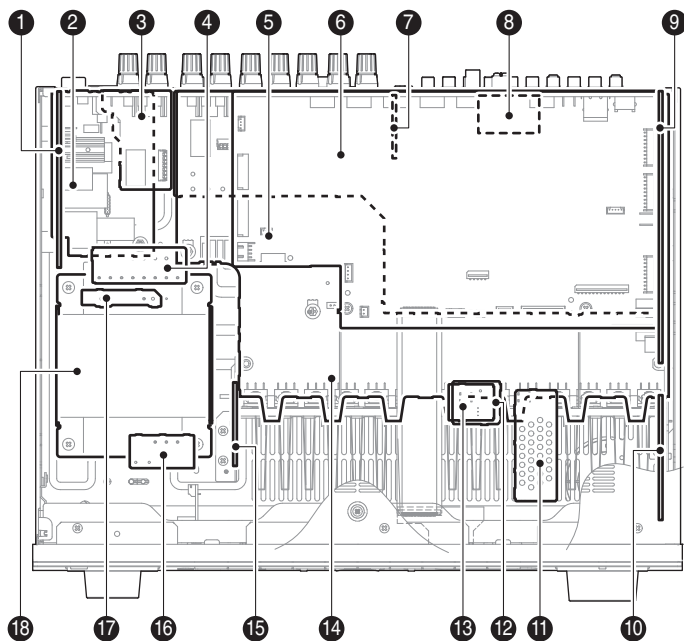
Front view



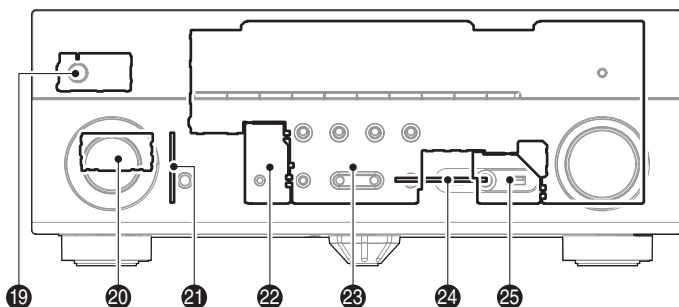
- ① VIDEO (2) P.C.B.
- ② VIDEO (3) P.C.B.
- ③ VIDEO (8) P.C.B. (R, S models)
- ④ OPERATION (8) P.C.B.
- ⑤ MAIN (2) P.C.B.
- ⑥ DIGITAL (1) P.C.B.
- ⑦ VIDEO (1) P.C.B.
- ⑧ VIDEO (4) P.C.B.
- ⑨ AM/FM TUNER
- ⑩ OPERATION (2) P.C.B.
- ⑪ OPERATION (12) P.C.B.
- ⑫ OPERATION (7) P.C.B.
- ⑬ OPERATION (11) P.C.B.
- ⑭ OPERATION (9) P.C.B. (U, C models)
- ⑮ OPERATION (10) P.C.B. (R, T, K, A, B, G, F, L, S, H models)
- ⑯ MAIN (1) P.C.B.
- ⑰ MAIN (6) P.C.B.
- ⑱ VIDEO (9) P.C.B. (R, S models)
- ⑲ VIDEO (7) P.C.B.
- ⑳ VIDEO (6) P.C.B. (U, C, T, K, A, B, G, F, L, H models)
- ㉑ POWER TRANSFORMER
- ㉒ OPERATION (4) P.C.B.
- ㉓ OPERATION (3) P.C.B.
- ㉔ OPERATION (1) P.C.B.
- ㉕ DIGITAL (2) P.C.B.
- ㉖ OPERATION (5) P.C.B.

RX-A720

Top view



Front view



- ① VIDEO (2) P.C.B.
- ② VIDEO (3) P.C.B.
- ③ OPERATION (8) P.C.B.
- ④ MAIN (2) P.C.B.
- ⑤ DIGITAL (1) P.C.B.
- ⑥ VIDEO (1) P.C.B.
- ⑦ VIDEO (4) P.C.B.
- ⑧ AM/FM TUNER
- ⑨ OPERATION (2) P.C.B.
- ⑩ OPERATION (7) P.C.B.
- ⑪ OPERATION (11) P.C.B.
- ⑫ OPERATION (9) P.C.B. (U, C models)
- ⑬ OPERATION (10) P.C.B. (A model)
- ⑭ MAIN (1) P.C.B.
- ⑮ MAIN (6) P.C.B.
- ⑯ VIDEO (7) P.C.B.
- ⑰ VIDEO (6) P.C.B.
- ⑱ POWER TRANSFORMER
- ⑲ OPERATION (5) P.C.B.
- ⑳ OPERATION (6) P.C.B.
- ㉑ OPERATION (3) P.C.B.
- ㉒ OPERATION (4) P.C.B.
- ㉓ OPERATION (1) P.C.B.
- ㉔ DIGITAL (2) P.C.B.
- ㉕ OPERATION (12) P.C.B.

■ SERVICE PRECAUTIONS

Safety measures

- Some internal parts in this product contain high voltages and are dangerous. Be sure to take safety measures during servicing, such as wearing insulating gloves.
- Note that the capacitors indicated below are dangerous even after the power is turned off because an electric charge remains and a high voltage continues to exist there. Before starting any repair work, connect a discharging resistor (5 k-ohms/10 W) to the terminals of each capacitor indicated below to discharge electricity. The time required for discharging is about 30 seconds per each.

C1082–C1085 on MAIN P.C.B.

C3706 on VIDEO (2) P.C.B.

For details, refer to "PRINTED CIRCUIT BOARDS".

■ DISASSEMBLY PROCEDURES

RX-V673/HTR-6065

(Remove parts in the order as numbered.)
 Disconnect the power cable from the AC outlet.

1. Removal of Top Cover

- a. Remove 4 screws (①) and 5 screws (②). (Fig. 1)
- b. Lift the rear of the top cover to remove it. (Fig. 1)

2. Removal of Front Panel Unit

- a. Remove 6 screws (③), and remove W4401 and W4421. (Fig. 1)
- b. Remove CB8, CB82, CB458, CB472, CB947 and CB952. (Fig. 1)
- c. Release 2 hooks, and remove the front panel unit. (Fig. 1)

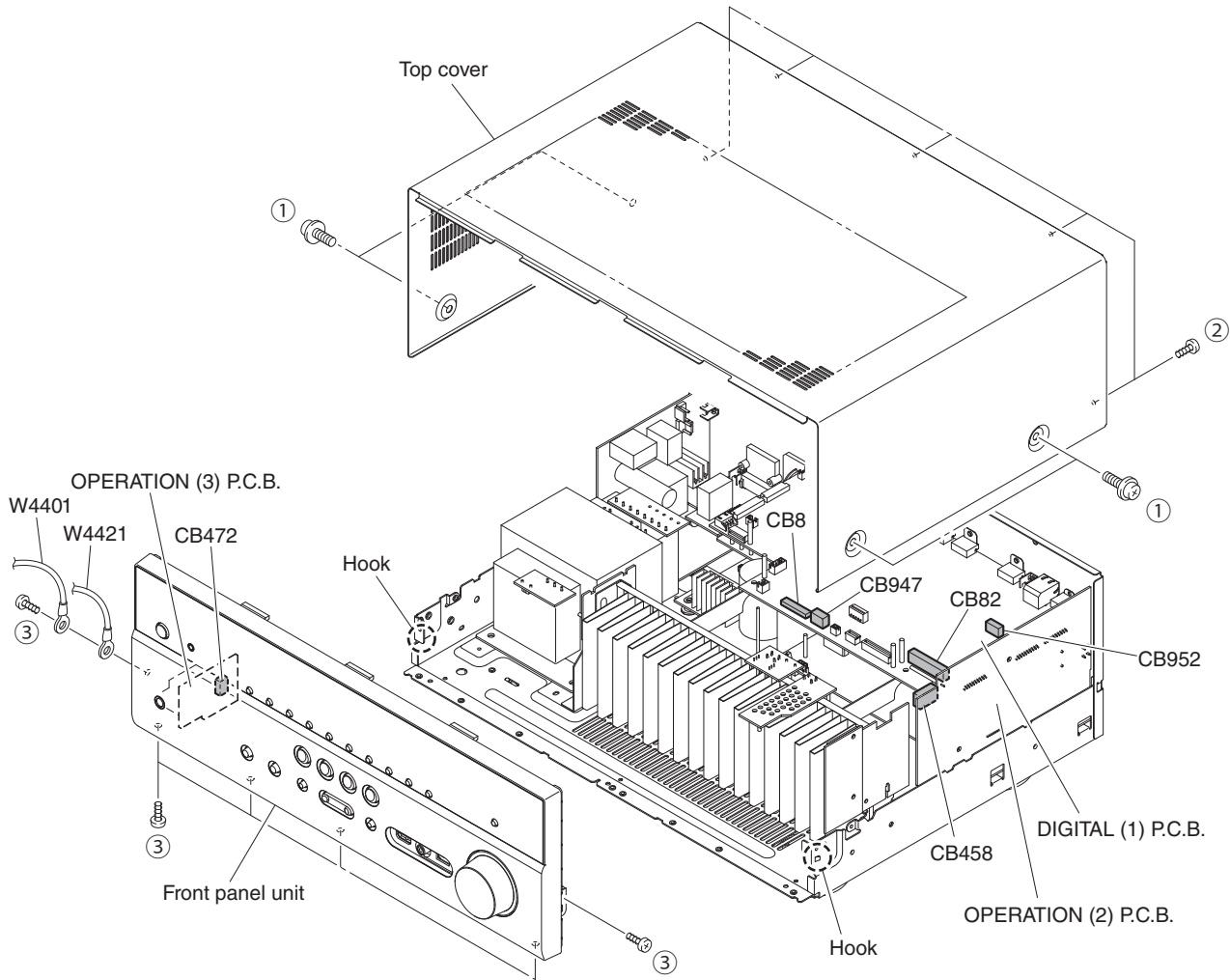


Fig. 1

RX-V673/HTR-6065/
RX-A720

3. Removal of DIGITAL (1) P.C.B.

- a. Remove screw (④) and 7 screws (⑤). (Fig. 3)
- b. Remove 3 screws. (⑥). (Fig. 2)
- c. Remove CB21, CB76, CB81 and CB942. (Fig. 2)
- d. Unlock and remove CB78, CB79 and CB944. (Fig. 2)
- e. Remove the DIGITAL (1) P.C.B. which is connected directly to the OPERATION (2) P.C.B. with board-to-board connectors. (Fig. 2)

4. Removal of AMP Unit and Power Transformer

- a. Remove screw (⑦), 3 screws (⑧), 3 screws (⑨) and 4 screws (⑩). (Fig. 2)
- b. Remove 3 screws (⑪). (Fig. 3)
- c. Remove the AMP unit together with the power transformer. (Fig. 2)

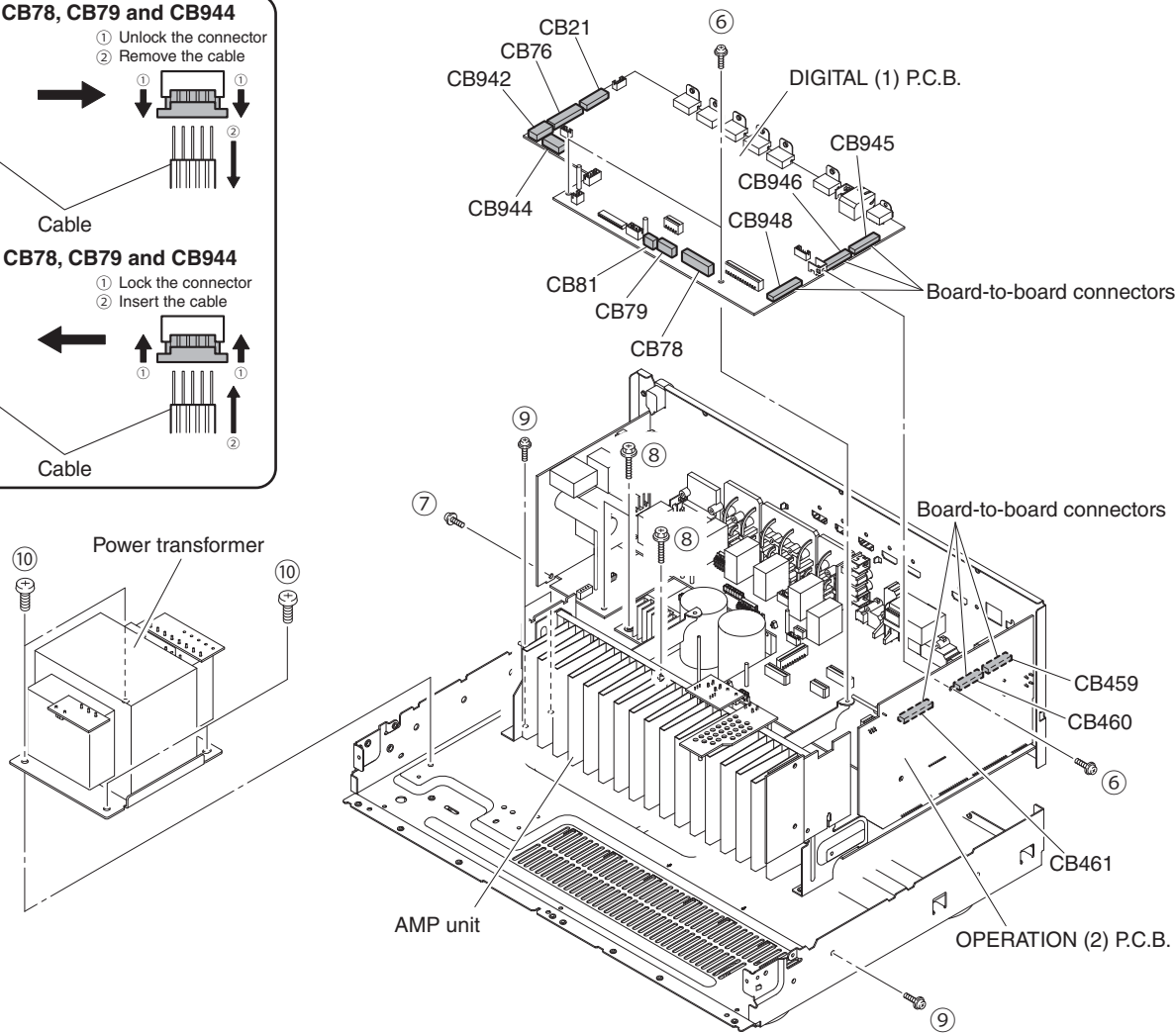
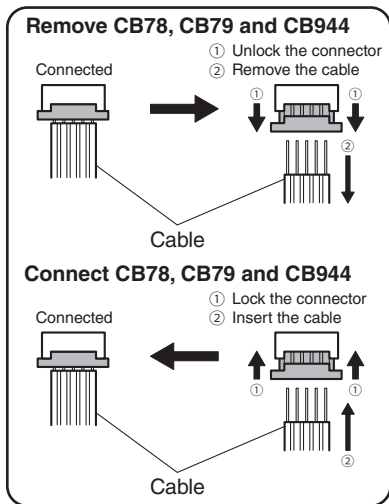


Fig. 2

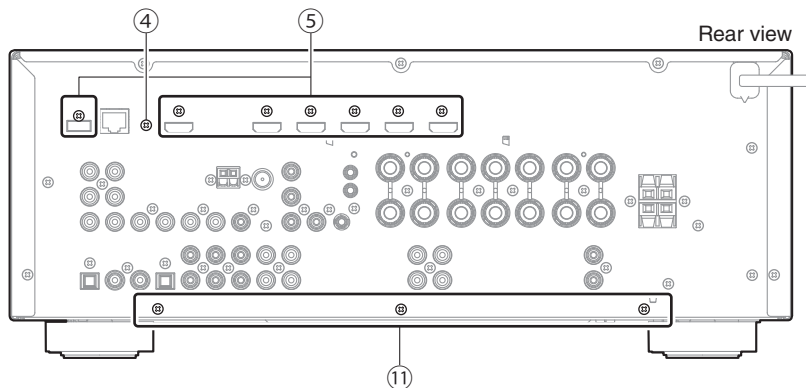


Fig. 3

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RX-A720

When checking the P.C.B.s:

- Place the P.C.B.s (with rear panel) upright. (Fig. 4)
- Connect the heatsink and rear panel to the chassis with a ground lead. (Fig. 4)
- Reconnect all cables (connectors) that have been disconnected.
- When connecting the flexible flat cable, be careful with polarity.

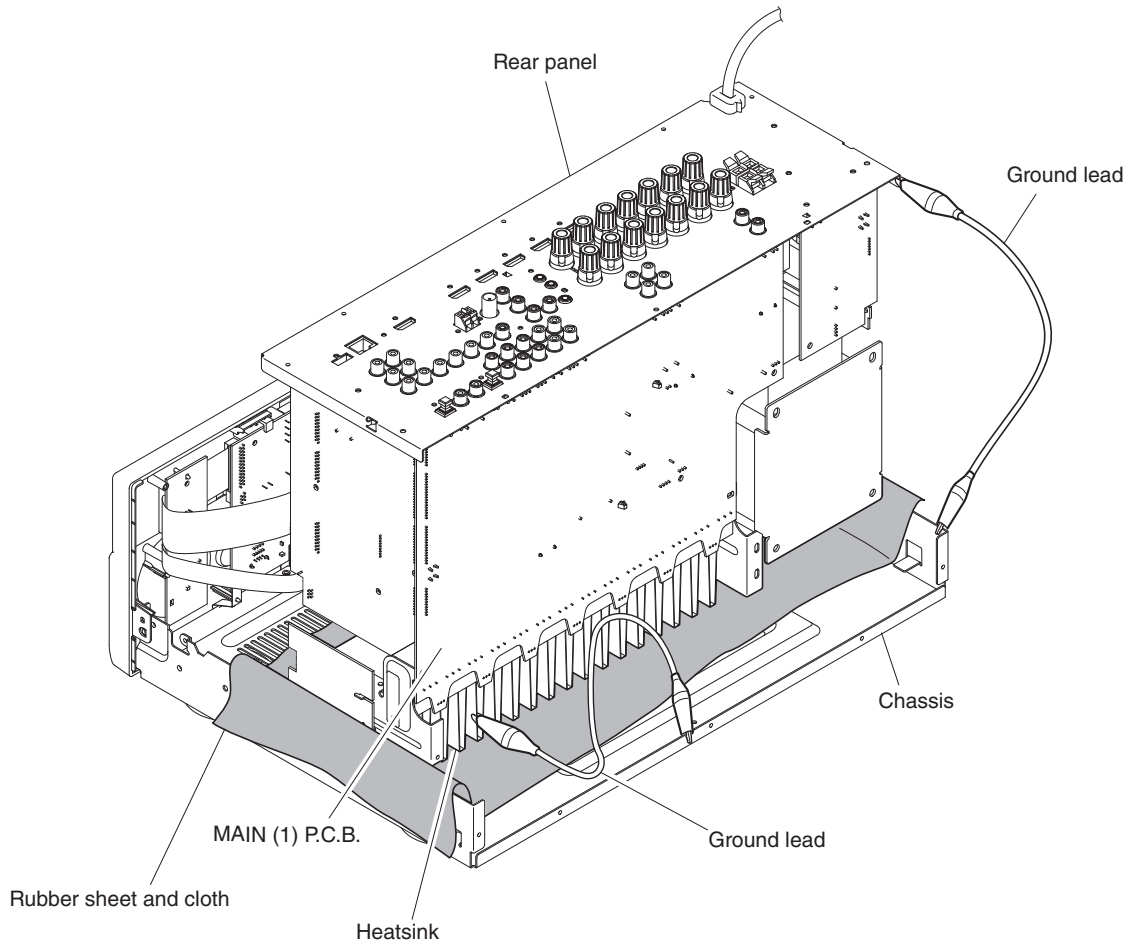


Fig. 4

RX-A720

(Remove parts in the order as numbered.)
Disconnect the power cable from the AC outlet.

1. Removal of Top Cover

- a. Remove 4 screws (①), 5 screws (②) and screw (③). (Fig. 1)
- b. Lift the rear of the top cover to remove it. (Fig. 1)

2. Removal of Front Panel Unit and Sub-Chassis Unit

- a. Remove knob (INPUT) and knob (VOLUME). (Fig. 1)
- b. Remove 6 screws (④) and then remove the front panel unit. (Fig. 1)
- c. Remove 2 push rivets and then remove the side plate (L) and side plate (R). (Fig. 1)
- d. Remove CB8, CB82, CB458, CB471, CB947 and CB952. (Fig. 1)
- e. Remove 2 screws (⑤) and then remove the sub-chassis unit. (Fig. 1)

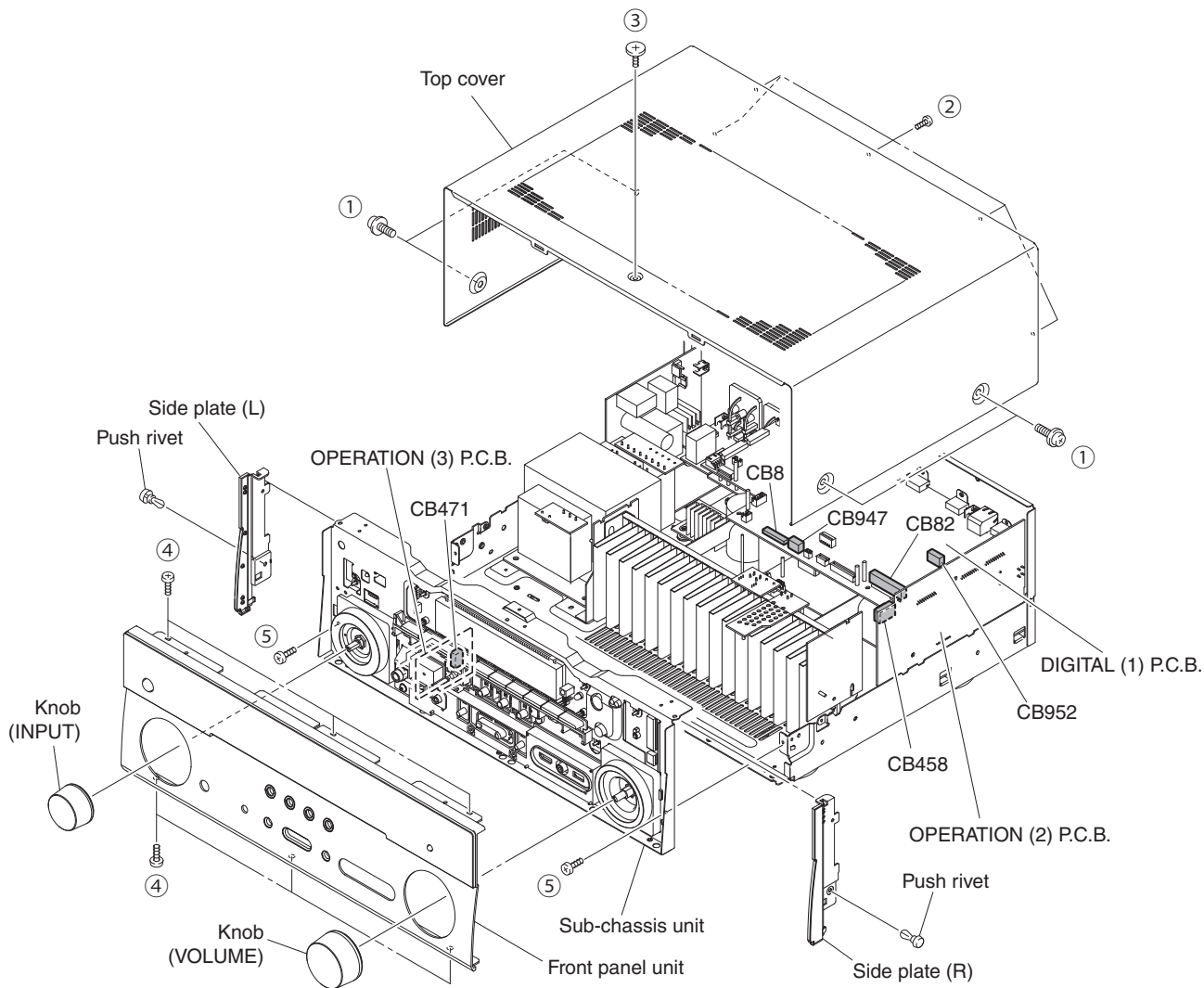


Fig. 1

3. Removal of DIGITAL (1) P.C.B.

- a. Remove screw (6) and 7 screws (7). (Fig. 3)
- b. Remove 3 screws. (8). (Fig. 2)
- c. Remove CB21, CB76, CB81 and CB942. (Fig. 2)
- d. Unlock and remove CB78, CB79 and CB944. (Fig. 2)
- e. Remove the DIGITAL (1) P.C.B. which is connected directly to the OPERATION (2) P.C.B. with board-to-board connectors. (Fig. 2)

4. Removal of AMP Unit and Power Transformer

- a. Remove screw (9), 3 screws (10), 3 screws (11) and 4 screws (12). (Fig. 2)
- b. Remove 3 screws (13). (Fig. 3)
- c. Remove the AMP unit together with the power transformer. (Fig. 2)

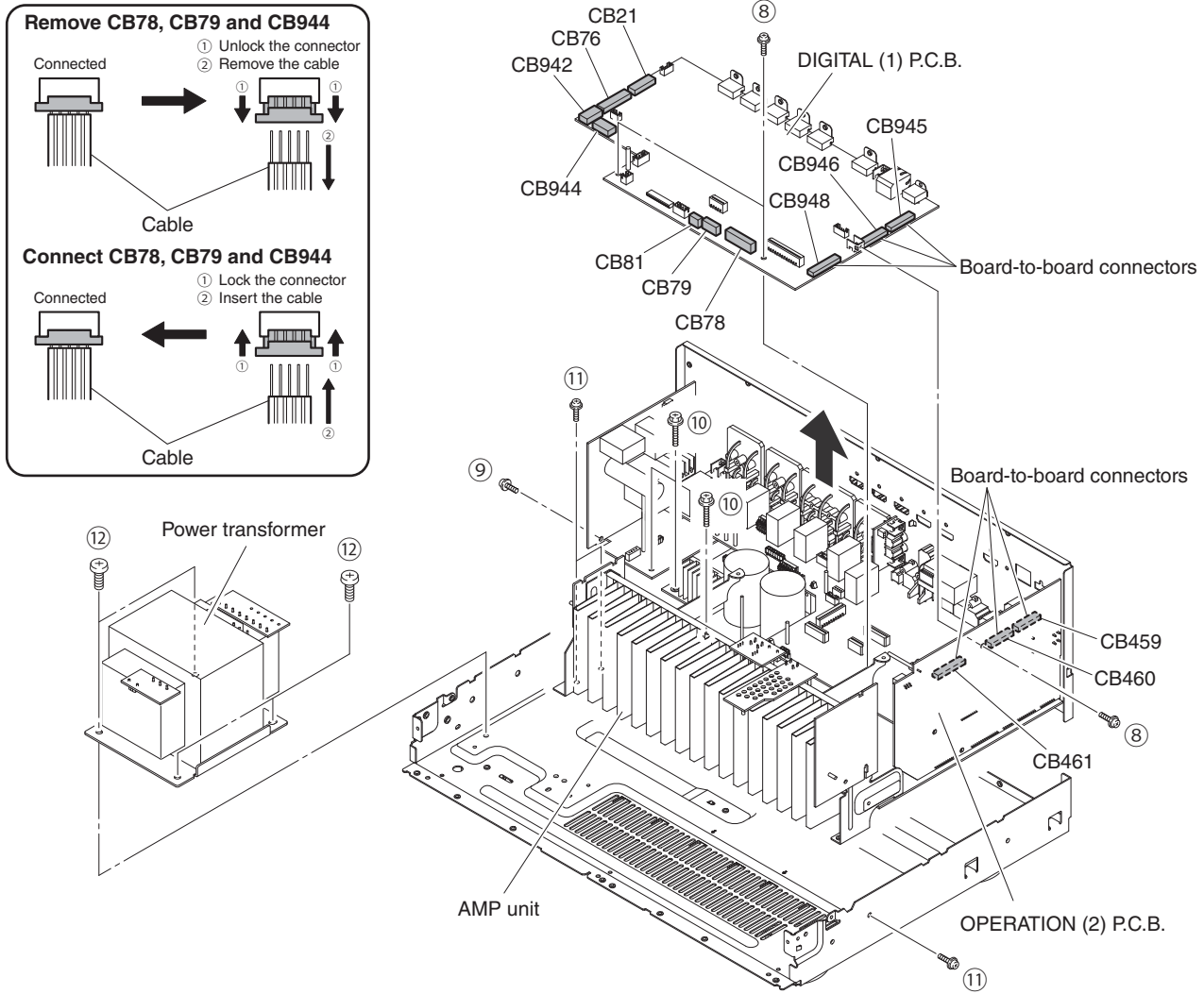


Fig. 2

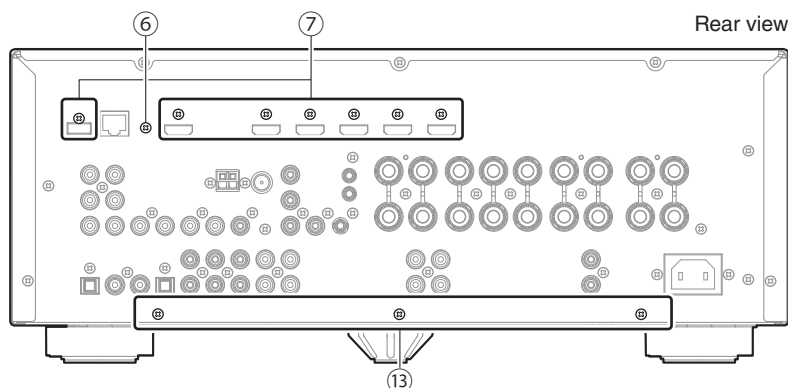
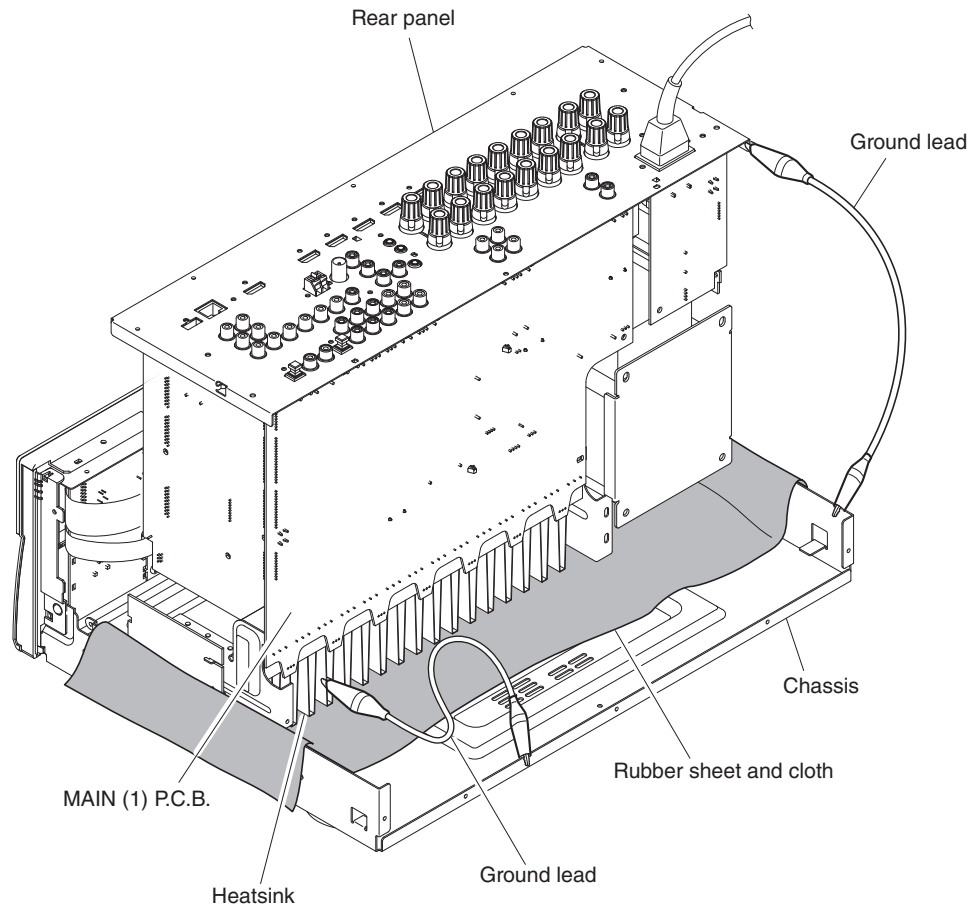


Fig. 3

When checking the P.C.B.s:

- Place the P.C.B.s (with rear panel) upright. (Fig. 4)
- Connect the heatsink and rear panel to the chassis with a ground lead. (Fig. 4)
- Reconnect all cables (connectors) that have been disconnected.
- When connecting the flexible flat cable, be careful with polarity.

**Fig. 4**

■ UPDATING FIRMWARE

When the following parts are replaced, the firmware must be updated to the latest version.

DIGITAL P.C.B.

FPGA Flash ROM: IC77 on DIGITAL P.C.B.

DSP(TI) Flash ROM: IC923 on DIGITAL P.C.B.

NETWORK Flash ROM: IC953 on DIGITAL P.C.B.

● Confirmation of firmware version and checksum

Before and after updating the firmware, check the firmware version and checksum by using the self-diagnostic function menu.

Start up the self-diagnostic function and select "S4. ROM VERSION/CHECKSUM" menu.

Using the sub-menu, have the firmware version and checksum displayed, and note them down.

(See "SELF-DIAGNOSTIC FUNCTION")

* When the firmware version is different from written one after updating, perform the updating procedure again from the beginning again.

● Initializing the back-up IC (EEPROM: IC82 on DIGITAL P.C.B.)

After updating the firmware, the back-up IC MUST be initialized by the following procedure to store the setting information (soundfield parameters, system memory and tuner presetting, etc.) properly.

Start up the self-diagnostic function and select "S3. FACTORY PRESET" menu. (See "SELF-DIAGNOSTIC FUNCTION")

Select "PRESET RSRV", press the "MAIN ZONE ⏻" key to turn off the power once and turn on the power again. Then the back-up IC is initialized.

● Required Tools

- USB storage device
- Firmware
RX-V673/HTR-6065/RX-A720: R0309-xxxx.bin

● Preparation

1. Download the latest firmware from the specified download source to the folder of the PC.
2. Copy the latest firmware from the PC to the root folder of the USB storage device.

Note) When the latest firmware is copied to a sub-folder of the USB storage device, the update will not proceed.

● **Operation Procedures**

1. Insert the USB storage device to the USB jack. (Fig. 1)
2. While pressing the “PURE DIRECT” key, connect the power cable to the AC outlet. (Fig. 1)

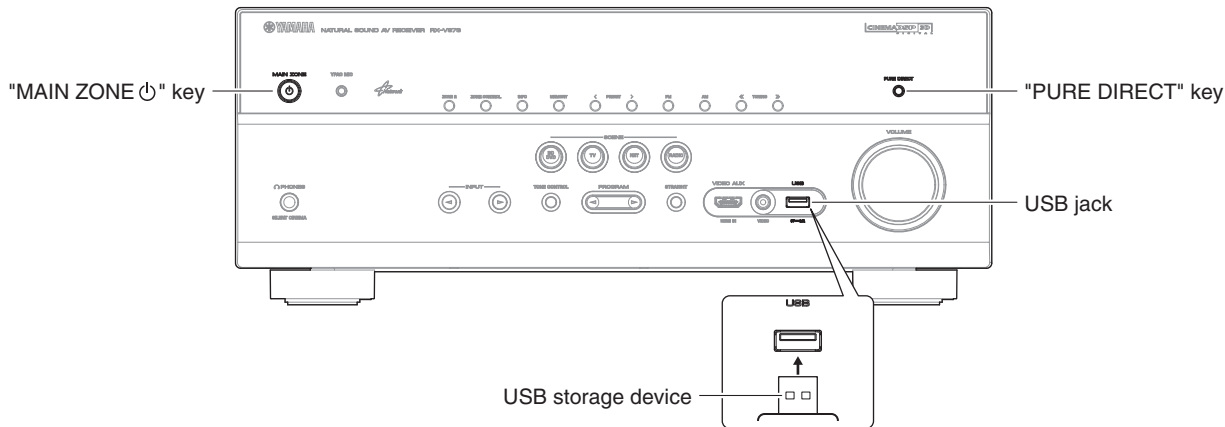


Fig. 1

3. The USB UPDATE mode is activated and “USB UPDATE” is displayed. Writing of the firmware starts automatically. (Fig. 2)



Fig. 2

4. When writing of the firmware is completed, “UPDATE SUCCESS”, “PLEASE...” and “POWER OFF!” are displayed repeatedly. (Fig. 3)

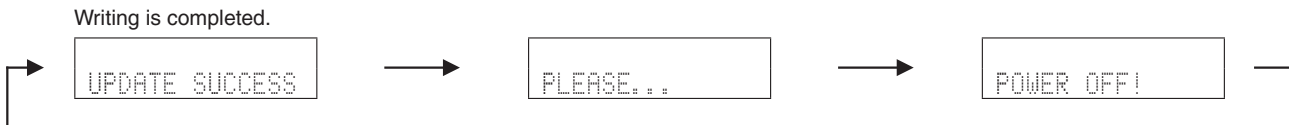


Fig. 2

5. Press the “MAIN ZONE” key to turn off the power. (Fig. 1)
6. Remove the USB storage device from the USB jack. (Fig. 1)
7. Start up the self-diagnostic function and check that the firmware version and checksum are the same as written ones. (See “Confirmation of firmware version and checksum”)

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RX-A720

■ SELF-DIAGNOSTIC FUNCTION

This unit has self-diagnostic functions that are intended for inspection, measurement and location of faulty point.

There are 22 main menu items, each of which has sub-menu items.

Listed in the table below are main menu items and sub-menu items.

Note: Some of the menu items listed below may not apply to the models covered in this service manual.

No.	Main menu	No.	Sub-menu
A: Audio system			
A1	DSP AUDIO	1	DSP MARGIN
		2	DSP NON MARGIN
		3	INVALID ITEM (Not for service)
		4	DSP FULL CENTER
		5	DSP FULL SURROUND
		6	DSP FULL SURROUND BACK
		7	DSP FULL SUBWOOFER
A2	DIRECT AUDIO	1	ANALOG DIRECT VH
		2	ANALOG DIRECT VL
A3	HDMI AUDIO	1	HDMI AUTO
		2	INVALID ITEM (Not for service)
		3	ARC1
		4	INVALID ITEM (Not for service)
		5	INVALID ITEM (Not for service)
A4	SPEAKERS SET	1	BI-AMP
		2	ZONE/TONE=MAX
		3	ZONE/TONE=MIN
		4	INVALID ITEM (Not for service)
		5	INVALID ITEM (Not for service)
		6	D-PARTY MODE
		7	FULL MUTE
		8	INVALID ITEM (Not for service)
		9	INVALID ITEM (Not for service)
		10	INVALID ITEM (Not for service)
A5	MULTI CHANNEL INPUT (Not for service)	1	MULTI CHANNEL INPUT 8 ohms
		2	MULTI CHANNEL INPUT 6 ohms
A6	MIC CHECK	1	MIC ROUTE CHECK
A7	MANUAL TEST	1	TEST ALL
		2	TEST FRONT L
		3	TEST CENTER
		4	TEST FRONT R
		5	TEST SURROUND R
		6	TEST SURROUND BACK R
		7	TEST SURROUND BACK L
		8	TEST SURROUND L
		9	TEST FRONT PRESENCE L
		10	TEST FRONT PRESENCE R
		11	INVALID ITEM (Not for service)
		12	INVALID ITEM (Not for service)
		13	TEST LFE 1
		14	INVALID ITEM (Not for service)

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No.	Main menu	No.	Sub-menu
D: Display system			
D1	FL CHECK	1	FL CHECK
		2	ALL SEGMENT OFF
		3	ALL SEGMENT ON
		4	CHECK PATTERN 1
		5	CHECK PATTERN 2
Z: Zone system			
Z1	ZONE TEST	1	AV1 (Not for service)
		2	AV2 (Not for service)
		3	AV3 (Not for service)
		4	AV4 (Not for service)
		5	AV5
		6	AV6
		7	AUDIO1
		8	AUDIO2
		9	V-AUX (Not for service)
		10	PHONO (Not for service)
U: Universal system			
U1	USB	1	USB FRONT 1 TRACK
		2	USB FRONT 2 TRACK
		3	USB_VBUS HIGH POWER
N: Network system			
N1	NETWORK	1	IP ADDRESS CHECK
		2	MAC ADDRESS CHECK
		3	LINE NOISE 100 MDI (Not for service)
		4	LINE NOISE 100 MDIX (Not for service)
		5	LINE NOISE 10 MDI (Not for service)
		6	LINE NOISE 10 MDIX (Not for service)
		7	EXT TEST
		8	MAC ADDRESS
C: Communication system			
C1	DIGITAL PCB CHECK	1	ALL
		2	BUS FLASH ROM
		3	BUS FPGA
		4	I2C
		5	FPGA RAM
		6	BUS DIR1
		7	BUS DSP1
		8	EEPROM
		9	INVALID ITEM (Not for service)
		10	INVALID ITEM (Not for service)
		11	INVALID ITEM (Not for service)
C2	NETWORK IC CHECK	1	ALL
		2	LINK CHECK
		3	PHY TEST
		4	BUS RAM
		5	APL ID CHECK

No.	Main menu	No.	Sub-menu
V: Video system			
V1	ANALOG VIDEO CHECK	1	ANALOG BYPASS
		2	INVALID ITEM (Not for service)
		3	INVALID ITEM (Not for service)
		4	MUTE CHECK
		5	TEST PATTERN (Not for service)
		6	VIDEO IN
V2	DIGITAL VIDEO CHECK	1	LOOPBACK TEST 1
		2	LOOPBACK TEST 2
		3	LOOPBACK TEST 3
		4	INVALID ITEM (Not for service)
		5	INVALID ITEM (Not for service)
		6	INVALID ITEM (Not for service)
		7	HDMI REPEAT
		8	DIGITAL CVBS
		9	INVALID ITEM (Not for service)
		10	DIGITAL COMPONENT
		11	DIGITAL COMPONENT SC
		12	GUI-VIDEO OUT
V3	TEST PATTERN	1	480i
		2	480p
		3	720p 60Hz
		4	1080i 60Hz
		5	1080p 60Hz
		6	576i
		7	576p
		8	720p 50Hz
		9	1080i 50Hz
		10	1080p 50Hz
		11	1080p 24Hz
		12	1080p 24Hz 3D/FP
		13	720p 60Hz 3D/FP
		14	720p 50Hz 3D/FP
		15	1080i 60Hz 3D/FP
		16	1080i 60Hz 3D/SS
		17	1080i 50Hz 3D/SS
		18	720p 60Hz 3D/TB
		19	720p 50Hz 3D/TB
		20	1080p 24Hz 3D/TB
		21	4k 24Hz

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No.	Main menu	No.	Sub-menu
P: Power and protection system			
P1	SYSTEM MONITOR	1	DC
		2	PS1/PS2/PS3
		3	THM
		4	INVALID ITEM (Not for service)
		5	OUTPUT LEVEL
		6	LIMITER CONTROL
		7	L3 (J model) (Not for service)
		8	KEY1/KEY2
		9	USB-VBUS (Not for service)
P2	PROTECTION HISTORY	1	HISTORY 1
		2	HISTORY 2
		3	HISTORY 3
		4	HISTORY 4
S: System and version system			
S1	FIRMWARE UPDATE	1	FIRMWARE UPDATE (Not for service)
S2	SET INFORMATION	1	MODEL
		2	DESTINATION
		3	DEBUG (Not for service)
		4	NET RESTART COUNTER (Not for service)
S3	FACTORY PRESET	1	PRESET INHIBIT/RESERVE
S4	ROM VERSION/CHECKSUM	1	SYSTEM VERSION
		2	MICROPROCESSOR VERSION
		3	MICROPROCESSOR CHECKSUM
		4	FLASH ROM VERSION
		5	FLASH ROM CHECKSUM
		6	NETWORK MICROPROCESSOR VERSION
		7	NETWORK MICROPROCESSOR CHECKSUM
		8	DSP1 VERSION
		9	DSP1 CHECKSUM
		10	INVALID ITEM (Not for service)
		11	INVALID ITEM (Not for service)
		12	GUI VERSION
		13	FPGA GUI VERSION
		14	FPGA SD VERSION
		15	FPGA HD VERSION
		16	INVALID ITEM (Not for service)
		17	INVALID ITEM (Not for service)

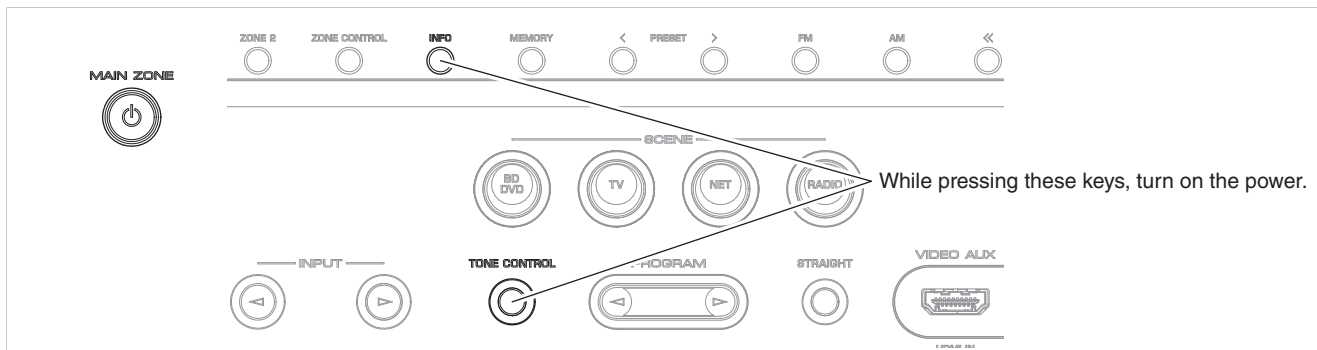
● Starting Self-Diagnostic Function

While pressing the “TONE CONTROL” and “INFO” keys, press the “MAIN ZONE ϕ ” key to turn on the power, and release those 2 keys.

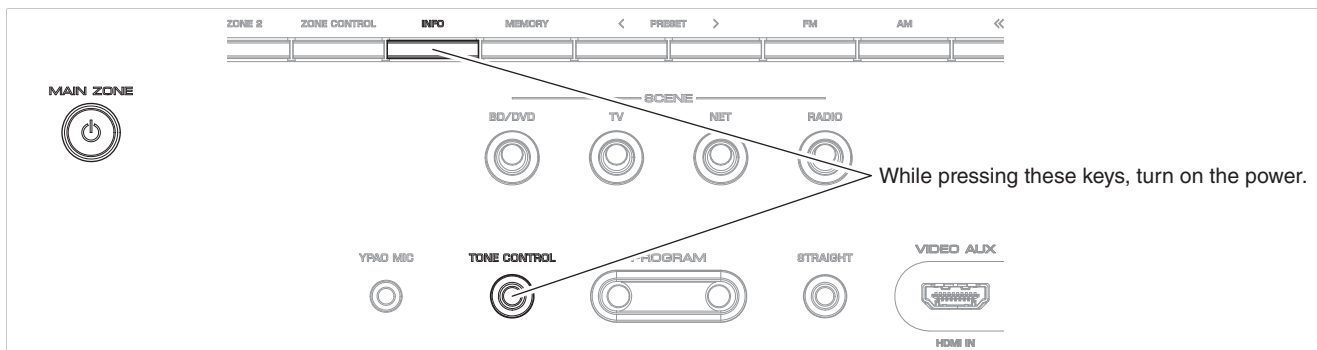
The self-diagnostic function mode is activated.

Keys of this unit

RX-V673/HTR-6065



RX-A720



● Starting Self-Diagnostic Function in the protection cancel mode

If the protection function works and causes hindrance to troubleshooting, cancel the protection function by the procedure below, and it will be possible to enter the self-diagnostic function mode. (The protection functions other than the excess current detect function will be disabled.)

While pressing the “TONE CONTROL” and “INFO” keys, press the “MAIN ZONE ϕ ” key to turn on the power and keep pressing those 2 keys and “MAIN ZONE ϕ ” key for 3 seconds or longer.

The self-diagnostic function mode is activated with the protection functions disabled.

In this mode, the “SLEEP” segment of the FL display flashes to indicate that the mode is self-diagnostic function mode with the protection functions disabled.

CAUTION!

Using this unit with the protection function disabled may cause further damage to this unit. Use special care for this point when using this mode.

● Canceling Self-Diagnostic Function

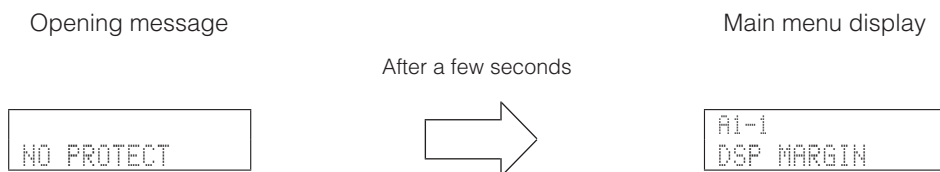
- Before canceling self-diagnostic function, execute setting for "S3. FACTORY PRESET" menu. (Memory initialization inhibited or Memory initialized).
 - * In order to keep the user memory preserved, be sure to select PRESET INHIBIT (Memory initialization inhibited).
- Press the "MAIN ZONE ϕ " key to turn off the power.

● Display provided when Self-Diagnostic Function started

The display is as described below depending on the situation when the power to this unit is turned off.

1. When the power is turned off by usual operation:

"NO PROTECT" is displayed. Then "A1-1. DSP MARGIN" is displayed in a few seconds.



2. When the protection function worked to turn off the power:

The information of protection function which worked at that time is displayed. Then "A1-1. DSP MARGIN" is displayed in a few seconds.

Note: At that time if you restart the self-diagnostic function after turning off the power once, "NO PROTECT" will be displayed. That is because that situation is equal to "1. When the power is turned off by usual operation:".

However history of the protection function is stored in memory as backup data. For details, refer to "P2. PROTECTION HISTORY" menu.

2-1. When there is a history of protection function due to excess current.



Cause: An excessive current flowed through the power amplifier.

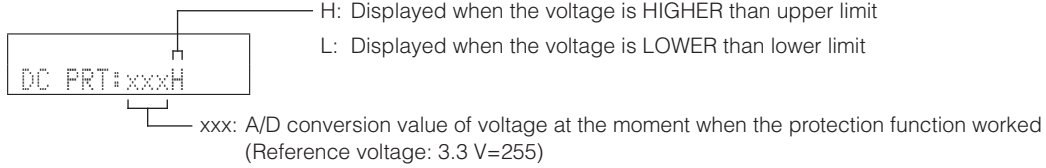
Supplementary information: As over current of the power amplifier is detected, check condition of each power transistor.

Turning on the power without correcting the abnormality will cause the protection function to work immediately and the power supply will instantly be shut off.

Notes:

- Applying the power to this unit without correcting the abnormality can be dangerous and cause additional circuit damage. To avoid this, if "I PROTECT" protection function works 1 time, the power will not turn on even when the "MAIN ZONE ϕ " key is pressed. In order to turn on the power again, start up the self-diagnostic function.
- The output transistors in each amplifier channel should be checked for damage before applying power to this unit.
- Amplifier current should be monitored by measuring DC voltage across the emitter resistors for each channel.

2-2. When the protection function worked due to abnormal DC output.

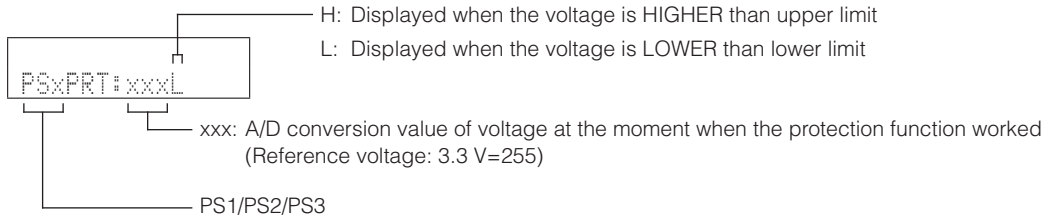


Cause: DC output of the power amplifier is abnormal.

Supplementary information: The protection function worked due to a DC voltage appearing at the speaker terminal. A cause could be a defect in the amplifier.

Turning on the power without correcting the abnormality will cause the protection function to work in 5 seconds and the power supply will be shut off.

2-3. When the protection function worked due to abnormal voltage in the power supply section.



Cause: The voltage in the power supply section is abnormal.

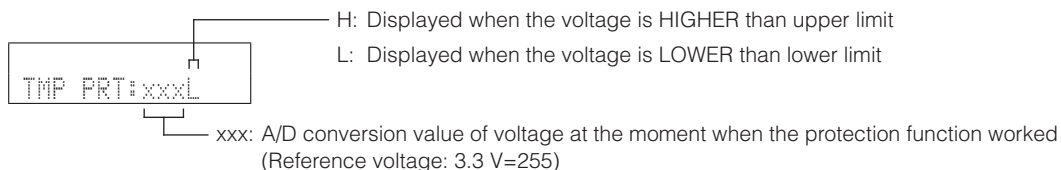
Supplementary information: The protection function worked due to a defect or overload in the power supply.

Turning on the power without correcting the abnormality will cause the protection function to work in 1 seconds and the power supply will be shut off.

Notes:

- Applying the power to this unit without correcting the abnormality can be dangerous and cause additional circuit damage. To avoid this, if “PS” and “DC” protection function works 3 times consecutively, the power will not turn on even when the “MAIN ZONE ⏻” key is pressed. In order to turn on the power again, start up the self-diagnostic function.
- The output transistors in each amplifier channel should be checked for damage before applying power to this unit.
- Amplifier current should be monitored by measuring DC voltage across the emitter resistors for each channel.

2-4. When the protection function worked due to excessive heatsink temperature.



Cause: The temperature of the heatsink is excessive.

Supplementary information: The protection function worked due to the temperature limit being exceeded. Causes could be poor ventilation or a defect related to the thermal sensor.

Turning on the power without correcting the abnormality will cause the protection function to work in 1 seconds and the power supply will be shut off.

● History of protection function

When the protection function has worked, its history is stored in memory as backup data.

Even if no abnormality is noted while servicing the unit, an abnormality which has occurred previously can be defined as long as the backup data has been stored.

For details, refer to "P2. PROTECTION HISTORY" menu.

● Operation procedure of Main menu and Sub-menu

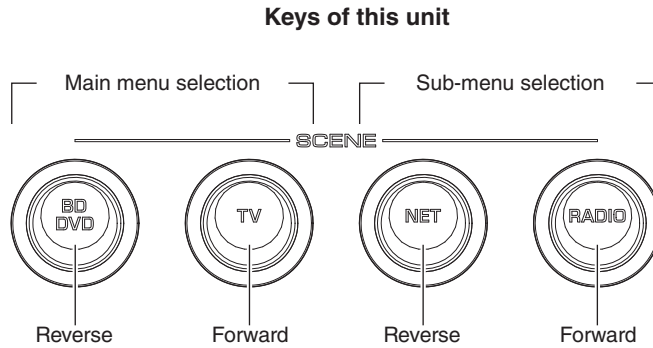
There are 22 main menu items, each of which has sub-menu items.

Main menu selection

Select the main menu using “SCENE TV” (forward) and “SCENE BD/DVD” (reverse) keys.

Sub-menu selection

Select the sub-menu using “SCENE RADIO” (forward) and “SCENE NET” (reverse) keys.



● Functions in Self-Diagnostic Function mode

In addition to the self-diagnostic function menu items, functions listed below are available.

- Power ON/OFF
- Master volume
- Muting
- Input selection
- Zone control

* Functions related to the tuner and the set menu are not available.

● Initial settings when Self-Diagnostic Function started

The following initial settings are used when self-diagnostic function is started.

- Master volume: -20 dB / Zone volume: +2.5dB
- Input: HDMI1 / Zone input: AUDIO1
- Main menu: A1-1. DSP MARGIN
- Speaker setting: LARGE, Bass out to SWFR (All channels)
- HDMI Control: Off
- Zone 2: On

* When self-diagnostic function is canceled, these settings are restored to those before starting self-diagnostic function.

● Details of Self-Diagnostic Function menu

A1. DSP AUDIO

This menu is used to check audio signal route via DSP.

A1-1. DSP MARGIN

The audio signal is output including the head margin via DSP.

* When input source is stereo, signal is assigned as below.

Front L: Front L, Center, Surround L, Surround Back L

Front R: Front R, Surround R, Surround Back R

Front L +10 dB: Subwoofer

```
A1-1
DSP MARGIN
```

A1-2. DSP NON MARGIN

The SUBWOOFER signal is output including the head margin via DSP.

The audio signal other than SUBWOOFER is output without including the head margin via DSP.

```
A1-2
DSP NON MARGIN
```

A1-3. INVALID ITEM

Not for service.

```
A1-3
INVALID ITEM
```

A1-4. DSP FULL CENTER

The audio signal is output to only CENTER channel in digital full bit without including the head margin.

```
A1-4
DSP FULL C
```

A1-5. DSP FULL SURROUND

The audio signal is output to only SURROUND L/R channels in digital full bit without including the head margin.

```
A1-5
DSP FULL SUR
```

A1-6. DSP FULL SURROUND BACK

The audio signal is output to only SURROUND BACK L/R channel in digital full bit without including the head margin.

```
A1-6  
DSP FULL SB
```

A1-7. DSP FULL SUBWOOFER

The audio signal is output to only SUBWOOFER channel in digital full bit without including the head margin.

```
A1-7  
DSP FULL SW
```

A2. DIRECT AUDIO

This menu is used to check audio signal route of PURE DIRECT mode.

A2-1. DIRECT VH

The analog input audio signal is output to FRONT L/R in PURE DIRECT mode.

VH: Voltage High, RY101 on MAIN P.C.B.: Off

```
A2-1  
DIRECT :VH
```

A2-2. DIRECT VL

The analog input audio signal is output to FRONT L/R in PURE DIRECT mode.

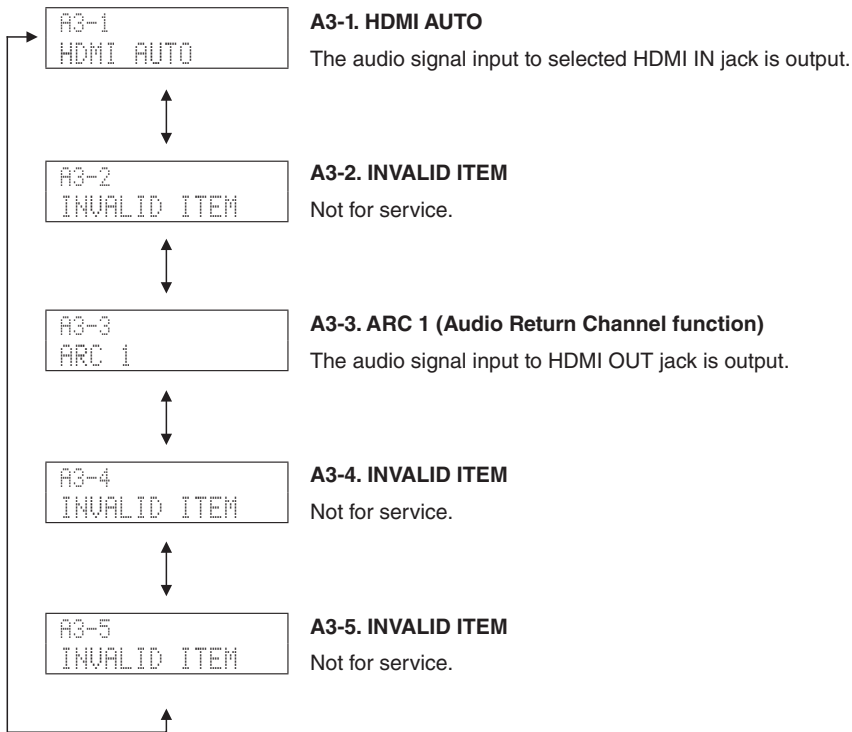
VL: Voltage Low, RY101 on MAIN P.C.B.: On

```
A2-2  
DIRECT :VL
```


A3. HDMI AUDIO

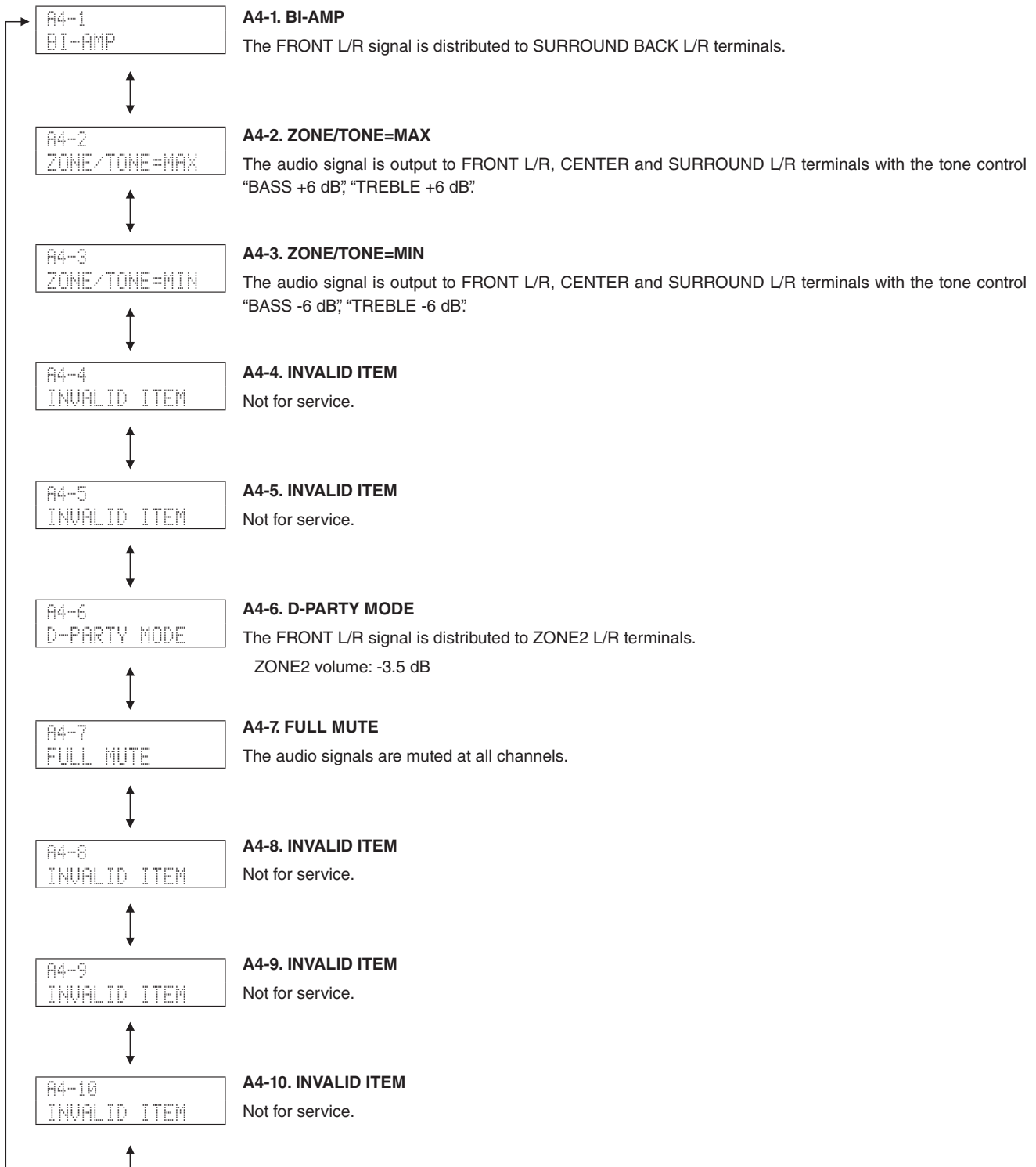
This menu is used to check the route of audio signal input to HDMI IN/OUT jack.

- * Before check using "A3-3. ARC 1" menu, be sure to connect a TV monitor equipped with Audio Return Channel function to this unit in advance.



A4. SPEAKERS SET

This menu is used to check the speaker output.



A5. MULTI CHANNEL INPUT

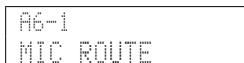
Not for service.



A6. MIC CHECK

A6-1. MIC ROUTE CHECK

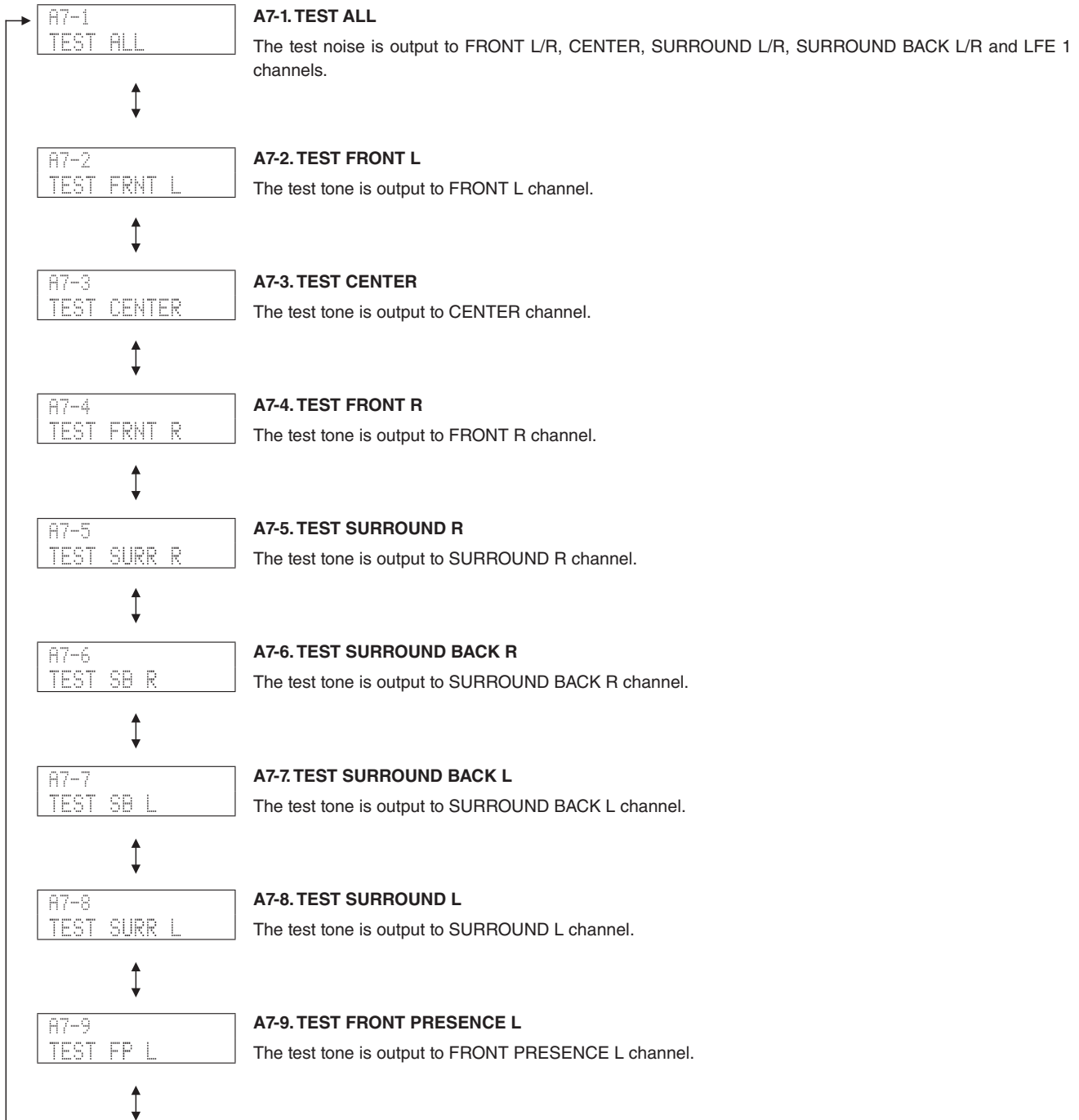
The audio signal input to the YPAO MIC jack is output to FRONT L and FRONT R channels via A/D-D/A.



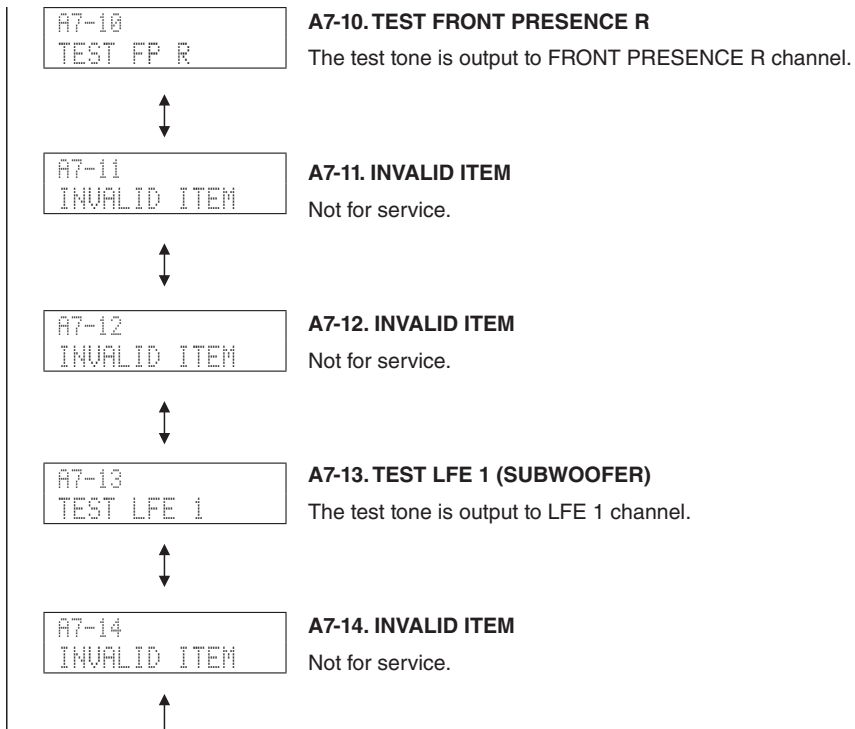
A7. MANUAL TEST

The test noise generated by built-in noise generator in DSP is output to the channels specified by the sub-menu.

	Test noise	Test tone
for SUBWOOFER	30 Hz to 80 Hz pink noise	50 Hz sine wave
for other than SUBWOOFER	500 Hz to 2 kHz pink noise	1 kHz sine wave



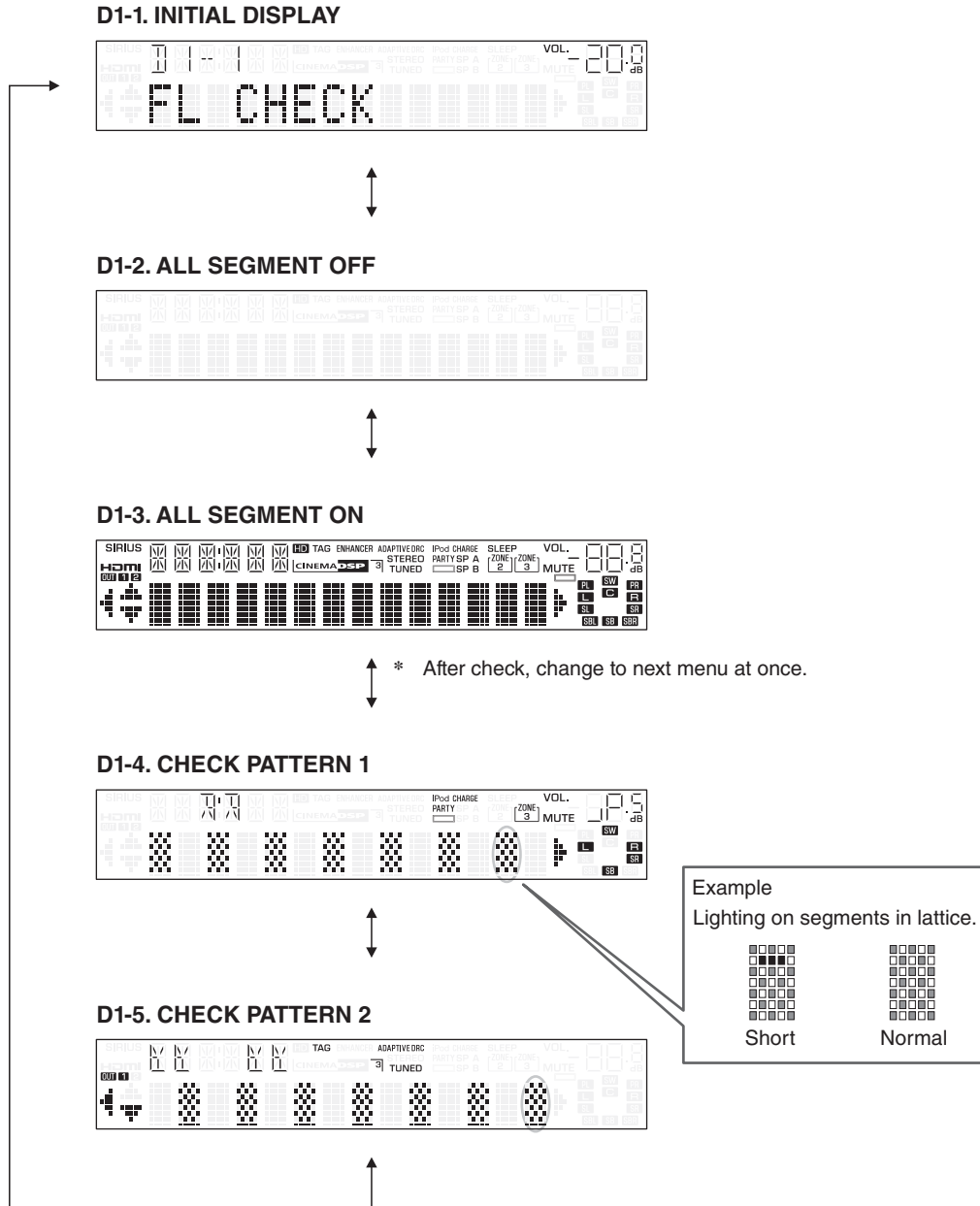
RX-V673/HTR-6065/
RX-A720



D1. FL CHECK

This menu is used to check operation of the FL display.

FL display



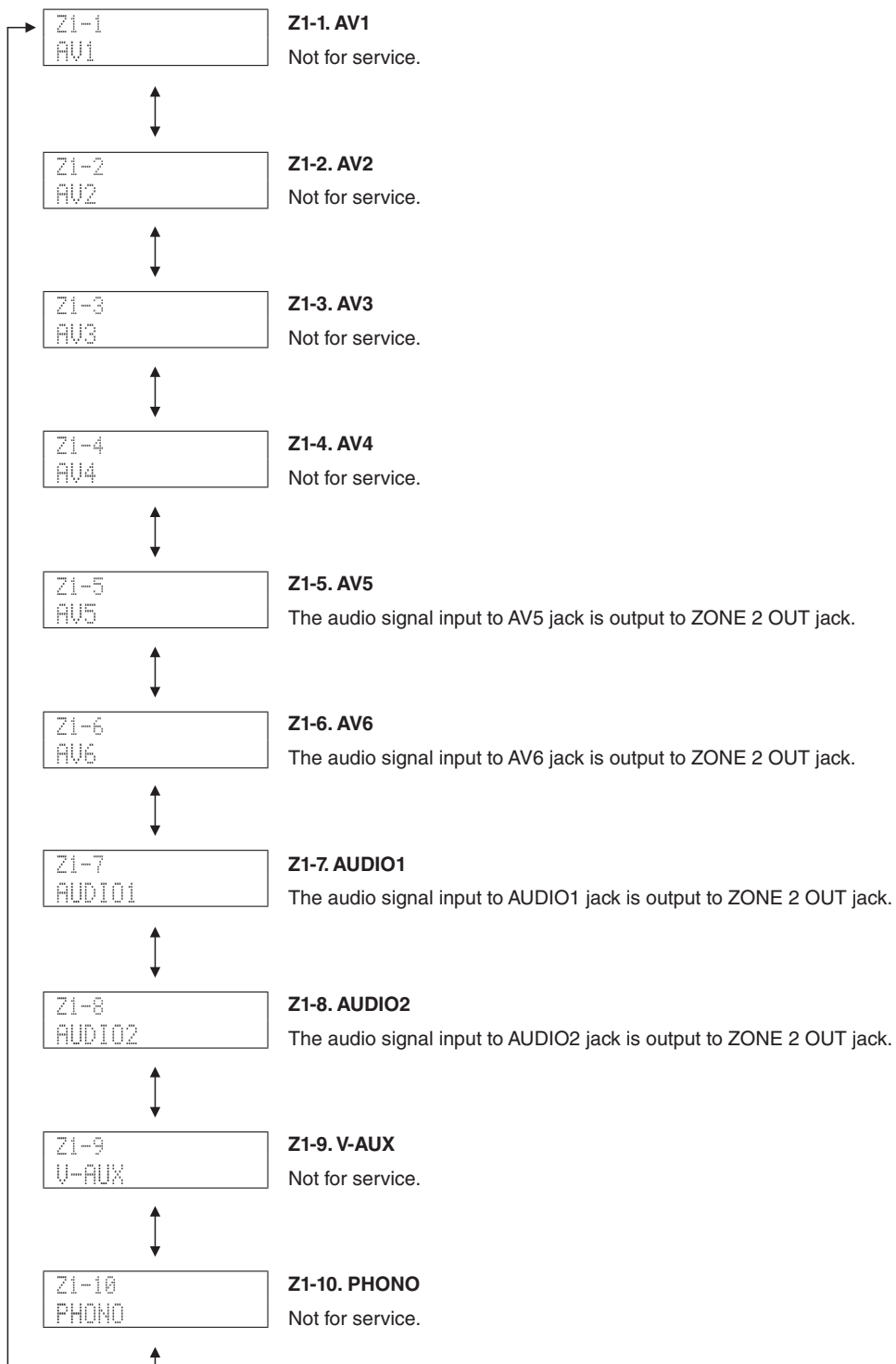
Segment conditions of the FL tube is checked by turning ON and OFF all segments.

Next, a short between segments next to each other is checked by turning ON and OFF all segments alternately (in lattice).

(In the above example, the segments in the second row from the top are shorted.)

Z1. ZONE TEST

This menu is used to check audio signal route to ZONE2 OUT jack.



U1. USB

This menu is used to check the audio signal route from USB storage device.

U1-1. USB FRONT 1 TRACK

The 1st music file stored in the USB storage device connected to the USB jack is reproduced.

- * Copy 2 or more music files from PC to the root folder of the USB storage device in advance.

```
U1-1
USB_F 1 TRACK
```

U1-2. USB FRONT 2 TRACK

The 2nd music file stored in the USB storage device connected to the USB jack is reproduced.

```
U1-2
USB_F 2 TRACK
```

U1-3. USB_VBUS HIGH POWER

The output current (USB_VBUS) of USB jack is output at up to 2.1A/5V.

```
U1-3
USB_VBUS_HPWR
```

N1. NETWORK

This menu is used to check functions related to NETWORK.

Connect between LAN port of broadband router and NETWORK jack of this unit with a network cable.

- * When the network condition varies while sub-menu is displayed (e.g., the network is deactivated once), the correct result will not be displayed.

In that case, once turn off the power to this unit, then start up the self-diagnostic function again and select this menu.

N1-1. IP ADDRESS CHECK

This menu is used to check that IP address can be obtained.

```
N1-1
IP AD CHK:OK
```

OK: Connected (IP address obtained)
NG: No traffic / Disconnected

N1-2. MAC ADDRESS CHECK

This menu is used to check that MAC address is written.

```
N1-2
MAC AD CHK:OK
```

OK: Normal
NG: Unwritten

N1-3. LINE NOISE 100 MDI

Not for service.

```
N1-3
LN MDI 100
```

N1-4. LINE NOISE 100 MDIX

Not for service.

```
N1-4
LN MDIX 100
```

N1-5. LINE NOISE 10 MDI

Not for service.

```
N1-5
LN MDI 10
```

N1-6. LINE NOISE 10 MDIX

Not for service.

```
N1-6
LN MDIX 10
```

N1-7. EXT TEST

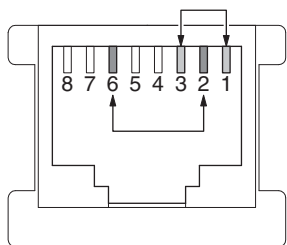
Transmission/reception of the NETWORK jack is checked.

With the power turned off, short the pins of the NETWORK jack as shown in the figure below.

Start up the self-diagnostic function and select this menu.

Transmission/reception test is executed and its result is displayed.

Note: Be sure to return the shorted pins to their original condition after executing this test.



NETWORK jack

```
N1-7
EXT TEST:OK
```

- OK: Normal
- NG: Abnormal
- : Checking

N1-8. MAC ADDRESS

Written MAC address is displayed.

```
N1-8
00A0DExxxxxx
```

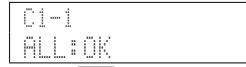
RX-V673/HTR-6065/
RX-A720

C1. DIGITAL P.C.B. CHECK

This menu is used to check the communication and bus line connection between devices on DIGITAL P.C.B.

C1-1. ALL

The synthetic judgment result of sub-menu C1-2 to C1-8 is displayed.



OK: No error detected
 NG: An error is detected

C1-2. BUS FLASH ROM

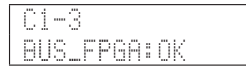
FLASH ROM (IC77)'s reading/writing are checked.



OK: No error detected
 NG: An error is detected

C1-3. BUS FPGA

Communication and bus line connection between microprocessor (IC83) and FPGA (IC50) are checked.



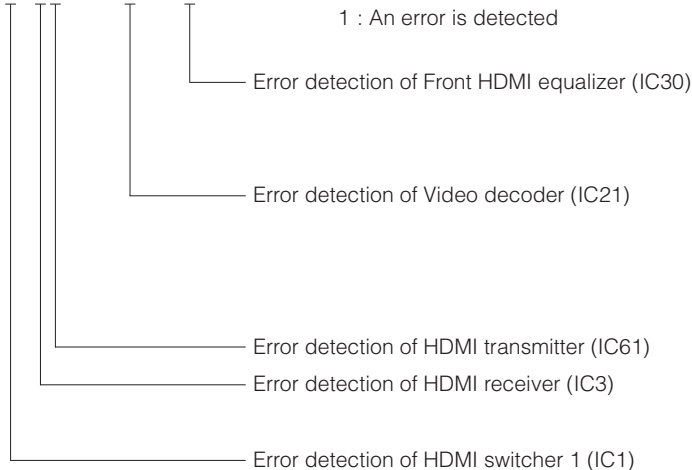
OK: No error detected
 NG: An error is detected

C1-4. I2C

The I2C (Inter integrated circuit) bus line connection is checked.



0 : No error detected
 1 : An error is detected



C1-5. FPGA RAM

SDRAM (IC53)'s reading/writing are checked.

```
C1-5
FPGA_RAM:OK
```

OK: No error detected
NG: An error is detected

C1-6. BUS DIR1

Communication and bus line connection between microprocessor (IC83) and DIR1 (IC924) are checked.

```
C1-6
DIR1_BUS:OK
```

OK: No error detected
NG: An error is detected

C1-7. BUS DSP1

Communication and bus line connection between microprocessor (IC83) and DSP1 (IC921) are checked.

```
C1-7
DSP1_BUS:OK
```

OK: No error detected
NG: An error is detected

C1-8. EEPROM

EEPROM (IC82)'s reading is checked.

```
C1-8
EEPROM:OK
```

OK: No error detected
NG: An error is detected

C1-9. INVALID ITEM

Not for service.

```
C1-9
INVALID ITEM
```

C1-10. INVALID ITEM

Not for service.

```
C1-10
INVALID ITEM
```

C1-11. INVALID ITEM

Not for service.

```
C1-11
INVALID ITEM
```

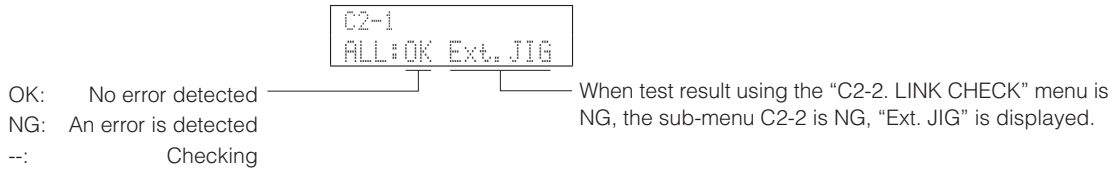
RX-V673/HTR-6065/
RX-A720

C2. NETWORK IC CHECK

This menu is used to check the communication and bus line connection between devices related to network.

C2-1. ALL

The synthetic judgment result of sub-menu C2-2 to C2-5 is displayed.

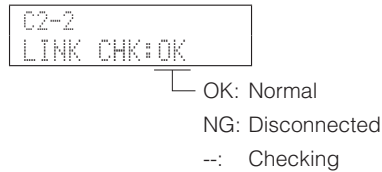


C2-2. LINK CHECK

LAN cable connection is checked.

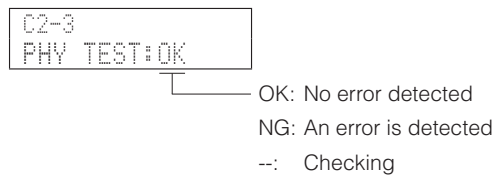
Connect between NETWORK jack of this unit and LAN port of broadband router with a network cable.

- * When the network condition varies while sub-menu is displayed (e.g., the network is deactivated once), the correct result will not be displayed. In that case, once turn off the power to this unit, then start up the self-diagnostic function again and select this menu.



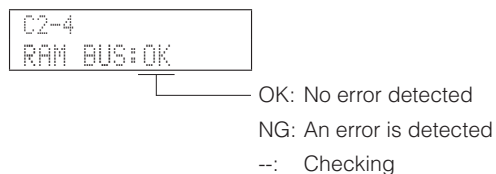
C2-3. PHY (Ethernet PHYceiver) TEST

Communication and bus line connection between PHY (IC955) and NETWORK microprocessor (IC951) are checked.



C2-4. BUS RAM

Communication and bus line connection between SDRAM (IC952) and NETWORK microprocessor (IC951) are checked.



C2-5. APL (Apple) ID CHECK

Apple authentication IC (IC956) device ID is checked.

```
C2-5
APL ID:OK
```

OK: No error detected
 NG: An error is detected
 --: Checking

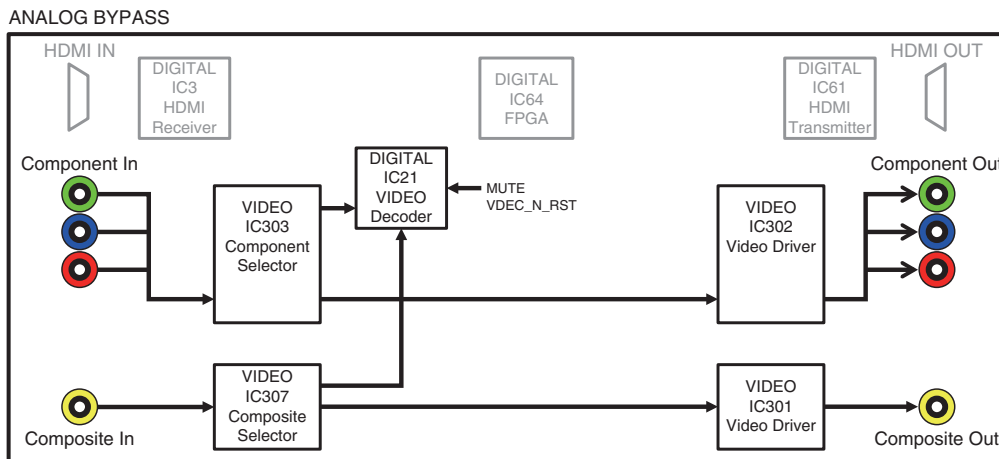
V1. ANALOG VIDEO CHECK

This menu is used to check the analog video signal route.

V1-1. ANALOG BYPASS

The video signal is converted and output as shown below.

```
V1-1
ANALOG BYPASS
```



V1-2. INVALID ITEM

Not for service.

```
V1-2
INVALID ITEM
```

V1-3. INVALID ITEM

Not for service.

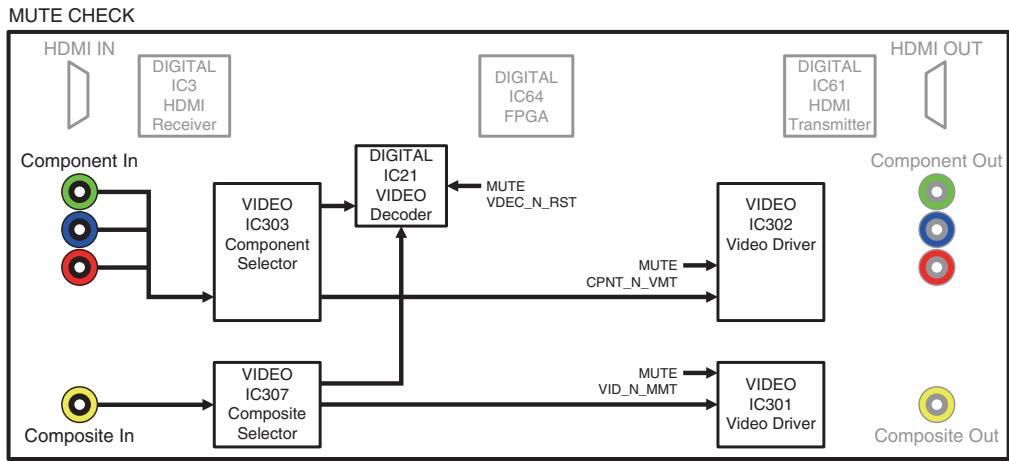
```
V1-3
INVALID ITEM
```

RX-V673/HTR-6065/
RX-A720

V1-4. MUTE CHECK

The video signal is muted.

V1-4
MUTE CHECK



V1-5. TEST PATTERN

Not for service.

V1-5
TEST PATTERN

V1-6. VIDEO INFORMATION

The information of input analog video signals is displayed.

V1-6
VID IN=480160

V2. DIGITAL VIDEO CHECK

This menu is used to check the digital video signal route.

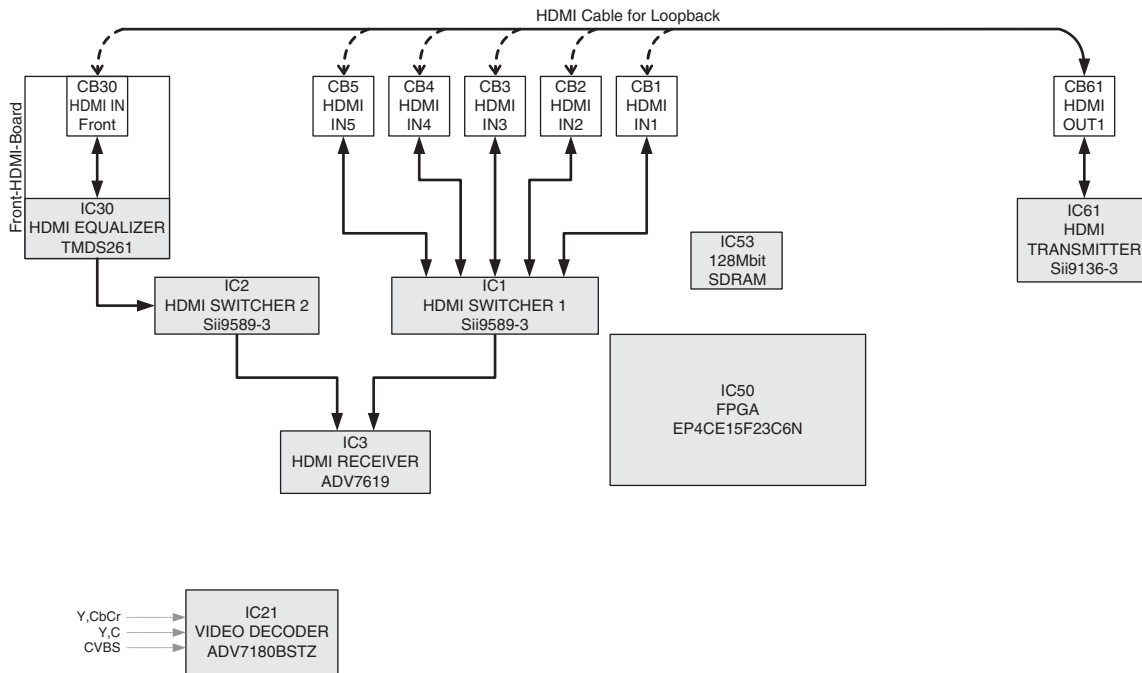
V2-1. LOOPBACK TEST 1

Execute the test for all HDMI IN jacks by repeating the procedure below.

1. Select sub-menu other than V2-1.
2. Connect between any of the HDMI IN jacks and HDMI OUT jack with an HDMI cable.
3. Select V2-1. The test result is displayed in a few seconds.



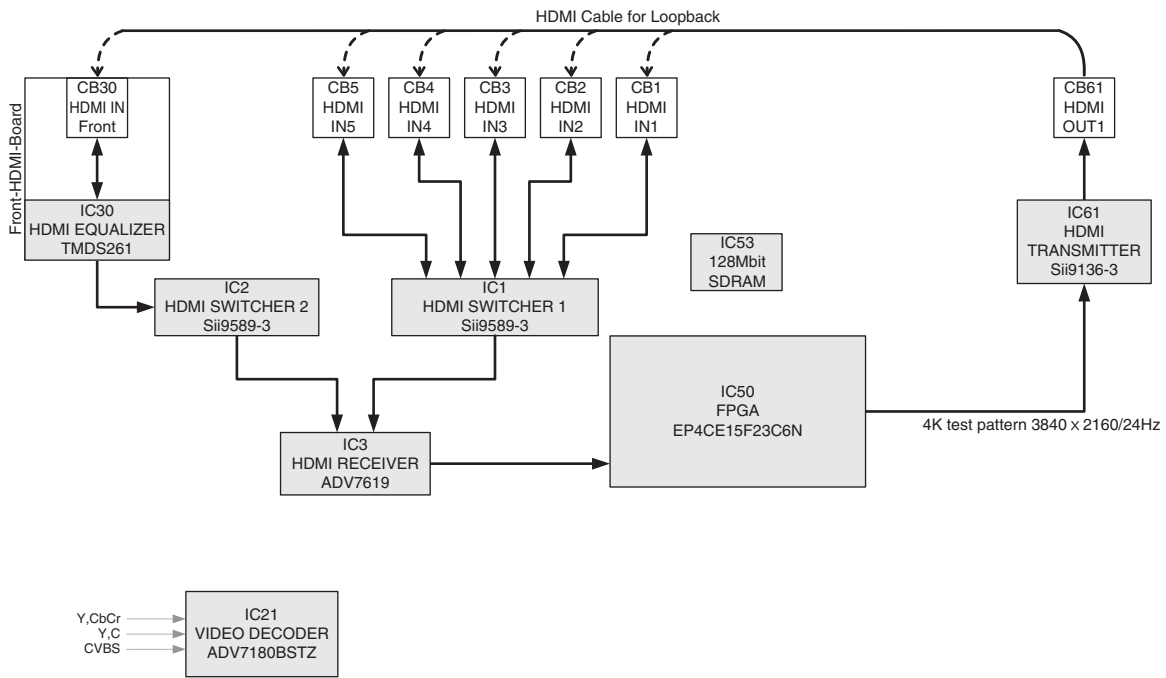
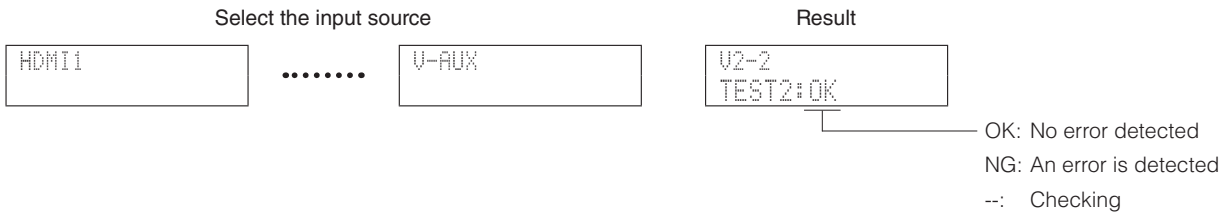
OK: No error detected
 NG: An error is detected
 --: Checking



V2-2. LOOPBACK TEST 2

Execute the test for all HDMI IN jacks by repeating the procedure below.

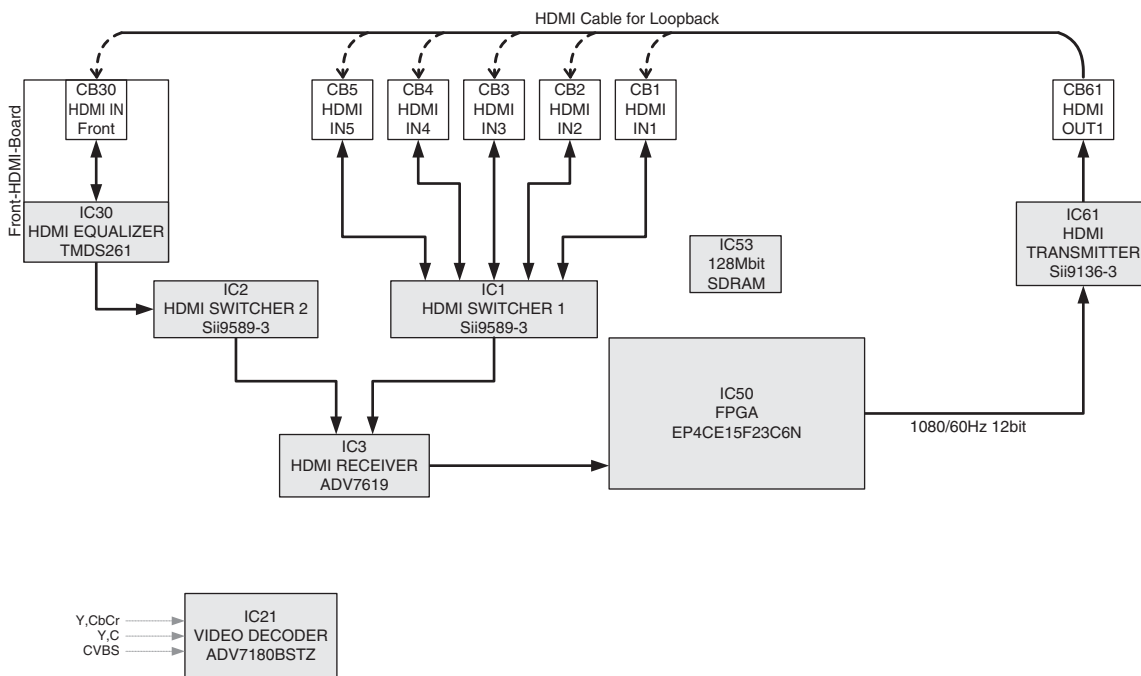
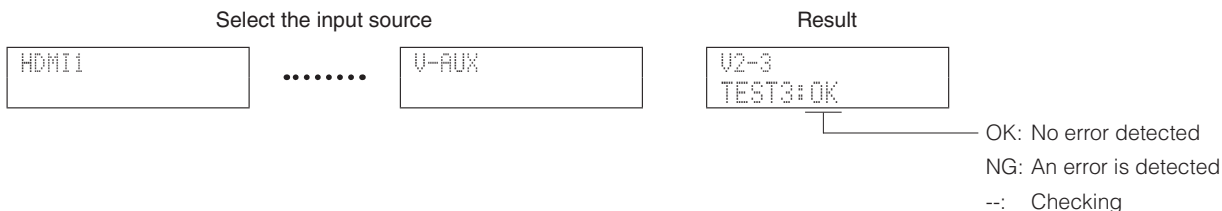
1. Select sub-menu other than V2-2.
2. Connect between any of the HDMI IN jacks and HDMI OUT jack with an HDMI cable.
3. Select the input source corresponding to the connected HDMI IN jack by using "INPUT <" and "INPUT >" keys (RX-V673/HTR-6065) / "INPUT" knob (RX-A720).
4. Select V2-2. The test result is displayed in a few seconds.



V2-3. LOOPBACK TEST 3

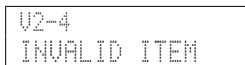
Execute the test for all HDMI IN jacks by repeating the procedure below.

1. Select sub-menu other than V2-3.
2. Connect between any of the HDMI IN jacks and HDMI OUT jack with an HDMI cable.
3. Select the input source corresponding to the connected HDMI IN jack by using "INPUT <" and "INPUT >" keys (RX-V673/HTR-6065) / "INPUT" knob (RX-A720).
4. Select V2-3. The test result is displayed in a few seconds.



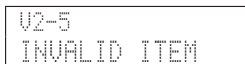
V2-4. INVALID ITEM

Not for service.



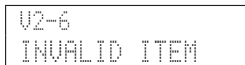
V2-5. INVALID ITEM

Not for service.



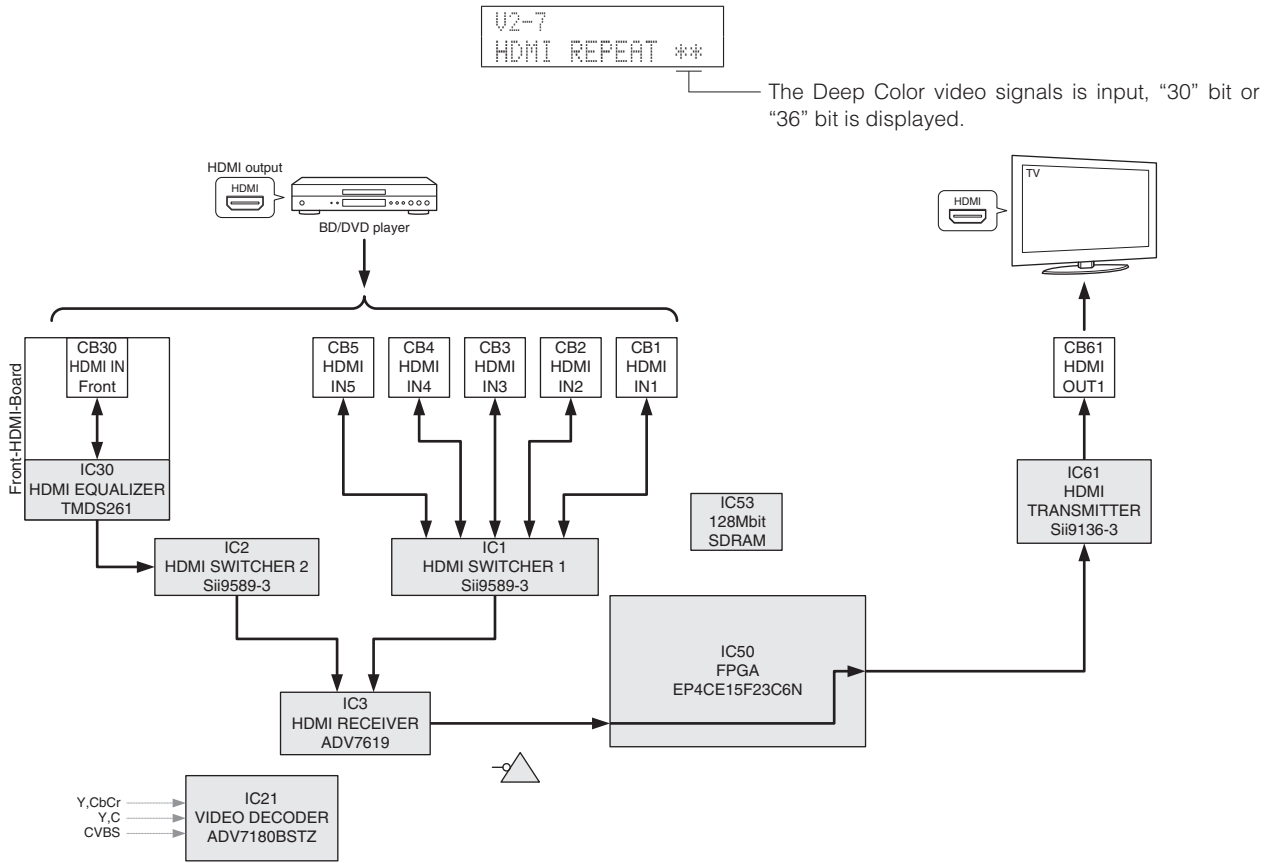
V2-6. INVALID ITEM

Not for service.



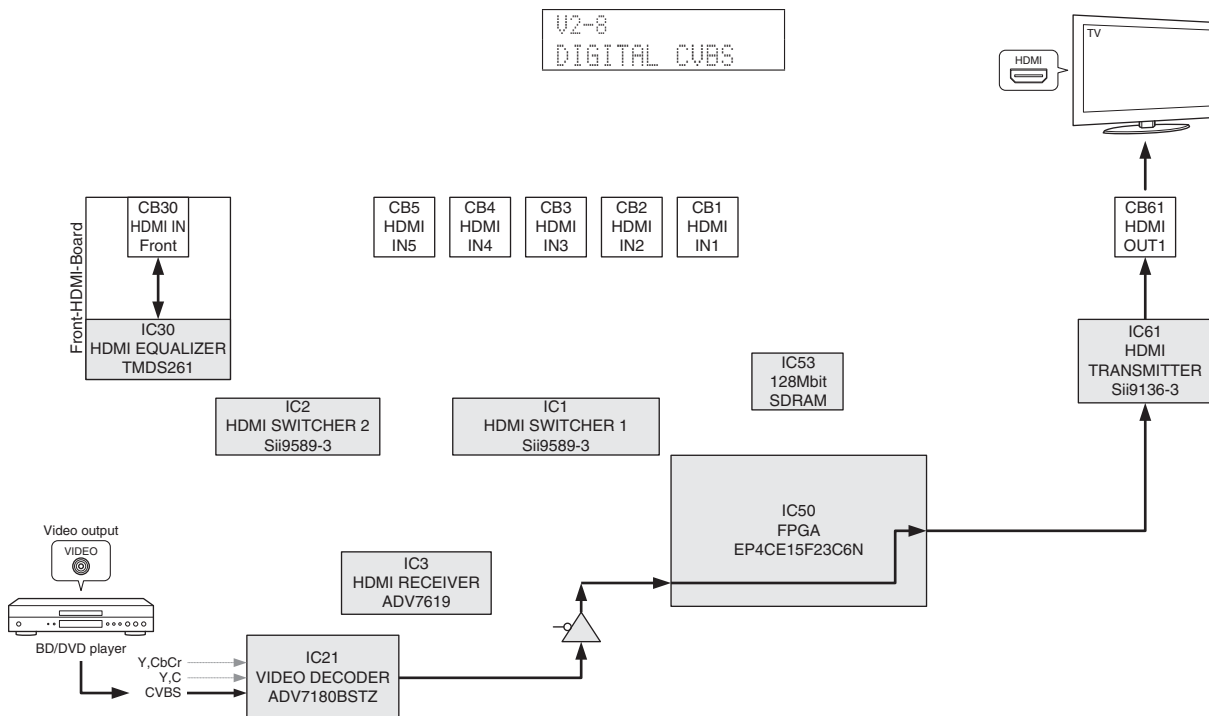
V2-7. HDMI REPEAT

The video/audio signals input to HDMI IN jack are output to HDMI OUT jack.



V2-8. DIGITAL CVBS

The video (CVBS) signal is converted and output as shown below.



RX-V673/HTR-6065/RX-A720

V2-9. INVALID ITEM

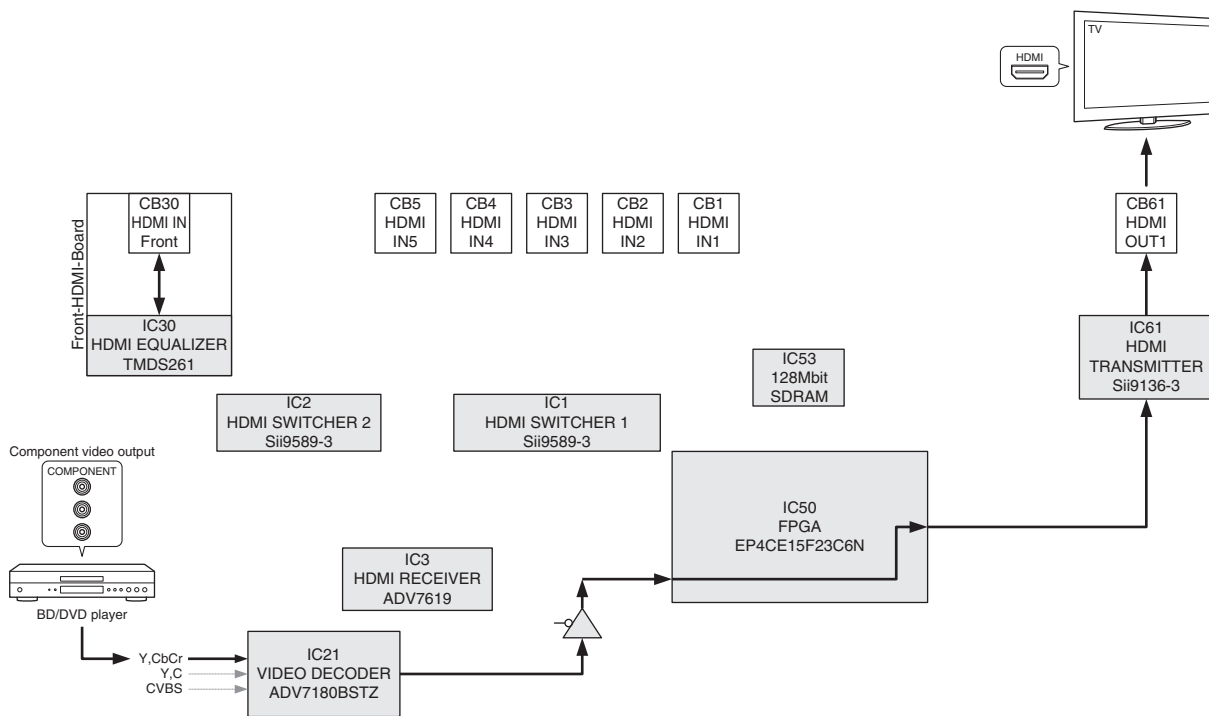
Not for service.

V2-9
INVALID ITEM

V2-10. DIGITAL COMPONENT

The component video (Y, Cb, Cr) signal is converted and output as shown below.

V2-10
DIGITAL COMP

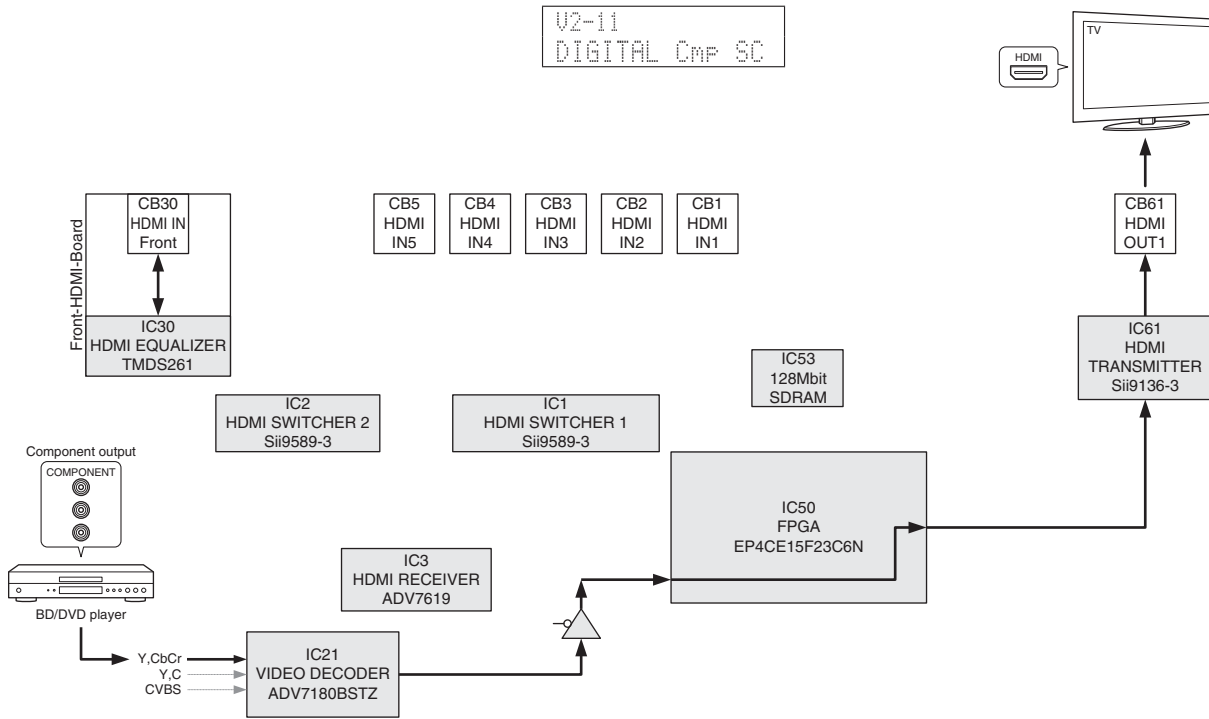


RX-V673/HTR-6065/
RX-A720

V2-11. DIGITAL COMPONENT SC

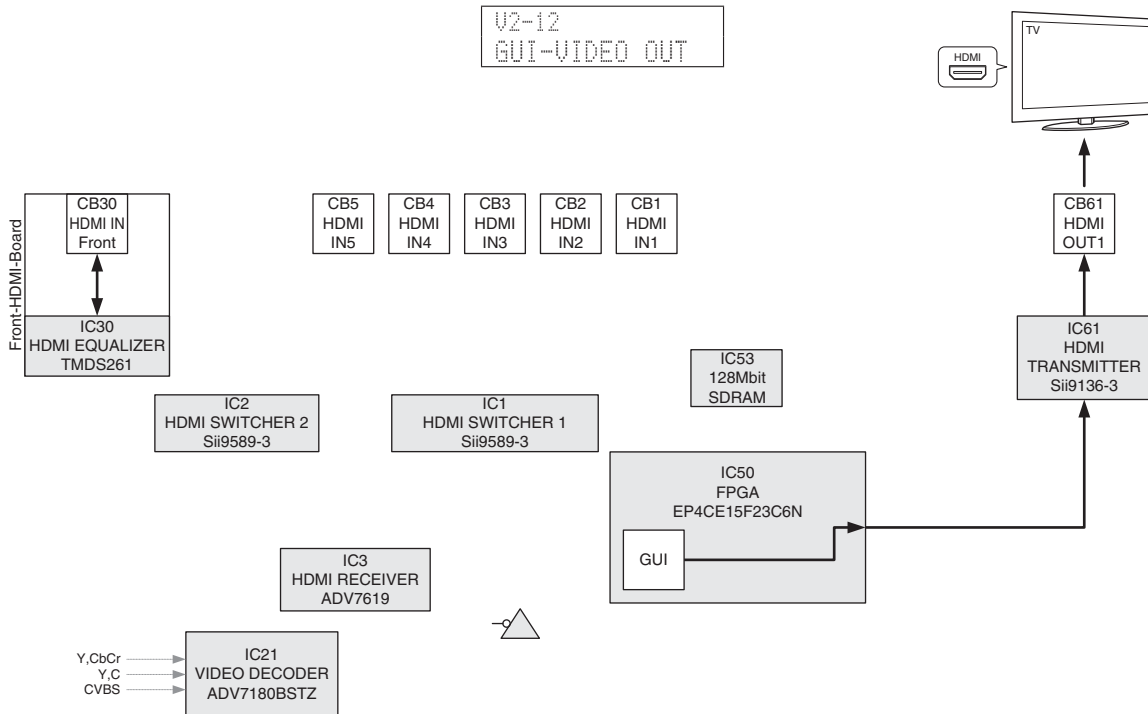
The component video (Y, Cb, Cr) signal is converted and output as shown below.

HDMI video output up-scaling: 480i/p, 576i/p only => 1080p



V2-12. GUI (Graphical User Interface)-VIDEO OUT

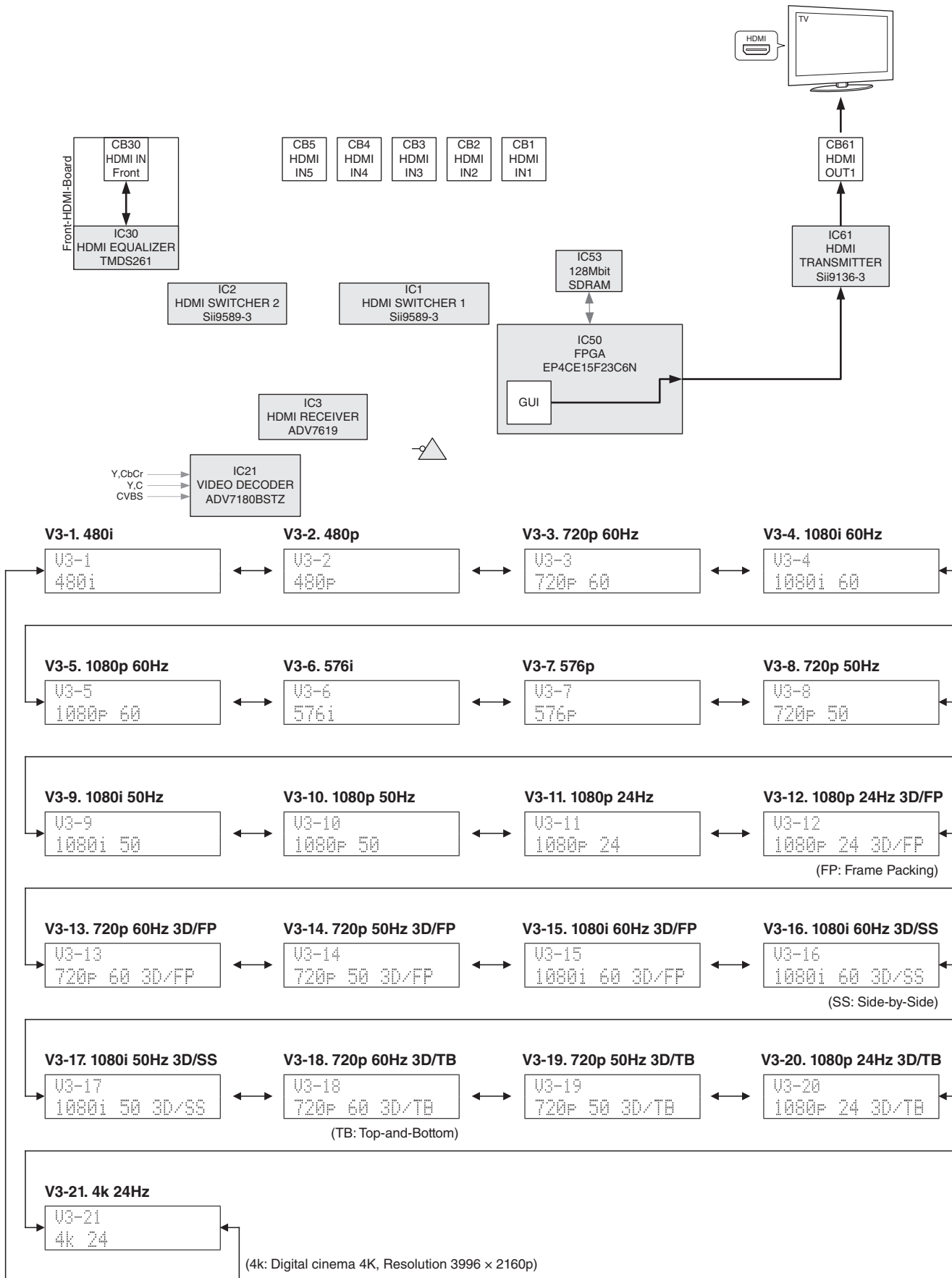
The GUI is output from FPGA (IC50 on DIGITAL P.C.B.).



RX-V673/HTR-6065/
RX-A720

V3. TEST PATTERN

The video signal is output to HDMI OUT jack with its resolution converted as shown below.



RX-V673/HTR-6065/
RX-A720

P1. SYSTEM MONITOR

This menu is used to display the A/D conversion value of the microprocessor which detects panel keys and protection functions by using the sub-menu.

When "P1-7. KEY1/KEY2" sub-menu is selected, keys become inoperable due to detection of the values of all keys.

However, it is possible to advance to the next menu by pressing the "SCENE RADIO" (forward) key or "SCENE NET" (reverse) key on the remote control.

* Numeric values in the figure are given as reference only.

P1-1. DC

Power amplifier DC (DC voltage) output is detected.

The voltage at 5 pin (DC_PRT) of IC78 is displayed.

Normal value: 32 to 74

(Reference voltage: 3.3 V=255)

* If DC becomes out of the normal value range, the protection function works to turn off the power.

P1-1
DC: 50

P1-2. PS1/PS2/PS3

Power supply voltage (PS) protection detection.

The voltage at 2 pin (PS1_PRT)/1 pin (PS2_PRT)/13 pin (PS3_PRT) of IC78 are displayed.

Voltage detects

PS1: ACBL, AC12, AC5, ± 7

PS2: -VP, +5T, $\pm 5V$

PS3: +5.5V

Normal value

PS1: 12 to 100

PS2: 90 to 166 (PURE DIRECT mode: 143 to 220)

PS3: 132 to 168

(Reference voltage: 3.3 V=255)

* If PS1, PS2 or PS3 becomes out of the normal value range, the protection function works to turn off the power.

P1-2
PS: 77/129/153

PS3
PS2
PS1

P1-3. THM

Temperature of the heatsink (THM) is detected.

The voltage at 12 pin (THM1) of IC78 is displayed.

Normal value: 116 to 255 (U, C models)

42 to 255 (R, T, K, A, B, G, F, L, S, H models)

(Reference voltage: 3.3 V=255)

* If THM becomes out of the normal value range, the protection function works to turn off the power.

P1-3
THM: 114

P1-4. INVALID ITEM

Not for service.

```
P1-4  
INVALID ITEM
```

P1-5. OUTPUT LEVEL

Output level of speaker output is detected.

The voltage at 4 pin (AMP_OLV) of IC78 is displayed.

(Reference voltage: 3.3 V=255)

```
P1-5  
OUTLVL: 255
```

P1-6. LIMITER CONTROL

Power limiter control is detected.

The voltage at 4 pin (AMP_LMT) of IC83 is displayed.

(Reference voltage: 3.3 V=255)

```
P1-6  
LMTCNT: 255
```

P1-7. L3 (J model)

Not for service.

```
P1-7  
L3: 4
```

P1-8. KEY1/KEY2

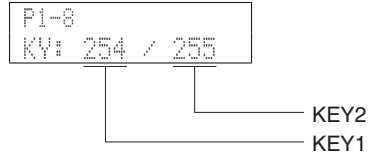
Panel key is detected.

When the A/D conversion value of the panel key becomes out of the specified range, normal operation will not be available.

In that case, check the constant of voltage dividing resistor, solder condition, etc. Refer to table.

* When "P1-8. KEY1/KEY2" menu is selected, keys become inoperable due to detection of the values of all keys. However, it is possible to advance to the next menu by pressing the "SCENE RADIO" (forward) key or "SCENE NET" (reverse) key on the remote control.

(Reference voltage: 3.3 V=255)



Display	KEY1
0 – 11	RADIO (SCENE4)
12 – 32	NET (SCENE3)
33 – 54	TV (SCENE2)
55 – 75	BD/DVD (SCENE1)
76 – 96	ZONE CONTROL
97 – 119	ZONE2
120 – 142	INPUT > (RX-V673/HTR-6065 models)
143 – 172	INPUT < (RX-V673/HTR-6065 models)
173 – 202	MAIN ZONE ⏻
203 – 235	TONE CONTROL
255	Key off

Display	KEY2
0 – 11	PURE DIRECT
12 – 32	TUNING >>
33 – 54	TUNING <<
55 – 77	AM
78 – 99	FM
100 – 121	PRESET >
122 – 144	PRESET <
145 – 166	MEMORY
167 – 186	INFO
187 – 205	STRAIGHT
206 – 226	PROGRAM >
227 – 246	PROGRAM <
255	Key off

P1-9. USB-VBUS

Not for service.

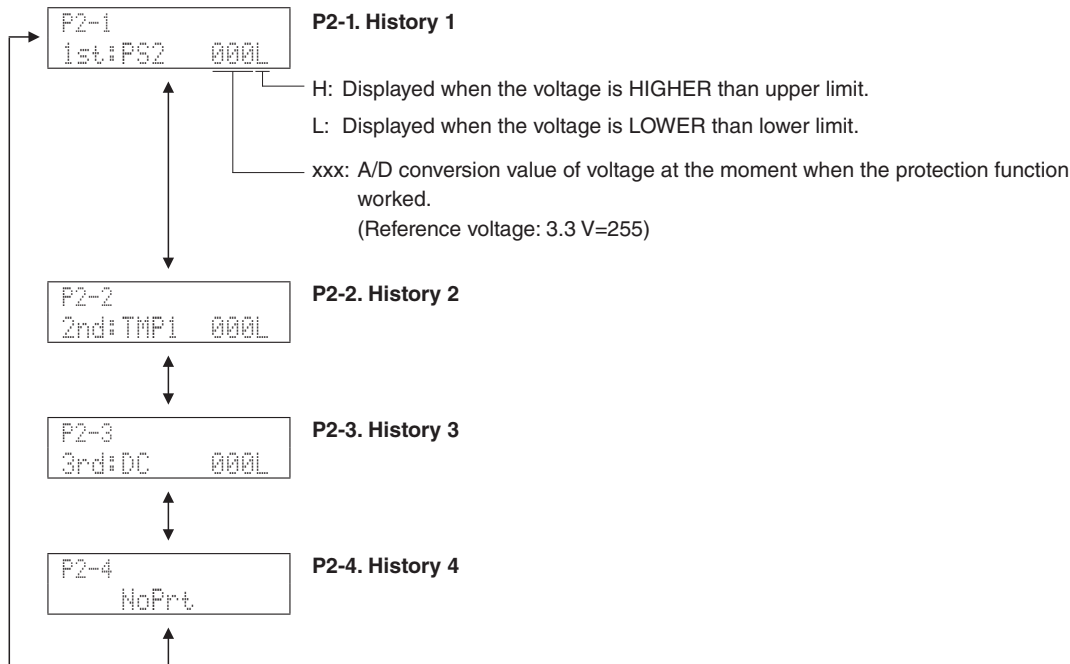


P2. PROTECTION HISTORY

This menu is used to display the history of protection function.

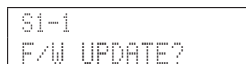
All history of protection function will be erased by pressing the "STRAIGHT" key.

* Numeric values in the figure are given as reference only.



S1. FIRMWARE UPDATE

Not for service.



S2. SET INFORMATION

The model name and destination of this unit are displayed.

S2-1. MODEL

The model name of this unit is displayed.



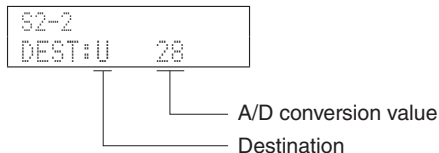
Not for service.

Model name

- V673 : RX-V673
- 6065 : HTR-6065
- A720 : RX-A720

S2-2. DESTINATION

The destination of this unit is displayed.



Destination	J	U	C	R (R, S)	T	K	A	BG (B, G, F)	L (L, H)
A/D conversion value (3.3 V=255)	0 – 12	13 – 39	40 – 67	68 – 92	93 – 115	116 – 140	141 – 169	199 – 221	222 – 244

S2-3. DEBUG

Not for service.



S2-4. NET RESTART COUNTER

Not for service.



S3. FACTORY PRESET

This menu is used to reserve/inhibit initialization of the back-up IC (EEPROM: IC82 on DIGITAL P.C.B.).



S3-1. PRESET INHIBIT (Initialization inhibited)

Initialization of the back-up IC is not executed. Select this sub-menu to protect the values set by the user.



S3-1. PRESET RESERVED (Initialization reserved)

Initialization of the back-up IC is reserved. (Actual initialization is executed when the power is turned on next.) To reset to the original factory settings or to reset the backup IC, select this sub-menu and press the "MAIN ZONE ⏻" key to turn off the power.

CAUTION: Before setting to the PRESET RESERVED, write down the existing preset memory content of the tuner. (This is because setting to the PRESET RESERVED will cause the user memory content to be erased.)

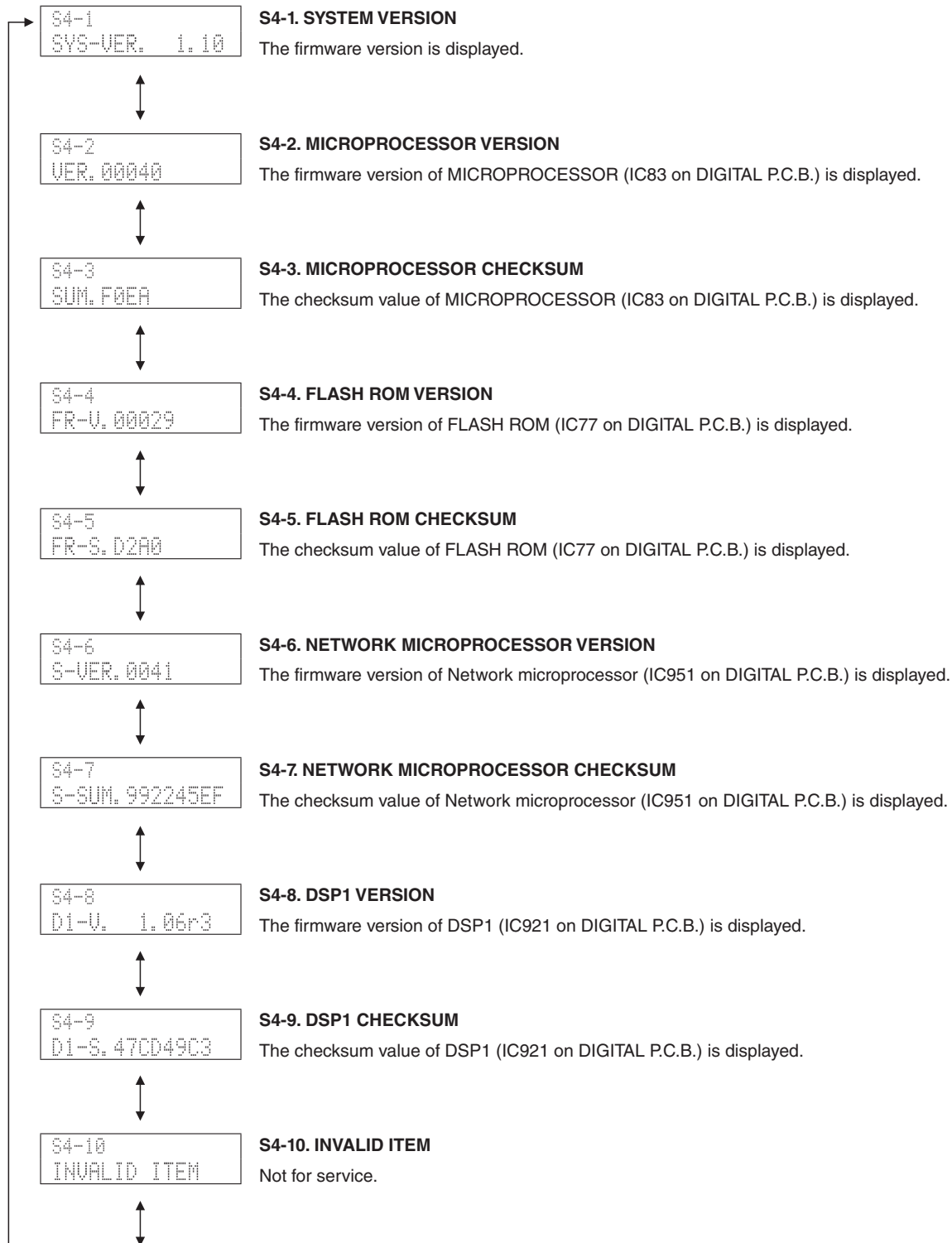
RX-V673/HTR-6065/
RX-A720

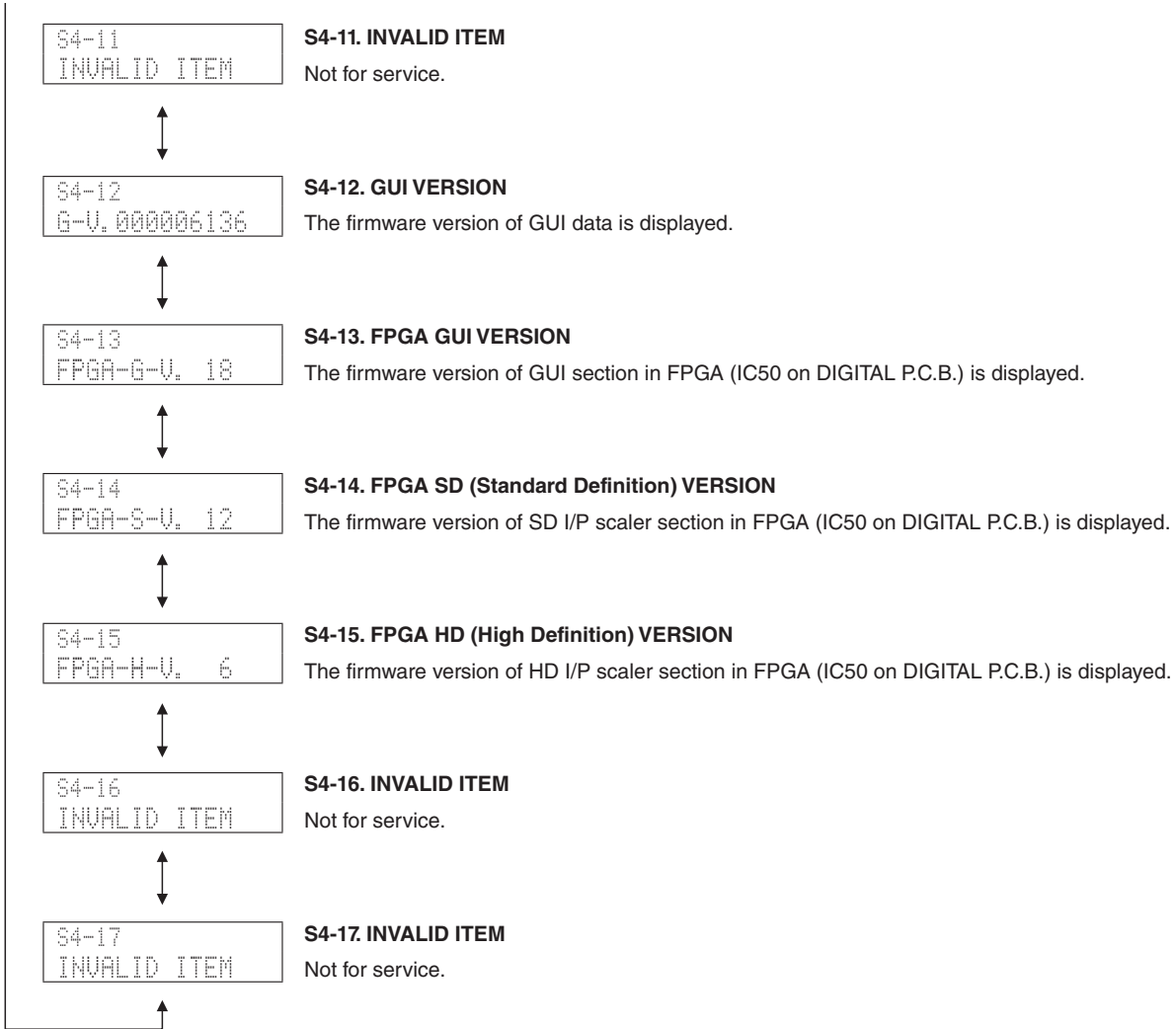
S4. ROM VERSION/CHECKSUM

The firmware version and checksum values are displayed.

The checksum is obtained by adding the data at every 8-bit and expressing the result as a hexadecimal notation.

* Numeric values in the figure are given as reference only.





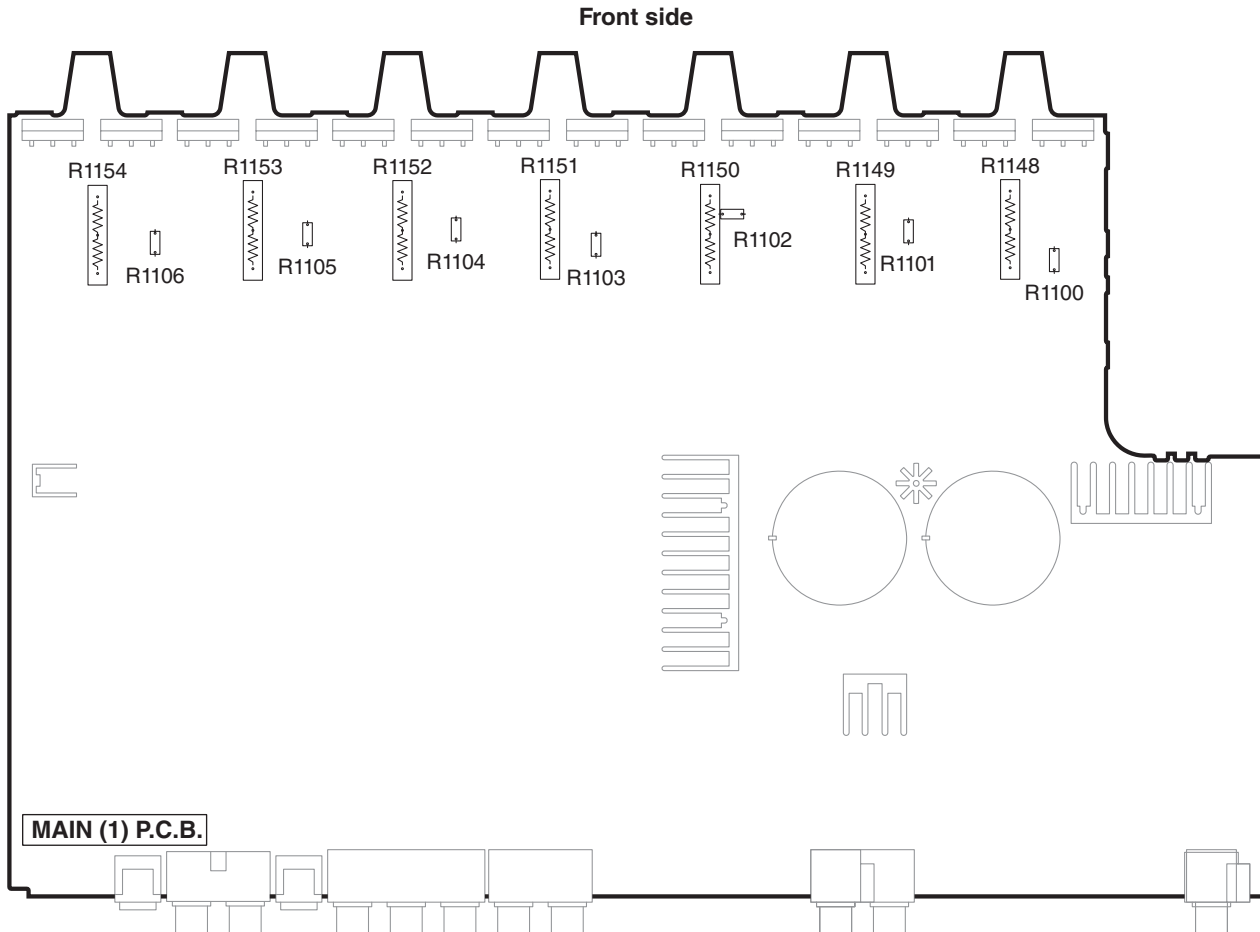
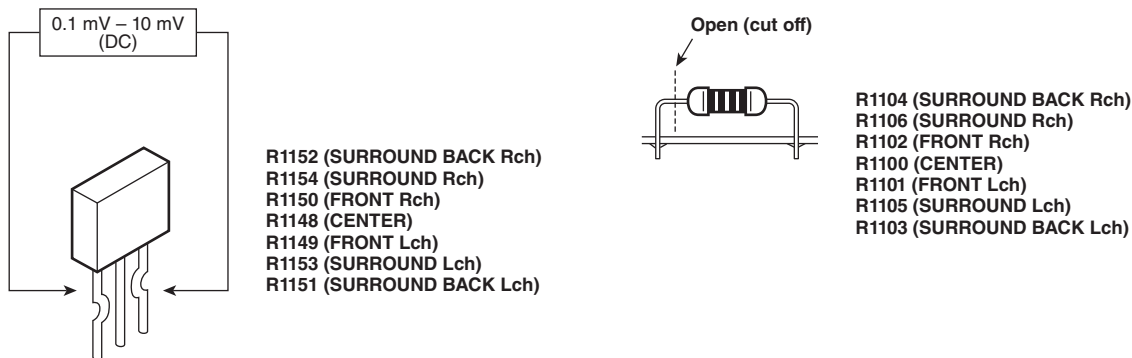
■ POWER AMPLIFIER ADJUSTMENT

1. Right after power is turned on, confirm that the voltage across the terminals of R1152 (SURROUND BACK Rch), R1154 (SURROUND Rch), R1150 (FRONT Rch), R1148 (CENTER), R1149 (FRONT Lch), R1153 (SURROUND Lch) and R1151 (SURROUND BACK Lch) are within the confines of 0.1 mV to 10 mV.
2. If measured voltage exceeds 10 mV, open (cut off) R1104 (SURROUND BACK Rch), R1106 (SURROUND Rch), R1102 (FRONT Rch), R1100 (CENTER), R1101 (FRONT Lch), R1105 (SURROUND Lch) and R1103 (SURROUND BACK Lch), and then reconfirm the voltage.

Attention

If the measured voltage exceeds 10 mV after repairing the power amplifier, check other parts again for any possible defect before cutting the resistor.

3. Confirm that the voltage is within the confines of 0.2 mV to 15 mV after 60 minutes.

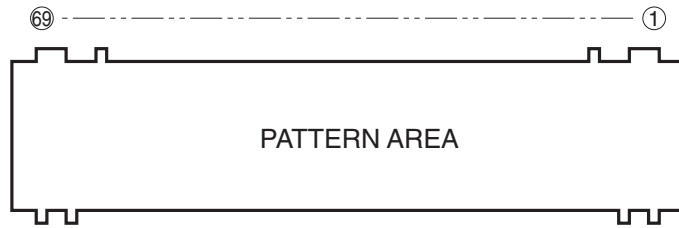


RX-V673/HTR-6065/
 RX-A720

■ DISPLAY DATA

RX-V673/HTR-6065

● V4001 : 18-MT-11GNK (OPERATION P.C.B.)



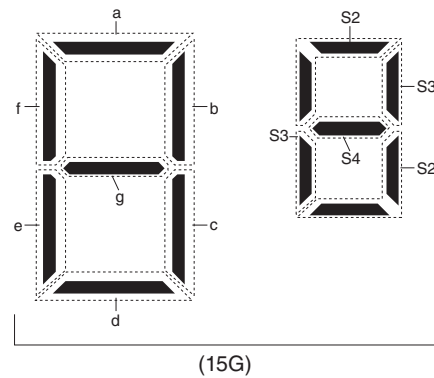
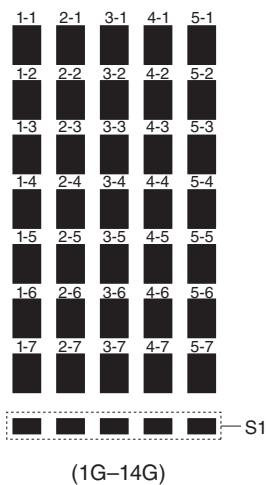
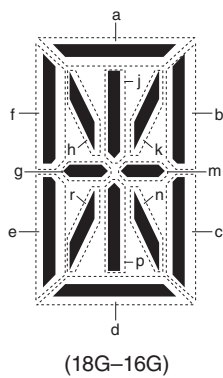
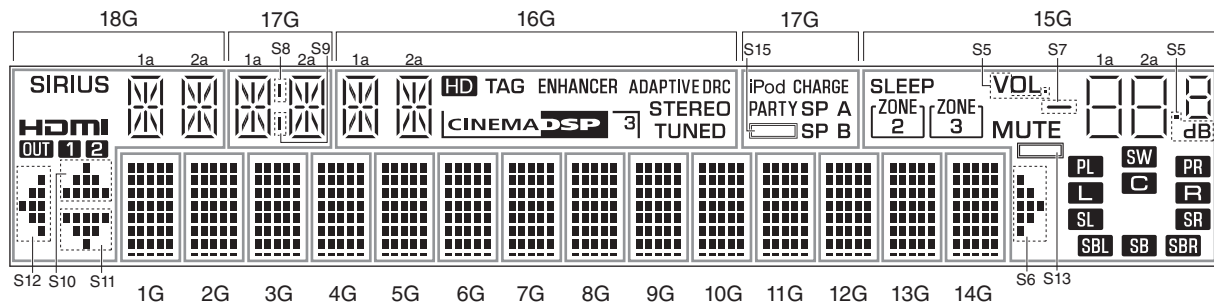
● PIN CONNECTION

Pin No.	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35
Connection	F2	NX	NP	NP	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16	P17	P18	P19	P20	P21	P22	P23	P24	P25	P26	P27	P28	P29	P30	P31

Pin No.	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	
Connection	P32	P33	P34	P35	P36	NX	NX	NX	NX	NX	NX	NX	NX	18G	17G	16G	15G	14G	13G	12G	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G	NP	NP	NX	F1

Note : 1) F1, F2 Filament pin 2) NP No pin 3) NX No extend pin 4) 1G-18G Grid pin

● GRID ASSIGNMENT



RX-V673/HTR-6065/
RX-A720

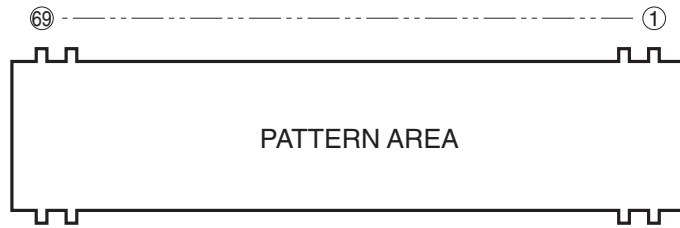
RX-V673/HTR-6065

● ANODE CONNECTION

	18G	17G	16G	15G	1G-14G
P1	1a	1a	1a	S5	1-1
P2	1h	1h	1h	S7	2-1
P3	1j	1j	1j	1d	3-1
P4	1k	1k	1k	2d	4-1
P5	1b	1b	1b	S2	5-1
P6	1f	1f	1f	1e	1-2
P7	1m	1m	1m	2e	2-2
P8	1g	1g	1g	S3	3-2
P9	1c	1c	1c	1c	4-2
P10	1e	1e	1e	2c	5-2
P11	1r	1r	1r	S4	1-3
P12	1p	1p	1p	1g	2-3
P13	1n	1n	1n	2g	3-3
P14	1d	1d	1d	1f	4-3
P15	2a	2a	2a	2f	5-3
P16	2h	2h	2h	1b	1-4
P17	2j	2j	2j	2b	2-4
P18	2k	2k	2k	1a	3-4
P19	2b	2b	2b	2a	4-4
P20	2f	2f	2f	PL	5-4
P21	2m	2m	2m	SW	1-5
P22	2g	2g	2g	PR	2-5
P23	2c	2c	2c	L	3-5
P24	2e	2e	2e	C	4-5
P25	2r	2r	2r	R	5-5
P26	2p	2p	2p	SL	1-6
P27	2n	2n	2n	SR	2-6
P28	2d	2d	2d	SBL	3-6
P29	SIRIUS	S8	HD	SB	4-6
P30	OUT	S9	TAG	SBR	5-6
P31	HDMI	iPod CHARGE	CINEMA DSP	S6	1-7
P32	1	SP B	3	S13	2-7
P33	2	S15	STEREO	MUTE	3-7
P34	S12	SP A	TUNED	ZONE 2	4-7
P35	S10	PARTY	ENHANCER	ZONE 3	5-7
P36	S11	-	ADAPTIVE DRC	SLEEP	S1

RX-A720

● V4001 : HNA-18MM03T (OPERATION P.C.B.)

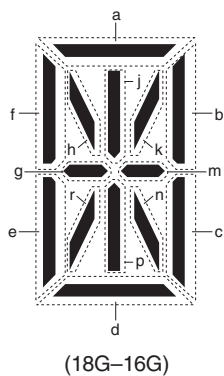
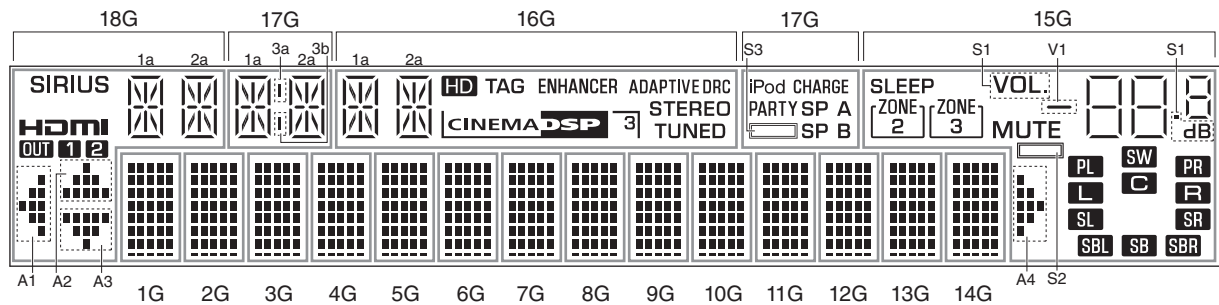


● PIN CONNECTION

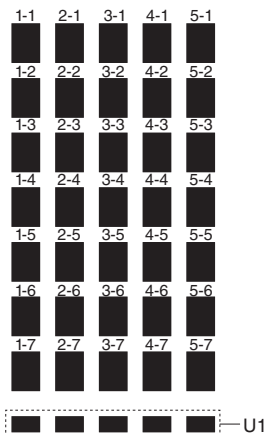
Pin No.	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35
Connection	F2	F2	NP	NP	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16	P17	P18	P19	P20	P21	P22	P23	P24	P25	P26	P27	P28	P29	P30	P31
Pin No.	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	
Connection	P32	P33	P34	P35	P36	NX	NX	NX	NX	NX	NX	NX	NX	18G	17G	16G	15G	14G	13G	12G	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G	NP	NP	F1	F1

Note : 1) F1, F2 Filament pin 2) 1G–18G Grid pin 3) P1–P36 Anode pin 4) NP No pin 5) NX No extended pin

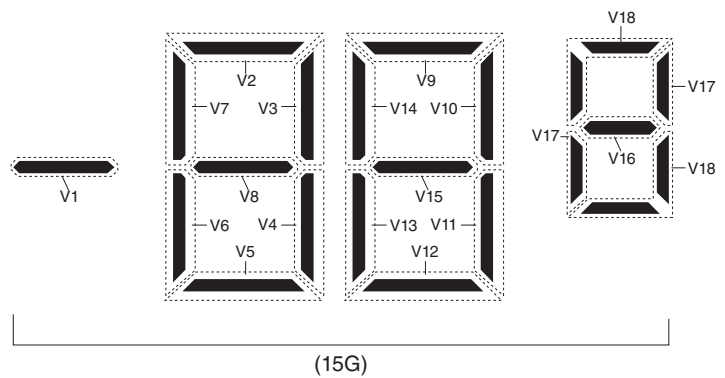
● GRID ASSIGNMENT



(18G–16G)



(1G–14G)



(15G)

RX-A720

● ANODE CONNECTION

	18G	17G	16G	15G	1G-14G
P1	1a	1a	1a	S1	1-1
P2	1h	1h	1h	V1	2-1
P3	1j	1j	1j	V5	3-1
P4	1k	1k	1k	V12	4-1
P5	1b	1b	1b	V18	5-1
P6	1f	1f	1f	V6	1-2
P7	1m	1m	1m	V13	2-2
P8	1g	1g	1g	V17	3-2
P9	1c	1c	1c	V4	4-2
P10	1e	1e	1e	V11	5-2
P11	1r	1r	1r	V16	1-3
P12	1p	1p	1p	V8	2-3
P13	1n	1n	1n	V15	3-3
P14	1d	1d	1d	V7	4-3
P15	2a	2a	2a	V14	5-3
P16	2h	2h	2h	V3	1-4
P17	2j	2j	2j	V10	2-4
P18	2k	2k	2k	V2	3-4
P19	2b	2b	2b	V9	4-4
P20	2f	2f	2f	PL	5-4
P21	2m	2m	2m	SW	1-5
P22	2g	2g	2g	PR	2-5
P23	2c	2c	2c	L	3-5
P24	2e	2e	2e	C	4-5
P25	2r	2r	2r	R	5-5
P26	2p	2p	2p	SL	1-6
P27	2n	2n	2n	SR	2-6
P28	2d	2d	2d	SBL	3-6
P29	SIRIUS	3a	HD	SB	4-6
P30	OUT	3b	TAG	SBR	5-6
P31	HDMI	iPod CHARGE	CINEMA DSP	A4	1-7
P32	1	SP B	3	S2	2-7
P33	2	S3	STEREO	MUTE	3-7
P34	A1	SP A	TUNED	ZONE 2	4-7
P35	A2	PARTY	ENHANCER	ZONE 3	5-7
P36	A3	-	ADAPTIVE DRC	SLEEP	U1

Pin No.	Function Name	TYPE (1)	PULL (2)	Detail of Function
1	AXR1[0]/GP4[0]	I/O	IPD	McASP1 serial data
2	UART0_RXD/I2C0_SDA/TM64P0_IN12/GP5[8]/BOOT[8]	I	IPU	BOOT[8]
		I	IPU	UART0 receive data
		I/O	IPU	I2C0 serial data
		I	IPU	Timer0 lower input
3	UART0_TXD/I2C0_SCL/TM64P0_OUT12/GP5[9]/BOOT[9]	I	IPU	BOOT[9]
		O	IPU	UART0 transmit data
		I/O	IPU	I2C0 serial clock
		O	IPU	Timer0 lower output
4	AXR1[10]/GP5[10]	I/O	IPU	McASP1 serial data
5	DVDD (I/O supply)	PWR		3.3-V I/O supply voltage pins
6	AXR1[11]/GP5[11]	I/O	IPU	McASP1 serial data
7	SPI1_ENA /UART2_RXD/GP5[12]	I/O	IPU	SPI1 enable
		I	IPU	UART2 receive data
8	SPI1_SCS[0] /UART2_TXD/GP5[13]	I/O	IPU	SPI1 chip select
		O	IPU	UART2 transmit data
9	SPI0_SCS[0] /UART0_RTS/EQEP0B/GP5[4]/BOOT[4]	I/O	IPU	SPI0 chip select
		I	IPU	eQEP0B quadrature input
		I	IPU	BOOT[4]
		O	IPU	UART0 ready-to-send output
10	CVDD (Core supply)	PWR		1.2-V core supply voltage pins
11	SPI0_CLK/EQEP11/GP5[2]/BOOT[2]	I/O	IPD	SPI0 clock
		I	IPD	eQEP1 index
		I	IPD	BOOT[2]
12	SPI0_ENA /UART0_CTS/EQEP0A/GP5[3]/BOOT[3]	I/O	IPU	SPI0 enable
		I	IPU	eQEP0A quadrature input
		I	IPU	BOOT[3]
		I	IPU	UART0 clear-to-send input
13	SPI1_SOMI[0]/I2C1_SCL/GP5[5]/BOOT[5]	I/O	IPU	SPI1 data/slave-out-master-in
		I	IPU	BOOT[5]
		I/O	IPU	I2C1 serial clock
14	SPI1_SIMO[0]/I2C1_SDA/GP5[6]/BOOT[6]	I/O	IPU	SPI1 data/slave-in-master-out
		I	IPU	BOOT[6]
		I/O	IPU	I2C1 serial Data
15	DVDD (I/O supply)	PWR		3.3-V I/O supply voltage pins
16	SPI1_CLK/EQEP1S/GP5[7]/BOOT[7]	I/O	IPD	SPI1 clock
		I	IPD	eQEP1 strobe
		I	IPD	BOOT[7]
17	SPI0_SOMI[0]/EQEP0I/GP5[0]/BOOT[0]	I/O	IPD	SPI0 data/slave-out-master-in
		I	IPD	eQEP0 index
		I	IPD	BOOT[0]
18	SPI0_SIMO[0]/EQEP0S/GP5[1]/BOOT[1]	I/O	IPD	SPI0 data/slave-in-master-out
		I	IPD	eQEP0 strobe
		I	IPD	BOOT[1]
19	EMA_WAIT[0]/ UHPI_HRDY/GP2[10]	I	IPU	EMIFA wait input/interrupt
		I/O	IPU	UHPI ready
20	CVDD (Core supply)	PWR		1.2-V core supply voltage pins
21	EMA_CS[3] /AMUTE2/GP2[6]	O	IPU	EMIFA Async chip select
		O	IPU	McASP2 mute output
22	EMA_OE /UHPI_HDS1/AXR0[13]/GP2[7]	O	IPU	EMIFA output enable
		I/O	IPU	UHPI data strobe
23	EMA_CS[2] /UHPI_HCS/GP2[5]/BOOT[15]	O	IPU	EMIFA Async chip select
		I	IPU	BOOT[15]
		I/O	IPU	UHPI chip select
24	EMA_OE/UHPI_HDS1/AXR0[13]/GP2[7] DVDD (I/O supply)	I/O	IPU	McASP0 serial data
		PWR		3.3-V I/O supply voltage pins
25	EMA_BA[0]/ GP1[14]	O	IPU	EMIFA bank address
26	EMA_BA[1]/ UHPI_HHWIL/GP1[13]	O	IPU	EMIFA bank address
		I/O	IPU	UHPI half-word identification control

Pin No.	Function Name	TYPE (1)	PULL (2)	Detail of Function
27	EMA_A[10]/ GP1[10]	O	IPU	EMIFA address bus
28	CVDD (Core supply)	PWR		1.2-V core supply voltage pins
29	EMA_A[0]/ GP1[0]	O	IPD	EMIFA address bus
30	EMA_A[1]/MMCSA_CLK/UHPI_HCNTL0/GP1[1]	O	IPU	EMIFA address bus
		I/O	IPU	UHPI access control
		O	IPU	MMCSA_CLK
31	EMA_A[2]/MMCSA_CMD/UHPI_HCNTL1/GP1[2]	O	IPU	EMIFA address bus
		I/O	IPU	UHPI access control
		I/O	IPU	MMCSA_CMD
32	EMA_A[3]/ GP1[3]	O	IPD	EMIFA address bus
33	DVDD (I/O supply)	PWR		3.3-V I/O supply voltage pins
34	EMA_A[4]/ GP1[4]	O	IPD	EMIFA address bus
35	EMA_A[5]/ GP1[5]	O	IPD	EMIFA address bus
36	EMA_A[6]/ GP1[6]	O	IPD	EMIFA address bus
37	EMA_A[7]/ GP1[7]	O	IPD	EMIFA address bus
38	CVDD (Core supply)	PWR		1.2-V core supply voltage pins
39	EMA_A[8]/ GP1[8]	O	IPU	EMIFA address bus
40	EMA_A[9]/ GP1[9]	O	IPU	EMIFA address bus
41	EMA_A[11]/ GP1[11]	O	IPU	EMIFA address bus
42	EMA_A[12]/ GP1[12]	O	IPU	EMIFA address bus
43	DVDD (I/O supply)	PWR		3.3-V I/O supply voltage pins
44	EMA_D[0]/MMCSA_DAT[0]/UHPI_HD[0]/GP0[0]/BOOT[12]	I/O	IPU	EMIFA data bus
		I	IPU	BOOT[12]
		I/O	IPU	UHPI data bus
		I/O	IPU	MMC/SD data
45	EMA_D[1]/MMCSA_DAT[1]/UHPI_HD[1]/GP0[1]	I/O	IPU	EMIFA data bus
		I/O	IPU	UHPI data bus
		I/O	IPU	MMC/SD data
46	EMA_D[2]/MMCSA_DAT[2]/UHPI_HD[2]/GP0[2]	I/O	IPU	EMIFA data bus
		I/O	IPU	UHPI data bus
		I/O	IPU	MMC/SD data
47	DVDD (I/O supply)	PWR		3.3-V I/O supply voltage pins
48	EMA_D[3]/MMCSA_DAT[3]/UHPI_HD[3]/GP0[3]	I/O	IPU	EMIFA data bus
		I/O	IPU	UHPI data bus
		I/O	IPU	MMC/SD data
49	EMA_D[4]/MMCSA_DAT[4]/UHPI_HD[4]/GP0[4]	I/O	IPU	EMIFA data bus
		I/O	IPU	UHPI data bus
		I/O	IPU	MMC/SD data
50	CVDD (Core supply)	PWR		1.2-V core supply voltage pins
51	EMA_D[5]/MMCSA_DAT[5]/UHPI_HD[5]/GP0[5]	I/O	IPU	EMIFA data bus
		I/O	IPU	UHPI data bus
		I/O	IPU	MMC/SD data
52	EMA_D[6]/MMCSA_DAT[6]/UHPI_HD[6]/GP0[6]	I/O	IPU	EMIFA data bus
		I/O	IPU	UHPI data bus
		I/O	IPU	MMC/SD data
53	DVDD (I/O supply)	PWR		3.3-V I/O supply voltage pins
54	EMA_D[7]/MMCSA_DAT[7]/UHPI_HD[7]/GP0[7]/BOOT[13]	I/O	IPU	EMIFA data bus
		I	IPU	BOOT[13]
		I/O	IPU	UHPI data bus
		I/O	IPU	MMC/SD data
55	EMA_WE /UHPI_HRW/AXR0[12]/GP2[3]/BOOT[14]	O	IPU	EMIFA SDRAM write enable
		I	IPU	BOOT[14]
		I/O	IPU	UHPI read/write
		I/O	IPU	McASP0 serial data
56	CVDD (Core supply)	PWR		1.2-V core supply voltage pins
57	EMB_CAS	O	IPU	EMIFB column address strobe
58	DVDD (I/O supply)	PWR		3.3-V I/O supply voltage pins
59	EMB_WE	O	IPU	EMIFB write enable
60	EMB_WE_DQM[0] /GP5[15]	O	IPU	EMIFB write enable/data mask for EMB_D.

Pin No.	Function Name	TYPE (1)	PULL (2)	Detail of Function
61	CVDD (Core supply)	PWR		1.2-V core supply voltage pins
62	EMB_D[7]/GP6[7]	I/O	IPD	EMIFB SDRAM data bus
63	EMB_D[6]/GP6[6]	I/O	IPD	EMIFB SDRAM data bus
64	EMB_D[5]/GP6[5]	I/O	IPD	EMIFB SDRAM data bus
65	DVDD (I/O supply)	PWR		3.3-V I/O supply voltage pins
66	EMB_D[4]/GP6[4]	I/O	IPD	EMIFB SDRAM data bus
67	CVDD (Core supply)	PWR		1.2-V core supply voltage pins
68	EMB_D[3]/GP6[3]	I/O	IPD	EMIFB SDRAM data bus
69	CVDD (Core supply)	PWR		1.2-V core supply voltage pins
70	EMB_D[2]/GP6[2]	I/O	IPD	EMIFB SDRAM data bus
71	DVDD (I/O supply)	PWR		3.3-V I/O supply voltage pins
72	EMB_D[1]/GP6[1]	I/O	IPD	EMIFB SDRAM data bus
73	EMB_D[0]/GP6[0]	I/O	IPD	EMIFB SDRAM data bus
74	EMB_D[15]/GP6[15]	I/O	IPD	EMIFB SDRAM data bus
75	DVDD (I/O supply)	PWR		3.3-V I/O supply voltage pins
76	EMB_D[14]/GP6[14]	I/O	IPD	EMIFB SDRAM data bus
77	CVDD (Core supply)	PWR		1.2-V core supply voltage pins
78	EMB_D[13]/GP6[13]	I/O	IPD	EMIFB SDRAM data bus
79	EMB_D[12]/GP6[12]	I/O	IPD	EMIFB SDRAM data bus
80	EMB_D[11]/GP6[11]	I/O	IPD	EMIFB SDRAM data bus
81	DVDD (I/O supply)	PWR		3.3-V I/O supply voltage pins
82	EMB_D[10]/GP6[10]	I/O	IPD	EMIFB SDRAM data bus
83	EMB_D[9]/GP6[9]	I/O	IPD	EMIFB SDRAM data bus
84	EMB_D[8]/GP6[8]	I/O	IPD	EMIFB SDRAM data bus
85	EMB_WE_DQM[1]/GP5[14]	O	IPU	EMIFB write enable/data mask for EMB_D
86	EMB_CLK	O	IPU	EMIF SDRAM clock
87	DVDD (I/O supply)	PWR		3.3-V I/O supply voltage pins
88	EMB_SDCKE	I/O	IPU	EMIFB SDRAM clock enable
89	EMB_A[12]/GP3[13]	O	IPD	EMIFB SDRAM row/column address bus
90	DVDD (I/O supply)	PWR		3.3-V I/O supply voltage pins
91	EMB_A[11]/GP7[13]	O	IPD	EMIFB SDRAM row/column address bus
92	EMB_A[9]/GP7[11]	O	IPD	EMIFB SDRAM row/column address bus
93	CVDD (Core supply)	PWR		1.2-V core supply voltage pins
94	EMB_A[8]/GP7[10]	O	IPD	EMIFB SDRAM row/column address bus
95	EMB_A[7]/GP7[9]	O	IPD	EMIFB SDRAM row/column address bus
96	EMB_A[6]/GP7[8]	O	IPD	EMIFB SDRAM row/column address bus
97	EMB_A[5]/GP7[7]	O	IPD	EMIFB SDRAM row/column address bus
98	EMB_A[4]/GP7[6]	O	IPD	EMIFB SDRAM row/column address
99	DVDD (I/O supply)	PWR		3.3-V I/O supply voltage pins
100	EMB_A[3]/GP7[5]	O	IPD	EMIFB SDRAM row/column address
101	EMB_A[2]/GP7[4]	O	IPD	EMIFB SDRAM row/column address
102	EMB_A[1]/GP7[3]	O	IPD	EMIFB SDRAM row/column address
103	EMB_A[0]/GP7[2]	O	IPD	EMIFB SDRAM row/column address
104	CVDD (Core supply)	PWR		1.2-V core supply voltage pins
105	EMB_A[10]/GP7[12]	O	IPD	EMIFB SDRAM row/column address bus
106	EMB_BA[1]/GP7[0]	O	IPU	EMIFB SDRAM bank address
107	EMB_BA[0]/GP7[1]	O	IPU	EMIFB SDRAM bank address
108	EMB_CS[0]	O	IPU	EMIFB SDRAM chip select 0
109	DVDD (I/O supply)	PWR		3.3-V I/O supply voltage pins
110	EMB_RAS	O	IPU	EMIFB SDRAM row address strobe
111	AXR0[0]/AFSR2/GP3[0]	I/O	IPD	McASP0 serial data
		O	IPD	McASP2 serial data
112	AXR0[1]/ACLKX2/GP3[1]	I/O	IPD	McASP0 serial data
		O	IPD	McASP2 transmit bit clock
113	AXR0[2]/AXR2[3]/GP3[2]	I/O	IPD	McASP0 serial data
		O	IPD	McASP2 serial data
114	CVDD (Core supply)	PWR		1.2-V core supply voltage pins
115	AXR0[3]/AXR2[2]/GP3[3]	I/O	IPD	McASP0 serial data
		O	IPD	McASP2 serial data

Pin No.	Function Name	TYPE (1)	PULL (2)	Detail of Function
116	AXR0[4]/ AXR2[1]/GP3[4]	I/O	IPD	McASP0 serial data
		O	IPD	McASP2 serial data
117	AXR0[5]/AFSX2/GP3[5]	I/O	IPD	McASP0 serial data
		O	IPD	McASP2 transmit frame sync
118	AXR0[6]/ACLKR2/GP3[6]	I/O	IPD	McASP0 serial data
		I/O	IPD	McASP2 receive bit clock
119	DVDD (I/O supply)	PWR		3.3-V I/O supply voltage pins
120	AXR0[7]/GP3[7]	I/O	IPD	McASP0 serial data
121	AXR0[8]/GP3[8]	I/O	IPU	McASP0 serial data
122	UART1_RXD/AXR0[9]/GP3[9]	I	IPD	UART1 receive data
		(3) I/O	IPD	McASP0 serial data
123	UART1_TXD/AXR0[10]/GP3[10]	O	IPD	UART1 transmit data
		(3) I/O	IPD	McASP0 serial data
124	AXR0[11]/ AXR2[0]/GP3[11]	I/O	IPD	McASP0 serial data
		O	IPD	McASP2 serial data
125	AHCLKX0/AHCLKX2/USB_REFCLKIN/GP2[11]	I/O	IPD	McASP0 transmit master clock
		O	IPD	McASP2 transmit master clock
		I	IPD	USB_REFCLKIN. Optional 48 MHz clock input
126	ACLKX0/ECAP0/APWM0/GP2[12]	I/O	IPD	Enhanced capture 0/input or auxiliary PWM 0 output
		I/O	IPD	McASP0 transmit bit clock
127	AFSX0/GP2[13]/BOOT[10]	I	IPD	BOOT[10]
		I/O	IPD	McASP0 transmit frame sync
128	DVDD (I/O supply)	PWR		3.3-V I/O supply voltage pins
129	AHCLKR0/GP2[14]/BOOT[11]	I	IPD	BOOT[11]
		I/O	IPD	McASP0 receive master clock
130	ACLKR0/ECAP1/APWM1/GP2[15]	I/O	IPD	Enhanced capture 1/input or auxiliary PWM 1 output
		I/O	IPD	McASP0 receive bit clock
131	AFSR0/GP3[12]	I/O	IPD	McASP0 receive frame sync
132	AMUTE1/EPWMTZ/GP4[14]	I/O	IPD	eHRPWM0 trip zone input
		I/O	IPD	eHRPWM1 trip zone input
		I/O	IPD	eHRPWM2 trip zone input
		O	IPD	McASP1 mute output
133	RSV2	PWR		Reserved. For proper device operation, this pin must be tied directly to CVDD
134	USB0_VDDA12	(4) PWR		USB0 PHY 1.2-V LDO output for bypass cap
135	USB0_VDDA18	PWR		USB0 PHY 1.8-V supply input
136	NC	–	–	–
137	USB0_DP	A		USB0 PHY data plus
138	USB0_DM	A		USB0 PHY data minus
139	NC	–	–	–
140	USB0_VDDA33	PWR		USB0 PHY 3.3-V supply
141	PLL0_VDDA	PWR		PLL analog VDD (1.2-V filtered supply)
142	PLL0_VSSA	GND		PLL analog VSS (for filter)
143	OSCIN	I		Oscillator input
144	OSCVSS	GND		Oscillator ground (for filter only)
145	OSCOUT	O		Oscillator output
146	RESET	I		Device reset input
147	CVDD (Core supply)	PWR		1.2-V core supply voltage pins
148	RTC_XI	I		Low-frequency (32-kHz) oscillator receiver for real-time clock
149	RTC_CVDD	PWR		RTC module core power (isolated from rest of chip CVDD)
150	TRST	I	IPD	JTAG test reset
151	DVDD (I/O supply)	PWR		3.3-V I/O supply voltage pins
152	TMS	I	IPU	JTAG test mode select
153	TDI	I	IPU	JTAG test data input
154	CVDD (Core supply)	PWR		1.2-V core supply voltage pins
155	TCK	I	IPU	JTAG test clock
156	TDO	O	IPD	JTAG test data output
157	GP7[14]	(5) I/O	IPD	General-Purpose IO signal
158	DVDD (I/O supply)	PWR		3.3-V I/O supply voltage pins
159	CVDD (Core supply)	PWR		1.2-V core supply voltage pins

Pin No.	Function Name	TYPE (1)	PULL (2)	Detail of Function
160	AHCLKX1/EPWM0B/GP3[14]	I/O	IPD	eHRPWM0 B output
		I/O	IPD	McASP1 transmit master clock
161	CVDD (Core supply)	PWR		1.2-V core supply voltage pins
162	ACLKX1/EPWM0A/GP3[15]	I/O	IPD	eHRPWM0 A output
		I/O	IPD	McASP1 transmit bit clock
163	AFSX1/EPWMSYNCO/EPWMSYNCO/GP4[10]	I/O	IPD	Sync input to eHRPWM0 module or sync output to external PWM
		I/O	IPD	McASP1 transmit frame sync
164	DVDD (I/O supply)	PWR		3.3-V I/O supply voltage pins
165	ACLKR1/ECAP2/APWM2/GP4[12]	I/O	IPD	enhanced capture 2/input or auxiliary PWM 2 output
		I/O	IPD	McASP1 receive bit clock
166	AFSR1/GP4[13]	I/O	IPD	McASP1 receive frame sync
167	CVDD (Core supply)	PWR		1.2-V core supply voltage pins
168	AXR1[8]/EPWM1A/GP4[8]	I/O	IPD	eHRPWM1 A (with high-resolution)
		I/O	IPD	McASP1 serial data
169	AXR1[7]/EPWM1B/GP4[7]	I/O	IPD	eHRPWM1 B
		I/O	IPD	McASP1 serial data
170	AXR1[6]/EPWM2A/GP4[6]	I/O	IPD	eHRPWM2 A (with high-resolution)
		I/O	IPD	McASP1 serial data
171	AXR1[5]/EPWM2B/GP4[5]	I/O	IPD	eHRPWM2 B
		I/O	IPD	McASP1 serial data
172	DVDD (I/O supply)	PWR		3.3-V I/O supply voltage pins
173	AXR1[4]/EQEP1B/GP4[4]	I	IPD	eQEP1B quadrature input
		I/O	IPD	McASP1 serial data
174	AXR1[3]/EQEP1A/GP4[3]	I	IPD	eQEP1A quadrature input
		I/O	IPD	McASP1 serial data
175	AXR1[2]/GP4[2]	I/O	IPD	McASP1 serial data
176	AXR1[1]/GP4[1]	I/O	IPD	McASP1 serial data

(1) I = Input, O = Output, I/O = Bidirectional, Z = High impedance, PWR = Supply voltage, GND = Ground, A = Analog signal.

Note: The pin type shown refers to the input, output or high-impedance state of the pin function when configured as the the signal name highlighted in bold. All multiplexed signals may enter a high-impedance state when the configured function is input-only or the configured function supports high-Z operation. All GPIO signals can be used as input or output. For multiplexed pins where functions have different types (ie., input versus output), the table reflects the pin function direction for that particular peripheral.

(2) IPD = Internal Pulldown resistor, IPU = Internal Pullup resistor

(3) 122, 123 pin: As these signals are internally pulled down while the device is in reset, it is necessary to externally pull them high with resistors if UART1 boot mode is used.

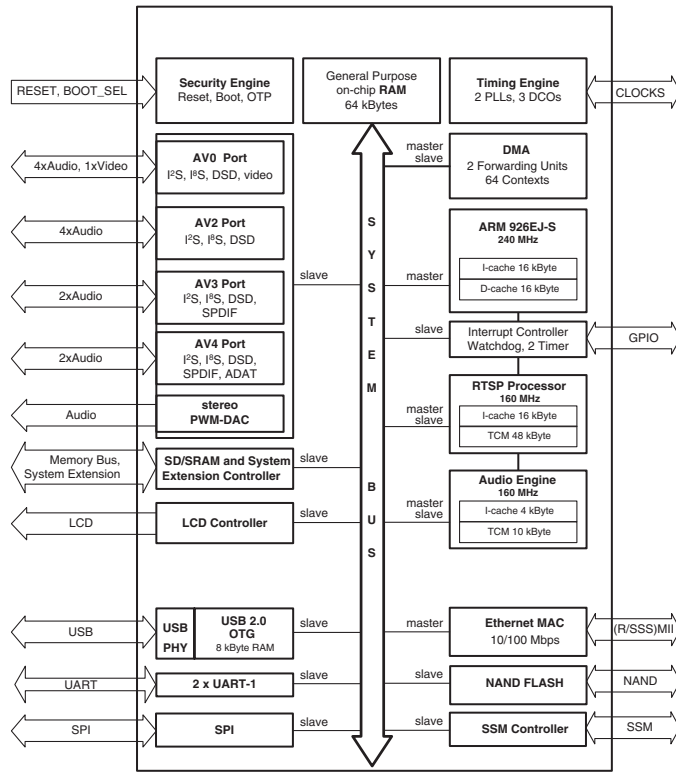
(4) 134 pin: Core power supply LDO output for USB PHY. This pin must be connected via a 0.22-mF capacitor to VSS. When the USB peripheral is not used, the USB_VDDA12 signal should still be connected via a 1-mF capacitor to VSS.

(5) 157 pin: GP7[14] is initially configured as a reserved function after reset and will not be in a predictable state. This signal will only be stable after the GPIO configuration for this pin has been completed. Users should carefully consider the system implications of this pin being in an unknown state after reset.

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Network microprocessor

* **No replacement part available.**



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18			
A	USBDN	VDD33 USBC	VSS33 USBC	n.c.	n.c.	VDD33	RFLCKP	RFRXQP	RFRXIP	HIGHZ	SSMD0	SSMD4	SSMCMD	RXD1	TDO	TDI	A0	A1	A		
B	USBDP	VDD33 USBT	VSS33 USBT	n.c.	n.c.	VSS	RFLCKN	RFRXQN	RFRXIN	TEST1	SSMD1	SSMD5	TXD1	RXD0	TMS	SPICLK	SPINCS1	A2	B		
C	VSS12 USB	USBREXT	USBXO	USBXI	NRES12 OUT	VSS	RREF	n.c.	n.c.	SSMCKL	SSMD2	SSMD6	TXD0	TCK	SPINCS0	A3	A4	A5	C		
D	VDD12 USB	USBVBUS	USBATST	NRES33 OUT	NRES33 REF	NRES12 REF	VDD33	VDD12	SSMWP	SSMCP	SSMD3	SSMD7	NRESET	SPDI	SPIDO	A6	A7	A8	D		
E	VSS33 RTC	USBDI	USBVB USDRV	NC		VDD12 CORE	VDD12 CORE	VDD33IO	VDD33IO	VDD12 CORE	VDD12 CORE	VDD33IO	VDD33IO		A9	A10	A11	A12	E		
F	VDD33 RTC	RTCXIN	VDD33 PLL	NC	VDD33IO	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VDD12 CORE	A13_RAS	A14_CAS	A15_BA0	A16_BA1	F		
G	VDD12 DCO	RTXCOUT	VSS33 PLL	NC	VDD33IO	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VDD12 CORE	A17_DQ M0	A18_DQ M1	A19	A20	G		
H	VSS12 DCO	VSS12 PLL	VDD12 PLL	NC	VDD12 CORE	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VDD33IO	A21	A22	A23	NCS3	H		
J	PDOUT1	VC01	XTALO	NC	VDD12 CORE	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VDD33IO	NCS0	NCS1	NCS2	MEMCKE	J		
K	PDOUT0	VC00	XTALI	AOUTLP	VDD33IO	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VDD12 CORE	MEMCLK	NWE	NOE	NWAIT	K		
L	AV0CLK	AOUTLN	AOUTRN	AOUTRP	VDD33IO	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VDD12 CORE	D3	D2	D1	D0	L		
M	AV0 CTRL0	AV0 CTRL1	AV0 CTRL2	AV0 DATA3	VDD12 CORE	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VDD33IO	D7	D6	D5	D4	M		
N	AV0 DATA2	AV0 DATA1	AV0 DATA0	AV1 DATA3	VDD12 CORE	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VDD33IO	D11	D10	D9	D8	N		
P	AV1 DATA2	AV1 DATA1	AV1 DATA0	AV2 DATA3		VDD33IO	VDD33IO	VDD12 CORE	VDD12 CORE	VDD33IO	VDD33IO	VDD12 CORE	VDD12 CORE		FD0	FD1	D13	D12	P		
R	AV2CLK	AV2 CTRL1	AV2 DATA2	AV3CLK	AV3 DATA1	LCDD11	LCDD7	LCDD3	LCD CTRL0	VPP	MIITXEN	MIITXCLK	MIIRXER	MIIGRS	FD2	FD3	FD4	D14	R		
T	AV2 CTRL0	AV2 DATA1	AV3 CTRL1	AV3 DATA0		LCDD10	LCDD6	LCDD2	LCD CTRL1	LCDDCLK	MIITXER	MIIRXCLK	MIICOL	MII RXDV	FD5	FD6	FD7	D15	T		
U	AV2 DATA0	AV3 CTRL0	AV4 DATA1			LCDD16	LCDD13	LCDD9	LCDD5	LCDD1	LCD CTRL2	MIITXD0	MIITXD2	MIIRXD0	MIIRXD2	MIIMDIO	NFCE0	FCLE	NFWE	NFRB	U
V	NC	AV4 DATA0	LCDD17	LCDD15	LCDD12	LCDD8	LCDD4	LCDD0	LCD CTRL3	MIITXD1	MIITXD3	MIIRXD1	MIIRXD3	MIIMDC	MIPHY CLK	NFWP	NFRE	FALE	V		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18			

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AV-Port 0

Pin No.	Function Name	I/O	Detail of Function
M4	AV0DATA[3:0]	I/O	Audio/video data. Several formats are supported.
N1			
N2			
N3			
N4	AV1DATA[3:0]	I/O	Video data, together with AV0DATA[3:0]: AV0DATA[3:0] = video[3:0] AV1DATA[3:0] = video[7:4]
P1			
P2			
P3			
L1	AV0CLK	I/O	Data clock. Depending on the AV-Port 0 configuration, this clock is a bit- or byte-clock which is used to transmit or receive the AV0DATA[*] synchronously.
M1	AV0CTRL0	I/O	Configurable sync signal: <ul style="list-style-type: none"> Serial audio formats: LRCK input or output. Video formats: PSYNC input or output.
M2	AV0CTRL1	I/O	Configurable sync signal: <ul style="list-style-type: none"> Serial audio formats: Master clock output. Video formats: DVALID input or output.
M3	AV0CTRL2	I/O	Configurable sync signal: <ul style="list-style-type: none"> Video formats: FSYNC input or output.

AV-Port 2

Pin No.	Function Name	I/O	Detail of Function
P4	AV2DATA[3:0]	I/O	Audio data. Several formats are supported.
R3			
T2			
U1			
R1	AV2CLK	I/O	Data clock. Depending on the AV-Port 2 configuration this clock is a bit-clock which is used to transmit or receive the AV2DATA[*] synchronously.
T1	AV2CTRL0	I/O	Configurable sync signal: Serial audio formats: LRCK input or output.
R2	AV2CTRL1	I/O	Configurable sync signal: Serial audio formats: Master clock output.

AV-Port 3

Pin No.	Function Name	I/O	Detail of Function
R5	AV3DATA[1:0]	I/O	Audio data. Several formats are supported.
T4			
R4	AV3CLK	I/O	Data clock. Depending on the AV-Port 3 configuration this clock is a bit-clock which is used to transmit or receive the AV3DATA[*] synchronously.
U2	AV3CTRL0	I/O	Configurable sync signal: Serial audio formats: LRCK input or output.
T3	AV3CTRL1	I/O	Configurable sync signal: Serial audio formats: Master clock output.

AV-Port 4

Pin No.	Function Name	I/O	Detail of Function
U3	AV4DATA[1:0]	I/O	Audio data. Several formats are supported.
V2			

PWM-DAC

Pin No.	Function Name	I/O	Detail of Function
K4	AOUTLP	O	Left channel PWM output (positive).
L2	AOUTLN	O	Left channel PWM output (negative).
L4	AOUTRP	O	Right channel PWM output (positive).
L3	AOUTRN	O	Right channel PWM output (negative).

UART Interface

Pin No.	Function Name	I/O	Detail of Function
B14	RXD0	I	UART-0 receive signal.
C13	TXD0	O	UART-0 transmit signal.
A14	RXD1	I	UART-1 receive signal.
B13	TXD1	O	UART-1 transmit signal.

Serial Peripheral Interface (SPI)

Pin No.	Function Name	I/O	Detail of Function
D14	SPIDIN	I	SPI data receive.
D15	SPIDOUT	O	SPI data transmit.
B16	SPICLK	I/O	SPI clock.
C15	SPINCS0	I/O	Multi-master mode: Chip-select input (used to detect bus conflict). Master only mode: Chip-select 1 output. Slave mode: Chip-select input.
B17	SPINCS1	I/O	Multi-master mode: Chip-select 2 output. Master only mode: Chip-select 2 output. Slave mode: Not used.

External Memory Interface

Pin No.	Function Name	I/O	Detail of Function
T18	D[15:0]	I/O	Data bus for external memory and peripheral access.
R18			
P17			
P18			
N15			
N16			
N17			
N18			
M15			
M16			
M17			
M18			
L15			
L16			
L17			
L18			
E18	A[12:0]	O	Address bus for external memory and peripheral access.
E17			
E16			
E15			
D18			
D17			
D16			
C18			
C17			
C16			
B18			
A18			
A17			
F15	A13_RAS	O	SRAM: Address output SDRAM: Row access strobe
F16	A14_CAS	O	SRAM: Address output SDRAM: Column access strobe
F17	A15_BA0	O	SRAM: Address output SDRAM: Bank select
F18	A16_BA1	O	SRAM: Address output SDRAM: Bank select
G15	A17_DQM0	O	SRAM: Address output SDRAM: Data mask
G16	A18_DQM1	O	SRAM: Address output SDRAM: Data mask
H17	A[23:19]	O	Address bus for external memory and peripheral access.
H16			
H15			
G18			
G17			

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Pin No.	Function Name	I/O	Detail of Function
H18	NCS[3:0]	O	Chip select signals. The active memory range for NCS[n] (active low) can be configured. <ul style="list-style-type: none"> • NCS[0] supports SRAM, can be used for booting. • NCS[1] supports SDRAM or SRAM. • NCS[2] supports SRAM. • NCS[3] supports SRAM.
J17			
J16			
J15			
K17	NOE	O	Output enable, asserted (low) for read operations.
K16	NWE	O	Write enable, asserted (low) for write operations.
K18	NWAIT	I	External wait line. If NWAIT is asserted, memory access will be stalled. Can be configured as either low-active (default) or high-active.
K15	MEMCLK	O	SDRAM system clock.
J18	MEMCKE	O	SDRAM clock enable.

NAND-Flash Interface

Pin No.	Function Name	I/O	Detail of Function
T17	FD[7:0]	I/O	Bi-directional data bus.
T16			
T15			
R17			
R16			
R15			
P16			
P15			
V18	FALE	O	Address latch enable; pull-up/down defines boot mode.
U16	FCLE	O	Command latch enable; pull-up/down defines boot mode.
U15	NFCE0	O	Chip-enable, low-active.
U18	NFRB	I	Ready/busy. NAND flash is busy when NFRB is low.
V17	NFRE	O	Read enable, low-active.
U17	NFWE	O	Write enable, low-active.
V16	NFWP	O	Write protect, low-active.

Ethernet MAC-Phy Interface (MII)

Pin No.	Function Name	I/O	MII	RMII	SMII
U14	MIIDIO	I/O	Management data	Management data	
V14	MIIMDC	O	Management clock	Management clock	
V13	MIIRXD[3]	I	RxD 3	RxD 1	
U13	MIIRXD[2]	I	RxD 2	RxD 0	
V12	MIIRXD[1]	I	RxD 1		Rx-Sync
U12	MIIRXD[0]	I	RxD 0		RxD
T12	MIIRXCLK	I	Receive clock		Receive clock
R13	MIIRXER	I	Receive error	Receive error	
T14	MIIRXDV	I	Receive data valid	Carrier sense/data valid	
V11	MIITXD[3]	O	TxD 3	TxD 1	
U11	MIITXD[2]	O	TxD 2	TxD 0	
V10	MIITXD[1]	O	TxD 1		Tx-Sync
U10	MIITXD[0]	O	TxD 0		TxD
R12	MIITXCLK	I	Transmit clock		Transmit clock
T11	MIITXER	O	Transmit error		
R11	MIITXEN	O	Transmit data enable	Transmit data enable	
T13	MIICOL	I	MII ethernet collision		
R14	MIICRS	I	MII carrier sense		
V15	MIIPHYCLK	O	25.000 MHz clock	50.000 MHz clock	125.000 MHz clock

USB 2.0 OTG

Pin No.	Function Name	I/O	Detail of Function
B1	USBD+	I/O	Positive data line that is connected to the serial USB cable.
A1	USBD-	I/O	Negative data line that is connected to the serial USB cable.
E2	USBID	I	USB ID pin of mini-AB receptacle.
C2	USBREXT	I	External bias resistor (2K7, 1%); connect resistor to VSSUSB.
D2	USBVBUS	I	VBUS voltage sense.
E3	USBVBUSDRV	O	Control signal to control VBUS 5V voltage source.
C4	USBXTALI	I	Oscillator circuit input for a 24.000 MHz crystal (optional). Without external crystal, pull this pin to GND.
C3	USBXTALO	O	Oscillator circuit output for a 24.000 MHz crystal (optional). Without external crystal, leave this pin open.
D3	USBATST	-	Do not connect.

Power-on Reset Pins

Pin No.	Function Name	I/O	Detail of Function
D6	NRES12REF	I	Voltage reference input. NRES12OUT is release when this input voltage exceeds VTH12.
C5	NRES12OUT	O	Open-drain reset (active low) for 1.2V core power supply.
D5	NRES33REF	I	Voltage reference input. NRES33OUT is release when this input voltage exceeds VTH33.
D4	NRES33OUT	O	Open-drain reset (active low) for 3.3V core power supply

Real-Time Clock (RTC) Pins (RTC is Not Supported)

Pin No.	Function Name	I/O	Detail of Function
F2	RTCXIN	I	No connection. Leave this pin open circuit.
G2	RTCXOUT	O	No connection. Leave this pin open circuit.
F1	VDD33RTC	Power	No connection. Leave this pin open circuit.
E1	VSS33RTC	Power	Ground (0 V) for RTC

LCD Interface

Pin No.	Function Name	I/O	TFT Mode	LCD STN monochr.	LCD STN monochr. (double)	LCD STN color	LCD STN color (bias)
V3	LCDD[17]	O	RED5				
U4	LCDD[16]	O	RED4				
V4	LCDD[15]	O	RED3				
T5	LCDD[14]	O	RED2				
U5	LCDD[13]	O	RED1				
V5	LCDD[12]	O	(RED0)				
R6	LCDD[11]	O	GREEN5				
T6	LCDD[10]	O	GREEN4				
U6	LCDD[9]	O	GREEN3				
V6	LCDD[8]	O	GREEN2				
R7	LCDD[7]	O	GREEN1		DATAHIGH3	DATA7	DATA7
T7	LCDD[6]	O	GREEN0		DATAHIGH2	DATA6	DATA6
U7	LCDD[5]	O	BLUE5		DATAHIGH1	DATA5	DATA5
V7	LCDD[4]	O	BLUE4		DATAHIGH0	DATA4	DATA4
R8	LCDD[3]	O	BLUE3	DATA3	DATALOW3	DATA3	DATA3
T8	LCDD[2]	O	BLUE2	DATA2	DATALOW2	DATA2	DATA2
U8	LCDD[1]	O	BLUE1	DATA1	DATALOW1	DATA1	DATA1
V8	LCDD[0]	O	(BLUE0)	DATA0	DATALOW0	DATA0	DATA0
T10	LCDCLK	O	Byte clock	CL2	CL2	CL2	CL2
V9	LCDCTRL[3]	O	Display off	Display off	Display off	Display off	Display off
U9	LCDCTRL[2]	O	Vsync	FLM	FLM	FLM	FLM
T9	LCDCTRL[1]	O	HSync	CL1	CL1	CL1	CL1
R9	LCDCTRL[0]	O	DVALID			M/Bias	

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SSM Interface

Pin No.	Function Name	I/O	Detail of Function
D12	SSMD[7:0]	I/O	Data lines.
C12			
B12			
A12			
D11			
C11			
B11			
A11			
C10	SSMCLK	O	Clock output.
A13	SSMCMD	O	Command output.
D10	SSMCP	I	Card power input (high = off).
D9	SSMWP	I	Write protect input (low = protect).

External PLL Pins

Pin No.	Function Name	I/O	Detail of Function
J2	VCO[1:0]	I	External oscillator inputs, typically coming from an external VCO. Together with the external loop-filter and the internal clock dividers, each PDOUT/VCO pair can form a complete PLL.
K2			
J1	PDOUT[1:0]	O	Phase discriminator outputs. These signals are charge-pump type outputs. Each of them can be used to feed the loop-filter of a PLL structure.
K1			

Global Pins

Pin No.	Function Name	I/O	Detail of Function
D13	NRESET	I	Reset (active low). When asserted, the chip is placed in the reset state and the peripheral pins are configured as inputs. After deassertion of NRESET, the chip is clocked by XTALI and starts booting from the port configured by the FCLE, FALE pins. The NRESET signal must be asserted after power-up.
K3	XTALI	I	Oscillator circuit input. Internal system clock will be derived from XTALI (internal clock multiplier).
J3	XTALO	O	Oscillator circuit output.
C7	RREF	I	Reference current. Connect a 3.0 k-ohms $\pm 1\%$ resistor to GND.
B10	TEST1	I	Reserved. Connect to VDD for normal operation.
A10	HIGHZ	I	Reserved. Connect to VDD for normal operation.
E4	n.c.	-	Pins must be left unconnected (18x).
F4			
G4			
H4			
J4			
V1			
A4			
A5			
B4			
B5			
C8			
C9			

JTAG Interface

Pin No.	Function Name	I/O	Detail of Function
B15	TMS	I	JTAG mode select.
C14	TCK	I	JTAG clock.
A16	TDI	I	JTAG serial data input.
A15	TDO	O	JTAG serial data output.

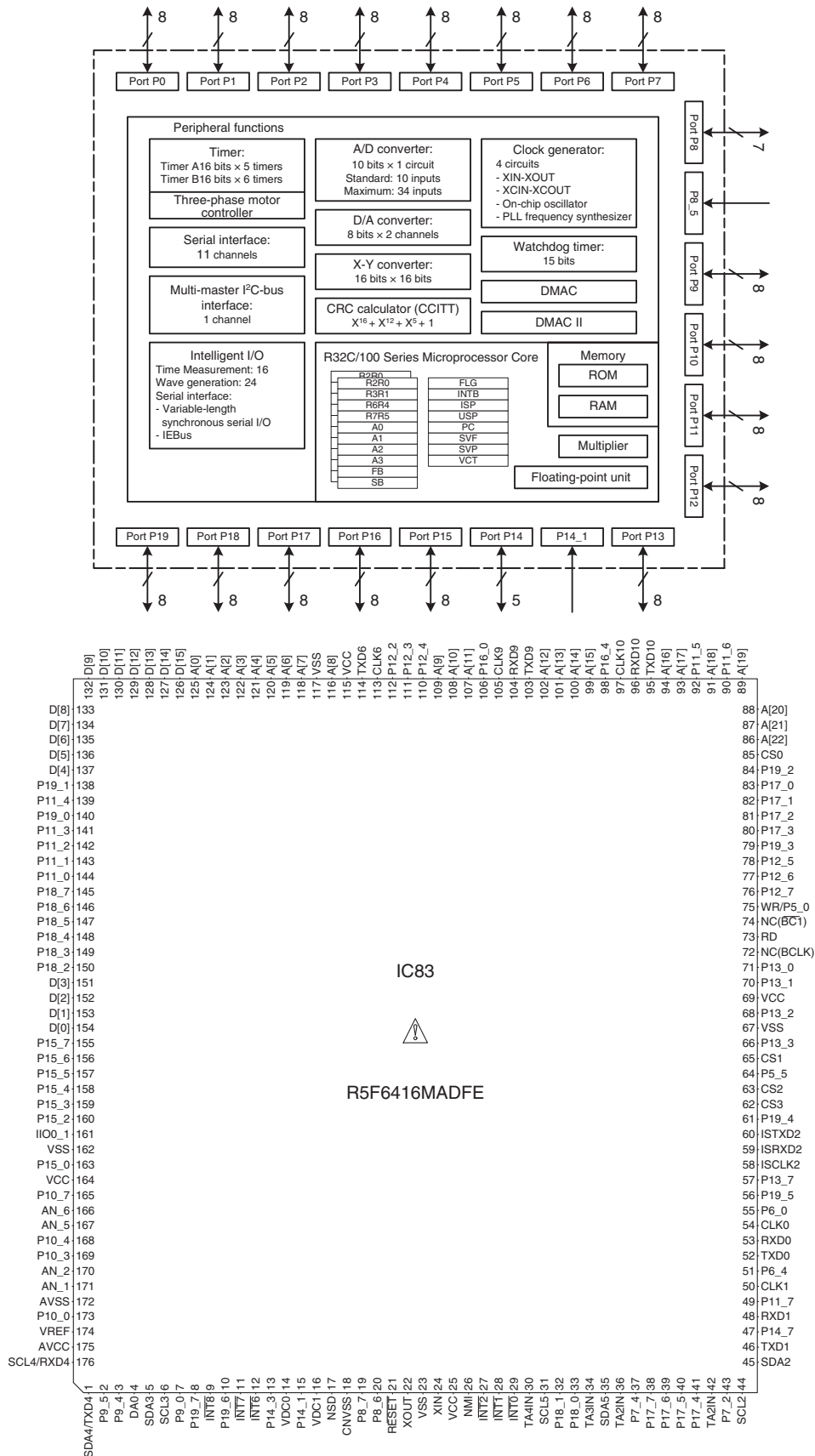
Power Supply Pins

Pin No.	Function Name	Detail of Function	Pin No.	Function Name	Detail of Function
A6	VDD33	I/O power supply (+3.3 V).	K13	VSS	Ground (0 V).
E8			L6		
E9			L7		
E12			L8		
E13			L9		
F5			L10		
G5			L11		
H14			L12		
J14			L13		
K5			M6		
L5			M7		
M14			M8		
N14			M9		
P6			M10		
P7			M11		
P10			M12		
P11			M13		
D7			N6		
F6			N7		
F7			N8		
F8	N9				
F9	N10				
F10	N11				
F11	N12				
F12	N13				
F13	B6				
G6	C6				
G7	R10	VPP			
G8	A2	VDD33USB	Power supply (+3.3 V) for USB interface. Ground (0 V).		
G9	B2				
G10	A3	VSS33USB	Ground (0 V).		
G11	B3				
G12	F3	VDD33PLL	Power supply (+3.3V) for PLL.		
G13	G3	VSS33PLL	Ground (0 V).		
H6	VSS	Ground (0 V).	E6	VDD12	Power supply (+1.2V).
H7			E7		
H8			E10		
H9			E11		
H10			F14		
H11			G14		
H12			H5		
H13			J5		
J6			K14		
J7			L14		
J8			M5		
J9			N5		
J10			P8		
J11			P9		
J12			P12		
J13	P13				
K6	D8				
K7	D1	VDD12USB	Power supply (+1.2V) for USB interface.		
K8	C1	VSS12USB	Ground (0 V).		
K9	H3	VDD12PLL	Power supply (+1.2V) for PLL.		
K10	H2	VSS12PLL	Ground (0 V).		
K11	G1	VDD12DCO	Power supply (+1.2V) for DCO.		
K12	H1	VSS12DCO	Ground (0 V).		

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RX-A720

IC83: R5F6416MADFE (DIGITAL P.C.B.)
Microprocessor

* No replacement part available.



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Pin No.	Port Name	Function Name	I/O		Detail of Function
			Related Power Supply ON	Related Power Supply OFF	
1	SRXD4/SDA4/TXD4/ANEX1/P9_6	TUN_SDA	I/O	O	Tuner I2C data
		HDR_MOSI	O	O	HD Radio transmission data
2	CLK4/ANEX0/P9_5	VOL1_SCK	O	O	VOL1 (R2A15220FP #1) communication clock
3	N_CTS4/N_N_RTS4/N_SS4/TB4IN/DA1/P9_4	VOL_MOSI	O	O	VOL1/VOL2/VOL3 communication data
4	N_CTS3/N_N_RTS3/N_SS3/TB3IN/DA0/P9_3	AMP_LMT	O	I	Limiter control
5	IEOUT/ISTXD2/OUTC2_0/SRXD3/SDA3/TXD3/TB2IN/P9_2	HDMI_SDA	I/O	O	HDMI 400k I2C data
6	IEIN/ISRXD2/STXD3/SCL3/RXD3/TB1IN/P9_1	HDMI_SCL	O	O	HDMI 400k I2C clock
7	CLK3/TB0IN/P9_0	SPRY_5CH	O	O	SP relay 5CH (L, C, R, SRL, SRR)
8	P19_7	PA_B_RY	O	O	Power amplifier B power supply control
9	N_INT8/P14_6	HAU_N_INT	I	O	Mute signal from HDMI, RX1 and RX2
10	P19_6	FLD_N_RST	O	O	FLD reset
11	N_INT7/P14_5	HTX1_N_INT	I	O	HDMI TX CEC interrupt
12	N_INT6/P14_4	PWR_DET	I	I	AC power detect
13	P14_3	FLD_N_CS	O	O	FLD chip select
14	VDC0	VDC0			---
15	P14_1 (for exclusive use of the input)	I_PRT	I	I	Current protection
16	VDC1	VDC1			---
17	NSD	NSD			Debugger
18	CNVSS	DBG_CNVSS			---
19	XCIN/P8_7	MIC_N_DET	I	O	Microphone detection
20	XCOU/P8_6	PD_LED	O	O	Pure direct LED
21	RESET	MCPU_N_RST			---
22	XOUT	XOUT			---
23	VSS	VSS			---
24	XIN	XIN			---
25	VCC	VCC			---
26	NMI/P8_5	NMI			---
27	N_INT2/P8_4	WAKEUP_INT	I	O	Power switch, MISO interrupt of RS-232C (Sleep return)
28	N_INT1/P8_3	REM_IN2	I	O	Remote control pulse input 2
29	N_INT0/P8_2	REM_IN1	I	O	Remote control pulse input 1
30	UD0B/UD1B/IIO1_5/N_RTS5/N_CTS5/N_SS5/U/TA4IN/P8_1	TUN_N_INT	I	O	Interrupt from TUNER
31	UD0A/UD1A/RXD5/SCL5/STXD5/U/TA4OUT/P8_0	FHDMI_SCL	O	O	HDMI switcher 100k I2C clock
32	P18_1	FLD_PON	O	O	FL driver +3.3V power supply control
33	P18_0	STBY_LED	O	O	Standby LED control
34	UD0B/UD1B/IIO1_4/CLK5/TA3IN/P7_7	HSW_N_INT	I	O	Sii9589 1, 2 interrupt
35	UD0A/UD1A/IIO1_3/N_RTS8/N_CTS8/TXD5/SDA5/SRXD5/TA3OUT/P7_6	FHDMI_SDA	I/O	O	HDMI switcher 100k I2C data
36	IIO1_2/RXD8/W/TA2IN/P7_5	DAU_N_INT	I	O	Interrupt from DIR1, DIR2 and DSP
37	IIO1_1/CLK8/W/TA2OUT/P7_4	-	O	O	No used
38	P17_7	ISEL_RA	I	I	Input selector A
39	P17_6	ISEL_RB	I	I	Input selector B
40	P17_5	VOL_RA	I	I	Volume A
41	P17_4	VOL_RB	I	I	Volume B
42	IIO1_0/TXD8/N_SS2/N_RTS2/N_CTS2/V/TA1IN/P7_3	HRX_N_INT	I	O	HDMI RX (ADV7619) interrupt
43	CLK2/V/TA1OUT/P7_2	R32C_N_INT	O	O	Interrupt of R32C to Blackfin
		NCPU_SPI_REQ	I	O	BridgeCO request
44	MSCL/IEIN/ISRXD2/OUTC2_2/IIO1_7/STXD2/SCL2/RXD2/TA0IN/TB5IN/P7_1	DV_SCL	O	O	D-VIDEO 400k I2C clock
45	TA0OUT/TXD2/SDA2/SRXD2/IIO1_6/OUTC2_0/ISTXD2/IEOUT/MSDA/P7_0	DV_SDA	I/O	O	D-VIDEO 400k I2C data
46	TXD1/SDA1/SRXD1/P6_7	232C_DBG_MOSI	O	O	RS-232C transmission data / Debug / E8a
47	P14_7	DSP_PON	O	O	DSP power supply
48	RXD1/SCL1/STXD1/P6_6	232C_DBG_MISO	I	O	RS-232C reception data / Debug / E8a
49	P11_7	DAC_N_CS	O	O	DAC chip select (SW of V3071, FP DAC is D-FF)
50	CLK1/P6_5	DBG_SCK	I	O	E8a

Pin No.	Port Name	Function Name	I/O		Detail of Function
			Related Power Supply ON	OFF	
51	N_CTS1/N_RTS1/N_SS1/OUTC2_1/ISCLK2/P6_4	DBG_BUSY	O	O	E8a
52	TXD0/SDA0/SRXD0/P6_3	DSP_MOSI	O	O	DSP/DIR/DAC transmission data
53	TB2IN/RXD0/SCL0/STXD0/P6_2	DSP_MISO	I	I	DSP/DIR/DAC reception data
54	TB1IN/CLK0/P6_1	DSP_SCK	O	O	DSP/DIR/DAC communication clock
55	TB0IN/N_CTS0/N_RTS0/N_SS0/P6_0	NCPU_N_INT	I	O	Network microprocessor interrupt
		NCPU_SPI_RDY	I	O	BridgeCO data ready
56	P19_5	–	I	I	No used (+3.3DSP is applied, input port setting)
57	D31/OUTC2_7/P13_7	DSP1_N_RST	O	O	DSP1 reset
58	D30/OUTC2_1/ISCLK2/P13_6	Space			
59	D29/OUTC2_2/ISRXD2/IEIN/P13_5	Space			
60	D28/OUTC2_0/ISTXD2/IEOUT/P13_4	Space			
61	P19_4	EEP_N_CS	O	O	EEPROM chip select
62	RDY/CS3/N_CTS7/N_RTS7/P5_7	FPGA_N_CS	B	O	External bus FPGA chip select
63	ALE/CS2/RXD7/P5_6	DFF2_N_CS	B	O	External bus DFF2 chip select
64	HOLD/CLK7/P5_5	DBG_EPM	I	I	E8a
65	HLDA/CS1/TXD7/P5_4	DFF1_N_CS	B	O	External bus DFF1 chip select
66	D27/OUTC2_3/P13_3	–	O	O	No used
67	VSS	VSS			---
68	D26/OUTC2_6/P13_2	DSP1_N_SPIRDY	I	O	DSP1 SPI ready
69	VCC	VCC			---
70	D25/OUTC2_5/P13_1	–	O	O	No used
71	D24/OUTC2_4/P13_0	DSP1_N_CS	O	O	DSP1 chip select
72	CLKOUT/BCLK/P5_3	NC(BCLK)	B	O	External bus
73	RD/P5_2	MCBUS_N_RD	B	O	External bus
74	WR1/BC1/P5_1	NC(BC1)	B	O	External bus
75	WR0/WR/P5_0	MCBUS_N_WR	B	I	External bus
		DBG_N_CE	I	I	E8a
76	D23/P12_7	MT_DA	O	O	Mute Digital Audio
77	D22/P12_6	DIR1_N_CS	O	O	DIR1 chip select
78	D21/P12_5	DIR_N_RST	O	O	DIR reset
79	P19_3	–	O	O	No used
80	P17_3	HPA_PU	O	O	HDMI RX HPA_B terminal pull-up presence control
		–	O	O	No used
81	P17_2	HSW_N_CS	O	O	HDMI SW chip select / L=SW1, H=SW2
82	P17_1	NCPU_PON	O	O	NET / USB power supply
83	P17_0	NCPU_VBUSDRV	I	O	USB VBUS drive
84	P19_2	USB_VBUS_PON	O	O	USB VBUS power supply control
85	CS0/A23/TXD6/SDA6/SRXD6/P4_7	FLASH_N_CS	O	O	External bus Flash ROM chip select
86	CS1/A22/RXD6/SCL6/STXD6/P4_6	A[22]	B	O	External bus
87	CS2/A21/CLK6/P4_5	A[21]	B	O	External bus
88	CS3/A20/N_CTS6/N_RTS6/N_SS6/P4_4	A[20]	B	O	External bus
89	A19/TXD3/SDA3/SRXD3/OUTC2_0/ISTXD2/IEOUT/P4_3	A[19]	B	O	External bus
90	P11_6	–	O	O	No used
91	A18/RXD3/SCL3/STXD3/ISRXD2/IEIN/P4_2	A[18]	B	O	External bus
92	P11_5	DFF_FROM_N_RST	O	O	Reset of DFF
93	A17/CLK3/P4_1	A[17]	B	O	External bus
94	A16/N_CTS3/N_RTS3/N_SS3/P4_0	A[16]	B	O	External bus
95	P16_7/TXD10	EX_MOSI	O	O	FL / EEPROM / Expansion IO transmission data
96	P16_6/RXD10	EEP_MISO	I	O	EEPROM reception data
97	P16_5/CLK10	EX_SCK	O	O	FL / EEPROM / Expansion IO communication clock
98	P16_4/N_CTS10/N_RTS10	BF_MT	I	O	Mute signal from Blackfin (for NCPU_N_INT distinction)
		NCPU_AMUTE	I	O	Mute signal from BridgeCO
99	A15/[A15/D15]/TA4IN/U/P3_7	A[15]	B	O	External bus
100	A14/[A14/D14]/TA4OUT/U/P3_6	A[14]	B	O	External bus
101	A13/[A13/D13]/TA2IN/W/P3_5	A[13]	B	O	External bus
102	A12/[A12/D12]/TA2OUT/W/P3_4	A[12]	B	O	External bus

Pin No.	Port Name	Function Name	I/O		Detail of Function
			Related Power Supply		
			ON	OFF	
103	P16_3/TXD9	NCPU_PIC_MISO	O	O	Network microprocessor SPI transmission data
		NCPU_SPI_MOSI	O	O	Data (Master out slave in)
104	P16_2/RXD9	NCPU_PIC_MOSI	I	O	Network microprocessor SPI reception data
		NCPU_SPI_MISO	I	O	Data (Master in slave out)
105	P16_1/CLK9	NCPU_PIC_SCK	I	O	Network microprocessor SPI communication clock
		NCPU_SPI_SCK	O	O	Clock (Master out slave in)
106	P16_0/N_CTS9/N_RTS9	NCPU_N_RST	O	O	Network microprocessor reset
107	A11/[A11/D11]/TA1IN/V/P3_3	A[11]	B	O	External bus
108	A10/[A10/D10]/TA1OUT/V/P3_2	A[10]	B	O	External bus
109	A9/[A9/D9]/TA3OUT/UD0B/UD1B/P3_1	A[9]	B	O	External bus
110	D20/P12_4	AD_SEL_A	O	O	AD select A
111	D19/N_CTS6/N_RTS6/N_SS6/P12_3	AD_SEL_B	O	O	AD select B
112	D18/RXD6/SCL6/STXD6/P12_2	AD_SEL_C	O	O	AD select C
113	D17/CLK6/P12_1	FPGA_SCK	O	O	FPGA clock (at Boot)
114	D16/TXD6/SDA6/SRXD6/P12_0	FPGA_MOSI	O	O	FPGA transmission data (at Boot)
115	VCC	VCC			---
116	A8/[A8/D8]/TA0OUT/UD0A/UD1A/P3_0	A[8]	B	O	External bus
117	VSS	VSS			---
118	A7/[A7/D7]/AN2_7/P2_7/TXD10	A[7]	B	O	External bus
119	A6/[A6/D6]/AN2_6/P2_6/RXD10	A[6]	B	O	External bus
120	A5/[A5/D5]/AN2_5/P2_5/CLK10	A[5]	B	O	External bus
121	A4/[A4/D4]/AN2_4/P2_4/N_CTS10/N_RTS10	A[4]	B	O	External bus
122	A3/[A3/D3]/AN2_3/P2_3/TXD9	A[3]	B	O	External bus
123	A2/[A2/D2]/AN2_2/P2_2/RXD9	A[2]	B	O	External bus
124	A1/[A1/D1]/BC2/[BC2/D1]/AN2_1/P2_1/CLK9	A[1]	B	O	External bus
125	A0/[A0/D0]/BC0/[BC0/D0]/AN2_0/P2_0/N_CTS9/N_RTS9	A[0]	B	O	External bus
126	D15/N_INT5/IIO0_7/IIO1_7/P1_7	D[15]	B	I	External bus
127	D14/N_INT4/IIO0_6/IIO1_6/P1_6	D[14]	B	I	External bus
128	D13/N_INT3/IIO0_5/IIO1_5/P1_5	D[13]	B	I	External bus
129	D12/IIO0_4/IIO1_4/P1_4	D[12]	B	I	External bus
130	D11/IIO0_3/IIO1_3/P1_3	D[11]	B	I	External bus
131	D10/IIO0_2/IIO1_2/P1_2	D[10]	B	I	External bus
132	D9/IIO0_1/IIO1_1/P1_1	D[9]	B	I	External bus
133	IIO0_0/IIO1_0/D8/P1_0	D[8]	B	I	External bus
134	AN0_7/D7/P0_7	D[7]	B	I	External bus
135	AN0_6/D6/P0_6	D[6]	B	I	External bus
136	AN0_5/D5/P0_5	D[5]	B	I	External bus
137	AN0_4/D4/P0_4	D[4]	B	I	External bus
138	P19_1	FPGA_N_CFG	O	O	FPGA nCONF
139	WR3/BC3/P11_4	FPGA_N_STA	I	I	FPGA nSTATUS
140	P19_0	FPGA_CDONE	I	I	FPGA CONF DONE
141	IIO1_3/N_RTS8/N_CTS8/WR2/CS3/P11_3	DIAG_CHECK	O	O	Diag inspection result output / OK=High, NG=Low
142	IIO1_2/RXD8/CS2/P11_2	NCPU_MISO	I	O	Network microprocessor UART reception data
		NDAC_N_MT	O	O	Net zone DAC mute
143	IIO1_1/CLK8/CS1/P11_1	SPRY_Z2&FP	O	O	SP relay Zone2 and Front Presence
144	IIO1_0/TXD8/CS0/P11_0	NCPU_MOSI	O	O	Network microprocessor UART transmission data
		NCPU_SPI_N_CS	O	O	Network microprocessor SPI chip select
145	P18_7	HPRY	O	O	HP relay
146	P18_6	MT_N_Z2	O	O	Mute Zone2 (Line out)
147	P18_5	SPRY_SB&BA	O	O	SP relay surround back and Bi-Amp
148	P18_4	MT_N_5CH	O	O	Mute 5ch (L, C, R, SRL, SRR Preout/Main amplifier input)
149	P18_3	MT_N_SW	O	O	Mute Subwoofer (Preout)
150	P18_2	MT_N_SB	O	O	Mute SB/BA/Z2/FP (Preout/Main amplifier input)
151	AN0_3/D3/P0_3	D[3]	B	I	External bus
152	AN0_2/D2/P0_2	D[2]	B	I	External bus
153	AN0_1/D1/P0_1	D[1]	B	I	External bus
154	AN0_0/D0/P0_0	D[0]	B	I	External bus

RX-V673/HTR-6065/
RX-A720

Pin No.	Port Name	Function Name	I/O		Detail of Function
			Related Power Supply ON	OFF	
155	IIO0_7/N_RTS6/N_CTS6/N_SS6/AN15_7/P15_7	SVID_DET	I	I	S-video detect
156	IIO0_6/CLK6/AN15_6/P15_6	HP_N_DET	I	O	Headphone detection
157	IIO0_5/RXD6/SCL6/STXD6/AN15_5/P15_5	EX1_N_CS	O	O	Expansion IO 1 chip select
158	IIO0_4/TXD6/SDA6/SRXD6/AN15_4/P15_4	EX1_N_RST	O	O	Expansion IO 1 reset
159	IIO0_3/N_RTS7/N_CTS7/AN15_3/P15_3	DSP1_N_INT	I	O	Interrupt from DSP1 (for DAU_N_INT distinction)
160	IIO0_2/RXD7/AN15_2/P15_2	DIR1_N_INT	I	O	Interrupt from DIR1 (for DAU_N_INT distinction)
161	IIO0_1/CLK7/AN15_1/P15_1	IR_OUT	O	O	Remote control cord output
162	VSS	VSS			---
163	IIO0_0/TXD7/AN15_0/P15_0	HRX1_N_MT	I	O	
164	VCC	VCC			---
165	KI3/AN_7/P10_7	+3.3S_PON	O	O	+3.3S power supply
166	KI2/AN_6/P10_6	AD2_COM	I	O	AD selector 2 COM input
167	KI1/AN_5/P10_5	AD1_COM	I	O	AD selector 1 COM input
168	KI0/AN_4/P10_4	HSW_2CHIP	I	I	HDMI SW number distinction
169	AN_3/P10_3	-	O	O	No used
170	AN_2/P10_2	KY_AD2	I	O	Key 2
171	AN_1/P10_1	KY_AD1	I	O	Key 1
172	AVSS	AVSS			---
173	AN_0/P10_0	TUN_N_RST	O	O	Tuner reset
174	VREF	VREF			---
175	AVCC	AVCC			---
176	STXD4/SCL4/RXD4/ADTRG/P9_7	TUN_SCL	O	O	Tuner I2C clock

Key detection for A/D port
Key input (A/D) pull-up resistance 10 k-ohms

	0 Ω	+ 1.0 kΩ	+ 1.0 kΩ	+ 1.5 kΩ	+ 1.5 kΩ	+ 2.2 kΩ	+ 3.3 kΩ	+ 4.7 kΩ	22 kΩ	33 kΩ
Detected voltage value at 171 pin	0 – 0.15 V	0.15 – 0.42 V	0.43 – 0.70 V	0.71 – 0.97 V	0.98 – 1.24 V	1.25 – 1.53 V	1.54 – 1.84 V	1.85 – 2.22 V	2.23 – 2.62 V	2.63 – 3.04 V
A/D value (3.3 V=255)	0 – 11	12 – 32	33 – 54	55 – 75	76 – 96	97 – 119	120 – 142	143 – 163	182 – 197	198 – 209
KEY1	RADIO (SCENE4)	NET (SCENE3)	TV (SCENE2)	BD/DVD (SCENE1)	ZONE CONTROL	ZONE2	INPUT > (RX-V673/HTR-6065 models)	INPUT <	MAIN ZONE Ⓞ (power)	TONE CONTROL

	0 Ω	+ 1.0 kΩ	+ 1.0 kΩ	+ 1.5 kΩ	+ 1.8 kΩ	+ 2.2 kΩ	+ 3.3 kΩ	+ 4.7 kΩ	+ 6.8 kΩ	+ 10 kΩ	+ 22 kΩ	+ 68 kΩ
Detected voltage value at 170 pin	0 – 0.15 V	0.16 – 0.42 V	0.43 – 0.70 V	0.71 – 0.99 V	1.00 – 1.27 V	1.28 – 1.56 V	1.57 – 1.86 V	1.87 – 2.14 V	2.15 – 2.39 V	2.40 – 2.65 V	2.66 – 2.91 V	2.92 – 3.17 V
A/D value (3.3 V=255)	0 – 11	12 – 32	33 – 54	55 – 77	78 – 99	100 – 121	122 – 144	145 – 166	167 – 186	187 – 205	206 – 226	227 – 246
KEY2	PURE DIRECT	TUNING >>	TUNING <<	AM	FM	PRESET >	PRESET <	MEMORY	INFO	STRAIGHT	PROGRAM >	PROGRAM <

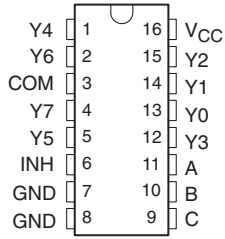
Destination detection for A/D port
Pull-up resistance 10 k-ohms

R753 on DIGITAL P.C.B.	0 Ω	1.2 kΩ	2.7 kΩ	4.7 kΩ	6.8 kΩ	10 kΩ	15 kΩ	47 kΩ	100 kΩ
Detected voltage value at 111 pin	0 – 0.16 V	0.17 – 0.51 V	0.52 – 0.87 V	0.88 – 1.92 V	1.93 – 1.49 V	1.50 – 1.81 V	1.82 – 2.35 V	2.36 – 2.86 V	2.87 – 3.15 V
A/D value (3.3 V=255)	0 – 12	13 – 39	40 – 67	68 – 92	93 – 115	116 – 140	141 – 169	199 – 221	222 – 244
Destination	J	U	C	R, S	T	K	A	B, G, F	L, H

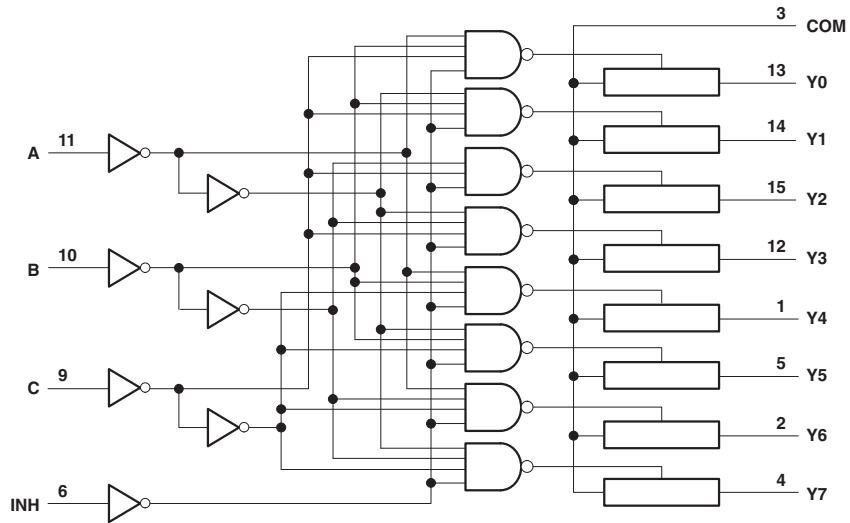
RX-V673/HTR-6065/RX-A720

• **Microprocessor extended port**

IC76, 78: SN74LV4051APWR (DIGITAL P.C.B.)
8-channel analog multiplexers/demultiplexers



INPUTS	ON CHANNEL			
	INH	C	B	A
L	L	L	L	Y0
L	L	L	H	Y1
L	L	H	L	Y2
L	L	H	H	Y3
L	H	L	L	Y4
L	H	L	H	Y5
L	H	H	L	Y6
L	H	H	H	Y7
H	X	X	X	None



IC76

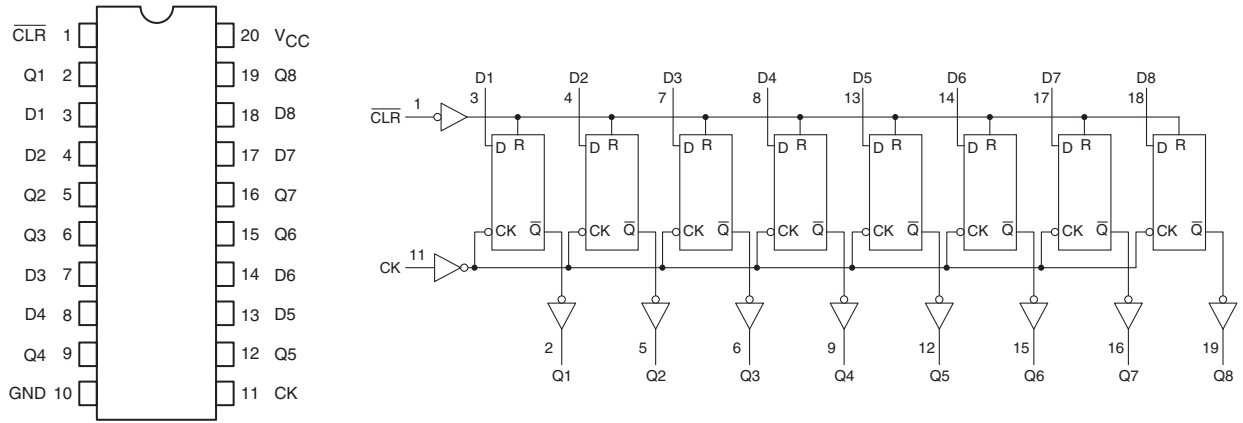
Pin No.	Port Name	Function Name	I/O		Detail of Function
			Related Power Supply		
			ON	OFF	
1	Y4	THM2	I	I	Temperature detection 2
2	Y6	THM3	I	I	Temperature detection 3
4	Y7	THM4	I	I	Temperature detection 4
5	Y5	DEST	I	I	Destination distinction
12	Y3	MODEL	I	I	Model distinction
13	Y0	Space	I	I	–
14	Y1	USB_VBUS_PRT	I	I	Front USB overcurrent detection
15	Y2	Space	I	I	–

IC78

Pin No.	Port Name	Function Name	I/O		Detail of Function
			Related Power Supply		
			ON	OFF	
AD selector 1 (AD1_COM signal is input into AN_5 of R32C)					
1	Y4	PS2_PRT	I	I	Power supply protection 2
2	Y6	PS1_PRT	I	I	Power supply protection 1
4	Y7	AMP_OLV	I	I	Amplifier output level detection
5	Y5	DC_PRT	I	I	DC protection
12	Y3	THM1	I	I	Temperature detection 1
13	Y0	PS3_PRT	I	I	Power supply protection 3
14	Y1	L3_DET	I	I	D terminal L3 detection
15	Y2	MODE	I	I	Special mode distinction

RX-V673/HTR-6065/RX-A720

IC79, 81: TC74VHC273FT (EL,K) (DIGITAL P.C.B.)
Octal D-type flip-flop with clear



Inputs			Output	Function
CLR	D	CK	Q	
L	X	X	L	Clear
H	L	↑	L	-
H	H	↑	H	-
H	X	↓	Q _n	No Change

IC79

Pin No.	R32C external bus data	Function Name	I/O		Detail of Function
			Related Power Supply ON	Related Power Supply OFF	
2	D[8]	HDMI_PON	O	O	HDMI power supply (Necessary for DSP, A-VIDEO drive)
5	D[9]	HRX1_N_RST	O	O	HDMI receiver reset
6	D[10]	HTX1_N_RST	O	O	HDMI transmitter reset
9	D[11]	HTX2_N_RST	O	O	HDMI transmitter 2 reset
12	D[12]	CEC_EN	O	O	CEC function ON/OFF of HDMI TX1
15	D[13]	HTX_AUSEL	O	O	HDMI transmitter sound select
16	D[14]	HAU_N_OE	O	O	HDMI to DIR sound output enable
19	D[15]	ZTX_AUSEL2	O	O	Switching of the HDMI sound and except HDMI

IC81 (D-FF11)

Pin No.	R32C external bus data	Function Name	I/O		Detail of Function
			Related Power Supply ON	Related Power Supply OFF	
2	D[0]	HSW_N_RST	O	O	HDMI switcher reset
5	D[1]	VDEC_N_RST	O	O	Video decoder reset
6	D[2]	WIFI_PON	O	O	WiFi adaptor power supply control (spare)
9	D[3]	HRX_VSEL	O	O	Video decoder to scaler line enable
12	D[4]	F_HEQ_CE	O	O	Front HDMI + 3.3HF power supply: Interlocking movement with HDMI_PON
15	D[5]	VID_PON	O	O	Video power supply
16	D[6]	+3.3D_PON	O	O	OR of HDMI_PON, DSP_PON, NET_USB_PON
19	D[7]	PRY	O	O	Power relay

PIN CONNECTION DIAGRAMS

ICs

<p>ADV7180BSTZ</p>	<p>ADV7619KSVZ</p>	<p>BD7542F-E2</p> <p>BD9328EFJ BD9329AEFJ-E2</p>	<p>D80YK113CPTP400</p>	<p>DM860A-AQE</p>		
<p>EP4CE15F23C6N</p>		<p>FHP3350IM14X</p>	<p>KIA7805API</p>	<p>KIA7912PI</p>	<p>LM19CIZ/LF</p>	<p>LM833MX</p>
<p>LAN8700C-AEZG-TR</p>		<p>M12L2561616A-5TG2A M12L64164A-5TG</p>	<p>M66003-0131FP-R</p>	<p>MF1341S2162</p>		
<p>MX29GL256FLT2I-90Q</p>	<p>MX29LV640EBTI-70G</p>	<p>NJM2388F05</p> <p>1. VIN 2. VOUT 3. GND 4. ON/OFF CONTROL</p>	<p>NJM2505A</p>	<p>NJM2581M</p>		
<p>NJM4565M (TE1)</p>	<p>NJM7812FA</p>	<p>NT5SV8M16HS-6K</p>	<p>PCM1681PWPR</p>	<p>PCM5101PWR</p>		
<p>PCM9211PTR</p>	<p>R2A15220FP</p>	<p>R5F213G1DN400SP#W4</p>	<p>R5F6416MADFE</p>			

RX-V673/HTR-6065/
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• ICs

R1163N501B-TR-FE R1172N301D-TR-F	R1EX25512ATA00A	RP130Q121D-TR-F RP130Q181D-TR-F RP130Q251D-TR-FE RP130Q331D-TR-F RP130Q501D-TR-F	SiI9136CTU-3 SiI9589-3	SN74LV4051APWR	
R1172H121D-T1-F R1172H501D-T1-F RP132H331D-T1-FE				SN74LVC1G17DCKR	
STR2A153	TC74HC4051AFEL	TC74HC4053AF	TC74LCX245FT	TC74VHC157FT	TC74VHC273FT (EL,K)
TC74VHCT08AF	TC74VHCU04FT	TC7SH08FU TC7SH32FU TC7SH86FU TC7SH125FU	TC7WH126FU	TC7WZ32FK (TE85L, F)	TL431ACLPR
TMDS261BPAGR	W25Q80BVSSIG				

• Diodes

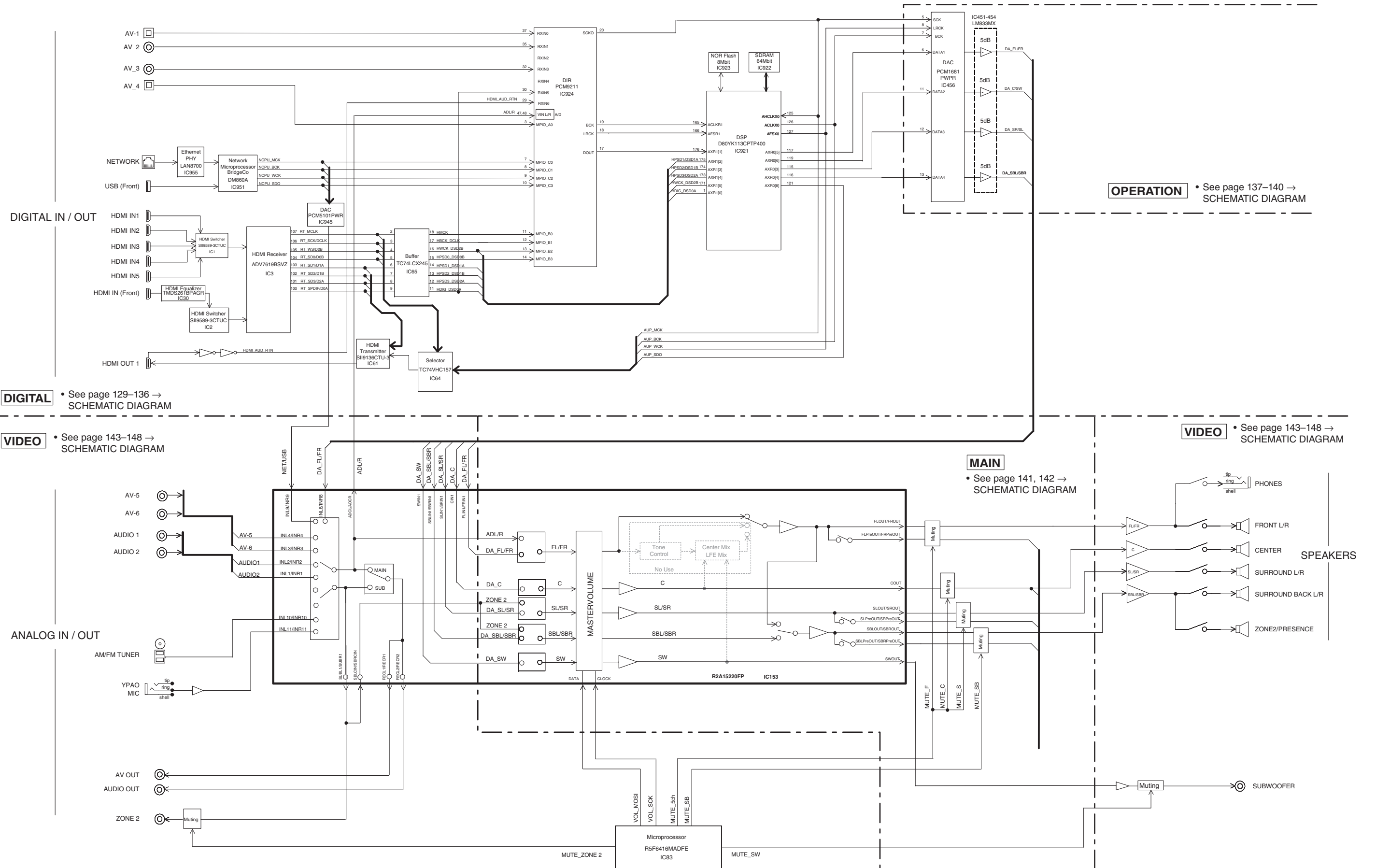
1SS355 1SS355VMTE-17	D6SBN20	DBL155G	MTZJ5.1C MTZJ6.8C MTZJ13B	RB215T-90	RB501V-40 RB521S-30
RCLAMP0584J	RF101L2STE25	RS203M-B-C-J80	RS603M-B-C-J80	SARS05	UDZS12B 12V UDZV4.3B UDZV5.1B UDZV36B

• Transistors

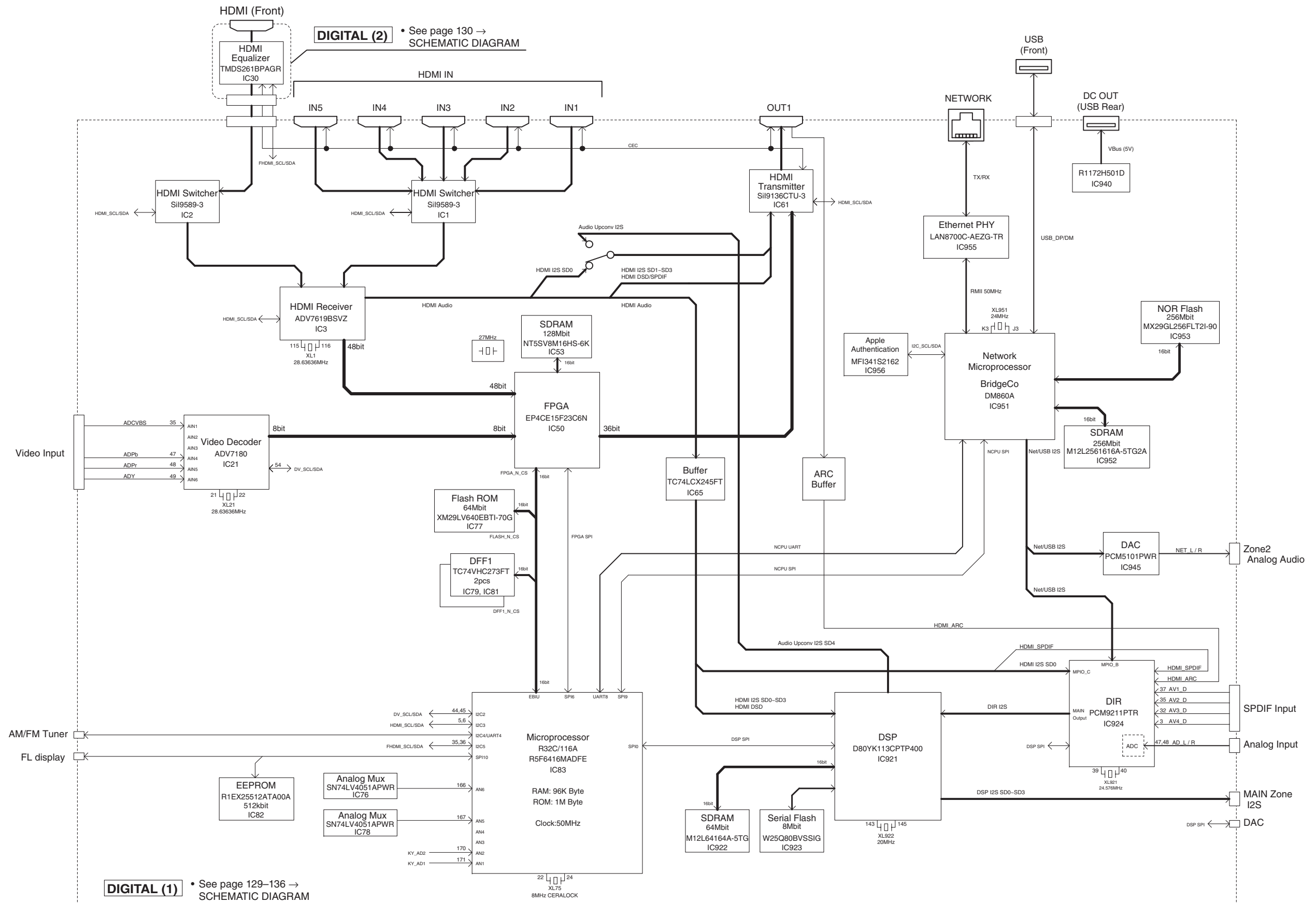
2N5401C-AT/P	2N5551C-AT	2SA1312-GR,BL	2SA1576A 2SA1576UBTLR	2SA1695 O,P,Y 2SC4468 O,P,Y	2SA1708	2SA1770S/T-AN	2SA949 2SC2229
2SC3324-GR,BL 2SC3906K	2SC4081 T106 2SC4081UBTLR	2SC4614S/T-AN	2SC5964-TD-E 2SD2704 K	2SD2705S TP	DTA044EUBTL DTC014EUBTL	DTA114EKA DTC114EKA DTC144EKA	
HN4B01JE	KRA102M-AT/P KRC102M-AT	KTA1046-Y-U/PFY KTA1837-U/P	KTA1504S KTC3875S	MCH6336-TL-E	RAL035P01	μPA672T-T1-A	

BLOCK DIAGRAMS

AUDIO Section Block Diagram

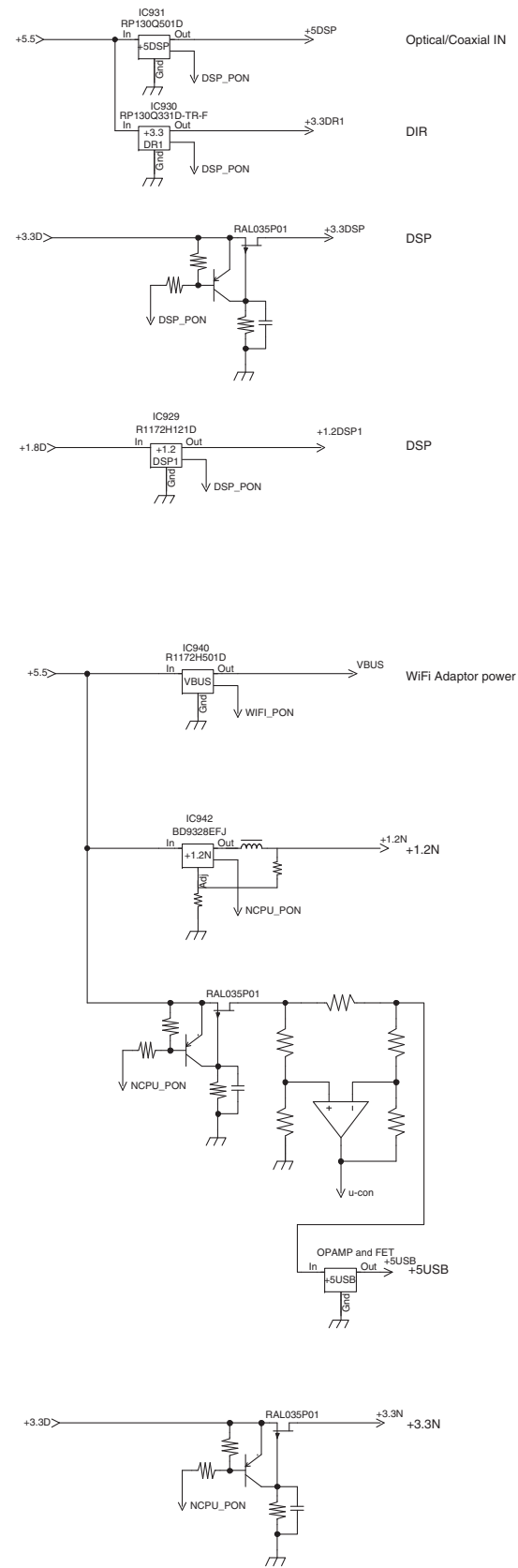
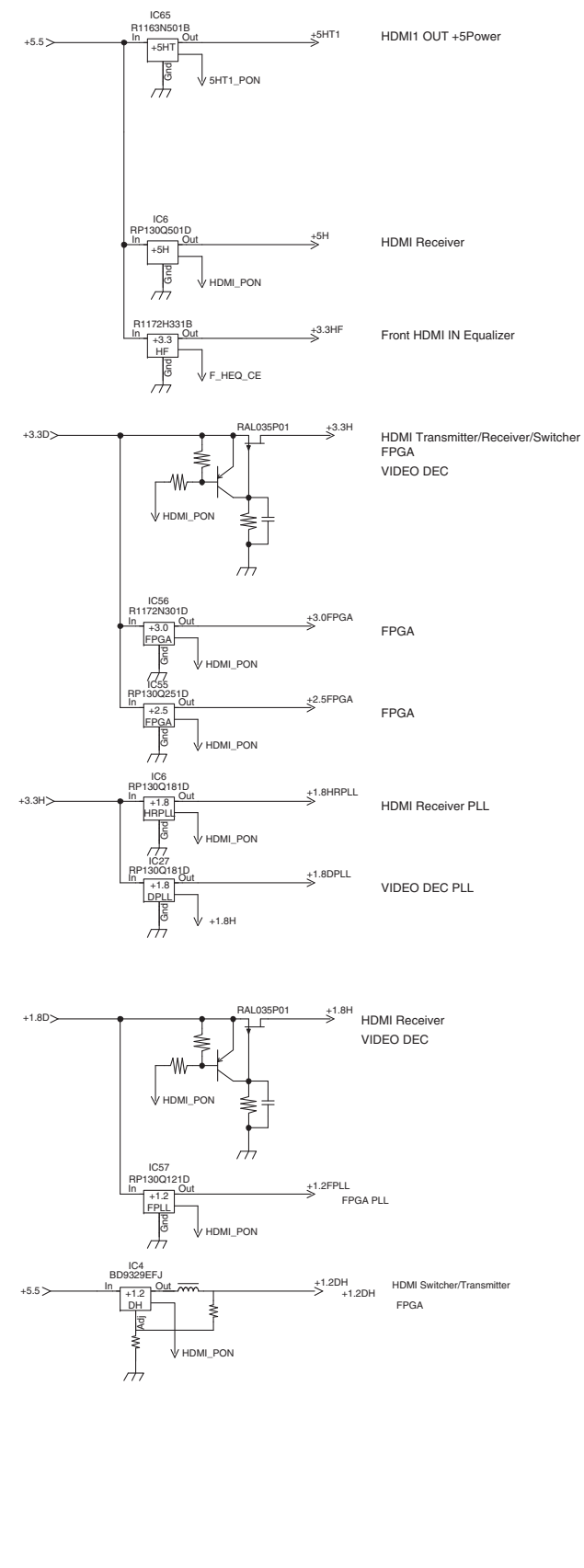
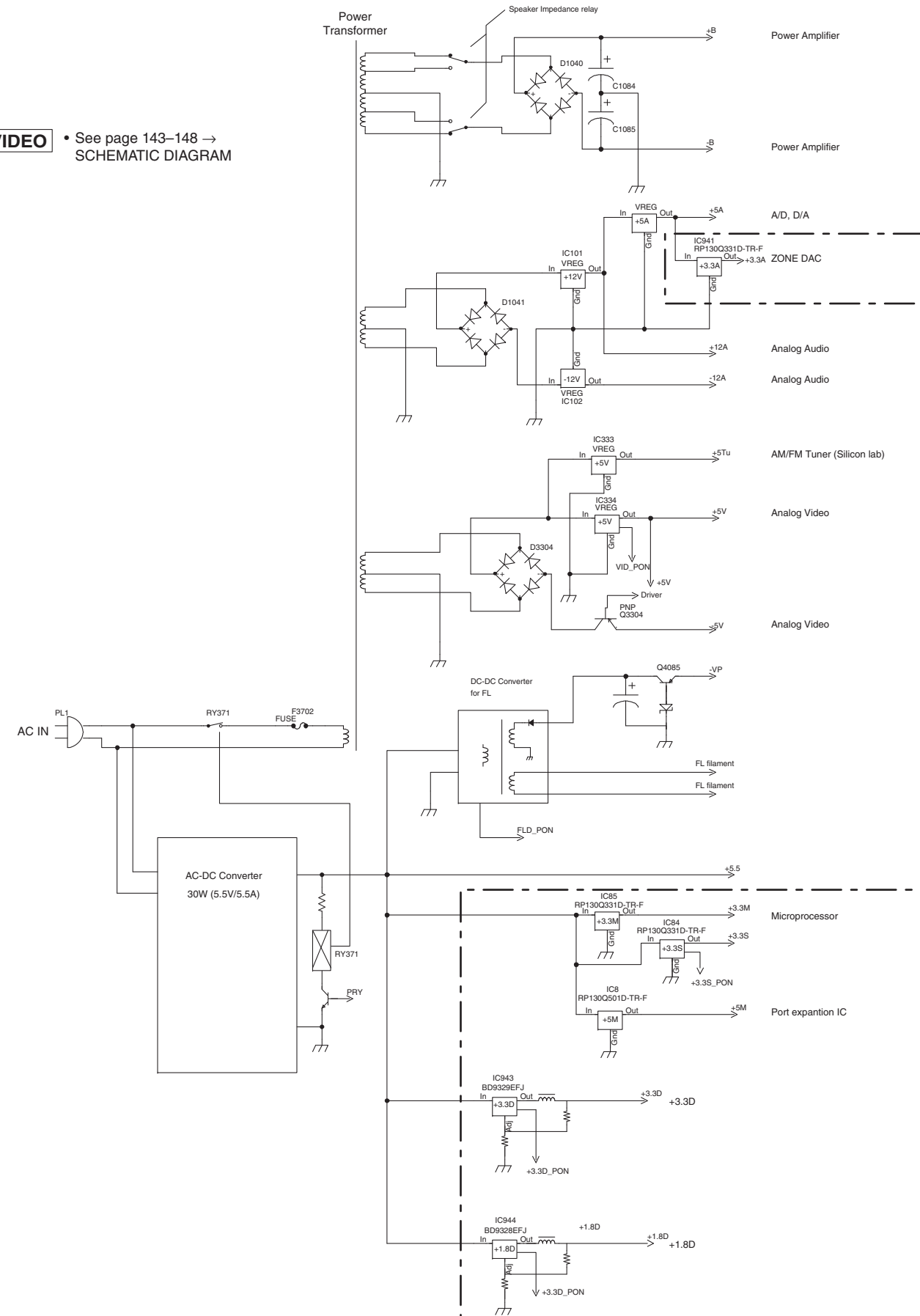


DIGITAL P.C.B. Section Block Diagram



Power Supply Section Block Diagram

VIDEO • See page 143-148 → SCHEMATIC DIAGRAM



DIGITAL • See page 129-136 → SCHEMATIC DIAGRAM

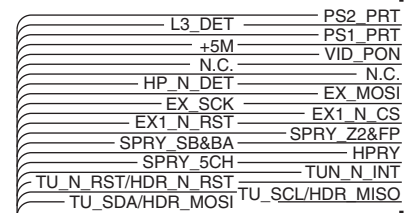
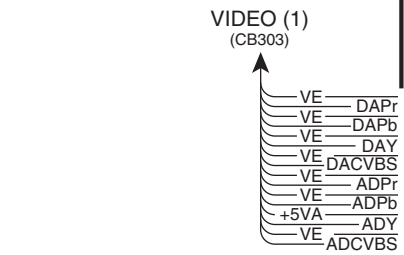
PRINTED CIRCUIT BOARDS

DIGITAL (1) (Side A)

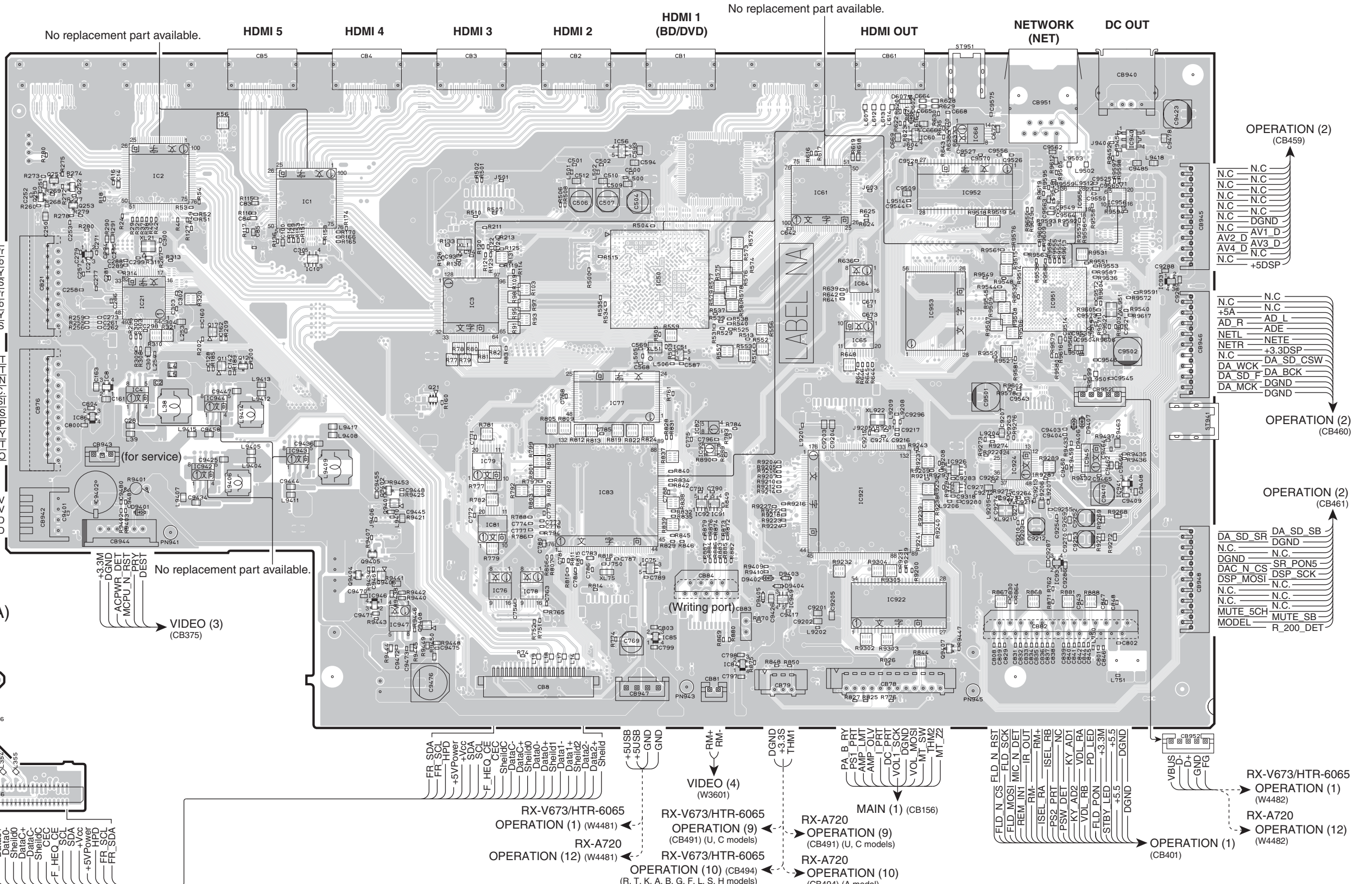
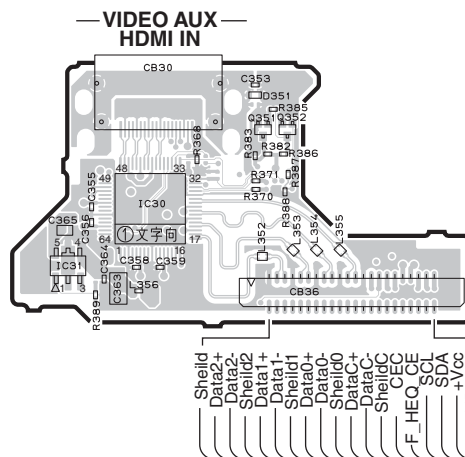
Semiconductor Location

Ref no.	Location	Ref no.	Location
D351	A6	IC1	D3
D602	H2	IC2	C3
D607	H2	IC3	E4
D9401	C5	IC4	C4
D9402	G5	IC8	C4
D9404	G5	IC21	C4
D9405	G5	IC27	C3
D9406	I4	IC30	B6
D9407	I4	IC31	A7

Ref no.	Location	Ref no.	Location	Ref no.	Location	Ref no.	Location	Ref no.	Location	Ref no.	Location	Ref no.	Location	Ref no.	Location	Ref no.	Location	Ref no.	Location
IC50	F3	IC65	G4	IC79	E5	IC86	C4	IC924	H5	IC941	I5	IC947	E6	IC956	I3	Q251	B3	Q9402	E5
IC51	F4	IC66	H3	IC81	E5	IC91	F5	IC926	H5	IC942	C5	IC949	G5	Q11	C4	Q252	C3	Q9404	D5
IC56	F3	IC75	F5	IC82	F4	IC92	F5	IC927	H5	IC943	D5	IC951	I4	Q12	D4	Q253	C3	Q9405	D5
IC60	H3	IC76	E5	IC83	F5	IC93	F5	IC930	I5	IC944	C4	IC952	H3	Q17	C4	Q351	B6	Q9406	D5
IC61	G3	IC77	F4	IC84	G6	IC921	G5	IC931	I4	IC945	I5	IC953	H4	Q21	E4	Q352	B6	Q9407	H6
IC64	G3	IC78	E5	IC85	F6	IC922	H5	IC940	I3	IC946	D5	IC955	I3	Q250	B3	Q9401	E5	Q9408	E6



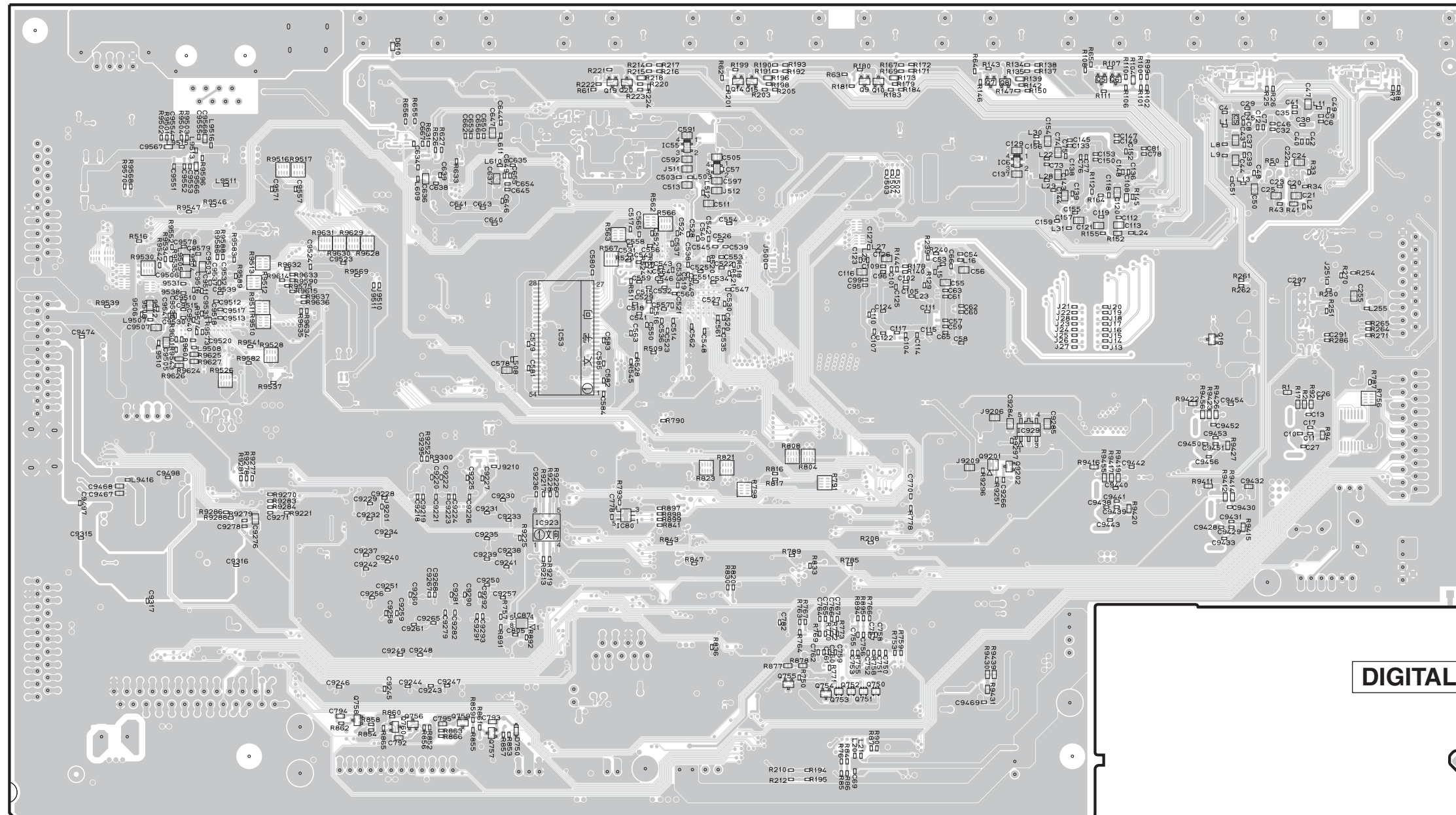
DIGITAL (2) (Side A)



RX-V673/HTR-6065

RX-A720

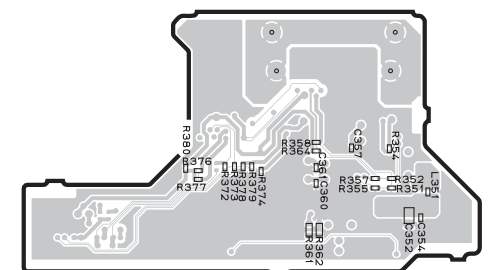
DIGITAL (1) (Side B)



• Semiconductor Location

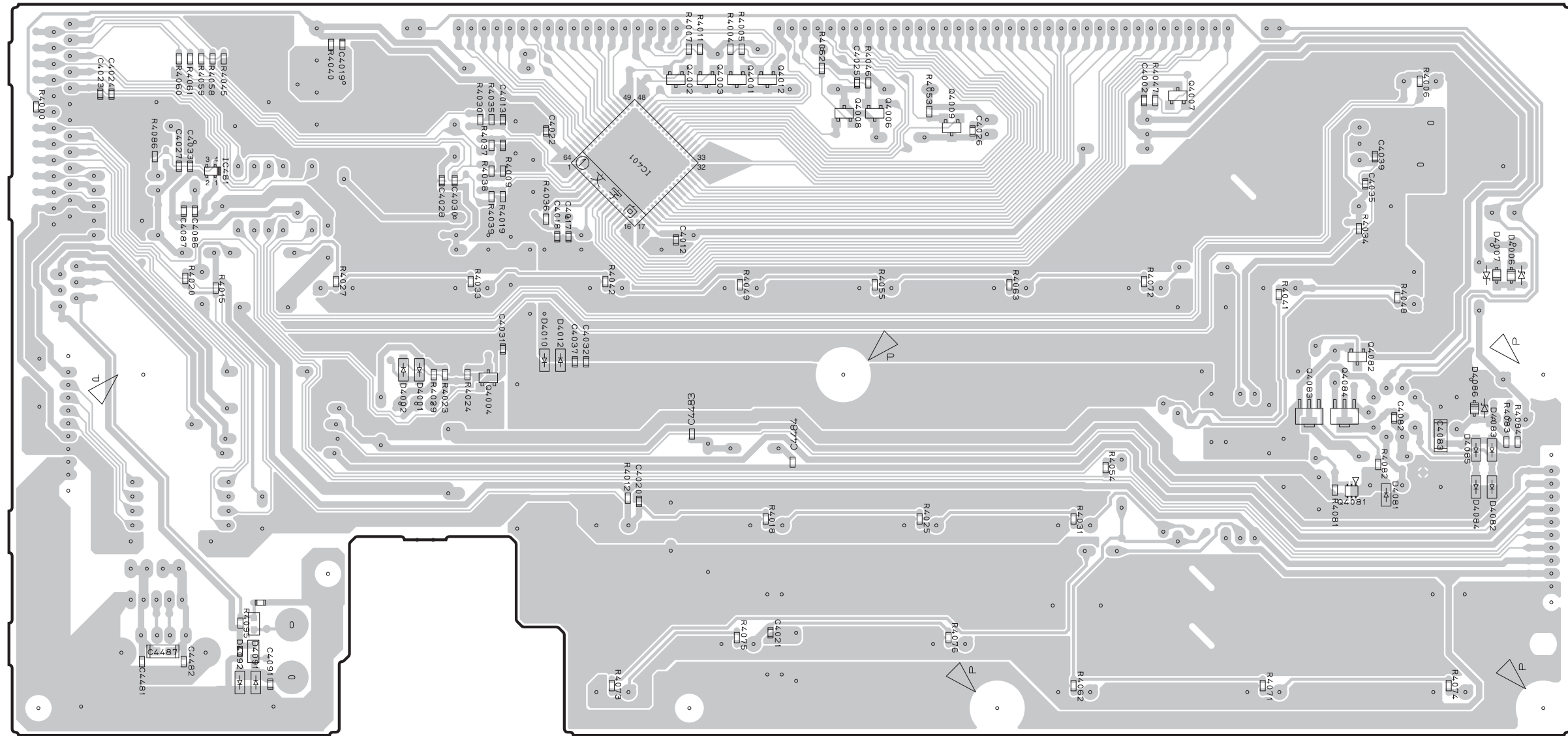
Ref no.	Location	Ref no.	Location
D610	D2	Q15	E3
D750	D6	Q18	H4
IC6	G3	Q19	E3
IC53	D4	Q20	E3
IC55	E3	Q750	F6
IC57	E3	Q751	F6
IC80	E5	Q752	F6
IC87	D5	Q753	F6
IC923	D5	Q754	F6
IC929	G4	Q755	F6
Q5	G3	Q756	D6
Q6	G3	Q757	D6
Q7	G3	Q758	C6
Q8	G3	Q759	D6
Q9	F3	Q760	D6
Q10	F3	Q9201	G4
Q14	E3	Q9202	G4

DIGITAL (2) (Side B)



RX-V673/HTR-6065

OPERATION (1) (Side B)

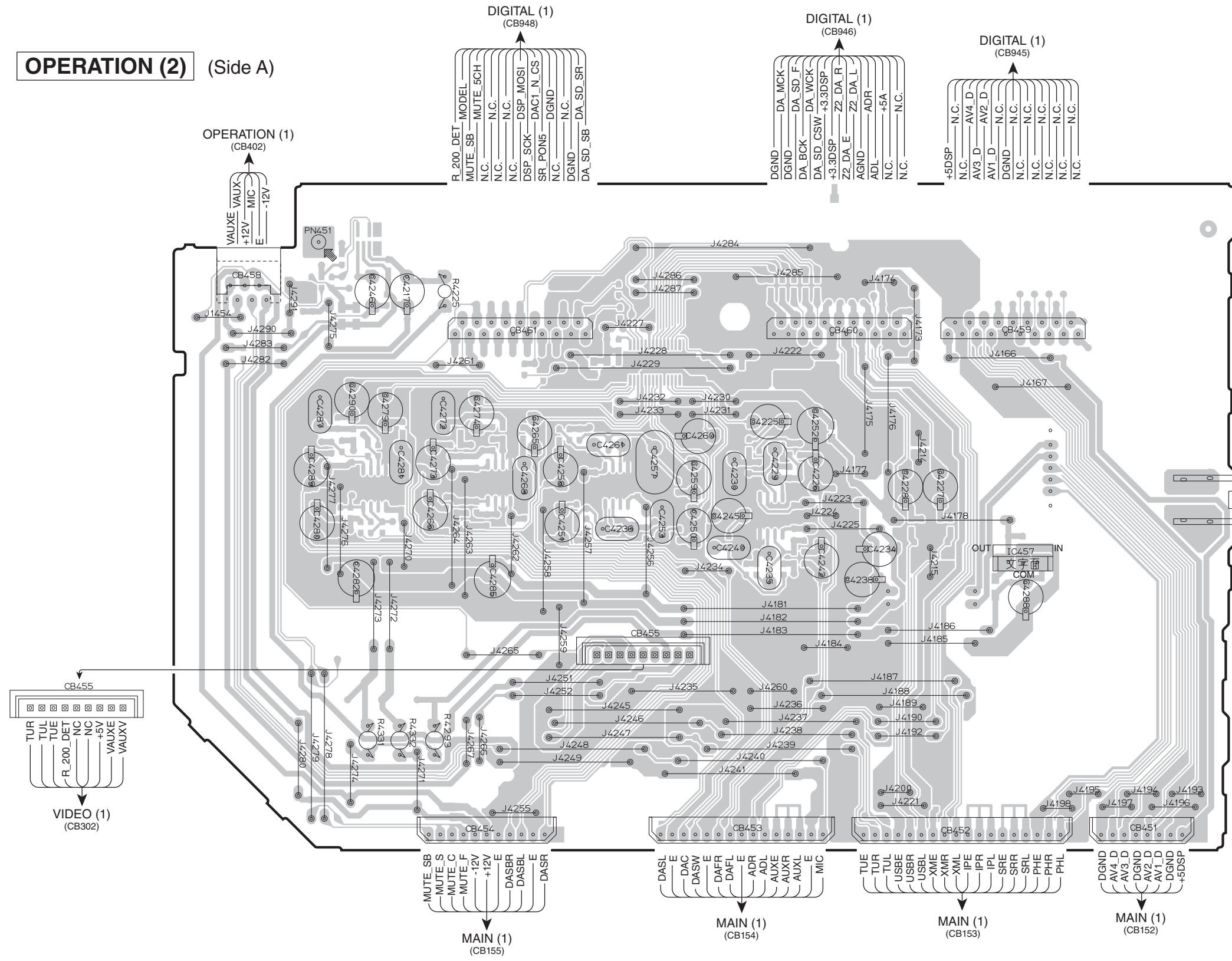


• Semiconductor Location

Ref no.	Location	Ref no.	Location	Ref no.	Location	Ref no.	Location
D4001	C4	D4083	I4	Q4001	E3	Q4012	E3
D4002	C4	D4084	I5	Q4002	E3	Q4081	H5
D4006	I4	D4085	I4	Q4003	E3	Q4082	H4
D4007	I4	D4086	I4	Q4004	D4	Q4083	H4
D4010	D4	D4091	C6	Q4006	F3	Q4084	H4
D4012	D4	D4092	C6	Q4007	G3		
D4081	H5	IC401	E3	Q4008	F3		
D4082	I5	IC481	B3	Q4009	F3		

RX-V673/HTR-6065

OPERATION (2) (Side A)

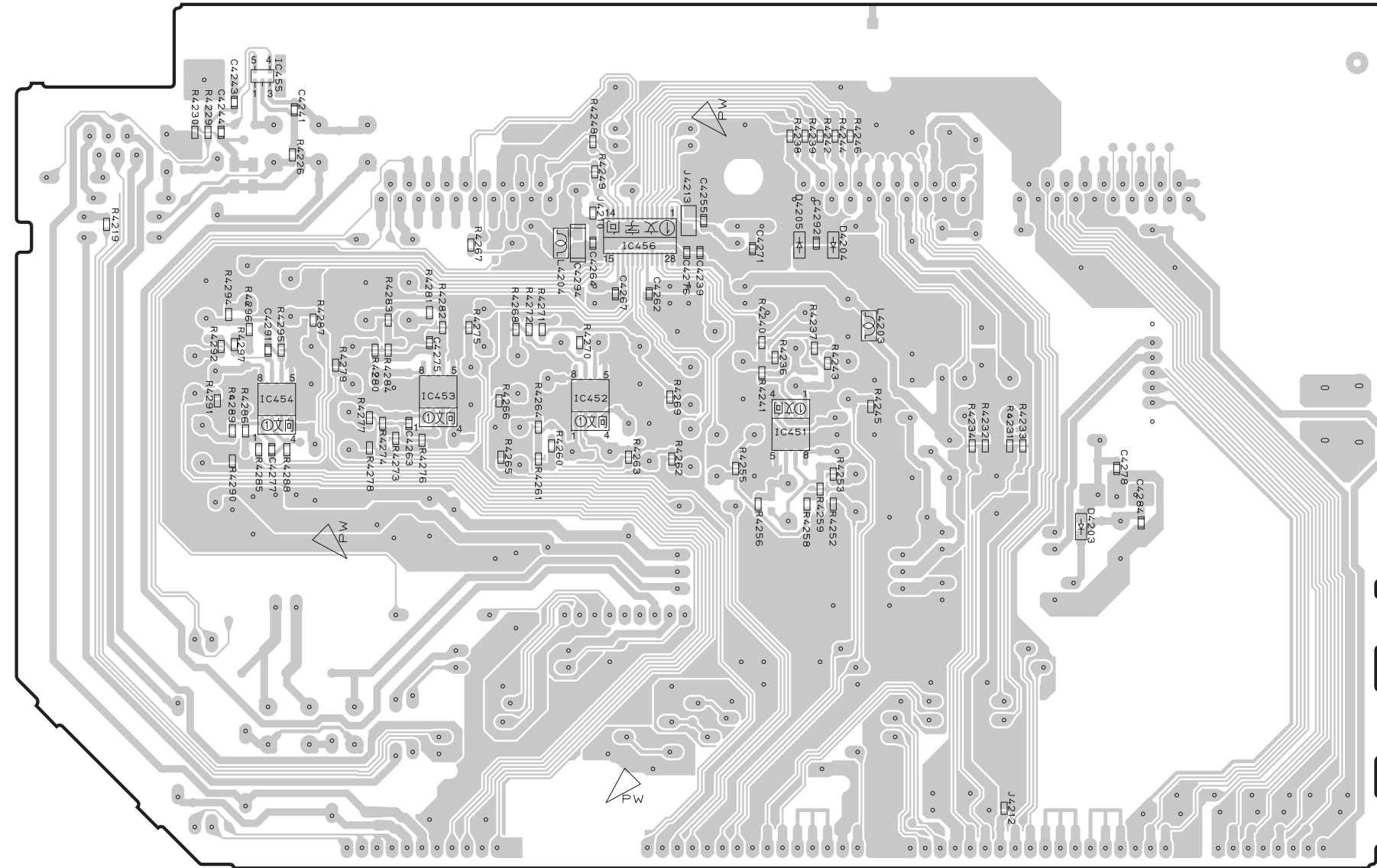


• Semiconductor Location

Ref no.	Location
IC457	G4

RX-V673/HTR-6065

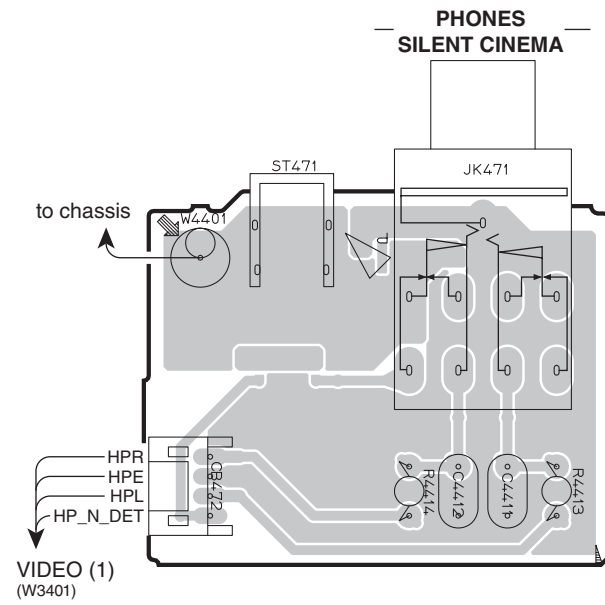
OPERATION (2) (Side B)



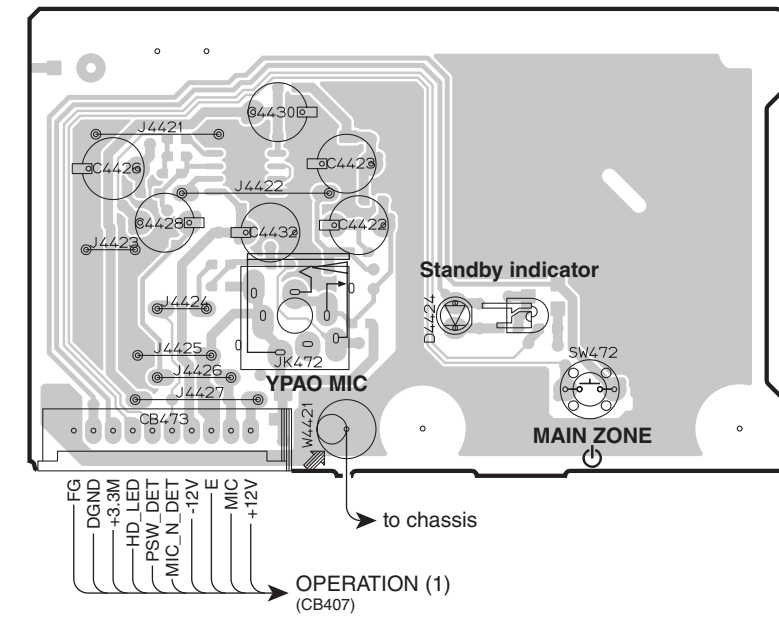
• Semiconductor Location

Ref no.	Location
D4203	G4
D4204	F3
D4205	E3
IC451	E4
IC452	E4
IC453	D4
IC454	C4
IC455	C2
IC456	E3

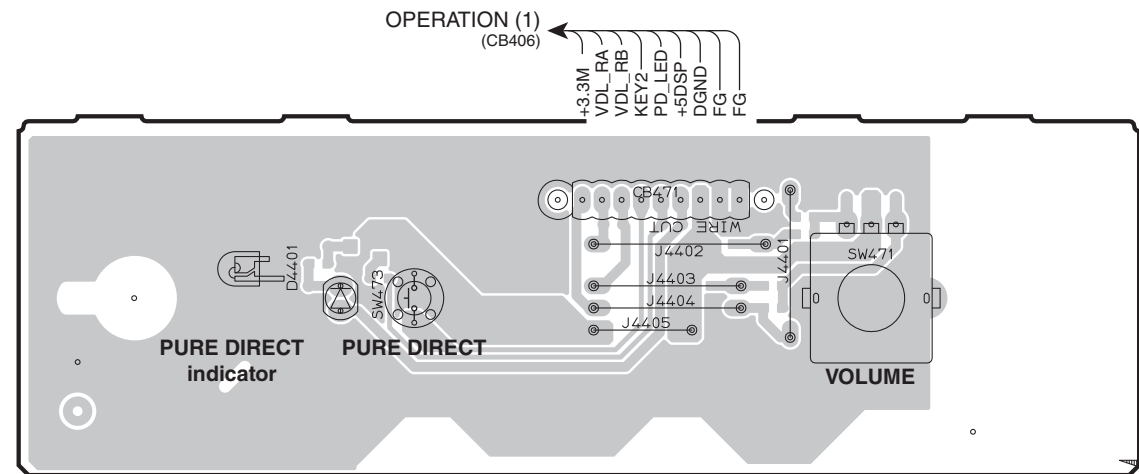
OPERATION (3) (Side A)



OPERATION (4) (Side A)



OPERATION (5) (Side A)



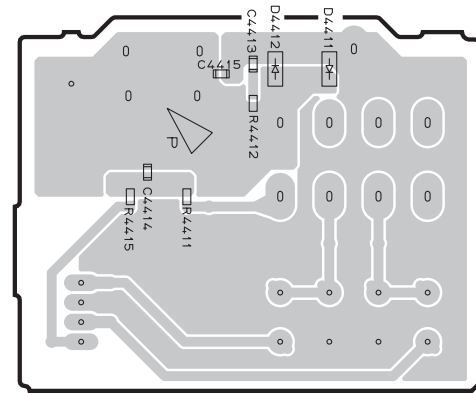
• Semiconductor Location

Ref no.	Location
D4401	C6
D4424	H3

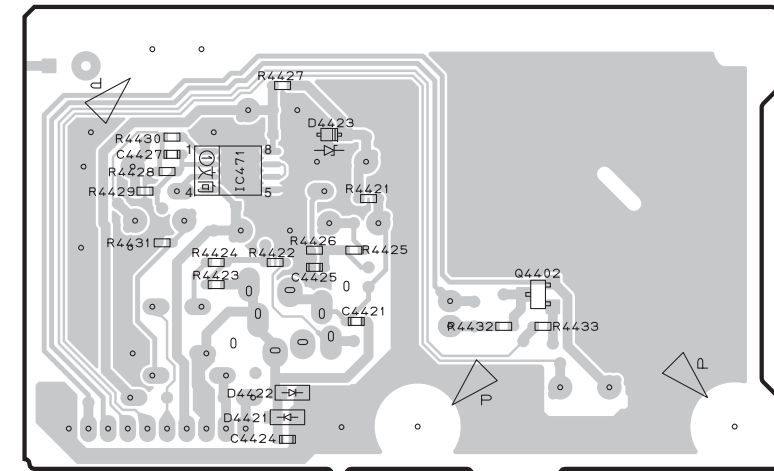
RX-V673/HTR-6065

1
2
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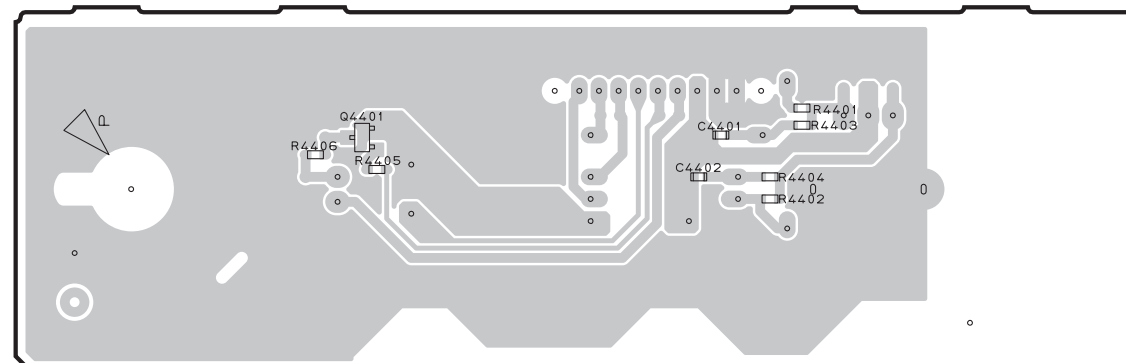
OPERATION (3) (Side B)



OPERATION (4) (Side B)



OPERATION (5) (Side B)

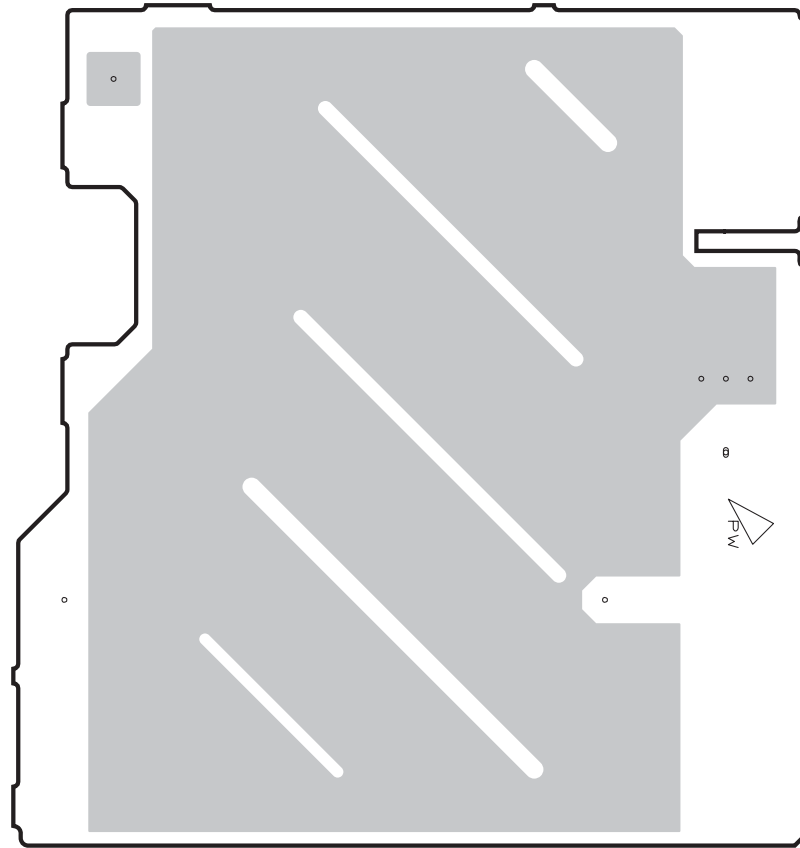


• Semiconductor Location

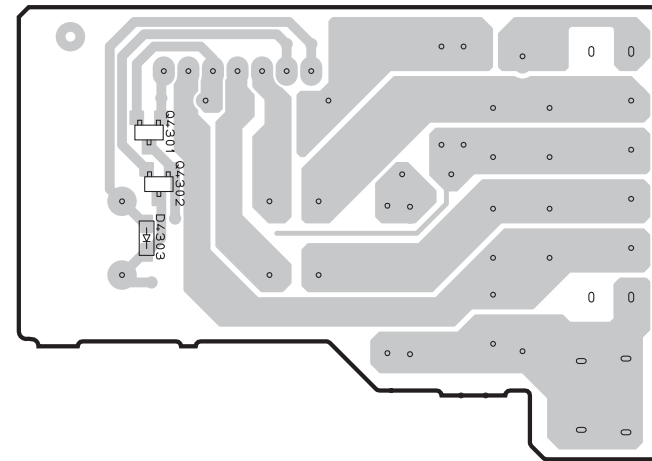
Ref no.	Location
D4411	C3
D4412	C3
D4421	G3
D4422	G3
D4423	H3
IC471	G3
Q4001	C6
Q4401	C6
Q4402	H3

RX-V673/HTR-6065

OPERATION (7) (Side B)

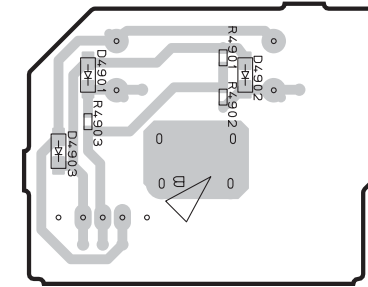


OPERATION (8) (Side B)



OPERATION (9) (Side B)

U, C models

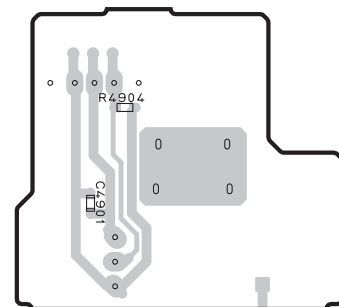


• Semiconductor Location

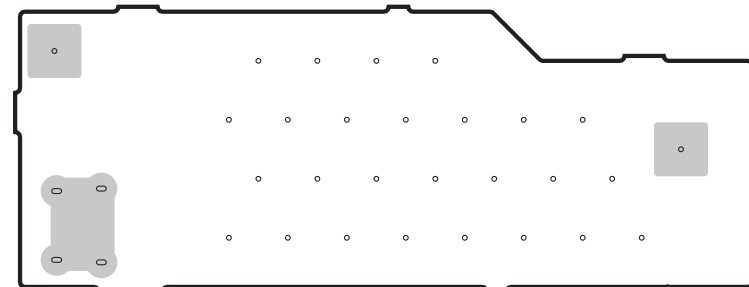
Ref no.	Location
D4303	E3
D4901	I3
D4902	I3
D4903	H3
Q4301	E3
Q4302	E3

OPERATION (10) (Side B)

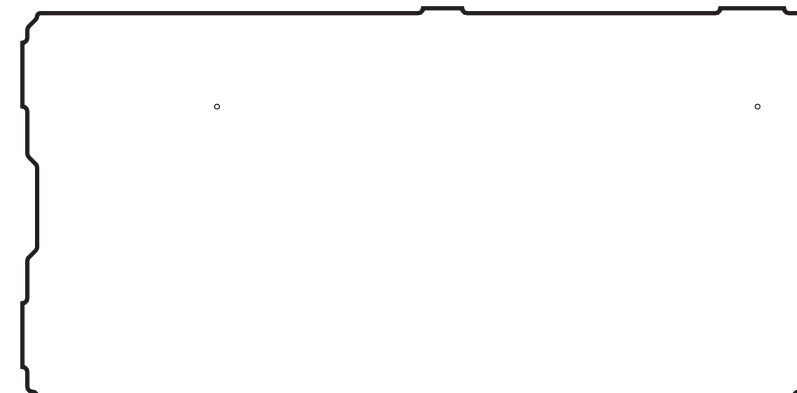
R, T, K, A, B, G, F, L, S, H models



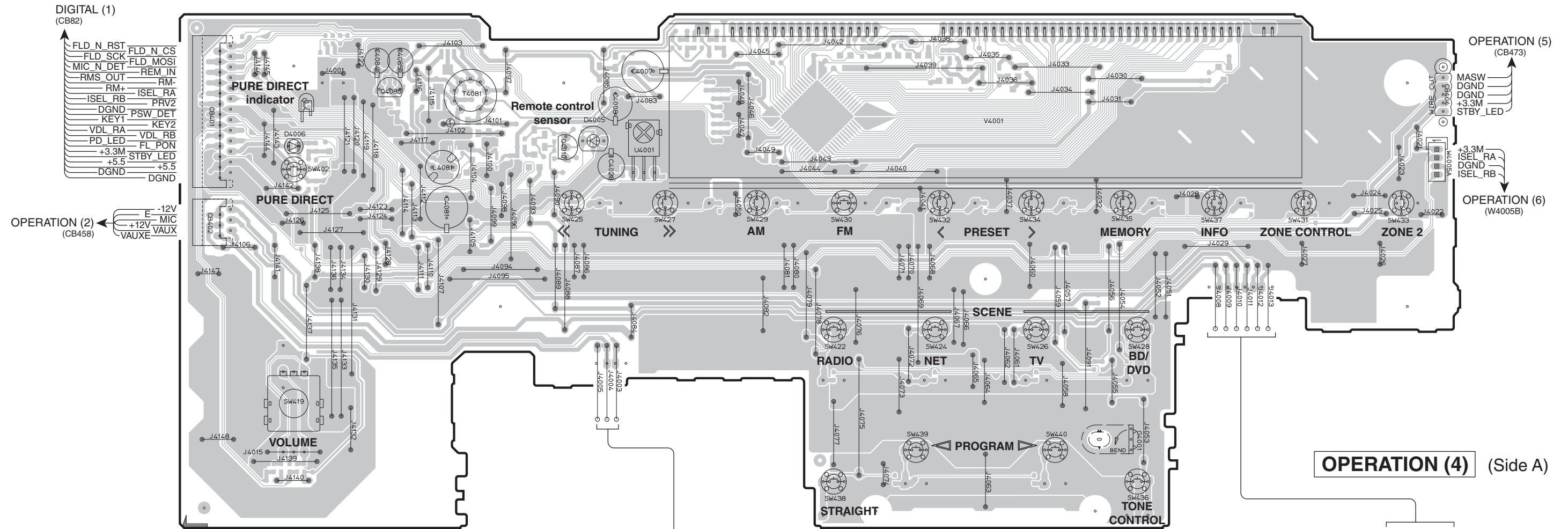
OPERATION (11) (Side B)



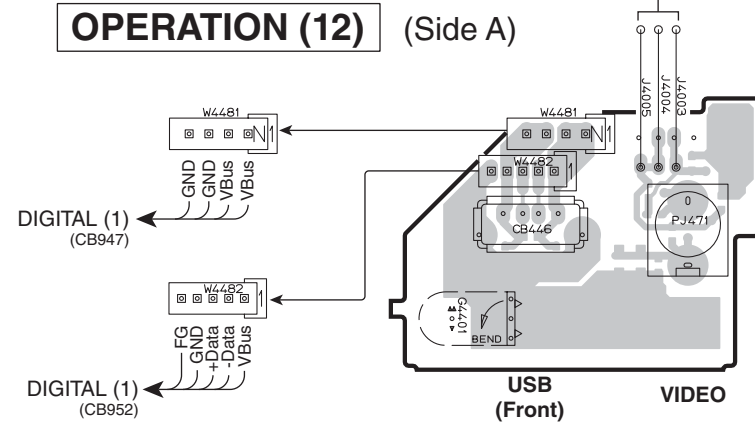
OPERATION (12) (Side B)



OPERATION (1) (Side A)



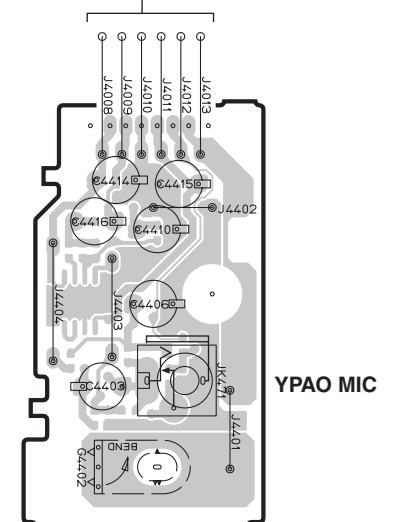
OPERATION (12) (Side A)



• Semiconductor Location

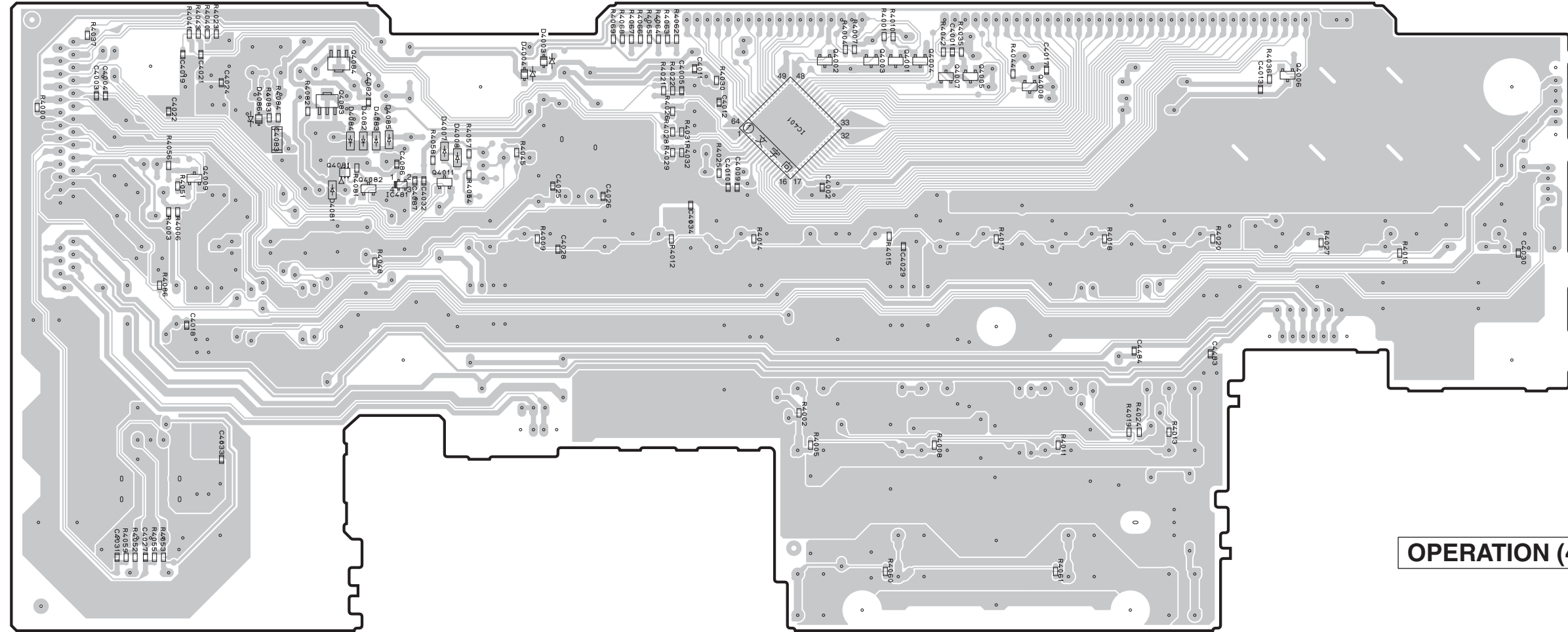
Ref no.	Location
D4005	D3
D4006	C3
Q4010	D3
Q4085	C3

OPERATION (4) (Side A)



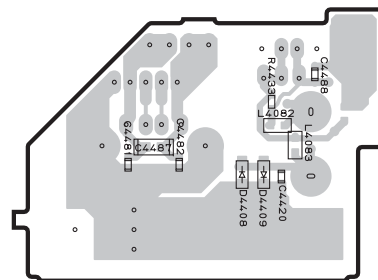
RX-A720

OPERATION (1) (Side B)



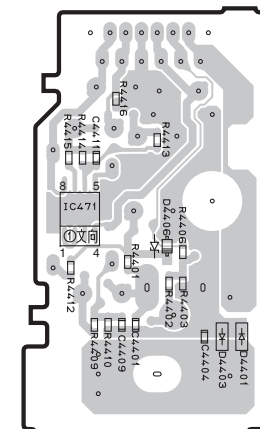
OPERATION (4) (Side B)

OPERATION (12) (Side B)



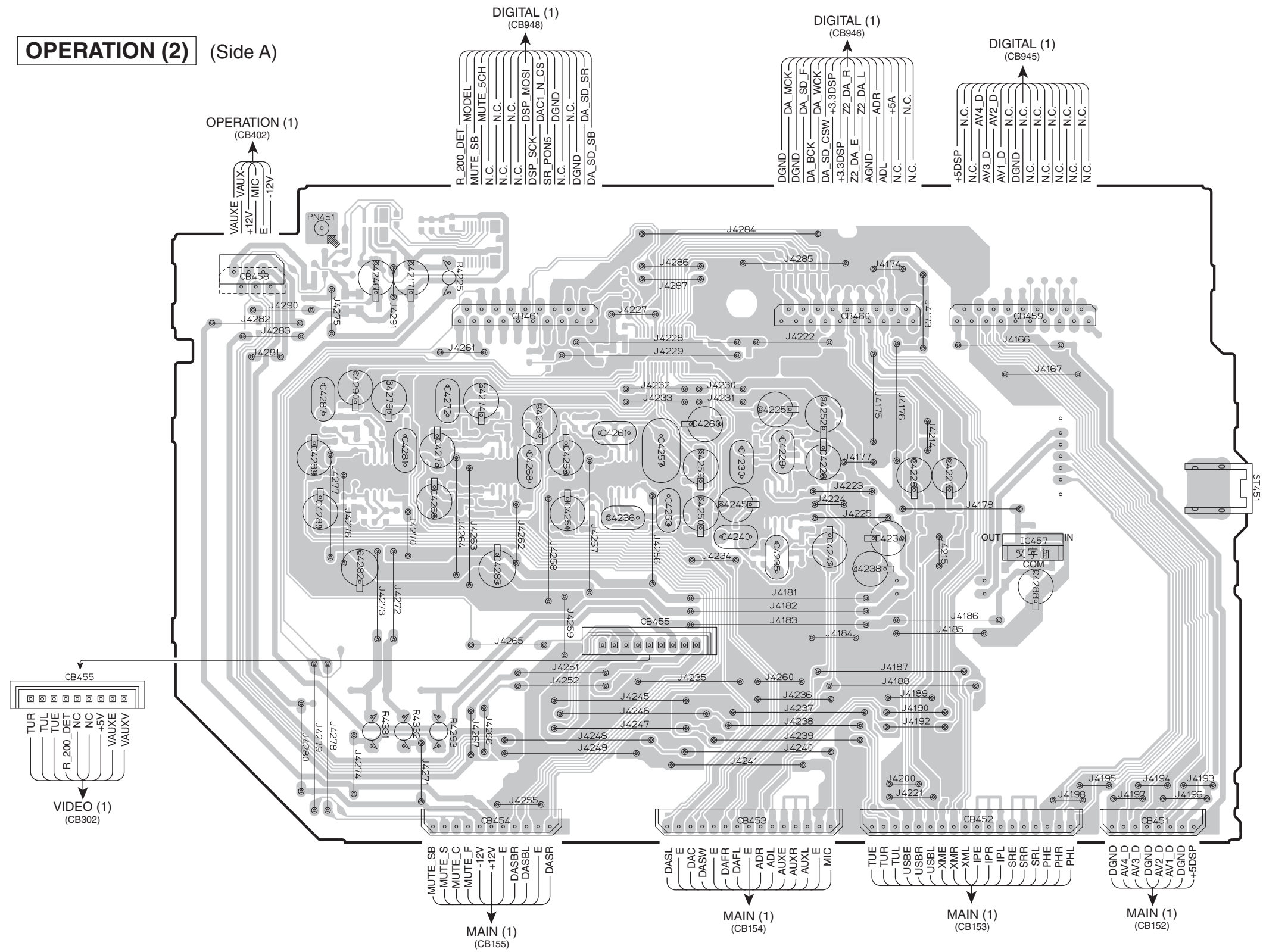
• Semiconductor Location

Ref no.	Location	Ref no.	Location	Ref no.	Location	Ref no.	Location
D4003	D3	D4086	C3	Q4001	F3	Q4011	D3
D4004	D3	D4401	I6	Q4002	E3	Q4081	C3
D4007	D3	D4403	I6	Q4003	F3	Q4082	C3
D4008	D3	D4406	I6	Q4004	F3	Q4083	C3
D4081	C3	D4408	D7	Q4005	F3	Q4084	C3
D4082	C3	D4409	D7	Q4006	H3		
D4083	C3	IC401	E3	Q4007	F3		
D4084	C3	IC471	I6	Q4008	G3		
D4085	C3	IC481	C3	Q4009	B3		



RX-A720

OPERATION (2) (Side A)

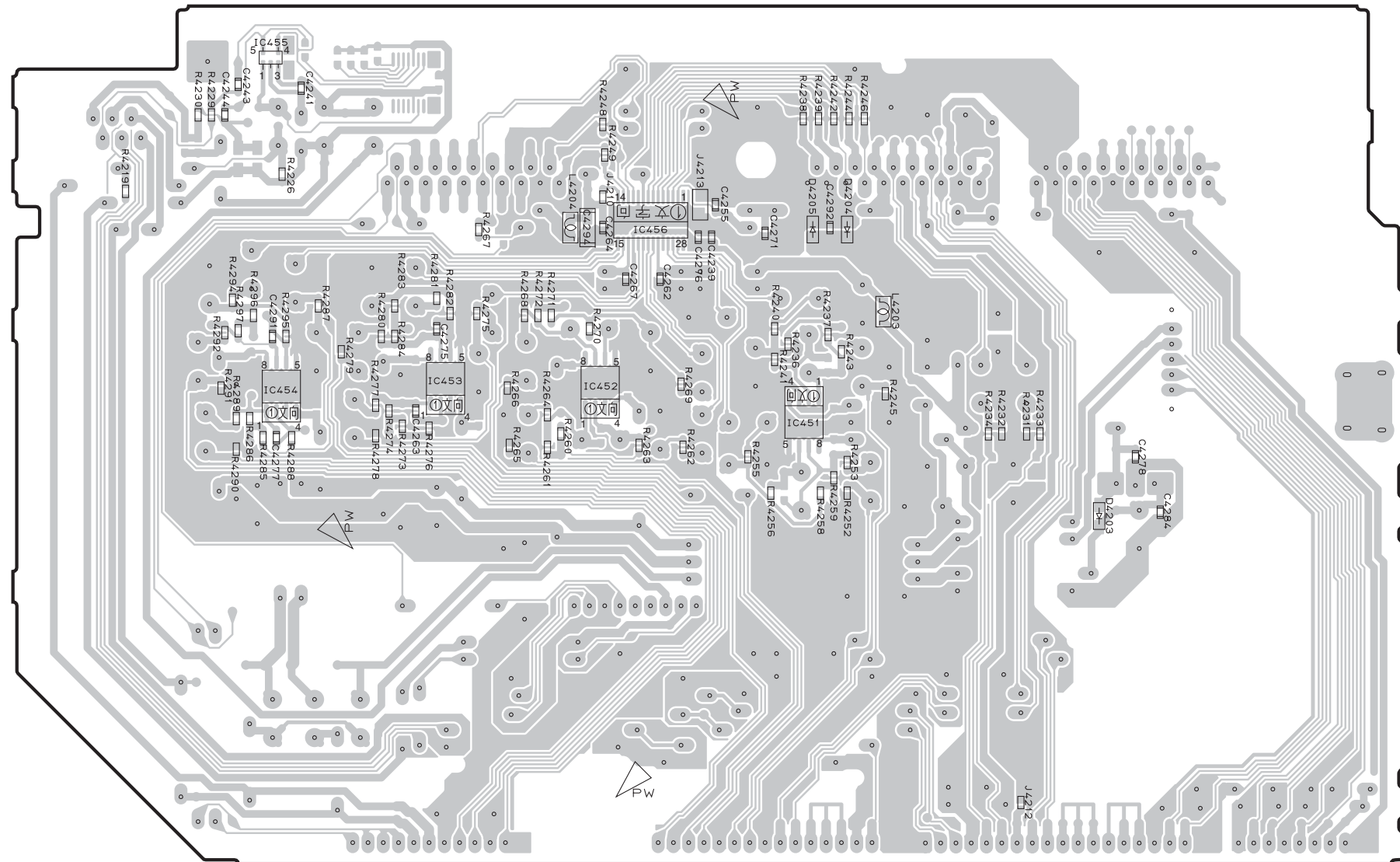


• Semiconductor Location

Ref no.	Location
IC457	G4

RX-A720

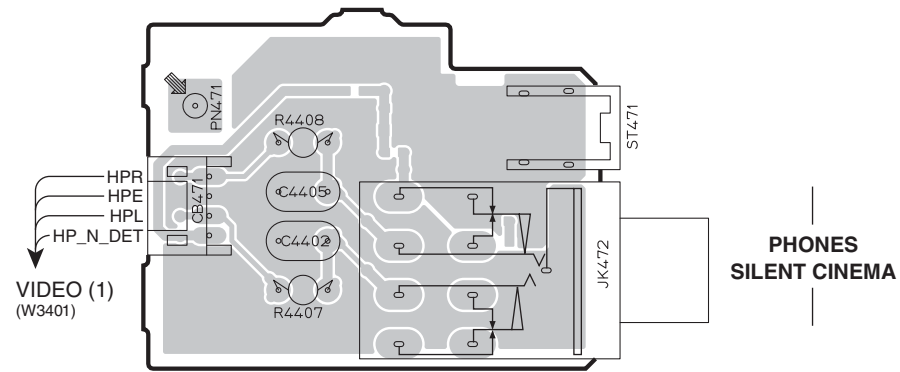
OPERATION (2) (Side B)



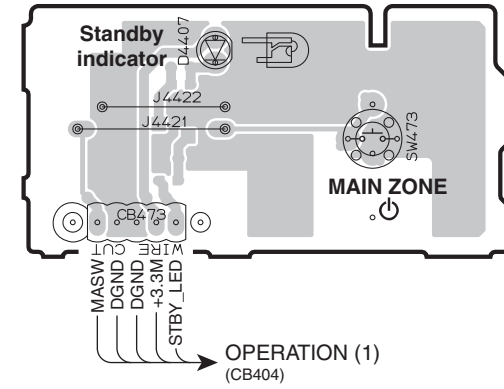
• Semiconductor Location

Ref no.	Location
D4203	G4
D4204	F3
D4205	E3
IC451	E4
IC452	E4
IC453	D4
IC454	C4
IC455	C2
IC456	E3

OPERATION (3) (Side A)



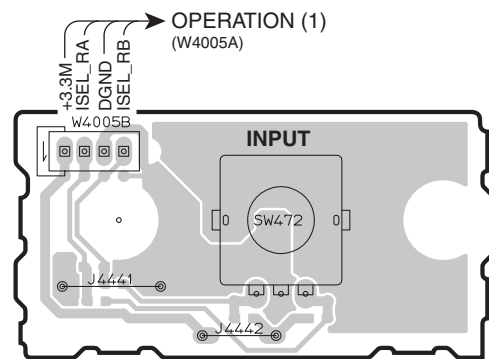
OPERATION (5) (Side A)



• Semiconductor Location

Ref no.	Location
D4407	H2

OPERATION (6) (Side A)

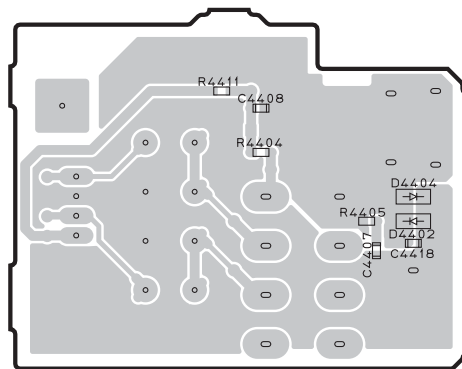


OPERATION (7) (Side A)

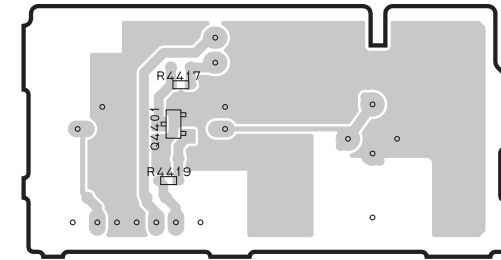


RX-A720

OPERATION (3) (Side B)



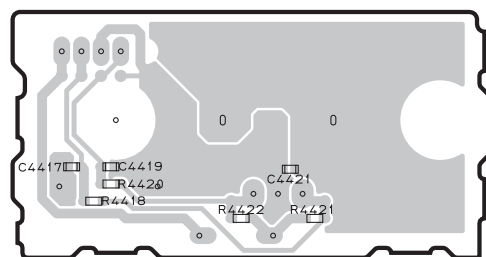
OPERATION (5) (Side B)



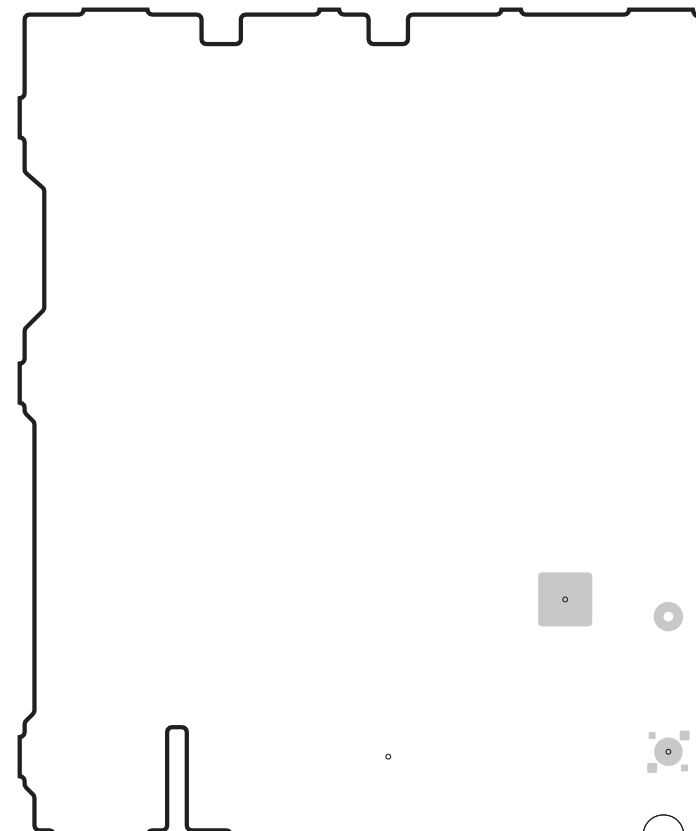
• Semiconductor Location

Ref no.	Location
D4402	C3
D4404	C3
Q4401	G3

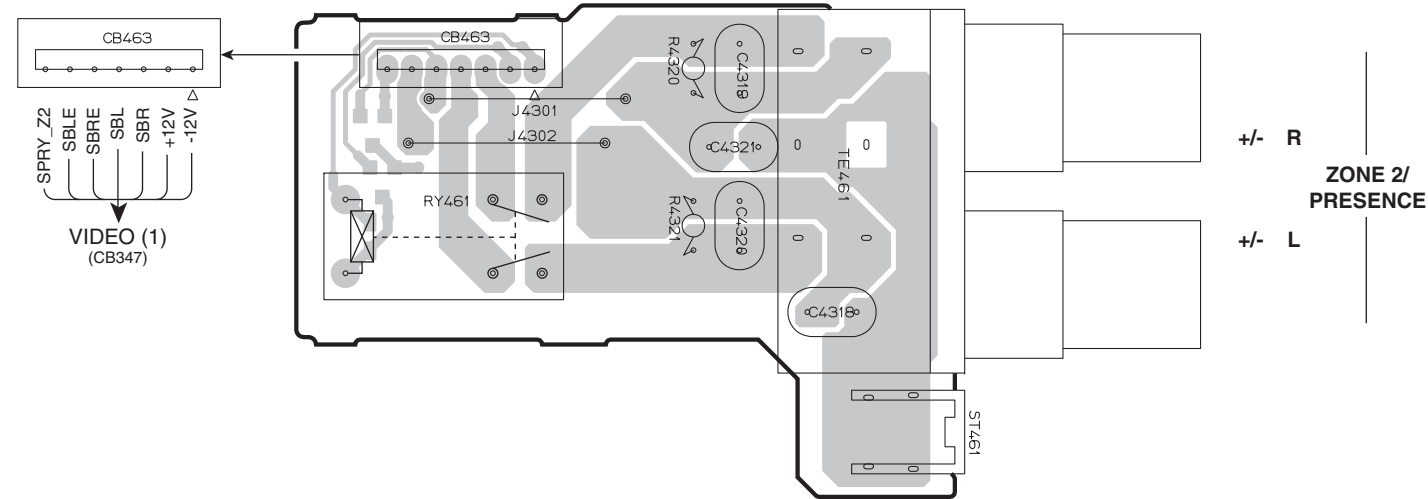
OPERATION (6) (Side B)



OPERATION (7) (Side B)

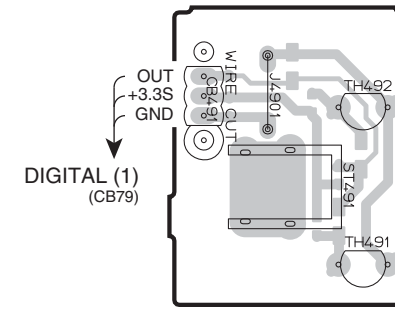


OPERATION (8) (Side A)



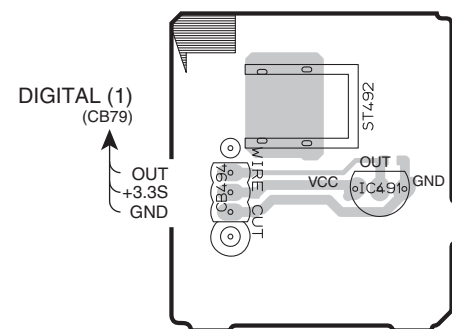
OPERATION (9) (Side A)

U, C models



OPERATION (10) (Side A)

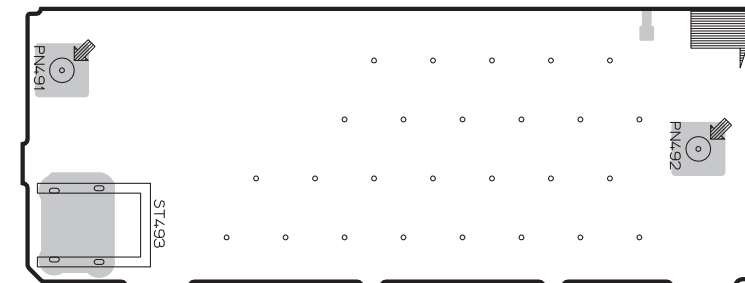
A model



• Semiconductor Location

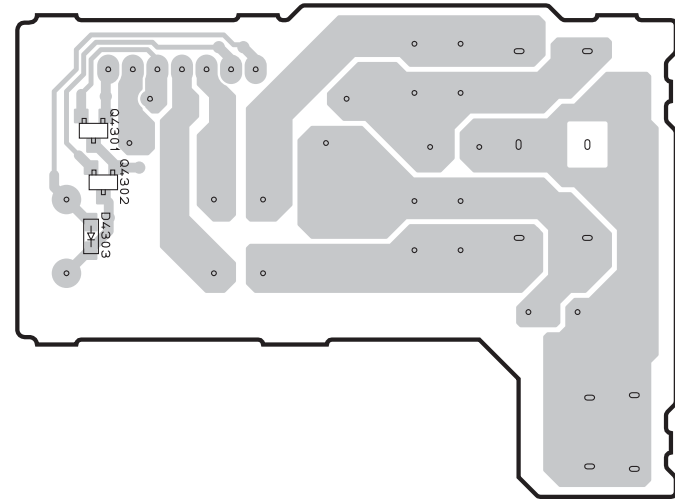
Ref no.	Location
IC491	D6

OPERATION (11) (Side A)



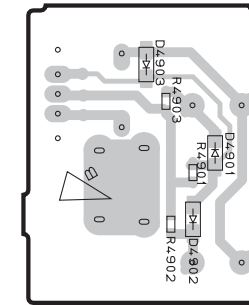
RX-A720

OPERATION (8) (Side B)



OPERATION (9) (Side B)

U, C models

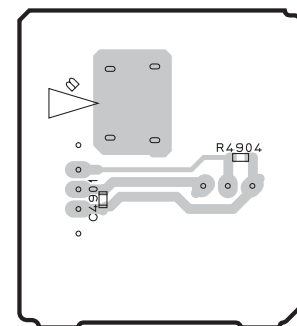


• Semiconductor Location

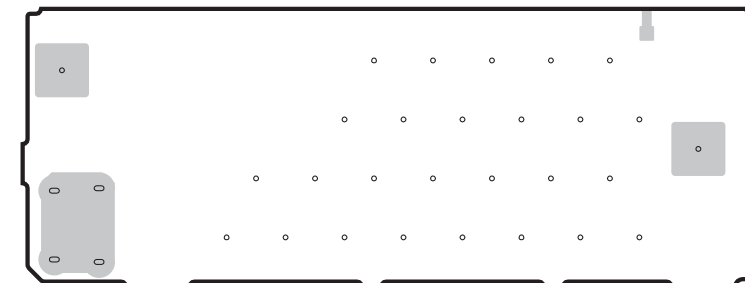
Ref no.	Location
D4303	B3
D4901	G3
D4902	G3
D4903	G2
Q4301	B2
Q4302	B3

OPERATION (10) (Side B)

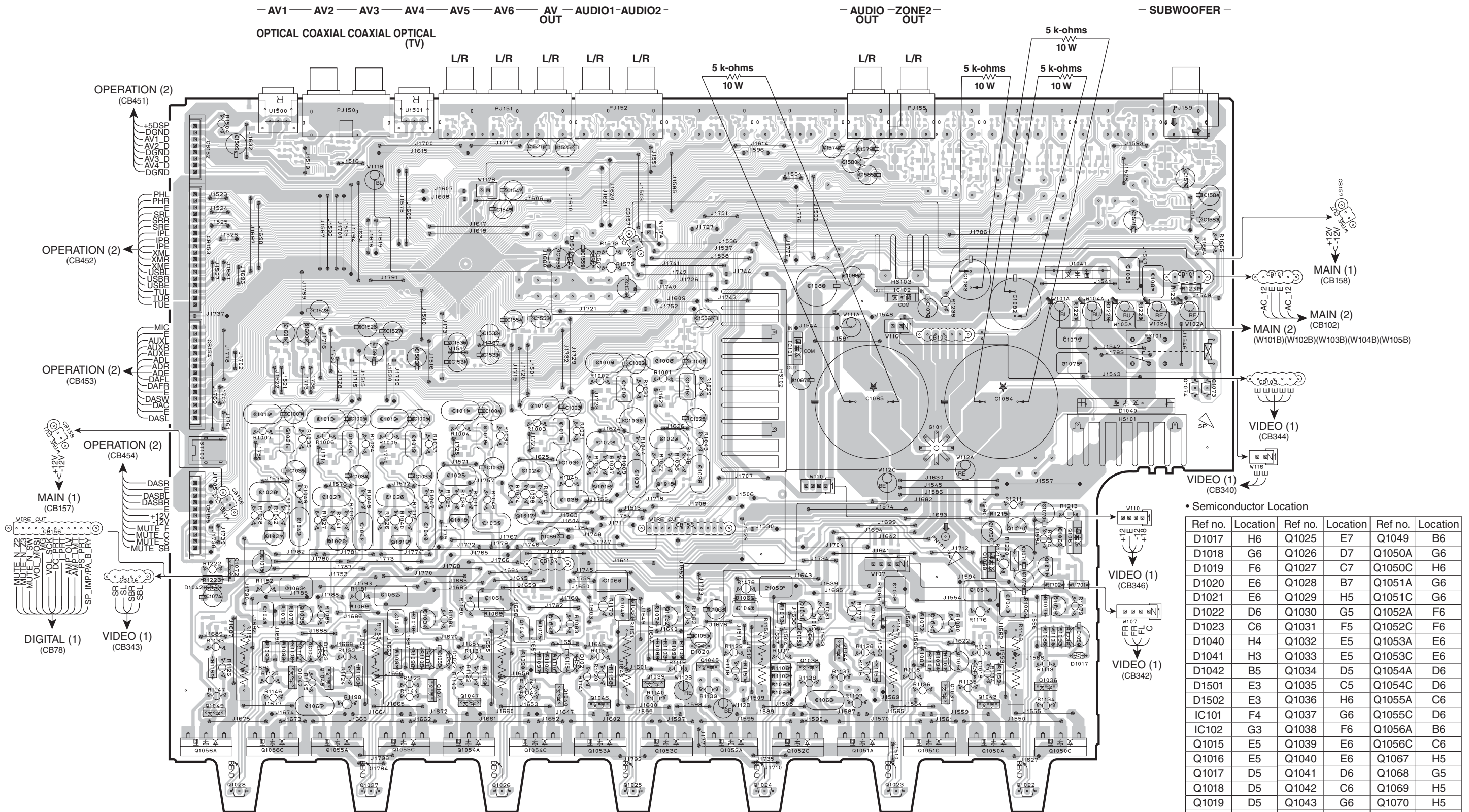
A model



OPERATION (11) (Side B)



MAIN (1) (Side A)



• Semiconductor Location

Ref no.	Location	Ref no.	Location	Ref no.	Location
D1017	H6	Q1025	E7	Q1049	B6
D1018	G6	Q1026	D7	Q1050A	G6
D1019	F6	Q1027	C7	Q1050C	H6
D1020	E6	Q1028	B7	Q1051A	G6
D1021	E6	Q1029	H5	Q1051C	G6
D1022	D6	Q1030	G5	Q1052A	F6
D1023	C6	Q1031	F5	Q1052C	F6
D1040	H4	Q1032	E5	Q1053A	E6
D1041	H3	Q1033	E5	Q1053C	E6
D1042	B5	Q1034	D5	Q1054A	D6
D1501	E3	Q1035	C5	Q1054C	D6
D1502	E3	Q1036	H6	Q1055A	C6
IC101	F4	Q1037	G6	Q1055C	D6
IC102	G3	Q1038	F6	Q1056A	B6
Q1015	E5	Q1039	E6	Q1056C	C6
Q1016	E5	Q1040	E6	Q1067	H5
Q1017	D5	Q1041	D6	Q1068	G5
Q1018	D5	Q1042	C6	Q1069	H5
Q1019	D5	Q1043	G6	Q1070	H5
Q1020	C5	Q1044	F6	Q1071	H5
Q1021	C5	Q1045	F6	Q1072	B5
Q1022	H7	Q1046	E6	Q1073	I4
Q1023	G7	Q1047	D6	Q1074	I4
Q1024	F7	Q1048	C6		

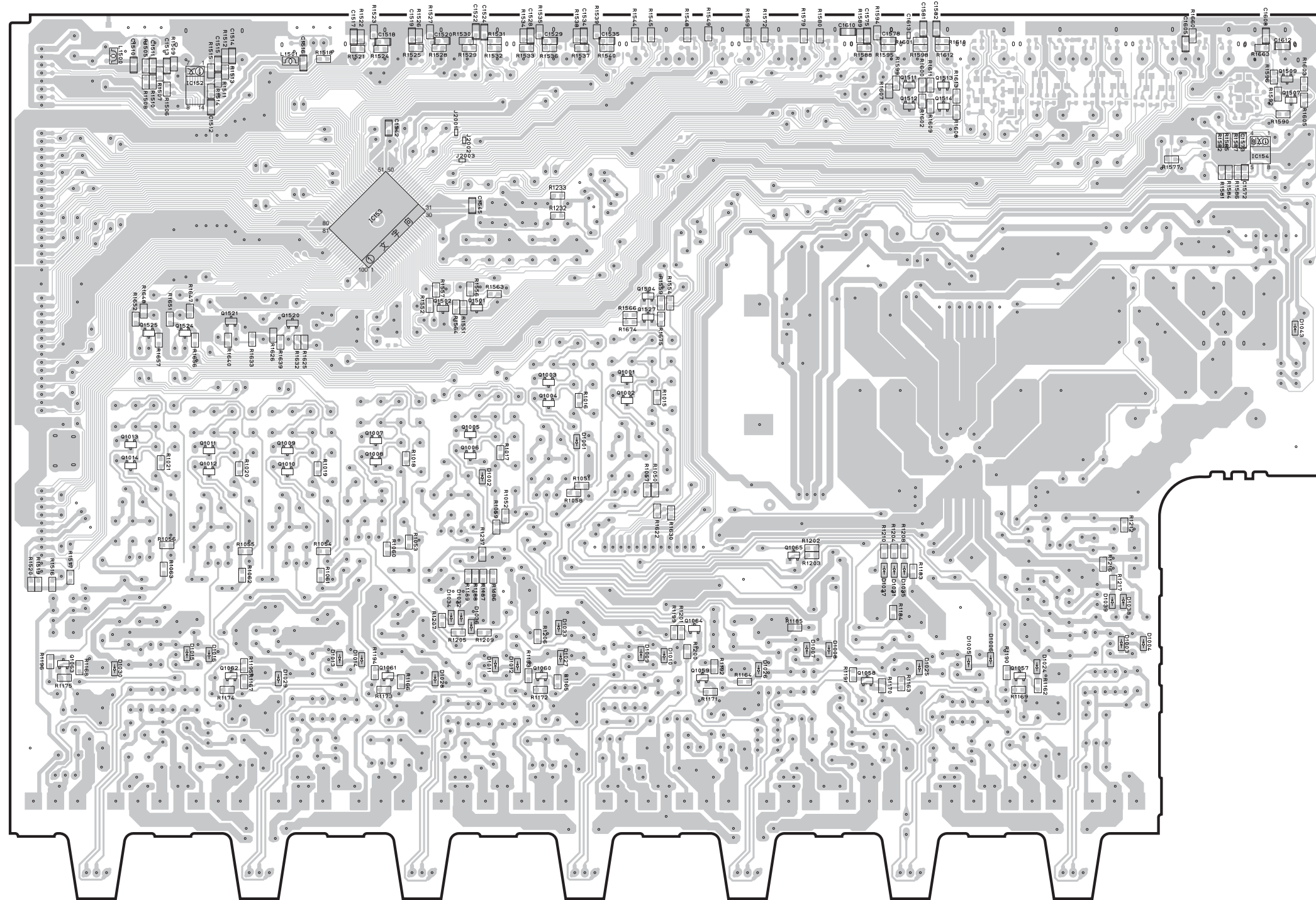
Safety measures

- Some internal parts in this product contain high voltages and are dangerous. Be sure to take safety measures during servicing, such as wearing insulating gloves.
- Note that the capacitors indicated below are dangerous even after the power is turned off because an electric charge remains and a high voltage continues to exist there. Before starting any repair work, connect a discharging resistor (5 k-ohms/10 W) to the terminals of each capacitor indicated below to discharge electricity. The time required for discharging is about 30 seconds per each. C1082-C1085 on MAIN (1) P.C.B.

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MAIN (1) (Side B)

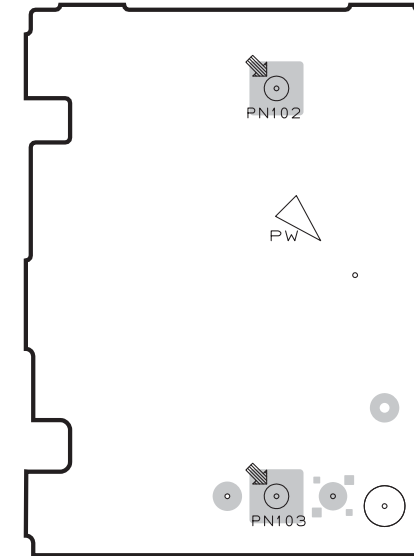
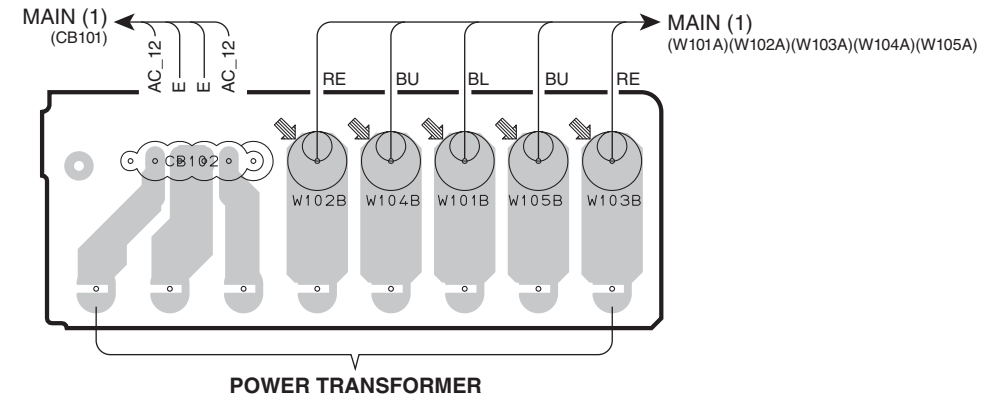


• Semiconductor Location

Ref no.	Location	Ref no.	Location
D1001	D4	Q1002	E4
D1002	D4	Q1003	D4
D1003	G5	Q1004	D4
D1004	G5	Q1005	D4
D1005	G5	Q1006	D4
D1006	G5	Q1007	C4
D1007	F5	Q1008	C4
D1008	F5	Q1009	C4
D1009	E5	Q1010	C4
D1010	E5	Q1011	C4
D1011	D5	Q1012	C4
D1012	D5	Q1013	B4
D1013	C5	Q1014	B4
D1014	C5	Q1017	G5
D1015	B5	Q1058	F6
D1016	C5	Q1059	E6
D1024	G5	Q1060	D6
D1025	F5	Q1061	C6
D1026	E5	Q1062	C6
D1027	D5	Q1063	B5
D1028	D6	Q1064	E5
D1029	C6	Q1065	F5
D1030	B5	Q1501	D4
D1031	F5	Q1502	D4
D1032	D5	Q1504	E4
D1033	D5	Q1507	H2
D1034	D5	Q1509	H2
D1035	F5	Q1511	F2
D1036	D5	Q1512	F2
D1037	F5	Q1513	F2
D1038	G5	Q1514	F2
D1039	G5	Q1520	C4
D1043	H4	Q1521	C4
IC152	B2	Q1524	B4
IC153	C3	Q1525	B4
IC154	H3	Q1527	E4
Q1001	E4		

MAIN (2) (Side A)

MAIN (6) (Side A)



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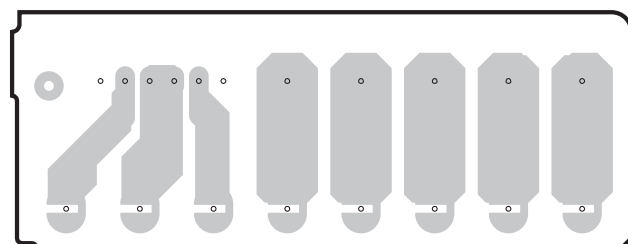
1

MAIN (2) (Side B)

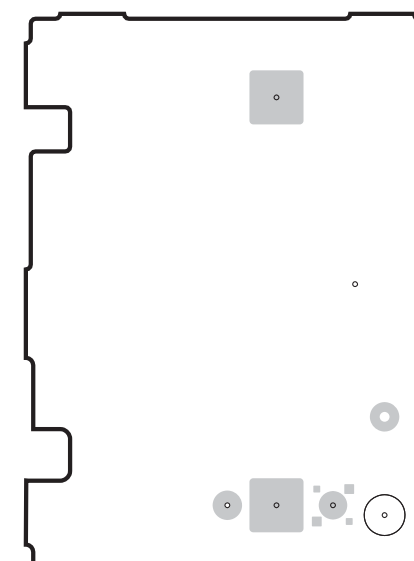
MAIN (6) (Side B)

2

3



4

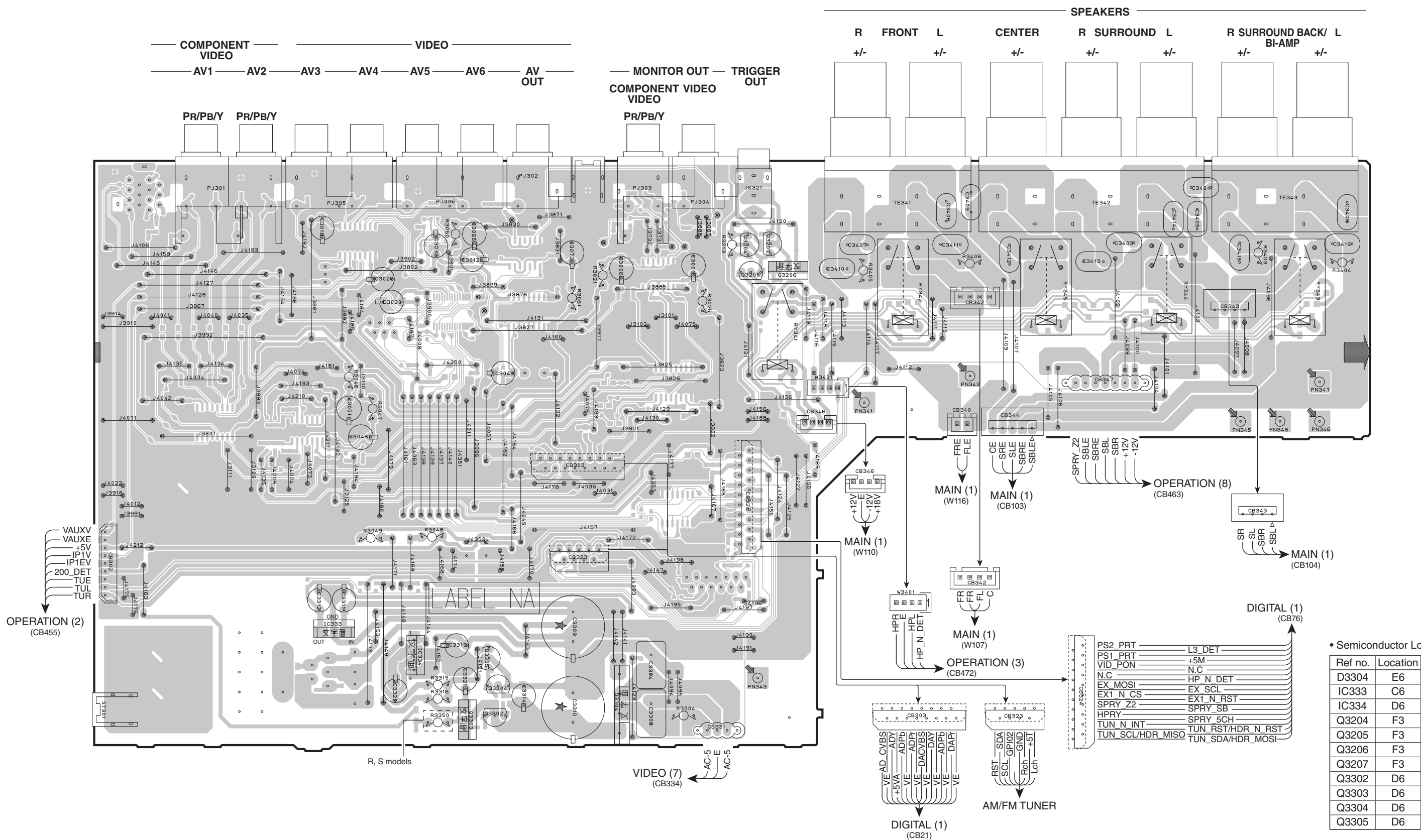


5

6

7

VIDEO (1) (Side A)



PS2_PRT L3_DET
 PS1_PRT +5M
 VID_PON N.C
 N.C HP_N_DET
 EX_MOSI EX_SCL
 EX1_N_CS EX1_N_RST
 SPRY_Z2 SPRY_SB
 HPRY SPRY_5CH
 TUN_N_INT TUN_RST/HDR_N_RST
 TUN_SCL/HDR_MISO TUN_SDA/HDR_MOSI

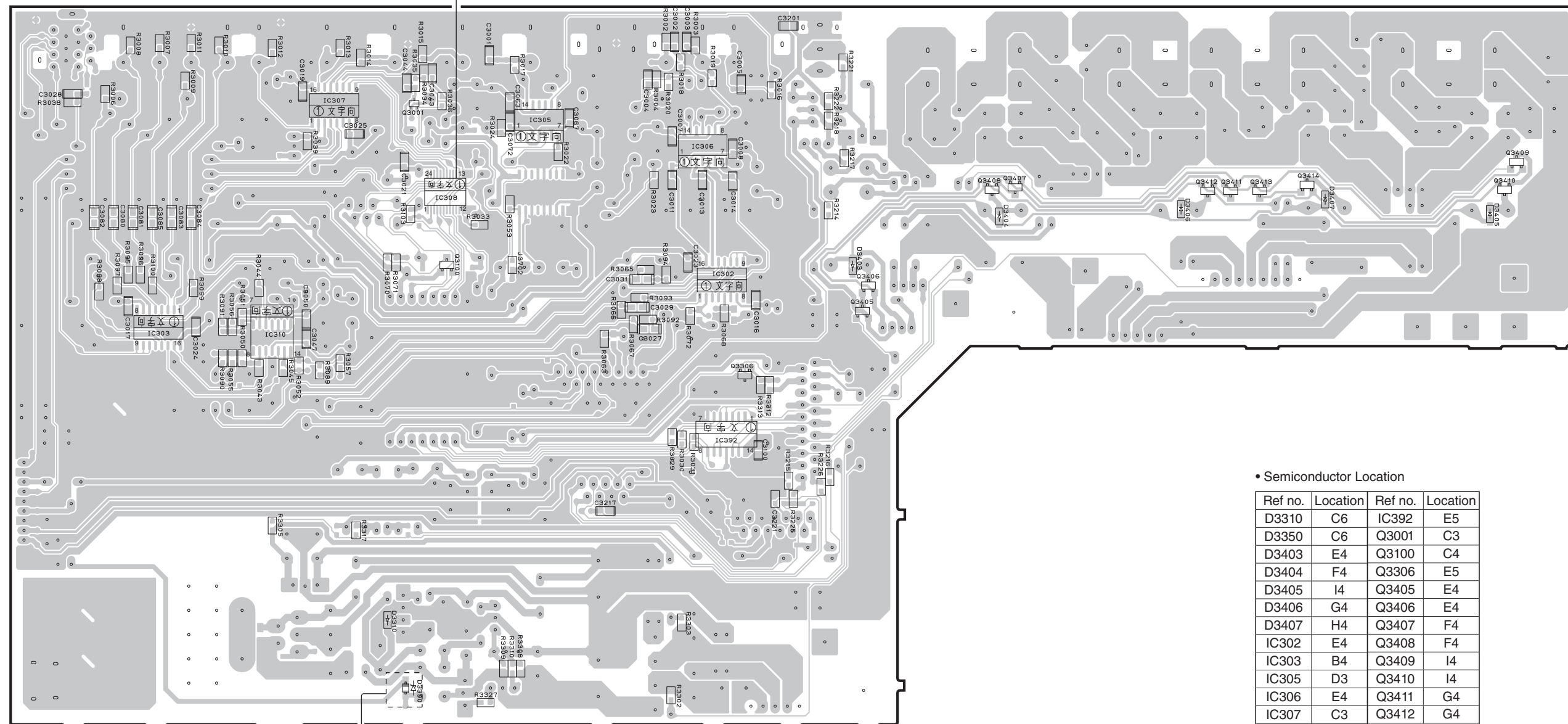
• Semiconductor Location

Ref no.	Location
D3304	E6
IC333	C6
IC334	D6
Q3204	F3
Q3205	F3
Q3207	F3
Q3302	D6
Q3303	D6
Q3304	D6
Q3305	D6

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VIDEO (1) (Side B)

No replacement part available.



R, S models

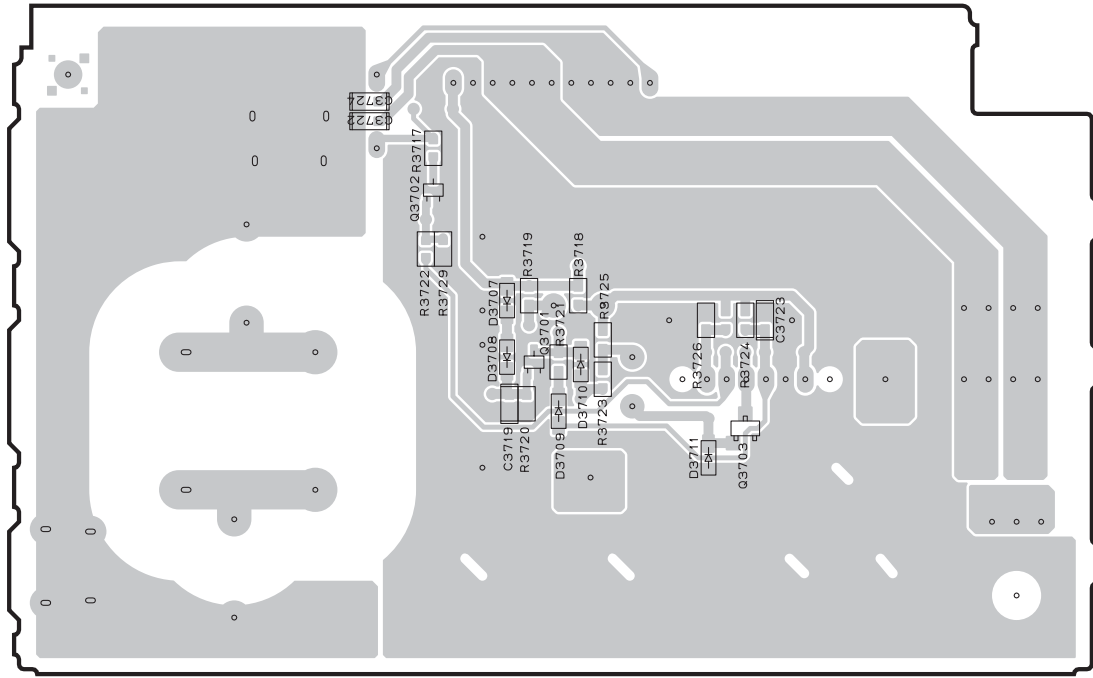
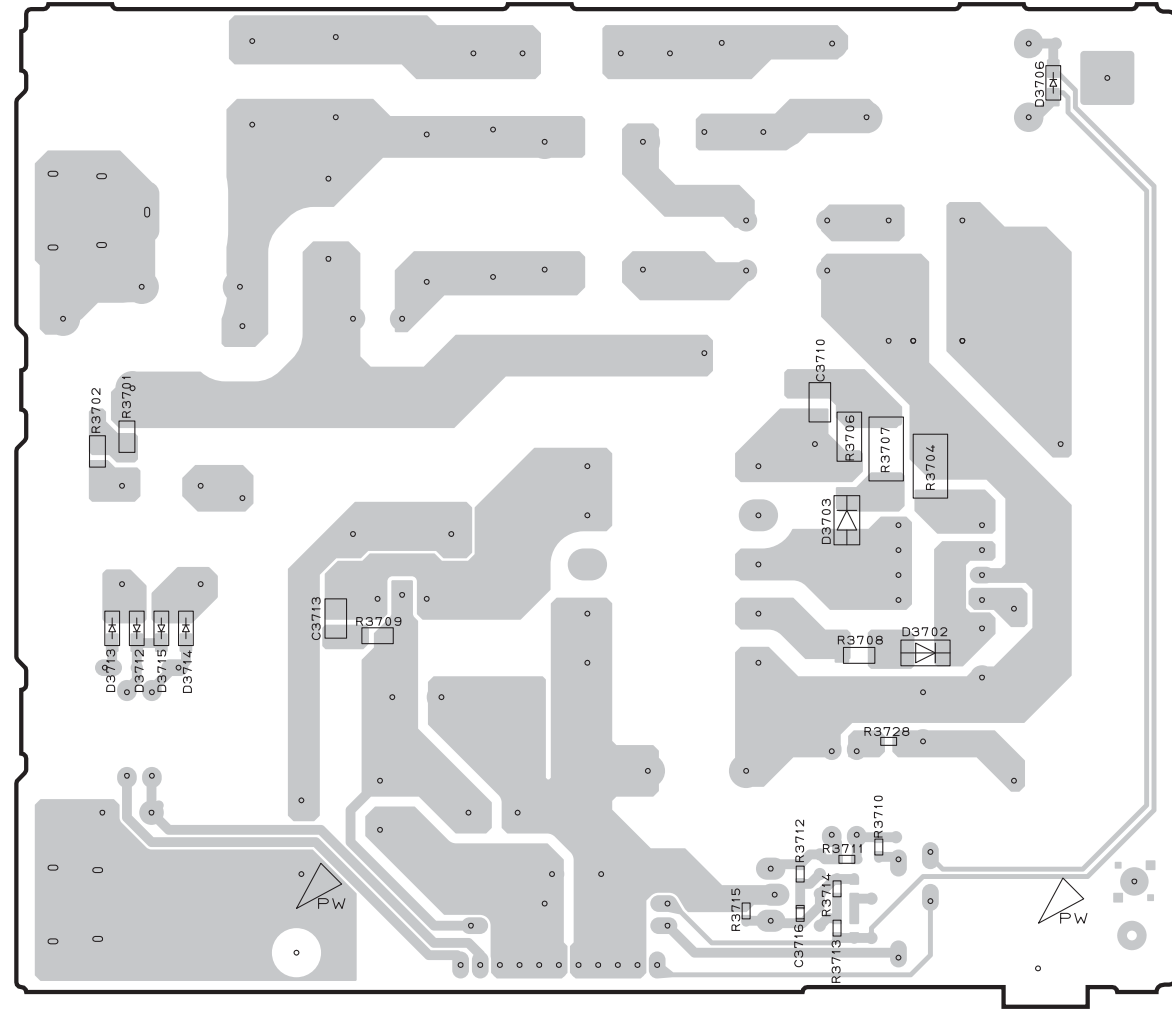
• Semiconductor Location

Ref no.	Location	Ref no.	Location
D3310	C6	IC392	E5
D3350	C6	Q3001	C3
D3403	E4	Q3100	C4
D3404	F4	Q3306	E5
D3405	I4	Q3405	E4
D3406	G4	Q3406	E4
D3407	H4	Q3407	F4
IC302	E4	Q3408	F4
IC303	B4	Q3409	I4
IC305	D3	Q3410	I4
IC306	E4	Q3411	G4
IC307	C3	Q3412	G4
IC308	C4	Q3413	H4
IC310	B4	Q3414	H4

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VIDEO (2) (Side B)

VIDEO (3) (Side B)

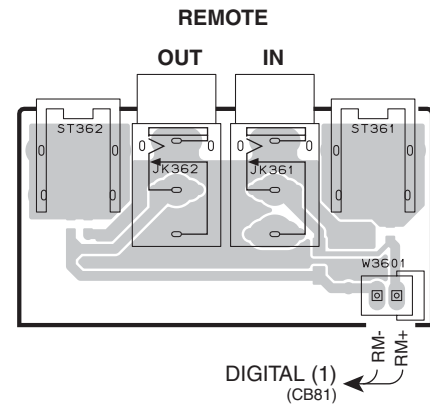


• Semiconductor Location

Ref no.	Location
D3702	D4
D3703	D4
D3706	E2
D3707	H4
D3708	H4
D3709	H4
D3710	H4
D3711	H4
D3712	B4
D3713	A4
D3714	B4
D3715	B4
Q3701	H4
Q3702	G3
Q3703	H4

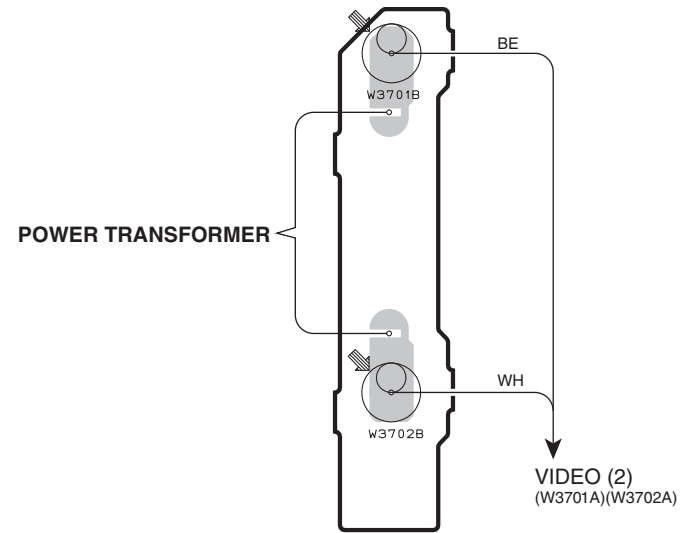
RX-V673/HTR-6065

VIDEO (4) (Side A)

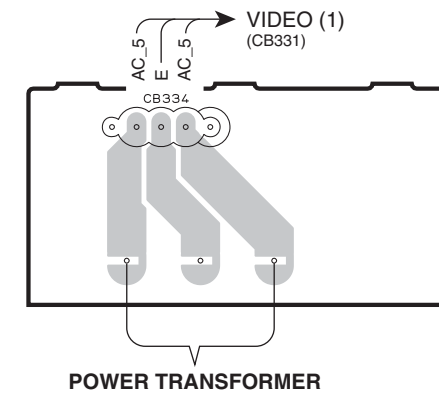


VIDEO (6) (Side A)

U, C, T, K, A, B, G, F, L, H models

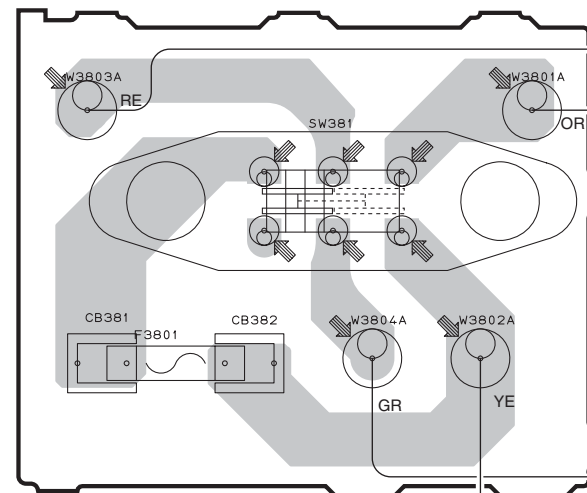


VIDEO (7) (Side A)



VIDEO (8) (Side A)

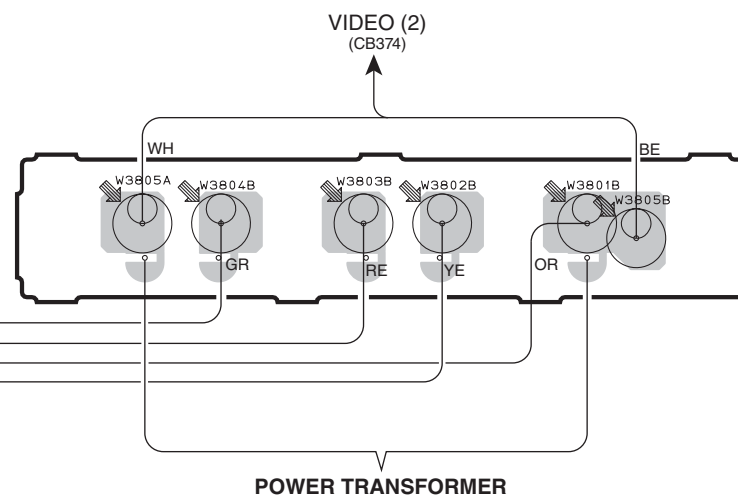
R, S models



220V - 240V 110V - 120V
VOLTAGE SELECTOR

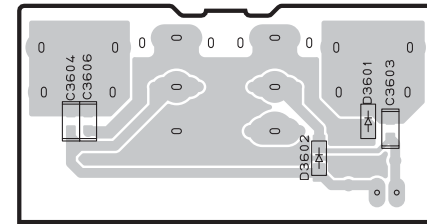
VIDEO (9) (Side A)

R, S models



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VIDEO (4) (Side B)

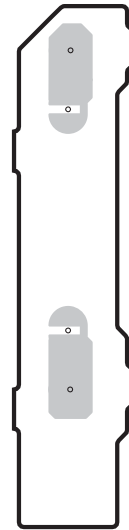


• Semiconductor Location

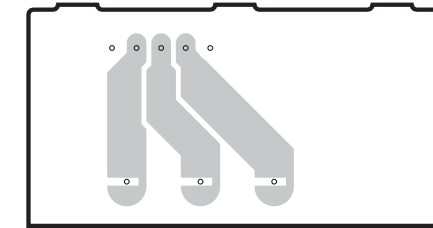
Ref no.	Location
D3601	B3
D3602	B3

VIDEO (6) (Side B)

U, C, T, K, A, B, G, F, L, H models

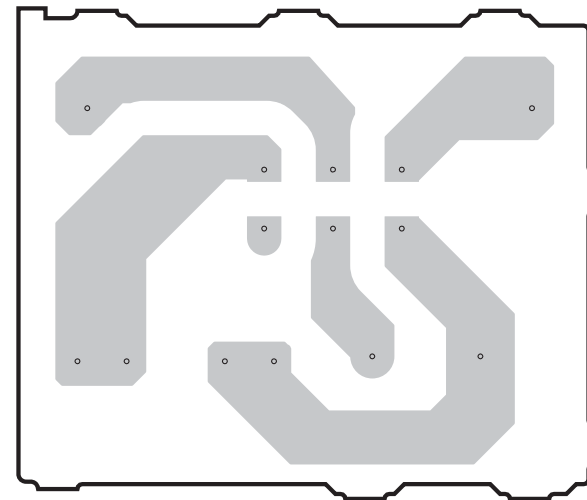


VIDEO (7) (Side B)



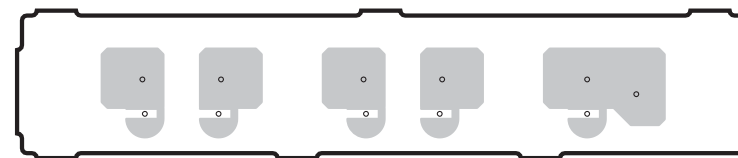
VIDEO (8) (Side B)

R, S models



VIDEO (9) (Side B)

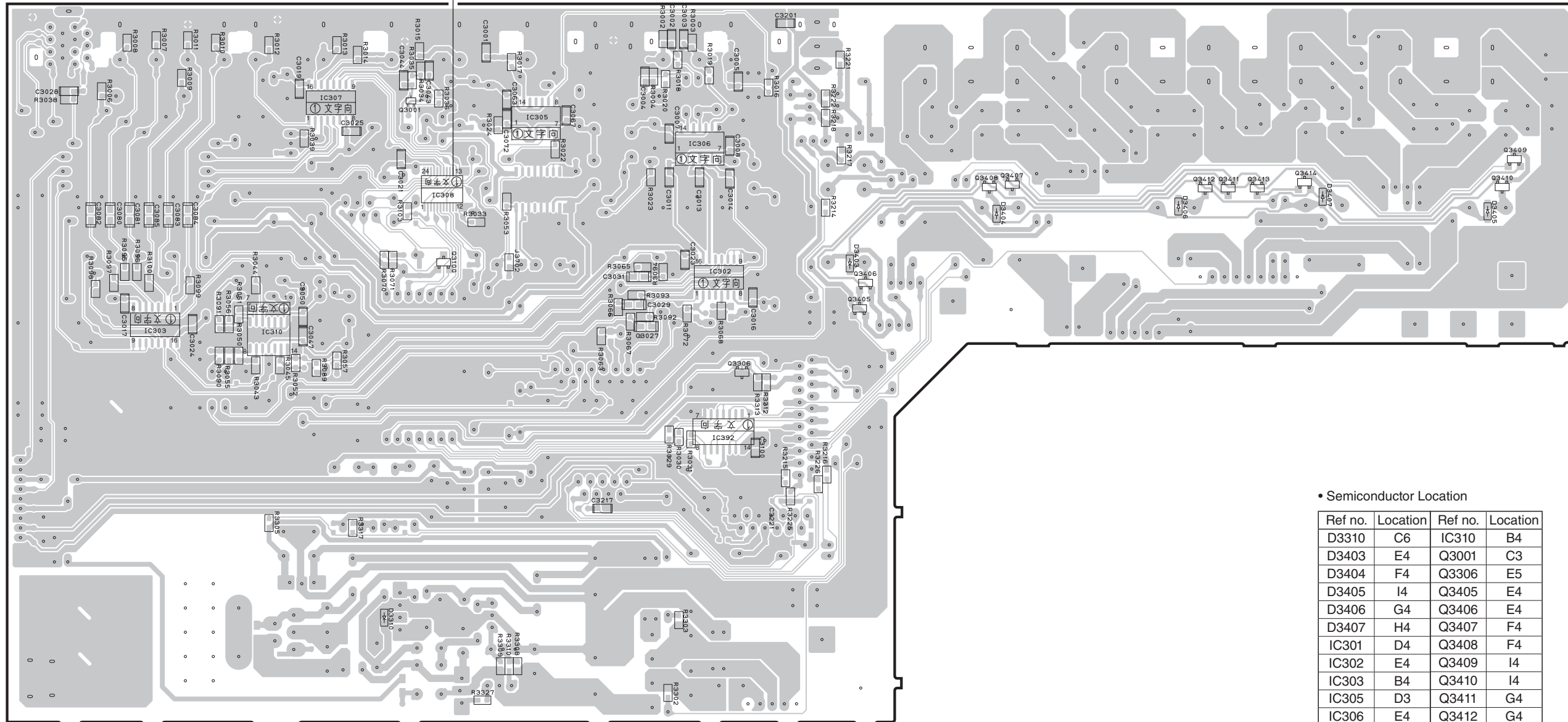
R, S models



RX-A720

VIDEO (1) (Side B)

No replacement part available.

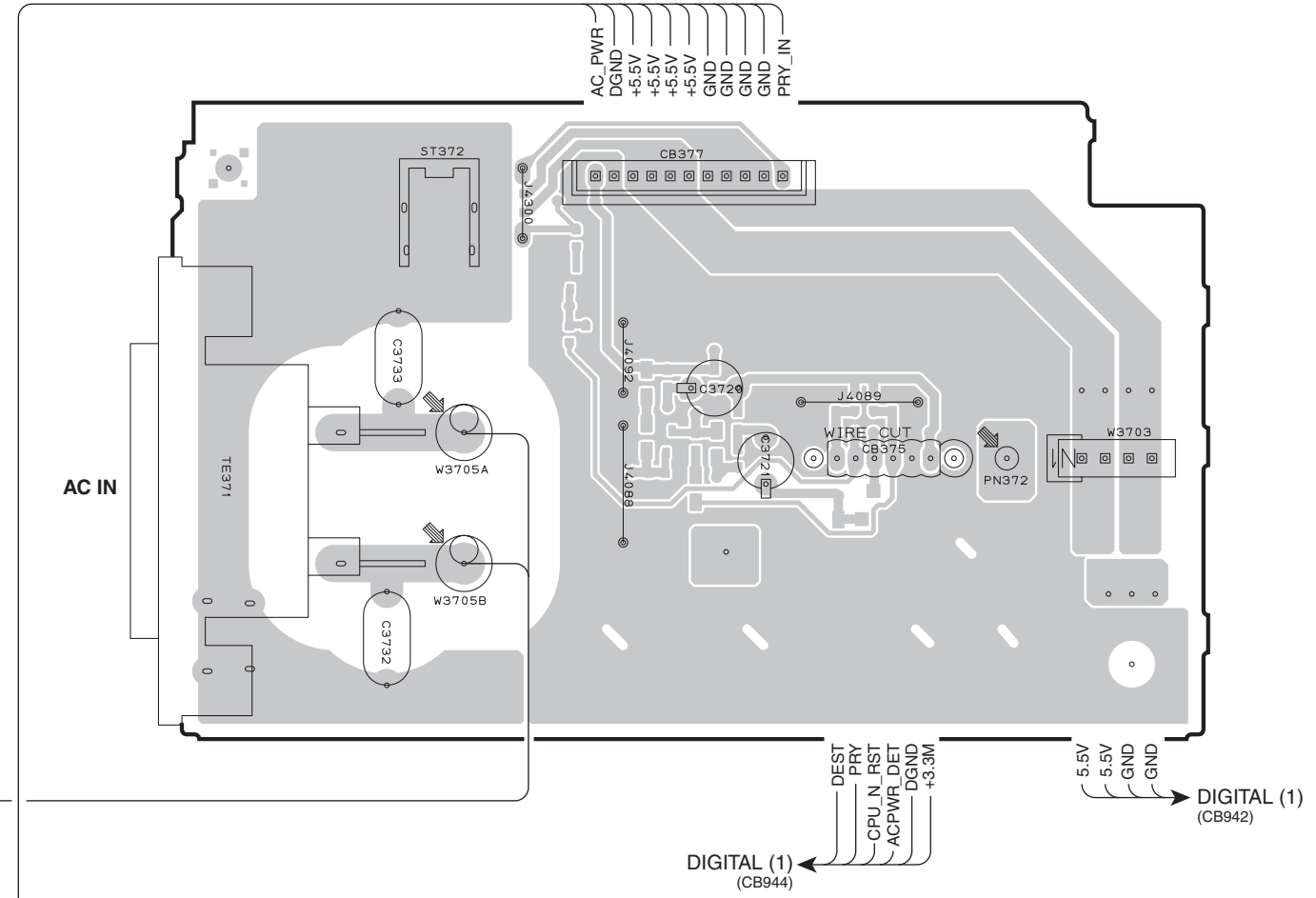
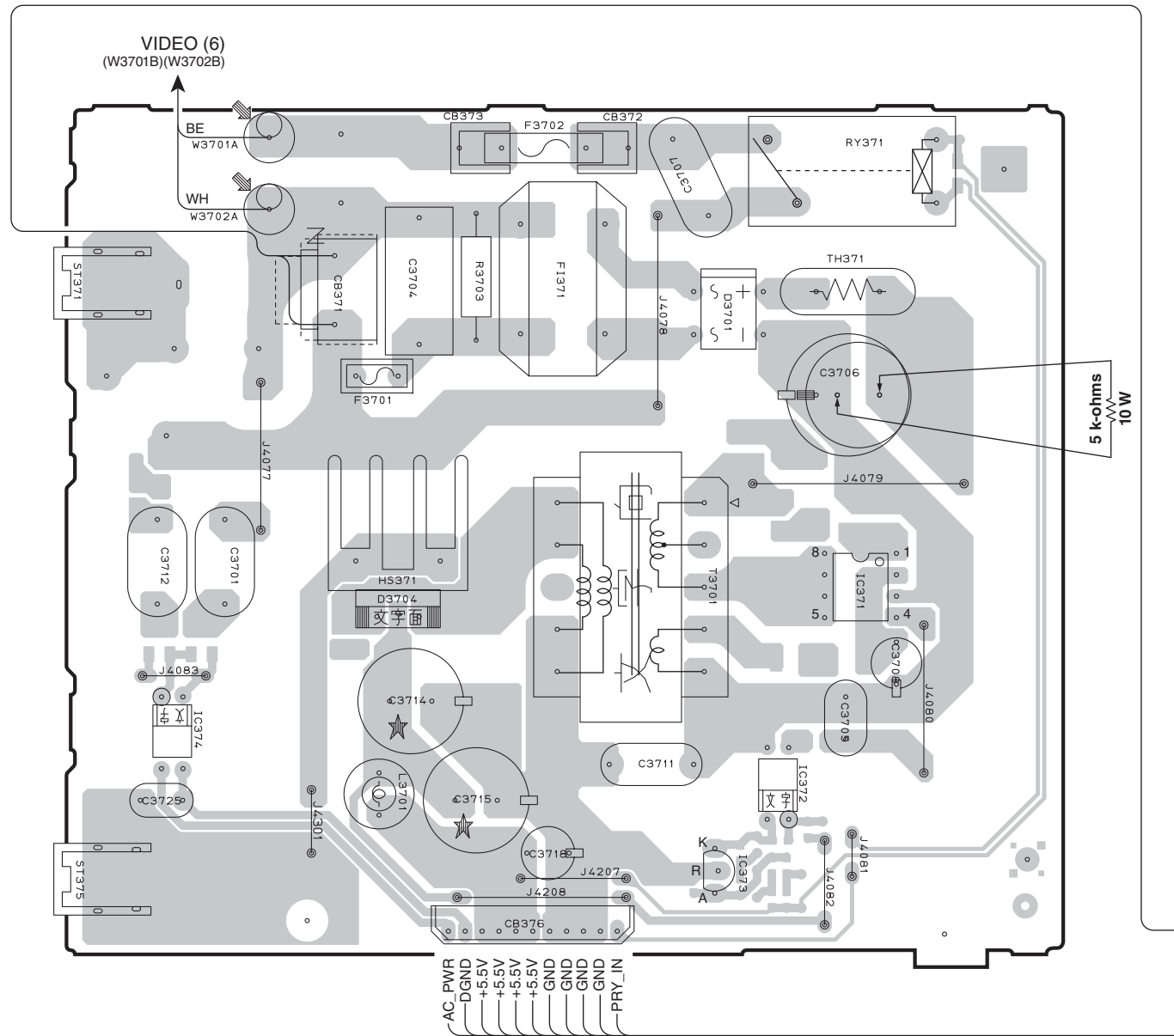


• Semiconductor Location

Ref no.	Location	Ref no.	Location
D3310	C6	IC310	B4
D3403	E4	Q3001	C3
D3404	F4	Q3306	E5
D3405	I4	Q3405	E4
D3406	G4	Q3406	E4
D3407	H4	Q3407	F4
IC301	D4	Q3408	F4
IC302	E4	Q3409	I4
IC303	B4	Q3410	I4
IC305	D3	Q3411	G4
IC306	E4	Q3412	G4
IC307	C3	Q3413	H4
IC308	C4	Q3414	H4

VIDEO (2) (Side A)

VIDEO (3) (Side A)



Safety measures

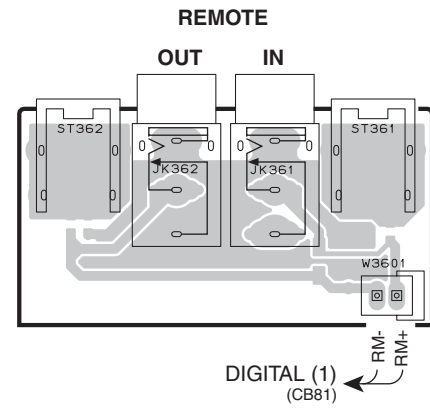
- Some internal parts in this product contain high voltages and are dangerous. Be sure to take safety measures during servicing, such as wearing insulating gloves.
- Note that the capacitors indicated below are dangerous even after the power is turned off because an electric charge remains and a high voltage continues to exist there. Before starting any repair work, connect a discharging resistor (5 k-ohms/10 W) to the terminals of each capacitor indicated below to discharge electricity. The time required for discharging is about 30 seconds per each. C3706 on VIDEO (2) P.C.B.

• Semiconductor Location

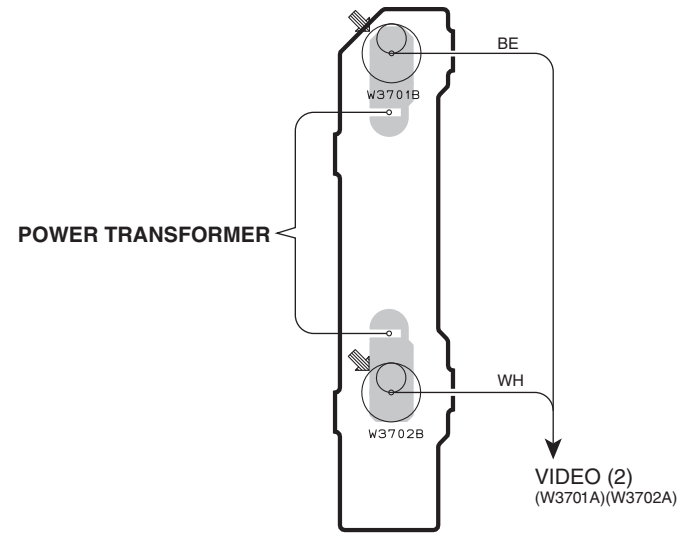
Ref no.	Location
D3701	D3
D3704	C4
IC371	E4
IC372	D5
IC373	D5
IC374	B4

RX-A720

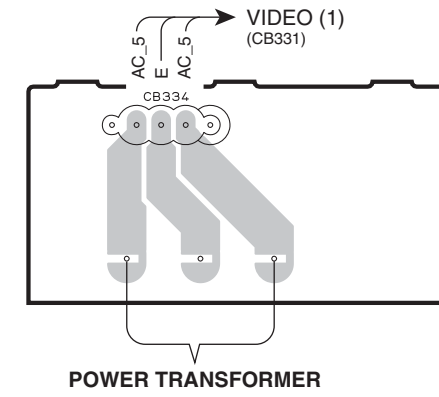
VIDEO (4) (Side A)



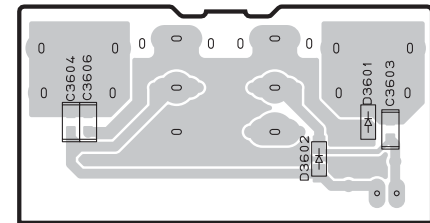
VIDEO (6) (Side A)



VIDEO (7) (Side A)



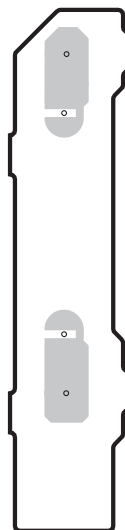
VIDEO (4) (Side B)



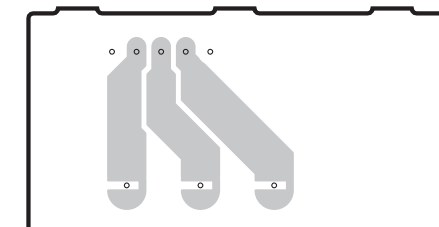
• Semiconductor Location

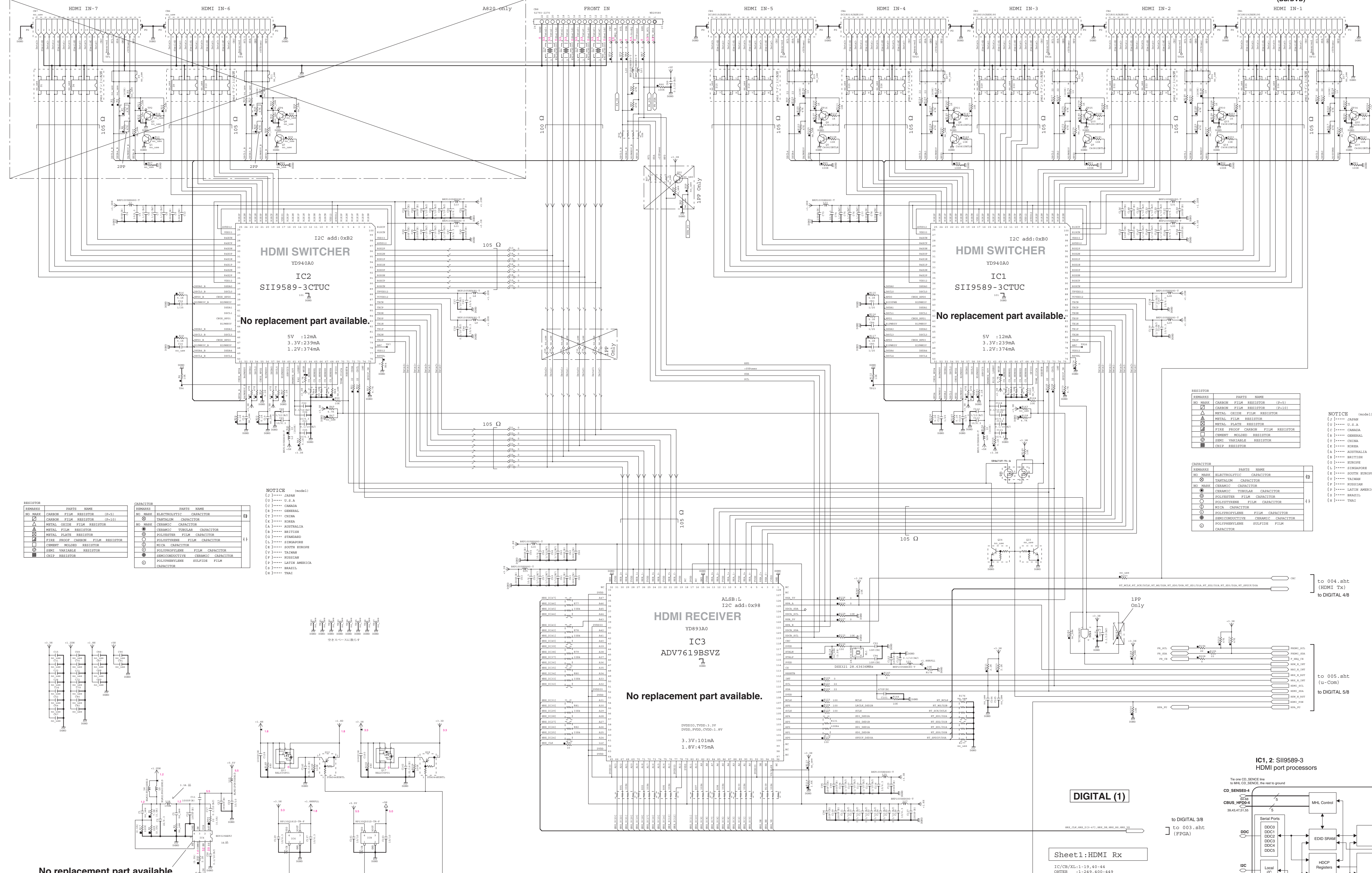
Ref no.	Location
D3601	C6
D3602	C6

VIDEO (6) (Side B)



VIDEO (7) (Side B)





RESISTOR	PARTS NAME	RESISTOR	PARTS NAME
NO MARK	RESISTOR	NO MARK	RESISTOR
□	CARBON FILM RESISTOR (P-1)	□	CARBON FILM RESISTOR (P-1)
△	METAL OXIDE FILM RESISTOR	△	METAL OXIDE FILM RESISTOR
○	METAL FILM RESISTOR	○	METAL FILM RESISTOR
◇	METAL PLATE RESISTOR	◇	METAL PLATE RESISTOR
◇	FILM PROOF CARBON FILM RESISTOR	◇	FILM PROOF CARBON FILM RESISTOR
◇	CHERRY MIXED RESISTOR	◇	CHERRY MIXED RESISTOR
◇	TEMP. VARIABLE RESISTOR	◇	TEMP. VARIABLE RESISTOR
◇	INDIC. RESISTOR	◇	INDIC. RESISTOR

CAPACITOR	PARTS NAME	CAPACITOR	PARTS NAME
□	ALUMINUM ELECTROLYTIC CAPACITOR	□	ALUMINUM ELECTROLYTIC CAPACITOR
□	TANTALUM CAPACITOR	□	TANTALUM CAPACITOR
□	CERAMIC CAPACITOR	□	CERAMIC CAPACITOR
□	CERAMIC TROUBLE CAPACITOR	□	CERAMIC TROUBLE CAPACITOR
□	POLYESTER FILM CAPACITOR	□	POLYESTER FILM CAPACITOR
□	POLYPROPYLENE FILM CAPACITOR	□	POLYPROPYLENE FILM CAPACITOR
□	MICA CAPACITOR	□	MICA CAPACITOR
□	POLYETHYLENE SULFIDE FILM CAPACITOR	□	POLYETHYLENE SULFIDE FILM CAPACITOR
□	POLYBUTYLENE SULFIDE FILM CAPACITOR	□	POLYBUTYLENE SULFIDE FILM CAPACITOR
□	OTHER CAPACITOR	□	OTHER CAPACITOR

NOTICE (model)

□ U.S.A.
○ CANADA
△ GERMANY
◇ CHINA
◇ KOREA
◇ AUSTRALIA
◇ STANDARD
◇ SINGAPORE
◇ SOUTH AFRICA
◇ MALAYSIA
◇ HONG KONG
◇ LATIN AMERICA
◇ BRAZIL
◇ OTHER

RESISTOR	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P-1)
△	METAL OXIDE FILM RESISTOR
○	METAL FILM RESISTOR
◇	METAL PLATE RESISTOR
◇	FILM PROOF CARBON FILM RESISTOR
◇	CHERRY MIXED RESISTOR
◇	TEMP. VARIABLE RESISTOR
◇	INDIC. RESISTOR

CAPACITOR	PARTS NAME
□	ALUMINUM ELECTROLYTIC CAPACITOR
□	TANTALUM CAPACITOR
□	CERAMIC CAPACITOR
□	CERAMIC TROUBLE CAPACITOR
□	POLYESTER FILM CAPACITOR
□	POLYPROPYLENE FILM CAPACITOR
□	MICA CAPACITOR
□	POLYETHYLENE SULFIDE FILM CAPACITOR
□	POLYBUTYLENE SULFIDE FILM CAPACITOR
□	OTHER CAPACITOR

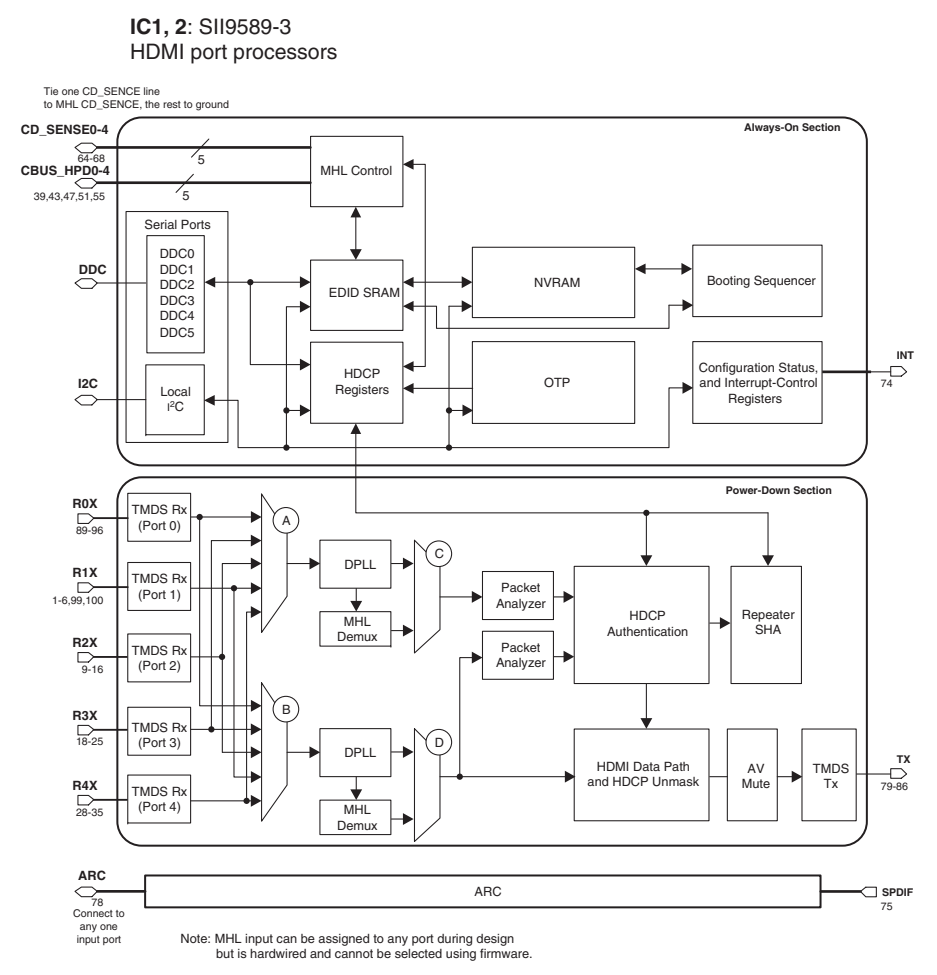
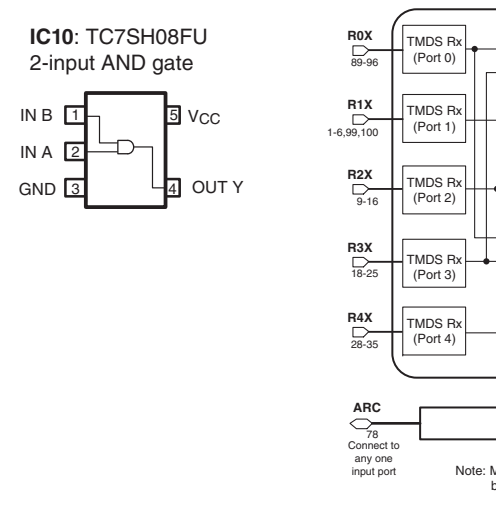
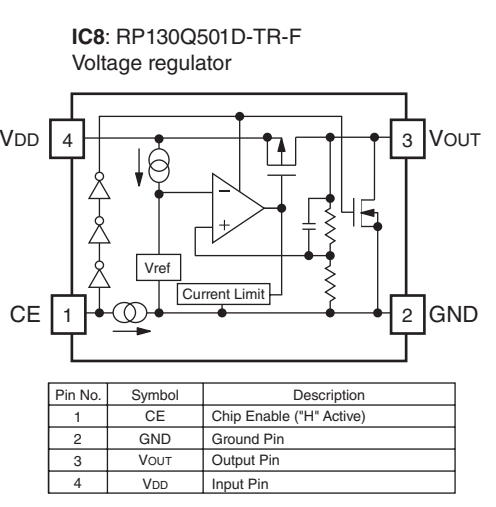
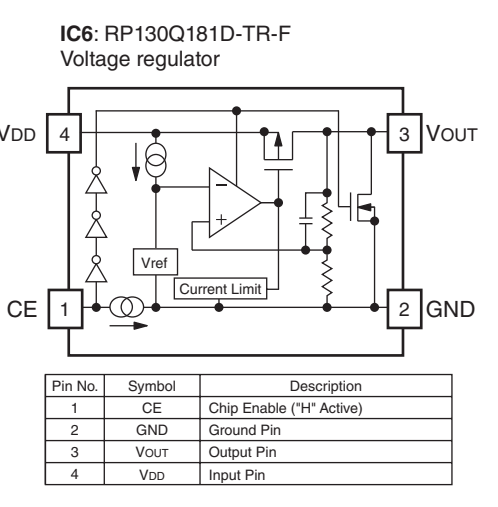
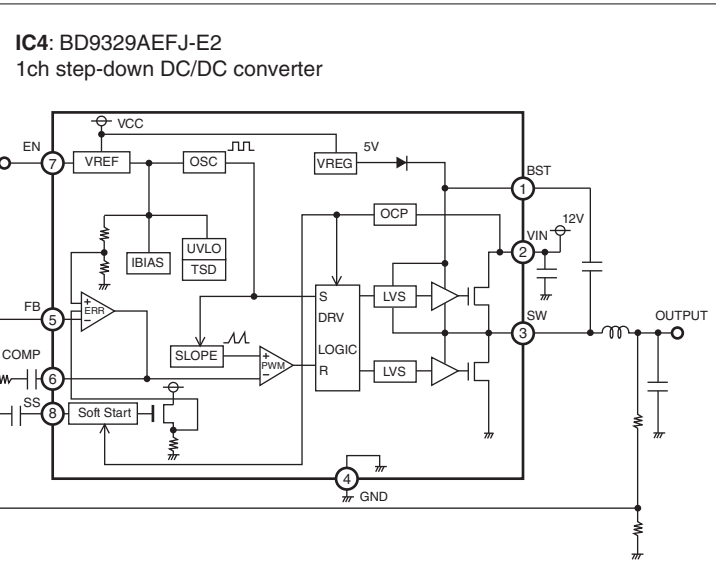
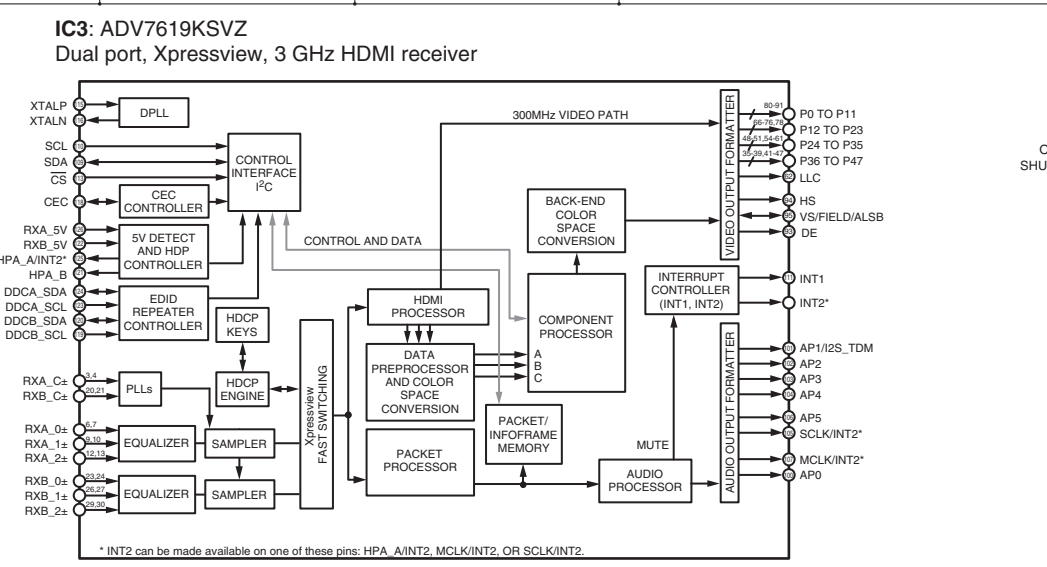
No replacement part available.

No replacement part available.

DIGITAL (1)

Sheet1: HDMI Rx

* All voltages are measured with a 10MΩV DC electronic voltmeter.
* Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
* Schematic diagram is subject to change without notice.



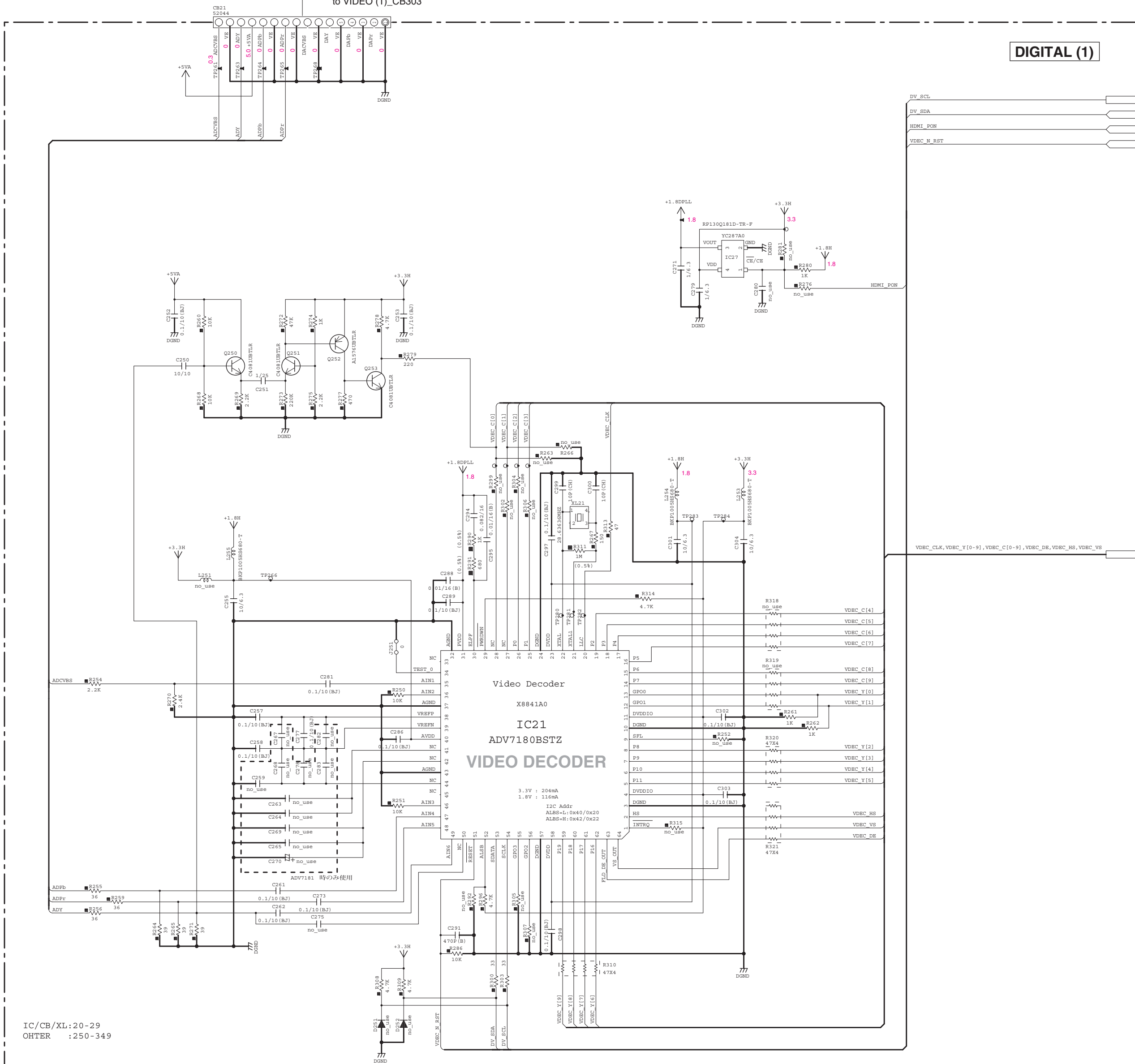
DIGITAL 2/8

RX-V673/HTR-6065

RX-A720

Page 143 K9 RX-V673/HTR-6065 to VIDEO (1)_CB303

Page 146 K9 RX-A720 to VIDEO (1)_CB303

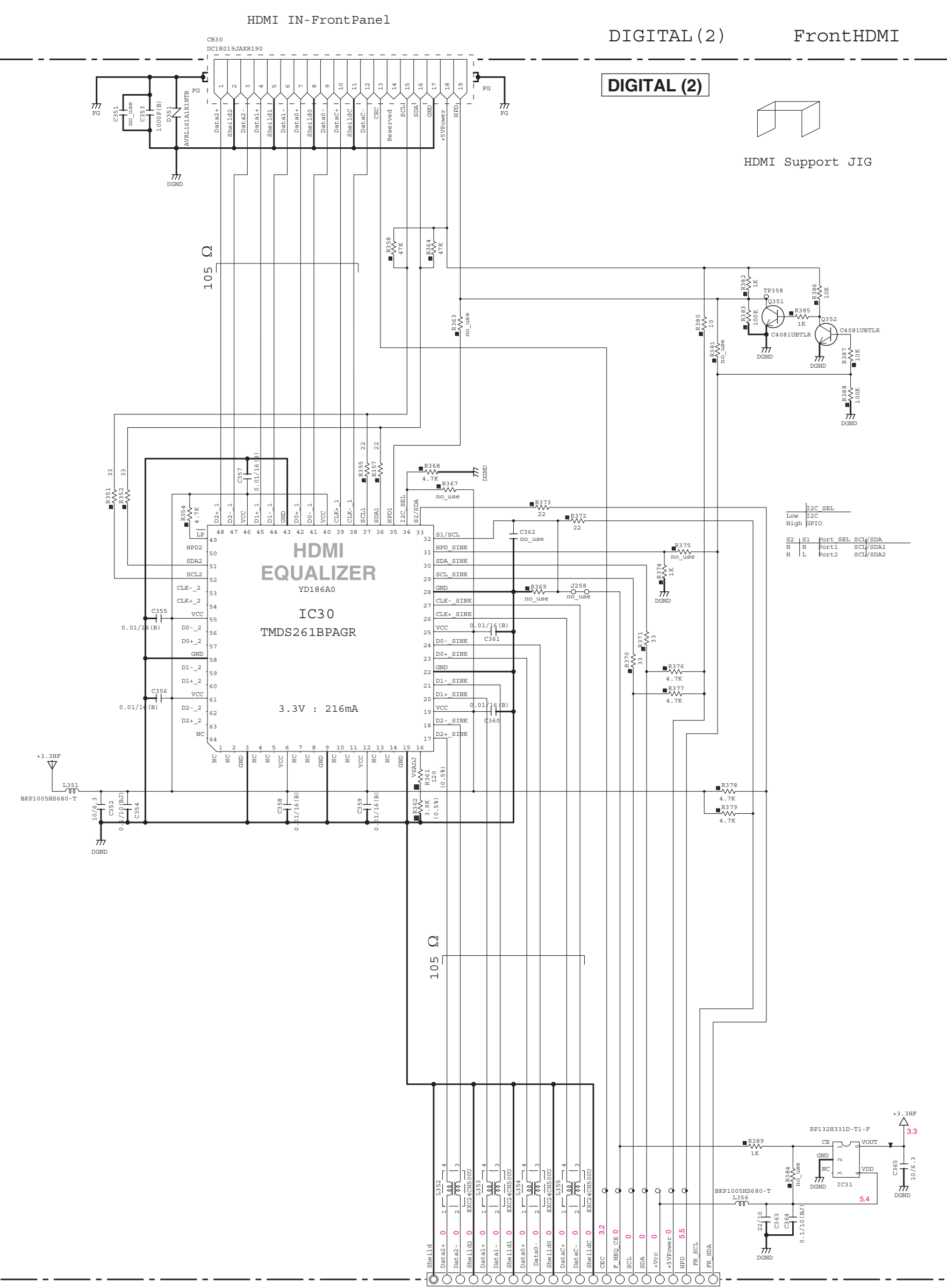


IC/CB/XL:20-29
OTHER :250-349

to DIGITAL 5/8
to 005_sht
(u-Com)

to DIGITAL 3/8
to 003_sht
(FPGA)

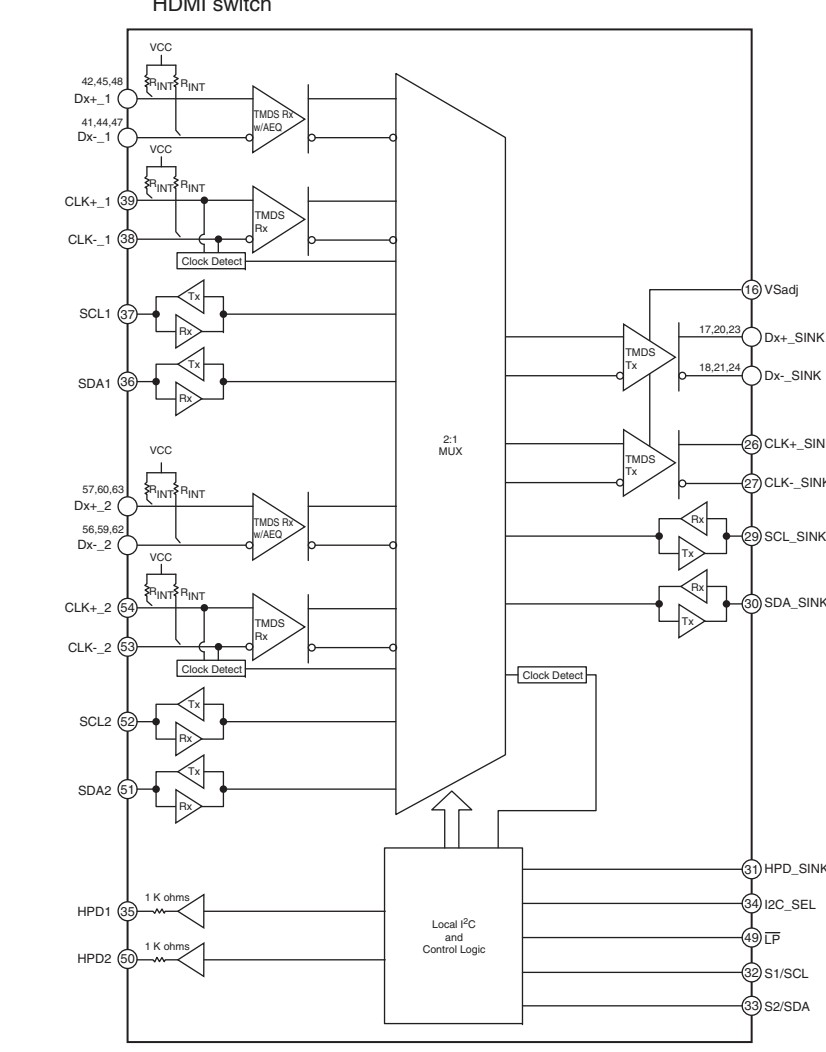
VIDEO AUX
HDMI IN



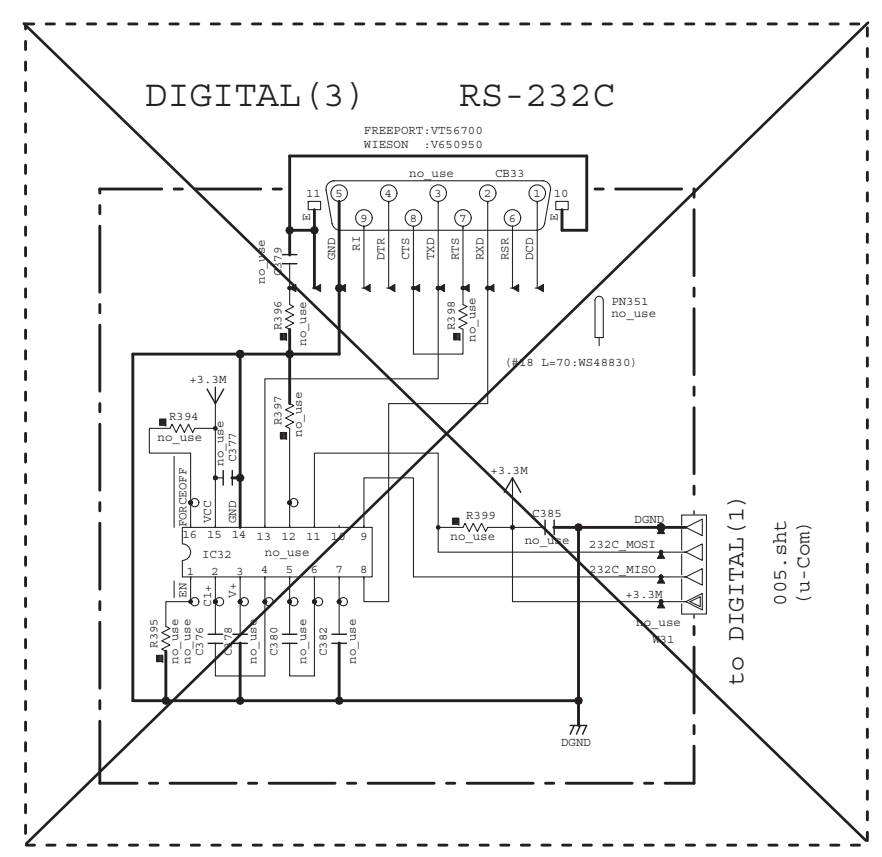
to DIGITAL (1)
001_sht
(HDMI RxC)

Page 129 F1
to DIGITAL (1)_CB8

IC30: TMSD261BPAGR
HDMI switch

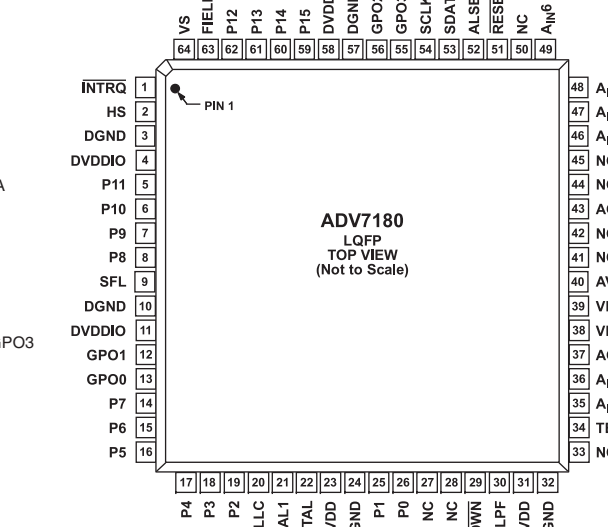
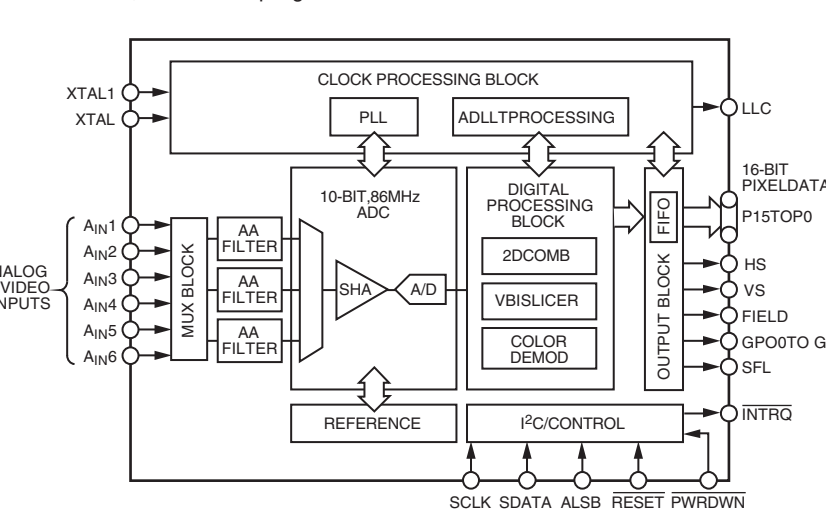


DIGITAL (2), (3)
IC/CB/XL:30-39
OTHER :350-399

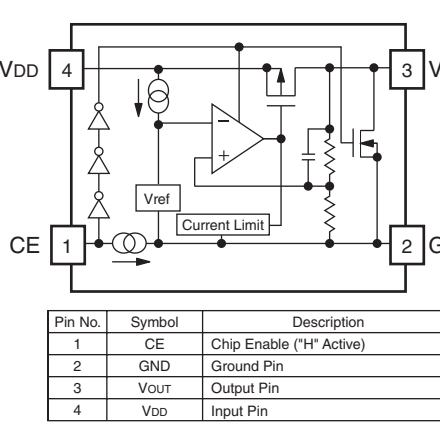


Sheet 2 : VDec / FHDMI / 232C

IC21: ADV7180BSTZ
10-bit, 4 x oversampling SDTV video decoder

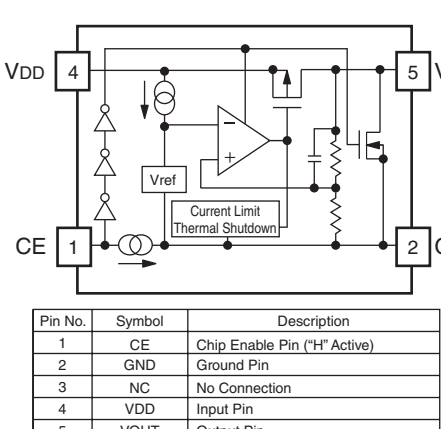


IC27: RP130Q181D-TR-F
Voltage regulator



Pin No.	Symbol	Description
1	CE	Chip Enable (T ⁺ Active)
2	GND	Ground Pin
3	VOUT	Output Pin
4	VDD	Input Pin

IC31: RP132H31D-T1-FE
Voltage regulator



Pin No.	Symbol	Description
1	CE	Chip Enable (T ⁺ Active)
2	GND	Ground Pin
3	NC	No Connection
4	VDD	Input Pin
5	VOUT	Output Pin

NOTICE (model)

- () : JAPAN
- () : U.S.A.
- () : CANADA
- () : GENERAL
- () : OTHER
- () : KOREA
- () : AUSTRALIA
- () : SINGAPORE
- () : HONGKONG
- () : SOUTHWEST
- () : TAIWAN
- () : HONGKONG
- () : LATIN AMERICA
- () : MEXICO
- () : OTHER

RESISTOR	PARTS	VALUE
NO MARK	CARBON FILM RESISTOR (P-5)	
01	CARBON FILM RESISTOR (P-10)	
02	METAL OXIDE FILM RESISTOR	
03	METAL FILM RESISTOR	
04	METAL PLATE RESISTOR	
05	FILM PROOF CARBON FILM RESISTOR	
06	CHROME-NICKEL RESISTOR	
07	SEMICONDUCTOR RESISTOR	
08	CHIP RESISTOR	

CAPACITOR	PARTS	VALUE
09	NO MARK ELECTROLYTIC CAPACITOR	
10	TANTALUM CAPACITOR	
11	CERAMIC CAPACITOR	
12	POLYMER FILM CAPACITOR	
13	POLYESTER FILM CAPACITOR	
14	POLYPROPYLENE FILM CAPACITOR	
15	POLYCARBONATE FILM CAPACITOR	
16	NONCONDUCTIVE CERAMIC CAPACITOR	
17	POLYETHYLENE SULFIDE FILM CAPACITOR	

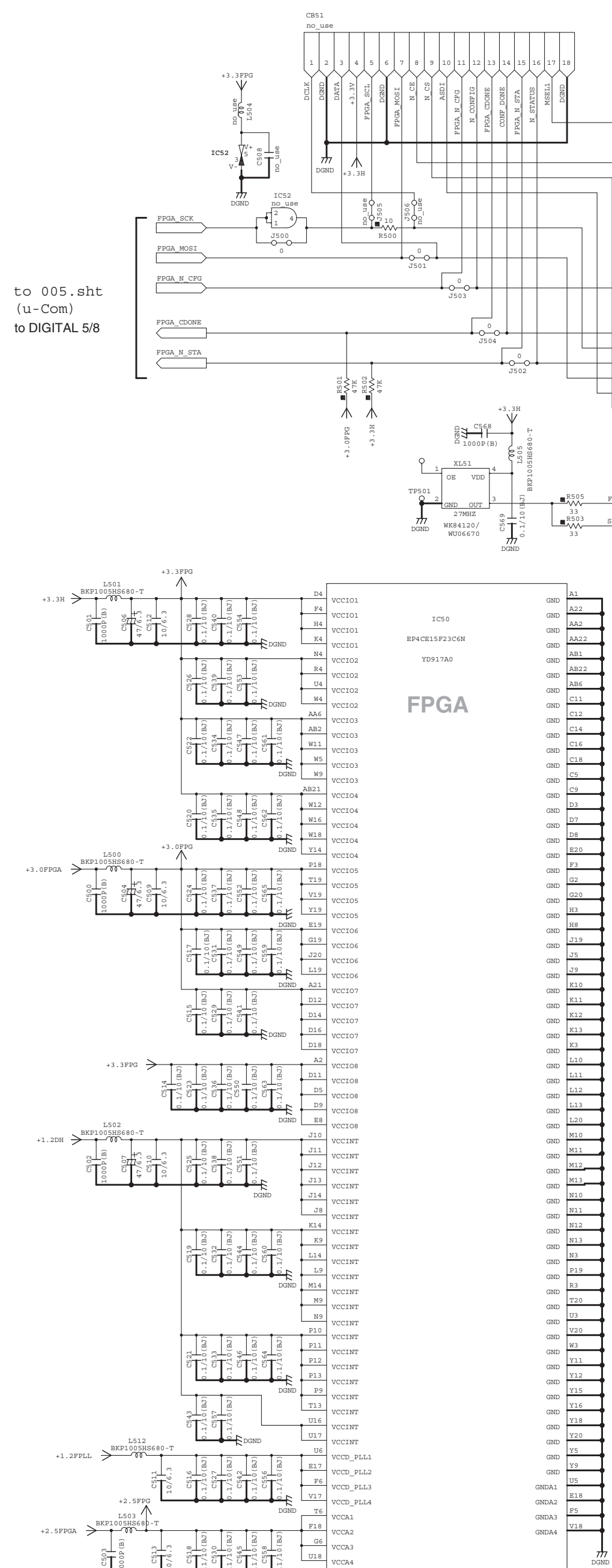
* All voltages are measured with a 10MΩ DC electronic voltmeter.
 * Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
 * Schematic diagram is subject to change without notice.

DIGITAL 3/8

to 001.sht
(HDMI Rx)
to DIGITAL 1/8

to 002.sht
(VDec)
to DIGITAL 2/8

to 005.sht
(u-Com)
to DIGITAL 5/8



No replacement part available.

No replacement part available.

FPGA

FPGA

FPGA

SDRAM

できるだけ IC50 端子付近に配置

No replacement part available.

DIGITAL (1)

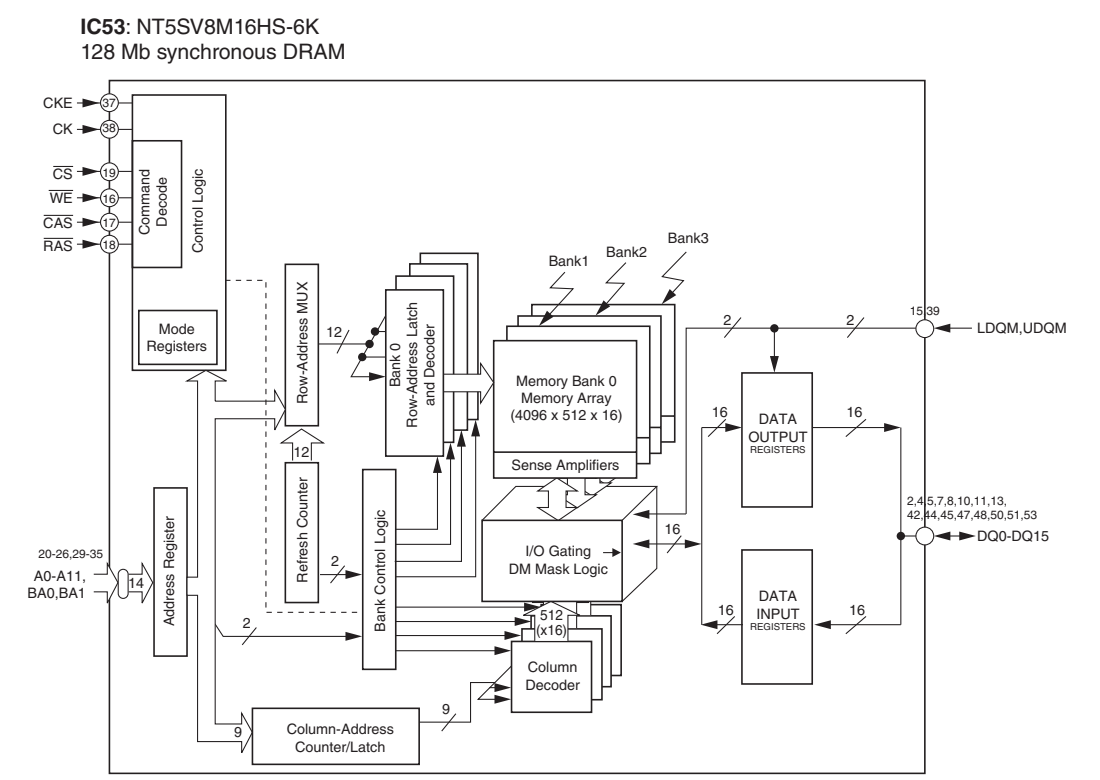
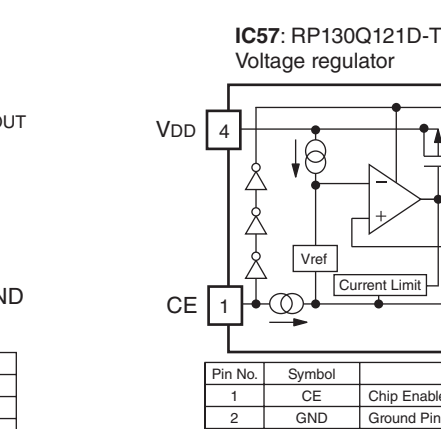
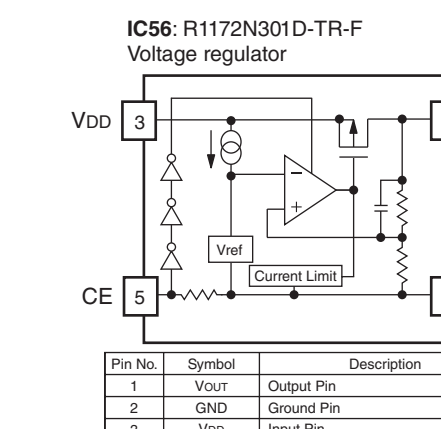
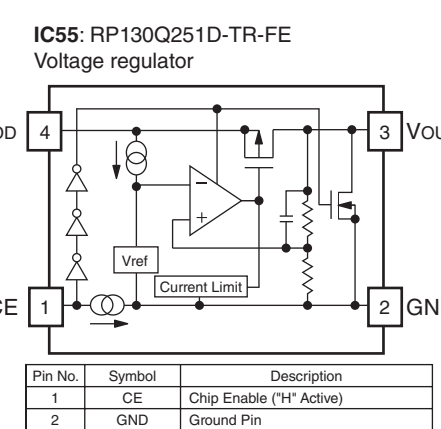
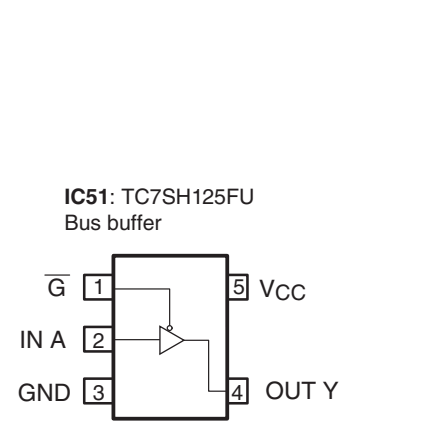
to DIGITAL 5/8
to 005.sht
(u-Com)

Sheet 3 : FPGA

IC / CB / XL : 45-59
SW : 45-59
OTHER : 450-599

NOTICE (model)

(1) 中国	(1) 中国
(2) 台湾	(2) 台湾
(3) 香港	(3) 香港
(4) 日本	(4) 日本
(5) 韩国	(5) 韩国
(6) 泰国	(6) 泰国
(7) 马来西亚	(7) 马来西亚
(8) 印度尼西亚	(8) 印度尼西亚
(9) 菲律宾	(9) 菲律宾
(10) 越南	(10) 越南
(11) 柬埔寨	(11) 柬埔寨
(12) 老挝	(12) 老挝
(13) 新加坡	(13) 新加坡
(14) 文莱	(14) 文莱
(15) 东帝力	(15) 东帝力
(16) 马尼拉	(16) 马尼拉
(17) 曼谷	(17) 曼谷
(18) 雅加达	(18) 雅加达
(19) 泗水	(19) 泗水
(20) 巴达维亚	(20) 巴达维亚
(21) 新德里	(21) 新德里
(22) 孟买	(22) 孟买
(23) 加爾各答	(23) 加爾各答
(24) 仰光	(24) 仰光
(25) 曼谷	(25) 曼谷
(26) 河内	(26) 河内
(27) 金边	(27) 金边
(28) 万象	(28) 万象
(29) 曼谷	(29) 曼谷
(30) 曼谷	(30) 曼谷



* All voltages are measured with a 10MΩ DC electronic voltmeter.
* Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
* Schematic diagram is subject to change without notice.

DIGITAL 5/8

DIGITAL (1)

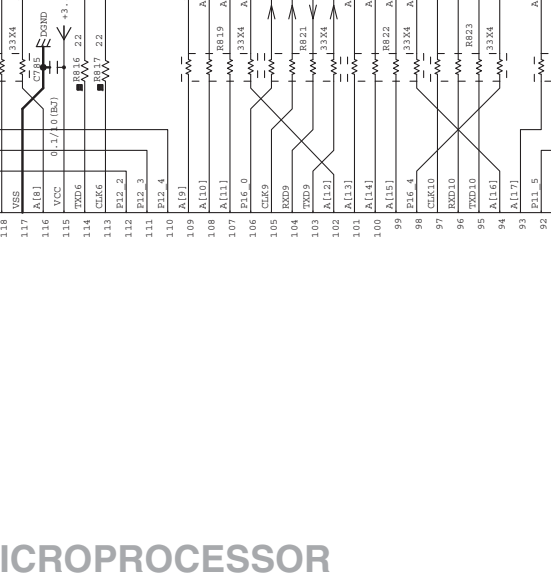
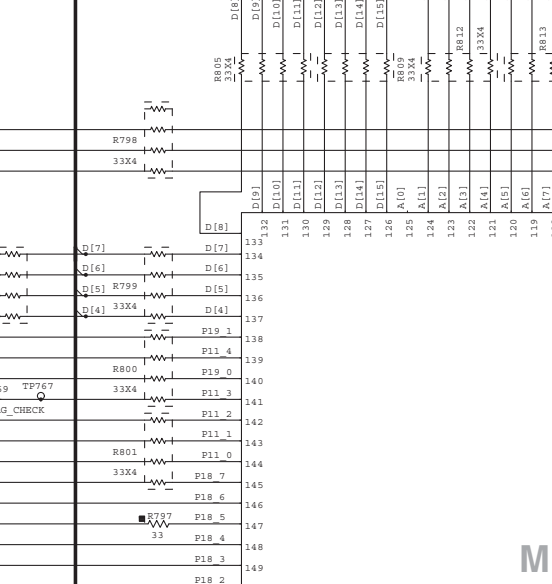
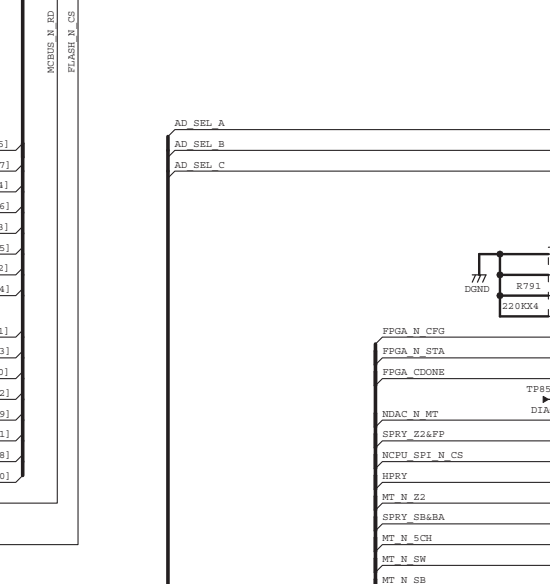
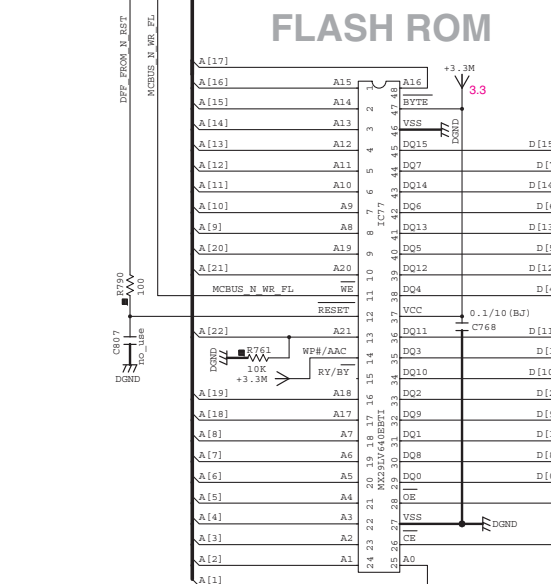
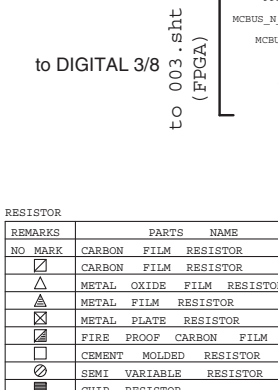
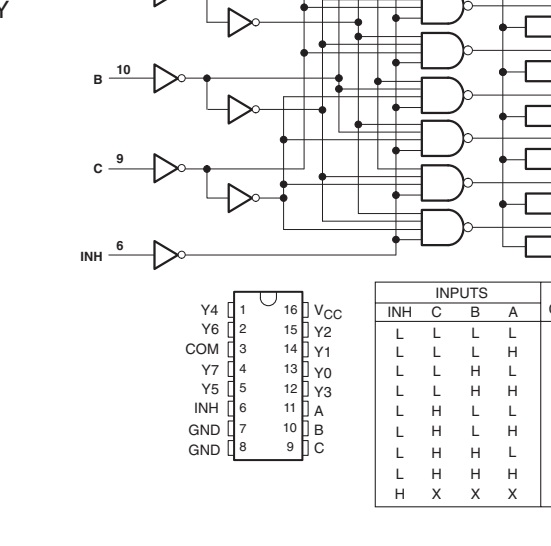
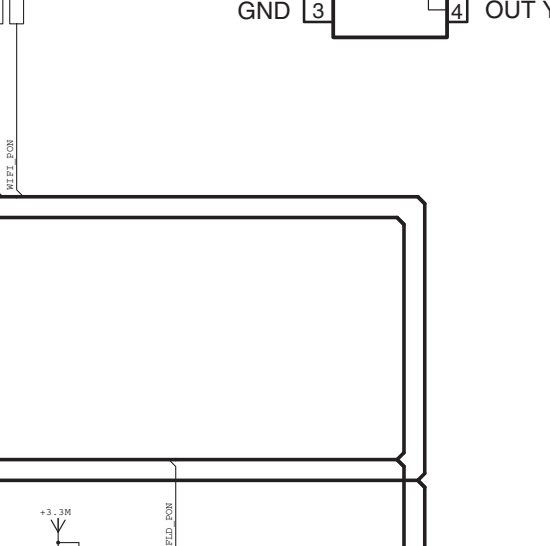
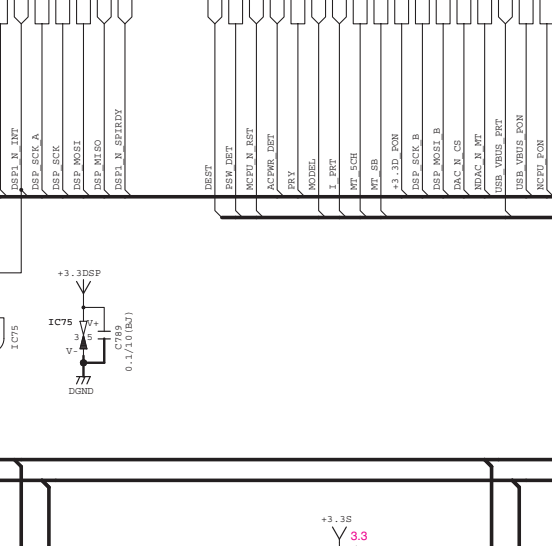
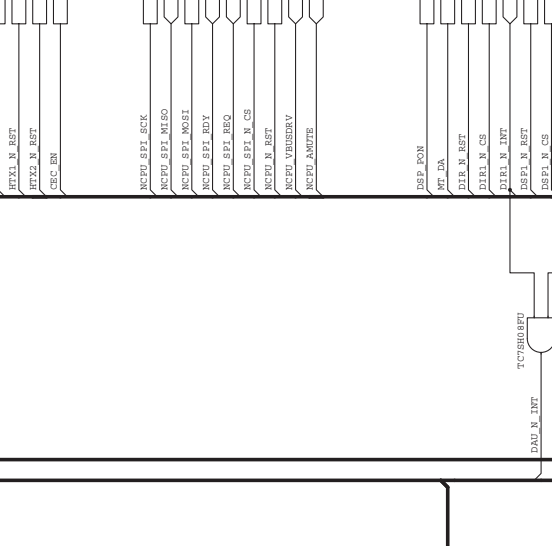
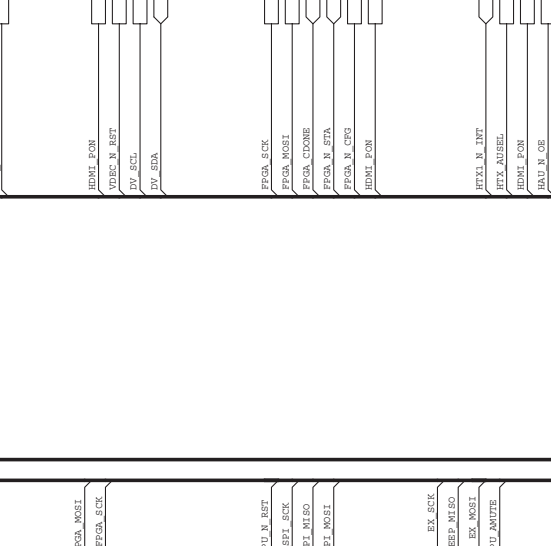
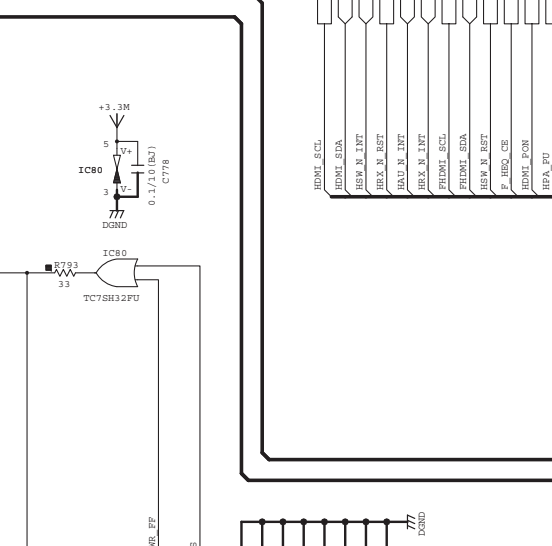
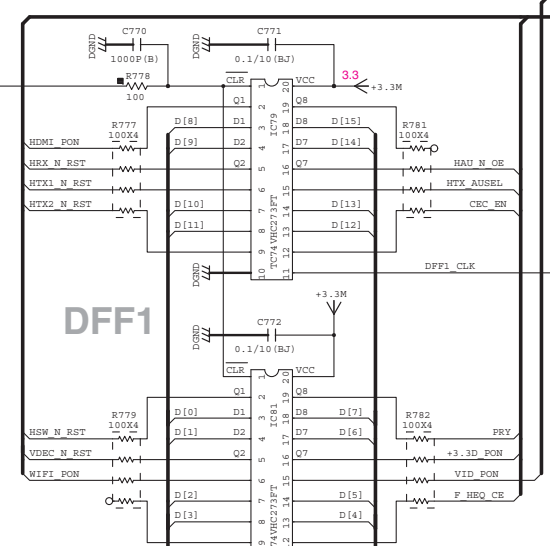
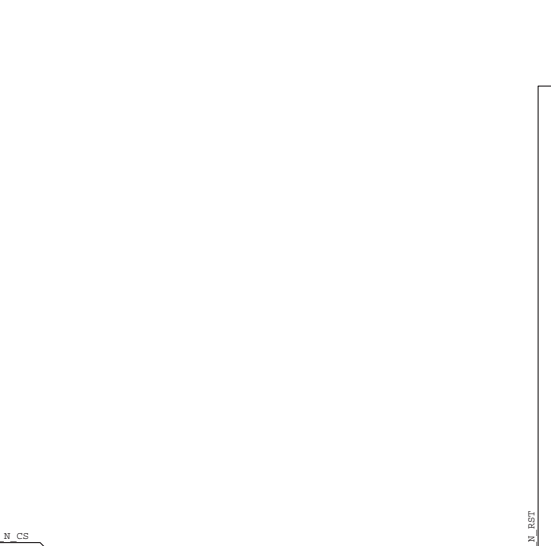
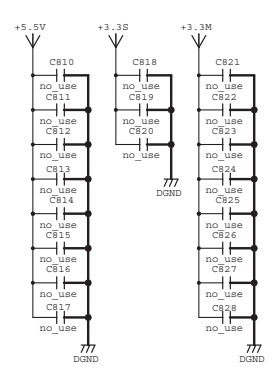


Table with 3 columns: SYMBOL, PARTS NAME, and VALUE. Lists various electronic components like resistors, capacitors, and diodes.

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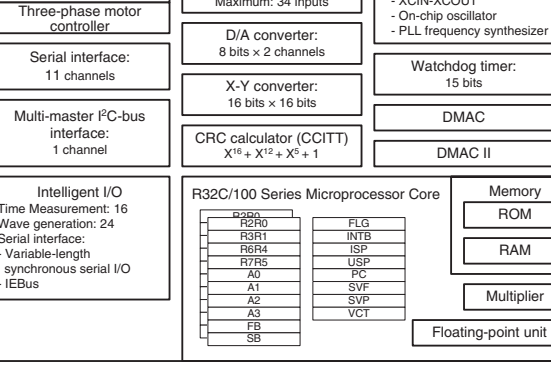
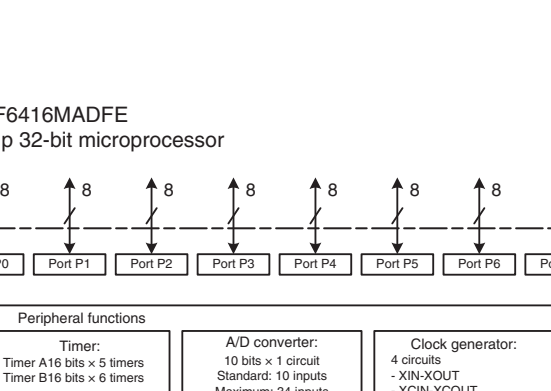
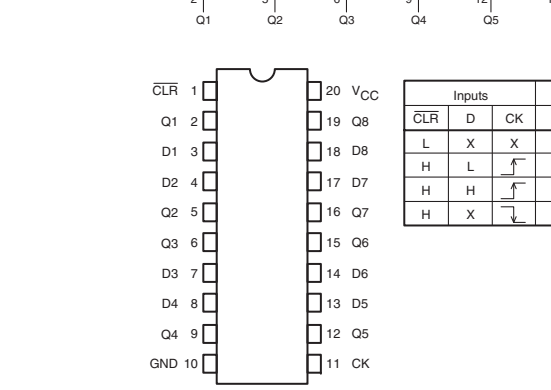
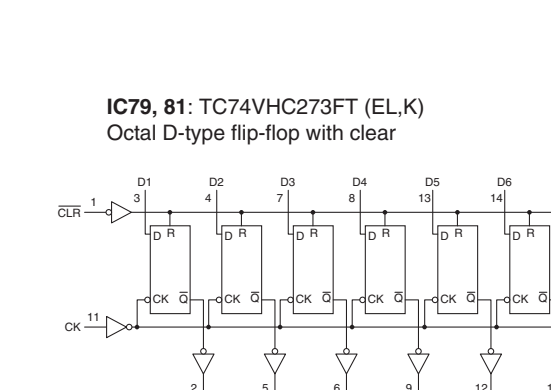
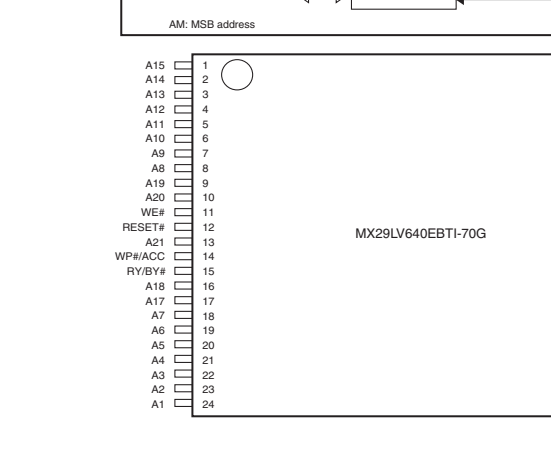
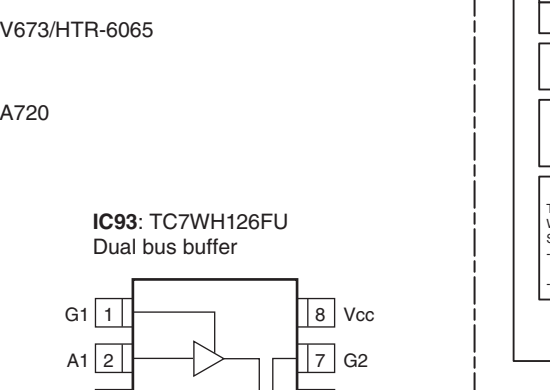
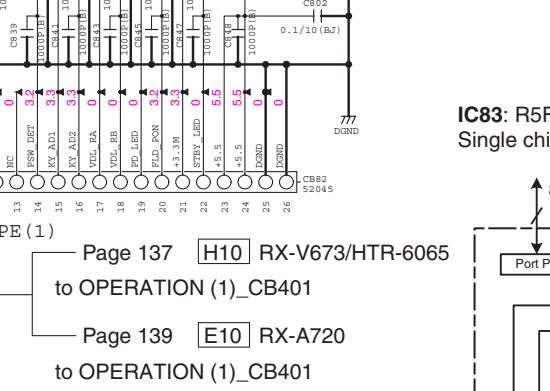
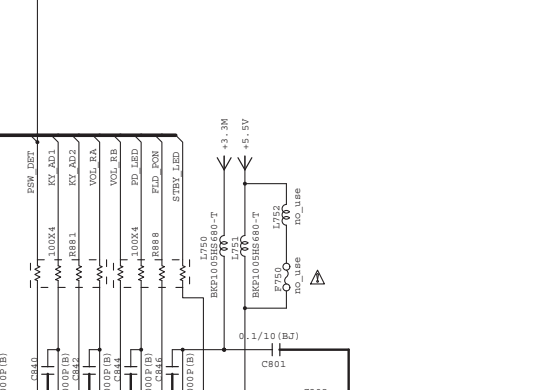
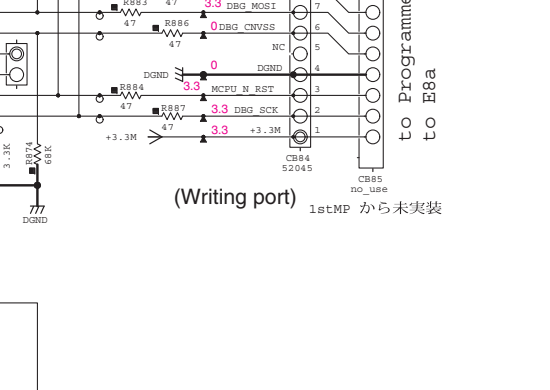
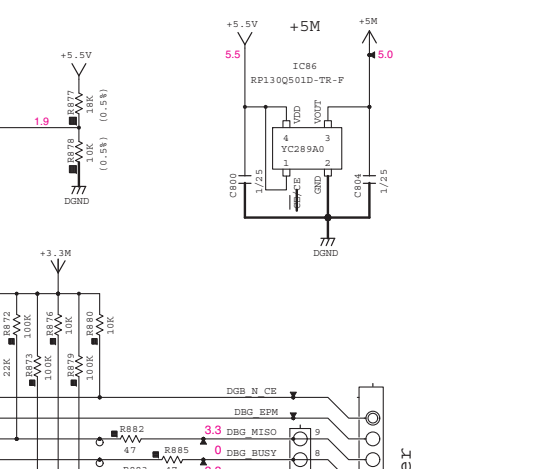
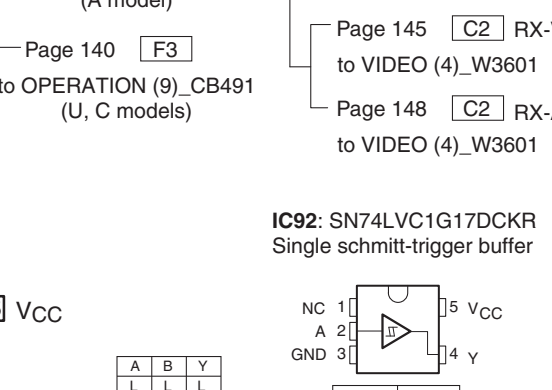
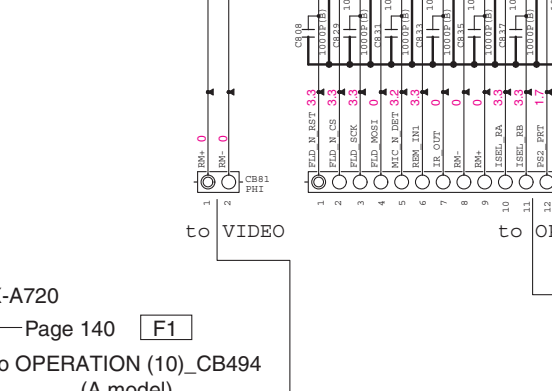
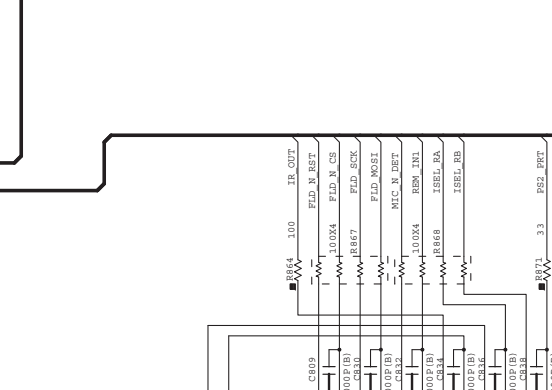
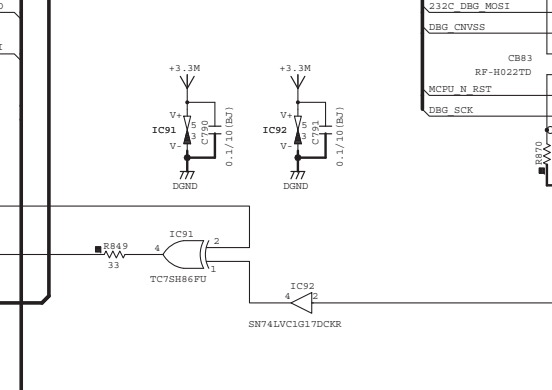
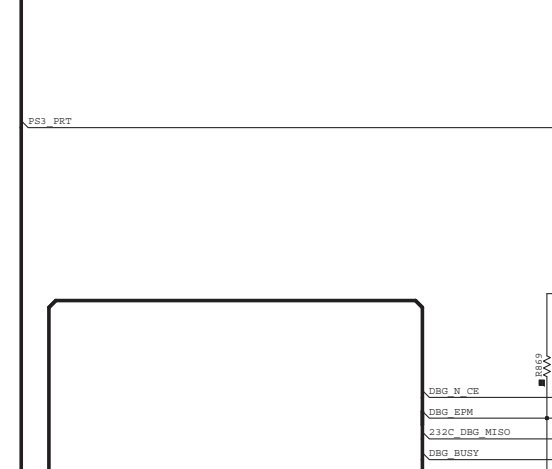
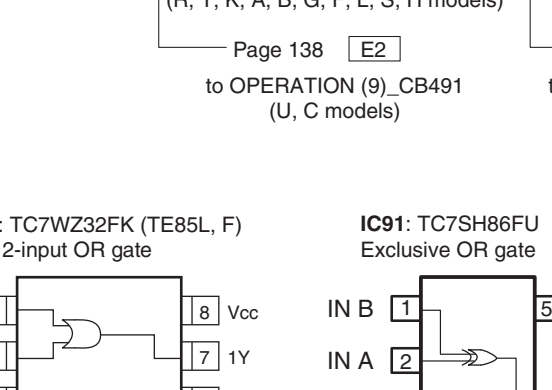
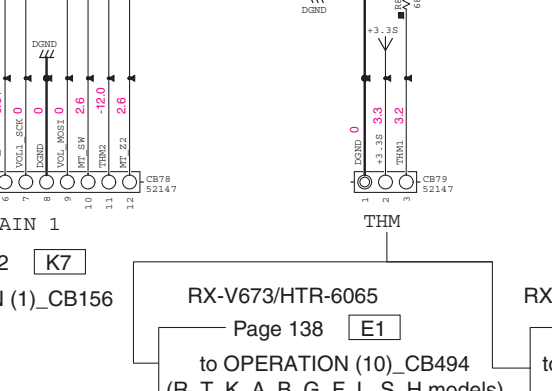
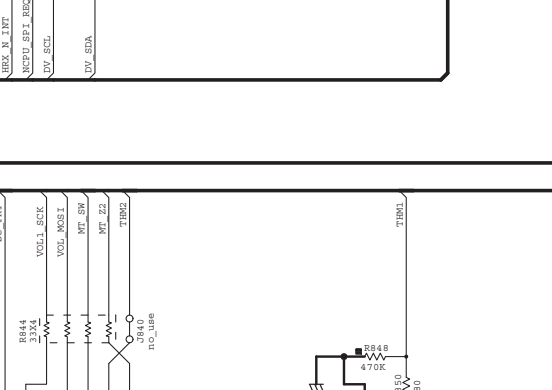
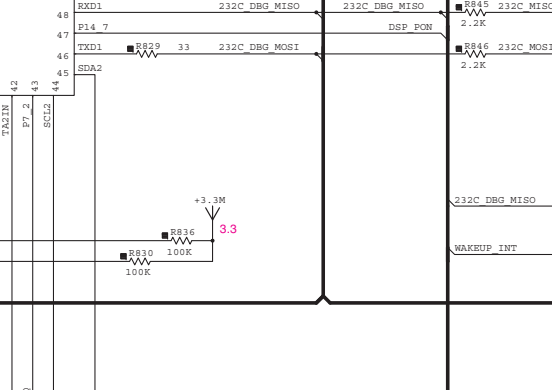
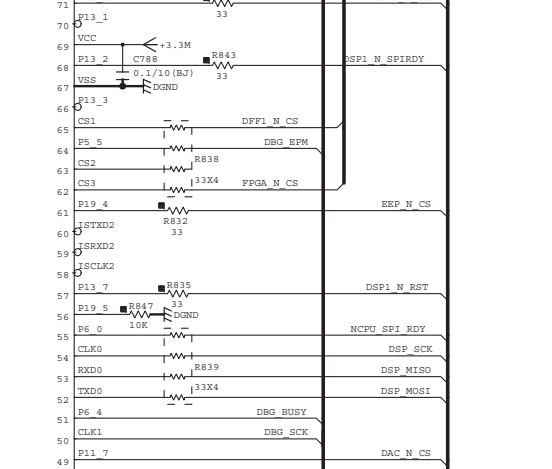
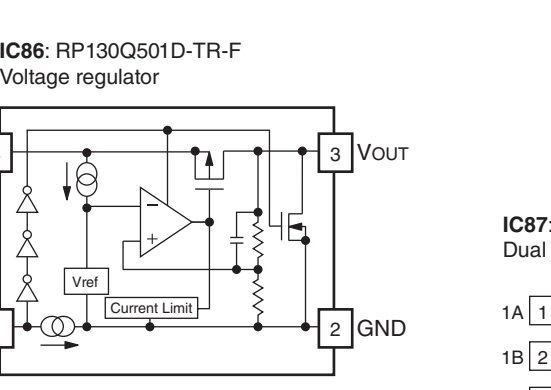
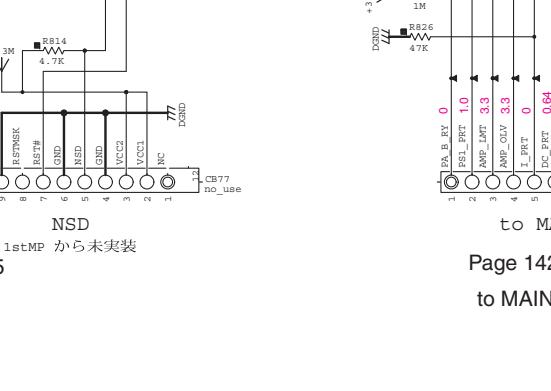
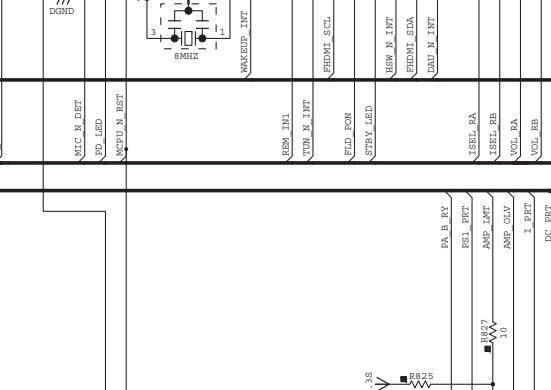
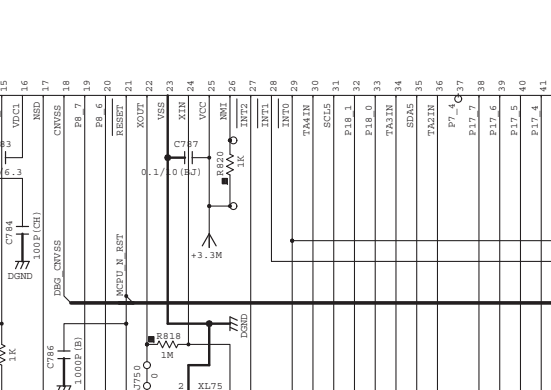
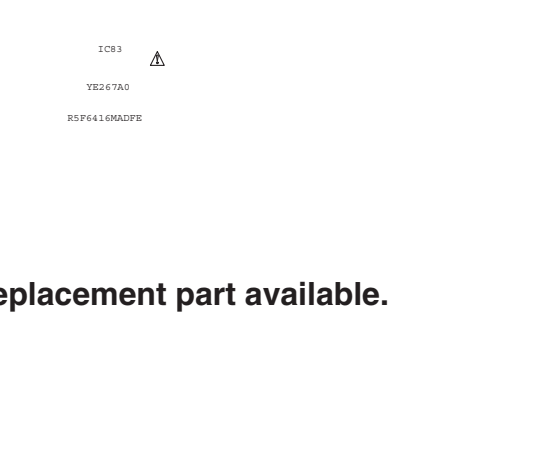
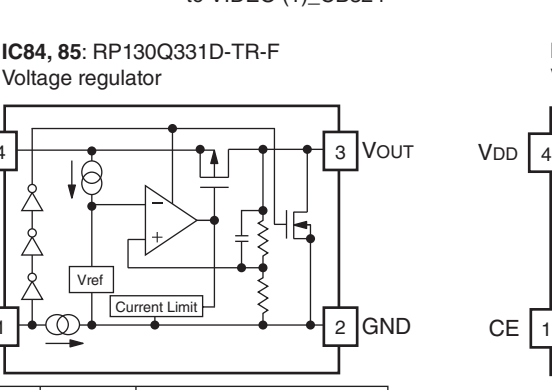
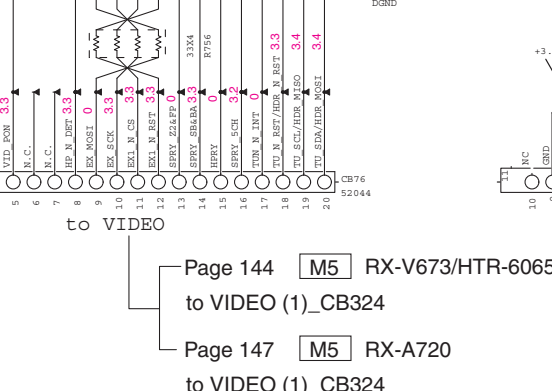
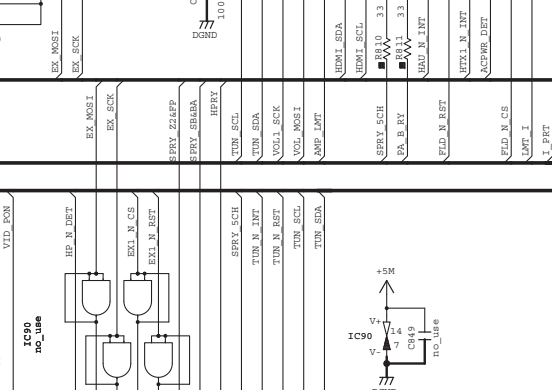
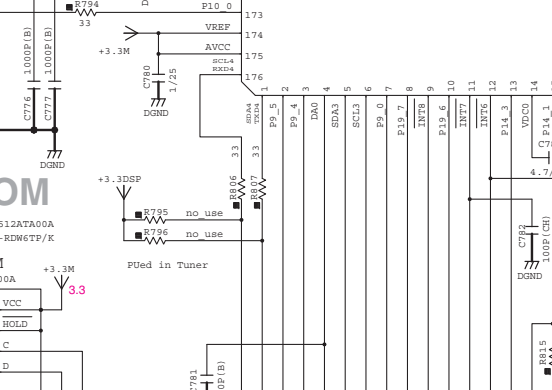
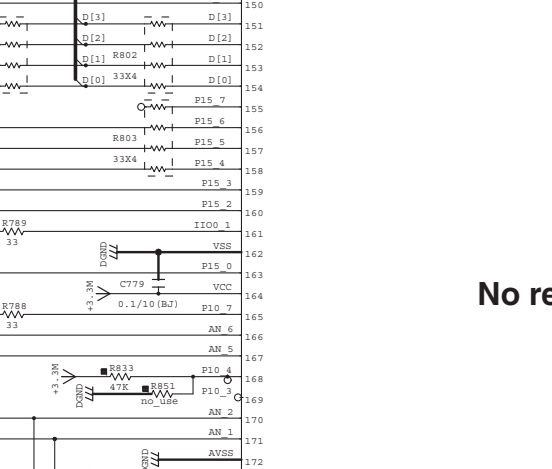
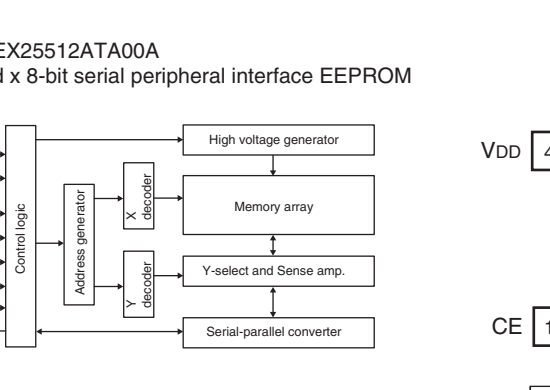
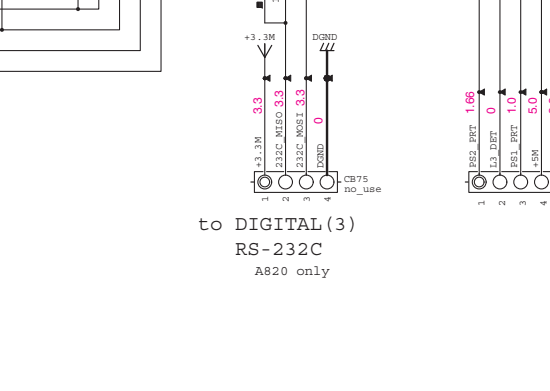
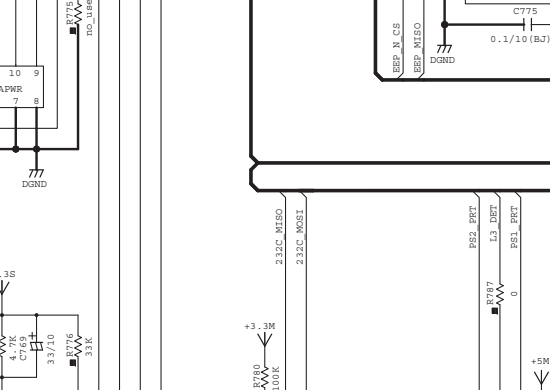
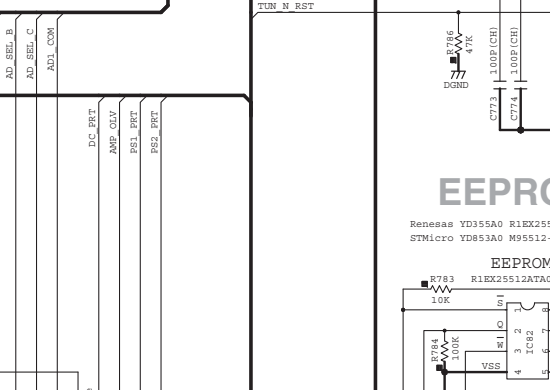
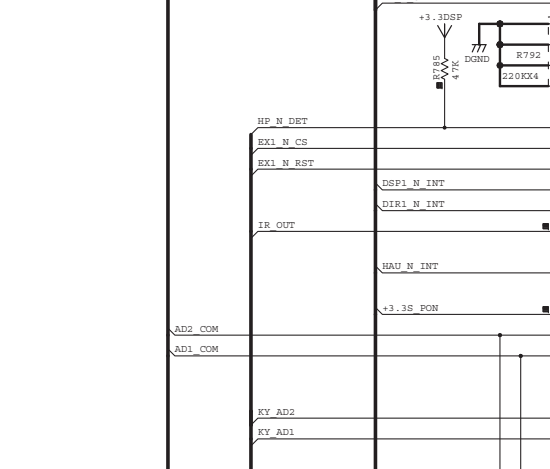
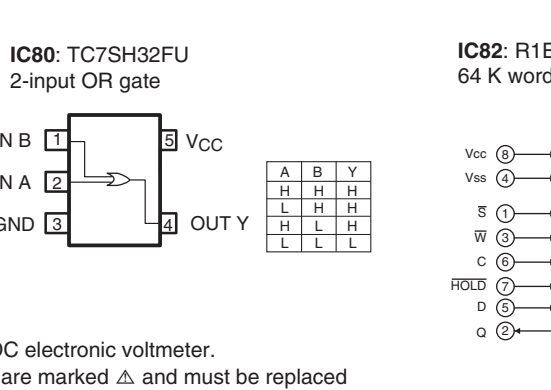
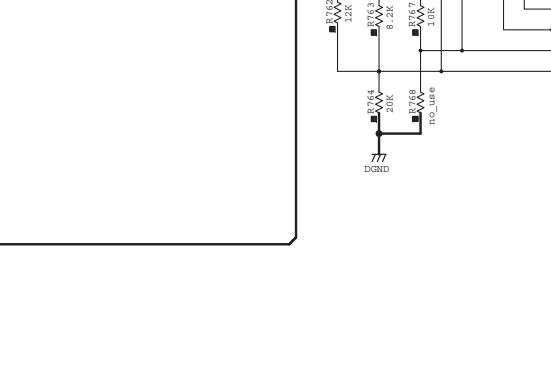
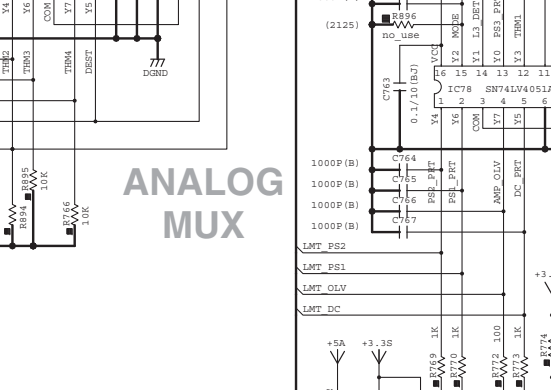
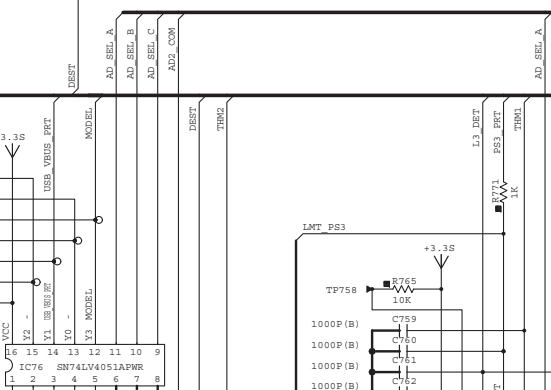
Table with 3 columns: SYMBOL, PARTS NAME, and VALUE. Lists various electronic components like resistors, capacitors, and diodes.

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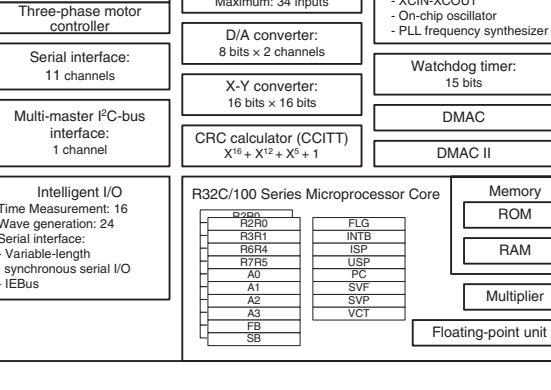
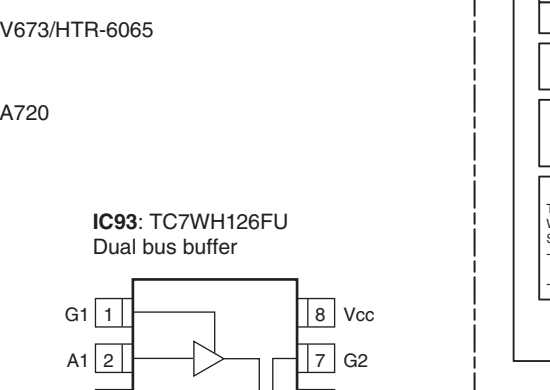
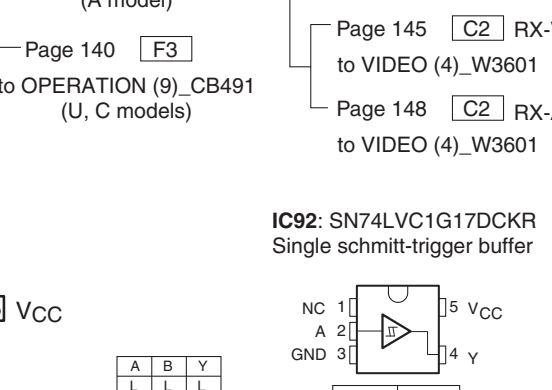
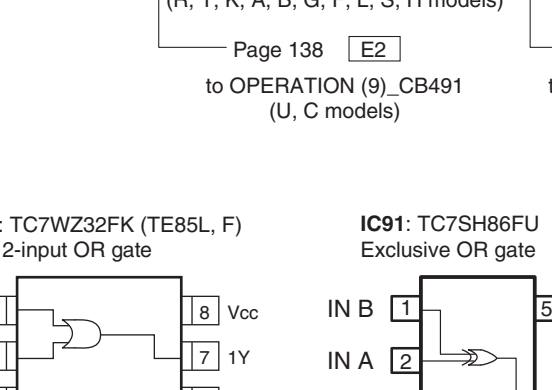
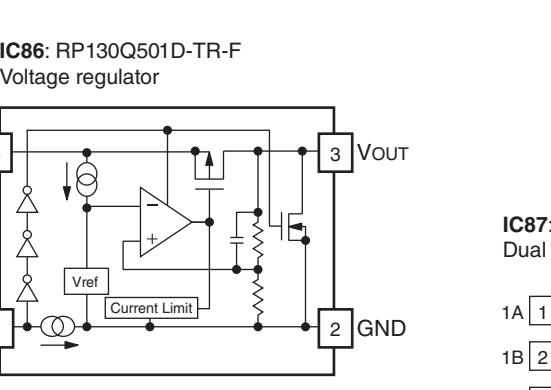
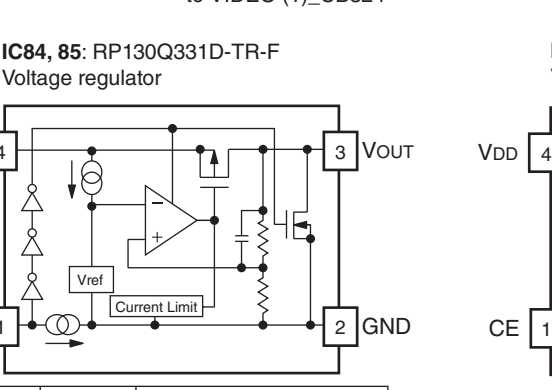
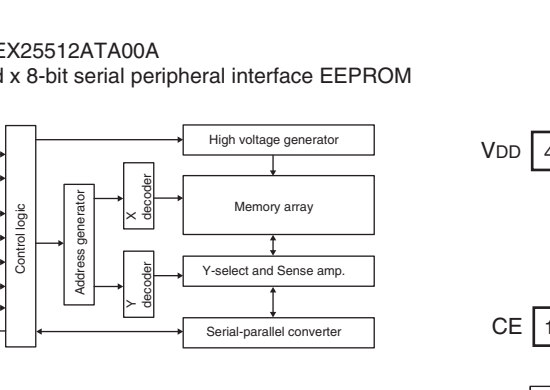
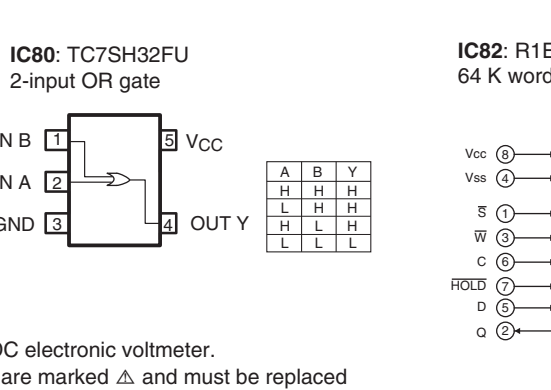
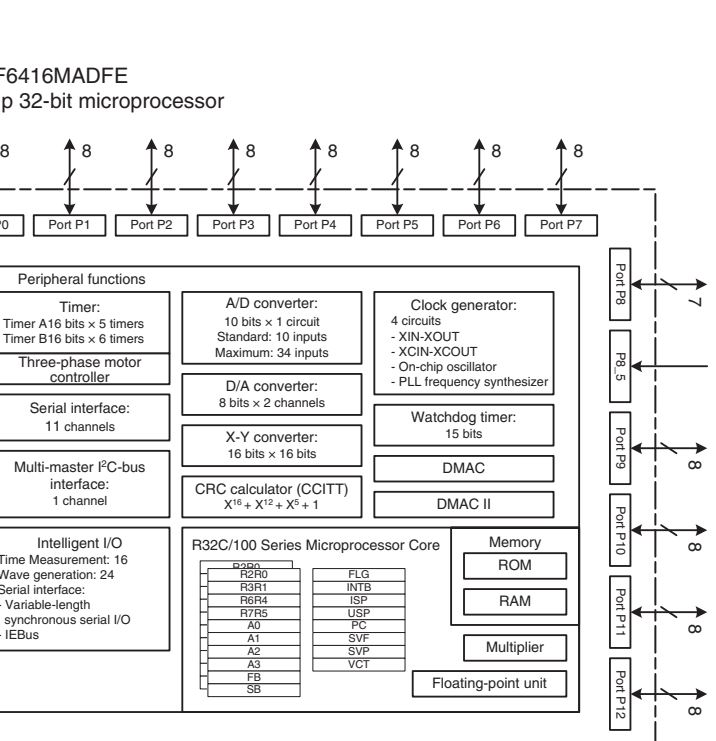
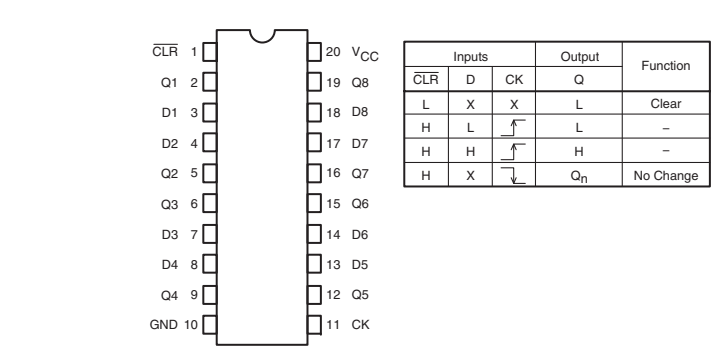
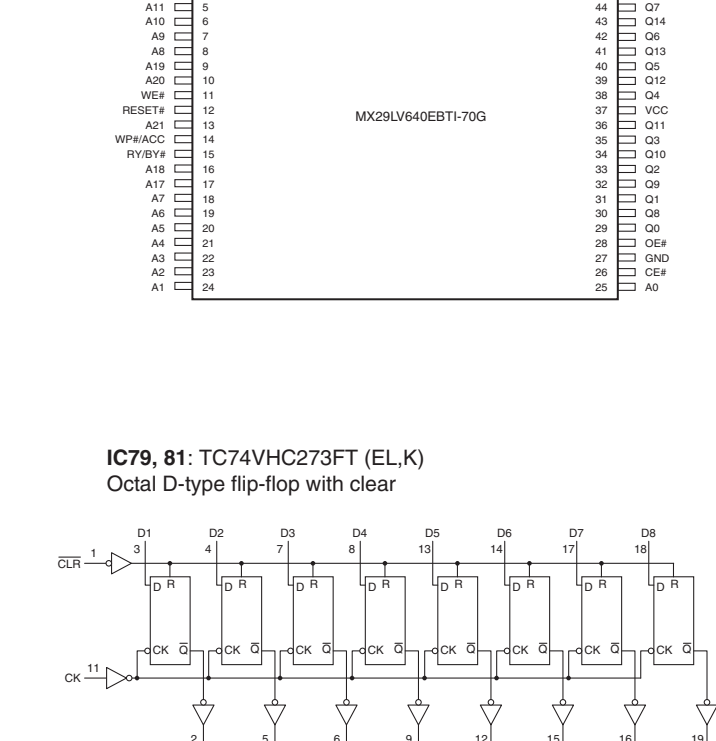
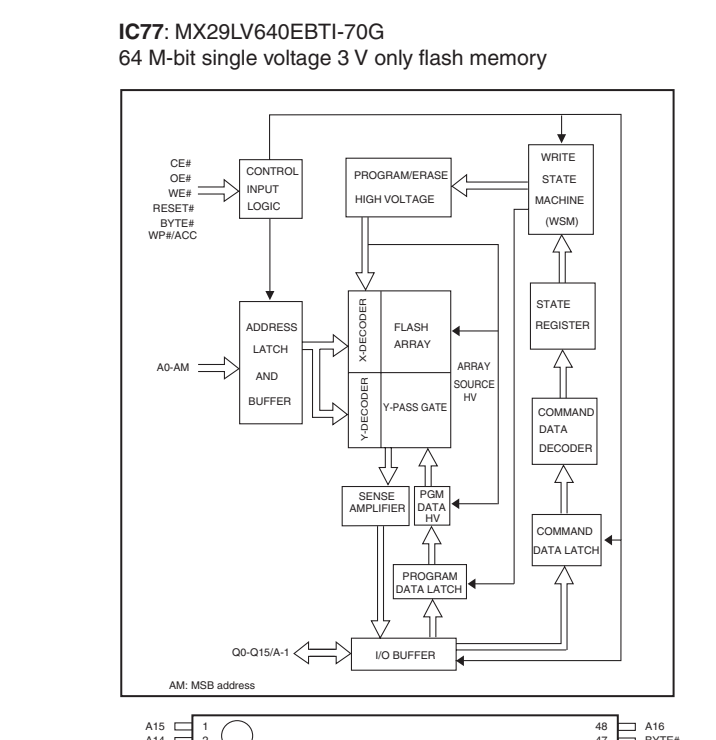
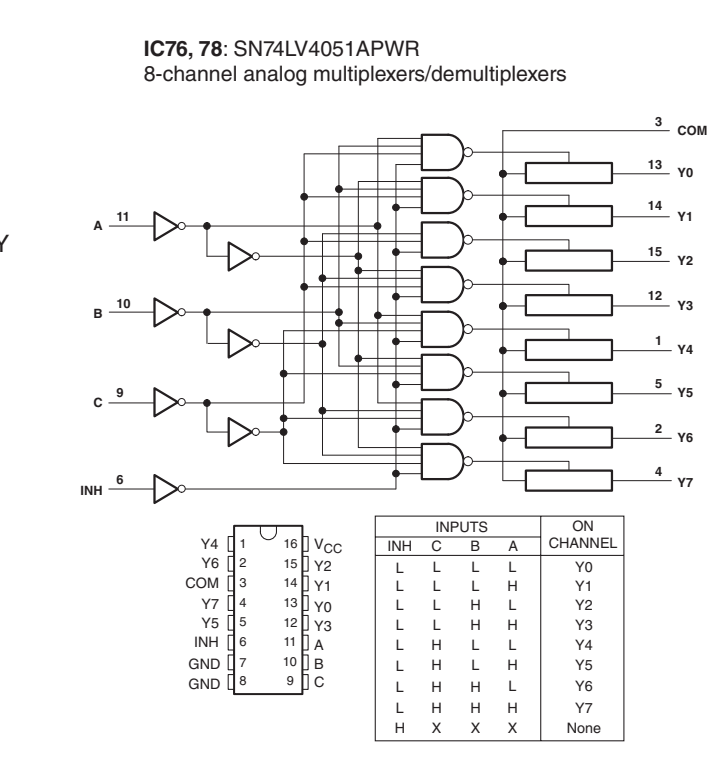
NOTICE (Model)

- [J] JAPAN
- [U] U.S.A
- [C] CANADA
- [G] GERMANY
- [K] KOREA
- [A] AUSTRALIA
- [B] BRITAIN
- [S] SWITZERLAND
- [T] TAIWAN
- [M] MEXICO
- [L] LATIN AMERICA
- [I] INDIA



* All voltages are measured with a 10MΩ/V DC electronic voltmeter.
* Components having special characteristics are marked Δ, and must be replaced with parts having specifications equal to those originally installed.
* Schematic diagram is subject to change without notice.

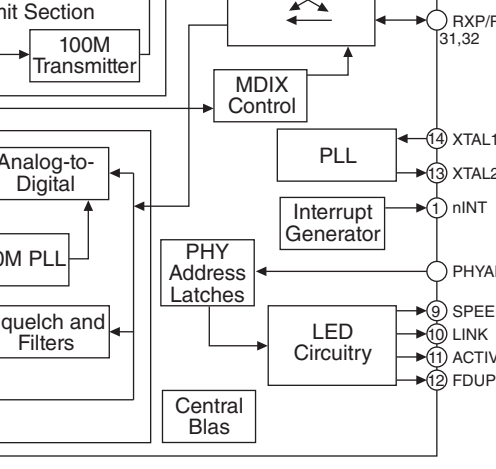
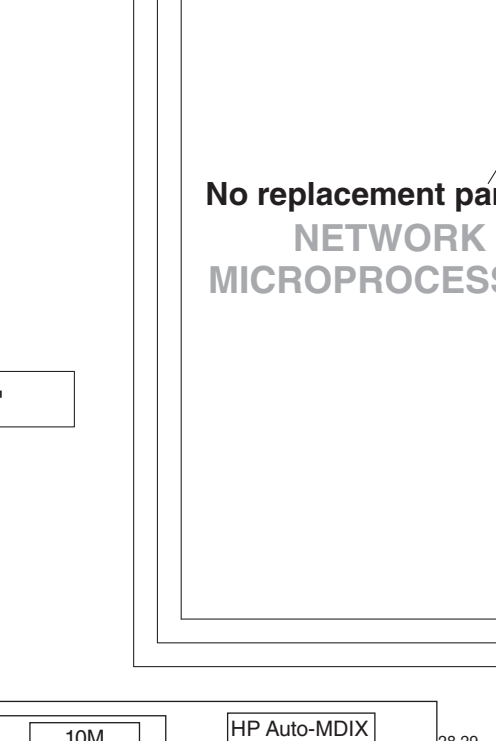
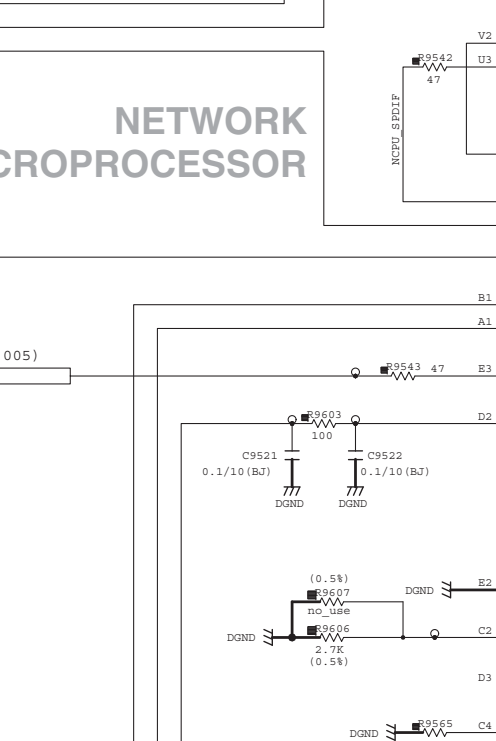
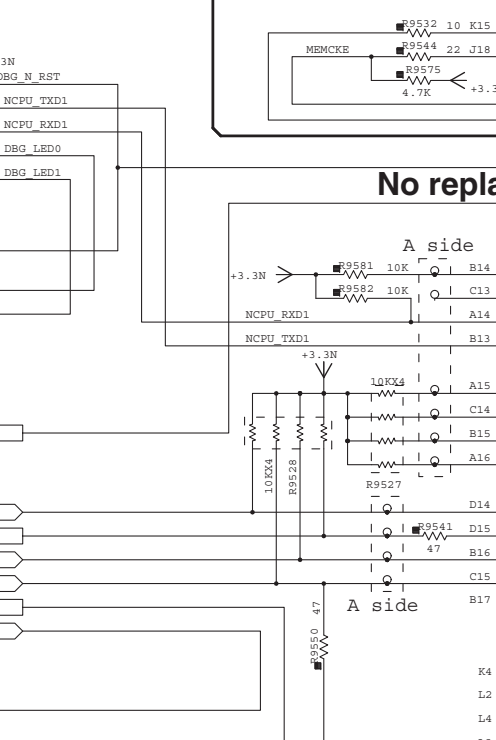
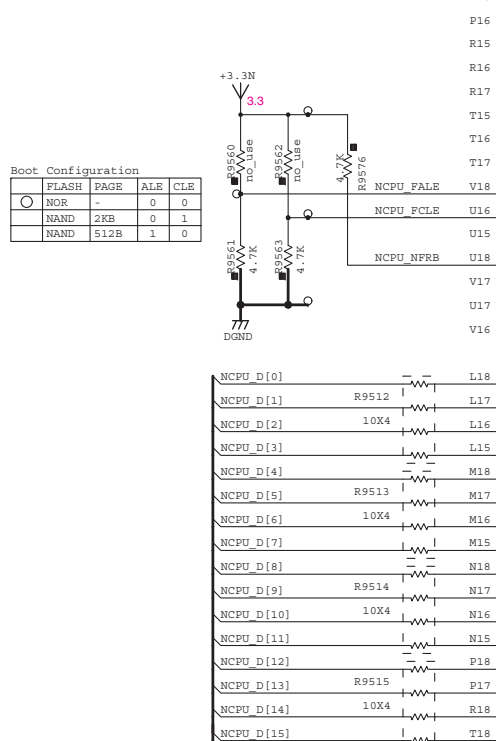
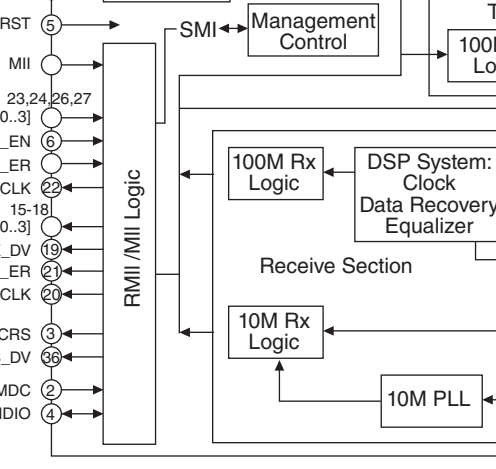
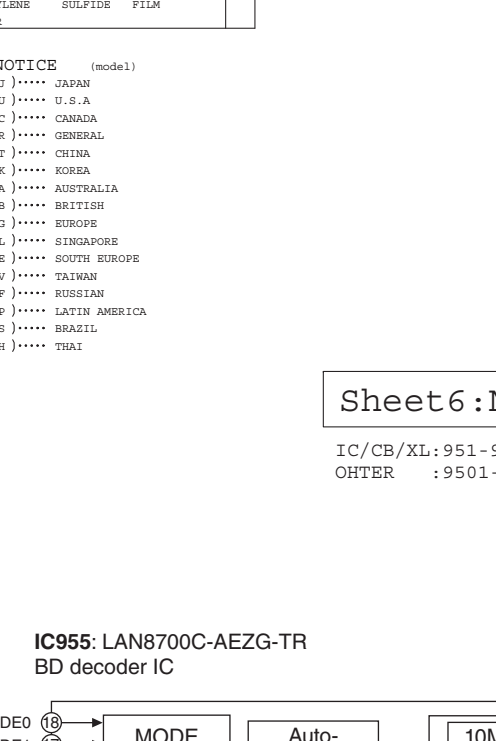
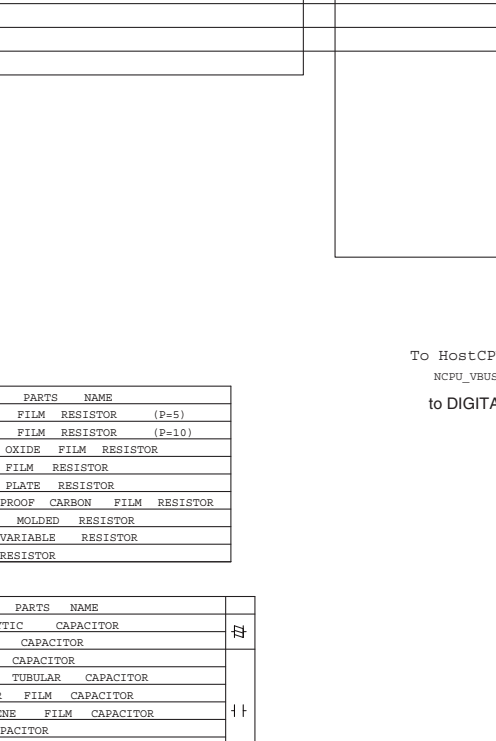
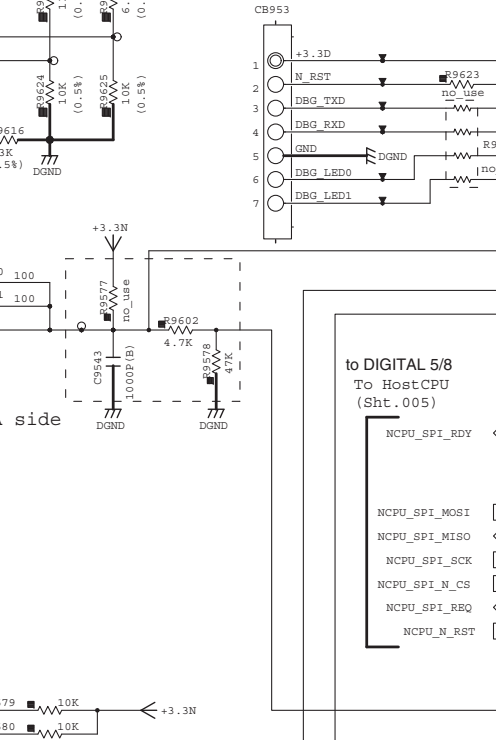
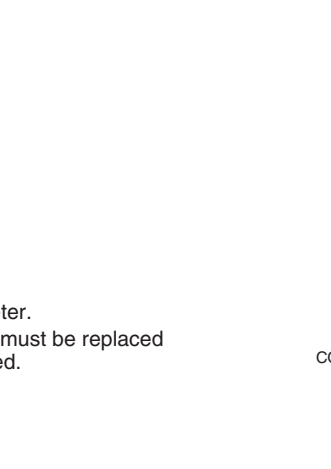
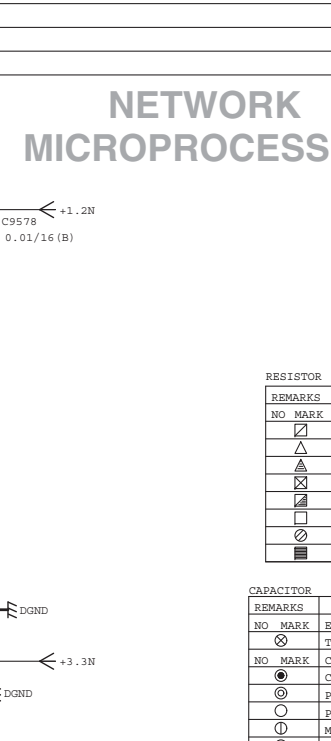
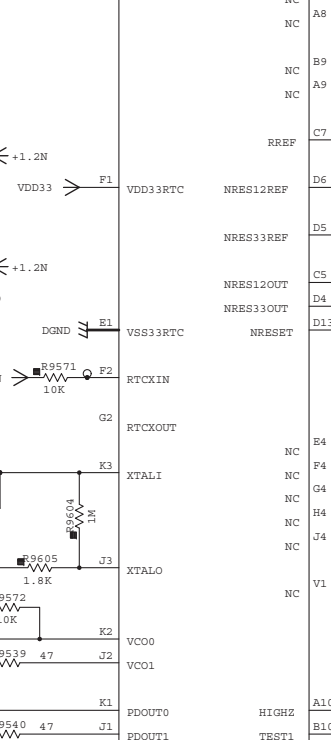
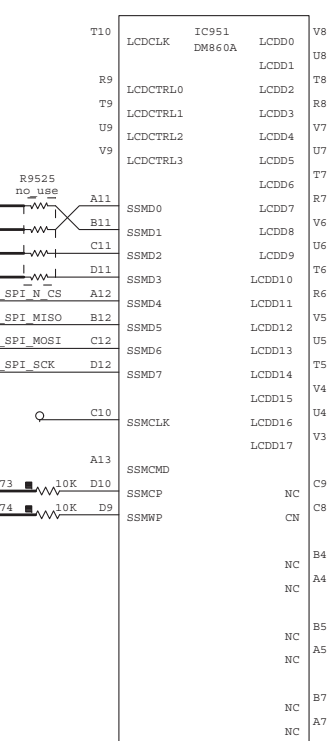
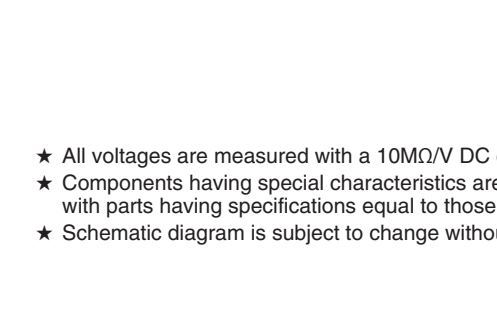
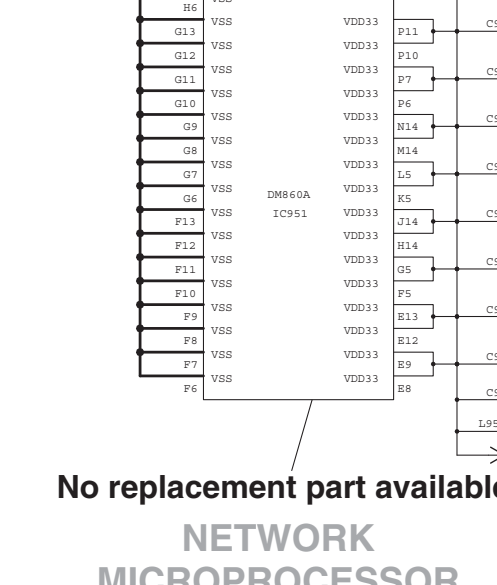
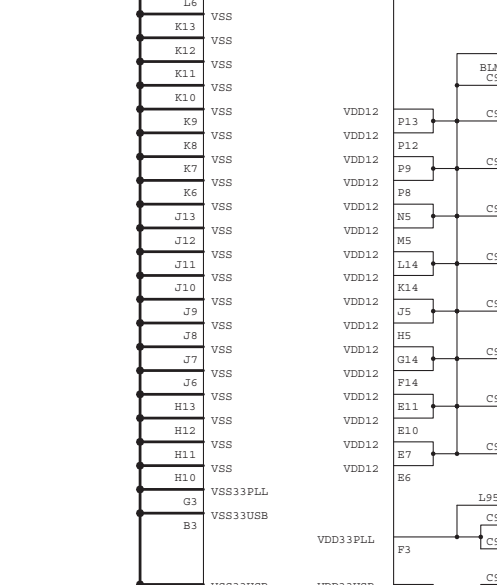
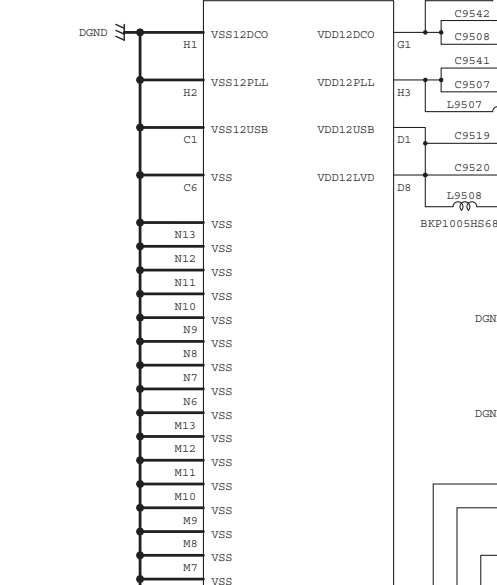
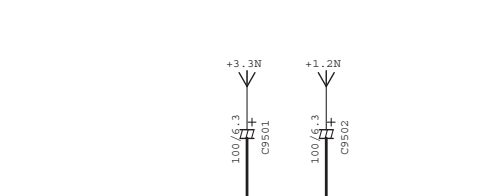
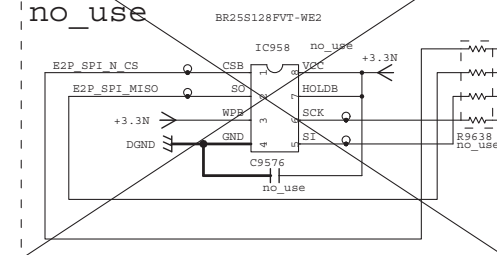
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DIGITAL 6/8

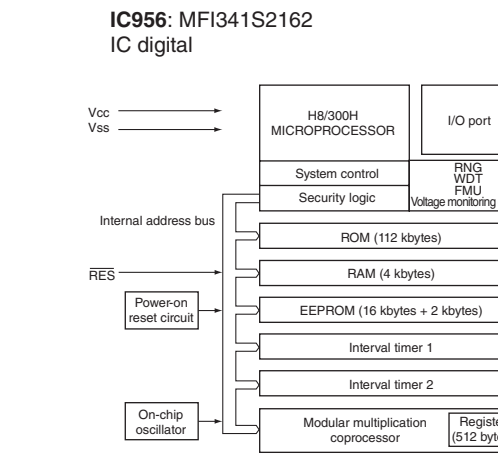
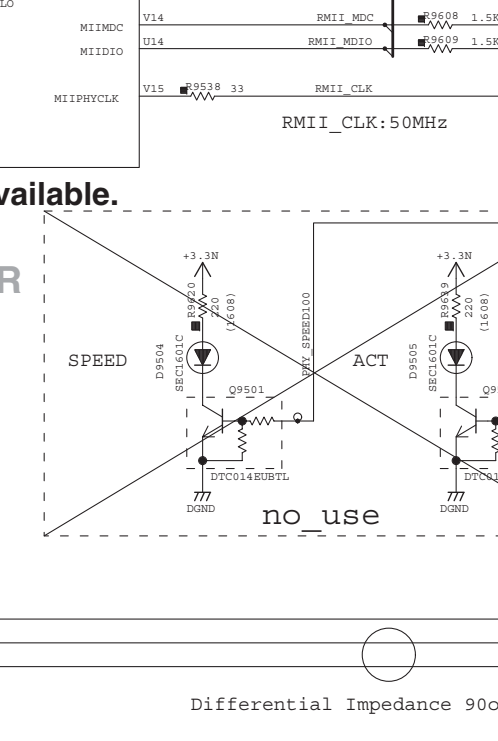
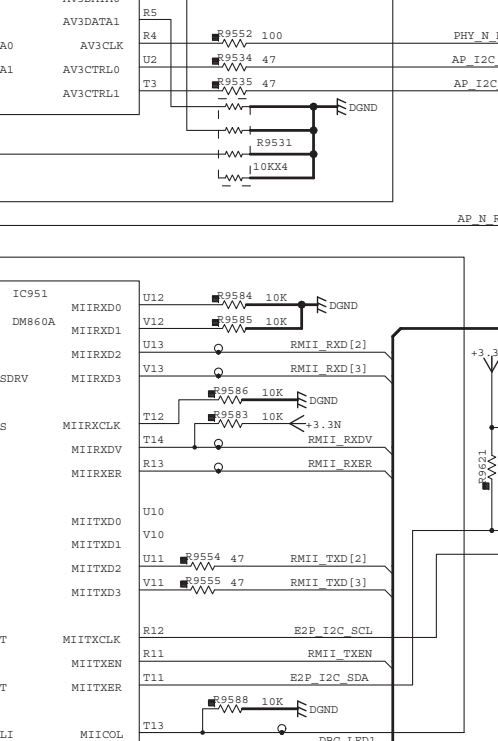
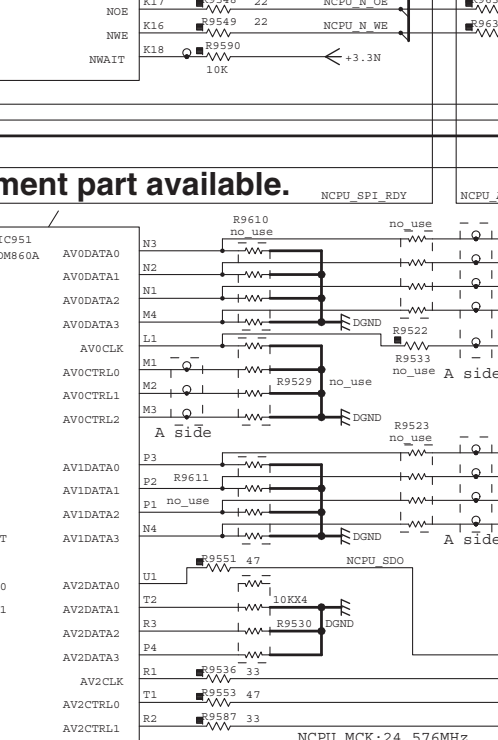
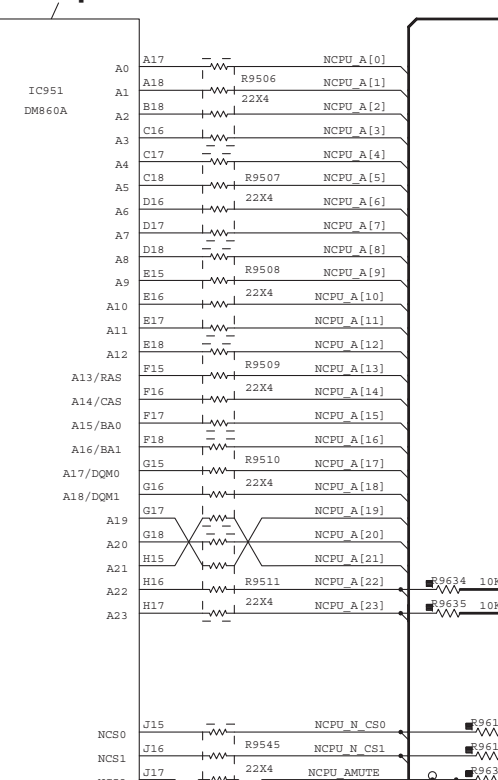
DIGITAL (1)

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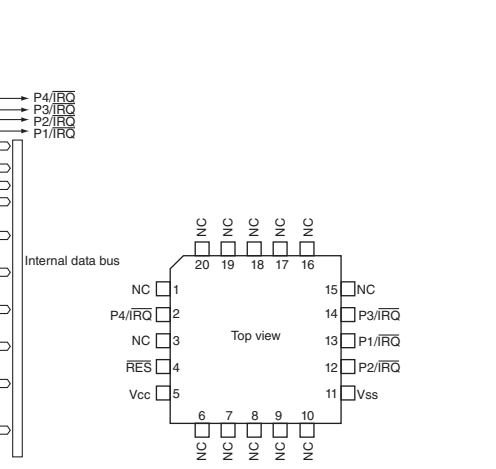
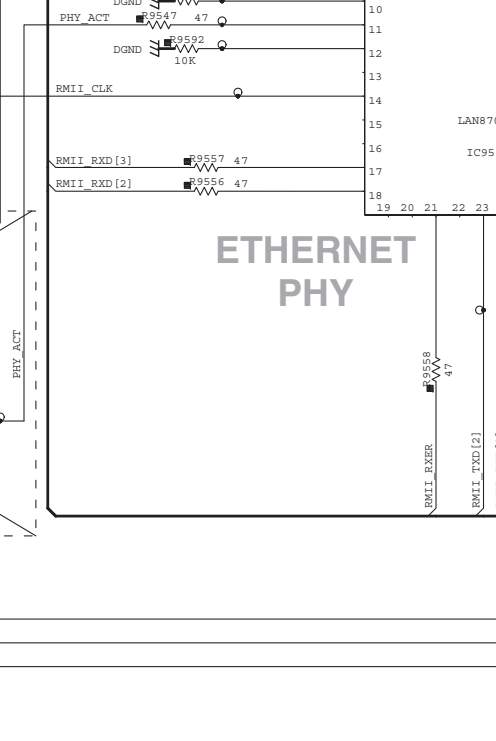
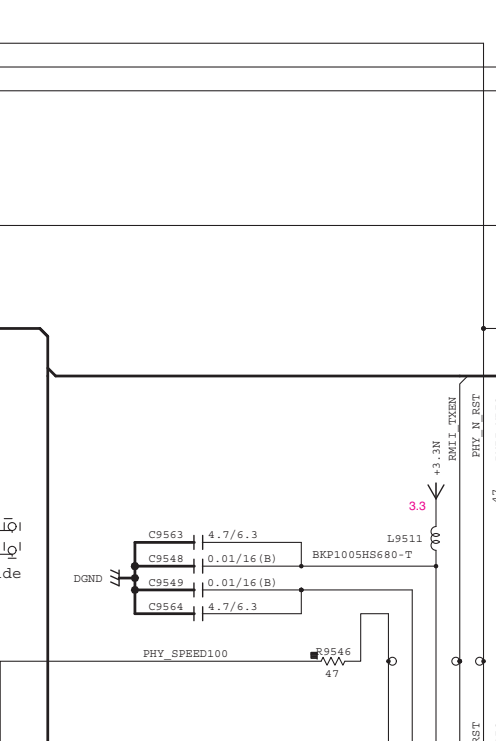
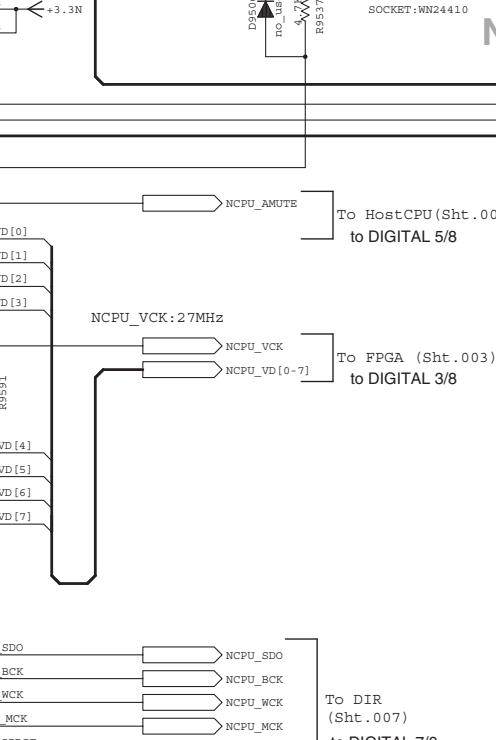
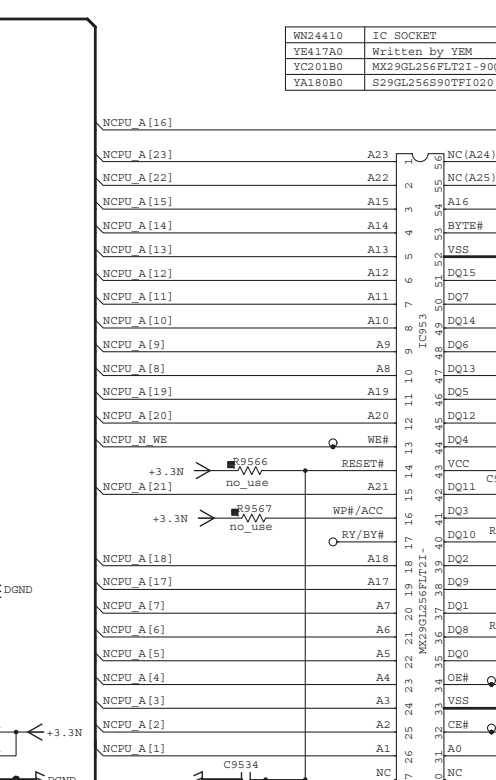


NETWORK MICROPROCESSOR

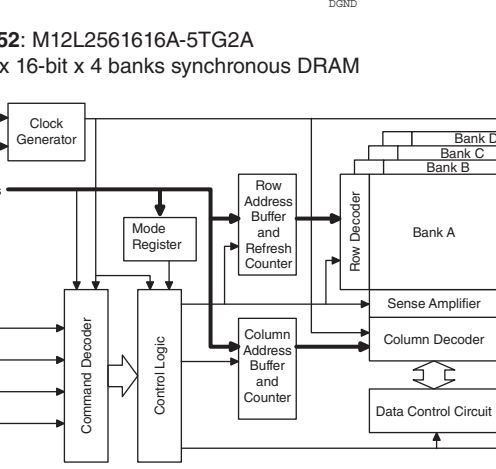
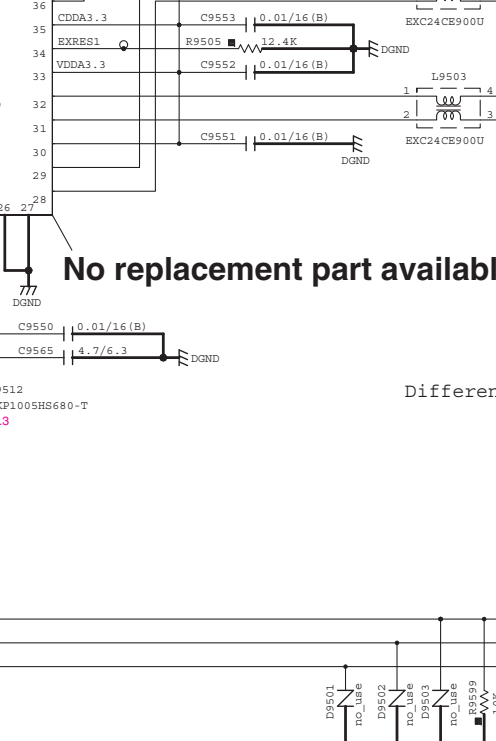
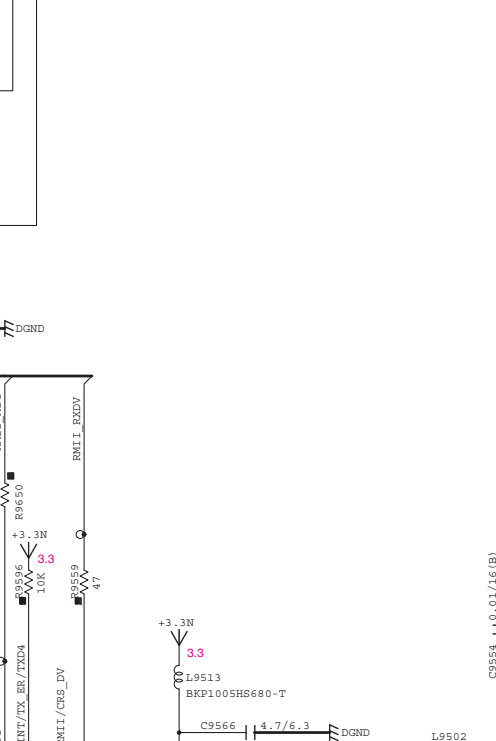
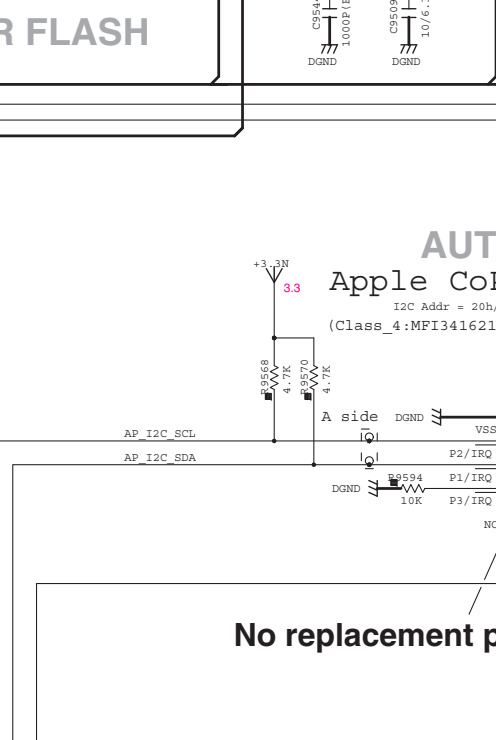
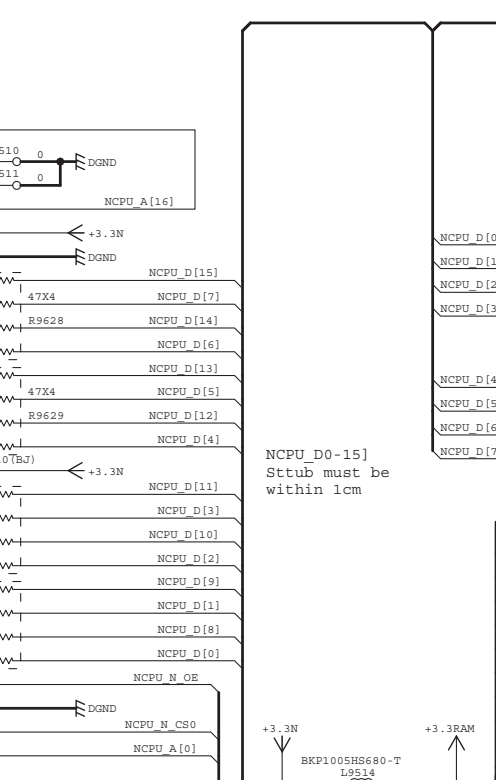
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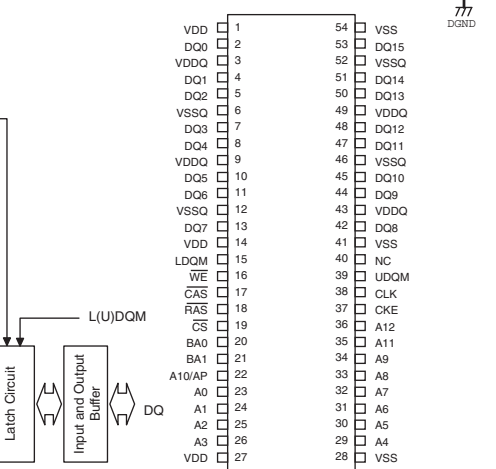
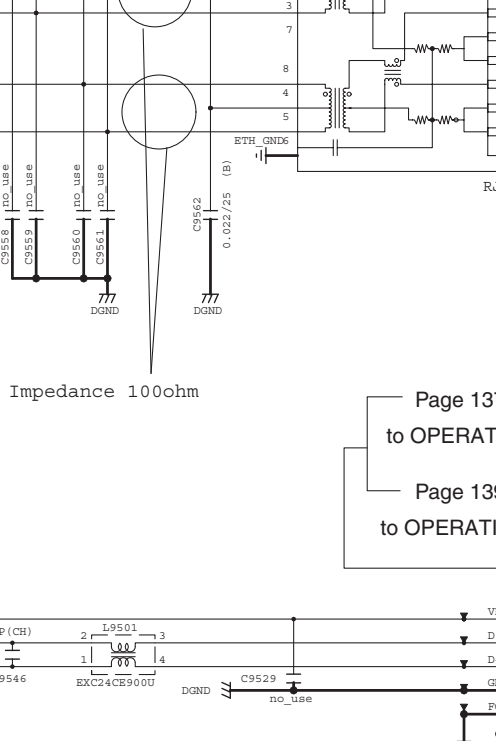
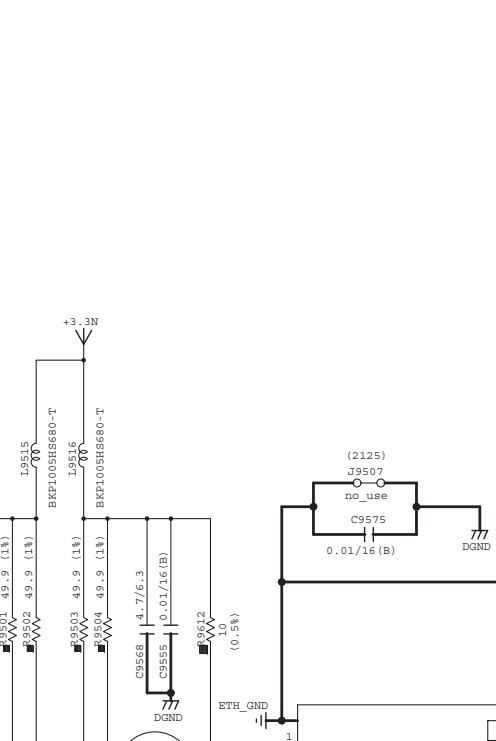
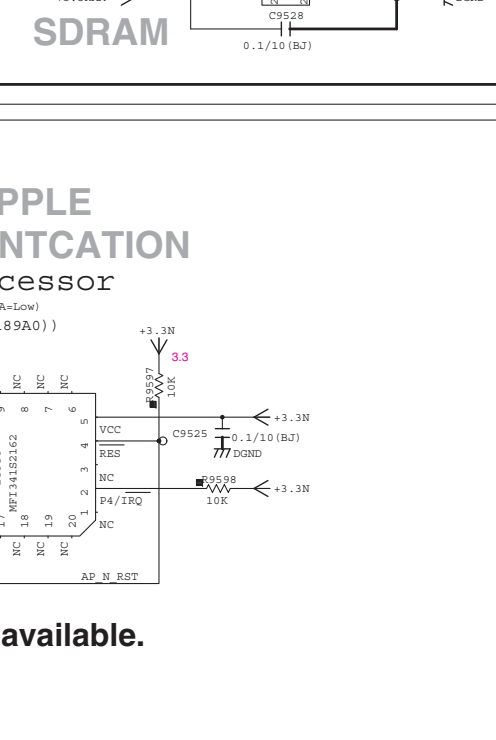
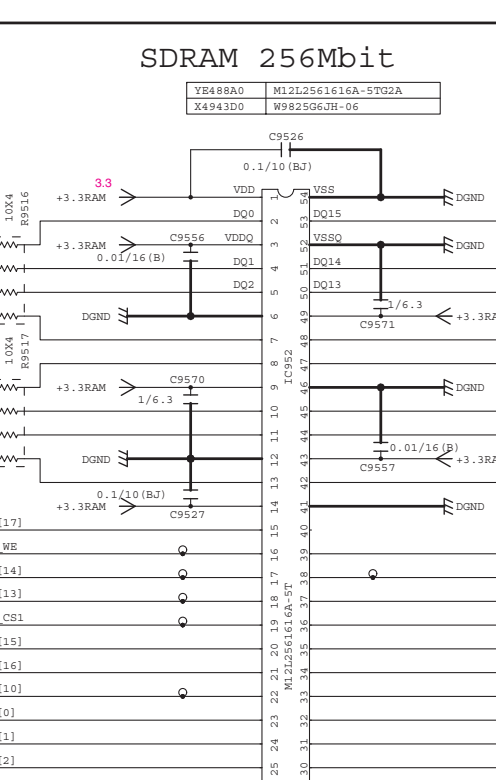
NOR FLASH 256Mbit



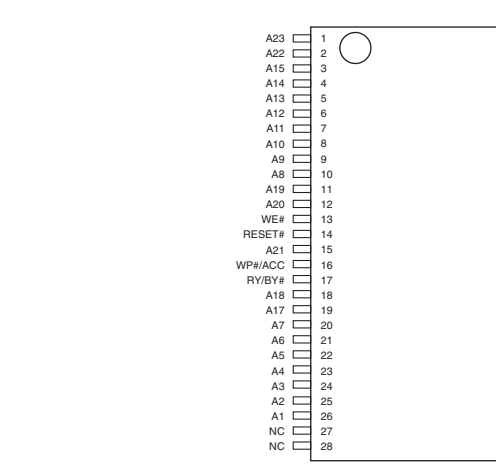
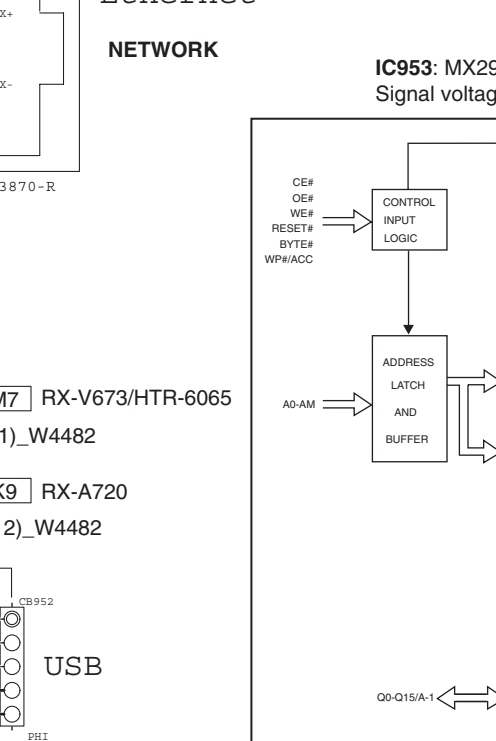
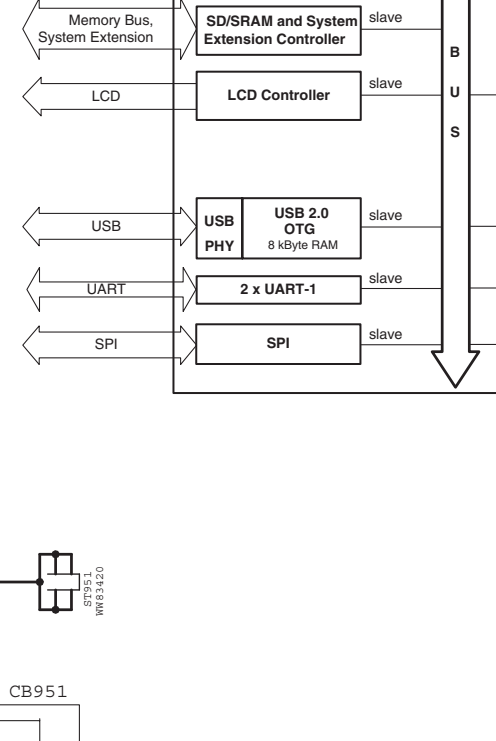
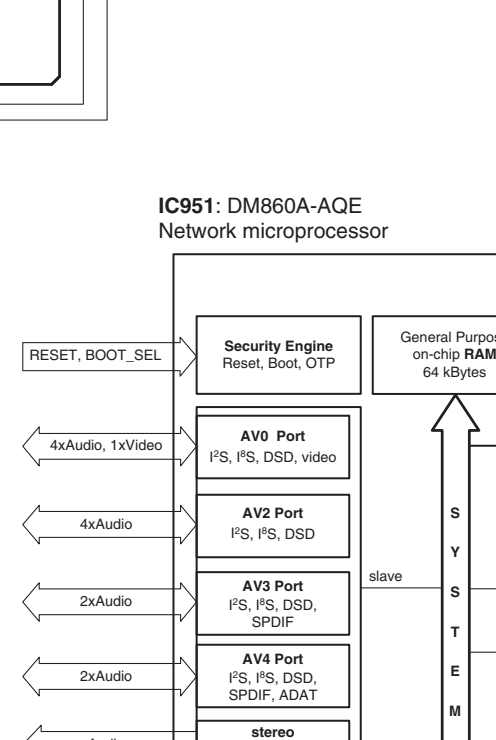
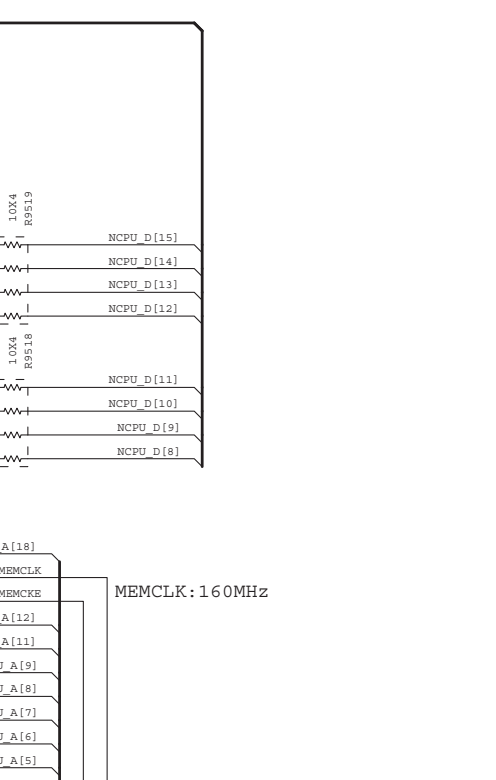
SDRAM 256Mbit



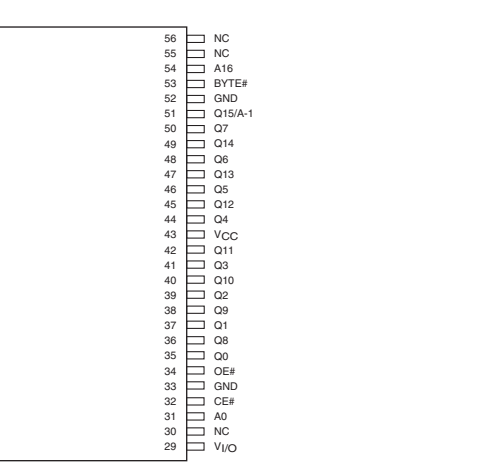
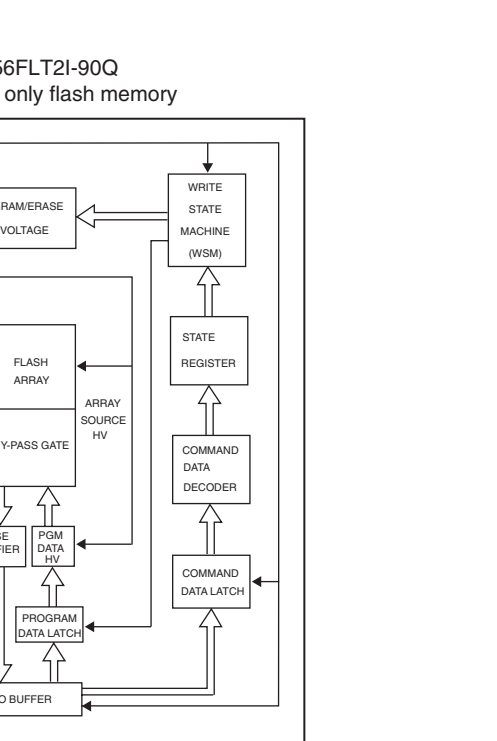
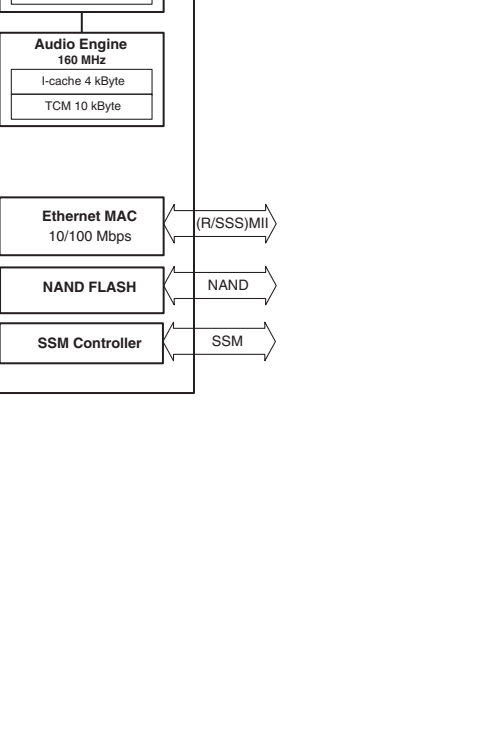
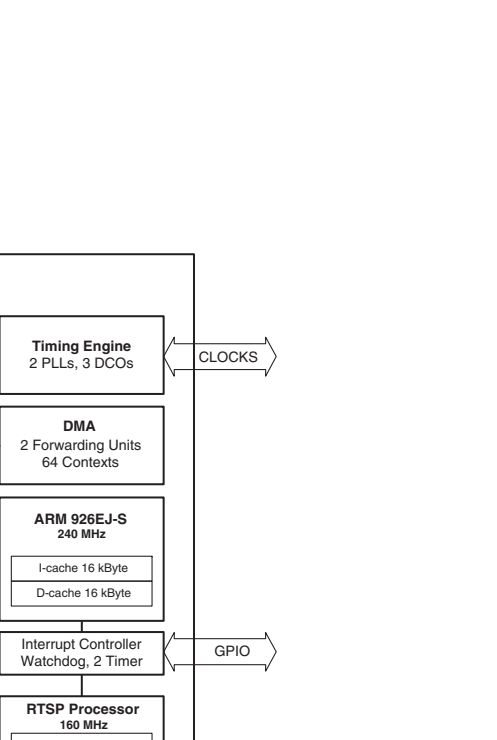
APPLE AUTHENTICATION



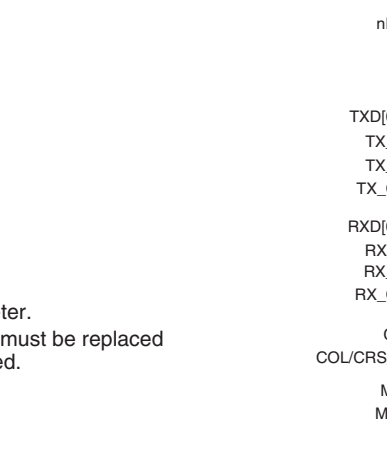
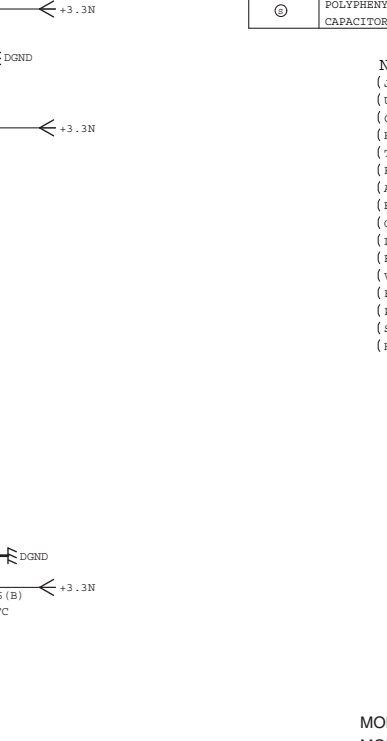
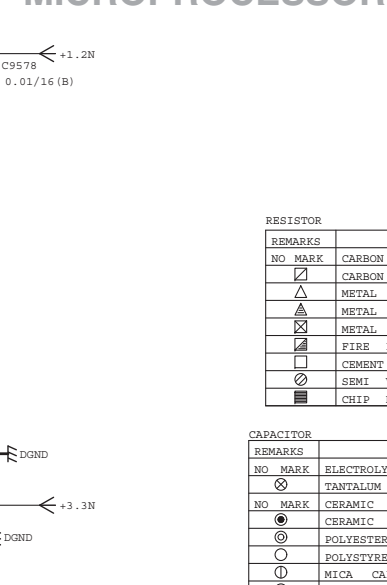
NETWORK MICROPROCESSOR



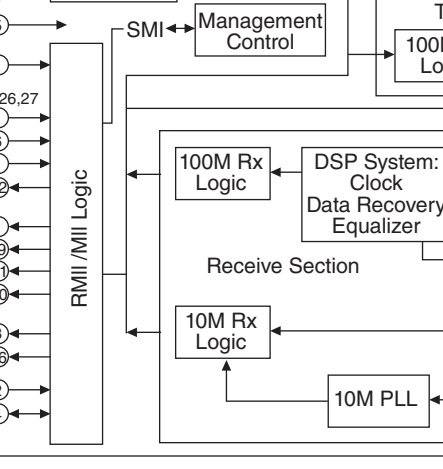
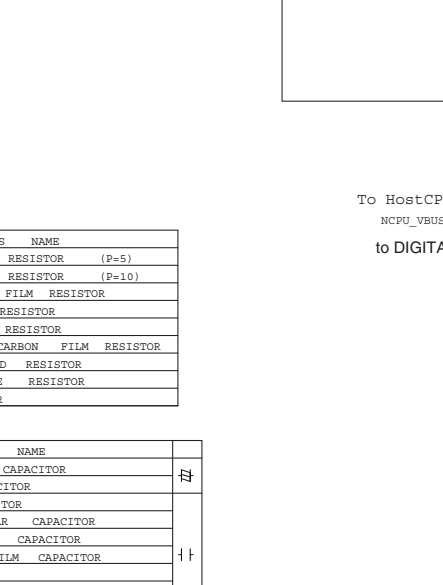
ETHERNET PHY



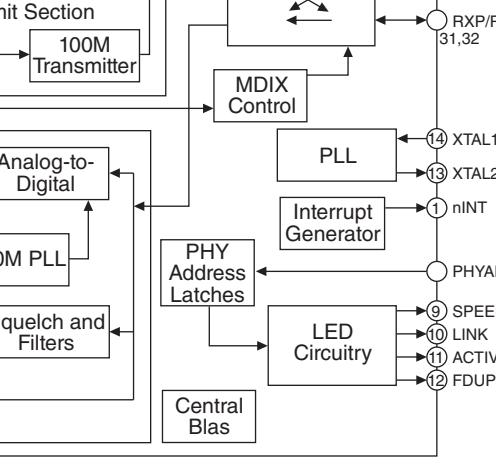
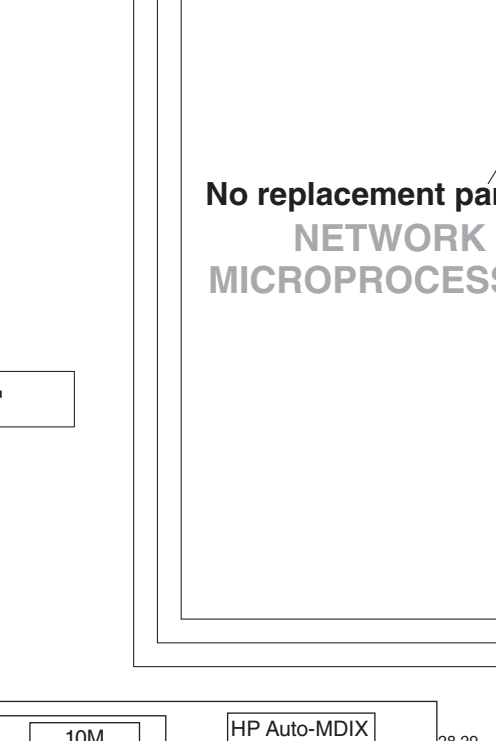
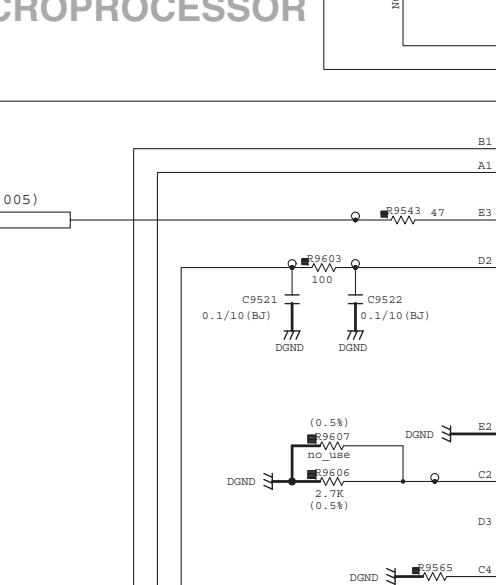
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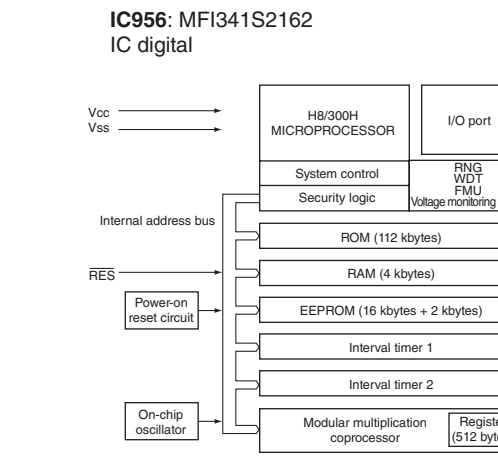
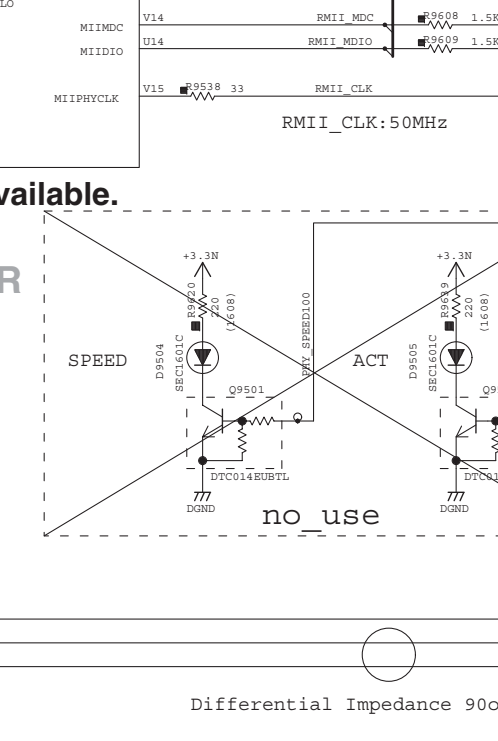
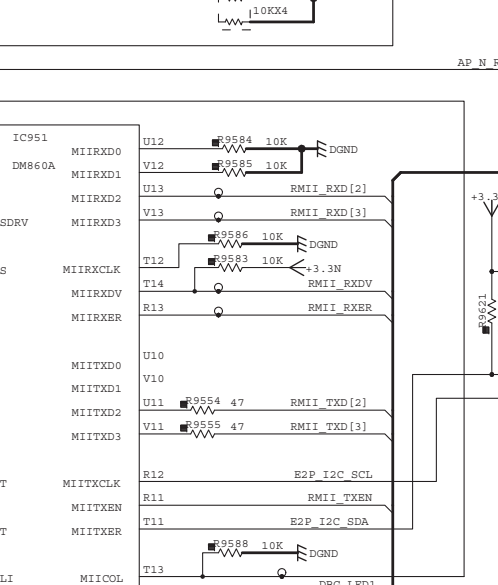
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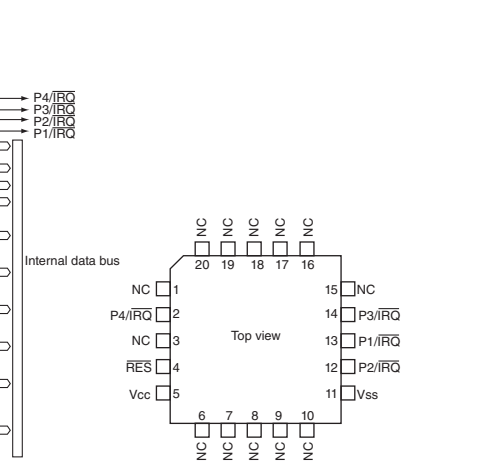
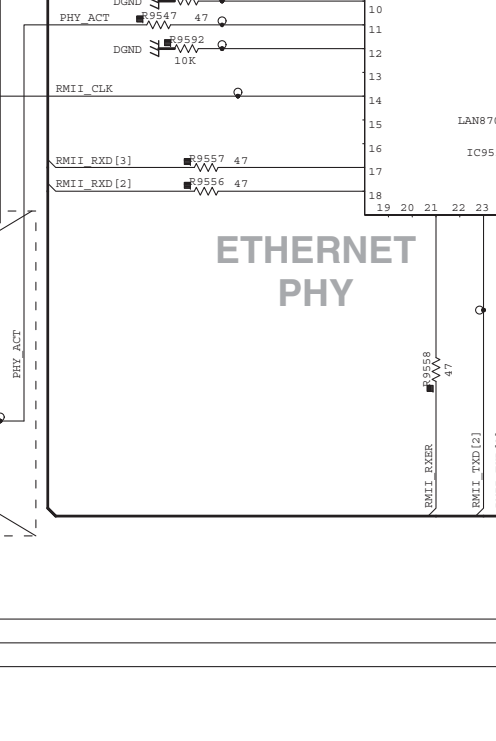
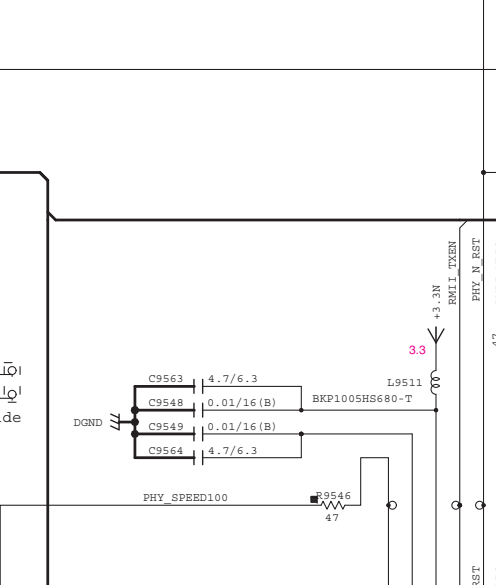
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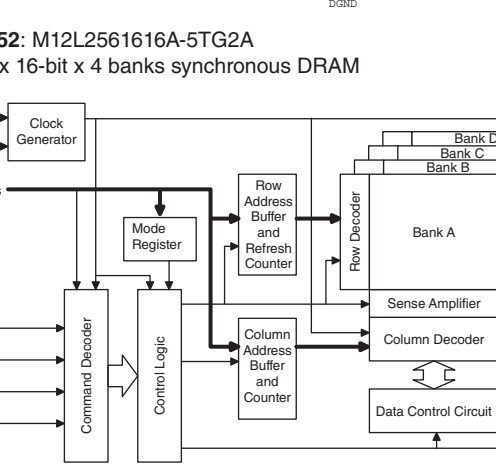
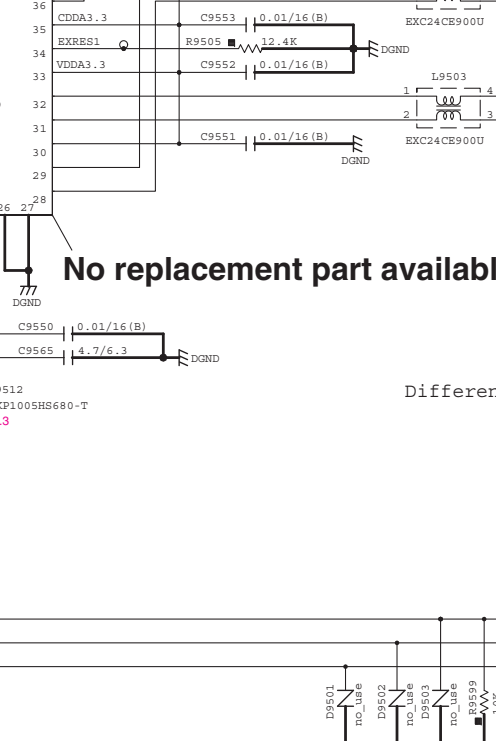
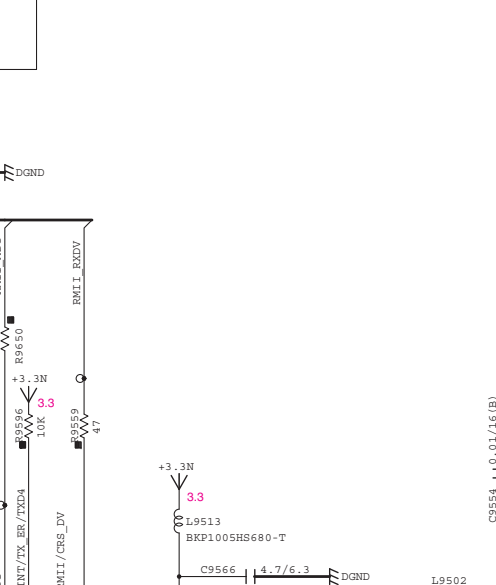
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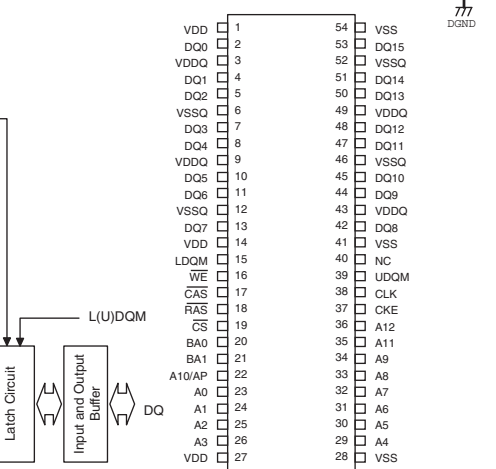
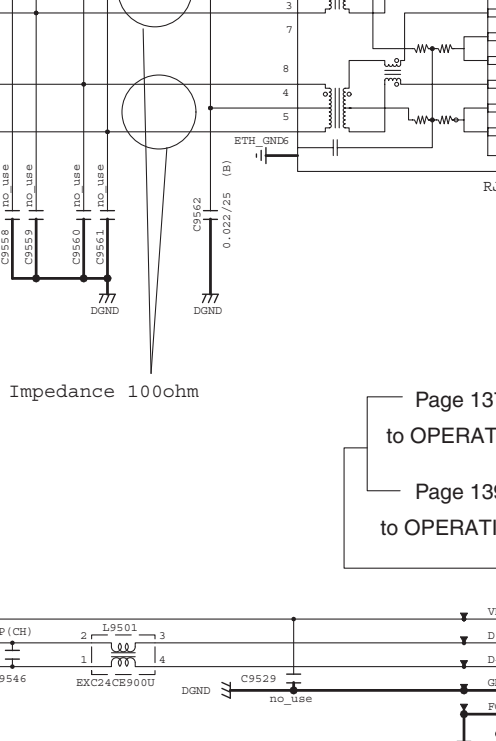
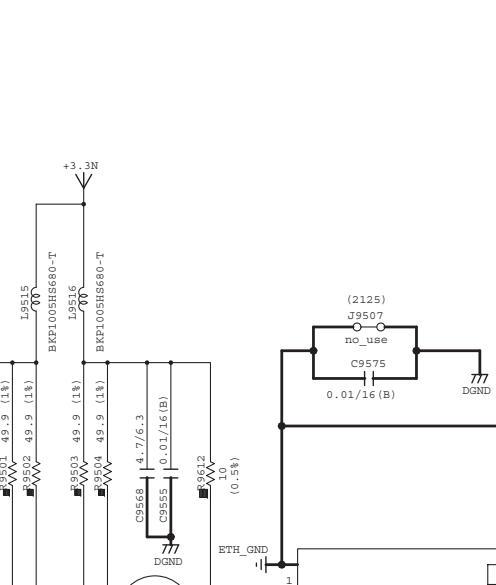
ETHERNET PHY



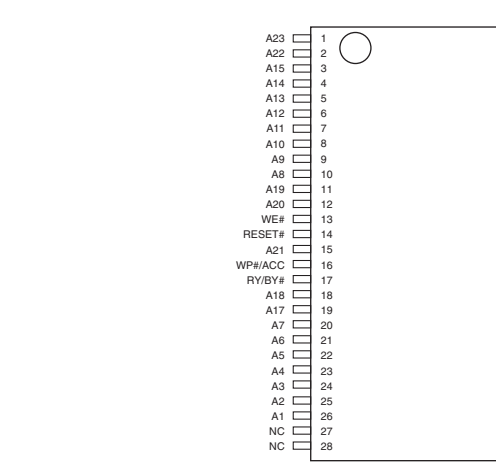
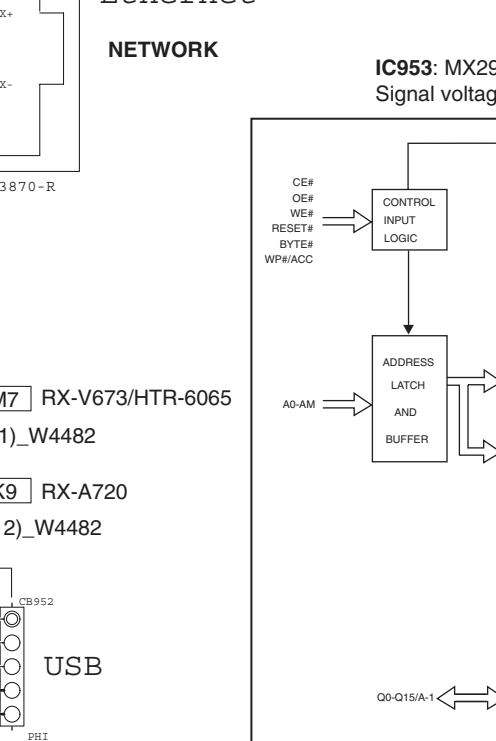
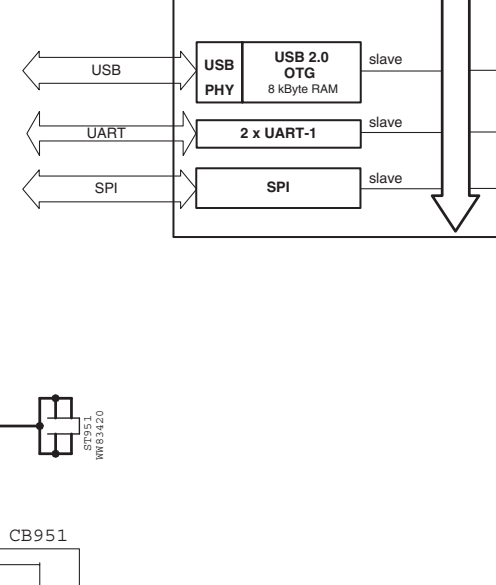
ETHERNET PHY



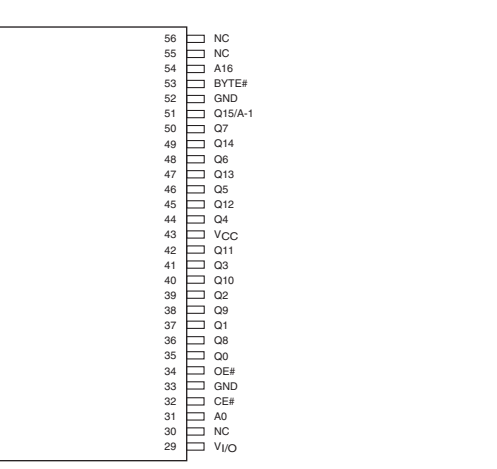
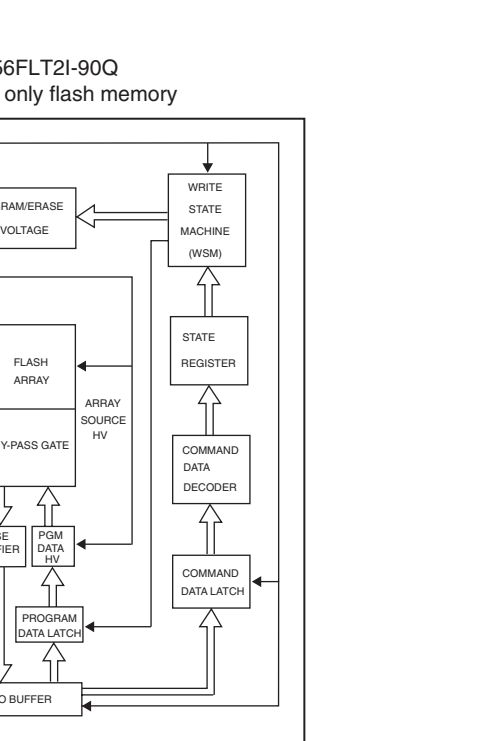
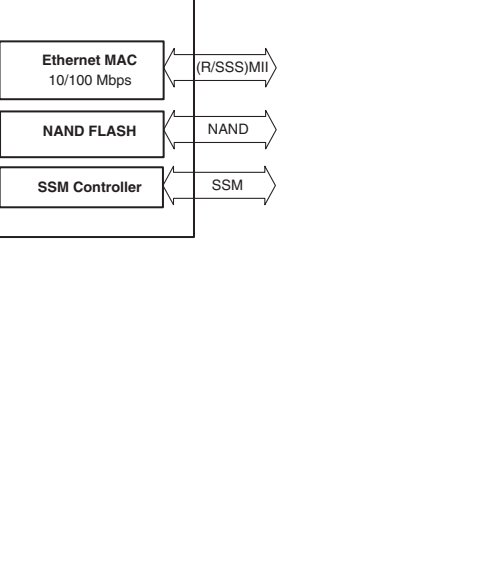
ETHERNET NETWORK



ETHERNET NETWORK



ETHERNET NETWORK



All voltages are measured with a 10MΩ/V DC electronic voltmeter. Components having special characteristics are marked A and must be replaced with parts having specifications equal to those originally installed. Schematic diagram is subject to change without notice.

- NOTICE (model)
- (L) ***** JAPAN
 - (O) ***** U.S.A
 - (C) ***** CANADA
 - (I) ***** ISRAEL
 - (E) ***** CHINA
 - (K) ***** KOREA
 - (A) ***** AUSTRALIA
 - (B) ***** BRITISH ISLES
 - (R) ***** RUSSIA
 - (S) ***** SOUTH AFRICA
 - (E) ***** EUROPE
 - (S) ***** SINGAPORE
 - (T) ***** TAIWAN
 - (J) ***** JAPAN
 - (L) ***** LATIN AMERICA
 - (M) ***** MEXICO
 - (N) ***** THAI

RESISTOR

MARK	PARTS NAME
NO MARK	CARBON FILM RESISTOR (R-1)
△	CARBON FILM RESISTOR (R-15)
▲	METAL OXIDE FILM RESISTOR
■	METAL FILM RESISTOR
□	METAL GLAZE RESISTOR
◇	FILM PROOF CARBON FILM RESISTOR
○	CHROME METAL RESISTOR
◎	SMT VARIABLE RESISTOR
■	CHIP RESISTOR

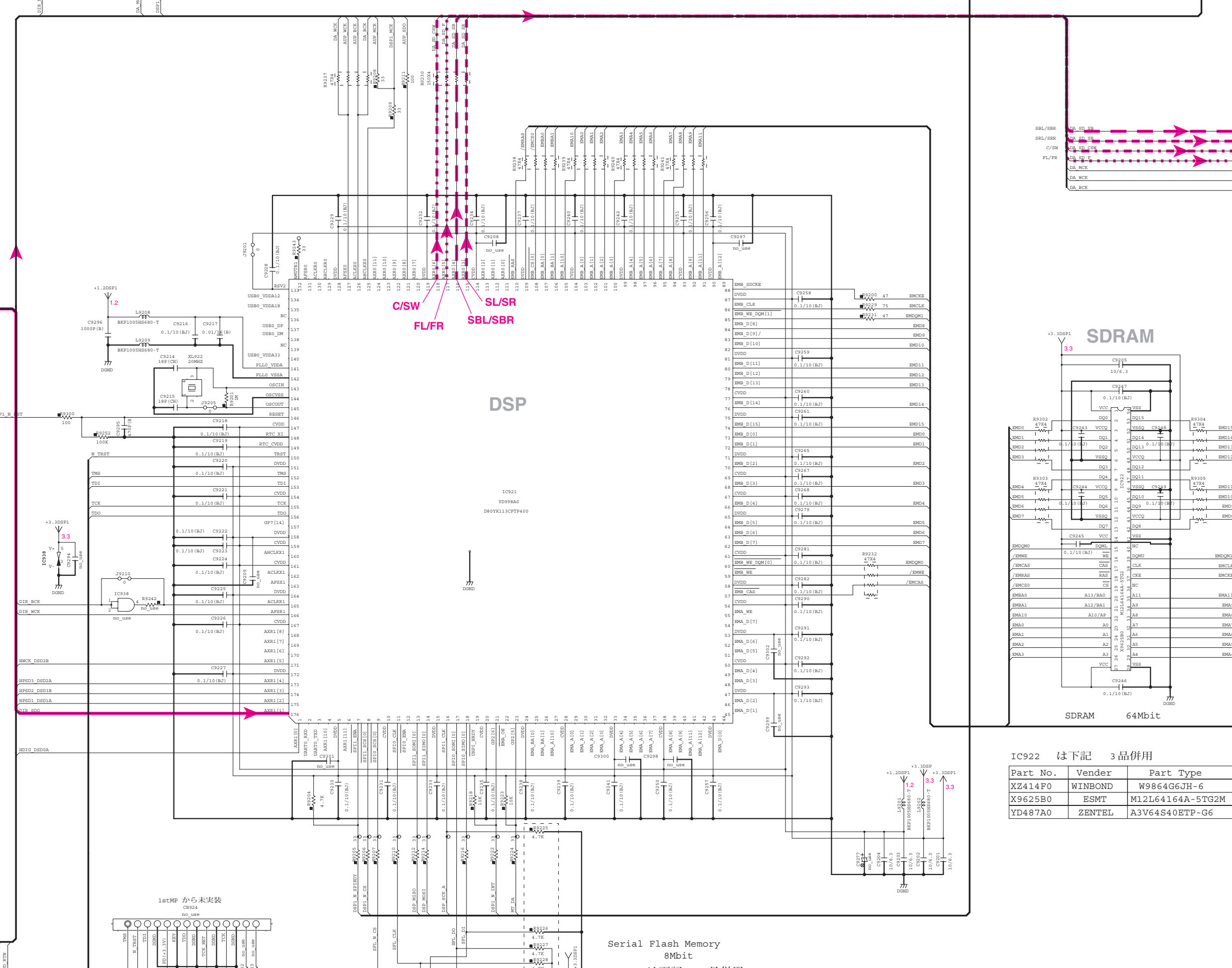
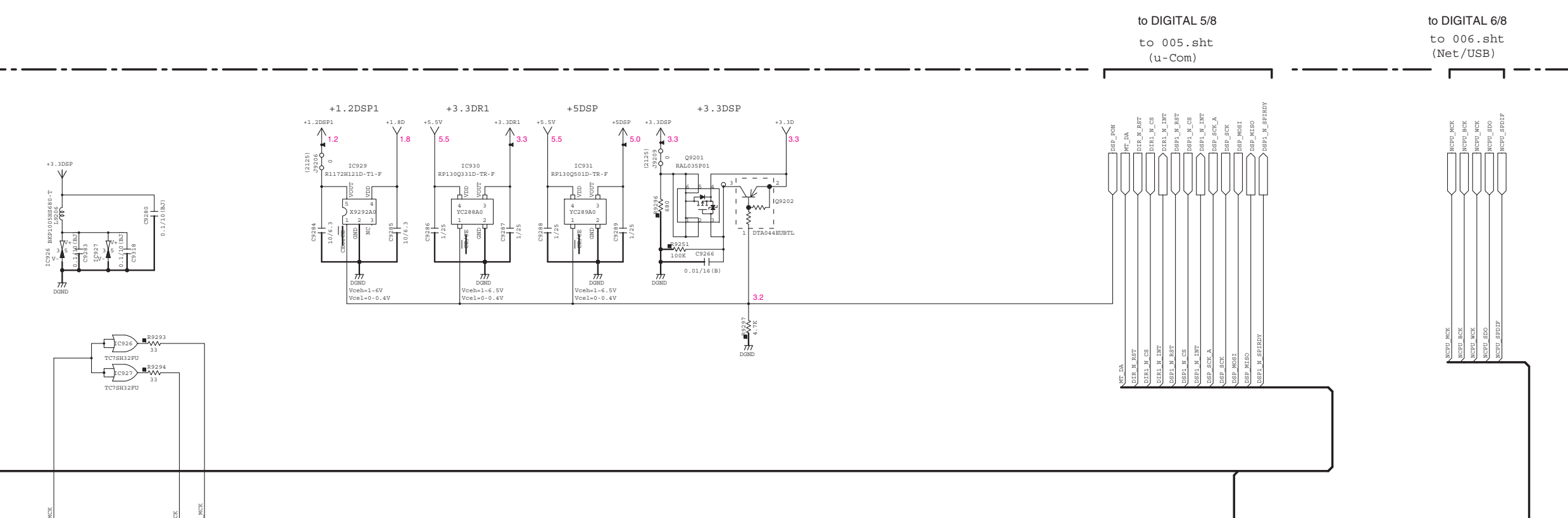
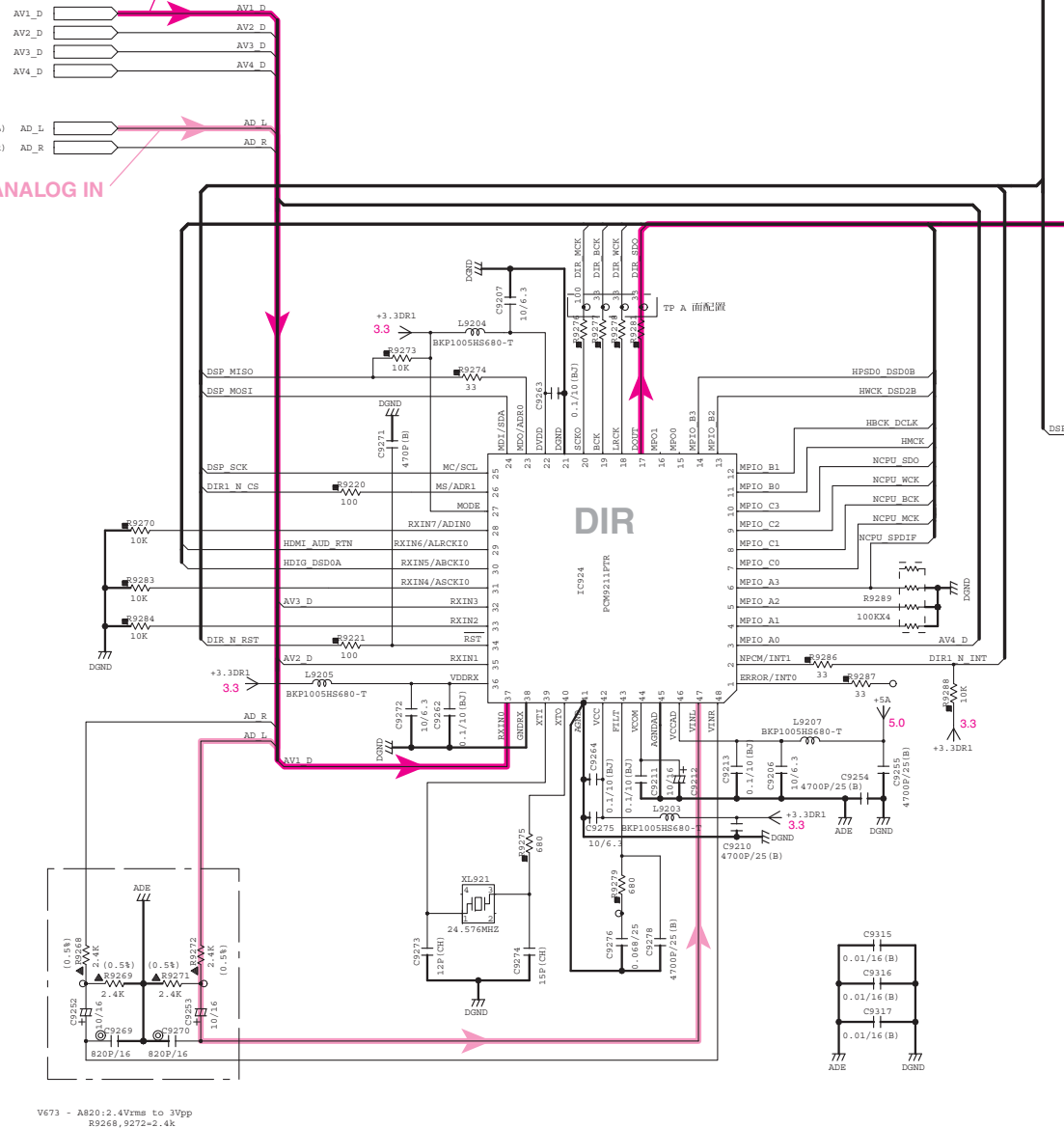
CAPACITOR

MARK	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
○	PAPER OIL CAPACITOR
□	CERAMIC CAPACITOR
●	CERAMIC TANTALUM CAPACITOR
○	POLYESTER FILM CAPACITOR
○	POLYPROPYLENE FILM CAPACITOR
○	MICA CAPACITOR
○	MILADROXYLONE FILM CAPACITOR
○	SEMICONDUCTIVE CERAMIC CAPACITOR
○	POLYBIPHENYLENE SULFIDE FILM CAPACITOR

to DIGITAL 8/8 (Power)

DIGITAL IN

ANALOG IN



IC922 以下記 3品併用

Part No.	Vendor	Part Type
XZ414F0	WINBOND	W9864G6JH-6
X9625B0	ESMT	M12L64164A-5TG2M
YD487A0	ZENTEL	A3V64840ETP-G6

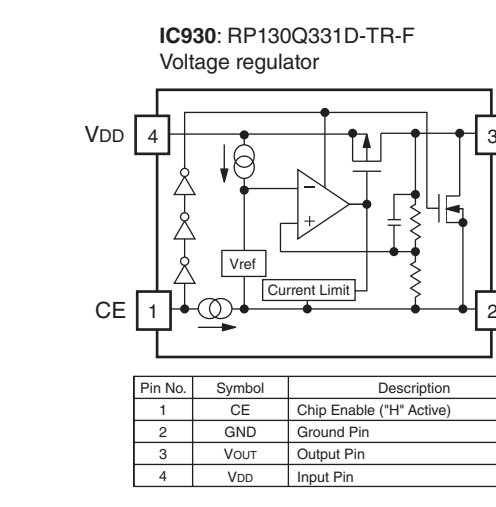
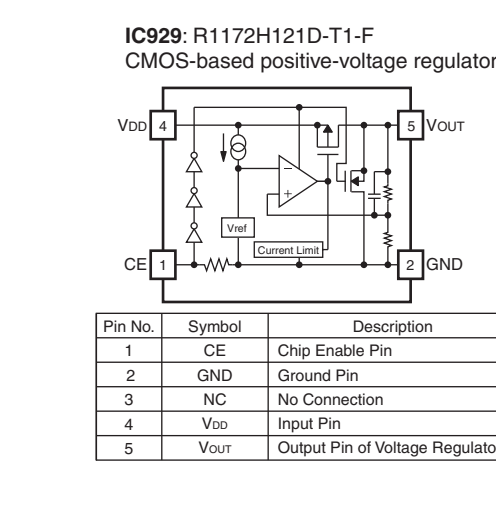
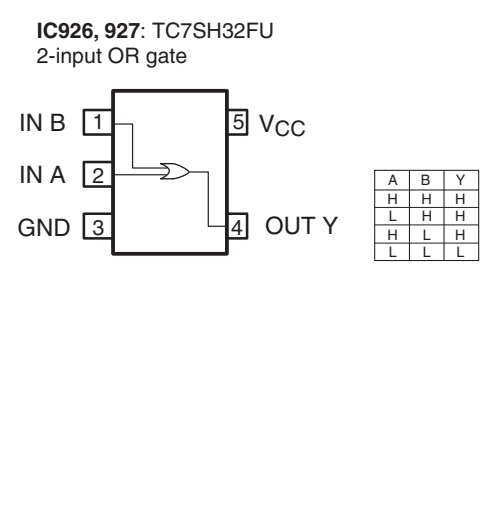
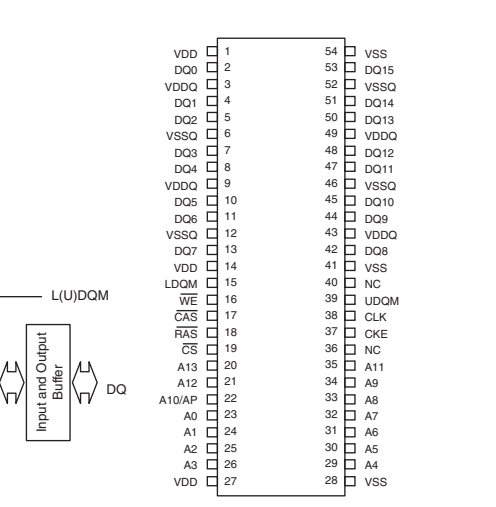
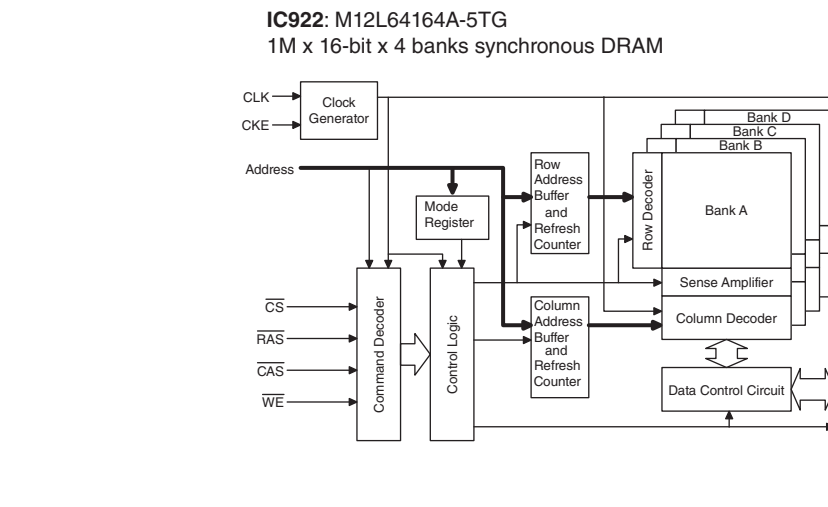
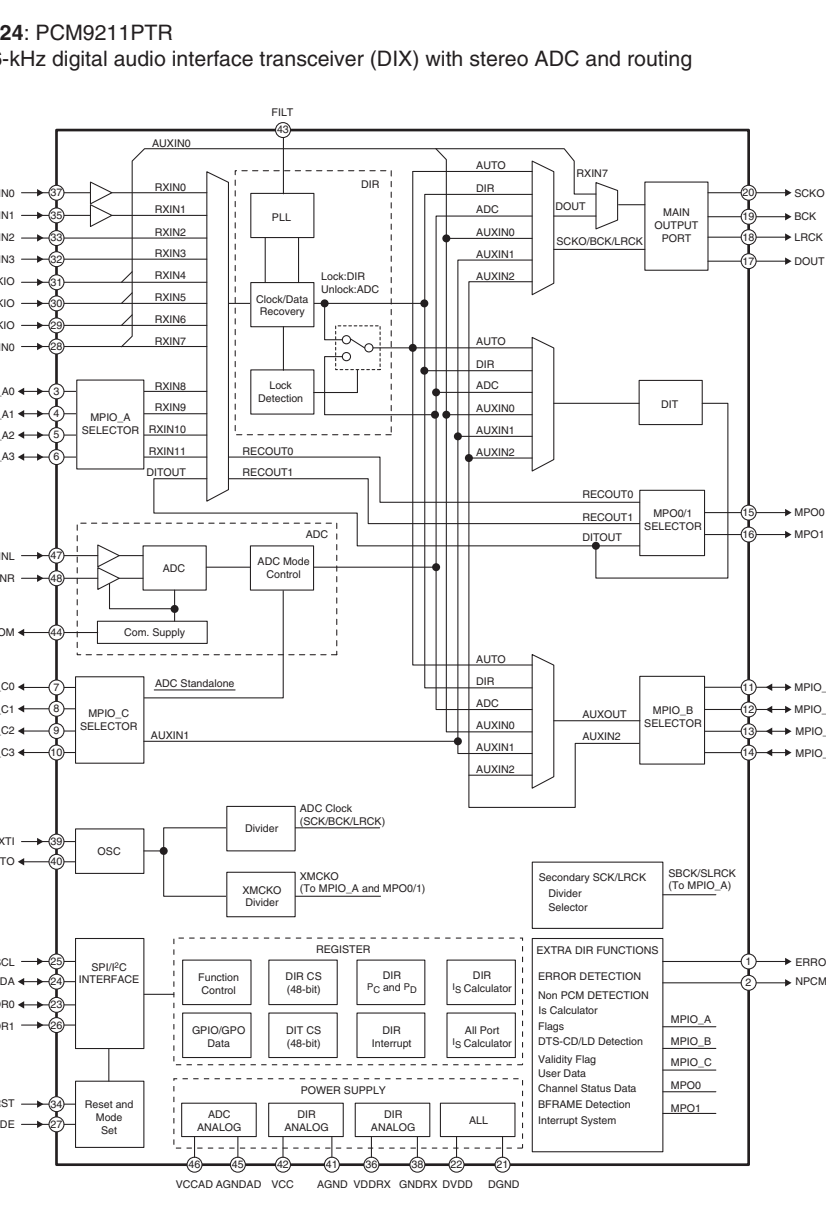
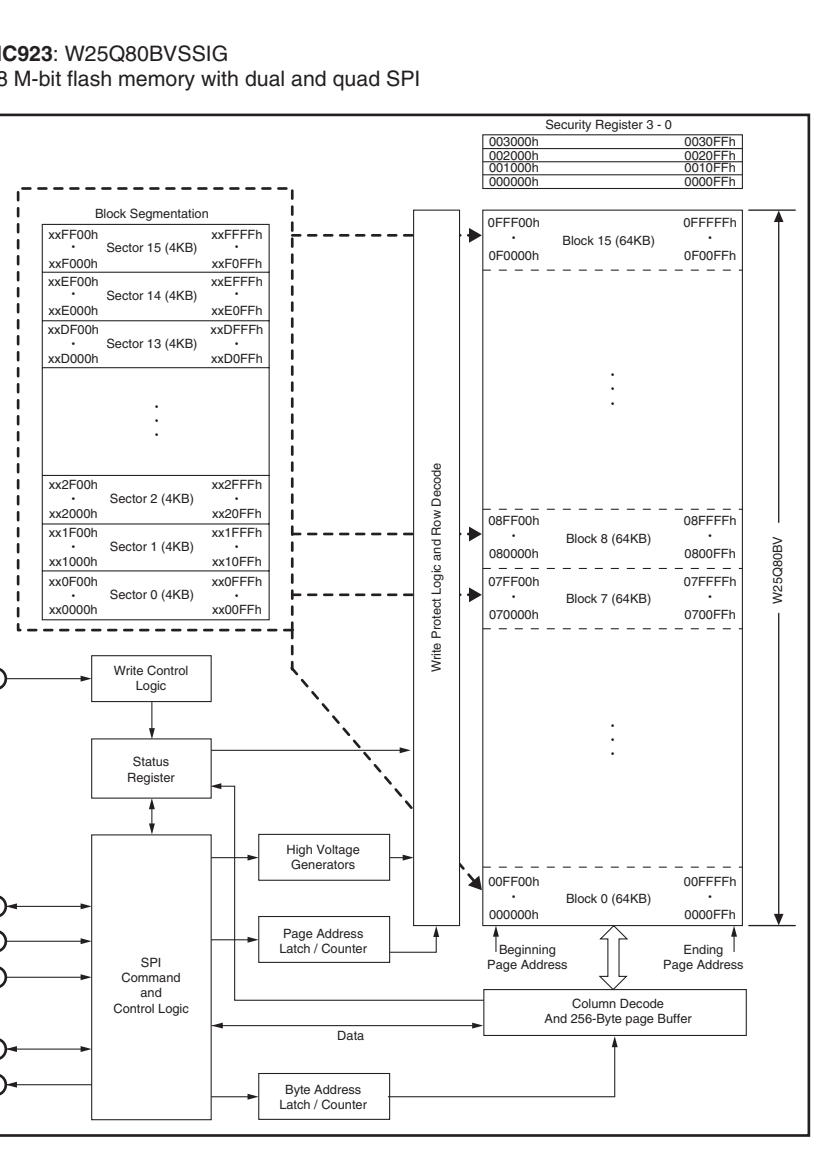
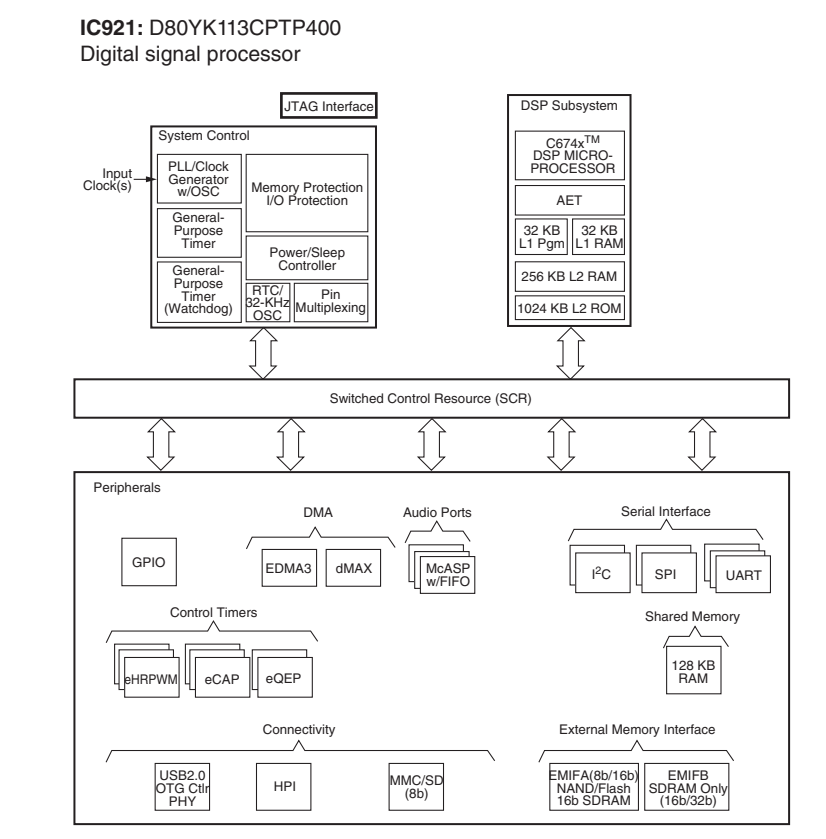
Serial Flash Memory 8Mbit

IC923 以下記 3品併用

Part No.	Vendor	Part Type
YD762A0	WINBOND	W25Q80BVSSIG
YB058A0	MXIC	MX25L8035EM2I-10G
YB005A0	ECN	EN25Q80A-100HIP

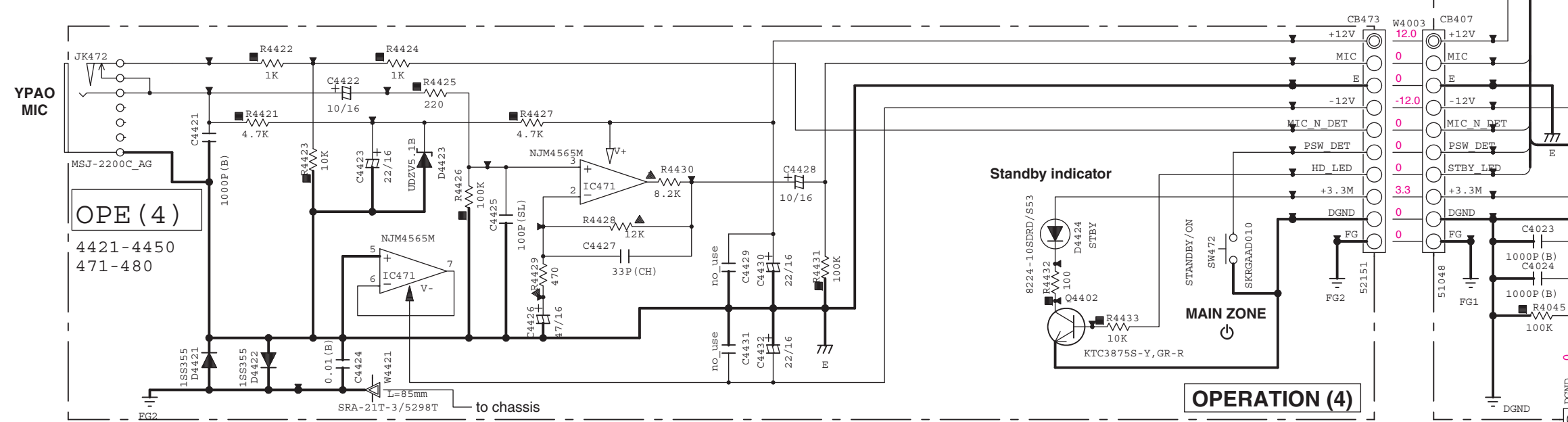
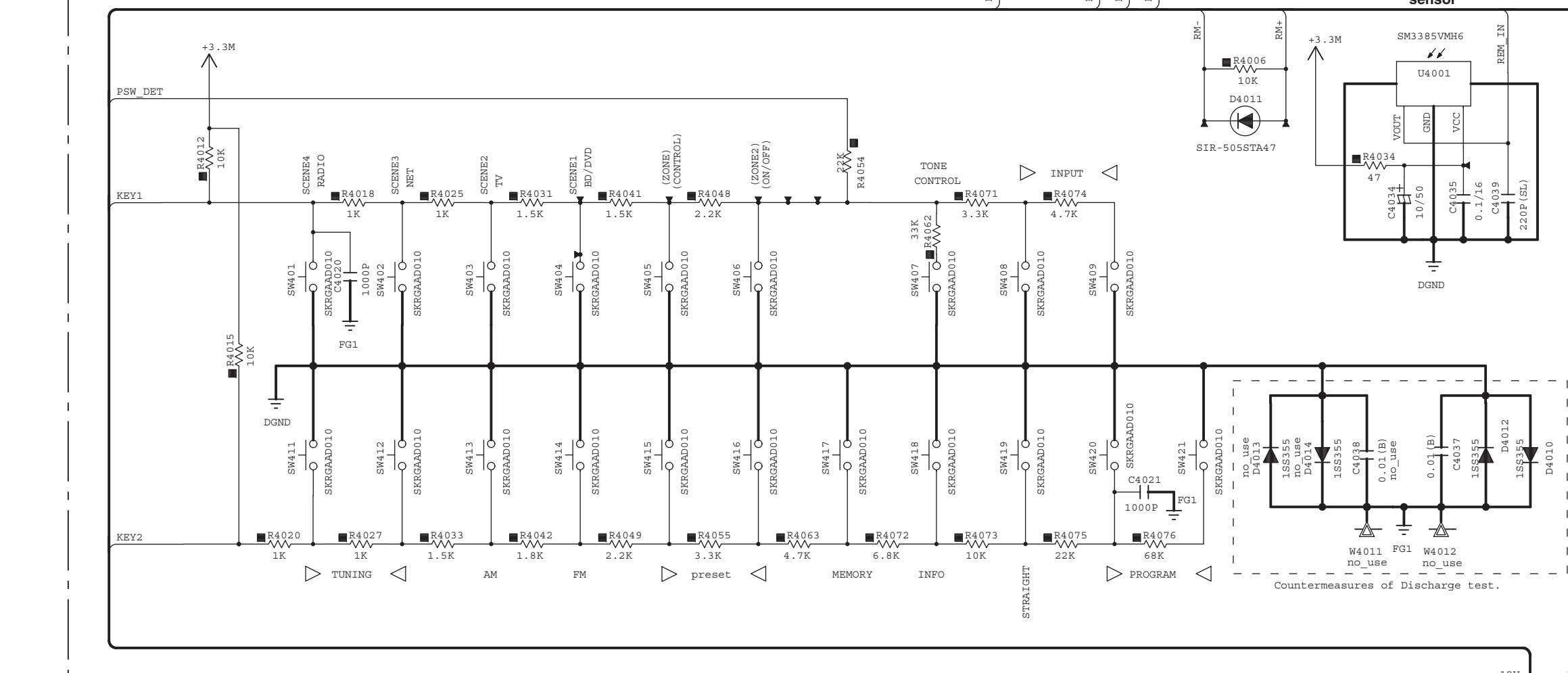
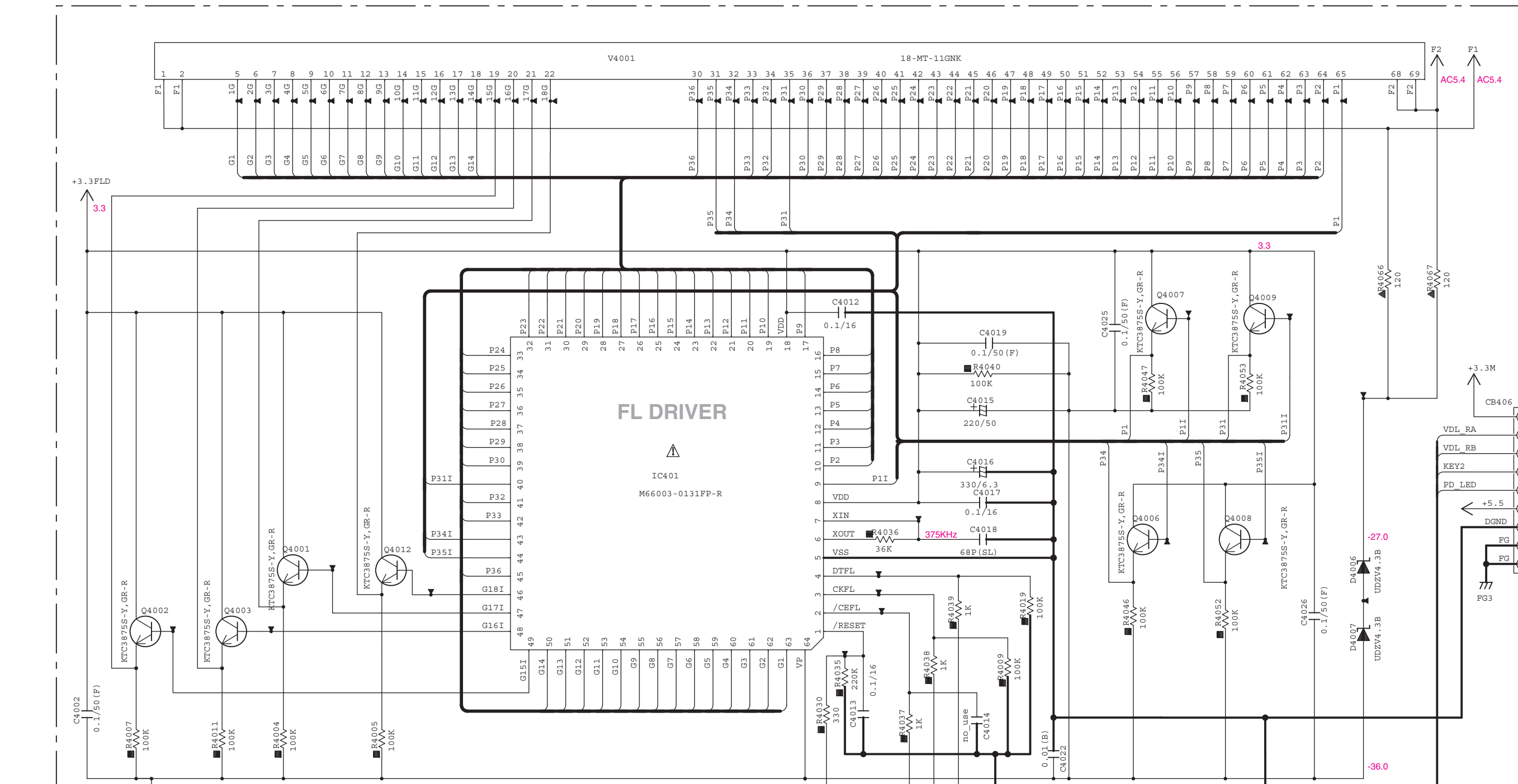
DIGITAL (1)

Sheet 7: DSP/DIR
IC/CB/XL: 921-939
OTHER : 9201-9339



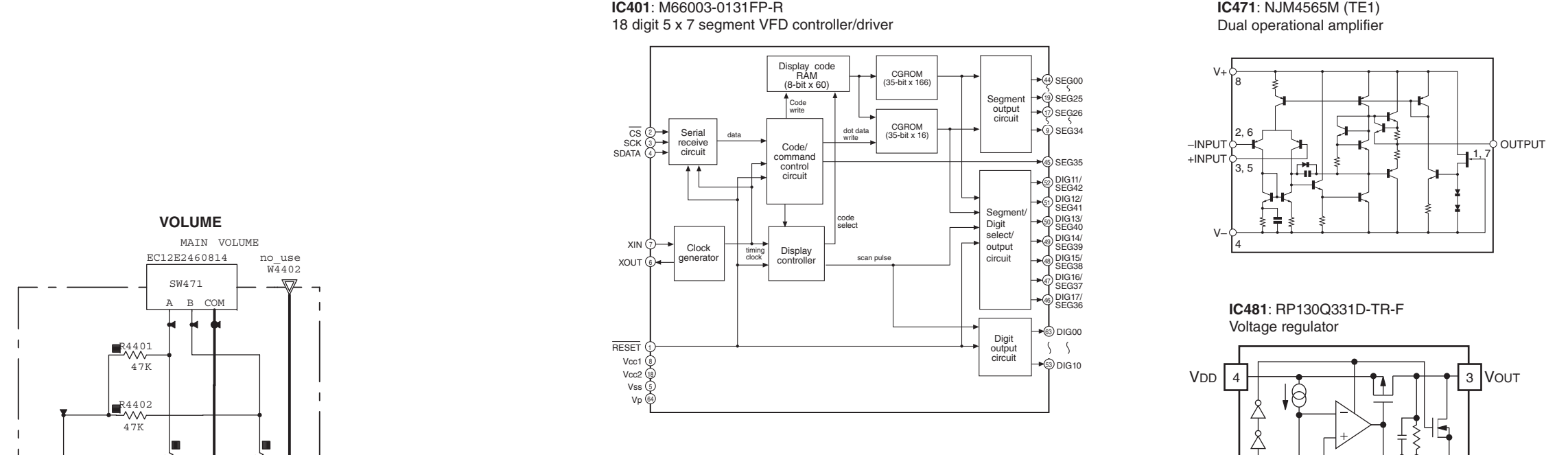
* All voltages are measured with a 10MΩ/V DC electronic voltmeter.
* Components having special characteristics are marked △, and must be replaced with parts having specifications equal to those originally installed.
* Schematic diagram is subject to change without notice.

OPERATION 1/2



Key detection for A/D port
Key input (A/D) pull-up resistance 10 k-ohms

Detected voltage value @171 Ohm	0 0	+10k	+15k	+18k	+22k	+3.3k	+4.7k	22k	33k			
A/D value (3.3V±25%)	0-11V	0.15-0.42V	0.43-0.70V	0.71-0.97V	0.98-1.24V	1.25-1.53V	1.54-1.84V	1.85-2.22V	2.23-2.62V	2.63-3.04V		
KEY1	RADIO (SCENER)	NET (SCENER)	TV	BD/DVD (SCENER)	ZONE CONTROL	ZONE2	INPUT >	INPUT <	MAIN ZONE (POWER)	ZONE CONTROL		
Detected voltage value @171 Ohm	0 0	+10k	+15k	+18k	+22k	+3.3k	+4.7k	22k	33k			
A/D value (3.3V±25%)	0-11V	0.16-0.42V	0.43-0.70V	0.71-0.99V	1.00-1.27V	1.28-1.56V	1.57-1.84V	1.87-2.14V	2.15-2.39V	2.40-2.65V	2.66-2.91V	2.92-3.17V
KEY2	PURE DIRECT	TUNING >>	TUNING <<	AM	FM	PRESET	PRESET	MEMORY	INFO	STRAIGHT	PROGRAM	PROGRAM



RESISTOR

RESMARK	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P±5)
△	CARBON FILM RESISTOR
□	METAL OXIDE FILM RESISTOR
◇	METAL PLATE RESISTOR
○	FILM PROOF CARBON FILM RESISTOR
◇	CONDUCT. MELDOR RESISTOR
◇	SEMI-VARIABLE RESISTOR
■	CHIP RESISTOR

CAPACITOR

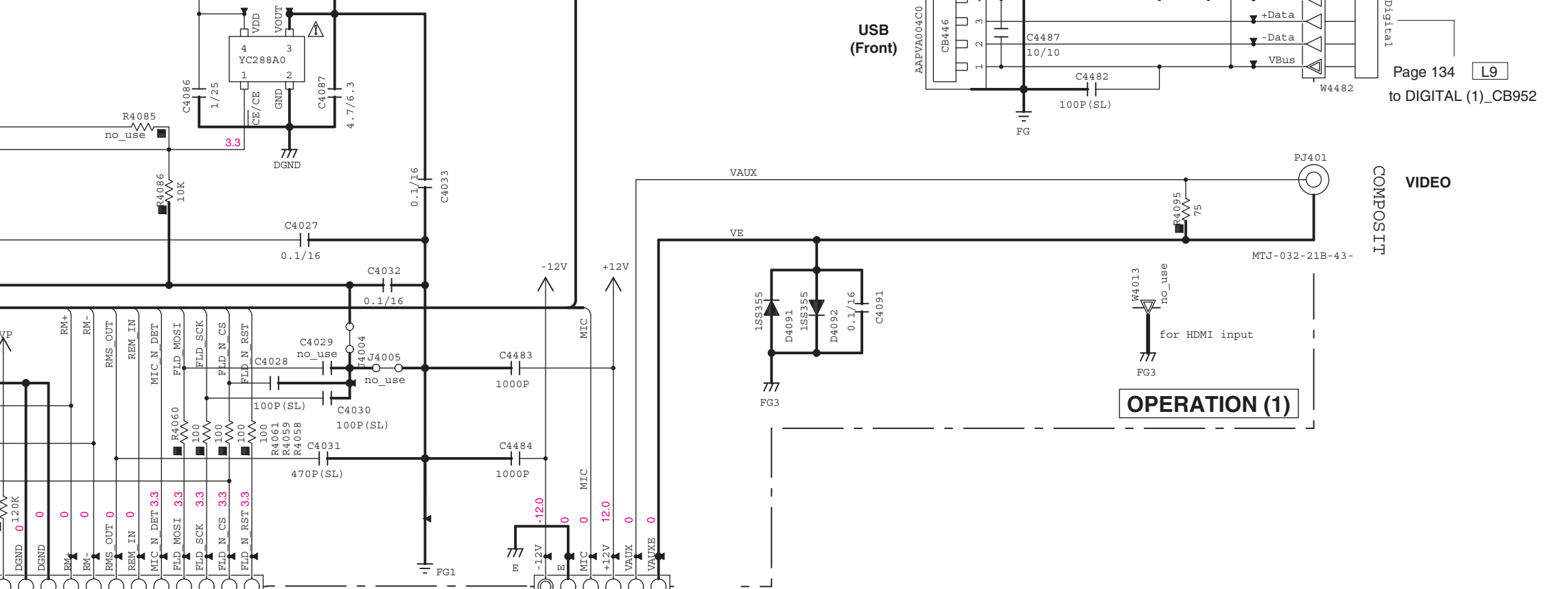
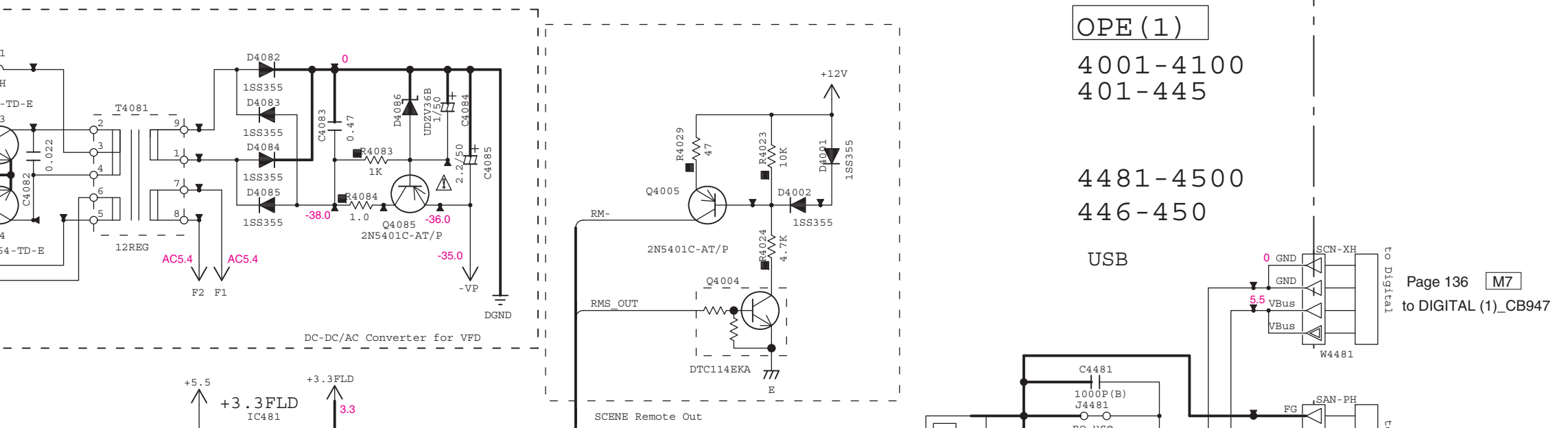
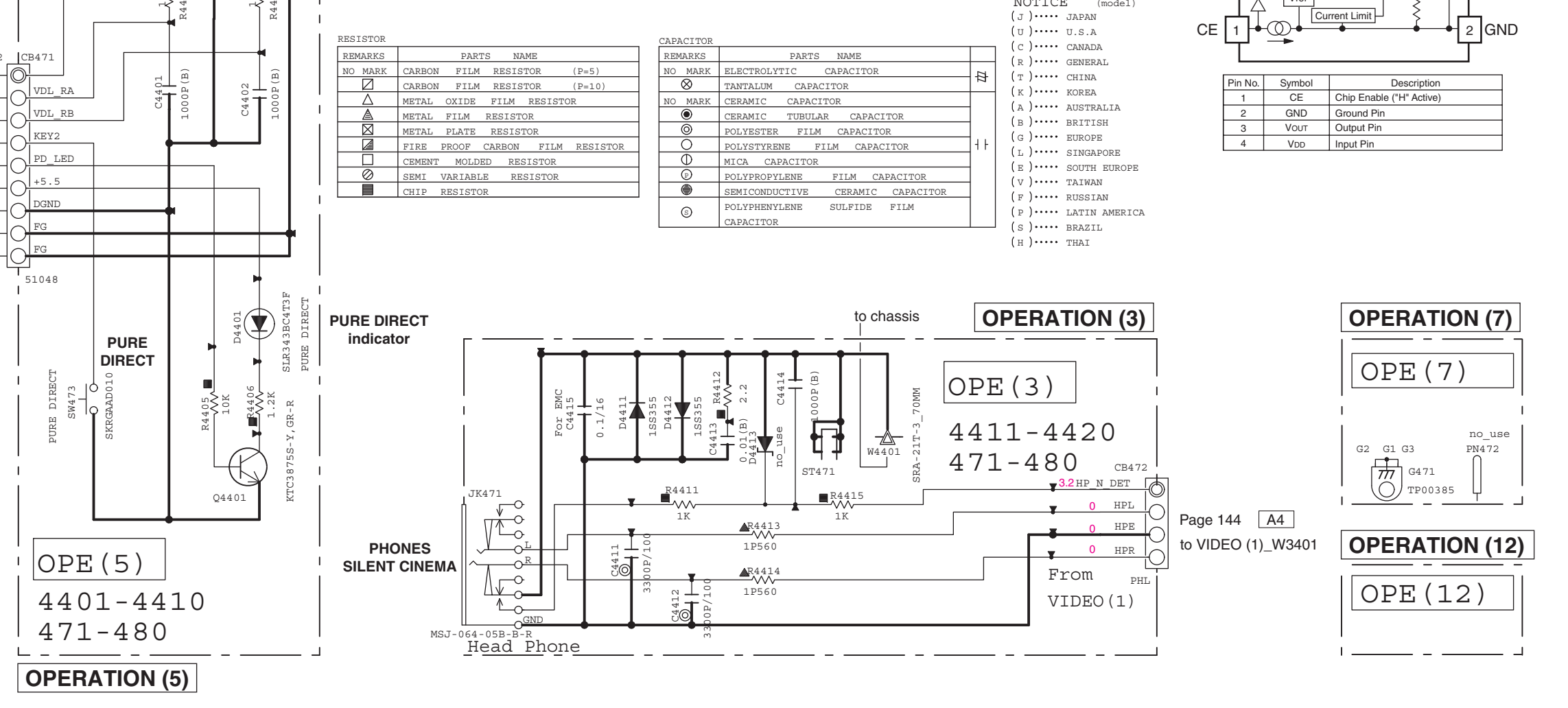
RESMARK	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
○	TANTALUM CAPACITOR
○	CERAMIC CAPACITOR
○	CERAMIC TUBULAR CAPACITOR
○	POLYESTER FILM CAPACITOR
○	POLYPROPYLENE FILM CAPACITOR
○	MICA CAPACITOR
○	POLYPROPYLENE FILM CAPACITOR
○	SEMICONDUCTIVE CERAMIC CAPACITOR
○	POLYPROPYLENE SULFIDE FILM CAPACITOR

NOTICE (model)

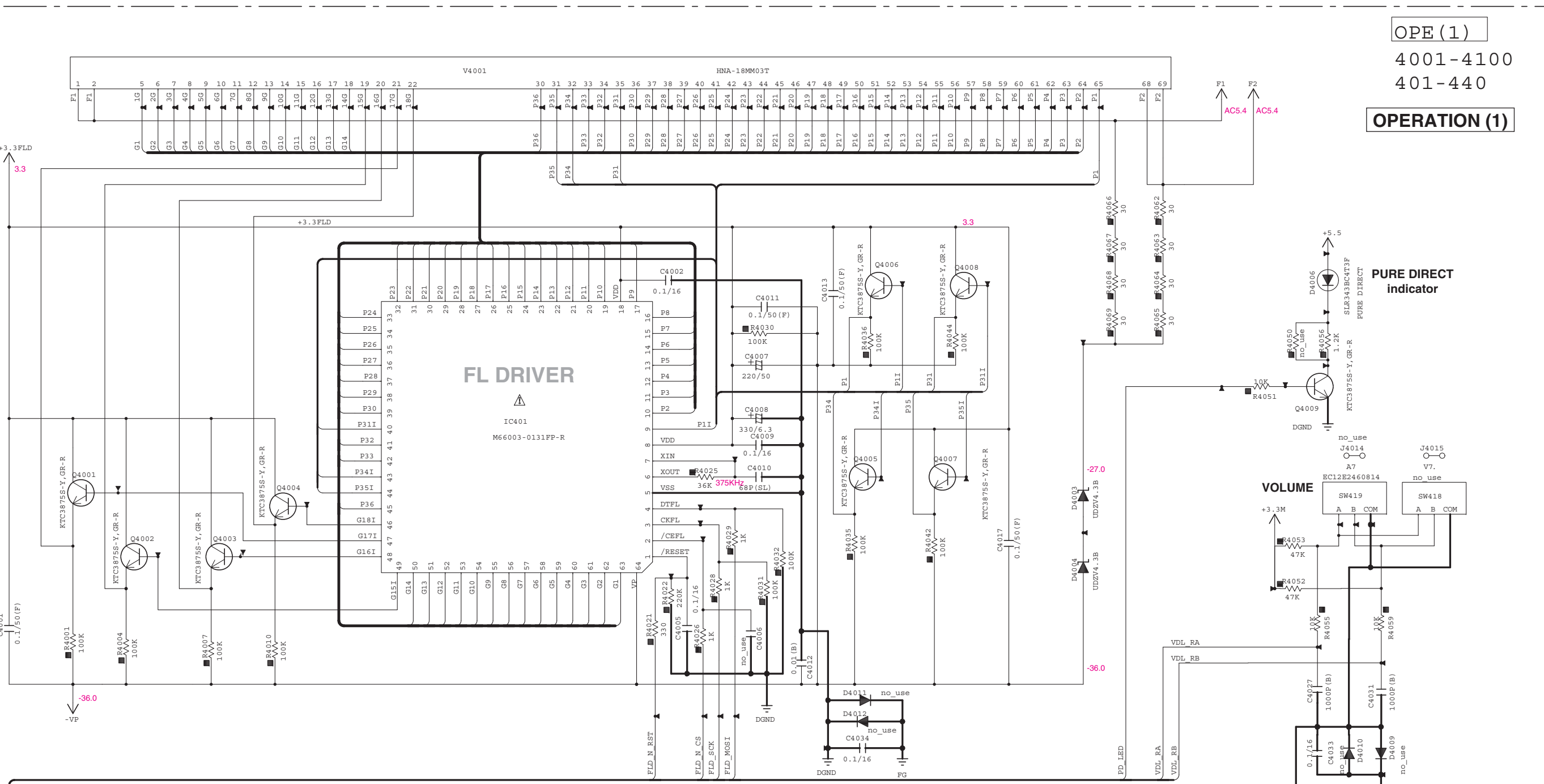
- (J) JAPAN
- (U) U.S.A.
- (C) CANADA
- (S) SWEDEN
- (K) KOREA
- (A) AUSTRALIA
- (B) BRITISH
- (G) EUROPE
- (L) SINGAPORE
- (E) SOUTH EUROPE
- (V) TAIWAN
- (P) RUSSIAN
- (D) LATIN AMERICA
- (B) BRAZIL
- (R) THAI

Pin No. Symbol Description

1	CE	Chip Enable (T _{TP} Active)
2	GND	Ground Pin
3	Vout	Output Pin
4	Vin	Input Pin



* All voltages are measured with a 10MΩ/V DC electronic voltmeter.
 * Components having special characteristics are marked Δ, and must be replaced with parts having specifications equal to those originally installed.
 * Schematic diagram is subject to change without notice.



CAPACITOR

REMARKS	PARTS NAME	Symbol
NO MARK	ELECTROLYTIC CAPACITOR	⊖
NO MARK	TANTALUM CAPACITOR	⊖
NO MARK	CERAMIC CAPACITOR	⊖
⊖	CERAMIC TUBULAR CAPACITOR	⊖
⊖	POLYESTER FILM CAPACITOR	⊖
⊖	POLYSTYRENE FILM CAPACITOR	⊖
⊖	MICA CAPACITOR	⊖
⊖	POLYPROPYLENE FILM CAPACITOR	⊖
⊖	SEMICONDUCTIVE CERAMIC CAPACITOR	⊖
⊖	POLYBUTYLENE SULFIDE FILM CAPACITOR	⊖
⊖	CAPACITOR	⊖

NOTICE (model)

(J)	..... JAPAN
(U)	..... U.S.A
(C)	..... CANADA
(B)	..... GENERAL
(T)	..... CHINA
(K)	..... KOREA
(A)	..... AUSTRALIA
(R)	..... BRITISH
(G)	..... EUROPE
(L)	..... SINGAPORE
(E)	..... SOUTH EUROPE
(V)	..... TAIWAN
(P)	..... RUSSIAN
(S)	..... LATIN AMERICA
(B)	..... BRAZIL
(H)	..... THAI

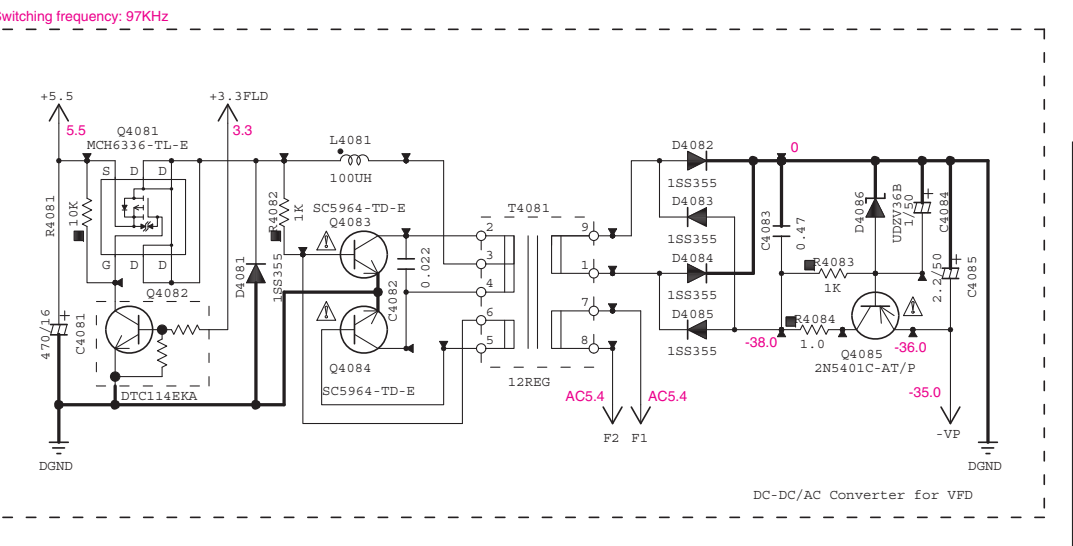
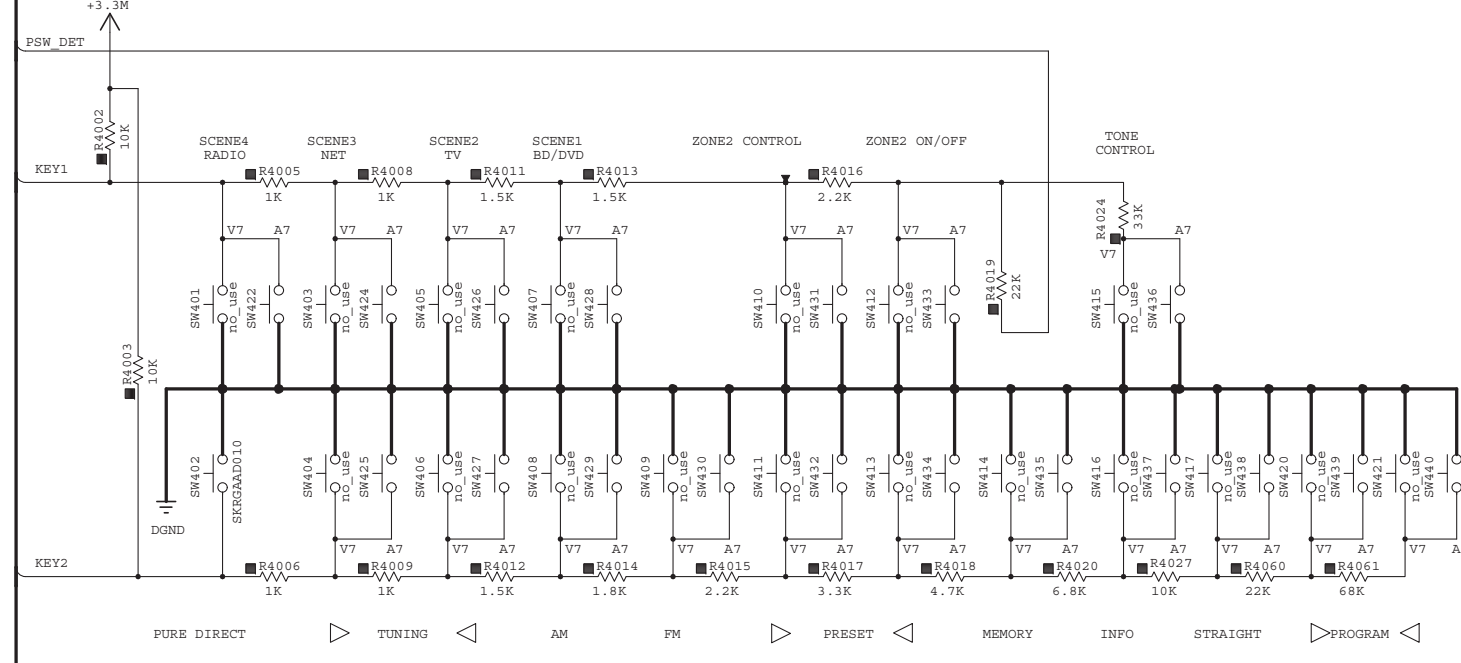
RESISTOR

REMARKS	PARTS NAME	Symbol
NO MARK	CARBON FILM RESISTOR (P=5)	⊖
⊖	CARBON FILM RESISTOR (P=10)	⊖
⊖	METAL OXIDE FILM RESISTOR	⊖
⊖	METAL FILM RESISTOR	⊖
⊖	METAL PLATE RESISTOR	⊖
⊖	FIRE PROOF CARBON FILM RESISTOR	⊖
⊖	CHERRY MOURED RESISTOR	⊖
⊖	SEMI-VARIABLE RESISTOR	⊖
⊖	CHIP RESISTOR	⊖

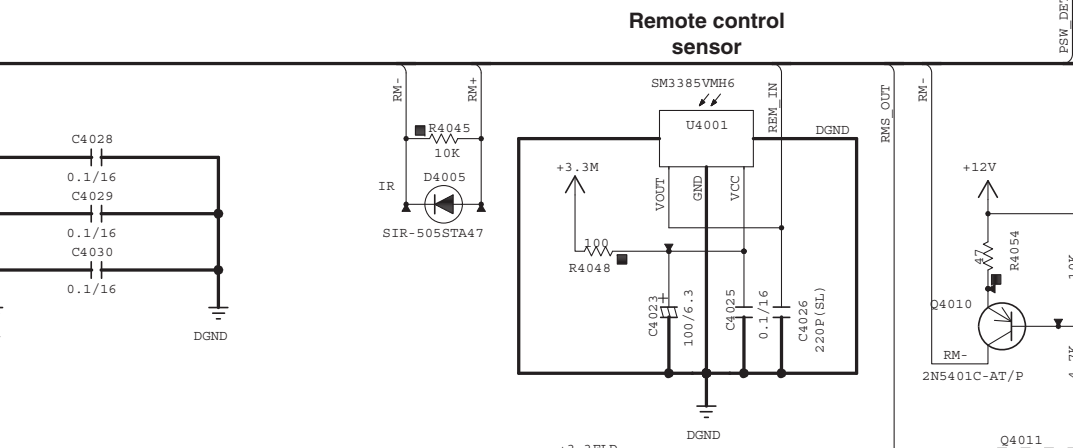
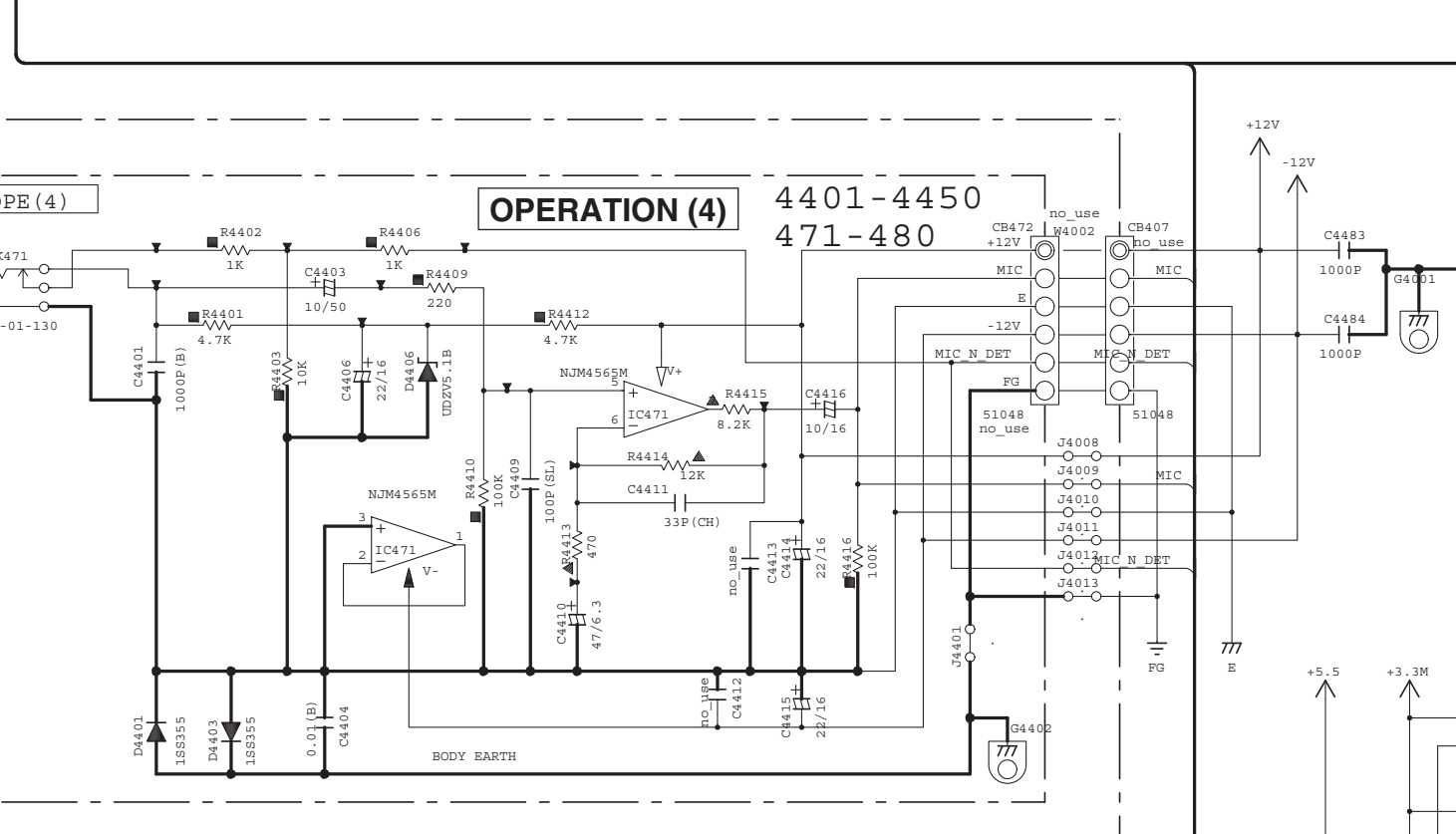
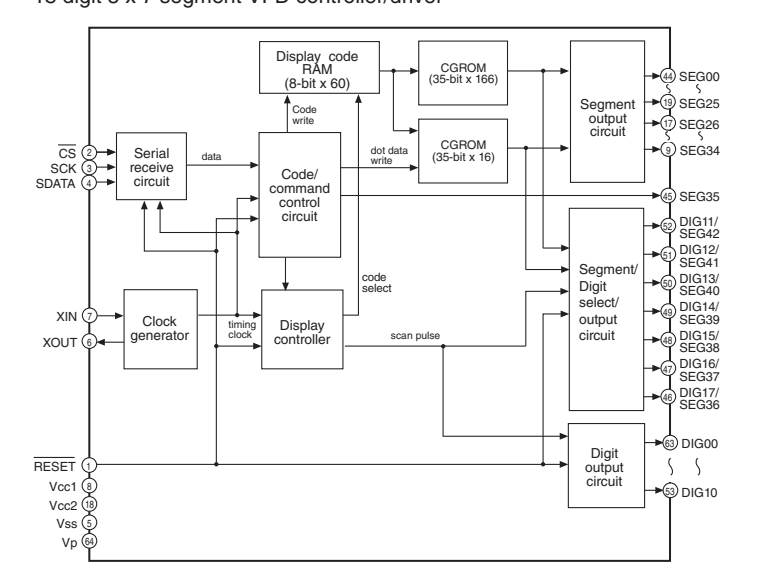
Key detection for A/D port
Key input (A/D) pull-up resistance 10 k-ohms

Detected voltage value at I/O pin	0 D	+10 KD	+10 KD	+15 KD	+15 KD	+2.2 KD	+3.3 KD	+4.7 KD	22 KD	33 KD
A/D value (3.3V±5%)	0-11	12-32	33-54	55-75	76-96	97-119	120-142	143-163	162-197	198-209
KEY1	RADIO (SCENE4)	NET (SCENE5)	TV (SCENE2)	BODVD (SCENE1)	ZONE2 CONTROL	ZONE2				

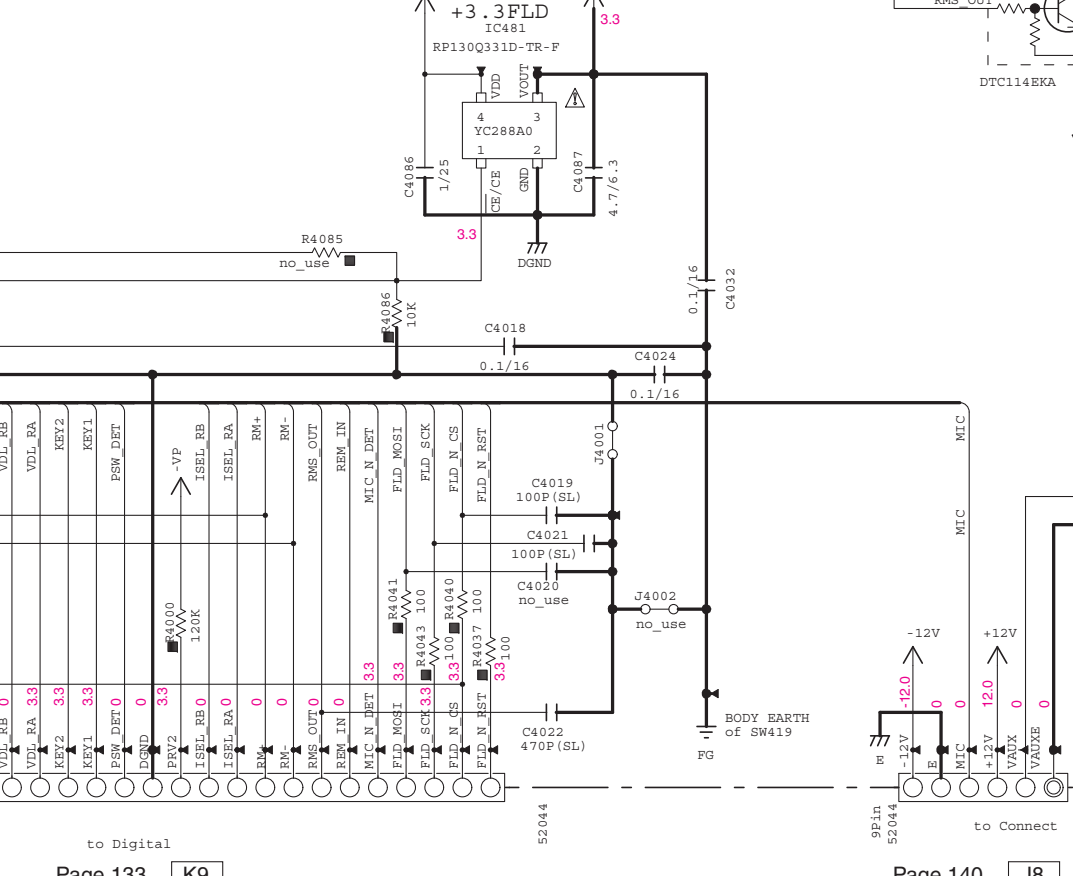
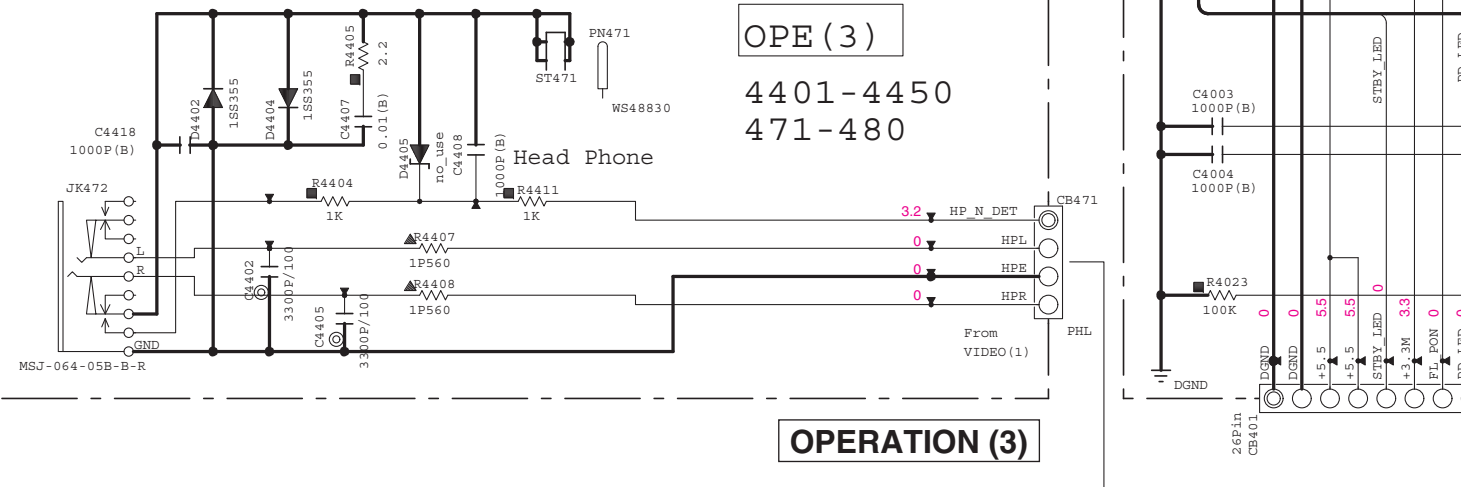
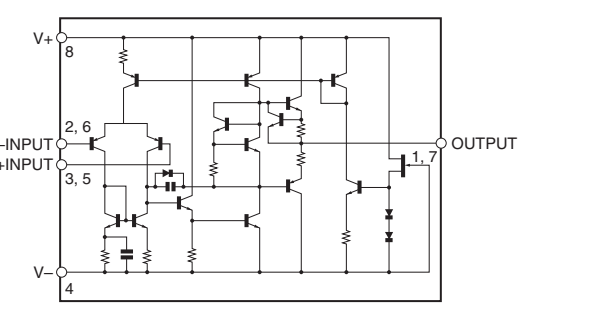
Detected voltage value at I/O pin	0 D	+10 KD	+10 KD	+15 KD	+18 KD	+2.2 KD	+3.3 KD	+4.7 KD	+6.8 KD	+10 KD	+68 KD
A/D value (3.3V±5%)	0-15	16-42	43-70	71-99	100-127	128-156	157-186	187-214	215-239	240-265	266-291
KEY2	PURE DIRECT	TUNING	TUNING	AM	FM	PRESET	PRESET	MEMORY	INFO	STRAIGHT	PROGRAM



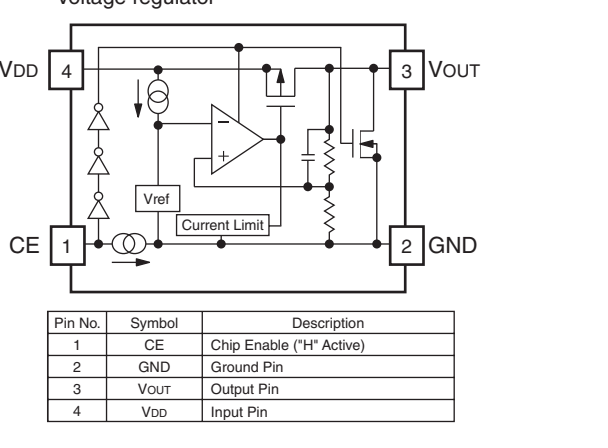
IC401: M66003-0131FP-R
18 digit 5 x 7 segment VFD controller/driver



IC471: NJM4565M (TE1)
Dual operational amplifier



IC481: RP130Q331D-TR-F
Voltage regulator



Pin No.	Symbol	Description
1	CE	Chip Enable (P# Active)
2	GND	Ground Pin
3	Vout	Output Pin
4	Vin	Input Pin

Page 147 [B4] to VIDEO (1)_W3401

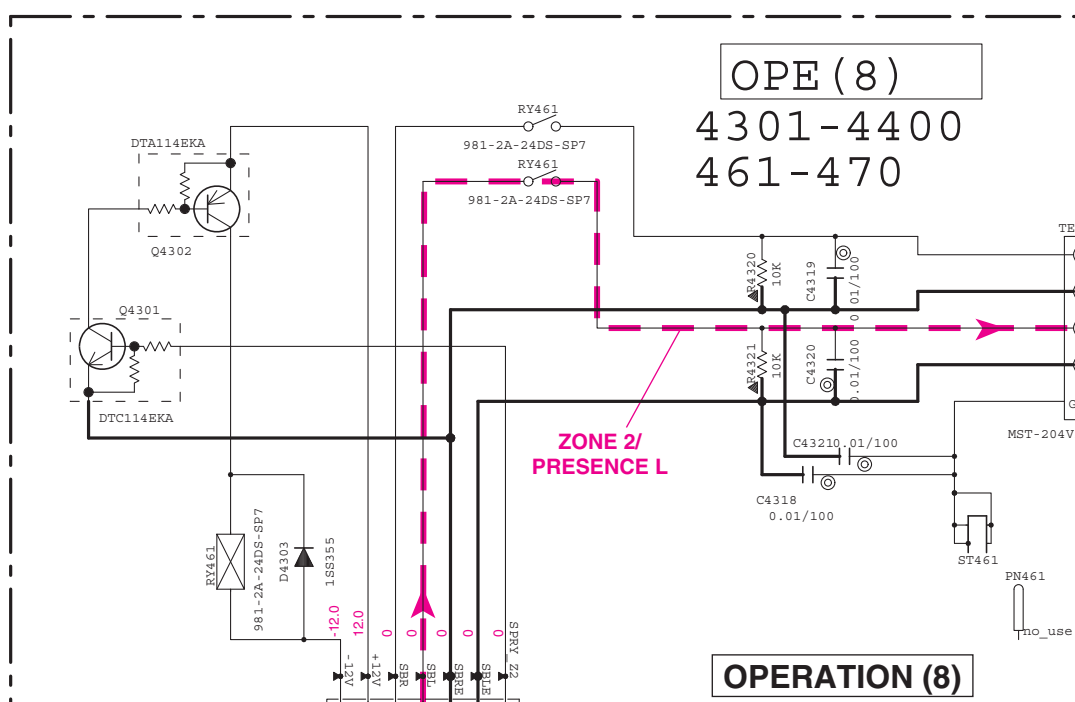
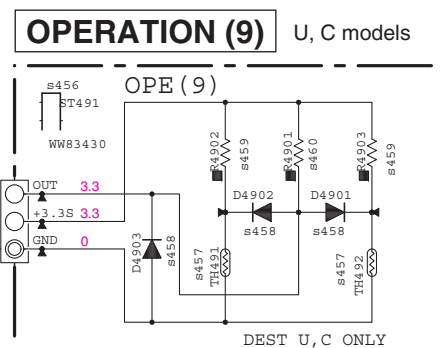
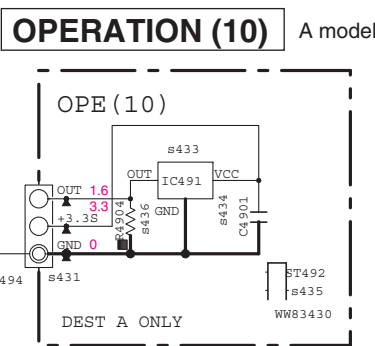
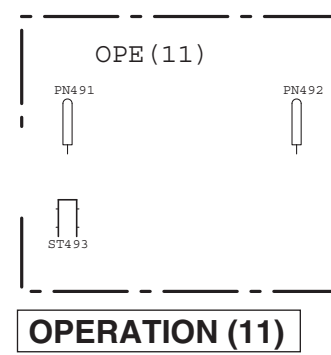
Page 133 [K9] to DIGITAL (1)_CB82

Page 140 [JB] to OPERATION (2)_CB458

Page 136 [M7] to DIGITAL (1)_CB947

Page 134 [L9] to DIGITAL (1)_CB952

* Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
* Schematic diagram is subject to change without notice.



R
EXTRA SP
L

ZONE 2/
PRESENCE

Destination Part List

#XX	LOC	QC	A
#431	C848	X	V287810 51048
#432	M4903	X	MF80310
#433	C0491	X	Y808300 1M1912E/LP74
#434	C0491	X	DS13110 6.1/164
#435	ST492	X	WB83430
#436	M4904	X	SD35710 10K
#456	ST491	X	WB83430
#457	TH491	X	MC928A10321
#458	D4903	X	VT12290 180355
#459	D4902	X	RD16110
#460	H4901	X	RD16710 15K
#461	C8491	X	V187810 51048
#462	M4901	X	MF80310

RESISTOR

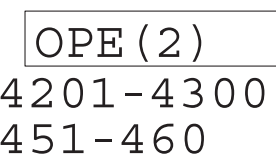
NO.	MARK	CARBON FILM RESISTOR (P=1)	PARTS NAME
⊙			CARBON FILM RESISTOR (P=10)
△			METAL OXIDE FILM RESISTOR
▲			METAL FILM RESISTOR
■			METAL PLATE RESISTOR
□			FIRE PROOF CARBON FILM RESISTOR
⊖			CEMENT MOLDED RESISTOR
⊕			SEM. VARIABLE RESISTOR
■			CHIP RESISTOR

CAPACITOR

NO.	MARK	PARTS NAME
⊖		ELECTROLYTIC CAPACITOR
⊕		TANTALUM CAPACITOR
⊙		CERAMIC CAPACITOR
⊖		CERAMIC TUBULAR CAPACITOR
⊙		POLYESTER FILM CAPACITOR
⊖		POLYPROPYLENE FILM CAPACITOR
⊙		MICA CAPACITOR
⊖		POLYPROPYLENE FILM CAPACITOR
⊙		SEMICONDUCTIVE CERAMIC CAPACITOR
⊖		POLYPROPYLENE SULFIDE FILM CAPACITOR

NOTICE (model)

(J)..... JAPAN
(U)..... U.S.A
(C)..... CANADA
(M)..... MEXICO
(T)..... THAILAND
(K)..... KOREA
(A)..... AUSTRALIA
(E)..... EUROPE
(L)..... SINGAPORE
(S)..... SOUTH EUROPE
(V)..... VIETNAM
(F)..... FRANCE
(P)..... LATIN AMERICA
(B)..... BRAZIL



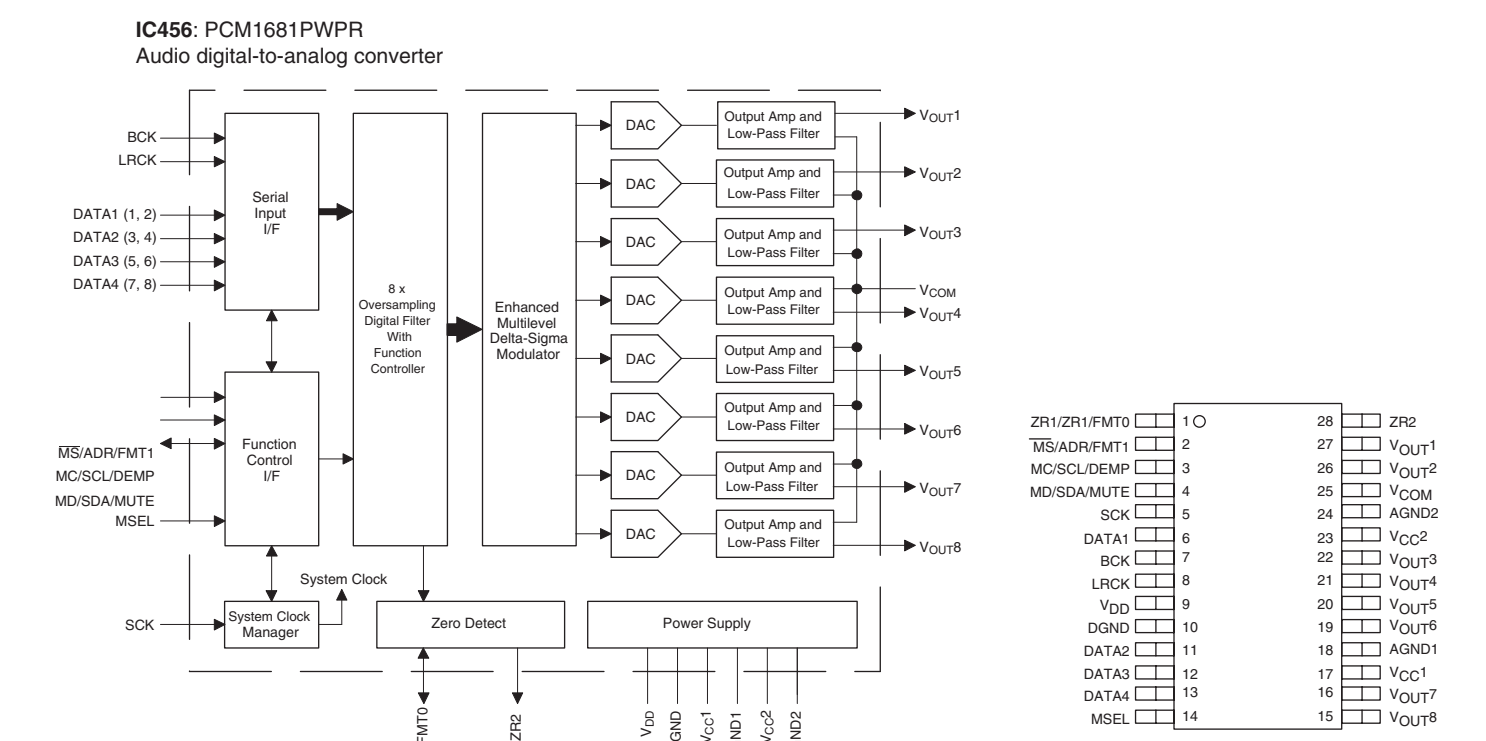
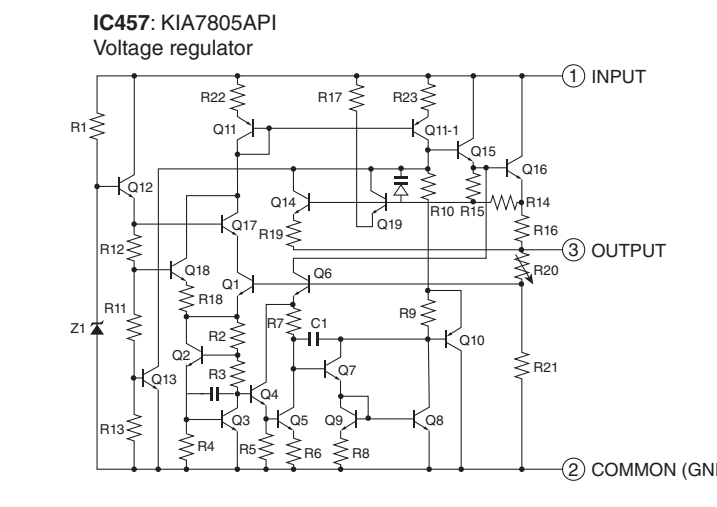
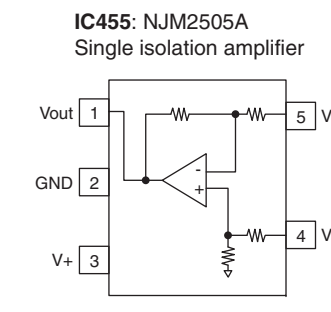
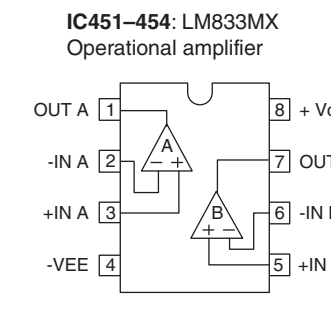
Page 136 [M2] to DIGITAL (1)_CB945

Page 136 [M3] to DIGITAL (1)_CB946

Page 136 [M5] to DIGITAL (1)_CB948

RESISTOR

R4200	0
RX-V673	0
RX-A710	2.2K
HTR6064	2.2K
RX-V771	3.3K
RX-A810	5.6K
HTR7064	8.2K
RX-V871	1.2K
RX-A910	18K
HTR8064	27K

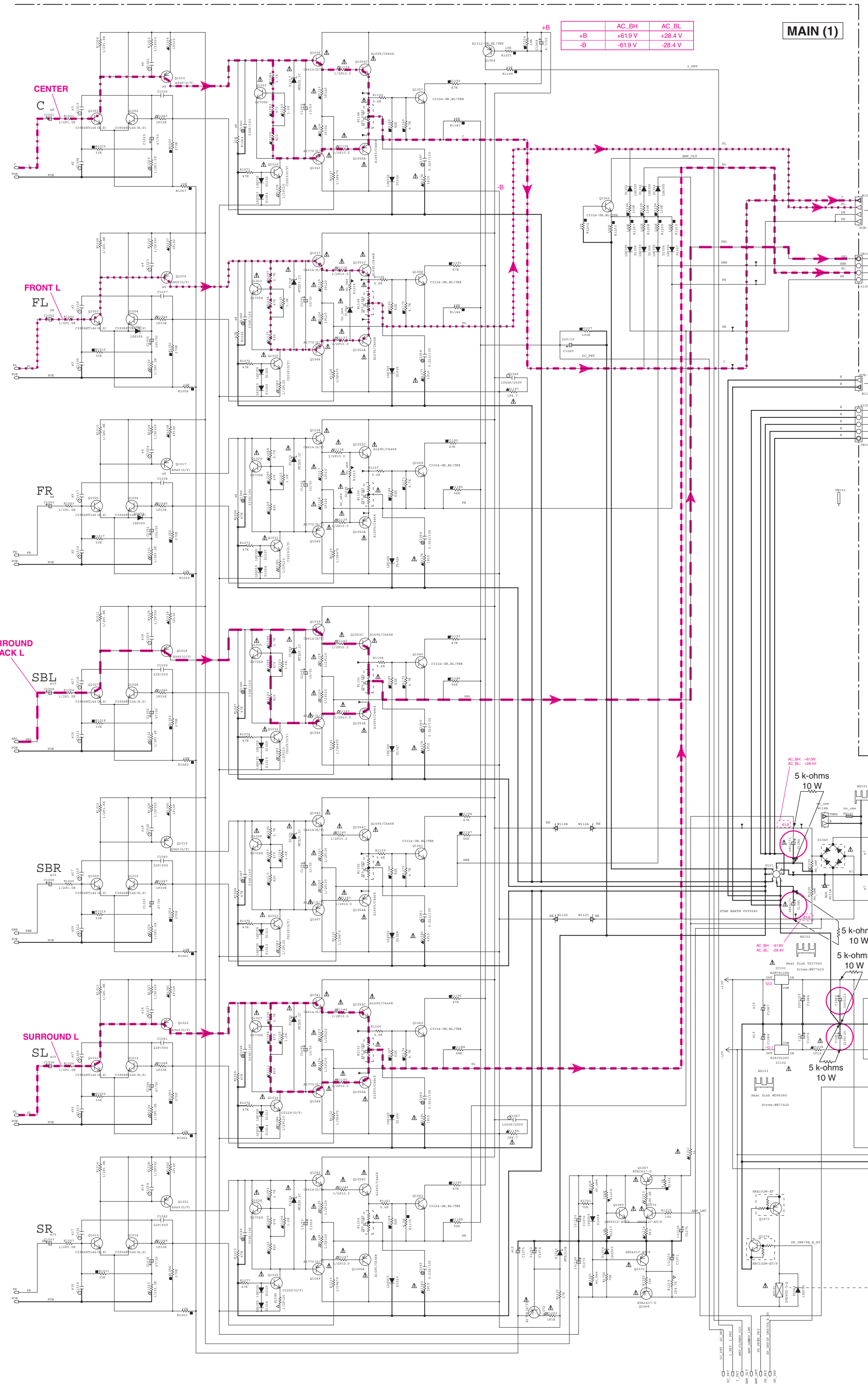


Page 139 [H10] to OPERATION (1)_CB402

Pin List

ZN12R1VMTU	1	0	26	ZR2
IBADRFMT1	2	0	27	VOUT1
MCSCLEMP	3	0	26	VOUT2
MDSDAMUTE	4	0	25	VCOM
SCK	5	0	24	AGND2
DATA1	6	0	20	VCC0
BCK	7	0	32	VOUT3
LCK	8	0	21	VOUT4
VDD	9	0	20	VOUT5
DGND	10	0	19	VOUT6
DATA2	11	0	18	AGND1
DATA3	12	0	17	VCC1
DATA4	13	0	16	VOUT7
MSEL	14	0	15	VOUT8

* Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
* Schematic diagram is subject to change without notice.



MAIN (1)

Page 144 [B5] RX-V673/HTR-6065 to VIDEO (1)_CB342
 Page 147 [B5] RX-A720 to VIDEO (1)_CB342

Page 144 [B5] RX-V673/HTR-6065 to VIDEO (1)_CB343
 Page 147 [B5] RX-A720 to VIDEO (1)_CB343

Page 144 [B6] RX-V673/HTR-6065 to VIDEO (1)_CB340
 Page 147 [B6] RX-A720 to VIDEO (1)_CB340

Page 144 [B6] RX-V673/HTR-6065 to VIDEO (1)_CB344
 Page 147 [B6] RX-A720 to VIDEO (1)_CB344

Safety measures

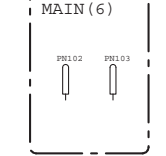
- Some internal parts in this product contain high voltages and are dangerous. Be sure to take safety measures during servicing, such as wearing insulating gloves.
- Note that the capacitors indicated below are dangerous even after the power is turned off because an electric charge remains and a high voltage continues to exist there. Before starting any repair work, connect a discharging resistor (5 k-ohms/10 W) to the terminals of each capacitor indicated below to discharge electricity. The time required for discharging is about 30 seconds per each.

C1082-C1085 on MAIN (1) P.C.B.

MAIN (2)

to POWER TRANSFORMER

MAIN (6)



Page 144 [B7] RX-V673/HTR-6065 to VIDEO (1)_CB346
 Page 147 [B7] RX-A720 to VIDEO (1)_CB346

DISCRETE PART LIST

NO.	QTY	REF.	DESCRIPTION	QTY	REF.
100	1	Q100	2N3858	1	Q100
101	1	Q101	2N3858	1	Q101
102	1	Q102	2N3858	1	Q102
103	1	Q103	2N3858	1	Q103
104	1	Q104	2N3858	1	Q104
105	1	Q105	2N3858	1	Q105
106	1	Q106	2N3858	1	Q106
107	1	Q107	2N3858	1	Q107
108	1	Q108	2N3858	1	Q108
109	1	Q109	2N3858	1	Q109
110	1	Q110	2N3858	1	Q110
111	1	Q111	2N3858	1	Q111
112	1	Q112	2N3858	1	Q112
113	1	Q113	2N3858	1	Q113
114	1	Q114	2N3858	1	Q114
115	1	Q115	2N3858	1	Q115
116	1	Q116	2N3858	1	Q116
117	1	Q117	2N3858	1	Q117
118	1	Q118	2N3858	1	Q118
119	1	Q119	2N3858	1	Q119
120	1	Q120	2N3858	1	Q120

RESISTOR

NO.	QTY	REF.	DESCRIPTION	QTY	REF.
100	1	R100	10K	1	R100
101	1	R101	10K	1	R101
102	1	R102	10K	1	R102
103	1	R103	10K	1	R103
104	1	R104	10K	1	R104
105	1	R105	10K	1	R105
106	1	R106	10K	1	R106
107	1	R107	10K	1	R107
108	1	R108	10K	1	R108
109	1	R109	10K	1	R109
110	1	R110	10K	1	R110
111	1	R111	10K	1	R111
112	1	R112	10K	1	R112
113	1	R113	10K	1	R113
114	1	R114	10K	1	R114
115	1	R115	10K	1	R115
116	1	R116	10K	1	R116
117	1	R117	10K	1	R117
118	1	R118	10K	1	R118
119	1	R119	10K	1	R119
120	1	R120	10K	1	R120

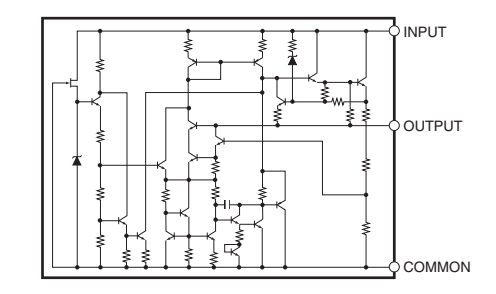
CAPACITOR

NO.	QTY	REF.	DESCRIPTION	QTY	REF.
100	1	C100	1000P	1	C100
101	1	C101	1000P	1	C101
102	1	C102	1000P	1	C102
103	1	C103	1000P	1	C103
104	1	C104	1000P	1	C104
105	1	C105	1000P	1	C105
106	1	C106	1000P	1	C106
107	1	C107	1000P	1	C107
108	1	C108	1000P	1	C108
109	1	C109	1000P	1	C109
110	1	C110	1000P	1	C110
111	1	C111	1000P	1	C111
112	1	C112	1000P	1	C112
113	1	C113	1000P	1	C113
114	1	C114	1000P	1	C114
115	1	C115	1000P	1	C115
116	1	C116	1000P	1	C116
117	1	C117	1000P	1	C117
118	1	C118	1000P	1	C118
119	1	C119	1000P	1	C119
120	1	C120	1000P	1	C120

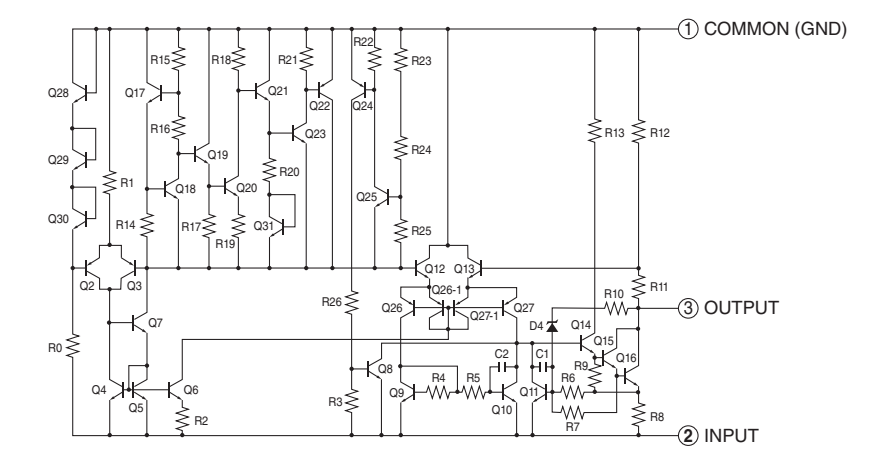
NOTICE (Model)

(J) JAPAN
 (U.S.A.) U.S.A.
 (CANADA) CANADA
 (GENERAL) GENERAL
 (EUROPE) EUROPE
 (KOREA) KOREA
 (AUSTRALIA) AUSTRALIA
 (MEXICO) MEXICO
 (INDONESIA) INDONESIA
 (HONG KONG) HONG KONG
 (SINGAPORE) SINGAPORE
 (MALAYSIA) MALAYSIA
 (THAI) THAI

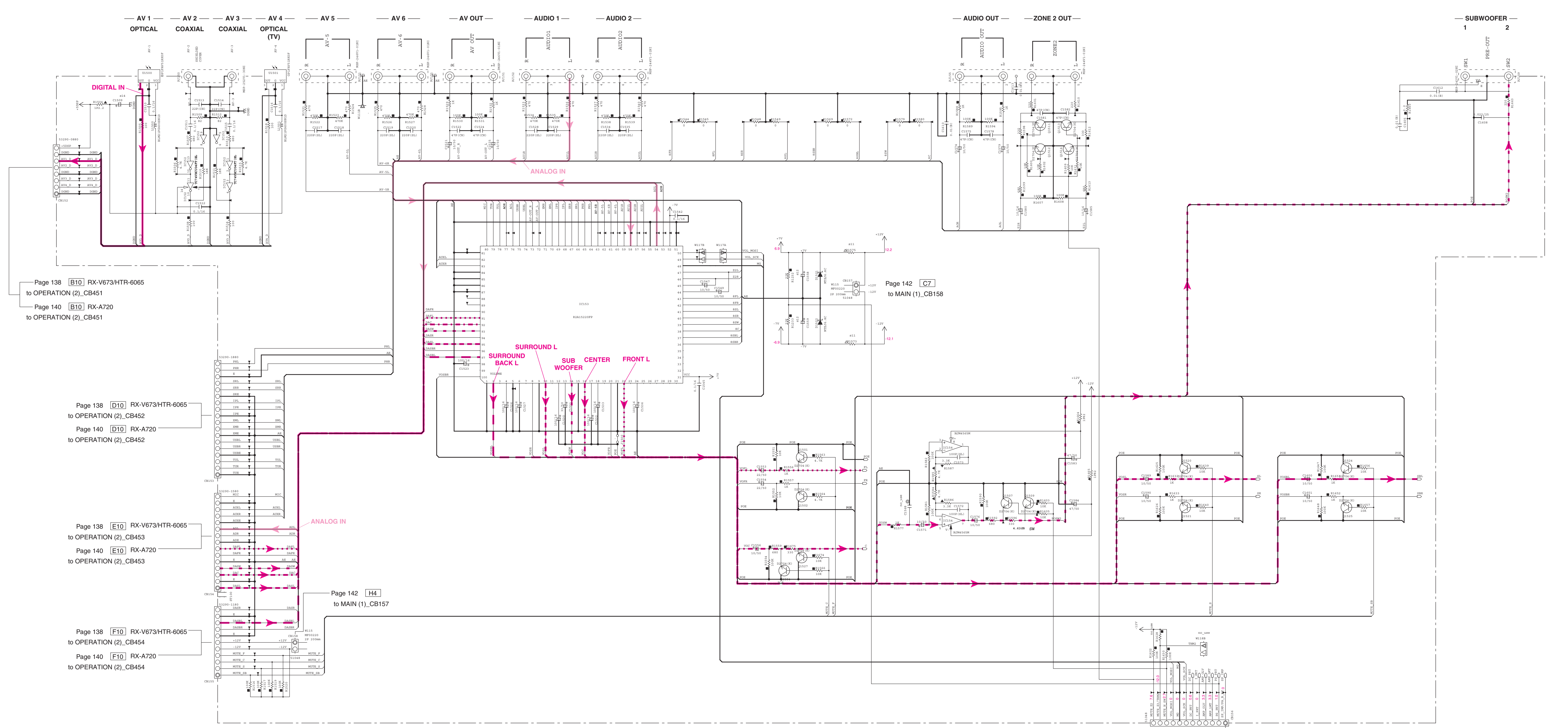
IC101: NJM7812FA Voltage regulator



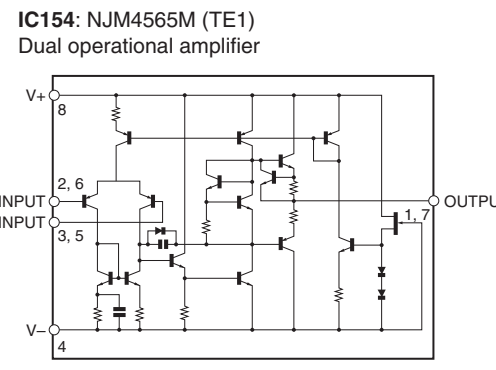
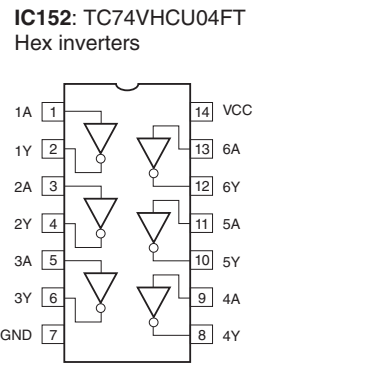
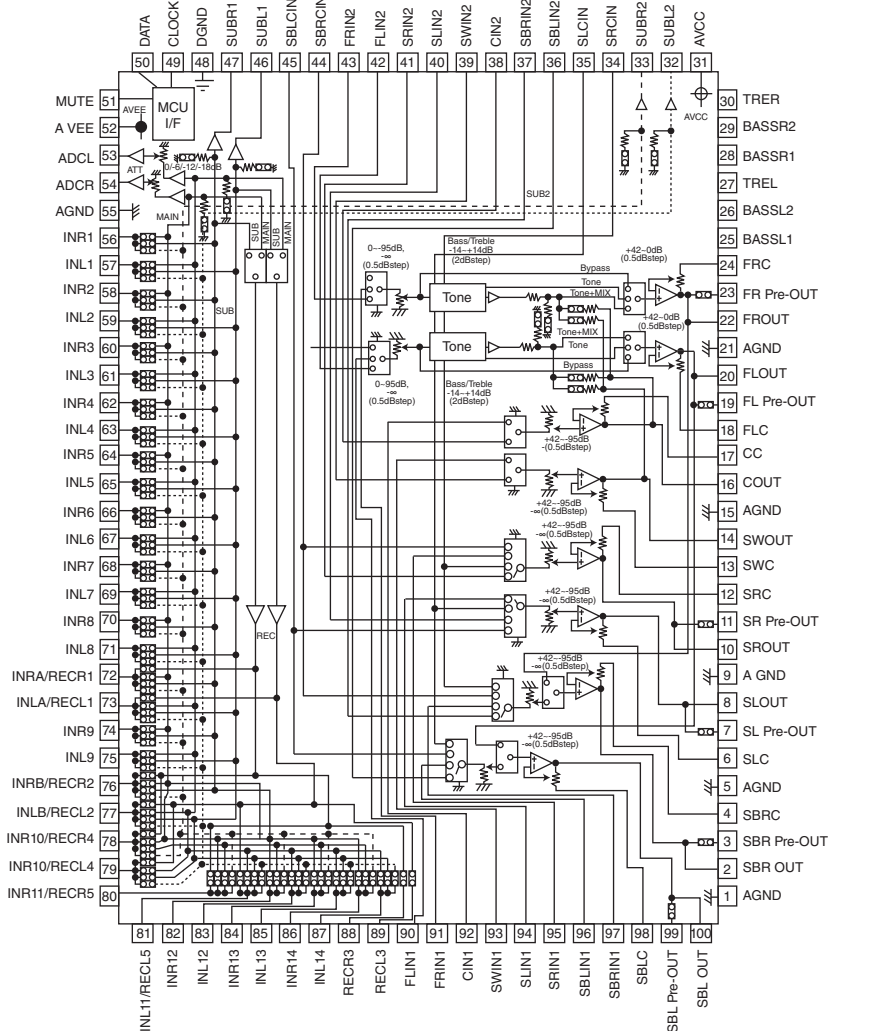
IC102: KIA7912PI Voltage regulator



• All voltages are measured with a 10MΩ/V DC electronic voltmeter.
 • Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
 • Schematic diagram is subject to change without notice.



IC153: R2A15220FP
8-channel electronic volume with 11 input selector and tone control



Page 133 [H9] to DIGITAL (1)_CB78

RESISTOR

REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P=5)
□	CARBON FILM RESISTOR (P=10)
△	METAL OXIDE FILM RESISTOR
▲	METAL FILM RESISTOR
⊠	METAL PLATE RESISTOR
⊞	FILM GRID CARBON FILM RESISTOR
⊞	CEMENT MOUNTED RESISTOR
⊞	SEMI-VARIABLE RESISTOR
⊞	CHIP RESISTOR

CAPACITOR

REMARKS	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
⊞	TANTALUM CAPACITOR
NO MARK	CERAMIC CAPACITOR
⊞	CERAMIC DISK CERAMIC CAPACITOR
⊞	POLYESTER FILM CAPACITOR
⊞	POLYETHYLENE FILM CAPACITOR
⊞	MICA CAPACITOR
⊞	POLYPROPYLENE FILM CAPACITOR
⊞	SEMICONDUCTIVE CERAMIC CAPACITOR

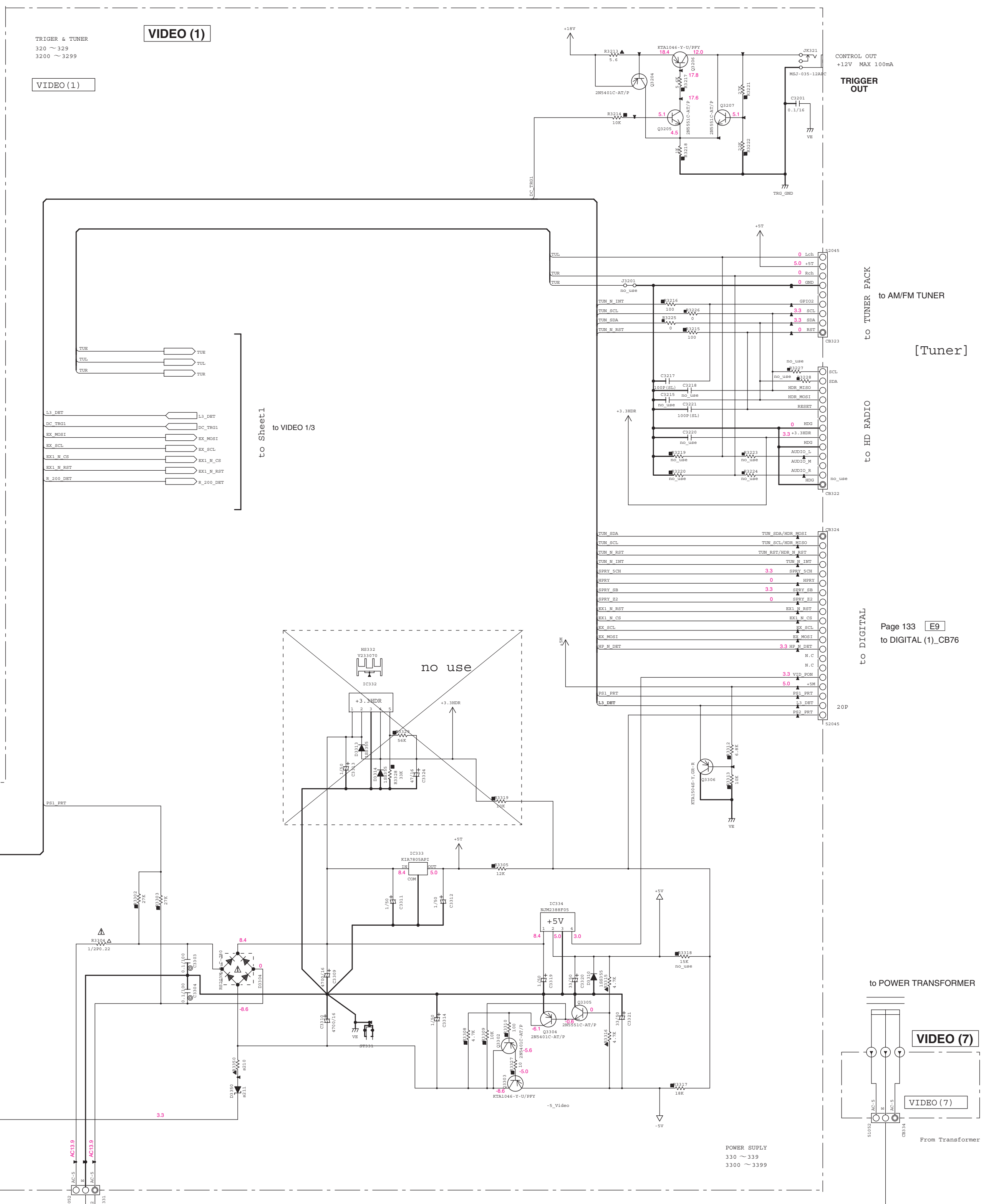
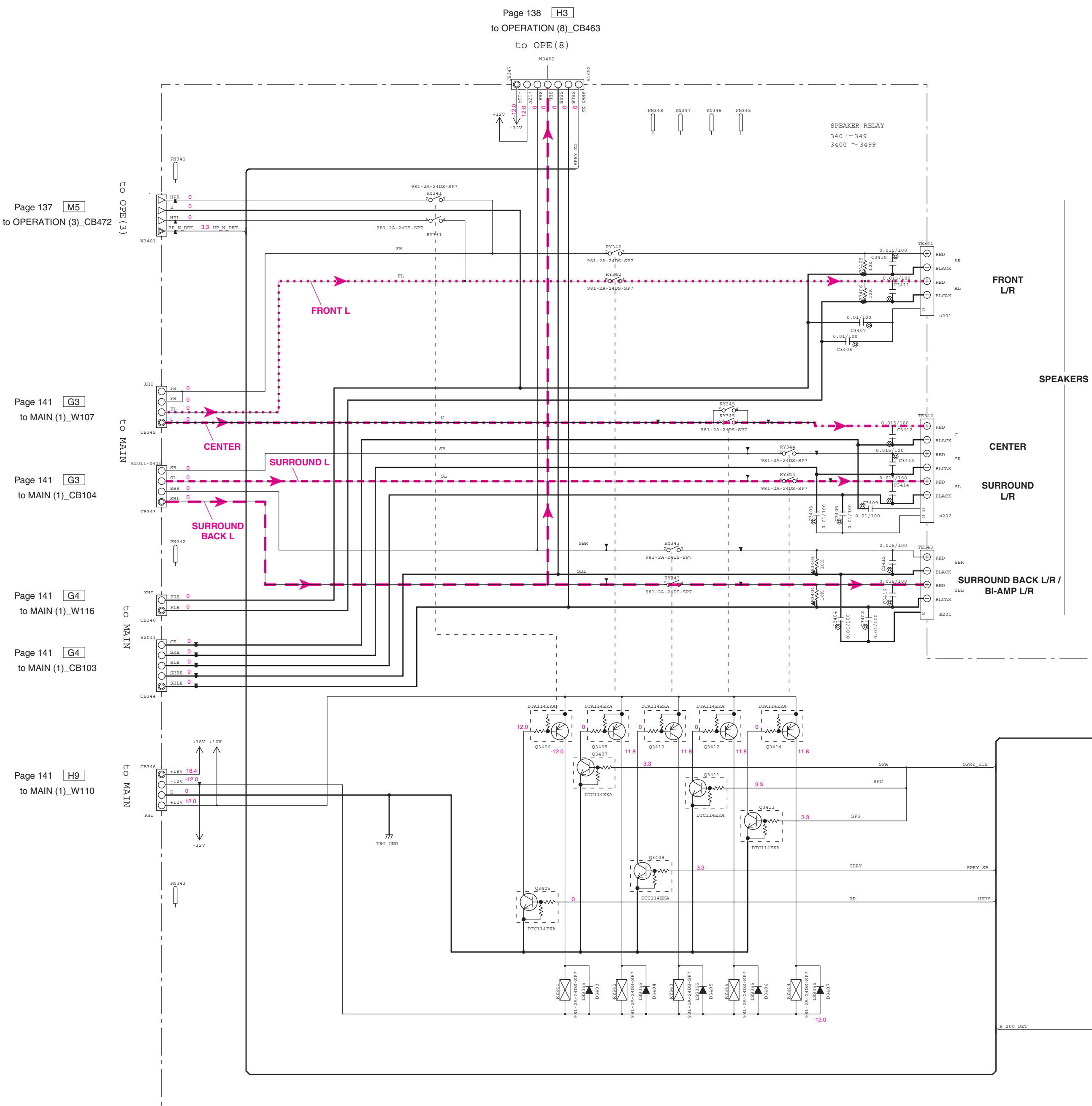
NOTICE (model)

(J)..... JAPAN
 (U)..... U.S.A.
 (C)..... CANADA
 (B)..... BERMUDA
 (E)..... CHINA
 (K)..... KOREA
 (A)..... AUSTRALIA
 (B)..... BRITISH
 (C)..... EUROPE
 (L)..... SINGAPORE
 (E)..... SOUTH EUROPE
 (V)..... TAIWAN
 (F)..... RUSSIAN
 (P)..... LATIN AMERICA
 (S)..... BRAZIL
 (H)..... THAI

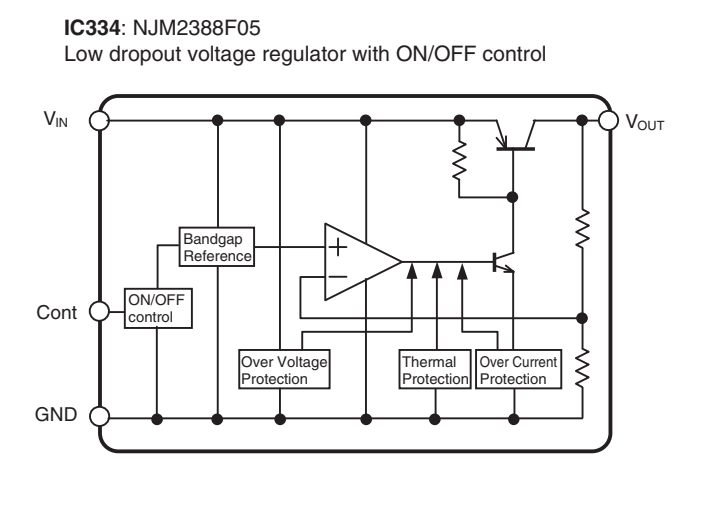
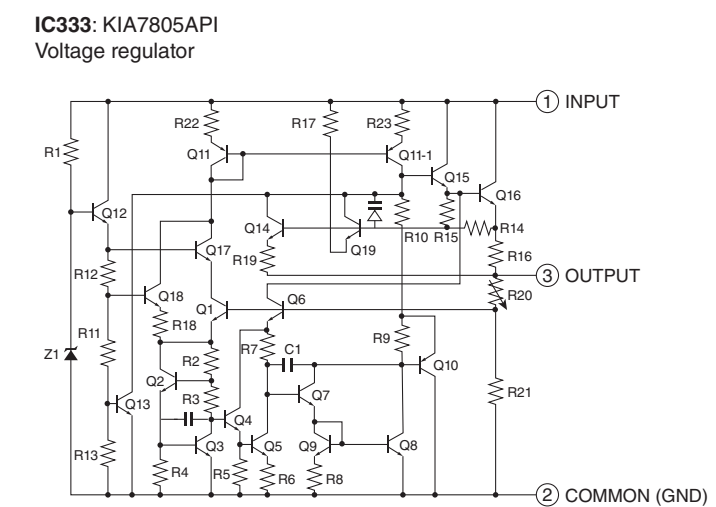
* All voltages are measured with a 10MΩ/V DC electronic voltmeter.
 * Components having special characteristics are marked Δ, and must be replaced with parts having specifications equal to those originally installed.
 * Schematic diagram is subject to change without notice.

Destination Part List

REQ	LOC	U	C	R5	T	X	A	RF	LR
8201	TR343	MP72850	MP72850	MP72850	MP72850	MP72850	MP72850	MP72850	MP72850
8202	TR342	MP72840	MP72840	MP72840	MP72840	MP72840	MP72840	MP72840	MP72840
8210	R3350	X	X	MP7250	X	X	X	X	X
8211	Q3350	X	X	OC28128	X	X	X	X	X



* All voltages are measured with a 10MΩ/V DC electronic voltmeter.
 * Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
 * Schematic diagram is subject to change without notice.



RESISTOR

SYMBOL	PARTS NAME
□	CARBON FILM RESISTOR (P-S)
○	CARBON FILM RESISTOR (P-10)
△	METAL OXIDE FILM RESISTOR
▲	METAL FILM RESISTOR
■	METAL PLATE RESISTOR
◇	FILM PROOF CARBON FILM RESISTOR
⊖	CEMENT MOUNTED RESISTOR
⊕	5W VARIABLE RESISTOR
⊗	CHIP RESISTOR

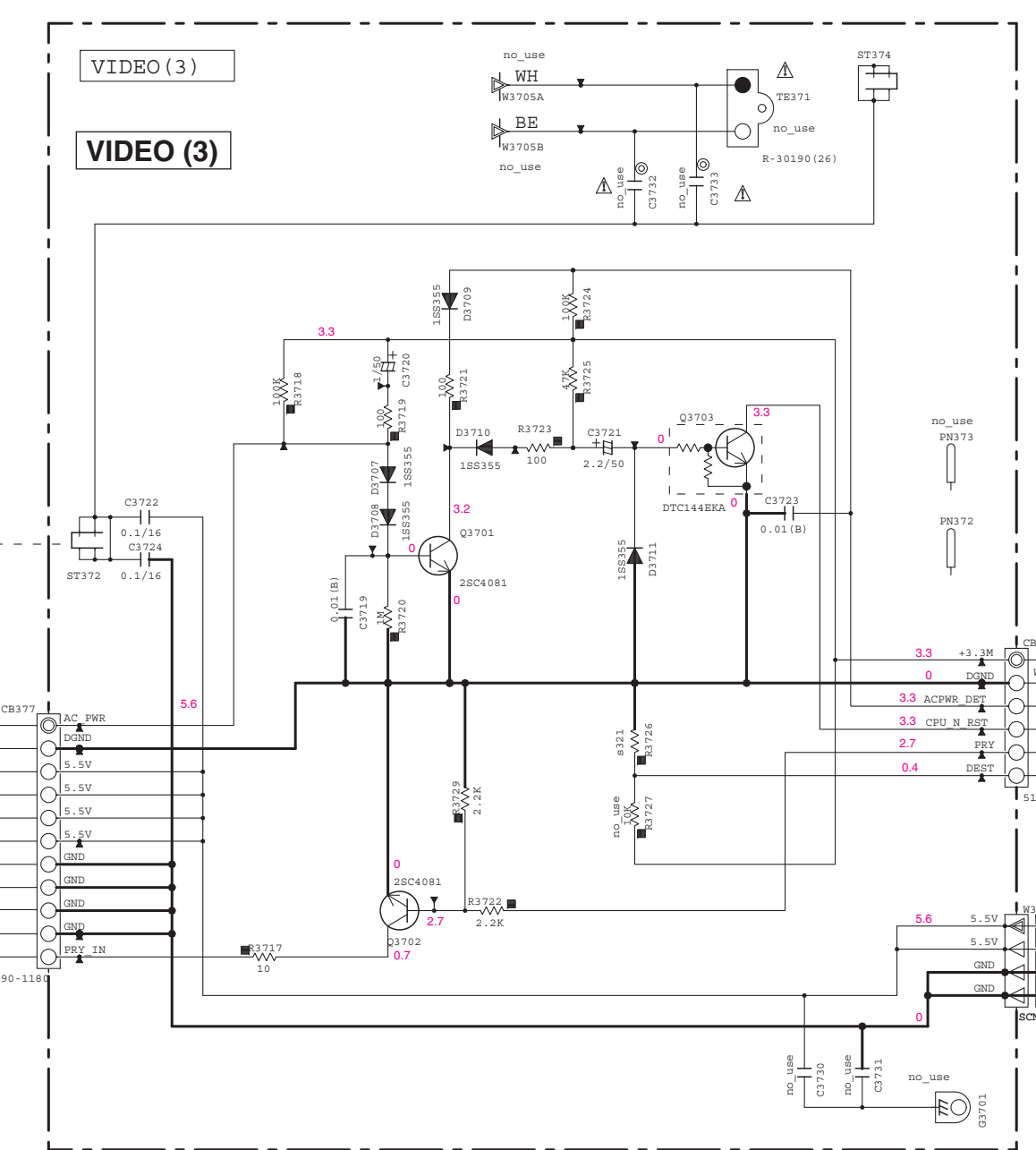
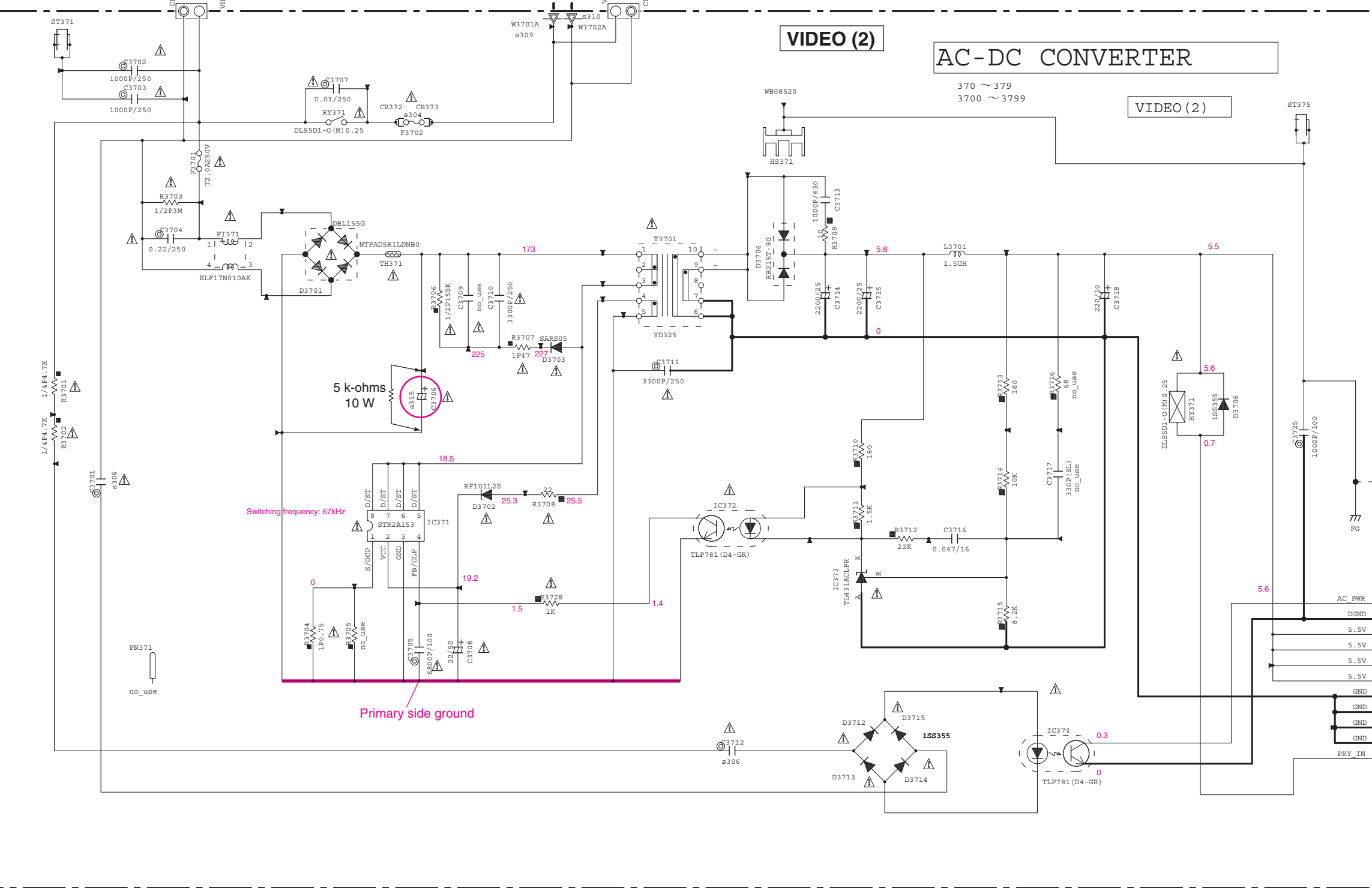
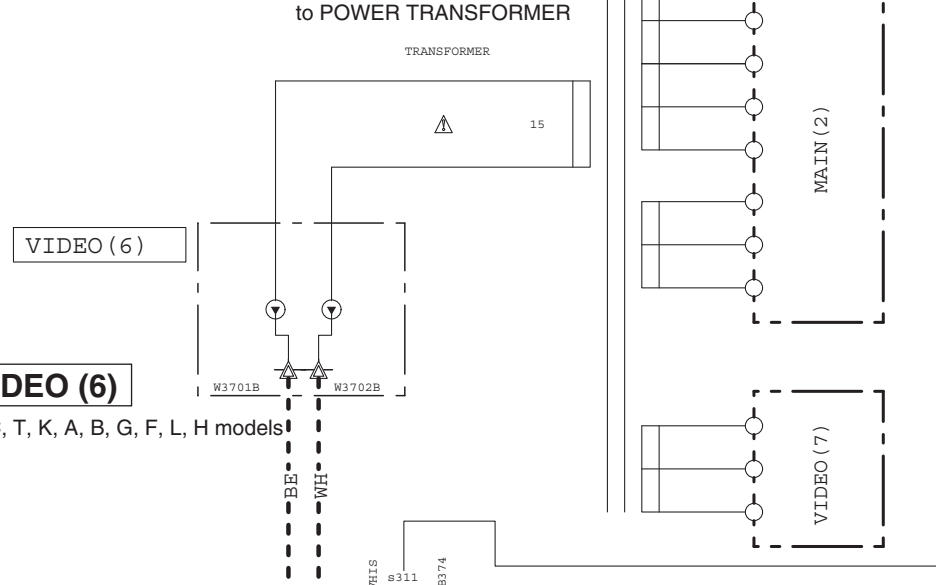
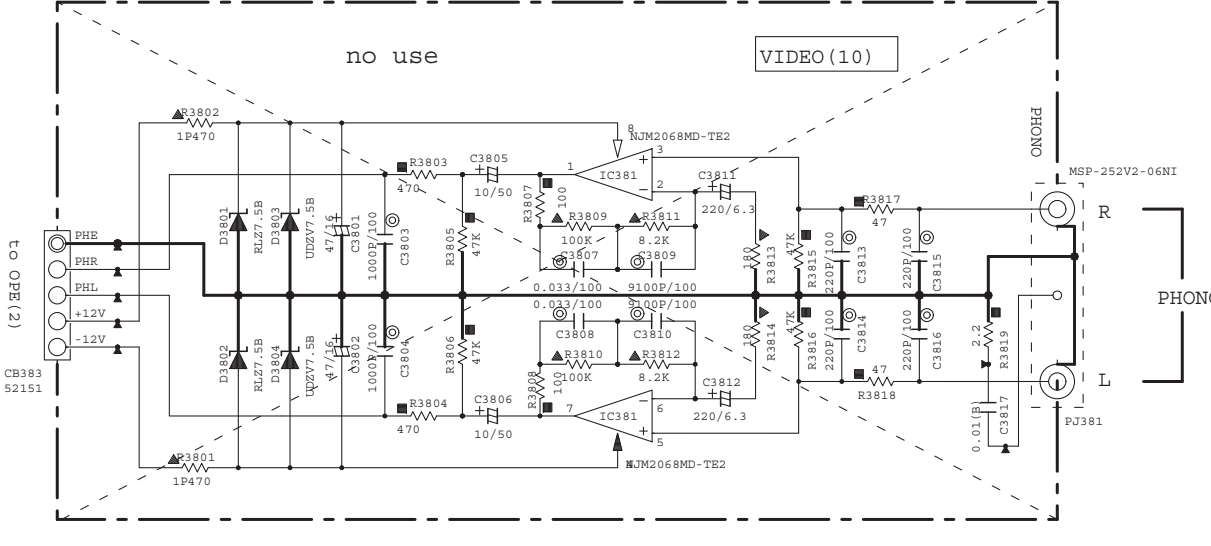
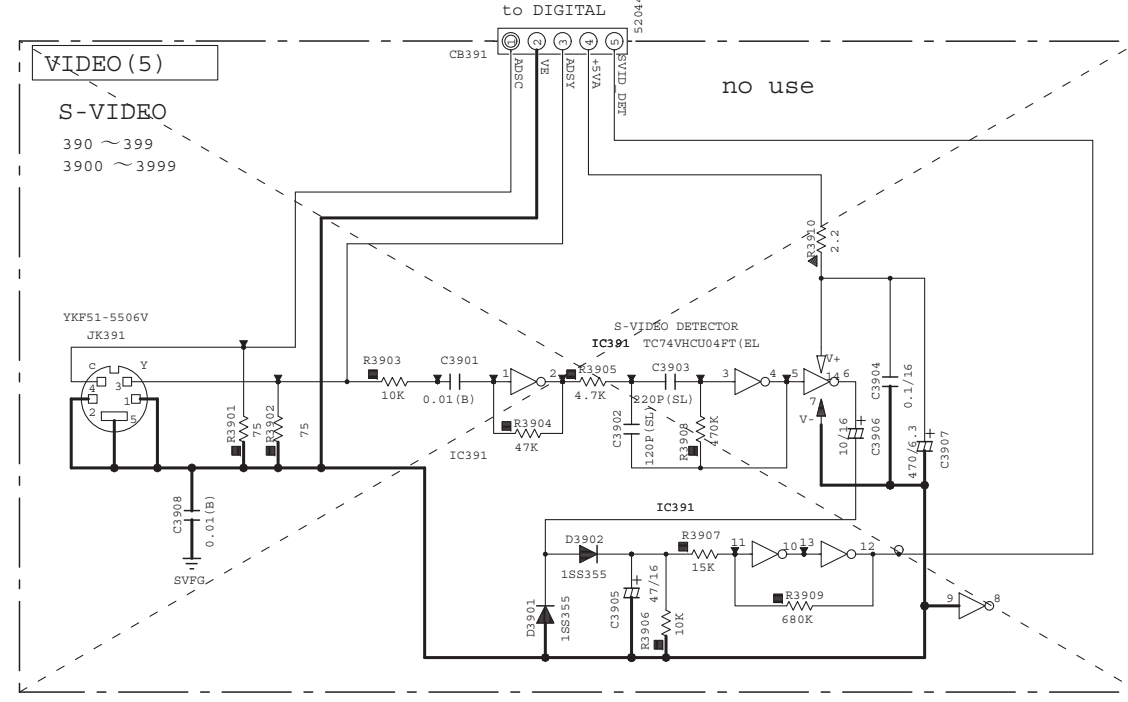
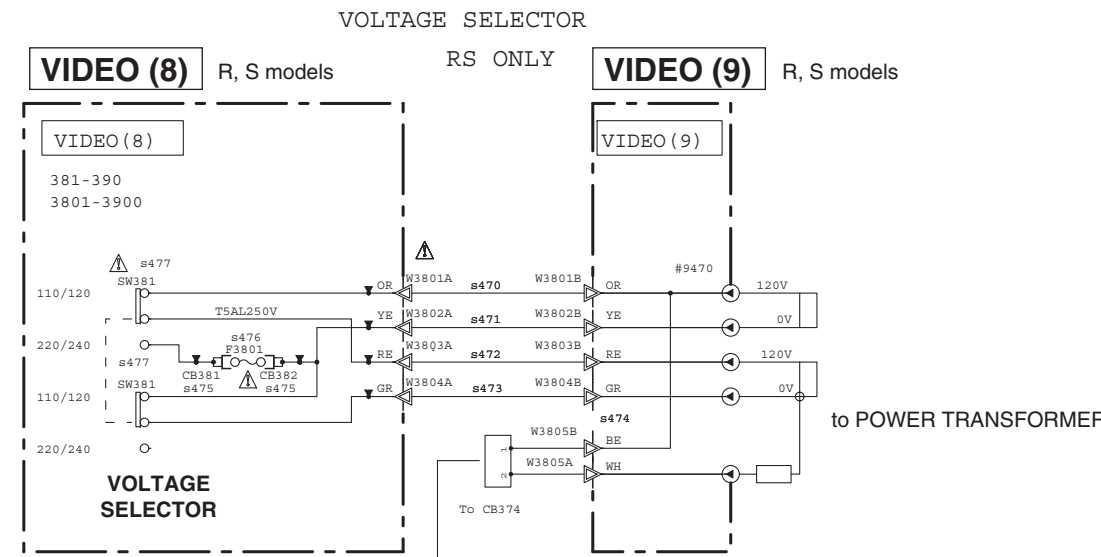
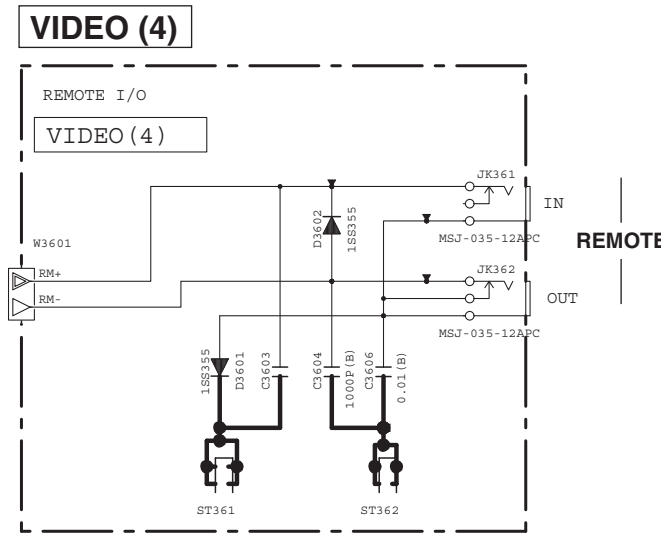
CAPACITOR

SYMBOL	PARTS NAME
⊖	ALUMINUM ELECTROLYTIC CAPACITOR
⊕	NONPOLAR ALUMINUM ELECTROLYTIC CAPACITOR
⊖	METAL CERAMIC CAPACITOR
⊕	CERAMIC TUBULAR CAPACITOR
⊖	POLYESTER FILM CAPACITOR
⊕	POLYESTER FILM CAPACITOR
⊖	POLYPROPYLENE FILM CAPACITOR
⊕	POLYPROPYLENE FILM CAPACITOR
⊖	AGC CERAMIC CAPACITOR
⊕	AGC CERAMIC CAPACITOR

NOTICE (model)

(J)	JAPAN
(U)	U.S.A.
(C)	CANADA
(R)	GENERAL
(K)	KOREA
(A)	AUSTRALIA
(B)	BREITEN
(G)	EUROPE
(L)	SINGAPORE
(S)	SOVIET UNION
(V)	TAIWAN
(P)	RUSSIAN
(E)	LATIN AMERICA
(B)	BRAZIL
(H)	HK

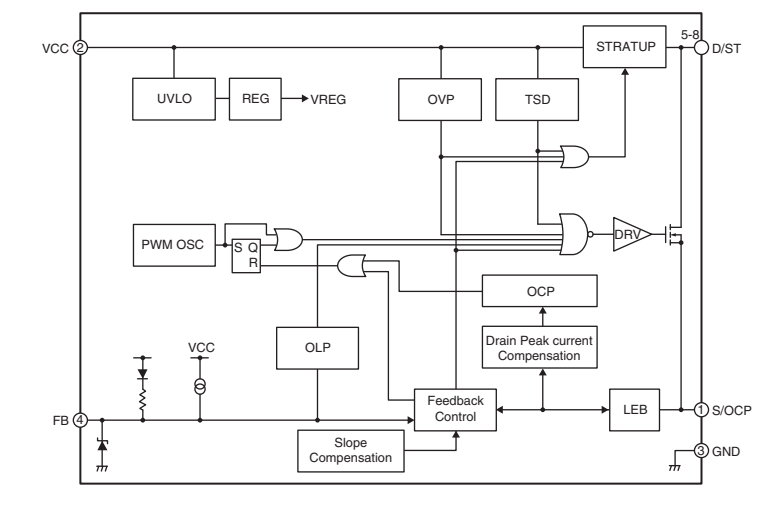
Page 133 to DIGITAL (1)_CB81



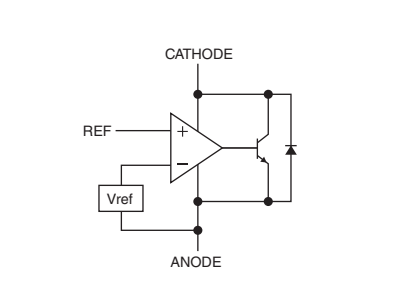
Destination Part List

LOC	Q	C	SE	F	K	A	ROF	LA
#306	C3701	W316120	M316120	M316180	M316180	M316180	M316180	M316180
#308	C3712A	W316120	M316120	M316180	M316180	M316180	M316180	M316180
#310	W3702A	M309420	M309420	X	M309420	M309420	M309420	M309420
#315	C3706	W376400	W376400	W376410	W376410	W376410	W376410	W376410
#322	R3726	R335642	R335642	R335647	R335647	R335647	R335647	R335647
#470	W3801A	W3801B	X	X	M303020	X	X	X
#471	W3802A	W3802B	X	X	M303020	X	X	X
#472	W3803A	W3803B	X	X	M303020	X	X	X
#473	W3804A	W3804B	X	X	M303020	X	X	X
#474	W3805A	W3805B	X	X	W376540	X	X	X
#475	CB382	CB381	X	X	TP030300	X	X	X
#476	F3801	X	X	X	F380078	X	X	X
#477	W3801	X	X	X	W376540	X	X	X

IC371: STR2A153 Switching regulator



IC373: TL431ACLPR Adjustable precision shunt regulators



Safety measures

- Some internal parts in this product contain high voltages and are dangerous. Be sure to take safety measures during servicing, such as wearing insulating gloves.
- Note that the capacitors indicated below are dangerous even after the power is turned off because an electric charge remains and a high voltage continues to exist there. Before starting any repair work, connect a discharging resistor (5 k-ohms/10 W) to the terminals of each capacitor indicated below to discharge electricity. The time required for discharging is about 30 seconds per each.

C3706 on VIDEO (2) P.C.B.

RESISTOR

MARK	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P-5)
□	CARBON FILM RESISTOR (P-10)
△	METAL OXIDE FILM RESISTOR
▲	METAL FILM RESISTOR
◇	METAL PLATE RESISTOR
□	FIRE PROOF CARBON FILM RESISTOR
■	CEMENT MOLDED RESISTOR
○	SEMI VARIABLE RESISTOR
□	CHIP RESISTOR

NOTICE (models)

(J)	JAPAN
(U.S.A.)	U.S.A.
(C)	CANADA
(H)	GENERAL
(O)	OSHA
(K)	KOREA
(A)	AUSTRALIA
(B)	BRITAIN
(E)	EUROPE
(S)	SINGAPORE
(T)	TAIWAN
(P)	RUSSIAN
(L.A.)	LATIN AMERICA
(B)	BRAZIL
(TH)	THAI

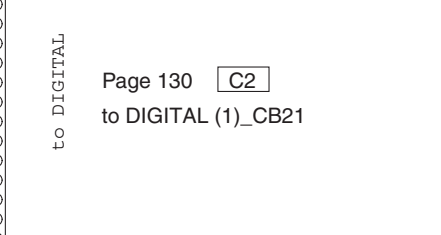
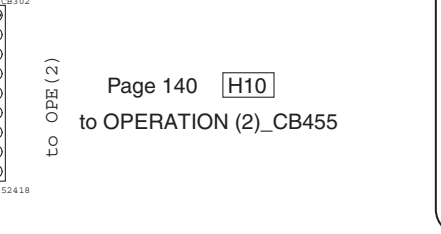
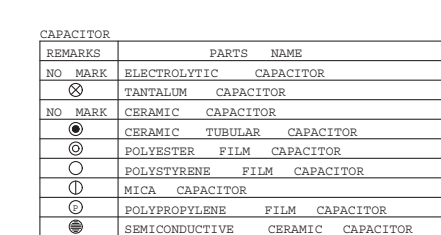
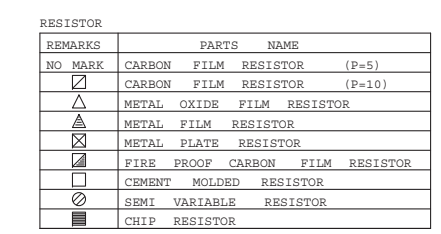
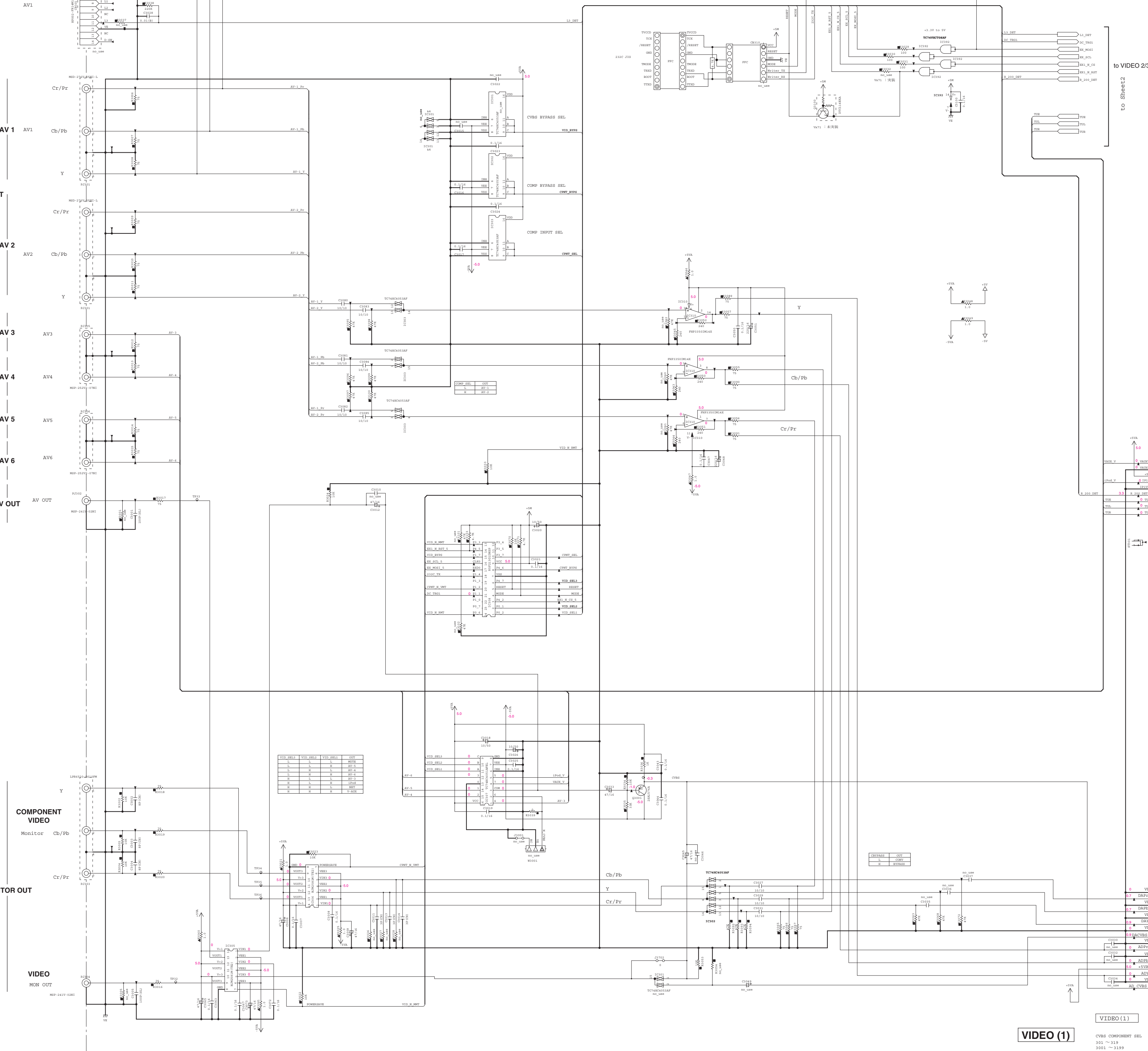
CAPACITOR

MARK	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
□	TANTALUM CAPACITOR
NO MARK	CERAMIC CAPACITOR
○	CERAMIC THERMAL CAPACITOR
○	POLYESTER FILM CAPACITOR
○	POLYETHYLENE FILM CAPACITOR
○	BI-FILM CAPACITOR
○	POLYPROPYLENE FILM CAPACITOR
○	SEMICONDUCTIVE CERAMIC CAPACITOR

Page 136 to DIGITAL (1)_CB94

Page 136 to DIGITAL (1)_CB92

All voltages are measured with a 10MΩ/V DC electronic voltmeter. Components having special characteristics are marked Δ, and must be replaced with parts having specifications equal to those originally installed. Schematic diagram is subject to change without notice.



* Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
 * Schematic diagram is subject to change without notice.

Page 140 [H10] to OPERATION (2)_CB455

Page 130 [C2] to DIGITAL (1)_CB21

VIDEO (1)

VIDEO (2)

VIDEO (3)

VIDEO (4)

VIDEO (5)

VIDEO (6)

VIDEO (7)

VIDEO (8)

VIDEO (9)

VIDEO (10)

VIDEO (11)

VIDEO (12)

VIDEO (13)

VIDEO (14)

VIDEO (15)

VIDEO (16)

VIDEO (17)

VIDEO (18)

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VIDEO (96)

VIDEO (97)

VIDEO (98)

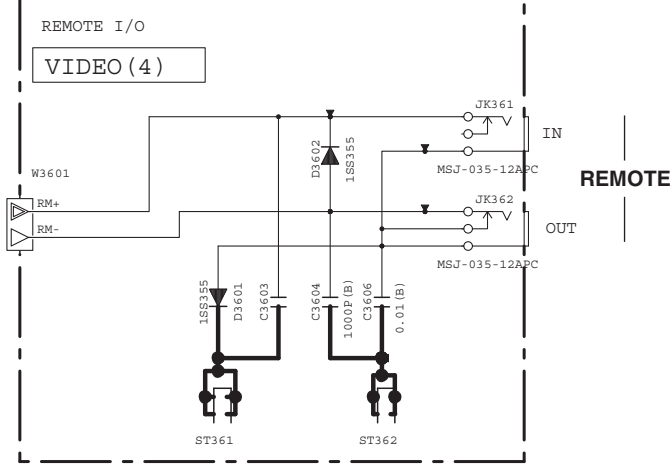
VIDEO (99)

VIDEO (100)

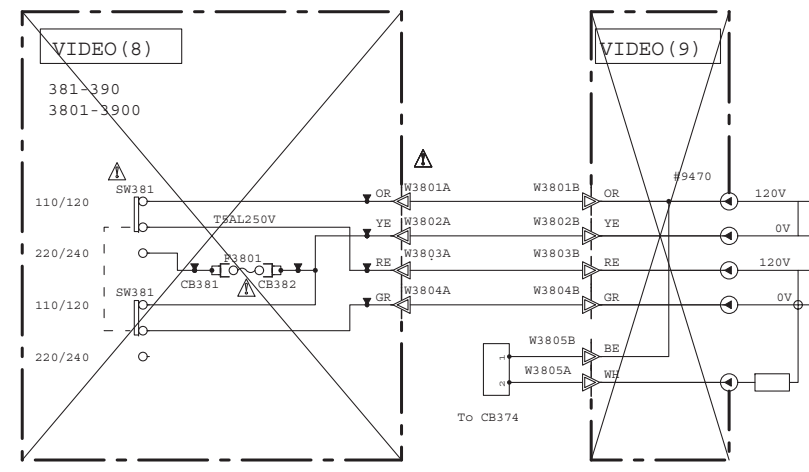
RX-A720

VIDEO (4)

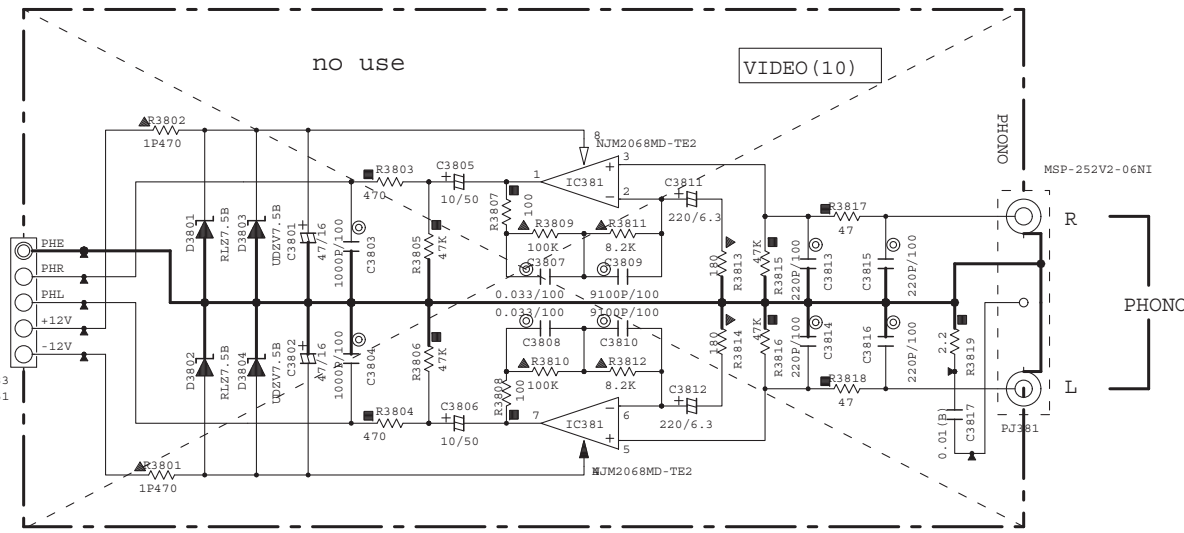
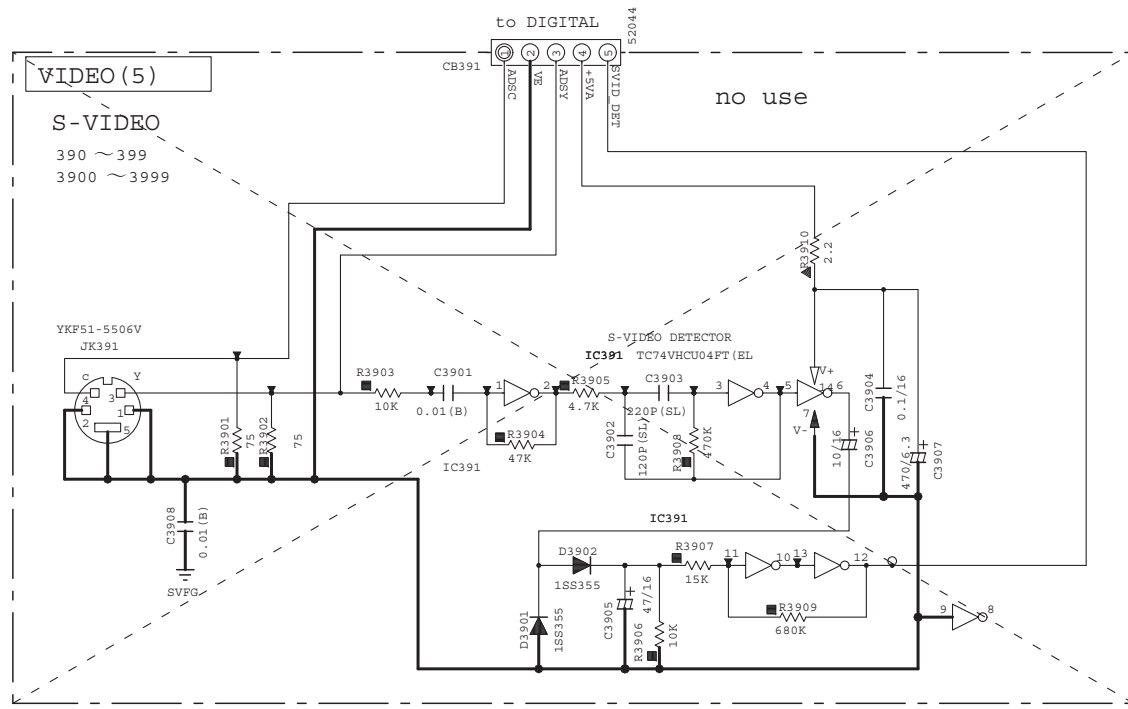
Page 133 J9 to DIGITAL (1)_CB81



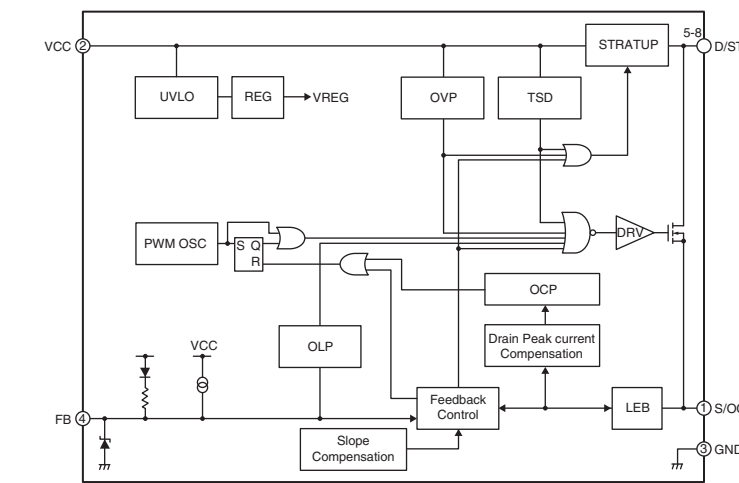
no use VOLTAGE SELECTOR R ONLY



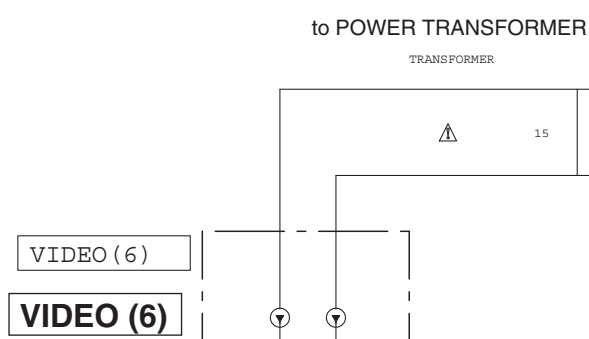
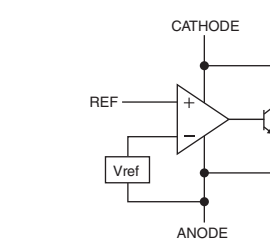
Destination Part List table with columns for part numbers and descriptions.



IC371: STR2A153 Switching regulator

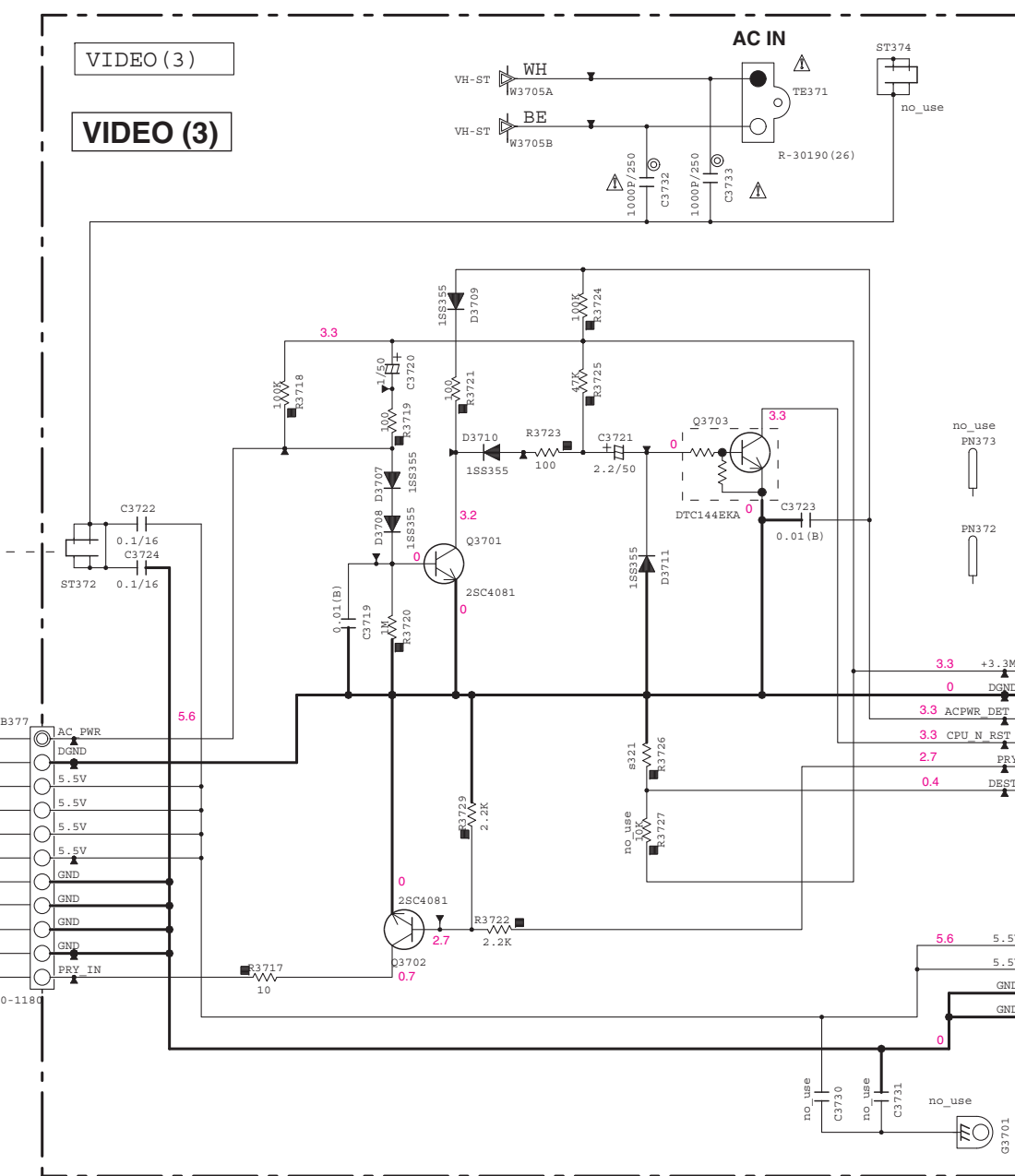
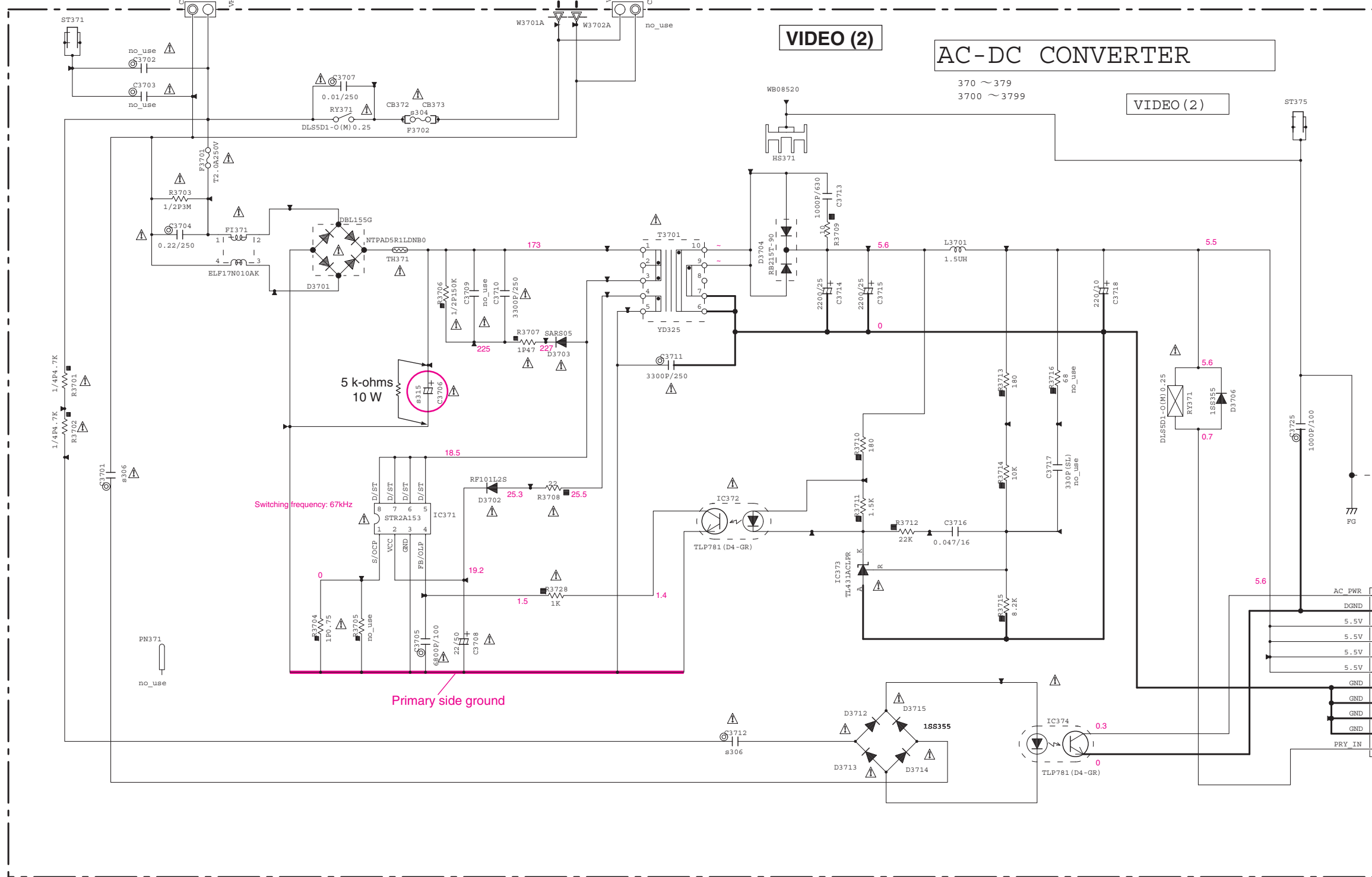


IC373: TL431ACLPR Adjustable precision shunt regulators



Safety measures

- Some internal parts in this product contain high voltages and are dangerous. Be sure to take safety measures during servicing, such as wearing insulating gloves. Note that the capacitors indicated below are dangerous even after the power is turned off because an electric charge remains and a high voltage continues to exist there. Before starting any repair work, connect a discharging resistor (5 k-ohms/10 W) to the terminals of each capacitor indicated below to discharge electricity. The time required for discharging is about 30 seconds per each. C3706 on VIDEO (2) P.C.B.



RESISTOR PARTS NAME table listing various resistor types like carbon film, metal oxide film, etc.

CAPACITOR PARTS NAME table listing various capacitor types like electrolytic, tantalum, ceramic, etc.

NOTICE (model)

- Country codes for parts: JAPAN, U.S.A., CANADA, GERMANY, CHINA, KOREA, AUSTRALIA, SWITZERLAND, EUROPE, SINGAPORE, SOUTH AFRICA, TAIWAN, VIETNAM, LATIN AMERICA, BRAZIL, ITALY.

Page 136 B5 to DIGITAL (1)_CB944

Page 136 B6 to DIGITAL (1)_CB942

* Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed. * Schematic diagram is subject to change without notice.

■ REPLACEMENT PARTS LIST

● ELECTRICAL COMPONENT PARTS

WARNING

- Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.

ABBREVIATIONS IN THIS LIST ARE AS FOLLOWS:

C.A.EL.CHP	: CHIP ALUMI.ELECTROLYTIC CAP	LED.CHP	: CHIP LED
C.CE	: CERAMIC CAP	LED.DSPLY	: LED DISPLAY
C.CE.ARRAY	: CERAMIC CAP ARRAY	LED.INFRD	: LED,INFRARED
C.CE.CHP	: CHIP CERAMIC CAP	PHOT.CPL	: PHOTO COUPLER
C.CE.M.CHP	: CHIP MULTILAYER CERAMIC CAP	PHOT.INTR	: PHOTO INTERRUPTER
C.CE.SAFTY	: RECOGNIZED CERAMIC CAP	PHOT.RFLCT	: PHOTO REFLECTOR
C.CE.TUBLR	: CERAMIC TUBULAR CAP	PHOT.TR	: PHOTO TRANSISTOR
C.CE.SMI	: SEMI CONDUCTIVE CERAMIC CAP	PIN.TEST	: PIN,TEST POINT
C.EL	: ELECTROLYTIC CAP	PTC.THERMISTOR	: POSITIVE TEMPERATURE COEFFICIENT THERMISTOR
C.EL.BP	: BIPOLAR ELECTROLYTIC CAP	R.ANTI.SURGE	: FIXED ANTI SURGE RESISTOR
C.EL.CHP	: CHIP ELECTROLYTIC CAP	R.ARRAY	: RESISTOR ARRAY
C.MICA	: MICA CAP	R.CAR.	: CARBON RESISTOR
C.ML.FLM	: MULTILAYER FILM CAP	R.CAR.CHP	: CHIP RESISTOR
C.MP	: METALLIZED POLYESTER FILM CAP	R.CAR.FP	: FLAME PROOF CARBON RESISTOR
C.MYLAR	: MYLAR FILM CAP	R.CEMENT	: CEMENT RESISTOR
C.MYLAR.ML	: MULTILAYER MYLAR FILM CAP	R.CHP	: CHIP RESISTOR
C.NIOB.OXD	: NIOBIUM OXIDE CAP	R.FUS	: FUSIBLE RESISTOR
C.PAPER	: PAPER CAPACITOR	R.MTL.CHP	: CHIP METAL FILM RESISTOR
C.PLS	: POLYSTYRENE FILM CAP	R.MTL.FLM	: METAL FILM RESISTOR
C.POL	: POLYESTER FILM CAP	R.MTL.OXD	: METAL OXIDE FILM RESISTOR
C.PP	: POLYPROPYLENE FILM CAP	R.MTL.PLAT	: METAL PLATE RESISTOR
C.PP.CHP	: CHIP POLYPROPYLENE FILM CAP	RSNR.CE	: CERAMIC RESONATOR
C.TNTL	: TANTALIUM CAP	RSNR.CRY	: CRYSTAL RESONATOR
C.TNTL.CHP	: CHIP TANTALIUM CAP	SCR.BND.HD	: BIND HEAD B-TIGHT SCREW
C.TRIM	: TRIMMER CAP	SCR.TERM	: SCREW TERMINAL
CN	: CONNECTOR	SCR.TR	: SCREW,TRANSISTOR
CN.BS.PIN	: CONNECTOR,BASE PIN	SURG.PRTCT	: SURGE PROTECTOR
CN.CANNON	: CONNECTOR,CANNON	SUPRT.PCB	: P.C.B. SUPPORT
CN.DIN	: CONNECTOR,DIN	SW.LEVER	: LEVER SWITCH
CN.FLAT	: CONNECTOR,FLAT CABLE	SW.MICRO	: MICRO SWITCH
CN.FFC	: CONNECTOR,FLEXIBLE FLAT CABLE	SW.LEAF	: LEAF SWITCH
CN.HDMI	: HDMI CONNECTOR	SW.PUSH	: PUSH SWITCH
CN.PHOTO.R	: PHOTO FIBER SENSOR,RECEIVED	SW.RT	: ROTARY SWITCH
CN.PHOTO.T	: PHOTO FIBER SENSOR,TRANSMITTED	SW.RT.ENC	: ROTARY ENCODER
DIODE.ARRAY	: DIODE ARRAY	SW.RT.MTR	: ROTARY SWITCH WITH MOTOR
DIODE.BRG	: DIODE BRIDGE	SW.SLIDE	: SLIDE SWITCH
DIODE.CHP	: CHIP DIODE	SW.TACT	: TACT SWITCH
DIODE.VAR	: VARACTOR DIODE	TERM.SP	: SPEAKER TERMINAL
DIODE.ZENR	: ZENER DIODE	TERM.WRAP	: WRAPPING TERMINAL
DIODE.Z.CHP	: CHIP ZENER DIODE	THRMST.CHP	: CHIP THERMISTOR
DIODE.SCHOTTKY	: SCHOTTKY BARRIER DIODE	TR	: TRANSISTOR
DIODE.PHOT	: PHOTO DIODE	TR.CHP	: CHIP TRANSISTOR
FER.BEAD	: FERRITE BEADS	TR.DGT	: DIGITAL TRANSISTOR
FER.CORE	: FERRITE CORE	TR.DGT.CHP	: CHIP DIGITAL TRANSISTOR
FET.CHP	: CHIP FET	TR.PAIR	: PAIR TRANSISTOR
FL.DSPLY	: FLUORESCENT DISPLAY	TRANS	: TRANSFORMER
FLTR.CE	: CERAMIC FILTER	TRANS.PULS	: PULSE TRANSFORMER
FLTR.COMB	: COMB FILTER MODULE	TRANS.PWR	: POWER TRANSFORMER
FLTR.LC.RF	: LC FILTER,EMI	VARISTOR.CHP	: CHIP VARISTOR
FUSE.CHP	: CHIP FUSE	VOLT.SELCT	: VOLTAGE SELECTOR
GND.MTL	: GROUND PLATE	VR	: ROTARY POTENTIOMETER
GND.TERM	: GROUND TERMINAL	VR.MTR	: POTENTIOMETER WITH MOTOR
JUMPER.CN	: JUMPER CONNECTOR	VR.SLIDE	: SLIDE POTENTIOMETER
JUMPER.TST	: JUMPER,TEST POINT	VR.SW	: POTENTIOMETER WITH SWITCH
L.DTCT	: LIGHT DETECTING MODULE	VR.TRIM	: TRIMMER POTENTIOMETER

DIGITAL

Ref No.	Part No.	Description	Markets
*	ZC099900	P. C. B.	DIGITAL
* CB1-5	WW271700	CN. HDMI	19P HDMI
CB8	WD295800	CN. BS. PIN	22P 52793 SE
CB21	VQ044700	CN. BS. PIN	16P
* CB30	WW271700	CN. HDMI	19P HDMI
* CB36	VY939900	CN. BS. PIN	22P 52610 TE
* CB61	WW271700	CN. HDMI	19P HDMI
CB76	VQ045000	CN. BS. PIN	20P
CB78	VK025600	CN. BS. PIN	12P
CB79	VK024700	CN. BS. PIN	3P
CB81	VB389800	CN. BS. PIN	2P
CB82	VN520900	CN. BS. PIN	52045 26P TE
CB83	VG518300	PIN. BASE	2P RF TE
CB84	VQ047200	CN. BS. PIN	9P
CB940	WG939700	CN. USB	4P SE
CB942	LB919040	CN. BS. PIN	4P
CB943	VB389900	CN. BS. PIN	3P
CB944	VK026500	CN. BS. PIN	6P
CB945-946	V9356900	CN. JE	19P SE
CB947	VL844800	CN. BS. PIN	4P
CB948	V9356900	CN. JE	19P SE
CB951	WY212400	CN. LAN	8P RJSE1AG3870-R
CB952	VB390100	CN. BS. PIN	5P
C2	WJ344400	C. CE. CHP	22uF 6.3V
C4	US663100	C. CE. CHP	1000pF 50V
C5	WG888300	C. CE. M. CHP	10uF 6.3V
C6-8	US625100	C. CE. CHP	0.1uF 10V
C9-11	US663100	C. CE. CHP	1000pF 50V
C12	US662100	C. CE. CHP	100pF 50V
C13	US634100	C. CE. CHP	0.01uF 16V
C14	US046100	C. CE. CHP	1uF 25V
C17	US625100	C. CE. CHP	0.1uF 10V
C20	US625100	C. CE. CHP	0.1uF 10V
C21	WG888300	C. CE. M. CHP	10uF 6.3V
C22-23	US625100	C. CE. CHP	0.1uF 10V
C24-25	WG888300	C. CE. M. CHP	10uF 6.3V
C26	US625100	C. CE. CHP	0.1uF 10V
C27	US663390	C. CE. CHP	3900pF 50V
C28	WD758300	C. CE. CHP	10uF 10V
C29	US662100	C. CE. CHP	100pF 50V
C30	US625100	C. CE. CHP	0.1uF 10V
C32	US662100	C. CE. CHP	100pF 50V
C35	US663100	C. CE. CHP	1000pF 50V
C37-39	US625100	C. CE. CHP	0.1uF 10V
C40	US663100	C. CE. CHP	1000pF 50V
C41-42	US625100	C. CE. CHP	0.1uF 10V
C43-44	WG888300	C. CE. M. CHP	10uF 6.3V
C45-46	US625100	C. CE. CHP	0.1uF 10V
C47	WG888300	C. CE. M. CHP	10uF 6.3V
C48	US625100	C. CE. CHP	0.1uF 10V
C49	US663100	C. CE. CHP	1000pF 50V
C50	WG888300	C. CE. M. CHP	10uF 6.3V
C51	US663100	C. CE. CHP	1000pF 50V
C53-54	US663100	C. CE. CHP	1000pF 50V
C55-56	WG888300	C. CE. M. CHP	10uF 6.3V
C57-61	US625100	C. CE. CHP	0.1uF 10V
C62-63	US663100	C. CE. CHP	1000pF 50V

* New Parts

Ref No.	Part No.	Description	Markets
C65-66	US662100	C. CE. CHP	100pF 50V
C69	US625100	C. CE. CHP	0.1uF 10V
C73	US663100	C. CE. CHP	1000pF 50V
C74	WG888300	C. CE. M. CHP	10uF 6.3V
C75-77	US625100	C. CE. CHP	0.1uF 10V
C78	US663100	C. CE. CHP	1000pF 50V
C81	US662100	C. CE. CHP	100pF 50V
C83-85	US046100	C. CE. CHP	1uF 25V
C93-94	US661100	C. CE. CHP	10pF 50V D
C95-96	US662100	C. CE. CHP	100pF 50V
C99	US663100	C. CE. CHP	1000pF 50V
C100	US046100	C. CE. CHP	1uF 25V
C101	US662470	C. CE. CHP	470pF 50V
C102	US663100	C. CE. CHP	1000pF 50V
C104-105	US625100	C. CE. CHP	0.1uF 10V
C107	US625100	C. CE. CHP	0.1uF 10V
C108	US046100	C. CE. CHP	1uF 25V
C109	US663100	C. CE. CHP	1000pF 50V
C110-112	US625100	C. CE. CHP	0.1uF 10V
C113	WG888300	C. CE. M. CHP	10uF 6.3V
C114-115	US625100	C. CE. CHP	0.1uF 10V
C116	WG888300	C. CE. M. CHP	10uF 6.3V
C117-119	US625100	C. CE. CHP	0.1uF 10V
C120-121	WG888300	C. CE. M. CHP	10uF 6.3V
C122	US625100	C. CE. CHP	0.1uF 10V
C123	US663100	C. CE. CHP	1000pF 50V
C124-125	US625100	C. CE. CHP	0.1uF 10V
C126	WG888300	C. CE. M. CHP	10uF 6.3V
C127-128	US663100	C. CE. CHP	1000pF 50V
C129	WG888300	C. CE. M. CHP	10uF 6.3V
C133	US662100	C. CE. CHP	100pF 50V
C136	US662100	C. CE. CHP	100pF 50V
C137	WG888300	C. CE. M. CHP	10uF 6.3V
C138-139	US625100	C. CE. CHP	0.1uF 10V
C142	US634100	C. CE. CHP	0.01uF 16V
C143-144	WG888300	C. CE. M. CHP	10uF 6.3V
C145	US663100	C. CE. CHP	1000pF 50V
C147	US625100	C. CE. CHP	0.1uF 10V
C148	US663100	C. CE. CHP	1000pF 50V
C149-150	US625100	C. CE. CHP	0.1uF 10V
C152-153	US625100	C. CE. CHP	0.1uF 10V
C154	WG888300	C. CE. M. CHP	10uF 6.3V
C155	US625100	C. CE. CHP	0.1uF 10V
C156	US663100	C. CE. CHP	1000pF 50V
C157	WG888300	C. CE. M. CHP	10uF 6.3V
C159-160	US663100	C. CE. CHP	1000pF 50V
C161	WD758300	C. CE. CHP	10uF 10V
C162	US634100	C. CE. CHP	0.01uF 16V
C163	WD758300	C. CE. CHP	10uF 10V
C250	WD758300	C. CE. CHP	10uF 10V
C251	US046100	C. CE. CHP	1uF 25V
C252-253	US625100	C. CE. CHP	0.1uF 10V
C255	WG888300	C. CE. M. CHP	10uF 6.3V
C257-258	US625100	C. CE. CHP	0.1uF 10V
C261-262	US625100	C. CE. CHP	0.1uF 10V
C271	WJ932500	C. CE. CHP	1uF 6.3V
C273	US625100	C. CE. CHP	0.1uF 10V

* New Parts

RX-V673/HTR-6065/
RX-A720

RX-V673/HTR-6065

RX-A720

DIGITAL

Ref No.	Part No.	Description	Markets
C277	US625100	C. CE. CHP 0. 1uF 10V	
C279	WJ932500	C. CE. CHP 1uF 6. 3V	
C281	US625100	C. CE. CHP 0. 1uF 10V	
C286	US625100	C. CE. CHP 0. 1uF 10V	
C288	US634100	C. CE. CHP 0. 01uF 16V	
C289	US625100	C. CE. CHP 0. 1uF 10V	
C291	US662470	C. CE. CHP 470pF 50V	
C294	US034820	C. CE. CHP 0. 082uF 16V K	
C295	US634100	C. CE. CHP 0. 01uF 16V	
C297-298	US625100	C. CE. CHP 0. 1uF 10V	
C299-300	US661100	C. CE. CHP 10pF 50V D	
C301	WG888300	C. CE. M. CHP 10uF 6. 3V	
C302-303	US625100	C. CE. CHP 0. 1uF 10V	
C304	WG888300	C. CE. M. CHP 10uF 6. 3V	
C352	WG888300	C. CE. M. CHP 10uF 6. 3V	
C353	US663100	C. CE. CHP 1000pF 50V	
C354	US625100	C. CE. CHP 0. 1uF 10V	
C355-361	US634100	C. CE. CHP 0. 01uF 16V	
C363	WQ614300	C. CE. CHP 22uF 10VE	
C364	US625100	C. CE. CHP 0. 1uF 10V	
C365	WG888300	C. CE. M. CHP 10uF 6. 3V	
C500-503	US663100	C. CE. CHP 1000pF 50V	
C504	UF417470	C. EL. CHP 47uF 6. 3V	
C505	WG888300	C. CE. M. CHP 10uF 6. 3V	
C506-507	UF417470	C. EL. CHP 47uF 6. 3V	
C509-513	WG888300	C. CE. M. CHP 10uF 6. 3V	
C514-554	US625100	C. CE. CHP 0. 1uF 10V	
C556-565	US625100	C. CE. CHP 0. 1uF 10V	
C568	US663100	C. CE. CHP 1000pF 50V	
C569	US625100	C. CE. CHP 0. 1uF 10V	
C578	WG888300	C. CE. M. CHP 10uF 6. 3V	
C579-585	US625100	C. CE. CHP 0. 1uF 10V	
C587	US625100	C. CE. CHP 0. 1uF 10V	
C591-594	WG888300	C. CE. M. CHP 10uF 6. 3V	
C597	WG888300	C. CE. M. CHP 10uF 6. 3V	
C634-635	US663100	C. CE. CHP 1000pF 50V	
C636-637	WG888300	C. CE. M. CHP 10uF 6. 3V	
C638-643	US625100	C. CE. CHP 0. 1uF 10V	
C644-645	US663100	C. CE. CHP 1000pF 50V	
C646	US625100	C. CE. CHP 0. 1uF 10V	
C647	WG888300	C. CE. M. CHP 10uF 6. 3V	
C649	US663100	C. CE. CHP 1000pF 50V	
C650	US625100	C. CE. CHP 0. 1uF 10V	
C653	US625100	C. CE. CHP 0. 1uF 10V	
C654-655	US662100	C. CE. CHP 100pF 50V	
C656	US663100	C. CE. CHP 1000pF 50V	
C662	US662100	C. CE. CHP 100pF 50V	
C664-665	US046100	C. CE. CHP 1uF 25V	
C666	WD758300	C. CE. CHP 10uF 10V	
C667	US662470	C. CE. CHP 470pF 50V	
C668	US661220	C. CE. CHP 22pF 50V	
C669	WD758300	C. CE. CHP 10uF 10V	
C670-671	US625100	C. CE. CHP 0. 1uF 10V	
C672	US046100	C. CE. CHP 1uF 25V	
C673	US625100	C. CE. CHP 0. 1uF 10V	
C750-753	US663100	C. CE. CHP 1000pF 50V	
C754	US625100	C. CE. CHP 0. 1uF 10V	

* New Parts

Ref No.	Part No.	Description	Markets
C755-762	US663100	C. CE. CHP 1000pF 50V	
C763	US625100	C. CE. CHP 0. 1uF 10V	
C764-767	US663100	C. CE. CHP 1000pF 50V	
C768	US625100	C. CE. CHP 0. 1uF 10V	
C769	UF027330	C. EL. CHP 33uF 10V	
C770	US663100	C. CE. CHP 1000pF 50V	
C771-772	US625100	C. CE. CHP 0. 1uF 10V	
C773-774	US662100	C. CE. CHP 100pF 50V	
C775	US625100	C. CE. CHP 0. 1uF 10V	
C776-777	US663100	C. CE. CHP 1000pF 50V	
C778-779	US625100	C. CE. CHP 0. 1uF 10V	
C780	US046100	C. CE. CHP 1uF 25V	
C781	US663100	C. CE. CHP 1000pF 50V	
C782	US662100	C. CE. CHP 100pF 50V	
C783	WG251600	C. CE. CHP 4. 7uF 6. 3V	
C784	US662100	C. CE. CHP 100pF 50V	
C785	US625100	C. CE. CHP 0. 1uF 10V	
C786	US663100	C. CE. CHP 1000pF 50V	
C787-791	US625100	C. CE. CHP 0. 1uF 10V	
C792-795	US046100	C. CE. CHP 1uF 25V	
C796	US625100	C. CE. CHP 0. 1uF 10V	
C797	US046100	C. CE. CHP 1uF 25V	
C798	WG251600	C. CE. CHP 4. 7uF 6. 3V	
C799-800	US046100	C. CE. CHP 1uF 25V	
C801-802	US625100	C. CE. CHP 0. 1uF 10V	
C803	WG251600	C. CE. CHP 4. 7uF 6. 3V	
C804	US046100	C. CE. CHP 1uF 25V	
C805	US625100	C. CE. CHP 0. 1uF 10V	
C808-809	US663100	C. CE. CHP 1000pF 50V	
C829-848	US663100	C. CE. CHP 1000pF 50V	
C9201-9207	WG888300	C. CE. M. CHP 10uF 6. 3V	
C9210	US643470	C. CE. CHP 4700pF 25V	
C9211	US625100	C. CE. CHP 0. 1uF 10V	
C9212	UF437100	C. EL. CHP 10uF 16V	
C9213	US625100	C. CE. CHP 0. 1uF 10V	
C9214-9215	US661180	C. CE. CHP 18pF 50V	
C9216	US625100	C. CE. CHP 0. 1uF 10V	
C9217	US634100	C. CE. CHP 0. 01uF 16V	
C9218-9251	US625100	C. CE. CHP 0. 1uF 10V	
C9252-9253	UF437100	C. EL. CHP 10uF 16V	
C9254-9255	US643470	C. CE. CHP 4700pF 25V	
C9256-9265	US625100	C. CE. CHP 0. 1uF 10V	
C9266	US634100	C. CE. CHP 0. 01uF 16V	
C9267-9268	US625100	C. CE. CHP 0. 1uF 10V	
C9269-9270	WB571200	C. MYLA. CHP 0. 00082uF 16V	
C9271	US662470	C. CE. CHP 470pF 50V	
C9272	WG888300	C. CE. M. CHP 10uF 6. 3V	
C9273	US661120	C. CE. CHP 12pF 50V	
C9274	US661150	C. CE. CHP 15pF 50V	
C9275	WG888300	C. CE. M. CHP 10uF 6. 3V	
C9276	UB214680	C. CE. CHP 0. 068uF 25V	
C9278	US643470	C. CE. CHP 4700pF 25V	
C9279-9283	US625100	C. CE. CHP 0. 100uF 10V	
C9284-9285	WG888300	C. CE. M. CHP 10uF 6. 3V	
C9286-9289	US046100	C. CE. CHP 1uF 25V	
C9290-9293	US625100	C. CE. CHP 0. 1uF 10V	
C9295	US662470	C. CE. CHP 470pF 50V	

* New Parts

DIGITAL

Ref No.	Part No.	Description	Markets
C9296	US663100	C. CE. CHP 1000pF 50V	
C9315-9317	US634100	C. CE. CHP 0. 01uF 16V	
C9318	US625100	C. CE. CHP 0. 1uF 10V	
C9401	US625100	C. CE. CHP 0. 1uF 10V	
C9402	WH772100	C. EL 1000uF 10V	
C9403	US625100	C. CE. CHP 0. 1uF 10V	
C9404	US643470	C. CE. CHP 4700pF 25V	
C9408	US046100	C. CE. CHP 1uF 25V	
C9409	WG251600	C. CE. CHP 4. 7uF 6. 3V	
C9410	UF417470	C. EL. CHP 47uF 6. 3V	
C9417	US625100	C. CE. CHP 0. 1uF 10V	
C9423	UF438100	C. EL. CHP 100uF 16V	
C9425	WJ344400	C. CE. CHP 22uF 6. 3V	
C9426	WG888300	C. CE. M. CHP 10uF 6. 3V	
C9428-9429	US663100	C. CE. CHP 1000pF 50V	
C9430	US634100	C. CE. CHP 0. 01uF 16V	
C9431	US625100	C. CE. CHP 0. 1uF 10V	
C9432	US044220	C. CE. CHP 0. 022uF 25V B	
C9433	US663390	C. CE. CHP 3900pF 50V	
C9434	WD758300	C. CE. CHP 10uF 10V	
C9436	WJ344400	C. CE. CHP 22uF 6. 3V	
C9438-9439	US663100	C. CE. CHP 1000pF 50V	
C9440	US663330	C. CE. CHP 3300pF 50V	
C9441-9442	US625100	C. CE. CHP 0. 1uF 10V	
C9443	US663390	C. CE. CHP 3900pF 50V	
C9444	WD758300	C. CE. CHP 10uF 10V	
C9445	WG251600	C. CE. CHP 4. 7uF 6. 3V	
C9447	WJ344400	C. CE. CHP 22uF 6. 3V	
C9448	US634100	C. CE. CHP 0. 01uF 16V	
C9450-9451	US663100	C. CE. CHP 1000pF 50V	
C9452	US643680	C. CE. CHP 6800pF 25V	
C9453-9454	US625100	C. CE. CHP 0. 1uF 10V	
C9455	WG251600	C. CE. CHP 4. 7uF 6. 3V	
C9456	US663390	C. CE. CHP 3900pF 50V	
C9458	WD758300	C. CE. CHP 10uF 10V	
C9459-9460	US625100	C. CE. CHP 0. 1uF 10V	
C9461	US634100	C. CE. CHP 0. 01uF 16V	
C9462	WV169100	C. CE. CHP 2. 2uF 10V	
C9463	WD758300	C. CE. CHP 10uF 10V	
C9464-9465	US625100	C. CE. CHP 0. 1uF 10V	
C9466	WV169100	C. CE. CHP 2. 2uF 10V	
C9467-9468	US062680	C. CE. CHP 680pF 50V B	
C9469	US625100	C. CE. CHP 0. 1uF 10V	
C9470	US046100	C. CE. CHP 1uF 25V	
C9471	WG251600	C. CE. CHP 4. 7uF 6. 3V	
C9472	US625100	C. CE. CHP 0. 1uF 10V	
C9473	US663150	C. CE. CHP 1500pF 50V	
C9474	US643470	C. CE. CHP 4700pF 25V	
C9475	US663100	C. CE. CHP 1000pF 50V	
C9476	UF128470	C. EL. CHP 470uF 10V	
C9478	WD758300	C. CE. CHP 10uF 10V	
C9480	US662100	C. CE. CHP 100pF 50V	
C9481	US663100	C. CE. CHP 1000pF 50V	
C9485	WD758300	C. CE. CHP 10uF 10V	
C9497-9498	US634100	C. CE. CHP 0. 01uF 16V	
C9501-9502	UF418100	C. EL. CHP 100uF 6. 3V	
C9503-9509	WG888300	C. CE. M. CHP 10uF 6. 3V	

* New Parts

Ref No.	Part No.	Description	Markets
C9510-9528	US625100	C. CE. CHP 0. 1uF 10V	
C9530-9533	US663100	C. CE. CHP 1000pF 50V	
C9535-9545	US663100	C. CE. CHP 1000pF 50V	
* C9546	US660400	C. CE. CHP 4pF 50V	
C9548-9557	US634100	C. CE. CHP 0. 01uF 16V	
C9562	US044220	C. CE. CHP 0. 022uF 25V B	
C9563-9568	WG251600	C. CE. CHP 4. 7uF 6. 3V	
C9570-9571	WJ932500	C. CE. CHP 1uF 6. 3V	
C9572-9573	US661150	C. CE. CHP 15pF 50V	
C9575	US634100	C. CE. CHP 0. 01uF 16V	
C9578-9579	US634100	C. CE. CHP 0. 01uF 16V	
D351	WE674800	VARI STOR. CHP AVRL161A1R1NTB	
D602	VV220700	DIODE. SCHOTTKY RB501V-40	
* D607	WZ699800	DIODE RCLAMP0584J	
D610	WE674800	VARI STOR. CHP AVRL161A1R1NTB	
D750	WR148500	DIODE RB521S-30TE61	
D9401-9402	WW783900	DIODE 1SS355VM	
D9403-9405	WR148500	DIODE RB521S-30TE61	
D9406-9407	WW783900	DIODE 1SS355VM	
IC6	YC287A00	IC RP130Q181D-TR-F	
IC8	YC289A00	IC RP130Q501D-TR	
IC10	XR680A00	IC TC7SH08FU (TE85L, JF	
IC21	X8841A00	IC ADV7180BSTZ	
IC27	YC287A00	IC RP130Q181D-TR-F	
* IC30	YD186A00	IC. HDMI TMDS261BPAGR	
* IC31	YE357A00	IC RP132H331D-T1-FE	
IC51	X8378A00	IC TC7SH125FU (TE85L, F	
* IC53	YA560B00	IC NT5SV8M16HS-6K	
* IC55	YD992A00	IC RP130Q251D-TR-FE	
* IC56	YC827A00	IC R1172N301D-TR-F	
IC57	YC286A00	IC RP130Q121D-TR-F	
* IC60	YD987A00	IC R1163M501B-TR-FE	
IC64	X0199B00	IC TC74VHC157FT (EL, K)	
IC65	X7787A00	IC TC74LXC245FT (EL, K)	
IC66	XZ509A00	IC TC74VHC04FT INVER	
IC75	XR680A00	IC TC7SH08FU (TE85L, JF	
IC76	X5875A00	IC SN74LV4051APWR	
* IC77	YE269D00	IC. MEMORY MX29LV640EBT1-70G	(written)
IC78	X5875A00	IC SN74LV4051APWR	
IC79	X7942B00	IC TC74VHC273FT (EL, K)	
IC80	XW633A00	IC TC7SH32FU	
IC81	X7942B00	IC TC74VHC273FT (EL, K)	
IC82	YD355A00	IC. MEMORY R1EX25512ATA00A EE	
IC84-85	YC288A00	IC RP130Q331D-TR-F	
IC86	YC289A00	IC RP130Q501D-TR	
IC87	X8531A00	IC TC7WZ32FK	
IC91	X8121A00	IC TC7SH86FU EX-OR	
IC92	X4453A00	IC SN74LVC1G17DCKR	
IC93	X9692A00	IC TC7WH126FU	
* IC921	YD998A00	IC D80YK113CPTP400	
IC922	X9625B00	IC. MEMORY M12L64164A-5TG	
* IC923	YE266D00	IC. MEMORY W25080BVSS1G SPI F	(written)
IC924	YD216A00	IC PCM9211PTR	
IC926-927	XW633A00	IC TC7SH32FU	
IC929	X9292A00	IC R1172H121D-T1-F	
IC930	YC288A00	IC RP130Q331D-TR-F	
IC931	YC289A00	IC RP130Q501D-TR	

* New Parts

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DIGITAL

Ref No.	Part No.	Description	Markets
IC940	YA255A00	IC	R1172H501D-T1-F
IC941	YC288A00	IC	RP130Q331D-TR-F
* IC945	YD570A00	IC	PCM5101PWR
IC946	YC288A00	IC	RP130Q331D-TR-F
* IC947	YE478A00	IC	BD7542F-E2 OPAMP
IC949	X4453A00	IC	SN74LVC1G17DCKR
* IC952	YE488A00	IC	M12L2561616A-5TG2A
* IC953	YE417E00	IC. MEMORY	MX29GL256FLT21-90Q (written)
PN941	WS488500	STYLE. PIN	L=90 #18
PN943	WS488500	STYLE. PIN	L=90 #18
PN945	WS488500	STYLE. PIN	L=90 #18
Q5-10	WZ461800	TR. CHP	2SC4081UBTLR
Q11	WZ703400	FET	RAL035P01
Q12	WW782000	TR. DGT	DTA044EUBTL
Q14-15	WZ461800	TR. CHP	2SC4081UBTLR
Q17	WZ703400	FET	RAL035P01
Q18	WW782000	TR. DGT	DTA044EUBTL
Q19-20	WZ461800	TR. CHP	2SC4081UBTLR
Q21	WE834500	FET	UPA672T-T1-A
Q250-251	WZ461800	TR. CHP	2SC4081UBTLR
Q252	WZ461700	TR. CHP	2SA1576UBTLR
Q253	WZ461800	TR. CHP	2SC4081UBTLR
Q351-352	WZ461800	TR. CHP	2SC4081UBTLR
Q750-753	WY001400	TR. ARRAY	HN4B01JE
Q754-759	WZ461700	TR. CHP	2SA1576UBTLR
Q760	WZ461800	TR. CHP	2SC4081UBTLR
Q9201	WZ703400	FET	RAL035P01
Q9202	WW782000	TR. DGT	DTA044EUBTL
Q9401	WZ703400	FET	RAL035P01
Q9402	WW782000	TR. DGT	DTA044EUBTL
Q9404	WW782000	TR. DGT	DTA044EUBTL
Q9405	WW782100	TR. DGT	DTC014EUBTL
Q9406	WZ703400	FET	RAL035P01
Q9407	WZ461700	TR. CHP	2SA1576UBTLR
Q9408	WZ703400	FET	RAL035P01
R9401	WB784700	R. MTL. FLM	6. 8Ω 1W
* XL1	WZ730400	RSNR. CRY	28. 63636MHz DSX321
* XL21	WZ730400	RSNR. CRY	28. 63636MHz DSX321
XL51	WK841200	RSNR. CRY	27MHz DS0321SRAB
XL75	WA782500	RSNR. CE	8. 000MHz
XL921	WS190000	RSNR. CRY	24. 576MHZ DSX321G
XL922	WN318100	RSNR. CRY	20MHz DSX321G
XL951	WJ081300	RSNR. CRY	24MHz DSX321G

* New Parts

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OPERATION

Ref No.	Part No.	Description	Markets
* ZC102100	P. C. B.	OPERATION	UC
* ZC102200	P. C. B.	OPERATION	RTKABGFLSH
CB401	VQ045500	CN. BS. PIN	26P
CB402	VQ047000	CN. BS. PIN	6P
CB446	WQ680200	CN. USB	4P TE AAPVA004C0
CB451	VQ961100	CN. BS. PIN	8P
CB452	VQ962100	CN. BS. PIN	18P
CB453	VQ961800	CN. BS. PIN	15P
CB454	VQ961400	CN. BS. PIN	11P
CB455	VQ963000	CN. BS. PIN	9P
CB458	VQ044200	CN. BS. PIN	6P
CB459-461	V9357000	CN	19P TE
CB463	VQ585700	CN. JUMPER	7P
CB472	VB858300	CN. BS. PIN	4P
CB473	VK026900	CN	10P
C4002	US065100	C. CE. CHP	0. 1uF 50V B
C4012-4013	US035100	C. CE. CHP	0. 1uF 16V B
C4015	UR268220	C. EL	220uF 50V
C4016	UM388330	C. EL	330uF 6. 3V
C4017	US035100	C. CE. CHP	0. 1uF 16V B
C4018	US061680	C. CE. CHP	68pF 50V B
C4019	US065100	C. CE. CHP	0. 1uF 50V B
C4020-4021	US163100	C. CE. CHP	1000pF 50V
C4022	US064100	C. CE. CHP	0. 01uF 50V B
C4024	US063100	C. CE. CHP	1000pF 50V B
C4025-4026	US065100	C. CE. CHP	0. 1uF 50V B
C4027	US035100	C. CE. CHP	0. 1uF 16V B
C4028	US062100	C. CE. CHP	100pF 50V B
C4030	US062100	C. CE. CHP	100pF 50V B
C4031	US062470	C. CE. CHP	470pF 50V B
C4032-4033	US035100	C. CE. CHP	0. 1uF 16V B
C4034	UM417100	C. EL	10uF 50V
C4035	US035100	C. CE. CHP	0. 1uF 16V B
C4037	US064100	C. CE. CHP	0. 01uF 50V B
C4039	US062220	C. CE. CHP	220pF 50V B
C4081	WH773700	C. EL	470uF 16V
C4082	WY034800	C. CE. CHP	0. 022uF 50V
C4083	WM490200	C. CE. M. CHP	0. 47uF 50V
C4084	UM416100	C. EL	1uF 50V
C4085	UM416220	C. EL	2. 2uF 50V
C4086	US046100	C. CE. CHP	1uF 25V
C4087	WG251600	C. CE. CHP	4. 7uF 6. 3V
C4091	US035100	C. CE. CHP	0. 1uF 16V B
C4217	UR237100	C. EL	10uF 16V
C4225	UR067100	C. EL	10uF 50V UC
C4225	UU267100	C. EL	10uF 50V RTKABGFLSH
C4226	WK041800	C. EL	10uF 16V UC
C4226	UR267100	C. EL	10uF 50V RTKABGFLSH
C4227-4228	UR237100	C. EL	10uF 16V
C4229	WJ608100	C. MYLAR	100pF 100V
C4230	WY466700	C. PP	820pF 100V UC
C4230	WJ608800	C. MYLAR	820pF 100V RTKABGFLSH
C4234	WKO41800	C. EL	10uF 16V
C4235-4236	WJ608100	C. MYLAR	100pF 100V
C4238	WKO41800	C. EL	10uF 16V
C4239	US035100	C. CE. CHP	0. 1uF 16V B
C4240	WY466700	C. PP	820pF 100V UC

* New Parts

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OPERATION

Ref No.	Part No.	Description	Markets
C4240	WJ608800	C. MYLAR 820pF 100V	RTKABGFLSH
C4241	US035100	C. CE. CHP 0. 1uF 16V B	
C4242	WK041800	C. EL 10uF 16V	UC
C4242	UR267100	C. EL 10uF 50V	RTKABGFLSH
C4243-4244	WG251600	C. CE. CHP 4. 7uF 6. 3V	
C4245	UR067100	C. EL 10uF 50V	UC
C4245	UU237100	C. EL 10uF 16V	RTKABGFLSH
C4246	UR238100	C. EL 100uF 16V	
C4250	UR067100	C. EL 10uF 50V	UC
C4250	UU237100	C. EL 10uF 16V	RTKABGFLSH
C4251	WK041800	C. EL 10uF 16V	UC
C4251	UR267100	C. EL 10uF 50V	RTKABGFLSH
C4252	UR067100	C. EL 10uF 50V	UC
C4252	UU367470	C. EL 47uF 50V	RTKABGFLSH
C4253	WY466700	C. PP 820pF 100V	UC
C4253	WJ608800	C. MYLAR 820pF 100V	RTKABGFLSH
C4255	US062100	C. CE. CHP 100pF 50V B	
C4257	WJ611000	C. MYLAR 0. 047uF 100V	
C4258	UR267100	C. EL 10uF 50V	
C4259-4260	UR067100	C. EL 10uF 50V	
C4261	WJ609900	C. MYLAR 6800pF 100V	
C4262	US126100	C. CE. CHP 1uF 10V	
C4263	US062100	C. CE. CHP 100pF 50V B	
C4264	US126100	C. CE. CHP 1uF 10V	
C4265	UR067100	C. EL 10uF 50V	UC
C4265	UU237100	C. EL 10uF 16V	RTKABGFLSH
C4266	UR257100	C. EL 10uF 35V	UC
C4266	UR267100	C. EL 10uF 50V	RTKABGFLSH
C4267	US126100	C. CE. CHP 1uF 10V	
C4268	WY466700	C. PP 820pF 100V	UC
C4268	WJ608800	C. MYLAR 820pF 100V	RTKABGFLSH
C4271	US035100	C. CE. CHP 0. 1uF 16V B	
C4272	WY466700	C. PP 820pF 100V	UC
C4272	WJ608800	C. MYLAR 820pF 100V	RTKABGFLSH
C4273	UR257100	C. EL 10uF 35V	UC
C4273	UR267100	C. EL 10uF 50V	RTKABGFLSH
C4274	UR067100	C. EL 10uF 50V	UC
C4274	UU237100	C. EL 10uF 16V	RTKABGFLSH
C4275	US062100	C. CE. CHP 100pF 50V B	
C4276	US063470	C. CE. CHP 4700pF 50V B	
C4277	US062100	C. CE. CHP 100pF 50V B	
C4278	US035100	C. CE. CHP 0. 1uF 16V B	
C4279	UR067100	C. EL 10uF 50V	UC
C4279	UU237100	C. EL 10uF 16V	RTKABGFLSH
C4280	UR257100	C. EL 10uF 35V	UC
C4280	UR267100	C. EL 10uF 50V	RTKABGFLSH
C4281	WY466700	C. PP 820pF 100V	UC
C4281	WJ608800	C. MYLAR 820pF 100V	RTKABGFLSH
C4282	UR067470	C. EL 47uF 50V	
C4284	US035100	C. CE. CHP 0. 1uF 16V B	
C4285	UR067470	C. EL 47uF 50V	
C4287	WY466700	C. PP 820pF 100V	UC
C4287	WJ608800	C. MYLAR 820pF 100V	RTKABGFLSH
C4288	WK041800	C. EL 10uF 16V	
C4289	UR257100	C. EL 10uF 35V	UC
C4289	UR267100	C. EL 10uF 50V	RTKABGFLSH
C4290	UR067100	C. EL 10uF 50V	UC

* New Parts

Ref No.	Part No.	Description	Markets
C4290	UU237100	C. EL 10uF 16V	RTKABGFLSH
C4291	US062100	C. CE. CHP 100pF 50V B	
C4292	US063470	C. CE. CHP 4700pF 50V B	
C4294	WD758300	C. CE. CHP 10uF 10V	
C4318-4321	WJ610200	C. MYLAR 0. 01uF 100V	
C4401-4402	US063100	C. CE. CHP 1000pF 50V B	
C4411-4412	WJ609500	C. MYLAR 3300pF 100V	
C4413	US064100	C. CE. CHP 0. 01uF 50V B	
C4414	US063100	C. CE. CHP 1000pF 50V B	
C4415	US035100	C. CE. CHP 0. 1uF 16V B	
C4421	US063100	C. CE. CHP 1000pF 50V B	
C4422	UM397100	C. EL 10uF 16V	
C4423	WV360900	C. EL 22uF 16V	
C4424	US064100	C. CE. CHP 0. 01uF 50V B	
C4425	US062100	C. CE. CHP 100pF 50V B	
C4426	UM397470	C. EL 47uF 16V	
C4427	US061330	C. CE. CHP 33pF 50V B	
C4428	UM397100	C. EL 10uF 16V	
C4430	WV360900	C. EL 22uF 16V	
C4432	WV360900	C. EL 22uF 16V	
C4481	US063100	C. CE. CHP 1000pF 50V B	
C4482	US062100	C. CE. CHP 100pF 50V B	
C4483-4484	US163100	C. CE. CHP 1000pF 50V	
C4487	WD758300	C. CE. CHP 10uF 10V	
C4901	US035100	C. CE. CHP 0. 1uF 16V B	RTKABGFLSH
D4001-4002	VT332900	DIODE 1SS355	
D4006-4007	WY163000	DIODE. ZENR UDVZ4. 3B	
D4010	VT332900	DIODE 1SS355	
D4011	V2598200	LED SIR-505ST	
D4012	VT332900	DIODE 1SS355	
D4081-4085	VT332900	DIODE 1SS355	
D4086	WY165200	DIODE. ZENR UDVZ36B	
D4091-4092	VT332900	DIODE 1SS355	
D4203-4205	VT332900	DIODE 1SS355	
D4303	VT332900	DIODE 1SS355	
D4401	WP080300	LED. BLUE Blue SLR343BC4T3F	
D4411-4412	VT332900	DIODE 1SS355	
D4421-4422	VT332900	DIODE 1SS355	
D4423	WY163200	DIODE. ZENR UDVZ5. 1B	
D4424	WR095700	LED 8224-10SDRD/S530A3	
D4901-4903	VT332900	DIODE 1SS355	UC
△ IC401	X6386A00	IC M66003-0131FP	
IC451-454	X8136A00	IC LM833MX	
IC455	YD360A00	IC NJM2505A VIDEO AMP	
IC456	X9870A00	IC PCM1681PWPR	
IC457	X4928A00	IC KIA7805API 5V	
IC471	X7378A00	IC NJM4565M(Te1)	
△ IC481	YC288A00	IC RP130Q331D-TR-F	
IC491	YA381A00	IC LM19C1Z/LF THERMAL	
IC491	YA381A00	IC LM19C1Z/LF THERMAL	RTKABGFLSH
JK471	WZ975700	JACK. PHONE MSJ-064-05B-B-RF	
JK472	WJ117300	JACK. MINI MSJ-2200C AG	
PJ401	WZ631700	JACK. PIN 1P MTJ-032-21B-NI	
Q4001-4003	WC529400	TR KTC3875S Y GR RTK	
Q4004	VV655400	TR. DGT DTC114EKA	
Q4005	WC397700	TR 2N5401C-AT	
Q4006-4009	WC529400	TR KTC3875S Y GR RTK	

* New Parts

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OPERATION

OPERATION

Ref No.	Part No.	Description	Markets
Q4012	WC529400	TR	KTC3875S Y GR RTK
Q4081	WQ381000	FET	MCH6336-TL-E
Q4082	VV655400	TR. DGT	DTC114EKA
△ Q4083-4084	WW223000	TR	2SC5964-TD-E
△ Q4085	WC397700	TR	2N5401C-AT
Q4301	VV655400	TR. DGT	DTC114EKA
Q4302	VV655000	TR. DGT	DTA114EKA
Q4401-4402	WC529400	TR	KTC3875S Y GR RTK
R4066-4067	WW969500	R. MTL. OXD	120Ω 1/4W
R4225	WW965300	R. MTL. OXD	2.2Ω 1/4W
R4293	V8070500	R. MTL. FLM	22Ω 1W
R4320-4321	WW974100	R. MTL. OXD	10KΩ 1/4W
R4331-4332	WQ072300	R. MTL. OXD	2.2Ω 1W
R4413-4414	V8071400	R. MTL. FLM	560Ω 1W
RY461	WJ122400	RELAY	981-2A-24DS-SP7
SW401-409	WD483100	SW. TACT	SKRGAADO10
SW411-421	WD483100	SW. TACT	SKRGAADO10
SW471	V9597100	SW. RT. ENC	EC12E2460802
SW472-473	WD483100	SW. TACT	SKRGAADO10
TE461	WB213900	TERM. SP	MSP-113V2-03 PUSH
TH491-492	WT698300	THERMISTOR	WC92NA103J1
U4001	WQ600700	L. DTCT	SM3385VMH6
V4001	WW890900	FL. DSPLY	18-MT-11GNK
*	ZA889400	SPACER	4.3x8x30

* New Parts

Ref No.	Part No.	Description	Markets
* ZC102400	P. C. B.	OPERATION	UC
* ZC102500	P. C. B.	OPERATION	A
CB401	VQ045500	CN. BS. PIN	26P
CB402	VQ044200	CN. BS. PIN	6P
CB446	WQ680200	CN. USB	4P TE AAPVA004C0
CB451	VQ961100	CN. BS. PIN	8P
CB452	VQ962100	CN. BS. PIN	18P
CB453	VQ961800	CN. BS. PIN	15P
CB454	VQ961400	CN. BS. PIN	11P
CB455	VQ963000	CN. BS. PIN	9P
CB458	VQ047000	CN. BS. PIN	6P
CB459-461	V9357000	CN	19P TE
CB463	VQ585700	CN. JUMPER	7P
CB471	VB858300	CN. BS. PIN	4P
C4001	US065100	C. CE. CHP	0.1uF 50V B
C4002	US035100	C. CE. CHP	0.1uF 16V B
C4003-4004	US063100	C. CE. CHP	1000pF 50V B
C4005	US035100	C. CE. CHP	0.1uF 16V B
C4007	UR268220	C. EL	220uF 50V
C4008	UM388330	C. EL	330uF 6.3V
C4009	US135100	C. CE. CHP	0.1uF 16V
C4010	US061680	C. CE. CHP	68pF 50V B
C4011	US065100	C. CE. CHP	0.1uF 50V B
C4012	US064100	C. CE. CHP	0.01uF 50V B
C4013	US065100	C. CE. CHP	0.1uF 50V B
C4017	US065100	C. CE. CHP	0.1uF 50V B
C4018	US035100	C. CE. CHP	0.1uF 16V B
C4019	US062100	C. CE. CHP	100pF 50V B
C4021	US062100	C. CE. CHP	100pF 50V B
C4022	US062470	C. CE. CHP	470pF 50V B
C4023	UM388100	C. EL	100uF 6.3V
C4024-4025	US035100	C. CE. CHP	0.1uF 16V B
C4026	US062220	C. CE. CHP	220pF 50V B
C4027	US063100	C. CE. CHP	1000pF 50V B
C4028-4030	US035100	C. CE. CHP	0.1uF 16V B
C4031	US063100	C. CE. CHP	1000pF 50V B
C4032	US035100	C. CE. CHP	0.1uF 16V B
C4033-4034	US135100	C. CE. CHP	0.1uF 16V
C4081	WH773700	C. EL	470uF 16V
C4082	WY034800	C. CE. CHP	0.022uF 50V
C4083	WM490200	C. CE. M. CHP	0.47uF 50V
C4084	UM416100	C. EL	1uF 50V
C4085	UM416220	C. EL	2.2uF 50V
C4086	US046100	C. CE. CHP	1uF 25V
C4087	WG251600	C. CE. CHP	4.7uF 6.3V
C4217	UR237100	C. EL	10uF 16V
C4225	UR067100	C. EL	10uF 50V
C4226	WKO41800	C. EL	10uF 16V
C4227-4228	UR237100	C. EL	10uF 16V
C4229	WJ608100	C. MYLAR	100pF 100V
C4230	WY466700	C. PP	820pF 100V
C4234	WKO41800	C. EL	10uF 16V
C4235-4236	WJ608100	C. MYLAR	100pF 100V
C4238	WKO41800	C. EL	10uF 16V
C4239	US035100	C. CE. CHP	0.1uF 16V B
C4240	WY466700	C. PP	820pF 100V
C4241	US035100	C. CE. CHP	0.1uF 16V B

* New Parts

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Ref No.	Part No.	Description	Markets
C4242	WK041800	C. EL 10uF 16V	
C4243-4244	WG251600	C. CE. CHP 4. 7uF 6. 3V	
C4245	URO67100	C. EL 10uF 50V	
C4246	UR238100	C. EL 100uF 16V	
C4250	URO67100	C. EL 10uF 50V	
C4251	WK041800	C. EL 10uF 16V	
C4252	URO67100	C. EL 10uF 50V	
C4253	WY466700	C. PP 820pF 100V	
C4255	US062100	C. CE. CHP 100pF 50V B	
C4257	WJ611000	C. MYLAR 0. 047uF 100V	
C4258	UR267100	C. EL 10uF 50V	
C4259-4260	URO67100	C. EL 10uF 50V	
C4261	WJ609900	C. MYLAR 6800pF 100V	
C4262	US126100	C. CE. CHP 1uF 10V	
C4263	US062100	C. CE. CHP 100pF 50V B	
C4264	US126100	C. CE. CHP 1uF 10V	
C4265	URO67100	C. EL 10uF 50V	
C4266	UR257100	C. EL 10uF 35V	
C4267	US126100	C. CE. CHP 1uF 10V	
C4268	WY466700	C. PP 820pF 100V	
C4271	US035100	C. CE. CHP 0. 1uF 16V B	
C4272	WY466700	C. PP 820pF 100V	
C4273	UR257100	C. EL 10uF 35V	
C4274	URO67100	C. EL 10uF 50V	
C4275	US062100	C. CE. CHP 100pF 50V B	
C4276	US063470	C. CE. CHP 4700pF 50V B	
C4277	US062100	C. CE. CHP 100pF 50V B	
C4278	US035100	C. CE. CHP 0. 1uF 16V B	
C4279	URO67100	C. EL 10uF 50V	
C4280	UR257100	C. EL 10uF 35V	
C4281	WY466700	C. PP 820pF 100V	
C4282	URO67470	C. EL 47uF 50V	
C4284	US035100	C. CE. CHP 0. 1uF 16V B	
C4285	URO67470	C. EL 47uF 50V	
C4287	WY466700	C. PP 820pF 100V	
C4288	WK041800	C. EL 10uF 16V	
C4289	UR257100	C. EL 10uF 35V	
C4290	URO67100	C. EL 10uF 50V	
C4291	US062100	C. CE. CHP 100pF 50V B	
C4292	US063470	C. CE. CHP 4700pF 50V B	
C4294	WD758300	C. CE. CHP 10uF 10V	
C4318-4321	WJ610200	C. MYLAR 0. 01uF 100V	
C4401	US063100	C. CE. CHP 1000pF 50V B	
C4402	WJ609500	C. MYLAR 3300pF 100V	
C4403	URO67100	C. EL 10uF 50V	
C4404	US064100	C. CE. CHP 0. 01uF 50V B	
C4405	WJ609500	C. MYLAR 3300pF 100V	
C4406	WV360900	C. EL 22uF 16V	
C4407	US064100	C. CE. CHP 0. 01uF 50V B	
C4408	US063100	C. CE. CHP 1000pF 50V B	
C4409	US062100	C. CE. CHP 100pF 50V B	
C4410	UM387470	C. EL 47uF 16V	
C4411	US061330	C. CE. CHP 33pF 50V B	
C4414-4415	WV360900	C. EL 22uF 16V	
C4416	UM397100	C. EL 10uF 16V	
C4417-4419	US063100	C. CE. CHP 1000pF 50V B	
C4420	US135100	C. CE. CHP 0. 1uF 16V	

* New Parts

Ref No.	Part No.	Description	Markets
C4421	US035100	C. CE. CHP 0. 1uF 16V B	
C4424	US061470	C. CE. CHP 47pF 50V B	
C4481	US063100	C. CE. CHP 1000pF 50V B	
C4482	US062100	C. CE. CHP 100pF 50V B	
C4483-4484	US163100	C. CE. CHP 1000pF 50V	
C4487	WD758300	C. CE. CHP 10uF 10V	
C4488	US061470	C. CE. CHP 47pF 50V B	
C4901	US135100	C. CE. CHP 0. 1uF 16V	A
D4003-4004	WY163000	DIODE. ZENR UDZV4. 3B	
D4005	V2598200	LED SIR-505ST	
D4006	WP080300	LED. BLUE Blue SLR343BC4T3F	
D4007-4008	VT332900	DIODE 1SS355	
D4081-4085	VT332900	DIODE 1SS355	
D4086	WY165200	DIODE. ZENR UDZV36B	
D4203-4205	VT332900	DIODE 1SS355	
D4303	VT332900	DIODE 1SS355	
D4401-4404	VT332900	DIODE 1SS355	
D4406	WY163200	DIODE. ZENR UDZV5. 1B	
D4407	WR095700	LED 8224-10SDRD/S530A3	
D4408-4409	VT332900	DIODE 1SS355	
D4901-4903	VT332900	DIODE 1SS355	UC
△ IC401	X6386A00	IC M66003-0131FP	
IC451-454	X8136A00	IC LM833MX	
IC455	YD360A00	IC NJM2505A VIDEO AMP	
IC456	X9870A00	IC PCM1681PWPR	
IC457	X4928A00	IC KIA7805AP1 5V	
IC471	X7378A00	IC NJM4565M (TE1)	
△ IC481	YC288A00	IC RP130Q331D-TR-F	
IC491	YA381A00	IC LM19C1Z/LF THERMAL	A
JK471	WC814400	JACK. MNI JY-3554-01-130	
JK472	WZ975700	JACK. PHONE MSJ-064-05B-B-RF	
PJ471	WZ631700	JACK. PIN 1P MTJ-032-21B-NI	
Q4001-4009	WC529400	TR KTC3875S Y GR RTK	
Q4010	WC397700	TR 2N5401C-AT	
Q4011	VV655400	TR. DGT DTC114EKA	
Q4081	WQ381000	FET MCH6336-TL-E	
Q4082	VV655400	TR. DGT DTC114EKA	
△ Q4083-4084	WW223000	TR 2SC5964-TD-E	
△ Q4085	WC397700	TR 2N5401C-AT	
Q4301	VV655400	TR. DGT DTC114EKA	
Q4302	VV655000	TR. DGT DTA114EKA	
Q4401	WC529400	TR KTC3875S Y GR RTK	
R4225	WW965300	R. MTL. OXD 2. 2Ω 1/4W	
R4293	V8070500	R. MTL. FLM 22Ω 1W	
R4320-4321	WW974100	R. MTL. OXD 10KΩ 1/4W	
R4331-4332	V8070100	R. MTL. FLM 2. 2Ω 1W	
R4407-4408	V8071400	R. MTL. FLM 560Ω 1W	
RY461	WJ122400	RELAY 981-2A-24DS-SP7	
SW402	WD483100	SW. TACT SKRGAAD010	
SW419	V9597100	SW. RT. ENC EC12E2460802	
SW422	WD483100	SW. TACT SKRGAAD010	
SW424-440	WD483100	SW. TACT SKRGAAD010	
SW472	WQ291600	SW. RT. ENC XREB12105PVB25F1NA	
SW473	WD483100	SW. TACT SKRGAAD010	
TE461	WW728900	TERM. SP 4P	
TH491-492	WT698300	THERMISTOR WC92NA103J1	UC
U4001	WQ600700	L. DTCT SM3385VMH6	

* New Parts

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Ref No.	Part No.	Description	Markets
* V4001	WW890600 ZA889400	FL. DSPLY SPACER	HNA-18MM03T 4. 3x8x30

* New Parts

Ref No.	Part No.	Description	Markets
* *	WZ886500	P. C. B.	MAIN UCRTKALSH
* *	WZ886600	P. C. B.	MAIN B
* *	WZ886700	P. C. B.	MAIN GF
CB152	VQ962900	CN. BS. PIN	8P
CB153	VQ963900	CN. BS. PIN	18P
CB154	VQ963600	CN. BS. PIN	15P
CB155	VQ963200	CN. BS. PIN	11P
C1001	UR257100	C. EL	10uF 35V UCRTKALSH
C1001	WK041800	C. EL	10uF 16V BGF
C1002	UR257100	C. EL	10uF 35V UCRTKALSH
C1002	WK041800	C. EL	10uF 16V BGF
C1003	UR257100	C. EL	10uF 35V UCRTKALSH
C1003	WK041800	C. EL	10uF 16V BGF
C1004	UR257100	C. EL	10uF 35V UCRTKALSH
C1004	UU237100	C. EL	10uF 16V BGF
C1005	UR257100	C. EL	10uF 35V UCRTKALSH
C1005	UU237100	C. EL	10uF 16V BGF
C1006	UR257100	C. EL	10uF 35V UCRTKALSH
C1006	UU237100	C. EL	10uF 16V BGF
C1007	UR257100	C. EL	10uF 35V UCRTKALSH
C1007	UU237100	C. EL	10uF 16V BGF
C1008	WN164200	C. PP	220pF 100V UCRTKALSH
C1008	WE100900	C. PP	220pF 630V K BGF
C1009	WN164200	C. PP	220pF 100V UCRTKALSH
C1009	WE100900	C. PP	220pF 630V K BGF
C1010	WN164200	C. PP	220pF 100V UCRTKALSH
C1010	WE100900	C. PP	220pF 630V K BGF
C1011	WN164200	C. PP	220pF 100V UCRTKALSH
C1011	WJ608300	C. MYLAR	220pF 100V BGF
C1012	WN164200	C. PP	220pF 100V UCRTKALSH
C1012	WJ608300	C. MYLAR	220pF 100V BGF
C1013	WN164200	C. PP	220pF 100V UCRTKALSH
C1013	WJ608300	C. MYLAR	220pF 100V BGF
C1014	WN164200	C. PP	220pF 100V UCRTKALSH
C1014	WJ608300	C. MYLAR	220pF 100V BGF
C1015	WQ107500	C. PP	120pF 100V UCRTKALSH
C1015	WE100600	C. PP	120pF 630V K BGF
C1016	WQ107500	C. PP	120pF 100V UCRTKALSH
C1016	WE100600	C. PP	120pF 630V K BGF
C1017	WQ107500	C. PP	120pF 100V UCRTKALSH
C1017	WE100600	C. PP	120pF 630V K BGF
C1018	WQ107500	C. PP	120pF 100V UCRTKALSH
C1018	WW179700	C. MYLAR	120pF 100V BGF
C1019	WQ107500	C. PP	120pF 100V UCRTKALSH
C1019	WW179700	C. MYLAR	120pF 100V BGF
C1020	WQ107500	C. PP	120pF 100V UCRTKALSH
C1020	WW179700	C. MYLAR	120pF 100V BGF
C1021	WQ107500	C. PP	120pF 100V UCRTKALSH
C1021	WW179700	C. MYLAR	120pF 100V BGF
C1022	WN164900	C. PP	3300pF 100V UCRTKALSH
C1022	WE102300	C. PP	3300pF 100V J BGF
C1023	WN164900	C. PP	3300pF 100V UCRTKALSH
C1023	WE102300	C. PP	3300pF 100V J BGF
C1024	WN164900	C. PP	3300pF 100V UCRTKALSH
C1024	WE102300	C. PP	3300pF 100V J BGF
C1025	WN164900	C. PP	3300pF 100V UCRTKALSH
C1025	WJ609500	C. MYLAR	3300pF 100V BGF

* New Parts

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Ref No.	Part No.	Description	Markets
C1026	WN164900	C. PP 3300pF 100V	UCRTKALSH
C1026	WJ609500	C. MYLAR 3300pF 100V	BGF
C1027	WN164900	C. PP 3300pF 100V	UCRTKALSH
C1027	WJ609500	C. MYLAR 3300pF 100V	BGF
C1028	WN164900	C. PP 3300pF 100V	UCRTKALSH
C1028	WJ609500	C. MYLAR 3300pF 100V	BGF
C1029	URO67470	C. EL 47uF 50V	
C1030-1031	URO68100	C. EL 100uF 50V	
C1032-1035	URO67470	C. EL 47uF 50V	
C1036	WQ627600	C. CE 22pF 500V	UCRTKALSH
C1036	WE100200	C. PP 22pF 630V K	BGF
C1037	WQ627600	C. CE 22pF 500V	UCRTKALSH
C1037	WE100200	C. PP 22pF 630V K	BGF
C1038	WQ627600	C. CE 22pF 500V	UCRTKALSH
C1038	WE100200	C. PP 22pF 630V K	BGF
C1039-1042	WQ627600	C. CE 22pF 500V	
C1043	WJ608400	C. MYLAR 330pF 100V	UCRTKALSH
C1043	WE101100	C. PP 330pF 100V J	BGF
C1044	WJ608400	C. MYLAR 330pF 100V	UCRTKALSH
C1044	WE101100	C. PP 330pF 100V J	BGF
C1045	WJ608400	C. MYLAR 330pF 100V	UCRTKALSH
C1045	WE101100	C. PP 330pF 100V J	BGF
C1046-1049	WJ608400	C. MYLAR 330pF 100V	
C1050-1056	URO67100	C. EL 10uF 50V	
C1057-1063	WJ610600	C. MYLAR 0.022uF 100V	
C1066-1067	WN156000	C. PP 1000pF 250V	
C1068	UR866470	C. EL 4.7uF 50V	
C1069	UR828220	C. EL 220uF 10V	
C1070-1073	UR297100	C. EL 10uF 100V	
C1074	UR267330	C. EL 33uF 50V	
C1075	UR257100	C. EL 10uF 35V	UCRTKALSH
C1075	URO67470	C. EL 47uF 50V	BGF
C1076	UR266100	C. EL 1uF 50V	
C1078	WJ611400	C. MYLAR 0.1uF 100V J	UCRTKALSH
C1078	WP421000	C. PP 0.047uF 100V	BGF
C1079	WJ611400	C. MYLAR 0.1uF 100V J	UCRTKALSH
C1079	WP421000	C. PP 0.047uF 100V	BGF
C1080	WN165500	C. PP 0.022uF 100V	UCRTKALSH
C1080	WJ610600	C. MYLAR 0.022uF 100V	BGF
C1081	WN165500	C. PP 0.022uF 100V	UCRTKALSH
C1081	WJ610600	C. MYLAR 0.022uF 100V	BGF
△ C1082	URO49330	C. EL 3300uF 25V	
△ C1083	URO49220	C. EL 2200uF 25V	
△ C1084-1085	WN331300	C. EL 6800uF 71V	
C1086	URO49220	C. EL 2200uF 25V	
C1087	UR237100	C. EL 10uF 16V	UCRTKALSH
C1087	WK041800	C. EL 10uF 16V	BGF
C1088	UR237100	C. EL 10uF 16V	UCRTKALSH
C1088	WK041800	C. EL 10uF 16V	BGF
C1509	URO67470	C. EL 47uF 50V	UCRTKALSH
C1509	UR238100	C. EL 100uF 16V	BGF
C1510-1512	US035100	C. CE. CHP 0.1uF 16V B	
C1513-1514	US061220	C. CE. CHP 22pF 50V B	
C1515-1516	US035100	C. CE. CHP 0.1uF 16V B	
C1517-1520	US062220	C. CE. CHP 220pF 50V B	
C1521	UR267100	C. EL 10uF 50V	
C1522	US061470	C. CE. CHP 47pF 50V B	

Ref No.	Part No.	Description	Markets
C1523	UR238100	C. EL 100uF 16V	
C1524	US061470	C. CE. CHP 47pF 50V B	
C1525	UR267100	C. EL 10uF 50V	
C1526-1527	UR238100	C. EL 100uF 16V	
C1528-1529	US062220	C. CE. CHP 220pF 50V B	
C1530	UR238100	C. EL 100uF 16V	
C1531	UR267330	C. EL 33uF 50V	
C1532-1533	UR238100	C. EL 100uF 16V	
C1534-1535	US062220	C. CE. CHP 220pF 50V B	
C1536	UR238100	C. EL 100uF 16V	
C1542	US035100	C. CE. CHP 0.1uF 16V B	
C1545	US035100	C. CE. CHP 0.1uF 16V B	
C1547	UR267100	C. EL 10uF 50V	
C1549	UR267100	C. EL 10uF 50V	
C1553-1554	UR267220	C. EL 22uF 50V	
C1556	UR267100	C. EL 10uF 50V	
C1558	UR267470	C. EL 47uF 50V	UCRTKALSH
C1558	URO67470	C. EL 47uF 50V	BGF
C1559	UR267470	C. EL 47uF 50V	UCRTKALSH
C1559	URO67470	C. EL 47uF 50V	BGF
C1571	UR267100	C. EL 10uF 50V	
C1572-1573	US062100	C. CE. CHP 100pF 50V B	
C1574	UR267100	C. EL 10uF 50V	
C1575	US061470	C. CE. CHP 47pF 50V B	
C1576	UR267100	C. EL 10uF 50V	
C1578	US061470	C. CE. CHP 47pF 50V B	
C1579	UR267100	C. EL 10uF 50V	
C1580	UR837100	C. EL 10uF 16V	
C1581-1582	US061470	C. CE. CHP 47pF 50V B	
C1583-1584	UR267470	C. EL 47uF 50V	
C1585	UR837100	C. EL 10uF 16V	
C1589-1590	UR267100	C. EL 10uF 50V	
C1600-1601	UR267100	C. EL 10uF 50V	
C1605	US064100	C. CE. CHP 0.01uF 50V B	
C1608	US044220	C. CE. CHP 0.022uF 25V B	
C1610	US064100	C. CE. CHP 0.01uF 50V B	
C1612-1613	US064100	C. CE. CHP 0.01uF 50V B	
D1001-1016	VT332900	DIODE 1SS355	
△ D1017-1023	VG437500	DIODE. ZENR MTZJ5.1C 5.1V	
D1024-1039	VT332900	DIODE 1SS355	
D1040	WB212700	DIODE. BRG RS603M 6A 200V	UCRTKALSH
△ D1040	WK611100	DIODE. BRG D6SBN20 6A 200V	BGF
△ D1041	WH487300	DIODE. BRG RS203M 2.0A 200V	
D1042	VG440500	DIODE. ZENR MTZJ13B 13V	
D1043	VT332900	DIODE 1SS355	
D1501-1502	VG438400	DIODE. ZENR MTZJ6.8C 6.8V	
G101	V5995800	PLATE. GND	
△ IC101	XJ608A00	IC NJM7812FA	
△ IC102	X4154A00	IC KIA7912P1	
IC152	XZ509A00	IC TC74VHCU04FT INVER	
IC153	YA361B00	IC R2A15220FP	
IC154	X7378A00	IC NJM4565M(TE1)	
PJ150	V9420700	JACK. PIN 2P MSP-252V1-30NI	
PJ151	V7046800	JACK. PIN 6P MSP-246V1-01NI	
PJ152	V7046700	JACK. PIN 4P MSP-244V1-01NI	
PJ155	V7046700	JACK. PIN 4P MSP-244V1-01NI	
PJ159	V9392100	JACK. PIN MSP-242V1-02NIFELF	

* New Parts

* New Parts

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Ref No.	Part No.	Description	Markets
Q1001-1014	WF549900	TR	2SC3906K T146 R, S
Q1015-1021	V3966800	TR	2SA949 O, Y
△ Q1022-1028	WT676000	TR	2SD2705S
△ Q1029-1035	VR325600	TR	2SC2229 O, Y
△ Q1036-1042	V4096100	TR	2SC4614 S, T
△ Q1043-1049	V4096000	TR	2SA1770 S, T
△ Q1050-1056	VR355900	TR. PAIR	A1695/C4468 OPY
Q1057-1063	V7421700	TR. CHP	2SC3324-GR, BL
Q1064	V7421800	TR	2SA1312-GR, BL
Q1065	V7421700	TR. CHP	2SC3324-GR, BL
△ Q1067-1068	WC292600	TR	KTA1837-U
△ Q1069-1070	WC398400	TR	2N5551C-AT
△ Q1071	WC397700	TR	2N5401C-AT
△ Q1072	VP872600	TR	2SA1708 S, T
Q1073	WC398500	TR. DGT	KRA102M-AT
Q1074	WC529200	TR. DGT	KRC102M-AT
Q1501-1502	WC883400	TR	2SD2704 K
Q1504	WC883400	TR	2SD2704 K
Q1507	WC883400	TR	2SD2704 K
Q1509	WC883400	TR	2SD2704 K
Q1511-1514	WC883400	TR	2SD2704 K
Q1520-1521	WC883400	TR	2SD2704 K
Q1524-1525	WC883400	TR	2SD2704 K
Q1527	WC883400	TR	2SD2704 K
R1001-1007	HF356100	R. CAR	1KΩ 1/2W
R1008-1014	HF356180	R. CAR	1.8KΩ 1/2W
R1022-1028	HF355330	R. CAR	330Ω 1/2W
R1029-1035	HL006120	R. MTL. OXD	1.2KΩ 1/2W
R1036-1042	V8070900	R. MTL. FLM	100Ω 1W
R1043-1049	V8072600	R. MTL. OXD	33KΩ 1W
R1079-1085	HL005120	R. MTL. OXD	120Ω 1/2W
R1086-1092	WG727400	R. MTL. FLM	2.7KΩ 1/4W
R1093-1099	WG725600	R. MTL. FLM	470Ω 1/4W
R1100-1106	WG726400	R. MTL. FLM	1KΩ 1/4W
R1107-1112	WG726200	R. MTL. FLM	820Ω 1/4W
△ R1113-1118	WC862200	R. MTL. FLM	120Ω 1W
△ R1119-1126	HL005120	R. MTL. OXD	120Ω 1/2W
R1127-1133	HF355470	R. CAR	470Ω 1/2W
△ R1134-1147	HL004100	R. MTL. OXD	10Ω 1/2W
△ R1148-1154	WP839400	R. CEMENT	0.22+0.22 3W
△ R1176-1182	V8070300	R. MTL. FLM	10Ω 1W
△ R1197-1198	V8070200	R. MTL. FLM	4.7Ω 1W
△ R1211	WW966900	R. MTL. OXD	10Ω 1/4W
R1213	V8072100	R. MTL. OXD	5.6KΩ 1W
R1214	WW971100	R. MTL. OXD	560Ω 1/4W
R1219	V8072000	R. MTL. OXD	4.7KΩ 1W
△ R1222	V8071600	R. MTL. FLM	1KΩ 1W
R1236	WG726200	R. MTL. FLM	820Ω 1/4W
△ R1238	WC860900	R. MTL. FLM	10Ω 1W
R1504	WC860100	R. MTL. FLM	2.2Ω 1W
R1573	WA621400	R. MTL. OXD	82Ω 1W J UCRTKALSH
R1573	WQ835700	R. MTL. OXD	82Ω 1W BGF
R1575	WA621400	R. MTL. OXD	82Ω 1W J UCRTKALSH
R1575	WQ835700	R. MTL. OXD	82Ω 1W BGF
R1664-1665	WC862000	R. MTL. FLM	82Ω 1W
△ RY101	WE648700	RELAY	DC DH24D2-0-Q
U1500-1501	WH169900	CN. PHOTO. R	1P GP1FAV51RKOF

* New Parts

Ref No.	Part No.	Description	Markets
	WE774200	SCR. BND. HD 3x10 MFZN2W3	

* New Parts

RX-V673/HTR-6065/
RX-A720

RX-V673/HTR-6065

VIDEO

Ref No.	Part No.	Description	Markets
*	ZC104600	P. C. B. VIDEO	U
*	ZC104700	P. C. B. VIDEO	C
*	ZC104800	P. C. B. VIDEO	RS
*	ZC104900	P. C. B. VIDEO	T
*	ZC105000	P. C. B. VIDEO	K
*	ZC105100	P. C. B. VIDEO	A
*	ZC105200	P. C. B. VIDEO	BGF
*	ZC105300	P. C. B. VIDEO	LH
CB302	VQ961200	CN. BS. PIN 9P	
CB303	VM859700	CN. BS. PIN 16P	
CB323	VQ047200	CN. BS. PIN 9P	
CB324	VQ047500	CN. BS. PIN 20P	
CB340	LB918020	CN. BS. PIN 2P	
CB342	VL844800	CN. BS. PIN 4P	
CB343	VZ130900	CN. JUMPER 4P	
CB344	VQ585500	CN. JUMPER 5P	
CB346	VB390000	CN. BS. PIN 4P	
CB371	VG879900	CN. BS. PIN 2P	
CB372-373	WN103000	CL IP. FUSE TP00351-31	
CB374	VG879900	CN. BS. PIN 2P	RS
CB376	VQ961400	CN. BS. PIN 11P	
CB377	VQ963200	CN. BS. PIN 11P	
CB381-382	WN103000	CL IP. FUSE TP00351-31	RS
C3001	US062100	C. CE. CHP 100pF 50V B	
C3002-3004	US060800	C. CE. CHP 8pF 50V B	
C3005	US062100	C. CE. CHP 100pF 50V B	
C3006	UR237470	C. EL 47uF 16V	
C3007-3008	US135100	C. CE. CHP 0.1uF 16V	
C3009	UR237470	C. EL 47uF 16V	
C3011	US060300	C. CE. CHP 3pF 50V B	
C3012	UR837470	C. EL 47uF 16V	
C3013-3014	US060300	C. CE. CHP 3pF 50V B	
C3016-3017	US135100	C. CE. CHP 0.1uF 16V	
C3018	UR267100	C. EL 10uF 50V	
C3019	US135100	C. CE. CHP 0.1uF 16V	
C3020	UR267100	C. EL 10uF 50V	
C3021	US135100	C. CE. CHP 0.1uF 16V	
C3023-3025	US135100	C. CE. CHP 0.1uF 16V	
C3026	UR267100	C. EL 10uF 50V	
C3027	WD758300	C. CE. CHP 10uF 10V	
C3028	US064100	C. CE. CHP 0.01uF 50V B	
C3029	WD758300	C. CE. CHP 10uF 10V	
C3031	WD758300	C. CE. CHP 10uF 10V	
C3033	UR837470	C. EL 47uF 16V	
C3043-3044	US135100	C. CE. CHP 0.1uF 16V	
C3045	UR837470	C. EL 47uF 16V	
C3047	US135100	C. CE. CHP 0.1uF 16V	
C3048	UR238220	C. EL 220uF 16V	
C3050	US135100	C. CE. CHP 0.1uF 16V	
C3051	UR238220	C. EL 220uF 16V	
C3063	US135100	C. CE. CHP 0.1uF 16V	
C3065	UR237470	C. EL 47uF 16V	
C3067	US135100	C. CE. CHP 0.1uF 16V	
C3072	US135100	C. CE. CHP 0.1uF 16V	
C3073	UR237470	C. EL 47uF 16V	
C3080-3085	WD758300	C. CE. CHP 10uF 10V	
C3100	US135100	C. CE. CHP 0.1uF 16V	

* New Parts

Ref No.	Part No.	Description	Markets
C3201	US135100	C. CE. CHP 0.1uF 16V	
C3217	US062100	C. CE. CHP 100pF 50V B	
C3221	US062100	C. CE. CHP 100pF 50V B	
C3303-3304	WJ611400	C. MYLAR 0.1uF 100V J	
C3309-3310	WG601700	C. EL 4700uF 16V	
C3311-3312	UR866100	C. EL 1uF 50V	
C3314	UR266100	C. EL 1uF 50V	
C3319	UR266100	C. EL 1uF 50V	
C3320-3321	UR267330	C. EL 33uF 50V	
C3403-3409	WJ610200	C. MYLAR 0.01uF 100V	
C3410-3416	WJ610400	C. MYLAR 0.015uF 100V	
C3603-3604	US063100	C. CE. CHP 1000pF 50V B	
C3606	US064100	C. CE. CHP 0.01uF 50V B	
C3701	WJ361200	C. POL. MTL 0.047uF 400V	UC
△ C3701	WJ361800	C. POL. MTL 0.022uF 630V	RTKABGFLSH
△ C3702-3703	WQ902300	C. CE. SAFETY 1000pF 250V	
△ C3704	V5877700	C. MYLAR 0.22uF 250V	
△ C3705	WJ609900	C. MYLAR 6800pF 100V	
△ C3706	WW766000	C. EL 220uF 220V	UC
△ * C3706	WW766100	C. EL 150uF 400V	RS
△ C3706	WQ852500	C. EL 68uF 400V	TKABGFLH
△ C3707	WQ939400	C. CE. SAFETY 0.01uF 250V	
△ C3708	UR867220	C. EL 22uF 50V	
△ C3710	WR246900	C. CE. CHP 3300pF 250V	
△ C3711	WY685500	C. CE. SAFETY 3300pF 250V	
△ C3712	WJ361200	C. POL. MTL 0.047uF 400V	UC
△ C3712	WJ361800	C. POL. MTL 0.022uF 630V	RTKABGFLSH
C3713	WJ322300	C. CE. M. CHP 1000pF 630V	
C3714-3715	WH776400	C. EL 2200uF 25V	
C3716	US034470	C. CE. CHP 0.047uF 16V B	
C3718	WH771600	C. EL 220uF 10V	
C3719	US064100	C. CE. CHP 0.01uF 50V B	
C3720	V7887800	C. EL 1uF 50V	
C3721	WJ335500	C. EL 2.2uF 50V	
C3722	US135100	C. CE. CHP 0.1uF 16V	
C3723	US064100	C. CE. CHP 0.01uF 50V B	
C3724	US135100	C. CE. CHP 0.1uF 16V	
C3725	WJ608900	C. MYLAR 1000pF 100V	
△ D3304	WH487300	DIODE. BRG RS203M 2.0A 200V	
D3310	VT332900	DIODE 1SS355	
D3350	VU172800	DIODE. ZENR UDZS12B 12V	RS
D3403-3407	VT332900	DIODE 1SS355	
D3601-3602	VT332900	DIODE 1SS355	
△ D3701	WW872000	DIODE. BRG DBL155G 1.5A 600	
△ D3702	WE665600	DIODE RF101L2STE25	
△ D3703	WW170700	DIODE SARS05	
D3704	WW745500	DIODE. SCHOTTKY RB215T-90 20A 90V	
△ D3706-3715	VT332900	DIODE 1SS355	
△ F3701	WR944000	FUSE 2A 250V	
△ F3702	WQ211100	FUSE 8A 125V	UCRS
△ F3702	WM933100	FUSE T5A 250V	TKABGFLH
△ F3801	KB000780	FUSE T5A 250V	RS
IC302-303	XY879A00	IC TC74HC4053AF (EL)	
IC305-306	X2904A00	IC NJM2581M VIDEO AMP	
IC307	XY549A00	IC TC74HC4051AFEL	
IC310	X8875A00	IC FHP3350IM14X	
IC333	X4928A00	IC KIA7805API 5V	

* New Parts

RX-V673/HTR-6065/
RX-A720

RX-V673/HTR-6065

VIDEO

Ref No.	Part No.	Description	Markets
△ IC334	X6143A00	IC NJM2388F05 5.0V	
△ IC371	YD188A00	IC STR2A153	
△ IC372	WP388200	PHOT. CPL TLP781 (D4-GR, F)	
△ IC373	YA276A00	IC TL431AC 2.5-36V	
△ IC374	WP388200	PHOT. CPL TLP781 (D4-GR, F)	
IC392	XV495B00	IC TC74VHCT08AF E, K, F	
JK321	V9435700	JACK. MINI MSJ-035-12APC	
JK361-362	V9435700	JACK. MINI MSJ-035-12APC	
PJ301	WG505100	JACK. PIN 6P	
PJ302	V7189800	JACK. PIN 1P	
PJ303	WH381400	JACK. PIN 3P JACK G, B, R	
PJ304	V7189800	JACK. PIN 1P	
PJ305-306	V7190000	JACK. PIN 2P	
Q3001	VR936300	TR 2SA1576A T106	
Q3100	VV655400	TR. DGT DTC114EKA	
Q3204	WC397700	TR 2N5401C-AT	
Q3205	WC398400	TR 2N5551C-AT	
Q3206	ZA348800	TR KTA1046-Y-U/PFY	
Q3207	WC398400	TR 2N5551C-AT	
Q3302	WC397700	TR 2N5401C-AT	
Q3303	ZA348800	TR KTA1046-Y-U/PFY	
△ Q3304	WC397700	TR 2N5401C-AT	
Q3305	WC398400	TR 2N5551C-AT	
Q3306	WC529500	TR KTA1504S Y GR RTK	
Q3405	VV655400	TR. DGT DTC114EKA	
Q3406	VV655000	TR. DGT DTA114EKA	
Q3407	VV655400	TR. DGT DTC114EKA	
Q3408	VV655000	TR. DGT DTA114EKA	
Q3409	VV655400	TR. DGT DTC114EKA	
Q3410	VV655000	TR. DGT DTA114EKA	
Q3411	VV655400	TR. DGT DTC114EKA	
Q3412	VV655000	TR. DGT DTA114EKA	
Q3413	VV655400	TR. DGT DTC114EKA	
Q3414	VV655000	TR. DGT DTA114EKA	
Q3701-3702	VQ986700	TR 2SC4081 T106	
Q3703	VV655700	TR. DGT DTC114EKA	
R3021	WW964500	R. MTL. OXD 1Ω 1/4W	
R3025	WW964500	R. MTL. OXD 1Ω 1/4W	
R3046-3049	WW964500	R. MTL. OXD 1Ω 1/4W	
R3060-3061	WW964500	R. MTL. OXD 1Ω 1/4W	
R3213	WW966300	R. MTL. OXD 5.6Ω 1/4W	
R3304	HL002220	R. MTL. OXD 0.22Ω 1/2W	
R3315-3316	WW973300	R. MTL. OXD 4.7KΩ 1/4W	
R3350	WW972500	R. MTL. OXD 2.2KΩ 1/4W	RS
R3403-3406	WW974100	R. MTL. OXD 10KΩ 1/4W	
△ R3703	WU547900	R. ANTI. SURGE 3MΩ 1/2W	
RY341-345	WJ122400	RELAY 981-2A-24DS-SP7	
△ RY371	WQ804100	RELAY DC DLS5D1-0 (M) 0.25	
△ SW381	WV382900	SW. SLIDE SL14	RS
△ T3701	YD325A00	TRANS. SUB	
TE341	WW728900	TERM. SP 4P	UCRSTA
TE341	WW726500	TERM. SP 4P	KBGFLH
TE342	WW726600	TERM. SP 6P	UCRSTA
TE342	WW728800	TERM. SP 6P	KBGFLH
TE343	WW728900	TERM. SP 4P	UCRSTA
TE343	WW726500	TERM. SP 4P	KBGFLH
△ TH371	WF544600	PTC. THERMISTOR NTPAD5R1LDNBO 5.1	

* New Parts

Ref No.	Part No.	Description	Markets
	WE774200	SCR. BND. HD 3x10 MFZN2W3	

* New Parts

RX-V673/HTR-6065/
RX-A720

RX-A720

VIDEO

Ref No.	Part No.	Description	Markets
*	ZC105400	P. C. B. VIDEO	U
*	ZC105500	P. C. B. VIDEO	C
*	ZC105600	P. C. B. VIDEO	A
CB302	VQ961200	CN. BS. PIN 9P	
CB303	VM859700	CN. BS. PIN 16P	
CB323	VQ047200	CN. BS. PIN 9P	
CB324	VQ047500	CN. BS. PIN 20P	
CB340	LB918020	CN. BS. PIN 2P	
CB342	VL844800	CN. BS. PIN 4P	
CB343	VZ130900	CN. JUMPER 4P	
CB344	VQ585500	CN. JUMPER 5P	
CB346	VB390000	CN. BS. PIN 4P	
CB371	VG879900	CN. BS. PIN 2P	
CB372-373	WN103000	CL IP. FUSE TP00351-31	
CB376	VQ961400	CN. BS. PIN 11P	
CB377	VQ963200	CN. BS. PIN 11P	
C3001	US062100	C. CE. CHP 100pF 50V B	
C3002-3004	US060800	C. CE. CHP 8pF 50V B	
C3005	US062100	C. CE. CHP 100pF 50V B	
C3006	UR237470	C. EL 47uF 16V	
C3007-3008	US135100	C. CE. CHP 0.1uF 16V	
C3009	UR237470	C. EL 47uF 16V	
C3011	US060300	C. CE. CHP 3pF 50V B	
C3012	UR837470	C. EL 47uF 16V	
C3013-3014	US060300	C. CE. CHP 3pF 50V B	
C3016-3017	US135100	C. CE. CHP 0.1uF 16V	
C3018	UR267100	C. EL 10uF 50V	
C3019	US135100	C. CE. CHP 0.1uF 16V	
C3020	UR267100	C. EL 10uF 50V	
C3021	US135100	C. CE. CHP 0.1uF 16V	
C3023-3025	US135100	C. CE. CHP 0.1uF 16V	
C3026	UR267100	C. EL 10uF 50V	
C3027	WD758300	C. CE. CHP 10uF 10V	
C3028	US064100	C. CE. CHP 0.01uF 50V B	
C3029	WD758300	C. CE. CHP 10uF 10V	
C3031	WD758300	C. CE. CHP 10uF 10V	
C3033	UR837470	C. EL 47uF 16V	
C3043-3044	US135100	C. CE. CHP 0.1uF 16V	
C3045	UR837470	C. EL 47uF 16V	
C3047	US135100	C. CE. CHP 0.1uF 16V	
C3048	UR238220	C. EL 220uF 16V	
C3050	US135100	C. CE. CHP 0.1uF 16V	
C3051	UR238220	C. EL 220uF 16V	
C3063	US135100	C. CE. CHP 0.1uF 16V	
C3065	UR237470	C. EL 47uF 16V	
C3067	US135100	C. CE. CHP 0.1uF 16V	
C3072	US135100	C. CE. CHP 0.1uF 16V	
C3073	UR237470	C. EL 47uF 16V	
C3080-3085	WD758300	C. CE. CHP 10uF 10V	
C3100	US135100	C. CE. CHP 0.1uF 16V	
C3201	US135100	C. CE. CHP 0.1uF 16V	
C3217	US062100	C. CE. CHP 100pF 50V B	
C3221	US062100	C. CE. CHP 100pF 50V B	
C3303-3304	WJ611400	C. MYLAR 0.1uF 100V J	
C3309-3310	WG601700	C. EL 4700uF 16V	
C3311-3312	UR866100	C. EL 1uF 50V	
C3314	UR266100	C. EL 1uF 50V	

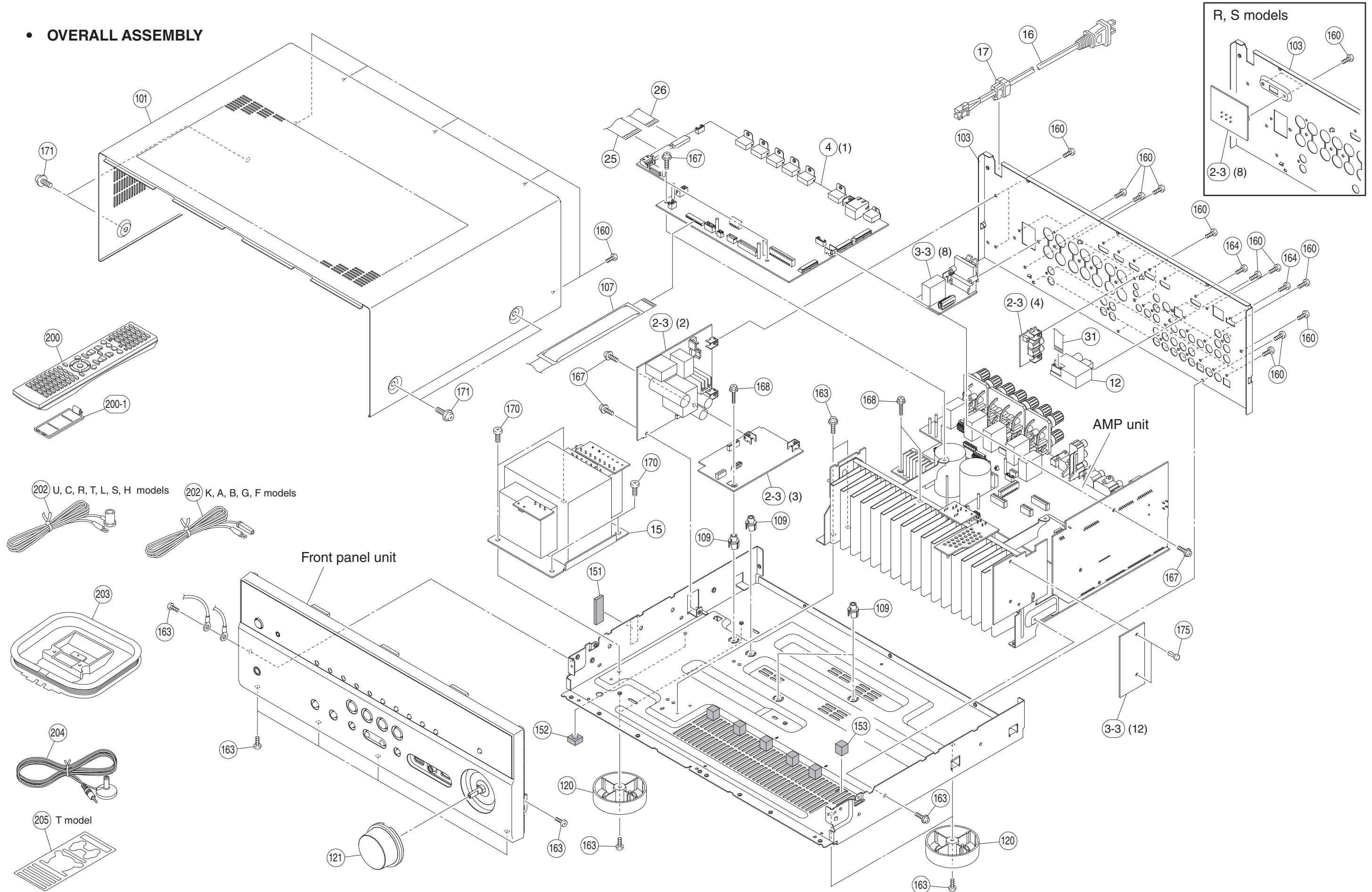
* New Parts

Ref No.	Part No.	Description	Markets
C3319	UR266100	C. EL 1uF 50V	
C3320-3321	UR267330	C. EL 33uF 50V	
C3403-3409	WJ610200	C. MYLAR 0.01uF 100V	
C3410-3416	WJ610400	C. MYLAR 0.015uF 100V	
C3603-3604	US063100	C. CE. CHP 1000pF 50V B	
C3606	US064100	C. CE. CHP 0.01uF 50V B	
△ C3701	WJ361200	C. POL. MTL 0.047uF 400V	UC
△ C3701	WJ361800	C. POL. MTL 0.022uF 630V	A
△ C3704	V5877700	C. MYLAR 0.22uF 250V	
△ C3705	WJ609900	C. MYLAR 6800pF 100V	
△ C3706	WW766000	C. EL 220uF 220V	UC
△ C3706	WQ852500	C. EL 68uF 400V	A
△ C3707	WQ939400	C. CE. SAFTY 0.01uF 250V	
△ C3708	UR867220	C. EL 22uF 50V	
△ C3710	WR246900	C. CE. CHP 3300pF 250V	
△ C3711	WY685500	C. CE. SAFTY 3300pF 250V	
△ C3712	WJ361200	C. POL. MTL 0.047uF 400V	UC
△ C3712	WJ361800	C. POL. MTL 0.022uF 630V	A
C3713	WJ322300	C. CE. M. CHP 1000pF 630V	
C3714-3715	WH776400	C. EL 2200uF 25V	
C3716	US034470	C. CE. CHP 0.047uF 16V B	
C3718	WH771600	C. EL 220uF 10V	
C3719	US064100	C. CE. CHP 0.01uF 50V B	
C3720	V7887800	C. EL 1uF 50V	
C3721	WJ335500	C. EL 2.2uF 50V	
C3722	US135100	C. CE. CHP 0.1uF 16V	
C3723	US064100	C. CE. CHP 0.01uF 50V B	
C3724	US135100	C. CE. CHP 0.1uF 16V	
C3725	WJ608900	C. MYLAR 1000pF 100V	
△ C3732-3733	WQ902300	C. CE. SAFTY 1000pF 250V	
△ D3304	WH487300	DIODE. BRG RS203M 2.0A 200V	
D3310	VT332900	DIODE 1SS355	
D3403-3407	VT332900	DIODE 1SS355	
D3601-3602	VT332900	DIODE 1SS355	
△ D3701	WW872000	DIODE. BRG DBL155G 1.5A 600	
△ D3702	WE665600	DIODE RF101L2STE25	
△ D3703	WW170700	DIODE SARS05	
D3704	WW745500	DIODE. SCHOTTKY RB215T-90 20A 90V	
△ D3706-3715	VT332900	DIODE 1SS355	
△ F3701	WR944000	FUSE 2A 250V	
△ F3702	WQ211100	FUSE 8A 125V	UC
△ F3702	WM933100	FUSE T5A 250V	A
IC302-303	XY879A00	IC TC74HC4053AF (EL)	
IC305-306	X2904A00	IC NJM2581M VIDEO AMP	
IC307	XY549A00	IC TC74HC4051AFEL	
IC310	X8875A00	IC FHP3350IM14X	
IC333	X4928A00	IC KIA7805API 5V	
IC334	X6143A00	IC NJM2388F05 5.0V	
△ IC371	YD188A00	IC STR2A153	
△ IC372	WP388200	PHOT. CPL TLP781 (D4-GR, F)	
△ IC373	YA276A00	IC TL431AC 2.5-36V	
△ IC374	WP388200	PHOT. CPL TLP781 (D4-GR, F)	
* IC392	XV495B00	IC TC74VHCT08AF E, K, F	
JK321	V9435700	JACK. MINI MSJ-035-12APC	
JK361-362	V9435700	JACK. MINI MSJ-035-12APC	
PJ301	WG505100	JACK. PIN 6P	
PJ302	V7189800	JACK. PIN 1P	

* New Parts

RX-V673/HTR-6065/
RX-A720

• OVERALL ASSEMBLY



RX-V673/HTR-6065

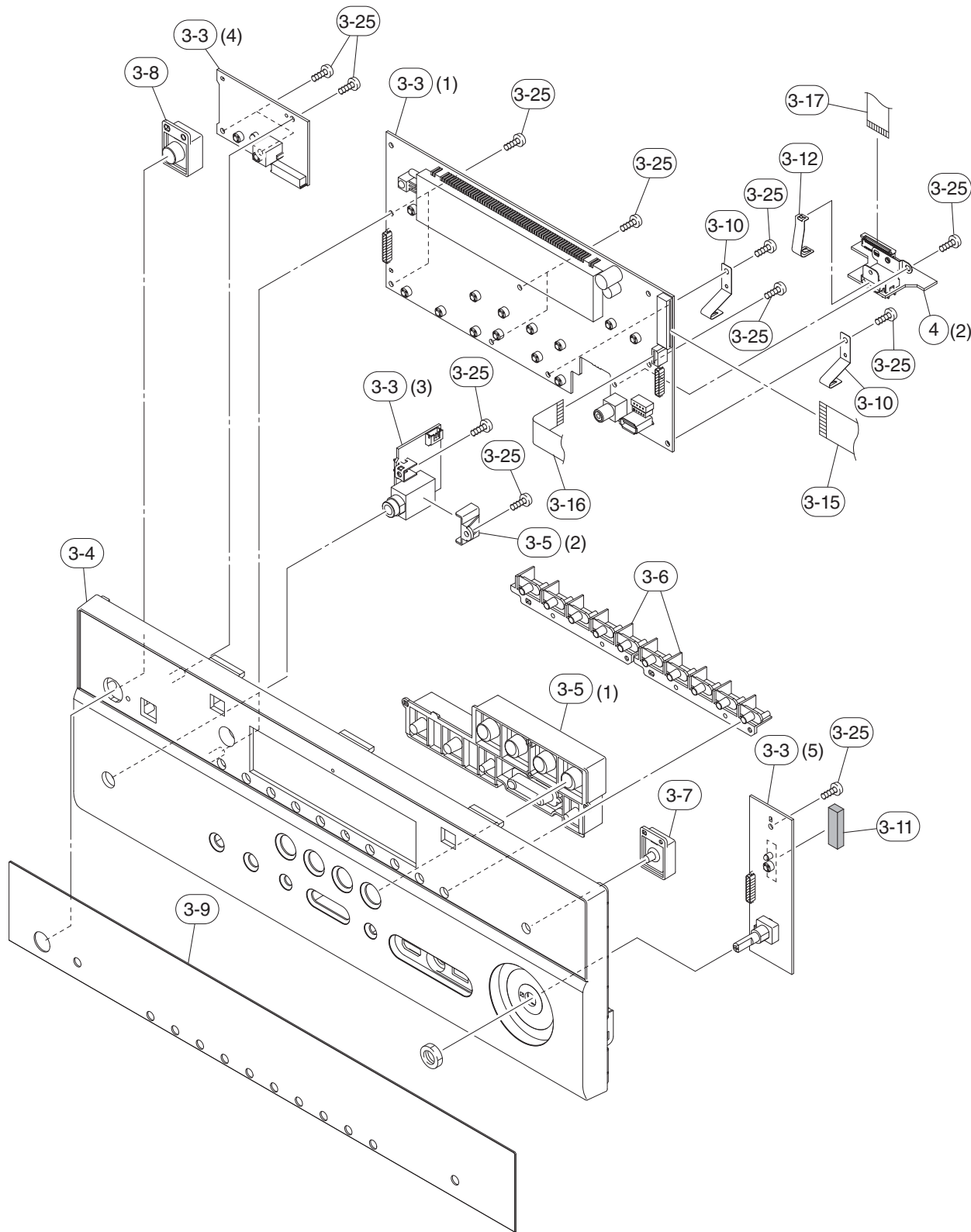
Ref No.	Part No.	Description	Remarks	Markets
* 2-3	ZC104600	P. C. B. ASSEMBLY	VIDEO	U
* 2-3	ZC104700	P. C. B. ASSEMBLY	VIDEO	C
* 2-3	ZC104800	P. C. B. ASSEMBLY	VIDEO	RS
* 2-3	ZC104900	P. C. B. ASSEMBLY	VIDEO	T
* 2-3	ZC105000	P. C. B. ASSEMBLY	VIDEO	K
* 2-3	ZC105100	P. C. B. ASSEMBLY	VIDEO	A
* 2-3	ZC105200	P. C. B. ASSEMBLY	VIDEO	BGF
* 2-3	ZC105300	P. C. B. ASSEMBLY	VIDEO	LH
* 3-3	ZC102100	P. C. B. ASSEMBLY	OPERATION	UC
* 3-3	ZC102200	P. C. B. ASSEMBLY	OPERATION	RTKABGFLSH
* 4	ZC099900	P. C. B. ASSEMBLY	DIGITAL	
12	WW891000	AM/FM TUNER	FAEH08-W02	UCRTLSH
12	WW891100	AM/FM TUNER	FAEH08-E02	KABGF
△ * 15	YD387A00	POWER TRANSFORMER		UC
△ * 15	YD388A00	POWER TRANSFORMER		RS
△ * 15	YD389A00	POWER TRANSFORMER		TK
△ * 15	YD390A00	POWER TRANSFORMER		ALH
△ * 15	YD391A00	POWER TRANSFORMER		BGF
△ 16	WY040900	POWER CABLE	1.8m	UC
△ 16	WY042500	POWER CABLE	1.8m	R
△ 16	WY042600	POWER CABLE	1.8m	T
△ 16	WY042400	POWER CABLE	1.8m	K
△ 16	WY042100	POWER CABLE	1.8m	A
△ 16	WY041100	POWER CABLE	1.8m	B
△ 16	WR336900	POWER CABLE	2m	GFL
△ * 16	ZC898500	POWER CABLE	1.8m	S
△ 16	WY094600	POWER CABLE	1.8m	H
17	V2438700	CORD STOPPER	10P1	
* 25	ZC038600	FLEXIBLE FLAT CABLE	20P 200mm P=1.25	
* 26	ZC038500	FLEXIBLE FLAT CABLE	16P 250mm P=1.25	
31	WY194600	FLEXIBLE FLAT CABLE	9P 100mm P=1.25	
* 101	ZA554700	TOP COVER		GD (Gold)
* 101	ZA554500	TOP COVER		BL (Black)
* 101	ZA554600	TOP COVER		TI (Titanium)
* 103	ZA558400	REAR PANEL		UC
* 103	ZA558500	REAR PANEL		RS
* 103	ZA558600	REAR PANEL		T
* 103	ZA558800	REAR PANEL		KALH
* 103	ZA558900	REAR PANEL		BGF
* 107	ZC017300	FFC BARRIER		
109	WQ664500	SUPPORT	H8	
* 120	ZC181800	LEG	D60/H21 Black	
* 121	ZA168900	KNOB	D52 VOLUME	GD (Gold)
* 121	ZA168700	KNOB	D52 VOLUME	BL (Black)

* New Parts

Ref No.	Part No.	Description	Remarks	Markets
* 121	ZA168800	KNOB	D52 VOLUME	TI (Titanium)
151	V5881100	CUSHION	5x8x25	
152	WC879000	DAMPER	SCREW MASK	
153	WR377400	DAMPER	14x10x10	
160	WE774100	BIND HEAD BONDING B-T. SCREW	3x8 MFZN2B3	
163	WE774300	BIND HEAD B-TIGHT SCREW	3x8 MFZN2W3	
164	WE877900	BIND HEAD S-TIGHT SCREW	3x6 MFZN2W3	
167	WF002600	PW HEAD B-TIGHT SCREW	3x8 MFZN2W3	
168	WE774600	HEXAGONAL HEAD B-TIGHT SCREW	3x18 MFZN2W3	
170	WU048900	BIND HEAD S-TIGHT SCREW	4x10 MFZN2W3	
171	VDO69600	PW HEAD S-TIGHT SCREW	4x8-10 MFN133	GD (Gold)
171	VH313200	PW HEAD S-TIGHT SCREW	4x8-10 MFN13BL	BL (Black)
171	VDO69600	PW HEAD S-TIGHT SCREW	4x8-10 MFN133	TI (Titanium)
175	VQ368600	PUSH RIVET	P3555-B	
		ACCESSORIES		
* 200	ZA238200	REMOTE CONTROL	RAV472	000-224700010
200-1	AAX82380	BATTERY COVER	Black	CG-2209
202	V6267000	FM ANTENNA	1.4m 1pc	UCRTLSH
202	VQ147100	FM ANTENNA	1.4m 1pc	KABGF
203	VR248500	AM ANTENNA	1m 1pc	
204	WN649600	YPAO MICROPHONE	6m 1pc	EM6022L-HN1700
* 205	ZC175500	REMOTE CONTROL SHEET	1pc	T
		BATTERY	R03, AAA, UM-4 2pcs	

* New Parts

• FRONT PANEL UNIT

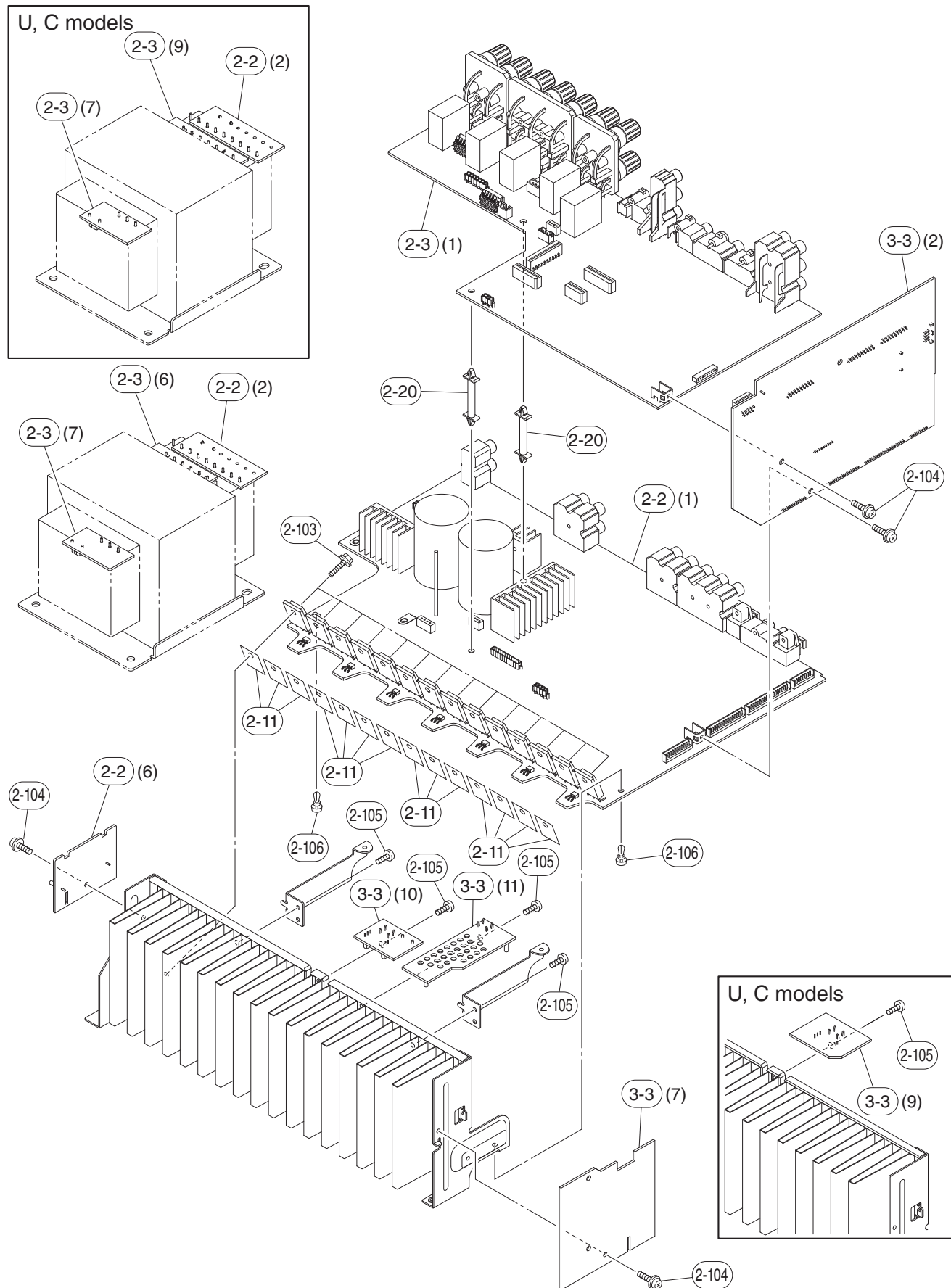


Ref No.	Part No.	Description	Remarks	Markets
* 3-3	ZC102100	P. C. B. ASSEMBLY	OPERATION	UC
* 3-3	ZC102200	P. C. B. ASSEMBLY	OPERATION	RTKABGFLSH
* 3-4	ZA582000	FRONT PANEL		GD (Gold)
* 3-4	ZA581800	FRONT PANEL	RX-V673, HTR-6065	BL (Black)
* 3-4	ZA581900	FRONT PANEL		TI (Titanium)
* 3-5	ZA281500	BUTTON	SCENE	GD (Gold)
* 3-5	ZA281300	BUTTON	SCENE	BL (Black)
* 3-5	ZA281400	BUTTON	SCENE	TI (Titanium)
3-6	WT823900	BUTTON	TUNER	
3-7	WT871300	BUTTON	PURE DIRECT	
3-8	WT843800	BUTTON	POWER	
* 3-9	ZA582100	WINDOW SHEET		RX-V673
* 3-9	ZA582200	WINDOW SHEET		HTR-6065
* 3-10	ZA582300	EARTH PLATE	OPEARTION	
3-11	V5881100	CUSHION	5x8x25	
* 3-12	ZA582400	EARTH PLATE		
3-15	WY194500	FLEXIBLE FLAT CABLE	26P 300mm P=1.25	
* 3-16	ZA116800	FLEXIBLE FLAT CABLE	6P 300mm P=1.25	
* 3-17	ZA116600	FLEXIBLE FLAT CABLE	22P 210mm P=1.0	
3-25	WE774800	BIND HEAD P-TIGHT SCREW	3x8 MFZN2W3	
* 4	ZC099900	P. C. B. ASSEMBLY	DIGITAL	

* New Parts

RX-V673/HTR-6065

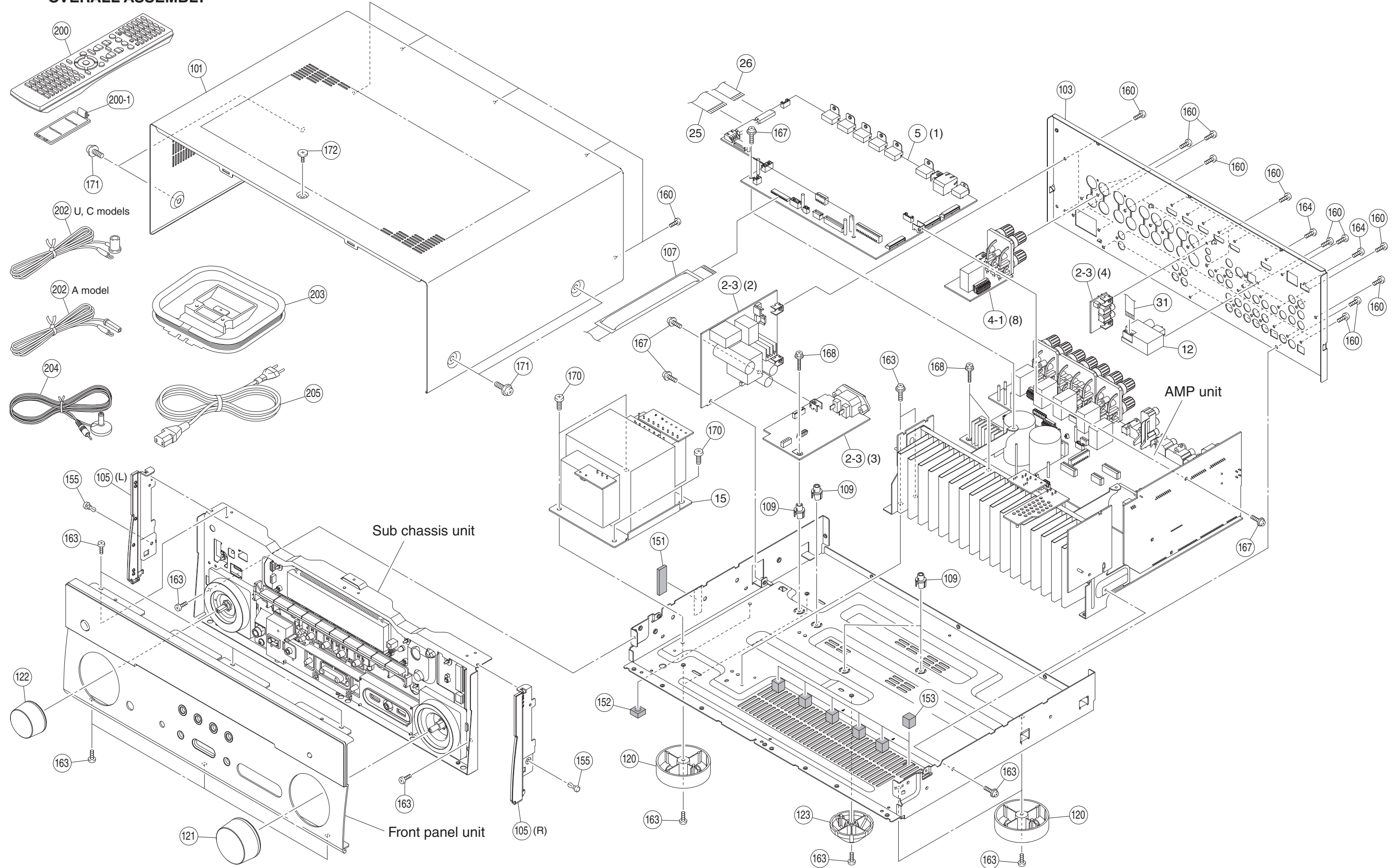
• AMP UNIT



Ref No.	Part No.	Description	Remarks	Markets
* 2-2	WZ886500	P. C. B. ASSEMBLY	MAIN	UCRTKALSH
* 2-2	WZ886600	P. C. B. ASSEMBLY	MAIN	B
* 2-2	WZ886700	P. C. B. ASSEMBLY	MAIN	GF
* 2-3	ZC104600	P. C. B. ASSEMBLY	VIDEO	U
* 2-3	ZC104700	P. C. B. ASSEMBLY	VIDEO	C
* 2-3	ZC104800	P. C. B. ASSEMBLY	VIDEO	RS
* 2-3	ZC104900	P. C. B. ASSEMBLY	VIDEO	T
* 2-3	ZC105000	P. C. B. ASSEMBLY	VIDEO	K
* 2-3	ZC105100	P. C. B. ASSEMBLY	VIDEO	A
* 2-3	ZC105200	P. C. B. ASSEMBLY	VIDEO	BGF
* 2-3	ZC105300	P. C. B. ASSEMBLY	VIDEO	LH
2-11	WQ753200	RADIATION SHEET	40x23x0.06 MICA	
2-20	WS000800	SPACER SUPPORT	LCA4-29M PIN	
2-103	WM220800	HEXAGONAL HEAD B-TIGHT SCREW	3x15 SP MFZN2W3	
2-104	WFO02600	PW HEAD B-TIGHT SCREW	3x8 MFZN2W3	
2-105	WE774300	BIND HEAD B-TIGHT SCREW	3x8 MFZN2W3	
2-106	VQ368600	PUSH RIVET	P3555-B	
* 3-3	ZC102100	P. C. B. ASSEMBLY	OPERATION	UC
* 3-3	ZC102200	P. C. B. ASSEMBLY	OPERATION	RTKABGFLSH

* New Parts

• OVERALL ASSEMBLY



RX-A720

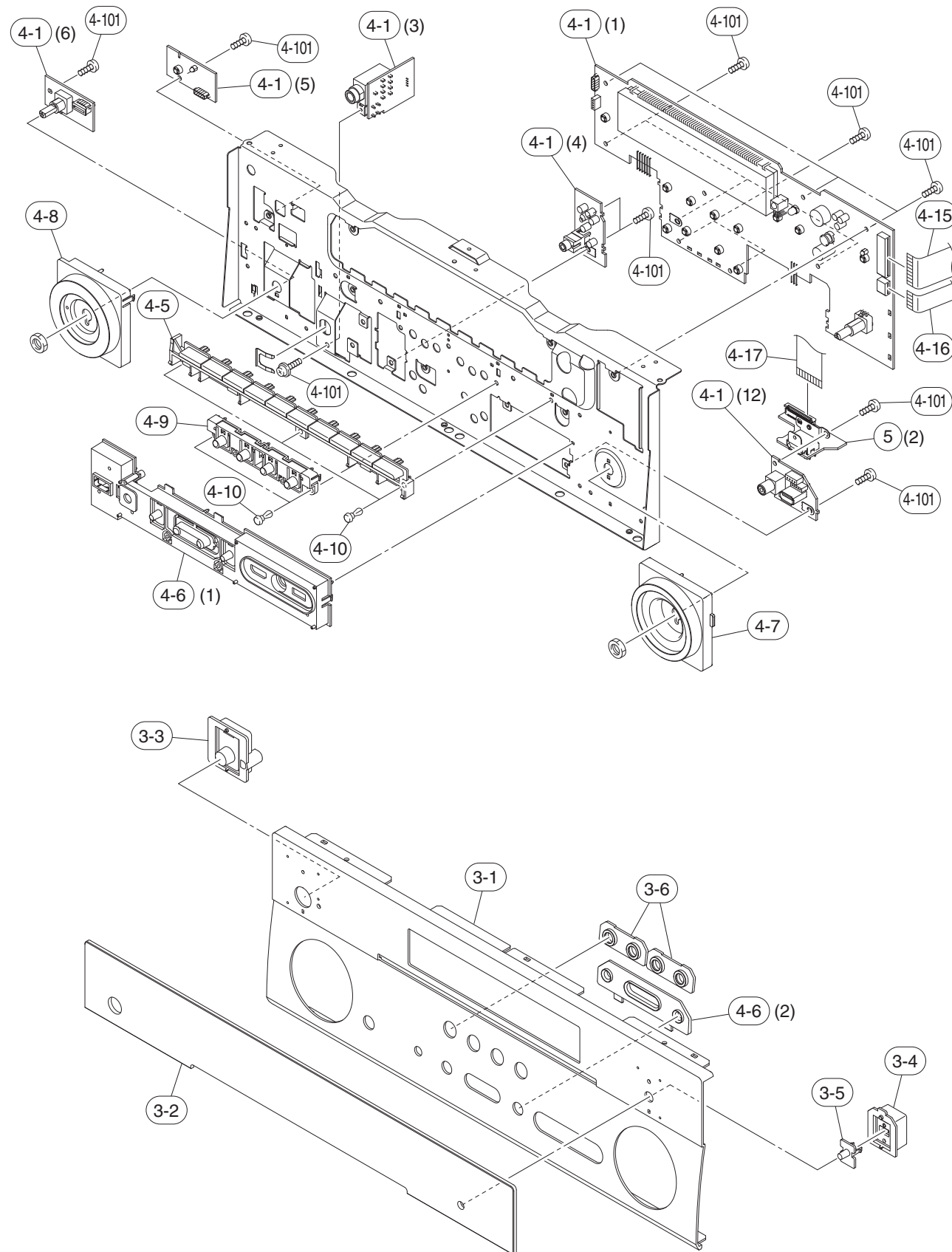
Ref No.	Part No.	Description	Remarks	Markets
* 2-3	ZC105400	P. C. B. ASSEMBLY	VIDEO	U
* 2-3	ZC105500	P. C. B. ASSEMBLY	VIDEO	C
* 2-3	ZC105600	P. C. B. ASSEMBLY	VIDEO	A
* 4-1	ZC102400	P. C. B. ASSEMBLY	OPERATION	UC
* 4-1	ZC102500	P. C. B. ASSEMBLY	OPERATION	A
* 5	ZC099900	P. C. B. ASSEMBLY	DIGITAL	
12	WW891000	AM/FM TUNER	FAEH08-W02	UC
12	WW891100	AM/FM TUNER	FAEH08-E02	A
△ * 15	YD387A00	POWER TRANSFORMER		UC
△ * 15	YD390A00	POWER TRANSFORMER		A
* 25	ZC038600	FLEXIBLE FLAT CABLE	20P 200mm P=1.25	
* 26	ZC038500	FLEXIBLE FLAT CABLE	16P 250mm P=1.25	
31	WY194600	FLEXIBLE FLAT CABLE	9P 100mm P=1.25	
101	WQ665500	TOP COVER		
* 103	ZA559300	REAR PANEL		
105	WW982200	SIDE PLATE		
* 107	ZC017300	FFC BARRIER		
109	WQ664500	SUPPORT	H8	
* 120	ZC181800	LEG	D60/H21 Black	
121	WW981000	KNOB	D48 VOLUME	
122	WW981300	KNOB	D38 INPUT	
123	WV139700	CENTER LEG	D48	
151	V5881100	CUSHION	5x8x25	
152	WC879000	DAMPER	SCREW MASK	
153	WR377400	DAMPER	14x10x10	
155	VQ368600	PUSH RIVET	P3555-B	
160	WE774100	BIND HEAD BONDING B-T. SCREW	3x8 MFZN2B3	
163	WE774300	BIND HEAD B-TIGHT SCREW	3x8 MFZN2W3	
164	WE877900	BIND HEAD S-TIGHT SCREW	3x6 MFZN2W3	
167	WFO02600	PW HEAD B-TIGHT SCREW	3x8 MFZN2W3	
168	WE774600	HEXAGONAL HEAD B-TIGHT SCREW	3x18 MFZN2W3	
170	WU048900	BIND HEAD S-TIGHT SCREW	4x10 MFZN2W3	
171	VH313200	PW HEAD S-TIGHT SCREW	4x8-10 MFN13BL	
172	WE200500	DISH HEAD B-TIGHT SCREW	3x6 MFN13BL	

* New Parts

Ref No.	Part No.	Description	Remarks	Markets
		ACCESSORIES		
* 200	ZA238200	REMOTE CONTROL	RAV472	000-224700010
200-1	AAX82380	BATTERY COVER	Black	CG-2209
202	V6267000	FM ANTENNA	1.4m 1pc	UC
202	VQ147100	FM ANTENNA	1.4m 1pc	A
203	VR248500	AM ANTENNA	1m 1pc	
204	WN649600	YPAO MICROPHONE	6m 1pc	EM6022L-HN1700
△ 205	WU900300	POWER CABLE	2m 1pc	UC
△ 205	WB750900	POWER CABLE	2m 1pc	A
		BATTERY	R03, AAA, UM-4 2pcs	

* New Parts

• FRONT PANEL UNIT and SUB-CHASSIS UNIT

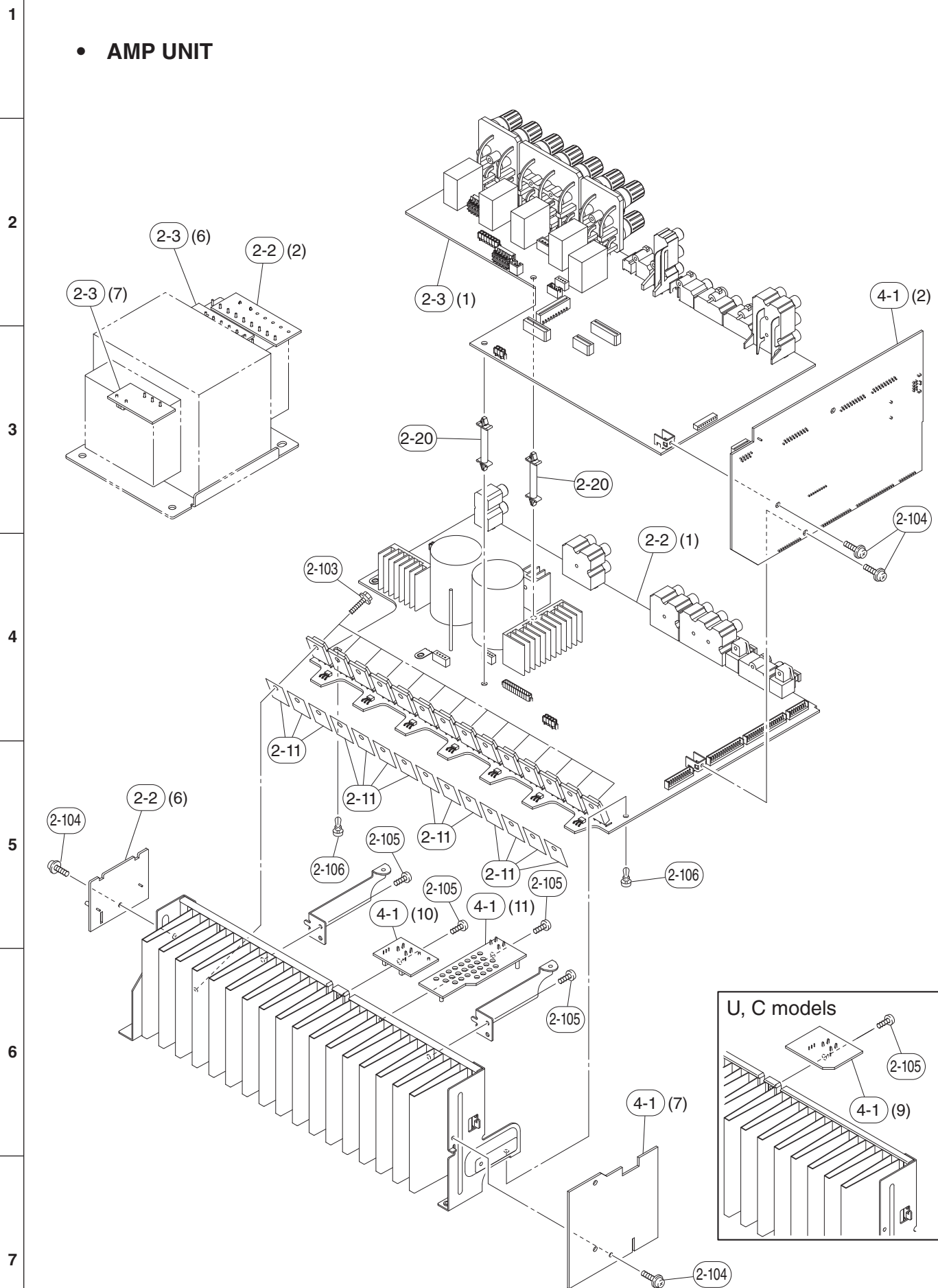


Ref No.	Part No.	Description	Remarks	Markets
* 3-1	ZA569500	FRONT PANEL		
* 3-2	ZA567900	WINDOW SHEET		
3-3	WW980100	BUTTON	POWER	
3-4	WW980500	BUTTON	PURE DIRECT	
3-5	WU155600	LENS	PURE DIRECT	
3-6	WW961500	ESCUTCHEON	SCENE	
* 4-1	ZC102400	P. C. B. ASSEMBLY	OPERATION	UC
* 4-1	ZC102500	P. C. B. ASSEMBLY	OPERATION	A
4-5	WW983400	BUTTON	TUNER	
* 4-6	ZA567100	BUTTON CASE		
4-7	WW981600	ESCUTCHEON	VOLUME	
4-8	WW981900	ESCUTCHEON	INPUT	
4-9	WW983100	BUTTON	SCENE	
4-10	VQ368600	PUSH RIVET	P3555-B	
4-15	WP242200	FLEXIBLE FLAT CABLE	26P 250mm P=1.25	
* 4-16	ZA116700	FLEXIBLE FLAT CABLE	6P 200mm P=1.25	
* 4-17	ZA116600	FLEXIBLE FLAT CABLE	22P 210mm P=1.0	
4-101	WE774300	BIND HEAD B-TIGHT SCREW	3x8 MFZN2W3	
* 5	ZC099900	P. C. B. ASSEMBLY	DIGITAL	

* New Parts

RX-A720

• AMP UNIT

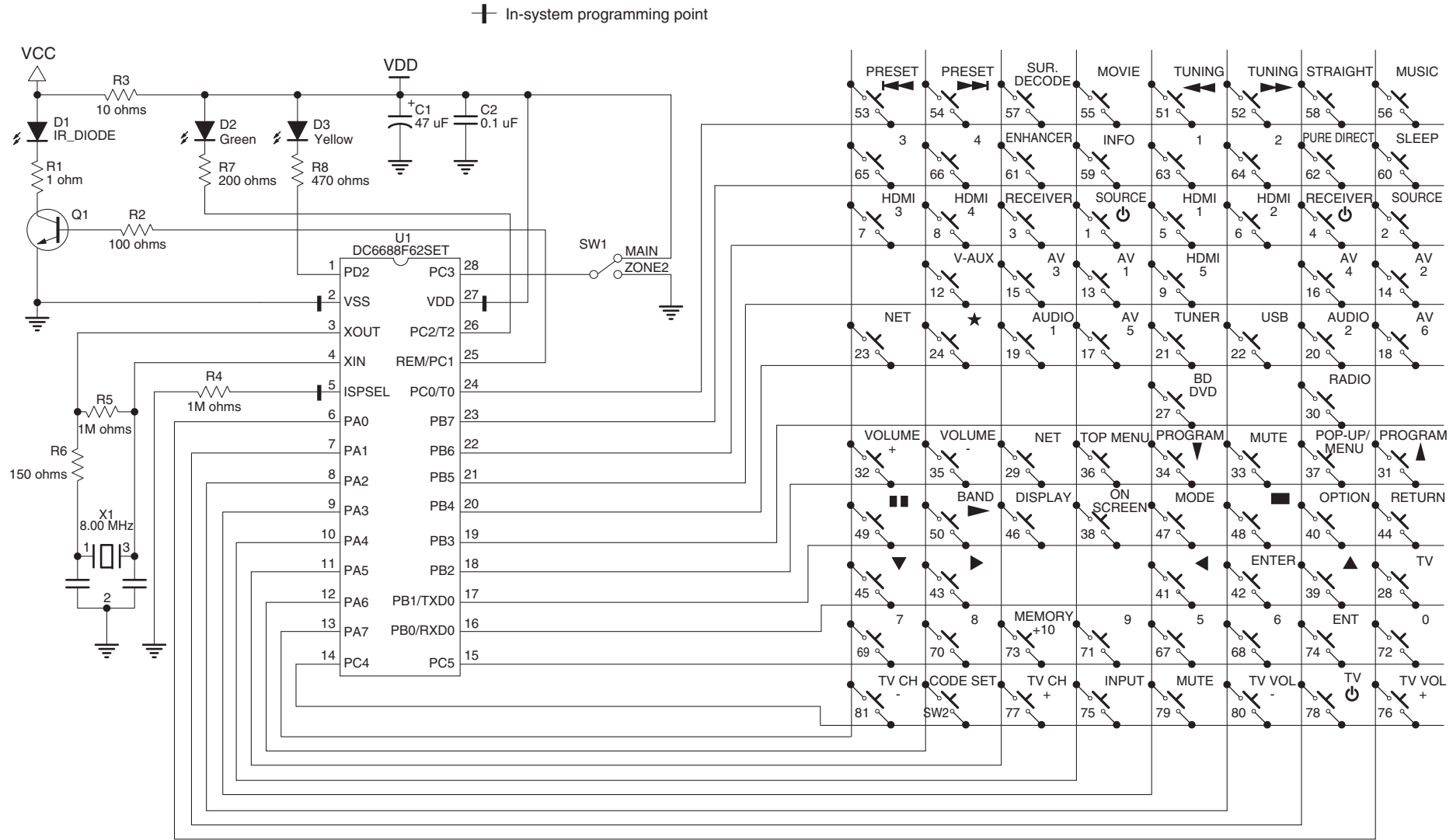


Ref No.	Part No.	Description	Remarks	Markets
* 2-2	WZ886500	P. C. B. ASSEMBLY	MAIN	
* 2-3	ZC105400	P. C. B. ASSEMBLY	VIDEO	U
* 2-3	ZC105500	P. C. B. ASSEMBLY	VIDEO	C
* 2-3	ZC105600	P. C. B. ASSEMBLY	VIDEO	A
2-11	WQ753200	RADIATION SHEET	40x23x0.06 MICA	
2-20	WS000800	SPACER SUPPORT	LCA4-29M PIN	
2-103	WM220800	HEXAGONAL HEAD B-TIGHT SCREW	3x15 SP MFZN2W3	
2-104	WF002600	PW HEAD B-TIGHT SCREW	3x8 MFZN2W3	
2-105	WE774300	BIND HEAD B-TIGHT SCREW	3x8 MFZN2W3	
2-106	VQ368600	PUSH RIVET	P3555-B	
* 4-1	ZC102400	P. C. B. ASSEMBLY	OPERATION	UC
* 4-1	ZC102500	P. C. B. ASSEMBLY	OPERATION	A

* New Parts

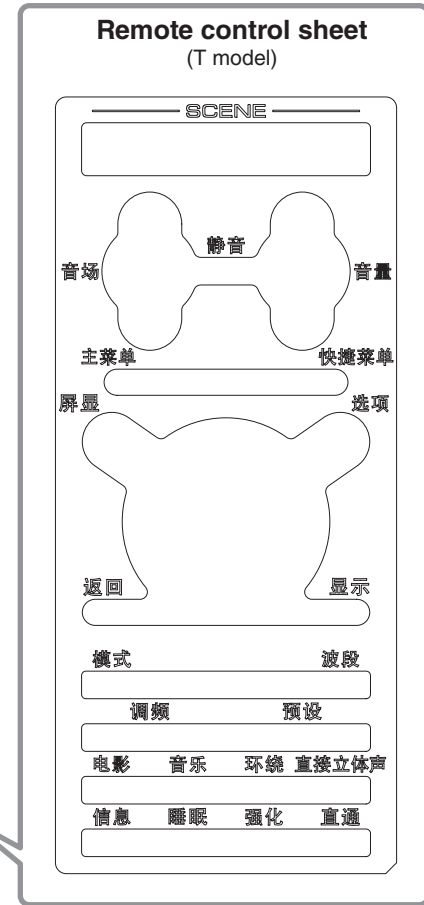
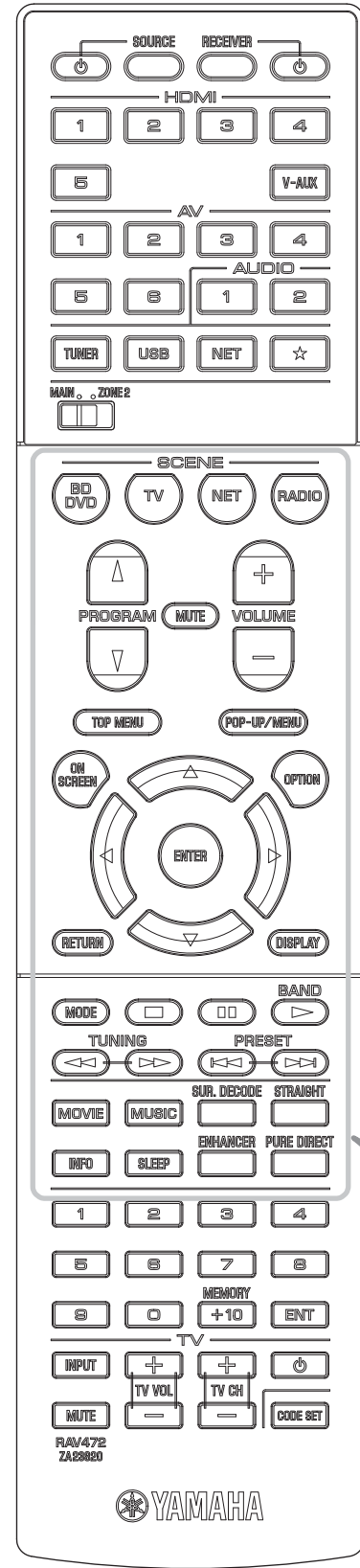
REMOTE CONTROL

SCHEMATIC DIAGRAM

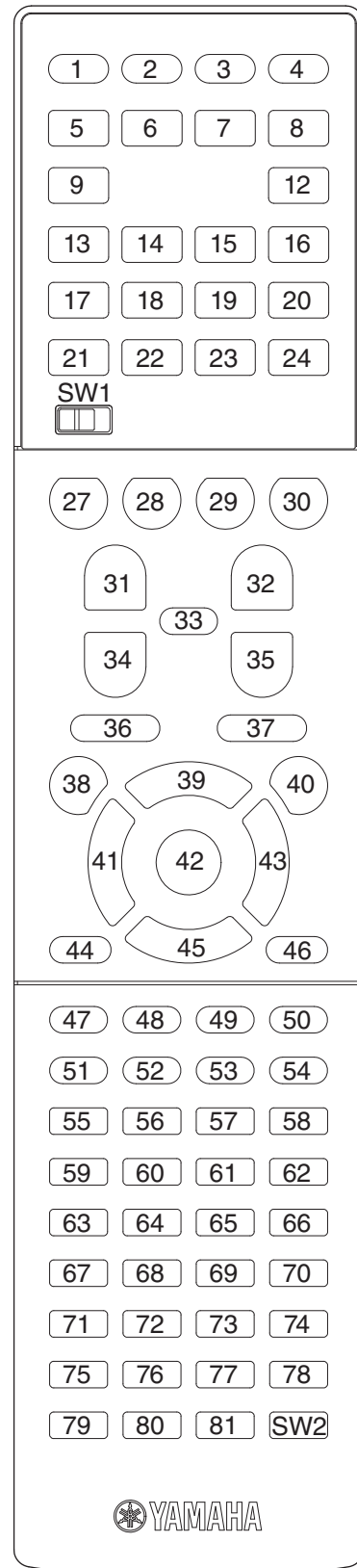


PANEL

RAV472



KEY NO. LAYOUT

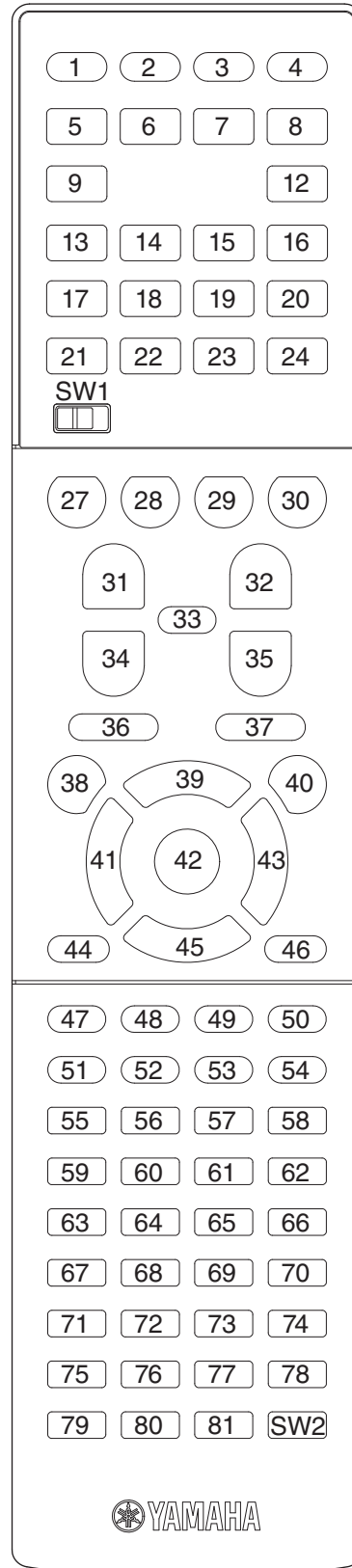


KEY CODE

RECEIVER MODE

Key No.	FUNCTION		ID-1 (5019)		ID-2 (5020)	
	(U, C, R, T, K, A, B, G, F, L, S, H models)	Remote control sheet (T model)	MAIN	ZONE2	MAIN	ZONE2
SW1	MAIN/ZONE2		[MAIN]	[ZONE2]	[MAIN]	[ZONE2]
SW2	CODE SET		[CODE SET]	[CODE SET]	[CODE SET]	[CODE SET]
K2	SOURCE		select RCU "mode: SOURCE"			
K3	RECEIVER		select RCU "mode: RECEIVER"			
"RECEIVER" (mode fixed)	K4 RECEIVER		7E-2A	7A-453A	7E-2AD4	7A-453B
	K5 HDMI-1		7A-4738	7A-4837	7A-4739	7A-4836
	K6 HDMI-2		7A-4A35	7A-4B34	7A-4A34	7A-4B35
	K7 HDMI-3		7A-4D32	7A-4E31	7A-4D33	7A-4E30
	K8 HDMI-4		7A-502F	7A-512E	7A-502E	7A-512F
	K9 HDMI-5		7A-700F	7A-710E	7A-700E	7A-710F
	K12 V-AUX		7A-55	7A-D8	7A-55AB	7A-D826
	K13 AV-1		7A-532C	7A-542B	7A-532D	7A-542A
	K14 AV-2		7A-5629	7A-5728	7A-5628	7A-5729
	K15 AV-3		7A-5926	7A-5A25	7A-5927	7A-5A24
	K16 AV-4		7A-5C23	7A-5D22	7A-5C22	7A-5D23
	K17 AV-5		7A-5F20	7A-601F	7A-5F21	7A-601E
	K18 AV-6		7A-621D	7A-631C	7A-621C	7A-631D
	K19 AUDIO-1		7A-651A	7A-6619	7A-651B	7A-6618
	K20 AUDIO-2		7A-6817	7A-6916	7A-6816	7A-6917
	K21 TUNER		7A-16	7A-D2	7A-16E8	7A-D22C
	K22 USB		7F01-720D	7F01-730C	7F01-720C	7F01-730D
	K23 NET		7F01-3F	7F01-40	7F01-3FC1	7F01-40BE
	K24 ★		7A-14	7A-D0	7A-14EA	7A-D02E
	K27 BD/DVD (SCENE)		7A-007F	7A-017E	7A-007E	7A-017F
	K28 TV (SCENE)		7A-037C	7A-047B	7A-037D	7A-047A
	K29 NET (SCENE)		7A-0679	7A-0778	7A-0678	7A-0779
	K30 RADIO (SCENE)		7A-0976	7A-0A75	7A-0977	7A-0A74
	K31 PROGRAM ▲	音场	7A-58	-	7A-58A6	-
	K32 VOLUME (+)	音量	7A-1A	7A-DA	7A-1AE4	7A-DA24
	K33 MUTE	静音	7A-1C	7A-DC	7A-1CE2	7A-DC22
	K34 PROGRAM ▼	音场	7A-59	-	7A-59A7	-
	K35 VOLUME (-)	音量	7A-1B	7A-DB	7A-1BE5	7A-DB25
	K38 ON SCREEN	屏显	7A-84	7A-3B44	7A-847A	7A-3B45
	K40 OPTION	选项	7A-6B14	7A-6C13	7A-6B15	7A-6C12
	K55 MOVIE	电影	7A-88	-	7A-8876	-
	K56 MUSIC	音乐	7A-89	-	7A-8977	-
	K57 SUR. DECODE	环绕	7A-8D	-	7A-8D73	-
	K58 STRAIGHT	直接立体声	7A-56	-	7A-56A8	-
	K59 INFO	信息	7A-2758	7A-2857	7A-2759	7A-2856
	K60 SLEEP	睡眠	7A-30	7A-31	7A-30CE	7A-31CF
	K61 ENHANCER	强化	7A-94	-	7A-946A	-
	K62 PURE DIRECT	直通	7A-DD	-	7A-DD23	-

K41 [◀ cursor -LEFT] + K27 [SCENE -BD/DVD]	ID-1		
K41 [◀ cursor -LEFT] + K28 [SCENE -TV]		ID-2	
K43 [▶ cursor -RIGHT] + K27 [SCENE -BD/DVD]	MAIN		MAIN
K43 [▶ cursor -RIGHT] + K28 [SCENE -TV]		ZONE2	ZONE2
K43 [▶ cursor -RIGHT] + K29 [SCENE -NET]			




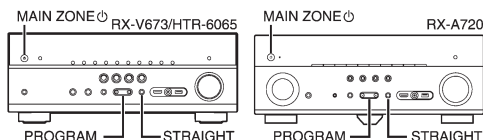
SOURCE MODE


Key No.	FUNCTION		IR code in "RECEIVER" mode				IR code in "SOURCE" mode	K24	K23	K22	K21	K20	K19	K18	K17	K16	K15	K14	K13	K12	K9	K8	K7	K6	K5
	(U, C, R, T, K, A, B, G, F, L, S, H models)	Remote control sheet (T model)	ID-1		ID-2		ID-1 / ID-2	[☆]	[NET]	[USB]	[TUNER]	[AU-DIO-2]	[AU-DIO-1]	[AV-6]	[AV-5]	[AV-4]	[AV-3]	[AV-2]	[AV-1]	[V-AUX]	[HDMI-5]	[HDMI-4]	[HDMI-3]	[HDMI-2]	[HDMI-1]
			MAIN	ZONE2	MAIN	ZONE2	MAIN / ZONE2 / ZONE3																		
"SOURCE/RECEIVER"	K1	SOURCE ϕ		7F01-50	7F01-70	7F01-50AE	7F01-708E																		
	K36	TOP MENU	主菜单	7A-A0DF	7A-A1DE	7A-A0DE	7A-A1DF	* SOURCE *																	* RECEIVER *
	K37	POP-UP MENU		7A-A4DB	7A-A5DA	7A-A4DA	7A-A5DB																		
	K39	▲ (UP)		7A-9D	7A-2B54	7A-9D63	7A-2B55																		
	K41	◀ (LEFT)		7A-9F	7A-2D52	7A-9F61	7A-2D53																		
	K42	ENTER		7A-DE	7A-2F50	7A-DE20	7A-2F51																		
	K43	▶ (RIGHT)		7A-9E	7A-2E51	7A-9E60	7A-2E50	* SOURCE *																	* RECEIVER *
	K44	RETURN		7A-AA	7A-3C43	7A-AA54	7A-3C42																		
	K45	▼ (DOWN)		7A-9C	7A-2C53	7A-9C62	7A-2C52																		
	K46	DISPLAY		7F01-60	7F01-80	7F01-609E	7F01-807E																		
	K47	MODE	模式	7F01-66	7F01-86	7F01-6698	7F01-8678																		
	K48	■ (STOP)		7F01-69	7F01-89	7F01-6997	7F01-8977																		
	K49	▣ (PAUSE)		7F01-67	7F01-87	7F01-6799	7F01-8779																		
	K50	BAND ▶ (PLAY)	波段	7F01-68	7F01-88	7F01-6896	7F01-8876	* SOURCE *																	* RECEIVER *
	K51	◀◀ (REW) / TUNING (-)	调频	7F01-6A	7F01-8A	7F01-6A94	7F01-8A74	* SOURCE *																	* RECEIVER *
	K52	▶▶ (FF) / TUNING (+)		7F01-6B	7F01-8B	7F01-6B95	7F01-8B75																		
	K53	◀◀ (SKIP) / PRESET (-)	预设	7F01-6C	7F01-8C	7F01-6C92	7F01-8C72	* SOURCE *																	* RECEIVER *
	K54	▶▶ (SKIP) / PRESET (+)		7F01-6D	7F01-8D	7F01-6D93	7F01-8D73																		
	K63	1		7F01-51	7F01-71	7F01-51AF	7F01-718F	* SOURCE *																	* RECEIVER *
	K64	2		7F01-52	7F01-72	7F01-52AC	7F01-728C																		
	K65	3		7F01-53	7F01-73	7F01-53AD	7F01-738D																		
	K66	4		7F01-54	7F01-74	7F01-54AA	7F01-748A																		
	K67	5		7F01-55	7F01-75	7F01-55AB	7F01-758B																		
	K68	6		7F01-56	7F01-76	7F01-56A8	7F01-7688																		
	K69	7		7F01-57	7F01-77	7F01-57A9	7F01-7789																		
	K70	8		7F01-58	7F01-78	7F01-58A6	7F01-7886																		
	K71	9		7F01-59	7F01-79	7F01-59A7	7F01-7987																		
	K72	0		7F01-5A	7F01-7A	7F01-5AA4	7F01-7A84																		
	K73	+10 / MEMORY		7F01-5B	7F01-7B	7F01-5BA5	7F01-7B85																		
	K74	ENT		7F01-5C	7F01-7C	7F01-5CA2	7F01-7C82																		
"SOURCE" (mode fixed)	K75	TV -INPUT																							* TV -INPUT
	K76	TV -VOL (+)																							* TV -VOL (+)
	K77	TV -CH (+)																							* TV -CH (+)
	K78	TV - ϕ						* SOURCE (TV) *																	* TV - ϕ
	K79	TV -MUTE																							* TV -MUTE
	K80	TV -VOL (-)																							* TV -VOL (-)
	K81	TV -CH (-)																							* TV -CH (-)

■ ADVANCED SETUP

Configure the system settings of the unit while viewing the front display.

- 1 Set the unit to standby mode.
- 2 While holding down **STRAIGHT** on the front panel, press **MAIN ZONE** .



- 3 Press **PROGRAM** to select an item.
- 4 Press **STRAIGHT** to select a setting.
- 5 Press **MAIN ZONE**  to set the unit to standby mode and turn it on again.

The new settings take effect.

ADVANCED SETUP menu items

Item	Function
SP IMP.	Changes the speaker impedance setting.
REMOTE ID	Selects the unit's remote control ID.
TU (R, T, K, L, S, H models)	Changes the FM/AM tuning frequency setting.
TV FORMAT	Switches the video signal type.
MON.CHK	Removes the limitation on HDMI video output.
INIT	Restores the default settings.
UPDATE	Updates the firmware.
VERSION	Checks the version of firmware currently installed on the unit.

Changing the speaker impedance setting (SP IMP.)

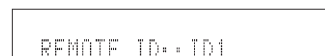


Change the unit's speaker impedance settings depending on the impedance of the speakers connected.

Settings

6 Ω MIN	Select this option when you connect 6-ohm speakers to the unit. You can also use 4-ohm speakers as the front speakers.
8 Ω MIN (default)	Select this option when you connect 8-ohm or higher speakers to the unit.

Selecting the remote control ID (REMOTE ID)



Change the unit's remote control ID so that it matches the remote control's ID (default: ID1). When using multiple Yamaha AV receivers, you can set each remote control with a unique remote control ID for its corresponding receiver.

Settings

ID1 (default), ID2

■ Changing the remote control ID of the remote control

Perform each of the following steps within 1 minute. Otherwise, the setting will be automatically canceled.

- 1 Press **CODE SET** on the remote control.
- 2 Press **RECEIVER**.
- 3 Use the numeric keys to enter "5019" (ID1) or "5020" (ID2).

Once the remote control ID is registered successfully, SOURCE blinks twice. If it blinks six times, registration failed. Repeat from Step 1.



The registered remote control codes are not cleared even if you change the remote control ID.

Changing the FM/AM tuning frequency setting (TU)

(R, T, K, L, S, H models)

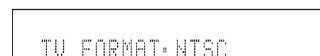


Change the FM/AM tuning frequency setting of the unit depending on your country or region.

Settings

FM100/AM10	Select this when you want to adjust the FM frequency by 100-kHz steps and AM by 10-kHz steps.
FM50/AM9 (default)	Select this when you want to adjust the FM frequency by 50-kHz steps and AM by 9-kHz steps.

Switching the video signal type (TV FORMAT)



Switch the video signal type of the unit so that it matches to the format of your TV.

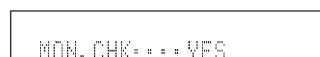
Settings

NTSC, PAL

Default

U.S.A., Canada, Korea and General models: NTSC
Other models: PAL

Removing the limitation on HDMI video output (MON.CHK)



The unit automatically detects resolutions supported by a TV connected to the HDMI OUT jack.

Disable the monitor check function if you want to specify a resolution in "Resolution" when the unit cannot detect the TV's resolution or when you want to specify a different resolution than the detected resolution.

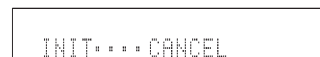
Settings

YES (default)	Enables the monitor check function. (Outputs video signals with a resolution supported by the TV only.)
SKIP	Disables the monitor check function. (Outputs video signals with a specified resolution regardless of compatibility with the TV.)



Reset to "YES" if the unit becomes inoperable because video from the unit cannot be displayed on the TV after "MON.CHK" has been set to "SKIP".

Restoring the default settings (INIT)

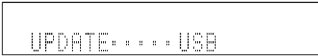


Restores the default settings for the unit.

Choices

VIDEO	Restores the default settings for video configurations.
ALL	Restores the default settings for the unit.
CANCEL	Does not perform an initialization.

Updating the firmware (UPDATE)



New firmware that provides additional features or product improvements will be released as needed. Updates can be downloaded from our website. If the unit is connected to the Internet, you can download the firmware via the network. For details, refer to the information supplied with updates.

■ Firmware update procedure

Do not perform this procedure unless firmware update is necessary. Also, make sure you read the information supplied with updates before updating the firmware.

- 1 Press **STRAIGHT** repeatedly to select "USB" or "NETWORK" and press **INFO** to start firmware update.

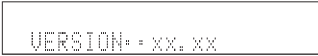
Choices

USB	Update the firmware using a USB memory device.
NETWORK	Update the firmware via the network.



- If the unit detects newer firmware over the network, the corresponding message will be displayed after **ON SCREEN** is pressed. In this case, you can also update the unit's firmware by following the procedure in "Updating the unit's firmware".

Checking the firmware version (VERSION)



Check the version of firmware currently installed on the unit.



- You can also check the firmware version in "System" in the "Information" menu.

FIRMWARE UPDATING PROCEDURE

! IMPORTANT NOTICE

Do not attempt to update your Yamaha receiver using any other data file except those provided directly from the Yamaha website or through your network connection.

Follow the instructions carefully and do not attempt any other procedures not specified in the instructions provided by Yamaha.

Improperly updated products may cause improper operation, and any parts or service required to restore proper operation will not be covered under the Yamaha Limited Warranty.

Choose from the following 2 methods to update to the latest firmware.

Click here for [Firmware Update Through the Internet](#)

(Connection to the Internet is required)

Click here for [Firmware Update by USB](#)

(A USB thumb drive is required)

In case of error, see the [Troubleshooting](#) section

Firmware Update Through the Internet

Requirement: Internet connection

Your receiver is connected to the Internet if you can receive Internet radio stations.

(See owner's manual for details)

1 Power off the receiver (Standby mode)

2 Enter the ADVANCED SETUP mode

While pressing the **STRAIGHT** key, press the **MAIN ZONE** key and keep **STRAIGHT** key pressed until "ADVANCED SETUP" appears on the front panel display.

* "ADVANCED SETUP" is displayed only for a few seconds.

3 Select "FIRM UPDATE" from the menu

- Press the **PROGRAM** key until "UPDATE: USB" is displayed.
- Then, press **STRAIGHT** key until "UPDATE: NETWORK" is displayed.



4 Start firmware update

- Press **INFO** key to start the update.
(Update process may take up to 15 minutes)

* If "UPDATE SUCCESS" appears, this means your receiver is already up-to-date. In this case, power off to exit from Advanced Setup. Your AV receiver is ready for normal use.

Firmware update in progress



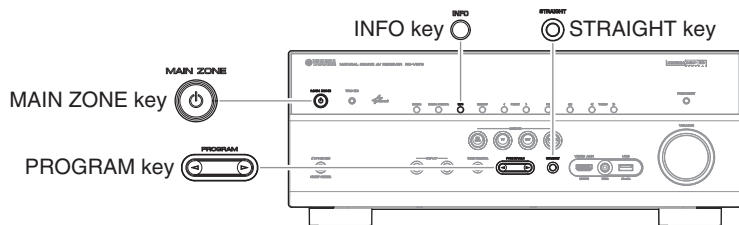

! Caution

DO NOT interrupt power during the update.

In case the power is accidentally cut off resulting in a condition where you can't recover normal operation, refer to the troubleshooting method (**Troubleshooting CASE 2**) on the last page.

- When completed, "UPDATE SUCCESS" appears on the display.

- Turn off the power of the receiver by pressing the **MAIN ZONE** key.



5 Check the updated firmware version

- a. Power on the AV receiver and press the **ON SCREEN** key on the remote control.
- b. Select "Information" > "System".
- c. Confirm that the firmware version is updated to the latest version.

ON SCREEN key 



Congratulations!

You have completed the firmware update. Your AV receiver is ready for normal use.

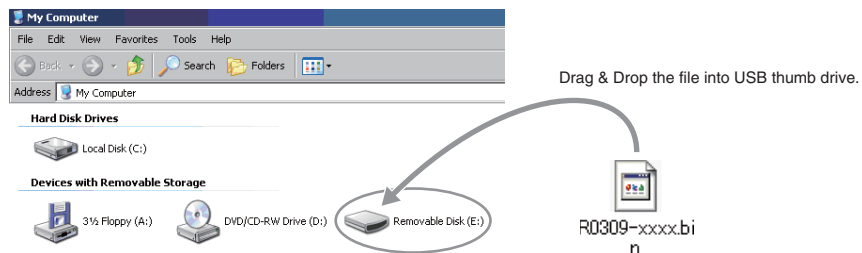
Firmware Update by USB

Requirement: USB thumb drive, with enough free space to store over 25MB.
(File system with FAT16 or FAT32 format)

Firmware file provided by YAMAHA, "R0309-xxxx.bin".

1 Prepare USB thumb drive for the update

Download the firmware, unzip and copy "R0309-xxxx.bin" into the root directory of the USB thumb drive.



2 Power off the receiver (Standby mode)

3 Insert the USB thumb drive

USB port is located at the lower left corner of the front panel.

4 Enter the ADVANCED SETUP mode

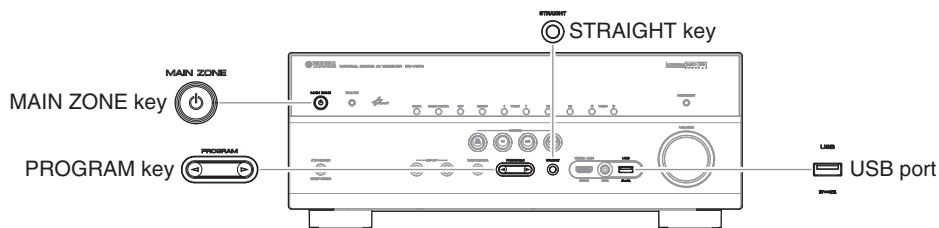
While pressing the **STRAIGHT** key, press the **MAIN ZONE** key and keep **STRAIGHT** key pressed until "ADVANCED SETUP" appears on the front panel display.

ADVANCED SETUP

5 Select firmware update from the menu

Press the **PROGRAM** key until "UPDATE: USB" is displayed.

UPDATE: USB



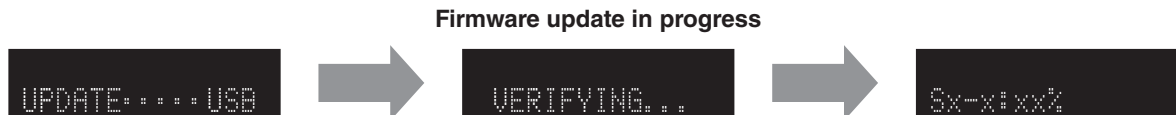
RX-V673/HTR-6065

6 Start firmware update

- a. Press **INFO** key to start the update.

(Update process may take up to 10 minutes)

- * If "UPDATE SUCCESS" appears, this means your receiver is already up-to-date. In this case, power off to exit from Advanced Setup. Your AV receiver is ready for normal use.



! Caution

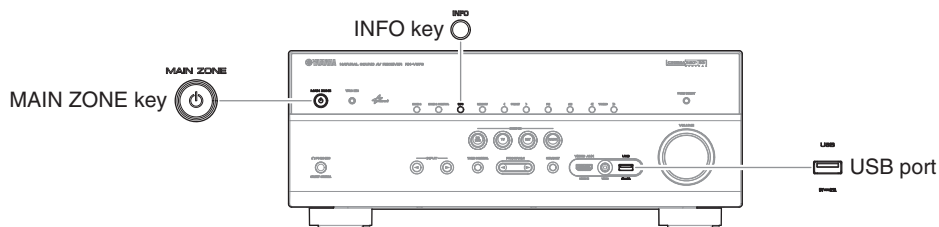
DO NOT interrupt power during the update.

In case the power is accidentally cut off resulting in a condition where you can't recover normal operation, refer to the troubleshooting method (**Troubleshooting CASE 2**) on the last page.

- b. When completed, "UPDATE SUCCESS" appears on the display.

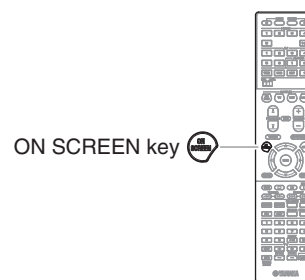


- c. Turn off the power of the receiver by pressing the **MAIN ZONE** key.



7 Check the updated firmware version

- Power on the AV receiver and press the **ON SCREEN** key on the remote control.
- Select "Information" > "System".
- Confirm that the firmware version is updated to the latest version.



Congratulations!

You have completed the firmware update. Your AV receiver is ready for normal use.

Troubleshooting

CASE 1 Error message appeared during the update

Cause: For some reason, the receiver can't read the firmware data.

Method: For your solution, check the following

[Update through Internet]

- Check Internet connection.
Your Internet connection is working by playing an Internet radio station.
(See owner's manual for details)

[Update by USB thumb drive]

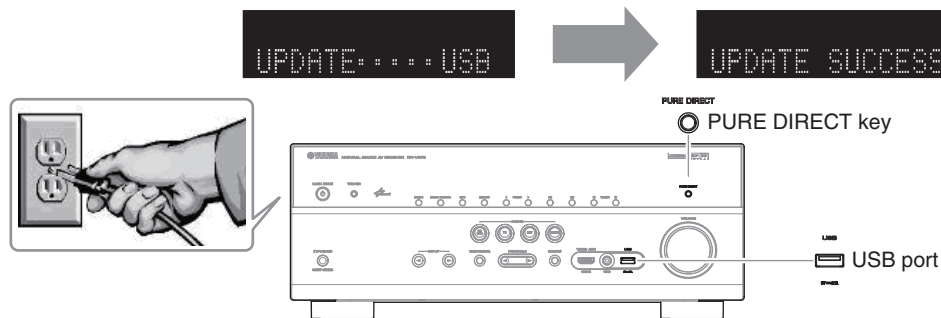
- USB thumb drive is connected properly to the receiver.
- USB thumb drive is not password protected.
(AV receiver cannot read data from a security protected USB thumb drive)
- Make sure the USB thumb drive is inserted before the receiver is powered on for the update.
- The firmware data, R0309-xxxx.bin is stored in the root directory of the USB thumb drive.
- There is no other data except the firmware data in the USB thumb drive.
- No folders are created in the USB thumb drive.
Else, retry the update by USB using another USB thumb drive.

CASE 2 Firmware update doesn't start for other reasons

- Receiver doesn't power up after the update.
- Or, error message appeared when confirming the firmware version.

Recovery method using USB method:

1. Unplug the AC power cable from wall outlet.
2. Insert the USB thumb drive which has the firmware data stored inside, into the USB port located on the front panel.
3. Press and hold the **PURE DIRECT** key and keep it pressed while you plug the AC power cable back into the wall outlet again.
"USB UPDATE" will appear on the front display. Then, release the **PURE DIRECT** key.
4. The update will start automatically.
5. When "UPDATE:.....USB" appears on the display, firmware update is completed.
Power off the receiver and remove the USB thumb drive.
6. Confirm updated firmware version.



FIRMWARE UPDATING PROCEDURE

! IMPORTANT NOTICE

Do not attempt to update your Yamaha receiver using any other data file except those provided directly from the Yamaha website or through your network connection.

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Improperly updated products may cause improper operation, and any parts or service required to restore proper operation will not be covered under the Yamaha Limited Warranty.

Choose from the following 2 methods to update to the latest firmware.

Click here for [Firmware Update Through the Internet](#)

(Connection to the Internet is required)

Click here for [Firmware Update by USB](#)

(A USB thumb drive is required)

In case of error, see the [Troubleshooting](#) section

Firmware Update Through the Internet

Requirement: Internet connection

Your receiver is connected to the Internet if you can receive Internet radio stations.

(See owner's manual for details)

1 Power off the receiver (Standby mode)

2 Enter the ADVANCED SETUP mode

While pressing the **STRAIGHT** key, press the **MAIN ZONE** key and keep **STRAIGHT** key pressed until "ADVANCED SETUP" appears on the front panel display.

* "ADVANCED SETUP" is displayed only for a few seconds.

3 Select "FIRM UPDATE" from the menu

- Press the **PROGRAM** key until "UPDATE: USB" is displayed.
- Then, press **STRAIGHT** key until "UPDATE: NETWORK" is displayed.



4 Start firmware update

- Press **INFO** key to start the update.
(Update process may take up to 15 minutes)

* If "UPDATE SUCCESS" appears, this means your receiver is already up-to-date. In this case, power off to exit from Advanced Setup. Your AV receiver is ready for normal use.

Firmware update in progress



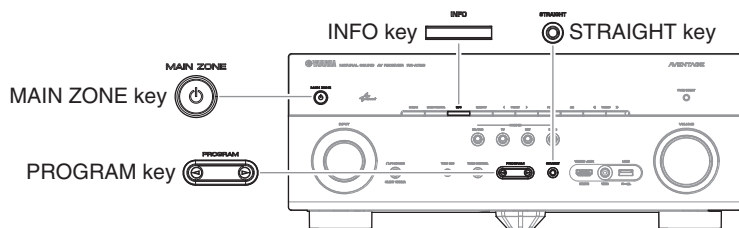

! Caution

DO NOT interrupt power during the update.

In case the power is accidentally cut off resulting in a condition where you can't recover normal operation, refer to the troubleshooting method (**Troubleshooting CASE 2**) on the last page.

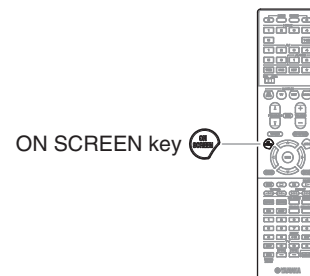
- When completed, "UPDATE SUCCESS" appears on the display.

- Turn off the power of the receiver by pressing the **MAIN ZONE** key.



5 Check the updated firmware version

- a. Power on the AV receiver and press the **ON SCREEN** key on the remote control.
- b. Select "Information" > "System".
- c. Confirm that the firmware version is updated to the latest version.



Congratulations!

You have completed the firmware update. Your AV receiver is ready for normal use.

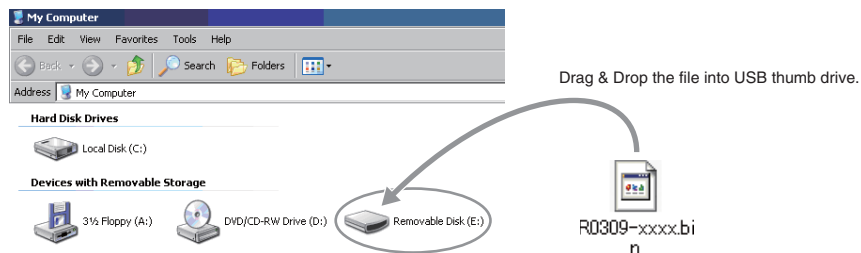
Firmware Update by USB

Requirement: USB thumb drive, with enough free space to store over 25MB.
(File system with FAT16 or FAT32 format)

Firmware file provided by YAMAHA, "R0309-xxxx.bin".

1 Prepare USB thumb drive for the update

Download the firmware, unzip and copy "R0309-xxxx.bin" into the root directory of the USB thumb drive.



2 Power off the receiver (Standby mode)

3 Insert the USB thumb drive

USB port is located at the lower left corner of the front panel.

4 Enter the ADVANCED SETUP mode

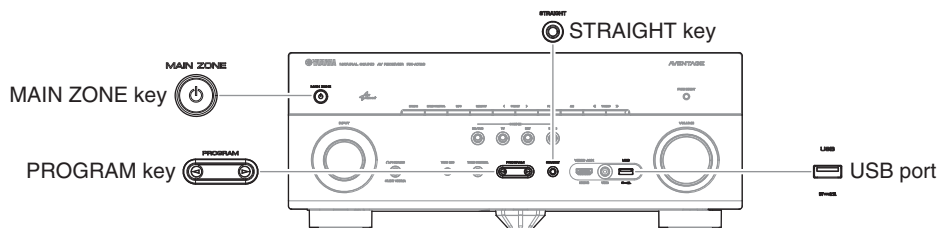
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ADVANCED SETUP

5 Select firmware update from the menu

Press the **PROGRAM** key until "UPDATE: USB" is displayed.

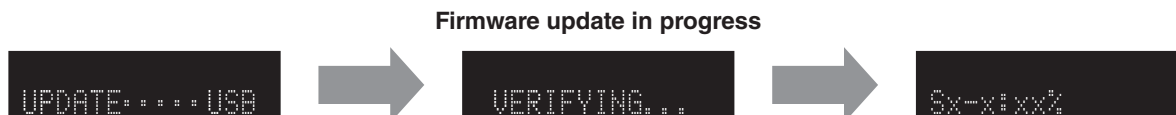
UPDATE: USB



6 Start firmware update

- Press **INFO** key to start the update.
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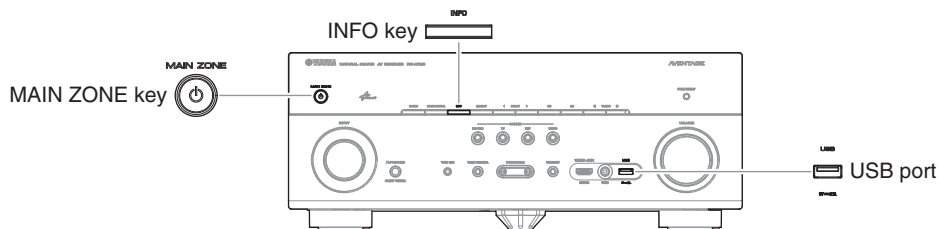
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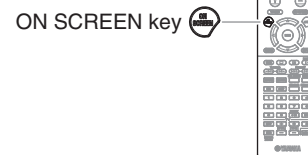


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7 Check the updated firmware version

- Power on the AV receiver and press the **ON SCREEN** key on the remote control.
- Select "Information" > "System".
- Confirm that the firmware version is updated to the latest version.



Congratulations!

You have completed the firmware update. Your AV receiver is ready for normal use.

Troubleshooting

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Cause: For some reason, the receiver can't read the firmware data.

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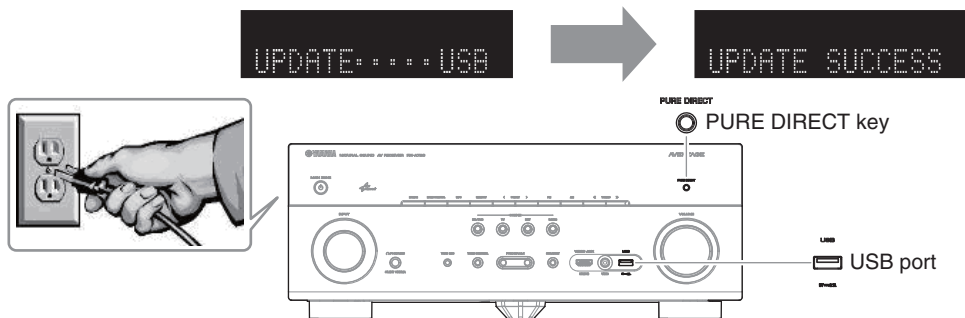
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CASE 2 Firmware update doesn't start for other reasons

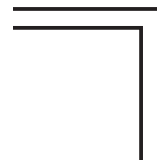
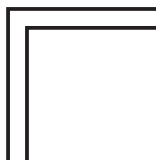
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3. Press and hold the **PURE DIRECT** key and keep it pressed while you plug the AC power cable back into the wall outlet again.
"USB UPDATE" will appear on the front display. Then, release the **PURE DIRECT** key.
4. The update will start automatically.
5. When "UPDATE:.....USB" appears on the display, firmware update is completed.
Power off the receiver and remove the USB thumb drive.
6. Confirm updated firmware version.



MEMO



**RX-V673/HTR-6065/
RX-A720**

