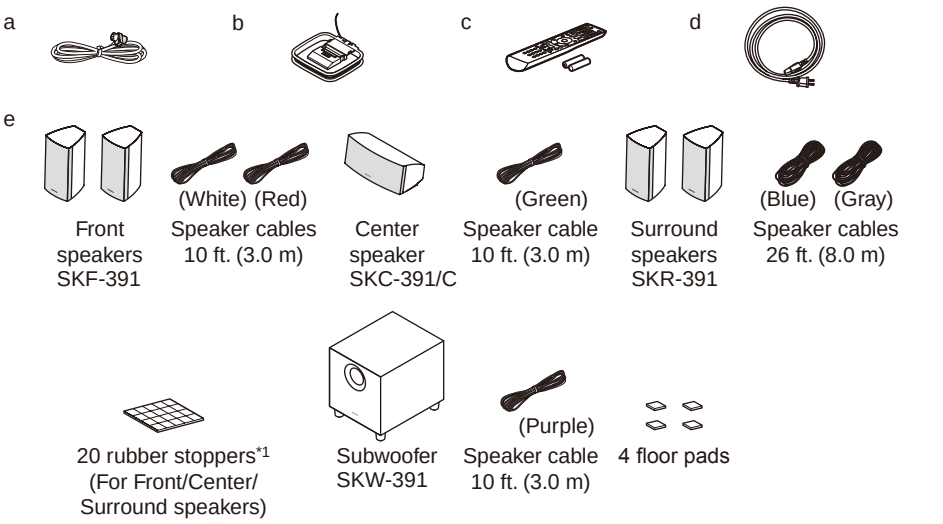
Ref. No. 4365
022012

ONKYO SERVICE MANUAL

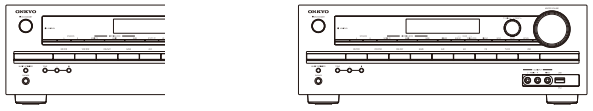
5.1CH HOME THEATER SYSTEM
MODEL HT-S3500(B)

a **Indoor FM antenna**
b **AM loop antenna**
c **Remote controller and two batteries (AA/R6)**
d **Power cord (Brazilian models)** (Plug type varies from country to country.)
e **Speaker Package**

*1 Configuration of the rubber stoppers may be different from the figure, such as being 2 sheets instead of 1 sheet, but the total number will be same.



(Asian models) (North American and Brazilian models)



HT-R391

RC-799M

Black model

B MMQ	230V AC, 50Hz
B MMK	230V AC, 500Hz
B MDC	220-240V AC, 50/60Hz
B MDS	230V AC, 50Hz

HT-R391(B)MMQ + SKF-391(B)MC + SKC-391C(B)MQ + SKR-391(B)MC + SKW-391(B)MQ
HT-R391(B)MMK + SKF-391(B)MC + SKC-391C(B)MQ + SKR-391(B)MC + SKW-391(B)MQ
HT-R391(B)MDC + SKF-391(B)MC + SKC-391(B)MC + SKR-391(B)MC + SKW-391(B)MC
HT-R391(B)MDS + SKF-391(B)MC + SKC-391(B)MC + SKR-391(B)MC + SKW-391(B)MC

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK.

REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

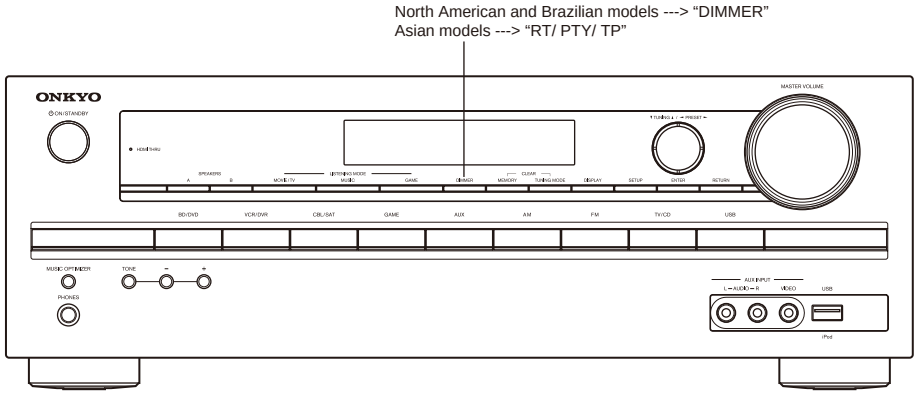
MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED ARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

Onkyo Sound & Vision Corporation
Service Department

Ref. No. 4380
022012

ONKYO® SERVICE MANUAL

AV RECEIVER
MODEL HT-R391(B)



RC-799M

Black model for HT-S3500

B MDC, B MDS	120V AC, 60Hz
B MMK, B MMQ	220-240V AC, 50/60Hz

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

ONKYO SOUND & VISION CORPORATION
Service Department

SERVICE PROCEDURE-1

1. Replacing the fuses

This symbol located near the fuse indicates that the fuse used is slow operating type, For continued protection against fire hazard, replace with same type fuse, For fuse rating, refer to the marking adjacent to the symbol.

Ce symbole indique que le fusible utilise est e lent. Pour une protection permanente, n'utiliser que des fusibles de meme type. Ce demier est indique la qu le present symbol est apposre.

REF NO.	PART NAME	DESCRIPTION	PART NO.	REMARKS
F6901	FUSE	8A-T/UL-ST2	252261GR	!
F6902	FUSE	8A-T/UL-ST2	252261GR	!
F901	FUSE	8A-UL/T-233	252329GR	! <MDC, MDS>
F901 or	FUSE	8A-T/UL-ST2	252261GR	! <MDC, MDS>
F901	FUSE	4A-SE-EAK	252077GR	! <MMK, MMQ>
F901 or	FUSE	4A-SE-TL250V	252277GR	! <MMK, MMQ>
F9001	FUSE	5A-UL-125V	252385T	!

2. Safety check out

(U.S.A. model only)

After correcting the original service problem, perform the following safety check before releasing the unit to the customer.

Leakage current Check

Measure the leakage current to a known earth ground (water pipe or conduct etc.) by connecting a leakage current tester between the earth ground and exposed metal parts of the unit (input/output ground terminals, screw heads or metal overlays etc.).

Plug the power supply cord directly into a 120Vac 60Hz wall socket and turn ON/STANDBY button on.

Any current measured must not exceed 0.5mA.

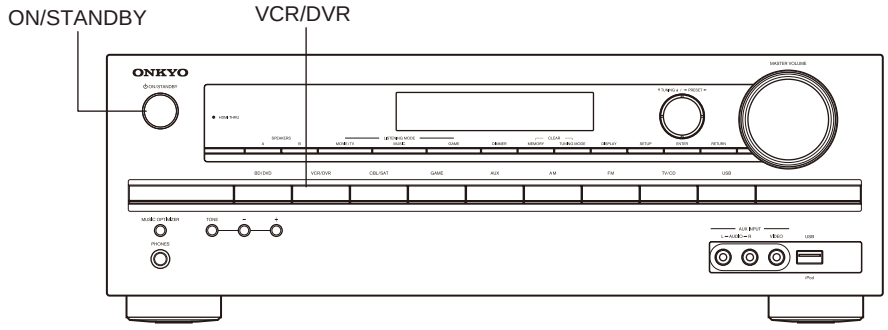
3. To initialize the unit

1. Press ON/STANDBY button while pressing down VCR/DVR button when the unit is POWER ON, then the FL displays "CLEAR", and turn to STAND-BY.

   Preset memory and each mode stored in the memory, are initialized and will return to the factory settings.

   Clear → Stand-by

2. Remove power cord from wall outlet.

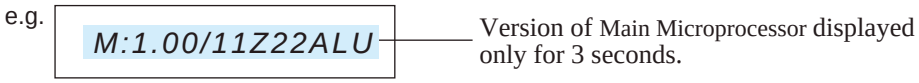


SERVICE PROCEDURE-2

4. To check version of each Firmware

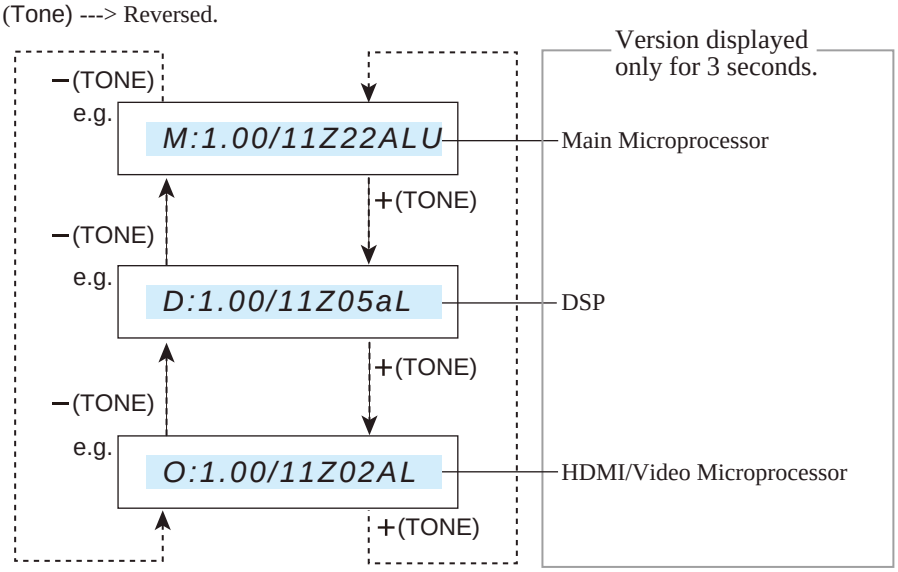
1. Press ON/STANDBY (Power On)

2. Press DISPLAY + ON/STANDBY.

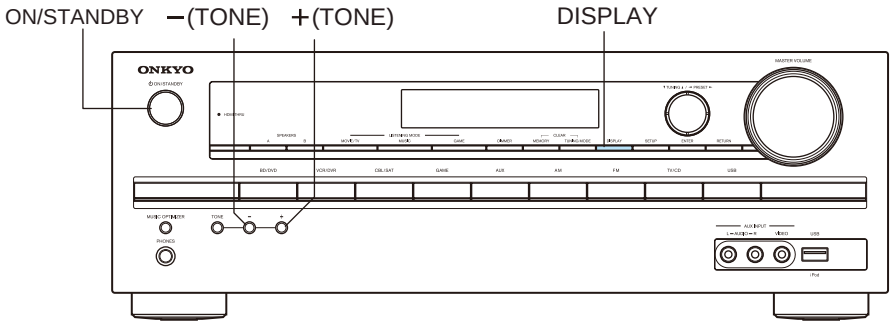


3. Press ＋(Tone) ---> Forward

   Press － (Tone) ---> Reversed.



4. Press ON/STANDBY (Power Off).



DEBUG MODE-1

AUDIO DEBUG MODE-1/5

The operations of DSP and DIR etc are able to checked by the information displayed on FL in this debug mode.
This information will help to analysing digital audio no sound trouble.

To set in Debug mode

1. Press and hold down **DISPLAY** button, then press **ON/STANDBY** button.

e.g. `M1.06/12417AE` — The version number of microprocessor is displayed only for 3 seconds.

2. Press + (TONE) button while the version number of microprocessor is displayed.

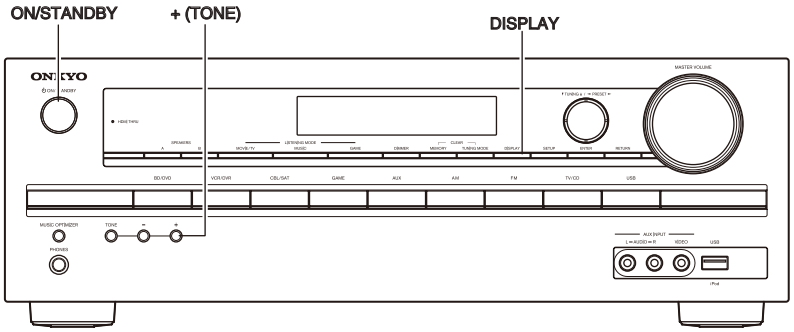
e.g. `D1.05/12327AEA` — The version number of DSP is displayed only for 3 seconds.

3. Press **DISPLAY** button while the version number of DSP is displayed.

e.g. `4D48K1N 0FFPo0` — **AUDIO dubug mode**
The status of DSP and DIR etc will be displayed.

11. Press **DISPLAY** button.

e.g. [ ] **Exit**



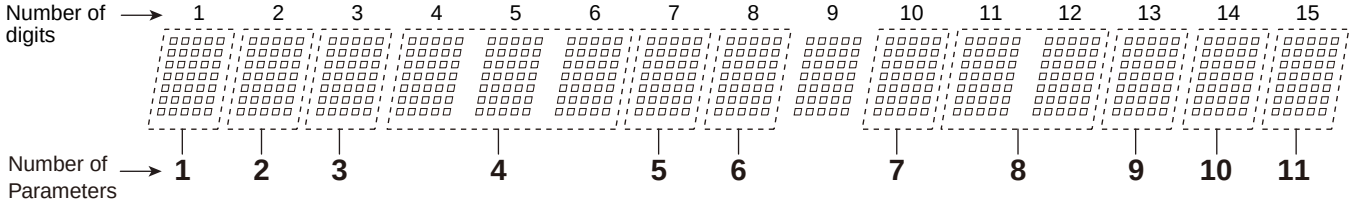
DEBUG MODE-2

AUDIO DEBUG MODE-2/5

Contents of Display

FL Display

e.g. `0A0002:__:00__`



1. DIR INPUT LOCK/UNLOCK
- E:UNLOCK
- :LOCK

2. DIR INPUT RX
- 0:None
- 1:COAX1
- 2:COAX2
- 3:OPT1
- 4:OPT2
- 5:FRONT
- 8:HDMI1
- 9:HDMI2

3. DIR/ADC,FIX MODE
- D:Digital(SPDIF)
- A:Analog
- M:AnalogMultich
- p:PCM FIXED
- d:DTS FIXED

4. Sampling Freq,Emphasis
- 32K: 32 kHz w/o Emphasis
- 44K: 44.1kHz w/o Emphasis
- 48K: 48 kHz w/o Emphasis
- 64K: 64 kHz
- 88K: 88.2kHz
- 96K: 96 kHz
- 176:176.4kHz
- 192:192 kHz
- 32e: 32 kHz w Emphasis
- 44e: 44.1kHz w Emphasis
- 48e: 48 kHz w Emphasis

5. DIR DETECT TYPE
- 0:Analog
- 1:PCM
- 2:Not PCM
- 3:Data
- 4:DTS CD(Not used)
- 5:Multich
- 6:Not Decided

6. CODEC CLOCK MODE
- N:Normal
- U:Up Sampling
- H:High Sampling(Double Rate)
- D:Down Smapling
- Q:Quad Rate

7. DSP PORT
- bit0:NIC
- bit1:DEC
- bit2:BUSY
- bit3:EXEC WAIT

→ Refer to “DEBUG MODE-3” Description of the DSP PORT (NIC/DEC/SPI Busy/Exec wait)

8. DSP SEQUENCE
- 00-FE:NotFree
- 2D:Mute Control
- FF:Free

→ Refer to “DEBUG MODE-4, -5” Description of the DSP Sequence

9. DSP DETECT FORMAT
- P:PCM(Analog)
- D:Dolby Digital
- d:DTS
- A:AAC
- d:DTS
- A:AAC
- S:DSD
- p:DolbyDigital+
- T:TrueHD
- H:DTSHD High Resolution
- M:DTSHD MaterAudio
- ?:UNKNOWN

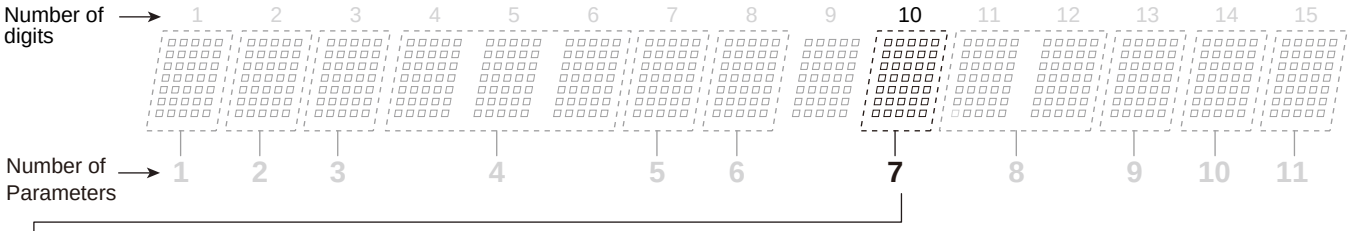
10. DSP DECODE OK
- o:OK
- x:NG

11. Mute
- 1:Selector
- 2:Effector
- 4:DSP
- 8:DIR

DEBUG MODE-3

AUDIO DEBUG MODE-3/5

Description of the DSP PORT(NIC/DEC/SPI Busy/Exec wait)

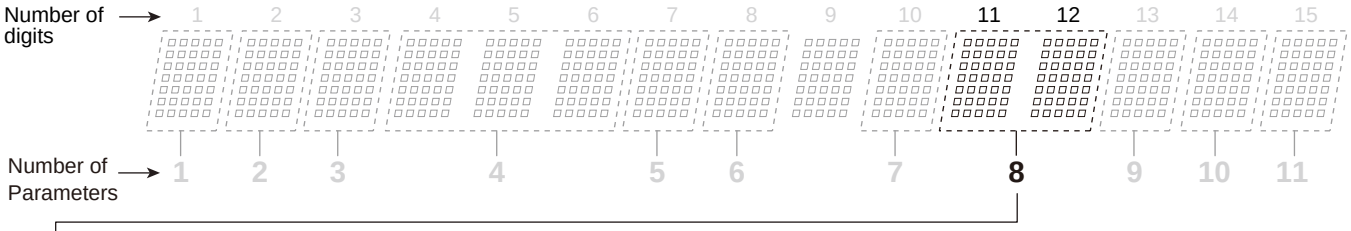


Display contents	Internal state	Inferred state
0		Stable state
1	NIC	If the stop remains "1" is indicated, it is possible that there is an abnormality in the connection between the microcomputer and the NIC.
2	DEC	Please check if the input signal Dolby / DTS / AAC / PCM from Coax or OPT. If the stop remains “2” is indicated, it is possible that there is an abnormality in the connection between the DIR and the DSP. There is a case of "2" for the state to stop or pause playback equipment. And it is normal.
3	NIC+DEC	If the stop remains "3" is indicated, it is possible that there is an abnormality in the connection between the microcomputer and the NIC.
4	SPI Busy	If the stop in these numbers, it is possible that there is an abnormality in the connection between the DSP and the microcomputer.
5	SPI Busy + NIC	
6	SPI Busy + DEC	
7	SPI Busy + NIC + DEC	
8	Exec wait	If you stop at these numbers, please check the DSP Sequence.
9	Exec wait + NIC	
A	Exec wait + DEC	
B	Exec wait + NIC+DEC	
C	Exec wait + SPI Busy	
D	Exec wait + SPI Busy + NIC	
E	Exec wait + SPI Busy + DEC	
F	Exec wait + SPI Busy + NIC + Dec	

DEBUG MODE-4

AUDIO DEBUG MODE-4/5

Description of the DSP Sequence(1/2)

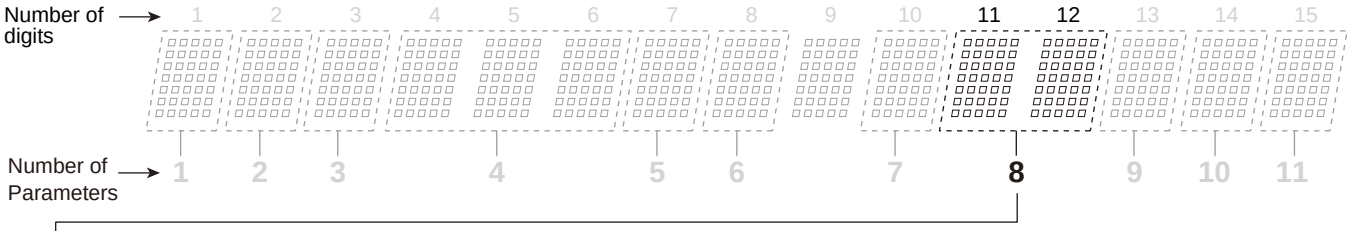


Display contents	Inferred state	Possible Causes
Stop at "*03*" is indicated.	Have not been able to communicate between the microcontroller and the DSP.	1.There is a problem with the connection between the FlashROM and the DSP, and the SDRAM. 2.Power is not supplied to the DSP. 3.Operation clock is not input to the DSP. 4.Reset port of the DSP is not connected. 5.There is a problem with the line of communication between the microcontroller and DSP. 6.DSP is broken or Microcomputer. 7.Program has not been successfully written to the Flash ROM. Or the program is not written. 8.Communication port (such as DIR) other devices are connected to t he SPI mode is broken short. Terminals are short-circuited.
Stop at "*05*" is indicated.	Have not been able to write from the boot loader of the DSP.	1.Program is not written correctly to Flash ROM. 2.DSPSDO line of microcomputer is interrupted somewhere. 3.There is a problem with the FlashROM (or SDRAM) of DSP. 4.DSP is broken or Microcomputer. 5.Upper address bus of Flash ROM is not connected properly.
Stop at "*08*" is indicated.	While running the boot loader of DSP, the main program is not running.	1.SDRAM is broken or Flash ROM. 2.Upper address bus of Flash ROM is not connected properly. 3.Program is not written correctly to Flash ROM. 4.There is a possibility that the power is turned off during the S / PDIF Update.
Stop at "*09 - 0C*" is indicated.	Main program of DSP is not working properly.	1.SDRAM is broken or Flash ROM. 2.Upper address bus of Flash ROM is not connected properly. 3.Program is not written correctly to Flash ROM. 4.There is a possibility that the power is turned off during the S / PDIF Update.
Stop at "*17*" is indicated.	There is a possibility that the power is turned off during the S / PDIF Update.	Solution : Hold down the VCR/ DVR when the power is turned on, press the On/Standby key. (Clear) When out of the state of S / PDIF Update, please press the On/Standby key.

DEBUG MODE-5

AUDIO DEBUG MODE-5/5

Description of the DSP Sequence(2/2)



Display contents	Inferred state	Possible Causes
Stop at *"21"*, to return to the previous display after a while. Format display indicator flashes.	Main program of DSP is not working properly.	1.SDRAM(or Flash ROM) is broken. 2.Upper address bus of Flash ROM is not connected properly. 3.Program is not written correctly to Flash ROM. 4.Operation clock to the DSP is not a predetermined value.
Stop at "*22-24*" is indicated.	main program of DSP is not working properly. The audio signal is not input.	1.SDRAM(or Flash ROM) is broken. 2.Upper address bus of Flash ROM is not connected properly. 3.Program is not written correctly to Flash ROM. 4.Operation clock to the DSP is not a predetermined value. 5.Audio clock to the DSP is not a predetermined value.
Stop at "*30-33*" is indicated.	main program of DSP is not working properly. The audio signal is not input.	1.SDRAM(or Flash ROM) is broken. 2.Upper address bus of Flash ROM is not connected properly. 3.Program is not written correctly to Flash ROM.
Stop at "*26-2F*" is indicated.	DSP settings has failed.	1.SDRAM(or Flash ROM) is broken. 2.Upper address bus of Flash ROM is not connected properly. 3.Program is not written correctly to Flash ROM.
Stop at "*FF*" is indicated.	The DSP is functioning properly.	All settings are completed, DSP has started normal operation.
	There is no sound even though it is the display of "*FF*".	→ Refer to “DEBUG MODE-3” Description of the DSP PORT (NIC/DEC/SPI Busy/Exec wait)

DEBUG MODE-6

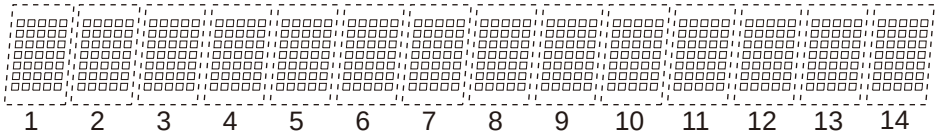
HDMI DEBUG MODE-1/6

HDMI-related operations can be checked to some extent by displaying HDMI debug mode.

To enter this mode

Hold down **DISPLAY** button for **3** seconds. Information display will last for about 8 seconds.

Content of Display



Resolution display

Input resolution

Output resolution

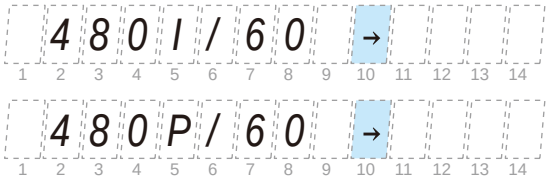
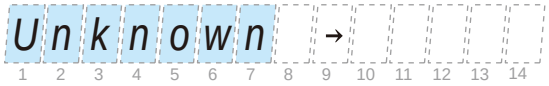
List of standard resolution

480i/60	#576i/50	576p200
480p/60	#576p/50	576i200
1080i/60	#288p/50	480p/60
720p/60	1080p/24	480p240
1080p/60	1080p/25	480i240
240p/60	1080p/30	*480p/60
#480i/60	VGA	*576p/50
#480p/60	1080i100	720p/24
#240p/60	720p100	720p/25
576i/50	576p100	720p/30
576p/50	576i100	
1080i/50	1080i120	
720p/50	720p120	
1080p/50	480p120	
288p/50	480i120	

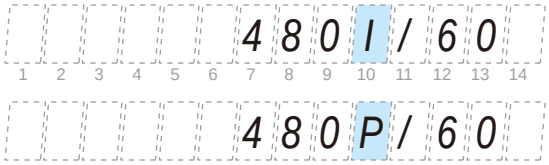
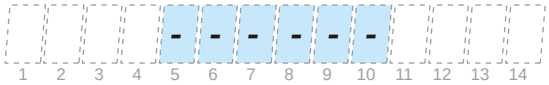
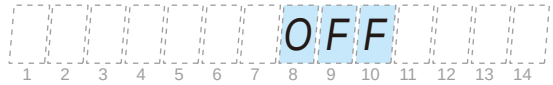
DEBUG MODE-7

HDMI DEBUG MODE-2/6

Display of Input resolution

DVI input signal	 i / p will be capitalized.
VGA input signal	 Display the " ✻ " in column 1
No input	

Display of Output resolution

For a video processor	Via VSP	 Display the " → " in column 4
	VSP skip	
DVI input signal		 i / p will be capitalized.
VGA input signal		 Display the " ✻ " in column 5
RSEN is OFF		 Display the " ✻ " in column 14
EDID_READ is NG		 Display the " # " in column 14
Resolution Error		 Display the " x " in column 14
No output (Signal output destination can not be found.)		
Hot-plug of Sink equipment can not be detected.		

DEBUG MODE-8

HDMI DEBUG MODE-3/6

4K Upscaling

Display of input resolution

Display of Output resolution

If the three-digit numbers are refrate

List of resolution

Resolution Error

EDID_READ_NG

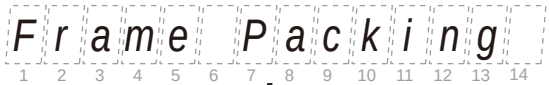
DEBUG MODE-9

HDMI DEBUG MODE-4/6

Resolution display

Status Display

3D format

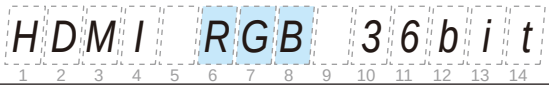


INPUT/OUTPUT

Display of Input resolution

RSEN OFF	 Display the " * " in column 14
EDID READ NG	 Display the " # " in column 9
Resolution Error	 Display the " x " in column 13

Status

Input Mode	HDMI input	
	DVI input	
	No input	
Input Color	RGB	
	422	
	444	
Deep Color	24bit	
	30bit	
	36bit	

DEBUG MODE-10

HDMI DEBUG MODE-5/6

3D format

Frame Packing	Frame_Packing_
Field alternative	F_alternative_
Line alternative	L_alternative_
Side-by-Side(Full)	SidebySide(F)_
L+depth	L+depth_____
L+depth + graphics	L+depthgraphic
Side by Side(Harf)	Sidebyside(H)_
Top and Bottom	Top-and-Bottom
unknown	UNKNOWN_____

INPUT/ OUTPUT

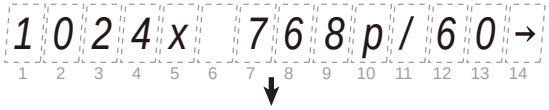
IN: ** OUT: **

DEBUG MODE-11

HDMI DEBUG MODE-6/6

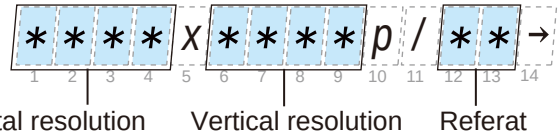
PC resolution

Input Resolution



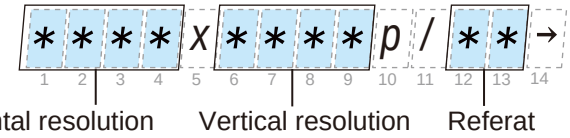
Output Resolution

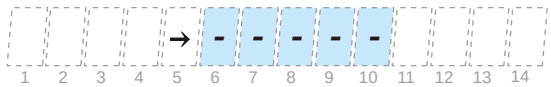
Display of Input resolution



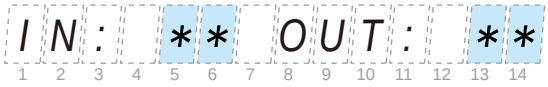
DVI input	Display uppercase P/I	
HDMI input	Display lowercase p/i	
Three-digit numbers are Referat		
No input		

Display of Output resolution



DVI output	Display uppercase P/I	
HDMI output	Display lowercase p/i	
Display"-----"		
Three-digit numbers are Referat		
EDID READ NG	Display the " # " in column 13	
Resolution through	Display the " x " in column 13	

INPUT/ OUTPUT



OPERATION CHECK-1

1.OPERATION CHECK(1/2)

1-1. OPERATIONS OF VOLTAGE-DETECTION PROTECTORS.

See “OPERATION CHECK-3, -5” for TEST MODE operation.
NOTE: Don't connect load nor short speaker terminals.

a. Change the state to "TEST-4-21".
b. It tests by being automatic in order of TEST4-21(FL+) → 22(FR-) → 23(C+) → 24(SL-) → 25(SR+) → (26(SBL-) → 27(SBR+)). It becomes the display of "TEST-4-35."
c. It will complete, if displayed on FL TUBE as "TEST-4-35."
d. Check operation of voltage-detection of subwoofer channnel. (HT-R391/358 only)
Change the state to "TEST-1-00".
The speaker relay is OFF immediately after D.C. +1.5v～3v is put at J4082 J4090 to check SW.
The same as above when D.C. -1.5v～3v is put at each place.

NOTE1: Limit time to apply voltage is 0.5-1.0 seconds each channel.
When protection operation does not occur at once, try several times.
NOTE2: Don't connect load nor short speaker terminals.
NOTE3: The relay shall recover in one second in "TEST-1-00". So it shall not be hold OFF.

1-2. OPERATIONS OF CURRENT-DETECTION PROTECTORS

See “OPERATION CHECK-3, -4” for TEST MODE operation.

a. Change the state to "TEST-4-35".
Even if you connect 3-ohm load for every channel of L, R, C, SL, SR, SBL,SBR and SWch, a relay should not cut off.
If 1-ohm load is connected for every channel of L, R, C, SL, SR,SBL,SBR and SWch, a relay should hold the state of ON.

1-3. CONFIRMATION OF RDS (RADIO DATA SYSTEM) OPERATION (Applied to MPP/MPB type)

a. Input 98MHz,30dBμ signal modurated with RDS data.
b. When a PS information is received, the name of the station "RDS TEST" shall be displayed within 2 seconds instead of the frequency.

1-4. CONFIRMATION OF HEAD PHONE OPERATION.

Confirm the Listening Mode is automatically switched to "STEREO" mode when headphones plug is inserted into the PHONES jack.

1-5. COMFIRMATION OF USB(Except of HT-R358)

See “OPERATION CHECK-3, -4” for TEST MODE operation.

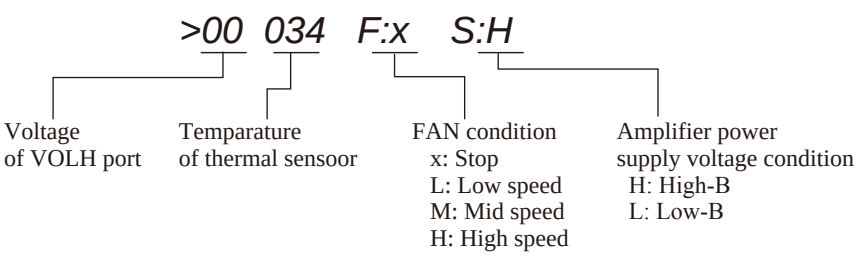
a. Connect ipod to AVR USB port.
b. When set to TEST-3-10, confirm that the display of AVR change "connecting" to "press Push [MODE] button ...." or "iPod" after few seconds.
The following iPod models can be used for inspection.(The above-mentioned operation is not done excluding the following items.)
iPod classic, 3G nano, 4G nano, 5G nano

1-6. CONFIRMATION OF OUTPUT SENSOR AND THERMAL SENSER.

See “OPERATION CHECK-3, -5” for TEST MODE operation.

a. Set the TEST MODE to "TEST-4-36" and "TEST-4-37".
After light "FM STEREO" on FL display, the relays RL691/692 is OFF and "FM STEREO"is off .(TEST4-37 is only for HT-R591.)
b. Push ON/Standby button while pushing down DISPLAY button to display CPU PROGRAM version.
Push TONE button while displaying CPU PROGRAM version to display value of temparature sensor.
Confirm outside temperature ±20C is displayed immediately after energizing.
Note that the error margin is caused by the rise of the temperature of the heat sink when time passes.

No singal condition (Ex. Display)



OPERATION CHECK-2

1.OPERATION CHECK(2/2)

1-7. CONFIRMATION OF HDMI MAIN OUTPUT OSD(ON SCREEN DISPLAY) OPERATION

a. When SETUP button is pushed, confirm that setup menu is displayed in HDMI Out.
b. Confirm that specified operations for ENTER(with 4-cursor) buttons are made.

1-8. CONFIRMATION OF HDMI AUDIO OPERATION.

See “OPERATION CHECK-3, -6” for TEST MODE operation.
CONFIRMATION OF HDMI I2S SIGNAL

a. Input the one of these signals below from HDMI1 terminal.
DTS-HD MasterAudio 7.1ch
Dolby TrueHD 7.1ch
LPCM 7.1ch
b. Change the state to TEST 6-00. Confirm the signal is output from L/R,SW/C,SL/SR,SBL/SBR.
c. When TEST 6-08, confirm the sound(HDMI1 input) outputs from the TV.
CONFIRMATION OF HDMI SPDIF SIGNAL
d. SPDIF signal is input from HDMI terminal.
e. When TEST 6-06, confirm the sound(HDMI IN1) outputs from the speaker.
f. When TEST 6-07, confirm the sound(BD/DVD analog input) outputs from the TV.(VIDEO is HDMI1)
CONFIRMATION OF HDMI DSD SIGNAL
g. When TEST 6-10,11,12, confirm the sound of DSD 5.1ch input HDMI IN 3, output from the speaker.

1-9. VIDEO FUNCTION CHECK

See “OPERATION CHECK-3, -6” for TEST MODE operation.

a. Confirm Video output signal as shown Table 2, while Video signal are input as shown Table 1.
NOTE: Confirm the HDMI path at 1080p signal.

Table 1

Input	Composite Video	Component		HDMI	
BD/DVD	A	IN1	F	IN1	J
VCR/DVR	B	---	No	IN2	K
CBL/SAT	C	IN2	G	IN3	L
GAME	D	---	No	IN4	M
PC	H	---	No	IN5	N
AUX	E	---	No	IN6	O

Table 2

Test mode	Composite Video		Component	HDMI
	ZVCR out	Monitor out	OUT	OUT
5-05(BD/DVD)	A	A	F	J
5-06(VCR/DVR)	---	B	---	K
5-07(CBL/SAT)	C	C	G	L
5-08(GAME)	D	D	---	M
5-09(PC)	H	H	---	N
5-10(AUX)	E	E	---	O

b. OPERATIONS OF VIDEO SIGNAL-DETECTION
Set the TEST MODE to "TEST-5-00".
Confirm that "RDS" of FL TUBE lights, when the component video signal is input.

1-10. MISCELLANEOUS

See “OPERATION CHECK-3” for TEST MODE operation.

a. Please confirm LED and FL displaying by the FL test mode. And confirm the destination setting. ---> See to"OPERATION CHECK-3".
b. Confirm Key Operation.
Change the state to KEY TEST under TEST MODE described in Section 4-2. to confirm each key operation.
c. Confirm the version of each firmware.--->See to" SERVICE PROCEDURE-2".
d. Confirm the firmware combination check.
e. Confirm the DSP flash check.(Except TX-NR414, HT-R758)
When it is normal, FL display indicate "A:OK B:OK"

OPERATION CHECK-3

2.TEST MODE(1/4)

2-1.TEST MODE FOR MODEL, DESTINATION AND FL DISPLAY

NOTE: If VOL value is not 25(initial setting), test mode cannot be set.

a. Push ON/STANDBY key while pushing down TV/CD button button to display "TEST-".

b. Then push DIMMER(RT/PTY/TP) button and get the FL test mode.

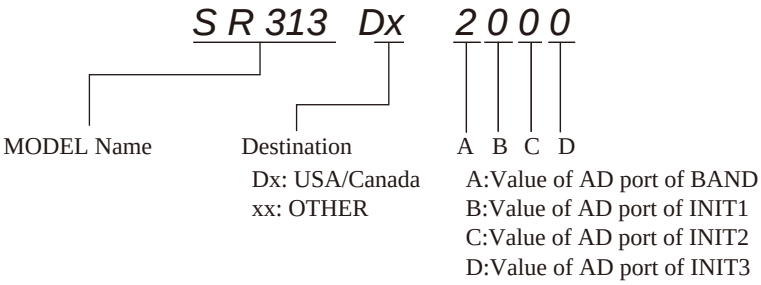
c. In the FL test mode, TONE - button is FL TEST UP and TONE + button is FL TEST DOWN.

d. REC OUT and ZONE2 button's originally operation can't work when it is in FL test mode.

e. The contents of the step are as follows.

1. Lit all segment
2. Lit 'FEDCBA987654321'.
3. Lit a even number segment
4. Lit an odd number segment
5. The Destination is displayed. Please see the below for detail.

f. To close the FL test, push POWER button.



MODEL	TX-SR313		HT-RC430	HT-R391		HT-R358	HT-R558	HT-R658	HT-R591	
FL DIS Name	SR313		RC430	HT391		HT358	HT558	HT658	HT591	
Destination	Dx	xx	Dx	Dx	xx	xx	xx	xx	Dx	xx
ABCD	2000	8000	2002	2020	8020	8022	8026	8024	2028	8028

MODEL	TX-NR414		HT-R758		HT-R358	HT-RC440
FL DIS Name	NR414		HT758		HT358	RC440
Destination	Dx	xx	Dx	xx	xx	Dx
ABCD	2000	8000	2020	8020	8022	2002

2-2. TEST MODE FOR OPERATION

a. Push STANDBY/ON button while pushing down TV/CD button to display "TEST-_".

b. Next, if the following keys are pushed, it becomes a each TEST MODE.

c. In the test mode, (TONE)- button is TEST MODE DOWN and (TONE)+ button is TEST MODE UP.

d. "TEST-1-00" and "TEST-1-01" are used to check a protection circuit, and the relay recovered in one second.

TEST MODE							
Test mode No. --->		1-00	2-00	3-00	4-00	5-00	6-00	KEY TEST
Button --->	TX-NR414 /HT-R758	BD/DVD	CBL/SAT	GAME	PC	AUX	TV/CD	MEMORY (CINEMA FILTER)
	Others	BD/DVD	VCR/DVR	CBL/SAT	GAME	AUX	TV/CD	

TEST MODE					
IDLING TIMER	FL TEST	FIRMWARE VERSION	FIRMWARE COMBINATION CHECK	CHECK SUM	DSP FLASH CHECK
TUNING MODE (LATE NIGHT)	DIMMER (RT/PTY/TP)	TONE	ENTER	When the MPU version is displayed, push "MEMORY(CINEMA FILTER)"	When the DSP version is displayed, push "BD/DVD"

OPERATION CHECK-4

2.TEST MODE(2/4)

2-2. TEST MODE FOR OPERATION(Continue)

e. Test mode is as follows.

TEST No	Analog Input [Rec Sel] (Zone2)	Listening Mode/ Input Format	VIDEO Input	Compo-nent V	HDMI	12V Trigger	Digital Input /Output	Config.	Master Vol. /Z2 Vol	Speaker Relay	etc.	
1-00	BD/DVD (Off)	Direct	BD/DVD	IN1	IN1		-	-	Max	F/CS/SB/Z2		*1 PROTECT
1-01	BD/DVD (Off)	Direct	BD/DVD	IN1	IN1		-	-	Max	F/CS/SB/Z2	SBL,SBR	"*1 PROTECTFOR SBL ch"
1-02	BD/DVD (Off)	Direct	BD/DVD	IN1	IN1		-	-	MIN	F/CS/SB/Z2		
2-00	BD/DVD (Off)	Stereo(Direct)	BD/DVD	IN1	IN1		-	-	Max		SW=NO	
2-01	BD/DVD (Off)	Stereo(Direct)	BD/DVD	IN1	IN1		-	-	64	F	SW=NO	
2-02	BD/DVD (Off)	DVD Direct	BD/DVD		IN1		-	Y/L/L/L/L	Max	F/CS/SB		
2-03	Multi channel	Multich Amp Test	BD/DVD	IN1	IN1		-	Y/L/L/L/L	64	F/CS/SB		
2-05	BD/DVD (Off)	ADC DSP 8ch Thru.	BD/DVD	IN1	IN1		-	Y/L/L/L/L	62	F/CS/SB		
2-06	BD/DVD (Off)	ADC DSP 8ch Thru.	BD/DVD	IN1	IN1		-	Y/L/L/L/L	64	F/CS/SB		
2-07	BD/DVD (Off)	ADC DSP 7ch Thru.	BD/DVD	IN1	IN1		-	Y/L/L/L/L	57	F/CS/SB	SW:MUTE	
2-08	BD/DVD (Off)	ADC DSP 8ch Thru.	BD/DVD	IN1	IN1		-	Y/L/L/L/L	45	F/CS/SB		
2-09	BD/DVD (Off)	ADC DSP 8ch Thru.	BD/DVD	IN1	IN1		-	Y/L/L/L/L	MIN	F/CS/SB		
2-10	BD/DVD (Off)	ADC DSP 8ch Thru.	BD/DVD	IN1	IN1		-	Y/L/L/L/L	64	CS/SB	SPRLF OFF	
2-11	VCR/DVR (Off)*2	Automatic	VCR/DVR*2	-	IN2	A	*OPT1	Y/L/L/L/L	64	F/CS/SB		
2-12	VCR/DVR (Off)*2	Automatic	VCR/DVR*2	-	IN2	B	*COAX1	Y/L/L/L/L	64	F/CS/SB		
2-13	CBL/SAT (Off)	DIR DSP 8ch Thru	CBL/SAT	-	IN3	C	*OPT1	Y/L/L/L/L	64	F/CS/SB		
2-14	GAME (Off)	DIR DSP 8ch Thru	GAME	-	IN4				64			
2-15	AUX (Off)	DIR DSP 8ch Thru	AUX	-	-		OPT1	Y/L/L/L/L	64	F/CS/SB		
2-16	BD/DVD (Off)	DIR DSP 8ch Thru	BD/DVD	-	-		COAX1	Y/L/L/L/L	Max	F/CS/SB		
2-17	BD/DVD (Off)	DIR DSP 8ch Thru	BD/DVD	-	-		COAX1	Y/L/L/L/L	64	F/CS/SB		
2-18	TV/CD (Off)	Automatic	BD/DVD	DVD	IN2		*OPT2	Y/L/L/L/L	52	F/CS/SB		
2-19	BD/DVD (Off)	DIR DSP 8ch Thru	BD/DVD	DVD	IN2		*OPT2	Y/L/L/L/L	64	F/CS/SB		
2-20	BD/DVD (Off)	DIR DSP 8ch Thru	BD/DVD	DVD	IN2		*OPT2	Y/L/L/L/L	64	F		
2-21	BD/DVD (Off)	DIR DSP 8ch Thru	BD/DVD	DVD	IN3		*COAX2	Y/L/L/L/L	64	F		
2-22	BD/DVD(Source)	DIR DSP 8ch Thru	BD/DVD	DVD	IN3		*COAX2	Y/L/L/L/L	64	CS		
2-23	MIC	ADC DSP 8ch Thru.	BD/DVD	DVD	IN1		-	Y/L/L/L/L	64	F/CS/SB		
2-24	MIC	ADC DSP 8ch Thru.	BD/DVD	DVD	IN1		-	Y/L/L/L/L	64	F/CS/SB	MICMUTE ON	
2-25	AUX(Off)	DIR DSP 8ch Thru	AUX	-	-		OPT1	Y/L/L/L/L	59	F/CS/SB		
2-26	PC (Off)	DIR DSP 8ch Thru	PC	-	-		OPT1	Y/L/L/L/L	64	F/CS/SB		
3-00	FM/Source	Stereo(Direct)	DVD	DVD	IN1		-	-	64	F		
3-01	TV/CD	Stereo(Direct)	DVD	DVD	IN1		-	-	Max	F/Z2		
3-02	TV/CD	Stereo(Direct)	DVD	DVD	IN1		-	-	64	F/Z2		
3-03	TV/CD	Stereo(Direct)	DVD	DVD	IN1		-	-	64	F/Z2	Z2MUTE ON	
3-04	TV/CD (Off)	ALL CH STEREO	DVD	DVD	IN1		-	Y/L/L/L/L	64	F/CS/FH		
3-05	SXM (Off)	Stereo(Direct)	DVD	DVD	IN1		SIRIUS JIG Board	-	43	F		
3-06	PORT (Source)	ADC DSP 8ch Thru.	PORT	-	-		-	-	57	F		
3-10	USB/(Source)	Stereo(Direct)	Last	-	-	-	USB	-	57	F		*3
3-11	NET/(Source)	Stereo(Direct)	Last	-	-	-	NET	-	48	F	"Output Level / Distortion"	"WAV,44.1kHz,16bit,1kHz,0dBfs, from test server"
3-12	NET/(Source)	Stereo(Direct)	Last	-	-	-	NET	-	48	F	SN Ratio	"WAV,44.1kHz,16bit,-∞dBfs, from test server"
3-13	NET/(Source)	Stereo(Direct)	Last	-	-	-	NET	-	48	F	Freq. Resp.	"WAV,44.1kHz,16bit,20Hz,0dBfs, from test server"
3-14	NET/(Source)	Stereo(Direct)	Last	-	-	-	NET	-	48	F	Freq. Resp.	"WAV,44.1kHz,16bit,20kHz,0dBfs, from test server"
3-15	NET/(Source)	Stereo(Direct)	Last	-	-	-	NET	-	48	F	Separation	"WAV,44.1kHz,16bit,1kHz,0dBfs,Lch from test server"
3-16	NET/(Source)	Stereo(Direct)	Last	-	-	-	NET	-	48	F	Separation	"WAV,44.1kHz,16bit,1kHz,0dBfs,Rch from test server"
3-17	NET/(Source)	Stereo(Direct)	Last	-	-	-	NET	-	48	F	"Output Level / Distortion"	"WAV,48kHz,16bit,1kHz,0dBfs, from test server"
3-18	NET/(Source)	Stereo(Direct)	Last	-	-	-	NET	-	48	F	"Net connectioncheck "	display IP address

In all test modes, it is not concerned with detection of VOLH but SEC1H are made "H" fixation. (Except TEST4-36 and 4-37.)

***1**: All SP-RELAYs are turned ON only at the time of this STEP.
Moreover, whether make RELAY restoration time at the time of protection operation into 1 second, and PROTECT input "H" is detected how many times or it continues 1 second or more, RELAY is not held at OFF or POWER OFF is not carried out, either.
When "H" is 1 seconds or more to PROTECT input and it is set to "L", RELAY is turned ON again.
Moreover, not any MUTE is outputted at the time of this STEP.

***2**: Selector is CBL/SAT on NR414.

NOTE-1: For inspection procedure of NET, TEST-3-11 should be measured first. (for prevention of the malfunction)
NOTE-2: TTEST of NET/USB can't do immediately after the start-up. It should be measure after other TEST.

OPERATION CHECK-5

2.TEST MODE(3/4)

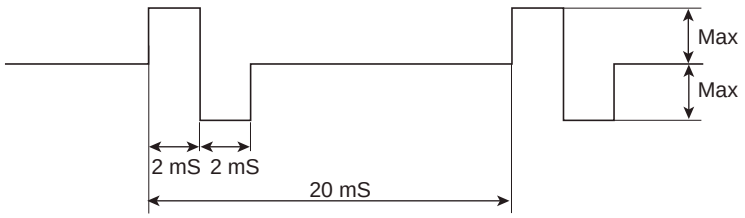
2-2. TEST MODE FOR OPERATION(Continue)

Auto Measurement Mode

TEST No.	DSP Output ch	DSP Output Frequency	DSP Output Voltage	Config.	Master Vol.	Speaker Relay	etc.	
4-00	ALL	1kHz	-20dBFS	Y/L/L/L/L	64(-16dB)	F/CS/SB		DSP Gain
4-01	ALL	30Hz	-20dBFS	Y/L/L/L/L	64(-16dB)	F/CS/SB		DSP Freq.Response
4-02	ALL	20kHz	-20dBFS	Y/L/L/L/L	64(-16dB)	F/CS/SB		DSP Freq.Response
4-03	SW	30Hz	-20dBFS	N/L/L/L/L	58(-22dB)	F/CS/SB		Characteristic(1)
4-04	FL,FR	30Hz	-20dBFS	N/L/L/L/L	64(-16dB)	F/CS/SB		Characteristic(2)
4-05	FR,C,SL,SR,SBL,SBR,SW	10kHz	-20dBFS	Y/L/L/L/L	64(-16dB)	F/CS/SB	Mute:FL	Separation
4-06	FL,C,SL,SR,SBL,SBR,SW	10kHz	-20dBFS	Y/L/L/L/L	64(-16dB)	F/CS/SB	Mute:FR	Separation
4-07	FL,FR,SL,SR,SBL,SBR,SW	10kHz	-20dBFS	Y/L/L/L/L	64(-16dB)	F/CS/SB	Mute:C	Separation
4-08	FL,FR,C,SR,SBL,SBR,SW	10kHz	-20dBFS	Y/L/L/L/L	64(-16dB)	F/CS/SB	Mute:SL	Separation
4-09	FL,FR,C,SL,SBL,SBR,SW	10kHz	-20dBFS	Y/L/L/L/L	64(-16dB)	F/CS/SB	Mute:SR	Separation
4-10	FL,FR,C,SL,SR,SBR,SW	10kHz	-20dBFS	Y/L/L/L/L	64(-16dB)	F/CS/SB	Mute:SBL	Separation
4-11	FL,FR,C,SL,SR,SBL,SW	10kHz	-20dBFS	Y/L/L/L/L	64(-16dB)	F/CS/SB	Mute:SBR	Separation
4-12	FL,FR,C,SL,SR,SBL,SBR	30Hz	-20dBFS	Y/L/L/L/L	64(-16dB)	F/CS/SB	Mute:SW	Separation
4-13	ALL	1kHz	-20dBFS	Y/L/L/L/L	64(-16dB)	F/CS/SB	*mut on	Muting
4-14	ALL	30Hz	-20dBFS	Y/L/L/L/L	64(-16dB)	F/CS/SB	*mut on	Muting
4-15	ALL	1kHz	-20dBFS	Y/L/L/L/L	Min(-80dB)	F/CS/SB		Volume Max.Attenuation
4-16	ALL	30Hz	-20dBFS	Y/L/L/L/L	Min(-80dB)	F/CS/SB		Volume Max.Attenuation
4-17	ALL	100Hz	-20dBFS	Y/L/L/L/L	64(-16dB)	F/CS/SB	BASS ALL:+12	BASS Max.
4-18	ALL	10kHz	-20dBFS	Y/L/L/L/L	64(-16dB)	F/CS/SB	TREBLE ALL+12	TREBLE Max.
4-19	ALL	100Hz	-20dBFS	Y/L/L/L/L	64(-16dB)	F/CS/SB	BASS ALL:-12	BASS Min.
4-20	ALL	10kHz	-20dBFS	Y/L/L/L/L	64(-16dB)	F/CS/SB	TREBLE ALL-12	TREBLE Min.
4-21	FL	+DC	+Max	Y/L/L/L/L	Max	F/CS/SB	*1,*2	+DC Protect
4-22	FR	-DC	-Max	Y/L/L/L/L	Max	F/CS/SB	*1,*2	-DC Protect
4-23	C	+DC	+Max	Y/L/L/L/L	Max	F/CS/SB	*1,*2	+DC Protect
4-24	SL	-DC	-Max	Y/L/L/L/L	Max	F/CS/SB	*1,*2	-DC Protect
4-25	SR	+DC	+Max	Y/L/L/L/L	Max	F/CS/SB	*1,*2	+DC Protect
4-26	SBL	-DC	-Max	Y/L/L/L/L	Max	F/CS/SB	*1,*2	-DC Protect
4-27	SBR	+DC	+Max	Y/L/L/L/L	Max	F/CS/SB	*1,*2	+DC Protect
4-28	FL	-DC	-Max	Y/L/L/L/L	Max	F/CS/SB	*1,*2	-DC Protect
4-29	FR	+DC	+Max	Y/L/L/L/L	Max	F/CS/SB	*1,*2	+DC Protect
4-30	C	-DC	-Max	Y/L/L/L/L	Max	F/CS/SB	*1,*2	-DC Protect
4-31	SL	+DC	+Max	Y/L/L/L/L	Max	F/CS/SB	*1,*2	+DC Protect
4-32	SR	-DC	-Max	Y/L/L/L/L	Max	F/CS/SB	*1,*2	-DC Protect
4-33	SBL	+DC	+Max	Y/L/L/L/L	Max	F/CS/SB	*1,*2	+DC Protect
4-34	SBR	-DC	-Max	Y/L/L/L/L	Max	F/CS/SB	*1,*2	-DC Protect
4-35	ALL	Pulse	Max	Y/L/L/L/L	58(-22dB)	F/CS/SB	*1,*3	Current Protect
4-36	"FL,FR,C,SL,SR"	1kHz	0dBFS	Y/L/L/L/L	55(-25dB) 59(-21dB)	F/CS/SB	others: vol = 55 TX-NR414/HT-R758: vol = 59 *4	VOLH DET
4-37	C,SL,SR,SBL,SBR	1kHz	0dBFS	Y/L/L/L/L	55(-25dB)	F/CS/SB	*4	VOLH DET
4-38	ALL	1kHz	-20dBFS	Y/L/L/L/L	59(-21dB)	F/CS/SB		
4-39	ALL	30Hz	-20dBFS	Y/L/L/L/L	59(-21dB)	F/CS/SB		
4-40	ALL	20kHz	-20dBFS	Y/L/L/L/L	59(-21dB)	F/CS/SB		

*2 : When TEST No. 4-21 ～ 34 is setted, DC votage is putted out immediately at each channel. (within 100msec.)

*3 : The following signal is putted out at all channel continuously in TEST4-35



*4 : VOLH is detected and H/L of SEC1H is changed.
A detection level is the same as the normal mode.
When it is detected, light "FM STEREO" on FLD.

*8 : In TEST3-06,when I-Pod pull out from jug I-POD DET is detectedt han change to standby.

OPERATION CHECK-6

2.TEST MODE(4/4)

2-2. TEST MODE FOR OPERATION(Continue)

VIDEO & HDMI TEST MODE

TEST No.	Input selector	DIGITAL INPUT	COMPONENT	Volume	HDMI	MODE	etc
5-00	BD/DVD	HDMI	IN1	MIN	-	-	
5-01	BD/DVD	HDMI	IN1	MIN	-	-	
5-02	BD/DVD	HDMI	IN1	MIN	-	-	
5-03	BD/DVD	HDMI	IN1	MIN	-	-	
5-04	PC	-	-	MIN	-	-	Only NR414
5-05	BD/DVD	HDMI	IN1	33	IN1	Through	Audio TV Out
5-06	VCR/DVR	HDMI	-	33	IN2	Through	Audio TV Out
5-07	CBL/SAT	HDMI	IN2	33	IN3	Through	Audio TV Out
5-08	GAME	HDMI	-	33	IN4	Through	Audio TV Out
5-09	PC	HDMI	-		IN5	Through	Audio TV Out,Only NR414
5-10	AUX	HDMI	-	33	IN6	Through	Audio TV Out
6-00	BD/DVD	HDMI	IN1	43	IN1	HDMI I2S SIGNAL	OUTPUT CH=L/R/C/SW/SL/SR
6-01	BD/DVD	HDMI	IN1	43	IN1	HDMI I2S SIGNAL	OUTPUT CH = SW/C (only 313)
6-02	BD/DVD	HDMI	IN1	43	IN1	HDMI I2S SIGNAL	OUTPUT CH = SL/SR (only 313)
6-03	BD/DVD	HDMI	IN1	43	IN1	HDMI I2S SIGNAL	OUTPUT CH = SBL/SBR (only 313)
6-04	BD/DVD	HDMI	IN1	43	IN1	HDMI DSD SIGNAL	OUTPUT CH = L/R/C/SW/SL/SR
6-05	BD/DVD	HDMI	IN1	43	IN1	HDMI DSD SIGNAL	OUTPUT CH = SBL/SBR
6-06	BD/DVD	HDMI	IN1	43	IN1	HDMI SPDIF SIGNAL	
6-07	BD/DVD	COAX1*	IN1	MIN	IN1	Audio TV OUT = ON, VOL=0, ANALOG(DVD)	
6-08	BD/DVD	HDMI	IN1	MIN	IN1	Audio TV OUT = ON, VOL=0, I2S SIGNAL	
6-09	BD/DVD	HDMI ARC	IN1	43	IN1	HDMI AUDIO RETURN CHANNEL	
6-10	BD/DVD	HDMI	IN1	50	IN3	HDMI DSD SIGNAL	Output CH = L/R to L/R
6-11	BD/DVD	HDMI	IN1	50	IN3	HDMI DSD SIGNAL	Output CH = C/SW to L/R
6-12	BD/DVD	HDMI	IN1	50	IN3	HDMI DSD SIGNAL	Output CH = SL/SR to L/R

NOTES

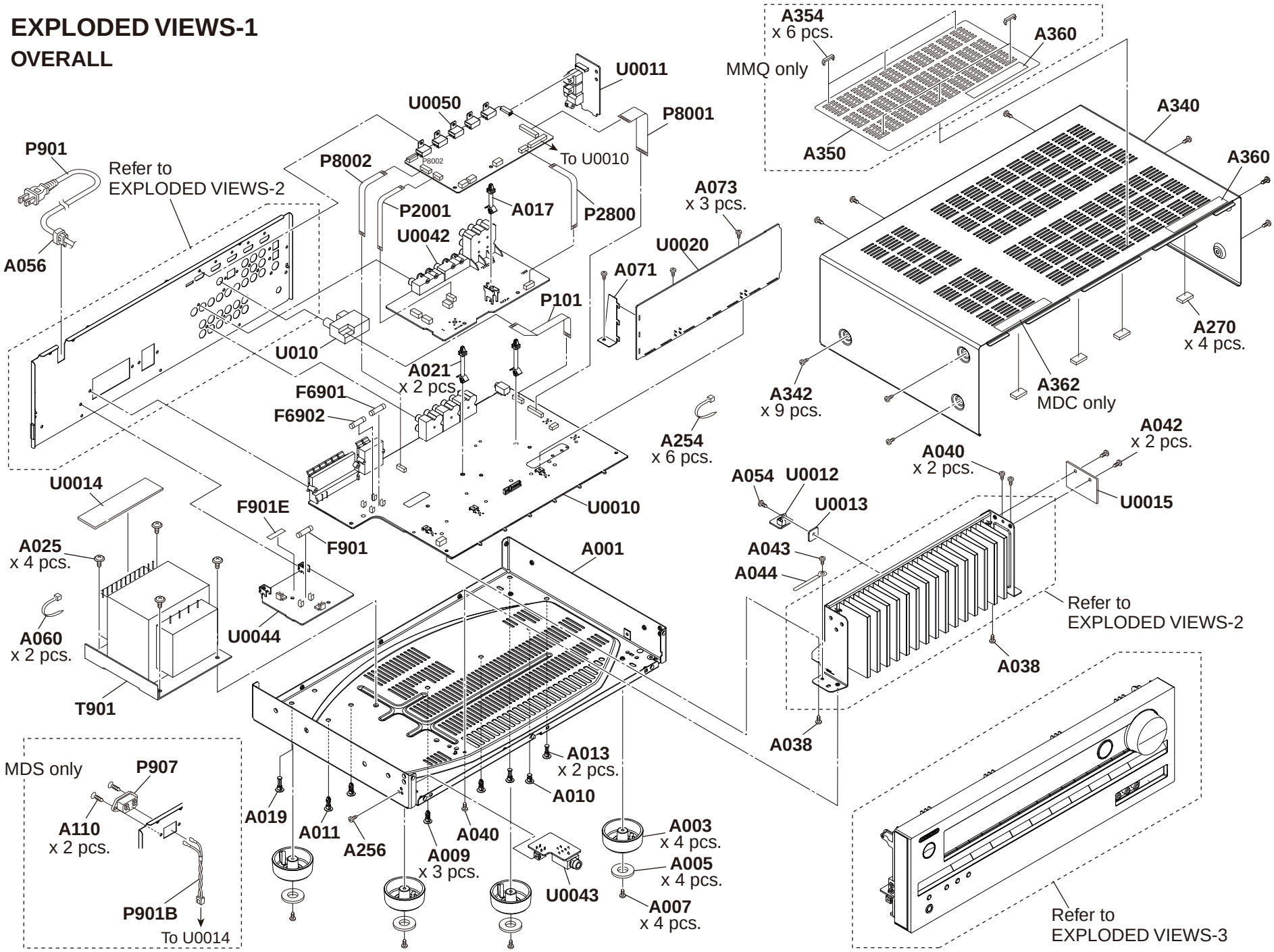
1. DSP Thru of Lstn Mode outputs L Input signal to L/C/LS/SB, and outputs R Input signal to R/RS/SBR/RSW.
2. Config. is in order of SW/Front/Center/Surround/Surround Back
3. Mute is function to stop output(from the channel) by using inner DSP programming.
4. When Lstn Mode is DSP thru, an analog SW is changed into the state of SURROUND.
5. At the time of PRTCTTHM detection, it is displayed on FLT as "THERMAL PROTECT".

f. Following frequencies are automatically written in the preset memory, when the unit goes into test mode.

	PRESET No.	MD*	MW*(10k)	MP*,MG* MW*(9k)
FM	1	89.9MHz	89.90MHz	89.90MHz
	2	97.9MHz	97.90MHz	97.90MHz
	3	98.9MHz	98.90MHz	98.90MHz
	4	107.1MHz	107.10MHz	107.10MHz
	5	107.9MHz	107.90MHz	107.90MHz
	6	100.1MHz	100.10MHz	100.10MHz
	7	88.1MHz	88.10MHz	88.10MHz
	8	104.1MHz	104.10MHz	104.10MHz
	9	95.3MHz	95.30MHz	95.30MHz
	10	106.7MHz	106.70MHz	106.70MHz
AM	11	530KHz	530KHz	522KHz
	12	630KHz	630KHz	630KHz
	13	990KHz	990KHz	990KHz
	14	1440KHz	1440KHz	1440KHz
	15	1710KHz	1710KHz	1611KHz
	16	670KHz	670KHz	666KHz
	17	830KHz	830KHz	828KHz
	18	1310KHz	1310KHz	1314KHz
	19	1200KHz	1200KHz	1197KHz
	20	530KHz	530KHz	522KHz
FM	21	87.5MHz	87.50MHz	87.50MHz
	22	107.9MHz	108.00MHz	108.00MHz
	23	103.7MHz	104.00MHz	104.00MHz
	24	104.5MHz	104.20MHz	104.20MHz
AM	25	1180kHz	1180kHz	1179kHz
	26	1220kHz	1220kHz	1215kHz

EXPLODED VIEWS-1

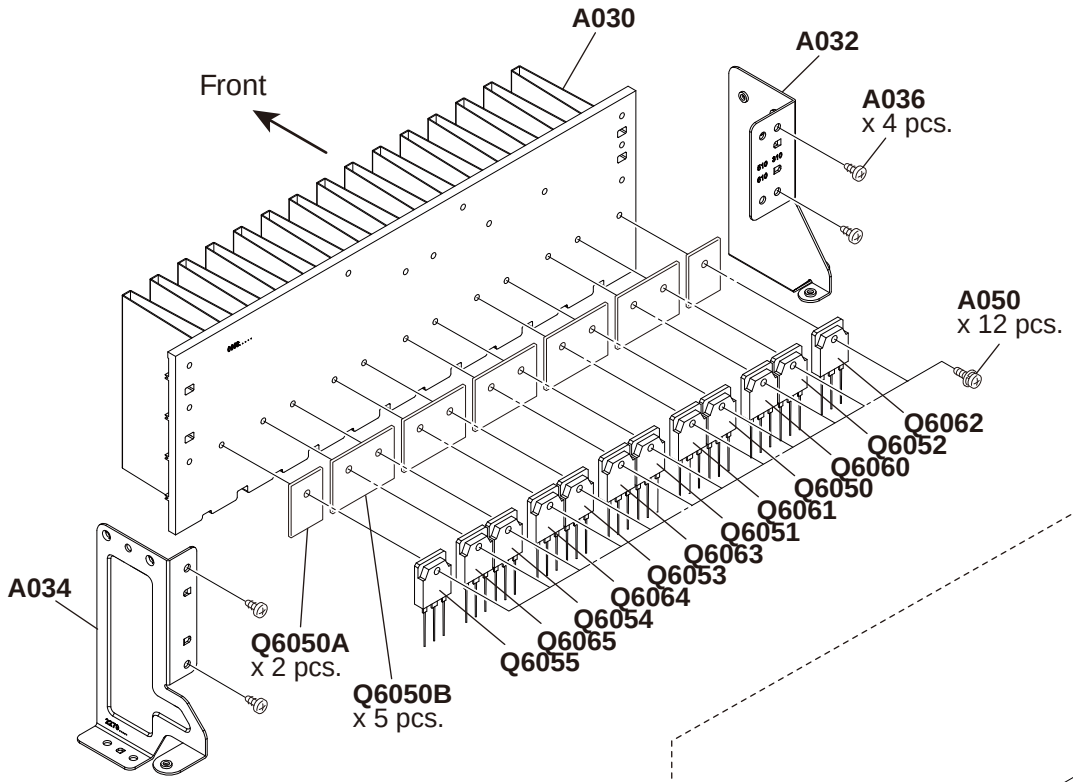
OVERALL



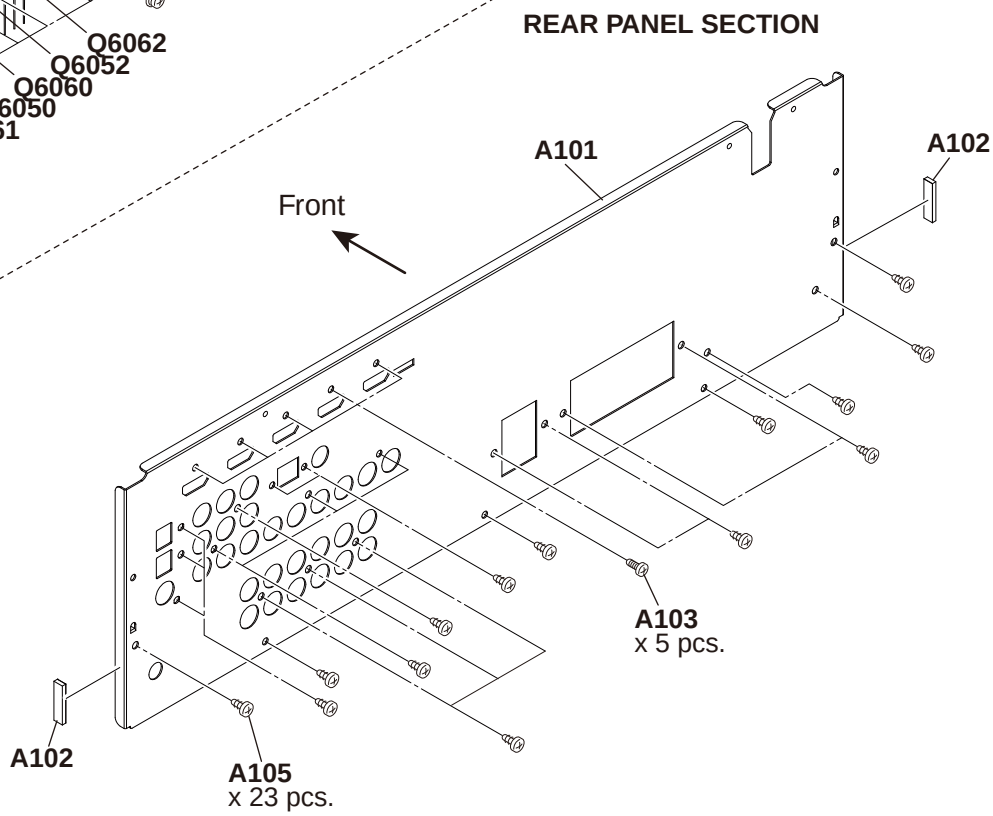
EXPLODED VIEWS-2

HEAT SINK / REAR PANEL SECTION

HEAT SINK SECTION

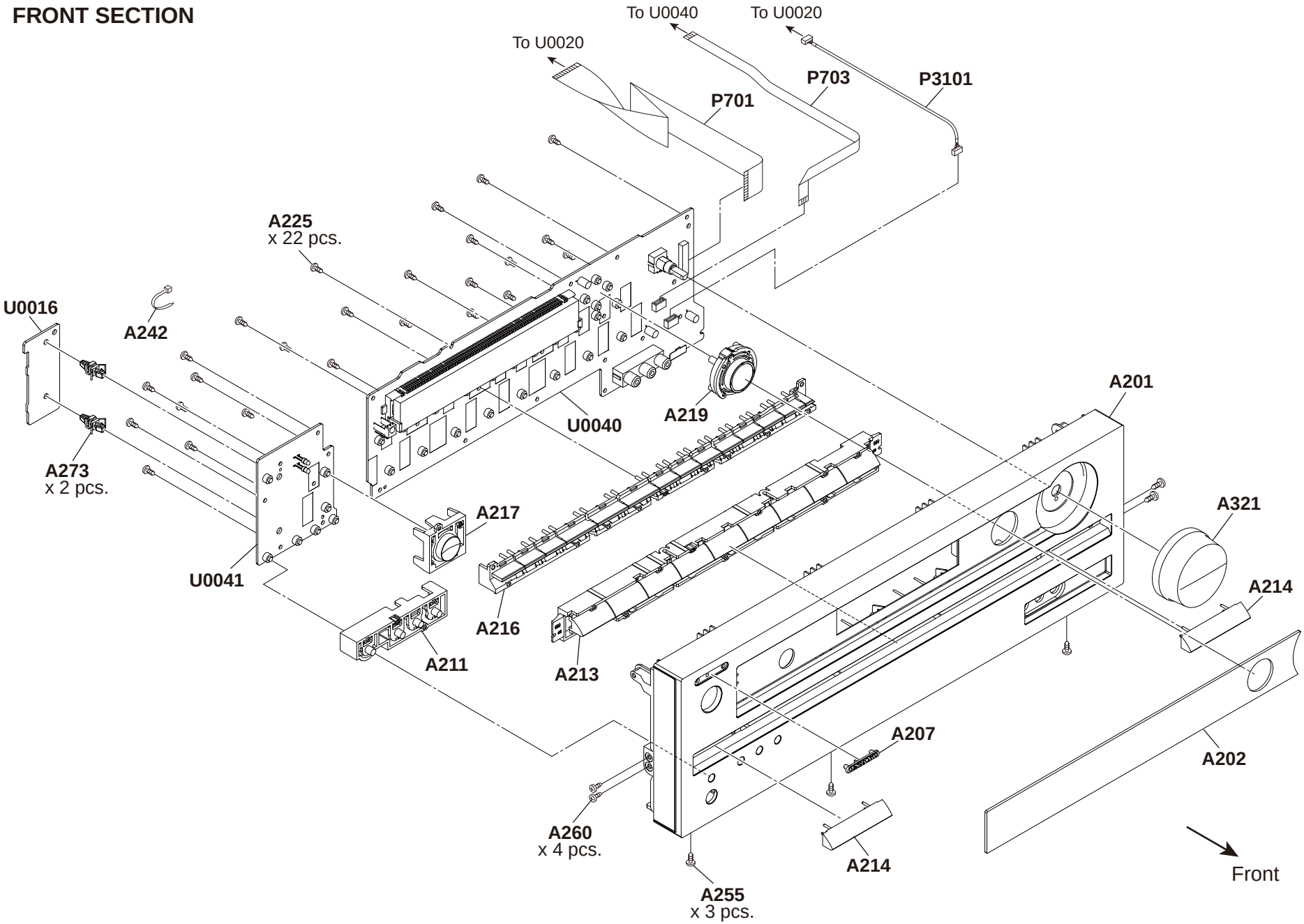


REAR PANEL SECTION



EXPLODED VIEWS-3

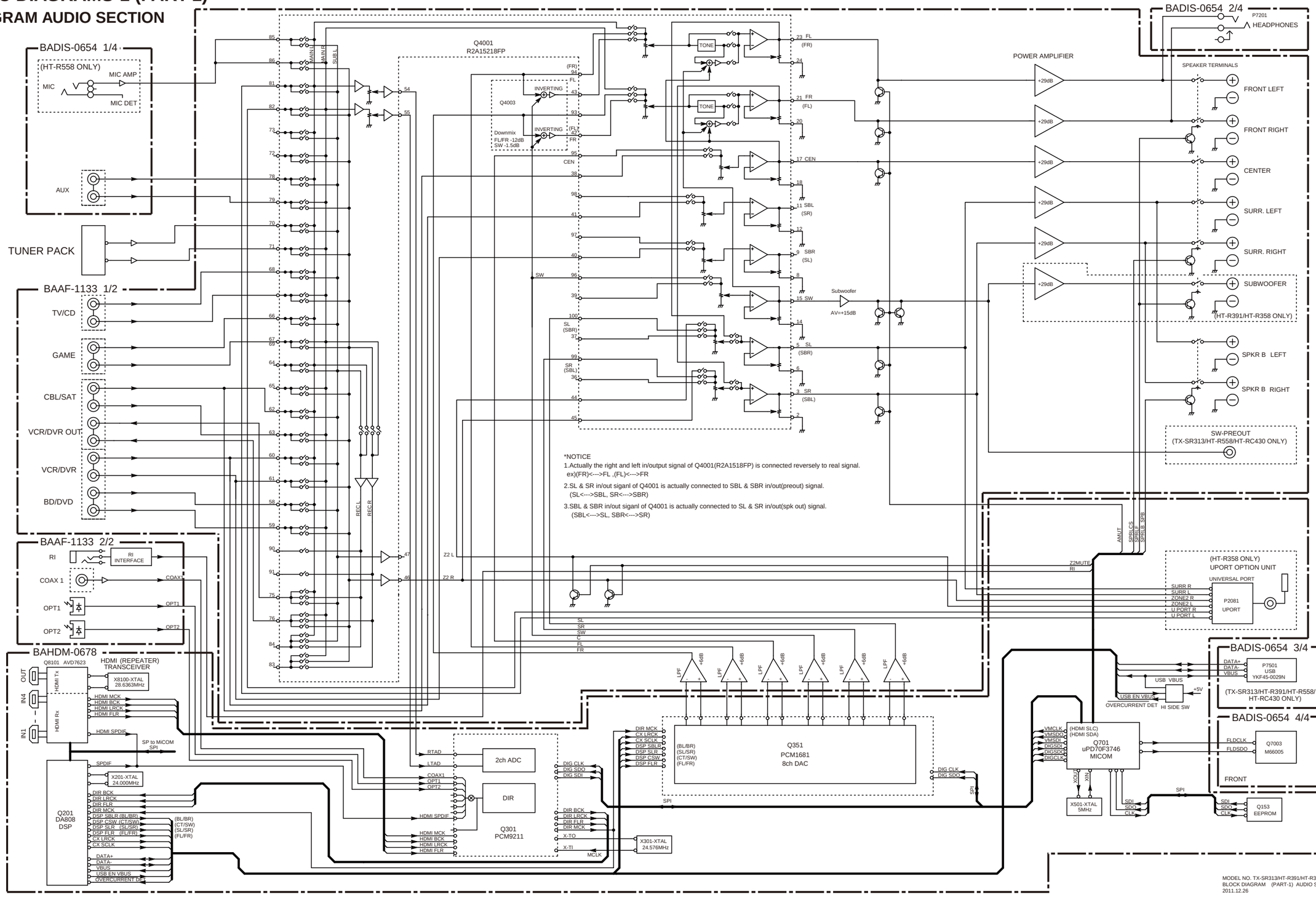
FRONT SECTION



HT-R391

SCHEMATIC DIAGRAMS-1 (PART-1)

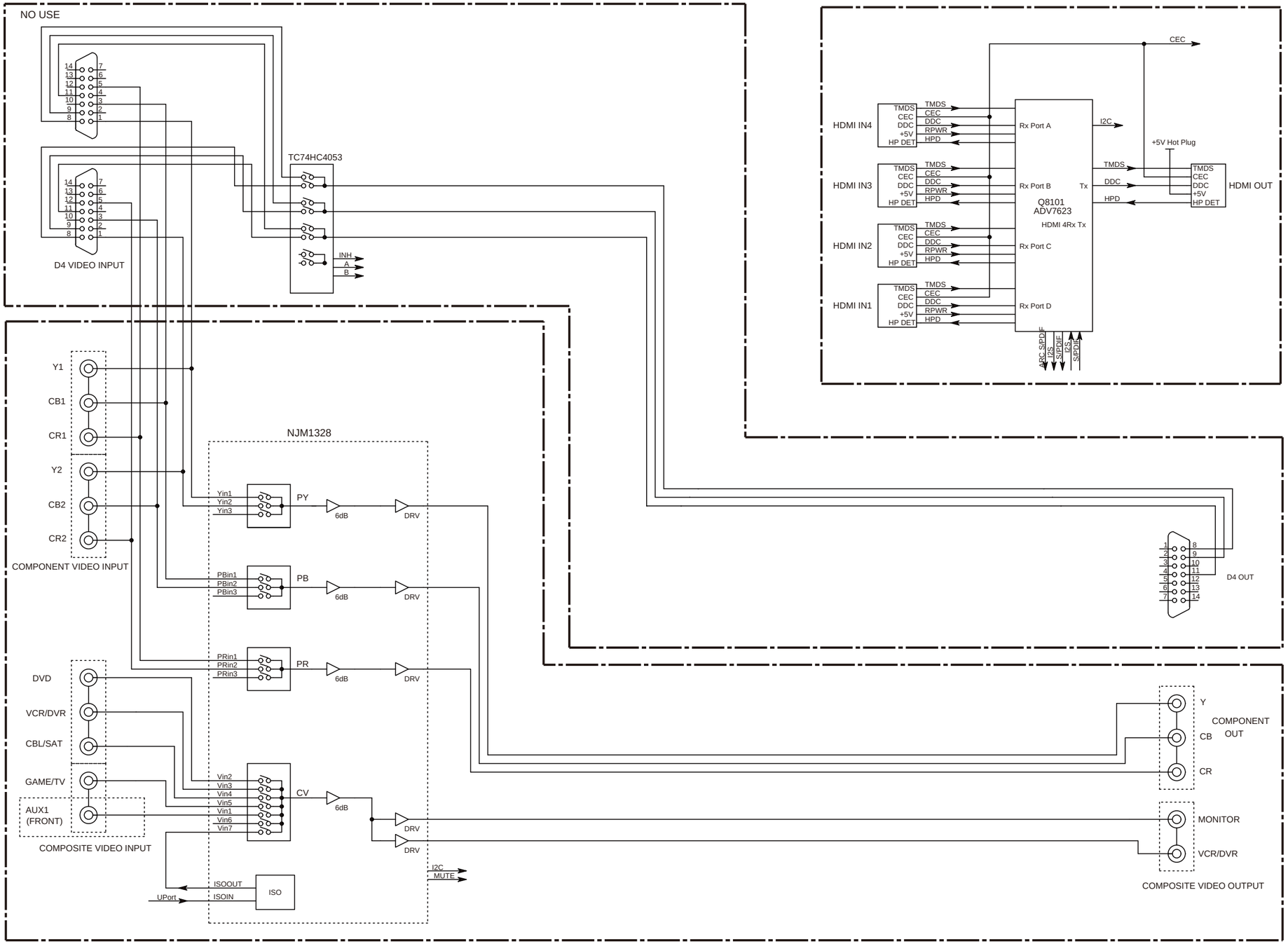
BLOCK DIAGRAM AUDIO SECTION



MODEL NO. TX-SR313/HT-R391/HT-R358/HT-R558/HT-RC430
BLOCK DIAGRAM (PART-1) AUDIO SECTION
2011.12.26

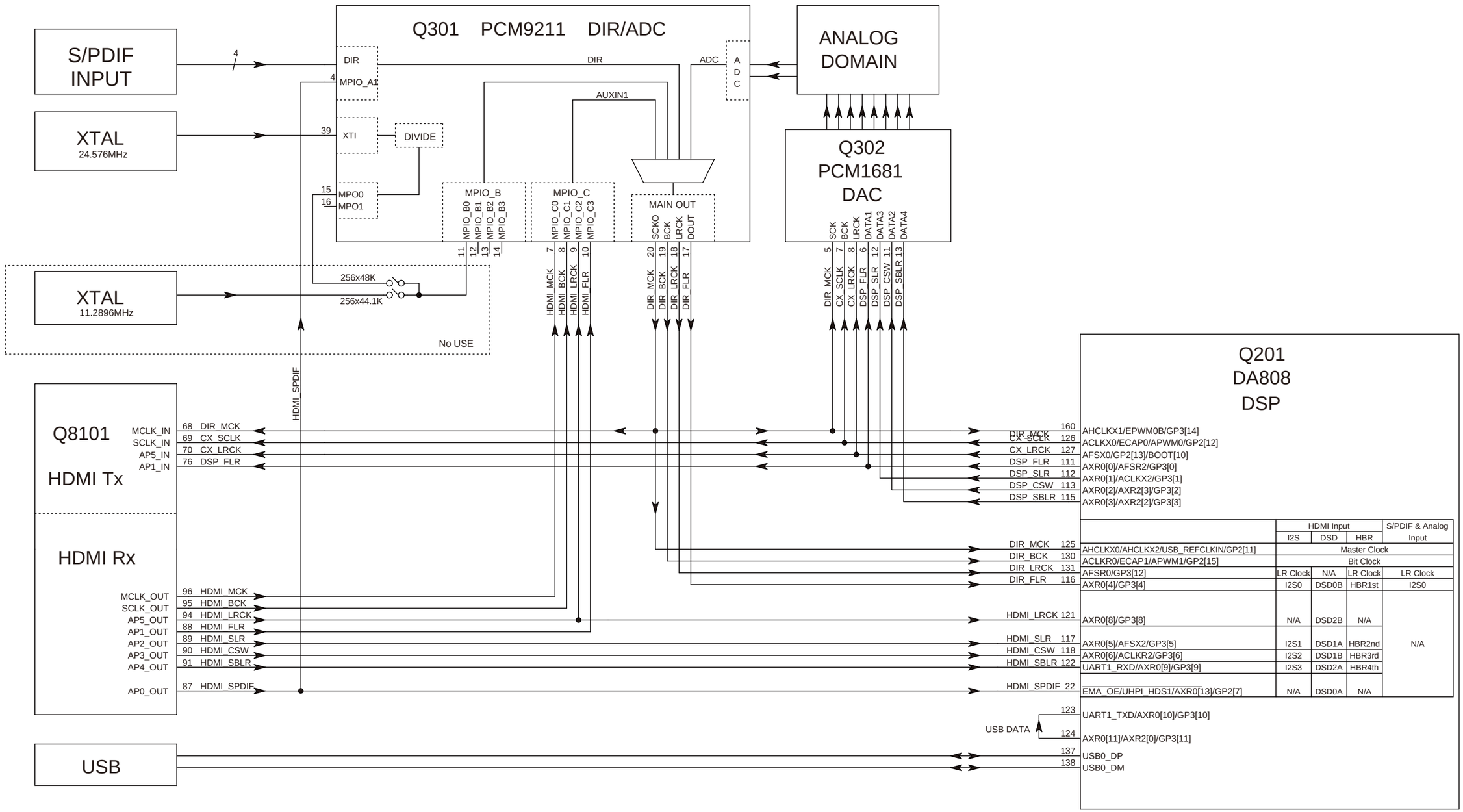
SCHEMATIC DIAGRAMS-2 (PART-2)

BLOCK DIAGRAM VIDEO SECTION



SCHEMATIC DIAGRAMS-3 (PART-3)

BLOCK DIAGRAM DIGITAL AUDIO SECTION



	HDMI Input			S/PDIF & Analog
	I2S	DSD	HBR	Input
AHCLKX0/AHCLKX2/USB_REFCLKIN/GP2[11]	Master Clock			
ACLKR0/ECAP1/APWM1/GP2[15]	Bit Clock			
AFSR0/GP3[12]	LR Clock	N/A	LR Clock	LR Clock
AXR0[4]/GP3[4]	I2S0	DSD0B	HBR1st	I2S0
AXR0[8]/GP3[8]	N/A	DSD2B	N/A	
AXR0[5]/AFSX2/GP3[5]	I2S1	DSD1A	HBR2nd	N/A
AXR0[6]/ACLKR2/GP3[6]	I2S2	DSD1B	HBR3rd	
UART1_RXD/AXR0[9]/GP3[9]	I2S3	DSD2A	HBR4th	
EMA_OE/UHPI_HDS1/AXR0[13]/GP2[7]	N/A	DSD0A	N/A	

TX-SR313/ HT-R358/ 558/ 391/ HT-RC430

SCHEMATIC DIAGRAMS-4 (PART-4)

ASP SECTION

BAAF-1133 (1/2)

U0010

AUDIO PC BOARD

ASP

VIDEO

TO BAVD-0656(PART-8)

DISPLAY

1mm FFC CABLE

FROM BADIS-0654(PART-10)

TUNER PACK

TUNER FFC CABLE(1.25mm)

FROM TUNER PACK

HDMI

1mm FFC CABLE

TO BAHDM-0678(PART-18)

HDMI

1mm FFC CABLE

TO BAHDM-0678(PART-14)

T3	TX-SR313 DC,DS,PP,PA,MQ,MR,MK
H39	HT-R391 DC,DS,MQ,MK
H35	HT-R358 PP,PB
H55	HT-R558 PP,PA,MQ,MR
H43	HT-RC430 DC

Option table

	T3/H55/H43			H39/H35		
	-2A	-2B	-2C	-2D	-2F	-2E
	MDC MDS	MPP MPA	MMQ MMR MMK	MDC MDS	MPP MPB	MMQ MMK
Table: A	○			×		
Table: B	×			×	○	×
C4107	47uF/50V			2.2uF/50V		
R4107	220K			2.2K		
R4001	10(1W)	4.7(1W)		10(1W)	4.7(1W)	

TO AMP SECTION (PART-5)

FROM AMP SECTION (PART-5)

TO BAVD-0656(PART-8)

Multi ch in for AMP TEST

*FL/FR use DVD IN

*SL/SR use GAME IN

*C use CBL Lch IN

*SW use CBL Rch IN

BAAF-1134

U0011

TERMINAL(DIGITAL) PC BOARD

DIGITAL IN

FROM BAHDM-0678(PART-18) HDMI

R2A15218FP

Q4001

(Botom view)

Model No. TX-SR313/HT-R391/HT-R358/HT-R558/HT-RC430
SCHEMATIC DIAGRAM (PART-4) ASP SECTION
2011.12.26

TX-SR313/ HT-R358/ 558/ 391/ HT-RC430

SCHEMATIC DIAGRAMS-5 (PART-5)

AMP. SECTION

Notes

THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR SAFETY.
REPLACE ONLY WITH PART NUMBER SPECIFIED.

VOLTAGE(MEASUREDWITHVOLTMETER) IS DCVOLTAGE
(NO INPUT SIGNAL in HT-R340MPP)
ELECTROLYTIC CAPACITORS( )ARE IN uF/WV.

EX)030:3pF 330:33pF 331:330pF 333:0.033uF

CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.
ALL CAPACITORS ARE IN pF/50WV UNLESS OTHERWISE NOTED.

CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH FUSE OF SAME TYPE AND RATING INDICATED.

ATTENTIION
AFIN D'ASSURER UNE PROTECTION PERMANENTE CONTRE LES RISQUES D'INCENDIE, REMPLACER UNIQUEMENT PAR UN FUSIBLE DE MEME TYPE ET CALIBRATION COMME INDIQUE.

THIS SYMBOL LOCATED NEAR THE FUSE INDICATES THAT THE FUSE USED IS SLOW OPERATING TYPE FOR CONTINUED PROTECTION AGAINST FIRE FUSE HAZARD,REPLACE WITH SAME TYPE FUSE. FOR FUSE RATING REFER TO THE MAKING ADJACENT TO THE SYMBOL.

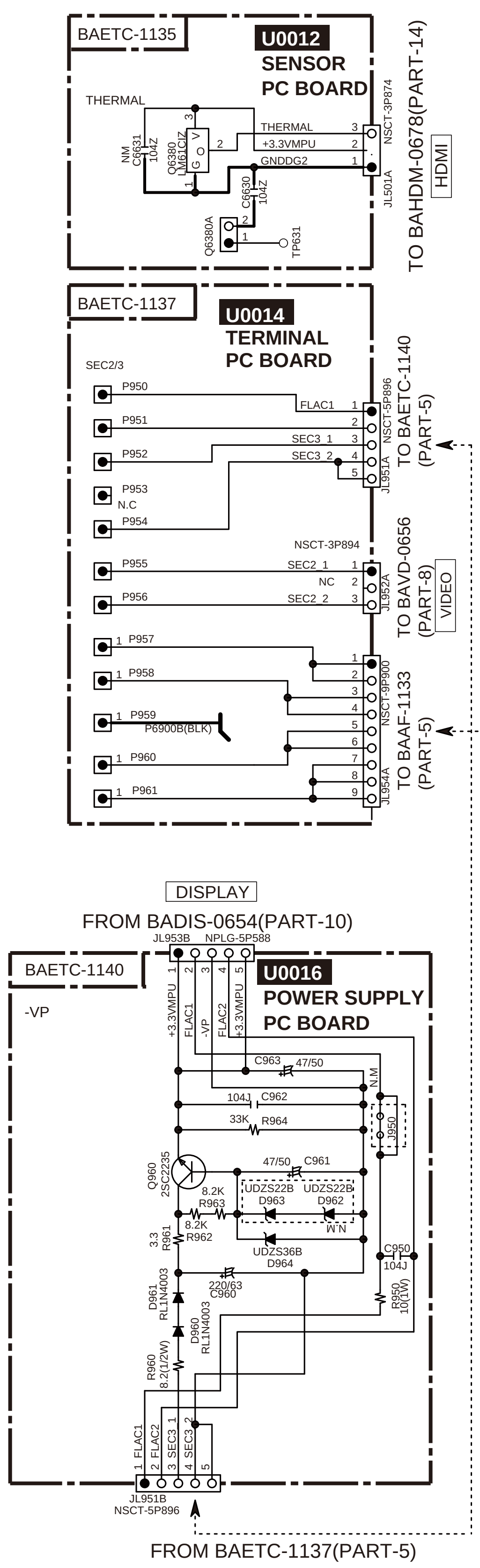
CE SYMBOLE INDIQUE QUE LE FUSIBLE UTLISE EST A LENT, E POUR UNE PROTECTION PERMANENTE,N'UTILISER QUE DES FUSIBLES DE MEME TYPE. CE DARNIER EST INDIQUE LA QU LE PRESENT SYMBOL EST APPOSE.

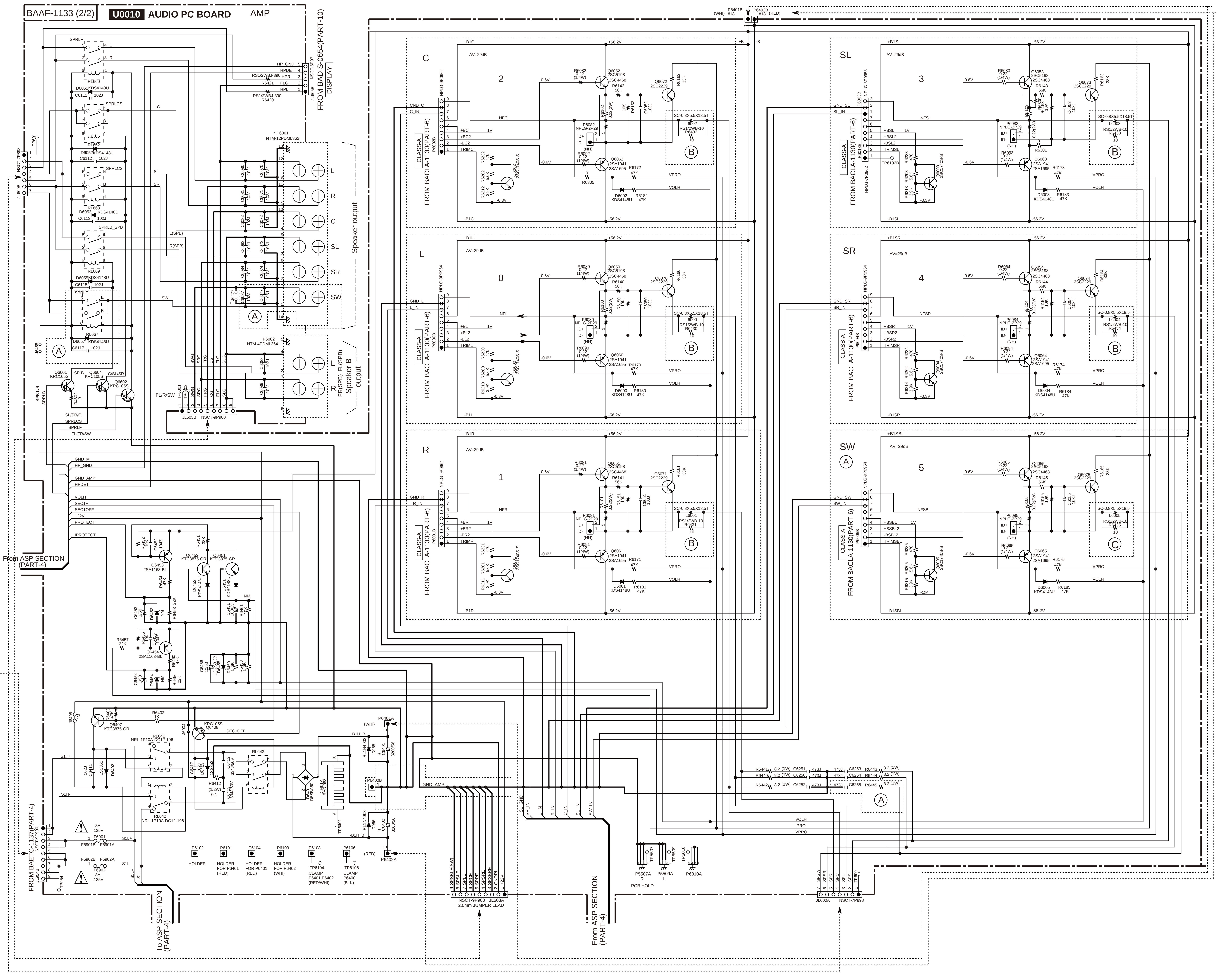
T3	TX-SR313 DC,DS,PP,PA,MQ,MR,MK
H39	HT-R391 DC,DS,MQ,MK
H35	HT-R358 PP,PB
H55	HT-R558 PP,PA,MQ,MR
H43	HT-RC430 DC

MODEL	Power Trans
T3/H43 -2A, H39 -2D	NPT-1603D
T3/H55 -2B, H35 -2F	NPT-1603P
T3 -2C, H39 -2E	NPT-1603M

Destination table

		T3/H55/H43			H39/H35		
		-2A	-2B	-2C	-2D	-2F	-2E
		MDC MDS	MPP MPA	MMQ MMR MMK	MDC MDS	MPP MPB	MMQ MMK
Table: A		×			○		
Table: B	L6000,L6001 L6002,L6003 L6004	×	○		×	○	
	R6430,R6431 R6432,R6433 R6434	JUMPER	○		JUMPER	○	
Table: C	L6004	×	×		×	○	
	R6434	×	×		JUMPER	○	
	J6477	○			×		
	P6001	NTM-10PDML			NTM-12PDML		
	C6401 C6402	8200u 56V		8200u 63V	8200u 56V		8200u 63V





SCHEMATIC DIAGRAMS-6 (PART-6)

AMP.(CLASS-A) SECTION

ADJUSTMENT OF IDLING CURRENT

[NOTES]

1. Set R6040 ~6046 to minimum position before POWER ON.
2. Equip series 1/4W 100-ohm resisters near the terminal respectively in the each poles of the jig used for P6080-6086 terminals.

[PROCEDURES]

1. Set the voltages at P6080 ~6082 to 2.5mV by adjusting R6040 ~6042, under the condition of no input and no load, immediately after POWER ON.
2. Set the voltages at P6083 ~6086 to 1.5mV by adjusting R6043 ~6046, under the condition of no input and no load, immediately after POWER ON.
3. Re-adjust by following procedure after 4 ~ 6 minutes of heat running.

L/ C/ R			SL/ SR/ SBL/ SBR		
Below 9mV	→	9mV	Below 6mV	→	6mV
Between 9 ~11mV	→	Leave it as it is.	Between 6 ~8mV	→	Leave it as it is.
Over 11mV	→	11mV	Over 8mV	→	8mV

アイドリング電流の調整

[注意]

1. R6040～6046はPOWER ON前に、左に回して最小の位置にしておく。
2. P6080～6086端子に接続するジグ端子の両極には、端子近傍にそれぞれ100Ω1/4Wの抵抗をシリーズに入れること。

[手順]

1. 無負荷・無信号にてPOWER ON直後、P6080～6082の両端電圧をR6040～6042にて2.5mVに設定する。
2. 無負荷・無信号にてPOWER ON直後、P6083～6086の両端電圧をR6043～6046にて1.5mVに設定する。
3. 約 4～6分間のヒートラン後、下記手順で再調整する。

L/ C/ R			SL/ SR/ SBL/ SBR		
9mV 未満の場合	→	9mV	6mV 未満の場合	→	6mV
9～11mV の場合	→	そのまま	6～8mVの場合	→	そのまま
11mV より大きい場合	→	11mV	8mV より大きい場合	→	8mV

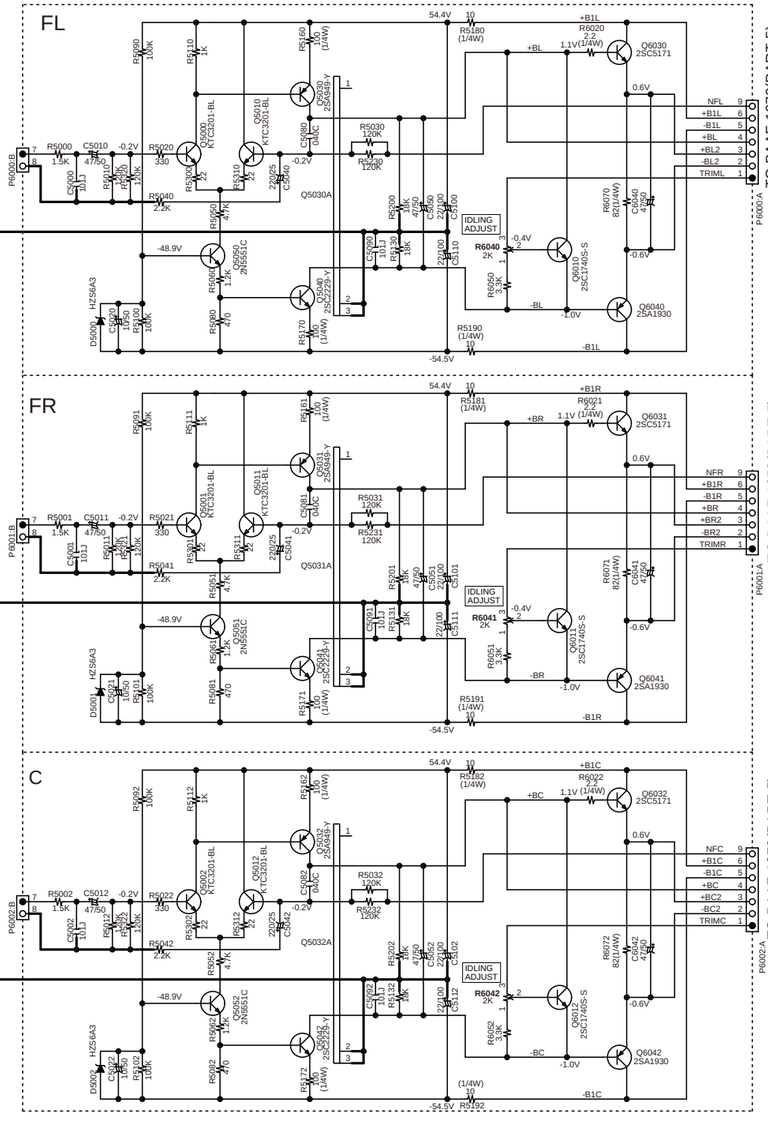
BACLA-1130

CLASS-A

CODE	MODEL
T3	TX-SR313
H39	HT-R391
H35	HT-R358
H55	HT-R558
H43	HT-RC430
H59	HT-R591
T4	TX-NR414
H75	HT-R758
T5	TX-NR515
H46	HT-RC460
H79	HT-R791
D2	DTR-20.4

U0020

APLIFIER PC BOARD



SCHEMATIC DIAGRAMS-8 (PART-8)

VIDEO SECTION

BAVD-0656 **U0042**

VIDEO PC BOARD

NO USE (D Treminal)

CODE	MODEL
T3	TX-SR313
H4	HT-RC430
H39	HT-R391
H35	HT-R358
H55	HT-R558
H59	HT-R591

FrontUSB			
	need parts	R2602	R2603	R2604
O	Q2600 C2601 - C2605 R2601 - R2603	22	4.7	NC
X	R2602 - R2604	0	0	0

NJW1328 Q2001

NJM2505AF Q2600

NJM4580M-D

KDS4148U

UD256.2B

KDS4148U

5A125V

XC62D8501PR Q9020

BLM18PG181SN1 L9020

TO BAETC-1137(PART-4) TO AMP PWB

TO BAAF-1133(PART-4) TO AMP PWB

TO BAAF-1133(PART-4) TO AMP PWB

TO UP-A1L TO iPod Dock

TO BAHDM-0678(PART-14) For HDMI

TO BAHDM-0678(PART-14) NO USE

From FAN

SCHEMATIC DIAGRAMS-10 (PART-10)

DISPLAY SECTION

A B C D E F G H

1 2 3 4 5

BADIS-0654

DISPLAY

Q7002
16-BT-162GNK

U0040
DISPLAY PC BOARD

TO BAETC-1075(PART-5)
TO BAETC-1140(PART-5)

FROM BAHDM-1126(PART-14)
FROM BAHDM-0678(PART-14)

HDMI

TO BAETRM-1089(PART-9)
TO BAAF-1133(PART-5)

FROM BAETC-1092(PART-9)
TO BAAF-1133(PART-4)

ASP

BAETC-0658

U0043
PHONE JACK PC BOARD

HEAD PHONE

BADIS-0655

KEY

U0041
SWITCH PC BOARD

Q7003
M66005-0001AHP

HT55/HT59 ONLY

MIC SECTION

USB SECTION

ADD : T3/HT39/55/59
DEL : HT35

CODE	MODEL
T3	TX-SR310
HT43	HT-RC430
HT39	HT-R391
HT35	HT-R358
HT55	HT-R558
HT59	HT-R591

MODEL NO. TX-SR313, HT-RC430, HT-R391/358/558/591
SCHEMATIC DIAGRAM (PART-10) DISPLAY SECTION
2011. 12. 26

SCHEMATIC DIAGRAMS-11 (PART-11)

POWER SUPPLY SECTION

・印は火災、感電の危険に関与する部品の為、必ず指定部品を使用の事。
・電圧表示は無信号時に測定した直流電圧を示す。
（単位Ｖ，入力抵抗１００ＫΩ／Ｖ以上の電圧計）
・記入なき電解コンデンサの単位はμＦ／ＷＶである。
・記入なきコンデンサの単位はｐＦ／５０ＷＶである。
例　０３０→3ｐＦ　３３０→３３ｐＦ　３３１→３３０ｐＦ　３３３→0．０３３μＦ
・本配線図は基本配線図につき性能改善等により予告なく変更する事がある。

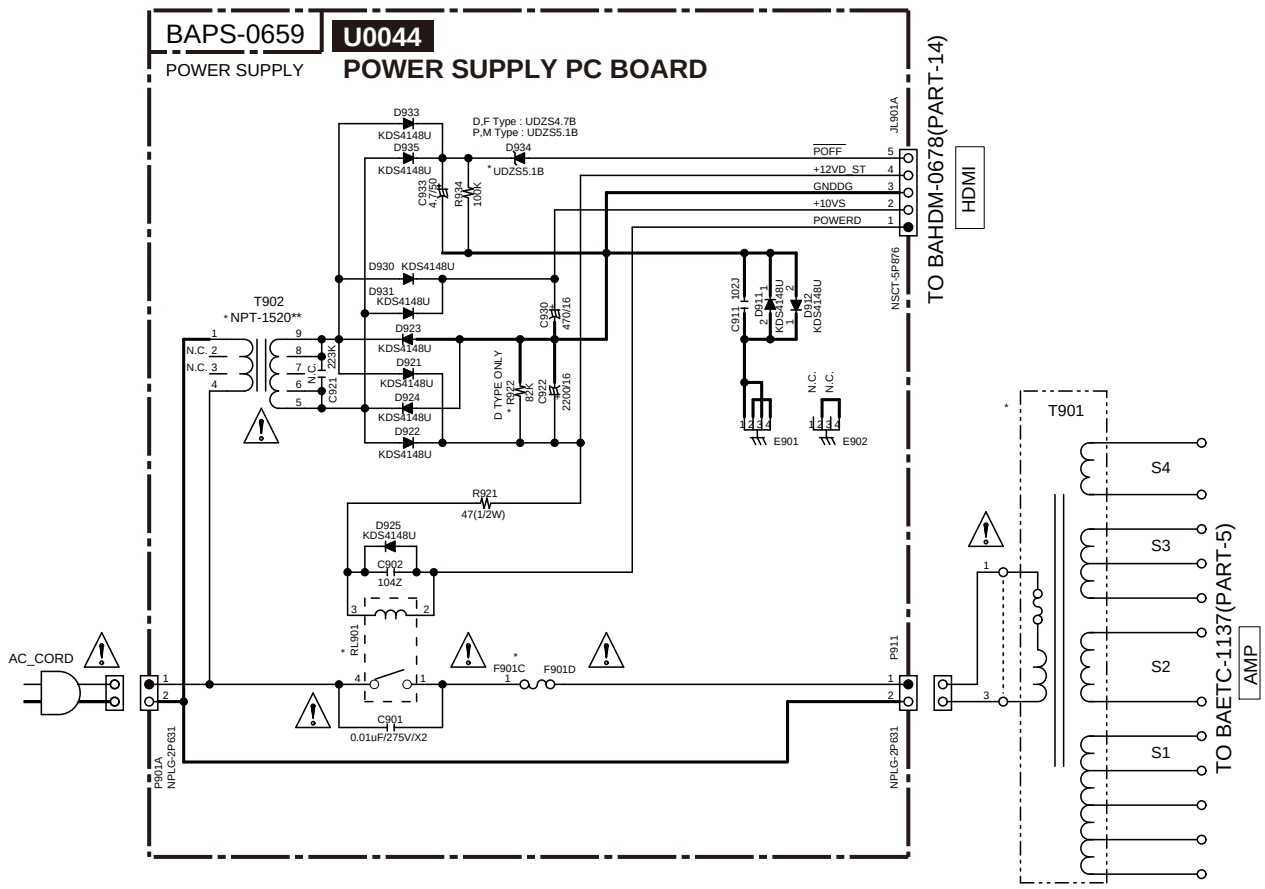
Notes
THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR SAFETY.
REPLACE ONLY WITH PART NUMBER SPECIFIED.
VOLTAGE(MEASUREDWITHVOLTMETER) IS DCVOLTAGE
(NO INPUT SIGNAL in HT-R340MPP)
ELECTROLYTIC CAPACITORS(⏚)ARE IN uF/WV.
EX)030:3pF 330:33pF 331:330pF 333:0.033uF
CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.
ALL CAPACITORS ARE IN pF/50WV UNLESS OTHERWISE NOTED.

CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH FUSE OF SAME TYPE AND RATING INDICATED.

ATTENTIION
AFIN D'ASSURER UNE PROTECTION PERMANENTE CONTRE LES RISQUES D'INCENDIE, REMPLACER UNIQUEMENT PAR UN FUSIBLE DE MEME TYPE ET CALIBRATION COMME INDIQUE.

THIS SYMBOL LOCATED NEAR THE FUSE INDICATES THAT THE FUSE USED IS SLOW OPERATING TYPE FOR CONTINUED PROTECTION AGAINST FIRE FUSE HAZARD,REPLACE WITH SAME TYPE FUSE. FOR FUSE RATING REFER TO THE MAKING ADJACENT TO THE SYMBOL.

CE SYMBOLE INDIQUE QUE LE FUSIBLE UTLISE EST A LENT, E POUR UNE PROTECTION PERMANENTE,N'UTILISER QUE DES FUSIBLES DE MEME TYPE. CE DARNIER EST INDIQUE LA QU LE PRESENT SYMBOL EST APPOSE.



CODE	MODEL
T3	TX-SR313
HT43	HT-RC430
HT39	HT-R391
HT35	HT-R358
HT55	HT-R558
HT59	HT-R591

TYPE	AC
D	120V ～ / 60Hz
P	230V ～ / 50Hz
M	220-240V ～ / 50/60Hz

F901

TYPE	T3	HT39	HT43	HT35/55	HT59
D,F	8A 125V	8A 125V	8A 125V	---	8A 125V
P,M	T4AL250V	T4AL250V	---	T4AL250V	T4AL250V

RL901

TYPE	T3	HT39	HT43	HT35/55	HT59
D,F	NRL-1P5A	NRL-1P5A	NRL-1P5A	---	NRL-1P5A
P,M	NRL-1P5A	NRL-1P5A	---	NRL-1P5A	NRL-1P5A

T901

TYPE	T3	HT39	HT43	HT35	HT55	HT59
D,F	NPT-1603D	NPT-1603D	NPT-1603D	---	---	NPT-1604D
P	NPT-1603P	---	---	NPT-1603P	NPT-1603P	---
M	NPT-1603M	NPT-1603M		---	NPT-1603M	NPT-1604M

T902

TYPE	T3	HT39	HT43
D,F	NPT-1520JQ	NPT-1520JQ	NPT-1520JQ
P,M	NPT-1520GQ	NPT-1520GQ	---
TYPE	HT35/55	HT59	
D,F	---	NPT-1520JQ	
P,M	NPT-1520GQ	NPT-1520GQ	

TX-SR313/ HT-R358/ 558/ 391/ HT-RC430

TX-SR313/ HT-R358/ 558/ 391/ HT-RC430

SCHEMATIC DIAGRAMS-14(PART-14)

MPU SECTION

BAHDM-0678(1/3)

U0050

HDMI PC BOARD

to RB Section
No USE

UPGRADE

INITIAL

MAIN MICOM

EEPROM

J-TAG

RESET

MUTE

AUTHENTICATION

MPD70F3746
Q701

to DSP Section (Part-18)

to HDMI Section (Part-15)

TO BAAF-0614(PART-3) AMP

TO BAVD-0656(PART-7) VIDEO

TO BAVD-0656(PART-7) VIDEO

TO BADIS-0654(PART-10) DIS

TO BAPS-0659(PART-11) STANBY

TO BAETC-0616(PART-4) THERMAL

TO BAVD-0656(PART-7) VIDEO

POWER SUPPLY (DDC)

POWER SUPPLY For HDMI

POWER SUPPLY (MPU)

POWER SUPPLY (STB)

SCHEMATIC DIAGRAMS-16 (PART-16)

HDMI SECTION

BAHDM-0678(2/3) **U0050** HDMI PC BOARD

HDMI IN 4 (P8101) · HDMI IN 3 (P8102) · HDMI IN 2 (P8103) · HDMI IN 1 (P8104)

HDMI TxRx

HDMI 4Rx Tx
Q8101
ADV7623

SPI MEMORY
Q8105
W25Q16CVSSIG

SPI MEMORY Writer
P8901

HDMI OUT
D8145 AOZ8804ADI

HOT PLUG
D8100 KDS4148U
Q8104 MM3404A50NRE

to CODEC Section (Part-18)

to DSP Section (Part-18)

from MAIN MICON Section (Part-14)

TX-SR313/ HT-R358/ 558/ 391/ HT-RC430

SCHEMATIC DIAGRAMS-19 (PART-19)

DSP/ DIR/ DAC SECTION

BAHDM-0678(3/3)

U0050
HDMI PC BOARD

to HDMI Section (Part-15)
to MICON Section (Part-14)

EXCEPT HT-R358

Boot Mode	SPI1
Boot [7]	L
Boot [2]	H
Boot [1]	H
Boot [0]	L

SPI Memory Writer

W25Q16CVSSIG Q282

64Mbit SDRAM Q281 EM638165TS-7G

Q201 DA808

Q351 PCM1681

Q301 PCM9211

Q271 S-1172B12-U5T1G

Q272 BU33TD3WG-TR

Q277 BU33TD3WG-TR

Q278 BU18TD3WG-TR

PIN	No	SoftWare	HardWare
1	R353	N.C.	0
2	R358	N.C.	0
	R351	330	N.C.
3	R363	N.C.	0
	R352	330	N.C.
4	R361	330	N.C.
	R350	N.C.	330
14	R362	0	220k

No USE

TO BADG-0615 (PART-3)

TO BAAF-0614 (PART-3)

to Micon Section (Part-14)

ONKYO

Onkyo Sound & Vision Corporation
Technical Support, Service Department
2-1, Nisshin-cho, Neyagawa-shi, OSAKA 572-8540, JAPAN
Tel: 072-831-8023 Fax: 072-831-8163

Onkyo U.S.A. Corporation
18 Park Way, Upper Saddle River, N.J. 07458, U.S.A.
Tel: 800-229-1687, 201-785-2600 Fax: 201-785-2650
http://www.us.onkyo.com/

Onkyo Europe Electronics GmbH
Liegnitzerstrasse 6, 82194 Groebenzell, GERMANY
Tel: +49-8142-4401-0 Fax: +49-8142-4208-213
http://www.eu.onkyo.com/

Onkyo Europe Electronics GmbH (UK Branch)
The Coach House 81A High Street, Marlow, Buckinghamshire, SL7 1AB, UK
Tel: +44-(0)1628-473-350 Fax: +44-(0)1628-401-700

Onkyo China Limited
Unit 1033, 10/F, Star House, No 3, Salisbury Road, Tsim Sha Tsui Kowloon, Hong Kong.
Tel: 852-2429-3118 Fax: 852-2428-9039
http://www.onkyochina.com/

Onkyo China PRC
1301, 555 Tower, No.555 West NanJin Road, Jin an, Shanghai,
China 200041, Tel: 86-21-52131366 Fax: 86-21-52130396
http://www.cn.onkyo.com/