

MICRO COMPONENT SYSTEM MCR-E810 DVD PLAYER DVD-E810

SERVICE MANUAL

The MCR-E810 is composed of the DVD-E810, RX-E810 and NX-E800.

This service manual is for the DVD-E810.

For service manual of the RX-E810 and NX-E800, please refer to the following publication number:

RX-E810/RX-E410/NX-E800 101019

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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This Service Manual uses recycled paper.

101017

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YAMAHA

YAMAHA CORPORATION
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06.08

DVD-E810

■ TO SERVICE PERSONNEL

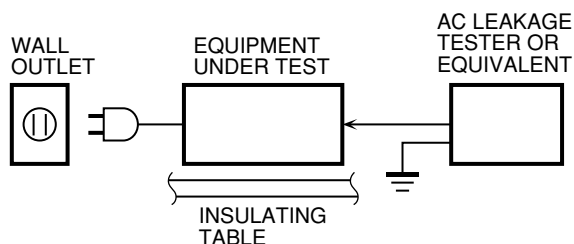
1. Critical Components Information

Components having special characteristics are marked $\triangle$ 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.

WARNING: CHEMICAL CONTENT NOTICE!

The solder used in the production of this product contains LEAD. In addition, other electrical/electronic and/or plastic (where applicable) components may also contain traces of chemicals found by the California Health and Welfare Agency (and possibly other entities) to cause cancer and/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.

WARNING: Laser Safety

This product contains a laser beam component. This component may emit invisible, as well as visible radiation, which may cause eye damage. To protect your eyes and skin from laser radiation, the following precautions must be used during servicing of the unit.

- 1) When testing and/or repairing any component within the product, keep your eyes and skin more than 30 cm away from the laser pick-up unit at all times. Do not stare at the laser beam at any time.
- 2) Do not attempt to readjust, disassemble or repair the laser pick-up, unless noted elsewhere in this manual.
- 3) CAUTION : Use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Laser Emitting conditions:

- 1) When the Top Cover is removed, and the STANDBY/ON SW is turned to the "ON" position, the laser component will emit a beam for several seconds to detect if a disc is present. During this time (5-10 sec.) the laser may radiate through the lens of the laser pick-up unit. Do not attempt any servicing during this period!
If no disc is detected, the laser will stop emitting the beam. When a disc is loaded, you will not be exposed to any laser emissions.
- 2) The laser power level can be adjusted with the VR on the pick-up PWB, however, this level has been set by the factory prior to shipping from the factory. Do not adjust this laser level control unless instruction is provided elsewhere in this manual. Adjustment of this control can increase the laser emission level from the device.

Laser Diode Properties

Type:	Semiconductor laser GaAlAs
Wave length:	650 nm (DVD) 780 nm (VCD/CD)
Output power:	7 mW (DVD) 10 mW (VCD/CD)
Beam divergence:	60 degree

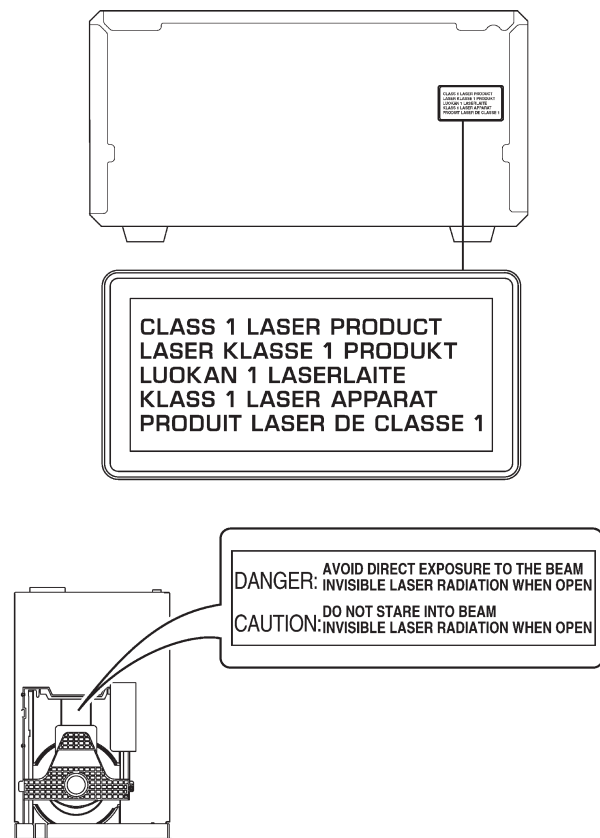
VARO!

AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.

WARNING!

OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.

WARNING



CAUTION VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.

ADVARSEL SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING. UNDGÅ UDSÆTTELSE FOR STRÅLING.

ADVARSEL SYNLIG OG USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES. UNNGÅ EKSPONERING FOR STRÅLEN.

VARNING SYNLIG OCH OSYNLIG LASERSTRÅLNING NÅR DENNA DEL ÄR ÖPPNAD. BETRAKTA EJ STRÅLEN.

VARO! AVATTAESSA OLET ALTTIINA NÄKYVÄLLE JA NÄKYMÄTTÖMÄLLE LASER SÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.

VORSICHT SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.

DANGER VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM.

ATTENTION RAYONNEMENT LASER VISIBLE ET INVISIBLE EN CAS D'OUVERTURE. EXPOSITION DANGEREUSE AU FAISCEAU.

Warning for power supply

The primary side of the power supply carries live mains voltage when the player is connected to the mains even when the player is switched off !

This primary area is not shielded so it is possible to touch copper tracks and/or components when servicing the player. Service personnel have to take precautions to prevent touching this area or components in this area.

Note:

The screws on the DVD mechanism may never be touched, removed or re-adjusted.

Handle the DVD mechanism with care when the unit has to be exchanged!

The DVD mechanism is very sensitive for dropping or giving shocks.

■ PREVENTION OF ELECTROSTATIC DISCHARGE

The laser diode in the DVD mechanism may be damaged due to static electricity from clothes or the human body. Use caution to prevent electrostatic damage when servicing or handling the DVD-mechanism.

1. Grounding for electrostatic damage prevention

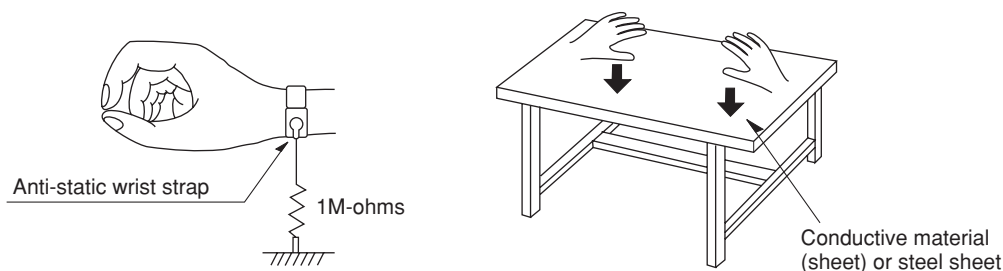
Some devices, such as the DVD player, use an optical pickup (laser diode) that will be damaged by static electricity in the working environment. Only attempt service after ensuring that all grounding procedures have been completed.

1. Worktable grounding

Put a grounded conductive material (sheet) or iron sheet on the area where the optical pickup is placed.

2. Human body grounding

Use an anti-static wrist strap to discharge the static electricity from your body.



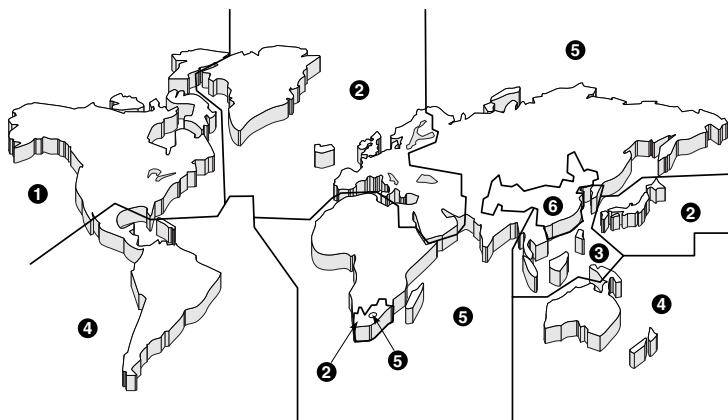
2. Handling Precautions for DVD mechanism

1. Handle the DVD mechanism gently, as it is an extremely high-precision assembly.
2. The flexible cable lines may break if an excessive force is applied to it. Use caution when handling the cable.
3. The semi-fixed resistor for laser power adjustment should not be adjusted. Do not turn the resistor.

■ LOCALE MANAGEMENT INFORMATION

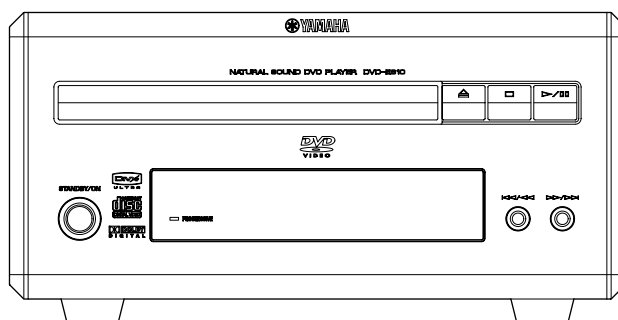
Locale Management Information : This DVD player is designed and manufactured to respond to the Locale Management Information that is recorded on a DVD disc. If the Locale number described on the DVD disc does not correspond to the Locale number of this DVD player, this DVD player cannot play this disc.

This product incorporates copyright protection technology that is protected by method claims of certain U.S. patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorized by Macrovision Corporation, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision Corporation. Reverse engineering or disassembly is prohibited.



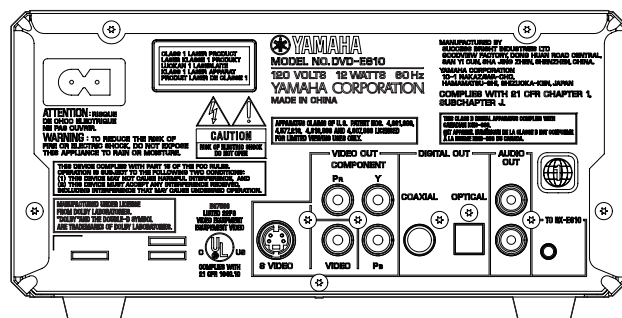
FRONT PANEL

DVD-E810 (U, C, T, K, A, B, G, L, V models)

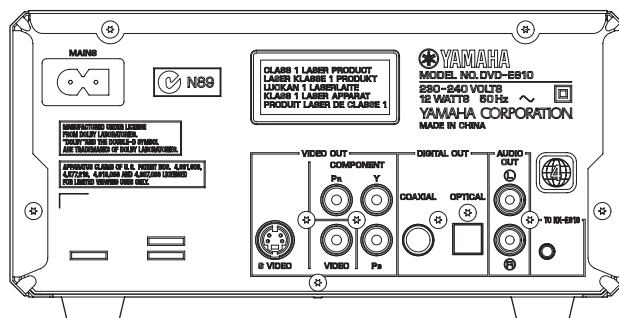


REAR PANELS

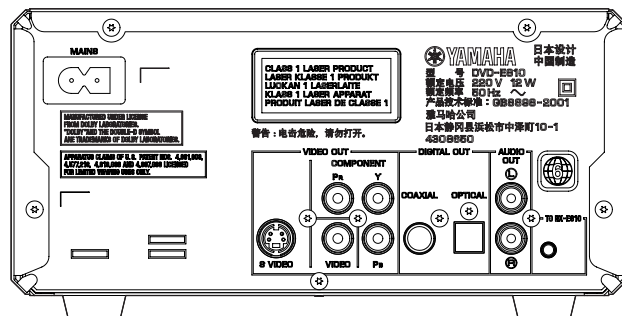
DVD-E810 (U, C models)



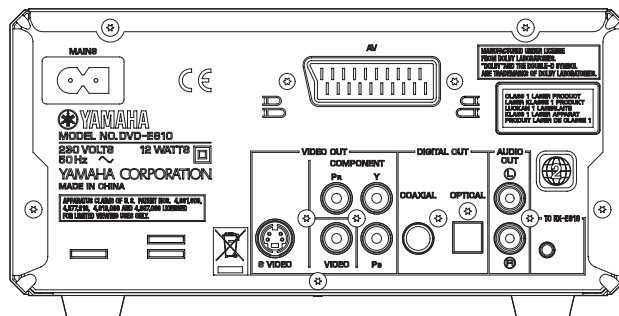
DVD-E810 (A model)



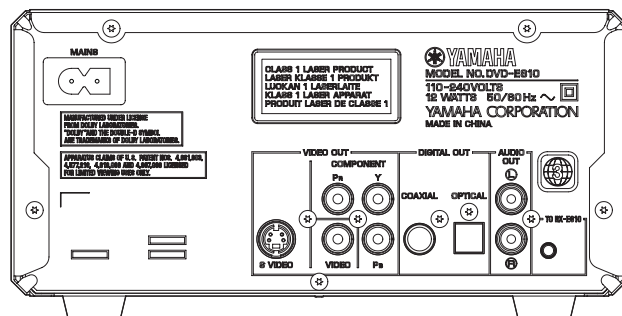
DVD-E810 (T model)



DVD-E810 (B, G models)



DVD-E810 (K, L, V models)



SPECIFICATIONS

PLAYBACK SYSTEM

DVD Video, VR (Video Recording) format (DVD-RW)
 Video CD & SVCD
 CD
 Picture CD
 CD-R, CD-RW
 DVD+R, DVD+RW, DVD+R DL
 DVD-R, DVD-RW, DVD-R DL

VIDEO PERFORMANCE

Video (CVBS) output 1 Vpp into 75 ohms
 S-Video output Y: 1 Vpp into 75 ohms
 C: 305 mVpp into 75 ohms
 RGB (Scart) output 700 mVpp into 75 ohms
 Component video output Y: 1 Vpp into 75 ohms
 Pb/Cb Pr/Cr: 700 mVpp into 75 ohms

AUDIO FORMAT

Digital Dolby Digital/DTS/MPGE
 Compressed Digital
 PCM 16, 20, 24 bits
 fs, 44.1, 48, 96 kHz
 MP3 (ISO 9660) 96, 128, 256, 320 kbps
 fs, 32, 44.1, 48 kHz
 WMA 64 kbps to 192 kbps
 fs, 44.1, 48 kHz
 Analog sound Stereo

AUDIO PERFORMANCE

DA converter 24 bits/192 kHz
 Signal to noise (1 kHz) 105 dB
 Dynamic range (1 kHz) 97 dB
 DVD fs 96 kHz 2 Hz to 44 kHz
 fs 48 kHz 2 Hz to 22 kHz
 SVCD fs 48 kHz 2 Hz to 22 kHz
 fs 44.1 kHz 2 Hz to 20 kHz
 CD/VCD fs 44.1 kHz 2 Hz to 20 kHz
 Distortion and noise (1kHz) 0.0035 %

TV STANDARD (PAL/50 Hz) (NTSC/60 Hz)

Number of lines 625 525
 Playback Multistandard (PAL/NTSC)

CONNECTIONS

SCART (B, G models) Euroconnector
 Y output Cinch (green)
 Pb/Cb output Cinch (blue)
 Pr/Cr output Cinch (red)
 S-Video output Mini DIN, 4 pins
 Video output Cinch
 Audio output (L+R) Cinch
 Digital output 1 coaxial, 1 optical
 IEC60958 for CDDA/LPCM
 IEC61937 for MPEG 2, Dolby Digital

GENERAL

Dimensions (W x H x D) 215 x 108 x 330 mm
 (8-7/16" x 4-1/4" x 13")
 Weight 2.3 Kg (5 lbs. 1 oz)
 Finish Gold color (T, A models)
 Black color (G model)
 Silver color
 (U, K, B, G, L, V models)
 Power supply AC 120 V, 60 Hz (U, C models)
 AC 220 V, 50 Hz (T model)
 AC 110-240 V, 50/60 Hz
 (K, L, V models)
 AC 240 V, 50 Hz (A model)
 AC 230 V, 50 Hz (B, G models)
 Power consumption Approx. 12 W
 Standby power consumption < 1.0 W

ACCESSORIES

Power cable (1.8 m) x 1 (U, C models)
 Power cable (1.5 m) x 1 (T, A, B, G models)
 Power cable (1.5 m) x 3 (K, L, V models)
 Audio pin cable (1.5 m) x 1
 Video pin cable (1.5 m) x 1

** Specifications are subject to change without prior notice.*

U **USA model** **C** **Canadian model**
T **Chinese model** **K** **Korean model**
A **Australian model** **B** **British model**
G **European model** **L** **Singapore model**
V **Taiwan model**

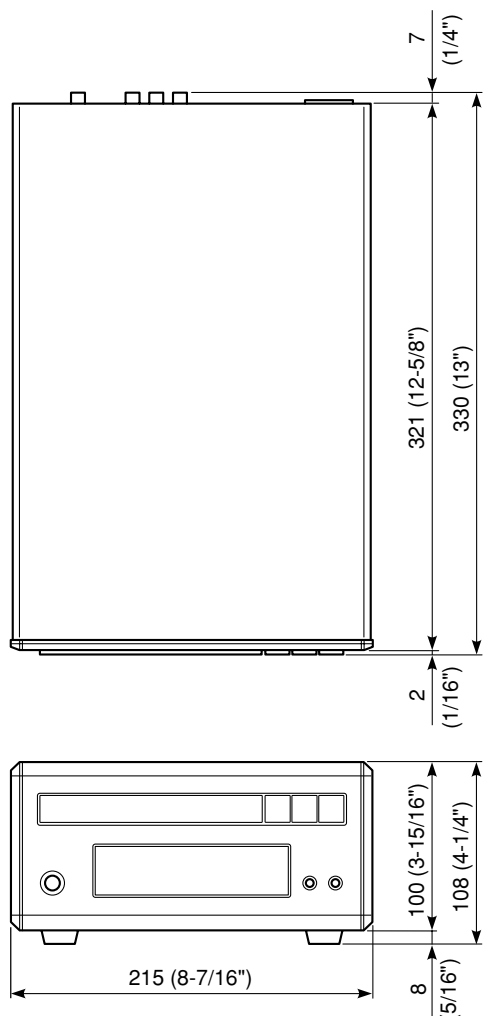


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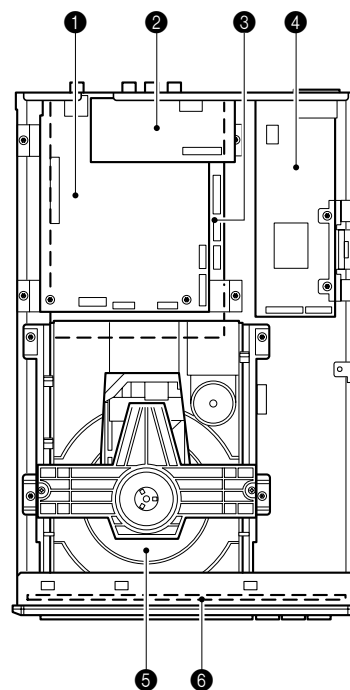
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• DIMENSIONS



Unit: mm (inch)

■ INTERNAL VIEW



- ❶ MONO P.C.B.
- ❷ SCART P.C.B. (B, G models)
- ❸ AV P.C.B.
- ❹ Power Supply Unit
- ❺ DVD Mechanism
- ❻ FRONT P.C.B.

■ REPAIR NOTES

None of the components of the following unit can be supplied separately.
Each unit must be replaced as a whole in case of a failure.

- DVD Mechanism
- MONO P.C.B.
- AV P.C.B.
- FRONT P.C.B.
- SCART P.C.B. (B, G models)
- Power Supply Unit

■ TRADE MODE

This unit provides TRADE mode which prevents the tray from opening even when the “OPEN/CLOSE” key is pressed.

• Activating TRADE mode

The power to the main unit should be turned on before activating the TRADE mode.

1. Press the “OPEN/CLOSE” key to open the tray. (Fig. 1)
2. Press the “DVD/CD”, “2”, “5” and “9” keys on the remote control in that order. (Fig. 2)
3. “TRA ON” is displayed and TRADE mode is activated. (Fig. 3)

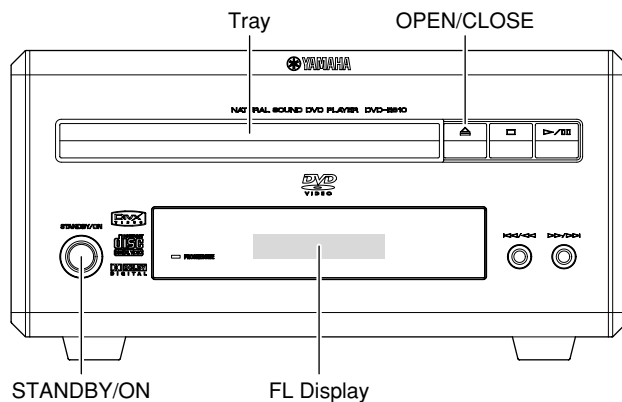


Fig. 1

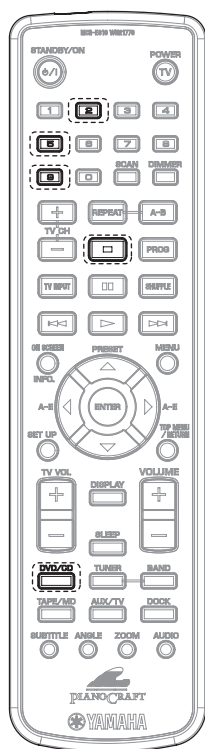
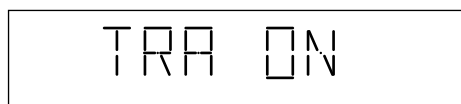


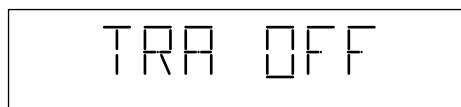
Fig. 2

TRADE mode display



Enter

Fig. 3



Cancel

Fig. 4

- * After activating TRADE mode, it is not possible to operate keys of the main unit as usual except the following key.
STANDBY/ON (Turn on the power only)
But operation with the remote control is available as usual.

• Canceling TRADE mode

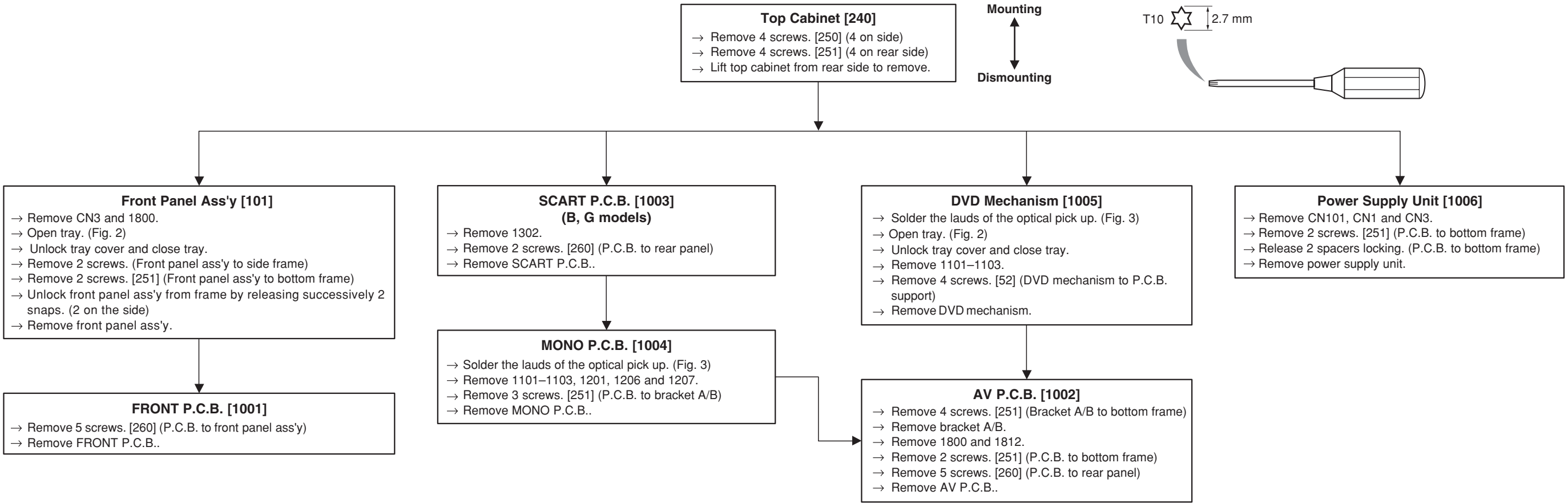
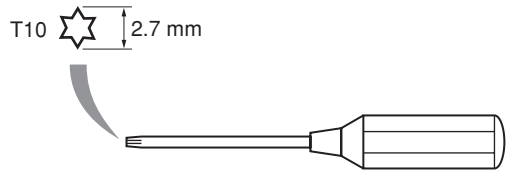
The power to the main unit should be turned on before canceling TRADE mode.

1. Press and hold the “STOP” key on the remote control. (Fig. 2)
The tray opens after about 2 second.
2. Press the “DVD/CD”, “2”, “5” and “9” keys on the remote control in that order. (Fig. 2)
3. “TRA OFF” is displayed and TRADE mode is cancelled. (Fig. 4)

■ DISASSEMBLY PROCEDURES

See REPLACEMENT PARTS LIST for item numbers.

When disassembling, use the special screw driver with tip shape in figure.



● Cable connections

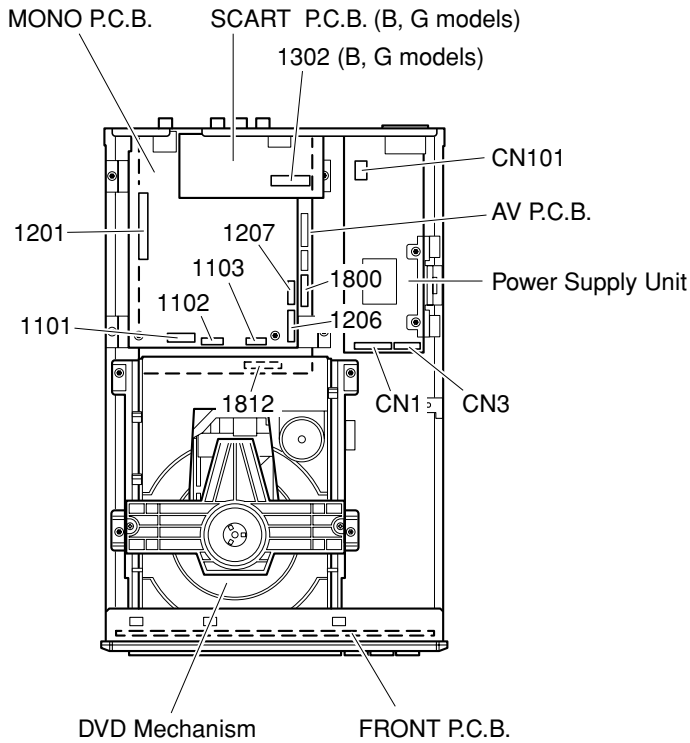


Fig. 1

● How to manually eject the tray

- Turn the player bottom up.
- Move the slider in the direction indicated with a screw driver until the tray is ejected.
- Gently pull the tray out.

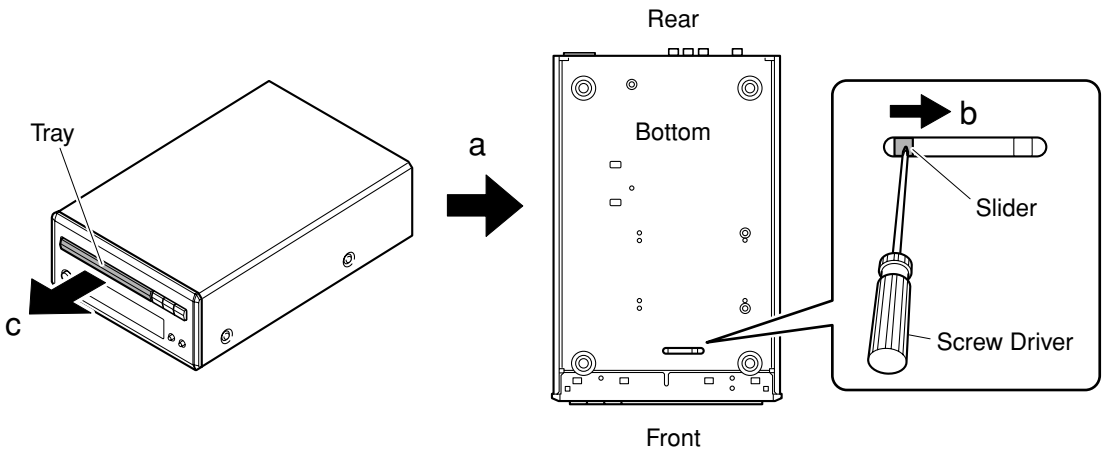


Fig. 2

● Preventive measure for laser diode from electrostatic breakdown

When replacing the MONO P.C.B. or DVD mechanism, solder between lands of the optical pick up P.C.B. to protect the laser diode against electrostatic breakdown.

Notes

- Use an anti-static soldering iron to short-circuit and unshort-circuit laser diode.
- After you have finished repairing, remove the solder from the short-circuit location.

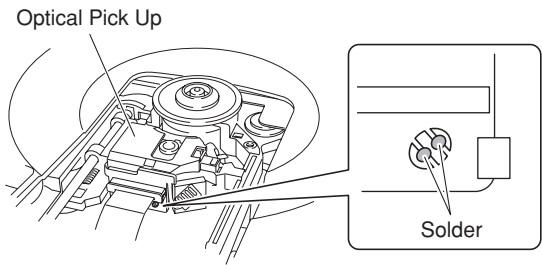


Fig. 3

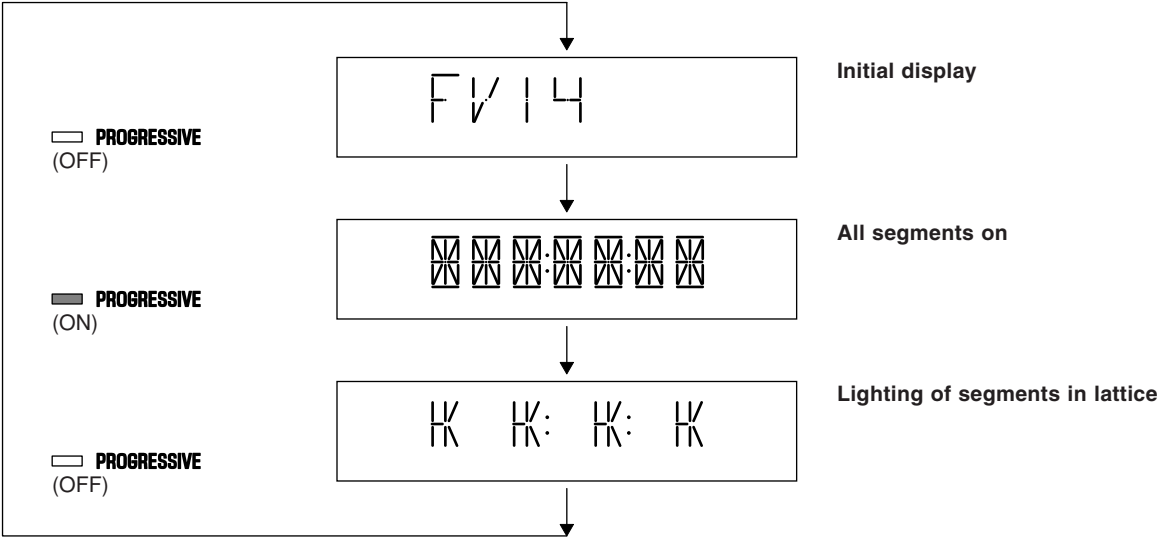
■ TEST MODE

• Starting Test Mode

- a. Connect the power cable to the AC outlet.
- b. Press the “STANDBY/ON” key while simultaneously pressing “NEXT/F.FWD” and “STOP” keys of the main unit.
At this time, keep pressing “NEXT/F.FWD” and “STOP” keys for 8 seconds or longer.
- c. The “FV xx” (firmware version) is displayed.
 - * The firmware version and region code appears on the TV monitor screen at this time.

• Display Test

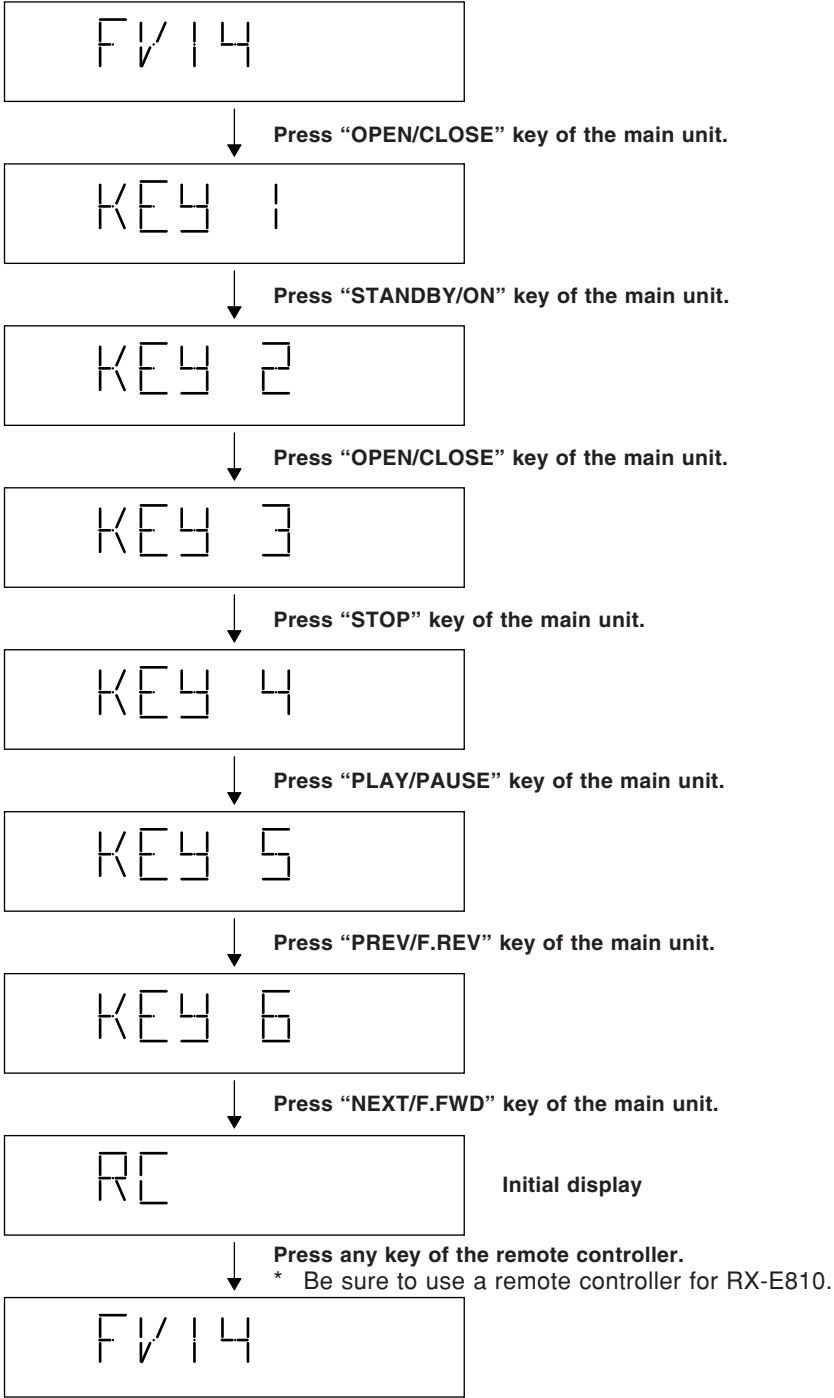
The display condition varies as shown below according to the “PLAY” key of the main unit.



• Panel Key Test

The display changes as shown below as the specified key is pressed.

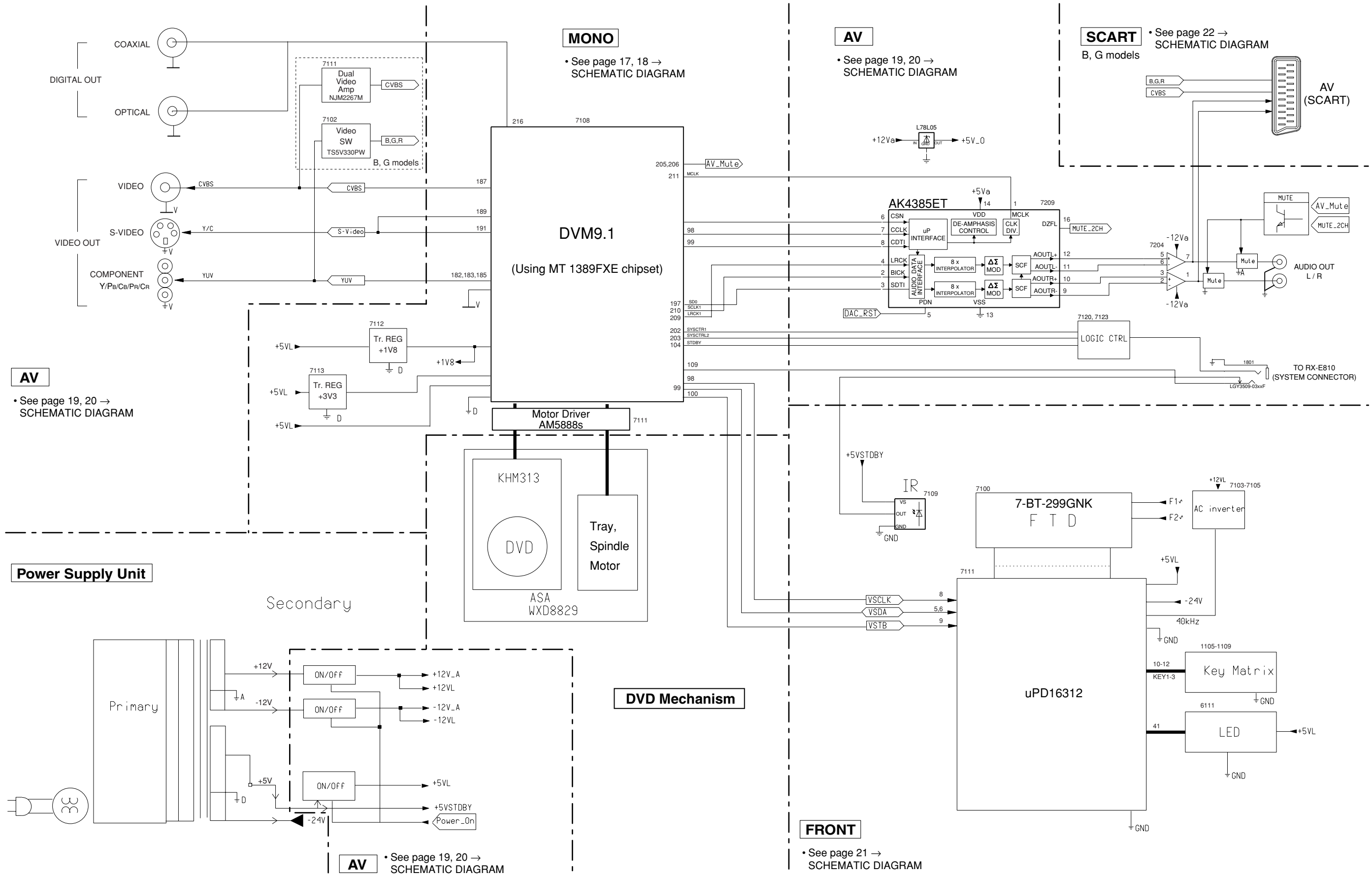
- * When performing the panel key test, a remote controller for RX-E810 is required.



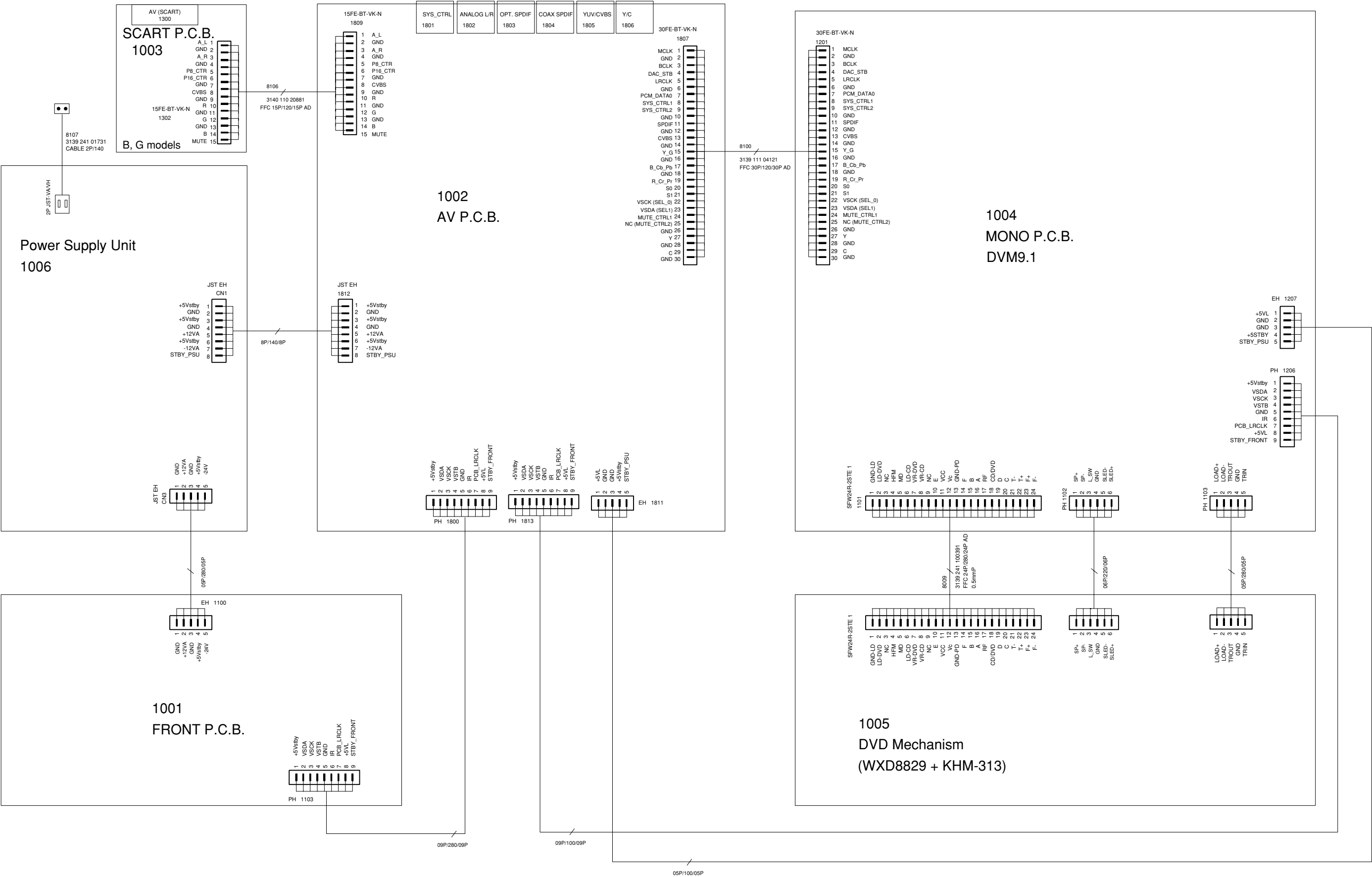
• Canceling Test Mode

Disconnect the power cable from the AC outlet.

■ BLOCK DIAGRAM



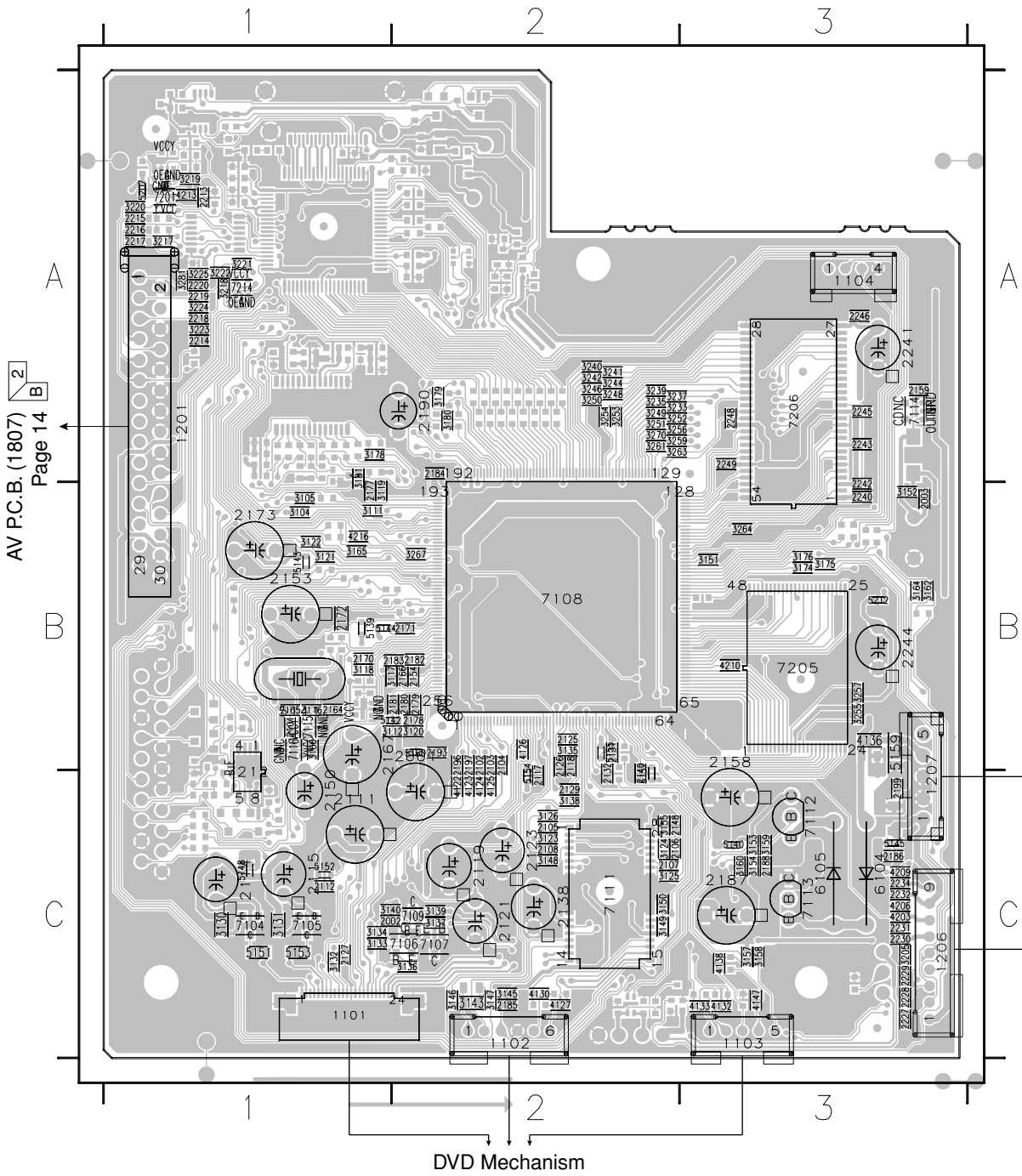
WIRING DIAGRAM



The first digit of a component indicates the component type.
1xxx : Connector 3xxx : Resistor 5xxx : Coil 7xxx : IC, Transistor, FET
2xxx : Capacitor 4xxx : SMD jumper 6xxx : Diode 9xxx : Wire jumper

■ PRINTED CIRCUIT BOARDS
FOR INFORMATION ONLY (NO SERVICE PARTS WILL BE AVAILABLE)

MONO P.C.B. Top View



AV P.C.B. (1807) Page 14

AV P.C.B. (1811) Page 14

AV P.C.B. (1813) Page 14

1101	C1	3104	B1	3324
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The first digit of a component indicates the component type.

1xxx : Connector

3xxx : Resistor

5xxx : Coil

7xxx : IC, Transistor, FET

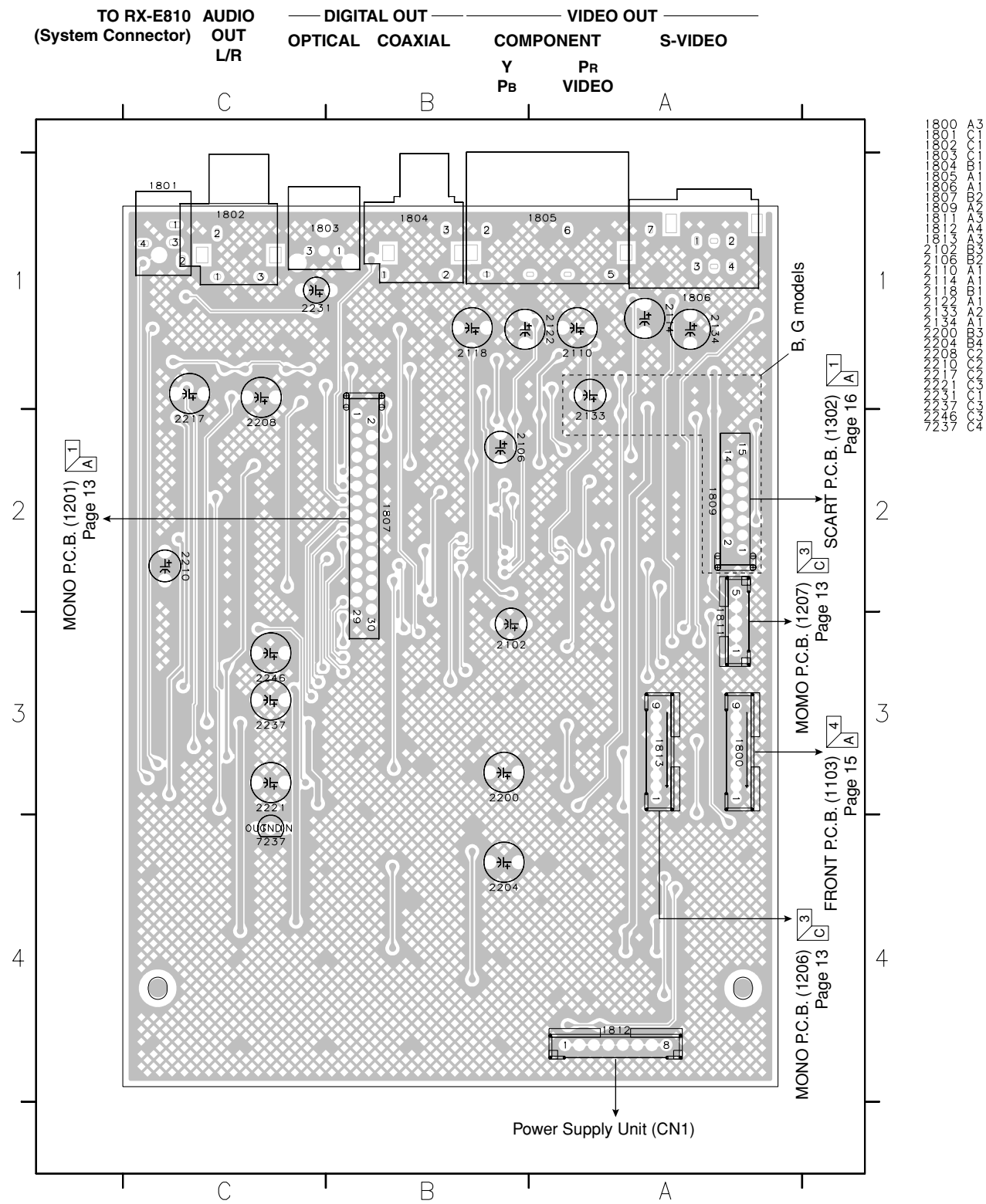
2xxx : Capacitor

4xxx : SMD jumper

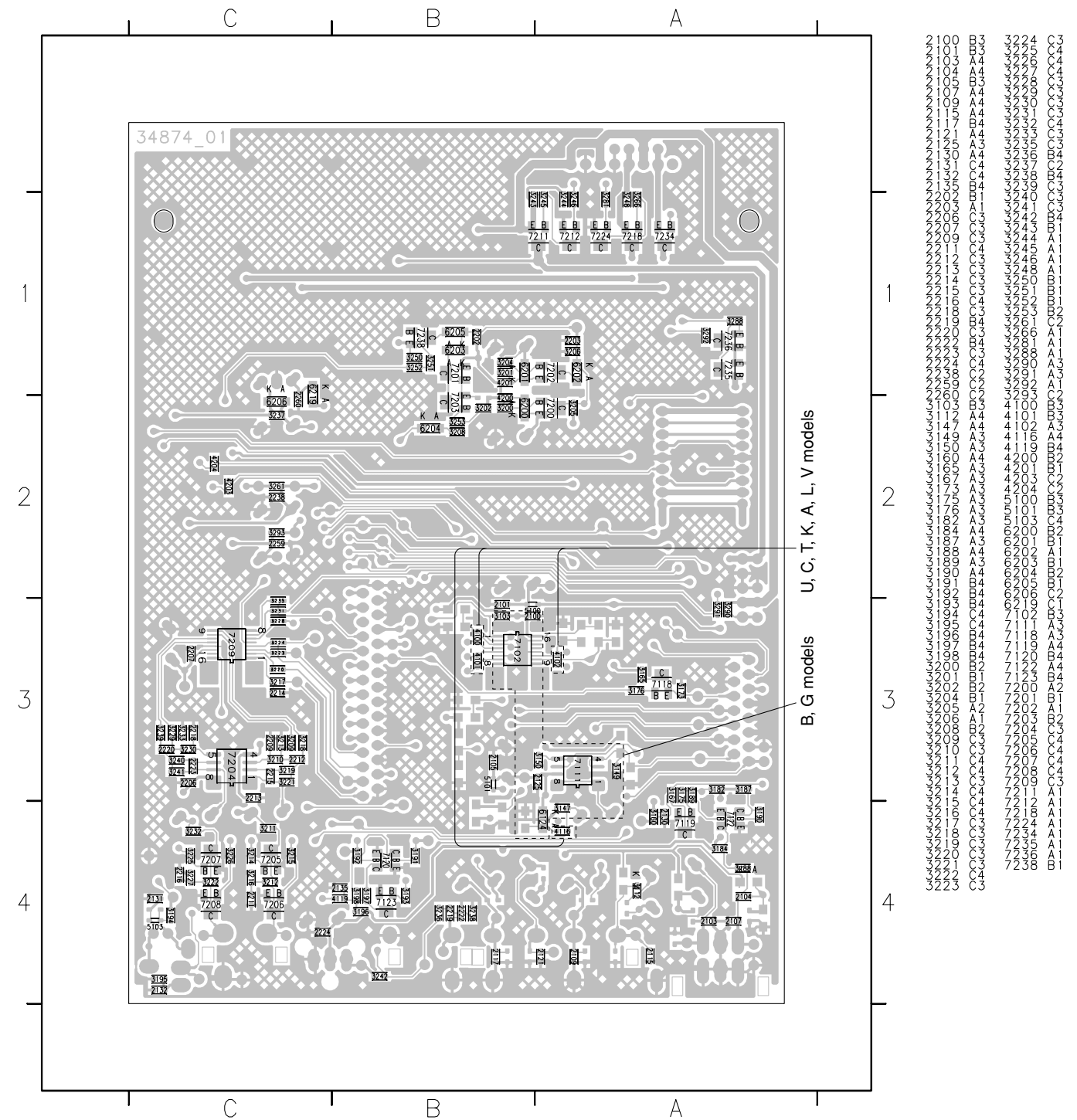
6xxx : Diode

9xxx : Wire jumper

AV P.C.B. Top View

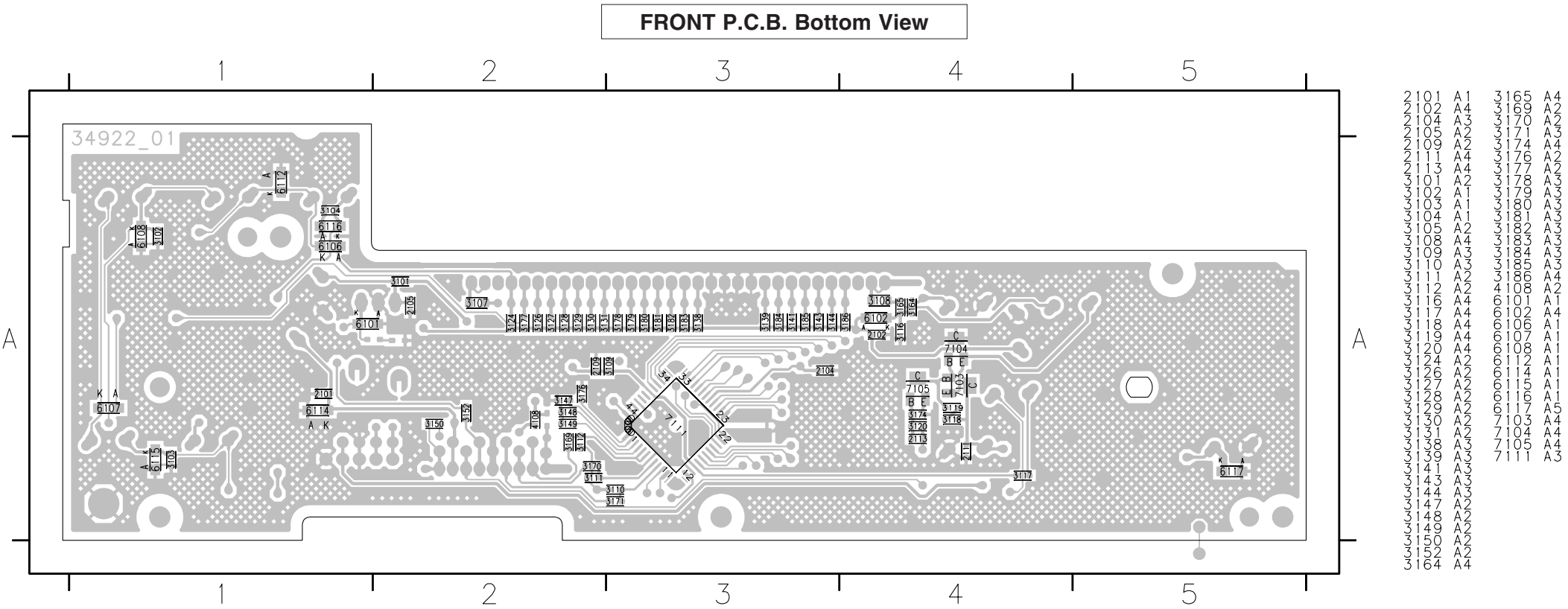
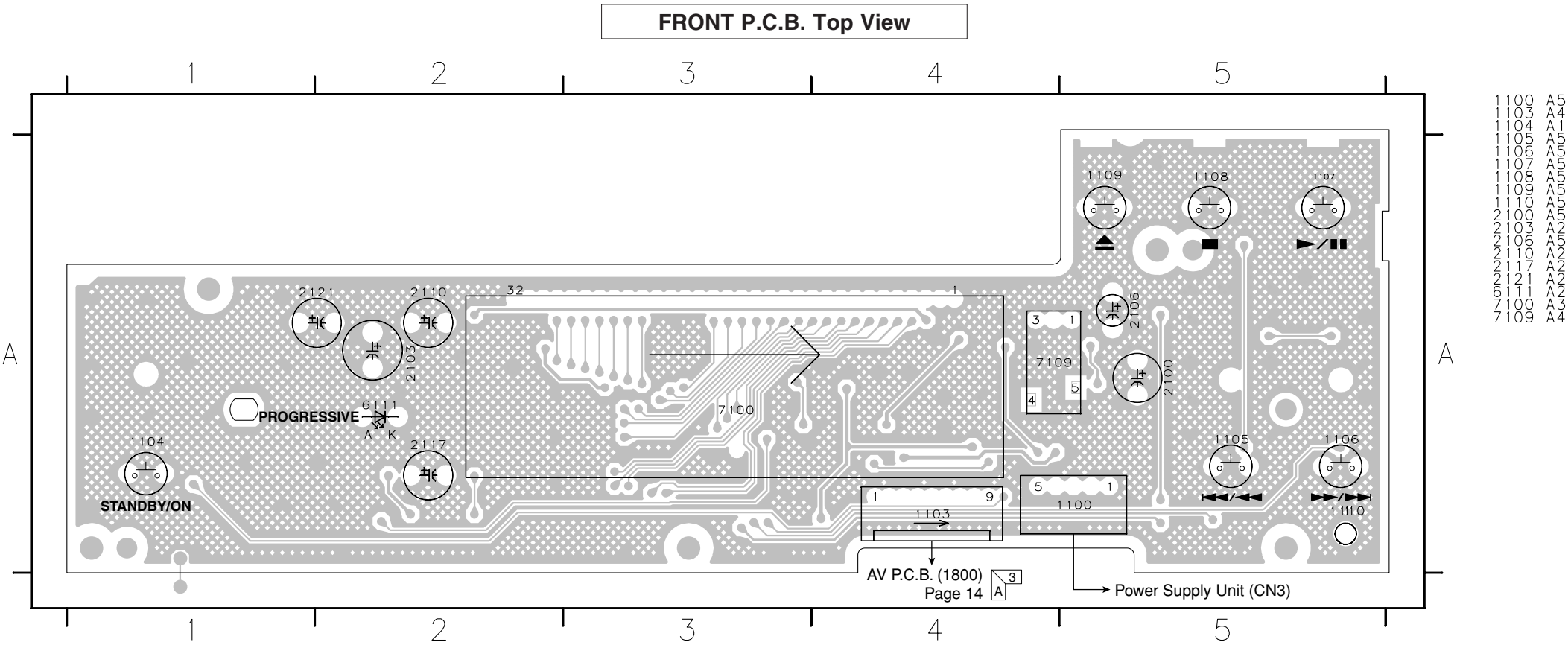


AV P.C.B. Bottom View



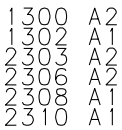
The first digit of a component indicates the component type.

- 1xxx : Connector
- 2xxx : Capacitor
- 3xxx : Resistor
- 4xxx : SMD jumper
- 5xxx : Coil
- 6xxx : Diode
- 7xxx : IC, Transistor, FET
- 8xxx : IC, Transistor, FET
- 9xxx : Wire jumper

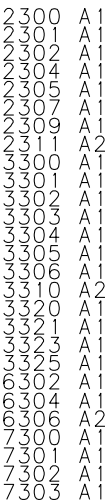


1xxx : Connector	3xxx : Resistor	5xxx : Coil	7xxx : IC, Transistor, FET
2xxx : Capacitor	4xxx : SMD jumper	6xxx : Diode	9xxx : Wire jumper

(B, G models)



(B, G models)



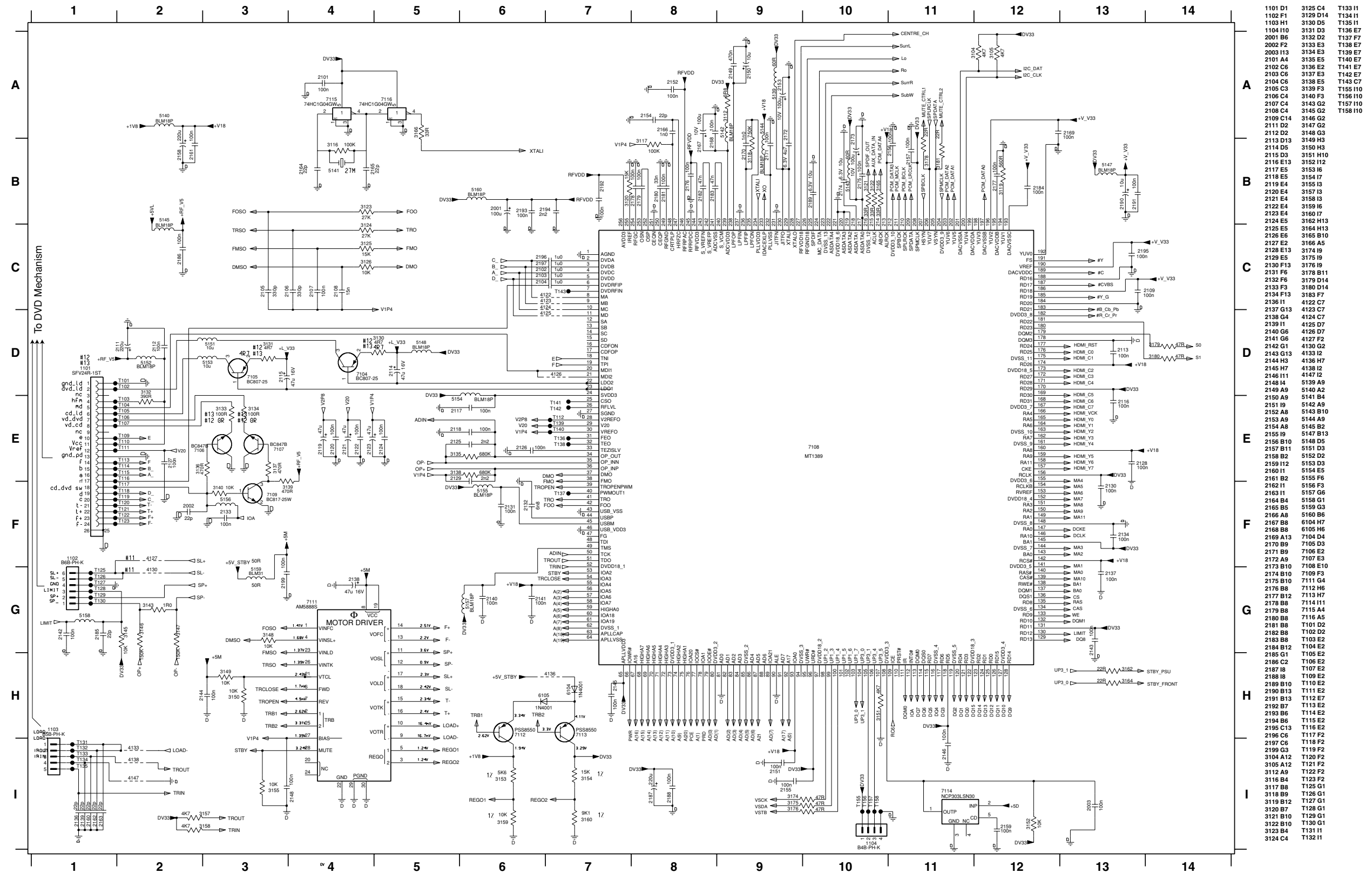
SCHEMATIC DIAGRAMS

FOR INFORMATION ONLY (NO SERVICE PARTS WILL BE AVAILABLE)

MONO 1/2

The first digit of a component indicates the component type.

1xxx : Connector 3xxx : Resistor 5xxx : Coil 7xxx : IC, Transistor, FET
2xxx : Capacitor 4xxx : SMD jumper 6xxx : Diode 9xxx : Wire jumper



★ 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.

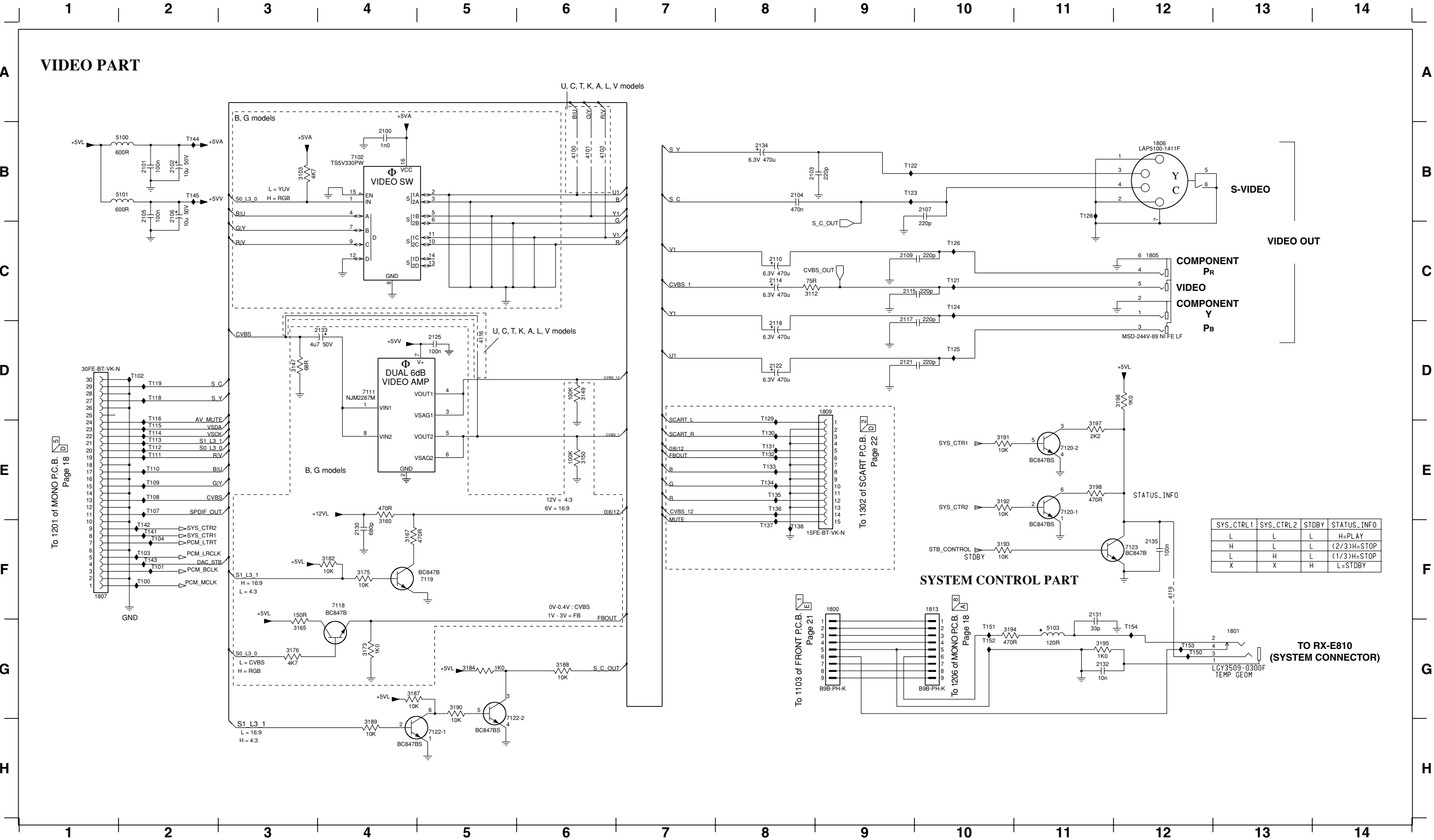
The first digit of a component indicates the component type.

1xxx : Connector	3xxx : Resistor	5xxx : Coil	7xxx : IC, Transistor, FET
2xxx : Capacitor	4xxx : SMD jumper	6xxx : Diode	9xxx : Wire jumper

AV 1/2

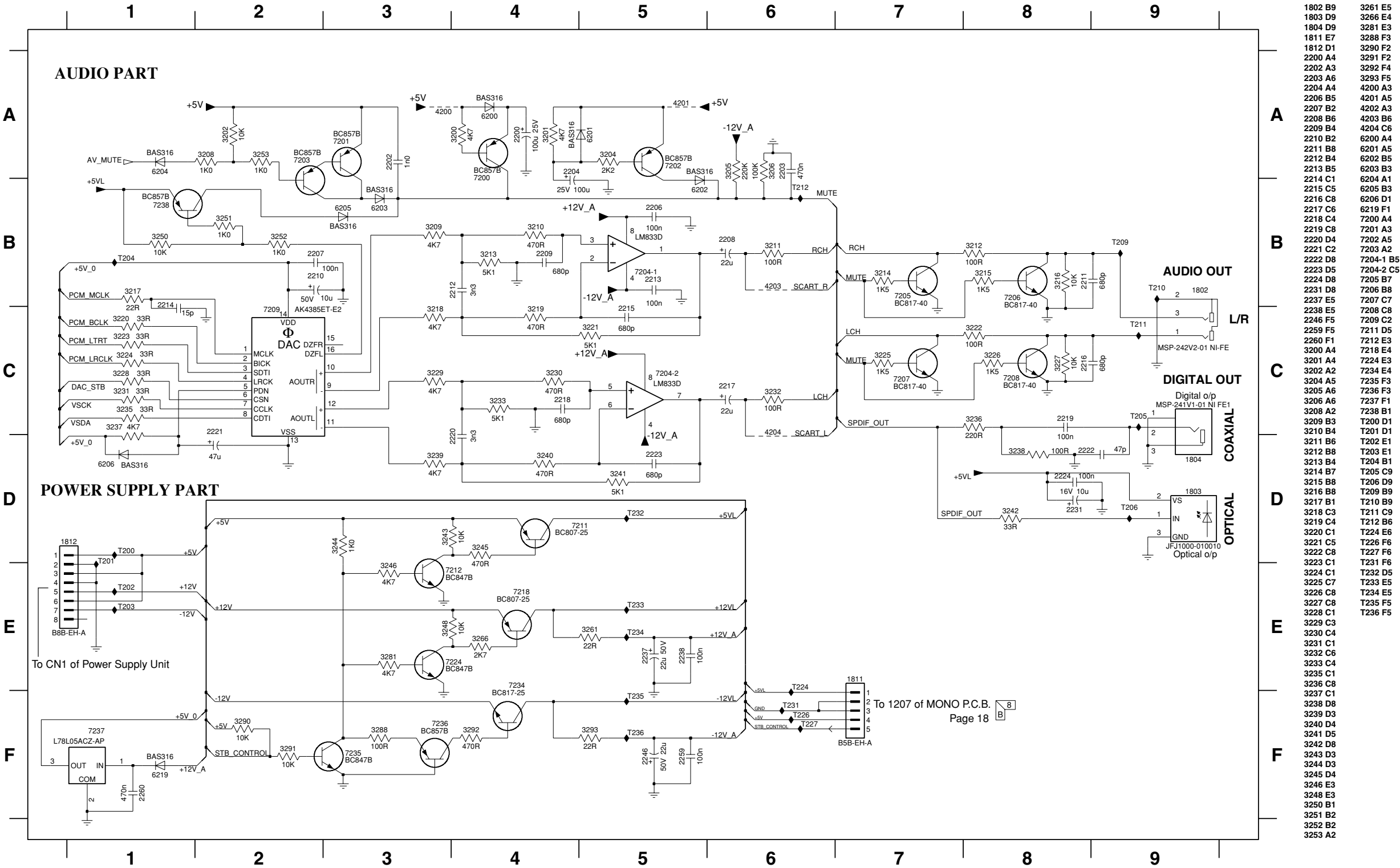
1800 F9	1813 F10	2105 B2	2115 C9	2130 F4	3103 B3	3165 G3	3184 G5	3192 E10	3198 E11	5100 B2	7119 F5	T100 F2	T108 E2	T114 E2	T122 B9	T129 D8	T135 E8	T143 F2	T153 G12
1801 G13	2100 B4	2106 B2	2117 D9	2131 F11	3112 C8	3167 F4	3187 G4	3193 F10	4100 B6	5101 B2	7120-1 E11	T101 F2	T109 E2	T115 E2	T123 B9	T130 E8	T136 E8	T144 B2	T154 G12
1805 C12	2101 B2	2107 B10	2118 D8	2132 G11	3147 D3	3173 G4	3188 G6	3194 G10	4101 B6	5103 G11	7120-2 E11	T102 D2	T110 E2	T116 D2	T124 C10	T131 E8	T137 F8	T145 B2	
1806 B12	2102 B2	2109 C9	2121 D9	2133 D4	3149 D6	3175 F4	3189 H4	3195 G11	4102 B6	7102 B4	7122-1 H5	T103 F2	T111 E2	T118 D2	T125 D10	T132 E8	T138 F8	T150 G12	
1807 F1	2103 B8	2110 C8	2122 D8	2134 B8	3150 E6	3176 G3	3190 G5	3196 D12	4116 D5	7111 D4	7122-2 H5	T104 F2	T112 E2	T119 D2	T126 C10	T133 E8	T141 F2	T151 G10	
1809 D9	2104 B8	2114 C8	2125 D5	2135 F12	3160 E4	3182 F4	3191 E10	3197 E11	4119 F12	7118 F4	7123 F12	T107 E2	T113 E2	T121 C10	T128 B11	T134 E8	T142 F2	T152 G10	

★ 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.



The first digit of a component indicates the component type.
1xxx : Connector 3xxx : Resistor 5xxx : Coil 7xxx : IC, Transistor, FET
2xxx : Capacitor 4xxx : SMD jumper 6xxx : Diode 9xxx : Wire jumper

AV 2/2

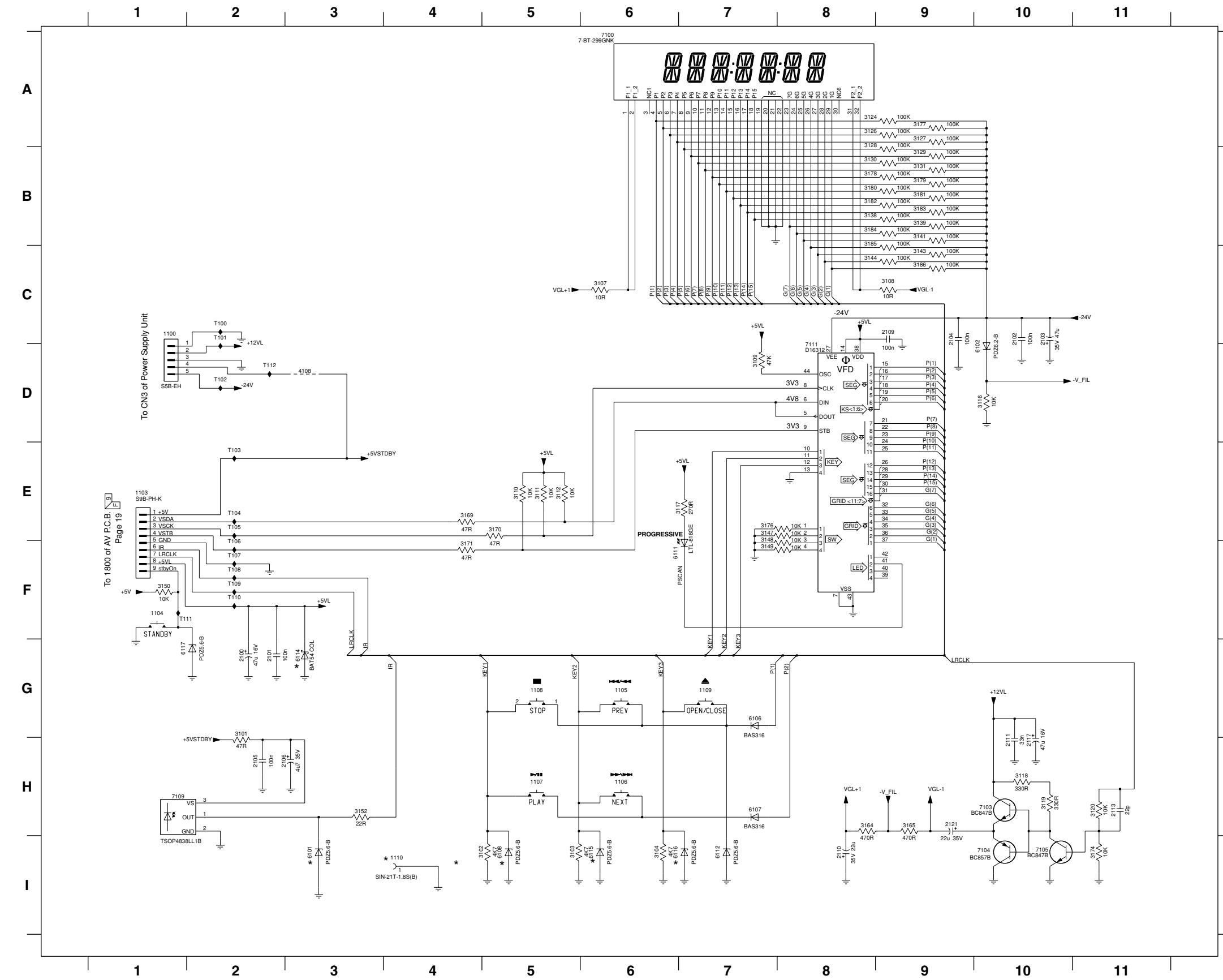


★ Components having special characteristics are marked  and must be replaced with parts having specifications equal to those originally installed.
★ Schematic diagram is subject to change without notice.

The first digit of a component indicates the component type.

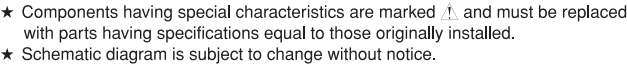
1xxx : Connector 3xxx : Resistor 5xxx : Coil 7xxx : IC, Transistor, FET
2xxx : Capacitor 4xxx : SMD jumper 6xxx : Diode 9xxx : Wire jumper

FRONT



- 1100 C1
- 1103 E1
- 1104 F1
- 1105 G6
- 1106 H6
- 1107 H5
- 1108 G5
- 1109 G7
- 1110 I4
- 2100 G2
- 2101 G2
- 2102 C10
- 2103 C10
- 2104 C9
- 2105 H2
- 2106 H3
- 2109 C9
- 2110 I8
- 2111 H10
- 2113 H11
- 2117 H10
- 2121 H9
- 3101 G2
- 3102 I5
- 3103 I5
- 3104 I6
- 3105 I3
- 3108 C9
- 3109 D7
- 3110 E5
- 3111 E5
- 3112 E5
- 3116 D10
- 3117 E7
- 3118 H10
- 3119 H10
- 3120 H11
- 3124 A8
- 3126 A8
- 3127 A9
- 3128 B8
- 3129 B9
- 3130 B8
- 3131 B9
- 3138 B8
- 3139 B9
- 3141 B9
- 3143 C9
- 3144 C8
- 3147 E7
- 3148 F7
- 3149 F7
- 3150 F1
- 3152 H3
- 3164 H8
- 3165 H9
- 3169 E4
- 3170 E5
- 3171 F4
- 3174 I11
- 3176 E7
- 3177 A9
- 3178 B8
- 3179 B9
- 3180 B8
- 3181 B9
- 3182 B8
- 3183 B9
- 3184 B8
- 3185 C8
- 3186 C9
- 4108 D3
- 6101 I3
- 6102 D10
- 6106 G7
- 6107 H7
- 6108 I5
- 6111 F6
- 6112 I7
- 6114 G3
- 6115 I6
- 6116 I6
- 6117 G1
- 7100 A6
- 7103 H10
- 7104 H10
- 7105 H10
- 7109 H1
- 7111 D8
- T100 C2
- T101 C2
- T102 D2
- T103 E2
- T104 E2
- T105 E2
- T106 F2
- T107 F2
- T108 F2
- T109 F2
- T110 F2
- T111 F1
- T112 D2

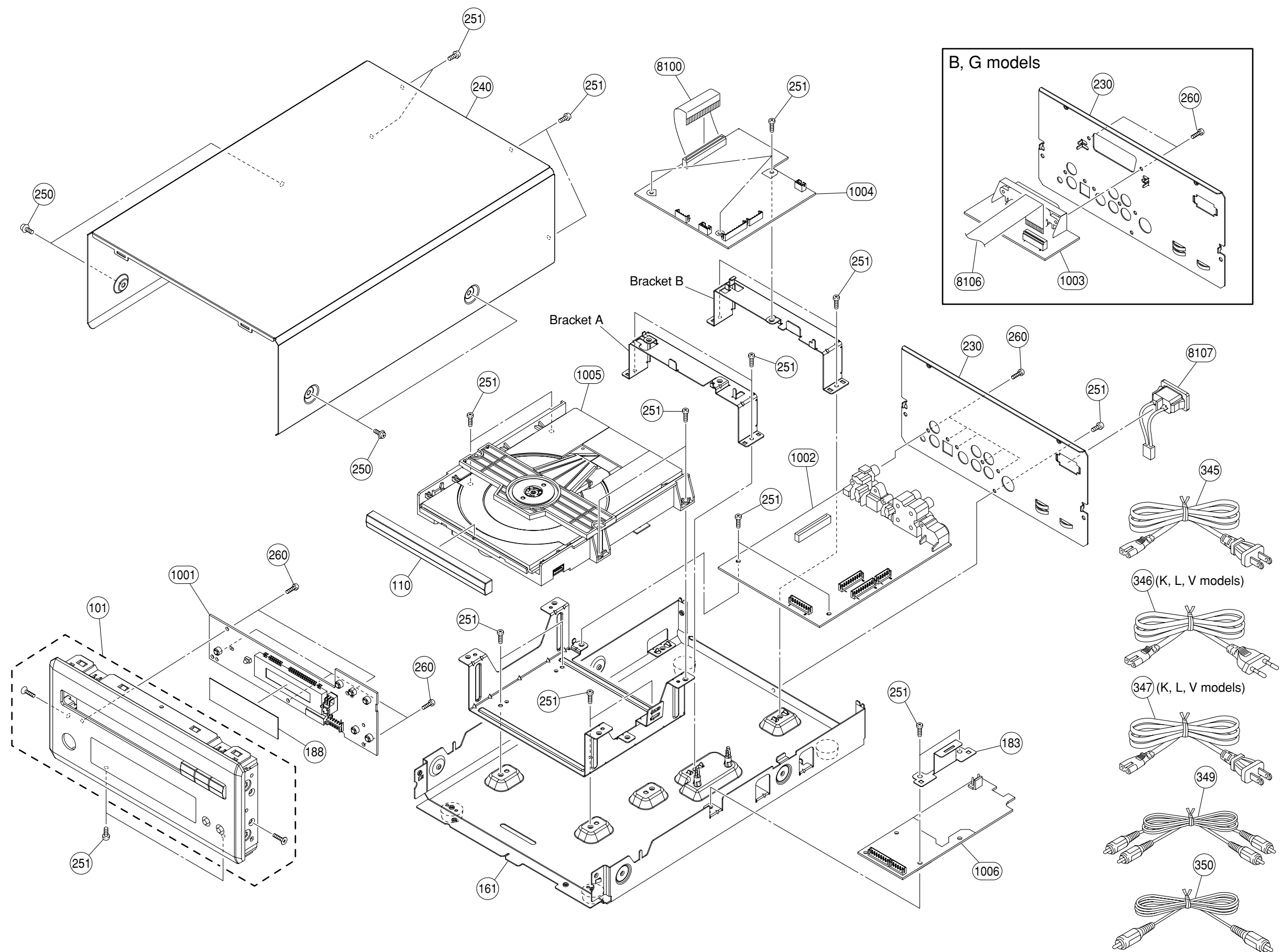
★ Components having special characteristics are marked and must be replaced with parts having specifications equal to those originally installed.
★ Schematic diagram is subject to change without notice.



MEMO

MEMO

REPLACEMENT PARTS LIST



WARNING

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

	Ref. No.	Part No.	Description		Remarks	Markets	
*	101	AAX79590	FRONT PANEL ASS' Y	GD	3141 079 39811		
*	101	AAX79570	FRONT PANEL ASS' Y	BL	3141 079 39791		
*	101	AAX79580	FRONT PANEL ASS' Y	SI	3141 079 39801		
*	110	AAX79530	TRAY COVER	GD	3139 244 11871		
*	110	AAX79550	TRAY COVER	BL	3139 244 12921		
*	110	AAX79540	TRAY COVER	SI	3139 244 11881		
*	161	AAX79560	FRAME ASS' Y		3141 079 39821		
*	183	AAX79490	CUT SHEET		3139 243 20621		
*	188	AAX79450	WINDOW SHEET (ORANGE)	GD	3139 243 20541		
*	188	AAX79460	WINDOW SHEET (BLUE)	BL, SI	3139 243 20551		
*	230	AAX79640	REAR PANEL		3139 241 60751	UC	
*	230	AAX79621	REAR PANEL		3139 241 60732	T	
*	230	AAX79610	REAR PANEL		3139 241 25061	KL	
*	230	AAX79630	REAR PANEL		3139 241 60741	V	
*	230	AAX79600	REAR PANEL		3139 241 24761	A	
*	230	AAX79600	REAR PANEL		3139 241 24761	B	
*	240	AAX79500	TOP COVER	GD	3139 241 24681	G	
*	240	AAX79520	TOP COVER	BL	3139 241 25071		
*	240	AAX79510	TOP COVER	SI	3139 241 24691		
	250	AAX53440	PW HEAD TORX S-TIGHT SCREW	GD,SI 3x6-8 MFN133	3104 120 40081		
	250	AAX55450	PW HEAD TORX S-TIGHT SCREW	BL 3x6-8 MFZN2B3	3139 110 40611		
	251	AAX23640	PAN HEAD TORX S-TIGHT SCREW	3x6 MFZN2B3	2511 077 00039		
	260	AAX53520	PAN HEAD TORX P-TIGHT SCREW	3x8 MFZN2B3	2511 076 50012		
*	1001	AAX79440	P.C.B. ASS' Y	FRONT	3139 248 89721		
*	1002	AAX79410	P.C.B. ASS' Y	AV	3139 248 89681	UCTKALV	
*	1002	AAX79400	P.C.B. ASS' Y	AV	3139 248 89661	BG	
*	1003	AAX79430	P.C.B. ASS' Y	SCART	3139 248 89671	BG	
*	1004	AAX79420	P.C.B. ASS' Y	MONO DVM9.1	3139 248 50221		
	1005	AAX79060	DVD MECHANISM	WXD8829	3139 247 13341		
	1006	AAX79050	POWER SUPPLY UNIT	SRV1919WW	3139 247 13351	UCTKALV	
	1006	AAX77890	POWER SUPPLY UNIT	SRV1797EK	3139 247 12432	BG	
*	8100	AAX79470	FLEXIBLE FLAT CABLE	30P 120mm	3139 111 04121		
*	8106	AAX79480	FLEXIBLE FLAT CABLE	15P 120mm	3140 110 20881		
*	8107	AAX79930	CABLE ASS' Y	2P 140mm	3139 241 01731	UCTABG	
*	8107	AAX80010	CABLE ASS' Y	2P 140mm	3139 241 03121	KL	
			ACCESSORY				
	345	AAX56530	POWER CABLE	1.8m 1pc	2422 070 98134	UC	
*		345	AAX79670	POWER CABLE	1.5m 1pc	2422 070 98257	T
*		345	AAX79940	POWER CABLE	1.5m 1pc	2422 070 00094	KL
	345	AAX56540	POWER CABLE	1.5m 1pc	2422 070 98248	A	
*		345	AAX79650	POWER CABLE	1.5m 1pc	2422 070 98147	B
*		345	AAX79660	POWER CABLE	1.5m 1pc	2422 070 98151	G
*		346	AAX79660	POWER CABLE	1.5m 1pc	2422 070 98151	KL
*		347	AAX79950	POWER CABLE	1.5m 1pc	2422 070 98242	KL
	349	AAX21980	AUDIO PIN CABLE	RD/WH 1.5m 1pc	3103 308 92611		
	350	AAX22970	VIDEO PIN CABLE	YE 1.5m 1pc	3104 108 45432		

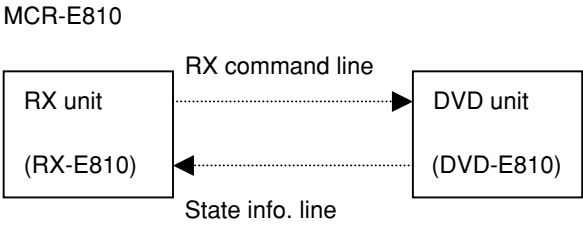
* New Parts

SYSTEM CONTROL

1. External Bus

1.1. Physical format of external bus

It is composed of 2 bus lines.



1.2. Format of RX command

RX command is the request of RX to DVD unit.
Both are expressed by the remote control code of the NEC format. And the signal wave form is the demodulated signal of remote control IR signal.

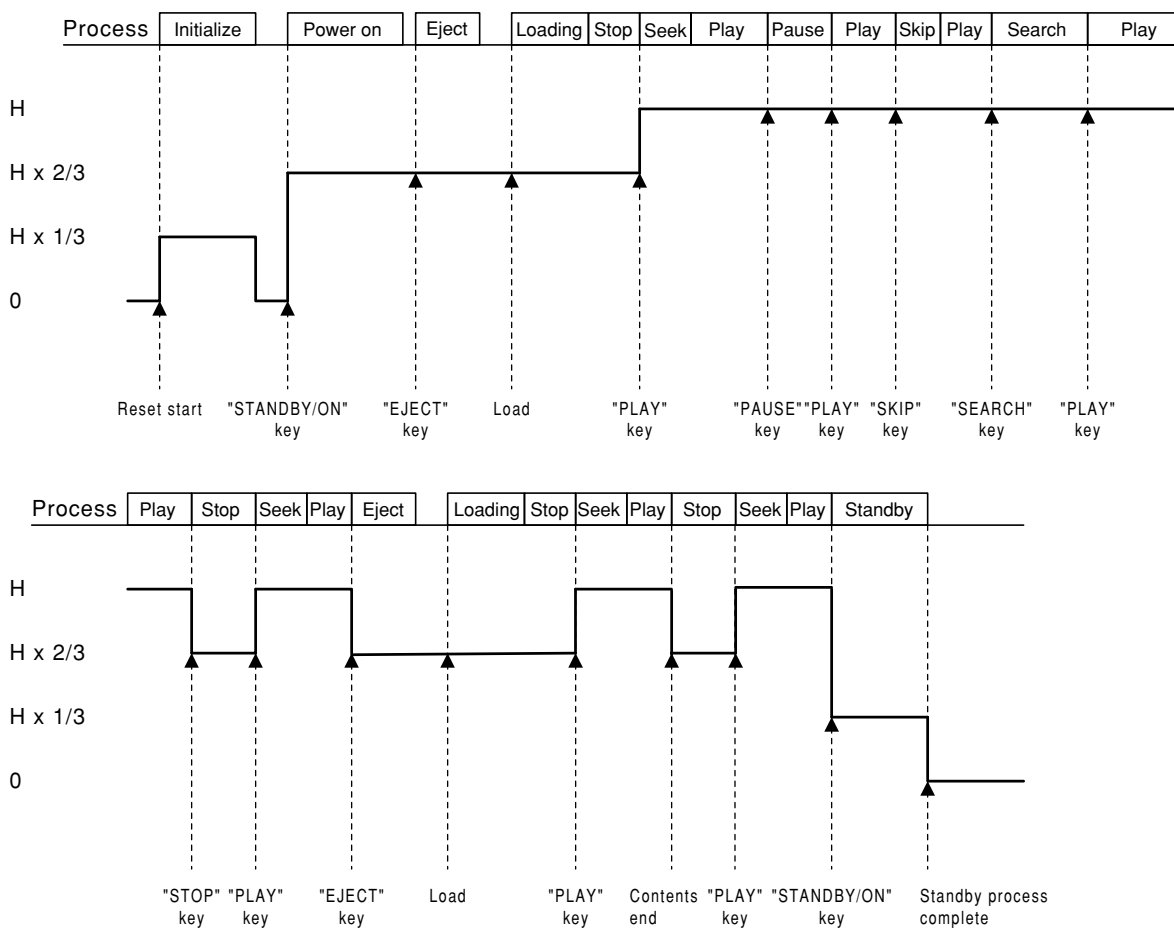
1.3. Format of state info.

State info. is the state information of DVD and expressed by the DC voltage level.

Name	DC voltage level	Content
PORT_PLAY	H	The period between from playback operation to stop factor generation. Playback operation: "PLAY" key operation, disc tray hand push close Stop factor: "STOP", "EJECT", "STANDBY/ON" key operation Playback contents end Failsafe stop by abnormal detection
PORT_STOP	H x 2/3	Power on state other than PORT_PLAY state
PORT_PRE_STANDBY	H x 1/3	The period between from standby operation to standby process completion and from DVD reset start to initialize process completion
PORT_STANDBY	0	Standby state after standby process completion

H: Microprocessor Vcc level

Example:



Note: The details or some limitations regarding the change of player status need the extra discussion.

2. Command and Operation Key Code

The system command and the system remote control code described as follows are transmitted through RX command bus.

2.1 RX request command

Name	Code	Function
POWER_ON	7C-F6	Power on request
POWER_OFF	7C-F7	Standby request
PLAY	7C-82	Playback request
STOP	7C-85	playback stop request
DIMMER_ON	78-FE	Display dimmer(decrement of brightness) request
DIMMER_OFF	78-FF	Cancel display dimmer
VFD_OFF	78-FD	VFD turn off request

RX request command is not transmitted if DVD is already in the state that RX requests.

2.2 Operation key code

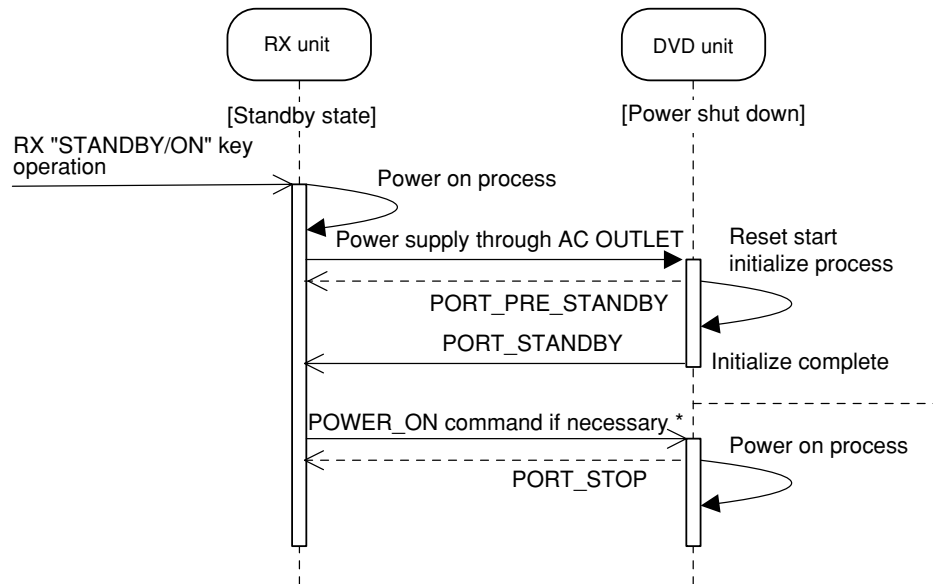
The DVD unit receives the remote control signal directly.

3. Command Communication for System Function

3.1 Power on

(1) Power on by RX "STANDBY/ON" key operation

RX turns on the power by RX's "STANDBY/ON" key and at the same time DVD also turns on the power if DVD state is power on at the last RX's power on.

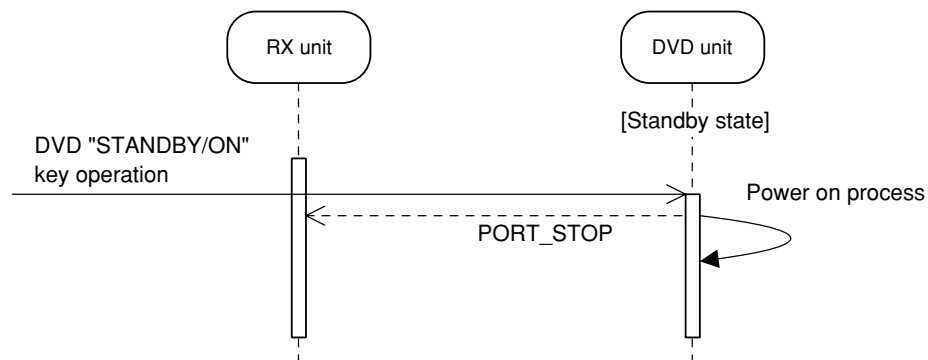


* RX transmits POWER_ON command if DVD state at the last RX's power on is power on.

(2) Power on of individual unit by each "STANDBY/ON" key operation

In the system power on, the each unit can be changed into standby and then into power on again by the "STANDBY/ON" key operation of the unit.

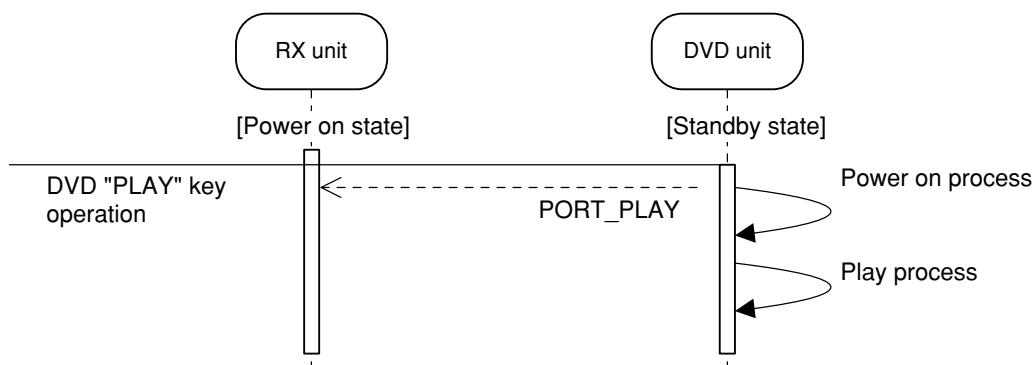
When the power supply of the unit is individually supplied, only the unit can turn on the power by operating "STANDBY/ON" key of an individual unit even in system standby.



DVD unit can turn on the power by also other key, "PLAY" or "OPEN/CLOSE (EJECT)".

In this case, it carries out a peculiar function to the key after processing power on. However, only the power on processing is done by "PLAY" key without media.

When the system is in power on state and DVD unit is in standby state, only DVD unit is changed into power on state by this operation.



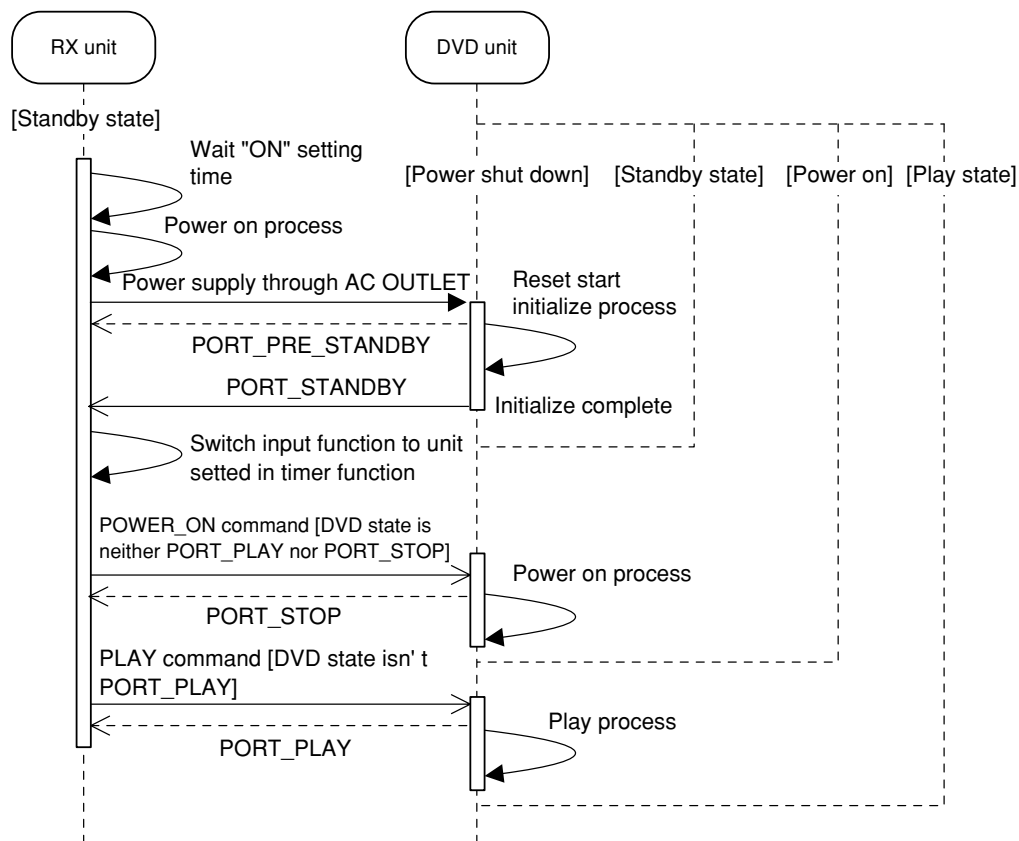
3.2 Timer function

The unit set in this RX timer function is played back at the setting time as the ON-TIME.

It functions even when at set time the system is already in power on state or the unit is already played back.

(1) Timer play

The state is not changed if the set time unit is already in the state of playback.



After sending POWER_ON command, if DVD unit has Auto-play function after power-on, RX will not send PLAY command.

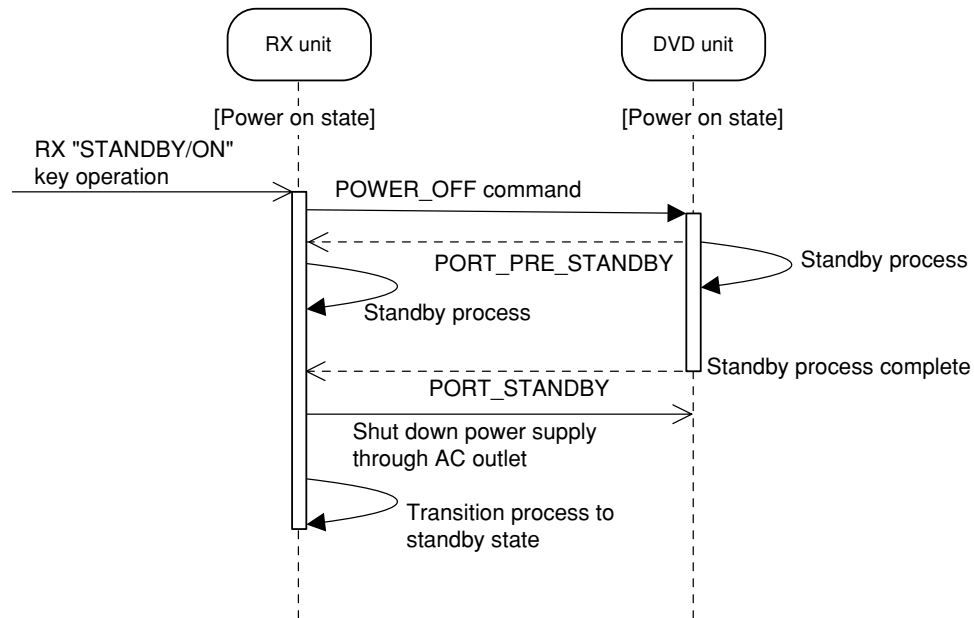
3.3 Standby (power off)

(1) System standby

The power supply through AC outlet of RX is shut down in system standby (power off).

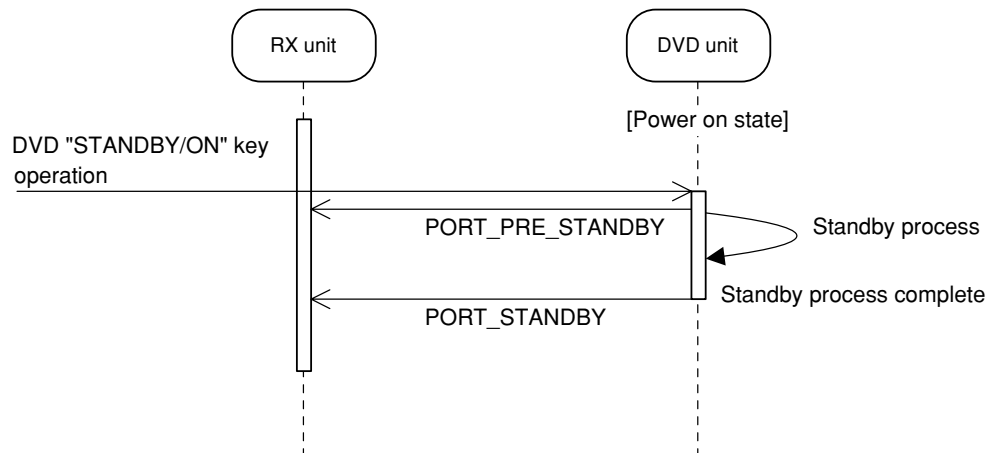
The microcomputer of the unit connected with AC outlet of RX cannot work after system power off.

When there is processing that should be finished before the system power off, the system is turned power off after such processing completion.



(2) Unit standby (power off)

Each unit can be individually standby (power off) with an individual "STANDBY/ON" key of each unit.

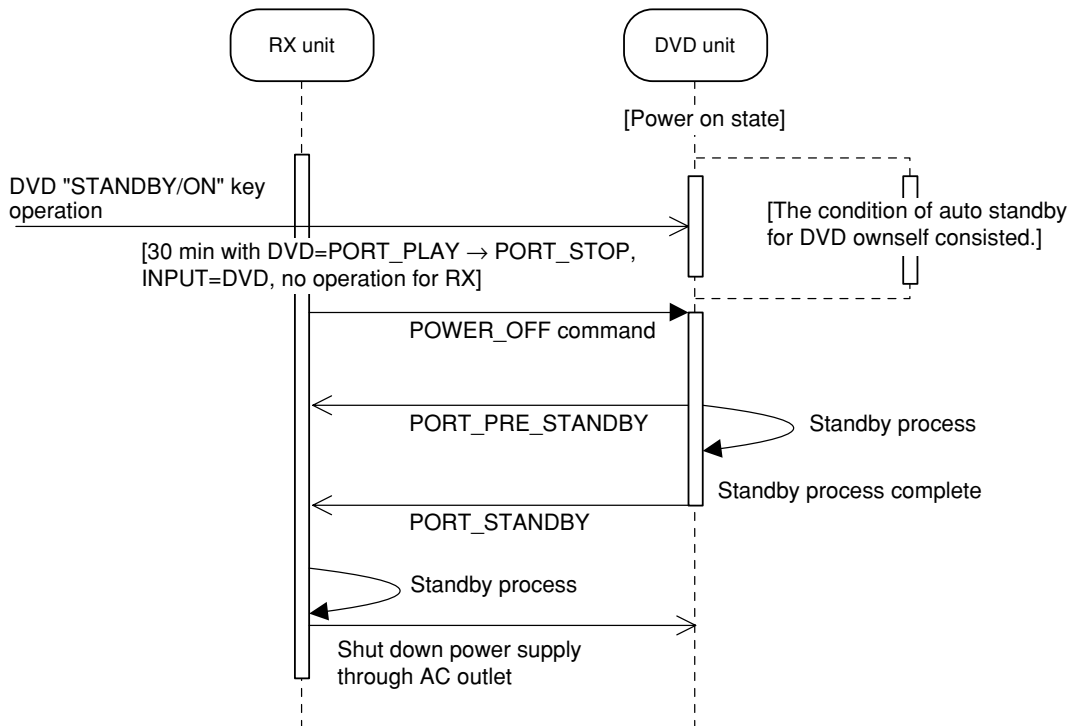


(3) Auto standby (power off)

When 30 minutes pass with the following conditions consisted, the system turns off the power (standby) automatically.

- a. The unit connected with an external bus is in the standby state.
- b. RX input function is DVD.
- c. RX is not operated

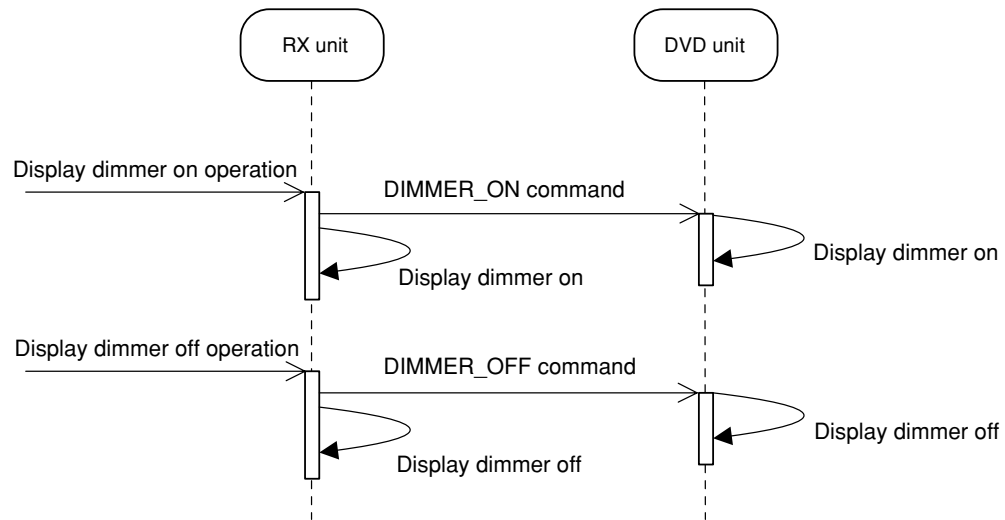
DVD might turn off the power by own auto standby function.



3.4 Display control

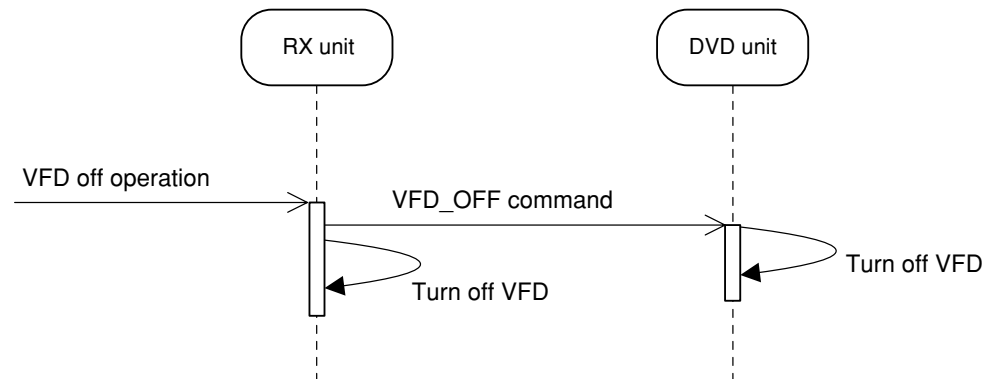
(1) Display dimmer function

This is the function to change the brightness of DVD's display by operating RX.



(2) Turn off VFD

This is the function to turn off VFD.



Exit: RX sends DIMMER_ON or DIMMER_OFF command, and then DVD unit turn on VFD with the appropriate dimmer value.

DVD-E810

