

DVD PLAYER

DVD-S520/DV-S5450

SERVICE MANUAL

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.



■ TO SERVICE PERSONNEL

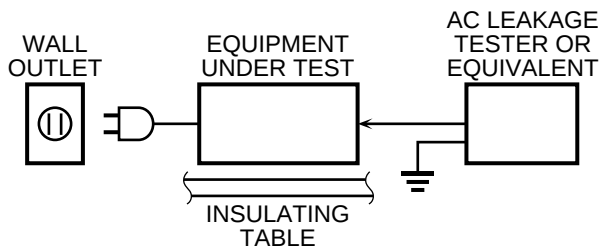
1. Critical Components Information

Components having special characteristics are marked  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 ohm 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.



THE DVD PLAYER SHOULD NOT BE ADJUSTED OR REPAIRED BY ANYONE EXCEPT PROPERLY QUALIFIED SERVICE PERSONNEL.

■ WARNINGS

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 "POWER" 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

Output value is determined by CFR CHAPTER1, SUBCHAPTER J

VARO! : AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASER-SÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.

VARNING! : OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRakta EJ STRÅLEN.

WARNING

The use of optical instruments with this product will increase eye hazard.
 Repair handling should take place as much as possible with a disc loaded inside the player

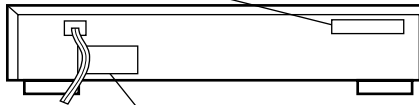
U, C models

DANGER - Visible and invisible laser radiation when open. Avoid direct exposure to beam.



R, A, T, P models

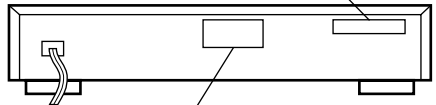
CAUTION - Visible and invisible laser radiation when open. Avoid exposure to beam.



CLASS 1 LASER PRODUCT
 LASER KLASSE 1 PRODUKT
 LUOKAN 1 LASERLAITE
 KLASSE 1 LASER APPART

B, G models

CAUTION - Visible and invisible laser radiation when open. Avoid exposure to beam.



CLASS 1 LASER PRODUCT
 LASER KLASSE 1 PRODUKT
 LUOKAN 1 LASERLAITE
 KLASSE 1 LASER APPART

WARNING LOCATION: REAR PANEL

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 NÄR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN
VARNING SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD BETRakta EJ STRÅLEN
VARO! AVATT AESSA 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 including the heatsink 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 .

The primary side of the power supply has been indicated with a lightening stroke and a stripe-marked print on the printed wiring board

Note:

The screws on the DVD mechanism (position 18-1 in on the exploded view drawing) 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 ELECTRO STATIC DISCHARGE

The laser diode in the traverse unit (optical pickup) may be damaged due to static electricity from clothes or the human body. Use caution to prevent electrostatic damage when servicing or handling the laser diode.

1. Grounding for electrostatic damage prevention

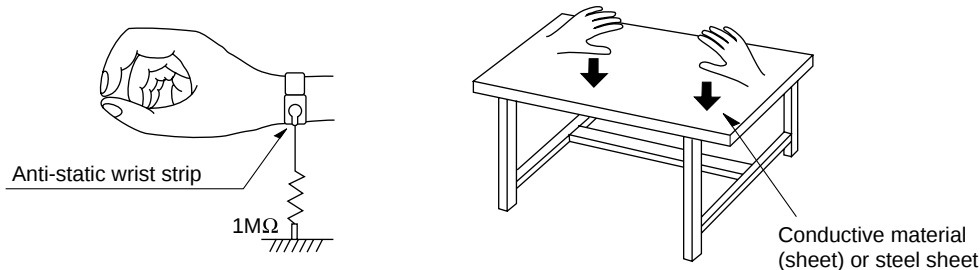
Some devices, such as the DVD player, use an optical pickup (laser diode) that will be damaged by static electricity in the working environment. Only attempt service after ensuring that all grounding procedures have been completed.

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 of the optical pickup

1. To prevent damage to the optical pickup replacement parts during transportation and before installation, both ends of the laser diode are short-circuited. After installing the new part, remove the short circuit according to the correct procedure in this service manual.
2. Do not use a tester to check the laser diode in the optical pickup. The power supply in the tester will damage the laser diode.

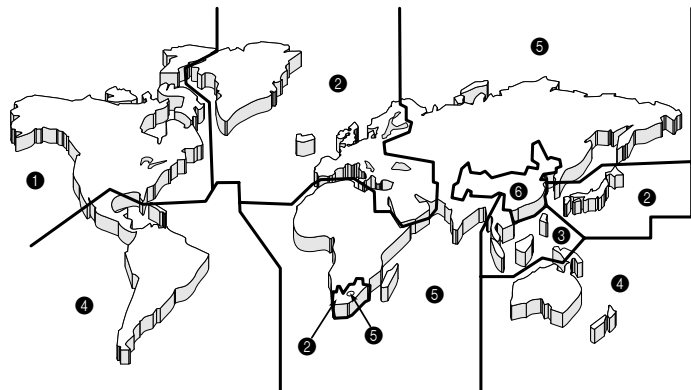
3. Handling Precautions for the Traverse Unit (Optical Pickup)

1. Handle the traverse unit (optical pickup) gently, as it is an extremely high-precision assembly.
2. When replacing the optical pickup, install the flexible cable and cut its short land with wire cutters. See the optical pickup replacement procedure in this service manual. Before replacing the traverse unit, remove the shorting pin for preventing static electricity damage and install the new unit. Reconnect the connector as quickly as possible.
3. The flexible cable lines may break if an excessive force is applied to it. Use caution when handling the cable.
4. The semi-fixed resistor for laser power adjustment should not be adjusted. Do not turn the resistor.

■ LOCALE MANAGEMENT INFORMATION

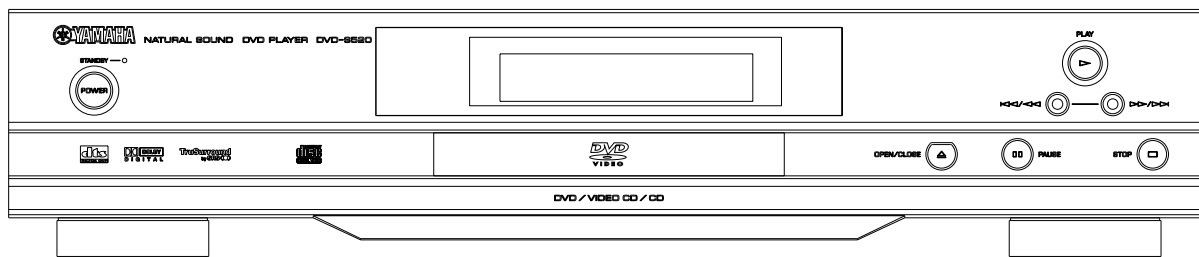
Locale Management Information : This DVD player is designed and manufactured to respond to the Locale Management Information that is recorded on the DVD disc. If the Locale number described on the DVD disc does not correspond to the Locale number of this DVD player, this DVD player cannot play this disc.

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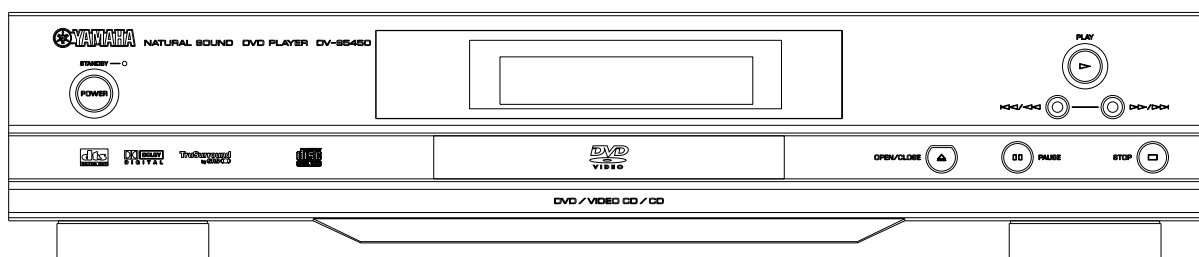


FRONT PANELS

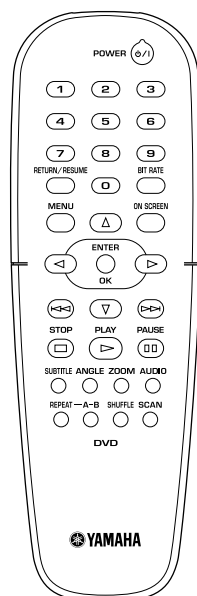
DVD-S520



DV-S5450

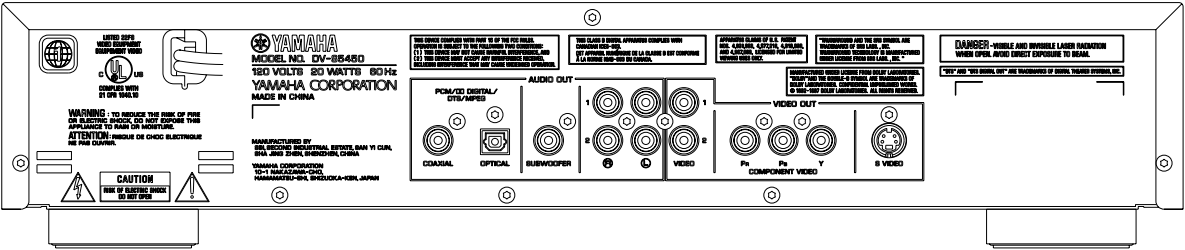


REMOTE CONTROL TRANSMITTER

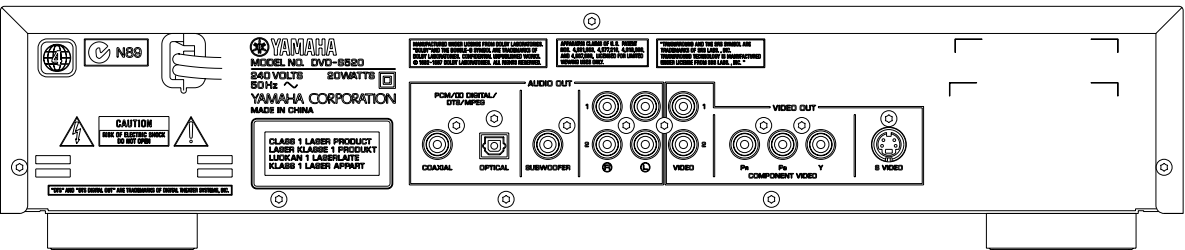


REAR PANELS

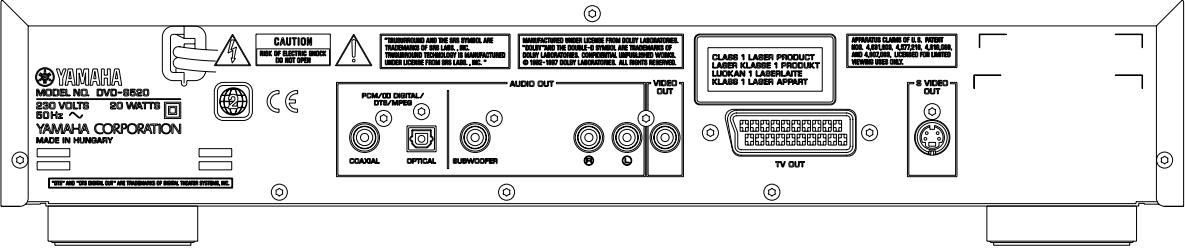
DVD-S520 U, C models



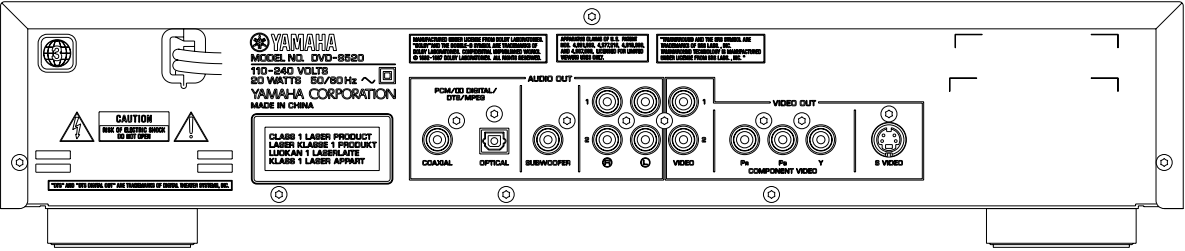
DVD-S520 A model



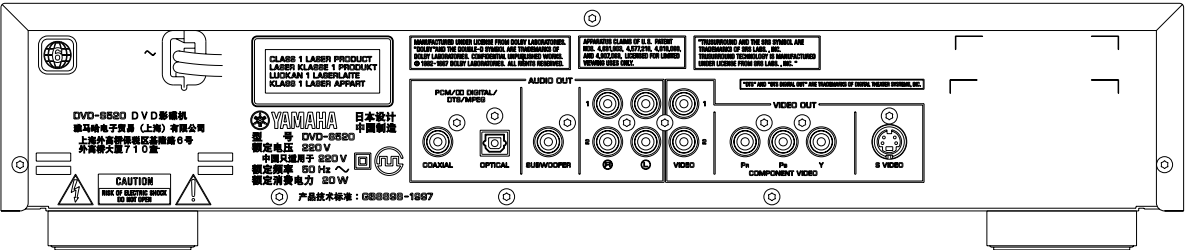
DVD-S520 B, G models



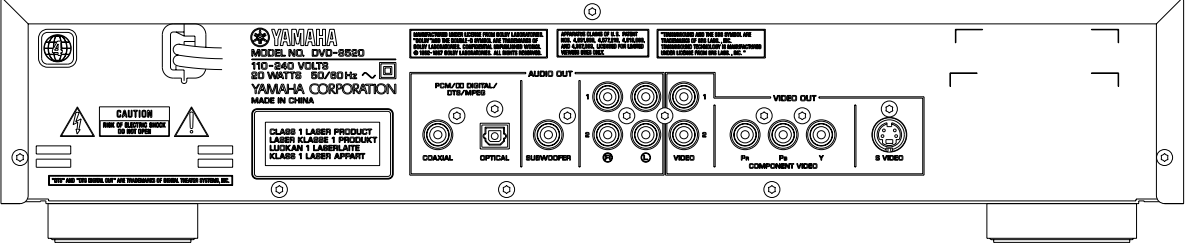
DVD-S520 R model



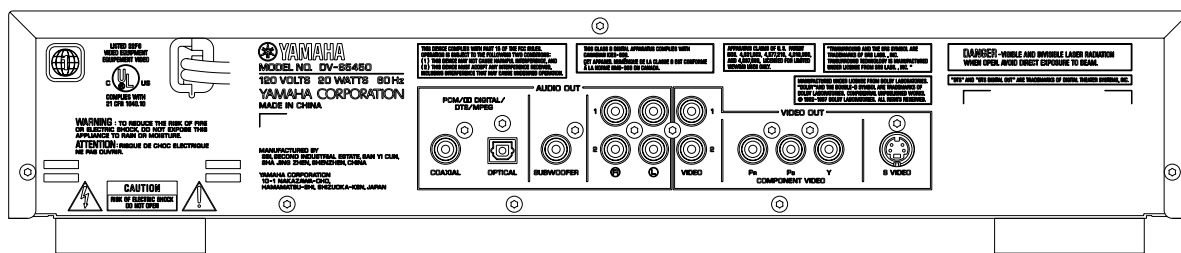
DVD-S520 T model



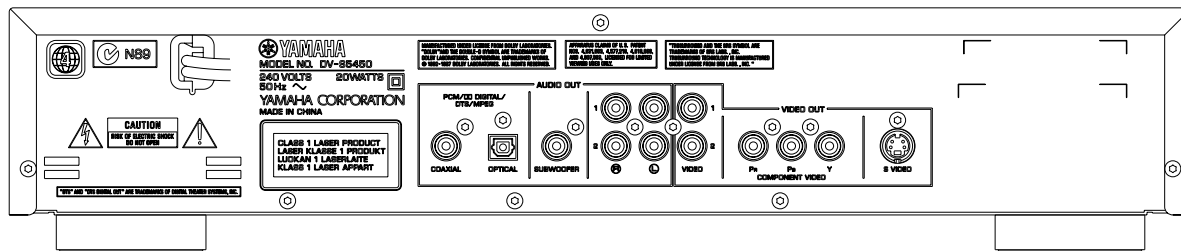
DVD-S520 P model



DV-S5450 U model



DV-S5450 A model



SPECIFICATIONS

PLAYBACK SYSTEM

DVD Video
Video CD & SVCD
CD (CD Recordable and CD Rewritable)
DVD+RW
MP3

OPTICAL READOUT SYSTEM

Lasertype Semiconductor AlGaAs
Numerical Aperture 0.60 (DVD)
0.45 (VCD/CD)
Wavelength 650 nm (DVD)
780 nm (VCD/CD)

DVD DISC FORMAT

Medium	Optical Disc	
Diameter	12cm (8cm)	
Playing time (12cm)	One layer	2.15 h*
	Dual layer	4 h*
	Two side layer	4.30 h*
	Single layer	
	Two side layer	8 h*
	Dual layer	

VIDEO FORMAT

DA Converter 10 bits
Signal handling Components
Digital Compression MPEG2 for DVD
MPEG1 for VCD

TV STANDARD	(PAL/50Hz)	(NTSC/60Hz)
Number of lines	625	525
Playback	Multistandard	(PAL/NTSC)

DVD

Horizontal Resolution	720 pixels	720 pixels
Vertical Resolution	576 lines	480 lines

VCD

Horizontal Resolution	352 pixels	352 pixels
Vertical Resolution	288 lines	240 lines

VIDEO PERFORMANCE

Video output 1 Vpp into 75 ohm
S-Video output Y: 1 Vpp into 75 ohm
C: 0.3 Vpp into 75 ohm
Component video output Y: 1 Vpp into 75 ohm (U, C, A, R, T, P)
Pb/Cb Pr/Cr: 0.7Vpp into 75 ohm
(U, C, A, R, T, P)
RGB (SCART) output 0.7 Vpp into 75 ohm (B, G)
Black Level Shift On/Off
Video Shift Left/Right

AUDIO FORMAT

Digital	MPEG	Compressed Digital
	DTS/Dolby Digital	
	PCM	16, 20, 24 bits fs, 44.1, 48, 96 kHz

Analog Sound Stereo
Dolby Pro Logic downmix from Dolby Digital multi-channel sound
3D Sound (TruSurround) for virtual 5.1 channel sound on 2 speakers

AUDIO PERFORMANCE

DA Converter	24 bits	
DVD	fs 96 kHz	2 Hz 44 kHz
	fs 48 kHz	2 Hz 22 kHz
Video CD	fs 44.1 kHz	2 Hz 20 kHz
CD	fs 44.1 kHz	2 Hz 20 kHz
Signal-Noise (1kHz)		95 dB
Dynamic Range (1kHz)		95 dB
Harmonic Distortion and Noise (1kHz)		0.0035 %
MPEG MP3		MPEG Audio L3

CONNECTIONS

Y Output	Cinch (green) (U, C, A, R, T, P)
Pb/Cb Output	Cinch (blue) (U, C, A, R, T, P)
Pr/Cr Output	Cinch (red) (U, C, A, R, T, P)
SCART	Euroconnector (B, G)
S-Video Output	Mini DIN, 4 pins
Video Output	Cinch (yellow)
Audio L+R output	Cinch (white/red)
Subwoofer output	Cinch (black)
Digital Output	1 coaxial, 1 optical IEC958 for CDDA / LPCM IEC1937 for MPEG1/2, Dolby Digital and DTS

GENERAL

Dimensions(w x h x d)	435 x 91 x 314 mm (17-1/8" x 3-5/8" x 12-9/16")
Weight	Approx. 3.3 Kg (7 lbs. 4.5 oz.)
Finish	DVD-S520 Black color (U, C, A, B, G, P) Gold color (R, G, T) Titan color (G, B)
	DV-S5450 Black color (U, A) Silver color (U)
Power supply	120 V, 60 Hz (U, C) 230 V, 50 Hz (B, G) 240 V, 50 Hz (A) 110–240 V, 50/60 Hz (R) 220 V, 50 Hz (T)
Power consumption	20 W
Standby power consumption (reference data)	5 W

PACKAGE CONTENTS

DVD-Video Player, Remote Control & Batteries,
Owner's Manual, Audio/Video cable (U, C, A, R, T),
Audio cable (B, G), Video cable (B, G)

GENERAL FUNCTIONALITY

Stop / Play / Pause
Fast Forward / Backward
Time Search
Step Forward / Backward
Slow Motion
Title / Chapter / Track Select
Skip Next / Previous
Repeat (Chapter / Title / All) or (Track / All)
A-B Repeat
Shuffle
Scan
New enhanced user graphical interface
Zoom (x1.33, x2. x4) with picture enhancement
Smart Picture for convenient personal colour setting
NTSC/PAL Conversion
Screen Saver (Dim 75% after 15 min.)
3D Sound (TruSurround)
Audio and video bit rate indicator

DVD FUNCTIONALITY

Multi-angle Selection
Audio Selection (1 out of maximum 8 languages)
Subtitles Selection (1 out of maximum 32 languages)
Aspect Ratio conversion (16:9, 4:3 Letterbox, 4:3 Pan Scan)
Parental Control and Child Lock
Disc Menu support (Title Menu and Access Control)
Resume (5 discs) after stop / standby
Programming Titles/chapters with Favourite Track Selection

VIDEO CD FUNCTIONALITY

Playback Control for VCD 2.0 discs
Child Lock
Resume (5 discs) after stop / standby
Programming Tracks with Favourite Track Selection

AUDIO CD FUNCTIONALITY

Time Display (Total / Track)
Full audio functionality with remote control
Programming with Favourite Track Selection

MP3 FUNCTIONALITY

Time Display (Track)
Album and Track Selection
Repeat (Disc / Album / Track)

* typical playing time for movie with 2 spoken languages and 3 subtitle languages.

Specifications subject to change without prior notice

U	U.S.A. model	C	Canada model
G	Europe model	B	British model
A	Australia model	R	General model
T	China model	P	South America model

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TruSurround™
by **SRS** 

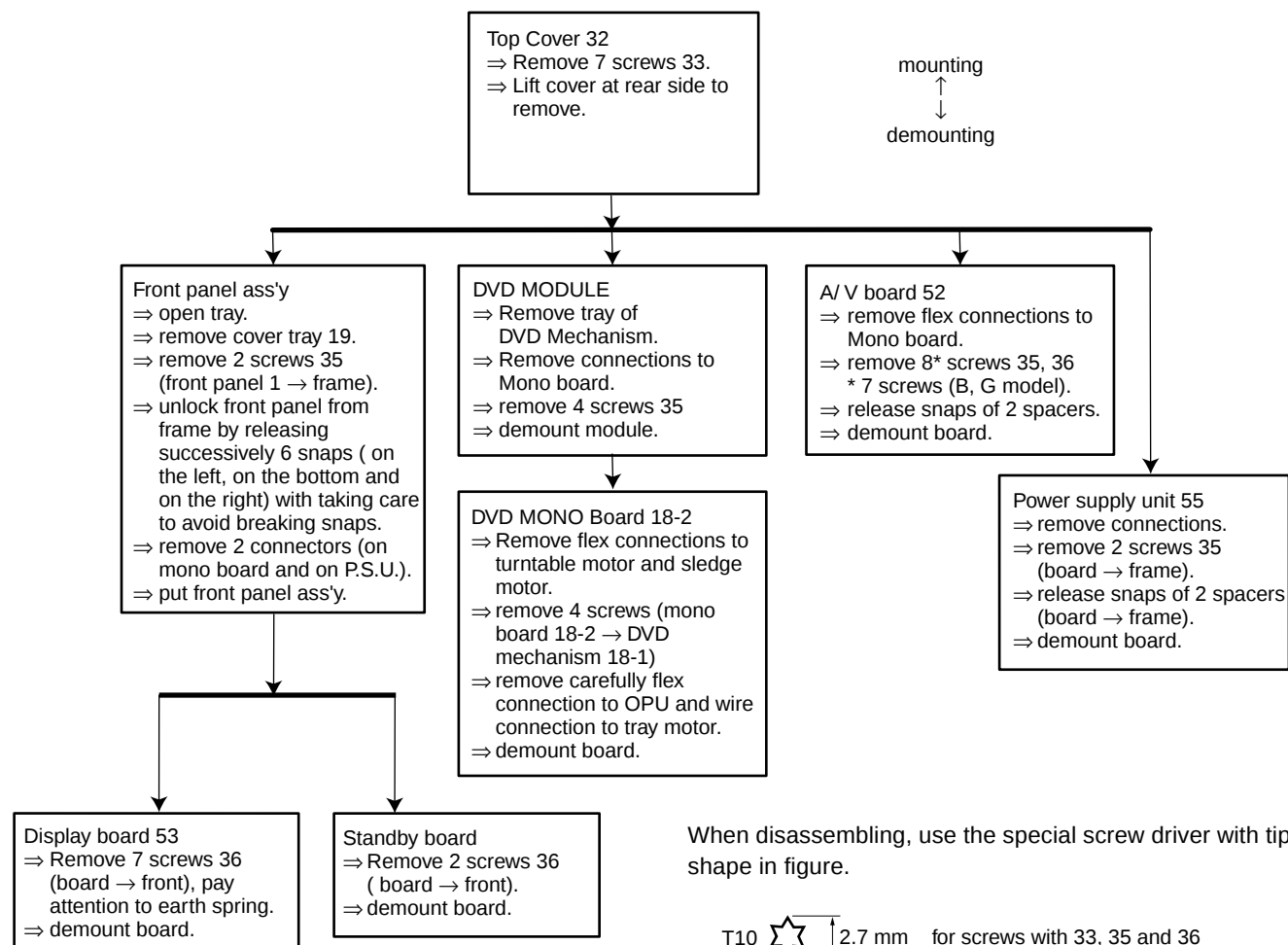
Manufactured under license from Dolby Laboratories.
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DISASSEMBLY PROCEDURES

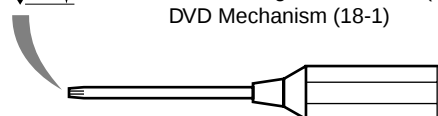
See exploded view for item numbers.



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

T10  2.7 mm for screws with 33, 35 and 36

T6  1.7 mm for removing MONO board (18-2) from DVD Mechanism (18-1)



● The way to remove tray

1. Push left end of the lever under the tray toward the right by using screwdriver, move the tray by pulling it forward. (Fig. 1)
2. While lifting up the lever (①), move the left side of the tray by pulling it forward (②). (Fig. 2)
3. While lifting up the tray (③), remove the tray by pulling it forward (④). (Fig. 2)

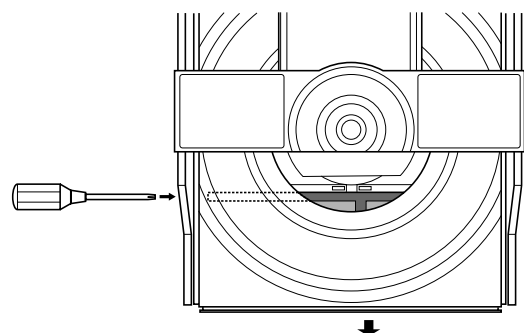


Fig. 1

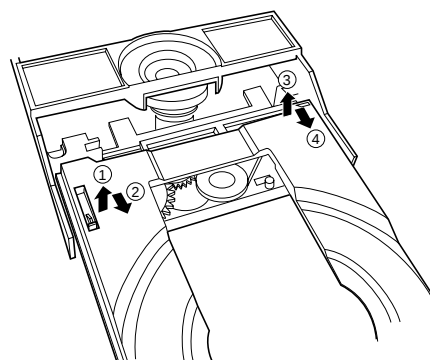


Fig. 2

■ SERVICE POSITION

See figure 1 for the service position

1. Remove the cables from the cable tie housing.
2. Remove 4 screws that mount the DVD module to the bottom frame.
3. Move the DVD module backward slightly and flip the module over, so that the component side of the board faces upwards, and the module is in the service position.

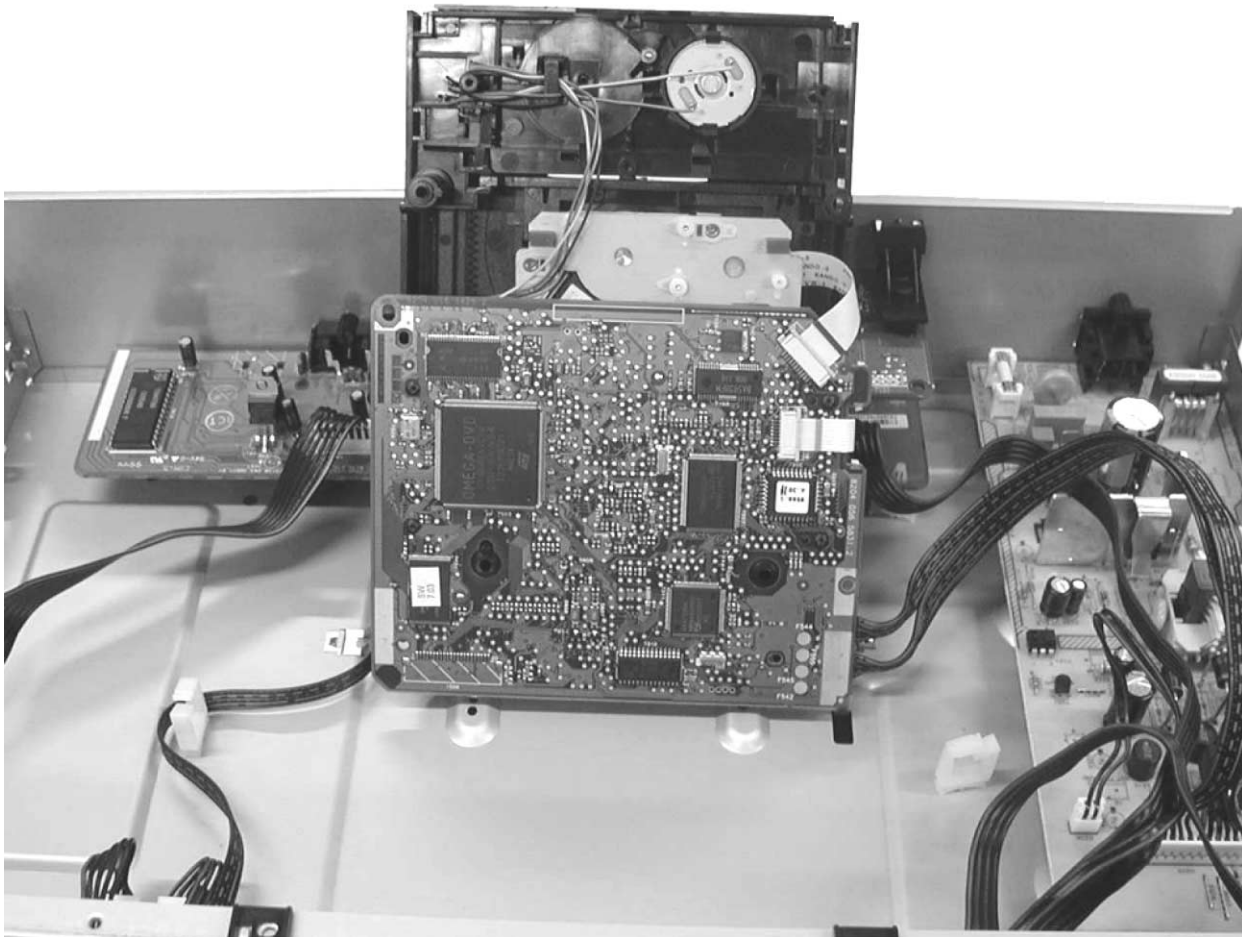


Fig. 1

■ SERVICE HINTS

Diagnostic software

In chapter "Diagnostic software", some tests are referring to the SCART functionality.

These tests are for sets with RGB-output.

For sets without RGB-output, no SCART connector is mounted.

In these sets, the SCART tests will automatically be skipped.

■ DIAGNOSTIC SOFTWARE : SCRIPT INTERFACES

1. DEALER SCRIPT

1.1 Purpose of Dealer Script

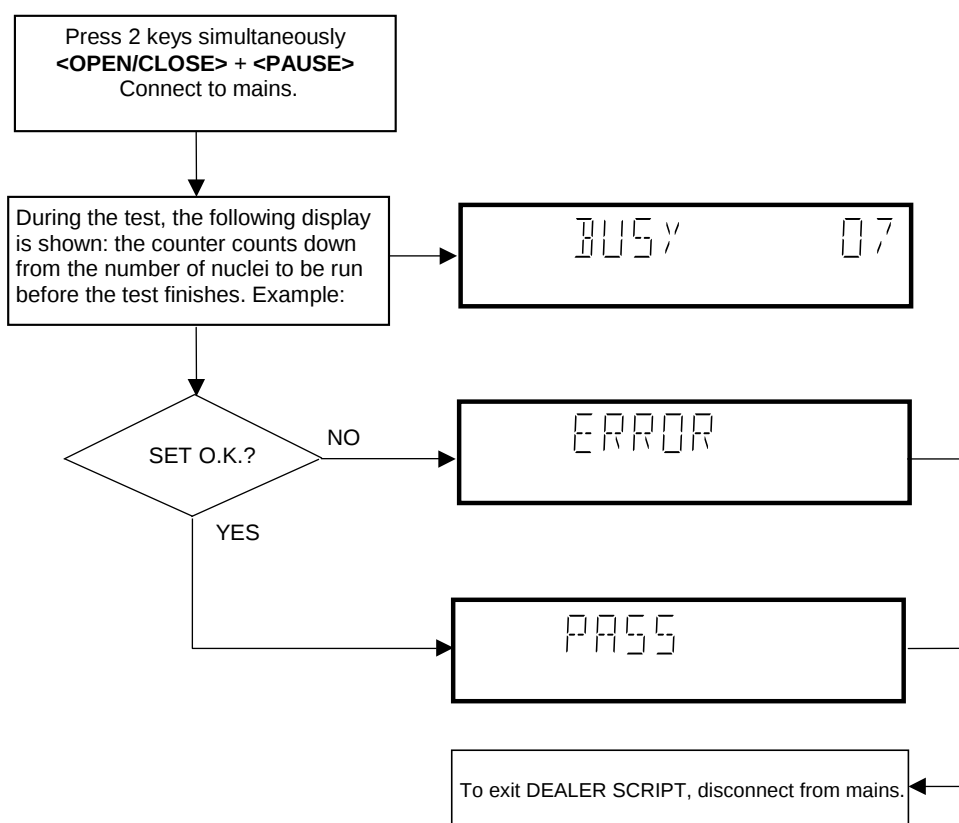
The dealer script can give a diagnosis on a standalone DVD player; no other equipment is needed to perform a number of hardware tests to check if the DVD player is faulty. The diagnosis is simply a "error" or "pass" message; no indication is given of faulty hardware modules. Only tests within the scope of the diagnostic software will be executed hence only faults within this scope can be detected.

1.2 Contents of Dealer Script

The dealer script executes all diagnostic nuclei that do not need any user interaction and are meaningful on a standalone DVD player.

The nuclei called in the dealer script are the following (the number after each nucleus name corresponds with the number being on the local display when the nucleus is executed during the dealer script):

Nucleus		Description
VideoColSetupComm	9	Checks the I2C interface with the RGB video processor on the Audio/Video board (only for DVD players with RGB video processor).
VideoScartSwComm	8	Checks the I2C interface with the scart switch on the Audio/Video board
PapChksFl	7	Calculate and verify checksum of FLASH memory.
PapDramWrR	6	Pattern test of all locations in the DRAM(s).
PapI2cDisp	5	Checks the I2C interface with the slave processor on the display PCB.
PapS2bEcho	4	Checks the I2C interface to the basic engine.
PapI2cNvram	3	Checks the I2C interface with the NVRAM.
PapNvramWrR	2	Pattern test of all locations in the NVRAM
CompSdramWrR	1	Pattern test of all locations in the SDRAM(s).



2. PLAYER SCRIPT

2.1 Purpose of Player Script

The Player script will give the opportunity to perform a test that will determine which of the DVD player's modules are faulty, to read the error log and error bits and to perform an endurance loop test. To successfully perform the tests, the DVD player must be connected to a TV set to check the output of a number of nuclei. For DVDv2b a multi-channel amplifier, a set of 6 boxes and an external video source are necessary to test. To be able to check results of certain nuclei, the player script expects some interaction of the user (i.e. to approve a test picture or a test sound). Some nuclei (e.g. nuclei that test functionality of the Basic Engine module) require that the DVD player itself is opened, to enable the user to observe moving parts and approve their movement visually. Only tests within the scope of the diagnostic software will be executed hence only faults within this scope can be detected.

2.2 Contents of Player Script

The player script contains all nuclei that are useful on a DVD player that is connected to a TV-set and help to determine which module of the DVD player is faulty, as well as to read out the contents of the error logs.

2.3 Structure of Player Script

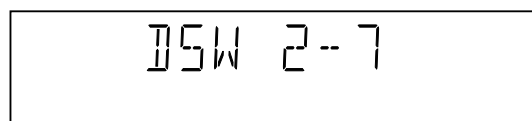
The player script consists of a set of nuclei testing the three hardware modules in the DVD player: the Display PWB, the Digital PWB and the Basic Engine.

Nuclei run by the player test need some user interaction; in the next paragraph this interaction is described. The player test is done in two phases:

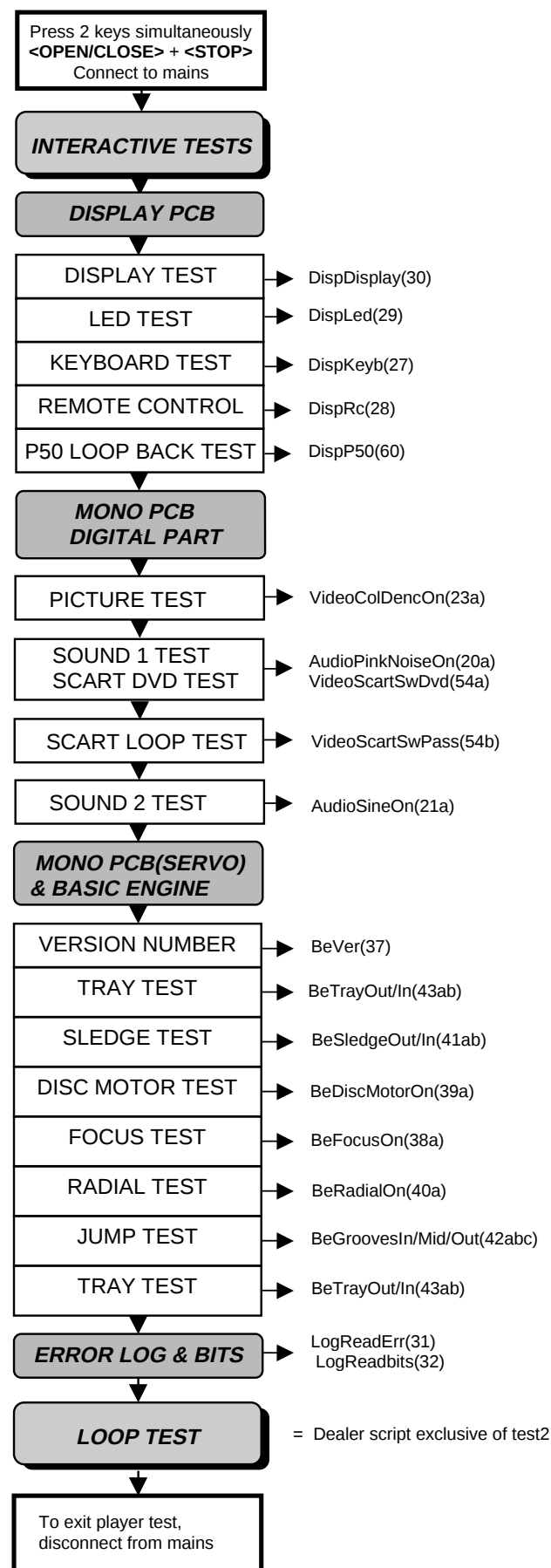
1. Interactive tests: this part of the player test depends strongly on user interaction and input to determine nucleus results and to progress through the full test. Reading the error log and error bits information can be useful to determine any errors that occurred recently during normal operation of the DVD player.
2. The loop test will loop through the list of nuclei indefinitely, till the NEXT key is pressed. The list of nuclei is as follows:
 - VideoColSetupComm
 - VideoScartSwComm
 - PapChksFlash
 - PapI2cNvram
 - CompSdramWrR
 - PapS2bEcho
 - PapI2cDisp

For DSW version 1.6 and above, the DSW version number will be displayed on the local display. Press NEXT to continue to the display test.

The display should look like the following:



2.4 Survey



■ INTERACTIVE TESTS

1. DISPLAY PCB

1.1 DISPLAY TEST

The display test is performed by nucleus DispDisplay. By putting a series of test patterns on the local display, the local display is tested. To step through all different patterns, the user must either press PLAY (pattern is ok) or PAUSE (pattern was incorrect) to proceed to the next pattern. The display of patterns is continued in a cyclic manner until the user presses NEXT. If the user presses NEXT before all display patterns are tested, the DispDisplay nucleus will return TRUE (display test successful).

1.2 LED TEST

The LED(s) on the DVD player is (are) tested by nucleus DispLed. The user must check if the LED(s) is (are) lighted; if it is, press PLAY, if it is not, press PAUSE. By pressing NEXT the script will proceed to the next test. If the user presses NEXT before PLAY or PAUSE, the DispLed nucleus will return TRUE (LED test successful).

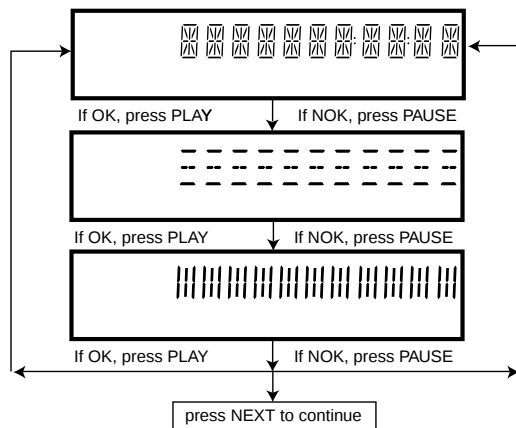


Figure 1

1.3 KEYBOARD TEST

The keyboard of the DVD player is tested by nucleus DispKeyb. The user is expected to press all keys on the local keyboard once. The code of the key pressed is shown on the local display (1 hexadecimal digit) immediately followed by a (hexadecimal) number indicating how many times that key has been pressed. Example of the local display during this test:

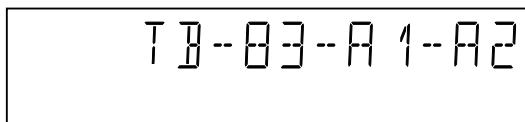


Figure 2

The key-codes displayed on the local display will scroll from right to left when the display gets full, the text "tb-" will remain on display.

key id.	key
0	PLAY ▶
1	NEXT ⏭/⏮
2	PREVIOUS ⏮/⏭
3	PAUSE ⏸
4	STOP □
5	OPEN/CLOSE △
A	POWER (B,G models)

Figure 3

If any keys are detected more than once (due to hardware error), the key-code is displayed twice (or more), with the second digit increased by 1.

If the user does not press all keys minimally once (in any order), the DispKeys nucleus will return FALSE and cause an error in the overall result of the player script.

The user can leave the keyboard test by pressing the NEXT key on the local display of the DVD player for at least one full second.

The result of the keyboard test is shown on local display as follows:

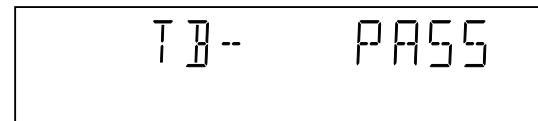


Figure 4

Or

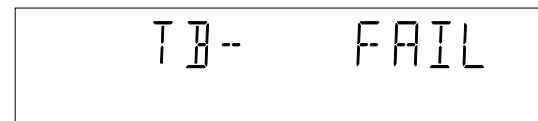


Figure 5

Pressing NEXT on the local keyboard again will proceed to the next text.

1.4 REMOTE CONTROL TEST

The remote control of the DVD player is tested by nucleus DispRc. The user must press any key on the remote control just once. The codes of the key pressed will be shown on the local display in hexadecimal format. Example:

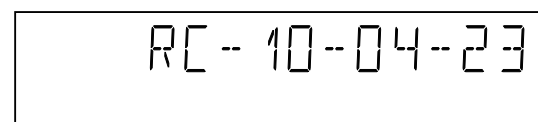


Figure 6

In this example 23 is the hexadecimal code of the pressed RC key. The user can leave the remote-control test by pressing NEXT on the local keyboard of the DVD player. The remote control test is successful if a code was received before the user pressed the NEXT key; pressing the NEXT key before pressing a key on the remote control gives an error in the remote control test (note that the remote control test will also fail if a key on the remote control was pressed but no code was received). The remote control test does not check upon the contents of the received code, that is it will not be checked if the received code matches the key pressed. If desired, the user can manually check this code by using a code-table for the remote control key-codes.

RC Key id	Hexadecimal code
POWER 	C
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
RETURN/RESUME	83
0	0
BIT RATE	EF
MENU	54
CURSOR UP 	58
ON SCREEN	82
CURSOR LEFT 	5A
OK	5C
CURSOR RIGHT 	5B
PREVIOUS 	21
CURSOR DOWN 	21
NEXT 	20
STOP 	31
PLAY 	2C
PAUSE 	30
SUBTITLE	4B
ANGLE	85
ZOOM	F7
AUDIO	4E
REPEAT	1D
A/B REPEAT	3B
SHUFFLE	1C
SCAN	2A

Figure 7

After pressing NEXT, the result of the remote control test is displayed on the local display of the DVD player as follows:

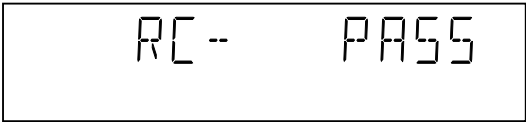


Figure 8

Or

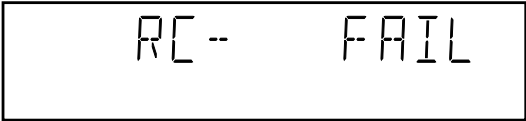


Figure 9

Pressing NEXT on the local keyboard again will proceed to the next test.

1.5 P50 Loop-Back Test

For the P50 loop-back test, the user must first press a key to decide if the test is to be performed.

The display will show the following message:

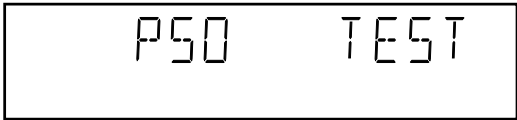


Figure 10

If the user presses PAUSE, the P50 test will be skipped. If the user presses PLAY, the P50 test is performed and the result is displayed as follows:

Test successful:

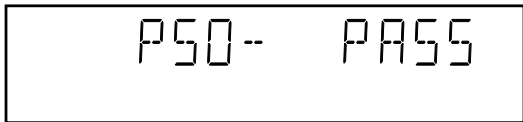


Figure 11

Test fails:

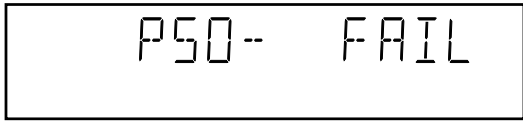


Figure 12

Press the NEXT key to continue to the next text

2 MONO PCB DIGITAL PART

2.1 PICTURE TEST

The picture test is performed by putting a predefined picture (colour bar) on the display (nucleus

VideoColDencOn) and asking the user for confirmation. The display shows the following message:

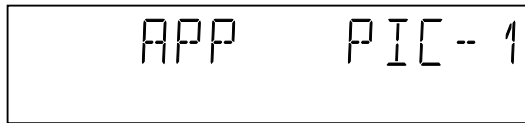


Figure 13

By pressing PLAY, the user confirms the test; pressing PAUSE will indicate the picture was invisible or incorrect. Pressing NEXT will proceed to the next test

2.2 SOUND 1 & SCART DVD TEST

The first soundtest is performed by starting a pink noise sound that needs confirmation from the user (nucleus AudioPinkNoiseOn); the display shows the following message very shortly:

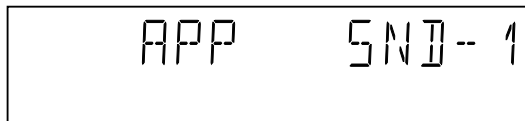


Figure 14

This sound will only be audible from version cut3.1 of Sti5505(item7503 on mono board) onwards. After starting up sound 1, SCART loop-trough will be simultaneously active during this test. SCART loop-trough will be measured with the aid of an external video source. When entering the SCART loop-trough, the local display indicates:



Figure 15

On the TV screen, a colour bar (generated by nucleus VideoColDencOn) is visual and the internally generated pinknoise is audible. By pressing PLAY, the user confirms the test; pressing PAUSE will indicate the sound was inaudible or incorrect. Pressing NEXT will proceed to the next test; if the user presses NEXT without pressing PLAY or PAUSE first, the result of this test will be TRUE (sound ok). By pressing the NEXT button, there will be switched over to the external source, this must become now visible on the TV screen (using the SCART). The local display indicates:

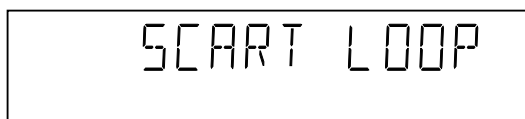


Figure 16

The internally generated colour bar is still available on the CVBS and Y/C outputs. And the pinknoise-signal is still available on the cinch audio outputs. By pressing the PREV button, the internal generated colour bar becomes visual again.

The test can be left by pressing the NEXT key for more than one second.

2.3 SOUND 2 TEST

The second soundtest is performed by producing a sine sound (nucleus AudioSineOn). The signal can be stopped by pressing the STOP-key. The display shows the following message:

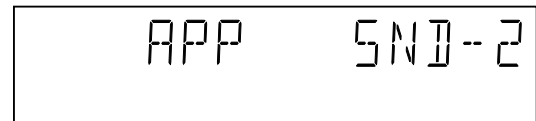


Figure 17

By pressing PLAY, the user confirms the test; pressing PAUSE will indicate that something went wrong. To proceed NEXT, press the STOP key first, press the NEXT key second and wait five seconds.

3 BASIC ENGINE

note) Basic engine means DVD mechanism.

3.1 VERSION NUMBER

In the basic engine tests, the version number of the Basic Engine will be shown first, as the following example:

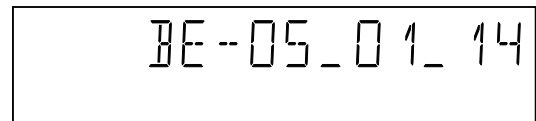


Figure 18

By pressing the NEXT key, the Basic Engine tests are started.

3.2 TRAY TEST

First, the tray is tested. The purpose of this test is also to give the user the opportunity to put a disc in the tray of the DVD player. Some tests on the Basic Engine require that a disc (e.g. DVD MPTD test disc) is present in the player. At the end of the Basic Engine tests, this tray test will be repeated solely to enable the user to remove the disc in the tray. The local display looks as follows:

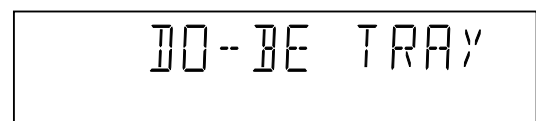


Figure 19

By pressing PLAY or PAUSE, the user can toggle the position of the tray. Note that this test will not contribute to

the test result of the Basic Engine. Pressing NEXT will proceed to the next test, after the tray has been closed (by the software) if it was open.

3.3 SLEDGE TEST(visual test)

The second Basic Engine test tests the sledge; the user can move the sledge as many times as desired by using PLAY (nucleus BeSledgeOut) and PAUSE (nucleus BeSledgeIn).

Pressing NEXT on the local keyboard proceeds to the next test.

Note that this test will not contribute to the test result of the Basic Engine. The local display looks as follows during the sledge test:

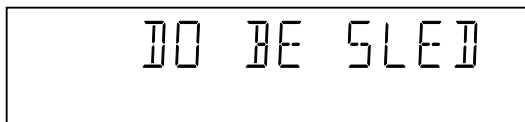


Figure 20

3.4 DISC MOTOR TEST(visual test)

The third Basic Engine test tests the disc motor (nucleus BeDiscMotorOn); the local display looks as follows:

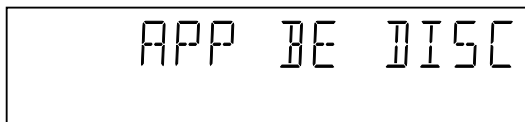


Figure 21

By pressing PLAY, the user confirms that the disc motor is running; pressing PAUSE indicates the disc motor does not work. Pressing NEXT proceeds to the next test, after a reset of the disc motor (nucleus BeDiscMotorOff). If the user presses NEXT before pressing PLAY or PAUSE, the result of this test will be TRUE (disc motor is running).

3.5 FOCUS TEST(visual test)

The fourth Basic Engine test tests the focussing; first focussing is turned on by calling nucleus BeFocusOn. The display looks as follows:

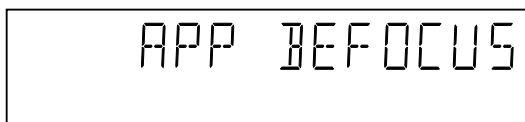


Figure 22

By pressing PLAY, the user confirms that the focussing was successful; pressing PAUSE indicates a focussing failure.

Pressing NEXT proceeds to the next test after a reset of the focussing (nucleus BeFocusOff); if NEXT is pressed before PLAY or PAUSE, the result of this test will be TRUE (focus successful).

3.6 RADIAL TEST(visual & listening test)

The fifth Basic Engine test tests the radial functionality (nucleus BeRadialOn); the local display looks as follows:

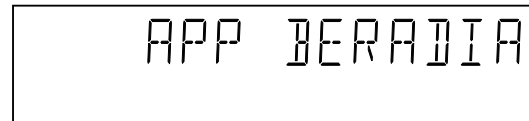


Figure 23

By pressing PLAY, the user confirms that the radial function worked; pressing PAUSE indicates the function does not work.

Pressing NEXT proceeds to the next test, after a reset of the radial (nucleus BeRadialOff). If the user presses NEXT before pressing PLAY or PAUSE, the result of this test will be TRUE (radial successful).

3.7 JUMP TEST(listening test)

The sixth and last Basic Engine test tests the jumping by calling nuclei BeGroovesIn, BeGroovesMid and BeGroovesOut.

During this test, the local display looks as follows:

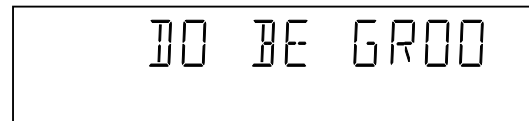


Figure 24

The user can switch between the three different types of groove settings by pressing PLAY (forward to next nucleus in the list In-Mid-Out) or PAUSE (backward in the list In-Mid-Out).

This is done in a cyclic manner; note that this test will not contribute to the test result of the Basic Engine. Pressing NEXT proceeds to the next test, after the disc motor has been shut off with a call to nucleus BeDiscMotorOff.

3.8 TRAY TEST

As a last action for the Basic Engine tests, the tray test is repeated. The local display looks as follows:

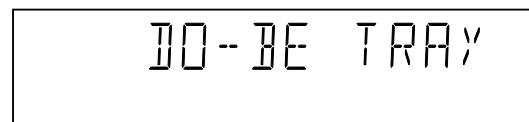


Figure 25

This test is meant to give the user the opportunity to remove the disc in the tray. The tray position can be toggled using the PLAY and PAUSE key. The tray will be closed (by the software, if it is open) before proceeding to the next test when the user presses the NEXT key.

3.9 ERROR LOG

Reading the error log and error bits information can be useful to determine any errors that occurred recently during normal operation of the DVD player. Reading the error log is done by nucleus LogReadErr. The display during the errorlog readout looks as follows :

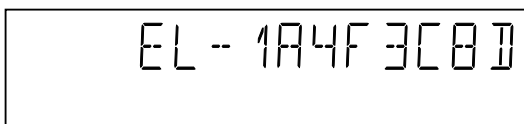


Figure 26

By pressing PLAY or PAUSE, the user can move forward or backward (respectively) through the logged error codes. The highlighted number indicates which errorcode is currently on display (in the example above, errorcode number 4 is displayed). If "0000" is displayed at all positions, the error log is empty. Display of the logged errors is done in a cyclic manner.

The errorcode with the lowest highlighted number is the

most recent. By pressing NEXT on the local keyboard, the user can proceed to the next test.

3.10 ERROR BITS

Reading the error bits is done by nucleus LogReadBits. The display during the errorbits readout looks as follows:

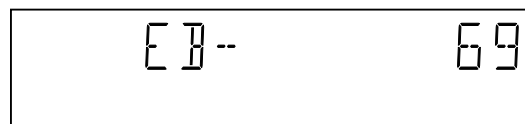


Figure 27

Only the set errorbits will be shown by their (decimal) number.

Refer to the appropriate documentation for the explanation of each bit number. If the display only shows "EB-0", no error bits were set. By pressing NEXT, the user can continue to the next test.

See table below:

Error log / bits table	Read ERROR LOG in player script	Read ERROR BITS in player script
Basic engine errors	Value:	Value:
Command to the Basic Engine not allowed in this state or unknown command	150101	8
Parameter(s) from the command to the Basic Engine is not valid	150102	7
Sledge could not be moved to the inner home position	150103	6
Focus failure	150104	5
Turntable motor speed could not be reached within timeout	150105	4
Radial servo could not get on track on the disc	150106	3
PLL could not lock in the accessing or tracking state	150107	2
Subcode or sector information could not be read	150108	1
requested subcode could not be found	150109	16
Tray could not be closed or opened completely	15010A	15
TOC could not be read within timeout	15010B	14
The requested seek on the disc could not be executed	15010C	13
A requested lead-in is not on the disc	15010D	12
A non existing burst cutting area is requested	15010E	11
S2b communication error	1501F0	10
S2b communication error	1501F1	9
S2b communication error	1501F3	24
S2b communication error	1501F4	23
S2b communication error	1501F5	22
Digital PWB errors		
Communication error with the Sti 5505	90000	32
Communication error with the Sti 5505	90001	31
Disply processor errors		
Communication error with the display processor	190000	40

4. LOOP TEST

At the start of the loop test, the display will show the result of the interactive player test:



Figure 28

The left side of the display contains a 3-digit code, which can have a value between 000 and 111. These values are to be interpreted as follows:

Displayed Value	Indication for each module		
	Basic Engine	Mono PCB	Display PCB
000	ok	ok	ok
001	ok	ok	faulty
010	ok	faulty	ok
011	ok	faulty	faulty
100	faulty	ok	ok
101	faulty	ok	faulty
110	faulty	faulty	ok
111	faulty	faulty	faulty

Figure 29

The loop test will perform the same nuclei as the dealer test, but it will loop through the list of nuclei indefinitely. The display of the DVD player will display not only the three digits indicating correct/faulty modules and the last found error code (as mentioned, faults are detected as far as they can be within the scope of the diagnostic software), but also a loop counter indicating how many times the loop has been gone through.

Example:

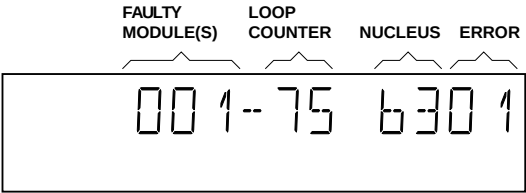


Figure 30

The number after the hyphen indicates the number of times the loop test has been performed; the 4 digits at the right side of the display show the last error that was found when running the loop test: the leftmost two digits of this code indicate which nucleus resulted in a fault; the rightmost two digits refer to the faultcode within that nucleus. For further explanation of this error code, see list of error codes below.

ERROR CODES LOOP TEST

ERROR CODE	NUCLEUS NUMBER	ERROR DESCRIPTION
0601	6	Calculated checksum of FLASH is not correct
0901	9	The DVD DRAM is faulty
1104	11	I2C bus busy before start
1102		NVRAM access time-out
1103		No NVRAM Acknowledge
1104		NVRAM reply time-out
1201	12	I2C bus busy
1202		I2C bus not working
1203		Slave controller not responding
1204		Slave response is not correct
1301	13	Parity error from basic engine to serial
1302		Parity error from serial to basic engine
1303		No communication between serial and basic engine
1304		Communication time-out error
1601	16	The SDRAM is faulty
5201	52	I2C bus busy
5202		Error sending I2C command to COLOR SETUP IC
5203		Colour setup IC not responding
5204		Colour setup IC response is not correct
5401	54	I2C bus busy
5402		Error sending I2C command to SCART SWITCH IC
5403		SCART Switch is not responding
5403		SCART Switch response is not correct

Figure 31

5. Servicing DVD module and MONO board

5.1 Reset of Virgin Mode

After the player has been powered up for test by the dealer, it would have gone through the Virgin Mode. It is possible to reset the settings made during that mode before the delivery of player to the customer. This can be done as shown in the following diagram:

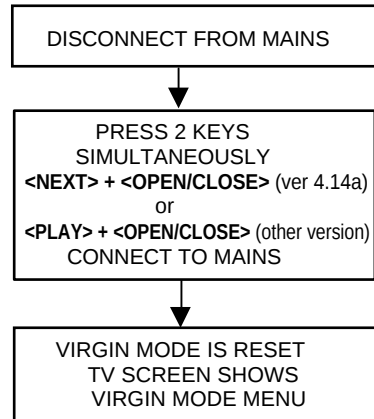


Figure 32

5.2 Trade Mode

When the player is in Trade Mode, the player cannot be controlled by means of the front key buttons, but only by means of the remote control.

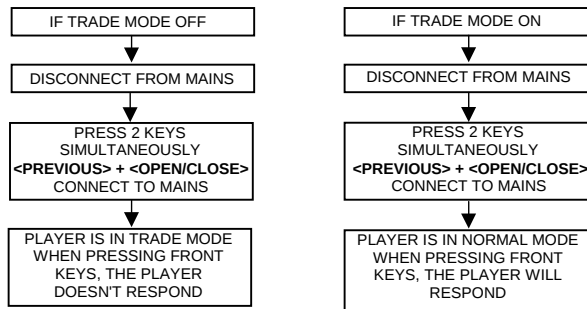


Figure 33

TEST INSTRUCTIONS

1 AV Board

These test instructions can be used for all versions of the AV board which has the following outputs:

- Audio L/R
- 5.1 Audio output
- Subwoofer output
- Optical / Coaxial digital output
- CVBS
- Y/G_vid, U/B_vid, V/R_vid output
- S-video
- Scart output

1.1 General

- All the waveforms measurement carried out in these test instruction will be base on the testpoint indicated in the AV board schematic diagram in the Service manual.
- Impedance of the measuring-equipment should be > 1MΩ
- Most of the tests can be done using either the Diagnostic software "Player script" which can be found in the chapter "Diagnostic Software description and troubleshooting" or the Menu interface using the Service PC with a terminal emulation program (e.g. Window Hyperterminal) where it is possible to control the execution of the Diagnostic Nuclei
- Setup for the measurement will be done in set level with all modules connected as shown in the Wiring Block diagram.

1.2 General Start-Up Measurement

Supply Check:

Before starting the measurement, ensure that all power supply are connected to the AV board.

Pin nbr	Supply
1010-9	-5V (-Vcc)
1010-10	+5V
1010-11	+5V

The supply currents can be measured using a Tektronics AM503B current probe or equivalent.

Supply	Power consumption (AVG)
+5VA	+5V ± 3% I = 200mA
+5Vvid	+5V ± 3% I = 200mA
-5V	-5V ± 3% I = 200mA

Clock Check

Ensure the present of the clock to the DAC

Clock Name	Testpoint	Frequency
PCM_CLK	TP10	11.2896MHz ± 0.02% tolerance

Audio Mute Check

Measure the Audio mute voltage input at pin 12 of connector 1010

Status	Value
AudioMuteOn	4.7V ± 10%
AudioMuteOff	-8V ± 10%

To toggle between ON and OFF, use the following commands:

Ref.#	Command Name	Remarks
19a	AudioMuteOn	Audio Mute On
19b	AudioMuteOff	Audio Mute Off

1.3 Audio DAC And Amplifier

Ensure that the Audio mute signal is OFF

To check the DAC and buffer amplifier, send the following commands:

Ref.#	Command Name	Remarks	Audio output
21a	AudioSineOn	Audio Sine signal ON	Sine, 1Khz on stereo
----	Press stop button	Audio Sine signal OFF	No waveform
20a	AudioPinkNoise On	Audio Pinknoise ON	Pink Noise on 6 channels
20b	AudioPinkNoise Off	Audio Pinknoise OFF	No waveform

The audio signal (sine or pink noise) will also be present on the digital output (SPDIF). This can be checked by connecting digital signal to an amplifier with digital input. Check the I2S and audio signal at the following testpoints:

Name	Testpoint
LRCLK	TP8
SCLK	TP9
PCM_CLK	P10
PCM_OUT0	TP7
PCM_OUT1	TP27
PCM_OUT2	TP28
SPDIF	TP11
Front L/R out-Audio cinch	TP13
H/P L/R out	TP20
Analog out -Audio cinch	TP25

All waveforms can be refer to the waveform diagram in the chapter "Diagnostic software description and troubleshooting".

1.4 Video Output And Buffer Amplifier

Check DC output-level at all video cinch output : 1.0V DC 10% Generate a color bar using the following software commands:

Ref.#	Command Name	Remarks
23a	VideoColDencOn	Colour DENC ON
61a	VideoColOutRGB	RGB Colourbar
61b	VideoColOutYUV	YUV Colourbar
23b	VideoColDencOff	Colourbar DENC OFF

Check the video outputs at the following testpoints:

Name	Testpoint
B_VID	TP1
G_VID	TP2
R_VID	TP3
CVBS out	TP14
S-Video-C out	TP15
S-Video-Y out	TP16
Y out	TP17
U out	TP18
V out	TP19

All waveforms can be refer to the waveform diagram in the chapter "Diagnostic Software description and troubleshooting".

1.5 Play And 16/9 Detection

Check DC voltage at S-Video-chroma output (pin 4) with a 6K8 ohm load and Scart connector (pin 8) and change the 0/6/12 input (1010-8) using the following commands:

Ref.#	Command Name	Remarks	Chroma output
25a	VideoScartLo	Sends out 0V $\pm 0.5V$	<0.1V
25b	VideoScartMi	Sends out 6V $\pm 10\%$	2.0V $\pm 10\%$ with load 5.0V $\pm 10\%$ without load
25c	VideoScartHi	Sends out 12V $\pm 10\%$	<0.1V

1.6 Kill Circuit

To check the functionality of the Kill circuitry, the audio outputs has to be present by the following command:

Ref.#	Command Name	Remarks	Audio output
21a	AudioPinkNoise On	Audio Pinknoise ON	Pink Noise on 6 channels

Check the audio outputs at the audio cinch of the AV board :PinkNoise

Activate the Kill circuit by using the following command:

Ref.#	Command Name	Remarks
19a	AudioMuteOn	Audio Mute On

Check the audio outputs at the audio cinch of the AV board : No waveform

Switch off the kill circuit by using the following command:

Ref.#	Command Name	Remarks
19b	AudioMuteOff	Audio Mute Off

Check the audio outputs at the audio cinch of the AV board :PinkNoise

2. Display board

2.1 Introduction

These test instructions are written for all versions of the display PCB.

The contents of the PCB can be split up into next blocks:

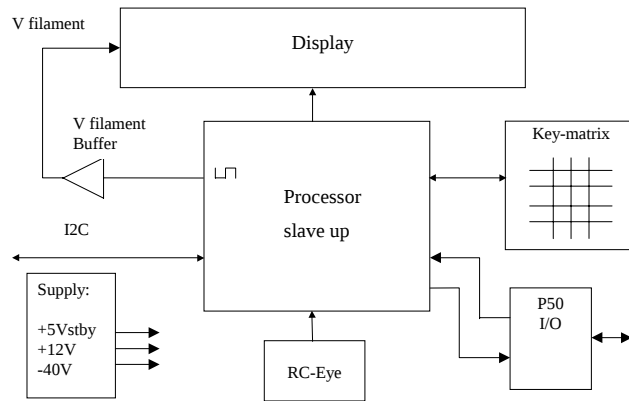


Figure 1

2.2 Functionality description:

The essential component of the display PCB is the μP (slave).

This slave works on an 8MHz resonator and has a reset circuit that is triggered by the +5Vstby. After the reset pulse, the standby control line will release the reset of the host μ P. This host μ P will then initialize the slave. In addition, when going to stand-by, the slave will put the host μ P in reset. When the slave receives the right IR or key code to leave the standby mode, the reset of the host μ P will be released.

Other slave functions are:

- Square signal generator to generate the filament voltage, which is required for an AC FTD.
- Generating the grid and segment scanning for the FTD.
- Generating a scanning grid for the keys (separated from display scanning).
- Having inputs for RC (RC5 and RC6) and P50 (P50 controller is built in).

2.3 Reset

Check next reset timing with an oscilloscope at pin 10 of the microprocessor.

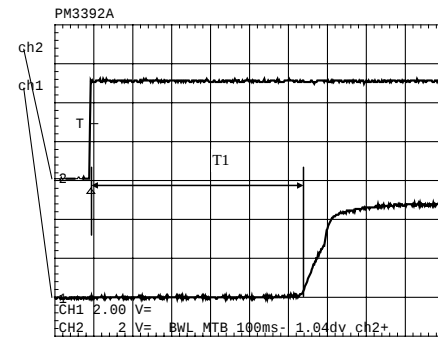


Figure 2

Timing: 400msec < T1 > 700msec.

CH1: +5Vstby voltage at power on.

CH2: Voltage at pin 10.

2.4 Display steering

Check next timing and level for all grid-lines (G1 r G14).

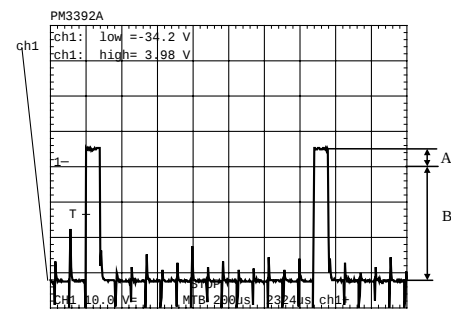


Figure 3

1. Check level A: +4V5 +/-10% for grid lines 1 => 11
2. Check level A: +4V0 +/-10% for grid lines 12 => 14
3. Check level B: -33V +/-10%
4. Check timing and levels of segment-lines P1 => P10:

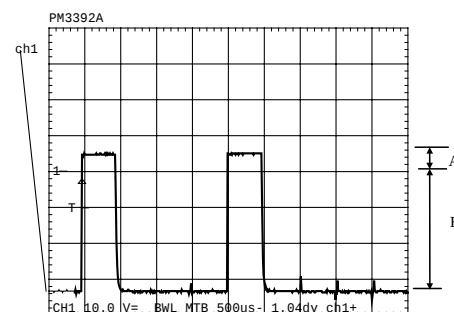


Figure 4

Level A: +4V5 +/-10%

Level B:-33V +/-10%

The data on these segment lines depend on the characters that are displayed.

The characters can be set by sending I2C commands to the display.

See the Slave URS how to send a display command.

2.5 Key-matrix

Connect a extra 10kpull-up resistor to pin 36 en 37 of the μ P and check next matrix scanning at these pins.

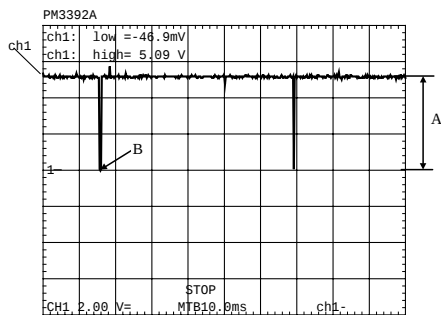


Figure 5

Level A: 5.0V +/-7%

Level B: 0V +/-200mV

Check matrix scanning from pin 26 until 33 of the μ P.

The results should be the same as the diagram above.

2.6 I.R. receiver

Check at pin 23 of the μ P if this line switches from low (< 0.3V) to high (> 4.5V), while pressing a key on a Philips RC5 or RC6 remote control.

2.7 Karaoke interface

The karaoke interface (4 lines) is a single direction communication.

This means that it consists of four μ P output lines.

The interface can be checked by setting or resetting these output-ports via the I2C bus.

Send next command via the I2C bus:

Address	: 0x70
Command byte	: 0x24
Data byte	: xxxxabcd
Where	: a = Karaoke reset.
	: b = Karaoke data.
	: c = Karaoke clock.
	: d = Karaoke strobe.

2.8 P50 interface

P50 is a bi-directional serial interface, which is used for communication between video equipment. For European sets, this communication goes via pin 10 of the scart-bus. In other regions, it can be a cinch bus at the back of the set.

1. Keep the μ P in reset by short-circuiting emitter and collector of transistor 7108, via resistor 3100 and 3104 transistor 7101 is switched on.
2. Check the voltage at the P50 output connector 1118-5: < 200mV.

When the reset is released the μ P output-pin becomes low and transistor 7101 is switched off.

1. Check the voltage at the P50 output connector 1118-5: 4.9V +/-5%.
2. Check also the μ P P50 input (μ P pin 20): 5V +/-5%.
3. Connect the P50 line (connector 1118-5) to ground.
4. Check again the μ P P50 input (μ P pin 20): <0.3V.

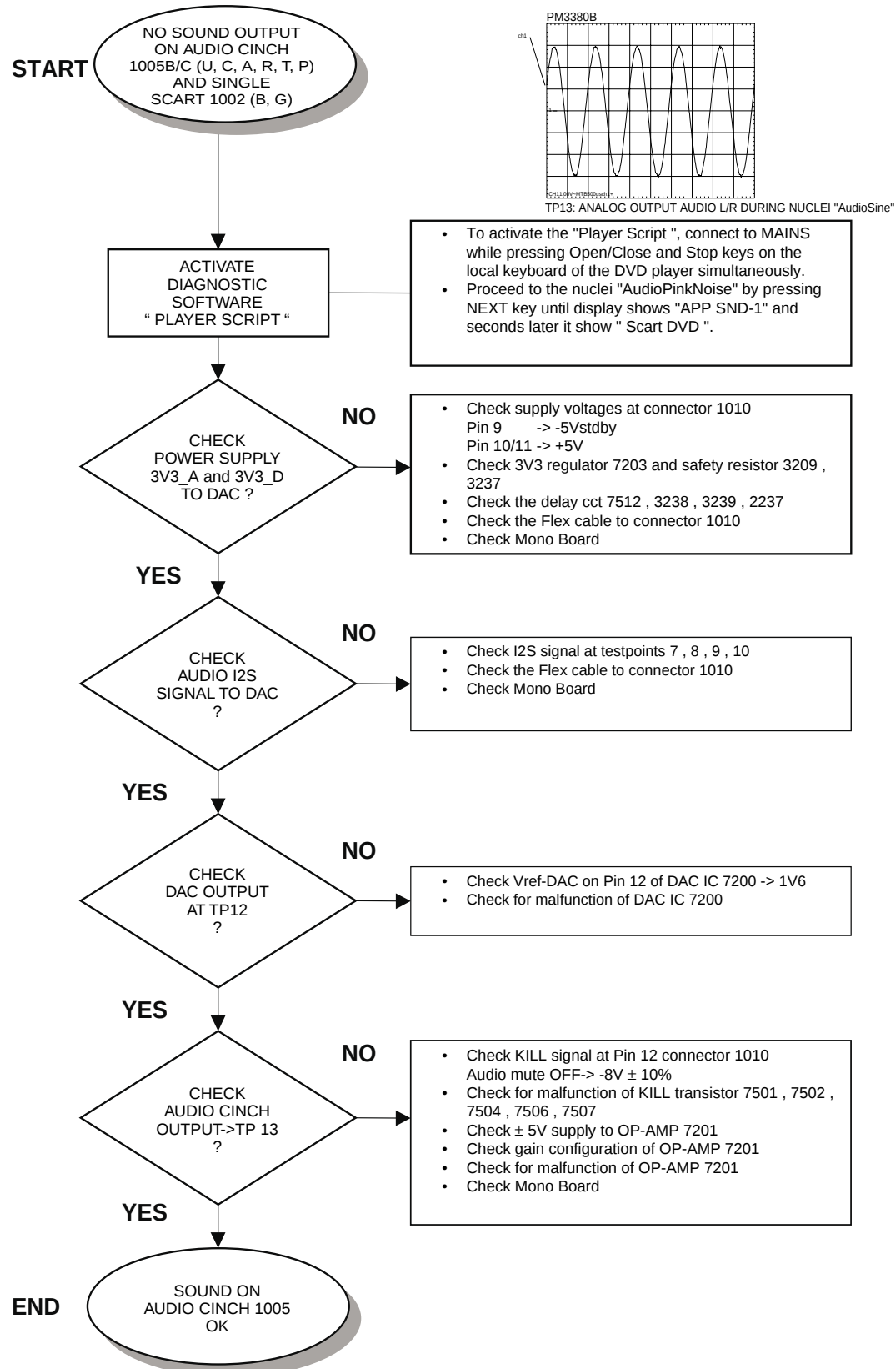
■ TROUBLESHOOTING

1. TROUBLESHOOTING AV BOARD

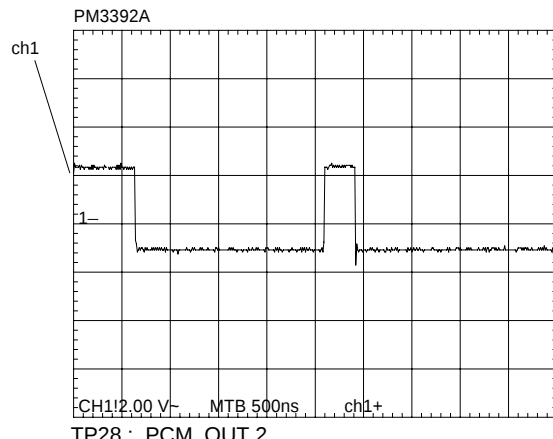
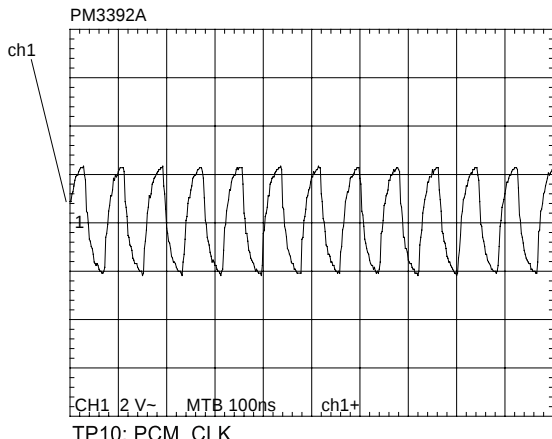
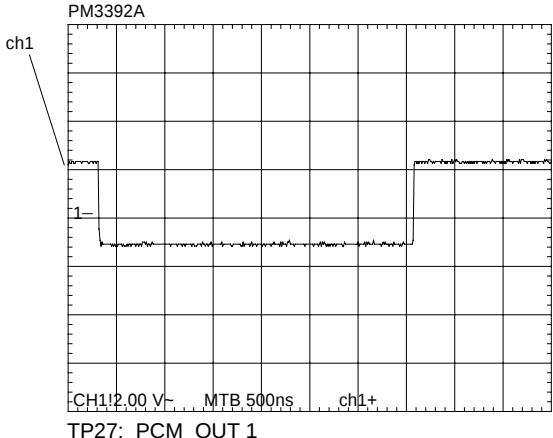
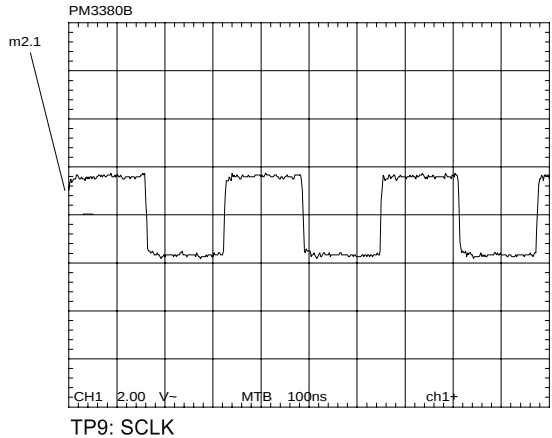
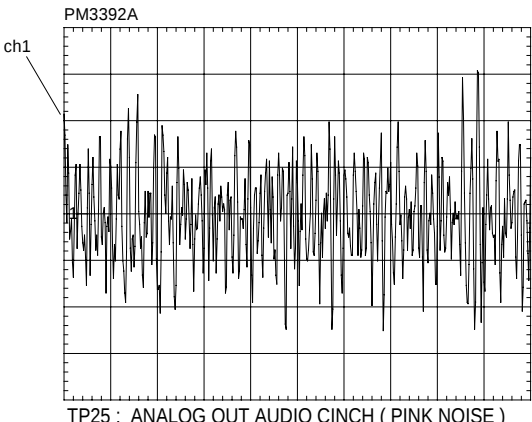
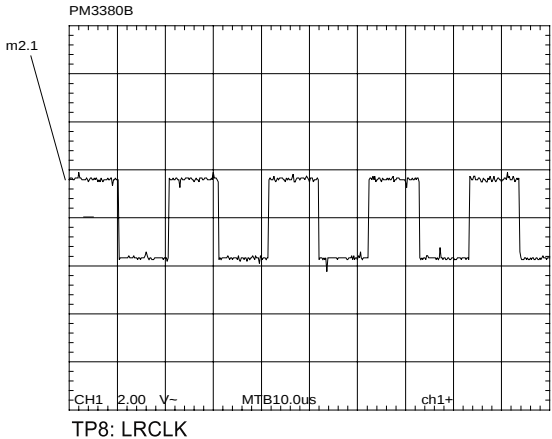
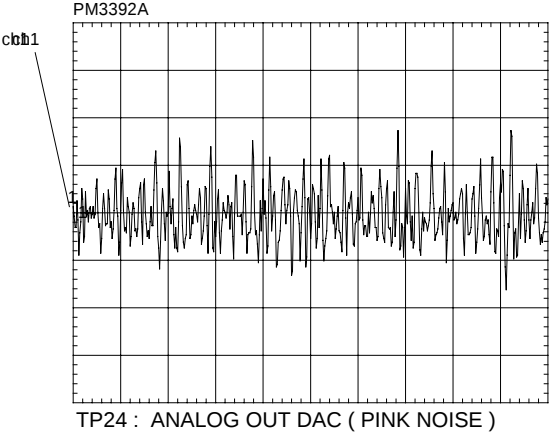
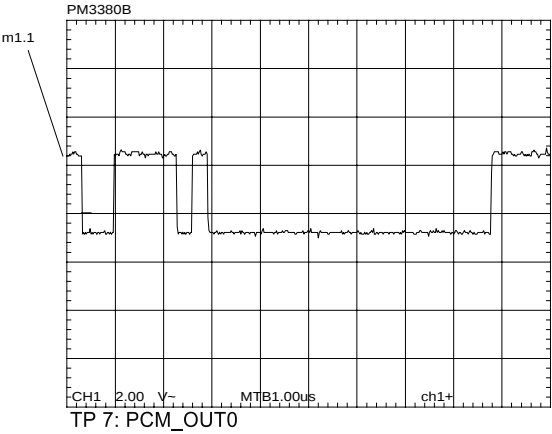
Testing of AV board can be done using diagnostic software "PLAYER SCRIPT".

MONO board is used to generate a sound with the sound tests SND-1 and SND-2 or a VIDEO signal with the picture PIC-1. See description in the chapter of "DIAGNOSTIC SOFTWARE: SCRIPT INTERFACES".

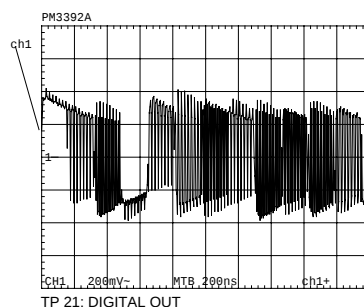
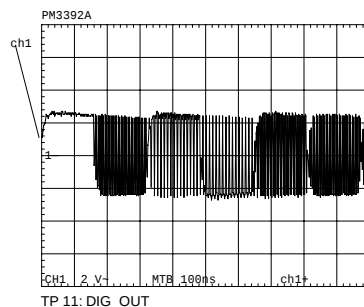
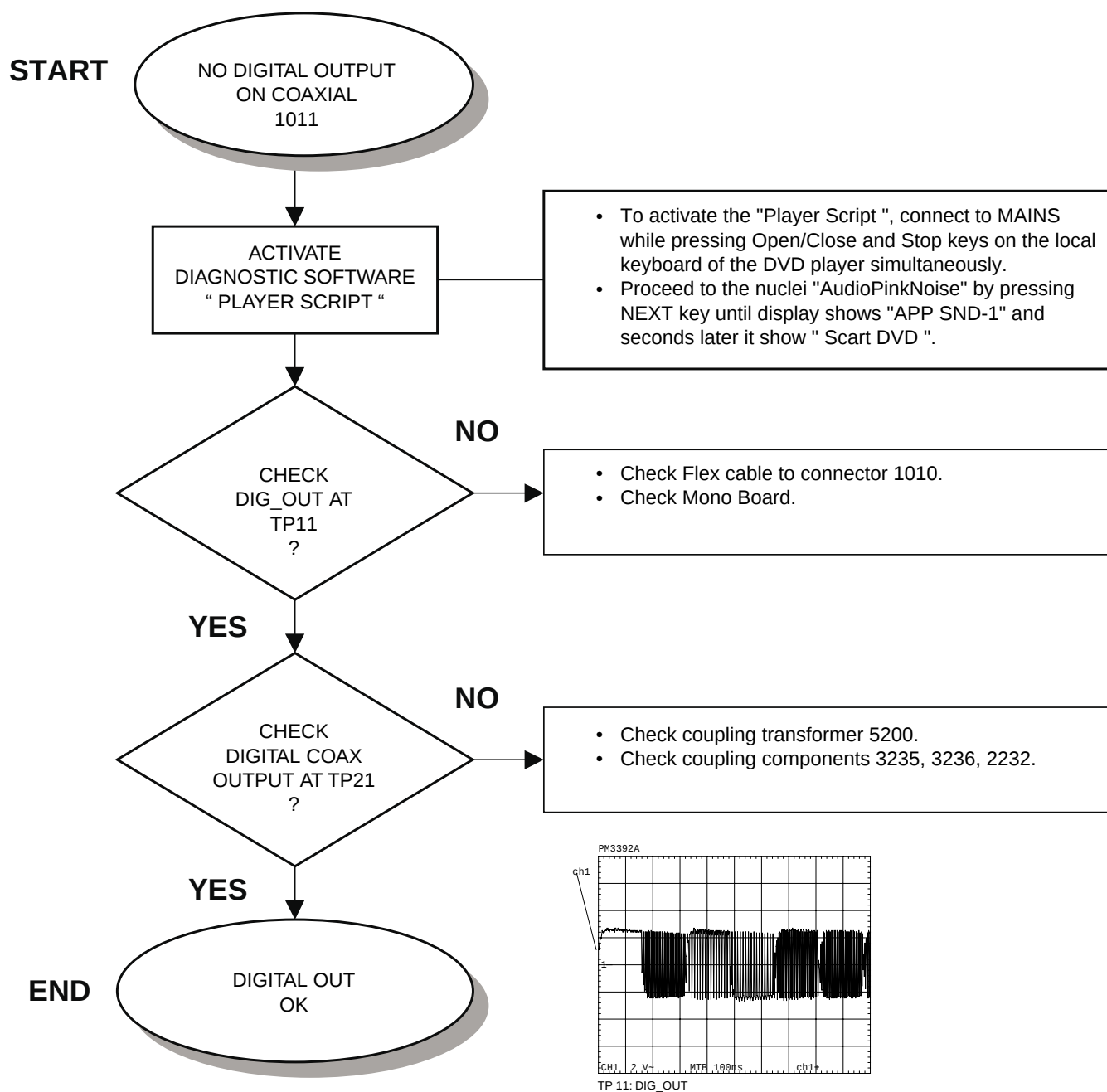
AUDIO PART OF AV BOARD (ANALOG)



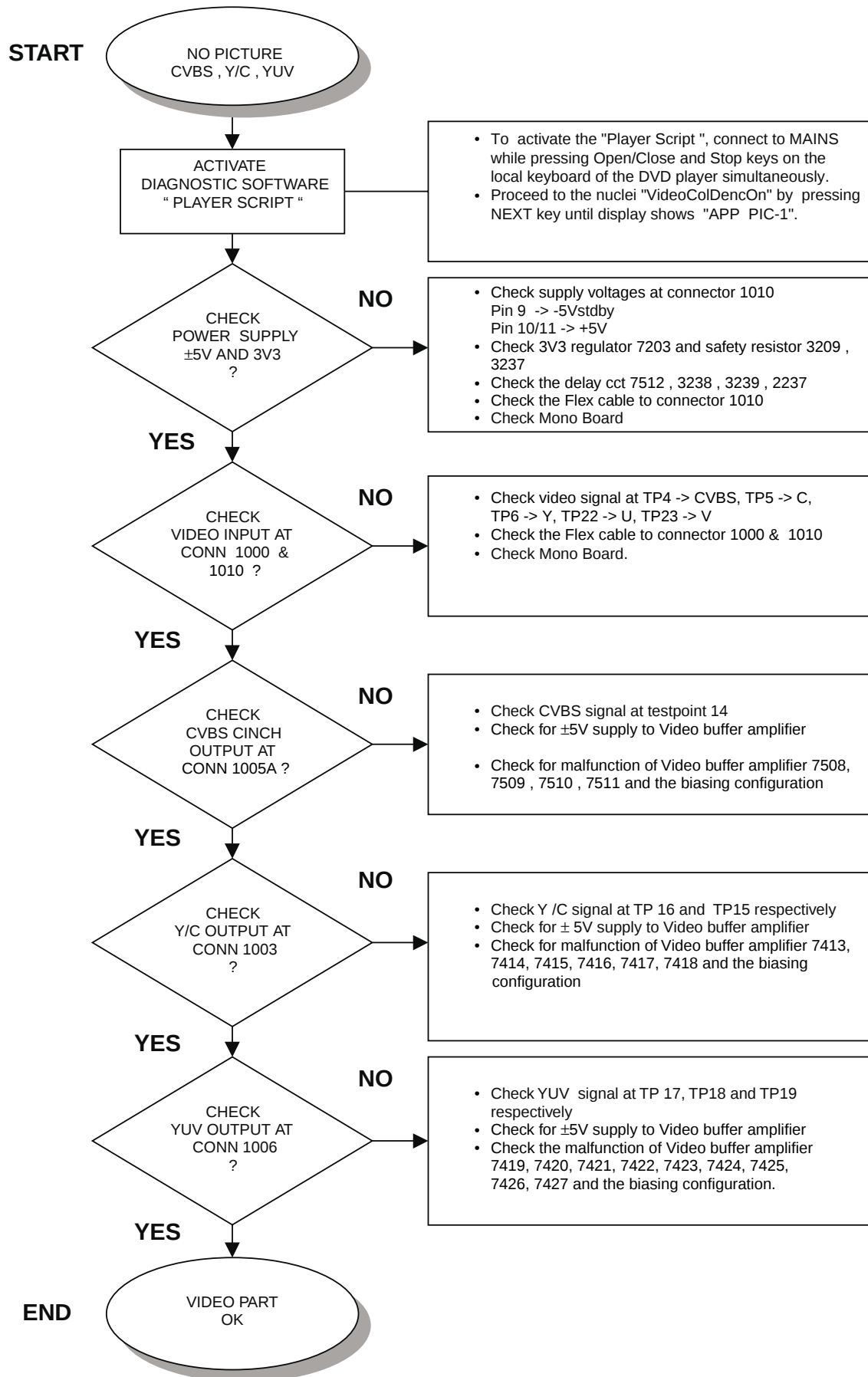
AUDIO WAVEFORM MEASUREMENT



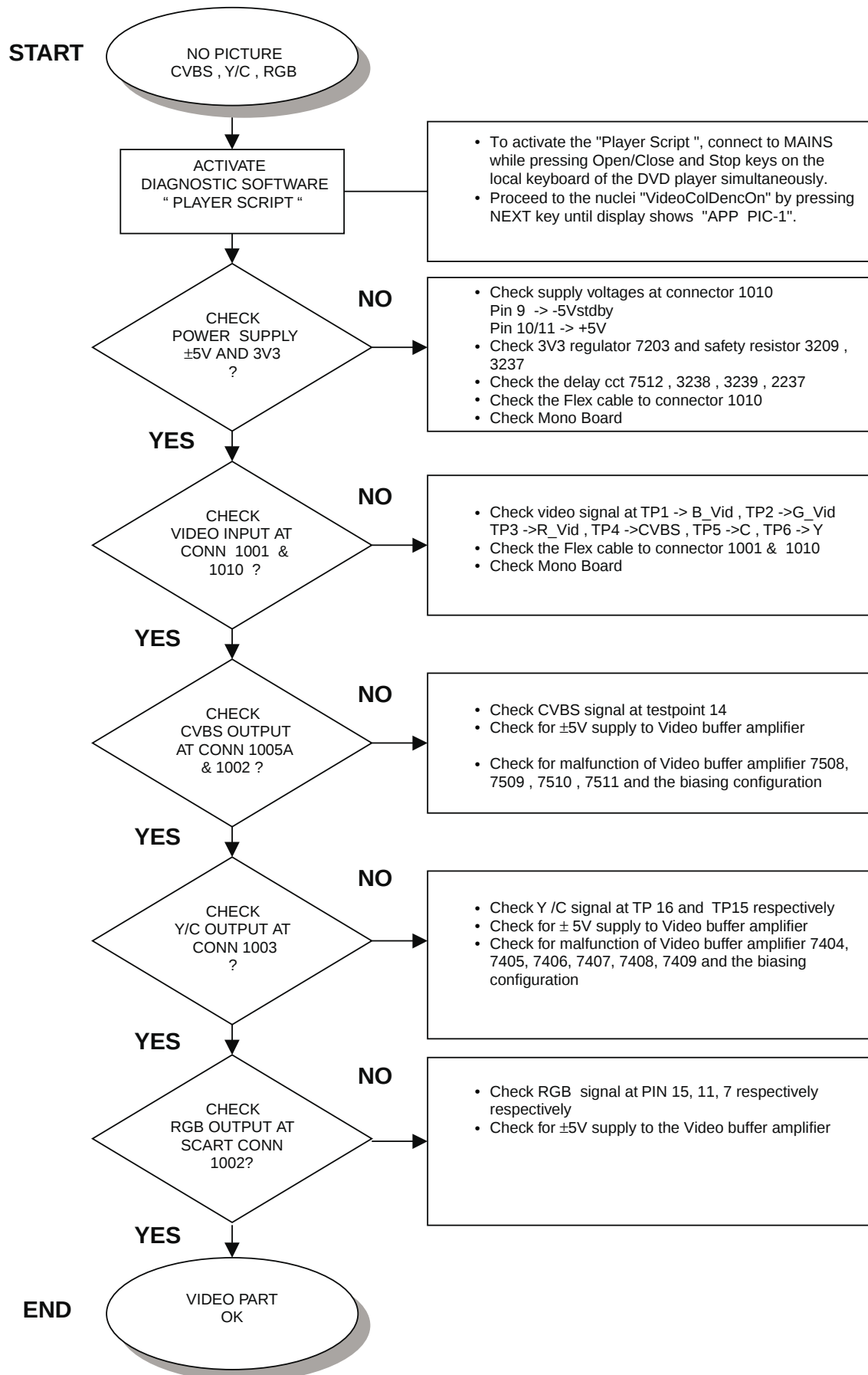
AUDIO PART OF AV BOARD (DIGITAL)



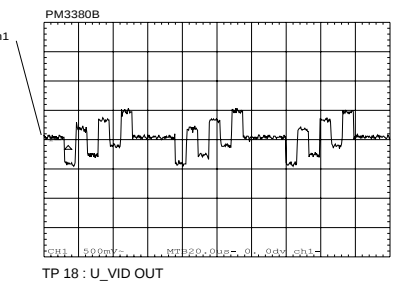
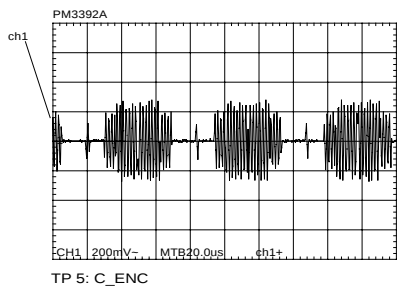
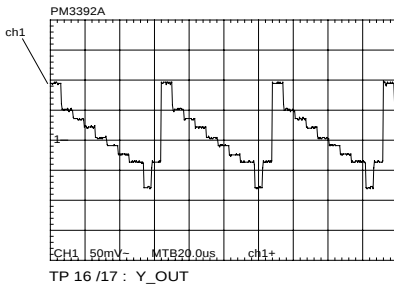
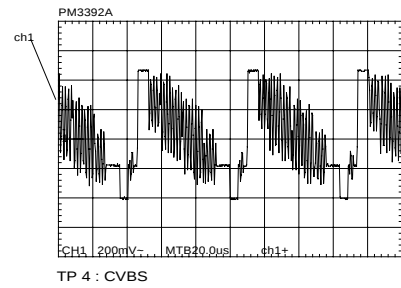
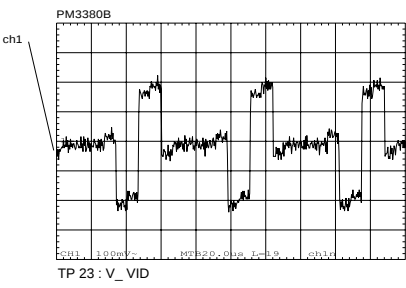
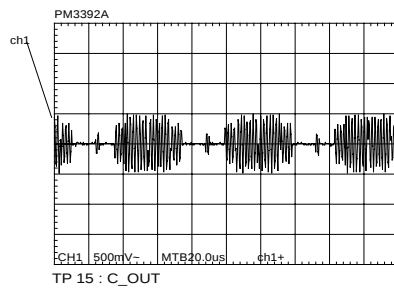
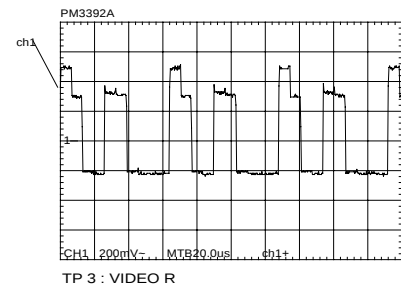
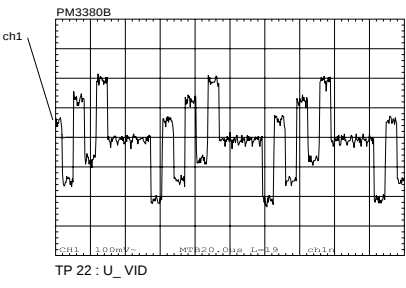
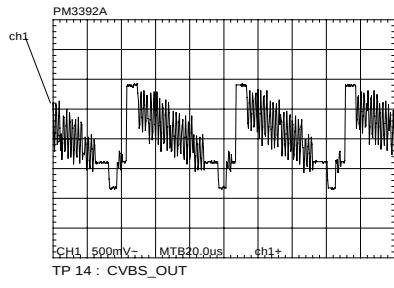
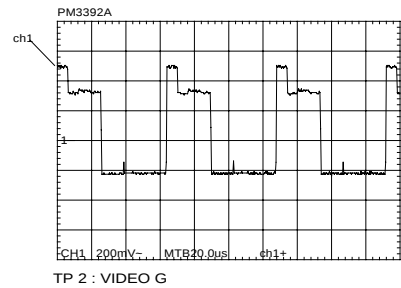
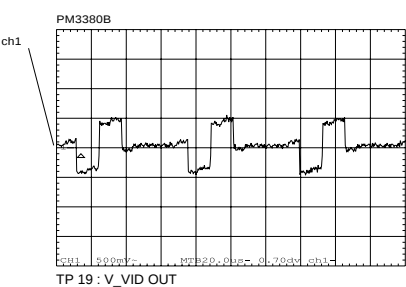
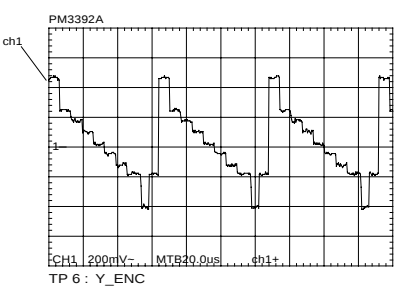
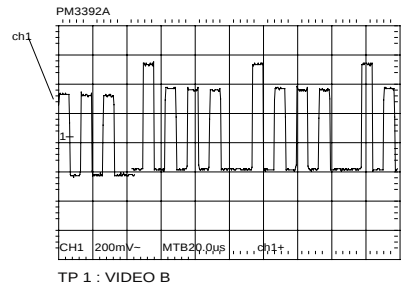
VIDEO PART OF AV BOARD (U, C, A, R, T, P)



VIDEO PART OF AV BOARD (G, B)

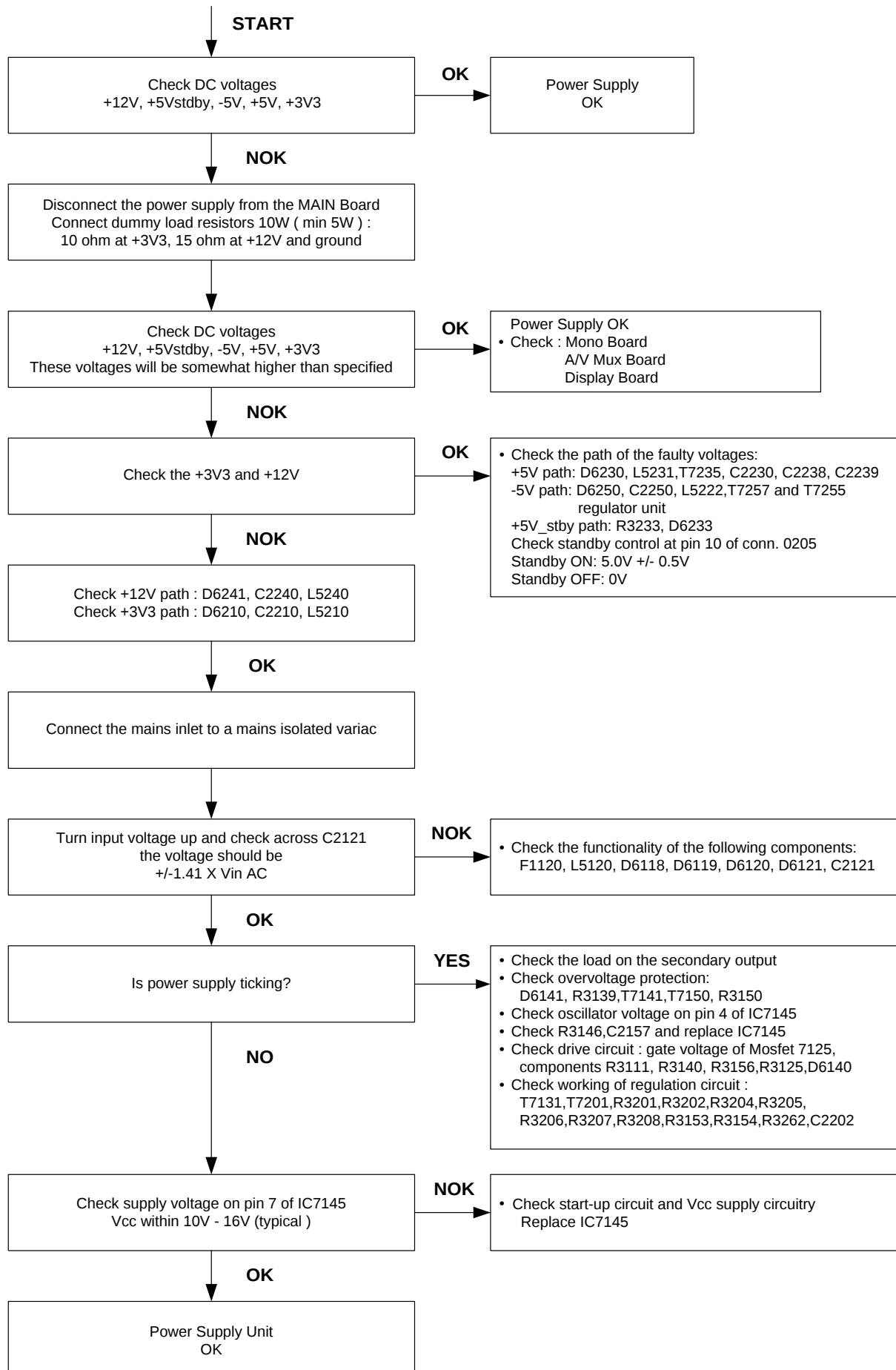


VIDEO WAVEFORM MEASUREMENT



DVD-S520/DV-S5450

2. TROUBLESHOOTING POWER SUPPLY UNIT VFM (B, G)



■ TECHNICAL SPECIFICATIONS DVD MODULE

1.1 Connections

1.1.1 Connector 1600: Supply input connector.

- 1. +3V3stby
- 2. +3V3stby
- 3. +5V
- 4. +5Vstby
- 5. +6Vstby
- 6. GND
- 7. GND
- 8. GND
- 9. -8Vstby (-5V,on new PSU)
- 10. Standby control line
- 11. +12Vstby
- 12. GND

1.1.2 Connector 1603: A/V 1 connector.

- 1. P50
- 2. Blue Video / U
- 3. Green Video / Y
- 4. GND
- 5. Red Video / V
- 6. CVBS
- 7. GND
- 8. Slow blanking scart
- 9. -8Vstby (-5V,on new PSU)
- 10. +5V
- 11. +5V
- 12. Audio mute
- 13. GND
- 14. I2S data0 out
- 15. I2S wordselect
- 16. I2S bitclock
- 17. GND
- 18. I2S systemclock
- 19. Center_on
- 20. Kar_bypass
- 21. SPDIF out
- 22. GND

1.1.3 Connector 1604: A/V 2 connector.

- 1. GND
- 2. Hor. sync.
- 3. GND
- 4. I2S data 2 out
- 5. GND
- 6. I2S data 1 out
- 7. -8Vstby (-5V,on new PSU)
- 8. I2C clock
- 9. +12Vstby
- 10. I2C data
- 11. +6Vstby
- 12. +3V3
- 13. GND
- 14. C video
- 15. GND
- 16. Y video

1.1.4 Connector 1501: I2C interface connector.

- 1. I2C clock
- 2. GND
- 3. I2C data
- 4. Standby control line
- 5. P50

1.1.5 Connector 1602: Service connector.

- 1. TXD

- 2. Service activation
- 3. RXD
- 4. Reserved for RTS
- 5. 5: GND
- 6. CTS
- 7. +5V

1.1.6 Connector 1507: Karaoke connector.

- 1. GND
- 2. ADC_SCLK
- 3. ADC_LRCLK
- 4. ADC_DATA
- 5. ADC_PCMCLK
- 6. +5V
- 7. -8V stby (-5V,on new PSU)
- 8. N/C

1.2 Signal specifications

This the specification of all signals as described under "Connections"

H = +5V ±0.5V

h = 3V3 ±0.3V

L = 0V ±0.5V

I = 0V ±0.3V

Stby

Standby control line

P50

Slow blanking scart

Audio mute

I2S data0 out

I2S wordselect / I2Sbitclock

I2S systemclock

- :
- : If the set supports a "standby" function, all supply voltages marked with "stby"
- :
- : have to stay on during standby.
- : H Standby mode
- : L On mode.
- : Connection between front and A/V board, and can be used as P50 signal line.
- : The signal is not connected to the module electronics.
- : This signal switches between
- : 0V (220output impedance)
- : 12Vstby/2 (455Ω output impedance)
- : 12vstby (690Ω output impedance)
- : Can be used for audio mute transistors during stop or power On/ Off.
- : Mute on : +5Vstby
- : Mute off: -8Vstby via a 10kresistor.
- : I2S front data output.
- : Level h / I
- : I2S timing signals
- : Level h / I
- : 256xFS audio systemclock.
- : Level H / L

Kar_bypass	: Bypasses the karaoke chip on the A/V board.
	: Bypass activeH
	: Bypass offL
Center_on	: Switches the center audio to the scart output.
	: Center to scarth
	: L/R to scartL
Karaoke	: I2S inpuH / L
	: PCMCLK outputH / L
SPDIF out	: Digital audio output levelH / L
Hor. Sync	: Video Horizontal synchronisation LevelH / L
I2S data1 out	: I2S surround data output.
	: Level: h / l.
I2S data2 out	: I2S center/sub data output.
	: Level h / l.
I2C clock / I2C data	: I2C databus
	: Level: h / l
TXD / RXD / RTS / CTS	: Service UART to be connected direct to PC serial input.
	: Output levelsH / L
	: Input levelsRS232 compliant
Service activation	: Signal openNormal module start-up
	: Signal tied to GND Module start-up in service mode.
Vreserved	: Is now configured for +6V stby & is only an inter-connection via the monoboard and not used by any IC's on the module.However,there's an on board 47uF/16V elco and a 100nF/16V X7R connected to this pin.

1.3 Performance:

1.3.1 Digital output

CDDA/LPCM	: according IEC60958
MPEG1 is converted to LPCM	:
MPEG2, AC3 audio.MP3	: according IEC1937
DTS.	: according IEC61937 amendment 1.
	: Digital output level is 0V / 5V with GND as reference. To meet the standards a decouple circuit is necessary.

1.3.2 I2S output

Accuracy	: Up to 24bit.
Sample rate	: 44.1kHz / 48kHz / 96KHz
Standard	: Philips I2S output
Number of I2S outputs	: 3 (6 channel: Front / Surround / Center-Bass)
Deemphasis	: Already processed in module.
Audio source streams	: CDDA / MPEG1 / LPCM / MPEG2 / AC3
	: No DTS decoding.
Audio processing	: Dolby Pro Logic (multichannel downmix on front output)
	: 3D sound.

1.3.3 Analog output

The module has no analog audio ouput.	: The analog audio specification will be determined by the external DAC circuit.
---------------------------------------	--

1.3.4 Video.

Standards	: The video output standard will follow the source material.
	: The OSD standard is switchable between PAL or NTSC.
Outputs	: The module has 6 analog outputs (4formats): Y/C ; CVBS ; RGB / YUV
Specification.	: The output complies fully according PQR3 IMS except
	: Output load>1k(to GND / Cap. load <47pF.
	: Level0.5Vpp with 100% white
	: Sync level300mV (PAL), 286mV (NTSC) from blanking level
	: Some specification points are significantly better then PQR3
	: SNR on all video outputs is better then 60dB.
	: Video bandwidth >5MHz (±3dB)

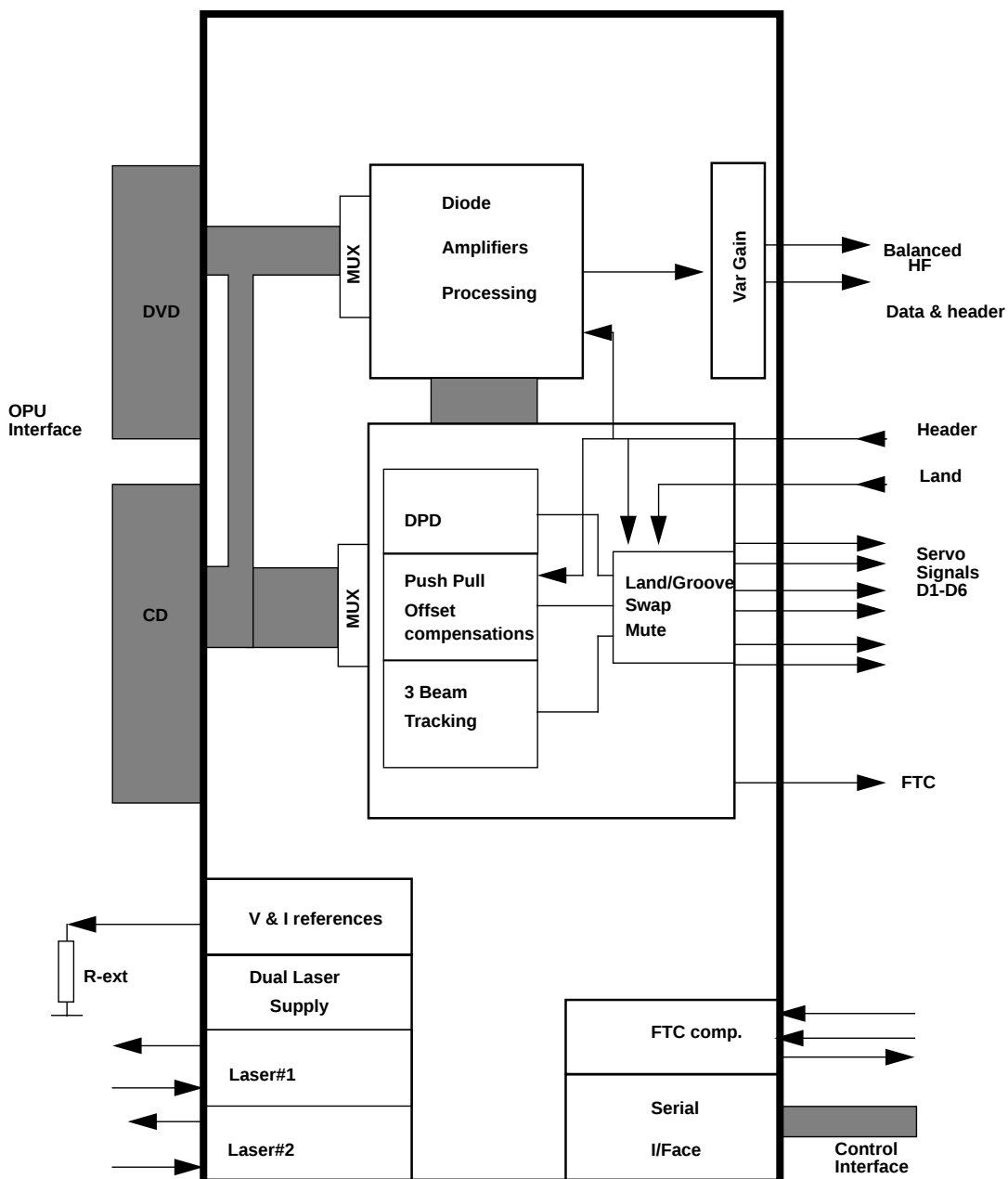
■ LIST OF ABBREVIATIONS

B	Buffered Video input Blue from DVD monoboard	Y_ENC	Buffered Luma input from DVD monoboard
BC_AUX	Blue or Chroma input from AUX-scart	YCVBSIN_AUX	Luma or CVBS input from AUX-scart
BC_TV	Blue or Chroma output to TV-scart	YCVBSIN_TV	Luma or CVBS input from TV-scart
C_ENC	Buffered Chroma input from DVD monoboard	YCVBSOUT_AUX	Luma or CVBS output to AUX-scart
CVBS	Buffered Composite video input from DVD monoboard	YCVBSOUT_TV	Luma or CVBS output to TV-scart
DC_OFF	Control signal to switch off -5Vstby and +12Vstby during standby	0/6/12	Scart switch control signal A/V board. 0V : loop through (AUX to TV), 6V : play 16:9 format, 12V : play 4:3 format
DIG_OUT	Digital out		
FBIN_AUX	Fast blanking input from AUX-scart		
FBOUT_TV	Fast blanking output to TV-scart		
G	Buffered Video input Green from DVD monoboard		
GIN_AUX	Video input Green from AUX-scart		
GOUT_TV	Video output Green to TV-scart		
HP_L	Audio output left to headphone and audio scart switch TEA6420		
HP_R	Audio output right to headphone and audio scart switch TEA6420		
KILL	Kill control signal for audio outputs and for soft mute of DAC		
LIN_AUX	Audio input left from AUX-scart		
LIN_TV	Audio input left from TV-scart		
LOUT_AUX	Audio output left to AUX-scart		
LOUT_TV	Audio output left to TV-scart		
LRCLK	Left/Right clock		
PCM_CLK	Audio system clock for DAC		
PCM_OUT0	Audio serial output data		
R	Buffered Video input Red from DVD monoboard		
RCIN_TV	Red or Chroma input from TV-scart		
RCOUT_TV	Red or Chroma output to TV-scart		
RIN_AUX	Audio input right from AUX-scart		
RIN_TV	Audio input right from TV-scart		
ROUT_AUX	Audio output right to AUX-scart		
ROUT_TV	Audio output right to TV-scart		
SCL	I2C bus clock		
SCLK	Audio serial bit clock		
SDA	I2C bus data		
SELECT	Control signal for video scart switches; high = TV ,low = AUX		
SELECT_HIGH	Control signal for switching fast blanking and slow blanking signals; high = TV ,low = AUX		
SLB_AUX	Slow blanking control signal from AUX-scart		
SLB_TV	Slow blanking control signal to TV-scart		
STANDBY	Control signal from STI5505 used to switch off -5Vstby and +12Vstby during standby.		
STEREO_L	Audio cinch output left		
STEREO_R	Audio cinch output right		

■ IC DESCRIPTIONS

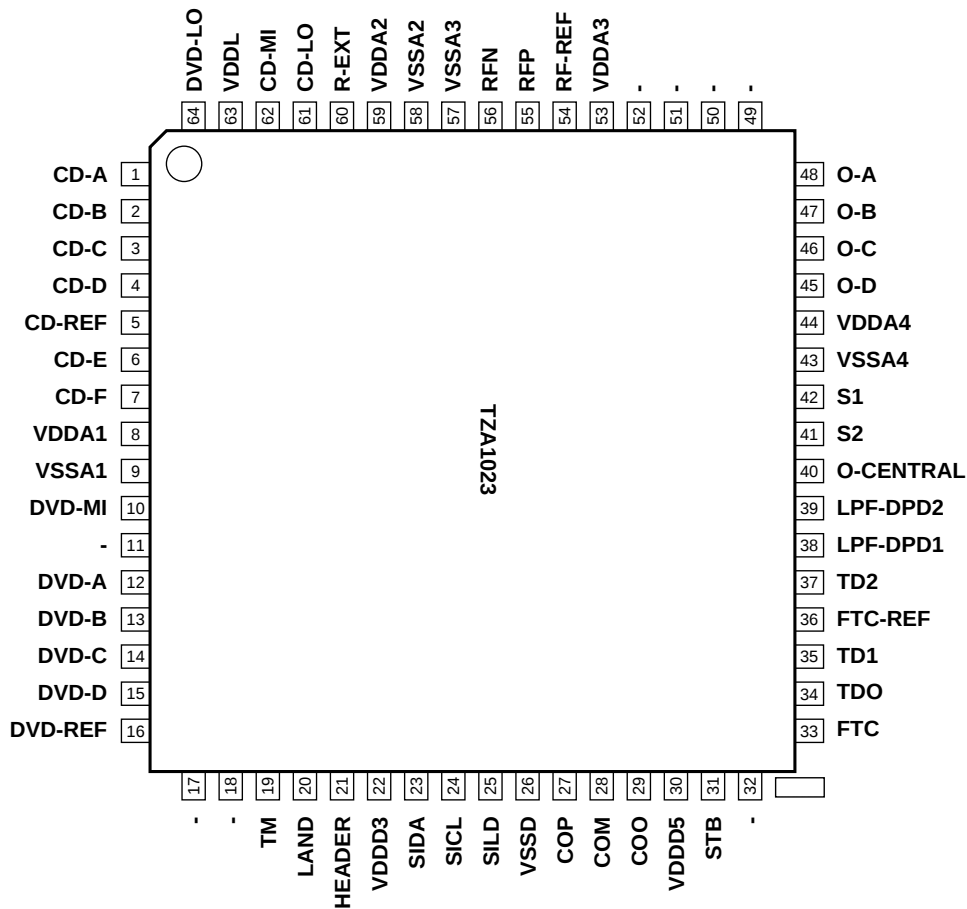
TZA1033

DVDALAS2plus Advanced Analog DVD Signal Processor and Laser Supply



TZA1033

DVDALAS2plus Advanced Analog DVD Signal Processor and Laser Supply



Pin description

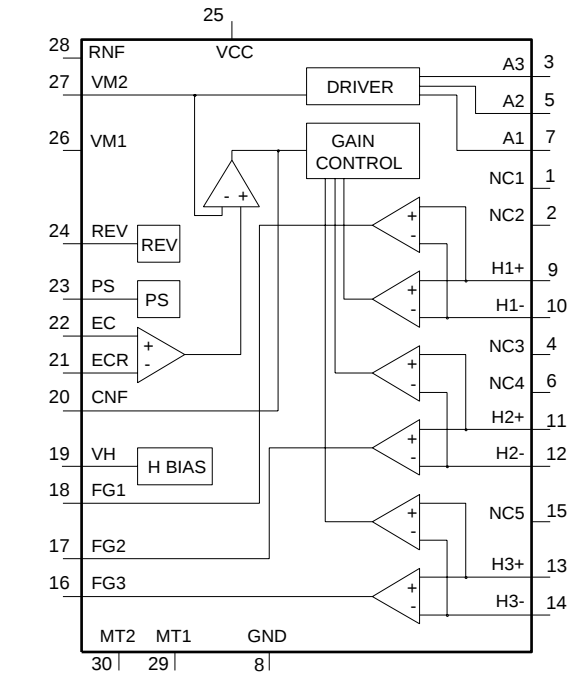
Name	Pin	Description
CD-A	1	CD pick up input A
CD-B	2	CD pick up input B
CD-C	3	CD pick up input C
CD-D	4	CD pick up input D
CD-REF	5	CD pick up reference voltage
CD-E	6	CD pick up input E
CD-F	7	CD pick up input F
DVD-A	12	DVD pick up input A
DVD-B	13	DVD pick up input B
DVD-C	14	DVD pick up input C
DVD-D	15	DVD pick up input D
DVD-ref	16	DVD pick up reference voltage
O-A	48	Servo current output for Focus-A
O-B	47	Servo current output for Focus-B
O-C	46	Servo current output for Focus-C
O-D	45	Servo current output for Focus-D

TZA1033**DVDALAS2plus Advanced Analog DVD Signal Processor and Laser Supply**

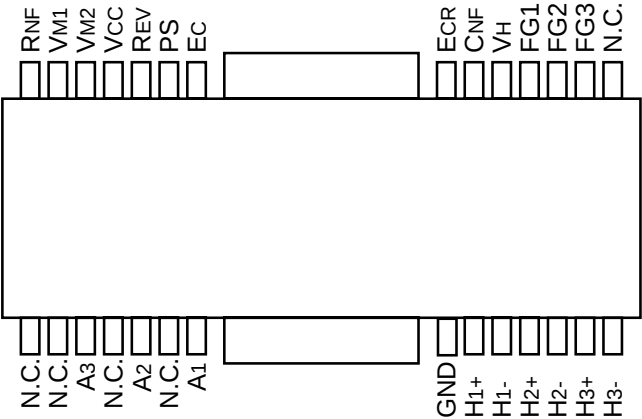
Name	Pin	Description
O-central	40	Test pin for offset cancelation
TD2	37	Internally connected
FTC-ref	36	Servo output voltage reference input
S1	42	Servo current output for radial tracking
S2	41	Servo current output for radial tracking
TD1	35	Internally connected
FTC	33	Fast track count voltage output
RFP	55	pos. RF output signal
RFN	56	neg. RF output signal
RF-REF	54	DC Reference signal input RF
LPF-DPD1	38	DPD Low pass bandwidth capacitor, channel pos
LPF-DPD2	39	DPD Low pass bandwidth capacitor, channel neg
Land	20	Land/groove toggle input
HEADER	21	Header detector window input
CD-MI	62	CD laser monitor input
DVD-MI	10	DVD laser monitor input
CD-LO	61	CD laser output
DVD-LO	64	DVD laser output
COP	27	Positive input FTC comparator
COM	28	Inverting input FTC comparator
COO	29	FTC comparator output
SIDA	23	Serial host interface data input
SICL	24	Serial host interface clock input
SILD	25	Serial host interface load
VDDA1	8	Analog Supply voltage 1 (RF input)
VDDA2	59	Analog Supply voltage 2 (RF internal)
VDDA3	53	Analog Supply voltage 3 (RF output stage)
VDDA4	44	Analog Supply voltage 4 (Servo)
VDDD5	30	Digital Supply voltage (5V dig core)
VDDD3	22	Digital Supply voltage (3V I/O pads and FTC comp.)
VDDL	63	Supply voltage for laser
VSSA1	9	Analog Ground 1
VSSA2	58	Analog Ground 2
VSSA3	57	Analog Ground 3
VSSA4	43	Analog Ground 4
VSSD	26	Digital ground
R-EXT	60	Reference current input (Connect 12k1 to VSSA4)
STB	31	Standby input
TM	19	Test mode input
TDO	34	Test data out

BA6856FP

3 Phase motor driver for DVD players



Terminal lay-out

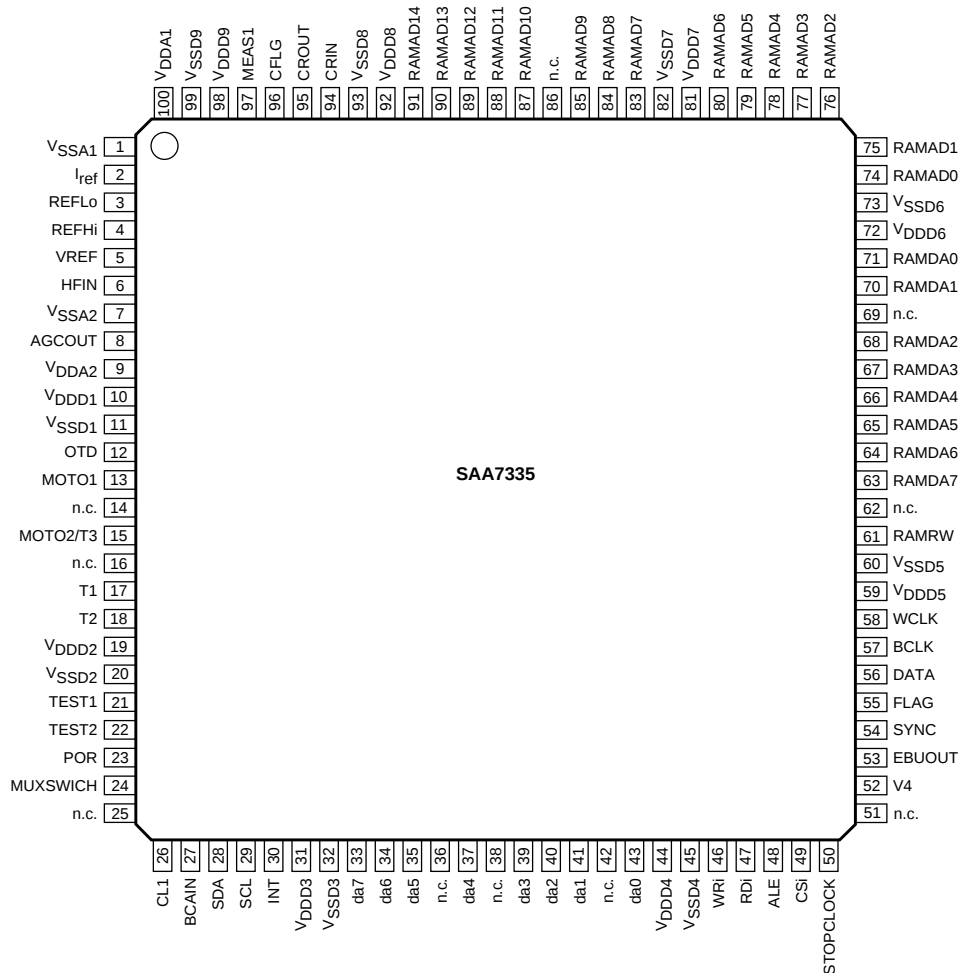
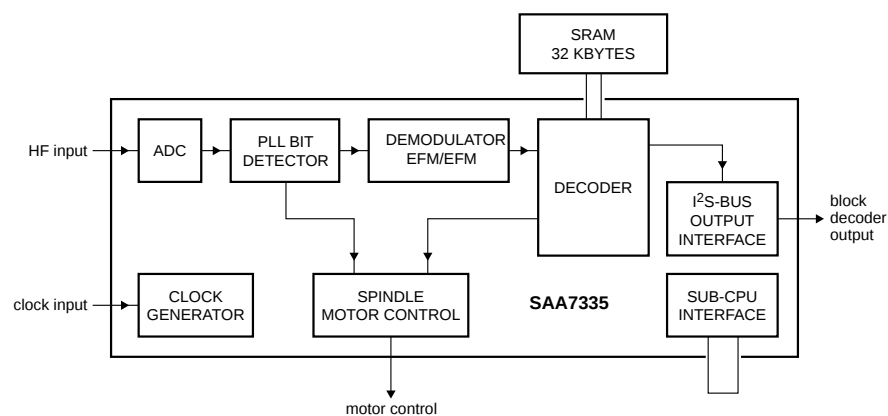


Pin description

PIN No	PIN NAME	DESCRIPTION
1	N.C.	Not connected
2	N.C.	Not connected
3	A3	Output 3 for motor
4	N.C.	Not connected
5	A2	Output 2 for motor
6	N.C.	Not connected
7	A1	Output 1 for motor
8	GND	Ground
9	H1+	Hall input Amp1. positive input
10	H1-	Hall input Amp1. negative input
11	H2+	Hall input Amp2. positive input
12	H2-	Hall input Amp2. negative input
13	H3+	Hall input Amp3. positive input
14	H3-	Hall input Amp3. negative input
15	N.C.	Not connected
16	FG3	FG3 signal output terminal
17	FG2	FG2 signal output terminal
18	FG1	FG1 signal output terminal
19	VH	Hall Bias
20	CNF	Capacitor connection pin for phase compensation
21	ECR	Torque control standard voltage input terminal
22	EC	Torque control voltage input terminal
23	PS	POWER SAVE switch
24	REV	Reverse terminal
25	VCC	Power supply for signal division
26	VM2	Power supply 2 for driver
27	VM1	Power supply 2 for driver
28	RNF	Power supply for driver division

SAA7335

DSP for CD and DVD-ROM system

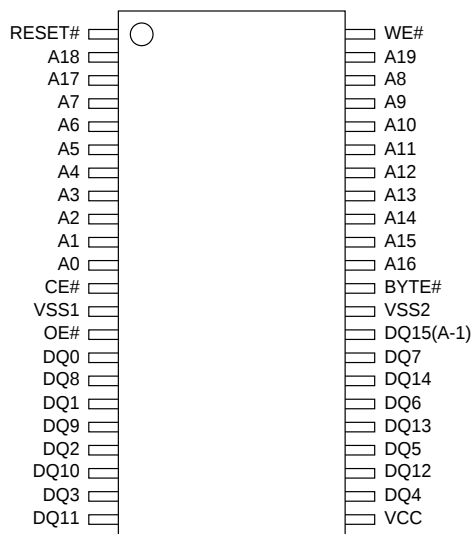
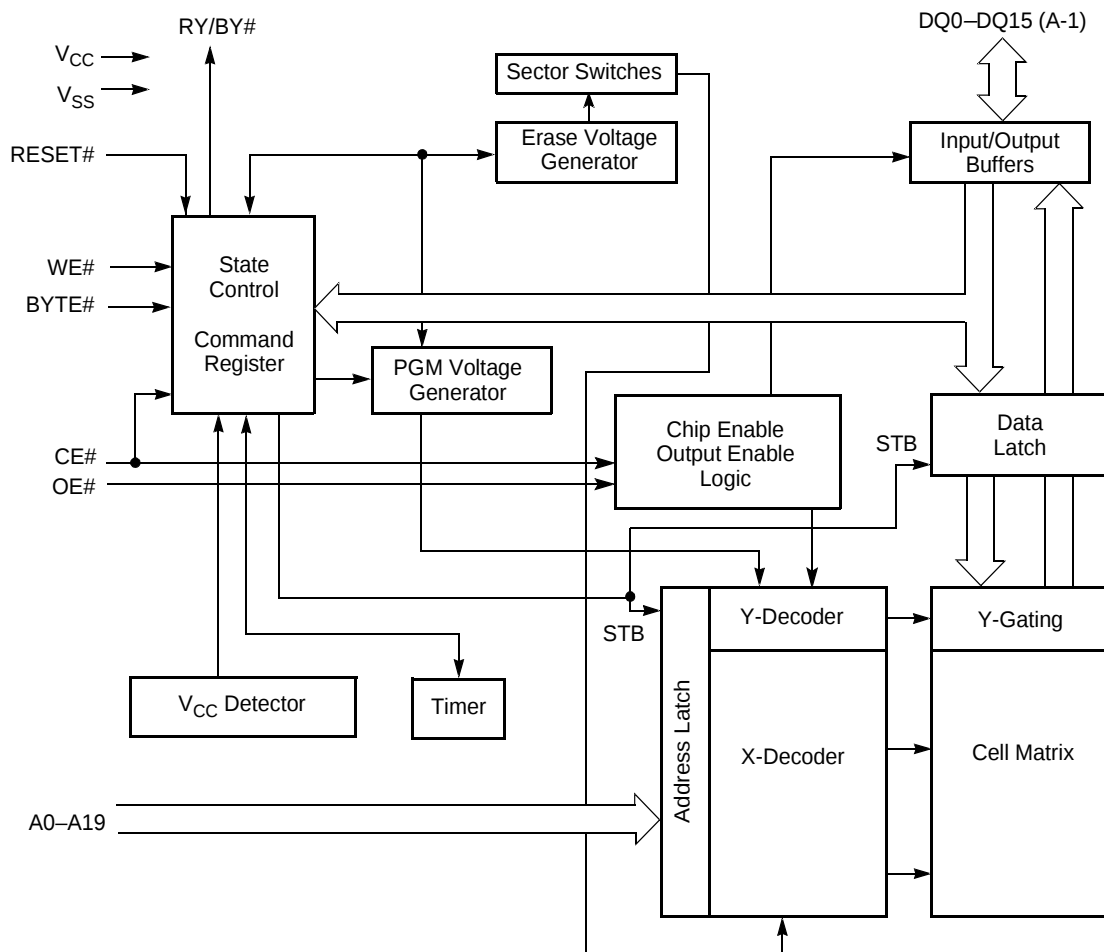


SAA7335**DSP for CD and DVD-ROM system****Pin description**

SYMBOL	PIN	TYPE	DESCRIPTION
VSSA1	1	supply	analog ground 1
Iref	2	I	analog current reference input for ADC
REFLo	3	I	analog low reference input for ADC
REFHi	4	I	analog high reference input for ADC
VREF	5	I	analog negative input
HFIN	6	I	analog positive input
VSSA2	7	supply	analog ground 2
AGCOUT	8	O	analog test pin output
VDDA2	9	supply	analog supply voltage 2
VDDD1	10	supply	digital supply voltage 1
VSSD1	11	supply	digital ground 1
OTD	12	I	off track detect input
MOTO1	13	O	3-state motor control output
n.c.	14	—	not connected, reserved
MOTO2/T3	15	I/O	motor control output/tachometer 3 input
n.c.	16	—	not connected, reserved
T1	17	I	tachometer 1 input
T2	18	I	tachometer 2 input
VDDD2	19	supply	digital supply voltage 2
VSSD2	20	supply	digital ground 2
TEST1	21	I	test input 1
TEST2	22	I	test input 2
POR	23	I	power-on reset input
MUXSWICH	24	I	use clock multiplier input
n.c.	25	—	not connected, reserved
CL1	26	O	divided clock output
BCAIN	27	I	BCA input
SDA	28	I/O	sub-CPU I 2 C-bus serial data input/output
SCL	29	I	sub-CPU I 2 C-bus serial clock input
INT	30	O	sub-CPU interrupt output (open-drain)
VDDD3	31	supply	digital supply voltage 3
VSSD3	32	supply	digital ground 3
da7	33	I/O	sub-CPU data bus bit 7 input/output (parallel)
da6	34	I/O	sub-CPU data bus bit 6 input/output (parallel)
da5	35	I/O	sub-CPU data bus bit 5 input/output (parallel)
n.c.	36	—	not connected, reserved
da4	37	I/O	sub-CPU data bus bit 4 input/output (parallel)
n.c.	38	—	not connected, reserved
da3	39	I/O	sub-CPU data bus bit 3 input/output (parallel)
da2	40	I/O	sub-CPU data bus bit 2 input/output (parallel)
da1	41	I/O	sub-CPU data bus bit 1 input/output (parallel)
n.c.	42	—	not connected, reserved
da0	43	I/O	sub-CPU data bus bit 0 input/output (parallel)
VDDD4	44	supply	digital supply voltage 4
VSSD4	45	supply	digital ground 4
WRi	46	I	sub-CPU write enable input (active LOW)
RD _i	47	I	sub-CPU read enable input (active LOW)
ALE	48	I	sub-CPU address latch enable input
CSi	49	I	sub-CPU chip select input (active HIGH)
STOPCLOCK	50	O	stop clock output

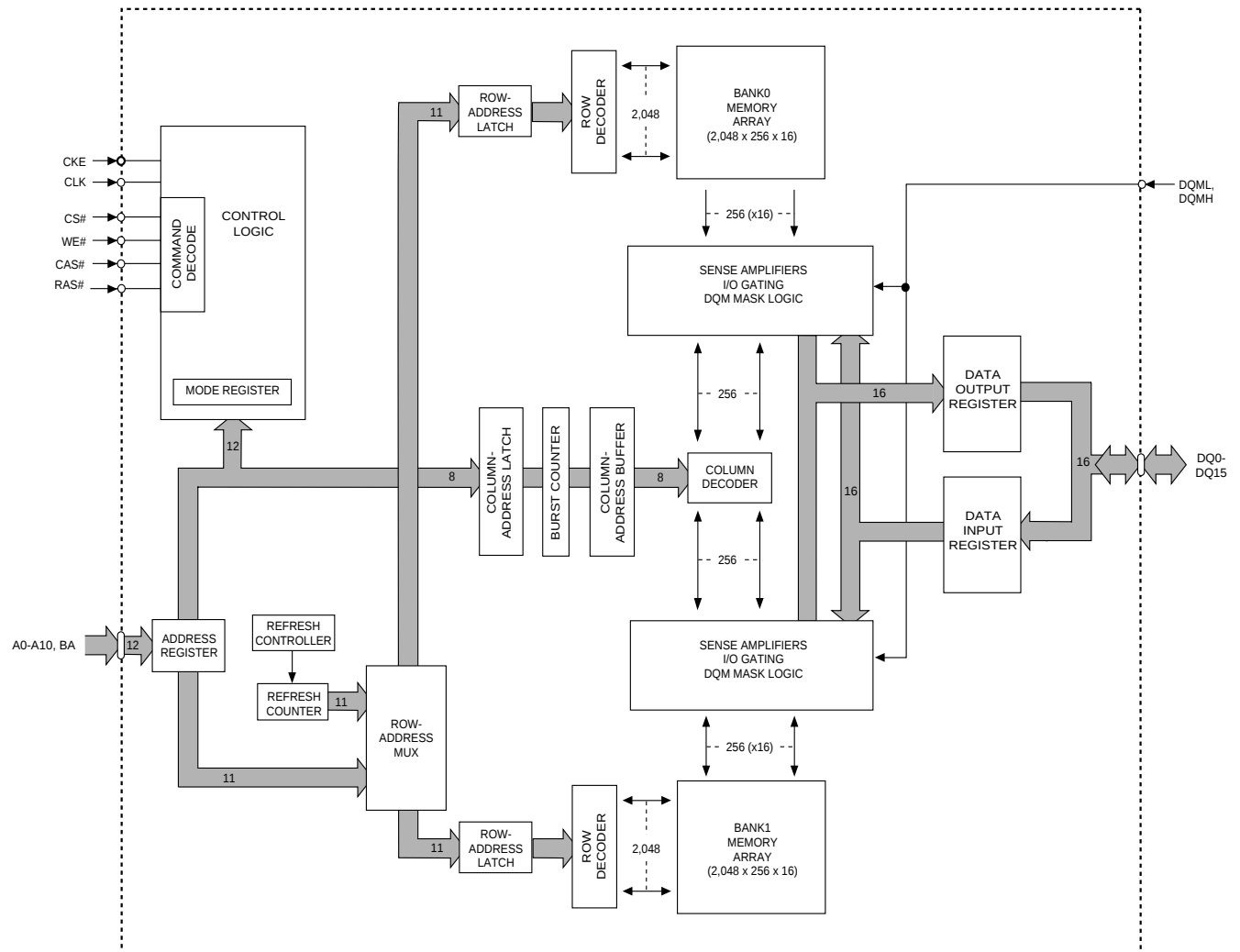
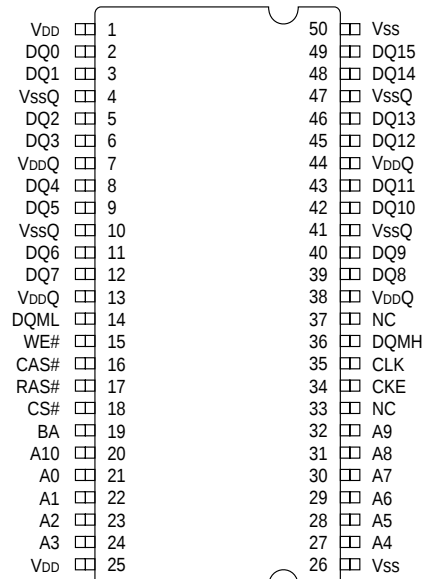
SAA7335**DSP for CD and DVD-ROM system**

SYMBOL	PIN	TYPE	DESCRIPTION
n.c.	51	–	not connected, reserved
V4	52	O	serial subcode output (for CD)
EBUOUT	53	O	digital audio output
SYNC	54	O	I ² S-bus sector sync output
FLAG	55	O	I ² S-bus correction flag output
DATA	56	O	I ² S-bus serial data output
BCLK	57	I/O	I ² S-bus bit serial clock input/output
WCLK	58	I/O	I ² S-bus word clock input/output
VDDD5	59	supply	digital supply voltage 5
VSSD5	60	supply	digital ground 5
RAMRW	61	O	RAM read/write control output
n.c.	62	–	not connected, reserved
RAMDA7	63	I/O	RAM data bus bit 7 input/output
RAMDA6	64	I/O	RAM data bus bit 6 input/output
RAMDA5	65	I/O	RAM data bus bit 5 input/output
RAMDA4	66	I/O	RAM data bus bit 4 input/output
RAMDA3	67	I/O	RAM data bus bit 3 input/output
RAMDA2	68	I/O	RAM data bus bit 2 input/output
n.c.	69	–	not connected, reserved
RAMDA1	70	I/O	RAM data bus bit 1 input/output
RAMDA0	71	I/O	RAM data bus bit 0 input/output
VDDD6	72	supply	digital supply voltage 6
VSSD6	73	supply	digital ground 6
RAMAD0	74	O	RAM address bit 0 output
RAMAD1	75	O	RAM address bit 1 output
RAMAD2	76	O	RAM address bit 2 output
RAMAD3	77	O	RAM address bit 3 output
RAMAD4	78	O	RAM address bit 4 output
RAMAD5	79	O	RAM address bit 5 output
RAMAD6	80	O	RAM address bit 6 output
VDDD7	81	supply	digital supply voltage 7
VSSD7	82	supply	digital ground 7
RAMAD7	83	O	RAM address bit 7 output
RAMAD8	84	O	RAM address bit 8 output
RAMAD9	85	O	RAM address bit 9 output
n.c.	86	–	not connected, reserved
RAMAD10	87	O	RAM address bit 10 output
RAMAD11	88	O	RAM address bit 11 output
RAMAD12	89	O	RAM address bit 12 output
RAMAD13	90	O	RAM address bit 13 output
RAMAD14	91	O	RAM address bit 14 output
VDDD8	92	supply	digital supply voltage 8
VSSD8	93	supply	digital ground 8
CRIN	94	I	analog crystal input
CROUT	95	O	analog crystal output
CFLG	96	O	correction statistics output
MEAS1	97	O	front-end telemetry output
VDDD9	98	supply	digital supply voltage 9
VSSD9	99	supply	digital ground 9
VDDA1	100	supply	analog supply voltage 1

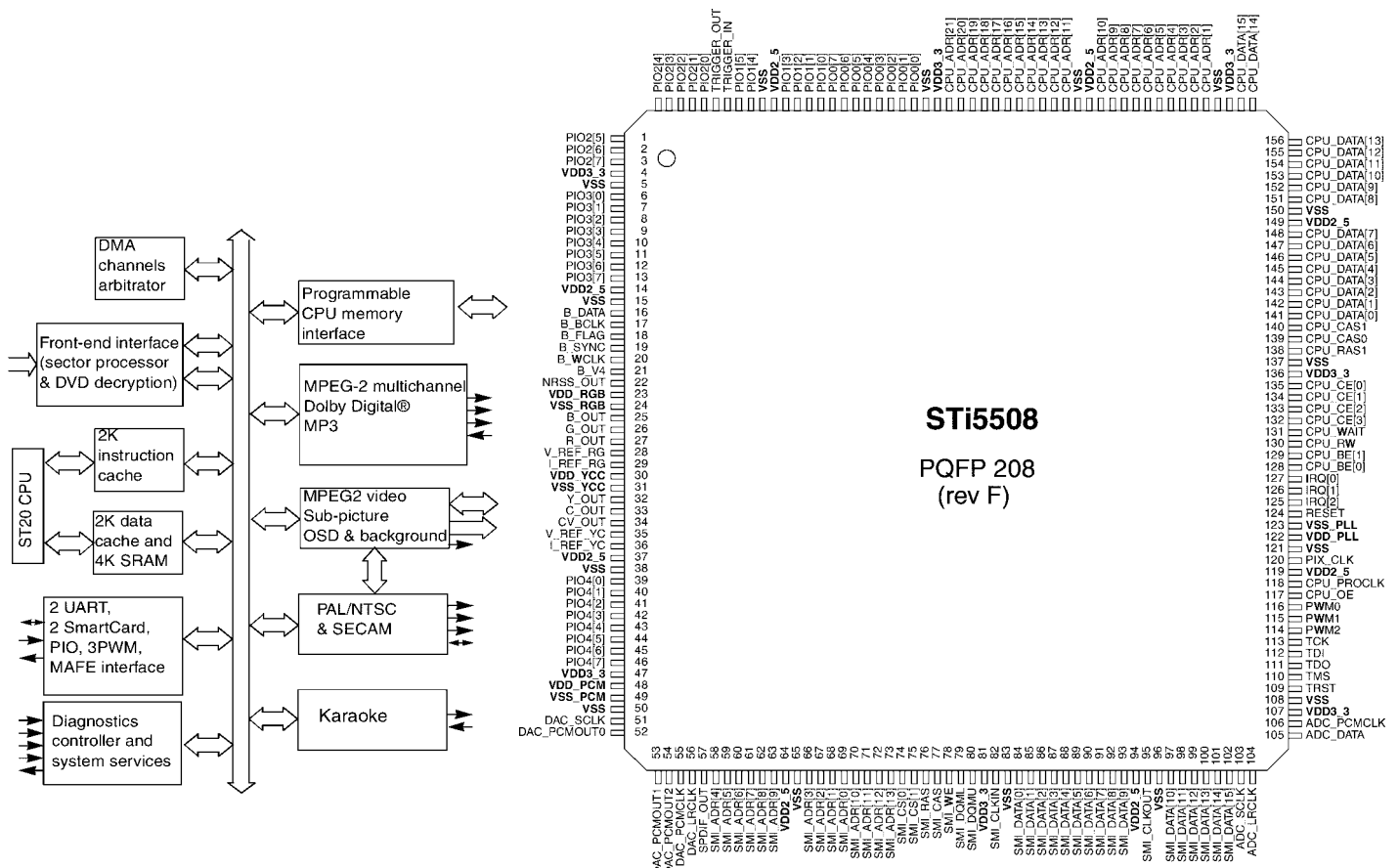
Am29LV160BT**16 MB (2 M x 8-bit / 1 M x 16-bit) CMOS 3.0 Volt-only Sector Erase Flash Memory**

MT48LC1M16A1TG S

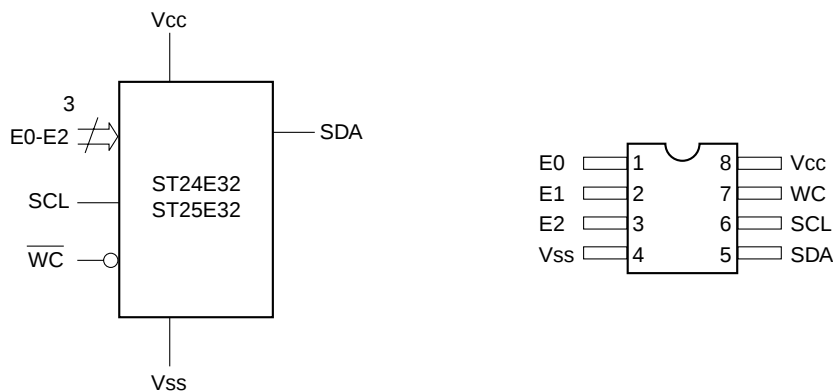
Synchronous DRAM



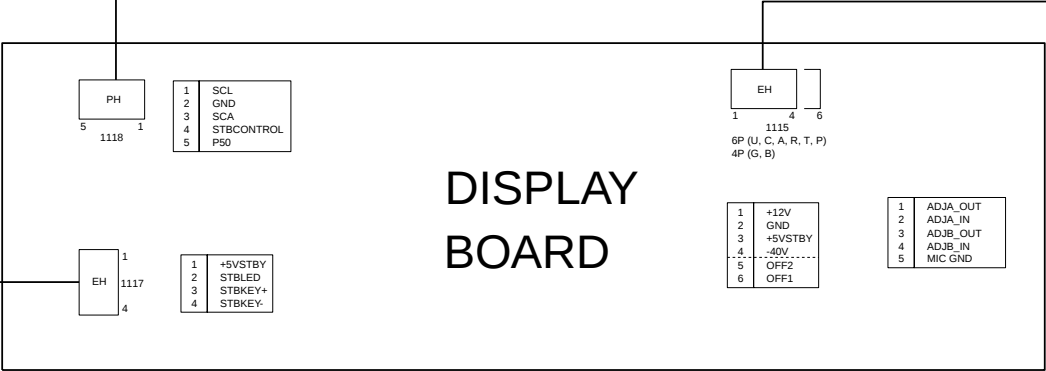
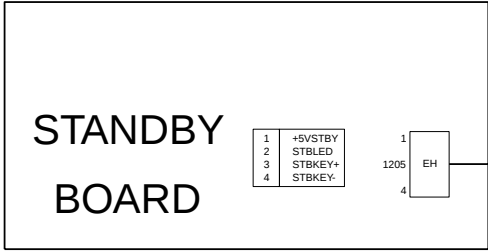
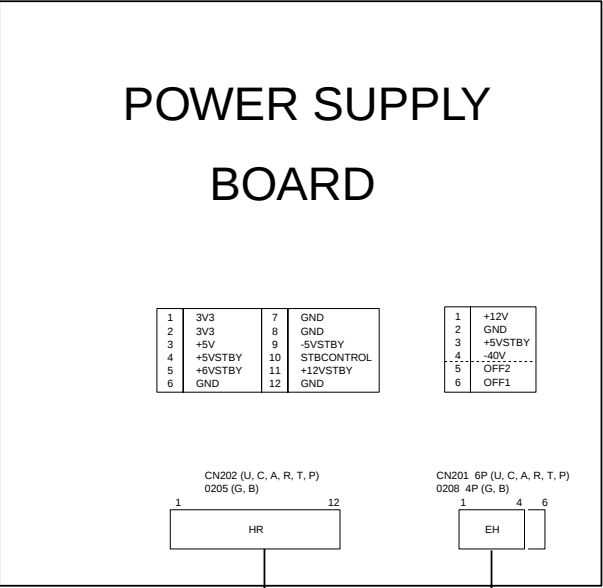
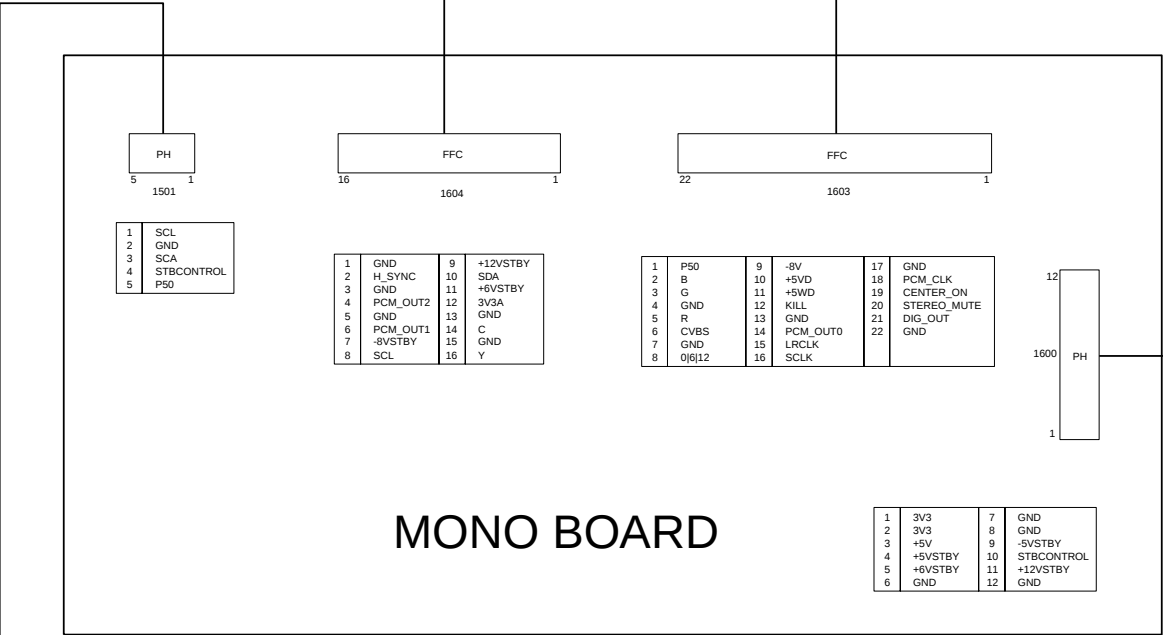
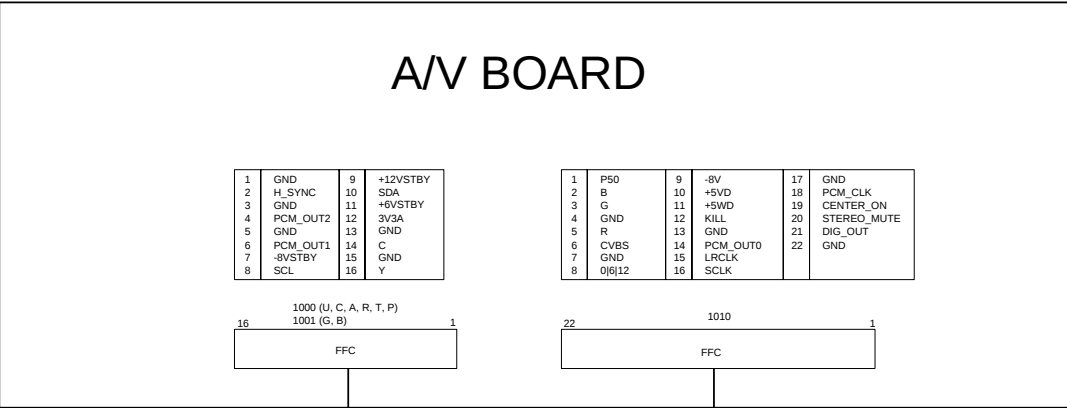
DVD host processor with enhanced audio features



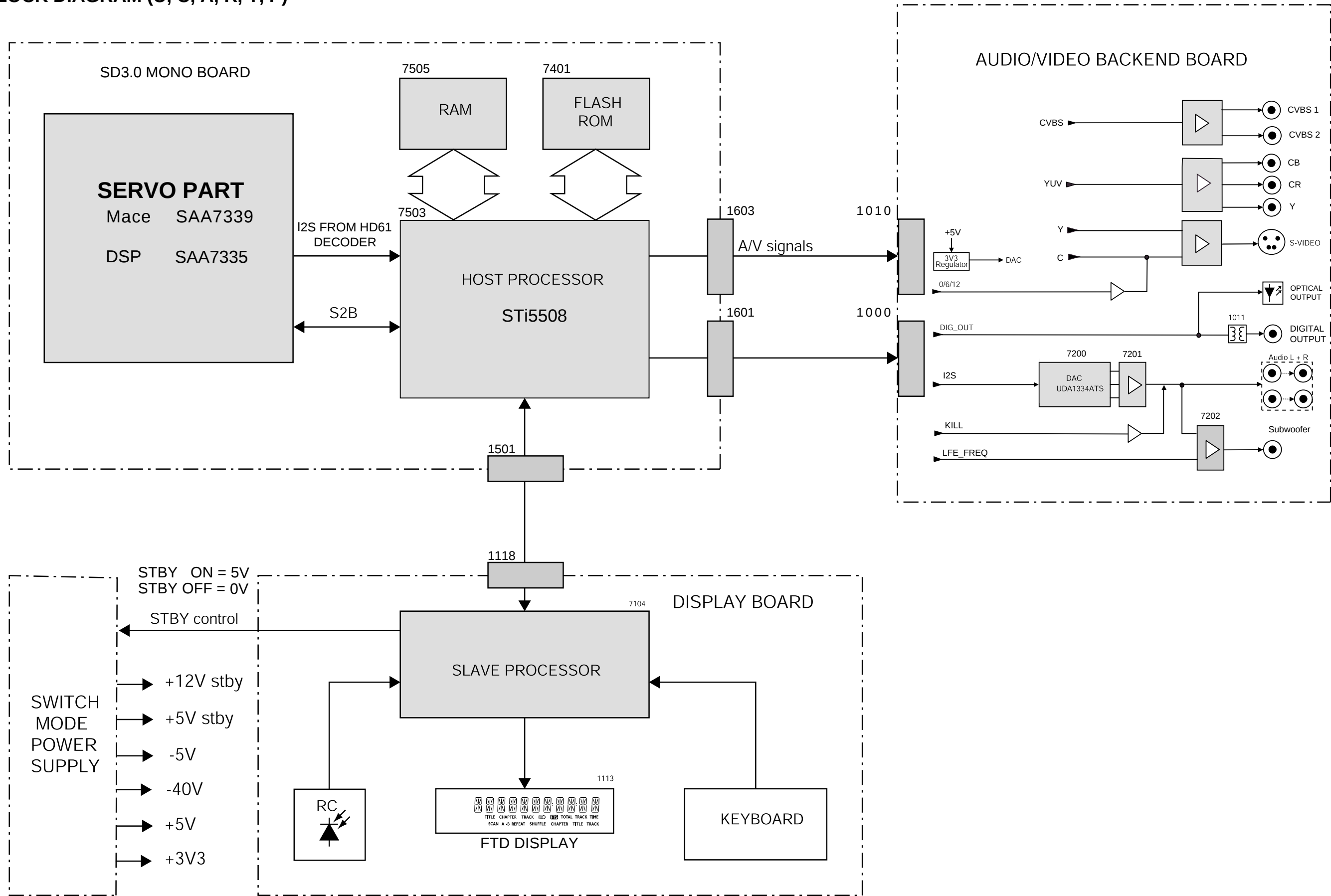
32k serial I²C EEPROM with extended addressing



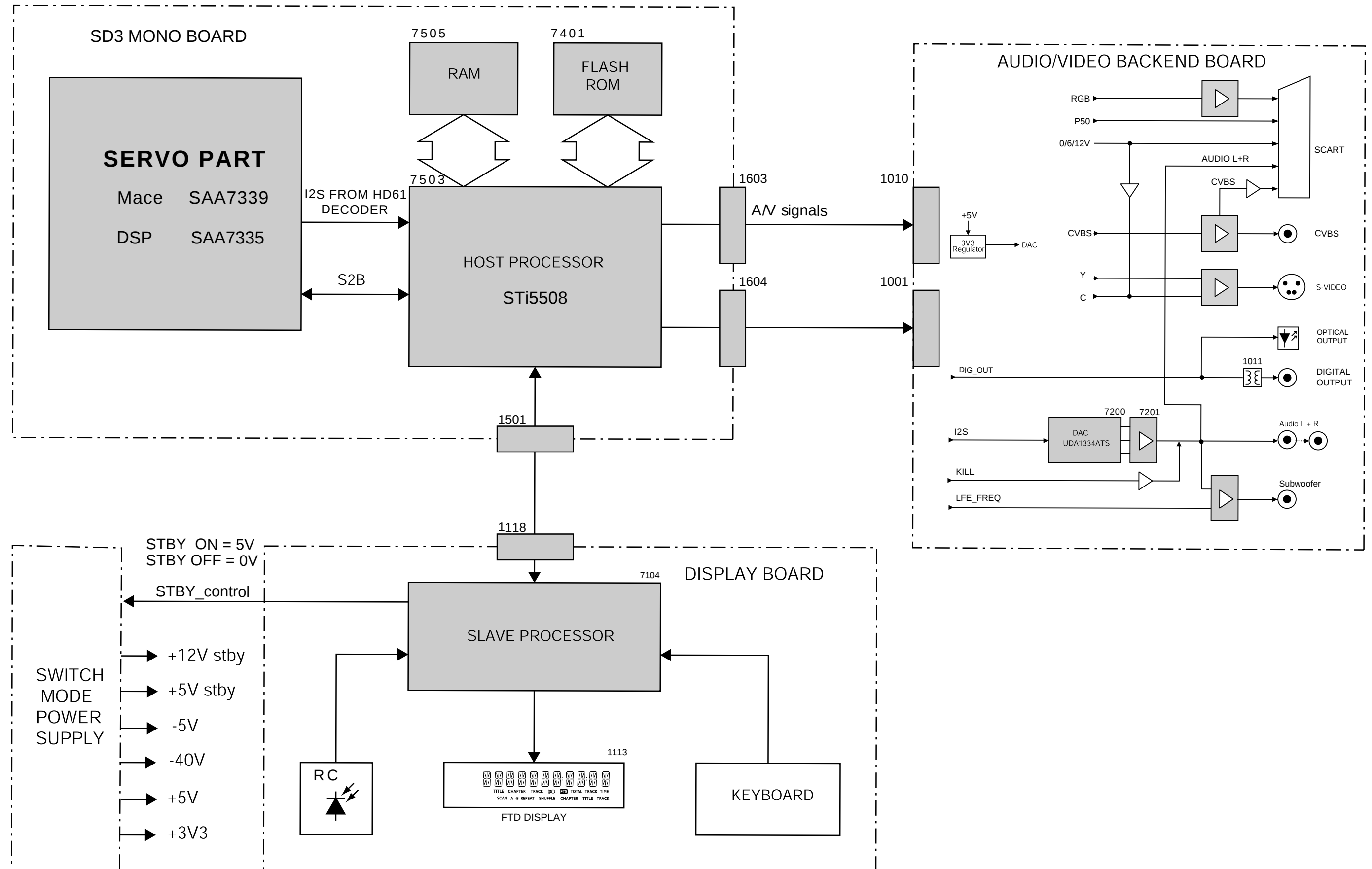
WIRING DIAGRAM



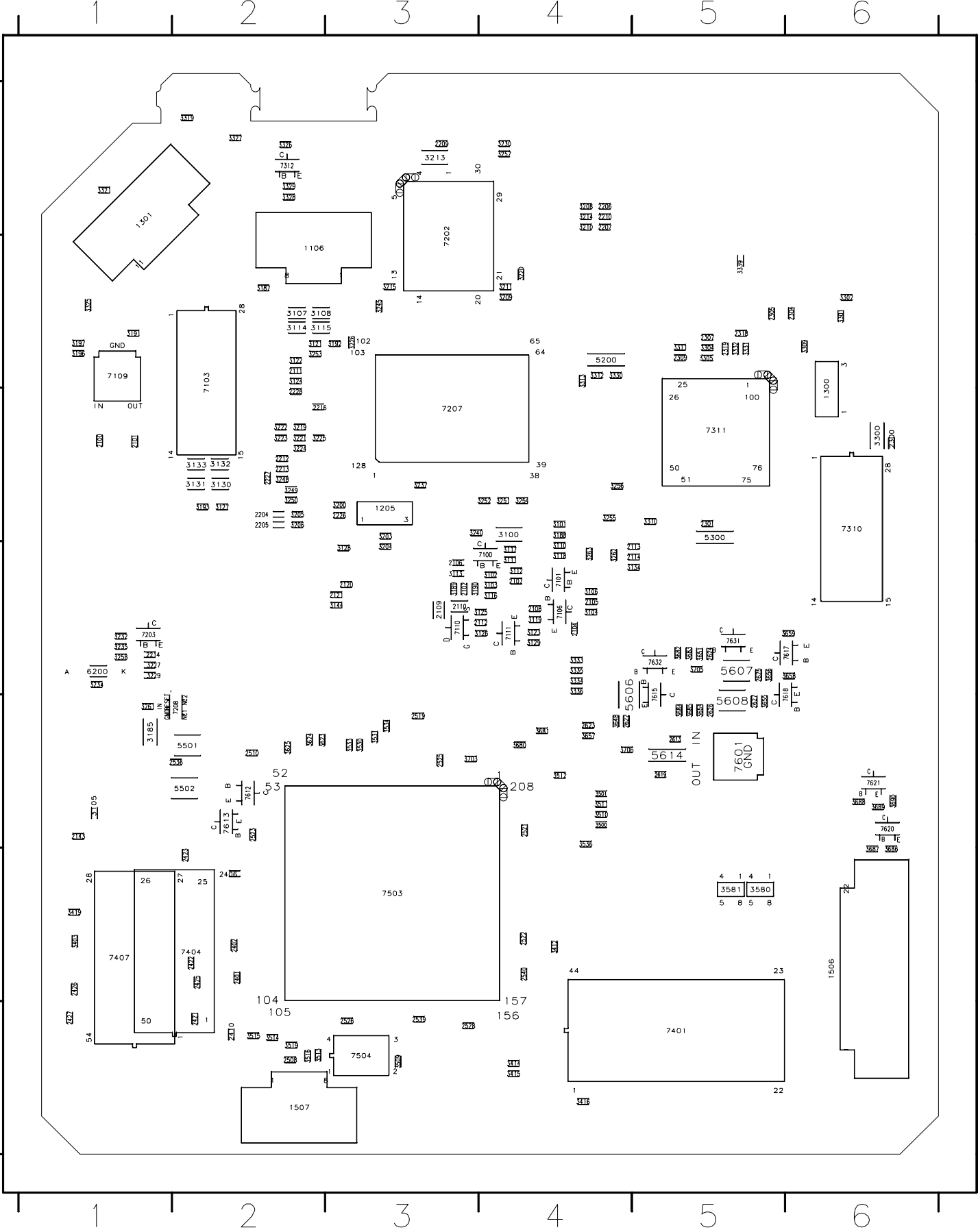
■ BLOCK DIAGRAM (U, C, A, R, T, P)



BLOCK DIAGRAM (B, G)



PRINTED CIRCUIT BOARD
MONO (Bottom view)

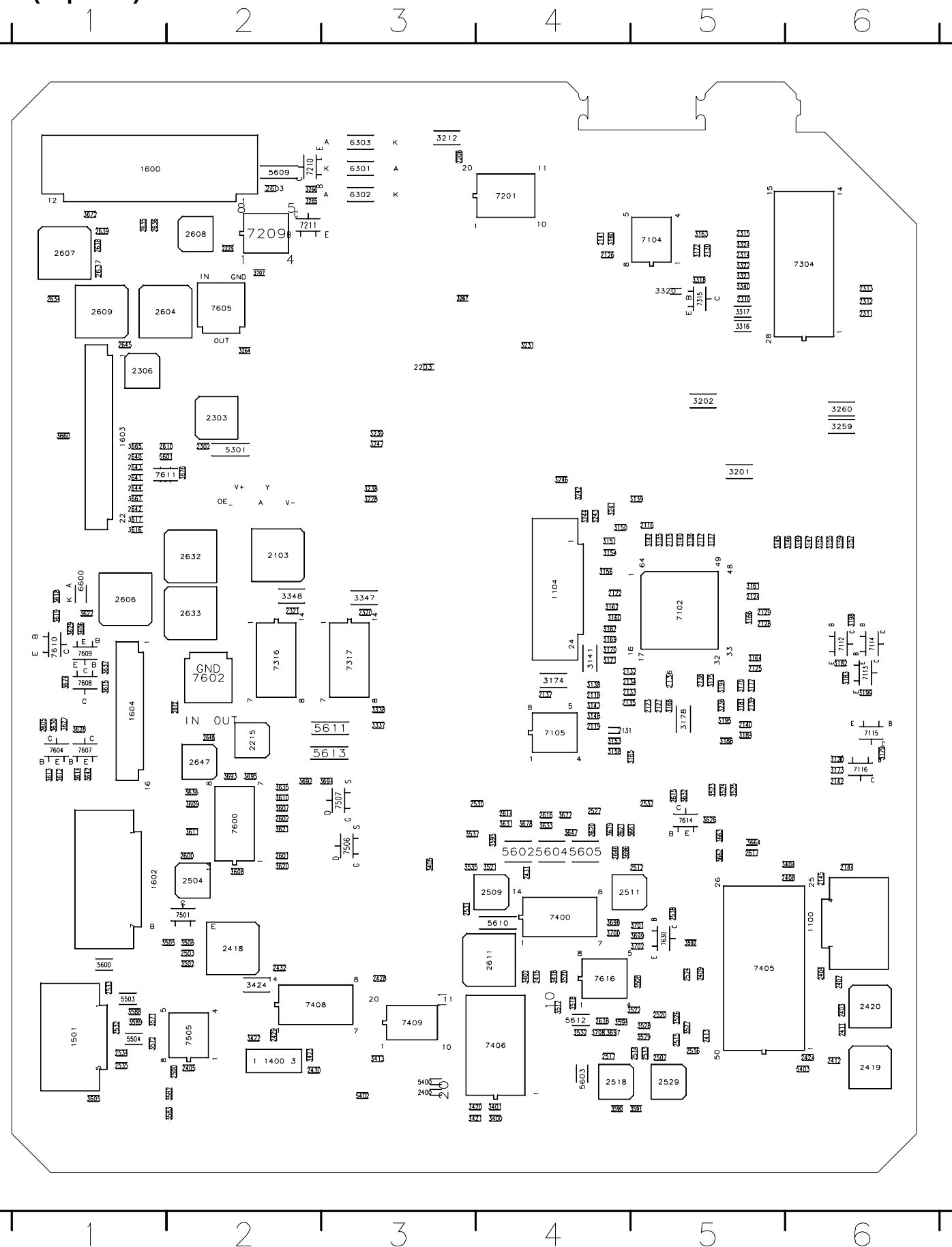


The first digit of a component indicates the component type.
1XXX : Connector 4XXX : SMD jumper 7XXX : Transistor, FET, IC
2XXX : Capacitor 5XXX : Coil 9XXX : Wire jumper
3XXX : Resistor 6XXX : Diode

MONO BOARD only
The second digit of a component indicates the number of the schematic diagram.
E.g. IC7503 is on the schematic diagram 5.
E.g. R3100 is on the schematic diagram 1.

PRINTED CIRCUIT BOARD

MONO (Top view)



The first digit of a component indicates the component type.

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

MONO BOARD only
The second digit of a component indicates the number of the schematic diagram.
E.g. IC7503 is on the schematic diagram 5.
E.g. R3100 is on the schematic diagram 1.

E.g. R3100 is on the schematic diagram 1.

9XXX : Wire jumper



MONO BOARD only

The second digit of a component indicates the number of the schematic diagram.

E.g. IC7503 is on the schematic diagram 5.

E.g. R3100 is on the schematic diagram 1.

The first digit of a component indicates the component type.

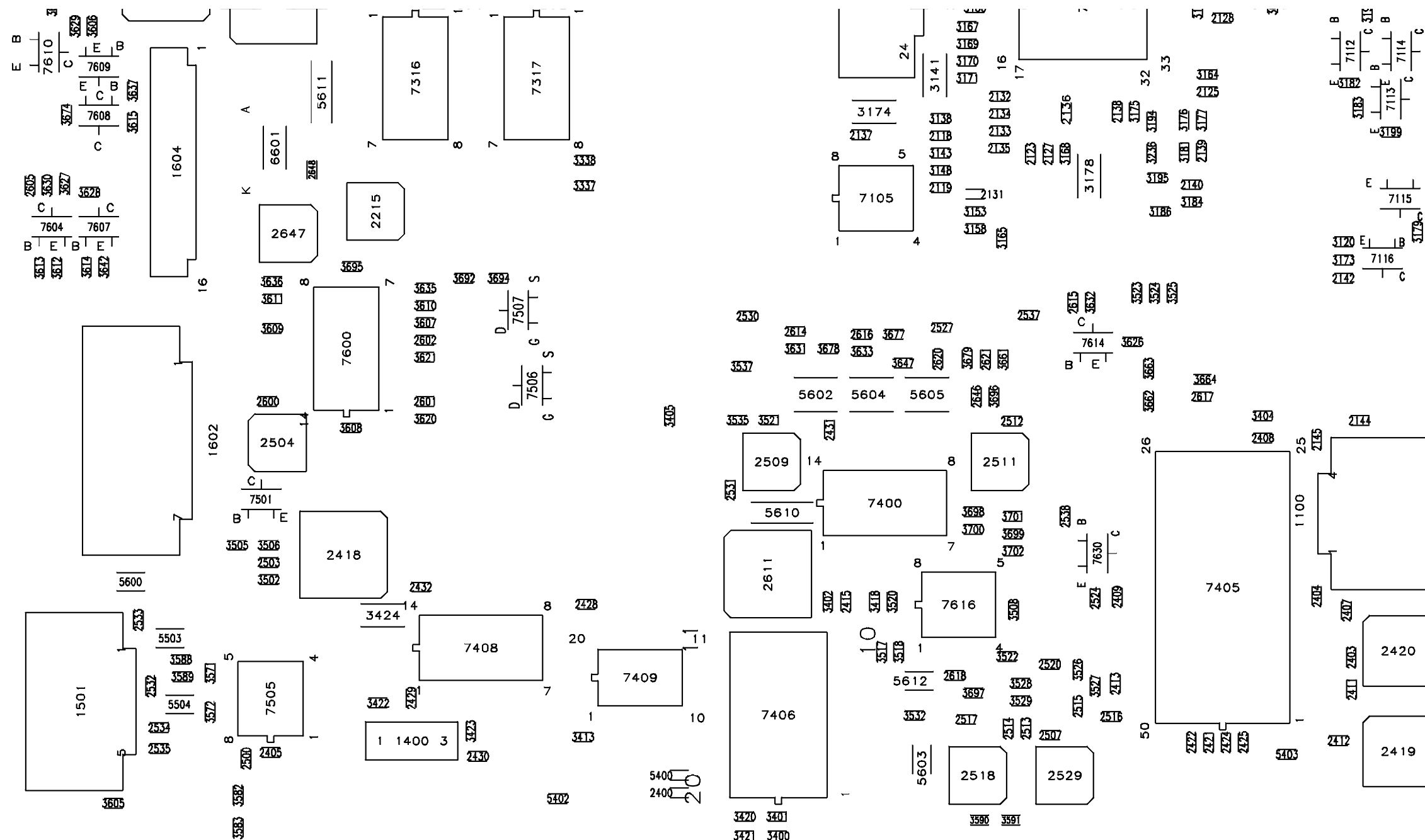
1XXX : Connector 4XXX : SMD jumper 7XXX : Transistor, FET, IC

2XXX : Capacitor 5XXX : Coil 9XXX : Wire jumper

3XXX : Resistor 6XXX : Diode

PRINTED CIRCUIT BOARD

MONO (Detailed top view 2/2)



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

■ PRINTED CIRCUIT BOARD

AV (Component side) (U, C, A, R, T, P)

1000	A8	1010	B5	1601	D8	2103	A15	2112	B13	2205	A10	2216	B6	2227	A6	3204	B5	3235	C5	5200	C3	7203	B2	9301	B3	9305	C6	9309	A12	9313	A14	9317	A14
1003	D15	1011	D3	1602	D9	2106	B16	2201	A5	2206	B5	2220	B10	2232	C4	3214	B8	5100	C13	5201	C9	7204	D4	9302	B4	9306	B6	9310	A12	9314	A15	9318	B3
1005	C8	1012	D6	2100	A2	2109	B12	2202	C4	2208	B1	2225	A10	2236	C10	3216	B8	5101	C12	5202	D10	9104	C15	9303	B6	9307	C10	9311	C12	9315	A15		
1006	D13	1600	D7	2101	A2	2111	B11	2204	A16	2211	C7	2226	B7	2237	C1	3234	D5	5102	C11	7100	A2	9300	A3	9304	A11	9308	A11	9312	A14	9316	C14		

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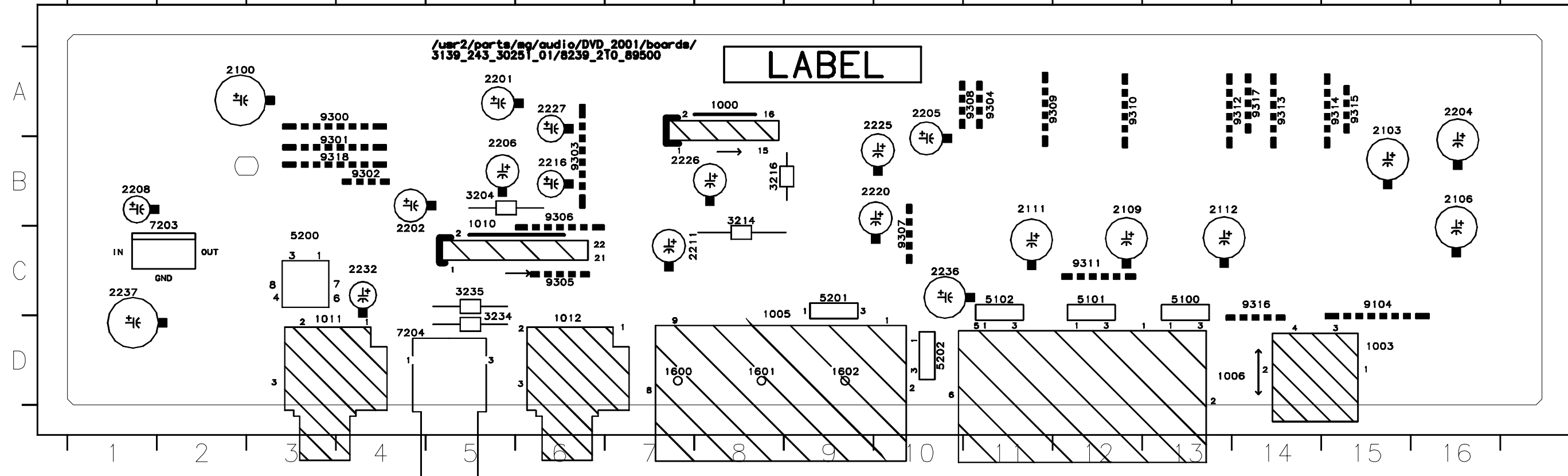
12

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16



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7

AV (Overview bottom side) (U, C, A, R, T, P)

The first digit of a component indicates the component type.

1XXX : Connector

4XXX : SMD jumper

7XXX : Transistor, FET, IC

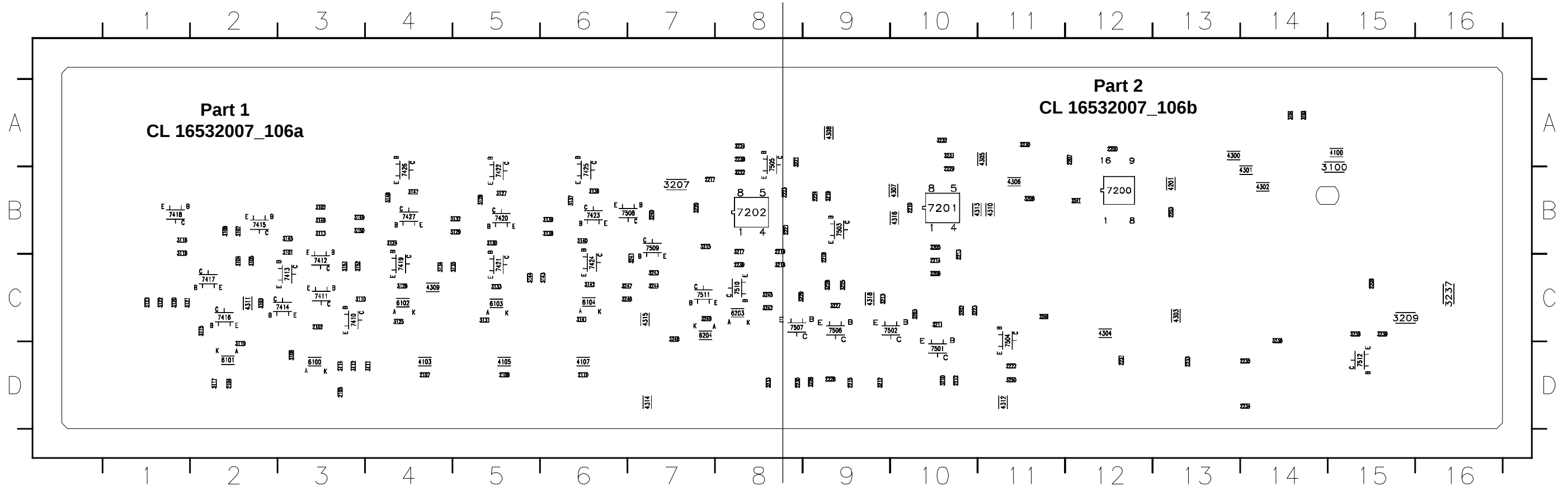
2XXX : Capacitor

5XXX : Coil

9XXX : Wire jumper

3XXX : Resistor

6XXX : Diode

[illegible]

A

B

C

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G

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I

J

DVD-S520/DV-S5450

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

■ PRINTED CIRCUIT BOARD
AV (Part 1 bottom side) (U, C, A, R, T, P)

1

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A

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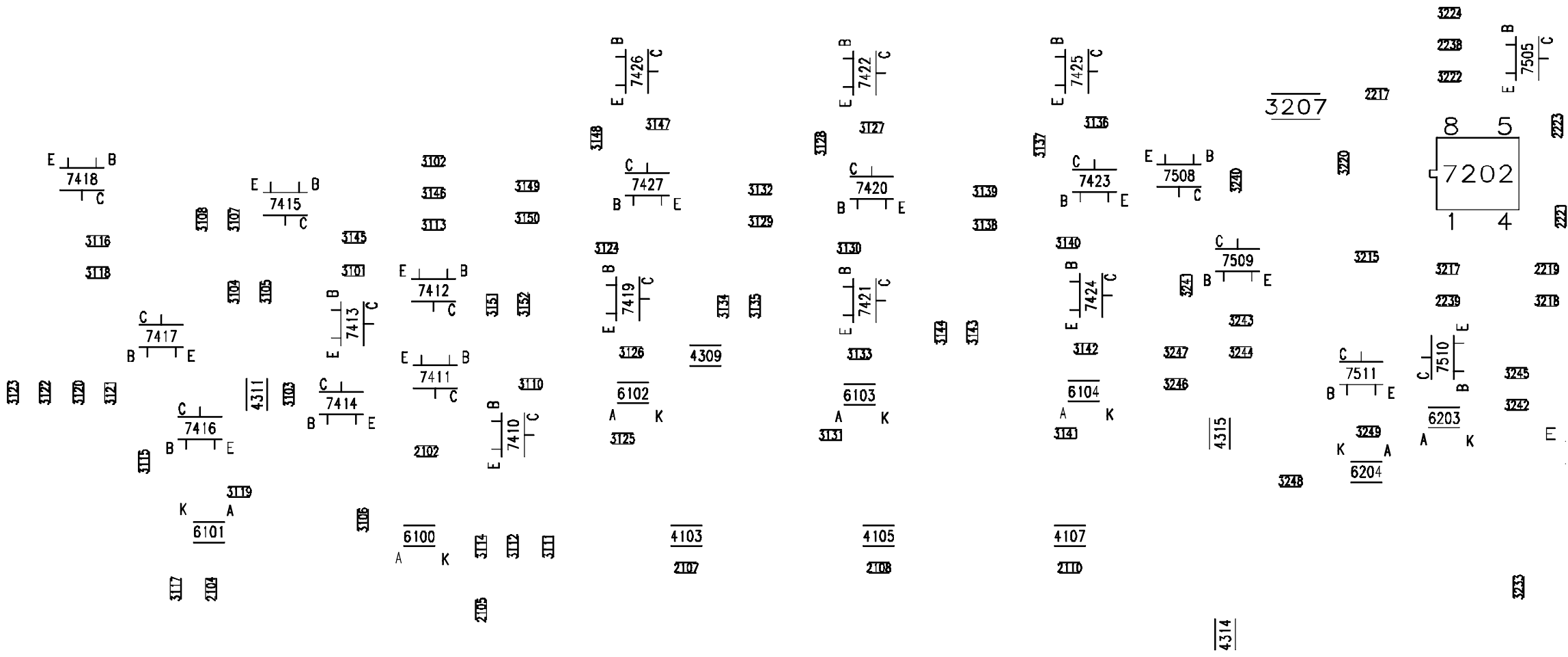
4

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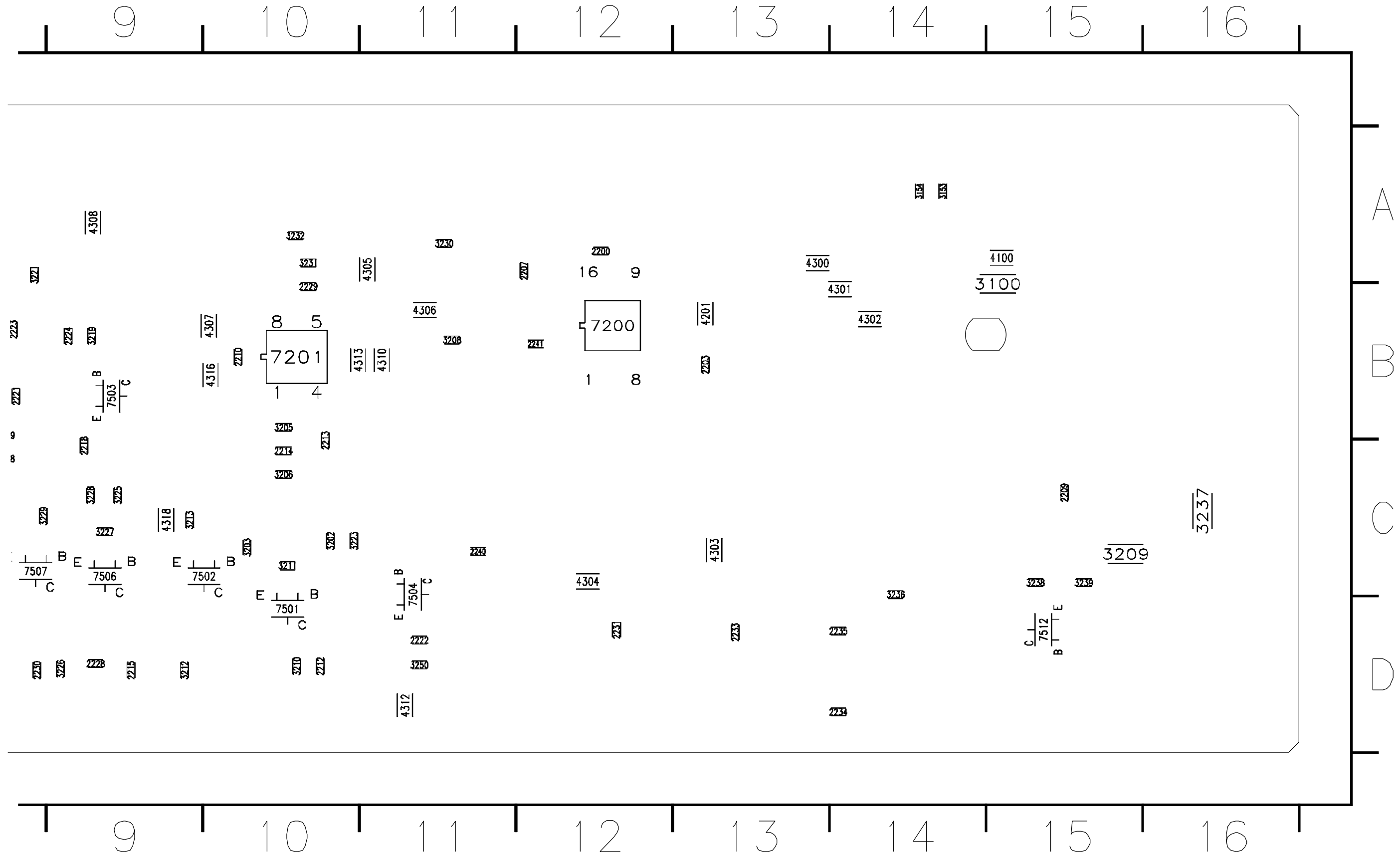
8



AV (Part 2 bottom side) (U, C, A, R, T, P)

The first digit of a component indicates the component type.

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



A

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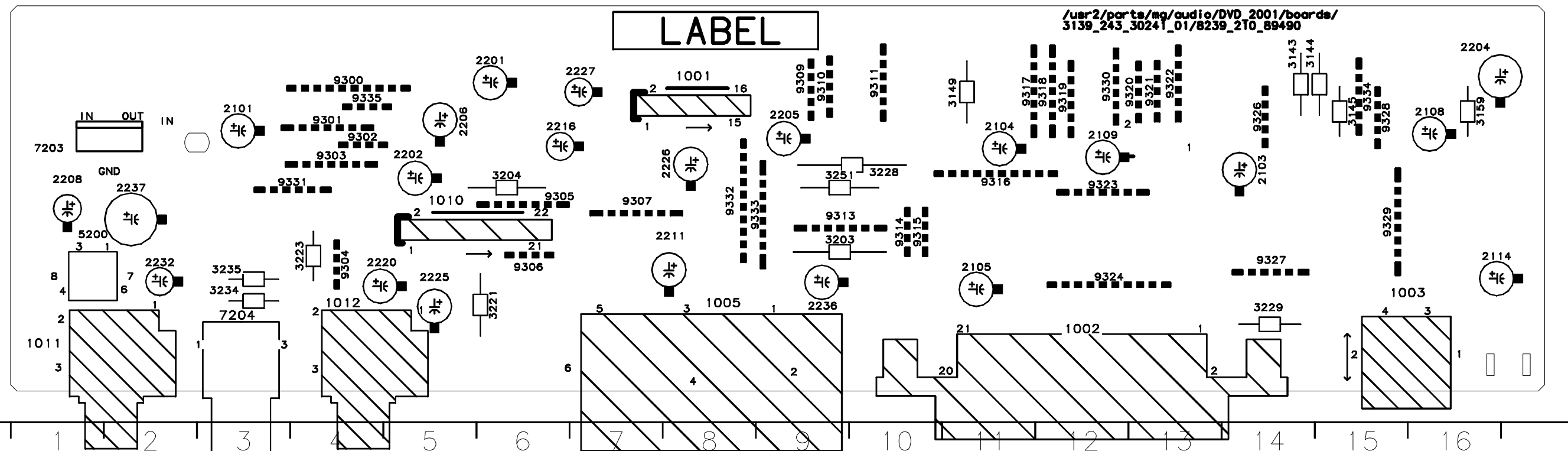
J

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

■ PRINTED CIRCUIT BOARD

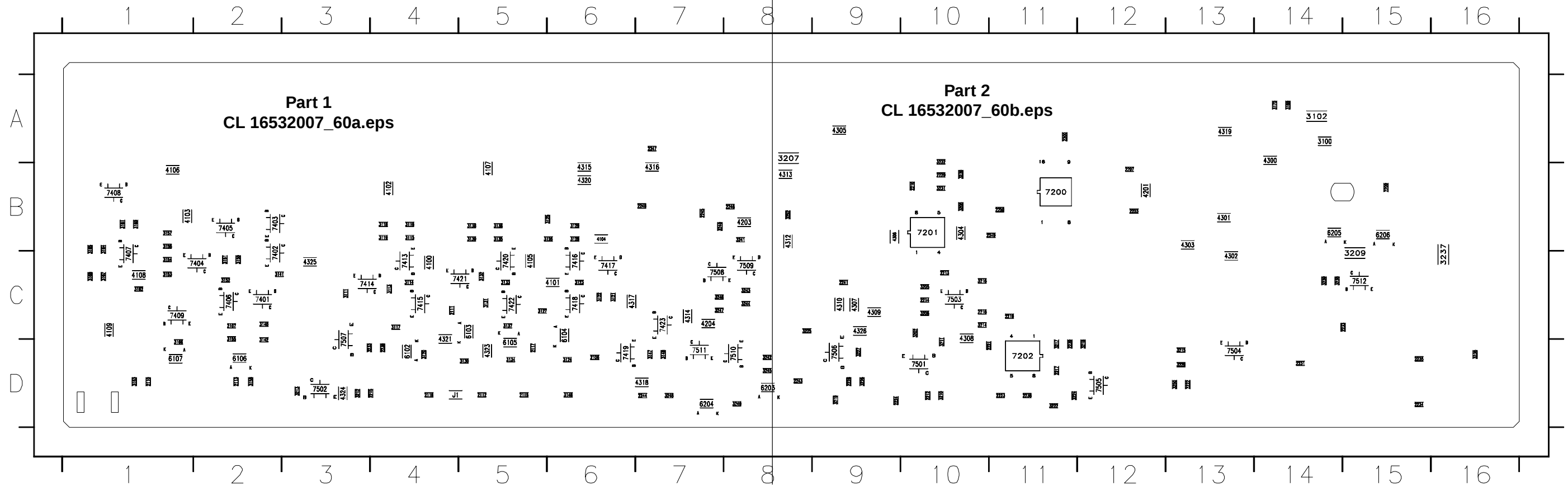
AV (Component side) (B, G)

1001	A8	1010	B5	2101	A3	2109	B12	2205	B9	2220	C4	2236	D9	3145	A15	3221	D6	3235	C3	7204	D3	9304	C4	9310	A9	9316	B11	9321	A13	9327	C14	9332	B8
1002	D12	1011	D1	2103	B14	2114	C16	2206	B5	2225	C5	2237	B2	3149	A11	3223	C4	3251	B9	9300	A4	9305	B6	9311	A10	9317	A11	9322	A13	9328	B15	9333	C8
1003	C15	1012	D4	2104	B11	2201	A6	2208	B1	2226	B8	2242	B3	3159	A16	3228	B10	5200	C1	9301	B4	9306	C6	9313	C9	9318	A12	9323	B12	9329	C15	9334	A15
1004	B13	1013	B10	2105	C11	2202	B5	2211	C8	2227	A7	3143	A14	3203	C9	3229	D14	7100	A2	9302	B4	9307	B7	9314	C10	9319	A12	9324	C12	9330	A12	9335	A4
1005	D8	2100	A1	2108	A16	2204	A16	2216	B6	2232	C2	3144	A14	3204	B6	3234	C3	7203	B1	9303	B4	9309	A9	9315	C10	9320	A13	9326	B14	9331	B4		



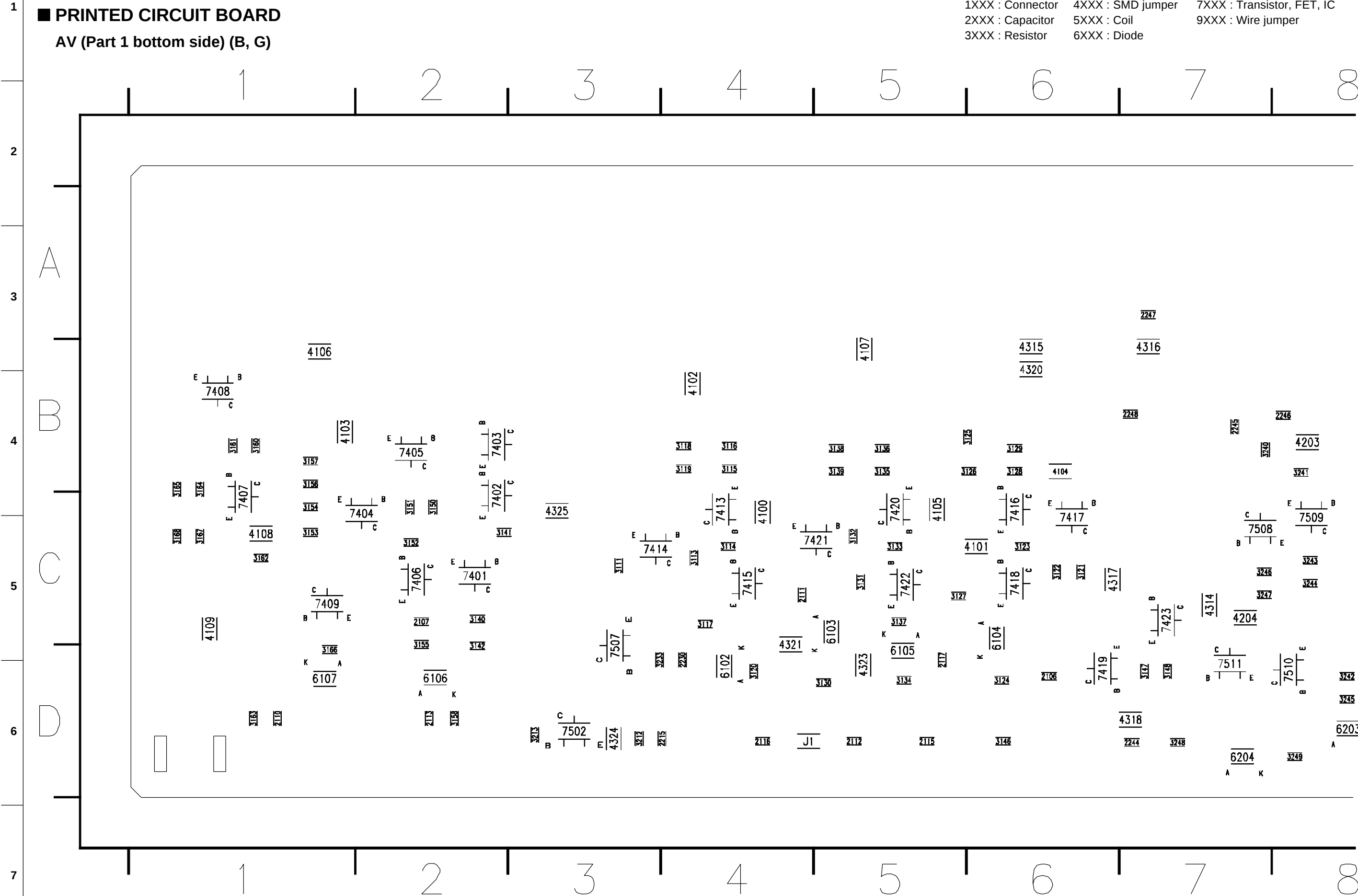
AV (Overview bottom side) (B, G)

6XXX : Diode

[illegible]

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

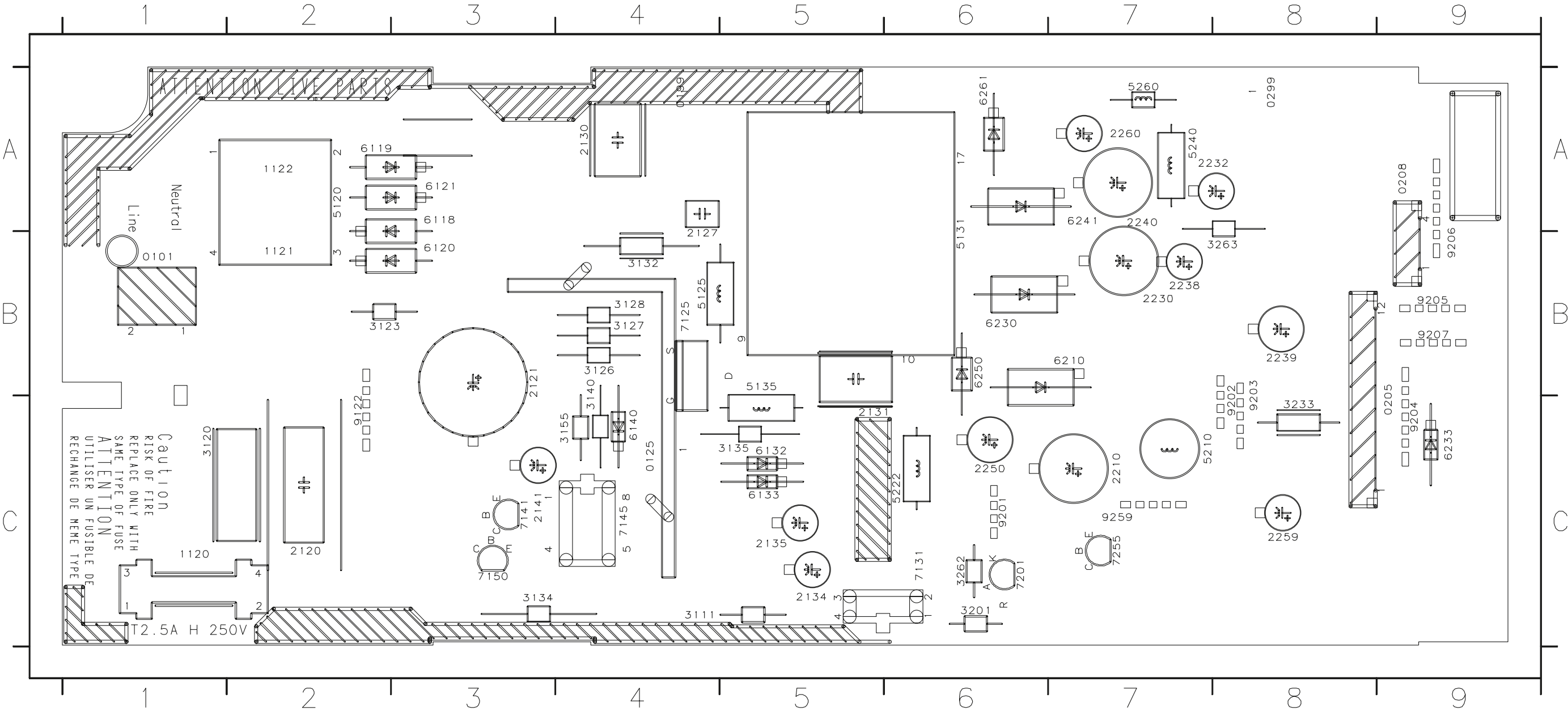
■ PRINTED CIRCUIT BOARD
AV (Part 1 bottom side) (B, G)



PRINTED CIRCUIT BOARD
POWER (Component side) (B, G)

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

0101	B1	0209	A9	2121	B3	2130	A4	2135	C5	2232	A8	2240	A7	2259	C8	3111	C4	3123	B2	3133	A3	3201	C6	5120	A2	5210	C7	5260	A7	6120	B3	6128	A4	6211	C6	6241	A7	7125	B4	7201	C6	7259	C8	9203	B8	9259	C7
0125	C4	0299	A8	2122	C2	2131	C5	2141	C3	2233	A8	2241	A6	2260	A7	3112	C5	3126	B4	3134	C3	3232	B8	5121	B2	5222	C6	6110	C3	6121	A3	6132	C5	6230	B6	6250	B6	7131	C6	7233	A8	9122	C2	9204	C9		
0199	A4	1120	C1	2123	B3	2132	C5	2210	C7	2236	B6	2250	C6	2261	A7	3120	C1	3127	B4	3135	C5	3233	C8	5125	B4	5230	B7	6111	C3	6122	C3	6133	C5	6231	B6	6259	C7	7141	C3	7236	B7	9125	B4	9205	B9		
0205	C9	2119	B2	2127	B4	2133	C5	2211	B7	2238	B7	2251	B6	2263	A6	3121	C3	3128	B4	3140	B4	3262	C6	5131	B6	5231	B7	6118	A3	6123	B3	6140	C4	6233	C9	6260	A6	7145	C4	7237	B8	9201	C6	9206	B9		
0208	A9	2120	C2	2129	C4	2134	C5	2230	B7	2239	B8	2253	C7	3105	C1	3122	B2	3132	B4	3155	C4	3263	B8	5135	B5	5240	A7	6119	A2	6127	A4	6210	B7	6240	B6	6261	A6	7150	C3	7255	C7	9202	C8	9207	B9		



A

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G

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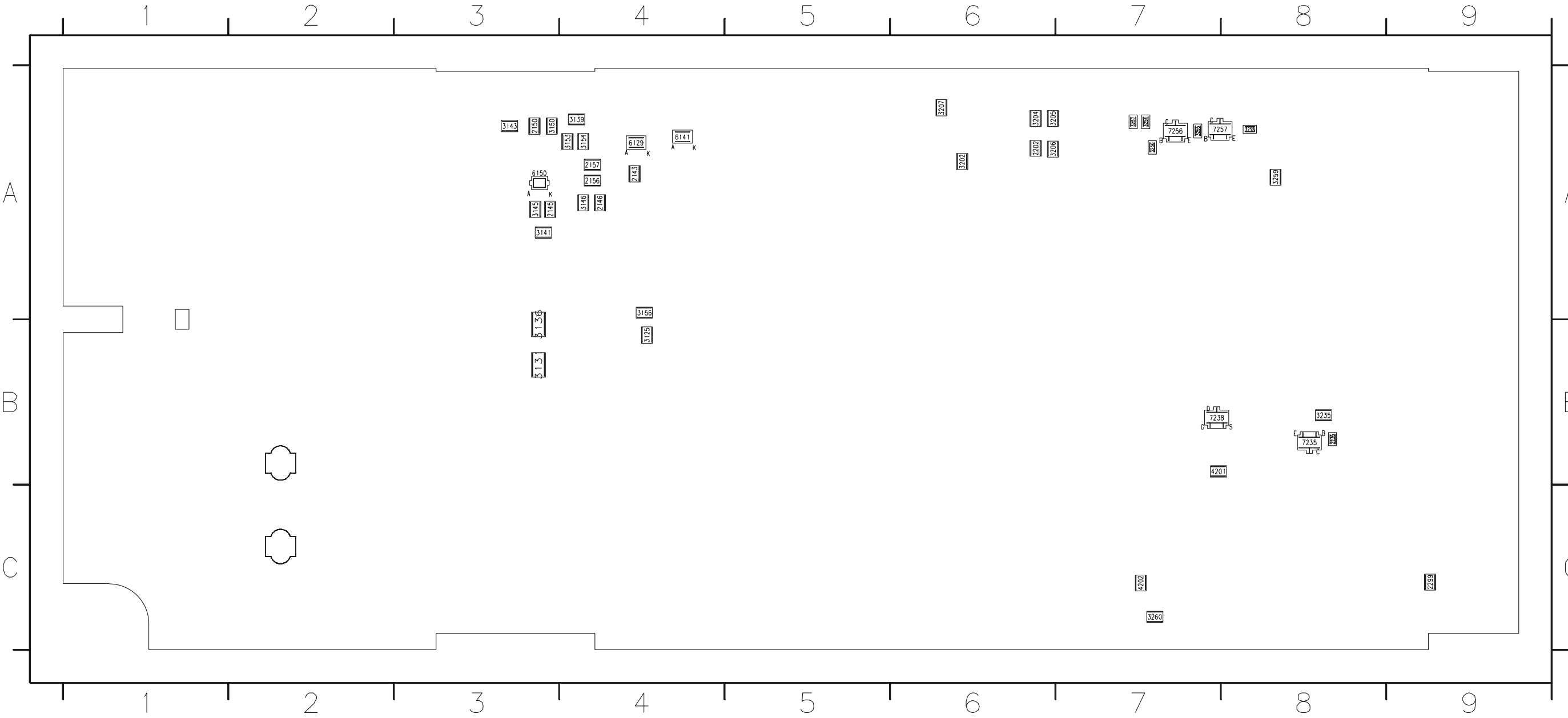
I

J

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

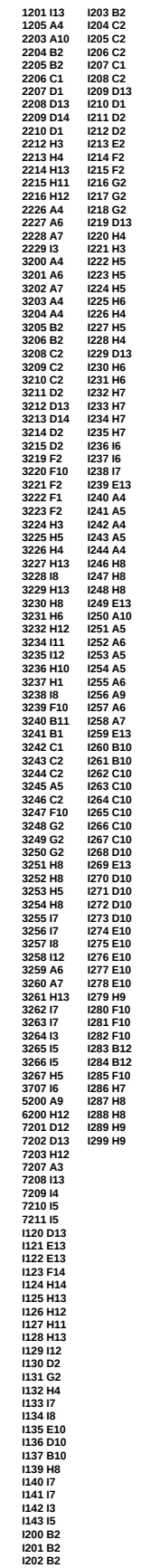
■ PRINTED CIRCUIT BOARD
POWER (Bottom side) (B, G)

2142	A3	2146	A4	2156	A4	2202	A6	2235	B8	3125	B4	3137	A5	3143	A3	3150	A3	3156	A4	3204	A6	3207	A6	3235	B8	3241	B8	3255	A7	3258	A8	4201	B7	6141	A4	7238	B7
2143	A4	2150	A3	2157	A4	2203	A6	2262	B8	3131	B3	3139	A4	3145	A3	3153	A4	3202	A6	3205	A6	3208	A6	3236	B8	3253	A7	3256	A7	3259	A8	4202	C7	6150	A3	7256	A7
2145	A3	2152	A4	2201	A6	2234	B8	2299	C9	3136	B3	3141	A3	3146	A4	3154	A4	3203	A6	3206	A6	3234	B8	3237	B8	3254	A7	3257	A7	3260	C7	6129	A4	7235	B8	7257	A7



The first digit of a component indicates the component type.

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



SCHEMATIC DIAGRAM

MONO 3/6 (Decoder)

MONO BOARD only

The second digit of a component indicates the number of the schematic diagram.

E.g. IC7503 is on the schematic diagram 5.

E.g. R3100 is on the schematic diagram 1.

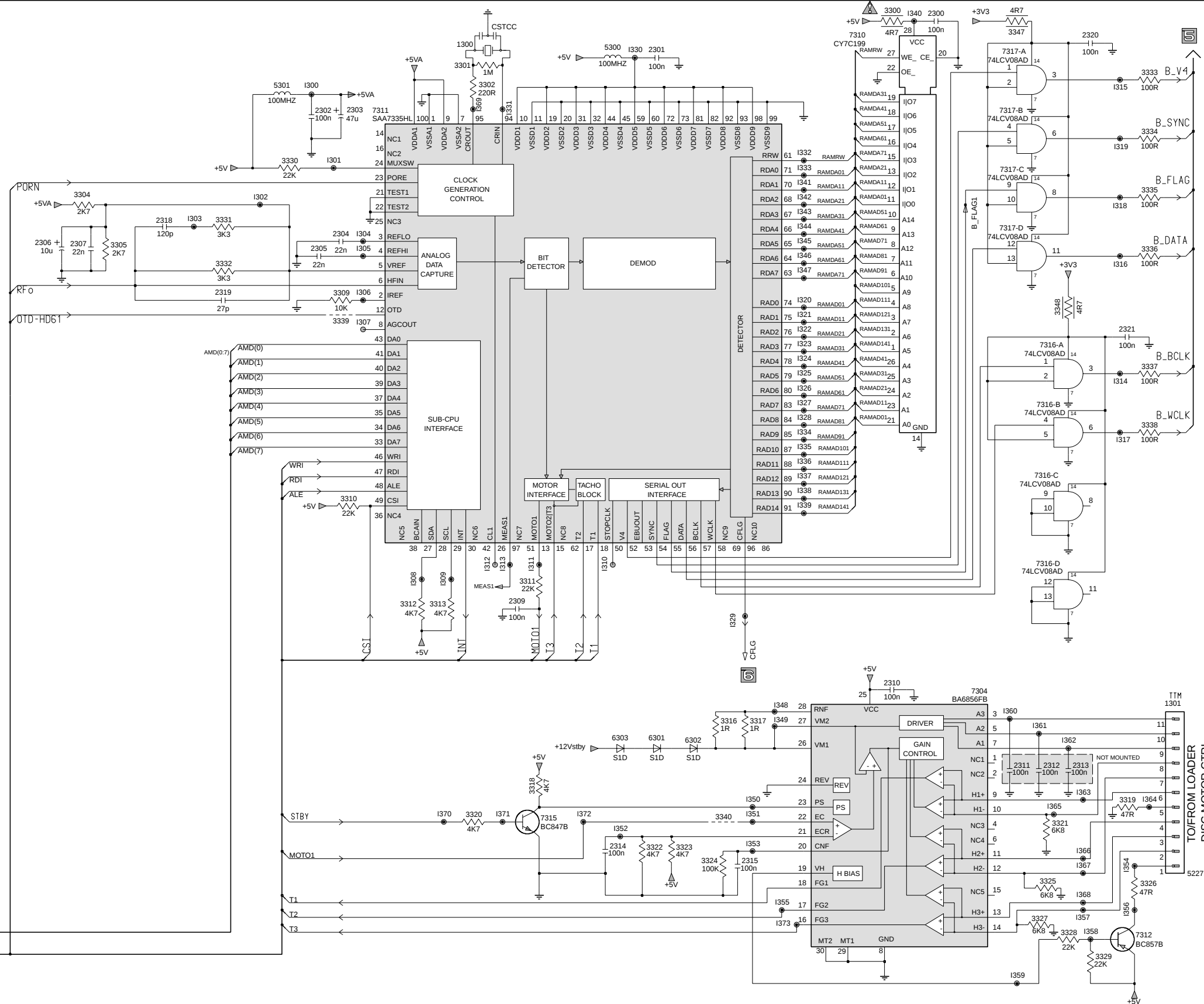
The first digit of a component indicates the component type.

1XXX : Connector 4XXX : SMD jumper 7XXX : Transistor, FET, IC

2XXX : Capacitor 5XXX : Coil 9XXX : Wire jumper

3XXX : Resistor 6XXX : Diode

3



ADDRESS-DATA BUS
CONTROL BUS

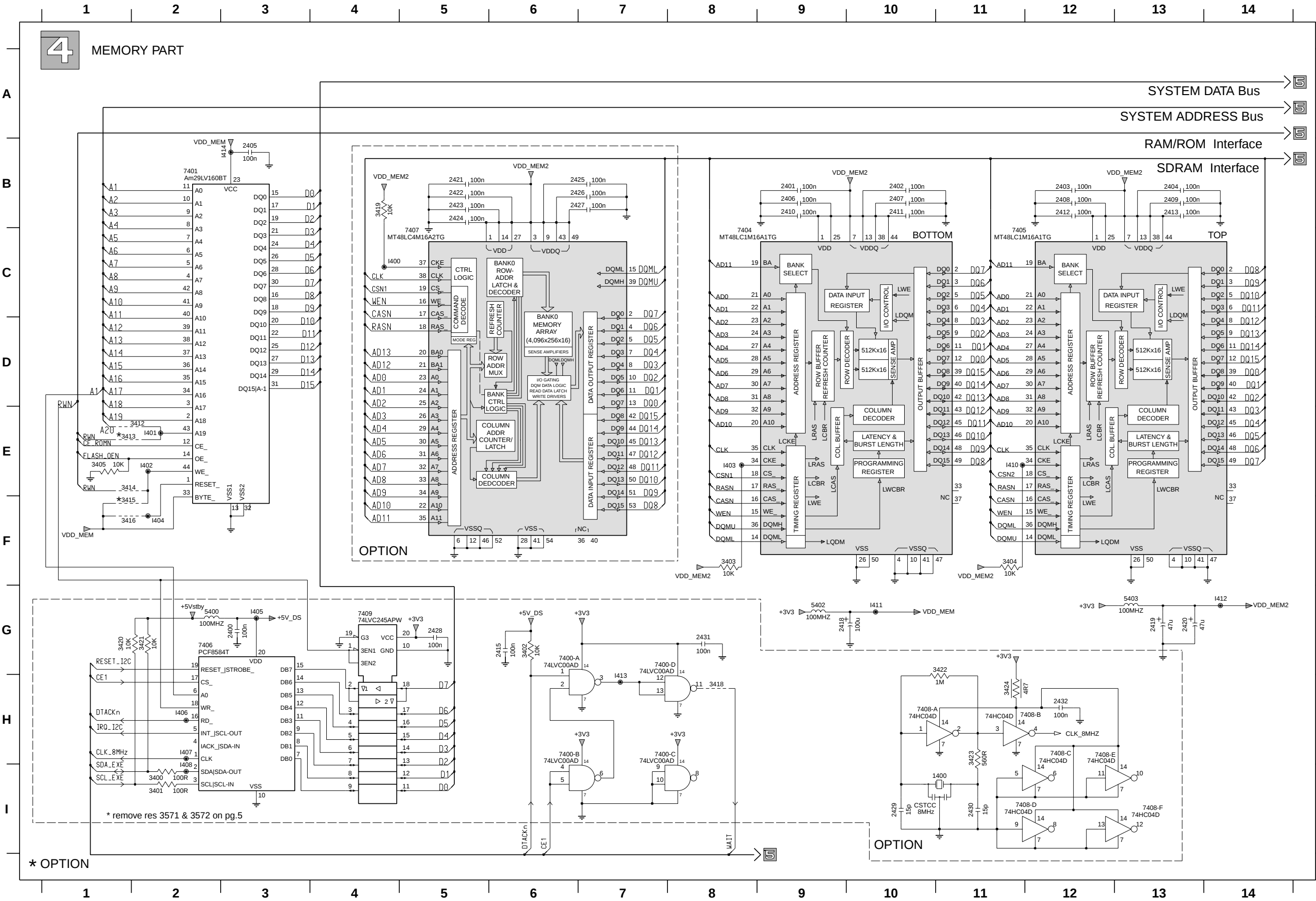
* OPTION

1300 A6
1301 G13
2300 A11
2301 A8
2302 A5
2303 A5
2304 B5
2305 C5
2306 B2
2307 B3
2309 F7
2310 G10
2311 H12
2312 H12
2313 H12
2314 H8
2315 H9
2318 B3
2319 C4
2320 A12
2321 C13
3000 A10
3001 A6
3002 A7
3004 B3
3005 B3
3009 C5
3310 E5
3311 F7
3312 F6
3313 F6
3316 G9
3317 G9
3318 H7
3319 H13
3320 H6
3321 H12
3322 H8
3323 H8
3324 H9
3325 I12
3326 I13
3327 I12
3328 I12
3329 I13
3330 B5
3331 B4
3332 C4
3333 A13
3334 A13
3335 B13
3336 C13
3337 D13
3338 D13
3339 C5
3340 H8
3347 A12
3348 C12
5300 A8
5301 A5
6301 G8
6302 G9
6303 G8
7304 G11
7310 A10
7311 A5
7312 I13
7315 H7
7316-A C12
7316-B D12
7316-C E12
7316-D F12
7317-A A12
7317-B A12
7317-C B12
7317-D B12
I300 A5
I301 B5
I302 B4
I303 B4
I304 B5
I305 C5
I306 C5
I307 C5
I308 F6
I309 F6
I310 F8
I311 F7
I312 F7
I313 F7
I314 D13
I315 A13
I316 C13
I317 D13
I318 B13
I319 A13
I320 C10
I321 C10
I322 C10
I323 C10
I324 D10
I325 D10
I326 D10
I327 D10
I328 D10
I329 F9
I330 A8
I331 A7
I332 B10
I333 B10
I334 D10
I335 D10
I336 E10
I337 E10
I338 E10
I339 E10
I340 A11

MONO BOARD only
The second digit of a component indicates the number of the schematic diagram.
E.g. IC7503 is on the schematic diagram 5.
E.g. R3100 is on the schematic diagram 1.

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

SCHEMATIC DIAGRAM
MONO 4/6 (Memory)

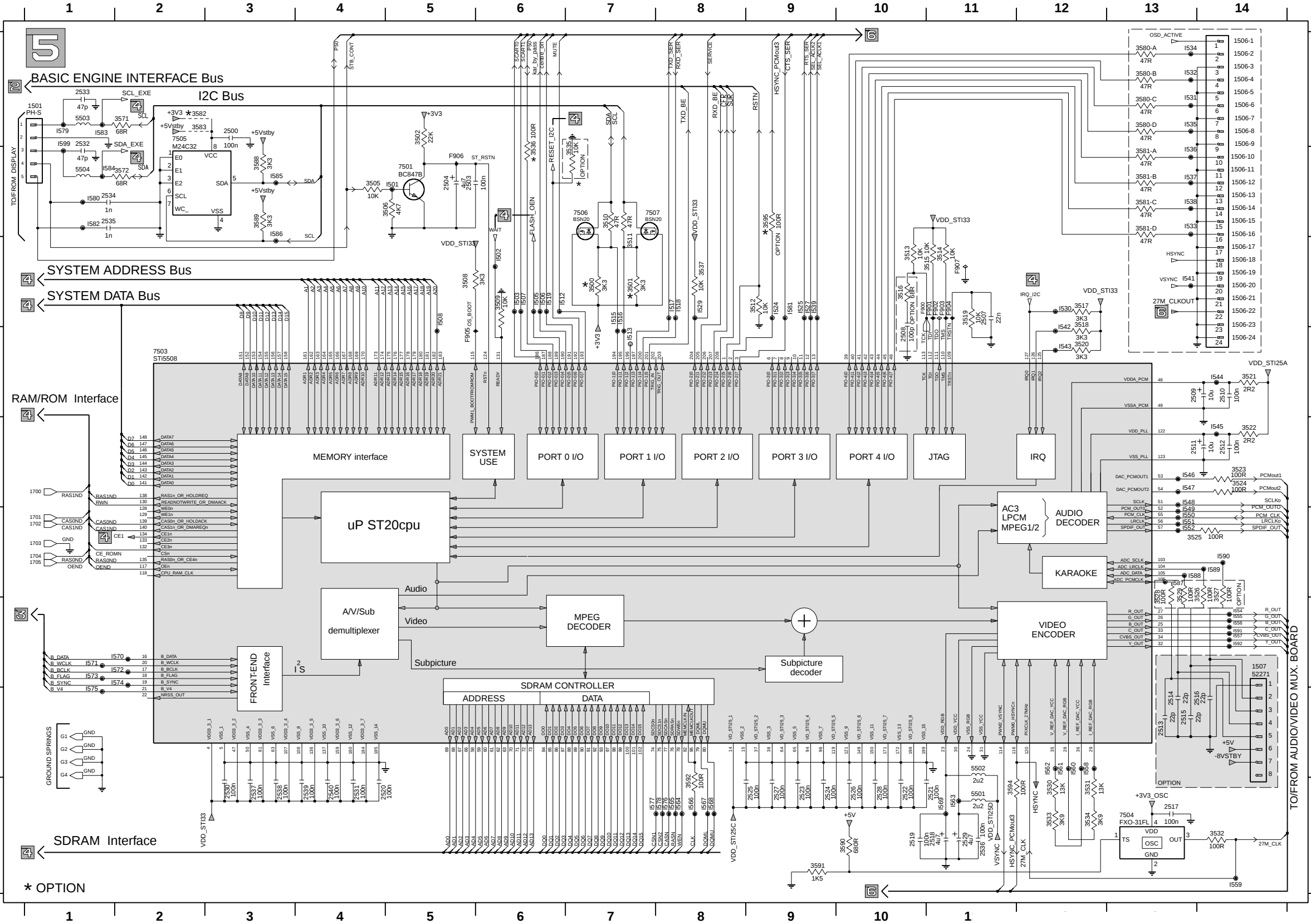


1400 I11
2400 G3
2401 B9
2402 B10
2403 B12
2404 B13
2405 B3
2406 B9
2407 B10
2408 B12
2409 B13
2410 B9
2411 B10
2412 B12
2413 B13
2415 G6
2418 G9
2419 G13
2420 G13
2421 B5
2422 B5
2423 B5
2424 B5
2425 B6
2426 B6
2427 B6
2428 G5
2429 I10
2430 I11
2431 G8
2432 H12
3400 I2
3401 I2
3402 G6
3403 F8
3404 F11
3405 E1
3412 E2
3413 E1
3414 E1
3415 F1
3416 F1
3418 H9
3419 B4
3420 G1
3421 G2
3422 G11
3423 H11
3424 H11
5400 G2
5402 G9
5403 G13
7400-A G6
7400-B H6
7400-C H7
7400-D G7
7401 B2
7404 C8
7405 C12
7406 C2
7407 C5
7408-A H10
7408-B H11
7408-C H12
7408-D I11
7408-E H12
7408-F I13
7409 G4
I400 C4
I401 E2
I402 E2
I403 E8
I404 F2
I405 G3
I406 H2
I407 H2
I408 I2
I410 E11
I411 G10
I412 G14
I413 H7
I414 B3

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

SCHEMATIC DIAGRAM
MONO 5/6 (STI 5508)

MONO BOARD only
The second digit of a component indicates the number of the schematic diagram.
E.g. IC7503 is on the schematic diagram 5.
E.g. R3100 is on the schematic diagram 1.



G1 H1	3581-C B13
G2 H1	3581-D B13
G3 H1	3582 A2
G4 H1	3583 A2
1501 A1	3588 B3
1506-1 A14	3589 B3
1506-10 B14	3590 I10
1506-11 B14	3591 I9
1506-12 B14	3592 I8
1506-13 B14	3594 I11
1506-14 B14	3595 B9
1506-15 B14	5501 I11
1506-16 B14	5502 H11
1506-17 C14	5503 A1
1506-18 C14	5504 B1
1506-19 C14	7501 B5
1506-2 A14	7503 D2
1506-20 C14	7504 I13
1506-21 C14	7505 A2
1506-22 C14	7506 B7
1506-23 C14	7507 B8
1506-24 D14	F900 C10
1506-3 A14	F901 C11
1506-4 A14	F902 C11
1506-5 A14	F903 C11
1506-6 A14	F904 C11
1506-7 A14	F905 D5
1506-8 A14	F906 B5
1506-9 A14	F907 C11
1507 G14	I501 B5
1700 E1	I502 C6
1701 F1	I503 C6
1702 F1	I505 C6
1703 F1	I506 C6
1704 F1	I507 C6
1705 F1	I508 C5
2500 A3	I512 C7
2503 B5	I513 D7
2504 B5	I515 C7
2507 C11	I516 C7
2508 D10	I517 C9
2509 D13	I518 C8
2510 D14	I519 C6
2511 E13	I524 C9
2512 E14	I525 C9
2513 H13	I527 C9
2514 H13	I529 C8
2515 H13	I530 C12
2516 H14	I531 A13
2517 H13	I532 A13
2518 I11	I533 B13
2519 I10	I534 A13
2520 I5	I535 A13
2521 I11	I536 B13
2522 I10	I537 B13
2523 I9	I538 B13
2524 I9	I539 C9
2525 I9	I541 C13
2526 I10	I542 C12
2527 I9	I543 D12
2528 I10	I544 D14
2529 I11	I545 E14
2530 I3	I546 E13
2531 I4	I547 E13
2532 A1	I548 E13
2533 A1	I549 E13
2534 B1	I550 F13
2535 B1	I551 F13
2536 I11	I552 F13
2537 I3	I554 G14
2538 I3	I555 G14
2539 I4	I556 G14
2540 I4	I557 G14
3500 C7	I558 H12
3501 C7	I559 I14
3502 A5	I560 H12
3505 B4	I561 H12
3506 B5	I562 H12
3508 C5	I563 I11
3509 C6	I564 I8
3510 B7	I565 I8
3511 C7	I566 I8
3512 C9	I567 I8
3513 C10	I568 I8
3514 C11	I569 I11
3515 C11	I570 G2
3516 C10	I571 G1
3517 C12	I572 G2
3518 D12	I573 G1
3519 C11	I574 G2
3520 D12	I575 H1
3521 D14	I576 I8
3522 E14	I577 I7
3523 E14	I578 I8
3524 E14	I579 A1
3525 F13	I580 B1
3526 F14	I581 C9
3527 F14	I582 B1
3528 F13	I583 A1
3529 F13	I584 B1
3530 I12	I585 B3
3531 I12	I586 B3
3532 I14	I587 F13
3533 I12	I588 F13
3534 I12	I589 F14
3535 B7	I590 F14
3536 B6	I591 G14
3537 C8	I592 G14
3571 A2	I599 A1
3572 B2	
3580-A A13	
3580-B A13	
3580-C A13	
3580-D A13	
3581-A B13	
3581-B B13	

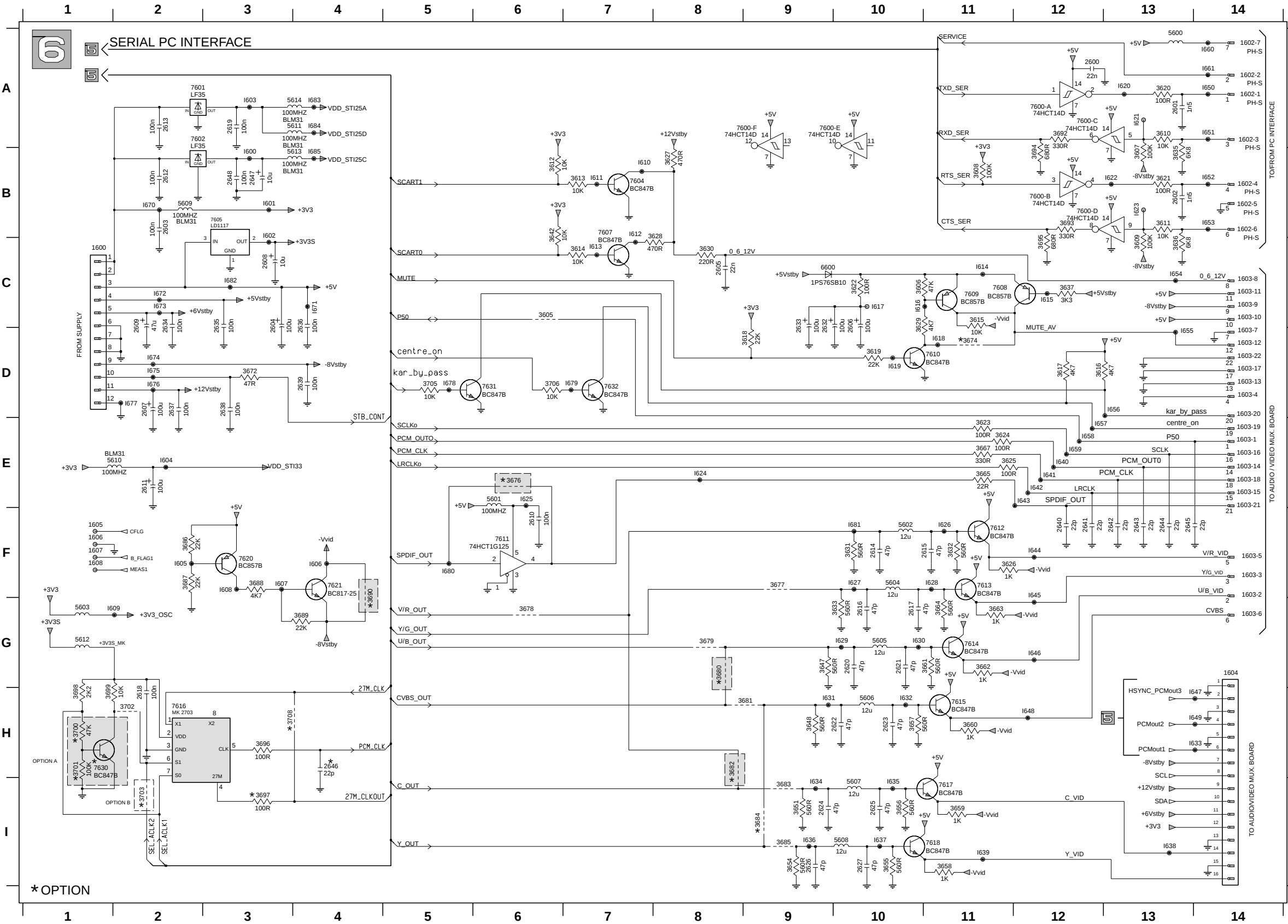
Project	Loc. 7503	Remarks	Digital YUV Option	Karaoke Option	PLL_CLK chip Option	PLL Rework Issue
SD3.0	Sti5508/Cut 1.6	Replace 5505	Insert Conn 1506 & R-pk 3580/1	Insert Conn 1507, res 3526-9 & caps 2513-6	As is	Remove 3521; replace 2510 w. jumper
SD3.0	Sti5508/Cut 2.0	Replace 5505	Insert Conn 1506, R-pk 3580/1 & R3707	Insert Conn 1507, res 3526-9 & caps 2513-6	Don't Insert 7616, 5612, 3696-99, 3703, 2618 & 2646	No Rework

MONO BOARD only
The second digit of a component indicates the number of the schematic diagram.
E.g. IC7503 is on the schematic diagram 5.
E.g. R3100 is on the schematic diagram 1.

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

SCHEMATIC DIAGRAM

MONO 6/6 (Service interface and Back-end)



1600 C1	3654 I9	1628 F11
1602-1 A14	3655 I10	1629 G10
1602-2 A14	3656 I10	1630 G10
1602-3 A14	3657 H10	1631 H9
1602-4 B14	3658 I11	1632 H10
1602-5 B14	3659 I11	1633 H14
1602-6 B14	3660 H11	1634 I9
1602-7 A14	3661 G11	1635 I10
1603-1 E14	3662 G11	1636 I9
1603-10 C14	3663 G11	1637 I10
1603-11 C14	3664 G11	1638 I13
1603-12 D14	3665 E11	1639 I11
1603-13 D14	3667 E11	1640 E12
1603-14 E14	3672 D3	1641 E12
1603-15 E14	3674 D11	1642 E12
1603-16 E14	3675 E6	1643 E12
1603-17 D14	3677 F9	1644 F12
1603-18 E14	3678 G6	1645 F12
1603-19 E14	3679 G8	1646 G12
1603-2 F14	3680 G8	1647 H14
1603-20 D14	3681 H9	1648 H12
1603-21 E14	3682 H8	1649 H14
1603-22 D14	3683 I9	1650 A14
1603-3 F14	3684 I9	1651 A14
1603-4 D14	3685 I9	1652 B14
1603-5 F14	3686 F2	1653 B14
1603-6 G14	3687 F2	1654 C13
1603-7 D14	3688 F3	1655 D13
1603-8 C14	3689 G4	1656 D13
1603-9 C14	3690 F4	1657 E12
1604 G14	3692 A12	1658 E12
1605 F1	3693 B12	1659 E12
1606 F1	3694 B12	1660 A14
1607 F1	3695 C12	1661 A14
1608 F1	3696 H3	1670 B2
2600 A12	3697 I3	1671 C4
2601 A13	3698 H1	1672 C2
2602 H13	3699 H1	1673 C2
2603 B2	3700 H1	1674 D2
2604 C3	3701 H1	1675 D2
2605 C8	3702 H2	1676 D2
2606 C10	3703 I2	1677 D2
2607 D2	3705 D5	1678 D5
2608 C3	3706 D6	1679 D7
2609 C2	3708 H3	1680 F5
2610 F6	5600 A13	1681 F10
2611 E2	5601 E6	1682 C3
2612 B2	5602 F10	1683 A4
2613 A2	5603 G1	1684 A4
2614 F10	5604 F10	1685 B4
2615 F11	5605 G10	
2616 G10	5606 H10	
2617 G10	5607 I10	
2618 H2	5608 I10	
2619 A3	5609 B2	
2620 G10	5610 E2	
2621 G10	5611 A4	
2622 H10	5612 G1	
2623 H10	5613 B4	
2624 I9	5614 A4	
2625 I10	5600 C9	
2626 I9	7600-A A12	
2627 I10	7600-B B12	
2632 C9	7600-C A12	
2633 C9	7600-D B12	
2634 C2	7600-E A10	
2635 C3	7600-F A9	
2636 C4	7601 A2	
2637 D2	7602 A2	
2638 D3	7604 B7	
2639 D4	7605 B3	
2640 F12	7607 B7	
2641 F12	7608 C11	
2642 F13	7609 C11	
2643 F13	7610 D11	
2644 F13	7611 F6	
2645 F13	7612 F11	
2646 H4	7613 F11	
2647 B3	7614 G11	
2648 B3	7615 H11	
3605 C6	7616 H2	
3606 C10	7617 I11	
3607 B13	7618 I11	
3608 B11	7620 F3	
3609 C13	7621 F4	
3610 A13	7630 H1	
3611 B13	7631 D6	
3612 B6	7632 D7	
3613 B7	1600 B3	
3614 C7	1601 B3	
3615 C11	1602 B3	
3616 D12	1603 A3	
3617 D12	1604 E2	
3618 D9	1605 F2	
3619 D10	1606 F4	
3620 A13	1607 F3	
3621 B13	1608 F3	
3622 C10	1609 G2	
3623 E11	1610 B7	
3624 E11	1611 B7	
3625 E11	1612 B7	
3626 F11	1613 C7	
3627 B8	1614 C11	
3628 C8	1615 C12	
3629 C10	1616 C10	
3630 C8	1617 C10	
3631 D10	1618 D11	
3632 F11	1619 D10	
3633 G10	1620 A13	
3635 B13	1621 A13	
3636 C13	1622 B13	
3637 C12	1623 B13	
3642 B6	1624 E8	
3647 G9	1625 E9	
3648 H9	1626 F11	
3651 I9	1627 F10	

The components in the "Option A" block ie. x'tor 7630, res. 3700, 3701 are not required anymore.
It was originally used in the Gapfiller project.

■ SCHEMATIC DIAGRAM

AV (U, C, A, R, T, P) 1/2

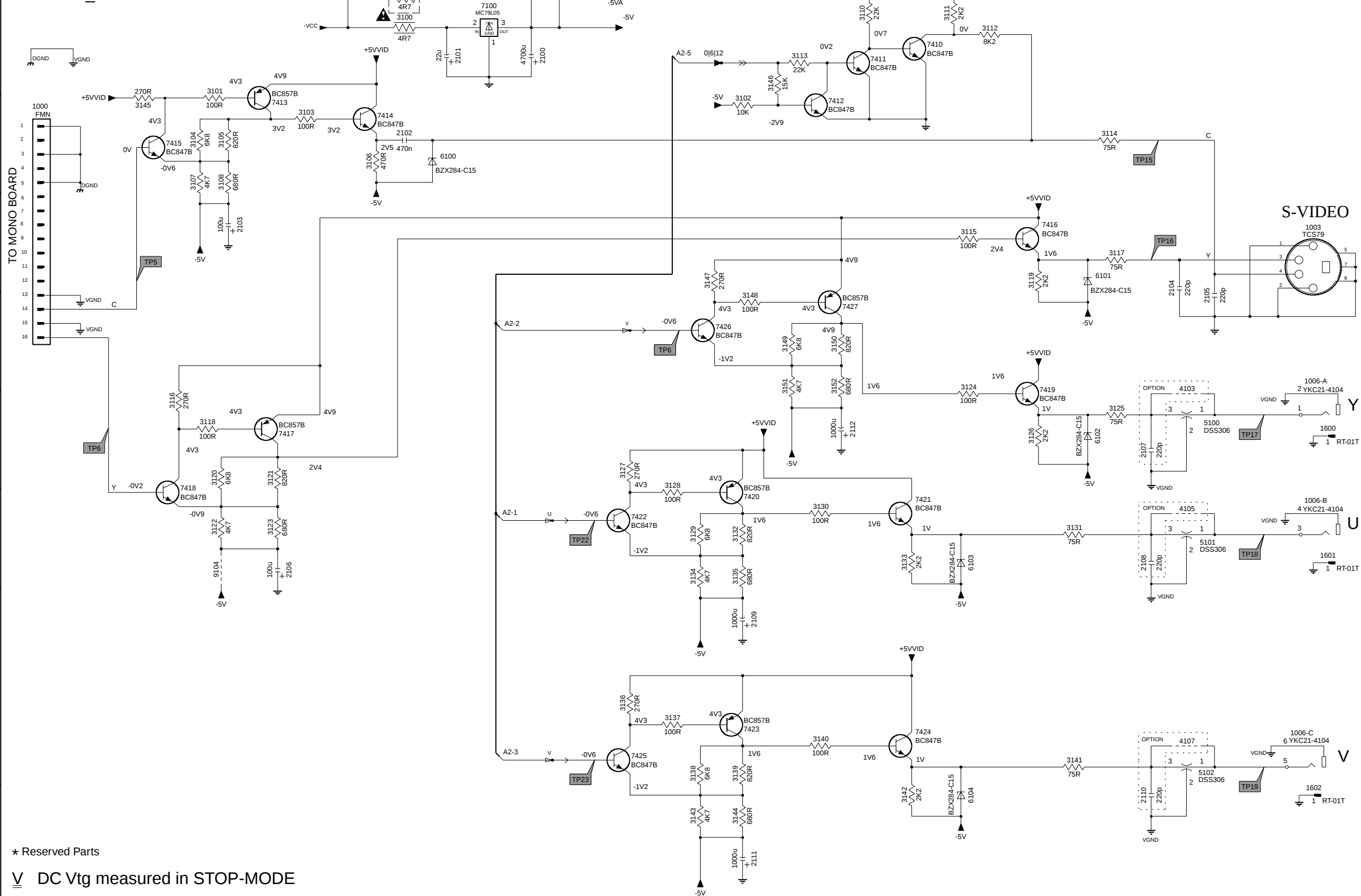
The first digit of a component indicates the component type.

1XXX : Connector 4XXX : SMD jumper 7XXX : Transistor, FET, IC

2XXX : Capacitor 5XXX : Coil 9XXX : Wire jumper

3XXX : Resistor 6XXX : Diode

A1 AV_VIDEO



* Reserved Parts

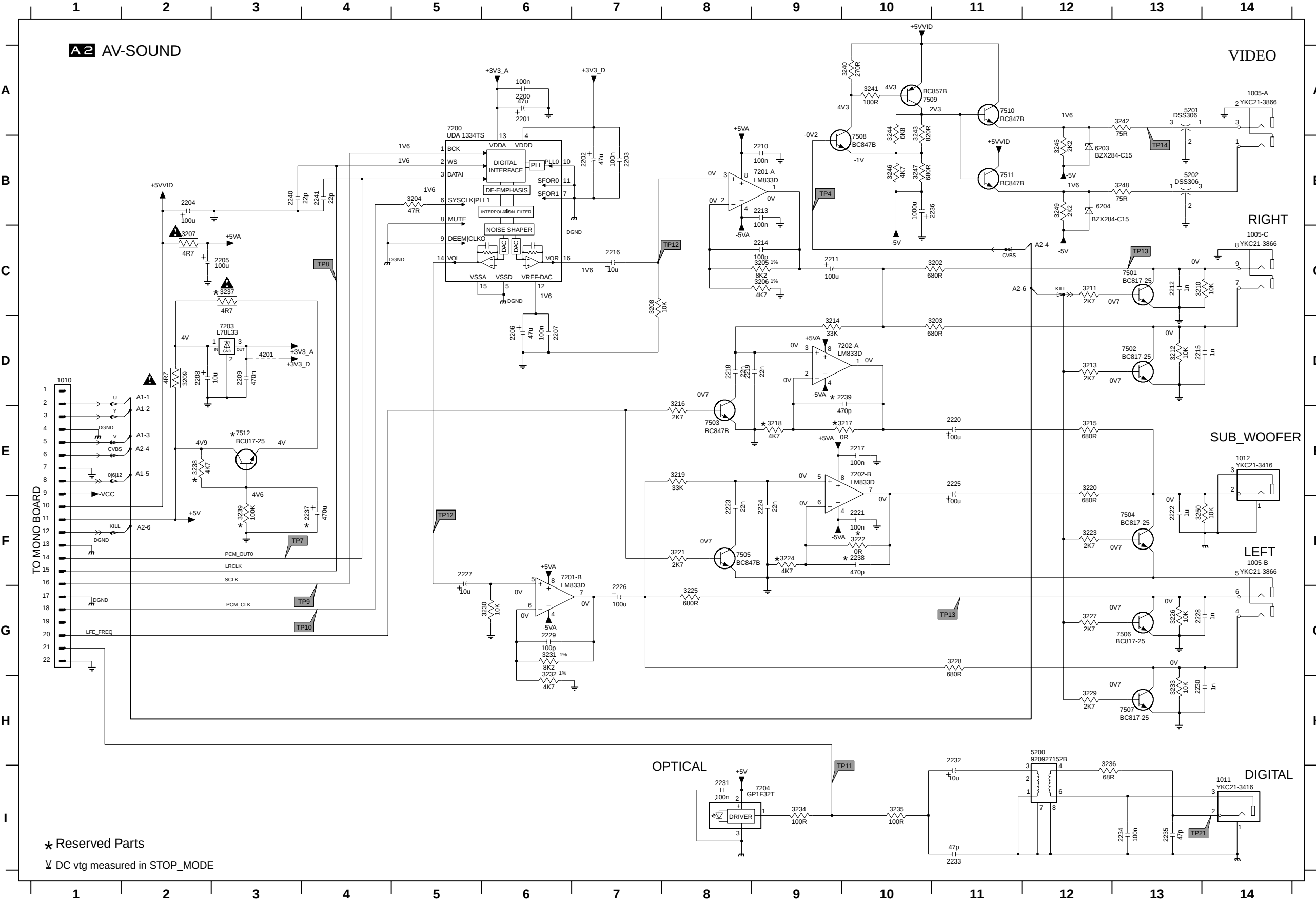
V DC Vtg measured in STOP-MODE

1000 B1
1003 C13
1006-A D13
1006-B F13
1006-C H13
1600 E13
1601 F13
1602 I13
2100 A5
2101 A5
2102 B4
2103 C2
2104 C12
2105 D12
2106 F3
2107 E12
2108 F12
2109 G8
2110 I12
2111 I8
2112 E9
3100 A4
3101 A2
3102 B8
3103 B3
3104 B2
3105 B2
3106 B4
3107 B2
3108 B2
3110 A9
3111 A10
3112 A10
3113 A8
3114 B11
3115 C10
3116 E2
3117 C11
3118 E2
3119 C10
3120 E2
3121 E3
3122 F2
3123 F3
3124 D10
3125 E11
3126 E10
3127 E6
3128 E7
3129 F7
3130 F8
3131 F11
3132 F7
3133 F9
3134 F7
3135 F7
3136 H6
3137 H7
3138 H7
3139 H7
3140 H8
3141 H11
3142 I9
3143 I7
3144 I7
3145 B1
3146 A8
3147 C7
3148 D8
3149 D8
3150 D8
3151 D8
3152 D8
3153 A6
3154 A6
4100 A4
4103 E12
4105 F12
4107 H12
5100 E12
5101 F12
5102 H12
6100 B5
6101 C11
6102 E11
6103 F10
6104 I10
7100 A5
7410 A9
7411 A9
7412 B8
7413 B3
7414 B4
7415 B2
7416 C11
7417 E3
7418 F2
7419 E11
7420 F8
7421 F9
7422 F6
7423 H8
7424 H9
7425 H6
7426 D7
7427 D9
9104 F2

SCHEMATIC DIAGRAM

AV (U, C, A, R, T, P) 2/2

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



- 1005-A A14
- 1005-B F14
- 1005-C C14
- 1010 D1
- 1011 I14
- 1012 E14
- 2200 A6
- 2201 A6
- 2202 B7
- 2203 B7
- 2204 B2
- 2205 C3
- 2206 D6
- 2207 D6
- 2208 D2
- 2209 D3
- 2210 B9
- 2211 C9
- 2212 C13
- 2213 B9
- 2214 C9
- 2215 D13
- 2216 C7
- 2217 E10
- 2218 D8
- 2219 D8
- 2220 E11
- 2221 F10
- 2222 F13
- 2223 F8
- 2224 F9
- 2225 E11
- 2226 G7
- 2227 F5
- 2228 G13
- 2229 G6
- 2230 H13
- 2231 I8
- 2232 H11
- 2233 I11
- 2234 I13
- 2235 I13
- 2236 B10
- 2237 F4
- 2238 F10
- 2239 D10
- 2240 B3
- 2241 B4
- 3202 C11
- 3203 D11
- 3204 B5
- 3205 C9
- 3206 C9
- 3207 C2
- 3208 C7
- 3209 D2
- 3210 C13
- 3211 C12
- 3212 D13
- 3213 D12
- 3214 D9
- 3215 E12
- 3216 E8
- 3217 E10
- 3218 E9
- 3219 E8
- 3220 E12
- 3221 F8
- 3222 F10
- 3223 F12
- 3224 F9
- 3225 G8
- 3226 G13
- 3227 G12
- 3228 G11
- 3229 H12
- 3230 G6
- 3231 G6
- 3232 H6
- 3233 H13
- 3234 I9
- 3235 I10
- 3236 I12
- 3237 C3
- 3238 E2
- 3239 F3
- 3240 A10
- 3241 A10
- 3242 A13
- 3243 A10
- 3244 A10
- 3245 B12
- 3246 B10
- 3247 B10
- 3248 B13
- 3249 B12
- 3250 F13
- 4201 D3
- 5200 H12
- 5201 A13
- 5202 B13
- 6203 B12
- 6204 B12
- 7200 A5
- 7201-A B9
- 7201-B F6
- 7202-A D9
- 7202-B E10
- 7203 D3
- 7204 I9
- 7501 C13
- 7502 D13
- 7503 E8
- 7504 F13
- 7505 F8
- 7506 G13
- 7507 H13
- 7508 B10
- 7509 A10
- 7510 A11
- 7511 B11
- 7512 E3

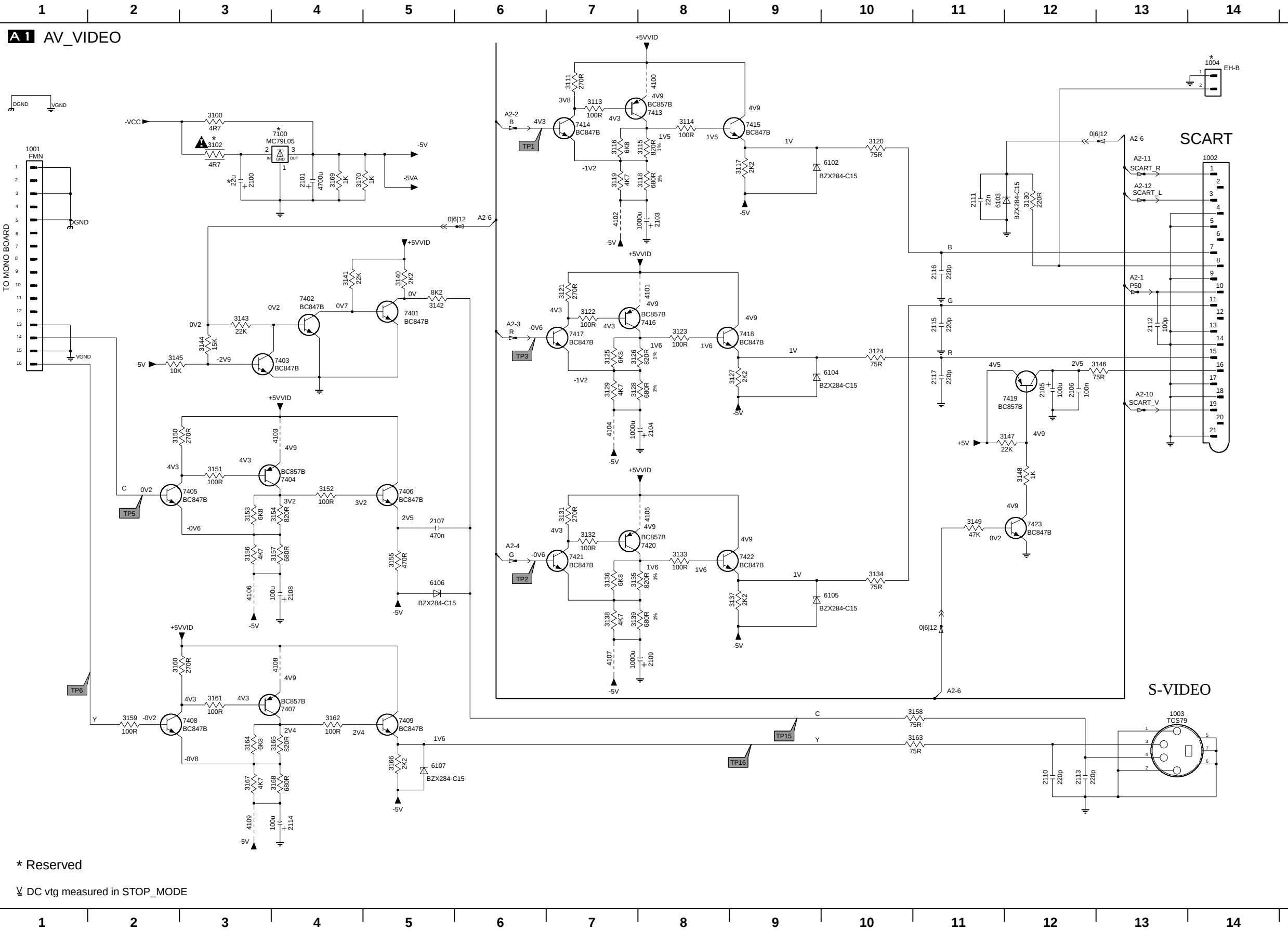
★ Reserved Parts
▽ DC vtg measured in STOP_MODE

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

■ SCHEMATIC DIAGRAM

AV (B, G) 1/2

A1 AV_VIDEO



* Reserved

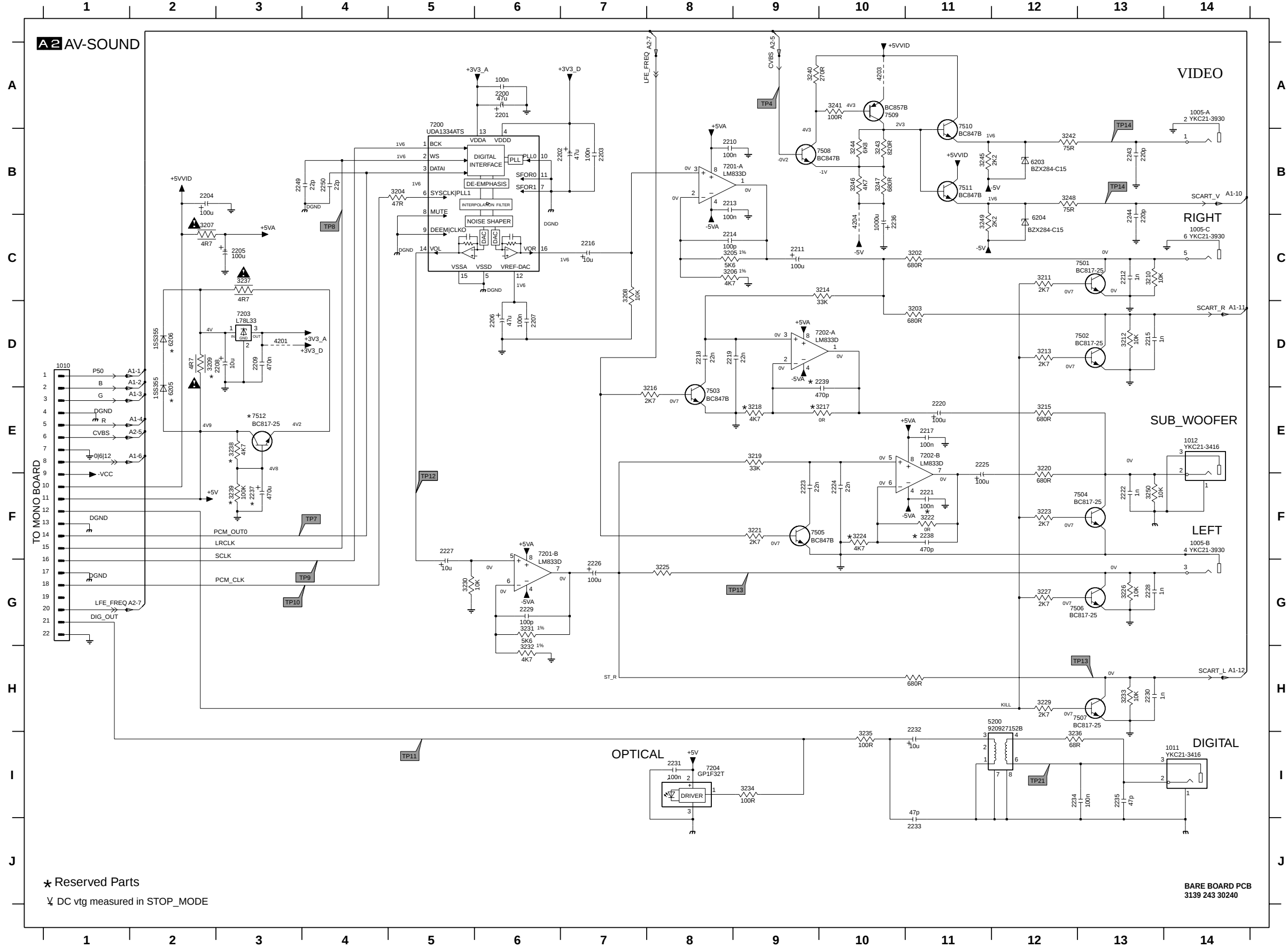
∇ DC vtg measured in STOP_MODE

- 1001 B1
- 1002 B4
- 1003 H13
- 1004 A14
- 2100 B3
- 2101 B4
- 2103 B8
- 2104 E8
- 2105 D12
- 2106 D12
- 2107 F5
- 2108 F4
- 2109 G8
- 2110 H12
- 2111 B11
- 2112 C13
- 2113 H12
- 2114 I4
- 2115 C11
- 2116 C11
- 2117 D11
- 3100 A3
- 3102 B3
- 3111 A7
- 3113 A7
- 3114 A8
- 3115 B8
- 3116 B7
- 3117 B9
- 3118 B8
- 3119 B7
- 3120 A10
- 3121 C7
- 3122 C7
- 3123 D8
- 3124 D10
- 3125 D7
- 3126 D7
- 3127 D9
- 3128 D7
- 3129 D7
- 3130 B12
- 3131 F7
- 3132 F7
- 3133 F8
- 3134 F10
- 3135 F7
- 3136 F7
- 3137 F9
- 3138 G7
- 3139 G7
- 3140 C5
- 3141 C4
- 3142 C5
- 3143 C3
- 3144 D3
- 3145 D2
- 3146 D13
- 3147 E12
- 3148 E12
- 3149 F11
- 3150 E2
- 3151 E3
- 3152 E4
- 3153 F3
- 3154 F4
- 3155 F5
- 3156 F3
- 3157 F4
- 3158 H11
- 3159 H2
- 3160 G2
- 3161 H3
- 3162 H4
- 3163 H11
- 3164 H3
- 3165 H4
- 3166 H5
- 3167 H3
- 3168 H4
- 3169 B4
- 3170 B4
- 4100 A8
- 4101 C8
- 4102 B7
- 4103 E4
- 4104 E7
- 4105 F8
- 4106 F3
- 4107 G7
- 4108 G4
- 4109 I3
- 6102 B10
- 6103 B11
- 6104 D10
- 6105 F10
- 6106 F5
- 6107 H5
- 7100 A4
- 7401 C5
- 7402 C4
- 7403 D4
- 7404 E4
- 7405 E3
- 7406 E5
- 7407 H4
- 7408 H3
- 7409 H5
- 7413 A8
- 7414 A7
- 7415 A9
- 7416 C8
- 7417 D7
- 7418 D9
- 7419 D11
- 7420 F8
- 7421 F7
- 7422 F9
- 7423 F12

SCHEMATIC DIAGRAM

AV (B, G) 2/2

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



- 1005-A A14
- 1005-B F14
- 1005-C C14
- 1010 D1
- 1011 I14
- 1012 E14
- 1013 B1
- 2200 A6
- 2201 A6
- 2202 B7
- 2203 B7
- 2204 B2
- 2205 C3
- 2206 D6
- 2207 D6
- 2208 D3
- 2209 D3
- 2210 B8
- 2211 C9
- 2212 C13
- 2213 B8
- 2214 C8
- 2215 D13
- 2216 C7
- 2217 E11
- 2218 D8
- 2219 D8
- 2220 E11
- 2221 F11
- 2222 F13
- 2223 F9
- 2224 F10
- 2225 E11
- 2226 G7
- 2227 F5
- 2228 G13
- 2229 G6
- 2230 H13
- 2231 I8
- 2232 H11
- 2233 J11
- 2234 I12
- 2235 I13
- 2236 C10
- 2237 F3
- 2238 F11
- 2239 D10
- 2240 G10
- 2241 G10
- 2242 C1
- 2243 B13
- 2244 C13
- 2245 B1
- 2246 B1
- 2247 C1
- 2248 C1
- 2249 B3
- 2250 B4
- 3202 C11
- 3203 D11
- 3204 B5
- 3205 C8
- 3206 C8
- 3207 C2
- 3208 C7
- 3209 D2
- 3210 C13
- 3211 C12
- 3212 D13
- 3213 D12
- 3214 C10
- 3215 E12
- 3216 E8
- 3217 E10
- 3218 E9
- 3219 E9
- 3220 E12
- 3221 F9
- 3222 F11
- 3223 F12
- 3224 F10
- 3225 G8
- 3226 G13
- 3227 G12
- 3228 H11
- 3229 H12
- 3230 G5
- 3231 G6
- 3232 H6
- 3233 H13
- 3234 I9
- 3235 I10
- 3236 I12
- 3237 C3
- 3238 E3
- 3239 F3
- 3240 A9
- 3241 A10
- 3242 B12
- 3243 B10
- 3244 B10
- 3245 B11
- 3246 B10
- 3247 B10
- 3248 B12
- 3249 C11
- 3250 F13
- 3251 D12
- 3252 G11
- 4201 D3
- 4203 A10
- 4204 C10
- 5200 H11
- 6203 B12
- 6204 C12
- 6205 E2
- 6206 D2
- 7200 A5
- 7201-A B8
- 7201-B F6
- 7202-A D9
- 7202-B E11
- 7203 D3
- 7204 I8
- 7205-A D11

★ Reserved Parts
▽ DC vtg measured in STOP_MODE

BARE BOARD PCB
3139 243 30240

SCHEMATIC DIAGRAM

DISPLAY

The first digit of a component indicates the component type.

1XXX : Connector 4XXX : SMD jumper 7XXX : Transistor, FET, IC

2XXX : Capacitor 5XXX : Coil

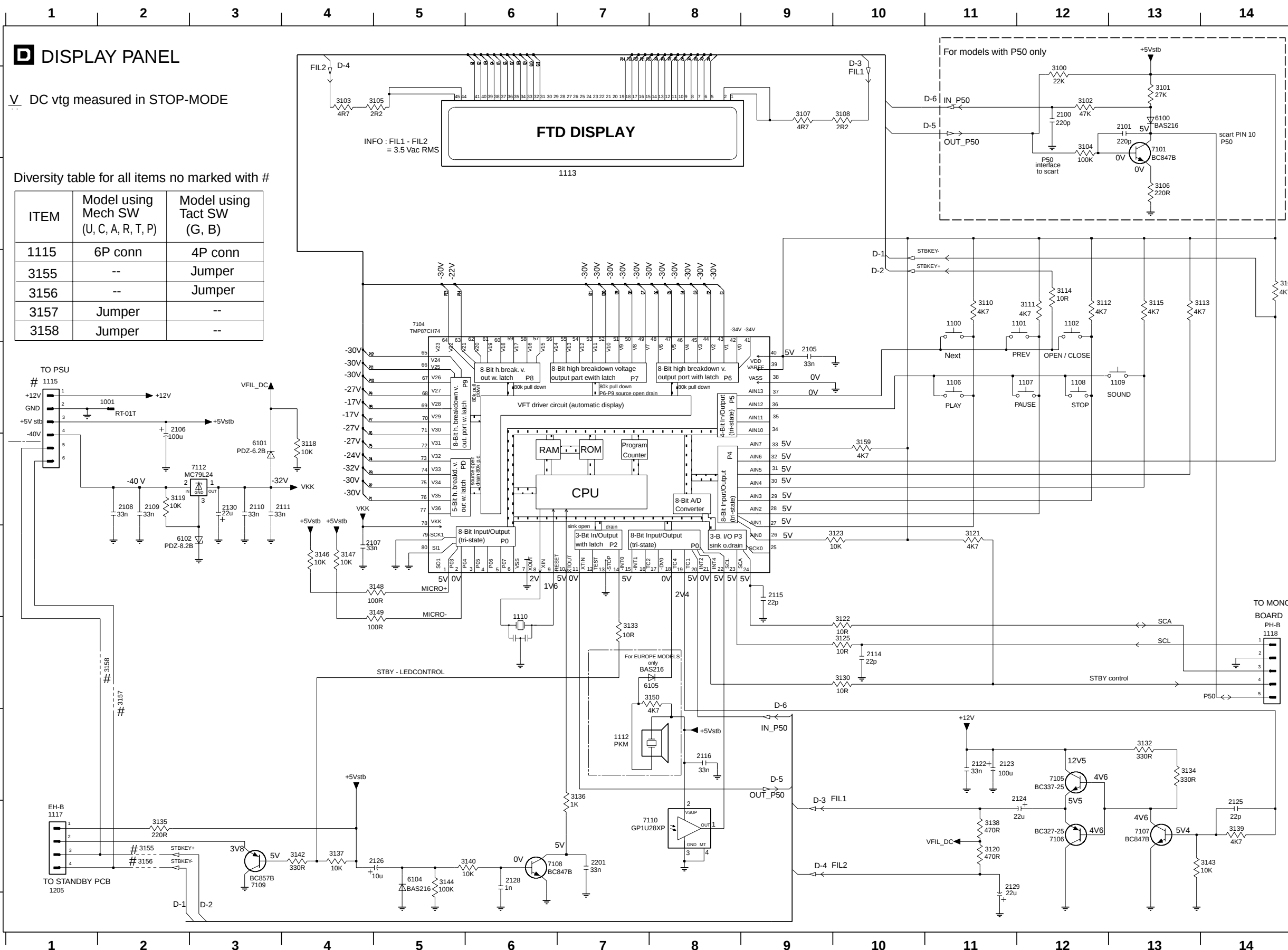
3XXX : Resistor 6XXX : Diode

DISPLAY PANEL

V DC vtg measured in STOP-MODE

Diversity table for all items no marked with #

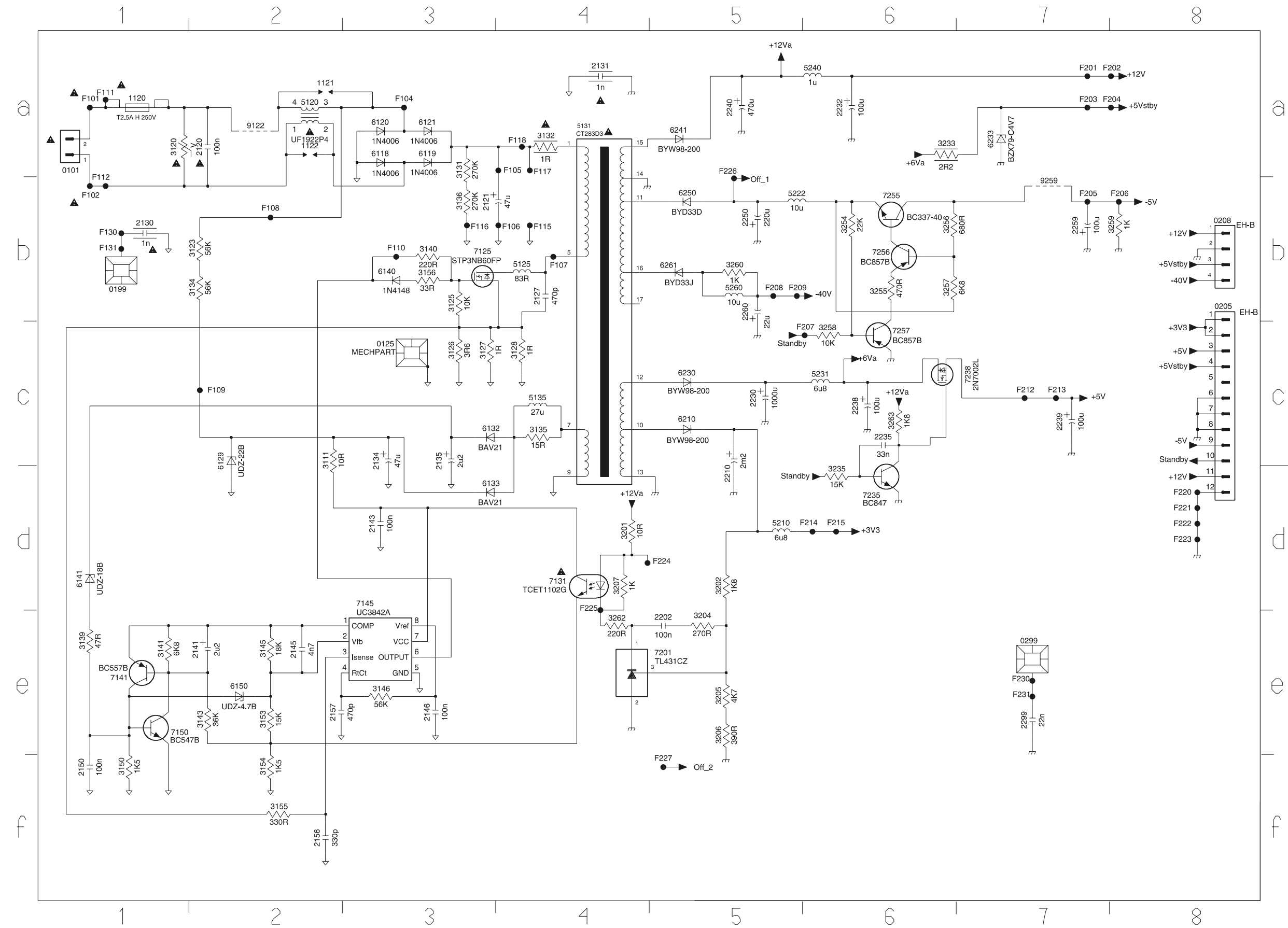
ITEM	Model using Mech SW (U, C, A, R, T, P)	Model using Tact SW (G, B)
1115	6P conn	4P conn
3155	--	Jumper
3156	--	Jumper
3157	Jumper	--
3158	Jumper	--



1001 D2
1100 C11
1101 C12
1102 C12
1106 D11
1107 D12
1108 D12
1109 D13
1110 G6
1112 H7
1113 A7
1115 D1
1117 I1
1118 G14
2100 A12
2101 A13
2105 D9
2106 D2
2107 F4
2108 E2
2109 E2
2110 E3
2111 E4
2114 G10
2115 F9
2116 H8
2122 H11
2123 H11
2124 I12
2125 I14
2126 I5
2128 I6
2129 I11
2130 E3
2201 I7
3100 A12
3101 A13
3102 A12
3103 A4
3104 A2
3105 A5
3106 B13
3107 A9
3108 A10
3109 C14
3110 C11
3111 C12
3112 C12
3113 C14
3114 C12
3115 C13
3116 E4
3119 E2
3120 I11
3121 F11
3122 G10
3123 F10
3125 G10
3130 G10
3132 H13
3133 G7
3134 H13
3135 I2
3136 H7
3137 I4
3138 I11
3139 I14
3140 I6
3142 I4
3143 I14
3144 I5
3146 F4
3147 F4
3148 F5
3149 F5
3150 G8
3155 I2
3156 I2
3157 G2
3158 G2
3159 E10
6100 A13
6101 E3
6102 F2
6104 I5
6105 G8
7101 A13
7104 C5
7105 H12
7106 I12
7107 I13
7108 I6
7109 I3
7110 I8
7112 E3
F102 D5
F103 D5
F108 A5
F109 A9
F119 C7
F120 C7
F121 C7
F122 C8
F123 C8
F124 C8
F125 C5
F129 C7
F130 C7
F131 C7
F132 C8
F133 C8
F137 D5
F138 D5
F139 D5
F140 H8
F141 D5
F142 D9
F143 A12
F144 A12
F145 G8
F146 D3
F147 E3
F148 D1
F149 D5
F150 E5
F151 E5
F152 E9
F153 C5
F154 E5
F155 E9
F156 E5
F157 E9
F158 E5
F159 E9
F160 E9
F161 E9
F162 I6
F163 I7
F164 H6
F165 A13
F166 A13
F167 B13
F168 F1
F169 F1
F183 I1
F184 I1
F186 E9
F203 D2
F205 E1
F208 G13
F209 G13
F210 G13
F228 D1
F233 D9
F234 I1
F235 I1
F241 G14
F242 G14

SCHEMATIC DIAGRAM
POWER (B, G)

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



PARTS LIST

■ ELECTRICAL PARTS

■ WARNING

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

- For the parts No. of the chip carbon resistors, refer to last page of ELECTRICAL PARTS LIST.

ABBREVIATIONS IN THIS LIST ARE AS FOLLOWS:

C.A.EL.CHP	: CHIP ALUMI.ELECTROLYTIC CAP	L.EMIT	: LIGHT EMITTING MODULE
C.CE	: CERAMIC CAP	LED.DSPLY	: LED DISPLAY
C.CE.ARRAY	: CERAMIC CAP ARRAY	LED.INFRD	: LED,INFRARED
C.CE.CHP	: CHIP CERAMIC CAP	MODUL.RF	: MODULATOR,RF
C.CE.ML	: MULTILAYER 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	PIN.TEST	: PIN,TEST POINT
C.CE.SMI	: SEMI CONDUCTIVE CERAMIC CAP	PLST.RIVET	: PLASTIC RIVET
C.EL	: 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 PAPER CAP	R.CAR.FP	: FLAME PROOF CARBON RESISTOR
C.MYLAR	: MYLAR FILM CAP	R.FUS	: FUSABLE RESISTOR
C.MYLAR.ML	: MULTILAYER MYLAR FILM CAP	R.MTL.CHP	: CHIP METAL FILM RESISTOR
C.PAPER	: PAPER CAPACITOR	R.MTL.FLM	: METAL FILM RESISTOR
C.PLS	: POLYSTYRENE FILM CAP	R.MTL.OXD	: METAL OXIDE FILM RESISTOR
C.POL	: POLYESTER FILM CAP	R.MTL.PLAT	: METAL PLATE RESISTOR
C.POLY	: POLYETHYLENE FILM CAP	RSNR.CE	: CERAMIC RESONATOR
C.PP	: POLYPROPYLENE FILM CAP	RSNR.CRYS	: CRYSTAL RESONATOR
C.TNTL	: TANTALUM CAP	R.TW.CEM	: TWIN CEMENT FIXED RESISTOR
C.TNTL.CHP	: CHIP TANTALUM CAP	R.WW	: WIRE WOUND RESISTOR
C.TRIM	: TRIMMER CAP	SCR.BND.HD	: BIND HEAD B-TITE SCREW
CN	: CONNECTOR	SCR.BW.HD	: BW HEAD TAPPING SCREW
CN.BS.PIN	: CONNECTOR,BASE PIN	SCR.CUP	: CUP TITE SCREW
CN.CANNON	: CONNECTOR,CANNON	SCR.TERM	: SCREW TERMINAL
CN.DIN	: CONNECTOR,DIN	SCR.TR	: SCREW,TRANSISTOR
CN.FLAT	: CONNECTOR,FLAT CABLE	SUPRT.PCB	: SUPPORT,P.C.B.
CN.POST	: CONNECTOR,BASE POST	SURG.PRTCT	: SURGE PROTECTOR
COIL.MX.AM	: COIL,AM MIX	SW.TACT	: TACT SWITCH
COIL.AT.FM	: COIL,FM ANTENNA	SW.LEAF	: LEAF SWITCH
COIL.DT.FM	: COIL,FM DETECT	SW.LEVER	: LEVER SWITCH
COIL.MX.FM	: COIL,FM MIX	SW.MICRO	: MICRO SWITCH
COIL.OUTPT	: OUTPUT COIL	SW.PUSH	: PUSH SWITCH
DIOD.ARRAY	: DIODE ARRAY	SW.RT.ENC	: ROTARY ENCODER
DIODE.BRG	: DIODE BRIDGE	SW.RT.MTR	: ROTARY SWITCH WITH MOTOR
DIODE.CHP	: CHIP DIODE	SW.RT	: ROTARY SWITCH
DIODE.VAR	: VARACTOR DIODE	SW.SLIDE	: SLIDE SWITCH
DIOD.Z.CHP	: CHIP ZENER DIODE	TERM.SP	: SPEAKER TERMINAL
DIODE.ZENR	: ZENER DIODE	TERM.WRAP	: WRAPPING TERMINAL
DSCR.CE	: CERAMIC DISCRIMINATOR	THRMST.CHP	: CHIP THERMISTOR
FER.BEAD	: FERRITE BEADS	TR.CHP	: CHIP TRANSISTOR
FER.CORE	: FERRITE CORE	TR.DGT	: DIGITAL TRANSISTOR
FET.CHP	: CHIP FET	TR.DGT.CHP	: CHIP DIGITAL TRANSISTOR
FL.DSPLY	: FLUORESCENT DISPLAY	TRANS	: TRANSFORMER
FLTR.CE	: CERAMIC FILTER	TRANS.PULS	: PULSE TRANSFORMER
FLTR.COMB	: COMB FILTER MODULE	TRANS.PWR	: POWER TRANSFORMER ASS'Y
FLTR.LC.RF	: LC FILTER,EMI	TUNER.AM	: TUNER PACK,AM
GND.MTL	: GROUND PLATE	TUNER.FM	: TUNER PACK,FM
GND.TERM	: GROUND TERMINAL	TUNER.PK	: FRONT-END TUNER PACK
HOLDER.FUS	: FUSE HOLDER	VR	: ROTARY POTENTIOMETER
IC.PRTCT	: IC PROTECTOR	VR.MTR	: POTENTIOMETER WITH MOTOR
JUMPER.CN	: JUMPER CONNECTOR	VR.SW	: POTENTIOMETER WITH ROTARY SW
JUMPER.TST	: JUMPER,TEST POINT	VR.SLIDE	: SLIDE POTENTIOMETER
L.DTCT	: LIGHT DETECTING MODULE	VR.TRIM	: TRIMMER POTENTIOMETER

Note) Those parts marked with “#” are not included in the P.C.B. ass'y.

P. C. B. MONO

Schm Ref.	PART NO.	Description	Remarks
	AAX29590	P. C. B.	MONO (UCARTP)
	AAX29600	P. C. B.	MONO (GB)
1104	AAX22180	CON	BMH 24P FFC
1106	AAX22190	CON	BMH 8P FFC
1205	AAX23320	RSNR. CRY5	8.467MHz
1300	AAX23310	RSNR. CRY5	6MHz
1301	AAX22360	CON	11P FEMALE
1603	AAX22210	CON	BMV 22P FFC
1604	AAX22200	CON	BMV 16P FFC
2100	US135100	C. CE. CHP	0.1uF 16V
2101	US135100	C. CE. CHP	0.1uF 16V
2103	UF037470	C. EL. CHP	47uF 16V
2104	US063470	C. CE. CHP	4700pF 50V
2105	US061220	C. CE. CHP	22pF 50V
2107	US061680	C. CE. CHP	68PF 50V
2108	US062390	C. CE. CHP	390PF 50V
2109	US063150	C. CE. M. CHP	1500pF 50V
2110	US063220	C. CE. CHP	2200pF 50V
2111	US135100	C. CE. CHP	0.1uF 16V
2112	US063100	C. CE. CHP	1000pF 50V
2113	US135100	C. CE. CHP	0.1uF 16V
2114	US062100	C. CE. CHP	100pF 50V
2115	US135100	C. CE. CHP	0.1uF 16V
2116	US135100	C. CE. CHP	0.1uF 16V
2117	US135100	C. CE. CHP	0.1uF 16V
2118	US044220	C. CE. CHP	0.022uF 25V
2119	US044220	C. CE. CHP	0.022uF 25V
2120	US135100	C. CE. CHP	0.1uF 16V
2121	US135220	C. CE. CHP	0.22uF 16V
2122	US044220	C. CE. CHP	0.022uF 25V
2123	US135100	C. CE. CHP	0.1uF 16V
2124	US135100	C. CE. CHP	0.1uF 16V
2125	US135100	C. CE. CHP	0.1uF 16V
2126	US135100	C. CE. CHP	0.1uF 16V
2127	US135100	C. CE. CHP	0.1uF 16V
2128	US062180	C. CE. CHP	180pF 50V
2129	US062180	C. CE. CHP	180pF 50V
2130	US061220	C. CE. CHP	22pF 50V
2131	US044220	C. CE. CHP	0.022uF 25V
2136	US135100	C. CE. CHP	0.1uF 16V
2137	US135100	C. CE. CHP	0.1uF 16V
2138	US135100	C. CE. CHP	0.1uF 16V
2139	US135100	C. CE. CHP	0.1uF 16V
2140	US062330	C. CE. CHP	330P 50V
2141	US061220	C. CE. CHP	22pF 50V
2142	US064100	C. CE. CHP	0.01uF 50V
2143	US062220	C. CE. CHP	220pF 50V
2144	US062220	C. CE. CHP	220pF 50V
2145	US062220	C. CE. CHP	220pF 50V
2203	US135100	C. CE. CHP	0.1uF 16V
2204	US135100	C. CE. CHP	0.1uF 16V
2205	US135100	C. CE. CHP	0.1uF 16V
2206	US034330	C. CE. CHP	0.033uF 16V
2207	US063100	C. CE. CHP	1000pF 50V
2208	US135100	C. CE. CHP	0.1uF 16V
2209	US135100	C. CE. CHP	0.1uF 16V
2210	US063100	C. CE. CHP	1000pF 50V
2212	US135100	C. CE. CHP	0.1uF 16V
2213	US135100	C. CE. CHP	0.1uF 16V
2214	US044220	C. CE. CHP	0.022uF 25V
2215	UF017220	C. EL. CHP	22uF 6.3V
2216	US063100	C. CE. CHP	1000pF 50V
2226	US135100	C. CE. CHP	0.1uF 16V

* New Parts

Schm Ref.	PART NO.	Description	Remarks
2227	US135100	C. CE. CHP	0.1uF 16V
2228	US135100	C. CE. CHP	0.1uF 16V
2229	US135100	C. CE. CHP	0.1uF 16V
2300	US135100	C. CE. CHP	0.1uF 16V
2301	US135100	C. CE. CHP	0.1uF 16V
2302	US135100	C. CE. CHP	0.1uF 16V
2303	UF017470	C. EL. CHP	47uF 6.3V
2304	US044220	C. CE. CHP	0.022uF 25V
2305	US044220	C. CE. CHP	0.022uF 25V
2306	UF037100	C. EL. CHP	10uF 16V
2307	US044220	C. CE. CHP	0.022uF 25V
2309	US135100	C. CE. CHP	0.1uF 16V
2310	US135100	C. CE. CHP	0.1uF 16V
2314	US135100	C. CE. CHP	0.1uF 16V
2315	US135100	C. CE. CHP	0.1uF 16V
2318	US062120	C. CE. CHP	120PF 50V
2319	US061270	C. CE. CHP	27PF 50V
2320	US135100	C. CE. CHP	0.1uF 16V
2321	US135100	C. CE. CHP	0.1uF 16V
2401	US135100	C. CE. CHP	0.1uF 16V
2402	US135100	C. CE. CHP	0.1uF 16V
2403	US135100	C. CE. CHP	0.1uF 16V
2404	US135100	C. CE. CHP	0.1uF 16V
2405	US135100	C. CE. CHP	0.1uF 16V
2406	US135100	C. CE. CHP	0.1uF 16V
2407	US135100	C. CE. CHP	0.1uF 16V
2408	US135100	C. CE. CHP	0.1uF 16V
2409	US135100	C. CE. CHP	0.1uF 16V
2410	US135100	C. CE. CHP	0.1uF 16V
2411	US135100	C. CE. CHP	0.1uF 16V
2412	US135100	C. CE. CHP	0.1uF 16V
2413	US135100	C. CE. CHP	0.1uF 16V
2418	UF038100	C. EL. CHP	100uF 16V
2419	UF017470	C. EL. CHP	47uF 6.3V
2420	UF017470	C. EL. CHP	47uF 6.3V
2500	US135100	C. CE. CHP	0.1uF 16V
2503	US135100	C. CE. CHP	0.1uF 16V
2504	UF066470	C. EL. CHP	4.7uF 50V
2507	US044220	C. CE. CHP	0.022uF 25V
2509	UF037100	C. EL. CHP	10uF 16V
2510	US135100	C. CE. CHP	0.1uF 16V
2511	UF037100	C. EL. CHP	10uF 16V
2512	US135100	C. CE. CHP	0.1uF 16V
2513	US061220	C. CE. CHP	22pF 50V
2514	US061220	C. CE. CHP	22pF 50V
2515	US061220	C. CE. CHP	22pF 50V
2516	US061220	C. CE. CHP	22pF 50V
2517	US135100	C. CE. CHP	0.1uF 16V
2518	UF066470	C. EL. CHP	4.7uF 50V
2519	US135100	C. CE. CHP	0.1uF 16V
2520	US135100	C. CE. CHP	0.1uF 16V
2521	US135100	C. CE. CHP	0.1uF 16V
2522	US135100	C. CE. CHP	0.1uF 16V
2523	US135100	C. CE. CHP	0.1uF 16V
2524	US135100	C. CE. CHP	0.1uF 16V
2525	US135100	C. CE. CHP	0.1uF 16V
2526	US135100	C. CE. CHP	0.1uF 16V
2527	US135100	C. CE. CHP	0.1uF 16V
2528	US135100	C. CE. CHP	0.1uF 16V
2529	UF066470	C. EL. CHP	4.7uF 50V
2530	US135100	C. CE. CHP	0.1uF 16V
2531	US135100	C. CE. CHP	0.1uF 16V
2532	US061470	C. CE. CHP	47pF 50V

* New Parts

P. C. B. MONO

Schm Ref.	PART NO.	Description	Remarks
2533	US061470	C. CE. CHP 47pF 50V	4822 122 33777
2534	US063100	C. CE. CHP 1000pF 50V	5322 126 11578
2535	US063100	C. CE. CHP 1000pF 50V	5322 126 11578
2536	US135100	C. CE. CHP 0. 1uF 16V	4822 126 14305
2537	US135100	C. CE. CHP 0. 1uF 16V	4822 126 14305
2538	US135100	C. CE. CHP 0. 1uF 16V	4822 126 14305
2539	US135100	C. CE. CHP 0. 1uF 16V	4822 126 14305
2540	US135100	C. CE. CHP 0. 1uF 16V	4822 126 14305
2600	US044220	C. CE. CHP 0. 022uF 25V	4822 126 14494
2601	US063150	C. CE. CHP 1500pF 50V	4822 126 14247
2602	US063150	C. CE. CHP 1500pF 50V	4822 126 14247
2603	US135100	C. CE. CHP 0. 1uF 16V	4822 126 14305
2604	UF038100	C. EL. CHP 100uF 16V	4822 124 12095
2605	US044220	C. CE. CHP 0. 022uF 25V	4822 126 14494
2606	UF038100	C. EL. CHP 100uF 16V	4822 124 12095
2607	UF038100	C. EL. CHP 100uF 16V	4822 124 12095
2608	UF037100	C. EL. CHP 10uF 16V	4822 124 23002
2609	UF037470	C. EL. CHP 47uF 16V	4822 124 80151
2610	US135100	C. CE. CHP 0. 1uF 16V	4822 126 14305
2611	UF038100	C. EL. CHP 100uF 16V	4822 124 12095
2614	US061470	C. CE. CHP 47pF 50V	4822 122 33777
2615	US061470	C. CE. CHP 47pF 50V	4822 122 33777
2616	US061470	C. CE. CHP 47pF 50V	4822 122 33777
2617	US061470	C. CE. CHP 47pF 50V	4822 122 33777
2618	US135100	C. CE. CHP 0. 1uF 16V	4822 126 14305
2620	US061470	C. CE. CHP 47pF 50V	4822 122 33777
2621	US061470	C. CE. CHP 47pF 50V	4822 122 33777
2622	US061470	C. CE. CHP 47pF 50V	4822 122 33777
2623	US061470	C. CE. CHP 47pF 50V	4822 122 33777
2624	US061470	C. CE. CHP 47pF 50V	4822 122 33777
2625	US061470	C. CE. CHP 47pF 50V	4822 122 33777
2626	US061470	C. CE. CHP 47pF 50V	4822 122 33777
2627	US061470	C. CE. CHP 47pF 50V	4822 122 33777
2632	UF038100	C. EL. CHP 100uF 16V	4822 124 12095
2633	UF038100	C. EL. CHP 100uF 16V	4822 124 12095
2634	US135100	C. CE. CHP 0. 1uF 16V	4822 126 14305
2635	US135100	C. CE. CHP 0. 1uF 16V	4822 126 14305
2636	US135100	C. CE. CHP 0. 1uF 16V	4822 126 14305
2637	US135100	C. CE. CHP 0. 1uF 16V	4822 126 14305
2638	US135100	C. CE. CHP 0. 1uF 16V	4822 126 14305
2639	US135100	C. CE. CHP 0. 1uF 16V	4822 126 14305
2641	US061220	C. CE. CHP 22pF 50V	4822 122 33761
2647	UF037100	C. EL. CHP 10uF 16V	4822 124 23002
2648	US135100	C. CE. CHP 0. 1uF 16V	4822 126 14305
5200	AAAX22070	COIL BLM31P500SPT	4822 157 11717
5300	AAAX22070	COIL BLM31P500SPT	4822 157 11717
5301	AAAX22070	COIL BLM31P500SPT	4822 157 11717
5402	AAAX22050	COIL BLM11P600SPT	4822 157 11499
5403	AAAX22050	COIL BLM11P600SPT	4822 157 11499
5501	AAAX22110	COIL 2. 2uH NL322522T	4822 157 70299
5502	AAAX22110	COIL 2. 2uH NL322522T	4822 157 70299
5503	AAAX22130	COIL BLM21A601SPT	4822 157 71206
5504	AAAX22130	COIL BLM21A601SPT	4822 157 71206
5600	AAAX22130	COIL BLM21A601SPT	4822 157 71206
5601	AAAX22050	COIL BLM11P600SPT	4822 157 11499
5602	AAAX29690	COIL 12uH	4822 157 70651
5603	AAAX22130	COIL BLM21A601SPT	4822 157 71206
5604	AAAX29690	COIL 12uH	4822 157 70651
5605	AAAX29690	COIL 12uH	4822 157 70651
5606	AAAX29690	COIL 12uH	4822 157 70651
5607	AAAX29690	COIL 12uH	4822 157 70651
5608	AAAX29690	COIL 12uH	4822 157 70651
5609	AAAX22070	COIL BLM31P500SPT	4822 157 11717

* New Parts

Schm Ref.	PART NO.	Description	Remarks
5610	AAAX22070	COIL BLM31P500SPT	4822 157 11717
5611	AAAX22070	COIL BLM31P500SPT	4822 157 11717
5612	AAAX22050	COIL BLM11P600SPT	4822 157 11499
6200	AAAX22630	DIODE. CHP BAS316	4822 130 11397
6301	AAAX22690	DIODE. CHP S1D	9322 128 69685
6302	AAAX22690	DIODE. CHP S1D	9322 128 69685
6303	AAAX22690	DIODE. CHP S1D	9322 128 69685
6600	AAAX29900	DIODE. CHP RB501V-40	9322 154 46685
6601	AAAX22690	DIODE. CHP S1D	9322 128 69685
7100	AAAX22750	TR. CHP BFS20	5322 130 42718
7101	AAAX22750	TR. CHP BFS20	5322 130 42718
7102	AAAX21880	IC TZA1033HL	9352 637 37518
7103	AAAX21620	IC BA5938FM	4822 209 17229
7104	AAAX21660	IC LM833D	4822 209 30095
7105	AAAX21690	IC MC34072D	4822 209 32073
7106	AAAX22750	TR. CHP BFS20	5322 130 42718
7109	AAAX21580	IC AN78M09	4822 209 15083
7110	AAAX22760	TR. CHP BST72A	5322 130 60803
7111	AAAX22740	TR. CHP BC847B	4822 130 60511
7112	AAAX22740	TR. CHP BC847B	4822 130 60511
7113	AAAX22740	TR. CHP BC847B	4822 130 60511
7114	AAAX22740	TR. CHP BC847B	4822 130 60511
7115	AAAX22730	TR. CHP BC856B	4822 130 60373
7116	AAAX22740	TR. CHP BC847B	4822 130 60511
7201	AAAX21860	IC 74HCT573	9351 869 80118
7202	AAAX29470	IC AM29F002T	3104 123 85860
7203	AAAX22730	TR. CHP BC856B	4822 130 60373
7207	AAAX29480	IC SAA7399HL	4822 209 17231
7208	AAAX21780	IC MC33464N-45A	9322 139 67685
7209	AAAX29490	IC L78L05ACD	4822 209 90927
7210	AAAX29930	TR. CHP BC807-25	5322 130 60845
7211	AAAX22780	TR. CHP BC817-25	4822 130 42804
7304	AAAX21600	IC BA6856FP	4822 209 16877
7310	AAAX21590	IC CY7C199-15C	4822 209 15899
7311	AAAX29530	IC SAA7335HL	9352 622 13557
7312	AAAX22730	TR. CHP BC856B	4822 130 60373
7315	AAAX22740	TR. CHP BC847B	4822 130 60511
7316	AAAX29520	IC 74LVC08AD	9352 500 20118
7317	AAAX29520	IC 74LVC08AD	9352 500 20118
7404	AAAX21800	IC MT48LC1M16A1TG-7S	9322 144 59668
7405	AAAX21800	IC MT48LC1M16A1TG-7S	9322 144 59668
7501	AAAX22740	TR. CHP BC847B	4822 130 60511
7503	AAAX29500	IC STI5508	9322 159 29671
7504	AAAX30380	RSNR. CRYSC OSC XTL SM 27MHZ	12722 171 08709
7505	AAAX21850	IC M24C32-WMN6TNKSA	9322 156 81668
7506	AAAX29940	TR. CHP BSN20	5322 130 63289
7507	AAAX29940	TR. CHP BSN20	5322 130 63289
7600	AAAX21740	IC PC74HCT14T	5322 209 71568
7604	AAAX22740	TR. CHP BC847B	4822 130 60511
7605	AAAX21630	IC LD1117DT33	4822 209 17398
7607	AAAX22740	TR. CHP BC847B	4822 130 60511
7608	AAAX22730	TR. CHP BC856B	4822 130 60373
7609	AAAX22730	TR. CHP BC856B	4822 130 60373
7610	AAAX22740	TR. CHP BC847B	4822 130 60511
7611	AAAX29510	IC 74HCT1G125	9352 456 80115
7612	AAAX22740	TR. CHP BC847B	4822 130 60511
7613	AAAX22740	TR. CHP BC847B	4822 130 60511
7614	AAAX22740	TR. CHP BC847B	4822 130 60511
7615	AAAX22740	TR. CHP BC847B	4822 130 60511
7616	AAAX21840	IC SM MK2703STR	9322 151 71668
7617	AAAX22740	TR. CHP BC847B	4822 130 60511
7618	AAAX22740	TR. CHP BC847B	4822 130 60511
7620	AAAX22730	TR. CHP BC856B	4822 130 60373

* New Parts

P. C. B. MONO & P. C. B. AV

Schm Ref.	PART NO.	Description	Remarks
7621	AA22780	TR. CHP	BC817-25
7631	AA22740	TR. CHP	BC847B
7632	AA22740	TR. CHP	BC847B
* 1000	AA229570	P. C. B.	AV(UCARTP)
1003	AA22220	CN	BMV 16P FFC
1005	AA22350	JACK. DIN	4P MDIN
1006	AA22240	JACK. PIN	6P
1010	AA22250	JACK. PIN	3P
1011	AA22230	CN	BMV 22P FFC
1012	AA30050	JACK. PIN	2P YKC21-3416
2100	AA30050	JACK. PIN	2P YKC21-3416
2102	UJ729470	C. EL	4700uF 10V
2103	UB445470	C. CE. M. CHP	0.47uF 16V
2104	UR848100	C. EL	100uF 25V
2105	US062220	C. CE. CHP	220pF 50V
2106	US062220	C. CE. CHP	220pF 50V
2109	UR848100	C. EL	100uF 25V
2111	UR819100	C. EL	1000uF 6.3V
2112	UR819100	C. EL	1000uF 6.3V
2200	US135100	C. CE. CHP	0.1uF 16V
2201	UR837470	C. EL	47uF 16V
2202	UR837470	C. EL	47uF 16V
2203	US135100	C. CE. CHP	0.1uF 16V
2204	UR848100	C. EL	100uF 25V
2205	UR828100	C. EL	100uF 10V
2206	UR837470	C. EL	47uF 16V
2207	US135100	C. CE. CHP	0.1uF 16V
2208	UR837100	C. EL	10uF 16V
2209	UB445470	C. CE. M. CHP	0.47uF 16V
2210	US135100	C. CE. CHP	0.1uF 16V
2211	UR828100	C. EL	100uF 10V
2212	US063100	C. CE. M. CHP	1000pF 50V
2213	US135100	C. CE. CHP	0.1uF 16V
2214	US062100	C. CE. CHP	100pF 50V
2215	US063100	C. CE. M. CHP	1000pF 50V
2216	UR837100	C. EL	10uF 16V
2217	US135100	C. CE. CHP	0.1uF 16V
2218	US044220	C. CE. CHP	0.022uF 25V
2219	US044220	C. CE. CHP	0.022uF 25V
2220	UR828100	C. EL	100uF 10V
2221	US135100	C. CE. CHP	0.1uF 16V
2222	US126100	C. CE. CHP	1uF 10V
2223	US044220	C. CE. CHP	0.022uF 25V
2224	US044220	C. CE. CHP	0.022uF 25V
2225	UR828100	C. EL	100uF 10V
2226	UR828100	C. EL	100uF 10V
2227	UR837100	C. EL	10uF 16V
2228	US063100	C. CE. M. CHP	1000pF 50V
2229	US062100	C. CE. CHP	100pF 50V
2230	US063100	C. CE. M. CHP	1000pF 50V
2231	US135100	C. CE. CHP	0.1uF 16V
2232	UR837100	C. EL	10uF 16V
2233	US061470	C. CE. CHP	47pF 50V
2234	US135100	C. CE. CHP	0.1uF 16V
2235	US061470	C. CE. CHP	47pF 50V
2236	UR819100	C. EL	1000uF 6.3V
2237	UR838470	C. EL	470uF 16V
3112	HX610400	R. MTL. CHP	8.2KΩ 1/16W
3205	HX610400	R. MTL. CHP	8.2KΩ 1/16W
3231	HX610400	R. MTL. CHP	8.2KΩ 1/16W

* New Parts

Schm Ref.	PART NO.	Description	Remarks
3234	HV755100	R. CAR. FP	100Ω 1/4W
3235	HV755100	R. CAR. FP	100Ω 1/4W
3204	HV754470	R. CAR. FP	47Ω 1/4W
3216	HV756270	R. CAR. FP	2.7KΩ 1/4W
3214	HV457330	R. CAR. FP	33KΩ 1/4W
3208	HX609130	R. MTL. CHP	100K 1/10W
3230	HX609130	R. MTL. CHP	100K 1/10W
3239	HX609130	R. MTL. CHP	100K 1/10W
5100	AA22140	COIL	DSS306
5101	AA22140	COIL	DSS306
5102	AA22140	COIL	DSS306
5200	AA22120	COIL	100uH
5201	AA22140	COIL	DSS306
5202	AA22140	COIL	DSS306
6100	AA22640	DIODE. CHP	UDZ15B
6101	AA22640	DIODE. CHP	UDZ15B
6102	AA22640	DIODE. CHP	UDZ15B
6103	AA22640	DIODE. CHP	UDZ15B
6104	AA22640	DIODE. CHP	UDZ15B
6203	AA22640	DIODE. CHP	UDZ15B
6204	AA22640	DIODE. CHP	UDZ15B
7200	AA221900	IC	UDA1334TS/NI
7201	AA221660	IC	LM833D
7202	AA221660	IC	LM833D
7203	AA221610	IC	LF33CV
7204	AA22270	L. EMIT	GP1F32T
7410	AA22740	TR. CHP	BC847B
7411	AA22740	TR. CHP	BC847B
7412	AA22740	TR. CHP	BC847B
7413	AA22730	TR. CHP	BC856B
7414	AA22740	TR. CHP	BC847B
7415	AA22740	TR. CHP	BC847B
7416	AA22740	TR. CHP	BC847B
7417	AA22730	TR. CHP	BC856B
7418	AA22740	TR. CHP	BC847B
7419	AA22740	TR. CHP	BC847B
7420	AA22730	TR. CHP	BC856B
7421	AA22740	TR. CHP	BC847B
7422	AA22740	TR. CHP	BC847B
7423	AA22730	TR. CHP	BC856B
7424	AA22740	TR. CHP	BC847B
7425	AA22740	TR. CHP	BC847B
7426	AA22740	TR. CHP	BC847B
7427	AA22730	TR. CHP	BC856B
7501	AA22780	TR. CHP	BC817-25
7502	AA22780	TR. CHP	BC817-25
7503	AA22740	TR. CHP	BC847B
7504	AA22780	TR. CHP	BC817-25
7505	AA22740	TR. CHP	BC847B
7506	AA22780	TR. CHP	BC817-25
7507	AA22780	TR. CHP	BC817-25
7508	AA22740	TR. CHP	BC847B
7509	AA22730	TR. CHP	BC856B
7510	AA22740	TR. CHP	BC847B
7511	AA22740	TR. CHP	BC847B
7512	AA22780	TR. CHP	BC817-25
* 1001	AA229580	P. C. B.	AV(GB)
1002	AA22220	CN	BMV 16P FFC
1003	AA229760	TERM. SCART	21P
1005	AA22350	JACK. DIN	4P MDIN
1005	AA22300	JACK. PIN	3P YKC21-3930

* New Parts

P. C. B. AV

Schm Ref.	PART NO.	Description	Remarks
1010	AAx22230	CN	BMV 22P FFC
1011	AAx30050	JACK. PIN	2P YKC21-3416
1012	AAx30050	JACK. PIN	2P YKC21-3416
2101	UJ729470	C. EL	4700uF 10V
2103	UR819100	C. EL	1000uF 6.3V
2104	UR819100	C. EL	1000uF 6.3V
2105	UR848100	C. EL	100uF 25V
2106	US135100	C. CE. CHP	0.1uF 16V
2107	UB445470	C. CE. M. CHP	0.47uF 16V
2108	UR848100	C. EL	100uF 25V
2109	UR819100	C. EL	1000uF 6.3V
2110	US062220	C. CE. CHP	220pF 50V
2111	US044220	C. CE. CHP	0.022uF 25V
2112	US062100	C. CE. CHP	100pF 50V
2113	US062220	C. CE. CHP	220pF 50V
2114	UR848100	C. EL	100uF 25V
2115	US062220	C. CE. CHP	220pF 50V
2116	US062220	C. CE. CHP	220pF 50V
2117	US062220	C. CE. CHP	220pF 50V
2200	US135100	C. CE. CHP	0.1uF 16V
2201	UR837470	C. EL	47uF 16V
2202	UR837470	C. EL	47uF 16V
2203	US135100	C. CE. CHP	0.1uF 16V
2204	UR828100	C. EL	100uF 10V
2205	UR848100	C. EL	100uF 25V
2206	UR837470	C. EL	47uF 16V
2207	US135100	C. CE. CHP	0.1uF 16V
2208	UR837100	C. EL	10uF 16V
2209	UB445470	C. CE. M. CHP	0.47uF 16V
2210	US135100	C. CE. CHP	0.1uF 16V
2211	UR848100	C. EL	100uF 25V
2212	US063100	C. CE. M. CHP	1000pF 50V
2213	US135100	C. CE. CHP	0.1uF 16V
2214	US062100	C. CE. CHP	100pF 50V
2215	US063100	C. CE. M. CHP	1000pF 50V
2216	UR837100	C. EL	10uF 16V
2217	US135100	C. CE. CHP	0.1uF 16V
2218	US044220	C. CE. CHP	0.022uF 25V
2219	US044220	C. CE. CHP	0.022uF 25V
2220	UR848100	C. EL	100uF 25V
2221	US135100	C. CE. CHP	0.1uF 16V
2222	US126100	C. CE. CHP	1uF 10V
2223	US044220	C. CE. CHP	0.022uF 25V
2224	US044220	C. CE. CHP	0.022uF 25V
2225	UR848100	C. EL	100uF 25V
2226	UR848100	C. EL	100uF 25V
2227	UR837100	C. EL	10uF 16V
2228	US063100	C. CE. M. CHP	1000pF 50V
2229	US062100	C. CE. CHP	100pF 50V
2230	US063100	C. CE. M. CHP	1000pF 50V
2231	US135100	C. CE. CHP	0.1uF 16V
2232	UR837100	C. EL	10uF 16V
2233	US061470	C. CE. CHP	47pF 50V
2234	US135100	C. CE. CHP	0.1uF 16V
2235	US061470	C. CE. CHP	47pF 50V
2236	UR819100	C. EL	1000uF 6.3V
2237	UR838470	C. EL	470uF 16V
2243	US062220	C. CE. CHP	220pF 50V
2244	US062220	C. CE. CHP	220pF 50V
2249	US061220	C. CE. CHP	22pF 50V
3142	HX610400	R. MTL. CHP	8.2KΩ 1/16W
3205	HX610400	R. MTL. CHP	8.2KΩ 1/16W
3231	HX610400	R. MTL. CHP	8.2KΩ 1/16W

* New Parts

Schm Ref.	PART NO.	Description	Remarks
3239	HX609130	R. MTL. CHP	100K 1/10W
3145	HV757100	R. CAR. FP	10KΩ 1/4W
3159	HV755100	R. CAR. FP	100Ω 1/4W
3234	HV755100	R. CAR. FP	100Ω 1/4W
3235	HV755100	R. CAR. FP	100Ω 1/4W
3204	HV754470	R. CAR. FP	47Ω 1/4W
3203	HV755680	R. CAR. FP	680Ω 1/4W
3228	HV755680	R. CAR. FP	680Ω 1/4W
3144	HV757150	R. CAR. FP	15KΩ 1/4W
3143	HV457220	R. CAR. FP	22KΩ 1/4W
3221	HV756270	R. CAR. FP	2.7KΩ 1/4W
3223	HV756270	R. CAR. FP	2.7KΩ 1/4W
3229	HV756270	R. CAR. FP	2.7KΩ 1/4W
3149	HV457470	R. CAR. FP	47KΩ 1/4W
5200	AAx22120	COIL	100uH
6102	AAx22640	DIODE. CHP	UDZ15B
6103	AAx22640	DIODE. CHP	UDZ15B
6104	AAx22640	DIODE. CHP	UDZ15B
6105	AAx22640	DIODE. CHP	UDZ15B
6106	AAx22640	DIODE. CHP	UDZ15B
6107	AAx22640	DIODE. CHP	UDZ15B
6203	AAx22640	DIODE. CHP	UDZ15B
6204	AAx22640	DIODE. CHP	UDZ15B
7200	AAx21900	IC	UDA1334TS/NI
7201	AAx21660	IC	LM833D
7202	AAx21660	IC	LM833D
7203	AAx21610	IC	LF33CV
7204	AAx22270	L. EMIT	GP1F32T
7401	AAx22740	TR. CHP	BC847B
7402	AAx22740	TR. CHP	BC847B
7403	AAx22740	TR. CHP	BC847B
7404	AAx22730	TR. CHP	BC856B
7405	AAx22740	TR. CHP	BC847B
7406	AAx22740	TR. CHP	BC847B
7407	AAx22730	TR. CHP	BC856B
7408	AAx22740	TR. CHP	BC847B
7409	AAx22740	TR. CHP	BC847B
7413	AAx22730	TR. CHP	BC856B
7414	AAx22740	TR. CHP	BC847B
7415	AAx22740	TR. CHP	BC847B
7416	AAx22730	TR. CHP	BC856B
7417	AAx22740	TR. CHP	BC847B
7418	AAx22740	TR. CHP	BC847B
7419	AAx22730	TR. CHP	BC856B
7420	AAx22730	TR. CHP	BC856B
7421	AAx22740	TR. CHP	BC847B
7422	AAx22740	TR. CHP	BC847B
7423	AAx22740	TR. CHP	BC847B
7501	AAx22780	TR. CHP	BC817-25
7502	AAx22780	TR. CHP	BC817-25
7503	AAx22740	TR. CHP	BC847B
7504	AAx22780	TR. CHP	BC817-25
7505	AAx22740	TR. CHP	BC847B
7506	AAx22780	TR. CHP	BC817-25
7507	AAx22780	TR. CHP	BC817-25
7508	AAx22740	TR. CHP	BC847B
7509	AAx22730	TR. CHP	BC856B
7510	AAx22740	TR. CHP	BC847B
7511	AAx22740	TR. CHP	BC847B
7512	AAx22780	TR. CHP	BC817-25

* New Parts

P. C. B. DISPLAY & P. C. B. VFM & P. C. B. POWER

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* New Parts

P. C. B. POWER

Schm Ref.	PART NO.	Description	Remarks	Schm Ref.	PART NO.	Description	Remarks
* 6233	AAx29800	DIODE	BZX79-B4V7	4822	130	34174	
6241	AAx22550	DIODE	BYW98-200-C1	4822	130	11584	
6250	AAx22580	DIODE	BYD33D	4822	130	42488	
6261	AAx22590	DIODE	BYD33J	4822	130	42606	
7125	AAx21500	FET	STP3NB60FP	4822	130	11417	
* 7131	AAx30080	PHOTO. CPL	TCET1102-G	9322	149	04682	
7141	AAx22880	IC	BC557B	4822	130	44568	
7145	AAx21820	IC	UC3842A	9322	145	88682	
* 7150	AAx29970	TR	BC547	4822	130	44257	
7201	AAx21710	IC	TL431CLPST	4822	209	81397	
7235	AAx22870	TR	BC847	4822	130	42705	
* 7238	AAx29450	FET	IRLML2803	5322	130	11197	
7255	AAx22860	TR	BC337	4822	130	40855	
* 7256	AAx29980	TR	BC857C	5322	130	42756	
* 7257	AAx29980	TR	BC857C	5322	130	42756	
7141	RD350000	R. CAR. CHP	0Ω 1/10W				
	RD353100	R. CAR. CHP	1Ω 1/10W				
	RD353220	R. CAR. CHP	2. 2Ω 1/10W				
	RD353470	R. CAR. CHP	4. 7Ω 1/10W				
	RD354330	R. CAR. CHP	33Ω 1/10W				
	RD354470	R. CAR. CHP	47Ω 1/10W				
	RD355100	R. CAR. CHP	100Ω 1/10W				
	RD355390	R. CAR. CHP	390Ω 1/10W				
	RD356100	R. CAR. CHP	1KΩ 1/10W				
	RD357220	R. CAR. CHP	22KΩ 1/10W				
	RD357360	R. CAR. CHP	36KΩ 1/10W				
	HX611040	R. CAR. CHP	0Ω 1/16W				
	HX610750	R. CAR. CHP	1Ω 1/16W				
	NX703320	R. CAR. CHP	2. 2Ω 1/16W			ERJ3GEYJ2R2	
	HX611160	R. CAR. CHP	10Ω 1/16W				
7141	HX610090	R. CAR. CHP	22Ω 1/16W			ERJ3GEYJ220	
	HX611150	R. CAR. CHP	47Ω 1/16W				
	AAx06470	R. CAR. CHP	68Ω 1/16W			ERJ3GEYJ680	
	AAx15900	R. CAR. CHP	75Ω 1/16W			ERJ3RED750	
	HX610900	R. CAR. CHP	100Ω 1/16W				
	AAx15800	R. CAR. CHP	150Ω 1/16W			ERJ3GEYF151	
	HX610960	R. CAR. CHP	220Ω 1/16W			1305810918	
	HX611120	R. CAR. CHP	270Ω 1/16W				
	HX610170	R. CAR. CHP	330Ω 1/16W			ERJ3GEYJ331	
	HX610890	R. CAR. CHP	470Ω 1/16W				
	HX611010	R. CAR. CHP	560Ω 1/16W			1305810927	
	HX610910	R. CAR. CHP	1kΩ 1/16W				
	HX611090	R. CAR. CHP	1. 5kΩ 1/16W				
	HX610110	R. CAR. CHP	2. 2KΩ 1/16W			4822 050 12202	
	HX611140	R. CAR. CHP	2. 7kΩ 1/16W				
7141	HX610980	R. CAR. CHP	3. 3kΩ 1/16W				
	AAx17770	R. CAR. CHP	3. 9KΩ 1/16W			VRSCY1JB392F	
	HX611080	R. CAR. CHP	4. 7kΩ 1/16W				
	HX611030	R. CAR. CHP	6. 8kΩ 1/16W				
	HX610920	R. CAR. CHP	10kΩ 1/16W				
	HX610780	R. CAR. CHP	12kΩ 1/16W				
	HX610950	R. CAR. CHP	15KΩ 1/16W				
	HX611110	R. CAR. CHP	22kΩ 1/16W				
	HX611130	R. CAR. CHP	27kΩ 1/16W				
	AAx17750	R. CAR. CHP	33KΩ 1/16W			VRSCY1JB333F	
	AAx06590	R. CAR. CHP	39KΩ 1/16W			ERJ3RBD393	
	HX611070	R. CAR. CHP	1MΩ 1/16W				

* New Parts

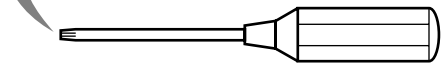
* New Parts

1 ■ EXPLODED VIEW

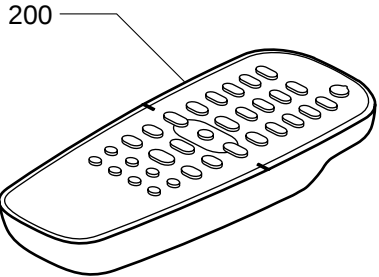
When disassembling, use the special screw driver with tip shape in figure.

T10  2.7 mm for screws with 33, 35 and 36

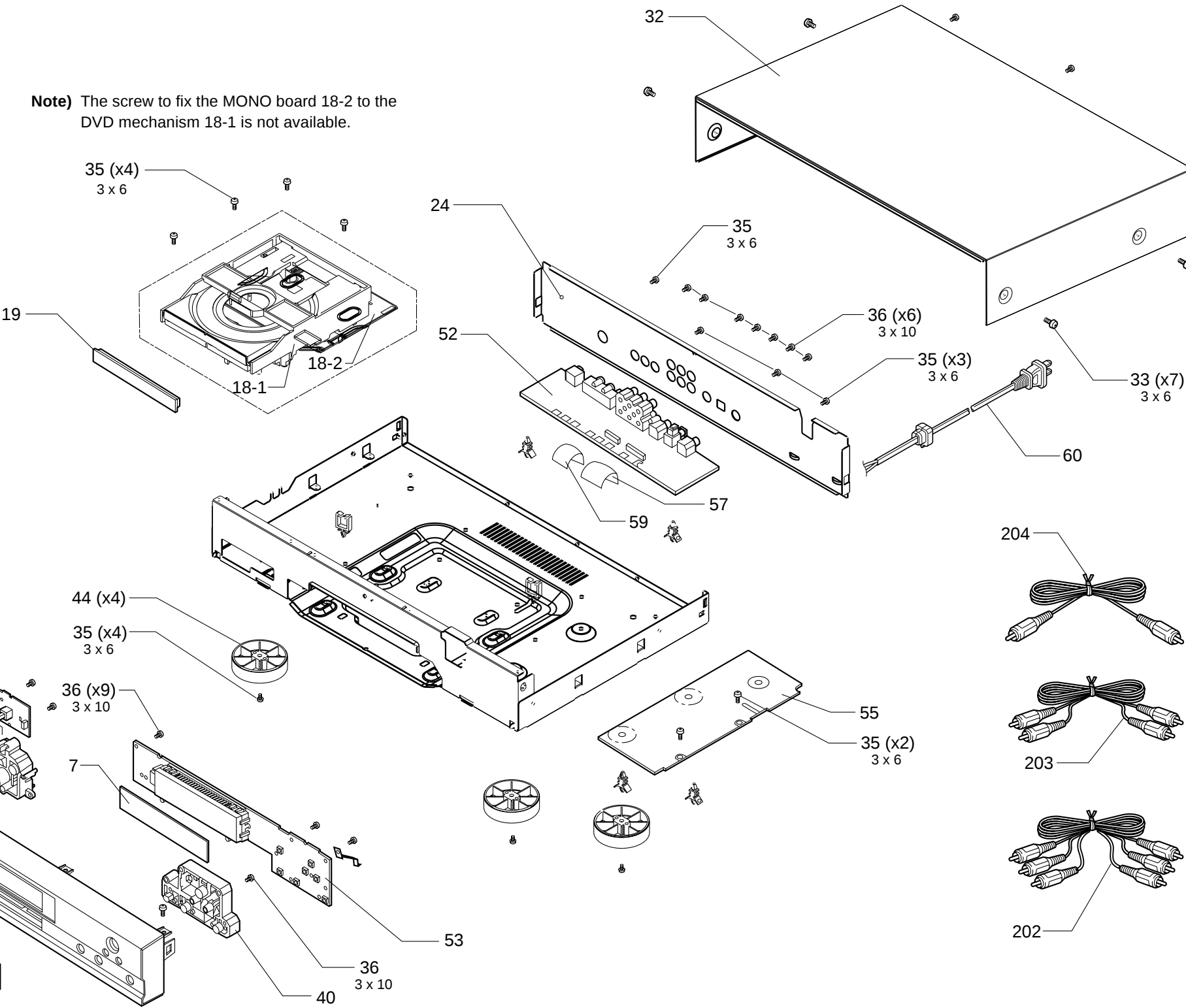
T6  1.7 mm for removing MONO board (18-2) from DVD Mechanism (18-1)



Note) The screw to fix the MONO board 18-2 to the DVD mechanism 18-1 is not available.



Note) The Lid is not available.



MECHANICAL PARTS

Ref. No.	PART NO.	Description	Remarks	Markets
* 1	AAX30140	FRONT PANEL	S520BL	3139 247 54561 UCAP
* 1	AAX30150	FRONT PANEL	S520BL	3139 247 54571 GB
* 1	AAX30090	FRONT PANEL	S520GD	3139 247 54351 RT
* 1	AAX30110	FRONT PANEL	S520GD	3139 247 54441 G
* 1	AAX30130	FRONT PANEL	S520TI	3139 247 54491 G
* 1	AAX30120	FRONT PANEL	S5450BL	3139 247 54461 UA
* 1	AAX30100	FRONT PANEL	S5450SI	3139 247 54391 U
2	AAX22900	BADGE YAMAHA	S520BL/TI, S5450SI	3139 240 00061
2	AAX22910	BADGE YAMAHA	S520GD, S5450BL	3139 240 00071
* 4	AAX29630	WINDOW	GRAYSMOKE	3139 244 01631
5	AAX22920	BUTTON/POWER	S520BL	3139 247 52381 UCAR
5	AAX22930	BUTTON/POWER	S520GD	3139 247 52701 RT
5	AAX22940	BUTTON/POWER	S5450BL	3139 247 52711 UA
* 5	AAX30030	BUTTON/POWER	S5450SI	3139 247 54411 U
5	AAX22430	BUTTON/STANDBY	S520BL	3139 247 52391 GB
5	AAX22440	BUTTON/STANDBY	S520GD	3139 247 52401 G
* 5	AAX29770	BUTTON/STANDBY	S520TI	3139 247 54511 G
* 7	AAX30060	FL FILTER		3139 243 10131
		DVD MODULE	SD3.0 NON EURO	3139 248 70841 not available
		DVD MODULE	SD3.0 EURO	3139 248 70381 not available
18-1	AAX21470	DVD MECHANISM (BASIC ENGINE)	VAL6011/04	9305 023 61104
* 18-2	AAX29590	P.C.B. ASS'Y	MONO BOARD	3139 247 10111 UCARTP
* 18-2	AAX29600	P.C.B. ASS'Y	MONO BOARD	3139 247 10161 GB
19	AAX23100	COVER TRAY	S520BL	3139 247 52451
19	AAX23110	COVER TRAY	S520GD	3139 247 52461
* 19	AAX30190	COVER TRAY	S520TI	3139 247 54501
19	AAX23130	COVER TRAY	S5450BL	3139 247 52731
* 19	AAX30180	COVER TRAY	S5450SI	3139 247 54401
* 24	AAX30260	REAR PANEL	S520	3139 247 54531 UC
* 24	AAX30230	REAR PANEL	S520	3139 247 54361 R
* 24	AAX30240	REAR PANEL	S520	3139 247 54371 T
* 24	AAX30270	REAR PANEL	S520	3139 247 54541 A
* 24	AAX30220	REAR PANEL	S520	3139 247 54331 GB
* 24	AAX30280	REAR PANEL	S520	3139 247 54551 P
* 24	AAX30250	REAR PANEL	S5450	3139 247 54471 U
* 24	AAX30290	REAR PANEL	S5450	3139 247 54581 A
32	AAX22820	TOP COVER	S520BL, S5450BL	3139 247 50341
32	AAX22830	TOP COVER	S520GD	3139 247 52481
32	AAX22840	TOP COVER	S520TI, S5450SI	3139 247 52491
33	AAX23640	PAN HEAD TORX S-TITE SCREW	3x6 ZN-BL	4822 502 13988
33	AAX23650	PAN HEAD TORX S-TITE SCREW	3x6 NI	2511 077 01039
35	AAX23640	PAN HEAD TORX S-TITE SCREW	3x6 ZN-BL	4822 502 13988
36	AAX23630	PAN HEAD TORX P-TITE SCREW	3x10 ZN-BL	4822 502 14109
40	AAX23330	BUTTON/CONTROL	S520BL	3139 247 52421
40	AAX23340	BUTTON/CONTROL	S520GD	3139 247 52431
* 40	AAX30400	BUTTON/CONTROL	S520TI	3139 247 54521
40	AAX23360	BUTTON/CONTROL	S5450BL	3139 247 52721
* 40	AAX30390	BUTTON/CONTROL	S5450SI	3139 247 54421
44	AAX23270	FOOT ASS'Y	S520BL, S5450SI	3139 247 50750 UCAP
44	AAX23280	FOOT ASS'Y	S520BL, S520TI	3139 247 51261 GB
44	AAX23290	FOOT ASS'Y	S520GD	3139 247 51461 G
* 44	AAX30350	FOOT ASS'Y	S520GD	3139 247 51451 RT
* 44	AAX30340	FOOT ASS'Y	S5450BL	3139 247 51220 U
* 52	AAX29570	P.C.B. ASS'Y	AV	3139 248 80881 UCARTP
* 52	AAX29580	P.C.B. ASS'Y	AV	3139 248 80891 GB
* 53	AAX29610	P.C.B. ASS'Y	DISPLAY	3139 248 80951 UCARTP
* 53	AAX29620	P.C.B. ASS'Y	DISPLAY	3139 248 80961 GB
* 55	AAX30430	POWER SUPPLY UNIT	VFM 2001 US 120V	3139 248 70421 UC
* 55	AAX30420	POWER SUPPLY UNIT	VFM WR	3122 427 22600 ARTP
* 55	AAX30410	POWER SUPPLY UNIT	VFM EURO 230V	3122 427 22572 GB

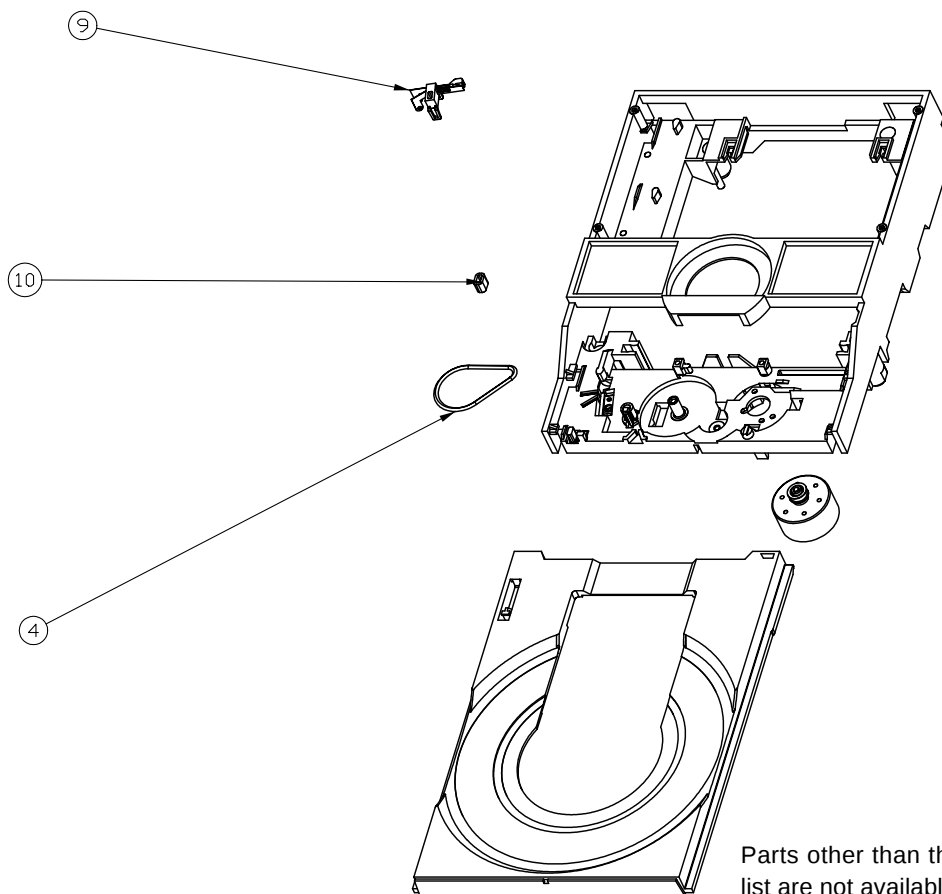
* New Parts

DVD-S520/DV-S5450

Ref. No.	PART NO.	Description		Remarks	Markets
57	AAX22990	FLEXIBLE FOIL CONNECTION	FFC 22P 130mm	3139 110 34220	UC RTP A G B
59	AAX23000	FLEXIBLE FOIL CONNECTION	FFC 16P 130mm	3139 110 34230	
60	V2363800	POWER CORD ASS'Y			
60	VZ542500	POWER CORD ASS'Y			
60	V2296800	POWER CORD ASS'Y			
60	VN363700	POWER CORD ASS'Y			
60	VV437300	POWER CORD ASS'Y			

Ref. No.	PART NO.	Description		Remarks	Markets
200	AAX30200	ACCESSORY REMOTE CONTROL TRANSMITTER	RC19133004/01H	3139 228 89671	UCARTP GB GB
202	AAX23450	AUDIO/VIDEO CORD	YE/RD/WH 1.5m 1pc	2422 076 00304	
203	AAX21980	AUDIO CORD	RD/WH 1.5m 1pc	3103 308 92611	
204	AAX22970	VIDEO CORD	YE 1.5m 1pc	3104 108 45432	

DVD MECHANISM ASS'Y

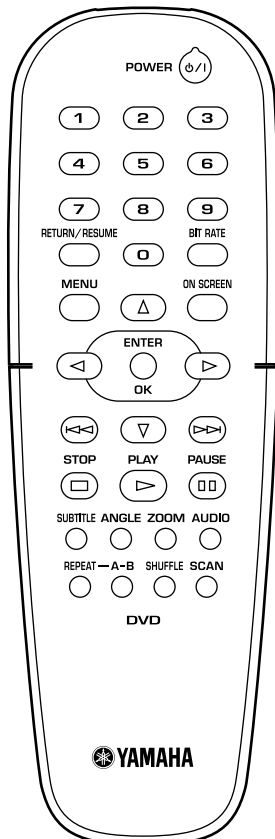
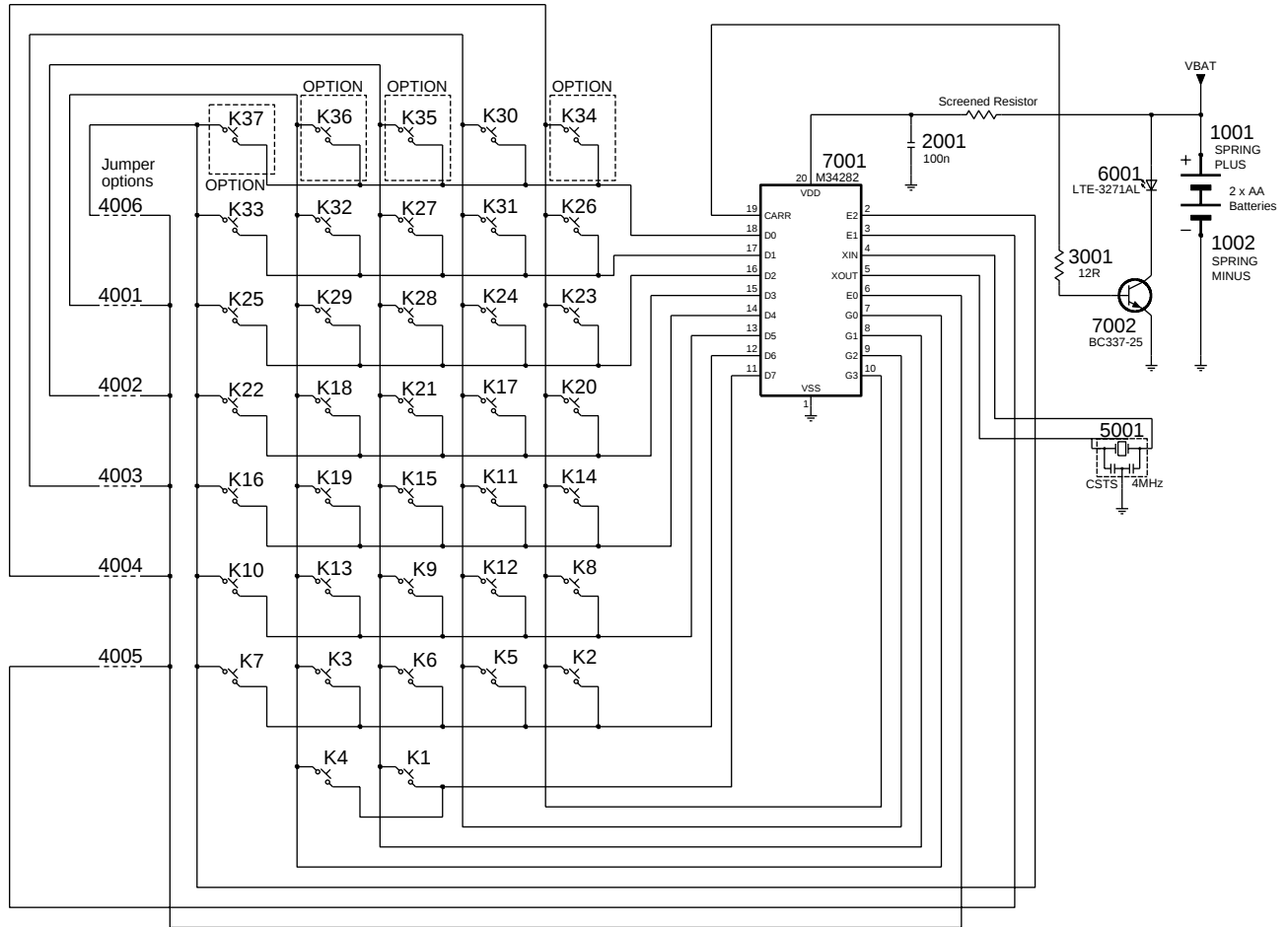


Parts other than the following parts list are not available as spare parts.

Ref. No.	PART NO.	Description		Remarks	Markets
4	AAX21470	DVD MECHANISM (BASIC ENGINE)		9305 023 61102	
9	AAX23070	BELT/DRIVING		4822 358 10266	
10	AAX22410	SWITCH/OTHERS		3139 198 80010	
	AAX23210	RING	TULE	4822 532 13097	
		TRAY		3139 194 00270	
		MOTOR	DC <=37.5W	3139 197 50060	not available not available

* New Parts

REMOTE CONTROL TRANSMITTER



Protocol Type: RC6 Mode 0

Key No.	RC Key id	Hexadecimal code
1	POWER ϕ / I	C
2	1	1
3	2	2
4	3	3
5	4	4
6	5	5
7	6	6
8	7	7
9	8	8
10	9	9
11	RETURN/RESUME	83
12	0	0
13	BIT RATE	EF
14	MENU	54
15	CURSOR UP Δ	58
16	ON SCREEN	82
17	CURSOR LEFT $\triangleleft$	5A
18	OK	5C
19	CURSOR RIGHT $\triangleright$	5B
20	PREVIOUS $\ll$	21
21	CURSOR DOWN ∇	21
22	NEXT $\gg$	20
23	STOP $\square$	31
24	PLAY $\triangleright$	2C
25	PAUSE $\square\square$	30
26	SUBTITLE	4B
27	ANGLE	85
28	ZOOM	F7
29	AUDIO	4E
30	REPEAT	1D
31	A/B REPEAT	3B
32	SHUFFLE	1C
33	SCAN	2A

DVD-S520/DV-S5450

