
harman/kardon
Service Manual

HS 2X0/230

(HS 210 system and HS 280 system)

2 x 65W 2.1 RECEIVER / HOME CINEMA SYSTEMS



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NOTE: The HS 210 and HS 280 systems DVD/amplifier units are identical, named "HS 2X0" on the rear panel, but featuring NO NAME-STICKER on the front panel.

The only difference is the loudspeakers included in the system box.

HS 210 comes with a HKTS 30 system in 2.1 configuration

HS 280 comes with a HKTS 60 system in 2.1 configuration.

Please refer to the HKTS 20+30+60 service manual for information on the speakers.

Introduction

Please register your product on our Web site at www.harmankardon.com.

Note: You'll need the product's serial number. At the same time, you can choose to be notified about our new products and/or special promotions.

www.harmankardon.com

Thank you for choosing the Harman Kardon® HS 2X0S0/230!

In the years since Harman Kardon invented the high-fidelity receiver, we have taken to heart this philosophy: Bring the joy of home entertainment to as many people as possible, adding performance and ease-of-use features that enhance the experience. With the introduction of the HS series of home-entertainment systems, Harman Kardon offers a complete home-entertainment solution with a wealth of listening and viewing options in one sleek component. Each HS series system also includes a 5.1-channel or 2.1-channel loudspeaker system, a system remote control and all the cables and accessories you need to enjoy movies and music in your own home, when you use them with your television or video display.

To get the maximum enjoyment from your new HS system, we urge you to read this manual thoroughly and refer back to it as you become more familiar with your new system's features and their operation.

If you have any questions about this product, its installation or its operation, please contact your retailer or custom installer, or visit our Web site at www.harmankardon.com.



NOTE: The built-in DVD player is designed and manufactured for compatibility with Region Management Information that is encoded on most DVDs. This player is designed only for playback of discs with Region Code 2 information or discs that do not contain Region Code information. If there is any other Region Code on a disc, it will not play in the HS 2X0S0/230.

HS 2X0S0/230 Two-Channel DVD Receiver

Audio Section

- 65 watts x 2 continuous power at 6 ohms (both channels driven), 20Hz – 20kHz, <0.5% THD (total harmonic distortion)

Audio Modes

- Dolby® Digital
- Dolby Virtual Speaker
- Stereo

Analog-Audio Inputs

- FM tuner (internal)
- DVD player (internal)
- Two left/right (L/R) line input connectors
- L/R input via SCART

Analog-Audio Outputs

- Headphone output
- Subwoofer output
- One L/R line output connector

Digital Audio Inputs

- Two coaxial
- Two optical
- Two USB 2.0 ports

Digital Audio Outputs

- One coaxial

Video Inputs

- DVD player (internal)

Video Outputs

- One HDMI™ (High-Definition Multimedia Interface™) version 1.2
- One S-Video
- One composite video
- S-Video and composite video via SCART

Speaker Outputs

- Front left and front right

Control Inputs/Outputs

- Subwoofer trigger output
- Infrared (IR) remote control input
- Infrared (IR) remote control output

Ease of Use

- On-screen menu system
- Dot-matrix front-panel information display
- Learning remote control (also controls your TV and a video component)

DVD Player Features

- Region 2 coding
- Plays five-inch (12cm) and 3-inch (8cm) discs
- Video formats supported: DVD, DVD-R, DVD-RW, DVD+R/RW, VCD, SVCD
- Audio formats supported: Dolby Digital, CD, CD-R/RW, MP3, WMA (v7-v8)
- Still-image formats supported: JPEG
- Video upscaling to 720p and 1080p (HDMI output only)
- Progressive-scan video output (HDMI only)
- MP3 bit rates: 32kbps – 320kbps
- WMA bit rates: 16kbps – 192kbps
- JPEG resolution supported: Five megapixels, 5MB file size
- Still-image rotation in 90-degree increments
- Fast Play rates: 2x, 4x, 8x, 16x, 32x
- Slow Play rates: 1x, 2x, 4x, 8x
- Random Play
- Repeat Play: One group/title, one track/chapter, one folder, one disc
- Disc recognition for up to 100 discs
- Playback control for VCDs
- Aspect-ratio adjustment

SAT TS60 Satellite Speakers (for HS 280)

- One 1" (25mm) CMMD® Lite dome video-shielded tweeter
- Two 3" (75mm) flat-diaphragm, video-shielded, midrange drivers
- 20 ~ 150 watts recommended power

SAT TS11 Satellite Speakers (for HS 210)

- One 1/2" (12mm) dome, video-shielded tweeter
- Dual 3" (75mm) drivers, video-shielded, midrange
- 10 ~ 120 watts recommended power

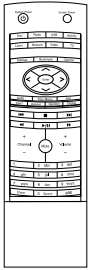
HKTS200SUB Subwoofer

- 8" (200mm) woofer in a sealed enclosure
- 200 watts RMS amplifier power
- Automatic turn-on and turn-off

Supplied Accessories (for HS 280)

The following accessory items are supplied with the HS 280 system. If any of these items are missing, please contact Harman Kardon Customer Service via www.harmankardon.com.

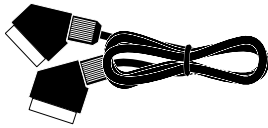
- System remote control



- HDMI cable



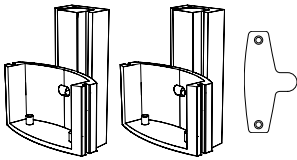
- SCART cable



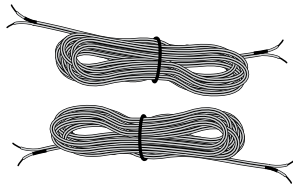
- FM wire antenna



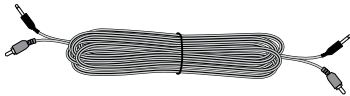
- Two speaker wall-mount brackets



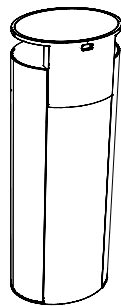
- Two five-meter (16.4-foot) speaker cables



- One combination LFE (low-frequency effects) and trigger cable for connection to the subwoofer



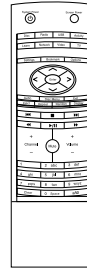
- 2 TS-60 Satellites



Supplied Accessories (for HS 210)

The following accessory items are supplied with the HS 210 system. If any of these items are missing, please contact Harman Kardon Customer Service via www.harmankardon.com.

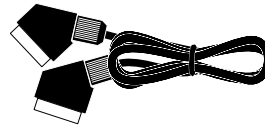
- System remote control



- HDMI cable



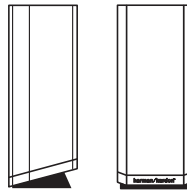
- SCART cable



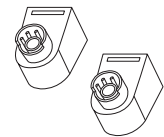
- FM wire antenna



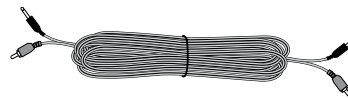
- 2 TS-11 satellite speakers



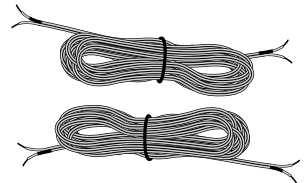
- Two wall-mount brackets



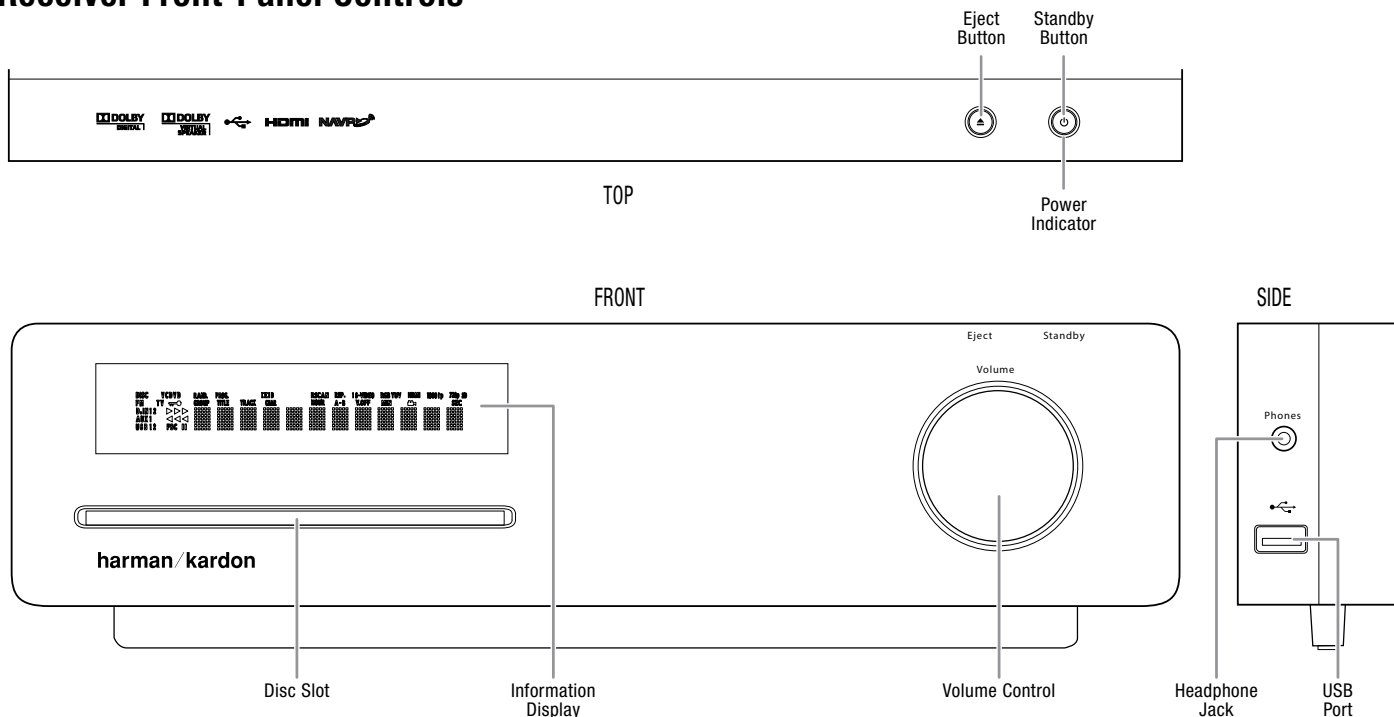
- One combination LFE (low-frequency effects) and trigger cable for connection to the subwoofer



- Two five-meter (16.4-foot) speaker cables



Receiver Front-Panel Controls



Disc Slot: Insert a compatible disc into the slot. The HS 2X0S0/230's disc player will accept five-inch (12cm) and three-inch (8cm) discs.

Information Display: Various messages appear on this display in response to commands. In addition, a variety of indicators will light at various times to show the current source, settings or other aspects of the HS 2X0S0/230's status as described throughout this manual. See *Receiver Information Display*, on page 7, for details.

Volume Control: Rotate the disc clockwise to raise the volume; rotate counterclockwise to lower the volume. The volume level will appear on the Information Display and on the on-screen menu (if the menu is enabled, see *Preferences – Volume Bar*, on page 20).

Eject Button (on top of unit): Press this button to eject a disc from the HS 2X0S0/230's built-in DVD player. Before pressing this button, make sure that no objects are blocking the disc slot. **NOTE:** If you do not remove the ejected disc within 20 seconds, it will automatically re-load back into the DVD player for protection.

Standby Button (on top of unit): This button turns the HS 2X0S0/230 on for playback or leaves it in the Standby mode for quick turn-on using this button or the remote control.

Power Indicator: This LED (light-emitting diode) surrounds the Standby switch. When the HS 2X0S0/230 is plugged into AC power, the LED turns red to indicate that the HS 2X0S0/230 is in Standby mode (ready to be turned on). When you turn the HS 2X0S0/230 on (by the Standby switch or the remote control), the LED turns white.

Phones (headphones) Jack (on side of unit): Insert the 3.5mm stereo mini-connector from a set of headphones into this jack. **NOTE:** When a plug is inserted into the Phones jack, the HS 2X0S0/230's speaker outputs automatically mute; the HDMI audio output, coaxial output and line output remain active.

USB 2.0 Port (on side of unit):

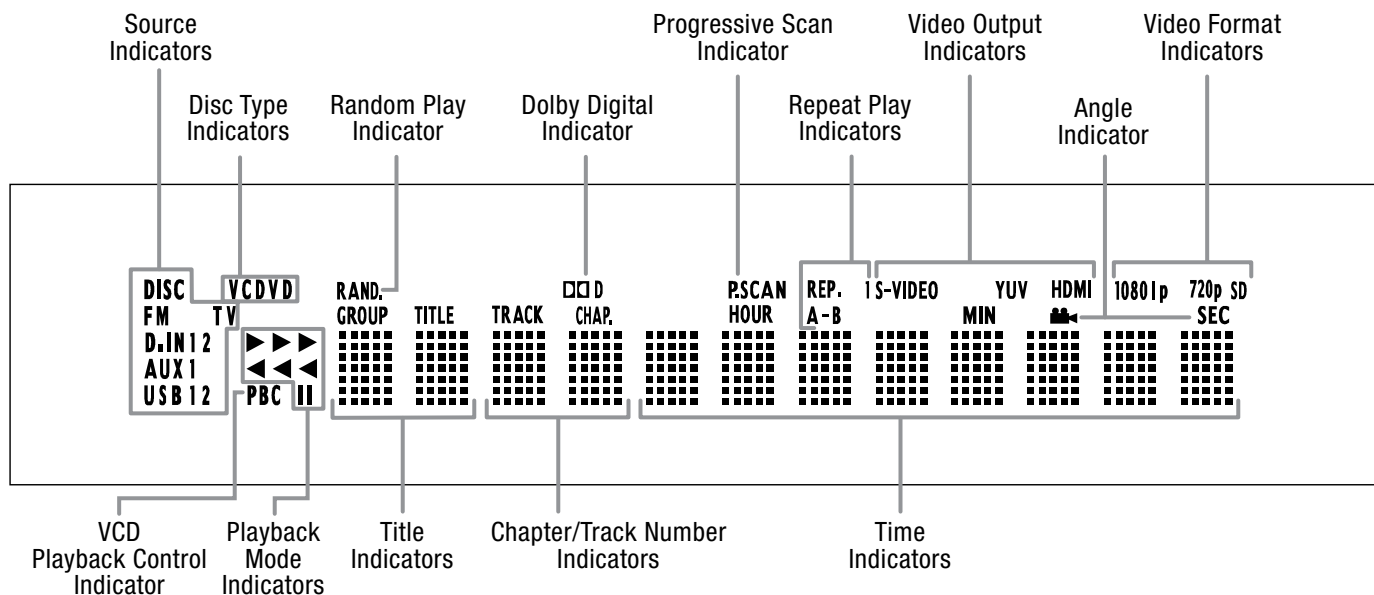
Gently insert a flash drive, card reader, digital camera or other USB device, or a USB Standard-A cable connected to a USB device, to this port.

IMPORTANT: DO NOT connect a PC or other USB host/controller to this port, or you may damage both the HS 2X0S0/230 and your other device.

Orient the other device's plug so it fits all the way into the HS 2X0S0/230's USB connector. You may insert or remove the device at any time — there is no installation or ejection procedure.

The HS 2X0S0/230 can play MP3 and Windows Media® Audio WMA audio files that are stored on the device. The HS 2X0S0/230 can also display JPEG-format still-image files.

Receiver Information Display



Source Indicators: Indicate which source is currently playing.

Disc Type Indicators: Indicate the type of disc that is currently playing.

Random Play Indicator: Indicates that the disc player is in the Random Play mode.

Dolby Digital Indicator: Indicates that the soundtrack of the currently-playing disc is Dolby Digital-encoded.

Progressive Scan Indicator: Indicates that the disc player is outputting a progressive-scan video signal.

Repeat Play Indicators: Indicate that the disc player is in one of the Repeat Play modes: Rep. = repeat all; Rep. 1 = repeat track; A-B = A/B repeat.

Video Output Indicators: Indicate which type of video output is currently active.

Angle Indicator: Indicates when alternative viewing angles are available on the currently-playing DVD.

Video Format Indicators: Indicate which video format is currently playing.

VCD Playback Control Indicator: Indicates that the playback-control function is turned on when the HS 2X0S0/230 is playing a VCD.

Playback Mode Indicators: Indicate the current disc playback mode:

- ▶ Indicates normal playback.
- ▶▶ Indicates that the disc is in the forward fast-search mode. The video display will indicate the selected speed.
- || Indicates that the disc is paused. The video display will also indicate that the disc is paused.
- ◀◀ Indicates that the disc is in the reverse fast-search mode. The video display will indicate the selected speed.

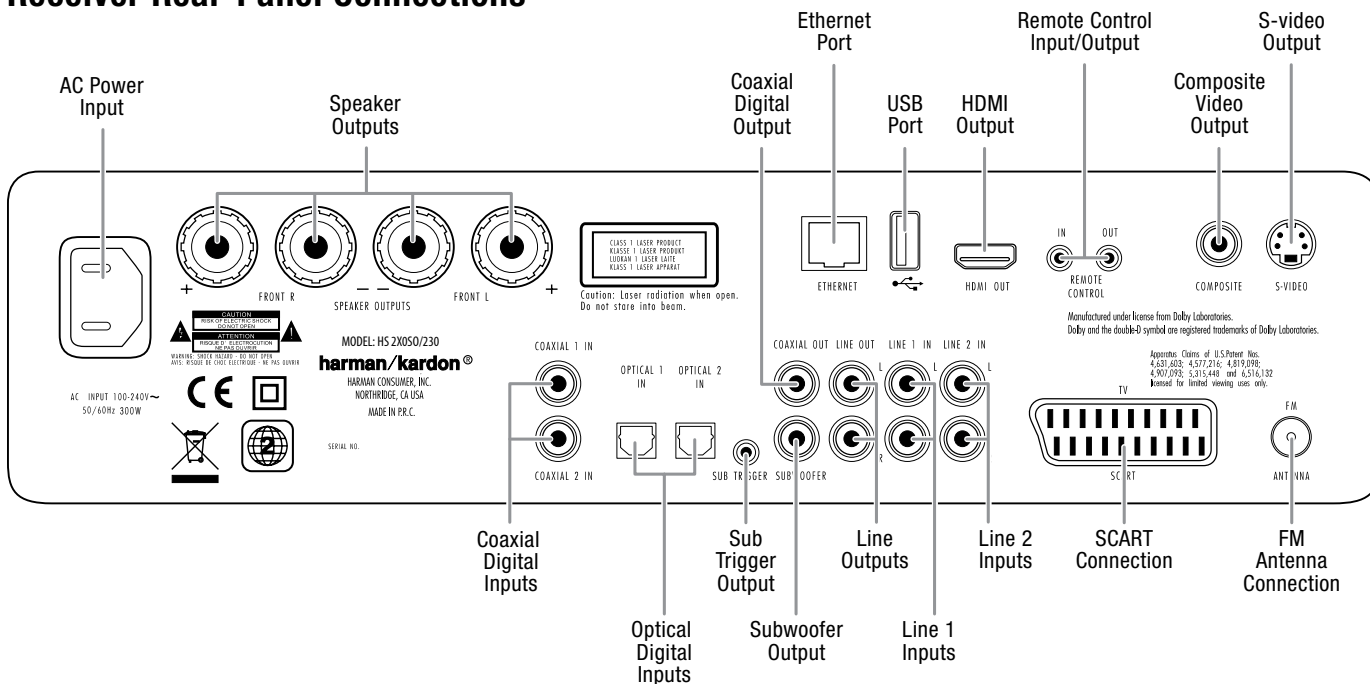
Title Indicators: Show the title number of a DVD that is playing.

Chapter/Track Number Indicators: Show the current chapter when a DVD is playing; show the current track number when a CD is playing.

Time Indicators: Show the running time when a DVD is playing; show elapsed time when a CD is playing.

NOTE: The Title, Chapter/Track Number and Time Indicators will also display the radio station name when Radio is the selected input. When a DVD or CD is playing, the indicators will display various text messages about the disc's status.

Receiver Rear-Panel Connections



See the *Connections* section, on page 14, for detailed information about making connections.

AC Power Input: After you have made and confirmed all other connections, plug the supplied AC power cord into this input and into an unswitched AC outlet.

Speaker Outputs: Use the speaker wires supplied with the SAT TS60 speakers to connect the satellite speakers to the proper terminals. Be sure to connect the positive (+, colored red) connector on the speaker to the positive (+, colored red and white) connector on the HS 2X0S/230, and the negative (–, colored black) connectors on the speakers to the negative (–, colored black) connectors on the HS 2X0S/230. See *Connecting the Satellite Speakers*, on page 14, for more information about making connections.

Coaxial Digital Inputs: Connect the coaxial digital output of an audio-only source component here. The signal may be a Dolby Digital bitstream or a standard PCM digital audio bitstream.

NOTE: Use only one type of digital connection for each source component.

Optical Digital Inputs: Connect the optical digital output of an audio-only source component here. The signal may be a Dolby Digital bitstream or a standard PCM digital audio bitstream.

NOTE: Use only one type of digital connection for each source component.

Coaxial Digital Output: Connect this output to the coaxial digital input of a digital recording device such as a CD-R or MiniDisc recorder.

Sub Trigger Output: Use the black mini-cable connector of the supplied combination LFE and trigger cable to connect this jack to the HKTS200SUB subwoofer's External Trigger Input. See *Connecting the Subwoofer*, on page 15, for more details about making connections.

Whenever the HS 2X0S/230 is turned on, it will send a trigger signal that will turn the subwoofer's amplifier on. Turning the HS 2X0S/230 off removes the trigger signal, and the subwoofer's amplifier will turn off. (This change will occur even when the subwoofer's Power On Mode switch – see page 9 – is in the Auto position.)

Subwoofer Output: Use the LFE (purple) connector of the supplied combination LFE and trigger cable to connect this jack to the HKTS200SUB subwoofer's Line-Level In LFE jack. See *Connecting the Subwoofer*, on page 15, for more details about making connections.

Ethernet Port: Connect this port to your local area network (LAN) using a CAT 5 RJ45 network cable. See *Connecting to a Local Area Network (LAN)*, on page 17, for details.

Line Outputs: Use the Line Outputs to connect to an audio-only recorder, such as a CD-R recorder or tape deck.

USB 2.0 Port: Gently insert a flash drive, card reader, digital camera or other USB device, or a USB Standard-A cable connected to a USB device, to this port.

IMPORTANT: DO NOT connect a PC or other USB host/controller to this port, or you may damage both the HS 2X0S/230 and the other device. Orient the device's plug so it fits all the way into the HS 2X0S/230's USB connector. You may insert or remove the device at any time – there is no installation or ejection procedure.

The HS 2X0S/230 can display JPEG-format still-image files stored on the device and can also play MP3 and Windows Media® Audio (WMA) files and MPEG4 and AVI video files that are stored on the device.

Line 1 Input/Line 2 Inputs: Use these inputs to connect to an audio-only source component (such as a tape deck). Do not connect a turntable to these jacks without a phono preamp.

HDMI Output (HDMI version 1.2): If your video display is HDMI-capable, connect it to the HS 2X0S/230's HDMI output for improved video performance. Since the HDMI cable transmits both video and audio to the video display, we recommend that you disable your display's HDMI audio function to take full advantage of the HS 2X0S/230's system's superior audio performance.

IMPORTANT: The HS 2X0S/230 is in compliance with HDCP (High-Definition Copy Protection). A video display must also be HDCP-compliant to be used with the HS 2X0S/230's HDMI output. For best results, we do not recommend HDMI connections in excess of ten feet without a repeater. If your video display has a DVI input, you may use an optional HDMI-to-DVI cable or adapter for the video connection to the display. (The DVI connection is video-only.)

Remote Control Input/Output: If the HS 2X0S0/230's front-panel IR sensor is blocked, such as when it is placed inside of a cabinet, connect an external IR receiver (such as the Harman Kardon HE 1000 – not included) to the Remote Control In connector. You can then place the external IR receiver in a location where it can receive the signals from the HS 2X0S0/230 remote control.

You can connect the HS 2X0S0/230's Remote Control Out connector to the remote IR input of a compatible device, allowing it to be controlled through the HS 2X0S0/230 (and through an external IR receiver, if connected). You can even connect several such compatible devices together in "daisy-chain" fashion.

SCART Connection: Connect it to a compatible TV or set-top box using the included SCART cable. The SCART cable carries composite (CVBS) video or S-Video from the HS 2X0S0/230 to a TV or set-top box (as well as a control signal for automatically controlling picture aspect ratio and other parameters). It also carries stereo audio from the TV or set-top box back to the HS 2X0S0/230.

Composite-Video Output: Connect it to the composite-video input of a TV or video projector.

S-Video Output: Connect it to the S-Video input of a TV or video projector.

FM Antenna Connection: Connect the supplied FM antenna to this terminal.

Subwoofer Controls and Connections



Subwoofer Level Control: Use this control to adjust the HKTS200SUB subwoofer's volume. Turn clockwise to increase the volume; turn counterclockwise to decrease the volume.

Bass Boost Switch: Set this switch to On to enhance the subwoofer's low-frequency performance. Set this switch to Off for normal low-frequency performance.

Phase Switch: This switch determines whether the subwoofer driver's piston-like action moves in and out in phase with the satellite speakers. If the subwoofer were to play out of phase with the satellite speakers, the sound waves from the satellite speakers could cancel out the sound waves from the subwoofer, reducing bass performance and sonic impact. This phenomenon depends in part on the relative placement of all the speakers in the room.

Although in most cases the Phase Switch should be left in the Normal position, there is no absolutely correct setting for it. When the subwoofer is properly in phase with the satellite speakers, the sound will be clearer and have maximum impact. It will make percussive sounds like drums, piano and plucked strings sound more lifelike. The best way to set the Phase Switch is to listen to music that you know well and set the switch in the position that gives drums and other percussive sounds maximum impact.

Power On Mode Switch: When this switch is set in the Auto position and when the Power switch is set to On, the HKTS200SUB will automatically turn itself On whenever it receives an audio signal. It will enter the standby mode if it receives no audio signal for 20 minutes. When the Power On Mode switch is set in the On position, the subwoofer will remain on whether or not it is receiving an audio signal.

An LED on the subwoofer's top panel indicates whether the subwoofer is in the on or standby mode:

- When the LED is illuminated blue, the subwoofer is turned on.
- When the LED is not illuminated, the subwoofer is in standby mode.

When the Power switch is set to Off, the LED will not be illuminated, no matter what setting the Power On Mode switch is in.

External Trigger Input Connector: Use the mini-plug of the supplied combination LFE and trigger cable to connect the External Trigger Input to the trigger output of another compatible component. Whenever the subwoofer detects a trigger signal between 3V and 30V (AC or DC), the subwoofer's amplifier will turn on. The subwoofer's amplifier will turn off after the trigger signal ceases. (This change will occur even when the Power On Mode switch is in the Auto position.)

Line-Level In LFE Connector: Use the LFE (purple) connector of the supplied combination LFE and trigger cable to connect the Line-Level In LFE connector to the dedicated subwoofer output of a receiver or preamp/processor. This input bypasses the subwoofer's internal crossover circuitry, so use it only with a subwoofer output that is low-pass filtered. (Check the receiver or preamp/processor's documentation to confirm that its subwoofer output is low-pass filtered.) If your receiver or preamp/processor does not have a dedicated subwoofer output that is low-pass filtered, use the subwoofer's Line-Level In L/R connectors instead.

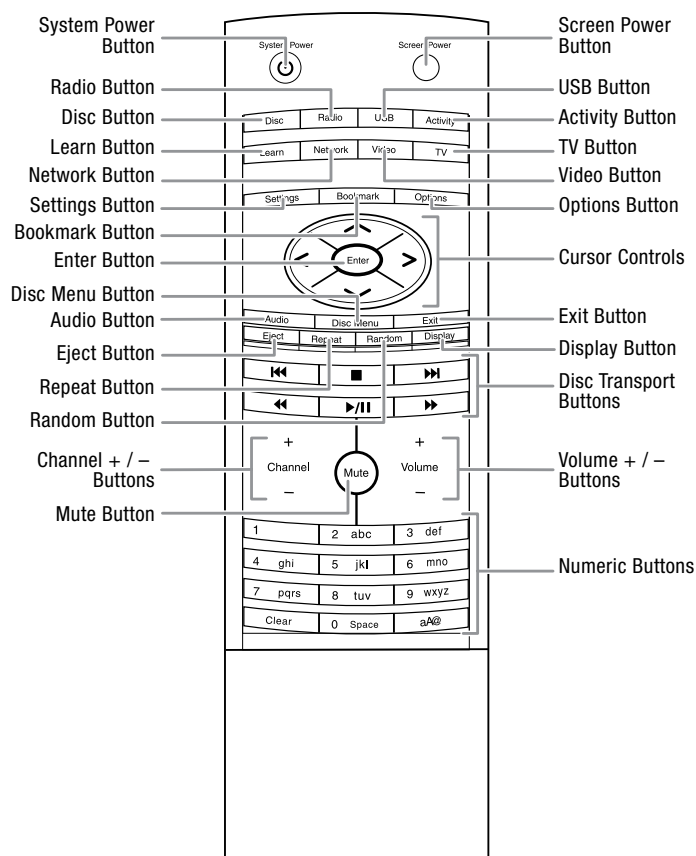
Line-Level In L/R Connectors: Use these connectors if your receiver or preamp/processor does not have digital surround-sound decoding or a low-pass-filtered subwoofer output.

- If your receiver or preamp/processor has a separate subwoofer output, use the LFE (purple) connector of the supplied combination LFE and trigger cable to connect the receiver or preamp/processor's subwoofer output to either one of the subwoofer's Line-Level In L/R connectors.
- If your receiver or preamp/processor does not have a separate subwoofer output, use two Y-adapters (not supplied). Connect one adapter's single end to the unit's preamp output for that channel. Connect one of this adapter's dual ends to the main amp input for that channel, and connect the adapter's other dual end to one of the subwoofer's Line-Level In L/R Connectors. Repeat this process with the other Y-adapter, the preamp channel, the main amp input and the subwoofer's other Line-Level In L/R connector.

Power Switch: Set this switch in the On position to turn the subwoofer on. The subwoofer will then either be on or in Standby mode, depending on the setting of the subwoofer's Power On Mode switch.

AC Power Cord: After you have made and verified all subwoofer and speaker connections described in this manual, plug the Power Cord into an active, unswitched electrical outlet (that is, an outlet not connected to a light switch) for proper operation of the subwoofer. DO NOT plug this cord into the accessory outlets found in some audio components.

Remote Control Functions



System Power Button: Switches the HS 2X0S0/230 into the Standby mode.

Screen Power Button: Switches your video display on and off.

Disc Button: Selects the HS 2X0S0/230's built-in DVD player as the system's active sound source and plays a disc that has been inserted into the player. Pressing this button also puts the remote control into the disc player control mode. See *Using the DVD Player*, on page 21, for details. NOTE: Pressing this button when the HS 2X0S0/230 is in the Standby mode will switch it on.

Radio Button: Selects the HS 2X0S0/230's built-in FM radio as the system's active sound source. Pressing this button also puts the remote control into the control mode for the radio. See *Using the FM Tuner*, on page 23, for details. NOTE: Pressing this button when the HS 2X0S0/230 is in the Standby mode will switch it on.

USB Button: Selects a device connected to the front- or rear-panel USB ports as the system's active sound source. The HS 2X0S0/230's on-screen menu system lets you navigate through the files stored on the device. See *Playing Files from USB Devices*, on page 24, for details. NOTE: Pressing this button when the HS 2X0S0/230 is in the Standby mode will switch it on.

Activity Button: Switches the on-screen menu to the Activity menu from any other active screen or menu. See *Activity Button*, on page 21, for details. NOTE: Pressing this button when the HS 2X0S0/230 is in the Standby mode will switch it on.

Learn Button: Places the remote control in the learning mode. See *Programming the Remote Control*, on page 17, for details.

Network Button: Switches to the local area network (LAN) that is connected to the HS 2X0S0/230's rear-panel Network connector. See *Playing Files from Networked Devices*, on page 25, for details. NOTE: Pressing this button when the HS 2X0S0/230 is in the Standby mode will switch it on.

Video Button: Puts the remote control into the video-control mode, allowing it to control a video source component with codes that you have programmed into the remote. See *Programming the Remote Control*, on page 17, for details. If you have designated one of the HS 2X0S0/230's analog-audio inputs as a video-component audio input, pressing the Video button will also make that input the system's active sound source. See *Connecting Audio Sources/Line 1, Line 2 In*, on page 16, for details.

TV Button: Puts the remote control into the TV-control mode, allowing it to control your TV or video display with codes that you have programmed-into the remote. See *Programming the Remote Control*, on page 17, for details. If you have designated one of the HS 2X0S0/230's analog-audio inputs as the TV-audio input, pressing the TV button will also make that input the system's active sound source. See *Connecting Audio Sources/Line 1, Line 2 In*, on page 16, for details.

Settings Button: Displays the HS 2X0S0/230's Settings menu. See *Settings Menu*, on page 19, for details.

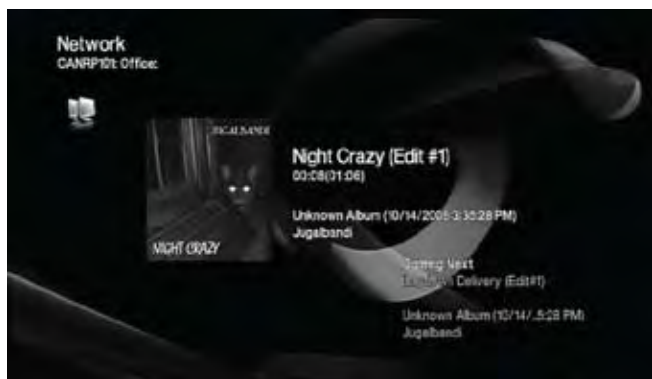
Bookmark Button: Displays the list of your stored bookmarks for easy access. See *Bookmarks*, on page 21, for details.

Options Button: Displays any available options for a menu item that is selected in the on-screen menu.

Cursor Controls: Use these controls – the up cursor, down cursor, left cursor and right cursor – to navigate through items on the on-screen menu.

Enter Button: Press it to select items highlighted on the on-screen menu.

Audio Button: Lets you select from the different listening modes that are available for the source that you have selected. Pressing the Audio button while you are playing a DVD will display the on-screen audio-mode menu.



If there are other MP3s in the folder with the one that you've selected, the HS 2X0S0/230 will play each one, in order as they appear on the OSD screen.

• To skip to the next or previous MP3 file, press the ►► or ◀◀ button. To pause play, press the ►|| button. To resume play, press the ►/|| button again.

• To exit and return to file list screen, press the ■ button.

Playing Videos

Selecting a video file plays the file. If there are other video files in the folder, the HS 2X0S0/230 will play each one, in order as they appear on the OSD screen.

Troubleshooting

If your HS 2X0S0/230 system isn't performing the way you think it should, check to see if the problem is covered in this section before calling your dealer or contacting Harman Kardon.

The receiver won't power up (the Power Indicator is not lit):

- Check that the receiver's AC Power Cord is properly plugged into the receiver's AC Power Input connector.
- Check that the AC power cord is plugged into a working AC outlet and that the AC outlet is not controlled by a switch.

Sound plays through the HS 2X0S0/230 speakers, but there is no TV picture:

- Check the connection between the receiver and the TV.
- Check that the TV is turned on and is set to the proper input source.
- Confirm that all of the choices made in the Settings: Video menu are correct for your TV.
- If you're using the HDMI connection, be sure that the TV or video display is HDCP-compliant. If the TV is not HDCP-compliant, disconnect the HDMI cable and use the receiver's S-Video or composite-video connection.

There is no sound coming from the subwoofer:

- Check that the subwoofer's power cord is plugged into a working AC outlet.
- Check that the subwoofer's Power Switch is in the on position.
- Check that the Subwoofer Level Control is not turned all the way down (fully counterclockwise).
- Check the audio connection between the receiver and the subwoofer.
- Check the receiver's Settings: Audio: Subwoofer menu to make sure that the subwoofer volume has not been set at -10dB.

There is a constant hum in the sound:

- Check that all input cables are plugged all the way into their connectors.
- Check that all cables are at least 3m (9.8 ft.) from fluorescent lights.
- Check that all cable connectors are clean. If necessary, wipe them with a cloth slightly moistened with alcohol.
- Turn the subwoofer's Power switch off. If the hum goes away, there is a ground loop between the subwoofer and the receiver. Plugging the subwoofer's Power Cord into the same AC outlet that the receiver is plugged into should eliminate the ground loop.

The disc does not play:

- Check that the disc is inserted correctly (label-side up).
- Check that the disc is the correct type: DVD, DVD-R, DVD-RW, DVD+R/RW, VCD, SVCD, CD, CD-R/RW, MP3, WMA (v7 and v8). Other disc types will not play.
- Check that the disc surface is clean and not scratched.

There is noise or other interference in the picture while the HS 280 is playing a DVD:

- Check that the disc surface is clean and not scratched.
- If you have the receiver's video output connected to your TV through your VCR, the copy-protection program on some DVDs could affect picture quality. Connect the receiver's video output directly to your TV's video input.

The sound and picture are out of sync:

- Check the Audio: Settings: Delay menu and change the Delay setting to put the sound back in sync with the picture.

The HS 2X0S0/230 cannot tune in radio stations:

- Check that the FM antenna is correctly connected.
- Adjust the antenna's position. If necessary, use a powered FM antenna or an outdoor FM antenna.

The receiver does not respond to remote control commands:

- Replace all three of the remote control's batteries with fresh ones, and make sure to install them correctly.
- Hold the remote control closer to the receiver.
- Check that the receiver's remote sensor is in line of sight with the remote control. If necessary, use an optional Harman Kardon HE 1000 external IR receiver.

The remote does not control programmed components (TV or Video):

- Check that you have pressed the remote's TV or Video button before trying to operate the component.
- Re-learn the component's commands into the remote.

The ∅ symbol appears on the screen when you press a remote control button:

- The selected function is not permitted at the time the button is pressed.

The receiver does not respond to commands, or behaves in an erratic way:

- Unplug the receiver's power cord from the AC outlet, wait 30 seconds, then plug it back in.

You can find additional troubleshooting information in the FAQs link on the Support page at www.harmankardon.com.

Specifications

HS 2X0S0/230 Receiver

Audio Section

Continuous average power, stereo mode (FTC):
65 watts per channel, 120Hz–20kHz,
@ <0.3% THD, both channels driven into 6 ohms

Input sensitivity/impedance (line inputs): 240mV/47k ohms

Frequency response @ 1W (± 3 dB): 120Hz–20kHz

Transient intermodulation distortion (TIM): <0.2%

FM Tuner Section

Frequency range: 87.5 – 108.0MHz

Usable sensitivity IHF: 3.0 μ V/14.7 dBf

Signal-to-noise ratio (mono/stereo): 65dB/60dB

Distortion mono/stereo: 0.3%/0.5%

Stereo separation: 40dB @ 1kHz

Selectivity ± 400 kHz: 65dB

Image rejection: 40dB

IF rejection: 70dB

DVD Player Section

Supported disc formats: 5-inch (12cm) or 3-inch (8cm) DVD Video, DVD-Audio, standard-conforming DVD-R, DVD+R, DVD-RW, DVD+RW, VCD, CD, CD-R, CD-RW, MP3 (up to 320kbps bitrate), or WMA (v7-v8) discs

Region code: 2

DVD layers: Single-side/single-layer, single-side/dual-layer, dual-side/dual-layer

Audio formats: Dolby Digital, linear PCM, MP3 (up to 320kbps bit rate), Windows Media 7 or 8

Still-image format: JPEG

Video signal system: NTSC or PAL

Composite-video output: IV p-p/75 ohms, sync negative polarity

S-Video output: Y/luminance: IV p-p/75 ohms, sync negative polarity;
C/chrominance: 0.3V p-p

Frequency response: DVD (linear PCM): 20Hz–22kHz, ± 1.0 dB,
CD: 20Hz–22kHz ± 1.0 dB

Signal-to-noise ratio: 90dB (A-weighted)

Dynamic range: DVD/CD: 92dB (16-bit)

THD/1kHz: DVD/CD: 0.01%

Wow & flutter: Below measurable limits

Video Section

Television format: Automatic or PAL (selectable)

Output level/impedance: 1.0Vp-p/75 ohms

Video frequency response: (composite and S-Video) 10Hz–8MHz (-3 dB)

HDMI™ version: 1.2

General

Power requirement: AC 100–240V ~ 50/60Hz

Power consumption: 300W maximum, 1W standby

| Dimensions | Unit | Shipping |
|------------|-------------------------|------------------------|
| Height | 98mm (3-7/8 inches) | 197mm (7-3/4 inches) |
| Width | 350mm (13-25/32 inches) | 484mm (19-1/16 inches) |
| Depth | 280mm (11 inches) | 355mm (14 inches) |
| Weight: | 3.5kg (7.7 lb) | 6.1kg (13.4 lb) |

Depth measurement includes terminal connections. Height measurement includes feet and chassis.

Speaker System

Frequency response: 45Hz–20kHz (-6 dB)

SAT TS60 Satellites (for HS 280)

Recommended power: 10 ~ 120 watts

Impedance: 8 ohms nominal

Sensitivity: 86dB @ 2.83V/1 meter

Tweeter: One 19mm (3/4") dome, video-shielded

Midrange: Dual 75mm (3") flat-panel drivers, video-shielded

Dimensions:

Height 299mm (11-25/32 inches)

Width 110mm (4-11/32 inches)

Depth 88mm (3-15/32 inches)

Weight: 1.5kg (3.3 lb)

Height measurement includes removable stands.

SAT-TS11 Satellites (for HS 210)

Recommended power: 10 ~ 120 watts

Impedance: 8 ohms nominal

Sensitivity: 86dB @ 2.83V/1 meter

Tweeter: One 1/2" (12mm) dome, video-shielded

Midrange: Dual 3" (75mm) drivers, video-shielded

Dimensions:

Height 243mm (9-9/16 inches)

Width 100mm (3-15/16 inches)

Depth 92mm (3-5/8 inches)

Weight: 1kg (2.2 lb)

HKTS200SUB Subwoofer

Input rating: AC 220–240V~, 50/60Hz, 200W

Amplifier power: 200 watts RMS

Woofer: 8" cone in a sealed enclosure

External trigger input voltage: 3 ~ 30 volts AC/DC

Dimensions (H x W x D):

Height 353mm (13-29/32 inches)

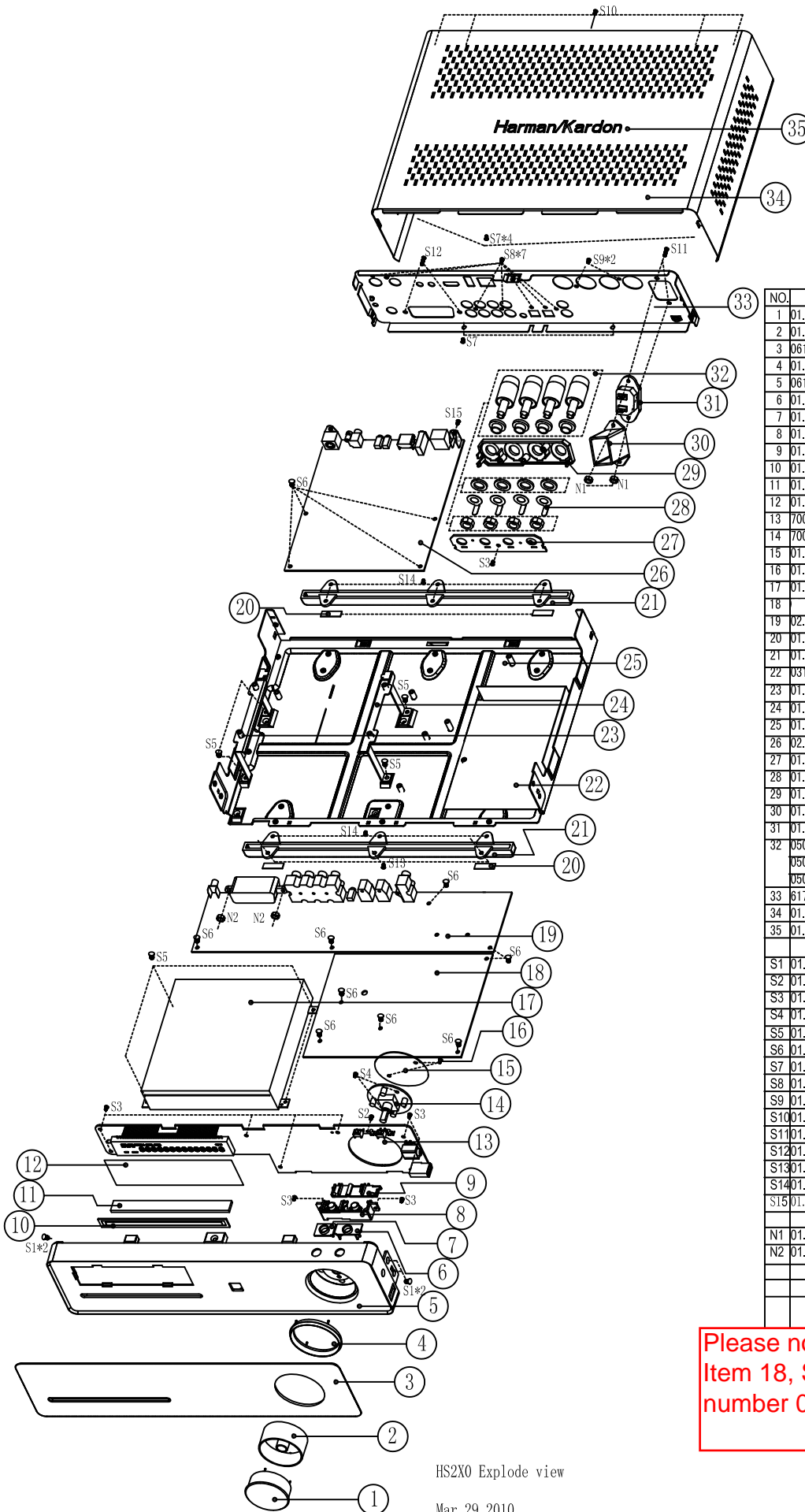
Width 267mm (10-1/2 inches)

Depth 267mm (10-1/2 inches)

Weight: 9kg (19.8 lb)

Height measurement includes the product's feet.

Features, specifications and appearance are subject to change without notice.

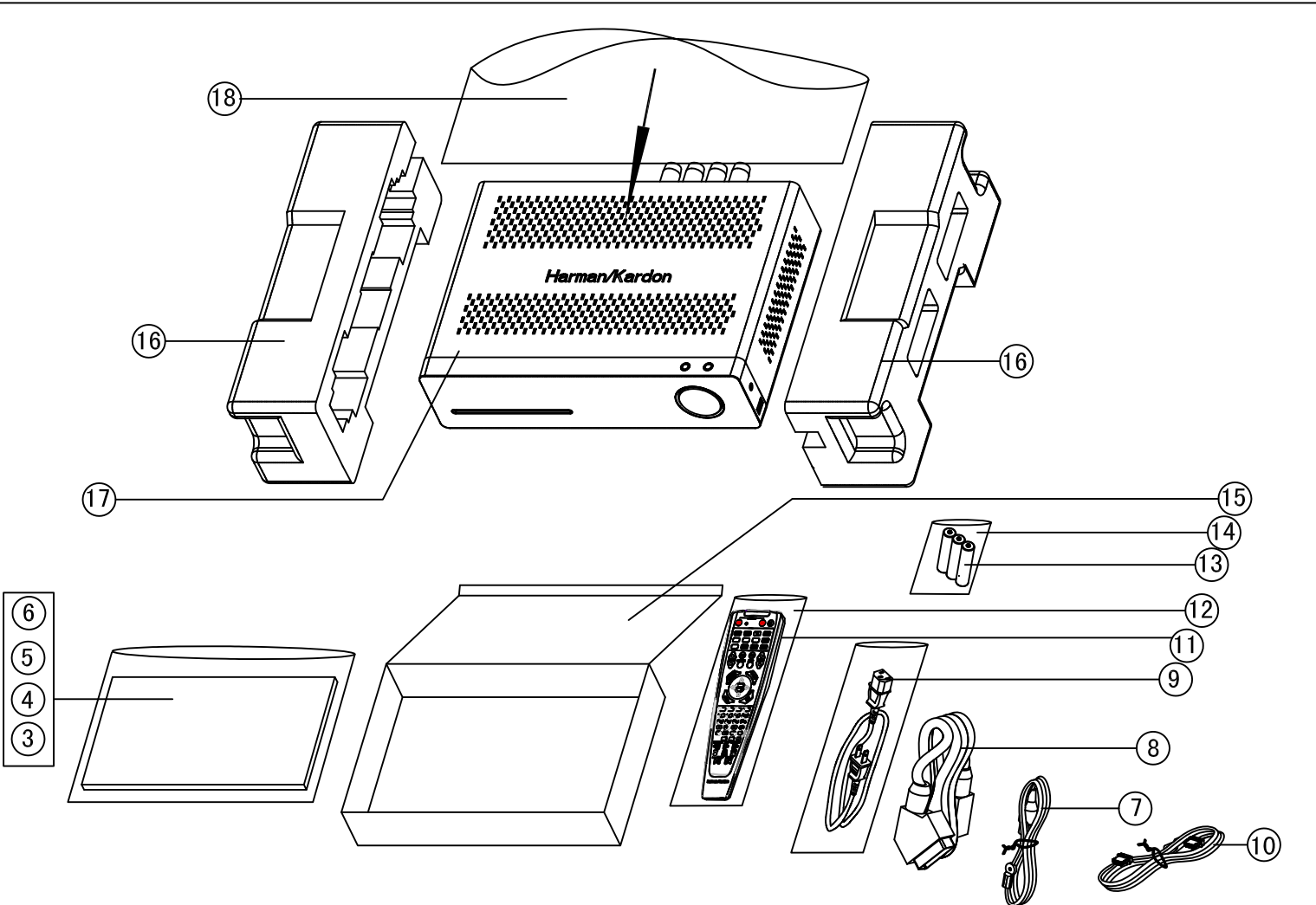


HS2X0 Explode view

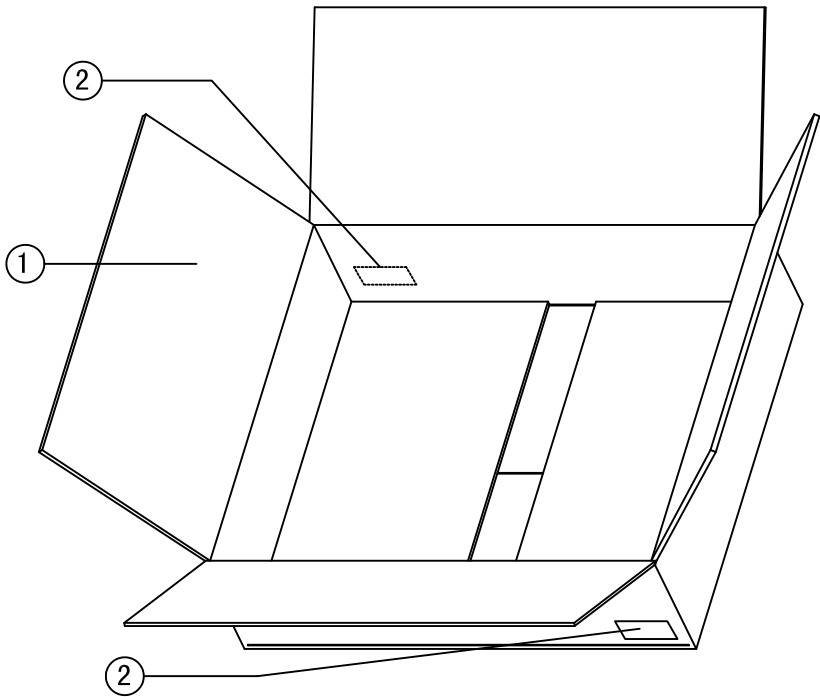
Mar, 29 2010

| NO. | P/N | DESCRIPTION | QTY. |
|-----|------------------------|--------------------------------------|------|
| 1 | 01.00.SJ.HS100.E010 | HS100—Volume Button | 1 |
| 2 | 01.00.SJ.HS100.E008 | HS100—volume button lampshade | 1 |
| 3 | 0616170100034 | HS2X0—Large Lens | 1 |
| 4 | 01.00.SJ.HS100.E006 | HS100—Volume Button Collar | 1 |
| 5 | 0616201100038 | HS2X0—front panel | 1 |
| 6 | 01.00.SJ.HS200.E005 | HS200—Power Indicator lampshade | 1 |
| 7 | 01.00.SJ.HS200.E003 | HS200—Open button collar | 1 |
| 8 | 01.00.SJ.HS200.E002 | HS200—2 in 1 Button | 1 |
| 9 | 01.00.SJ.HS200.E004 | HS200—Button Cover Board | 1 |
| 10 | 01.00.DP.JY.E135 | Dustproof for Loader LTD-1510 | 1 |
| 11 | 01.00.DP.HM.E363 | High Soft sponge 124*12*2MM | 1 |
| 12 | 01.00.SJ.QT.E019 | VFD filter 124,5*33,5*0,5mm | 1 |
| 13 | 7001200100001 | Front Panel Board ass'y 6742C01 | 1 |
| 14 | 7001200100002 | Front Panel Board ass'y 6743C01 | 1 |
| 15 | 01.00.DP.JY.E249 | Insulated PVC HS200-H02 | 1 |
| 16 | 01.00.SJ.QT.E104 | plastic rivet MBL3-2.5 | 2 |
| 17 | 01.15.JX.EDL05FHH40P | Loader DL-05FH-H40P | 1 |
| 18 | | | 1 |
| 19 | 02.14.HAV0915983C01 | AV Board ass'y HAV091-5983C01 | 1 |
| 20 | 01.00.DP.XJ.E192 | Silica gel gasket 50,6*4,2*1,5mm | 4 |
| 21 | 01.00.SJ.HS200.E009 | HS200—Large Lens | 1 |
| 22 | 0311020000020 | Insulated PVC HS280-H01 | 1 |
| 23 | 01.00.WJ.TJ.E1306 | HS280-PCB plastic frame (Left) | 1 |
| 24 | 01.00.WJ.TJ.HS200.E006 | HS280-PCB plastic frame (Right) | 1 |
| 25 | 01.00.WJ.TJ.E1304 | HS280—chassis | 1 |
| 26 | 02.11.HAV06M3627C02 | Main Board ass'y HAV06M-3627C02 (EU) | 1 |
| 27 | 01.37.PCB.2.E6314C | Speaker Board ass'y 6314C | 1 |
| 28 | 01.00.WJ.TJ.HS200.E007 | HS200—Connected Piece | 4 |
| 29 | 01.00.SJ.HS200.E008 | HS200—plastic scaleboard | 1 |
| 30 | 01.00.SJ.HS200.E007 | HS200—Power Jack Jacket | 1 |
| 31 | 01.40.CON.DCZ.E178 | AC power Jack WS-044-0 | 1 |
| 32 | 0504020000002 | Speaker Connective Stick—Red | 1 |
| | 0504020000003 | Speaker Connective Stick—Black | 2 |
| | 0504020000001 | Speaker Connective Stick—White | 1 |
| 33 | 617090000008 | HS2X0—rear panel | 1 |
| 34 | 01.00.WJ.TJ.E1481 | HS280—top cover | 1 |
| 35 | 01.00.SB.E036 | Metal logo 100mm "Harman/Kardon" | 1 |
| S1 | 01.00.WJ.JG.E328 | Screw 3*6KBTTO | 4 |
| S2 | 01.00.WJ.JG.E011 | Screw 1.7*4CBHNI | 1 |
| S3 | 01.00.WJ.JG.E100 | Screw 3*8PAHNI | 10 |
| S4 | 01.00.WJ.JG.E085 | Screw 3*6KBTNI | 2 |
| S5 | 01.00.WJ.JG.E1044 | Screw M3*6.5 (1SZZR-0098J) | 8 |
| S6 | 01.00.WJ.JG.E795 | Screw 3*6PWHNI | 13 |
| S7 | 01.00.WJ.JG.E1073 | Screw 3*4BBTNI | 6 |
| S8 | 01.00.WJ.JG.E321 | Screw 3*8PAHO | 7 |
| S9 | 01.00.WJ.JG.E675 | Screw 3*10PAHO | 2 |
| S10 | 01.00.WJ.JG.E403 | Screw 3*6PWBTTTO | 5 |
| S11 | 01.00.WJ.JG.E865 | Screw 3*12PMHO | 2 |
| S12 | 01.00.WJ.JG.E1083 | Screw 3*10PMHO | 2 |
| S13 | 01.00.WJ.JG.E235 | Screw 3*8PWBTTNI | 3 |
| S14 | 01.00.WJ.JG.E543 | Screw 3*6PWBTTNI | 9 |
| S15 | 01.00.WJ.JG.E909 | Screw 3*6BBTTO | 1 |
| N1 | 01.00.WJ.JG.E119 | NUT M3 | 2 |
| N2 | 01.00.WJ.JG.E119 | NUT M3 | 2 |

Please note:
Item 18, SMPS Board Assembly has part number 0209HAV08P6144C2X0.



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| No. | Part No. | Description | Qty. |
|-----|----------------------|----------------------------------------|------|
| 1 | 0108020000008 | Carton box HS2X0 EU version | 1 |
| 2 | | Barcode label | 1 |
| 3 | 1011000000022 | Owner manual HS2X0 EU version | 1 |
| 4 | 01.00.BZ.D.Z.E020 | Plastic bag for manual 25*35cm | 1 |
| 5 | 01.00.YS.FY3.E1600 | Safety instruction manual EU version | 1 |
| 6 | 01.00.YS.FY3.E1953 | Supplement page of Batteries treatment | 1 |
| 7 | 01.47.CNT.CTX.E016 | FM antenna FM-TV-22 EU | 1 |
| 8 | 01.47.CNT.LJX.5.E012 | SCART cable | 1 |
| 9 | 01.47.CNT.ACX.E052 | AC power cord EU version | 1 |
| | 01.00.BZ.D.H.E002 | ROHS bag 11*28cm For power cord | 1 |
| 10 | CBADV-19P-19P-2M | HDMI 19P/M to HDMI 19P/M CABLE | 1 |
| 11 | 0431000000010 | Remote control HS280-RC | 1 |
| 12 | 01.00.BZ.D.H.E034 | Plastic bag for RC 9*27.5cm | 1 |
| 13 | 01.14.DX.B.E0007 | battery 7# battery | 3 |
| 14 | 01.00.BZ.D.Z.E008 | Plastic bag for battery 6*9cm | 1 |
| 15 | 01.00.BZ.X.B.E511 | accessories box | 1 |
| 16 | 0504020000002 | Polyfoam HS200 | 1 |
| 17 | | | |
| 18 | | Main unit | 1 |
| 19 | 01.00.BZ.D.C.E109 | Plastic bag for unit 47*50cm | 1 |
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HS2X0 Packing instruction
2010-03-29

HS2X0 Component List

| Item | P/N | Description | Specification | Qty | Location.No. | Note |
|------|------------------------|----------------------------------------|--------------------------------------------------------|-----|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------|
| 1 | 01.00.WJ.TJ.E1304 | metals part | HS280-chassis | 1 | HS280-PT01 | 0.8mm galvanized sheet, natural color |
| 2 | 01.00.WJ.TJ.E1481 | metals part | HS280-top cover | 1 | HS280-PT07 | 0.55mm galvanized and pre-coated sheet, black color |
| 3 | 617090000008 | metals part | HS2X0-rear panel | 1 | HS280-PT02 | EU Version, 0.6mm galvanized sheet |
| 4 | 01.00.WJ.TJ.E1306 | metals part | HS280-PCB bracket(Left) | 1 | HS280-PT03 | 1.0mm galvanized sheet |
| 5 | 01.00.WJ.TJ.HS200.E006 | metals part | HS200-PCB bracket(Right) | 1 | HS200-PT05 | |
| 6 | 01.00.WJ.TJ.HS200.E007 | metals part | HS200-Connected Piece for Speaker Jack | 4 | HS200-PT06 | |
| 7 | 01.00.WJ.TJ.E1307 | Heatsink | HS280-Amplifier Heatsink | 1 | HS280-PT05 | Upon the U407 on AV Board |
| 8 | 01.00.WJ.TJ.E1336 | Heatsink | HS280-Power Heatsink | 1 | HS280-PT04 | For SMPS Board |
| 9 | 01.00.WJ.TJ.E892 | Heatsink | 35*30*49mm | 1 | HS200-PT10 | For SMPS Board |
| 10 | 01.00.WJ.TJ.E893 | Heatsink | 16*12*51MM (The Hole's depth is 18MM) | 4 | For S503/S504/S505/S506 on SMPS Board | |
| 11 | 01.00.WJ.TJ.E268 | Heatsink | 28*28*10mm | 1 | For U21 on Mainboard | |
| 12 | 01.00.WJ.TJ.E1379 | Heatsink | HS280 Heatsink-2, W24*H11*L23MM, | 1 | HS280-PT06, For U6,U17 on Mainboard | Aluminium alloy, Oxidation, Black |
| 13 | 030200000002 | Magnetism annulus | F5BRH12*27*5.6-P.W | 2 | For Amplifier Output Cord | |
| 14 | 0616201100038 | plastic part | HS2X0-front panel | 1 | HS200-RE01 | Antiflaming, ABS,94V0; Black Color and Spray |
| 15 | 01.00.SJ.HS200.E002 | plastic part | HS200-2 in 1 Button | 1 | HS200-RE02 | ABS, Appointed Color and Spray technique |
| 16 | 01.00.SJ.HS200.E003 | plastic part | HS200-Open button collar | 1 | HS200-RE03 | ABS, Appointed Color and Spray technique |
| 17 | 01.00.SJ.HS100.E006 | plastic part | HS100-Volume Button Collar | 1 | HS100-RE06 | ABS, Spray argent color (Same as HS100) |
| 18 | 01.00.SJ.HS200.E004 | plastic part | HS200-Button Cover Board | 1 | HS200-RE04 | ABS, Black |
| 19 | 01.00.SJ.HS200.E005 | plastic part | HS200-Power Indicator lampshade | 1 | HS200-RE05 | transparent ABS+dispersion material |
| 20 | 01.00.SJ.HS200.E006 | plastic part | HS200-pedestal underlay | 2 | HS200-RE06 | transparent PVC |
| 21 | 01.00.SJ.HS200.E007 | plastic part | HS200-Power Jack Jacket | 1 | HS200-RE07 | Antiflaming ABS,94V0, Black |
| 22 | 01.00.SJ.HS200.E008 | plastic part | HS200-plastic scaleboard | 1 | HS200-RE08 | ABS, Black, For Speaker Connected Board |
| 23 | 0616170100034 | plastic part | HS2X0-Large Lens | 1 | HS200-RE10 | Mitsubishi 3mm Black Lens (Include 47mm "harman/kardon" Logo) |
| 24 | 01.00.SJ.HS100.E010 | plastic part | HS100-Volume Button | 1 | HS100-RE10 | Rubber Lacquer Appointed by client |
| 25 | 01.00.SJ.HS100.E008 | plastic part | HS100-volume button lampshade | 1 | HS100-RE08 | Transparent ABS + dispersion material |
| 26 | 01.00.SJ.1000A.E016 | plastic part | 1000A-IR receiver support 5.5mm | 1 | | |
| 27 | 01.00.SJ.QT.E019 | VFD filter | 124.5*33.5*0.5mm | 1 | | material is as DVD22 |
| 28 | 01.40.CON.DCZ.E178 | AC power Jack | WS-044-0 | 1 | | EU Version |
| 29 | 01.00.SB.E036 | Metal logo | 100mm "Harman/Kardon" Thin Logo | 1 | For top cover | |
| 30 | 01.00.DP.JY.E135 | Dustproof for Disc tray door of Loder | LTD-1510 | 1 | | Black |
| 31 | 01.00.DP.XJ.E192 | Silica gel gasket | 50.6*4.2*1.5mm (with #500 glue be single sides glued) | 4 | For pedestal underlay HS100-H01 | |
| 32 | 0305010000003 | Diathermanous Selenium Rubber | Gap Pad VO Ultra Soft,L15*W8*TO.3.single sides glued | 1 | Between U407 and Amplifier Heatsink on AV board | |
| 33 | 01.00.DP.HM.E359 | sponge | 20*10*7MM (with #9448 glue be double sides glued) | 2 | For VFD(2) | |
| 34 | 01.00.FZ.QT.153 | Astigmatism PVC | φ45.5*φ9.5mm | 1 | Between volume button and Front Panel Board | |
| 35 | 01.00.FZ.QT.E253 | Mask PVC | φ38.5 (Underside Glued) | 1 | Inside the volume button | Black PVC |
| 36 | 01.00.DP.HM.E364 | sponge | 10*10*7MM (with double sides glued) | 1 | For IR receiver | |
| 37 | 01.00.DP.HM.E378 | High Soft sponge | 124*10*2MM (with Single side glued) | 1 | paste in front of Disc tray door in the front panel | Black |
| 38 | 01.00.DD.PM.E271 | electric sponge | 20*20*10MM | 1 | Between front panel PCB and plastic part | |
| 39 | 01.00.FZ.QT.E122 | Plastic fastener | 12CM | 1 | For power cord fastness | |
| 40 | 01.00.DP.QT.E113 | Sil-pad | sil-pad 400-3022 | 1 | For Q509 on SMPS Board | |
| 41 | 0311020000020 | Insulated PVC | HS280-H01 (transparency) | 1 | For SMPS Board | |
| 42 | 01.00.DP.JY.E249 | Insulated PVC | HS200-H02 | 1 | Be buckled above volume button board | |
| 43 | 01.00.DP.JY.E541 | Insulated PVC | 22.5*10*0.3mm (with Single side glued) | 6 | For hamulus of front panel | |
| 44 | 01.00.WJ.JG.E328 | Screw | M3*6KBTTO | 5 | For front Panel and Left/Right sides of chassis (4), Between two Heatsinks on SMPS Board(1) | |
| 45 | 01.00.WJ.JG.E543 | Screw | M3*6PWBTTNI | 9 | For pedestal underlay and chassis (9) | |
| 46 | 01.00.WJ.JG.E235 | Screw | M3*8PWBTTNI | 5 | For front panel and pedestal underlay and chassis(3); For AV Board and Heatsink (2) | |
| 47 | 01.00.WJ.JG.E011 | Screw | M1.7*4CBHNI | 1 | For Button cover Board and button Board | |
| 48 | 01.00.WJ.JG.E100 | Screw | M3*8PAHNI | 10 | For front panel and front panel board(9) For plastic scaleboard and Speaker Connected Board (1) | |
| 49 | 01.00.WJ.JG.E472 | Screw | M3*8PBTTNI | 7 | For ICs and Heatsinks on SMPS Board (7) | |
| 50 | 01.00.WJ.JG.E085 | Screw | M3*6KBTJNI | 2 | For front panel and volume button board(2) | |
| 51 | 01.00.WJ.JG.E1044 | Screw | 1SZZR-0098J(M3*6.5,LG Appointed) | 8 | For Loader and chassis(4), For PCB Brackets and chassis (4) | |
| 52 | 01.00.WJ.JG.E795 | Screw | M3*6PVMHNI | 13 | For SMPS Board and chassis (5), For AV Board and chassis (4), For Main Board and PCB brackets (4) | |
| 53 | 01.00.WJ.JG.E909 | Screw | M3*6BBTTO | 1 | For U type connect piece and rear panel(1) | |
| 54 | 01.00.WJ.JG.E1073 | Screw | M3*4BBTTNI | 6 | For rear panel and the bottom side of chassis (2), For top cover and bottom side of chassis (4) | |
| 55 | 01.00.WJ.JG.E321 | Screw | M3*8PAHO | 7 | For output jacks (7) | |
| 56 | 01.00.WJ.JG.E675 | Screw | M3*10PAHO | 2 | For plastic scaleboard and rear panel (2) | |
| 57 | 01.00.WJ.JG.E403 | Screw | M3*6PWBTTTO | 5 | For top cover and chassis, top cover and rear panel (5) | |
| 58 | 01.00.WJ.JG.E865 | Screw | M3*12PMHO | 2 | For AC power socket (2) | |
| 59 | 01.00.WJ.JG.E1083 | Screw | M3*10PMHO | 2 | For SCART Jack (2) | EU Vision |
| 60 | 01.00.WJ.JG.E119 | Nut | M3 | 2 | For SCART Jack (2) | EU Vision |
| 61 | 01.00.WJ.JG.E119 | Nut | M3 | 2 | For power jack(2) | |
| 62 | 01.00.WJ.JG.E426 | Flat Pad | M3*0.5 W=8 | 2 | For Heatsink and AV Board (2) | |
| 63 | 01.00.SJ.QT.E104 | plastic rivet | MBL3-2.5 | 2 | For Insulated gasket and volume button Board | |
| 64 | 01.00.WJ.JG.E424 | Spring Pad | M3 | 2 | For Heatsink and AV Board (2) | |
| 65 | 0504020000002 | Speaker Terminal Connector | H-HS2 copper Terminal Connector-Red (Surface gilded) | 1 | | |
| 66 | 0504020000001 | Speaker Terminal Connector | H-HS2 copper Terminal Connector-Black (Surface gilded) | 2 | | |
| 67 | 0504020000003 | Speaker Terminal Connector | H-HS2 copper Terminal Connector-White (Surface gilded) | 1 | | |
| 68 | 01.00.DP.QT.E558 | Polyfoam | HS200 | 1 | | |
| 69 | 01.00.BZ.X.B.E511 | Accessories box | HS200 340*170*45mm | 1 | For accessories | White |
| 70 | 0108020000008 | Carton box | HS2X0 | 1 | | |
| 71 | 01.00.YS.FY3.E1600 | Safety and Warning instruction manual | Harman/Kardon EU Version | 1 | | |
| 72 | 01.00.YS.FY3.E1953 | Supplement page of Batteries treatment | A4 paper Size | 1 | 12 Kinds of languages, Harman/Kardon | |
| 73 | 1011000000022 | Owner manual | HS2X0(HS280&HS210) EU Version | 1 | | |
| 74 | 01.00.YS.TZ.T.E068 | Laser label | Laser precaution mark | 1 | | |
| 75 | 01.00.YS.TZ.T.E057 | Laser label | Laser precaution guide | 1 | | |
| 76 | 0431000000010 | Remote control | RC-HS280 | 1 | | Outsourcing, Black |
| 77 | 01.14.DX.B.E0007G | Alkalescent battery | GP7# | 3 | | |
| 78 | 01.00.BZ.D.S.E109 | Plastic bag for unit | 47*50cm | 1 | For unit Packing | |
| 79 | 01.00.BZ.D.Z.E020 | Plastic bag | 25*35cm | 1 | For Owner manual Packing | Match for DVD21 |
| 80 | 01.00.BZ.D.Z.E034 | Plastic bag | 9*27.5CM | 1 | For Remote Control Packing | |
| 81 | 01.00.BZ.D.Z.E008 | Plastic bag | 6*9cm | 1 | For battery Packing | |
| 82 | 01.00.BZ.D.H.E002 | ROHS bag | 11*28cm | 1 | For power cord packing | |
| 83 | 01.47.CNT.LJX.5.E211 | HDMI Cord | CBADV-S05-2 | 1 | | Outsourcing |
| 84 | 01.47.CNT.ACX.E052 | Power Cord | WS-002E+WS-019 HO5VV-F 0.75*2C BK 2M | 1 | | EU Vision |
| 85 | 01.47.CNT.LJX.5.E058 | Connect cable | scart 1.5m | 1 | | EU Vision |

HS2X0 Component List

| Item | P/N | Description | Specification | Qty | Location.No. | Note |
|------|----------------------|-----------------------------------------------|--------------------------------------------------------------------------------------------------|-----|-------------------------------------------------------------------------------------------------------|-------------------------|
| 86 | 01.47.CNT.CTX.E016 | Antenna | FM-TV-22 (Lead content less than 300PPM) | 1 | | EU Vision |
| 87 | 01.15.JX.EDL05MHEA | Loader | DL-05MH-H40P(EA) | 1 | | Foryou.Mabuchi EA motor |
| 88 | 01.47.CNT.LJX.7.E603 | Connect cable | VH-3Y Connector-2Y-120mm(Be same side) | 1 | CN501 on SMPS Board to Power Jack with solder one end | |
| 89 | 01.47.CNT.LJX.7.E706 | Connect cable | VH-3Y Connector-2Y-2Y-60mm(Be same side) | 1 | CN506 on SMPS Board to CN400(L) on AV Board | |
| 90 | 0804020100006 | Connect cable | NSCL-20090908-01,VH-4Y Connector-4P-80mm(Be same side with color is White, Black, Red and Black) | 1 | CN406 on AV Board to JP1.JP2 on Speaker Connected Board with solder one end | |
| 91 | 01.48.BPX.1.E147 | Flat cable | 1.0*14P*100mmA | 2 | CN4(A) on Mainboard to CN601(A) on Front Panel Board*1, CN5(D) on Mainboard to CN403(D) on AV board*1 | |
| 92 | 01.48.BPX.1.E148 | Flat cable | 1.0*8P*100mmA | 1 | CN2(B) on Mainboard to CN603(B) on Front Panel Board | |
| 93 | 01.48.BPX.1.E149 | Flat cable | 1.25*12P*80mmA(T=0.1mm) | 1 | CN3(C) on Mainboard to CN504(C) on SMPS Board | |
| 94 | 01.48.BPX.1.E151 | Flat cable | 1.0*24P*80mmA | 1 | CN1(E) on Mainboard to CN401(E) on AV Board | |
| 95 | 01.48.BPX.1.E167 | Flat cable | 1.0*20P*80mmA | 1 | CN6(F) on Mainboard to CN404(F) on AV Board | |
| 96 | 01.48.BPX.1.E153 | Flat cable | 1.25*14P*70mmA(T=0.1mm) | 1 | CN503(H) on SMPS Board to CN602(H) on Front Panel Board | |
| 97 | 01.48.BPX.1.E154 | Flat cable | 1.0*6P*40mmA | 1 | CN604(J) on Front Panel Board to CN605(J) on Volume Button Board | |
| 98 | 01.48.BPX.1.E155 | Flat cable | 1.25*9P*60mmA(T=0.1mm) | 1 | CN505(K) on SMPS Board to CN405(K) on AV Board | |
| 99 | 01.48.BPX.1.E156 | Flat cable | 1.0*12P*220mmA | 1 | For Loader and CN9 on Main Board | |
| 100 | 01.48.BPX.1.E028 | Flat cable | 0.5*24P*200mmA | 1 | For Loader and CN2 on Main Board | |
| 101 | 01.37.PCB.2.E6314C | Speaker Connected Board | 6314C | 1 | 2-layers | |
| 102 | 02.11HAV09M5982C01 | Mainboard (semi-manufactured goods) | HAV09M-5982C01 (EU Vision+Hitachi Loader) | 1 | 4-layers | |
| 103 | 02.14HAV09I5983C01 | AV Board (semi-manufactured goods) | HAV09I-5983C01 (EU Vision) | 1 | 2-layers | |
| 104 | 0219HAV08P6144C2X0 | SMPS Board (semi-manufactured goods) | HAV08P-6144 | 1 | 2-layers. Power supply board. | |
| 105 | 7001200100001 | Front Panel Board (semi-manufactured goods) | 6742C | 1 | 2-layers | |
| 106 | 7001200100002 | Volume Button Board (semi-manufactured goods) | 6743C | 1 | 2-layers | |

HS2X0 Component List for Mainboard (5982C)

| Item | P/N | Description | Specification | Qty | Location.No. | Note |
|------|----------------------|-------------------------------------|-------------------------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| 1 | 01.57.R.2.E000J | Resistor, chip | 0603-0Ω ±5% | 19 | R146 R158 R159 R160 R162 R164 R165 (R198) R227 R233 R235 R266 R268 R281 R59 R278 R279 R280 (R291) | |
| 2 | 01.57.R.2.E020J | Resistor, chip | 0603-2Ω±5% | 1 | R21 | |
| 3 | 01.57.R.2.E100J | Resistor, chip | 0603-10Ω±5% | 2 | (R22) (R92) | |
| 4 | 01.57.R.2.E220F | Resistor, chip | 0603-22Ω±1% | 1 | R286 | |
| 5 | 01.57.R.2.E220J | Resistor, chip | 0603-22Ω±5% | 42 | R29 R30 R35 (R39) R42 R56 R63 R64 R65 R68 R73 R74 R75 R82 R83 R84 R105 R106 R107 R108 R109 R112 R113 R114 R115 R116 R123 R124 R125 R183 R184 R185 (R224) R195 R246 R40 R78 R79 R141 R186 R190 R196 | |
| 6 | 01.57.R.2.E330J | Resistor, chip | 0603-33Ω±5% | 6 | R55 R57 R60 R143 R208 R259 | |
| 7 | 01.57.R.2.E430J | Resistor, chip | 0603-43Ω±5% | 1 | (R24) | |
| 8 | 01.57.R.2.E49R9F | Resistor, chip | 0603-49.9Ω±1% | 10 | (R93) (R94) (R95) (R96) (R212) (R213) (R214) (R215) R216 R217 | |
| 9 | 01.57.R.2.E680F | Resistor, chip | 0603-68Ω±1% | 3 | R229 R250 R254 | |
| 10 | 01.57.R.2.E750F | Resistor, chip | 0603-75Ω±1% | 10 | R228 R231 R234 R240 R241 R244 R245 R253 R206 R211 | |
| 11 | 01.57.R.2.E820F | Resistor, chip | 0603-82Ω±1% | 2 | R20 R252 | |
| 12 | 01.57.R.2.E101J | Resistor, chip | 0603-100Ω±5% | 14 | R46 R230 R236 R237 (R238) R264 R265 (R282) (R283) R58 (R151) (R150) R179 R180 | |
| 13 | 01.57.R.2.E271J | Resistor, chip | 0603-270Ω±5% | 1 | (R139) | |
| 14 | 01.57.R.2.E301J | Resistor, chip | 0603-300Ω±5% | 1 | R178 | |
| 15 | 01.57.R.2.E331J | Resistor, chip | 0603-330Ω±5% | 3 | R45 R103 R104 | |
| 16 | 01.57.R.2.E391J | Resistor, chip | 0603-390Ω±5% | 1 | R134 | |
| 17 | 01.57.R.2.E471J | Resistor, chip | 0603-470Ω±5% | 3 | R156 R157 (R239) | |
| 18 | 01.57.R.2.E511F | Resistor, chip | 0603-510Ω±1% | 1 | R285 | |
| 19 | 01.57.R.2.E102F | Resistor, chip | 0603-1KΩ±1% | 1 | R19 | |
| 20 | 01.57.R.2.E102J | Resistor, chip | 0603-1KΩ±5% | 6 | (R51) (R52) R61 R62 (R275) R194 | |
| 21 | 01.57.R.2.E152J | Resistor, chip | 0603-1.5KΩ±5% | 2 | (R101) (R102) | |
| 22 | 01.57.R.2.E162J | Resistor, chip | 0603-1.6KΩ±5% | 1 | R177 | |
| 23 | 01.57.R.2.E182J | Resistor, chip | 0603-1.8KΩ±5% | 2 | (R267) (R269) | |
| 24 | 01.57.R.2.E222J | Resistor, chip | 0603-2.2KΩ±5% | 1 | (R276) | |
| 25 | 01.57.R.2.E332J | Resistor, chip | 0603-3.3KΩ±5% | 2 | (R271) (R272) | |
| 26 | 01.57.R.2.E472J | Resistor, chip | 0603-4.7KΩ±5% | 32 | (R3) (R6) (R7) (R10) (R11) (R13) (R15) R18 R25 R26 R27 R28 R43 (R44) R47 R53 R69 (R71) R72 R85 R86 R87 R88 R89 (R126) (R133) R135 R138 (R182) (R242) R261 R140 | |
| 27 | 01.57.R.2.E103J | Resistor, chip | 0603-10KΩ±5% | 22 | (R91) (R97) (R98) (R99) (R110) (R117) R136 R137 R148 R149 R161 R166 R169 R170 R171 R172 (R197) R218 R219 R220 (R222) R270 | |
| 28 | 01.57.R.2.E123F | Resistor, chip | 0603-12KΩ±1% | 3 | (R2) R37 R155 | |
| 29 | 01.57.R.2.E1212F | Resistor, chip | 0603-12.1KΩ±1% | 1 | (R131) | |
| 30 | 01.57.R.2.E153J | Resistor, chip | 0603-15KΩ±5% | 3 | R163 R210 R209 | |
| 31 | 01.57.R.2.E203J | Resistor, chip | 0603-20KΩ±5% | 1 | R152 | |
| 32 | 01.57.R.2.E223F | Resistor, chip | 0603-22KΩ±1% | 1 | (R1) | |
| 33 | 01.57.R.2.E393J | Resistor, chip | 0603-39KΩ±5% | 1 | R167 | |
| 34 | 01.57.R.2.E473J | Resistor, chip | 0603-47KΩ±5% | 5 | R144 R147 R175 R176 R262 | |
| 35 | 01.57.R.2.E104J | Resistor, chip | 0603-100KΩ±5% | 15 | R9 R31 R32 (R33) R34 R38 R49 R66 R67 R90 R192 R203 R205 R207 (R41) | |
| 36 | 01.57.R.2.E105J | Resistor, chip | 0603-1MΩ±5% | 2 | (R168) (R36) | |
| 37 | 01.57.R.3.E000J | Resistor, chip | 0805-0Ω ±5% | 1 | R132 | |
| 38 | 01.57.R.3.E4R7J | Resistor, chip | 0805-4.7Ω±5% | 2 | (R154) (R153) | |
| 39 | 01.57.R.8.EP2204 | Resistor, thick film chip network | 0603-22Ω*4 ±5% | 22 | RN2 RN3 RN4 RN5 RN6 RN8 RN10 RN12 RN14 RN24 RN27 RN29 RN30 RN31 RN33 RN34 RN35 RN36 RN37 RN38 RN39 RN40 | |
| 40 | 01.57.R.8.EP3304 | Resistor, thick film chip network | 0603-33Ω*4 ±5% | 8 | RN19 RN21 RN22 RN23 RN25 RN26 RN28 RN32 | |
| 41 | 01.57.R.Y.E270 | Voltage Dependent Resistor, TDK | AVR-M1608C270MTABB SMD | 2 | ESD3 ESD2 | |
| 42 | 01.57.R.R.E050 | Thermal PTC Resistor, JinKe | JK-MSMD050 SMD | 1 | PTC1 | |
| 43 | 01.54.CS.2.E150N50V | Capacitor, multilayer ceramic, chip | 0603-15P NPO±5%/50V | 1 | (C241) | |
| 44 | 01.54.CS.2.E200N50V | Capacitor, multilayer ceramic, chip | 0603-20P NPO±5%/50V | 6 | (C70) (C68) (C119) (C127) (C20) (C21) | |
| 45 | 01.54.CS.2.E151N50V | Capacitor, multilayer ceramic, chip | 0603-150P NPO±5%/50V | 2 | C128 C129 | |
| 46 | 01.54.CS.2.E681N50V | Capacitor, multilayer ceramic, chip | 0603-680P NPO±5%/50V | 2 | C97 C120 | |
| 47 | 01.54.CS.2.E122X50V | Capacitor, multilayer ceramic, chip | 0603-122 X7R±10%/50V | 1 | C108 | |
| 48 | 01.54.CS.2.E152X50V | Capacitor, multilayer ceramic, chip | 0603-152 X7R±10%/50V | 1 | C123 | |
| 49 | 01.54.CS.2.E392X50V | Capacitor, multilayer ceramic, chip | 0603-392 X7R±10%/50V | 1 | C109 | |
| 50 | 01.54.CS.2.E392X50V | Capacitor, multilayer ceramic, chip | 0603-392 X7R±10%/50V | 1 | (C239) | |
| 51 | 01.54.CS.2.E103Y50V | Capacitor, multilayer ceramic, chip | 0603-103 Y5V 20+80%/50V | 6 | C3 (C6) (C8) C74 C75 (C111) | |
| 52 | 01.54.CS.2.E103XT50V | Capacitor, multilayer ceramic, chip | 0603-103 X7R±5%/50V | 1 | (C15) | |
| 53 | 01.54.CS.2.E223X50V | Capacitor, multilayer ceramic, chip | 0603-223 X7R±10%/50V | 1 | (C76) | |

HS2X0 Component List for Mainboard (5982C)

| Item | P/N | Description | Specification | Qty | Location.No. | Note |
|------|--------------------------|-----------------------------------------------------|-----------------------------------------------------|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| 54 | 01.54.CS.2.E104Y50V | Capacitor, multilayer ceramic, chip | 0603-104 Y5V-20+80%/50V | 133 | C1 (C2) C4 (C5) C7 C9 (C10) C11 (C12) (C13) (C14) (C16) C17 C18 C19 (C22) C23 (C24) C25 C26 C27 (C28) (C29) (C30) (C31) (C32) (C33) (C34) (C35) (C36) (C38) (C40) (C41) (C42) (C43) (C44) C45 (C46) (C47) (C48) (C49) (C50) (C51) (C52) (C53) C54 (C55) (C56) (C57) (C58) C59 C61 (C65) (C66) (C71) (C72) (C73) C79 C82 C83 (C84) (C85) (C86) (C88) (C89) C90 C91 C92 C93 C94 (C96) (C98) C99 (C100) (C101) (C102) C103 (C105) C106 (C107) C110 C112 C113 C114 C115 (C116) (C117) (C118) (C121) (C124) (C125) (C126) C130 C131 C132 C133 (C134) C135 C136 (C138) (C139) (C140) C141 (C142) (C143) (C144) (C145) (C146) (C147) C148 (C149) (C150) (C151) (C152) (C153) (C154) (C155) C160 C163 C164 C165 C166 C167 C168 C169 C170 C171 C172 C173 (C174) C175 C176 C177 | |
| 55 | 01.54.CS.2.E474X10V | Capacitor, multilayer ceramic, chip | 0603-474 X7R±10%/10V | 1 | C122 | |
| 56 | 01.54.CS.2.E105X16V | Capacitor, multilayer ceramic, chip | 0603-105 X7R±10%/16V | 5 | (C60) C62 C63 (C104) C238 | |
| 57 | 01.54.CS.2.E104Y50V | Capacitor, multilayer ceramic, chip | 0603-104 Y5V-20+80%/50V | 54 | C178 (C179) C180 (C181) (C182) (C183) (C184) (C185) (C186) (C187) (C188) (C189) (C190) (C191) (C192) (C193) (C194) C195 (C198) C199 (C200) (C201) (C202) (C203) C204 (C205) (C206) (C207) (C208) (C209) (C210) (C211) (C212) (C213) (C214) (C215) (C216) (C217) (C218) (C219) (C220) (C221) (C222) (C223) (C224) (C225) (C230) C231 C232 C233 (C234) C236 (C237) C240 | |
| 58 | 01.54.CS.2.E475X16V | Capacitor, multilayer ceramic, chip | 0603-475 X7R ±10%/16V | 1 | (C37) | |
| 59 | 01.54.CS.3.E106X16V | Capacitor, multilayer ceramic, chip | 0805-106 X7R±10%/16V | 4 | C87 C228 C229 C235 | |
| 60 | 01.54.CS.3.E335Y16V | Capacitor, multilayer ceramic, chip | 0805-335 Y5V-20+80%/16V | 2 | C244 C245 | |
| 61 | 01.54.CS.3.E475X16V | Capacitor, multilayer ceramic, chip | 0805-475 X7R±10%/16V | 1 | C243 | |
| 62 | 01.54.CS.B.E1023KV | Capacitor, multilayer ceramic, chip | 1812-102/3KV | 2 | C69 C95 | |
| 63 | 01.35.CC.E120622U10V | Capacitor, multilayer ceramic, chip | ECJMFF1A226Z | 1 | C64 | |
| 64 | 01.34.CL.D.E10U16VC | Capacitor, AL electrolytic | CD110-10UF/16V 5*11 | 2 | CE12 CE41 | |
| 65 | 01.34.CL.D.E22U16VC | Capacitor, AL electrolytic | CD110-22UF/16V 5*11 | 6 | CE51 CE52 CE56 CE48 CE49 CE50 | |
| 66 | 01.34.CL.D.E47U10VC | Capacitor, AL electrolytic | CD110-47UF/10V 5*11 | 5 | CE3 CE6 CE29 CE46 CE58 | |
| 67 | 01.34.CL.D.E47U16VC | Capacitor, AL electrolytic | CD110-47UF/16V 5*11 | 3 | CE14 CE16 CE17 | |
| 68 | 01.34.CL.D.E100U10VD | Capacitor, AL electrolytic | CD110-100UF/10V 5*12 | 6 | CE1 CE2 CE9 CE47 CE57 CE62 | |
| 69 | 01.34.CL.D.E100U16VC | Capacitor, AL electrolytic | CD110-100UF/16V 5*11 | 17 | CE4 CE10 CE11 CE15 CE18 CE19 CE20 CE21 CE32 CE34 CE37 CE39 CE40 CE42 CE60 CE61 CE63 | |
| 70 | 01.34.CL.D.E220U16VD | Capacitor, AL electrolytic | CD110-220UF/16V 6.3*12 | 7 | CE7 CE8 CE31 CE33 CE35 CE36 CE38 | |
| 71 | 01.34.CL.D.E470U10VD | Capacitor, AL electrolytic | CD110-470UF/10V 6.3*12 | 1 | CE13 | |
| 72 | 01.34.CL.D.E1000U10VE | Capacitor, AL electrolytic | CD110-1000UF/10V 8*14 | 1 | CE30 | |
| 73 | 01.38.FUSE.S.EJK110 | Polymer Positive Temperature Coefficient | JK-110(1.1A) SMD | 1 | PTC3 | |
| 74 | 01.13.L.Z.ESA50 | Bead, chip | 0603-50Ω | 10 | FB6 FB23 FB24 FB25 FB16 FB17 FB18 FB20 FB41 FB44 | |
| 75 | 01.13.L.Z.ESA120 | Bead, chip | 0603-120Ω | 1 | (FB22) | |
| 76 | 01.13.L.Z.ESB50 | Bead, chip | 0805-50Ω | 11 | FB8 (FB9) FB10 FB11 (FB12) (FB14) FB39 FB19 FB26 FB42 FB43 | |
| 77 | 01.13.L.Z.ESB220 | Bead, chip | 0805-220Ω | 1 | FB21 | |
| 78 | 01.13.L.Z.ESC50 | Bead, chip | 1206-50Ω | 4 | FB7 FB37 FB38 (FB40) | |
| 79 | 01.13.L.Z.ED50A | Bead, leaded fixed | 50Ω (3.5*6.0*0.8) | 10 | FB1 FB2 FB3 FB4 FB5 FB13 FB15 FB27 FB35 FB36 | |
| 80 | 01.13.L.L.S.E007 | Inductor, multilayer ceramic, chip | 0805-10UH SMD | 12 | (L1) L2 (L3) L4 L5 L6 L8 L9 L10 L11 L13 L14 | |
| 81 | 01.13.L.L.S.E320 | Inductor, SMD | SP11048OR-150(15uH/3A) SMD | 1 | L19 | |
| 82 | 01.13.L.L.S.E242 | Inductor, multilayer ceramic, chip, TDK | ACM2012-900-2P SMD | 4 | L15 L16 L17 L18 | |
| 83 | 01.41.D.PS.EB340LA | Diode | B340LA SMD | 1 | D1 | |
| 84 | 01.41.D.PD.E5393 | Diode | IN5393 DIP | 3 | D5 D10 D11 | |
| 85 | 01.41.D.PS.ELL4148 | Diode | LL4148 SMD | 1 | D4 | |
| 86 | 01.41.D.PS.EBAV99 | Diode | BAV99LT1,SOT23 (or LBAV99L1G,SOT23) | 3 | D12 D13 D14 | |
| 87 | 01.42.Q.S.E1132 | Transistor | 2SB1132,SOT89 | 2 | Q5 Q6 | |
| 88 | 01.42.Q.S.ET3904 | Transistor | MMBT3904,SOT23 | 1 | Q3 | |
| 89 | 01.42.Q.S.E2N3906 | Transistor | 2N3906,SOT23 | 1 | Q2 | |
| 90 | 01.42.Q.S.EC8550 | Transistor | KTC8550,SOT23 | 3 | Q1 Q4 Q7 | |
| 91 | 01.42.Q.S.E8050 | Transistor | KTC8050,SOT23 | 1 | Q10 | |
| 92 | 0218020000007 | Crystal Oscillator | 7050 OSC-50.000MHz,50.000MHz,-25PPM~+25PPM,3.3V,SMD | 1 | Y3 | |
| 93 | 01.00.JZ.E27000 | Quartz Crystal Unit | 27.000MHZ-49S-20P | 2 | Y2 Y4 | |
| 94 | 01.00.JZ.E24000C | Quartz Crystal Unit | 24.000MHZ-49S-20P | 1 | Y5 | |
| 95 | 01.44.IC.D.EL7805 | IC, ST, Voltage Regulator | L7805,TO-220 | 1 | U22 | |
| 96 | 01.46.IC.EK4S561632JUC60 | IC, Samsung, SDRAM | K4S561632J-UC60(TSOP54,256M,SMD) | 1 | U7 | |
| 97 | 01.46.IC.EK4S643232HUC60 | IC, Samsung, SDRAM | K4S643232H-UC60(TSOP86,64M,SMD) | 1 | U31 | |
| 98 | 01.44.IC.S.EA1117V3 | IC, AAC, LDO | AZ1117H-3.3,SOT-223 | 3 | U1 U4 U11 | |
| 99 | 01.44.IC.S.EA1117V8 | IC, AAC, LDO | AZ1117H-1.8,SOT-223 | 2 | U2 U23 | |
| 100 | 01.44.IC.S.E1117 | IC, AAC, LDO | AZ1117H-ADJ,SOT-223 | 1 | U3 | |
| 101 | 01.44.IC.S.EMP1411DH | IC,MPS,Step-Down Converter | MP1411DH,MSOP-10 | 1 | U28 | |
| 102 | 01.46.IC.EAML8218 | IC, Amlogic, A/V Processor | AML8218(PQFP-216,SMD) | 1 | U6 | |
| 103 | 01.46.IC.EFLI2310 | IC, ST, Digital Video Format Converter | FLI2310-LF-CF,PQFP-208,SMD | 1 | U21 | |
| 104 | 01.46.IC.ETMD8809X02 | IC, TAMUL, MPEG Processor | TMD8809X02(160-LOFP-2424,SMD) | 1 | U17 | |
| 105 | 01.46.IC.EK9F1G08UOB | IC, Samsung, Flash | K9F1G08UOB-PCB0 SMD,48-TSOP1-1220F | 1 | U9 | firmware burn-in |
| 106 | 01.46.IC.EW25X16VSSIG | IC, Winbond, Flash | W25X16VSSIG(SOIC-8,SMD) | 1 | U18 | firmware burn-in |
| 107 | 01.46.IC.EW9812G6GH | IC, Winbond, SDRAM | W9812G6GH-6 SMD,54L-TSOP2-400mil | 1 | U19 | |
| 108 | 01.44.IC.S.EAM5888 | IC, Amtek, Motor Driver | AM5888 SMD,HSOP28 | 1 | U15 | |
| 109 | 01.44.IC.S.EFMS6143 | IC, Fairchild, Video Filter Driver | FMS6143CSX_NL(SOIC-8,SMD) | 1 | U20 | |
| 110 | 01.46.IC.ESI9034CTU | IC, Silicon Image, HDMI Transmitter | SI9034CTU(TQFP-100,SMD) | 1 | U24 | |
| 111 | 01.44.IC.D.EPC817 | IC, Sharp, Photoelectric Coupler | PC817 DIP | 1 | U14 | |
| 112 | 01.46.IC.EUS92514AEZG | IC, SMSC, USB HUB Controller | USB2514-AEZG(QFN-36,SMD) | 1 | U32 | |
| 113 | 01.46.IC.ESN74ALVC244PW | IC, TI, Octal Buffer with 3-State outputs | SN74ALVC244PW(TSSOP-20,SMD) | 1 | U29 | |
| 114 | 01.46.IC.ESN74AUP1G80DCK | IC, TI, D-Type FLIP-FLOP | SN74AUP1G80DCK(SCS-70,SMD) | 1 | U8 | |
| 115 | 01.46.IC.ELAN8700CAEZG | IC, SMSC, Ethernet Transceiver | LAN8700C-AEZG(QFN-36,SMD) | 1 | U12 | |
| 116 | 01.44.IC.S.E3522 | IC, Analog Tech., Reset Circuit | AAT3522 SMD,SOT-23 | 1 | U5 | |
| 117 | 01.44.IC.S.E0514 | IC, Semtech, Low Capacitance TVS Diode Array | RClamp0514M SMD,MSOP-10L | 4 | U25 U26 U27 U30 | |
| 118 | 01.46.IC.EMK900 | IC, Mutek, Licence Chip | MK-900(SOP14,MCU,SMD) | 1 | U34 | Burn code: MK908 |
| 119 | 01.44.IC.S.EFST3257MTC | IC, Fairchild, Multiplexer/Demultiplexer Bus Switch | FST3257MTC SMD | 1 | U36 | FAIRCHILD |
| 120 | 01.40.CON.DCZ.E316 | HDMI Jack | 1747981-1 SMD | 1 | JP7 | 51U019S-331N-A SMD |
| 121 | 01.13.L.R.E135 | Ethernet Transforamer | 13F-38AN SMD | 1 | U35 | |
| 122 | 01.40.CON.DDZ.EDSW-30 | S-Video Connector | DSW-30 | 1 | JP5 | |
| 123 | 01.40.CON.DCZ.E045 | Jack | AV1-8-4-8G | 1 | JP6 | Antiflaming, Yellow Color |
| 124 | 01.40.CON.DCZ.E857 | RJ45 Jack | 26LM90-37121-01 | 1 | JP1 | Yilian |
| 125 | 01.40.CON.DCZ.E217 | USB Jack | USB-A-05 (ROHS, Mother Set) | 1 | JP4 | |
| 126 | 01.40.CON.DCZ.E203 | IR in/out jack | CKX-3.5-22 | 2 | JP2 JP3 | |
| 127 | 01.40.CON.S10.FPC1.E015 | FPC Connector, SMD | FPC-1.0-12P with upward touch | 1 | CN9 | |
| 128 | 01.40.CON.S13.FPC2.E003 | FPC Connector | 1.25-12P Vertical Type and Dual Conact | 1 | CN3 | Black |
| 129 | 01.40.CON.S10.FPC2.E002 | FPC Connector | 1.0-8P Vertical Type and Dual Conact | 1 | CN2 | Black & Antiflaming |
| 130 | 01.40.CON.S10.FPC2.E030 | FPC Connector | 1.0-14P Vertical Type and Dual Conact | 2 | CN5 CN4 | Black |
| 131 | 01.40.CON.S10.FPC2.E031 | FPC Connector | 1.0-20P Vertical Type and Dual Conact | 1 | CN6 | Black |
| 132 | 01.40.CON.S10.FPC2.E003 | FPC Connector | 1.0-24P Vertical Type and Dual Conact | 1 | CN1 | Black & Antiflaming |
| 133 | 01.40.CON.S05.E007 | FPC connector, SMD | FPC-0.5-24P with upward touch | 1 | CN10 | |
| 134 | 01.00.WJ.TJ.HS650.E002 | Metal Part | HS650DL-U type connect piece | 1 | H1 | |
| 135 | 01.37.PCB.4.E5982C | PCB Board-Mainboard without components | 5982C | 1 | | |

HS2X0 Component List for AV Board (5983C)

| Item | P/N | Description | Specification | Qty | Location.No. | Note |
|------|-------------------------|--------------------------------------------------|-----------------------------------------------------|-----|------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | 01.57.R.1.E000J | Resistor, chip | 0402-00±5% | 1 | 4R38 | |
| 2 | 01.57.R.1.E220J | Resistor, chip | 0402-220±5% | 5 | 4R31 4R32 4R39 4R40 4R41 | |
| 3 | 01.57.R.1.E101J | Resistor, chip | 0402-1000±5% | 2 | 4R33 R425 | |
| 4 | 01.57.R.1.E202J | Resistor, chip | 0402-2K0±5% | 2 | 4R29 4R30 | |
| 5 | 01.57.R.1.E472J | Resistor, chip | 0402-4.7K0±5% | 1 | 4R53 | |
| 6 | 01.57.R.2.E000J | Resistor, chip | 0603-00 ±5% | 24 | 4R06 4R08 4R09 4R11 4R12 R441 R442 R443 R445 4R45 R446 4R49 R453 R454 R455 R456 R457 R461 R462 R463 R464 4R52 4R51 R449 | |
| 7 | 01.57.R.2.E100J | Resistor, chip | 0603-100±5% | 4 | 4R43 4R44 4R46 4R47 | |
| 8 | 01.57.R.2.E561J | Resistor, chip | 0603-5600±5% | 2 | 4R17 4R23 | |
| 9 | 01.57.R.2.E750F | Resistor, chip | 0603-750±1% | 3 | 4R25 4R20 R427 | |
| 10 | 01.57.R.2.E101J | Resistor, chip | 0603-1000±5% | 1 | R467 | |
| 11 | 01.57.R.2.E111J | Resistor, chip | 0603-1100±5% | 2 | R428 R435 | |
| 12 | 01.57.R.2.E471J | Resistor, chip | 0603-4700±5% | 6 | R472 R477 R479 R481 R483 R485 | |
| 13 | 01.57.R.2.E751F | Resistor, chip | 0603-7500±1% | 1 | R431 | |
| 14 | 01.57.R.2.E221F | Resistor, chip | 0805-22001% | 2 | R436 R401 | |
| 15 | 01.57.R.2.E102J | Resistor, chip | 0603-1K0±5% | 4 | R419 R405 R408 R410 | |
| 16 | 01.57.R.2.E162F | Resistor, chip | 0603-1.6K0±1% | 1 | R415 | |
| 17 | 01.57.R.2.E222J | Resistor, chip | 0603-2.2K0±5% | 3 | 4R18 4R26 4R50 | |
| 18 | 01.57.R.2.E332J | Resistor, chip | 0603-3.3K0±5% | 5 | R407 R409 R412 R413 R423 | |
| 19 | 01.57.R.2.E472J | Resistor, chip | 0603-4.7K0±5% | 2 | 4R28 4R21 | |
| 20 | 01.57.R.2.E622F | Resistor, chip | 0603-6.2K0±1% | 1 | R429 | |
| 21 | 01.57.R.2.E103J | Resistor, chip | 0603-10K0±5% | 6 | R414 R417 R418 R420 R421 R422 | |
| 22 | 01.57.R.2.E473J | Resistor, chip | 0603-47K0±5% | 3 | 4R22 4R27 4R48 | |
| 23 | 01.57.R.2.E104J | Resistor, chip | 0603-100K0±5% | 7 | 4R19 4R24 R459 R460 R466 R468 R469 | |
| 24 | 01.57.R.4.E102J | Resistor, chip | 1206-1K0±5% | 1 | R406 | |
| 25 | 01.57.R.4.E202J | Resistor, chip | 1206-2K0±5% | 2 | R403 R404 | |
| 26 | 01.57.R.Y.E270 | Voltage Dependent Resistor, TDK | AVR-M1608C270MTABB SMD | 8 | ESD401 ESD402 ESD405 ESD406 ESD407 ESD408 ESD410 ESD409 | |
| 27 | 01.57.R.C.E220 | FIXED CARBON FILM | CR1/2WT/B220±5%(RT,220,±5%,1/2W,DI P) | 2 | R438 R437 | |
| 28 | 01.54.CS.1.E103X50V | Capacitor, multilayer ceramic, chip | 0402-103 X7R±10%/50V | 1 | C400 | |
| 29 | 01.54.CS.1.E104X10V | Capacitor, multilayer ceramic, chip | 0402-104 X7R ±10%/10V | 1 | C490 | |
| 30 | 01.54.CS.1.E223X25V | Capacitor, multilayer ceramic, chip | 0402-223 X7R±10%/25V | 1 | C487 | |
| 31 | 01.54.CS.2.E180N50V | Capacitor, multilayer ceramic, chip | 0603-18P NPO±5%/50V | 2 | C415 C416 | |
| 32 | 01.54.CS.2.E270N50V | Capacitor, multilayer ceramic, chip | 0603-27P NPO±5%/50V | 1 | C410 | |
| 33 | 01.54.CS.2.E331N50V | Capacitor, multilayer ceramic, chip | 0603-330P NPO±5%/50V | 6 | C420 C422 C424 C426 C428 C430 | |
| 34 | 01.54.CS.2.E103X50V | Capacitor, multilayer ceramic, chip | 0603-103 X7R±10%/50V | 9 | C432 C440 C441 C442 C443 C479 C483 C484 C486 | |
| 35 | 01.54.CS.2.E104Y50V | Capacitor, multilayer ceramic, chip | 0603-104 Y5V-20+80%/50V | 25 | C401 C402 C407 C408 C411 C414 C417 C431 C433 C434 C435 C436 C437 C438 C439 C444 C445 C446 C447 C480 C481 C482 C485 C402 C403 | |
| 36 | 01.54.CS.2.E104X50V | Capacitor, multilayer ceramic, chip | 0603-104 X7R±10%/50V | 6 | C453 C454 C463 C469 C473 C497 | |
| 37 | 01.54.CS.2.E333X50V | Capacitor, multilayer ceramic, chip | 0603-333 X7R±10%/50V | 4 | (C493) (C494) (C495) (C496) | |
| 38 | 01.54.CS.2.E473X50V | Capacitor, multilayer ceramic, chip | 0603-473 X7R±10%/50V | 3 | C404 C405 C418 | |
| 39 | 01.54.CS.3.E102N50V | Capacitor, multilayer ceramic, chip | 0805-102 NPO±5%/50V | 4 | (C450) (C459) (C466) (C476) | |
| 40 | 01.54.CS.3.E103X50V | Capacitor, multilayer ceramic, chip | 0805-103 X7R±10%/50V | 4 | (C451) (C460) (C467) (C477) | |
| 41 | 01.54.CS.3.E104X50V | Capacitor, multilayer ceramic, chip | 0805-104 X7R±10%/50V | 4 | C458 C465 C474 C475 | |
| 42 | 01.54.CS.3.E475X16V | Capacitor, multilayer ceramic, chip | 0805-475 X7R±10%/16V | 6 | C419 C421 C423 C425 C427 C429 | |
| 43 | 01.54.CS.3.E106X16V | Capacitor, multilayer ceramic, chip | 0805-106 X7R±10%/16V | 4 | C400 C406 C498 C499 | |
| 44 | 01.54.CS.3.E226X6V3 | Capacitor, multilayer ceramic, chip | 0805-226 X7R±20%/6.3V | 1 | C405 | |
| 45 | 01.54.CS.4.E104X50V | Capacitor, multilayer ceramic, chip | 1206-104 X7R±10%/50V | 4 | (C448) (C462) (C464) (C478) | |
| 46 | 01.54.CS.4.E105X50V | Capacitor, multilayer ceramic, chip | 1206-105 X7R±10%/50V | 4 | C461 C468 C470 C471 | |
| 47 | 01.34.CL.D.E10U10VC | Capacitor, AL, electrolytic | CD110-10UF/10V 5*11 | 2 | CE426 CE427 | |
| 48 | 01.34.CL.D.E10U16VC | Capacitor, AL, electrolytic | CD110-10UF/16V 5*11 | 1 | CE421 | |
| 49 | 01.34.CL.D.E470J6V3 | Capacitor, AL, electrolytic | 470uF/6.3V 6.3*12 ±20% 105°C | 1 | CE419 | |
| 50 | 01.34.CL.D.E22U16VC | Capacitor, AL, electrolytic | CD110-22UF/16V 5*11 | 4 | CE408 CE414 CE415 CE416 | |
| 51 | 01.34.CL.D.E47U10VC | Capacitor, AL, electrolytic | CD110-47UF/10V 5*11 | 2 | CE425 CE405 | |
| 52 | 01.34.CL.D.E47U25VC1 | Capacitor, AL, electrolytic | CD110-47UF/25V 5*11 | 2 | CE417 CE428 | |
| 53 | 01.34.CL.D.E100U10VD | Capacitor, AL, electrolytic | CD110-100UF/10V 5*12 | 1 | CE402 | |
| 54 | 01.34.CL.D.E100U16VC | Capacitor, AL, electrolytic | CD110-100UF/16V 5*11 | 4 | CE418 CE420 CE422 CE423 | |
| 55 | 01.34.CL.D.E330U16VD | Capacitor, AL, electrolytic | CD110-330UF/16V 6.3*12 | 2 | CE411 CE412 | |
| 56 | 01.34.CL.D.E1000U50VH | Capacitor, AL, electrolytic | GF102M0501250A | 3 | CE400 CE406 CE407 | |
| 57 | 01.33.CT.EA3U310V | Solid Electrolyte Tantalum Chip Capacitor | A-3.3UF-10V | 1 | CA400 | CAPXON Can Replaced by T491A335K016AT |
| 58 | 01.00.CD.DL.E474100V | Capacitor, polyester film | 474J/100V DIP | 2 | C472 C455 | FaLa, XiaMen |
| 59 | 01.13.L.L.S.E434 | Inductor, SMD | CS0603-R27J-S(0603,270NH,±2%,High-frequency,SMD) | 1 | L405 | |
| 60 | 01.13.L.Z.E5A50 | Bead, chip | 0603-50Ω | 2 | FB405 FB406 | |
| 61 | 01.13.L.Z.E5B50 | Bead, chip | 0805-50Ω | 6 | FB408 FB411 FB413 FB414 FB415 FB416 | |
| 62 | 01.13.L.Z.ED50A | Bead, leaded fixed | 50Ω (3.5*6.0*0.8) | 1 | FB409 | |
| 63 | 01.13.L.L.D.E127 | Magnetic shielding Inductor | 983BN-1003-15UH | 4 | L401 L402 L403 L404 | Can Replaced by TH1315-150 |
| 64 | 01.00.JZ.E20250 | Quartz Crystal Unit | 20.250MHz-495 18P±20PPM | 1 | Y400 | SKJ |
| 65 | 01.00.JZ.E32768Y | Crystal Oscillator | 32.768KHZ 3.3V 5*3.2mm SMD | 1 | Y403 | Can Replaced by 5032 OSC-0.032768MHZ,32.768KHZ,±2 5PPM,3.3V,SMD |
| 66 | 01.41.D.PS.ELL4148 | Diode | LL4148 SMD | 2 | D400 D401 | |
| 67 | 01.41.D.PS.EBAV99 | Diode | BAV99L1 SMD | 2 | D403 D402 | Can Replaced by LBAV99L1G SMD |
| 68 | 01.42.Q.S.E8050 | Transistor | KTC8050 SMD | 1 | Q400 | SOT23 |
| 69 | 01.42.Q.S.EC8550 | Transistor | KTC8550 SMD | 3 | Q404 Q405 Q409 | SOT23 |
| 70 | 01.42.Q.S.EDTC343 | Transistor | DTC343TK146 SMD | 7 | Q401 Q402 Q406 Q407 Q408 Q410 Q411 | |
| 71 | 01.44.IC.D.EL7808 | IC, ST, LDO | L7808C-V DIP, TO-220 | 1 | U405 | |
| 72 | 01.44.IC.S.EC5FP | IC, Rohm, LDO | BA00HC5FP SMD, T0252-5 | 1 | U404 | |
| 73 | 01.46.IC.EMAP5601ME5900 | IC, Micronas, Audio Processor | MAP5601M-E5-900(PMQFP-128-2,SMD) | 1 | U403 | |
| 74 | 01.46.IC.ETAS5352DDV | IC, TI, Stereo Digital Amplifier | TAS5352DDV(HTSSOP-44,SMD) | 1 | U407 | |
| 75 | 01.46.IC.ESI4705B20GM | IC, Silicon labs, FM Radio Receiver | SI4705-B20-GM(QFN-36,SMD) | 1 | U408 | |
| 76 | 01.44.IC.S.EFST3257MTC | IC, Fairchild, Analog Switch | FST3257MTC SMD | 1 | U411 | |
| 77 | 01.44.IC.S.E3522 | IC, Analogic Tech, Reset monitor | AAT3522 SMD,SOT-23 | 1 | U406 | |
| 78 | 01.44.IC.S.EV330 | IC, TI, Video Switch | FSAV330 SMD | 1 | U409 | Can Replaced by SGM330A SMD |
| 79 | 01.46.IC.EW25X80SS | IC, Winbon, Flash | W25X80-SS SMD | 1 | U410 | Can Replaced by A25L080M-F/G, firmware burn-in |
| 80 | 01.46.IC.E74H04 | IC, TI, Hex Inverter | 74HCU04 SMD | 1 | U401 | TSSOP14 |
| 81 | 01.40.CON.S13.FPC2.E004 | FPC Connector | 1.25-9P Vertical Type and Dual Contact | 1 | CN405 | Black |
| 82 | 01.40.CON.S10.FPC2.E030 | FPC Connector | 1.0-14P Vertical Type and Dual Contact | 1 | CN403 | Black |
| 83 | 01.40.CON.S10.FPC2.E031 | FPC Connector | 1.0-20P Vertical Type and Dual Contact | 1 | CN404 | Black |
| 84 | 01.40.CON.S10.FPC2.E003 | FPC Connector | 1.0-24P Vertical Type and Dual Contact | 1 | CN401 | Black & Antiflaming |
| 85 | 01.40.CON.DCZ.E244 | Connector | Vertical VH Connector with four holes and four pins | 1 | CN406 | White & Antiflaming |
| 86 | 01.40.CON.DCZ.E129 | Connector | Vertical VH Connector with three holes and two pins | 1 | CN400 | White & Antiflaming |
| 87 | 01.43.E011 | Jack, Sharp, Fiber optic iuput jack with shutter | GP1FAV51RK0F | 2 | JP405 JP404 | |
| 88 | 01.40.CON.DCZ.E203 | Jack, YuanChang, SUB Tirgger Jack | CKX-3.5-22 | 1 | JP402 | |
| 89 | 01.40.CON.DCZ.E865 | Jack | H-AV2-8.4-9PB-14 | 1 | JP406 | Antiflaming: The color of two terminals is Orange. Antiflaming: The color is Orange, White, White&White from left to right on top line and Purple, Red, Red&Red from left to right on bottom line. |
| 90 | 01.40.CON.DCZ.E864 | Jack | H-AV8-8.4-13PB-54 | 1 | JP403 | |
| 91 | 01.40.CON.DCZ.E181 | Jack, YuanChang, SCART Jack | CS-101 | 1 | JP401 | Fully Shield |
| 92 | 01.57.R.R.E010 | Thermal PTC Resistor, JinKe | JK-MSMD010 SMD | 1 | PTC400 | |
| 93 | 01.40.CON.DCZ.E863 | Jack, HongChang, FM Jack | IF-02P | 1 | ANT401 | nickel-plate |
| 94 | 01.37.PCB.2.E5983C | PCB board-AV Board without components | 5983C | 1 | 2-layers | |

HS2X0 Component List for SMPS Board (6144C)

| Item | P/N | Description | Specification | Qty | Location.No. | Note |
|------|----------------------------|--------------------------------------------|-------------------------------------------------------|-----|------------------------------------------------------------------------------------------------------|----------------------------|
| 1 | 01.57.R.3.E000J | Resistor, chip | 0805-0Ω ±5% | 2 | R504 R505 | |
| 2 | 01.57.R.3.E100J | Resistor, chip | 0805-100Ω±5% | 1 | R591 | |
| 3 | 01.57.R.3.E220J | Resistor, chip | 0805-220Ω±5% | 1 | R568 | |
| 4 | 01.57.R.3.E330J | Resistor, chip | 0805-330Ω±5% | 2 | R519 R589 | |
| 5 | 01.57.R.3.E470J | Resistor, chip | 0805-470Ω±5% | 1 | R569 | |
| 6 | 01.57.R.3.E101J | Resistor, chip | 0805-100Ω±5% | 1 | R517 | |
| 7 | 01.57.R.3.E471J | Resistor, chip | 0805-470Ω±5% | 4 | R525 R536 R553 R580 | |
| 8 | 01.57.R.3.E102J | Resistor, chip | 0805-1K0Ω±5% | 9 | R535 R538 R542 R544 R546 R551 R554 R555 R598 | |
| 9 | 01.57.R.3.E202J | Resistor, chip | 0805-2K0Ω±5% | 2 | R541 R537 | |
| 10 | 01.57.R.3.E302F | Resistor, chip | 0805-3K0Ω±1% | 2 | R531 R543 | |
| 11 | 01.57.R.3.E362F | Resistor, chip | 0805-3.6KΩ±1% | 2 | R533 R534 | |
| 12 | 01.57.R.3.E472J | Resistor, chip | 0805-4.7KΩ±5% | 6 | R540 R547 R552 R556 R560 R576 | |
| 13 | 01.57.R.3.E103J | Resistor, chip | 0805-10KΩ±5% | 8 | R524 R549 R571 R577 R579 R587 R532 R590 | |
| 14 | 01.57.R.3.E203J | Resistor, chip | 0805-20KΩ±5% | 3 | R592 R593 R594 | |
| 15 | 01.57.R.3.E393F | Resistor, chip | 0805-39KΩ±1% | 1 | R545 | |
| 16 | 01.57.R.3.E513J | Resistor, chip | 0805-51KΩ±5% | 1 | R567 | |
| 17 | 01.57.R.3.E204J | Resistor, chip | 0805-200KΩ±5% | 1 | R566 | |
| 18 | 01.57.R.4.E330J | Resistor, chip | 1206-330Ω±5% | 1 | R522 | |
| 19 | 01.57.R.4.E201J | Resistor, chip | 1206-200Ω±5% | 1 | R526 | |
| 20 | 01.57.R.4.E331F | Resistor, chip | 1206-330Ω±1% | 4 | R583 R584 R585 R586 | |
| 21 | 01.57.R.4.E102J | Resistor, chip | 1206-1K0Ω±5% | 1 | R539 | |
| 22 | 01.57.R.4.E103J | Resistor, chip | 1206-10KΩ±5% | 2 | R596 R597 | |
| 23 | 01.57.R.4.E393J | Resistor, chip | 1206-39KΩ±5% | 2 | R520 R514 | |
| 24 | 01.57.R.4.E564J | Resistor, chip | 1206-560KΩ±5% | 2 | R501 R502 | |
| 25 | 01.57.R.4.E305J | Resistor, chip | 1206-3M0Ω±5% | 4 | R562 R563 R564 R565 | |
| 26 | 01.57.R.4.E335J | Resistor, chip | 1206-3.3MΩ±5% | 2 | R573 R574 | |
| 27 | 01.57.R.C.ED102 | FIXED CARBON FILM | RT1/4W-1KΩ | 1 | R570 | |
| 28 | 01.57.R.C.EF683 | FIXED CARBON FILM | RT1W-68KΩ±5% | 1 | R530 | |
| 29 | 01.57.R.C.EF104 | FIXED CARBON FILM | RT1W-100KΩ ±5% | 1 | R521 | |
| 30 | 01.57.R.C.EG390 | FIXED CARBON FILM | RT2W-39Ω±5% | 1 | R548 | |
| 31 | 01.57.R.C.EGR39 | FIXED CARBON FILM | RT2W-0.39Ω±5% | 2 | R572,R575 | |
| 32 | 01.57.R.C.EH471 | FIXED CARBON FILM | RT3W-470Ω | 1 | R595 | |
| 33 | 01.57.R.Y.E10K | Voltage Dependent Resistor | 10K-471 | 1 | RZ503 | |
| 34 | 01.57.R.R.E5D11 | Thermal Dependent Resistor | NTC-5D-11 | 1 | RZ501 | |
| 35 | 01.57.R.C.E60F116 | High-Resistance Cermet Resistor | RCR60-1W-11MΩ | 2 | R558 | |
| 36 | 01.57.R.R.EJK16300 | Resettable Fuse, JinKe | JK16 300 | 1 | RZ502 | |
| 37 | 01.54.CS.3.E331N50V | Capacitor, multilayer ceramic, chip | 0805-330P NPO±5%/50V | 1 | C533 | |
| 38 | 01.54.CS.3.E102X50V | Capacitor, multilayer ceramic, chip | 0805-102 X7R ±10%/50V | 1 | C519 | |
| 39 | 01.54.CS.3.E103X50V | Capacitor, multilayer ceramic, chip | 0805-103 X7R±10%/50V | 1 | C534 | |
| 40 | 01.54.CS.3.E473X50V | Capacitor, multilayer ceramic, chip | 0805-473 X7R±10%/50V | 1 | C532 | |
| 41 | 01.54.CS.3.E473X100V | Capacitor, multilayer ceramic, chip | 0805-473 X7R±10%/100V | 2 | C508,C510 | |
| 42 | 01.54.CS.3.E104Y50V | Capacitor, multilayer ceramic, chip | 0805-104 Y5V+80-20%/50V | 19 | C517 C521 C522 C523 C524 C526 C527 C528 C529 C530 C537 C538 C539 C542 C543 C544 C545 C547 C548 | |
| 43 | 01.54.CS.3.E224Y50V | Capacitor, multilayer ceramic, chip | 0805-224 Y5V-20+80%/50V | 1 | C516 | |
| 44 | 01.54.CS.3.E474Y50V | Capacitor, multilayer ceramic, chip | 0805-474 Y5V+80-20%/50V | 1 | C535 | |
| 45 | 01.54.CS.4.E105Y25V | Capacitor, multilayer ceramic, chip | 1206-105 Y5V+80-20%/25V | 1 | C518 | |
| 46 | 01.35.CC.E120610U16V | Capacitor, multilayer ceramic, chip | ECJMFF1C106Z | 1 | C536 | |
| 47 | 01.00.CD.DL.E223100V | Terylene Capacitor 223/100 | V | 1 | C507 | |
| 48 | 01.00.CD.DS.E10450V | Radial Monolithic Capacitor | 104/50V X7R±10% (lead pitch:5.08mm) | 1 | C531 | |
| 49 | 01.00.CD.JZ.E472630VA | Metallized capacitor | 472/630V (lead pitch: 10mm) | 1 | C509 | |
| 50 | 01.00.CD.JZ.E103630VA | Metallized capacitor | 103/630V (lead pitch: 10mm) | 2 | C505 C515 | |
| 51 | 01.00.CD.JZ.E105400V | Metallized capacitor | 105/400V (lead pitch: 15mm) | 1 | C502 | |
| 52 | 01.00.CD.GY.E8211KV | High-voltage metallized polyester film | 821,1KV (lead pitch: 15mm) | 1 | C520 | |
| 53 | 01.00.CD.GY.E224275V | High-voltage metallized polyester film | 224/275V X2 (lead pitch: 15mm) | 2 | CX502 CX503 | |
| 54 | 01.00.CD.GY.E334275V | High-voltage metallized polyester film | 334/275V X2 (lead pitch: 15mm) | 1 | CX501 | |
| 55 | 01.00.CD.GY.E102400V250V | High-voltage metallized polyester film | 102/400V(X1) 250V(Y1) (lead pitch: 10mm) | 2 | CY503 CY504 | |
| 56 | 01.00.CD.GY.E471400V250V | High-voltage metallized polyester film | 471/400V (X1) 250V (Y1) (lead pitch: 10mm) | 2 | CY501 CY502 | |
| 57 | 01.34.CL.D.EH47U50VD | Capacitor, AL electrolytic | GF470M050E110A | 3 | EC501 EC503 EC505 | CAPXON |
| 58 | 01.34.CL.D.EH470U16VD | Capacitor, AL electrolytic | GF471M016F115A | 2 | EC513 EC514 | CAPXON |
| 59 | 01.34.CL.D.E470U25V | Capacitor, AL electrolytic | 470UF/25V 8*20 ±20% 105°C Low ESR | 8 | EC524 EC511 EC525 EC516 EC526 EC521 EC515 EC512 | CAPXON |
| 60 | 01.34.CL.D.E1000U50VH | Capacitor, AL electrolytic | GF102M050J250A | 3 | EC517 EC519 EC527 | CAPXON |
| 61 | 01.34.CL.D.E1500U50V | Capacitor, AL electrolytic | GF152M050J410A | 1 | EC518 | CAPXON |
| 62 | 01.34.CL.D.E288220U16VH | Capacitor, AL electrolytic | CD288H-2200UF/16V 13*25 | 2 | EC507 EC508 | CAPXON GF222M016I250A |
| 63 | 01.34.CL.D.E288220U10VH | Capacitor, AL electrolytic | GF222M010G200A | 3 | EC522 EC506 EC520 | CAPXON GF222M010G200A |
| 64 | 01.34.CL.D.E28868U50 | Capacitor, AL electrolytic | KM680M050E110A | 1 | EC528 | CAPXON-KM680M050E110A |
| 65 | 01.34.CL.D.E270U400VS | Capacitor, AL electrolytic | HP271M400N510AP(270UF,400V,Φ25*51, ±20%,105°C,DIP) | 1 | EC502 | HP271M400N510AP |
| 66 | 01.13.LL.D.E192 | Common Mode Inductor | LCL-303A DIP | 2 | LF502 LF501 | |
| 67 | 01.13.LL.D.E077 | Pulse transformer | LO620-050 DIP | 2 | L507 L502 | |
| 68 | 01.13.LL.D.E141 | Filter inductor | L-200A DIP | 1 | L508 | |
| 69 | 01.13.LL.D.E018 | Common Mode Choke | LCL-471 | 1 | LF503 | |
| 70 | 01.13.LR.E172 | Transformer | BCK-ER2893(DIP) | 1 | T502 | |
| 71 | 01.13.LR.E173 | Switching Power Transformer | BCK-ER4204(DIP) | 1 | T503 | |
| 72 | 01.13.LL.D.E051 | Inductor, leaded fixed | LH0608-22UH | 3 | L504 L505 L506 | |
| 73 | 01.13.LZ.ED100A | Bead, leaded fixed | 100Ω(3.5*6.0*0.8) | 1 | L511 | |
| 74 | 01.13.LZ.ED100 | Bead, leaded fixed | 100Ω(3.5*9.0*0.8-T) | 2 | L509 L510 | F10 RHW3.5*9*0.8-T 0.5W |
| 75 | 01.41.D.PS.ELL4148 | Diode | LL4148 SMD | 1 | D520 | |
| 76 | 01.41.D.PS.EB540C | Diode | B540C SMD | 1 | D517 | |
| 77 | 01.41.D.PD.EFR104 | Diode | FR104 DIP | 4 | D506 D505 D503 D512 | |
| 78 | 01.41.D.PD.EHER208G | Diode | HER208G DIP | 2 | D508 D504 | |
| 79 | 01.41.D.PD.EDQ06 | Diode | 21DQ06 DIP | 1 | D513 | |
| 80 | 01.41.D.PD.E21DQ10 | Diode | 21DQ10 DIP | 2 | D514 D509 | |
| 81 | 01.41.D.PD.EFCF16A40 | Diode | FCF16A40,400V,16A,TO-220,1.25V,30uA,120A,45nS,DIP | 2 | D516 D515 | |
| 82 | 01.41.D.PD.E2010DN | Diode | FYPF2010DN DIP | 1 | D510 | plastic encapsulation |
| 83 | 01.41.D.PD.EGBU806 | Diode bridge | GBU806 DIP | 1 | BD501 | |
| 84 | 01.41.D.WS.E18V | Zener Diode | 18V | 3 | Z501 Z502 Z506 | |
| 85 | 01.41.D.WS.EDDZ9707 | Zener Diode | DDZ9707-F(20V) SMD | 2 | Z503 Z504 | |
| 86 | 01.42.Q.S.E8050 | Transistor | KTC8050 SMD | 1 | Q510 | |
| 87 | 01.42.Q.S.EC8550 | Transistor | KTC8550 SMD | 1 | Q511 | |
| 88 | 01.42.Q.S.ET3904 | Transistor | MMBT3904 SMD | 2 | Q504 Q507 | SOT23 |
| 89 | 01.42.Q.S.E2N3906 | Transistor | 2N3906 SMD | 1 | Q505 | SOT23 |
| 90 | 01.42.Q.S.E1037 | Transistor | ZSA1037AKR SMD | 1 | Q513 | |
| 91 | 01.42.Q.S.E5866 | Transistor | ZSC5866 SMD | 1 | Q514 | |
| 92 | 01.44.IC.S.E4835 | Mosfet | 4F4835 SMD | 2 | Q503 Q508 | Rohm |
| 93 | 01.44.MOS.S.EDMN3033LSN | Mosfet | DMN3033LSN SMD | 1 | Q506 | |
| 94 | 01.44.MOS.S.EFQ0A13N80 | Mosfet | FQ0A13N80(TO-3PIN DIP) | 1 | Q509 | |
| 95 | 01.44.IC.D.EFSDM0465REWDTU | IC, Fairchild, Power Switch | FSDM0465REWDTU, TO-220F | 1 | U503 | Fairchild |
| 96 | 01.44.IC.S.EA11173V3 | IC, AAG, LDO | AZ1117H-3.3, SOT-23 | 1 | U510 | plastic encapsulation |
| 97 | 01.44.IC.D.E78R12 | IC, Fairchild, Voltage Regulator | KA78R12, TO-220F-4L | 1 | U514 | plastic encapsulation |
| 98 | 01.44.IC.D.E278R05 | IC, Fairchild or ShiBao, Voltage Regulator | KA278R05CTU, TO-220F-4L | 1 | U511 | plastic encapsulation |
| 99 | 01.44.IC.D.E78R05CTU | IC, Fairchild, Voltage Regulator | KA78R05TSTU, TO-220F-4L | 1 | U508 | |
| 100 | 01.44.IC.D.EKA7912 | IC, Fairchild, Voltage Regulator | KA7912, TO-220 | 1 | U513 | |
| 101 | 01.44.IC.D.ELTV817 | IC, LITEON, Photoelectric Coupler | LTV817 DIP | 4 | U505 U504 U502 U515 | |
| 102 | 01.44.IC.D.EKA431 | IC, AAG, Shunt Regulator | KA431LZTA 0.5% DIP | 2 | U507 U509 | |
| 103 | 01.44.IC.S.EFAN7602MX | IC, Fairchild/ShiBao, PWM Controller | FAN7602MX SMD | 1 | U506 | |
| 104 | 01.40.CON.DCZ.E129 | Connector | Vertical VH Connector with three holes and two pins | 2 | CN501 CN506 | White & Antiflaming |
| 105 | 01.38.FUSE.D.E5AL250V3610 | Fuse | T5AL/250V(φ3.6*10 dual pins), In Line Package | 1 | F501 | |
| 106 | 01.40.CON.S13.FPC2.E005 | FPC Connector | 1.25-14P Vertical Type and Dual Connect | 1 | CN503 | Black |
| 107 | 01.40.CON.S13.FPC2.E003 | FPC Connector | 1.25-12P Vertical Type and Dual Connect | 1 | CN504 | Black |
| 108 | 01.40.CON.S13.FPC2.E004 | FPC Connector | 1.25-9P Vertical Type and Dual Connect | 1 | CN505 | Black |
| 109 | 01.00.WJ.QT.E041 | 3pins grounding piece | M4 | 3 | G501 G503 G502 | |
| 110 | 01.00.DP.QT.E113 | Sil-pad | sil-pad 400-3022 | 1 | For Q509 on SMPS Board | |
| 111 | 01.37.PCB.2.E6144C | PCB Board-SMPS Board without components | 6144C | 1 | 2-layers | |

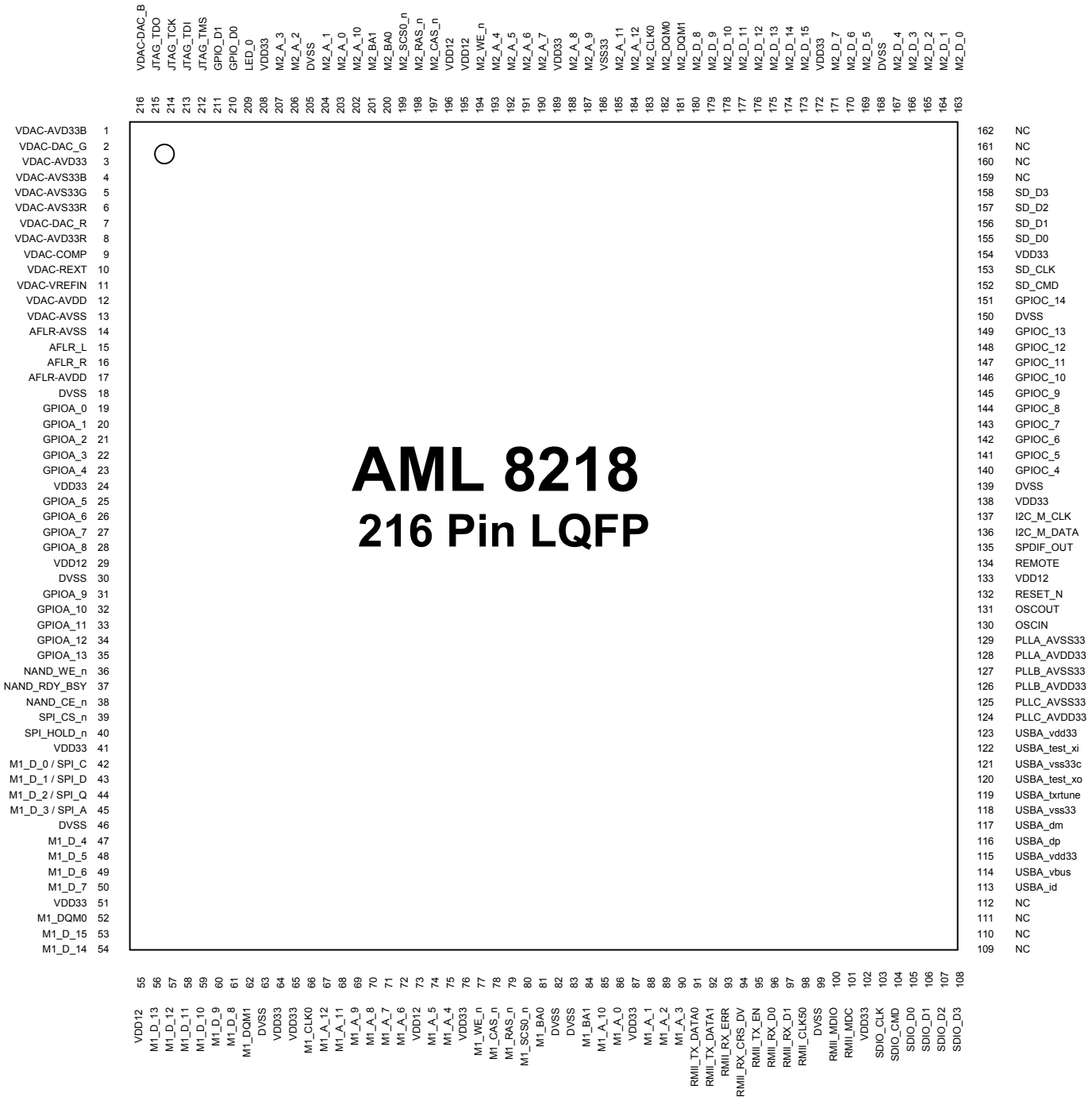
HS2X0 Component List for Front panel board (6742C)

| Item | P/N | Description | Specification | Qty | Location.No. | Note |
|------|-------------------------|----------------------------------------------------------------|-----------------------------------------|-----|-----------------------------------------------------------------------|-----------------------------|
| 1 | 01.57.R.3.E000J | Resistor, chip | 0805-0Ω ±5% | 2 | (R657) (R659) | |
| 2 | 01.57.R.3.E1R0J | Resistor, chip | 0805-10Ω±5% | 2 | (FB604) (FB605) | |
| 3 | 01.57.R.3.E101J | Resistor, chip | 0805-100Ω±5% | 5 | (R606) (R607) (R638) (R641) (R652) | |
| 4 | 01.57.R.3.E201J | Resistor, chip | 0805-200Ω±5% | 2 | (R614) (R647) | |
| 5 | 01.57.R.3.E471J | Resistor, chip | 0805-470Ω±5% | 1 | (R605) | |
| 6 | 01.57.R.3.E511J | Resistor, chip | 0805-510Ω±5% | 3 | (R615) (R648) (R642) | |
| 7 | 01.57.R.3.E202J | Resistor, chip | 0805-2KΩ±5% | 1 | (R608) | |
| 8 | 01.57.R.3.E472J | Resistor, chip | 0805-4.7KΩ±5% | 9 | (R609) (R610) (R601) (R603) (R604) (R611) (R612) (R613) (R655) | |
| 9 | 01.57.R.3.E103J | Resistor, chip | 0805-10KΩ±5% | 1 | (R637) | |
| 10 | 01.57.R.3.E153J | Resistor, chip | 0805-15KΩ±5% | 2 | (R602) (R653) | |
| 11 | 01.57.R.3.E203J | Resistor, chip | 0805-20KΩ±5% | 2 | (R636) (R644) | |
| 12 | 01.57.R.3.E104J | Resistor, chip | 0805-100KΩ±5% | 1 | (R639) | |
| 13 | 01.57.R.3.E154J | Resistor, chip | 0805-150KΩ±5% | 1 | (R643) | |
| 14 | 01.57.R.4.ER15J | Resistor, chip | 1206-0.15Ω±5% | 1 | (R640) | |
| 15 | 01.57.R.Y.E270 | Voltage Dependent Resistor, TDK | AVR-M1608C270MTABB SMD | 6 | (ESD601) ESD602 ESD603 ESD605 ESD606 ESD604 | |
| 16 | 01.54.CS.3.E220N50V | Capacitor, multilayer ceramic, chip | 0805-22P NPO±5%/50V | 2 | (C604) (C605) | |
| 17 | 01.54.CS.3.E300N50V | Capacitor, multilayer ceramic, chip | 0805-30P NPO±5%/50V | 1 | (C620) | |
| 18 | 01.54.CS.3.E560N50V | Capacitor, multilayer ceramic, chip | 0805-56P NPO±5%/50V | 2 | (C611) (C612) | |
| 19 | 01.54.CS.3.E123X50V | Capacitor, multilayer ceramic, chip | 0805-123 X7R±10%/50V | 2 | (C624) (C636) | |
| 20 | 01.54.CS.3.E473X50V | Capacitor, multilayer ceramic, chip | 0805-473 X7R±10%/50V | 2 | (C618) (C626) | |
| 21 | 01.54.CS.3.E104Y50V | Capacitor, multilayer ceramic, chip | 0805-104 Y5V+80-20%/50V | 10 | (C634) (C606) (C607) (C608) (C627) (C628) (C629) (C630) (C633) (C635) | |
| 22 | 01.54.CS.3.E225X25V | Capacitor, multilayer ceramic, chip | 0805-225 X7R±20%/25V | 2 | (C603) (C619) | YAGEO |
| 23 | 01.54.CS.4.E105X50V | Capacitor, multilayer ceramic, chip | 1206-105 X7R±10%/50V | 2 | (C637) (C638) | |
| 24 | 01.34.CL.D.E10U16VB | Capacitor, AL, electrolytic | CD11X-10UF/16V 4*7 | 2 | EC616 EC617 | |
| 25 | 01.34.CL.D.E47U16VB | Capacitor, AL, electrolytic | CD11X-47UF/16V 5*7 | 2 | EC603 EC601 | |
| 26 | 01.34.CL.D.E47U50VCD | Capacitor, AL, electrolytic | CD110-47UF/50V 6.3*12 | 2 | EC605 EC614 | |
| 27 | 01.34.CL.D.EH47U50VD | Capacitor, AL, electrolytic | GF470M050E110A | 1 | CE607 | |
| 28 | 01.34.CL.D.EX100U16VB | Capacitor, AL, electrolytic | CD11X-100UF/16V 6.3*7 | 2 | EC602 CE615 | |
| 29 | 01.34.CL.D.E220U6V3B | Capacitor, AL, electrolytic | CD11X-220UF/6.3V 6.3*7 | 1 | EC621 | |
| 30 | 01.34.CL.D.E288330U16VD | Capacitor, AL, electrolytic | CD288H-330UF/16V 8*12 | 2 | EC620 EC604 | |
| 31 | 01.38.FUSE.S.EJK110 | Polymer Positive Temperature Coefficient | JK-110(1.1A) SMD | 1 | PTC601 | |
| 32 | 01.13.L.Z.ESB50 | Bead, chip | 0805-50Ω | 3 | (FB601) (FB602) (FB603) | |
| 33 | 01.00.JZ.E04000 | Quartz Crystal Unit | 4.000MHZ-49S-22P | 1 | Y601 | |
| 34 | 0203020000003 | Transformer | SPT-EE1316V,EE13,DIP | 1 | TR3 | |
| 35 | 01.41.D.PS.ELL4148 | Diode | LL4148 SMD | 4 | (D601) (D602) (D603) (D605) | |
| 36 | 01.41.D.PD.EFR104 | Diode | FR104 DIP | 2 | D606 D608 | |
| 37 | 01.41.D.FD.E1L0392A | LED | 1L0392A2W32CM001 DIP | 2 | LED601 LED602 | High light, white and amber |
| 38 | 01.42.Q.S.EC8550 | Transistor | KTC8550 SMD | 1 | (Q603) | SOT23 |
| 39 | 01.42.Q.S.E8050 | Transistor | KTC8050 SMD | 1 | (Q602) | SOT23 |
| 40 | 01.41.D.WS.E6V2 | Zener Diode | 6.2V | 1 | DZ601 | DZ601 |
| 41 | 01.44.IC.S.E75711 | IC, SANYO, VFD Driver | LC75711NE_QFP64E | 1 | (U604) | |
| 42 | 01.46.IC.E78P156G | IC, ELAN, MCU | EM78P156ELM-G SMD | 1 | U601 | firmware burn-in |
| 43 | 01.44.IC.D.ENCP3063BPG | IC, ONSEMI, 1.5 A, Step-Up/Down/Inverting Switching Regulators | NCP3063BPG DIP | 1 | (U605) | |
| 44 | 01.44.IC.D.E38B17 | IC, IR receiver | HL38B17 DIP | 1 | IR601 | |
| 45 | 01.40.CON.S10.FPC2.E030 | FPC Connector | 1.0-14P, Vertical Type and Dual Conact | 1 | CN601 | Black |
| 46 | 01.40.CON.S13.FPC2.E005 | FPC Connector | 1.25-14P, Vertical Type and Dual Conact | 1 | CN602 | Black |
| 47 | 01.40.CON.S10.FPC2.E002 | FPC Connector | 1.0-8P, Vertical Type and Dual Conact | 1 | CN603 | Black & Antiflaming |
| 48 | 01.40.CON.S10.FPC2.E004 | FPC Connector | 1.0-6P, Vertical Type and Dual Conact | 1 | CN604 | Black & Antiflaming |
| 49 | 01.39.SW.QC.EDKFC | Touch switch | KFC-A06-05 (Vertical Type) DIP | 2 | K602 K601 | |
| 50 | 01.40.CON.DCZ.E219 | Earphone Jack | CKX-3.5-12 | 1 | J602 | |
| 51 | 01.40.CON.DCZ.E217 | USB Jack | USB-A-05 (ROHS, Mother Set) | 1 | J601 | |
| 52 | 01.16.E1303F | VFD | VFD22-1303F | 1 | VFD601 | |
| 53 | 0226010000074 | PCB Board-Front Panel Board without components | 6742C | 1 | | |

HS2X0 Component List for Volume Button board (6743C)

| Item | P/N | Description | Specification | Qty | Location.No. | Note |
|------|------------------------------|--------------------------------------------------|----------------------------------------|-----|-----------------------------|----------------------------------|
| 1 | 01.57.R.3.E472J | Resistor, chip | 0805-4.7KΩ±5% | 3 | (R617) (R618) (R616) | |
| 2 | 01.57.R.3.E181J | Resistor, chip | 0805-180Ω±5% | 4 | (R622) (R623) (R624) (R625) | |
| 3 | 01.54.CS.3.E821N50V | Capacitor, multilayer ceramic, chip | 0805-820P NPO±5%/50V | 2 | (C601) (C602) | |
| 4 | 01.54.CS.3.E104Y50V | Capacitor, multilayer ceramic, chip | 0805-104 Y5V+80-20%/50V | 1 | (C614) | |
| 5 | 01.42.Q.S.ET3904 | Transistor | MMBT3904, SOT23 | 1 | (Q601) | |
| 6 | 01.42.Q.S.EC8550 | Transistor | KTC8550, SOT23 | 2 | (Q604) (Q605) | |
| 7 | 01.41.D.FD.E1L0545W31B0CC201 | LED | 1L0545W31B0CC201 Φ5(white) DIP | 4 | LED603 LED604 LED605 LED606 | High light white and astigmatism |
| 8 | 01.40.CON.S10.FPC2.E036 | FPC Connector | 1.0-6P Horizontal Type and Dual Conact | 1 | CN605 | Positive Pointer |
| 9 | 01.36.VR.E20K | Volume encoder, Pulse | ED1612-24-24-HC-F20(2) | 1 | W601 | |
| 10 | 0226010000075 | PCB board-Volume Button Board without components | 6743C | 1 | | 2-layers |

7. Pin-Out Diagram



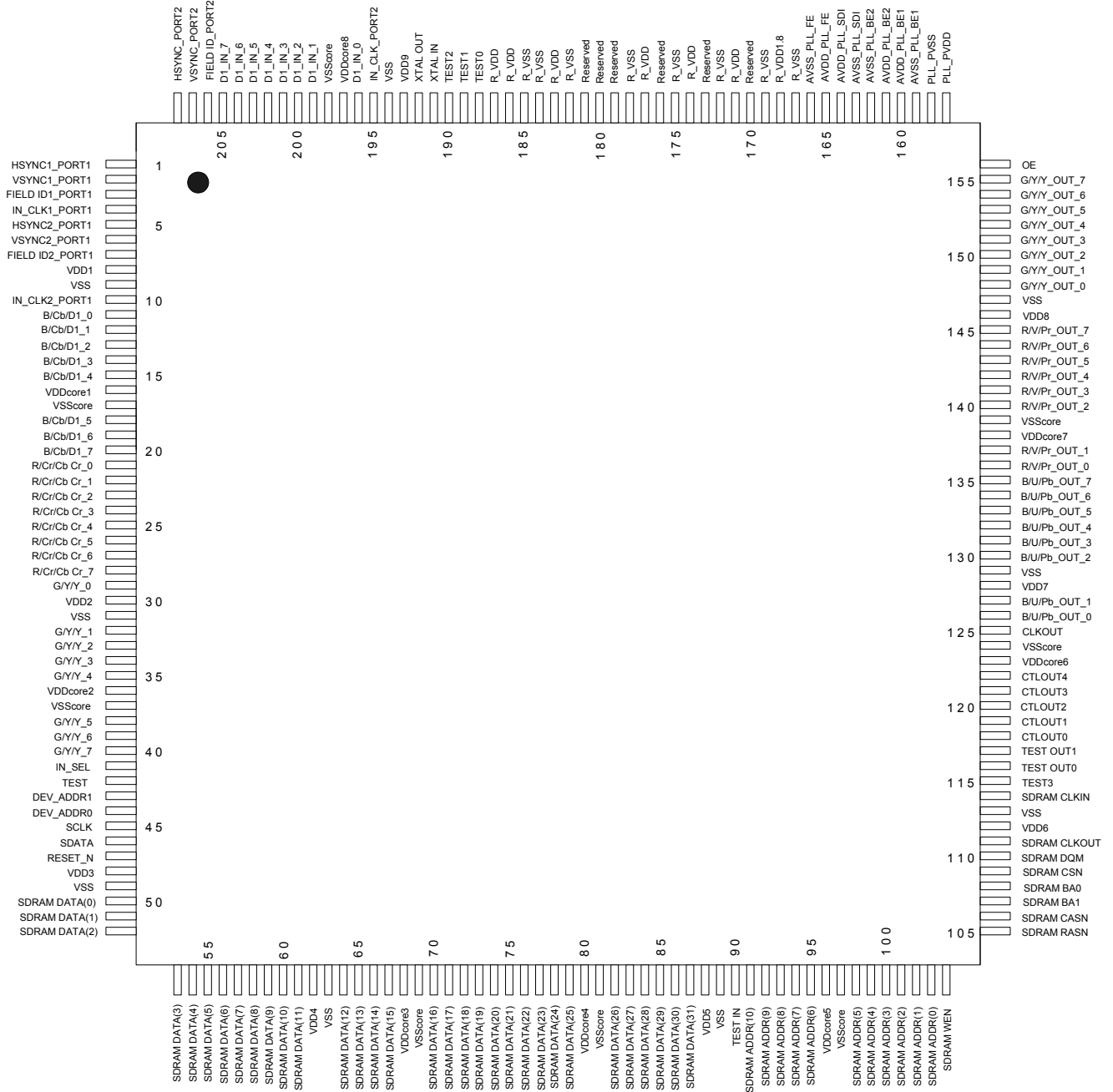


FLI2310 LF Digital Video Converter Data Sheet

3 PIN INFORMATION

3.1 Pin Diagram

Figure 3.1: Pinout Information



Package: 208-pin PQFP

PIN ASSIGNMENT

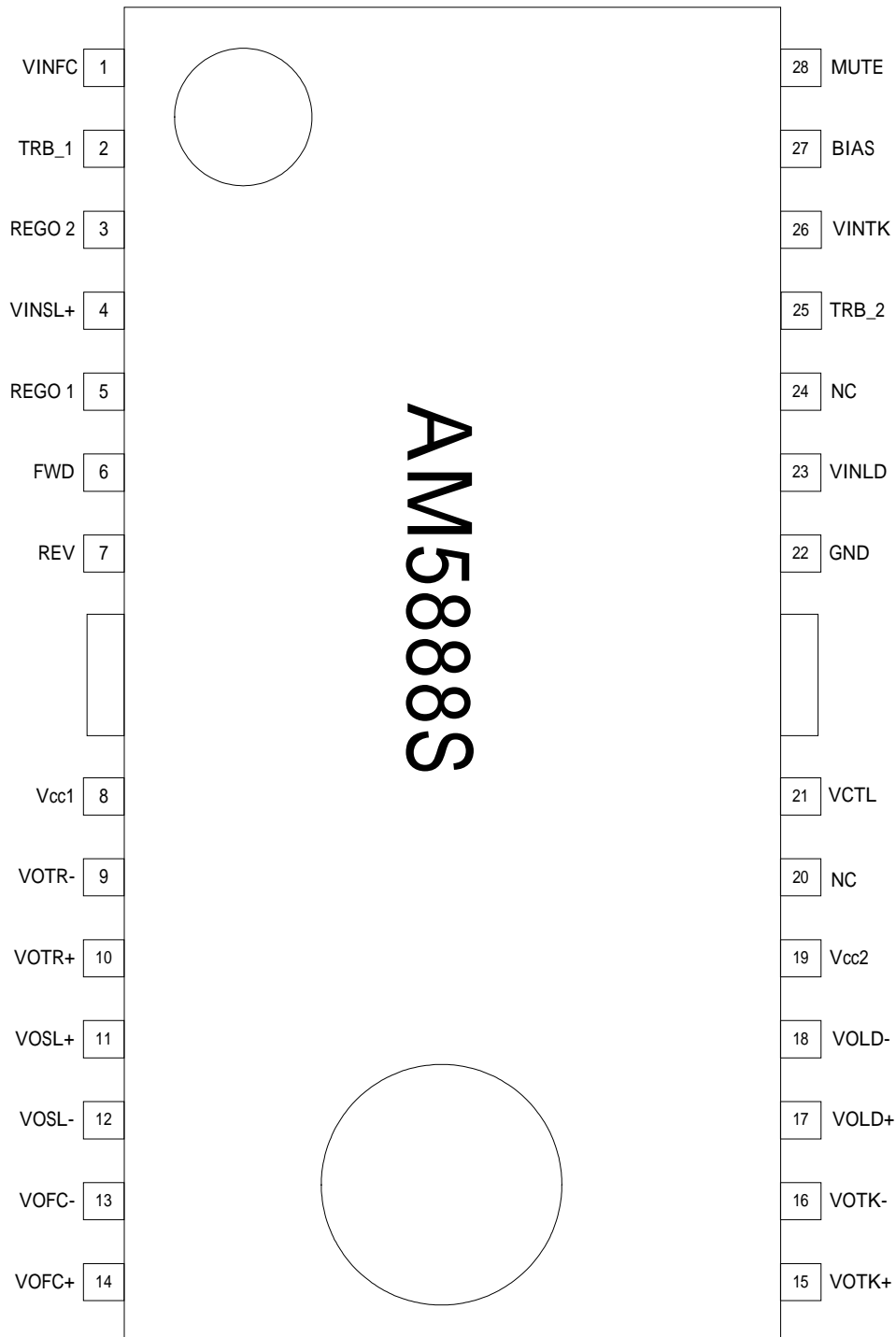
| 160-PIN | | | | |
|------------|-----|-------------|-------------|--------------|
| | 160 | VDDP5 | | |
| | 159 | USB_DP/P7.2 | | |
| | 158 | USB_DM/P7.1 | | |
| | 157 | VSSP5 | | |
| | 156 | MISO/P2.6 | | |
| | 155 | MOSI/P2.5 | | |
| | 154 | VSSC1 | | |
| | 153 | SPICLK/P2.4 | | |
| | 152 | VDDC1 | | |
| | 151 | SF_CLK/P2.3 | | |
| | 150 | SF_CS/P2.2 | | |
| | 149 | SF_D0/P2.1 | | |
| | 148 | SF_D1/P2.0 | | |
| | 147 | P1.5SF_D2 | | |
| | 146 | P1.4/SF_D3 | | |
| | 145 | P1.3 | | |
| | 144 | P1.2 | | |
| | 143 | P1.1 | | |
| | 142 | P1.0 | | |
| | 141 | VDDP4 | | |
| | 140 | VSSP4 | | |
| | 139 | RTCK/P0.5 | | |
| | 138 | TCK/P0.4 | | |
| | 137 | TMS/P0.3 | | |
| | 136 | TDO/P0.2 | | |
| | 135 | TDI/P0.1 | | |
| | 134 | NTRST/P0.0 | | |
| | 133 | RXD/P0.7 | | |
| | 132 | TXD/P0.6 | | |
| | 131 | IRIN/P7.0 | | |
| | 130 | NRESET | | |
| | 129 | ADCAIN | | |
| | 128 | ADCVREF | | |
| | 127 | ADCVDD33A | | |
| | 126 | ADCVSS33A | | |
| | 125 | REF0 | | |
| | 124 | SPO | | |
| | 123 | SLO | | |
| | 122 | TRO | | |
| | 121 | FLO | | |
| MDA4 | 1 | | 120 | ABUFN/DSDR |
| MDA3 | 2 | | 119 | ABUFF/DSDF |
| MDA5 | 3 | | 118 | RBIAS |
| MDA2 | 4 | | 117 | PREF |
| MDA6 | 5 | | 116 | AFEVSS33A2 |
| MDA1 | 6 | | 115 | AFEVDD33A2 |
| MDA7 | 7 | | 114 | DVDPD |
| MDA0 | 8 | | 113 | CDPD/KEYSCAN |
| MDA8 | 9 | | 112 | DVDLD |
| MDA10 | 10 | | 111 | CDLD |
| MDA9 | 11 | | 110 | FIN / SLDM |
| MDA11/P7.3 | 12 | | 109 | EIN / SLDP |
| BA1_NDCS1 | 13 | | 108 | DIN |
| BA0 | 14 | | 107 | CIN |
| NDCS0 | 15 | | 106 | BIN |
| NRAS | 16 | | 105 | AIN |
| DCLK | 17 | | 104 | RFSUM |
| VDDP0 | 18 | | 103 | AFEVDD33A1 |
| VSSP0 | 19 | | 102 | EQO |
| NCAS | 20 | | 101 | EFMI |
| NDWE | 21 | | 100 | AFEVSS33A1 |
| DQM | 22 | | 99 | DPLLVDDA33 |
| MDB8 | 23 | | 98 | DPLLVSSA33 |
| MDB7 | 24 | | 97 | DPLLLLPF1 |
| MDB9 | 25 | | 96 | DPLLLLPF2 |
| MDB6 | 26 | | 95 | DPLLVDDA12 |
| MDB10 | 27 | | 94 | DPLLVSSA12 |
| MDB5 | 28 | | 93 | PLL1VDD |
| MDB11 | 29 | | 92 | PLL1VSS |
| MDB4 | 30 | | 91 | PLL2VDD |
| MDB12 | 31 | | 90 | PLL2VSS |
| MDB3 | 32 | | 89 | P6.6 |
| MDB13 | 33 | | 88 | P6.5 |
| MDB2 | 34 | | 87 | XO |
| MDB14 | 35 | | 86 | XI |
| MDB1 | 36 | | 85 | VSSP3 |
| MDB15 | 37 | | 84 | VDDP3 |
| MDB0 | 38 | | 83 | P6.4 |
| P3.0 | 39 | | 82 | P6.3 |
| P3.1 | 40 | | 81 | P6.2 |
| | | 41 | VDDP1 | |
| | | 42 | VSSP1 | |
| | | 43 | P3.2 | |
| | | 44 | P3.3 | |
| | | 45 | P3.4 | |
| | | 46 | P3.5 | |
| | | 47 | P3.6 | |
| | | 48 | P3.7 | |
| | | 49 | VDDC0 | |
| | | 50 | SPDIF0/P4.0 | |
| | | 51 | ISDI/P4.1 | |
| | | 52 | PSMCKO/P5.0 | |
| | | 53 | PSBCKO/P5.1 | |
| | | 54 | PSWSO/P5.2 | |
| | | 55 | VSSC0 | |
| | | 56 | PSD04/P5.3 | |
| | | 57 | PSD03/P5.4 | |
| | | 58 | PSD02/P5.5 | |
| | | 59 | PSVDD | |
| | | 60 | Boot1 | |
| | | 61 | PSVSS | |
| | | 62 | PSD01/P5.6 | |
| | | 63 | PSD00/P5.7 | |
| | | 64 | Boot0 | |
| | | 65 | DAC4 | |
| | | 66 | DACVSS33A1 | |
| | | 67 | DAC3 | |
| | | 68 | DACVDD33A1 | |
| | | 69 | DAC2 | |
| | | 70 | DAC1 | |
| | | 71 | DACVSS33D | |
| | | 72 | DAC0 | |
| | | 73 | DACVDD33D | |
| | | 74 | DACIREF | |
| | | 75 | DACVREF | |
| | | 76 | DACCOMP | |
| | | 77 | ICDAT/P4.2 | |
| | | 78 | ICCLK/P4.3 | |
| | | 79 | V_Sync/P6.0 | |
| | | 80 | H_Sync/P6.1 | |

TMD8809

(160-LQFP-2424)

Figure 1-5. TMD8809 Pin Assignments (160-LQFP-2424)

● Pin configuration



● Pin description

| PIN No | Pin Name | Function |
|--------|----------|--------------------------------------------------------------------|
| 1 | VINFC | Input for focus driver |
| 2 | TRB_1 | Connect to external transistor base |
| 3 | REGO2 | Regulator voltage output, connect to external transistor collector |
| 4 | VINSL+ | Input for the sled driver |
| 5 | REGO1 | Regulator voltage output, connect to external transistor collector |
| 6 | FWD | Tray driver forward input |
| 7 | REV | Tray driver reverse input |
| 8 | Vcc1 | Vcc for pre-drive block and power block of sled and tray |
| 9 | VOTR- | Tray driver output (-) |
| 10 | VOTR+ | Tray driver output (+) |
| 11 | VOSL+ | Sled driver output (+) |
| 12 | VOSL- | Sled driver output (-) |
| 13 | VOFC- | Focus driver output (-) |
| 14 | VOFC+ | Focus driver output (+) |
| 15 | VOTK+ | Tracking driver output (+) |
| 16 | VOTK- | Tracking driver output (-) |
| 17 | VOLD+ | Spindle driver output (+) |
| 18 | VOLD- | Spindle driver output (-) |
| 19 | Vcc2 | Vcc for power block of spindle, tracking and focus |
| 20 | NC | No Connection |
| 21 | VCTL | Speed control input of tray driver |
| 22 | GND | Ground |
| 23 | VINLD | Input for spindle driver |
| 24 | NC | No Connection |
| 25 | TRB_2 | Connect to external transistor base |
| 26 | VINTK | Input for tracking driver |
| 27 | BIAS | Input for reference voltage |
| 28 | MUTE | Input for mute control |

Notes) Symbol of + and – (output of drivers) means polarity to input pin.

(For example, if voltage of pin1 is high, pin14 is high.)

Sii 9034 HDMI Transmitter Pin Diagram

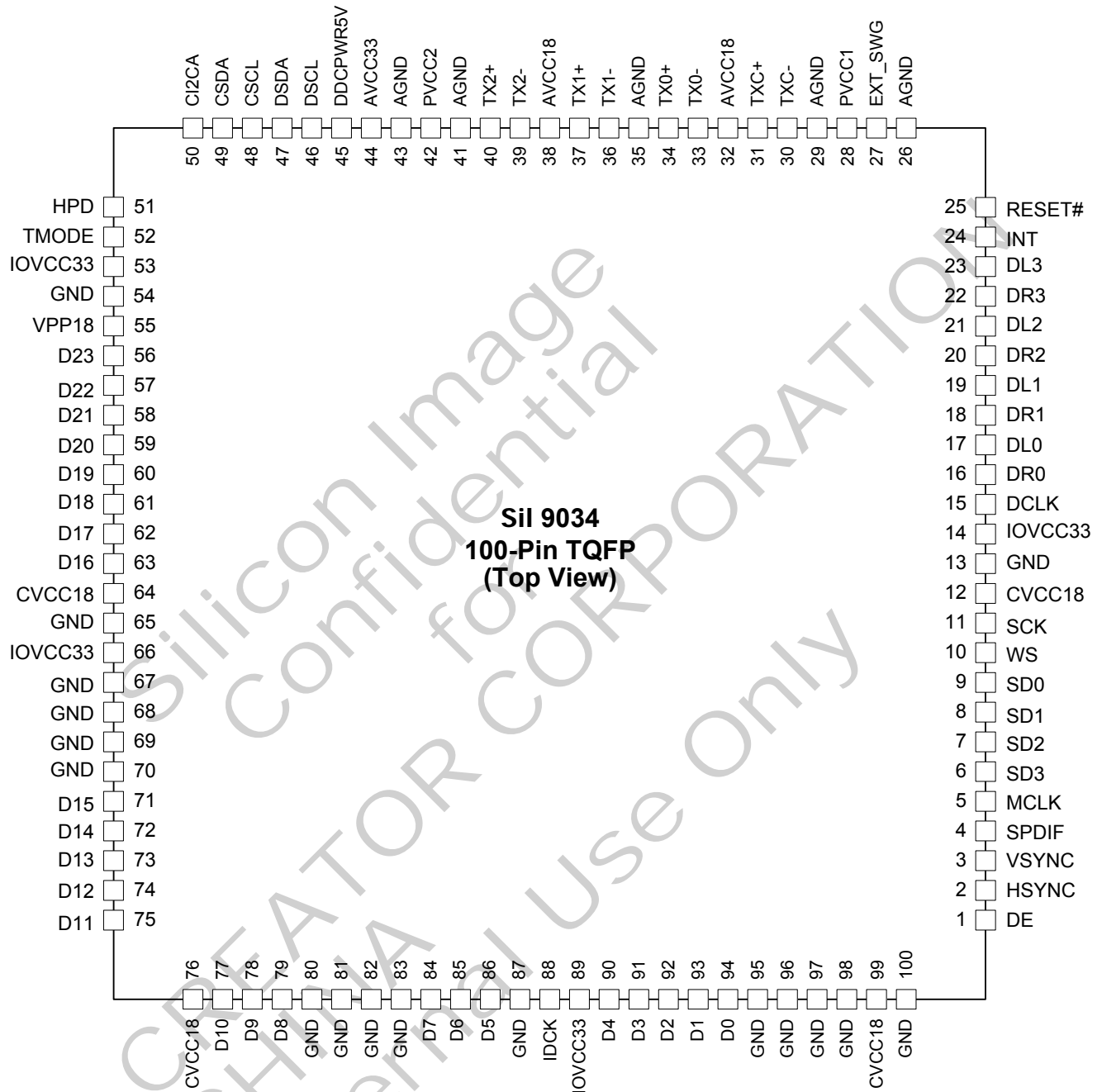


Figure 1. 100-Pin TQFP Pinout Diagram



Chapter 2 Pin Configuration

2.1 Package Pin-out Diagram and Signal Table

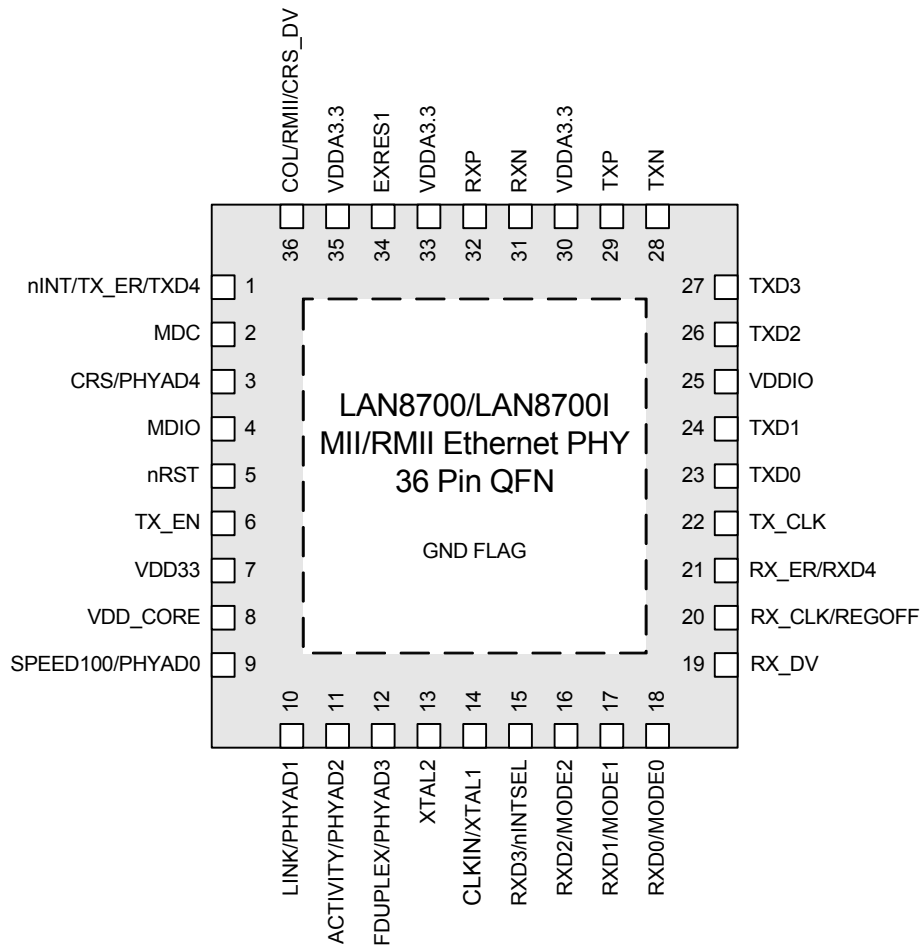
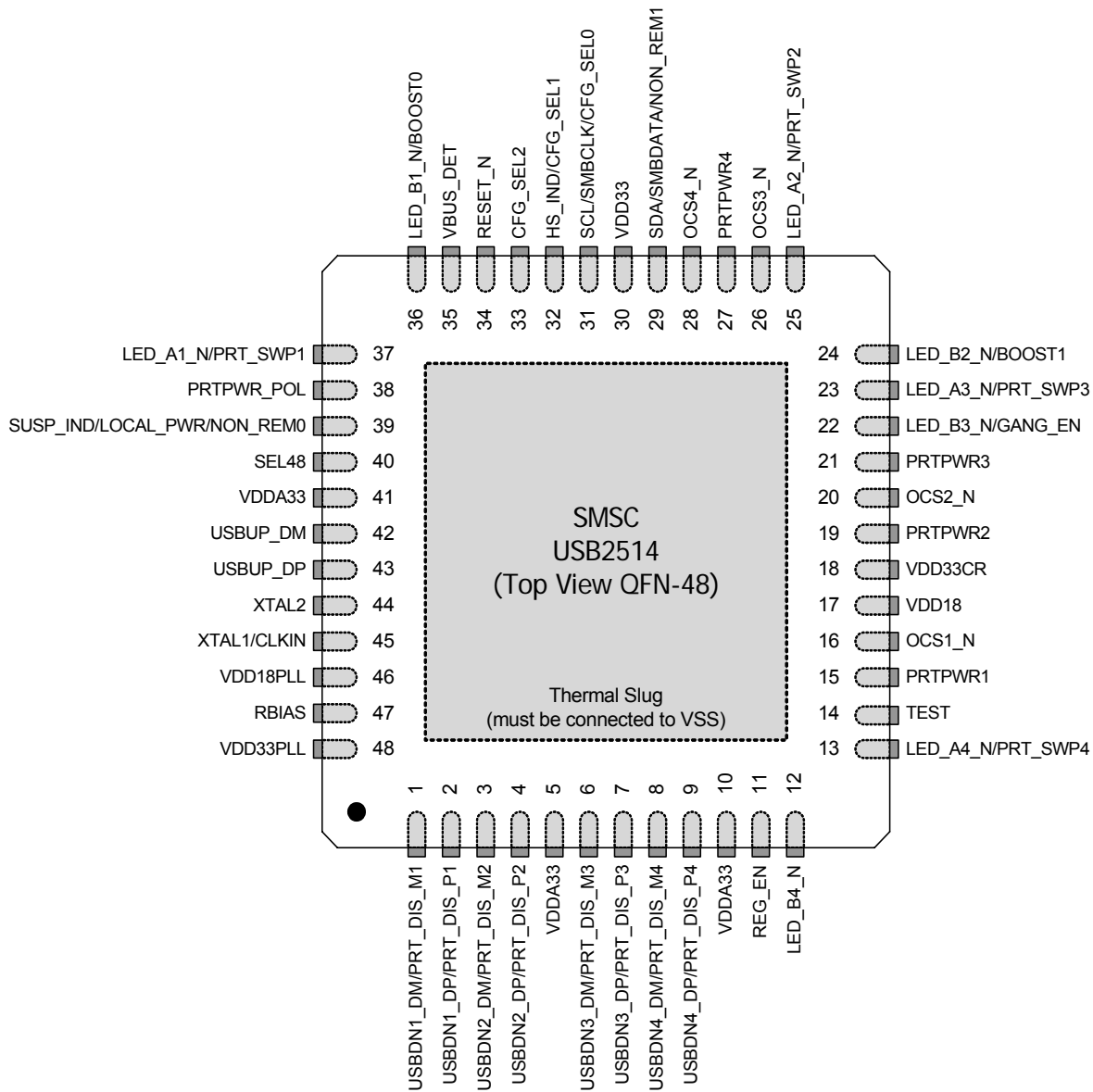


Figure 2.1 Package Pinout (Top View)



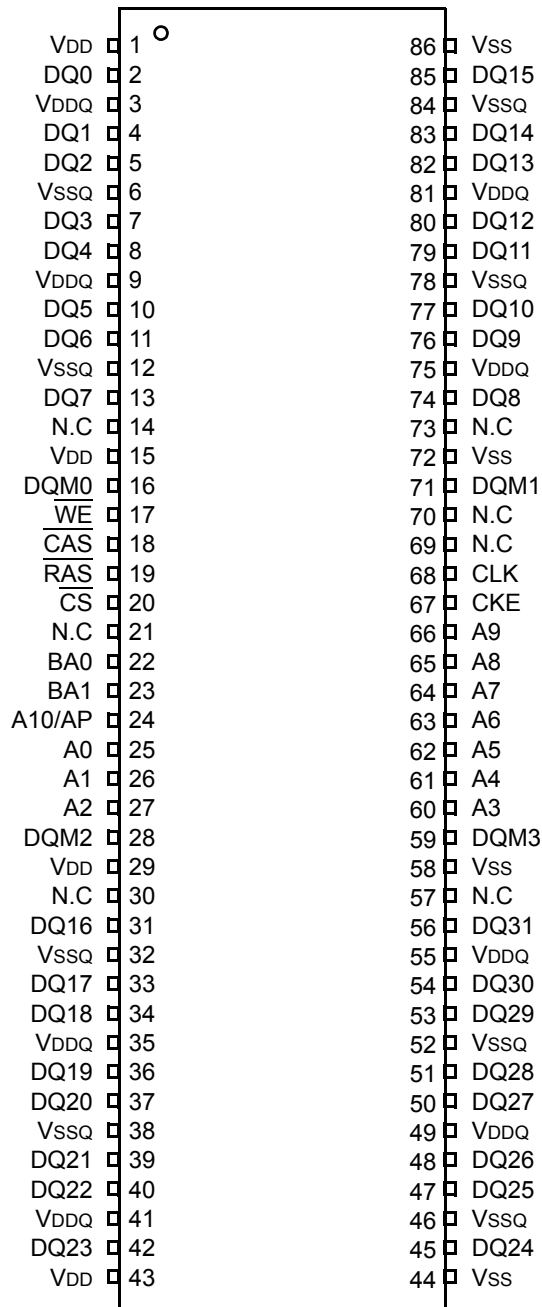
Indicates pins on the bottom of the device.

Figure 1.2 USB2514 48-Pin QFN

K4S643232H

SDRAM

PIN CONFIGURATION (Top view)

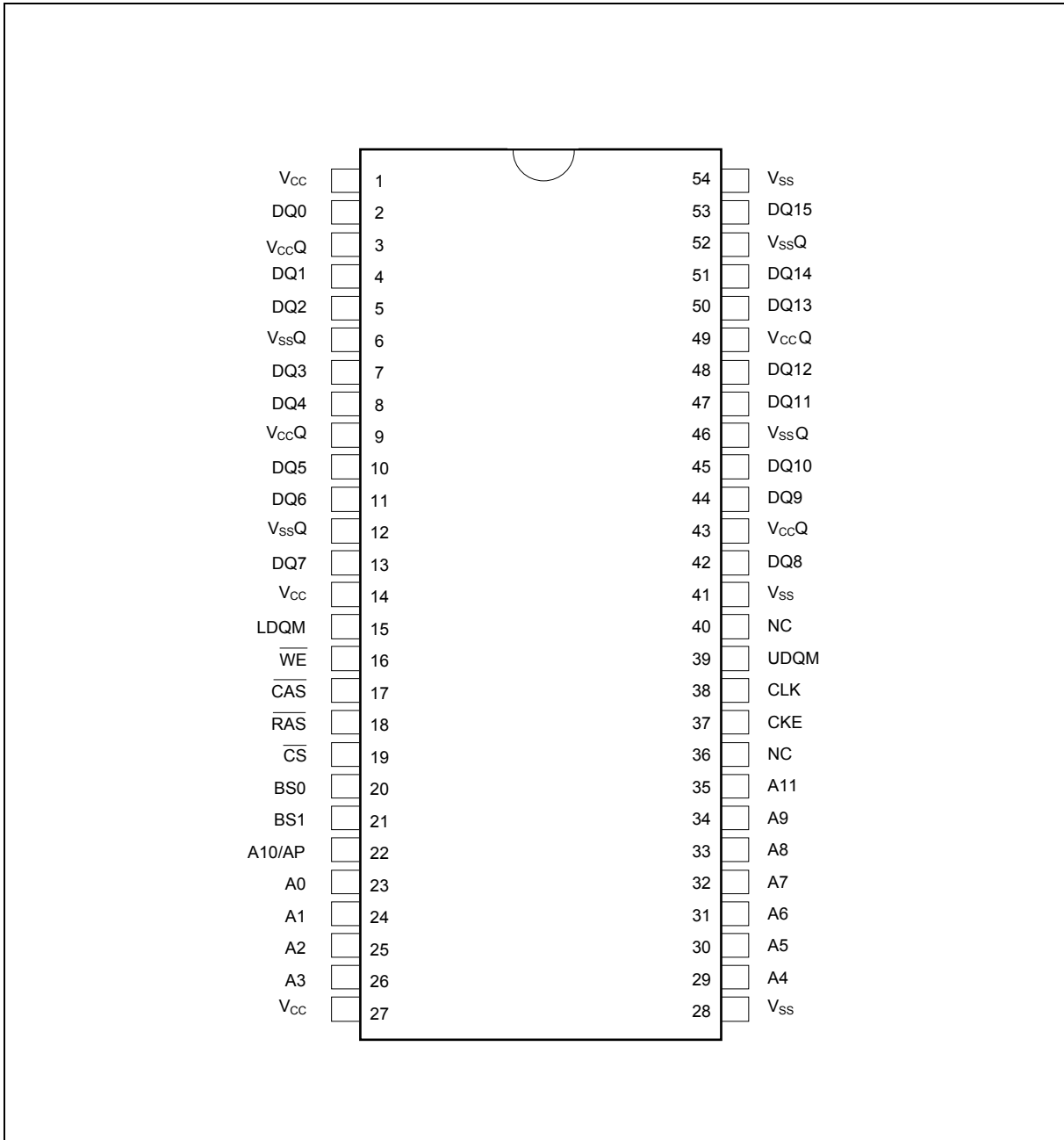


86Pin TSOP (II)
 (400mil x 875mil)
 (0.5 mm Pin pitch)

W9812G6GH



4. PIN CONFIGURATION



W25X16, W25X32, W25X64



5. PIN CONFIGURATION PDIP 300-MIL

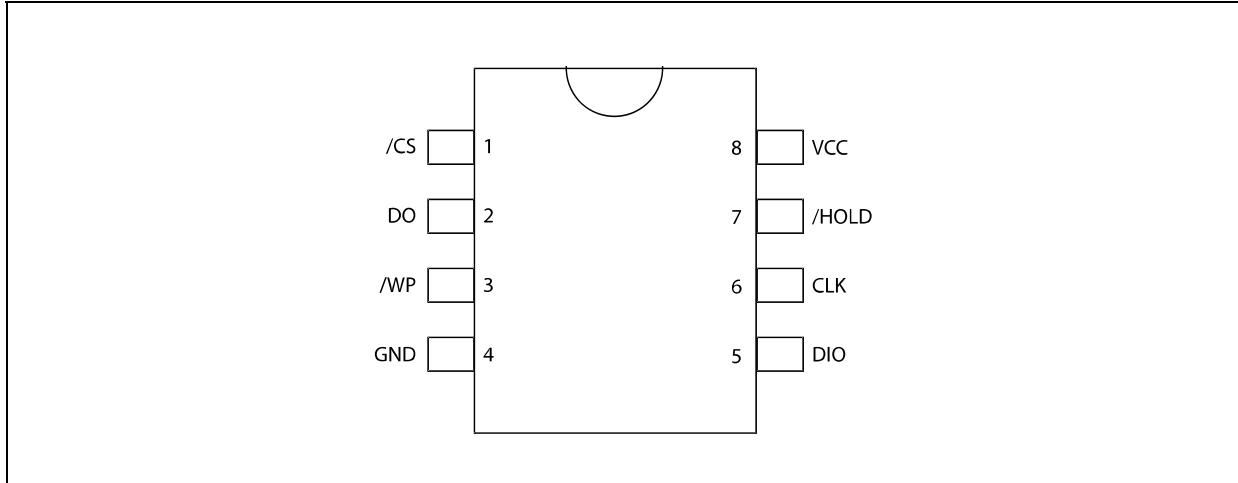


Figure 1c. W25X16, W25X32, W25X64 Pin Assignments, 8-pin PDIP (Package Code DA)

6. PIN DESCRIPTION SOIC 208-MIL, PDIP 300-MIL, AND WSON 6X5-MM

| PAD NO. | PAD NAME | I/O | FUNCTION |
|---------|----------|--------|---------------------|
| 1 /CS | | I | Chip Select Input |
| 2 DO | | O | Data Output |
| 3 /WP | | I | Write Protect Input |
| 4 GND | | | Ground |
| 5 | DIO | I/O | Data Input / Output |
| 6 | CLK | I | Serial Clock Input |
| 7 /HOLD | | I Hold | Input |
| 8 VCC | | | Power Supply |

W25X10, W25X20, W25X40, W25X80



3. PIN CONFIGURATION SOIC 150-MIL

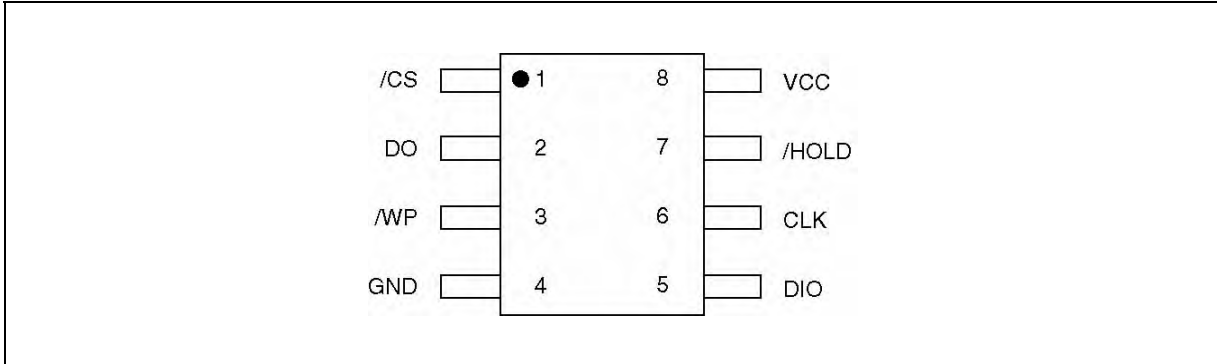


Figure 1a. W25X10, W25X20 and W25X40 Pin Assignments, 8-pin SOIC (Package Code SN)

4. PIN CONFIGURATION SOIC 208-MIL

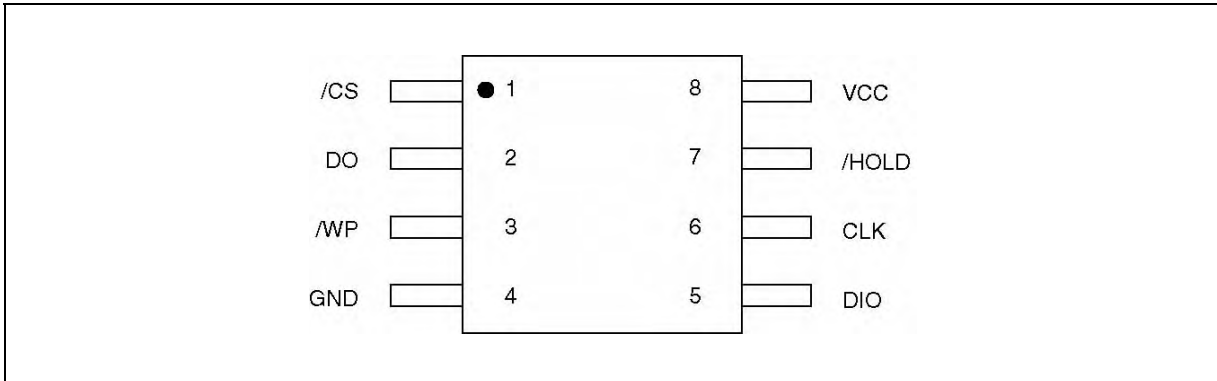


Figure 1b. W25X40 and W25X80 Pin Assignments, 8-pin SOIC (Package Code SS)

5. PIN CONFIGURATION PDIP 300-MIL

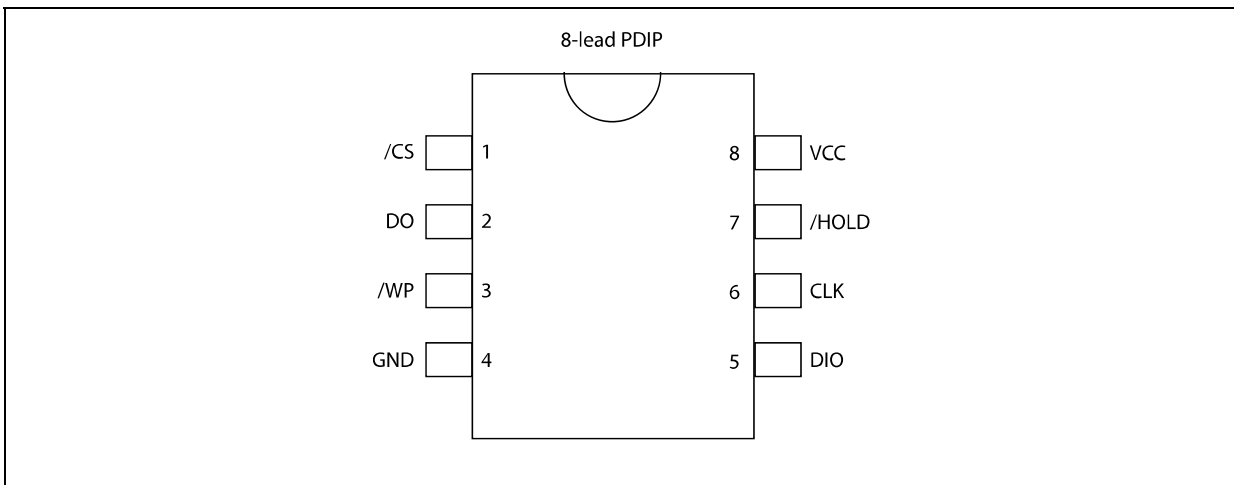


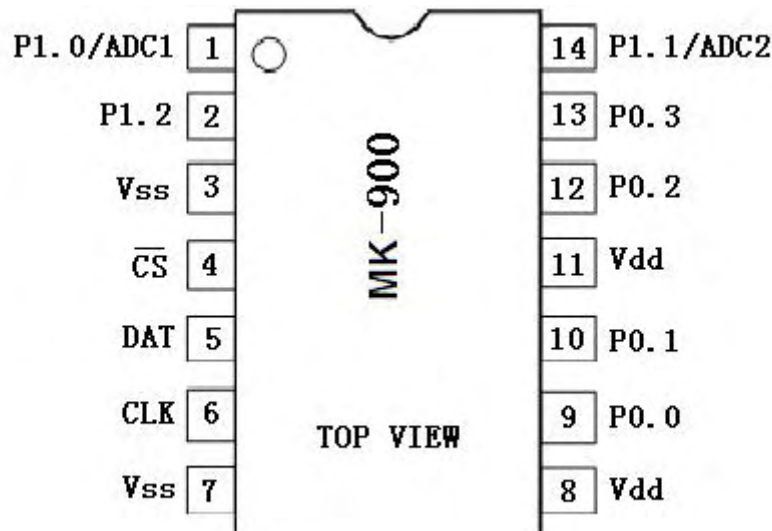
Figure 1c. W25X10, W25X20, W25X40 and W25X80 Pin Assignments, 8-pin PDIP (Package Code DA)

SAMSUNG

MK-900 手册（内部资料）

MK-900 硬件手册

- 芯片管脚图
14 脚 SOP



- 芯片管脚说明

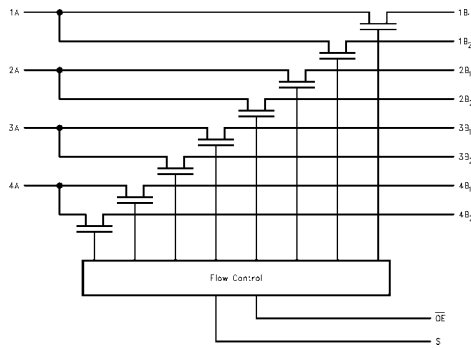
| 管脚号 | 管脚名 | I/O | 缓冲器类型 | 管脚说明 |
|-----|-----------------|-----|---------|----------------------|
| 1 | P1.0/ADC1 | I/O | TTL SMT | 双向输入输出端口, ADC 模拟信号输入 |
| 2 | P1.2 | I | TTL SMT | 单向输入端口 |
| 3 | V _{SS} | P | — | 地, 0V 参考点 |
| 4 | /CS | I | TTL SMT | 单向输入端口 |
| 5 | DAT | I/O | TTL SMT | 双向输入输出端口, 数据通信端口 |
| 6 | CLK | I | TTL SMT | 单向输入端口, 时钟通信端口 |
| 7 | V _{SS} | P | — | 地, 0V 参考点。 |
| 8 | V _{DD} | P | — | 电源 |
| 9 | P0.0 | I/O | — | |
| 10 | P0.1 | I/O | TTL SMT | 双向输入输出端口 |
| 11 | V _{DD} | P | — | 电源 |
| 12 | P0.2 | I/O | TTL SMT | 双向输入输出端口 |
| 13 | P0.3 | I/O | TTL SMT | 双向输入输出端口 |
| 14 | P1.1/ADC2 | I/O | TTL SMT | 双向输入输出端口, ADC 模拟信号输入 |

- DC 特性参数

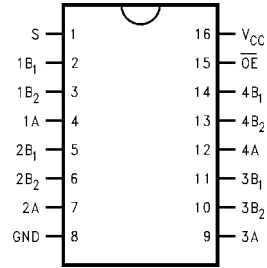
最大标称值 (V_{SS} = 0V)

FSAV330

Logic Diagram



Connection Diagram



Pin Descriptions

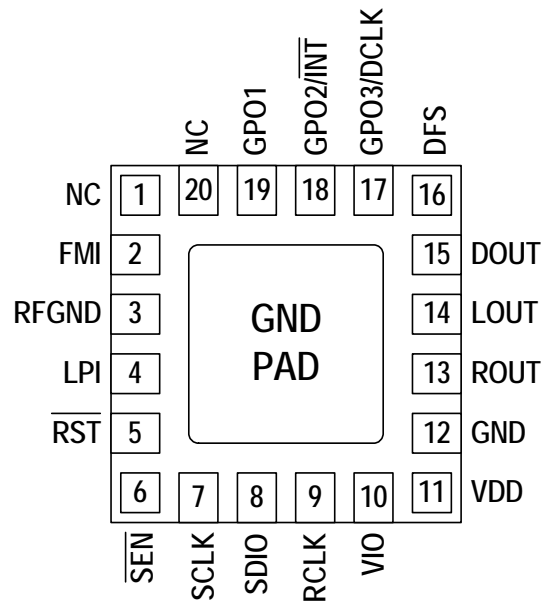
| Pin Name | Description |
|--------------------------------|-------------------|
| \overline{OE} | Bus Switch Enable |
| S | Select Input |
| A | Bus A |
| B ₁ -B ₂ | Bus B |

Truth Table

| S | \overline{OE} | Function |
|---|-----------------|--------------------|
| X | H | Disconnect |
| L | L | A = B ₁ |
| H | L | A = B ₂ |

Si4704/05

6. Pin Descriptions: Si4704/05-GM



| Pin Number(s) | Name | Description |
|---------------|-----------|-----------------------------------------------------------------------------------|
| 1, 20 | NC | No connect. Leave floating. |
| 2 | FMI | FM RF input. |
| 3 | RFGND | RF ground. Connect to ground plane on PCB. |
| 4 | LPI | Loop antenna RF input. |
| 5 | RST | Device reset (active low) input. |
| 6 | SEN | Serial enable input (active low). |
| 7 | SCLK | Serial clock input. |
| 8 | SDIO | Serial data input/output. |
| 9 | RCLK | External reference or crystal oscillator input. |
| 10 | VIO | I/O supply voltage. |
| 11 | VDD | Supply voltage. May be connected directly to battery. |
| 13 | ROUT | Right audio analog line output. |
| 14 | LOUT | Left audio analog line output. |
| 15 | DOUT | Digital audio output data. |
| 16 | DFS | Digital frame synchronization. |
| 17 | GPO3/DCLK | General purpose output/digital bit synchronous clock or crystal oscillator input. |
| 18 | GPO2/INT | General purpose output/interrupt. |
| 19 | GPO1 | General purpose output. |
| 12, GND PAD | GND | Ground. Connect to ground plane on PCB. |

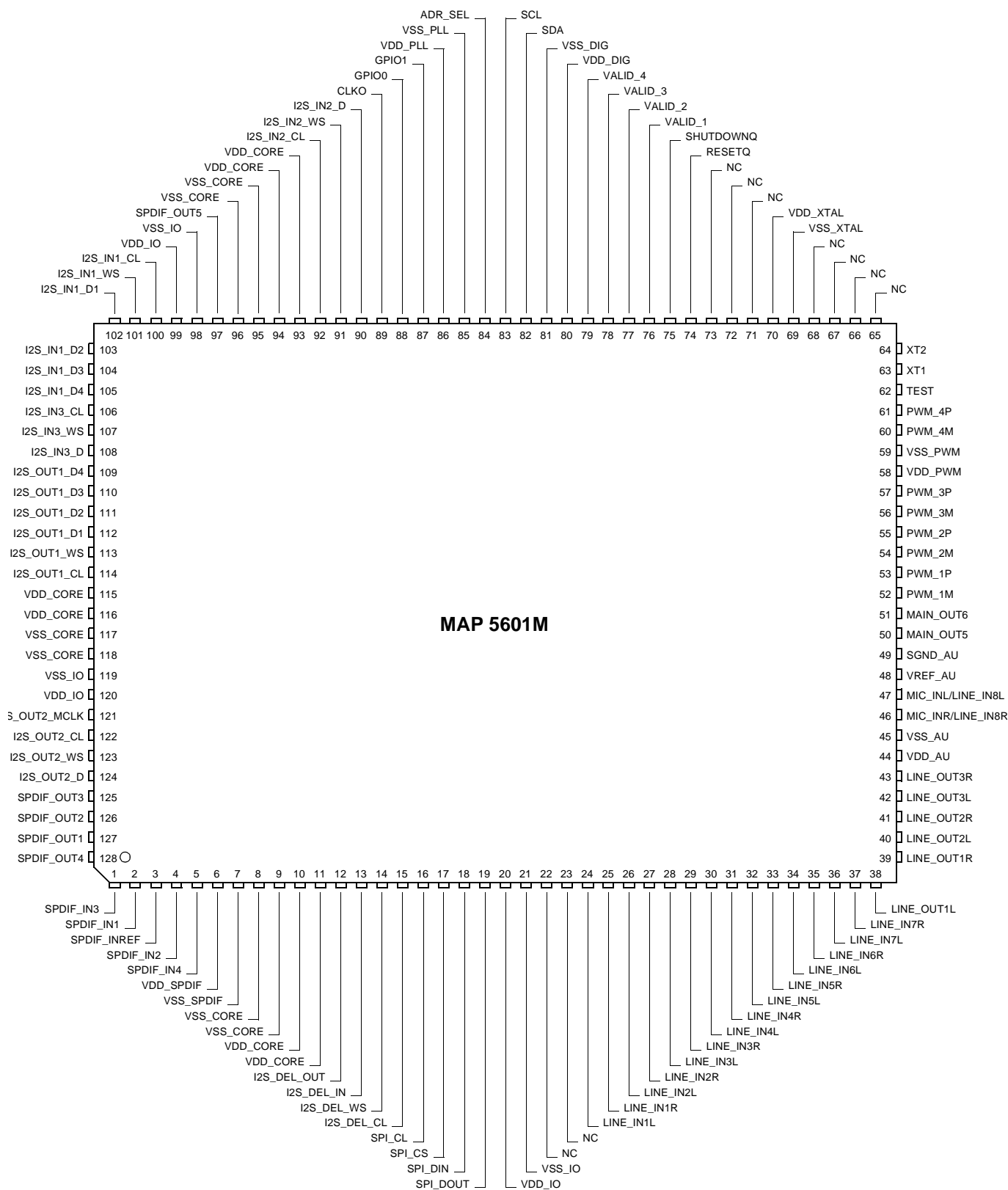


Fig. 4–6: MAP 5601M in PMQFP128-2 package



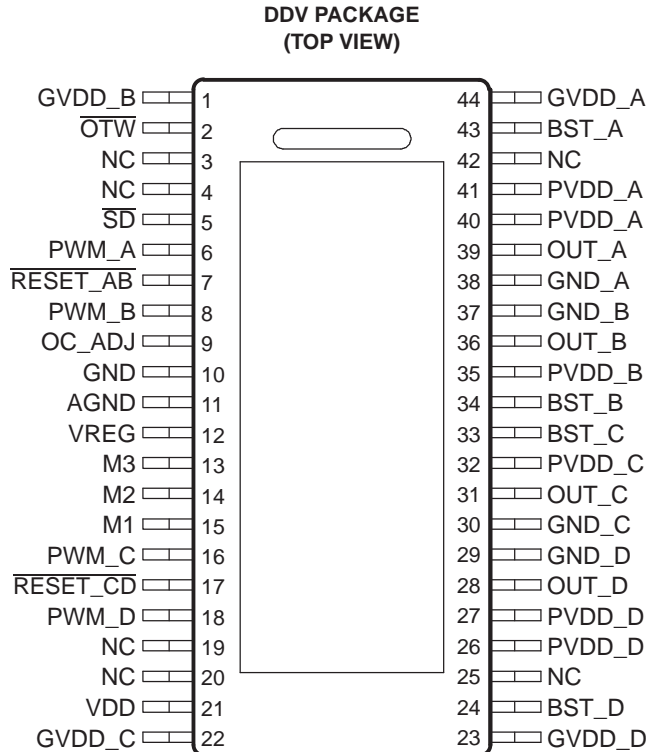
These devices have limited built-in ESD protection. The leads should be shorted together or the device placed in conductive foam during storage or handling to prevent electrostatic damage to the MOS gates.

GENERAL INFORMATION

Terminal Assignment

The TAS5352 is available in a thermally enhanced 44-pin HTSSOP PowerPad™ package (DDV)

This package contains a thermal pad that is located on the top side of the device for convenient thermal coupling to the heatsink.

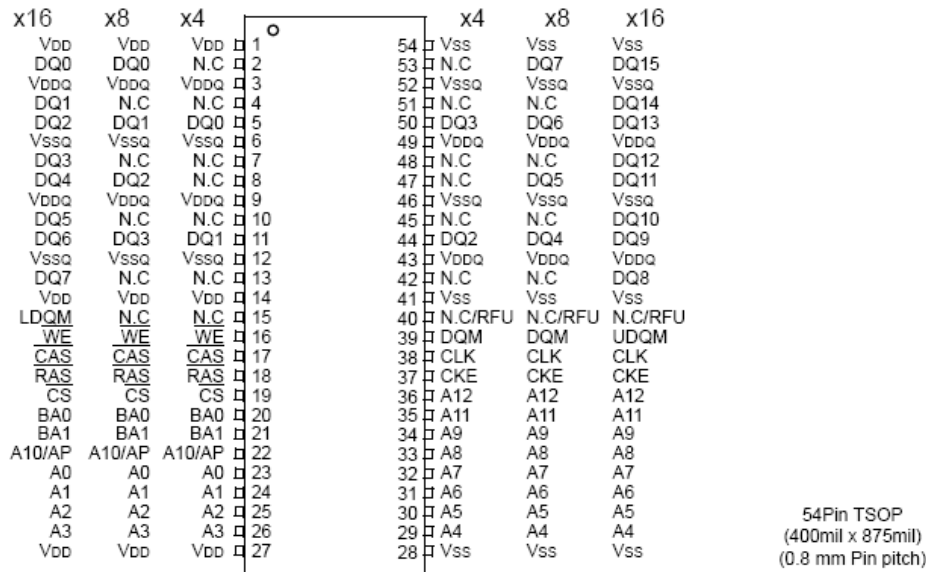


P0016-02

K4S561632J

Synchronous DRAM

6.0 Pin Configuration (Top view)

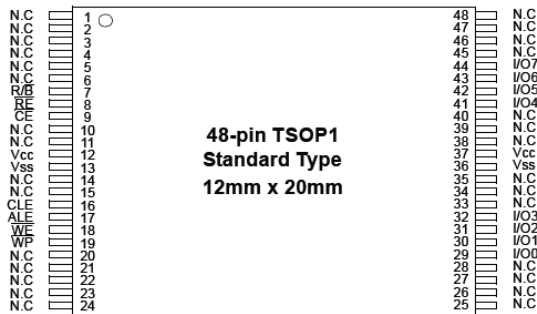


K9F1G08U0B

FLASH MEMORY

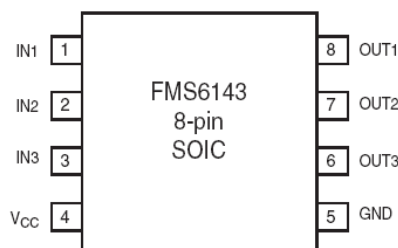
PIN CONFIGURATION (TSOP1)

K9F1G08U0B-PCB0/PIB0



FMS6143

Pin Configurations

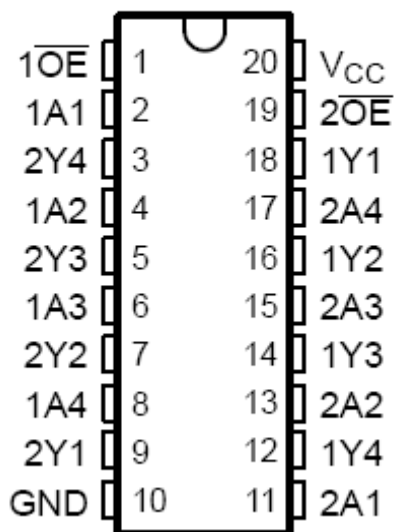


Pin Assignments

| Pin# | Pin | Type | Description |
|------|-----------------|--------|--------------------------------------|
| 1 | IN1 | Input | Video input, Channel 1 |
| 2 | IN2 | Input | Video input, Channel 2 |
| 3 | IN3 | Input | Video input, Channel 3 |
| 4 | V _{CC} | Input | +5V supply, do not float |
| 5 | GND | Output | Must be tied to ground, do not float |
| 6 | OUT3 | Output | Filtered output, Channel 3 |
| 7 | OUT2 | Output | Filtered output, Channel 2 |
| 8 | OUT1 | Output | Filtered output, Channel 1 |

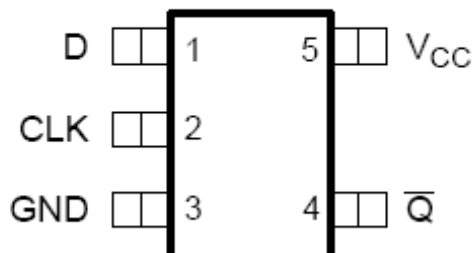
SN74ALVC244

DGV, DW, NS, OR PW PACKAGE
(TOP VIEW)

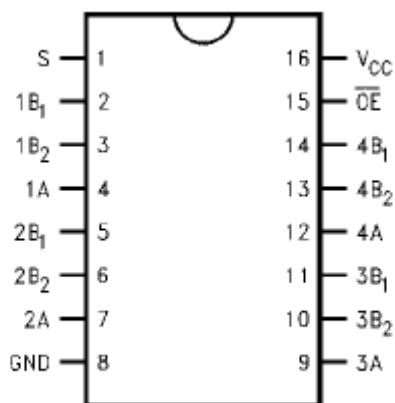


SN74AUP1G80

DCK PACKAGE
(TOP VIEW)



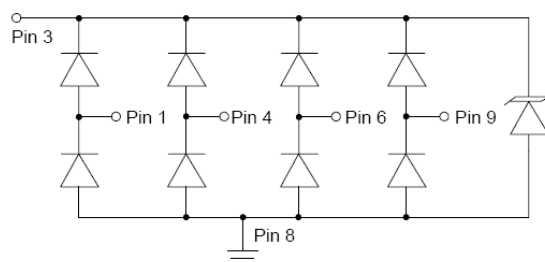
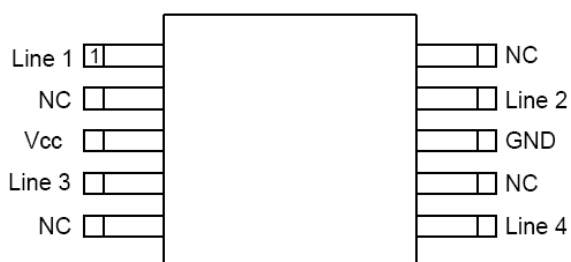
FST3257



| Pin Name | Description |
|--------------------------------|-------------------|
| \overline{OE} | Bus Switch Enable |
| S | Select Input |
| A | Bus A |
| B ₁ -B ₂ | Bus B |

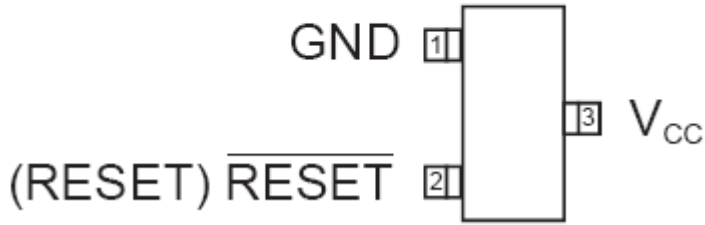
| S | \overline{OE} | Function |
|---|-----------------|--------------------|
| X | H | Disconnect |
| L | L | A = B ₁ |
| H | L | A = B ₂ |

RClamp0514M

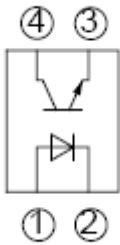


AAT3520/2/4

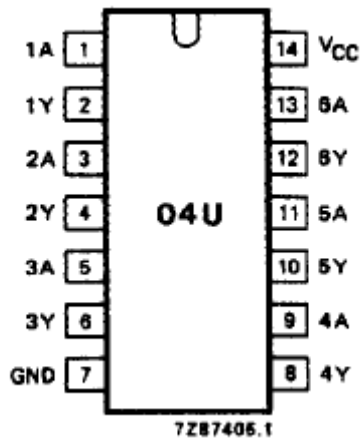
**SOT-23
(Top View)**



PC817



74HCU04



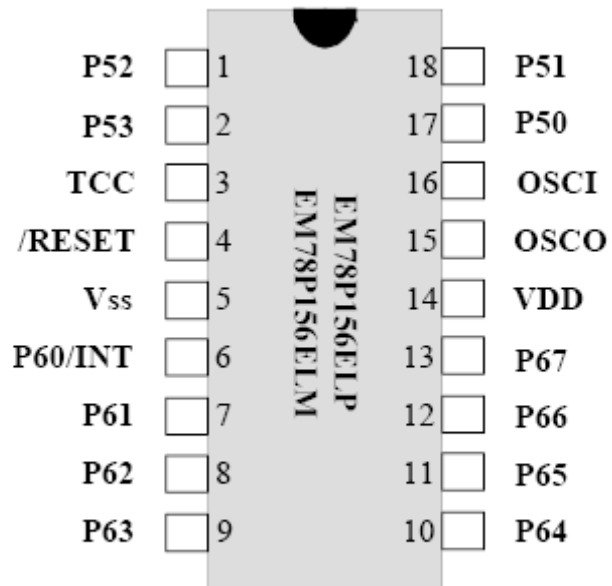
FUNCTION TABLE

| INPUT | OUTPUT |
|-------|--------|
| nA | nY |
| L | H |
| H | L |

Note

- 1. H = HIGH voltage level
L = LOW voltage level

EM78P156



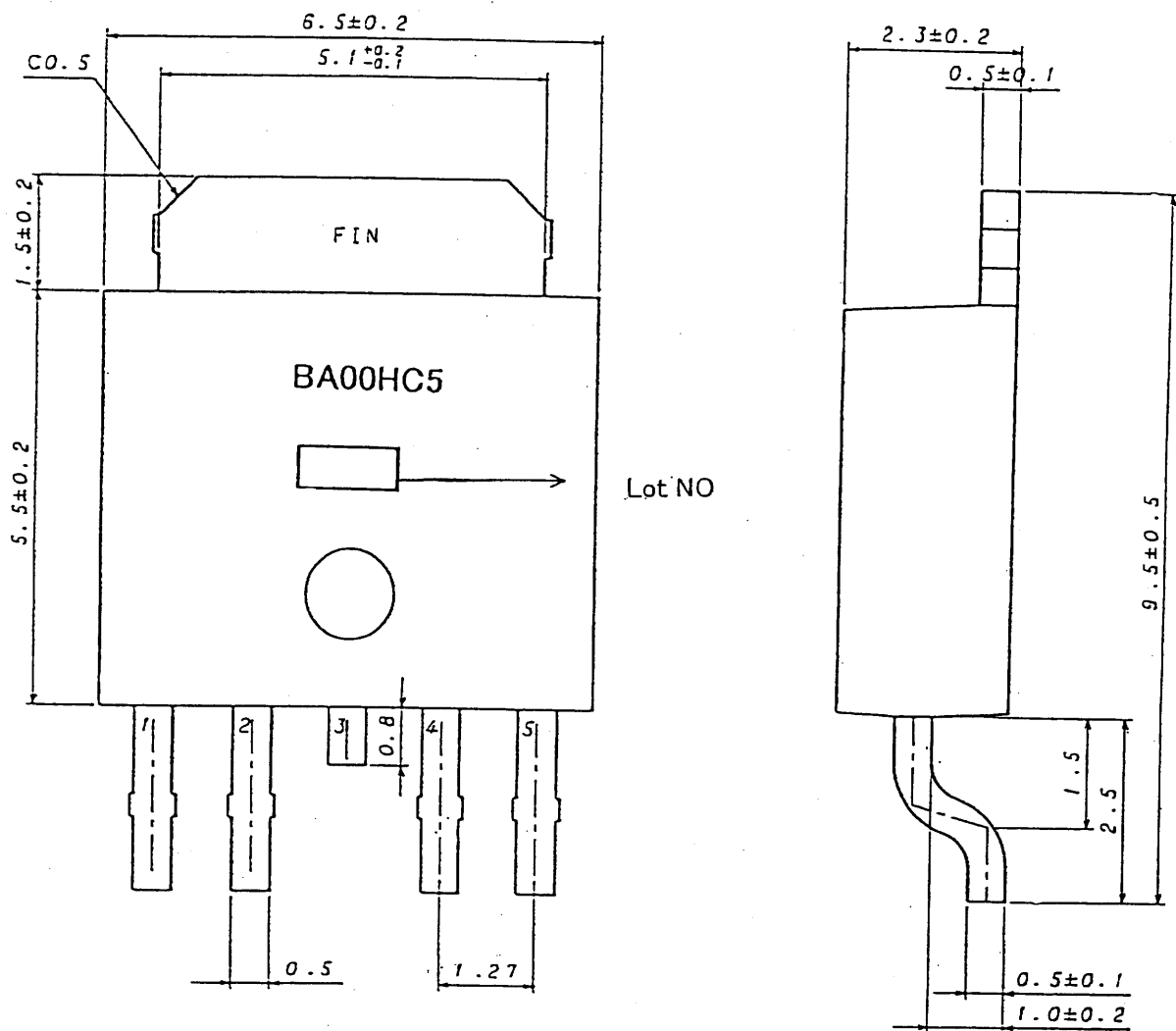


PRODUCTS
半導体集積回路

TYPE
BA00HC5FP

PAGE
4/10

○外形図



(UNIT:mm)

- | | | | | | |
|-------|---|------|-------|---|-----|
| 1 Pin | : | ADJ | 4 Pin | : | Vo |
| 2 Pin | : | PVcc | 5 Pin | : | Vcc |
| 3 Pin | : | N.C. | FIN | : | GND |

図-1 外形図 (プラスチックモールド)

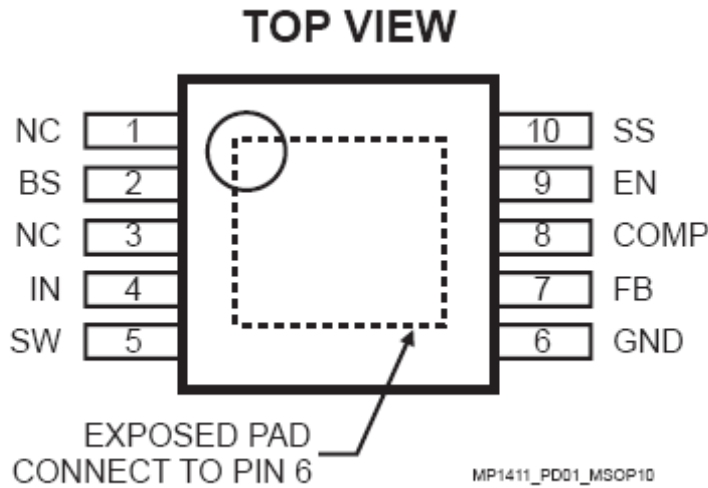
ROHM CO., LTD.

REV. : A

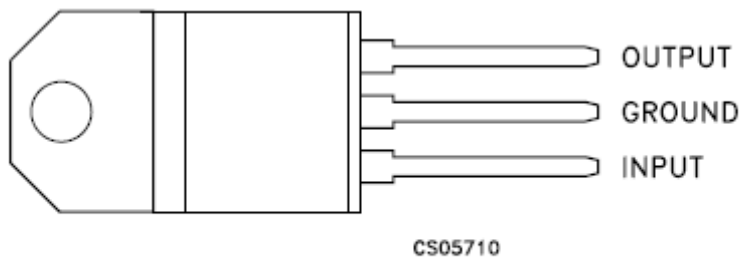
SPECIFICATION No. : TSZ02201-BA00HC5FP-1-1



MP1411 – 2A, 18V, 380KHz STEP-DOWN CONVERTER



L7800 SERIES

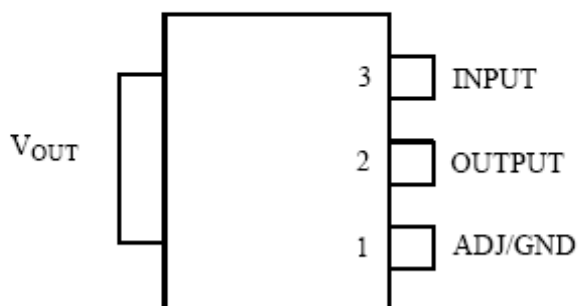


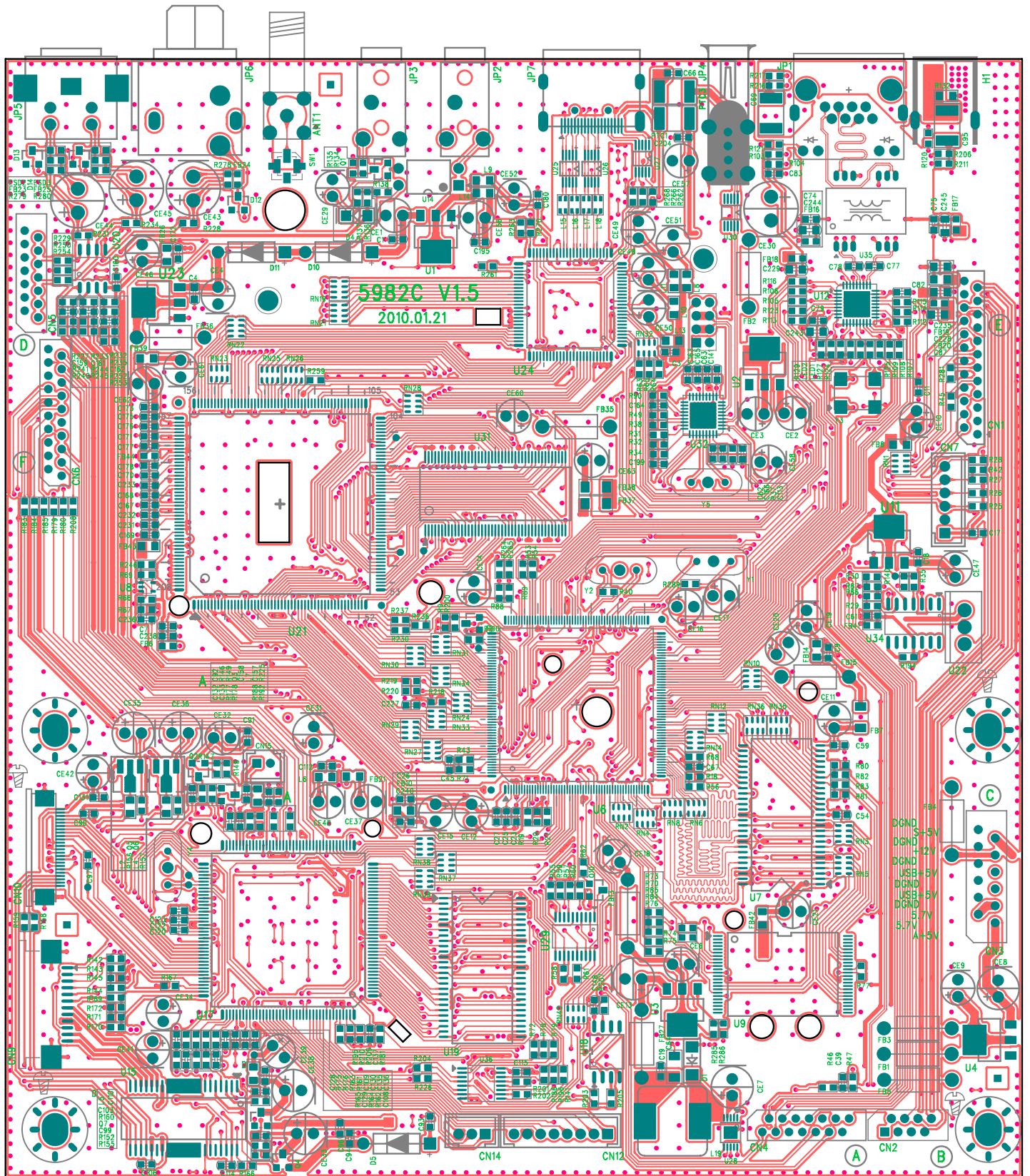
TO-220 (Any Type)

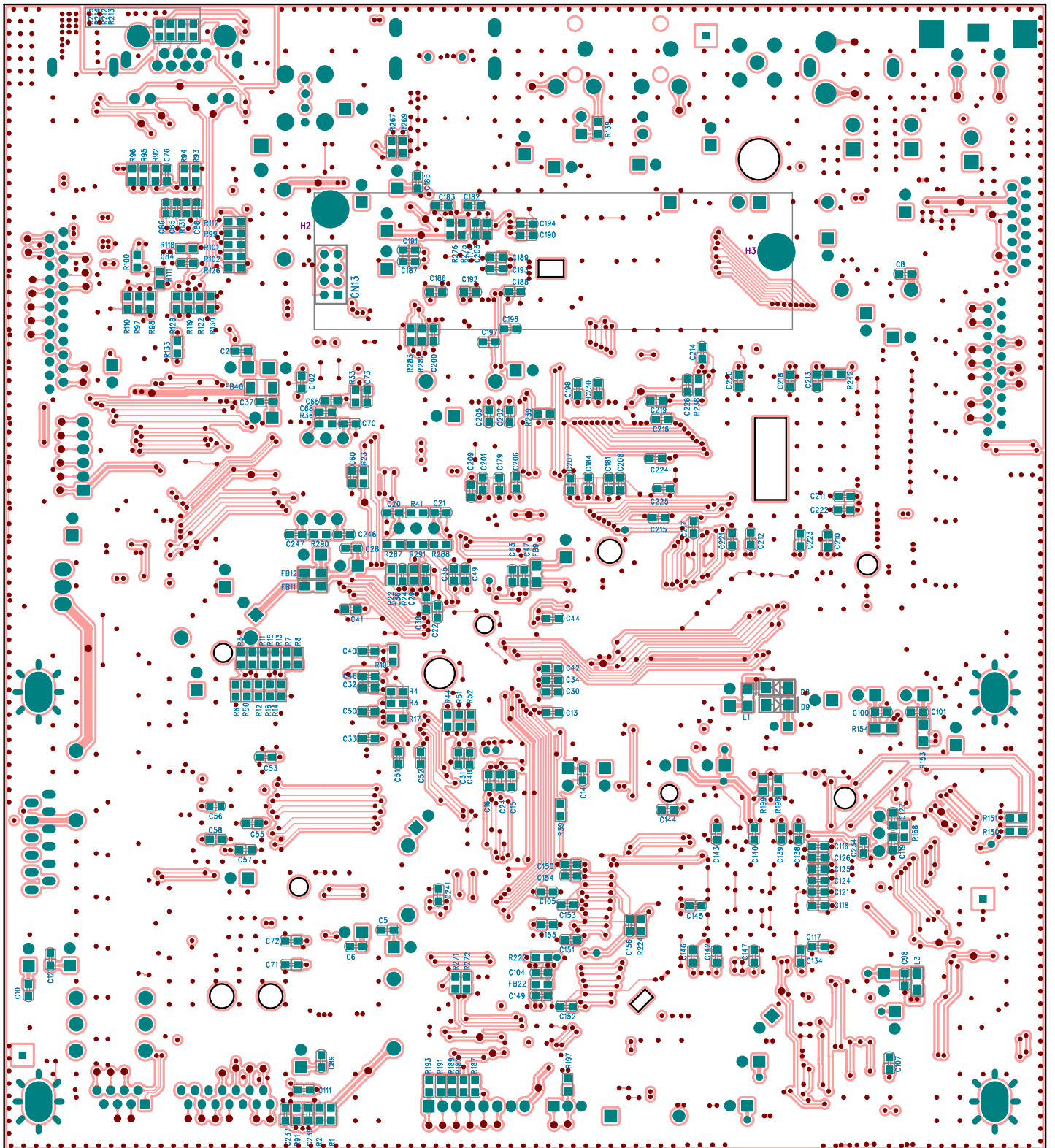
1A LOW DROPOUT LINEAR REGULATOR

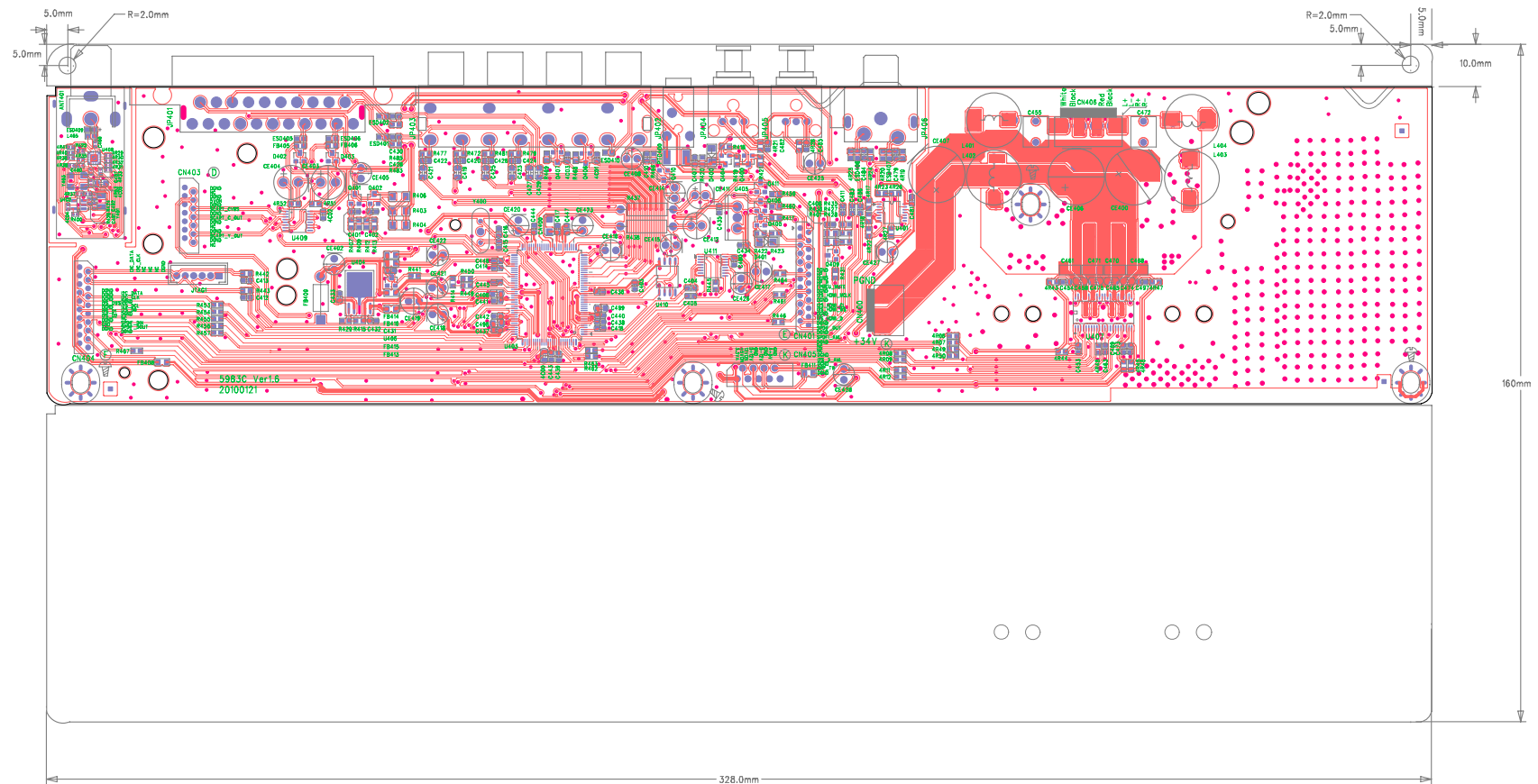
AZ1117

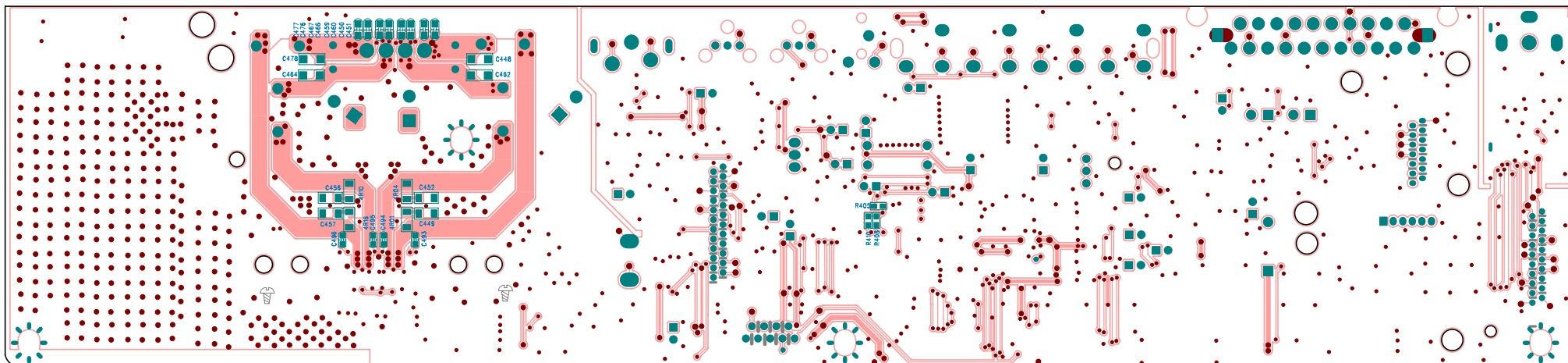
**H Package
 (SOT-223)**

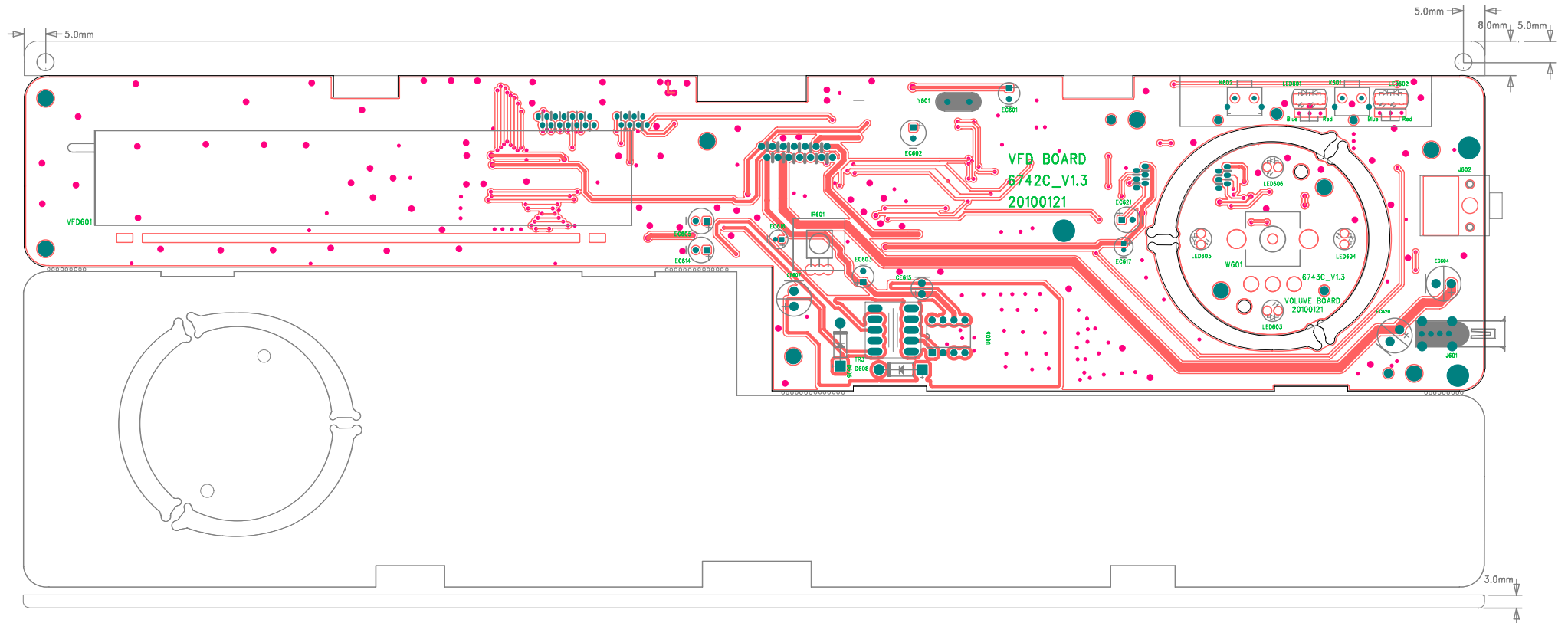


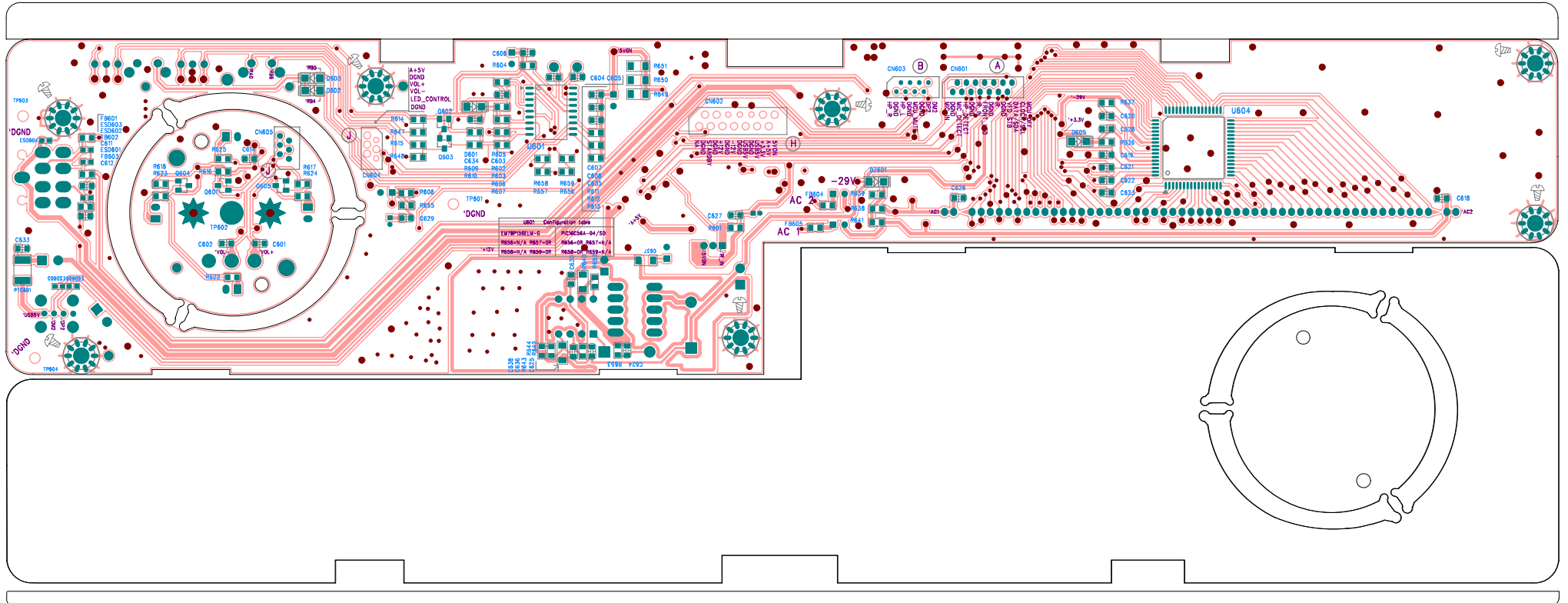


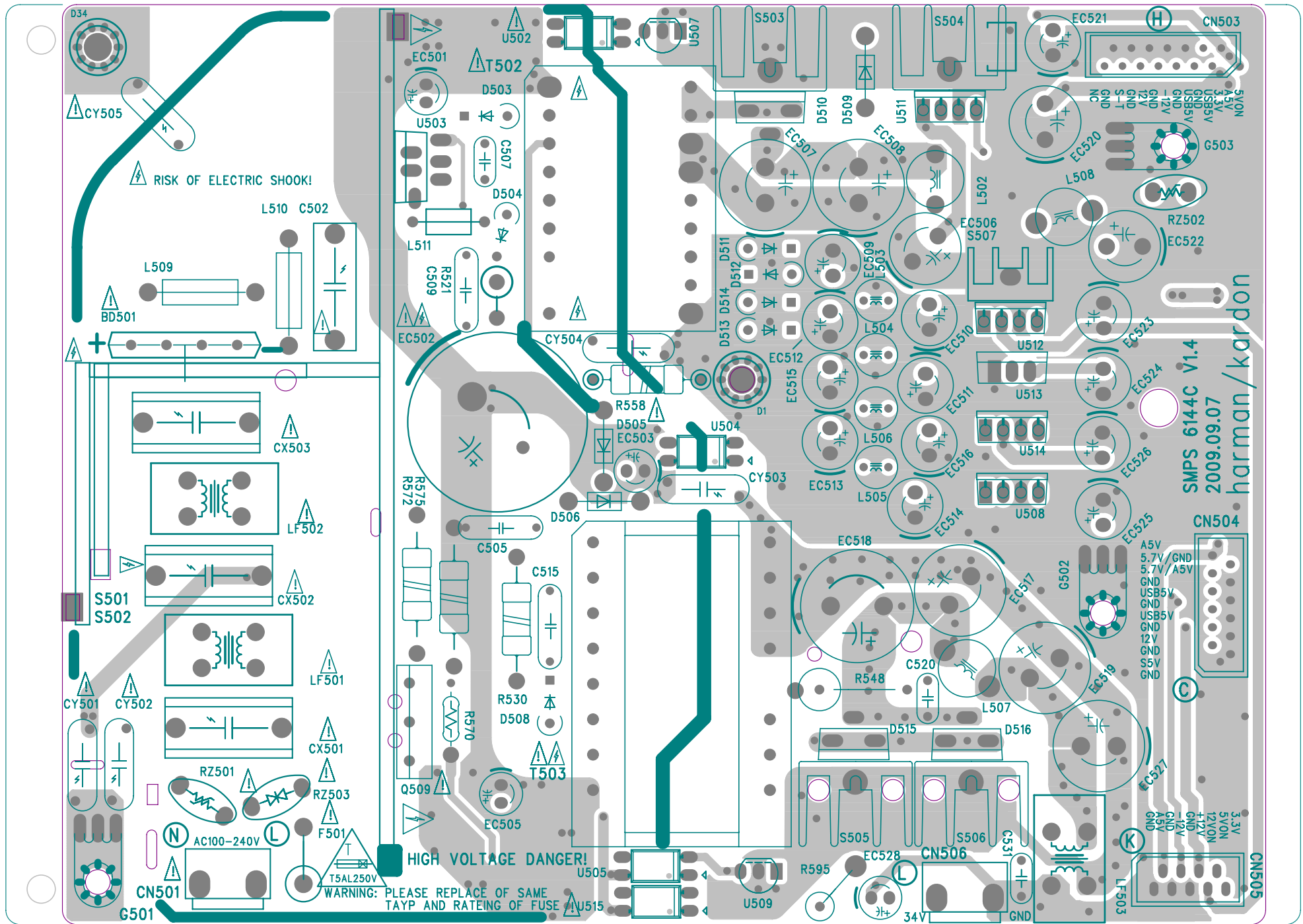


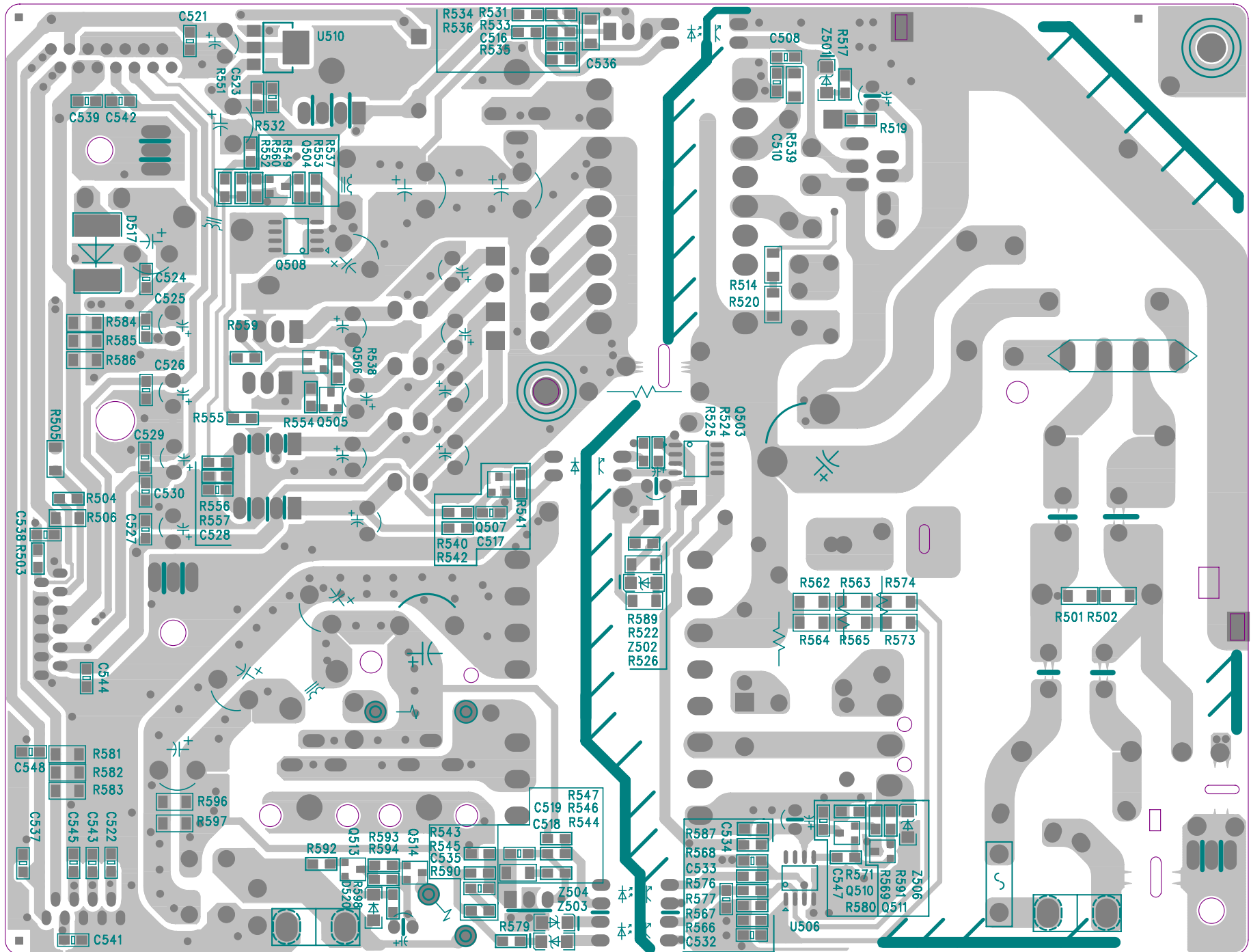


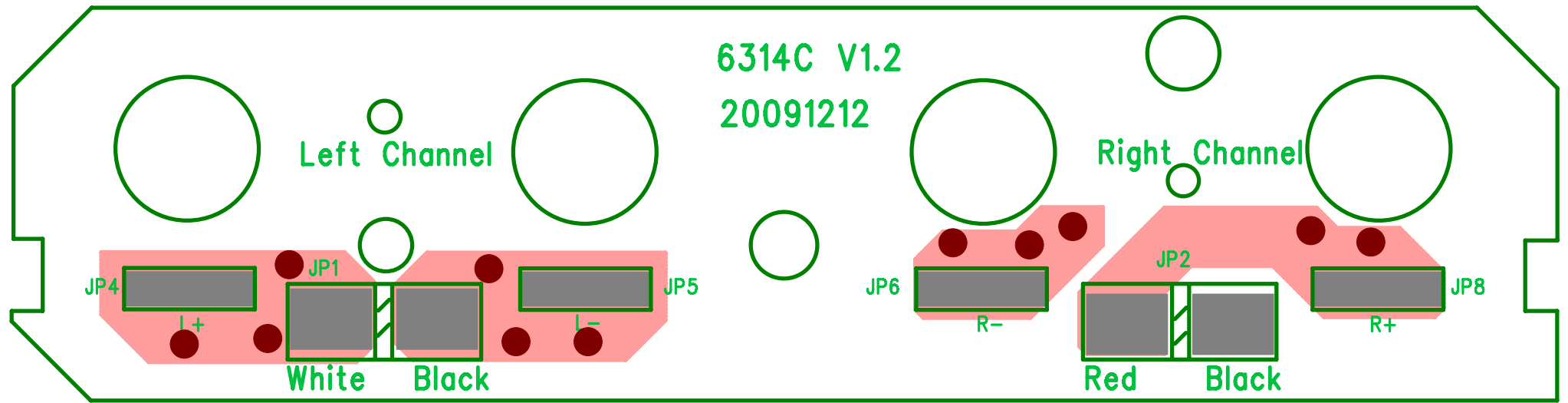


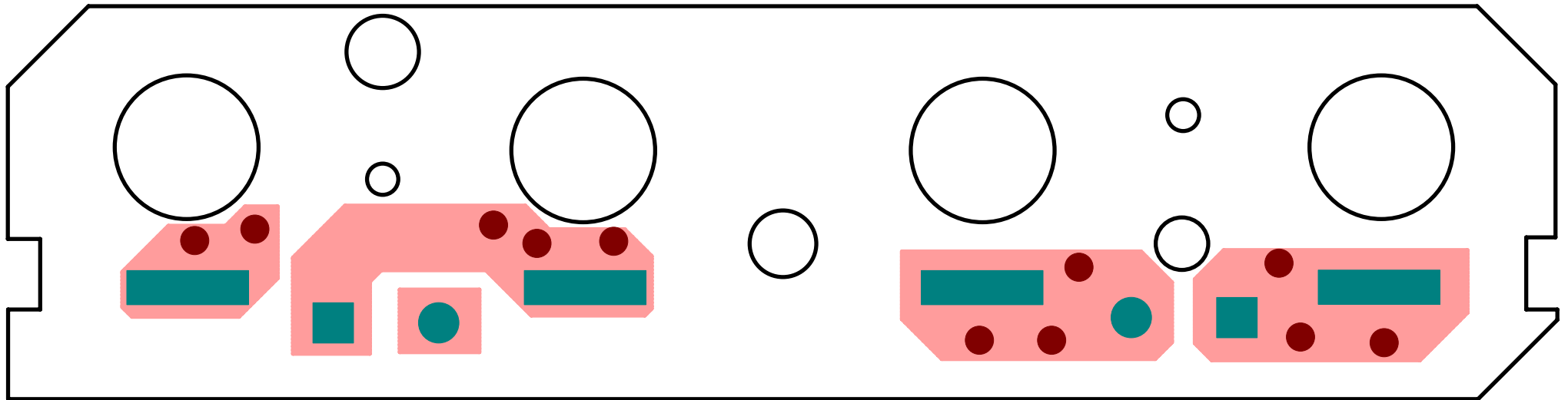




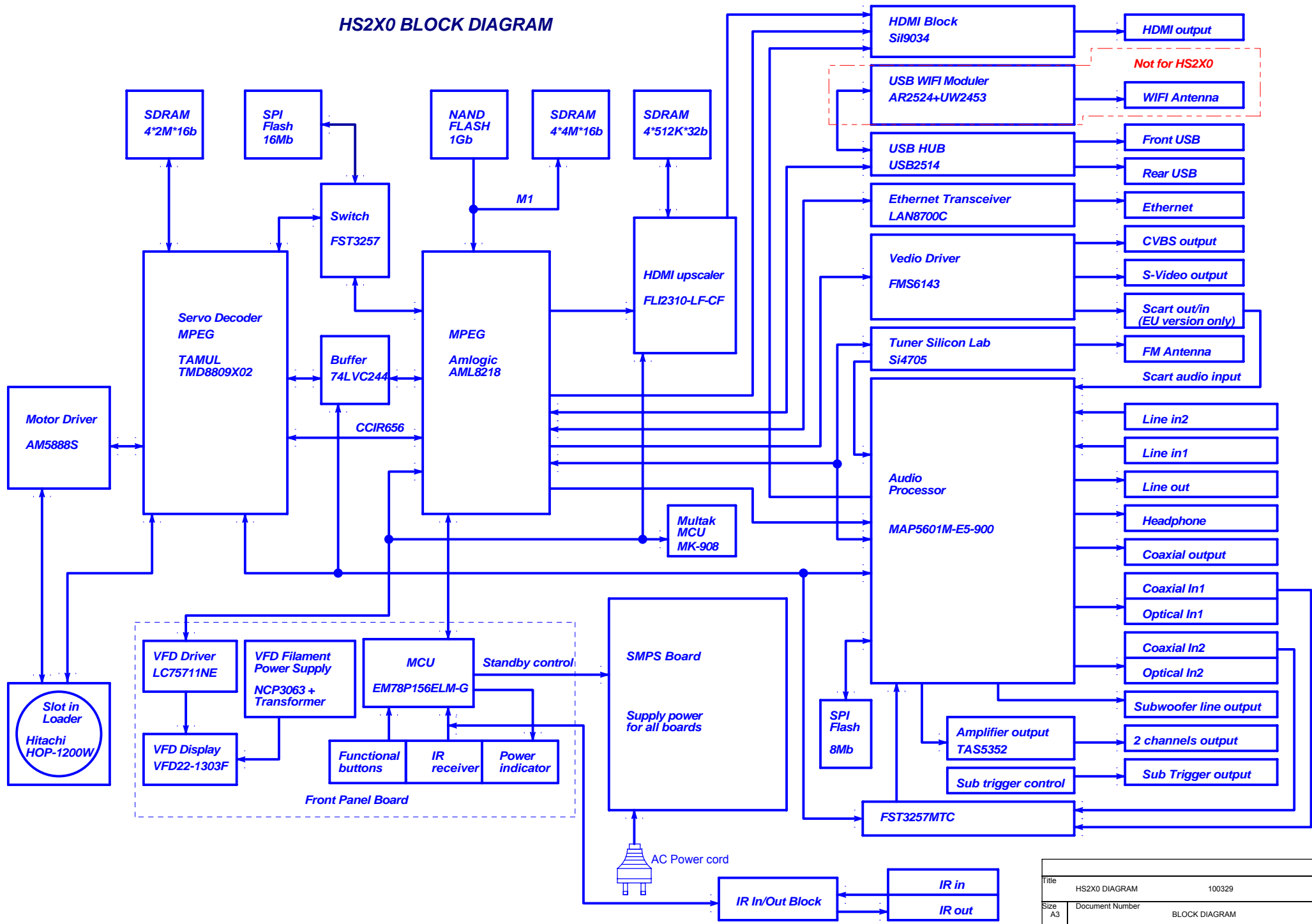




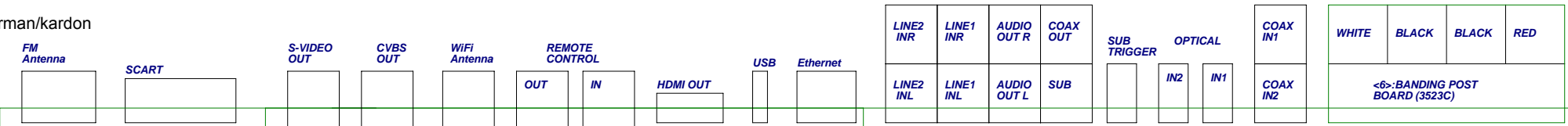




HS2X0 BLOCK DIAGRAM



| | | | | | |
|-------|------------------------|-----------------|---------------|--------|-----|
| Title | | HS2X0 DIAGRAM | | 100329 | |
| Size | A3 | Document Number | BLOCK DIAGRAM | | Rev |
| Date: | Monday, March 29, 2010 | Sheet | 1 | of | 21 |



HS 2X0/230 Service Manual

CNH03

| | |
|----|-------------|
| 1 | DGND |
| 2 | NC |
| 3 | DGND |
| 4 | SVGN |
| 5 | DGND |
| 6 | SCART_CVBS |
| 7 | DGND |
| 8 | SCART_C_OUT |
| 9 | DGND |
| 10 | NC |
| 11 | DGND |
| 12 | SCART_Y_OUT |
| 13 | DGND |
| 14 | NC |

1.0mm flat cable (14P)
D

CNH04

| | |
|----|------|
| 1 | DGND |
| 2 | DGND |
| 3 | DGND |
| 4 | DGND |
| 5 | DGND |
| 6 | DGND |
| 7 | DGND |
| 8 | DGND |
| 9 | DGND |
| 10 | DGND |
| 11 | DGND |
| 12 | DGND |
| 13 | DGND |
| 14 | DGND |
| 15 | DGND |
| 16 | DGND |
| 17 | DGND |
| 18 | DGND |
| 19 | DGND |
| 20 | DGND |

1.0mm flat cable (20P)
F

CNS

| | |
|----|-------------|
| 14 | DGND |
| 13 | NC |
| 12 | DGND |
| 11 | SVGN |
| 10 | DGND |
| 9 | SCART_CVBS |
| 8 | DGND |
| 7 | SCART_C_OUT |
| 6 | DGND |
| 5 | NC |
| 4 | DGND |
| 3 | SCART_Y_OUT |
| 2 | DGND |
| 1 | NC |

<7>: WIFI BOARD(3874C)

CNE

| | |
|----|----------------|
| 20 | DGND |
| 19 | I2C_DATA_AV |
| 18 | DGND |
| 17 | I2C_CLK_AV |
| 16 | DGND |
| 15 | DGND |
| 14 | I2S_DVD_WS |
| 13 | I2S_DVD_CL |
| 12 | DGND |
| 11 | I2S_I_DVD |
| 10 | I2S_I_DVD |
| 9 | DGND |
| 8 | I2S_2_DVD |
| 7 | NC |
| 6 | DGND |
| 5 | SPDIF_INTO_DVD |
| 4 | DGND |
| 3 | SPDIF_DVD |
| 2 | DGND |
| 1 | DGND |

<1>: MAIN BOARD(5982C)

CN1

| | |
|----|----------------|
| 24 | DGND |
| 23 | HP_L |
| 22 | DGND |
| 21 | HP_R |
| 20 | FRFRCU_MUTE |
| 19 | DGND |
| 18 | I2S_MCLK |
| 17 | DGND |
| 16 | I2S_ACL |
| 15 | I2S_AWS |
| 14 | DGND |
| 13 | I2S_HDMI_D |
| 12 | DGND |
| 11 | SPDIF_MAP_HDMI |
| 10 | DGND |
| 9 | SPDIF_AML |
| 8 | DGND |
| 7 | NC |
| 6 | NC |
| 5 | DGND |
| 4 | I2S3_AML |
| 3 | DGND |
| 2 | AMP_TWAN |
| 1 | DGND |

1.0mm flat cable (22P)
E

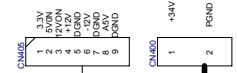
CNH01

| | |
|----|----------------|
| 1 | GND |
| 2 | HP_L |
| 3 | DGND |
| 4 | HP_R |
| 5 | FRFRCU_MUTE |
| 6 | DGND |
| 7 | I2S_MCLK |
| 8 | DGND |
| 9 | I2S_ACL |
| 10 | I2S_AWS |
| 11 | DGND |
| 12 | I2S_HDMI_D |
| 13 | DGND |
| 14 | SPDIF_MAP_HDMI |
| 15 | DGND |
| 16 | SPDIF_AML |
| 17 | DGND |
| 18 | NC |
| 19 | NC |
| 20 | DGND |
| 21 | I2S3_AML |
| 22 | DGND |
| 23 | AMP_TWAN |
| 24 | DGND |

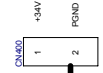
<2>: AV BOARD (5983C)

NOTE (MAP GPIO): TVFORMAT1, TVFORMAT0, YC_CVBS_SWITCH...

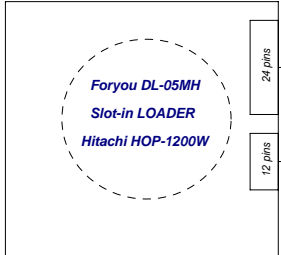
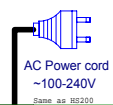
TI AMPLIFIER PART
(2CH*65W)



1.0mm flat cable (9P) | K
Same as HS200



L
Same as HS200



24 pins
Same as HS200
0.5mm flat cable (24P)

12 pins
Same as HS200
1.0mm flat cable (12P)

CNH10 DVD PART

| | |
|----|--------|
| 1 | GND-LD |
| 2 | LD-DVD |
| 3 | NC |
| 4 | HFM |
| 5 | MD |
| 6 | CD-LD |
| 7 | DVD_VR |
| 8 | CD_VR |
| 9 | NC |
| 10 | E |
| 11 | SSV |
| 12 | VC_CPU |
| 13 | GND-PD |
| 14 | F |
| 15 | B |
| 16 | A |
| 17 | DVDRFP |
| 18 | CD_DVD |
| 19 | D |
| 20 | C |
| 21 | TRACK- |
| 22 | TRACK+ |
| 23 | FOCUS+ |
| 24 | FOCUS- |

CNE9

| | |
|----|-------|
| 1 | SW4 |
| 2 | SW1 |
| 3 | SW2 |
| 4 | SW3 |
| 5 | SPIN+ |
| 6 | SPIN- |
| 7 | LOAD- |
| 8 | LOAD+ |
| 9 | GND |
| 10 | SW5 |
| 11 | SLED- |
| 12 | SLED+ |

1.0mm flat cable (14P) | A
Same as HS200

1.0mm flat cable (8P) | B
Same as HS200

1.25mm flat cable (12P)
C

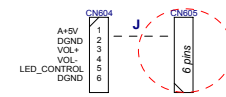
<5>: SMPS(6144C)

1.25mm flat cable (14P) | H
Same as HS200

HS2X0 CNT REF NO. ASSIGNMENT
SMPS 6144C: from 500-599
Front panel board 6184C/6185C: from 600-699
Main board 5982C: from 1-399
AV board 5983C: from 400-499(4R...)

VFD 12COLUMNS x 1LINE 5x7 DOT MATRIX

<4>: FRONT PANEL BOARD (6184C/6185C)



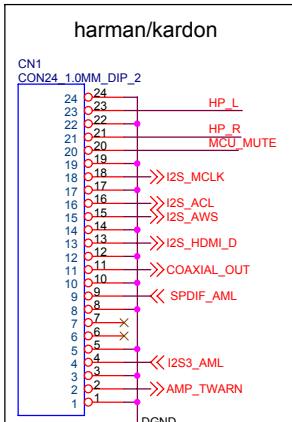
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|-------------------------------|------------------------|----------------|
| File | | |
| HS2X0 Wiring DIAGRAM_20090304 | | |
| Size | Document Number | Rev |
| A2 | Wiring Diagram | 1.2 |
| Date | Monday, March 29, 2010 | Sheet 20 of 20 |

| NO. | REVISION DATE | REV | harman/kardon | REVISION HISTORY | HS 2X0/230 Service Manual |
|-----|----------------------------------------|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| 1 | July 8, 2008 Hitachi version EV1 | 1.0 | <ul style="list-style-type: none"> 1. R3 -> ON, R7 on->off, R8 off->on 2. U11 -> OFF, U10 -> ON 3. R71 R72 R78 R79 -> ON 4. U21 Pin9 GND -> VCC and add R31=4.7K 5. Change R162 from 4.7K to 0R 6. Crrct spindle signals by swap them. 7. Add pull-up resistors onto I2C 8. Change to high speed logic device SN74LVC2G04DCKR for 50MHz crystal. 9. Delete YUV output, reassign the output AML_CVBS, AML_Y and AML_C. 10. Delete analog conversion chip TVP7000, add FLI2310 to convey the signal between AML8218 and SiI9034, add reset signal of U6.158 11. Delete SDRAM2 of U6, and change the SDRAM1to 256M capability, reassign the HDMI output of AML8218. 12. Delete the SDIO interface for WiFi, replace it with USB Hub and USB interface WiFi. 13. Delete U11, not useful. 14. Reassign the IEC958 output from U6.135 to U6.141. 15. Delete HYNC. VSYNC, FID signals of 5029, and pin77 78 81 leave float. 16. Repalce SN74ALVCH16827-DGG with SN74ALVC244PW, and move to AML8218 page. delete Video buffer page | <ul style="list-style-type: none"> 17. SPI modification: (1) Change I2C_DATAS from p1.0 to p5.3, delete the connection between p5.3 and SPI_FAIL_, SPI_FAIL connect 1K ohm and then to GND. (2) Change SPI_CONTROL_CLK_ from p1.2 to p1.0, leave p1.2 vacant. (3) Change P1.5 from sip_sop to spi_ack (4) Delete the connection between buffer 1Y2, 1Y3 and RN43.2, RN43.3; connect RN43.2, RN43.3 to GND. NANDFLASH modification: (1) R8 -> OFF, R7 -> ON (2) Pull 4.7Kohm from R73 to U11.8, left of R85 connect to NAND_VCC3 18. Change net name of PIN32 33 on AML8218, from VSYNC, HSYNC to SPI_FAIL, SPI_SOP, and pull down 1Kohm resistor to GND, delete SPI_FAIL and SPI_SOP of 5029 19. AML8218 and S5L5029 share 27MHz clock. 20. Move MCU_OFF from pin212 to pin 108, pin212 change to I2S3_AMCLK, I2S3_AMCLK and I2S_HDMI_MCLK connect to I2S_MCLK then to CN1.18, I2S_AML_CL and I2S_HDMI_CL connect to I2S_ACL then to CN1.16, I2S_AML_WS and I2S_HDMI_WS connect to I2S_AWS then to CN1.15, delete CN1.7 and CN1.6 net I2S_AML_WS and I2S_AML_CL 21. Delete the crystal of AML8218 on USB port. 22. Delete CE13 23. Divide the 27M clock into 13.5M for FL2310 and add D-trigger. | |
| 2 | Dec 18, 2008 EV2 | 1.1 | <ul style="list-style-type: none"> 1. Pin13,17,19 of USB2514 must be connected to GND 2. Change C68, C70 to 20p 3. R91 -> 1.5K, R140 -> 1.2K 4. R50 -> N/A 5. Move R7 value to R6, NOR FLASH 6. C237 -> R262 = 22R 7. Correct USB data signal and WIFI PORT1, PORT2 8. Change the power supply of U8 to 3.3V 9. In debug mode, R42 shoud be N/A 10. Change SDRAM to Samsung brand, modify the data signals between SDRAM and flash. 11. Add WIFI antenna connection 12. Change the data signal of SDRAM. | <ul style="list-style-type: none"> 13. Add R266 and R268 onto I2C of HDMI 14. Move I2C of VFD from GPIOC_2,3 to GPIOC_19,18; I2C of HDMI from GPIOC_19,18 to GPIOC_2,3; FLI2310 share I2C with VFD 15. Add pull-up resistor onto DATA, CLK of I2C 16. SPI DMA modification: RN40 pin 6 connect 15p to GND RN40 pin 2 connect 3.3k resistor to 3.3V RN40 pin 3 connect 3.3k resistor to 3.3V 17. R59 -> 0R 18. Add a resistor 1K between pin8 and vcc of MK900. 19. Add pull-up resistor to CS of MK900 20. ADD DC/DC convertor, reassign power for chips. 21. Modify the connector between mainboard and SMPS board | |
| 3 | Mar 10, 2009 EV3 DV1 | 1.2 | <ul style="list-style-type: none"> 1. Add pull-up R71 to HP_DETECT 2. Replace the intergrated network connector with discrete connector. 3. Separate the analog power supply for FLI2310 4. Modify the burning signal of servo flash U18, add switch FST3257. 5. Modify the reset signal for samsung chip to AML8218. 6. Delete R181, C137 7. Delete crystal of FLI2310, nor flash of AML8218, EEPROM of S5L5029 8. Delete optional capacitor for clock between s5l5029 and AML8218, choose resistor to connect. 9. Add 12MHz crystal for AML8218 | <ul style="list-style-type: none"> 10. Modify the core power supply for AML8218 with DC/DC. 11. Enhance the core power supply of AML8218. 12. Modify the video output capacitors and resistors, add clamp diodes on them, to improve the performance. 13. Change R252 to 82R 14. Change C119 and C127 to 20pF. 15. Add optional clock net for AML8218. 16. R5 -> OFF, R6 -> ON 17. rn1 -> N/A | |
| 4 | Aug 15, 2009 DV2 | 1.3 | <ul style="list-style-type: none"> 1. Modify 50MHz crytal to 50MHz active crytal. 2. Enlarge the capacitor to 1000uF for USB5V power supply, improve HDD noise plugging in. 3. Add PTC3. | <ul style="list-style-type: none"> 4. Change R58 to 100R, to improve the wave of SPDIF input. 5. Change R179 R180 to 100R, to improve CD player noise. 6. Change C15 from Y5V to X7R, to improve the video performance stability. | |
| 5 | Dec 12, 2009 PV | 1.4 | <ul style="list-style-type: none"> 1. RFSUM C97(102) -> 681 2. RFEQO C120(561) -> 681 3. FOD R175(2.2k) -> 47k, R165(30k) -> 0, C128(222) ->151 4. TRD R176(2.2k) ->47k, R164(43k) -> 0, C129(222) ->151 5. SLD R163(20k) ->15k 6. DVD VR: R150 - 100 ohm - pin78 P4.3 7. CD VR: R151 - 100 ohm - pin81 P6.2 | | |
| 6 | Jan 22, 2010 MP | 1.5 | <ul style="list-style-type: none"> 1. R229, R250, R254 -> 68R | | |

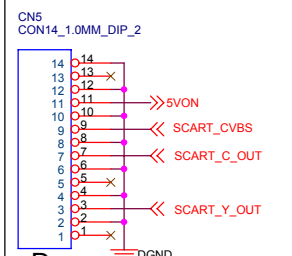
| | | |
|---------------------------|-------------------------|--------------|
| Title | | |
| HS2X0 MAIN BOARD - 100309 | | |
| Size | Document Number | Rev |
| A3 | 5982Y | 1.0 |
| Date: | Tuesday, March 09, 2010 | Sheet 1 of 1 |

| NO. | REVISION DATE | REV | REVISION HISTORY |
|-----|------------------------------------|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | June 05, 2008 TI version EV1 | 1.0 | 1. Add 25V note to C491 and C492. 2. Delete AM tuner circuit. 3. Modify SCART output from RGB to YC. 4. Add E5 version to MAP4601. 5. R459, R460 -> ON 6. Delete net I2S_3_DVD 7. R415 -> 1.6K, adjust volage to 1.01V 8. 4R48 -> 47K, 7A for current limited. 9. Reset SPDIF_IN parameters. 10. Delete AMP_TWARN connection on MAP4601, connect this net to mainboard 11. Add pull-up resistor to net VALID. |
| 2 | Jul 22, 2008 EV1 | 1.1 | 1. In order to synchro clock, TUNER, ALM8218, HDMI, MAP commonly use same AMCLK, BCK and WS. 2. Delete nets I2S_AML_CL, I2S_AML_WS, change I2S_HDMI_MCLK to I2S_MCLK, change I2S_HDMI_CL to I2S_ACL, change I2S_HDMI_WS to I2S_AWS 3. Invert the input signals twice in the 74HC158. 4. Correct the BAV99 package. 5. Change the optical-coaxial combined terminal to discrete components. 6. Add CE406 CE407 to improve THD+N performance. |
| 3 | Dec 23, 2008 EV2 | 1.2 | 1. 4R31, 4R32 -> 22R 2. Connect pin106, pin107, pin90, pin91 to nets. 3. Add EEPROM for AC3 decode. 4. Change 78I08 to L7808. 5. Swap and correct the net name of optical1 and optical2. 6. Confirm the tuner chip part number is Si4705. |
| 4 | Mar 09, 2009 DV1 | 1.3 | 1. Comfirm the MAP part number is MAP5601-E5-900 for our use. 2. R431 -> 750R, R436-> 220R, Q409 -> BC847. 3. Modify the crystal circuit for Si4705 4. Correct the phase of AMPLIFIER OUT R+-. 5. Change the PWM2 output to PWM4 in MAP. 6. Add CE408 to improve plop noise in Harman subwoofer during power on. 7. Q406, Q407, Q410 -> ON |
| 5 | Sep 03, 2009 DV2 | 1.4 | 1. Replace 74HC158 with FST3257 2. Coaxial output modification, to meet the spectification of IEC60958. |
| 6 | Dec 12, 2009 PV | 1.5 | 1. Only layout changed, to improve CD player noise. |
| 7 | Jan 21, 2009 MP1 | 1.6 | |

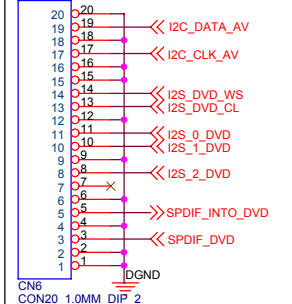
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|----------------------------------|--------------------------|--------------|
| Title HS2X0 AV BOARD - 100309 | | |
| Size A3 | Document Number 5983Y | Rev 1.0 |
| Date: Tuesday, March 09, 2010 | | Sheet 1 of 1 |



E TO AV BOARD

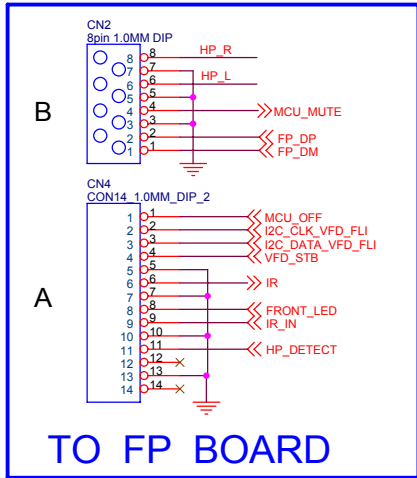


D TO AV BOARD

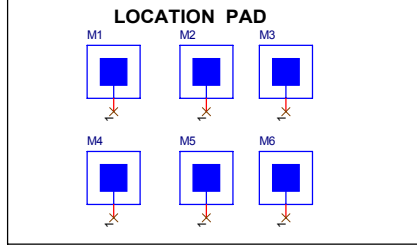
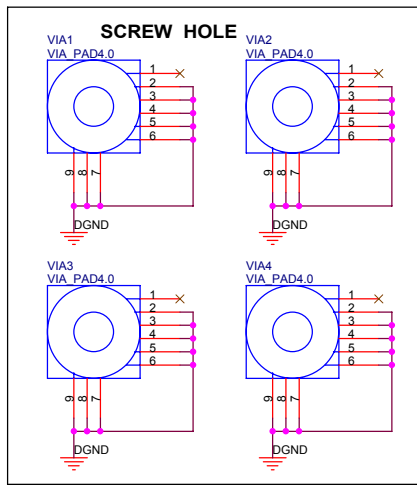


F TO AV BOARD

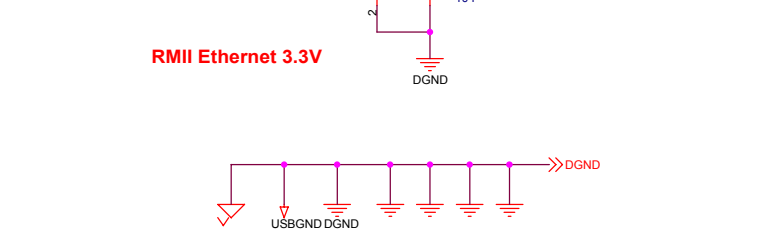
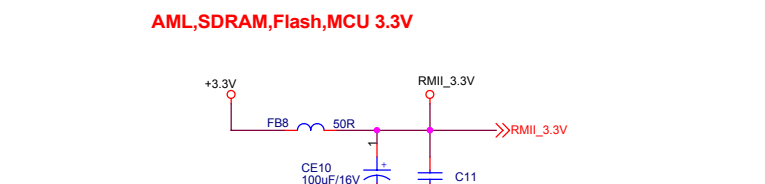
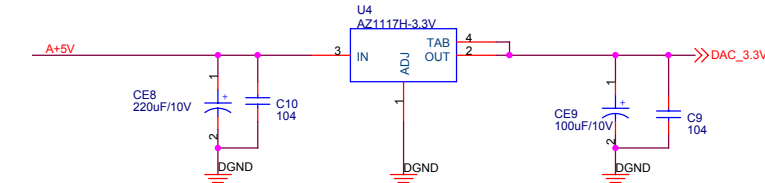
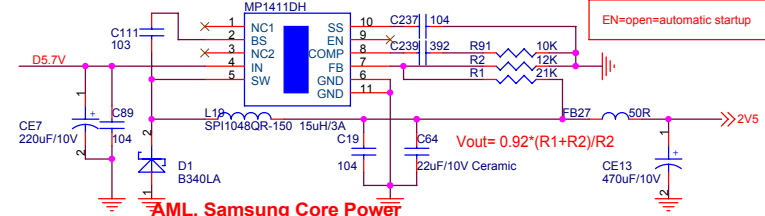
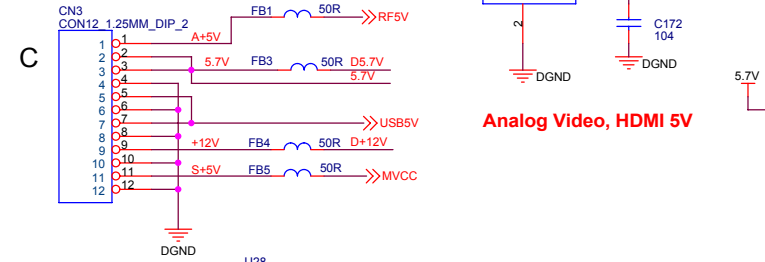
TO AV BOARD



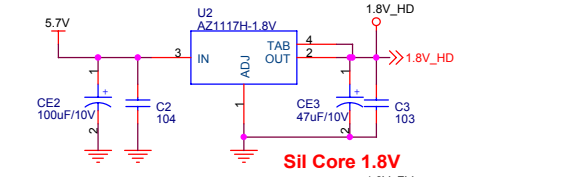
TO FP BOARD



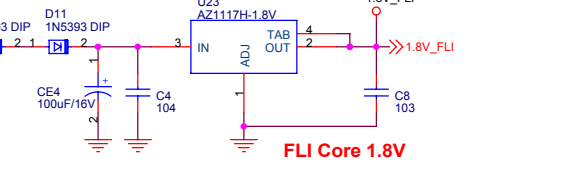
POWER INPUT FROM EXTERNAL POWER BOARD



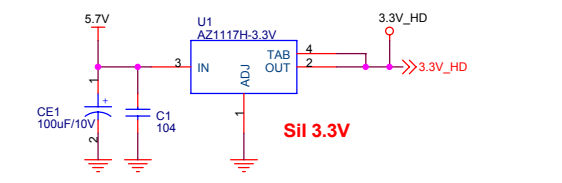
HS 2X0/230 Service Manual



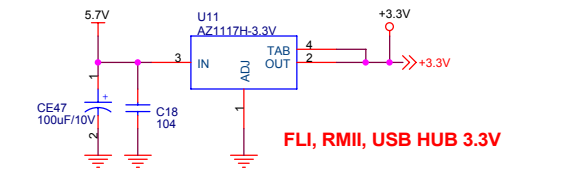
Sil Core 1.8V



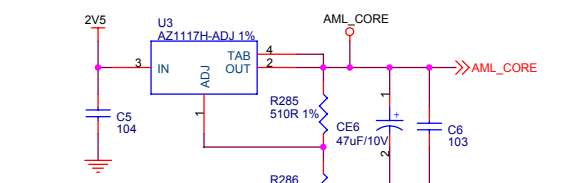
FLI Core 1.8V



Sil 3.3V

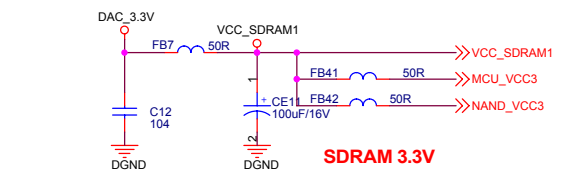


FLI, RMII, USB HUB 3.3V



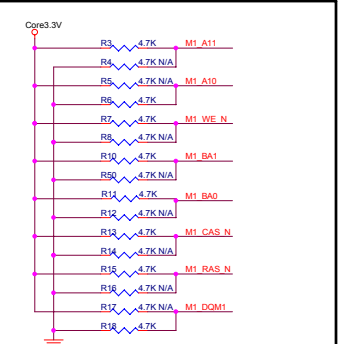
$V_{out} = 1.25 * (R_{out} + R_{adj}) / R_{out} + I_{adj} * R_{adj}$

AML_Core = 1.30V 1%



SDRAM 3.3V

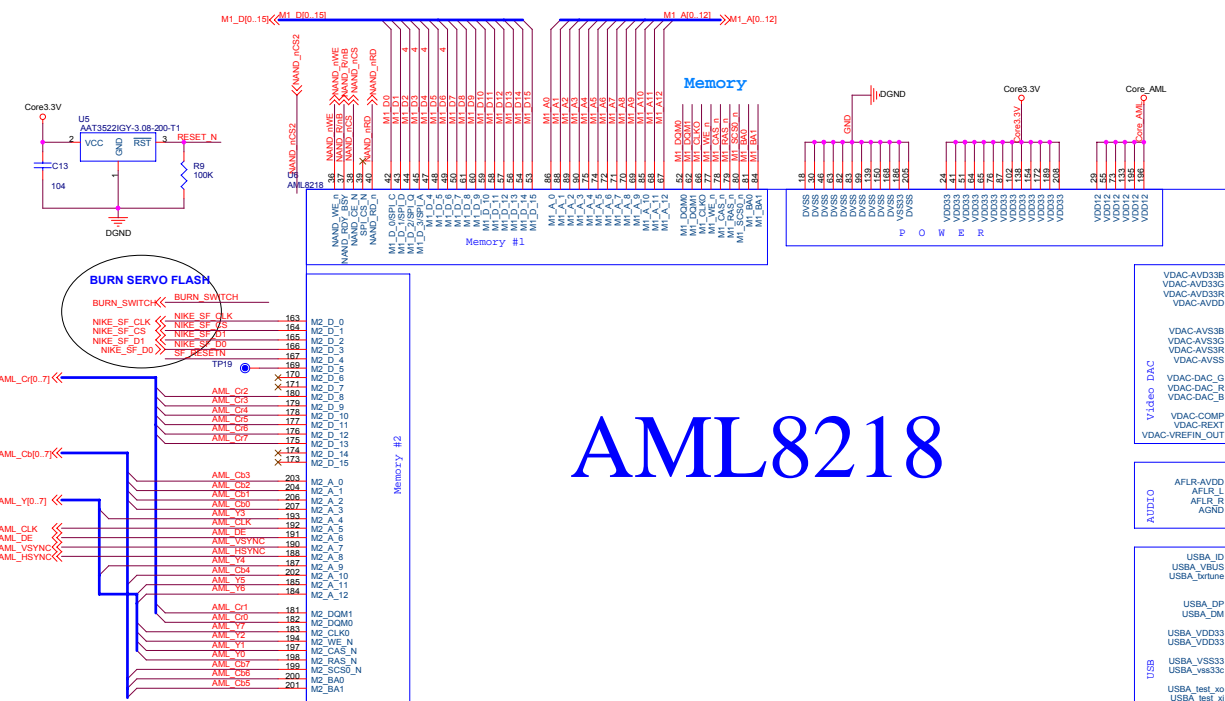
| | | |
|---------------------------|------------------------|----------------|
| Title | | |
| HS2X0 MAIN BOARD - 090718 | | |
| Size | Document Number | Rev |
| A3 | Harman/Kardon - 5982Y | 1.5 |
| Date: | Monday, March 29, 2010 | Sheet 01 of 10 |



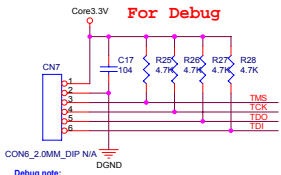
Power On Configuration:

| | | | |
|----------|----------------------|--------------|-----------------------|
| M1_A11 | SPI Boot Location | HMI1_* pins | L1NAND_* pins |
| M1_A10 | JTAG | HJTAG Enable | L1GPIO |
| M1_WE_N | Boot From | HNAND | L1NOR |
| M1_BAT | SDRAM2 Configuration | No SDRAM2 | L1Use M2_* for SDRAM2 |
| M1_BA0 | NAND Location From | HMI1_* pins | L1M2_* pins |
| M1_CAS_N | NAND Flash Page Size | 2048 Byte | L1S12Byte |
| M1_RAS_N | NAND Set Row Address | 3ALE | L2ALE |
| M1_DQM1 | Bit Of Flash | H160t | L160t |

Note:
The NAND flash can only boot from M1_* pins.
The SPI flash can boot from M1_* pins or NAND_* pins.
AML8218 boot from NAND Flash is default.

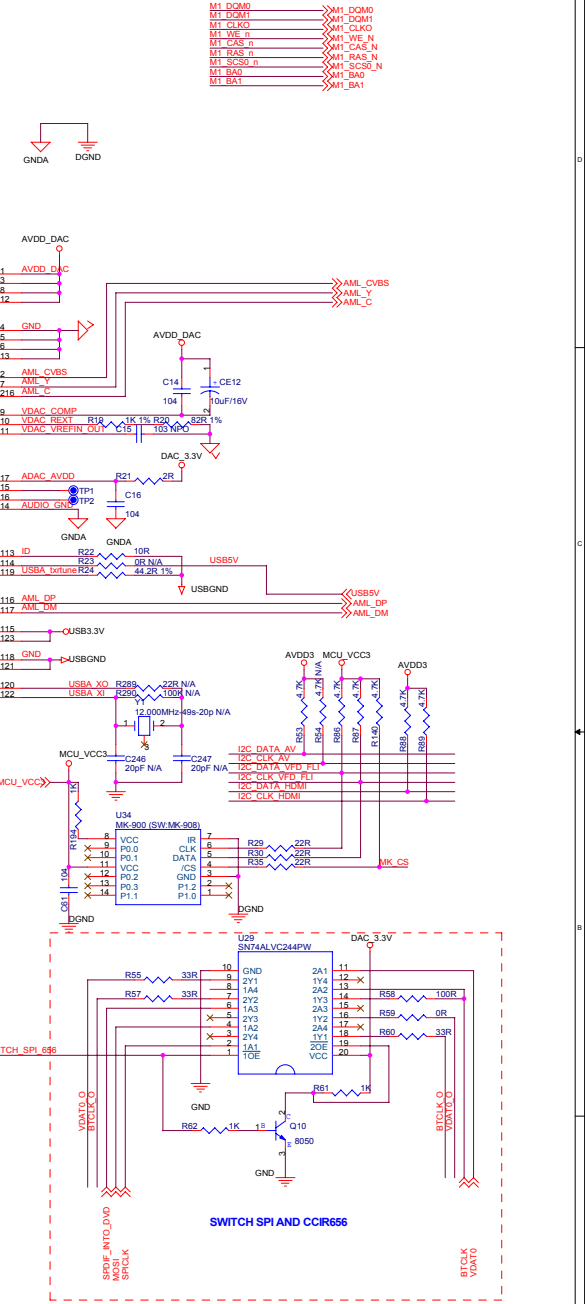
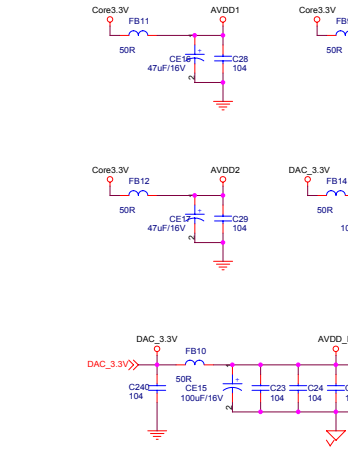


AML8218

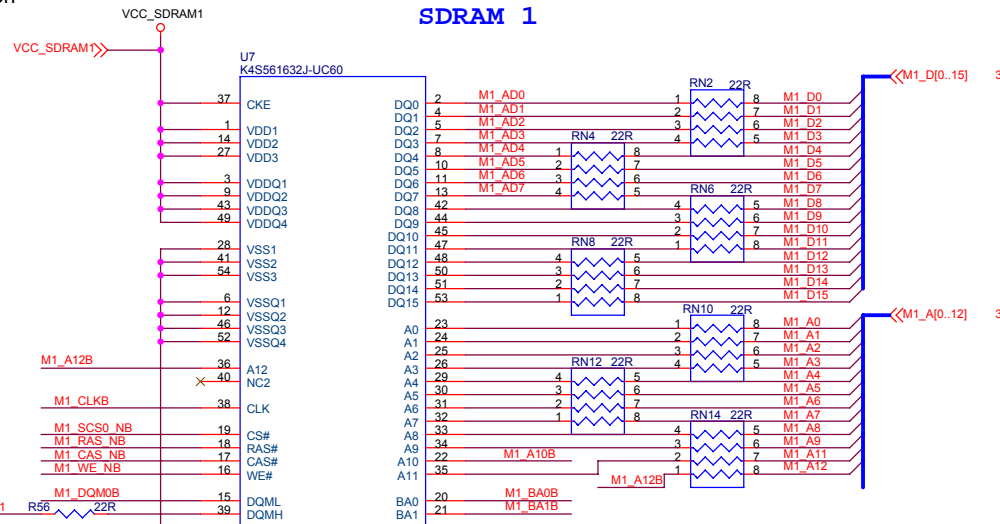


Debug note:

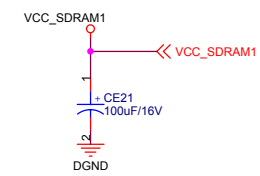
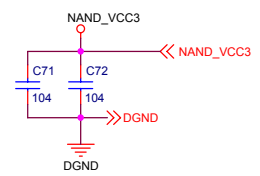
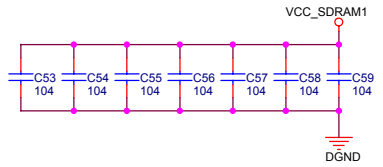
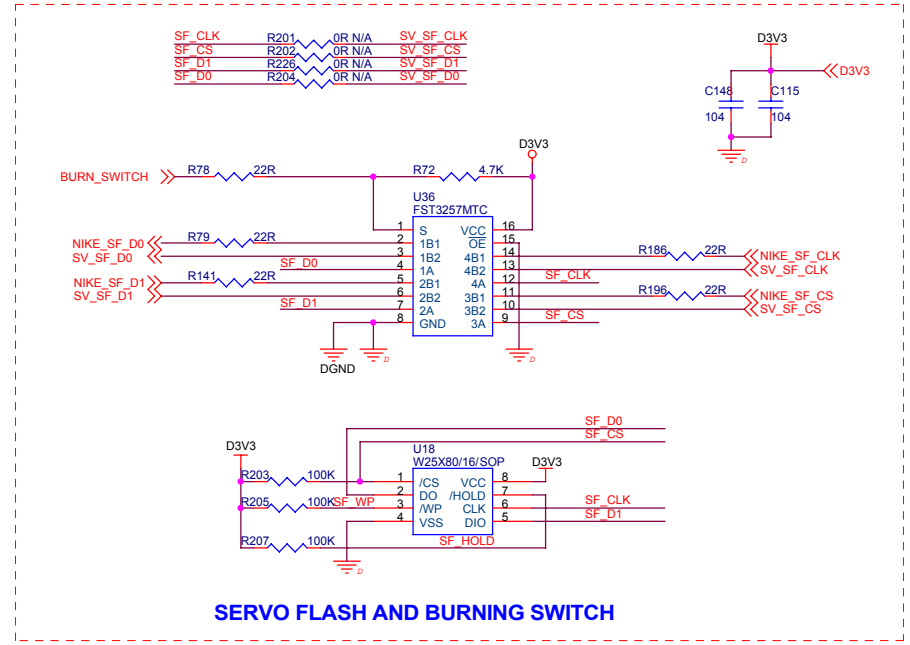
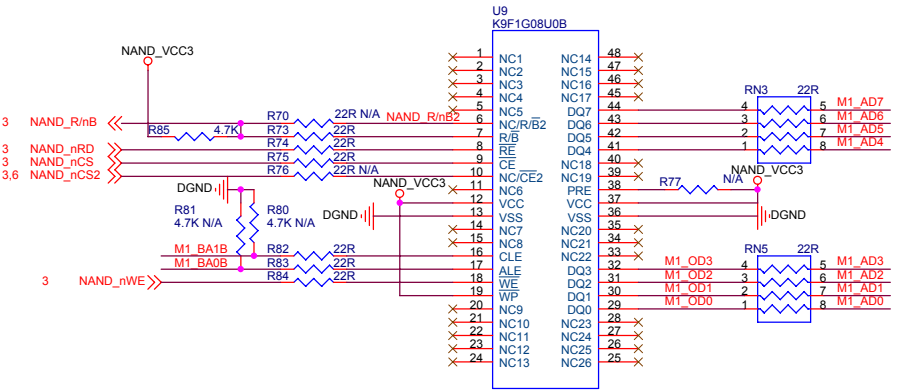
| | R42 22R | RN1 22R | R5 4.7K | R6 4.7K |
|--------|---------|---------|---------|---------|
| Debug | N/A | N/A | Yes | N/A |
| Normal | Yes | N/A | N/A | Yes |



SDRAM 1

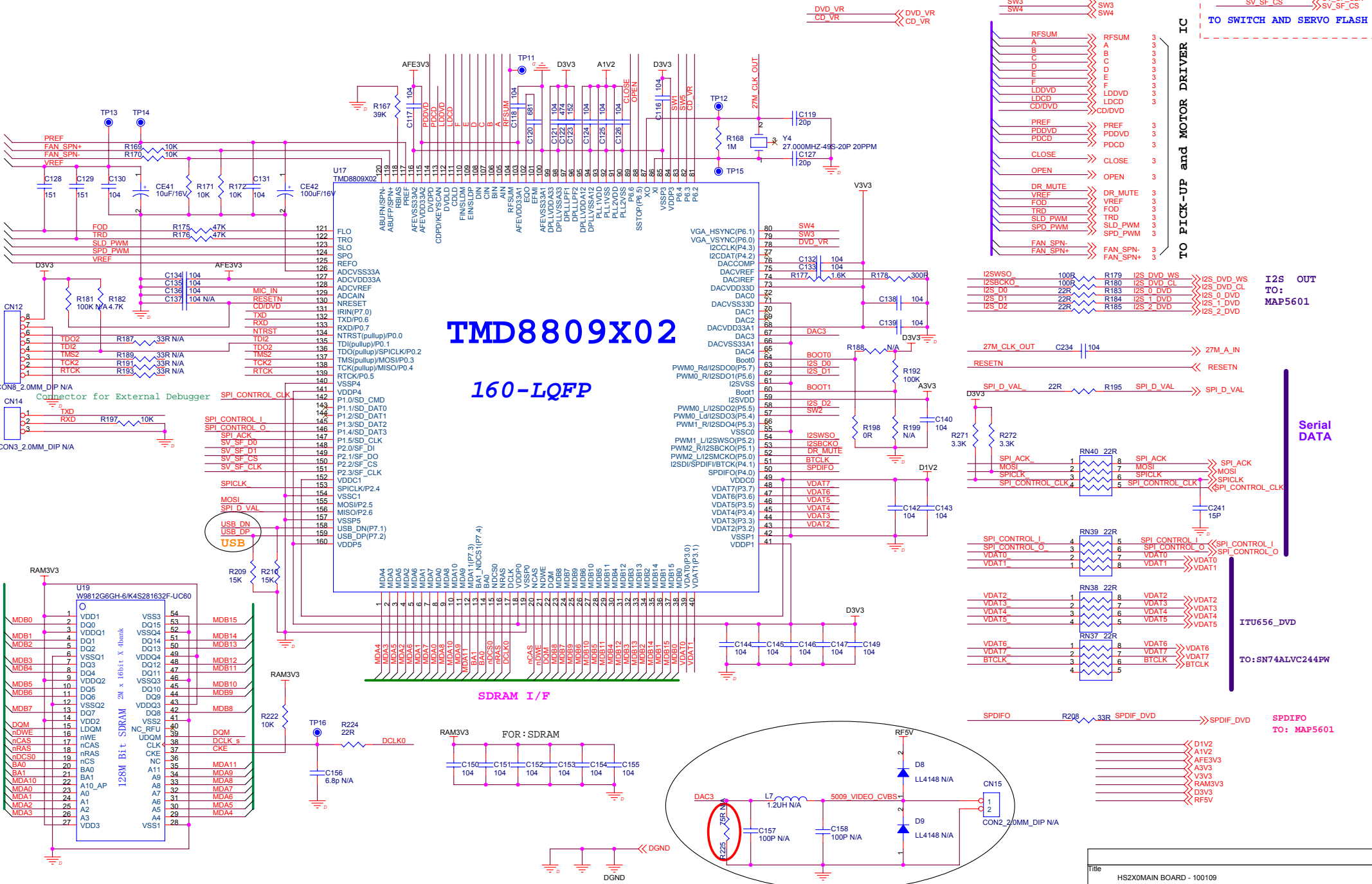


NAND FLASH



Clot to AML8218

| | | |
|---------------------------|------------------------|----------------|
| Title | | |
| HS2X0 MAIN BOARD - 090805 | | |
| Size | Document Number | Rev |
| A3 | Harman/Kardon - 5982Y | 1.5 |
| Date: | Monday, March 29, 2010 | Sheet 03 of 10 |



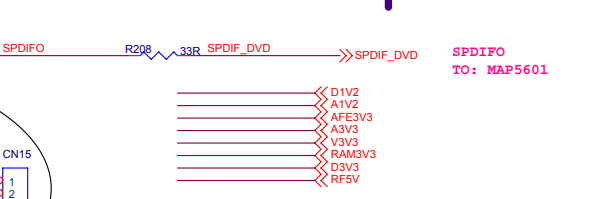
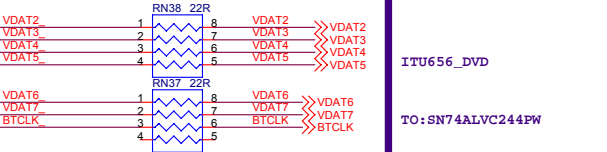
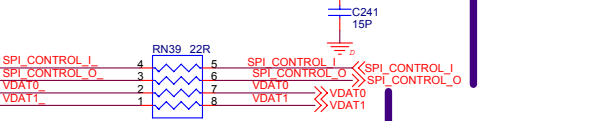
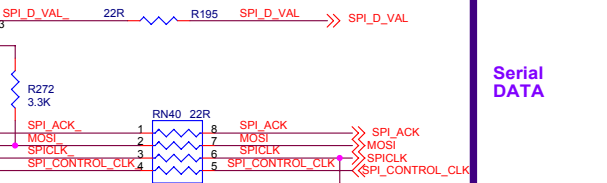
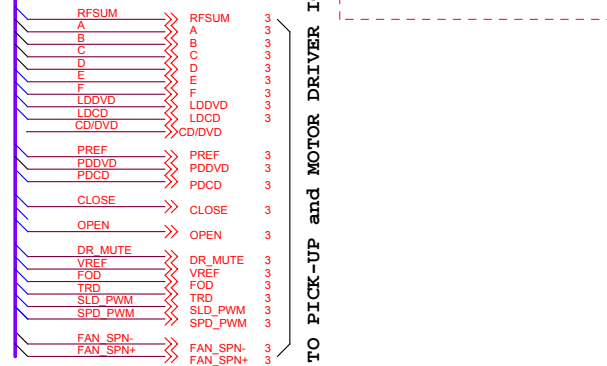
TMD8809X02

160-LQFP

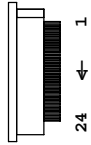
SDRAM I/F

FOR : SDRAM

ADD 5029 CVBS TEST CIRCUIT

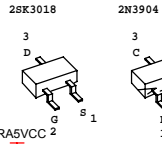


| | | | |
|--------|------------------------|-------|--------------------------|
| Title | | | HS2X0MAIN BOARD - 100109 |
| Size | Document Number | Rev | |
| Custom | Harman/Kardon - 5982Y | 1.5 | |
| Date: | Monday, March 29, 2010 | Sheet | 04 of 10 |

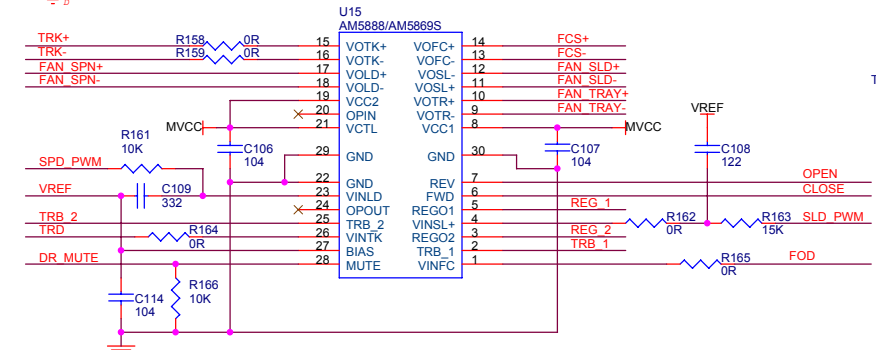
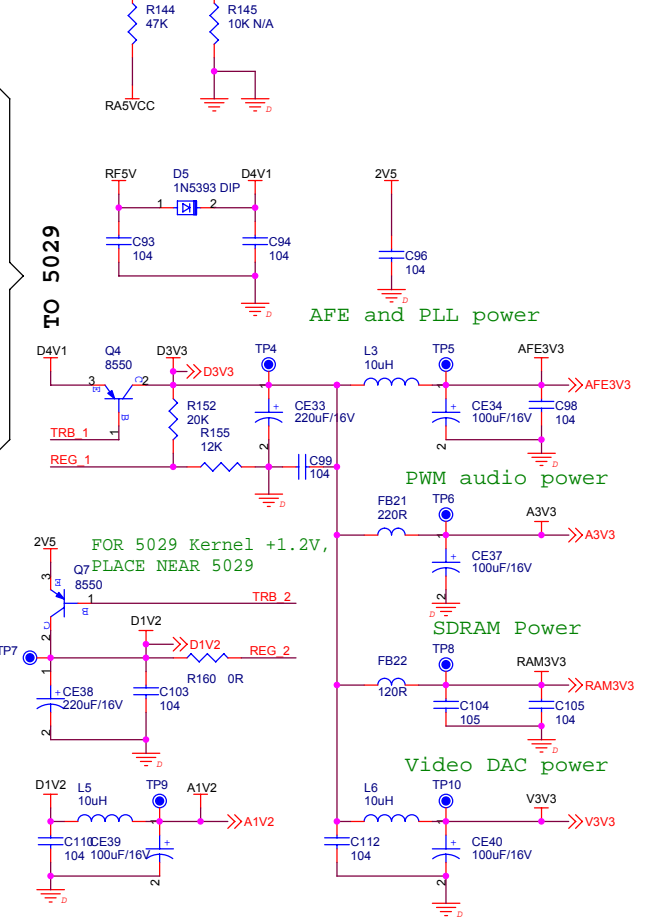
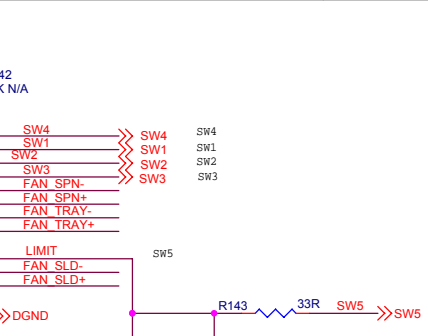
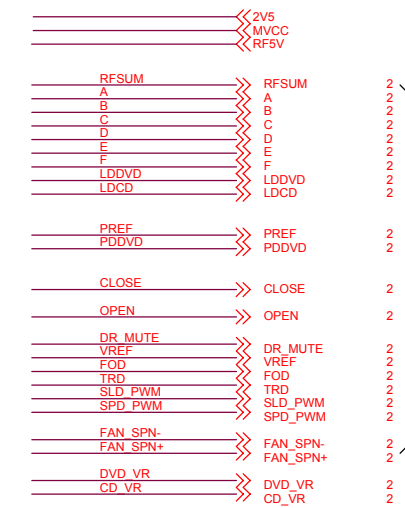
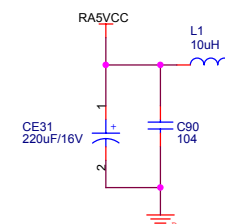
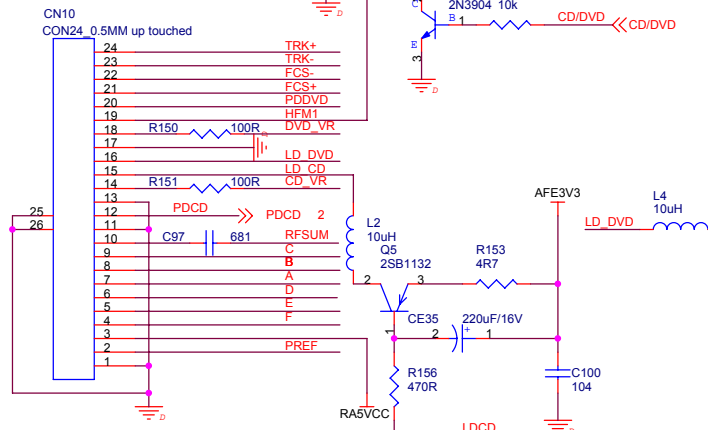


FFC CONNECTOR

For DL6/HD65/1200X

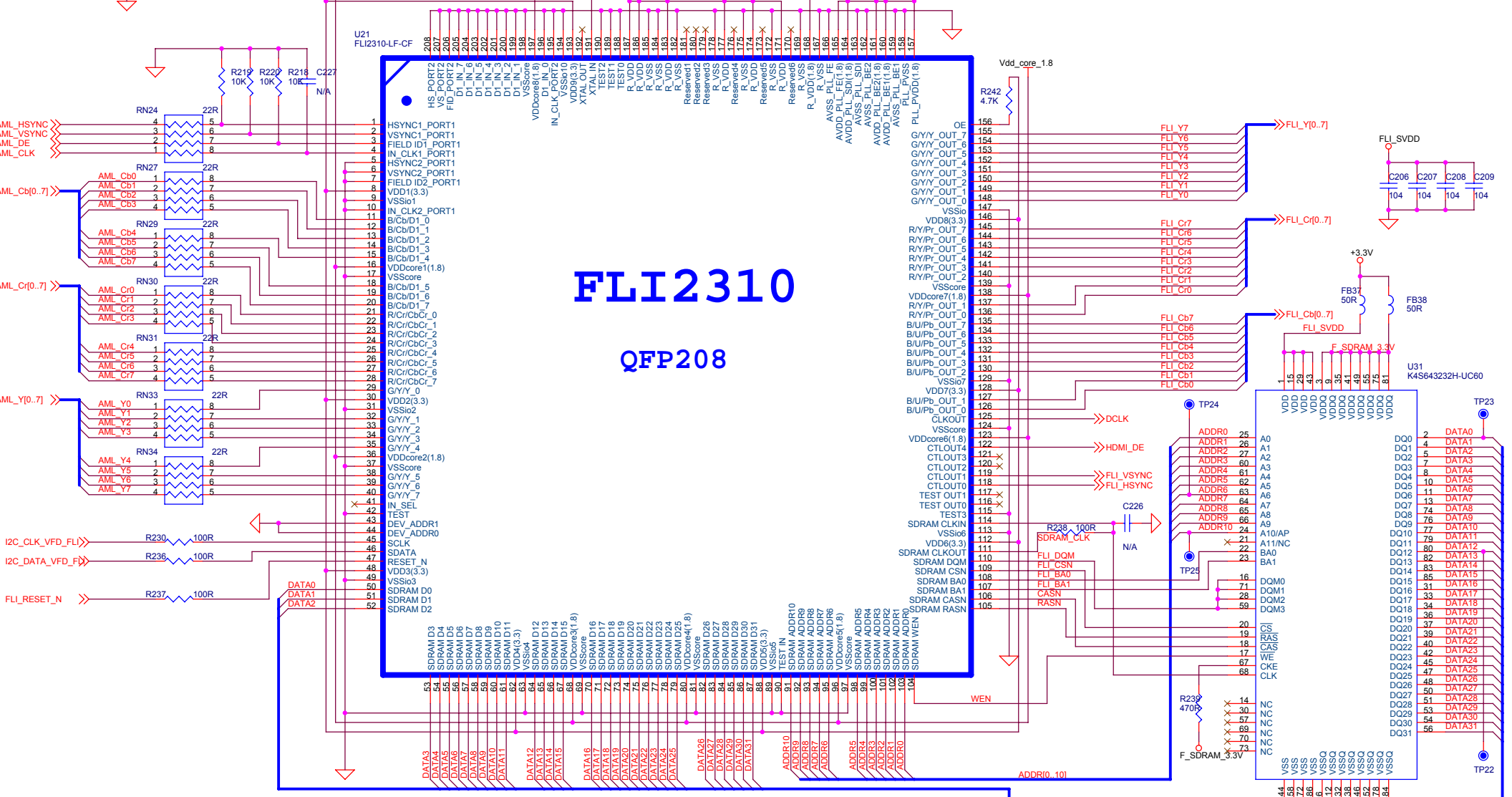
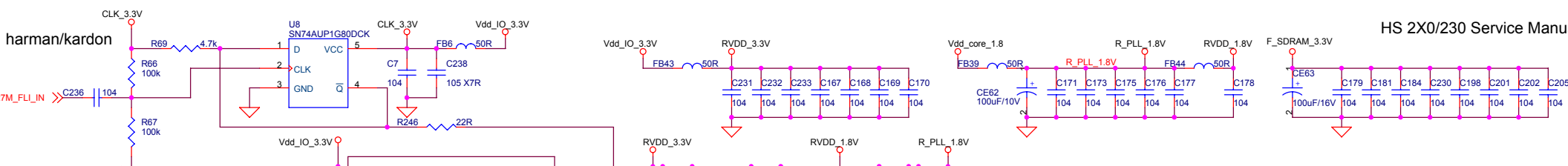


For HITACHI 1200W P/U



| | | |
|---------------------------|------------------------|----------------|
| Title | | |
| HS2X0 MAIN BOARD - 100109 | | |
| Size | Document Number | Rev |
| Custom | 5982Y | 1.5 |
| Date: | Monday, March 29, 2010 | Sheet 05 of 10 |

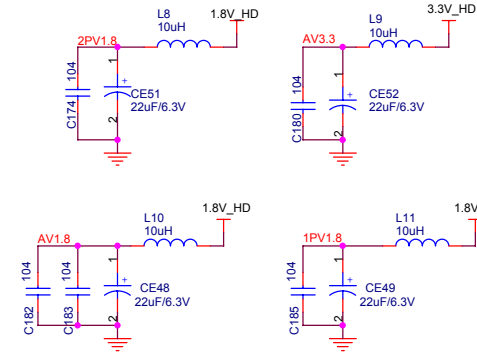
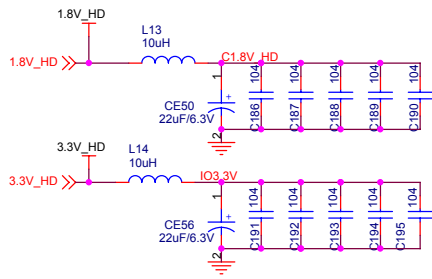
harman/kardon



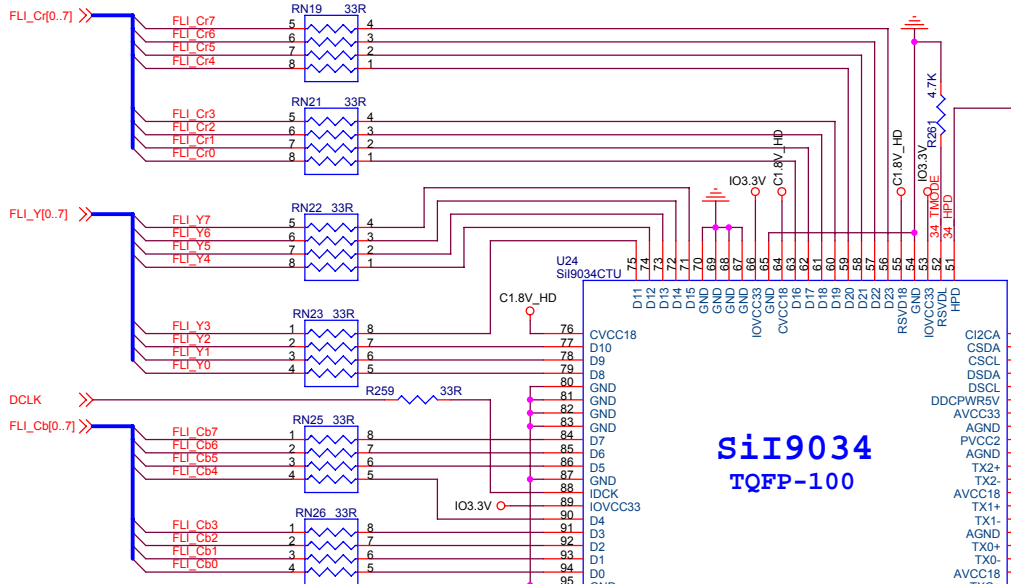
FLI2310

QFP208

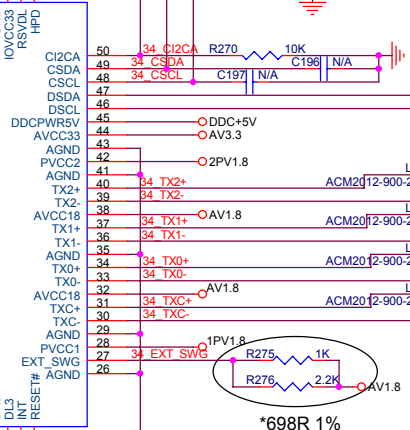
| | | | |
|-------|------------------------|-------|---------------------------|
| Title | | | HS2X0 MAIN BOARD - 090703 |
| Size | Document Number | | 5982Y |
| Date: | Monday, March 29, 2010 | Sheet | 06 of 10 |
| Rev | | 1.5 | |



POWER PART

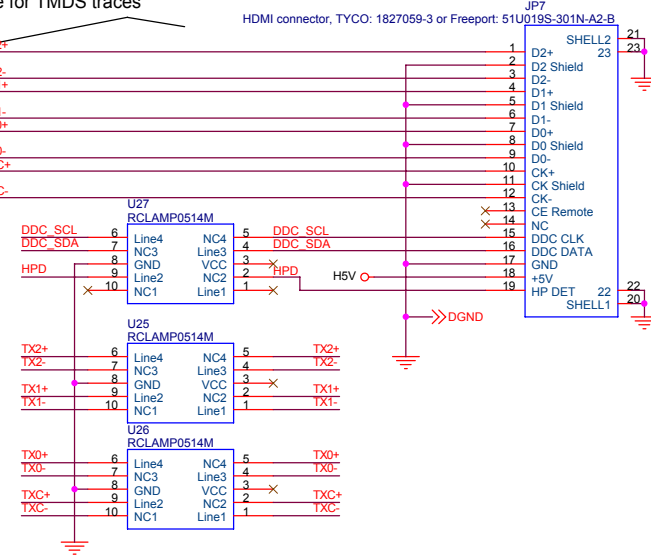


SiI9034
TQFP-100

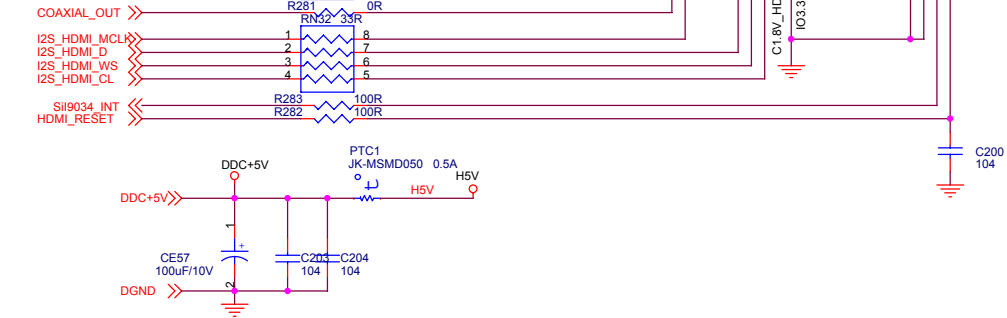


LAYOUT: 100 ohm differential impedance for TMD5 traces

LAYOUT: Place TVS diodes & chokes together & close to connector



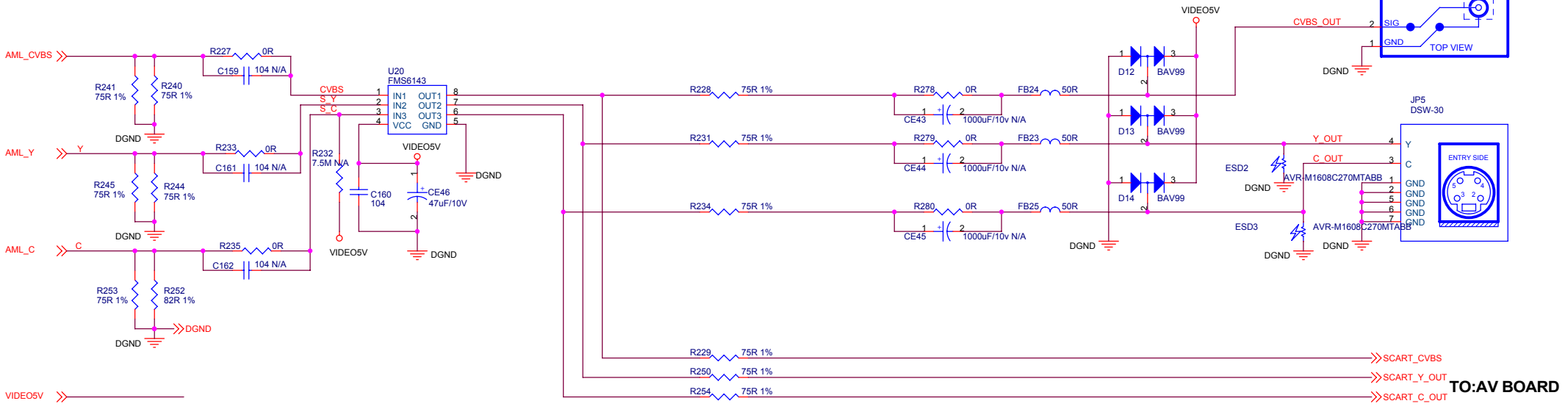
HDMI I2S IN
SiI9034
FROM: MAP5601



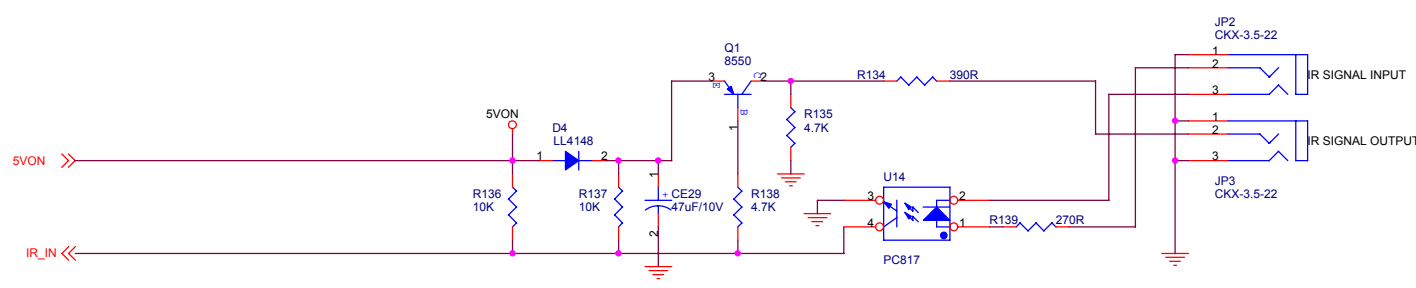
| | | | | | |
|-------|------------------------|-------|---------------------------|----|----|
| Title | | | HS2X0 MAIN BOARD - 090703 | | |
| Size | Document Number | Rev | | | |
| A3 | 5982Y | 1.5 | | | |
| Date: | Monday, March 29, 2010 | Sheet | 07 | of | 10 |

Nike-216Pin FM6143 IN1 (CVBS) ->Y/G
 Nike-256Pin FM6143 IN1 (CVBS) ->CVBS

harman/kardon



TO:AV BOARD



| | | |
|---------------------------|------------------------|----------------|
| Title | | |
| HS2X0 MAIN BOARD - 090805 | | |
| Size | Document Number | Rev |
| A3 | Harman/Kardon - 5982Y | 1.5 |
| Date: | Monday, March 29, 2010 | Sheet 08 of 10 |

R99 digital communication mode
 EMPTY is MII mode
 PULL UP is RMII mode

If pull up by AML8218 maybe
 needn't solder R101 & R102

R100 internal regulator mode
 EMPTY is Enabled internal Regulator
 PULL UP is Disabled internal Regulator

| Mode2 | Model | Mode0 | |
|------------|-----------|-----------|-------------------------------------------|
| RMII_MODE2 | RMII_RXD1 | RMII_RXD0 | |
| 1 | 1 | 1 | 111 All capable |
| 1 | 0 | 0 | 110 Power Down Mode (DEFAULT) |
| 1 | 0 | 1 | 101 Repeater Mode |
| 1 | 0 | 0 | 100 100Base-TX Half Duplex Advertised |
| 0 | 1 | 1 | 011 100Base-TX Full Duplex Auto Negotiate |
| 0 | 1 | 0 | 010 100Base-TX Half Duplex Auto Negotiate |
| 0 | 0 | 1 | 001 10Base-T Full Duplex Auto Negotiate |
| 0 | 0 | 0 | 000 10Base-T Half Duplex Auto Negotiate |

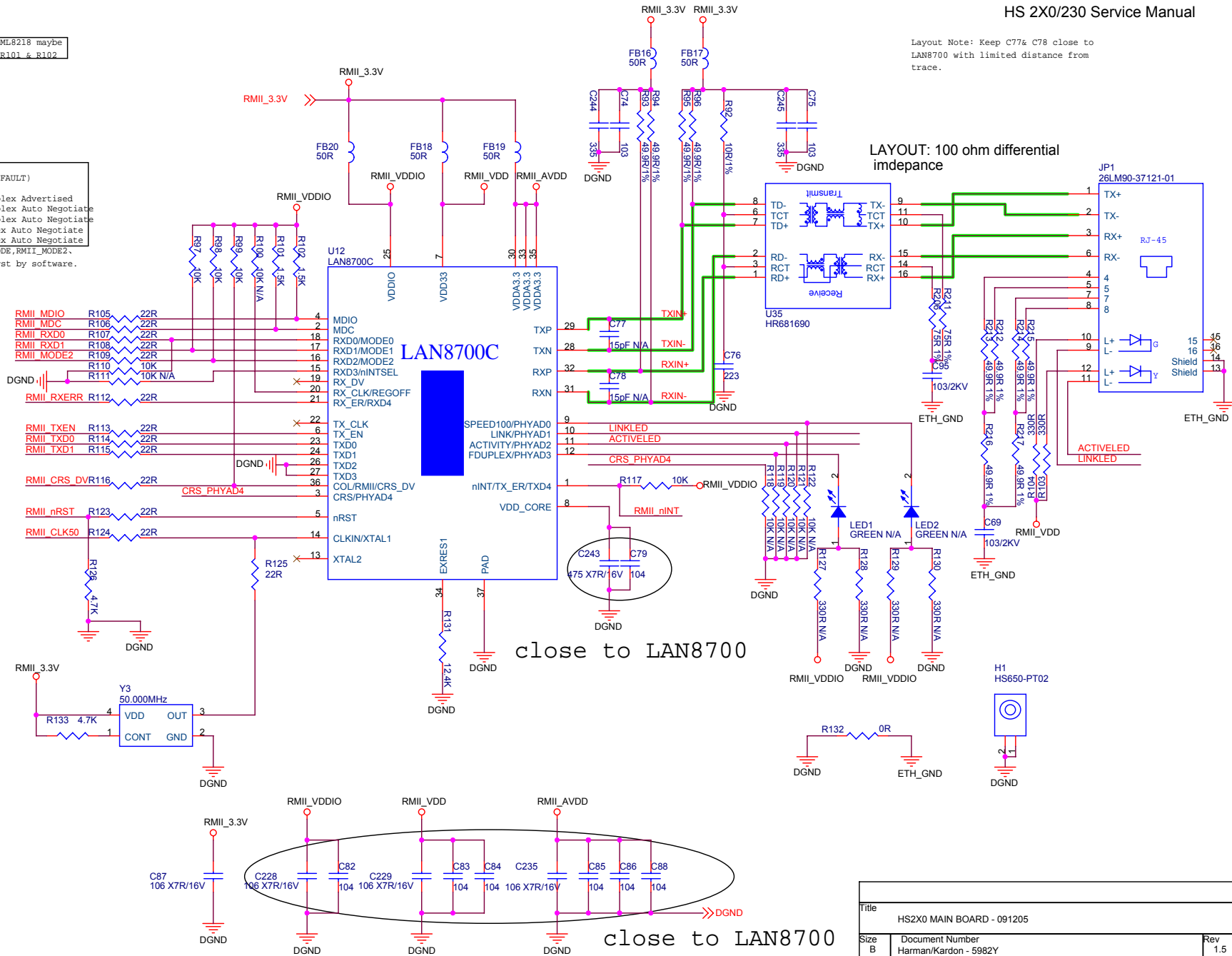
NOTE: The default is Power Down Mode. As using other MODE, RMII_MODE2, RMII_RXD1, RMII_RXD0 should be configured as GPIO first by software. Please refer to LAN8700 for detail.

R111 pin 1 mode
 EMPTY is nINT
 PULL UP is TXER/TXD4

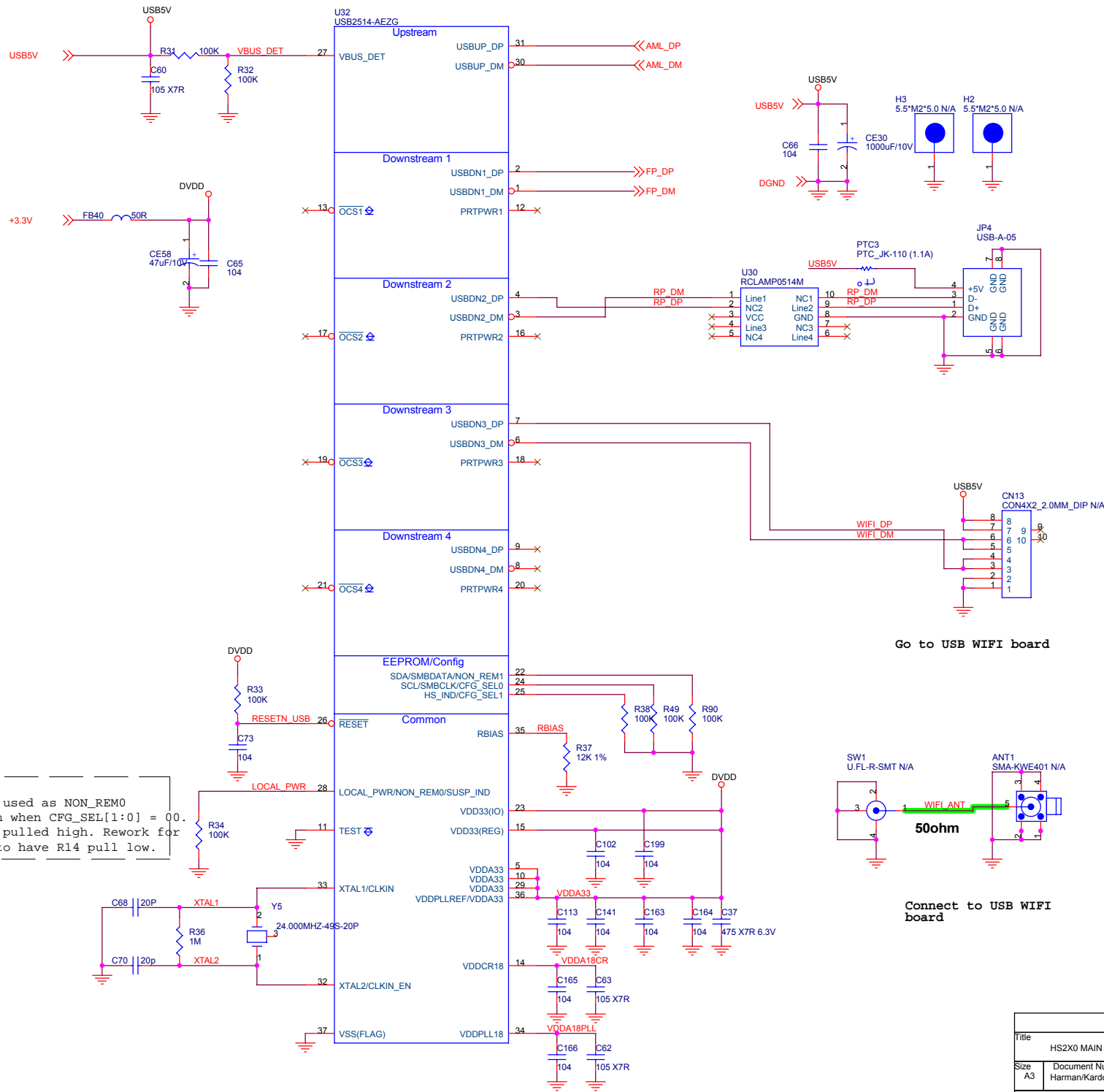
FROM: AML8218

- RMII_MDIO >> RMII MDIO
- RMII_MDC >> RMII MDC
- RMII_RXD0 >> RMII RXD0
- RMII_RXD1 >> RMII RXD1
- RMII_MODE2 >> RMII RXERR
- RMII_RXERR >> RMII RXERR
- RMII_TXEN >> RMII TXEN
- RMII_TXD0 >> RMII TXD0
- RMII_TXD1 >> RMII TXD1
- RMII_CRSDV >> RMII CRSDV
- RMII_nRST >> RMII nRST
- RMII_CLK50 >> RMII CLK50
- RMII_nINT >> RMII nINT

Layout Note: Keep C77& C78 close to LAN8700 with limited distance from trace.



| | | | |
|-------|-----------------|----|---------------------------|
| Title | | | HS2X0 MAIN BOARD - 091205 |
| Size | Document Number | | Harman/Kardon - 5982Y |
| | Date | | Monday, March 29, 2010 |
| Sheet | 09 | of | 10 |
| Rev | | | 1.5 |



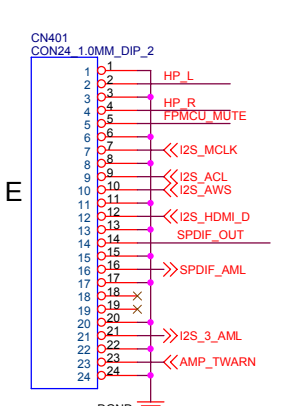
NOTE: Pin 28 is used as NON_REM0 strapping option when CFG_SEL[1:0] = 00. The PCB has R14 pulled high. Rework for revision A1 is to have R14 pull low.

Go to USB WIFI board

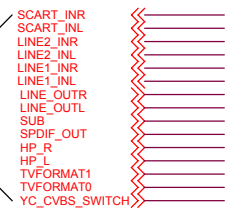
Connect to USB WIFI board

| | | |
|---------------------------|------------------------|----------------|
| Title | | |
| HS2X0 MAIN BOARD - 091212 | | |
| Size | Document Number | Rev |
| A3 | Harman/Kardon - 5982Y | 1.5 |
| Date: | Monday, March 29, 2010 | Sheet 10 of 10 |

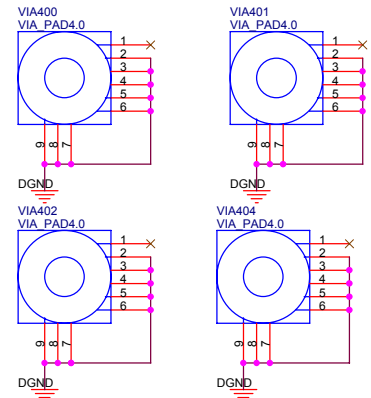
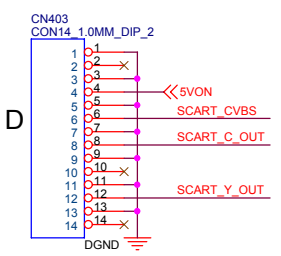
harman/kardon



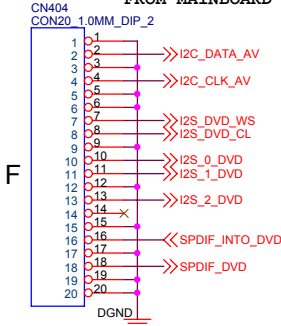
FROM MAP



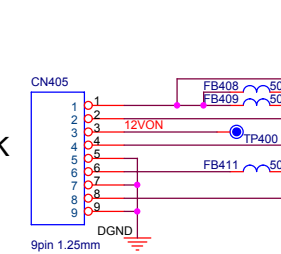
FROM MAINBOARD



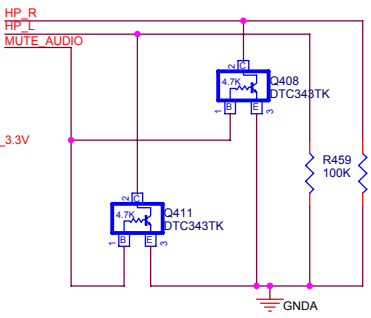
FROM MAINBOARD



FROM MAINBOARD

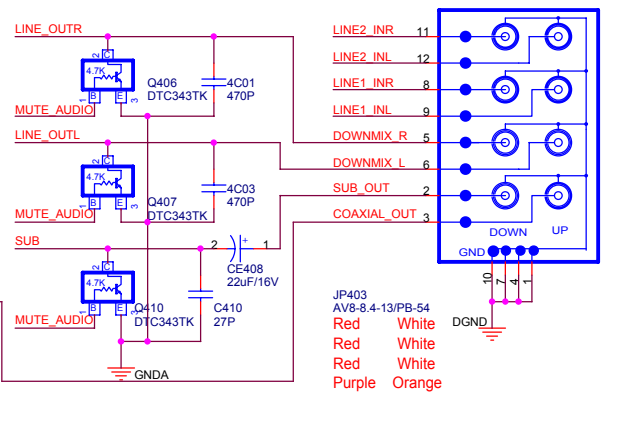
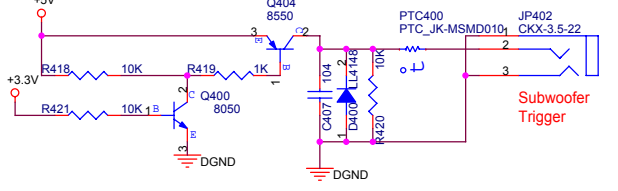
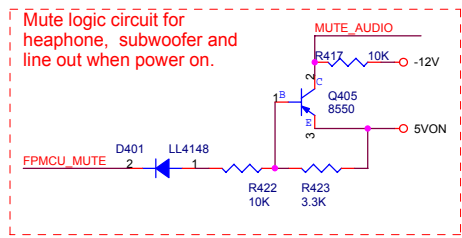
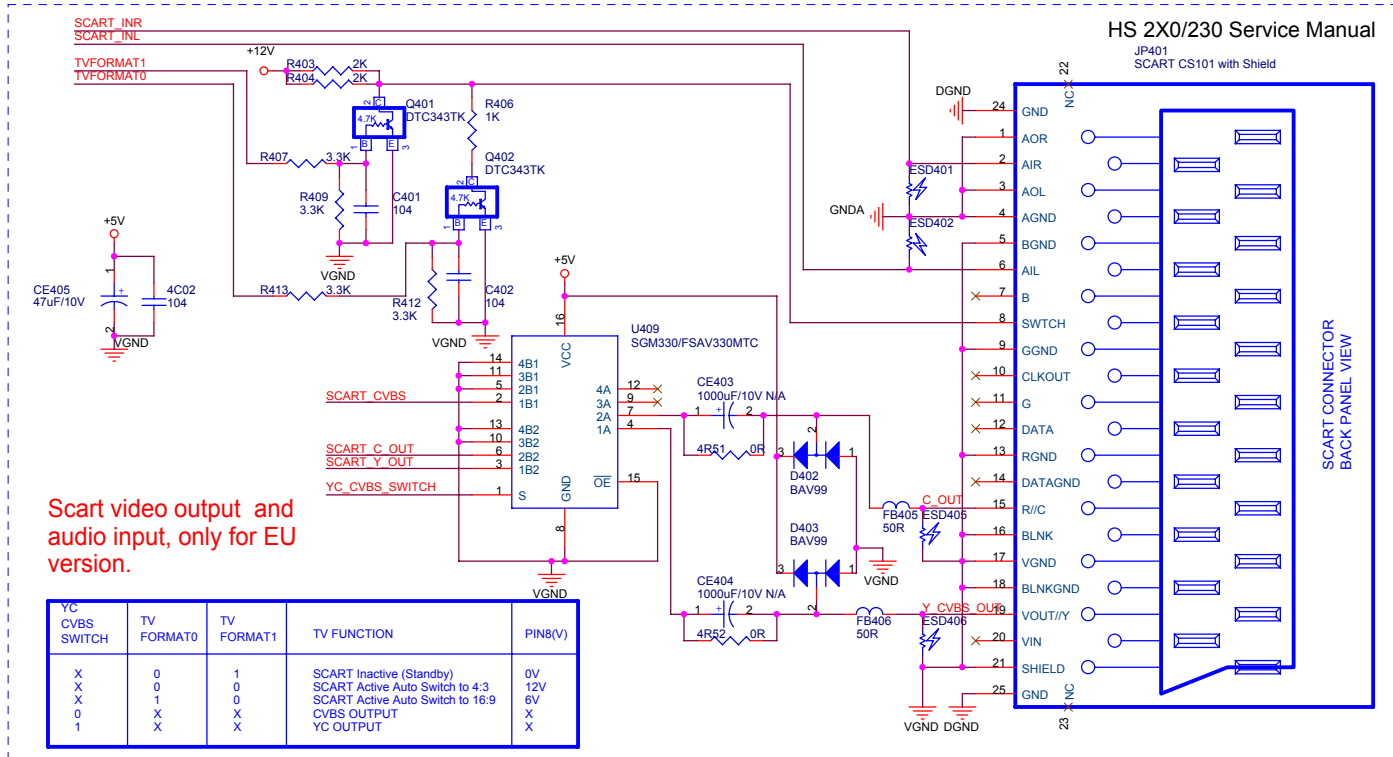


FROM SMPS BOARD



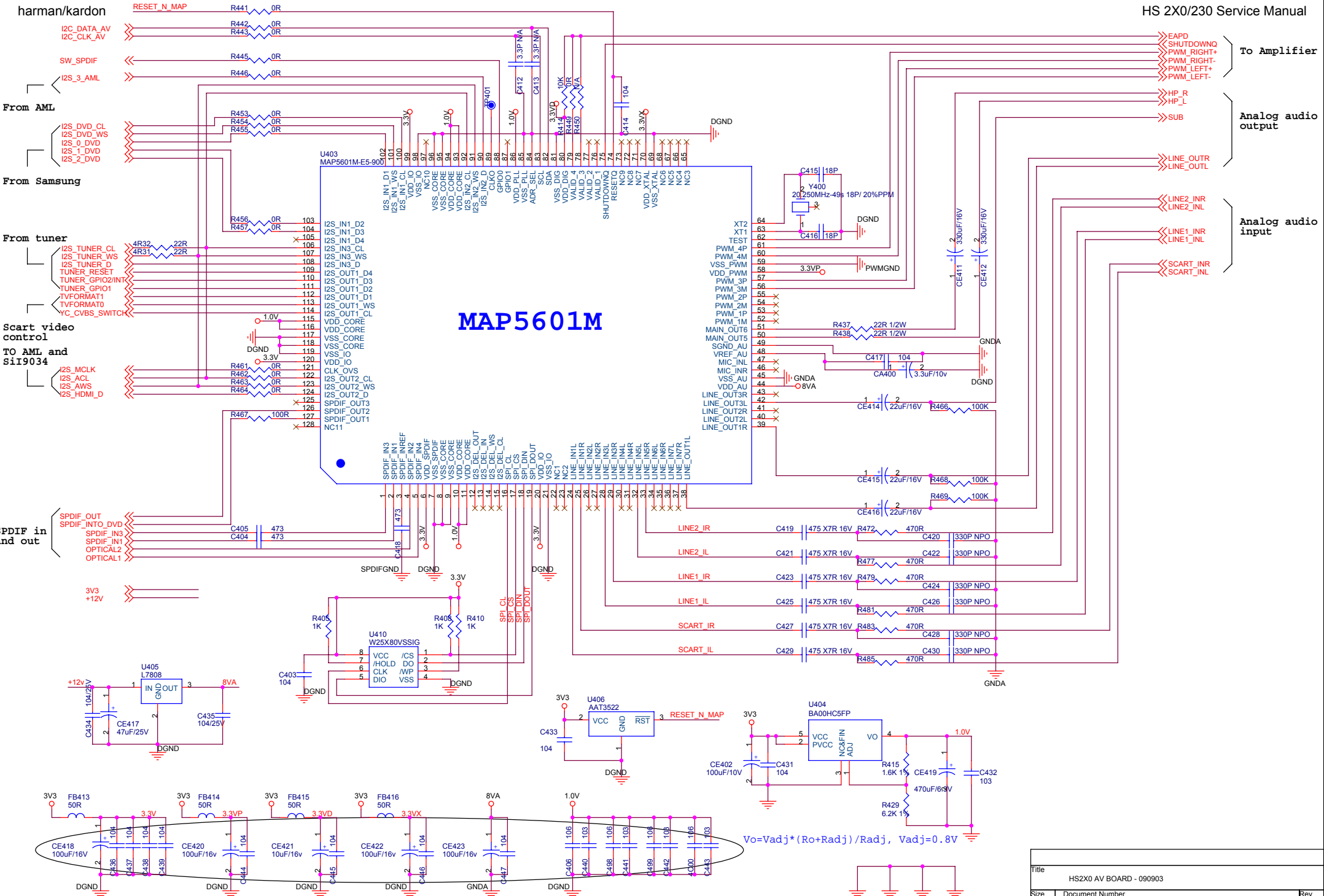
Scart video output and audio input, only for EU version.

| YC CVBS SWITCH | TV FORMAT0 | TV FORMAT1 | TV FUNCTION | PIN8(V) |
|----------------|------------|------------|----------------------------------|---------|
| X | 0 | 1 | SCART Inactive (Standby) | 0V |
| X | 0 | 0 | SCART Active Auto Switch to 4:3 | 12V |
| X | 1 | 0 | SCART Active Auto Switch to 16:9 | 6V |
| 0 | X | X | CVBS OUTPUT | X |
| 1 | X | X | YC OUTPUT | X |



Coaxial output requests:
75ohm Z = 0.5Vpp
High Z =1Vpp

| | | |
|----------------------------------|--------------------------|------------|
| Title HS2X0 AV BOARD - 091205 | | |
| Size A3 | Document Number 5983Y | Rev 1.6 |
| Date: Monday, March 29, 2010 | Sheet 1 | of 4 |

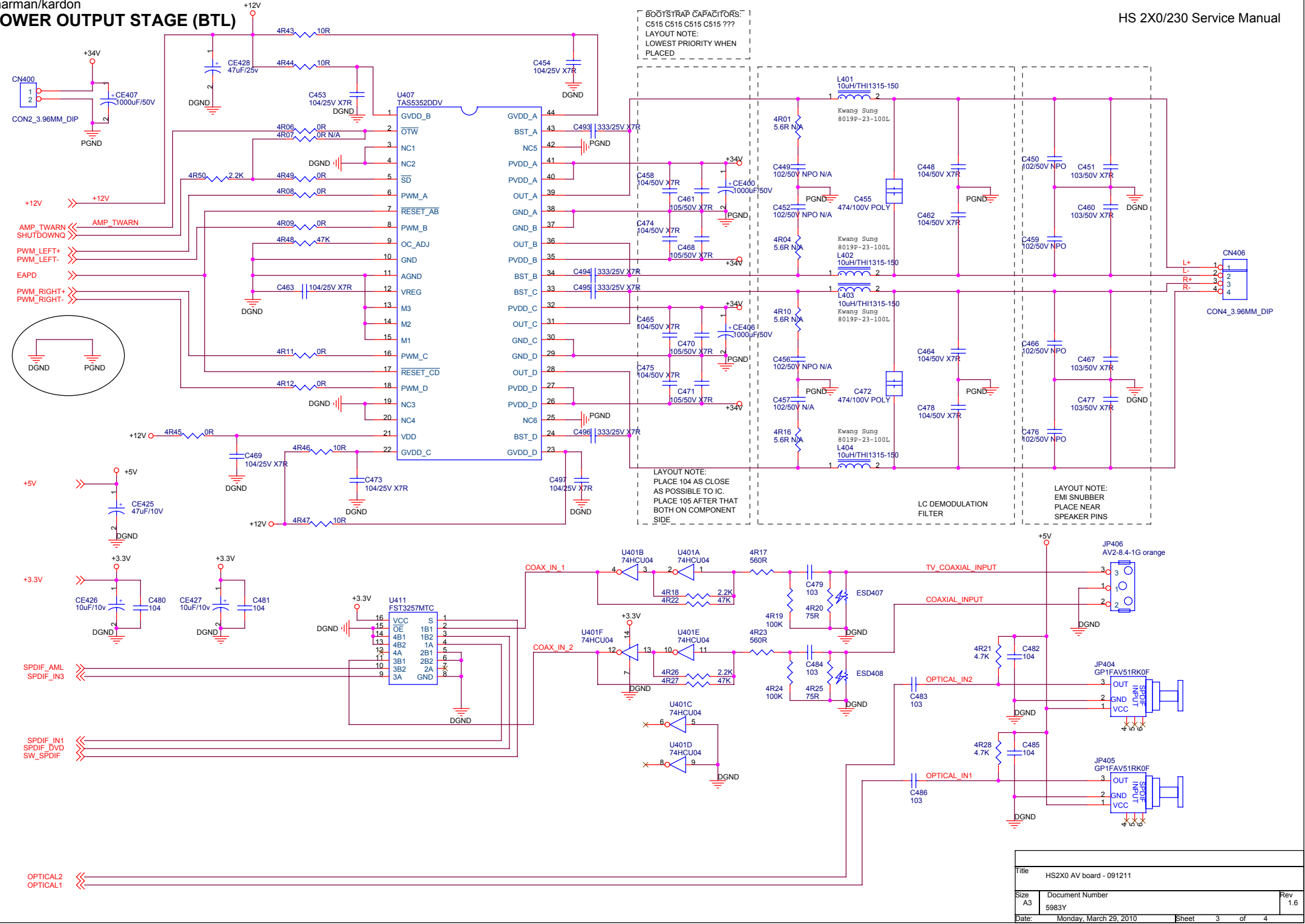


MAP5601M

close to MAP4601

| | | |
|-------------------------|------------------------|--------------|
| Title | | |
| HS2X0 AV BOARD - 090903 | | |
| Size | Document Number | Rev |
| A3 | 5983Y | 1.6 |
| Date: | Monday, March 29, 2010 | Sheet 2 of 4 |

POWER OUTPUT STAGE (BTL)

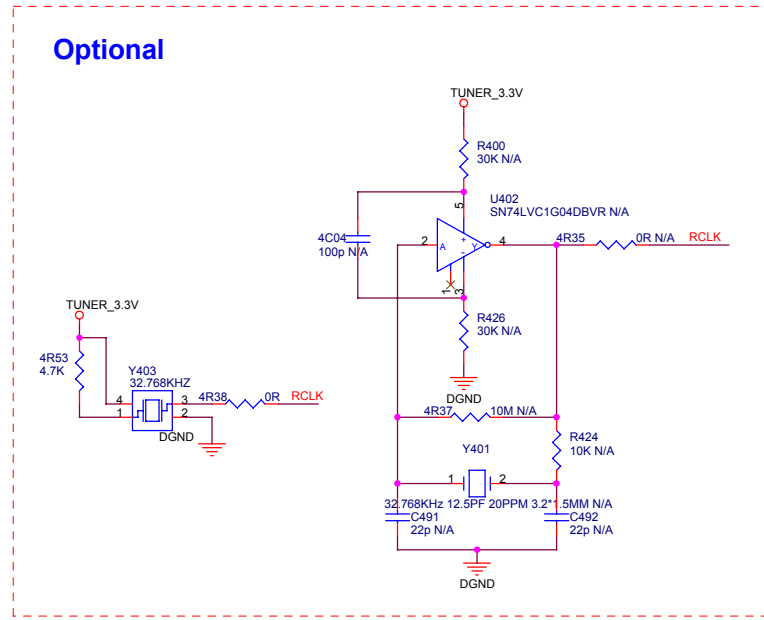
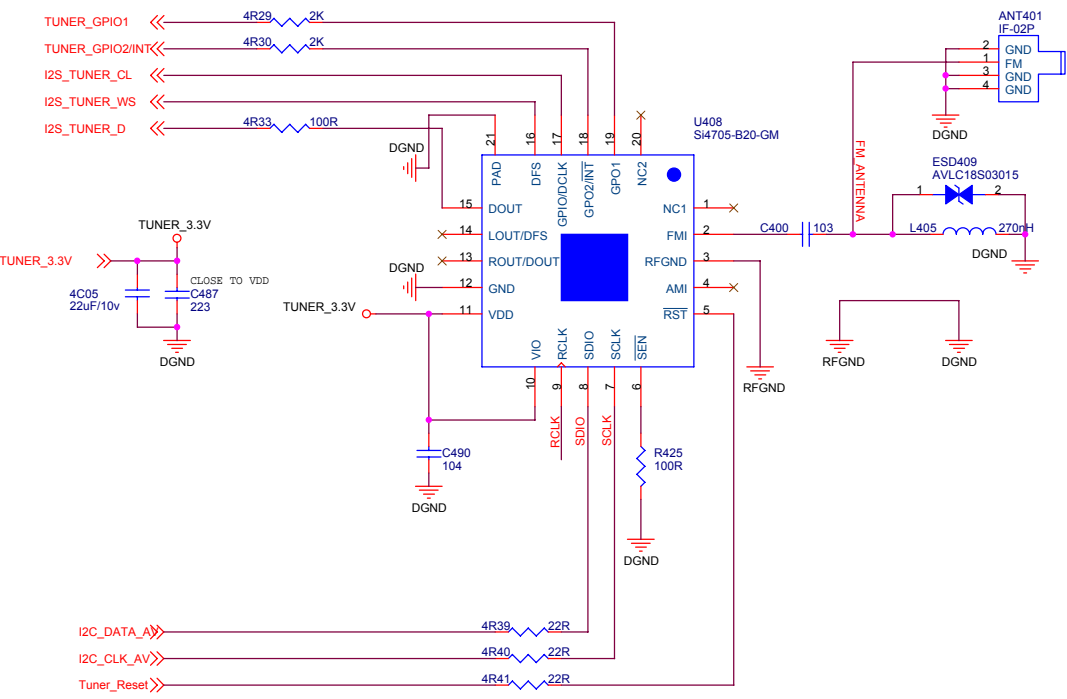


BOOTSTRAP CAPACITORS:
 C515 C516 C515 C515 ???
 LAYOUT NOTE:
 LOWEST PRIORITY WHEN
 PLACED

LAYOUT NOTE:
 PLACE 104 AS CLOSE
 AS POSSIBLE TO IC.
 PLACE 105 AFTER THAT
 BOTH ON COMPONENT
 SIDE

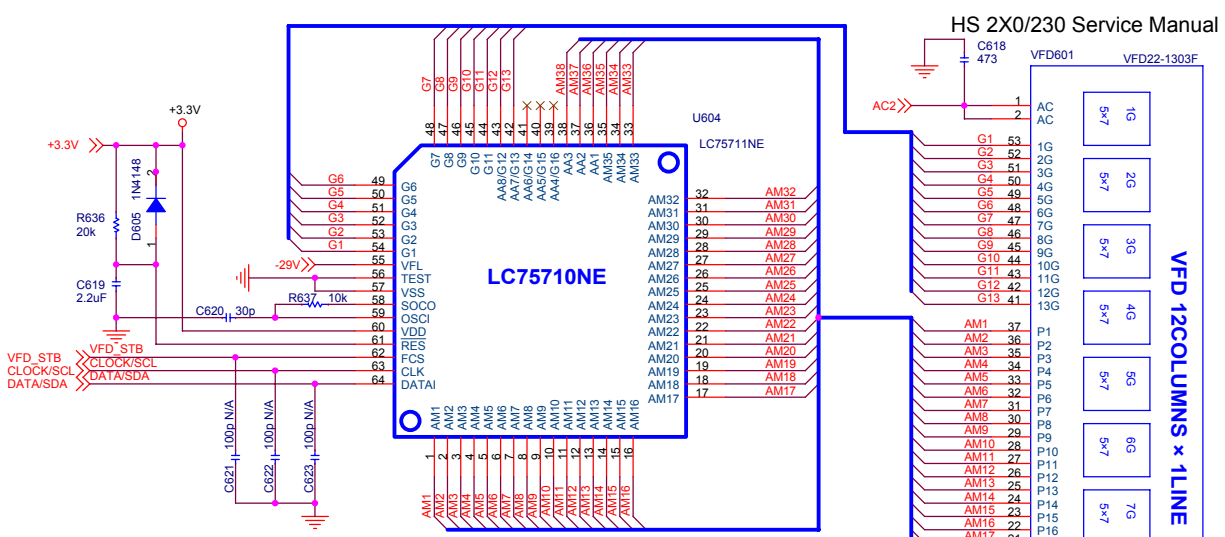
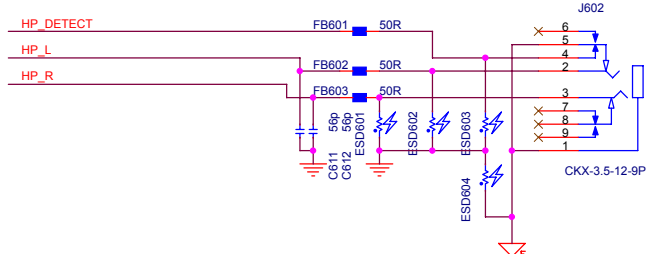
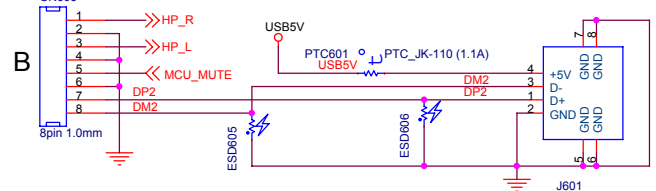
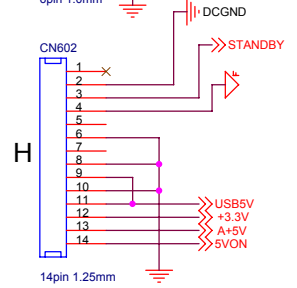
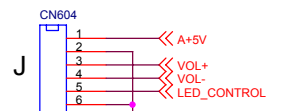
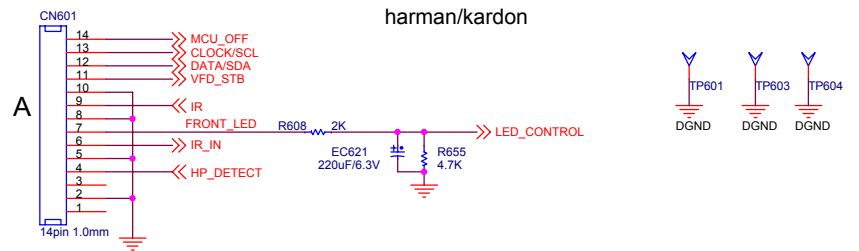
LAYOUT NOTE:
 EMI SNUBBER
 PLACE NEAR
 SPEAKER PINS

| | | |
|-------------------------|------------------------|--------------|
| Title | | |
| HS2X0 AV board - 091211 | | |
| Size | Document Number | Rev |
| A3 | 5983Y | 1.6 |
| Date: | Monday, March 29, 2010 | Sheet 3 of 4 |

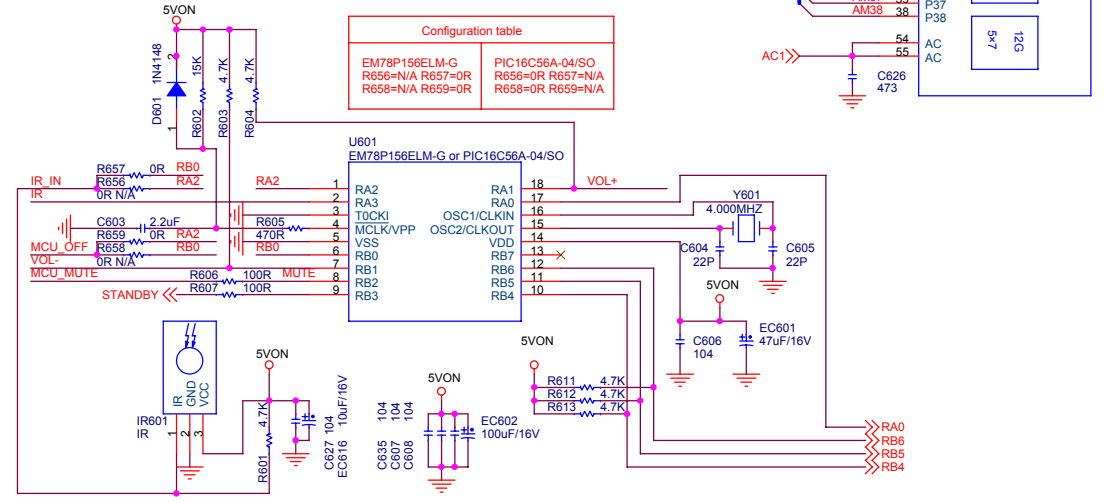


1. Place C487 close to VDD pin.
2. All grounds connect directly to GND plane on PCB.
3. Pins 1 and 20 are no connects, leave floating.
4. To ensure proper operation and receiver performance, follow the guidelines in "AN383: Si47xx 3 mm x 3 mm QFN Universal Layout Guide." Silicon Laboratories will evaluate schematics and layouts for qualified customers.
5. Pin 2 connects to the FM antenna interface, and pin 4 connects to the AM antenna interface.
6. RFGND should be locally isolated from GND.
7. Place Si4704/05 as close as possible to antenna jack and keep the FMI and AMI traces as short as possible.
8. 4R29,4R30->2K; 4R33->600R; C487->22nF, C490->100nF
Y4->32.768; C491,C492->22pF .
9. ESD closed to C400 for Layout pcb when ESD capacitance >1pF .

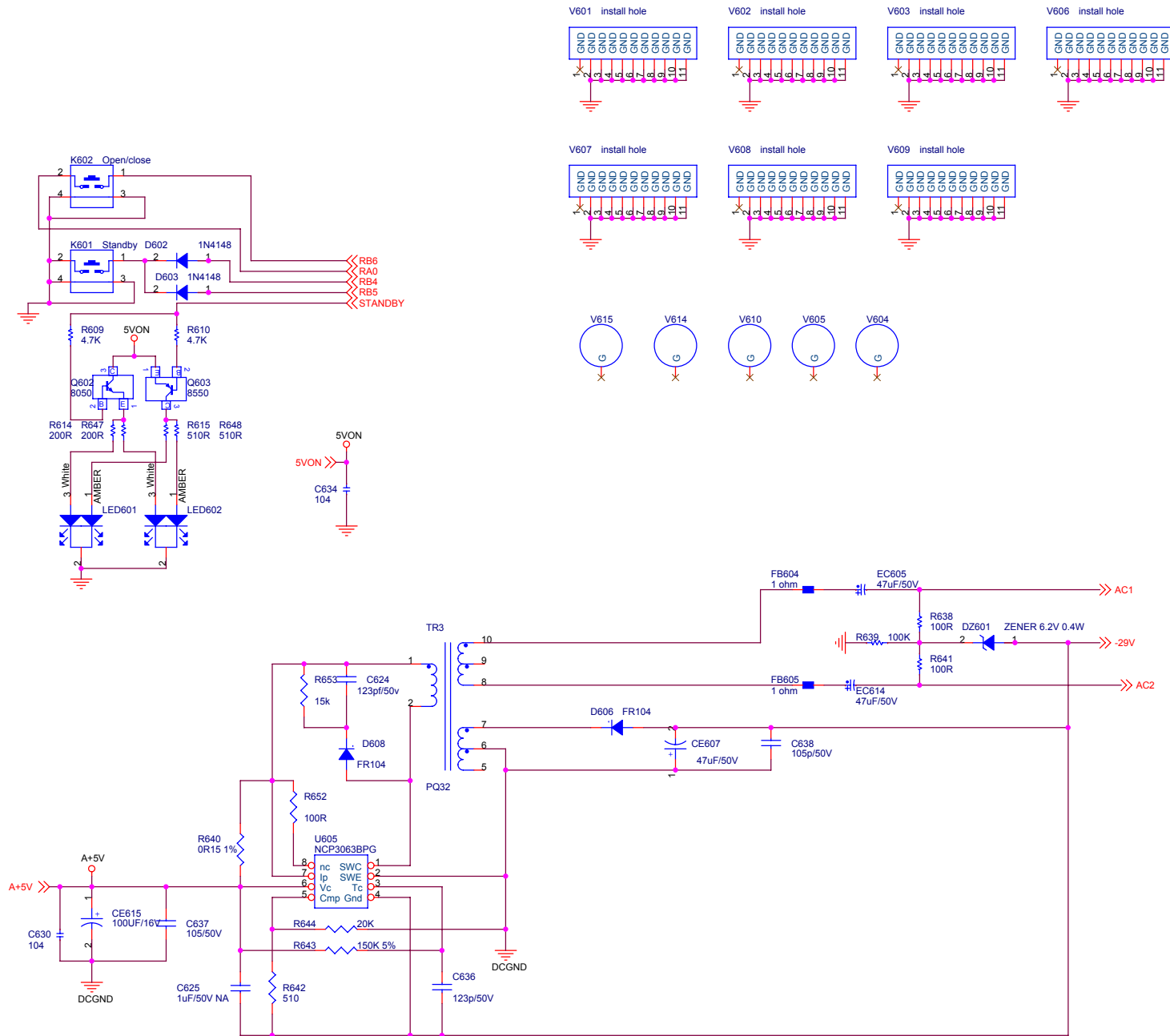
| | | |
|-------------------------|------------------------|--------------|
| Title | | |
| HS2X0 AV BOARD - 090905 | | |
| Size | Document Number | Rev |
| A3 | 5983Y | 1.6 |
| Date: | Monday, March 29, 2010 | Sheet 4 of 4 |



| Configuration table | |
|-------------------------------------------------------|---------------------------------------------------------|
| EM78P156ELM-G R656=N/A R657=0R R658=N/A R659=0R | PIC16C56A-04/SO R656=0R R657=N/A R658=0R R659=N/A |

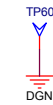
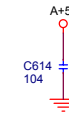
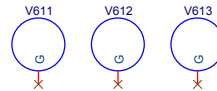
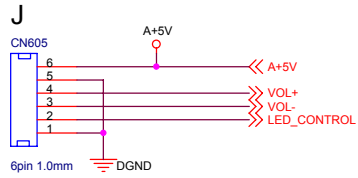
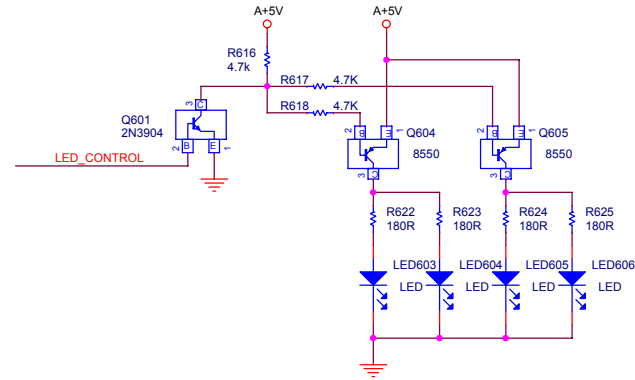
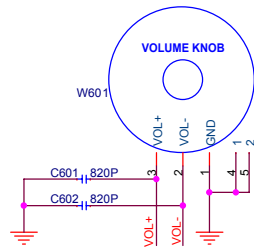


| | | | |
|-------|------------------------|-------|--------------------------------------|
| Title | | | HS2X0 FR0NT PANEL: VFD BOARD 0901121 |
| Size | Document Number | Rev | |
| A3 | 6742C | 17 | 1.3 |
| Date: | Monday, March 29, 2010 | Sheet | of 21 |

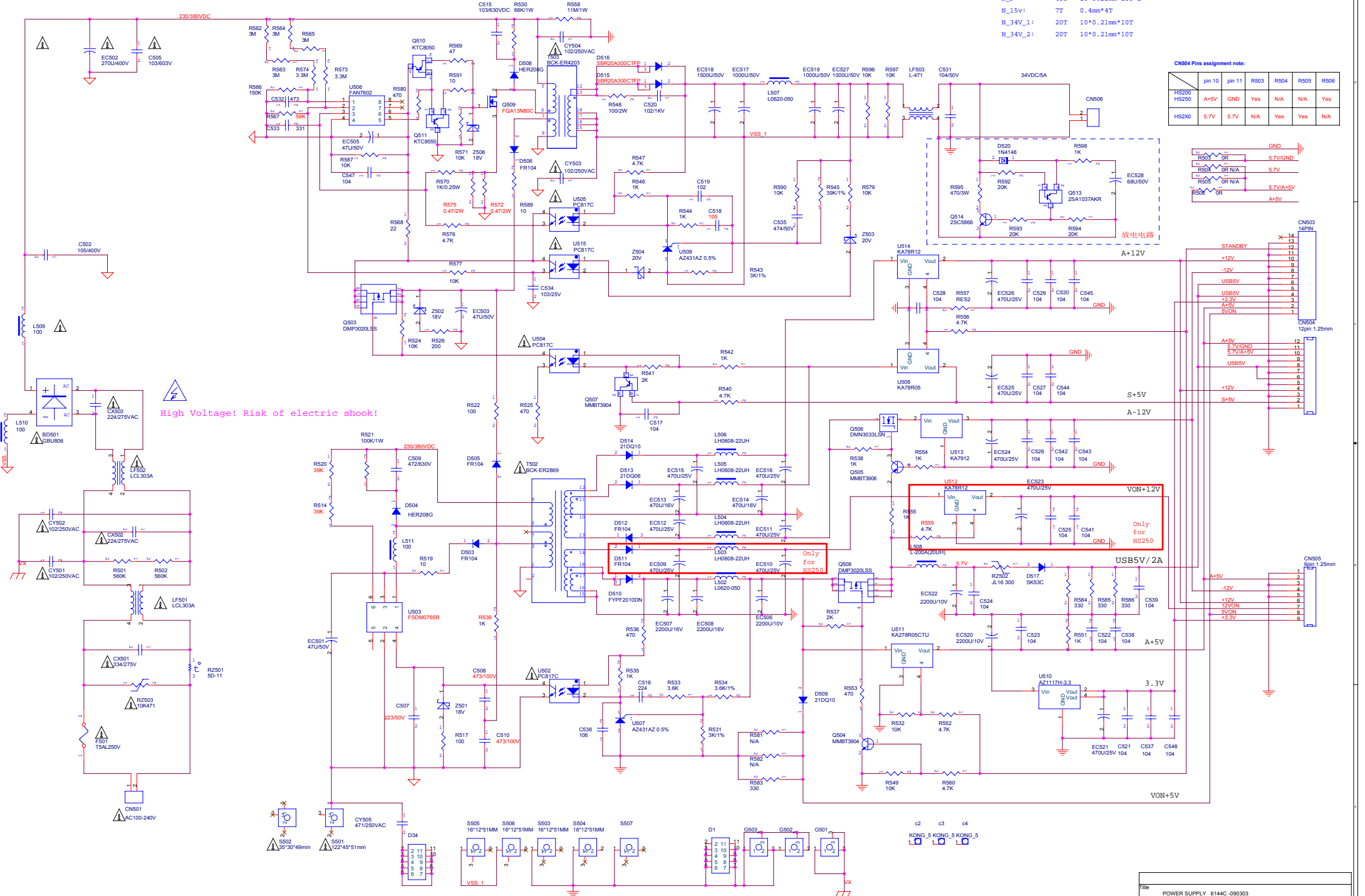


Function describe: supply power for VFD and VFD driver.

| | | |
|-------------------------------------|------------------------|----------------|
| Title | | |
| HS2X0 FRONT PANEL: VFD BOARD 090905 | | |
| Size | Document Number | Rev |
| A3 | 8742C | 1.3 |
| Date: | Monday, March 29, 2010 | Sheet 18 of 21 |

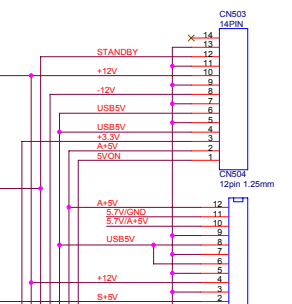
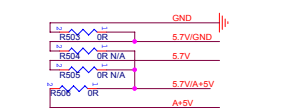


| | | |
|-------------------------------------|------------------------|----------------|
| Title | | |
| HS2X0 FRONT PANEL: VFD BOARD 090825 | | |
| Size | Document Number | Rev |
| A3 | 6743C | 1.3 |
| Date: | Monday, March 29, 2010 | Sheet 19 of 21 |



CN504 Pins assignment note:

| | pin 10 | pin 11 | R503 | R504 | R505 | R506 |
|-------|--------|--------|------|------|------|------|
| HS200 | A+5V | GND | Yes | N/A | N/A | Yes |
| HS250 | 5.7V | 5.7V | N/A | Yes | Yes | N/A |



High Voltage! Risk of electric shock!

Only for HS250

Only for HS250

| | | |
|-------|---------------------------|--------------|
| File | POWER SUPPLY 6144C-090303 | |
| Size | Document Number | Rev |
| A2 | xyz | V1.4 |
| Date: | Fri, 26. March 2010 | Sheet 1 of 1 |