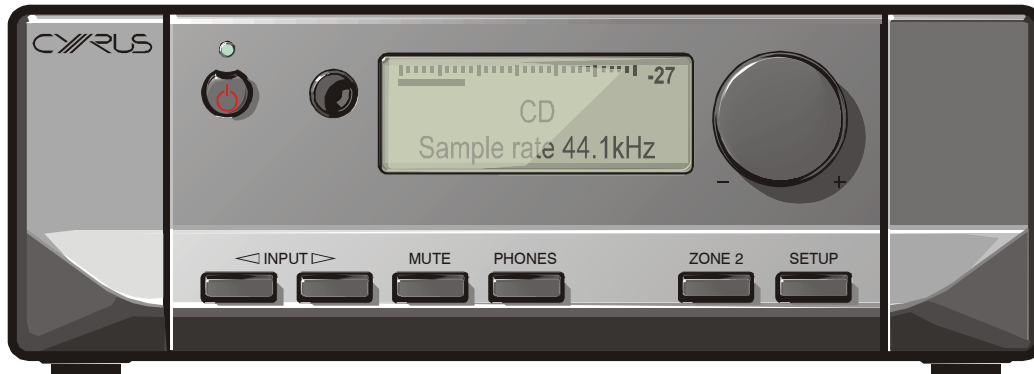


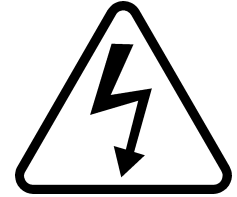


ENGINEERED TO ENTERTAIN

Cyrus 6 DAC, Cyrus 8 DAC, Cyrus 8 Qx DAC Digital amplifiers



SERVICE CAUTIONS



These two symbols shown are displayed prominently on the base cover. They indicate that the following cautions must be observed by all personnel-

CAUTION: TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER OR BACK.

THERE ARE NO USER SERVICEABLE PARTS INSIDE THE PRODUCT.

ALWAYS REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

STATIC PRECAUTIONS

When servicing any Cyrus product, adequate care must be taken during any service work to observe static precautions, particularly when storing, handling or fitting replacement components. The following guidelines must be observed –

- Check that all component purchases are delivered in static-safe packaging.
- Store all components in a static-safe environment.
- Always wear a grounding strap and work on a grounded bench when handling components or servicing a product. Static damage may not be immediately obvious and may result in a delayed action component/product failure.

LEAD-FREE COMPLIANCE

This product was manufactured using components and processes that do not contain lead. All components used in the repair should therefore be similarly specified (lead-free) and obtained from the spares department at the Cyrus factory. In addition, any solder or solder-paste used in the repair process must not contain lead. If in any doubt about the correct procedures, contact the Cyrus Service department for advice.

SOUND QUALITY

Preservation of the 'factory' sound is a priority when servicing a product for a Cyrus owner. For this reason, please ensure that only original specification components are used, sourced where necessary from the Service Department at the Cyrus factory. Use of inferior substitute components may significantly degrade the sound quality.

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MODEL DIFFERENCES

Digital amplifier models

The digital amplifiers share the same construction, featuring 6 stereo analogue inputs and 5 digital inputs. The circuit boards are common to all models, with differences in the capacity of the power supply transformer to deliver different power outputs:

- Cyrus 6 DAC delivers 40W continuous power into 8Ω.
- Cyrus 8 DAC delivers 70W continuous power into 8Ω.

The Qx high performance digital variant, the Cyrus 8 Qx DAC, adds an upgraded D/A converter module to the digital stage of the Cyrus 8 DAC.

The Cyrus 8 DAC and Cyrus 8 Qx DAC include connection for a PSX-R upgrade power supply. The power feed from the regulated PSX-R is fed to the preamplifier stages.

Model upgrades

The Cyrus factory offers owners the opportunity to upgrade to a higher specification model.

Some of these upgrades may be available as kits to enable a Cyrus authorised service agent to perform the upgrade. In these cases detailed instructions and kits of original parts will be available from the Cyrus service department.

Under no circumstances should an upgrade be attempted on an owners amplifier without these detailed instructions and an original parts kit.

TECHNICAL SPECIFICATIONS

Cyrus 6 DAC analogue specification

Continuous Power	40W/CH (both driven into 8Ω) 50W/CH (both driven into 4Ω)
Burst Power	190W (IHF, one channel driven into 1Ω)
Distortion	0.003%, 1kHz (into 8Ω)
Frequency Response.....	-3 dB at 0.1Hz and 100kHz
Damping Factor	150
Sensitivity.....	Line: 179mV for 40W
Input impedance.....	40kΩ (RCA).
Output voltage.....	179mV (Tape out), 360mV (Pre out)
S/N Ratio.....	104dBA (ref. 40W)
Channel Balance	±0.2dB (0dB to -63dB)
Volume control accuracy	±0.1dB (0dB to -63dB)
Dimensions (H x W x D).....	73 x 215 x 360 (mm), 2.8 x 8.4 x 14.1 (inches)
Weight	4.0kg

Cyrus 8 DAC analogue specification

Continuous Power	70W/CH (both driven into 8Ω) 115W/CH (both driven into 4Ω)
Burst Power	320W (IHF, one channel driven into 1Ω)
Distortion	0.002%, 1kHz (into 8Ω)
Frequency Response.....	-3 dB at 0.1Hz and 100kHz
Damping Factor	150
Sensitivity.....	Line: 237mV for 70W
Input impedance.....	40kΩ (RCA).
Output voltage.....	237mV (Tape out), 480mV (Pre out)
S/N Ratio.....	105dBA (ref. 40W)
Channel Balance	±0.2dB (0dB to -63dB)
Volume control accuracy	±0.1dB (0dB to -63dB)
Dimensions (H x W x D).....	73 x 215 x 360 (mm), 2.8 x 8.4 x 14.1 (inches)
Weight	5.9kg

Cyrus 6 DAC, Cyrus 8 DAC digital specification

Input voltage.....	500mV
Input impedance.....	75Ω
Sample rate range.....	32k-96k
Audio formats	PCM stereo only
S/N Ratio.....	>100dBA
THD+N (pre out 0dB FS).....	<0.004%, 1kHz (into 8Ω)

Cyrus 8 Qx DAC digital specification

Input voltage.....	500mV
Input impedance.....	75Ω
Sample rate range.....	32k-192k
Audio formats	PCM stereo only
S/N Ratio.....	>100dBA
THD+N (pre out 0dB FS).....	<0.002%, 1kHz (into 8Ω)

TYPE IDENTIFICATION

Rating label

Each amplifier carries a rating label on the rear panel which includes details of the following:

Model number

The full model number of the amplifier is shown.

Nominal power voltage

This will be either 230V For use on nominal 220V - 240V AC mains supply.
 115V For use on nominal 110V - 120V AC mains supply.

Power consumption

The maximum power consumption figure is indicated.

Changing the supply voltage rating

It is possible to change the supply voltage rating of an amplifier between 115V and 230V settings. The following additional parts will be required from the Cyrus parts department –

- Main power transformer of the correct rating.
- Mains fuse of the correct rating.
- Rating label that indicates the new supply voltage.
- Power cord with the correct termination.
- Replacement speaker sockets (4mm for 115V operation, BFA for 230V operation).

In addition, the primary wiring links (R410, R411, R412) that set the supply voltage for the control system power transformer will require rewiring (details in the PCB parts lists).

Model number display

The model number of the amplifier (for example – Cyrus 8 DAC) is displayed when the amplifier is connected to the mains and also each time the amplifier is switched on from Standby.

Serial number

Each amplifier carries a serial number code, which identifies the following-

- Type of product
- Build number
- Paint finish (colour)

The serial number is on the baseplate. It is therefore important to ensure that a baseplate removed from a product is re-fitted to the same product. In any communications with Cyrus Service or Quality departments it is essential that the full serial number is quoted so that original specification parts and service information may be supplied.

PCB Identification

Each PCB is marked with a design revision number and this number should be quoted in all correspondence to the service department when requesting technical advice or requesting spare parts. The table below shows a typical main PCB number, which can be found on each revision of PCB.

Revision number	PCB marking
Main board revision 2	JG1012J2

SMD COMPONENT REPLACEMENT

Handling

SMD resistors and capacitors are widely used in the Cyrus range of products. When handling SMD components, certain precautions should be observed-

Handling SMD resistors and capacitors

- Always store SMD components in their original packaging or in a cool dry environment.
- Always handle SMD resistors and capacitors with tweezers or a vacuum pencil.
- Never handle SMD resistors and capacitors with fingers.
- Hold the SMD component by the body, not by the ends.
- Do not use SMD resistors or capacitors if the ends are dirty or discoloured.
- Do not use SMD resistors or capacitors if they have been dropped on the floor- they may be internally damaged.
- Always use replacement components of the correct size and shape. SMD components are available in many different packages. Where possible, order original parts from Cyrus.

Handling SMD ICs

- Always store these components in their original packaging or in a cool dry environment.
- Always handle SMD transistors and ICs with tweezers or a vacuum pencil.
- Never handle SMD transistors and ICs with fingers.
- Ensure that the connection pins of larger multi-pin ICs are not deformed or damaged before fitting.

Measuring circuits with SMD capacitors and resistors

- Avoid using sharp, pointed probes directly on the component end caps.
- Measure voltages from the PCB pad next to the component.

Static precautions

SMD components, particularly ICs, may be damaged by the static levels present in the workshop. Damage caused by static may not immediately cause component failure but could cause partial damage and a possible failure in the future. Observing these simple SMD precautions will avoid product failures related to static damage-

- Always wear a grounded wristband when replacing *any* electronic components.
- Always store components in their original packaging or conductive plastic bags.
- Never store components in plastic trays or bags without protection.

Soldering/desoldering SMD components

- Never re-use old SMD components after de-soldering!
- Always apply solder heat directly to the contact area. Avoid over-heating adjacent components.
- Always repair SMD PCBs with the correct tools. SMD components can only be replaced with a hot air pencil or soldering iron designed for SMD components, preferably with temperature control.
- Keep the soldering temperature as low as possible. 370°C is recommended for SMD rework on PCBs that use lead-free solder. Most SMD components will withstand 370°C for 5 to 10 seconds

SMD COMPONENT REPLACEMENT

- Use tin/silver solder which has a lower melting point. Tin/silver solder paste or small gauge solder (26SWG) is recommended. Do not use solder containing lead when servicing these products.
- When using solder paste a pressure dispenser should be used to ensure the correct amount of solder is applied to each pad.
- Solder paste should not be used with direct heating methods as the solder between component pins may not be melted.
- If necessary, remove excess solder paste with solder braid.

Removing SMD resistors and capacitors from the PCB with a soldering iron

1. Fit the soldering iron with a tip large enough to bridge both ends of the component.
2. Place the soldering iron so that its flat tip will heat both ends of the component at once.
3. When the solder melts, remove the component with tweezers.
4. Allow the PCB to cool for a few minutes, removing any excess solder with desoldering braid.

Fitting replacement SMD resistors and capacitors to the PCB with a soldering iron

1. Apply a little flux to the connections.
2. Place the component in position.
3. Tin the soldering iron, bring the tip into contact with the PCB pad and flow solder to the joint. Avoid bringing the soldering iron tip directly into contact with the component.

Removing SMD ICs from the PCB

1. Using fine tipped side cutters or tweezer cutters, snip all the leads of the device and remove the IC body.
2. Desolder the leads from the PCB pads.
3. Clean up the PCB with solder braid.

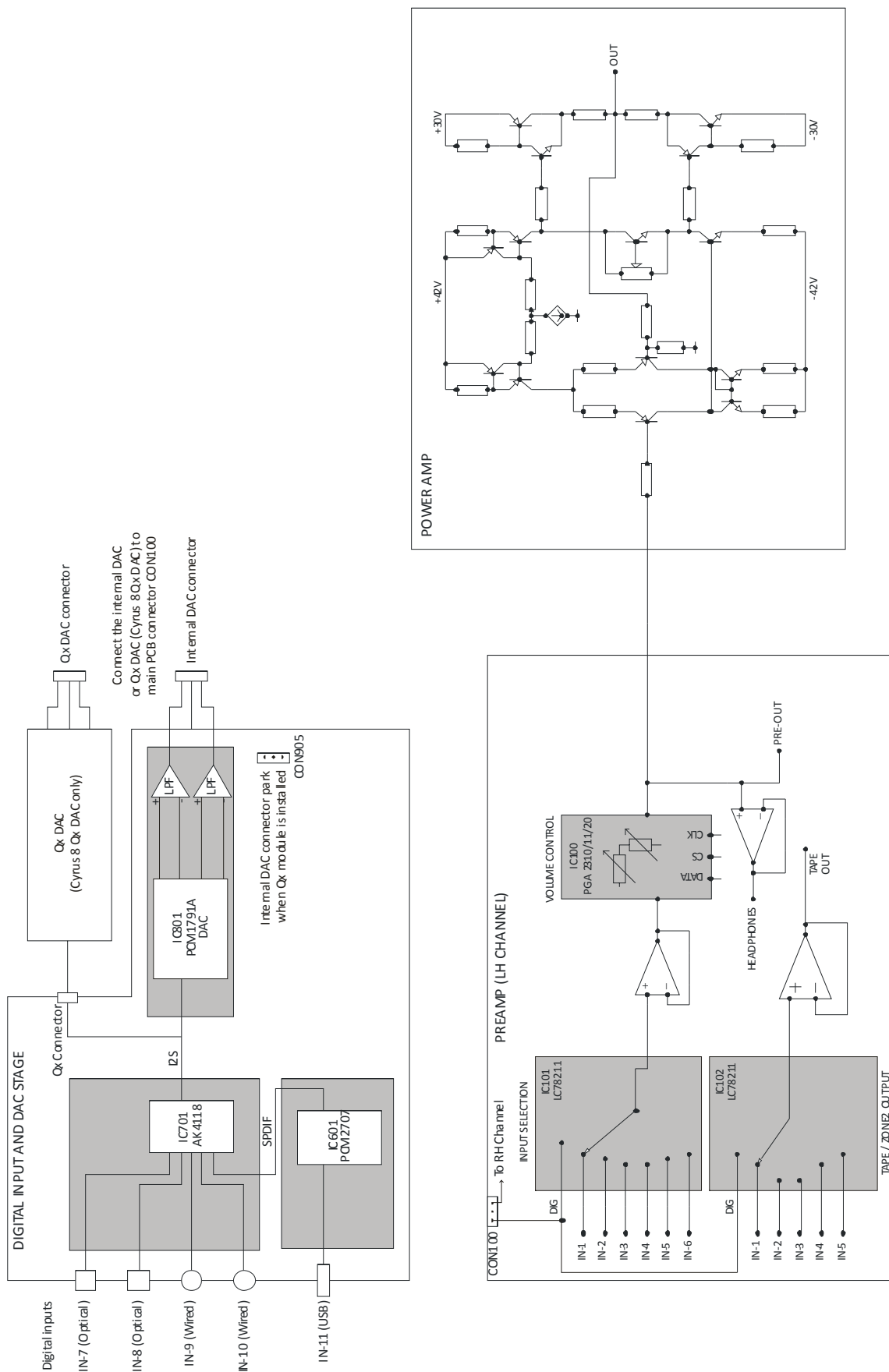
Removing SMD ICs with a hot air SMD tool

1. Fit a suitable size tip for the IC being removed.
2. Heat the IC evenly until the solder melts.
3. Remove the IC with tweezers.

Fitting replacement ICs to the PCB with a soldering iron

1. Check that the pins of the IC are not distorted.
2. Using tweezers, position the IC over the footprint.
3. Check that all the IC pins are correctly aligned with the pads.
4. With a very fine tip soldering iron, solder in the pins at the corners of the IC.
5. Re-check the alignment and correct if necessary.
6. When the alignment is OK, solder the remaining pins of the IC to the PCB.

BLOCK DIAGRAM



TECHNICAL DESCRIPTION

NOTE: - Reference numbers in the text are for the left channel.

Analogue input selection and Tape Monitor

The input and tape monitor selection is via an electronic audio selector switch (IC101). The switch is a 7 way 2 pole switch followed by a buffer (IC103) which then feeds audio to the volume control section of the circuit.

The Zone 2/Tape output is separately selected via a second electronic switch (IC102). The signal from the Zone 2/Tape selector is then sent to the Zone 2/Tape output via the buffer IC104.

Digital inputs

In addition to the six analogue inputs described above, the amplifiers include a digital input switcher and a two channel D/A Converter to enable connection of an additional five digital inputs, four of which are stereo SPDIF format and one USB.

Digital input selection is performed by an 8:1 input multiplexer in a Digital Input Receiver (IC701). The DIR is clocked by a 24.576MHz reference clock. The input sample rate is determined by comparing the incoming frequency to the reference clock. The frequency is then read by the system microcontroller on the front panel PCB, and displayed on the front panel LCD display.

The output from the multiplexed SPDIF input signal is then synchronised by an internal PLL and decoded to I²S (a 3-wire digital audio format) by IC701.

The USB input is decoded by IC601. This enables the amplifier to play music from a PC or similar, but is not suitable for connecting Flash drives or the like. When a USB device is connected, the power supply for IC601 is powered via T601. When there is no USB master device connected to the USB type socket, the power supply for IC601 is powered down, stopping the clock for IC601. When enabled, and with a USB audio signal connected, IC601 will re-format the audio signal to IEC958/SPDIF format which is routed to IC701, the digital input switch.

The I²S audio data from the input switch IC701 is fed to IC801, a stereo D/A Converter. The D/A Converter converts the digital audio into an analogue output. This is amplified and filtered by IC802 before being passed to the DIG input of IC101 (the input switch on the main analogue amplifier PCB) via CON100.

The digital audio signals from IC801 are also fed to the Qx DAC upgrade connector CON902. If a Qx upgrade DAC is fitted to a Cyrus 8 DAC, a flexfoil cable is fitted between CON902 and the Qx DAC PCB to connect digital audio and power etc to the Qx DAC. The audio output of the Qx DAC is connected to CON100 on the main PCB. In this configuration, the audio output cable of the Digital Input module is connected to a spare connector CON905.

The power for the digital input PCB is supplied from a separate low voltage winding of the main power transformer. This is then rectified and sub regulated to a number of individual supplies, one 3.3V and two 5.0V. The rectified and unregulated supply is also passed directly to the main analogue amplifier PCB to provide power for the LCD backlight. The $\pm 15V$ power supplies for the analogue post DAC filter are provided from the main analogue amplifier PCB.

When the amplifier is set to standby the power to the whole digital input PCB is removed.

If a digital input is not selected for listening on the main amplifier or in Zone 2, the digital PCB will be held in reset to eliminate digital noise interference coupling to the main analogue inputs.

TECHNICAL DESCRIPTION

Volume control

The output signal from the input selector buffer (IC103) is coupled to the input of the digitally controlled volume IC (IC100). The output of the volume control IC is then fed to the preamplifier output and the power amplifiers.

Power amplifier stage

The power amplifier is a discrete voltage feedback design. RV201 allows adjustment of the output transistor bias current. T208 and T210 are the driver transistors. T206, T208 and T210 are bolted together to ensure good thermal coupling. T209 and T211 are the output transistors.

DC offset at the output of the amplifier may be set under conditions of no signal by adjusting RV203. Once set, DC working conditions are stabilised within the power amplifier by a DC servo (IC200), measuring the DC offset at the amplifier output and adjusting the bias voltage applied to T202B to compensate.

Power amplifier standby control is achieved via the CCS point. With this line, the microcontroller can switch the power amplifiers on or off via the level shifting and buffer circuit on the 'Charge Pump' schematic sheet.

Headphones

The drive for the headphones comes from a dedicated power amplifier IC901. The headphone amplifier is muted by the microcontroller when the power amplifiers are on and activated when the power amplifiers are off. The PHONES_IN signal enables the microcontroller to detect when a 3.5mm jack plug is inserted in the headphone socket.

Power supply

The front panel control circuit (with the exception of the display backlight) is powered from a small power transformer mounted on the main PCB. When exiting standby, the control system switches relay RL401, applying mains power to the main power transformer. This enables the control system, including microcontroller, to consume very little power, particularly when set to Standby.

Power for the display backlight and the digital input PCB is provided separately from a low voltage winding of the main power transformer.

The power supplies for the main amplifier ($\pm VCC$) are $\pm 42V$ (Cyrus 8 DAC) or $\pm 39V$ (Cyrus 6 DAC). These are protected by fast blow fuses FS401 and FS402 on the main PCB. In addition a regulated $\pm 42V$ is derived from a charge pump circuit and supplies the low current section of the power amplifiers. A regulated power supply of $\pm 15V$ is derived from the power supply for the main amplifier via regulators VR402 and VR403. The $\pm 15V$ supplies are used for the input selector, buffers and parts of the protection circuits. $\pm 5V$ is derived from the $\pm 15V$ supplies for the volume control IC100.

TECHNICAL DESCRIPTION

The protection circuits

Over-current protection is achieved by detecting the voltage across the dual emitter resistor R219. When a high level of current is detected T304 will turn on, switching T307 on etc. The output signal from this detector is then sent to the microcontroller.

If the DC conditions of the amplifier drift beyond acceptable limits, this is detected by IC200 and associated circuitry and protection will be activated.

Thermal protection is achieved by the microcontroller detecting a high temperature reading from the thermal sensor.

Power supply failure is detected by IC402 arranged as a window comparator. The window range is set between 19V and 60V, as the amplifier will work between these voltages. If the supply voltage is outside that range a power supply error signal is sent to the control microprocessor.

Mains disconnection is detected by the control microprocessor to prevent switch off noise.

The control system

The system microcontroller and the display are housed on a PCB attached to the back of the front panel assembly. The inputs to the microcontroller read when the keys are pressed, a remote control or MC-BUS command is received and also monitor the working status of the amplifier via fault detection lines. The microcontroller is then configured to update the display and set the volume, input and other sections within the amplifier.

The front panel control system PCB is connected to the main PCB via a single 25 way flexible cable. A second 13 way flexible cable connects directly from the front panel PCB to the digital PCB. Note that this flexible cable is inverted compared to the 25 way cable. When correctly installed, the writing will be visible on the 13 way cable, and not visible on the 25 way cable.

The front panel control PCB changed during the course of manufacturing these amplifiers. The second-generation PCB includes a push function on the rotary encoder, whereas the first-generation PCB does not. More information about the differences between the two versions is shown on the next page.

FRONT PANEL CONTROL PCB

The front panel control PCB changed during the life of the amplifiers.

The two PCB versions are easy to identify without dismantling the amplifier. The rotary control of the later version display PCB includes a push function, the earlier control PCB does not. Operation of the amplifier changed slightly with the introduction of the push function.

In the event that a front panel control PCB requires replacement, the replacement PCB supplied will be the same type as the original. When ordering a replacement PCB, always quote the serial number of the amplifier and state whether the rotary control has a push function.

NOTE: The two types of control PCB are not directly interchangeable. To replace an original 'non-push' type PCB with the later type 'push' PCB would require changes in other circuit areas and also updated user instructions.

The amplifier operational software is located on the front panel control PCB.

Front panel control PCBs without push control

Replacement PCBs are supplied 'clean' of software so when replacing this type it will always be necessary to program the PCB via the amplifier programming connector.

Front panel control PCBs with push control

Replacement PCBs are supplied pre-programmed so can be fitted without re-programming via the amplifier.

Refer to page 20 for more information about programming the amplifiers.

FAULT FINDING

The amplifiers are complex, microcontrolled products using small-scale SMD technology. Do not attempt any fault-finding or repair on one of these products unless you are a competent audio engineer with the correct SMD repair tools and trained to fault-find on this equipment.

This fault-finding guide is not exhaustive, but should help a competent engineer trace faults within the amplifier. If you require more technical help than this guide, contact the Cyrus Service Department.

CAUTION

The high-efficiency heat-transfer insulation pads fitted between the power amplifier output transistors and the chassis of the amplifiers are designed to soften, melt and bond to the transistor and heatsink when the amplifier first heats up. This is to enable the pads to fill any pits in the surface of the heatsink and provide an excellent thermal bond between the transistor and heatsink. For this reason any pad material must ALWAYS be completely scraped from the heatsink and the pads replaced if the seal is broken between the transistor and heatsink, as they will not re-bond. Conventional pads and grease are much less efficient heat conductors and are not an acceptable substitute for the correct pads. Use of alternative pads will risk future failure of the amplifier. Always obtain original pads from the Cyrus Service Department.

Layout of the amplifier

The amplifier is constructed with the analogue pre-amplifier, power amplifier and power supply laying on the main PCB fixed in the base of the chassis, and a smaller sub PCB located over this that includes the headphone amplifier, the power supply for the display backlight, the circuitry for the digital inputs and the D/A converter. The analogue audio output from the digital audio section of the sub PCB connects to the preamplifier on the main PCB through a cable.

The circuitry that controls the amplifier is located on the front panel PCB with the LCD display.

Dismantling the amplifier

Basic tests, alignment and fuse replacement are possible without removing the sub PCB. All alignment test points on the main PCB and the right channel adjustment presets are accessible around the border of the sub PCB. The left channel adjustment presets can be reached through an access hole in the sub PCB.

For access to test or repair the preamplifier or power amplifier stages, the sub PCB must first be removed. With the sub PCB removed, the amplifier will continue to function as normal for test and repair, but without the display backlight or digital inputs.

The sub PCB cannot simply be unplugged from its main PCB connector without damage. To remove the sub PCB leaving the main PCB in the chassis, remove the screws securing the rear panel to the sub PCB and the two along the top edge fixing it to the chassis. Remove the nut securing the headphone socket (special tool required). Once the screws are removed, the rear panel can be tilted back slightly to allow clearance to remove the sub PCB from its connector.

CAUTION: When re-fitting the sub-PCB, take particular care to ensure that the connector pins are correctly aligned. Misalignment of the pins will cause considerable damage to the sub-PCB.

Initial precautions and first tests

Before connecting power to an amplifier that is suspected to be faulty, ensure that loudspeakers and loads are disconnected from the speaker sockets to avoid damaging them.

FAULT FINDING

A first test is to check the resistance between the speaker terminals. This should be approximately 14.2k Ω . If the value is significantly different, there may be an output stage fault of that channel. A complete check of the output stage transistors is recommended. Check also the DC fuses. If these are blown follow the same course of action.

If the output transistors are suspect, measure the resistance between base and emitter (the outside pins). This should be approximately 68 Ω - 70 Ω . If the measurement is low, the transistor may be blown and both transistors should be replaced in that channel.

With the loudspeakers disconnected, connect the mains power. The amplifier should switch on and set to standby (front panel LED is red). If the LED does not light the mains fuse may have blown or there may be a fault in the control system power supply. Disconnect the amplifier and check the mains fuse. If the mains fuse is OK, re-connect the mains and check the +5V power supply for the front panel control PCB at the regulator VR401 output. If this is absent, trace the control circuit power supply back through the regulator, D448 bridge rectifier and R421 fusible resistor to the PCB-mounted power transformer that supplies the power to the regulator.

If the amplifier has set to standby, switch it on now. The mains relay RL401 should click and power is then applied to the main power transformer. The display backlight will light and power will be applied to the circuits in the amplifier. If the display does not light, check FS901 on the sub-PCB. If the relay does not operate there may be a fault within the drive circuit T400 etc, or the relay itself. The relay can be tested by applying 12V to SK401 when the power is disconnected (a 6LR61 9V battery can be used for this test).

If the amplifier switches on, check the DC offset voltage at the speaker terminals. The DC offset measured should read within $\pm 50\text{mV}$. If the voltage is greater than this then first try to set the DC offset voltage (see page 18). If the voltage will not set within the band specified, the power amplifier may well be faulty.

If the DC offset is within limits, then it is safe to connect a dummy load or loudspeakers. At this point it is advisable to measure the power output and THD from the amplifier to establish if it will meet specification (front page of this service manual) and determine if there is a fault.

Power amplifier faults

DC rail fuses. If the DC offset cannot be adjusted to spec or if a power amplifier stage is not functioning correctly, then disconnect the power and check the DC rail fuses on the main PCB. Replace these if necessary. If they blow again, there is probably a semiconductor fault in the power amplifier or power supply. NOTE:- If the standby light flashes red when the amplifier is switched on this indicates that a DC fuse may be blown.

Power supply voltage check. If the DC fuses are OK, then check initially all the voltages in the power supply of the amplifier, including the regulated power supply $\pm 42\text{V}$. If the regulated supply needs repair, then check against the schematic to find failed components and replace them. If the voltages check OK then there is probably a semiconductor fault in the left or right power amplifier.

Semiconductor faults. There is no exact fault-finding procedure for the power amplifier circuits, however it is recommended that a DVM set to 'diode test' should be used to thoroughly check each semiconductor in the power amplifier stage, also set the DVM to ohms and check all low value resistors such as R214-219 (left channel). Remove any suspect transistors and re-check them out of circuit. Replace as necessary with the correct original components supplied by the Cyrus Service Department.

FAULT FINDING

Re-testing the amplifier after repair. After repairing the amplifier, connect a DVM to monitor the quiescent current in the repaired channel. As you switch on from Standby, watch the DVM reading which should read just a few mV maximum. A high or rapidly climbing quiescent reading will probably indicate that a fault still exists within the power amplifier stage. In this case the amplifier should be switched off immediately to avoid further damage. If the quiescent remains low, then proceed to set the quiescent current accurately, referring to the correct section in this service manual.

If the quiescent current sets correctly, continue to check and set the DC offset voltage at the speaker terminals.

If both quiescent current and DC offset settings are stable at the correct values, proceed to connect speakers or dummy loads and check the function of the amplifier with a signal.

Preamplifier faults

Power supplies. Before commencing any fault tracing it is advisable to refer to the preamplifier schematic sheet and check the power supplies to each of the preamplifier ICs. In the event of a power supply failure, trace the power supplies to the preamplifier using the schematics. Note that power to the preamplifier regulators is routed via the PSX-R switching circuit T401/T402/T405/T406 when a PSX-R is not connected.

No signal. If the power supplies check out OK, then pre-amplifier signal faults are best found by supplying a sine-wave signal to the amplifier inputs and tracing this through the pre-amplifier stage input selector and volume ICs to the power amplifier, and replacing any components where the signal may be lost. The Zone 2 output can help trace signal faults. If the test signal can be seen at the Zone 2 output, but not at the Pre-amp output, then the volume control IC100 or input selector IC101 may be faulty. If there is no signal at the Zone 2 output, then the Zone 2 selector IC102 may be faulty.

Control system faults

If the front panel does not power up and set to standby when power is applied, then test the control system power supply as described in the 'Initial precautions and first tests' section. If the front panel initialises and sets to standby, but there are problems with any element of the control system the front panel control PCB will require replacement.

If one of the control keys is not operating correctly, then check that the switch operates mechanically and that it is not sticking in the technical moulding.

Digital audio faults

If a fault is suspected with a digital input sub PCB, some initial diagnostic work is worthwhile before removing the PCB as this cannot be powered for tests once it is removed from the amplifier.

Connect a digital input to one of the electrical or optical inputs of the amplifier. Select this input and check if the sample rate is correctly indicated on the display. If the sample rate reads OK, this suggests that the digital input IC (IC701) is working correctly.

Check the other digital inputs in the same way. The USB input may be checked by connecting a computer as a source with an audio signal playing. If all digital inputs are working, but USB is not, then the USB decoder IC601 or one of the associated components may be faulty.

If the input selector IC is working for all inputs, then check both left and right channels at the audio output of the amplifier using one of the digital inputs as a source. If one or both of the

FAULT FINDING

audio channels is not working, there may be a fault with the DAC (IC801), filter IC (IC802) or one of the components associated with these.

If a fault is found from these tests, the next step recommended is to check the power supplies to the plug-in daughter PCB. Remove the PCB for these tests, then switch on the amplifier and check that the correct voltages are supplied at the PCB connector from the main PCB.

If the voltages measure correctly, then the fault must be on the sub PCB.

USE WITH A PSX-R

Use with a PSX-R

When a PSX-R power supply is connected to a Cyrus 8 DAC, the presence of power as the PSX-R is switched from standby automatically disconnects the feed from the internal power supply to the preamplifier regulators (via switch transistors T406/T402). The power from the PSX-R is then fed to the preamplifier regulators via D451/D454.

No modification is necessary to the amplifier for use with a PSX-R, it may be connected without any changes to the amplifier.

The connections between the amplifier and PSX-R function as follows-

Pin 1 (Standby)

This is an output from the amplifier to send a standby control message (logic 1, +5V) to the PSX-R, enabling the regulated power supplies of the PSX-R. Note that this pin will not change state if the amplifier detects a fault (See pin 5).

Pin 2 (Positive supply)

In Cyrus 8 DAC amplifiers, this pin delivers +18V from the PSX-R to the amplifier, switched by the Standby control system.

Pin 3 (GND)

This pin is the system ground return between the amplifier and PSX-R.

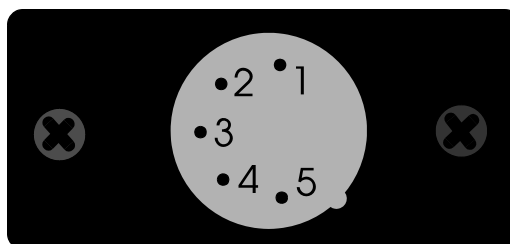
Pin 4 (Negative supply)

In Cyrus 8 DAC amplifiers, this pin delivers -18V from the PSX-R to the amplifier, switched by the Standby control system.

Pin 5 (PSX-R detect)

This pin is an input to the amplifier to detect the presence of a working PSX-R. The pin also sets the working mode of the PSX-R. T408 and associated components act on the line to set a reference voltage that switches the PSX-R to variable mode, set for 18V supply.

This diagram shows the pin numbers of the power supply input connector on the amplifier. View is of the connector pins from the rear of the amplifier



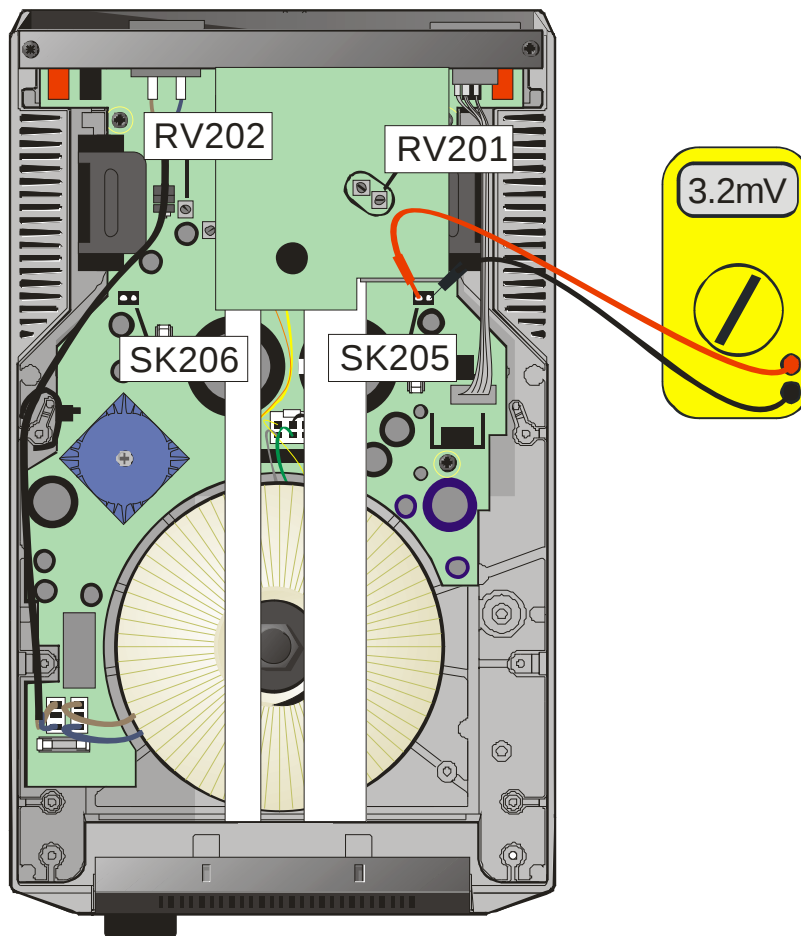
QUIESCENT CURRENT SETTING

Quiescent current setting (no signal condition)

Quiescent current setting should always be set correctly after repair of the power amplifier. If incorrectly set, the amplifier sonic and technical performance will deteriorate, and if set too high, there is a possible risk of the amplifier overheating.

The following procedure should be followed exactly to set the quiescent current to the correct value. If the quiescent current will not set correctly, this may indicate a power amplifier fault.

- Switch off the power to the amplifier.
- Disconnect all loudspeakers or dummy loads.
- Connect a DVM set to read mV to SK205.
- Switch on the power to the amplifier, and bring it out of standby. If a mains voltage adjuster (variac) is available, use it to set the mains voltage precisely.
- Adjust the quiescent setting preset RV201 so that the meter reads 8mV
- Proceed to connect the DVM to SK206. Adjust the quiescent setting preset RV202 so that the meter reads 8mV.
- Leave the amplifier to stabilise for fifteen minutes and repeat the adjustments for both channels, taking the setting to $3.2\text{mV} \pm 0.25\text{mV}$.
- Check periodically and adjust if necessary to $3.2\text{mV} \pm 0.25\text{mV}$ until settled. Also ensure that the nominal mains voltage has not drifted.



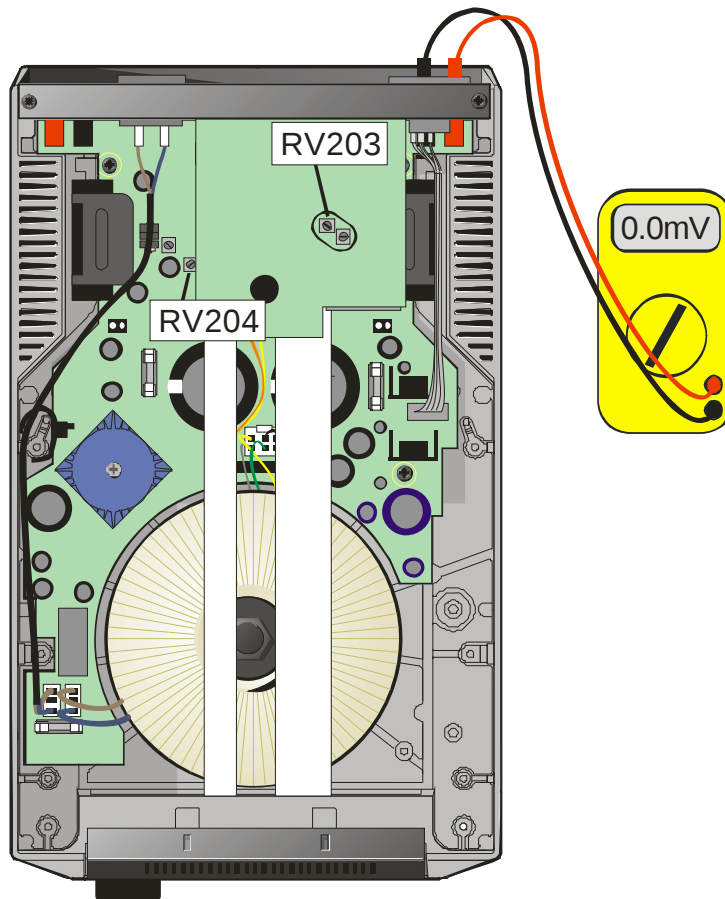
DC OFFSET ADJUSTMENT

DC offset adjustment (no signal condition)

The DC offset adjustment sets the DC voltage at the speaker output terminals. DC offset should always be checked as a matter of routine when an amplifier is returned for repair, whether the power amplifier section has required repair or not.

The following procedure should be followed exactly to set the DC offset voltage to the correct value. If the DC offset voltage will not set correctly, this may indicate a power amplifier fault.

- Switch off the power to the amplifier.
- Disconnect all loudspeakers or dummy loads.
- Connect a DVM set to read mV to the left loudspeaker terminals (a short cable terminated with Cyrus speaker connectors is recommended to make certain contact with the terminals).
- Switch on the power to the amplifier, and bring it out of standby. Set the volume level to -15dB.
- Leave the amplifier to settle for 5 minutes.
- Check the voltage reading on the DVM. A voltage within the range $0V \pm 50mV$ is acceptable and will not require any adjustment. If the voltage is outside of these limits, adjust RV203 to set the left channel offset within the range $0V \pm 50mV$.
- Connect the DVM to the right channel.
- Repeat the voltage check to the same limits and adjust RV204 to correct the right channel offset if necessary.
- Leave the amplifier to settle for 15 minutes and re-check the DC offset voltages.



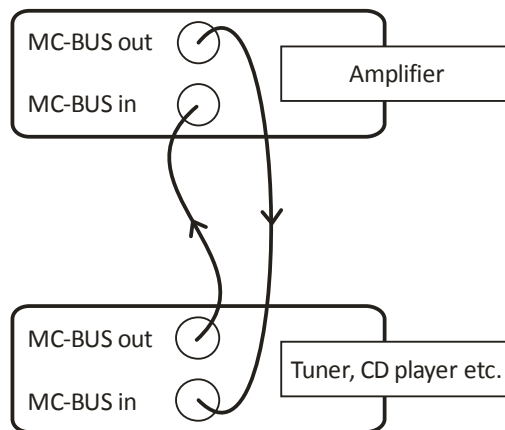
MC-BUS OPERATION

MC-BUS

MC-BUS is a system which provides communication between the control systems of a number of Cyrus products. The communication takes the form of a serial data stream which is sent from a 'master' product and received and repeated by 'slave' products. The data is thus passed from one product to another around a loop. The master product should then receive the message back which confirms that loop connections have been correctly made. Cyrus amplifiers are 'master' products and send commands following certain key sequences. Products such as CD players and tuners are 'slaves' and only listen to MC-BUS for commands which may be appropriate.

MC-BUS system test

The MC-BUS system can be tested by substituting the amplifier into a known working Cyrus system with a CD player or tuner. Note that MC-BUS must be connected as a closed loop. It is also important to connect the audio signal cables between components to provide an adequate ground return path for the MC-BUS signals. Switch on the power to the system and set all components to Standby. Selecting an input on the amplifier will now activate both the amplifier and the selected device (tuner or CD as connected). When the amplifier is set to Standby, all other components connected to the MC-BUS loop will also set to Standby.



FLASH SOFTWARE

Flash Software Overview

The amplifiers feature upgradeable software for the control system. The front panel control PCB includes a microcontroller with internal memory that includes the software.

The microcontroller is labelled during the manufacturing process to show which software version is installed. If the software version is revised at some point this indication should be clearly deleted with a cross marked on the device label. The most reliable method to check the software version (without dismantling the amplifier) is to read it from the display as follows -

1. Connect power to the unit and set to Standby (power light red).
2. Press and hold the Standby key.
3. The software version and release date will be shown on the display.

Re-programming

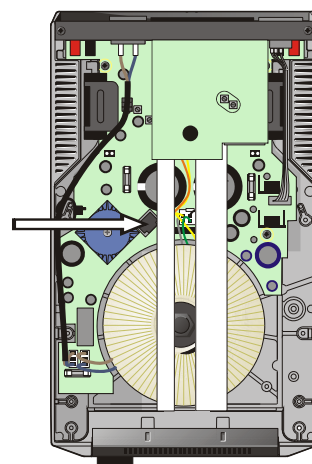
NOTE: Product software must never be replaced with an earlier version than already installed.

If it becomes necessary to install a later version of software, first check which version of the rotary control is fitted. The controls on later amplifiers have a push function, early amplifiers do not.

Reprogramming amplifiers without push rotary control

Contact the Cyrus factory for availability of the Flash-Programming Interface box and software. This is supplied with full instructions to set the programming software up on a PC and load the software for installation into the amplifier memory.

The programming connector on the main PCB is arrowed in the picture on the right.

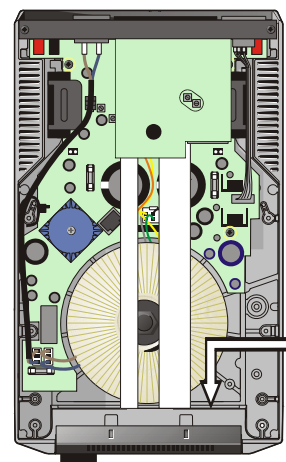


Reprogramming front panel control PCBs with push control

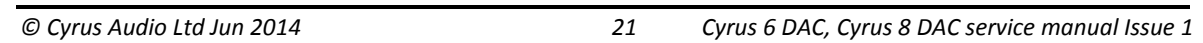
Front panel PCBs with push control are programmed by connecting a USB cable directly from the control PCB to a computer. The location of the programming connector on the control PCB is arrowed in the picture on the right.

CAUTION: Ensure you have a new firmware file to hand before starting the process. Do not disconnect the cable until the new software is installed.

1. Disconnect the mains from the product.
2. Connect a mini-USB cable to a free USB port on a computer.
3. Whilst pushing the rotary control in on the front panel, connect the mini-USB cable to the socket on the back of the display.
4. A new window will pop up on the PC which will show the current firmware.bin file.
5. Delete the existing firmware.bin file.
6. Copy the new firmware.bin file supplied by Cyrus to this folder.
7. Once the file has been copied, remove the USB cable.
8. Power up and check the new software version as described above.



CHASSIS PARTS LIST

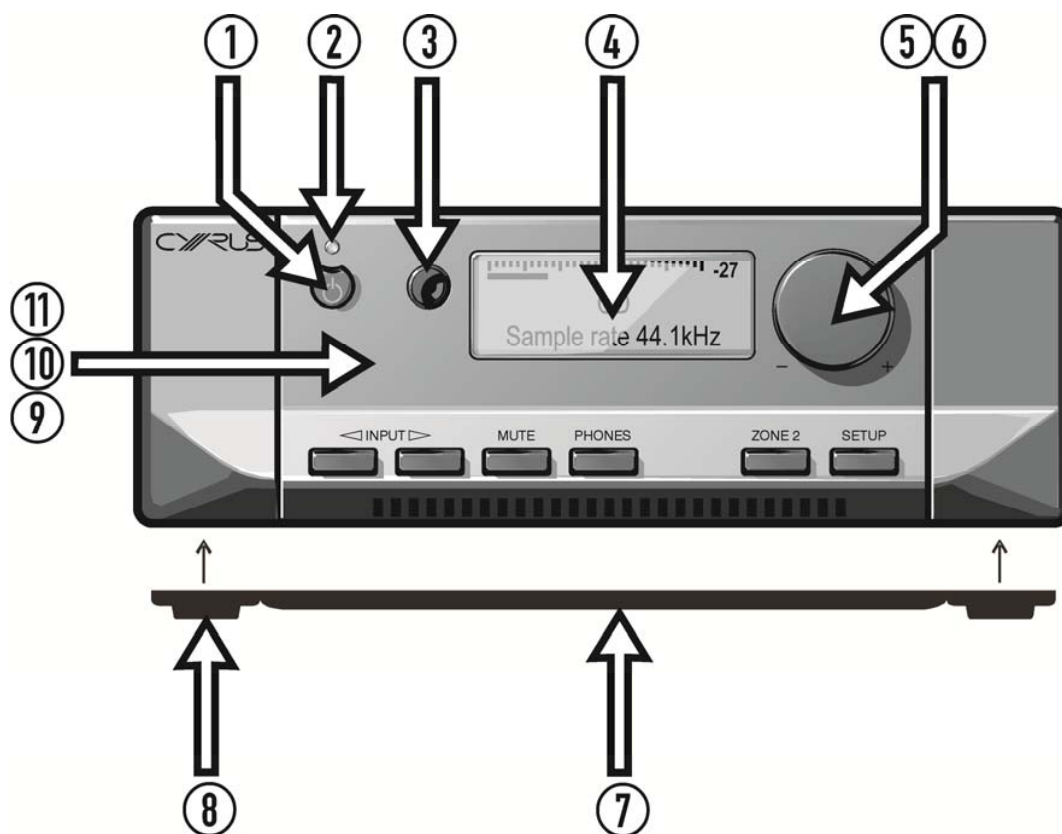


CHASSIS PARTS LIST

Ref	Part Number	Description	Model
1	AM-MTERM/	AC inlet	
2	AM-BFOOT/	Rubber protector	
3	See #19, PCB ass'y	Sub PCB	
4	AM-PLG5W/150 AM-BPLUG/B	PSX-R cable assembly PSX-R blanking grommet	8 DAC only 6 DAC only
5	AM-SILPD/625	Heatsink insulator pad	
6	AM-HCLMP/	Heatsink clamp	
7	See PCB parts list	DC fuse	
8	D1-H6238/B	Clip on regulator heatsink	
9	AM-CB25W/300	25 way flexfoil cable (main PCB)	
10	AM-M1240/B PS-M1245/B	Transformer bolt Transformer bolt	6 DAC only 8 DAC only
11	AM-M12WA/B	Star washer for transformer bolt	
12	AM-COVER/BR AM-COVER/S1	Chassis (brushed black) Chassis (silver)	Brushed black Quartz silver
13	See separate parts list	Front panel assembly (black) Front panel assembly (silver)	Brushed black Quartz silver
14	AM-INSUL/XP	Chassis insulator	
15	AM-T0.8A/ PS-T2.0A/ AM-T1.25/AUL AM-T4.0A/	T800mA AC mains fuse 230V T2AL AC mains fuse 230V T1.25AL AC mains fuse 115V T4AL AC mains fuse 115V	6 DAC only 8 DAC only 6 DAC only 8 DAC only
16	AM-CB13W/300	13 way flexfoil cable (sub PCB)	
17	AM-TX230/5M2 AM-TX230/8M2 AM-TX115/5M2 AM-TX115/8M2	Power transformer 230V Power transformer 230V Power transformer 115V Power transformer 115V	6 DAC only 8 DAC only 6 DAC only 8 DAC only
18	AM-TXWAS/95	Neoprene insulator	
19	AM-MBSTD/DXP*	PCB assembly including main and sub PCBs.	6 DAC, 8 DAC
20	AM-CBPOW/280	Power inlet cable	
21	AM-BACKP/8XP	Rear panel	

*When replacing these PCBs ensure that for a 8 DAC amplifier R520 is not fitted, for a 6 DAC a zero ohm link is fitted.

FRONT PANEL PARTS LIST



Front Panel parts (all models)

Ref	Part Number	Description
1	AM-POWCP/	Standby knob trim
2	AM-PLENS/02	Power lens
3	AM-LENSM/02	Remote eye lens
4	AM-DISPW/	Display window
5	AM-RKNOB/B	Volume control knob plastic insert
6	AM-CKNOB/ AM-CKNOB/S	Volume control knob black Volume control knob silver
7	AM-BPPLT/V0	Base plate
8	AM-BFOOT/	Rubber foot
9	AM-FACXP/B AM-FACXP/S	Front fascia black Front fascia silver
10	AM-FRONT/02 AM-FRONT/S	Technical moulding (black front panel) Technical moulding (silver front panel)
11	DX-MBDIS/ DS-MBDIS/	Display PCB including LCD without push control* Display PCB including LCD with push control*

* Refer to page 11 to identify the correct part number required.

MAIN PCB PART LIST

The part list is marked where components differ between models.

RESISTORS

R102	SMD0805	18R	MF 1/8W 1%	
R103	SMD0805	47k	MF 1/8W 1%	
R104	SMD0805	47k	MF 1/8W 1%	
R106	SMD0805	18R	MF 1/8W 1%	
R107	SMD0603	1k5	MF 1/16W 1%	
R108	SMD0603	1k5	MF 1/16W 1%	
R110	SMD0805	10M	MF 1/8W 1%	
R112	SMD0805	10M	MF 1/8W 1%	
R113	SMD0805	330k	MF 1/8W 1%	
R114	SMD0805	330k	MF 1/8W 1%	
R115	SMD0805	330k	MF 1/8W 1%	
R116	SMD0805	330k	MF 1/8W 1%	
R117	SMD0805	330k	MF 1/8W 1%	
R118	SMD0805	330k	MF 1/8W 1%	
R119	SMD0805	330k	MF 1/8W 1%	
R120	SMD0805	330k	MF 1/8W 1%	
R121	SMD0805	330k	MF 1/8W 1%	
R122	SMD0805	330k	MF 1/8W 1%	
R125	SMD0805	330R	MF 1/8W 1%	
R126	SMD0805	330R	MF 1/8W 1%	
R127	SMD0603	1k5	MF 1/16W 1%	
R131	SMD0805	680R	MF 1/8W 1%	
R132	SMD0805	82R	MF 1/8W 1%	
R133	SMD0603	1k5	MF 1/16W 1%	
R134	SMD0805	680R	MF 1/8W 1%	
R136	SMD0805	82R	MF 1/8W 1%	
R137	SMD0805	100k	MF 1/8W 1%	
R138	SMD0603	1k5	MF 1/16W 1%	
R144	SMD0603	3k9	MF 1/16W 1%	
R145	SMD0805	10k	MF 1/8W 1%	
R146	SMD0805	47k	MF 1/8W 1%	
R147	SMD0805	47k	MF 1/8W 1%	
R156	SMD0805	10k	MF 1/8W 1%	
R158	SMD0805	330k	MF 1/8W 1%	
R159	SMD0805	330k	MF 1/8W 1%	
R160	SMD0603	1k5	MF 1/16W 1%	
R164	SMD0805	18R	MF 1/8W 1%	
R165	SMD0805	18R	MF 1/8W 1%	
R180	SMD0805	10k	MF 1/8W 1%	
R181	SMD0805		Not fitted	
R182	SMD0805	0R	MF 1/8W 1%	
R183	SMD0805		Not fitted	
R184	SMD0805	0R	MF 1/8W 1%	
R185	SMD0805	100k	MF 1/8W 1%	
R186	SMD0805	100k	MF 1/8W 1%	
R187	SMD0805	1k	MF 1/8W 1%	
R188	SMD0603	1k5	MF 1/16W 1%	
R189	SMD0603	1k5	MF 1/16W 1%	
R190	SMD0603	1k5	MF 1/16W 1%	
R191	SMD0603	1k5	MF 1/16W 1%	

MAIN PCB PART LIST

R192	SMD0603	3k9	MF 1/16W 1%	
R193	SMD0805	0R	MF 1/8W 1%	
R201	SMD0805	750R	MF 1/8W 1%	
R202	SMD0805	220R	MF 1/8W 1%	
R203	SMD0805	10k	MF 1/8W 1%	
R205	SMD0805	100R	MF 1/8W 1%	
R206	SMD0805	100R	MF 1/8W 1%	
R207	SMD0805	100R	MF 1/8W 1%	
R208	SMD0805	100R	MF 1/8W 1%	
R209	SMD0805	330R	MF 1/8W 1%	
R211	SMD0805	1k	MF 1/8W 1%	
R212	SMD0805	18R	MF 1/8W 1%	
R213	SMD0805	100R	MF 1/8W 1%	
R214	SMD0805	100R	MF 1/8W 1%	
R215	SMD0805	100R	MF 1/8W 1%	
R216	SMD0805	68R	MF 1/8W 1%	
R217	SMD0805	68R	MF 1/8W 1%	
R219	RGC	0R1	MF7W 5%	Dual resistor
R222	SMD0805	4M7	MF 1/8W 1%	
R224	SMD0805	220R	MF 1/8W 1%	
R225	SMD0805	10k	MF 1/8W 1%	
R226	SMD0805	68k	MF 1/8W 1%	
R227	AXIAL0.4	39k	MF 1/4W 1%	
R229	SMD0805	220R	MF 1/8W 1%	
R230	SMD0805	10k	MF 1/8W 1%	
R231	SMD0805	10k	MF 1/8W 1%	
R232	SMD0805	100R	MF 1/8W 1%	
R233	SMD0805	100R	MF 1/8W 1%	
R234	SMD0805	100R	MF 1/8W 1%	
R235	SMD0805	100R	MF 1/8W 1%	
R236	SMD0805	330R	MF 1/8W 1%	
R237	SMD0805	27k	MF 1/8W 1%	
R238	SMD0805	1k	MF 1/8W 1%	
R239	SMD0805	18R	MF 1/8W 1%	
R240	SMD0805	100R	MF 1/8W 1%	
R241	SMD0805	100R	MF 1/8W 1%	
R242	SMD0805	100R	MF 1/8W 1%	
R243	SMD0805	68R	MF 1/8W 1%	
R244	SMD0805	68R	MF 1/8W 1%	
R245	RGC	0R1	MF7W 5%	Dual resistor
R247	SMD0805	27k	MF 1/8W 1%	
R248	SMD0805	100k	MF 1/8W 1%	
R250	SMD0805	220R	MF 1/8W 1%	
R251	SMD0805	1k	MF 1/8W 1%	
R252	AXIAL0.4	39k	MF 1/4W 1%	
R253	SMD0805	10k	MF 1/8W 1%	
R254	SMD0805	10k	MF 1/8W 1%	
R256	SMD0805	750R	MF 1/8W 1%	
R257	SMD0805	1k	MF 1/8W 1%	
R258	AXIAL0.4	3R9	MF 1/2W 1%	
R259	AXIAL0.4	3R9	MF 1/2W 1%	
R260	SMD0603	8k2	MF 1/16W 1%	
R261	SMD0603	8k2	MF 1/16W 1%	
R262	SMD0603		Not fitted	

MAIN PCB PART LIST

R263	SMD0603		Not fitted	
R264	SMD0805	1k	MF 1/8W 1%	
R265	SMD0805	1k	MF 1/8W 1%	
R266	SMD0805	845R	MF 1/8W 1%	
R267	SMD0805	845R	MF 1/8W 1%	
R268	SMD0805	10k	MF 1/8W 1%	
R270	SMD0805	10k	MF 1/8W 1%	
R271	SMD0805	100k	MF 1/8W 1%	
R272	SMD0603	4k7	MF 1/16W 1%	
R273	SMD0805	22k	MF 1/8W 1%	
R274	SMD0805	22k	MF 1/8W 1%	
R275	SMD0805	1k	MF 1/8W 1%	
R279	SMD0805	100k	MF 1/8W 1%	
R280	SMD0805	100k	MF 1/8W 1%	
R281	SMD0805	4M7	MF 1/8W 1%	
R282	SMD0805	220R	MF 1/8W 1%	
R283	SMD0805	68k	MF 1/8W 1%	
R284	SMD0805	10k	MF 1/8W 1%	
R286	SMD0805	10k	MF 1/8W 1%	
R287	SMD0805	220R	MF 1/8W 1%	
R288	SMD0805	1k	MF 1/8W 1%	
R289	SMD0805	100k	MF 1/8W 1%	
R290	SMD0805	100k	MF 1/8W 1%	
R291	SMD0603	4k7	MF 1/16W 1%	
R292	SMD0805	1k	MF 1/8W 1%	
R293	SMD0805	1k	MF 1/8W 1%	
R294	SMD0603	1M	MF 1/8W 1%	
R295	SMD0603	1M	MF 1/8W 1%	
R296	SMD0805		Not fitted	
R297	SMD0805		Not fitted	
R298	SMD0805	22k	MF 1/8W 1%	
R299	SMD0805	22k	MF 1/8W 1%	
R300	SMD1206	4k7	MF 1/8W 1%	
R301	SMD1206	4k7	MF 1/8W 1%	
R302	SMD1206	4k7	MF 1/8W 1%	
R303	SMD1206	4k7	MF 1/8W 1%	
R304	SMD0805	330R	MF 1/8W 1%	
R305	SMD0805	330R	MF 1/8W 1%	
R306	SMD0805	100k	MF 1/8W 1%	
R307	AXIAL0.4	1R	NFRH 1/2W 5%	
R308	AXIAL0.4	1R	NFRH 1/2W 5%	
R310	AXIAL0.4		Not fitted	
R311	AXIAL0.4		Not fitted	
R319	SMD0805	47k	MF 1/8W 1%	
R320	SMD0805	47k	MF 1/8W 1%	
R330	SMD0805	100R	MF 1/8W 1%	
R331	SMD0805	100R	MF 1/8W 1%	
R332	SMD0805	100R	MF 1/8W 1%	
R333	SMD0805	100R	MF 1/8W 1%	
R334	SMD0805	100R	MF 1/8W 1%	
R335	SMD0805	100R	MF 1/8W 1%	
R336	SMD0805	100R	MF 1/8W 1%	
R337	SMD0805	100R	MF 1/8W 1%	
R338	SMD0805	22k	MF 1/8W 1%	

MAIN PCB PART LIST

R339	SMD0805	22k	MF 1/8W 1%	
R340	SMD0805	22k	MF 1/8W 1%	
R341	SMD0805	22k	MF 1/8W 1%	
R342	SMD0805	10k	MF 1/8W 1%	
R343	SMD0805	1k	MF 1/8W 1%	
R344	SMD0805	10k	MF 1/8W 1%	
R345	SMD0805	1k	MF 1/8W 1%	
R346	SMD0805	10k	MF 1/8W 1%	
R347	SMD0805	10k	MF 1/8W 1%	
R348	SMD0805	220R	MF 1/8W 1%	
R349	SMD0805	22k	MF 1/8W 1%	
R350	SMD0805	100k	MF 1/8W 1%	
R351	SMD0805	100R	MF 1/8W 1%	
R352	SMD0805	47R	MF 1/8W 1%	
R353	SMD0805	10k	MF 1/8W 1%	
R354	SMD0603	2k2	MF 1/16W 1%	
R355	SMD0805	100k	MF 1/8W 1%	
R356	SMD0805	2k7	MF 1/8W 1%	
R401	SMD0805	33k	MF 1/8W 1%	
R402	SMD0805	750R	MF 1/8W 1%	
R403	SMD0603	15k	MF 1/16W 1%	
R404	SMD0805	33k	MF 1/8W 1%	
R405	SMD0805	22k	MF 1/8W 1%	
R408	SMD0603	1M	MF 1/16W 1%	
R409	SMD0805	22k	MF 1/8W 1%	
R410	AXIAL0.4		Not fitted for 230V operation	Fit 0R link for 115V operation.
R411	AXIAL0.4		Not fitted for 230V operation	Fit 0R link for 115V operation.
R412	AXIAL0.4	0R	Fit only for 230V operation	Remove for 115V operation
R417	SMD0805	22k	MF 1/8W 1%	
R418	SMD0805	22k	MF 1/8W 1%	
R419	SMD0805	1k	MF 1/8W 1%	
R420	SMD0805	1k	MF 1/8W 1%	
R421	AXIAL0.4	1R	NFRH 1/2W 5%	
R425	SMD0805		Not fitted	
R437	SMD0805	47k	MF 1/8W 1%	
R439	SMD0805	10k	MF 1/8W 1%	
R440	SMD0805	10k	MF 1/8W 1%	
R441	SMD0805	22k	MF 1/8W 1%	
R442	SMD0805	10k	MF 1/8W 1%	
R443	SMD0805	5k1	MF 1/8W 1%	
R444	SMD0805	5k1	MF 1/8W 1%	
R445	SMD0805	470R	MF 1/8W 1%	
R446	SMD0805	470R	MF 1/8W 1%	
R448	SMD0805	470k	MF 1/8W 1%	
R449	SMD0603	1M	MF 1/16W 1%	
R450	SMD0805	470k	MF 1/8W 1%	
R451	SMD0805	27k	MF 1/8W 1%	
R452	SMD0805	130k	MF 1/8W 1%	
R453	SMD0805	27k	MF 1/8W 1%	22k may be fitted for earlier amplifier PCBs. If so, this should be changed to 27k.
R454	SMD0805	160k	MF 1/8W 1%	
R455	SMD0805	10k	MF 1/8W 1%	

MAIN PCB PART LIST

R470	SMD0603	3k9	MF 1/16W 1%	
R471	SMD0805	1k	MF 1/8W 1%	
R474	SMD0603	3k0	MF 1/16W 1%	
R475	SMD0805	1k	MF 1/8W 1%	
R476	SMD0805	2k7	MF 1/8W 1%	
R501	SMD0805	47k	MF 1/8W 1%	
R502	SMD0805	47k	MF 1/8W 1%	
R503	SMD0805	47k	MF 1/8W 1%	
R504	SMD0805	1k	MF 1/8W 1%	
R505	SMD0805	1k	MF 1/8W 1%	
R509	SMD0805	1k	MF 1/8W 1%	
R510	SMD0805	100k	MF 1/8W 1%	
R515	SMD0805	47k	MF 1/8W 1%	
R516	SMD0805	47k	MF 1/8W 1%	
R517	SMD0805	47k	MF 1/8W 1%	
R518	SMD0805	47k	MF 1/8W 1%	
R519	SMD0805	47k	MF 1/8W 1%	
R520	SMD0805	0R	MF 1/8W 1%	Cyrus 6 variants
	SMD0805		Not fitted	Cyrus 8 variants

Key: MF = metal film. NFR = non-flammable resistor. MRS25 = axial metal film resistor
SMD-0805 = refers to surface mount device size profile 0805

PRESETS

RV201	100R	150mW 10%		
RV202	100R	150mW 10%		
RV203	100k	150mW 10%		
RV204	100k	150mW 10%		

CAPACITORS

C100	SMD0603	100nF	CP 50V 10%	X7R dielectric
C101	SMD0805	100pF	CP 100V 5%	NPO dielectric
C102	SMD0805	100pF	CP 100V 5%	NPO dielectric
C103	SMD0805	100pF	CP 100V 5%	NPO dielectric
C104	SMD0805	100pF	CP 100V 5%	NPO dielectric
C105	SMD0805	100pF	CP 100V 5%	NPO dielectric
C106	SMD0805	100pF	CP 100V 5%	NPO dielectric
C107	SMD0805	100pF	CP 100V 5%	NPO dielectric
C108	SMD0805	100pF	CP 100V 5%	NPO dielectric
C109	SMD0805	100pF	CP 100V 5%	NPO dielectric
C110	SMD0805	100pF	CP 100V 5%	NPO dielectric
C111	SMD0805	100pF	CP 100V 5%	NPO dielectric
C112	SMD0805	100pF	CP 100V 5%	NPO dielectric
C117	SMD0603	100nF	CP 50V 10%	X7R dielectric
C119	RAD0.2W	330pF	PP 63V 5%	FKP2
C120	CAPSMD5.0	47uF	16V EL 20%	EEEFK1C470UR
C121	CAPSMD5.0	47uF	16V EL 20%	EEEFK1C470UR
C122	RAD0.2W	330pF	PP 63V 5%	FKP2
C124	SMD0603	100nF	CP 50V 10%	X7R dielectric
C126	SMD0805	47pF	CP 50V 5%	NPO dielectric
C127	SMD0603	100nF	CP 50V 10%	X7R dielectric
C128	SMD0805	47pF	CP 50V 5%	NPO dielectric
C130	RAD0.2W	1uF	PE 63V 10%	MKS2
C131	RAD0.2W	1uF	PE 63V 10%	MKS2
C133	SMD0603	100nF	CP 50V 10%	X7R dielectric
C135	SMD0603	100nF	CP 50V 10%	X7R dielectric

MAIN PCB PART LIST

C136	SMD0603	100nF	CP 50V 10%	X7R dielectric
C141	SMD0603	100nF	CP 50V 10%	X7R dielectric
C144	SMD0805	100pF	CP 100V 5%	NPO dielectric
C145	SMD0805	100pF	CP 100V 5%	NPO dielectric
C148	SMD0603	100nF	CP 50V 10%	X7R dielectric
C150	SMD0603	100nF	CP 50V 10%	X7R dielectric
C151	SMD0603	100nF	CP 50V 10%	X7R dielectric
C160	SMD0603	100nF	CP 50V 10%	X7R dielectric
C161	SMD0603	100nF	CP 50V 10%	X7R dielectric
C172	RAD0.2W	1uF	PE 63V 10%	MKS2
C173	RAD0.2W	1uF	PE 63V 10%	MKS2
C174	RAD0.2W	1uF	PE 63V 10%	MKS2
C176	RAD0.2W	1uF	PE 63V 10%	MKS2
C178	SMD0805	10nF	CP 50V 10%	X7R dielectric
C180	SMD0603	100nF	CP 50V 10%	X7R dielectric
C181	SMD0603	100nF	CP 50V 10%	X7R dielectric
C182	SMD0603	100nF	CP 50V 10%	X7R dielectric
C183	SMD0603		Not fitted	
C184	SMD0603		Not fitted	
C185	SMD0603		Not fitted	
C186	SMD0603	1nF	CP 50V 5%	NPO dielectric
C187	SMD0603	1nF	CP 50V 5%	NPO dielectric
C188	SMD0603	1nF	CP 50V 5%	NPO dielectric
C189	SMD0603	1nF	CP 50V 5%	NPO dielectric
C190	SMD0603	1nF	CP 50V 5%	NPO dielectric
C200	SMD0603	100nF	CP 50V 10%	X7R dielectric
C201	SMD0603	150pF	CP 100V 5%	NPO dielectric
C202	SMD0805	100pF	CP 100V 5%	NPO dielectric
C203	SMD0805	100pF	CP 100V 5%	NPO dielectric
C204	SMD0603	100nF	CP 50V 10%	X7R dielectric
C205	SMD0603	100nF	CP 50V 10%	X7R dielectric
C206	SMD0603	100nF	CP 50V 10%	X7R dielectric
C208	SMD0603	150pF	CP 100V 5%	NPO dielectric
C209	SMD0805	100pF	CP 100V 5%	NPO dielectric
C210	SMD0805	100pF	CP 100V 5%	NPO dielectric
C220	RAD0.2	100nF	PE 100V 10%	MKT R.82
C221	RAD0.2	100nF	PE 100V 10%	MKT R.82
C222	RB.2/.3	100uF	EL 50V 20%	PX series 105 degC
C223	RB.2/.3	100uF	EL 50V 20%	PX series 105 degC
C224	RB.2/.3	100uF	EL 50V 20%	PX series 105 degC
C225	RB.2/.3	100uF	EL 50V 20%	PX series 105 degC
C226	SMD0805	12pF	CP 50V 5%	NPO dielectric
C227	SMD0805	12pF	CP 50V 5%	NPO dielectric
C230	RAD0.2	1nF	PE 100V 5%	MKT R.82
C231	RAD0.2	1nF	PE 100V 5%	MKT R.82
C240	SMD0603	100nF	CP 50V 10%	X7R dielectric
C241	SMD0603	100nF	CP 50V 10%	X7R dielectric
C242	SMD0603	100nF	CP 50V 10%	X7R dielectric
C243	SMD0603	100nF	CP 50V 10%	X7R dielectric
C260	SMD0603	100nF	CP 50V 10%	X7R dielectric
C261	SMD0603	100nF	CP 50V 10%	X7R dielectric
C270	SMD0603	100nF	CP 50V 10%	X7R dielectric
C271	SMD0603	100nF	CP 50V 10%	X7R dielectric
C272	SMD0603	100nF	CP 50V 10%	X7R dielectric
C273	SMD0603	100nF	CP 50V 10%	X7R dielectric
C274	SMD0805	1uF	CP 25V 10%	X7R dielectric
C275	SMD0805	1uF	CP 25V 10%	X7R dielectric
C280	RB.2/.3	100uF	BP 25V 20%	NK101M025F115T
C281	RB.2/.3	100uF	BP 25V 20%	NK101M025F115T
C301	RB.2/.3	47uF	EL 100V 20%	YXF series 105 degC
C302	RB.2/.3	47uF	EL 100V 20%	YXF series 105 degC
C304	RB.2/.5	47uF	EL 100V 20%	RJ4 series 105 degC

MAIN PCB PART LIST

C305	RB.2/.5	47uF	EL 100V 20%	RJ4 series 105 degC
C306	RB.2/.5	47uF	EL 100V 20%	RJ4 series 105 degC
C307	RB.2/.5	47uF	EL 100V 20%	RJ4 series 105 degC
C308	RB.3/.7	3300uF	EL 50V 20%	RJ4 series 105 degC
C309	RB.3/.7	3300uF	EL 50V 20%	RJ4 series 105 degC
C310	RB.2/.4	100uF	EL 100V 20%	ECA2AHG101B
C311	SMD0805	10nF	CP 50V 10%	X7R dielectric
C312	RB.2/.4	100uF	EL 100V 20%	ECA2AHG101B
C313	SMD0805	10nF	CP 50V 10%	X7R dielectric
C314	SMD0805	680pF	CP 50V 5%	NPO dielectric
C315	RB.2/.4	100uF	EL 50V 20%	PX series 105 degC
C316	RB.2/.2	22uF	EL 50V 20%	RJ4 series 105 degC
C400	CAPSMD5.0	47uF	16V EL 20%	EEEFK1C470UR
C401	RAD0.2	100nF	PE 100V 10%	MKT R.82
C402	RAD0.2	100nF	PE 100V 10%	MKT R.82
C403	RAD0.2	100nF	PE 100V 10%	MKT R.82
C404	RAD0.2	100nF	PE 100V 10%	MKT R.82
C405	CAPSMD5.0	33uF	25V EL 20%	EEEFKE330UAR
C406	AM	10000uF	71V 20%	AM SERIES 40X50mm
C407	AM	10000uF	71V 20%	AM SERIES 40X50mm
C408	SMD0603	100nF	CP 50V 10%	X7R dielectric
C409	SMD0603	100nF	CP 50V 10%	X7R dielectric
C410	RAD0.2	100nF	PE 100V 10%	MKT R.82
C411	CAPSMD5.0	47uF	16V EL 20%	EEEFK1C470UR
C414	SMD0805	100nF	CP 100V 10%	X7R dielectric
C415	RB.2/.4	1000uF	16V EL 20%	YXJ series 105degC
C416	RB.2/.3	220uF	EL 16V 20%	RJ4 series 105 degC
C417	CAPSMD5.0	47uF	16V EL 20%	EEEFK1C470UR
C420	RB.2/.3	220uF	EL 16V 20%	RJ4 series 105 degC
C424	SMD0805	220nF	CP 50V 10%	X7R dielectric
C428	SMD0805	220nF	CP 50V 10%	X7R dielectric
C429	SMD0805	470pF	CP 50V 5%	NPO dielectric
C430	SMD0603	100nF	CP 50V 10%	X7R dielectric
C431	SMD0603	100nF	CP 50V 10%	X7R dielectric
C434	SMD0603	100nF	CP 50V 10%	X7R dielectric
C440	SMD0805	100nF	CP 100V 10%	X7R dielectric
C450	RB.2/.5	2200uF	EL 35V 20%	FC Series (EEUFC1V222) 105degC
C451	RB.2/.5	2200uF	EL 35V 20%	FC Series (EEUFC1V222) 105degC
C460	RB.2/.5		Not fitted	
C461	RB.2/.5		Not fitted	
C462	SMD0603	100nF	CP 50V 10%	X7R dielectric
C501	SMD0805	10nF	CP 50V 10%	X7R dielectric
C504	SMD0603	100nF	CP 50V 10%	X7R dielectric

Key: CP = ceramic plate. EL = electrolytic. PE = polyester. PP = polypropylene. BP = bi-polar.

CAPSMD6.3 refers to surface mount device with 6.3mm pitch pads

SMD-0805 refers to surface mount device size code 0805

DIODES

D107	SOT23	BAV99	300mA Signal diode	
D108	SOT23	BAV99	300mA Signal diode	
D109	SOT23	BAV99	300mA Signal diode	
D110	SOT23	BAV99	300mA Signal diode	
D111	SOT23	BAV99	300mA Signal diode	
D112	SOT23	BAV99	300mA Signal diode	
D113	SOT23	BAV99	300mA Signal diode	
D114	SOT23	BAV99	300mA Signal diode	
D115	SOT23	BAV99	300mA Signal diode	

MAIN PCB PART LIST

D116	SOT23	BAV99	300mA Signal diode	
D117	SOT23	BAV99	300mA Signal diode	
D118	SOT23	BAV99	300mA Signal diode	
D130	SOT23	BAS19	300mA Signal diode	
D131	SOT23	BAS19	300mA Signal diode	
D150	SOT23	BAS19	300mA Signal diode	
D151	SOT23	BZX84-C5V1	300mA 5V1 Zener diode	
D152	SOT23	BAV99	300mA Signal diode	
D202	SOT23	BAS19	300mA Signal diode	
D204	SOT23	BAS19	300mA Signal diode	
D205	SOT23	BZX84-C12	300mA 12V Zener diode	
D206		1SR154-400	1A Rectifier Diode	
D207		1SR154-400	1A Rectifier Diode	
D208		1SR154-400	1A Rectifier Diode	
D209		1SR154-400	1A Rectifier Diode	
D212	SOT23	BZX84-C12	300mA 12V Zener diode	
D213	SOT23		Not fitted	
D215	SOT23	BZX84-C9V1	300mA 9V1 Zener diode	
D216	SOT23	BZX84-C5V1	300mA 5V1 Zener diode	
D217	SOT23	BZX84-C5V1	300mA 5V1 Zener diode	
D218	SOT23	BAS19	300mA Signal diode	
D219	SOT23		Not fitted	
D221	SOT23	BZX84-C5V1	300mA 5V1 Zener diode	
D222	SOT23	BZX84-C5V1	300mA 5V1 Zener diode	
D224	SOT23	BAS19	300mA Signal diode	
D225	SOT23	BZX84-C9V1	300mA 9V1 Zener diode	
D226	SOT23	BZX84-C9V1	300mA 9V1 Zener diode	
D230	SOT23	BZX84-C9V1	300mA 9V1 Zener diode	
D303	SOT23	BAS19	300mA Signal diode	
D304	SOT23	BAS19	300mA Signal diode	
D306	SOT23	BZX84-C10	300mA 10V Zener diode	
D307	SOT23	BZX84-C10	300mA 10V Zener diode	
D308		1SR154-400	1A Rectifier Diode	
D309		1SR154-400	1A Rectifier Diode	
D310	SOT23	BZX84-C33	300mA 33V Zener diode	
D311	SOT23	BZX84-C33	300mA 33V Zener diode	
D312		1SR154-400	1A Rectifier Diode	
D313		1SR154-400	1A Rectifier Diode	
D314	SOT23	BAS19	300mA Signal diode	
D315	SOT23	BAS19	300mA Signal diode	
D316	SOT23	BZX84-C3V3	300mA 3V3 Zener diode	
D400		RS2004M	Diode bridge	
D401		1SR154-400	1A Rectifier Diode	
D402		1SR154-400	1A Rectifier Diode	
D403		1SR154-400	1A Rectifier Diode	
D404		1SR154-400	1A Rectifier Diode	
D405	SOT23	BAS19	300mA Signal diode	
D406	SOT23	BAS19	300mA Signal diode	
D407		1SR154-400	1A Rectifier Diode	
D408		1SR154-400	1A Rectifier Diode	
D413	SOT23	BAS19	300mA signal diode	
D416	SOT23	BAS19	300mA signal diode	
D431	SOT23	BAS19	300mA signal diode	
D448		DF04S	1A 400v SMD Bridge	

MAIN PCB PART LIST

D451		1SR154-400	1A Rectifier Diode	
D452		1SR154-400	1A Rectifier Diode	
D453		1SR154-400	1A Rectifier Diode	
D454		1SR154-400	1A Rectifier Diode	
D460	SOT23	BAV70	Dual signal Diode common cathode	
D470		DF04S	1A 400v SMD Bridge	
D471			Not fitted	
D472	SOT23	BAS19	300mA signal diode	
D501	SOT23	BAS19	300mA signal diode	
D502	SOT23	BAV99	300mA signal diode	
D503	SOT23	BAV99	300mA signal diode	

TRANSISTORS

T101	SOT23	2SC3326	NPN Signal Transistor	
T102	SOT23	2SC3326	NPN Signal Transistor	
T103	SOT23	2SC3326	NPN Signal Transistor	
T104	SOT23	2SC3326	NPN Signal Transistor	
T105	SOT23	BC860C	PNP Signal Transistor	
T106	SOT23	BC850C	NPN Signal Transistor	
T108	SOT23	2SC3326	NPN Signal Transistor	
T109	SOT23	2SC3326	NPN Signal Transistor	
T110	SOT23	2SC3326	NPN Signal Transistor	
T111	SOT23	2SC3326	NPN Signal Transistor	
T112	SOT23	2SC3326	NPN Signal Transistor	
T113	SOT23	2SC3326	NPN Signal Transistor	
T200	SC-74	IMT1A	PNP/PNP Dual Transistor	
T201	SC-74	IMT1A	PNP/PNP Dual Transistor	
T202	SC-74	IMT1A	PNP/PNP Dual Transistor	
T203	SC-74	IMX1	NPN/NPN Dual Transistor	
T204	SOT23	BC850C	NPN Signal Transistor	
T205	SOT-223	PZTA42T1	NPN HV Transistor SMT	
T206	TO-126	2SC3421-Y	NPN Power Transistor	
T207	SOT223	PZTA92T1	PNP HV Transistor SMT	
T208	TO-126	2SC3421-Y	NPN Power Transistor	
T209	TO-3P	2SA1386	PNP Power Transistor	
T210	TO-126	2SA1358-Y	PNP Power Transistor	
T211	TO-3P	2SC3519	NPN Power Transistor	
T213	SC-74	IMT1A	PNP/PNP Dual Transistor	
T214	SC-74	IMT1A	PNP/PNP Dual Transistor	
T215	SC-74	IMX1	NPN/NPN Dual Transistor	
T216	SOT23	BC850C	NPN Signal Transistor	
T217	SOT223	PZTA42T1	NPN HV Transistor SMT	
T218	TO-126	2SC3421-Y	NPN Power Transistor	
T219	SOT223	PZTA92T1	PNP HV Transistor SMT	
T220	TO-126	2SC3421-Y	NPN Power Transistor	
T221	TO-3P	2SA1386	PNP Power Transistor	
T222	TO-126	2SA1358-Y	PNP Power Transistor	
T223	TO-3P	2SC3519	NPN Power Transistor	
T225	SOT23	BC850C	NPN Signal Transistor	
T226	SOT23	BC850C	NPN Signal Transistor	
T227	SOT23	BC860C	PNP Signal Transistor	
T228	SOT23	BC860C	PNP Signal Transistor	

MAIN PCB PART LIST

T229	SC-74	IMT1A	PNP/PNP Dual Transistor	
T230	SOT23	BC860C	PNP Signal Transistor	
T235	SOT23	BC860C	PNP Signal Transistor	
T300	SOT23	BC846C	NPN Signal Transistor	
T301	SOT223	FZT758	PNP HV Transistor SMT	
T302	SOT23	BC856C	NPN Signal Transistor	
T303	SOT223	FZT658	NPN HV Transistor SMT	
T304	SOT23	FMMT593	PNP Signal Transistor	
T305	SOT23	FMMT593	PNP Signal Transistor	
T306	SOT23	BC860C	PNP Signal Transistor	
T307	SOT23	BC850C	NPN Signal Transistor	
T308	SC-74	IMZ1A	NPN/PNP Dual Transistor	
T309	SC-74	IMT1A	PNP/PNP Dual Transistor	
T310	SC-74	IMX1	NPN/NPN Dual Transistor	
T400	SC-74	IMX1	NPN/NPN Dual Transistor	
T401	SOT23	BC846C	NPN Signal Transistor	
T402	SOT223	2STN2540	PNP Current Driver Transistor	
T405	SOT23	BC856C	NPN Signal Transistor	
T406	SOT223	2STN1360	NPN Current Driver Transistor	
T408	SC-74	IMX1	NPN/NPN Dual Transistor	

INTEGRATED CIRCUITS

IC100	SOL-16	PGA2311UG	Stereo Volume	
IC101	DIP30N	SW_LC78211	Input selector	
IC102	DIP30N	SW_LC78211	Input selector	
IC103	SO-8	OPA2134UA	op amp	
IC104	SO-8	NE5532	op amp	
IC200	SO-8	TL072	op amp	
IC201	SO-8	TL072	op amp	
IC402	SO-8	LM393	Comparator	
IC506	SO-14	74HC14	Hex Invertor	

VOLTAGE REGULATORS

VR100	SOT-89	78L05	100mA SMD 78L00 series	
VR101	SOT-89	79L05	100mA SMD 79L00 series	
VR401	TO220	7805	1A 78 series reg	
VR402	TO220	LM317T	1A 78 series reg	
VR403	TO220	LM337T	1A 78 series reg	

MAIN PCB PART LIST

CONNECTORS AND SOCKETS

CON100			3 way header	
CON400			5 way PSX-R cable connector	
CON411			3 way header	
CON412			3 way header	
CON420			12 Way SIL	
CON450			6 way	
CON501			25 WAY LIF CON	
CON502			SMD RJ45 CONNECTOR	
SK101			Quad Phono Gold with frame ground, black inserts	
SK102			Quad Phono Gold with frame ground, black inserts	
SK103			Quad Phono Gold with frame ground, black inserts	
SK104			Quad Phono Gold with frame ground, black inserts	
SK105			Quad Phono Gold with frame ground, black inserts	
SK201			Dual speaker socket red	
SK202			Dual speaker socket black	
SK203			Dual speaker socket red	
SK204			Dual speaker socket black	
SK205	RAD0.1		2 PIN HEADER	
SK206	RAD0.1		2 PIN HEADER	
SK401	RAD0.1		2 PIN HEADER	

OTHER PARTS

FS401	20mm Fuse		F6.3AL	
FS402	20mm Fuse		F6.3AL	
FS403	20mm Fuse		T2AL	Cyrus 8 230V variants only!
	20mm Fuse		T4AL	Cyrus 8 115V variants only!
	20mm Fuse		T800mAL	Cyrus 6 230V variants only!
	20mm Fuse		T1.25AL	Cyrus 6 115V variants only!
FS404	T1A Axial fuse		T1A	
FS405	T1A Axial fuse		T1A	
TH401	TH_33K		Thermistor	
TR400	81497-P2S02K		Transformer	
RL401	G2R-1E		12V Relay	

SUB PCB PART LIST

RESISTORS

R601	SMD0805	470R	MF 1/8W 1%	
R602	SMD0603	1k5	MF 1/16W 1%	
R603	SMD0603	1k5	MF 1/16W 1%	
R604	SMD0603	120R	Meggit: BMB1J0120RS2	
R606	SMD0603	1M	MF 1/16W 1%	
R607	SMD0603	1M	MF 1/16W 1%	
R608	SMD0603	1k5	MF 1/16W 1%	
R609	SMD0603	15k	MF 1/16W 1%	
R610	SMD0603	15k	MF 1/16W 1%	
R612	SMD0603	22R	MF 1/16W 1%	
R613	SMD0603	22R	MF 1/16W 1%	
R614	SMD0805	330R	MF 1/8W 1%	
R615	SMD0805	1k	MF 1/8W 1%	
R701	SMD0603	75R	MF 1/16W 1%	
R702	SMD0603	75R	MF 1/16W 1%	
R703	SMD0805	10k	MF 1/8W 1%	
R704	SMD0603	1M	MF 1/16W 1%	
R705	SMD0805	470R	MF 1/8W 1%	
R706	SMD0805	470R	MF 1/8W 1%	
R707	SMD0805	470R	MF 1/8W 1%	
R708	SMD0805	470R	MF 1/8W 1%	
R711	SMD0805	470R	MF 1/8W 1%	
R712	SMD0603		Not fitted	
R713	SMD0603		Not fitted	
R714	SMD0603	75R	MF 1/16W 1%	
R801	SMD0603	2k2	MF 1/16W 1%	
R802	SMD0603	2k2	MF 1/16W 1%	
R803	SMD0603	2k2	MF 1/16W 1%	
R804	SMD0603	2k2	MF 1/16W 1%	
R805	SMD0603	3k9	MF 1/16W 1%	
R806	SMD0603	3k9	MF 1/16W 1%	
R807	SMD0603	3k9	MF 1/16W 1%	
R808	SMD0603	3k9	MF 1/16W 1%	
R809	SMD0603	8k2	MF 1/16W 1%	
R810	SMD0603	8k2	MF 1/16W 1%	
R811	SMD0603	8k2	MF 1/16W 1%	
R812	SMD0603	8k2	MF 1/16W 1%	
R814	SMD0603	75R	MF 1/16W 1%	
R815	SMD0603	75R	MF 1/16W 1%	
R816	SMD0805	0R	MF 1/8W 1%	
R901	SMD0603		Not fitted	
R902	SMD0805		Not fitted	
R903	SMD0805	47k	MF 1/8W 1%	
R904	SMD0805	47k	MF 1/8W 1%	
R905	SMD0805	33k	MF 1/8W 1%	
R906	SMD0805	33k	MF 1/8W 1%	
R907	SMD0805	10k	MF 1/8W 1%	
R908	SMD0603	8k2	MF 1/16W 1%	
R909	SMD0603	8k2	MF 1/16W 1%	
R910	SMD0603	1k5	MF 1/16W 1%	
R911	SMD0603	1k5	MF 1/16W 1%	

SUB PCB PART LIST

R912	SMD0805	10k	MF 1/8W 1%	
RP601	SMD CAT16	10k x 4	MF 1/16W 5%	
RP701	SMD CAT16		Not fitted	IC701 is AK4118A
	SMD CAT16	100R x 4	MF 1/16W 5%	IC701 is AK4118E
RP702	SMD CAT16	100R x 4	MF 1/16W 5%	
RP703	SMD CAT16	100R x 4	MF 1/16W 5%	IC701 is AK4118A
	SMD CAT16		Not fitted	IC701 is AK4118E
RP801	SMD CAT16	100R x 4	MF 1/16W 5%	
RP802	SMD CAT16	100R x 4	MF 1/16W 5%	
RP901	SMD CAT16	10k x 4	MF 1/16W 5%	
RP902	SMD CAT16	10k x 4	MF 1/16W 5%	
RP903	SMD CAT16	100R x 4	MF 1/16W 5%	
RP904	SMD CAT16	100R x 4	MF 1/16W 5%	

Key: MF = metal film. NFR = non-flammable resistor. MRS25 = axial metal film resistor
SMD-0805 = refers to surface mount device size profile 0805

CAPACITORS

C601	CAPSMD5.0	47uF	16V EL 20%	EEEFK1C470UR
C602	SMD0805	1uF	CP 25V 10%	X7R dielectric
C603	SMD0805	1uF	CP 25V 10%	X7R dielectric
C604	SMD0805	1uF	CP 25V 10%	X7R dielectric
C605	SMD0805	1uF	CP 25V 10%	X7R dielectric
C606	SMD0805	1uF	CP 25V 10%	X7R dielectric
C607	SMD0603	22nF	CP 50V 10%	X7R dielectric
C608	SMD0603	22nF	CP 50V 10%	X7R dielectric
C609	SMD0603	33pF	CP 50V 5%	NPO dielectric
C610	SMD0603	33pF	CP 50V 5%	NPO dielectric
C701	SMD0603		Not fitted	
C702	CAPSMD5.0	47uF	16V EL 20%	EEEFK1C470UR
C703	CAPSMD5.0	47uF	16V EL 20%	EEEFK1C470UR
C704	SMD0603	100nF	CP 50V 10%	X7R dielectric
C705	SMD0603	100nF	CP 50V 10%	X7R dielectric
C706	SMD0603	100nF	CP 50V 10%	X7R dielectric
C707	SMD0603		Not fitted	
C708	SMD0603		Not fitted	
C709	SMD0603	100nF	CP 50V 10%	X7R dielectric
C710	SMD0603	100nF	CP 50V 10%	X7R dielectric
C711	SMD0603		Not fitted	
C712	SMD0805	470nF	CP 16V 10%	X7R dielectric
C713	SMD0603	10pF	CP 50V 5%	NPO dielectric
C714	SMD0603	10pF	CP 50V 5%	NPO dielectric
C715	SMD0603	100nF	CP 50V 10%	X7R dielectric
C716	SMD0603	100nF	CP 50V 10%	X7R dielectric
C717	CAPSMD5.0	47uF	16V EL 20%	EEEFK1C470UR
C718	SMD0603	100nF	CP 50V 10%	X7R dielectric
C801	CAPSMD5.0	47uF	16V EL 20%	EEEFK1C470UR
C802	CAPSMD5.0	47uF	16V EL 20%	EEEFK1C470UR
C803	CAPSMD5.0	47uF	16V EL 20%	EEEFK1C470UR
C804	CAPSMD5.0	47uF	16V EL 20%	EEEFK1C470UR
C805	CAPSMD5.0	47uF	16V EL 20%	EEEFK1C470UR
C806	CAPSMD5.0	47uF	16V EL 20%	EEEFK1C470UR
C807	CAPSMD5.0	47uF	16V EL 20%	EEEFK1C470UR
C808	SMD0603	100nF	CP 50V 10%	X7R dielectric
C809	SMD0603	100nF	CP 50V 10%	X7R dielectric
C810	SMD0603	100nF	CP 50V 10%	X7R dielectric
C811	SMD0603	100nF	CP 50V 10%	X7R dielectric
C812	SMD0603	100nF	CP 50V 10%	X7R dielectric
C813	SMD0603	1nF	CP 50V 5%	NPO dielectric

SUB PCB PART LIST

C814	SMD0603	1nF	CP 50V 5%	NPO dielectric
C815	SMD0603	150pF	CP 100V 5%	NPO dielectric
C816	SMD0603	150pF	CP 100V 5%	NPO dielectric
C817	SMD0603	150pF	CP 100V 5%	NPO dielectric
C818	SMD0603	150pF	CP 100V 5%	NPO dielectric
C819	SMD0603	33pF	CP 50V 5%	NPO dielectric
C820	SMD0603	33pF	CP 50V 5%	NPO dielectric
C821	SMD0603	22nF	CP 50V 10%	X7R dielectric
C822	SMD0603	22nF	CP 50V 10%	X7R dielectric
C901	SMD0603	22nF	CP 50V 10%	X7R dielectric
C902	SMD0603	22nF	CP 50V 10%	X7R dielectric
C903	SMD0603	22nF	CP 50V 10%	X7R dielectric
C904	SMD0603	22nF	CP 50V 10%	X7R dielectric
C905	SMD0603	22nF	CP 50V 10%	X7R dielectric
C906	SMD0603	22nF	CP 50V 10%	X7R dielectric
C907	SMD0603	22nF	CP 50V 10%	X7R dielectric
C908	SMD0603	22nF	CP 50V 10%	X7R dielectric
C909	SMD0603	22nF	CP 50V 10%	X7R dielectric
C910	SMD0603	22nF	CP 50V 10%	X7R dielectric
C911	SMD0603	22nF	CP 50V 10%	X7R dielectric
C912	SMD0603	22nF	CP 50V 10%	X7R dielectric
C913	SMD0603	22nF	CP 50V 10%	X7R dielectric
C914	SMD0603	22nF	CP 50V 10%	X7R dielectric
C915	SMD0603	22nF	CP 50V 10%	X7R dielectric
C916	SMD0603	22nF	CP 50V 10%	X7R dielectric
C917	CAPSMD5.0	47uF	16V EL 20%	EEEFK1C470UR
C919	CAPSMD5.0	47uF	16V EL 20%	EEEFK1C470UR
C920	CAPSMD5.0	47uF	16V EL 20%	EEEFK1C470UR
C921	CAPSMD5.0	47uF	16V EL 20%	EEEFK1C470UR
C922	SMD0603	100nF	CP 50V 10%	X7R dielectric
C923	SMD0603	100nF	CP 50V 10%	X7R dielectric
C926	CAPSMD5.0	47uF	16V EL 20%	EEEFK1C470UR
C927	CAPSMD5.0	47uF	16V EL 20%	EEEFK1C470UR
C928	CAPSMD8.0	470uF	16V EL 20%	EEEFK1C471AP
C929	CAPSMD8.0	470uF	16V EL 20%	EEEFK1C471AP
C930	RB.3/.6	4700uF	16V EL 20%	UPS1C472MHD
C931	SMD0603	22nF	CP 50V 10%	X7R dielectric
C932	SMD0603	22nF	CP 50V 10%	X7R dielectric
C933	CAPSMD5.0	47uF	16V EL 20%	EEEFK1C470UR

Key: CP = ceramic plate. EL = electrolytic. PE = polyester. PP = polypropylene. BP = bi-polar.

CAPSMD6.3 refers to surface mount device with 6.3mm pitch pads

SMD-0805 refers to surface mount device size code 0805

DIODES

D601	SOT23	BZX84-C3V6	BZX84C3V6 3V6Zener Diode	
D602	SOT23	BZX84-C3V6	BZX84C3V6 3V6Zener Diode	
D603	SOT23	BAV70	Dual signal Diode common cathode	
D604	SOT23	BAV70	Dual signal Diode common cathode	
D901		DF04S	1A 400v SMD Bridge	

TRANSISTORS

T601	SOT23	BC846C	NPN Signal Transistor	
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SUB PCB PART LIST

INTEGRATED CIRCUITS

IC601	TQFP-32	PCM2707PJT	Stereo DAC with USB interface	
IC602	SMDIP-8	FOD617CS		Alternative SFH6202-2.
IC701	LQFP48	AK4118E	192k 24 bit DIR with 8:1 selector	Alternative AK4118A. Value of RP701 and RP703 depends on IC spec.
IC801	SSOP28	PCM1791A	Stereo D to A converter	
IC802	SO-8	OPA2134UA	Dual opamp	
IC901	SO-8	TPA152D	Stereo power amplifier	

VOLTAGE REGULATORS

VR901	SOT223	LM1117MPX-3.3	+VE fixed regulator 3V3	
VR902	TO-252	LM1117DTX-5.0	+VE fixed regulator 5V0	
VR903	TO-252	LM1117DTX-5.0	+VE fixed regulator 5V0	

FILTERS, INDUCTORS & CRYSTALS

L901	1210	100uH		
L902	1210	100uH		
X601	XTAL2	12.000MHz		
X701	XTAL2	24.576MHz		

CONNECTORS AND SOCKETS

CON901			13 way LIF connector	
CON902			20 way LIF connector	
CON903			12 Way SIL Header	
CON904			3 way cable assembly	
CON905			3 way header	
CON906			2 way transformer connector	
SK601			USB type B socket	
SK701			Dual phono socket gold contacts black inserts	
SK702			Not fitted	
SK901	JACK3.5		Stereo Audio Jack Socket. Part 2 contains switch half.	

OTHER PARTS

FS901	T1A Radial fuse		T1A	396 series TE5
TORX701	GP1FAV31RKOF		Optical receiver	GP1FAV31RKOF
TORX702	GP1FAV31RKOF		Optical receiver	GP1FAV31RKOF

CIRCUIT DIAGRAMS

Circuit diagram index

The Cyrus 6 DAC and Cyrus 8 DAC circuit diagrams are listed below.

Main PCB

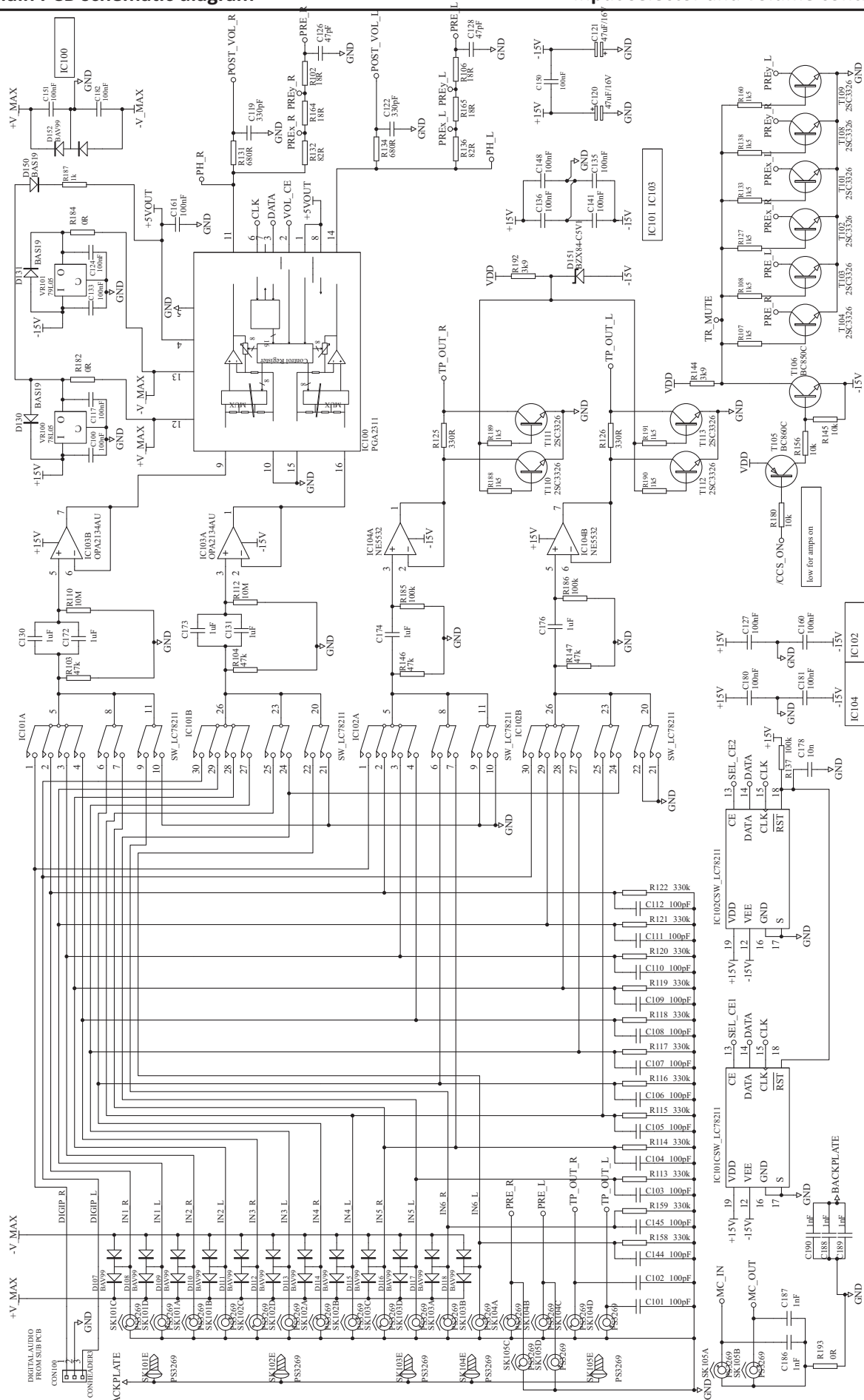
Input selector and volume control.....	40
Power amplifier and DC servo.....	41
Power amp regulator and standby control.....	42
Main PCB power supplies, protection logic	43
MC-BUS, main PCB connectors	44

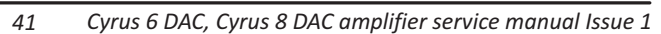
Sub PCB

USB decoder	45
Digital inputs	46
D/A Converter	47
Power supplies, connectors and headphone amp.....	48

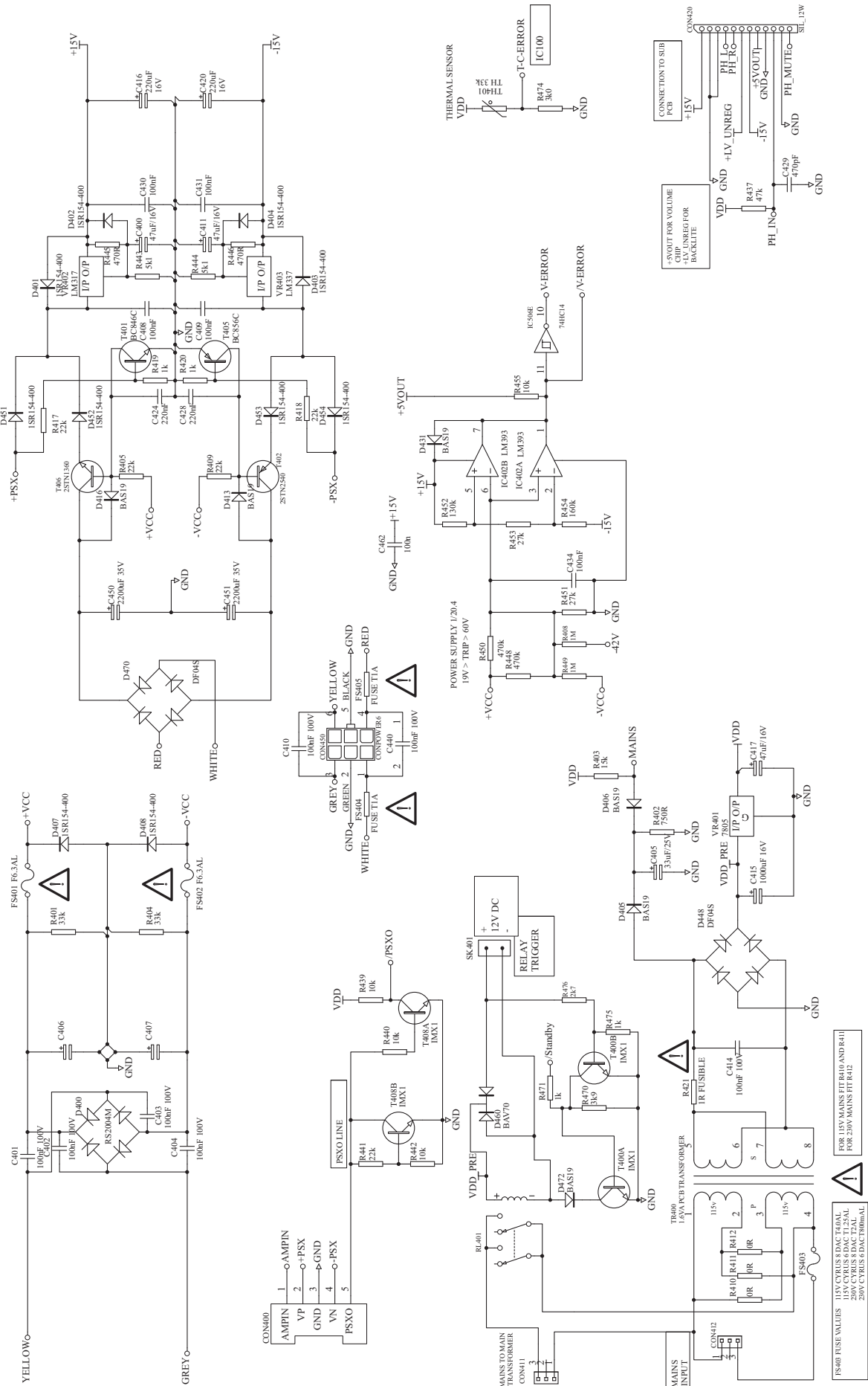
Main PCB schematic diagram

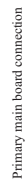
Input selector and volume control



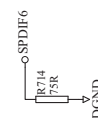


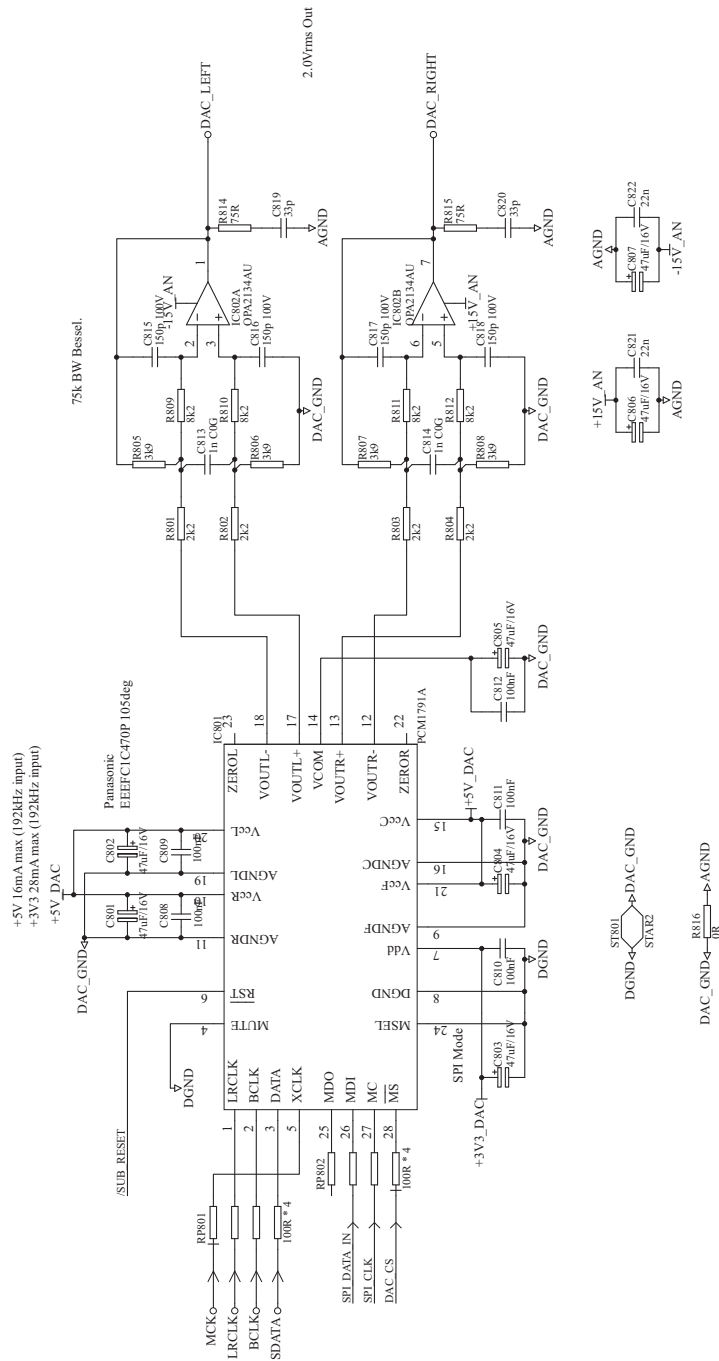


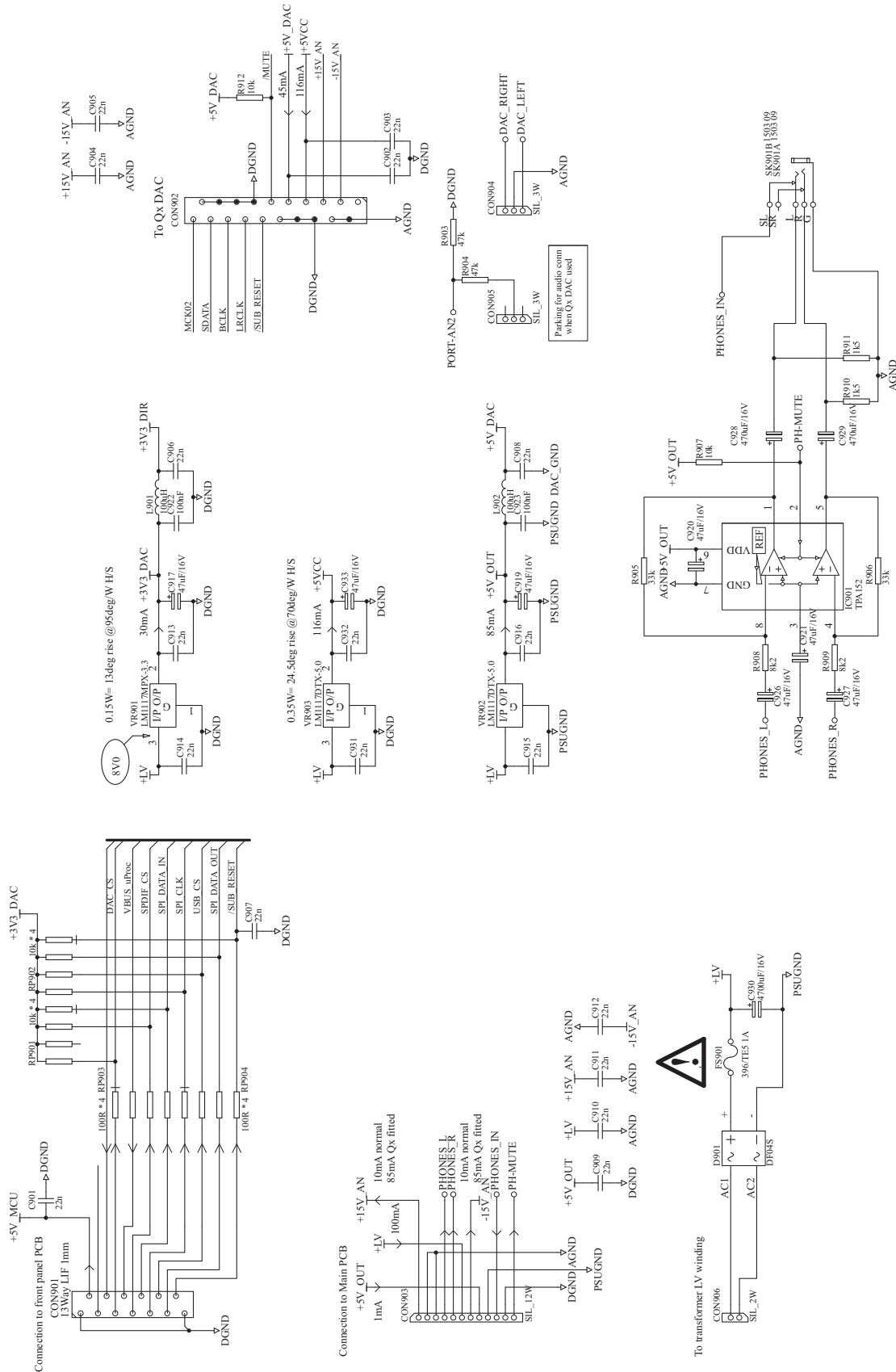












SAFETY CRITICAL COMPONENT
REPLACE WITH APPROVED PART