



CYRUS CD6s CD PLAYER

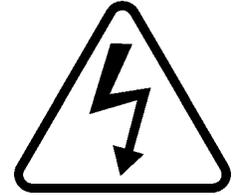
SERVICE MANUAL



SPECIFICATIONS

Audio output	2.1Vrms
Frequency response	20Hz-20kHz
Distortion	<0.002%, (ref. 1kHz, 0dB)
S/N ratio	110dBA
Dynamic range	>100dB (20Hz-20kHz)
Channel separation	>110dB (1kHz), >90dB (20kHz)
Digital output	Optical SPDIF
Clock jitter	<100ps
Dimensions (H x W x D)	73 x 215 x 360 (mm), 2.8 x 8.4 x 14.1 (inches)
Weight	3.1kg

CYRUS CD6s SERVICE CAUTIONS



These two symbols shown are displayed prominently on the Cyrus CD6s base cover label. 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.*

CAUTION! LIVE MAINS VOLTAGES!

When undertaking any work on the CD6s, engineers should observe that exposed live mains voltages exist on the PCB attached to the mains inlet socket. For safety, this area must be securely insulated with insulation tape during all repair work.

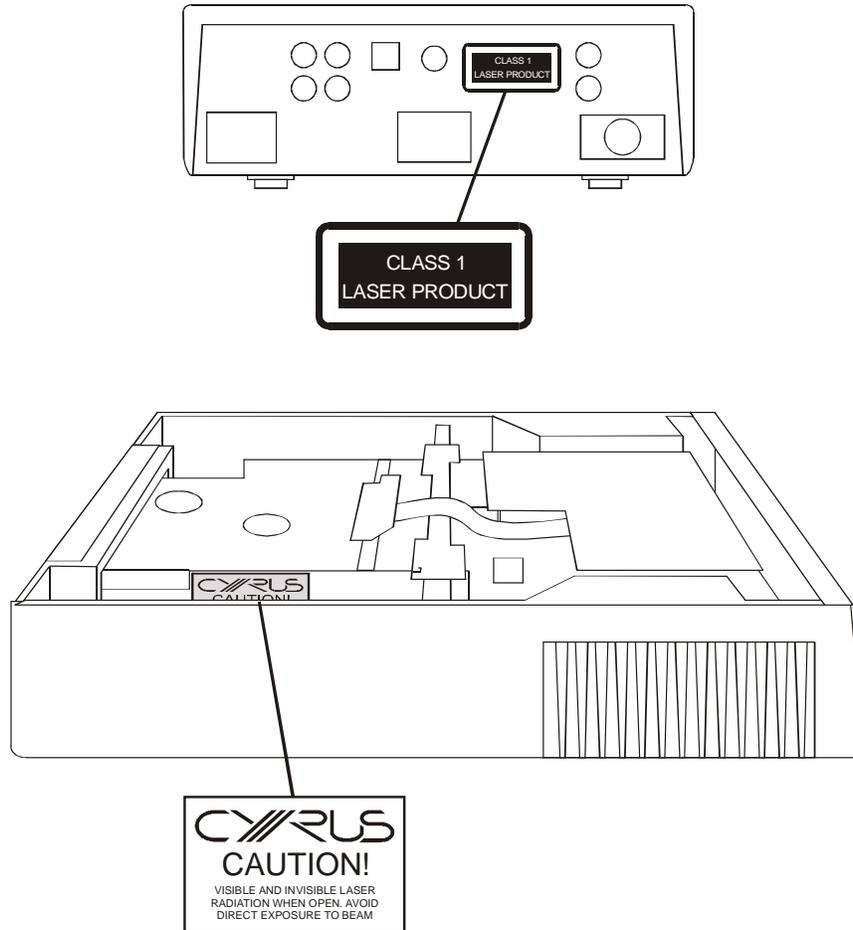
STATIC PRECAUTIONS

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.

CYRUS CD6s SERVICE CAUTIONS

The notice below shows the position of caution labels which alert the service technician to the presence of a laser device –



CYRUS CD6s SERVICE MANUAL INDEX

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CYRUS CD6s 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. 260°C is recommended for SMD rework. Most SMD components will withstand 260°C for 5 to 10 seconds
- Use tin/lead/silver solder which has a lower melting point (about 179°C). Tin/lead/silver solder paste or small gauge solder (26SWG) is recommended.

CYRUS CD6s SMD COMPONENT REPLACEMENT

- 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.

CYRUS CD6s TYPE IDENTIFICATION

Rating label

Each Cyrus CD6s carries a rating label on the rear panel, which includes details of the following:

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 power consumption figure is indicated under normal working conditions.

Serial number

Each Cyrus CD6s carries a serial number code, which identifies the following-

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

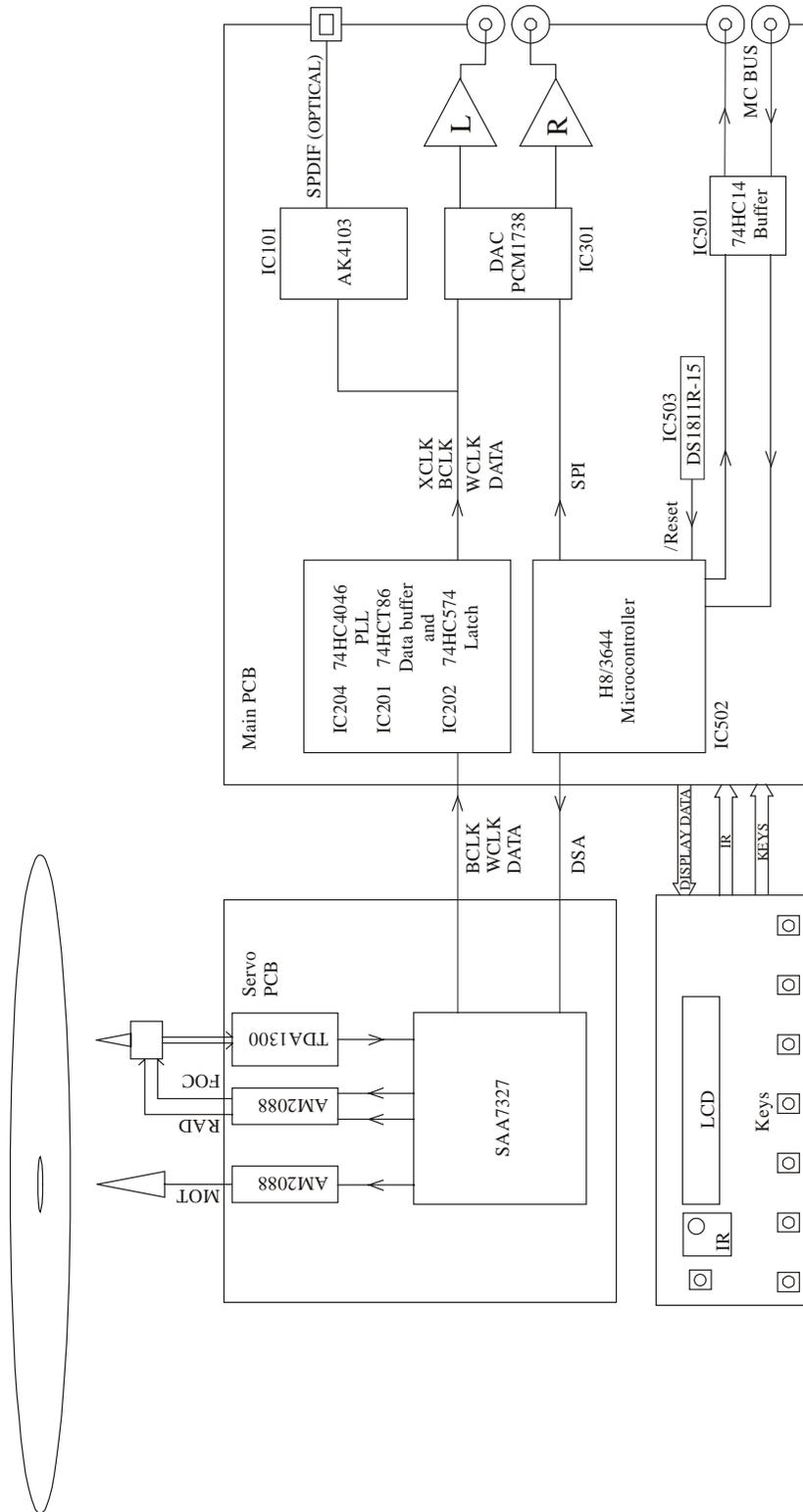
The serial number is on the baseplate. It is therefore important to ensure that a baseplate removed from a product is re-fitted to the same product. In any communications with Cyrus Service or Quality departments it is essential that the full serial number is quoted so that original specification parts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

PCB Identification

The Cyrus CD6s 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 the PCB markings.

Revision number	PCB marking
Main board revision 2	IS101332

CYRUS CD6s BLOCK DIAGRAM



CYRUS CD6s TECHNICAL DESCRIPTION

Cyrus CD6s PCB assemblies

The following is a brief description of the two internal PCBs found in the CD6s.

The **servo** PCB is located just under the base plate, this includes the CD tray motor and sled drivers, the laser servo microcontroller and CD decoder.

The **main** PCB is mounted under the servo PCB in the base of the chassis and contains regulated power supplies, DtoA converter, optical SPDIF output and the user interface microcontroller.

Microprocessor control system

System control for the CD6s is provided by microcontroller IC502 (H8/3644). The microcontroller accepts external user commands (IR handset, front panel keys and MCBus loop) and translates them into instructions that operate the CD mechanism, via the servo PCB.

The microcontroller communicates with the servo PCB via the bi-directional serial data bus (marked 'DSA' on the circuit diagrams), where the operational status of the CD mechanism is communicated back to the microcontroller and displayed on the LCD.

IC503 (DS1811R-15) is a power supply voltage supervisor for the microcontroller. If the power supply voltage drops below 4.3V it will reset the microcontroller.

Control Software

The software contained in the microcontroller is electrically programmed into the internal flash memory when the CD6s are manufactured. This software may be updated at an authorised Cyrus service centre as later versions are released.

Note. If IC502 is replaced for any reason, new software must be installed after the replacement microcontroller is fitted.

The software version may be checked from the front panel of the CD6s by using the following key sequence -

1. Connect power to the CD6s 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.

Disc reading/decoder module and servo PCB

The disc reading laser pickup is a Philips VAM1202/12 mounted in a motor driven tray loader, which receives its operating commands via the servo PCB.

Note. The laser pickup and servo PCB are not serviceable items. If either of these parts is defective it must be replaced with original parts from the Cyrus spares department.

Digital to Analogue conversion

The digital audio data from the servo PCB is fed to the main PCB via cable assembly CON102. The data is then buffered by IC201 (74HCT86) and reformatted by IC202 (74HC574) before being input to the DAC (IC301 (PCM1728)). The balanced DAC outputs are passed through I/V converters IC302/3 (BA5523) and then buffered by IC304 (OPA2134) to the left and right audio outputs.

CYRUS CD6s TECHNICAL DESCRIPTION

The DAC master clock is generated by the PLL circuit IC204 (74HC4046) and divided by shift register IC205 (74HC161). O/P Pin11 ($\div 16$) XCLK/8 = 2.1168MHz.
O/P Pin14 ($\div 2$) XCLK = 19.99344MHz.

The DAC regulated power supplies are derived from the low voltage secondary windings: +5V (VR604) and +3.3V (VR301).

Digital Optical output

The reformatted data from IC202 (74HC574) is converted to SPDIF format by the digital audio output encoder IC101 (AK4103) then fed to the optical output (TOTX101).

Power supplies

The internal regulated power supplies for the Cyrus CD6s are derived from the high and low voltage secondary windings from a single toroidal transformer.

The low voltage windings supply regulated +5V supplies to digital circuitry including the PLL, DtoA converter, microcontroller and CD mechanism.

The high voltage windings supply regulated $\pm 15V$ supplies to the analogue audio stages and a +9V supply to the servo control motors for CD mechanism.

Front panel display

The front panel display is a backlit LCD module mounted in a moulding behind the front panel. The LCD module is driven by signals from microcontroller IC502 pins 52 and 53 (LCD_DATA and LCD_SCLK). IC502 also reads back an analogue voltage encoded from keys pressed on the front panel (via KEYS_IN1 pin 64), and remote control information from the eye via line REMOTE_IN pin 43.

CYRUS CD6s FAULT FINDING/DISASSEMBLY

CAUTION! LIVE MAINS VOLTAGES!

When undertaking any work on the CD6s, engineers should observe that exposed live mains voltages exist on the PCB attached to the mains inlet socket. For safety, this area must be securely insulated with insulation tape during all repair work.

Disc will not read

If the disc will not read, check first the power supplies to the servo PCB at pins +9VM, +5VCD on connector CD502 of the servo PCB. If the power supplies are working correctly, remove the loader and substitute the laser pickup with a new replacement unit. If the disc will still not read, substitute with a new servo PCB.

CAUTION! When disconnecting the flexfoil cable from the laser pickup to the servo PCB, always ensure that static precautions are taken with a grounded static mat and wrist-strap as the laser pickup can easily be damaged by relatively low levels of static. When the disc reading mechanism or laser pickup are removed from the chassis, it is preferable to fit a flexfoil and use a metal paper clip or similar to bridge all open connections as static protection when handling the pickup.

Removing the loading mechanism and laser pickup

Eject the disc drawer and disconnect the power. Turn the player upside down and remove the front drawer trim by applying gentle pressure to the underside with your thumbs, whilst supporting the drawer with your index fingers.

Gently push the loading tray back into the loading mechanism. In a static safe environment, disconnect the flex foil from the CD loader to the servo PCB at the loader end. Remove the 4 screws securing the servo PCB brackets to the chassis and lift the PCB clear of the chassis. Now disconnect the two wire connectors marked CD902 and CD903 from the servo PCB. Remove the two screws securing the loader clamp to the loader subframe and slide the mechanism up and out of the chassis from the rear of the player. The laser pickup may now be replaced in the loader if required.

When refitting the loading mechanism, pay particular caution to the following points. Ensure that the multi-coloured cables from connectors CD902 and CD903 are dressed clear of the moving part of the CD loading tray which runs under the servo PCB. Ensure that the blue grounding cable from the servo PCB is fixed securely under one of the screws fixing the servo PCB bracket to the chassis. After a successful repair and when re-fitting the trim to the loading tray, heatstake the sides of the trim to the tray with a soldering iron and use a small dot of superglue at each side to lock it permanently in place. The trim should not be refitted until repair work is complete, in case it may be necessary to remove it again.

Removing the front panel PCB

If a fault is diagnosed which requires the removal of the front panel PCB, proceed as follows. First, following the instructions above, remove the loading mechanism. Now disconnect the flexfoil running to the front panel PCB. Note that a small cable stay is screwed to the front of the chassis to hold the flexfoil clear of the loading tray when it moves. Finally, the complete front panel assembly including display PCB may now be pressed forward out of the front of the chassis. Remove the fixing screws and the front panel PCB may now be lifted off the front panel

CYRUS CD6s FAULT FINDING/DISASSEMBLY

assembly. The only part available for service of this PCB is the remote eye. If there are other faults with this PCB it will be necessary to replace the PCB assembly.

Removing the power transformer

The power transformer is mounted on a pin fixed to the side cheek of the loading mechanism subframe. To remove the power transformer it is first necessary to remove the disc loading mechanism as detailed above, then remove the subframe. The power transformer may then be unplugged from the mains inlet PCB and main PCB and lifted off the pin on the subframe.

Audio Signal faults

If the disc is reading but with no audio, check for valid digital audio data on connector CD901 of the servo PCB. These signals can be found on pins SCLK, WCLK, DATA. If these signals are present, then the fault is on the main PCB.

No response to MC-Bus

The CD6s should auto power via the MC-Bus when selecting CD as the source from a Cyrus pre-amp or integrated amp. If the MC-Bus system is not working correctly, see the MC-Bus section in this Service Manual.

CYRUS CD6s ALIGNMENT

Alignment

There is no alignment required for the CD6s during maintenance.

CYRUS CD6s CONTROL SOFTWARE

Flash Software Installation

The CD6s features upgradeable software for its control system. The design includes a microcontroller with internal flash memory (IC502) which includes the control code. Version changes for the listed products are now made by connecting a PC through the Cyrus Flash-Programming Interface box to the programming connector on the main PCB and running programming software from the PC to install the revised software version.

The version installed at the factory is labelled on the IC but the label will not show the correct version if the software has been changed electrically. A reliable method to check the installed software version (without dismantling the player) is to read it from the display of 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.

If it becomes necessary to install a later version of software, contact Cyrus UK 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 CD6 software for installation into the player memory.

Version control

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

NOTE:- In all cases the only means to reliably check the installed software version is with the 'version checking' procedure listed above

CYRUS CD6s USE WITH A PSX-R

Cyrus CD6s use with a PSX-R

The CD6s does not include the facility to connect the PSX-R external power supply. The CD6s may however be upgraded at the Cyrus factory to full CD8x specification including PSX-R connection.

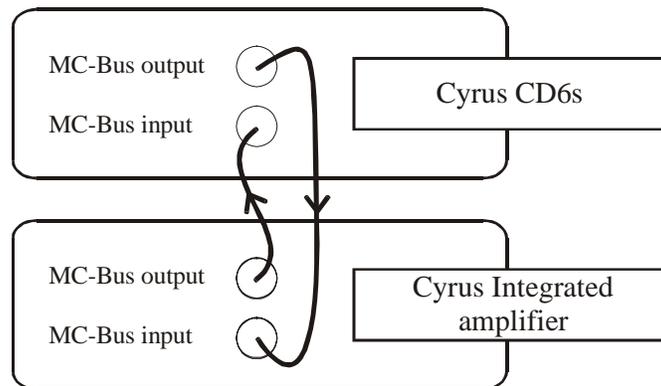
CYRUS CD6s MCBUS OPERATION

The MC-Bus system

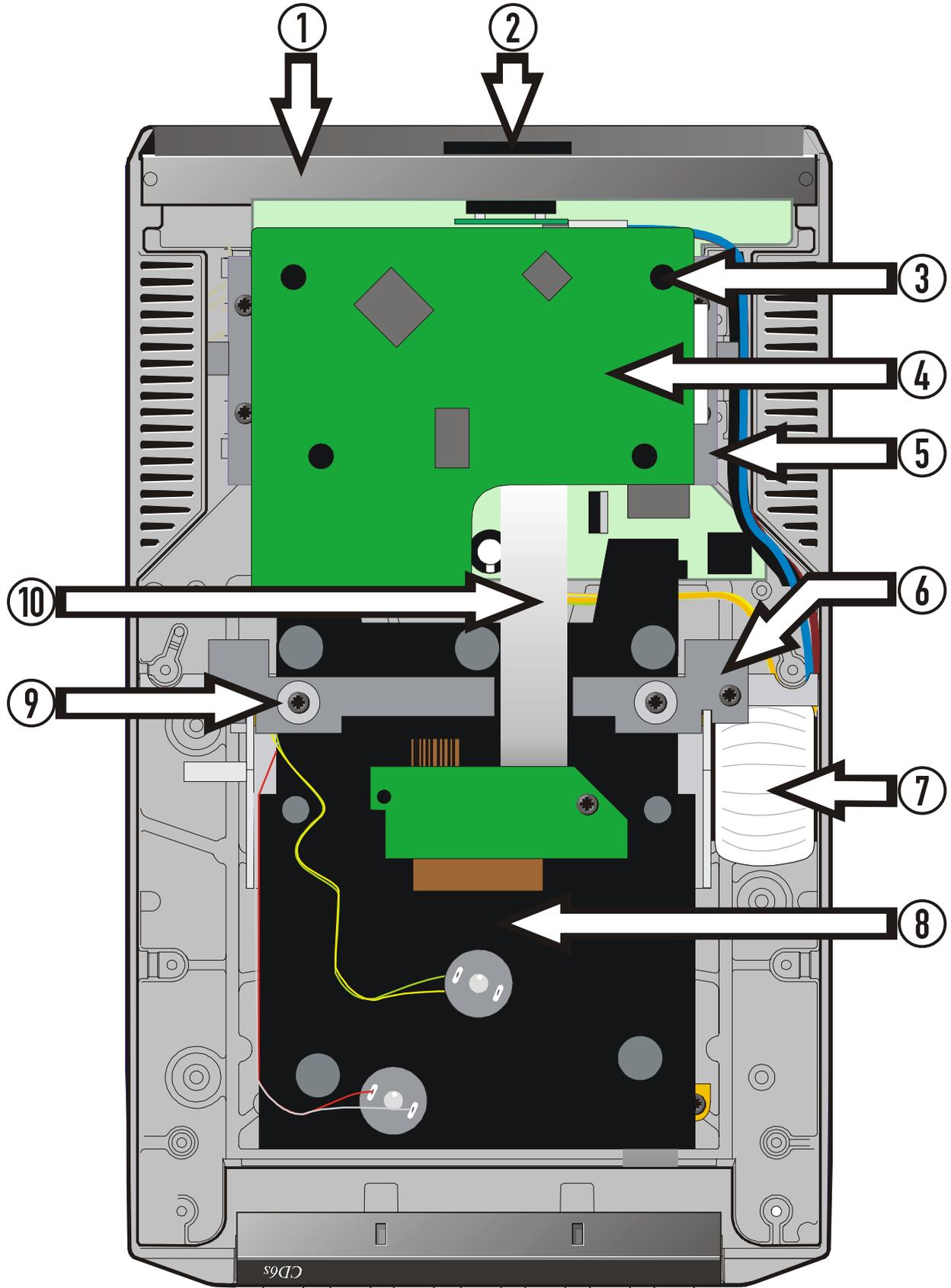
MC-Bus is a system which provides communication between the control systems of a number of Cyrus products. The communication takes the form of a serial data stream which is sent from a 'master' product and received and repeated by 'slave' products. The data is thus passed from one product to another around a loop. The master product should then receive the message back which confirms that loop connections have been correctly made. The CD player is a 'slave' product and listens for 'CD' commands from the master product in the loop (usually an amplifier or surround decoder).

MC-Bus system tests

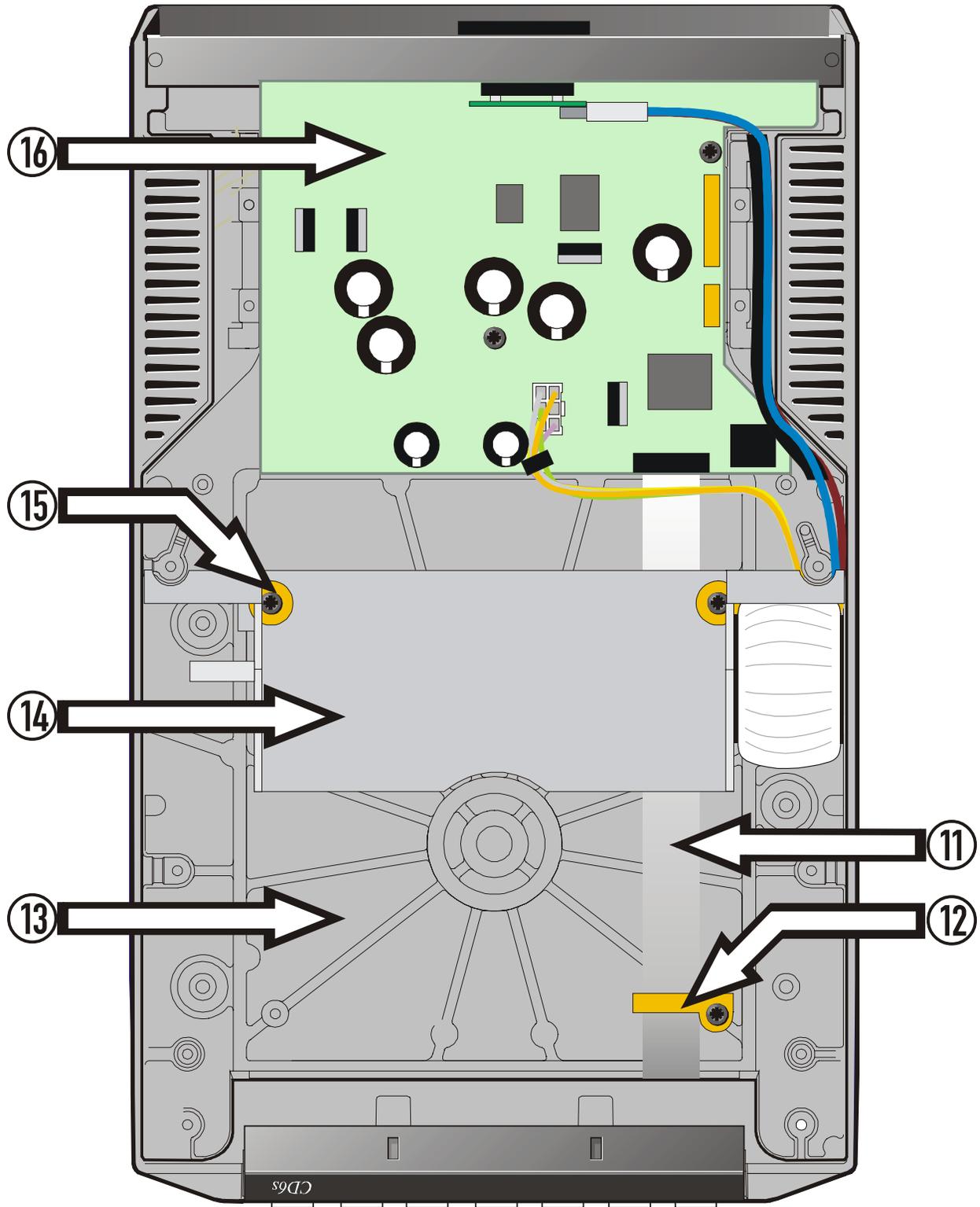
The MC-Bus system can be tested by connecting the CD6s into a known working Cyrus system. Note that MC-Bus must be connected as a closed loop as shown in the diagram below. It is also important to connect the audio signal cables between components to provide an adequate ground return path for the MC-Bus signals. Switch on the power to the system and set all components to Standby. Selecting the CD input on the amplifier will bring the CD6s out of standby. When the amplifier is set to Standby, all other components connected to the MC-Bus loop will also set to Standby.



CYRUS CD6s CHASSIS PARTS DRAWING



CYRUS CD6s CHASSIS PARTS DRAWING

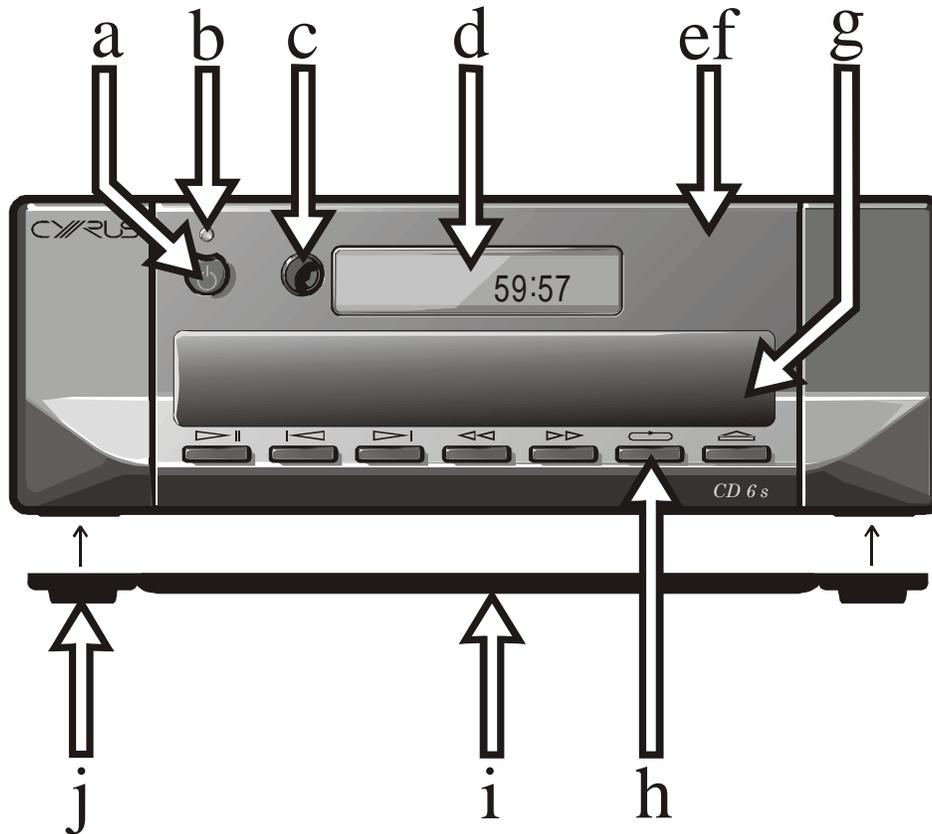


CYRUS CD6s CHASSIS PARTS LIST

Main chassis

Ref	Part number	Description
1	I6-BACKP/	Rear panel
2	AM-MTERM/	AC power inlet
3	I6-RIVET/	PCB retainer
4	Please contact factory	Servo PCB
5	I6-PCBBR/LH I6-PCBBR/RH	Servo PCB mount - left hand Servo PCB mount - right hand
6	I6-CRLOC/	Cradle lock
7	I6-TX230/ I6-TX115/	Transformer (230V) Transformer (115V)
8	I6-L1210/	CD loader
9	I6-CRBOS/7.0	Mechanism mounting boss
10	I6-CB12W/100	Flex foil cable 12 way 100mm long
11	CQ-CB12W/190	Flex foil cable 12 way 190mm long
12	I6-FLCLP/	Flex foil retainer
13	AM-COVER/B AM-COVER/S	Chassis - black Chassis - silver
14	I6-CRADL/	Mechanism mounting cradle
15	I6-CRBOX/8.2	Cradle mounting boss
16	I6-MBSTD	Main PCB assembly

CYRUS CD6s FRONT PANEL PARTS DRAWING



Front Panel parts

Ref	Part Number	Description
a	AM-POWCP/	Standby knob trim
b	AM-PLENS/	Power lens
c	AM-LEMSM/02	Remote eye lens
d	D3-DISPW/	Display window
e	I6-FACIA/SB I6-FACIA/SS	Cyrus CD6s front fascia black Cyrus CD6s front fascia silver
f	I6-TMOLD/	Technical Moulding
g	I6-DRWFR/B I6-DRWFR/S	CD tray trim black CD tray trim silver
h	I6-TMKEY/B I6-TMKEY/S	Function key black Function key silver
i	I6-BPPLT/C	Base plate
j	AM-BFOOT/	Rubber foot

CYRUS CD6s PCB PARTS LIST

CYRUS CD6s COMPONENT LIST

RESISTORS

R101	SMD0805	3.3k	MF 1/8W 1%	
R102	SMD0805	3.3k	MF 1/8W 1%	
R103	SMD0603	100R	MF 1/16W 1%	
R104	SMD0603	100R	MF 1/16W 1%	
R105	SMD0603		NOT FITTED	
R106	SMD0603	100R	MF 1/16W 1%	
R107	SMD0603		NOT FITTED	
R108	SMD0805		NOT FITTED	
R109	SMD0603	100R	MF 1/16W 1%	
R201	SMD0805	47k	MF 1/8W 1%	
R202	SMD0805		NOT FITTED	
R203	SMD0805	47k	MF 1/8W 1%	
R204	SMD0603	150R	MF 1/16W 1%	
R205	SMD0603		NOT FITTED	
R206	SMD0603		NOT FITTED	
R207	SMD0603		NOT FITTED	
R208	SMD0805	3.3k	MF 1/8W 1%	
R209	SMD0805	47R	MF 1/8W 1%	
R210	SMD0805	91R	MF 1/8W 1%	
R211	SMD0805		NOT FITTED	
R212	SMD0805	0R	MF 1/8W 1%	
R213	SMD0603	100R	MF 1/16W 1%	
R214				
R215	SMD0603	150R	MF 1/16W 1%	
R216	SMD0603	100R	MF 1/16W 1%	
R217	SMD0603	100R	MF 1/16W 1%	
R218	SMD0603	100R	MF 1/16W 1%	
R219	SMD0603	150R	MF 1/16W 1%	
R220	SMD0603	100R	MF 1/16W 1%	
R221	SMD0603	100R	MF 1/16W 1%	
R301	SMD0805	620R	MF 1/8W 1%	
R302	SMD0805	620R	MF 1/8W 1%	
R303	SMD0805	620R	MF 1/8W 1%	
R304	SMD0805	620R	MF 1/8W 1%	
R305	SMD0805	9.1k	MF 1/8W 1%	
R306	SMD0805	9.1k	MF 1/8W 1%	
R307	SMD0805	9.1k	MF 1/8W 1%	
R308	SMD0805	9.1k	MF 1/8W 1%	
R309	SMD0805	9.1k	MF 1/8W 1%	
R310	SMD0805	9.1k	MF 1/8W 1%	
R311	SMD0805	9.1k	MF 1/8W 1%	
R312	SMD0805	9.1k	MF 1/8W 1%	
R313	SMD0805	0R	MF 1/8W 1%	
R314	SMD0805		NOT FITTED	
R315	SMD0805		NOT FITTED	
R316	SMD0805		NOT FITTED	
R317	SMD0805	0R	MF 1/8W 1%	
R318	SMD0805		NOT FITTED	
R323	SMD0805	47R	MF 1/8W 1%	
R324	SMD0805		NOT FITTED	
R325	SMD0805	75k	MF 1/8W 1%	

CYRUS CD6s PCB PARTS LIST

R327	SMD0805	16k	MF 1/8W 1%	
R328	SMD0805	110R	MF 1/8W 1%	
R329	SMD0805	180R	MF 1/8W 1%	
R330	SMD0805	75k	MF 1/8W 1%	
R331	SMD0805	47R	MF 1/8W 1%	
R401	SMD0805		NOT FITTED	
R402	SMD0805		NOT FITTED	
R403	SMD0805		NOT FITTED	
R404	SMD0805		NOT FITTED	
R405	SMD0805		NOT FITTED	
R406	SMD0805		NOT FITTED	
R407	SMD0805		NOT FITTED	
R408	SMD0805		NOT FITTED	
R409	SMD0805		NOT FITTED	
R410	SMD0805		NOT FITTED	
R411	SMD0805		NOT FITTED	
R412	SMD0805		NOT FITTED	
R413	SMD0805		NOT FITTED	
R414	SMD0805		NOT FITTED	
R415	SMD0805		NOT FITTED	
R416	SMD0805		NOT FITTED	
R417	SMD0805		NOT FITTED	
R418	SMD0805		NOT FITTED	
R423	SMD0805		NOT FITTED	
R424	SMD0805		NOT FITTED	
R425	SMD0805		NOT FITTED	
R427	SMD0805		NOT FITTED	
R428	SMD0805		NOT FITTED	
R429	SMD0805		NOT FITTED	
R501	SMD0805		NOT FITTED	
R502	SMD0805	47k	MF 1/8W 1%	
R503	SMD0805	47k	MF 1/8W 1%	
R504	SMD0805	47k	MF 1/8W 1%	
R506	SMD0805	47k	MF 1/8W 1%	
R507	SMD0805	10R	MF 1/8W 1%	
R508	SMD0805	1k	MF 1/8W 1%	
R509	SMD0805	1k	MF 1/8W 1%	
R510	SMD0805	1k	MF 1/8W 1%	
R511	SMD0805	1k	MF 1/8W 1%	
R512	SMD0805	1M	MF 1/8W 1%	
R513	SMD0805	10k	MF 1/8W 1%	
R514	SMD0805	10k	MF 1/8W 1%	
R515	SMD0805	10k	MF 1/8W 1%	
R516	SMD0805	10k	MF 1/8W 1%	
R517	SMD0805	5.6R	MF 1/8W 1%	
R518	SMD0805	100k	MF 1/8W 1%	
R519	SMD0805	100k	MF 1/8W 1%	
R520	SMD0805	47k	MF 1/8W 1%	
R601	SMD0805	0R	MF 1/8W 1%	
R602	SMD0805			deleted
R603	SMD0805	0R	MF 1/8W 1%	
R604	SMD0805		NOT FITTED	
R605	AXIAL 0.6	1R	MF 1/4W 5%	
R606	AXIAL 0.6	1R	MF 1/4W 5%	
R607	SMD0805	10k	MF 1/8W 1%	

CYRUS CD6s PCB PARTS LIST

R608	SMD0805		NOT FITTED	
R609	SMD0805	300R	MF 1/8W 1%	
R610	SMD0805	300R	MF 1/8W 1%	
R611	SMD0805	2.7k	MF 1/8W 1%	
R612	SMD0805	2.7k	MF 1/8W 1%	
R613	SMD0805	110R	MF 1/8W 1%	
R614	SMD0805		NOT FITTED	
R615	SMD0805	330R	MF 1/8W 1%	
R616	SMD0805		NOT FITTED	
R617	SMD0805		NOT FITTED	
R618	SMD0805		NOT FITTED	
R619	SMD0805		NOT FITTED	
R620	SMD0805		NOT FITTED	
R621	3W_VERT		NOT FITTED	
R622	SMD0805	240R	MF 1/8W 1%	
RP201	SMD CAT16	100R	MF 1/16W 5%	
RP202	SMD CAT16	100R	MF 1/16W 5%	
RP203	SMD CAT16	100R	MF 1/16W 5%	
RP204	SMD CAT16	100k	MF 1/16W 5%	
RP205	SMD CAT16	100k	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

C101	SMD0603	10nF	CP 50V 10%	
C102	SMD0603	10nF	CP 50V 10%	
C103	SMD0603	10nF	CP 50V 10%	
C104	SMD0603	10nF	CP 50V 10%	
C105	SMD0805	100pF	CP 50V 10%	
C106	SMD0805	100pF	CP 50V 10%	
C107	SMD0805	100pF	CP 50V 10%	
C108	SMD0603		NOT FITTED	
C109	SMD0603	10nF	CP 50V 10%	
C110	SMD0805		NOT FITTED	
C111	SMD0805		NOT FITTED	
C112	SMD0805		NOT FITTED	
C113	SMD0805	47pF	CP 50V 10%	
C114	SMD0603	470nF	CP 50V 10%	
C115	SMD0603		NOT FITTED	
C201	SMD0603	10nF	CP 50V 10%	
C202	SMD0603	470nF	CP 50V 10%	
C203	SMD0603	470nF	CP 50V 10%	
C204	SMD0603		NOT FITTED	
C205	SMD0603	10nF	CP 50V 10%	
C206	SMD0603	10nF	CP 50V 10%	
C207	SMD0603	10nF	CP 50V 10%	
C208	RAD	68pF	5%	
C209	CAPSMD6.3	100uF	EL 16V 20%	
C210	CAPSMD5.0	22uf	EL 16V 20%	
C211	SMD0603	10nF	CP 50V 10%	
C301	SMD0805	82pF	CP 50V 10%	
C302	SMD0805	82pF	CP 50V 10%	
C303	SMD0805	82pF	CP 50V 10%	

CYRUS CD6s PCB PARTS LIST

C304	SMD0805	82pF	CP 50V 10%	
C305	SMD0805	220pF	CP 50V 10%	
C306	SMD0805	220pF	CP 50V 10%	
C307	SMD0805	220pF	CP 50V 10%	
C308	SMD0805	220pF	CP 50V 10%	
C309	SMD0805		NOT FITTED	
C310	SMD0805		NOT FITTED	
C311	SMD0805		NOT FITTED	
C312	SMD0805		NOT FITTED	
C313	CAPSMD6.3	220uF	EL 16V 20%	
C319	SMD0603	10nF	CP 50V 10%	
C320	SMD0603	10nF	CP 50V 10%	
C321	CAPSMD5.0	22uF	EL 16V 20%	
C322	CAPSMD5.0	22uF	EL 16V 20%	
C323	CAPSMD5.0	22uF	EL 16V 20%	
C324	CAPSMD5.0	22uF	EL 16V 20%	
C325	SMD0603	10nF	CP 50V 10%	
C326	SMD0603	10nF	CP 50V 10%	
C327	CAPSMD5.0	47uF	EL 6.3V 20%	
C328	CAPSMD5.0	47uF	EL 6.3V 20%	
C329	SMD0603	10nF	CP 50V 10%	
C330	SMD0805	100nF	CP 50V 10%	
C331	SMD0805	100nF	CP 50V 10%	
C332	SMD0805	100nF	CP 50V 10%	
C333	SMD0805	100nF	CP 50V 10%	
C334	SMD0805	100nF	CP 50V 10%	
C335	SMD0805	100nF	CP 50V 10%	
C336	SMD0805	100nF	CP 50V 10%	
C337	SMD0805	100nF	CP 50V 10%	
C340	CAPSMD5.0		NOT FITTED	
C341	CAPSMD5.0		NOT FITTED	
C342	CAPSMD5.0		NOT FITTED	
C343	CAPSMD5.0		NOT FITTED	
C344	CAPSMD5.0		NOT FITTED	
C345	CAPSMD5.0		NOT FITTED	
C346	CAPSMD6.3	220uF	EL 16V 20%	
C401	SMD0805		NOT FITTED	
C402	SMD0805		NOT FITTED	
C403	SMD0805		NOT FITTED	
C404	SMD0805		NOT FITTED	
C405	SMD0805		NOT FITTED	
C406	SMD0805		NOT FITTED	
C407	SMD0805		NOT FITTED	
C408	SMD0805		NOT FITTED	
C409	SMD0805		NOT FITTED	
C410	SMD0805		NOT FITTED	
C411	SMD0805		NOT FITTED	
C412	SMD0805		NOT FITTED	
C413	CAPSMD6.3		NOT FITTED	
C419	SMD0603		NOT FITTED	
C420	SMD0603		NOT FITTED	
C421	CAPSMD5.0		NOT FITTED	
C422	CAPSMD5.0		NOT FITTED	
C423	CAPSMD5.0		NOT FITTED	
C424	CAPSMD5.0		NOT FITTED	

CYRUS CD6s PCB PARTS LIST

C425	SMD0603		NOT FITTED
C426	SMD0603		NOT FITTED
C427	CAPSMD6.3		NOT FITTED
C428	CAPSMD6.3		NOT FITTED
C429	SMD0603		NOT FITTED
C430	SMD0805		NOT FITTED
C431	SMD0805		NOT FITTED
C432	SMD0805		NOT FITTED
C433	SMD0805		NOT FITTED
C434	SMD0805		NOT FITTED
C435	SMD0805		NOT FITTED
C440	SMDCAPS		NOT FITTED
C441	SMDCAPS		NOT FITTED
C442	SMDCAPS		NOT FITTED
C443	SMDCAPS		NOT FITTED
C501	CAPSMD5.0	22uF	EL 16V 20%
C502	SMD0603	10nF	CP 50V 10%
C503	SMD0603	10nF	CP 50V 10%
C504	SMD0603	10nF	CP 50V 10%
C505			NOT FITTED
C506			NOT FITTED
C507	SMD0805	22nF	CP 50V 10%
C508	SMD0805	22pF	CP 50V 10%
C509	SMD0805	22pF	CP 50V 10%
C510	SMD1206	1uF	CP 50V 10%
C511	SMD0805	100nF	CP 50V 10%
C512	CAP RAD0.4	470uF	EL 25V 20%
C513	SMD1206	1uF	CP 50V 10%
C601	SMD0805	100nF	CP 50V 10%
C602	SMD0805	100nF	CP 50V 10%
C603	SMD0805	100nF	CP 50V 10%
C604	SMD0805	100nF	CP 50V 10%
C605	SMD0805		NOT FITTED
C606	SMD0805		NOT FITTED
C607	SMD0805		NOT FITTED
C608	SMD0603	10nF	CP 50V 10%
C609	SMD0603		NOT FITTED
C610	SMD0603		NOT FITTED
C611	SMD0603	10nF	CP 50V 10%
C612	SMD0603	10nF	CP 50V 10%
C613	SMD0603	10nF	CP 50V 10%
C614	SMD0603		NOT FITTED
C615	SMD0603		NOT FITTED
C616	SMD0603	10nF	CP 50V 10%
C617	SMD0603	10nF	CP 50V 10%
C618	SMD0603	10nF	CP 50V 10%
C619	SMD0603	10nF	CP 50V 10%
C620	SMD0603		NOT FITTED
C621	SMD0603		NOT FITTED
C622	SMD0603		NOT FITTED
C623	SMD0603		NOT FITTED
C624	SMD0603		NOT FITTED
C625	SMD0603	10nF	CP 50V 10%
C626	SMD0603	10nF	CP 50V 10%
C627	SMD0603		NOT FITTED

CYRUS CD6s PCB PARTS LIST

C628	SMD0603		NOT FITTED
C629	SMD0603	10nF	CP 50V 10%
C630	SMD0603	10nF	CP 50V 10%
C631	SMD0603		NOT FITTED
C632	SMD0603		NOT FITTED
C633	SMD0603	10nF	CP 50V 10%
C634	SMD0603		NOT FITTED
C635	SMD0603		NOT FITTED
C636	SMD0603		NOT FITTED
C637	SMD0603		NOT FITTED
C638	SMD0603		NOT FITTED
C639	SMD0603	10nF	CP 50V 10%
C640	SMD0603	10nF	CP 50V 10%
C641	SMD0603	10nF	CP 50V 10%
C642	SMD0603		NOT FITTED
C643	RB.3/.7	2200uF	EL 25V 20%
C644	RB.2/.5	1200uF	EL 16V 20%
C645	CAPSMD5.0	22uF	EL 16V 20%
C646	RB.3/.7	2200uF	EL 25V 20%
C647	RB.3/.7	4700uF	EL 25V 20%
C648	RB.3/.7	4700uF	EL 25V 20%
C649	RB.3/.7		NOT FITTED
C650	RB.3/.7		NOT FITTED
C651	CAPSMD6.3	47uF	EL 16V 20%
C652	CAPSMD6.3	47uF	EL 16V 20%
C653	CAPSMD6.3	220uF	EL 16V 20%
C654	CAPSMD6.3	47uF	EL 16V 20%
C655	CAPSMD6.3	47uF	EL 16V 20%
C656	CAPSMD6.3	47uF	EL 16V 20%
C657	CAPSMD6.3	220uF	EL 16V 20%
C659	CAPSMD5.0	22uF	EL 16V 20%
C661	CAPSMD5.0	47uF	EL 6.3V 20%
C662	CAPSMD5.0		NOT FITTED
C663	CAPSMD5.0		NOT FITTED
C664	RB.3/.7	4700uF	EL 25V 20%
C665	SMD0603	10nF	CP 50V 10%
C666	SMD0603	10nF	CP 50V 10%

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

D501	SOT-23	BAV99	300mA Dual Signal Diode
D502	SOT-23	BAV99	300mA Dual Signal Diode
D503	SOT-23	BAS16	300mA Signal Diode
D505	SOT-23	5V6	BZX84C5V6 5V6 Zener Diode
D506	PSM	1SR154-400	1A Rectifier Diode
D507	PSM	1SR154-400	1A Rectifier Diode
D508	SOT-23	BAW56	300mA Dual Signal Diode
D601	PSM		NOT FITTED
D602	PSM	1SR154-400	1A Rectifier Diode
D603	PSM	1SR154-400	1A Rectifier Diode
D604	DIODEBR2-SM	DF02	1A Rectifier diode bridge

CYRUS CD6s PCB PARTS LIST

D605	SOT-23	11V	BZX84C11V 11V Zener Diode	
D606	SMC			deleted
D607	DIODEBR2-SM	DF02	1A Rectifier diode bridge	
D608	DIODEBR2-SM		NOT FITTED	

TRANSISTORS

T101	SOT-23	BC817-25	NPN Signal Transistor	
T102	SOT-23	BC817-25	NPN Signal Transistor	
T501	SOT-23	BC807-25	PNP Dual Signal Transistor	
T502	DPAK1	MJD32C	PNP SMD Power Transistor	
T503	SOT-23	BC817-25	NPN Dual Signal Transistor	
T504	SOT-23	BC817-25	NPN Dual Signal Transistor	
T505	SOT-23	DTA114YK	PNP Digital Transistor	
T506	SOT-23	DTA114YK	PNP Digital Transistor	
T507	SOT-23	DTA114YK	PNP Digital Transistor	
T601	TO-220	TIP31	NPN Power Transistor	
T602	SOT-23	BC817-25	NPN Signal Transistor	
T603	SOT-23		NOT FITTED	

INTEGRATED CIRCUITS

IC101	VSOP24	AK4103	Digital Audio Output Encoder	
IC201	SO-14	74HCT86	Quad XOR	
IC202	SOL-20	74HC574	Octal Latch	
IC203	SO-14	74HC14	Hex Schmitt Inverter	
IC204	SO-16	CD74HC4046AM	PLL and VCO NO ALTERNATIVE	
IC205	SO-16	74HC161	8 Bit Shift Register	
IC206	SO-14	74HC74	Dual D type Flip Flop	
IC301	SSOP28	PCM1738	24 bit 192kHz DAC	
IC302	SO-8	BA15532	Low noise dual op amp	
IC303	SO-8	BA15532	Low noise dual op amp	
IC304	SO-8	BA15532	Low noise dual op amp	
IC305	SO-8		NOT FITTED	
IC401	SSOP28		NOT FITTED	
IC402	SO-8		NOT FITTED	
IC403	SO-8		NOT FITTED	
IC404	SO-8		NOT FITTED	
IC501	SO-14	74HC14	Hex Schmitt Inverter	
IC502	QFP-64SKT	H8/3644	8 bit Microcontroller	
IC503	SOT-23-GEC	DS1811R-15	Reset control IC	

VOLTAGE REGULATORS

VR301	SOT223	REG1117A	800mA +VE Adjustable Regulator	
VR401	SOT223		NOT FITTED	
VR601	SOT252	LM1117DT-5.0	800mA +VE Regulator SMD	
VR602	TO220	LM2940CT-5.0	1A +VE 5V regulator LDO	
VR603	TO220	LM317	1A +VE Adjustable Regulator	
VR604	SOT223	REG1117A	800mA +VE Adjustable Regulator	
VR605	SOT223		NOT FITTED	
VR606	TO220	LM337	1A -VE adjustable regulator	

CYRUS CD6s PCB PARTS LIST

FILTERS , INDUCTORS & CRYSTALS

L101	COIL7KM		NOT FITTED	
L201	l206	1uH	FSLM2520	
L601	l206	1uH	FSLM2520	
L602	COIL-DO3316			deleted
X501	XTAL SMD	9.8304MHz	4HSMX SMD Xtal, Alt IQD	
XTAL201	XTALMODULE14		NOT FITTED	

CONNECTORS AND SOCKETS

CON101	CONLIF12S	00-8370-127-000-800	12 Way flex foil side entry 1.25mm	
CON102	9 way cable		9way Molex KK header to 9 way JST	
CON103	4 way cable		4 way Molex KK header to 4 way JST	
CON104	CONZIF12S	39-51-3123	12 Way flex foil side entry 1.25mm	
CON105	CONLIF12S	00-8370-127-000-800	12 Way flex foil side entry 1.25mm	
CON106	2.8mmQC		DNF	
CON107	2.8mmQC	RMB6199	2.8x 0.5mm rt angle quick connect	
CON108	2.8mmQC	RMB6199	2.8x 0.5mm rt angle quick connect	
CON109	2.8mmQC		DNF	
CON501	CON-RJ45-SMD	98435-511	Alt 85513-0013	
CON601	CONMINIPWR6	6 way	Alt 39-31-0060	
CON602	CONMINIPWR6		NOT FITTED	
CON603	CON-PSX		NOT FITTED	
SK101	PHONOQUAD	Quad Phono	Gold plated, black sockets	
SK103	Black RCA		NOT FITTED	
SK501	PHONODUAL	Dual Phono	Gold plated, black sockets	

OTHER PARTS

TOTX101	TOX179		Optical output	
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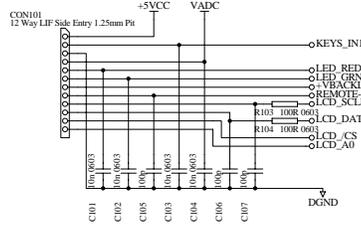
CYRUS CD6s CIRCUIT DIAGRAMS

Circuit diagram index

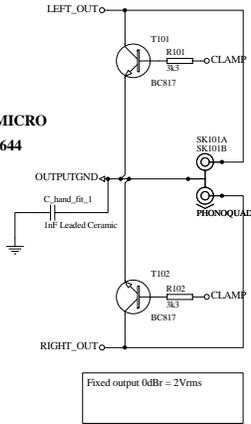
The Cyrus CD6s circuit diagrams are listed below.

SHEET 1	Connectors and digital audio output
SHEET 2	Clock generation
SHEET 3	Left and Right channel DtoA converter
SHEET 4	Microcontroller
SHEET 5	PSU

To Front Panel PCB

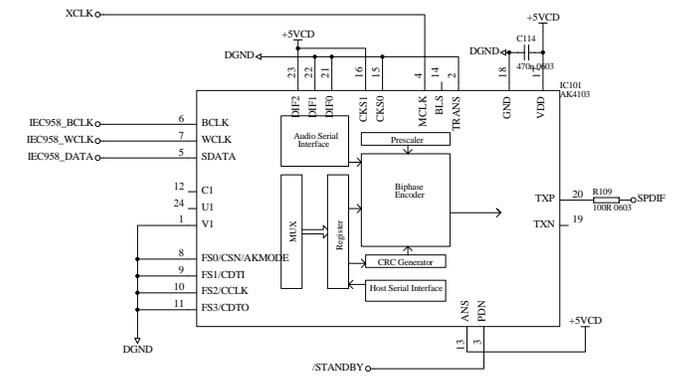
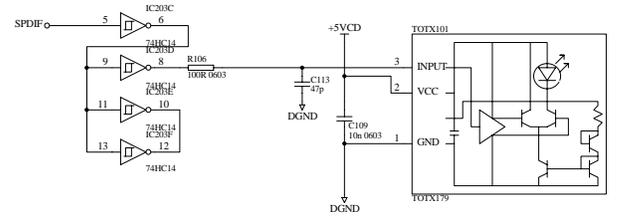
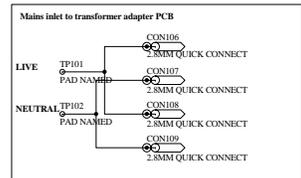
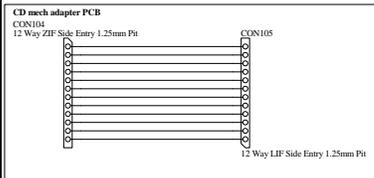
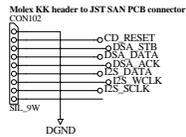
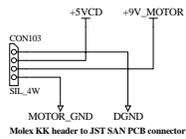


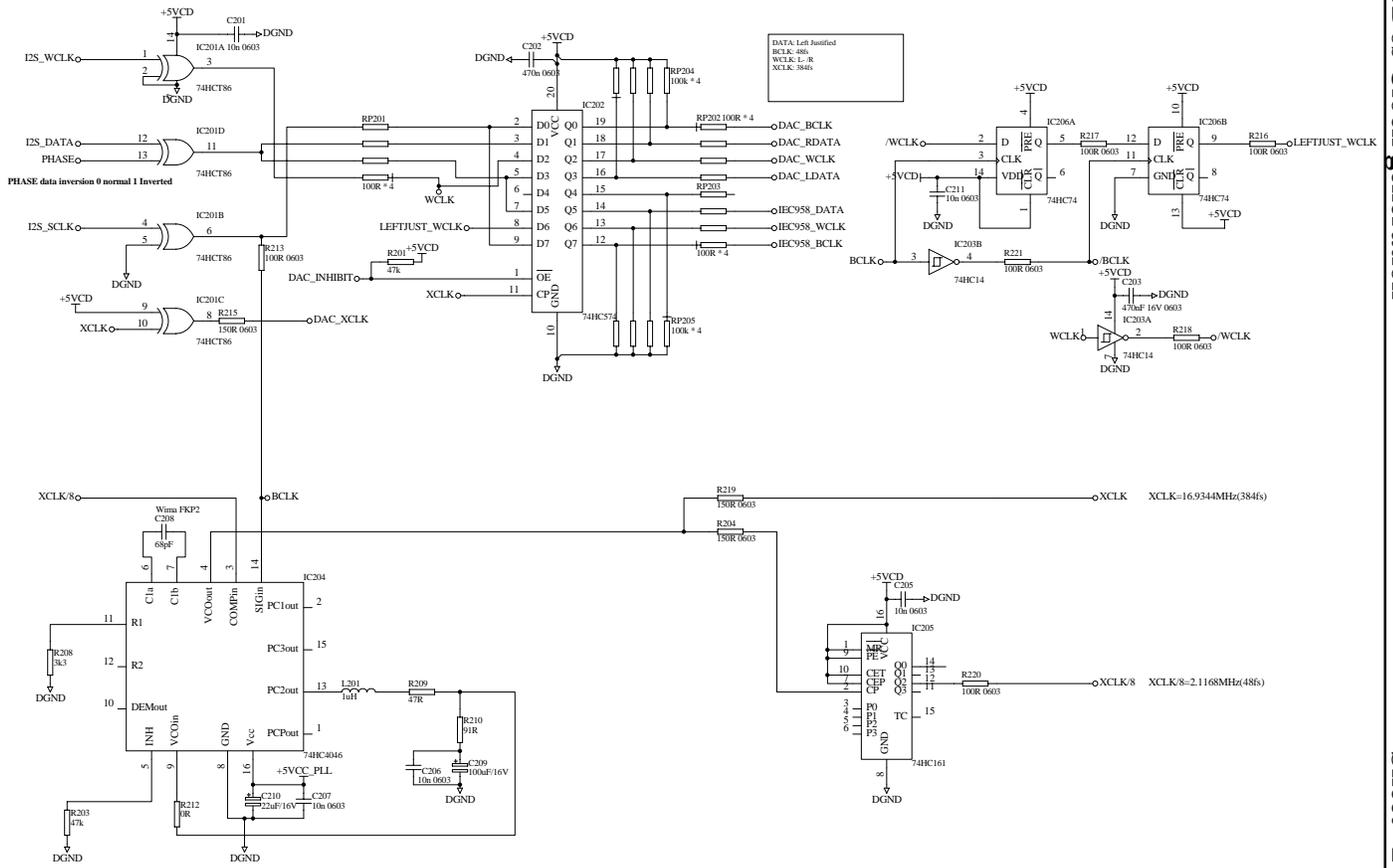
**TO MICRO
H8/3644**

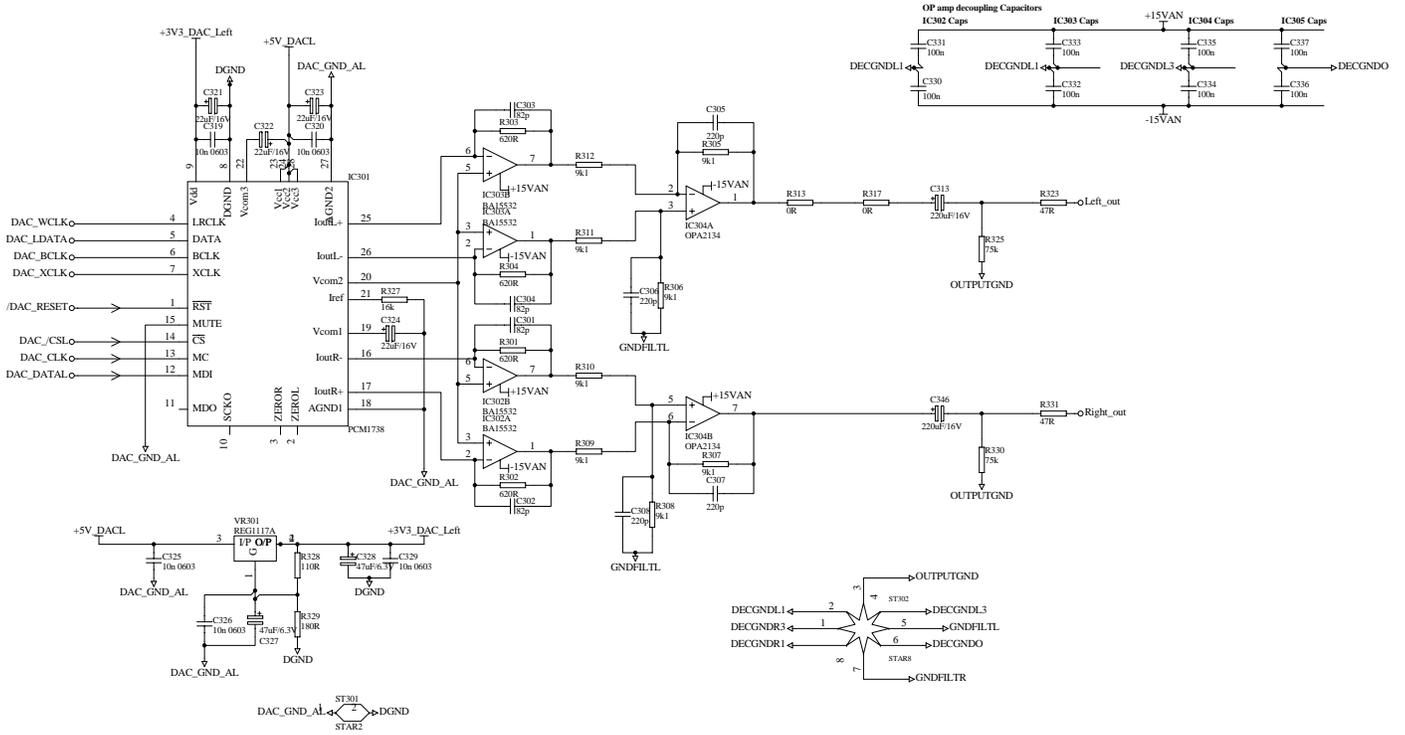


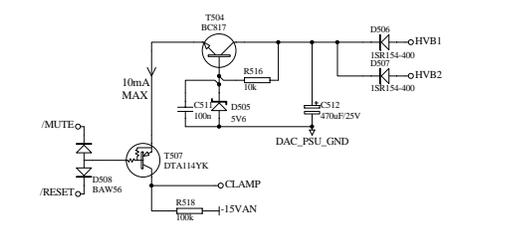
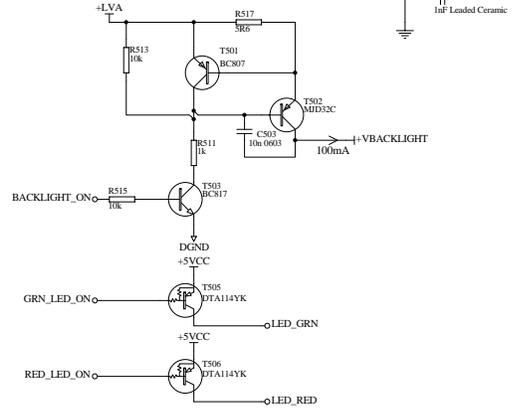
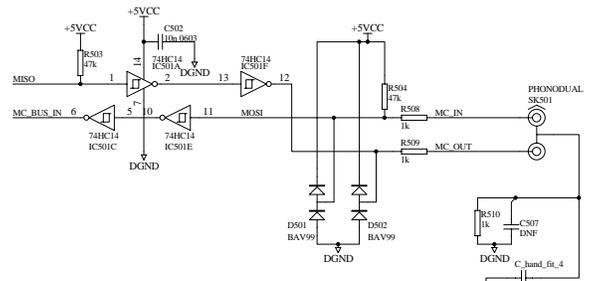
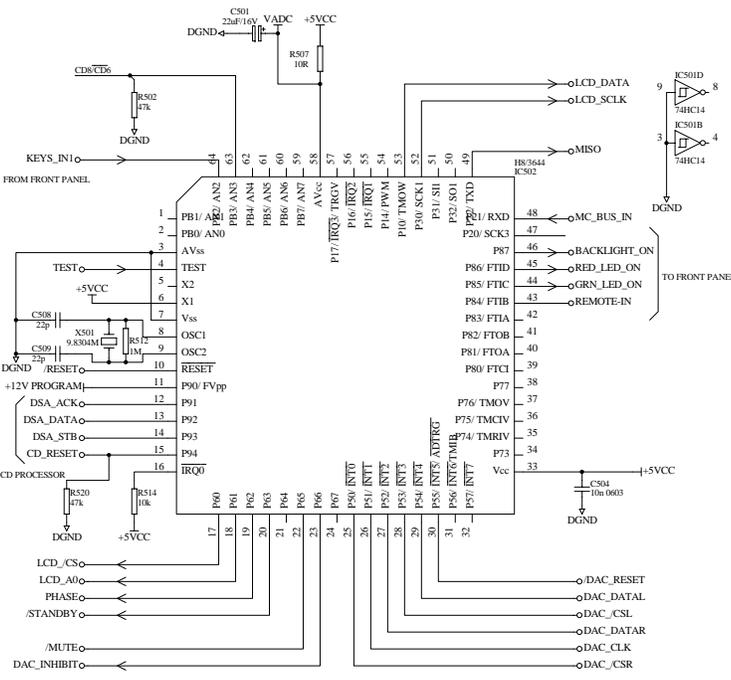
Fixed output 0dB = 2Vrms

To CD Mechanism









25-02-99

