

# Service Service Service

CDR570  
CDR770  
CDR775  
CDR930  
CDR950

# Service Manual



## Contents

	Page
1 Introduction	2
2 Safety- and maintenance instructions, warnings and notes	3
3 Directions for use	6
4 <i>Mechanical instructions</i>	7
Loader CDL4009	7
CDL3800	8
Demounting CDL3800	9
Exploded view CDM3800	11
Cleaning lens	12
Lubricating	13
5 <i>Service modes, faultfindingtrees and repair tips</i>	14
Service modes	14
Faultfindingtrees	18
6 Blockdiagrams	33
7 Electrical diagrams and PWB's	34
8 Alignments, Adjustments	75
9 Circuit description	76
List of abbreviations	77
10 Sparepart list	85

©Copyright reserved 2000 Philips Consumer Electronics B.V. Eindhoven, The Netherlands. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise without the prior permission of Philips.



# PHILIPS

# 1. Technical Specifications/Introduction.

In this document the important issues for the mechanical and electrical testing, adjusting, checking and diagnosing of the Digital Audio CDR Module such as applied in so-called 3rd generation CDR recorders is described.

In this first chapter is presented the introduction of the repair manual for 2nd line repair workshops. It contains the repair instructions of the CDR Module CDL4009 + Mainboard 4228. All modules consist of the same loader + CDM part, the mounting of the components on the Mainboard deviates from each other. For that reason a separate CDR-module has been defined for each type/modelnumber.

On top of that: Each mainboard connected to another CDM has to be adjusted before that module can be used. To have this module on component level repaired this second line service (repair) manual has to be used in combination with the "first" line service manual of mentioned typenumber. As long as the adjustment instructions can not be carried out, the module has to be exchanged by an adjusted one from Service stock in case of repairs concerning CDM and/or Servo circuits.

Chapter 2 contains the required safety instructions, in chapter 3 a referring to the directions for use, as published in the typenumber Service Manual, is made.

In chapter 4 the mechanical exploded view of the complete module, the loading part and the CDM3800 is presented. This chapter also includes the mounting, demounting, cleaning and greasing instruction.

In chapter 5 the internal selfdiagnostics without opening the set and use of other tools is described in the service modes. The faultfinding trees and repair suggestions like the power supply voltages for proper functioning of the mainboard are indicated there too. This chapter also contains initialising and reset, concerned measuring points are highlighted. For proper functioning of all ICs the clockfrequencies have to be tested and the importance of derived clockfrequencies is shown. and how to operate with the menu driven diagnostics. Via a PC connection (serial input socket RS232C) the Menu Driven Diagnostics feature is started.

To improve the interactivity and communication with the set/module the COMPAIR (the for service designed computer aided repair) tool is supported too by this CDR generation. Details to be defined soonest and will be published by a service information bulletin later on.

Via blockdiagrams of applied boards the common issues of all boards are shown and in short explained in chapter 6.

In chapter 7 the circuit diagrams and printed wiring boards with important measuring points are shown.

The adjustment of the laser current (only one important and necessary adjustment has to be carried out, the rest of the adjustments are calculated from that parameter onwards) will be presented in chapter 8. The needed PC program is under investigation now and with the implementation of COMPAIR this adjustment action will be explained. The method how to align the software, if needed, is indicated here.

In chapter 9 reference is made to existing 3rd generation circuit description in which publication a lot of details about the functioning of the set is explained.

Also the list of abbreviations is inserted here.

Finally a survey of applied components and corresponding service ordering numbers is given in chapter 10.

As the Mainboard 4228 is designed to be applied for several modelnumbers this board contains a lot of optional components.

The most extended board is modelnumber CDR775 where double speed dubbing feature is applied too.

## 2. Safety and Maintenance instructions warnings and notes

**GB WARNING**

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.  
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance.  
Keep components and tools also at this potential.



**NL WAARSCHUWING**

Alle IC's en vele andere halfgeleiders zijn gevoelig voor elektrostatische ontladingen (ESD).  
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen.  
Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.  
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

**F ATTENTION**

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).  
Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.  
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.  
Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

**D WARNUNG**

Alle IC und viele andere Halbleiter sind empfindlich gegen elektrostatische Entladungen (ESD).  
Unvorsichtige Behandlung bei der Reparatur kann die Lebensdauer drastisch vermindern.  
Sorgen sie dafür, das Sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind.  
Halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

**I AVVERTIMENTO**

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).  
La loro longevita potrebbe essere fortemente ridatta in caso di non osservazione della piu grande cauzione alla loro manipolazione.  
Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.  
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

**GB**

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

**D**

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Gerats darf nicht verändert werden. Für Reparaturen sind Original-Ersatzteile zu verwenden.

**NL**

Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt terug gebracht en dat onderdelen, identiek aan de gespecificeerde worden toegepast.

**I**

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati pezzi di ricambio idetici a quelli specificati.

**F**

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.



**CAUTION  
VARO!  
WARNING  
ADVERSEL  
DANGER  
VORSICHT**

INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.  
AVATTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASER SÄTTEILYLLE ÄLÄ KATSO SÄTEESSEN  
OSYNYLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD BETRÄKTA EJ STRÅLEN.  
USYNYLIG LASERSTRÅLNING VID ÅBNING. UNDGÅ UNSÄTTELSE FÖR STRÅLING.  
INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM.  
UNSIICHTBARE LASERSTRÄHLUNG WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.

**SHOCK, FIRE HAZARD SERVICE TEST:**

**CAUTION:** After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or Front Panel of product and controls and chassis bottom,  
Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verified before return to user/customer.  
Ref.UL Standard NO.1492.

**NOTE ON SAFETY:**

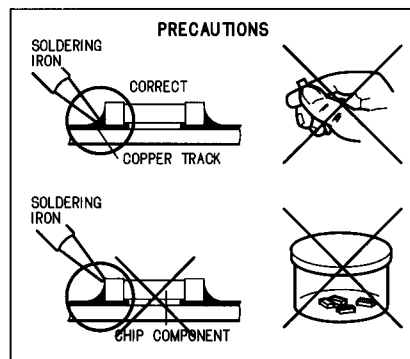
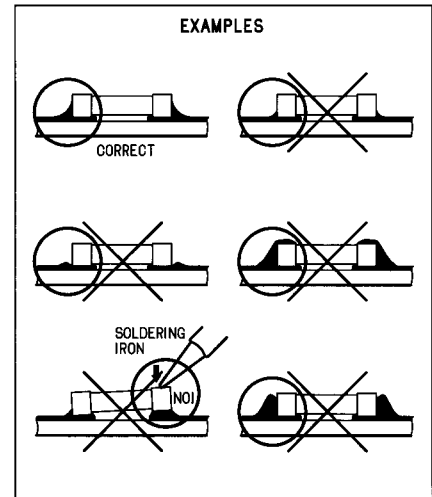
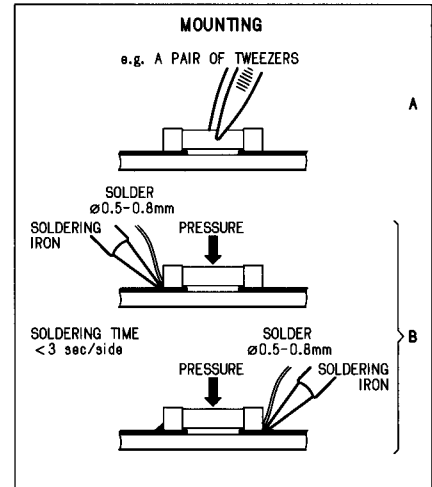
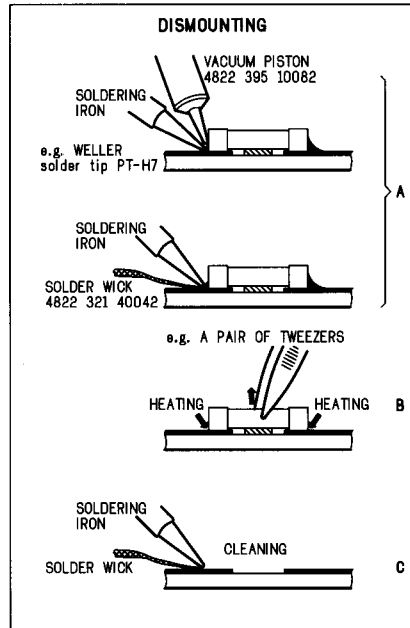
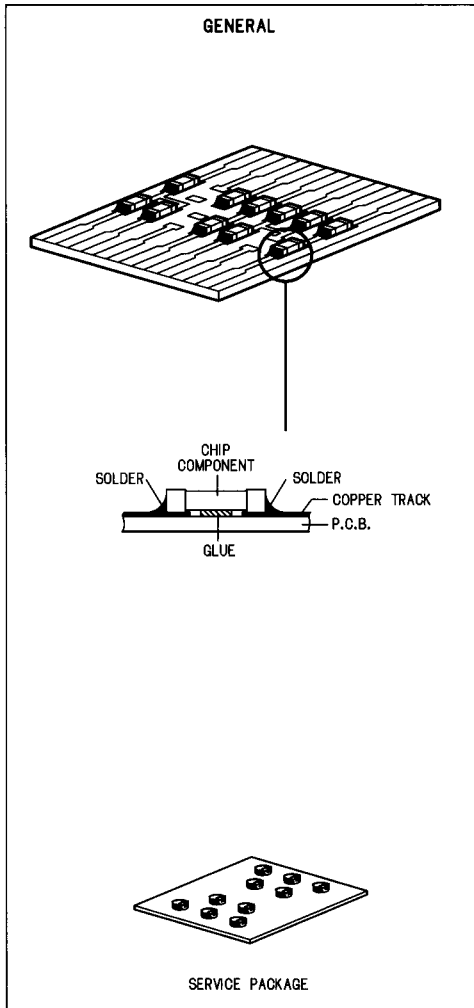
Symbol : Fire or electrical shock hazard. Only original parts should be used to replace any part with symbol Any other component substitution(other than original type), may increase risk or fire or electrical shock hazard.



"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne."

SERVICING HINTS

In the set, chip components have been applied. For disassembly and assembly check the figure below.





## SAFETY GUIDELINES FOR THE PROFESSIONAL SERVICE TECHNICIAN

### Important

Proper service and repair is important to the safe, reliable operation of all Philips equipment. The service procedures recommended by Philips and described in this service manual are effective methods of performing service operations. Some of these service operations require the use of tools specially designed for the purpose. The special tools should be used when and as recommended.

It is important to note that this manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It also is important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. Philips could not possibly know, evaluate and advise the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, Philips has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by Philips must first satisfy himself thoroughly that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.

### Safety Checks

After the original service problem has been corrected, a complete safety check should be made. Be sure to check over the entire set, not just the areas where you have worked. Some previous servicer may have left an unsafe condition, which could be unknowingly passed on to your customer. Be sure to check all of the following:

### Fire and Shock Hazard

1. Be sure all components are positioned in such a way as to avoid the possibility of adjacent component shorts. This is especially important on those units which are transported to and from the service shop.
2. Never release a repaired unit unless all protective devices such as insulators, barriers, covers, strain reliefs, and other hardware have been installed according to the original design.
3. Soldering and wiring must be inspected to locate possible cold solder joints, solder splashes, sharp solder points, frayed leads, pinched leads, or damaged insulation (including the ac cord). Be certain to remove loose solder balls and all other loose foreign particles.
4. Check across-the-line components and other components for physical evidence of damage or deterioration and replace if necessary. Follow original layout, lead length, and dress.
5. No lead or component should touch a resistor rated at 1 watt or more. Lead tension around protruding metal surfaces or edges must be avoided.
6. Critical components having special safety characteristics are identified with a  $\blacktriangle$  by the Ref. No. in the parts list and enclosed within a broken line\* (where several critical components are grouped in one area) along with the safety symbol  $\blacktriangle$  on the schematic diagrams and/or exploded views.  
Replacement parts without the same safety characteristics may create shock, fire, or other hazards.
7. When servicing any unit, always use a separate isolation transformer for the chassis. Failure to use a separate isolation transformer may expose you to possible shock hazard, and may cause damage to servicing instruments.
8. Many electronic products use a polarized ac line cord (one wide pin on the plug). Defeating this safety feature may create a potential hazard to the servicer and the user. Extension cords which do not incorporate the polarizing feature should never be used.

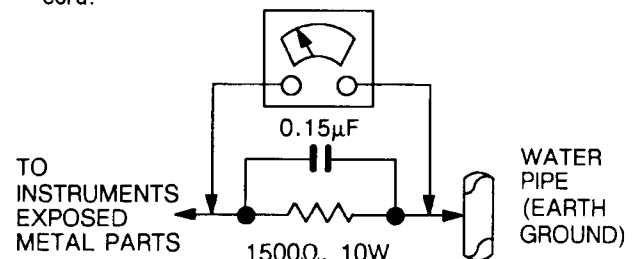
### Fire and Shock Hazard (Continued)

9. After reassembly of the unit, always perform an ac leakage test or resistance test from the line cord to all exposed metal parts of the cabinet. Also, check all metal control shafts (with knobs removed), antenna terminals, handles, screws, etc. to be sure the unit is safe to operate without danger of electrical shock.

\* Broken line: 

### Leakage Current Cold Check

1. Unplug the ac line cord and connect a jumper between the two prongs of the plug.
2. Turn on the power switch.
3. Measure the resistance value between the jumpered ac plug and all exposed cabinet parts of the receiver, such as screw heads, antennas, and control shafts. When the exposed metallic part has a return path to the chassis, the reading should be between 1 megohm and 5.2 megohms. When the exposed metal does not have a return path to the chassis, the reading must be infinity. Remove the jumper from the ac line cord.



### Leakage Current Hot Check

1. Do not use an isolation transformer for this test. Plug the completely reassembled unit directly into the ac outlet.
2. Connect a 1.5k, 10W resistor paralleled by a 0.15uF capacitor between each exposed metallic cabinet part and a good earth ground such as a water pipe, as shown above.
3. Use an ac voltmeter with at least 5000 ohms/volt sensitivity to measure the potential across the resistor.
4. The potential at any point should not exceed 0.75 volts. A leakage current tester may be used to make this test; leakage current must not exceed 0.5 millamps. If a measurement is outside of the specified limits, there is a possibility of shock hazard. The receiver should be repaired and rechecked before returning it to the customer.
5. Repeat the above procedure with the ac plug reversed. (Note: An ac adapter is necessary when a polarized plug is used. Do not defeat the polarizing feature of the plug.)

### Parts Replacement

1. Many electrical and mechanical parts in Philips equipment have special safety related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. The use of a substitute part which does not have the same safety characteristics as the Philips recommended replacement part shown in this service manual may create shock, fire, or other hazards. Under no circumstances should the original design be modified or altered without written permission from Philips. Philips assumes no liability, express or implied, arising out of any unauthorized modification of design. Servicer assumes all liability.
2. All ICs and many other semiconductor parts are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce the life of the part drastically.

### LASER NOTE:

**DANGER** - Invisible laser radiation when open. AVOID DIRECT EXPOSURE TO BEAM.

**CAUTION** - Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

**CAUTION** - The use of optical instruments with this product will increase eye hazard.

### 3. Instructions for use

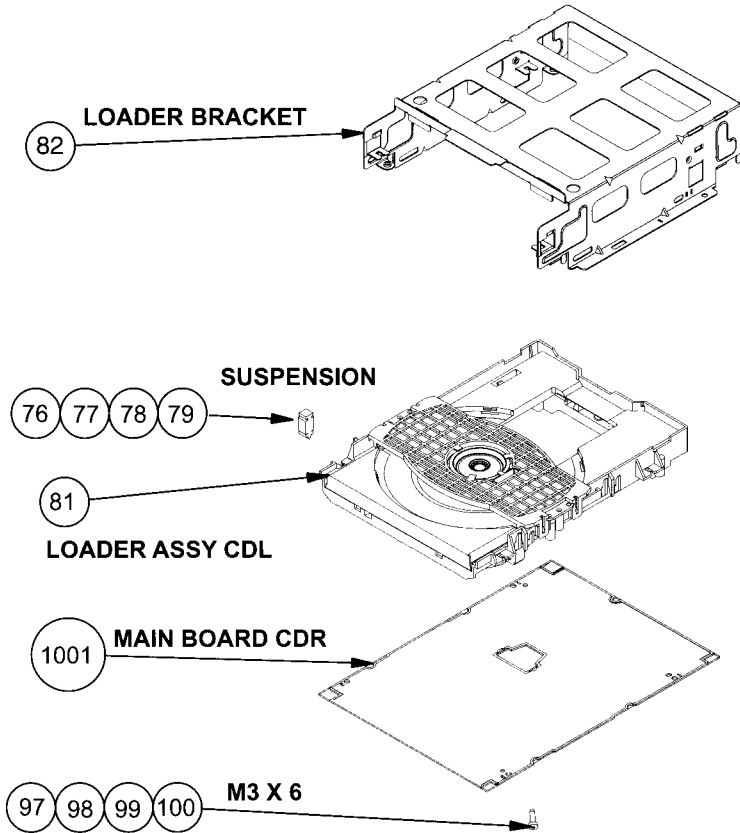
See service manual of concerned modelnumber in which the instructions for use has been inserted. This chapter has not been filled as this module of CDR Module CDL4009 + Mainboard 4228 is only a part of a complete set.

# 4. Mechanical instructions

## 4.1 Loader CDL4009

CDL4009 consists of metal loader bracket item 82 and glued on it an identification sticker (on which the module production number and production code is printed); 4 suspension rubbers items 76, 77, 78 and 79 which carry loader assembly item 81;

and on the bottom side the CDR mainboard 1001 is mounted. Notice that mainboard is dependant to the applied set and has to be adjusted to mounted CDM in loader in case of exchange. See next figure, Loader CDL4009



82: LOADER BRACKET  
 81: LOADER ASSY CDL  
 76: SUSPENSION

3104 121 23900  
 9305 043 20900  
 3104 144 05730

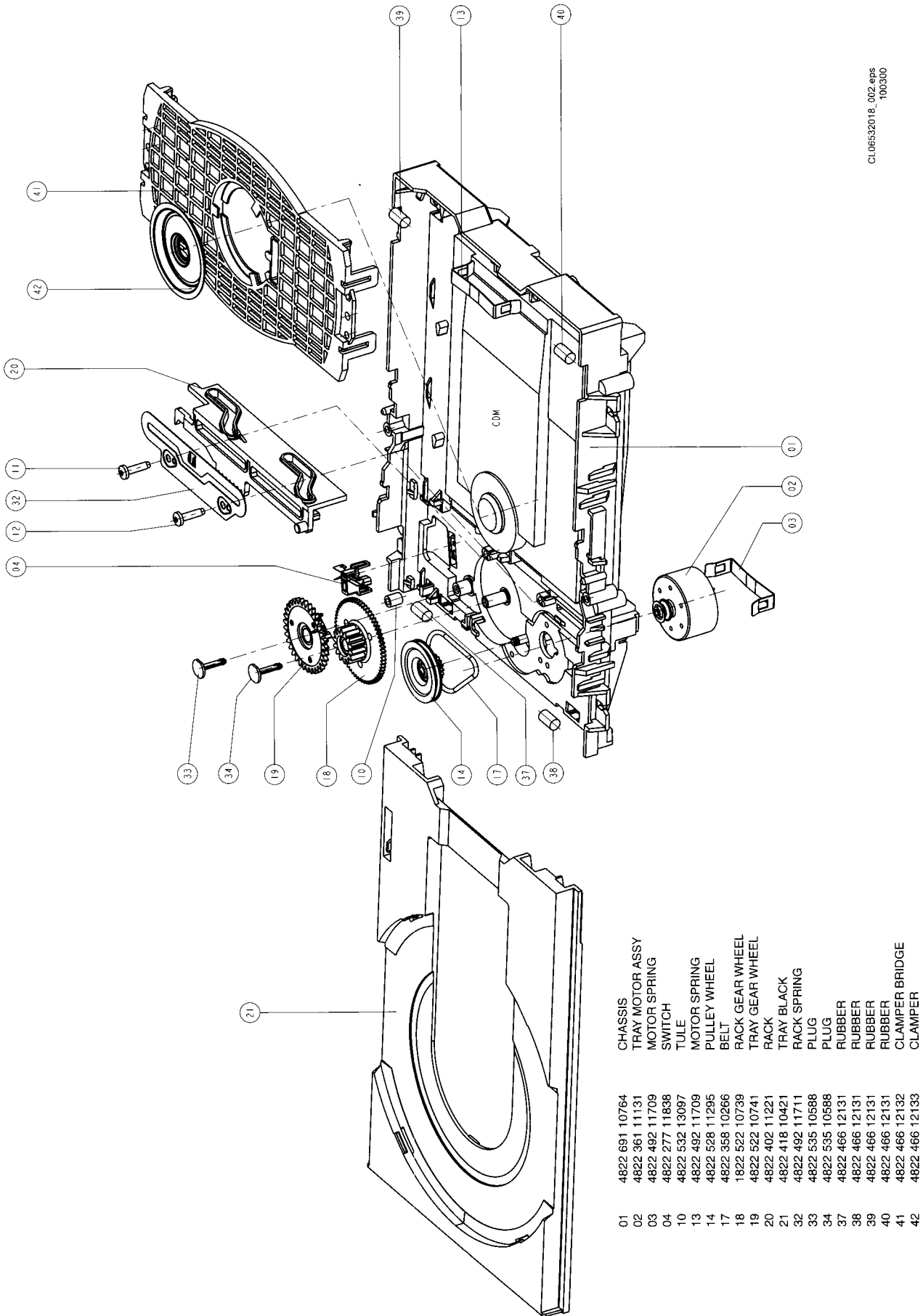
CL06532018\_001.eps  
 090300

Figure 4-1

To demount loader module CDL4009:

1. Mainboard item 1001. Beware of connections to CDM. Optical pick-up unit has to be ESD protected!
2. Loosen suspensions 76, 77, 78 and 79 from metal loader bracket 81
3. Take out Loader assy CDL

4.2 Exploded view CDL3800



CL06532016\_002.eps  
100300

- |    |                |                 |
|----|----------------|-----------------|
| 01 | 4822 691 10764 | CHASSIS         |
| 02 | 4822 361 11131 | TRAY MOTOR ASSY |
| 03 | 4822 492 11709 | MOTOR SPRING    |
| 04 | 4822 277 11838 | SWITCH          |
| 10 | 4822 532 13097 | TULE            |
| 13 | 4822 492 11709 | MOTOR SPRING    |
| 14 | 4822 528 11295 | PULLEY WHEEL    |
| 17 | 4822 358 10266 | BELT            |
| 18 | 1822 522 10739 | RACK GEAR WHEEL |
| 19 | 4822 522 10741 | TRAY GEAR WHEEL |
| 20 | 4822 402 11221 | RACK            |
| 21 | 4822 418 10421 | TRAY BLACK      |
| 32 | 4822 492 11711 | RACK SPRING     |
| 33 | 4822 535 10588 | PLUG            |
| 34 | 4822 535 10588 | PLUG            |
| 37 | 4822 466 12131 | RUBBER          |
| 38 | 4822 466 12131 | RUBBER          |
| 39 | 4822 466 12131 | RUBBER          |
| 40 | 4822 466 12131 | RUBBER          |
| 41 | 4822 466 12132 | CLAMPER BRIDGE  |
| 42 | 4822 466 12133 | CLAMPER         |

Figure 4-2

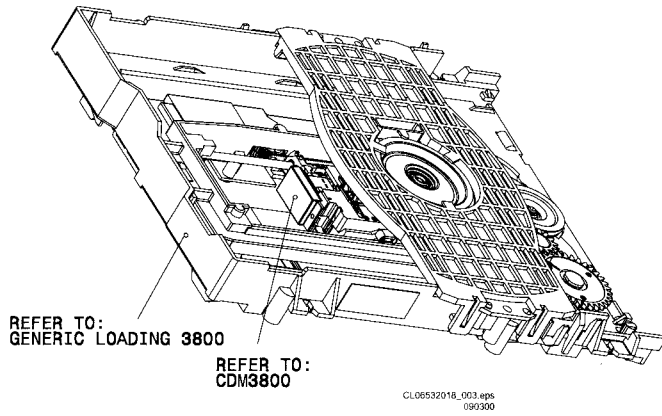


Figure 4-3

### 4.3 DEMOUNTING LOADER CDL3800

Remove the following items starting with:  
(For the item numbers refer to the Exploded Views CDL3800, figure 4.2)

#### 4.3.1 Release and remove tray

Push to open the tray on the rack (item 20)

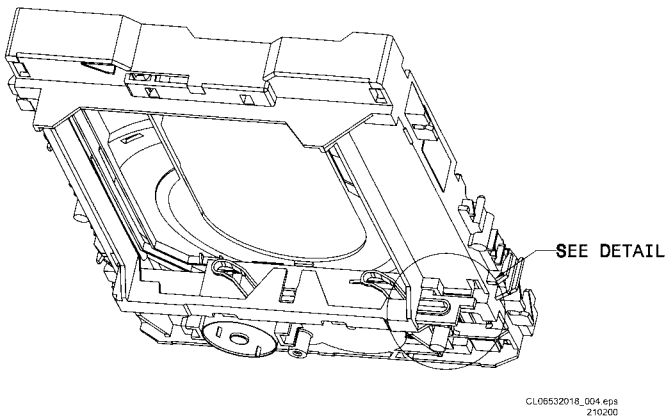


Figure 4-4

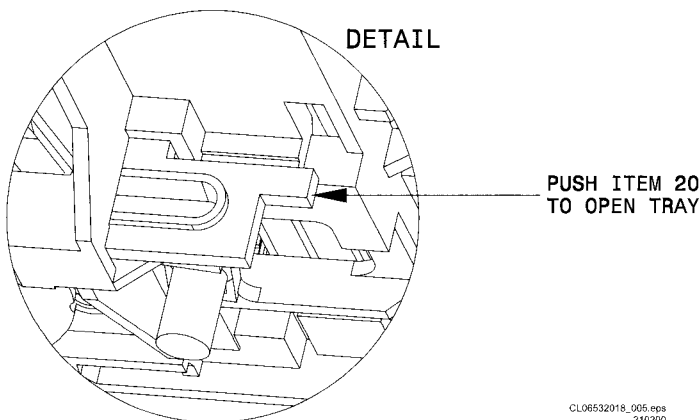


Figure 4-5

#### Tray

Pull out the tray (item 21) until it sticks. Press the lock at the left side of the tray upwards. Pull out the tray.

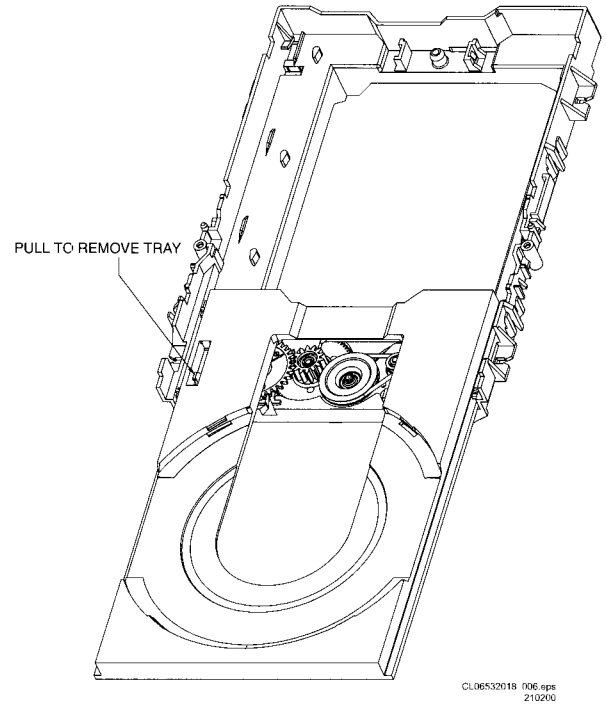


Figure 4-6

#### Tray motor assey

Remove the tray motor belt (item 17).  
Loosen the motorspring (item 3) with a pair of tweezers or a screwdriver via the rectangular hole at the right side of the tray motor.

#### Clamper bridge

Bend the locks-profiles on both sides of the clamper bridge (item 41) carefully to the outside and lift up the clamper bridge.

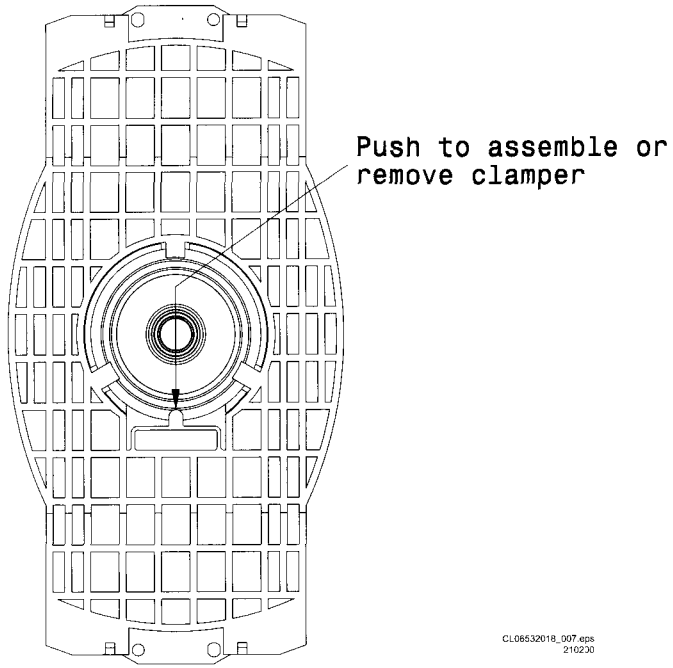
#### CDM

Place the loader upside down and remove the motorspring (item 13) with a pair of tweezers or a screwdriver, but hold the CDM so it can't fall down.

#### Rack

First remove the rack spring (item 32) by unscrewing items 11 and 12.

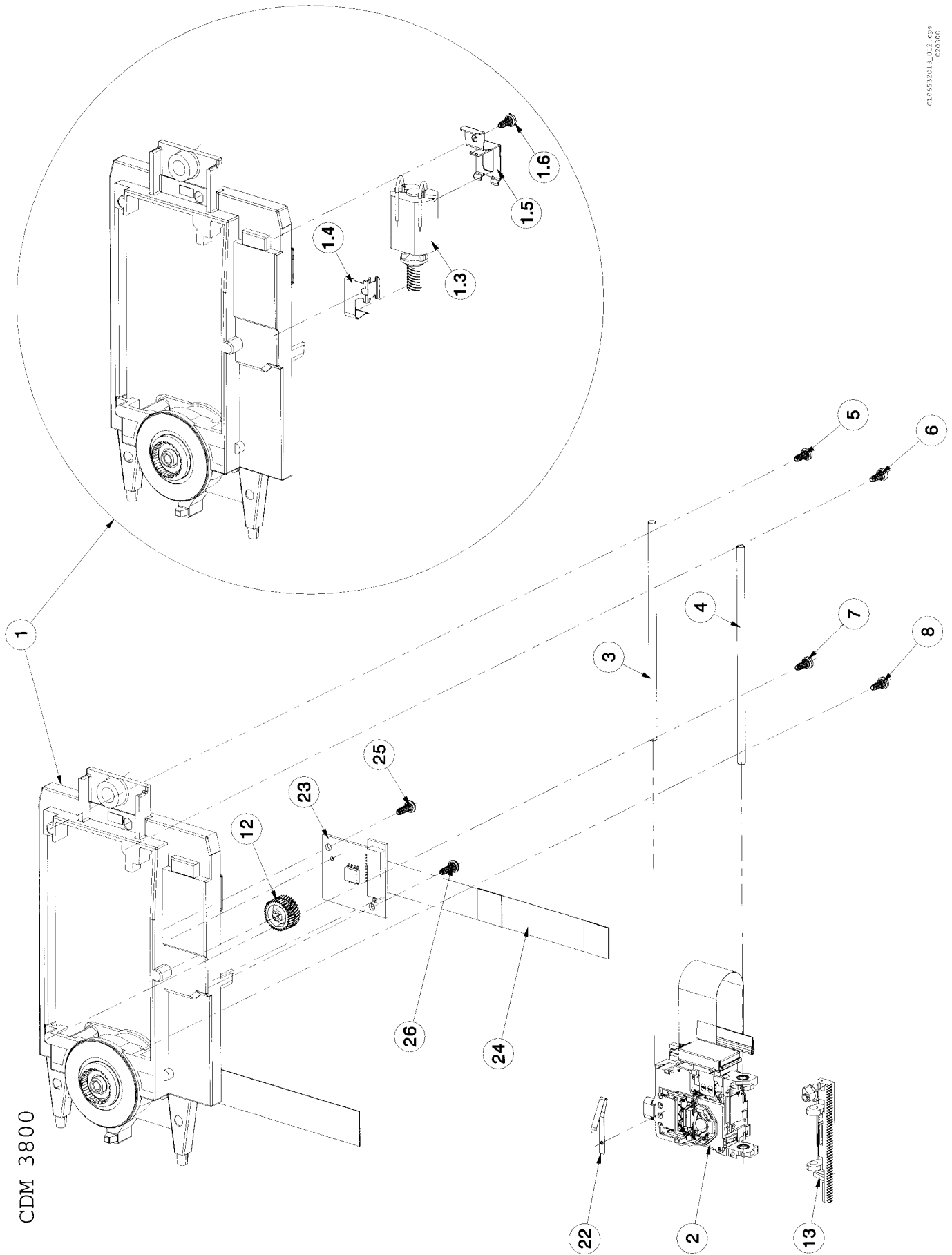
*Clamper*



CL06532018\_007.dps  
210230

**Figure 4-7**

4.4 Exploded view CDM3800



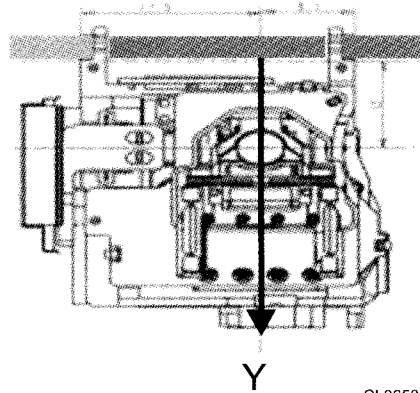
CDM3800 0.2.039  
C7030C

Figure 4-8

3104 147 01580 CDM3800 COMPLETE

1: 4822 691 10765 MOUNTING PLATE ASSY  
 1.3: 4822 361 11132 SLEDGE MOTOR ASSY  
 2: 3104 147 12890 OPU-24.24  
 3: 4822 535 10591 THIRD BEARING AXLE  
 4: 4822 535 10591 AXLE  
 12: 4822 528 11297 COMBI WHEEL  
 13: 4822 522 10742 GEAR RACK ASSY  
 22: 3104 141 21830 THIRD BEARING SPRING

2100: 4822 126 13196 100nF 10% 25V  
 3100: Δ4822 051 20101 100Ω 5% 0,1W  
 5101: 4822 130 11531 SENSOR LT125A



4

CL06532018\_008.eps  
 210200

## 4.5 Cleaning objective lens

### 4.5.1 CLEANING PRESCRIPTION OBJECTIVE LENS

Figure 4-9

- Cleaning fluid

The lens cleaner codenumber reads 4822 389 10026

- Procedure

- Take a clean cotton wool tipped stick and put Lens-cleaner on the wool.
- Wipe the lens very softly with the wet wool end of the stick by moving it forwards and backwards in the Y-direction. (see drawing)
- Take a dry cotton wool tipped stick and remove the Lens-cleaner from the lens by moving it very softly back and forth in the Y-direction (see drawing)
- During cleaning, take the necessary precautions in order to prevent damage to the\*Actuator (hinges, lens, litze-wires) or OPU (ESD, ...) Do not remove axle (item 4, see drawing) from OPU, because the fixing screws of axle are deforming it at it's end. On their turn these deformings are damaging the hinges of the OPU when loosening the axle.

- Application

This cleaning procedure is only applicable for the flat side (upside) of the lens.

Never try to clean the round side (underside) of the lens (replica-side).

With this cleaning procedure, fingerprints and dust can easily be removed with very soft and gently movements of the cotton wool tipped stick.

- Limitation

This cleaning procedure is only applicable in cases of malfunctions of the product, due to lens-problems. It's not ment to be applied on 100% of the actuators, OPU's.

After cleaning, the product must be re-checked on it's functionality.



**4.6 Lubricating**

Between worm and combiwheel (item 12, 4822 528 11297)2x

**4.6.1 LUBRICATING INSTRUCTIONS FOR GENERIC LOADING CDL3800**

USE TRIBOL GREASE (1322 523 78101)

Be careful when lubricating the parts.

For parts and points to apply grease, refer to the drawing figure 4-10.

Avoid excess grease.

B. The bearing of the gearwheel. Grease on upper part of cylindrical surface.<sup>o</sup>

C. Guiding and 2 guiding pins of the rack on the chassis.<sup>o</sup>

D. The guiding of the rackspring.\*

E. The 2 guiding profiles of the rack\*

F. 10 guiding surface of the chassis on the tray.\*

G. The guiding pin on the rack.\*

H. On top (in the middle) of the 4 rubbers.\*

I. Guiding on the chassis of the tray. Grease around the 5 guiding pins.\*

J. The guiding ribs of the chassis for guiding the CDM-nose.\*

<sup>o</sup>=Lubricated with dosing apparatus.

\*=Lubricated with a brush.

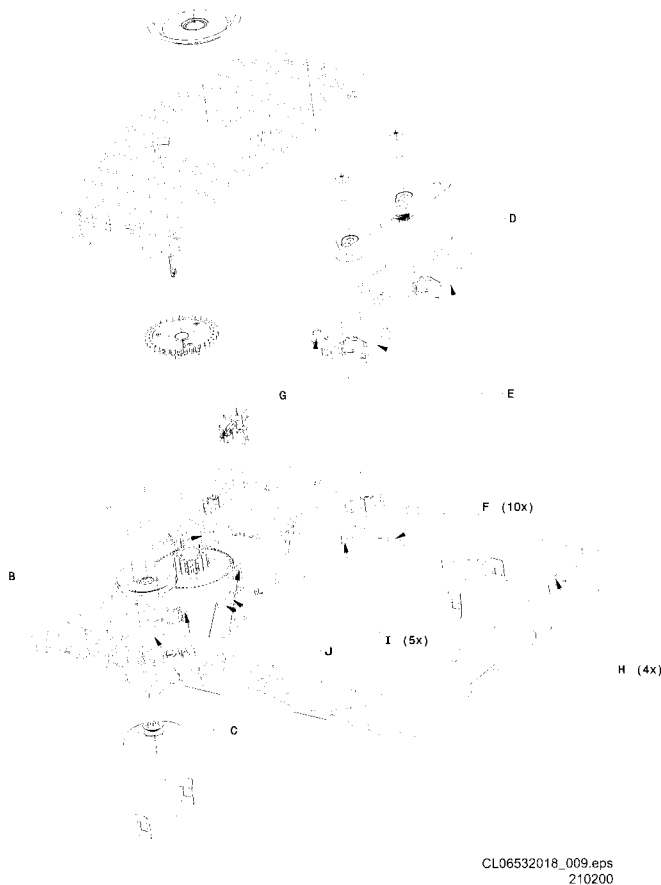


Figure 4-10

**4.6.2 Lubricating instructions for CDM3800**

USE TRIBOL GREASE (1322 523 78101)

The third bearing axle (item 3, 4822 535 10591) on the upperside of the axle 2x

The third bearing axle on the bottomside of the axle 2x

The OPU bearing with Mobil Oil SHC 629 (see next paragraph)

The top of the worm

The pressed in axle on the top

The gear rack assy (item 13, 4822 522 10742) on the teeth2x



Figure 4-11

**Oiling the centrifuged bearings**

USE MOBIL OIL SHC 629 (3104 129 52260)

Use dose apparatus

Place the needle against the bearing and axle.

Dose one (1) drop of oil there where the bearing touches the axle (see drawing figure 4-12)

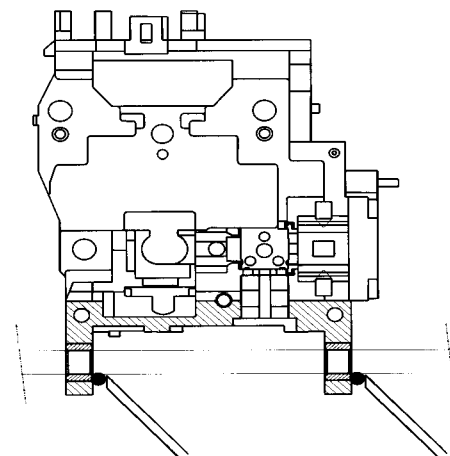
Repeat this handling for the second bearing

Move the OPU for a few times up and down.

REMARKS:

Do not use the oil on the axle alone. Always place the oil drop against the bearing.

No oil on top of the OPU.



2x 1 DROP OF OIL

CL06532018\_011.eps  
020300

Figure 4-12

## 5. Service modes, repair tips and faultfinding trees

### 5.1 Service modes

In this paragraph the internal selfdiagnostics without opening the set and use of other tools is described.

**Notice:** Module is mounted in a set

#### 5.1.1 Dealer mode

The purpose of the dealer mode is to prevent people taking out the CD inside the player at exhibitions, showrooms etc.. This mode disables the open/close function of the player.

The dealer mode can be switched on and off pressing keys [OPEN/CLOSE] and [STOP] of the CDR player simultaneously while switching on the unit. The dealer mode is stored in the flash memory and can only be changed by executing the above actions.

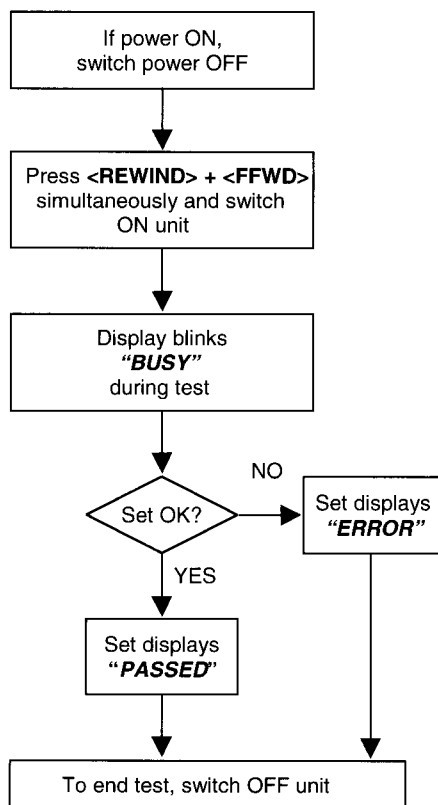
#### 5.1.2 Dealer diagnostics

display. Pressing keys [F FWD] and [REWIND] simultaneously while switching on the unit, starts the test. Switching off the unit ends the test.

#### **Requirements to perform the test**

- Working keyboard to start up the test.
- Working local display to check the output messages.

### DEALER DIAGNOSTICS (status of player)



CL96532086-024.eps  
090999

Figure 5-1

#### **Description**

The intention of the dealer diagnostics is to give an indication of the CDR player status. An inexperienced, even non-technical dealer will/can perform the test. Tests are executed automatically without need for external tools or disassembly of the unit. This test checks the CDR main board using the same tests as the electrical service diagnostics program. Only the result of the test, "PASSED" or "ERROR", will be shown on the

5.1.3 Electrical service diagnostics

**ELECTRICAL SERVICE DIAGNOSTICS**  
(software versions, test for defective components)

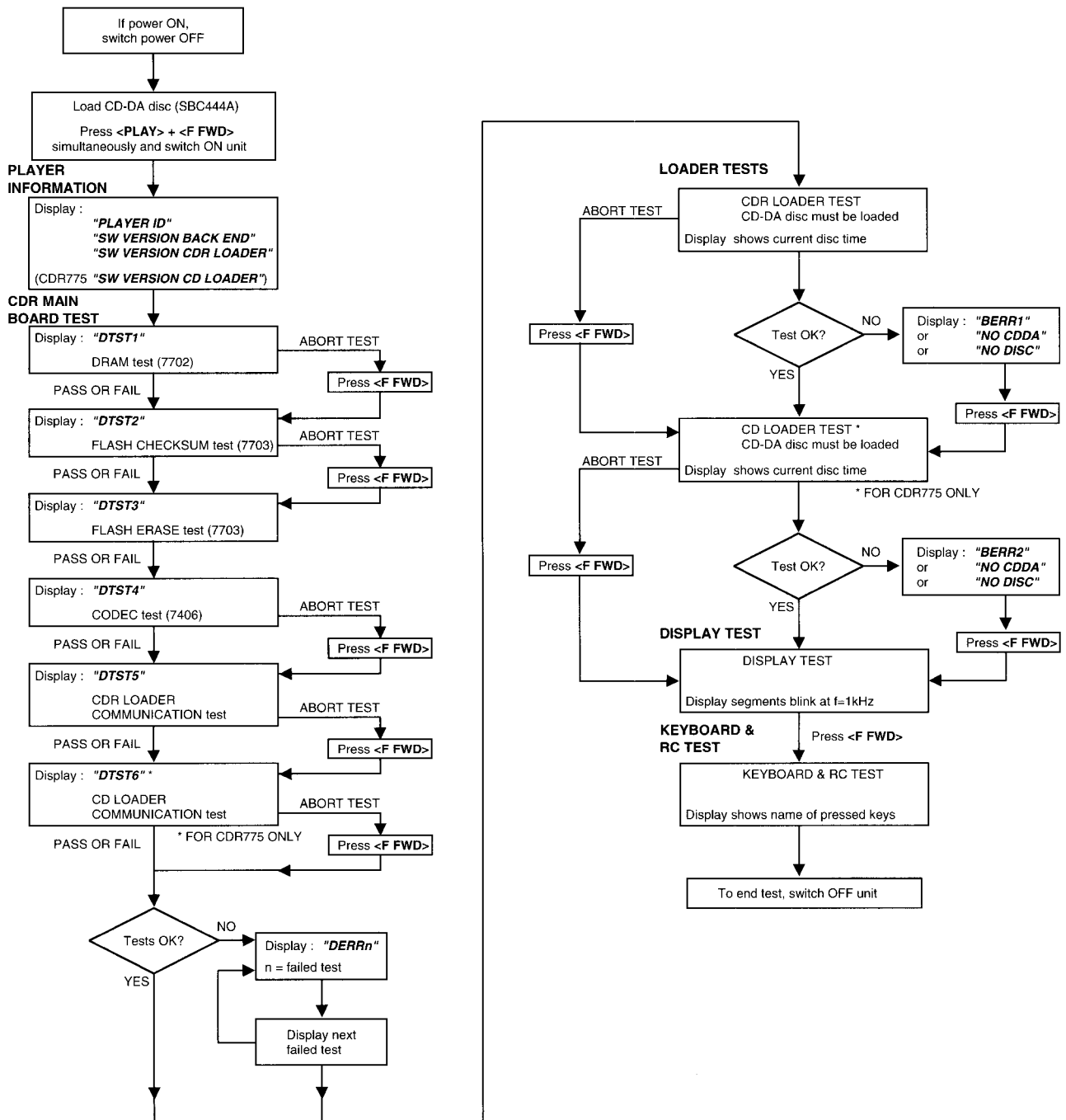


Figure 5-2

**Description**

The intention of the electrical service diagnostics is to show the software versions present in the player and to direct the dealer towards defective internal units. The units are : the CDR main board, the CDR loader, the CD loader in case of a CDR775 and the keyboard/display board. A sequence of tests is executed automatically. Some of the tests can be aborted or skipped without the result being taken into account. External tools or disassembly of the unit is not necessary to get the diagnostic information. Pressing keys [PLAY/PAUSE] and [F FWD] simultaneously while switching on the unit, starts the test. Switching off the unit ends the test.

**Requirements to perform the test**

- Working keyboard to start up the test.
- Working local display to check the output messages.
- A CD-DA disc with a minimum of 3 tracks in all trays to perform the disc test.

**Description of the tests****Player information**

In this part of the test the following important information can be checked without removing the cover :

- Recorder ID.
- SW-version back end of player.
- SW-version CDR loader.
- SW-version CD loader (only for CDR775).

**CDR main board test**

[F FWD] key. The message "DERRn" will be displayed with n indicating the faulty test number.

If one of the tests is aborted with the [F FWD] key, no error message will be displayed for this test. The flash data erase test ("DTST3") can not be aborted !

The CDR main board test consists out of :

**DRAM test**

Display : "DTST1". The DRAM used for buffer management is tested by writing, reading and verifying test patterns.

**Flash checksum test**

Display : "DTST2". This test checks the checksum of the player's SW stored in the flash.

**Flash data erase**

Display : "DTST3". During this test, all temporary information (CDtxt) in the flash is erased.

**CODEC (ADC/DAC) test**

Display : "DTST4". This test checks the CODEC IC by writing, reading and verifying test patterns. The test is not applicable for CDR950.

**CDR communication test**

Display : "DTST5". The communication between the host processor (DASP) and the CDR loader via the DSA-R-bus is tested.

**CD communication test**

Display : "DTST6"). The communication between the host processor (DASP) and the CD loader is tested. The test is only applicable for CDR775.

**Loader tests**

These tests determine if the CDR loader and the CD loader in case of a CDR775 work correctly. A CD-DA disc with a minimum of 3 tracks needs to be inserted in both loaders. A disc test is executed to check focus control, disc motor control, radial control and jump grooves control. The disc test is

performed by audio play-back of 5 seconds at the beginning, middle and end of the disc.

**CDR loader test**

During the test, the current disc time is shown. In case of an error the message "BERR1" will be displayed and the [F FWD] key must be pressed to continue with the following test. Pressing the [F FWD] key also aborts this test.

**CD loader test**

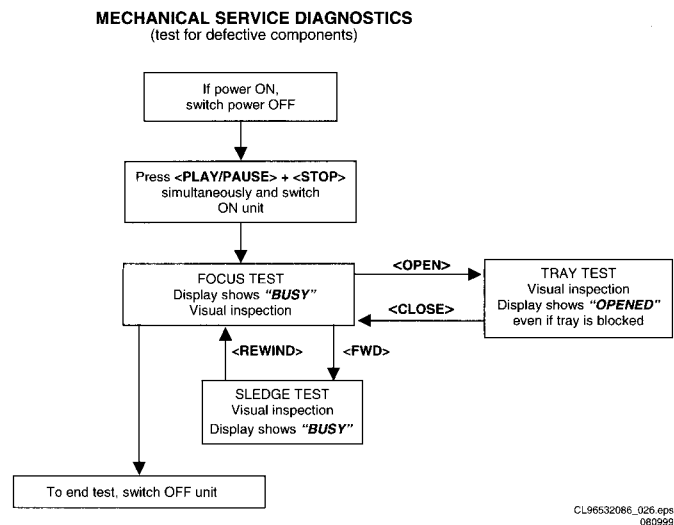
For CDR775 only. During the test, the current disc time is shown. In case of an error the message "BERR2" will be displayed and the [F FWD] key must be pressed to continue with the following test. Pressing the [F FWD] key also aborts this test.

**Display test**

All segments will blink at a frequency of 1 Hz. Pressing the [F FWD] key will start the next test because the user has to check for himself if all segments work properly.

**Keyboard and remote control tests**

The test will give the user the ability to test every key without executing the function assigned to it. Therefore, the user needs to press every key on the keyboard and the remote control. The display will show the name of the key being pressed. Pressing more than one key at once will give an unpredictable result except for the service combinations : [PLAY/PAUSE] + [STOP], [PLAY/PAUSE] + [F FWD], [F FWD] + [REWIND], [ERASE] + [RECORD], [PLAY/PAUSE] + [RECORD], [OPEN/CLOSE] + [PROGRAM].

**5.1.4 Mechanical service diagnostics****Figure 5-3****Description**

No external tools are required to perform this test. The cover needs to be removed because the user has to check the movements of the tray, focus and sledge visually. Pressing keys [PLAY/PAUSE] and [STOP] simultaneously while switching on the unit ends the test. Switching off the unit ends the test. In case of a CDR775, one can check the CD loader mechanics in the same way by pressing the above key combination on the CD player keys.

**Requirements to perform the test**

- Working keyboard to cycle through the tests and to start up the test.
- Working local display to check the output messages.

**Description of the tests**

*Focus control test*

The focussing lens is continuously moving up and down. The display reads "BUSY".

*Sledge control test*

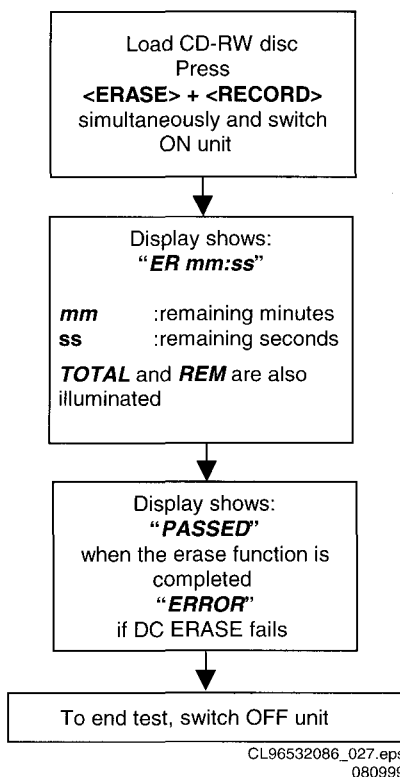
After pressing [F FWD] the sledge continuously moves up and down. Pressing [REWIND] stops the sledge at the position it is in and the focus control test resumes. The display reads "BUSY".

*Tray control test*

This test starts from within the focus control test routine. Pressing [OPEN/CLOSE] moves the tray in or out. In the tray open position one can initiate focus and sledge tests by pressing [F FWD]. One has to stop these tests pressing [REWIND] before it is possible to close the tray again. Depending on the action the display reads "OPEN", "OPENED", "CLOSE" or "BUSY".

**5.1.5 DC-erase service mode**

**DC ERASE SERVICE MODE**  
(erasure of complete CD-RW)



**Figure 5-4**

**Description**

This test is initiated by pressing [ERASE] and [RECORD] simultaneously while switching on the unit. The player will erase a complete CD-RW disc (including PMA and ATIP lead out area) at speed N=2. The display shows the countdown of the remaining time required for the operation to complete. The format is "ER mm:ss", where "mm" are the remaining minutes and "ss" the remaining seconds. After completion the message "PASSED" is shown, and the player has to be switched off and on again to start up in normal operating mode. Switching off the

unit before completion of the test, leaves the disc in an unpredictable state. In such case only a complete DC-erase procedure can recover the CD-RW disc.

**Requirements to perform the test**

- Functional CDR player.
- A CD-RW audio disc must be present in the tray.

**5.1.6 Burn in mode**

**Description:**

The Burn In mode is an endless cycle of:

- DC-Erase to erase the CDRW disc with maximum laser power.
- Recording a CDRW disc
- Finalising at double speed

The Burn In mode is used to test intermittent faults of the loader.

**Requirements to perform the test:**

- Working Local Keyboard: needed to start up the test.
- Working Local Display: all output messages must be displayed on the local display.
- Analog source connected to the CDR99 player
- CDRW disc in tray

*Burn in sequence*

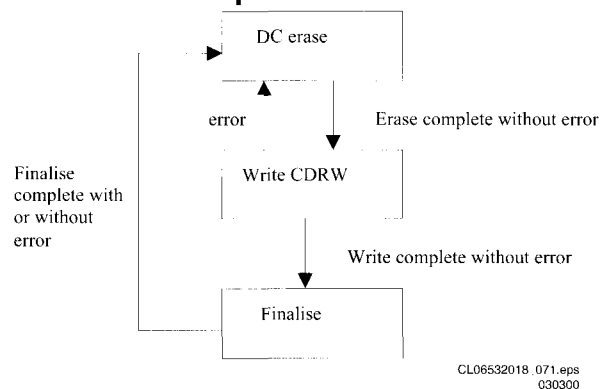
- Initialisation

The 'Burn In' mode is initiated by pressing the PAUSE> and key on the local keyboard at the same time, and then switching the POWER switch on.

- Continuous loop

The following picture shows the burn in sequence.

**Burn in sequence**



**Figure 5-5**

Continuously do DC erase, record complete CDRW and then finalise until the player is powered off.

When an error is detected during writing, the DC erase procedure is called again., the disc will be DC erased and the cycle starts again.

During the test the display shows the number of hours for which the test is running and the number of errors detected during the test. The display looks as follows : "HH BI RE FE"

- HH : number of hours on digits 1 and 2
- "BI" : burn in mode, digits 3 and 4
- RE : number of errors detected during DC erase and write CDRW modes on digits 7 and 8

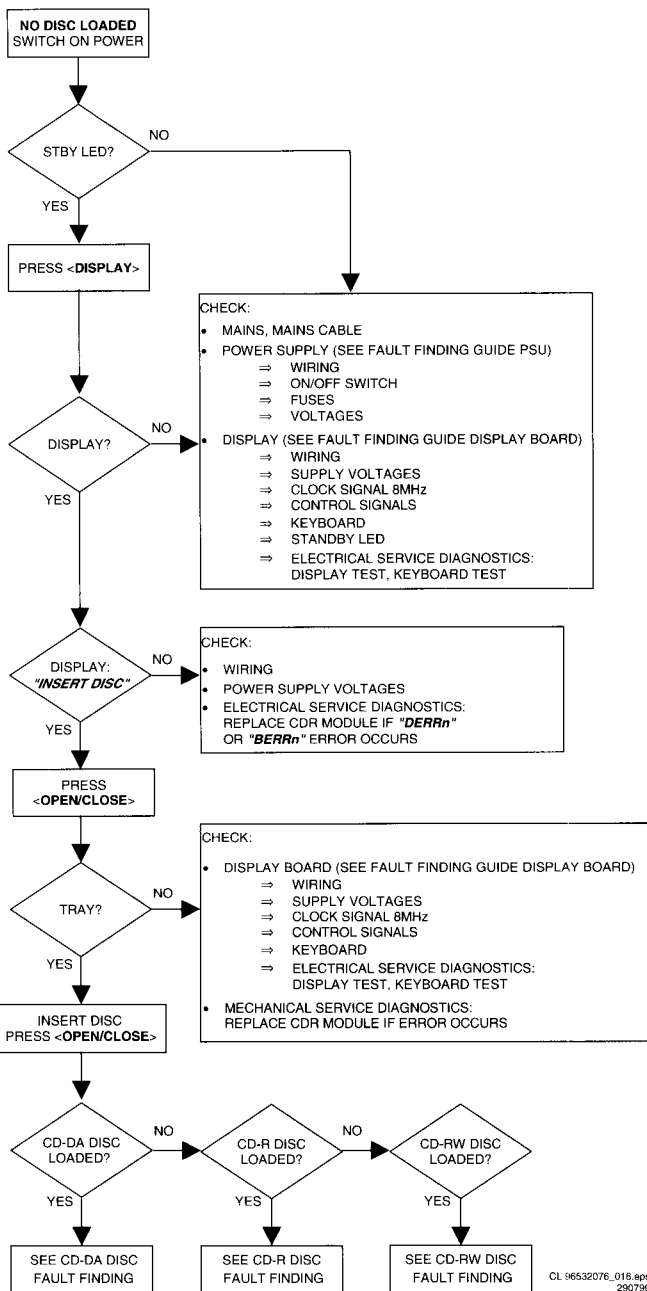
FE : number of errors detected during finalise modes on digits 10 and 11

If started up with a disc other than a CDRW disc the display shows : "WRONG DISC", if no disc is inserted display : "NO DISC".  
 - End of test  
 To exit the Burn In mode, power off the player.

5.2 Faultfinding Trees

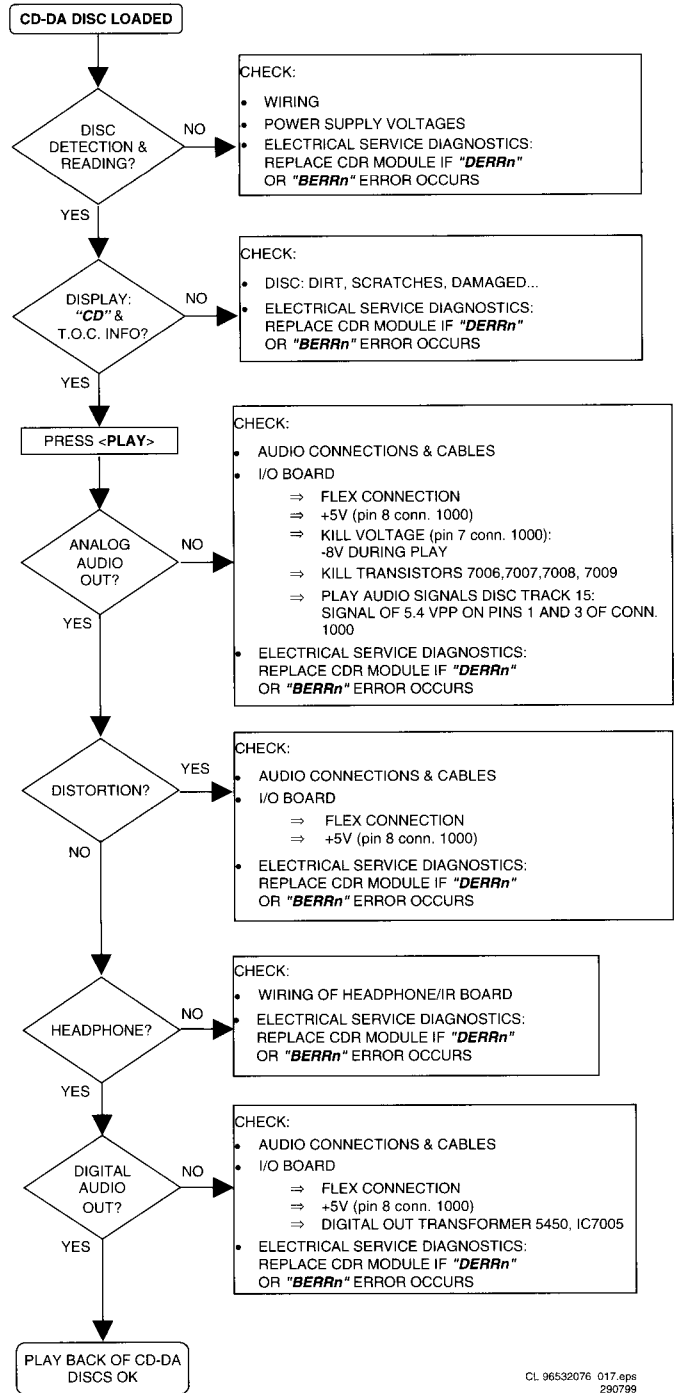
The faultfinding trees and repair suggestions like the power supply voltages for proper functioning of the mainboard are indicated here.

5.2.1 CDR-Module



CL 96532076\_016.eps  
290799

Figure 5-6



CL 96532076\_017.eps  
290799

Figure 5-7

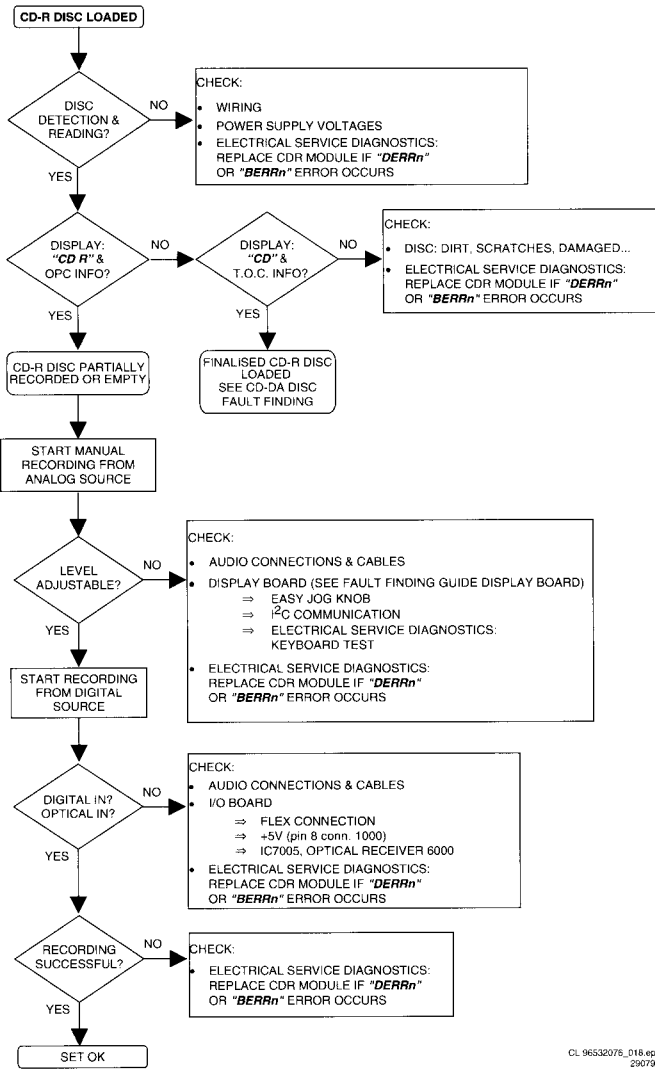


Figure 5-8

5.2.2 Mainboard

Power supply part on mainboard

• Description.  
 The most important part of an electrical function is the power supply. Without it will never operate. The power supplies as well analog as digital equipment. For these reasons the power supply is split-up in different sections. One for the digital electronics, one for the servo controls and one for the AUDIO part. The servo controls are the big consuming parts with high peak-currents, also introducing disturbances in the power lines. The audio part needs very "clean" power, because noise and ripples have there reflection in the audio signals, specially in S/N and THD+N. Some of the power supplies are switched off, this to reduce consumption in case of standby. The different power supplies are delivered to the PCB via connector 1500 This is a 11 pole connector with following voltages on it: +5V, +12V, -8V, VFTD, VDC1 and VDC2. The last 3 voltages are not used on the main PCB, but are meant for the FTD (Fluorescent Tube Display). They are directly routed to connector 1705. The other voltages are split up in different functions on the PCB. The following block-diagram gives an indication of that implementation.

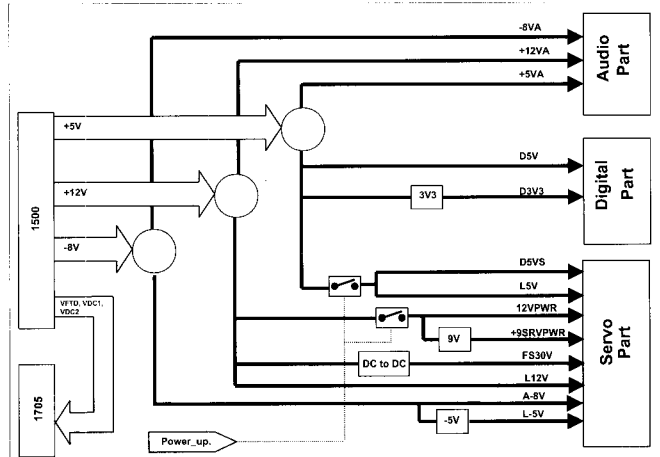


Figure 5-10

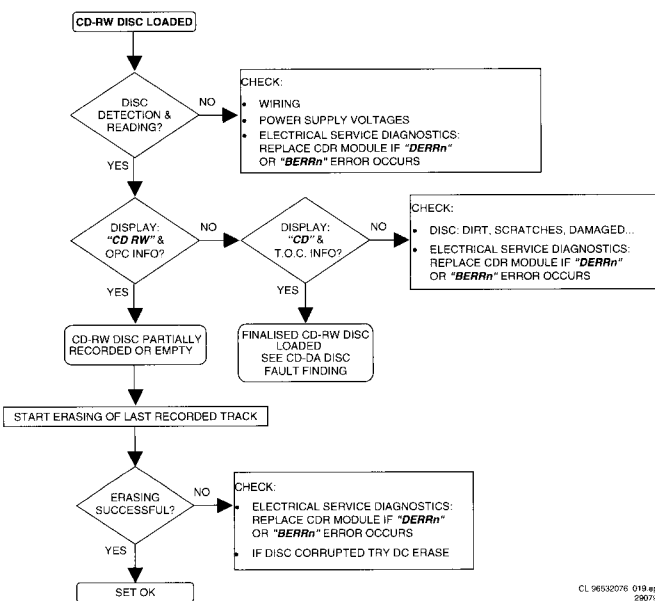


Figure 5-9

- Power supply to main board. Power supply enters the BOARD via connector 1500. Pinning as follows:  
 Connector 1500  
 pin 1: VDC2 : 3V8 (10%)  
 pin 2: VFTD : -38V (5%)  
 pin 3: VDC1 : 3V8 (10%)  
 pin 4: GND : Ground.  
 pin 5: D5V : +5V (5%)  
 pin 6: D5V : +5V (5%)  
 pin 7: GND : Ground.  
 pin 8: GND : Ground.  
 pin 9: GND : Ground.  
 pin 10: 12V : 12V (10%)  
 pin 11: -8V : -8V (10%)

## POWER PART CHECK

USE CDR MAIN BOARD CIRCUIT DIAGRAM 7 AND CDR MAIN BOARD BOTTOM VIEW : POWER PART TEST POINTS

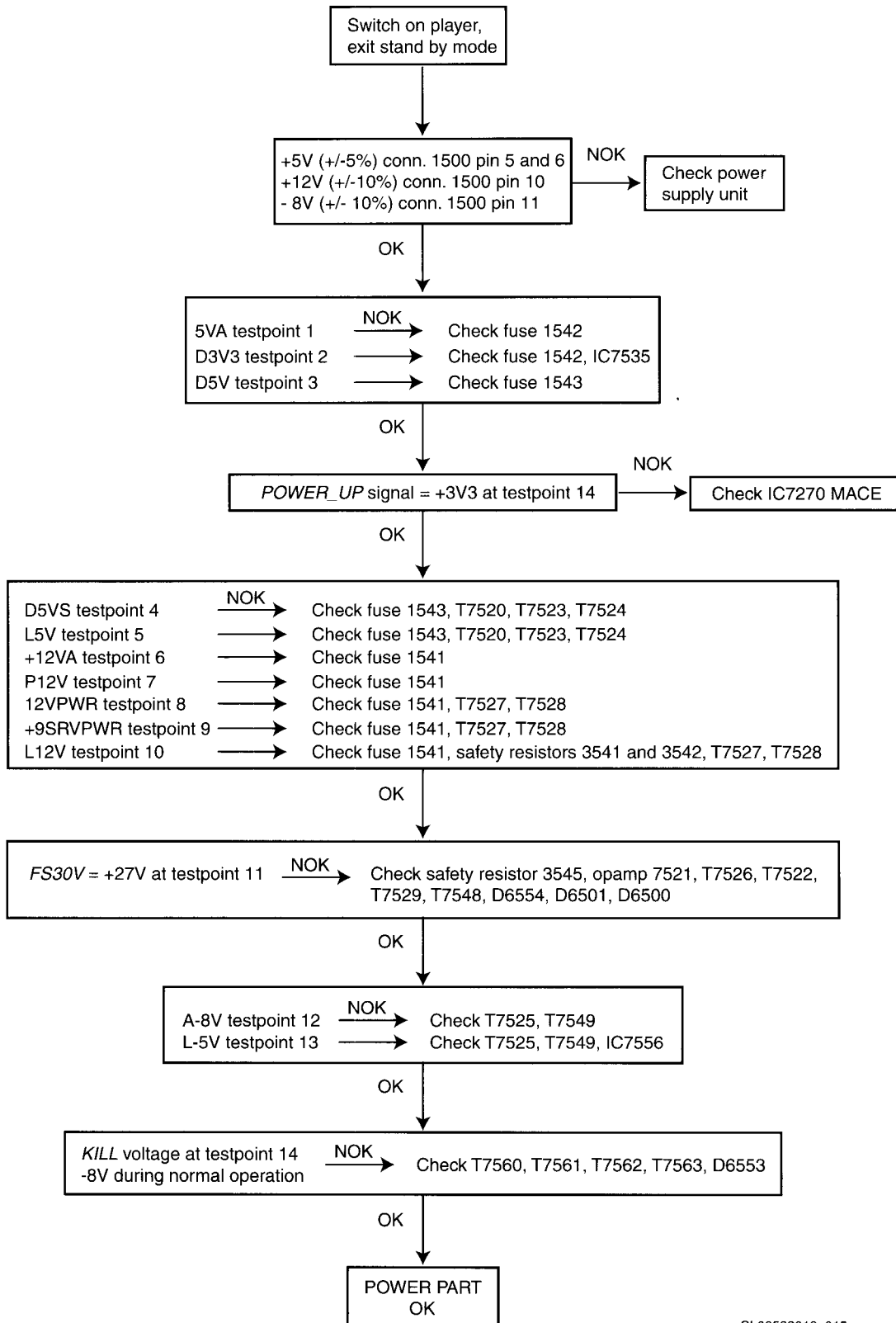


Figure 5-11



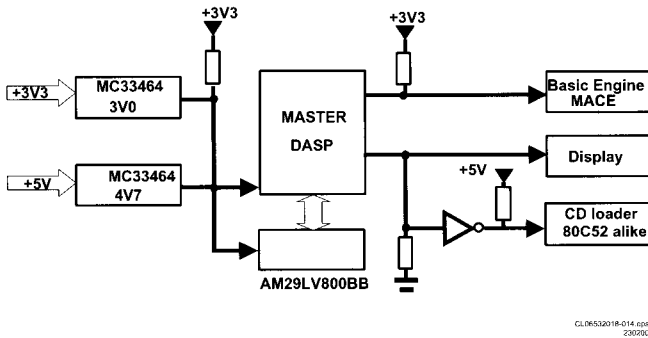
**Reset & Clock**

*Master reset.*

Since the Mainboard is more or less mix-mode between +3V3 and +5V devices, special treatment for the RESET behavior is wishful. Controlling the RESET only from 1 power supply could lead to collisions between different devices, damaging the internal I/O structure of the devices. To avoid this the +3V3 and the +5V are guarded by a special device. These devices keep the output low as long as the power supply is not stable or is not above the required level. As soon as the power supply is stable it switches the output to "HIGH-Z". The output is an open collector type. From then onwards the line can be controlled by means of external pull-up resistors. Benefit of the open-collector devices is that several of those devices can be tight together at the outputs. In our case we used a device on the +5V and one on the +3V3. This means that both power supplies need to be stable before the RESET of the Master processor is released.

Resetting several processors in the same structure by means of the power supplies invokes certain risks. The duration of initialization after reset is processor and Code depending. It can lead to hang-up in those cases that communication between the processors is "time" driven. Meaning that only in a certain time frame the establishment of the communication-bus must take place. If not successful the Bus hangs!

To avoid these kinds of problems, only 1 RESET is depending on the power supply, and this is the RESET of the Master controller. The same master controller will then take care of the RESET of the other devices. In the next figure this is explained.



**Figure 5-12**

For further measurements see next reset and clock flowcharts.

## RESET & CLOCK CHECK

USE CDR MAIN BOARD CIRCUIT DIAGRAMS 4, 9 AND 10 AND CDR MAIN BOARD BOTTOM VIEW : RESET & CLOCK TESTPOINTS

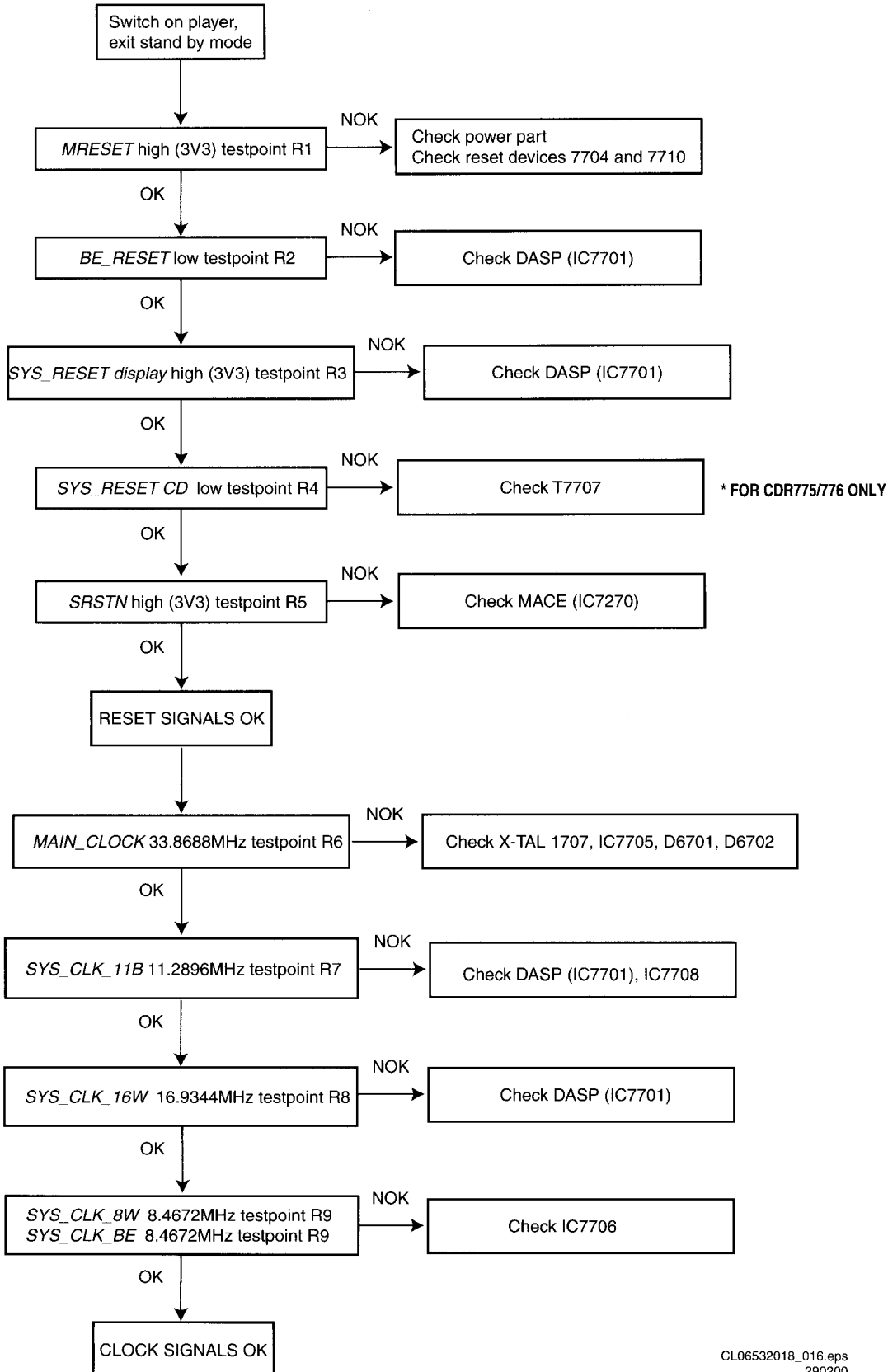


Figure 5-13

**The clockgeneration**

All microprocessors or digital devices need a clock. The clock is usually made by means of resonators or crystals depending on the speed and the accuracy that is requested. The clock can also differ from device to device so that more than one crystal is needed. The cheapest and "system wise" best way is only 1 crystal. The derived clocks are then Phase related to each other.

On the CDR MAIN 99 the DASP is generating all clock signals. Not only the systemclock for the processor itself, but also for the basic engine processor and even the systemclock for the ADDA part which is directly related to the 44.1kHz. sample frequency. To be able to do this a 33.8688Mhz. crystal with 25ppm accuracy is connected to the internal oscillator of the DASP. Internal the clock signal is multiplied by means of a PLL. This gives the systemclock on which the processor runs internally. This systemclock is then again divided internally to have the systemclock for the ADDA, which is 11.2896Mhz, and the 16,9344Mhz. which divided by 2 gives the systemclock for the BE part. In this way only 1 crystal is required. The same 8.4672Mhz. is also routed to the CD-module in case of a CDR775 player.

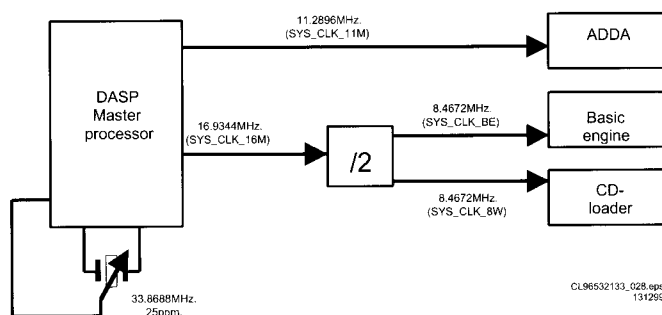


Figure 5-14

**PC help on mainboard diagnostics**

A couple of the diagnostics are only possible with the help of a PC. The DASP micro controller will contain an interface with the external world; this interface is realised via a serial RS232 connector that is accessible inside the player. It can be accessed from the outside world by means of test pins and connector 1818 and interface board 7104 086 91111.

Via those test pins a terminal emulator can be connected. Then menus will come up that give the opportunity to enter all Audio Engine commands. This includes the commands on Bit Engine Level (transparent). This terminal emulator functionality is part of the embedded software, so no external software is needed. It can also read out the User Profile Logging of Bit Engine. This can show the hours that the loader really was in recording mode.

This diagnostic tool is activated if communication is detected on the RS232 interface during power up. The baud rate for both is 19k2 baud.

Details of the diagnostic tool are given in chapter 5.2.3 of this publication: Menu Driven Diagnostics.

Also in preparation is the interactive COMPAIR tool. Then the PC communicates in an active form with the set and compares the result for making the next decision. With MDD the technician has to take the next active step from his experiences onwards.

**5.2.3 Menu Driven Diagnostics**

In this paragraph the specification of the software requirements for the Menu Driven Fault Finding Diagnostics is given. It will give a clear and unambiguous description of what the Menu Driven Diagnostics (MDD) do.

NOTICE:THE TESTS, AS PROVIDED BY THE MENU DRIVEN DIAGNOSTICS, ARE NOT SUPPOSED TO BE MIXED RANDOMLY, ESPECIALLY TESTS LIKE 'LASER ON' AND 'FOCUS ON'. IT IS ASSUMED THAT THE PERSON THAT USES THE MDD KNOWS IN WHICH ORDER THESE TESTS CAN BE EXECUTED.

The MDD module communicates with two entities: the terminal emulator on the PC. The MDD receives instructions (test to be executed) and transmits the menu to be shown and the test results; the Audio Engine module. It instructs the Audio Engine via the interface field which test should be executed. The test result is retrieved from the interface field.

**Requirements**

The functionality of the Menu Driven Diagnostics module is to implement Menu Driven Diagnostics for service purposes. When the CDR recorder is connected to a PC via an interface board 7104 086 91111, connection cable 3104 157 11122 and a RS232 cable (available at PC shop), the service technician can select via a menu on the PC screen which test should be performed. The result of the test is also shown on the PC screen. No special test tool is needed for the PC; any terminal emulation program can be used (for example, HyperTerminal under Windows95/NT).

The last occurred error during a test session can be retrieved via the menu.

The RS232 connector should be soldered to pins:

- 1818-1 = Rx
- 1818-4 = Gnd
- 1818-2 = Tx

**General Constraints**

It is advised to connect the connection cable 3104 157 11122 to the Mainboard connector 1818 mounted just under the loader (topview). Via this cable also the powersupply for the interface board 7104 086 91111 is arranged when it is connected to connector 1000 on interfaceboard. To start this application at powering on; for 5 seconds the Rx and Tx output pin of the mainboard connector should be short circuited. This temporarily short circuit indicates the internal CDR software program to switch onto Menu Driven Diagnostics. This short cut can easily be done via the switch (1009) on the interface board. To communicate with the PC the RS232 cable has to be connected to output connector 1010 on the interface board and the switch (1009) should be released.

When switching on the CDR, two possibilities exist: the RS232 cable is not connected. The application is executed (no MDD mode); the RS232 connector is connected; Rx and Tx are short circuited for more than 5 seconds then the Menu Driven Diagnostics is started. By connecting via connection cable to interface and from there via the RS232 cable onto the PC, so the MDD can transmit the main menu to the PC.

**User Interfaces**

RS232 interface  
The CDR recorder transmits the menu to be shown and the test results to the PC via connection cable 3104 157 11122, interface board 7104 086 91111 and a RS232 cable. It receives the selection of the user, chosen in the menu.

**Hardware Interfaces**

RS232 interface  
The communication via RS232 should be set to the following settings:  
Baudrate:19200  
Databits:8  
Stopbits1  
Parity:none  
Handshaking:none

**Data Communication Interfaces**

Communication between the CDR recorder and the PC is straightforward: everything the CDR recorder transmits to the PC is shown on the PC screen. Data, transmitted from the PC to the CDR775, is treated as a choice from the currently shown menu.

All functionality of the MDD has to be part of the CDR775 software; the PC can only use a terminal emulation program.

**Menu Structure and Test Results**

This chapter describes the structure of the menus and the results of the tests, as shown on the PC screen.

**Menu Structure**

When starting up, the PC screen is cleared and the software version and the main menu (level 1) are shown. From the main menu, one of the sub menus (level 2) can be selected. These sub menus contain other sub menus and/or a number of tests that can be executed. The menus are shown below. '>>' indicates that when this option is selected, a new menu will be shown.

*Level 1 Mainmenu:*

## MAIN MENU

- 1 General tests >>
- 2 Retrieve last occurred error
- 3 Recorder module test >>
- 4 Playback module test >>\* \*Only used for the CDR775
- 5 Select adjust program CDM
- 6 Download new program

When a test is running, a 'test running indicator' (a dot) is showed on the screen every second, When a test has been executed, the screen is cleared and the result of the test (if any) and the menu, separated by one empty line, are showed.

Three types of tests exist:

Tests that return PASSED or FAILED, like the DRAM test.

When a test has been executed, the result is showed on the PC screen;

Tests that return a value, the message 'PASSED, xxx' (with xxx is the returned value) is showed on the PC screen;

Tests that don't return anything, like the 'laser on' test. Most of these tests require a visual check of the service person. When one of these tests is executed, 'PASSED, visual check' is showed on the PC.

*Level 2 menus*

When a submenu is selected in the main menu, the level 2 menus are showed. These sub menus contain other sub menus and/or a number of tests that can be executed.

## GENERAL TESTS MENU

- 1 Check DRAM
- 2 CHECK FLASH>>
- 3 Check ADC/DAC
- 4 Check LCD

## RECORDER MODULE TEST MENU

- 1 communication test
- 2 Tray >>
- 3 Laser >>
- 4 Focus >>
- 5 Radial >>
- 6 Sledge >>
- 7 Miscellaneous >>
- 8 Jump grooves >>

## PLAYBACK MODULE TEST MENU

- 1 communication test
- 2 Tray >>
- 3 Laser >>
- 4 Focus >>

- 5 Turntable motor >>
- 6 Radial >>
- 7 Sledge >>
- 8 Miscellaneous >>

*Level 3 menus*

## CHECK FLASH MENU

- 1 Check FLASH
- 2 Manufacturer-ID and
- 3 Device ID

## TRAY MENU

- 1 Open tray
- 2 Close tray

## LASER MENU

- 1 Laser off
- 2 Laser on, read
- 3 Laser on, write\*-----\*Laser on, write' only used for the recorder module

## FOCUS MENU

- 1 Focus on
- 2 Focus off

## TURNTABLE MOTOR

- 1 Turntable motor ON
- 2 Turntable motor OFF

## RADIAL MENU

- 1 Radial control on
- 2 Radial control off

## SLEDGE MENU

- 1 Sledge inwards
- 2 Sledge outwards\*-----\*Sledge stays outwards for the recorder module; sledge moves inwards after 300 ms for playback module

## JUMP GROOVES MENU

- 1 Jump grooves to inside
- 2 Jump grooves to middle
- 3 Jump grooves to outside

## MISCELLANEOUS MENU

- 1 Start player
- 2 Stop player
- 3 Calibrate CD >>\*-----\*Only used for recorder module
- 4 Get user profile logging
- 5 Erase CD-RW\*-----\*Only used for recorder module
- 6 Read firmware version\*\*-----\*\*CD firmware version for CD-module, CDR firmware version for CDR-module

## CALIBRATE CD MENU \*-----\*Only used for recorder module

- 1 Calibrate CD, N=1
- 2 Calibrate CD, N=2
- 3 Get last OPC values

*End of test*

These diagnostics can be quitted by powering off the player

5.2.4 Servo drivers check

### SERVO DRIVERS CHECK

USE CDR MAIN BOARD CIRCUIT DIAGRAMS 1, 3 AND 4 AND CDR MAIN BOARD BOTTOM VIEW : SERVO DRIVERS TESTPOINTS

#### FOCUS SERVO

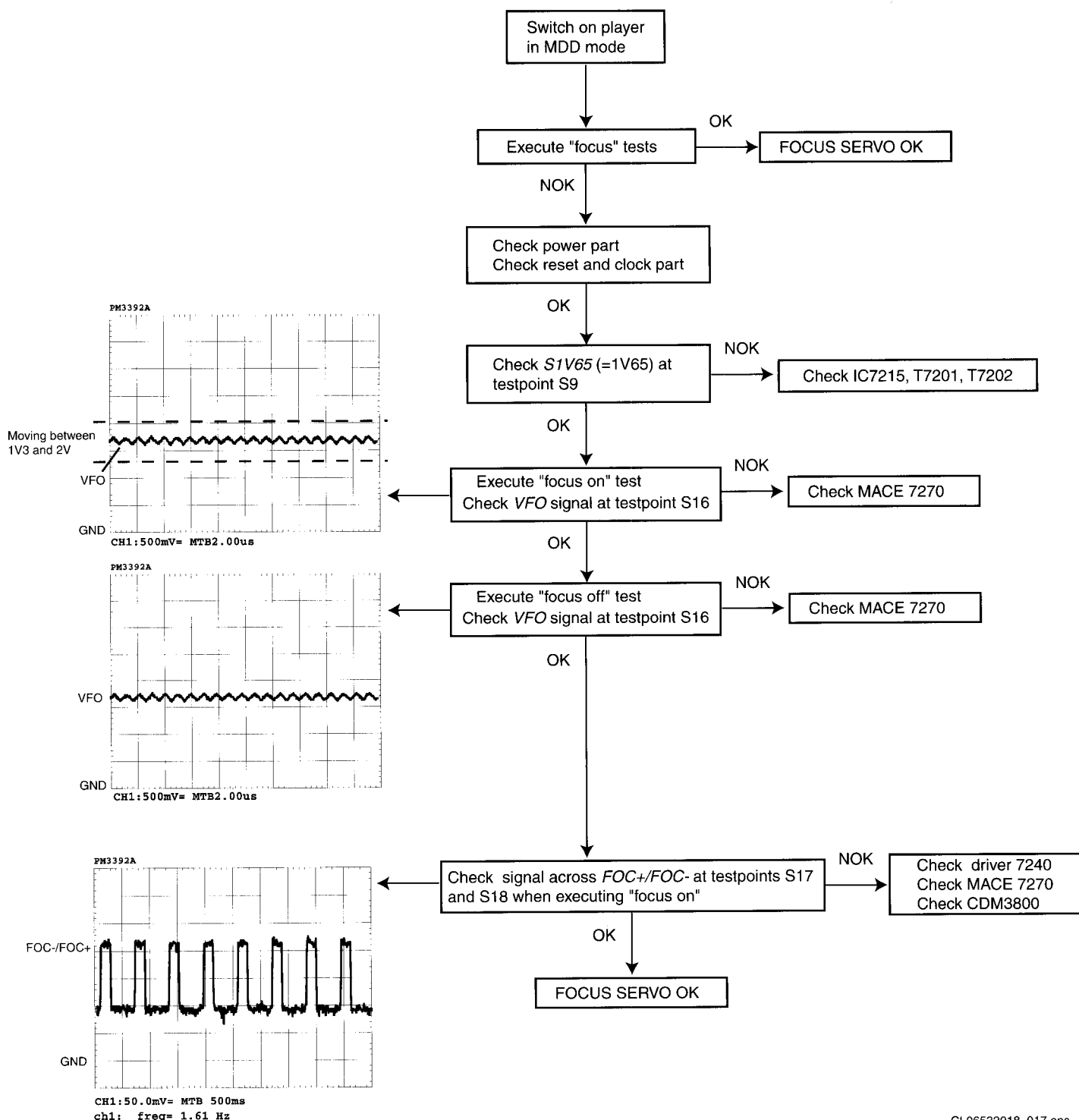


Figure 5-15

# SERVO DRIVERS CHECK

USE CDR MAIN BOARD CIRCUIT DIAGRAMS 1, 3 AND 4 AND CDR MAIN BOARD BOTTOM VIEW : SERVO DRIVERS TESTPOINTS

## RADIAL SERVO

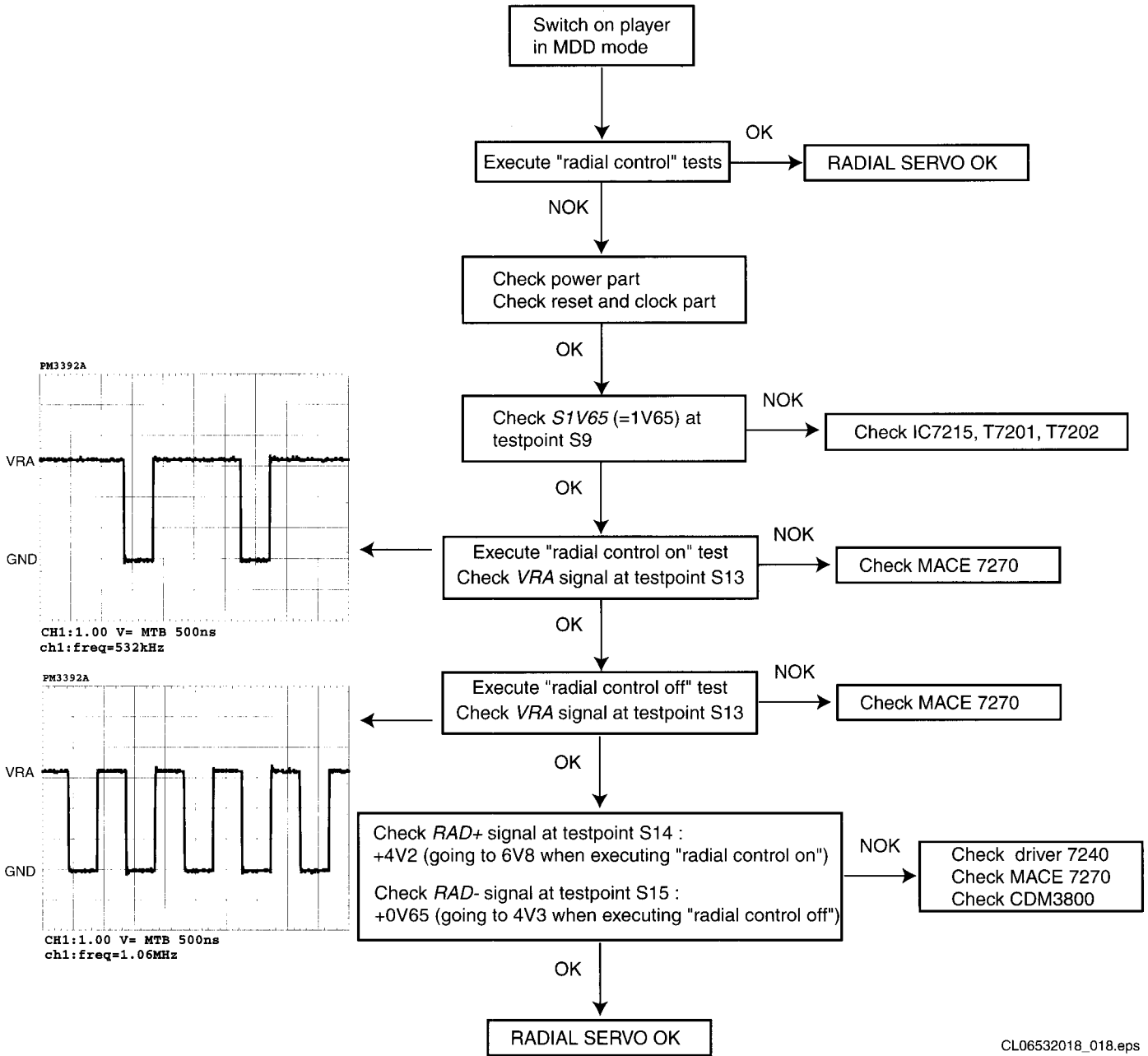


Figure 5-16

### SERVO DRIVERS CHECK

USE CDR MAIN BOARD CIRCUIT DIAGRAMS 3 AND 4 AND CDR MAIN BOARD BOTTOM VIEW : SERVO DRIVERS TESTPOINTS

#### SLEDGE SERVO

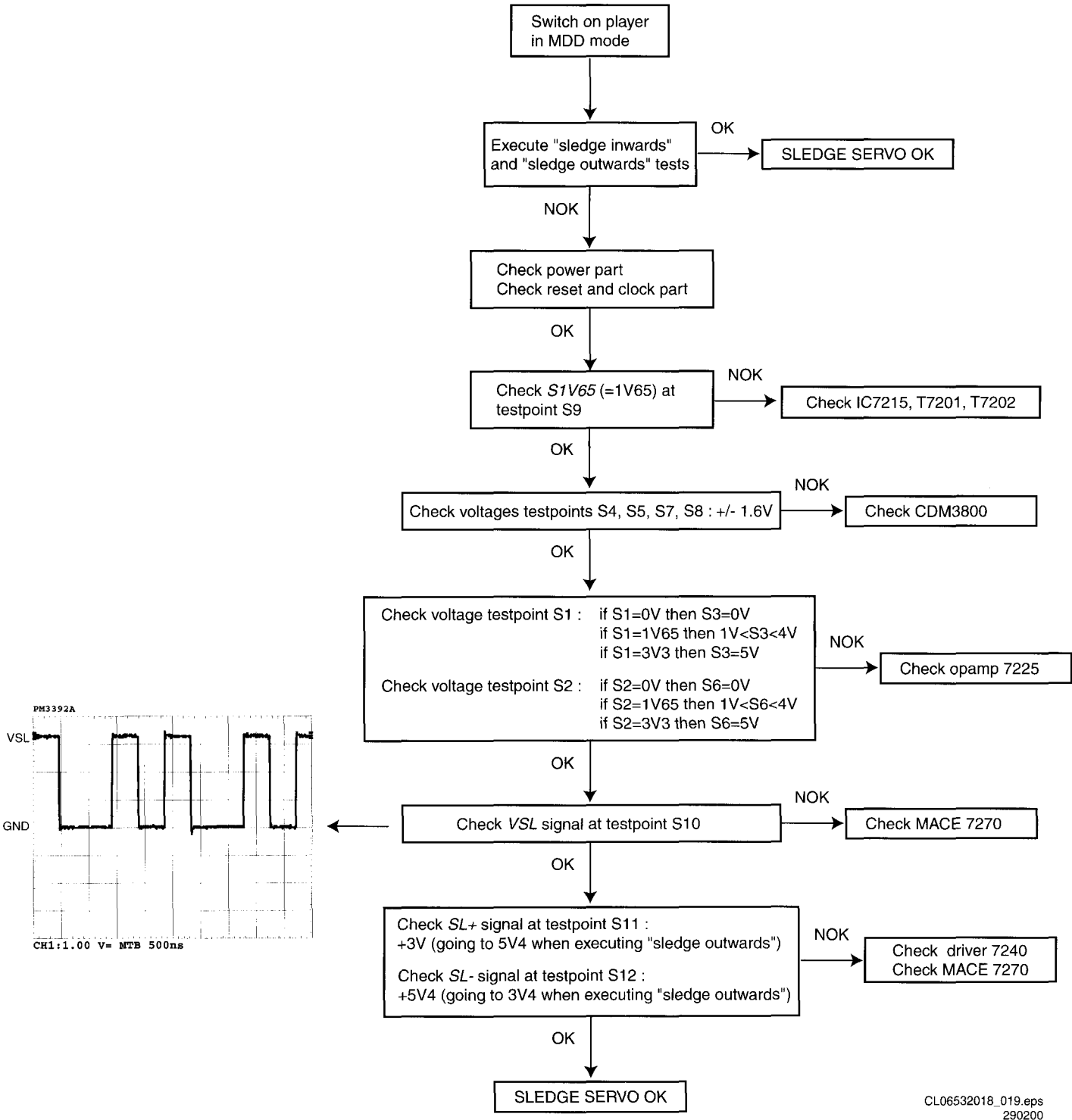


Figure 5-17

### SERVO DRIVERS CHECK

USE CDR MAIN BOARD CIRCUIT DIAGRAMS 3 AND 4 AND CDR MAIN BOARD BOTTOM VIEW : SERVO DRIVERS TESTPOINTS

#### TRAY SERVO

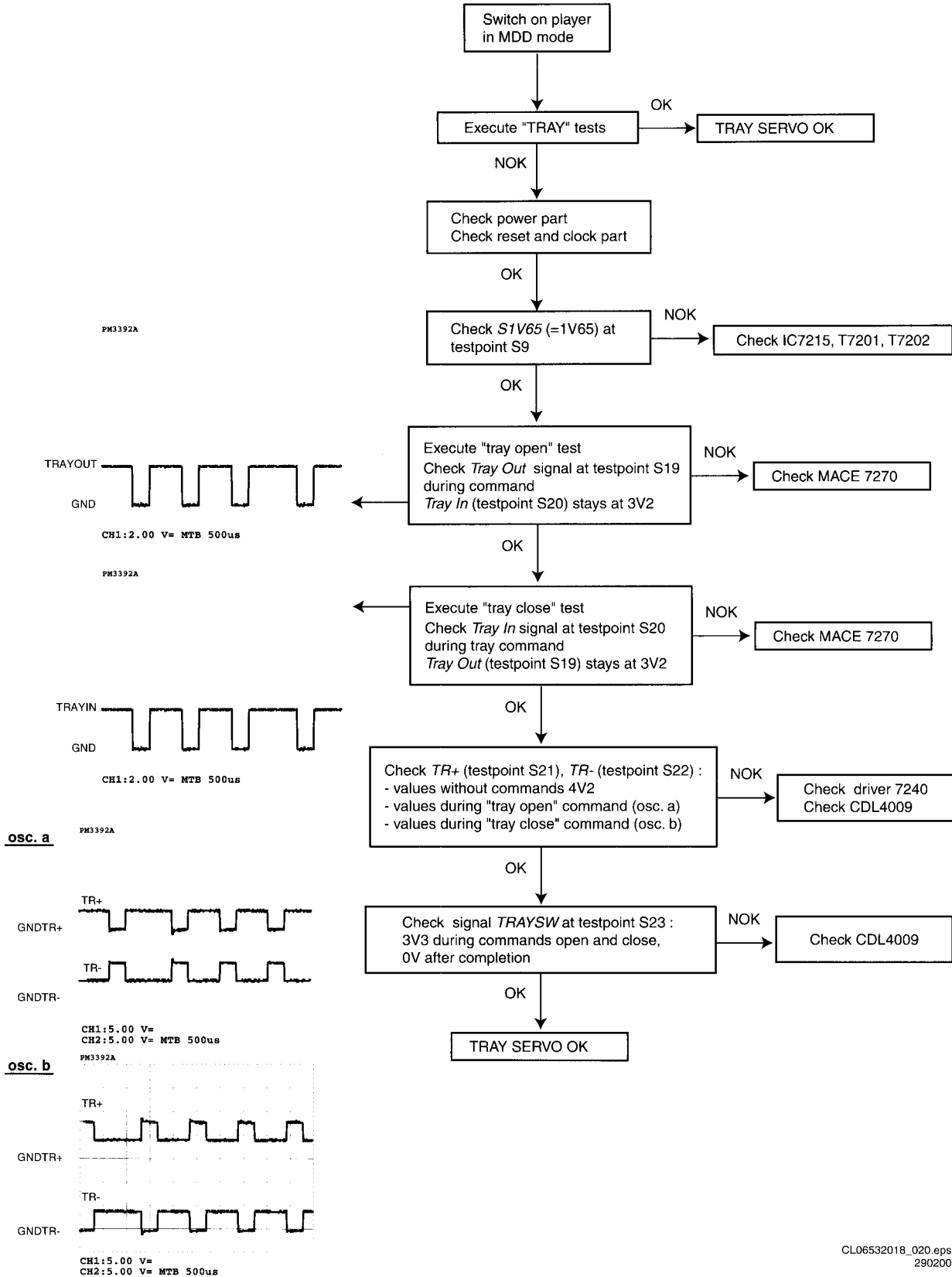


Figure 5-18



5.2.5 Audio signal check

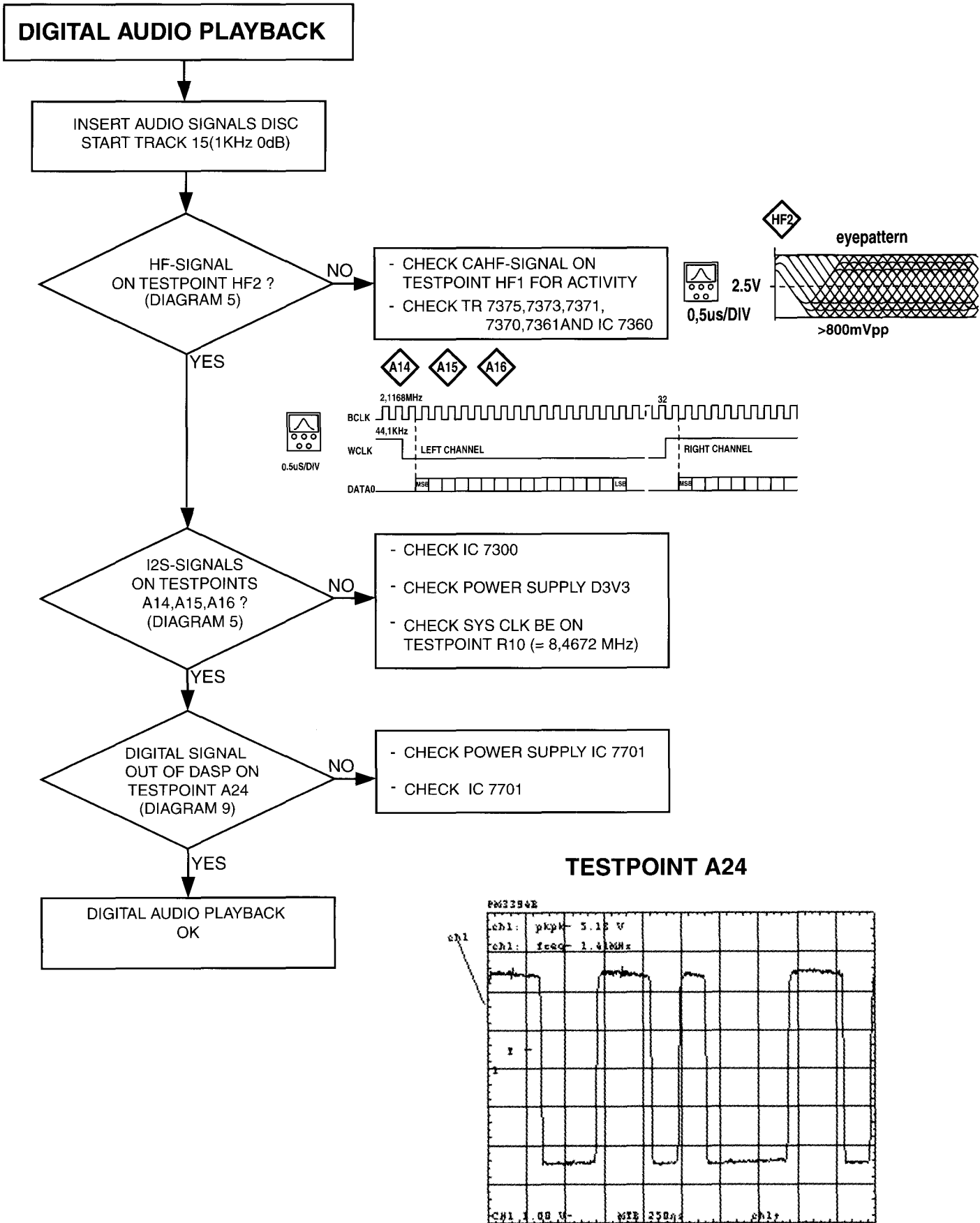


Figure 5-19

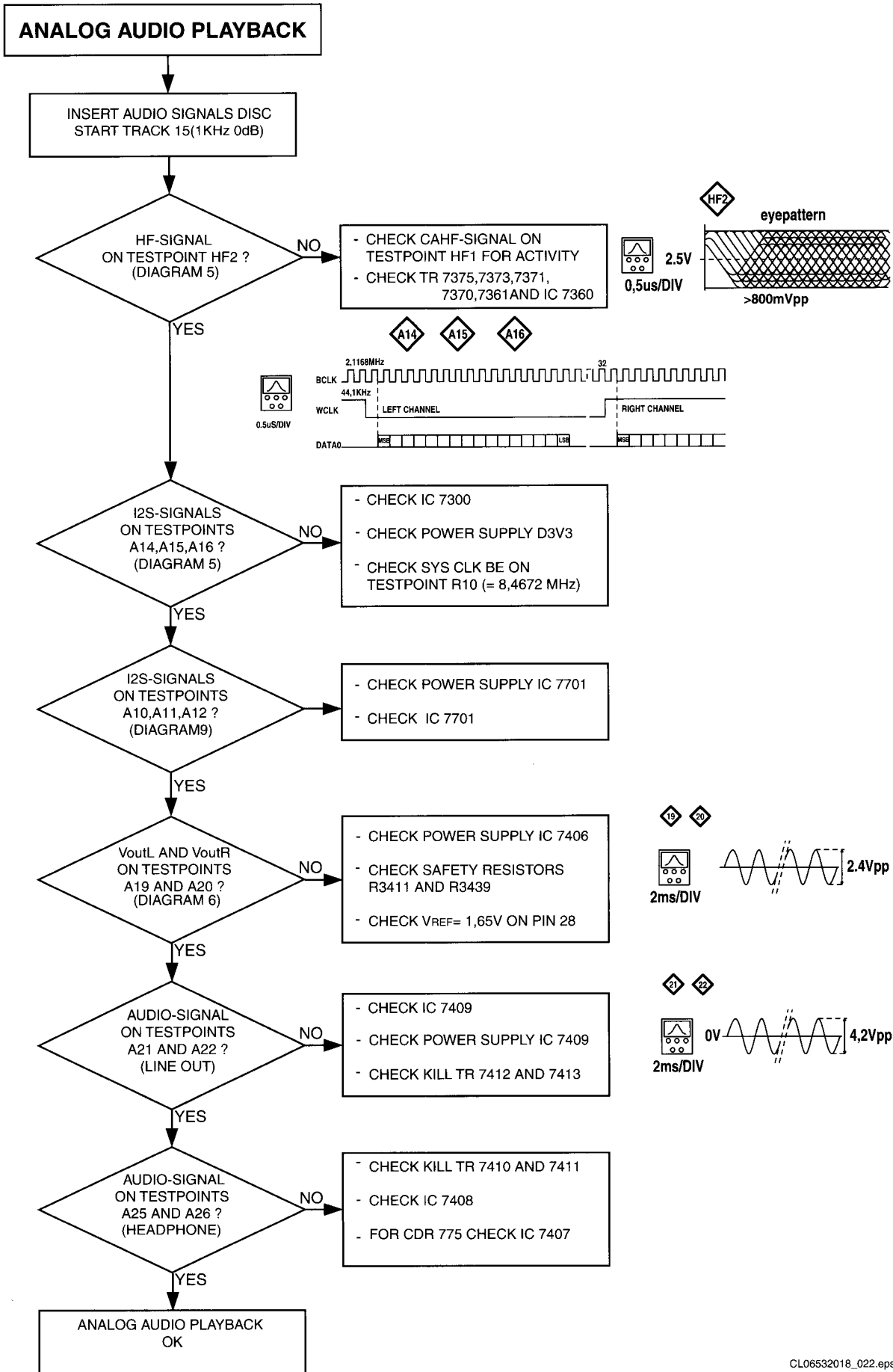


Figure 5-20

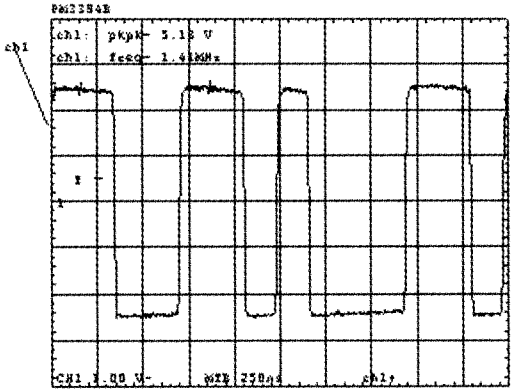
**DIGITAL AUDIO PATH DURING RECORDING**

CONNECT DIGITAL INPUT FROM EXTERNAL SOURCE AND SELECT THE DIGITAL RECORDING INPUT BY PRESSING SOURCE

CHECK DIGITAL SIGNAL ON TESTPOINT A23 (DIAGRAM9)

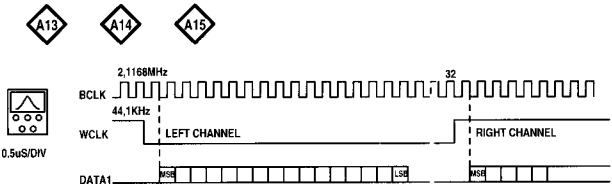
NO - CHECK FLEX - CONNECTOR BETWEEN I/O-BOARD AND MAINBOARD

A23



CHECK I2S - SIGNALS ON TESTPOINTS A13, A14 AND A15 (DIGRAM 9 AND 5)

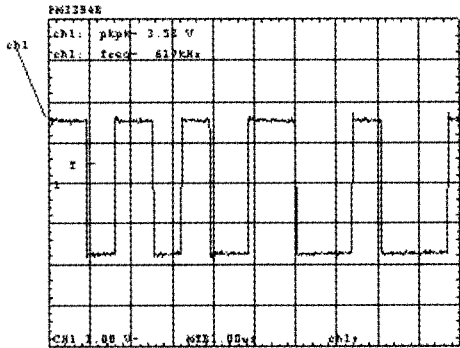
NO - CHECK POWER SUPPLY IC 7701  
- CHECK IC 7701



CHECK EFMDATA AND EFMCLOCK ON TESTPOINTS A17 AND A18 (DIAGRAM1)

NO - CHECK POWER SUPPLY IC 7300  
- CHECK I2C - SIGNAL OF IC 7300  
- CHECK IC 7300

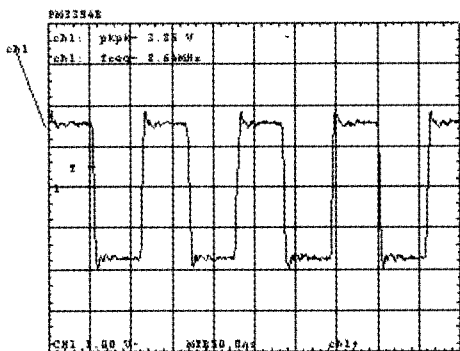
A17



CHECK ACTIVITY ON TESTPOINT A27 (DIAGRAM1)

NO - CHECK POWER SUPPLY IC 7008  
- CHECK I2C - SIGNAL OF IC 7008  
- CHECK IC 7008

A18



DIGITAL AUDIO PATH DURING RECORDING  
OK

Figure 5-21

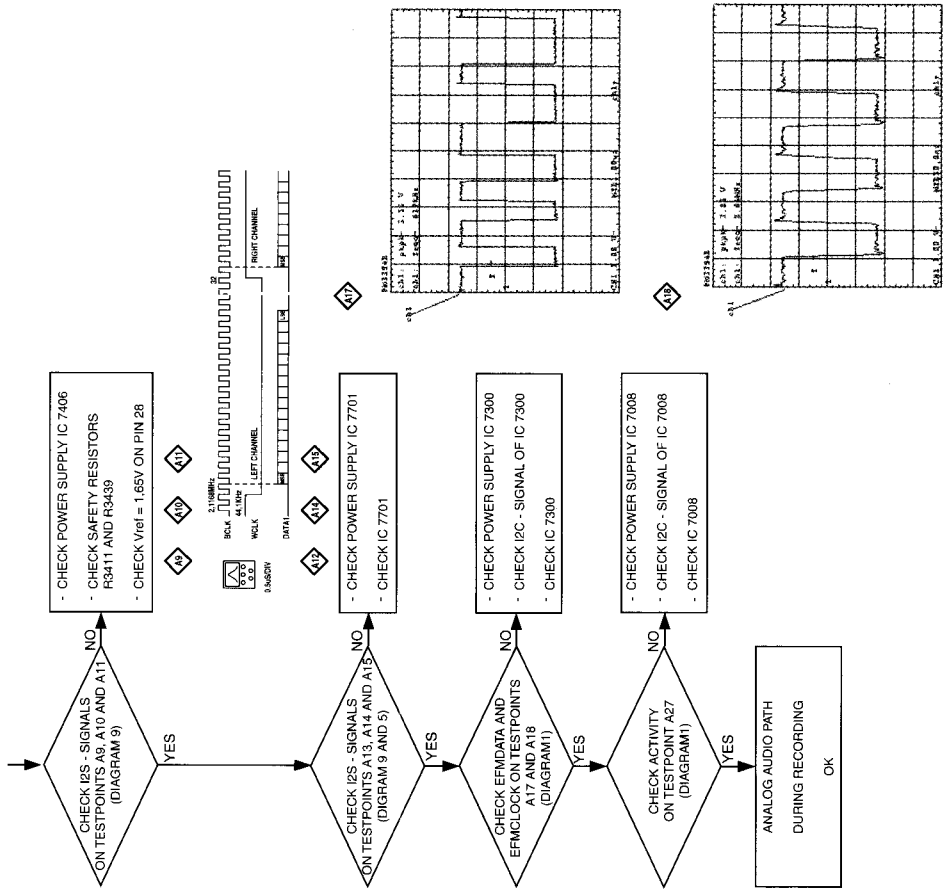
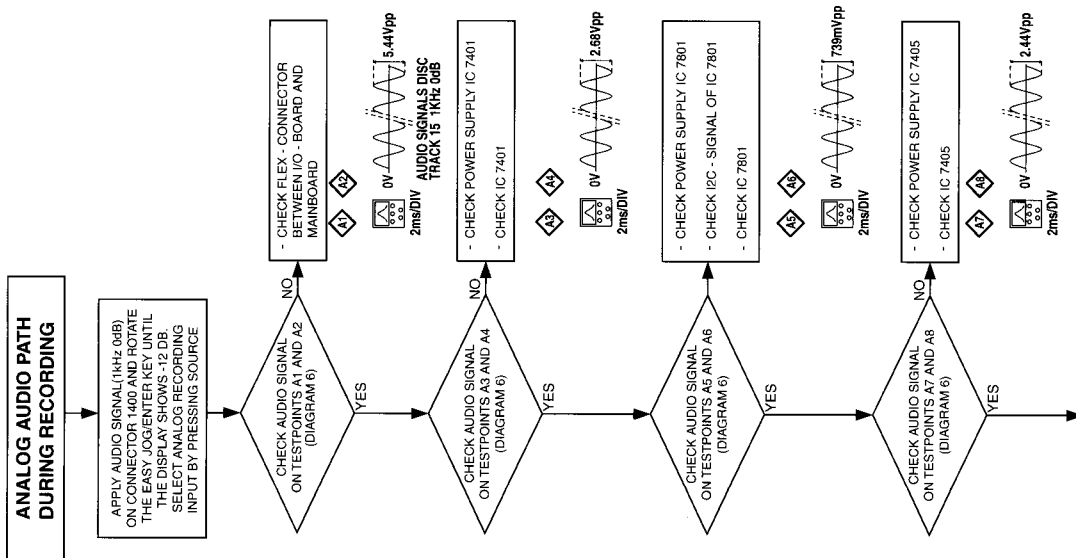
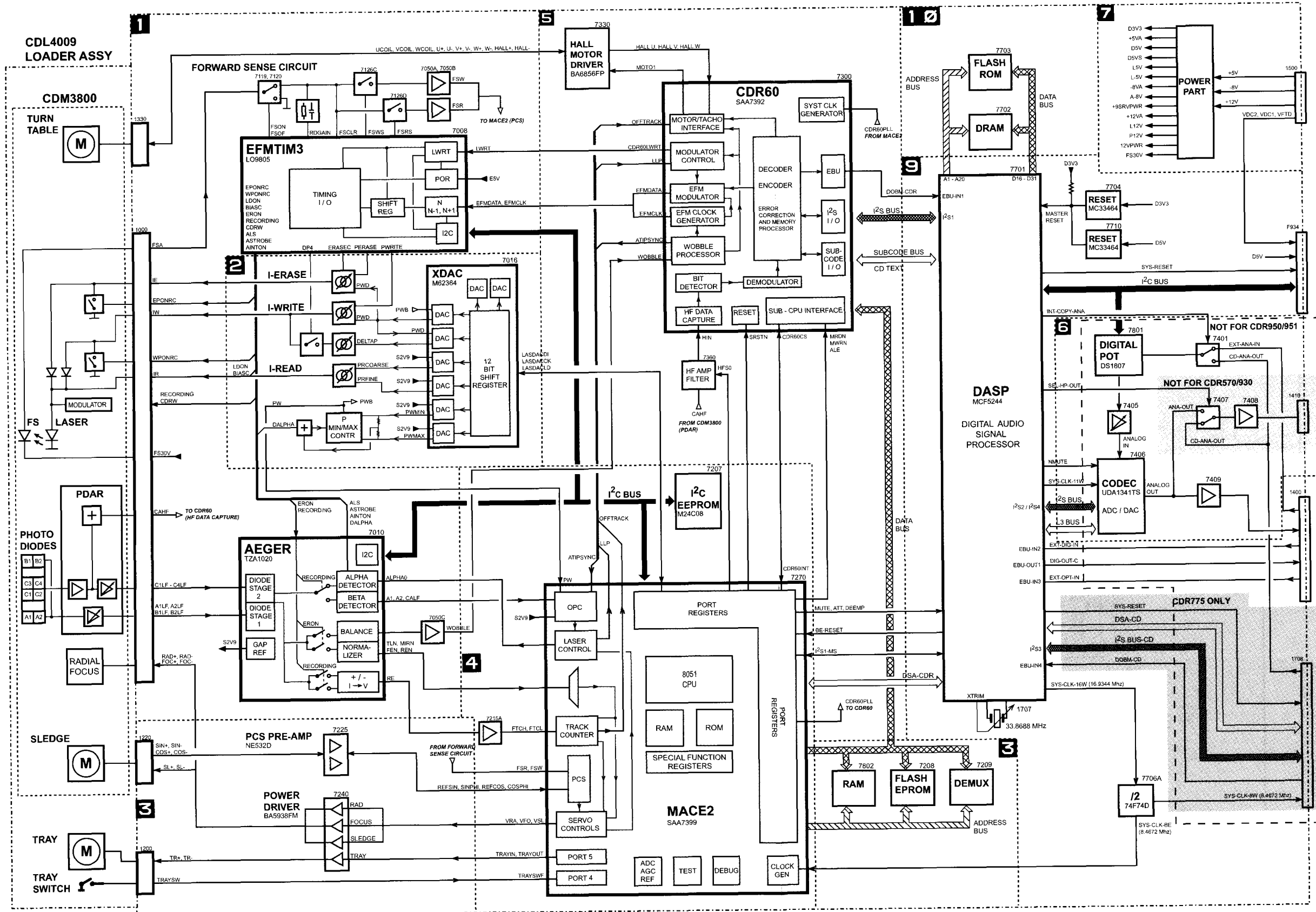


Figure 5-22

C:\06932018\_024.sps 28/05/20

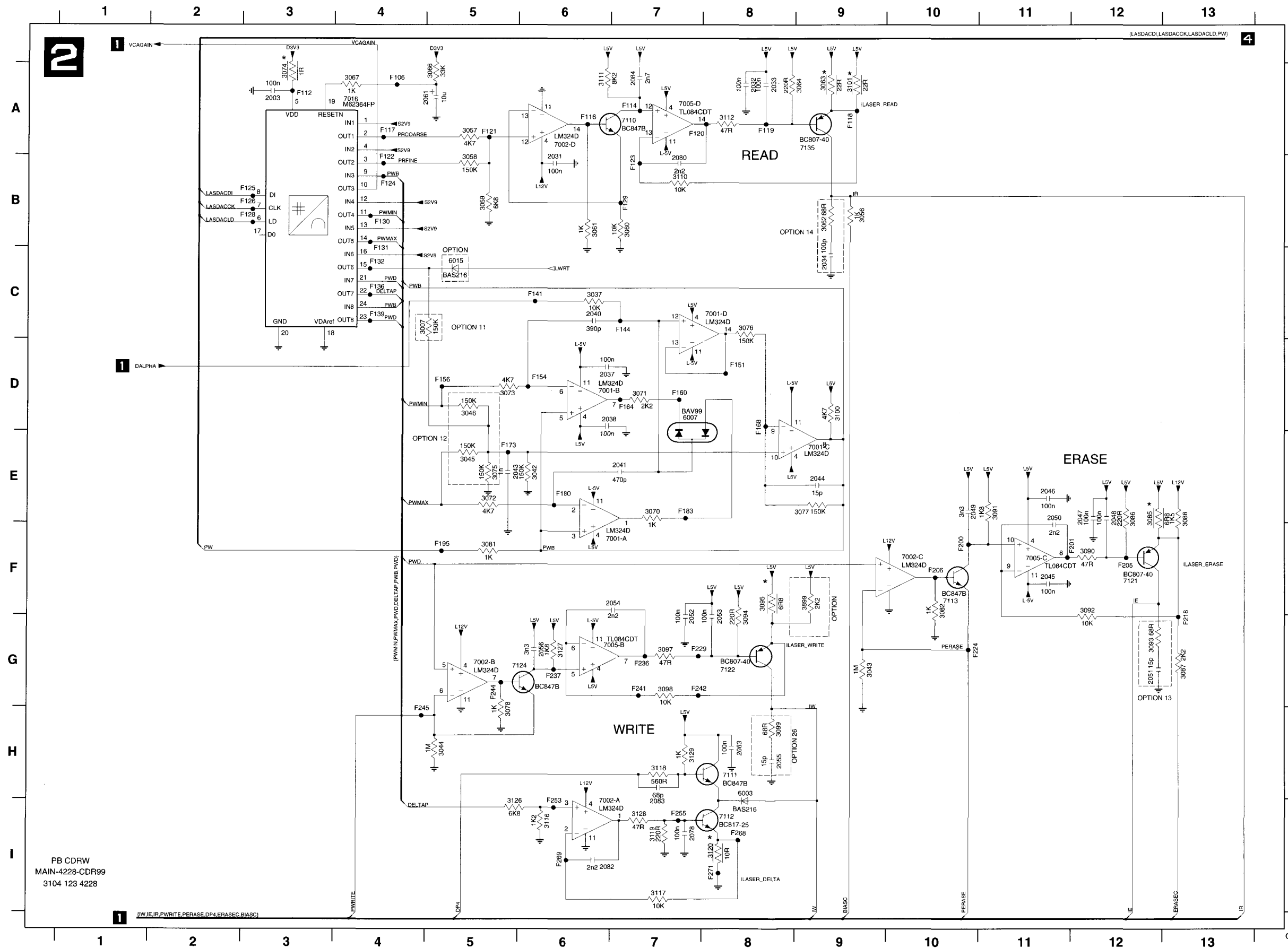
6. Block diagrams

CDR MAIN BOARD BLOCK DIAGRAM





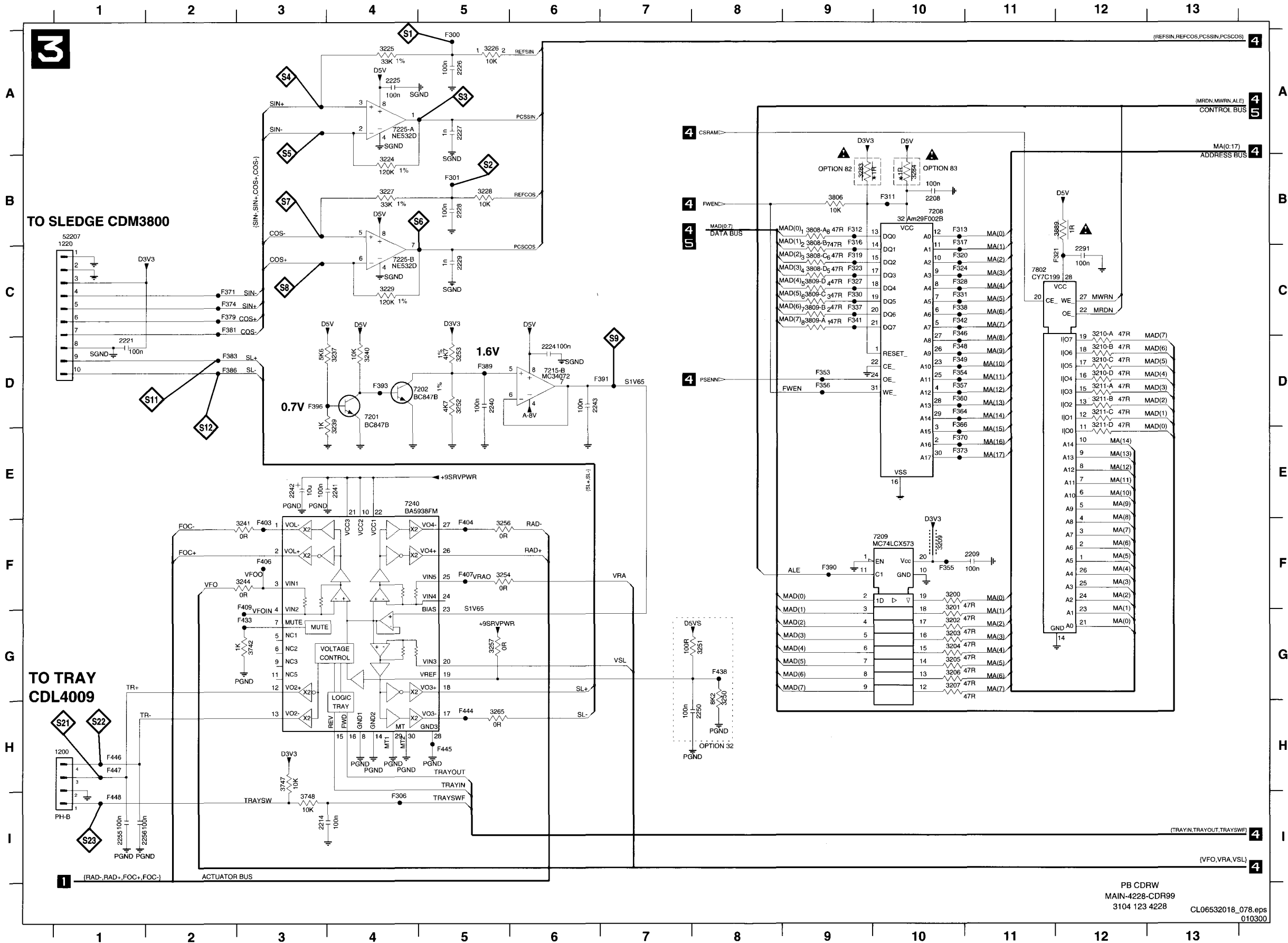
CDR MAIN BOARD - CIRCUIT DIAGRAM 2 : XDAC, LASER DRIVE CURRENT CIRCUITS



- 2003 A3
- 2031 B6
- 2032 A8
- 2033 A8
- 2034 C9
- 2037 D6
- 2038 D6
- 2040 C6
- 2041 E7
- 2043 E5
- 2044 E9
- 2045 F11
- 2046 E11
- 2047 E12
- 2048 E12
- 2049 E10
- 2050 E11
- 2051 G12
- 2052 G7
- 2063 G8
- 2054 F7
- 2055 H6
- 2056 G6
- 2061 A5
- 2063 H8
- 2078 I7
- 2080 E7
- 2082 I6
- 2083 I7
- 2084 A7
- 3007 C4
- 3037 C5
- 3042 E6
- 3043 G9
- 3044 H5
- 3045 E5
- 3046 D5
- 3056 B9
- 3057 A5
- 3058 B5
- 3059 B6
- 3060 B7
- 3061 B6
- 3062 B9
- 3063 A9
- 3064 A9
- 3065 A5
- 3067 A4
- 3070 E7
- 3071 D7
- 3072 E5
- 3073 D5
- 3074 A3
- 3075 E5
- 3076 C8
- 3077 E9
- 3078 H5
- 3081 F5
- 3082 F10
- 3085 E12
- 3086 E12
- 3087 G13
- 3088 E13
- 3090 F12
- 3091 E11
- 3092 F12
- 3093 G12
- 3094 G8
- 3095 F8
- 3097 G7
- 3098 G7
- 3099 H8
- 3100 D9
- 3101 A9
- 3110 B7
- 3111 A6
- 3112 A8
- 3116 I6
- 3117 I7
- 3118 H7
- 3119 I7
- 3120 I8
- 3126 I5
- 3127 G6
- 3128 I7
- 3129 H7
- 3899 F9
- 6003 H8
- 6007 D7
- 6015 C5
- 7001-A F6
- 7001-B D6
- 7001-C E9
- 7001-D C8
- 7002-A I6
- 7002-B G5
- 7002-C F10
- 7002-D A6
- 7005-B G6
- 7005-C F11
- 7005-D A7
- 7016 A4
- 7110 A7
- 7111 H8
- 7112 I8
- 7113 F10
- 7121 F12
- 7122 G6
- 7124 G5
- 7135 A9
- F106 A4
- F112 A3
- F114 A7
- F116 A6
- F117 A4
- F118 A9
- F119 A8
- F120 A7
- F121 A5
- F122 B4
- F123 B7
- F124 B4
- F125 B3
- F126 B3
- F128 B3
- F129 B7
- F130 B4
- F131 C4
- F132 C4
- F136 C4
- F139 C4
- F141 C6
- F144 C7
- F151 D8
- F154 D6
- F156 D5
- F160 D7
- F164 D7
- F168 D8
- F173 E5
- F180 E5
- F183 E7
- F196 F5
- F200 F10
- F201 F11
- F205 F12
- F206 F10
- F216 G13
- F224 G10
- F229 G7
- F236 G7
- F237 G6
- F241 G7
- F242 G7
- F244 G5
- F245 H4
- F253 I6
- F255 I7
- F258 I6
- F269 I6
- F271 I8

PB CDRW  
MAIN-4228-CDR99  
3104 123 4228

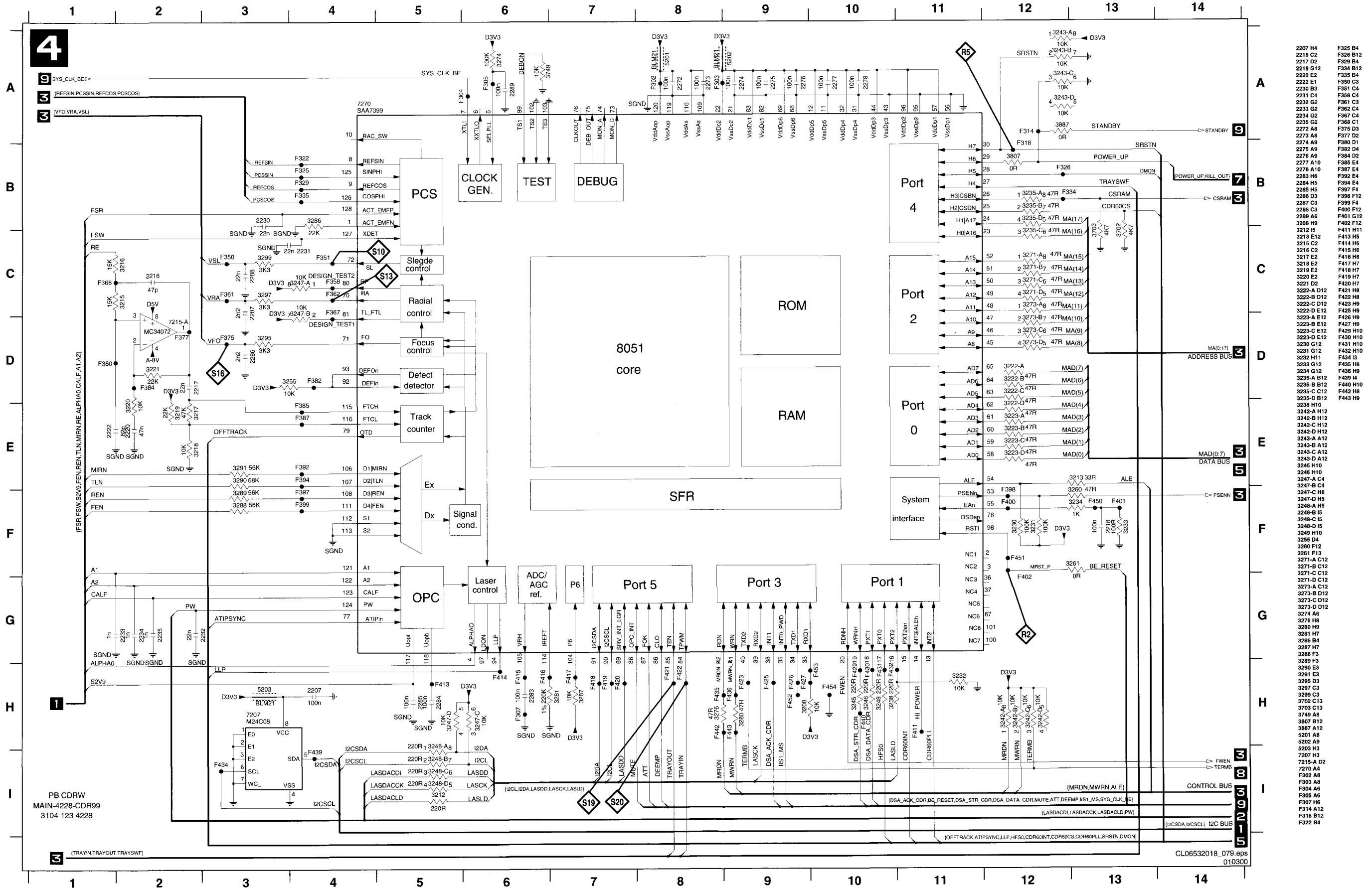
CDR MAIN BOARD - CIRCUIT DIAGRAM 3 : SERVO DRIVERS, MACE-RAM, -FLASH, -DEMUX TEST POINTS



- 1200 H1
- 1220 B1
- 2208 B10
- 2209 F11
- 2214 I3
- 2221 D1
- 2224 D6
- 2225 A4
- 2226 A5
- 2227 A5
- 2228 B5
- 2229 C5
- 2240 D5
- 2241 E4
- 2242 E3
- 2243 D6
- 2250 H8
- 2255 I1
- 2256 I1
- 2291 C12
- 3200 F10
- 3201 G10
- 3202 G10
- 3203 G10
- 3204 G10
- 3205 G10
- 3206 G10
- 3207 G10
- 3209 F10
- 3210-A D12
- 3210-B D12
- 3210-C D12
- 3210-D D12
- 3211-A D12
- 3211-B D12
- 3211-C D12
- 3211-D E12
- 3224 B4
- 3225 A4
- 3226 A5
- 3227 B4
- 3228 B5
- 3229 C4
- 3237 D4
- 3239 D4
- 3240 D4
- 3241 F3
- 3244 F3
- 3250 G8
- 3251 G8
- 3252 D8
- 3253 D8
- 3254 F5
- 3255 F5
- 3257 G6
- 3265 H5
- 3283 B9
- 3284 B10
- 3742 G3
- 3747 H3
- 3748 I3
- 3806 B9
- 3808-A B9
- 3808-B C9
- 3808-C C9
- 3808-D C9
- 3809-A C9
- 3809-B C9
- 3809-C C9
- 3809-D C9
- 3889 B12
- 7201 D4
- 7202 D4
- 7208 B10
- 7209 F10
- 7215-B D6
- 7225-A A4
- 7225-B C4
- 7240 E4
- 7802 C11
- F300 A5
- F301 B5
- F306 H
- F311 B10
- F312 B9
- F313 B10
- F316 B9
- F317 B10
- F319 C9
- F320 C10
- F321 C12
- F323 C9
- F324 C10
- F327 C9
- F328 C10
- F330 C9
- F331 C10
- F337 C9
- F338 C10
- F341 C9
- F342 C10
- F346 C10
- F348 D10
- F349 D10
- F353 D9
- F354 D10
- F355 F10
- F356 D9
- F367 D10
- F368 D10
- F369 D10
- F370 E10
- F371 C2
- F373 E10
- F374 C2
- F378 C2
- F381 C2
- F383 D2
- F386 D2
- F389 D5
- F390 F9
- F391 D7
- F393 D4
- F396 D3
- F403 F3
- F404 F5
- F406 F3
- F407 F5
- F409 F3
- F433 G3
- F438 G8
- F444 H5
- F445 H5
- F446 H1
- F447 H1
- F448 I1

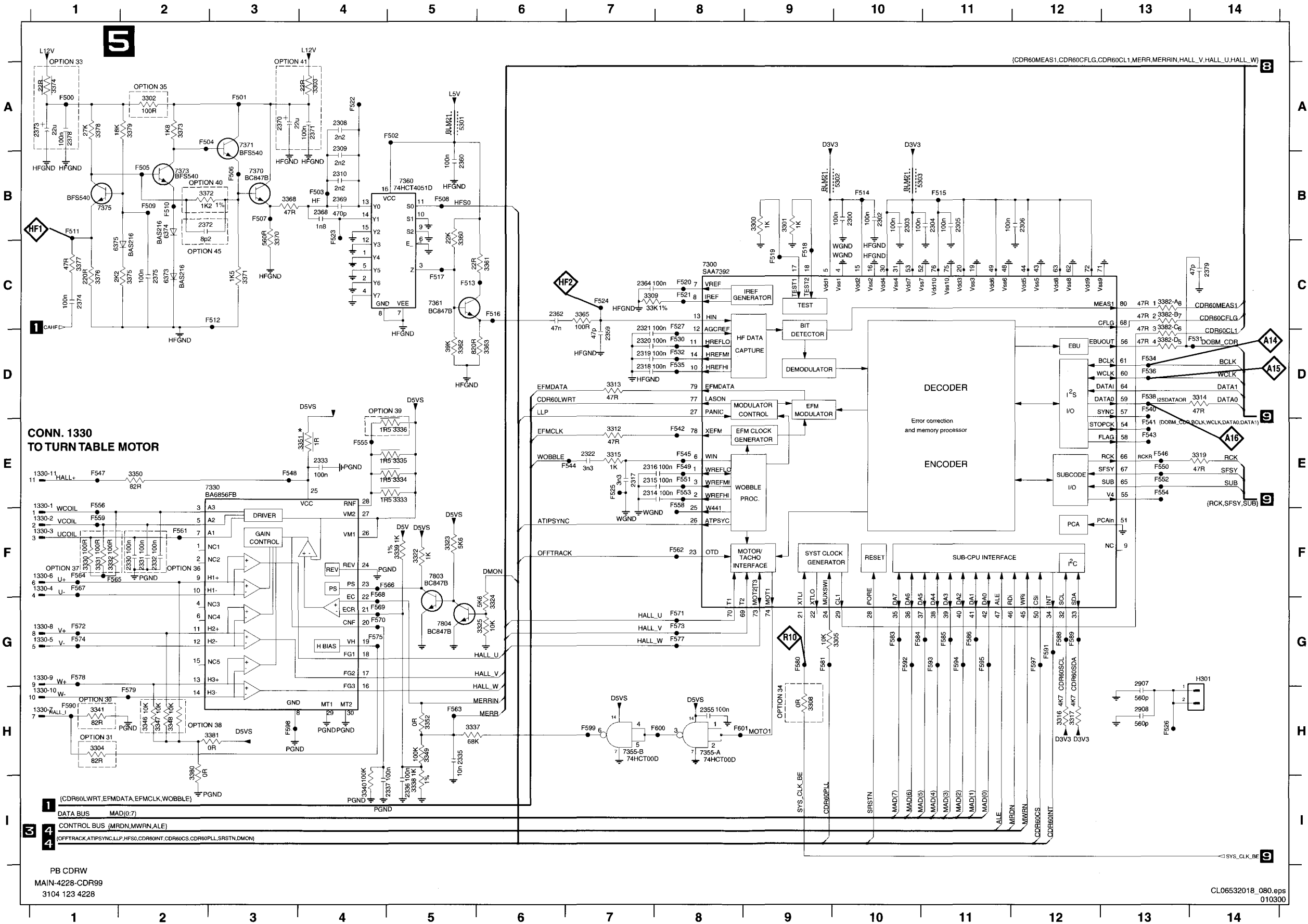


CDR MAIN BOARD - CIRCUIT DIAGRAM 4 : MACE BE-PROCESSOR TESTPOINTS



PB CDRW  
MAIN-4228-CDR99  
3104 123 4228

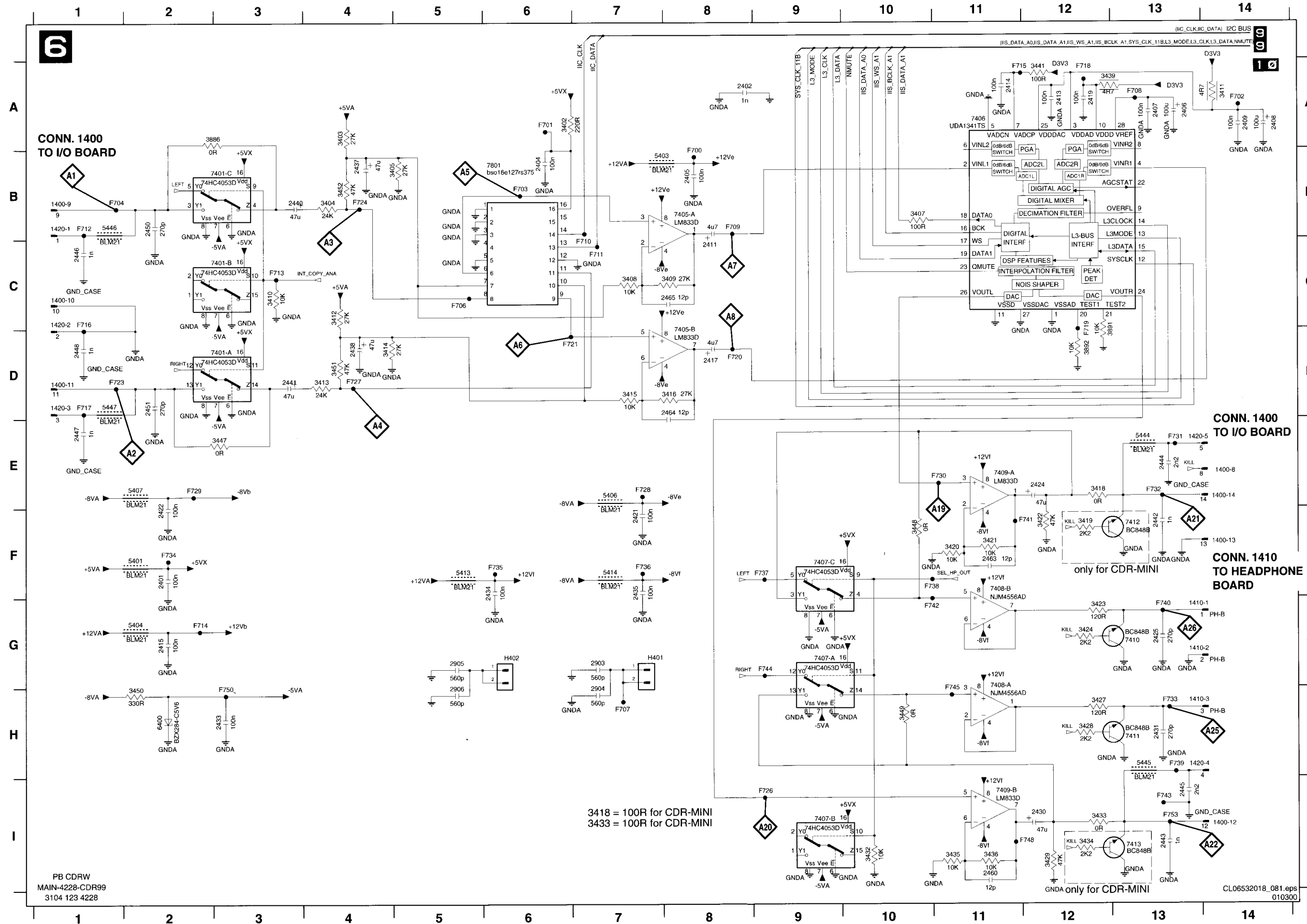
CDR MAIN BOARD - CIRCUIT DIAGRAM 5 : CD ENCODING-DECODING PART



1330-1 E1	6375 C1
1330-10 H1	7300 C8
1330-11 E1	7330 E2
1330-2 F1	7355-A H8
1330-3 F1	7355-B H7
1330-4 F1	7360 C5
1330-5 G1	7361 C5
1330-6 F1	7370 B3
1330-7 H1	7371 A3
1330-8 G1	7373 B2
1330-9 G1	7375 B1
2300 B10	7803 F5
2302 B10	7804 G5
2303 B10	F500 A1
2304 B11	F501 A3
2305 B11	F502 A5
2306 B12	F503 B4
2308 A4	F504 A2
2309 A4	F505 B2
2310 B4	F506 B3
2314 E7	F507 B3
2315 E7	F508 B5
2316 E7	F509 B2
2317 E7	F510 B2
2318 D7	F511 B1
2319 D7	F512 C5
2320 D7	F513 C5
2321 D7	F514 B10
2322 E7	F515 B11
2323 E7	F516 C6
2324 E7	F517 C5
2325 F2	F518 C5
2326 F2	F519 C9
2327 E4	F520 C8
2328 H5	F521 C8
2329 H5	F522 C8
2330 H5	F523 A4
2331 H5	F524 B4
2332 H5	F525 E7
2333 H5	F526 H3
2334 H5	F527 C8
2335 H5	F528 D8
2336 H5	F529 D7
2337 H5	F530 D8
2338 H5	F531 D14
2339 H5	F532 D8
2340 H5	F533 D13
2341 H5	F534 D13
2342 H5	F535 D13
2343 H5	F536 D13
2344 H5	F537 A1
2345 H5	F538 D13
2346 H5	F539 D13
2347 H5	F540 D13
2348 H5	F541 E13
2349 H5	F542 E8
2350 H5	F543 E13
2351 H5	F544 E7
2352 H5	F545 E8
2353 H5	F546 E13
2354 H5	F547 E13
2355 H5	F548 E13
2356 H5	F549 E8
2357 H5	F550 E13
2358 H5	F551 E8
2359 H5	F552 E13
2360 H5	F553 E8
2361 H5	F554 E13
2362 H5	F555 E4
2363 H5	F556 E1
2364 H5	F557 E1
2365 H5	F558 E1
2366 H5	F559 F1
2367 H5	F560 F2
2368 H5	F561 F2
2369 H5	F562 F8
2370 H5	F563 F8
2371 H5	F564 F8
2372 H5	F565 F1
2373 H5	F566 F1
2374 H5	F567 F4
2375 H5	F568 F4
2376 H5	F569 G4
2377 H5	F570 G4
2378 H5	F571 G8
2379 H5	F572 G1
2380 H5	F573 G8
2381 H5	F574 G1
2382 H5	F575 G1
2383 H5	F576 G4
2384 H5	F577 G8
2385 H5	F578 G1
2386 H5	F579 H2
2387 H5	F580 G9
2388 H5	F581 G9
2389 H5	F582 G10
2390 H5	F583 G10
2391 H5	F584 G10
2392 H5	F585 G11
2393 H5	F586 G11
2394 H5	F587 G12
2395 H5	F588 G12
2396 H5	F589 G12
2397 H5	F590 H1
2398 H5	F591 G12
2399 H5	F592 G10
2400 H5	F593 G11
2401 H5	F594 G11
2402 H5	F595 G11
2403 H5	F596 G12
2404 H5	F597 G12
2405 H5	F598 H3
2406 H5	F599 H7
2407 H5	F600 H8
2408 H5	F601 H8
2409 H5	F602 H8
2410 H5	H301 G14

PB CDRW  
 MAIN-4228-CDR99  
 3104 123 4228

CDR MAIN BOARD - CIRCUIT DIAGRAM 6 : AUDIO PART (NOT FOR CDR950/951)



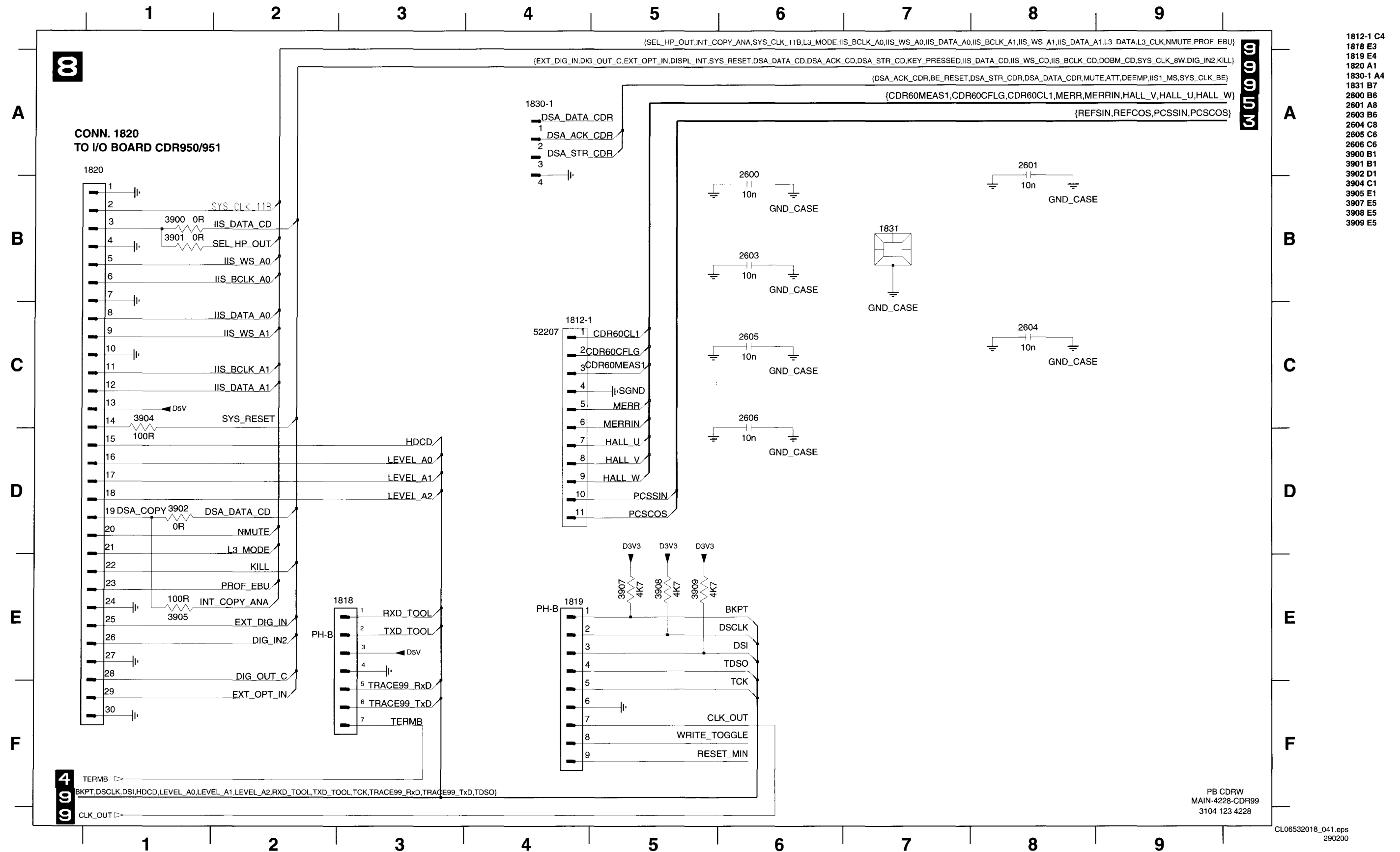
- 1400-10 C1
- 1400-11 D1
- 1400-12 I14
- 1400-13 F14
- 1400-14 E14
- 1400-8 E14
- 1400-9 B1
- 1410-1 G14
- 1410-2 G14
- 1410-3 H14
- 1420-1 B1
- 1420-2 C1
- 1420-3 D1
- 1420-4 H14
- 1420-5 E14
- 2401 F2
- 2402 A1
- 2404 B6
- 2405 B8
- 2406 A13
- 2407 A13
- 2408 B14
- 2409 A14
- 2411 C8
- 2413 A11
- 2414 A11
- 2415 G2
- 2417 D8
- 2419 A12
- 2421 F7
- 2422 F2
- 2424 E12
- 2425 G13
- 2430 I12
- 2431 H3
- 2433 H3
- 2434 F6
- 2435 F7
- 2437 B4
- 2438 D4
- 2440 B3
- 2441 D3
- 2442 F13
- 2443 I13
- 2444 E13
- 2445 I13
- 2446 C1
- 2447 E1
- 2448 D1
- 2450 B2
- 2451 D2
- 2480 I11
- 2483 F11
- 2484 D8
- 2485 C8
- 2903 G7
- 2904 H7
- 2905 G5
- 2906 H5
- 3402 A6
- 3403 A4
- 3404 B4
- 3405 B5
- 3407 B10
- 3408 C7
- 3409 C8
- 3410 C3
- 3411 A14
- 3412 C4
- 3413 D4
- 3414 D4
- 3415 D7
- 3416 D8
- 3418 E12
- 3419 F12
- 3420 F11
- 3421 F11
- 3422 F12
- 3423 G12
- 3424 G12
- 3427 H12
- 3428 H12
- 3429 I12
- 3432 I10
- 3433 I12
- 3434 I12
- 3435 I11
- 3436 I11
- 3439 A12
- 3441 A12
- 3442 E3
- 3447 E3
- 3448 F10
- 3449 H10
- 3450 H2
- 3451 D4
- 3452 B4
- 3886 A2
- 3891 D12
- 3892 D12
- 5401 F2
- 5403 B7
- 5404 G2
- 5406 E7
- 5413 F5
- 5414 F7
- 5444 E13
- 5445 H13
- 5446 B1
- 5447 D1
- 6400 H2
- 7401-A D3
- 7401-B C3
- 7401-C B3
- 7405-A B8
- 7405-B D8
- 7406 A11
- 7407-A G9
- 7407-B I9
- 7407-C F9
- 7408-A H11
- 7408-B F11
- 7409-A E11
- 7409-B I11
- 7410 G13
- 7411 H13
- 7412 F13
- 7413 I13
- 7801 B6
- F700 B8
- F701 A6
- F702 A14
- F703 B6
- F704 B1
- F705 C5
- F707 H7
- F708 A13
- F709 B8
- F710 B7
- F711 C7
- F712 B1
- F713 C3
- F714 A11
- F715 A11
- F716 C1
- F717 D1
- F718 A12
- F719 D12
- F720 D8
- F721 D6
- F723 D1
- F724 B4
- F725 B4
- F726 B4
- F727 D4
- F728 E7
- F729 E2
- F730 E1
- F731 E13
- F732 E13
- F733 H13
- F734 F2
- F735 F6
- F736 F7
- F737 F9
- F738 F10
- F739 H13
- F740 G13
- F741 F12
- F742 G10
- F743 F11
- F744 G9
- F745 H11
- F748 I2
- F750 H3
- F753 I13
- H401 G7
- H402 G7
- H403 A4
- H404 A4
- H405 B5
- H406 B5
- H407 G7
- H408 H2
- H409 H2
- H410 H2
- H411 H2
- H412 H2
- H413 H2
- H414 H2
- H415 H2
- H416 H2
- H417 H2
- H418 H2
- H419 H2
- H420 H2
- H421 H2
- H422 H2
- H423 H2
- H424 H2
- H425 H2
- H426 H2
- H427 H2
- H428 H2
- H429 H2
- H430 H2
- H431 H2
- H432 H2
- H433 H2
- H434 H2
- H435 H2
- H436 H2
- H437 H2
- H438 H2
- H439 H2
- H440 H2
- H441 H2
- H442 H2
- H443 H2
- H444 H2
- H445 H2
- H446 H2
- H447 H2
- H448 H2
- H449 H2
- H450 H2
- H451 H2
- H452 H2
- H453 H2
- H454 H2
- H455 H2
- H456 H2
- H457 H2
- H458 H2
- H459 H2
- H460 H2

PB CDRW  
 MAIN-4228-CDR99  
 3104 123 4228

CL06532018\_081.eps  
 010300



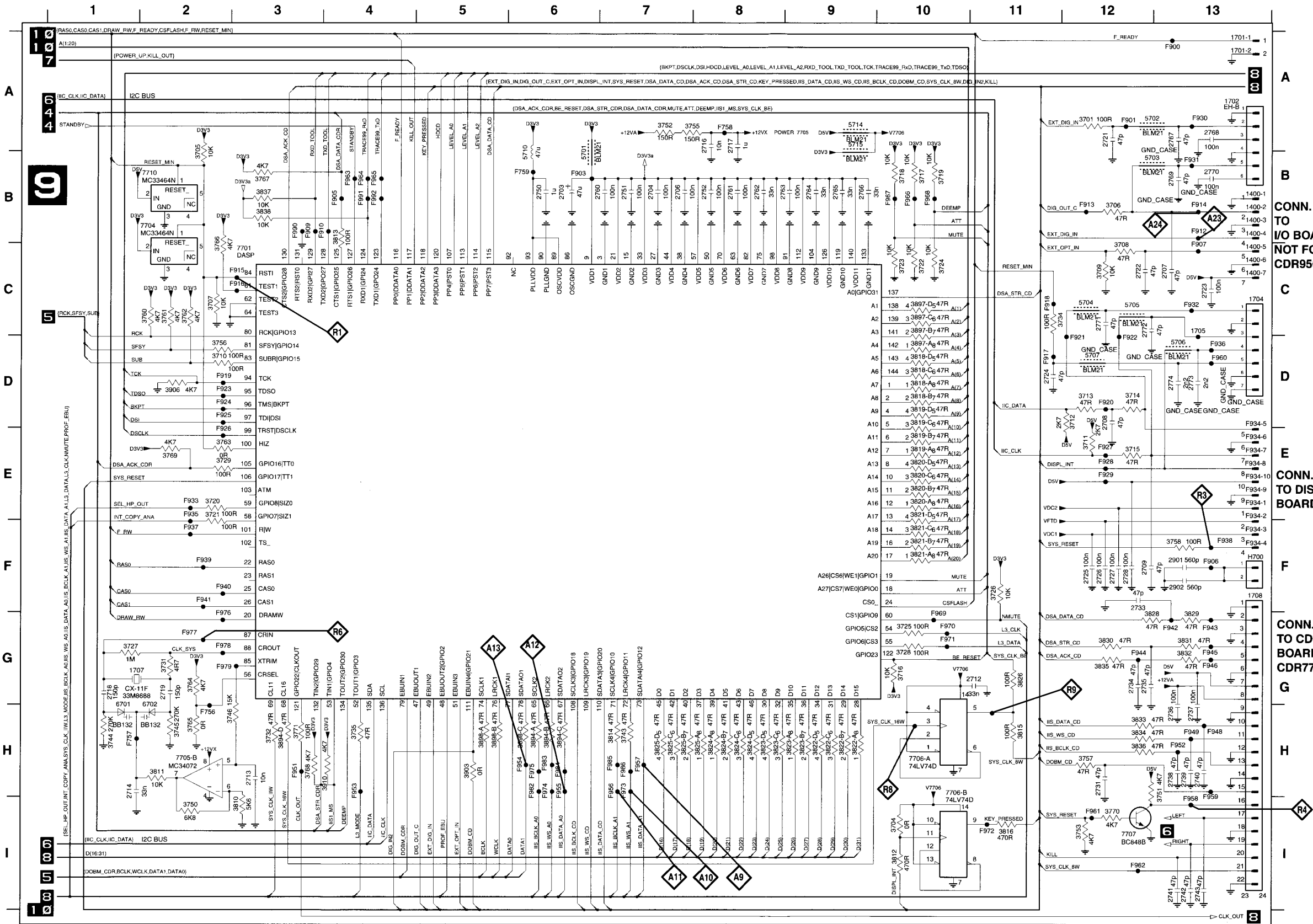
CDR MAIN BOARD - CIRCUIT DIAGRAM 8 : TEST & CONNECTOR PART



- 1812-1 C4
- 1818 E3
- 1819 E4
- 1820 A1
- 1830-1 A4
- 1831 B7
- 2600 B6
- 2601 A8
- 2603 B6
- 2604 C8
- 2605 C6
- 2606 C6
- 3900 B1
- 3901 B1
- 3902 D1
- 3904 C1
- 3905 E1
- 3907 E5
- 3908 E5
- 3909 E5

PB CDRW  
MAIN-4228-CDR99  
3104 123 4228

CDR MAIN BOARD - CIRCUIT DIAGRAM 9 : DASP MASTER PROCESSOR TESTPOINTS



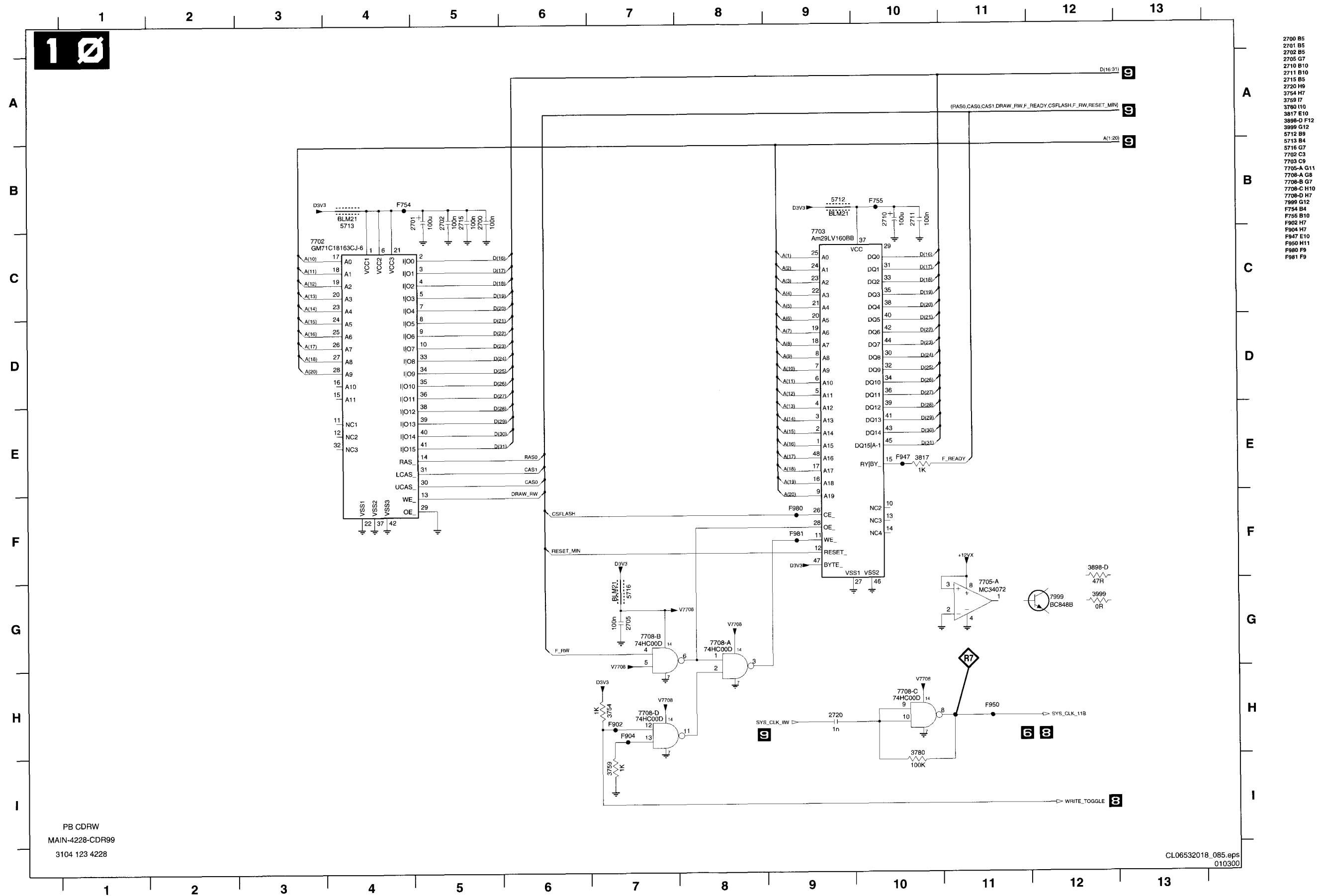
- 1400-1 B13
- 1400-2 B13
- 1400-3 B13
- 1400-4 B13
- 1400-5 C13
- 1400-6 C13
- 1400-7 C13
- 1701-1 A13
- 1701-2 A13
- 1702 A13
- 1704 C13
- 1707 G1
- 1708 F13
- 2703 B5
- 2704 B7
- 2705 B7
- 2707 C13
- 2708 D12
- 2709 F12
- 2712 G11
- 2713 H1
- 2714 H1
- 2715 A8
- 2716 A8
- 2717 A8
- 2718 G1
- 2719 G2
- 2721 A12
- 2722 C12
- 2723 C13
- 2724 D11
- 2725 F12
- 2726 H12
- 2727 F12
- 2728 F12
- 2731 H12
- 2733 F12
- 2734 G12
- 2735 G12
- 2736 H12
- 2737 H13
- 2738 H13
- 2739 H13
- 2740 H13
- 2741 H13
- 2742 H13
- 2743 H13
- 2750 B6
- 2751 B7
- 2752 B6
- 2753 B7
- 2756 B9
- 2757 B9
- 2758 B9
- 2759 B9
- 2760 B9
- 2761 B6
- 2762 B8
- 2763 B9
- 2764 B9
- 2765 B9
- 2766 B9
- 2767 A13
- 2768 A13
- 2769 A13
- 2770 B13
- 2771 C12
- 2772 C12
- 2773 C12
- 2774 D13
- 2901 F13
- 2902 F13
- 2903 F13
- 2904 F13
- 2905 B2
- 2906 B12
- 2907 C2
- 2908 C12
- 2909 C12
- 2910 D2
- 2911 D2
- 2912 D2
- 2913 D2
- 2914 D12
- 2915 E12
- 2916 G10
- 2917 B10
- 2918 B10
- 2919 B10
- 2920 E2
- 2921 E2
- 2922 C10
- 2923 C10
- 2924 C10
- 2925 C10
- 2926 F11
- 2927 G1
- 2928 G10
- 2929 E2
- 2930 G2
- 2931 G2
- 2932 H3
- 2933 C11
- 2934 C11
- 2935 H4
- 2936 H7
- 2937 H4
- 2938 H2
- 2939 H2
- 2940 H2
- 2941 H2
- 2942 H2
- 2943 H2
- 2944 H1
- 2945 H1
- 2946 H2
- 2947 H3
- 2948 H3
- 2949 H3
- 2950 I2
- 2951 H13
- 2952 A7
- 2953 I7
- 2954 A7
- 2955 A7
- 2956 D2
- 2957 C2
- 2958 E2
- 2959 E2
- 2960 C2
- 2961 C2
- 2962 C2
- 2963 E2
- 2964 G2
- 2965 H2
- 2966 H2

CONN. 1400 TO I/O BOARD NOT FOR CDR950/951

CONN. F934 TO DISPLAY BOARD

CONN. 1708 TO CD MAIN BOARD CDR775/776

CDR MAIN BOARD - CIRCUIT DIAGRAM 10 : DASP FLASH & DRAM TESTPOINTS



- 2700 B5
- 2701 B5
- 2702 B5
- 2705 G7
- 2710 B10
- 2711 B10
- 2715 B5
- 2720 H9
- 3754 H7
- 3759 I7
- 3760 I10
- 3817 E10
- 3898-D F12
- 3999 G12
- 5712 B9
- 5713 B4
- 5716 G7
- 7702 C3
- 7703 C9
- 7705-A G11
- 7708-A G8
- 7708-B G7
- 7708-C H10
- 7708-D H7
- 7999 G12
- F754 B4
- F755 B10
- F902 H7
- F904 H7
- F947 E10
- F950 H11
- F980 F9
- F981 F9

PB CDRW  
MAIN-4228-CDR99  
3104 123 4228

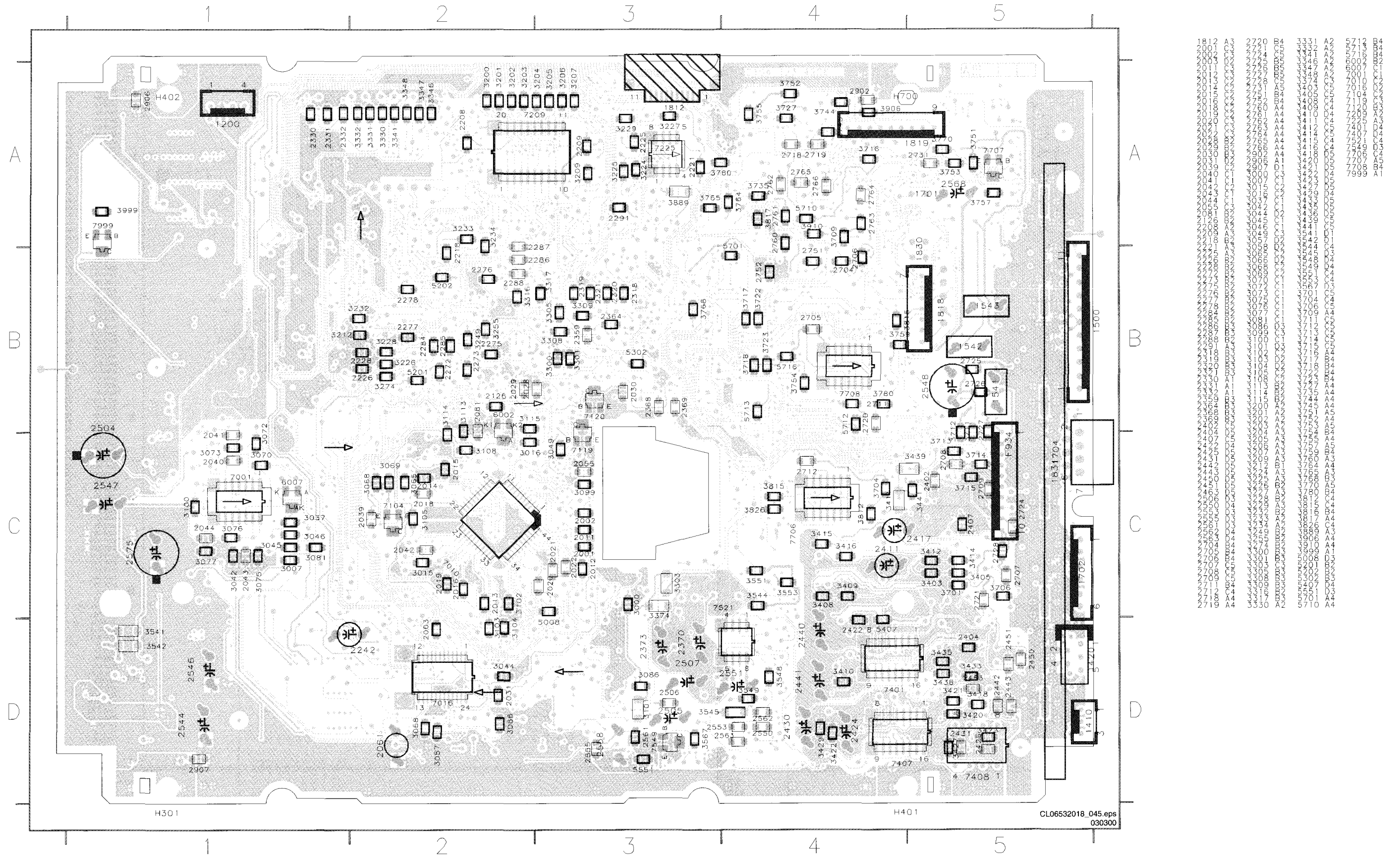
CL06532018\_085.eps  
010300







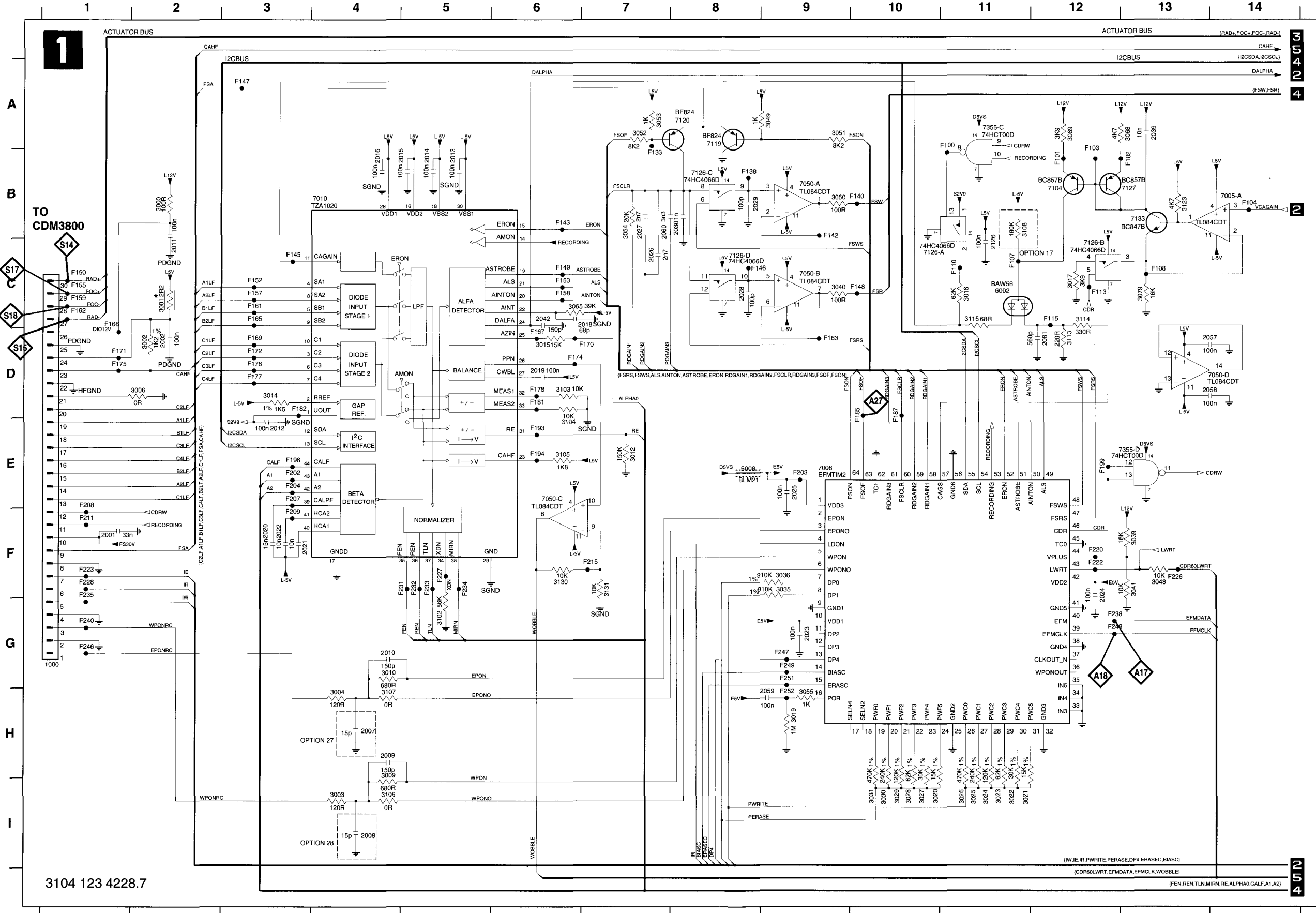
CDR MAIN BOARD - BOTTOM VIEW



1	2	3	4	5	
A	1	2	3	4	5
B	1	2	3	4	5
C	1	2	3	4	5
D	1	2	3	4	5

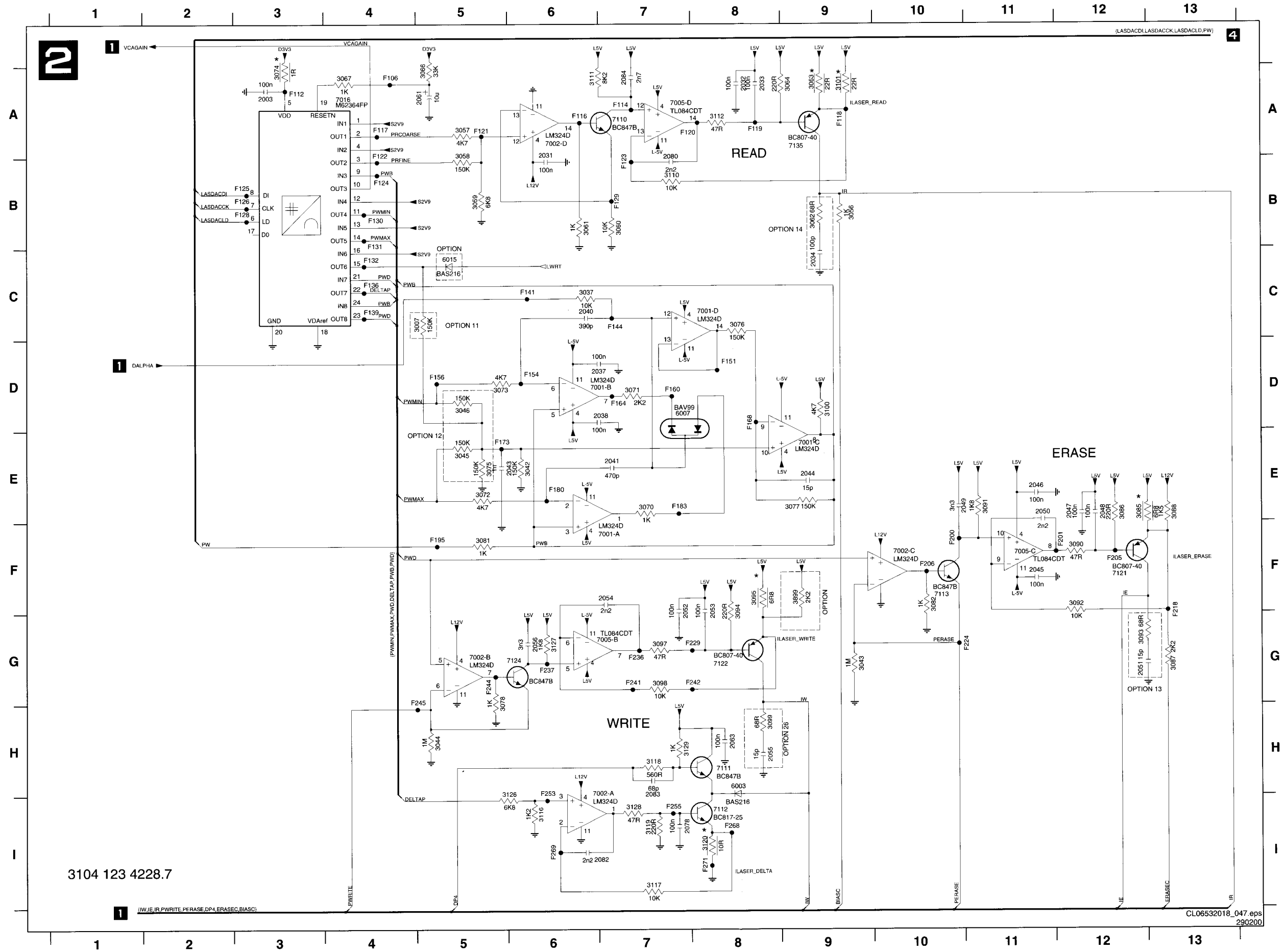
CDR-Mainboard Version 4228.7

CDR MAIN BOARD - CIRCUIT DIAGRAM U 1 : AEGER, EFMTIM, FORWARD SENSE CIRCUIT TESTPOINTS



- 1000 G1
- 2001 F1
- 2002 D2
- 2007 H4
- 2008 I4
- 2009 H4
- 2010 G4
- 2011 C2
- 2012 E3
- 2013 B5
- 2014 B5
- 2015 B4
- 2016 B4
- 2018 C7
- 2019 D6
- 2020 F3
- 2021 F3
- 2022 F3
- 2023 G9
- 2024 F12
- 2025 E9
- 2026 C7
- 2027 B7
- 2028 C8
- 2029 B8
- 2030 B8
- 2039 A13
- 2042 C6
- 2057 D14
- 2058 D14
- 2059 H9
- 2060 B7
- 2061 D12
- 2062 C11
- 3000 B2
- 3001 C2
- 3002 D2
- 3003 I4
- 3004 H4
- 3006 D2
- 3008 H4
- 3010 G4
- 3012 E7
- 3014 D3
- 3015 D6
- 3016 C11
- 3017 C12
- 3019 H9
- 3020 I10
- 3021 I11
- 3022 I11
- 3023 I11
- 3024 I11
- 3025 I11
- 3026 I11
- 3027 I10
- 3028 I10
- 3029 I10
- 3030 I10
- 3031 I10
- 3035 F9
- 3036 F9
- 3039 F13
- 3040 C9
- 3041 F13
- 3048 F13
- 3049 A9
- 3050 B9
- 3051 A9
- 3052 A7
- 3053 A7
- 3054 B7
- 3055 H9
- 3065 C6
- 3068 A13
- 3069 A12
- 3079 C13
- 3102 G5
- 3103 D6
- 3104 E6
- 3105 E6
- 3106 I4
- 3107 H4
- 3108 B11
- 3113 D12
- 3114 C12
- 3115 C11
- 3123 B13
- 3130 F6
- 3131 F7
- 5008 E8
- 6002 C11
- 7005-A B14
- 7008 E9
- 7010 B4
- 7050-A B9
- 7050-B C9
- 7050-C E9
- 7050-D D13
- 7104 B12
- 7119 A8
- 7120 A8
- 7126-A C11
- 7126-B C12
- 7126-C B8
- 7126-D C8
- 7127 B13
- 7133 B13
- 7355-C A11
- 7355-D E12
- F100 A11
- F101 B12
- F102 B13
- F103 B12
- F104 C11
- F107 C11
- F108 C13
- F113 C11
- F115 C11
- F119 C11
- F120 C12
- F121 C12
- F122 C12
- F123 C12
- F124 C12
- F125 C12
- F126 C13
- F127 C13
- F128 F1
- F129 F4
- F130 F5
- F131 F5
- F132 F5
- F133 B7
- F138 B8
- F140 B10
- F142 B9
- F143 B6
- F145 C3
- F146 C8
- F147 A3
- F148 C10
- F149 C6
- F150 C1
- F152 C3
- F153 C6
- F155 C1
- F157 C3
- F158 C6
- F159 C1
- F161 C3
- F162 C1
- F163 D9
- F165 C3
- F166 D6
- F169 D3
- F170 D7
- F171 D1
- F172 D3
- F174 D6
- F175 D1
- F176 D3
- F177 D3
- F181 D6
- F182 D3
- F185 D10
- F187 D10
- F193 E6
- F194 E6
- F196 E3
- F199 E12
- F202 E3
- F203 E9
- F204 E3
- F207 E3
- F208 E1
- F209 F3
- F211 F1
- F215 F7
- F220 F12
- F222 F12
- F223 F1
- F226 F13
- F227 F5
- F228 F1
- F231 F4
- F232 F5
- F233 F5
- F234 F5
- F235 F1
- F238 G12
- F240 G1
- F243 G12
- F246 G1
- F247 G9
- F249 G9
- F251 G9
- F252 H9

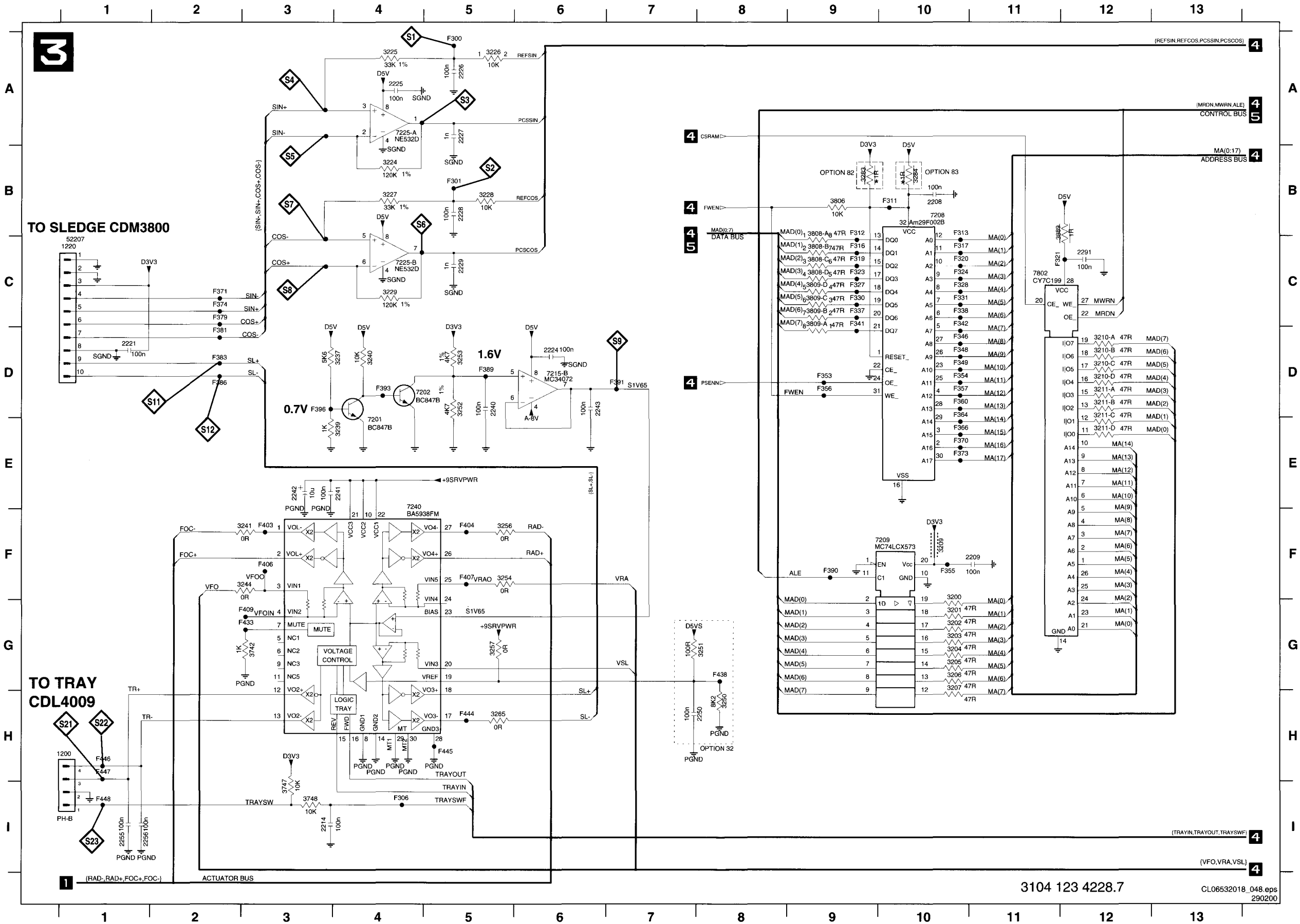
3104 123 4228.7



- 2003 A3
- 2031 A6
- 2032 A8
- 2033 A8
- 2034 C9
- 2037 D7
- 2038 D7
- 2040 C6
- 2041 E7
- 2043 E5
- 2044 E9
- 2045 F11
- 2046 E11
- 2047 E12
- 2048 E12
- 2049 E10
- 2050 E11
- 2051 G12
- 2052 F7
- 2053 F8
- 2054 F7
- 2055 H8
- 2056 G6
- 2061 A5
- 2063 H8
- 2078 I7
- 2080 B7
- 2082 I7
- 2083 I7
- 2084 A7
- 3007 C5
- 3037 C6
- 3042 E6
- 3043 G9
- 3044 H5
- 3045 E5
- 3046 D5
- 3056 B9
- 3057 A5
- 3058 B5
- 3059 B5
- 3060 B7
- 3061 B6
- 3062 B9
- 3063 A9
- 3064 A9
- 3066 A5
- 3067 A4
- 3070 E7
- 3071 D7
- 3072 E5
- 3073 D5
- 3074 A3
- 3075 E5
- 3076 C8
- 3077 E9
- 3078 G5
- 3081 F5
- 3082 F10
- 3085 E12
- 3086 E12
- 3087 G13
- 3088 F13
- 3090 F12
- 3091 E11
- 3092 F12
- 3093 G12
- 3094 F8
- 3095 F8
- 3097 G7
- 3098 G7
- 3099 H8
- 3100 D9
- 3101 A9
- 3110 B7
- 3111 A6
- 3112 A8
- 3116 I6
- 3117 I7
- 3118 H7
- 3119 I7
- 3120 I8
- 3126 I6
- 3127 G6
- 3128 I7
- 3129 H7
- 3899 F9
- 6003 H8
- 6007 D7
- 6015 C5
- 7001-A F7
- 7001-B D6
- 7001-C E9
- 7001-D C8
- 7002-A H6
- 7002-B G5
- 7002-C F10
- 7002-D A6
- 7005-B G6
- 7005-C F11
- 7005-D A7
- 7016 A4
- 7110 A7
- 7111 H8
- 7112 I8
- 7113 F10
- 7121 F12
- 7122 G8
- 7124 G5
- 7135 A9
- F106 A4
- F112 A3
- F114 A7
- F116 A6
- F117 A4
- F118 A9
- F119 A8
- F120 A7
- F123 B7
- F124 B4
- F125 B3
- F126 B3
- F128 B3
- F129 B7
- F130 B4
- F131 B4
- F132 C4
- F136 C4
- F141 C6
- F144 C7
- F151 D8
- F154 D6
- F155 D5
- F160 D7
- F164 D7
- F168 D8
- F173 E5
- F180 E6
- F183 E7
- F195 F5
- F200 F10
- F201 F12
- F205 F12
- F206 F10
- F218 F13
- F224 G10
- F229 G8
- F236 G7
- F237 G6
- F241 G7
- F242 G8
- F245 G5
- F253 H6
- F255 I7
- F268 I8
- F269 I6
- F271 I8

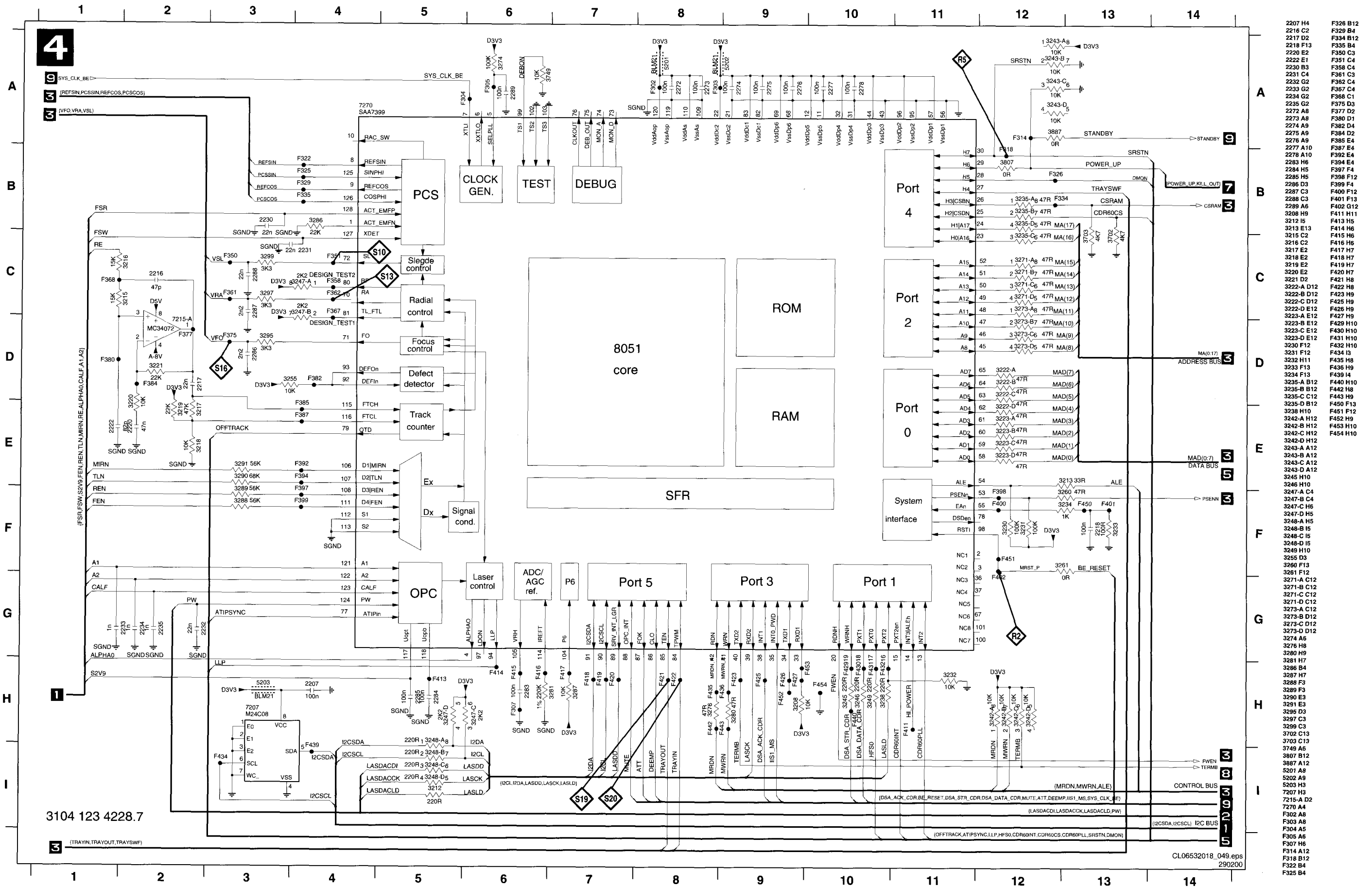
3104 123 4228.7

CDR MAIN BOARD - CIRCUIT DIAGRAM 3 : SERVO DRIVERS, MACE-RAM, -FLASH, -DEMUX TEST POINTS



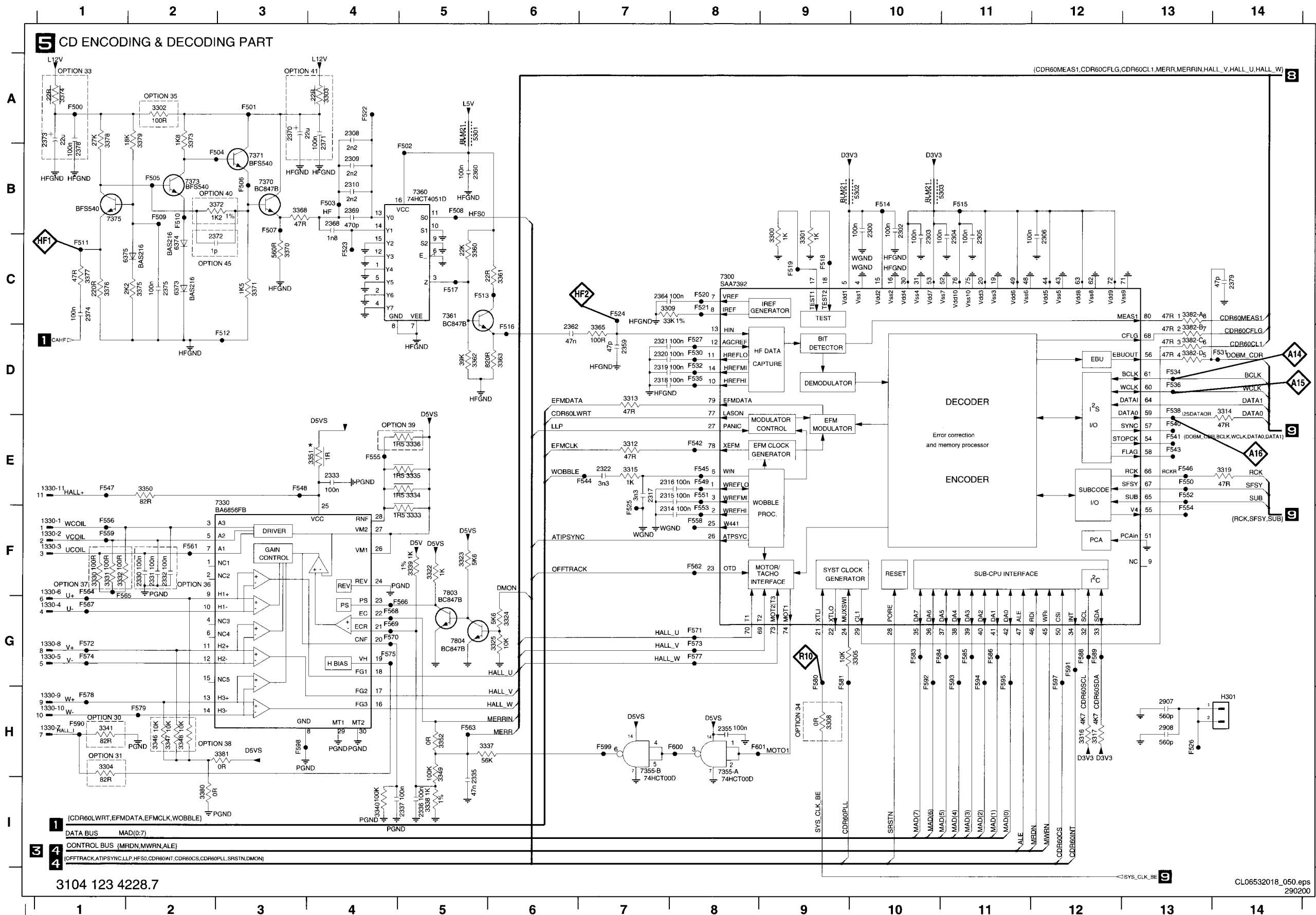
- 1200 H1
- 1220 C1
- 2208 B10
- 2214 I3
- 2221 D1
- 2224 D6
- 2225 A4
- 2226 A5
- 2227 A5
- 2228 B5
- 2229 C5
- 2240 D5
- 2241 E4
- 2242 E3
- 2243 D6
- 2250 H8
- 2255 I1
- 2256 I1
- 2291 C12
- 3200 F10
- 3201 G10
- 3202 G10
- 3203 G10
- 3204 G10
- 3205 G10
- 3206 G10
- 3207 G10
- 3209 F10
- 3210-A D12
- 3210-B D12
- 3210-C D12
- 3210-D D12
- 3211-A D12
- 3211-B D12
- 3211-C D12
- 3211-D E12
- 3224 B4
- 3225 A4
- 3226 A5
- 3227 B4
- 3228 B5
- 3229 C4
- 3237 D4
- 3238 E4
- 3240 D4
- 3241 F3
- 3244 F3
- 3250 H8
- 3251 G8
- 3252 D5
- 3253 D8
- 3254 F5
- 3256 F5
- 3257 G5
- 3265 H5
- 3283 B9
- 3284 B10
- 3742 G3
- 3747 I3
- 3748 I3
- 3806 B9
- 3808-A B9
- 3808-B C9
- 3808-C C9
- 3808-D C9
- 3809-A C9
- 3809-B C9
- 3809-C C9
- 3809-D C9
- 3889 B11
- 7201 E4
- 7202 D4
- 7208 B10
- 7209 F9
- 7215-B D6
- 7225-A A4
- 7225-B C4
- 7240 F4
- 7802 C11
- F300 A5
- F301 B5
- F306 I4
- F311 B10
- F312 B9
- F313 B10
- F316 C9
- F317 C10
- F319 C9
- F320 C10
- F321 C11
- F323 C9
- F324 C10
- F327 C9
- F328 C10
- F330 C9
- F331 C10
- F337 C9
- F338 C10
- F341 C9
- F342 C10
- F346 D10
- F348 D10
- F349 D10
- F353 D9
- F354 D10
- F355 F10
- F356 D9
- F357 D10
- F360 D10
- F364 D10
- F366 E10
- F370 E10
- F371 C2
- F373 E10
- F374 C2
- F379 C2
- F381 D2
- F383 D2
- F386 D2
- F389 D5
- F390 F9
- F391 D7
- F393 D4
- F396 D3
- F403 F3
- F404 F5
- F406 F3
- F407 F5
- F409 G3
- F433 G3
- F438 G8
- F444 H5
- F446 H1
- F447 H1
- F448 I1

CDR MAIN BOARD - CIRCUIT DIAGRAM 4 : MACE BE-PROCESSOR TESTPOINTS



- 2207 H4
- 2216 C2
- 2217 D2
- 2218 F13
- 2220 E2
- 2222 E1
- 2230 B3
- 2231 C4
- 2232 G2
- 2233 G2
- 2234 G2
- 2235 G2
- 2272 A8
- 2273 A8
- 2274 A9
- 2275 A9
- 2276 A9
- 2277 A10
- 2278 A10
- 2283 H6
- 2284 H6
- 2285 H5
- 2286 D3
- 2287 C3
- 2288 C3
- 2289 A6
- 3208 H9
- 3212 I5
- 3213 E13
- 3215 C2
- 3216 C2
- 3217 D2
- 3218 E2
- 3219 E2
- 3220 E2
- 3221 D2
- 3222-A D12
- 3222-B D12
- 3222-C D12
- 3222-D E12
- 3223-A E12
- 3223-B E12
- 3223-C E12
- 3223-D E12
- 3230 F12
- 3231 F12
- 3232 H11
- 3233 F13
- 3234 F13
- 3235-A B12
- 3235-B B12
- 3235-C C12
- 3235-D B12
- 3236 H10
- 3242-A H12
- 3242-B H12
- 3242-C H12
- 3242-D H12
- 3243-A A12
- 3243-B A12
- 3243-C A12
- 3243-D A12
- 3245 H10
- 3246 H10
- 3247-A C4
- 3247-B C4
- 3247-C H6
- 3247-D H5
- 3248-A H5
- 3248-B I5
- 3248-C I5
- 3248-D I5
- 3248 H10
- 3255 D3
- 3260 F13
- 3261 F12
- 3271-A C12
- 3271-B C12
- 3271-C C12
- 3271-D C12
- 3273-A C12
- 3273-B D12
- 3273-C D12
- 3273-D D12
- 3274 A6
- 3276 H8
- 3280 H9
- 3281 H7
- 3286 B4
- 3287 H7
- 3288 F3
- 3289 F3
- 3290 E3
- 3291 E3
- 3295 D3
- 3297 C3
- 3299 C3
- 3702 C13
- 3703 C13
- 3749 A6
- 3807 B12
- 3807 A12
- 5201 A8
- 5202 A9
- 5203 H3
- 7207 H3
- 7215-A D2
- 7270 A4
- F302 A8
- F303 A8
- F304 A5
- F305 A6
- F306 H6
- F307 H6
- F314 A12
- F318 B12
- F322 B4
- F326 B4
- F326 B12
- F334 B12
- F335 B4
- F350 C3
- F351 C4
- F358 C4
- F361 C3
- F362 C4
- F367 C4
- F368 C1
- F375 D3
- F377 D2
- F380 D1
- F382 D4
- F384 D2
- F385 E4
- F387 E4
- F392 E4
- F394 E4
- F397 F4
- F398 F12
- F399 F4
- F400 F12
- F401 F13
- F402 G12
- F411 H11
- F413 H5
- F414 H6
- F415 H6
- F416 H6
- F417 H7
- F418 H7
- F419 H7
- F420 H7
- F421 H8
- F422 H8
- F423 H9
- F425 H9
- F426 H9
- F427 H9
- F429 H10
- F430 H10
- F431 H10
- F432 H10
- F434 I3
- F435 H6
- F436 H9
- F439 I4
- F440 H10
- F442 H8
- F443 H9
- F450 F13
- F451 F12
- F452 H9
- F453 H10
- F454 H10

CDR MAIN BOARD - CIRCUIT DIAGRAM 5 : CD ENCODING-DECODING PART



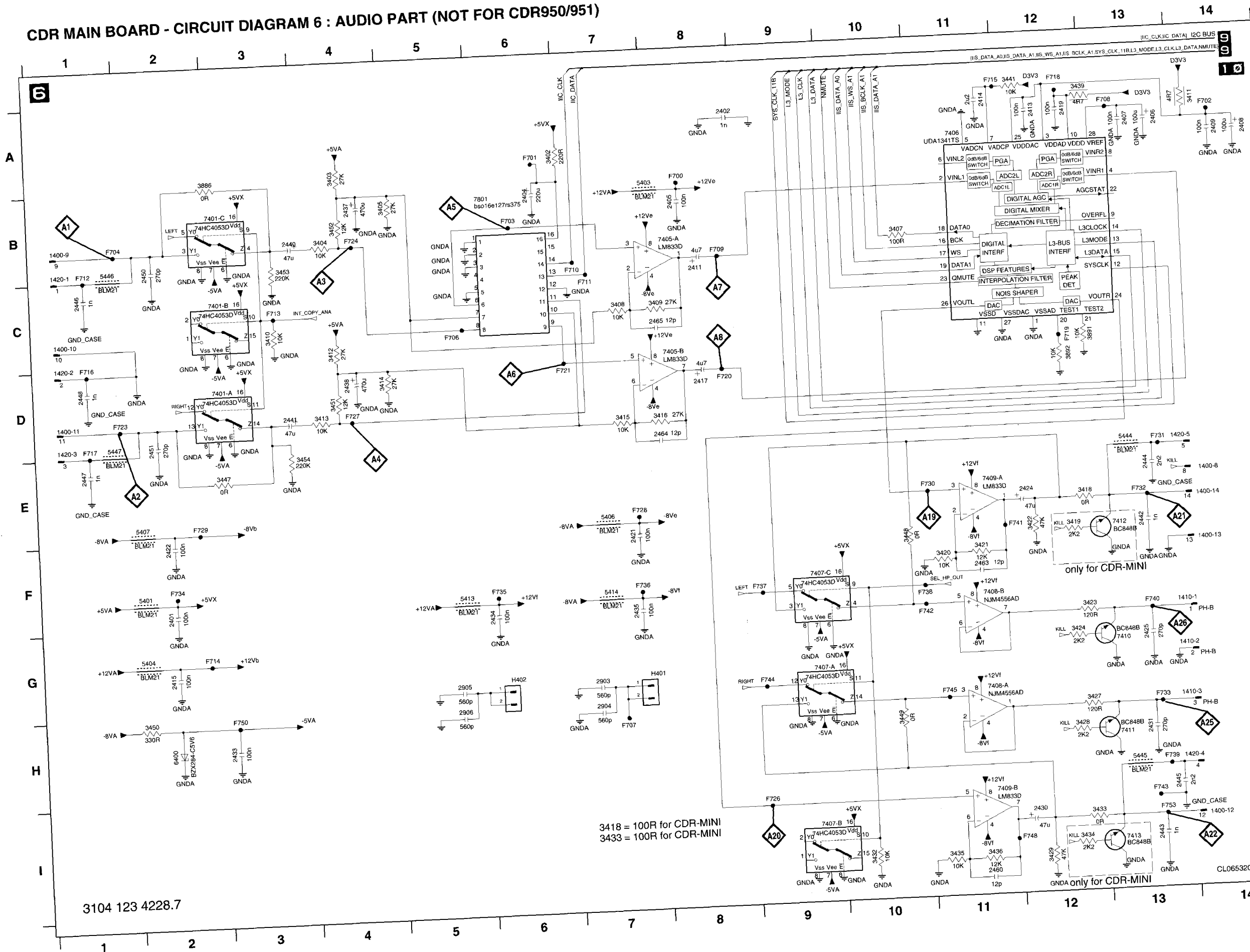
- 1330-1 F1
- 1330-10 H1
- 1330-11 E1
- 1330-2 F1
- 1330-3 F1
- 1330-4 G1
- 1330-5 G1
- 1330-6 F1
- 1330-7 H1
- 1330-8 G1
- 1330-9 H1
- 2300 B10
- 2302 B10
- 2303 C10
- 2304 C11
- 2305 C11
- 2306 C12
- 2308 A4
- 2309 B4
- 2310 B4
- 2314 F7
- 2315 E7
- 2316 E7
- 2317 E7
- 2318 D7
- 2319 D7
- 2320 D7
- 2321 D7
- 2322 E7
- 2330 F2
- 2331 F2
- 2332 F2
- 2333 E4
- 2335 H5
- 2336 H5
- 2337 H5
- 2338 H5
- 2339 D8
- 2359 D7
- 2360 B5
- 2362 D6
- 2364 C7
- 2368 B4
- 2369 B4
- 2370 A8
- 2371 A4
- 2372 C2
- 2373 D8
- 2374 C1
- 2375 C2
- 2378 B1
- 2379 C14
- 2907 H13
- 2908 H13
- 3000 C9
- 3001 C9
- 3002 A2
- 3003 A4
- 3004 H1
- 3305 G10
- 3308 H9
- 3309 C7
- 3312 E7
- 3313 D7
- 3314 D14
- 3315 E7
- 3316 H12
- 3317 H12
- 3319 A14
- 3322 F8
- 3323 F5
- 3324 G6
- 3325 G6
- 3330 F1
- 3331 F1
- 3332 F1
- 3333 F5
- 3334 E5
- 3335 E5
- 3336 E5
- 3337 H5
- 3338 H5
- 3339 F5
- 3340 H1
- 3341 H1
- 3342 H2
- 3343 H2
- 3344 H2
- 3345 H2
- 3346 H2
- 3347 H2
- 3348 H2
- 3349 H5
- 3350 E2
- 3351 E4
- 3352 H5
- 3353 H5
- 3360 C5
- 3361 C6
- 3362 D5
- 3363 D6
- 3365 D7
- 3368 B3
- 3370 C3
- 3371 C3
- 3372 B2
- 3373 A2
- 3374 A1
- 3375 C2
- 3376 C1
- 3377 C1
- 3378 A1
- 3379 A2
- 3380 I2
- 3381 H3
- 3382-A C13
- 3382-B D13
- 3382-C D13
- 3382-D D13
- 5301 A5
- 5302 B10
- 5303 B10
- 5304 C2
- 5305 C2
- 5306 C8
- 5307 E2
- 5308 A8
- 5309-B H7
- 5310 B5
- 5311 C5
- 5312 B3
- 5313 B3
- 5314 B2
- 5315 B1
- 5316 C1
- 5317 G5
- 5318 A1
- 5319 A3
- 5320 B5
- 5321 B4
- 5322 B2
- 5323 E7
- 5324 B3
- 5325 B3
- 5326 B3
- 5327 B3
- 5328 B5
- 5329 D7
- 5330 B2
- 5331 C1
- 5332 D3
- 5333 C5
- 5334 B10
- 5335 B11
- 5336 D6
- 5337 C5
- 5338 B5
- 5339 C9
- 5340 E13
- 5341 E13
- 5342 E8
- 5343 E13
- 5344 E7
- 5345 E8
- 5346 E13
- 5347 E1
- 5348 E3
- 5349 E8
- 5350 E13
- 5351 E8
- 5352 E13
- 5353 F8
- 5354 F13
- 5355 E4
- 5356 F14
- 5357 F8
- 5358 F1
- 5359 F2
- 5360 F6
- 5361 H5
- 5362 H8
- 5363 H5
- 5364 F1
- 5365 G1
- 5366 G5
- 5367 G1
- 5368 G4
- 5369 G4
- 5370 G4
- 5371 G8
- 5372 G1
- 5373 G8
- 5374 G1
- 5375 G8
- 5376 G1
- 5377 H3
- 5378 H7
- 5379 H8
- 5380 H8
- 5381 H14

3104 123 4228.7

CL06532018\_050.eps 290200



# CDR MAIN BOARD - CIRCUIT DIAGRAM 6 : AUDIO PART (NOT FOR CDR950/951)



1400-10 C1	7405-B D8
1400-11 D1	7406-A I1
1400-12 I14	7407-A G9
1400-13 F14	7407-B I9
1400-14 E14	7407-C F9
1400-8 E14	7408-A H11
1400-9 B1	7408-B F11
1410-1 G14	7409-B I11
1410-2 G14	7410 G13
1410-3 H14	7411 H13
1420-1 B1	7412 F13
1420-2 D1	7413 I13
1420-3 D1	7801 B6
1420-4 H14	7801 B6
1420-5 E14	F700 B8
2401 F2	F701 A6
2402 A8	F702 A14
2404 B6	F703 B6
2405 B8	F704 B1
2406 A13	F706 C5
2407 A13	F707 H7
2408 A14	F708 A13
2409 A14	F709 B8
2411 C8	F710 C7
2413 A12	F711 C7
2414 A11	F712 B1
2415 G2	F713 C3
2417 D8	F714 G2
2419 A12	F715 A12
2421 F7	F716 D1
2422 F2	F717 D1
2424 E12	F718 A12
2425 G13	F719 D12
2430 I12	F720 D8
2431 H13	F721 D7
2433 H3	F723 D1
2434 I9	F724 B4
2435 F7	F726 I9
2438 D4	F727 D4
2440 B3	F728 E7
2441 D3	F730 E11
2442 F13	F731 E13
2443 I13	F732 E13
2444 E13	F733 H13
2445 I13	F734 F2
2446 C1	F735 F6
2447 E1	F736 F7
2448 D1	F737 F9
2450 B2	F738 F11
2451 D2	F739 H13
2460 I11	F740 G13
2463 F11	F741 F12
2464 E8	F742 G11
2903 G7	F743 I13
2904 H7	F744 G9
2905 G5	F745 H11
3402 A6	F748 I12
3403 A4	F750 H3
3404 B4	F753 I13
3405 B5	H401 G7
3407 B10	H402 G6
3408 C7	
3409 C8	
3410 C3	
3411 A14	
3412 C4	
3413 D4	
3414 D4	
3415 D7	
3418 E12	
3419 F12	
3420 F11	
3422 F12	
3423 G12	
3424 G12	
3427 H12	
3428 H12	
3429 I12	
3432 I10	
3433 I12	
3434 I12	
3435 I11	
3438 I11	
3441 A12	
3447 E3	
3448 F10	
3449 H10	
3450 H2	
3451 D4	
3452 B4	
3453 B3	
3454 E4	
3886 A3	
3889 D12	
3892 D12	
5401 F2	
5403 B8	
5404 G2	
5406 E7	
5407 E2	
5413 F5	
5414 F7	
5444 E13	
5445 H13	
5446 B1	
5447 D1	
6400 H2	
7401-A D3	
7401-B C3	
7401-C B3	
7405-A B8	

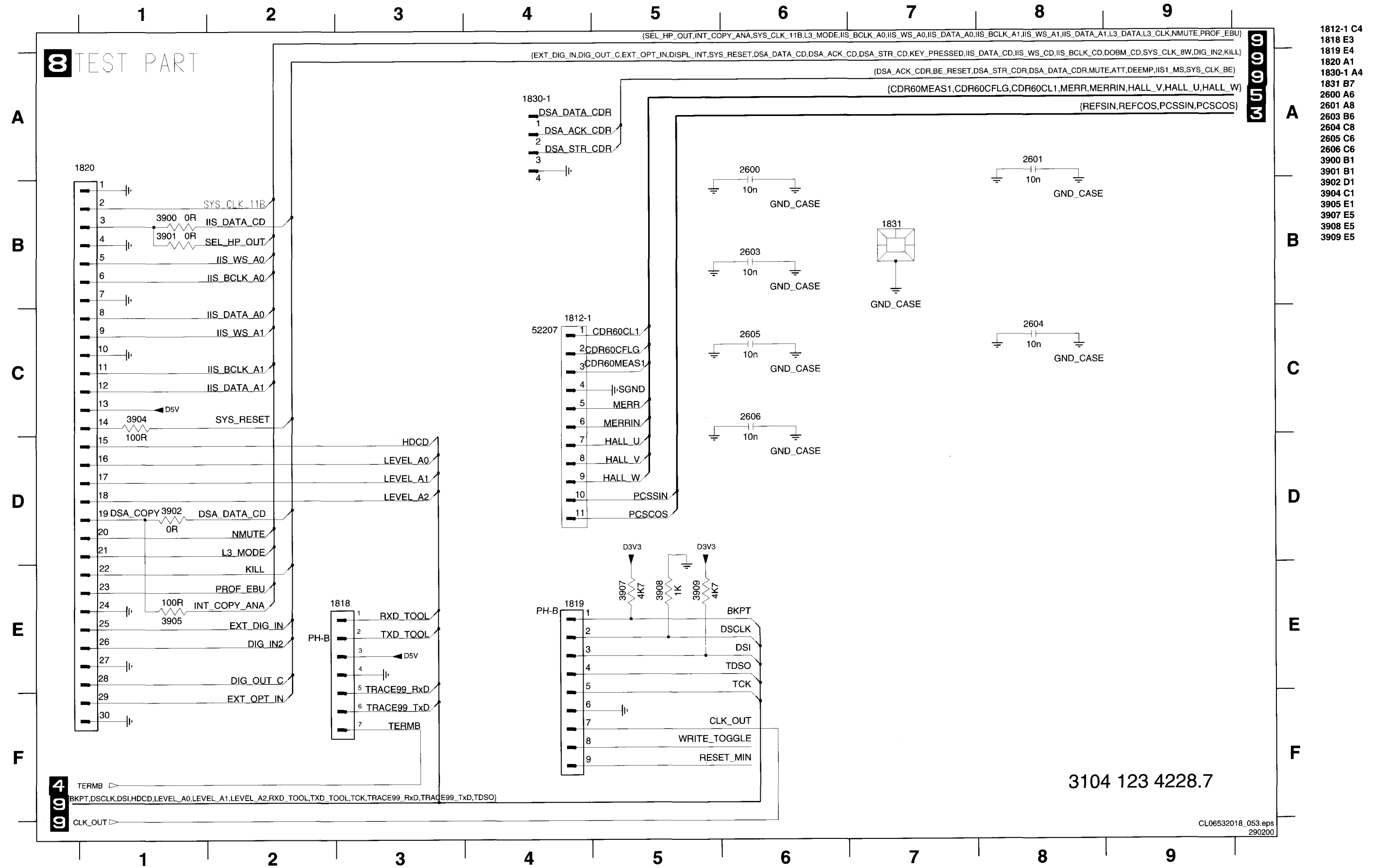
3104 123 4228.7

3418 = 100R for CDR-MINI  
3433 = 100R for CDR-MINI

CL06532018\_051.eps  
290200



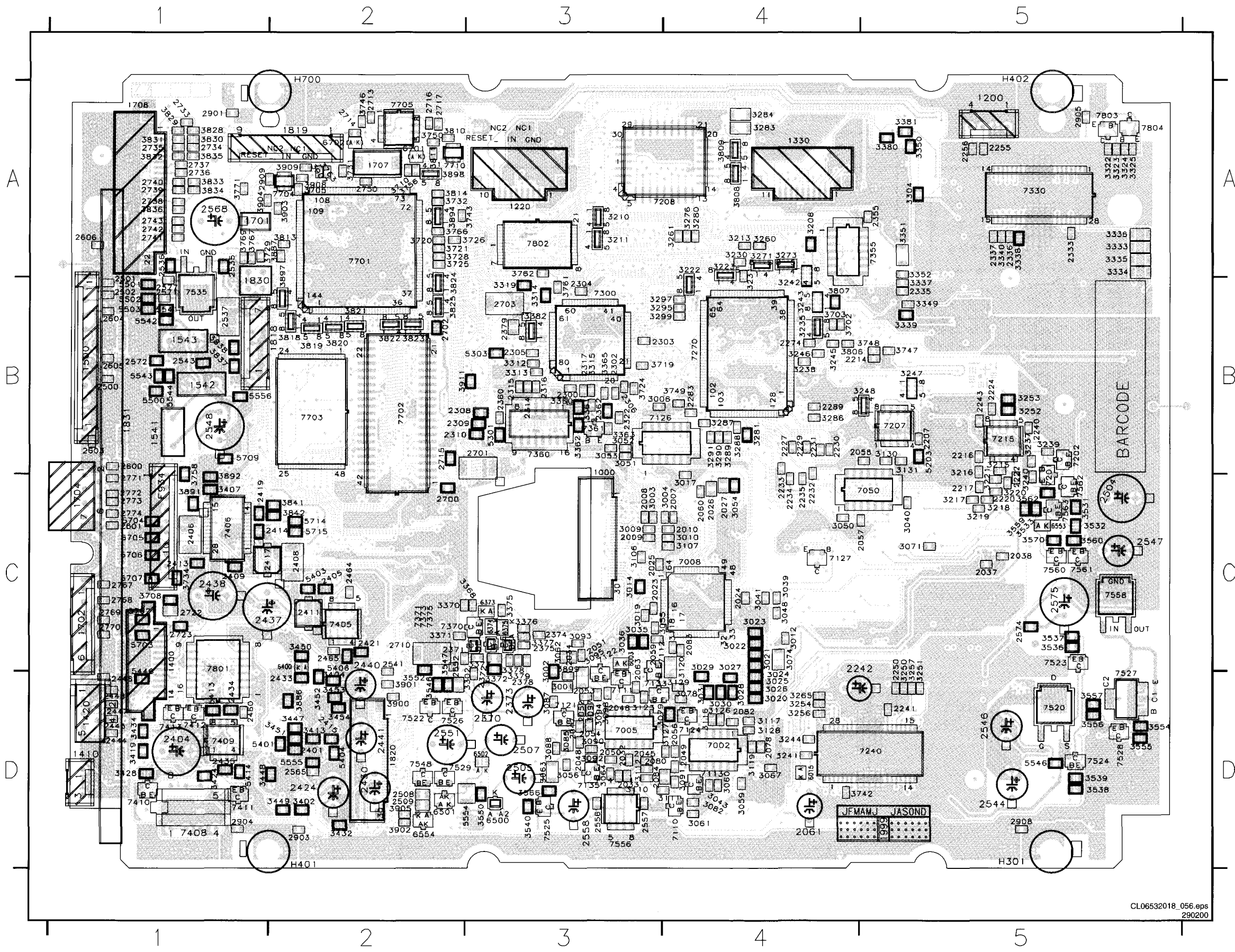








CDR MAIN BOARD .7 - TOP VIEW



CDR MAIN BOARD .7 - TOP VIEW

1 2 3 4 5

A B C D

H700 H402 H401 H301

NC2 NC1 RESET IN GND

BARCODE

JFMAM JASOND

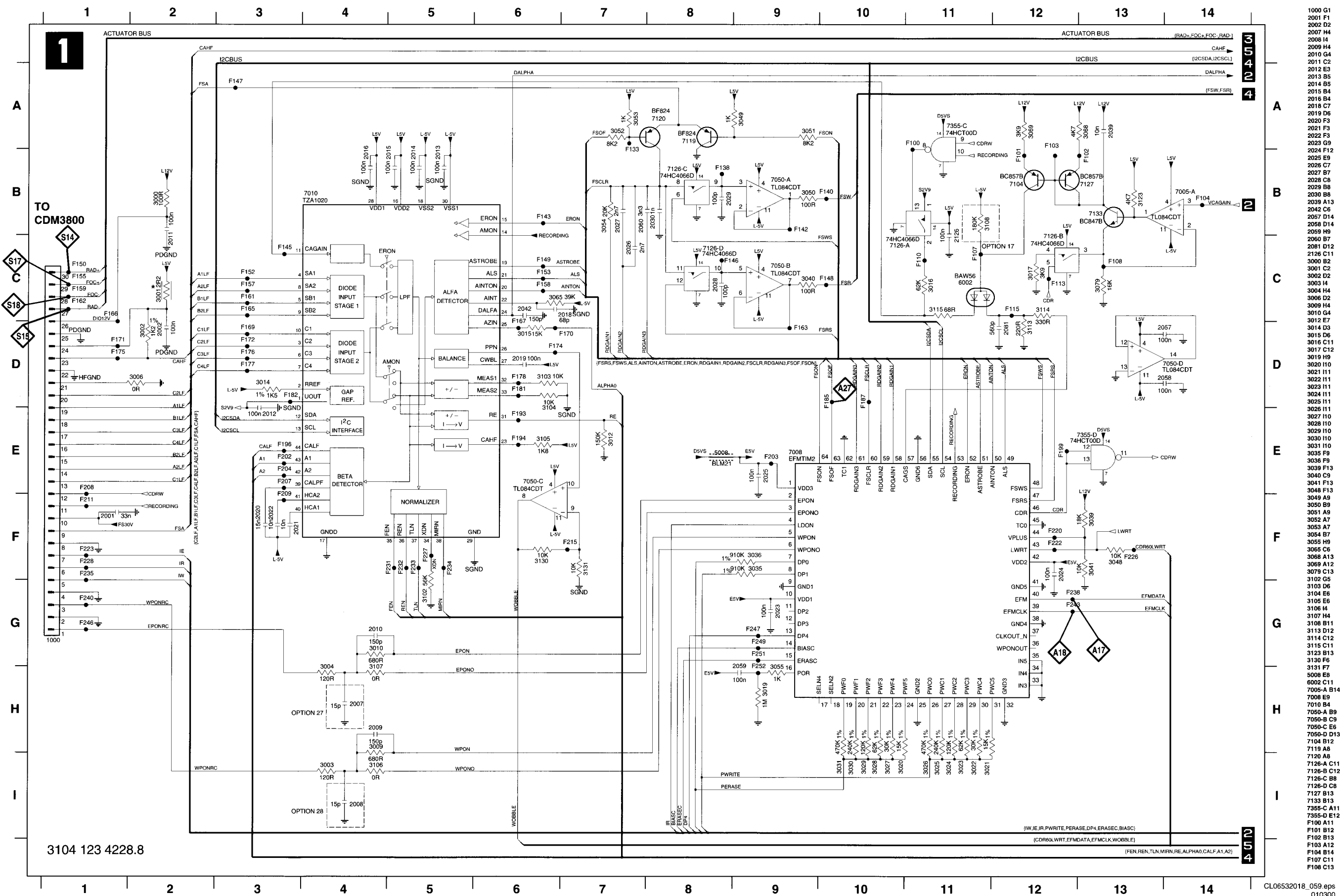
290200





CDR-Mainboard Version 4228.8

CDR MAIN BOARD - CIRCUIT DIAGRAM 1 : AEGER, EFMTIM, FORWARD SENSE CIRCUIT TESTPOINTS

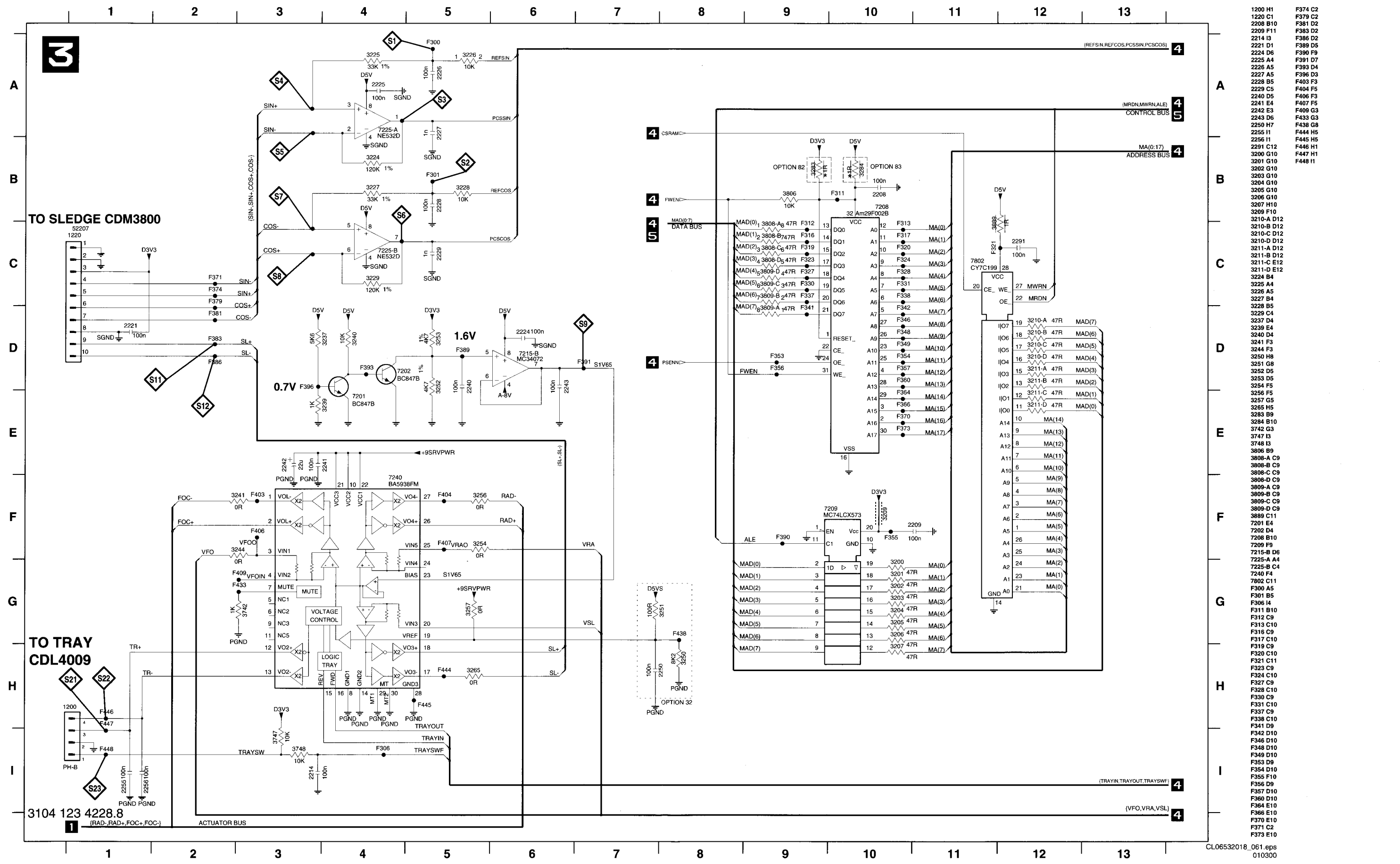


- 1000 G1
- 2001 F1
- 2002 D2
- 2007 H4
- 2008 I4
- 2009 H4
- 2010 G4
- 2011 C2
- 2012 E3
- 2013 B5
- 2014 B5
- 2015 B4
- 2016 B4
- 2018 C7
- 2019 D6
- 2020 F3
- 2021 F3
- 2022 F3
- 2023 G9
- 2024 F12
- 2025 E9
- 2026 C7
- 2027 B7
- 2028 C8
- 2029 B8
- 2030 B8
- 2039 A13
- 2042 C6
- 2057 D14
- 2058 D14
- 2059 H9
- 2062 B7
- 2081 D12
- 2126 C11
- 3000 B2
- 3001 C2
- 3002 D2
- 3003 I4
- 3004 H4
- 3006 D2
- 3009 H4
- 3010 G4
- 3012 E7
- 3014 D3
- 3015 D6
- 3016 C11
- 3017 C12
- 3019 H9
- 3020 H10
- 3021 H11
- 3022 H11
- 3023 H11
- 3024 H11
- 3025 H11
- 3026 H11
- 3027 H10
- 3028 H10
- 3029 H10
- 3030 H10
- 3031 H10
- 3035 F9
- 3036 F9
- 3039 F13
- 3040 C9
- 3041 F13
- 3048 F13
- 3049 A9
- 3050 B9
- 3051 A9
- 3052 A7
- 3053 A7
- 3054 B7
- 3055 H9
- 3065 C6
- 3068 A13
- 3069 A12
- 3079 C13
- 3102 G5
- 3103 D6
- 3104 E6
- 3105 E6
- 3106 I4
- 3107 H4
- 3108 B11
- 3113 D12
- 3114 C12
- 3115 C11
- 3123 B13
- 3130 F5
- 3131 F7
- 5008 E8
- 6002 C11
- 7005-A B14
- 7008 E9
- 7010 B4
- 7050-A B9
- 7050-B C9
- 7050-C E6
- 7050-D D13
- 7104 B12
- 7118 A8
- 7120 A8
- 7126-A C11
- 7126-B C12
- 7126-C B8
- 7126-D C8
- 7127 B13
- 7133 B13
- 7355-C A11
- 7355-D E12
- F100 A11
- F101 B12
- F102 B13
- F103 A12
- F104 B14
- F107 C11
- F108 C13
- F110 G1
- F113 C12
- F115 C12
- F138 B7
- F138 B8
- F140 B10
- F142 B9
- F143 B6
- F145 C3
- F146 C8
- F147 A3
- F148 C10
- F149 C6
- F150 C1
- F152 C3
- F153 C6
- F155 C1
- F157 C3
- F158 C6
- F161 C3
- F162 C1
- F163 D9
- F165 C3
- F166 C1
- F169 D3
- F170 D7
- F171 D1
- F172 D3
- F174 D6
- F175 D1
- F176 D3
- F177 D3
- F178 D6
- F181 D6
- F182 D3
- F183 D3
- F185 D10
- F187 D10
- F193 E6
- F196 E3
- F199 E12
- F202 E3
- F203 E9
- F204 E3
- F207 E3
- F208 E1
- F209 F3
- F211 F1
- F215 F7
- F220 F12
- F222 F12
- F223 F1
- F226 F13
- F227 F5
- F228 F1
- F231 F4
- F232 F5
- F233 F5
- F234 F5
- F235 F1
- F236 G12
- F240 G1
- F243 G12
- F246 G1
- F247 G9
- F249 G9
- F251 G9
- F252 H9

3104 123 4228.8



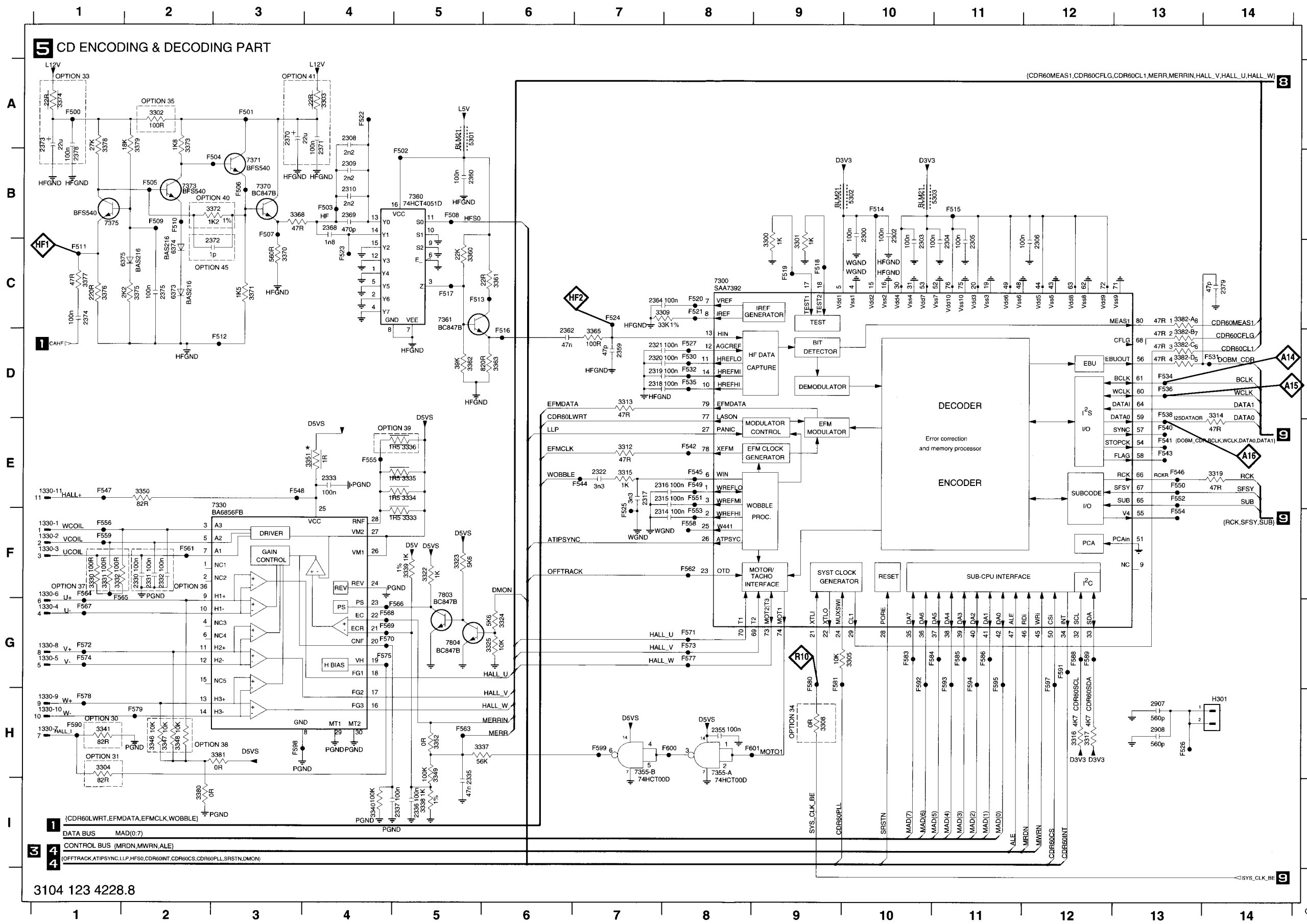
CDR MAIN BOARD - CIRCUIT DIAGRAM 3 : SERVO DRIVERS, MACE-RAM, -FLASH, -DEMUX TEST POINTS







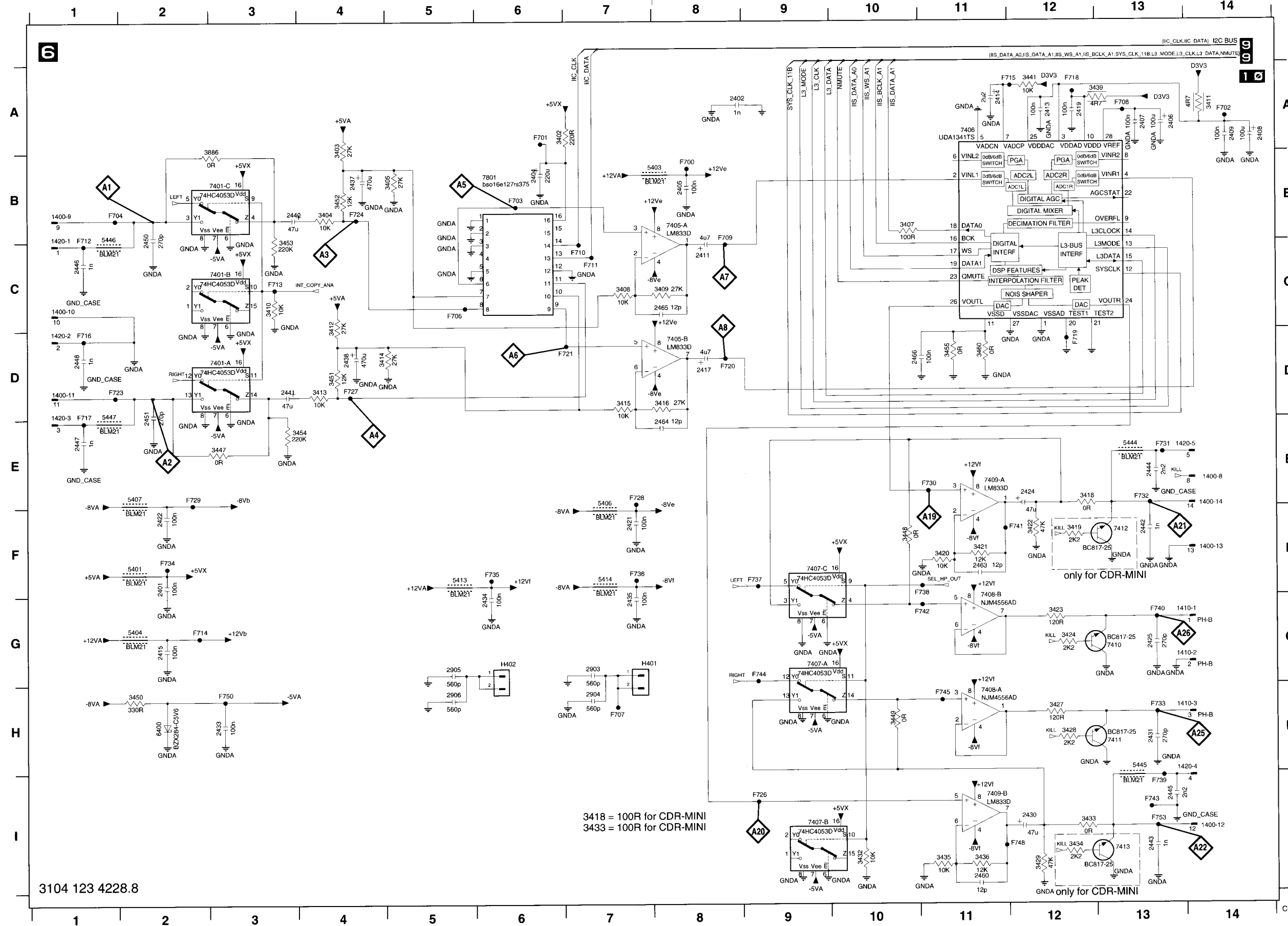
CDR MAIN BOARD - CIRCUIT DIAGRAM 5 : CD ENCODING-DECODING PART



- 1330-1 F1
- 1330-10 H1
- 1330-11 E1
- 1330-2 F1
- 1330-3 F1
- 1330-4 G1
- 1330-5 G1
- 1330-6 F1
- 1330-7 H1
- 1330-8 G1
- 1330-9 H1
- 2300 B10
- 2302 B10
- 2303 C10
- 2304 C11
- 2305 C11
- 2306 C12
- 2308 A4
- 2309 B4
- 2310 B4
- 2314 F7
- 2315 E7
- 2316 E7
- 2317 E7
- 2318 D7
- 2319 D7
- 2320 D7
- 2321 D7
- 2322 E7
- 2330 F2
- 2331 F2
- 2332 F2
- 2333 E4
- 2336 H5
- 2338 C9
- 2337 I5
- 2335 H8
- 2359 D7
- 2360 B5
- 2362 D6
- 2364 C7
- 2365 F7
- 2368 B4
- 2369 B4
- 2370 A3
- 2371 A4
- 2372 C3
- 2373 A1
- 2374 C1
- 2375 C2
- 2378 B1
- 2379 C14
- 2907 H13
- 2908 H3
- 3300 C9
- 3301 C9
- 3302 A2
- 3303 A4
- 3304 H1
- 3305 G10
- 3308 H9
- 3309 C7
- 3312 E7
- 3313 D7
- 3314 D14
- 3315 E7
- 3316 H12
- 3317 H12
- 3319 E14
- 3322 F5
- 3323 F5
- 3324 G6
- 3325 G6
- 3326 G6
- 3330 F1
- 3331 F1
- 3332 F1
- 3333 F5
- 3334 E5
- 3335 E5
- 3336 E5
- 3337 H6
- 3338 I5
- 3339 F5
- 3340 I4
- 3341 H1
- 3342 H2
- 3343 H2
- 3344 H2
- 3345 H5
- 3350 E2
- 3351 E4
- 3352 H5
- 3360 C5
- 3361 C6
- 3362 D5
- 3363 D6
- 3365 D7
- 3368 B5
- 3370 C3
- 3371 C3
- 3372 B3
- 3373 A2
- 3374 A1
- 3375 C2
- 3376 C1
- 3377 C1
- 3378 A1
- 3379 A2
- 3380 I2
- 3381 H3
- 3382-A C13
- 3382-B D13
- 3382-C D13
- 3382-D D13
- 5301 A5
- 5302 B10
- 5303 B10
- 6373 C2
- 6374 C2
- 6375 C2
- 7300 C8
- 7300 E3
- 7300 H8
- 7305-A H8
- 7305-B H7
- 7360 B5
- 7361 C5
- 7370 B3
- 7371 B3
- 7375 B2
- 7376 B5
- 7803 F5
- 7804 G5
- F500 A1
- F501 A3
- F502 B5
- F503 B4
- F504 B3
- F505 B2
- F506 B3
- F507 B3
- F508 B5
- F509 B2
- F510 B2
- F511 C1
- F512 D3
- F513 C5
- F514 B10
- F515 B11
- F516 D6
- F517 C5
- F518 C7
- F519 C9
- F520 C8
- F521 C8
- F522 A4
- F523 C4
- F524 C7
- F525 F7
- F526 H13
- F527 D8
- F530 D8
- F531 D4
- F532 D8
- F533 D13
- F535 D8
- F536 D13
- F538 D13
- F540 E13
- F541 E13
- F542 E8
- F543 E13
- F544 E7
- F545 E7
- F546 E13
- F547 E1
- F548 E3
- F549 E8
- F550 E13
- F551 E8
- F552 E13
- F553 F8
- F554 F13
- F555 E8
- F556 F1
- F557 F1
- F558 F8
- F559 F1
- F561 F2
- F562 F8
- F563 H5
- F564 F1
- F565 G1
- F566 G5
- F567 G1
- F568 G4
- F569 G4
- F570 G4
- F571 G8
- F572 G1
- F573 G8
- F574 G1
- F575 G4
- F577 G8
- F578 H1
- F579 H2
- F580 G6
- F581 G9
- F583 G10
- F584 G11
- F585 G11
- F586 G11
- F588 G12
- F589 G12
- F590 H1
- F591 G12
- F592 C3
- F593 G11
- F594 G11
- F595 G11
- F597 G12
- F598 H3
- F599 H7
- F600 H8
- F601 H9
- H301 H14

3104 123 4228.8

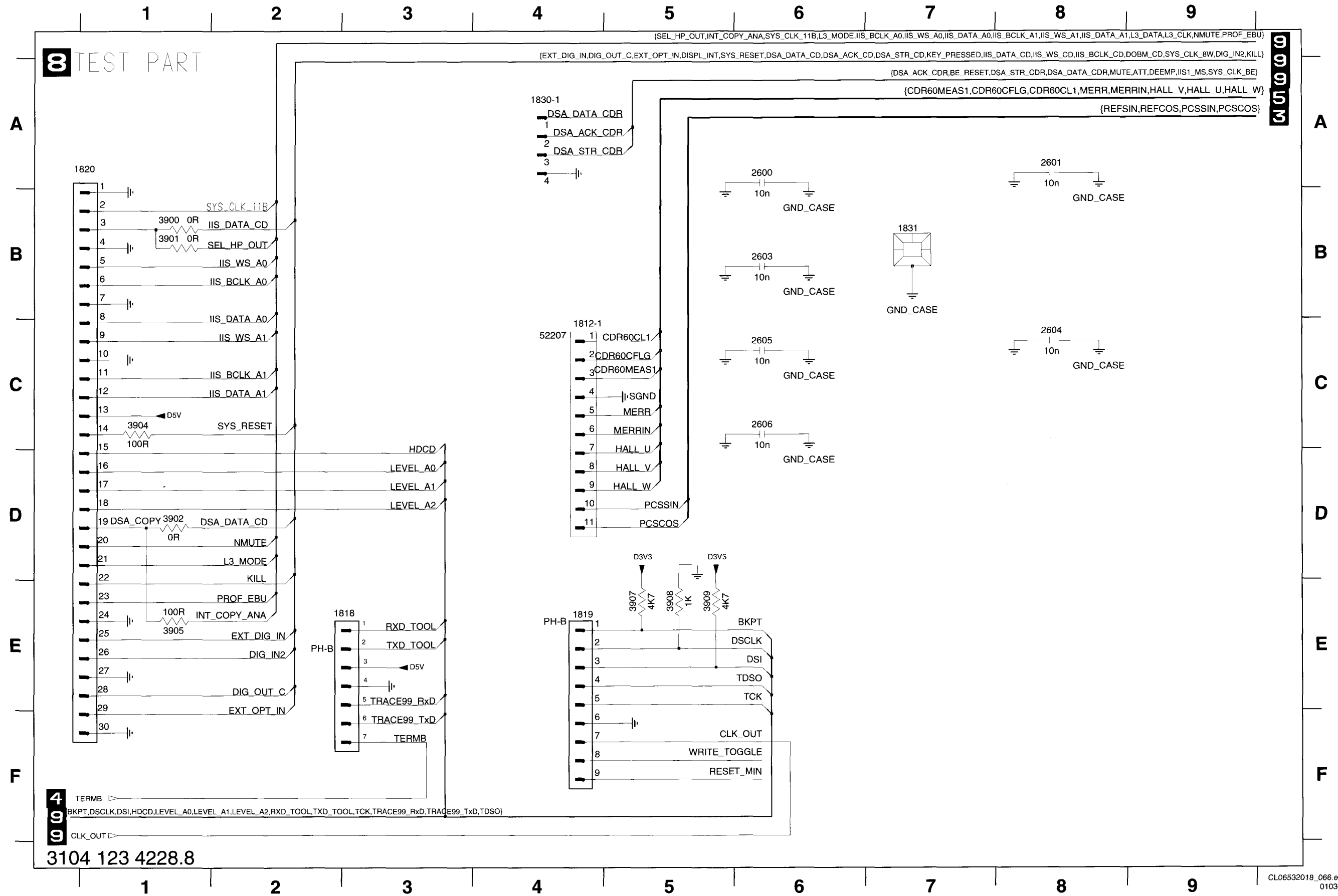
CDR MAIN BOARD - CIRCUIT DIAGRAM 6 : AUDIO PART (NOT FOR CDR950/951)



- 1400-10 C1
- 1400-11 D1
- 1400-12 H14
- 1400-13 F14
- 1400-14 F14
- 1400-8 E14
- 1400-9 B1
- 1410-1 G14
- 1410-2 G14
- 1410-3 H14
- 1420-1 B1
- 1420-2 D1
- 1420-3 D1
- 1420-4 H14
- 1420-5 E14
- 2401 F2
- 2402 A8
- 2404 B6
- 2405 B8
- 2406 A13
- 2407 A13
- 2408 A14
- 2409 A14
- 2411 C8
- 2413 A12
- 2414 A11
- 2415 C2
- 2417 D8
- 2419 A12
- 2421 F7
- 2422 F2
- 2424 E12
- 2425 G13
- 2430 H12
- 2431 H13
- 2433 H3
- 2434 G6
- 2435 G7
- 2437 B4
- 2438 D4
- 2440 B3
- 2441 D3
- 2442 F13
- 2443 I3
- 2444 E13
- 2445 I13
- 2446 C1
- 2447 E1
- 2448 D1
- 2450 B2
- 2451 D2
- 2460 I1
- 2463 F11
- 2464 B4
- 2465 C8
- 2466 D10
- 2903 G7
- 2904 H7
- 2905 G5
- 2906 H5
- 3402 A6
- 3403 A4
- 3404 B4
- 3405 B5
- 3407 B10
- 3408 C7
- 3409 C8
- 3410 C3
- 3411 A14
- 3412 C4
- 3413 D4
- 3414 D4
- 3415 D7
- 3416 D8
- 3418 E12
- 3419 F12
- 3420 F11
- 3421 F11
- 3422 F12
- 3423 G12
- 3424 G12
- 3427 H12
- 3428 H12
- 3429 I12
- 3432 I10
- 3433 I12
- 3434 I12
- 3435 I11
- 3436 H11
- 3439 A13
- 3441 A12
- 3447 E3
- 3448 F10
- 3449 H10
- 3450 H2
- 3451 D4
- 3452 B4
- 3453 B3
- 3454 E4
- 3455 D11
- 2460 D11
- 3886 A3
- 5401 F2
- 5403 B8
- 5404 G2
- 5406 E7
- 5407 E2
- 5413 F5
- 5414 F7
- 5444 E13
- 5445 H13
- 5446 B1
- 5447 D1
- 6400 H2
- 7401-A D3
- 7401-B C3
- 7401-C B3
- 7405-A B8

3104 123 4228.8

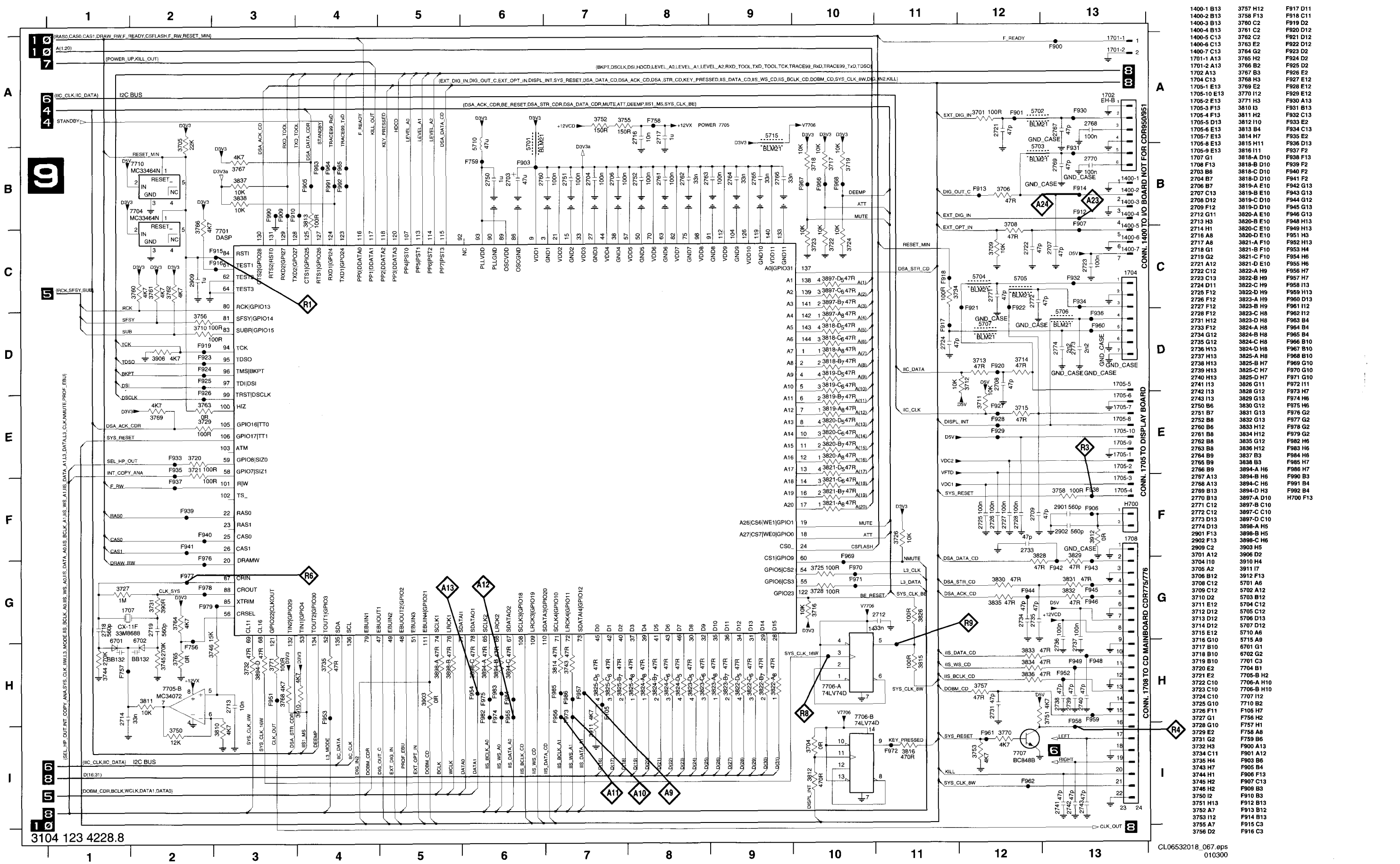




- 1812-1 C4
- 1818 E3
- 1819 E4
- 1820 A1
- 1830-1 A4
- 1831 B7
- 2600 A6
- 2601 A8
- 2603 B6
- 2604 C8
- 2605 C6
- 2606 C6
- 3900 B1
- 3901 B1
- 3902 D1
- 3904 C1
- 3905 E1
- 3907 E5
- 3908 E5
- 3909 E5

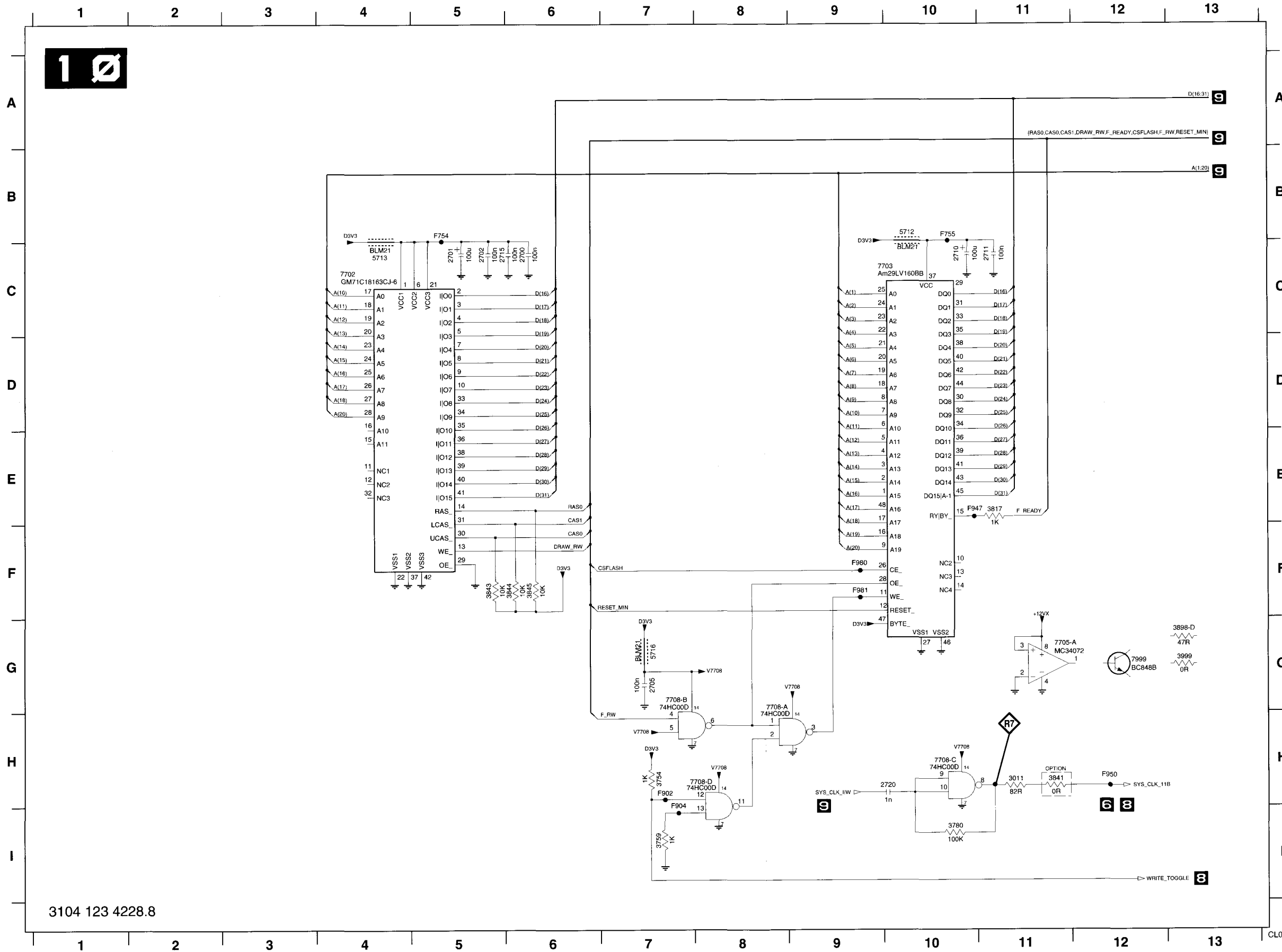
3104 123 4228.8

CDR MAIN BOARD - CIRCUIT DIAGRAM 9 : DASP MASTER PROCESSOR TESTPOINTS



3104 123 4228.8

CDR MAIN BOARD - CIRCUIT DIAGRAM 10 : DASP FLASH & DRAM TESTPOINTS

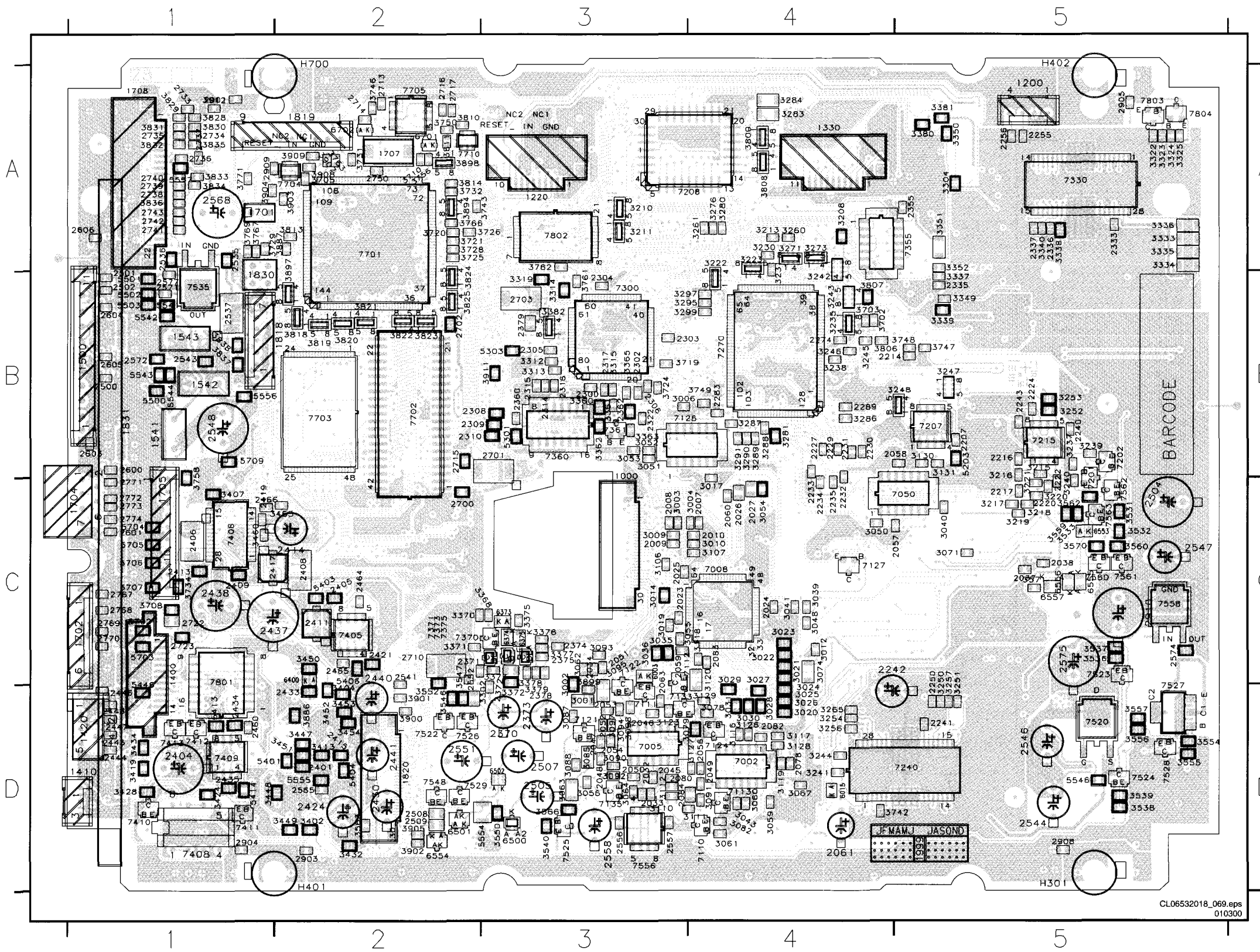


- 2700 C6
- 2701 C5
- 2702 C5
- 2705 G7
- 2710 C10
- 2711 C11
- 2715 C5
- 2720 H10
- 3011 H11
- 3754 H7
- 3758 I7
- 3780 I10
- 3817 E11
- 3841 H11
- 3843 F5
- 3844 F6
- 3845 F6
- 3898-D G13
- 3999 G13
- 5712 B10
- 5713 C4
- 5716 G7
- 7702 C4
- 7703 C9
- 7705-A G11
- 7708-A G8
- 7708-B G7
- 7708-C H10
- 7708-D H7
- 7999 G12
- F754 B5
- F755 B10
- F902 H7
- F904 I7
- F947 E10
- F950 H12
- F980 F9
- F981 F9

3104 123 4228.8



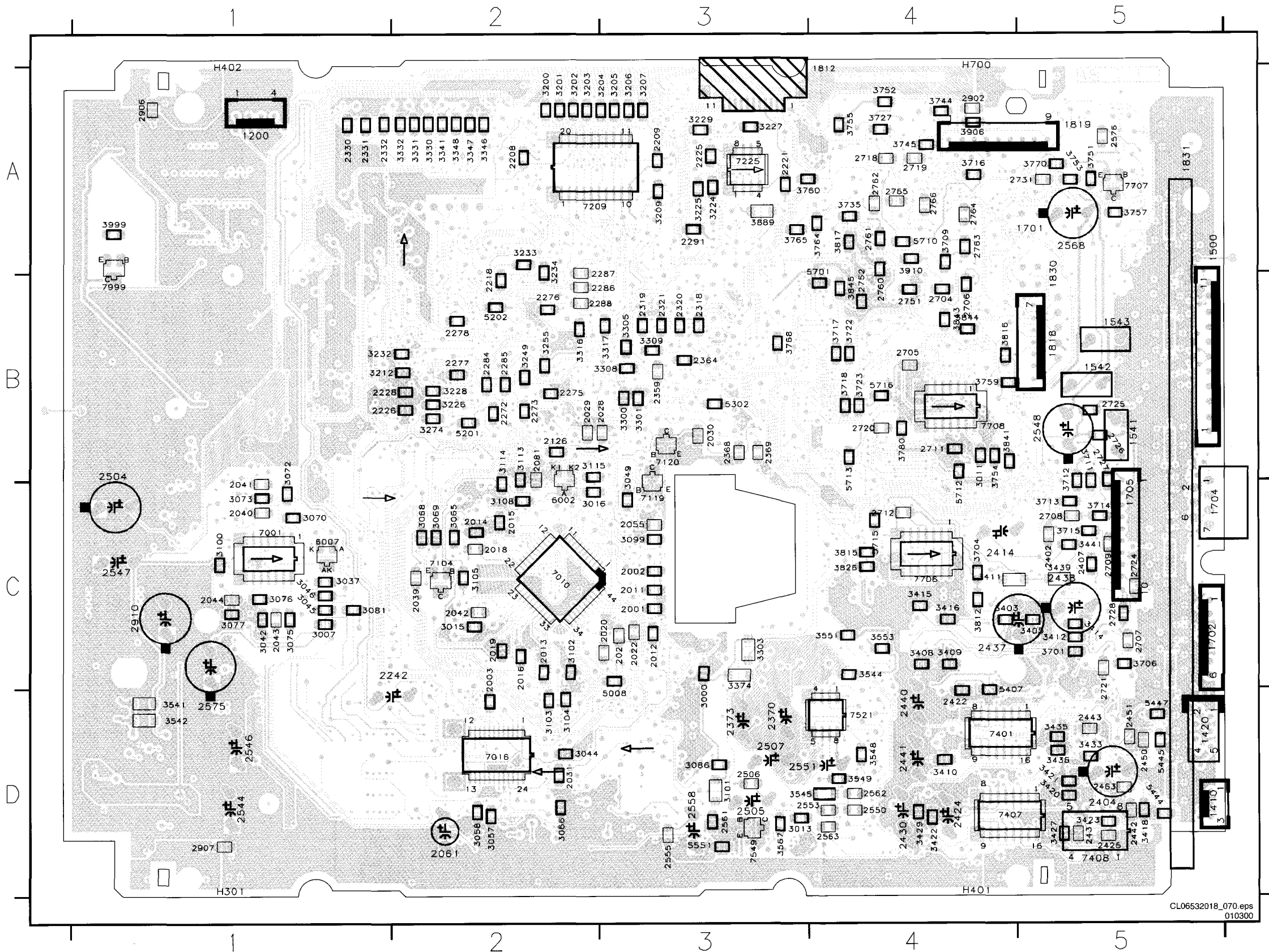
CDR MAIN BOARD .8 - TOP VIEW



100  
101  
102  
103  
104  
105  
106  
107  
108  
109  
110  
111  
112  
113  
114  
115  
116  
117  
118  
119  
120  
121  
122  
123  
124  
125  
126  
127  
128  
129  
130  
131  
132  
133  
134  
135  
136  
137  
138  
139  
140  
141  
142  
143  
144  
145  
146  
147  
148  
149  
150  
151  
152  
153  
154  
155  
156  
157  
158  
159  
160  
161  
162  
163  
164  
165  
166  
167  
168  
169  
170  
171  
172  
173  
174  
175  
176  
177  
178  
179  
180  
181  
182  
183  
184  
185  
186  
187  
188  
189  
190  
191  
192  
193  
194  
195  
196  
197  
198  
199  
200  
201  
202  
203  
204  
205  
206  
207  
208  
209  
210  
211  
212  
213  
214  
215  
216  
217  
218  
219  
220  
221  
222  
223  
224  
225  
226  
227  
228  
229  
230  
231  
232  
233  
234  
235  
236  
237  
238  
239  
240  
241  
242  
243  
244  
245  
246  
247  
248  
249  
250  
251  
252  
253  
254  
255  
256  
257  
258  
259  
260  
261  
262  
263  
264  
265  
266  
267  
268  
269  
270  
271  
272  
273  
274  
275  
276  
277  
278  
279  
280  
281  
282  
283  
284  
285  
286  
287  
288  
289  
290  
291  
292  
293  
294  
295  
296  
297  
298  
299  
300  
301  
302  
303  
304  
305  
306  
307  
308  
309  
310  
311  
312  
313  
314  
315  
316  
317  
318  
319  
320  
321  
322  
323  
324  
325  
326  
327  
328  
329  
330  
331  
332  
333  
334  
335  
336  
337  
338  
339  
340  
341  
342  
343  
344  
345  
346  
347  
348  
349  
350  
351  
352  
353  
354  
355  
356  
357  
358  
359  
360  
361  
362  
363  
364  
365  
366  
367  
368  
369  
370  
371  
372  
373  
374  
375  
376  
377  
378  
379  
380  
381  
382  
383  
384  
385  
386  
387  
388  
389  
390  
391  
392  
393  
394  
395  
396  
397  
398  
399  
400  
401  
402  
403  
404  
405  
406  
407  
408  
409  
410  
411  
412  
413  
414  
415  
416  
417  
418  
419  
420  
421  
422  
423  
424  
425  
426  
427  
428  
429  
430  
431  
432  
433  
434  
435  
436  
437  
438  
439  
440  
441  
442  
443  
444  
445  
446  
447  
448  
449  
450  
451  
452  
453  
454  
455  
456  
457  
458  
459  
460  
461  
462  
463  
464  
465  
466  
467  
468  
469  
470  
471  
472  
473  
474  
475  
476  
477  
478  
479  
480  
481  
482  
483  
484  
485  
486  
487  
488  
489  
490  
491  
492  
493  
494  
495  
496  
497  
498  
499  
500  
501  
502  
503  
504  
505  
506  
507  
508  
509  
510  
511  
512  
513  
514  
515  
516  
517  
518  
519  
520  
521  
522  
523  
524  
525  
526  
527  
528  
529  
530  
531  
532  
533  
534  
535  
536  
537  
538  
539  
540  
541  
542  
543  
544  
545  
546  
547  
548  
549  
550  
551  
552  
553  
554  
555  
556  
557  
558  
559  
560  
561  
562  
563  
564  
565  
566  
567  
568  
569  
570  
571  
572  
573  
574  
575  
576  
577  
578  
579  
580  
581  
582  
583  
584  
585  
586  
587  
588  
589  
590  
591  
592  
593  
594  
595  
596  
597  
598  
599  
600  
601  
602  
603  
604  
605  
606  
607  
608  
609  
610  
611  
612  
613  
614  
615  
616  
617  
618  
619  
620  
621  
622  
623  
624  
625  
626  
627  
628  
629  
630  
631  
632  
633  
634  
635  
636  
637  
638  
639  
640  
641  
642  
643  
644  
645  
646  
647  
648  
649  
650  
651  
652  
653  
654  
655  
656  
657  
658  
659  
660  
661  
662  
663  
664  
665  
666  
667  
668  
669  
670  
671  
672  
673  
674  
675  
676  
677  
678  
679  
680  
681  
682  
683  
684  
685  
686  
687  
688  
689  
690  
691  
692  
693  
694  
695  
696  
697  
698  
699  
700  
701  
702  
703  
704  
705  
706  
707  
708  
709  
710  
711  
712  
713  
714  
715  
716  
717  
718  
719  
720  
721  
722  
723  
724  
725  
726  
727  
728  
729  
730  
731  
732  
733  
734  
735  
736  
737  
738  
739  
740  
741  
742  
743  
744  
745  
746  
747  
748  
749  
750  
751  
752  
753  
754  
755  
756  
757  
758  
759  
760  
761  
762  
763  
764  
765  
766  
767  
768  
769  
770  
771  
772  
773  
774  
775  
776  
777  
778  
779  
780  
781  
782  
783  
784  
785  
786  
787  
788  
789  
790  
791  
792  
793  
794  
795  
796  
797  
798  
799  
800  
801  
802  
803  
804  
805  
806  
807  
808  
809  
810  
811  
812  
813  
814  
815  
816  
817  
818  
819  
820  
821  
822  
823  
824  
825  
826  
827  
828  
829  
830  
831  
832  
833  
834  
835  
836  
837  
838  
839  
840  
841  
842  
843  
844  
845  
846  
847  
848  
849  
850  
851  
852  
853  
854  
855  
856  
857  
858  
859  
860  
861  
862  
863  
864  
865  
866  
867  
868  
869  
870  
871  
872  
873  
874  
875  
876  
877  
878  
879  
880  
881  
882  
883  
884  
885  
886  
887  
888  
889  
890  
891  
892  
893  
894  
895  
896  
897  
898  
899  
900  
901  
902  
903  
904  
905  
906  
907  
908  
909  
910  
911  
912  
913  
914  
915  
916  
917  
918  
919  
920  
921  
922  
923  
924  
925  
926  
927  
928  
929  
930  
931  
932  
933  
934  
935  
936  
937  
938  
939  
940  
941  
942  
943  
944  
945  
946  
947  
948  
949  
950  
951  
952  
953  
954  
955  
956  
957  
958  
959  
960  
961  
962  
963  
964  
965  
966  
967  
968  
969  
970  
971  
972  
973  
974  
975  
976  
977  
978  
979  
980  
981  
982  
983  
984  
985  
986  
987  
988  
989  
990  
991  
992  
993  
994  
995  
996  
997  
998  
999  
1000



CDR MAIN BOARD .8 - BOTTOM VIEW

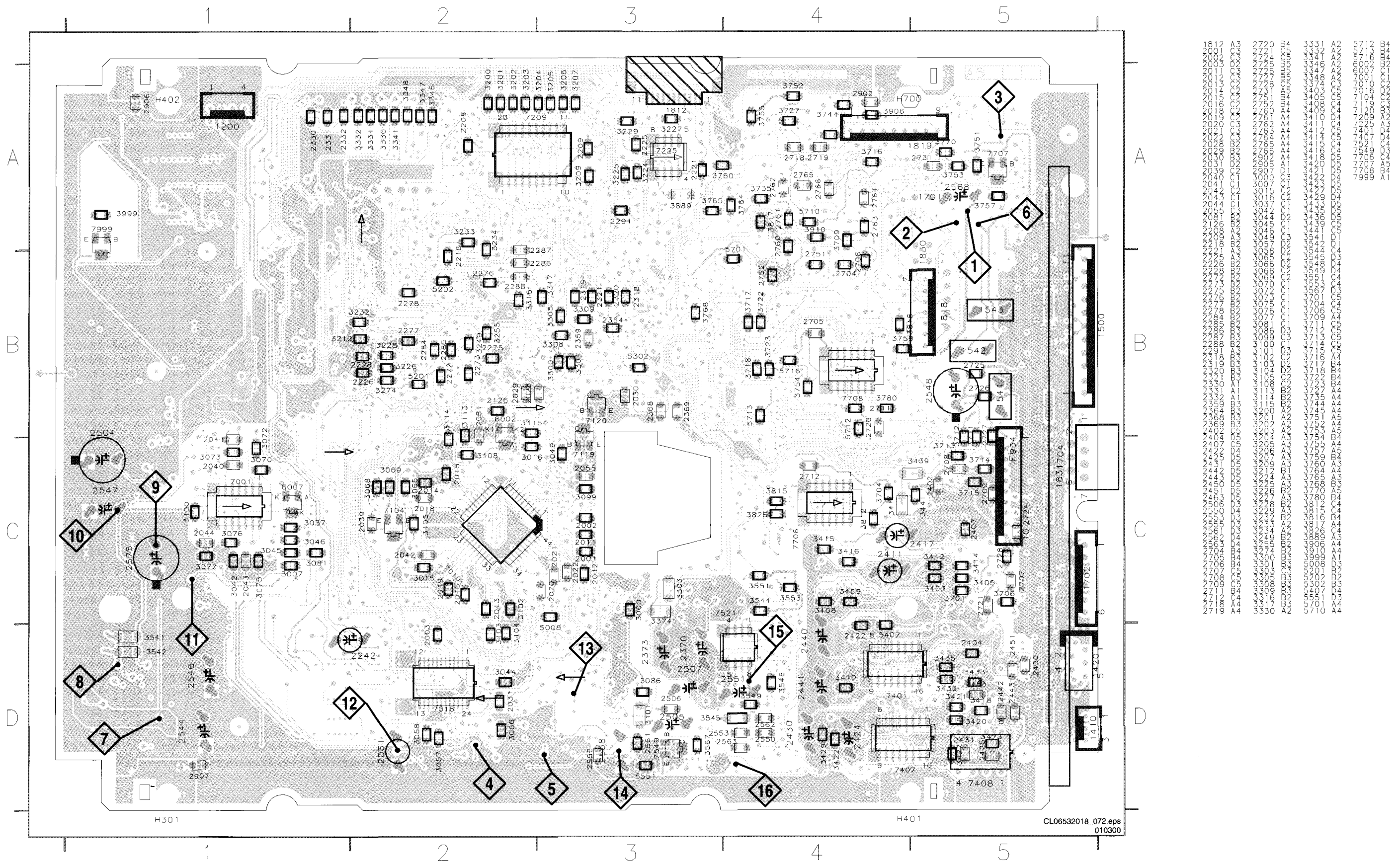


CL06532018\_070.eps  
010300

1	A	
2	A	
3	A	
4	A	
5	A	
1	B	
2	B	
3	B	
4	B	
5	B	
1	C	
2	C	
3	C	
4	C	
5	C	
1	D	
2	D	
3	D	
4	D	
5	D	

CDR-Mainboard PWB testpoints

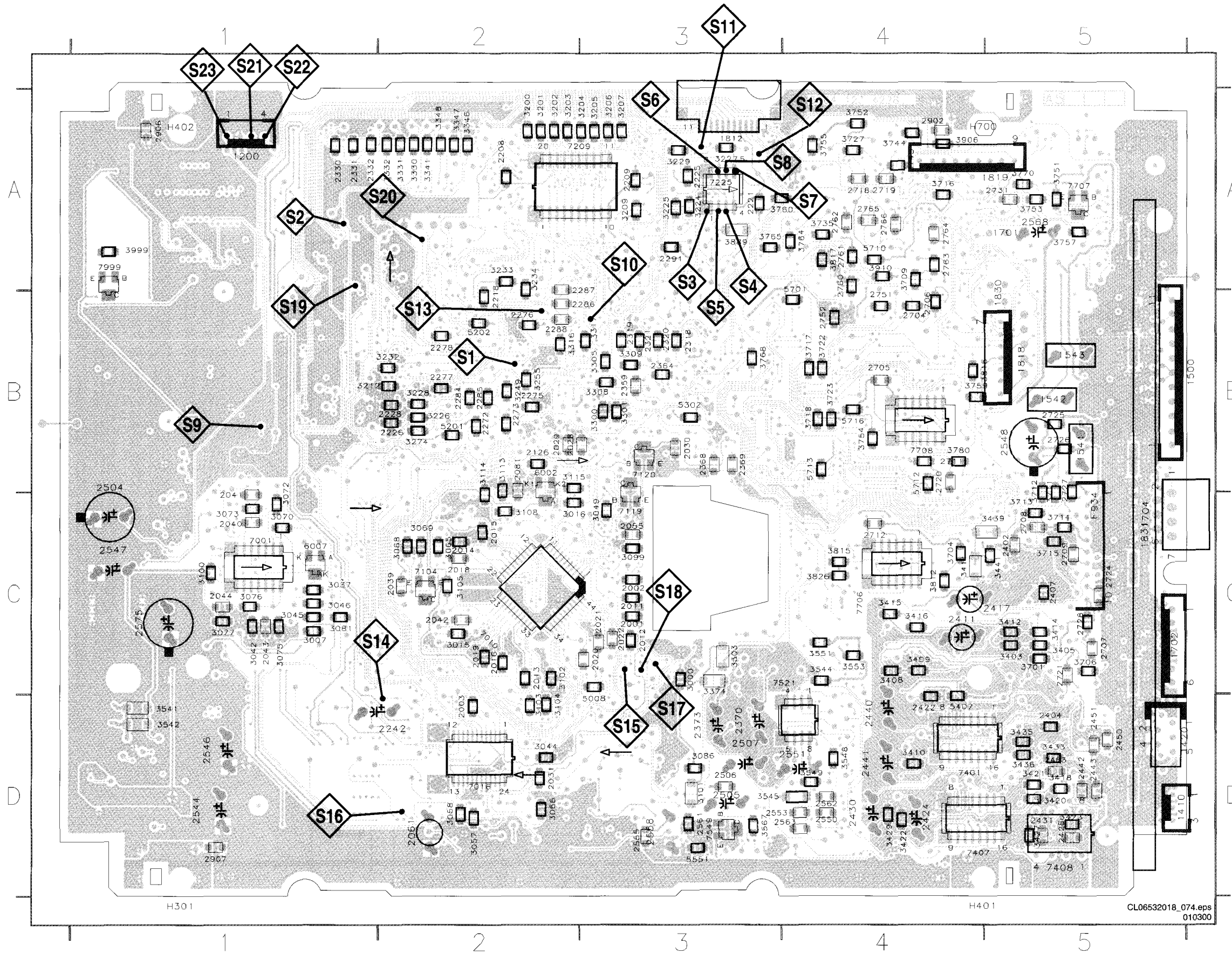
CDR MAIN BOARD - BOTTOM VIEW : POWER PART TESTPOINTS







CDR MAIN BOARD - BOTTOM VIEW : SERVO TESTPOINTS

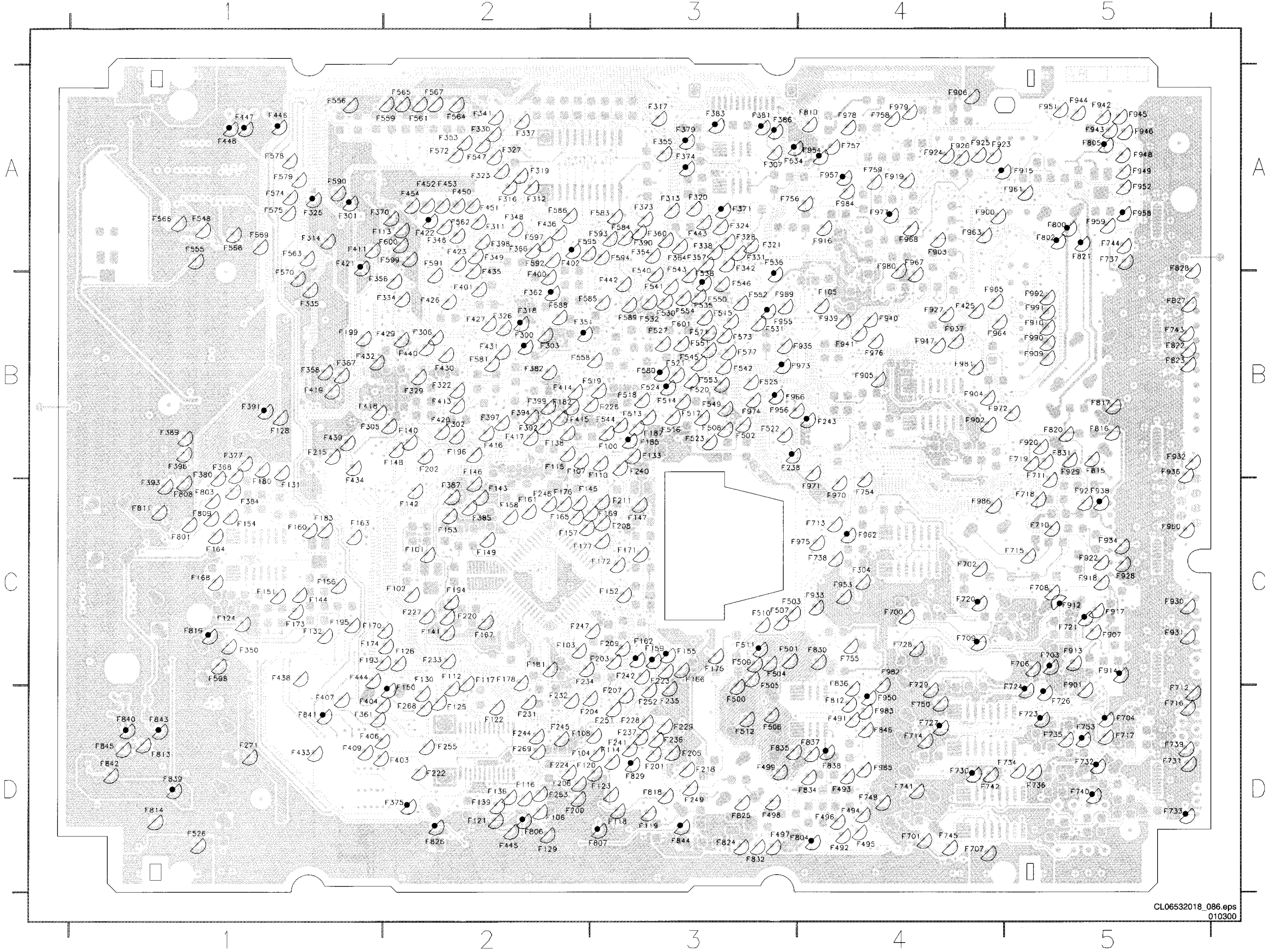


1	A	1	2	3	4	5
2	B	1	2	3	4	5
3	C	1	2	3	4	5
4	D	1	2	3	4	5
5	A	1	2	3	4	5
6	B	1	2	3	4	5
7	C	1	2	3	4	5
8	D	1	2	3	4	5
9	A	1	2	3	4	5
10	B	1	2	3	4	5
11	C	1	2	3	4	5
12	D	1	2	3	4	5
13	A	1	2	3	4	5
14	B	1	2	3	4	5
15	C	1	2	3	4	5
16	D	1	2	3	4	5
17	A	1	2	3	4	5
18	B	1	2	3	4	5
19	C	1	2	3	4	5
20	D	1	2	3	4	5
21	A	1	2	3	4	5
22	B	1	2	3	4	5
23	C	1	2	3	4	5
24	D	1	2	3	4	5
25	A	1	2	3	4	5
26	B	1	2	3	4	5
27	C	1	2	3	4	5
28	D	1	2	3	4	5
29	A	1	2	3	4	5
30	B	1	2	3	4	5
31	C	1	2	3	4	5
32	D	1	2	3	4	5
33	A	1	2	3	4	5
34	B	1	2	3	4	5
35	C	1	2	3	4	5
36	D	1	2	3	4	5
37	A	1	2	3	4	5
38	B	1	2	3	4	5
39	C	1	2	3	4	5
40	D	1	2	3	4	5
41	A	1	2	3	4	5
42	B	1	2	3	4	5
43	C	1	2	3	4	5
44	D	1	2	3	4	5
45	A	1	2	3	4	5
46	B	1	2	3	4	5
47	C	1	2	3	4	5
48	D	1	2	3	4	5
49	A	1	2	3	4	5
50	B	1	2	3	4	5
51	C	1	2	3	4	5
52	D	1	2	3	4	5
53	A	1	2	3	4	5
54	B	1	2	3	4	5
55	C	1	2	3	4	5
56	D	1	2	3	4	5
57	A	1	2	3	4	5
58	B	1	2	3	4	5
59	C	1	2	3	4	5
60	D	1	2	3	4	5
61	A	1	2	3	4	5
62	B	1	2	3	4	5
63	C	1	2	3	4	5
64	D	1	2	3	4	5
65	A	1	2	3	4	5
66	B	1	2	3	4	5
67	C	1	2	3	4	5
68	D	1	2	3	4	5
69	A	1	2	3	4	5
70	B	1	2	3	4	5
71	C	1	2	3	4	5
72	D	1	2	3	4	5
73	A	1	2	3	4	5
74	B	1	2	3	4	5
75	C	1	2	3	4	5
76	D	1	2	3	4	5
77	A	1	2	3	4	5
78	B	1	2	3	4	5
79	C	1	2	3	4	5
80	D	1	2	3	4	5
81	A	1	2	3	4	5
82	B	1	2	3	4	5
83	C	1	2	3	4	5
84	D	1	2	3	4	5
85	A	1	2	3	4	5
86	B	1	2	3	4	5
87	C	1	2	3	4	5
88	D	1	2	3	4	5
89	A	1	2	3	4	5
90	B	1	2	3	4	5
91	C	1	2	3	4	5
92	D	1	2	3	4	5
93	A	1	2	3	4	5
94	B	1	2	3	4	5
95	C	1	2	3	4	5
96	D	1	2	3	4	5
97	A	1	2	3	4	5
98	B	1	2	3	4	5
99	C	1	2	3	4	5
100	D	1	2	3	4	5





# CDR MAINBOARD: SURVEY OF TESTPOINTS



CL06532018\_086.eps  
010300

```

70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264
265
266
267
268
269
270
271
272
273
274
275
276
277
278
279
280
281
282
283
284
285
286
287
288
289
290
291
292
293
294
295
296
297
298
299
300
301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
322
323
324
325
326
327
328
329
330
331
332
333
334
335
336
337
338
339
340
341
342
343
344
345
346
347
348
349
350
351
352
353
354
355
356
357
358
359
360
361
362
363
364
365
366
367
368
369
370
371
372
373
374
375
376
377
378
379
380
381
382
383
384
385
386
387
388
389
390
391
392
393
394
395
396
397
398
399
400
401
402
403
404
405
406
407
408
409
410
411
412
413
414
415
416
417
418
419
420
421
422
423
424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440
441
442
443
444
445
446
447
448
449
450
451
452
453
454
455
456
457
458
459
460
461
462
463
464
465
466
467
468
469
470
471
472
473
474
475
476
477
478
479
480
481
482
483
484
485
486
487
488
489
490
491
492
493
494
495
496
497
498
499
500
501
502
503
504
505
506
507
508
509
510
511
512
513
514
515
516
517
518
519
520
521
522
523
524
525
526
527
528
529
530
531
532
533
534
535
536
537
538
539
540
541
542
543
544
545
546
547
548
549
550
551
552
553
554
555
556
557
558
559
560
561
562
563
564
565
566
567
568
569
570
571
572
573
574
575
576
577
578
579
580
581
582
583
584
585
586
587
588
589
590
591
592
593
594
595
596
597
598
599
600
601
602
603
604
605
606
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624
625
626
627
628
629
630
631
632
633
634
635
636
637
638
639
640
641
642
643
644
645
646
647
648
649
650
651
652
653
654
655
656
657
658
659
660
661
662
663
664
665
666
667
668
669
670
671
672
673
674
675
676
677
678
679
680
681
682
683
684
685
686
687
688
689
690
691
692
693
694
695
696
697
698
699
700
701
702
703
704
705
706
707
708
709
710
711
712
713
714
715
716
717
718
719
720
721
722
723
724
725
726
727
728
729
730
731
732
733
734
735
736
737
738
739
740
741
742
743
744
745
746
747
748
749
750
751
752
753
754
755
756
757
758
759
760
761
762
763
764
765
766
767
768
769
770
771
772
773
774
775
776
777
778
779
780
781
782
783
784
785
786
787
788
789
790
791
792
793
794
795
796
797
798
799
800
801
802
803
804
805
806
807
808
809
810
811
812
813
814
815
816
817
818
819
820
821
822
823
824
825
826
827
828
829
830
831
832
833
834
835
836
837
838
839
840
841
842
843
844
845
846
847
848
849
850
851
852
853
854
855
856
857
858
859
860
861
862
863
864
865
866
867
868
869
870
871
872
873
874
875
876
877
878
879
880
881
882
883
884
885
886
887
888
889
890
891
892
893
894
895
896
897
898
899
900
901
902
903
904
905
906
907
908
909
910
911
912
913
914
915
916
917
918
919
920
921
922
923
924
925
926
927
928
929
930
931
932
933
934
935
936
937
938
939
940
941
942
943
944
945
946
947
948
949
950
951
952
953
954
955
956
957
958
959
960
961
962
963
964
965
966
967
968
969
970
971
972
973
974
975
976
977
978
979
980
981
982
983
984
985
986
987
988
989
990
991
992
993
994
995
996
997
998
999
1000

```

## 8. Alignments & Adjustments

Each CDR-module composed from CDRloader and CDRmainboard has to be matched via SW filled parameters. This adjustment processed in the factory is under investigation to have it implemented into the COMPAIR tool. As long as this adjustment is not possible to be executed in secondline service workshop, the swop of modules and a central repair has to be continued. Adjustment only has to be done at replacement of CDM and concerned servo circuits. Other repairs (audio signals, replacement of adapted Flash roms etc) can be done without infringing the adjusted components.

As soon as COMPAIR CDR is installed this chapter will be adapted via a service information.

Flash Rom IC 7208 (MACE-ROM) is mounted on a socket and can be replaced after lifting up the loader part above it. Flash Rom IC 7703 (DASP-ROM) has to be soldered.

Take care for both ICs Firmware loaded components are mounted.

In case a module is offered with SW versions 1.4 and 91.48, the complete CDR-module should be replaced.

For SW versions 1.23 and 91.63, IC7703 and IC7208 have to be replaced by the latest SW verions.

## 9. Circuit description

### 9.1 Description

A separate circuit description concerning the 3rd generation CDR recorders is available with order number 3104 125 40100



## 9.2 List of Abbreviations

SIGNAL NAME	SIGNAL FLOW	FUNCTION AND DESCRIPTION
+12V	main supply voltage from PSU	+12V supply voltage from PSU
+12VA	supply voltage	+12V supply voltage for Audio part
+5V	main supply voltage from PSU	+5V supply voltage from PSU
+5VA	supply voltage	+5V supply voltage for Audio part
+9SRVPWR	IC7558 → IC7240	PoWeR supply for SeRVo driver IC
12VPWR	supply voltage	+12V supply voltage for servo part
-8V	main supply voltage from PSU	-8V supply voltage from PSU
-8VA	supply voltage	-8V supply voltage for Audio part
A(1:20)	IC7701 → R3818, R3819, R3820, R3821, R3897 → IC7703	Address lines 1 to 20 between DASP and flash ROM
A(10:20)	IC7701 → R3819, R3820, R3821 → IC7702	Address lines 10 to 20 between DASP and DRAM
A1	IC7010 → IC7270	amplitude of the "land" reflection relative to the average EFM, voltage output, OPC input
A1LF, A2LF	CONN1000 → IC7010	satellite photo diodes A1, A2 current output
A2	IC7010 → IC7270	amplitude of the "pit" reflection relative to the average EFM, voltage output, OPC input
A-8V	supply voltage	-8V supply voltage for servo part
AEGER		Analog Error signal GEnerator for Recordable
AINTON	IC7008 → IC7010	Alpha INTegrator ON (to AEGER)
ALE	* IC7270 → R3213 → IC7209, IC7300 * IC7270 → R3230	Address Latch Enable; external address latch strobe line, freeze address when low
ALPHA0	IC7270 → IC7010	analog voltage mode output from OPC D/A converter
ALS	IC7008 → IC7010	Alpha Loop Switch (to AEGER)
ASTROBE	IC7008 → IC7010	Alpha STROBE (to AEGER)
ATIP		Absolute Time In Pre-groove (sync signal)
ATIPSYNC	IC7300 → IC7270	ATIP SYNC signal
ATT	* IC7270 → R3717, R3722 * IC7270 → IC7701	ATTenuation request from MACE2 to audio DAC, active low; means that the output can be attenuated in case of search activities
B1LF, B2LF	CONN1000 → IC7010	satellite photo diodes B1, B2 current output
BCLK	IC7701 → R3898A → IC7300	I <sup>2</sup> S1 BitCLoCK from DASP to CDR60 (playback and record)
BE_RESET	* IC7701 → R3261 → IC7270 * IC7701 → R3716	Basic Engine RESET, active high
BIASC	IC7008 → R3056	BIAS Current switch CDRW output
BKPT	CONN1819, R3907 → IC7701	JTAG mode select / debug mode BreakPoint
C1LF, .., C4LF	CONN1000 → IC7010	Central photo diodes C1, C2, C3, C4 current output
CAGAIN	R3016, R3115 → IC7010	set-point laser power on disc, current input
CAHF	CONN1000 → C2374	Central Aperture (central photo diodes) High Frequency current output (C1+C2+C3+C4)
CALF	IC7010 → IC7270	Central Aperture (central photo diodes) Low-pass Filtered signal (DC coupled EFM signal), voltage output, OPC input
CAS0	IC7701 → IC7702	Column Address Strobe DRAM for upper byte

SIGNAL NAME	SIGNAL FLOW	FUNCTION AND DESCRIPTION
CAS1	IC7701 → IC7702	Column Address Strobe DRAM for lower byte
CDR	IC7008 → IC7355	CDR strategy detected output (active high)
CDR60CFLG	IC7300 → R3382B → CONN1812	serial output of error corrector status information of the CDR60-decoder, to be measured at test connector
CDR60CL1	IC7300 → R3382C → CONN1812	output of CLock signal for testing system clock of IC CDR60 at test connector
CDR60CS	IC7270 → R3235B → R3702, IC7300	CDR60 Chip Select, active high
CDR60INT	IC7300 → IC7270	CDR60 INTerrupt line, active low
CDR60LWRT	IC7300 → R3048	CDR60 Laser WRiTe control output
CDR60MEAS1	IC7300 → R3382A → CONN1812	serial output of information about jitter, PLL frequency and asymmetry of bit recovery block in CDR60, to be measured at test connector
CDR60PLL	IC7270 → R3305 → IC7300	CDR60 clock multiplier enable, active high
CDRW	* IC7355D → IC7355C * IC7355D → CONN1000	inverted CDR-strategy-detected signal
CLK_OUT	IC7701 → R3771 → CONN1819	system CLock OUT
CLK_SYS	IC7701 → R3727, R3731	oscillator output
COS-	CONN1220 → IC7225B	Hall feedback signal from sledge motor
COS+	CONN1220 → IC7225B	Hall feedback signal from sledge motor
CSFLASH	IC7701 → IC7703	Chip Select for FLASH or boot device
CSRAM	IC7270 → R3235A → R3703, IC7802	Chip Select SRAM, active low
D(16:31)	IC7701 ↔ R3822, R3823, R3824, R3825 ↔ IC7703, IC7702	Databus bit 16 to 31 between DASP, flash ROM and DRAM
D3V3	supply voltage	+3,3V supply voltage for Digital part
D5V	supply voltage	+5V supply voltage for Digital part
D5VS	supply voltage	+5V supply voltage for Servo part
DALPHA	IC7010 → R3037	ALPHA error signal for laser power control
DASP		Digital Audio Signal Processor
DATAI	IC7701 → R3898C → IC7300	I <sup>2</sup> S1 DATA In from DASP to CDR60 (recording)
DATAO	IC7300 → R3314 → IC7701	I <sup>2</sup> S1 DATA Out from CDR60 to DASP (playback)
DEEMP	* IC7270 → R3719, R3724 * IC7270 → IC7701	DE-EMphasis control for audio DAC from MACE2, active high; means that de-emphasis is needed in digital filter
DELTAP	IC7016 → R3126	DELTA Power current source drive signal from XDAC
DIG_OUT_C	IC7701 → R3706 → C2707, CONN1400	Common DIGital OUTput (consumer)
DISPLAY_INT	F934 → R3812, IC7701	DISPLAY INTerrupt
DMON	IC7270 → R3324	power save at stop, active low
DOBM_CD	CONN1708, C2731 → R3757 → R3903 → IC7701	Digital Output (EBU output) from CD player in CDR775 to DASP
DOBM_CDR	IC7300 → R3382D → C2379, IC7701	Digital Output (EBU output) from CDR60 to DASP
DRAM_RW	IC7701 → IC7702	Read/Write strobe for DRAM
DSA_ACK_CD	* IC7701 ↔ R3830 ↔ R3831	Data/Strobe/Acknowledge serial communication

SIGNAL NAME	SIGNAL FLOW	FUNCTION AND DESCRIPTION
	↔ CONN1708 * IC7701 ↔ R3830 ↔ C2735	between DASP and CD-player in CDR775
DSA_ACK_CDR	* IC7701 → R3729 → IC7270, CONN1830 * IC7701 → R3729 → R3769	Data/Strobe/Acknowledge serial communication between MACE2 and DASP for CDR; acknowledge input for MACE2 is strobe output for DASP
DSA_DATA_CD	* IC7701 ↔ R3828 ↔ R3829 ↔ CONN1708 * IC7701 ↔ R3828 ↔ C2733	Data/Strobe/Acknowledge serial communication between DASP and CD-player in CDR775
DSA_DATA_CDR	* IC7270 ↔ R3246 ↔ R3813 ↔ IC7701, CONN1830 * IC7270 ↔ R3246 ↔ R3767	Data/Strobe/Acknowledge serial communication between MACE2 and DASP for CDR
DSA_STR_CD	* IC7701 ↔ R3835 ↔ R3832 ↔ CONN1708 * IC7701 ↔ R3835 ↔ C2734	Data/Strobe/Acknowledge serial communication between DASP and CD-player in CDR775
DSA_STR_CDR	* IC7270 → R3245 → IC7701, CONN1830 * IC7270 → R3245 → R3768	Data/Strobe/Acknowledge serial communication between MACE2 and DASP for CDR (strobe output for MACE2 is acknowledge input for DASP)
DSCLK	CONN1819, R3908 → IC7701	reset in / Debug Serial CLock in
DSI	CONN1819, R3909 → IC7701	JTAG reset in / Debug Serial clock In
EFM		Eight to Fourteen Modulation = modulation method used for CD storage, also the actual raw CD signal as written or read on or from the CD disc
EFMCLK	IC7300 → IC7008	EFM CLock output
EFMDATA	IC7300 → IC7008	EFM DATA output
EFMTIM3		EFM TIMing generator
EPON	IC7008 → R3010 IC7008 → C2010	Erase Power ON
EPONO	IC7008 → R3107	Erase Power ON Open drain output
EPONRC	R3004 → CONN1000	Erase Power ON (after RC circuit)
ERASEC	IC7008 → R3087	ERASE Current switch CDRW output
ERON	IC7008 → IC 7010	ERror ON (to AEGER)
EXT_DIG_IN1	CONN1400 → IC7701	EXTernal DIGital INput 1
EXT_DIG_IN2	CONN1702, C2767, C2721 → R3701 → IC7701	EXTernal DIGital INput 2 (CDR950 only)
EXT_OPT_IN	CONN1400, C2722 → R3708 → IC7701	EXTernal OPTical INput
F_READY	* IC7703 → R3817 → IC7701 * CONN1701 → IC7701	Flash READY detection, this line is forced low as long as the flash is busy with erase or program algorithm
F_RW	IC7701 → IC7708B	Read/Write strobe for Flash ROM
FEN	IC7010 → IC7270	Focus Error Normalized current output
FOC-	IC7240 → CONN1000	FOCus actuator drive signal negative connection
FOC+	IC7240 → CONN1000	FOCus actuator drive signal positive connection
FS30V	D6500 → CONN1000	Forward Sense diode 30V power supply
FSA	CONN1000 → T7119, T7120	Forward Sense photo diode current output
FSCLR	IC7008 → IC7126	Forward Sense signals CLear switch
FSOF	IC7008 → R3052	Forward Sense photo diode sampling OFF

SIGNAL NAME	SIGNAL FLOW	FUNCTION AND DESCRIPTION
FSON	IC7008 → R3051	Forward Sense photo diode sampling ON
FSR	R3040 → IC7270	Forward Sense signal while Reading for read control loop
FSRS	IC7008 → IC7126D	Forward Sense photo diode Read Sampling
FSW	R3050 → IC7270	Forward Sense signal while Writing for write control loop
FSWS	IC7008 → IC7126C	Forward Sense photo diode Write Sampling
FWEN	IC7270 → IC7208, R3806	Flash EPROM Write ENable
HALL_U, HALL_V, HALL_W	IC7330 → IC7300, CONN1812	HALL feedback signals from turn table motor via hall motor driver
HFS0	IC7270 → R3249 → IC7360	select HF circuit
I <sup>2</sup> C		Inter IC
I <sup>2</sup> C_CLK	* IC7701, R3711 → R3715 → C2709 → F934 * IC7701, R3711 → IC7801	I <sup>2</sup> C CLock line used for display slave processor and digital potmeter
I <sup>2</sup> C_DATA	* IC7701, R3712 ↔ R3713 ↔ C2708, R3714 ↔ F934 * IC7701, R3712 ↔ IC7801	I <sup>2</sup> C DATA line used for display slave processor and digital potmeter
I <sup>2</sup> CL	R3248B → IC7207, R3247C	I <sup>2</sup> C CLock line
I <sup>2</sup> CSCL	* IC7207 → IC7008 * IC7207 → IC7010 * IC7207 → R3248B	I <sup>2</sup> C Serial CLock line
I <sup>2</sup> CSDA	* IC7207 ↔ IC7008 * IC7207 ↔ IC7010 * IC7207 ↔ R3248A	I <sup>2</sup> C Serial DAta line
I <sup>2</sup> DA	R3248A ↔ IC7270, R3247D	I <sup>2</sup> C DAta line
I <sup>2</sup> S_BCLK_AI	IC7701 → R3814 → IC7406	I <sup>2</sup> S4 Bit CLock for CODEC (ADC for CDR950) Analog Input (record from analog source)
I <sup>2</sup> S_BCLK_AO	IC7701 → R3894A → IC7406	I <sup>2</sup> S2 Bit CLock for CODEC (DAC for CDR950) Analog Output
I <sup>2</sup> S_BCLK_CD	CONN1708, C2739 → R3834 → IC7701	I <sup>2</sup> S3 Bit CLock from CD player (record n=2) (CDR775 only)
I <sup>2</sup> S_BCLK_MIC	CONN1708, C2739 → R3834 → IC7701	I <sup>2</sup> S3 Bit CLock from MICrophone (CDR950 only)
I <sup>2</sup> S_DATA_AI	IC7406 → IC7701	I <sup>2</sup> S4 DATA from CODEC (ADC for CDR950) Analog Input (record from analog source)
I <sup>2</sup> S_DATA_AO	IC7701 → R3894C → IC7406	I <sup>2</sup> S2 DATA for CODEC (DAC for CDR950) Analog Output
I <sup>2</sup> S_DATA_CD	CONN1708, C2738 → R3836 → IC7701	I <sup>2</sup> S3 DATA from CD player (record n=2) (CDR775 only)
I <sup>2</sup> S_DATA_MIC	CONN1708, C2738 → R3836 → IC7701	I <sup>2</sup> S3 DATA from MICrophone (CDR950 only)
I <sup>2</sup> S_WS_AI	IC7701 → R3743 → IC7406	I <sup>2</sup> S4 Word CLock for CODEC (ADC for CDR950) Analog Input (record from analog source)
I <sup>2</sup> S_WS_AO	IC7701 → R3894B → IC7406	I <sup>2</sup> S2 Word CLock for CODEC (DAC for CDR950) Analog Output
I <sup>2</sup> S_WS_CD	CONN1708, C2740 → R3833 → IC7701	I <sup>2</sup> S3 Word CLock from CD player (record n=2) (CDR775 only)

SIGNAL NAME	SIGNAL FLOW	FUNCTION AND DESCRIPTION
I <sup>2</sup> S_WS_MIC	CONN1708, C2740 → R3833 → IC7701	I <sup>2</sup> S3 Word CLock from MICrophone (CDR950 only)
I <sup>2</sup> S1_MS	IC7270 → R3910, IC7701	I <sup>2</sup> S1 Master-Slave interrupt from MACE2
IE	T7121 → CONN1000	laser Erase drive current signal
INT_COPY_ANA	* IC7701 → R3721 → IC7401 * IC7701 → R3721 → R3410	select INTernal COPY ANAlog (in case of copy protected disc or track on CD drive) (CDR775 only)
IR	* T7135 → CONN1000 * T7135 → R3056 * T7135 → IC7008	laser Read drive current signal
IW	* T7122 → CONN1000 * T7122 → D6003	laser Write drive current signal
KEY_PRESSED	IC7706B → R3816 → IC7701	KEY PRESSED interrupt
KILL	T7560, T7561, R3560 → CONN1400, R3424, R3428	KILL signal from power supply part to audio outputs
KILL_OUT	IC7701 → R3532	disables the KILL activity from the PSU; 1 = no kill, 0 = kill active
L12V	supply voltage	+12V supply voltage for servo/Laser part
L3_CLK	IC7701 → R3725 → IC7406	L3 interface CLock line / control CODEC (not for CDR950)
L3_DATA	IC7701 ↔ R3728 ↔ IC7406	L3 interface DATA line with CODEC (not for CDR950)
L3_MODE	IC7701 → R3735 → IC7406	L3 interface MODE line selects data or address transfer mode for CODEC (not for CDR950)
L5V	supply voltage	+5V supply voltage for servo/Laser part
L-5V	supply voltage	-5V supply voltage for servo/Laser part
LASCK	IC7270 ↔ R3248D	Clock line DAC LASer control
LASDACCK	R3248D ↔ IC7016	Clock line DAC LASer control
LASDACDI	R3248C ↔ IC7016	Data line DAC LASer control
LASDACLD	R3212 ↔ IC7016	LoaD line DAC LASer control
LASDD	IC7270 ↔ R3248C	Data line DAC LASer control
LASLD	* IC7270 ↔ R3238 ↔ R3212 * IC7270 ↔ R3232	LoaD line DAC LASer control
LEFT	CONN1708, C2743 → IC7401C, IC7407C	audio output LEFT channel from CD-player in CDR775
LLP	IC7270 → IC7300	Laser Low Power (active high), switches the laser from write to read power whenever the device tends to go offtrack
LWRT	R3048 → IC7008	Laser WRiTe control input
MA(16:17)	IC7270 ↔ IC7208	bank switch higher address lines
MA(8:15)	IC7270 ↔ IC7802 ↔ IC7208	address bus high byte
MACE2		Mini All Cd Engine (minus decoder + OPC + PCS + extra RAM)
MAD(0:7)	IC7270 ↔ IC7209 ↔ IC7802 ↔ IC7208 ↔ IC7300	bi-directional data bus / address bus low byte
MIRN	IC7010 → IC7270	MIRror Normalized (disc reflection) current output
MOTO1	IC7300 → IC7355A	turn table MOTOr control output

SIGNAL NAME	SIGNAL FLOW	FUNCTION AND DESCRIPTION
MRDN	IC7270 → R3276 → R3242A, IC7802, IC7300	Master ReaD, read strobe for external peripherals, active low
MUTE	* IC7270 → R3718, R3723 * IC7270 → IC7701	MUTE control from MACE2 to DASP, active low
MWRN	IC7270 → R3280 → R3242B, IC7802, IC7300	Master WRite, write strobe for external peripherals, active low
NMUTE	IC7701 → R3726, IC7406	MUTE output, low active
OFFTRACK	IC7270 → IC7300	OFFTRACK detection flag
OPC		Optimum Power Calibration
P12VKILL	supply voltage	+12V supply voltage for KILL-circuit
PCS		Position Control Sledge
PCSCOS	IC7225B, C2229 → IC7270, CONN1812	Position Control Sledge COS feedback signal
PCSSIN	IC7225A, C2227 → IC7270, CONN1812	Position Control Sledge SIN feedback signal
PDAR		Photo Diode Amplifier Recordable
PERASE	R3036, R3031, R3030, R3029, R3028, R3027, R3020 → IC7002C, R3043, T7113	laser Power switch for ERASE
POWER_UP	IC7270 → R3243C, R3556, R3538	standby pin, high level activates essential powers necessary for full function; overrules HI_POWER setting
PPN	IC7010 → IC7050C	Push-Pull signal, Normalized, balanced, voltage output
PRCOARSE	IC7016 → R3057	drive signal from Power Read COARSE DAC for read current source
PRFINE	IC7016 → R3058	drive signal from Power Read FINE DAC for read current source
PROF_EBU	IC7701 → CONN1820	PROFessional digital output (CDR950 only)
PSEn <sub>n</sub>	* IC7270 → R3260 → IC7208 * IC7270 → R3231	Program Store ENable; external ROM output enable line, active low
PW	R3081 → IC7008	Write Power signal to OPC input of MACE2
PWB	IC7001C → IC7016	drive signal to XDAC's for write and erase current sources and VCAGAIN
PWD	* IC7016 → IC7002B * IC7016 → IC7002C	drive signal from XDAC for write and erase current sources
PWMAX	IC7016 → R3073	PW MAXimum signal from DAC used for determining set point for laser power during writing
PWMIN	IC7016 → R3072	PW MINimum signal from DAC used for determining set point for laser power during writing
PWRITE	R3035, R3026, R3025, R3024, R3023, R3022, R3021 → IC7002B, R3044, T7124	laser Power switch for WRITE
RAD-	IC7240 → CONN1000	Radial actuator drive signal negative connection
RAD+	IC7240 → CONN1000	Radial actuator drive signal positive connection
RAS0	IC7701 → IC7702	Row Address Strobe DRAM
RCK	IC7300 → R3319 → IC7701	EIAJ subcode clock from CDR60 to DASP (CD text interface)
RDGAIN1	IC7008 → R3054	forward sense ReaD GAIN switch 1

SIGNAL NAME	SIGNAL FLOW	FUNCTION AND DESCRIPTION
RDGAIN2	IC7008 → C2027	forward sense ReaD GAIN switch 2
RDGAIN3	IC7008 → C2060	forward sense ReaD GAIN switch 3
RE	IC7010 → IC7215A	Radial Error signal for fast track counting, voltage output
RECORDING	* IC7008 → IC7010 * IC7008 → CONN1000 * IC7008 → IC7355C	RECORDING output (active high)
REN	IC7010 → IC7270	Radial Error Normalized current output
RIGHT	CONN1708, C2742 → IC7401A, IC7407A	audio output RIGHT channel from CD-player in CDR775
RXD_TOOL	CONN1818 → IC7701	Receive of UART for test TOOL
S1V65	Reference Voltage	1.65V delivered by IC7215B for Servo part
S2V9	Reference Voltage	2.9V delivered by IC7010 for Servo part
SEL_HP_OUT	* IC7701 → R3720 → IC7407	SElect HeadPhone OUTput in DJ-mode (for CDR775 only)
SFSY	IC7701 → R3756 → IC7300	EIAJ subcode synchronisation from DASP to CDR60 (CD text interface)
SIN-	CONN1220 → IC7225A	Hall feedback signal from sledge motor
SIN+	CONN1220 → IC7225A	Hall feedback signal from sledge motor
SL-	IC7240 → R3265 → CONN1220	SLedge motor drive signal negative connection
SL+	IC7240 → CONN1220	SLedge motor drive signal positive connection
SRSTN	IC7270 → R3243B, IC7300	Slave ReSeT out (CDR60 reset), active low
STANDBY	IC7270 → R3807 → R3887 → IC7701	STANDBY pin, high level activates essential powers necessary for full function; overrules HI_POWER setting
SUB	IC7701 → R3710 → IC7300	EIAJ subcode data from DASP to CDR60 (CD text interface)
SYS_CLK_11W	IC7701 → R3732 → IC7406	11.2896 MHz SYStem CLock for AD/DA datapath
SYS_CLK_16W	IC7701 → R3894D → IC7706A	16.9344 MHz SYStem CLock for producing SYS_CLK_BE
SYS_CLK_8W	IC7706A → R3815 → CONN1708	SYStem CLock CD player (8.4672 MHz) (CDR775 only)
SYS_CLK_BE	IC7706A → R3826 → IC7270	SYStem CLock Basic Engine (8.4672 MHz)
SYS_RESET	* IC7701 → R3758 → CONNF934 * IC7701 → R3770 → T7707 → CONN1708	SYStem RESET to display assy (and CD player for CDR775)
TCK	CONN1819 → R3906, IC7701	JTAG CLock signal
TDSO	IC7701 → CONN1819	JTAG Serial Data Out / debug data out
TERMB	IC7270 ↔ CONN1818	UART connection with MACE
TLN	IC7010 → IC7270	Track Loss Normalized current output
TR-	IC7240 → CONN1200	TRay motor drive signal negative connection
TR+	IC7240 → CONN1200	TRay motor drive signal positive connection
TRACE99_RXD	CONN1818 → R3838, IC7701	TRACE99 test tool receive data
TRACE99_TXD	IC7701 → CONN1818	TRACE99 test tool transmit data
TRAYIN	IC7270 → IC7240	move TRAY IN line, active low

SIGNAL NAME	SIGNAL FLOW	FUNCTION AND DESCRIPTION
TRAYOUT	IC7270 → IC7240	move TRAY OUT line, active low
TRAYSW	* CONN1200 → R3747 * CONN1200 → R3748	TRAY SWitch signal from loader assy
TRAYSWF	R3748, C2214 → IC7270	Filtered TRAY SWitch signal, low is completely out or in
TXD_TOOL	IC7701 → CONN1818	Transmit of UART for test TOOL
U+, U-, V+, V-, W+, W-	CONN1330 → IC7330	hall feedback signals from turn table motor to hall motor driver
UCOIL, VCOIL, WCOIL	IC7330 → CONN1330	drive signals for turn table motor
VCAGAIN	IC7016 → IC7005A	set-point laser power on disc, voltage output
VDC1	CONN1500 → CONNF934	supply voltage for display assy
VDC2	CONN1500 → CONNF934	supply voltage for display assy
VFO	IC7270 → R3295 → R3244	FOcus actuator drive output
VFTD	CONN1500 → CONNF934	Voltage Fluorescent Tube Display (display assy)
VRA	IC7270 → R3297 → R3254	RAdial actuator drive output
VSL	IC7270 → R3299 → IC7240	SLedge actuator drive output
WCLK	IC7701 → R3898B → IC7300	I <sup>2</sup> S1 WordCLock from DASP to CDR60 (playback and record)
WOBBLE	IC7050C → IC7300	analog WOBBLE signal of pre-groove detected by PPN-signal
WPON	* IC7008 → R3009 * IC7008 → C2009	Write Power ON
WPONO	IC7008 → R3106	Write Power ON Open drain output
WPONRC	R3003 → CONN1000	Write Power ON (after RC circuit)
XDAC		multiplying DAC



## 10. Spareparts List

## ELECTRICAL PARTSLIST MAINBOARD CDR'99

ITEM	CODENUMBER	DESCRIPTION	CDR775	CDR570	CDR770	CDR950
1000	482226710666	30 P. FEM.	+	+	+	+
1541	482225251173	19398E1(1,000A)	+	+	+	+
1542	482225251173	19398E1(1,000A)	+	+	+	+
1543	482225251173	19398E1(1,000A)	+	+	+	+
1707	482224210757	33.868 000MHZ SM 20P CX-11F	+	+	+	+
1708	482226760409	CONN 22P FEMALE	+	-	-	-
1820	482226710666	30 P. FEM.	-	-	-	+
2001	482212612105	CER2 0805 X7R 50V 33NF PM5	+	+	+	+
2002	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2003	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2009	482212233753	150PF 5%NP0 50V	+	+	+	+
2010	482212233753	150PF 5%NP0 50V	+	+	+	+
2011	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2012	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2013	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2014	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2015	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2016	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2018	482212613694	68PF 1% NP0 63V	+	+	+	+
2019	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2020	482212613188	15NF 5% X7R 63V	+	+	+	+
2021	482212233177	10NF 20% X7R 50V	+	+	+	+
2022	482212233177	10NF 20% X7R 50V	+	+	+	+
2023	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2024	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2025	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2026	222286115272	CER1 0805 NP0 50V	+	+	+	+
2027	222286115272	CER1 0805 NP0 50V	+	+	+	+
2028	532212232531	100PF 5%NP0 50V	+	+	+	+
2029	532212232531	100PF 5%NP0 50V	+	+	+	+
2030	532212231647	1NF10%X7R 63V	+	+	+	+
2031	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2032	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2033	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2037	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2038	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2039	482212233177	10NF 20% X7R 50V	+	+	+	+
2040	482212233172	390PF 5% NP0 50V	+	+	+	+
2041	532212234099	470PF10%X7R 63V	+	+	+	+
2042	532212233538	150PF 2%NP0 63V	+	+	+	+
2043	532212231647	1NF10%X7R 63V	+	+	+	+
2044	482212613486	15PF 2% NP0 63V	+	+	+	+
2045	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2046	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2047	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2048	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2049	532212611579	3,3NF10%X7R 63V	+	+	+	+
2050	482212614238	CER2 0603 X7R 50V 2N2 COL R	+	+	+	+
2052	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2053	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2054	482212614238	CER2 0603 X7R 50V 2N2 COL R	+	+	+	+
2056	532212611579	3,3NF10%X7R 63V	+	+	+	+
2057	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2058	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2059	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2060	532212611579	3,3NF10%X7R 63V	+	+	+	+
2061	482212411947	10UF 20% 16V	+	+	+	+

ITEM	CODENUMBER	DESCRIPTION	CDR775	CDR570	CDR770	CDR950
2063	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2078	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2080	482212614238	CER2 0603 X7R 50V 2N2 COL R	+	+	+	+
2081	532211680853	560PF 5%NP0 63V	+	+	+	+
2082	482212614238	CER2 0603 X7R 50V 2N2 COL R	+	+	+	+
2083	482212613956	68PF 5% NP0 63V CASE 0603	+	+	+	+
2084	482212232627	2.7NF10%X7R 50V	+	+	+	+
2126	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2207	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2208	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2209	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2214	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2216	482212233777	47PF 5%NP0 63V	+	+	+	+
2217	482212614494	22NF 10% X7R 25V 0603	+	+	+	+
2218	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2220	319801734730	CER2 0603 X7R 16V 47N COL	+	+	+	+
2221	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2222	482212614226	82PF 5% NP0 50V 0603	+	+	+	+
2224	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2225	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2226	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2227	319801631020	CER1 0603 NP0 25V 1N	+	+	+	+
2228	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2229	319801631020	CER1 0603 NP0 25V 1N	+	+	+	+
2230	482212614494	22NF 10% X7R 25V 0603	+	+	+	+
2231	482212614494	22NF 10% X7R 25V 0603	+	+	+	+
2232	482212614494	22NF 10% X7R 25V 0603	+	+	+	+
2233	319801631020	CER1 0603 NP0 25V 1N	+	+	+	+
2234	319801631020	CER1 0603 NP0 25V 1N	+	+	+	+
2235	319801631020	CER1 0603 NP0 25V 1N	+	+	+	+
2240	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2241	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2242	482212441796	22UF20% 16V	+	+	+	+
2243	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2255	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2256	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2272	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2273	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2274	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2275	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2276	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2277	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2278	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2283	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2284	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2285	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2286	482212233127	2,2NF10%X7R 63V	+	+	+	+
2287	482212233127	2,2NF10%X7R 63V	+	+	+	+
2288	532212232654	22NF10%X7R 63V	+	+	+	+
2289	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2291	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2300	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2302	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2303	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2304	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2305	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2306	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2308	222286115222	CER1 0805 NP0 50V 2N2 PM5	+	+	+	+
2309	222286115222	CER1 0805 NP0 50V 2N2 PM5	+	+	+	+
2310	222286115222	CER1 0805 NP0 50V 2N2 PM5	+	+	+	+
2314	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+

ITEM	CODENUMBER	DESCRIPTION	CDR775	CDR570	CDR770	CDR950
2315	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2316	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2317	532212611579	3,3NF10%X7R 63V	+	+	+	+
2318	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2319	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2320	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2321	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2322	532212611579	3,3NF10%X7R 63V	+	+	+	+
2333	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2335	319801734730	CER2 0603 X7R 16V 47N COL	+	+	+	+
2336	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2337	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2355	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2359	482212613692	47PF 1% NP0 63V	+	+	+	+
2360	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2362	482212613751	47NF10% X7R 63V	+	+	+	+
2364	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2368	223886115182	CER1 0805 NP0 50V 1N8 PM5 R	+	+	+	+
2369	532212232268	470PF 10% 50V	+	+	+	+
2370	482212441796	22UF20% 16V	+	+	+	+
2371	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2372	532212232447	1PF 5% NP0 63V CASE 0805	+	+	+	+
2373	482212441796	22UF20% 16V	+	+	+	+
2374	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2375	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2378	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2379	482212613692	47PF 1% NP0 63V	+	+	+	+
2401	482212614585	100NF 10% X7R 0805 50V	+	+	+	-
2402	482205120008	0R00 JUMP. (0805)	+	+	+	+
2404	482212412245	ELCAP 10V 220U PM20	+	+	+	-
2405	482212614585	100NF 10% X7R 0805 50V	+	+	+	-
2406	532212411919	47UF 20% 6,3V	+	+	+	-
2407	482212614585	100NF 10% X7R 0805 50V	+	+	+	-
2408	532212411919	47UF 20% 6,3V	+	+	+	-
2409	482212614585	100NF 10% X7R 0805 50V	+	+	+	-
2411	319803074780	ELCAP SM 35V 4U7 PM20 COL R	+	+	+	-
2413	482212613838	100NF Y5V 0805 50V P80M20	+	+	+	-
2414	482212480483	47UF20% 6,3V	+	+	+	-
2415	482212614585	100NF 10% X7R 0805 50V	+	+	+	-
2417	319803074780	ELCAP SM 35V 4U7 PM20 COL R	+	+	+	-
2419	482212613838	100NF Y5V 0805 50V P80M20	+	+	+	-
2421	482212614585	100NF 10% X7R 0805 50V	+	+	+	-
2422	482212614585	100NF 10% X7R 0805 50V	+	+	+	-
2424	482212480483	47UF20% 6,3V	+	+	+	-
2425	482212233216	270PF 5%NP0 50V	+	+	-	-
2430	482212480483	47UF20% 6,3V	+	+	+	-
2431	482212233216	270PF 5%NP0 50V	+	-	-	-
2433	482212614585	100NF 10% X7R 0805 50V	+	-	-	-
2434	482212614585	100NF 10% X7R 0805 50V	+	+	+	-
2435	482212614585	100NF 10% X7R 0805 50V	+	+	+	-
2437	202002490264	ELCAP MA 4V S 470U PM20 A	+	+	+	-
2438	202002490264	ELCAP MA 4V S 470U PM20 A	+	+	+	-
2440	482212480483	47UF20% 6,3V	+	+	+	-
2441	482212480483	47UF20% 6,3V	+	+	+	-
2442	532212231647	1NF10%X7R 63V	+	+	+	-
2443	532212231647	1NF10%X7R 63V	+	+	+	-
2450	482212233216	270PF 5%NP0 50V	+	+	+	-
2451	482212233216	270PF 5%NP0 50V	+	+	+	-
2460	482212611663	12PF	+	+	+	-
2463	482212233926	12PF 50V	+	+	+	-
2464	482212611663	12PF	+	+	+	-

ITEM	CODENUMBER	DESCRIPTION	CDR775	CDR570	CDR770	CDR950
2465	482212611663	12PF	+	+	+	-
2500	482212614238	CER2 0603 X7R 50V 2N2 COL R	+	+	+	+
2501	482212614238	CER2 0603 X7R 50V 2N2 COL R	+	+	+	+
2502	482212614238	CER2 0603 X7R 50V 2N2 COL R	+	+	+	+
2504	482212412245		+	+	+	+
2505	482212412255	10UF 20% 50V	+	+	+	+
2506	482212612105	CER2 0805 X7R 50V 33NF PM5	+	+	+	+
2507	482212412255	10UF 20% 50V	+	+	+	+
2508	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2509	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2535	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2536	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2537	532212411919	47UF 20% 6,3V	+	+	+	+
2541	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2543	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2544	482212480483	47UF20% 6,3V	+	+	+	+
2546	482212480483	47UF20% 6,3V	+	+	+	+
2547	482212481286	47UF20% 16V	+	+	+	+
2548	482212441643	100UF 20% 16V DIM:6,3X11MM	+	+	+	+
2550	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2551	482212441796	22UF20% 16V	+	+	+	+
2552	532212231647	1NF10%X7R 63V	+	+	+	+
2553	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2555	482212233177	10NF 20% X7R 50V	+	+	+	+
2556	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2557	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2558	482212441584	100UF 20% 10V	+	+	+	+
2561	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2562	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2563	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2565	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2568	482212441643	100UF 20% 16V DIM:6,3X11MM	+	+	+	+
2571	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2572	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2574	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2575	482212412245	ELCAP 220U 16V 20%	+	+	+	+
2576	482212613838	100NF Y5V 0805 50V P80M20	+	+	+	+
2577	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2700	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2701	532212411919	47UF 20% 6,3V	+	+	+	+
2702	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2703	532212411919	47UF 20% 6,3V	+	+	+	+
2704	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2705	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2706	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2707	482212613692	47PF 1% NP0 63V	+	+	+	+
2708	482212613692	47PF 1% NP0 63V	+	+	+	+
2709	482212613692	47PF 1% NP0 63V	+	+	+	+
2710	532212411919	47UF 20% 6,3V	+	+	+	+
2711	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2712	482212612105	CER2 0805 X7R 50V 33NF PM5	+	+	+	+
2713	532212611583	10NF 10% X7R 50V 0603 CER2	+	+	+	+
2714	482212614549	33N 16V X7R O6O3	+	+	+	+
2715	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2716	532212611583	10NF 10% X7R 50V 0603 CER2	+	+	+	+
2717	319801741050	CER2 0603 Y5V 10V 1U COL R	+	+	+	+
2718	532211680853	560PF 5%NP0 63V	+	+	+	+
2719	532211680853	560PF 5%NP0 63V	+	+	+	+
2720	532212231647	1NF10%X7R 63V	+	+	+	+
2721	482212613692	47PF 1% NP0 63V	+	+	+	+
2722	482212613692	47PF 1% NP0 63V	+	+	+	+

ITEM	CODENUMBER	DESCRIPTION	CDR775	CDR570	CDR770	CDR950
2723	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2725	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2726	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2727	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2728	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2731	482212613692	47PF 1% NP0 63V	+	-	-	-
2733	482212233777	47PF 5%NP0 63V	+	-	-	-
2734	482212233777	47PF 5%NP0 63V	+	-	-	-
2735	482212233777	47PF 5%NP0 63V	+	-	-	-
2736	482212614305	100NF 10% X7R 16V 0603 CER2	+	-	-	-
2737	482212614305	100NF 10% X7R 16V 0603 CER2	+	-	-	-
2738	482212233777	47PF 5%NP0 63V	+	-	-	-
2739	482212233777	47PF 5%NP0 63V	+	-	-	-
2740	482212233777	47PF 5%NP0 63V	+	-	-	-
2741	482212233777	47PF 5%NP0 63V	+	-	-	-
2742	482212233777	47PF 5%NP0 63V	+	-	-	-
2743	482212233777	47PF 5%NP0 63V	+	-	-	-
2750	319801741050	CER2 0603 Y5V 10V 1U COL R	+	+	+	+
2751	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2752	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2760	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2761	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2762	482212612105	CER2 0805 X7R 50V 33NF PM5	+	+	+	+
2763	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2764	482212612105	CER2 0805 X7R 50V 33NF PM5	+	+	+	+
2765	482212612105	CER2 0805 X7R 50V 33NF PM5	+	+	+	+
2766	482212612105	CER2 0805 X7R 50V 33NF PM5	+	+	+	+
2901	319802190030	RST JUMPER 0603 0.05 OHM	+	+	+	+
2902	482205120008	0R00 JUMP. (0805)	+	+	+	+
2903	319802190030	RST JUMPER 0603 0.05 OHM	+	+	-	+
2904	319802190030	RST JUMPER 0603 0.05 OHM	+	+	+	+
2905	319802190030	RST JUMPER 0603 0.05 OHM	+	+	+	+
2906	482205120008	0R00 JUMP. (0805)	+	+	+	+
2907	482205120008	0R00 JUMP. (0805)	+	+	+	+
2908	319802190030	RST JUMPER 0603 0.05 OHM	+	+	+	+
2909	319801741050	CER2 0603 Y5V 10V 1U COL R	+	+	+	+
2910	482212412245	ELCAP 220U 16V 20%	+	+	+	+
3000	482205120101	100R00 5% 0,1W	+	+	+	+
3001	482211711151	1R 5%	+	+	+	+
3002	482205120122	1K20 5% 0,1W	+	+	+	+
3003	482205130121	120R00 5% 0,062W	+	+	+	+
3004	482205130121	120R00 5% 0,062W	+	+	+	+
3006	482205130008	0R00 JUMPER	+	+	+	+
3007	482205120154	150K00 5% 0,1W	+	+	+	+
3009	482205130681	680R00 5% 0,062W	+	+	+	+
3010	482205130681	680R00 5% 0,062W	+	+	+	+
3011	482205120829	82R00 5% 0,1W	+	+	+	+
3012	482205130154	150K00 5% 0,062W	+	+	+	+
3013	482205120105	1M00 5% 0,1W	+	+	+	+
3014	482211711139	1K5 1% 0,1W	+	+	+	+
3015	482211683933	15K 1% 0,1W	+	+	+	+
3016	482211713172	62K 1% RC12H 0805 0,1W	+	+	+	+
3017	482205130392	3K9 5% 0.063W 0603	+	+	+	+
3019	482205130105	1M00 5% 0,062W	+	+	+	+
3020	482211683933	15K 1% 0,1W	+	+	+	+
3021	482211683933	15K 1% 0,1W	+	+	+	+
3022	482211711456	30K 1% 0,1W	+	+	+	+
3023	482211713172	62K 1% RC12H 0805 0,1W	+	+	+	+
3024	482211711374	120K 1% RC12H 0805	+	+	+	+
3025	482211713569	240K 1% 0805 RC12H	+	+	+	+
3026	482205120474	470K00 5% 0,1W	+	+	+	+

ITEM	CODENUMBER	DESCRIPTION	CDR775	CDR570	CDR770	CDR950
3027	482211711456	30K 1% 0,1W	+	+	+	+
3028	482211713172	62K 1% RC12H 0805 0,1W	+	+	+	+
3029	482211711374	120K 1% RC12H 0805	+	+	+	+
3030	482211713569	240K 1% 0805 RC12H	+	+	+	+
3031	482205120474	470K00 5% 0,1W	+	+	+	+
3035	482211713571	910K 1% 0805 RC12H	+	+	+	+
3036	482211713571	910K 1% 0805 RC12H	+	+	+	+
3037	482211710833	10K 1% 0,1W	+	+	+	+
3039	482205130183	18K00 5% 0,062W	+	+	+	+
3040	482205130101	100R00 5% 0,062W	+	+	+	+
3041	482205130103	10K00 5% 0,062W	+	+	+	+
3043	482205130105	1M00 5% 0,062W	+	+	+	+
3044	482205120105	1M00 5% 0,1W	+	+	+	+
3048	482205130103	10K00 5% 0,062W	+	+	+	+
3049	482205110102	1K00 2% 0,25W	+	+	+	+
3050	482205130101	100R00 5% 0,062W	+	+	+	+
3051	482211712902	8K2 1% 0.063W 0603	+	+	+	+
3052	482211712902	8K2 1% 0.063W 0603	+	+	+	+
3053	482205130102	1K00 5% 0,062W	+	+	+	+
3054	482211711188	20K 1% 0,1W	+	+	+	+
3055	482205130102	1K00 5% 0,062W	+	+	+	+
3056	482205130102	1K00 5% 0,062W	+	+	+	+
3057	482205120472	4K70 5% 0,1W	+	+	+	+
3058	482205120154	150K00 5% 0,1W	+	+	+	+
3059	482205130682	6K80 5% 0,062W	+	+	+	+
3060	482205130103	10K00 5% 0,062W	+	+	+	+
3061	482205130102	1K00 5% 0,062W	+	+	+	+
3063	482211713572	22R 5% 1206	+	+	+	+
3064	482205130221	220R00 5% 0,062W	+	+	+	+
3065	482205120393	39K00 5% 0,1W	+	+	+	+
3066	482211712367	33K 1% 0.10W	+	+	+	+
3067	482205130102	1K00 5% 0,062W	+	+	+	+
3068	482205120472	4K70 5% 0,1W	+	+	+	+
3069	482205120392	3K90 5% 0,1W	+	+	+	+
3070	482205110102	1K00 2% 0,25W	+	+	+	+
3071	482205130222	2K20 5% 0,062W	+	+	+	+
3072	482205120472	4K70 5% 0,1W	+	+	+	+
3073	482205120472	4K70 5% 0,1W	+	+	+	+
3074	482211711151	1R 5%	+	+	+	+
3075	482205120154	150K00 5% 0,1W	+	+	+	+
3076	482205120154	150K00 5% 0,1W	+	+	+	+
3077	482205120154	150K00 5% 0,1W	+	+	+	+
3078	482205130102	1K00 5% 0,062W	+	+	+	+
3079	482211711751	16K RC12H 1% 0805	+	+	+	+
3081	482205110102	1K00 2% 0,25W	+	+	+	+
3082	482205130102	1K00 5% 0,062W	+	+	+	+
3085	482211713568	6R8 5% 1206	+	+	+	+
3086	482211711503	220R 1% 0,1W	+	+	+	+
3087	482205130222	2K20 5% 0,062W	+	+	+	+
3088	482205130152	1K50 5% 0,062W	+	+	+	+
3090	482205130479	47R00 5% 0,062W	+	+	+	+
3091	482211712903	1K8 1% 0.063W 0603	+	+	+	+
3092	482205130103	10K00 5% 0,062W	+	+	+	+
3094	482205130221	220R00 5% 0,062W	+	+	+	+
3095	482211713568	6R8 5% 1206	+	+	+	+
3097	482205130479	47R00 5% 0,062W	+	+	+	+
3098	482205130103	10K00 5% 0,062W	+	+	+	+
3100	482205120472	4K70 5% 0,1W	+	+	+	+
3101	482211713572	22R 5% 1206	+	+	+	+
3102	482211711148	56K 1% 0,1W	+	+	+	+
3103	482211710833	10K 1% 0,1W	+	+	+	+

ITEM	CODENUMBER	DESCRIPTION	CDR775	CDR570	CDR770	CDR950
3104	482211710833	10K 1% 0,1W	+	+	+	+
3105	482205120182	1K80 5% 0,1W	+	+	+	+
3106	482205130008	0R00 JUMPER	+	+	+	+
3107	482205130008	0R00 JUMPER	+	+	+	+
3110	482205130103	10K00 5% 0,062W	+	+	+	+
3111	482211712902	8K2 1% 0.063W 0603	+	+	+	+
3112	482205130479	47R00 5% 0,062W	+	+	+	+
3113	482211711503	220R 1% 0.1W	+	+	+	+
3114	482211713577	330R 1% RC12H 0805 1,25W	+	+	+	+
3115	482211712521	68R 1% 0,1W	+	+	+	+
3116	482211711817	1K2 1% 1/16W	+	+	+	+
3117	482205130103	10K00 5% 0,062W	+	+	+	+
3118	482205130561	560R00 5% 0,062W	+	+	+	+
3119	482205130221	220R00 5% 0,062W	+	+	+	+
3120	532211711726	10R 5%	+	+	+	+
3123	482205130472	4K70 5% 0,062W	+	+	+	+
3126	482205130682	6K80 5% 0,062W	+	+	+	+
3127	482211712903	1K8 1% 0.063W 0603	+	+	+	+
3128	482205130479	47R00 5% 0,062W	+	+	+	+
3129	482205130102	1K00 5% 0,062W	+	+	+	+
3130	482205130103	10K00 5% 0,062W	+	+	+	+
3131	482205130103	10K00 5% 0,062W	+	+	+	+
3200	482205120479	47R00 5% 0,1W	+	+	+	+
3201	482205120479	47R00 5% 0,1W	+	+	+	+
3202	482205120479	47R00 5% 0,1W	+	+	+	+
3203	482205120479	47R00 5% 0,1W	+	+	+	+
3204	482205120479	47R00 5% 0,1W	+	+	+	+
3205	482205120479	47R00 5% 0,1W	+	+	+	+
3206	482205120479	47R00 5% 0,1W	+	+	+	+
3207	482205120479	47R00 5% 0,1W	+	+	+	+
3208	482211710833	10K 1% 0,1W	+	+	+	+
3209	482215771206	BLM21A601SPT	+	+	+	+
3210	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3211	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3212	482211711503	220R 1% 0.1W	+	+	+	+
3213	482205130008	0R00 JUMPER	+	+	+	+
3215	482205130153	15K00 5% 0,062W	+	+	+	+
3216	482205130153	15K00 5% 0,062W	+	+	+	+
3217	482211712925	47K 1% 0.063W 0603	+	+	+	+
3218	482205130103	10K00 5% 0,062W	+	+	+	+
3219	482205130223	22K00 5% 0,062W	+	+	+	+
3220	482205130103	10K00 5% 0,062W	+	+	+	+
3221	482205130223	22K00 5% 0,062W	+	+	+	+
3222	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3223	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3224	482211711374	120K 1% RC12H 0805	+	+	+	+
3225	482211712367	33K 1% 0.10W	+	+	+	+
3226	482211710833	10K 1% 0,1W	+	+	+	+
3227	482211712367	33K 1% 0.10W	+	+	+	+
3228	482211710833	10K 1% 0,1W	+	+	+	+
3229	482211711374	120K 1% RC12H 0805	+	+	+	+
3230	482211713632	100K 1% 0603 0.62W	+	+	+	+
3231	482211713632	100K 1% 0603 0.62W	+	+	+	+
3232	482211710833	10K 1% 0,1W	+	+	+	+
3233	482205120101	100R00 5% 0,1W	+	+	+	+
3234	482205110102	1K00 2% 0,25W	+	+	+	+
3235	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3237	482205130562	5K6 5% 0,063W 0603 RC21 RST SM	+	+	+	+
3238	482205130221	220R00 5% 0,062W	+	+	+	+
3239	482205130102	1K00 5% 0,062W	+	+	+	+
3240	482205130103	10K00 5% 0,062W	+	+	+	+

ITEM	CODENUMBER	DESCRIPTION	CDR775	CDR570	CDR770	CDR950
3241	482205130008	0R00 JUMPER	+	+	+	+
3242	235003510103	RST NETW SM ARV24 4X10K PM5 R	+	+	+	+
3243	235003510103	RST NETW SM ARV24 4X10K PM5 R	+	+	+	+
3244	482205130008	0R00 JUMPER	+	+	+	+
3245	482205130221	220R00 5% 0,062W	+	+	+	+
3246	482205130221	220R00 5% 0,062W	+	+	+	+
3248	482211713523	220R 5% RESN 0.63W	+	+	+	+
3249	482211711503	220R 1% 0.1W	+	+	+	+
3252	482211711145	4K70 1% 0,1W	+	+	+	+
3253	482211711145	4K70 1% 0,1W	+	+	+	+
3254	482205130008	0R00 JUMPER	+	+	+	+
3255	482211710833	10K 1% 0,1W	+	+	+	+
3256	482205130008	0R00 JUMPER	+	+	+	+
3260	482205130008	0R00 JUMPER	+	+	+	+
3261	482205130222	2K20 5% 0,062W	+	+	+	+
3265	482205130008	0R00 JUMPER	+	+	+	+
3271	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3273	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3274	482211710837	100K 1% 0.1W	+	+	+	+
3276	482205130479	47R00 5% 0,062W	+	+	+	+
3280	482205130479	47R00 5% 0,062W	+	+	+	+
3281	482211713579	220K 1% 0.1W RC12H 0805	+	+	+	+
3284	482211711151	1R 5%	+	+	+	+
3286	482205130223	22K00 5% 0,062W	+	+	+	+
3287	482205130103	10K00 5% 0,062W	+	+	+	+
3288	482205130563	56K00 5% 0,062W	+	+	+	+
3289	482205130563	56K00 5% 0,062W	+	+	+	+
3290	482205130683	68K00 5% 0,062W	+	+	+	+
3291	482205130563	56K00 5% 0,062W	+	+	+	+
3295	482205130332	3K30 5% 0,062W	+	+	+	+
3297	482205130332	3K30 5% 0,062W	+	+	+	+
3299	482205130332	3K30 5% 0,062W	+	+	+	+
3300	482205110102	1K00 2% 0,25W	+	+	+	+
3301	482205110102	1K00 2% 0,25W	+	+	+	+
3303	482211713572	22R 5% 1206	+	+	+	+
3305	482211710833	10K 1% 0,1W	+	+	+	+
3308	482205120008	0R00 JUMP. (0805)	+	+	+	+
3309	482211712367	33K 1% 0.10W	+	+	+	+
3312	482205130479	47R00 5% 0,062W	+	+	+	+
3313	482205130479	47R00 5% 0,062W	+	+	+	+
3314	482205120479	47R00 5% 0,1W	+	+	+	+
3315	482205130102	1K00 5% 0,062W	+	+	+	+
3316	482205120472	4K70 5% 0,1W	+	+	+	+
3317	482205120472	4K70 5% 0,1W	+	+	+	+
3319	482205120479	47R00 5% 0,1W	+	+	+	+
3322	482205130102	1K00 5% 0,062W	+	+	+	+
3323	482205130562	5K6 5% 0,063W 0603 RC21 RST SM	+	+	+	+
3324	482205130562	5K6 5% 0,063W 0603 RC21 RST SM	+	+	+	+
3325	482205130103	10K00 5% 0,062W	+	+	+	+
3333	482211713574	1R5 5% 1206	+	+	+	+
3334	482211713574	1R5 5% 1206	+	+	+	+
3335	482211713574	1R5 5% 1206	+	+	+	+
3337	482205130563	56K00 5% 0,062W	+	+	+	+
3338	532211712487	1K RC12G 1% 0,125W	+	+	+	+
3339	532211712487	1K RC12G 1% 0,125W	+	+	+	+
3340	482211713632	100K 1% 0603 0.62W	+	+	+	+
3341	232273468209	RST SM 0805 RC12H 82R PM1	+	+	+	+
3346	482211711507	6K8 1% 0,1W	+	+	+	+
3347	482211711507	6K8 1% 0,1W	+	+	+	+
3348	482211711507	6K8 1% 0,1W	+	+	+	+
3349	482211713632	100K 1% 0603 0.62W	+	+	+	+



ITEM	CODENUMBER	DESCRIPTION	CDR775	CDR570	CDR770	CDR950
3350	232273468209	RST SM 0805 RC12H 82R PM1	+	+	+	+
3351	482211711151	1R 5%	+	+	+	+
3352	482205130008	0R00 JUMPER	+	+	+	+
3360	482211710354	22K 1% 0,1W	+	+	+	+
3361	482211712139	22R 5% 0,062W	+	+	+	+
3362	482211712708	39K 1% 0,1W 0805 RC12G	+	+	+	+
3363	482211712968	820R 5% 0,62W	+	+	+	+
3365	482205130101	100R00 5% 0,062W	+	+	+	+
3368	482205130479	47R00 5% 0,062W	+	+	+	+
3370	482205130561	560R00 5% 0,062W	+	+	+	+
3371	482205130152	1K50 5% 0,062W	+	+	+	+
3372	482205120122	1K20 5% 0,1W	+	+	+	+
3373	482211712903	1K8 1% 0.063W 0603	+	+	+	+
3374	482211713572	22R 5% 1206	+	+	+	+
3375	482205130222	2K20 5% 0,062W	+	+	+	+
3376	482205130221	220R00 5% 0,062W	+	+	+	+
3377	482205130479	47R00 5% 0,062W	+	+	+	+
3378	482205130273	27K00 5% 0,062W	+	+	+	+
3379	482205130183	18K00 5% 0,062W	+	+	+	+
3381	482205120008	0R00 JUMP. (0805)	+	+	+	+
3382	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3402	482211711503	220R 1% 0.1W	+	+	+	-
3403	482211712024	27K 1% 0.1W	+	+	+	-
3404	482211710833	10K 1% 0,1W	+	+	+	-
3405	482211712024	27K 1% 0.1W	+	+	+	-
3407	482205120101	100R00 5% 0,1W	+	+	+	-
3408	482211710833	10K 1% 0,1W	+	+	+	-
3409	482211712367	33K 1% 0.10W	+	+	+	-
3410	482211710833	10K 1% 0,1W	+	+	+	-
3411	482211711152	4R7 5%	+	+	+	-
3412	482211712024	27K 1% 0.1W	+	+	+	-
3413	482211710833	10K 1% 0,1W	+	+	+	-
3414	482211712024	27K 1% 0.1W	+	+	+	-
3415	482211710833	10K 1% 0,1W	+	+	+	-
3416	482211712367	33K 1% 0.10W	+	+	+	-
3418	482205120008	0R00 JUMP. (0805)	+	+	+	-
3420	482211710833	10K 1% 0,1W	+	+	+	-
3421	482211711383	12K 1% 0,1W	+	+	+	-
3422	482211710834	47K 1% 0,1W	+	+	+	-
3423	482211713629	120R 1% 0.1W RC12H 0805	+	-	+	-
3424	482205120225	2M20 5% 0,1W	+	-	+	-
3427	482211713629	120R 1% 0.1W RC12H 0805	+	-	+	-
3428	482205120225	2M20 5% 0,1W	+	-	+	-
3429	482211710834	47K 1% 0,1W	+	+	+	-
3432	482211710833	10K 1% 0,1W	+	+	+	-
3433	482205120008	0R00 JUMP. (0805)	+	+	+	-
3435	482211710833	10K 1% 0,1W	+	+	+	-
3436	482211711383	12K 1% 0,1W	+	+	+	-
3439	482211711152	4R7 5%	+	+	+	-
3441	482205120101	100R00 5% 0,1W	+	+	+	-
3447	482205120008	0R00 JUMP. (0805)	-	+	+	-
3448	482205120008	0R00 JUMP. (0805)	-	+	+	-
3449	482205120008	0R00 JUMP. (0805)	-	+	+	-
3450	319802153311	330R 5%	+	-	-	-
3451	482211711383	12K 1% 0,1W	+	+	+	-
3452	482211711383	12K 1% 0,1W	+	+	+	-
3453	482211713579	220K 1% 0.1W RC12H 0805	+	+	+	-
3454	482211713579	220K 1% 0.1W RC12H 0805	+	+	+	-
3455	319802190030	RST JUMPER 0603 0.05 OHM	+	+	+	-
3460	319802190030	RST JUMPER 0603 0.05 OHM	+	+	+	-
3531	482205120562	5K6 5% 0,1W 0805	+	+	+	+

ITEM	CODENUMBER	DESCRIPTION	CDR775	CDR570	CDR770	CDR950
3532	482205120562	5K6 5% 0,1W 0805	+	+	+	+
3533	482211710837	100K 1% 0.1W	+	+	+	+
3536	482211710837	100K 1% 0.1W	+	+	+	+
3537	482211710833	10K 1% 0,1W	+	+	+	+
3538	482211710833	10K 1% 0,1W	+	+	+	+
3539	482211710837	100K 1% 0.1W	+	+	+	+
3540	482211710833	10K 1% 0,1W	+	+	+	+
3541	482211711747	12R 1206 5% FUSE	+	+	+	+
3542	482211711747	12R 1206 5% FUSE	+	+	+	+
3544	482211710834	47K 1% 0,1W	+	+	+	+
3545	482211713568	6R8 5% 1206	+	+	+	+
3546	482205120101	100R00 5% 0,1W	+	+	+	+
3547	482211683933	15K 1% 0,1W	+	+	+	+
3548	482211710834	47K 1% 0,1W	+	+	+	+
3549	482205120101	100R00 5% 0,1W	+	+	+	+
3550	482205120101	100R00 5% 0,1W	+	+	+	+
3551	482205120332	3K30 5% 0,1W	+	+	+	+
3552	482211710834	47K 1% 0,1W	+	+	+	+
3553	482205120101	100R00 5% 0,1W	+	+	+	+
3554	482211710833	10K 1% 0,1W	+	+	+	+
3555	482205120122	1K20 5% 0,1W	+	+	+	+
3556	482211710833	10K 1% 0,1W	+	+	+	+
3557	482211710837	100K 1% 0.1W	+	+	+	+
3559	482205120562	5K6 5% 0,1W 0805	+	+	+	+
3560	482211710837	100K 1% 0.1W	+	+	+	+
3562	482205120562	5K6 5% 0,1W 0805	+	+	+	+
3563	482205130563	56K00 5% 0,062W	+	+	+	+
3566	482211710837	100K 1% 0.1W	+	+	+	+
3567	482205120223	22K00 5% 0,1W	+	+	+	+
3570	482205120101	100R00 5% 0,1W	+	+	+	+
3701	482205120101	100R00 5% 0,1W	+	+	+	+
3702	482205130472	4K70 5% 0,062W	+	+	+	+
3703	482205130472	4K70 5% 0,062W	+	+	+	+
3704	482205120008	0R00 JUMP. (0805)	+	+	+	+
3705	482205130223	22K00 5% 0,062W	+	+	+	+
3706	482205120479	47R00 5% 0,1W	+	+	+	+
3708	482205120479	47R00 5% 0,1W	+	+	+	+
3710	482205130101	100R00 5% 0,062W	+	+	+	+
3711	482211710833	10K 1% 0,1W	+	+	+	+
3712	482211710833	10K 1% 0,1W	+	+	+	+
3713	482205120479	47R00 5% 0,1W	+	+	+	+
3714	482205120479	47R00 5% 0,1W	+	+	+	+
3715	482205120479	47R00 5% 0,1W	+	+	+	+
3716	482211710833	10K 1% 0,1W	+	+	+	+
3717	482211710833	10K 1% 0,1W	-	+	+	+
3718	482211710833	10K 1% 0,1W	+	+	+	-
3719	482205130103	10K00 5% 0,062W	+	+	-	+
3720	482205130101	100R00 5% 0,062W	+	+	+	+
3721	482205130101	100R00 5% 0,062W	+	+	+	+
3722	482211710833	10K 1% 0,1W	+	-	-	-
3723	482211710833	10K 1% 0,1W	-	-	-	+
3724	482205130103	10K00 5% 0,062W	+	-	+	-
3725	482205130101	100R00 5% 0,062W	+	+	+	+
3726	482205130103	10K00 5% 0,062W	+	+	+	+
3727	482205120105	1M00 5% 0,1W	+	+	+	+
3728	482205130101	100R00 5% 0,062W	+	+	+	+
3729	482205130101	100R00 5% 0,062W	+	+	+	+
3731	482205130391	390R00 5% 0,062W	+	+	+	+
3732	482205130479	47R00 5% 0,062W	+	+	+	+
3735	482205120479	47R00 5% 0,1W	+	+	+	+
3742	482205130102	1K00 5% 0,062W	+	+	+	+

ITEM	CODENUMBER	DESCRIPTION	CDR775	CDR570	CDR770	CDR950
3743	482205130479	47R00 5% 0,062W	+	+	+	+
3744	482205120274	270K00 5% 0,1W	+	+	+	+
3745	482205120274	270K00 5% 0,1W	+	+	+	+
3746	482205130153	15K00 5% 0,062W	+	+	+	+
3747	482205130103	10K00 5% 0,062W	+	+	+	+
3748	482205130103	10K00 5% 0,062W	+	+	+	+
3749	482205130103	10K00 5% 0,062W	+	+	+	+
3750	482205130123	12K00 5% 0,062W	+	+	+	+
3751	482205120472	4K70 5% 0,1W	+	-	-	-
3752	482211710353	150R 1% 0,1W	+	+	+	+
3753	482205120472	4K70 5% 0,1W	+	-	-	-
3754	482205110102	1K00 2% 0,25W	+	+	+	+
3755	482211710353	150R 1% 0,1W	+	+	+	+
3756	482205130101	100R00 5% 0,062W	+	+	+	+
3757	482205120479	47R00 5% 0,1W	+	-	-	-
3758	482205120101	100R00 5% 0,1W	+	+	+	+
3759	482205110102	1K00 2% 0,25W	+	+	+	+
3760	482205120472	4K70 5% 0,1W	+	+	+	+
3761	482205130472	4K70 5% 0,062W	+	+	+	+
3762	482205130472	4K70 5% 0,062W	+	+	+	+
3763	482205130102	1K00 5% 0,062W	+	+	+	+
3764	482205120472	4K70 5% 0,1W	+	+	+	+
3766	482205130472	4K70 5% 0,062W	+	+	+	+
3767	482205130472	4K70 5% 0,062W	+	+	+	+
3768	482205120472	4K70 5% 0,1W	+	+	+	+
3769	482205130472	4K70 5% 0,062W	+	+	+	+
3770	482205120472	4K70 5% 0,1W	+	+	+	+
3771	482205130101	100R00 5% 0,062W	+	+	+	+
3780	482211710837	100K 1% 0,1W	+	+	+	+
3806	482205130103	10K00 5% 0,062W	+	+	+	+
3807	482205120008	0R00 JUMP. (0805)	+	+	+	+
3808	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3809	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3810	482205130472	4K70 5% 0,062W	+	+	+	+
3811	482205130103	10K00 5% 0,062W	+	+	+	+
3813	482205130101	100R00 5% 0,062W	+	+	+	+
3814	482205130479	47R00 5% 0,062W	+	+	+	+
3817	482205110102	1K00 2% 0,25W	+	+	+	+
3818	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3819	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3820	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3821	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3822	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3823	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3824	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3825	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3826	482205120101	100R00 5% 0,1W	+	+	+	+
3828	482205130479	47R00 5% 0,062W	+	-	-	-
3829	482205130479	47R00 5% 0,062W	+	-	-	-
3830	482205130479	47R00 5% 0,062W	+	-	-	-
3831	482205130479	47R00 5% 0,062W	+	-	-	-
3832	482205130479	47R00 5% 0,062W	+	-	-	-
3833	482205130479	47R00 5% 0,062W	+	-	-	-
3834	482205130479	47R00 5% 0,062W	+	-	-	-
3835	482205130479	47R00 5% 0,062W	+	-	-	-
3836	482205130479	47R00 5% 0,062W	+	-	-	-
3837	482211710833	10K 1% 0,1W	+	+	+	+
3838	482211710833	10K 1% 0,1W	+	+	+	+
3841	482205120101	100R00 5% 0,1W	+	+	+	+
3843	482211710833	10K 1% 0,1W	+	+	+	+
3844	482211710833	10K 1% 0,1W	+	+	+	+

ITEM	CODENUMBER	DESCRIPTION	CDR775	CDR570	CDR770	CDR950
3845	482211710833	10K 1% 0,1W	+	+	+	+
3886	482205120008	0R00 JUMP. (0805)	-	+	+	-
3889	482211711151	1R 5%	+	+	+	+
3891	482211710833	10K 1% 0,1W	+	+	+	-
3892	482211710833	10K 1% 0,1W	+	+	+	-
3894	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3897	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3898	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3900	319802190030	RST JUMPER 0603 0.05 OHM	-	-	-	+
3902	319802190030	RST JUMPER 0603 0.05 OHM	-	-	-	+
3903	482205130008	0R00 JUMPER	+	+	+	+
3904	482205110102	1K00 2% 0,25W	-	+	-	+
3906	482205120472	4K70 5% 0,1W	+	+	+	+
3907	482205130472	4K70 5% 0,062W	+	+	+	+
3908	482205130102	1K00 5% 0,062W	+	+	+	+
3909	482205130472	4K70 5% 0,062W	+	+	+	+
3910	482205120472	4K70 5% 0,1W	+	+	+	+
3911	482205120472	4K70 5% 0,1W	+	+	+	+
5008	482215771206	BLM21A601SPT	+	+	+	+
5201	482215771206	BLM21A601SPT	+	+	+	+
5202	482215771206	BLM21A601SPT	+	+	+	+
5203	482215771206	BLM21A601SPT	+	+	+	+
5301	482215771206	BLM21A601SPT	+	+	+	+
5302	482215771206	BLM21A601SPT	+	+	+	+
5303	482215771206	BLM21A601SPT	+	+	+	+
5401	482215771206	BLM21A601SPT	+	+	+	-
5403	482215771206	BLM21A601SPT	+	+	+	-
5404	482215771206	BLM21A601SPT	+	+	+	-
5406	482215771206	BLM21A601SPT	+	+	+	-
5407	482215771206	BLM21A601SPT	+	+	+	-
5413	482215771206	BLM21A601SPT	+	+	+	-
5414	482215771206	BLM21A601SPT	+	+	+	-
5500	482215711716	BLM21P300SPT	+	+	+	+
5501	242254942103	IND FXD SM EMI 100MHZ 2K2 R	+	+	+	+
5502	242254942103	IND FXD SM EMI 100MHZ 2K2 R	+	+	+	+
5503	242254942103	IND FXD SM EMI 100MHZ 2K2 R	+	+	+	+
5541	242254942103	IND FXD SM EMI 100MHZ 2K2 R	+	+	+	+
5542	242254942103	IND FXD SM EMI 100MHZ 2K2 R	+	+	+	+
5543	482215711716	BLM21P300SPT	+	+	+	+
5544	482215711716	BLM21P300SPT	+	+	+	+
5546	482215771206	BLM21A601SPT	+	+	+	+
5551	482215771206	BLM21A601SPT	+	+	+	+
5554	482215710548	47UH 5%	+	+	+	+
5555	482215771206	BLM21A601SPT	+	+	+	+
5556	482215771206	BLM21A601SPT	+	+	+	+
5557	482215771206	BLM21A601SPT	+	+	+	+
5701	482215771206	BLM21A601SPT	+	+	+	+
5709	242254942103	IND FXD SM EMI 100MHZ 2K2 R	+	+	+	+
5710	482215710477	COIL 47UH	+	+	+	+
5712	482215771206	BLM21A601SPT	+	+	+	+
5713	482215771206	BLM21A601SPT	+	+	+	+
5715	482215771206	BLM21A601SPT	+	+	+	+
5716	482215771206	BLM21A601SPT	+	+	+	+
6002	532213030691	BAW56	+	+	+	+
6003	482213083757	BAS216	+	+	+	+
6007	532213034337	BAV99	+	+	+	+
6373	482213083757	BAS216	+	+	+	+
6374	482213083757	BAS216	+	+	+	+
6375	482213083757	BAS216	+	+	+	+
6400	482213010648	BZX284-C5V6	+	-	-	-
6500	532213083777	BAV70W	+	+	+	+

ITEM	CODENUMBER	DESCRIPTION	CDR775	CDR570	CDR770	CDR950
6501	532213034337	BAV99	+	+	+	+
6502	482213034441	BZX79-B22	+	+	+	+
6553	482213083757	BAS216	+	+	+	+
6554	532213034337	BAV99	+	+	+	+
6555	482213083757	BAS216	+	+	+	+
6556	482213083757	BAS216	+	+	+	+
6557	482213083757	BAS216	+	+	+	+
6701	934042250135	DIO VAR SM BB147 (PHSE) R	+	+	+	+
6702	934042250135	DIO VAR SM BB147 (PHSE) R	+	+	+	+
7001	482220963709	LM324DTR	+	+	+	+
7002	482220963709	LM324DTR	+	+	+	+
7005	482220990331	TL084CDT	+	+	+	+
7008	482220917223	EFM TIM3	+	+	+	+
7010	935261972518	IC SM TZA1020HP/M1 (PHSE) R	+	+	+	+
7016	482220917225	M62364FP	+	+	+	+
7050	482220990331	TL084CDT	+	+	+	+
7104	482213060373	BC856B	+	+	+	+
7110	482213060511	BC847B	+	+	+	+
7111	482213060511	BC847B	+	+	+	+
7112	482213042804	BC817-25	+	+	+	+
7113	482213060511	BC847B	+	+	+	+
7119	482213060383	BF824	+	+	+	+
7120	482213060383	BF824	+	+	+	+
7121	532213060123	BC807-40	+	+	+	+
7122	532213060123	BC807-40	+	+	+	+
7124	482213060511	BC847B	+	+	+	+
7126	933714420653	IC SM 74HC4066D	+	+	+	+
7127	482213060373	BC856B	+	+	+	+
7133	482213060511	BC847B	+	+	+	+
7135	532213060123	BC807-40	+	+	+	+
7201	482213060511	BC847B	+	+	+	+
7202	482213060511	BC847B	+	+	+	+
7207	932213040668	IC SM M24C16-WMN (ST00) R	+	+	+	+
7208	310412394850	FLASH EPROM ASSY CDR-AUDIO	+	+	+	+
7209	482220917227	MC74LCX573	+	+	+	+
7215	482220932073	MC34072D	+	+	+	+
7225	532220971553	NE532D	+	+	+	+
7240	482220917229	BA5938FM	+	+	+	+
7270	482220917231	SAA7399HL	+	+	+	+
7300	935263368557	IC SM SAA7392HLM3 (PHSE) Y	+	+	+	+
7330	482220916877	BA6856FP	+	+	+	+
7355	933713370653	IC SM 74HCT00D (PHSE) R	+	+	+	+
7360	933715300118	IC SM 74HCT4051D (PHSE) R	+	+	+	+
7361	482213060511	BC847B	+	+	+	+
7370	482213060511	BC847B	+	+	+	+
7371	482213011527	BFS540	+	+	+	+
7373	482213011527	BFS540	+	+	+	+
7375	482213011527	BFS540	+	+	+	+
7401	482220960792	74HC4053D	+	-	-	-
7405	482220930095	LM833D	+	+	+	-
7406	935254530118	IC SM UDA1341TS/N1 (PHSE) R	+	+	+	-
7407	482220960792	74HC4053D	+	-	-	-
7408	482220982362	NJM4556D	+	-	+	-
7409	482220930095	LM833D	+	+	+	-
7410	482213042804	BC817-25	+	-	+	-
7411	482213042804	BC817-25	+	-	+	-
7520	820405604480	FET POW STD16NE06L	+	+	+	+
7521	482220932073	MC34072D	+	+	+	+
7522	482213060373	BC856B	+	+	+	+
7523	482213060511	BC847B	+	+	+	+
7524	482213060511	BC847B	+	+	+	+

ITEM	CODENUMBER	DESCRIPTION	CDR775	CDR570	CDR770	CDR950
7525	482213060373	BC856B	+	+	+	+
7526	482213060511	BC847B	+	+	+	+
7527	482213011379	BCP69	+	+	+	+
7528	482213060511	BC847B	+	+	+	+
7529	482213060373	BC856B	+	+	+	+
7535	482220917398	LD1117DT33	+	+	+	+
7548	482213060511	BC847B	+	+	+	+
7549	482213060511	BC847B	+	+	+	+
7556	482220990332	MC79L05ABD	+	+	+	+
7558	482220915083	AN78M09	+	+	+	+
7560	482213060373	BC856B	+	+	+	+
7561	482213060373	BC856B	+	+	+	+
7562	482213060511	BC847B	+	+	+	+
7563	482213060511	BC847B	+	+	+	+
7701	820405603460	USER PROCESSOR DASP CF5244PU	+	+	+	+
7702	482220917375	GM71V18163CJ-6	+	+	+	+
7703	932213814668	IC SM AM29LV800BB-70REC (AMD)R	+	+	+	+
7704	482220916318	MC33464-30A	+	+	+	+
7705	482220932073	MC34072D	+	+	+	+
7706	482220917236	74LV74D	+	+	+	+
7707	482213060511	BC847B	+	-	-	-
7708	932214178668	IC SM 74LCX00M (ST00) R	+	+	+	+
7710	932213967685	IC SM MC33464N-45A (MOTA) R	+	+	+	+
7801	820405603520	LEVEL DIG POTMETER DS1807S-T/R	+	+	+	-
7802	820405603910	IC SM CY7C199-15ZC	+	+	+	+
7803	482213060511	BC847B	+	+	+	+
7804	482213060511	BC847B	+	+	+	+
PCINT-DASP	710408691110	PC-INTERFACE BOARD DASP	+	+	+	+
PCINT-MACE	710408683110	PC-INTERFACE BOARD MACE	+	+	+	+