

1 Maintenance inside the Scorpion

The following sections describe how to open up the console for maintenance purposes.

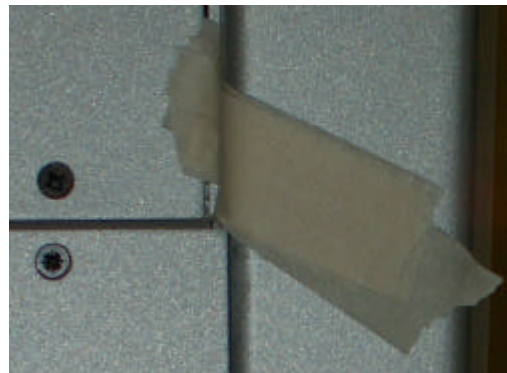
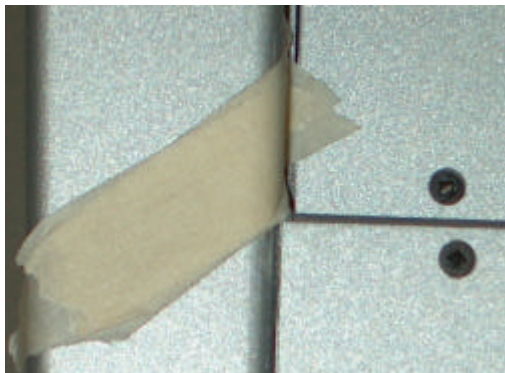
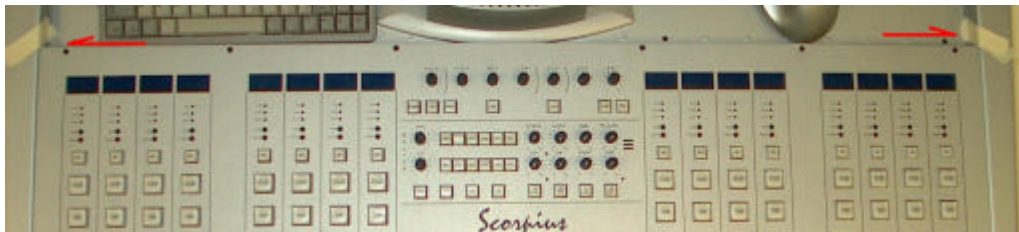
Warning: Only let qualified personnel work inside the console.

1.1 Removing the faderpanel from the scorpion.

By removing the faderpanel from the scorpion it's possible to do maintenance inside the console. In this section we will show you with help from some pictures how to safely open up the scorpion to work on the inside of the console.

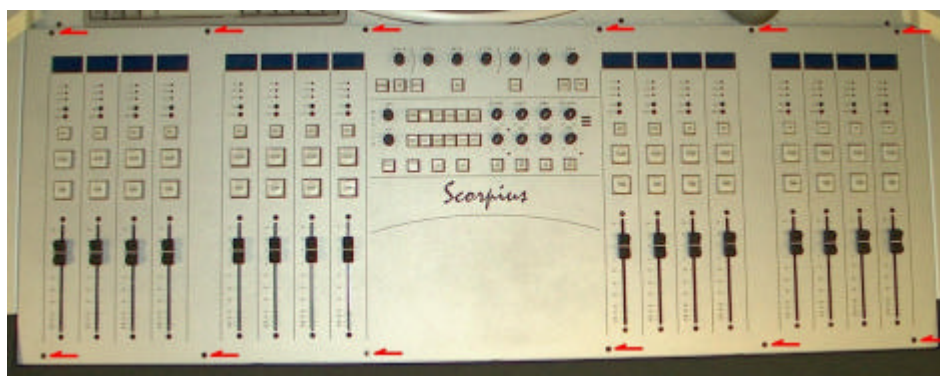
Step one:

To prevent damage to the chassis there are two marked points that you have to protect with some tape.



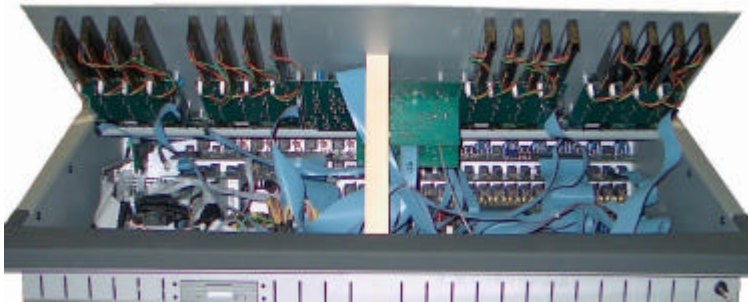
Step two:

Remove the 12 marked screws from the faderpanel.



Step three:

Carefully lift the faderpanel from the front like the hood of a car. Use a $\pm 30\text{cm}$ long bar to support the faderpanel. Preferably made from soft material like wood or plastic to prevent damage to the faderpanel.

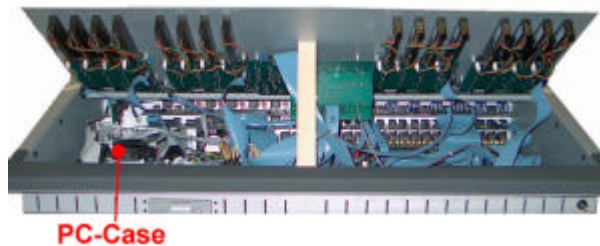


In this state you can still work with the console. This is necessary when you are for example upgrading software from a CDROM.

In this section we will identify the equipment located inside the console.

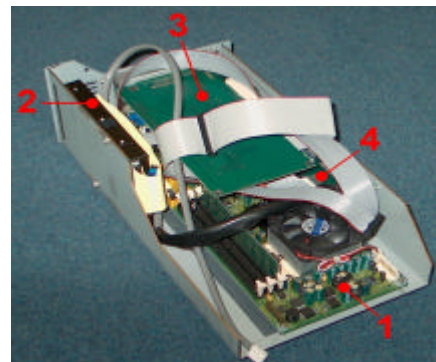
1.2 PC-Case

The PC-case is located on the left side of the console.



Inside the PC-case you can find the following parts.

- 1) Single Board Computer – Complete PC solution on one PCB
- 2) Harddrive – Necessary for the storage of the software
- 3) PCI-board – Equipped with the DSP from Texas Instruments for the processing of the audiosignals
- 4) Backpanel – Extension for the Singleboard Computer. Equipped with two PCI-slots.



1.2.1 Removing the PC-Case

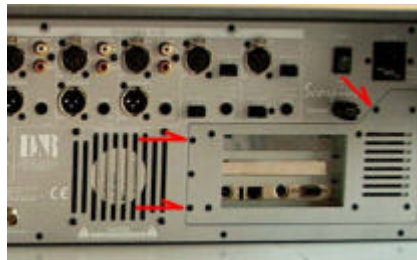
For maintenance purposes like the exchanging the harddrive it's necessary to remove the PC case from the console. In this chapter is described how to remove the PC case from the Scorpius console.

Step one:

Remove the faderpanel from the console. See section 1.

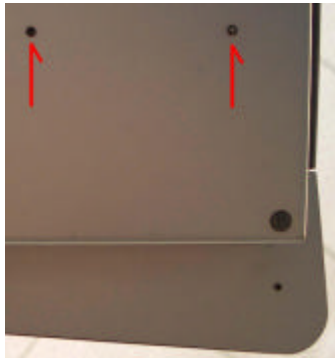
Step two:

Remove the following screws from the rear of the console.



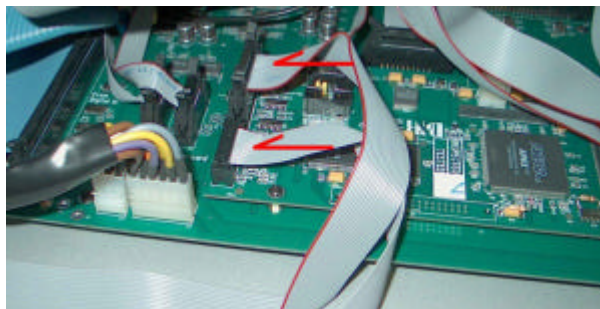
Step three:

Remove the following screws from the bottomside of the console.



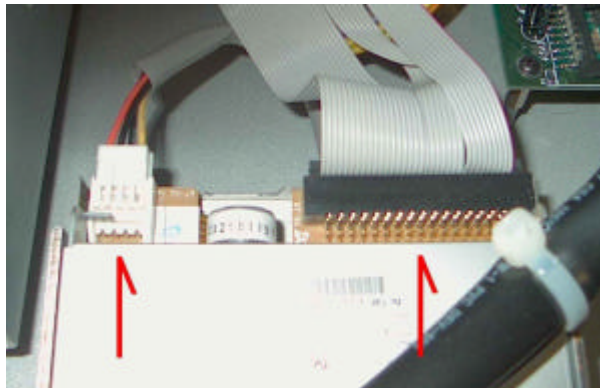
Step four:

Remove the flatcables from the PLD Module.



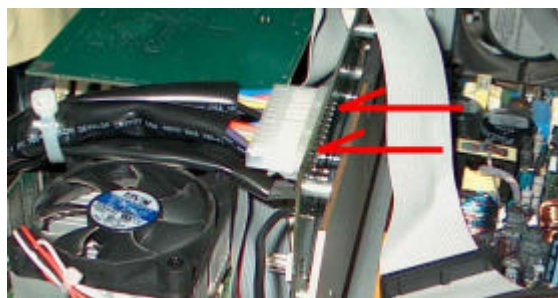
Step five:

Remove the floppy-drive cable and the floppy powersupply cable.



Step six:

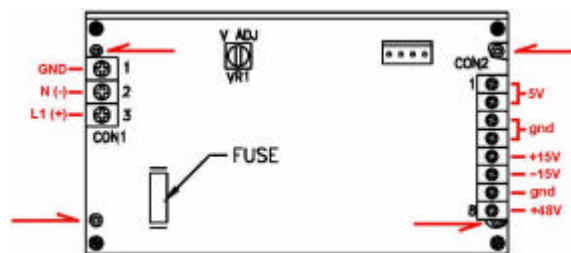
Disconnect the powercords to the PCI backpanel.



All the cables are now disconnected from the PC-case. You can now carefully remove the PC-case from the console.

1.3 Powersupply

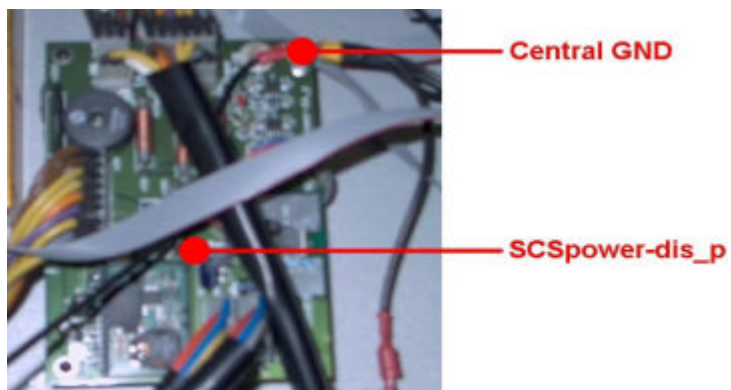
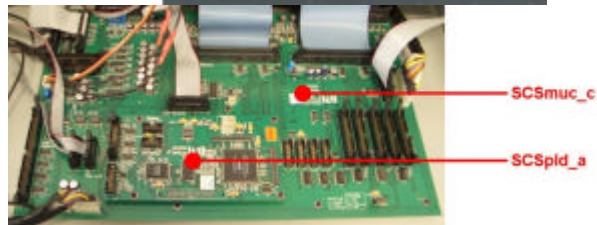
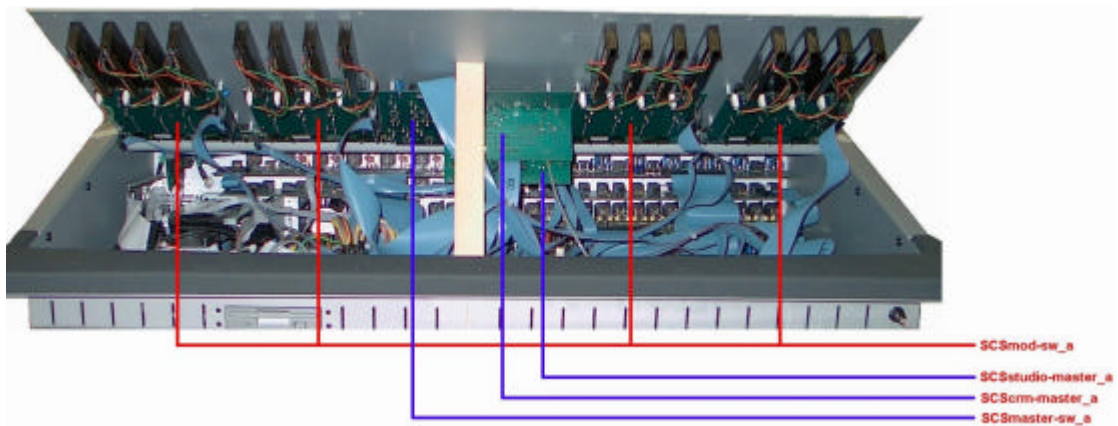
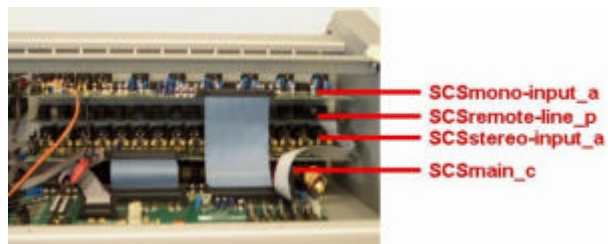
The powersupply used is the PPS150 or the PPS180 from PUT Powertech (<http://www.putpowertech.com/>). The wiring of the powersupply is showed in the next picture.

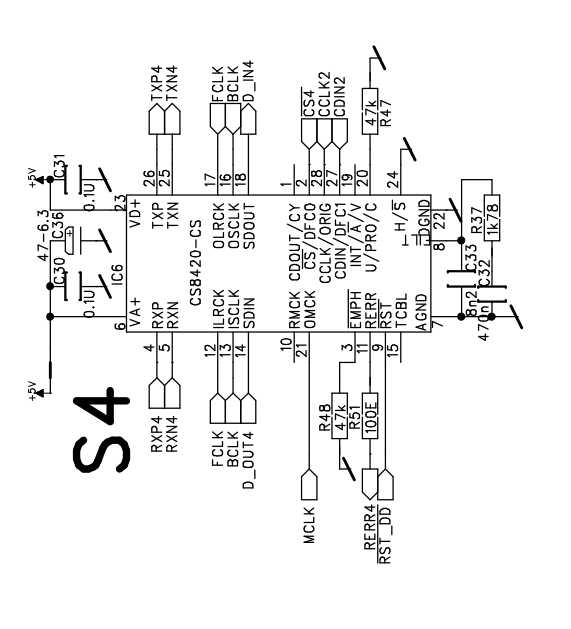
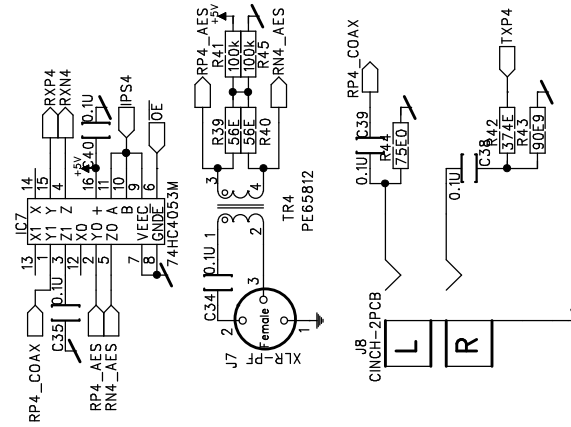
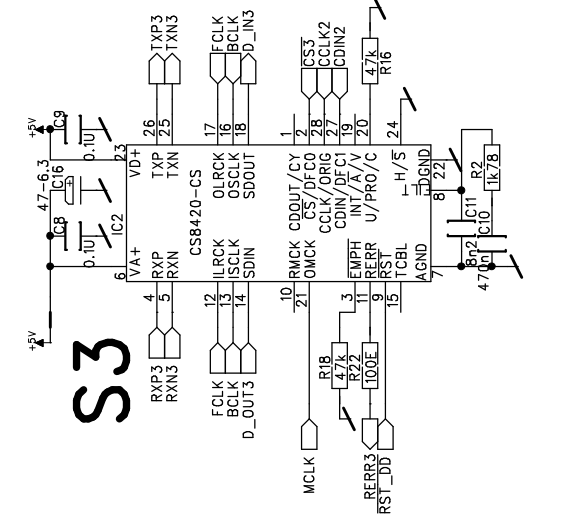
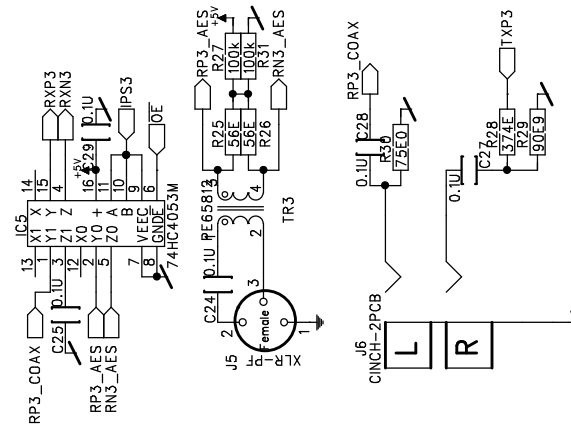
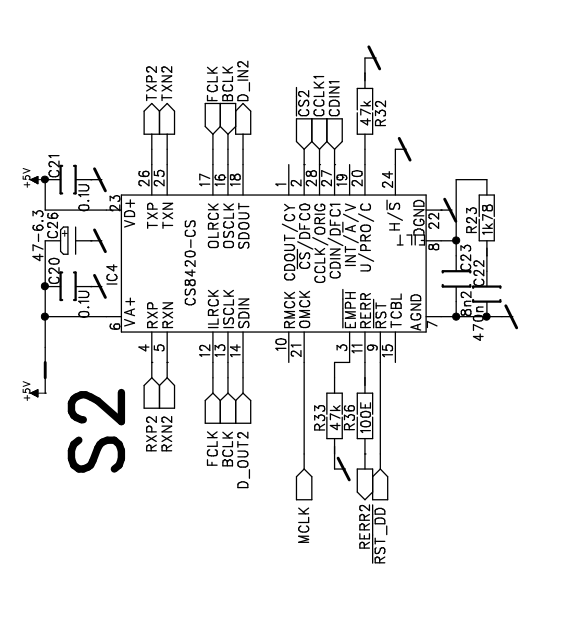
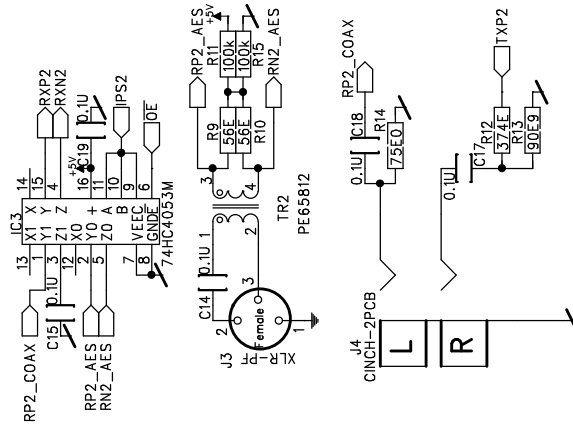
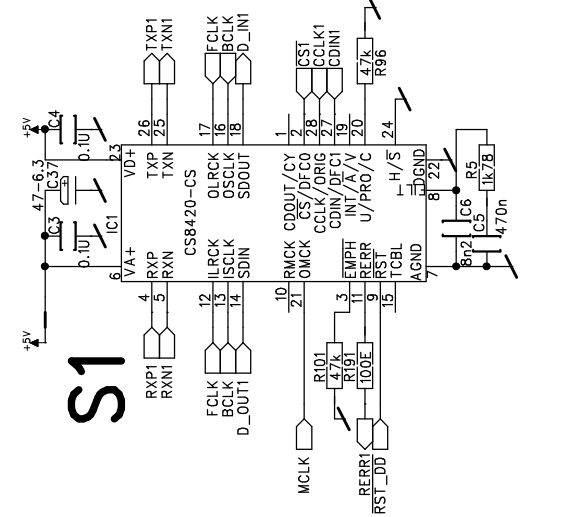
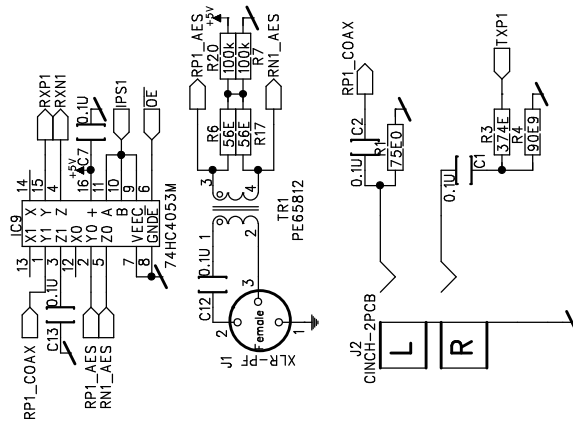


On the place of the arrows are the mountingholes of the powersupply. On the bottomsides of the console you can see the four screws which hold the powersupply on it's place.

1.4 PCB placement inside the console

In the next pictures you can see all the different kind of PCB's with there names



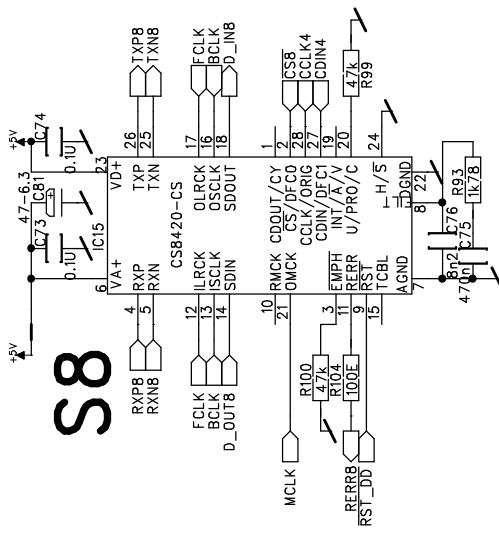
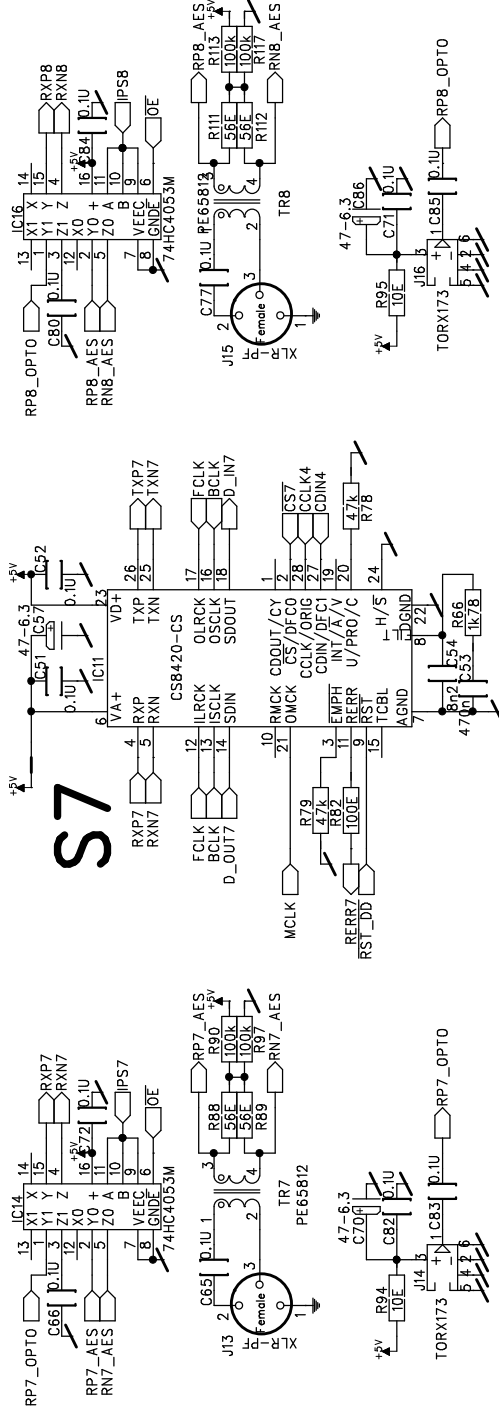
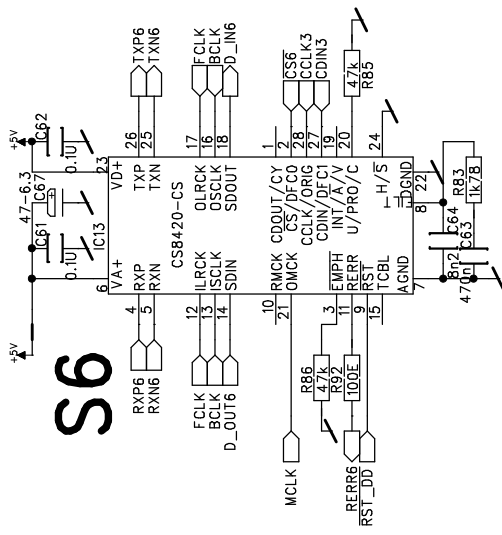
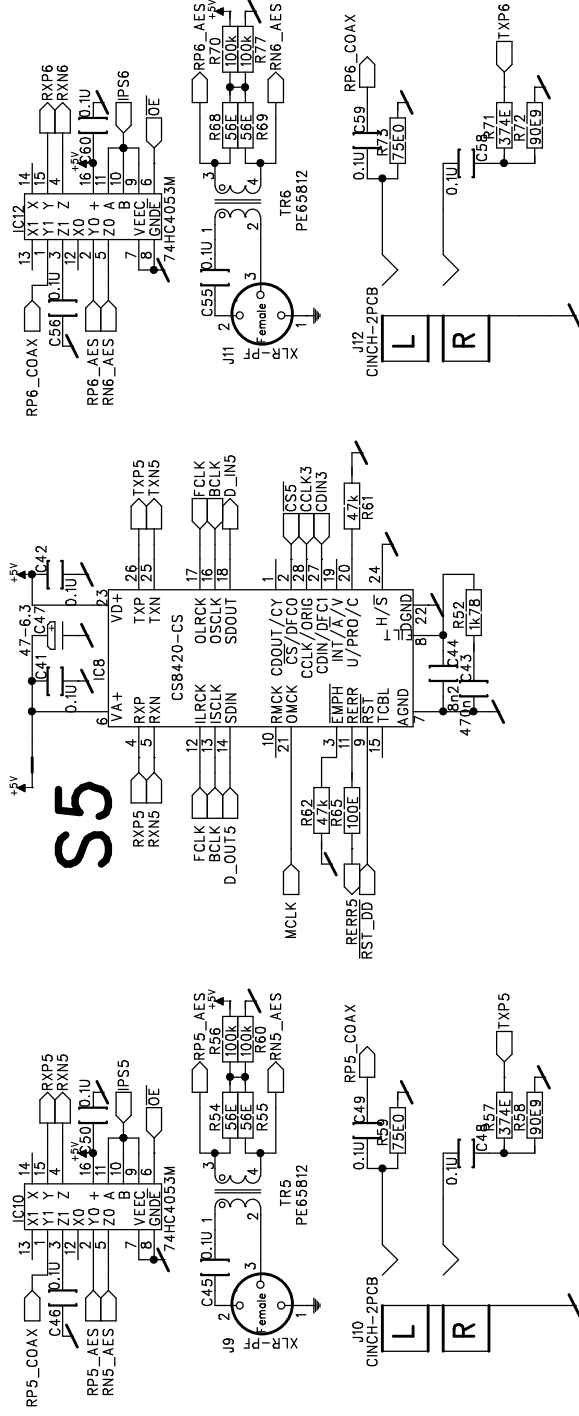


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Project:	Scorpius
Title:	Dig. In/Out 1..4
File:	SCSdig-input_a.sch
code:	2085 1487
Date:	18-05-2001
Sheet:	1 of 3

rev:
A

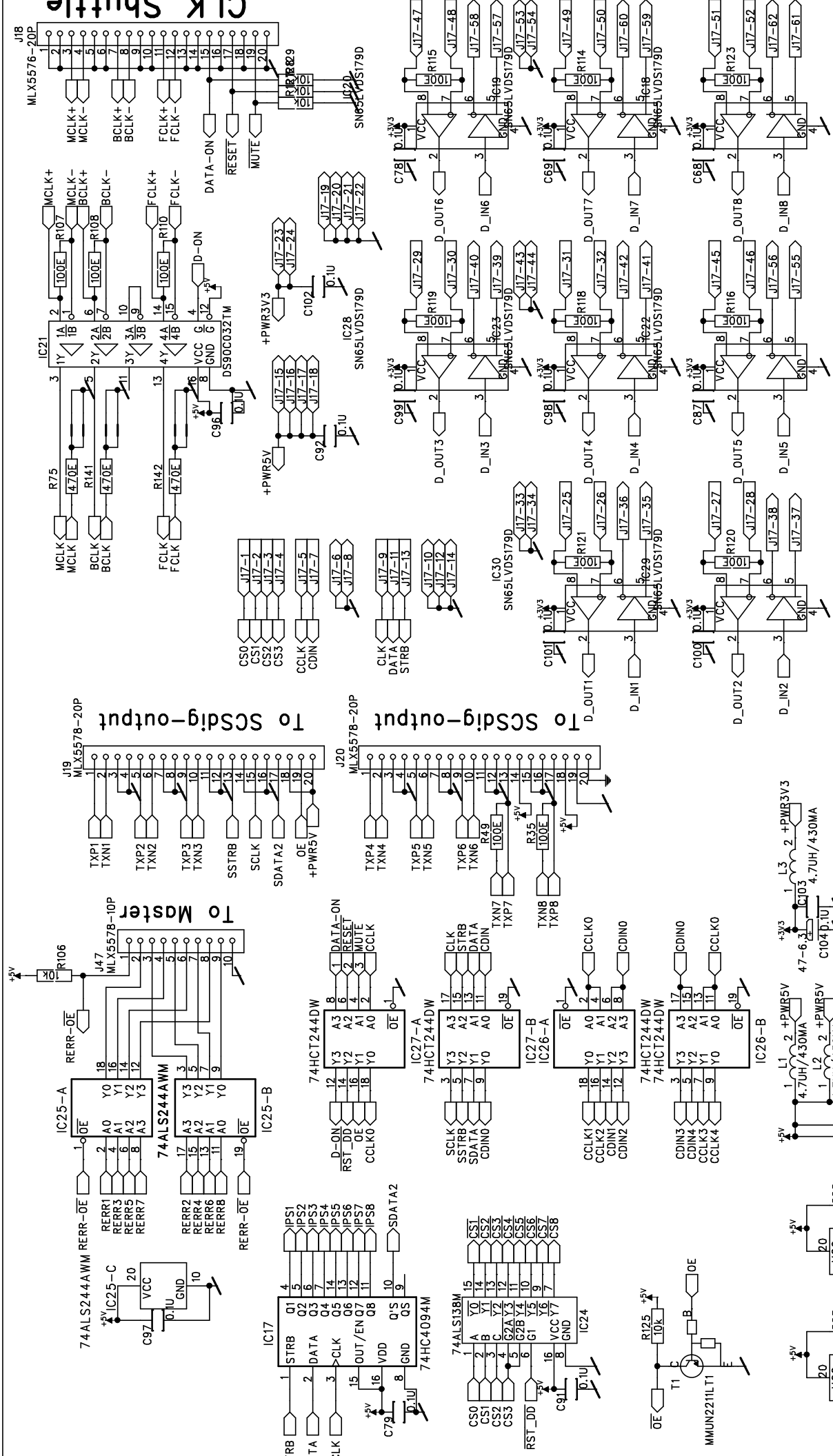


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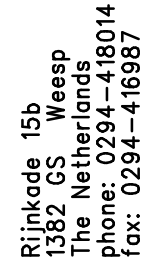
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Design: Jan Betten
Modify: _____

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Date:	18-05-2001
Sheet:	2 of 3

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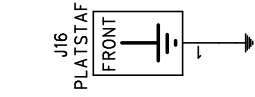
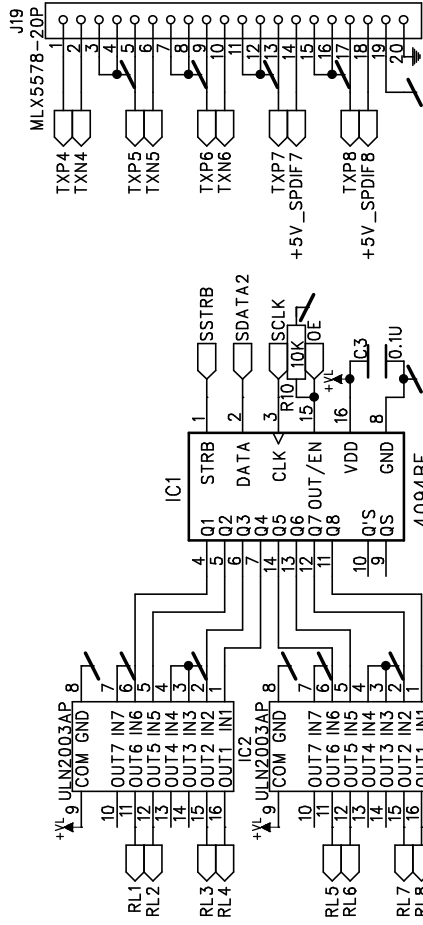
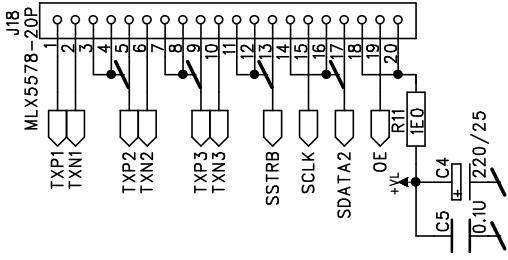
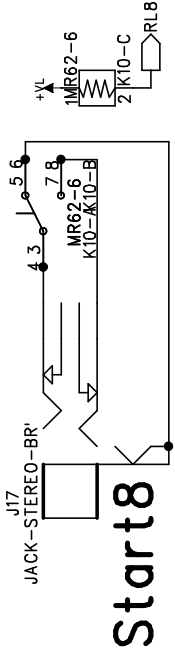
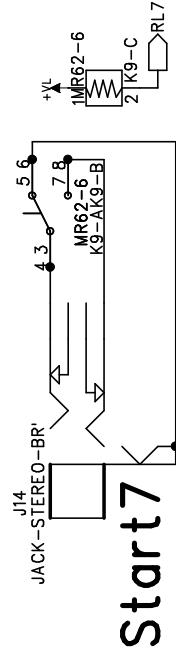
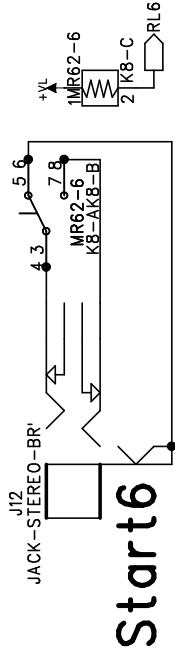
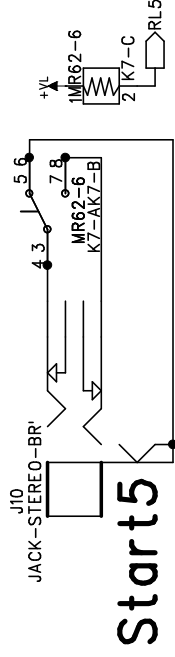
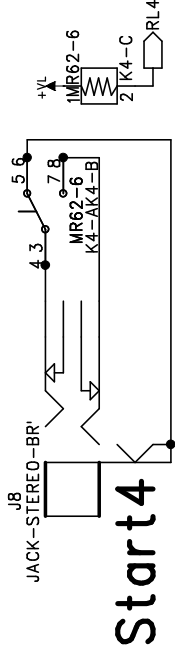
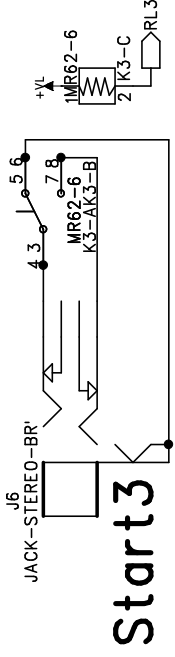
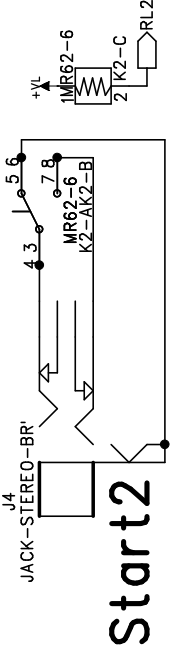
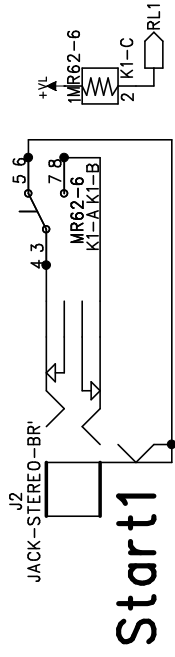
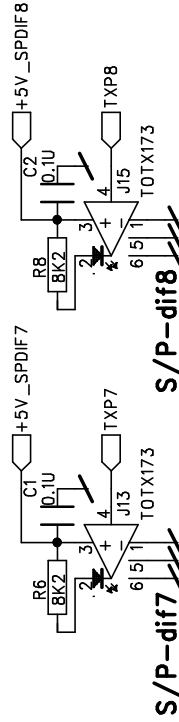
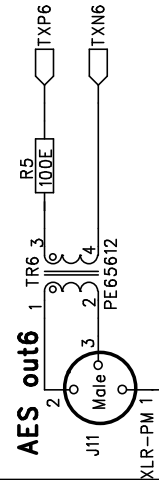
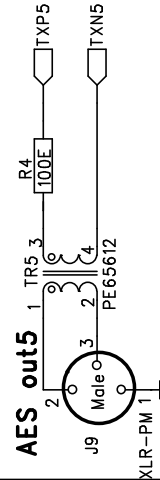
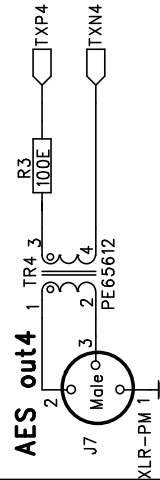
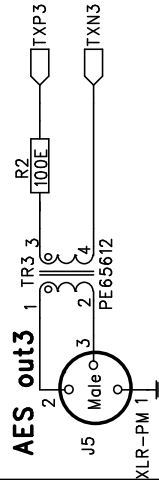
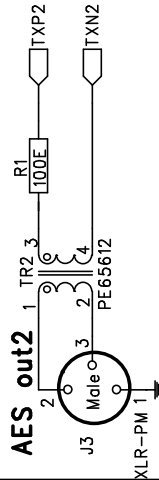
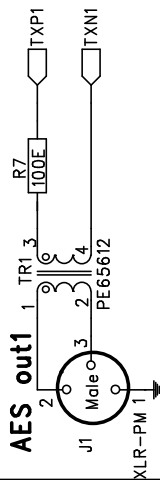
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Title: Dig. In/Out PWR
File: SCSdig-input_a.sch
code: 2085 1487
Date: 18-05-2001
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Power	+/-18V ANA	+5V_ANA	+3V3
CS8420	8 * 70mA = 560mA	8 * 10mA = 80mA	
LVDS179d			
SCSdig_output		170mA	
Total	+/-18V total = 000mA 5ANA Total = 000mA	15dig Total = 730mA	3V3 Total = 80mA

Rev: A
Rev: _____



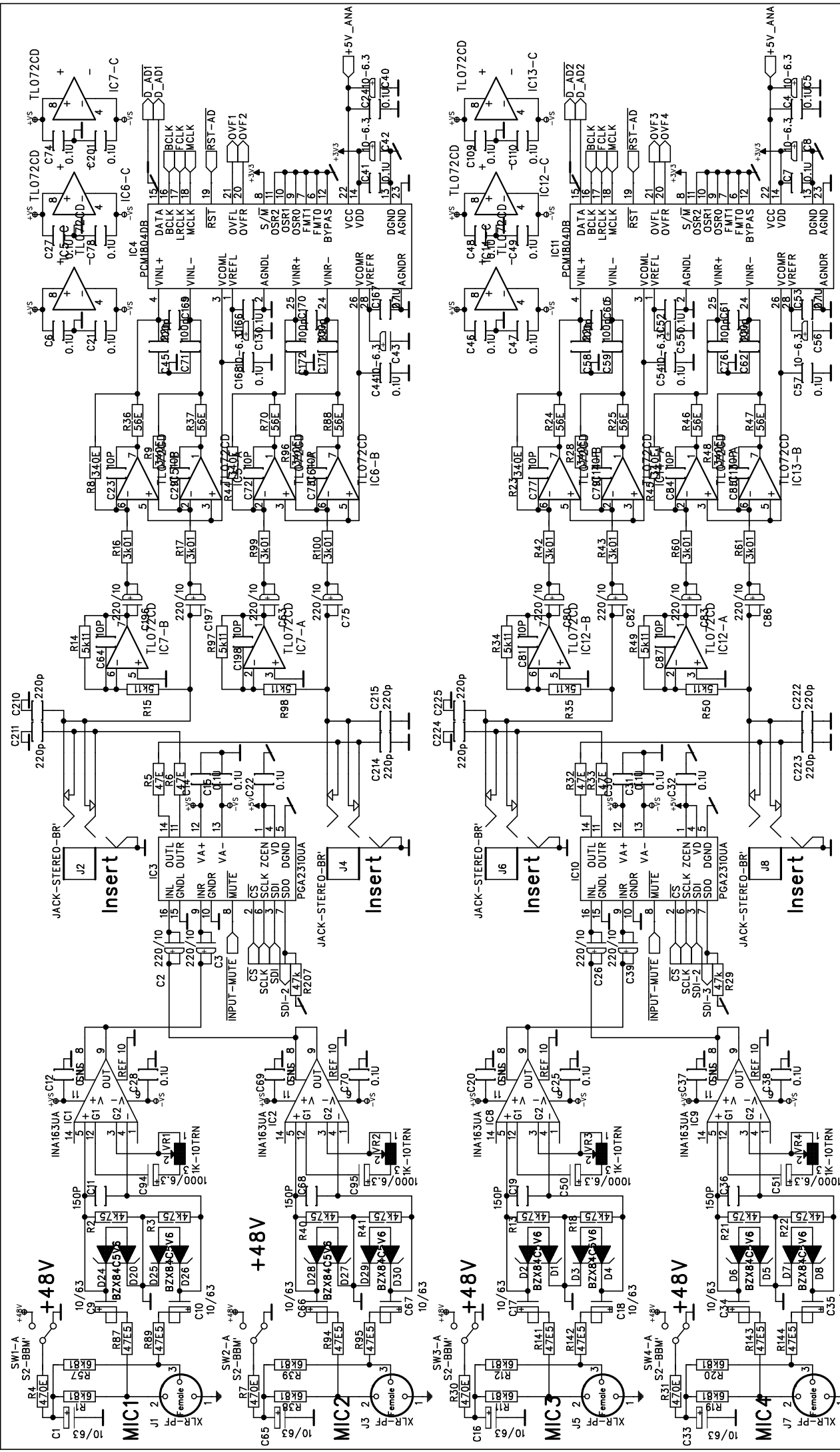
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Title: Dig.Out & GPO	
File: SCSdig-output_p.sch	
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Date: 18-05-2001	
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Scorpius

Mic/Line 1.4

SCSmono-input_b.sch

code: 2085 1483

Date: 25-07-2005

Sheet: 1 of 2

Power	+/-15V ANA	+5V_ANA	+5V	+3V3
PCMB104	4 * 35mA = 140mA			4 * 15mA = 60mA
OP2134	12 x 8mA = 96mA			
INA163	6 x 10mA = 60mA			
PGA2310	3 x 8mA = 24mA			
DRV134	2 x 10mA = 20mA			
LVDS				10mA+25mA=35mA
Total	+/-18V total = 220mA 5ANA Total = 140mA	5dig Total = 2.4mA		3V3 Total = 65mA

Project: Scorpius

Title: Mic/Line 1.4

File: SCSmono-input_b.sch

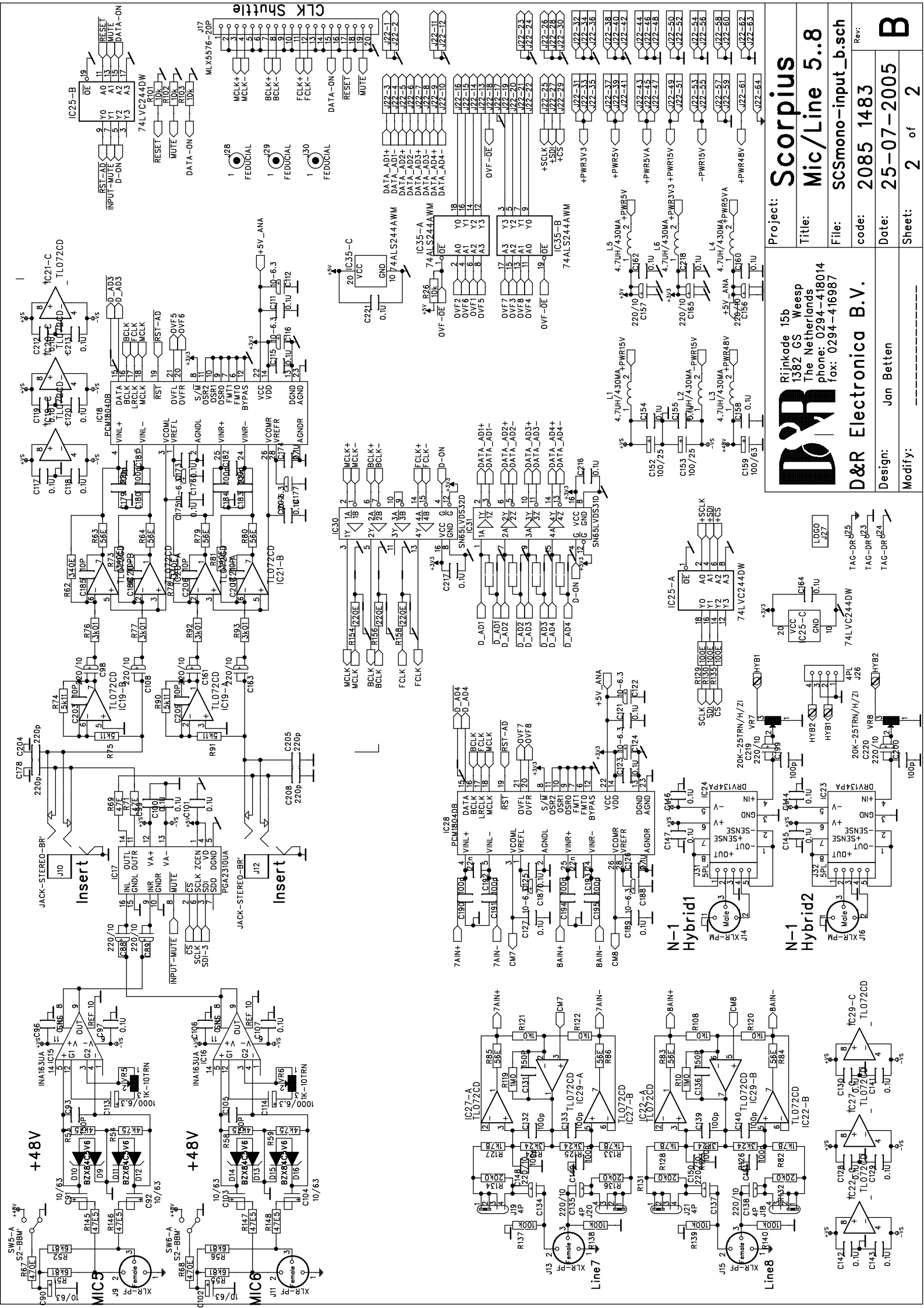
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Date: 25-07-2005

Sheet: 1 of 2

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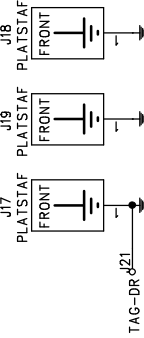
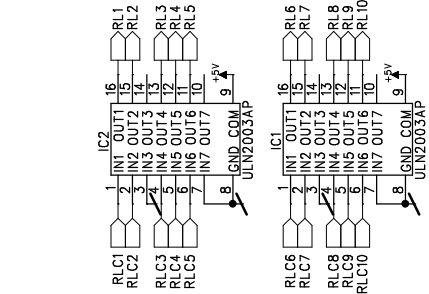
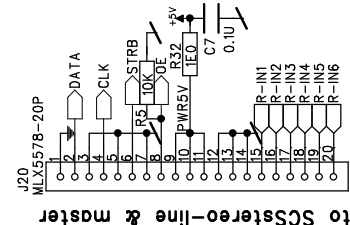
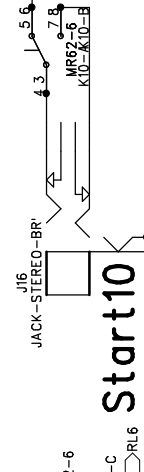
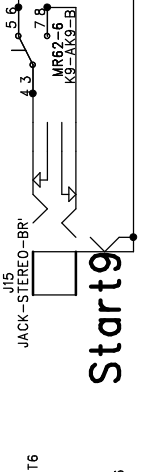
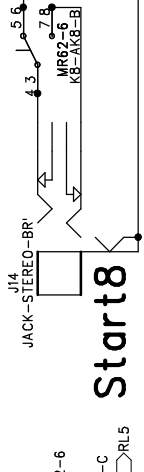
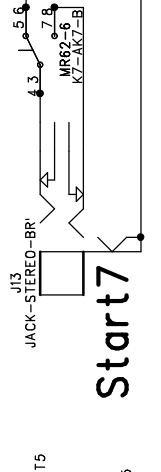
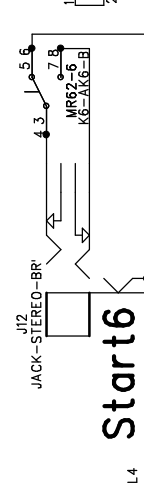
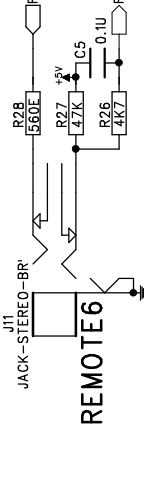
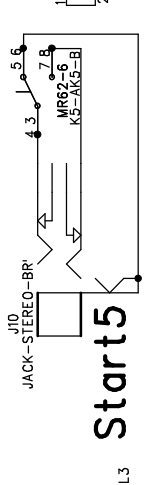
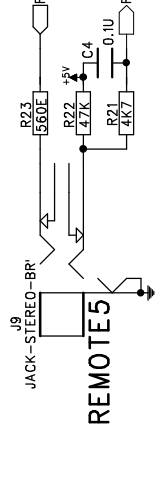
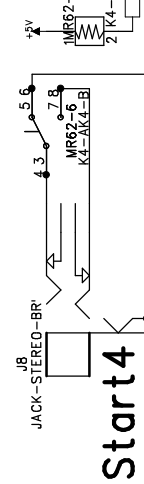
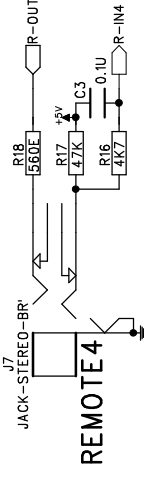
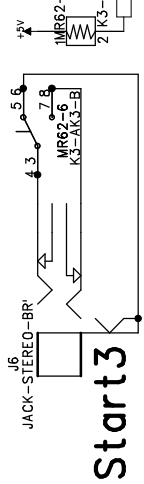
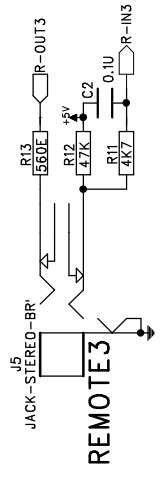
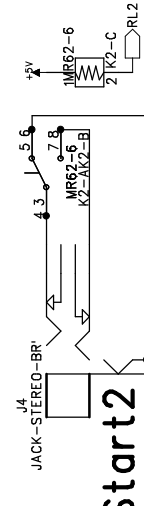
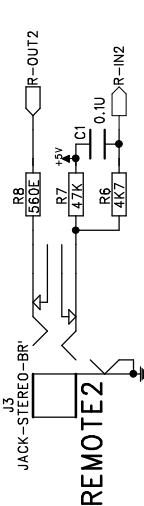
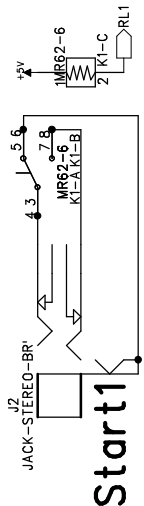
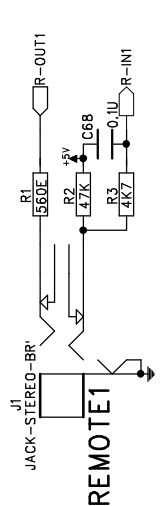
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File: SCSmono-input_b.sch
code: 2085 1483
Date: 25-07-2005
Sheet: 2 of 2

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Rev: **B**
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 code: 2085 1483
 Date: 25-07-2005
 Sheet: 2 of 2

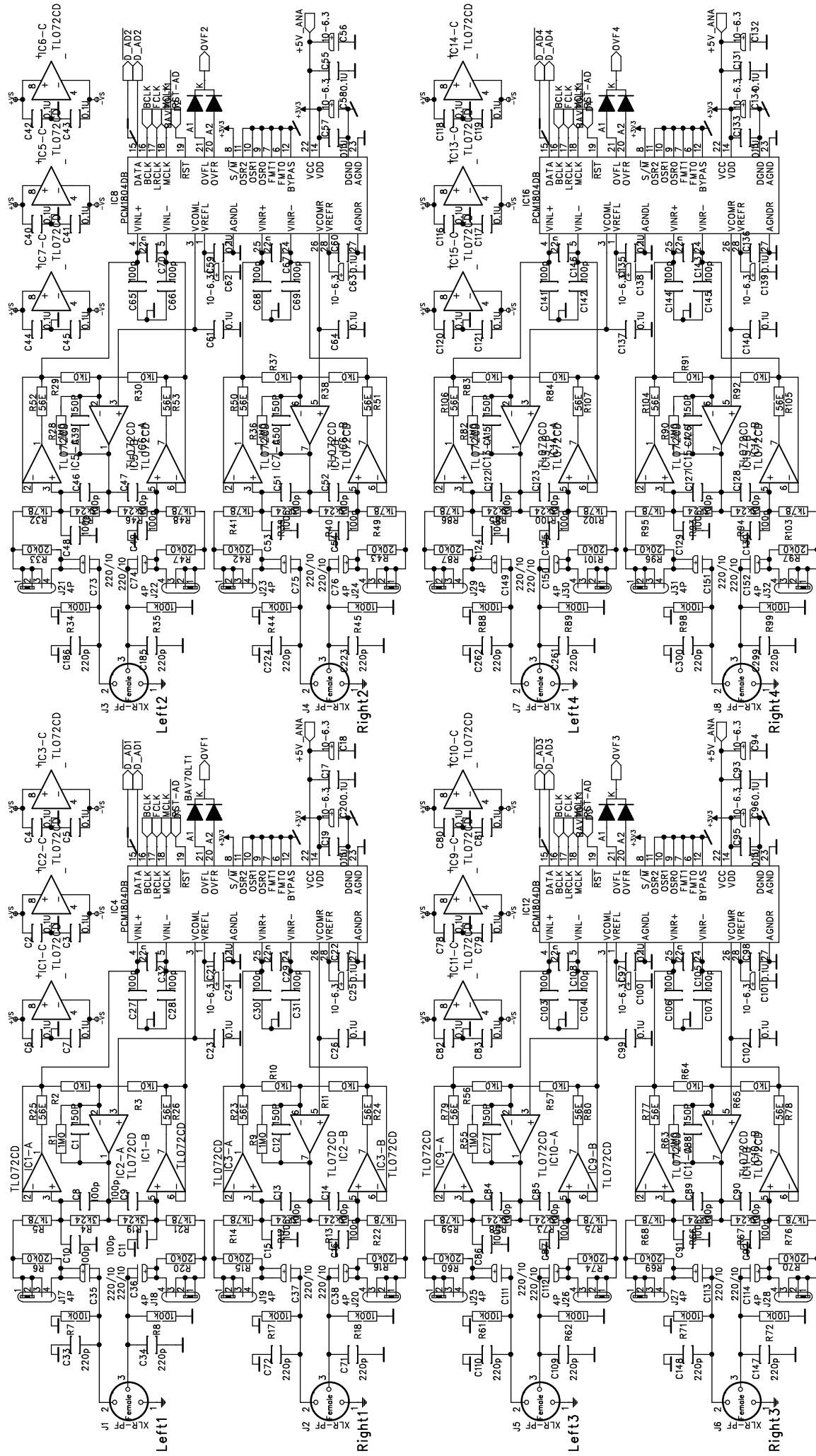



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Date: 18-05-2001
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Project: Scorpis

Title: Stereo Line In 1.4

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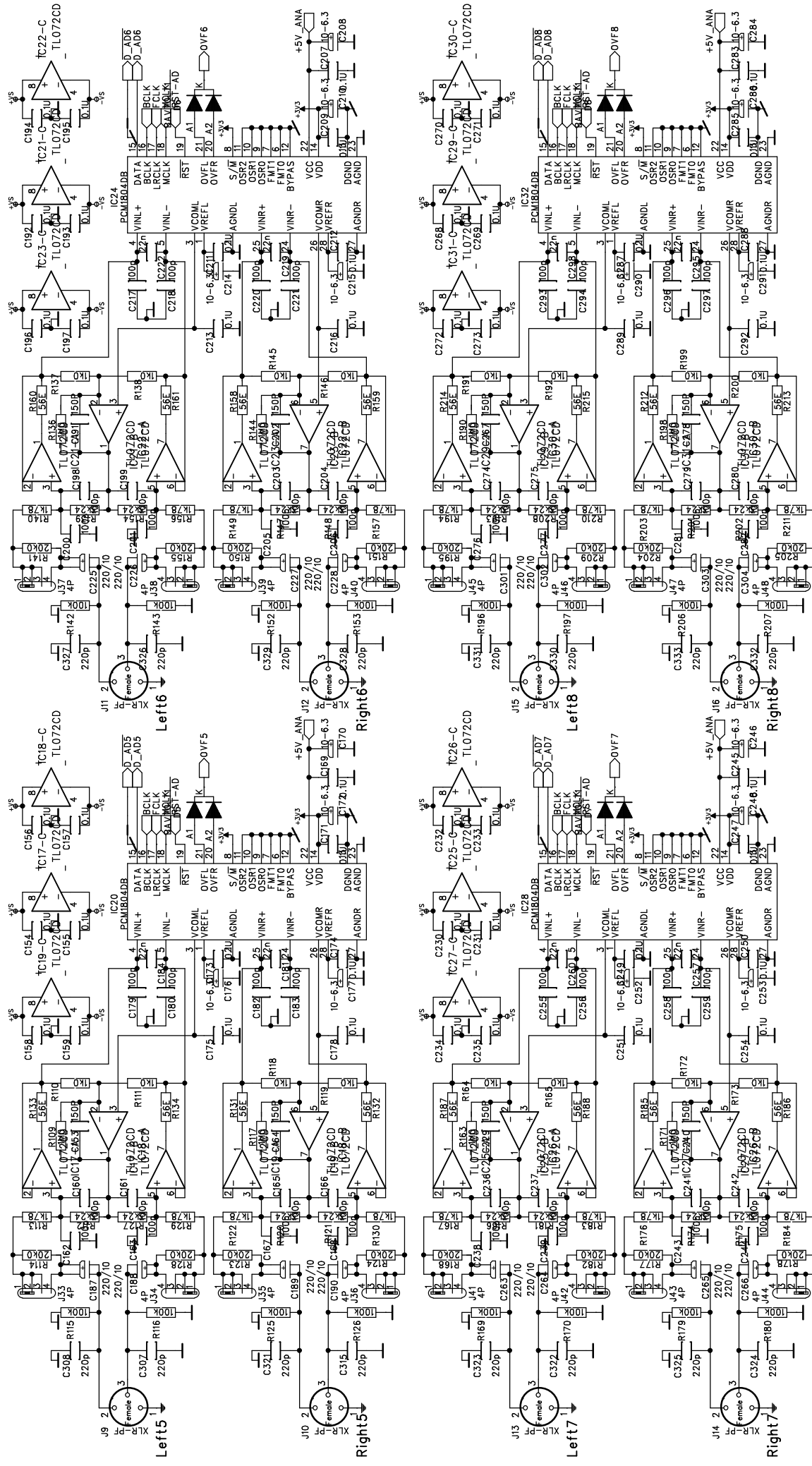
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Modify:

Rev: **B**



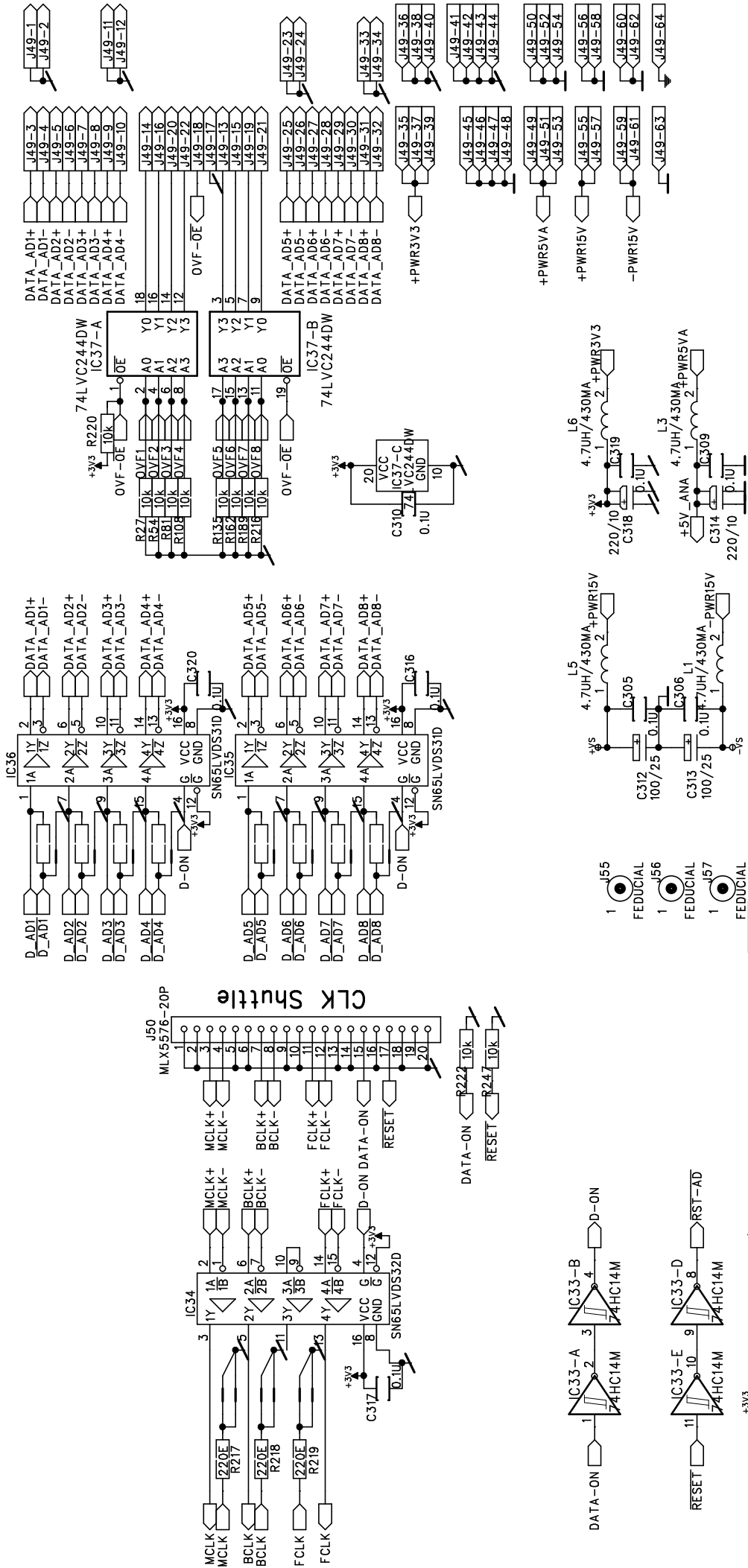
D&R
 Rijnkade 15b
 1382 GS
 The Netherlands
 phone: 0294-418014
 fax: 0294-416987

Scorpius
 Title: Stereo Line In 5.8
 File: SCSstereo-input_b.sch

code: 2085 1485
 Date: 25-07-05
 Sheet: 2 of 3

Design: Jan Betten
 Modify:

D&R Electronica B.V.
 Rev: B



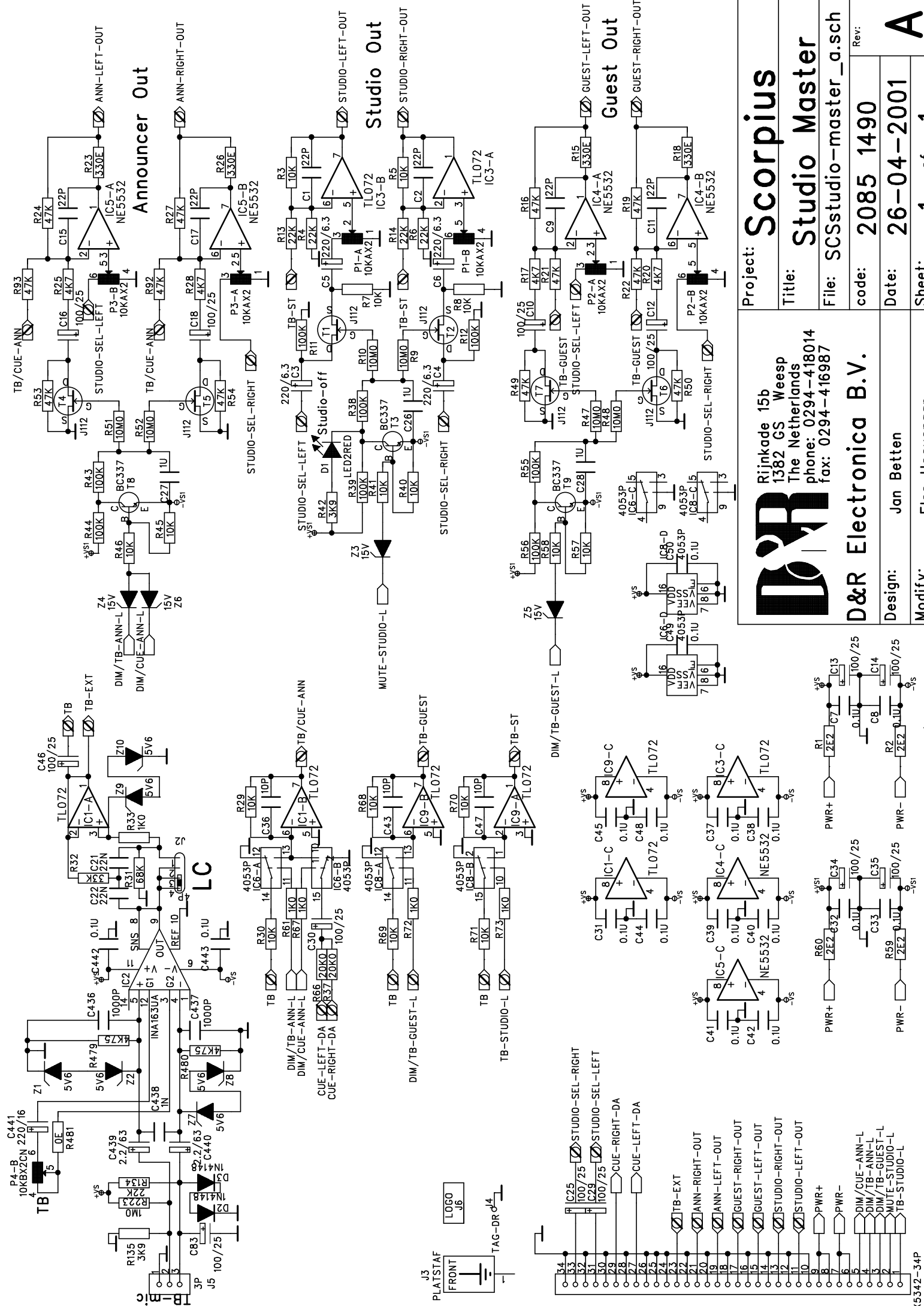
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 Title: **Stereo Line power**
 File: **SCSstereo-input_b.sch**
 code: **2085 1485**
 Date: **25-07-05**
 Sheet: **3** of **3**


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 fax: 0294-416987

D&R Electronics B.V.
 Design: Jan Betten
 Modify: _____

Power	+/-18V ANA	+5V_ANA	+3V3
PCMI804		8 * 35mA = 280mA	8 * 15mA = 120mA
OPA2134	24 x 8mA = 192mA		
LVDS31		2 * 25mA = 50mA	
LVDS32		1 * 10mA = 10mA	
Total	+/-18V total = 192mA	5ANA Total = 280mA	3V3 Total = 180mA

Rev: _____
 Design: Jan Betten
 Modify: _____





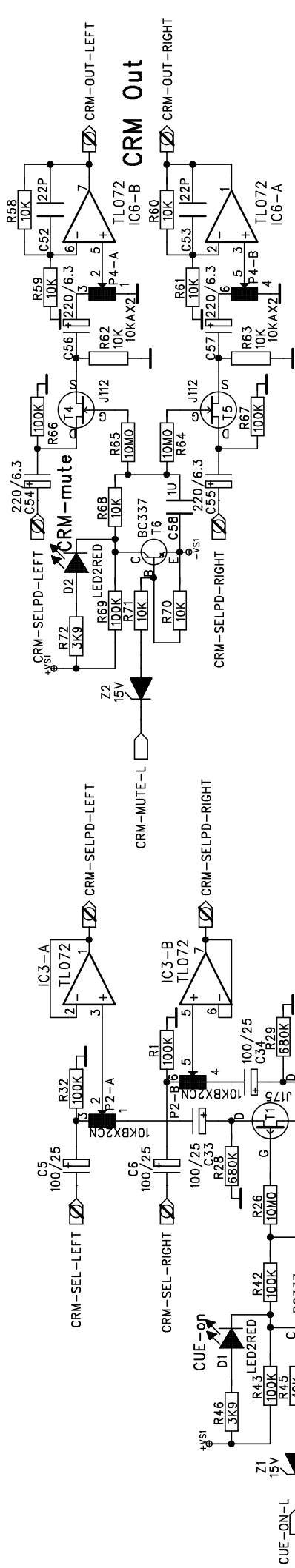
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Title: Studio Master
File: SCSstudio-master_a.sch
code: 2085 1490
Date: 26-04-2001
Sheet: 1 of 1

Rijnkade 15b
 1382 GS Weesp
 The Netherlands
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D&R Electronica B.V.

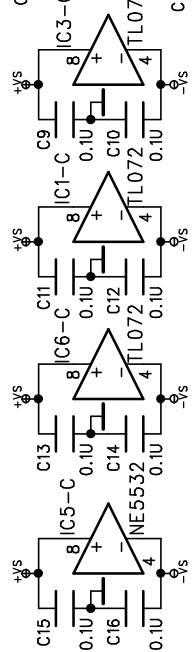
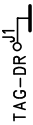
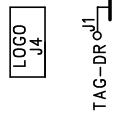
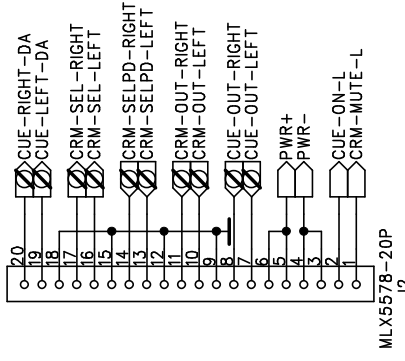
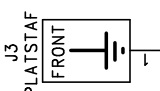
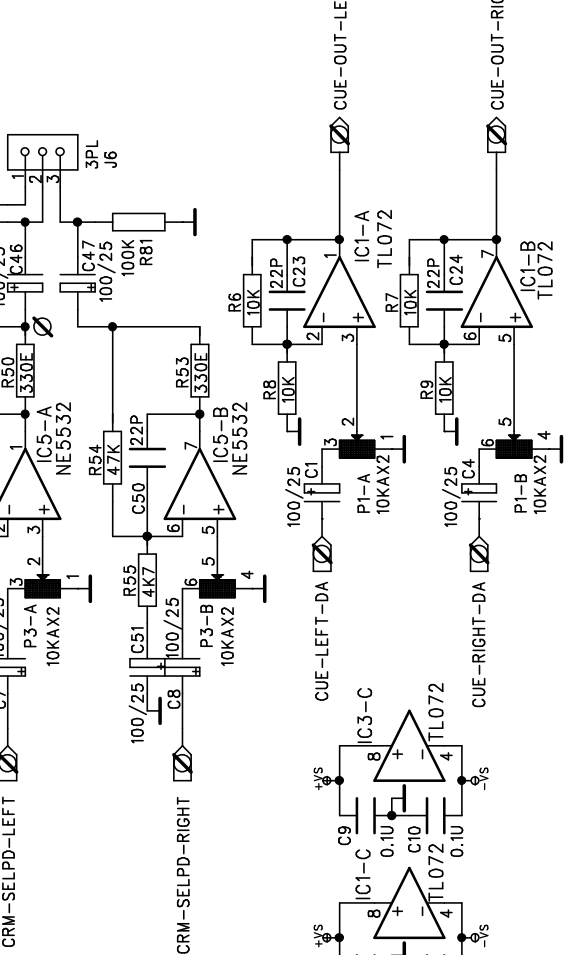
Design: Jan Betten
 Modify: Elco Hoevenaar

Rev: **A**



CUE-Out

CRM Phone

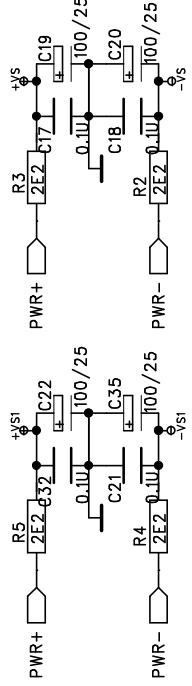


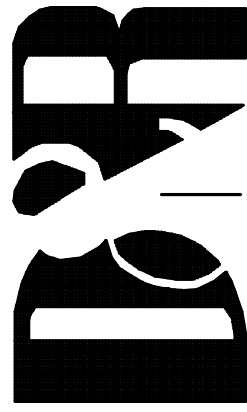
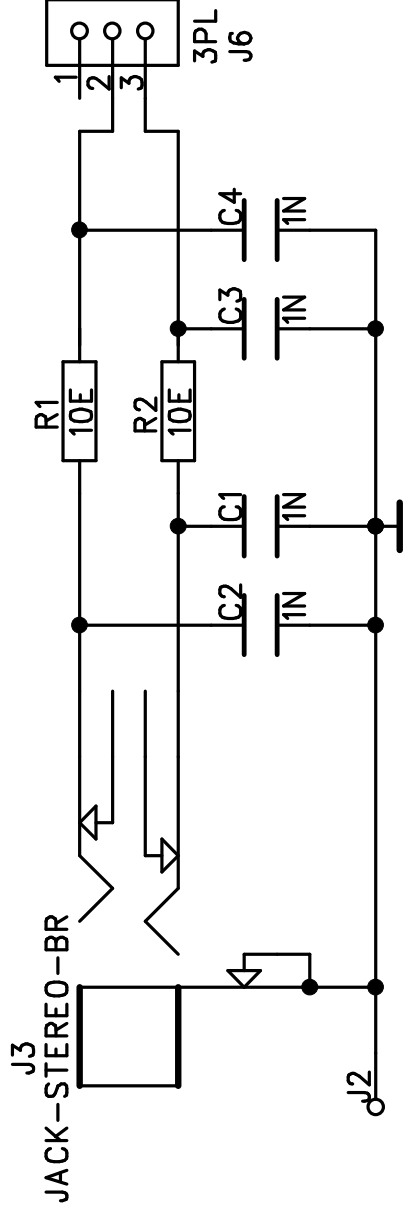
D&R
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1382 GS Weesp
The Netherlands
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fax: 0294-416987

Scorpius
CRM Master
File: SCSrm-master_a.sch
code: 2085 1489
Date: 15-06-2001
Sheet: 1 of 1

Design: Jan Betten
Modify: -----

Project: Scorpius
Title: CRM Master
File: SCSrm-master_a.sch
code: 2085 1489
Date: 15-06-2001
Sheet: 1 of 1





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D&R Electronics B.V.

Design: Jan Betten

Modify: -----

Project: **Scorpius**

Title: **HeadPhone conn**

File: **SCShp_p.sch**

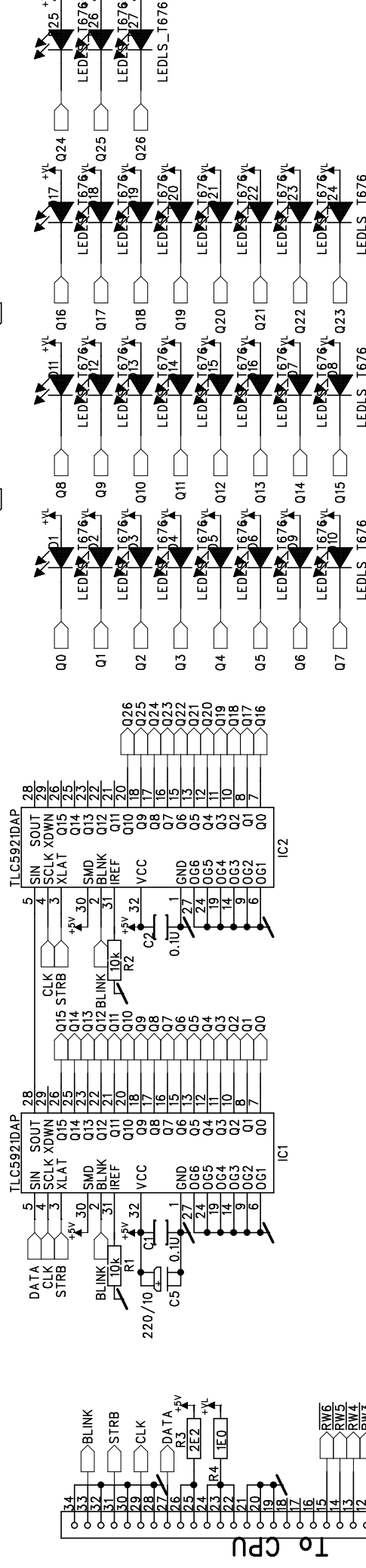
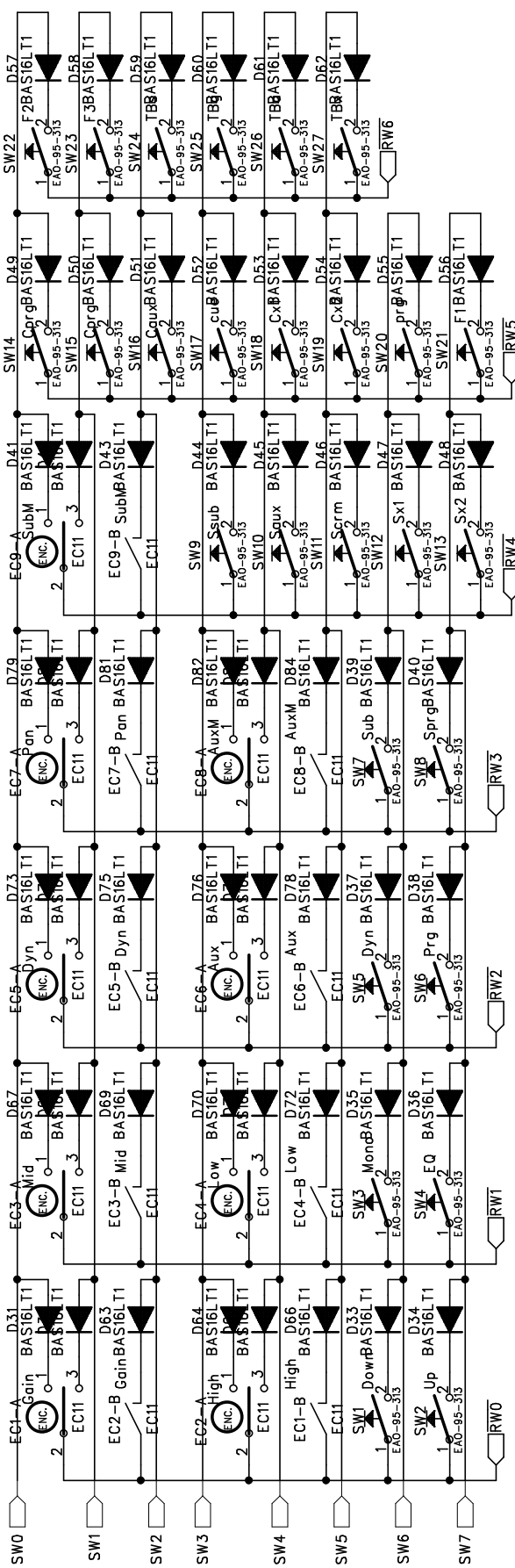
code: **1020******


Rev:

Date: **-- -- 2003**

P

Sheet: **1** of **1**





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Scorpius

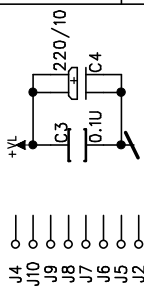
Master Sw Cont.

SCSmaster-sw_a.sch

2085 1482

04-01-2001

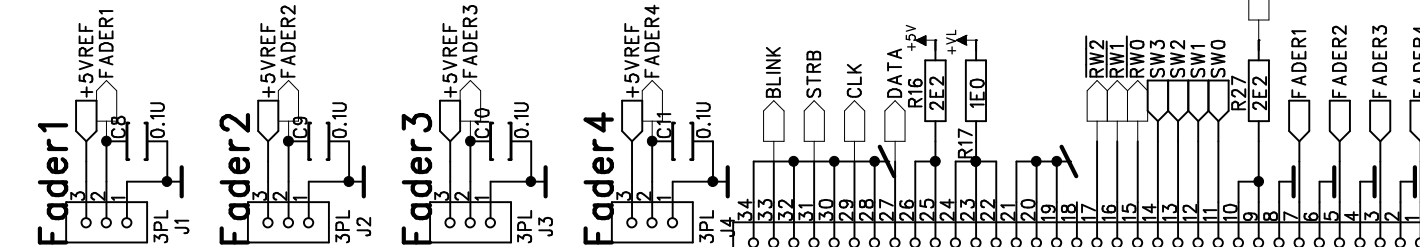
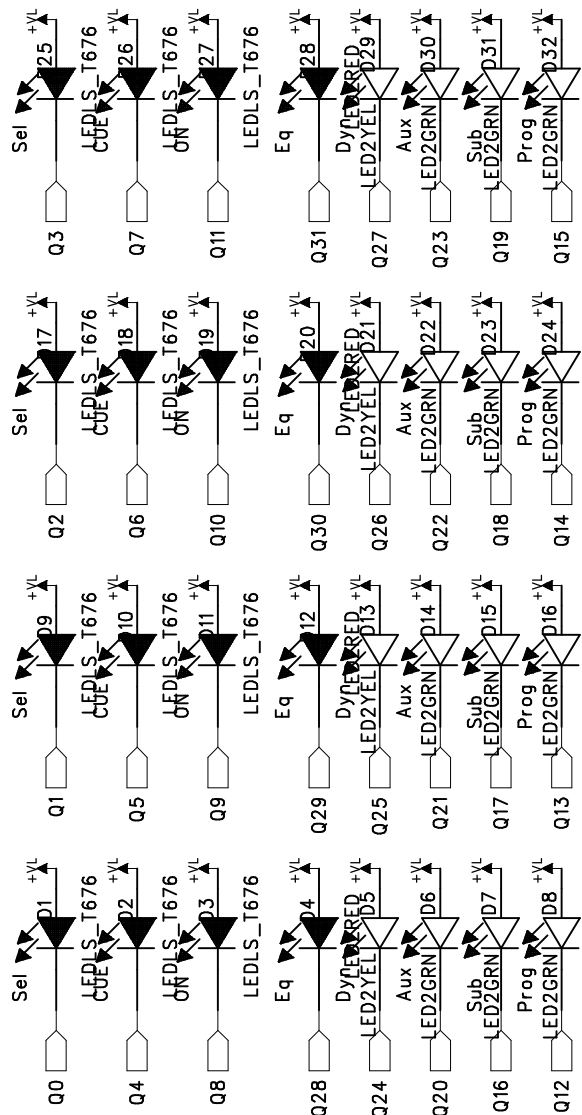
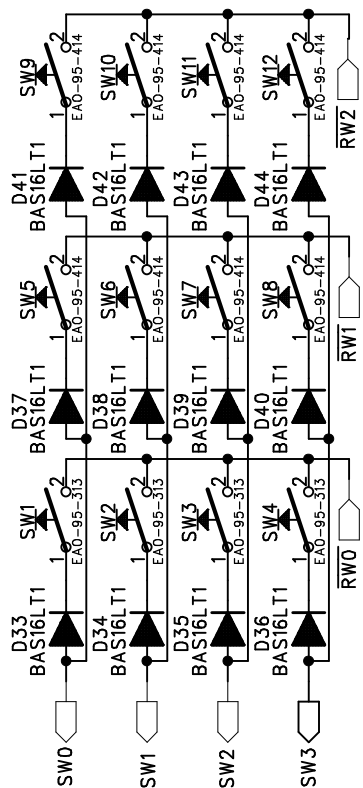
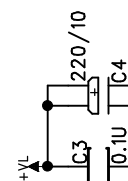
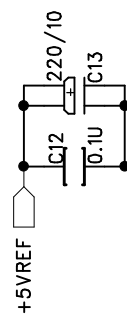
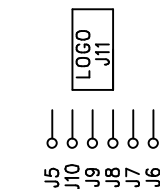
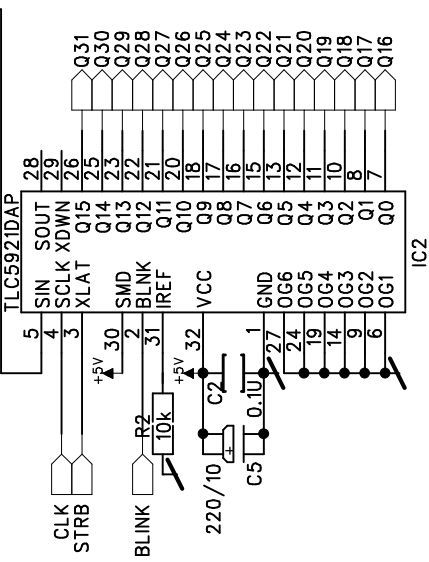
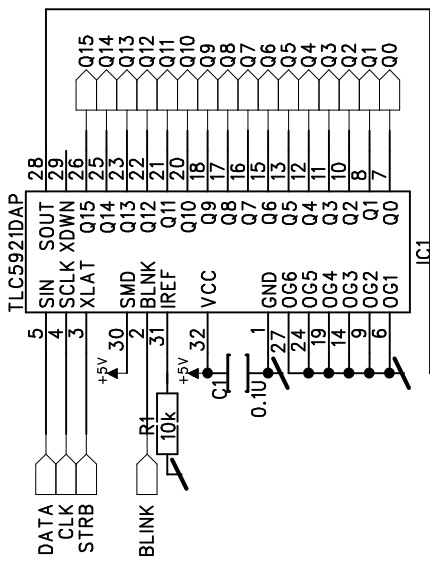
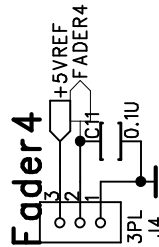
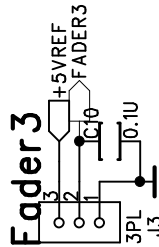
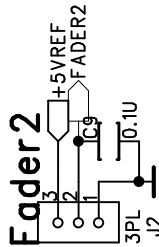
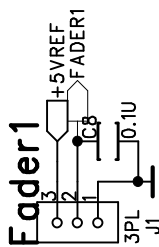
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- LOGO J11
- J4 ○
 - J10 ○
 - J9 ○
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 - J2 ○
 - J3 ○

MLX5578-34P
J1

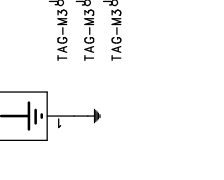
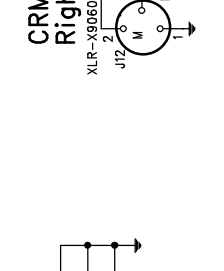
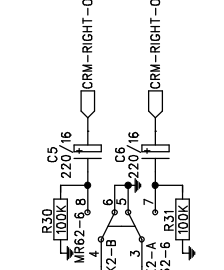
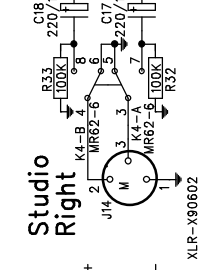
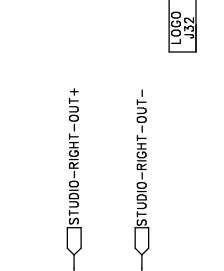
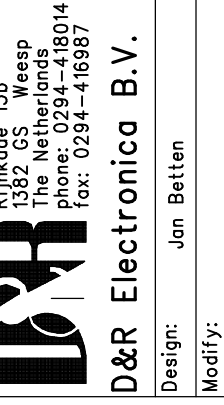
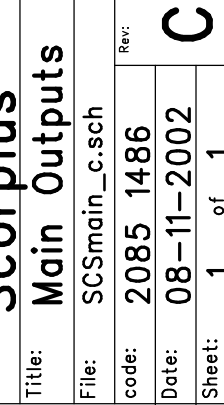
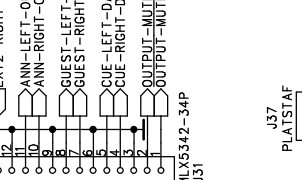
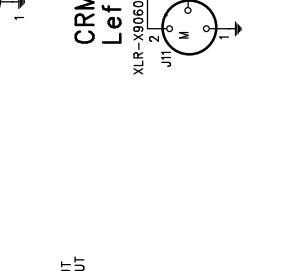
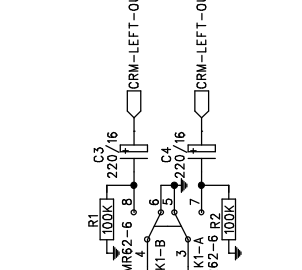
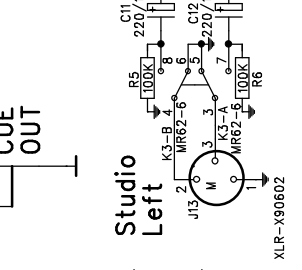
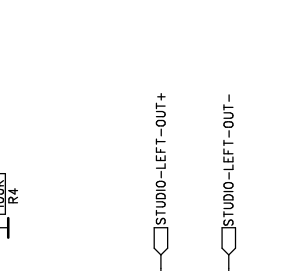
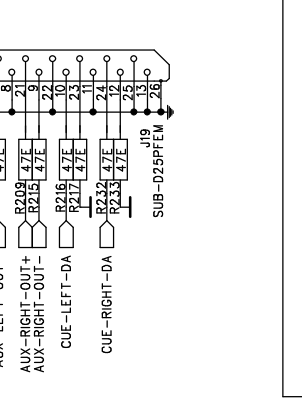
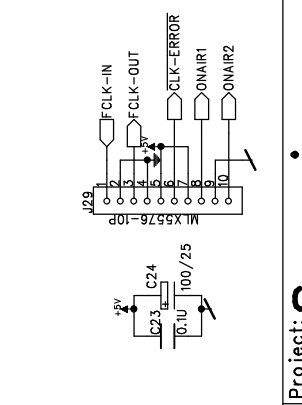
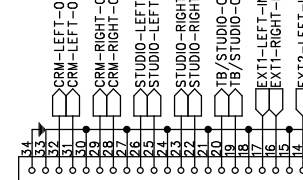
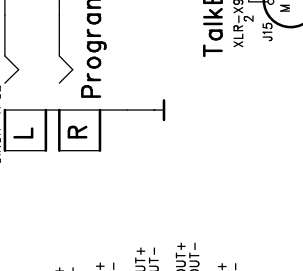
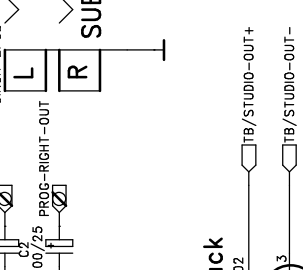
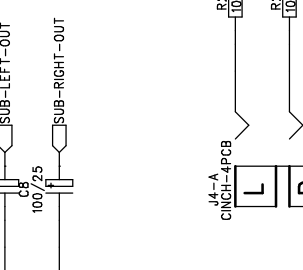
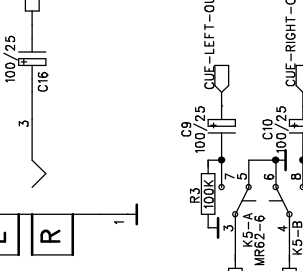
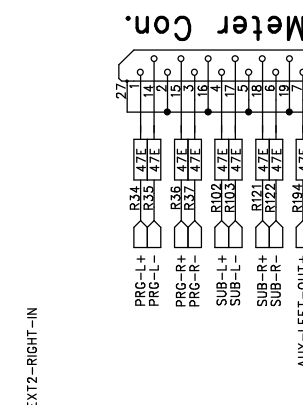
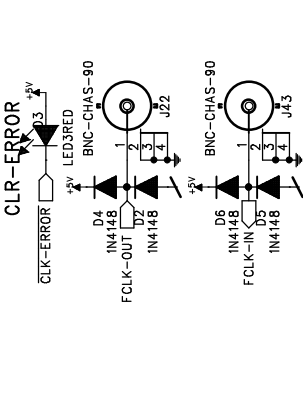
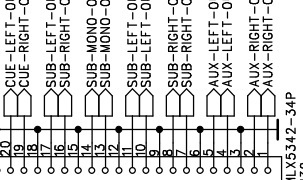
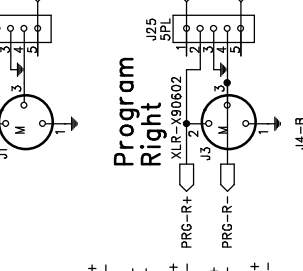
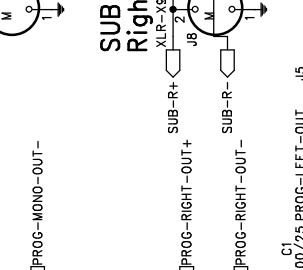
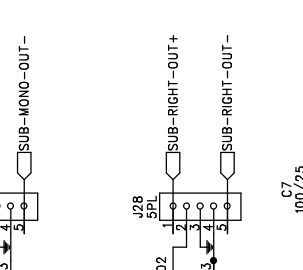
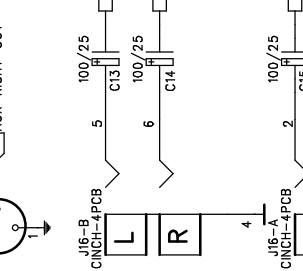
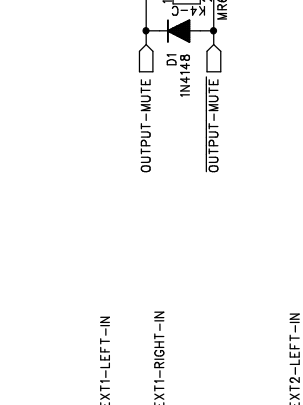
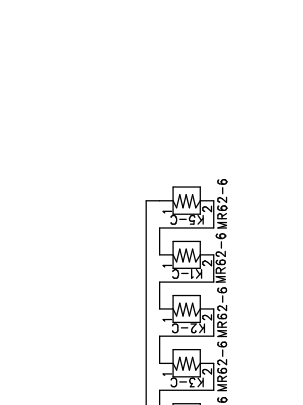
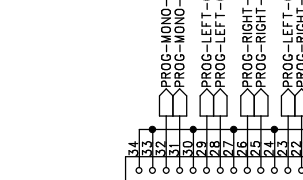
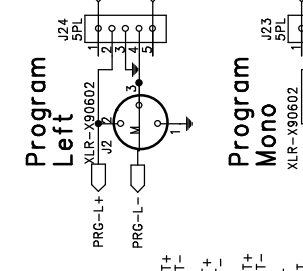
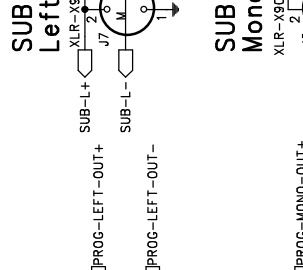
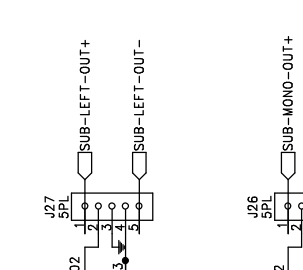
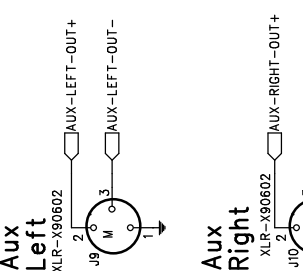
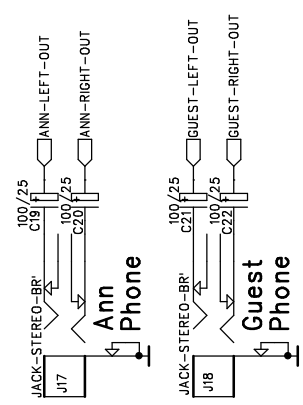
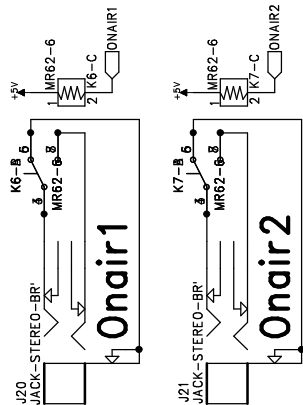
To CPU



Project: **Scorpius**
 Title: **Modul Sw Cont.**
 File: **SCSmod-sw_a.sch**
 code: **2085 1481**
 Date: **04-01-2001**
 Sheet: **1** of **1**

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D&R Electronica B.V.
 Design: **Jan Betten**
 Modify: _____



Project: **Scorpius**
Title: **Main Outputs**
File: **SCSmain_c.sch**
code: **2085 1486**
Date: **08-11-2002**
Sheet: **1** of **1**

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1382 GS Weesp
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D&R Electronics B.V.
Design: Jan Betten
Modify:

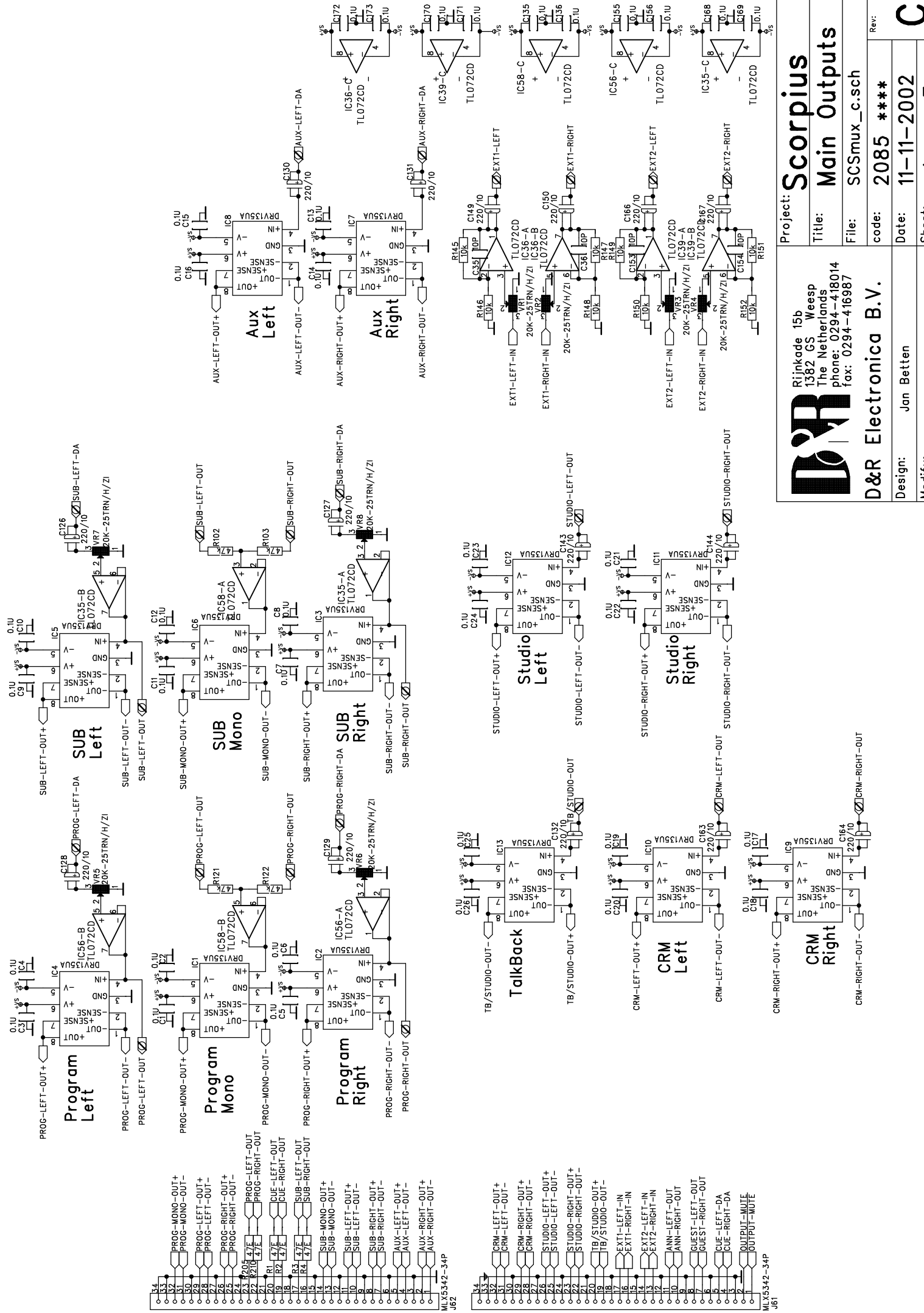
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TAG-M3-J35

J30
MLX5342-34P

J31
MLX5342-34P

J32
LOGO

Rev: **C**



Project: Scorpius
Title: Main Outputs
File: SCSmux_c.sch
code: 2085 ****
Date: 11-11-2002
Sheet: 1 of 7

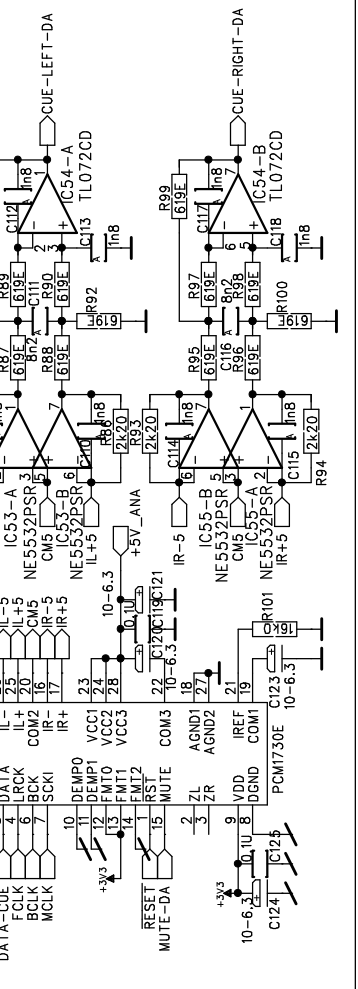
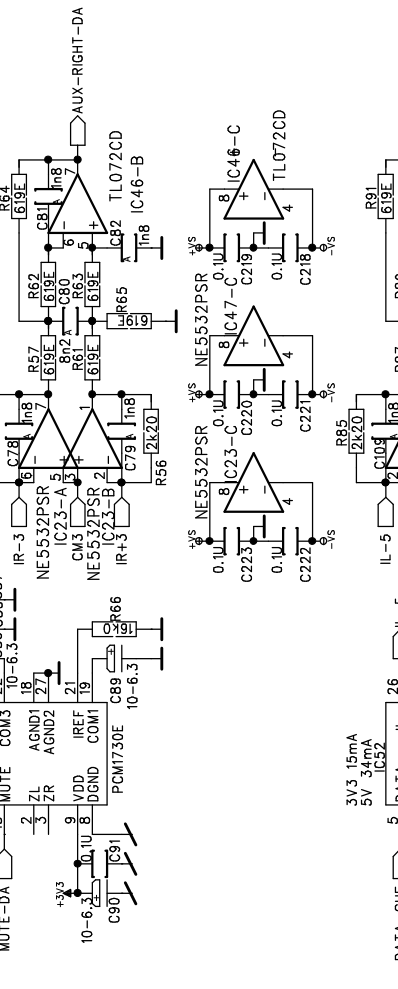
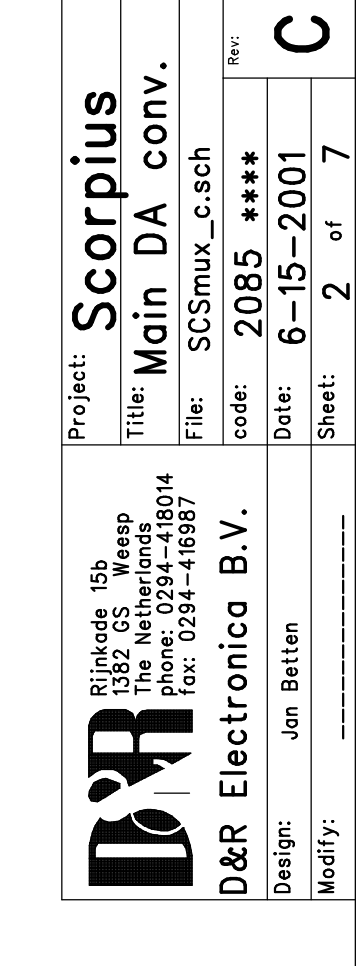
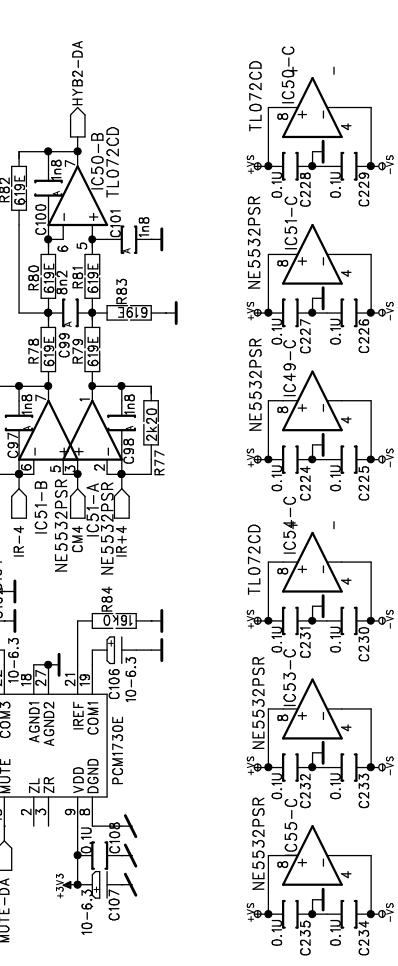
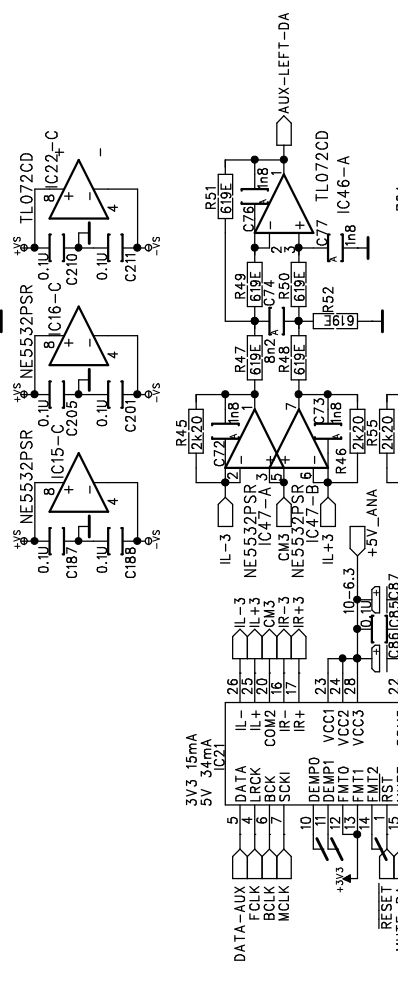
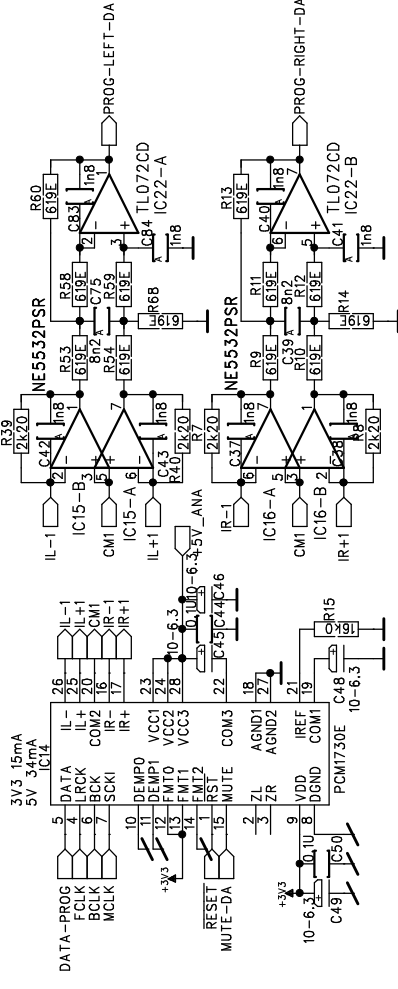
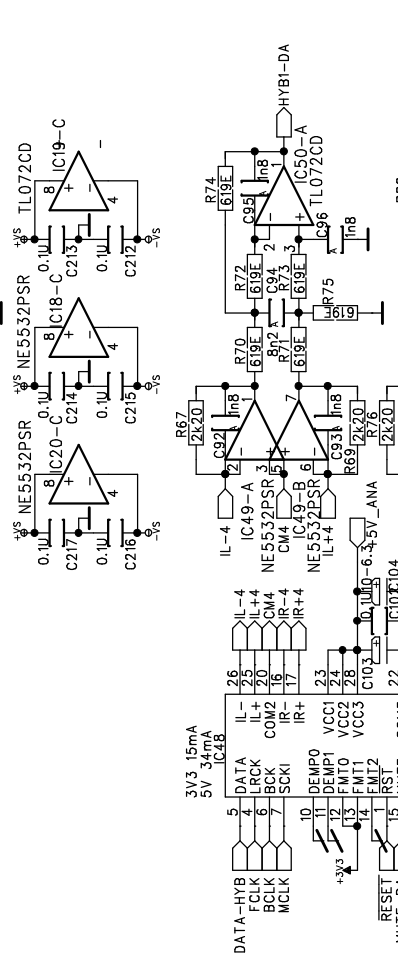
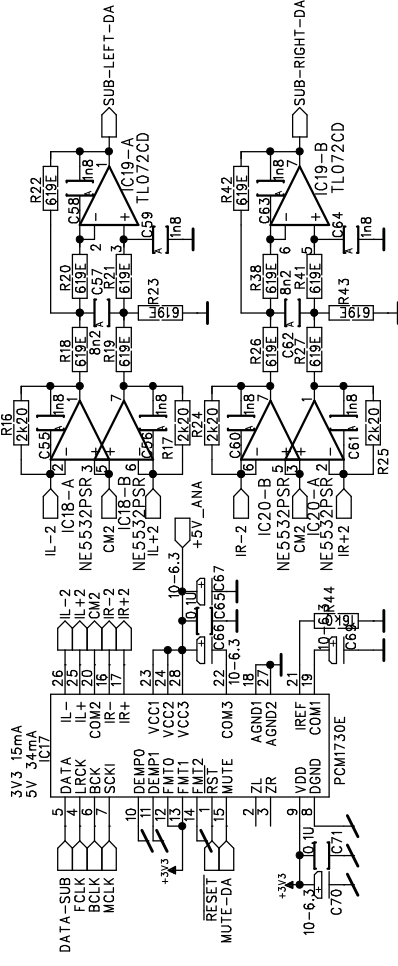
D&R
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D&R Electronica B.V.
 Design: Jan Betten
 Modify: _____

Rev: **C**

- 34
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- MLX5342-34P
J62

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J61

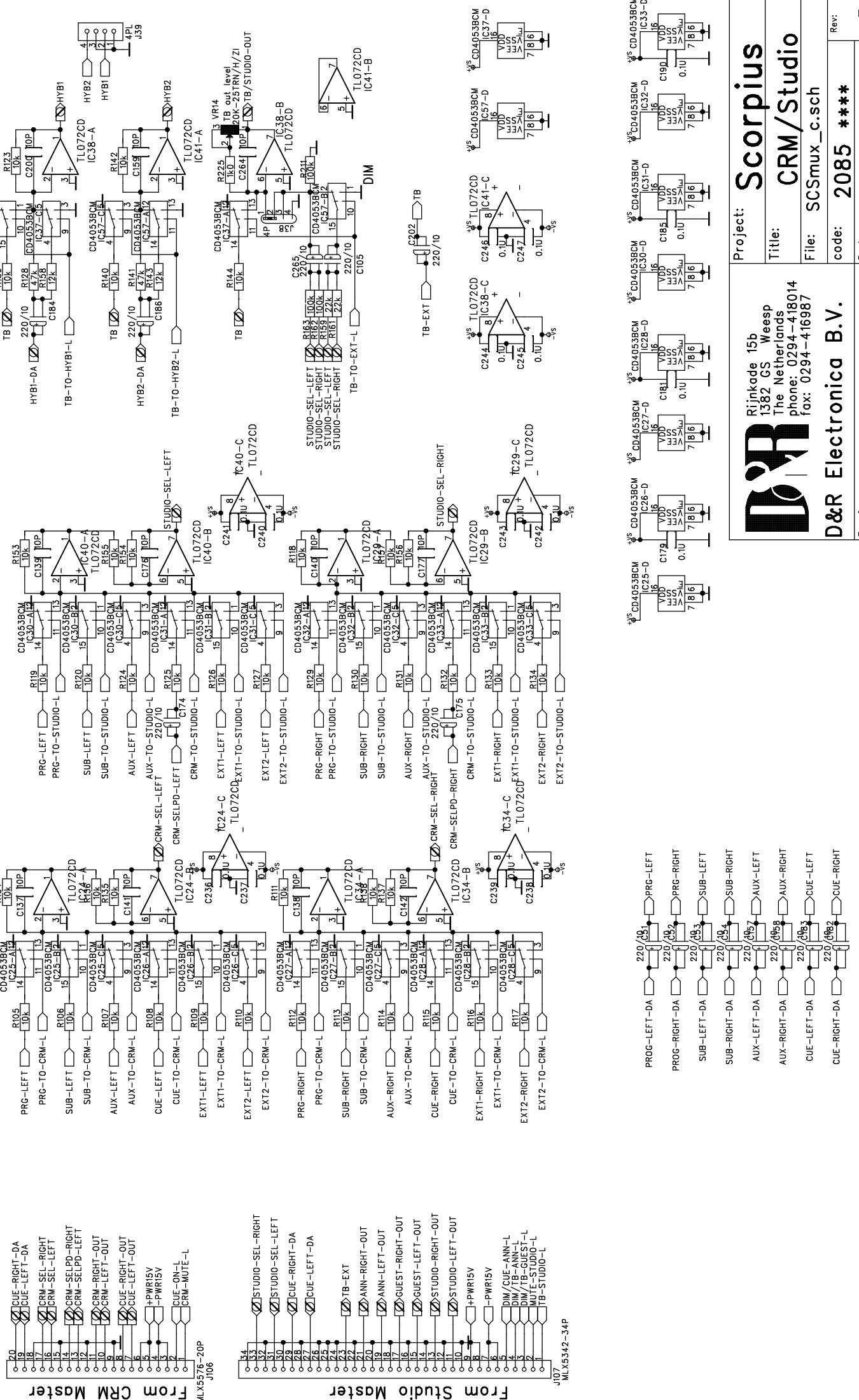



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File: SCSmux_c.sch
code: 2085 ***
Date: 6-15-2001
Sheet: 2 of 7

Riinkade 15b
1382 GS Weesp
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fax: 0294-416987

D&R Electronica B.V.
Design: Jan Betten
Modify: _____

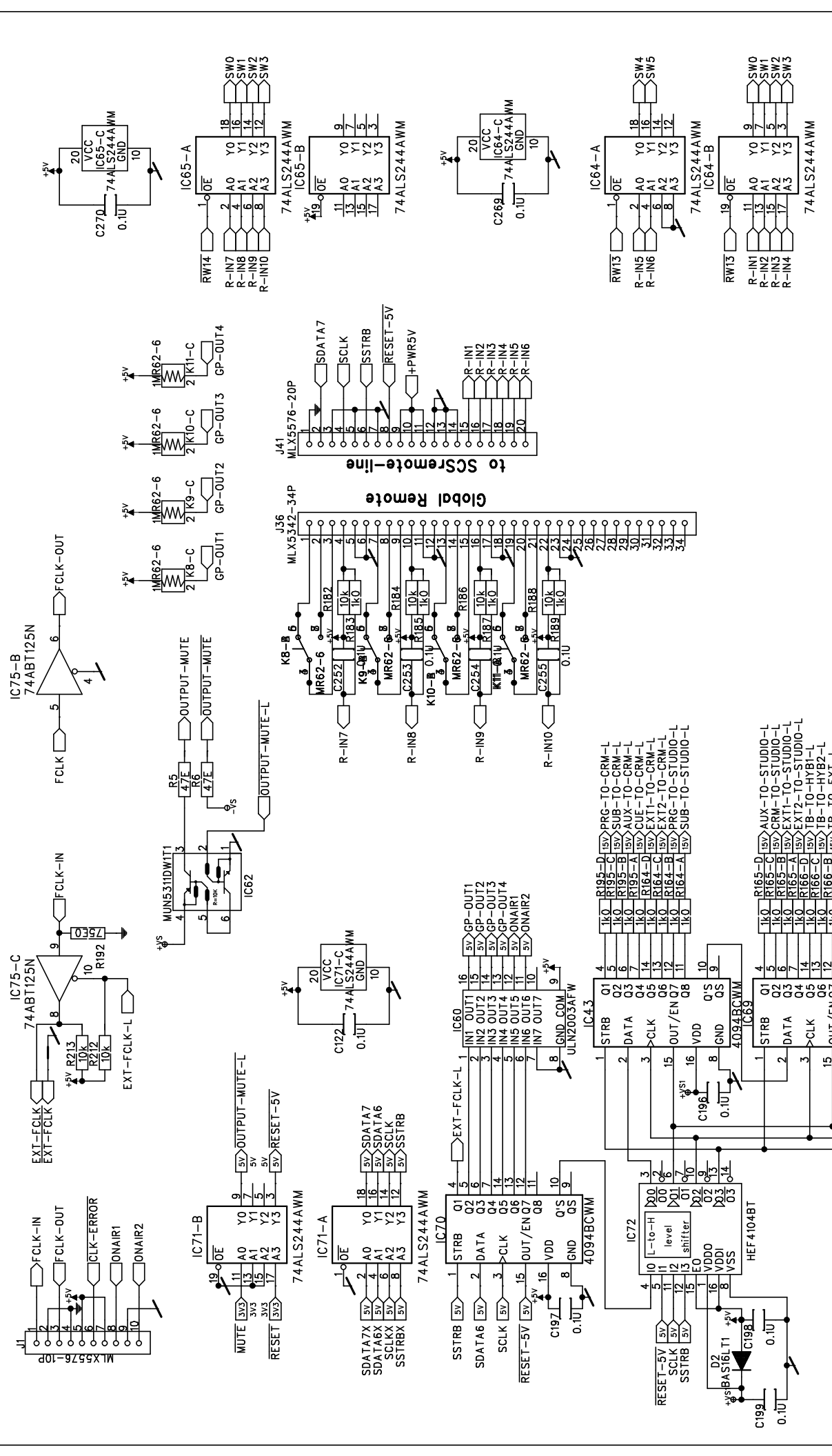
Rev: C



Project: Scorpius
Title: CRM/Studio
File: SCSmux_c.sch
code: 2085 ***
Date: 11-11-2002
Sheet: 3 of 7

Design: Jan Betten
Modify: _____

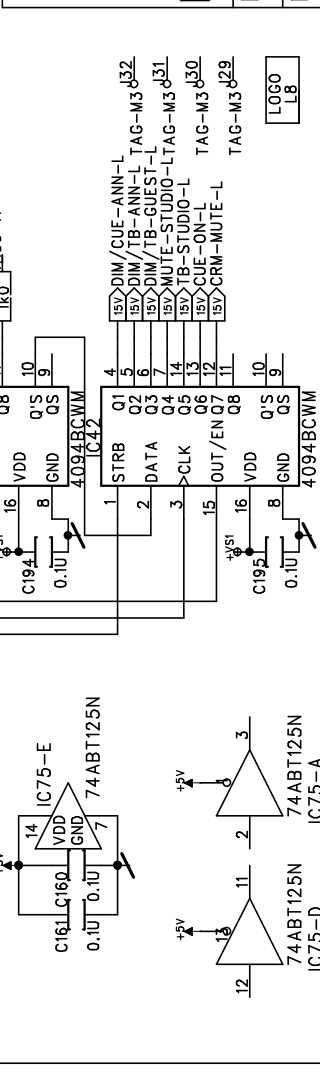
D&R
Rijnkade 15b
1382 CS Weesp
The Netherlands
phone: 0294-418014
fax: 0294-416987
D&R Electronics B.V.
Design: Jan Betten
Date: 11-11-2002
Sheet: 3 of 7

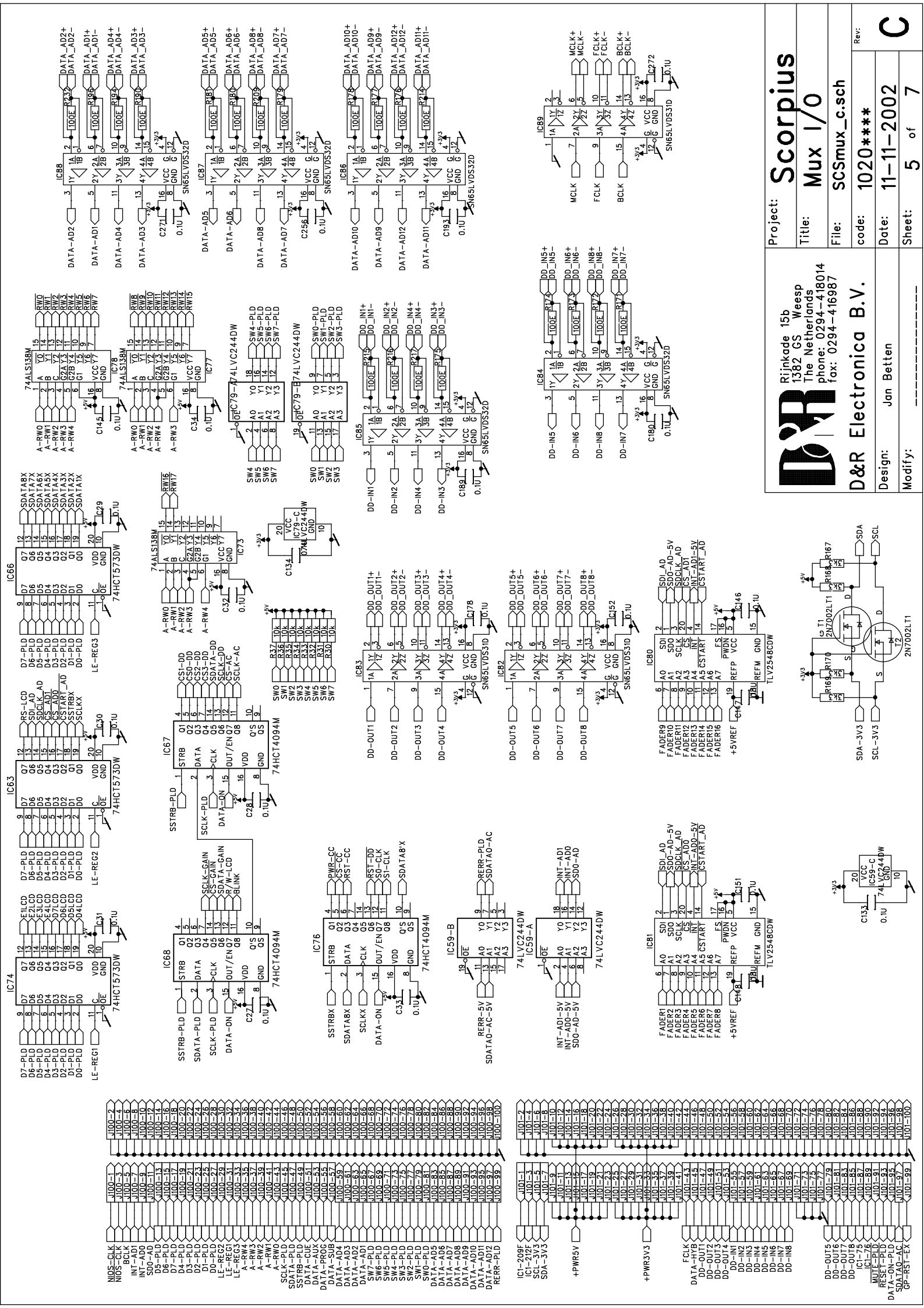


Project: **Scorpis**
 Title: **Input GPIO**
 File: **SCSmux_c.sch**
 code: **2085 ******
 Date: **11-11-2002**
 Sheet: **4** of **7**

D&R
 Rijkade 15b
 1382 GS Weesp
 The Netherlands
 phone: 0294-418014
 fax: 0294-416987

D&R Electronica B.V.
 Design: Jan Betten
 Modify: _____

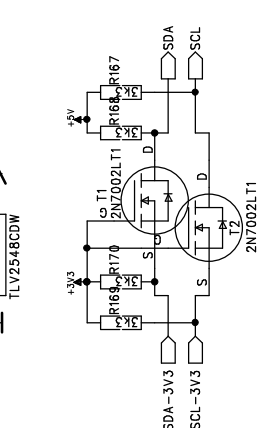




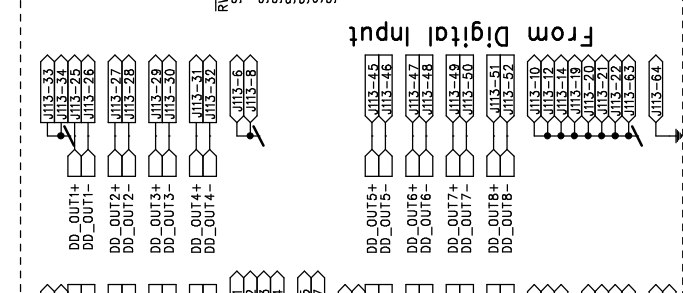
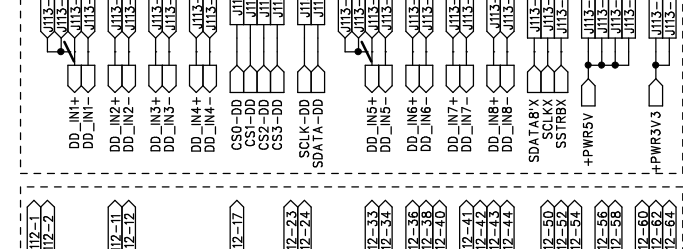
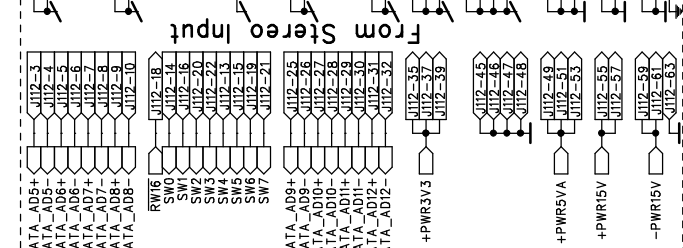
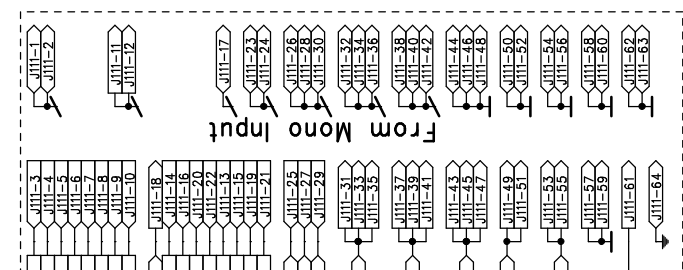
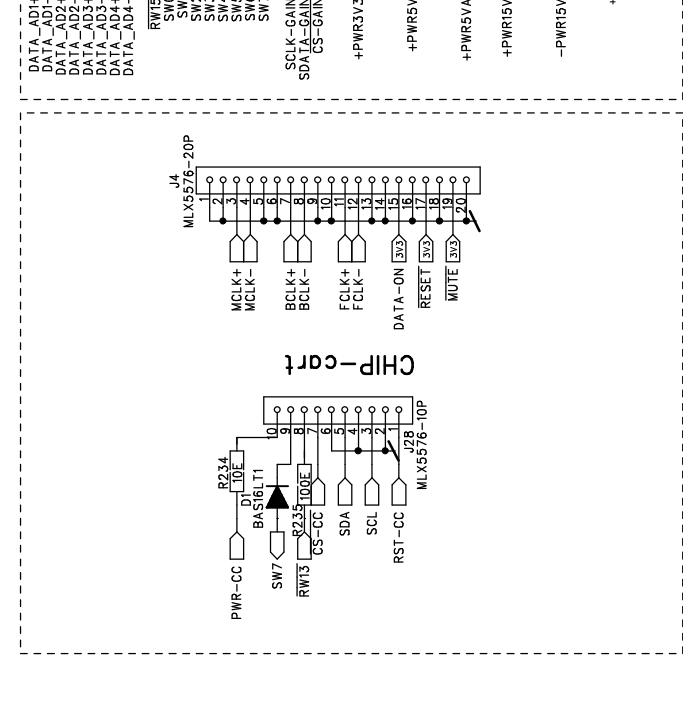
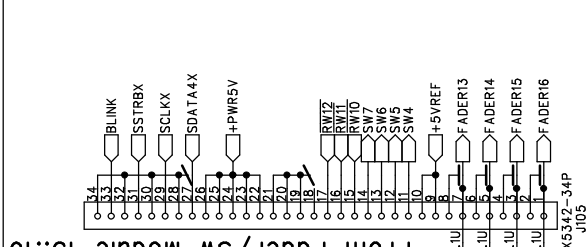
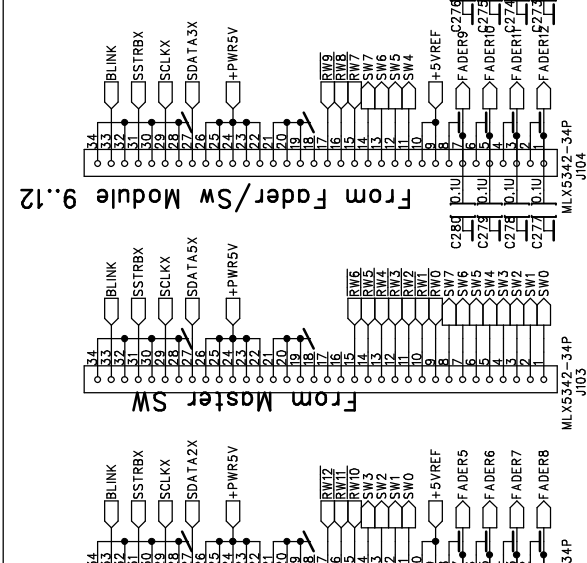
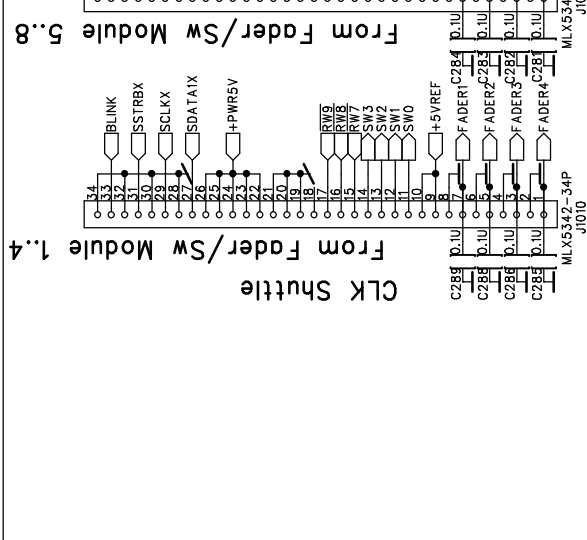
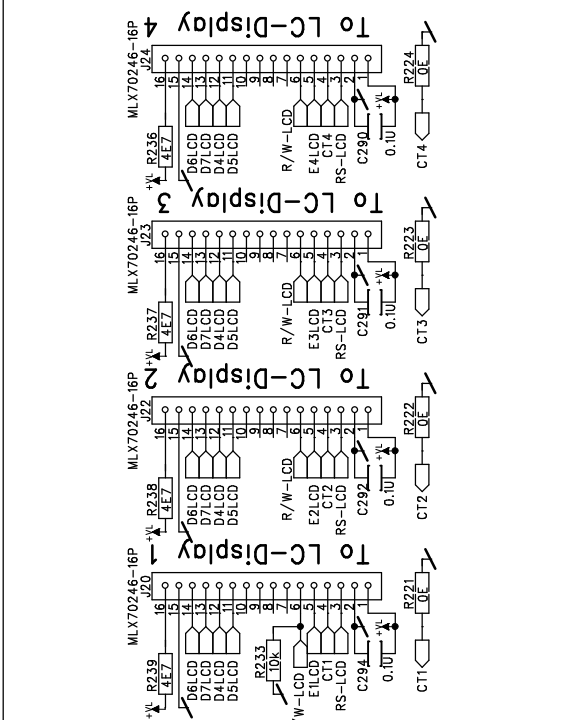
Project: **Scorpious**
 Title: **Mux I/O**
 File: **SCSmux_c.sch**
 code: **1020******
 Date: **11-11-2002**
 Sheet: **5 of 7**

D&R Rijnkade 15b
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D&R Electronics B.V.
 Design: Jan Betten
 Modify: _____



Rev: **C**



Project: **Scorpius**

Title: **Mux Conn.**

File: **SCSmux_c.sch**

code: **1020******

Date: **11-11-2002**

Sheet: **6 of 7**

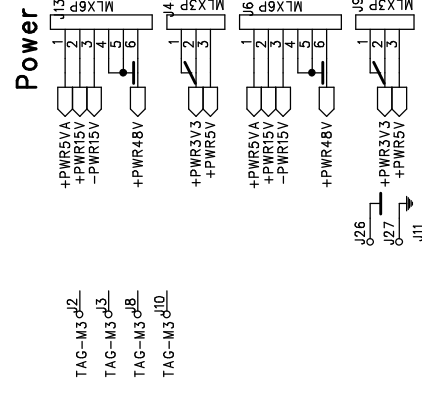
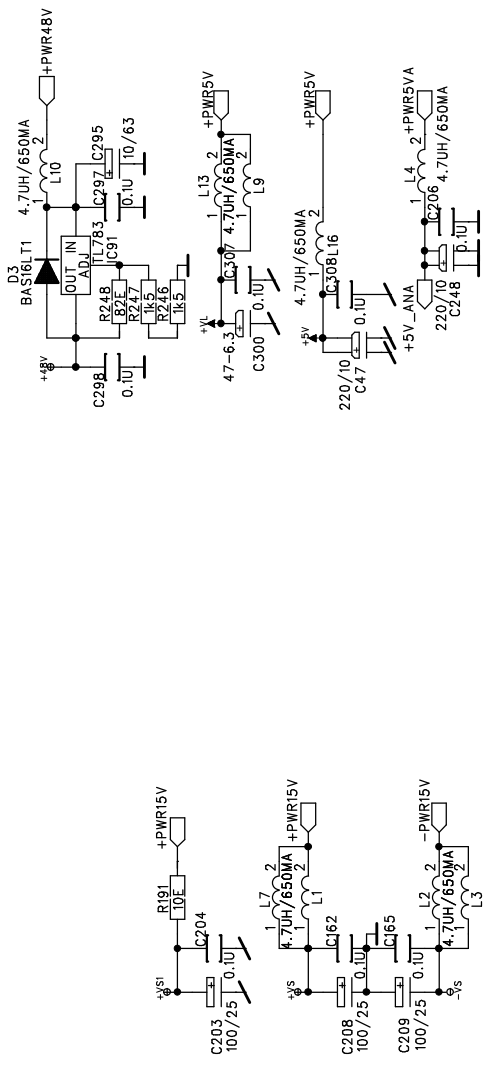
Rijnkade 15b
1382 GS Weesp
The Netherlands
phone: 0294-418014
fax: 0294-416987

D&R Electronica B.V.

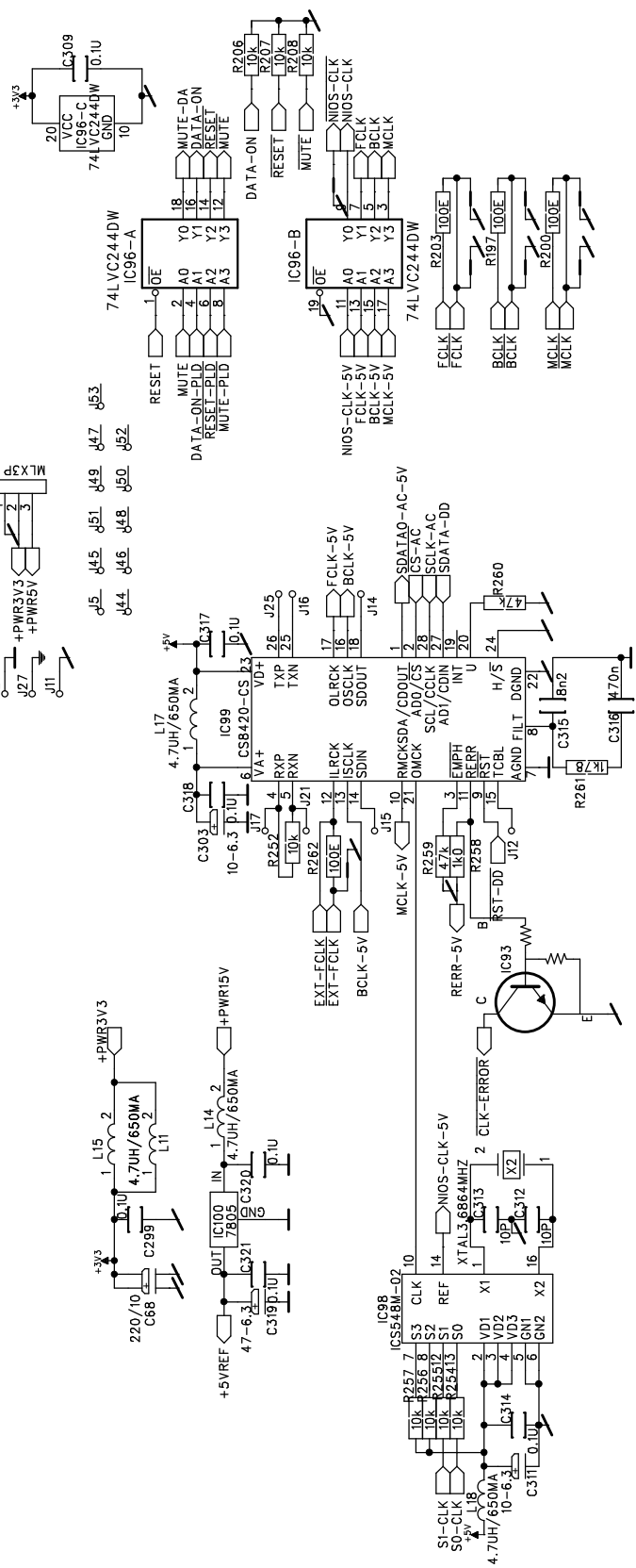
Design: Jan Betten

Modify:

Rev: **C**



	+PWR3V3	+PWR5V	+PWR5VA	PWR15V
SCSstudio-master				55mA
SCScrm-master				30mA
SCSmono-input		65mA	3mA	140mA
SCSremote-line		400mA		220mA
SCSstereo-input		180mA		192mA
SCSdig-in/output		80mA	730mA	
SCSmod-sw 4x		1024mA		
SCSmaster-sw		208mA		
SCSmain				
SCSmux		575mA	1430mA	430mA
SCS audio totaal		900mA	3795mA	590mA
SCS PC				927mA
SCS HD/FD				
SCS totaal				



Project: Scorpis

Title: Mux power

File: SCSmux_c.sch

code: 1020****

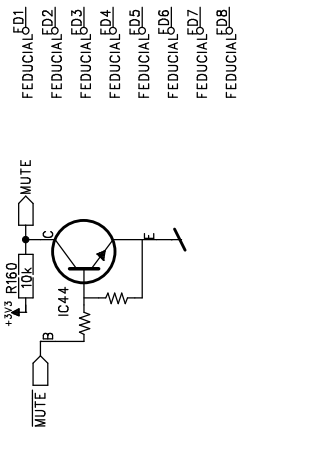
Date: 11-11-2002

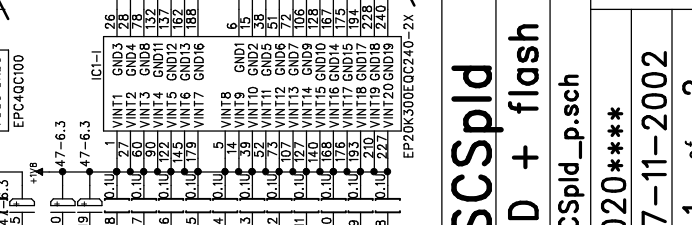
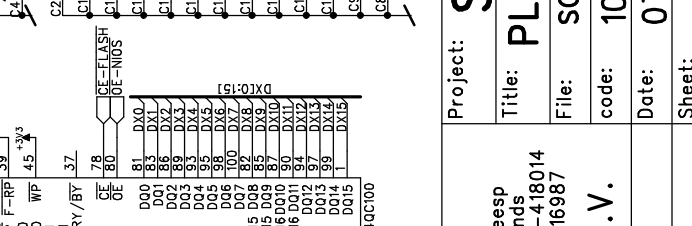
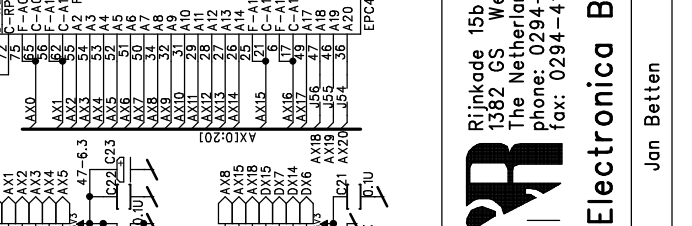
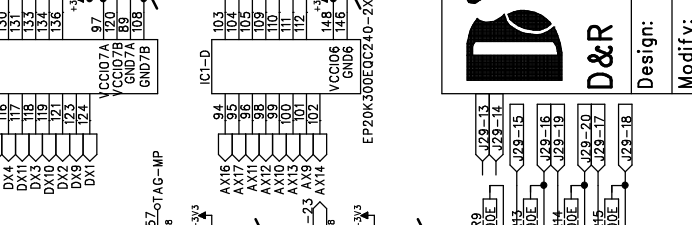
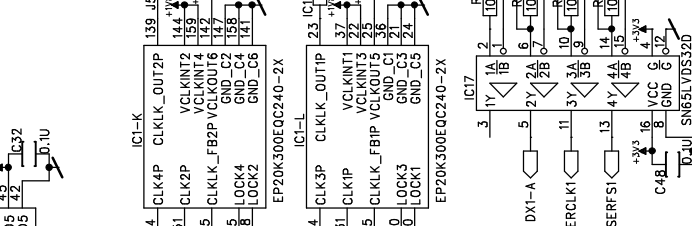
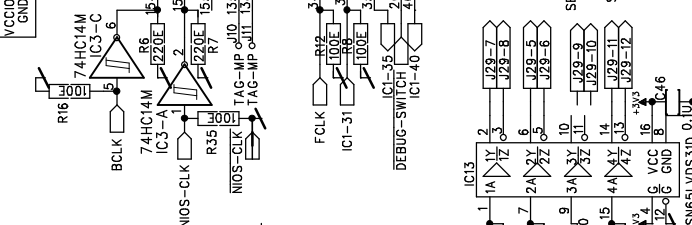
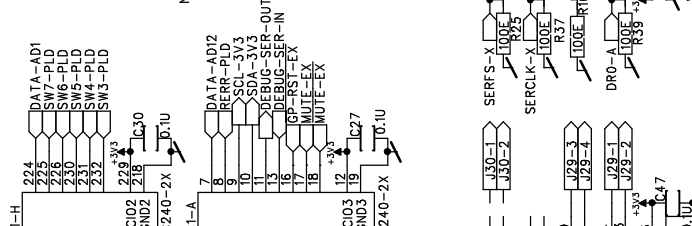
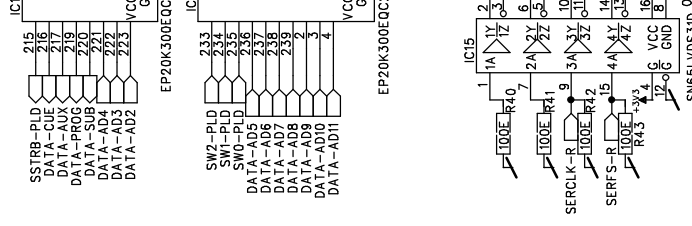
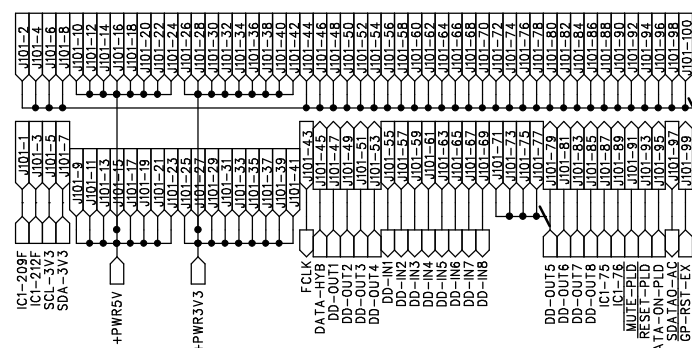
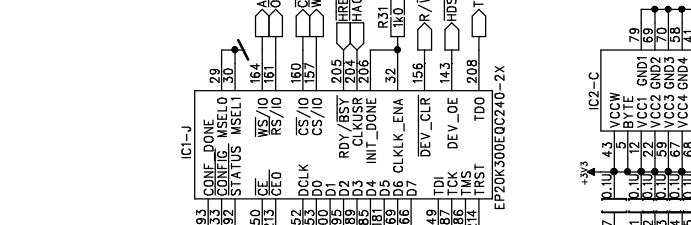
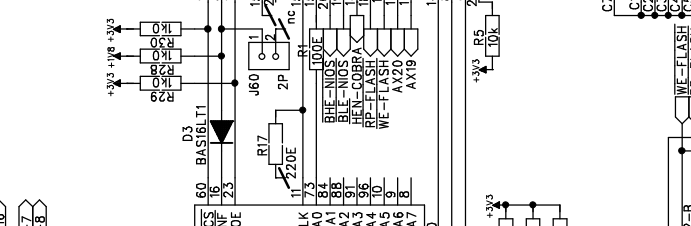
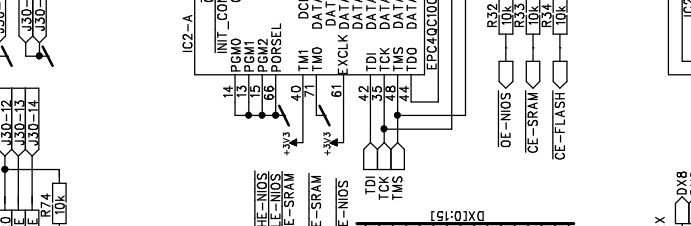
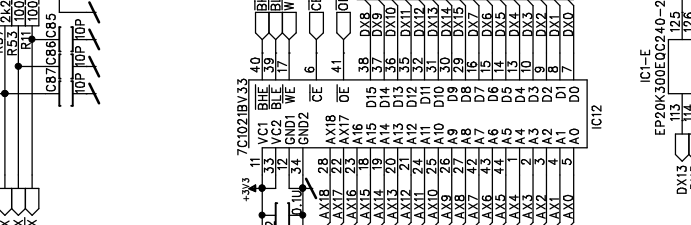
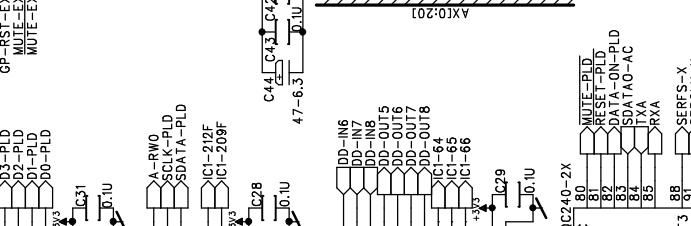
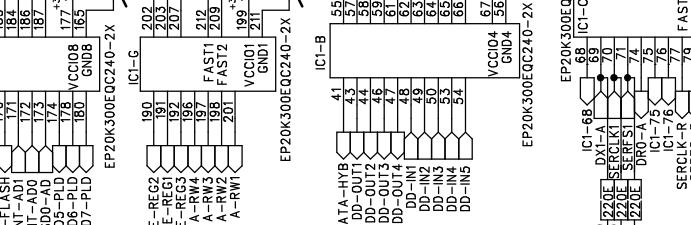
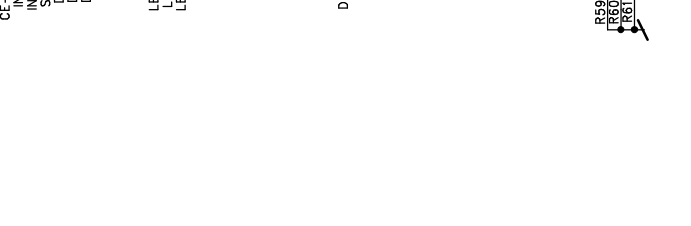
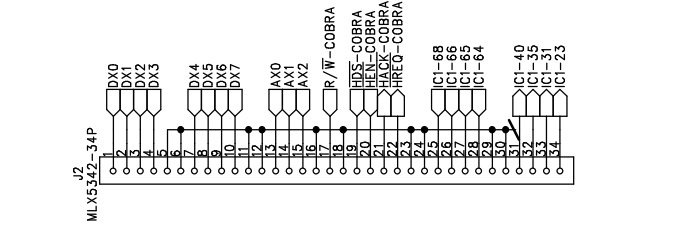
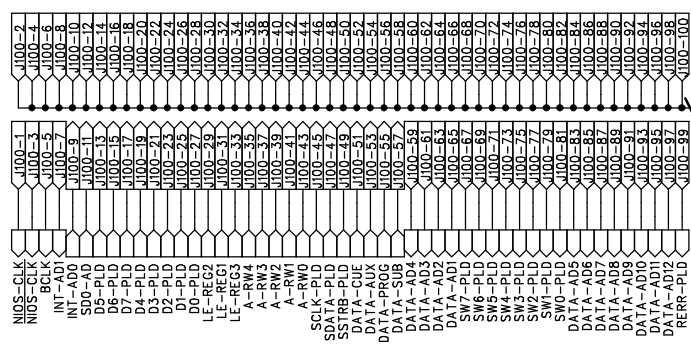
Sheet: 7 of 7

D&R
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fax: 0294-416987

D&R Electronics B.V.
Design: Jan Betten
Modify:

	+2V5	+3V3	+5V	+5V_AINA	+5V	-VS
PLD		280mA	320mA			
PCMI730	5 x 15mA			5 x 34mA		
NE5532				10 x 10mA	10 x 10mA	
OPA2134				5 x 8mA	5 x 8mA	
TL072				12 x 5mA	12 x 5mA	
DRV134				13 x 10mA	13 x 10mA	
CS8420				70mA		
LVDS31				6 x 25mA		
LVDS32				7 x 10mA		
LCD40x2				4 x 200mA	1 x 100mA	
Relais				6 x 40mA		
Logic						
Total master	0mA	575mA	1430mA	170mA	430mA	430mA



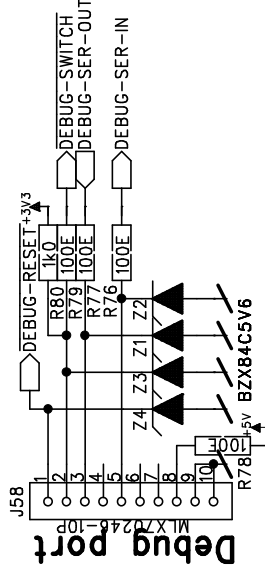
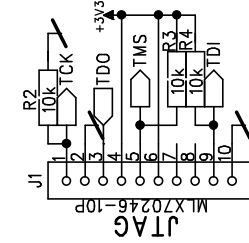
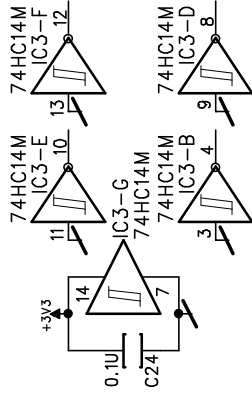


Project: SCSpid
Title: PLD + flash
File: SCSpid_p.sch
code: 1020****
Date: 07-11-2002
Sheet: 1 of 2

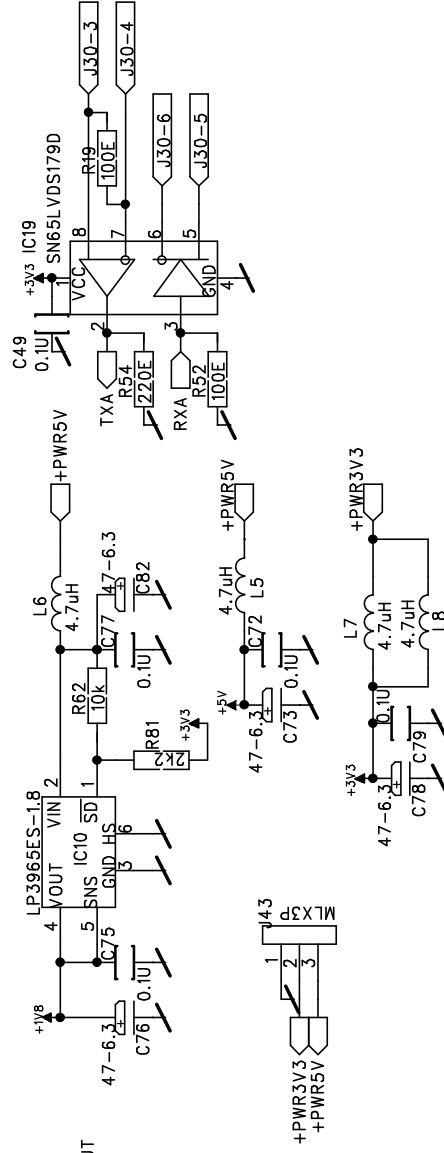
D&R Rijnkade 15b
 1382 GS Weesp
 The Netherlands
 phone: 0294-418014
 fax: 0294-416987

D&R Electronica B.V.
 Design: Jan Betten
 Modify:

Rev: **P**



LOGO
J7



D&R
Rijnkade 15b
1382 GS Weesp
The Netherlands
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fax: 0294-416987

Project: **SCSpIld**

Title: **PLD + flash**

File: **SCSpIld_p.sch**

code: **1020******

Rev:

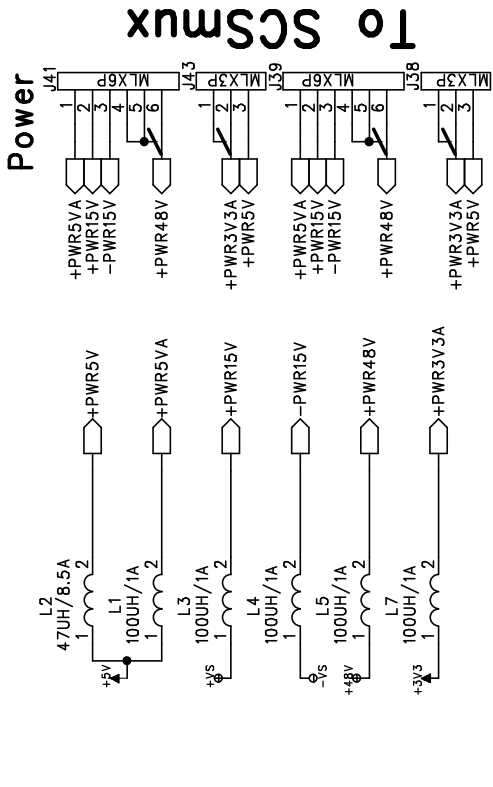
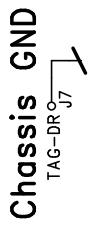
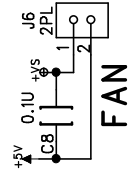
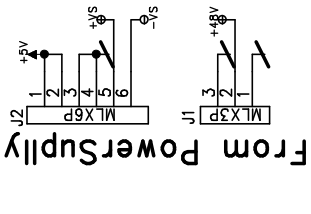
Date: **07-11-2002**

P

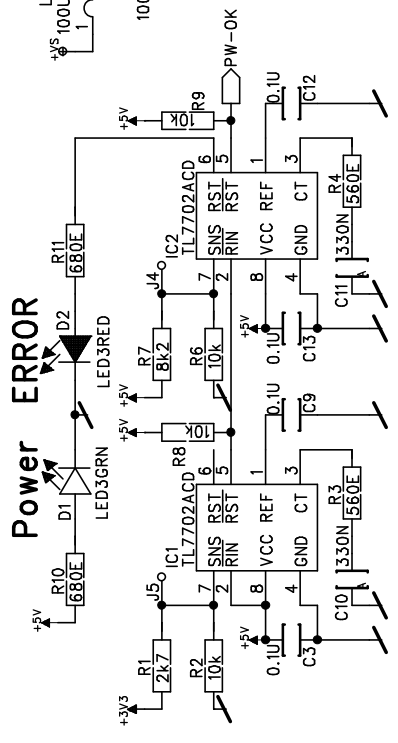
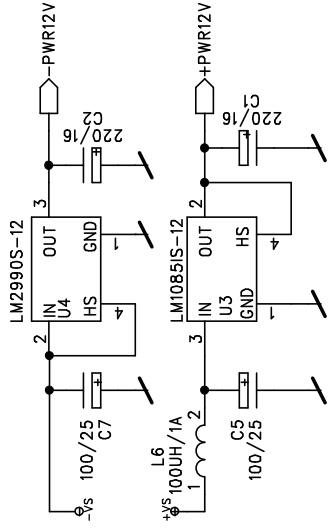
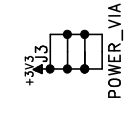
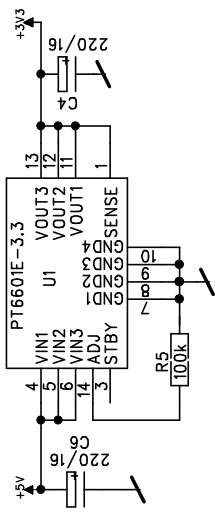
Sheet: **2 of 2**

Design: Jan Betten

Modify: -----



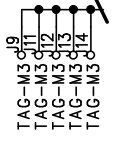
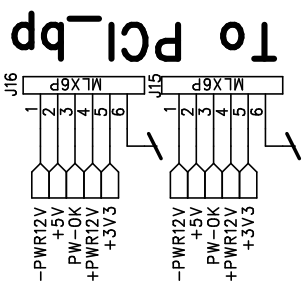
To SCSmux



Power ERROR

	+PWR3V3	+PWR5V	+PWR5VA	PWR15V
SCSstudio-master				55mA
SCSscrm-master				30mA
SCSmono-input	65mA	3mA	140mA	220mA
SCSremote-line	400mA			
SCSstereo-input	180mA		280mA	192mA
SCSdig-in/output	80mA	730mA		
SCSmod-sw 4x	1024mA			
SCSmaster-sw	208mA			
SCSmain	95mA	240mA	170mA	430mA
SCSmux	500mA	1246mA		
SCS audio total	920mA	3851mA	590mA	927mA
SCS PC	2000mA	4200mA		1mA
SCS HD/FD		1600mA		2400mApeak 233mAAnom
		3510mA		
SCS total	2920mA	13161mA	590mA	3328mAmax 1161mAAnom

2401mAmax (12V)
231mAAnom (12V)
927mAAnom (15V)



Project: **Scorpius**
 Title: **Power Distribution**
 File: **SCSpower-dis_p.sch**
 code: **2085 1492**
 Date: **12-04-2002**
 Sheet: **1 of 1**

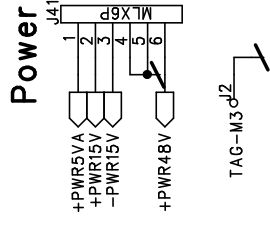
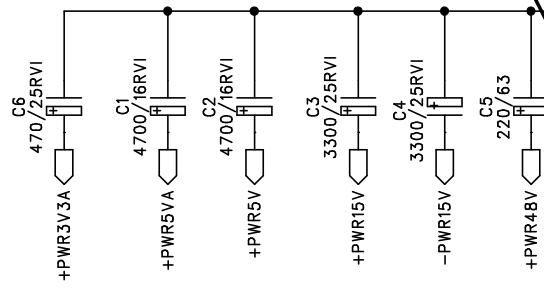
D&R
 Rijnkade 15b
 1382 GS Weesp
 The Netherlands
 phone: 0294-418014
 fax: 0294-416987

D&R Electronica B.V.


Design: **Karl de Boois**
 Modify: **Jan Betten**

Rev:

P



To SCSmux

		Project: Scorpius	
Rijinkade 15b 1382 GS Weesp The Netherlands phone: 0294-418014 fax: 0294-416987		Title: Condensators	
D&R Electronica B.V.		File: SCSpower-dis_condensators.sch code: 2085 1492 Date: 12-04-2002 Sheet: 1 of 1	
Design: Karl de Boois	Modify: Jan Betten	Rev:	
		P	