

**BLAXH50**  
**500-600MHz**

**TECHNICAL**  
**MANUAL**

**Version 003**

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**Sadis BRUKER SPECTROSPIN**

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P/N: W1302173

Updated for BASH 2.0 by U. Roos - December 1996

Manual P/N: Z31265  
DWG-No. 973 003

# Contents

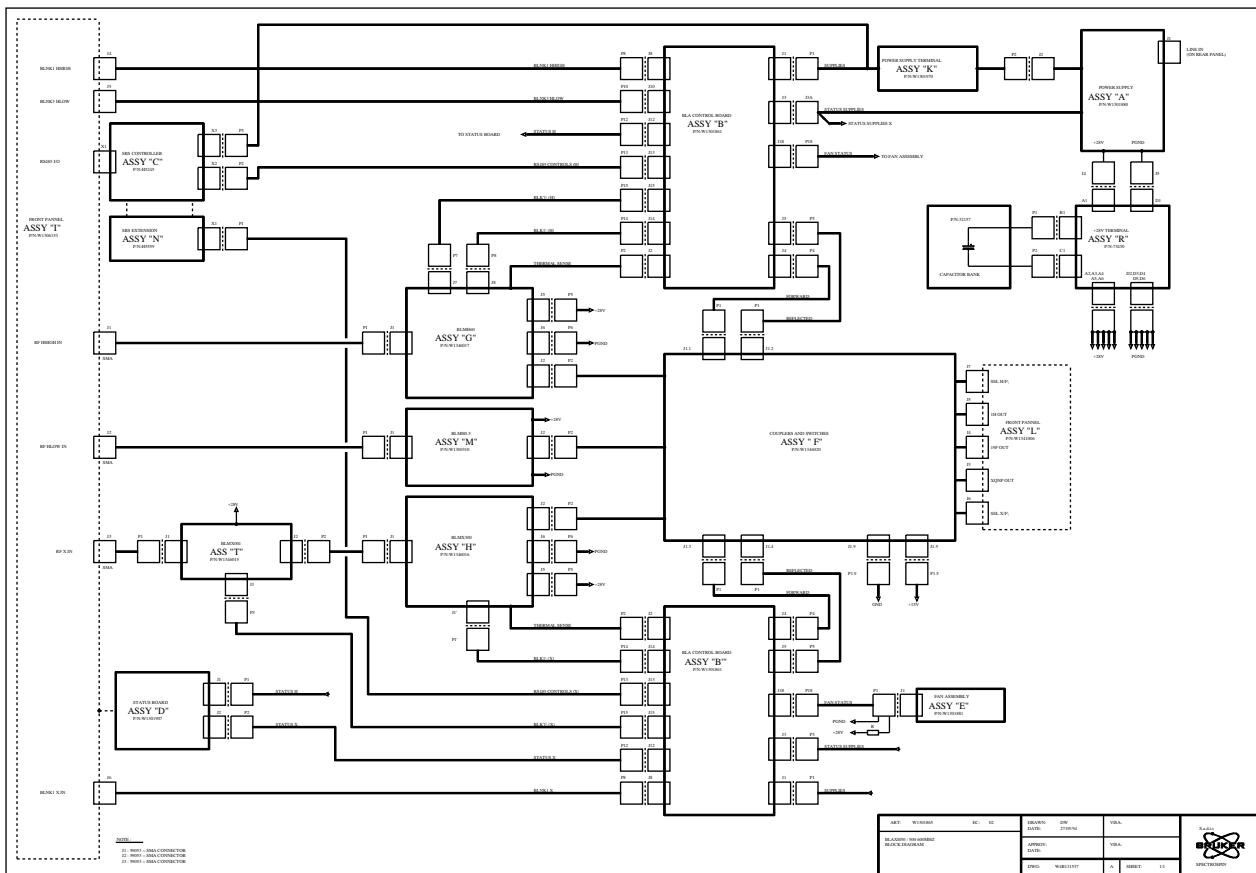
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# ***Block diagram***

# **1**

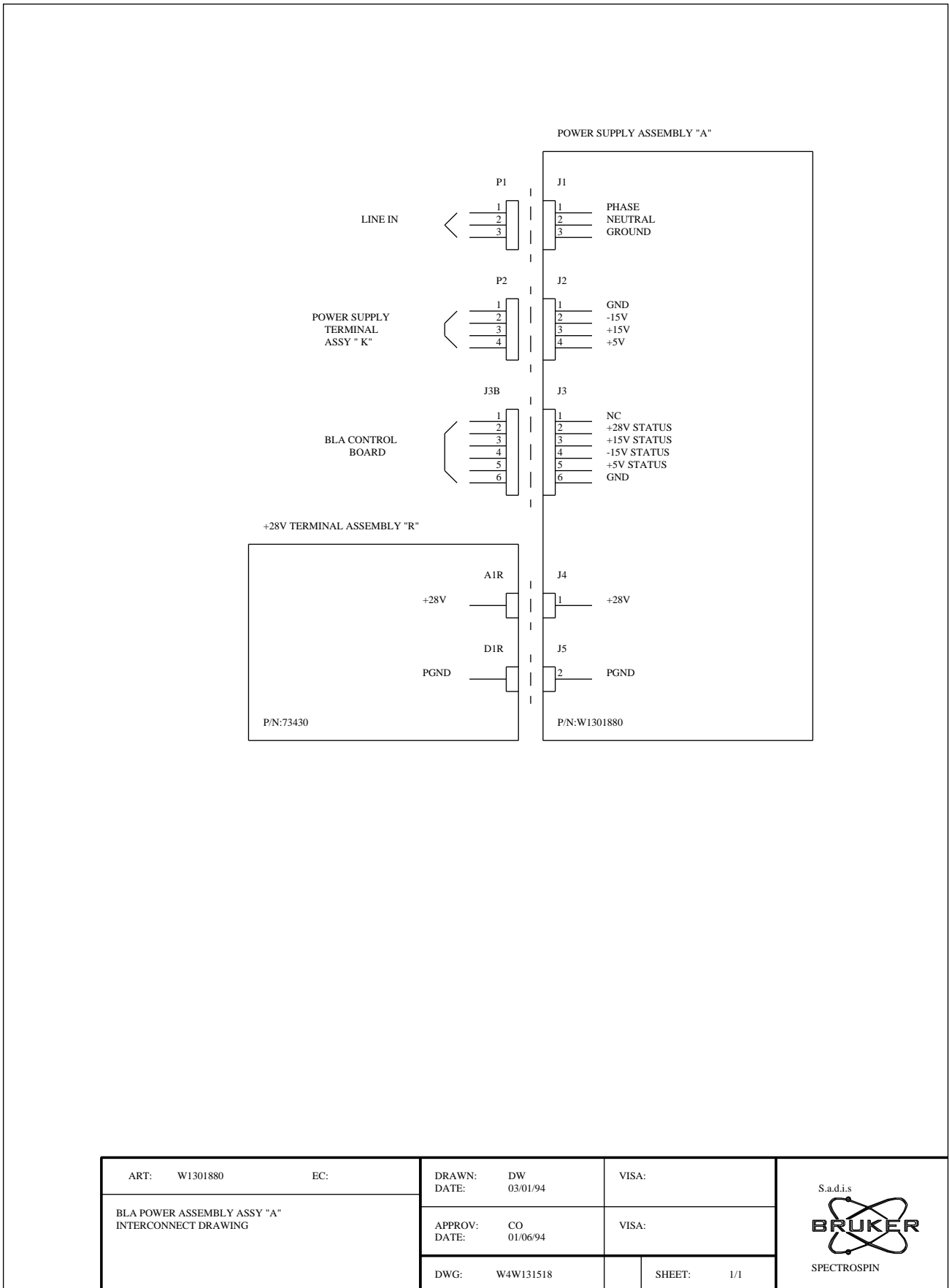
Figure 1.1. Block diagram



# *Power supply*

# 2

Figure 2.1. Wiring diagram




ART: W1301880	EC:	DRAWN: DW	VISA:	S.a.d.i.s  SPECTROSPIN
BLA POWER ASSEMBLY ASSY "A" INTERCONNECT DRAWING		DATE: 03/01/94		
		APPROV: CO	VISA:	
		DATE: 01/06/94		
		DWG: W4W131518	SHEET: 1/1	



Figure 2.2. Power supply diagram

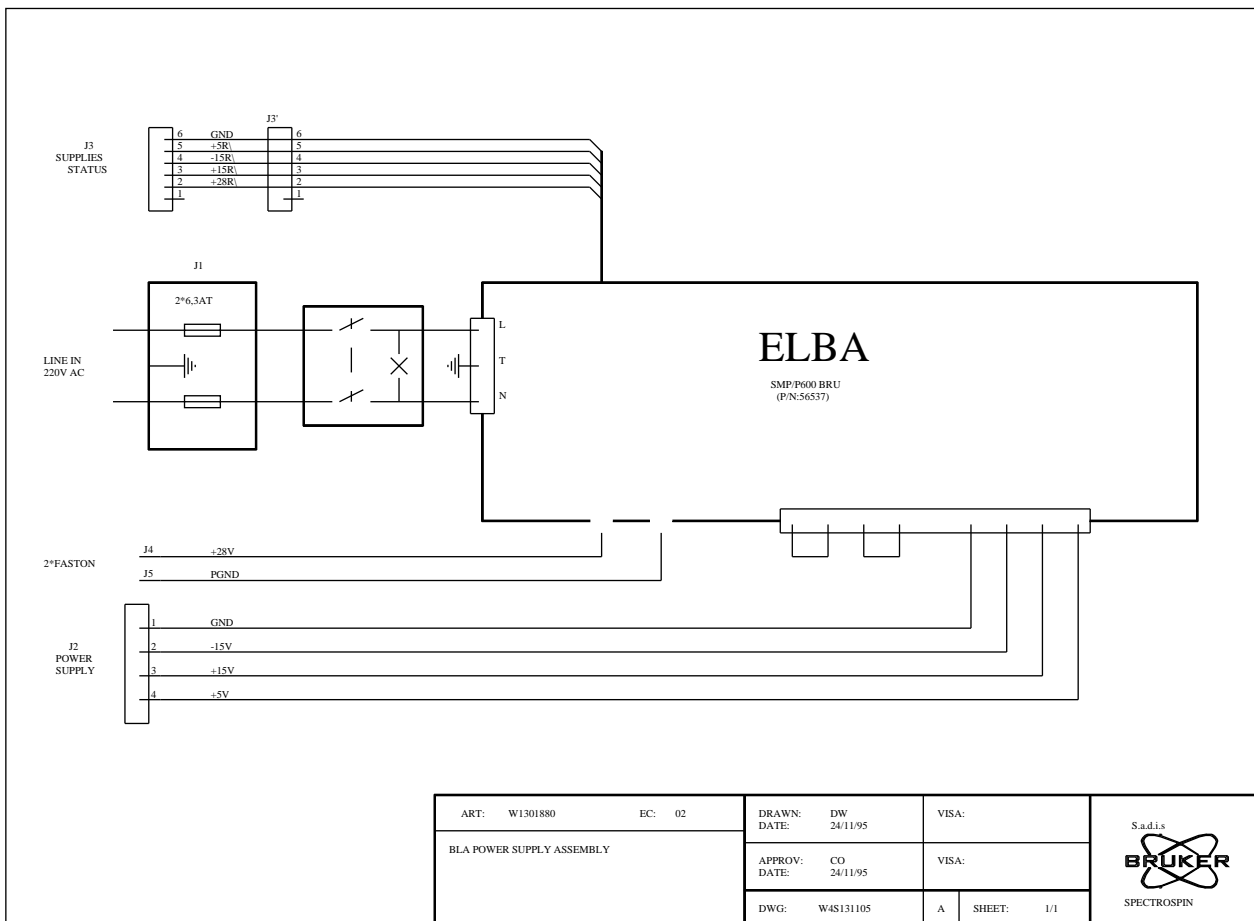


Figure 2.3. Power supply terminal

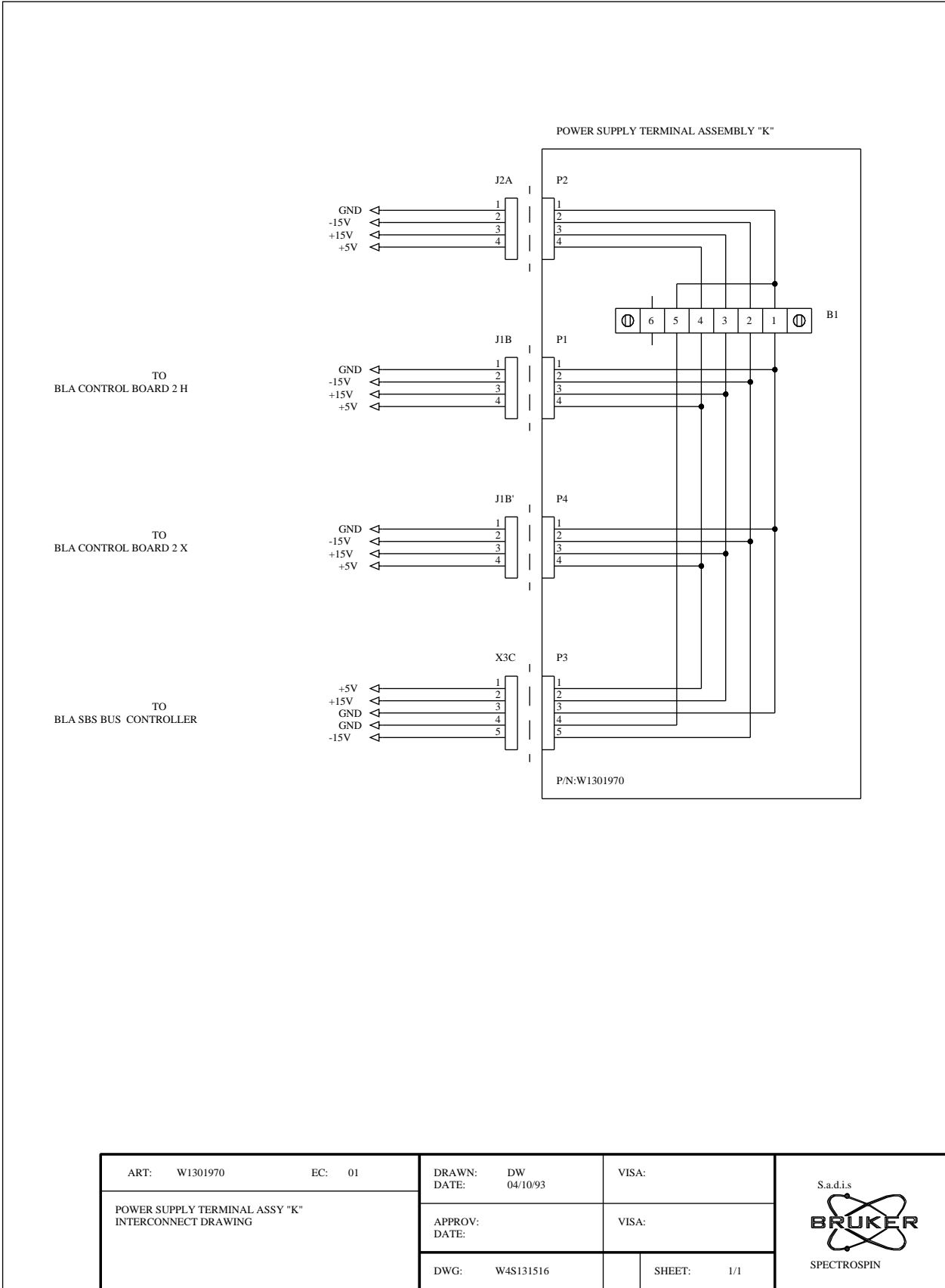
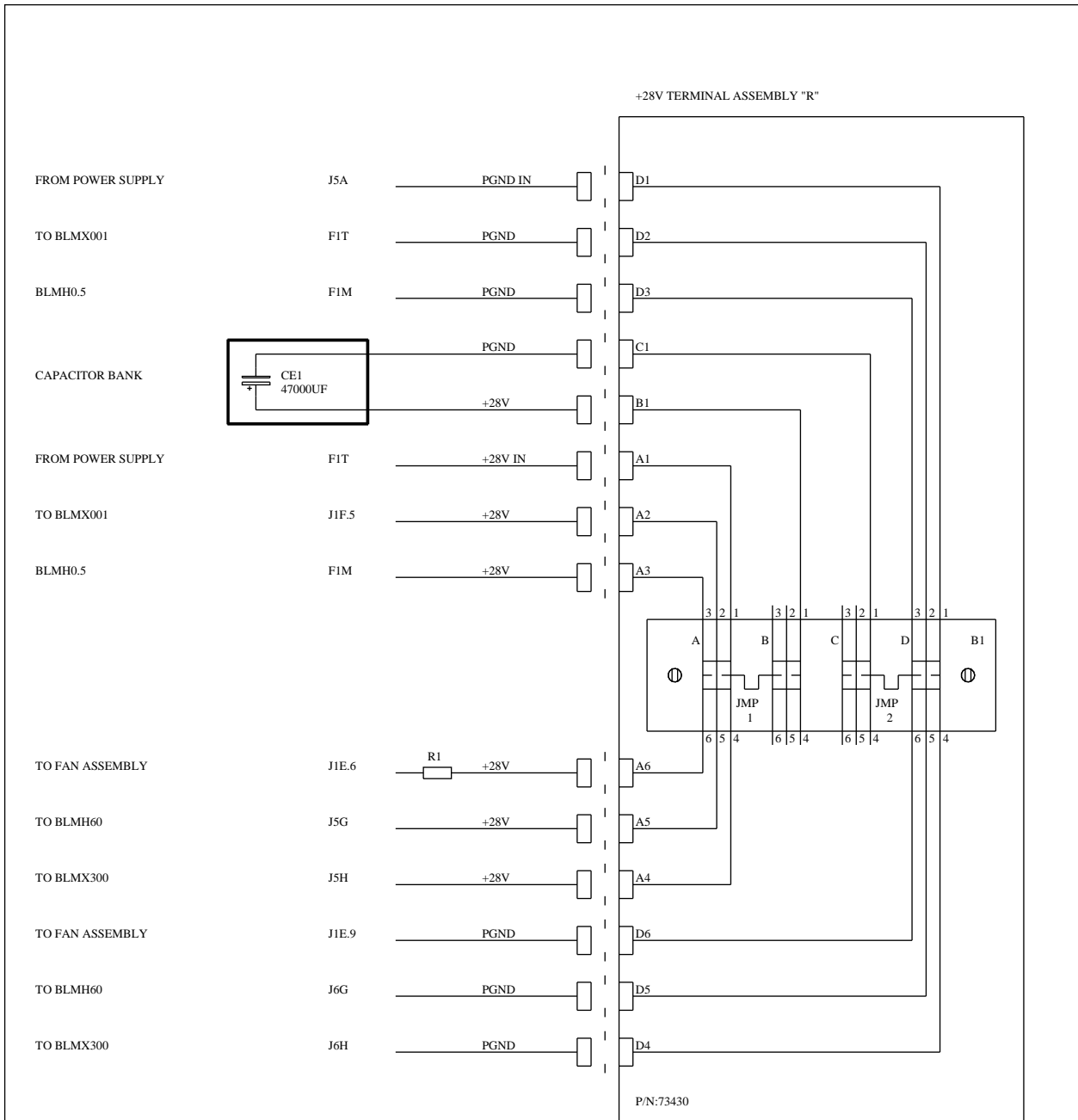


Figure 2.4. Power supply terminal



NOTE :  
 B1 = 73430 : 3070-PCM-04-5,033  
 CE1 = 32157 : 4700UF/40V  
 JMP1 = 73434 : JUMPER  
 JMP2 = 73434 : JUMPER  
 R1 = 32327 : RH10 22

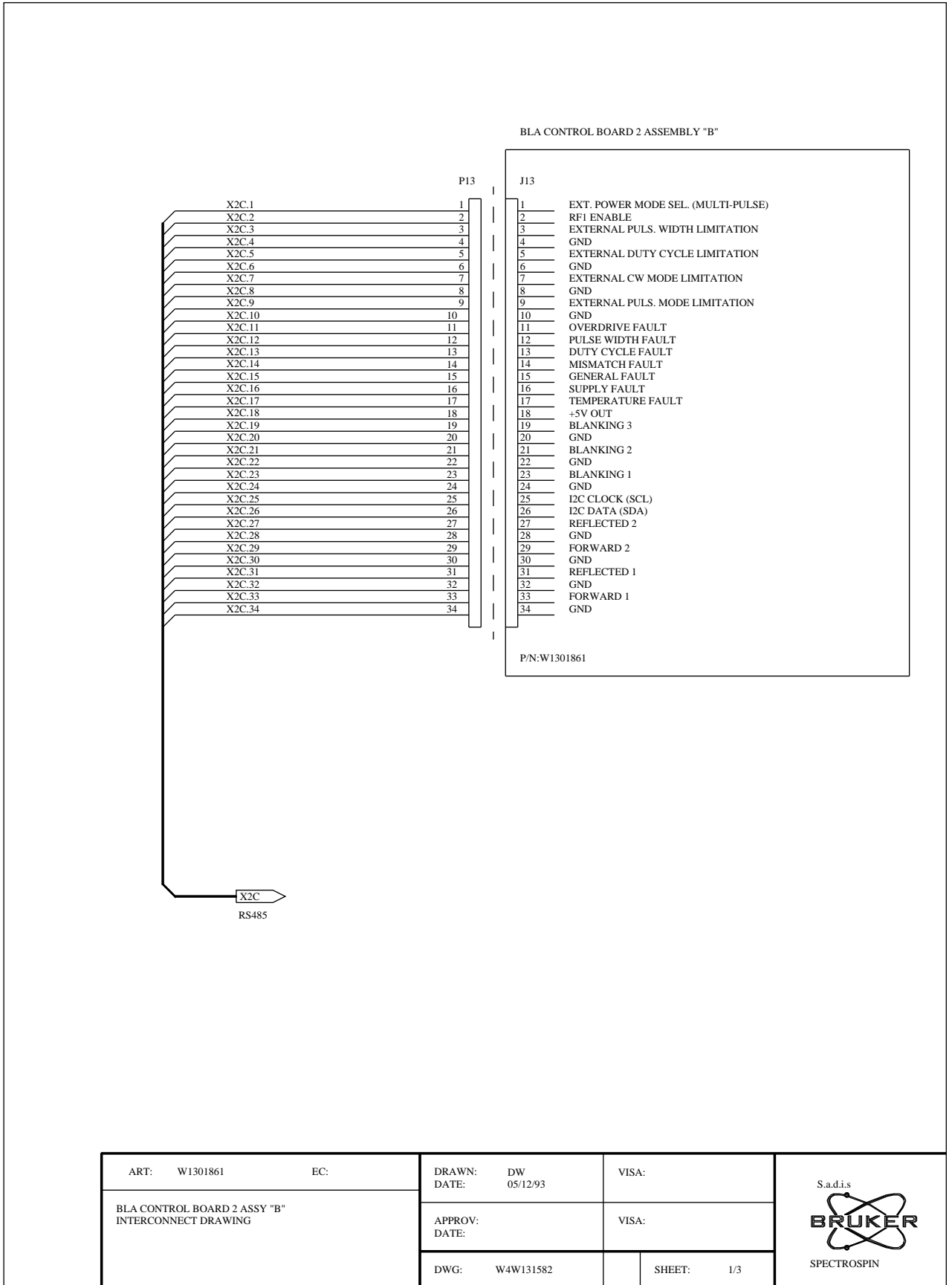
ART: 73430	EC:	DRAWN: DW DATE: 30/05/94	VISA:	S.a.d.i.s  SPECTROSPIN
+28V TERMINAL ASSY "R" INTERCONNECT DRAWING		APPROV: DATE:	VISA:	
		DWG: W4W131798	SHEET: 1/1	



# *Control board 2*

# 3

Figure 3.1. Interconnect drawing sheet 1/3

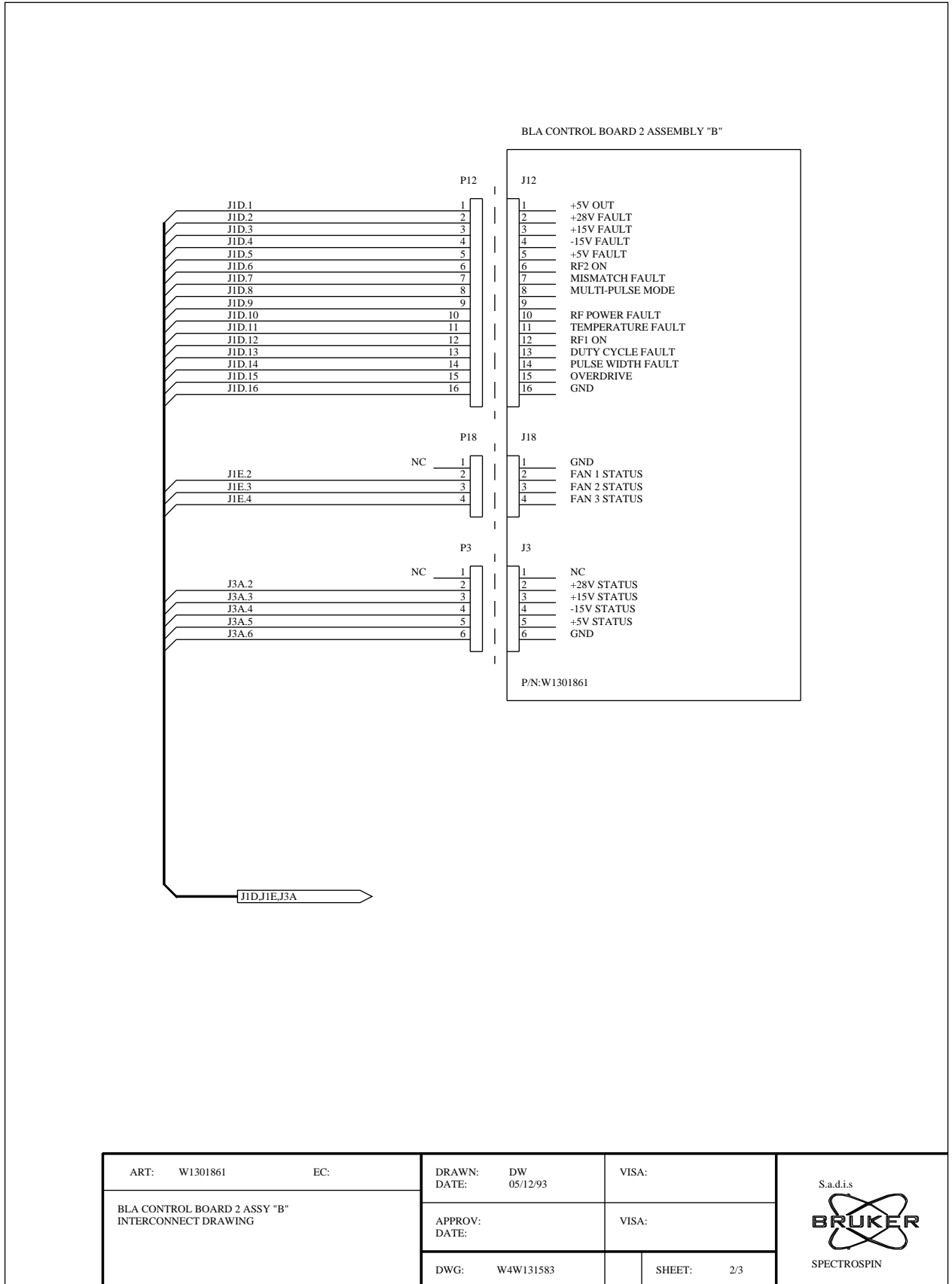


ART: W1301861	EC:	DRAWN: DW	VISA:
		DATE: 05/12/93	
BLA CONTROL BOARD 2 ASSY "B" INTERCONNECT DRAWING		APPROV:	VISA:
		DATE:	
DWG: W4W131582		SHEET: 1/3	

S.a.d.i.s

SPECTROSPIN

Figure 3.2. Interconnect drawing sheet 2/3



ART: W1301861	EC:	DRAWN: DW	VISA:
		DATE: 05/12/93	
BLA CONTROL BOARD 2 ASSY "B" INTERCONNECT DRAWING		APPROV:	VISA:
		DATE:	
DWG: W4W131583		SHEET: 2/3	

S.a.d.i.s

SPECTROSPIN

Figure 3.3. Interconnect drawing sheet 3/3

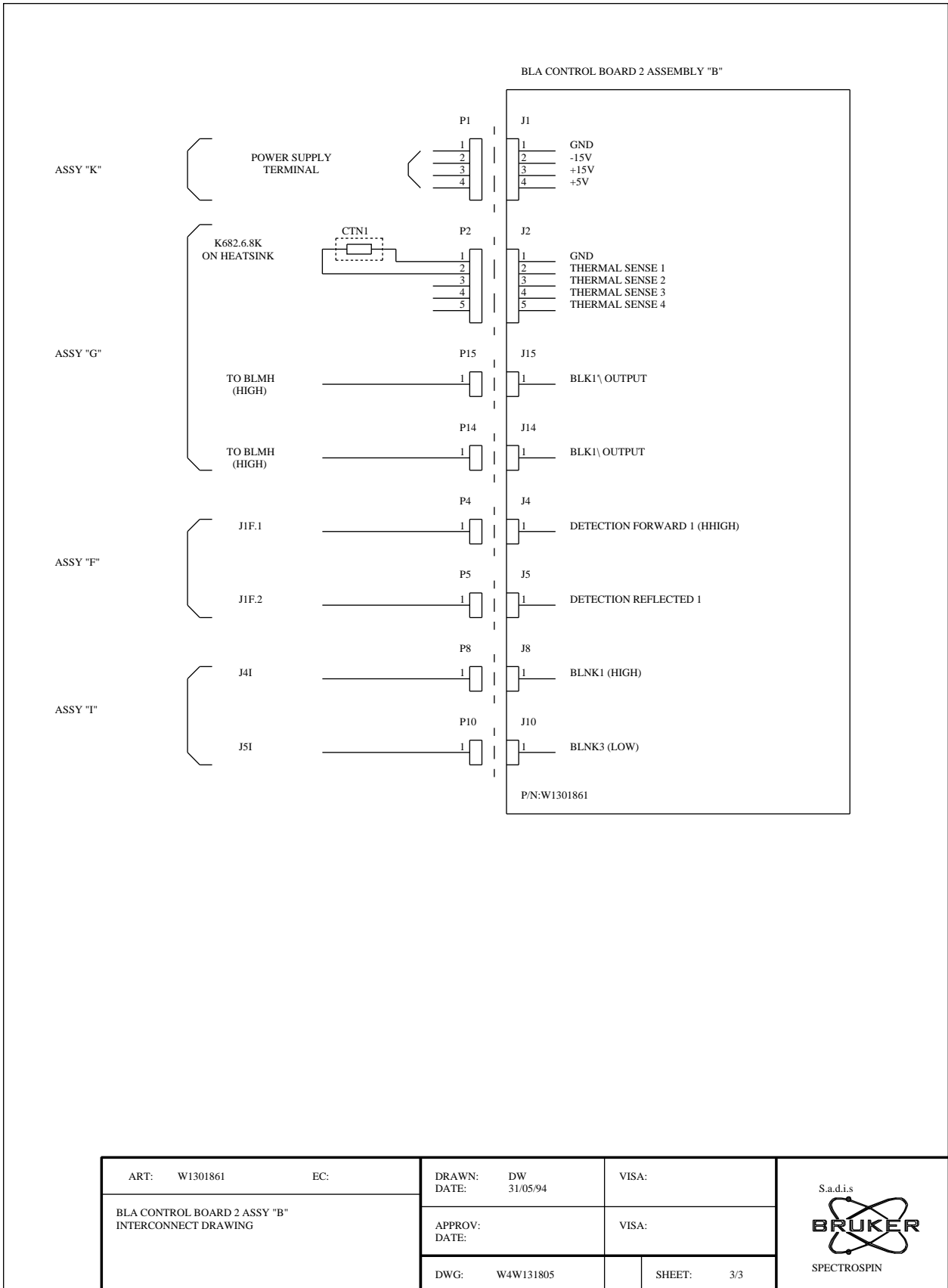




Figure 3.4. Control board top side

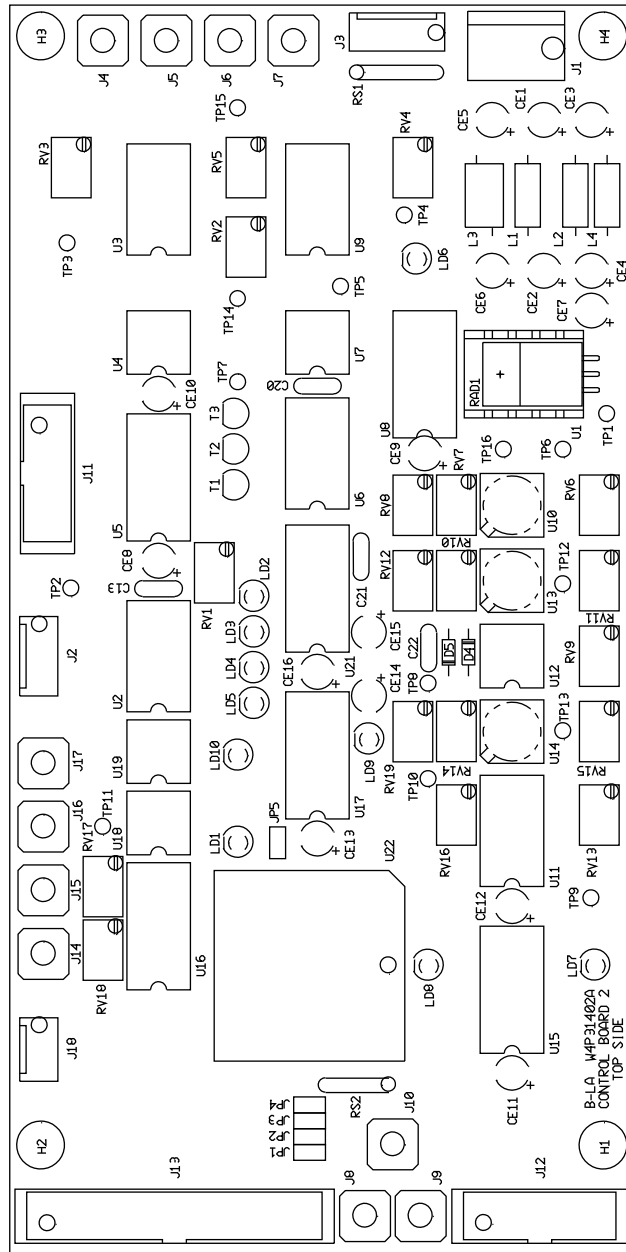


Figure 3.5. Control board bottom side

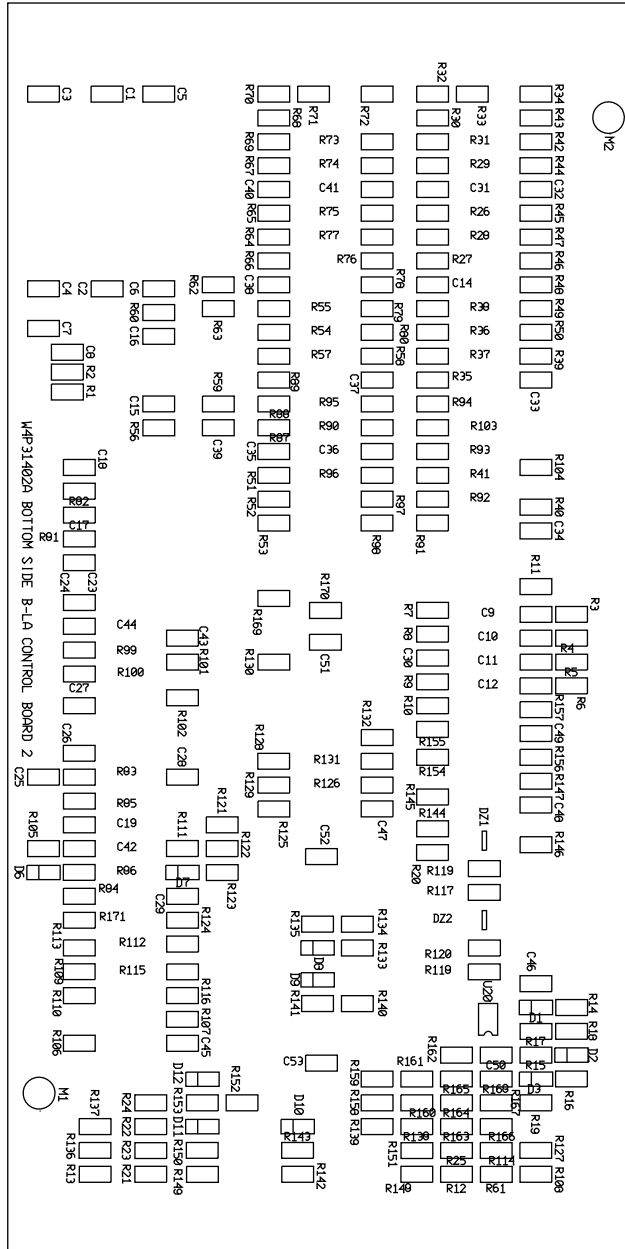


Figure 3.6. Control board 1/7 - power supply & reference

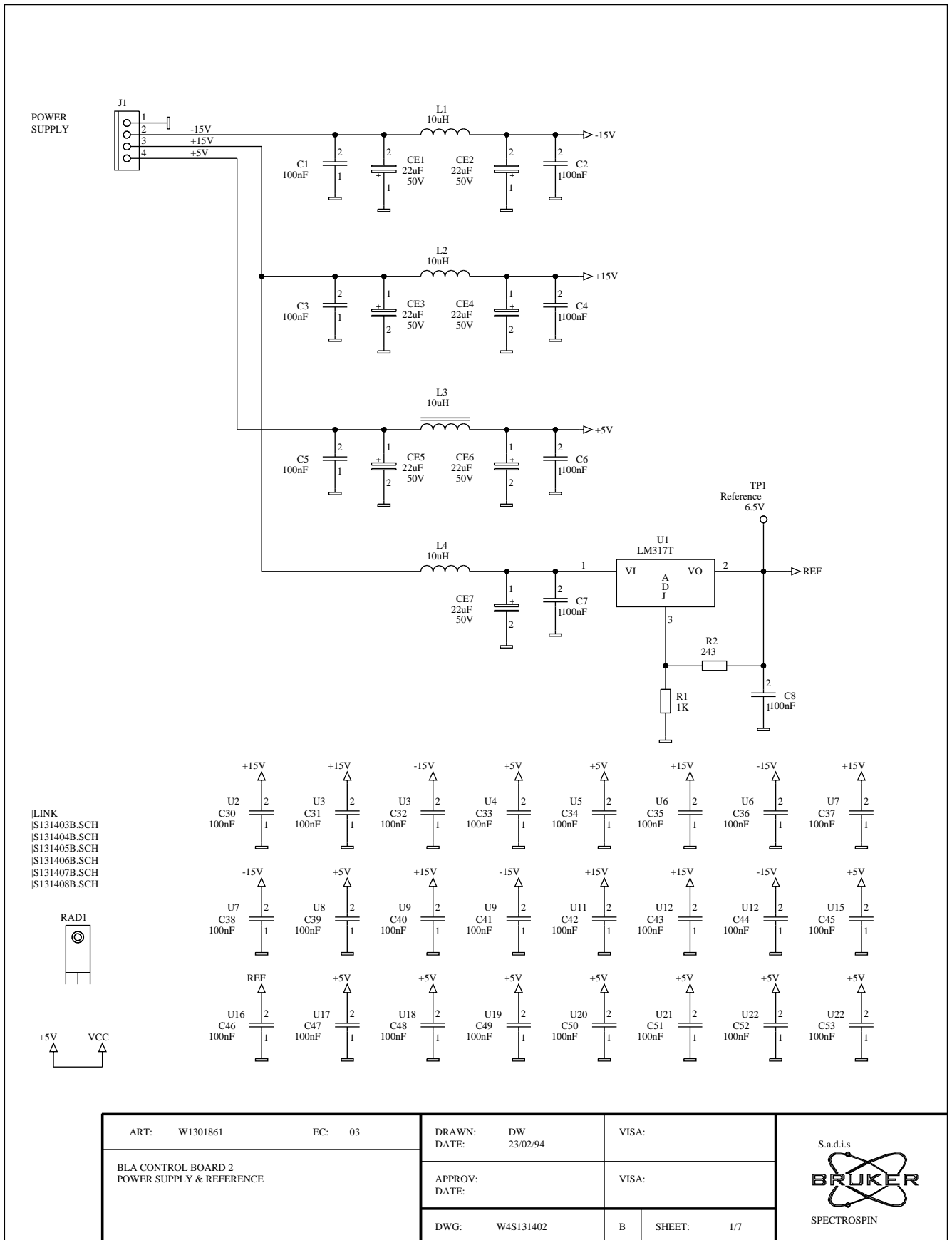


Figure 3.7. Control board 2/7 - Thermal sense, supply & fan control

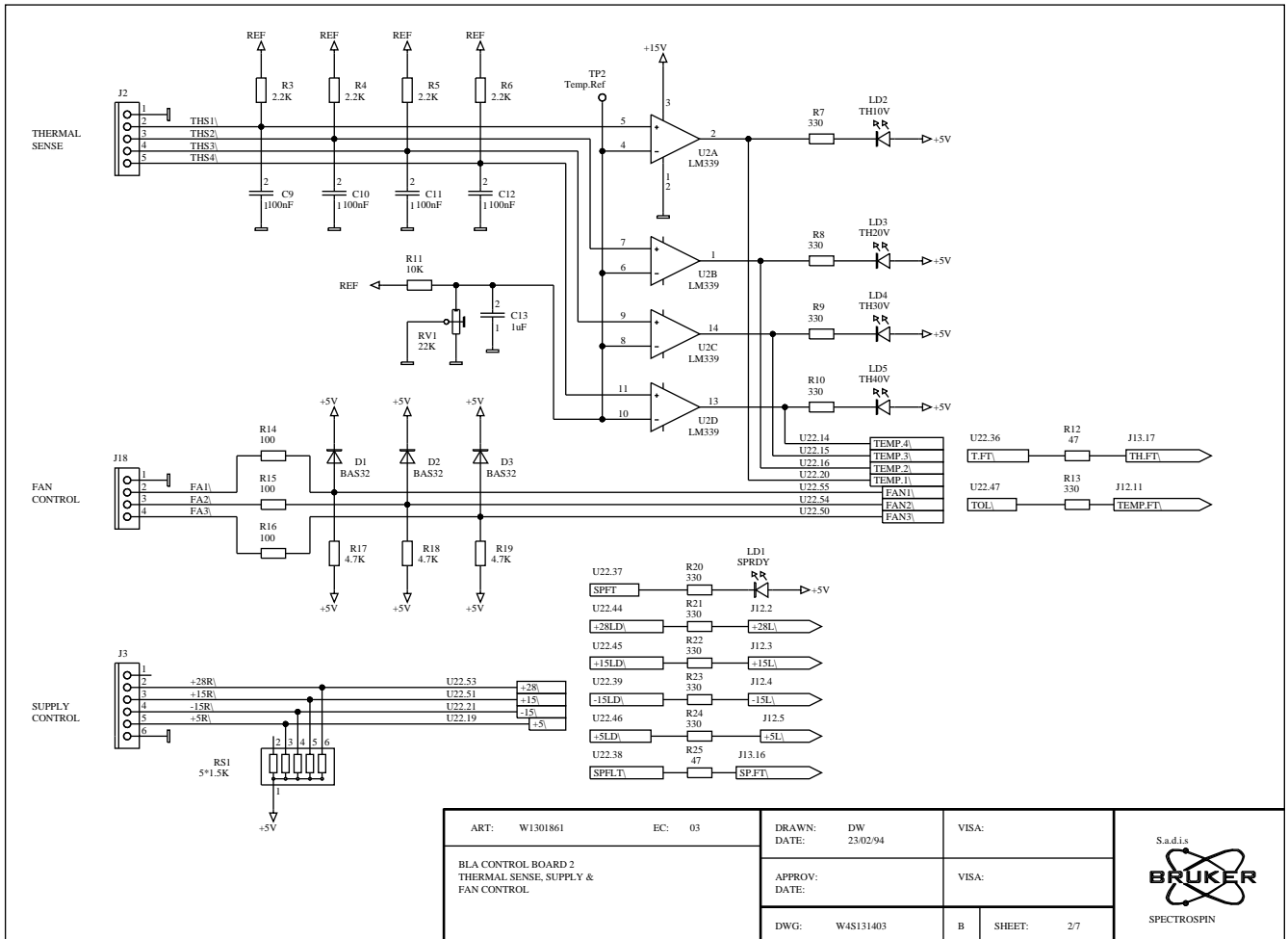
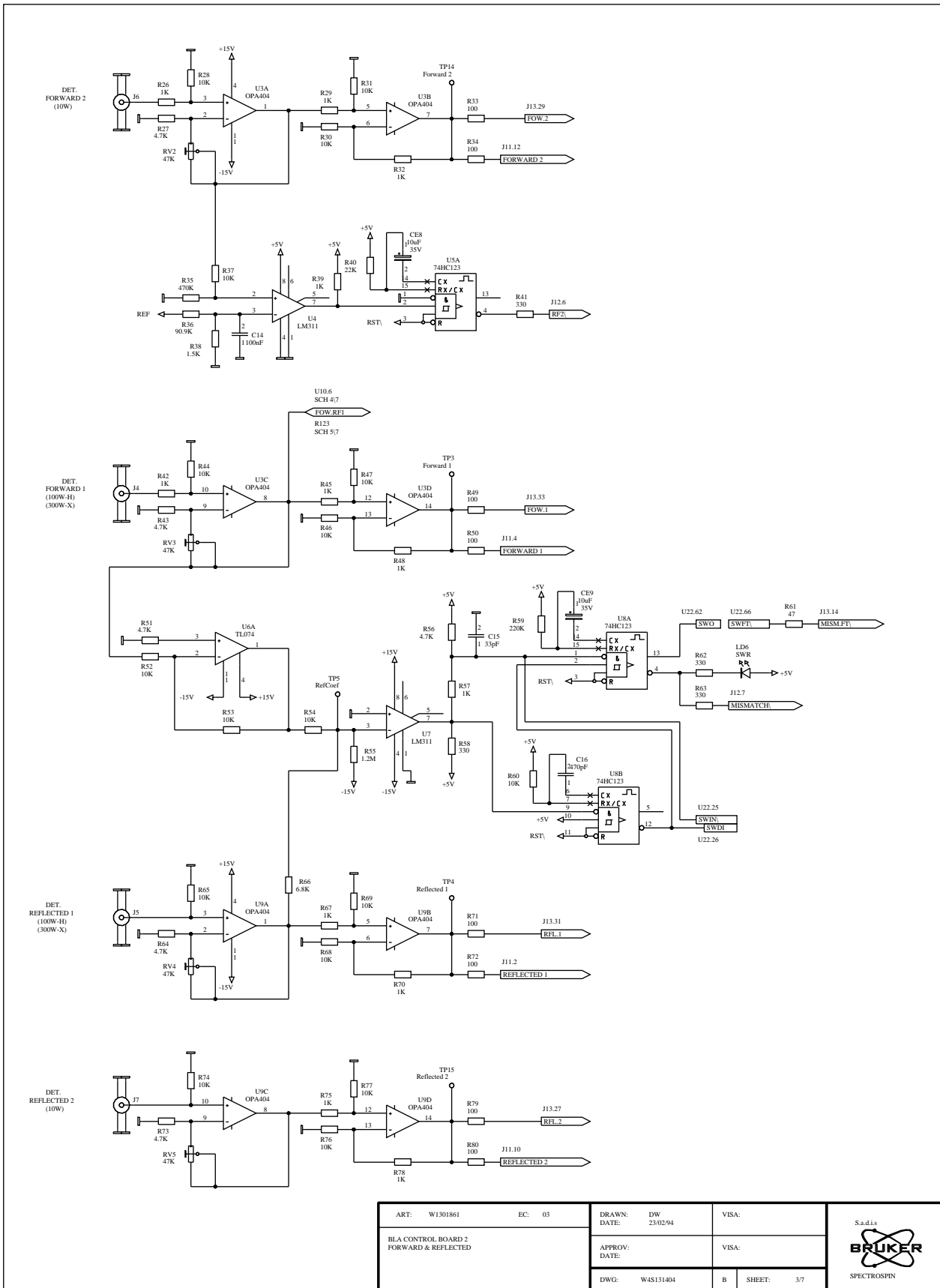


Figure 3.8. Control board 3/7 - Forward & reflected



ART: W1301861	EC: 03	DRAWN: DW 23/02/94	VISA:
BLA CONTROL BOARD 2 FORWARD & REFLECTED		DATE:	VISA:
		APPROV: DATE:	VISA:
		DWG: W48131404	B SHEET: 3/7



Figure 3.9. Control board 4/7 - Duty cycle & pulse width limiter

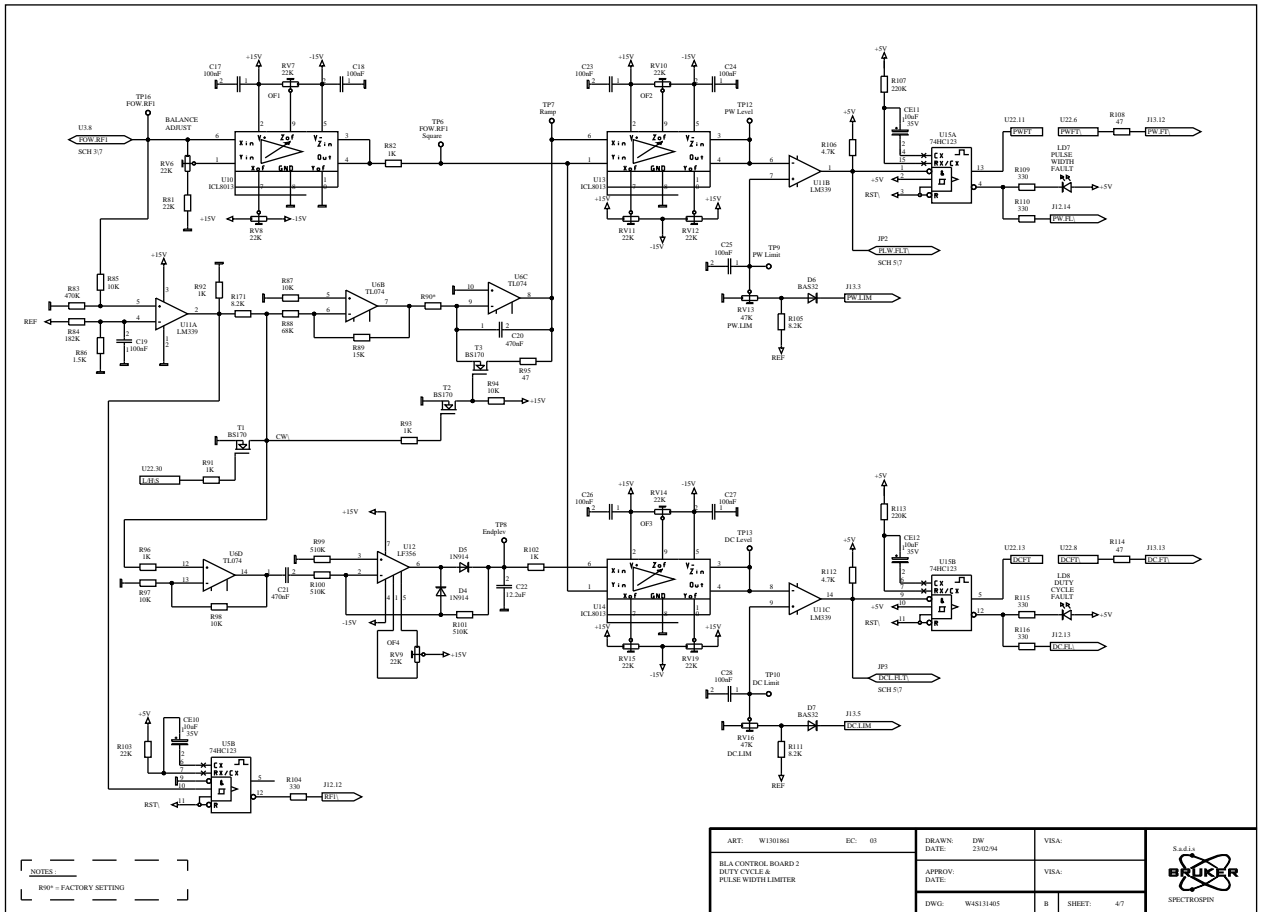


Figure 3.10. Control board 5/7 - Power limitation

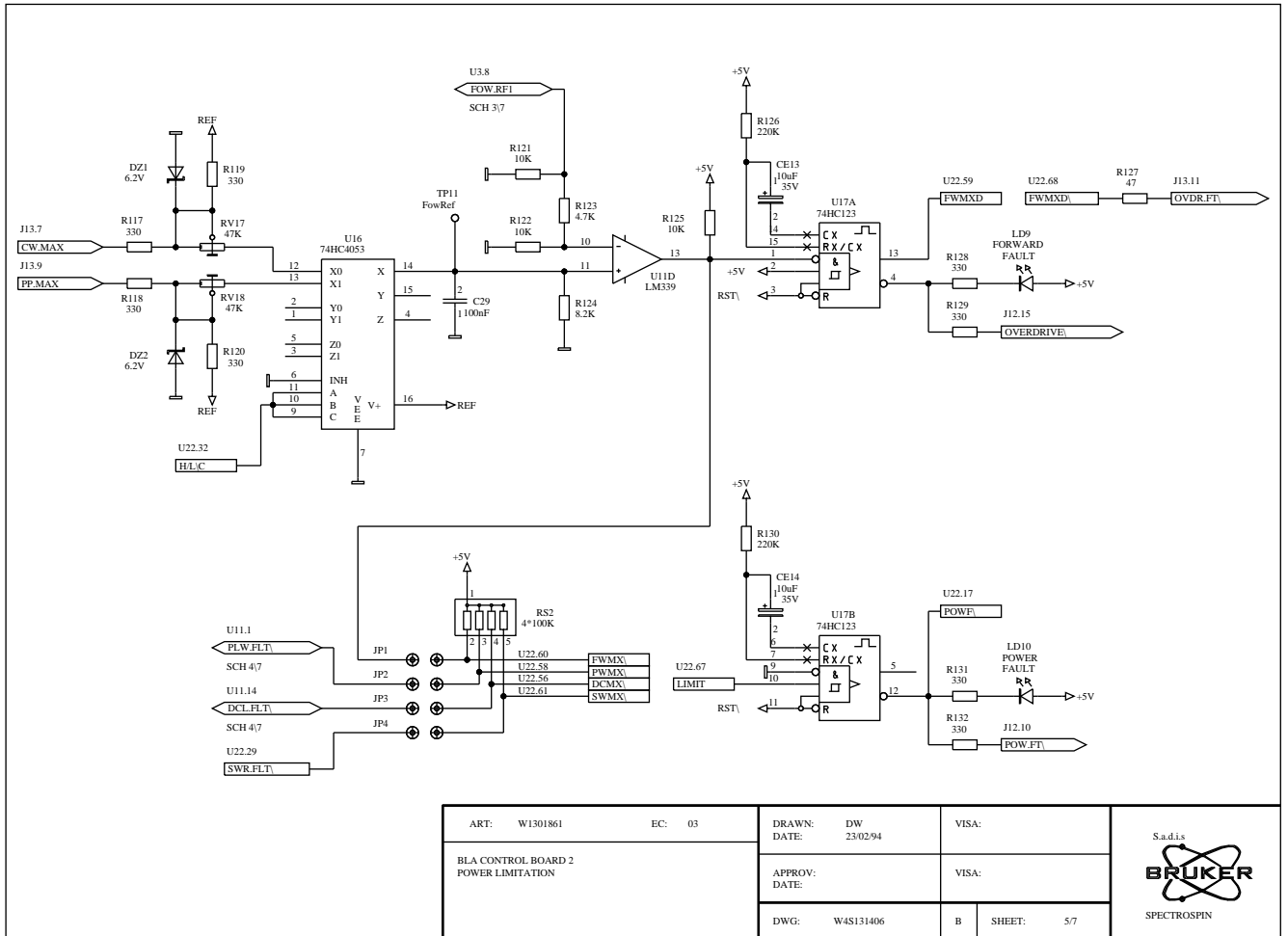
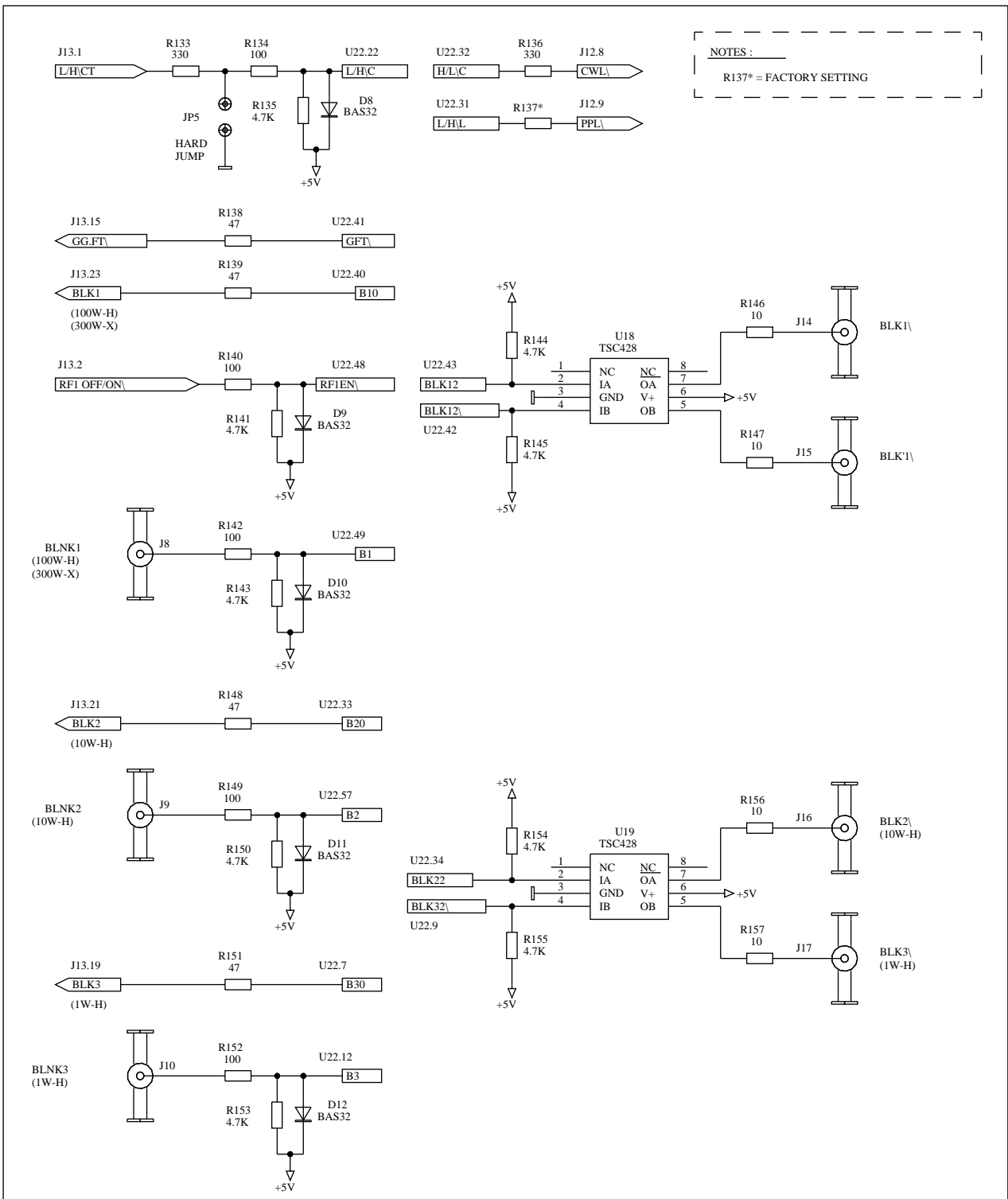


Figure 3.11. Control board 6/7 - Blanking circuit




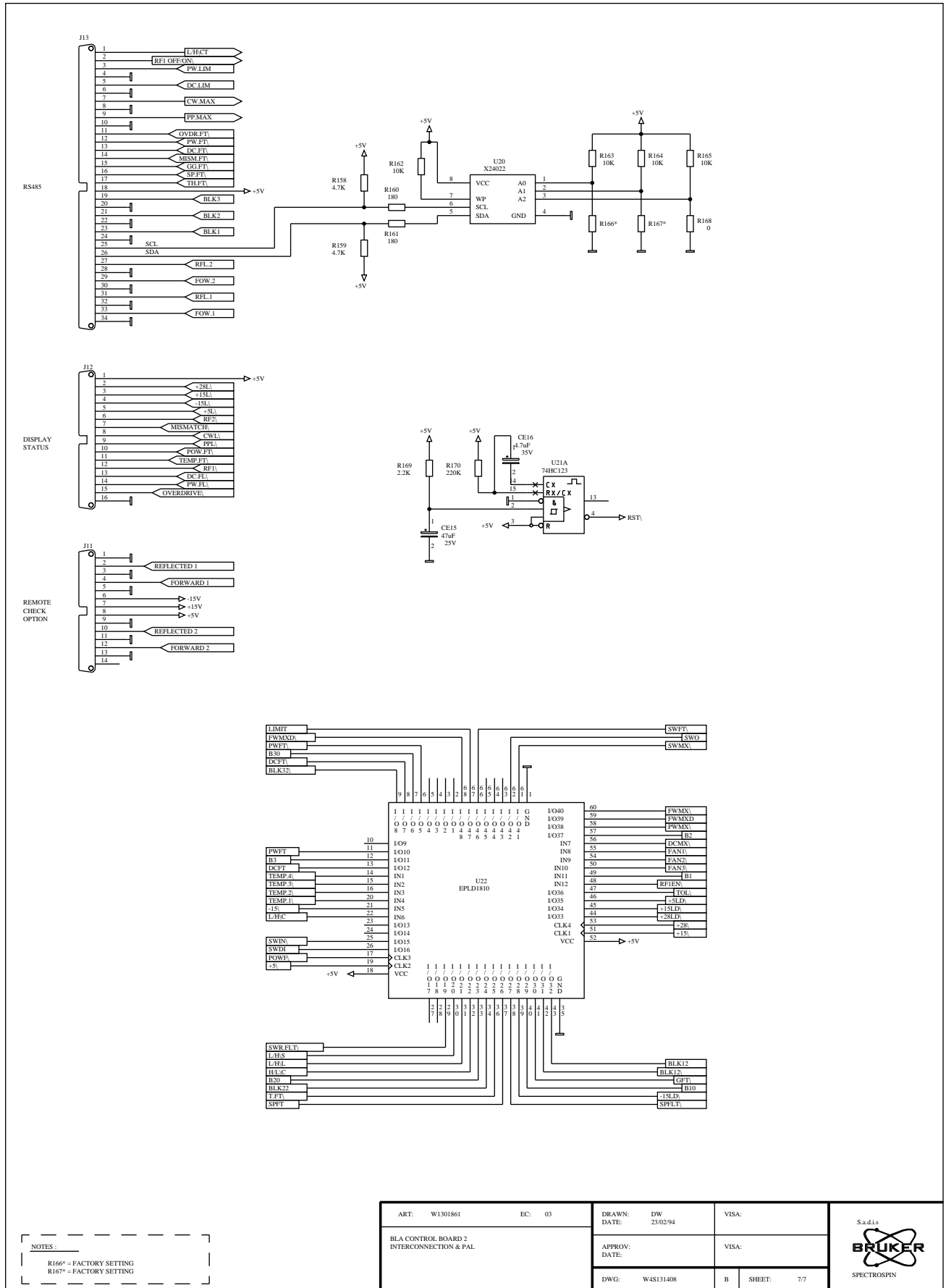
ART: W1301861	EC: 03	DRAWN: DW	VISA:	S.a.d.i.s  SPECTROSPIN
BLA CONTROL BOARD 2 BLANKING CIRCUIT		DATE: 23/02/94	VISA:	
		APPROV: DATE:	VISA:	
		DWG: W4S131407	B SHEET: 6/7	



Figure 3.12. Control board 7/7 - Interconnection & pal



NOTES :  
R166\* = FACTORY SETTING  
R167\* = FACTORY SETTING

ART: W1301861	EC: 03	DRAWN: DW 23/02/94	VISA:
BLA CONTROL BOARD 2 INTERCONNECTION & PAL		APPROV: DATE:	VISA:
DWG: W45131408	B	SHEET: 7/7	



Figure 3.13. Pal interconnection

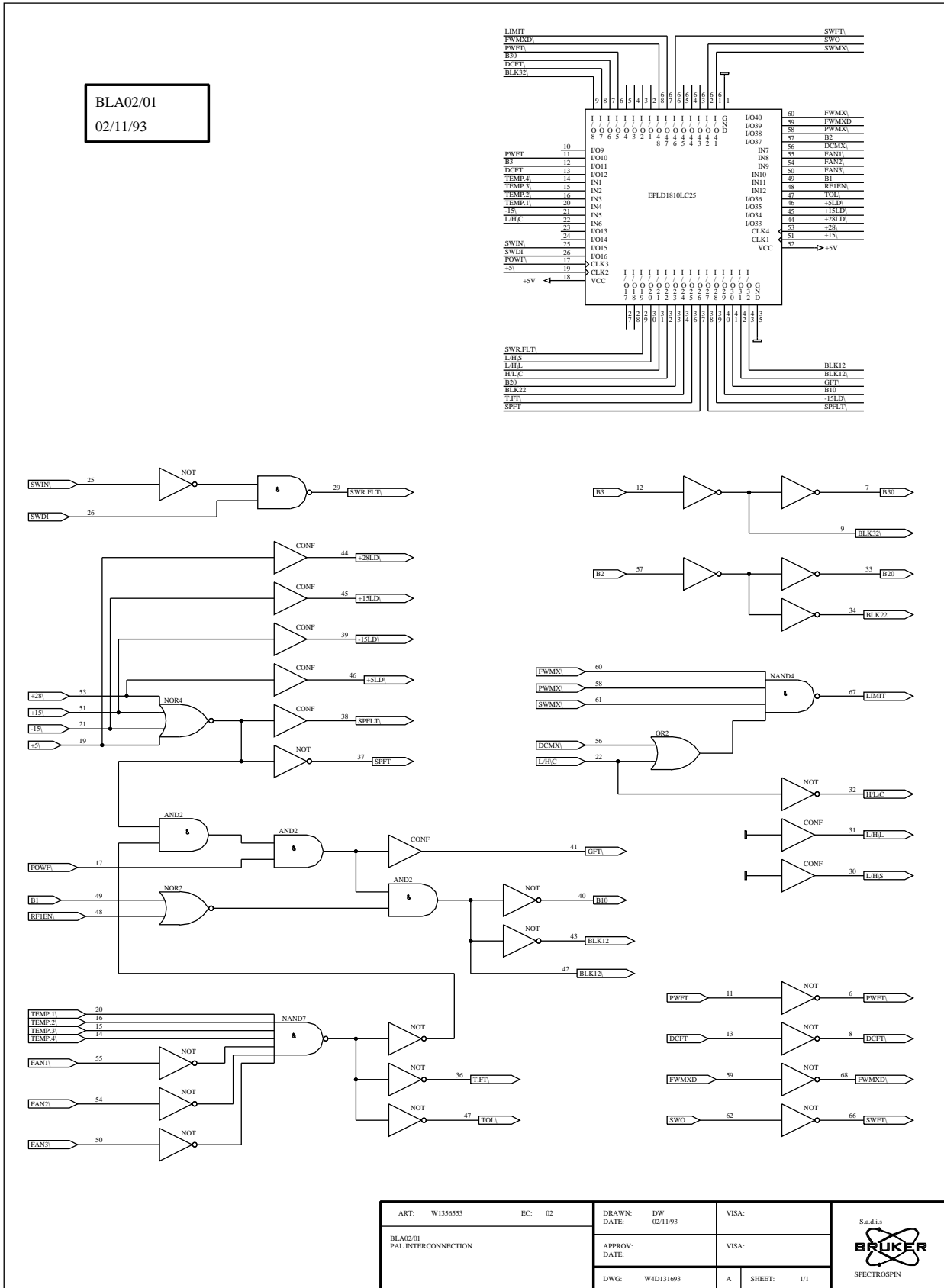


Figure 3.14. Wiring diagram

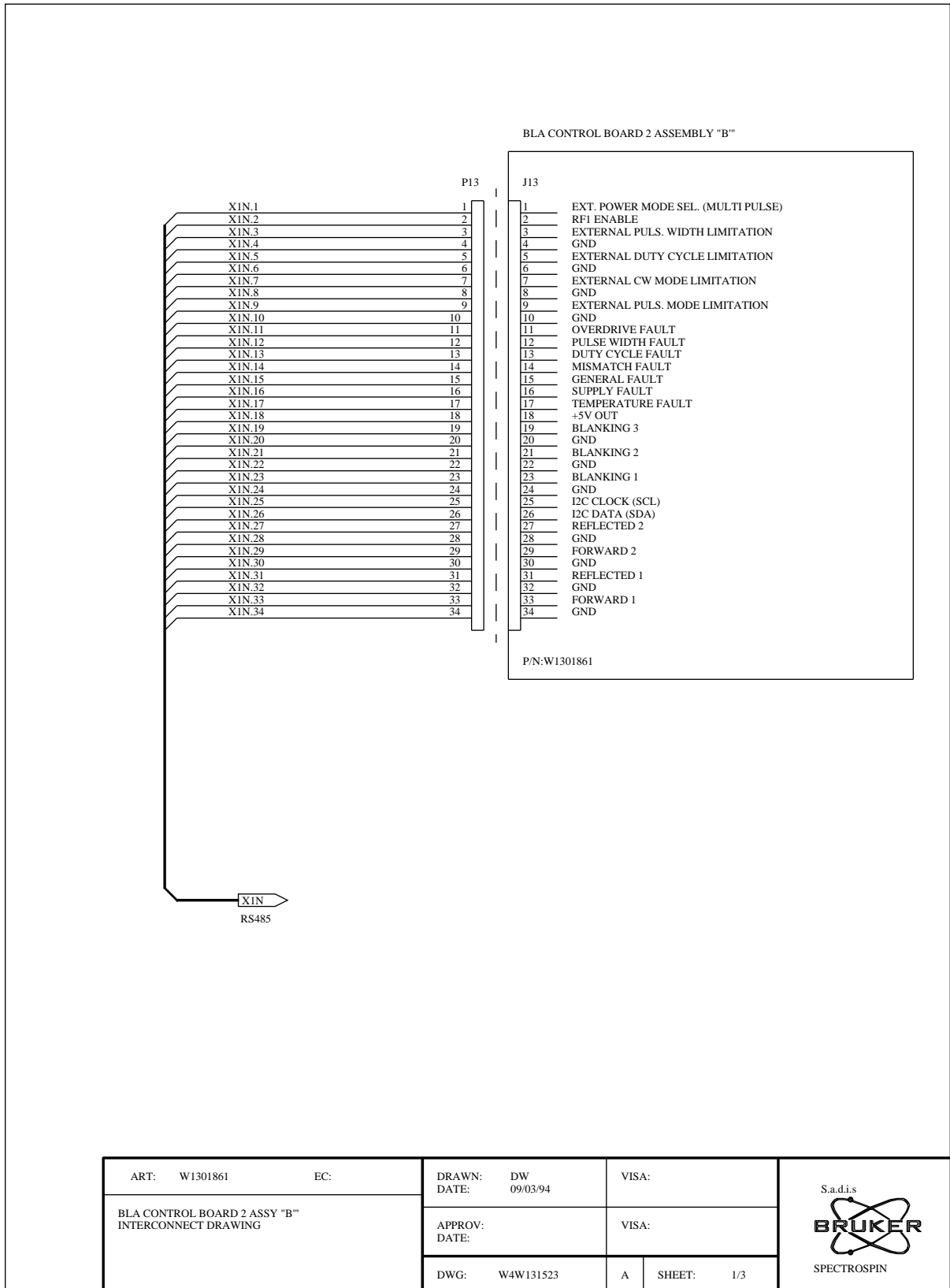


Figure 3.15. Wiring diagram

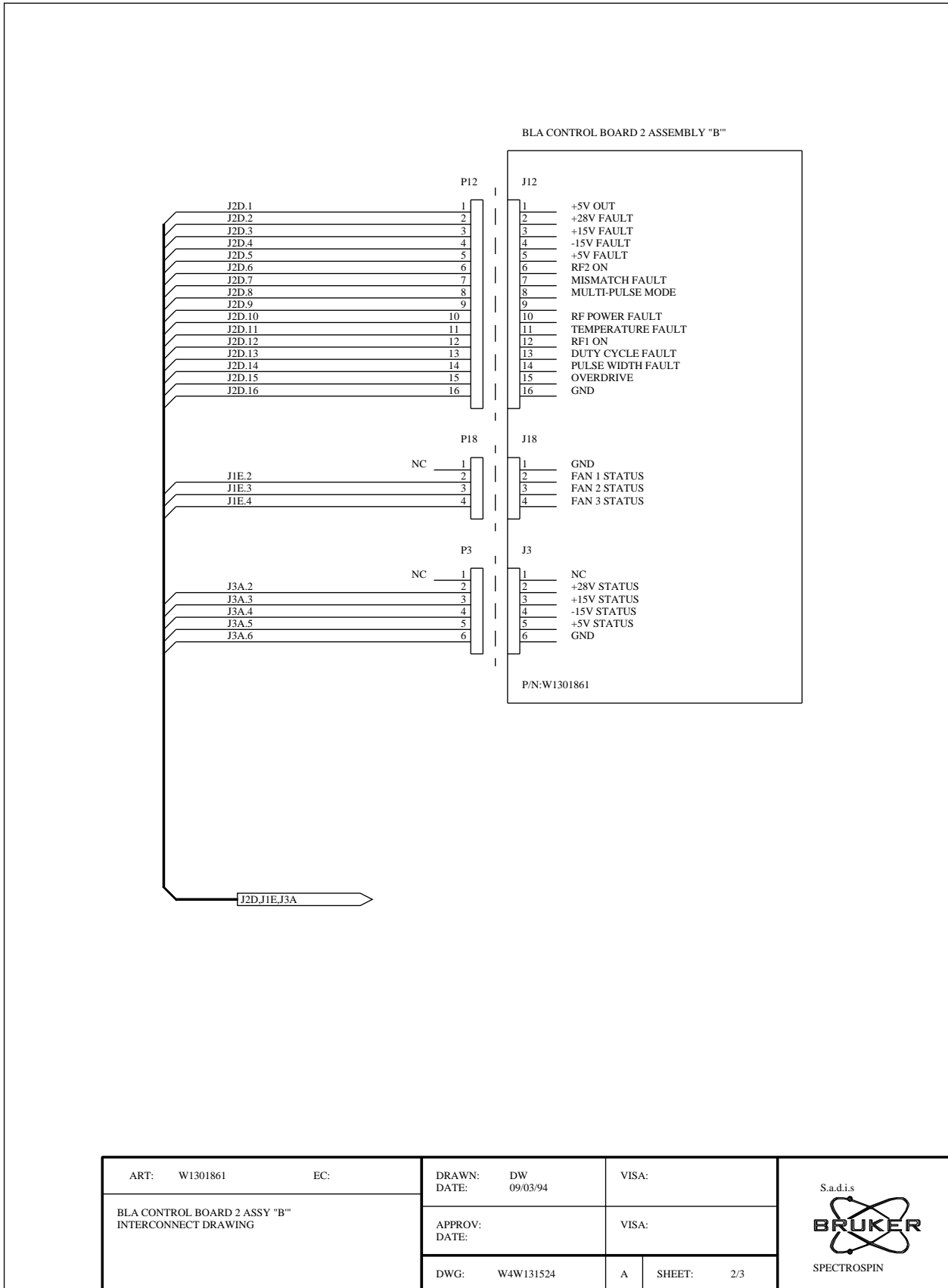
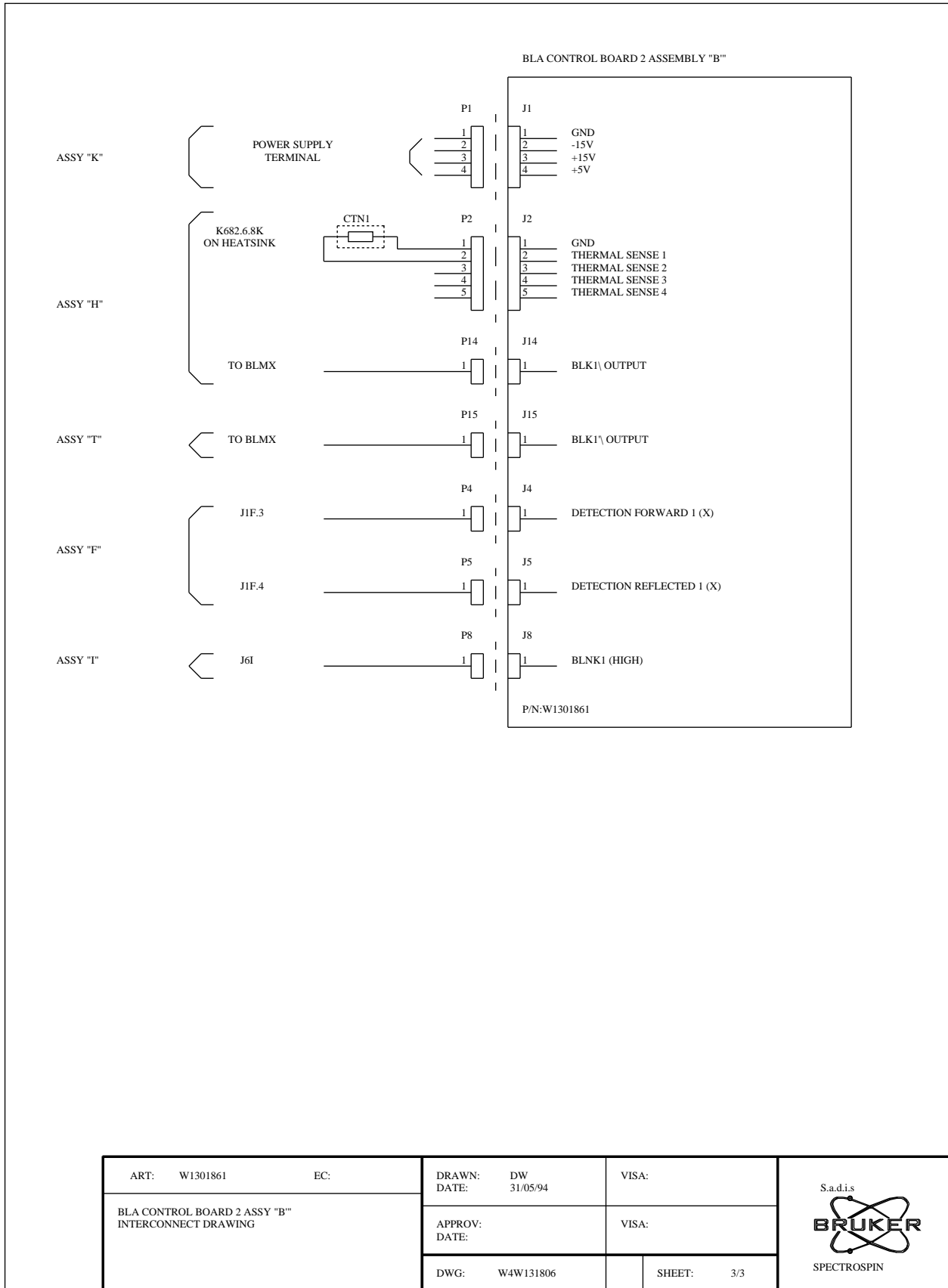


Figure 3.16. Wiring diagram





# ***Status board***

# **4**

Figure 4.17. Interconnect drawing

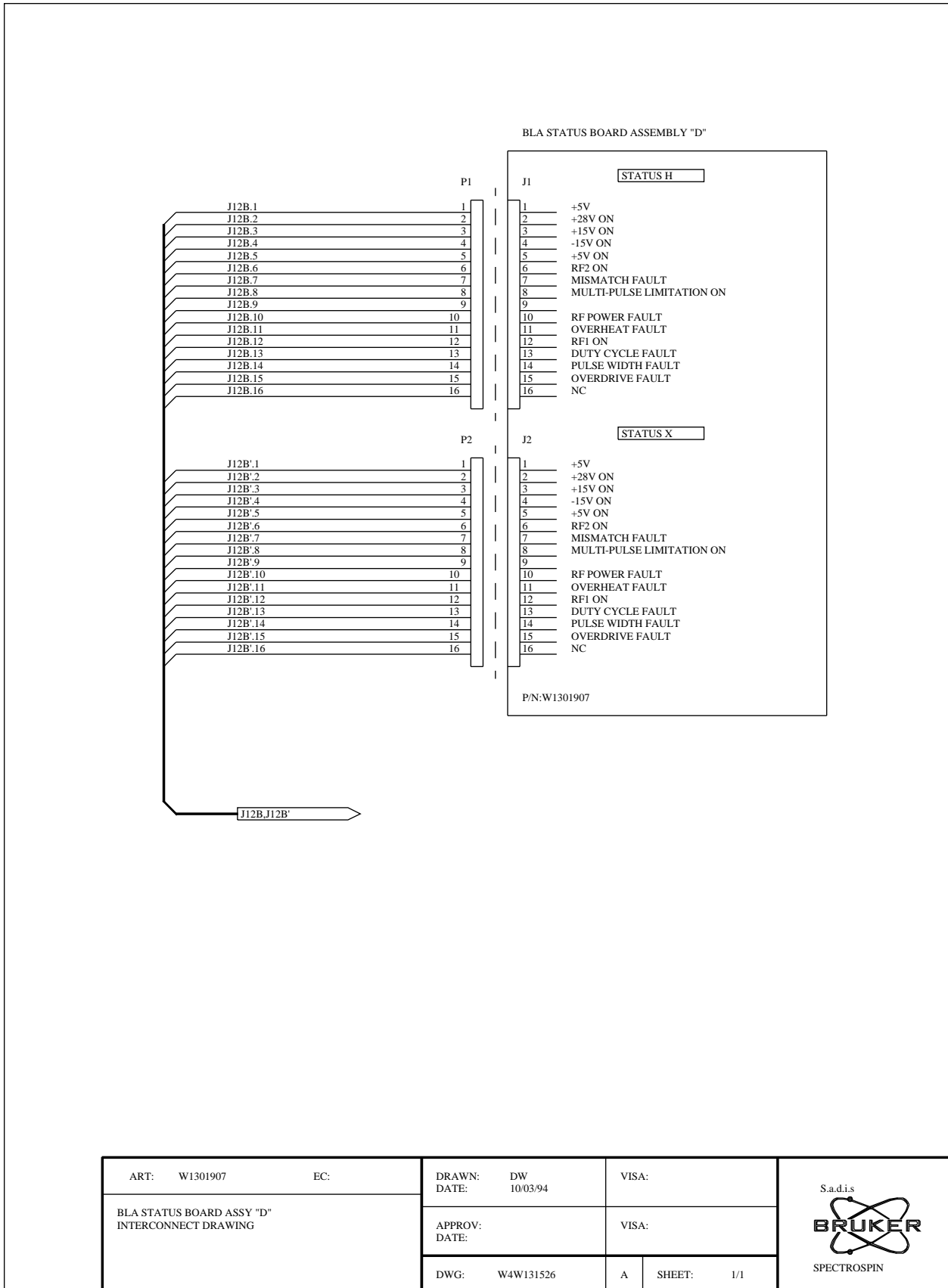
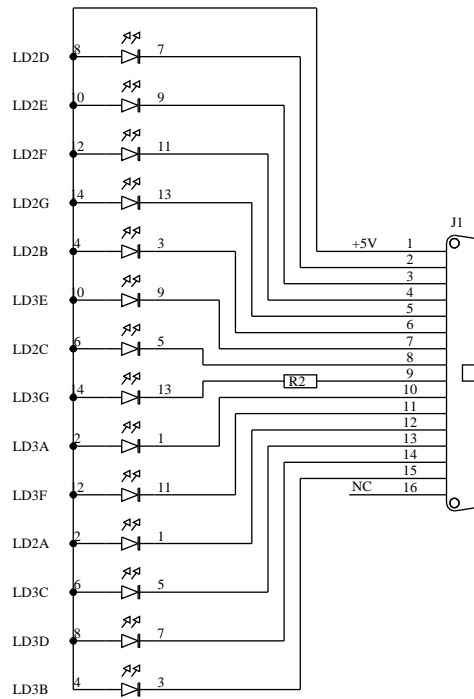
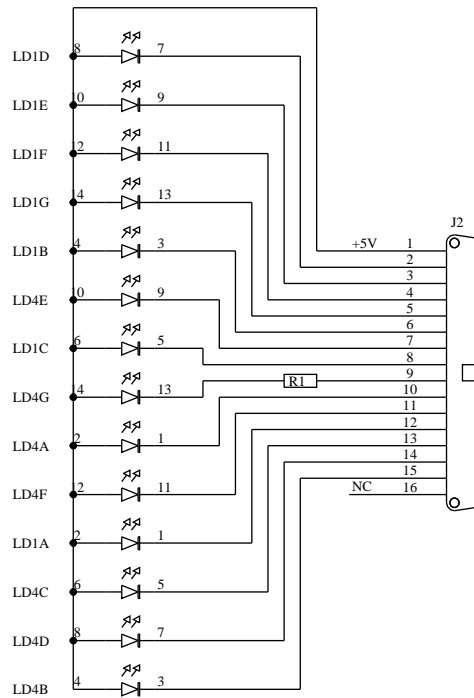


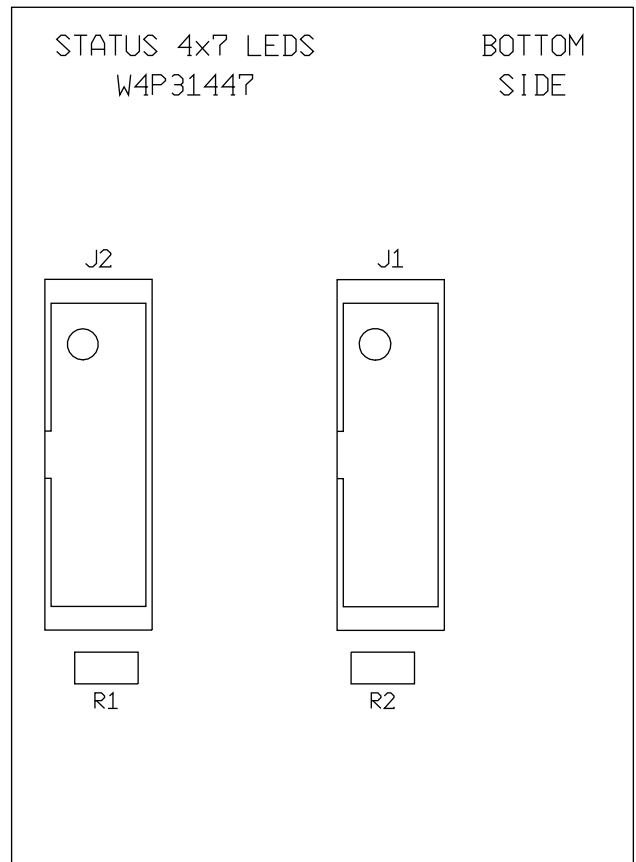
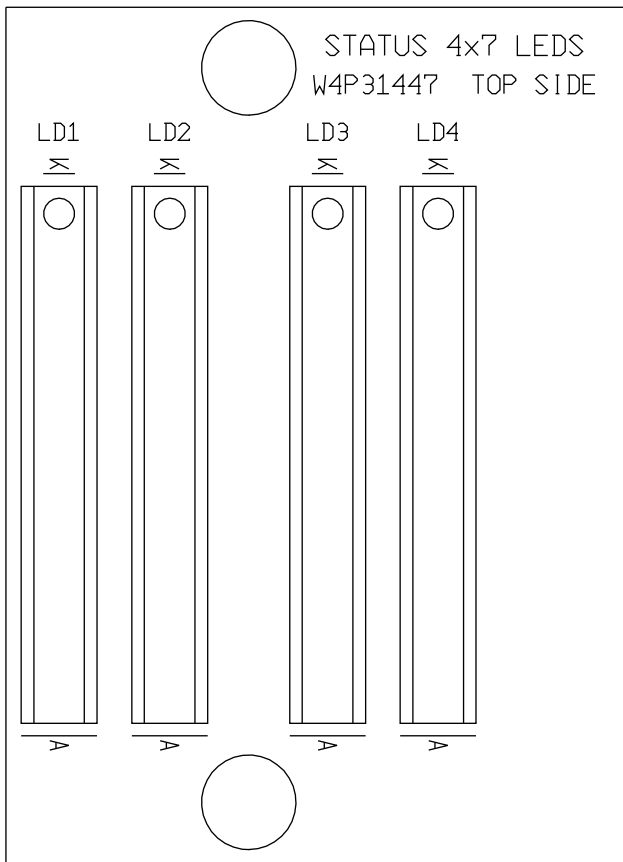


Figure 4.18. Status led board



ART: W1301907	EC: 01	DRAWN: DW	VISA:	
STATUS LED BOARD 4*7 LED		DATE: 18/06/93	VISA:	
		APPROV: DATE:	VISA:	
		DWG: W4S131447	SHEET: 1/1	

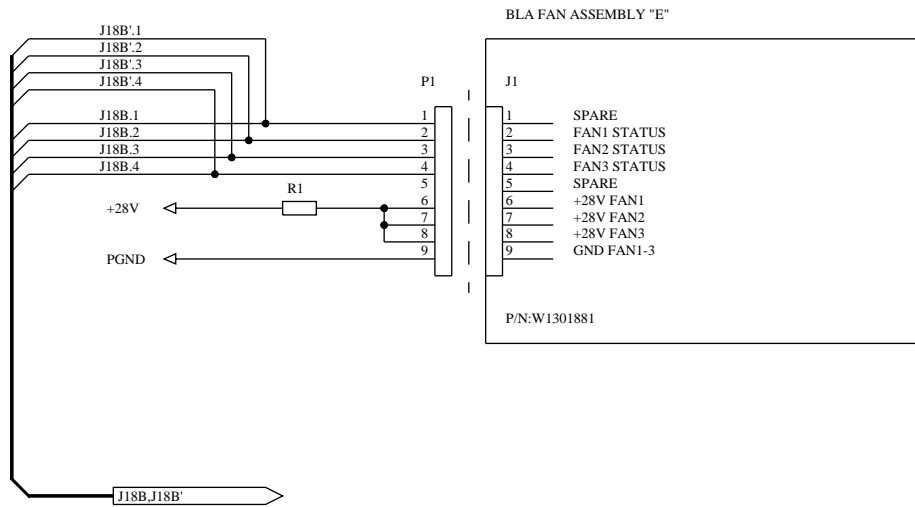
Figure 4.19. Status led board - location



# *Fan assembly*

# 5

Figure 5.1. Interconnect drawing




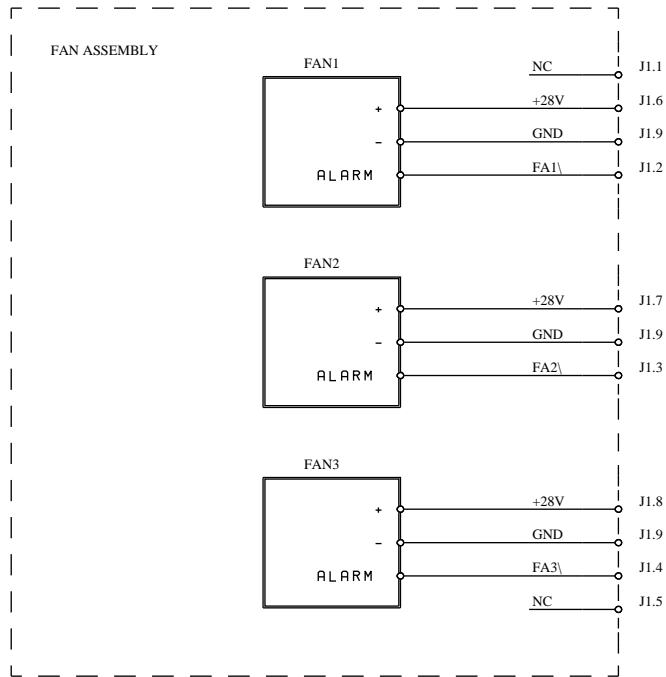

ART: W1301881	EC:	DRAWN: DW	VISA:		S.a.d.i.s  SPECTROSPIN
BLA FAN ASSEMBLY ASSY "E" INTERCONNECT DRAWING		DATE: 10/03/94	VISA:		
		APPROV: DATE:	A	SHEET: 1/1	
		DWG: W4W131527			

Figure 5.2. Fan assembly

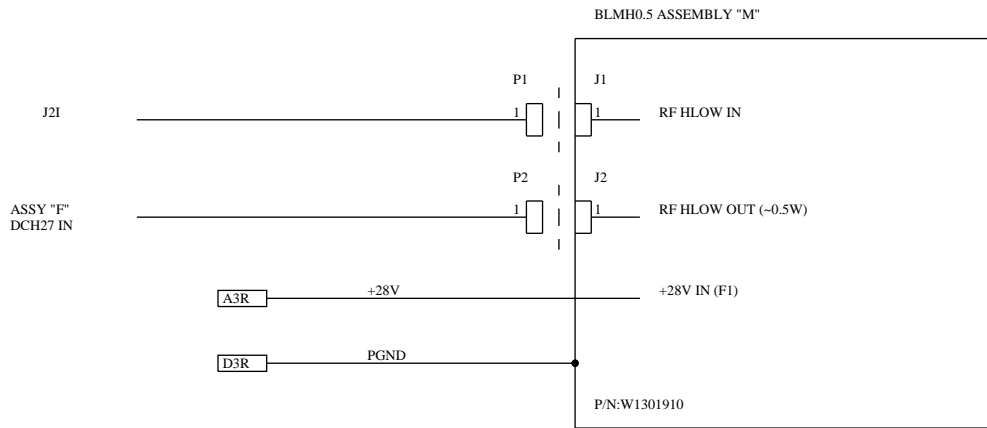


ART: W1301881	EC: 01	DRAWN: DW	VISA:	
FAN ASSEMBLY		DATE: 05/05/93	VISA:	
		APPROV: DATE:	VISA:	
		DWG: W4S131424	SHEET: 1/1	



# ***BLMH0.5/50***

Figure 6.1. BLMH0.5 assembly "M"




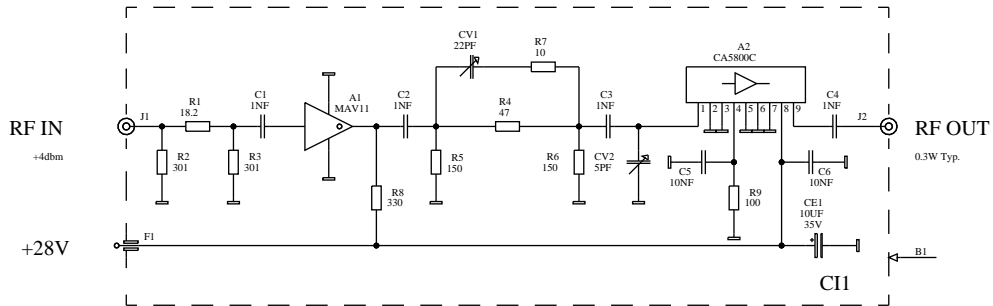
ART: W1301910	EC:	DRAWN: DW	VISA:	
BLMH0.5 ASSY "M" INTERCONNECT DRAWING		DATE: 29/10/93		
		APPROV: DATE:	VISA:	
		DWG: W4W131528	SHEET: 1/1	



Figure 6.2. BLMH0.5 amplifier 180-640 Mhz




ART: W1301910	EC: 01	DRAWN: DW	VISA:	
BLMH0.5 AMPLIFIER 180-640MHZ 5W LINEAR / 21 db		DATE: 01/09/93	VISA:	
		APPROV: DATE:	VISA:	
		DWG: W48131438	SHEET: 1/1	

Figure 6.3. BLMH60 assembly

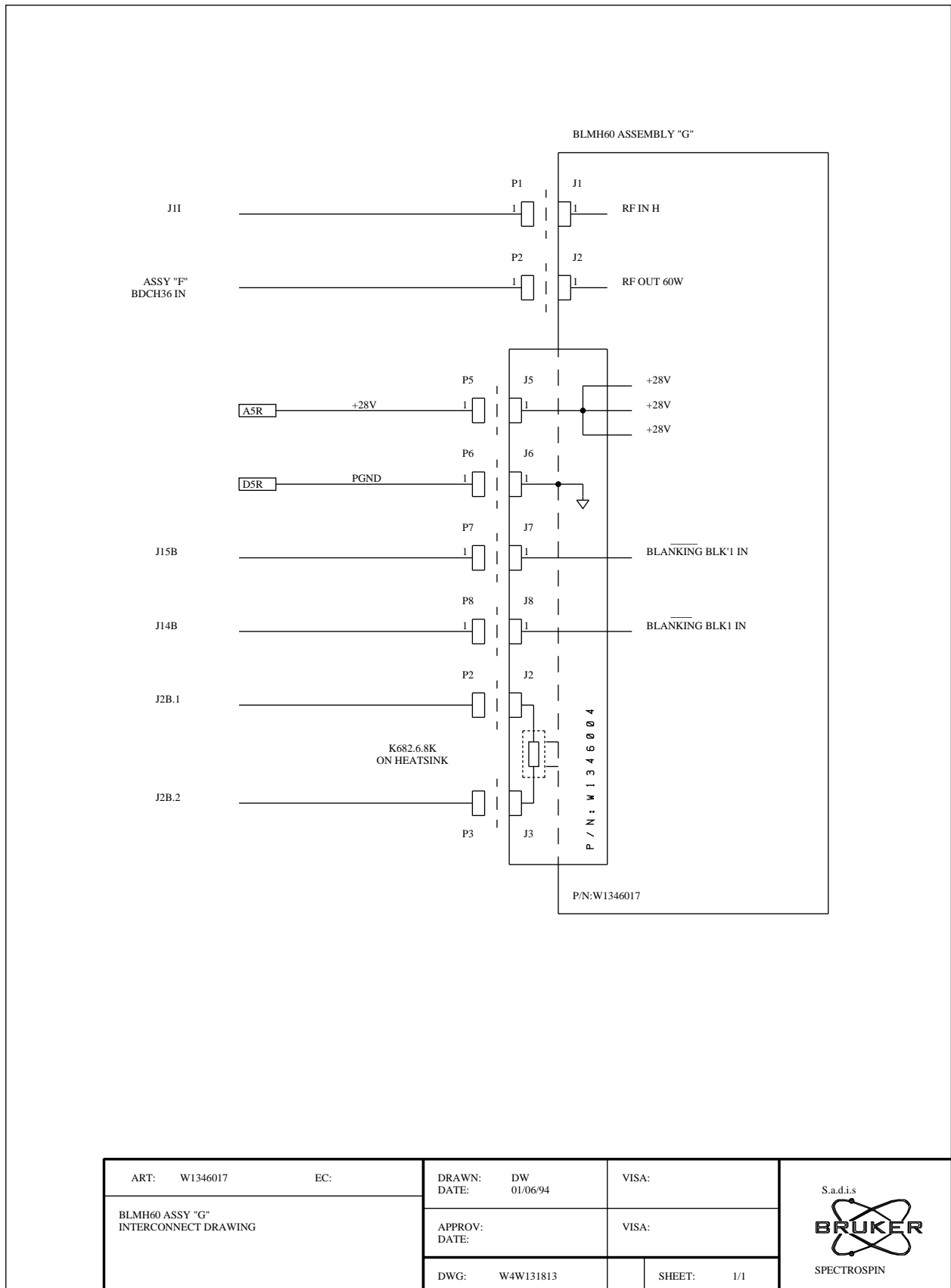


Figure 6.4. BLMH60 block diagram

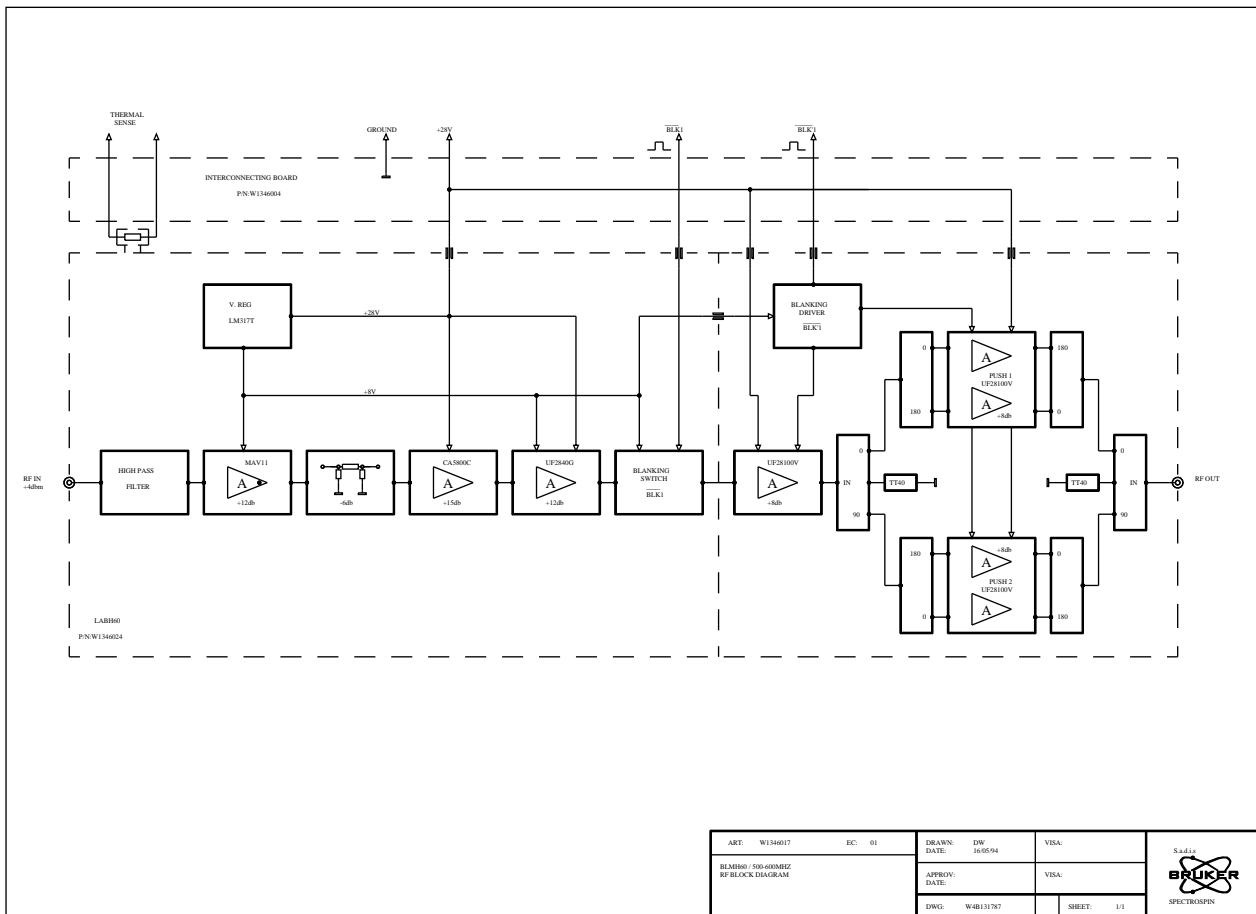


Figure 6.5. LABH60 amplifier 500-600 Mhz

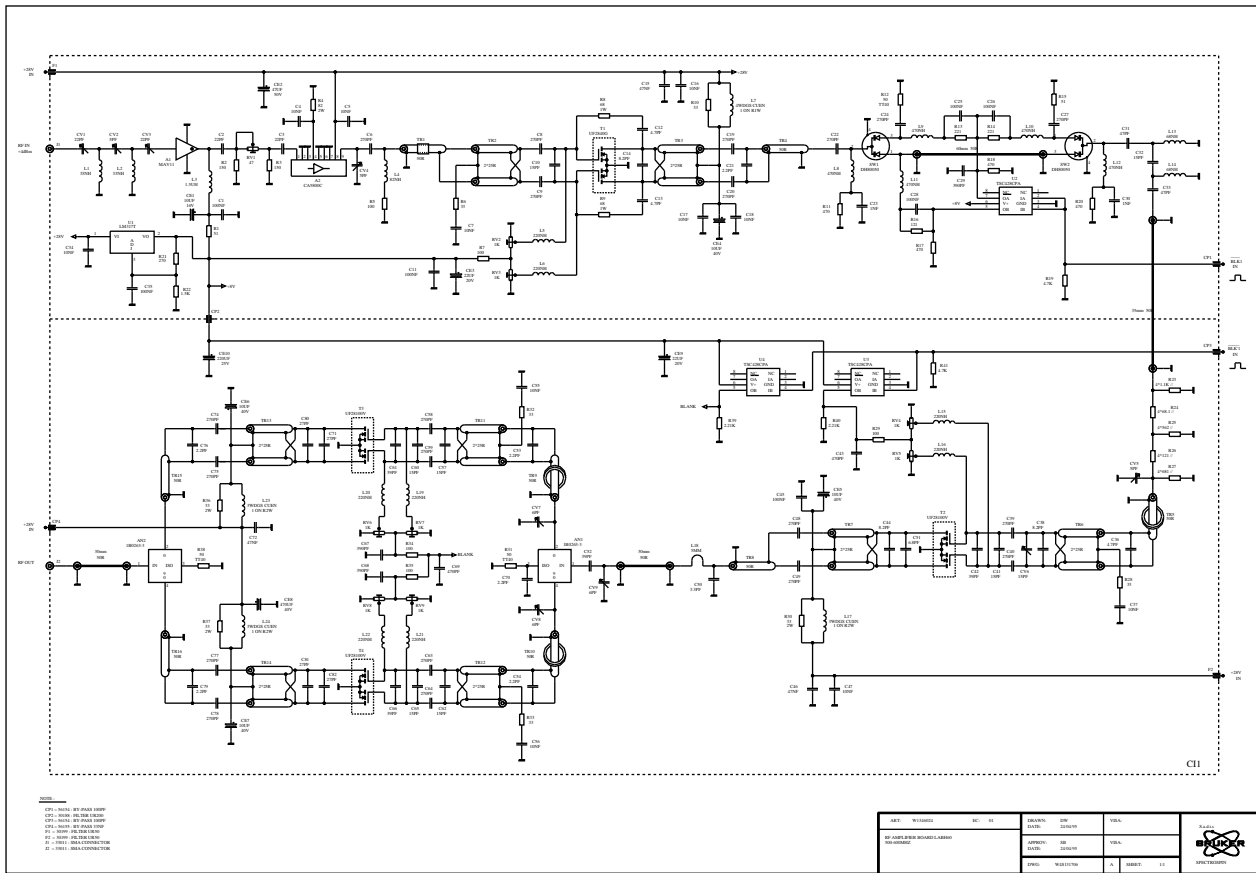
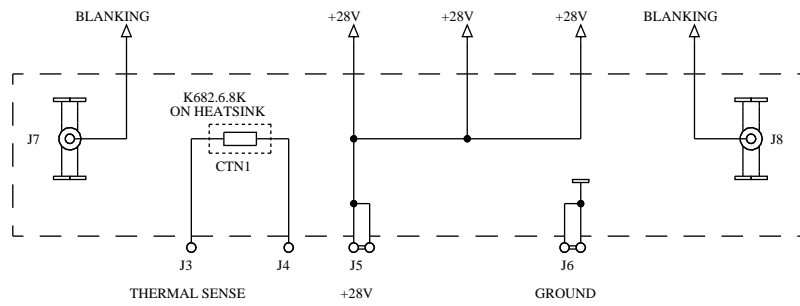


Figure 6.6. Interconnecting board



NOTE: \_\_\_\_\_  
 CTN1 = 56521 : CTN 6K8 K682


ART: W1346004	EC: 01	DRAWN: DW	VISA:	S.a.d.i.s  SPECTROSPIN
INTERCONNECTING BOARD		DATE: 09/12/93	VISA:	
		APPROV: _____	VISA: _____	
		DATE: _____		
		DWG: W4S131480	SHEET: 1/1	

Figure 6.7. BLMX001 assembly

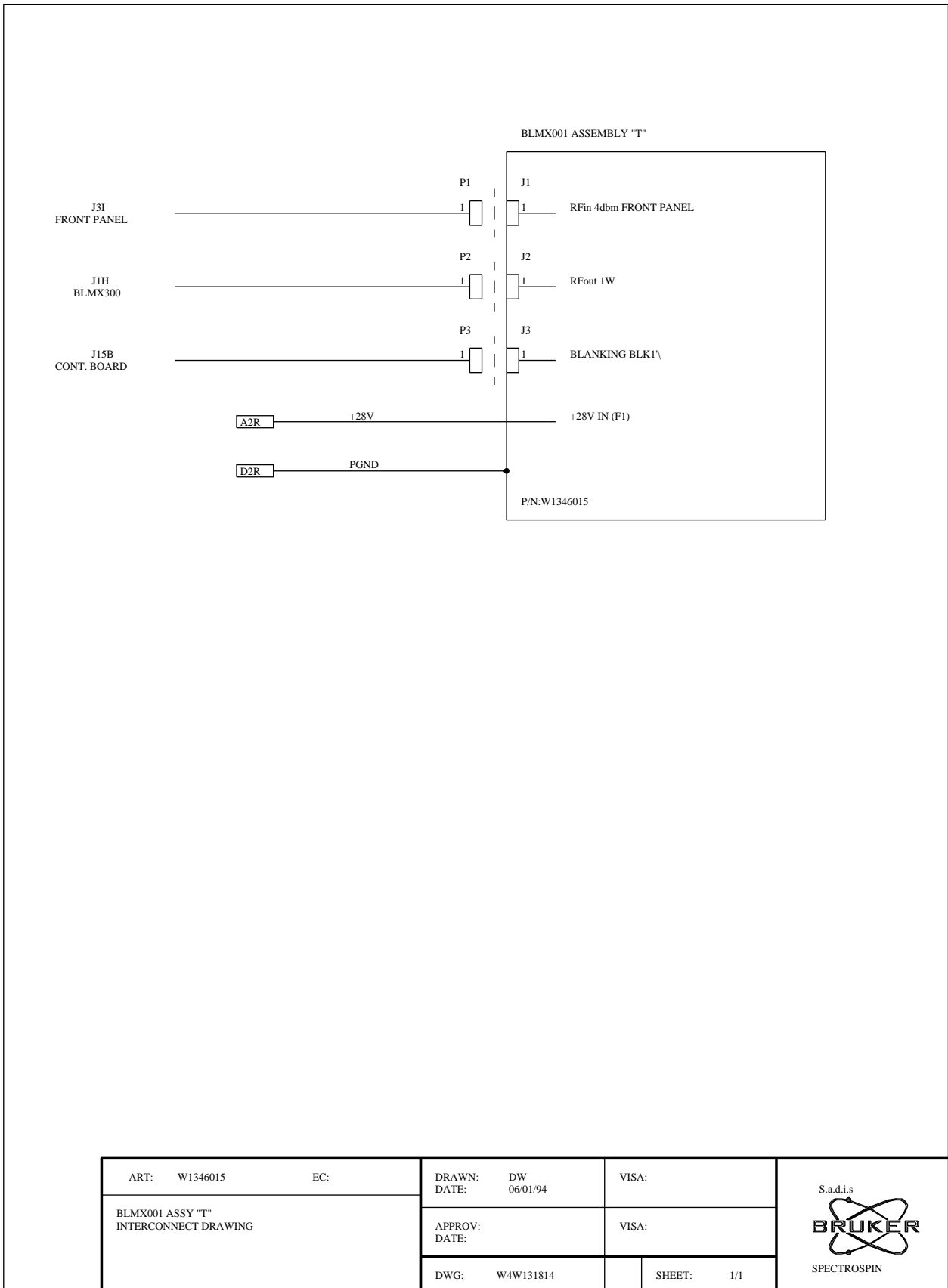


Figure 6.8. BLMX001 RF block diagram

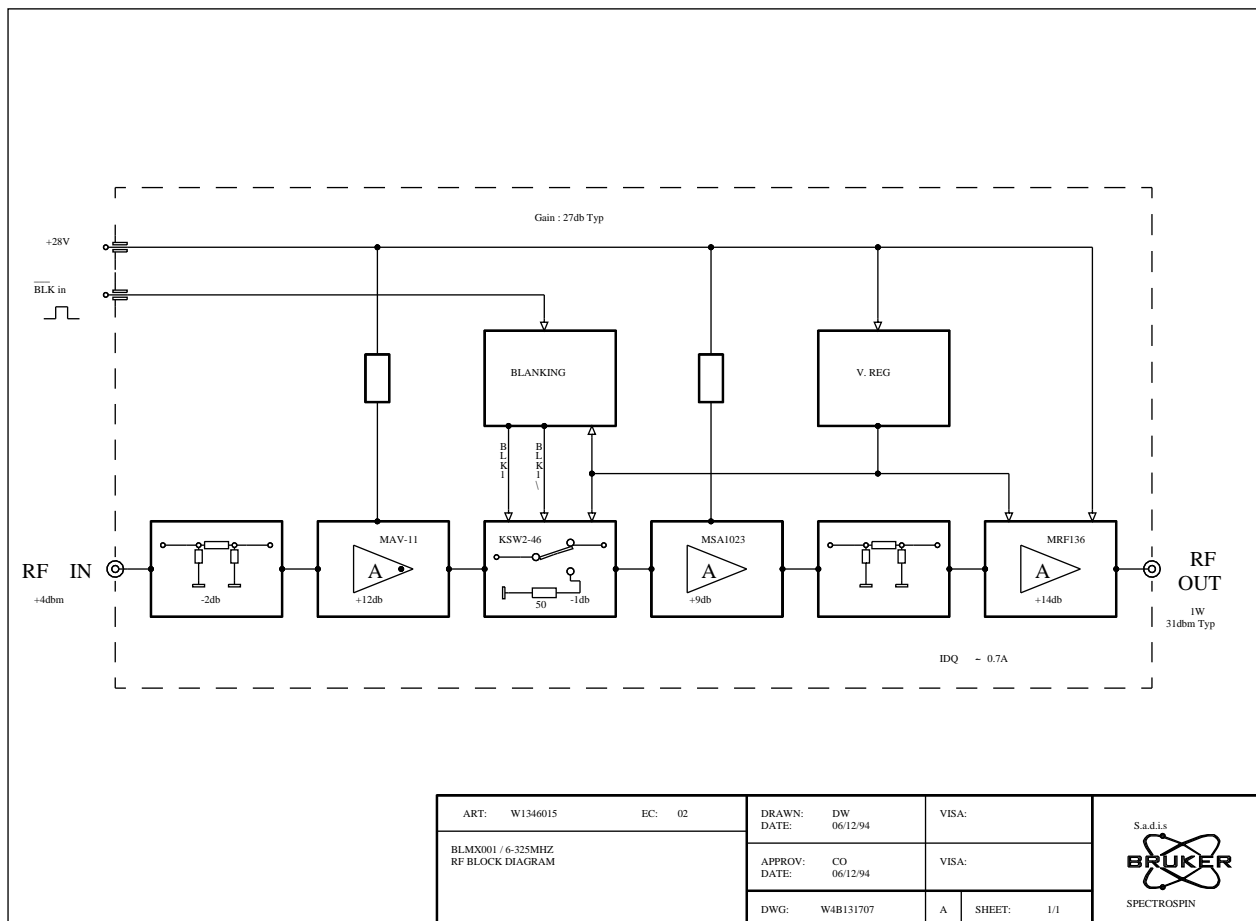
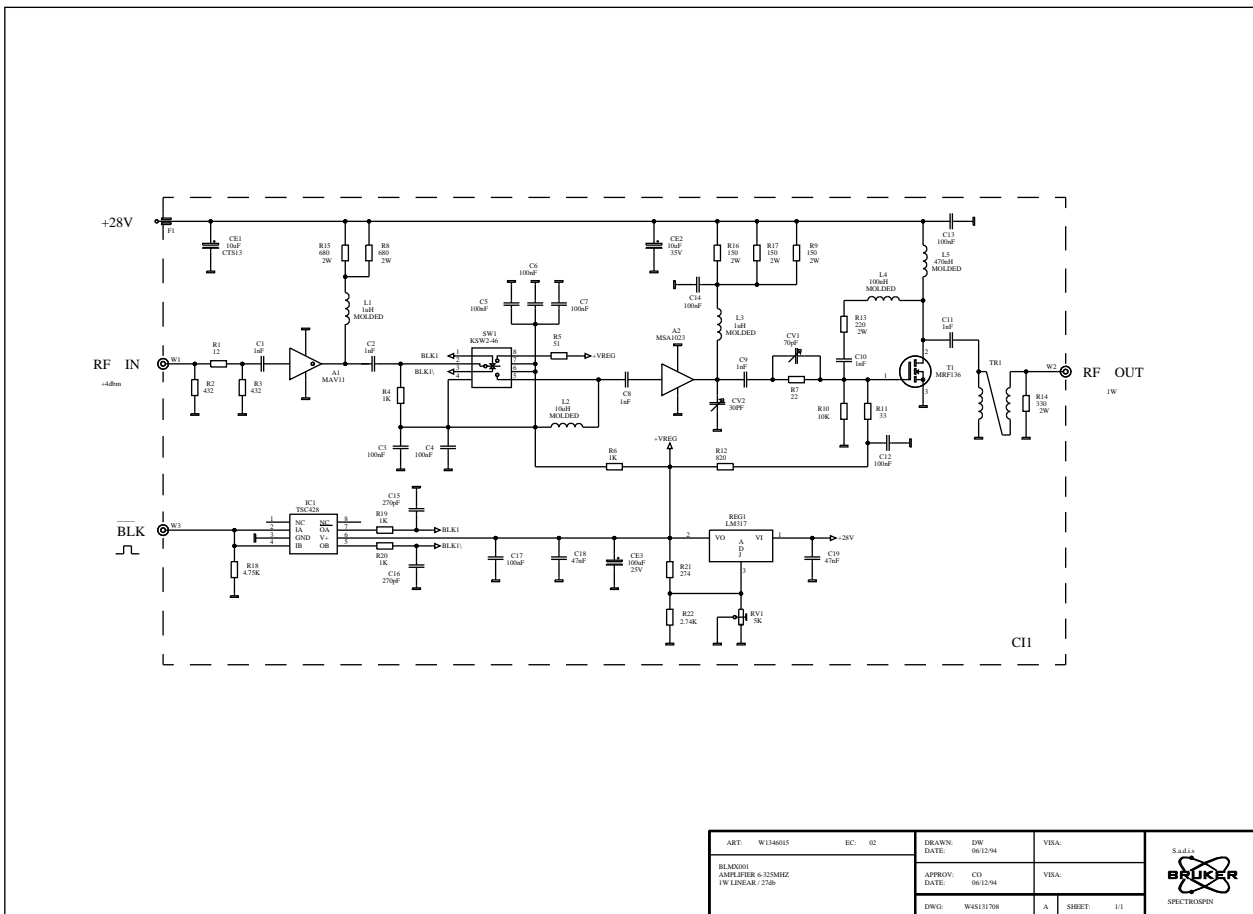


Figure 6.9. BLMX001 amplifier 6-304Mhz



ART: W1146015	EC: 02	DRAWN: DW	DATE: 06/12/94	VISA:
BLMX001 AMPLIFIER 6-304MHZ 1W LINEAR / 27db		APPROV: CD	DATE: 06/12/94	VISA:
		DSNG: WAK11708	A	SHEET: 1/1





# ***BLMX100 amplifier module***

Figure 7.1. BLMX300 Wiring diagram

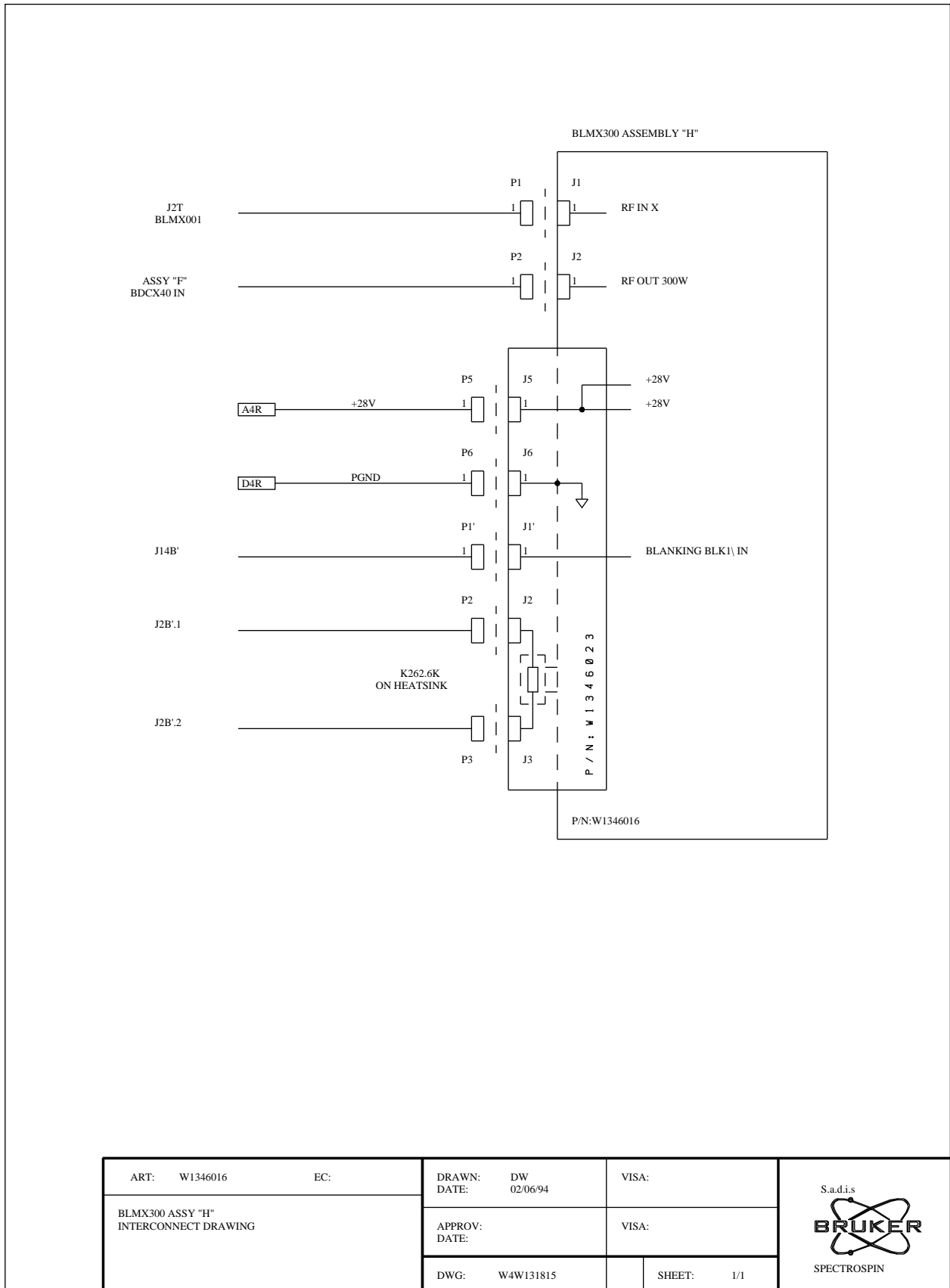
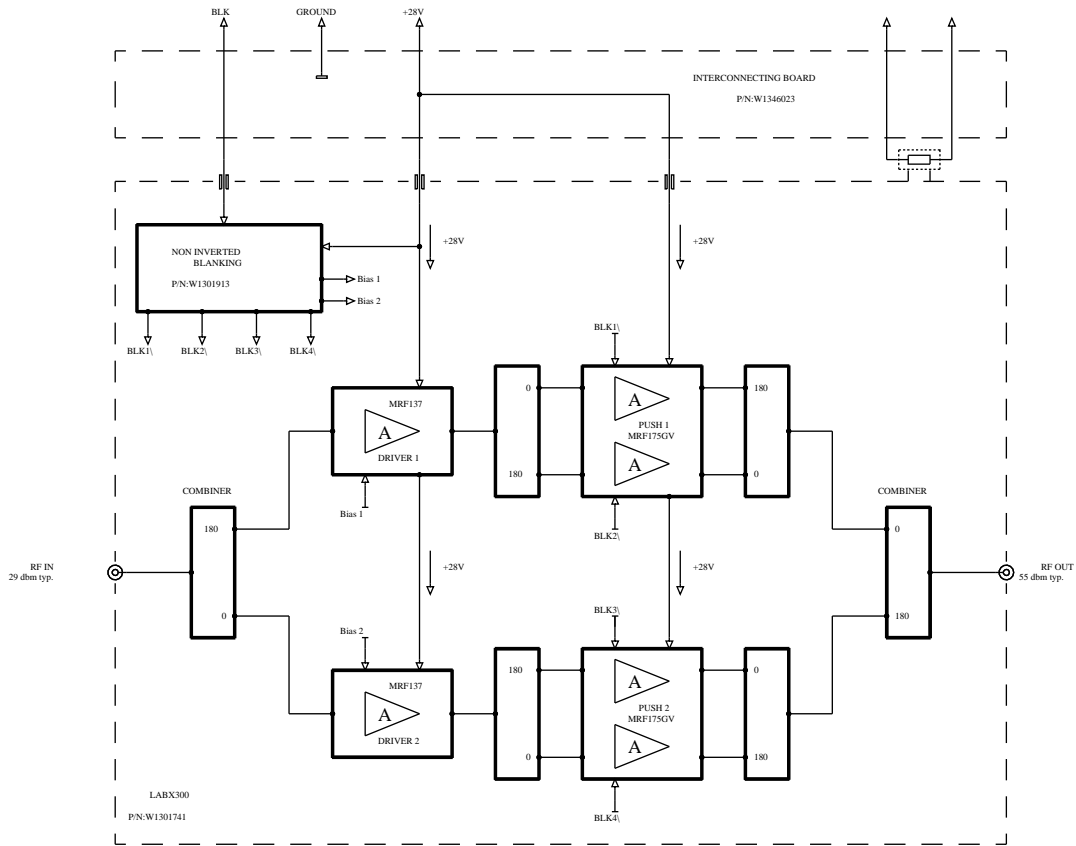


Figure 7.2. BLMX300 RF block diagram



LABX300  
P/N:W1301741

ART: W1346016	EC: 01	DRAWN: DW DATE: 07/03/94	VISA:	S.a.d.i.s <b>BRUKER</b> SPECTROSPIN
BLMX300 / 6-243MHZ RF BLOCK DIAGRAM		APPROV: CO DATE: 07/03/94	VISA:	
		DWG: W4B131705	SHEET: 1/1	

Figure 7.3. LABX300 amplifier 6-241 Mhz

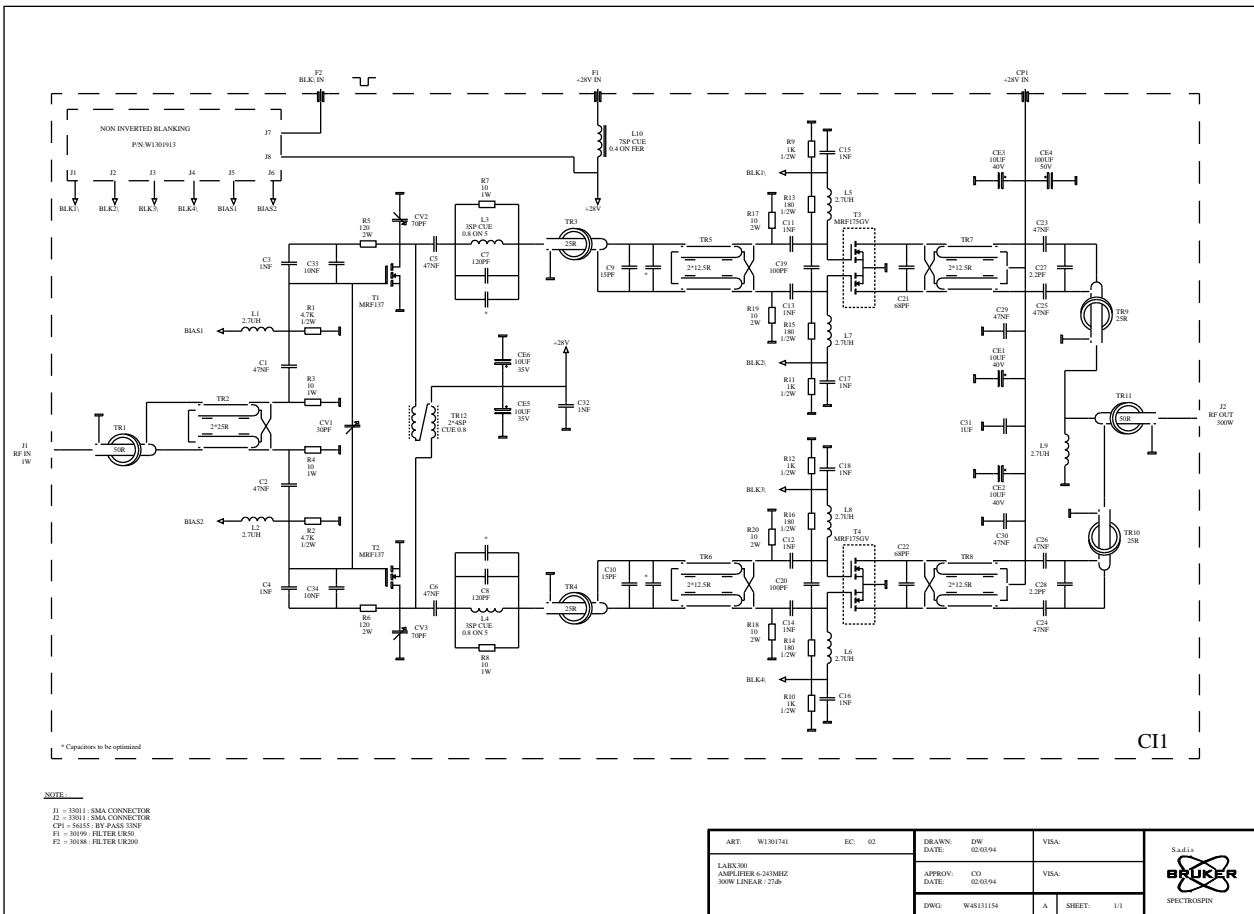
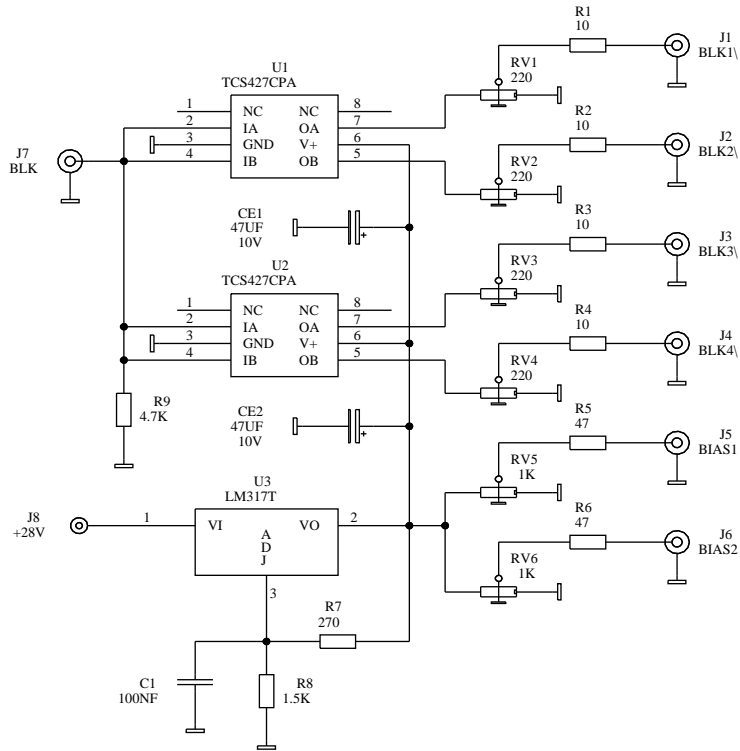


Figure 7.4. Non inverted blanking




ART: W1301913	EC: 01	DRAWN: DW	DATE: 13/09/93	VISA:	S.a.d.i.s  SPECTROSPIN
NON INVERTED BLANKING		APPROV: CO	DATE: 13/09/93	VISA:	
		DWG: W4S131508		SHEET: 1/1	

Figure 7.5. Blanking layout

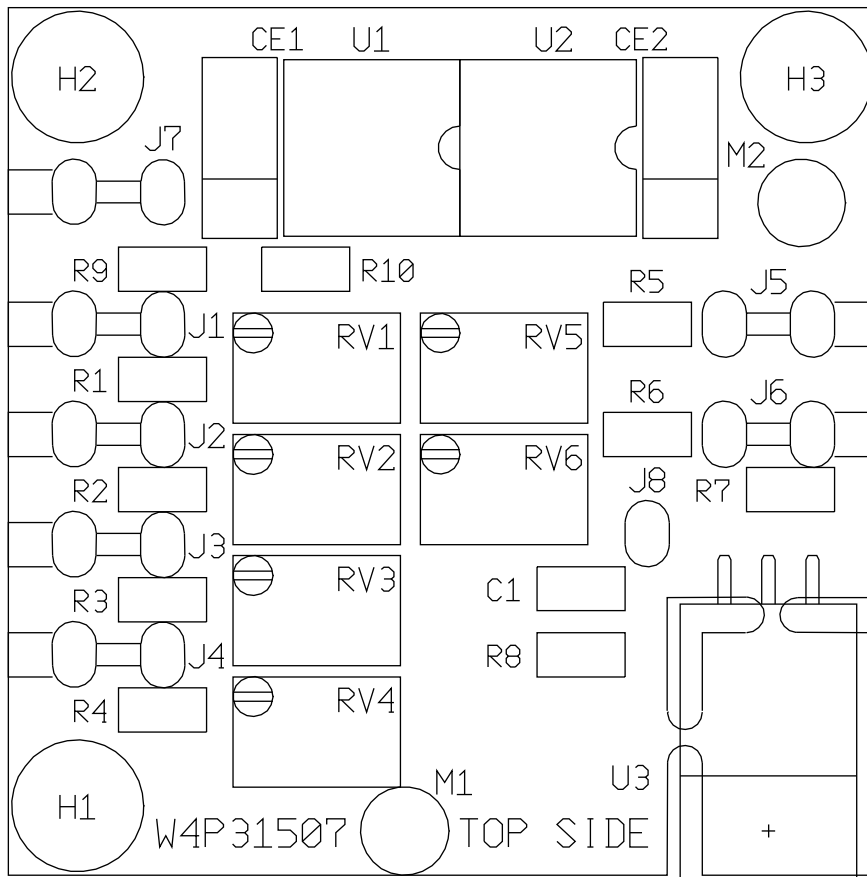
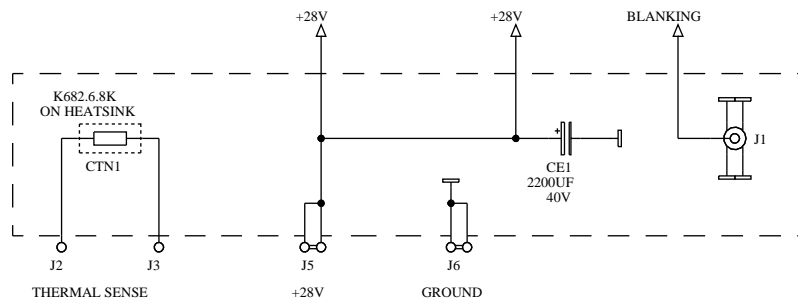



Figure 7.6. Interconnecting board



NOTE:

CTN1 = 56521 : CTN 6K8 K682

ART: W1346023	EC: 01	DRAWN: DW	VISA:	S.a.d.i.s  SPECTROSPIN
INTERCONNECTING BOARD		DATE: 02/03/94	VISA:	
		APPROV: DATE:	VISA:	
		DWG: W4S131704	SHEET: 1/1	





# ***Couplers, switches***

Figure 8.1. Couplers and switches assembly block diagram

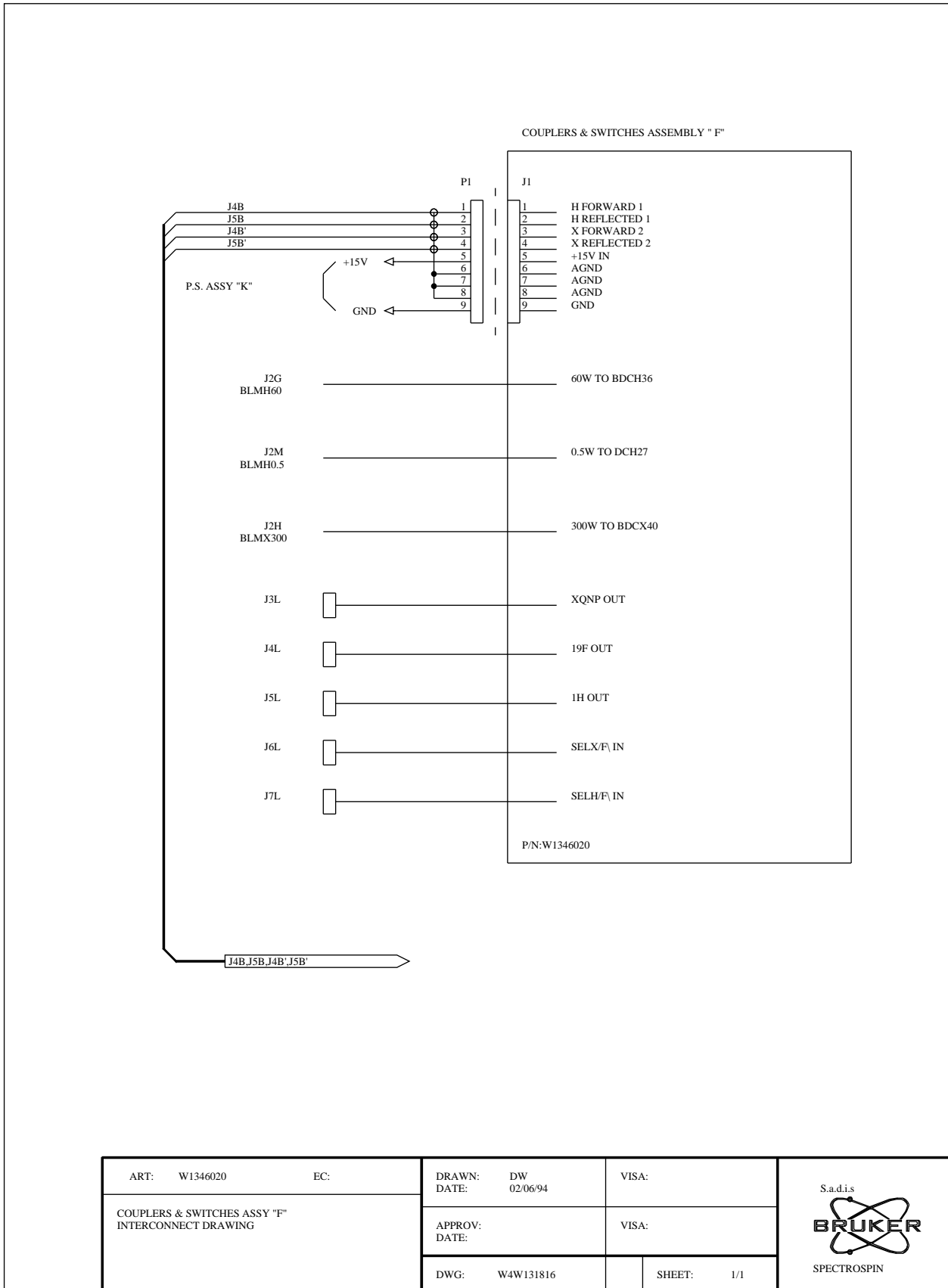


Figure 8.2. Couplers and switches block diagram

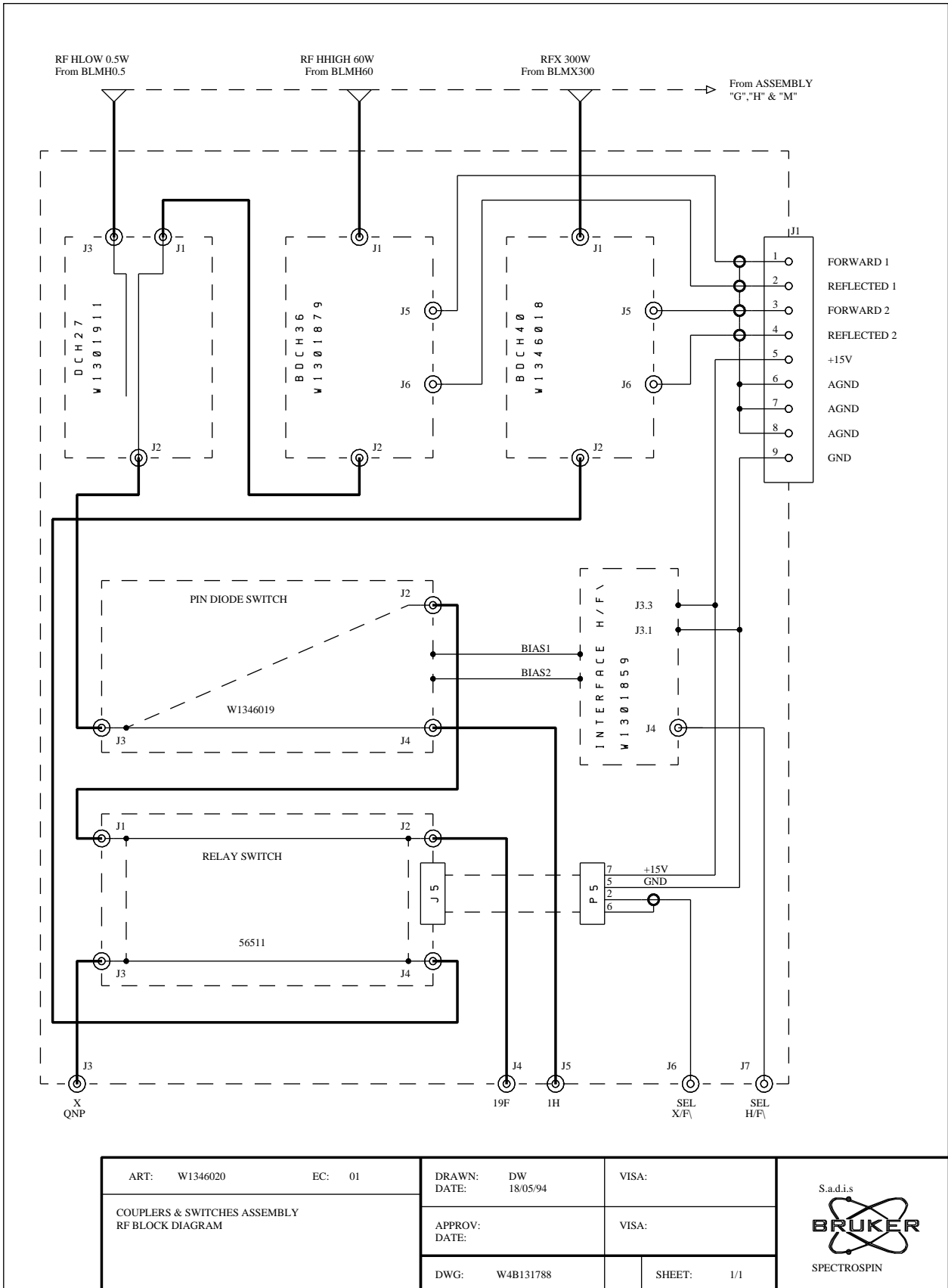
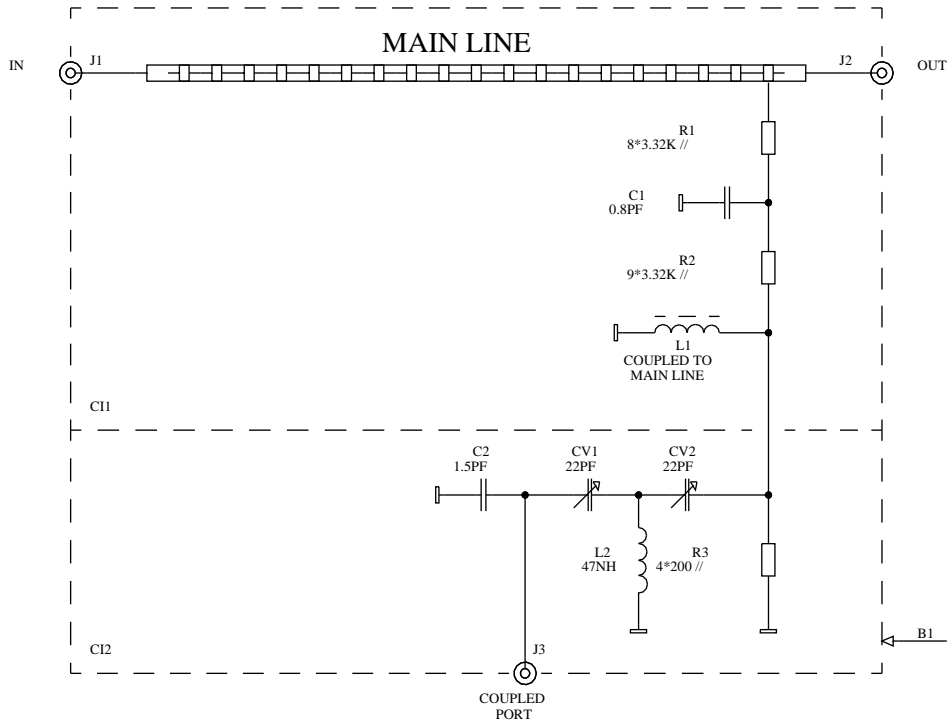


Figure 8.3. DCH27 directionnal coupler




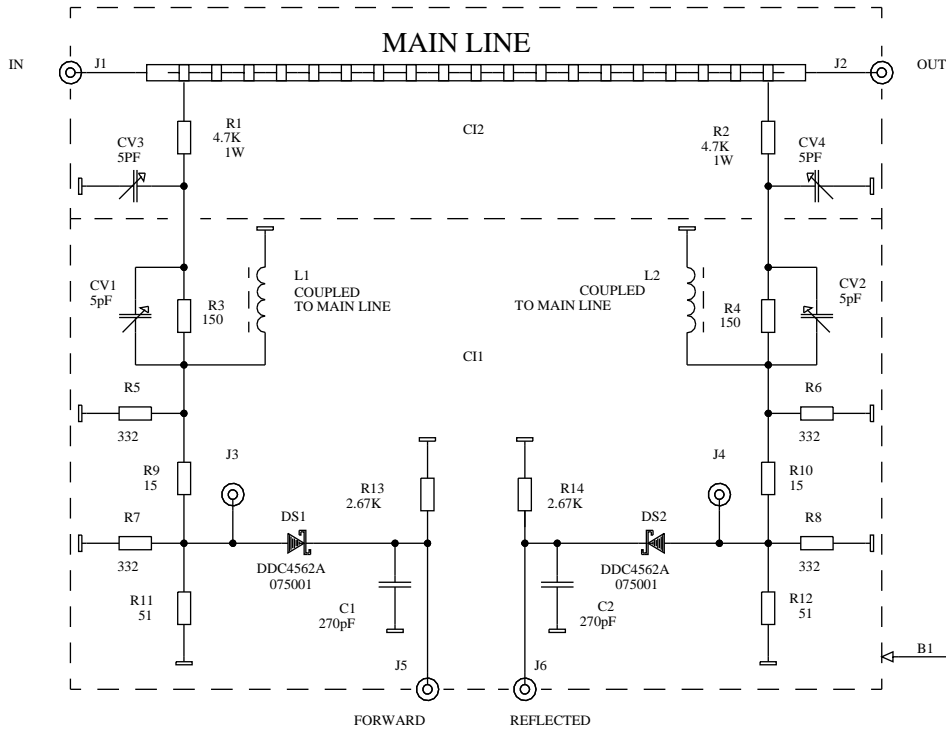
ART: W1301911	EC: 02	DRAWN: DW	VISA:	S.a.d.i.s  SPECTROSPIN
DCH27 DIRECTIONNAL COUPLER		DATE: 11/10/93		
(SMA.C-SMA)		APPROV: CO	VISA:	
		DATE: 01/06/94	A	SHEET: 1/1
		DWG: W4S131439		

Figure 8.4. BDCH36 bidirectionnal coupler




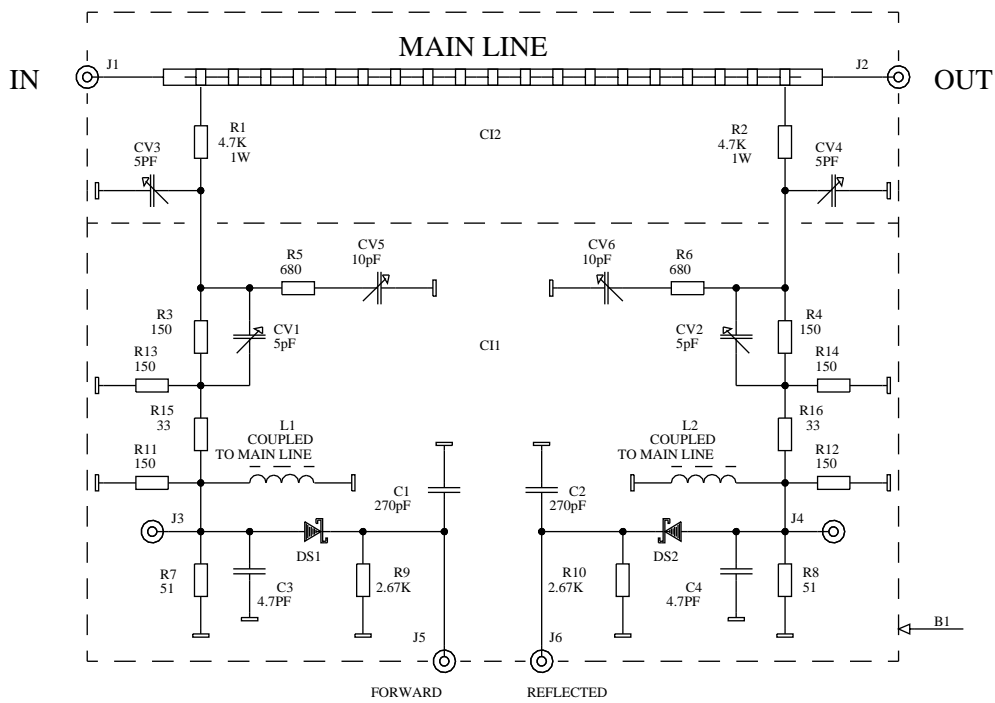
ART: W1301879	EC: 01	DRAWN: DW	VISA:	S.a.d.i.s  SPECTROSPIN
BDCH36 BI-DIRECTIONNAL COUPLER		DATE: 07/06/93	VISA:	
(SMB-SMA)		APPROV: DATE:	SHEET: 1/1	
		DWG: W4S131444		

Figure 8.5. BDCX40 bidirectionnal coupler




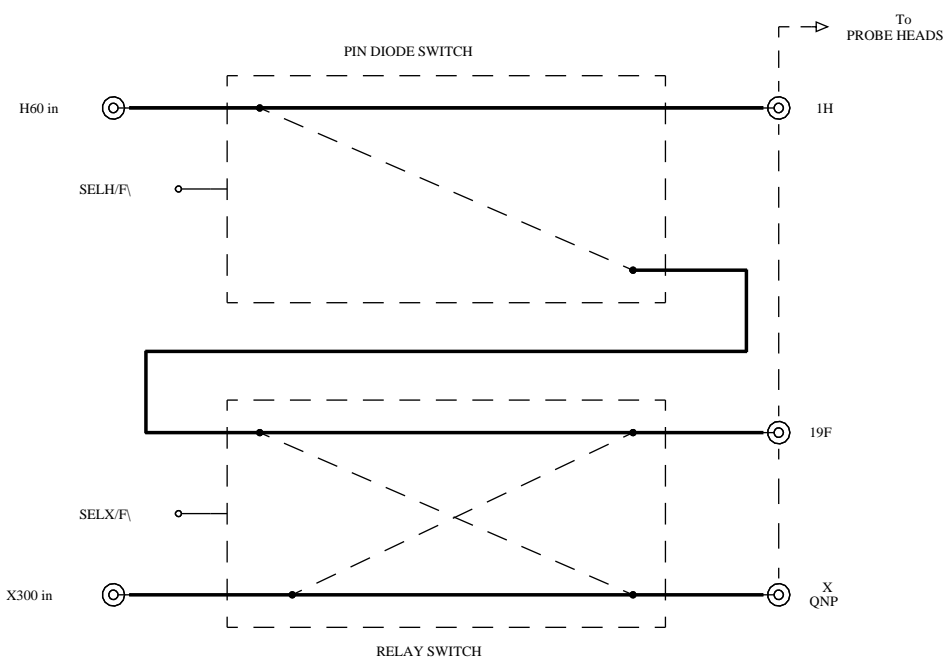
ART: W1346018	EC: 01	DRAWN: DW	VISA:	S.a.d.i.s  SPECTROSPIN
BDCX40 BI-DIRECTIONNALL COUPLER		DATE: 20/03/95	VISA:	
(SMB-SMA)		APPROV: CO	VISA:	
		DATE: 20/03/95	A	SHEET: 1/1
		DWG: W4S131716		

Figure 8.6. Output switch for DMX 500-600

TRUTH TABLE

CASE#	CONTROL SIGNALS		SELECTED OUTPUT POWER		
	SELH/F\	SELX/F\	XQNP	19F	1H
0	0	0	F50	X300	
1	0	1	X300	F50	
2	1	0		X300	H50
3	1	1	X300		H50




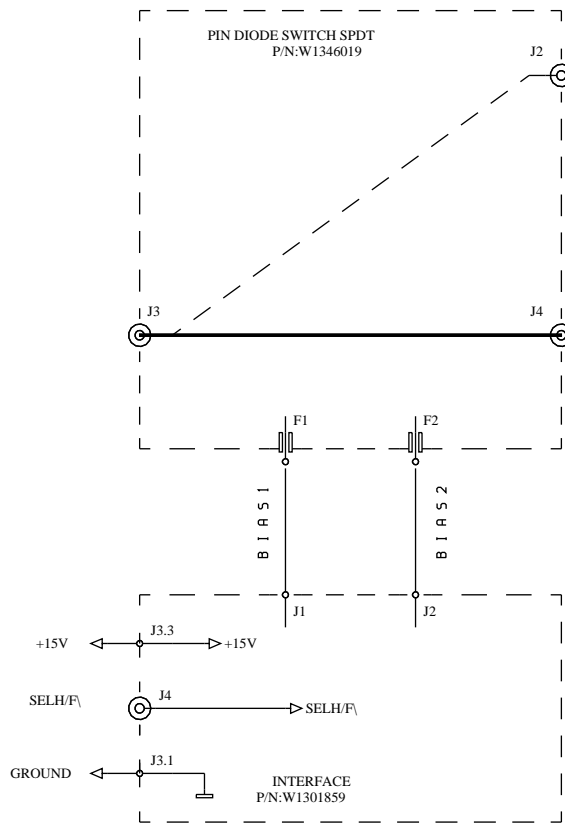
ART:	EC:	DRAWN: DW DATE: 02/06/94	VISA:	S.a.d.i.s  SPECTROSPIN
FONCTIONNAL BLOC DIAGRAM OUTPUT SWITCH FOR DRX 500-600 SYSTEM		APPROV:	VISA:	
		DATE:		
		DWG: W4B131817	SHEET: 1/1	

Figure 8.7. Pin diode switch SPDT

TRUTH TABLE

SELH/F\	BIAS1	BIAS2	RF CONTINUITY
0	0V	50mA	J3 $\longleftrightarrow$ J2
1	50mA	0V	J3 $\longleftrightarrow$ J4




ART: W1301931	EC: 02	DRAWN: DW DATE: 09/10/95	VISA:	S.a.d.i.s  SPECTROSPIN
PIN DIODE SWITCH SPDT BLOCK DIAGRAM		APPROV: CO DATE: 10/10/95	VISA:	
		DWG: W4B131792	A SHEET: 1/1	



Figure 8.8. Pin diode switch SPDT

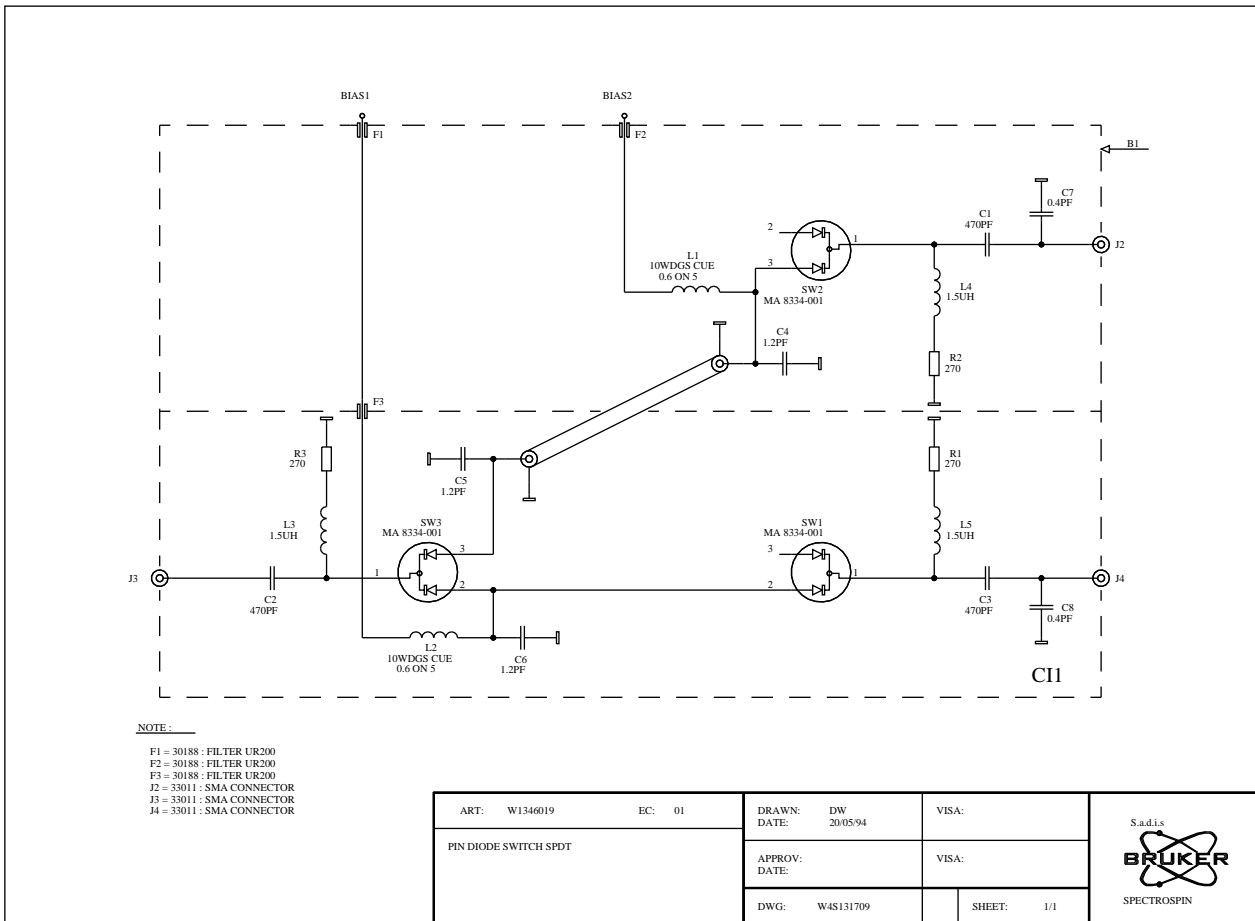
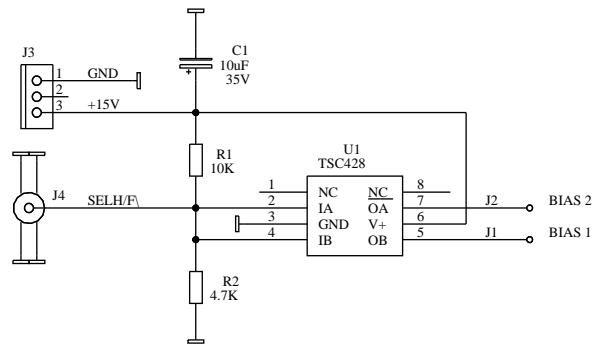


Figure 8.9. Interface switch H/F




ART: W1301859	EC: 01	DRAWN: DW DATE: 22/04/93	VISA:	S.a.d.i.s  SPECTROSPIN
INTERFACE SWITCH H/F\		APPROV: CO DATE: 01/06/94	VISA:	
		DWG: W4S131401	SHEET: 1/1	

Figure 8.10. Interface switch layout

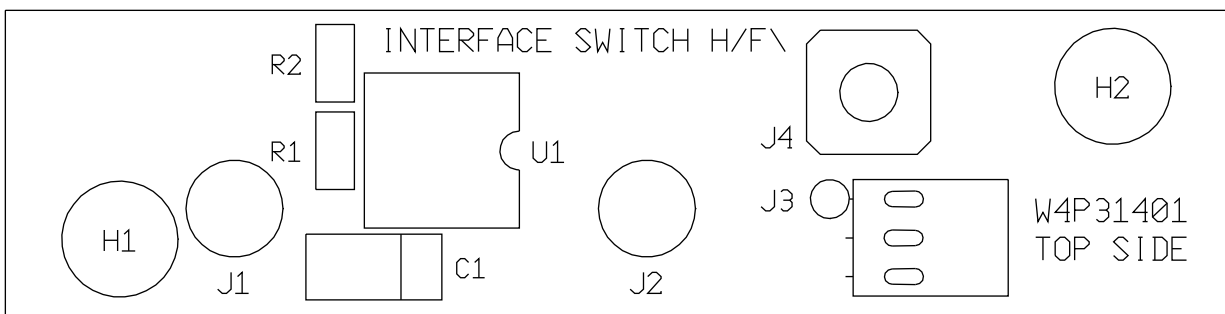
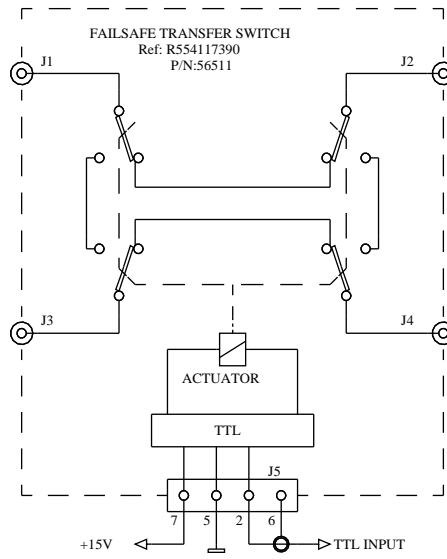



Figure 8.11. Relay transfer switch

TRUTH TABLE

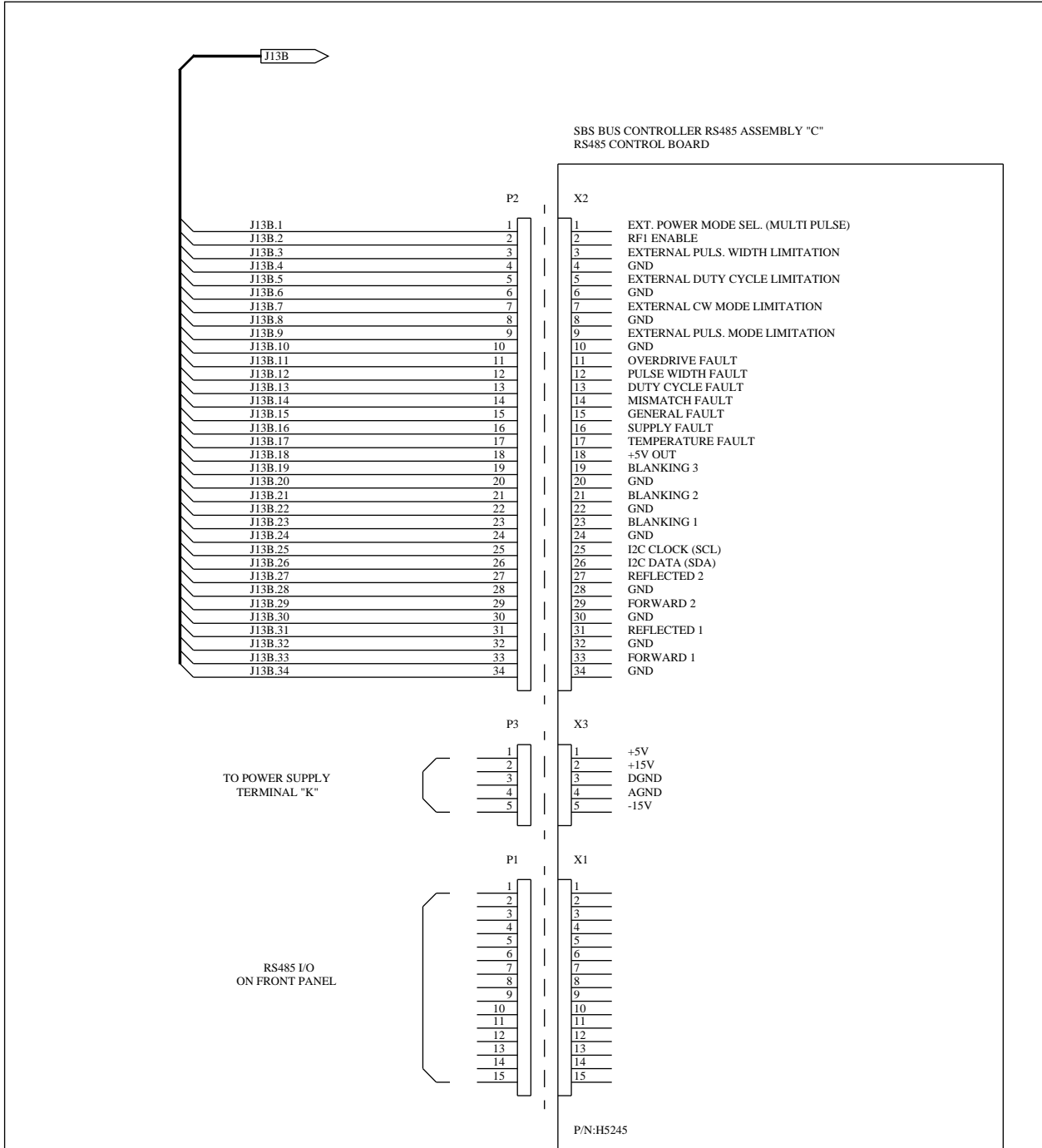
SELX/F <sub>1</sub>	ACTUATOR	RF CONTINUITY
0	ENERGIZED	J1 ↔ J3 ; J2 ↔ J4
1	DE-ENERGIZED	J1 ↔ J2 ; J3 ↔ J4



ART:	EC:	DRAWN: DW DATE: 25/03/94	VISA:	S.a.d.i.s  SPECTROSPIN
BLOCK DIAGRAM RELAY TRANSFER SWITCH		APPROV: DATE:	VISA:	
		DWG: W4B131457	A SHEET: 1/1	

# ***SBS controller***

Figure 9.1. Wiring diagram




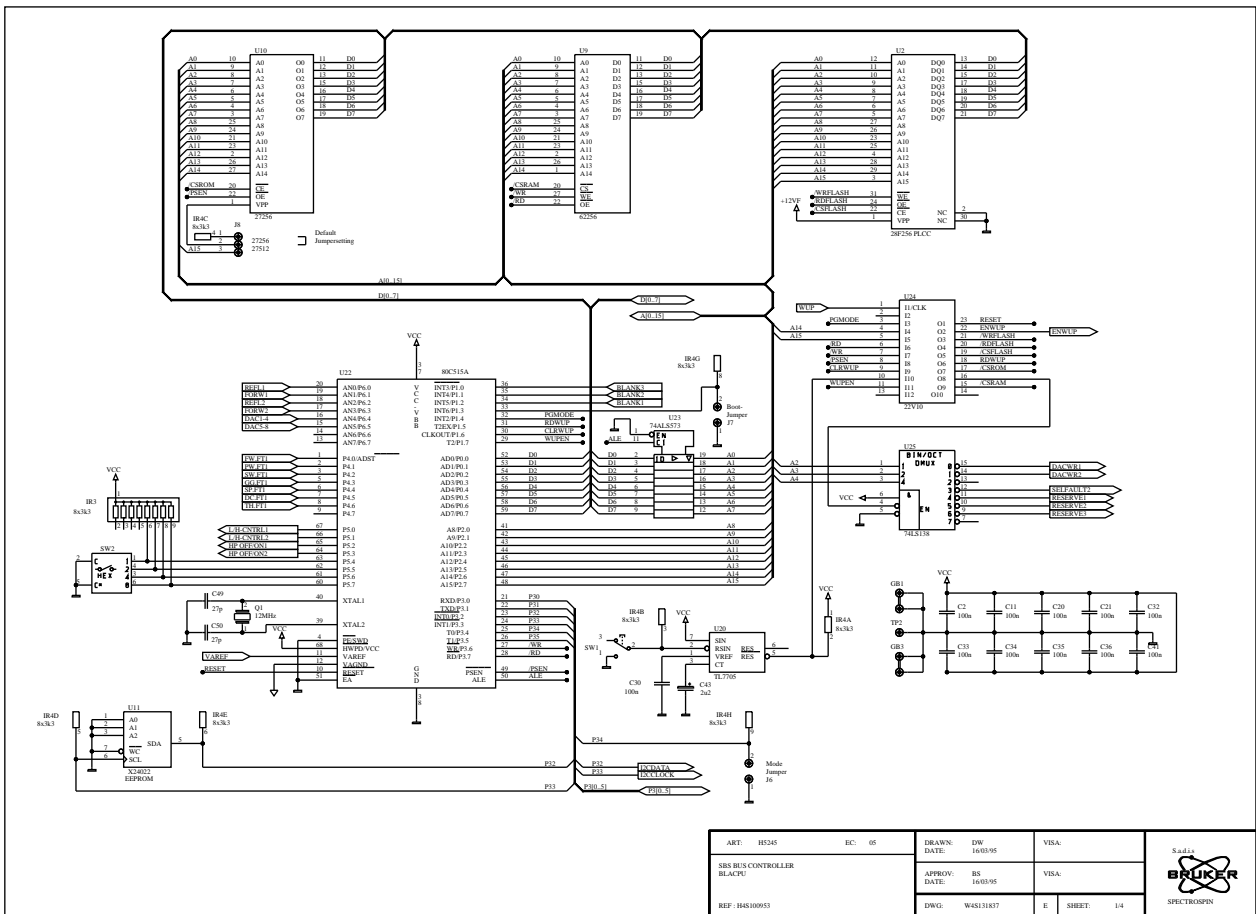
ART: H5245	EC:	DRAWN: DW	VISA:	
SBS BUS CONTROLLER ASSY "C" RS485 CONTROL BOARD INTERCONNECT DRAWING		DATE: 06/01/94		
		APPROV: DATE:	VISA:	
		DWG: W4W131557	SHEET: 1/1	

Figure 9.2. CPU board



ART: H2345	EC: 05	DRAWN: DW 16/03/95	VISA:	 Sadis SPECTROSPIN
SBS BUS CONTROLLER BLACPU		APPROV: BS 16/03/95	VISA:	
REF: H4810053		DWG: W4811817	E. SHEET 1/4	

Figure 9.3. Sbs controller dac

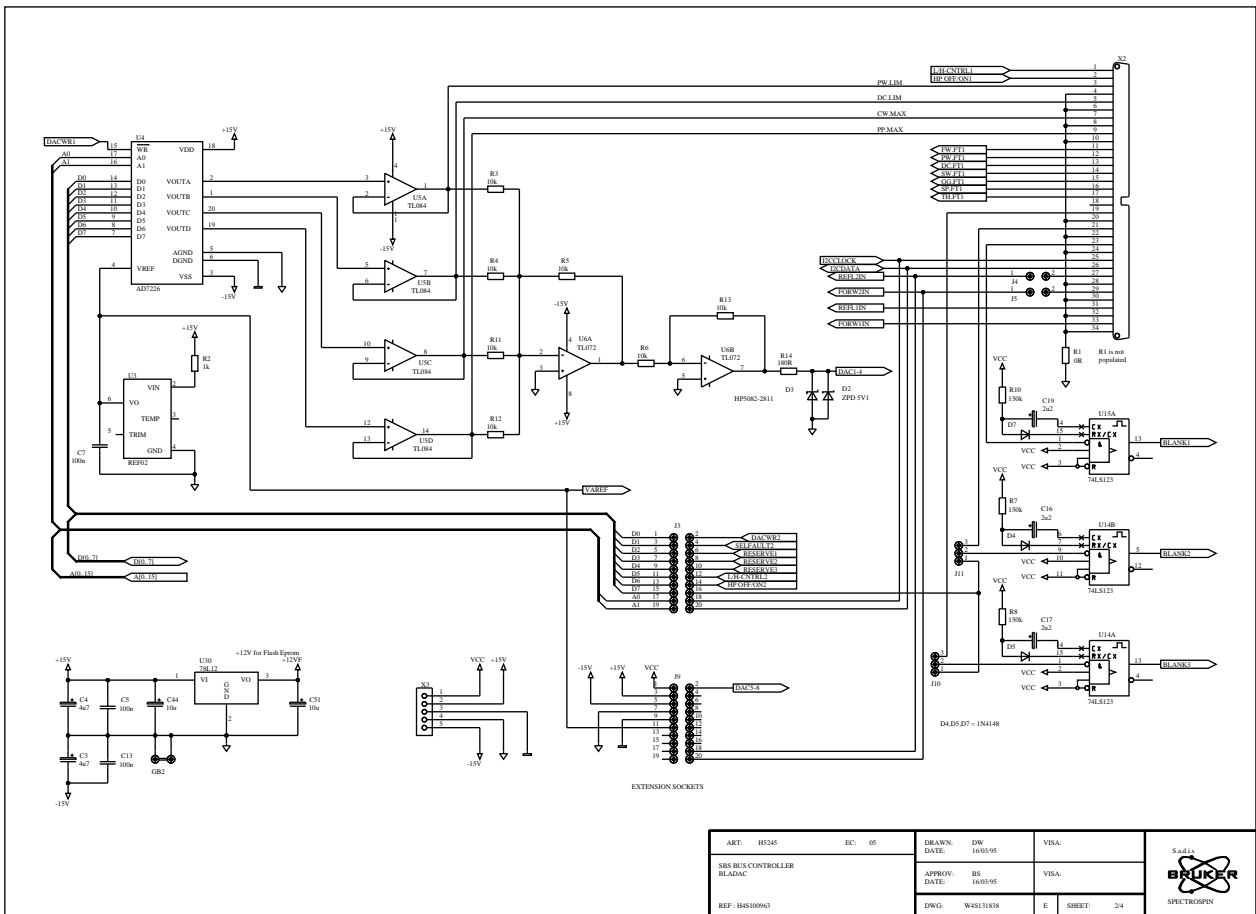




Figure 9.4. Sbs controller driver rs485

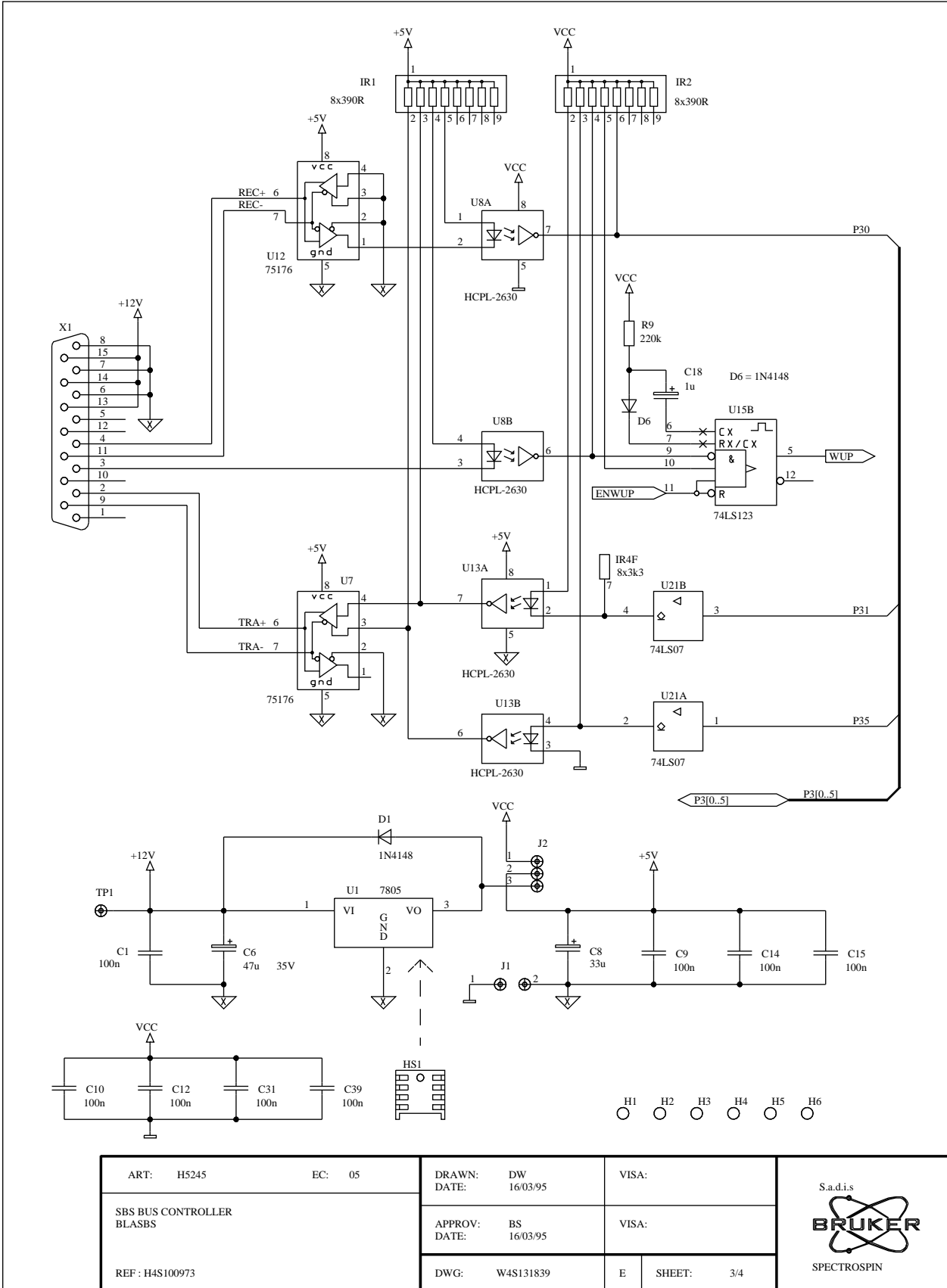
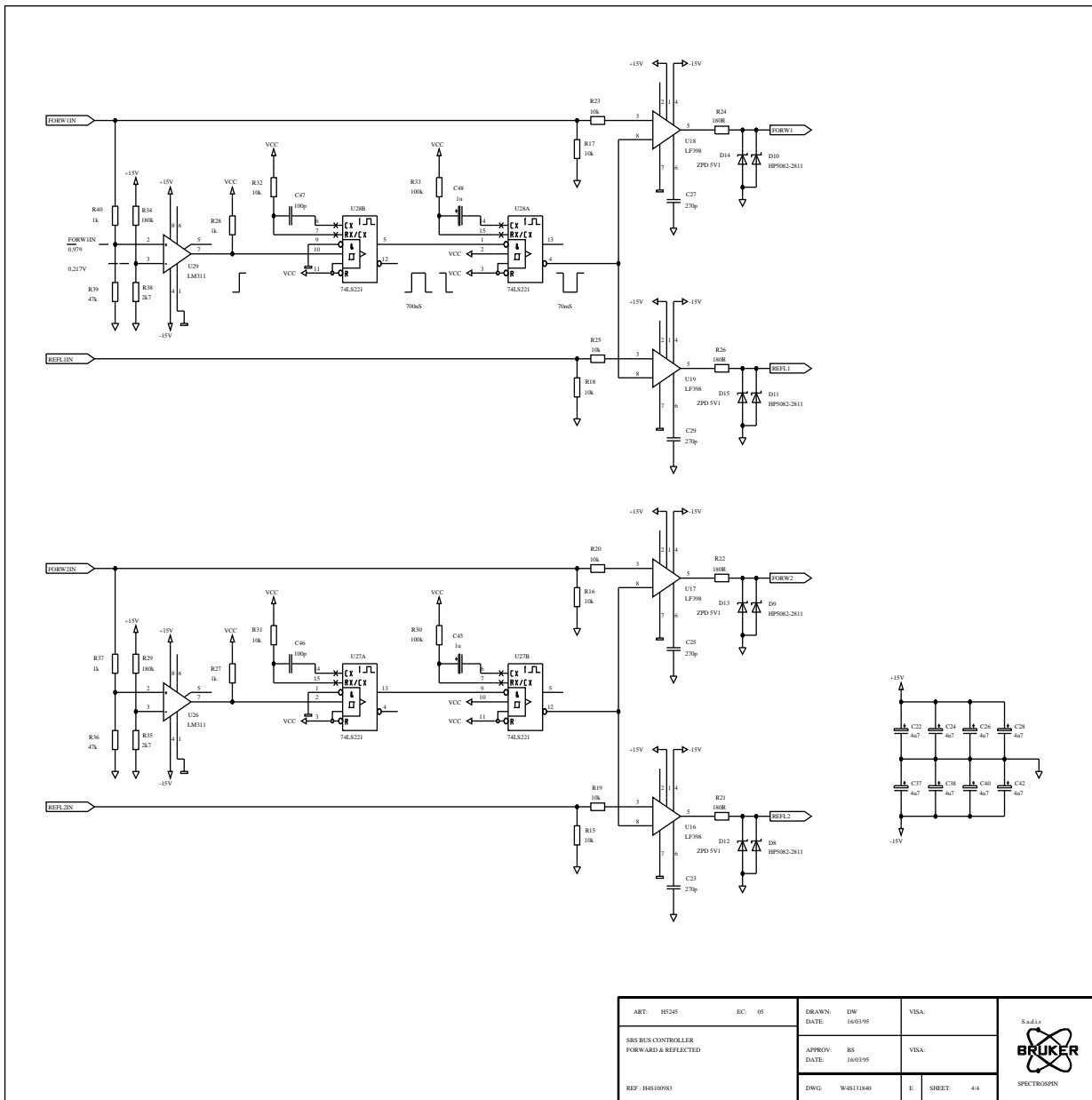


Figure 9.5. Sbs controller sample/hold



ART: H2545	EC: 05	DRAWN: DW	DATE: 16/03/95	VISA:
SBS BUS CONTROLLER FORWARD & REFLECTED		APPROV: BE	DATE: 16/03/95	VISA:
REF: H45100983		DWG: W45131840	E	SHEET: 4/4



Figure 9.6. RS485 extension board

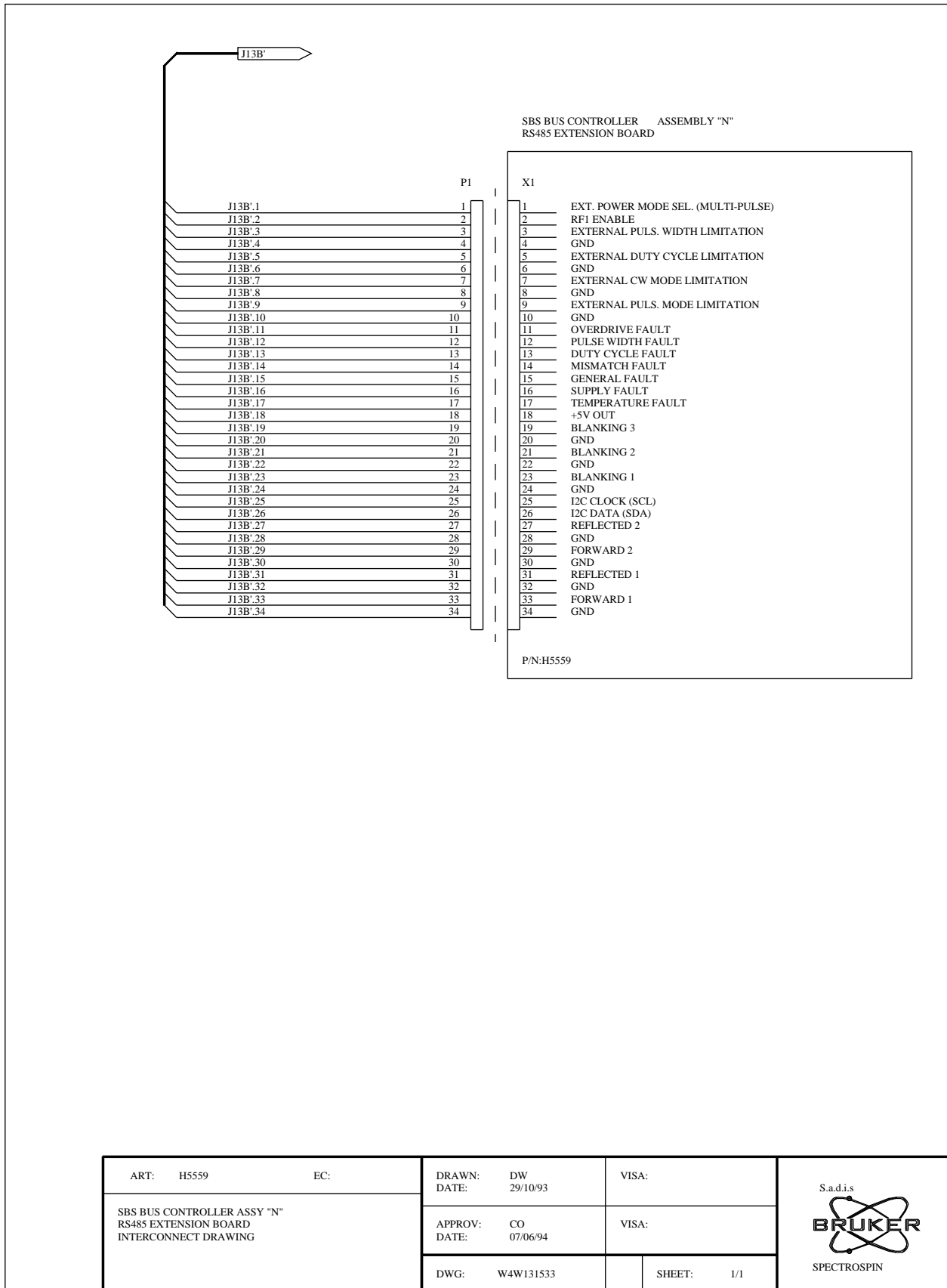
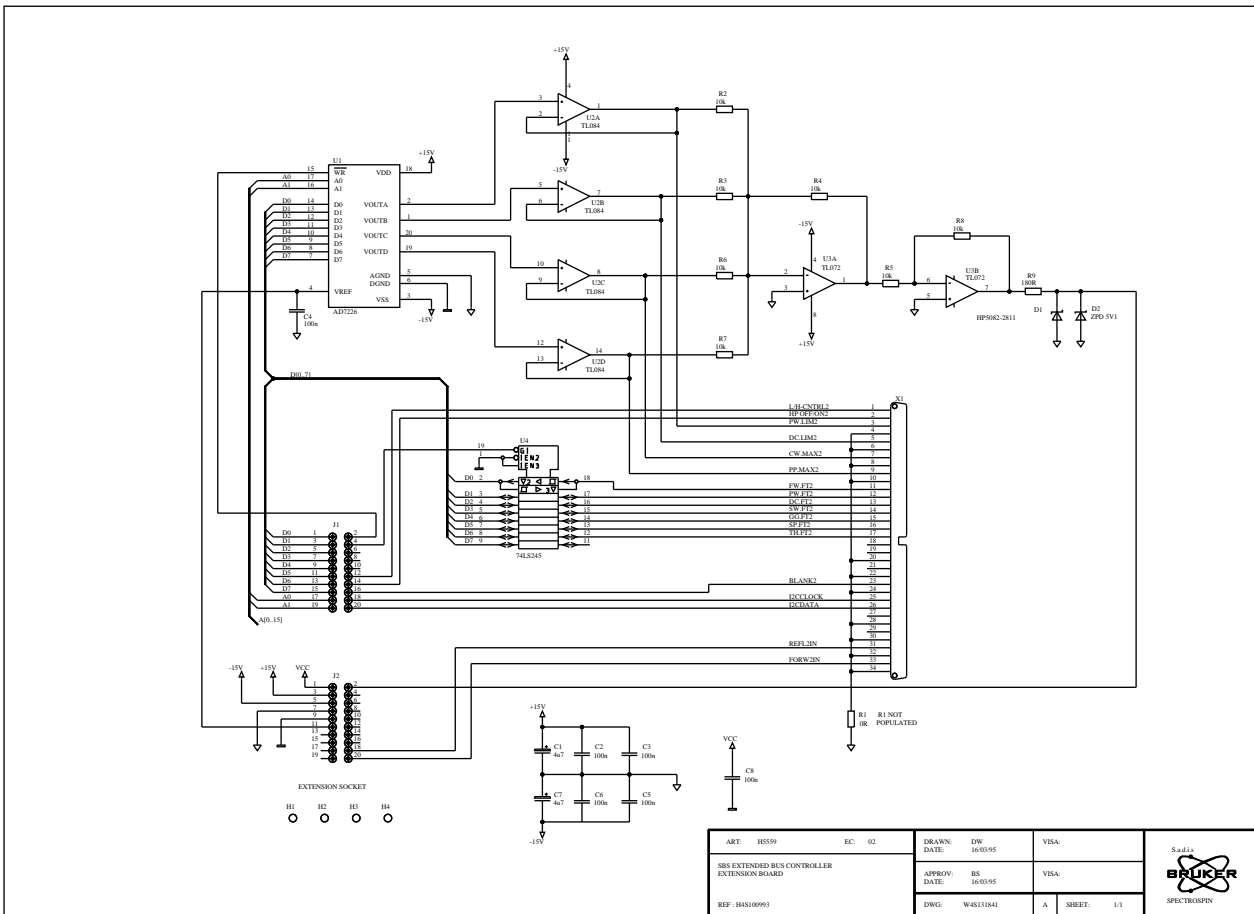


Figure 9.7. Extended bus controller



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