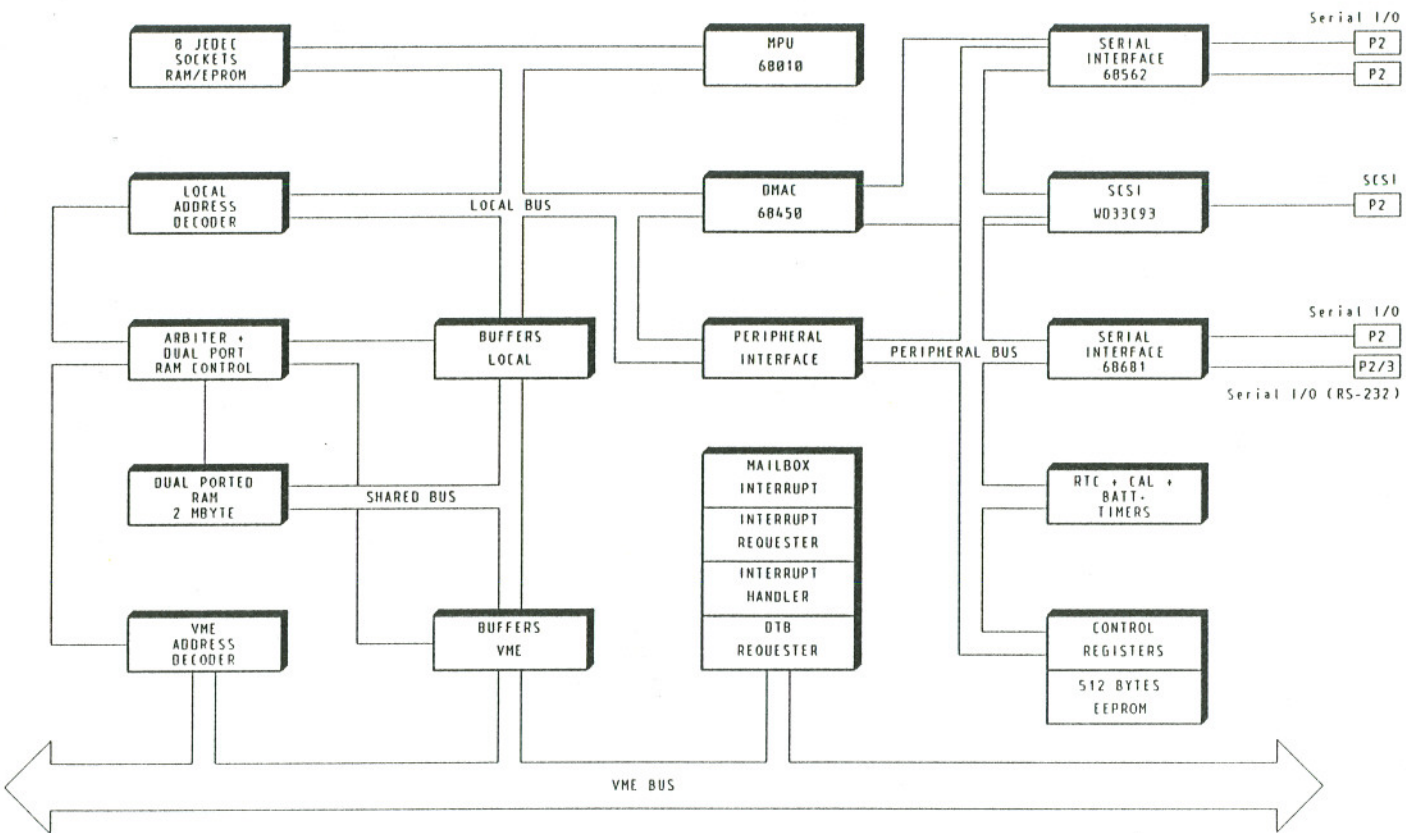


APPENDIX A Block Diagram

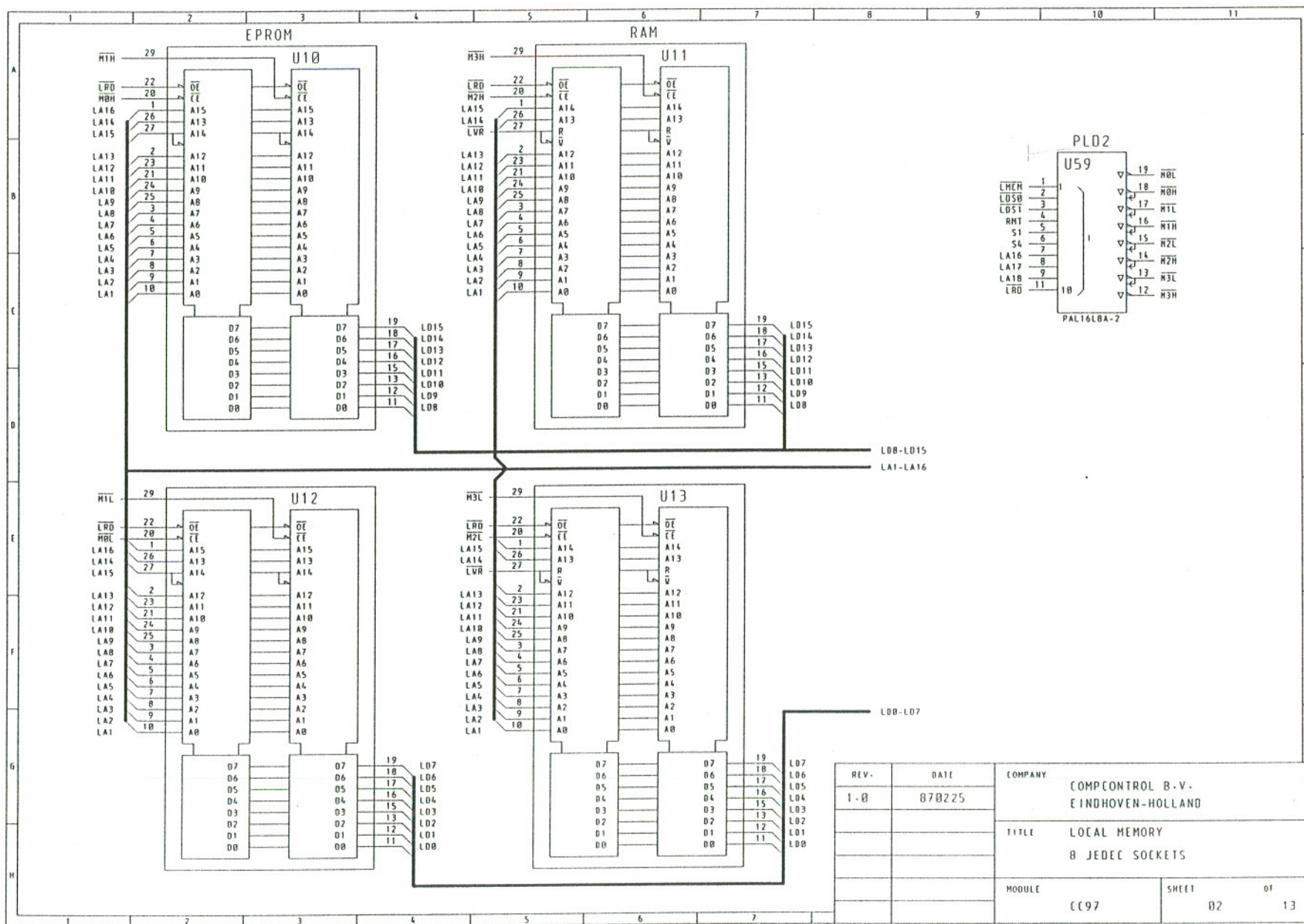


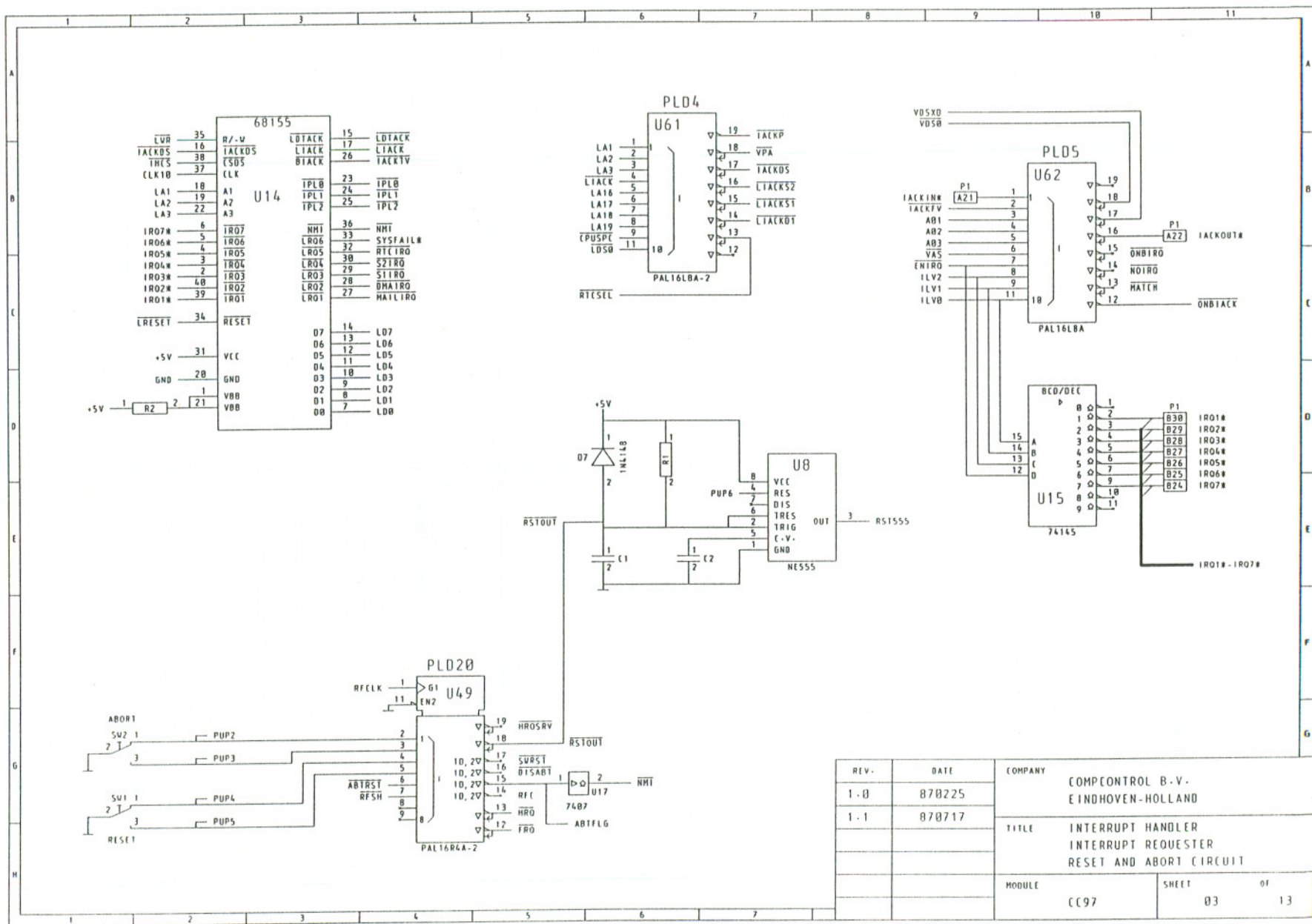


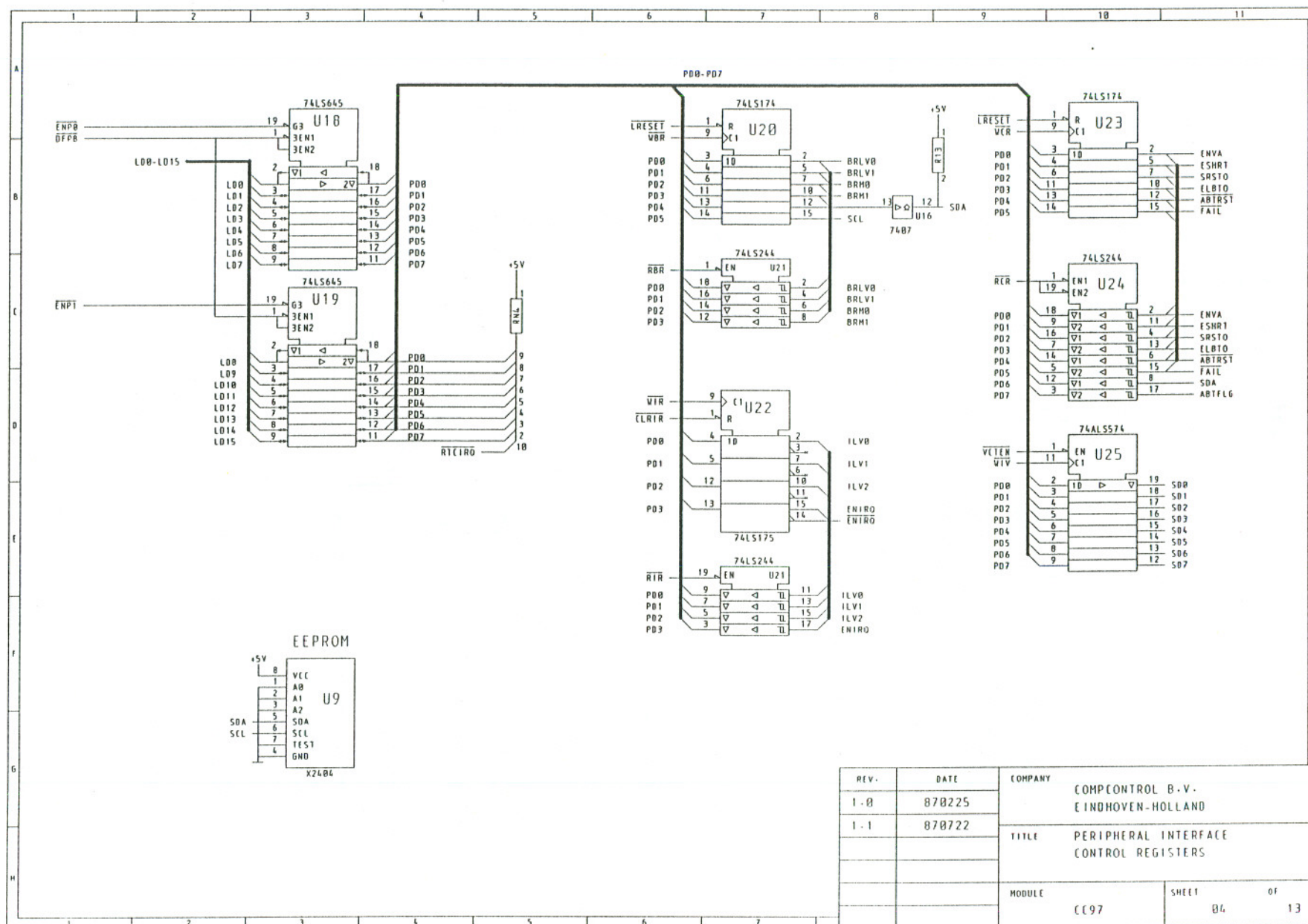
APPENDIX B

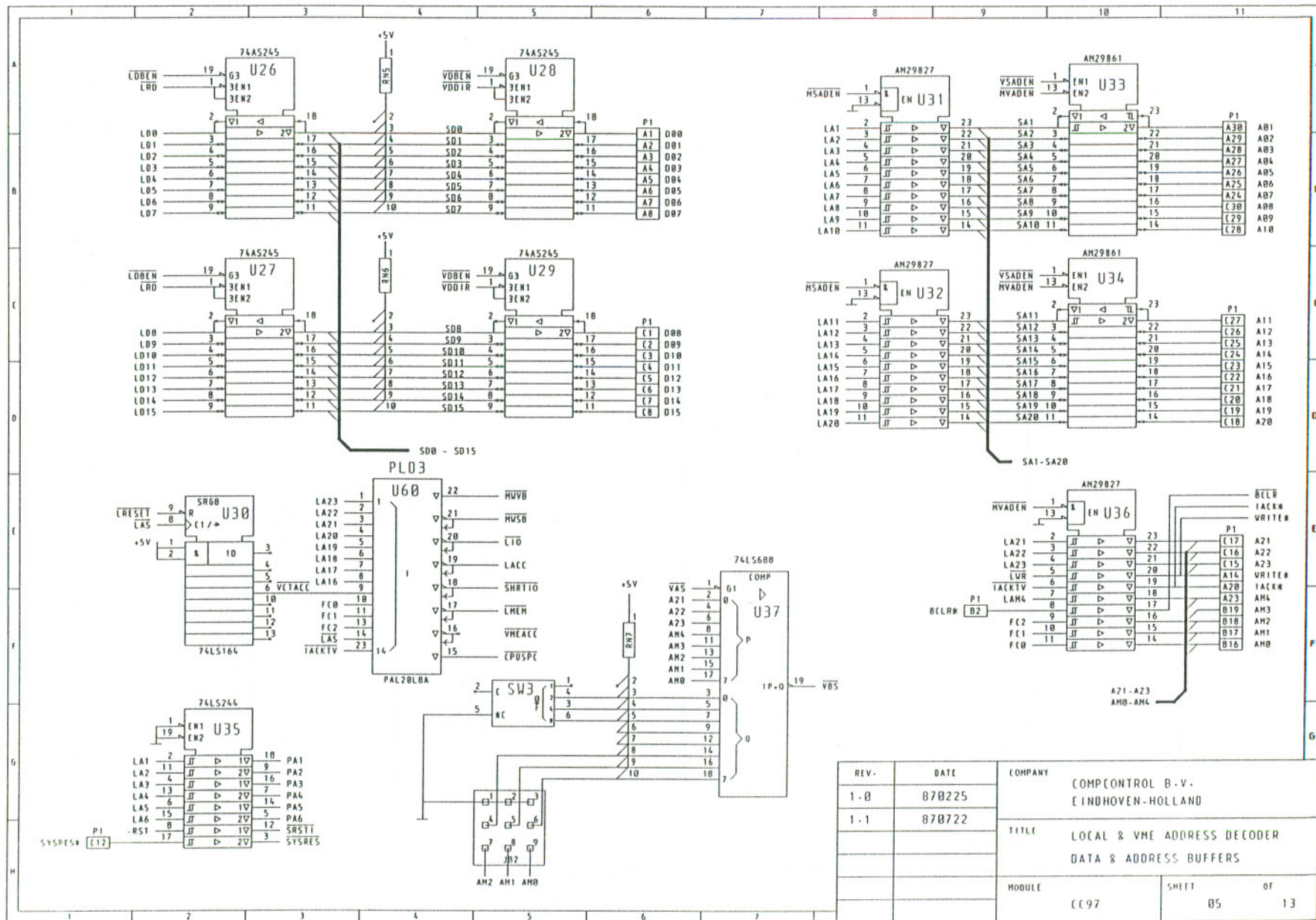
Schematic Diagrams

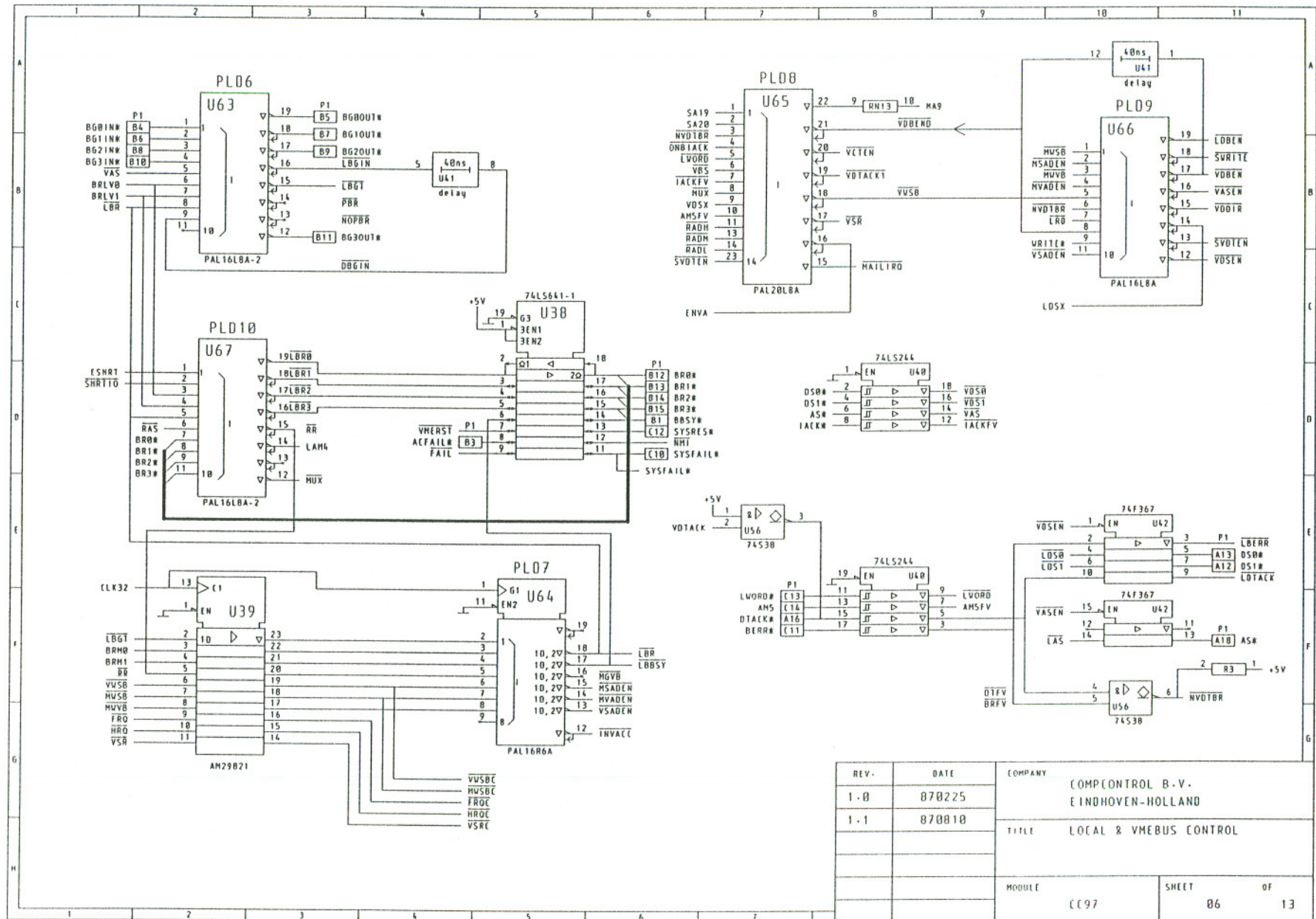
Sheet 1	MPU & DMA
Sheet 2	Local memory, 8 JEDEC sockets
Sheet 3	Interrupt handler/requester, reset and abort
Sheet 4	Peripheral interface, control registers
Sheet 5	Address decoding, data/address buffers
Sheet 6	Local & VMEbus control
Sheet 7	Peripheral control logic
Sheet 8	Memory sequencer, clock generation
Sheet 9	Memory DPRAM
Sheet 10	Peripherals
Sheet 11	VMEbus & I/O connectors
Sheet 12	Power supply
Sheet 13	Decoupling



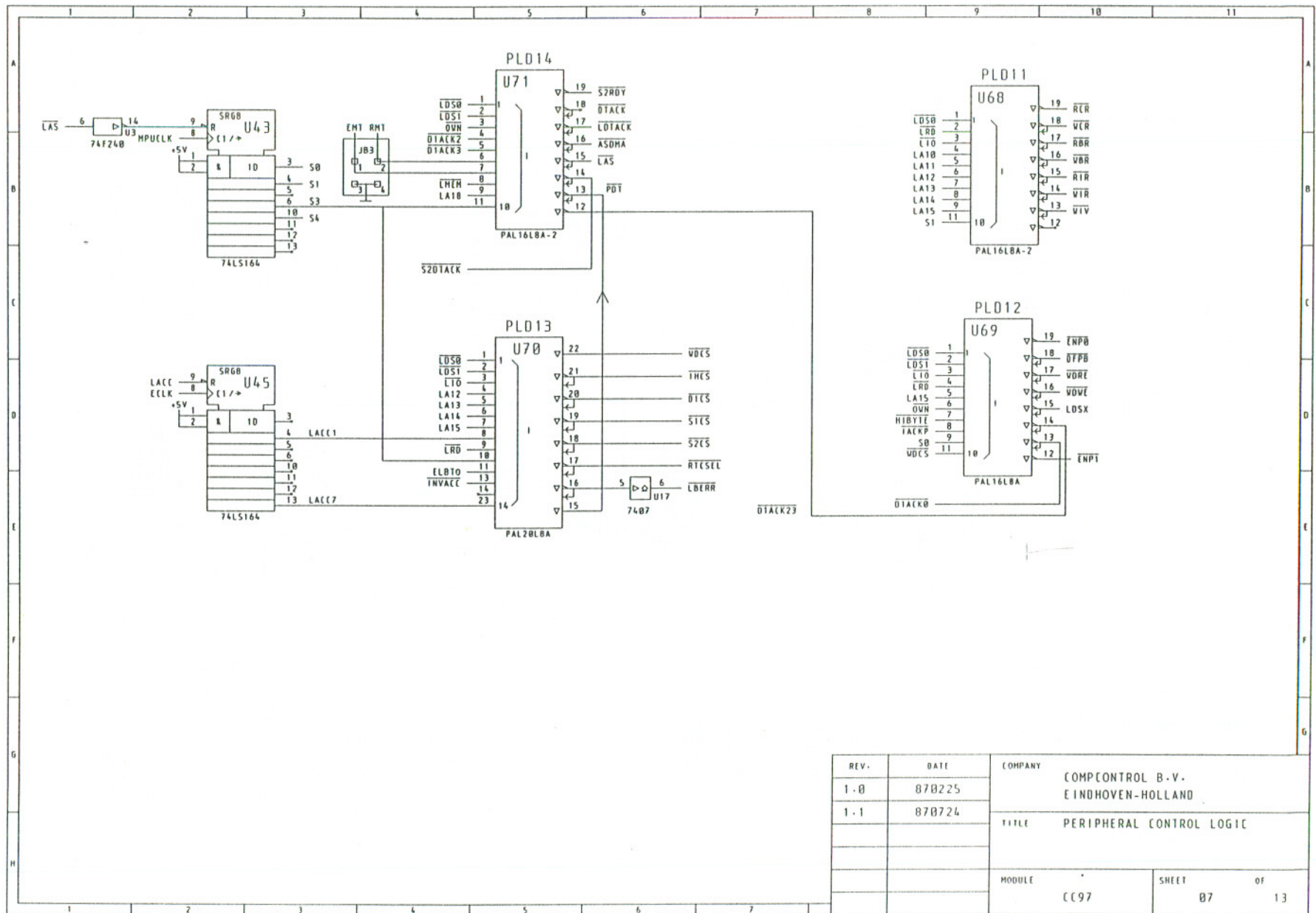




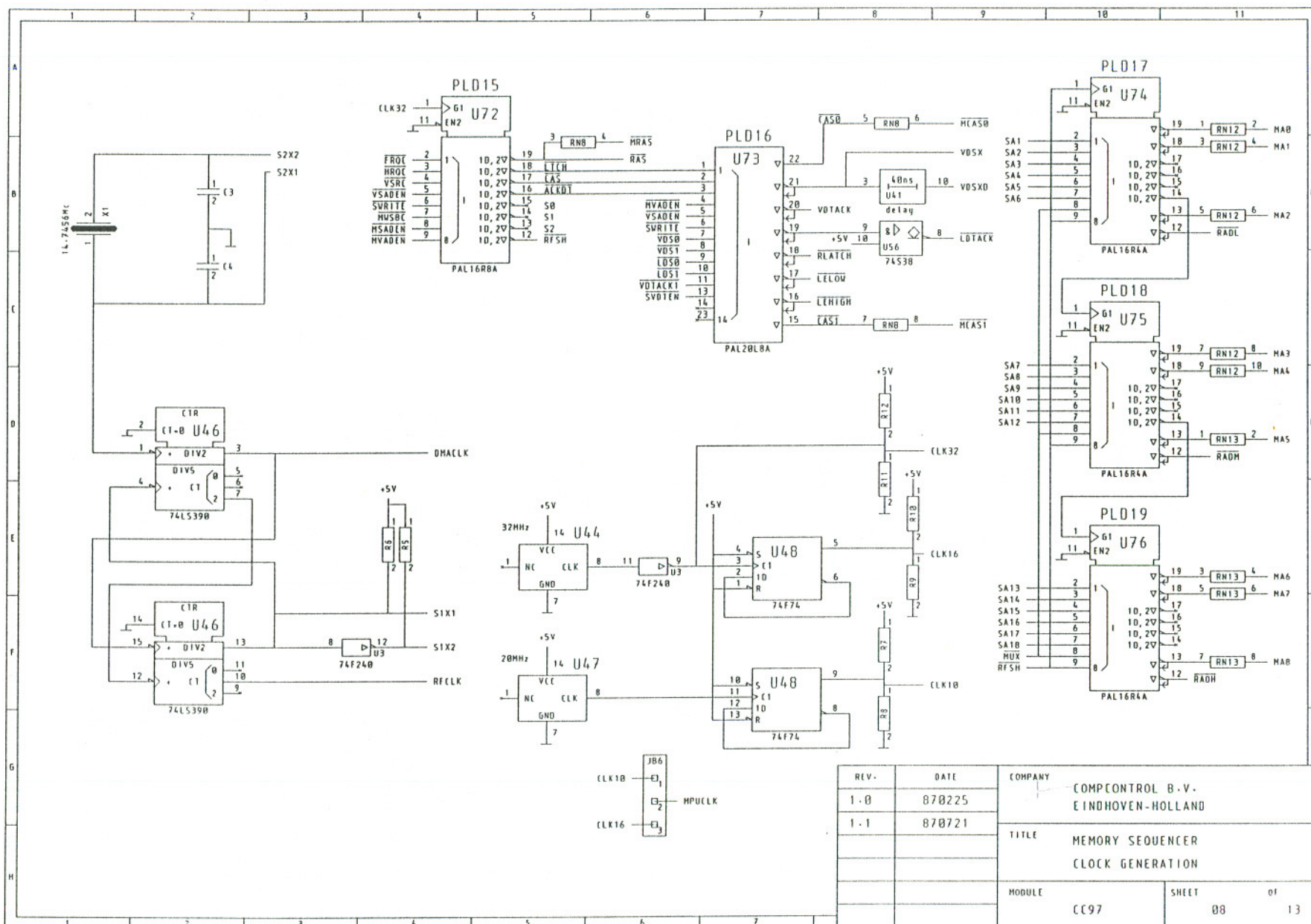


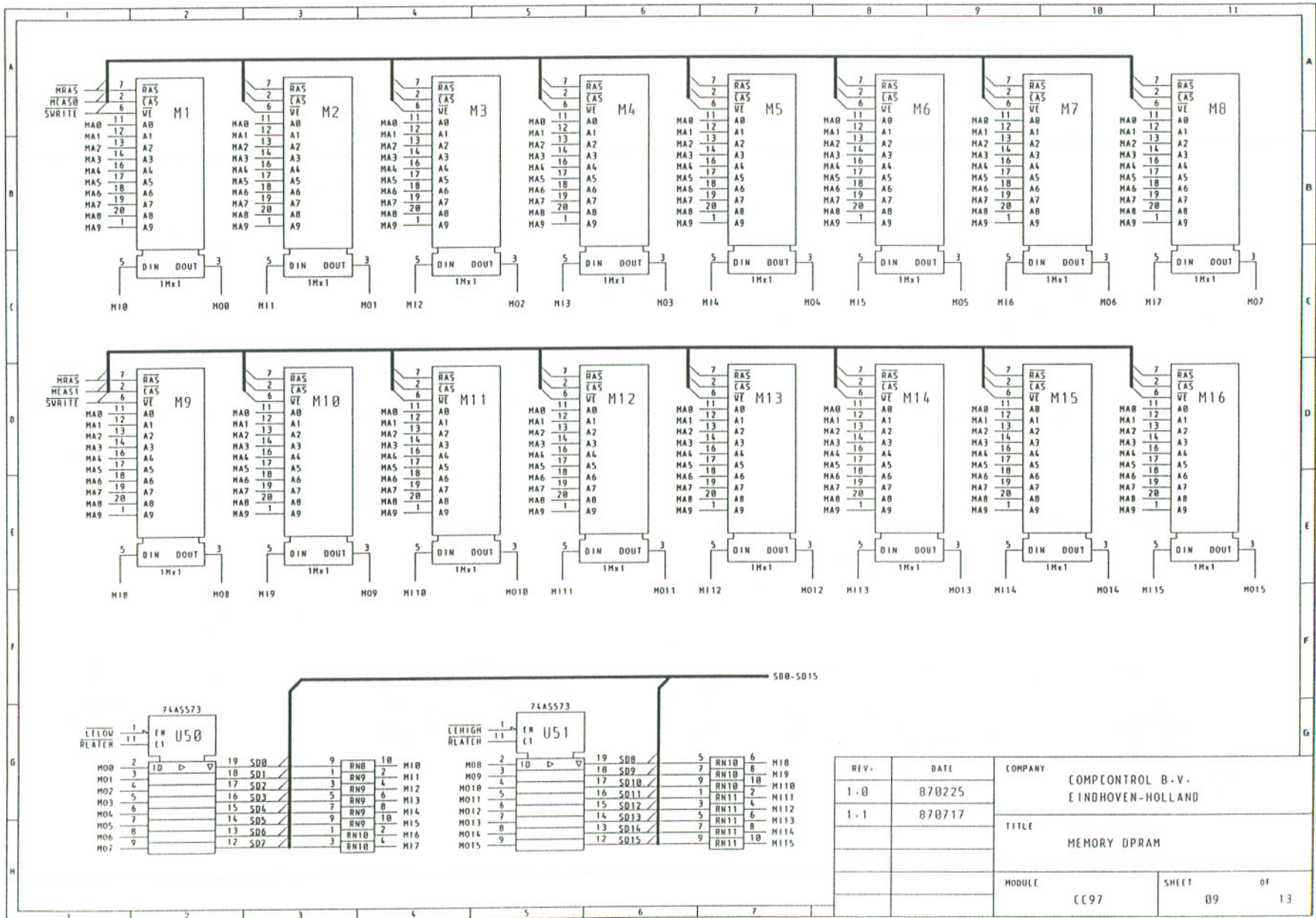


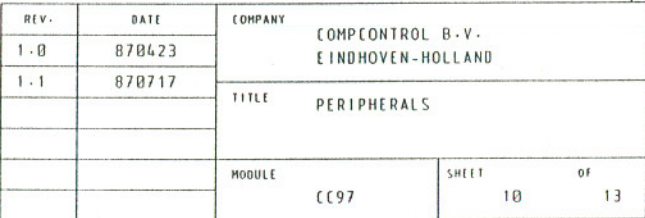
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1.1	870810	
		TITLE LOCAL & VMEBUS CONTROL
		MODULE CC97
		SHEET 06 OF 13



REV.	DATE	COMPANY	
1.0	870225	COMPCONTROL B.V.	
1.1	870724	EINDHOVEN-HOLLAND	
		TITLE	
		PERIPHERAL CONTROL LOGIC	
		MODULE	SHEET OF
		CC97	07 13



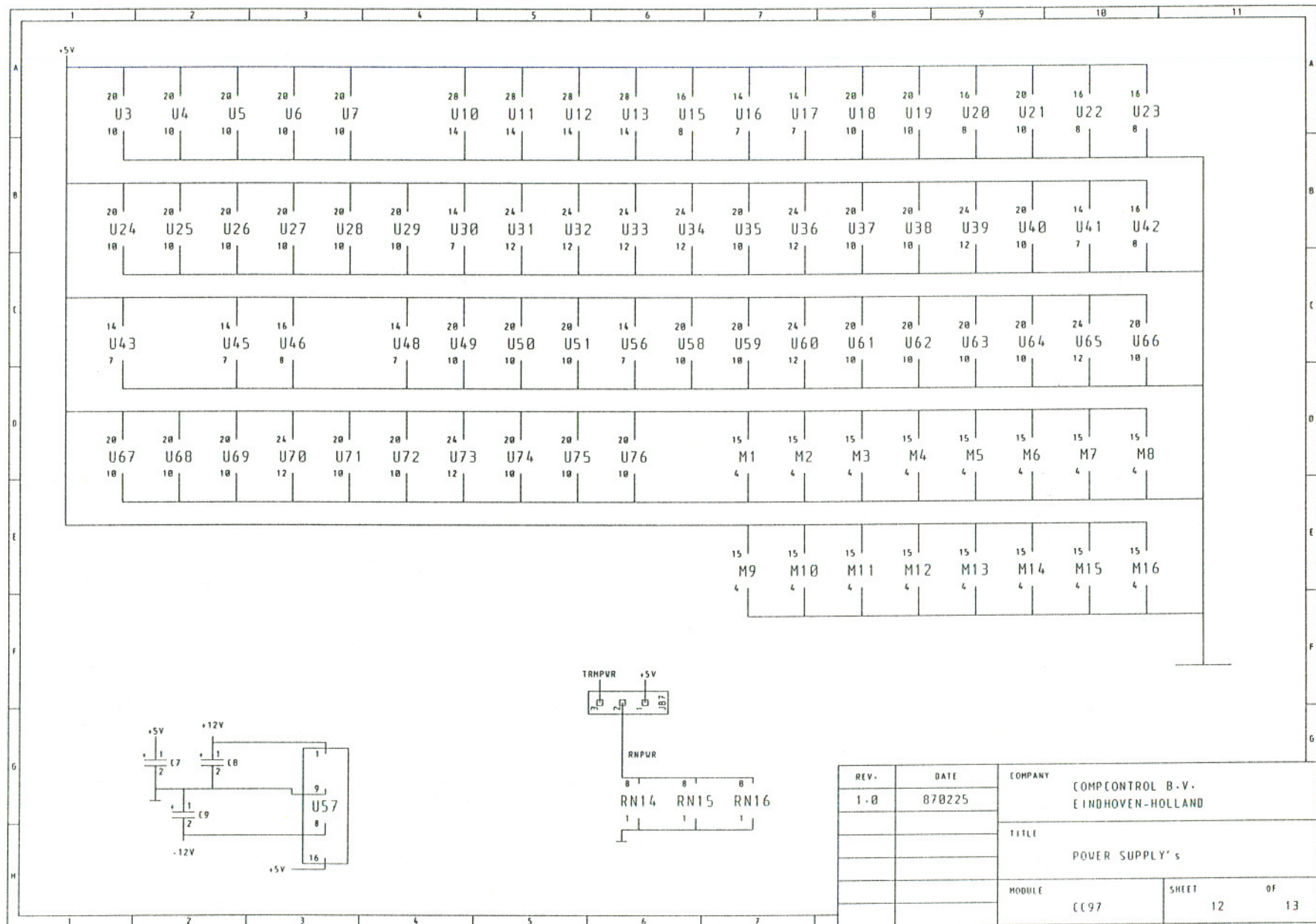


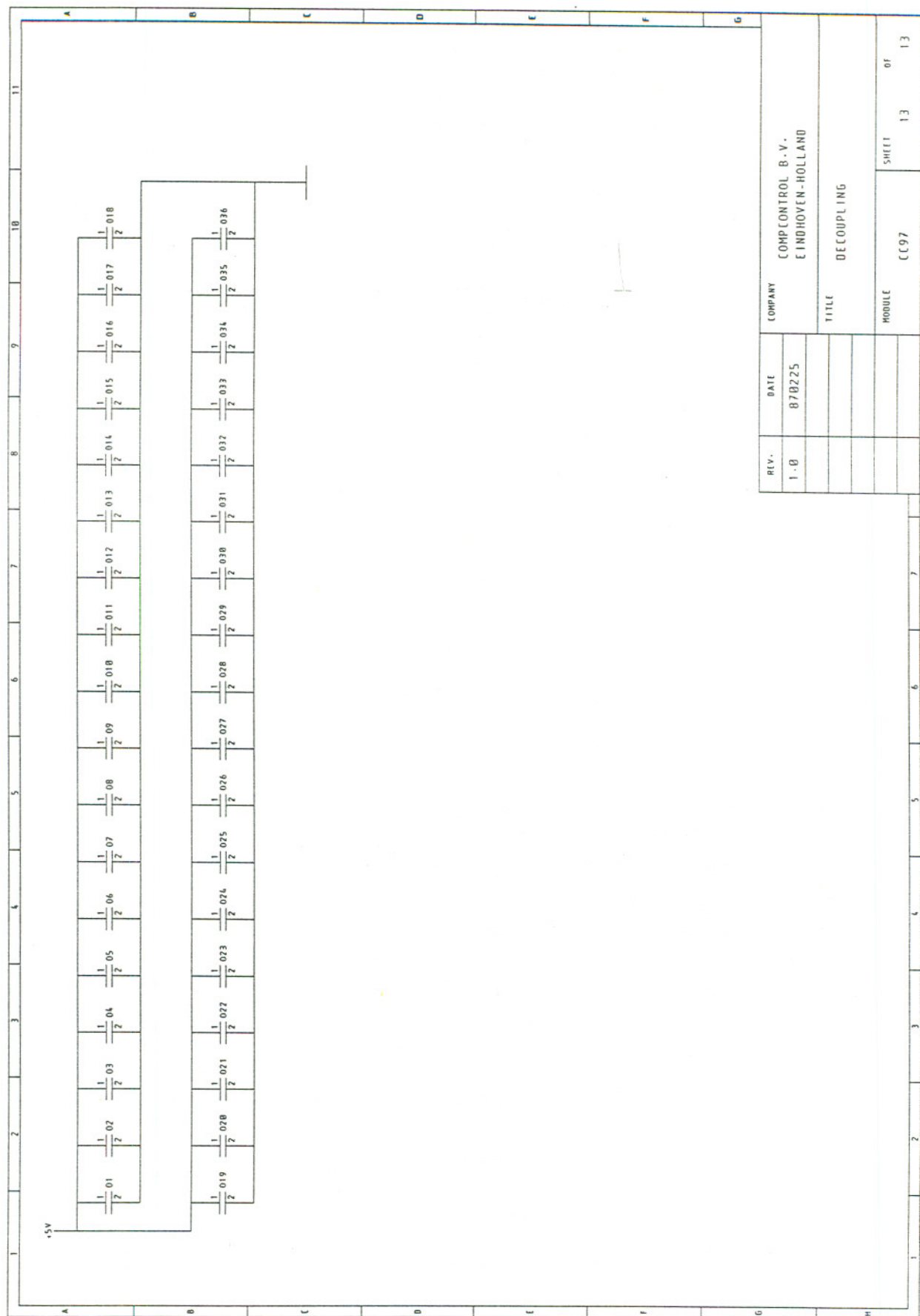


	1	2	3	4	5	6	7	8	9	10	11	
	P1A	P1B	P1C	P2A	P2B	P2C						
A	1 □ DB0	1 □ DBSY#	1 □ DB0	1 □ -12V	1 □ +5V	1 □ +12V						
	2 □ DB1	2 □ BCLR#	2 □ DB9	2 □ S2RTSB	2 □ GND	2 □ S2CTSA						
	3 □ DB2	3 □ ACFAIL#	3 □ D10	3 □ S2TRXB	3 □	3 □ S2TXDA						
B	4 □ DB3	4 □ BGB1N#	4 □ D11	4 □ S2RXC	4 □	4 □ S2RXDA						
	5 □ DB4	5 □ BG0OUT#	5 □ D12	5 □ S20CDB	5 □	5 □ S20CDA						
	6 □ DB5	6 □ BG1IN#	6 □ D13	6 □ S2TXDB	6 □	6 □ S2RXC						
	7 □ DB6	7 □ BG1OUT#	7 □ D14	7 □ S2RXDB	7 □	7 □ S2RXC						
	8 □ DB7	8 □ BG2IN#	8 □ D15	8 □ S2GPI2B	8 □	8 □ S2RTSA						
	9 □ GND	9 □ BG2OUT#	9 □ GND	9 □ S2GPO2B	9 □	9 □ -RST						
C	10 □ SYSCLK	10 □ BG3IN#	10 □ SYSFALL#	10 □ S2CTSB	10 □	10 □ -I/O						
	11 □ GND	11 □ BG3OUT#	11 □ BERR#	11 □ S2GPI1B	11 □	11 □ -MSG						
	12 □ DS1#	12 □ BR0#	12 □ SYSRES#	12 □ S2GPO1B	12 □ GND	12 □ -C/O						
	13 □ DS0#	13 □ BR1#	13 □ LVORD#	13 □ GND	13 □ +5V	13 □ -BSY						
	14 □ WRITE#	14 □ BR2#	14 □ AM5	14 □ SI1P4	14 □	14 □ -SEL						
	15 □ GND	15 □ BR3#	15 □ A23	15 □ SI1P3	15 □	15 □ GND						
D	16 □ DTACK#	16 □ AM0	16 □ A22	16 □ SI1P5	16 □	16 □ TRMPWR						
	17 □ GND	17 □ AM1	17 □ A21	17 □ SI1P2	17 □	17 □ -REQ						
	18 □ AS#	18 □ AM2	18 □ A20	18 □ SI1P2	18 □	18 □ -ACK						
	19 □ GND	19 □ AM3	19 □ A19	19 □ S1RXDA	19 □	19 □ -ATN						
	20 □ IACK#	20 □ GND	20 □ A18	20 □ S1TXDA	20 □	20 □ -DB7						
E	21 □ IACKIN#	21 □ SERCLK	21 □ A17	21 □ S1CTSA	21 □	21 □ -DB6						
	22 □ IACKOUT#	22 □ SERDAT#	22 □ A16	22 □ S1RTSA	22 □ GND	22 □ -DB5						
	23 □ AM4	23 □ GND	23 □ A15	23 □ S1OSRA	23 □	23 □ GND						
	24 □ A07	24 □ IR07#	24 □ A14	24 □ S1RXDB	24 □	24 □ GND						
F	25 □ A06	25 □ IR06#	25 □ A13	25 □ S1TXDB	25 □	25 □ -DB4						
	26 □ A05	26 □ IR05#	26 □ A12	26 □ S1RTSB	26 □	26 □ -DB3						
	27 □ A04	27 □ IR04#	27 □ A11	27 □ S1OP3	27 □	27 □ -DB2						
	28 □ A03	28 □ IR03#	28 □ A10	28 □ S1OP5	28 □	28 □ -DB1						
	29 □ A02	29 □ IR02#	29 □ A09	29 □ S1OP7	29 □	29 □ -DB0						
	30 □ A01	30 □ IR01#	30 □ A08	30 □	30 □	30 □ -DBP						
G	31 □ -12V	31 □ +5V5TB	31 □ +12V	31 □ GND	31 □ GND	31 □ GND						
	32 □ +5V	32 □ +5V	32 □ +5V	32 □ +5V	32 □ +5V	32 □ +5V						
H												

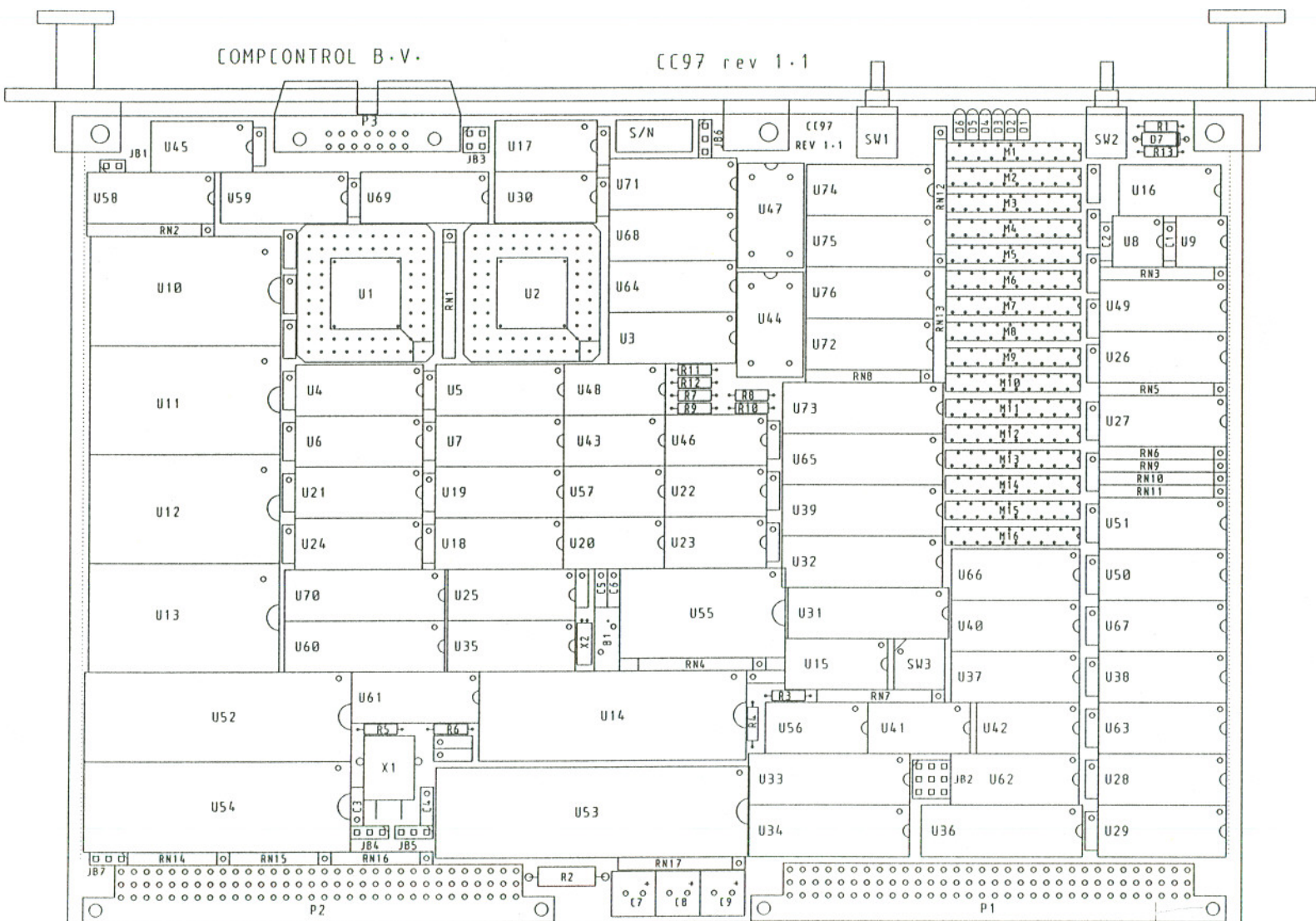
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1.0	870423	COMPCONTROL B.V.	EINDHOVEN-HOLLAND	
		TITLE	VMEbus & I/O connectors	
		MODULE	CC97	SHEET 11 OF 13

S1RXDA	1	2
S1TXDA	3	4
S1CTSA	5	6
S1RTSA	7	8
S1OSRA	9	10
	11	12
	13	14

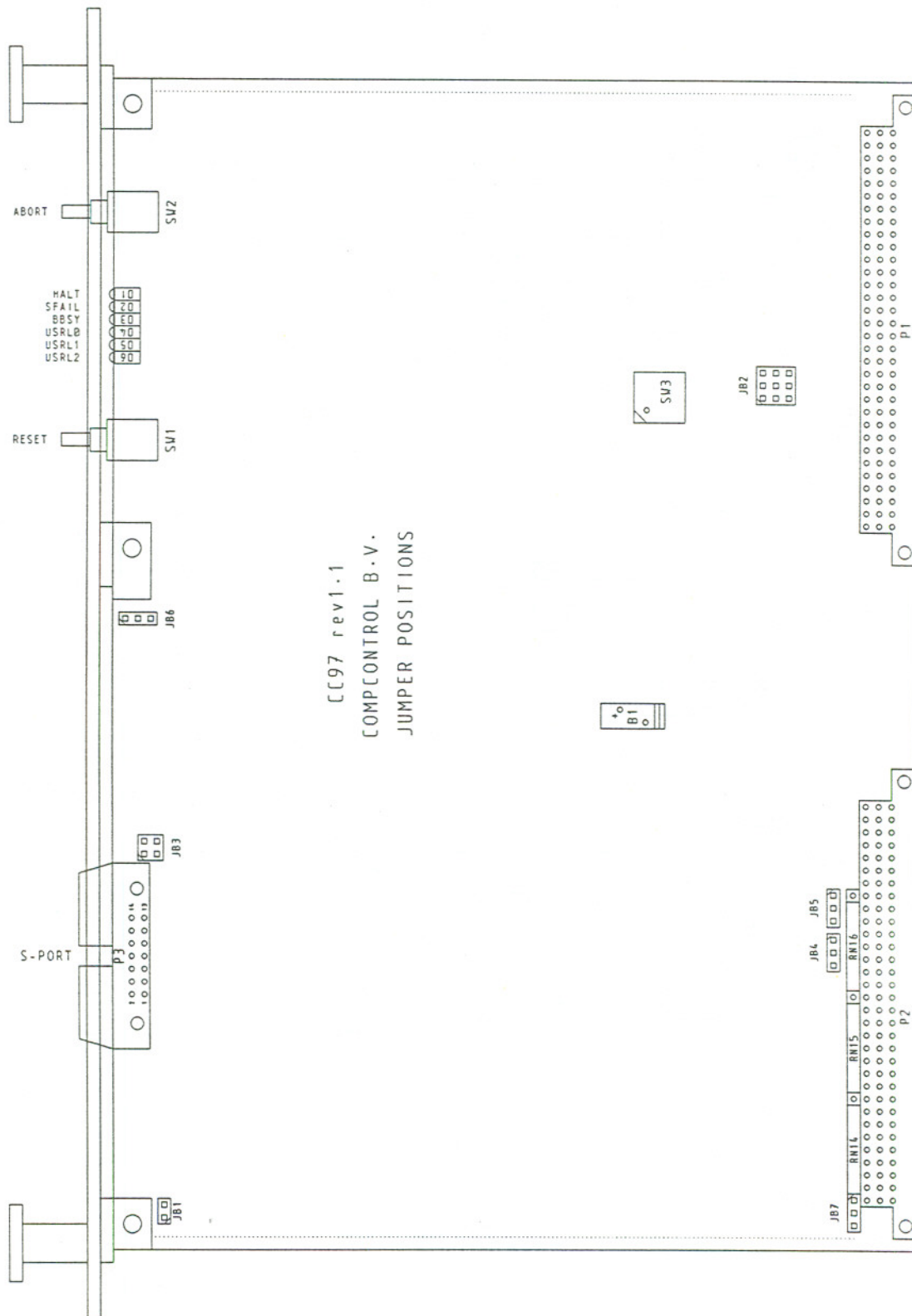




APPENDIX C Component Layout



Jumper Positioning



APPENDIX D

List of Components

Integrated Circuits (TTL)

U3	74FCT240	Buffer
U4-U5	74HCT645	Bus transceiver
U6-U7	74FCT573	Transparent latch
U15	74145	1-of-10 decoder/driver
U16-U17	7407	Buffer O.C.
U18-U19	74HCT645	Bus transceiver
U20	74HCT174	Flip-Flop
U21	74HCT244	Buffer
U22	74HCT175	Flip-Flop
U23	74HCT174	Flip-Flop
U24	74HCT244	Buffer
U25	74HCT574	D-type Flip-Flop
U26-U29	74FCT245	Bus transceiver
U30	74HCT164	Shift register
U31-U32	74FCT827	Buffer
U33-U34	39C861	Bus transceiver
U35	74HCT244	Buffer
U36	74FCT827	Buffer
U37	74HCT688	Comparator
U38	74LS641-1	Bus transceiver O.C.
U39	39C821	Bus interface register
U40	74HCT244	Buffer
U42	74F367	Bus driver
U43, U45	74HCT164	Shift register
U46	74HCT390	Counter
U48	74F74	Flip-Flop
U50-U51	74FCT573	Latch
U56	74S38	NAND O.C.

Integrated Circuits (PLD)

U49	097-049-0	16R4B-2
U58	097-058-0	16L8B-2
U59	097-059-0	16L8B-2
U60	097-060-0	20L8B-2
U61	097-061-0	16L8B-2
U62	097-062-0	16L8B-2
U63	097-063-0	16L8B-2
U64	097-064-0	16R6B
U65	097-065-0	20L8B-2
U66	097-066-1	16L8B-2
U67	097-067-0	16L8B-2
U68	097-068-0	16L8B-2
U69	097-069-0	16L8B-2
U70	097-070-0	20L8B-2
U71	097-071-0	16L8B-2

U72	097-072-0	16R8B
U73	097-073-0	20L8B-2
U74	097-074-0	16R4B-2
U75	097-075-0	16R4B-2
U76	097-076-0	16R4B-2

Memory Devices

M1-M16	TC511000Z	ZIP DRAM
U10,U12	PDS-28-20, 27512	EPROM
U11,U13	PDS-28-20, 55257	SRAM
U9	X2404	EEPROM

Integrated Circuits (miscellaneous)

U1	MC68010	MPU (PGA)
U2	MC68450R8	DMA controller (PGA)
U8	NE555	Timer
U14	SCB68155	Interrupt handler
U41	MDU-3-40	Delay line
U44	KXO-01-32	Clock oscillator
U47	KXO-01-20	Clock oscillator
U52	SCN68681	DUART
U53	SCN68562	DUSCC
U54	WD33C93	SBIC
U55	ICM7170	RTC
U57	MC145406	RS-232 driver/receiver

Capacitors

C1	220 nF	Capacitor, plastic (0.2" pitch)
C2	22 nF	Capacitor, ceramic (0.2" pitch)
C3	5 pF	Capacitor, ceramic (0.2" pitch)
C4	15 pF	Capacitor, ceramic (0.2" pitch)
C5	18 pF	Capacitor, ceramic (0.2" pitch)
C6	18 pF	Capacitor, ceramic (0.2" pitch)
C7-C9	100 uF	Capacitor, electrolytic
O1-O36	0.1 uF	Decoupling capacitor (0.2" pitch)

Resistors

R1	1 MOhm	Resistor 0.33 W
R2	33 Ohm	Resistor 0.5 W
R3-R4	330 Ohm	Resistor 0.33 W
R5-R6	1 KOhm	Resistor 0.33 W
R7	330 Ohm	Resistor 0.33 W
R8-R9	3.3 KOhm	Resistor 0.33 W
R10	330 Ohm	Resistor 0.33 W
R11	3.3 KOhm	Resistor 0.33 W
R12	330 Ohm	Resistor 0.33 W

R13	3.3 KOhm	Resistor 0.33 W
-----	----------	-----------------

Resistor Networks

RN1-RN7	101-392	3.9 KOhm, 10-pin SIP
RN8-RN13	102-330	33 Ohm, 10-pin SIP
RN14-RN16	104-221/331	220/330 Ohm, 8-pin SIP
RN17	101-392	3.9 KOhm, 10-pin SIP

Connectors / Jumpers

P1-P2	96-pin	IEC-603 male connector
P3	14-pin	Header
JB1	3-pin	Jumper block (1 x 3)
JB2	9-pin	Jumper block (3 x 3)
JB3	4-pin	Jumper block (2 x 2)
JB4-JB7	3-pin	Jumper block (1 x 3)

Switches

SW1-SW2	EP12	C&K switch
SW3	KDC-16	Hex switch

Diodes

D1-D6	555-2007	LED
D7	1N4148	Diode

Xtal

X1	X-tal 14.7456 MHz
X2	X-tal 32.768 KHz

Battery

B1	245A	Lithium battery
----	------	-----------------

Note: Some parts may have been replaced by their equivalent types.

APPENDIX E

Memory Map

ADDRESS

000000	Local EPROM space 256 KByte
040000	Local SRAM space 128 KByte
060000	Local I/O map 64 KByte
070000	VMEbus short I/O map 64 KByte
080000	VMEbus address space 13.5 MByte
E00000	Onboard dual ported RAM 2 MByte
FFFFFF	

APPENDIX F

I/O Map

EVEN ADDRESS	High byte	Low byte	ODD ADDRESS
060000	Unused	Board Contr Register	060001
060400		Bus Request Register	060401
060800		Int Request Register	060801
060C00		Int Vector Register	060C01
Reserved			
061000 06103E	Unused	Real Time Clock	061001 06103F
Reserved			
062000 062002	Unused	SCSI Controller	062001 062003
Reserved			
063000 06301E	Unused	DUART	063001 06301F
Reserved			
064000 06407E	Unused	DUSCC	064001 06407F
Reserved			
068000 0680FE	DMA Controller		068001 0680FF
Reserved			
069000 06900E	Unused	Interrupt Handler	069001 06900F
Reserved			
06FFFE			06FFFF

APPENDIX G

Connector Assignments

This Appendix identifies the VMEbus connectors P1, P2 and the I/O connector P3. It also summarizes the pin numbers used for the serial ports and the SCSI bus.

P1	96-pin IEC 603 connector	G-2
P2	96-pin IEC 603 connector	G-3
P3	14-pin flat-cable header	G-4

P1 Pin Assignments

PIN NUMBER	ROW A SIGNAL MNEMONIC	ROW B SIGNAL MNEMONIC	ROW C SIGNAL MNEMONIC
1	D00	BBSY*	D08
2	D01	BCLR*	D09
3	D02	ACFAIL*	D10
4	D03	BG0IN*	D11
5	D04	BG0OUT*	D12
6	D05	BG1IN*	D13
7	D06	BG1OUT*	D14
8	D07	BG2IN*	D15
9	GND	BG2OUT*	GND
10	(SYSCLK)	BG3IN*	SYSFAIL*
11	GND	BG3OUT*	BERR*
12	DS1*	BR0*	SYSRESET*
13	DS0*	BR1*	LWORD*
14	WRITE*	BR2*	AM5
15	GND	BR3*	A23
16	DTACK*	AM0	A22
17	GND	AM1	A21
18	AS*	AM2	A20
19	GND	AM3	A19
20	IACK*	GND	A18
21	IACKIN*	(SERCLK)	A17
22	IACKOUT*	(SERDAT*)	A16
23	AM4	GND	A15
24	A07	IRQ7*	A14
25	A06	IRQ6*	A13
26	A05	IRQ5*	A12
27	A04	IRQ4*	A11
28	A03	IRQ3*	A10
29	A02	IRQ2*	A09
30	A01	IRQ1*	A08
31	-12V	(+5V STDBY)	+12V
32	+5V	+5V	+5V

NOTE: Signal mnemonics shown in parenthesis are not used by the CC-97 module.

P2 Pin Assignments

PIN NUMBER	ROW A SIGNAL MNEMONIC	ROW B SIGNAL MNEMONIC	ROW C SIGNAL MNEMONIC
1	-12 VOLT	+5 VOLT	+12 VOLT
2	S2RTSB	GND	S2CTSA
3	S2TRXCB		S2TXDA
4	S2RTXCB		S2RXDA
5	S2DCDB		S2DCDA
6	S2TXDB		S2RTXCA
7	S2RXDB		S2TRXCA
8	S2GPI2B		S2RTSA
9	S2GPO2B		-RST
10	S2CTSB		-I/O
11	S2GPI1B		-MSG
12	S2GPO1B	GND	-C/D
13	GND	+5 VOLT	-BSY
14	S1IP4		-SEL
15	S1IP3		GND
16	S1IP5		TRMPWR
17	S1CTSB		-REQ
18	S1IP2		-ACK
19	S1RXDA		-ATN
20	S1TXDA		-DB7
21	S1CTSA		-DB6
22	S1RTSA	GND	-DB5
23	S1DSRA		GND
24	S1RXDB		GND
25	S1TXDB		-DB4
26	S1RTSB		-DB3
27	S1OP3		-DB2
28	S1OP5		-DB1
29	S1OP7		-DB0
30			-DBP
31	GND	GND	GND
32	+5 VOLT	+5 VOLT	+5 VOLT

NOTE: All mnemonics starting with 'S1' are signals of the DUART, and all mnemonics starting with 'S2' are signals of the DUSCC.

Serial Port 1 (DUART)
P2 / P3 Pin Assignments

P2 ROW A PIN NR.	P3 PIN NR.	SIGNAL MNEMONIC
20	3	S1TXDA
19	5	S1RXDA
25		S1TXDB
24		S1RXDB
21	9	S1CTSA
17		S1CTSB
18		S1IP2
15		S1IP3
14		S1IP4
16		S1IP5
22	7	S1RTSA
26		S1RTSB
27		S1OP3
28		S1OP5
29		S1OP7
23	11	S1DSRA

When using an adapter cable to connect the P3 connector to a standard RS-232 type D-connector, the following pin number conversion applies.

P3 PIN NR.	RS-232 D-CONNECTOR PIN NUMBER	CC-97 SIGNAL MNEMONIC
3	2	TRANSMIT DATA (S1TXDA)
5	3	RECEIVE DATA (S1RXDA)
7	4	REQUEST TO SEND (S1RTSA)
9	5	CLEAR TO SEND (S1CTSA)
11	6	DATA SET READY (S1DSRA)
13	7	GROUND

Serial Port 2 (DUSCC)
P2 Pin Assignments

P2 ROW A PIN NR.	P2 ROW C PIN NR.	SIGNAL MNEMONIC
	3	S2TXDA
	4	S2RXDA
	8	S2RTSA
	2	S2CTSA
	5	S2DCDA
	7	S2TRXCA
	6	S2RTXCA
7		S2TXDB
6		S2RXDB
2		S2RTSB
10		S2CTSB
5		S2DCDB
3		S2TRXCB
4		S2RTXCB
11		S2GPI1B
8		S2GPI2B
12		S2GPO1B
9		S2GPO2B

SCSI I/O Signals

P2 ROW C PIN NR.	SCSI CONNECTOR PIN NUMBER	SIGNAL MNEMONIC
29	2	-DB0
28	4	-DB1
27	6	-DB2
26	8	-DB3
25	10	-DB4
22	12	-DB5
21	14	-DB6
20	16	-DB7
30	18	-DBP
	20	GROUND
	22	GROUND
	24	GROUND
16	26	TRMPWR
	28	GROUND
	30	GROUND
19	32	-ATN
	34	GROUND
13	36	-BSY
18	38	-ACK
9	40	-RST
11	42	-MSG
14	44	-SEL
12	46	-C/D
17	48	-REQ
10	50	-I/O

NOTE: All odd pin numbers of the SCSI connector (except pin 25) are connected to ground. Pin 25 is not connected. The SCSI connector is not part of the CC-97 module, and is described here for reference only.