BLOCK DIAGRAM

A_CFG4

VG-230

B_CFG4

PCMCIA CONNECTOR

C_CFG4

SYSTEM MEMORY

D_CFG4

SYSTEM ROM

E_CFG4

I/F CONNECTORS
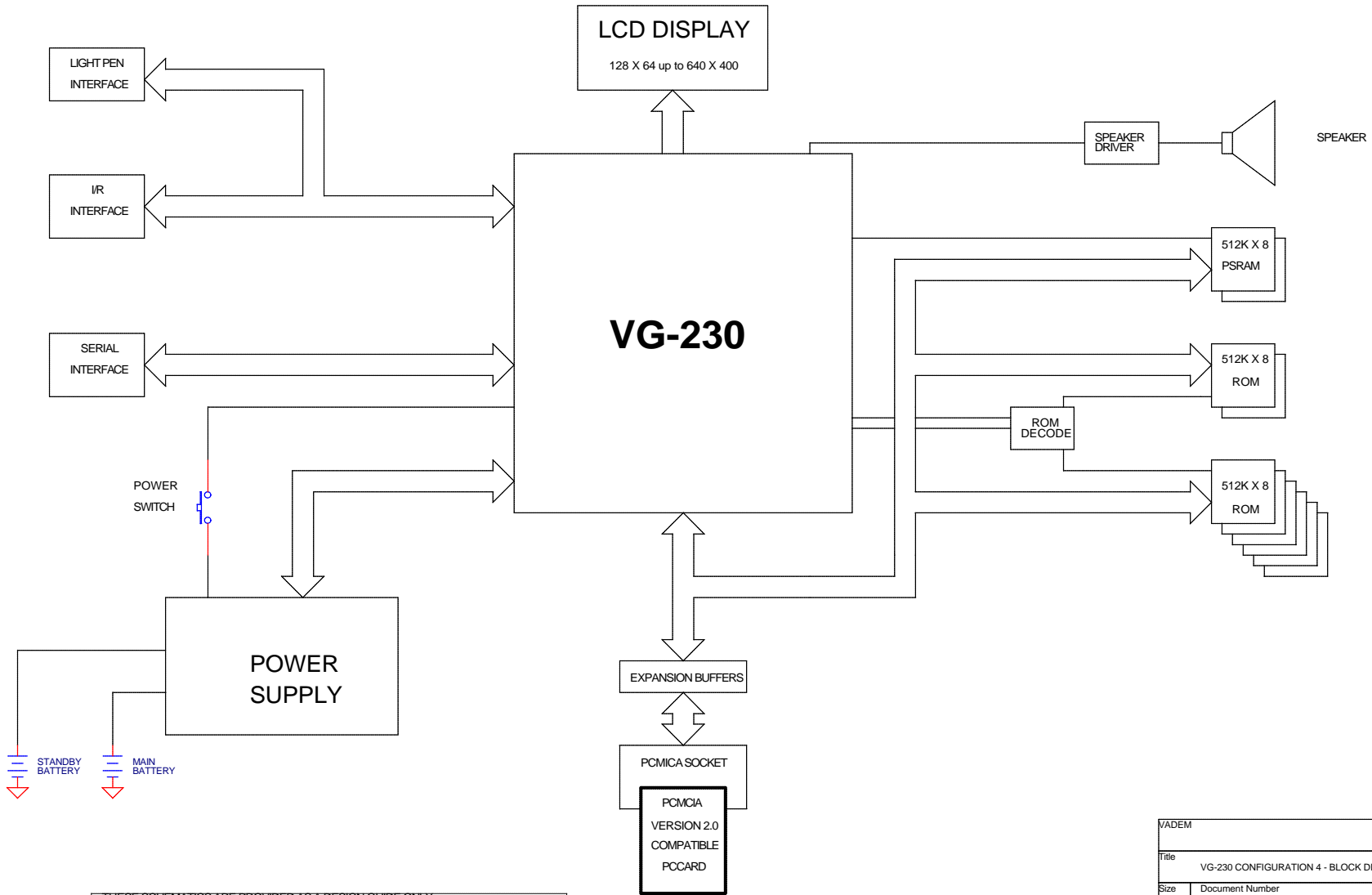
F_CFG4

PCMCIA BUFFERS

G_CFG4

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Title
VG-230 SAMPLE SCHEMATICS - CONFIG. 4

Size
B

Document Number

Rev
4

Date: Wednesday, March 17, 2004 Sheet 1 of 8

LIGHT PEN
INTERFACE

LCD DISPLAY

128 X 64 up to 640 X 400

SPEAKER
DRIVER

SPEAKER

I/R
INTERFACE

VG-230

512K X 8
PSRAM

SERIAL
INTERFACE

512K X 8
ROM

ROM
DECODE

POWER
SWITCH

512K X 8
ROM

POWER
SUPPLY

EXPANSION BUFFERS

STANDBY
BATTERY

MAIN
BATTERY

PCMICA SOCKET

PCMCIA

VERSION 2.0

COMPATIBLE

PCCARD

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VCC230
RET[0..11]
SHFT[0..4]
SCAN[0..3]
LCDU[0..3]
MC[0..9]
D[0..15]
A[0..25]

SHCLK
M
FRAME
LOCLK
TXD
*RTS

U1

RP1 22K
RET0
RET1
RET2
RET3
RET4
RET5
RET6
RET7
RET8

RP2 22K
RET9
RET10
RET11
SHFT0
SHFT1
SHFT2
SHFT3
SHFT4

X2 3.686MHz
C4 22pF
C5 22pF

X3 32.768KHz
C6 22pF
C7 22pF

ROM8/16
SHFT0/INPACKB
SHFT1/BVD2B
SHFT2/BVD1B
SHFT3/CD2B
SHFT4/CD1B
RET0/WAITB
RET1/WPB
RET2/RDY/BSYB
RET3/BUSY
VCCX
RET4/ACK
RET5/PE
RET6/SEL
RET7/ERR
RET8/SLCT
RET9/AFD
RET10/VPPENB
RET11/PDOE

SHCLK
LCDU3
LCDU2
LCDU1
LCDU0
M
FRAME
LCDL3
LCDL2
LCDL1
LOCLK
SIOX1
SIOX2
TEST
TXD
RTS

80 78 77 76 75 74 73 72 71 70 69 68 67 66 65 64 63 62 61
59 58 57 56 55 54 53 52 51 50 49 48 47 45 44 43 42 41

SCAN7/KBCLK 81
SCAN6/KBDAT 82
SCAN5/CE1B 83
SCAN4/CE2B 84
SCAN3/REQB 85
SCAN2/PDCLK 86
SCAN1/INIT 87
SCAN0/STB 88
VPRAM 89
VPPENA 90
CE1A 91
CE2A 92
CBEN0 93
CBEN1 94
CD1A 95
CD2A 96
REGA 97

SCAN3
SCAN2
SCAN1
SCAN0
VPRAM
VPPENA
*CE1A
*CE2A
*CBEN0
*CBEN1
*CD1A
*CD2A
*REGA

X1 99
X2 100
VCCX 101
*INPACKA 102
*WAITA 103
CDIR 104
BVD1A 105
BVD2A 106
WPA 107
RDY_*BSYA 108
IRQA 109
IRQB 110
SPK 111

*INPACKA
*WAITA
CDIR
BVD1A
BVD2A
WPA
RDY_*BSYA
SPK

MC0 113
MC1 114
MC2 115
MC3 116
MC4 117
MC5 118
MC6 119
MC7 120

DTR 40
DCD 39
DSR 38
CTS 37
RXD 36
RESOUT 35
32KX1 33
32KX2 32
SNEPWRGD 31
SYSPWRGD 30
VPBIAS 29
VPLCD 28
VPSYS 27
VPPCRD 26
LB 25
EXT 24
RI 23
VCCX 22
ROMCE1 21
ROMCE0 20
DACK 19
DRQ 17
SMRD 16
SMWR 15
SIORD 14
SIOWR 13
TC
IOCHRDY 12
AEN 11

*DTR
*DCD
*DSR
*CTS
RXD
*RESOUT
SNEPWRGD
SYSPWRGD
VPBIAS
VPLCD
VPSYS
VPCRD
LB
EXT
*RI
*ROMCE0
*ROMCE1
GND
*SMRD
*SMWR
*SIORD
*SIOWR

R1 22K
VCC230

A25 9
A24 8
A23 7
A22 6
A21 5
A20 4
A19 3
A18 2
A17 1

A24 A23 A22 A21 A20 A19 A18 A17

A[0..25]

C1 0.001uF

X1 28.63636MHz
C3 4.7pF
C2 22pF
L1 1.8uH

VG-230

MC8 MC9
121 122
D0-D15 124-140
A0-A16 142-160

MC[0..9]
D[0..15]
VCC230

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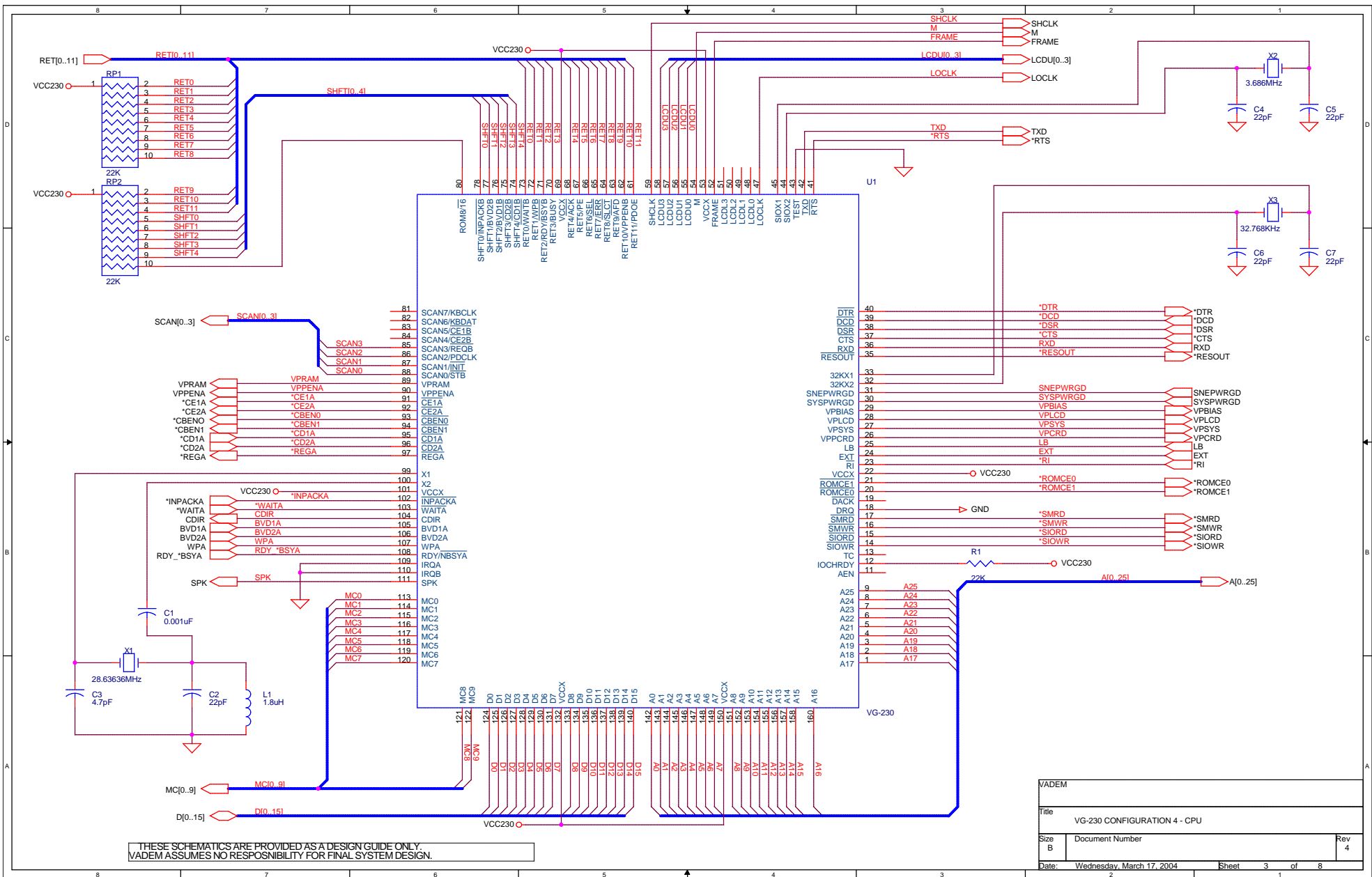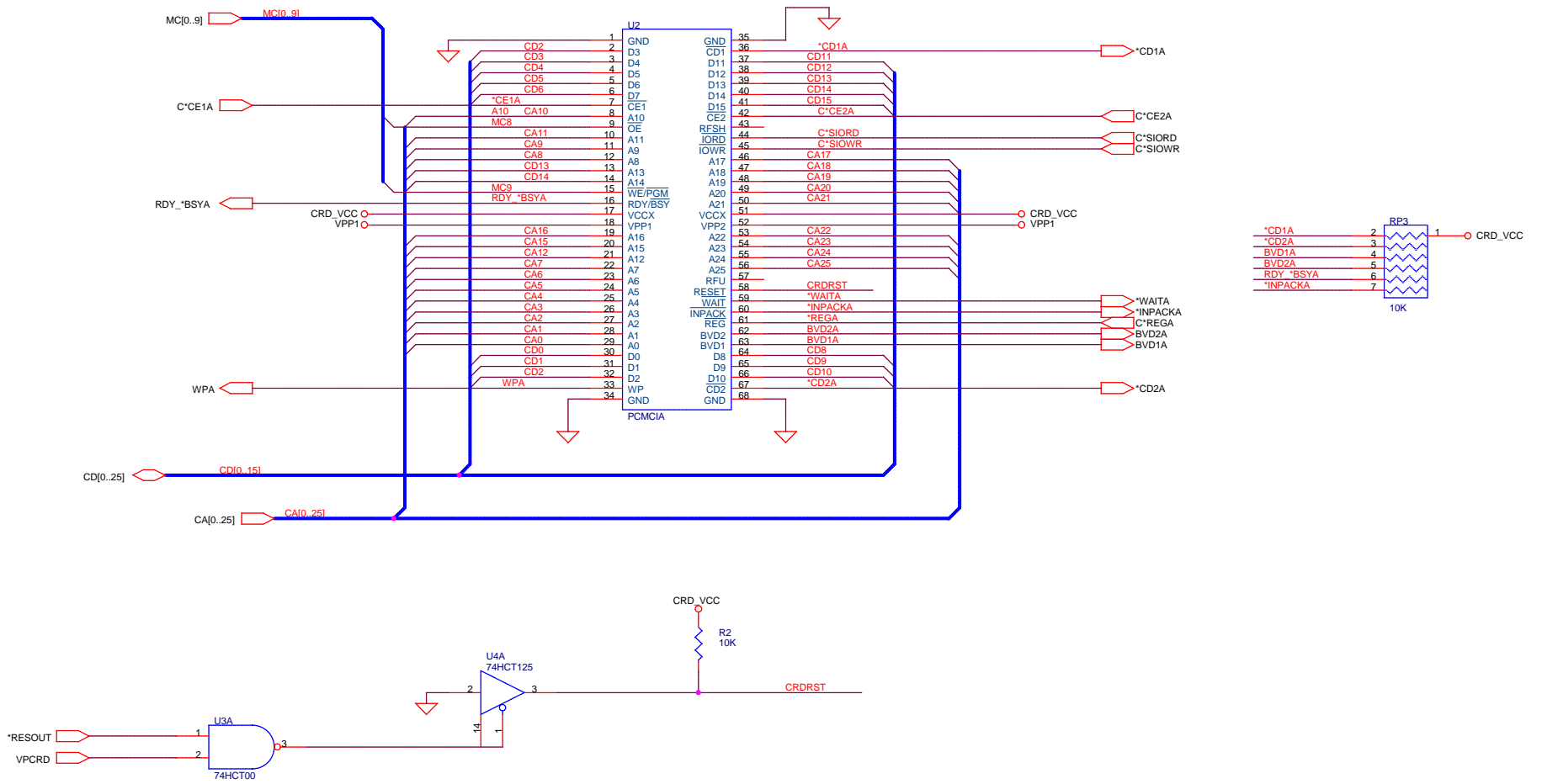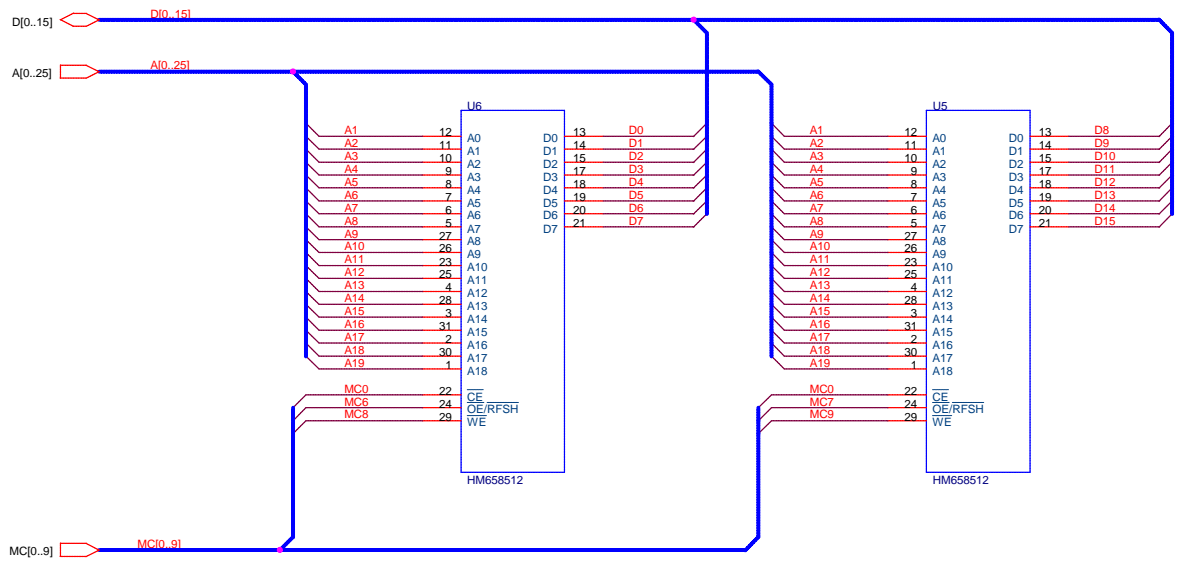VADEM ASSUMES NO RESPOSNIBILITY FOR FINAL SYSTEM DESIGN.

VADEM
Title: VG-230 CONFIGURATION 4 - CPU
Document Number
Size B
Rev 4
Date: Wednesday, March 17, 2004
Sheet 3 of 8

MC[0..9]   MCI0..9I

CD[0..15]   CD[0..15I

CA[0..25I   CAI0..25I

U2

Pin	Signal		Signal	Pin	Net
1	GND		GND	35	
2	D3		CD1	36	*CD1A
3	D4		D11	37	CD11
4	D5		D12	38	CD12
5	D6		D13	39	CD13
6	D7		D14	40	CD14
7	CE1		D15	41	CD15
8	A10		CE2	42	C*CE2A
9	OE		RFSH	43	
10	A11		IORD	44	C*SIORD
11	A9		IOWR	45	C*SIOWR
12	A8		A17	46	CA17
13	A13		A18	47	CA18
14	A14		A19	48	CA19
15	WE/PGM		A20	49	CA20
16	RDY/BSY		A21	50	CA21
17	VCCX		VCCX	51	
18	VPP1		VPP2	52	
19	A16		A22	53	CA22
20	A15		A23	54	CA23
21	A12		A24	55	CA24
22	A7		A25	56	CA25
23	A6		RFU	57	
24	A5		RESET	58	CRDRST
25	A4		WAIT	59	*WAITA
26	A3		INPACK	60	*INPACKA
27	A2		REG	61	*REGA
28	A1		BVD2	62	BVD2A
29	A0		BVD1	63	BVD1A
30	D0		D8	64	CD8
31	D1		D9	65	CD9
32	D2		D10	66	CD10
33	WP		CD2	67	*CD2A
34	GND		GND	68	

PCMCIA

Left side signal labels (row order):
CD2, CD3, CD4, CD5, CD6, *CE1A, A10 CA10, MC8, CA11, CA9, CA8, CD13, CD14, MC9, RDY_*BSYA, CRD_VCC, VPP1, CA16, CA15, CA12, CA7, CA6, CA5, CA4, CA3, CA2, CA1, CA0, CD0, CD1, CD2, WPA

C*CE1A
RDY_*BSYA
CRD_VCC
VPP1
WPA

*CD1A
C*CE2A
C*SIORD
C*SIOWR
CRD_VCC
VPP1
*WAITA
*INPACKA
C*REGA
BVD2A
BVD1A
*CD2A

RP3

*CD1A	2	1 — CRD_VCC
*CD2A	3	
BVD1A	4	
BVD2A	5	
RDY_*BSYA	6	
*INPACKA	7	

10K

CRD_VCC

R2
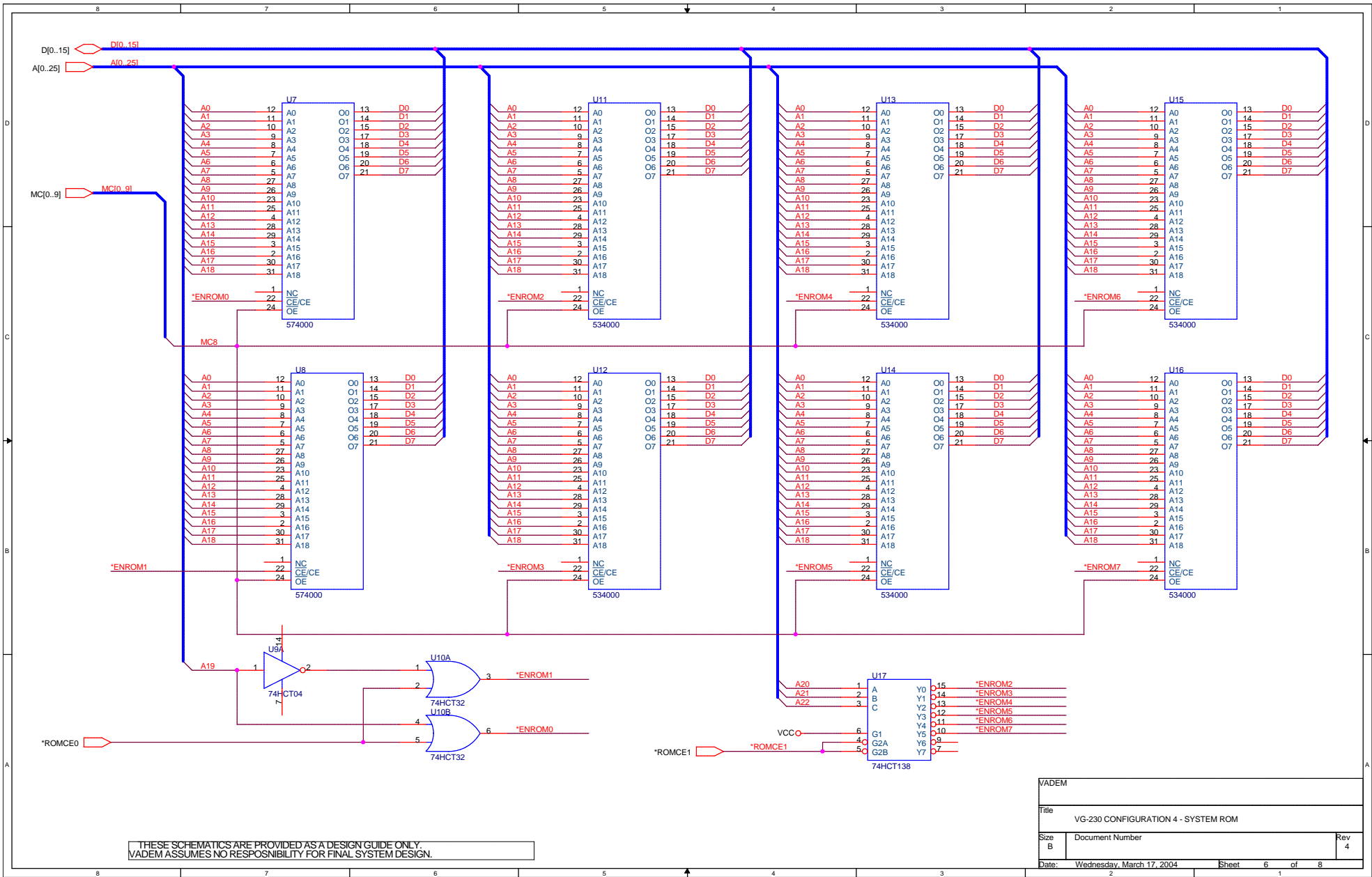10K

CRDRST

U4A
74HCT125
2
3
14
1

U3A
1
2
3
74HCT00

*RESOUT
VPCRD

VADEM

Title
VG-230 CONFIGURATION 4 - PCMCIA CONNECTOR

Size: B
Document Number
Rev: 4

Date: Wednesday, March 17, 2004   Sheet 4 of 8

D[0..15]

A[0..25]

MC[0..9]

U6
HM658512

		A0	D0	13	D0
A1	12	A0	D0	13	D0
A2	11	A1	D1	14	D1
A3	10	A2	D2	15	D2
A4	9	A3	D3	17	D3
A5	8	A4	D4	18	D4
A6	7	A5	D5	19	D5
A7	6	A6	D6	20	D6
A8	5	A7	D7	21	D7
A9	27	A8			
A10	26	A9			
A11	23	A10			
A12	25	A11			
A13	4	A12			
A14	28	A13			
A15	3	A14			
A16	31	A15			
A17	2	A16			
A18	30	A17			
A19	1	A18			

MC0	22	CE
MC6	24	OE/RFSH
MC8	29	WE

U5
HM658512

A1	12	A0	D0	13	D8
A2	11	A1	D1	14	D9
A3	10	A2	D2	15	D10
A4	9	A3	D3	17	D11
A5	8	A4	D4	18	D12
A6	7	A5	D5	19	D13
A7	6	A6	D6	20	D14
A8	5	A7	D7	21	D15
A9	27	A8			
A10	26	A9			
A11	23	A10			
A12	25	A11			
A13	4	A12			
A14	28	A13			
A15	3	A14			
A16	31	A15			
A17	2	A16			
A18	30	A17			
A19	1	A18			

MC0	22	CE
MC7	24	OE/RFSH
MC9	29	WE

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Title
VG-230 CONFIGURATION 4 - SYSTEM MEMORY

Size
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Document Number

Rev
4

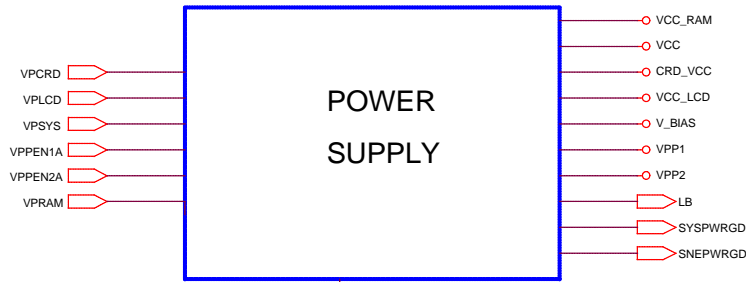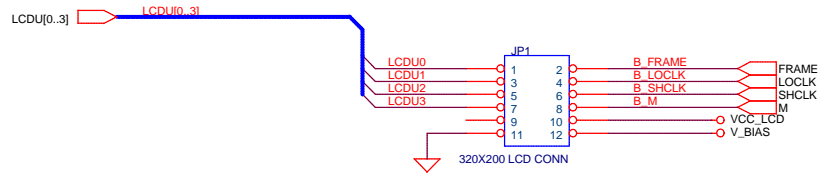Date: Wednesday, March 17, 2004   Sheet 5 of 8

D[0..15]

A[0..25]

MC[0..9]

U7 574000
U11 534000
U13 534000
U15 534000
U8 574000
U12 534000
U14 534000
U16 534000

*ENROM0
*ENROM2
*ENROM4
*ENROM6
*ENROM1
*ENROM3
*ENROM5
*ENROM7

MC8

A19

U9A
74HCT04

U10A
74HCT32

U10B
74HCT32

*ENROM1
*ENROM0

*ROMCE0

A20
A21
A22

U17
74HCT138

VCC
*ROMCE1

*ENROM2
*ENROM3
*ENROM4
*ENROM5
*ENROM6
*ENROM7

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VADEM		
Title		
VG-230 CONFIGURATION 4 - SYSTEM ROM		
Size	Document Number	Rev
B		4
Date:	Wednesday, March 17, 2004	Sheet 6 of 8

LCDU[0..3]

LCDU[0..3]

JP1

LCDU0	1	2	B_FRAME	FRAME
LCDU1	3	4	B_LOCLK	LOCLK
LCDU2	5	6	B_SHCLK	SHCLK
LCDU3	7	8	B_M	M
	9	10		VCC_LCD
	11	12		V_BIAS

320X200 LCD CONN

RET[0..11]

RET[0..11]

SCAN[0..3]

SCAN[0..3]

PEN
INTERFACE

SCAN0
SCAN1

RET0
RET1

I/R
INTERFACE

SCAN2
SCAN3

RET2
RET3

POWER
SUPPLY

VPCRD
VPLCD
VPSYS
VPPEN1A
VPPEN2A
VPRAM

VCC_RAM
VCC
CRD_VCC
VCC_LCD
V_BIAS
VPP1
VPP2
LB
SYSPWRGD
SNEPWRGD

BT1
4 X AAA ALKALINE

JP2

*DCD	*DCD	1	2	*DSR	*DSR
RXD	RXD	3	4	*RTS	*RTS
TXD	TXD	5	6	*CTS	*CTS
*DTR	*DTR	7	8	*RI	*RI
		9	10		

SIO CONNECTOR

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Title
VG-230 CONFIGURATION 4 - I/F CONNECTORS

Size
B

Document Number

Rev
4

Date: Wednesday, March 17, 2004   Sheet   7   of   8

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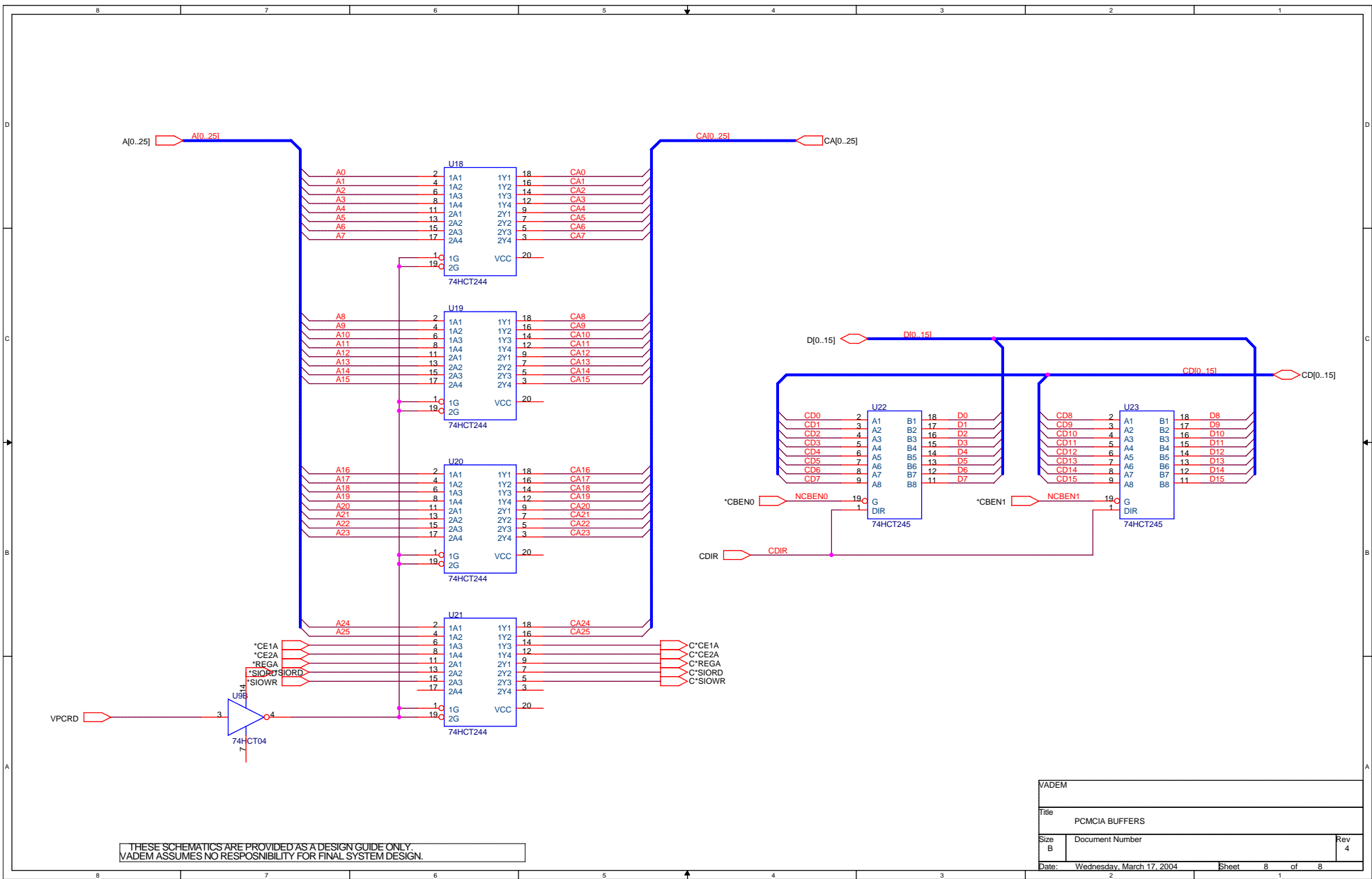VADEM ASSUMES NO RESPOSNIBILITY FOR FINAL SYSTEM DESIGN.

A[0..25]   A[0..25]   CA[0..25]   CA[0..25]

U18
| | | | | | |
A0 2   1A1   1Y1 18 CA0
A1 4   1A2   1Y2 16 CA1
A2 6   1A3   1Y3 14 CA2
A3 8   1A4   1Y4 12 CA3
A4 11 2A1   2Y1 9   CA4
A5 13 2A2   2Y2 7   CA5
A6 15 2A3   2Y3 5   CA6
A7 17 2A4   2Y4 3   CA7
    1   1G   VCC 20
    19 2G
74HCT244

U19
A8   2   1A1   1Y1 18 CA8
A9   4   1A2   1Y2 16 CA9
A10 6   1A3   1Y3 14 CA10
A11 8   1A4   1Y4 12 CA11
A12 11 2A1   2Y1 9   CA12
A13 13 2A2   2Y2 7   CA13
A14 15 2A3   2Y3 5   CA14
A15 17 2A4   2Y4 3   CA15
     1   1G   VCC 20
     19 2G
74HCT244

U20
A16 2   1A1   1Y1 18 CA16
A17 4   1A2   1Y2 16 CA17
A18 6   1A3   1Y3 14 CA18
A19 8   1A4   1Y4 12 CA19
A20 11 2A1   2Y1 9   CA20
A21 13 2A2   2Y2 7   CA21
A22 15 2A3   2Y3 5   CA22
A23 17 2A4   2Y4 3   CA23
     1   1G   VCC 20
     19 2G
74HCT244

U21
A24   2   1A1   1Y1 18 CA24
A25   4   1A2   1Y2 16 CA25
*CE1A 6   1A3   1Y3 14 C*CE1A
*CE2A 8   1A4   1Y4 12 C*CE2A
*REGA 11 2A1   2Y1 9   C*REGA
*SIORD SIORD 13 2A2 2Y2 7   C*SIORD
*SIOWR 15 2A3   2Y3 5   C*SIOWR
       17 2A4   2Y4 3
       1   1G   VCC 20
       19 2G
74HCT244

VPCRD   U9B   3   4
74HCT04

D[0..15]   D[0..15]   CD[0..15]   CD[0..15]

U22
CD0 2   A1   B1 18 D0
CD1 3   A2   B2 17 D1
CD2 4   A3   B3 16 D2
CD3 5   A4   B4 15 D3
CD4 6   A5   B5 14 D4
CD5 7   A6   B6 13 D5
CD6 8   A7   B7 12 D6
CD7 9   A8   B8 11 D7
*CBEN0 NCBEN0 19 G
        1   DIR
74HCT245

U23
CD8   2   A1   B1 18 D8
CD9   3   A2   B2 17 D9
CD10 4   A3   B3 16 D10
CD11 5   A4   B4 15 D11
CD12 6   A5   B5 14 D12
CD13 7   A6   B6 13 D13
CD14 8   A7   B7 12 D14
CD15 9   A8   B8 11 D15
*CBEN1 NCBEN1 19 G
        1   DIR
74HCT245

CDIR   CDIR

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Title   PCMCIA BUFFERS

Size   Document Number   Rev
B   4

Date: Wednesday, March 17, 2004   Sheet   8   of   8