EBC1 - Evaluation Carrier For EB860 / EB8245

01	Index / This page
02	Top Hierarchy
03	EBrain Interface Connectors
04	EBrain System Interface 1
05	EBrain Communication Interface 1
06	EBrain System Interface 2
07	EBrain Communication Interface 2
08	PCI Devices
09	PCI Connector / Slot
10	IDE-Controller
11	Graphics Controller
12	Graphics CRT Interface
13	Graphic BIOS Interface
14	Graphics PCI Interface
15	Graphics Flat Panel Interface
16	Graphics Power/Miscellany
17	Graphics Video Interface
18	Serial Panel Termination
19	TFT-Display Connector
20	Panel Power Supply
21	Compact Flash Socket
22	CF-Select-Resistors
23	Super I/O
24	LPC-Flash-Socket
25	Serial Interface 1 and 2
26	Serial Interface 3 and 4
27	Terminal / Consol Interface
28	Ethernet Magnetics/RJ45 connector
29	Can Physical and connector
30-31	Logic + dig. IO + Monitor/Control
32	JTAG/Debug connectors
33-34	Onboard DC/DC Converter
35	Logic Programming
36	Miscellaneous

TITLE: EBC1		MODULAR COMPUTERS
IND: 00/2 PCB-ID: 31.234-1010.1		
FUNC.: Contents	RELEASED	ENG.
FILE: EBC1	VERIFIED	ENG.
PAGE: 1 OF 36	CREATED: 10.2003	ENG.: BN/JM

E2Brain Eval-Carrier for EB8245/EB860

JTAG

32

JTAG/ISP

Page 32

Logic Programming

35

Atmel Prog

Page 35

CAN

29

CAN

CANRXA[1:0],CANTXA[1:0]

Page 29

LOGIC + DIG. IO

30

P_RST

CLK

LPC

Page 30-31

Page 24

LPC

LPC FLASH

24

P_RST

CLK

LPC

SuperIO

LPC

23

CLK

P_RST

KCLK,_KDAT

Page 23

P_RST

IC10

LPC_CLK

+3.3V

REF

VDD

GND

CLKOUT

CLK4

CLK3

CLK2

CLK1

CY2305

R83 10

R74 10

R73 10

PCI Devices

P_RST

P_INTA,P_INTB,P_INTC,P_INTD,P_X_CAP,P_M66EN

PCI Control

PCI CLK

PCI AD/CBE

8

P_REQ[1:3],P_GNT[1:3]

CompactFlash

P_INTA,P_INTB,P_INTC,P_INTD,P_X_CAP,P_M66EN

P_PAR,P_FRAME,P_TRDY,P_IRDY,P_STOP,P_DEVSEL,P_PERR,P_SERR,P_REQ64,P_ACK64,P_LOCK

P_CLK[1:3]

P_AD[0:31],P_CBE[0:3]

P_REQ[1:3],P_GNT[1:3]

IDE_D[0:15], IDE_A[0:2], IDE_RST, IDE_WR, IDE_RD, IDE_IORDY, IDE_IRQ, IDE_CS[0:1], IDE_PDIAG

Page 8-20

TCK,TMS,TDI,TDO,SRST,HRST,TRST_IN,VFLS[0:1],SER_EN,DATAO,DCLK,TARGET_VCC

E2BRAIN Connectors

JTAG

P_RST

P_INTA,P_INTB,P_INTC,P_INTD,P_X_CAP,P_M66EN

PCI Control

P_CLK[1:3]

PCI AD/CBE

3

P_REQ[1:3],P_GNT[1:3]

SDA,SCL

Utility Port

Ethernet1

LED[1:3],RST_TAST,AB_TAST

TDP[1:2],TDN[1:2],RDP[1:2],RDN[1:2],LILED[1:2],ACLED[1:2],SPLED[1:2]

Page 3-7

CANRXA[1:0],CANTXA[1:0]

LPC

_KCLK,_KDAT

TERMINALS

UART A

UART B

UART C

UART D

CompactFlash

LPC_CLK,LPC_AD[0:3],LPC_FRAME,LPC_SERIRQ

KCLK, KDAT

TERM_IN[1:2],TERM_OUT[1:2]

TXA,DTRA,RTSA,CDA,RXA,CTSA,DSRA,RIA

Terminal

Page 27

Terminal

27

Serial-Interfaces

Serial A

Serial B

25

Serial C

Serial D

TXB,DTRB,RTSB,CDB,RXB,CTSB,DSRB,RIB

TXC,DTRC,RTSC,CDC,RXC,CTSC,DSRC,RIC

TXD,DTRD,RTSD,CDD,RXD,CTSD,DSRD,RID

Page 25-26

CF_D[0:15],CF_A[0:2],CF_RST,CF_WR,CF_RD,CF_IORDY,CF_IRQ,CF_CS[0:1],CF_PDIAG

Miscellaneous

SDA,SCL

36

M/C Port

SDA,SCL

Page 36

CF_IF

22

CF-SOCKET

IDE_CTR

Page 22

Compact Flash

21

CF Socket Interface

IDE_D[0:15],IDE_A[0:2],IDE_RST,IDE_WR,IDE_RD,IDE_IORDY,IDE_IRQ,IDE_CS[0:1],IDE_PDIAG

Page 21

Ethernet

28

Ethernet IF

Page 28

Board Power Supply

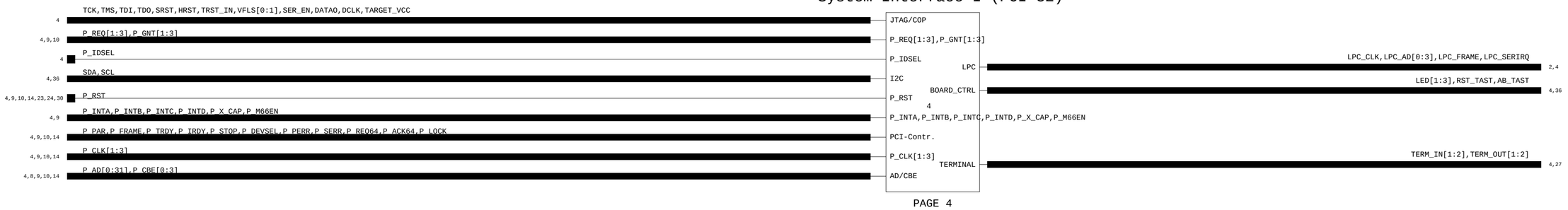
33

Page 33-34

TITLE: EBC1	MODULAR COMPUTERS	
IND: 00/2 PCB-ID: 31.234-1010.1		
FUNC. Top Level	RELEASED	ENG.
FILE EBC1	VERIFIED	ENG.
PAGE 2 OF 36	CREATED 10.2003	ENG. BN/JM

EBrain Interface Connectors

System Interface I (PCI-32)



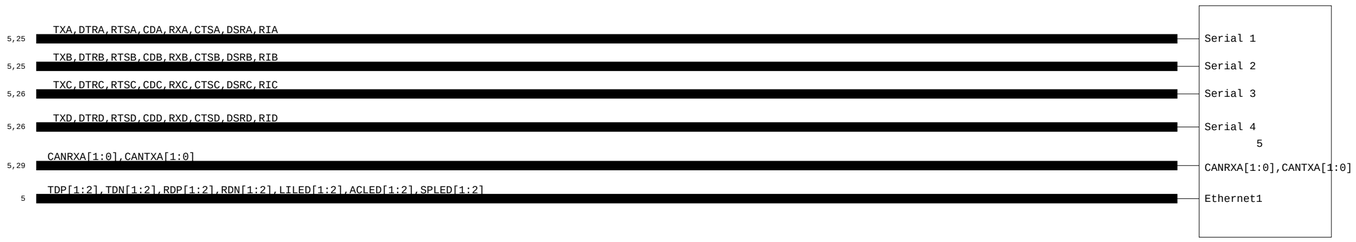
PAGE 4

System Interface II (IDE)



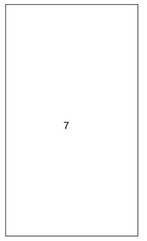
PAGE 6

Communication Interface I (Serial-Ports, Ethernet)



PAGE 5

Communication Interface II (not used)



PAGE 7

TITLE: EBC1	MODULAR COMPUTERS
IND: 00/2 PCB-ID: 31.234-1010.1	
FUNC.: Interface Connectors	RELEASED / ENG.
FILE: IF_CONNECTORS	VERIFIED / ENG.
PAGE: 3 OF 36	CREATED: 10.2003 / ENG.: BN/JM

EBrain System Interface 1

LED[1:3],RST_TAST,AB_TAST (36)
TCK,TMS,TDI,TDO,SRST,HRST,TRST_IN,VFLS[0:1],SER_EN,DATAO,DCLK,TARGET_VCC
P_AD[0:31],P_CBE[0:3] (8,9,10,14)
P_PAR,P_FRAME,P_TRDY,P_IRDY,P_STOP,P_DEVSEL,P_PERR,P_SERR,P_REQ64,P_ACK64,P_LOCK (9,10,14)
P_INTA,P_INTB,P_INTC,P_INTD,P_X_CAP,P_M66EN (9)
LPC_CLK,LPC_AD[0:3],LPC_FRAME,LPC_SERIRQ (2)
TERM_IN[1:2],TERM_OUT[1:2] (27)
P_CLK[1:3] (9,10,14)
P_REQ[1:3],P_GNT[1:3] (9,10)
SDA,SCL (36)

CON27
J15
Bootjumper
Set: Boot from LPC
Open: B. fr. EBr. flash (default)

P_RST (9,10,14,23,24,30)
M80 P_INTA
M82 P_INTB
M81 P_INTD
M87 P_LOCK
M89 P_ACK64

+3.3V
C79 220U
R71 0R
R80 0R

CON70X2

	GND	1	
	SDA1(I2C)	3	
LED1	LED1	5	PowerOn LED
RST_TAST	Reset-Tast	7	
	PWR-MG3(DEG)	9	
	+3.3V	11	
	PWR-MG4(FAL)	13	
FACTORY_MODE	Factory_Mode	15	
HEALTHY	RES	17	OUTPUT
	GND	19	
LPC_CLK	LPCCLK	21	
LPC_AD0	LAD0	23	
LPC_AD2	LAD2	25	
LPC_FRAME	LFRAME#	27	
LPC_SERIRQ	SERIRQ#	29	
TERM_OUT1	TxD1	31	
	+3.3V	33	
TERM_IN1	GND	35	
TARGET_VCC	RxD1	37	
VFLS1	EMU-VCC	39	
SRST	CKSTP_OUT/VFLS1	41	
TRST_IN	COP-SRST/SRESET	43	
TCK	TRST	45	
DCLK	TCK	47	
	FACTORY_USE	49	
P_CLK1	GND	51	
	PCI-CLK-OUT-0	53	
P_CLK2	+3.3V	55	
	PCI-CLK-OUT-1	57	
	PCI-RST#	59	
P_INTA	INTA#	61	
P_INTB	INTB#	63	
P_INTD	INTD#	65	
	GND	67	
P_AD31	AD31	69	
P_AD29	AD29	71	
P_AD27	AD27	73	
	+3.3V	75	
P_AD25	AD25	77	
P_CBE3	C/BE3#	79	
P_AD23	AD23	81	
	GND	83	
P_AD21	AD21	85	
	V(I/O)	87	
P_AD19	AD19	89	
P_AD17	AD17	91	
P_CBE2	C/BE2#	93	
	+3.3V	95	
P_IRDY	IRDY#	97	
P_DEVSEL	DEVSEL#	99	
	GND	101	
P_X_CAP	PCI-X-CAP	103	
P_LOCK	LOCK#	105	
P_PERR	PERR#	107	
P_SERR	SERR#	109	
	GND	111	
P_CBE1	C/BE1#	113	
P_AD14	AD14	115	
P_AD12	AD12	117	
P_AD10	AD10	119	
	+3.3V	121	
P_M66EN	M66EN	123	
P_AD8	AD8	125	
P_AD7	AD7	127	
P_AD5	AD5	129	
	GND	131	
P_AD3	AD3	133	
P_AD1	AD1	135	
P_ACK64	ACK64#	137	
	+3.3V	139	

CON1

AUX-Power		2	
SCL1(I2C)		4	
+3.3V		6	
LED2	Watchdog	8	LED2
Abort-Tast		10	AB_TAST
GND		12	
LED3	General Purpose LED	14	LED3
RES		16	ENUM
AGENT		18	
IREADY	I_READY	20	
FACTORY_USE		22	SER_EN
LAD1		24	LPC_AD1
+3.3V		26	
GND		28	
LAD3		30	LPC_AD3
RES		32	
TxD2		34	TERM_OUT2
RxD2		36	TERM_IN2
VFLS0/QUACK		38	VFLS0
COP-HRST		40	HRST
GND		42	
TMS		44	TMS
+3.3V		46	
TDO		48	TDO
TDI		50	TDI
FACTORY_USE		52	DATAO
V(I/O)		54	
PCI-CLK-IN		56	P_CLK_IN (1 M78)
GND		58	
PCI-CLK-OUT-2		60	P_CLK3
INTC#		62	P_INTC
GNT#1		64	P_GNT1
+3.3V		66	
GNT#2		68	P_GNT2
GNT#3		70	P_GNT3
REQ#1		72	P_REQ1
REQ#2		74	P_REQ2
GND		76	
REQ#3		78	P_REQ3
AD30		80	P_AD30
AD28		82	P_AD28
AD26		84	P_AD26
AD24		86	P_AD24
+3.3V		88	
IDSEL		90	
GND		92	
AD22		94	P_AD22
AD20		96	P_AD20
AD18		98	P_AD18
AD16		100	P_AD16
FRAME#		102	P_FRAME
GND		104	
TRDY#		106	P_TRDY
STOP#		108	P_STOP
+3.3V		110	
PAR		112	P_PAR
AD15		114	P_AD15
V(I/O)		116	
AD13		118	P_AD13
AD11		120	P_AD11
AD9		122	P_AD9
GND		124	
C/BE0#		126	P_CBE0
AD6		128	P_AD6
+3.3V		130	
AD4		132	P_AD4
AD2		134	P_AD2
AD0		136	P_AD0
REQ64#		138	P_REQ64 (1 M88)
GND		140	

VAUX
+3.3V
P_REQ1 1 M86
P_REQ2 1 M84
P_REQ3 1 M83
P_INTC 1 M76
P_GNT1 1 M79
P_GNT2 1 M90
P_GNT3 1 M85
P_IDSEL

TITLE	EBC1		MODULAR COMPUTERS
IND: 00/2 PCB-ID: 31.234-1010.1			
FUNC.	System Interface 1	RELEASED	ENG.
FILE	SYS_IF1	VERIFIED	ENG.
PAGE	4 OF 36	CREATED	10.2003 ENG. BN/JM

EBrain Communication Interface 1



TITLE: EBC1	MODULAR COMPUTERS	
IND: 00/2 PCB-ID: 31.234-1010.1		
FUNC.: Communication IF 1	RELEASED	ENG.
FILE: COM_IF1	VERIFIED	ENG.
PAGE: 5 OF 36	CREATED: 10.2003	ENG.: BN/JM

EBrain System Interface 2

CF_D[0:15],CF_A[0:2],CF_RST,CF_WR,CF_RD,CF_IORDY,CF_IRQ,CF_CS[0:1],CF_PDIAG

22

V(I/O)

+3.3V

CON40X2

	1	GND	
CF_D3	3	CF_D3	
CF_D4	5	CF_D4	
	7	+3.3V	
CF_D5	9	CF_D5	
CF_D6	11	CF_D6	
	13	GND	
CF_D7	15	CF_D7	
CF_CS0	17	CF_CS0	
	19	GND	
CF_RD	21	CF_RD	
CF_IRQ	23	CF_INTRQ	
	25	GND	
CF_IORDY	27	CF_IORDY	
CF_A1	29	CF_A1	
	31	+3.3V	
	33	CF_DASP	
CF_PDIAG	35	CF_PDIAG	
	37	GND	
CF_D8	39	CF_D8	
CF_D9	41	CF_D9	
	43	V(I/O)	
CF_D10	45	CF_D10	
	47	ATA_DMARQ	
	49	+3.3V	
	51	AC97-BIT_CLK	
	53	AC97-SDATA_IN	
	55	GND	
	57	NC	
	59	NC	
	61	GND	
SPI_TXD	63	DIV-TXOUT0+	
SPI_RXD	65	DIV-TXOUT0-	
SPI_CS1	67	DIV-TXOUT1+	
	69	DIV-TXOUT1-	
	71	+3.3V	
	73	DIV-TXOUT2+	
	75	DIV-TXOUT2-	
	77	USB1+	
	79	USB1-	

CON2

+3.3V

CF_CD1	2		
CF_D11	4		CF_D11
+3.3V	6		
CF_D12	8		CF_D12
CF_D13	10		CF_D13
GND	12		
CF_D14	14		CF_D14
CF_D15	16		CF_D15
+3.3V	18		
CF_CS1	20		CF_CS1
CF_WR	22		CF_WR
GND	24		
CF_RST	26		CF_RST
CF_A2	28		CF_A2
GND	30		
CF_A0	32		CF_A0
CF_D0	34		CF_D0
+3.3V	36		
CF_D1	38		CF_D1
CF_D2	40		CF_D2
GND	42		
CF_CS16	44		
CF_CD2/ATA-CSE	46		
GND	48		
ATA_DMACK	50		
AC97-SYNC	52		
GND	54		
AC97-SDATA_OUT	56		
NC	58		
+3.3V	60		
DDC-CLK	62		SPI_CLK
DDC-DATA	64		SPI_CS0
GND	66		
DVI-TXCLK+	68		SPI_CS2
DVI-TXCLK-	70		
DISP.ENAVDD	72		
DISP.ENABKL	74		
GND	76		
USB2+	78		_KCLK
USB2-	80		_KDAT

_KCLK,_KDAT

23

USB_N1

USB_P1

Optional SPI Extension

+3.3V

CON29

	1	2	SPI_TXD
SPI_CS0	3	4	SPI_RXD
SPI_CS1	5	6	SPI_CS2
SPI_CLK	7	8	

SPI_CS[0:2],SPI_CLK,SPI_TXD,SPI_RXD

Optional USB

L44

R228 1K5

L43

L42

SHIELD

CON22

6	
5	
1	
2	
3	
4	

C183 47P

C182 47P

C184 100N

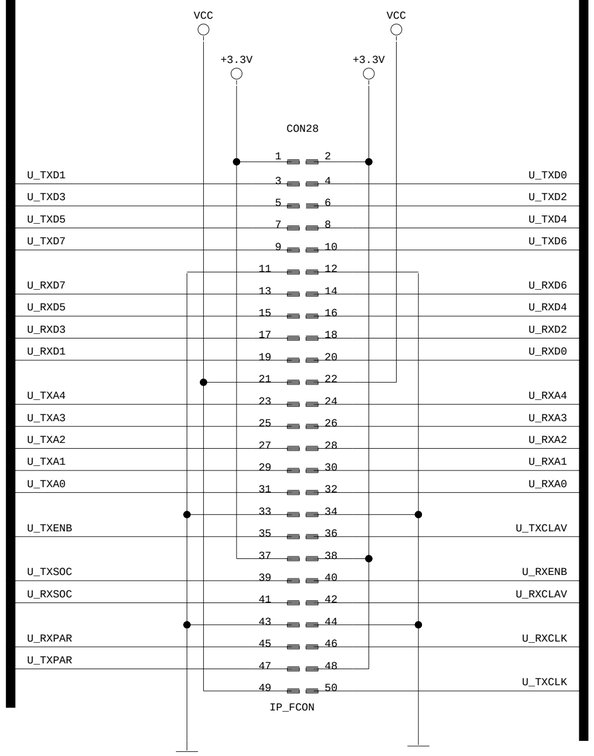
C185 68U

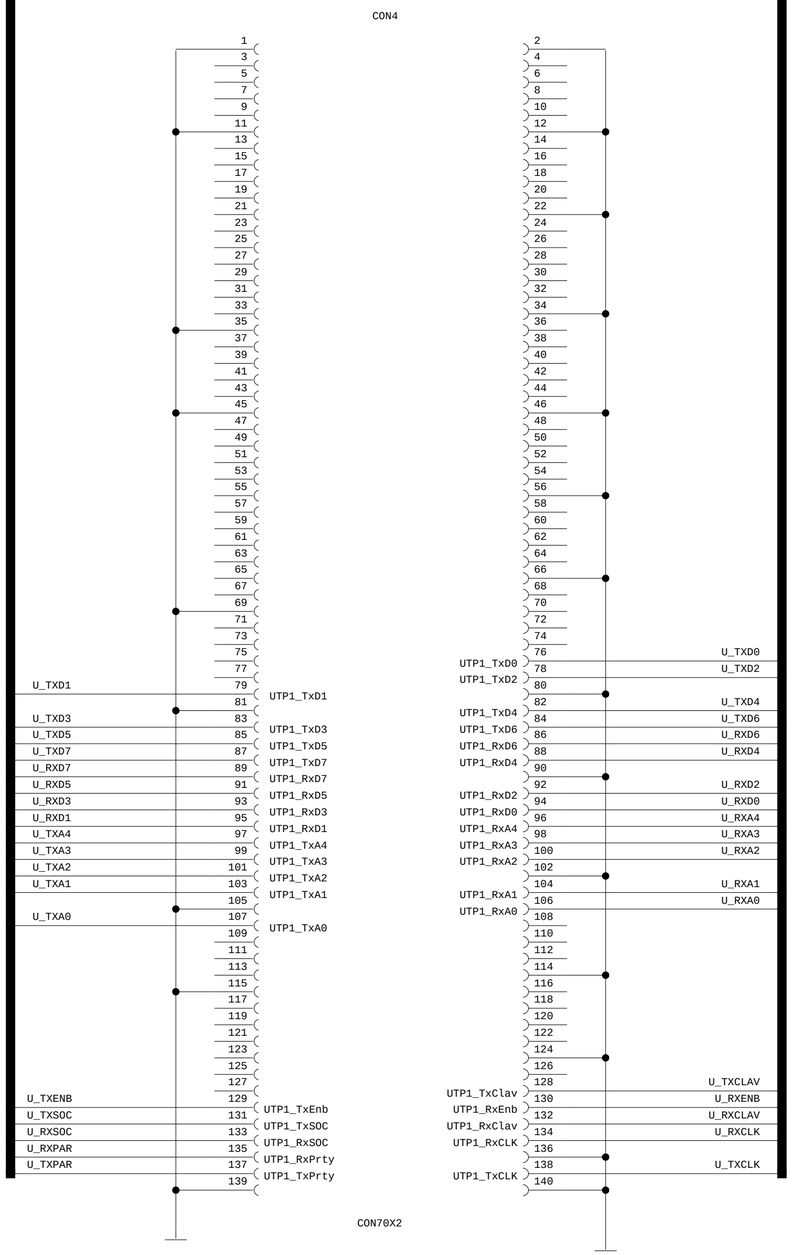
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IND: 00/2			
PCB-ID: 31.234-1010.1			
FUNC. System Interface 2	RELEASED	ENG.	
FILE SYS_IF2	VERIFIED	ENG.	
PAGE 6 OF 36	CREATED 10.2003	ENG. BN/JM	

EBrain Communication Interface 2

U_TXD[0:7],U_RXD[0:7],U_TXA[0:4],U_RXA[0:4],U_TXENB,U_RXENB,U_TXSOC,U_RXSOC,U_TXCLAV,U_RXCLAV,U_TXCLK,U_RXCLK,U_TXPAR,U_RXPAR

UTOPIA Interface Connector Pin Row





TITLE: EBC1		MODULAR COMPUTERS
IND: 00/2 PCB-ID: 31.234-1010.1		
FUNC.: Communication IF 2	RELEASED	ENG.
FILE: COM_IF2	VERIFIED	ENG.
PAGE: 7 OF 36	CREATED: 10.2003	ENG.: BN/JM

PCI-Devices

PCI-Connector

P_CLK
PCI Except.
PCI Control
P_REQ
P_GNT
9
P_IDSEL
AD, CBE
P_RST

P_CLK1
P_REQ1
P_GNT1
R49
P_AD28
10

P_RST 4,9,10,14,23,24,30
P_AD[0:31],P_CBE[0:3] 4,9,10,14
P_INTA,P_INTB,P_INTC,P_INTD,P_X_CAP,P_M66EN 4,9
P_PAR,P_FRAME,P_IRDY,P_STOP,P_DEVSEL,P_PERR,P_SERR,P_REQ64,P_ACK64,P_LOCK 4,9,10,14
P_CLK[1:3] 4,9,10,14
P_REQ[1:3],P_GNT[1:3] 4,9,10

Page 9

IDE-Control + Connector

10,22 _IDE_D[0:15],_IDE_A[0:2],_IDE_RST,_IDE_WR,_IDE_RD,_IDE_IORDY,_IDE_IRQ,_IDE_CS[0:1],_IDE_PDIAG

CompactFlash
10

PCI CONTROL
P_AD[0:31],P_CBE[0:3]
PCI_IDSEL
PCI_IRQ
P_GNT
P_REQ
PCI_CLK
P_RST

R128
10
P_AD27
P_INTD
P_GNT2
P_REQ2
P_CLK3

Page 10

TTL Panel Connector

19
TFT Control
RGB signals

_SHFCLK,_FLM,_LP,_M
_P[2:7],_P[10:15],_P[18:23]

Page 19

Panel Termination

SHFCLK,FLM,LP,M
_Data
P[2:7],P[10:15],P[18:23]
18 Data

SHFCLK,FLM,LP,M
P[2:7],P[10:15],P[18:23]

Page 18

Graphics Controller

Memory-IF
Control
Panel Interface
RGB signals
11
PANEL-Power

P_RST
P_INTA
PCI Control
PCI CLK
P_IDSEL
PCI AD/CBE

P_INTC
P_CLK2
R50
10
P_AD26

Page 11-17

Panel Supply

20
Panel Power

ENABKL,ENAVEE,ENAVDD

Page 20

TITLE: EBC1	MODULAR COMPUTERS	
IND: 00/2 PCB-ID: 31.234-1010.1		
FUNC. PCI Devices	RELEASED	ENG.
FILE PCI_DEVICES	VERIFIED	ENG.
PAGE 8 OF 36	CREATED 10.2003	ENG. BN/JM

PCI Connector slot

P_AD[0:31],P_CBE[0:3]
4,8,10,14
P_PAR,P_FRAME,P_TRDY,P_IRDY,P_STOP,P_DEVSEL,P_PERR,P_SERR,P_REQ64,P_ACK64,P_LOCK
4,10,14
P_INTA,P_INTB,P_INTC,P_INTD,P_X_CAP,P_M66EN
4

TMS
TDI
NW7
1 2
3 4
5 6
7 8
2K7
V(I/O)
VCC
12V
+3.3V
VAUX
CON6

	B1	-12V	
	B2	TCK	
	B3	GND	
	B4	TDO	
	B5	+5V	
	B6	+5V	
P_INTB	B7	INTB#	
P_INTD	B8	INTD#	
	B9	PRSNT1#	
	B10	Reserved	
	B11	PRSNT2#	
	B12	GND	
	B13	GND	
	B14	Reserved	
	B15	GND	
P_CLK (4)	B16	CLK	
	B17	GND	
P_REQ (4)	B18	REQ#	
	B19	+5V(I/O)	
P_AD31	B20	AD31	
P_AD29	B21	AD29	
	B22	GND	
P_AD27	B23	AD27	
P_AD25	B24	AD25	
	B25	+3.3V	
P_CBE3	B26	C/BE3#	
P_AD23	B27	AD23	
	B28	GND	
P_AD21	B29	AD21	
P_AD19	B30	AD19	
	B31	+3.3V	
P_AD17	B32	AD17	
P_CBE2	B33	C/BE2#	
	B34	GND	
P_IRDY	B35	IRDY#	
	B36	+3.3V	
P_DEVSEL	B37	DEVSEL#	
	B38	GND	
P_LOCK	B39	LOCK#	
P_PERR	B40	PERR#	
	B41	+3.3V	
P_SERR	B42	SERR#	
	B43	+3.3V	
P_CBE1	B44	C/BE1#	
P_AD14	B45	AD14	
	B46	GND	
P_AD12	B47	AD12	
P_AD10	B48	AD10	
	B49	GND	
	B50	Key	
	B51	Key	
P_AD8	B52	AD8	
P_AD7	B53	AD7	
	B54	+3.3V	
P_AD5	B55	AD5	
P_AD3	B56	AD3	
	B57	GND	
P_AD1	B58	AD1	
	B59	+5V(I/O)	
P_ACK64	B60	ACK64#	
	B61	+5V	
	B62	+5V	

CON62X2

TRST#	A1		
+12V	A2		
TMS	A3		
TDI	A4		
+5V	A5		
INTA#	A6	P_INTA	
INTC#	A7	P_INTC	
+5V	A8		
Reserved	A9		
+5V(I/O)	A10		
Reserved	A11		
GND	A12		
GND	A13		
3.3Vaux	A14		
RST#	A15	P_RST	4,10,14,23,24,30
+5V(I/O)	A16		
GNT#	A17	P_GNT	
GND	A18		
PME#	A19		
AD30	A20	P_AD30	
+3.3V	A21		
AD28	A22	P_AD28	
AD26	A23	P_AD26	
GND	A24		
AD24	A25	P_AD24	
IDSEL	A26	P_IDSEL	8
+3.3V	A27		
AD22	A28	P_AD22	
AD20	A29	P_AD20	
GND	A30		
AD18	A31	P_AD18	
AD16	A32	P_AD16	
+3.3V	A33		
FRAME#	A34	P_FRAME	
GND	A35		
TRDY#	A36	P_TRDY	
GND	A37		
STOP#	A38	P_STOP	
+3.3V	A39		
Reserved	A40		
Reserved	A41		
GND	A42		
PAR	A43	P_PAR	
AD15	A44	P_AD15	
+3.3V	A45		
AD13	A46	P_AD13	
AD11	A47	P_AD11	
GND	A48		
AD9	A49	P_AD9	
Key	A50		
Key	A51		
C/BE0#	A52	P_CBE0	
+3.3V	A53		
AD6	A54	P_AD6	
AD4	A55	P_AD4	
GND	A56		
AD2	A57	P_AD2	
AD0	A58	P_AD0	
+5V(I/O)	A59		
REQ64#	A60	P_REQ64	
+5V	A61		
+5V	A62		

VCC
C116 220U

TITLE	EBC1		MODULAR COMPUTERS
IND:	00/2		
PCB-ID:	31.234-1010.1		
FUNC.	PCI Connector	RELEASED	ENG.
FILE	PCI_CON	VERIFIED	ENG.
PAGE	9 OF 36	CREATED 10.2003	ENG. BN/JM

IDE-Controller

P_AD[0:31],P_CBE[0:3]

4,8,9,14

VCC

C76 220U

C105 220U

+3.3V

C115 220U

C130 4U7

C125 4U7

3 on each
side of the IC

C108 10N

C138 10N

C110 10N

C150 10N

C131 10N

C109 10N

C142 10N

C148 10N

C144 10N

C152 10N

C107 10N

C153 10N

IC14

P_AD0	135	AD0	
P_AD1	134	AD1	
P_AD2	133	AD2	
P_AD3	132	AD3	
P_AD4	131	AD4	
P_AD5	130	AD5	
P_AD6	127	AD6	
P_AD7	126	AD7	
P_AD8	124	AD8	
P_AD9	123	AD9	
P_AD10	122	AD10	
P_AD11	121	AD11	
P_AD12	120	AD12	
P_AD13	117	AD13	
P_AD14	116	AD14	
P_AD15	115	AD15	
P_AD16	102	AD16	
P_AD17	101	AD17	
P_AD18	100	AD18	
P_AD19	97	AD19	
P_AD20	96	AD20	
P_AD21	95	AD21	
P_AD22	94	AD22	
P_AD23	93	AD23	
P_AD24	90	AD24	
P_AD25	89	AD25	
P_AD26	86	AD26	
P_AD27	85	AD27	
P_AD28	84	AD28	
P_AD29	83	AD29	
P_AD30	82	AD30	
P_AD31	81	AD31	
P_CBE0	125	C/BE0	
P_CBE1	114	C/BE1	
P_CBE2	103	C/BE2	
P_CBE3	91	C/BE3	
P_PAR	113	PAR	
P_FRAME	104	FRAME	
P_TRDY	106	TRDY	
P_IRDY	105	IRDY	
P_STOP	110	STOP	
P_DEVSEL	107	DEVSEL	
	92	IDSEL	
	136	REQ	
	137	GNT	
	138	INTA	
P_PERR	111	PERR	
P_SERR	112	SERR	
	140	CLK	
	141	RST	
	142	SCAN_EN	
	143	MEM_CS	
	139	BA5_EN	
	3	PLL_CPBIAS	
	4	PLL_VCOBIAS	
	5	PLL-LOOPFLT	
	7	TEST_MODE	
	80	JP	
	2	PLL_VCC	
	16	VCC	
	26	VCC	
	36	VCC	
	51	VCC	
	61	VCC	
	72	VCC	
	87	VCC	
	98	VCC	
	108	VCC	
	118	VCC	
	128	VCC	
	144	VCC	

P_IDSEL

8

P_REQ

4

P_GNT

P_INTA

P_CLK

4

P_RST

4,9,14,23,24,30

+3.3V

R98 10K

alternative

R97 10K

R100 1K

R115 1K

C129 470P

R119 10K

R117 10K

C124 10P

R130 33R

+3.3V

L39

C106 10N

C113 100N

C114 10N

+3.3V

4,9,14

P_PAR,P_FRAME,P_TRDY,P_IRDY,P_STOP,P_DEVSEL,P_PERR,P_SERR,P_REQ64,P_ACK64,P_LOCK

SII680

IDE0_D0	8	NW10	ATA_D3
IDE0_D1	9		ATA_D2
IDE0_D2	10		ATA_D1
IDE0_D3	11		ATA_D0
IDE0_D4	12	NW13	ATA_D7
IDE0_D5	13		ATA_D6
IDE0_D6	14		ATA_D5
IDE0_D7	15		ATA_D4
IDE0_D8	18	NW15	ATA_D11
IDE0_D9	19		ATA_D10
IDE0_D10	20		ATA_D9
IDE0_D11	21		ATA_D8
IDE0_D12	22	NW17	ATA_D15
IDE0_D13	23		ATA_D14
IDE0_D14	24		ATA_D13
IDE0_D15	25		ATA_D12
IDE0_A0	30	NW24	ATA_WR
IDE0_A1	31		ATA_RD
IDE0_A2	32		ATA_A2
IDE0_CS0	28	NW23	ATA_A1
IDE0_CS1	29		ATA_A0
IDE0_DIOR	33		ATA_CS1
IDE0_DIOW	34		ATA_CS0
IDE0_DMACK	35	33R	
IDE0_CBLID	38		
IDE0_INTRQ	39	R153 33R	
IDE0_IORDY	40	R156 33R	
IDE0_AT_REXT	41		
IDE0_DMARQ	42		
IDE0_RST	43	R159 33R	
IDE1_D0	44	_IDE_D0	
IDE1_D1	45	_IDE_D1	
IDE1_D2	46	_IDE_D2	
IDE1_D3	47	_IDE_D3	
IDE1_D4	48	_IDE_D4	
IDE1_D5	49	_IDE_D5	
IDE1_D6	50	_IDE_D6	
IDE1_D7	53	_IDE_D7	
IDE1_D8	54	_IDE_D8	
IDE1_D9	55	_IDE_D9	
IDE1_D10	56	_IDE_D10	
IDE1_D11	57	_IDE_D11	
IDE1_D12	58	_IDE_D12	
IDE1_D13	59	_IDE_D13	
IDE1_D14	60	_IDE_D14	
IDE1_D15	63	_IDE_D15	
IDE1_A0	66	_IDE_A0	
IDE1_A1	67	_IDE_A1	
IDE1_A2	68	_IDE_A2	
IDE1_CS0	64	_IDE_CS0	
IDE1_CS1	65	_IDE_CS1	
IDE1_DIOR	69	_IDE_RD	
IDE1_DIOW	70	_IDE_WR	
IDE1_DMACK	74		
IDE1_CBLID	71		
IDE1_INTRQ	75		
IDE1_IORDY	76		
IDE1_AT_REXT	77		
IDE1_DMARQ	78		
IDE1_RST	79		
PLL_GND	6		
GND	1		
GND	17		
GND	27		
GND	37		
GND	52		
GND	62		
GND	73		
GND	88		
GND	99		
GND	109		
GND	119		
GND	129		

C147 10P

C154 10P

R152 10K

C149 47N

R154 10K

C151 1N

R157 1K8

R158 5K11

R160 10K

R155 4K7

R141 4K7

C143 1N

R137 1K8

R133 5K11

R144 10K

R161 10K

C155 47N

ATA_IRQ

_IDE_D7

_IDE_RD

_IDE_PDIAG

_IDE_IRQ

_IDE_IORDY

_IDE_RST

ATA_D[0:15],ATA_A[0:2],ATA_RST,ATA_WR,ATA_RD,ATA_IORDY,ATA_IRQ,ATA_CS[0:1],ATA_PDIAG

_IDE_D[0:15],_IDE_A[0:2],_IDE_RST,_IDE_WR,_IDE_RD,_IDE_IORDY,_IDE_IRQ,_IDE_CS[0:1],_IDE_PDIAG

22

CON25

ATA_D7	1	2	ATA_D8
ATA_D6	3	4	ATA_D9
ATA_D5	5	6	ATA_D10
ATA_D4	7	8	ATA_D11
ATA_D3	9	10	ATA_D12
ATA_D2	11	12	ATA_D13
ATA_D1	13	14	ATA_D14
ATA_D0	15	16	ATA_D15
	17	18	
	19	20	
	21	22	
ATA_WR	23	24	
ATA_RD	25	26	
	27	28	
	29	30	
ATA_IRQ	31	32	
ATA_A1	33	34	
ATA_A0	35	36	ATA_A2
ATA_CS0	37	38	ATA_CS1
	39	40	

BU40

CON24

ATA_D7	1	2	ATA_D8
ATA_D6	3	4	ATA_D9
ATA_D5	5	6	ATA_D10
ATA_D4	7	8	ATA_D11
ATA_D3	9	10	ATA_D12
ATA_D2	11	12	ATA_D13
ATA_D1	13	14	ATA_D14
ATA_D0	15	16	ATA_D15
	17	18	
	19	20	
	21	22	
ATA_WR	23	24	
ATA_RD	25	26	
	27	28	
	29	30	
ATA_IRQ	31	32	
ATA_A1	33	34	
ATA_A0	35	36	ATA_A2
ATA_CS0	37	38	ATA_CS1
	39	40	
	41	42	
	43	44	

BU44

F4

+3.3V

VCC

R179 0R

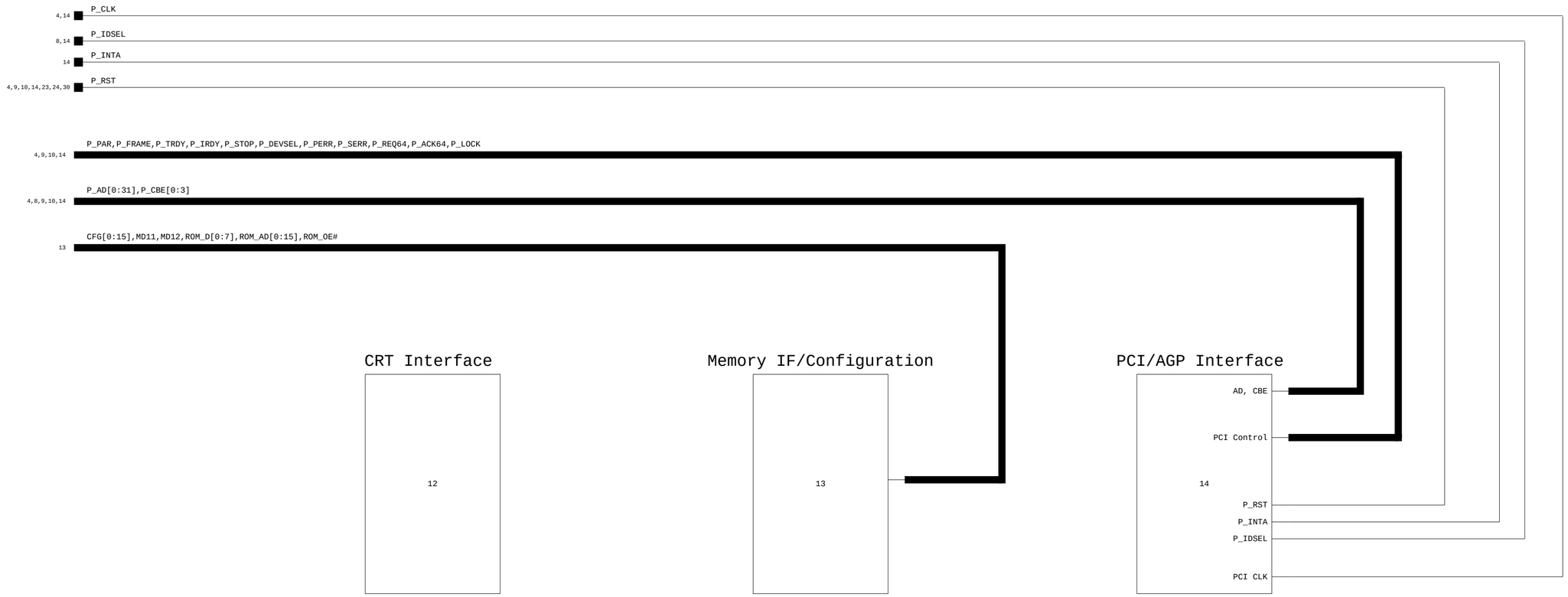
R176 0R

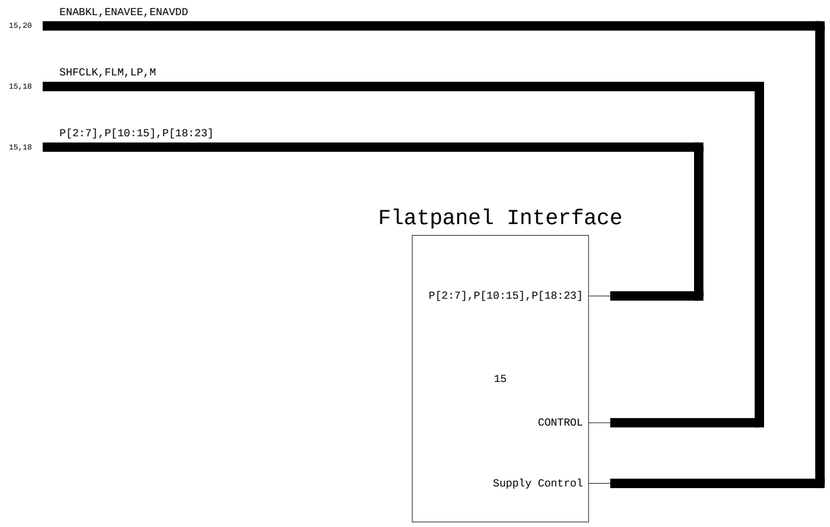
C139 220U

TITLE	EBC1
IND:	00/2
PCB-ID:	31.234-1010.1
FUNC.	PCI/IDE Bridge
FILE	IDE
PAGE	10 OF 36
RELEASED	
VERIFIED	
CREATED	10.2003
ENG.	BN/JM

MODULAR COMPUTERS

Graphics Controller

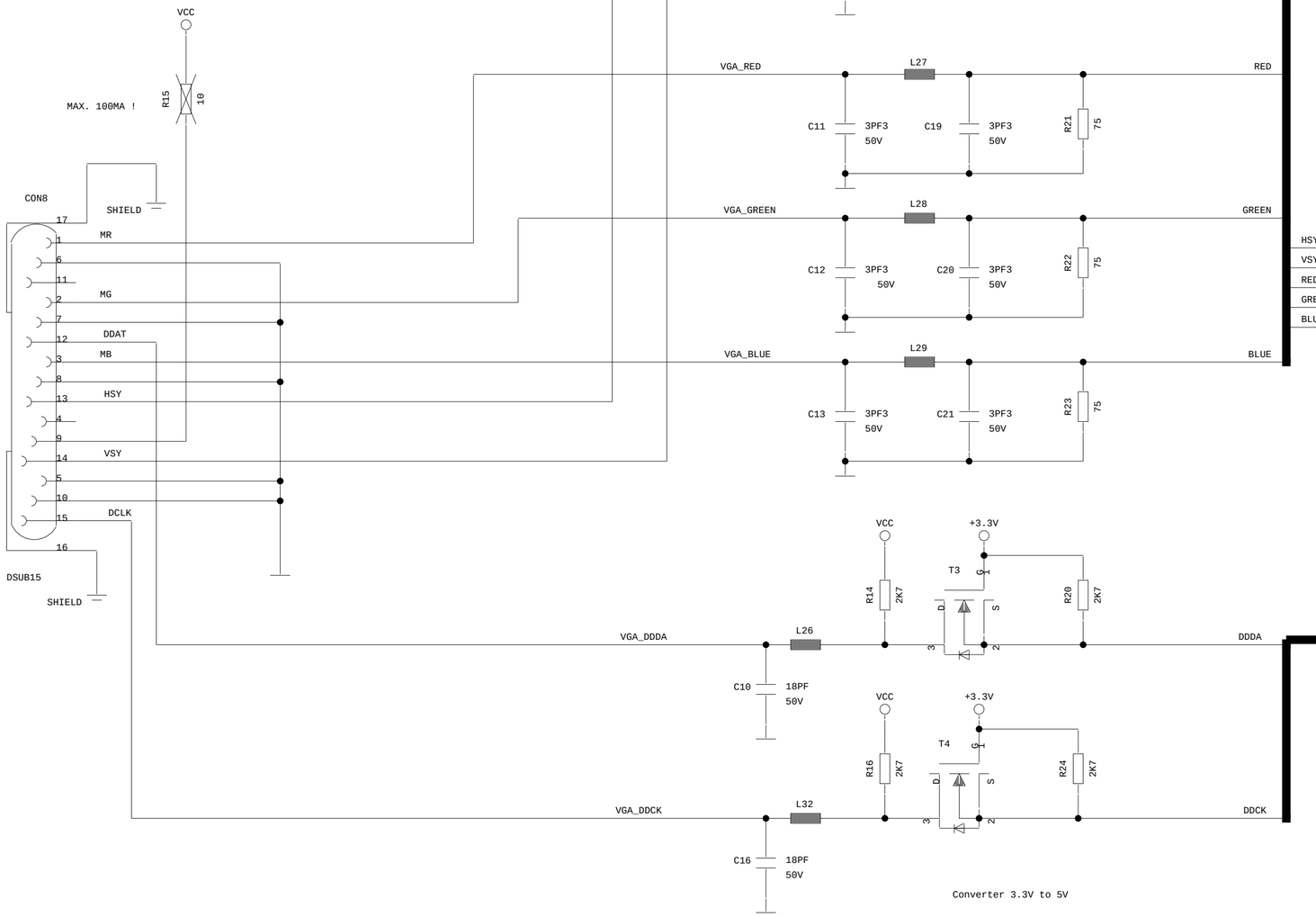




Not Used

TITLE: EBC1		MODULAR COMPUTERS
IND: 00/2 PCB-ID: 31.234-1010.1		
FUNC. Graphics Controller	RELEASED	ENG.
FILE GRAPHICS_CONTROLLER	VERIFIED	ENG.
PAGE 11 OF 36	CREATED 10.2003	ENG. BN/JM

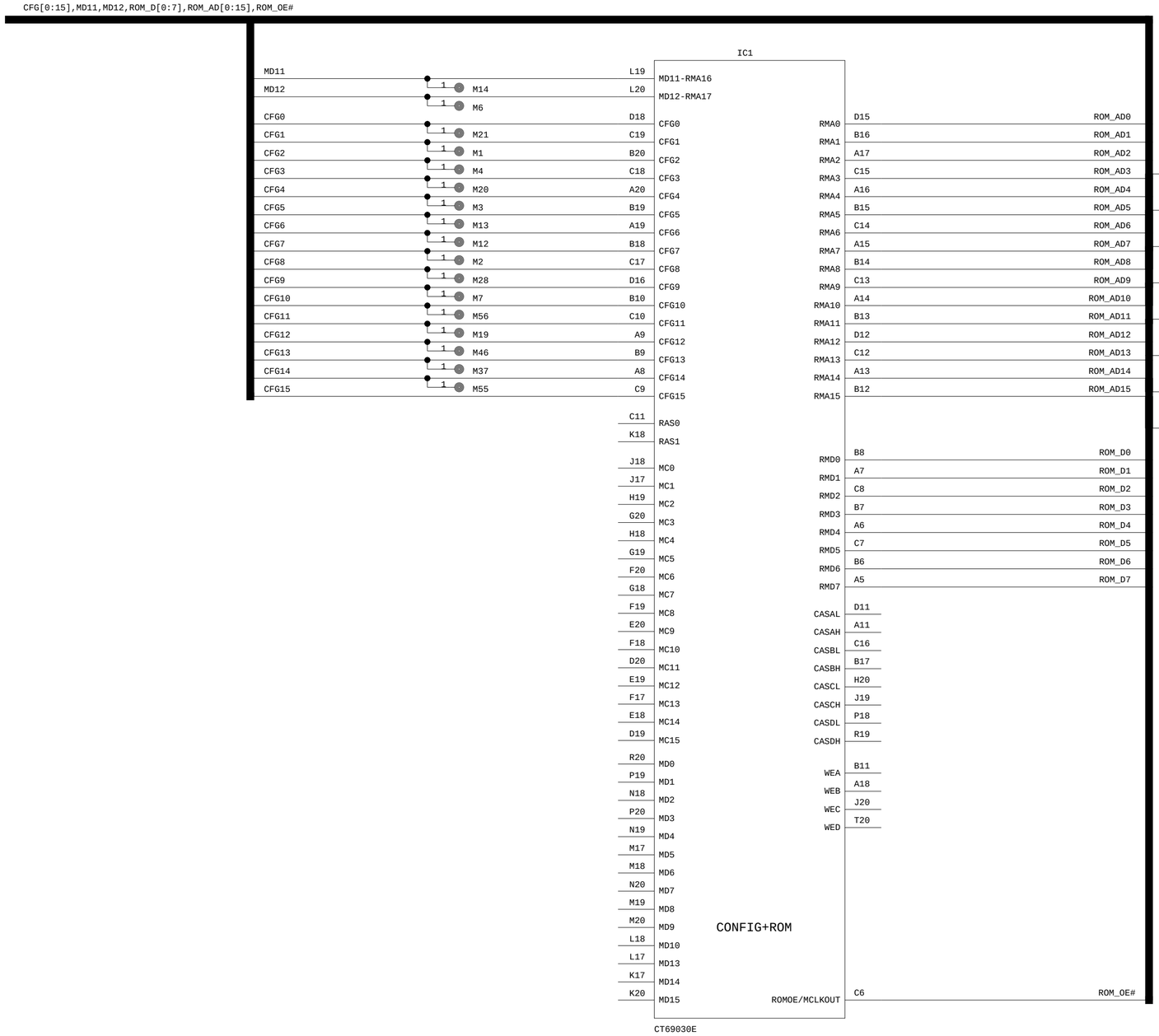
CRT Interface



TITLE: EBC1	MODULAR COMPUTERS
IND: 00/2	
PCB-ID: 31.234-1010.1	
FUNC.: CRT Interface	RELEASED / ENG.
FILE: CRT_IF	VERIFIED / ENG.
PAGE: 12 OF 36	CREATED: 10.2003 / ENG.: BN/JM

Memory Interface with Configuration

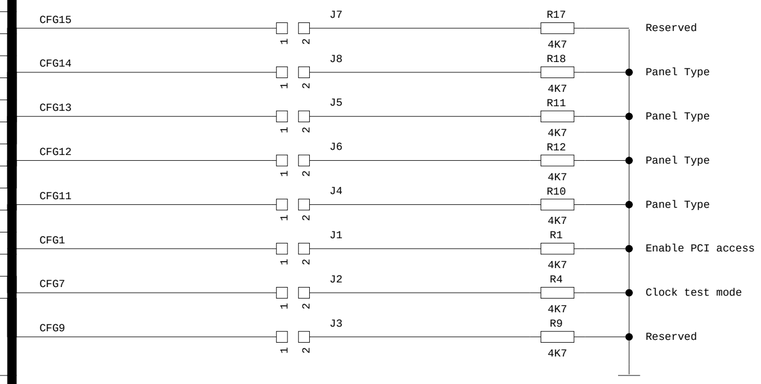
CFG[0:15],MD11,MD12,ROM_D[0:7],ROM_AD[0:15],ROM_OE#



Jumper default setting

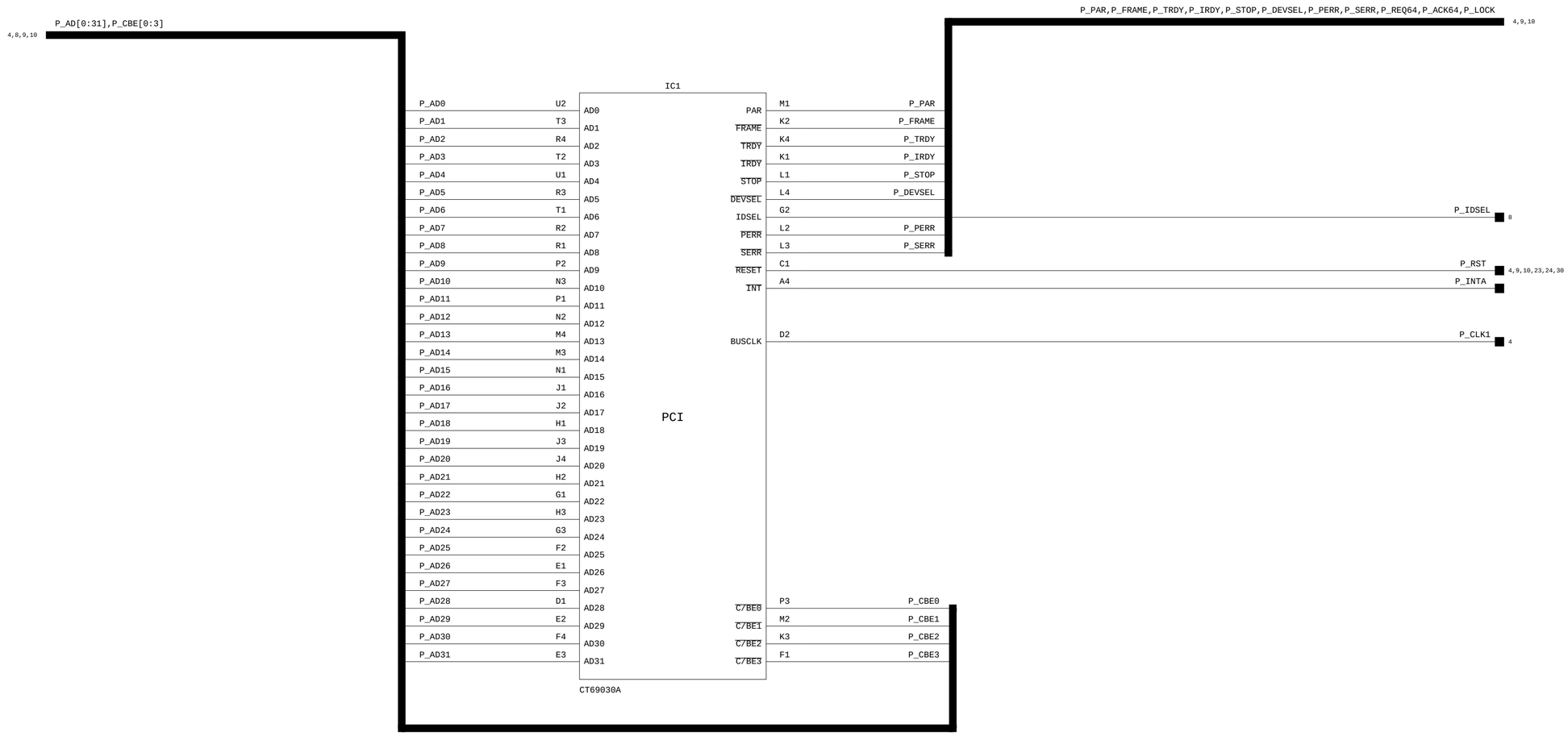
Set: J8

Open: J1,J2,J3,J4,J5,J6,J7



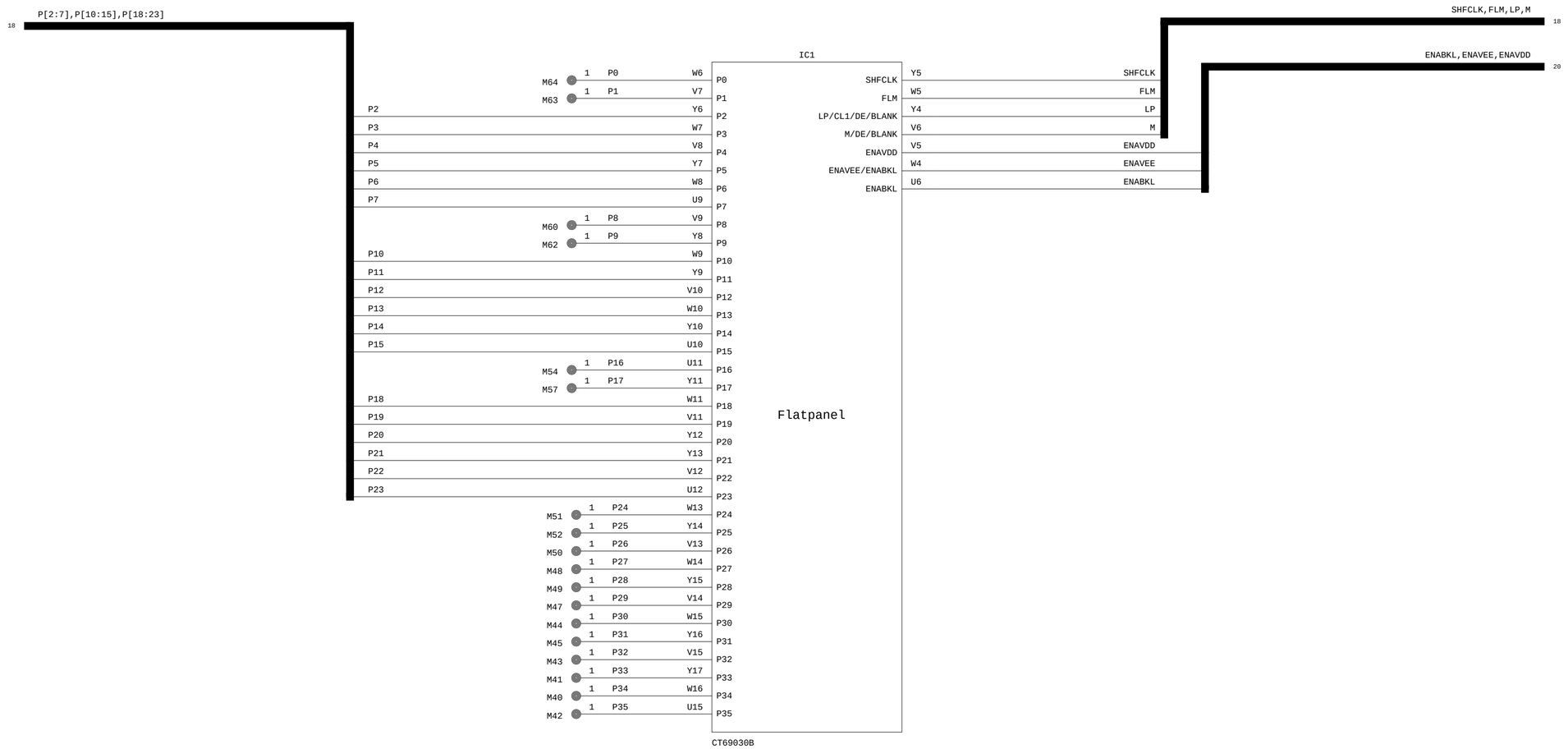
TITLE: EBC1	MODULAR COMPUTERS	
IND: 00/2 PCB-ID: 31.234-1010.1		
FUNC. Memory IF with Conf.	RELEASED	ENG.
FILE ROM_CONF_IF	VERIFIED	ENG.
PAGE 13 OF 36	CREATED 10.2003	ENG. BN/JM

PCI Interface



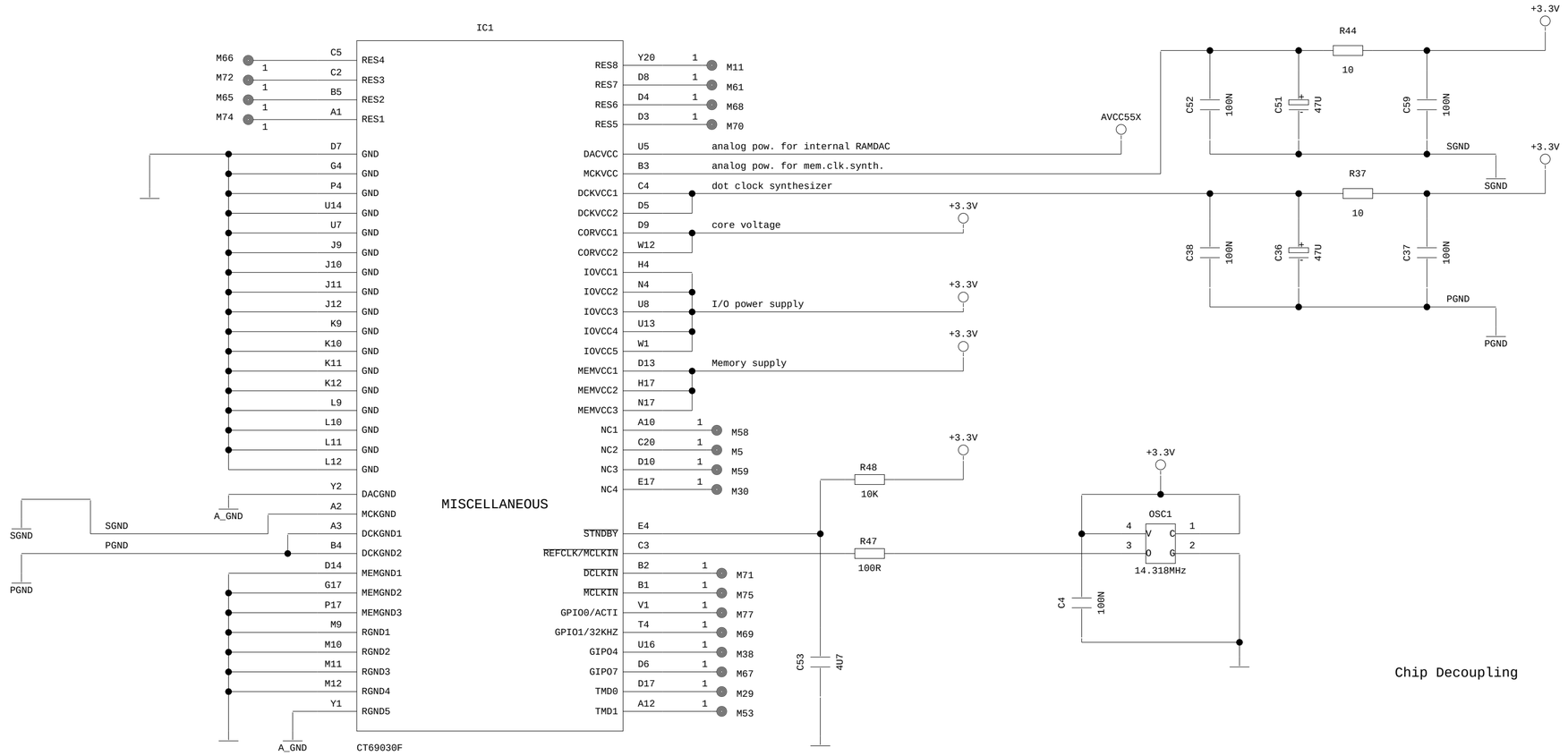
TITLE: EBC1		MODULAR COMPUTERS
IND: 00/2 PCB-ID: 31.234-1010.1		
FUNC. PCI/AGP Interface	RELEASED	ENG.
FILE PCI_AGP_IF	VERIFIED	ENG.
PAGE 14 OF 36	CREATED 10.2003	ENG. BN/JM

Flat Panel Interface

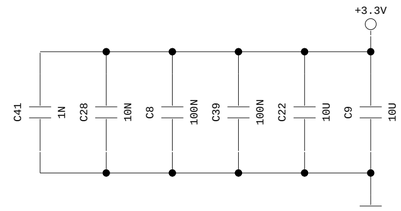


TITLE: EBC1	MODULAR COMPUTERS	
IND: 00/2 PCB-ID: 31.234-1010.1		
FUNC. Flat Panel Interface	RELEASED	ENG.
FILE FLATPANEL_IF	VERIFIED	ENG.
PAGE 15 OF 36	CREATED 10.2003	ENG. BN/JM

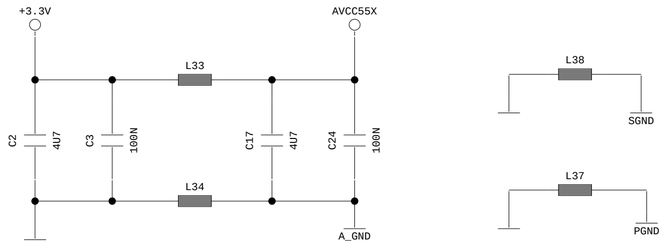
Power Supply/Miscellany



Chip Decoupling

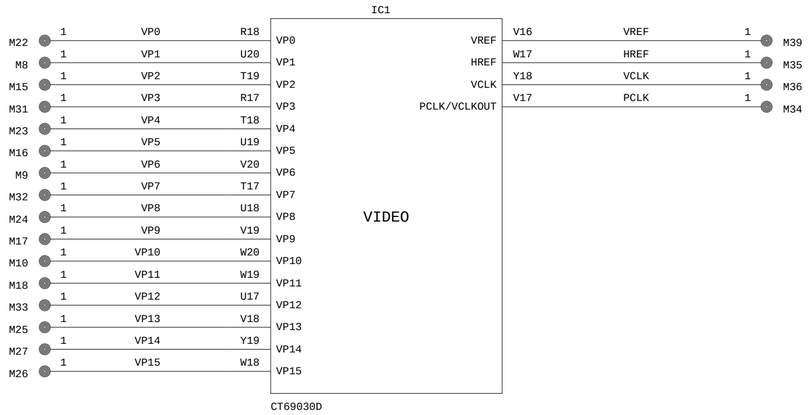


Isolation of power supplies



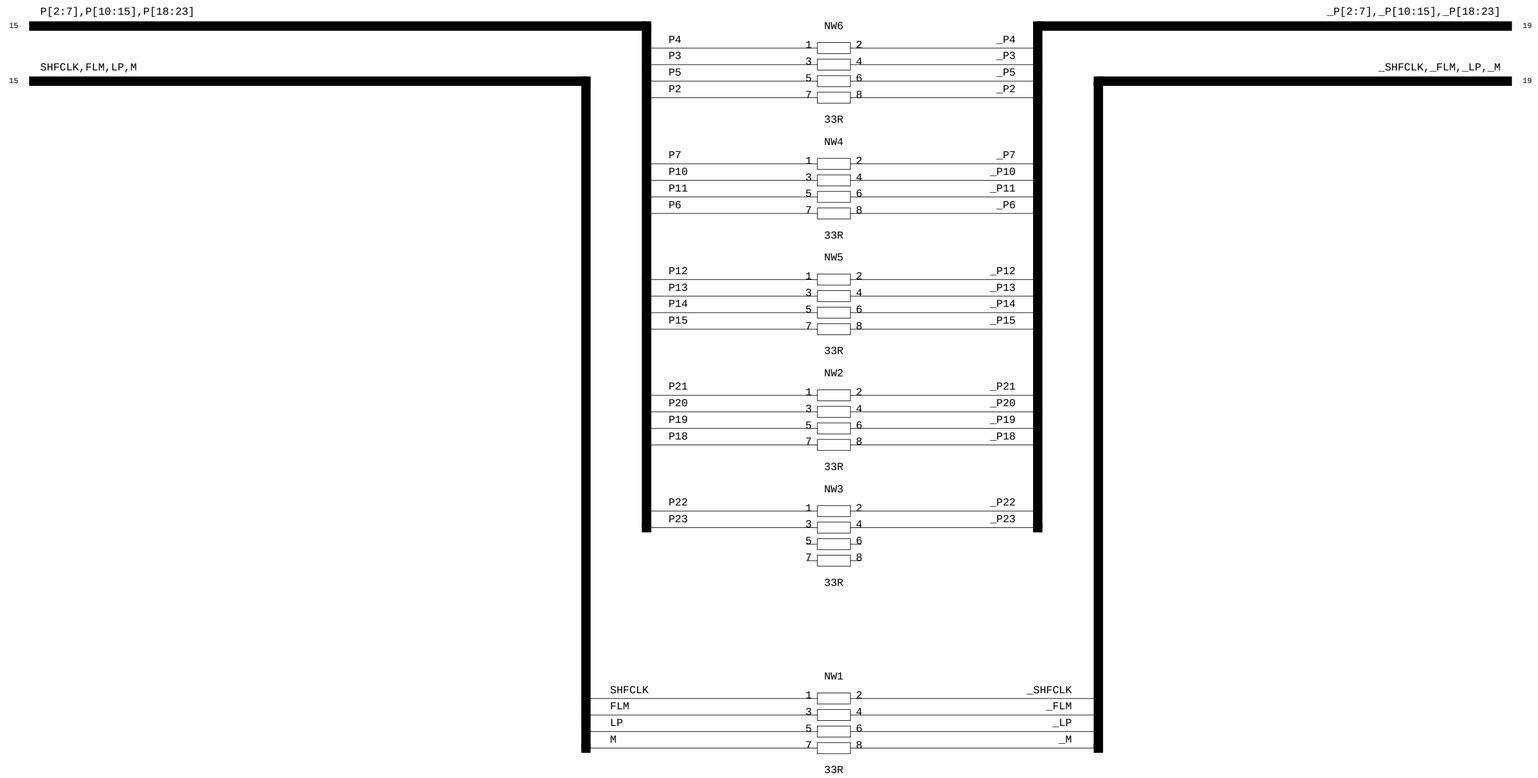
TITLE: EBC1	MODULAR COMPUTERS	
IND: 00/2 PCB-ID: 31.234-1010.1		
FUNC. Power/Miscellany	RELEASED	ENG.
FILE POW_MISC_IF	VERIFIED	ENG.
PAGE 16 OF 36	CREATED 10.2003	ENG. BN/JM

Video Interface (Not used)



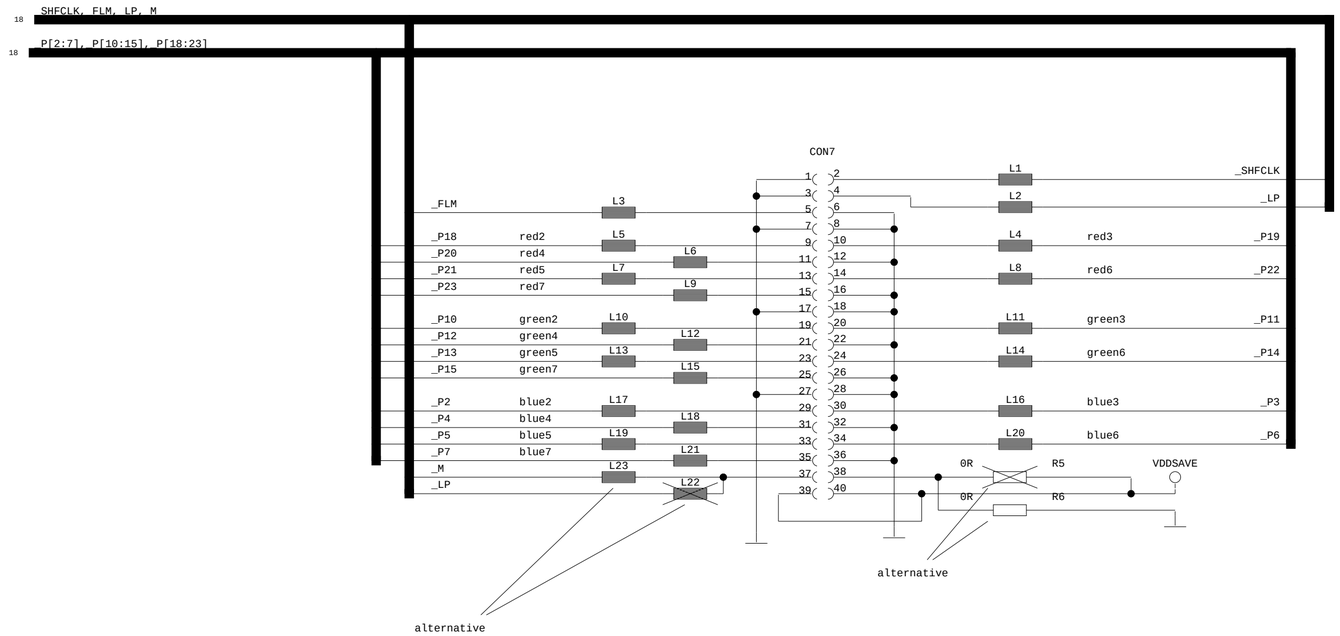
TITLE: EBC1		MODULAR COMPUTERS	
IND: 00/2 PCB-ID: 31.234-1010.1			
FUNC.: Video Interface	RELEASED	ENG.	
FILE: VIDEO_IF	VERIFIED	ENG.	
PAGE: 17 OF 36	CREATED: 10.2003	ENG.: BN/JM	

Serial Panel Termination



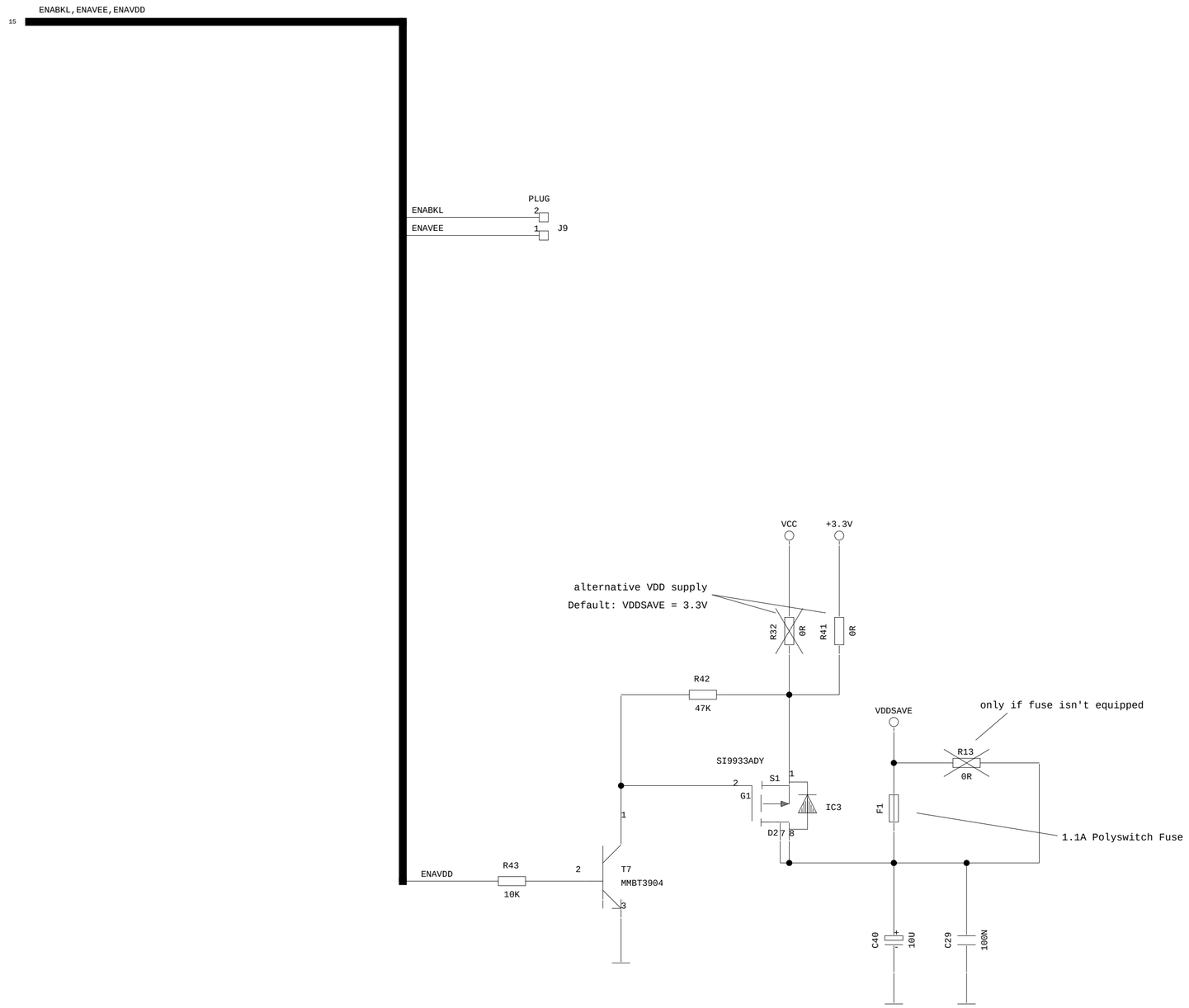
TITLE: EBC1		MODULAR COMPUTERS
IND: 00/2 PCB-ID: 31.234-1010.1		
FUNC.: Panel Termination	RELEASED	ENG.
FILE: PANEL-TERM	VERIFIED	ENG.
PAGE: 18 OF 36	CREATED: 10.2003	ENG.: BN/JM

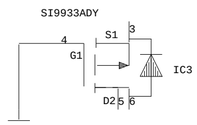
TTL Panel Connector Pin Row



TITLE: EBC1		MODULAR COMPUTERS
IND: 00/2 PCB-ID: 31.234-1010.1		
FUNC.: TTL Panel Connector	RELEASED	ENG.
FILE: TTL_FP_IF	VERIFIED	ENG.
PAGE: 19 OF 36	CREATED: 10.2003	ENG.: BN/JM

Panel Power Supply



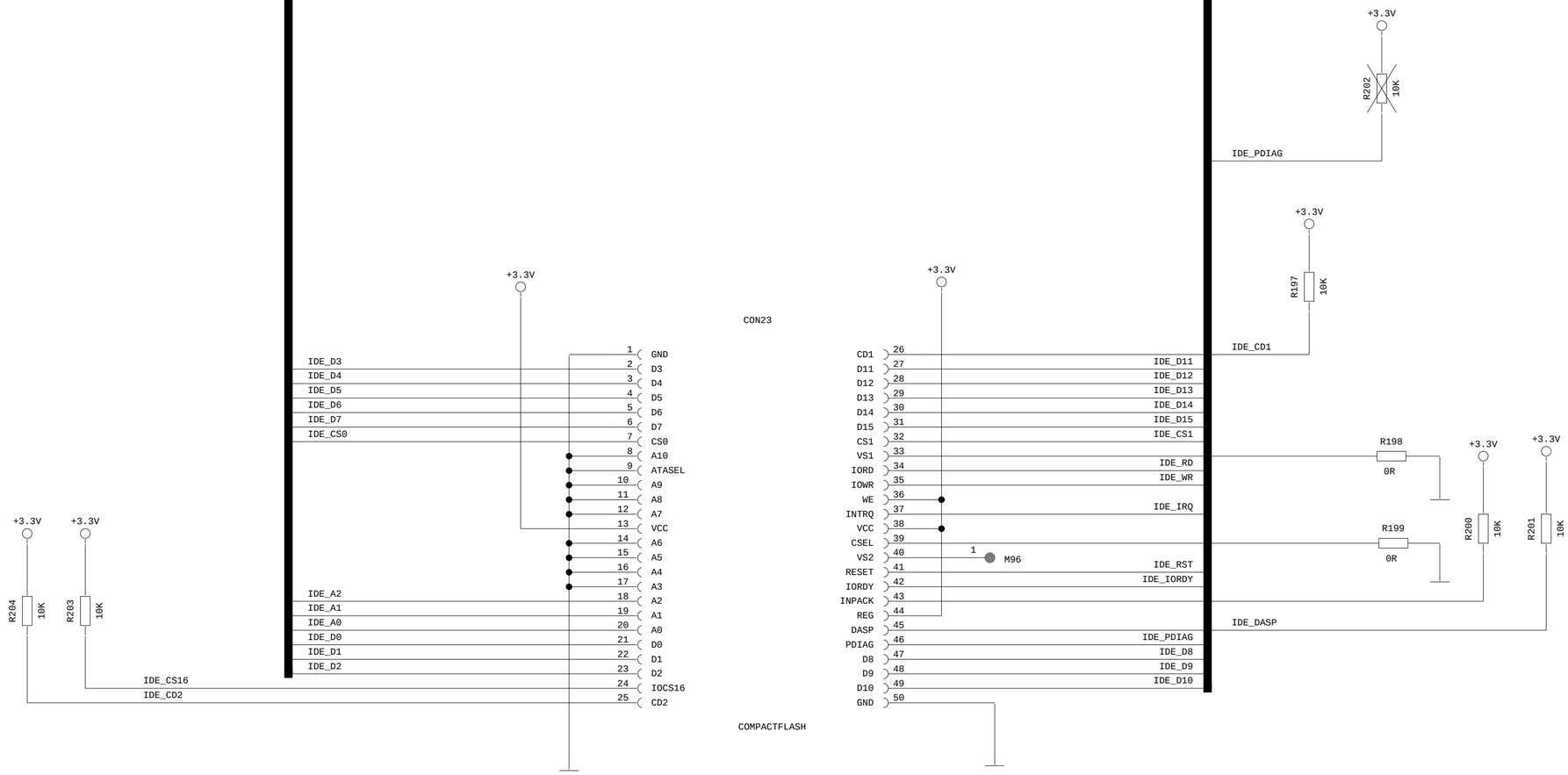


TITLE: EBC1	MODULAR COMPUTERS	
IND: 00/2 PCB-ID: 31.234-1010.1		
FUNC. Panel Power Supply	RELEASED	ENG.
FILE PANEL-SUPPLY	VERIFIED	ENG.
PAGE 20 OF 36	CREATED 10.2003	ENG. BN/JM

Compact Flash Socket

IDE_D[0:15],IDE_A[0:2],IDE_RST,IDE_WR,IDE_RD,IDE_IORDY,IDE_IRQ,IDE_CS[0:1],IDE_PDIAG

22



TITLE: EBC1		MODULAR COMPUTERS	
IND: 00/2	PCB-ID: 31.234-1010.1		
FUNC.: Compact Flash		RELEASED	ENG.
FILE: FLASH_EXTENTION		VERIFIED	ENG.
PAGE: 21 OF 36		CREATED: 10.2003	ENG.: BN/JM

CF Singal Route Selection

From E2Brain Module

To CF Socket

CF_D[0:15],CF_A[0:2],CF_RST,CF_WR,CF_RD,CF_IORDY,CF_IRQ,CF_CS[0:1],CF_PDIAG

IDE_D[0:15],IDE_A[0:2],IDE_RST,IDE_WR,IDE_RD,IDE_IORDY,IDE_IRQ,IDE_CS[0:1],IDE_PDIAG

EB8245:

1 - 2 connected

EB860:

1 - 3 connected

J36	CF_D0 _IDE_D0	IDE_D0	
J38	CF_D1 _IDE_D1	IDE_D1	
J40	CF_D2 _IDE_D2	IDE_D2	
J16	CF_D3 _IDE_D3	IDE_D3	
J18	CF_D4 _IDE_D4	IDE_D4	
J20	CF_D5 _IDE_D5	IDE_D5	
J22	CF_D6 _IDE_D6	IDE_D6	
J24	CF_D7 _IDE_D7	IDE_D7	
J39	CF_D8 _IDE_D8	IDE_D8	
J41	CF_D9 _IDE_D9	IDE_D9	
J42	CF_D10 _IDE_D10	IDE_D10	
J17	CF_D11 _IDE_D11	IDE_D11	
J19	CF_D12 _IDE_D12	IDE_D12	
J21	CF_D13 _IDE_D13	IDE_D13	
J23	CF_D14 _IDE_D14	IDE_D14	
J25	CF_D15 _IDE_D15	IDE_D15	
J35	CF_A0 _IDE_A0	IDE_A0	
J34	CF_A1 _IDE_A1	IDE_A1	
J33	CF_A2 _IDE_A2	IDE_A2	
J31	CF_RST _IDE_RST	IDE_RST	
J29	CF_WR _IDE_WR	IDE_WR	
J28	CF_RD _IDE_RD	IDE_RD	
J32	CF_IORDY _IDE_IORDY	IDE_IORDY	
J30	CF_IRQ _IDE_IRQ	IDE_IRQ	
J26	CF_CS0 _IDE_CS0	IDE_CS0	
J27	CF_CS1 _IDE_CS1	IDE_CS1	
J37	CF_PDIAG _IDE_PDIAG	IDE_PDIAG	

From IDE-Controller

_IDE_D[0:15],_IDE_A[0:2],_IDE_RST,_IDE_WR,_IDE_RD,_IDE_IORDY,_IDE_IRQ,_IDE_CS[0:1],_IDE_PDIAG

TITLE	EBC1		
IND:	00/2		
PCB-ID:	31.234-1010.1		MODULAR COMPUTERS
FUNC.	CF Route selection	RELEASED	ENG.
FILE	CF_RESISTORS	VERIFIED	ENG.
PAGE	22 OF 36	CREATED	ENG.
		10.2003	BN/JM

SuperI/O

LPC_CLK,LPC_AD[0:3],LPC_FRAME,LPC_SERIRQ

2,4

CLK

2

P_RST

4,9,10,14,24,30

Mixed Keyboard/Mouse Connector

_KCLK,_KDAT

6

CON11

SHIELD

VCC

_KDAT

_KCLK

R64 0R

R63 0R

KDAT

PMDAT

KCLK

PMCLK

VCC

NW19

1 2 KDAT

3 4 KCLK

5 6 PMDAT

7 8 PMCLK

2K7

PMDAT

PMCLK

PMCLK,PMDAT,KCLK,KDAT

IC15

LPC_AD0	20	LAD0	
LPC_AD1	21	LAD1	
LPC_AD2	22	LAD2	
LPC_AD3	23	LAD3	
LPC_FRAME	24	LFRAME	
	25	LDRQ	
LPC_SERIRQ	30	SER_IRQ	
	27	LPCPD	
	29	PCI_CLK	
	26	PCI_RESET	
	64	GP37/A20M	
	63	GP36/KBDRST	
	32	GP10/J1B1	
	33	GP11/J1B2	
	34	GP12/J2B1	
	35	GP13/J2B2	
	36	GP14/J1X	
	37	GP15/J1Y	
	38	GP16/J2X	
	39	GP17/J2Y	
	41	GP20/P17	
	46	GP25/MIDI_IN	
	47	GP26/MIDI_OUT	
	48	GP60/LED1	
	49	GP61/LED2	
	50	GP27/IO_SMI	
	51	GP30/FAN_TACH2	
	52	GP31/FAN_TACH1	
	54	GP32/FAN2_O	
	55	GP33/FAN1_O	
	17	GP42/IO_PME	
	28	GP43/DDRC	
	45	GP24/SYSOPT	
	62	GP35/IRTX2	
	61	GP34/IRRX2	
PMCLK	59	MCLK	
PMDAT	58	MDAT	
KCLK	57	KCLK	
KDAT	56	KDAT	
	44	VREF	
	18	VTR	
	19	CLOCKI	
	6	CLKI32	
	16	RDATA	
	11	WGATE	
	10	WDATA	
	12	HDSEL	
	8	DIR	
	9	STEP	
	4	DSKCHG	
	5	DS0	
	42	GP21/P16/DS1	
	3	MTR0	
	43	GP22/P12/MTR1	
	1	GP40/DRVDEN0	
	2	GP41/DRVDEN1	
	15	WRTPRT	
	14	TRK0	
	13	INDEX	
	84	RXD1	
	85	TXD1	
	87	RTS1	
	89	DTR1	
	88	CTS1	
	86	DSR1	
	91	DCD1	
	90	RI1	
	95	GP52/RXD2/IRRX	
	96	GP53/TXD2/IRTX	
	98	GP55/RTS2	
	100	GP57/DTR2	
	99	GP56/CTS2	
	97	GP54/DSR2	
	94	GP51/DCD2	
	92	GP50/RI2	
	67	SLCTIN	
	66	INIT	
	82	ALF	
	83	STROBE	
	79	BUSY	
	80	ACK	
	78	PE	
	77	SLCT	
	81	ERROR	
	68	PD0	
	69	PD1	
	70	PD2	
	71	PD3	
	72	PD4	
	73	PD5	
	74	PD6	
	75	PD7	

LPC47M107

+3.3V

R102 4K7

R147 4K7

R146 4K7

NW8 8K2

NW11 8K2

NW16 8K2

NW18 8K2

R104 8K2

R101 8K2

R131 2K7

PULLDOWN = 0X2E

R145 8K2

OSC2

14.318MHz

R103 10

C117 100N

RDATA R105 1K

HDSEL R109 1K

DSKCH R110 1K

DS1 R127 1K

MTR1 R129 1K

DENSEL0 R112 1K

DENSEL1 R111 1K

WP R106 1K

TRK0 R107 1K

INDEX R108 1K

R132 8K2

NW14 8K2

NW12 8K2

NW9 8K2

R134 8K2

NW22 8K2

NW20 8K2

NW21 8K2

Decoupling

C145 10U

C135 10U

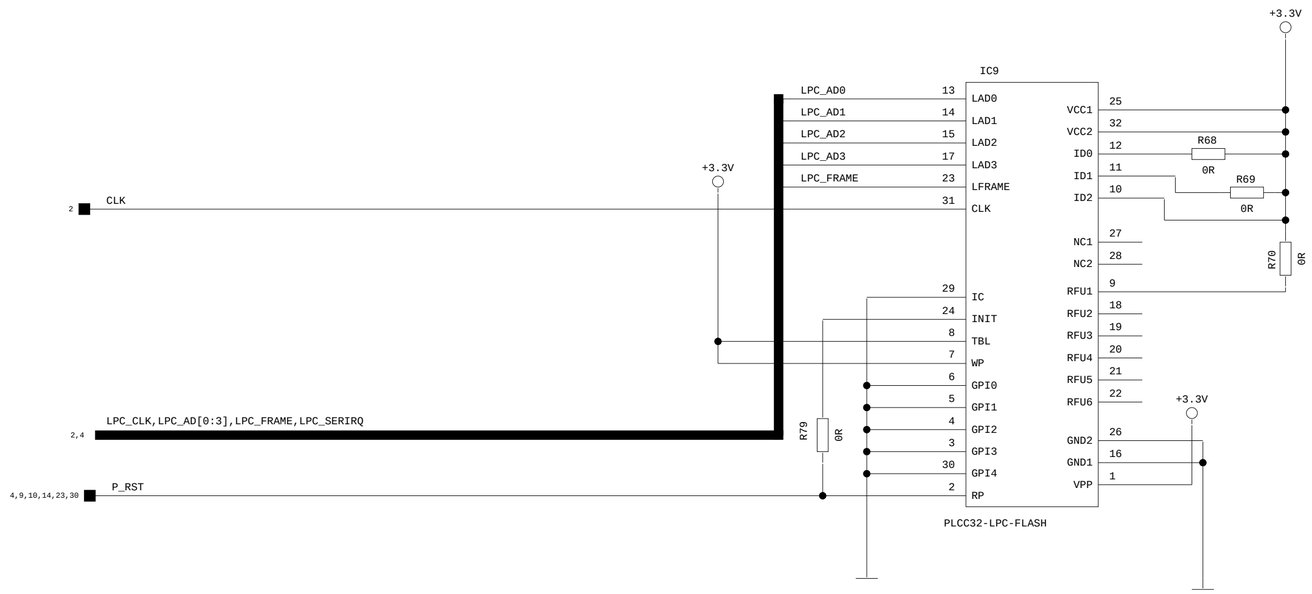
C104 100N

C118 100N

TITLE	EBC1
IND:	00/2
PCB-ID:	31.234-1010.1
FUNC.	Super I/O
FILE	LPC_SUPERIO
PAGE	23 OF 36
RELEASED	
ENG.	
VERIFIED	
ENG.	
CREATED	10.2003
ENG.	BN/JM

MODULAR COMPUTERS

LPC Flash Socket



TITLE: EBC1	MODULAR COMPUTERS	
IND: 00/2 PCB-ID: 31.234-1010.1		
FUNC.: LPC Flash Socket	RELEASED	ENG.
FILE: LPC_FLASH	VERIFIED	ENG.
PAGE: 24 OF 36	CREATED: 10.2003	ENG.: BN/JM

Optional Serial Interface 1

TXA,DTRA,RTSA,CDA,RXA,CTSA,DSRA,RIA

R72 0R TXA
R76 0R RTSA
R78 0R RTSA
R75 0R DSRA
R77 0R DSRA

CDA
DTRA
CTSA
RIA
RXA

TXB,DTRB,RTSB,CDB,RXB,CTSB,DSRB,RIB

R87 0R TXB
R99 0R RTSB
R96 0R RTSB
R114 0R DSRB
R113 0R DSRB

CDB
DTRB
CTSB
RIB
RXB

+3.3V

IC8 ADM561

	11	VCC	
C85 100N	12	C1+	V+ 13 — C86 100N — C84 100N
		+5V to +10V	
	14	C1-	
C82 100N	15	C2+	V- 17 — C90 100N
		+10V to -10V	
	16	C2-	
TXA	7	T1IN	T1O 2
RTSA	6	T2IN	T2O 3
DTRA	20	T3IN	T3O 1
	21	T4IN	T4O 28
RXA	8	R1O	R1IN 9
CTSA	5	R2O	R2IN 4
DSRA	26	R3O	R3IN 27
CDA	22	R4O	R4IN 23
RIA	19	R5O	R5IN 18
	24	EN	SD 25
	10	GND	

RS232 Interface

TXD
RTS
DTR
RXD
CTS
DSR
CD
RI

DSUB9 CON12

1 6 2 7 3 8 4 9 5 — 11 10 — SHIELD

C96 18P
C92 18P
C97 18P
C99 18P
C100 18P
C95 18P
C93 18P
C91 18P

RS422/485 Interface

Decoupling for 74ACT14

VCC
C111 100N

IC12 74ACT14 (4 gates)
3 → 4
1 → 2
11 → 10
9 → 8

VCC
R81 4K7
R92 4K7

RXB
TXB
RTSB

IC12 74ACT14
13 → 12
R91 0R

IC11 MAX3079

RXB	2	RO	A 12 — RX+
	13	RXP	B 11 — RX-
	1	H/F	Y 9 — TX+
	8	TXP	Z 10 — TX-
TXB	5	DI	
RTSB	3	RE	
	4	DE	
	6	SRL	
			VCC 14 — +3.3V
			GND 7

Full Duplex Half Duplex
TRX+
TRX-

J12 2 1 — R89 120R
J11 2 1 — R86 120R

CON13
2 1 4 3 6 5 8 7 10 9

Termination; Default: Set

Default: Full Duplex

Not Mounted: Full Duplex
Mounted: Half Duplex

VCC
R94 4K7
R95 0R

VCC
R85 4K7
R84 0R

VCC
R90 0R
R93 0R

Set: Full Duplex
Open: Half Duplex

High = Half-duplex
Low = Full-duplex

GND = 10Mb/s
VCC = 500kb/s
Open = 115kb/s

+3.3V
C103 100N

Decoupling

VCC
C190 220U
C83 4U7
C98 100N
C112 10N

Optional Serial Interface 2

TITLE	EBC1		MODULAR COMPUTERS
IND:	00/2		
PCB-ID:	31.234-1010.1		
FUNC.	Serial IF 1+2	RELEASED	ENG.
FILE	SERIAL_IF	VERIFIED	ENG.
PAGE	25 OF 36	CREATED 10.2003	ENG. BN/JM

Optional Serial Interface 3

TXC,DTRC,RTSC,CDC,RXC,CTSC,DSRC,RIC

R123 0R TXC
R125 0R RTSC
R126 0R RTSC
R122 0R DSRC
R124 0R DSRC

CDC
DTRC
CTSC
RIC
RXC

TXD,DTRD,RTSD,CDD,RXD,CTSD,DSRD,RID

R140 0R TXD
R118 0R RTSD
R120 0R RTSD
R121 0R DSRD
R116 0R DSRD

CDD
DTRD
CTSD
RID
RXD

+3.3V

IC13 ADM561

11	VCC		
12	C1+	V+	13
	+5V to +10V		
14	C1-		
15	C2+	V-	17
	+10V to -10V		
16	C2-		
TXC 7	T1IN	T1O	2 TXD
RTSC 6	T2IN	T2O	3 RTS
DTRC 20	T3IN	T3O	1 DTR
21	T4IN	T4O	28
RXC 8	R1O	R1IN	9 RXD
CTSC 5	R2O	R2IN	4 CTS
DSRC 26	R3O	R3IN	27 DSR
CDC 22	R4O	R4IN	23 CD
RIC 19	R5O	R5IN	18 RI
24	EN	SD	25
	GND		
10			

C122 100N
C119 100N
C126 100N
C121 100N
C123 100N

C134 10P
C128 10P
C137 10P
C140 10P
C141 10P
C133 10P
C132 10P
C127 10P

RS232 Interface

CON14 DSUB9

1 6 2 7 3 8 4 9 5 11 10 SHIELD

RS422/485 Interface

VCC

R135 4K7
R149 4K7

IC16 MAX3079

RXD 2	RO	A	12 RX+
13	RXP	B	11 RX-
1	H/F	Y	9 TX+ TRX+
8	TXP	Z	10 TX- TRX-
TXD 5	DI		
3	RE		
RTSD 4	DE	VCC	14
6	SRL	GND	7

Full Duplex Half Duplex

J14 2 1 R142 120R
J13 2 1 R139 120R

CON15

2 1 4 3 6 5 8 7 10 9

Termination; Default: Set

Default: Full Duplex

IC12 74ACT14
R148 0R

Not Mounted: Full Duplex
Mounted: Half Duplex

+3.3V
C146 100N

VCC
R151 4K7
R162 0R

VCC
R138 4K7
R136 0R

VCC
R143 0R
R150 0R

Set: Full Duplex
Open: Half Duplex

High = Half-duplex
Low = Full-duplex

GND = 10Mb/s
VCC = 500kb/s
Open = 115kb/s

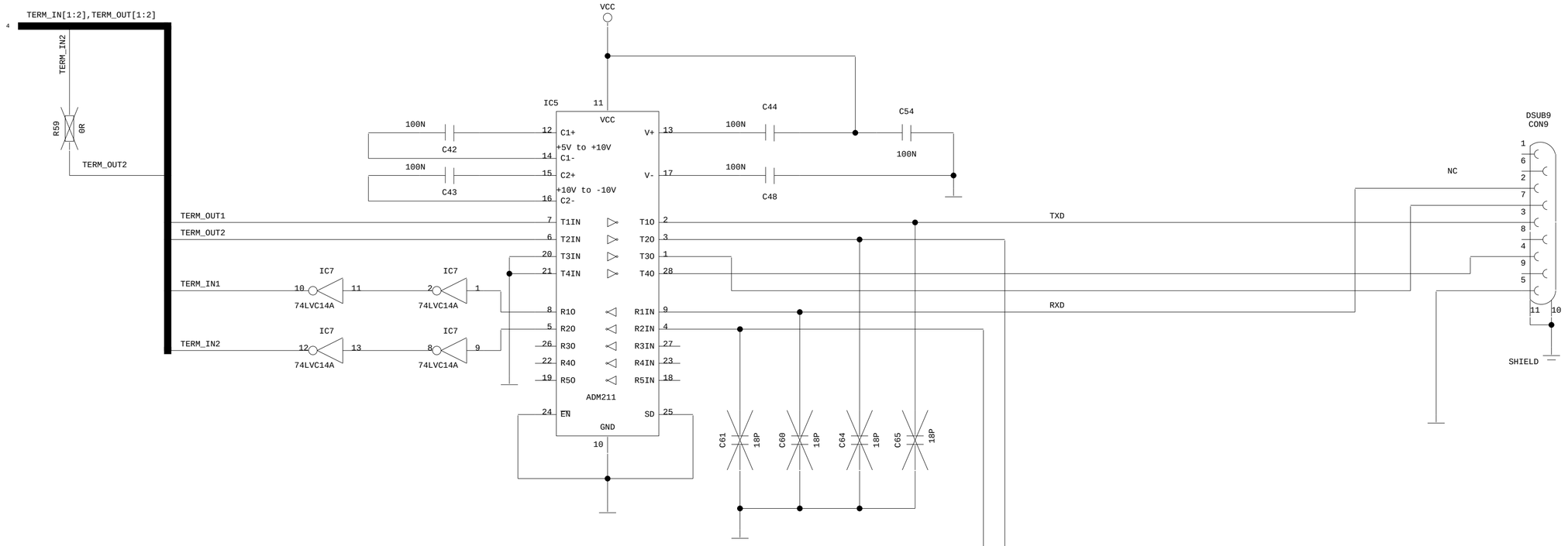
Decoupling

VCC
C120 4U7
C136 100N
C80 10N

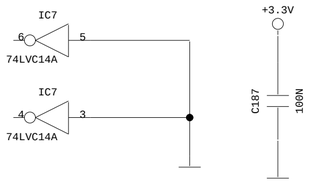
Optional Serial Interface 4

TITLE	EBC1		MODULAR COMPUTERS
IND:	00/2		
PCB-ID:	31.234-1010.1		
FUNC.	Serial IF 3+4	RELEASED	ENG.
FILE	SERIAL_IF	VERIFIED	ENG.
PAGE	26 OF 36	CREATED	ENG.
		10.2003	BN/JM

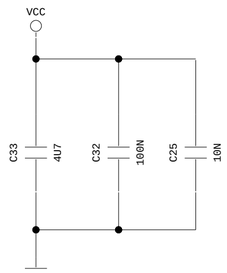
Terminal Interfaces



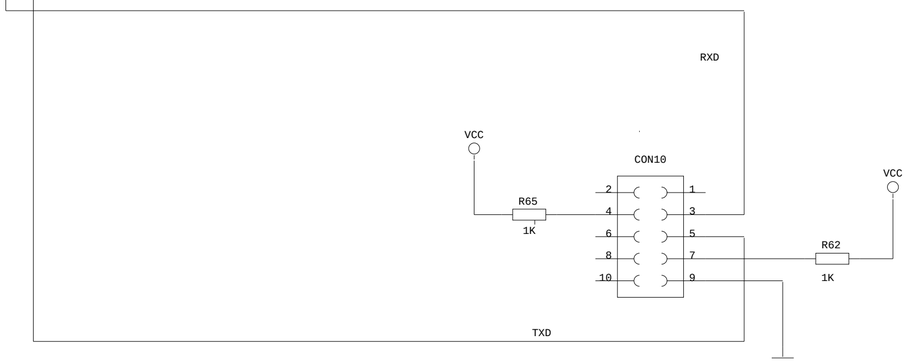
Decoupling for 74LVC14A



Decoupling



Optinal second Terminal Interface



TITLE: EBC1		MODULAR COMPUTERS	
IND: 00/2 PCB-ID: 31.234-1010.1			
FUNC. Terminal Interfaces		RELEASED	ENG.
FILE TERMINAL_IF		VERIFIED	ENG.
PAGE 27 OF 36		CREATED 10.2003	ENG. BN/JM

Magnetics/RJ45 Connector

TDP[1:2],TDN[1:2],RDP[1:2],RDN[1:2],LILED[1:2],ACLED[1:2],SPLED[1:2]

EB8245: Not mounted
EB860: Mounted

+3.3V
L41
C165 100N
C168 100N

IC20
H1102

TDP1
TDN1
RDP1
RDN1

1 TD+
2 TDC
3 TD-
6 RD+
8 RD-
7 RDC

TX+ 16
CMT 15
TX- 14
RX+ 11
RX- 9
RXC 10

R192 75
R183 75
R184 75
R193 75

C169 2KV 1500P

LAN1_TPLANE

SHIELD

+3.3V
R213 0R

CON17

ACLED1 0R R214 green
LILED1 R209 510R green
SPLED1 R185 510R green

11 yellow
12 green
9 yellow
10 green

1 2 3 4 5 6 7 8 13 14

Second Ethernet channel not available with EB8245 and EB860

EB8245: Not mounted
EB860: Mounted

+3.3V
L40
C161 100N
C162 100N

IC17
H1102

TDP2
TDN2
RDP2
RDN2

1 TD+
2 TDC
3 TD-
6 RD+
8 RD-
7 RDC

TX+ 16
CMT 15
TX- 14
RX+ 11
RX- 9
RXC 10

R171 75
R164 75
R165 75
R172 75

C158 2KV 1500P

LAN2_TPLANE

SHIELD

+3.3V
R178 0R

CON16

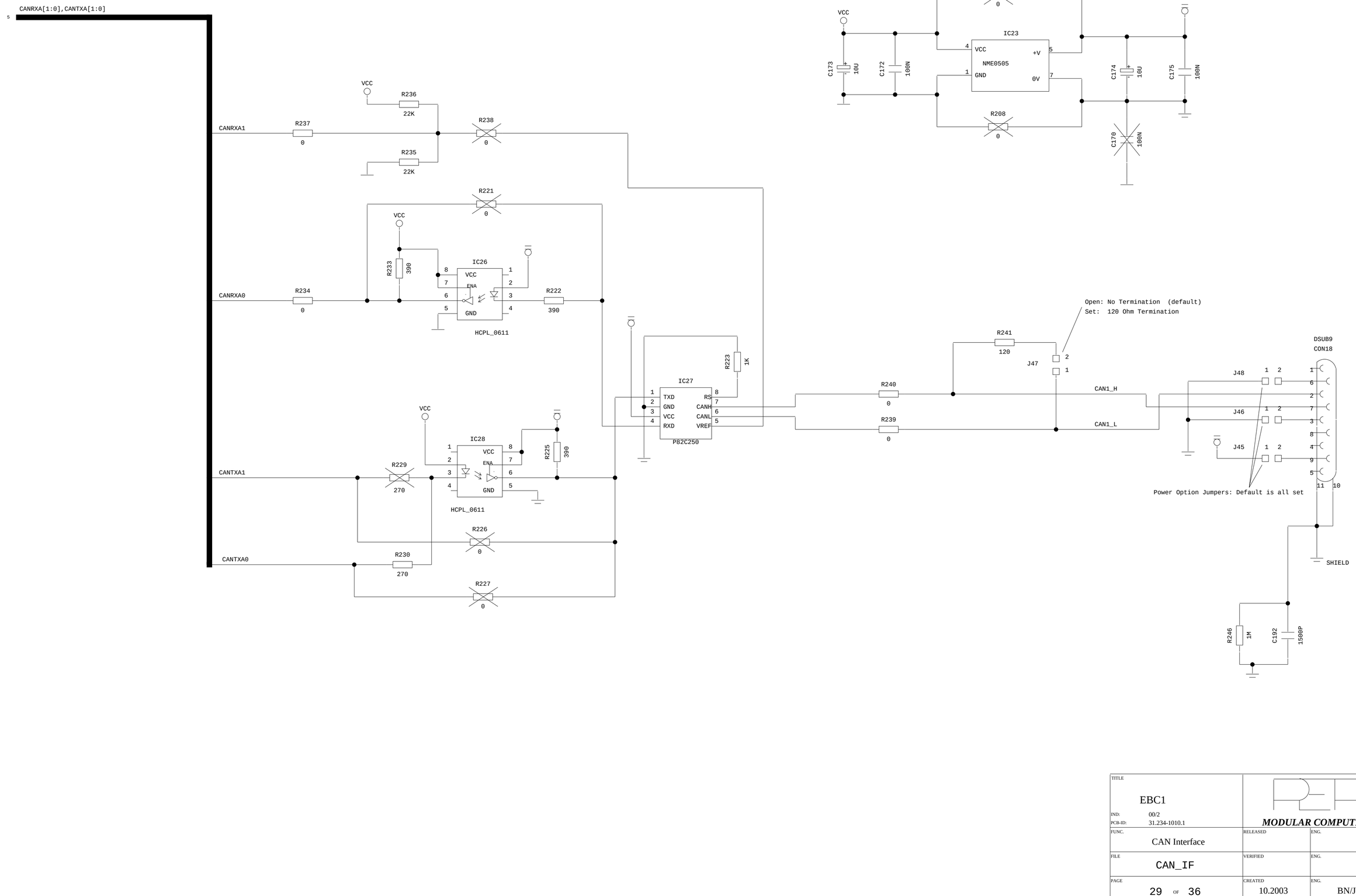
ACLED2 0R R181 green
LILED2 R175 510R green
SPLED2 R163 510R green

11 yellow
12 green
9 yellow
10 green

1 2 3 4 5 6 7 8 13 14

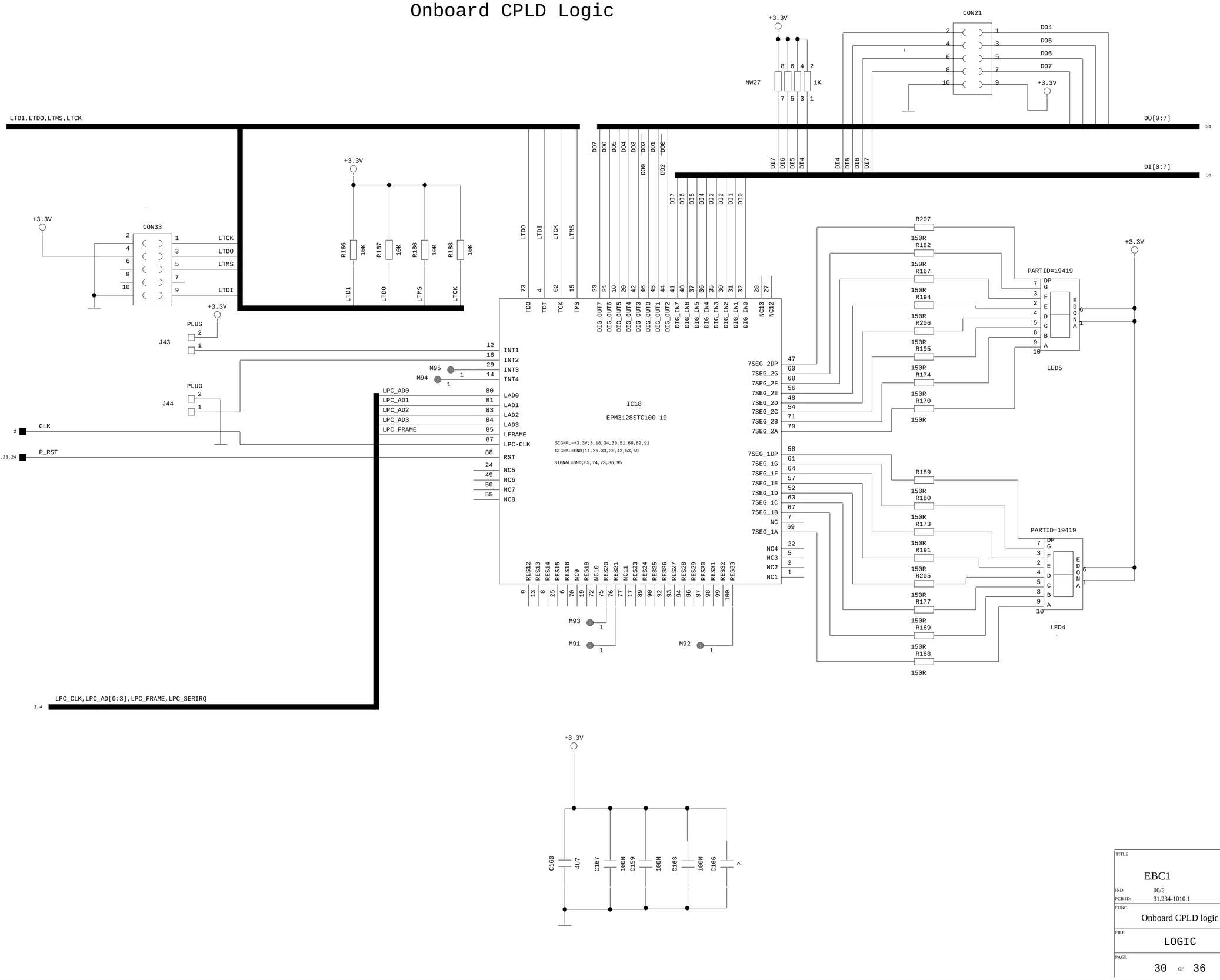
TITLE: EBC1	MODULAR COMPUTERS	
IND: 00/2 PCB-ID: 31.234-1010.1		
FUNC. Ethernet Interface	RELEASED	ENG.
FILE ETHERNET	VERIFIED	ENG.
PAGE 28 OF 36	CREATED 10.2003	ENG. BN/JM

CAN Interface



TITLE: EBC1	MODULAR COMPUTERS
IND: 00/2	
PCB-ID: 31.234-1010.1	
FUNC.: CAN Interface	RELEASED / ENG.
FILE: CAN_IF	VERIFIED / ENG.
PAGE: 29 OF 36	CREATED: 10.2003 / ENG.: BN/JM

Onboard CPLD Logic



TITLE: EBC1	MODULAR COMPUTERS
IND: 00/2 PCB-ID: 31.234-1010.1	
FUNC.: Onboard CPLD logic	RELEASED: ENG.:
FILE: LOGIC	VERIFIED: ENG.:
PAGE: 30 OF 36	CREATED: 10.2003 ENG.: BN/JM

Digital Inputs

DI[0:7]

30

+3.3V

NW25
1K

IC21
74LVC14A

DI0

DI1

DI2

DI3

IC22
TLP281_4

R300
0

R301
0

R302
0

R303
0

T10
JFET BSR57

T11
JFET BSR57

T12
JFET BSR57

T13
JFET BSR57

R215
82R

R216
82R

R217
82R

R218
82R

D7
PMLL4448

D9
PMLL4448

D11
PMLL4448

D13
PMLL4448

C178
15N

C179
15N

C180
15N

C181
15N

D14

NW28
56R

DIN0
DIN1
DIN2
DIN3

_DIN0
_DIN1
_DIN2
_DIN3

DIN[0:3],_DIN[0:3]

CON20

GND_ISO1

VCC_ISO1

Digital Outputs

DO[0:7]

30

NW26
240R

DO2 DO0
DO1
DO0 DO2
DO3

+3.3V

IC25
TLP281_4

T17 MMBT3904
T16 MMBT3904
T15 MMBT3904
T14 MMBT3904

D18 PMLL4448
D17 PMLL4448
D16 PMLL4448
D15 PMLL4448

R245 10K
R244 10K
R243 10K
R242 10K

CON19

VCC_ISO1

GND_ISO1

VCC

DCDC

IC24
NME0505
VCC
GND
+V
0V

C77 4U7
C102 100N
C101 10N

L45

C186 4U7
C191 100N
C188 10N

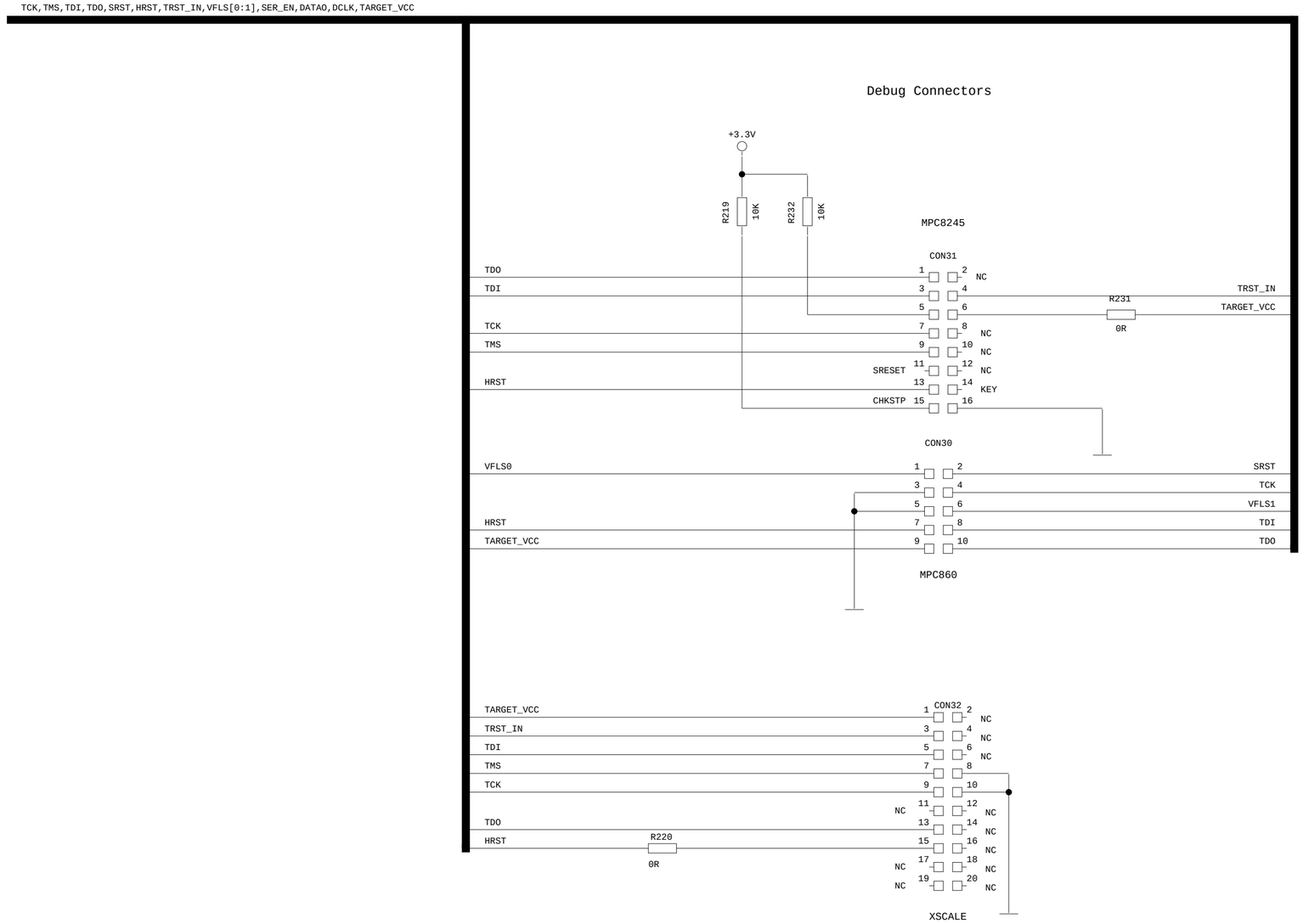
VCC_ISO1

GND_ISO1

TITLE: EBC1	MODULAR COMPUTERS	
IND: 00/2		
PCB-ID: 31.234-1010.1		
FUNC.: Digital I/O	RELEASED	ENG.
FILE: LOGIC	VERIFIED	ENG.
PAGE: 31 OF 36	CREATED: 10.2003	ENG.: BN/JM

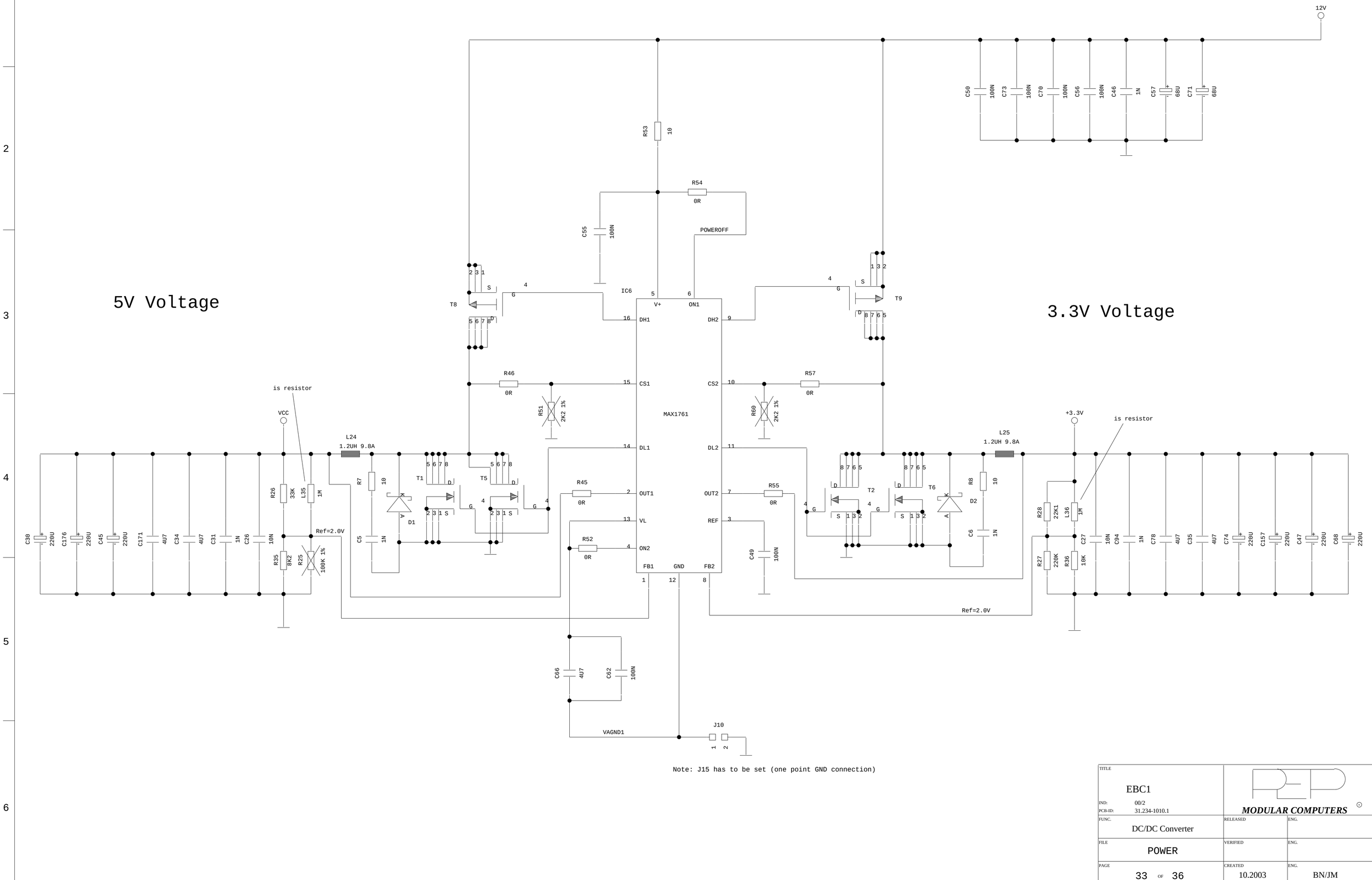
JTAG/DEBUG connectors

TCK,TMS,TDI,TDO,SRST,HRST,TRST_IN,VFLS[0:1],SER_EN,DATAO,DCLK,TARGET_VCC



TITLE: EBC1	MODULAR COMPUTERS	
IND: 00/2 PCB-ID: 31.234-1010.1		
FUNC.: JTAG/Debug IF	RELEASED	ENG.
FILE: DEBUG	VERIFIED	ENG.
PAGE: 32 OF 36	CREATED: 10.2003	ENG.: BN/JM

Onboard DC/DC Converter



5V Voltage

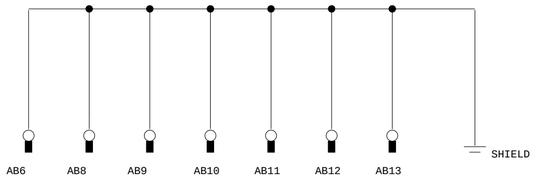
3.3V Voltage

Note: J15 has to be set (one point GND connection)

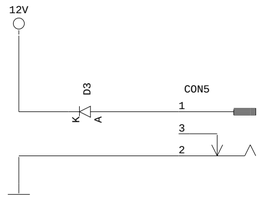
TITLE: EBC1	MODULAR COMPUTERS
IND: 00/2	
PCB-ID: 31.234-1010.1	
FUNC.: DC/DC Converter	RELEASED: / ENG.:
FILE: POWER	VERIFIED: / ENG.:
PAGE: 33 OF 36	CREATED: 10.2003 ENG.: BN/JM

Miscellany Power Supply

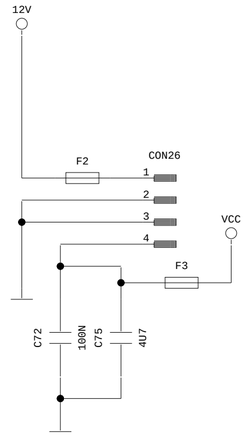
Mounting Holes



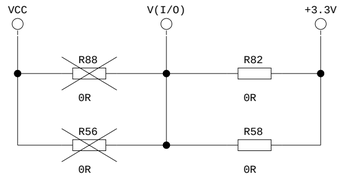
12V supply from external power supply



Power supply for external IDE devices



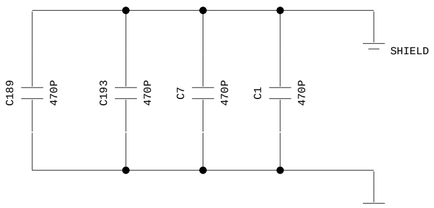
PCI Signal voltage level selection



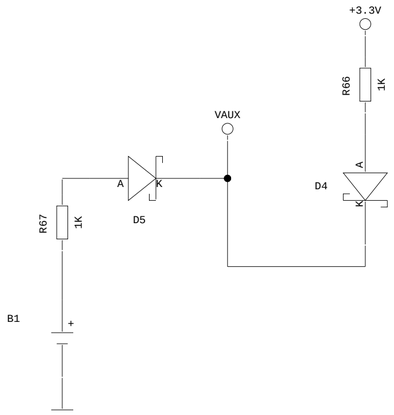
3.3V V(I/O): R58, R82 mounted; R56, R88 not mounted (default)

5V V(I/O): R56, R88 mounted; R58, R82 not mounted

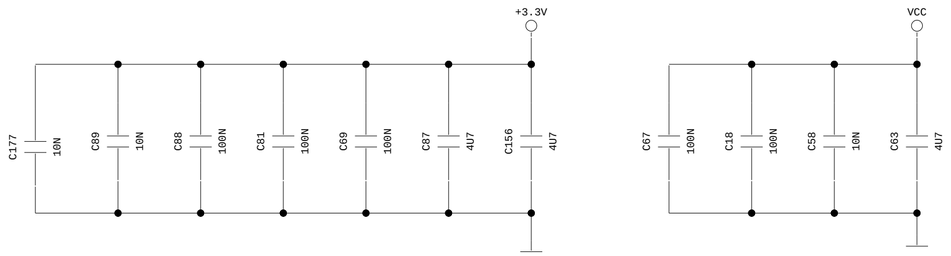
High Voltage GND/Shield Capacitors



Backup supply options

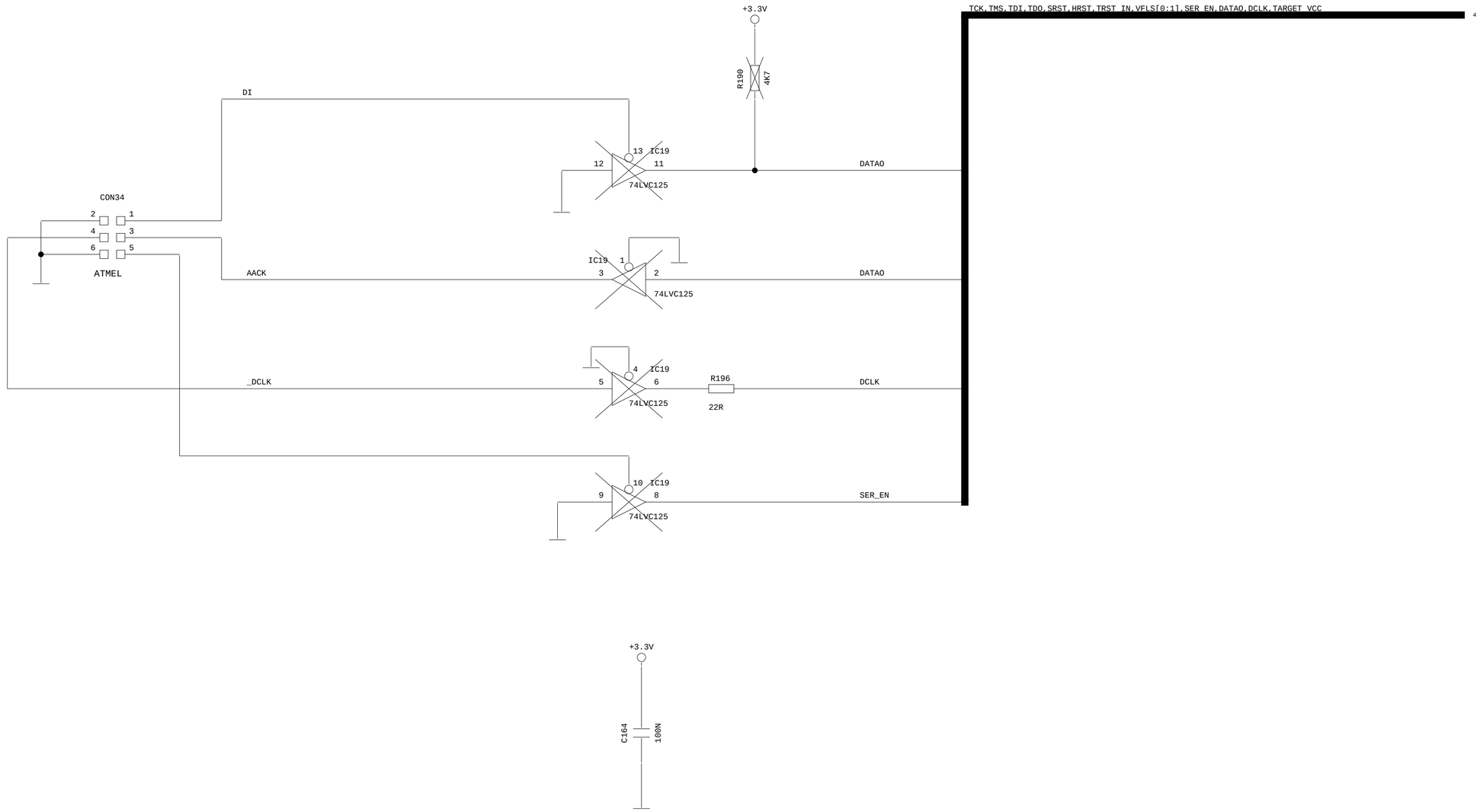


Board Decoupling



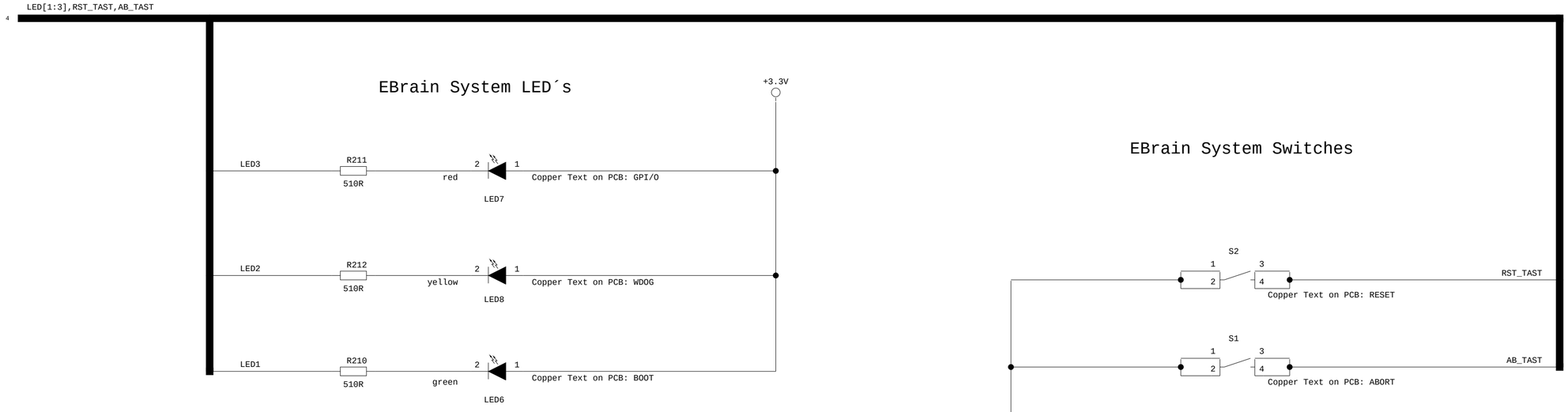
TITLE: EBC1	MODULAR COMPUTERS	
IND: 00/2 PCB-ID: 31.234-1010.1		
FUNC: Misceallany Power	RELEASED	ENG.
FILE: POWER	VERIFIED	ENG.
PAGE: 34 OF 36	CREATED: 10.2003	ENG. BN/JM

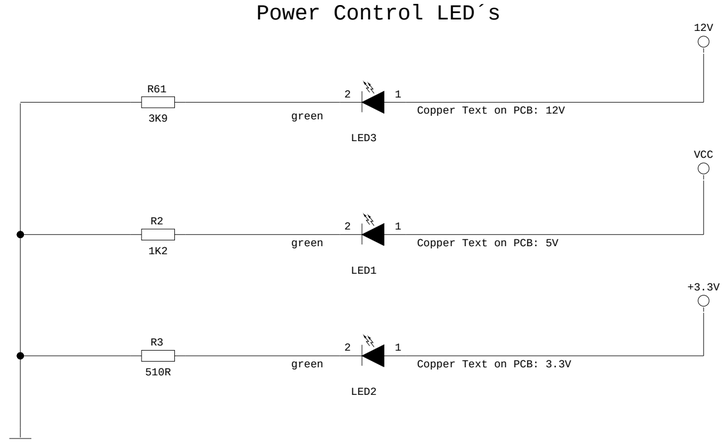
ATMEL Logic Programming

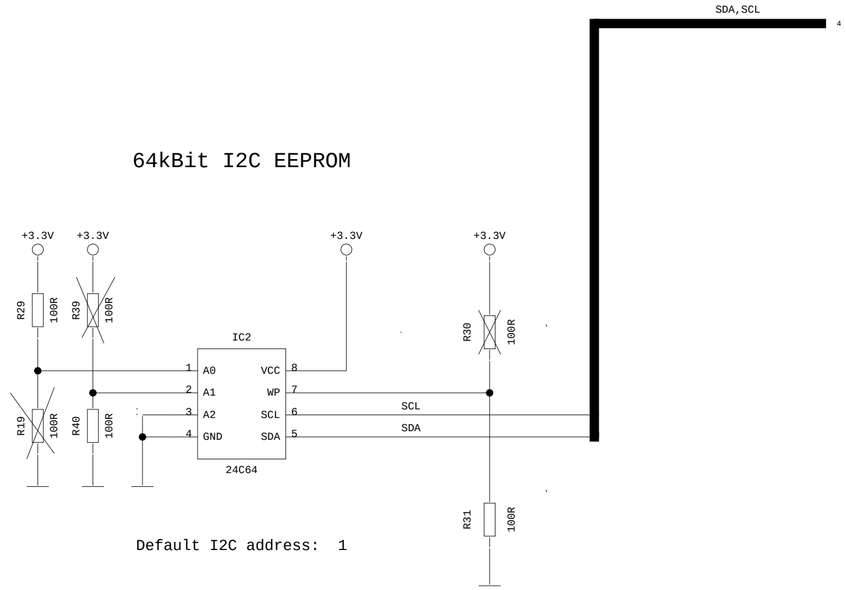


TITLE: EBC1		MODULAR COMPUTERS
IND: 00/2 PCB-ID: 31.234-1010.1		
FUNC.: Logic Programming	RELEASED	ENG.
FILE: LOGIC_PROG	VERIFIED	ENG.
PAGE: 35 OF 36	CREATED: 10.2003	ENG.: BN/JM

Monitor and Control Utilities







TITLE: EBC1		MODULAR COMPUTERS	
IND: 00/2	PCB-ID: 31.234-1010.1		
FUNC.: Miscellany		RELEASED	ENG.
FILE: MISCELLANY		VERIFIED	ENG.
PAGE: 36 OF 36		CREATED: 10.2003	ENG.: BN/JM