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CPU, Reset, oscillators.

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Ethernet interface

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NAND flash

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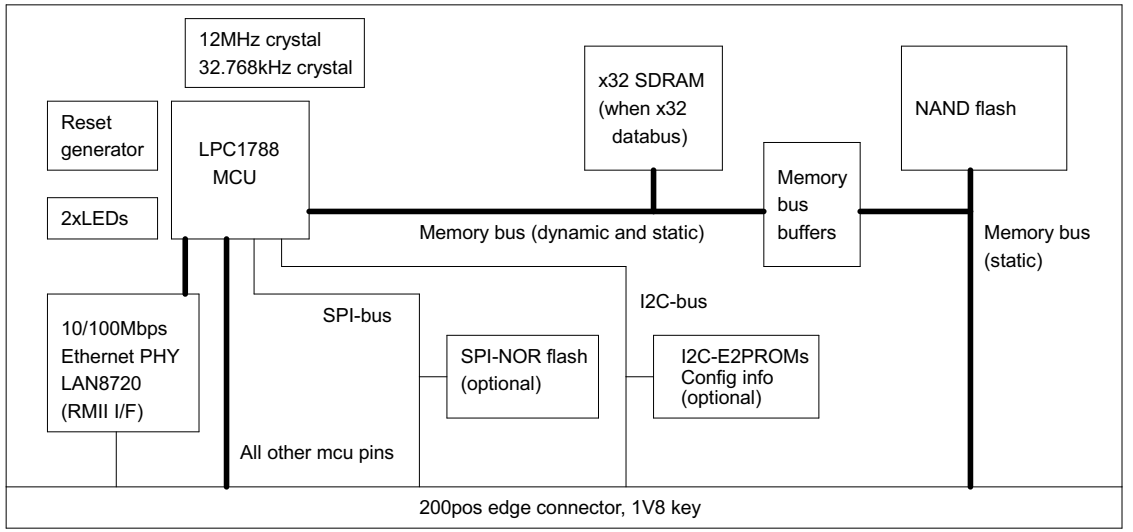
LEDs and configuration I2C-E2PROM

Page 9

SODIMM edge connector



UL = UnLoaded = normally not mounted component.

Default jumper settings are indicated in the schematic. However, always check jumper positions on actual boards since there is no guarantee that all jumpers are in default place.

Rev E

Removed X1/X2. U18 not mounted. Removed x16 databus.
Removed uSD interface, U5/U7, TP1/TP2/TP4/TP5.
Remove R7-R19, R21, RN9-RN12. SJ5 mounted in 1-2 pos.

Rev D

Changed Ethernet PHY reset to RESET_IN.
Changed C35 to 470pF and R38 to 2K.

Rev B-C

Update which components that are mounted.
Layout updates.

Rev A

First revision

Embedded Artists

(C) Embedded Artists AB

TITLE: LPC1788 OEM Board rev E

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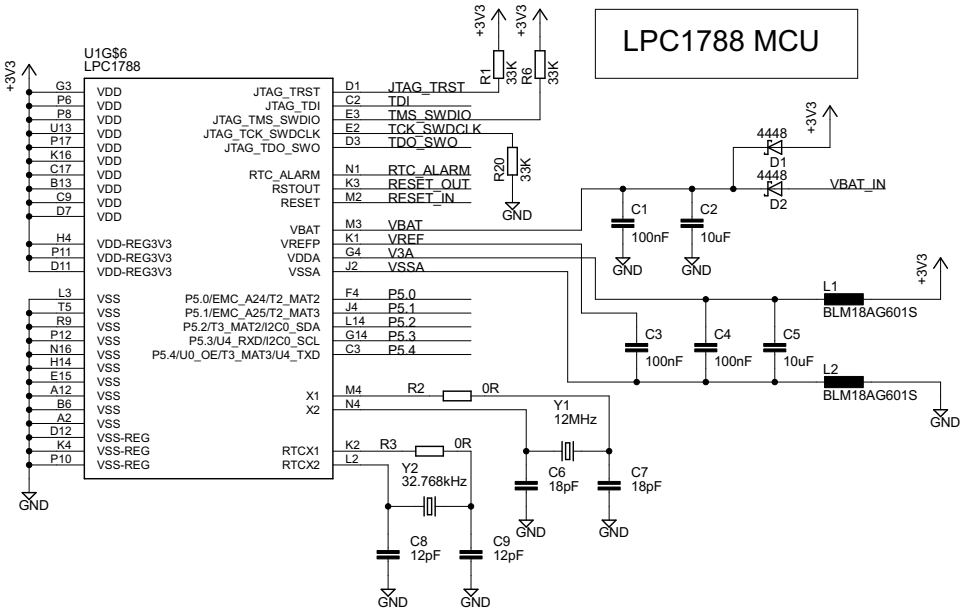
LPC1788 MCU



U1G$2
LPC1788

P1.0/ENET_TXD0/T3_CAP1/SSP2_SCK	A3 P1.0-RMII_TXD0
P1.1/ENET_TXD1/T3_MAT3/SSP2_MOSI	B5 P1.1-RMII_TXD1
P1.2/ENET_TXD2/SD_CLK/PWM0_1	D9 P1.2-MCICLK
P1.3/ENET_TXD3/SD_CMD/PWM0_2	A10 P1.3-MCICMD
P1.4/ENET_TX_EN/T3_MAT2/SSP2_MISO	A5 P1.4-RMII_TXEN
P1.5/ENET_TX_ER/SD_PWR/PWM0_3	A17 P1.5-MCIPWR
P1.6/ENET_TX_CLK/SD_DAT0/PWM0_4	B11 P1.6-MCIDAT0
P1.7/ENET_COL/SD_DAT1/PWM0_5	D14 P1.7-MCIDAT1
P1.8/ENET_CRS/T3_MAT1/SSP2_SSEL	C7 P1.8-RMII_CRS
P1.9/ENET_RXD0/T3_MAT0	A6 P1.9-RMII_RXD0
P1.10/ENET_RXD1/T3_CAP0	C8 P1.10-RMII_RXD1
P1.11/ENET_RXD2/SD_DAT2/PWM0_6	A14 P1.11-MCIDAT2
P1.12/ENET_RXD3/SD_DAT3/PWM0_CAP0	A16 P1.12-MCIDAT3
P1.13/ENET_RX_DV	D16 P1.13
P1.14/ENET_RX_ER/T2_CAP0	A7 P1.14-RMII_RXER
P1.15/ENET_RX_CLK/I2C2_SDA	A8 P1.15-RMII_CLK
P1.16/ENET_MDC/I2S_TX_MCLK	D10 P1.16-RMII_MCD
P1.17/ENET_MDIO/I2S_RX_MCLK	A9 P1.17-RMII_MDIO
P1.18/USB_UP_LED1/PWM1_1/T1_CAP0/SSP1_MISO	P7 P1.18
P1.19/USB_TX_E1/USB_PPWR1/T1_CAP1/MC_0A/SSP1_SCK/U2_OE	U6 P1.19
P1.20/USB_TX_DP1/PWM1_2/QEI_PHA/MC_FB0/SSP0_SCK/LCD_VD6/LCD_VD10	U7 P1.20
P1.21/USB_TX_DM1/PWM1_3/SSP0_SSEL/MC_ABORT/LCD_VD7/LCD_VD11	R8 P1.21
P1.22/USB_RCV1/USB_PWRD1/T1_MAT0/MC_0B/SSP1_MOSI/LCD_VD8/LCD_VD12	U8 P1.22
P1.23/USB_RX_DP1/PWM1_4/QEI_PHB/MC_FB1/SSP0_MISO/LCD_VD9/LCD_VD13	P9 P1.23
P1.24/USB_RX_DM1/PWM1_5/QEI_IDX/MC_FB2/SSP0_MOSI/LCD_VD10/LCD_VD14	T9 P1.24
P1.25/USB_LS1/USB_HSTEN1/T1_MAT1/MC_1A/CLKOUT/LCD_VD11/LCD_VD15	T10 P1.25
P1.26/USB_SSPND1/PWM1_6/T0_CAP0/MC_1B/SSP1_SSEL/LCD_VD12/LCD_VD20	R10 P1.26
P1.27/USB_INT1/USB_OVRCR1/T0_CAP1/CLKOUT/LCD_VD13/LCD_VD21	T12 P1.27
P1.28/USB_SCL1/PWM1_CAP0/T0_MAT0/MC_2A/SSP0_SSEL/LCD_VD14/LCD_VD22	T13 P1.28
P1.29/USB_SDA1/PWM1_CAP1/T0_MAT1/MC_2B/U4_TXD/LCD_VD15/LCD_VD23	U14 P1.29
P1.30/USB_PWRD2/USB_VBUS/ADC0_IN4/I2C0_SDA/U3_OE	P2 P1.30
P1.31/USB_OVRCR2/SSP1_SCK/ADC0_IN5/(I2C0_SCL	P1 P1.31

U1G$4
LPC1788

P3.0/EMC_D0	B4 P3.0-D0
P3.1/EMC_D1	B3 P3.1-D1
P3.2/EMC_D2	B1 P3.2-D2
P3.3/EMC_D3	E4 P3.3-D3
P3.4/EMC_D4	F2 P3.4-D4
P3.5/EMC_D5	G1 P3.5-D5
P3.6/EMC_D6	J1 P3.6-D6
P3.7/EMC_D7	L1 P3.7-D7
P3.8/EMC_D8	D8 P3.8-D8
P3.9/EMC_D9	C5 P3.9-D9
P3.10/EMC_D10	B2 P3.10-D10
P3.11/EMC_D11	D5 P3.11-D11
P3.12/EMC_D12	D4 P3.12-D12
P3.13/EMC_D13	C1 P3.13-D13
P3.14/EMC_D14	H2 P3.14-D14
P3.15/EMC_D15	M1 P3.15-D15
P3.16/EMC_D16/PWM0_1/U1_TXD	F17 P3.16-D16
P3.17/EMC_D17/PWM0_2/U1_RXD	F15 P3.17-D17
P3.18/EMC_D18/PWM0_3/U1_CTS	C15 P3.18-D18
P3.19/EMC_D19/PWM0_4/U1_DCD	B14 P3.19-D19
P3.20/EMC_D20/PWM0_5/U1_DSR	A13 P3.20-D20
P3.21/EMC_D21/PWM0_6/U1_DTR	C10 P3.21-D21
P3.22/EMC_D22/PWM0_CAP0/U1_RI	C6 P3.22-D22
P3.23/EMC_D23/PWM1_CAP0/T0_CAP0	T6 P3.23-D23
P3.24/EMC_D24/PWM1_1/T0_CAP1	R5 P3.24-D24
P3.25/EMC_D25/PWM1_2/T0_MAT0	U2 P3.25-D25
P3.26/EMC_D26/PWM1_3/T0_MAT1/STCLK	T3 P3.26-D26
P3.27/EMC_D27/PWM1_4/T1_CAP0	A1 P3.27-D27
P3.28/EMC_D28/PWM1_5/T1_CAP1	D2 P3.28-D28
P3.29/EMC_D29/PWM1_6/T1_MAT0	F3 P3.29-D29
P3.30/EMC_D30/U1_RTS/T1_MAT1	H3 P3.30-D30
P3.31/EMC_D31/T1_MAT2	J3 P3.31-D31

U1G$1
LPC1788

P0.0/CAN_RD1/U3_TXD/I2C1_SDA/U0_TXD	U15 P0.0
P0.1/CAN_TD1/U3_RXD/I2C1_SCL/U0_RXD	T14 P0.1
P0.2/U0_TXD/U3_TXD	C4 P0.2
P0.3/U0_RXD/U3_RXD	D6 P0.3
P0.4/I2S_RX_SCK/CAN_RD2/T2_CAP0/LCD_VD0	B12 P0.4
P0.5/I2S_RX_WS/CAN_TD2/T2_CAP1/LCD_VD1	C12 P0.5
P0.6/I2S_RX_SDA/SSP1_SSEL/T2_MAT0/U1_RTS/LCD_VD8	D13 P0.6
P0.7/I2S_TX_CLK/SSP1_SCK/T2_MAT1/LCD_VD9	C13 P0.7
P0.8/I2S_TX_WS/SSP1_MISO/T2_MAT2/LCD_VD16	A15 P0.8
P0.9/I2S_TX_SDA/SSP1_MOSI/T3_MAT3/LCD_VD17	C14 P0.9
P0.10/U2_TXD/I2C2_SDA/T3_MAT0	T15 P0.10
P0.11/U2_RXD/I2C2_SCL/T3_MAT1	R14 P0.11
P0.12/USB_PPWR2/SSP1_MISO/ADC0_IN6	R1 P0.12
P0.13/USB_UP_LED2/SSP1_MOSI/ADC0_IN7	R2 P0.13
P0.14/USB_HSTEN2/SSP1_SSEL/USB_CONNECT2	T7 P0.14
P0.15/U1_TXD/SSP0_SCK	J16 P0.15-SSP0_SCK
P0.16/U1_RXD/SSP0_SSEL	J14 P0.16-SSP0_SSEL
P0.17/U1_CTS/SSP0_MISO	K17 P0.17-SSP0_MISO
P0.18/U1_DCD/SSP0_MOSI	K15 P0.18-SSP0_MOSI
P0.19/U1_DSR/SD_CLK/I2C1_SDA	L17 P0.19
P0.20/U1_DTR/SD_CMD/I2C1_SCL	M17 P0.20
P0.21/U1_RI/SP_PWR/U4_OE/CAN_RD1	M16 P0.21
P0.22/U1_RTS/SD_DAT0/U4_TXD/CAN_TD1	N17 P0.22
P0.23/ADC0_IN0/I2S_RX_CLK/T3_CAP0	H1 P0.23
P0.24/ADC0_IN1/I2S_RX_WS/T3_CAP1	G2 P0.24
P0.25/ADC0_IN2/I2S_RX_SDA/U3_TXD	F1 P0.25
P0.26/ADC0_IN3/DAC_OUT/U3_RXD	E1 P0.26
P0.27/I2C0_SDA/USB_SDA1	T1 P0.27-SDA0
P0.28/I2C0_SCL/USB_SCL1	R3 P0.28-SCL0
P0.29/USB_D+1/EINT_0	U4 P0.29-USB_D+1
P0.30/USB_D-1/EINT_1	R6 P0.30-USB_D-1
P0.31/USB_D+2	T2 P0.31-USB_D+2
USB_D-2	U1 USB_D-2

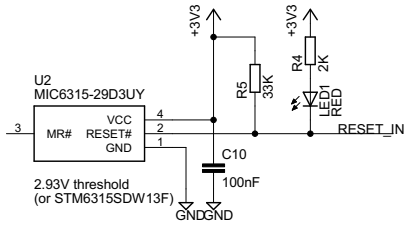
U1G$3
LPC1788

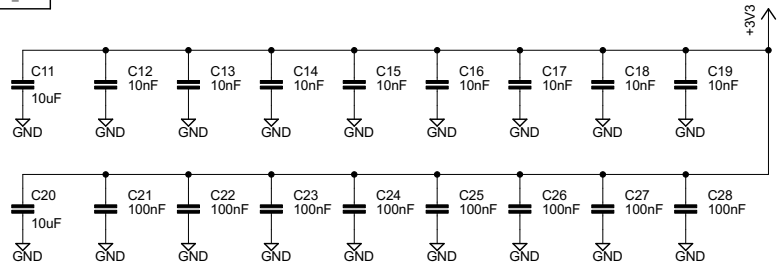
P2.0/PWM1_1/U1_TXD/LCD_PWR	B17 P2.0
P2.1/PWM1_2/U1_RXD/LCD_LE	E14 P2.1
P2.2/PWM1_3/U1_CTS/T2_MAT3/TRACEDATA3/LCD_DCLK	D15 P2.2-TRACEDATA3
P2.3/PWM1_4/U1_DCD/T2_MAP2/TRACEDATA2/LCD_FP	E16 P2.3-TRACEDATA2
P2.4/PWM1_5/U1_DSR/T2_MAT1/TRACEDATA1/LCD_ENAB_M	D17 P2.4-TRACEDATA1
P2.5/PWM1_6/U1_DTR/T2_MAT0/TRACEDATA0/LCD_LP	F16 P2.5-TRACEDATA0
P2.6/PWM1_CAP0/U1_RI/T2_CAP0/U2_OE/TRACECLK/LCD_VD0/LCD_VD4	E17 P2.6-TRACECLK
P2.7/CAN_RD2/U1_RTS/LCD_VD1/LCD_VD5	G16 P2.7
P2.8/CAN_TD2/U2_TXD/U1_CTS/ENET_MDC/LCD_VD2/LCD_VD6	H15 P2.8
P2.9/USB_CONNECT1/U2_RXD/U4_RXD/ENET_MDIO/LCD_VD3/LCD_VD7	H16 P2.9
P2.10/EINT0/NMI	N15 P2.10
P2.11/EINT1/SD_DAT1/I2S_TX_CLK/LCD_CLKIN	T17 P2.11
P2.12/EINT2/SD_DAT2/I2S_TX_WS/LCD_VD4/3/8/18	N14 P2.12
P2.13/EINT3/SD_DAT3/I2S_TX_SDA/LCD_VD5/9/19	T16 P2.13
P2.14/EMC_CS2/I2C1_SDA/T2_CAP0	R12 P2.14-CS2
P2.15/EMC_CS3/I2C1_SCL/T2_CAP1	P13 P2.15-CS3
P2.16/EMC_CAS	R11 P2.16-CAS
P2.17/EMC_RAS	R13 P2.17-RAS
P2.18/EMC_CLK0	U3 P2.18-CLKOUT0
P2.19/EMC_CLK1	R7 P2.19
P2.20/EMC_DYCS0	T8 P2.20-DYCS0
P2.21/EMC_DYCS1	U11 P2.21
P2.22/EMC_DYCS2/SSP0_SCK/T3_CAP0	U12 P2.22
P2.23/EMC_DYCS3/SSP0_SSEL/T3_CAP1	U5 P2.23
P2.24/EMC_CKE0	P5 P2.24-CKE0
P2.25/EMC_CKE1	R4 P2.25
P2.26/EMC_CKE2/SSP0_MISO/T3_MAT0	T4 P2.26
P2.27/EMC_CKE3/SSP0_MOSI/T3_MAT1	P3 P2.27
P2.28/EMC_DQM0	P4 P2.28-DQM0
P2.29/EMC_DQM1	N3 P2.29-DQM1
P2.30/EMC_DQM2/I2C2_SDA/T3_MAT2	L4 P2.30-DQM2
P2.31/EMC_DQM3/I2C2_SCL/T3_MAT3	N2 P2.31-DQM3

U1G$5
LPC1788

P4.0/EMC_A0	U9 P4.0-A0
P4.1/EMC_A1	U10 P4.1-A1
P4.2/EMC_A2	T11 P4.2-A2
P4.3/EMC_A3	U16 P4.3-A3
P4.4/EMC_A4	R15 P4.4-A4
P4.5/EMC_A5	R16 P4.5-A5
P4.6/EMC_A6	M14 P4.6-A6
P4.7/EMC_A7	L16 P4.7-A7
P4.8/EMC_A8	J17 P4.8-A8
P4.9/EMC_A9	H17 P4.9-A9
P4.10/EMC_A10	G17 P4.10-A10
P4.11/EMC_A11	F14 P4.11-A11
P4.12/EMC_A12	C16 P4.12-A12
P4.13/EMC_A13	B16 P4.13-A13
P4.14/EMC_A14	B15 P4.14-A14
P4.15/EMC_A15	A11 P4.15-A15
P4.16/EMC_A16	U17 P4.16-A16
P4.17/EMC_A17	P14 P4.17-A17
P4.18/EMC_A18	P15 P4.18-A18
P4.19/EMC_A19	P16 P4.19-A19
P4.20/EMC_A20/I2C2_SDA/SSP1_SCK	R17 P4.20-A20
P4.21/EMC_A21/I2C2_SCL/SSP1_SSEL	M15 P4.21-A21
P4.22/EMC_A22/U2_TXD/SSP1_MISO	K14 P4.22-A22
P4.23/EMC_A23/U2_RXD/SSP1_MOSI	J15 P4.23-A23
P4.24/EMC_OE	B8 P4.24-OE
P4.25/EMC_WE	B9 P4.25-WE
P4.26/EMC_BLS0	L15 P4.26-BLS0
P4.27/EMC_BLS1	G15 P4.27-BLS1
P4.28/EMC_BLS2/U3_TXD/T2_MAT0/LCD_VD6/10/2	C11 P4.28-BLS2
P4.29/EMC_BLS3/U3_RXD/T2_MAT1/I2C2_SCL/LCD_VD7/11/3	B10 P4.29-BLS3
P4.30/EMC_CS0	B7 P4.30-CS0
P4.31/EMC_CS1	A4 P4.31-CS1

Reset generation





Place at U1, pin G3, P6, P8, U13, P17, K16, C17, B13, C9, D7, H4, P11, D11

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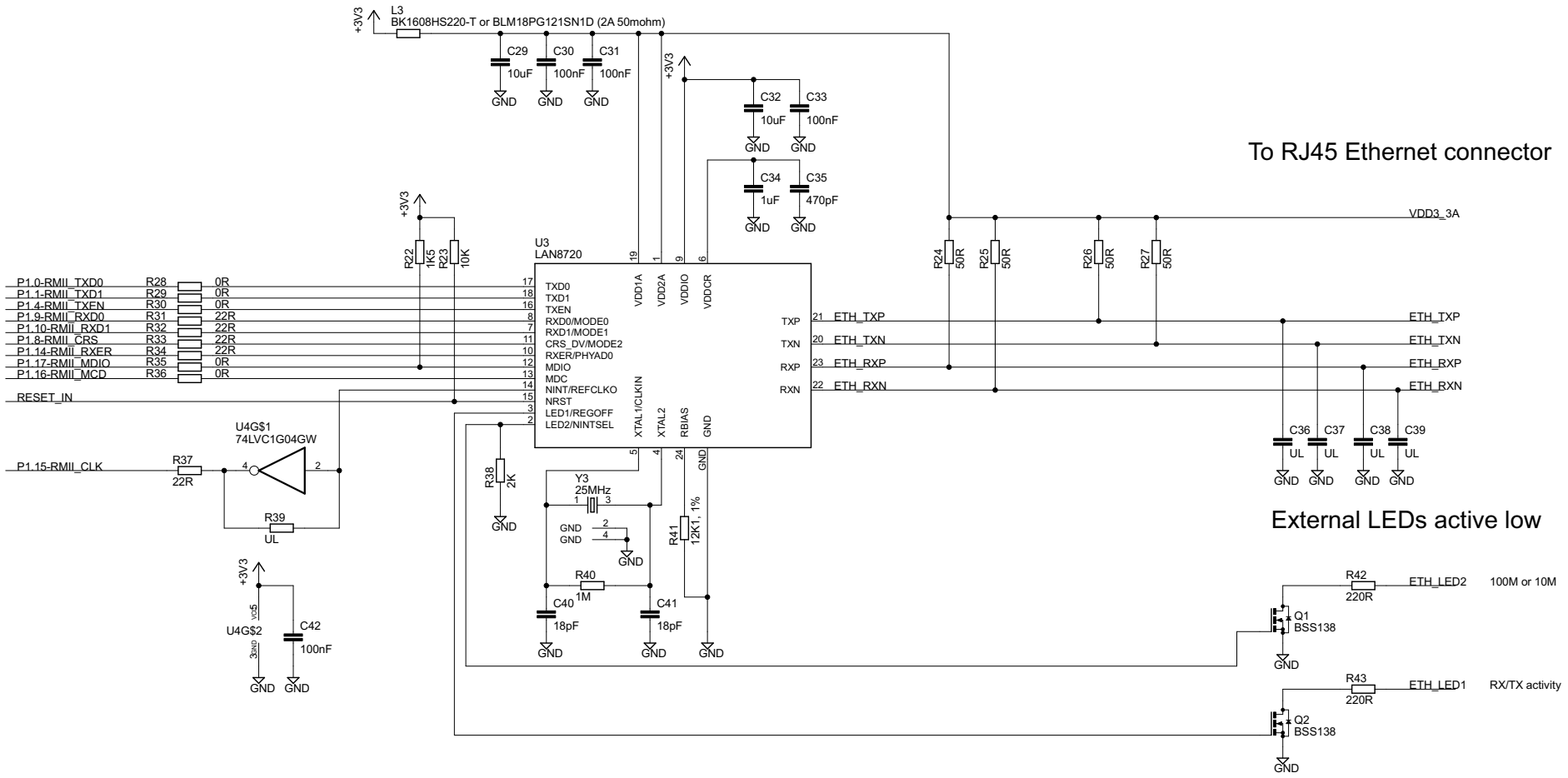
100/10M Ethernet PHY (via RMII interface)



To RJ45 Ethernet connector

External LEDs active low

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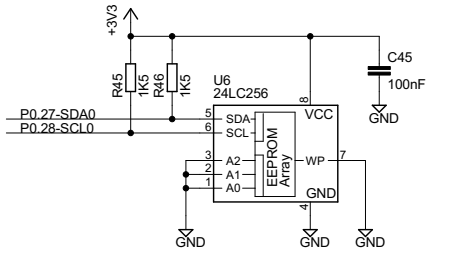
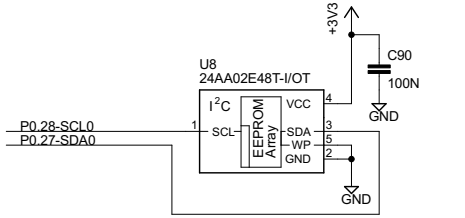
Serial memories (I2C-E2PROM)

256kbit EEPROM



I2C address (0xA0/0xA1): 1.0.1.0.0.0.0.RW

1Kbit I2C-E2PROM with EUI-48



I2C address (0xA0/0xA1): 1.0.1.0.0.0.0.RW

Not mounted

(C) Embedded Artists AB

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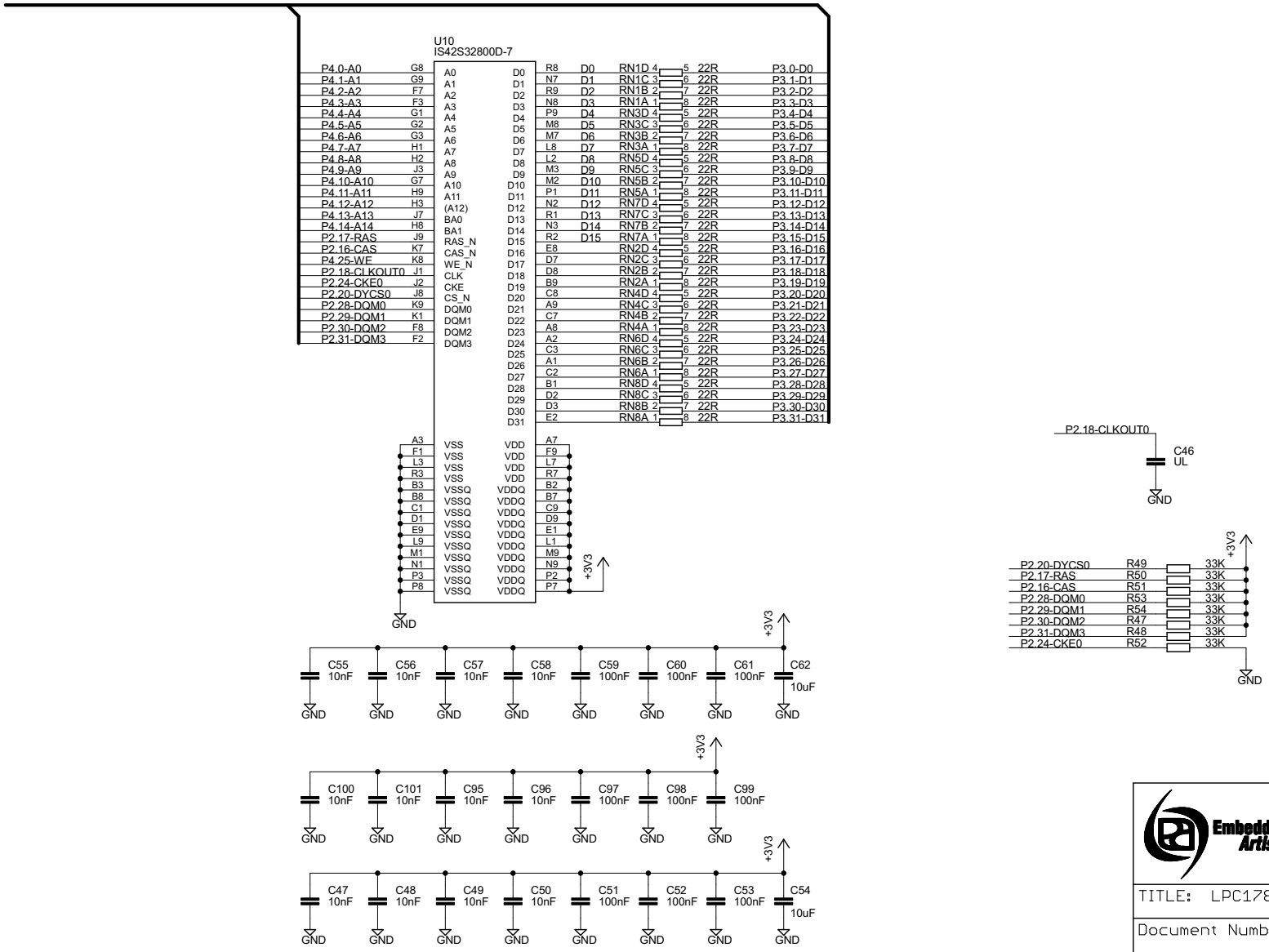
SDRAM

256Mbit (32MByte) SDRAM
(DYCS0 = 0xA000 0000 - 0xAFFF FFFF)



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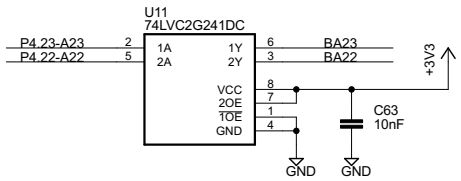
TITLE: LPC1788 OEM Board rev E

Document Number:

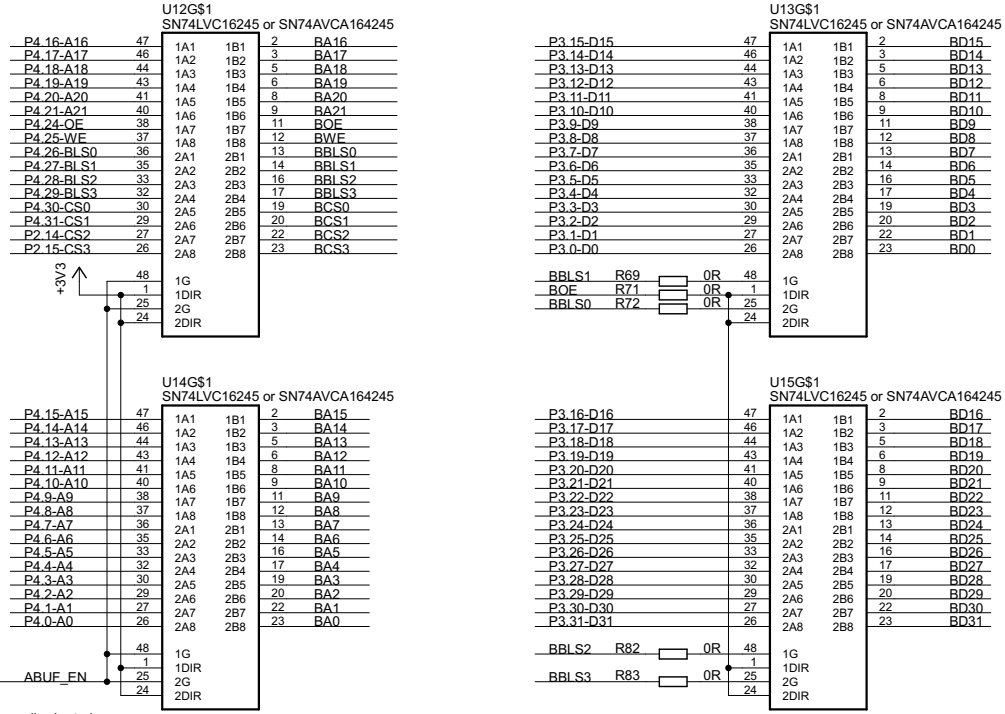
Date: not saved! Sheet: 5/9

Buffers for external memory bus

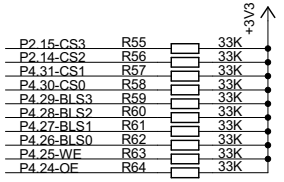
Address and Control Buffers



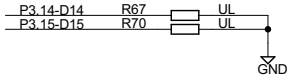
Databus Buffers

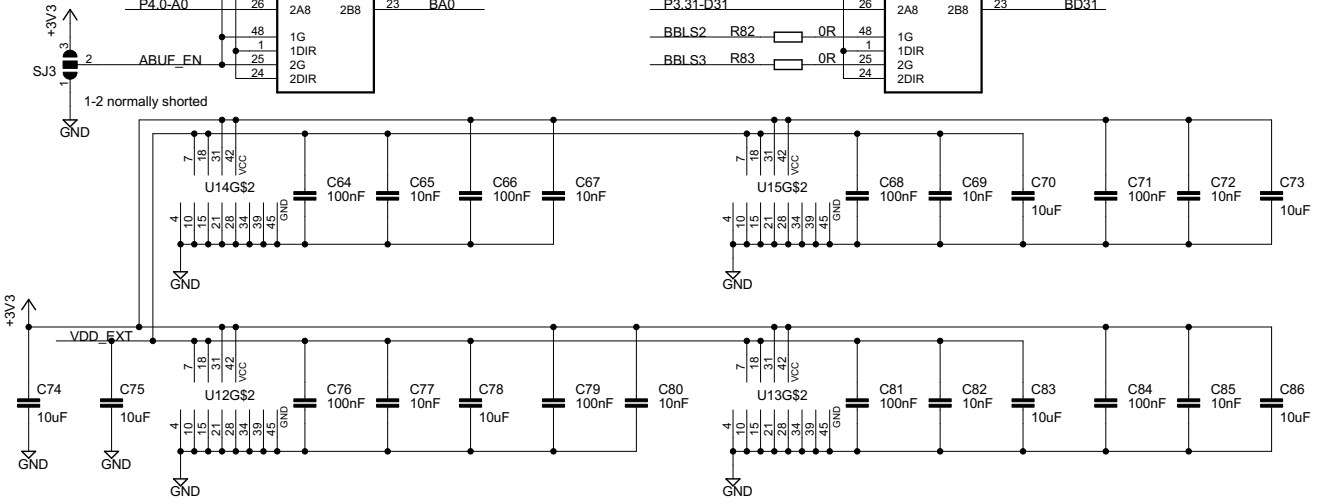


Pullups



Boot control (not used)





Buffered bus for static memories:

CS0 = 0x8000 0000 - 0x83FF FFFF
CS1 = 0x9000 0000 - 0x93FF FFFF
CS2 = 0x9800 0000 - 0x9BFF FFFF
CS3 = 0x9C00 0000 - 0x9FFF FFFF

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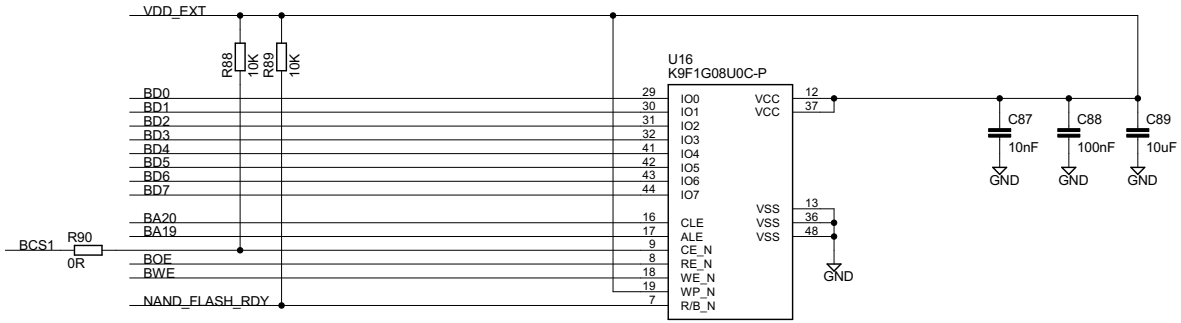
NAND Flash memory (on buffered bus)

1Gbit (128MByte) NAND FLASH
(CS1 = 0x9000 0000 - 0x93FF FFFF)



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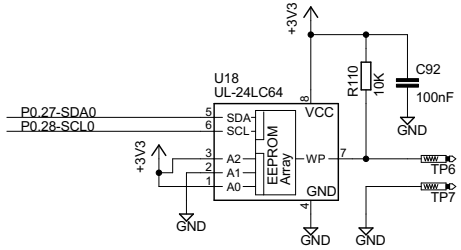
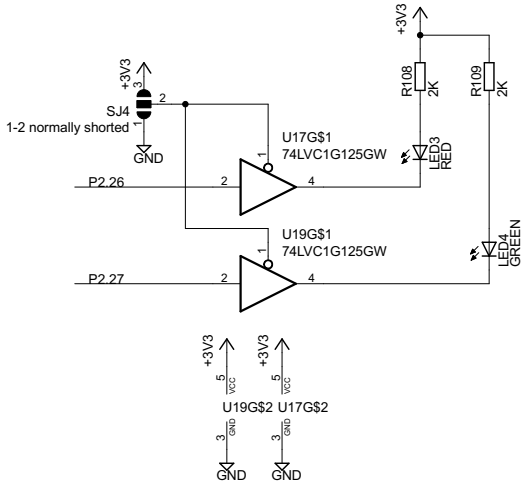
Configuration I2C-E2PROM and LEDs

64kbit Configuration EEPROM
(write protected, currently not mounted)



I2C address (0xAA/0xAB): 1.0.1.0.1.0.1.RW

LEDs



Embedded Artists
(C) Embedded Artists AB

TITLE: LPC1788 OEM Board rev E

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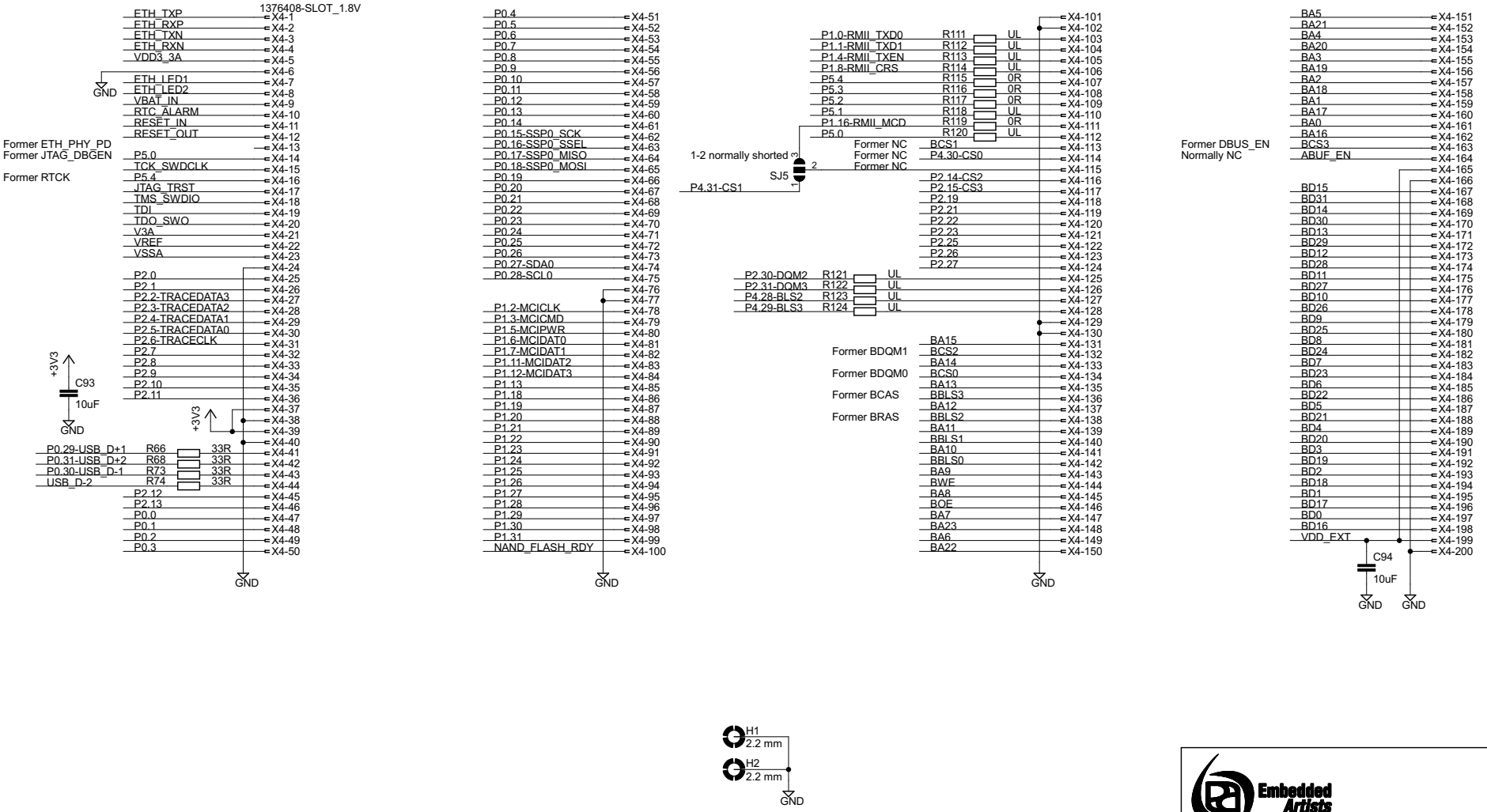
Date: not saved! | Sheet: 8/9

Expansion Connector (SODIMM Edge Connector)



(C) Embedded Artists AB

TITLE: LPC1788 OEM Board rev E

Document Number:

Date: not saved! Sheet: 9/9