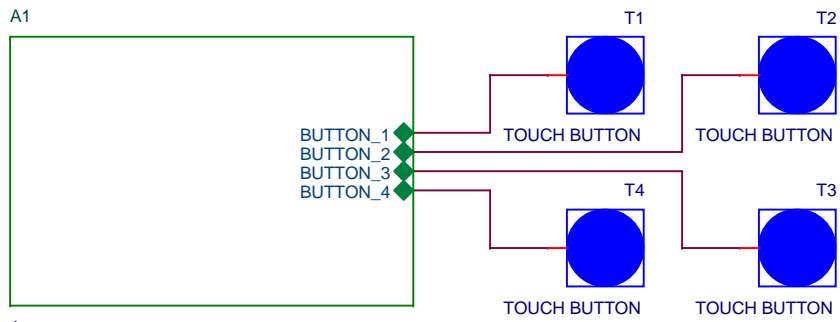




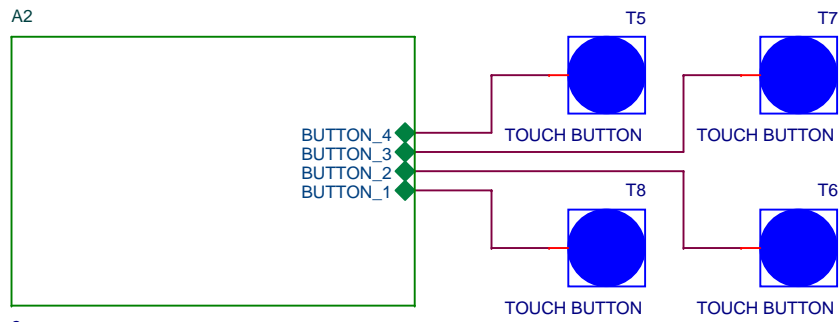
| Board Function | Page |
|-------------------------|------|
| Front Page | 1 |
| EFM32 Captouch | 2 |
| EFM32 Captouch Variants | 3 |
| | |

| Rev. | Comment |
|------|---|
| A00 | Initial release |
| A01 | Changes buzzer reference to BZ Swapped LED_3 and LED_4 |
| A02 | Updated some BOM details Set serial and AEM connectors to NM |
| | |

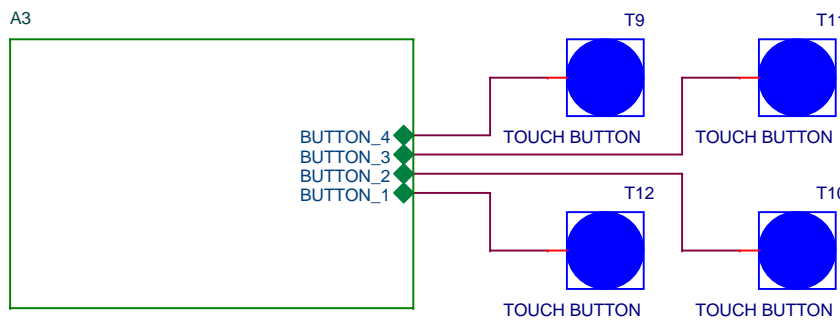
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|--|----------------------------|--|--|
| | | Schematic Title | |
| | | BRD9003A - Captouch Test Board | |
| | | Page Title | |
| | | Front Page | |
| Designed: AG | | Approved: AG | |
| Size A3 | BOM Doc No: <Cage Code> | Document number BRD9003A | Revision A02 |
| Design Created Date: Wednesday, December 03, 2008 | | Sheet Created Date Tuesday, February 17, 2009 | Sheet Modified Date Friday, November 11, 2011 |
| | | Sheet 1 of 10 | |



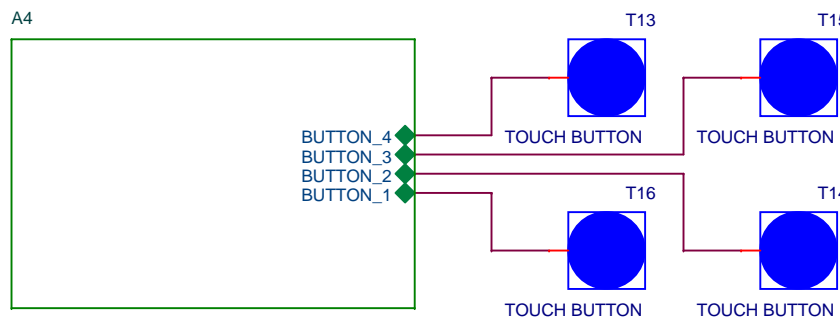
| | |
|----------------|--------|
| Size D: | 10 mm |
| GND type: | Hatch |
| Annular gap A: | 3 mm |
| Hatch trace: | 0.3 mm |
| Hatch space: | 5 mm |



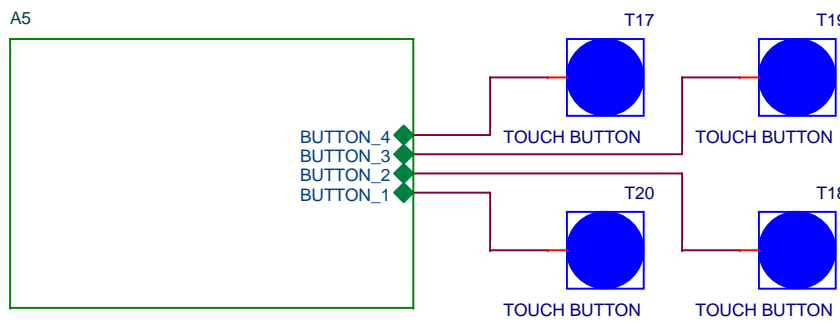
| | |
|----------------|--------|
| Size D: | 15 mm |
| GND type: | Hatch |
| Annular gap A: | 3 mm |
| Hatch trace: | 0.3 mm |
| Hatch space: | 5 mm |



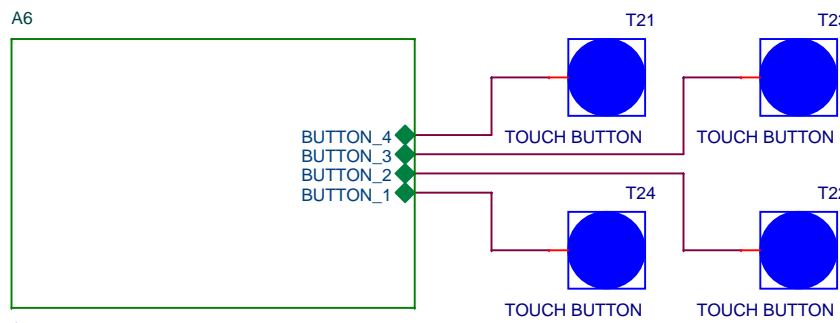
| | |
|----------------|--------|
| Size D: | 20 mm |
| GND type: | Hatch |
| Annular gap A: | 3 mm |
| Hatch trace: | 0.3 mm |
| Hatch space: | 5 mm |



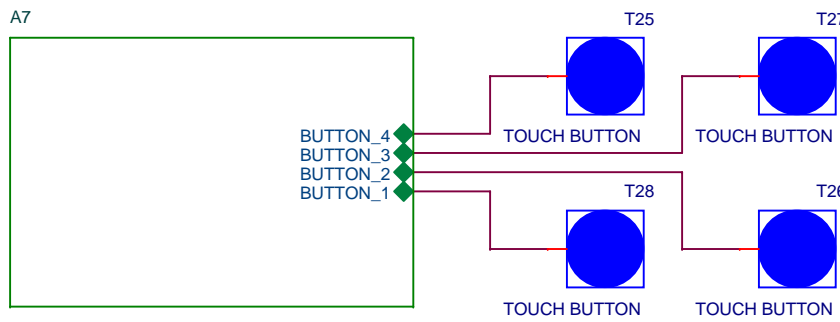
| | |
|-----------------|-------|
| Size D: | 15 mm |
| GND type: | Ring |
| Annular gap A: | 3 mm |
| Ring thickness: | 3 mm |



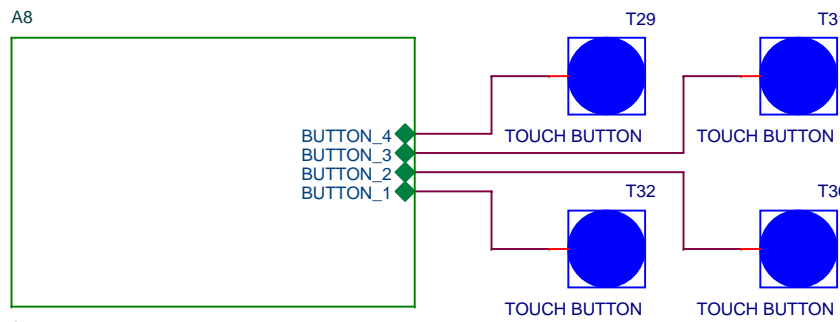
| | |
|----------------|-------|
| Size D: | 10 mm |
| GND type: | None |
| Annular gap A: | |
| Hatch trace: | |
| Hatch space: | |



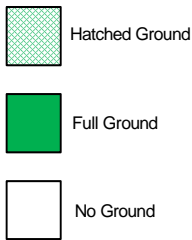
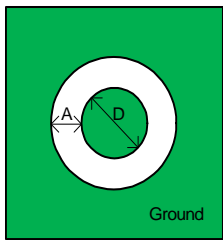
| | |
|----------------|-------|
| Size D: | 15 mm |
| GND type: | None |
| Annular gap A: | |
| Hatch trace: | |
| Hatch space: | |



| | |
|----------------|-------|
| Size D: | 20 mm |
| GND type: | None |
| Annular gap A: | |
| Hatch trace: | |
| Hatch space: | |



| | |
|----------------|--------|
| Size D: | 15 mm |
| GND type: | Hatch |
| Annular gap A: | 6 mm |
| Hatch trace: | 0.3 mm |
| Hatch space: | 5 mm |



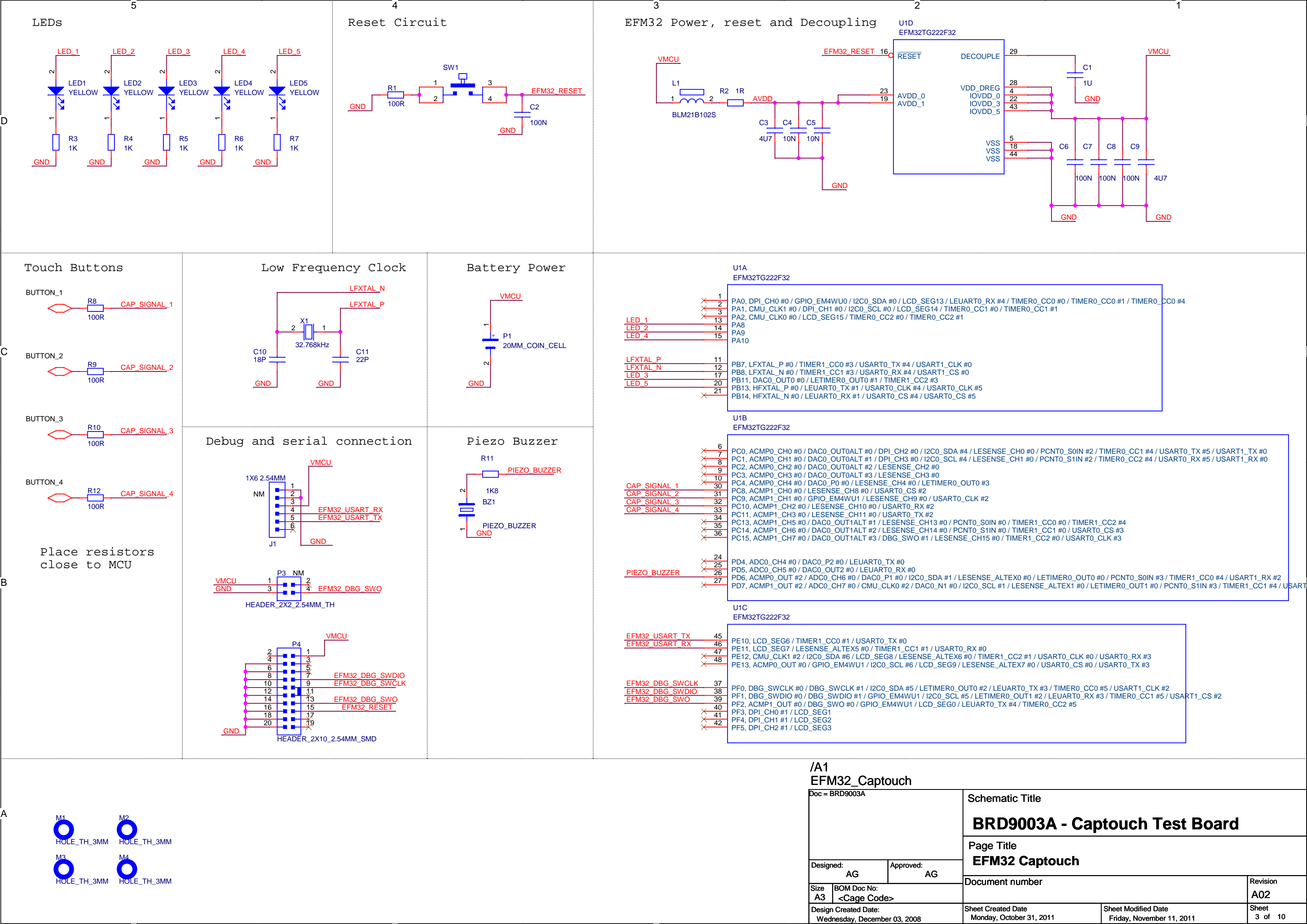
Space between buttons, center to center: 30 mm

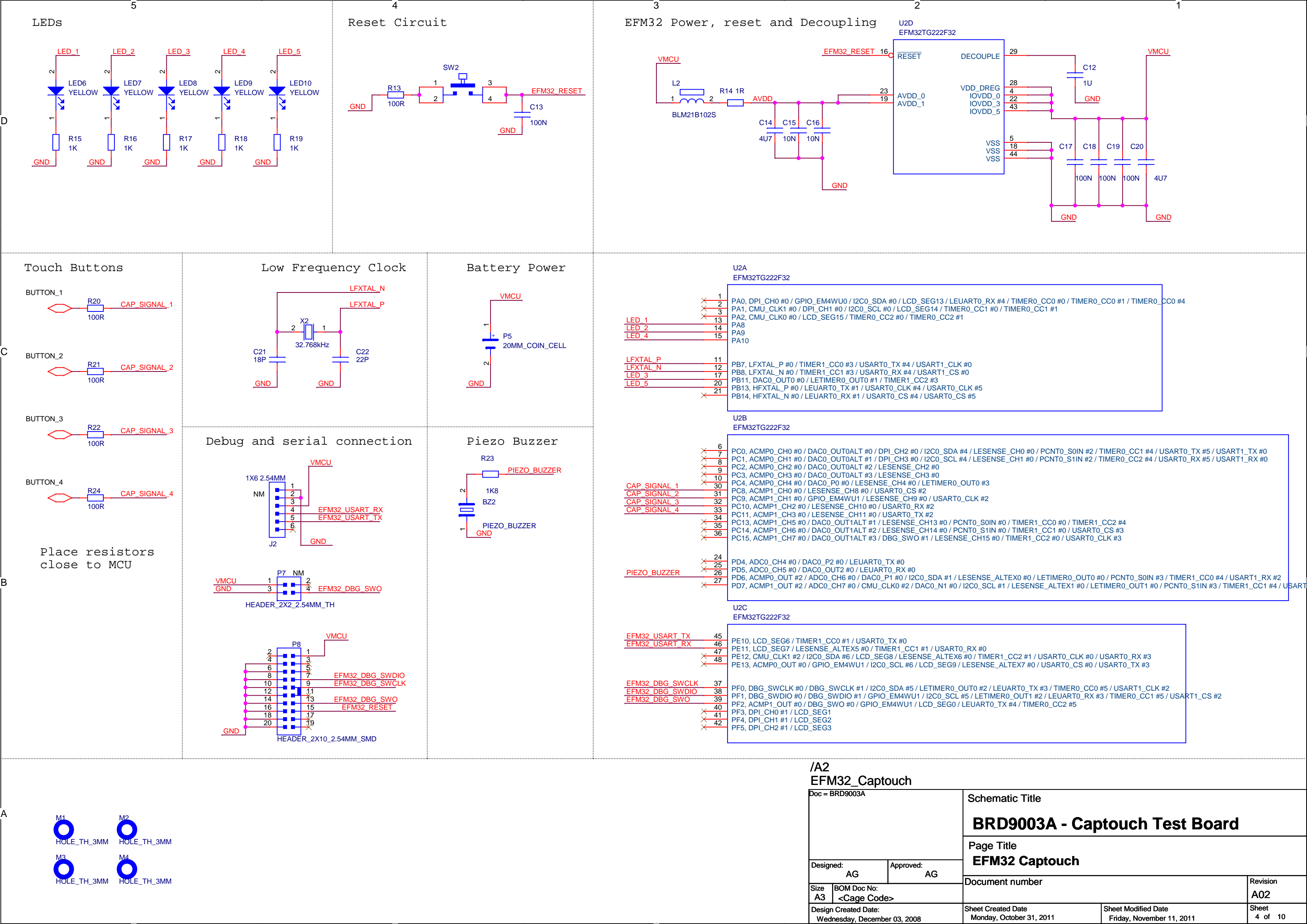
Ground and buttons on top layer, no ground on other layers in the touch-sone of the board.

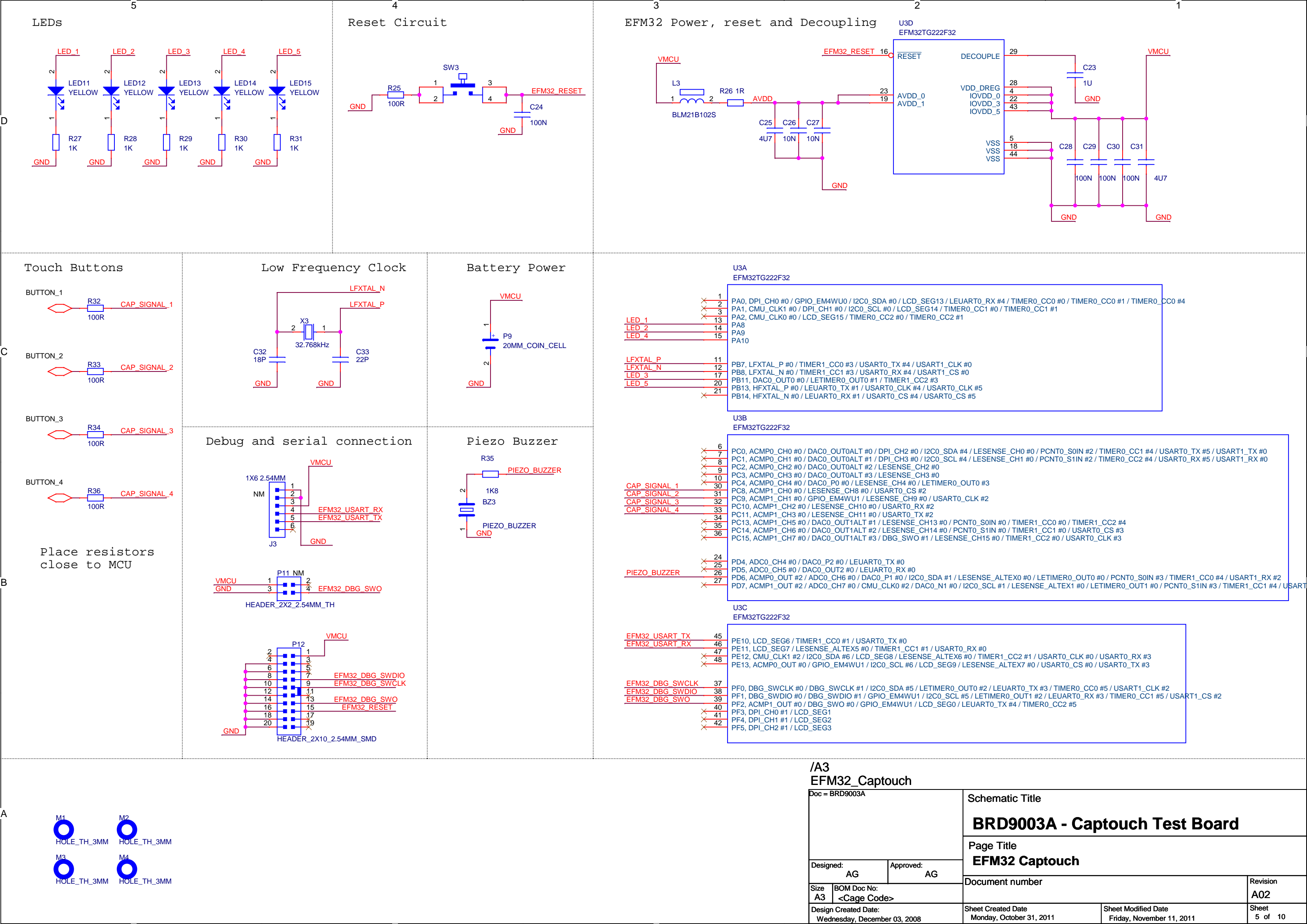
Keep touch traces as thin as possible, on the other side of the pcb and at least 1 mm apart from each other.

TOP

| | | | | |
|---|--|---|--|---------------|
| BRD9003A | | Schematic Title | | |
| | | BRD9003A - Captouch Test Board | | |
| | | Page Title | | |
| | | EFM32 Captouch Variants | | |
| Designed: AG | | Approved: AG | | Revision |
| Size A3 | | BOM Doc No: <Cage Code> | | A02 |
| Design Created Date: Wednesday, December 03, 2008 | | Sheet Created Date: Tuesday, October 25, 2011 | Sheet Modified Date: Friday, November 11, 2011 | Sheet 2 of 10 |








D

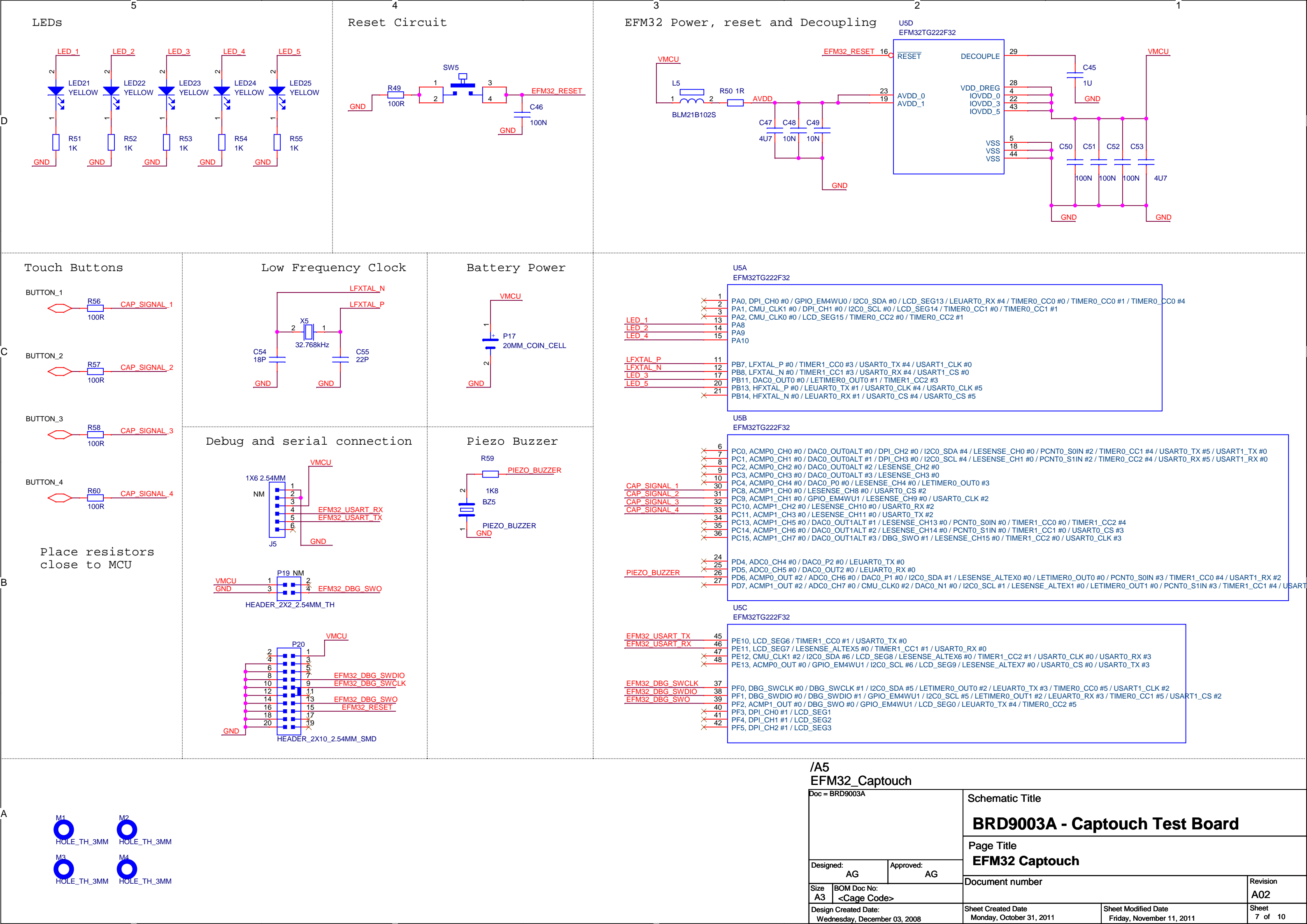


B



| U4C | | |
|------------------------|---------------|--|
| EFM32TG222F32 | | |
| <u>EFM32_USART_TX</u> | 45 | PE10, LCD_SEG6 / TIMER1_CC0 #1 / USART0_TX #0 |
| <u>EFM32_USART_RX</u> | 46 | PE11, LCD_SEG7 / LESENSE_ALTEX5 #0 / TIMER1_CC1 #1 / USART0_RX #0 |
| 47 | 47 | PE12, CMU_CLK1 #2 / I2C0_SDA #6 / LCD_SEG8 / LESENSE_ALTEX6 #0 / TIMER1_CC2 #1 / USART0_CLK #0 / USART0_RX #3 |
| 48 | 48 | PE13, ACMP0_OUT #0 / GPIO_EM4WU1 / I2C0_SCL #6 / LCD_SEG9 / LESENSE_ALTEX7 #0 / USART0_CS #0 / USART0_TX #3 |
| <u>EFM32_DBG_SWCLK</u> | 37 | PF0, DBG_SWCLK #0 / DBG_SWCLK #1 / I2C0_SDA #5 / LETIMER0_OUT0 #2 / LEUART0_TX #3 / TIMER0_CC0 #5 / USART1_CLK #2 |
| <u>EFM32_DBG_SWDIO</u> | 38 | PF1, DBG_SWDIO #0 / DBG_SWDIO #1 / GPIO_EM4WU1 / I2C0_SCL #5 / LETIMER0_OUT1 #2 / LEUART0_RX #3 / TIMER0_CC1 #5 / USART1_CS #2 |
| <u>EFM32_DBG_SWO</u> | 39 | PF2, ACMP1_OUT #0 / DBG_SWO #0 / GPIO_EM4WU1 / LCD_SEG0 / LEUART0_TX #4 / TIMER0_CC2 #5 |
| 40 | 40 | PF3, DPI_CH0 #1 / LCD_SEG1 |
| 41 | 41 | PF4, DPI_CH1 #1 / LCD_SEG2 |
| 42 | 42 | PF5, DPI_CH2 #1 / LCD_SEG3 |

| | | | |
|--|----------------------------|--|--|
| Doc = BRD9003A | | Schematic Title BRD9003A - Captouch Test Board | |
| | | Page Title EFM32 Captouch | |
| | | Designated: AG Approved: AG | |
| Size A3 | BOM Doc No: <Cage Code> | Document number | Revision A02 |
| Design Created Date: Wednesday, December 03, 2008 | | Sheet Created Date Monday, October 31, 2011 | Sheet Modified Date Friday, November 11, 2011 |
| | | | Sheet 6 of 10 |



D

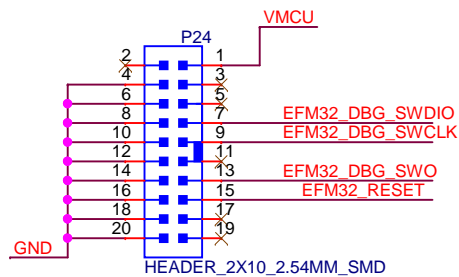
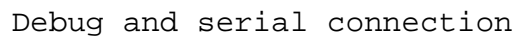


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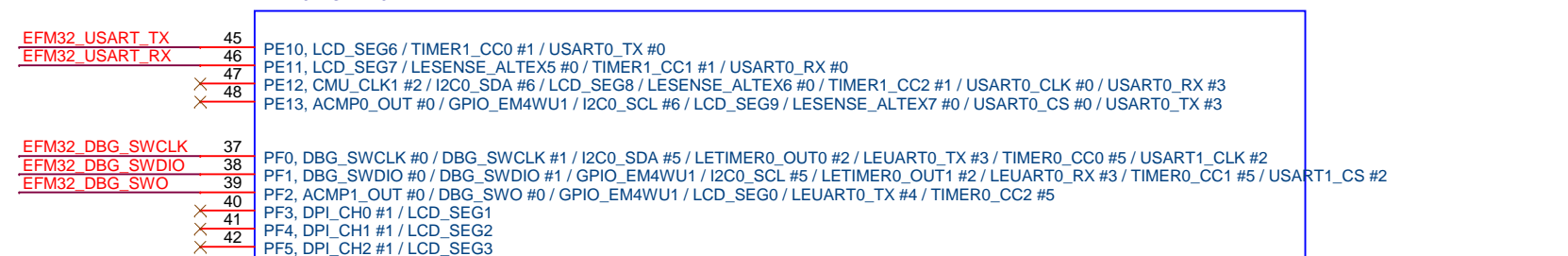


Diagram showing four holes labeled M1, M2, M3, and M4, each with a dimension of HOLE_TH_3MM.

| LFXTAL_N | LFXTAL_N |
|----------|----------|
| 1 | 1 |
| 2 | 2 |
| 3 | 3 |
| 4 | 4 |
| 5 | 5 |
| 6 | 6 |
| 7 | 7 |
| 8 | 8 |
| 9 | 9 |
| 10 | 10 |
| 11 | 11 |
| 12 | 12 |
| 13 | 13 |
| 14 | 14 |
| 15 | 15 |
| 16 | 16 |
| 17 | 17 |
| 18 | 18 |
| 19 | 19 |
| 20 | 20 |
| 21 | 21 |
| 22 | 22 |
| 23 | 23 |
| 24 | 24 |
| 25 | 25 |
| 26 | 26 |
| 27 | 27 |
| 28 | 28 |
| 29 | 29 |
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| 31 | 31 |
| 32 | 32 |
| 33 | 33 |
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| 40 | 40 |
| 41 | 41 |
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| 48 | 48 |
| 49 | 49 |
| 50 | 50 |
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| 52 | 52 |
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| 56 | 56 |
| 57 | 57 |
| 58 | 58 |
| 59 | 59 |
| 60 | 60 |
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| 66 | 66 |
| 67 | 67 |
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| 83 | 83 |
| 84 | 84 |
| 85 | 85 |
| 86 | 86 |
| 87 | 87 |
| 88 | 88 |
| 89 | 89 |
| 90 | 90 |
| 91 | 91 |
| 92 | 92 |
| 93 | 93 |
| 94 | 94 |
| 95 | 95 |
| 96 | 96 |
| 97 | 97 |
| 98 | 98 |
| 99 | 99 |
| 100 | 100 |

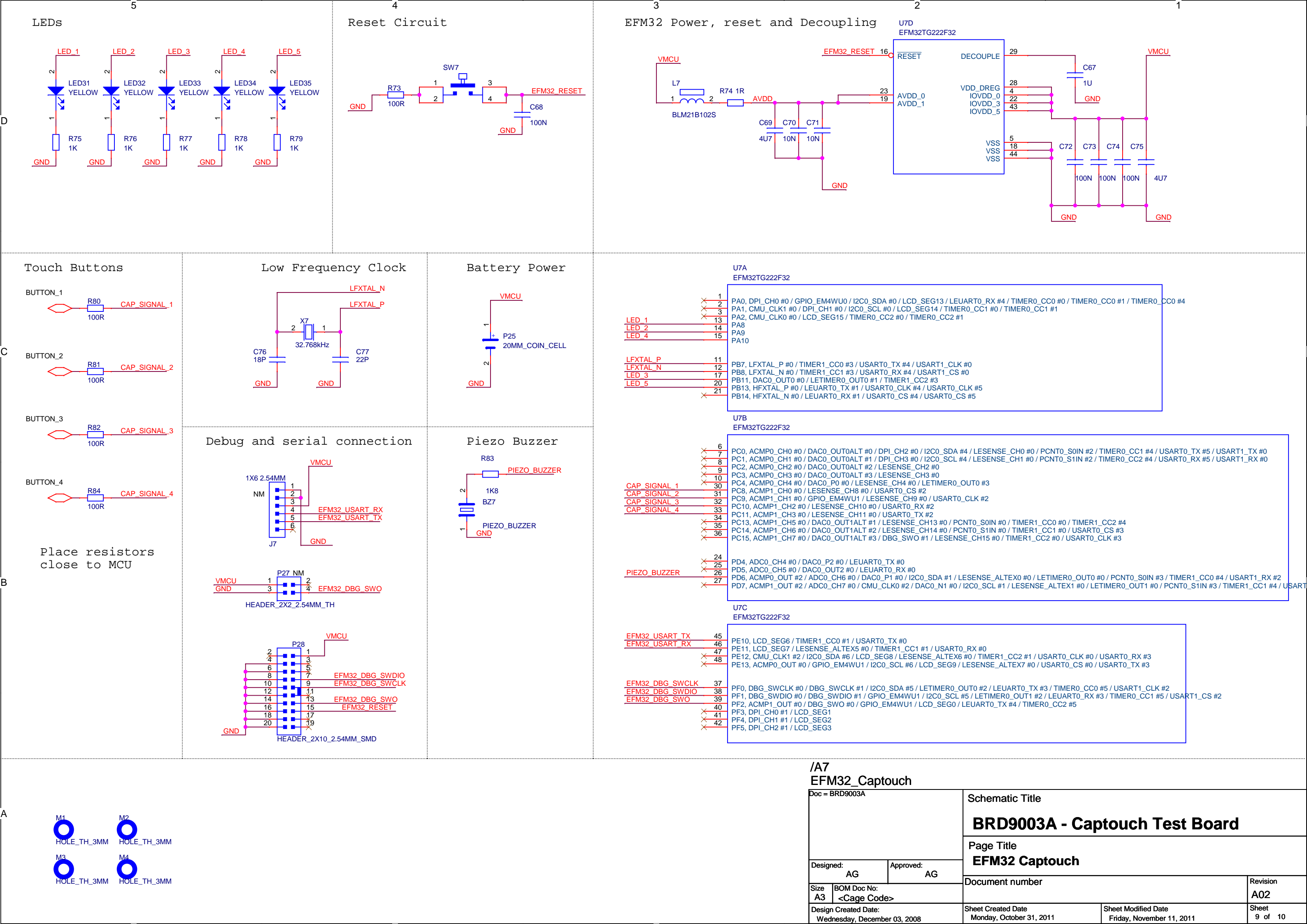


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| Doc = BRD9003A | Schematic Title |
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| Doc = BRD9003A | | Schematic Title | |
| | | BRD9003A - Captouch Test Board | |
| | | Page Title | |
| | | EFM32 Captouch | |
| Designed: AG | | Approved: AG | |
| Size A3 | BOM Doc No: <Cage Code> | Document number | Revision A02 |
| Design Created Date: Wednesday, December 03, 2008 | | Sheet Created Date Monday, October 31, 2011 | Sheet Modified Date Friday, November 11, 2011 |
| | | | Sheet 8 of 10 |



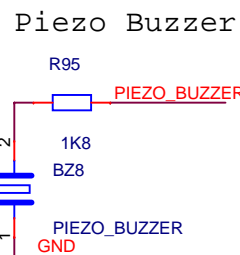
D



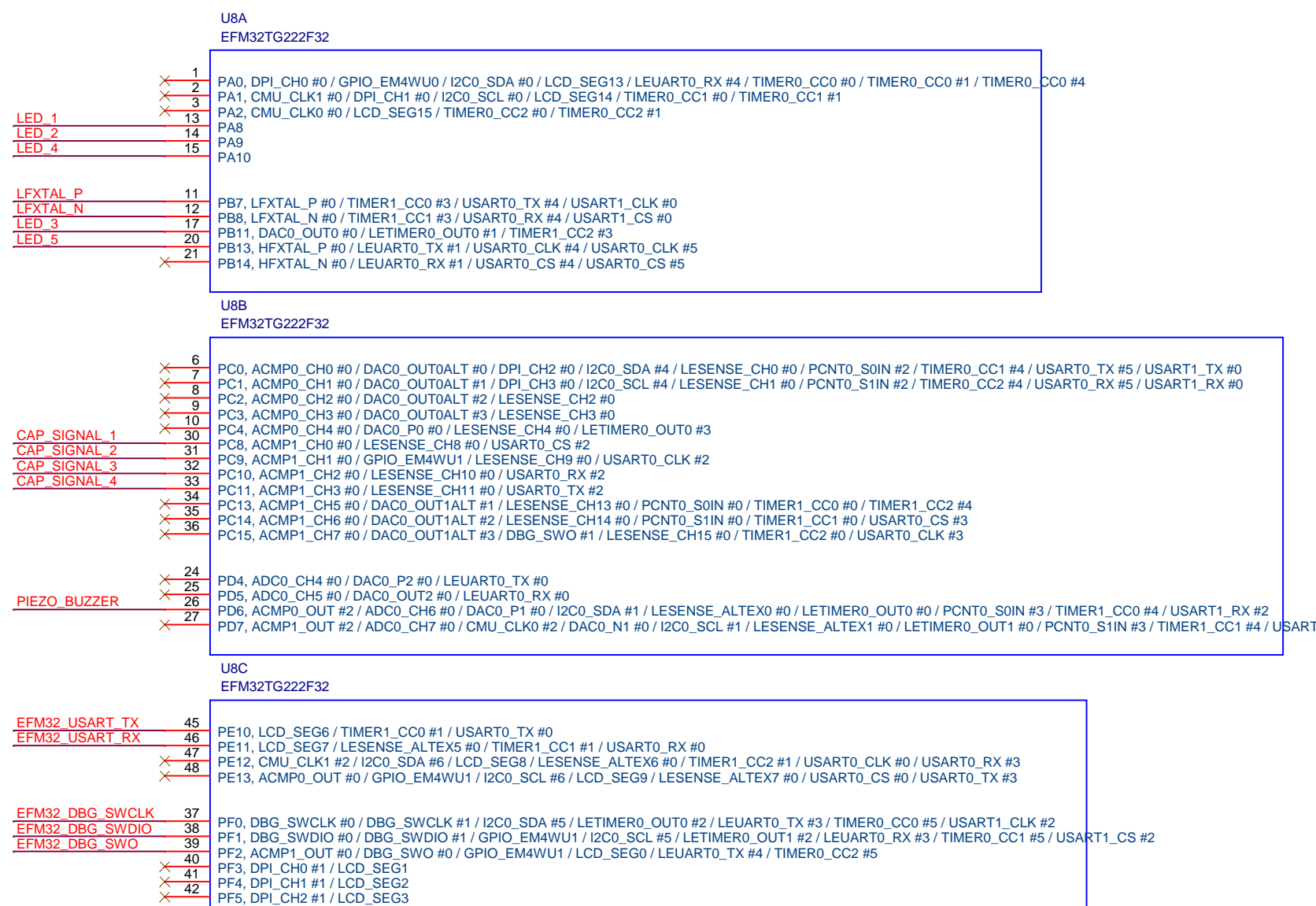
B



Battery Power



Pin connection diagram for the EFM32 USB Dongle. The diagram shows two headers: a 1x6 2.54MM header (J8) and a 2x2 2.54MM header (TH). The 1x6 header has pins 1-6. Pin 1 is connected to VMCU. Pin 2 is connected to EFM32 USART_RX. Pin 3 is connected to EFM32 USART_TX. Pin 4 is connected to GND. Pin 5 is connected to GND. Pin 6 is connected to GND. The 2x2 header has pins 1-4. Pin 1 is connected to VMCU. Pin 2 is connected to EFM32 DBG_SWO. Pin 3 is connected to GND. Pin 4 is connected to GND.



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|--|-------------------------|--|--|
| Doc = BRD9003A | | Schematic Title | |
| | | BRD9003A - Captouch Test Board | |
| | | Page Title EFM32 Captouch | |
| Designed: AG | | Approved: AG | |
| Size A3 | BOM Doc No: <Cage Code> | Document number | Revision A02 |
| Design Created Date: Wednesday, December 03, 2008 | | Sheet Created Date Monday, October 31, 2011 | Sheet Modified Date Friday, November 11, 2011 |
| | | | Sheet 10 of 10 |