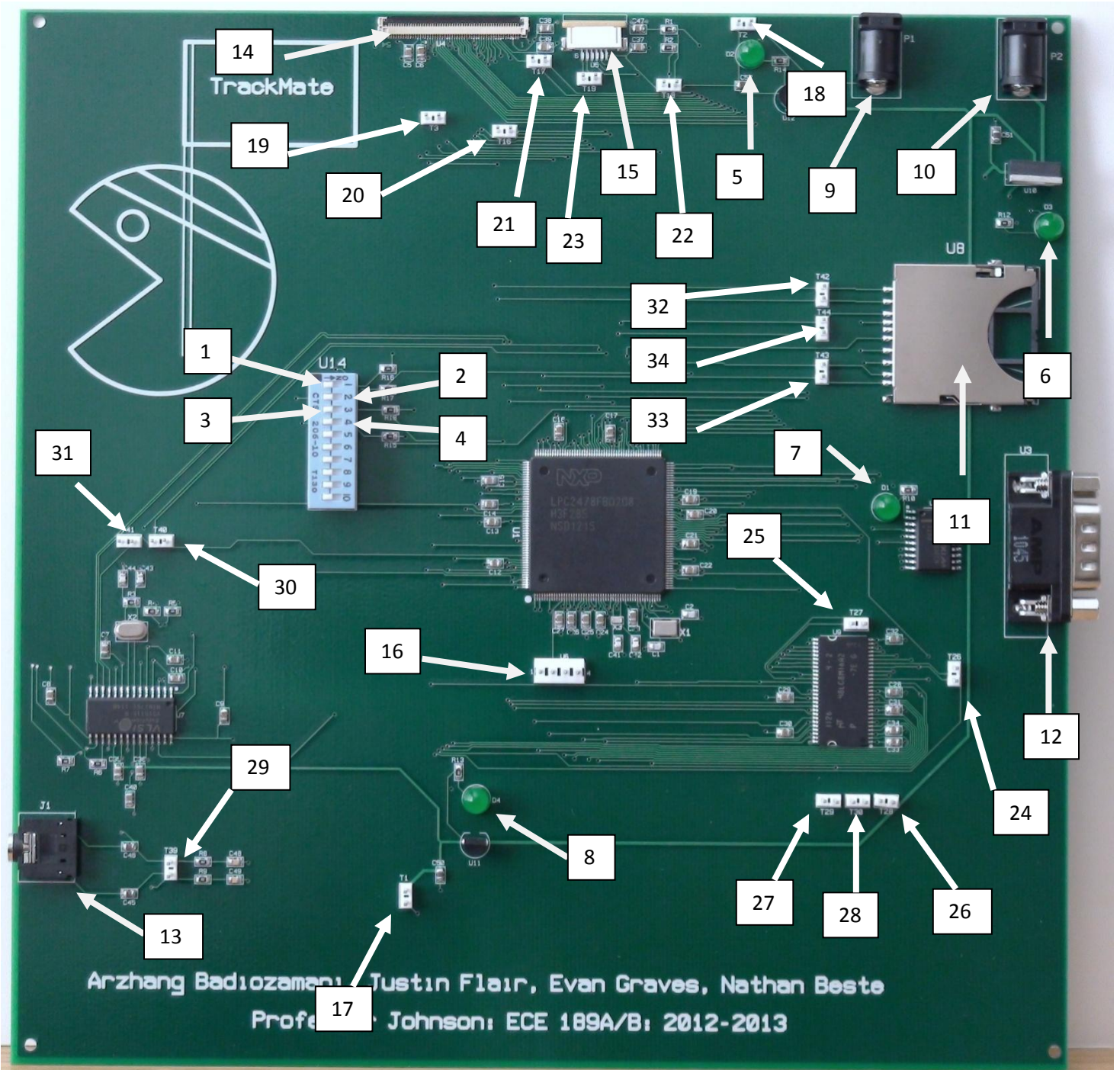


Controls, Indicators, and Interconnects: Trackmate

Arzhang Badiozamani, Nathan Beste, Justin Flair, Evan Graves



Controls:

- 1) Audio Decoder Reset: Switch for resetting Audio Decoder. Should always be on unless the audio decoder should be reset individually. Leaving this switch on while the processor is reset and control #10 is on causes the Audio Decoder to reset as part of a global reset.
- 2) LCD Reset: Switch for resetting the LCD display. Should always be on unless the LCD should be reset individually. Leaving this switch on while the processor is reset and control #10 is on causes the LCD to reset as part of a global reset.
- 3) Processor Reset: Switch for resetting the processor. This should remain on as long as the processor is not being reset. Resetting the processor while controls #8 and #9 are on causes both the Audio Decoder and LCD to reset simultaneously. If controls #8 and #9 are not on when this switch is turned off then only the processor will reset.
- 4) Bootloader switch: Switch for initiating the use of the bootloader after the processor is reset. Turning the switch off while control #10 is also off causes the bootloader to take control of the part after the reset.

Indicators:

- 5) 3V Power Indicator: LED that illuminates when 3V is successfully converted from the 6V input.
- 6) 3.3V Power Indicator: LED that illuminates when 3.3V is successfully converted from the 6V input.
- 7) Level Shifter Indicator: LED that illuminates to show a valid RS-232 level present on the receiver and stays dim when there is an invalid level present.
- 8) 2.8V Power Indicator: LED that illuminates when 2.8V is successfully converted from the 6V input.

Interconnects:

- 9) DC Power In: Power source for 19.2V backlight of the LCD, 2.0mm X 6.0mm jack.
- 10) DC Power In: Power source for 3.3V power plane, 2.0mm X 6.0mm jack.
- 11) SD Card Reader: Input for standard SD card that hold music files.
- 12) DB9 Connector: Connector for RS-232 input to program the processor.
- 13) Audio Output: 3.5mm output jack for connecting headphones.
- 14) LCD Connector: 24-bit RGB interface connector for 3.5 inch TFT LCD display.

15) Touchscreen connector: 6-pin I2C interface for a capacitive touch panel.

16) GPS Connector: 4-pin connector for Parallax PMB-648 SiRF GPS module with internal antenna.

Test Pins:

17) T1: Pin 1 tests the 3.3V output of the voltage regulator. Pin 2 tests the 2.8V output from the voltage regulator.

18) T2: Pin 1 tests the 3V output of the voltage regulator. Pin 2 tests the 19.2V output from the barrel jack.

19) T3: Pin 1 tests the hsync pin on the LCD connector. Pin 2 tests the vsync pin on the LCD connector.

20) T16: Pin 1 tests the SCL pin on the LCD connector. Pin 2 tests the SDI pin on the LCD connector.

21) T17: Pin 1 tests the P3[24] pin on the processor which is a GPIO pin that connects to the RESET pin on the LCD connector. Pin 2 tests the CS pin on the LCD connector.

22) T18: Pin 1 tests the SCL pin on the touch screen connector. Pin 2 tests the SDA pin on the touch screen connector.

23) T19: Pin 1 tests the INT pin on the touch screen connector. Pin 2 tests the WAKE pin on the touch screen connector.

24) T26: Pin 1 tests the SDRAM Bank Address 0. Pin 2 tests the SDRAM Bank Address 1.

25) T27: Pin 1 tests the SDRAM Clock. Pin 2 tests the SDRAM Clock Enable.

26) T28: Pin 1 tests the SDRAM Chip Select. Pin 2 tests the SDRAM DQML Data Mask Low.

27) T29: Pin 1 tests the SDRAM DQMH Data Mask High. Pin 2 tests the SDRAM Write Enable.

28) T30: Pin 1 tests the SDRAM Column Address Strobe. Pin 2 tests the Row Address Strobe.

29) T39: Pin 1 tests the LEFT output of the audio decoder. Pin 2 tests the RIGHT output of the audio decoder.

30) T40: Pin 1 tests the SO pin on the audio decoder that connects to the MISO pin on the processor. Pin 2 tests the DREQ pin on the audio decoder that connects to the P3[21] pin on the processor.

31) T41: Pin 1 connects to the P3[22] pin on the processor which is a GPIO pin. Pin 2 tests the XCS pin on the Audio Decoder which connects to the SSEL pin on the processor.

32) T42: Pin 1 tests the SDCARD chip select / Data 3. Pin 2 tests the SDCARD Data 2.

33) T43: Pin 1 tests the SDCARD Data 1. Pin 2 tests the SDCARD Data 0.

34) T44: Pin 1 tests the SDCARD Clock. Pin 2 tests the SDCARD Command.