

# NFC Reader and Data Display using the PIC33

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# Purpose

- scan an RFID tag and display the data contained on it.



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# Microprocessor Component

- dsPIC33E
- Microchip 16-bit MCU @ 60MHZ

Figure 1 dsPIC33EP128GP502 MicroController Pinout

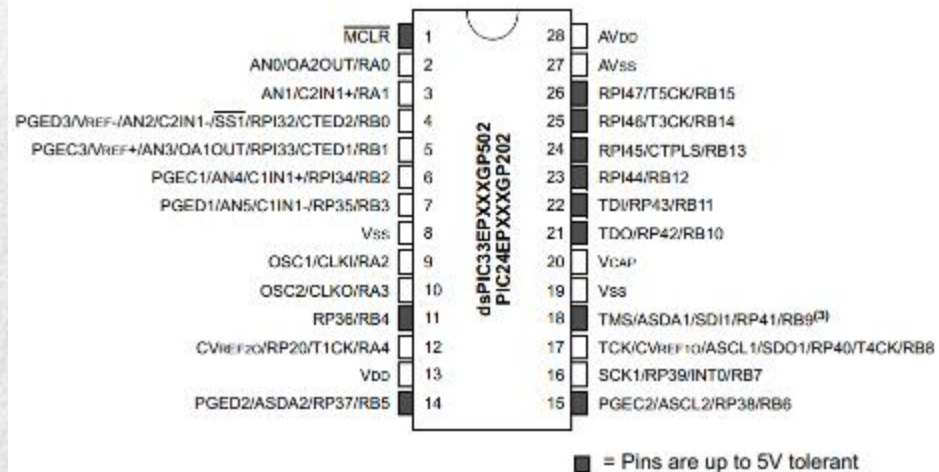


Figure redrawn by author from dsPIC33EPXXXGP50X datasheet. Microchip Technology Inc.



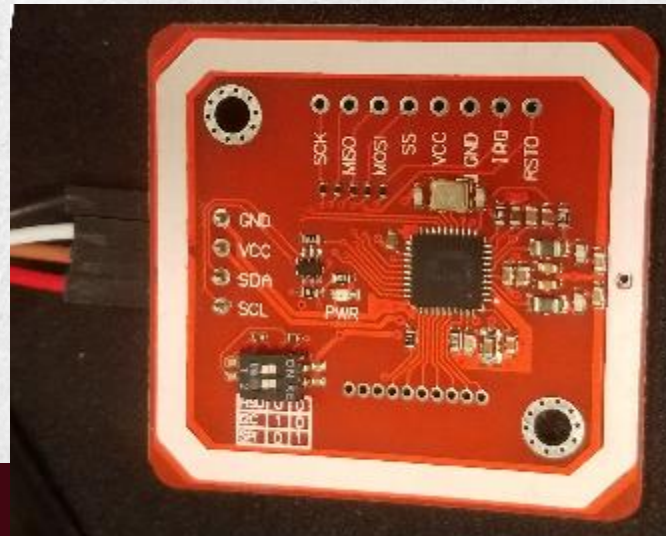
# LCD Component

- SainSmart I2C LCD
  - 20x4 screen of 5x10 pixel squares
- Communicating using I2C protocol



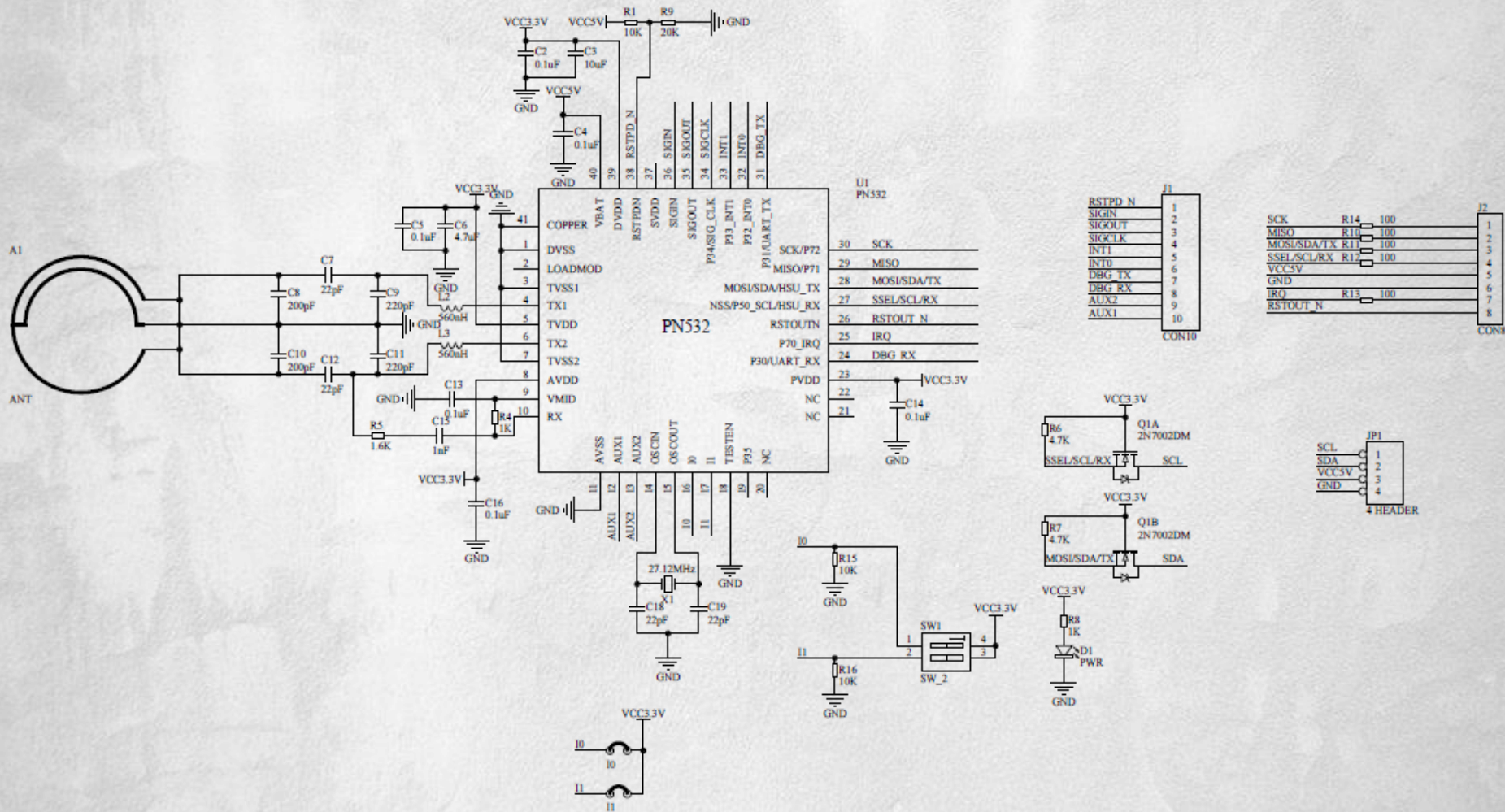
# Scanner Component

- NXP PN532 NFC RFID Module from HiLetGo
- Communicating using HSU (High Speed UART)

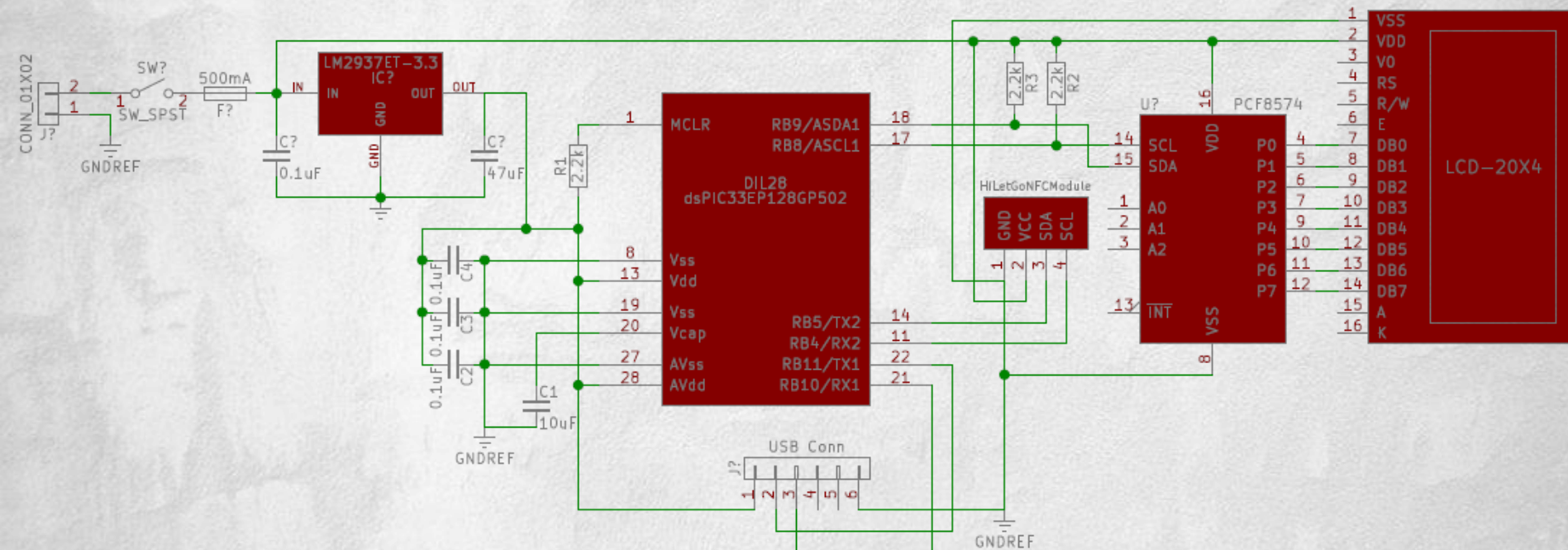




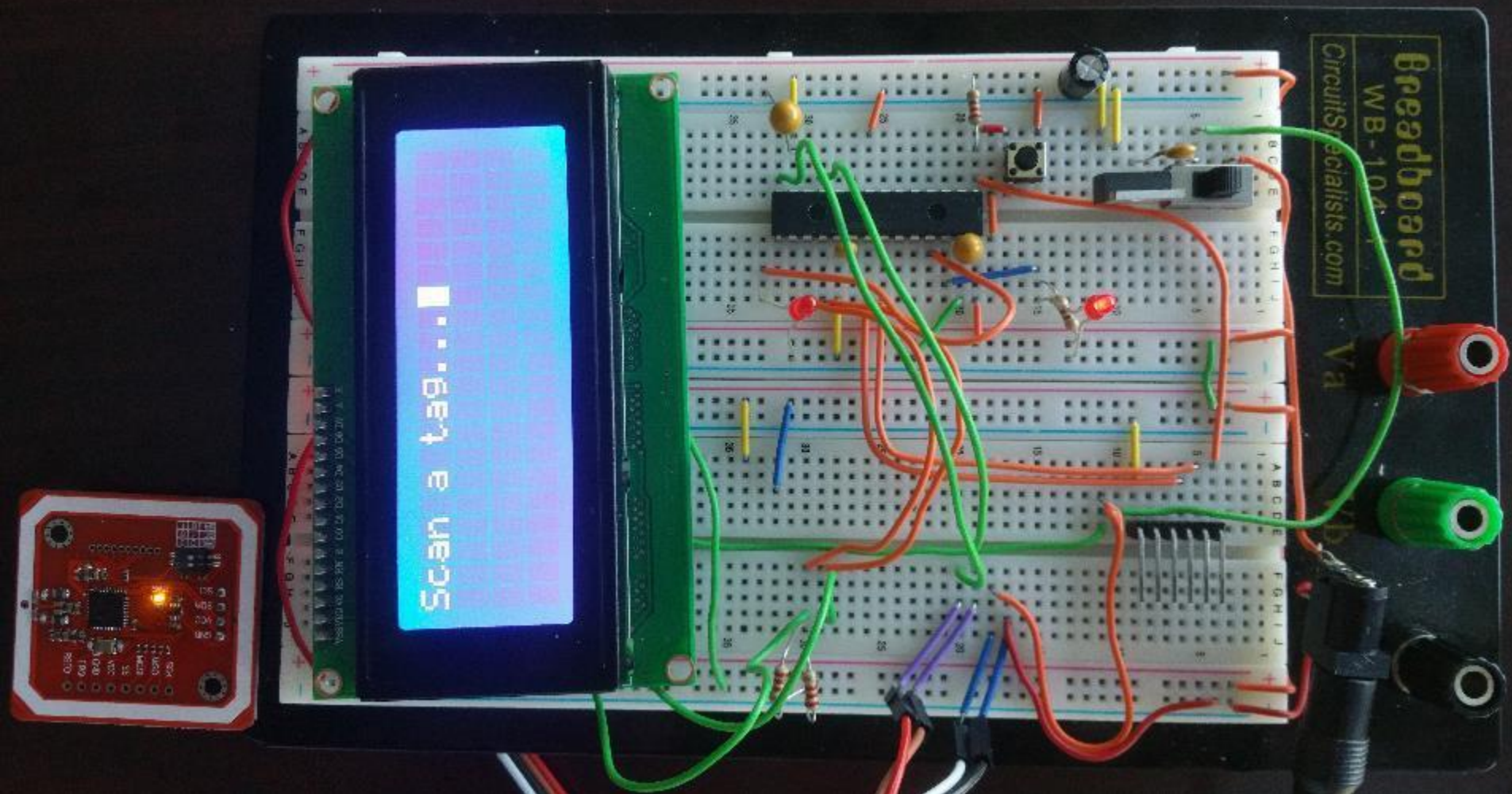
# HiLetGo PN532 RFID Reader



# NFC Reader and Data Display Schematic







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ECE



# Potential Uses

- Card Scanner
  - Door unlock
  - Personal Encryption Key
- Pet Identification
- Quick Access card



# Team Roles

- Spencer Callicott (sc2257)
  - Software and hardware development
  - Financial backing
- Jack Fletcher (jdf469)
  - Schematic design and presentation
- Drew Baker (sab479)
  - LCD Screen interfacing & code optimization

