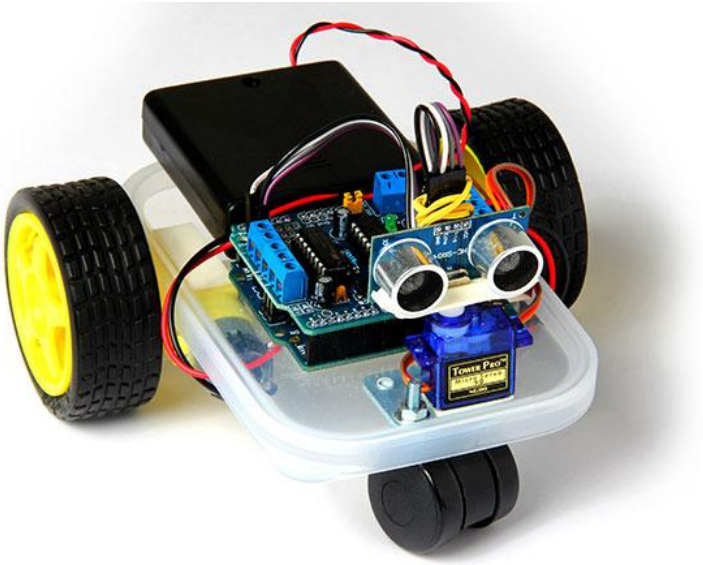
EP486 Microcontroller Applications

Topic 10

RFID



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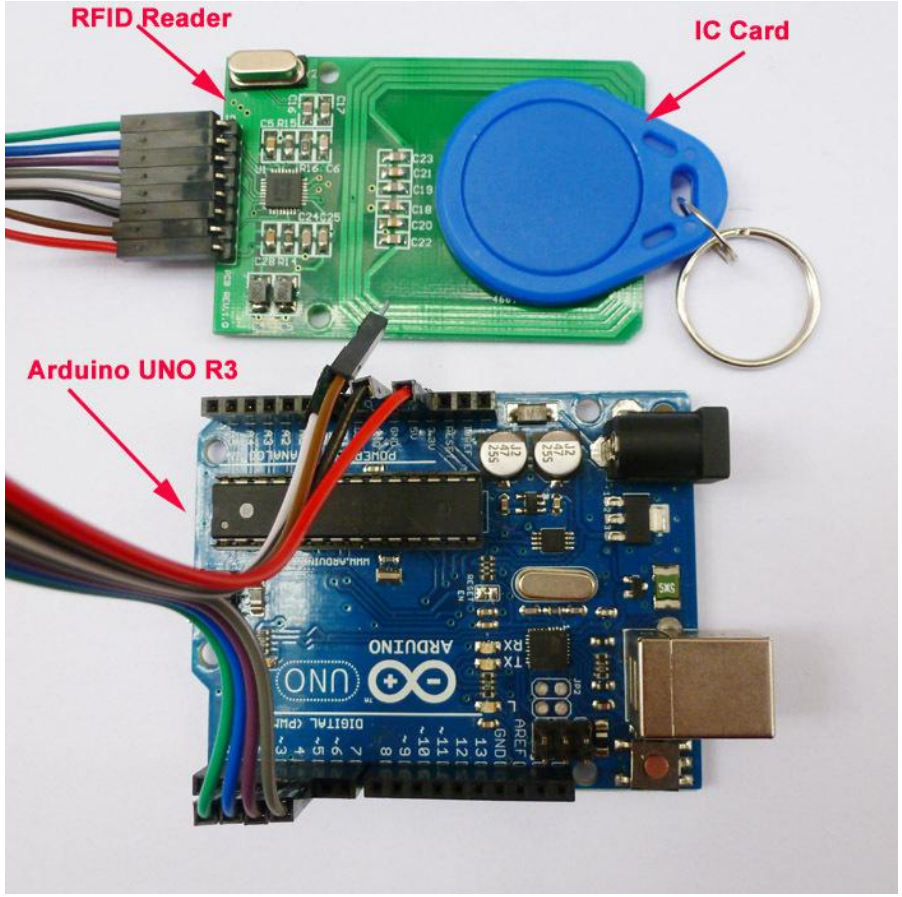
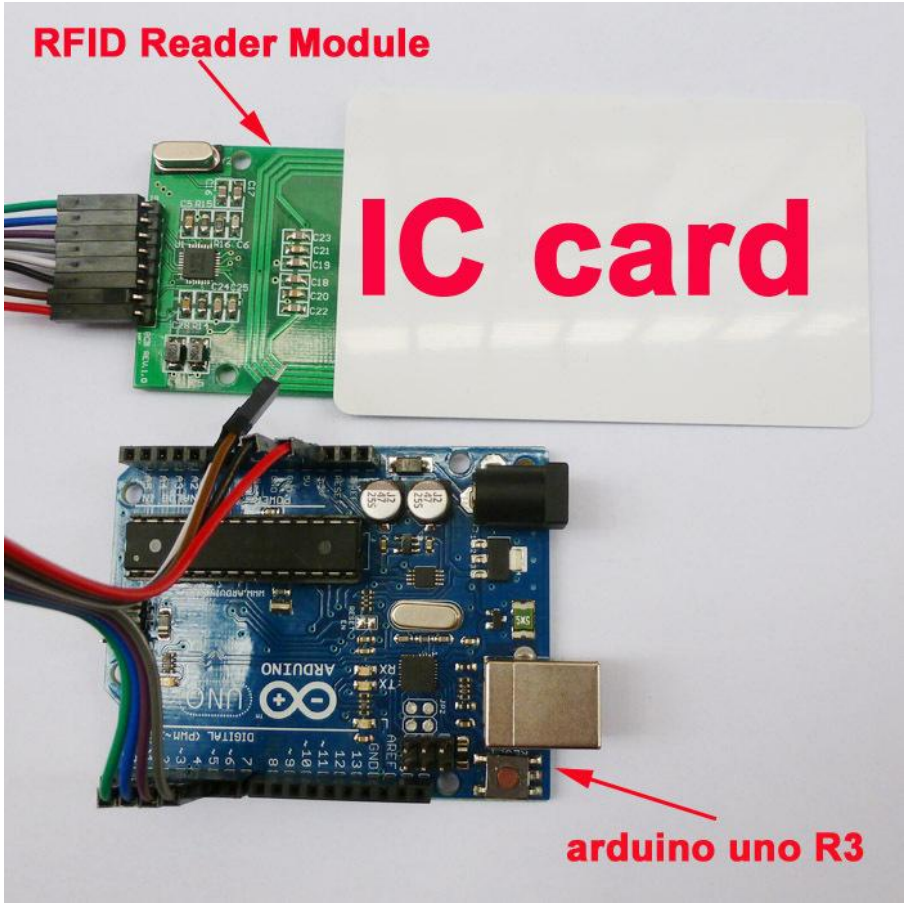
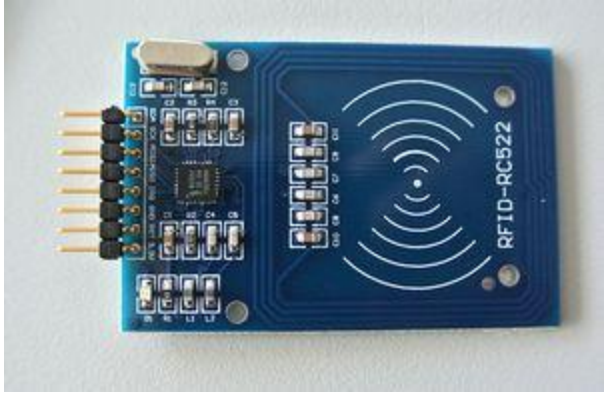
RFID RC522 Sensor





RFID RC522 Sensor



- MF RC522 is a highly integrated transmission module for contactless communication at 13.56 MHz.

- Specification:
  Operation Current 13~26mA/DC3.3V
  Idle Current 10~13mA/DC3.3V
  Sleep Current <80μA
  Peak Current <30mA
  Operation Frequency 13.56MHz Read Range 0~60mm
  Interface SPI Data Transition Rate Up to 10Mbit/s
  Operation Temperature -20~80
  Relative Humidity %5~%95 Notes

RFID RC522 (code)

```
VCC  > 3.3v
RST  > Pin 5
GND  > GND
MSS  > Pin 10
MOSI > Pin 11
MISO > Pin 12
SCK  > Pin 13
```

```
// Refid.ino (page1)
// Arduino uno example for RFId (RC522)

#include <SPI.h>
#include "RC522.h"

void setup(){
  Serial.begin(9600);
  SPI.begin();                          // start the SPI library
  pinMode(chipSelectPin, OUTPUT);       // the RFID /ENABLE pin
  digitalWrite(chipSelectPin, LOW);     // Activate the RFID reader
  pinMode(NRSTPD,OUTPUT);               // Not Reset and Power-down
  digitalWrite(NRSTPD, HIGH);
  MFRC522_Init();
}
```

- You can find the file **`RC522.h`** in the course Web Page at: http://www1.gantep.edu.tr/~bingul/ep486
- You should place this header file in same directory as the **`Rfid.ino`**.

RFID RC522 (code)

```
VCC  > 3.3v
RST  > Pin 5
GND  > GND
MSS  > Pin 10
MOSI > Pin 11
MISO > Pin 12
SCK  > Pin 13
```

```
// Refid.ino (page2)
// Arduino uno example for RFId (RC522)

void loop(){
       uchar status;
       // Find cards, return card type
       status = MFRC522_Request(PICC_REQIDL, str);
       if (status == MI_OK){
          Serial.print("Card detected: ");
          Serial.print(str[0],BIN);
          Serial.print(" , ");
          Serial.print(str[1],BIN);
          Serial.println(" ");
       }
       // Anti-collision, return card serial number 4 bytes
       status = MFRC522_Anticoll(str);
       memcpy(serNum, str, 5);
       if (status == MI_OK){
          Serial.print("The card's number is: ");
          Serial.print(serNum[0]);
          Serial.println(" ");
          delay(1000);
       }
       MFRC522_Halt(); // Command card into hibernation
}
```