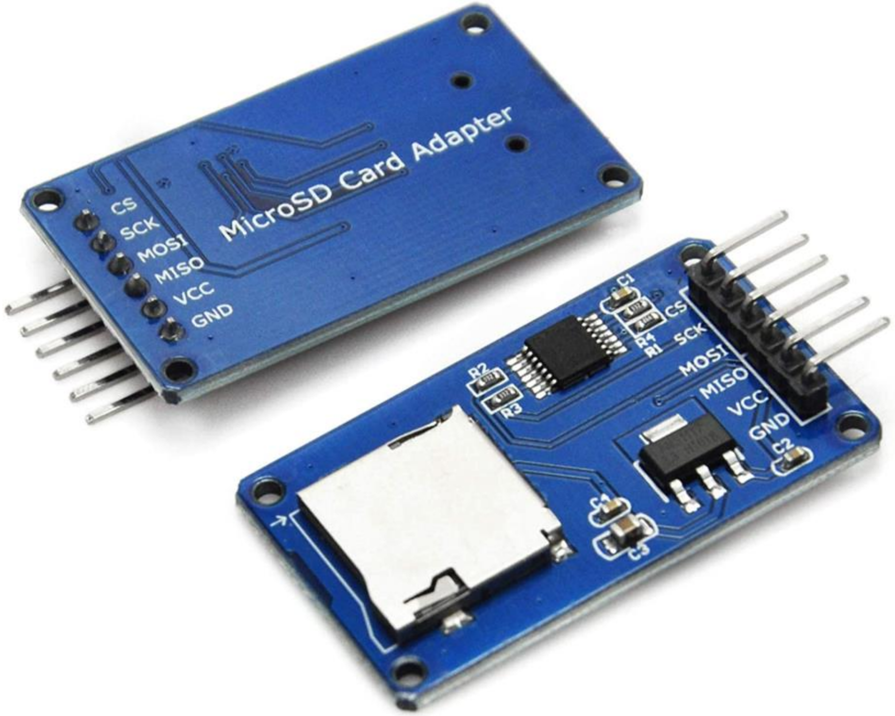
420-N23-LA Introduction to IOT

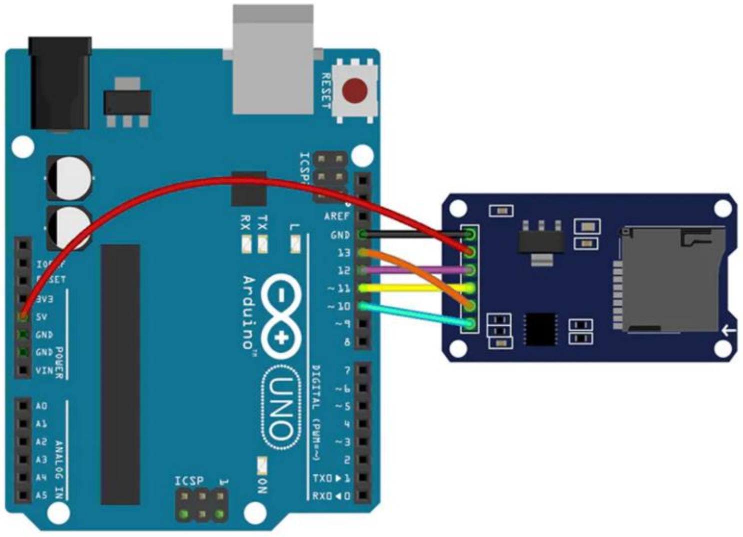
Sensor/Actuator Reference Sheet

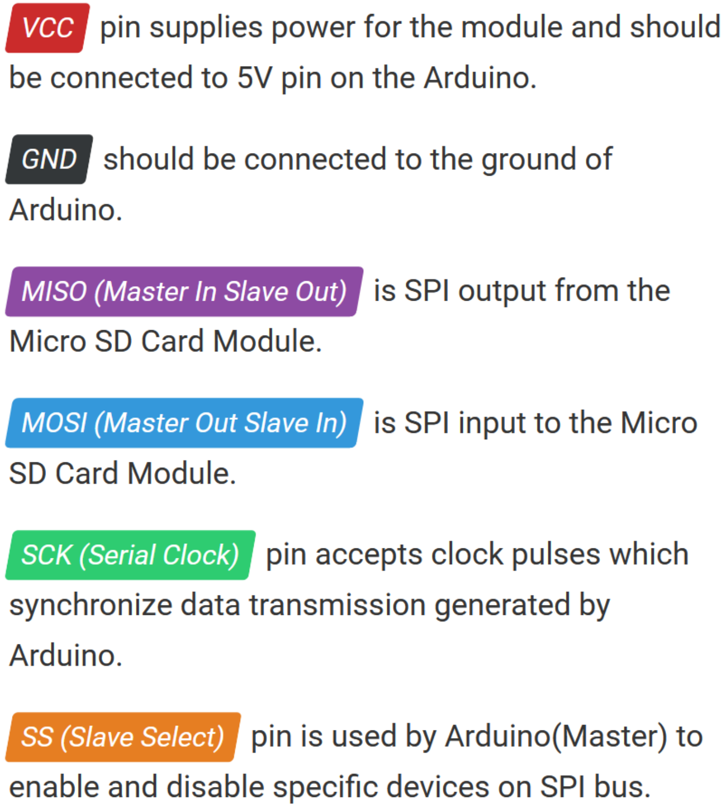
SD Card Reader – EK1442C



SD Card Reader – EK1442C Connections

- Connect:
  - CS, SCK, MOSI, MISO to digital pwm of your choice.
  - VCC to 5V, GND to DND




VCC pin supplies power for the module and should be connected to 5V pin on the Arduino.

GND should be connected to the ground of Arduino.

MISO (Master In Slave Out) is SPI output from the Micro SD Card Module.

MOSI (Master Out Slave In) is SPI input to the Micro SD Card Module.

SCK (Serial Clock) pin accepts clock pulses which synchronize data transmission generated by Arduino.

SS (Slave Select) pin is used by Arduino(Master) to enable and disable specific devices on SPI bus.

Prepare the SD Card

- Before you insert the micro SD card into the module and hook it up to the Arduino, you must properly format the card. For the Arduino library we'll be discussing, and nearly every other SD library, the card must be formatted **FAT16** or **FAT32**.
- Sometimes cards are ALREADY formatted, so if you don't have a card reader, you may still be OK.

1. Use the official **SD card formatter utility,** written by the SD association.
2. Connect the Arduino to the card.
3. Obtain the SAMPLE SKETCH via ▶ Examples/SD/CardInfo

SD Card Reader – EK1442C Code

Class level code

```
#include <SPI.h>
#include <SD.h>
```

Setup method code

```
if (!SD.begin(chipSelect)) { /* Failure Code Here */ }
File dataFile = SD.open("datalog.txt", FILE_WRITE);
if (dataFile) { /* The file is available to write to… */ }
```

Chipselect = 10 for our projects.

SD Card Reader – EK1442C Methods

SD Class Methods

- begin()
- exists()
- mkdir()
- open()
- remove()
- rmdir()

File Methods

- name()
- available()
- close()
- flush()
- peek()
- position()
- print()
- println()
- seek()
- size()
- read()
- write()
- isDirectory()
- openNextFile()
- rewindDirectory()

SD Card Reader – EK1442C Examples

See the following examples for usage of the SD card, provided by Arduino.cc

- Card Info: Get info about your SD card.
- Datalogger: Log data from three analog sensors to an SD card.
- Dump File: Read a file from the SD card.
- Files: Create and destroy an SD card file.
- List Files: Print out the files in a directory on a SD card.
- Read Write: Read and write data to and from an SD card.

Code to Read a File

```
#include <SPI.h>
#include <SD.h>
const int chipSelect = 10;
File dataFile;

-- Setup --
SD.begin(chipSelect);

File dataFile = SD.open("test.txt");
if (dataFile)
{
    while (dataFile.available())
    {
      Serial.write(dataFile.read());
    }
    dataFile.close();
}
```

Code to Write a File

```
#include <SPI.h>
#include <SD.h>
const int chipSelect = 10;
File myFile

-- Setup --
SD.begin(chipSelect);
myFile = SD.open("test.txt", FILE_WRITE);
if (myFile)
{
   Serial.print("Writing to test.txt...");
   myFile.println("testing 1 2 3");
   myFile.println("testing A B C");
   myFile.close(); // close the file
   // Done writing file.
}
else
{
   // if the file didn't open, print an error:
   Serial.println("error opening test.txt");
}
```