How to make connections between:

Antenna – Arduino:

VCC - 5V
GND - GND (any of the two)
SOUT - digital pin 2
ENABLE - digital pin 4

Arduino - iPod control:

GND (any of the two) - GND (this is from behind from pay button from left side the first one)
TX 1 - U1 Aud  (this is from behind from pay button from left side the third one)

If you upload the program to Arduino, you have to go as follows:

- take out TX (on Arduino)
- press the reset black button (on Arduino)
- on computer: Apple + u
- wait for the two red lights to finish blinking on Arduino
- put TX back
- when green light on antenna goes red, then system is ready

Code for The Talking Cups project (in Arduino):

```
#include <SoftwareSerial.h>

// RFID reader for Arduino
// Wiring version by BARRAGAN <http://people.interaction-ivrea.it/h.barragan>
// Modified for Arudino by djmatic

/**
 * switch (key) {
 * case 'f': // forward
 * sendCommand(0x08);
 * break;
 * case 'p': // play/pause
 * sendCommand(0x01);
 * break;
 * case 'b': // backward
 * sendCommand(0x10);
 * break;
 * case 'u': // vol up
 * sendCommand(0x02);
 * break;
 * case 'd': // vol down
 * sendCommand(0x04);
 * break;
 * case 'n': // next album
 * sendCommand(0x20);
 * break;
 * case 'v': // previous album
 * sendCommand(0x40);
 * break;
 * case 's': // next album
 * sendCommand(0x80);
 * break;
 * }
 *
 *
 **/
```

```
#include <TextString.h>
#define rxPin 2
#define txPin 3


int buttonRelease[] = {
  0xFF, 0x55, 0x03, 0x02, 0x00, 0x00,0xFB};
int commands[]={
  0,0,0x01,0x08,0x10,0x02,0x04};

int checkSum(int len, int mode, int command1, int command2, int parameter) {
  int checksum = 0x100 - ((len + mode + command1 + command2+ parameter) & 0xFF);
  return checksum;
}


// set up a new serial port
SoftwareSerial mySerial =  SoftwareSerial(rxPin, txPin);
int  val = 0;
TextString code = TextString(10);
int bytesread = 0;


void setup() {
  Serial.begin(19200);
  mySerial.begin(2400); // RFID reader SOUT pin connected to Serial RX pin at 2400bps
  pinMode(4,OUTPUT);   // Set digital pin 2 as OUTPUT to connect it to the RFID /ENABLE pin
  digitalWrite(4, LOW);                  // Activate the RFID reader

  pinMode(5, OUTPUT);
  digitalWrite(5, LOW);


}


void loop() {

  if((val = mySerial.read()) == 10) {   // check for header
    bytesread = 0;
    while(bytesread<10) {              // read 10 digit code
      val = mySerial.read();
      if((val == 10)||(val == 13)) { // if header or stop bytes before the 10 digit reading
        break;                       // stop reading
      }
      code.setCharAt(bytesread, (char)val);
      bytesread++;                   // ready to read next digit
    }
  }
  if(bytesread == 10) {              // if 10 digit read is complete


    if (code.equals("04162B6516")) {  // Song nr 3 French

      sendCommand(0x08);  // go forward (next song)
      sendCommand(0x08);  // go forward (next song)

      sendCommand(0x01); // play song
      delay(1000);  // play 1 second (below there is delay for 0,5 second that is activated after every command
```

```
= so this song plays 1,5 second)
    sendCommand(0x01); // stop (stop and play command is the same, this is also the same button on iPod
remote control)

    sendCommand(0x10); // go back (previous song)
    sendCommand(0x10); // go back (previous song) - so after finishing every song - we are always back in
first song

  }


    if (code.equals("04162B7815")) {     // song nr 2 English

    sendCommand(0x08);


    sendCommand(0x01);
    delay(1600);
    sendCommand(0x01);

    sendCommand(0x10);

  }


  if (code.equals("04162B785F")) {     // song nr 1 Estonian


    sendCommand(0x01);
    delay(1600);
    sendCommand(0x01);

    sendCommand(0x08);
    sendCommand(0x10);
  }


  if (code.equals("04162B6A1F")) {     // song nr 4 - Spanish
    sendCommand(0x08);
    sendCommand(0x08);
    sendCommand(0x08);

    sendCommand(0x01);
    delay(1800);
    sendCommand(0x01);

    sendCommand(0x10);
    sendCommand(0x10);
    sendCommand(0x10);


  }


 }


 bytesread = 0;
}
void sendCommand(int cmd) {
 int cs = checkSum(0x03, 0x02, 0x00, cmd, 0);
 Serial.println(cs,HEX);
```

```
  int bytes[] = {
    0xFF, 0x55, 0x03, 0x02, 0x00, cmd, cs              };
  for (int i = 0; i < 8; i++) {
    Serial.print(bytes[i], BYTE);

  }

  for (int i = 0; i < 8; i++) {
    Serial.print(buttonRelease[i],BYTE);
  }
  delay(500);
}
```