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[Arduiniana](#)

Arduino wisdom and gems by Mikal Hart

NewSoftSerial

A New Software Serial Library for Arduino

News: **NewSoftSerial** is in the core! Starting with Arduino 1.0 (December, 2011), NewSoftSerial has replaced the old SoftwareSerial library as the officially supported software serial library. This means that if you have 1.0 or later, you should *not* download this library. To port your code to 1.0, simply change all **NewSoftSerial** references to **SoftwareSerial**.

NewSoftSerial is the latest of three Arduino libraries providing “soft” serial port support. It’s the direct descendant of ladyada’s [AFSoftSerial](#), which introduced **interrupt-driven receives** – a dramatic improvement over the polling required by the native SoftwareSerial.

Without interrupts, your program’s design is considerably restricted, as it must continually poll the serial port at very short, regular intervals. This makes it nearly impossible, for example, to use SoftwareSerial to receive GPS data and parse it into a usable form. Your program is too busy trying to keep up with NMEA characters as they arrive to actually spend time assembling them into something meaningful. This is where AFSoftSerial’s (and **NewSoftSerial**’s) interrupt architecture is a godsend. Using interrupt-driven RX, your program fills its buffer behind the scenes while processing previously received data.

Improvements

NewSoftSerial offers a number of improvements over SoftwareSerial:

1. It inherits from built-in class `Print`, eliminating some 4-600 bytes of duplicate code
2. It implements circular buffering scheme to make RX processing more efficient
3. It extends support to all Arduino pins 0-19 (0-21 on Arduino Mini), not just 0-13
4. It supports multiple simultaneous soft serial devices.*
5. It supports a much wider range of baud rates.**
6. It provides a `boolean overflow()` method to detect buffer overflow.

7. Higher baud rates have been tuned for better accuracy.
8. It supports the ATmega328 and 168.
9. It supports 8MHz processors.
10. It uses direct port I/O for faster and more precise operation.
11. (New with version 10). It supports software signal inversion.
12. (New) It supports 20MHz processors.
13. (New) It runs on the Teensy and Teensy++.
14. (New) It supports an end() method as a complement to begin().

*But see below for an important caveat on multiple instances.

**Be circumspect about using 300 and 1200 baud though. The interrupt handler at these rate becomes so lengthy that timer tick interrupts can be starved, causing millis() to stop working during receives.

Using Multiple Instances

There has been [considerable support](#) for an library that would allow multiple soft serial devices. However, handling asynchronously received data from two, three, or four or more serial devices turns out to be an extremely difficult, if not intractable problem. Imagine four serial devices connected to an Arduino, each transmitting at 38,400 baud. As bits arrive, Arduino's poor little processor must sample and process each of 4 incoming bits within 26 microseconds or else lose them forever. Yikes!

It occurred to me, though, that multiple instances could still be possible if the library user were willing to make a small concession. **NewSoftSerial** is written on the principle that you can have as many devices connected as resource constraints allow, *as long as you only use one of them at a time*. If you can organize your program code around this constraint, then **NewSoftSerial** may work for you.

What does this mean, exactly? Well, you have to use your serial devices serially, like this:

```
1  #include <NewSoftSerial.h>
2
3  // Here's a GPS device connect to pins 3 and 4
4  NewSoftSerial gps(4,3);
5
6  // A serial thermometer connected to 5 and 6
7  NewSoftSerial therm(6,5);
8
9  // An LCD connected to 7 and 8
10 NewSoftSerial LCD(8,7); // serial LCD
11
12 void loop()
13 {
14     ...
15     // collect data from the GPS unit for a few seconds
16     gps.listen();
17     read_gps_data(); // use gps as active device
18     // collect temperature data from thermometer
19     therm.listen();
20     read_thermometer_data(); // now use therm
21     // LCD becomes the active device here
22     LCD.listen();
23     LCD.print("Data gathered...");
24     ...
25 }
```

In this example, we assume that `read_gps_data()` uses the `gps` object and `read_thermometer_data()` uses the `therm` object. Any time you call the `listen()` method, it becomes the “active” object, and the previously active object is deactivated and its RX buffer discarded. An important point here is that `object.available()` always returns 0 unless object is already active. This means that you can’t write code like this:

```
1  void loop()
2  {
3      device1.listen();
4      if (device1.available() > 0)
5      {
6          int c = device1.read();
7          ...
8      }
9      device2.listen();
10     if (device2.available() > 0)
11     {
12         int c = device2.read();
13         ...
14     }
15 }
```

This code will never do anything but activate one device after the other.

Signal Inversion

“Normal” TTL serial signaling defines a start bit as a transition from “high” to “low” logic. Logical 1 is “high”, 0 is “low”. But some serial devices turn this logic upside down, using what we call “inverted signaling”. As of version 10, `NewSoftSerial` supports these devices natively with a third parameter in the constructor.

```
NewSoftSerial myInvertedConn(7, 5, true); // this device uses inverted signaling
NewSoftSerial myGPS(3, 2); // this one doesn't
```

Library Version

You can retrieve the version of the **NewSoftSerial** library by calling the static member `library_version()`.

```
1  int ver = NewSoftSerial::library_version();
```

Resource Consumption

Linking the **NewSoftSerial** library to your application adds approximately 2000 bytes to its size.

Download

The latest version of **NewSoftSerial** is available here: [NewSoftSerial12.zip](#). *Note: don't download this if you have Arduino 1.0 or later. As of 1.0, NewSoftSerial is included in the Arduino core (named SoftwareSerial).*

Change Log

1. initial version
2. ported to Arduino 0013, included example sketch in package
3. several important improvements: (a) support for 300, 1200, 14400, and 28800 baud (see caveats), (b) added `bool overflow()` method to test whether an RX buffer overflow has occurred, and (c) tuned RX and TX for greater accuracy at high baud rates 38.4K, 57.6K, and 115.2K.

4. minor bug fixes — add .o file and objdump.txt to zip file for diagnostics.
5. etracer's inline assembler fix to OSX avr-gcc 4.3.0 interrupt handler bug added.
6. ladyada's new example sketch, fix to interrupt name, support for 328p.
7. etracer's workaround is now conditionally compiled only when avr-gcc's version is less than 4.3.2.
8. 8 MHz support and flush() and enable_timer0() methods added
9. digitalread/write scrapped in favor of direct port I/O. Revised routines now get perfect RX up to 57.6K on 16MHz processors and 31.25K on 8MHz processors.
10. inverted TTL signalling supported. 20MHz processors supported. Teensy and Teensy++ supported. New end() method and destructor added to clean up.
11. added listen() method to explicitly activate ports.
12. warn users about 1.0 conflict

Acknowledgements

Many thanks to [David Mellis](#), who wrote the original SoftwareSerial, and to the multi-talented [ladyada](#), whose work with AFSOFTSerial is seminal. Ladyada also provided the “Goodnight, moon” example sketch, fixed a problem with the interrupt naming (see v6) and tested NSS with the 328p.

Thanks also to **rogermm** and several other forum users who have tested NewSoftSerial and given useful feedback.

The diligent analysis of forum user **etracer** yielded the root cause of a tricky problem with NSS on OSX. A bug in avr-gcc 4.3.0 causes the compiler to fail to generate the proper entry and exit sequences for certain interrupt handlers. etracer identified the problem and provided an inline workaround. etracer's fix is in NSS 5.

User **jin** contributed a large body of work based on NSS and identified a potential problem that could result in data loss (fixed in NSS 5). jin also made a variant of NSS that supports 4-pin serial, with the additional pins providing a very nice RTS/CTS flow control. We may see this in NSS in the near future.

Thanks to [Garret Mace](#), who contributed the delay tables for 20MHz processors and claims that he can send and receive at 115K baud. Cool!

Thanks to Paul Stoffregen, both for his fine work with [Teensy and Teensy++](#), and for contributing some useful suggestions that help NewSoftSerial run on them without modification.

I appreciate any and all input.

Mikal Hart

Page last updated on July 3, 2013 at 7:37 pm

646 Responses → “NewSoftSerial”

[« Older Comments](#)

1.

[michael](#)

5 years ago

Hi, I am looking a best solution for the two module gps and gprs shield I also used Dpin(7,8 and 3,4) of arduino uno. Then 7 and 8 pin connected to the gprs while the 3 and 4 pin connected to gps. The two module is working well but I couldn't combine the two module in one program. I already used the softwareserial library while in the code I am using listen() but its nothing work. Now, I've try your newsoftserial but they give me an error

C:\Users\C\Documents\Arduino\libraries\NewSoftSerial\NewSoftSerial.cpp:43:24: fatal error:
WConstants.h: No such file or directory

#include "WConstants.h"

can you share your idea about this.
any help?

2.

unique nigam

5 years ago

check out this for Software Uart for AVR microcontroller tested on 1200 baud rate

<http://groomix.info/programming/Software-Uart-for-AVR-microcontroller-tested-on-1200-baud-rate/>

3.

Frantisek

4 years ago

Hi, please is possible modify NewSoftSerial to send two inverting serial signal Tx+ Tx- on two digital pins at the same time?

[« Older Comments](#)

93 Trackbacks For This Post

1. [NewSoftSerial 5 « Arduino](#) →
[February 15th, 2009 → 10:04 pm](#)

[...] NewSoftSerial version 5 is available. A lot of people have been using this library — thanks! — but I really need to recognize the exceptional work of two contributors. [...]

2. [NewSoftSerial 6 « Arduiniana](#) →
[February 20th, 2009 → 1:08 pm](#)

[...] I posted the new library. [...]

3. [เริ่มต้นสร้าง GPS จอสี่ก้านออนไลน์ | Ayarafun Factory](#) →
[March 2nd, 2009 → 1:46 pm](#)

[...] ในรอบนี้ผมได้ใช้ newSoftwareSerial3 จะได้ลองด้วยว่า มีปัญหาไหม

4. [Unlogic » USB Storage and Arduino](#) →
[March 11th, 2009 → 4:54 pm](#)

[...] of the first things to do is download NewSoftSerial

5. [The Hired Gun » GPS project: the Bluetooth saga](#) →
[June 9th, 2009 → 3:21 pm](#)

[...] to the task at hand, which happened to be adding 3 lines of code: declaration of an instance of NewSoftSerial, calling the instance constructor with a baud rate, and a single call to pass the char from the [...]

6. [layer8 » Controlling A Roomba with an Arduino](#) →
[August 1st, 2009 → 3:00 pm](#)

[...] and the XBee module has a serial interface. So how does this really solve my problem? Enter NewSoftSerial, an updated version of the Arduino software serial library, which basically lets you drive a serial [...]

7. [This and That » Blog Archive » Arduiniana - What else would it be?](#) →
[October 14th, 2009 → 1:38 pm](#)

[...] is probably the coolest gift idea I've seen. Mikal, you rock. And also, thank you for NewSoftSerial. [...]

8. [Interfacing the Arduino with the DS1616](#) →
[November 19th, 2009 → 3:36 pm](#)

[...] way. Let's move onto the software. Communication with the DS1616 is established using the NewSoftSerial library. Getting data is essentially a case of lots of bit banging. The DS1616 library [...]

9. [Serial Multiplexing « Interactive Environments Minor 2009-2010](#) →
[December 14th, 2009 → 8:08 am](#)

[...] So we started looking for a solution to overcome this tiny inconvenience. First we looked into a software serial but this didn't work out, it was a bit too much for the arduino's little processor to [...]

10. [Atmega/Arduino \(Soft-\) Serial Ports | Jochen Toppe's Blog](#) →
[December 29th, 2009 → 6:59 am](#)

[...] software serial port. I briefly thought about writing one, but then I found this great library, the New SoftSerial. It is as simple to use as the original library, but unfortunately once I connect the RF receiver, [...]

11. [The Frustrumatic Box, Part 4: Software « New Bright Idea](#) →
[January 20th, 2010 → 1:19 am](#)

[...] developers for the great libraries, and to Mikal Hart in particular for his work on the TinyGPS and NewSoftSerial [...]

12. [side2 » Bimeji Client for Arduino](#) →
[January 23rd, 2010 → 10:27 am](#)

[...] このソースでは、PS2ライブラリとNewSoftSerialライブラリを利用しています。コンパイルするには、これらのライブラリを有効にしておく必要があります。 [...]

13. [Live Twitter Table using New Bluetooth Shield | Club45](#) →
[February 27th, 2010 → 10:19 am](#)

[...] as a well. The shield can be wired to any of the pins on the Arduino. Right now we're using NewSoftSerial on pins 4 and 5. It can be attached to the hardware RX and TX pins, but interferes with [...]

14. [tokyo->kobe->osaka << Motoi Ishibashi](#) →
[February 27th, 2010 → 12:18 pm](#)

[...] 急遽、Arduinoでシリアル通信をふたつやる必要が発生してホテルで開発。といっても手元にハードがないので、ほとんど勘でプログラムしているようなもの。次の日現場で試すも、予

想通り動かない。そりゃそうだ。 NewSoftwareSerialなんていう便利なものがあるのを後で知った。 [...]

15. [VDIPI USB Host Controller « Arduino Fun](#) →
[March 27th, 2010 → 1:39 am](#)

[...] chose the NewSoftSerial library to give access to the VDIP1. The first attempt was to use the AFSofLibrary and it just [...]

16. [Project Lab](#) →
[April 5th, 2010 → 12:55 pm](#)

[...] software running on the Arduino ATMEGA328 chip utilizes the wonderfully robust NewSoftSerial library for communicating with the EM-406a GPS module and the very convenient TinyGPS library for [...]

17. [Box Round 2 « Stromberg Labs](#) →
[April 6th, 2010 → 1:33 am](#)

[...] is available here. I borrowed from a couple of people's Arduino libraries to get this done, notably NewSoftSerial from Arduiniana and the GPS Parsing code from the Arduino website for parsing the NMEA strings. [...]

18. [Grok Think » Blog Archive » I got Arduino sending temp to the computer using xbee wireless.](#) →
[May 15th, 2010 → 1:46 pm](#)

[...] I had to use this library to communicate with the xbee from the arduino:
<http://arduiniana.org/libraries/newsoftserial/> [...]

19. [GPS – Welcher Chip? | Ranzow im Umbau](#) →
[May 31st, 2010 → 12:54 pm](#)

[...] wird über die Serielle Schnittstelle angesteuert. Die werde ich wahrscheinlich über die NewSoftSerial Library [...]

20. [GPS – Welcher Chip? | Ranzow im Umbau](#) →
[May 31st, 2010 → 1:05 pm](#)

[...] GPS Modul wird über die Serielle Schnittstelle angesteuert. Die werde ich wahrscheinlich über die NewSoftSerial Library [...]

21. [Cititor RFID 125KHz « Tehnorama](#) →
[June 22nd, 2010 → 4:47 pm](#)

[...] metoda de a afla codul cartelei este de a utiliza biblioteca NewSoftSerial, disponibila gratuit aici. Fisierul zip se dezarhiveaza si se copiaza in folderul libraries al distributiei [...]

22. [Lightweight software UART -> custom serial « Robotics / Electronics / Physical Computing](#) →
[July 10th, 2010 → 3:59 pm](#)

[...] updated the NewSoftSerial library from Arduiniana (thanks Mikal !) so that it takes 2 extra [...]

23. [Control Camera with Arduino | SenSorApp](#) →
[July 20th, 2010 → 1:19 am](#)

[...] <http://arduiniana.org/libraries/newsoftserial/> [...]

24. [GPS testing with LCD Character Display](#) →
[July 25th, 2010 → 11:34 am](#)

[...] the TinyGPS library from Arduiniana downloaded and installed for it to work. They suggest using NewSoftSerial, but I couldn't get that to work, so I scrapped that portion. Here's my [...]

25. [#Rallylog Fusebits](#) →
[August 3rd, 2010 → 8:45 pm](#)

[...] it as a fail and moved on, however last night when I set about writing the RFID read function using NewSoftSerial on the RFID I was getting nothing reported back back on the AVR, not a thing coming back from the [...]

26. [433 MHz receiver and NewSoftSerial at mitat.tuu.fi](#) →
[August 10th, 2010 → 10:25 am](#)

[...] <http://arduiniana.org/libraries/newsoftserial/> http://www.sparkfun.com/commerce/product_info.php?products_id=8950 [...]

27. [Moving Forward with Arduino – Chapter 17 – GPS « t r o n i x s t u f f](#) →
[September 16th, 2010 → 11:37 pm](#)

[...] devices. At this point you will need to install two libraries into the Arduino software – NewSoftSerial and TinyGPS. Extract the folders into the libraries folder within your arduino-001x [...]

28. [Moving Forward with Arduino – Chapter 17 – GPS « Hey it's my blog...](#) →
[September 17th, 2010 → 12:09 am](#)

[...] this point you will need to install two libraries into the Arduino software – NewSoftSerial and TinyGPS. Extract the folders into the librariesfolder within [...]

29. [Sonar | Starter Kit](#) →
[October 6th, 2010 → 1:48 pm](#)

[...] there is one more library – “NewSoftSerial”, which is free of these defects and, in addition, handles inverted serial [...]

30. [Advanced RFID with Arduino and Python! | App Delegate Inc](#) →
[October 6th, 2010 → 2:05 pm](#)

[...] NewSoftSerial [...]

31. [RFID Door Opener – Update 3 – LCD Woes - Sommineer](#) →
[October 12th, 2010 → 10:18 pm](#)

[...] one on some other pins. Per the suggestion of some people on the Arduino forums, I decided to use NewSoftSerial to do the communication. Being interrupt driven, it was much more efficient than the older [...]

32. [keyHelper final project](#) →
[December 18th, 2010 → 7:36 pm](#)

[...] the code you will need a very useful NewSoftSerial library, that, among other things, allows you to assign TX and RX on other pins then 0 and 1 and that way [...]

33. [Step-by-Step Guide on using the Bluetooth Bee, Bees Shield & Arduino to communicate via bluetooth | Michael Chuah](#) →

[January 11th, 2011 → 7:09 am](#)

[...] up would be to try and use the awesome NewSoftSerial library by Mikal Hart to communicate with the Bluetooth Bee by emulating the UART [...]

34. [Tutorial: Arduino and GSM Cellular – Part One « t r o n i x s t u f f](#) →
[January 18th, 2011 → 5:56 pm](#)

[...] a software perspective we will need the NewSoftSerial Arduino library, so please download and install that before moving [...]

35. [Interfacing Arduino to GSM shield | Embedded projects from around the web](#) →
[January 28th, 2011 → 10:06 pm](#)

[...] goes step by step how to connect Cellular shield to Arduino mega and communicate to it by using newsoftserial Arduino library. Whole process steps are monitored in terminal window, so it is easy to follow [...]

36. [Fully functional Arduino GPS logger « Liudr's Blog](#) →
[February 4th, 2011 → 3:03 pm](#)

[...] NewSoftSerial library [...]

37. [LCD117 Controller Library - Jack Kern](#) →
[February 22nd, 2011 → 11:07 pm](#)

[...] also need the NewSoftSerial library installed in your Arduino sketchbook's library [...]

38. [Touch game for the offspring | NinjaTool inc.](#) →
[March 18th, 2011 → 5:17 am](#)

[...] GLCD that I bought (without knowing ANYTHING about it beforehand I might add). The code uses the NewSoftSerial library which apparently does wonders, but as of yet has not been validated as the code assumes a 9V [...]

39. [Arduino GSM and GPRS shield | Open Electronics](#) →
[March 21st, 2011 → 9:44 am](#)

[...] the pin 4 and 5 there aren't problems to upload the sketch but the maximum baudrate for NewSoftSerial (the serial library) is 57600. We performed a GSM library to controll easily the module. The GSM [...]

40. [Moving Forward with Arduino – Chapter 19 – GPS part II « t r o n i x s t u f f](#) →
[March 23rd, 2011 → 4:40 am](#)

[...] forget the 10k ohm pull-down resistor). You will need to install the SdFAT library, NewSoftSerial library, TinyGPS library and the SdFat library if not already [...]

41. [Blog What I Made » YAHMS: Base Station](#) →
[May 9th, 2011 → 8:54 am](#)

[...] of just the standard Serial interface, see the links below for that too. You'll also need NewSoftSerial of course and the Flash library which I've used to decrease memory usage. Follow the [...]

42. [Infovore » Nikon D-Series Intervalometer](#) →
[May 17th, 2011 → 2:01 am](#)

[...] a single wire, which again, keeps the number of wires from the Arduino down. I'm using the NewSoftSerial library to talk to it, which makes life [...]

43. [*Arduino Experiments*](#) →
[May 25th, 2011 → 10:27 am](#)

[...] you can use multiple serial “ports”, that are actually digital I/O lines, by using the NewSoftSerial library. This works exactly like the Serial library, but you can read from multiple pins, as long as you [...]

44. [*EasyTransfer Arduino Library « The Mind of Bill Porter*](#) →
[June 23rd, 2011 → 8:59 pm](#)

[...] it's easier to pick which Serial port to use; Serial, Serial1, etc. AND support for the NewSoftSerial library for creating software serial ports on any pin. Inside the download zip file are two versions of the [...]

45. [*Research: RFID, XBee and Arduino « Beyond the keyboard*](#) →
[July 3rd, 2011 → 11:28 am](#)

[...] neat thing is the NewSoftSerial library for Arduino, allowing you to turn any set of pins into additional RX/TX pins with free to set baud [...]

46. [*jomuoru weblog » Blog Archive » Esto es Camus Party*](#) →
[July 13th, 2011 → 7:09 am](#)

[...] de instalar la librería NewSoftSerial pude compilar e instalar el Arduino Firmware en mi placa. A continuación necesitaba descargarme [...]

47. [*Update: Design review « Appiphania*](#) →
[July 17th, 2011 → 8:51 pm](#)

[...] a bit of this code at the end of this journal entry. The “NewSoftSerial” library <http://arduiniana.org/libraries/newsoftserial/> was extremely easy to get working (code example [...])

48. [*Anonymous*](#) →
[July 21st, 2011 → 1:18 am](#)

[...] Modul per Software-UART? Bitte einen Link oder Hinweis wo ich nachlesen kann. danke Schaust du hier _____ FHZ1300 | 2x JeeLink | AVR-NETIO | FS20 | 1-Wire | 2x XBEE Pro | 4x XBEE 2.5 [...]

49. [*Using A Second \(Software\) Serial USB To Debug Your Arduino | Utopia Mechanicus*](#) →
[July 31st, 2011 → 11:07 pm](#)

[...] actually really easy, using some code called NewSoftSerial (available from this site, at the ‘Download’ subheading). This software is much like your Serial device you use on the Arduino, but it's in software [...]

50. [*Kemper LED / Arduino Interface » Powerhouse Electronics*](#) →
[August 20th, 2011 → 7:37 pm](#)

[...] provided by the software library “NewSoftSerial”. The library can be downloaded from: <http://arduiniana.org/libraries/NewSoftSerial/>. Since the communications port is created using software any of the Arduino port pins can be used. [...]

51. [*Android talks to Arduino | ★ Elmino Blog ★*](#) →
[August 28th, 2011 → 12:48 pm](#)

[...] NewSoftSerial library from Mikal Hart: <http://arduinoiana.org/libraries/newsoftserial/> [...]

52. [*Utilizando a Bees Shield em uma Arduino Mega « A arte do hardware*](#) →
[August 28th, 2011 → 7:03 pm](#)

[...] via jumper na própria shield. Para comunicação com essa Bee, é necessário o uso da biblioteca NewSoftwareSerial, permitindo fazer que dois pinos digitais se tornem mais uma [...]

53. [*Arduino camera and geotagger | jarv.org*](#) →
[September 6th, 2011 → 4:44 pm](#)

[...] NewSoftSerial lib was used for communicating over serial using an IO [...]

54. [*Bluetooth + Arduino + Android – 1 : Transmettre des données d'un capteur branché sur une carte Arduino vers un Smartphone Android via bluetooth*](#) →
[September 8th, 2011 → 4:21 am](#)

[...] 1– télécharger la bibliothèque NewSoftSerial pour Arduino NewSoftSerial10c.zip. Des explications et exemples plus détaillés concernant cette bibliothèque sur cette page (<http://arduinoiana.org/libraries/newsoftserial/>). [...]

55. [*Arduino + fon + OpenWRT + ser2net + NewSoftSerial « sea side she side*](#) →
[September 21st, 2011 → 11:47 pm](#)

[...] そのためソフトウェアシリアルを再現させたライブラリがありますのでそれを利用します。とはいっても標準ライブラリのSoftwareSerialは利用しません。高機能で速度もできるようになったNewSoftSerialを利用します。 [...]

56. [*David C. Dean Arduino GPS – On the Cheap*](#) →
[October 31st, 2011 → 2:10 am](#)

[...] NewSoftSerial Library - <http://arduinoiana.org/libraries/NewSoftSerial/> [...]

57. [*Telemetry Using Xbee Modules | Anacortes RC Sailors*](#) →
[December 25th, 2011 → 6:30 pm](#)

[...] arduino remotely can be found here. For communication over XBee the Arduino appears to need the NewSoftSerial library. LD_AddCustomAttr("AdOpt", "1"); LD_AddCustomAttr("Origin", "other"); [...]

58. [*NewSoftSerial, Attachinterrupt\(\) and Pins 2,3 | Anacortes RC Sailors*](#) →
[December 25th, 2011 → 6:36 pm](#)

[...] for attacheinterrupt() are 2 and 3. The GPS shield uses digital 2 and 3 for GPS communication using NewSoftSerial. So I tried moving the GPS to other pins, 8 and 9 worked. Now pins 2 and 3 are free for my [...]

59. [*Telemetry Using Xbee Modules | Anacortes RC Sailors*](#) →
[December 25th, 2011 → 6:36 pm](#)

[...] arduino remotely can be found here. For communication over XBee the Arduino appears to need the NewSoftSerial library. [...]

60. [*\[Arduino\] Lecteur RFID à écran lcd, avec stockage du tag “valide” en EEPROM externe I2C « Skyduino – Le DIY à la française*](#) →
[January 24th, 2012 → 1:46 am](#)

[...] Dans ce projet vous pouvez remarquer que je suis obligé d'utiliser deux port série, un à 9600 bauds pour l'écran lcd, et un autre à 2400 bauds pour le lecteur RFID. Normalement il me faudrait une mega (qui possède 3 port série) pour faire ce projet en hardware, mais il existe aussi des librairies Serial software ! C'est pourquoi je vais utiliser la librairie NewSoftSerial disponible ici :

<http://arduiniiana.org/libraries/newsoftserial/> [...]

61. [*An Idiot and an Arduino: Pretty WiFly for a White Guy* « ~jmoskie](#) →
[February 4th, 2012 → 9:10 pm](#)

[...] went through each error, and tried to resolve it myself. Some were easy. The "NewSoftSerial" libraries were incorporated into the core libraries, and they replaced the default SoftwareSerial [...]

62. [*Arduino vs Arduino Mega – Which To Use?* | *Utopia Mechanicus*](#) →
[March 8th, 2012 → 10:30 am](#)

[...] speed if you need a second or third (or fourth) port. On the Uno, you can do similarly using the NewSoftSerial library; however, software is slower, and if your program is pushing the limits, you may find a hardware [...]

63. [*I can solder! 7-Segment Serial Display & Nunchucky operational* « *I Am Chris Nolan.ca*](#) →
[August 5th, 2012 → 6:55 pm](#)

[...] already. I found this wall of text which I managed to digest down into this gist (and updated it thanks to these notes) which you can see running in the above [...]

64. [*S2 » Android + Bluetooth + Arduino*](#) →
[August 6th, 2012 → 1:54 am](#)

[...] そして、シリアル通信のテストに利用したArduinoのソースです。 NewSoftSerial(Arduino ライブラリ)を利用しています。 [...]

65. [*Getting started with DroneCell and Arduino.*](#) →
[August 8th, 2012 → 6:37 pm](#)

[...] DroneCell and the GPS simultaneously. I stumbled upon this interesting behavior in NewSoftSerial. NewSoftSerial*|*Arduiniana. I seem to at least have something to go on... Using Multiple Instances There has been [...]

66. [*Emular pines Serial de Arduino con la librería NewSoftSerial » Blog Archive » el blog de giltesa*](#) →
[August 13th, 2012 → 1:13 pm](#)

[...] eso es lo que es capaz de hacer la librería NewSoftSerial (más documentación aquí). Usándola podremos emplear el resto de pines como puertos serial, ya [...]

67. [*Time - He's waiting in the wings - Cuyahoga*](#) →
[August 16th, 2012 → 2:06 pm](#)

[...] in the download is TimeGPS.pde, but it's a touch outdated now that Mikal Hart's NewSoftSerial library has been rolled up into the core (since 1.0) and renamed SoftwareSerial. The problem I had [...]

68. [*Arduino的通讯扩展板介绍 | 爱板网*](#) →
[August 21st, 2012 → 10:42 pm](#)

[...] GPS模块与Arduino的通讯程序 [...]

69. [Giving Arduino a second UART over I2C by stacking another Arduino on top « CyclicRedundancy](#) →
[October 26th, 2012 → 1:58 pm](#)
- [...] tried using the SoftSerial (or the NewSoftSerial) library but ran into data corruptions even at the low speeds, so I decided to look for ways to get another [...]
70. [RFID Reader #1 « Tesla UIs](#) →
[November 6th, 2012 → 8:58 am](#)
- [...] the example code. There some issues on the Arduino library SoftwareSerial, which changed to the NewSoftSerial once in a while. Share this:TwitterFacebookLike this:LikeBe the first to like this.
Categories [...]
71. [Resources for the VCNL4000 IR Proximity Sensor | Sciencearium](#) →
[November 29th, 2012 → 12:22 pm](#)
- [...] - <http://arduinoiana.org/libraries/NewSoftSerial/> Share this: This entry was posted in AT Physics Class and tagged arduino, IR, proximity [...]
72. [Serial LCD do-it-yourself\(DIY\) kit | BUILD CIRCUIT](#) →
[March 17th, 2013 → 2:14 pm](#)
- [...] NewSoftSerial Library - Required for the example sketches. Sets up a second (third, fourth,...) serial port on the Arduino. [...]
73. [How to assemble serial LCD kit | BUILD CIRCUIT](#) →
[March 17th, 2013 → 2:19 pm](#)
- [...] NewSoftSerial Library - Required for the example sketches. Sets up a second (third, fourth,...) serial port on the Arduino. [...]
74. [Android talks to Arduino board - Arduino for ProjectsArduino for Projects](#) →
[March 21st, 2013 → 11:30 pm](#)
- [...] from this project (bluetooth_chat_LCD.pde attached below) – NewSoftSerial library from Mikal Hart: <http://arduinoiana.org/libraries/newsoftserial/> – Eclipse – Android Development Kit (explicitly follow all of Google's installation [...]
75. [Burn Arduino Bootloader on an ATtiny45 for SoftwareSerial | No bread? Make it!](#) →
[June 4th, 2013 → 8:56 pm](#)
- [...] <http://arduinoiana.org/libraries/newsoftserial/> いいね:いいね 読み込み中... カテゴリー Arduino, [...]
76. [Burn Arduino Bootloader on an ATtiny for SoftwareSerial | No bread? Make it!](#) →
[June 4th, 2013 → 9:03 pm](#)
- [...] <http://arduinoiana.org/libraries/newsoftserial/> いいね:いいね 読み込み中... カテゴリー Arduino, [...]
77. [Please wait your turn! Stratoballoon GPS Sensor Sketch « Mark Gilbert's Blog](#) →
[August 30th, 2013 → 6:11 pm](#)
- [...] to the GPS receiver, I'd be writing to the data logger serially. I found information here about running multiple devices serially – the short answer is that you have to access the serial [...]

78. [Going to Arduino from C#, Java, ... string trouble | Hydroinformatix the Gaul](#) →
[September 1st, 2013 → 8:29 am](#)

[...] kB). I used this method and solved my intermitting (and making me crazy...) problems 2) Using PString library, added by NewSoftSerial and put in official version of Arduino. It is very handy: it hands you a [...]

79. [The Frustrumantic Box, Part 4: Software | New Bright Idea](#) →
[October 7th, 2013 → 3:29 pm](#)

[...] developers for the great libraries, and to Mikal Hart in particular for his work on the TinyGPS and NewSoftSerial [...]

80. [Le Dan-TECH » 2ème Partie : Reconnaissance vocale avec Arduino](#) →
[October 19th, 2013 → 4:42 am](#)

[...] , les ports 12 & 13 de l'arduino sont utilisés (liaison arduino-module via la classe newSoftSerial) et ne permettent pas l'emploi du shield Ethernet sur une platine « arduino [...]

81. [on the trail of the elusive Power Cost Monitor signal | We Saw a Chicken ...](#) →
[December 3rd, 2013 → 6:35 pm](#)

[...] I rewrote the logger to use the Arduino's internal UART, since — lovely though NewSoftSerial may be — it causes millis() to report wildly inaccurate times at low bit rates. I recorded a [...]

82. [86duino](#) →
[April 22nd, 2014 → 1:23 am](#)

[...] require that protocol. The version of SoftwareSerial included in 1.0 and later is based on the NewSoftSerial library by Mikal [...]

83. [86duino](#) →
[April 22nd, 2014 → 1:59 am](#)

[...] This requires the TinyGPS and NewSoftSerial libraries from Mikal Hart:
<http://arduiniana.org/libraries/TinyGPS> and <http://arduiniana.org/libraries/newsoftserial/> [...]

84. [Kerry D. Wong » Blog Archive » RF Data Link Using Si4021 And Si4311](#) →
[May 25th, 2014 → 8:46 am](#)

[...] BT1 pin settings (which are done in hardware), the receiver is totally configuration free. I used NewSoftSerial library in the code below. The main loop simply print out the incoming bit stream. You may also use [...]

85. [how to set up arduino + pololu mini maestro \(for an 18 servo hexapod\) | orange narwhals](#) →
[June 7th, 2014 → 8:35 am](#)

[...] newsoftserial should be downloaded from the internet and the folder inside the zip put in (path to where you [...]

86. [Starter Kit Sonar » Starter Kit](#) →
[July 8th, 2014 → 6:47 am](#)

[...] szczęście jest jeszcze jedna biblioteka „NewSoftSerial”, która jest pozbawiona tych wad i na dodatek obsługuje zanegowany sygnał [...]

87. [Twitter Poem Box -Use Arduino for Projects](#) →
[July 24th, 2014 → 12:34 am](#)

[...] Download the TrueRandom <http://code.google.com/p/tinkerit/wiki/TrueRandom>, NewSoftSerial <http://arduiniana.org/libraries/newsoftserial/>, and Twitter [...]

88. [Подключение GPS L30 модуля используя GPS Шилд от SparkFun » Arduino Market](#) →
[October 28th, 2014 → 5:03 am](#)

[...] NewSoftSerial [...]

89. [Tema 5 – Proyectos Arduino | Aprendiendo Arduino](#) →
[December 10th, 2014 → 6:36 am](#)

[...] NewSoftwareSerial: <http://arduiniana.org/libraries/newsoftserial/> [...]

90. [Twitter Poem Box -Arduino for Projects](#) →
[February 13th, 2015 → 3:21 am](#)

[...] Download the TrueRandom <http://code.google.com/p/tinkerit/wiki/TrueRandom>, NewSoftSerial <http://arduiniana.org/libraries/newsoftserial/>, and Twitter [...]

91. [아두이노의 통신 방법, 핀 정리 \(Serial, UART, Software Serial, SPI, I2C\) | Hard Copy Arduino](#) →
[April 4th, 2015 → 12:34 am](#)

[...] NewSoftSerial (Arduino IDE 1.0 이후 버전만 지원) – Serial 모듈별로 인스턴스를 생성해서 여러 개를 사용할 수 있지만 한번에 하나의 인스턴스만 전송/수신 할 수 있습니다. 다른 라이브러리와의 충돌 가능성도 약간 있는 듯 합니다. <http://arduiniana.org/libraries/newsoftserial/> [...]

92. [Please wait your turn! Stratoballoon GPS Sensor Sketch « Mark Gilbert's Blog](#) →
[October 8th, 2017 → 6:14 am](#)

[...] to the GPS receiver, I'd be writing to the data logger serially. I found information here about running multiple devices serially – the short answer is that you have to access the serial [...]

93. [RFID cat door using Arduino -Use Arduino for Projects](#) →
[October 30th, 2018 → 10:14 pm](#)

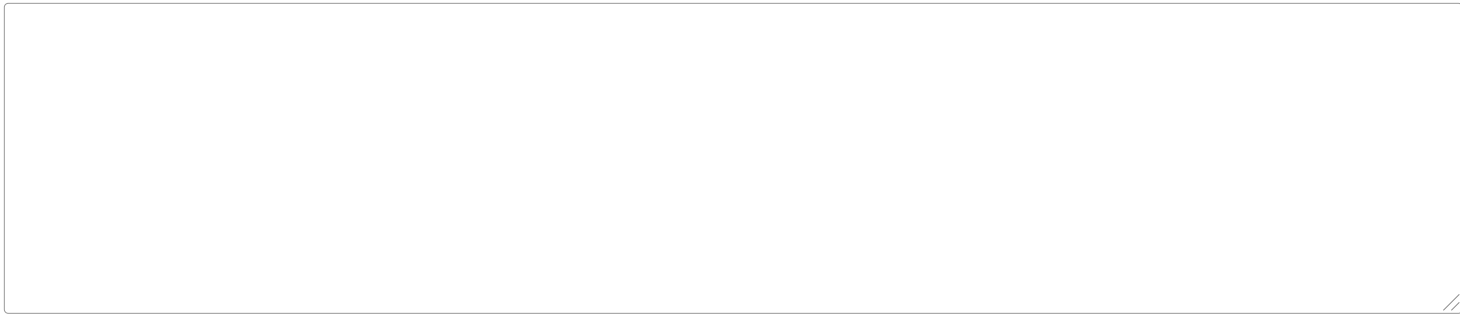
[...] This project consists of several 'modules' that you need to hook up to the Arduino and test in advance. First hook-up the RF reader. You can use the 5v output of the Arduino to power it, and a digital port (I used 2) to get the signal. The RDM630 that I used also has pins for a led that I don't use. It also has an RX pin to send info back to the RF reader, but I don't use that either. Hook-up your antenna, get a tag and use the serial monitor of the Arduino to see if it's detected. Now you can also start working on improving the antenna by trying adding or removing turns, trying different shapes et cetera. Power the Aduino with the 9v power supply, not just USB because at least in my case that didn't work. You can download the file named 'rfid3.pde' to test. The code requires NewSoftSerial.h which can be obtained here [...]

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