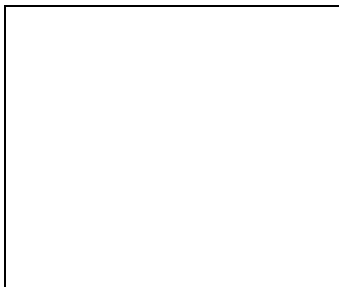


You are here: [DD-WRT wiki mainpage](#) / [LaFonera](#) / [Hardware](#) / [Serial-Cable-Port](#)

## Contents

- [1 Accessing serial console on the Fon](#)
- [2 Alternate Serial Circuit](#)
- [3 Direct USB connection](#)
- [4 Very simple console adapter](#)
  - ◆ [4.1 Pinout of console connector inside La Fonera is:](#)
  - ◆ [4.2 First \(ugly\) circuit:](#)
  - ◆ [4.3 New circuit:](#)
  - ◆ [4.4 With connectors:](#)
- [5 Other Tutorials](#)
- [6 Refrences](#)

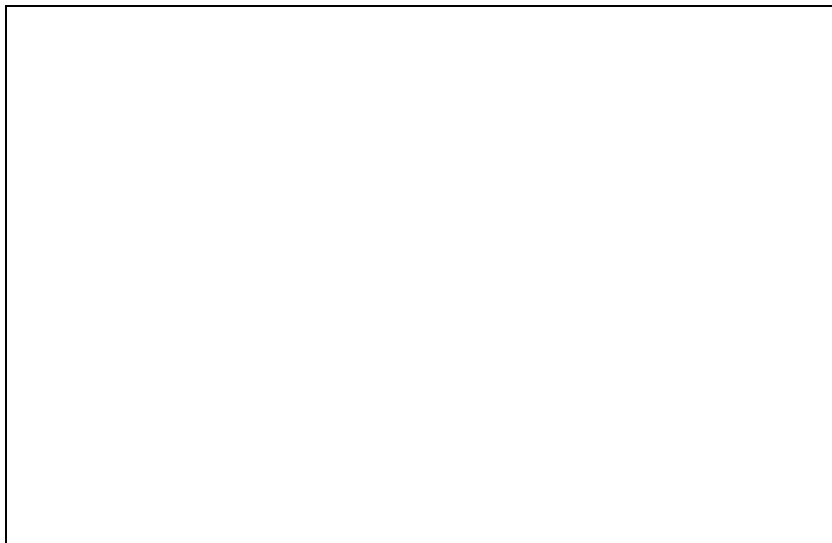
## Accessing serial console on the Fon



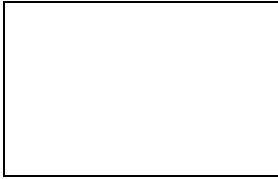
**Out of the box the foneros wireless router has Telnet and SSH turned off. By accessing the buit in serial console you can turn SSH on and access various settings and reflash the firmware.**

Read on and you?ll find out how.

See [LaFonera Hardware Disassembling](#) for how to disassemble your router. You will need to find the serial console. See the image below (FONERA 2100):

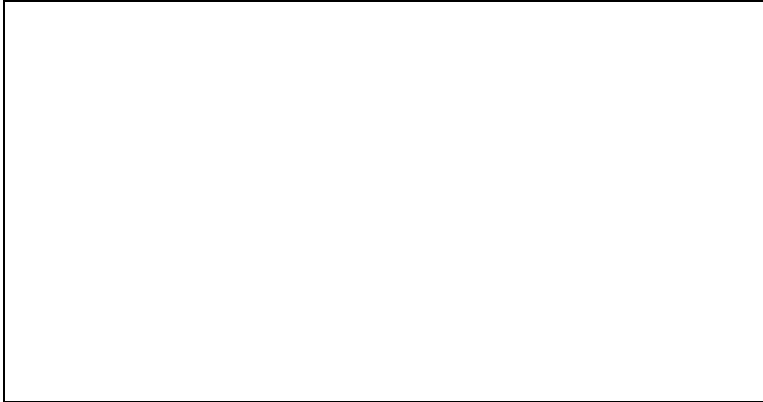


## LaFonera\_Hardware\_Serial-Cable-Port



In order to connect it to your PC we need to convert the **3.3 volts** from the Vcc of the router to the levels of your PC serial port wich operates at **-12 to 12 volts**.

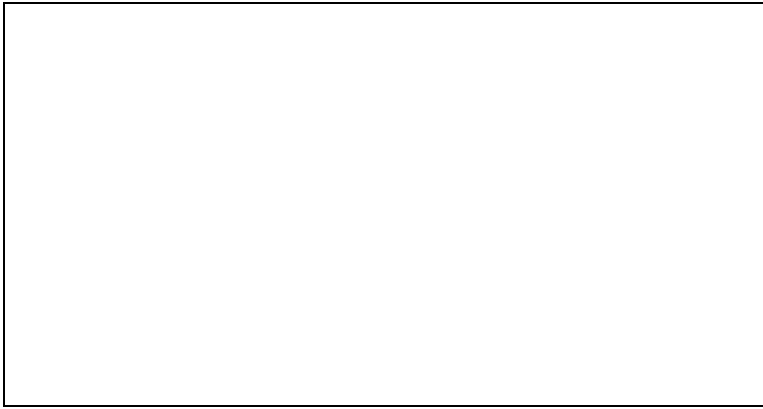
For this you can use any kind of **TTL to RS232 level shifter**. These can be bought as kits or made from for example a phone data cable. Using a **MAX 232** you can wire it up like this (however notice that the polarity of C5 is drawn incorrectly in this schematic):



Using a **dremel** or a knife we need to cut out a hole for the Serial connector:



Draw along the connector to mark out where to cut:

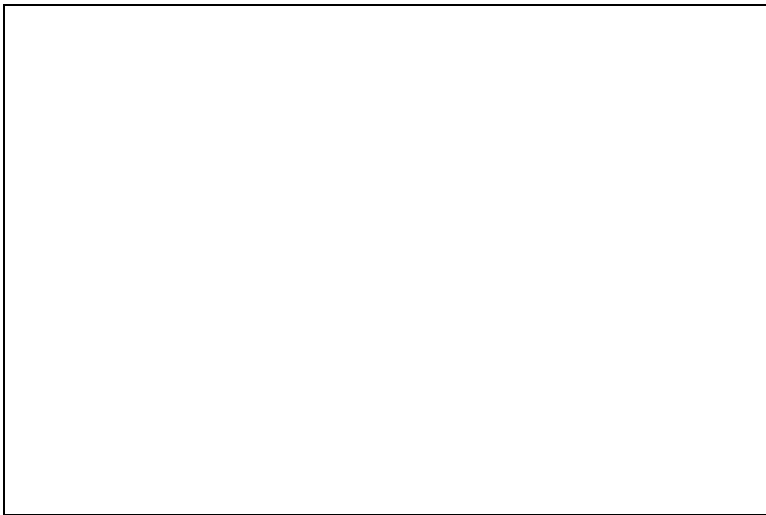
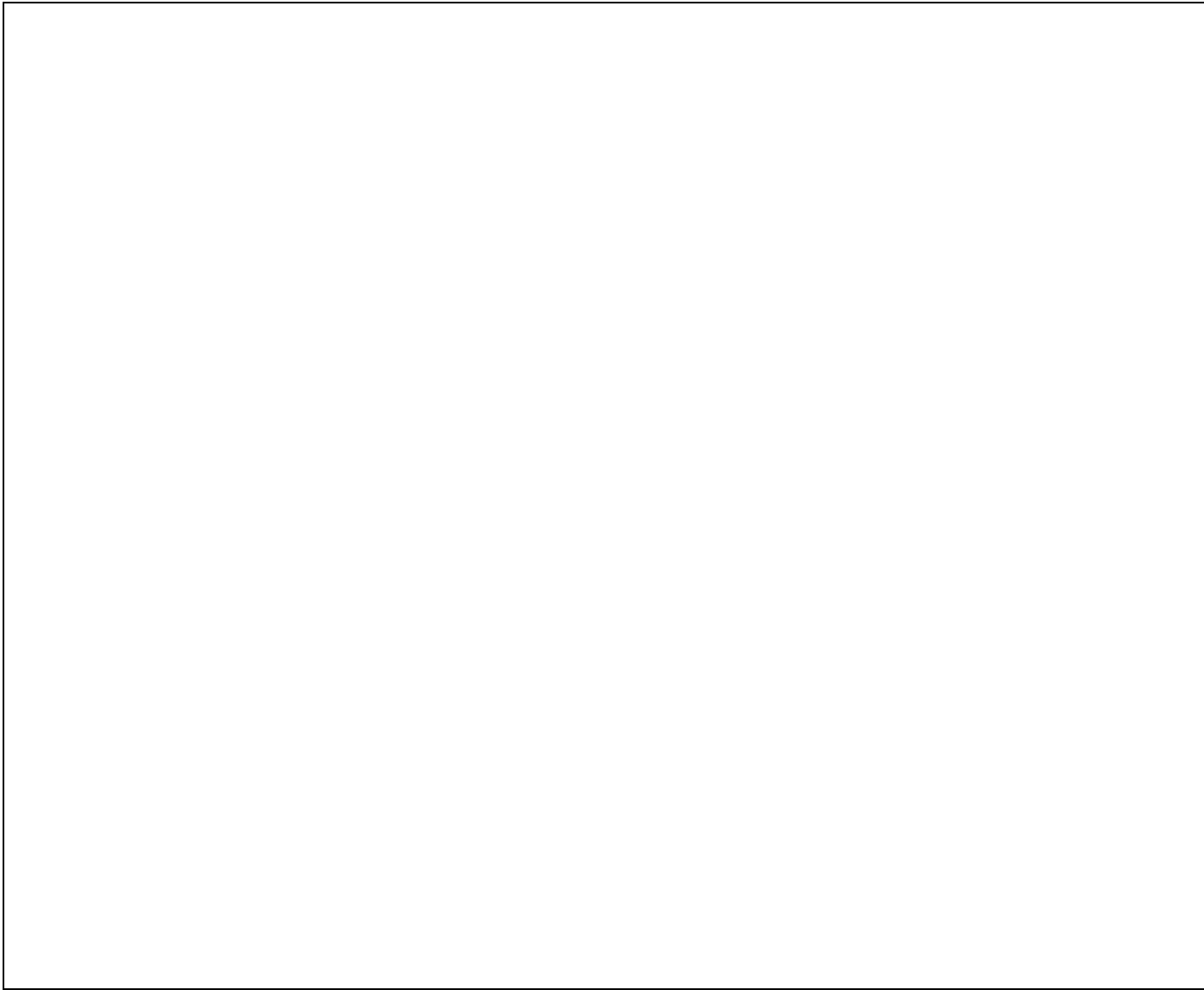


If you use a dremel, use a low rpm so that the plastic don?t melt.

The finished cutout for the **DB9 connector**:



All done! Ain?t it beautiful?



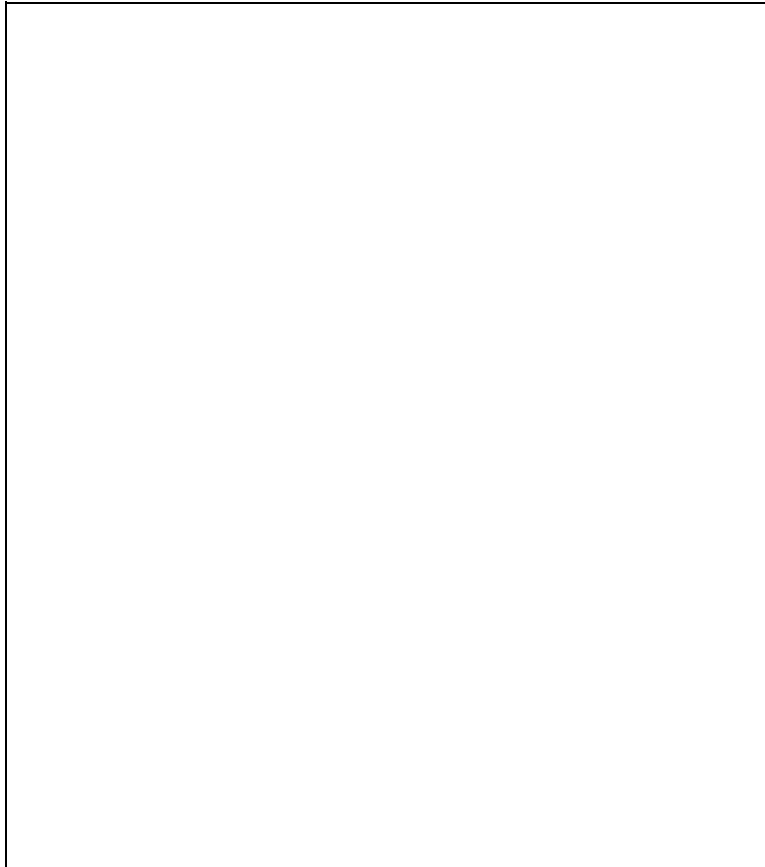
## LaFonera\_Hardware\_Serial-Cable-Port

To access it you can use any terminal application. **HyperTerminal** ships with windows and it will do fine. Connect your fon to Com1 and Start hyperterminal from:

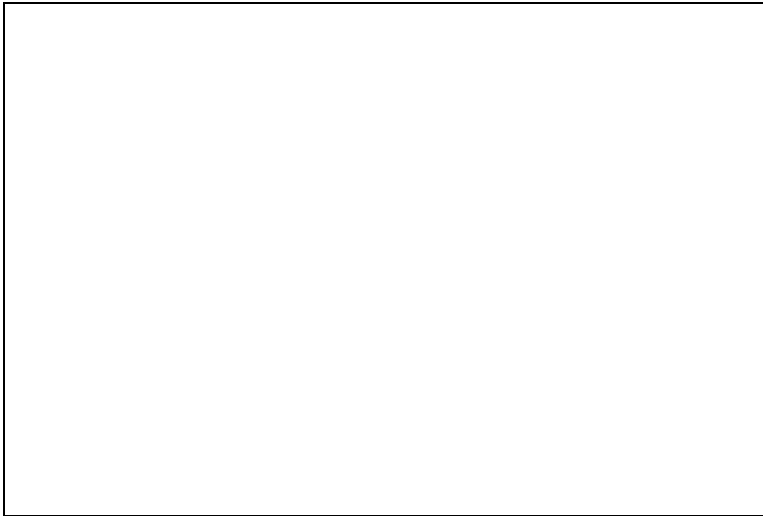
*Start->Programs->Accessories->Communications->HyperTerminal .*

You will need to set up communication settings to

**9600-8-N-1 and no flow control:**



And here you have it:



---

## Alternate Serial Circuit

There is also another solution to using a Max232 chip that is less work, and less parts. That means its easier to build, and it is a smaller circuit. All you need is a serial connector and a Dallas DS275. [Here is a link to the DS275](#) If your really slick, you can have them shipped at no cost as a "free sample."

Here is the diagram to wire up this chip to attach to the fon. The chip will operate on 5v, so you can use the pin on the Fon's board to power it.



You will enjoy the results immensely. I love you all.

## Direct USB connection

I think the simpler way to connect with the TTL level serial on the Fonera is to use a direct USB converter that avoid the RS232 level translation. A chip that can be used for this work is the FTDI FT232R. I use this

## LaFonera\_Hardware\_Serial-Cable-Port

part in my work and I can assure that it works well with Windows. A complete cable/converter can be bought directly from the FTDI at [this link](#).

I suggest to use the [wired end](#) converter, or the [jack version](#) for a cleaner job. [*Update 2010-06-13*: It was also tested with Adafruit's FTDI 3.3v cable [available here](#) and worked flawlessly]

Another chip I know to do this work is the SiliconLaboratories CP210x. The only connection needed are the TX, RX and GND signals. No need to connect any other wires.

TX <-> RXD

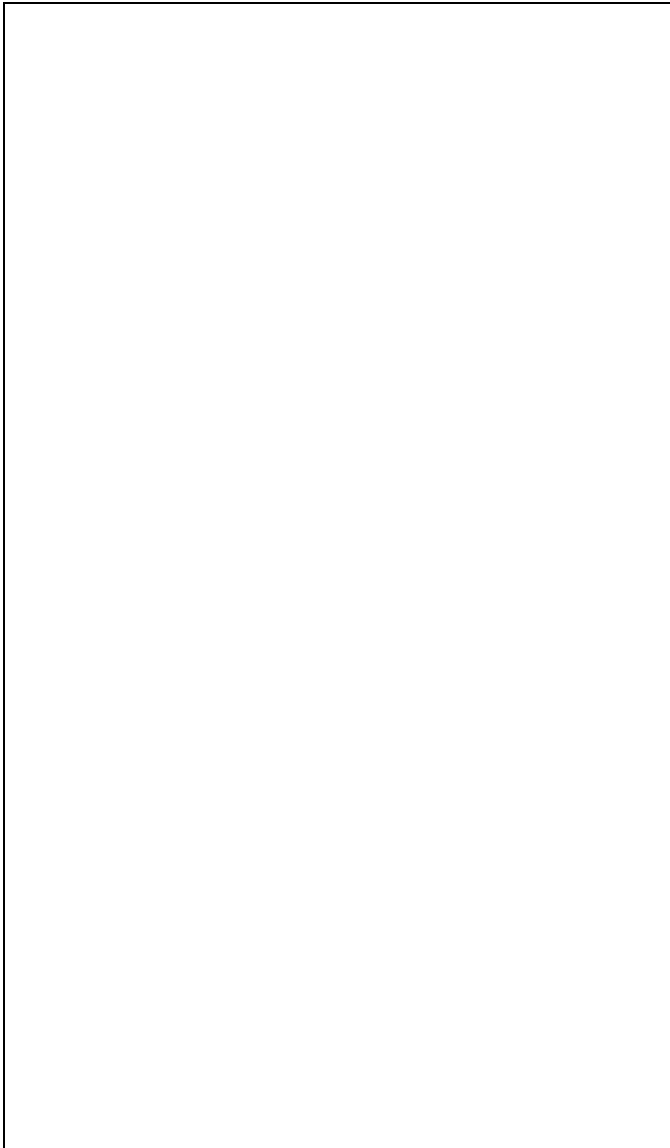
RX <-> TXD

GND <-> GND

**IMPORTANT:** as stated previously, YOU HAVE TO WAIT 5 seconds after powering on the Fonera before connecting the TX from the cable to RX on the router. FONERA WON'T BOOT IF THE RX PIN IS CONNECTED WHEN POWERING ON! I lost a couple of hours trying to understand why RedBoot wasn't working anymore until I discovered that other users had documented this before.

## Very simple console adapter

without the use of max232 or max3232, just NPN transistors:



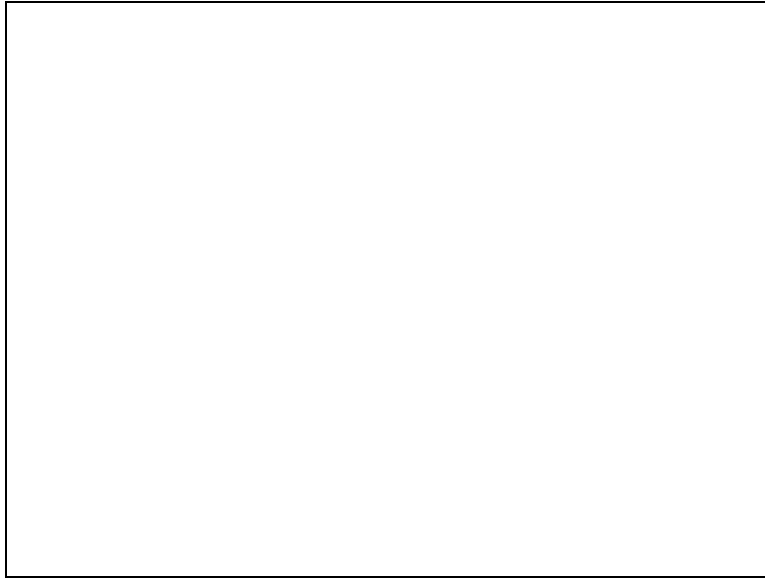
## Pinout of console connector inside La Fonera is:

(too big capacitors here)  
. . . . r  
. w o . b  
(SDRAM chip here)

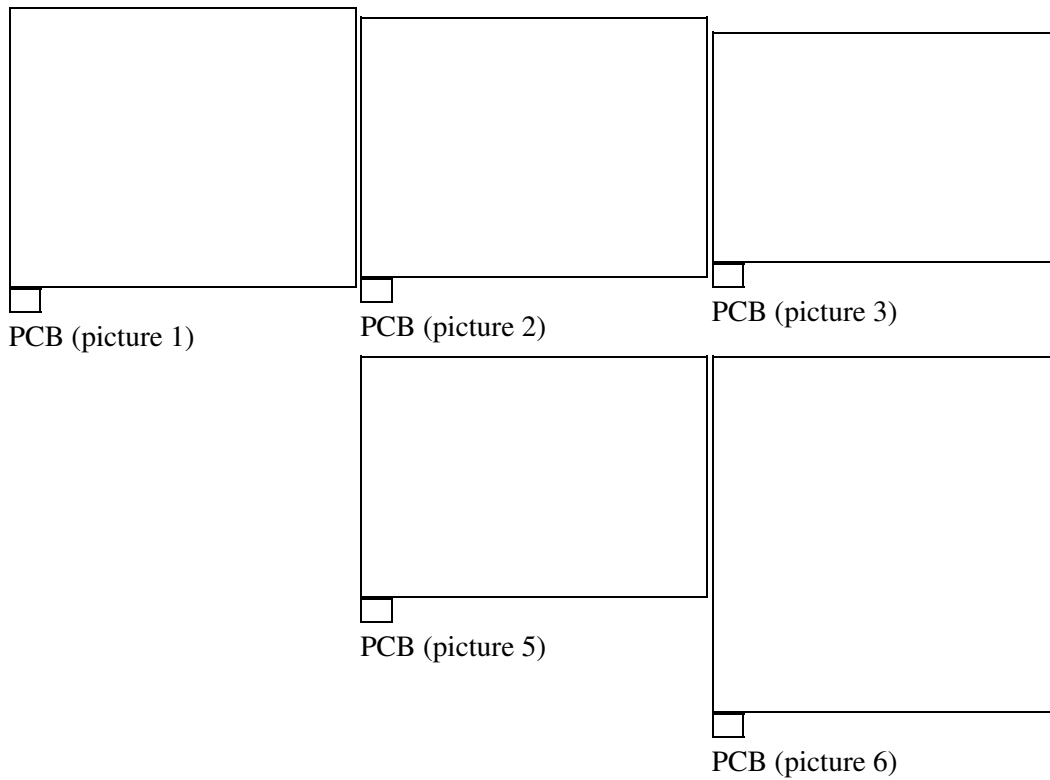
- r : red : Vcc 3.3 Volts
- b : bleu : Ground
- w : white : RX
- o : orange : TX



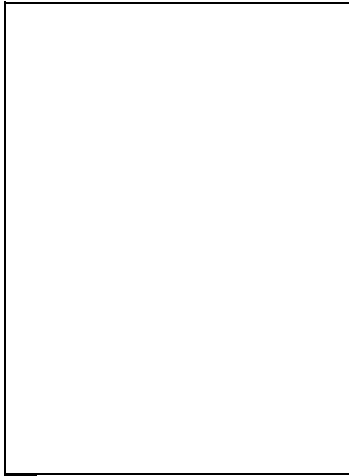
### First (ugly) circuit:



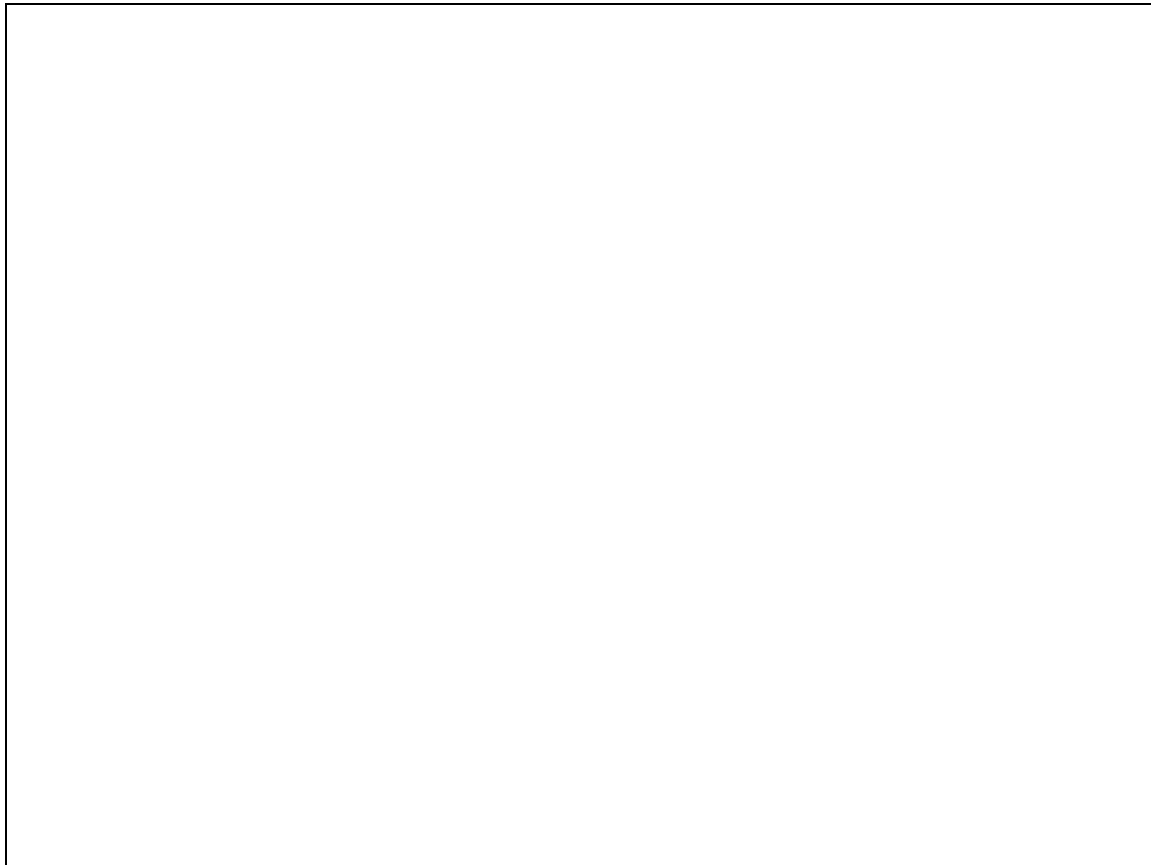
### New circuit:



First (ugly) circuit:



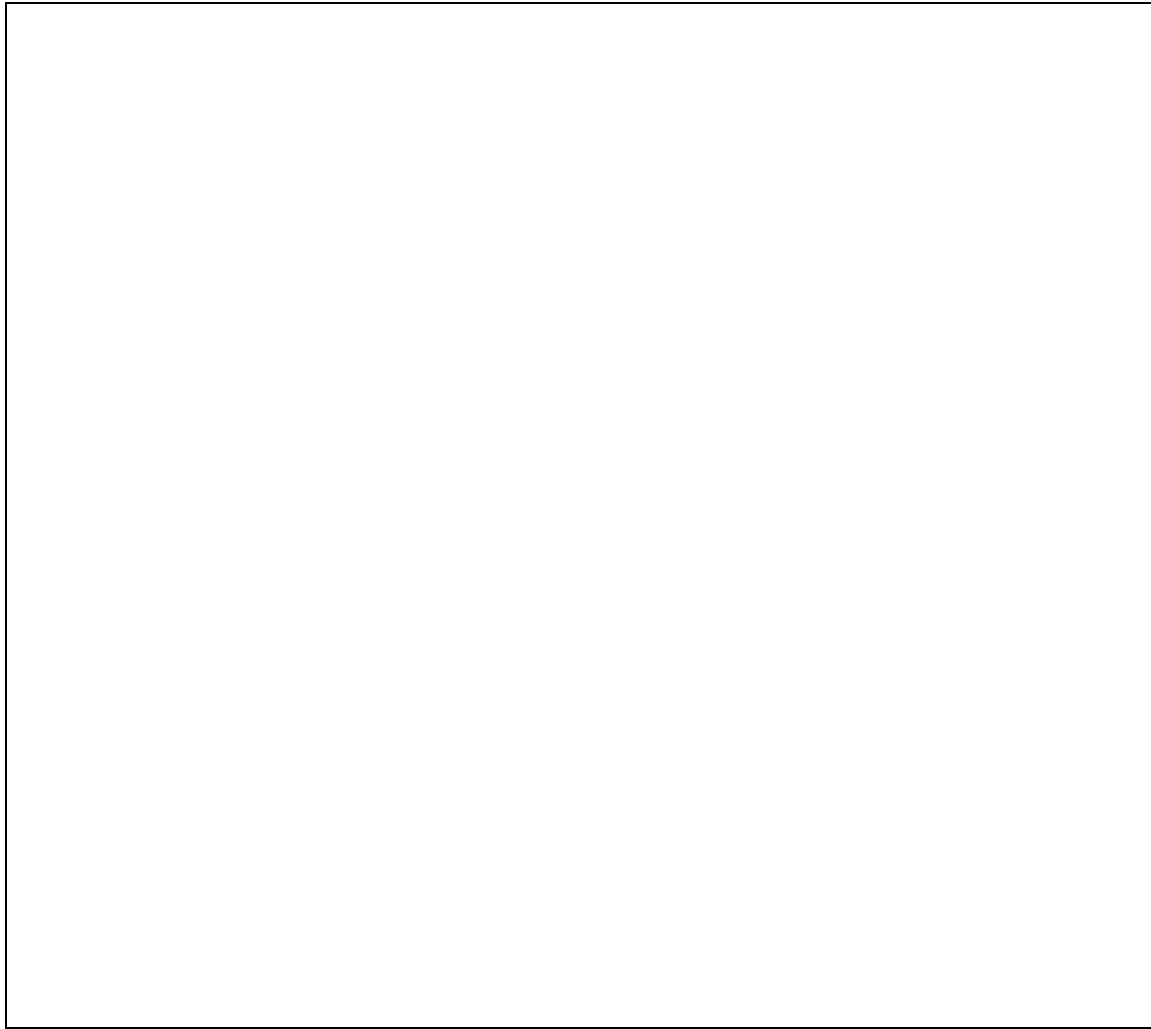
PCB (picture 4)



**With connectors:**

## LaFonera\_Hardware\_Serial-Cable-Port





For USB connexion just use a USB/serial adapter.

## Other Tutorials

There are other possibilities to build a serial-port to your LaFonera. Some of them could be found here:

- [max232 \(TTL\) adapter](#)
- [Level convertor \(TTL to RS232\) with a MAX3232CPE+](#)
- [Ugly cellphone adapter hack](#)
- Build a serial connection-cable from a mobile-phone-pc-adapter [original spanish website \[http://babelfish.altavista.com/babelfish/trurl\\_pagecontent?lp=es\\_en\]](#)

## References

- <http://www.lefinnois.net/wpen/index.php/2007/04/07/first-post/>

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this page was made by [wildblue!](#)