

Re: Help! Needing hint on Microcontroller

Source: <http://sci.tech-archive.net/Archive/sci.electronics.design/2005-09/msg03444.html>

- *From:* "Roger Hamlett" <rogerspamignored@xxxxxxxxxxxxxxxxxxxxxx>
 - *Date:* Sun, 18 Sep 2005 21:25:23 GMT
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"Ruediger" <ruediger.leibrandt@xxxxxx> wrote in message
[news:dgk1le\\$8gl\\$04\\$1@xxxxxxxxxxxxxxxxxxxxxx](mailto:news:dgk1le$8gl$04$1@xxxxxxxxxxxxxxxxxxxxxx)

> Hello all!

>

- > Due to the costs and size of multichannel I/O RC-model Transmitters &
- > Receivers I want to design a Bluetooth using, microcontroller based
- > remote
- > control.

You are unlikely to be able to make the modules in less than 100 off quantities for less than the off the shelf systems.

- > The pcb's in the receiver and the transmitter shall be equal, as there
- > is a
- > lot of data to be picked up and put out on both sides, as the vehicle
- > has
- > compass and tilt sensor, battery monitor and similar equipment, and the
- > transmitter has to display these info's on both analoguous and digital
- > displays.

If you intend to use the same PCB at both ends, you will be wasting money, and board real-estate.

- > What I am still thinking about is the main microcontroller on both
- > sides -
- > ideally it's a μ C with a USB-Interface to make use of a cheap
- > USB-Bluetooth-module, I would need about 8 output ports to act as
- > servo-data lines, 4 to 8 digital inputs and at least 4 analog inputs.
- > Furthermore the controller needs to be in-system programmable and
- > ideally
- > programmable with some higher-level language such as C or C++ or even
- > Java.

Any chip can be programmed in a high level language if you buy the suitable compiler. The part of this that will be incredibly difficult, is talking to the 'cheap USB-Bluetooth module'. USB, is a master-slave interface. The PC implements the master, and the master device is relatively complex, and needs a lot of code. Slaves are cheap to implement. The USB-bluetooth interface, is a slave device. There are dozens of processors that offer USB-slave interfaces, but a USB master interface (which is what you would need to talk to such a device), will

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involve adding a master interface chip, and programming this. You can reckon on perhaps 60 man days of programming to implement such an interface.

Much cheaper to use a Bluetooth module that is designed to interface to a microprocessor. These will cost more, but will bring the amount of code down to a few man-hours of work. A typical module would be:

<http://www.serial-cards.co.uk/productcategorydetail.aspx?CategoryID=53594&onspecialoffer=False>

TDK do cheaper version, that require a little more work.

There are also such units, with a processor built in, like:

http://www.rfsolutions.co.uk/acatalog/ToothPIC_Bluetooth_Module.html

Best Wishes

• **References:**

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◇ From: Ruediger

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