RF receiver for existing remote

Moderator: phalanx

strux

RF receiver for existing remote

Tue Nov 01, 2011 8:01 pm

Hi all,

First post to SF and fair warning, I'm a total noob.

I'm trying to create an IR blaster for an existing RF remote (http://www.remotecentral.com/wonder2/specs.htm). Initially, I just want to hook an RF receiver up to an Arduino Uno and start attempting to capture signals from the remote. I know that the frequency on the remote is 433MHz and so my question is, will any 433MHz receiver work for my purposes or do I need to take modulation into account? I have no idea what type of modulation the remote utilizes and so I'm not even sure if this is possible. The receiver I had in mind was this one http://www.sparkfun.com/products/10532.

Any help would be greatly appreciated.

waltr
Support Volunteer

Re: RF receiver for existing remote

Wed Nov 02, 2011 3:31 pm

You should know what the TX modulation is to properly match a receiver however some guesses could be made.
Considering to low price of the transmitter and that it is operating on 433MHz there is a good likely hood that it uses OOK or FSK modulation. To verify one could connect a fast O'scope to its antenna and look at the RF modulation envelope.
Can you get access to a scope?

Secondly if you are willing to spend the money on the SparkFun receiver and do a bit of experimenting (with a scope) that receiver could work with the proper Arduino code to de-code the receiver output.

Just looked at both the transmitter and receiver links you posted. These are not compatible since the transmitter is 433MHz and the receiver is 434MHz. Re-check what SparkFun carries since I think they also have a 433 MHz receiver.

strux

Re: RF receiver for existing remote

Wed Nov 02, 2011 5:44 pm

OK, so modulations need to match. It sounds like I will need to hook the remote up to an oscilloscope, as you mentioned, and try and determine the modulation. Luckily, I have a friend with one.

> **waltr wrote:**
> Secondly if you are willing to spend the money on the SparkFun receiver and do a bit of experimenting (with a scope) that receiver could work with the proper Arduino code to de-code the receiver output.

Not quite sure what you mean here, but I'd like to. Sorry, I'm a little slow.

> **waltr wrote:**
> Just looked at both the transmitter and receiver links you posted. These are not compatible since the transmitter is 433MHz and the receiver is 434MHz. Re-check what SparkFun carries since I think they also have a 433 MHz receiver.

The data sheet on the "434MHz" receiver says it has a frequency range of 433.92MHz, so I think they just rounded up in the product title for some reason.

Thanks for the reply!

waltr
Support Volunteer

Re: RF receiver for existing remote

Wed Nov 02, 2011 7:49 pm

Then I'd make sure that the remote TX is also transmitting on 433.92MHz. You may be able to measure this with a scope or use a freq counter.

Try to get pictures of the modulation from the scope and post them if you are not sure what you're seeing.

What I mean is: The remote's transmitter may use a simple OOK modulation but the data may have addition encoding/modulation so that it may not be as simple as using what comes out of the receiver. Do some searches on "OOK modulation", "FSK modulation", "Manchester encoding" to start getting an idea on what to expect. These topics have been discussed in these forums so look here as well as in Wikipedia and other web sites.

strux

Re: RF receiver for existing remote

Thu Nov 03, 2011 12:33 pm

I see what you mean. Essentially, I'll have to discern the modulation, then likely the encoding before I'll be able to make any sense of the signal. Thanks for the "Manchester encoding" reference, that was really helpful. I'm going to hook it up my friend's scope tonight so I'll try and post some pictures of the results.

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