

## Re: Using garage door remotes as a voting system?

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- *From:* [bigcat@xxxxxxxxxxxx](mailto:bigcat@xxxxxxxxxxxx)
  - *Date:* 10 Apr 2005 09:20:46 -0700
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Mike Harrison wrote:

> On 9 Apr 2005 14:11:45 -0700, "Steve" <popmusic@xxxxxxx> wrote:  
>  
>> Thanks for the replies. I'd like to do this on as low a budget as  
>> possible (under \$1000?, under \$500? :-)), and set it up for around  
>> 20  
>> people to begin, with the option to expand. Audience members should  
>> be  
>> able to vote at the same time and shouldn't be counted twice if they  
>> press the button twice.  
>>  
>> There's a keychain transmitter at <http://www.automicro.com.tw/> that  
>> is  
>> "rolling code" which I understand means that it creates a unique  
>> code  
>> every time it's pressed. There's also a shareware program called  
>> "girder" that I think I could use.  
>>  
> Using keyfob type remotes as-is is not going to work reliably as  
> there will be collisions due to  
> simultaneous transmissions. Although keyfobs usually send repeated  
> codes, the intervals are likely  
> to be the same so it would not help the collision problem.  
>  
> What you need is for each transmitter to send the data several times  
> at random intervals, over a  
> period of a few seconds.  
> You need to do some statistics to work out the optimum timings based  
> on packet length, receiver  
> timing requirements and number of users. Each transmitter would have  
> a unique address so the  
> receiver could distinguish each user and ignore the repeats.  
>  
> I would suggest you look for a keyfob that uses the Microchip RFPic  
> 12F parts, as you could change  
> the firmware to do this, while still having a ready-made RF stage and  
> casing etc.  
>

## Re: Using garage door remotes as a voting system?

- > You would need to write some code at the receiver end, but it would not be especially complicated –
- > it would just log each address received and the data for that address.
- >
- > Typical data rates for a cheap hardware keyfob would be 1200 baud. You need to send, say, 2 bytes of
- > data (12 bits address, 4 bits vote, 1 byte for error checking, and a few bytes of preamble to let
- > the receiver settle down, so probably about 6–8 bytes total.
- > This gives a packet length of about 65mS. Even for 20 users, this means that if all timings were
- > optimum it would take 1.3 seconds for all packets to get through. By the time you have enough
- > repeats to get good probability of receiving all of them I would think you are well into tens of
- > seconds if not minutes. This time would also scale nonlinearly with more users.
- > So you probably want higher performance RF stuff capable of significantly higher baudrates – this is
- > do-able but may need more expensive hardware – 100Kbit RF modules are available, and the extra cost
- > is mostly at the receiver so it may be feasible.
- > I would say you probably want to be using FM, not AM for better data integrity
- >
- > An alternative would be to have the fobs synchronise into defined timeslots from an external master
- > controller, however this adds the cost of receive hardware to each keyfob.

On \$500 the lot, by someone without the skills to do it?

NT

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### • *References:*

- ◆ *Using garage door remotes as a voting system?*  
◇ *From: Steve*
- ◆ *Re: Using garage door remotes as a voting system?*  
◇ *From: John Fields*
- ◆ *Re: Using garage door remotes as a voting system?*  
◇ *From: Steve*
- ◆ *Re: Using garage door remotes as a voting system?*  
◇ *From: Mike Harrison*

- Prev by Date: *Re: Colloidal silver generator?*

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