

Re: Inexperienced and need to find/design 2ch remote control+audio receiver combo

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On Jan 19, 9:01 pm, "Steve Bergman" <s...@xxxxxxxxxx> wrote:

Hi,

I'm not sure this is the right place to ask this, and pointers to the appropriate place would be appreciated.

I'm a programmer, not an expert in matters RF. But due to factors beyond my control, I have been called upon to make some decisions about the design of a device because "I'm a technical guy". ;-)

The device would be worn like a name tag (which limits the size, obviously. Perhaps 10cm x10cm x 3cm maximum) and be issued upon entry to a public place. For example, a shopping mall. It would be battery powered and need to be able to receive and play voice quality audio. I would need a range of at least a few hundred feet. (The transmitter can be off the shelf and just needs to accept audio input from any standard "line out" from, say, a CD player.) It also would have a separate receiver (from a separate transmitter) for remote control of an LED.

I'm looking for some basic info like what broadcast type (AM, FM) and frequency would be appropriate (and legal) for this use.

I believe that something like 418MHz or 434MHz AM would be appropriate for the remote control part. But I'm really clueless regarding the audio. I'm trying to avoid doing something really stupid like using 49MHz and having walkie-talkie's cutting into the broadcast.

Also, I would need some sort of protection against malicious individuals cutting into the broadcast with their own transmitters. This is difficult, as I need to be able to send audio and activate the remote controls on all the tags simultaneously. So I can't use any sort of rolling code protection. A fixed code is the best I can think of. For the remote control, I've found a transmitter receiver pair based on the Ming tws-434 and rws-434 chips with a fixed security code

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that looks usable.

An all in one board that had the 2 channel remote and audio receiver
all together in either kit or preassembled form would be a godsend.

Again, apologies if this is not the appropriate group, but I am out of
my depth and would really appreciate some pointers.

Thanks for any enlightenment,
Steve

For un-licensed operation, the 418 and 434 MHz frequencies in the U.S.
are for remote control purposes only. The signal must be manually
actuated and must be intermittent, not continuous, e.g. garage door
opener, tire pressure monitor, keyless entry ... to name a few
applications. Encoded voice may be transmitted in the ISM bands, e.g.
915, 2450, 5800 MHz. WCS bands may be used depending upon the
application.

Aside from that, to achieve several hundred feet (or more) range in a
shopping mall using a low-power (<1mW) transmitter and a small or
built-in antenna is feasible, but you will need a better link and
modulation method than what you describe. I don't know of any
off-the-shelf solutions that will give coverage you require with
reasonable quality. A custom solution may work.

More details on the application are required.

Frank Raffaelli
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