

Re: DTMF dead?

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- *From:* nico@xxxxxxxxxxx (Nico Coesel)
 - *Date:* Sun, 08 Jul 2007 19:17:54 GMT
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"Mook Johnson" <mook@xxxxxxxx> wrote:

"Nico Coesel" <nico@xxxxxxxxxxx> wrote in message
news:468fb22e.156164602@xxxxxxxxxxxxxxxxxxxxx

Vladimir Vassilevsky <antispam_bogus@xxxxxxxxxxx> wrote:

Nico Coesel wrote:

I have an upcoming project in which I might want to use dtmf transceiver chips as a simple means of communication. However, it seems that dtmf transceiver chips are quite hard to get these days. Even Digikey stocks none. Anyone knows a source that keeps making dtmf transceivers for the years to come?

It is possible to encode and decode the DTMF with pretty much any microcontroller. For example, you can do this:

<http://www.abvolt.com/research/Multitone%20detect-IEEE.pdf>

However, if the goal is the communication, I would rather implement a PSK or FSK modem using a microcontroller. It would be much better and even simpler than the DTMF.

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I was hoping to use the analog front-end which is usually quite good (reception down to at least -30dB). Its hard to beat that with a microcontroller implementation (been there done that).

PSK / FSK is also an option. I just need something cheap and reliable that will communicate over a 2 wire system carrying both communication and power.

If you have a DC return path beside the two wires I'd recommend using phantom power and going high speed RS-485.

You apply the DC (or AC) to the center tap and the telemetry to the secondary. ON the two wires the power is on the common mode and the telemetry is on the differential mode.

On the other end just pick off the signals in the same order. (power on the center tap and telemetry on the secondary).

The sort of wiring hasn't been nailed down yet, but at this moment I would prefer a system with 2 wires which carry both power and communication. RS485 is also in the picture, but we need to have up to several hundred devices on a short bus (say 20 meters / 60 feet). I think this would be stretching RS485 too much to its limits even at low baud rates. Also, the communication comes from a UART. Using a transformer on DC biased signals is not a good idea.

It also seems an NXP LPC2101 ARM micro is even cheaper (\$1.65) than a NXP LPC935 8051 based micro (\$1.82) so I think software FSK -which I've build before- is not out of the question. DTMF is a whole lot more complex to decode than FSK.

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Reply to nico@nctdevpunt.nl (punt=.)
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