

Re: Voice annunciated test box circuitry

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Robert Monsen wrote:

> *mirach wrote:*

>

>> *Hello*

>> *I am a repair tech for medical equipment and am needing to make some*

>> *test boxes for simple location of the number of a wire that has been*

>> *cut off in a harnesses with as many as 256 wires in them.*

>>

>> *These harnesses have a plug on one end and the cut-off unlabeled wires*

>> *at the other end . Up untill now I have used what is called a "light*

>> *box" these boxes have a plug to plug the harness into.. 128 or 256leds*

>> *on them and an internal battery and a lead so that when you touch one*

>> *of the wires with the lead one of the leds will light showing which pin*

>> *on the plug is associated with that wire (each wire is then labled)*

>>

>> *Now with what I would like to build.*

>> *Since you have to look at these wires through a microscope it is very*

>> *time consuming to look up from the scope to see the led every time.*

>> *What I would like to do is replace these leds with something that*

>> *announces the number like "21" "102" "128" etc. with a voice this*

>> *would make labeling much faster.*

>> *Does anyone know of a pre-made IC? or EEprom? that would have 128 or so*

>> *individual areas that could store the voice message for the number and*

>> *be random accessed. would it need some sort of special trigger? As im*

>> *sure you can tell my knowlege is limited in this area, I am just*

>> *starting to work on this project and anyones ideas would be greatly*

>> *appreciated.*

>>

>

> *You can buy digital voice recorder chips from windbond*

> *(<http://tinyurl.com/4y4rp>) that allow you to record some amount of*

> *voice. You can cue the voice at any point. Thus, you could record*

> *yourself saying 1,2,3.. and then cause the chip to replay the individual*

> *digits on command. You control it using SPI from a microcontroller. They*

> *go up to 240s of recording time, so you could conceivably record all 256*

> *numbers, but individual digits are probably easier. You can buy them at*

> *digikey or futurlec. I'm sure you can also get pre-recorded voices, but*

> *I didn't spend the time searching.*

- >
- > *As to encoding the data, you could use individual multiplexer chips.*
- > *However, you could also get 8 octal buffers with high impedance outputs.*
- > *Tie each input to a corresponding buffer pin, and tie the outputs*
- > *together into a bus, all bit zeros together, ones together, etc. Then,*
- > *select the buffer chips one at a time, and read the bits for that buffer*
- > *in parallel using 8 pins on your microcontroller. Once you have a hit,*
- > *just program the SPI device to output the proper voice codes. 16 bits on*
- > *the final device, 8 for input, 8 for output. Plus, of course, the 3 or 4*
- > *bits for SPI to control the recorder.*
- >

Meh. Multiplication. You'd need 32 buffers, and 32 pins to select them. You need a pin per input. There are probably better ways to do this...

- > *The total part count for this solution would be the voice chip, the*
- > *microcontroller, the buffers, and such. You could run it off of a 9V*
- > *battery, or use a set of rechargeable batteries, and build a recharger*
- > *unit for it. Alternately, if it didn't need to be portable, you could*
- > *run it off of a wall wart. Total cost would be around \$30 for parts, I*
- > *think, including PCB and enclosure, depending on the cost of the plug.*
- > *If you were to mass-produce these, you could probably make them for \$10*
- > *each.*
- >
- > *I'll work up an estimate for 10 if you want... ;)*
- >

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Regards,

Robert Monsen

"Your Highness, I have no need of this hypothesis."

- Pierre Laplace (1749-1827), to Napoleon,
on why his works on celestial mechanics make no mention of God.