

Re: PPC modem

Source:

<http://www.tech-archive.net/Archive/PocketPC/microsoft.public.pocketpc.developer/2004-09/0786.html>

From: Almon B. Strowger (*strowger_at_NOSPAM.kook.com*)

Date: 09/14/04

Date: Mon, 13 Sep 2004 18:33:37 -0700

Hi,

Thanks for the info. I'll check out the website.
I'm not an OEM now, but hey—Maybe I'll
reconsider that given the new opportunities.
BTW—How CPU intensive is the soft modem
on CE—Can it work with, say older Pocket
PC 2000 models?

Almon B. Strowger
KOOK Pocket Software

"darrin Garrett" <dgarrett@airbiquity.com> wrote in message
news:41463261.2010000@airbiquity.com...

- > *No not a regular PC modem, but a C++ library that interfaces to an*
- > *Application and also the audio device in the system, basically a soft*
- > *modem but runs in the application program memory, not a device driver.*
- >
- > *4.8k CELP definitely not, I don't know of any digital cell networks that*
- > *still use this. VSELP is only used on TDMA and GSM (Europe) and at full*
- > *rate on TDMA it works. It also works on the following:*
- > *ACELP, AMR (12.2k-7.4k), QCELP13K and EVRC (our modulation scheme forces*
- > *them into full rate, and EVRC is the most widely deployed vocoder in the*
- > *US), and SMV full rate only. Most of these have been tested with the*
- > *bit exact code as well as bench and drive tested across the US and Canada.*
- >
- > *The effective data throughput is very low with our retry scheme and*
- > *acknowledged service delivery about 110 baud even though its a 400 baud*
- > *modem. This is do to the fact that the protocol is designed to work in*
- > *CDMA and EVCR which is the worst in terms of cellular network signaling.*
- > *This is good enough to get for example all of the following: GPS,*
- > *vehicle ID, Air bag deploy(vehicle state), user ID and security key*
- > *within 1.4 seconds.*
- >
- > *As far as OnStar is concerned, we are under contract not to say any*
- > *thing in the form of a press release or advertise our relationship with*

> *out their consent, so I would have to say no.*
>
> *We do have the modem ported to various DSPs as well but why go there.*
> *They are not sold in retail form as of yet, hopefully soon because I am*
> *actively working on that. If you are an OEM then this is something we*
> *could do now.*
>
> *www.airbiquity.com*
>
> *Almon B. Strowger wrote:*
>> *Hi,*
>>
>> *Excellent--I thought you meant using a regular PC modem.*
>> *Or did you? (Thinking of a different product.)*
>> *(Now you'll tell me that there are some standard modems*
>> *that you reflash the DSP code to make them work, right? :)*
>> *I can think of some uses for it even at the slow rate.*
>> *So what's the typical data throughput (given that you have*
>> *CRC and ECC)?*
>> *Do you sell them retail? Website? So it's your modem*
>> *that is used in OnStar?*
>> *So can you still get pretty consistently correctable data*
>> *with the 'worst' (most highly voice optimized) vocoders?*
>> *Can it work with 4.8k CELP? Or is 8k VSELP its limit?*
>>
>> *Almon B. Strowger*
>> *KOOK Pocket Software*
>>
>>
>> *"darrin Garrett" <dgarrett@airbiquity.com> wrote in message*
>> *news:4145D067.605@airbiquity.com...*
>>
>>> *It seems like you know a thing or two about modems. The reason I*
>>> *originally posted this question was to see if there were any*
>>> *alternatives to the modem that we make here at my work, and I have not*
>>> *found any yet. Any constant FSK frequency (which is required for TX/RX*
>>> *synchronization for Bell and V. modem) will be filtered out by both*
>>> *noise cancellation software in the cell phone and cellular network*
>>> *Vocoders. Not only that, the cell tower to phone signaling (iDEN,*
>>> *TDMA, CDMA, and a little bit with GSM) removes audio and inserts control*
>>> *info like power adjustment, cell tower handoff info, and other stuff.*
>>> *When this happens bits are corrupted, so Bell 103 wont work at any*
>>> *frequency. What we have is a full duplex send and receive modem with*
>>> *forward error correction, CRC, retry and acknowledgement, and we make*
>>> *the frequency look like voice to the cellular network. It's a 400 baud*
>>> *modem so only applications like telematics (GPS/location services,*
>>> *vehicle diagnostics, asset tracking, telemetry...) would make sense. No*
>>> *more monthly data service, and yes it has been ported to WinCE and PPC.*
>>>
>>>
>>> *Almon B. Strowger wrote:*

> >>
> >>>Hi,
> >>>
> >>> Well then you have your own answer regarding
> >>>a typical PC modem. Do BOTH Bell 103 and V.21
> >>>fail to work? And do they fail in BOTH directions?
> >>>(Some modems can be told to turn off/ ignore carrier.)
> >>>If you use choose a modem that can be tweaked, or one
> >>>that can go into TTY/TDD mode (look for V.18), then
> >>>you may have something--But you may be stuck with
> >>>45.45, 50, 75, or 110 baud (Also check out Ultratec
> >>>turbo code.) If the standard 300 baud full duplex modem
> >>>frequencies won't work, the TTY frequencies of 1400Hz
> >>>and 1800Hz might. (You may end up being forced into
> >>>half-duplex mode.) Also, since it is carrier-less, it may be
> >>>more robust for cell phone use. Have you looked into
> >>>using V.23 at the 600 bps rate? (I'd be surprised if this
> >>>worked anywhere, but hey...) But anyway, if you do
> >>>use modems for the PC end that have V.18, you will be
> >>>able to get something to work--Not sure if the data rate
> >>>will be acceptable to you though.
> >>>
> >>>Hope this helps...
> >>>
> >>>Almon B. Strowger
> >>>KOOK Pocket Software
> >>>
> >>>P.S. By the way...Did you have a specific application
> >>>in mind, or is it just the general idea of sending data
> >>>over the voice channel to save money?
> >>>
> >>>
> >>>"darrin Garrett" <dgarrett@airbiquity.com> wrote in message
> >>>news:4141D26C.1030400@airbiquity.com...
> >>>
> >>>
> >>>>Well, I know 300 baud will not work, that is what Onstar (of General
> >>>>Motors) used for their data comm to the car but had to switch to a
> >>>>different modem when they switched from AMPS to digital embedded cell
> >>>>phone in the car. The Vocoders in the digital networks filter out the
> >>>>300 baud modem tones. I know what they are using but I can not
> >>>>advertise this, but I can tell you it is a special modulation/protocol
> >>>>scheme, one of a kind.
> >>>>
> >>>>Almon B. Strowger wrote:
> >>>>
> >>>>
> >>>>
> >>>>>Hi,
> >>>>>
> >>>>>So, to avoid digital charges, and since AMPS is going extinct,

microsoft.public.pocketpc.developer: Re: PPC modem

> >>>>>you want to see if an old-style 300 baud modem will work
> >>>>>with the various vocoder schemes? In your original post, did
> >>>>>you mean the desktop PC / server would be using a typical
> >>>>>standard modem? If so, all you can get is 300 baud, if anything.
> >>>>>I'd suggest patching in a real modem to the cell phone first.
> >>>>>(using 300 baud) to see if it's feasible first.
> >>>>>
> >>>>>Hope this helps...
> >>>>>
> >>>>>Almon B. Strowger
> >>>>>KOOK Pocket Software
> >>>>>
> >>>>>
> >>>>>"darrin Garrett" <dgarrett@airbiquity.com> wrote in message
> >>>>>news:413E44F1.8040903@airbiquity.com...
> >>>>>
> >>>>>
> >>>>>
> >>>>>>Interesting,
> >>>>>>I thought that if you were to use the voice channel that today's
> >>>>>>cellular vocoders (CDMA, GSM) would not allow a modem to work. Are
> >
> > you
> >
> >>>>>>sure you are not going through the control/data channel and not the
> >>>>>>voice channel. You can test this by using your "external modem"
cell
> >>>>>>phone and calling another phone. When you answer with the other
phone
> >>>>>>listen to see if you can hear any modem tones.... like you would if
> >
> > you
> >
> >>>>>>were calling out with a land line V.90 modem in a PC.
> >>>>>>
> >>>>>>
> >>>>>>David Gonzales [MS] wrote:
> >>>>>>
> >>>>>>
> >>>>>>
> >>>>>>>Windows Mobile does not support USB Host. However, a few Pocket PCs
> >>>>
> >>>>have
> >>>>
> >>>>
> >>>>>>a
> >>>>>>
> >>>>>>
> >>>>>>
> >>>>>>>custom implementation of it (i.e. the manufacturer has added their
> >

> > *own*
> >
> >>>>>>>*support for USB Host).*
> >>>>>>>
> >>>>>>>*Also, modem functionality is not a part of Pocket PC (i.e. the*
Pocket
> >>>
> >>>*PC*
> >>>
> >>>
> >>>>>>>*acts as a modem peripheral for a desktop PC), but again some*
> >>>>>>>
> >>>>>>>*manufacturers*
> >>>>>>>
> >>>>>>>
> >>>>>>>*have added modem feature to thier Pocket PC Phone Edition device.*
> >>>>>>>
> >>>>>>>*Any Pocket PC should be able to use an IR-enabled cell phone as a*
> >>>
> >>>*modem.*
> >>>
> >>>
> >>>>>>>*David*
> >>>>>>>-----
> >>>>>>>*This posting is provided "AS IS" with no warranties, and confers no*
> >>>>>>>
> >>>>>>>*rights.*
> >>>>>>>
> >>>>>>>
> >>>>>>>
> >>>>>>><r_z_aret@pen_fact.com> *wrote in message*
> >>>>>>>*news:dqmjj05qejenvv65a46po564m15il9qe6n@4ax.com...*
> >>>>>>>
> >>>>>>>
> >>>>>>>
> >>>>>>>>*I have a Motorola StarTac cell phone (> 2 years old) that includes*
> >>>>>>>>*some sort of modem. I bought a serial data cable, and now the cell*
> >>>>>>>>*phone "looks" like an external modem. It works with any software*
> >
> > *that*
> >
> >>>>>>>>*supports external modems. I've used it with a laptop (Win 98) and*
> >
> > *with*
> >
> >>>>>>>>*an HPC Pro (version 2.11 of the Windows CE operating system). No*
> >>>>>>>>*special driver needed. No special program. No data service needed*
> >
> > *from*

> >
> >>>>>>>>my cell phone carrier. Top speed is only 19.2K, but that is better
> >>>>>>>>than 0. I _think_ newer phones can do something similar with USB,
> >
> > *but*
> >
> >>>>>>>>that would require at least USB host support, which isn't
available
> >>>>>>>>for older Windows CE devices (I _think_ it is supported for Pocket
> >
> > *PC*
> >
> >>>>>>>>2003).
> >>>>>
> >>>>>
> >>>>>
> >>>>
> >
> >
> >
>