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September 27, 2006

Sandbridge Technologies Announces World's First Viable Flexible Baseband Processor : a MobileCrunch Exclusive

Posted by Oliver

ScreenHunter_661.jpgI've been anxiously awaiting news coming from Sandbridge for a long time. The White Plains New York fabless semiconductor company has been working for several years on the development of a Software Defined Radio (SDR) that would be a functional replacement for the traditional dedicated baseband radio designs that are the standard in today's mobile communications devices.

With funding coming from A-List VC's including Bessemer Venture Partners, Atlas Ventures, Doughty-Hanson Technology Ventures, Columbia Capital and other strategic investors and top caliber engineers from IBM, Lucent and Cadence, today's announcement is nothing short of a radical revolution in the development of mobile devices.

An unprecedented amount of time and money has been poured into the development of SandBridge's product however as recently as last year power consumption, heat generation and the absolute processing power required to deliver true real time digital signal processing was seemingly out of reach.

In my discussions with authorities on the topic I was lead to believe that we were still years away from having the ability to produce truly production-ready devices based upon SDR technology. Still, the promise of this innovation; which ultimately is the key to truly converged devices that can move seamlessly from WiFi to WiMax to 3G to CDMA, etc, is the real brass ring of telecommunications.

What's more, a production product of this type would be a boon to handset manufacturers - unlocking the potential for them to rapidly create prototypes of devices with all sorts of innovative functions while freeing them from the expensive and time consuming need to build new radio architecture for each new device. This would also solve a tremendous issue for manufacturers; the need to individually port the software for every phone based upon the different radio standards.

The standards being reported by Sandbridge for this new product are very impressive; particularly if you've been following this area as I have. The company is reporting that they've achieved 384K over UMTS using only 180 milliwats of power. While still higher than a hardwired ASIC (which comes in at around 150 milliwats) this is still well within acceptable parameters and when taken in combination with the other very substantial advantages in flexibility that an SDR confers has the ability to user in a huge burst in smartphone development coupled with big reductions in price for the most sophisticated units.

It should be noted that the radio itself is really only have the equation. Equally important is their semantic "C" only compiler which is the toolset that makes processing the digital signals possible. Together the radio and compiler for the heart of an entirely new platform as the basis for wireless communications.

Many top tier manufacturers have actually had the tools for several years and have only been waiting on the actual radio performance to be brought within spec in order to move forward. As a result, as soon as production units reach the major handset producers we should see big things announced and delivered to consumers in short order.

For me this also leads to some interesting speculation. Could this be the disruptive technology to wrench the control of communication from the carriers themselves? Or could this result in the

development of a weird type of Meta-MVNO that is capable of aggregating such a huge group of users that they are capable of basically forcing the carriers to share access for a small percentage of the fees collected - in essence reducing them to the "dumb pipes" that they fear becoming?

I don't think this reality should be counted out. Now I'm speaking from a purely hypothetical perspective here, but what if say Google - with their recent WiFi deployments, huge consumer base and nearly unlimited capital decided to sell communications services? With handsets capable of working on any platform what's to stop them from undercutting the carriers - possibly by completely subsidizing the handsets?

We've already seen Google's ability to generate substantial revenue without charging the customer for much of anything. What if their ability to tailor useful advertising to the consumer via a next generation handset equals or exceeds their efficiency on the web? The "third screen" is clearly the most personal, direct and thus valuable arena left for the advertiser. Cracking the code that makes this a viable place to explicitly target consumers by delivering advertising so targeted that the handset user actually welcomes it is the grail that all the competing parties - the carriers, the advertisers, handset manufacturers, etc. are seeking.

If Google is able to leverage their strengths in this area by taking advantage of Sandbridge's innovation there's no telling how disruptive this has the potential to be. Of course we're a ways away from this reality but today's announcement really is the beginning of a brave new world in communication device architecture, make no mistake about it.

Congratulations to the folks at Sandbridge. There have been lots of naysayers along their path so I'm pleased to see their technological triumph and look forward to the years of innovations certain to come from this breakthrough.

ScreenHunter_67.jpg

Tags: ASIC, SDR, DSP, digital signal processing, software defined radio, baseband radio, mobile, architecture, wireless
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8 Comments

1. Why is everything about Google this, Google that. There are other innovators out there. And Google has only one good revenue-generating product - AdSense/AdWords. Every thing else is sub-par and generic. Google is not a visionary company. Come on they paid 900 million to have advertising rights on MySpace. How "targeted" can they be? All they have is a search engine based on a simple algorithm and the only reason it is good because it has crawled a good portion of the web. There are search technologies way more advanced than Google. (e.g. FAST) Wake up people.

   Comment by Shaun — September 27, 2006 @ 12:39 pm

2. […] Sandbridge Technologies Announces World's First Viable Flexible Baseband Processor [MobileCrunch] […]

   Pingback by CrunchGear » Blog Archive » SDRs Are Wonderful. If You Don't Believe Me, Ask MobileCrunch — September 27, 2006 @ 2:34 pm

3. Good lord Shaun, what the heck are you ranting about? At issue is not whether Google will do this…you could substitute any number of companies in place of them. Microsoft, Yahoo, Time Warner…to name a few. The point is that this technology might just enable a scenario that brings down the long held hegemony of the carrier oligarchy that has held back progress and given us crappy service…all while making profits that any sector except perhaps oil companies can only dream of…AND by effectively holding a gun to the consumer with total impunity…nay the total support of the FCC. Face it. the only way that this can change is for a "non-traditional" carrier to arise out of a user-centric model that converges (quite literally) around a flexible handset. That, my friend is what is at issue…not which company does it.

   Comment by muckraker — September 27, 2006 @ 2:50 pm

4. I agree. But Google is a bad a metaphor. And so is Microsoft, Yahoo, Time Warner. These companies are no way more user-centric than the carrier. They just play on the other side of the field because…well they might as well. Not because they fill they have some obligation to the user-community who wants more out of the mobile phone. Quite frankly I trust the carriers more than Google, Microsoft, Yahoo, when it comes to my mobile phone. If not I would have viruses and trojan horses on my nice $500 Treo 650.

   Comment by Shaun — September 27, 2006 @ 4:22 pm

5. Of course they are just as bad…but you are missing my point. It doesn't matter who dissagregates the situation as long as the cartel is broken and competition forces either lower prices or better services…or both. As for your treo getting more viruses and trojan horses, that can happen regardless. 'specially with the treo that's now using MS smartphone…It's got nothin to do with the carriers, it's about the operating systems on the devices….which is just as important to a google or a yahoo or a microsoft or…whoever is servicing the user as it is to the dinosaur bells.

   Comment by muckraker — September 27, 2006 @ 6:18 pm

6. I scanned the SB website and didn't see mention of BOM cost reduction as a compelling benefit - or am I missing something? If you're building a multi-mode handset (GSM, WiFi, WiMax, BT…) this is a big thing. That is an equal benefit across all market players - carriers, Tier-1 manufacturers, and ODMs. Along a different dimension lowering multi-modal cost will inject interesting discontinuities in the marketplace that incumbents have to adapt to.

   Great post, great info.

   Comment by Lee C. — September 28, 2006 @ 8:52 am

7. BOM is of course a major issue Lee. I believe that the SB platform is the most cost efficient multi-mode solution …assuming one of the modes is "3G."

   Comment by muckraker — October 3, 2006 @ 10:07 am

8. […] Software defined radios […]

   Pingback by The Law of Mobility » Blog Archive » Enabling Technology: Week of 10/01/06 — October 6, 2006 @ 3:29 am

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