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Back to the Future with VCON



Just two weeks after announcing a \$10 million equity infusion, [VCON](http://www.vcon.com) is announcing two stunning new products that might explain why new investors were so interested in VCON in the first place. The two new products, the HD3000 and HD5000 add to the VCON high definition product line, which started with the HD100, an OEM brick codec announced a while back. The HD5000 is a PC-based room system that features IP data rates up to 4Mbps, multiple data sharing methods, dual stream video + data (with H.264), native 16:9 support, H.264 support up to 1 Mbps (a new high for the market I believe), ultra-low latency codec performance, and a DVI output to plasma/LCD displays, eliminating the digital-to-analog-to-digital conversion process. VCON's interactive multicast is included as well. Here's the real shocker – there's no hardware codec. Yep, the audio-video processing is done on the PC subsystem, which includes a 3 GHz hyper-threaded Pentium and a high end graphics card. Color me impressed. More on this later. The HD5000 has an optional tabletop pod, something we are getting to see more and more of; this one sports a VGA input for laptops, microphone, and USB for delivering files. The HD5000 starts at \$9,995 and gets up to twice that if you want all the ISDN, pod, camera, and audio options. VCON is also introducing a concept dubbed "synthetic file sharing." When the user selects a file to be shared, the HD5000 automatically launches the controlling application behind the scenes so that the file can be edited or otherwise manipulated as it is shared. The user simply selects a file (document, graphic, movie, etc) they want to share and the HD5000 does the rest, invisibly. One other neat trick – the HD5000 has the ability to play MP3 audio files into a videoconference, including mixing this audio source with the microphones.

The HD3000 is a set-top conferencing appliance that uses twin VLIW (very long instruction word) Equator chips for the heavy audio-video processing. VCON has written all the VLIW codec software from scratch to get maximum performance from the silicon. There is only one model of the HD3000 available, featuring IP data rates to 4 Mbps, an embedded 4-port MCU with transcoding and speed matching, HD dualstream support, embedded web server, and support for advanced streaming capabilities. H.264 support is promised in a future software upgrade; the current version supports H.261 and H.263 with up to CIF processing at 60 fields/sec. The dualstreams is



compatible with DuoVideo from TANDBERG. The multicasting will support up to 25 unicast streams at 384 kbps or up to 10 unicast streams at 384 kbps during a 384 kbps video call as well as multicasting to the VCON Broadcast view or a QuickTime viewer. The unit is priced at \$5,000.

My Comments:

Moore's Law and the Innovator's Dilemma have all led us to predict or expect the day when "host processing", also known as native signal processing (NSP) would replace DSP (digital signal processors) processing for videoconferencing compression/decompression tasks. Well, here it is. (For those history buffs reading this issue, you may remember that circa 1995 Vivo Software introduced a NSP H.320 videoconferencing product that ran on a Pentium 90 MHz, but that's another story for another day).

The significance of the HD5000 codec and its implications for the future of videoconferencing cannot be underestimated. (I admit I haven't SEEN the VCON performance, so I'm going a bit on specs here). The point is that Pentiums get faster and faster every year, and this year's bleeding edge 3 GHz processor is next quarter's run-of-the-mill consumer system. In fact, we may be approaching the day where (Intel) hardware gets faster, faster than (Microsoft) software gets slower, if you get my meaning.

The HD5000 may represent the beginning of the end. An all-software room system will enable us to finally take advantage of the price/performance advantages of the PC industry, the massive production volumes, etc. We have a ways to go yet, but you can look forward in a few years where the HD5000 level of performance might be available as a CDROM purchase for your favorite vanilla conference room computer.

I have to admit, I knew a high-end room system based on an all-software codec was coming. I just didn't think it would be VCON to introduce it. Give the guys credit where credit is due.

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