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Subject: Hypersonic Sound Beaming

Posted by [Wayne Parham](#) on Fri, 17 Sep 2004 17:52:56 GMT

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Looks like there is a rivalry between American Technology Corporation and Holosonics for the same basic technology. Both use heterodyning interference between two ultrasonic wave carriers to develop an audible beat frequency in the audio band. The sound can be directed using beam steering techniques and since the carrier is a single high frequency that is modulated with audio, narrow-band techniques can be used. It is much easier to work with a single frequency or very narrow band than a wide band, particularly when doing beam steering. The main problem is that the ultrasonic carriers can be uncomfortable if high energies are used. Lower energy applications may have some promise.

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Subject: Re: Hypersonic Sound Beaming

Posted by [Brett](#) on Mon, 22 Nov 2004 23:53:21 GMT

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See the ATC site, atcsd.com and if you bought as much stock as I did, you will be one happy camper.

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Subject: Re: Hypersonic Sound Beaming

Posted by [Wayne Parham](#) on Tue, 23 Nov 2004 05:48:45 GMT

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How involved are you with the company? Do you have any other news?

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Subject: Re: Hypersonic Sound Beaming

Posted by [Brett](#) on Wed, 24 Nov 2004 01:31:41 GMT

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There is another company (Sennheiser Electronics) in Europe that also makes "HSS" type devices (2 ultrasonic beams, acoustic heterodyning...) but neither is at the stage ATC is. Holosonics makes a similar design to what ATC was making in '96, they are hand made and very expensive, I was quoted \$7,500, basically a group of off the shelf ultrasonic emitters ganged together where ATC made their own film and flat (single/large/flat) emitter. ATC makes other products Holosonics and other companies do not compete, LRAD - Long Range Acoustic Device, a long range and directional (similar tech as HSS) hailing device and non-lethal weapon (151db,

pointable), a planar magnetic Neoplanar speakers, another flat film speaker that is very clear and directional (more like a standard speaker replacement), SFT is Stratified field, a non-magnetic film and a few other technologies. It is all pretty amazing stuff, compared to what regular sound devices can do. Later this year they are suppose to start rolling out HSS III with SONY in Digital Signage and advertising applications and a Navy order for something called IROS3/ACSAS, to protect warships using LRAD's, they are already doing it - got a bug in the pan/tilt driver at present that needs redesign (high failure). Some additional links Acoustical Society of America 133rd Meeting Lay Language Papers (early HSS paper, '97) <http://www.acoustics.org/press/133rd/2pea.html> Polymer films tapped as potential subs for speakers [http://www.eetimes.com/issue/tech/OEG20030721S0061Noisy Dispute Erupts Over Audio Technology](http://www.eetimes.com/issue/tech/OEG20030721S0061Noisy%20Dispute%20Erupts%20Over%20Audio%20Technology) <http://www.techweb.com/wire/story/TWB20000905S0008> "The dispute stems from student Joseph Pompei's accusation that Sennheiser Electronics GmbH, Berlin, founded by Jorg Sennheiser, a professor at the University of Hannover, used technology that Pompei had demonstrated a year before. The company denies Pompei's charge" (note, the point is moot, Woody Norris preceeded them in '96 and there is prior art to that, anyone can make an acoustic heterodyne, how you it is another story - sorry if you all know this, a lot of people don't) Sony selling the first units This appears to be the HSS II model, make sure you get HSS III if you are buying one, try ATC direct, it may be cheaper. [http://www.creativevideo.co.uk/gimme/storereframe.php?view=item&item=sony\\_hss-r220b](http://www.creativevideo.co.uk/gimme/storereframe.php?view=item&item=sony_hss-r220b) Woodynorris.com personal web site. There are many articles and inventions, magazines and newspapers. See the Wall Street Journal from April 2004 <http://woodynorris.com/Media.htm> See the April Wall Street Journal article NY Times The Sound of things to come March 2003 <http://www.datafilter.com/mc/nyTimesHssInfoMar03.html> From "The Engineer" Direct hits Advertising industry, see HSS <http://www.e4engineering.com/story.aspx?uid=83fdb702-256e-4f71-a3f2-318a506eb781> The ATC Government technology section [http://atcsd.com/gov\\_tech\\_port.html](http://atcsd.com/gov_tech_port.html) There is a new device I don't know the specifics of, the 5MC system for Aircraft Carrier flight decks. What I know is it is some kind of directional emitters pointed to section after section of the flight deck mer emitter. The volume for each emitter is self regulated by measuring the ambient noise level and adjusting accordingly.