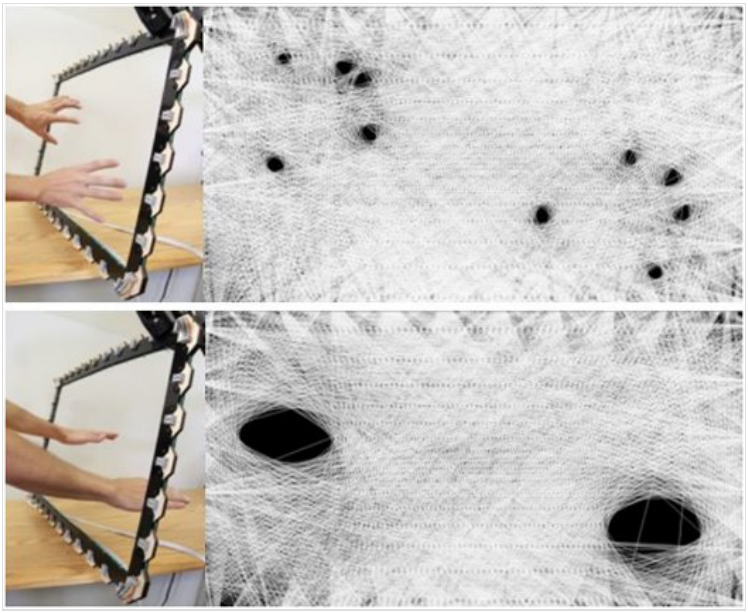
Video: New ZeroTouch Interface is a Touchscreen Without the Screen

By Clay Dillow Posted 05.12.2011 at 12:47 pm



ZeroTouch *via* ***Interface Ecology Lab***

At the Computer Human Interaction conference in B.C. this week, a **team** from Texas A&M University **unveiled** a touch screen technology they've been incubating for a couple of years that isn't really a screen at all. ZeroTouch, as the project is known, is more like an empty picture frame lined with LEDs and filled with criss-crossing beams of infrared light. Like a mashup of traditional 2-D touch interface with the 3-D applications of, say, Microsoft's Kinect, its applications are many.

The design seems so simple that it's almost surprising we haven't seen something like this until now. ZeroTouch is basically an empty window pane, and the LEDs and IR sensors mounted around its edges detect anything that crosses the plane of that frame (it can recognize up to 20 independent touch points at a time). It doesn't just register that something is there, but also the size of the object--whether it's a finger, an entire hand, a tiny stylus, etc.--and whether it is rotating or twisting (this is better explained visually in the video below).

Since ZeroTouch allows a user not only to touch but to reach through the "screen," it opens itself to numberless applications. Laid on a flat surface, it can be used as a drawing board or a drafting stylus. Placed over any conventional screen, it instantly and inexpensively turns it into a touch screen. Or it can be suspended in space so the user can actually reach through it, offering it a 3-D capability that other touch screen interfaces lack.

So far, such 3-D applications haven't really been exploited beyond a pretty straightforward painting program, but the possibilities are there. The Aggies behind ZeroTouch next plan to create a layered device wherein multiple screens are stacked atop one another, giving it a greater degree of depth of control.

See it work in the IDG report below.

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10 COMMENTS

Jivaii

05/12/11 at 2:26 pm

Could they make it into a kind of 3D box for full 3D interaction? Along the lines of, there's a sphere in the middle, and you reach in and brush your hand along it, and the sphere starts to rotate due to your "interaction" with it?

Proud Sailor of the USN

Link to this comment

Clifford Cannon

05/12/11 at 2:59 pm

I think they have that idea, the article mentions layering several for a box like sensor.

so take that box and place it in front of one of the new glasses free 3D screens and you would have a box that you could reach into and manipulate things.

the only thing missing would be tactile sensations, no sense of touch :/ but otherwise it would be a really good tool for 3D computer work and may be popular with cadcam programs.

Link to this comment

empjag

05/12/11 at 5:08 pm

Kind of reminds me of Iron Man's lab. Maybe in 10 years or so.

Link to this comment

-my name here-

05/12/11 at 5:13 pm

it kind of reminds me of a theremin.

Link to this comment

extremechiton

05/12/11 at 8:09 pm

lol @my name here
may be there could be a computer program that lets the zerotouch turn into a thremin.

that would be so cool!

Link to this comment

JediMindset

05/14/11 at 11:01 am

great technology. i wonder if we could apply this with hologram/3d technology? something like that touch screen in Avatar.

Link to this comment

venkey_23

05/18/11 at 12:36 pm

IR touchscreens have been around for a long time. Look for "Infrared" at http://en.wikipedia.org/wiki/Touchscreen

Link to this comment

GregN913

05/18/11 at 10:43 pm

As for the comment about lacking tacticle sensations, I have seen a video on youtube that uses intersecting sonic pulses to create a pressure point in three-dimensional space.

Link to this comment

Djur

05/19/11 at 6:54 pm

Arrange them in vertical stacks, place an object in the middle, and make a 3D model of whatever's in there =D Great for CAD people, methinks.

Link to this comment

treyloging

06/26/11 at 9:23 pm

as for the tactile response, you could also use some sort of static charges to correlate to the dimensions of whatever you are "touching"

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