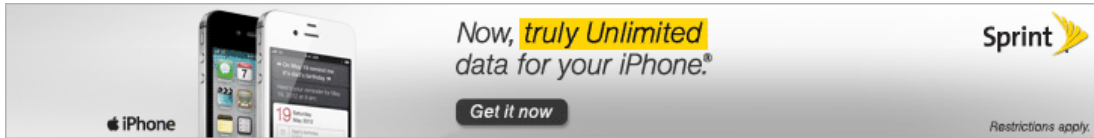
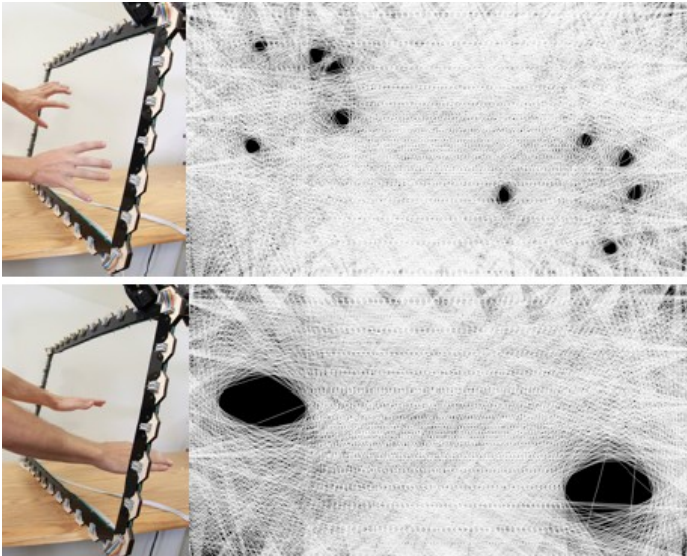


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Aol Tech.

An advertisement for Sprint's iPhone service. It features two iPhones, one showing the home screen and the other showing the 'Get it now' button. The text reads: 'Now, truly Unlimited data for your iPhone.®' and 'Get it now'. The Sprint logo is in the top right corner. Small text at the bottom right says 'Restrictions apply.'[MAIL](#)You might also like: [Engadget HD](#), [Engadget Mobile](#) and [More](#) [GALAXY NEXUS AND ICS](#)[GALAXY TABS](#)[BIRTH OF A SMART PHONE](#)[ENGADGET DISTRO](#)[NOKIA REVIEWS](#)[IPHONE 4S](#)FILED UNDER [Displays](#)

# ZeroTouch 'optical multi-touch force field' makes a touchscreen out of just about anything

By Christopher Trout  posted May 12th 2011 5:21PM

The rise of tablets and smartphones has made the touchscreen a rather [ubiquitous interface](#), but they aren't *everywhere* quite yet. A group of students from Texas A&M intend to change that, however, with the invention of ZeroTouch: a seemingly empty picture frame that lets you turn any surface into an interactive touchscreen. It might not look like much, but ZeroTouch is packing a series of pulsing LEDs and infrared sensors that turn that blank space into a highly sensitive surface. Basically, the strategically placed LEDs cover the open area in a sheet of invisible light. When a hand or stylus enters the picture (or lack there of), those beams are interrupted, providing cues to a piece of software that tracks the object's movement -- and boom! You've got a touchscreen. Of course, this isn't the sort of thing that's going to make it to market anytime soon, but you can check out ZeroTouch rocking the [rippling water effect](#) in the video below.

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VIA [NewScientist](#)  
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*infrared, infrared sensor, infrared sensors, InfraredSensor, InfraredSensors, interface, interface design, InterfaceDesign, IR, LED, LEDs, screen, sensitive, texas am, TexasAm, touch, touch sensitive, TouchSensitive, video, zero, ZeroTouch*

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- 

BJ Hanssen

7 months ago

DO WANT!

REPORT


+
- 

Burhan Ateeq

7 months ago

Great job guys. Have you thought about doing this in 3D?

REPORT


+ 2
- 

Burhan Ateeq

7 months ago

Great job guys. Have you thought about doing this in 3D?

REPORT

+
- 

MOSTOFA QMG

7 months ago

in reply to Burhan Ateeq

Great job guys. Have you thought about doing this in 3D I am agree with you

[www.mostofa.tk](#)

REPORT

+

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13991
- Go Daddy pulls support for SOPA amidst backlash, too late to satisfy Wikipedia


285



UncleB7 months ago

REPORT+1


So good! Electronics advances even as we speak! Where's my super-generator for efficient Wind Power to feed all the great stuff coming down the tubes? Wave power, in Scotland! We need much more efficient current generators, activated even by exposure to full spectrum of light! Even at night, we are bathed in EM, and magnetic effects! Rapidly lower consumption devices are flooding us, telling us that micro-sources of current can no longer be ignored!What happened to the very cheap to manufacture, even without expensive lithium, NiMh batteries? We could have made them domestically! Rav 4 EV, and EV-1 ran very effectively without expensive, imported, lithium! Where did the very effective, cheap for American manufacture, NiMh batteries go? Answer: Google, torrent, the documentary, "Who Stole The Electric Car". Study this well! Can we overcome this kind of tragedy in America? Do the people really rule? are we really a Democracy? I hope so, for our sakes, for our children's sake! A new electronic age awaits, just past the corporate barriers.



David Keo7 months ago

REPORT+2


it's probably already been said but, this could be the first step towards the holo deck. line the walls of a room in a grid pattern and BAM! but how much crunching power does it require?



Alex Beyer7 months ago

REPORT+1


Why is this different from the displays that use infrared like Dell uses?



John Hoffman7 months ago

REPORT+3


hello minority report screen!



Chris Sutton7 months ago

REPORT+3


Wonder if you could add a Z axis to this to render objects in 3D - live :) Don't know you'd gain from it though!



John Hoffman7 months ago

REPORT+1


*in reply to Chris Sutton*  
could probably be done. would depend mainly on the scan rate and how wide of an angle (in terms of depth) the IR sensors have



Dave\_Ray7 months ago

REPORT+1


*in reply to John Hoffman*  
I think you'd need an array of LEDs and sensors arranged in a tunnel-like configuration, as the tech works on triangulating an LED's firing to the sensors which receive its pulse. I also suppose that the more sensors added, the more complex the modulation required so each LED can be distinguished from others. Would be very cool if they could pull this off in combination with a holographic projection system ;)



gator10107 months ago

REPORT+5

I have a nerd boner. super cereal!



EricSEkong7 months ago

REPORT+3

Now all we need is for someone to combine this tech with a transparent display and ALL of our minority report dreams will have come true.

Swami O.H. Gere7 months ago

REPORT



In the year 2010

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http://www.engadget.com/2011/05/12/zerotouch-optical-multi-touch-force-field-makes-a-touchscreen/

Page 3 of 8

	yep.. all we need now is holographic display that goes with it!	+ 2
	<b>WE AND THE COLOR</b> 7 months ago Amazing! Looking forward to the new opportunities in the future!	REPORT + 3
	<b>ChristBach</b> 7 months ago Would that kind of virtual touchscreen be more precise, cheap or practical than a system like Celluon's (IR layer+Canesta's Electronic Perception Technology, a 3D motion sensor) ?	REPORT +
	<b>Jens Elstner</b> 7 months ago That could be an amazing foldable touchscreen. It's small, fits in your pocket and expands when needed. Also you could put some foam underneath to have a virtual keyboard with feedback.	REPORT +
	<b>Jens Elstner</b> 7 months ago That could be an amazing foldable touchscreen. It's small, fits in your pocket and expands when needed. Also you could put some foam underneath to have a virtual keyboard with feedback.	REPORT +
	<b>Mr New Vegas</b> 7 months ago That is awesome.... hello minority report	REPORT +
	<b>Neo</b> 7 months ago in reply to Mr New Vegas Yeah, one step closer to Minority Report! Loving it!	REPORT +
	<b>Henry Carless</b> 7 months ago This could also be adapted to create a 3d scanner. Very cool.	REPORT + 2
	<b>Luka Jurca</b> 7 months ago WTF!	REPORT +
	<b>Hadar</b> 7 months ago DIY instructions plz??? :))))	REPORT + 2
	<b>Bahtler</b> 7 months ago Oh my god. Imagine if they put like 50 of them in a row to create a 3d field. You could create a 3d controlling system and accurately map it. Minecraft would be so epic.	REPORT + 2
	<b>Dominick Dahl-Lacroix</b> 7 months ago this is amazing	REPORT +

*Kindle Fire root reignited, beats 6.2.1 update -- Engadget*

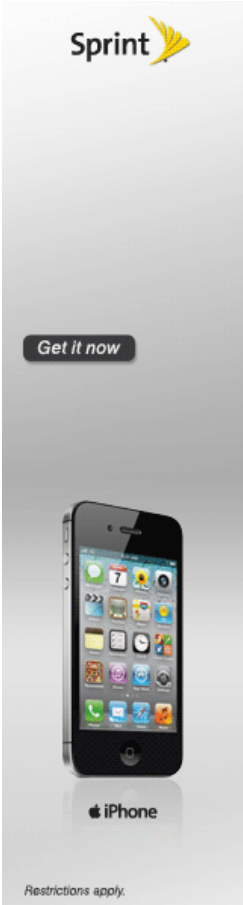
2^9

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*engadget Nokia Lumia 800 likes to taste the rainbow, wants to try a splash of white and yellow?: Cyan and M...*

11





*Ray* 7 months ago

This+kinect+3D> iron Man?

REPORT  
+ 2



*dfprodz* 7 months ago

If this comes into production and companies pick this up, we will face a whole new era of FAT bezels for a long while until revised versions follow up --

REPORT  
+ 2



*Guest* 7 months ago

YES people, this uses IR, wow you are so brilliant to have noticed that and deduced that IR is not new. \*clap, clap, clap\*.

Now, if I may step out of the shadow of our resident titans of thought, if for only a moment, I'd like to point out that the nature of the IR beams in this usage scenario is unique. Just because something uses IR does not necessarily mean it is not new, this is in fact a new application of IR beams.

The major problem with previous IR implementations is that you cannot see what is on the other side of a blocked beam, with this novel approach that problem is solved.

YES YOU ARE MOSTLY IDIOTS, mostly. - newt

REPORT  
+ 5



*dr\_shambolic* 7 months ago in reply to *Guest*

Multiple beam-multiple receiver IR "touch screen" frames have been around for years.

You really need to tone down the pomposity when talking about something you clearly just read on the internet.

REPORT  
+ 3



*Thomas Anderson* 7 months ago in reply to *Guest*

Only unique thing here is that they used irregular links (matrix) for IR sensors so that they coat object from almost all sides

YOU CUT THE POWER? HOW COULD U CUT THE POWER? Ur animal.... :P

REPORT  
+



*Thijsvr* 7 months ago in reply to *Thomas Anderson*

How is it irregular?

These frames have been around for ages, most digital whiteboards use them aswell. They are quite inexpensive, but fairly sensitive when you don't place them on a totally flat surface, because the sensors don't pick up the leds anymore with a little distortion. They do have quite a lot of points actually. Usually they're 8 to 15 points.

Anyways, you can pick these things up for less than a 100 bucks and simply plug it in to your usb port. It may not have as many touchpoints as this version, but you'll manage ;)

REPORT  
+



*zeum* 7 months ago

ok now stack about 20 together and you hav a 1'x1' kinect

REPORT  
+ 2



*JakeyBee* 7 months ago

This is the reason I have yet to purchase touch screen products from anyone but Apple and Wacom. The lag is extremely noticeable in the video--simply by watching him drag his fingers against the screen, you can clearly see that, in motion, the sensors are about 1/5 of a second off. May not seem like much, but to an artist, that's frustrating as hell.

REPORT  
+ 2



*jon shipman* 7 months ago in reply to JakeyBee

REPORT

+

I bet you're doing a lot of art with your fingers, eh? When you're done finger painting us real artists will be over there.

(comment directed towards Apple touchscreens, Wacom is the bees knees)



*JakeyBee* 7 months ago in reply to jon shipman

REPORT

+

lol... duh (thought you were trolling for a second).

Nobody has yet to create the perfect unison of tablet and computer as a utility for not only writing, but drawing, and other utilitarian features. They don't have the graphical capabilities to run zBrush, they don't render brush strokes well at all on Photoshop--and even if they do exist, they're not very portable, and they're very clunky--with very little battery life. I already have owned the TX2500z, I learned that the hard way.

Apple has this way to make things that just "work," and they are very well known for making computers better for artists than PCs. I think if they team up with Wacom to make both a pen-based and touch-based laptop, it would be THE device to own.

Why do you think I said "This is the reason I have yet to purchase touch screen based products from anyone but Apple and Wacom"? Does Wacom make computers? Does Apple make tablets that are better than function-able for an artist? Who in their right mind would actually uses their iPod as a tablet? That's just a waste of time, it wasn't designed for that. And they were all rhetorical questions.

TL:DR; I don't want to spend upwards of \$1,500 just for a touch screen that I can draw with. I want to spend \$2000 on a computer I can draw with that just "works." And PC-- doesn't just "work" like Macs tend to.



*picsal* 7 months ago in reply to JakeyBee

REPORT

+ 1

Apple doesn't make hardware.

Plus I just got a WP7 phone(samsung focus) and the touch precision is just as good (or near as good) as my iphone 4.



*Guest* 7 months ago in reply to JakeyBee

REPORT

+ 7

I'm sure these STUDENTS were going to go right from this engadget article and straight to production.



*zeum* 7 months ago in reply to JakeyBee

REPORT

+ 10

because you know apple and wacom never made a prototype before.



*Max Powers* 7 months ago

REPORT

+

Just because it uses IR doesn't mean it's not new. It's an evolutionary innovation, improving on accuracy and number of tracking points, while decreasing size and cost.



*Tewi* 7 months ago

REPORT

+ 3

Is this DIY-able?

Please let this be DIY-able.




*aiden9* 7 months ago

REPORT

+

With capacitive screens becoming a little scarce to come by, and improvements with optical screens, I can see them(optical screens) catching on. If you could combine an optical screen with a resistive screen(for pressure sensitivity) then that could be pretty sweet. Likely to be cheaper than a capacitive w/ digitizer while having similar effects.






PsychoEpsilon7 months ago

REPORT

+ 1

Will we have touchable holographic interfaces yet?




terrysaunders7 months ago in reply to PsychoEpsilon

REPORT

+

Or touchable holograms...

...No, no one would leave the house




ishai7 months ago

REPORT

+ 3

The force is strong with that one




asus9027 months ago

REPORT

+ 10

BUT WILL IT BLEND?




phreakincool7 months ago in reply to asus902

REPORT

+

Yes, but does it play Crisis 2?




stoffer7 months ago

REPORT

+ 8

Isn't this the oldest touchscreen technology ever? I have heard of it in the eighties.




Guest7 months ago in reply to stoffer

REPORT

+

Here come the naysayers, sorry it wasn't developed at MIT like the super amazing scooter with a fan on it...




Izzuddin Fakarudin7 months ago in reply to Guest

REPORT

+ 2

Hey idiot.. this technology has been here for a while now..

<http://en.wikipedia.org/wiki/T...>



Guest7 months ago in reply to Izzuddin Fakarudin

REPORT

+ 7

Hey idiot... Doing it this way is new. You do know that the problem with previous IR implementations is that beam is blocked and you can't see anything behind an object touching the screen, hence no multi-touch. This solves that problem. Sheesh, I know you're slow but damn, get with the program.

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