

Pulse Electronics' Antenna Miniaturization Technology Enables High Data Rates in Tight Spaces that Require 3x3 MIMO Configurations

"Dense Ant TL 1.0 optimizes isolation and performance for tablets, laptops, and notebook"



Reporter : Siddhi kharsekhar

Class : SYBscIT

Roll No : A-019

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SAN DIEGO--(BUSINESS WIRE)--Pulse Electronics Corporation introduces a new method of constructing antennas to enable high data rates in tight spaces that require 3x3 multiple input multiple output (MIMO) configurations such as tablets, laptops, and notebook computers. Pulse's DenseAnt TL 1.0 advanced manufacturing antenna technology fits three WLAN antennas in physically the same volume as was used for two LDS antennas without compromising performance or isolation. The antenna is composed of high dielectric materials to realize a 4-decibel improvement in isolation over standard

plastic substrates, achieving higher performance even when integrated in close proximity with each other. The antennas are customized for each application and configuration, optimizing them for size and performance.

"High-speed data rate applications require MIMO technology, which increases the number of antennas required in a device"
top tweeted

"High-speed data rate applications require MIMO technology, which increases the number of antennas required in a device," explained Jon Yu, GM, Pulse Electronics

Wireless Consumer Business Unit. *“At the same time, the space allocated for the antennas is limited. Pulse’s DenseAnt miniaturization concept utilizes advanced manufacturing technology combined with*

the use of advanced materials. This technology enables multiple antennas to be closely integrated with each other, enabling high throughput while achieving optimal space utilization in a cost-effective way.”

Pulse Electronics’ DenseAnt TL 1.0 supports WiFi WLAN 802.11n, ac standards. These customized antennas are proven and ready to be implemented in any project.

For more information visit the website: <http://www.pulseelectronics.com>, or contact Pulse Electronics at Mtimosaari@pulseelectronics.com.

About Pulse Electronics

Pulse Electronics is a leading provider of electronic components that help customers build the next great product by providing the needed technical solutions. Pulse Electronics has a long operating history of innovation in antennas, magnetic and connectors, as well as the ability to ramp quickly into high-quality, high-volume production. The Company serves the wireless and wire line communications, power management, military/aerospace, and automotive industries. Pulse Electronics is a participating member of the IEEE, SFF, OIF, HDBaseT Alliance, CommNexus, NFC Forum, MoCA, and IWPC. Visit the Pulse Electronics website at www.pulseelectronics.com.

AMAZON PRIME AIR



Reporter: Smit Maniyar
Class :SYBSCIT
Roll No:A -021

Source: https://en.wikipedia.org/wiki/Amazon_Prime_Air
2 December 2015, at 05:21

Concept:

On December 1, 2013, Amazon.com CEO Jeff Bezos revealed plans for Amazon Prime Air in an interview on 60 Minutes. Amazon Prime Air will use multicolor Miniature Unmanned Air Vehicle technology to autonomously fly individual packages to customers' doorsteps within 30 minutes of ordering. To qualify for 30 minute delivery, the order must be less than Five pounds (2.26 kg), must be small enough to fit in the cargo box that the craft will carry, and must have a delivery location within a ten-mile radius of a participating Amazon order fulfillment

center. 86% of packages sold by Amazon fit the weight qualification of the program.

Regulations:

Presently, the biggest hurdle facing Amazon Prime Air is that commercial use of UAV technology is not yet legal in the United States. In the FAA Modernization and Reform Act of 2012, Congress issued the Federal Aviation Administration a deadline of September 30, 2015 to accomplish a "*safe integration of civil unmanned aircraft systems into the national airspace system.*"

In March 2015 the US Federal Aviation Administration granted Amazon permission to begin US testing of a prototype. The company responded by claiming that the vehicle cleared for use was obsolete. In April 2015, the agency allowed the company to begin testing its current models. In the interim, the company had begun testing at a secret Canadian site 2000 ft (610 m) from the US border

The agency mandated that Amazon's drones fly no higher than 400 ft (122 m), no faster than 100 mph (161 km/h), and remain within the pilot's line of sight. These rules are consistent with a proposed set of FAA guidelines. Ultimately, Amazon hopes to operate in a slice of airspace above 200 ft (61 m) and beneath 500 ft (152 m), with 500 ft being where general aviation begins. It plans to fly drones weighing a maximum of 55 lb (25 kg) within a 10 mi (16 km) radius of its warehouses, at speeds of up to 50 mph (80.5 km/h) with packages weighing up to 5 lb (2.26 kg) in tow.

Public concerns:

Public concerns regarding this technology include public safety, privacy, and package security issues. Amazon states that "*Safety will be our top priority, and our vehicles will be built with multiple redundancies and designed to commercial aviation standards.*" However, while privacy and security remain concerns, the FAA's recently proposed rules for small UAS operations and Certifications only provides provisions on its technical and functional aspects.

The fact that the drone's navigational airspace exists below 500 feet is a big step toward safety management.



Privacy:

Concerns over the constant connection of the drones to the internet raises concerns over personal privacy. The primary purpose of drone internet connection will be to manage flight controls and communication between drones. However, the extent of Amazon's data collection from the drones is unclear. Some proposed data inputs include automated object detection, GPS surveillance, gigapixel cameras, and enhanced image resolution.

Because of this, Amazon's operating center will collect unknown amounts of information, both intentionally and unintentionally, throughout the delivery process. Neither Amazon or the FAA has formed a clear policy on the management of this data.

KPMG Cybercrime survey: 72 per cent Indian companies faced cyber attack in 2015



Reporter : Salma Maruf

Class: SYBscIT

Roll no: A-022

Dec 1st 2015

The Cybercrime Survey Report 2015 released by KPMG in India attempts to analyze the preparedness of organizations in India to deal with cybercrime and incidents by unearthing its modus operandi and its extent.

As the threat of cybercrime looms large over businesses and the general public, KPMG has carried out a cybercrime survey this year to get a pulse of cybercrime in India. The Cybercrime Survey Report 2015 released by KPMG in India attempts to analyze the

preparedness of organizations in India to deal with cybercrime and incidents by unearthing its modus operandi and its extent, besides highlighting preventive measures to deal with this menace. Over 250 respondents from the likes of CIOs, CISOs, CAEs, CROs, COOs and related professionals from across India participated in the survey.

The KPMG in India Cybercrime Survey Report states that 94 per cent respondents indicated that cybercrime is a major threat faced by organizations, but surprisingly only 41 per cent indicated that it forms part of the board agenda.

“The advancement and adoption of technology has enabled criminals to leverage it to carry out crime. Mumbai police has a dedicated cyber police station and is continuously strengthening itself by undertaking trainings to deal with cybercrime cases. It is critical for the citizens, both corporates and individuals, to be aware of cyber risks and not fall prey to the fishing/phishing scams. We are undertaking a drive to educate and create an awareness among citizens with reference to cyber threats,” said Ahmad Javed – Commissioner of Mumbai Police.

Highlighting the current cybercrime scenario in India, the report shows that 74 per cent respondents believe that the BFSI sector is a top target for cybercrime with 63 per cent indicating these crimes more often than not amount to gross financial loss. Moreover, 83 per cent respondents of the 250+ C-suite executives that participated in the survey indicated that there is usually external involvement in cyber attacks with directors/management being most vulnerable according to 64 per cent. It was also alarming to note that 54 per cent indicated that spend on cyber defenses is less than 5 per cent of IT spend.



“The last few years have seen multifold increase in cybercrimes across regions and sectors. Given the proliferation of connected technologies, organizations today face a significant challenge to be resilient against cyber attacks and incidents. It is also important that the management realizes that these are no longer a one-time phenomenon. The nature of cybercrime is constantly evolving, specifically with attackers having a solid arsenal of the ever evolving stealth attack. KPMG in India has been at the forefront in helping companies understand cyber threats and determining better preparedness against cybercrime,” said Mritunjay Kapur, Partner and Head, Risk Consulting, KPMG in India.

“Cybercriminals have understood the potential of an illicit financial gain and have begun executing highly sophisticated technology-driven frauds. These cyber frauds, by nature, are complex and difficult to detect. Organizations need to strengthen their cyber incident response process along with building strong prevention and

detection systems. Cyber forensics therefore is becoming a critical component of fraud investigations.” - Mohit Bahl, Partner and Head Forensics, KPMG in India

The report also analyses the impact and complexity of cybercrime in India. As businesses throw their doors open to technology, they also expose themselves to the risk of cybercrime that can have far reaching damages ranging from financial, reputational, operational and in certain scenarios, can also impact the physical safety of employees and assets, with 47 per cent citing the risk of disruption of business processes and 49 per cent claiming a reputational damage to the organization. While surveying the potential vulnerable system targets of cybercrime, 65 per cent respondents indicated that email servers are likely targets while 46 per cent stated end user systems. In the case of industries, though financial services and pharmaceuticals are still the favorite target for cyber attacks, the year 2015 has witnessed attacks across industries. Critical infrastructure is being seen as an attractive target for cyber attacks.

According to Atul Gupta Partner at KPMG in India, “People and vendors are one of the many critical yet one of the weakest links in the cyber defense chain. Cyber investigations of large cybercrimes reveal that social engineering has predominantly

been one of the preferred methods to extract critical information. In this context, it is vital for CXOs to ensure that cyber risk awareness trainings are periodically imparted to employees and vendors.”

The report with its keen eye for detail and a thorough assessment of cybercrime in India, not only studies the impact of this burgeoning threat but also enumerates the characteristics of a typical cybercriminal and his/her motivation factors. 65 per cent respondents stated that cybercriminals carry out attacks for financial gains while another 46 per cent believe corporate espionage to be the motive.

Cyber risk assessment is not a focus area for several enterprises across functions and people. Their emphasis is only on technology with 74 per cent respondents stating that a detailed annual IT and cyber risk assessment is not carried out.

As the report outlines the steps to designing a robust cyber risk management process, it acknowledges that while organizations play a key role in shoring up their defenses, the way that law and order is structured also plays a crucial part in tackling cybercrime.

To get a pulse of cybercrime in India and unearth its extent and modus operandi, KPMG, for its "The Cybercrime Survey Report 2015", surveyed 250 top executive organizations.

Light Fidelity(Li-Fi)

Reporter: Mr.Abhinav Meher

Class : SYBSCIT

Roll No : A-024

Source: **Internet**
(<https://en.wikipedia.org/wiki/Li-Fi>)
December 1,2015



Li-Fi (Light Fidelity) is a bidirectional, high speed and fully networked wireless communication technology similar to Wi-Fi. Coined by Prof. Harald Haas, Li-Fi is a subset of optical wireless communications (OWC) and can be a complement to RF communication (Wi-Fi or Cellular network), or a replacement in contexts of data broadcasting. It is so far measured to be about 100 times faster

than Wi-Fi, reaching speeds of 224 gigabits per second.

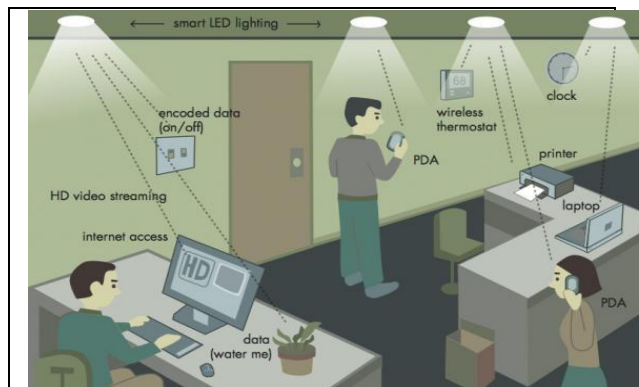
It is wireless and uses visible light communication or infra-red and near ultraviolet (instead of radio frequency waves) spectrum, part of optical wireless communications technology, which carries much more information, and has been proposed as a solution to the RF-bandwidth limitations. A complete solution includes an industry led standardization process.

This OWC technology uses light from light-emitting diodes (LEDs) as a medium to deliver networked, mobile, high-speed communication in a similar manner to Wi-Fi. The Li-Fi market is projected to have a compound annual growth rate of 82% from 2013 to 2018 and to be worth over \$6 billion per year by 2018.

Visible light communications (VLC) works by switching the current to the LEDs off and on at a very high rate, too quick to be noticed by the human eye. Although Li-Fi LEDs would have to be kept on to transmit data, they could be dimmed to below human visibility while still emitting enough light to carry data. The light waves cannot penetrate walls which makes a much shorter range, though more secure from hacking, relative to Wi-Fi. Direct line of sight isn't necessary for Li-Fi to transmit a

signal; light reflected off the walls can achieve 70 Mbit/s.

Li-Fi has the advantage of being useful in electromagnetic sensitive areas such as in aircraft cabins, hospitals and nuclear power plants without causing electromagnetic interference. Both Wi-Fi and Li-Fi transmit data over the electromagnetic spectrum, but whereas Wi-Fi utilizes radio waves, Li-Fi uses visible light. While the US Federal Communications Commission has warned of a potential spectrum crisis because Wi-Fi is close to full capacity, Li-Fi has almost no limitations on capacity. The visible light spectrum is 10,000 times larger than the entire radio frequency spectrum. Researchers have reached data rates of over 10 Gbit/s, which is much faster than typical fast broadband in 2013. Li-Fi is expected to be ten times cheaper than Wi-Fi.¹ Short range, low reliability and high installation costs are the potential downsides.



History

Professor Harald Haas, from the University of Edinburgh in the UK, is widely recognized as the original founder of Li-Fi. He coined the term Li-Fi and is Chair of Mobile Communications at the University of Edinburgh and co-founder of pure LiFi.

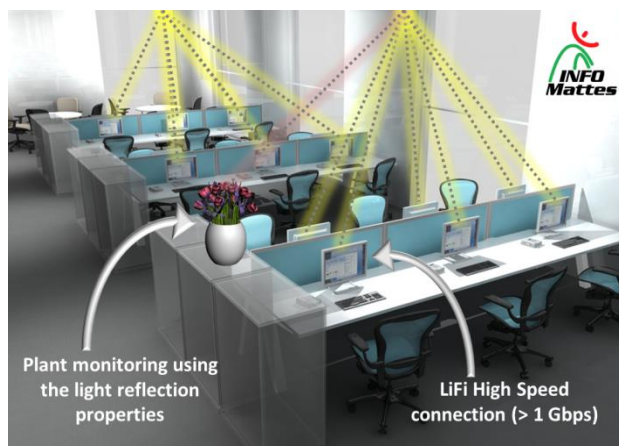
The general term visible light communication (VLC), includes any use of the visible light portion of the electromagnetic spectrum to transmit information. The D-Light project at Edinburgh's Institute for Digital Communications was funded from January 2010 to January 2012. Haas promoted this technology in his 2011 TED Global talk and helped start a company to market it. Pure LiFi, formerly pure VLC, is an original equipment manufacturer (OEM) firm set up to commercialize Li-Fi products for integration with existing LED-lighting systems.

In October 2011, companies and industry groups formed the Li-Fi Consortium, to promote high-speed optical wireless systems and to overcome the limited amount of radio-based wireless spectrum available by exploiting a completely different part of the electromagnetic spectrum.

A number of companies offer uni-directional VLC products, which is not the same as Li-Fi.

VLC technology was exhibited in 2012 using Li-Fi.¹ By August 2013, data rates of over 1.6 Gbit/s were demonstrated over a single color LED. In September 2013, a press release said that Li-Fi, or VLC systems in general, do not require line-of-sight conditions. In October 2013, it was reported Chinese manufacturers were working on Li-Fi development kits.

One part of VLC is modeled after communication protocols established by the IEEE 802 workgroup. However, the IEEE 802.15.7 standard is out-of-date, it fails to consider the latest technological developments in the field of optical wireless communications, specifically with the introduction of optical orthogonal frequency-division multiplexing (O-OFDM) modulation methods which have been optimized for data rates, multiple-access and energy efficiency. The introduction of O-OFDM means that a new drive for standardization of optical wireless communications is required.



Like Wi-Fi, Li-Fi is wireless and uses similar 802.11 protocols; but it uses visible light communication (instead of radio frequency waves), which has much wider bandwidth.

USES OF TECHNOLOGY

Reporter: Maulik Mehta

Class :SYBSCIT

Roll no :A-025

Source:

Internet
(www.useoftechnology.com),

Nov 25, 2012



The use of technology is increasing day by day, we all depend on technology and we use various technologies to accomplish specific tasks in our lives. Today we have various emerging technologies which impact our lives in different ways. Technology is being implemented in almost every section of our lives and business structures. It does not matter which industry you're dealing in, technology will be of use in a certain manner. So embracing it and learning how to **use technology** in whatever we do is very important and

recommended. As the world keeps on developing, technology will be changed, what is working today might not work not be efficient tomorrow.

Below are some of the uses of technology today:

1. Use of Technology in Business:

Today businesses can save money by using technology to perform certain tasks. When you compare the amount of money spent on hiring an individual to perform a certain task and to guarantee delivery on time, it is totally expensive. When it comes to technology a small business can scale out and deliver more with less human resource.

For eg: If you operate a manufacturing business, instead of hiring so many people to work in certain section, you can replace that labor with a "PLC" programmed production line which will automate the all process of manufacturing. The benefits of using a "PLC" is that productivity and accuracy will be better and first compared to using individuals.



aided by the introductions of online business to consumer portals like "Facebook Business Pages". As a business, you can get responses and suggestions from your customers via social network portals. This will save you money on direct mail surveys and other means of getting information from your consumers.

2. Use of technology in communication:

Unlike in the past when communication was limited to letter writing and waiting for those postal services to deliver your message. Today technology has made the field of communications so easy. Now you can draft a business message and email it or fax in a second without any delays, the recipient will get the message and they will reply you instantly.

- **Also technology has made business meetings so simple,** with the introduction of video conferencing; you no longer have to worry to be late for a business meeting. Now with this video conferencing technology, you can be in the meeting in a virtual form and engage with your partners directly.
- **Also technology has made it simple to get feedback from your clients on instant:** This has been

3. Use of technology in education:

Today, technology has made a very big change in the education world. With the invention of technological gadgets and mobile apps which helps students learn easily. Now days you can access a full library via a mobile app. Before inventing this technology, students had to go to physical libraries to get the information they need.

Some of these library Apps include My Library: With this app, you can catalog your books by scanning the ISBN with your Ipad camera and it helps students get access to free eBooks.

Book Crawler: This app will solve the book cataloging problem for students, and it also has a location awareness which will help a student see what others around them are reading.



4. Use of technology in purchasing:

Technology has also made the buying and selling of good so flexible. With the introduction e-payment systems like Paypal.com and Square Wallet App, users can easily purchase anything online without living the comfort of their homes. For you to use pay pal, you will have to sign up with the site for free, then connect your debit card details so that money is transferred from your physical bank account to your electronic PayPal account. So when you go to a store like Amazon.com, you can use your PayPal electronic credit to buy anything on AMAZON.COM



5: Use of technology in transportation:

Transportation is one of the basic areas of technological activity. Both businesses and individuals have benefited from the new technologies in the travel industry. Time is money, so we must have first and efficient means of transport. Try to imagine life without well developed transportation systems. I think of transportation in the same light as food, clothing and shelter. It has become a basic need, because we use advanced transport means like cars, trains , airplanes to go to work , to transport goods , to go shopping, to visit friends and families and so much more. However, the transportation technology has been changing since 1800 to the recent years. Let's take a good example in the picture below.

Picture 1 (In the past - slow)



Picture 2 (Today - first and efficient)



6. Use of technology in agriculture:

Also technology has changed the agricultural industry by replacing human labor with machines that are operated or controlled by people or other machines. In the agricultural industry, productivity is a key factor. If production is high the farmer will make more profits so technology has helped farmers replace the old ways of farming with machines that can do the job in time right from the day of planting to the day of harvesting.

Let's take a simple example: An animal-drawn plow replaced the digging stick. Then later, that plow was replaced by the horse drawn moldboard plow. Currently, we have the large tractors that pull complex tilling machines. But, even these machines are being replaced by no-till or minimum-till farming practices, which reduce the amount of work it takes to prepare the soil for plant

Picture 1 (Before Technology)



Picture 2 (After Technology)



