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DISSEMINATE INNOVATIVE SKY TIE EXPERTISE FOR LONG DISTANCE COMMUNIQUÉ TO P2P DURING ISM BAND 2.4 GHZ

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ABSTRACT

These paper tourist attractions that now a technology has been establish for accomplishment in wireless communication that is to be used at superior distance. But there are various vacant technology in the field of wireless communication to that (Bluetooth, Wi-Fi).And each one of them varies depending on their category of radio frequency. Its purpose could be used only for a maximum distance of 10 to 100 meters from phone to phone. There is a big problem in growing the distance to chat through this device ((Bluetooth, Wi-Fi) for communication. Therefore, there is an introduced new technology "Sky Tie". This technology has been introduced as a new processing method for each of P2P communication. It increases the statement distance from one end to any more end through industrial, scientific and medical (ISM) radio bands 2.45 GHz maximum 5Kms.This study will augment the statement process with this Sky Tie wireless technology.

Keywords: Antenna, ISM band 2.4GHz, STS, Long Range, and FCC, PD,$L_{D.}$

I. INTRODUCTION

Communication is as most proven and one of the most effective in human life cycle. In this world every using mobile along with Bluetooth and Wi-Fi [1].These two processes working through 2.4GHz ISM Band and these allow transmitting the data 10 to 100 meters. The maximum range will increase transmit range 10 meters Bluetooth and WiFi is capable of transmitting voice and data within 32 feet trough ISM band 2.4GHz and Various of devices mortal deployed nowadays have various technical features set aside agility and more proficient misuse of unlicensed bands. This is the most problem with Bluetooth and Wi-Fi Processes will human facing. Sky Tie is most power full many times more effective than Bluetooth and Wi-Fi device [2]. It allows communicating the data up to 5Kms through ISM bands. The IEEE 802.11b standard defines 11 possible channels that may used in ISM 2.4 GHZ bands occupy 79MHZ along with Federal Communications Commission (FCC) [15] and Maximum transmitter output power, fed into the antenna, is 30

dBm (1 watt). The Sky Tie swarm radio transmitter and receiver are many times more sensitive than the average Bluetooth and Wi Fi device.

Fig: 1 Communication between P2P 10 to 100 meters [Transaction successfully completed]

II. PROBLEM DISCOVERY

- Transmit distance is very low (10 to 100 Feet)
- No Encryption and Decryption method
- Week signal

Fig: 2 Communication between P2P 10 to 100 meters [Transaction failed]

III. RELATED EFFORT

Here, we launch new idea and better process for wireless technologies to communicate through ISM band 2.4GHz with smart phones, tablet PC. This new technology “Sky Tie” to increase the distance ranges between P2P communications [5]. So here we develop a new architecture to solve the previous problem. Sky Tie transmitter capable of broadcasting signals "150 meters" with the built-in 9dBi antenna [18].

The new Sky Tie technology following work to be delivering in new process method.

- Long Range Calculation.
- New Algorithm [L_D – Algorithm].
- Encryption and Decryption method
- External Antenna.
- FCC Rules.

IV. SKY TIE LONG RANGE ESTIMATE

The Sky Tie Technologies work beneath 2.4GHz ISM bands. The main of this work is increase distance range P2P. This Sky Tie technology can mathematically predict the system range based on the power output, [17] receiver, and antenna gains. This equation is derived from the first transmission equation and given by

Long Range Calculation = (R / &) dbi

R - Distance between Transmitter / Receiver (P2P)

& - Wave Length

dbi – Transmit Range (FCC)

(29 / 9) dbi – Distance Range 2.4 Km (FCC)

(26/18) dbi – Distance Range 10Km (FCC)

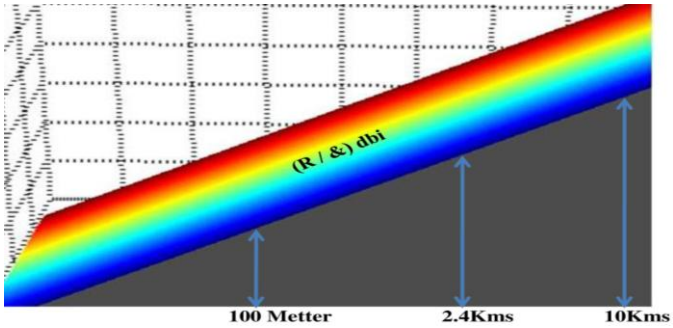

Fig: 3 Long Range Calculations

V. ENCRYPTION AND DECRYPTION METHOD [SAFE TRANSACTION STANDARD]

Mobile phone users are becoming savvier to the potential security risks of standard, unencrypted text messaging and Data's everyday communications. Transaction security is most important role in Sky Tie technology. So here introduced new method for this Safe Transaction Standard [STS] is based on a design attitude is very secure [7]. In order to shield the transaction against unauthorized reading and undetected damage a sender encrypts it with password and encrypts the message key in of symmetric crypto organism and send to another end also [19].

Sender can easily send encrypted message, Data s distinctiveness mining encrypted files so the receiver on untie the encrypted file using password on any smart phone and tablet PC with 384 – bits key.

5.1 Encrypt Route

Types or send your documents through STS. Encrypt the documents and set password and then STS encrypt on your side. If needed, grant the password to other party through a safe communication channel [20].

5.2 Decrypt Route

Receive password and Decrypt your documents. Then you effectively gained access to the undisclosed message or documents [20].

VI. SKY TIE EXTERNAL ANTENNA CONNECTOR

Sky Tie technology equipped with an externally powerful antenna mechanism with a 9dbi Omni directional antenna, the extended range is up to 5kms and with the 18dbi directional antenna, it is 10Kms [18].This type of antenna increase the transmit range and strength of Sky Tie Technology. It can send and receive 5Kms P2P.It reducing interfacing and noise and tools is binding for the equipment of this antenna. It affords up +9dBi gain in the 2.4-2.5 GHz frequency sort and can be worn in the midst of IEEE802.11b/g/n standards. In the 2.4 GHz band you can growth the antenna expansion to grow an EIRP above 9dBi but for every single 9dBi surge of antenna expansion you essential shrink the transmit power by 1dBi. The table below shows the amalgamations of allowed transmit power/antenna enlargement and the causing Effective Isotropic Radiated Power EIRP [16].

VII. FCC RULES FOR UNLICENSED WIRELESS EQUIPMENT EFFECTIVE IN THE ISM 2.4 GH_Z BAND

The ISM radio bands were originally set aside for electromagnetic radiation produced by industrial, scientific and medical (ISM) utensils [15]. In the early 1990's the Federal Communications Commission (FCC) allowed using three of the ISM bands for unlicensed communication equipment. These three ISM bands are:

- 902 to 928 MHz
- 2.400 to 2.4835 GHz
- 5.725 to 5.875 GHz

Fig: 4 9dbi Antenna

VIII. NEW ALGORITHM [L_D – Algorithm]

This Algorithm improves the efficiency of communication between P2P and transmits every location through Sky Tie Technology. It has been observed that transmit location through ISM band 2.4GH_Z [7]. Select transmit ™ through Sky Tie to receiver end after selecting this process Encrypts your documents and send password to other end through save communication [Ecr/ Dcr]. [11] In other end Decrypt that document through a password [19] and use it [11].The FCC (Œ FCC) rules as being followed in their algorithm [LD ® (R/D) dbi Œ FCC].The transmit power up to Max 5Kms (9dbi / Antenna Range) to reach the other end through save communication Long Distance Algorithm ($L_{D)}$.

On Sky Tie
Select ™ → (Receiver)
{
For all communication (Sky Tie € Ecr / Dcr)
if (Sky Tie = Null)
Error (Transmit Failed)
Else
if (Sky Tie ≠ Null)
Send (Mgs, File)
}
Start ™
{
™ → L_D (Ecr * Documents (Password)
Sent → © Safe Channel → Receiver
Receiver → Get @ Password & Dcr (Documents)
If (Password ≠ correct)
Failed
If (Password = correct)
Received document
L_D ® (R/D) dbi Œ FCC
™ → Max @ 5Kms (Sky Tie Œ 9dbi)
Return Sky Tie
}

IX. PROPOSE METHOD ARCHITECTURE

In this proposed method we introduced a new technology for wireless communication "Sky Tie". This technology used to extend the communication distance for P2P through ISM band 2.4GHz band and it gives very high density and efficiency of communication [13].It is designed specifically for mobile application with secure manner [Safe Transaction Standard]. The Ski Tie Software is supporting for Android, Linux and upcoming smart phone and every transfer cover through more secure. The Sky Tie technology is the only long distance communication transfer Data up to 5kms to P2P. It is equipped with an extremely powerful and high sensitive communication device [14].There is no complex RF protocol software is required to create an instant bidirectional link between P2P for Sky Tie technology for communication [5]. Sky Tie technology modules in use in the filled to capacity 2.4GHz bands. Frequency, bandwidth, power output and data rate can optionally be configured to set aside several diplomacy to communicate free from interfering with each other and any other devices. [12] It enhances additionally, given its high sensitivity, it can extend the range of communication between two devices. It can analyze and flow data in factual time or long data to be transmitted in Sky Tie.

9.1 Sky Tie Working System

It allows running customer application in basic smart phones. It's easily programmable through a wireless file transfer (FTP) of a simple text and data transfer (P2P).communication. The Sky Tie technology is the only embedded process that allows multiple and simulation, wireless that connects up to 5Kms through ISM 2.4GHz band (P2P).It can support at the same time file transfer and message with the high security manner [STS].The utilize of Sky Tie as the base technology makes certain that these strategy interoperate with all other devices which are sky Tie companionable, such as Smart phone and communication devices through ISM band 2.4GH_z extended range is up to 5Kms.[5] An especially powerful input and output system, execute within the Sky Tie OS allocate sending and receiving documents with the high security manner [STS].

9.2 Pd Card Slit

This is a full sized packing disk PD card slot. An SD card with an operating system (OS) set up is crucial for booting the device in Sky Tie technology .Its supporting several distance communication and mover over high quality ISM 2.4GHz band . Ad-hoc network also can access this Sky Tie technology for P2P communication.

Fig: 5 Sky Tie Connection Process to P2P through 9dbi Antenna

9.3 Benefits of Sky Tie Technology

1. Long Distance Communication (P2P) up to 5kms
2. Extremely long range device
3. High security communication (STS)
4. FCC Authorization rules
5. No Additional power needed
6. Antenna extended range up to 5Kms to 20Kms

X. IMPLEMENTATION METHOD

In this Sky Tie technology we developed a transaction kit for communication (P2P) [3].This kit supports multiple processing in Sky Tie through external antenna and ISM 2.4 GHZ. **Sky Tie** is a wireless communication technology standard for exchanging data over long range in the ISM band from 2.4 to

2.485 GHz from fixed device. Sky Tie is Low Energy aims to shrink the power use of Sky Tie communication at the same time as maintaining an identical range and increase long distance. [17] The cell phone Sky Tie linked with transaction kit and the kid retrieves the message and data from the user and then send receiver end through ISM band 2.5GH_Z. The transaction kit. It is conventional to Sky Tie V2.1+EDR and handcuffs instantaneous master and slave tie modes, 2 sequential anchorage profiles, file transfer and message communication to P2P [16].

10.1 Energetic Technique

Connect the Sky Tie application into transmit kit; there is a constant Data exchange one end to another end with the high security manner during Encrypt and Decrypt.

10.2 Dispensation Technique

Sky Tie is a Technology that allocates a device to communicate and split data over long distances without wire via ISM band 2.4 GH_Z. It is a standard wireless maturity, communication in each deliberate for low power communication system with long range based on low cost and no communication cost P2P. [12] The mobile device and transmit kit afford user with the potential prospect to connect in ad-hoc approach through long range communication such as Sky Tie.

10.3 Communication Test Between P2p

The distance amid the Sky Tie access point and Sky Tie station was mottled, while the two devices had a stripe of spectacle connecting one an added [20]. These devices preserve a connection speed in surfeit of 10 Mbps up to the maximum remoteness at which the test was achieve of 5Kms.The device will be improved the output maximum distance better than others. The Sky Tie technology improve the communication range these device through ISM 2.4 GHz band.

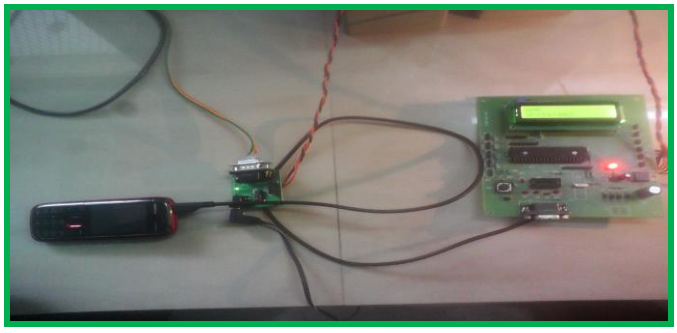

Fig: 6 Communications between P2P through Sky Tie Technology

XI. EXPERIMENTAL CONSEQUENCE

In order to evaluate the performance of our proposed method Sky Tie technology method delivered two efficient outputs up to 5Kms. One is frequency range and another one is long distance communication. One of the customs Bluetooth devices avoid intrusive with other systems is by convey out very weak signals of about 1 mill watt. By similarity, the largest part powerful cell phones can spread a signal of 3 watts. The low power confines the sort of a Bluetooth gadget to with reference to 10 to 100 meters. The low power devices, perimeter the

assortment of a Bluetooth device to in relation to 10 to 100 meters. The IEEE identical Bluetooth as IEEE 802.15.1, but no extended retains the typical. Radio waves are used as the communication medium. These radio waves in the unlicensed ISM band 2.45 GH_Z band frequency. The new technology improved the distance between P2P through Sky Tie and the effect will be given up to 5Kms from accessing point without any burden.

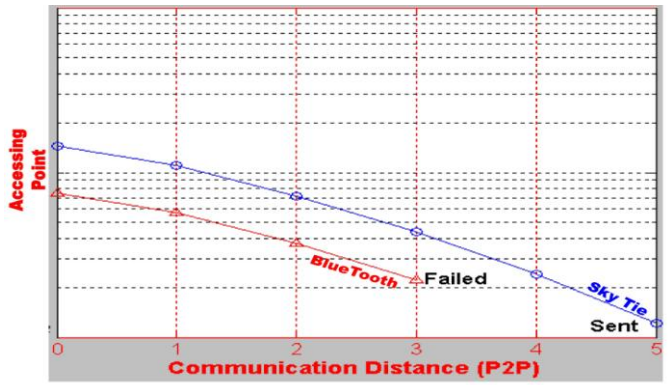

Fig: 7 Sky Tie Productivity

XII. CONCLUSION

This dissertation probe new technology for long distance communication using 2.4GHz ISM band. The Sky Tie technology produced high effective transfer for P2P in long distance. It's very useful to long range communication in one end to another end with low cost up to 5Kms. By using this concept of using this Sky Tie technology to reduce communication cost P2P and increase the distance through 2.4GHz ISM band. This architecture is designed to increase the frequency range to an access point to another access point through safe communication P2P. Here introduced new algorithm and security technique for this process to produce a high transaction technique. It is the responsibility of researcher to predict the high quality to overcome the future problem in 2.4GHz ISM band in communication. In this effort a new system is recognized within the Sky tie facilitates strategy. And future, it will be increased up to 30Kms through Ski Tie technology.

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