



REVIEW PAPER ON WI-FI 4G

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ABSTRACT: Wi-Fi is a term that most of us hear almost every day and is a service most would consider an integral part of our lives. From our smart phones to our game consoles and computers, most devices on the market today are equipped to use Wi-Fi. While WiFi has become critical to routines of many, a large portion of us don't know anything more than the basics. Wireless Fidelity is the wireless way to handle networking. It is also known as 802.11 networking and wireless networking. Using this technology we can connect computers anywhere in a home or office without the need of any wires. The computers connect to the network using radio signals, and they can be up to 100 feet or so apart. Wi-Fi allows to connect to the internet from virtually anywhere at speeds of up to 54Mbps. The computers and handsets enabled with this technology use radio technologies based on the IEEE 802.11 standard to send and receive data anywhere within the range of a base station.



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[1] Introduction

Wi-Fi would certainly not exist without a decision taken in 1985 by the Federal Communications Commission (FCC), America's telecoms regulator, to open several bands of wireless spectrum, allowing them to be used without the need for a government licence. This was an unheard-of move at the time; other than the ham-radio channels, there was very little unlicensed spectrum. But the FCC, prompted by a visionary engineer on its staff, Michael Marcus, took three chunks of spectrum from the industrial, scientific and medical bands and opened them up to communications entrepreneurs.

These so-called “garbage bands”, at 900MHz, 2.4GHz and 5.8GHz, were already allocated to equipment that used radio-frequency energy for purposes other than communications: microwave ovens, for example, which use radio waves to heat food. The FCC made them available for communications purposes as well, on the condition that any devices using these bands would have to steer around

interference from other equipment. They would do so using “spread spectrum” technology, originally developed for military use, which spreads a radio signal out over a wide range of frequencies, in contrast to the usual approach of transmitting on a single, well-defined frequency. This makes the signal both difficult to intercept and less susceptible to interference. Yu Jin, Esam Sharafuddin, Zhi-Li Zhang “Identifying Dynamic IP Address Blocks Serendipitously through Background Scanning Traffic”. University of Minnesota. April 2011.

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