

# ELECENG 2FL3 ASSIGNMENT 1

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**Application #7:** Marine radar is a form of radar that is used by vessels to detect and avoid other obstacles. The 2 main types of marine radars are X band and S band. X band is around the 10 GHz frequency and S band is around the 3 GHz frequency [1]. In Canada, the frequency ranges reserved for maritime radionavigation are 110-130 kHz, 2850-2900 MHz, 5470-5650 MHz, 8850-9000 MHz, and 9200-9300 MHz, which are radio and microwaves [2][3].

**Application #18:** WiMAX (Worldwide Interoperability for Microwave Access) also known as IEEE 802.16 is essentially a longer range WiFi. It was a competitor to LTE which came along and most US and Canadian cellular carriers adopted LTE instead [4]. It's frequency profiles published by the WiMAX Forum are 2.3 GHz, 2.5 GHz and 3.5 GHz. In Canada, the allocated range is 3475-3700 MHz, which is in the microwave range of the EM spectrum [2].

**Application #17:** Wi-Fi also known as IEEE 802.11 is a wireless networking standard that utilizes microwaves to enable high-speed data communication between devices, to a network and most commonly access to the Internet [5]. The most common frequencies for Wi-Fi are 2.4 GHz and 5 GHz, which are in the microwave range. In Canada the allowed frequencies are 2401-2478 MHz, 5170-5330 MHz, 5490-5590 MHz, and 5650-5815 MHz [2][6].

## References

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