

RADIO FM FREQUENCY MONITORING SYSTEM



Research Issues

Kominfo always monitors the frequency circulating in the field, but the vast territory of Indonesia makes some areas difficult to reach. This situation is usually used by individuals to use a frequency spectrum that is not in accordance with Kominfo regulations. Therefore, a portable device is needed to detect the illegal frequency spectrum circulating.

Research Objective

- Creating an FM radio frequency spectrum monitoring system with a portable device that can monitor the frequency in the FM radio frequency range
- Create dashboard that running in cloud and integrated with HackRF
- Create a warning alert to provide information, if the system detect frequency that not matching with Kominfo Database

DASHBOARD



Frequency spectrum page

The screenshot shows the HackRF One Dashboard. It features a table titled 'Illegal Database' with columns 'Frequency' and 'Relative Receive Power'. The table lists several frequencies and their corresponding power levels.

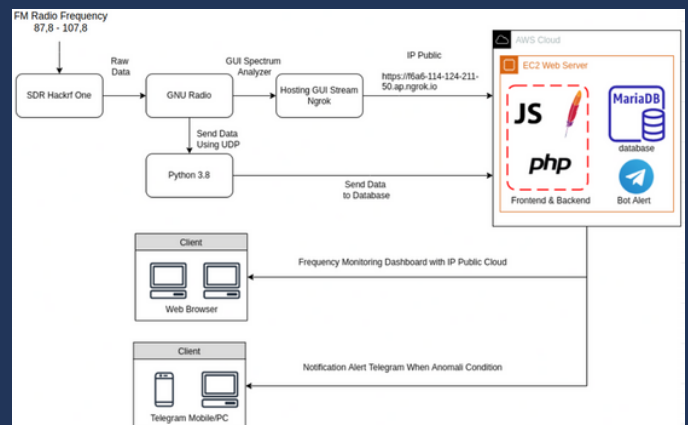
Frequency	Relative Receive Power
100684000 Hz	-52.2224 dB
100705000 Hz	-46.6932 dB
100723000 Hz	-47.2161 dB
100742000 Hz	-54.1668 dB

Illegal Frequency Detection

The screenshot shows the HackRF One Dashboard with a login and registration form overlay. The form has fields for 'Username' and 'Password', and a 'Login' button.

Login & Registration

ARCHITECTURE DESIGN SYSTEM



When the system monitoring detects an illegal frequency like in the dashboard image, the bot will give an alert.

Technology Use :

- SDR HackRF
- GNU Radio
- Cloud
- LAMPP (Linux, Apache, MariaDB, PHP)
- JavaScript
- CSS Bootstrap
- BOT Telegram