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Design & Implementation of a Portable RF Radiation Detector

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***Abstract* - This work presents the design and realization of a portable RF radiation detection system based on the envelope detection technique. The proposed system detects the presence of high-frequency electromagnetic radiation by converting RF signals into a measurable DC voltage using a diode-based rectifier and RC envelope detector. The detected signal is processed using an LM358 comparator to generate a digital output that drives a visual indicator. The circuit was first modelled and analysed using LTspice to evaluate transient response and signal behaviour across each stage, including rectification, filtering, and comparator switching. Simulation results confirm successful envelope extraction and threshold-based detection. The hardware implementation was developed and experimentally tested to validate practical performance. The prototype demonstrates reliable detection of nearby RF sources and provides a compact, low-cost solution for basic RF radiation monitoring applications.**

Keywords: RF radiation detector, electromagnetic radiation, RF signals, radio frequency.

I. INTRODUCTION

The rapid growth of wireless communication technologies has significantly increased the presence of radio frequency (RF) electromagnetic radiation in the environment. Devices such as mobile phones, Wi-Fi routers, Bluetooth modules, microwave transmitters, and communication towers continuously emit RF signals across a wide frequency spectrum. Although these radiations are generally regulated within permissible exposure limits, continuous monitoring of RF signal presence and intensity has become important for safety assessment, interference detection, and educational applications.

RF radiation detection systems are designed to identify the presence of high-frequency electromagnetic signals and convert them into measurable electrical quantities. Since RF signals operate at very high frequencies (MHz–GHz range), direct measurement using conventional low-frequency instruments is not feasible. Therefore, signal conditioning techniques are required to transform high-frequency alternating signals into low-frequency or DC equivalents that can be processed by analog or digital circuits.

One of the simplest and most effective methods for detecting RF signal amplitude is envelope detection, which involves rectification followed by low-pass filtering. This technique extracts the amplitude variation (envelope) of the RF waveform and converts it into a proportional DC voltage. The DC output can then be compared against a predefined threshold to indicate the presence of RF radiation.

In this work, a portable RF radiation detector is developed using a diode-based envelope detector and an LM358 operational amplifier configured as a comparator. The system is first analyzed through LTspice simulation to study waveform behaviour at various stages of the circuit.

Subsequently, the hardware prototype is implemented and experimentally validated. The proposed design emphasizes simplicity, low cost, portability, and ease of implementation, making it suitable for academic and basic monitoring applications.

II. OBJECTIVE OF THE RESEARCH

The main objectives of this work are:

1. To design a portable RF radiation detection system.
2. To implement envelope detection for high-frequency signal extraction.
3. To simulate the circuit using LTspice and analyze waveform behavior.
4. To develop a hardware prototype using low-cost components.
5. To validate the detection capability experimentally.
6. To provide a compact and energy-efficient RF sensing solution.

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III. LITERATURE SURVEY

1) Affordable RF Detector (Patil et al., 2025):

a) Designing: Designed with a copper loop antenna, Schottky diode rectifier, and LM358 amplifier, this device provides visual LED-based detection of RF emissions from smartphones and routers within 10–25 cm.

b) Health Impacts: Research links RF exposure to headaches, sleep disorders, and possible neurological effects near base stations.

c) Detector Technologies: CMOS RF amplitude detectors, Schottky-diode-based RF power meters, and bipolar transistor-based power detectors have been proposed for mobile phone testing and EMF monitoring.

2) Weak RF Signal Detection Based on Single-Mode Optoelectronic Oscillator (Zhaoyin Li and Zixiong Wang et al., 2023):

Advanced Detection Techniques: Multi-mode and single-mode OEO systems have been used for ultra-sensitive RF detection, with single-mode designs achieving superior gain and sensitivity.

3) CMOS RF Power Detector (Yan Dan Lei, 2Kasa Yasush et al., 2019):

Role in Wireless Systems: RF Power Detectors (PDs) are fundamental components in wireless communication, primarily used for Power Amplifier (PA) output power calibration and gain control of components like Low Noise Amplifiers (LNAs).

Technological Shift: While earlier PDs often relied on the non-linearity of devices like Schottky diodes or bipolar transistors, modern RF circuit design shows a strong trend toward CMOS implementation. CMOS technology offers the advantages of low-cost fabrication, high integration potential (System-on-Chip), and reduced power consumption, which is critical for mobile wireless devices.

4) Design of a Radio Frequency Detection System for Mobile Phones (Alvarado-Diaz and Roman-Gonzalez et al., 2018):

a) Primary Application: Historically, the main application for mobile phone RF detection systems has been security, such as preventing unauthorized use in restricted areas like examination halls, confidential meetings, or prisons, and detecting espionage (unauthorized audio/video transmission).

b) Mechanism of Detection: These systems function by sensing the electromagnetic radiation transmitted by a mobile phone during active communication (calls, texts, data). The detection circuits are designed to be sensitive to the frequency bands used by cellular communication, which typically fall in the 0.9 GHz to 3 GHz range.

5) Micromachined Radiation Detectors (Eun & Gianchandani, 2006):

Presented miniaturized gas-discharge detectors producing RF signals in the ultra-wideband range (>2.9 GHz). Incorporation of magnets and optimized electrode materials improved sensitivity by 15–30%. Applications include wireless sensor networks for environmental monitoring.

Miniaturization is done by Micro-machined detectors using lithographic fabrication have shown high portability, low power consumption, and the ability to form wireless sensor networks.

6) CMOS Foundry Implementation of Schottky Diodes for RF Detection (Veljko MilanoviC et al., 1996):

Schottky Diodes in CMOS: Demonstrated the fabrication of Schottky diodes in standard CMOS processes for RF detection. The devices showed rectifying behaviour, barrier height of 0.78 eV, and a cut-off frequency of ~600 MHz, enabling integration with CMOS electronics.

IV. METHODOLOGY

The development of the portable RF radiation detector was carried out through a systematic approach consisting of circuit design, simulation analysis, hardware implementation, and experimental validation. The overall methodology is described below.

a) Antenna (RF Signal Reception): The antenna captures ambient RF signals and converts electromagnetic radiation into a small AC voltage.

b) Rectifier Stage: Since RF signals operate at very high frequencies, direct processing is not feasible. Therefore, signal conditioning through rectification and filtering is performed. The diode performs half-wave rectification of the incoming RF signal and ensures that high-frequency ripple is minimized and a smooth DC voltage proportional to signal amplitude is obtained.

c) Envelope Detection: The envelope extraction stage, implemented using a diode-based rectifier and an RC filter network, converts the high-frequency RF signal into a pulsating DC voltage. This DC level represents the amplitude (envelope) of the received RF signal.

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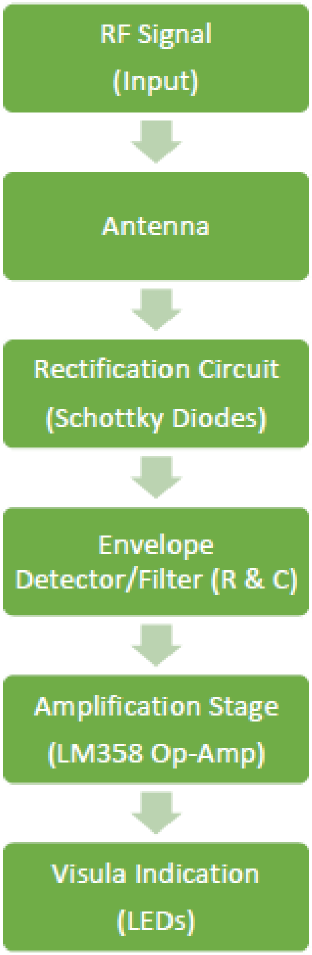

Figure 1: Design Flow

d) Amplification: LM358 op-amp in non-inverting mode with gain ~101.

e) Output Interface: LED indicator glows RF signal strength exceeds the threshold level.

f) Prototype Development: Breadboard prototype followed by perf-board assembly with 9V battery supply.

V. BLOCK DIAGRAM

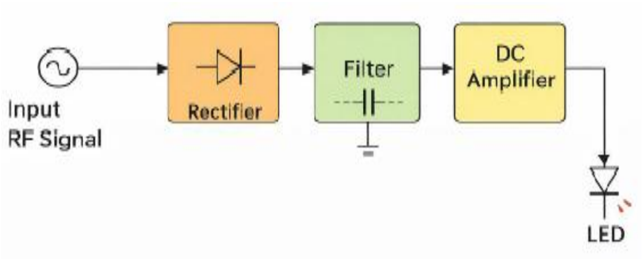

Figure 2: Block Diagram

The RF envelope detector is designed to sense the presence of an incoming RF signal and convert it into a usable DC output. The complete system consists of four main stages: a resonant tank circuit, a rectifier, a low-pass filter, and a DC amplifier driving an LED indicator. Each block plays a specific role in extracting the envelope of the RF waveform.

1. Input RF Signal

This is the high-frequency signal received from an antenna or RF source, containing a high-frequency carrier along with modulation or variations that form the envelope. The goal of the system is to detect this envelope and convert it into a visible indication using an LED.

2. Rectifier (Diode)

The rectifier performs half-wave rectification by removing the negative half cycles of the RF signal. This stage typically uses a Schottky diode, preferred for its low forward voltage and fast switching characteristics. The purpose of this stage is to convert the alternating RF signal into a pulsating DC signal by allowing only the positive half-cycles to pass. In operation, when the RF input exceeds the diode threshold, current flows and the signal is “clipped” into unidirectional pulses that represent the envelope peaks.

3. RC Envelope Detector/Filter

This stage filters the rectified signal and extracts the envelope (amplitude variation), producing a DC voltage proportional to signal strength. A capacitor (or RC network) removes the high-frequency components from the rectified waveform.

The purpose is to smooth the pulsating DC, extract only the low-frequency envelope of the RF signal, and provide a stable DC level proportional to RF amplitude. In operation, the capacitor charges to the peak of the rectified signal and discharges slowly, producing a clean envelope curve.

5. DC Amplifier

The extracted envelope is usually weak (millivolts), so a DC amplifier boosts this signal to a usable level. Its purpose is to increase the DC output voltage, drive the load (an LED in this case), and improve the sensitivity of detection. The amplifier ensures that even very small RF signals result in a visible LED indication.

6. LED Indicator

The LED glows when the amplified DC output exceeds its forward voltage. This provides a visual indication that RF energy is present and helps verify the detection performance. The brightness of the LED roughly corresponds to the strength of the detected RF signal.

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VI. CIRCUIT DIAGRAM & WORKING

The designed RF detector circuit converts a high-frequency input signal into a DC output capable of driving an LED indicator.

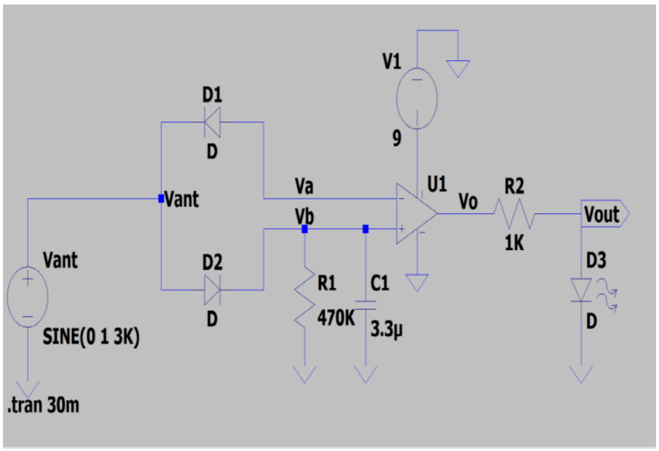

Figure 3: Circuit Diagram

The system consists of three main blocks: a dual-diode rectifier, an envelope filter, and an op-amp-based DC amplifier. A detailed description of each stage follows.

1. RF Input

The RF input source generates a 3 kHz RF signal defined as Vin = SINE(0 1 3K), with a DC offset of 0, an amplitude of 1 V, and a frequency of 3 kHz.

2. Dual Schottky Diode Rectifier

Two BAT54 Schottky diodes (D1 and D2) form a voltage-doubling rectifier. D1 rectifies positive peaks toward Vout, D2 rectifies negative peaks toward ground, and R1 (470 kΩ) provides a discharge path for the rectified envelope. Schottky diodes are used due to their low forward voltage (~0.2–0.25 V) and fast switching, which is essential for 3 kHz RF. The output at node Vb is a pulsating DC signal following the RF envelope.

3. Envelope Filter (C1 – 3.3 µF)

C1 forms a low-pass filter with R1. Its function is to smooth the rectified pulsating waveform, remove high-frequency components, and extract the true envelope of the RF signal. As a result, a stable envelope voltage appears at node Vb, proportional to RF strength.

4. DC Amplifier (Op-Amp Stage)

An op-amp (U1) powered by a +9V DC supply is used to amplify the weak envelope. The non-inverting input (+) receives the envelope, the inverting input (−) is biased to a reference node, and the output drives the LED through resistor R2 (1 kΩ).

The purpose is to boost the small envelope (in the mV range) to several volts, enabling LED activation even at low RF levels. The benefits include improved sensitivity, stabilized output, and minimized loading on the rectifier.

5. LED Indicator (D3)

The amplified output drives an LED, with R2 limiting the LED current. The LED glows whenever Vout exceeds its forward voltage, meaning that a glowing LED confirms the presence of RF energy.

VII. CIRCUIT ANALOGY & WORKING PRINCIPLE

The antenna receives RF radiation, after which the diodes rectify the high-frequency AC signal. The RC network then extracts the signal envelope, and the LM358 compares the envelope voltage with a reference. If the RF strength exceeds the threshold, the LED turns ON. Thus, the system converts RF radiation to AC voltage, then to a DC envelope, and finally to a digital output.

a) Functional Significance

The diode stage enables RF detection without complex circuitry, while the RC network ensures a stable DC output. The comparator provides reliable switching, and the LED gives immediate visual indication of RF presence. This architecture ensures simplicity, low cost, portability, and ease of implementation.

b) Simulation Setup and Configuration (LTspice)

To verify the functional operation of the proposed RF signal presence detection system, the circuit was simulated using LTspice. The objective of the simulation was to validate envelope extraction, threshold comparison, and output switching behavior prior to hardware implementation. The following steps and configurations were used.

c) Simulation Objective

The purpose of simulation is to verify rectification of the RF signal, observe envelope extraction, analyze comparator switching behavior, and validate the LED triggering condition. Transient analysis is performed to study time-domain behavior.

VIII. CIRCUIT MODELING IN LTSPICE

The circuit was modeled using standard LTspice components as follows.

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(a) Input Source (Antenna Equivalent)

The antenna was modeled using a sinusoidal voltage source: Vant SINE(0 1 3K), where 0 is the DC offset, 1 V is the peak amplitude, and 3 kHz is the signal frequency.

(b) Diodes (D1 and D2)

A standard silicon diode model was used (.model D D), and the diodes were connected in opposite directions to allow detection of both signal polarities.

Envelope Detector

The envelope detector consists of R1 = 470 kΩ and C1 = 3.3 µF, which form the RC filter. The time constant is $\tau = RC = 470\ k\Omega \times 3.3\ \mu F \approx 1.55\ s$, which ensures smoothing of the rectified waveform.

Comparator (LM358)

The LM358 operational amplifier was selected from the LTspice library. The non-inverting input (+) is connected to the envelope output, the inverting input (–) is connected to the reference node, and the supply voltage is 9V DC from a DC supply source labeled VA DC 9.

Output Stage

The output stage consists of R2 = 3 kΩ and an LED modeled using a diode component. This stage verifies switching operation.

Simulation (Transient Analysis) Command

Transient analysis was performed using the command `.tran 50m`, which simulates the circuit for 50 milliseconds to observe waveform behavior.

The following nodes were plotted:

1. V(Vant) – Input sinusoidal waveform
2. V(VB) – Rectified waveform
3. V(C1 node) – Envelope voltage
4. V(Vo) – Comparator output
5. V(Vout) – LED-drivingVoltage
6. I(D3) – LED current

These waveforms help verify proper rectification, filtering, and LED activation.

IX. RESULTS & DISCUSSIONS

Simulation Results & Waveform Analysis

The LTspice transient analysis was performed for 30 ms to evaluate the dynamic behavior of the RF signal detection circuit. The observed waveforms confirm correct operation of the rectification stage, envelope detector, comparator, and LED driver stage.

The simulation results validate that the circuit successfully detects the presence of an RF-like signal and converts it into a digital-level indication for LED activation.

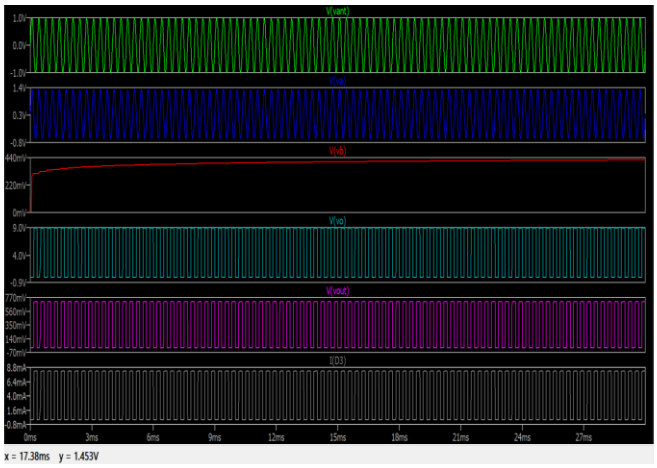

Figure 4: Waveforms

The key waveforms obtained during the transient analysis are shown in Figure 4. The explanation of each waveform is provided below.

1. RF Input Waveform (Vant)

The top waveform (Fig.5) represents the applied sinusoidal signal:

- Amplitude ≈ 1 V (peak)
- Frequency ≈ 3 KHz

This waveform emulates the RF signal received by the antenna. It is a pure AC signal with zero DC offset. This is the unprocessed AC signal that must be rectified and converted into a DC-equivalent voltage.

Observation: The waveform is symmetrical about 0 V, indicating a properly defined sinusoidal source.

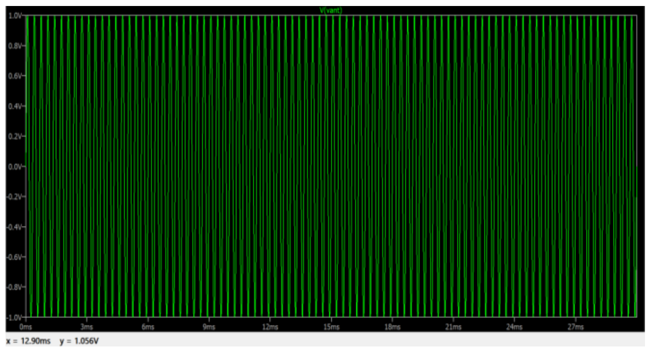

Figure 5: Input RF Signal (Vant)

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2. Rectified Waveform (Va)

The second waveform (Fig.6) corresponds to the output after the rectification stage.

a) Observation:

- The negative half cycles are clipped.
- The waveform becomes unidirectional (positive-dominant).
- A small DC shift is visible due to diode conduction.

This confirms proper diode operation and successful half-wave rectification.

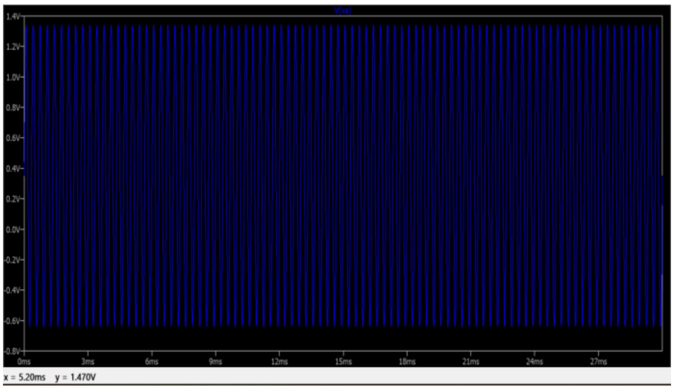

Figure 6: Rectified RF Signal (Va)

3. Envelope Detector Output – (Vb)

The third waveform (Fig.7) shows the output of the RC envelope detector.

a) Observation:

- The voltage rises gradually at the beginning of simulation.
- It stabilizes around ≈ 0.44 V.
- Ripple is minimal due to large RC time constant.

b) Explanation:

The capacitor charges through the diode during positive peaks and discharges slowly through the resistor.

Because:

$$\tau = RC \gg Tsignal$$

(where T = 1 ms)

The output becomes a smooth DC voltage proportional to signal amplitude. This confirms effective envelope extraction.

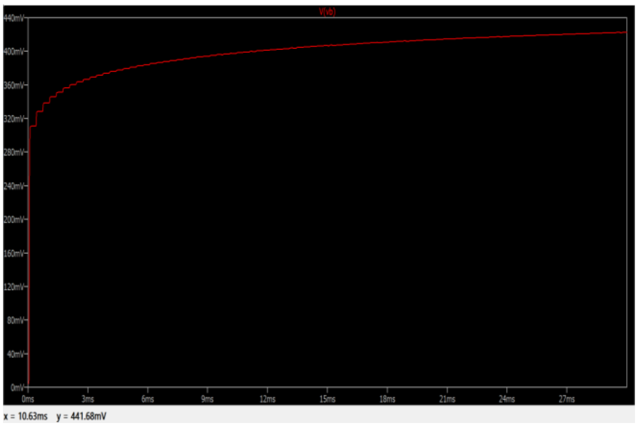

Figure 7: Envelope Detector Output (Vb)

4. Comparator Output (LM358) – (Vo)

The fourth waveform (Fig.8) shows the comparator output.

a) Observation:

- Output switches between approximately 0 V and 9 V.
- A clean square wave is generated.
- Fast transitions are observed.

b) Explanation:

When:

$$Venvelope > Vreference$$

The comparator output saturates to HIGH (≈ 9 V).

When:

$$Venvelope < Vreference$$

The output goes LOW (≈ 0 V).

The sharp transitions indicate stable comparator operation without oscillations.

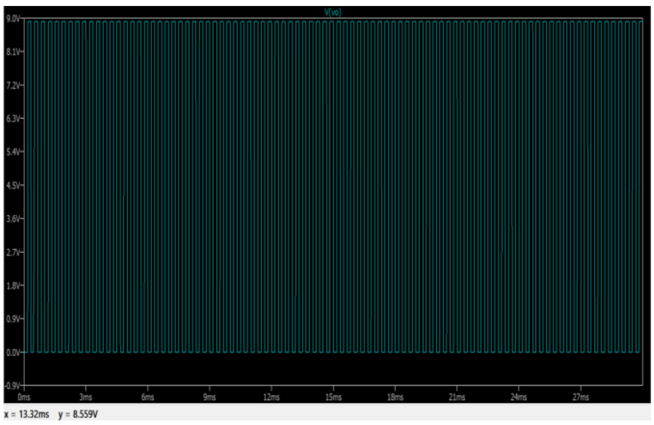

Figure 8: Comparator Output (Vo)

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5. LED Voltage – (Vout)

This waveform (Fig.9) represents the voltage across the LED.

a) Observation:

- Voltage pulses appear when comparator output is HIGH.
- Peak LED voltage ≈ 0.7 V (forward voltage drop region).
- LED remains OFF when comparator output is LOW.

This confirms that the LED receives forward bias only during HIGH output conditions. Thus, LED turns ON when RF signal is detected.

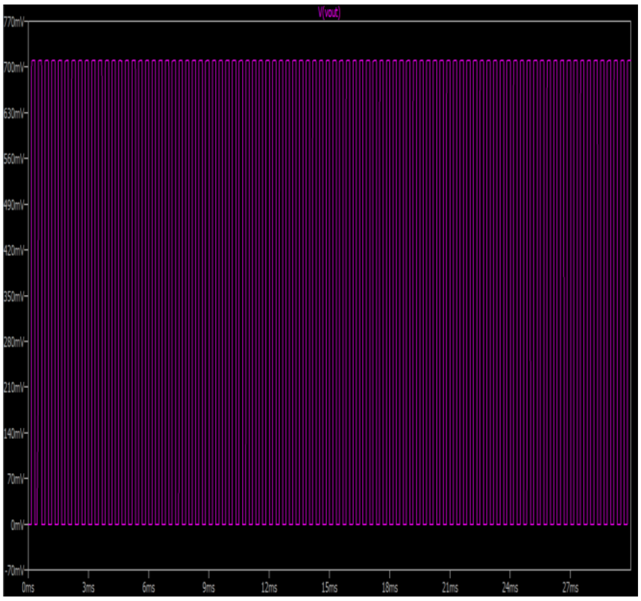

Figure 9: LED Voltage (Vout)

6. LED Current (ID3)

The final waveform (Fig.10) represents current through the LED.

a) Observation:

- Current pulses are visible.
- Peak current ≈ 7–8 mA.
- Current becomes zero when LED is OFF.

b) Explanation:

This confirms proper current limiting and safe LED operation. The current is within practical LED operating limits.

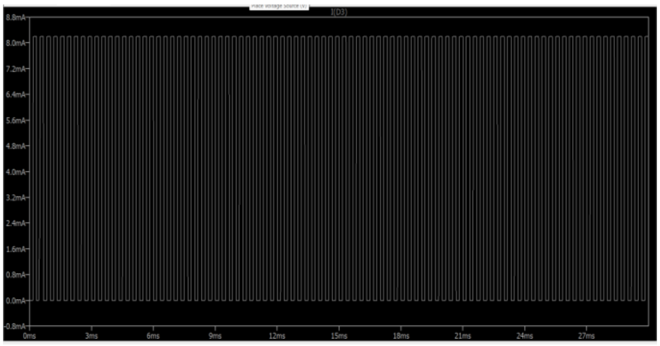

Figure 10: LED Current (ID3)

7. Key Observations

These waveforms demonstrate that:

1. High-frequency RF signal is successfully received.
2. Diode rectification removes the negative half of the AC waveform.
3. Envelope voltage grows over time initially and stabilizes around ~0.44 V with minimal ripple, indicating effective smoothing by the RC network.
4. Comparator produces a sharp square wave switching between 0 V and 9 V, confirming stable threshold-based comparator operation.
5. Pulsed voltage appears across the LED during comparator HIGH state, showing that the LED is forward biased only when signal is detected.
6. LED activation is confirmed when current pulses of approximately 7–8 mA are observed, verifying proper LED conduction and safe current limiting.

Thus, the simulated results verify proper functioning of each stage:

RF → Rectification → Filtering → Amplification → LED Indication

8. Discussion

The input sinusoidal signal is clearly observed, confirming correct source configuration in LTspice. The rectification stage successfully removes negative half cycles, producing a unidirectional waveform, and the RC network effectively smooths the rectified signal, generating a stable DC envelope voltage. This envelope voltage crosses the predefined threshold, triggering the comparator, which produces a clean square wave output between 0 V and 9 V, indicating proper switching behavior. The LED receives forward bias only during HIGH output conditions, confirming correct detection logic, while the LED current remains within safe limits (approximately 7–8 mA), ensuring reliable and stable operation. No oscillations or instability are observed, validating proper circuit design and component selection.

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9. Prototype Hardware

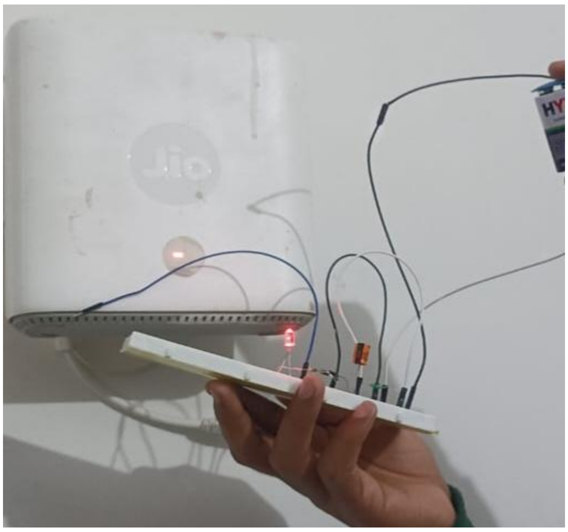

Figure 11: Prototype Hardware Testing with a WiFi Router

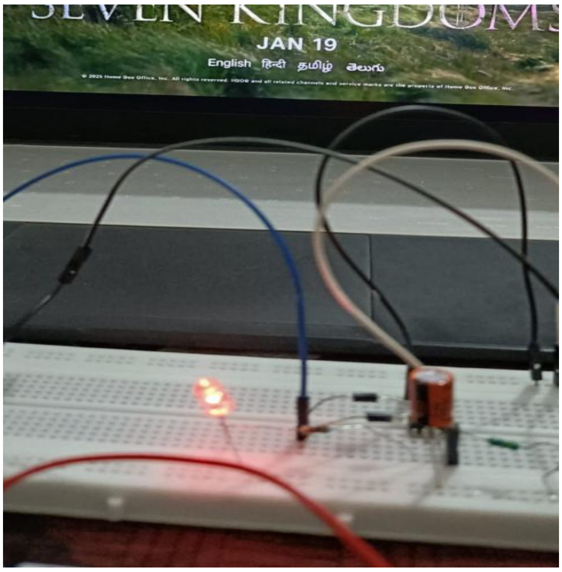

Figure 12: Prototype Hardware Testing with a Laptop

Table 1: Observed Results from various RF Soures

RF Source	Approximate Measurement Distance (in cm)	RF Activity	Likely Technology	Visual Indicator (LED)
Smartphone (Idle)	5	Background signalling	2G/3G/4G/5G	OFF
Smartphone (Voice Call)	5	Uplink/Downlink transmission	2G/3G/4G/5G	Flickering
Smartphone (Video Call)	7	Continuous data transmission	4G/5G/ Wi-Fi	Rapid Flickering
Smartphone (Downloading)	7	High data activity	4G/5G/Wi-Fi	ON
Wi-Fi Router (Idle)	20	Beacon signal	Wi-Fi (2.4 / 5 GHz)	OFF
Wi-Fi Router (Active)	10	Continuous packet transmission	Wi-Fi (2.4 / 5 GHz)	ON
Laptop	10 - 15	Wi-Fi/Bluetooth activity	Wi-Fi / Bluetooth	ON

The prototype hardware of the proposed RF signal detector was implemented on a breadboard according to the circuit schematic in Fig. 3. Upon application of an RF input signal, the LED indicator illuminated brightly, as shown in the hardware photograph thereby confirming the successful detection of RF energy and proper comparator switching.

X. CONCLUSIONS

The RF signal detection circuit was successfully designed and simulated using LTspice. The rectification stage effectively converted the AC input signal into a unidirectional waveform, and the RC envelope detector produced a stable DC voltage proportional to the input signal amplitude. The comparator accurately detected when the envelope voltage exceeded the reference threshold, yielding a clean digital output (0–9 V) that confirms proper switching operation. Furthermore, the LED indication and current waveform verified correct detection logic and safe operating conditions. Collectively, the simulation results validate the theoretical design and confirm reliable circuit performance, indicating that the proposed system is suitable for basic RF presence detection and low-power sensing applications.

XI. FUTURE DIRECTIONS

Several modifications and enhancements can be pursued to extend the capabilities of the proposed system. The circuit can be modified to detect higher-frequency RF signals in the MHz/GHz range by employing high-speed Schottky diodes and optimized RF components, while sensitivity can be further improved by incorporating an RF amplifier stage before the rectifier. For quantitative measurement, a calibrated signal strength indicator, such as an RSSI-based analog meter or an ADC interface, can be added. The design can also be implemented on a printed circuit board (PCB) with proper impedance matching for real-world RF applications. Additionally, integration with a microcontroller would enable digital logging, threshold adjustment, and wireless monitoring. Finally, the system can be further miniaturized using CMOS or VLSI implementation for low-power embedded sensing applications.

REFERENCES

[1] Nikhil S. Patil, Shreyas S., Kiran K. N., "Affordable and Portable RF Radiation Detection Device," *International Research Journal of Engineering and Technology (IRJET)*, vol. 12, no. 8, pp. 45-48, Aug. 2025.

[2] Zhaoyin Li, Zixiong Wang, Hao Luo, Yitong Xu, Jinlong Yu, Yang Jiang, "Weak RF Signal Detection Based on Single-Mode Optoelectronic Oscillator,"

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https://doi.org/10.47001/IRJIET/2026.105014

IEEE Photonics Technology Letters, vol. 35, no. 6, pp. 313-316, Mar. 2023.

[3] Brian Meneses-Claudio, Witman Alvarado-Diaz, Avid Roman-Gonzalez, "Design of a Radio Frequency Detection System for Mobile Phones," *2018 IEEE International Conference*, pp. 1-4, 2018.

[4] Y. Shao, X. Han, M. Li, and M. Zhao, "RF signal detection by a tunable optoelectronic oscillator based on a PS-FBG," *Opt. Lett.*, vol. 43, no. 6, pp. 1199–1202, Mar. 2018.

[5] X. Zou et al., "Optoelectronic oscillators (OEOs) to sensing, measurement, and detection," *IEEE J. Quantum Electron.*, vol. 52, no. 1, pp. 1–16, Jan. 2016.

[6] J. Wang et al., "Long-range, high-precision absolute distance measurement based on two optoelectronic oscillators," *Opt. Lett.*, vol. 39, no. 15, pp. 4412–4415, Aug. 2014.

[7] Tao Zhang, W. R. Eisenstadt and R. M. Fox, "A novel 5GHz RF power detector," *2004 IEEE International Symposium on Circuits and Systems (ISCAS), Vancouver, BC,* 2004, pp. I-897, doi: 10.1109/ISCAS.2004.1328340.

[8] V. Milanović, M. Gaitan, J. C. Marshall, M. E. Zaghloul, "CMOS foundry implementation of Schottky diodes for RF detection," *IEEE Transactions on Electron Devices*, vol. 43, no. 12, pp. 2210-2214, Dec. 1996.

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