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Signal Jammer

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***ABSTRACT**--Cell phone signal jammer is device that blocks the transmission of signals between a cell phone and a base station. In the cell phone signal jammer, we use the frequency as a mobile hand set, the cell phone signal jammer creates a strong interference between the communication between the caller and receiver. This effect the blocking transmission of the signals from the networks includes of UMTS, CDMA, 3G, 4G, 4G+5G, GSM and PHS.*

***Keywords**--Frequency, Jammer, block, control*

I. INTRODUCTION

With the wide readying of cellular mobile network and web furthermore because the emergence and development of varied wireless networks, wireless communications became associate integral half in our existence for facultative omnipresent access and completely different service demand. However, because of the openness and shared nature of the wireless channel, the protection of knowledge transmission could be a crucial issue for wireless networks.

One of the foremost common cooperative schemes in physical layer security is cooperative electronic jamming and therefore the, wherever external friendly jammers square measure used to collaboratively transmit busy-bodied signals once supply is transmission, thus on degrade the wiretap channel for greatly enhancing the secrecy rate. However, further energy consumption to transmit electronic jamming signals at the

Helpers brings concerning the subsequent 2 major challenges. First, low-power jammer with restricted battery provides would possible like saving energy for his or her own communication to aiding the others; therefore, the advantages of Co-operative would be quite compromised. Second, the energy imbalance among users could cause the creation of energy holes and even shorten the network life.

The mobile phones are operated on different frequency bandwidths as the mobiles are from different countries. For Canada the band 1900MHZ as the primary band for urban areas and 850 MHz is used in the rural areas. In USA the band is from 850-1900 and it depends on the area. In Europe, middle-east, Africa, Asia and Oceania it's from 900-1800 bands as standard. In Russia its 450MHZ. The use of different frequencies makes it difficult to have a jammer for all frequencies.

This formula is used for the calculation of required values

F=1/(2*pi*sqrt(L1*C1)

Depending on the frequencies we need to block, the values of inductor and capacitor can be changed.

If the mobile phones in your area is 1900MHZ the we need to generate a blocking signal with some noise of 1900MHZ.So that the receiver is not be able to conclude to accept the signal as it is confused with the both signals. Now we have successfully blocked cell phone signals. Here, 1900 is tuning frequency.

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Tuning Frequency is defined as the change in frequency of operation fora radio system through mechanical or electrical processes.

A voltage-controlled oscillator (VCO) is an electronic oscillator whose oscillation frequency is controlled by a voltage input.

A radio frequency power amplifier (RF power amplifier) is a type of electronic amplifier that converts a low-power radio-frequency signal into a higher power signal.

II. COMPONENTS REQUIRED

S.NO	COMPONENTS	Amount of components required
1.	Wires	As required
2.	Resistors	2
3.	Capacitors	7
4.	Inductor	1
5	Transistor	1

S.NO	COMPONENTS	USAGE OF COMPONENTS
1.	Wires	For connection
2.	Resistors	For Emitter loading and Base Biasing

3.	Capacitors	For Frequency Generation, Feedback, Coupling, Decoupling and Noise Reduction
4.	Transistor	Amplification
5.	Inductor	Frequency Generation

III. USAGE OF COMPONENTS

Resistors:

R1- Emitter Loading

R2- Base Biasing

Capacitors:

C1- Frequency Generation

C2- Feedback

C3- Feedback

C4- Noise Reduction

C5- Coupling

C6- Coupling

C7- Decoupling

Transistor:

T1- Amplification

Inductor:

L1- Frequency Generation

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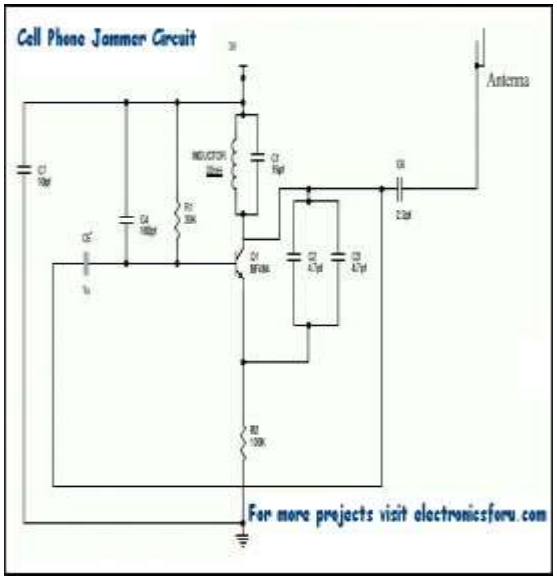
IV. CIRCUIT DIAGRAMDESCRIPTION



For any jammer circuit, it's essential to have three important sub-circuits.

1. RF amplifier:

A radio frequency power amplifier (RF power amplifier) is a type of electronic amplifier that converts a low-power radio-frequency signal into a higher power signal.

2. Voltage Controlled Oscillator:

A voltage-controlled oscillator (VCO) is an electronic oscillator whose oscillation frequency is controlled by a voltage input.

3. Tuning circuit:

Tuning Frequency is defined as the change in frequency of operation for a radio system through mechanical or electrical processes.

These 3 circuits, when combined together form an efficient cell phone jammer circuit.

V. WORKING PRINCIPLE

1. RF electronic equipment circuit includes of the junction transistor Q1, capacitors C4, C5 and electrical device R1. This RF circuit amplifies the signal generated by the tuned circuit. The amplified signal is given to the antenna through capacitance C6.

2. It blocks DC and permits solely the AC element of the signal to be transmitted.

When junction transistor Q1 is turned ON, the tuned circuit at the collector activates. The tuned circuit consists of capacitance C1 and inductance L1.

3. This acts as ANgenerator with zero resistance. It produces terribly high frequency with minimum damping.

4. When the circuit is ON, voltage is keep within the capacitance. Once the capacitance is totally charged, it permits

6. Now the magnetic charge through the inductance decreases and also the current charges the capacitance in opposite charge to flow through the inductance. Once current flows through the inductance, it stores magnetic energy adore the voltage across the capacitance.

5. At a precise purpose, the inductance reaches its most and also the charge or voltage across the capacitance turns to zeroor reverse polarity. The method repeats and once a jiffy, inductance charges the capacitance and becomes zero.

7. This method runs until internal resistance is generated and also the oscillations stop. RF electronic equipment feed is given through capacitance C5 to the collector terminal before C6. The capacitors C2 and C3 generate pulses in a very random fashion (noise) at the frequency generated by the tuned circuit.

The RF electronic equipment boosts the frequency generated by the tuned circuit.

8. The frequency generated by the tuned circuit and also the noise signal generated by the capacitors C2 and C3 is combined, amplified and transmitted.

VI. NOTE

1. The main drawback of thus circuit is it can only jam the signals within 100metres radius.

2. Usage of this type signal jammer is illegal.

3. If the circuit is not working properly, try increasing resistor and capacitors values in the circuit. Use the formula

F= 1/ (2*pi*sqrt (L*C)).

4. Power supply for the circuit should not exceed 3 Volts.

VII. CONCLUSION

By using these types of circuits we can easily blocks signals within range of 100meters radius. This will be very useful for some kind of operations like meetings, classes. These signal jammers are also used by police men for some rescue operations.

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