Mobile Phone Jammer

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What Is It?????

- The GSM Jammer is a device that transmit signal on the same frequency at which the GSM system operates, the jamming success when the mobile phones in the area where the jammer is located can’t communicate.

The basic idea was for military use
That was called “Denial Of Service Attack”. 
Why might cell phone use be destructive?
How do they work?

- Jammers simply overflow the frequency used by wireless phones with radio waves.

- Jamming signal needs enough power to collide and cancel GSM signal. Cell-phones are designed to increase their power when facing low level interface. Jammer should recognize that power. Power of Jamming signal should match the power increase from the phone.
Sophisticated Jammers can block several networks to head off dual or tri-mode phone that automatically switch among different network to find open signal.

- High end devices can block all frequencies.
- GSM (Global System For Mobile Communication) ranges:
  - Europe - 900 MHz
  - Asia - 1800 MHz
  - USA - 1.9 GHz
Types of Jammer

- Type “A”:- Jammer
- Type “B”:- Intelligent Cellular Disablers
- Type “C”:- Intelligent Beacon Disablers
- Type “D”:- Direct Receive And Transmit Jammers
- Type “E”:- EMI Shield Or Farady Cage
Type “A” :- Jammer

- Overpowers communicating signal with a stronger signal.
- Independent Oscillator.
- Having only one jamming signal.
- Very poor frequency selectivity.
- Leads to interference with a larger amount of spectrum than it was originally intended to.
- Brute-face type of jamming - Blocks everything.
- High power consumption.
Type “B” :- Intelligent Cellular Disablers

- Acts as a Detector.
- Prevention from authorization of call establishment.
- Sends a signal to Base Station(BS) to not communicate with device because it is in quiet zone.
- Process is completed in time reserved for signaling and handshaking.
- Has a function for setting max. time for each call.
- Facility of recognizing emergency no. like 911, 100 and allowing them.
- Needs full support of Cellular/PCS service providers.
Type “C” :- Intelligent Cellular Disablers

- On detecting quiet zone, compatible terminal is instructed to disable device’s ringer and operation.
- This compatible receiver need to be deployed on handsets so no need to change existing technology.
- Emergency users could be uniformed of a bypass terminal key sequence.
- Difficult to police misuse of “bypass key sequence”.
Type “D” :- Direct Receive And Transmit Jammers

- It is like small, independent and portable base station.
- Predominantly in receiving mode, can choose to interact and block the device directly.
- Much less electromagnetic pollution in terms of raw power transmitted and frequency spectrum.
- When device is not trying to communicate, it is in receiving mode.
- Advantages over type B, can allow emergency calls but no time consuming in negotiating with cellular network.
Type “E” :- EMI Shield Or Farady Cage

- Can make any room which will block all Electro Magnetic radiations.
- Emergency call can be forwarded through a transmitter which will respond via BASE Station.
- This thing is legal in Canada.
Things affecting Jamming

- Proximity to tower.
- Presence of buildings.
- Temperature
- Humidity
- Frequency Hoping
- Jamming-to-signal ratio (J/S)

\[
\frac{J}{S} = \frac{P_j G_{jr} G_{rj} R_{tr}^2 L_r B_r}{P_t G_{tr} G_{rt} R_{jr}^2 L_j B_j}
\]
Construction

Block diagram of the mobile Jammer
Supply

Transformer → Rectifier → Filter

+ Regulator +5V
+ Regulator +9V
- Regulator -9V
RF Section

VCO → RF Power Amplifier → Antenna
Disadvantages:-

- It can be used for blocking signal illegally.
- It can be used for tech-war.
- It can be used for self benefit.
- Can affect working of medical instruments like pacemakers.
Legal Issues

- India: government and schools use jammers.
- United States: illegal to operate, manufacture, import, or offer for sale, with fines of up to $11,000 and imprisonment of up to one year.
- Pakistan: legal inside banks, often used also in libraries.
- United Kingdom: illegal to use, but legal to own.
Any Questions????????
THANKS To

- GOOGLE
- WIKIPEDIA

And

“YOU”