A Review Paper on Sniffer Technology

Ankit Gupta
Department of Electronics & Communication
Vivekananda Institute of Technology, Jaipur
Jaipur, India

Abstract: **Now in upgraded technology environment most of us mostly depend upon the communication technology system. Mobile is one of the most versatile things that relate the modern technology. But what we do if we lost or misplaced our mobile phone? Generally people blocks of the lost mobile from prevent it by unauthorized person. This all process is done with the help of IMEI number. But here by using of sniffer technology we detect it by proper ways. The sniffer technology has to be designed precisely and its size is also reduced so that it can detect our mobile phone easily. It has three major components that play an important role for detecting the phone.**

Keywords: - Sniffer, BTS, MSC, IMEI, IMSI.

INTRODUCTION:

Our mobile phone work as a radio that uses some band of frequency range that is one of the most interesting things. Since by the help of advancement in VLSI we designed with less power, smaller size and light weight but however this technology has not yet answered the problem for detection and misplaced mobile phone. Here by the help of sniffer technology this problem can be optimized. This all process is done with the help of IMEI number. IMEI number is basically a unique number that is provided by the manufacture during its manufacturing. If we reports our loss mobile phone than it can be uses efficiently for the detection process.

IMEI

The IMEI number is basically a unique number with 15 digit code. Whenever a mobile phone is switched on than this number is transmitted and checking can be done by black list or gray list in the EIR (Equipment ID Resister). We can check the IMEI number by pressed (*#06#) onto the keypad. If the IMEI and EIR number match then we can do anything with our cellular phone. Generally gray and black list refers

1. Gray list will allow using any phone if the both number has been matched but it can be track easily via SIM information.
2. Black list will allow the phone for any network where there its EIR number has been matched.

Designing Process of Sniffer
The designing process can be done by using three mainly important components:

- ✓ Sniffer base station
- ✓ Unidirectional antenna
- ✓ Required software for tracking

SNIFFER BASE STATION

The sniffer work as a small base station .it works as a transceiver section. It should operate at a frequency that is different from the frequency at which detection process is carried out. Some of the main important things are the frequency that has to be generated by the transceiver section is around 900MHz range that is in VHF range and used for designing the oscillator. As we know mobile as well as base station has low transmitted power. This phenomenon helps us for reducing the interference with the other devices.

UNIDIRECTIONAL ANTENNA

The antenna works as an eye role for the detection process. Antenna is a device that is used for transmitting or receiving purpose. The antenna transmits its power with a lobe pattern which depends upon its power capability or directivity. Directivity is defines as the maximum direction gain, at which side the directivity is high the directional gain is maximum on similar side. It could be change from one antenna to other. The directivity value is constant for different antennas for different directions. The effective are is also another important factor that mainly required for detection process depends on the captured area with significantly directivity.
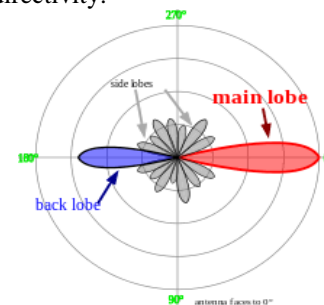

Fig: 1 (Lobe Pattern Of Antenna)

SOFTWARE FOR TRACKING

The software is also used in the tracking process. It establishes the communication between lost devices and our sniffer device. The IMEI number is embedded onto the software thus it acts as the database or as the directory of the lost device. After getting the IMEI number software checks the allover information regarding this and obtains the signaling information provided by antenna. The coding is either done by 'C' or 'JAVA' language, but we choose 'C' language foe the coding it is more comfortable and easily preferred on chip.

Special Issue - 2017

International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
VIMPACT - 2017 Conference Proceedings

WORKING PROCESS OF SNIFFER DEVICE

Sniffer works as a transceiver device that uses the unused frequency which is much different with the frequency that is used for the detection purpose. The interference problem is avoided by keeping it low transmitted power. Here the sniffer transmits the radiation that generates the lobe pattern and it gives to the BTS (Base Station) ,that works as a middle man in the communication process. It establishes the link between the BTS and the MTSO (Mobile Telephone Switching Office) or MSC (Mobile Switching Center). There is always a two way communication between devices and before the establishment of the communication the authentication of the SIM card that has the IMSI or the International Mobile Subscriber Identifier. This number helps to recognize the authorization of the user identity. The next authentication is provided by EIR number. This register is located at the MSC and it Contains the IMEI number of the lost handset and if the signal is obtained from the normal one then the two way communication is established. Then the IMEI number should ones reported to the service provider that is tracked out the lost phones. The MTSO and MSC continuously track all mobile phones with respective IMEI number. This shows the location of the lost devices because the two ways communication is always had been establish by BTS is known to the MSC. By this information where devices are locked in particular are, the sniffer device is introduced respective area.
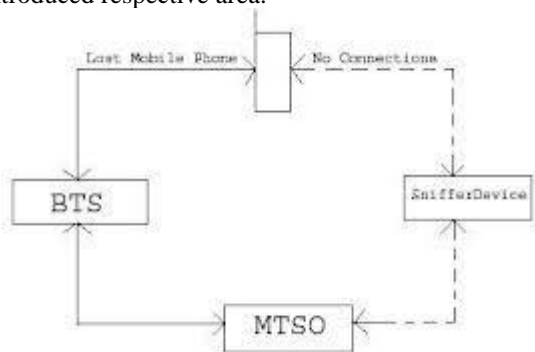

Fig:2(Communication between Device)

Now after getting the respective IMEI number by the MTSO or MSC, this is embedded onto the sniffer devices by proper coding with the help of respective language. The sniffer uses the particular frequency that is in the range of VHF. Here the BTS disconnected either the lost devices by the information provided by MSC. Now if we increase the sniffer frequency in respective area then the device itself locked with the sniffer devices.
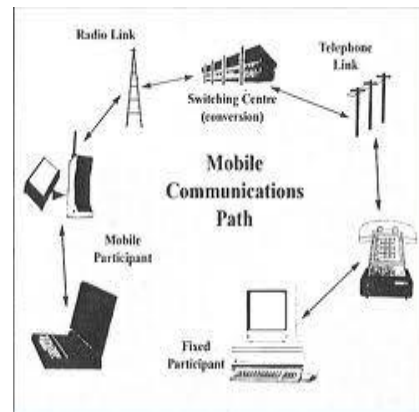

Fig 3 (Working Process of Sniffer Devices)

If the other devices are interfered between the communications then sniffer denied it because of embedded proper IMEI number. Once the communication is established then by the help of signal strength of the antenna we can easily detect the lost devices. The lobe pattern and the directivity are used in the finding of mobile phone.

CONCLUSION

Since the advancement of technology the mobile phone is one of the most used technologies in communication field. Many of mobile phones are lost or misplaced with some respective reasons, so this given paper is the basic idea for the 'Sniffer Technology for Detection of Mobile Phones". For this process we used the three main components that is earlier described as sniffer base station, unidirectional antenna and the software for tracking process. The designing of the antenna is most important because the detection is properly based on the signal strength or directivity, where the signal strength is maximum the detection is done in similar direction.

However there are certain limitation in this tracking process that are:
1. The power of the lost device should be good so that it can be easily detectable by the antenna pattern.
2. There should be no shadow.

REFERENCES

[1] www.google.com
[2] www.ijettjournal.org
[3] www.seminarproject.com