A.V.C COLLEGE OF ENGINEERING

DEPARTMENT OF COMPUTER APPLICATIONS

(A Recognized as a Research centre
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DIRECTOR'S DESK

I Congratulate all the Participants & Prize winners who have participated various events in National Level Cultural Events in

Tamil University, Thanjavur.

I wish them all success.

Dr. S.SELVAMUTHUKUMARAN.

PICO POCKET PROJECTOR

T. Vijayalakshmi - III MCA

Introduction

Pico projector:

A Pico Projector is a small hardware device designed to project content from a smartphone, camera , tablet , notebook or memory device onto a wall or other flat surface. Pico projector use either an LED or laser light source which effectively eliminates the need for lamp replacement over the useful life of a pico.

Pico projectors are tiny battery powered projectors-as small as a mobile phone-or even smaller : these projectors can even embedded inside phones or digital cameras.

Pico projectors are small , but they can show large displays (sometimes up to 100").While great for mobility and content sharing , pico projectors offer low brightness and resolution compared to larger projectors.

They were introduced as a concept only in 2003 by Explain, they went into production only in late 2008. They are now estimated to be selling in the millions all over the world and have biggies likeAsus , Acer , 3M and more making products as well.

How do Pico Projectors work?

There are 3 major technologies- DLP , LCoS and Laser beam-steering(LBS) which power Pico Projectors.

A. **DLP(Digital Light Processing)**

- Created by Texas Instruments. It is a technology that basically involves using tiny mirrors on a chip that directs light from a white light source.

Each tiny mirror controls a pixel on the target picture , and depending on how long it's on , the target pixel gets brighter or dimmer , since it has only on and off states. Between the light source and the mirrors , is a color wheel that splits light into the three primary colors(red , green , blue) and each mirror controls all three light beams for its designated pixel.

B. **LCoS(Liquid Crystal on Silicon)**

- An LCoS projector uses a small liquid-crystal display(LCD) to control how much light each pixel gets.
- There are two basic designs to get color:
    1. Color Filter(CF LCoS):-which uses 3 subpixels with the primary colors to create finished images.
    2. Field Sequential Color(FSC-LCoS):-which uses a dynamic color filter and faster LCD which refreshes the colors rapidly.
- The light source is white light based- either LED or diffused laser.

C. **Laser beam steering(LBS)**

- LBS projectors are different , creating the image one pixel at a time using a directed ,laser beam. If we scan the image fast enough(usually over 60hz) , we don't notice this pixel-by-pixel design. Micro vision is currently the only company with commercialized LBS projectors and embedded modules.

Pico projector types

- Standalone
- Embedded
- Media player
- USB Projector

Applications

1. Cicret smart Bracelet
2. Smart watches with Pico projector

3. Standalone Pico projectors
4. Mobile phone Pico Projectors
5. Camera/Camcorder Pico Projectors
6. Gaming
7. Hand Gesture Recognition
8. 3D Pico-projection

Pico projector is an emerging technology that applies the use of an image projector in a handheld device.
In the near future, we might completely abandon full size projectors if pico projector keep getting powerful.

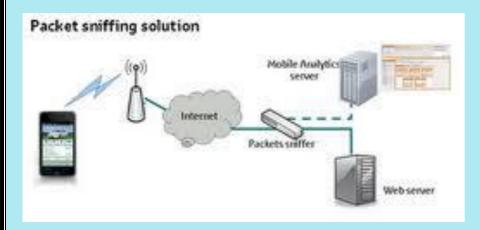## SNIFFER TECHNOLOGY

S. Sindhuja -III MCA

Introduction

The main scope of sniffer is to detect the lost mobiles. For the detection of lost mobile Sniffer plays a vital role. The Sniffer is basically a transceiver that works in the different frequency that we are commonly used. The sniffer device has to be designed for easy mobility for the purpose of detection. Most of the time , system administrators use packet sniffing to troubleshoot network problems or to detect intrusions . Packet sniffers are considered security tools instead of network tools.

IMEI - International Mobile Equipment Identifier

- 15 digit Unique code used to identify GSM phone
- Used for blocking of call made by unauthorized person

- When a phone is switched on, this unique IMEI number is transmitted and checked against a data base of black listed phones in the network's EIR .

- To know the IMEI number the *#06# has to be pressed. We use IMEI Effectively in Sniffer for the purpose of Detection.

DESIGNING FOR THE SNIFFER

    A. Sniffer base station.

    B. Unidirectional antenna.

    C. Tracking software.

  A. Sniffer Base Station

The sniffer is a small base station, it includes transceiver section. It should operate at a frequency that is much different from the frequency of the current cell in which the operation of detection is being carried out. Some of the main important things are the frequency that has to be generated by the transceiver section is around 900MHzrange which is a VHF range and it is necessarily to design the oscillator circuit for that frequency range.

  B. Design Of Unidirectional Antenna

The directional antenna acts as the eyes for the sniffer for the purpose of the detecting the lost mobile phones. Hence the proper design of the directional antenna is required. Antenna is a device which works at specified frequencies range for transmitting or receiving the data signal. To know the IMEI number the *#06# has to be pressed, the number will be displayed in the LCD screen it is unique to a mobile phone. If the EIR and IMEI number match, the networks can do a number of things. For example grey list or black list a phone. Grey listing will allow the phone to be used, but it can be tracked to see who has it (via the SIM information)

  C. Software for the Tracking

The software part plays a major role in the tracking of the lost mobile phone It is the base for the antenna to track the lost mobile the main feature of this software is that it helps in the process of creation of the data base and this is mainly done using a Random Access Memory.

WORKING OF THE SNIFFER DEVICE

If the connection of the lost mobile is Established with the BTS, The MSC collects it's IMEI number. If these number are matched with the reported lost no's . It transferred the connection to the sniffer device. Searching can perform with the GPS system for more accurate , fast detection and location can be tracked.

ADVANTAGES

- Useful for lost mobile
- effective cost
- low power consumption

- easy to design

In today's life Mobile phones are the mainly used device for communication, so large no. of complaints regarding the mobile phone that lost are comes. This method appears to be complex but for large scale detection the overall effective cost of the design down.

Rush your ideas to

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