

PEDIATRIC SIZE SWALLOWABLE PILL FOR DIGESTIVE MOTILITY ANALYSIS

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ABSTRACT

Swallowable pill is a multichannel sensor used for remote biomedical measurements. This is used for the real-time measurement parameters such as conductivity and dissolved oxygen. The sensors are fabricated using electron beam and were controlled by an Application Specific Integrated Circuit (ASIC). Digital pills are ingestible miniaturized devices representing a point of convergence between biomedical technology, medicine and the pharma industry. Electronics sensors can give access, analyze and manipulate the changes happening inside body. Smart pills are an emerging technology where many different approaches to local drug delivery have been proposed, including transcutaneous and implantable means. However, these smart pills for drug dosage monitoring are receiving increasing attention is still the preferred route for drug administration, due to its high patient acceptance and low cost. The changes occur in human bodies are monitored and sent to nearby monitor for doctor monitoring through wireless.

Keyword: - Wireless Capsule Endoscopy, In-Body Localization, Drug Dosage Monitoring, and Smart medicine.

1. INTRODUCTION

Electronic miniaturization has opened several medical diagnosis applications during the last decades. Focusing on the digestive system, the pills are equipped with cameras instead of capsule endoscopy system. This prevents the risk of conventional endoscopy. Digital Pills are used for remote biomedical measurements such as pH, conductivity and dissolved oxygen which are used to monitor the changes happening inside our body. The sensors are fabricated using electron beam and photolithographic pattern

Integration and were controlled by a microcontroller. Many different approaches to local drug delivery have been proposed, including transcutaneous and implantable means. However, these smart pills for drug dosage monitoring are receiving increasing attention is still the preferred route for drug administration, due to its high patient acceptance and low cost.

1.1 LITERATURE SURVEY

Application of Image Processing for Inspection of Pill Production Process : In this system, the Image Processing principal including the Grayscale Method, Threshold Method, OTSU Method, Bounding Box Method and the images are processed from normal webcam camera using Geometric Algorithm. The imperfection of the pill is distinguished in this project. It is necessary to adjust the speed of conveyor in low level so it would affect the maximum counting and distinguishing ratio to be 70 pills per minute. The factors that makes the pills to not display the accurate result are light, distance between pills, and the speed of conveyor.

A Broadband low-loss W-band Pill-box Window : In this project, The diameter of two sections of cylindrical waveguide are different. This system can nicely restrain the variations caused by the brazing process, and ensuring consistency between experimental results and design. It is used to develop wide-band low-loss window for W-band vacuum electronic devices, an asymmetric pill-box window is investigated in this system. However, In sub-terahertz and terahertz region, due to small size of each parts, it is hardly to ensure that the dielectric window is centered, thus it is easy to stimulates spurious modes, and reducing the bandwidth.

Automatic Drug Pills Detection based on Convolution Neural Network: It is a The drug pills detection system is developed for the visual system. The localization stage uses deep convolution neural network to extract feature and construct the feature pyramid with strong semantics; The regression and classification models are attach to pyramid level to predictions of pill location. But this system only find out the waste drugs in the lab

2 EXISTING SYSTEM

Reference:[1] Antenna System Design for Improved Wireless Capsule Endoscope Links at 433 MHz, Md. Suzan Miah , Ahsan Noor Khan, Clemens Icheln, Katsuyuki Haneda, Member, IEEE, and Ken-Ichi Takizawa

Electronic miniaturization and microsystem development has opened several medical diagnosis applications during the last decades. Focusing on the digestive system, the use of pills equipped with cameras instead of classic endoscopy system enables inspection of the digestive system without discomfort or need for sedation, thus preventing risks of conventional endoscopy. Multisensor pills that can monitor pH and temperature throughout the gastrointestinal tract are also used as indicators for gastric diseases. However, there are other digestive functional diseases that cannot be diagnosed with a visual recognition of the whole digestive tract such as constipation, diarrhea, irritable bowel syndrome (IBS) or gastro paresis.

2.1 DISADVANTAGES OF EXISTING SYSTEM

The captured images will be in a bad quality. Only physician can interpret the images. There is no prediction system in the existing system. Accuracy is less. Design is complex.

3. PROPOSED SYSTEM

It can predict the changes in the body within few minutes and it will give an alert to the relevant person. The proposed system has long term stability and high accuracy.



Chart -1: Implementation

3.1 HARDWARE AND SOFTWARE REQUIREMENTS

- NodeMCU
- Wi-Fi
- Power supply unit
- Arduino IDE
- Embedded C

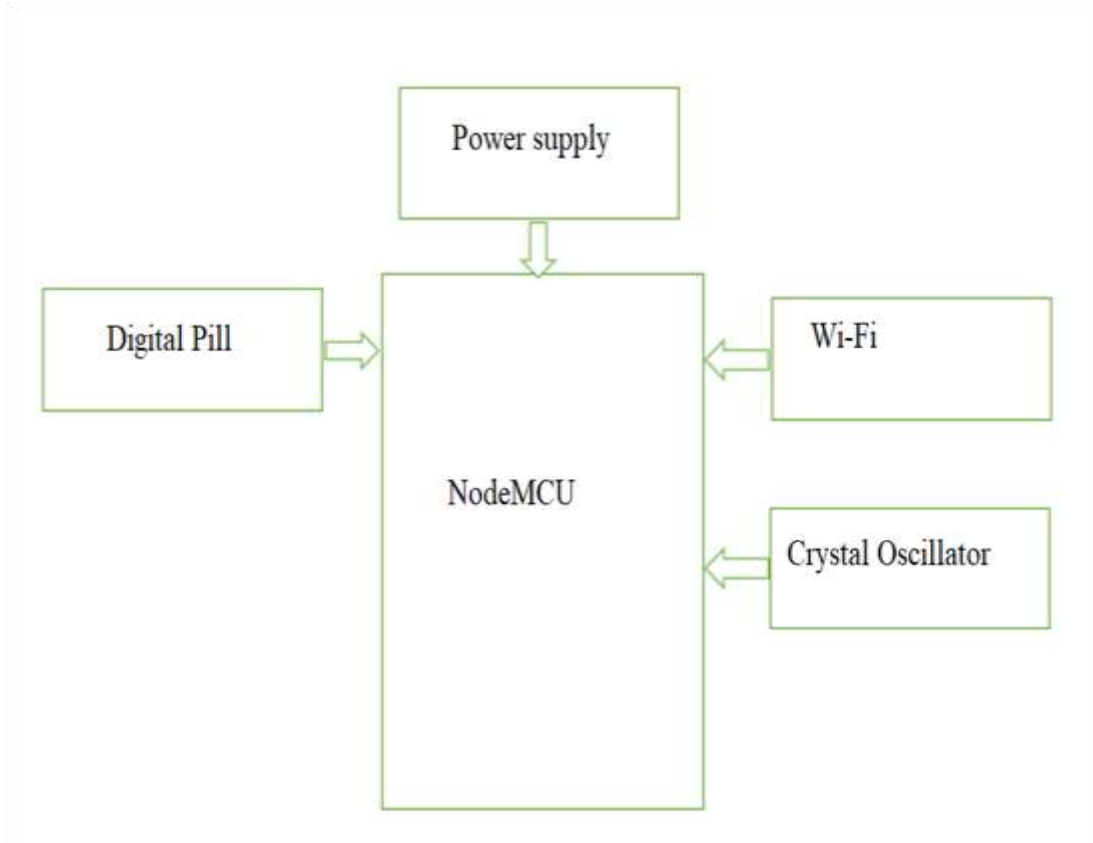


Fig -2: Block Diagram

4. CONCLUSION

In this paper, we presented a pediatric size swallowable pill used for digestive motility analysis, where the sensors are integrated using photolithographic pattern which are controlled using Application Specific Integrated circuit (ASIC). The size reduction of the system enables use of tracking pill for the humans. Electronics, sensors give access, analyze and manipulate the changes happening inside the body. Smart pills are an emerging technology where many different approaches to local drug delivery have been proposed, including transcutaneous and implantable means. However, these smart pills for dosage monitoring are receiving increasing attention is still the preferred route for drug administration, due to its high patient acceptance and low cost.

5. REFERENCES

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