

### International Research Journal of Modernization in Engineering Technology and Science

(Peer-Reviewed, Open Access, Fully Refereed International Journal)

Volume:05/Issue:04/April-2023 Impact Factor- 7.868

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## **INSTANT CONTACTLESS COVID TESTING USING BOOTH AUTOMATION**

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## ABSTRACT

In view of current epidemic Covid testing plays a crucial part in fighting the epidemic. The main end of this design is to design a fully automated instant contactless Covid testing cell system by which person details is covered using RFID technology. This design makes use of micro regulator. It acts as heart of the design. This onboard computer can efficiently communicate with the affair and input modules which are being used. We use regulator memory to leave some set of assembly instructions. When the micro regulator gets the data from the RFID Reader, Automatically the label details related to the person along with the sample collection details will be transferred as an SMS along with the test results to the stored mobile number. The system also provides both audible and visual cautions using TV and Buzzer. During the epidemic period, testing of Covid is a crucial part in order to fight the contagious contagion. It's relatively significant that this Covid testing is being carried out only in the Covid testing centers, but there are a lot of disadvantages with regard to homemade testing methodology. The reason being some of the tests are time consuming and delayed, wherein it's subordinated to mortal crimes due to a large quantum of sample collection.

**Keywords:** - microcontroller, Power force, RFID label,RFID anthology, Wi-Fi ESP8266 module, GSM modem etc.

## I. INTRODUCTION

Internet of things (IoT) is fleetly adding technology. IoT is the network of physical objects or effects bedded with electronics, software, detectors, and network connectivity. which enables these objects to collect and change data? In this paper, we're developing a system which will automatically test the person with covid incontinently with contactless testing cell. This design makes use of an onboard computer, which is generally nominated as micro regulator. It acts as heart of the design. This onboard computer can efficiently communicate with the affair and input modules which are being used. The regulator is handed with some internal memory to hold the law. This memory is used to leave some set of assembly instructions into the regulator. And the functioning of the regulator is dependent on these assembly instructions. The design of this system is veritably important sensitive and should be handled with utmost care because uniting RFID anthology and GSM to the micro regulator is sensitive. So, every small parameter should be given high significance while designing the interfacing circuit because if we use single sided board also lot of corridors are being used in a small space also it may be delicate to make a single sided board without jumping over traces with a string. The main idea is to design a fully automated instant contactless COVID testing cell system by which person details is covered using RFID technology. It's used for icing the person details like name, Aadhar checkup specific information by which the system completely isolates the test person from the stoner and also makes the process presto and error free by automating enrollment process too. When the Micro regulator gets the data from the RFID Reader, Automatically the label details related to the person along with the sample collection details will be transferred as an SMS along with the test results to the stored mobile number. therefore, we completely automate the Covid cell testing process, making it briskly, safer and error free to help fight the epidemic in a better manner.

## II. MODELING AND ANALYSIS

IOT INSTANT CONTACTLESS COVED TESTING BOOTH AUTOMATION
2.1 Plack diagram

3.1 Block diagram



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The design can be enforced with following as we No need for separate enrollment, the system uses RFID technology for instant Aadhar card checkup enrollment details covering. The Test person provides the sample number of the person from inside the cell using handed RFID label. The system uses buzzer to inform case that his test is done and coming person to come forward. The data collected by the time is transferred over to Lab using IOT ESP8266 Wi- Fi module automatically ahead coming person comes ahead. The lab in- charge can view the no of samples tested in real time and can modernize sample test results too on IOT garçon through Wi- Fi module. When lab in- charge updates test result of a sample, an SMS using GSM modem is incontinently transferred to the separate person by the system itself. therefore, we completely automate the Covid cell testing process, making it briskly, safer and error free to help fight the epidemic in a better manner. This design makes use of an onboard computer, which is generally nominated as micro regulator. It acts as heart of the design. This onboard computer can efficiently communicate with the affair and input modules which are being used. The regulator is handed with some internal memory to hold the law. This memory is used to leave some set of assembly instructions into the regulator. And the functioning of the regulator is dependent on these assembly instructions.

#### III. WORKING

The main working of our is it sense the temperature, after sensing it provides message to the doctor or patients both. In this project RFID (Radio frequency identification) is used which read the unique RFID card. Then ultrasonic sensor senses the range of human up to 2m or also we can vary it up to 3m. After that temperature sensor measure the temperature in human body in degree Celsius and also degree Fahrenheit. Then it provides data to Arduino UNO AT mega (328) and further procedure is done in Arduino UNO after that it shows the data on the display and also it sends the information to GSM (Global system for mobile communication) model. GSM model is used to sends message to doctor and patients also.

#### IV. COMPONENTS USED

#### 1. Arduino UNO (AT mega 328)

Arduino is an open- source electronics platform grounded on easy- to- use tackle and software. Arduino boards are suitable to read inputs- light on a detector, a cutlet on a button, or a Twitter communication- and turn it into an affair- cranking a motor, turning on an LED.

#### 2. RFID Reader

The RFID anthology is a network- connected device that can be movable or permanently attached. It uses radio swells to transmit signals that spark the label. Once actuated, the label sends a surge back to the antenna, where it's restated into data. The transponder is in the RFID label itself.



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#### 3. Ultrasonic detector

Ultrasonic detectors work by emitting sound swells at a frequence too high for humans to hear. They also stay for the sound to be reflected back, calculating distance grounded on the time needed. This is analogous to how radar measures the time it takes a radio surge to return after hitting an object.

#### 4. Temperature detector

A temperature detector is an electronic device that measures the temperature of its terrain and converts the input data into electronic data to record, cover, or signal temperature changes.

#### 5. GSM modem

A GSM modem or GSM module is a device that uses GSM mobile telephone technology to give a wireless data link to a network. GSM modems are used in mobile telephones and other outfit that communicates with mobile telephone networks. They use SIMs to identify their device to the network.

## V. APPLICATIONS

- 1. Hospitals
- 2. Laboratories
- 3. Outdoor testing booths
- 4. School & College
- 5. Entertainment Zone & Areas
- 6. Transport Locations
- 7. Religious Spots
- 8. Companies & Industries

## VI. RESULTS AND DISCUSSION

The design" IOT INSTANT CONTACTLESS COVID TESTING BOOTH AUTOMATION" was designed a fully automated instant contactless COVID testing cell system by which person details are covered using RFID technology. The data collected by the time is transferred over to Lab using IOT ESP8266 Wi- Fi module automatically ahead coming person comes ahead. The lab in- charge can view the no of samples tested in real time and can modernize sample test results too on IOT garçon through Wi- Fi module along with test result of a sample. an SMS using GSM modem is incontinently transferred to the separate person by the system itself.

### VII. CONCLUSION

The being model presents an Integrating point of all the tackle factors which has been used and developed in it with Arduino. The Presence of each and every module has been reasoned out and placed veritably precisely. Hence the contributing to the stylish working unit for" IOT INSTANT CONTACTLESS COVID TESTING BOOTH AUTOMATION" Secondly, using largely advanced ICs with the help of growing technology, the design has been successfully enforced. therefore, the design has been successfully designed and tested.

### VIII. REFERENCES

- [1] Jingyi Xiao Non-pharmaceutical Measures for Epidemic Influenza in Non-healthcare Settings particular Defensive and Environmental Measures.
- [2] World Health Organization. relative analysis of public epidemic influenza preparedness plans, 2011 cited 2019 Jun 251.
- [3] Aerosol transmission of influenza A contagion a review of new studies Raymond Tellier, Published22 September 2009.
- [4] Guyatt G. Oxman announcement, Akl EA, Kunz R. Vist G, Brozek J, et al. GRADE guidelines 1. preface-GRADE substantiation biographies and summary of findings tables. J Clin Epidemiol. 2011; 64383- 94. Published January 03, 2011
- [5] Wong VW, Cowling BJ. Aiello AE. Hand hygiene and threat of influenza contagion infections in the community a methodical review and meta- analysis. Epidemiol Infect. 2014; 142922- 32.
- [6] Hand hygiene and threat of influenza contagion infections in the community a methodical review and meta- analysis Published online by Cambridge University Press 23 January 20



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www.irjmets.com

- [7] Aiello AE, Murray GF, Perez V, Coulborn RM, Davis BM, Uddin M, et al. Mask use, hand hygiene, and seasonal influenza- suchlike illness among youthful grown-ups a randomized intervention trial. J Infect Dis. 2010201491- 8, 15 February 2010.
- [8] Suess T. Remschmidt C. Schink SB Schweiger B, Nitsche A. Schroeder K, et al. The part of facemasks and hand hygiene in the forestallment of influenza transmission in homes results from a cluster randomised trial Berlin, Germany, 2009- 2011. BMC Infect Composition number 26(2012) Dis. 20121226
- [9] Macias AE, de la TorreA. Moreno- EspinosaS. Leal PE, BourlonMT. Ruiz- Palacios GM. Controlling the novel A(H1N1) influenza contagion do not touch your face! J Hosp Infect. 2009; 73280, 1 May 17, 2010.
- [10] BarasheedO. AlmasriN. Badahdah AM, HeronL. TaylorJ. McPhee K, eal.; Hajj Research Team. Airman randomised controlled trial to test effectiveness of facemasks in precluding influenza- suchlike illness transmission among Australian Hajj pilgrims in 2011. Infect Disord Drug Targets. 201414110- 6, Volume 14, Issue 2, 2014.
- [11] Telemedicine and telerobotics from wisdom fabrication to reality. Evans CR. Medina MG, Dwyer AM. Updates Surg. 2018 Sep; 70(3) 357- 362. doi10.1007/s13304-018-0574-9. Epub 2018 Jul 28.
- [12] Teleoperation, telerobotics, and telepresence in surgery. Satava RM, Simon IB. Endosc Surg Allied Technol, 1993 Jun; 1(3) 151-3