GOVERNMENT POLYTECHNIC JALGAON

Department Name-: Electronics And Tele-communication

Academic Year 2020-21

Subject Name And Code : Capstone Project–Execution And Report Writing (22060)

Class : EJ6I

TOPIC OF CAPSTONE PROJECT-:

- **Electroplating bath parameters monitoring system in Spectrum Pvt.Ltd. Electroplating plant .**

PRESENTED BY :

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Under Guidance Of :

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Company Guide

Mr. S.D.Rade

(Head of R&D Dept. in Spectrum electrical Ltd.)

PROBLEM DEFINITION

1. The problem given by the spectrum electrical industry is as-:
2. In the company electroplating plant there is a need of system which will monitor a parameter of electroplating both wich include electrolyte solution PH, temperature , carbon monoxide and smoke gas
3. After that display this collected data in manager office .

OBJECTIVE

- Flexible system -: System should be so flexible which will easily adapt the electroplating plant environment and can be easily transferred to another container. Also if require it can be modified as per further requirement(which includes switching action of the inlet and outlet valve of the electroplating bath,diluting the electrolyte solution etc)
- Wireless system-: This monitoring system should be wireless because at the actual project implementing site there is no such place to carry the wires towards office
- Alarm provision -: System should have the alarm provision which will inform that bath parameters has cross the threshold level.
- Compact Size -: System should be compact so it can be attached at the site and can easily be carried to another bath if required

PROPOSED FEATURE

I. The very first aim is to detect the change in the parameters govern by the bath this parameters are
   - PH and Temperature value of the electrolyte solution.
   - Smoke gas and carbon monoxide within the bath environment .

II. To compare those detected sensed values with the predefined standard value required for the bath

III. To obtain the wireless features in the project which will allow to send the collected data to the electroplating plant office(managers office).

IV. To obtain the easy installation, flexible with hardware, compact system (system should be easily installed at another bath site).

V. To achieve the indication of change detected beyond the limited values of parameters .

BLOCK DIAGRAM

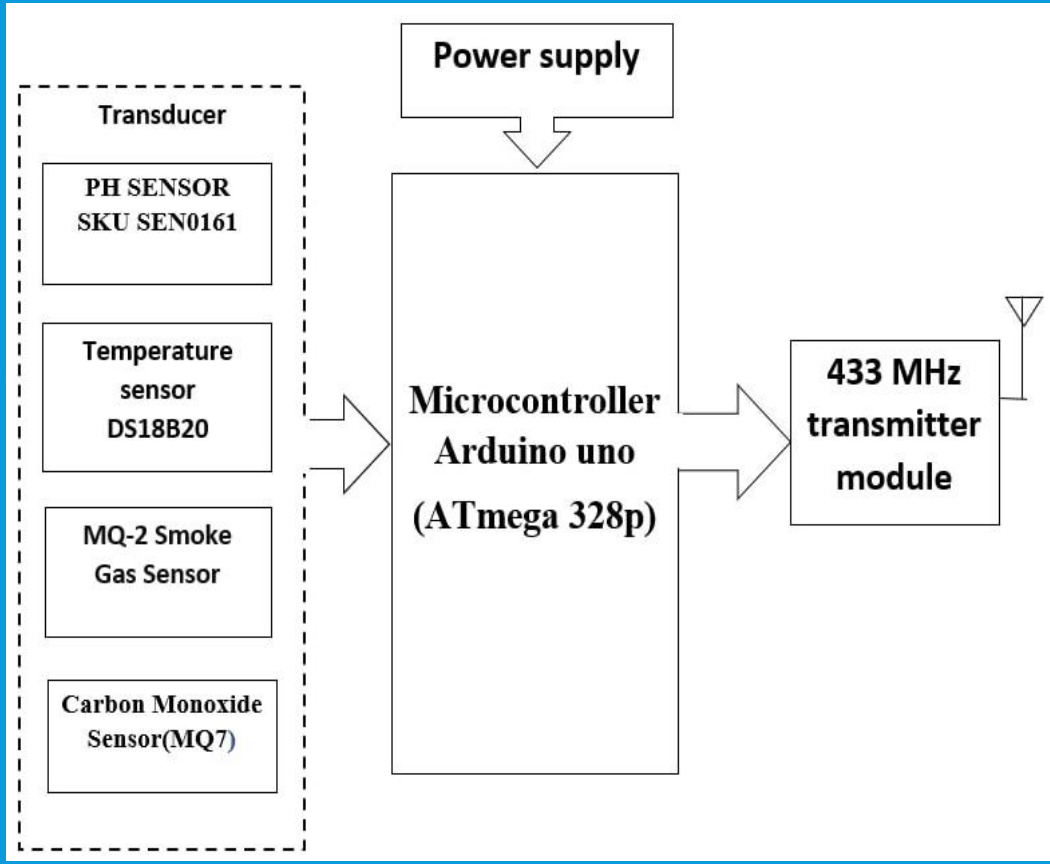


Fig . Data Acquisition And Transmitter Terminal

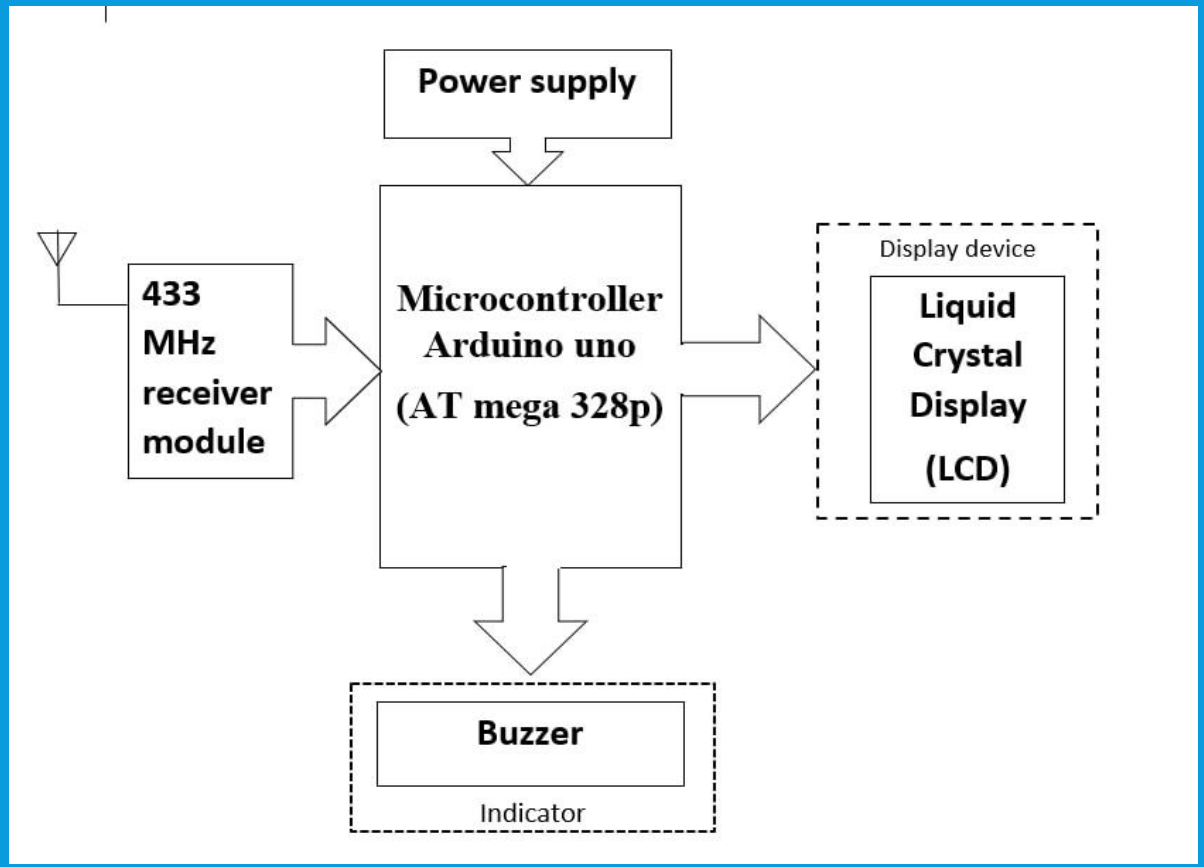


Fig . Data Receiver and display Terminal

CIRCUIT DIAGRAM

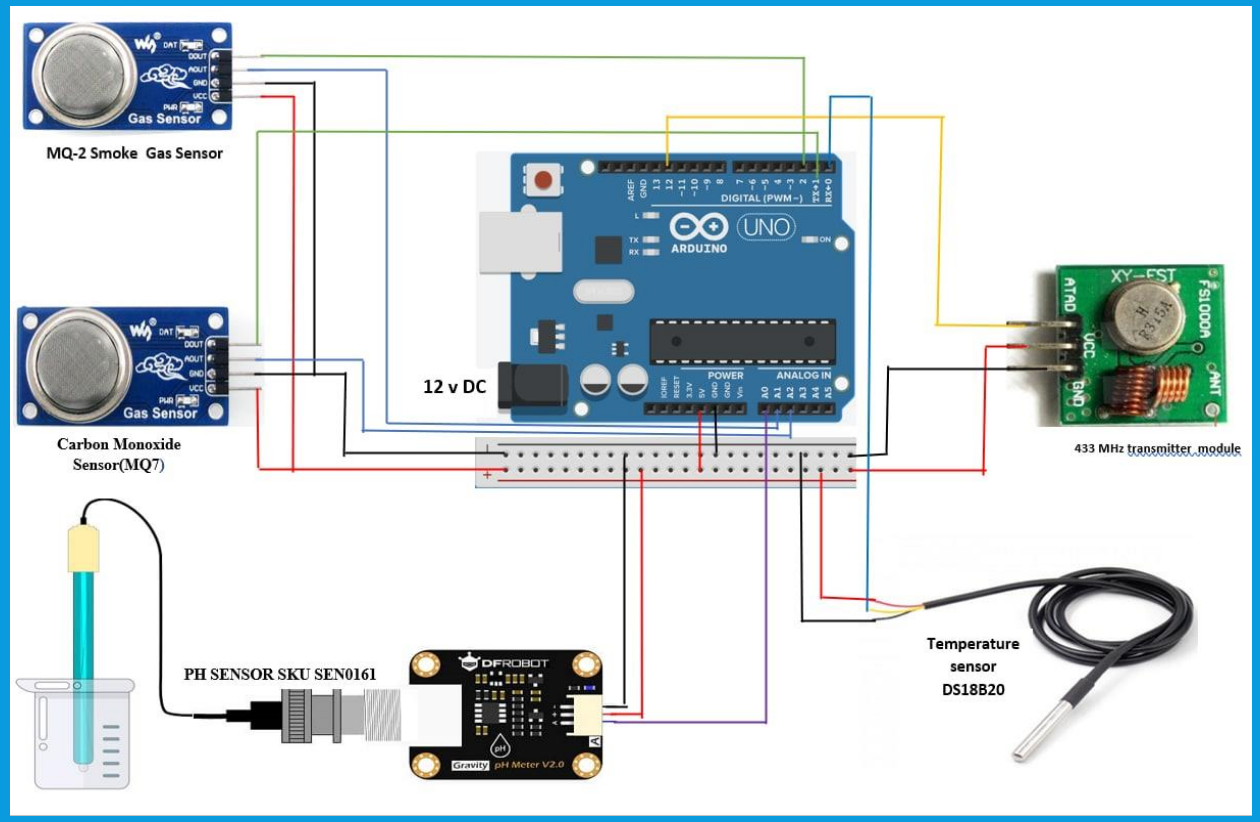


Fig . Sensor and Transmitter Terminal

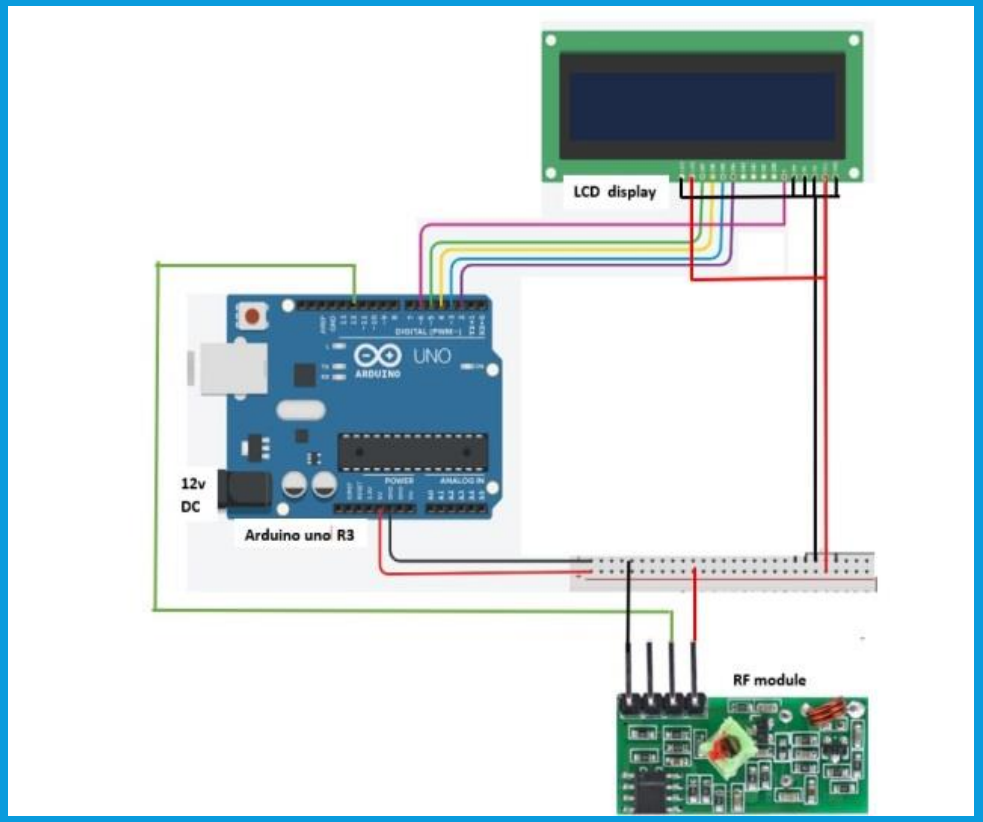
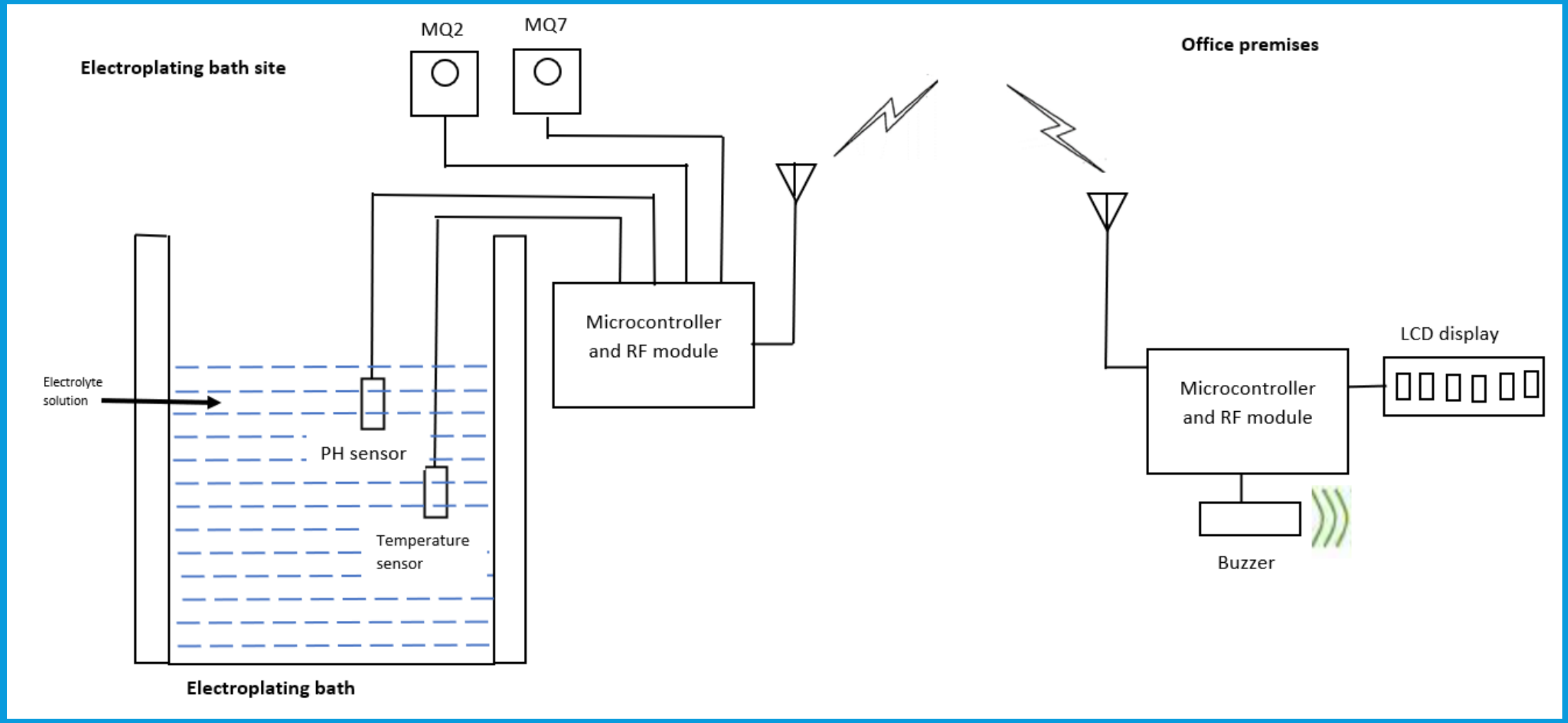


Fig Receiver and Display terminal

SYSTEM OPERATION



FUTURE SCOPE

1. Scalibility can be increased
2. Enable to IOT compliance standard
3. Data ;ogger to store the measure sensor data over a period of time .
4. Speaking voice alarm provision .
5. Self desister control provision. (to avoid accident prohability)

SPETRUM ELECTRICAL INDUSTRIES LIMITED , JALGAON

With industry guide Mr. S.D.Rade
(Head of R&D Dept. in Spectrum electrical Ltd.)

With plant manager Mr.B.G.Patil
(Electroplating Plant Manager)

Spectrum

Date – 08/06/2021

To,
1. Mohish Nilesh Khadse
2. Mandar Balu Patil
3.Prathamesh Ganesh Saraf
4. Mohit Ravindra Bhangale

TO WHOMSOEVER IT MAY CONCERN

This is to certify that has sucessfully done college **CAPSTONE project on Eletroplatting bath parameter monitering system** submitted on 07/June /2021 under supervision Mr. Sudharshan Rade (SR. MANAGER R&D) at our Organisation **SPECTRUM ELETRICAL INDUSTRIES LIMITED (Eletroplatting Plant 1004)**

They are sincere, hardworking & bears good moral character to the best of our knowledge.

We Wish him all the Success for their future.

Thanking You,

8/6/21

Human Resourace Dept

ELECTRICAL INDUSTRIES LIMITED PLANT-2 C-2/1&2 M.I.D.C. JALGAON

THANK YOU