e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:04/Issue:05/May-2022 Impact Factor- 6.752 www.irjmets.com

RF BASED HOME AUTOMATION SYSTEM

Prof. Sneha Tibude[*1], Bhujangrao Tekam[*2], Amit Taywade[*3], Ankush Kurve[*4], Ankit Kamble[*5], Vilas Jagtap[*6], Rameshwar Maske[*7]

[*1]Professor, Department Of Electrical Engineering, Tulsiramji Gaikwad-Patil College Of Engineering & Technology, Nagpur, India.

[*2,3,4,5,6]Students, Department Of Electrical Engineering, Tulsiramji Gaikwad Patil College Of Engineering & Technology, Nagpur, India.

ABSTRACT

These research is based on radio Frequency based home automation system. Currently we all are usingthe wall switches to operates the bulb load, Fand load etc. to overcome hese the RF based home automation system is use RF based technology is simple and one of the easy technology for using automation technology is home offices tec. In this paper the home automation with RF based technology is used having light loads.

I. INTRODUCTION

As we all know that the technology is increasing day by day. RF based home automation system is one of the technology which makes the human life easy to live and also make comfort. In a building electrical installation is must be required without electrical be required without electrical installation the building is nothing RF based home automation system is one of the technology from which we can control lighting fan load etc. by the remote without going near the switch with these technology the houses are getting smarter and it also reduce the time to go near the switches and operate it. It can be done within a second.

II. BLOCK DIAGRAM

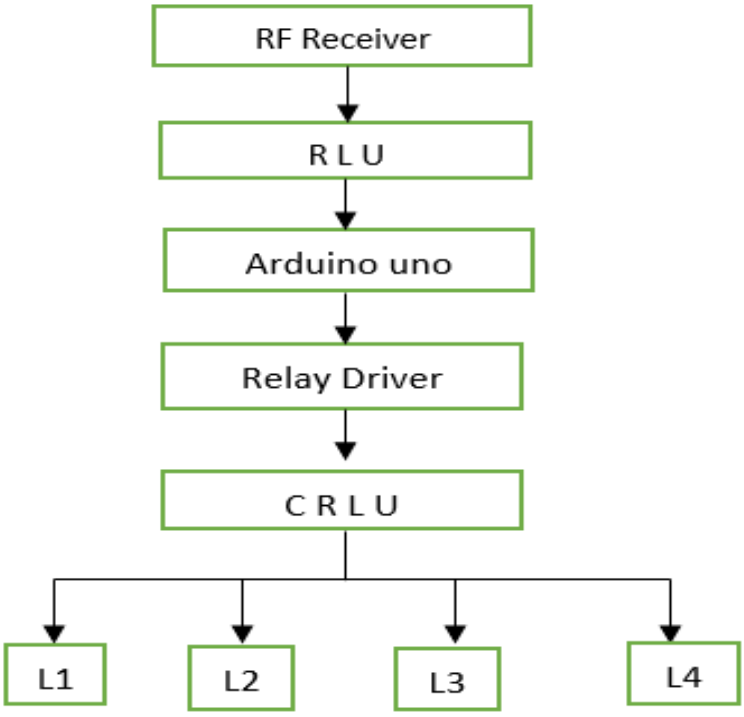


Fig. Block digram of Receiver

RLU = Relay Logic Unit

CRLU = Controle Logic Unit

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:04/Issue:05/May-2022 Impact Factor- 6.752 www.irjmets.com

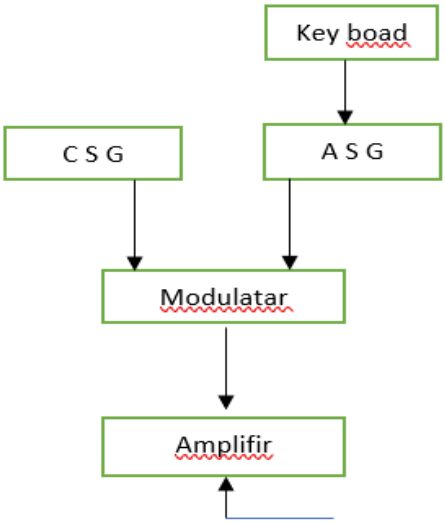


Fig. Block digram of Transmitter/Remote

ASG : Actual Signal Generator

CSG : Carrier Signal Generator

III. HARDWARE IMPLEMENTATION

There are various component are used in the paper as follows

3.1) Arduino uno:-

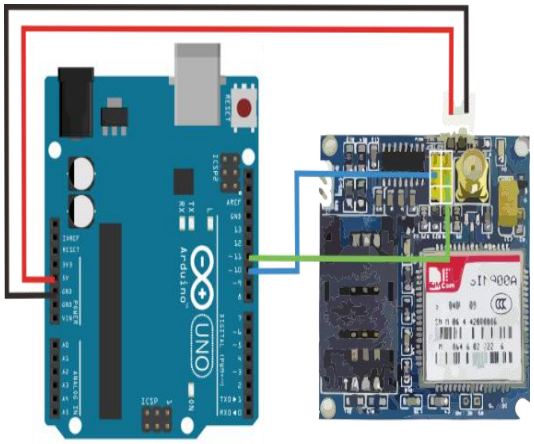
- It is a 8 bit microcontroller broad band with ATmegac328P microcontroller.
- It also supports the component such as voltage regulator, crystal, Oscillator

3.2) SIM900A GSM Module :-

- These type of module is used in many mobile phone and many embedded application.
- It is dual band engine and it only works on frequencies
- EGSM 900 KHZ and DCS 1800MHZ

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:04/Issue:05/May-2022 Impact Factor- 6.752 www.irjmets.com

3.3) GSM SIM900A With Arduino :-



- It is also one of the type of dual band.
- It works on the frequencies 900/1800MHz
- SIM 900A canfind the two bads automatically
- Its Dimensions 24*24*3 M

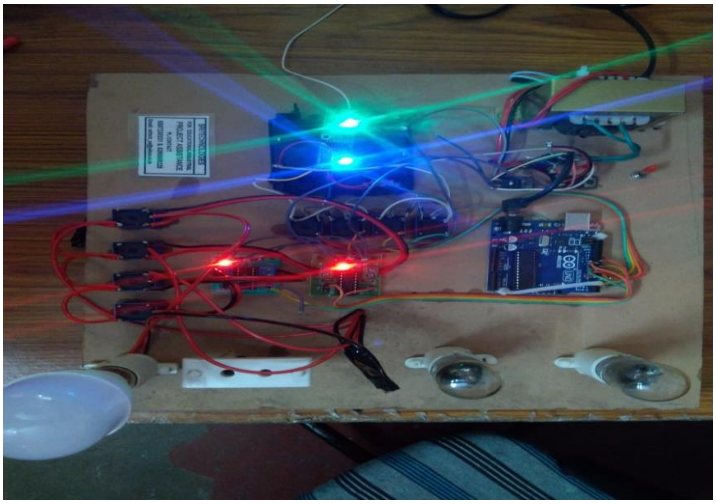
3.4) Transformer :-

Transformer is a device to step up or stepdown the current as per the requirment

Its range is 12-0-12v

It is a centre tapped step down transformer.

IV. PROJECT IMAGE



e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:04/Issue:05/May-2022 Impact Factor- 6.752 www.irjmets.com

V. ADVANTAGES

- ON/OFF is done within a second.
- It reduces the time.

VI. DISADVANTAGES

- Without electricity is no use.

VII. CONCLUSION

RF based technology is used in these paper to control the home appliances such as light load, charge load, bulb load Arduino is the software and the part of Programing and controlling device, Remote is there to have range of 5 meter. As technology can be used in used in many electrical appliance for future.

VIII. REFERENCE

[1] J. Chandramohan, R. Nagarajan, K.Satheesh kumar, N. Ajithkumar, P.A. Gopinath, S.Ranjithkumar, "Intelligent Smart Home Automation and Security System Using Arduino and Wi-fi" International Journal of Engineering and Computer Science, Vol. 6, No. 3, 2017.

[2] Sanjiv Kumar, Narendra Kumar, "Alleviation SSR and low frequency power oscillations in series compensated transmission line using SVC supplementary controllers," Springer Journal of The Institution of Engineers (India), vol. 98, No. 3, pp. 255-266, 2017.

[3] Abdullah, R., Rizman, Z. I., Dzulkefli, N. N. S. N., Ismail, S. I., Shafie, R., & Jusoh, M. H. (2016). Design an automatic temperature control system for smart TudungSaji using arduino microcontroller. ARPN Journal of Engineering and Applied Sciences. Vol. 11, No. 16 , 2016.