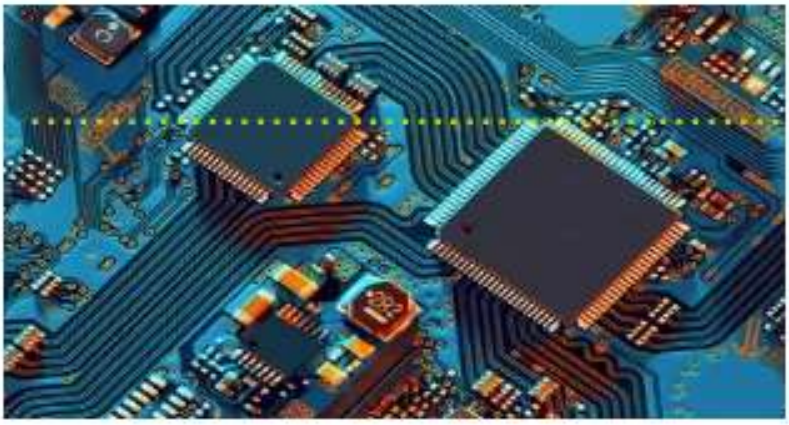
Electronica 22 of Electronics & Telecommunication Department

Date;15/08/21

Vision

- To serve basic needs of rural society by imparting technical education training to electronics and communication engineering students.



Mission

- M1- To provide excellent teaching and lifelong learning environment.
- M2- to contribute in the ethical , social and economic development Of society by imparting updated technical education.
- M3- to develop institute industry interaction to produce competent professionals and promising entrepreneurs in the field of electronics and telecommunication

HOD Desk

THE ELECTRONICS AND TELECOMMUNICATION DEPARTMENT NEWSLETTER IS A PLATFORM FOR SHARING EDUCATIONAL INFORMATION, ACTIVITIES AND RELATED EVENTS. I HOPE THAT THE NEWSLETTER WILL PROVIDE USEFUL AND RELEVANT INFORMATION. IT IS THE INTENT OF THE DEPARTMENT TO MAKE IT SEMI-ANNUAL PUBLICATION TO KEEP IN TOUCH WITH THE DEPARTMENTAL ACTIVITIES AND ACHIEVEMENTS.

Shri S.R.PAnke

Electronica 22 of Electronics & Telecommunication Department

Date;15/08/21

Departmental Laboratories Department is having well euipesd laboratories to have hands on practices of students.

Student Performance

1.PATIL MANSI LAXMAN=75.88

2.RASURE POOJA DHONDIRAM=74.33

3.INGALE SANDHYA SHIVAJI=73.55

Student ACtivities

1.Tree Plantation

Electronica 22 of Electronics & Telecommunication Department

Date;15/08/21

Student Activities
2.Women's Day

3. COVID Vaccination

4.Swacchata Abhiyan

5.Yoga Day

Electronica 22 of Electronics & Telecommunication Department

Date;15/08/21

Technical Articles

1.Supercapacitors to make IoT nodes to immune brownouts

By: Suraj Ghodke

When Internet of Things (IoT) or Industrial IoT (IIoT) networks are placed on the same main power grid used by residential electricity customers they are subject to power fluctuations, brownouts, or even a full loss of electric power for tens of seconds. Stateless nodes can resume operation on power-up; however, nodes that must maintain state over time will be reset on power-up, which can result in malfunctions, delays, or lost performance of the network.

Backup batteries are one way to avoid resets, but they have a limited lifespan and are potentially more expensive over the lifespan of the device. Instead, supercapacitors—goldcrest electrolytic capacitors with ratings of 1 farad (F) or higher—can be used. This article discusses the importance of ensuring IoT and IIoT device nodes are running without processor resets powered. It then shows how to apply supercapacitors to provide protection against brownouts and power-droop using two

assemble devices, one each from AVX Corporation and Illinois Capacitor.

The problem with pulling IoT nodes on residential power mains

Industrial facilities that run control processes often have backup power generators in case of a temporary power failure from the electric company. Redundancies and multiple generators ensure that power is constantly maintained except in extreme cases of extended power outages. The

dedicated power line from the main power grid to ensure a continuous supply of electric power, which may also provide some immunity from power outages on the rest of the grid. Many small or mid-sized IoT nodes use power off of the same residential power grid used by homes in the area without any expensive backup backup systems. Depending on the design of the network, a brownout or momentary loss of power can have several effects, from data retention, and result in loss of data and performance. There are several options to prevent this loss of data.

2.Wi-Fi 6

By:Aditya Pandit

What is Wi-Fi 6?

The timing could not be better for the latest generation of Wi-Fi, branded as "Wi-Fi 6," to come to market. Wi-Fi 6 devices use a more efficient means of communicating, allowing multiple devices to simultaneously communicate with the home access point. Wi-Fi 6 will make existing broadband connections feel faster since the devices in the home will not have to wait in line to take their turn, as was the case with previous generations of Wi-Fi. Wi-Fi 6 is currently shipping in volume in phones, PCs, and access points.

Wi-Fi has never been more important than it was in 2020, with distance learning and remote working stressing our home network connections, bogged down by wall-up video conferencing. Compared to previous years of simply streaming large amounts of video downstream data, video conferencing exposed the importance of uplink data traffic, both on the home broadband service as well as the multiple, simultaneous Wi-Fi devices

If your current Wi-Fi connection isn't strong enough to support your growing number of devices, you might be on the lookout for a better solution. Perhaps you're experiencing frequent connection errors, slowdowns, and other technical difficulties. Wi-Fi 6 can offer a faster, more reliable connection.

We'll talk more about this next-generation standard in Wi-Fi technology, tell you what it has to offer, and give tips on determining what devices are compatible with Wi-Fi 6.

The dawn of generational Wi-Fi labels

The Wi-Fi Alliance is the organization in charge of deciding, developing, and designating Wi-Fi standards. As devices become more complex and internet connections evolve, the process of delivering wireless connections also changes. That means that Wi-Fi standards — the technical specifications that manufacturers use to create Wi-Fi —

Electronica 22 of Electronics & Telecommunication Department

Date;15/08/21

Technical Articles

3.Designing ASICs for future Healthcare

By: Vaishnavi Jadhav

4.Electronic smart locks

By: Vaibhav Kawade

Electronic smart locks

Electronic smart locks are another critical system in building security. The electronic smart lock is designed to work even in power outage situations. The lock can accept either a code, an ID tag, or a remote signal to unlock. It provides sound and light feedback to enhance the user experience. The built-in temperature sensor is used to identify potential fires on the other side of the door and send out warnings to the surrounding people.

The smart lock is powered by a regulators helps reduce the overall cost and prolong the battery life as the switching regulators have higher efficiency. Two Aimtec switching regulators are used in the example. One converts the 9V battery power to 5V for wireless communication and user feedback. The other converts the 9V to 3.3V for the MCU and NFC reader. The latch motor remains the most power-hungry device hence is powered directly by the 9V battery.

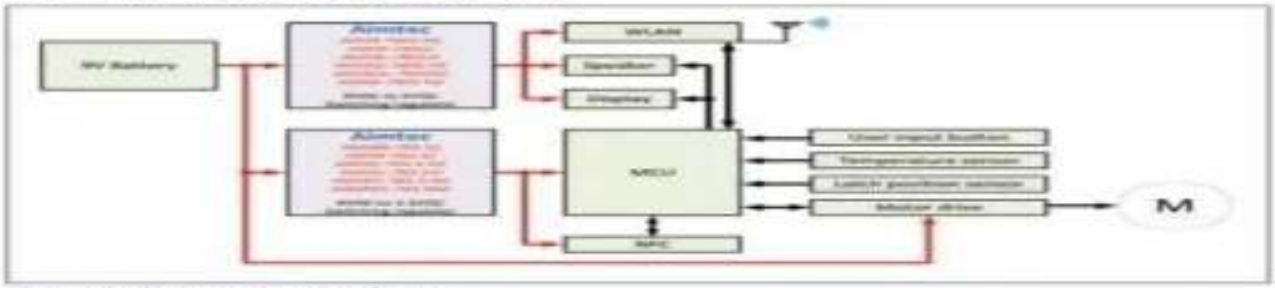


Figure 8. Electronic smart lock