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Monthly Updates The Bulletin

A Newsletter from

Electronics & Communication Engineering Department.

GLA UNIVERSITY MATHURA
Accredited with A+ Grade by NAAC
12-B Status from UGC

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Monthly Newsletter - November, 2023

RESEARCH | INNOVATION | NEW IDEAS | PLACEMENTS | GOALS | EVENTS | WORKSHOPS

Happy Placements !!!

Big congratulations to Akshat Bansal and Cheshta Pathak, shining stars from the B. Tech ECE Batch of 2024 at GLA University, for securing placements at Padmini VNA Mechatronics Pvt. Ltd.!

Your dedication and hard work have determined your success, and we're incredibly proud of your achievements. Wishing you both a fantastic journey ahead filled with success and growth in your new roles!

RESEARCH ARTICLE AUTHORED BY FACULTY.

The next generation of wireless connectivity : High Altitude Platform Station (HAPS)

Even though more than half of the world's population currently has Internet access, inadequately supplied towns, rural, and remote locations still required improved broadband connectivity and communications services.

Wireless communications can be delivered via High Altitude Platform Station (HAPS), which are aircrafts or airships located in the stratosphere. According to the ITU Radio Regulations, HAPS radio stations are those situated on an object at a nominal fixed location relative to Earth and at an altitude of 20–50 kilometers. High-altitude platform station (HAPS) systems have the potential to be used for backhauling traffic between mobile and core networks as well as fixed broadband connectivity for end users. The deployment of wireless broadband in remote locations, such as hilly, coastal, and desert regions, would be made possible by both kinds of HAPS applications.

Though it can fly much higher, between 20 and 50 kilometers above the ground, the HAPS is very similar to a drone. These are not satellites, which orbit the earth solely through gravity and can reach very higher altitudes. Moreover, they are not balloons.

As per the news reported in "The Hindu-business line"

India will witness the launch of its first HAP in coming May. The prototype device will hover about 3 km above ground while its designer-manufacturer, National Aerospace Laboratories (NAL), tests and validates the onboard equipment. The Director, NAL, told Quantum that the prototype is roughly one-third the size of a regular HAP. While the fully operational HAP would be stationed at an altitude of around 20 km, the prototype would remain at 3 km. The full-fledged HAP would be ready in 2-3 years.

News Article By :
Dr. Shreesh Kumar Shrivastava
Assistant Professor, ECE

GUEST LECTURE

The Department of Electronics and Communication Engineering (ECE) organized a highly informative guest lecture and practical session on November 6, 2023. The session was dedicated to exploring 'Technical Insights into Digital Payment Gateways,' a topic of great relevance in today's rapidly advancing technological landscape.

The resource person for the event was Mr. Rohit Kumar Duby, a distinguished Senior Software Engineer at PayU Payments. With his extensive experience and in-depth knowledge in the field, Mr. Duby provided valuable insights into the intricate workings of digital payment gateways. The students had the opportunity to delve into the technical aspects of these systems, gaining a comprehensive understanding of the underlying technologies and security measures.

The practical session allowed students to apply theoretical concepts in a hands-on environment, fostering a practical understanding of digital payment processes. Mr. Duby shared real-world examples and case studies, enriching the learning experience and connecting theoretical knowledge with practical applications.

The event not only expanded the students' knowledge base but also provided them with a unique opportunity to interact with an industry expert. They could ask questions, seek advice, and gain valuable perspectives on the current trends and challenges in the realm of digital payments.

Overall, the guest lecture and practical session proved to be a valuable addition to the academic calendar, aligning with the department's commitment to providing students with exposure to the latest developments in the field. The Department of ECE expresses its gratitude to Mr. Rohit Kumar Duby for his engaging and insightful session, which undoubtedly left a lasting impact on the students.

PROUD MOMENT

Congratulations to three outstanding students for securing a coveted six-month internship at the Semiconductor Laboratory (SCL) in Chandigarh. Sachin Chaudhary, a final-year B.Tech student, along with Ankita Varshney and Kanchan Upadhyay, both pursuing M.Tech, have been selected for this prestigious opportunity.

Their success reflects not only their academic prowess but also their dedication and commitment to excellence. The students will have the privilege of gaining hands-on experience in a leading semiconductor facility, further enhancing their skills and knowledge in the field.

This achievement is a testament to the hard work and guidance provided by Dr. Manish Agrawal, whose tireless efforts in mentoring and supporting the students are truly appreciated. The Department is proud of the accomplishments of Sachin, Ankita, and Kanchan and wishes them continued success in their endeavors.

AUTOMOTIVE MOSFETS ARE DESIGNED FOR E-MOBILITY

Alpha and Omega Semiconductor (AOS) combines TOLL packaging with clip technology in its automotive-grade 80V and 100V mosfets.

The automotive grade mosfets are in a new TO-leadless package, designed to optimise current capability for on-board batteries in two- and three-wheel vehicles and other light vehicles, automotive BLDC motor and battery management for e-mobility.

According to the company, the automotive TOLL package uses advanced clip technology to achieve a high in-rush current rating. This packaging with clip technology uses standard wire-bonding technology to deliver a very low package resistance and inductance to improve EMI performance compared to other TOLL packages, says the company. It also exhibits low Ohmic and high current capability, to reduce the number of parallel mosfets needed in high current applications and therefore enable higher power density requirements without compromising reliability, adds AOS.

Gate source voltage for both devices is 20V. Continuous drain current at 25°C is 445A for the 80V device and 370A for the 100V AOTL66912Q. At 100°C continuous drain is 247A and 269A for the AOTL66810Q and AOTL66912Q respectively. Pulsed drain current at 25°C is 1780A and 1480 (80V and 100V mosfets respectively). Max RDS(on) at 10V is 1.25mΩ for the AOTL66810Q and 1.7mΩ for the AOTL66912Q.

The AOTL66810Q (80V) and AOTL66912Q (100V) have a 30% smaller footprint compared to a TO-263 (D2PAK) package. They are qualified to AEC-Q101, are PPAP capable, and are manufactured in IATF 16949 certified facilities. They are also compatible with automated optical inspection manufacturing requirements.

The AOTL66810Q and AOTL66912Q mosfets are immediately available in production quantities with a lead time of 14 to 16 weeks.

DIGITAL MULTI-RANGE PORTABLE METERS FOR PRECIS AND VERSATILITY IN MEASUREMENT

These versatile meters eliminate parallax errors with their backlit display and annunciators. Built with advanced microcontroller technology and robust housing, they offer reliability without moving parts.

Source : electronicsforu.com
If it's electronics, it's here

The MECO Digital Multi-Range Portable Meters provide precise measurements for continuous AC TRMS and DC operations. Classified as Class 0.5 instruments, they feature a backlit display with clear annunciators, ensuring effortless readability. These meters are incredibly versatile, and suitable for horizontal, vertical, or inclined usage, eliminating parallax errors. Encased in a robust, compact, and rugged housing, these meters come equipped with a convenient tilt handle for easy transportation. Their design incorporates advanced microcontrollers and Surface Mount Technology (SMT), eliminating any potential inaccuracies or errors that could arise from moving parts.

Key Features:

- Precision rating of Class 0.5
- Accurate true root mean square (TRMS) measurement
- Designed with advanced microcontroller technology, eliminating moving parts
- Backlit display featuring clear annunciators to prevent parallax errors

Continued...

- Standard USB port (with optional user interface software)
- Additional functions include Data Hold, Auto Power Off, and Low Battery Indication
- Overload indication for added safety
- Robust and durable casing with a convenient tilt stand for easy use.

Four distinct models are available, catering to A AC, A DC, V AC, and V DC measurements. Each of these models offers five different ranges, effectively eliminating the necessity for individual instruments for each range. They come equipped with overload indication and protection features, guarding against unintended mishandling. Furthermore, these instruments offer USB connectivity and user-friendly interface software, facilitating convenient data management and analysis.

The Digital Multi-Range Portable Meters are highly suitable for a wide range of applications, including laboratories, engineering schools/colleges, workshops, and field measurements. They are designed for continuous usage and function as a master standard meter for verifying or re-calibrating secondary standard meters.

Achievement !!

The project titled "Design and Realization of Miniaturized LNA for S-Band RF Communication Applications" has received approval. The funding agency for this project is ISRO, Government of India, with an allocated amount of 20.98 Lakhs. The Principal Investigator (PI) for the project is Dr. Abhay Chaturvedi from the ECE Department at GLA University, Mathura. The Co-Principal Investigators (Co-PIs) include Dr. Manish Gupta and Dr. Manish Kumar from the ECE Department at GLA University, Mathura, and Dr. Rajendra Pratap from E-infochip, Noida.

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