



**RV College of
Engineering®**

CENTRE OF COMPETENCE 5G AND EMERGING WIRELESS TECHNOLOGIES

**ESTABLISHED AND FUNDED BY AICTE MODROB AND
RASHTREEYA SIKSHANA SAMITHI TRUST (RSST)**

The Centre of Competence in 5G and Emerging Wireless Technologies established during 6th September 2022. This centre focuses on enhancing knowledge and skill through training, conducting advanced research in the domains of 5G and its allied technologies. It aims at undertaking interdisciplinary research projects through collaboration with industry and research.

Vision : Empowering innovative young researchers and entrepreneurs in Emerging Wireless Technologies

Mission : Building state of the art infrastructure for designing and implementation of advanced wireless solutions for industrial and societal benefit. Enhancing Knowledge and Skill through training to make students industry ready. Undertaking interdisciplinary research projects through collaboration with Industry & research organizations and developing Sustainable Solutions.

Objectives :

1. Inclusion of relevant courses in curriculum for UG and PG programmes.
2. Development of laboratory infrastructure for projects and research.
3. Knowledge upgradation through webinars, workshops and FDP's.
4. Enhancement of industry-institute collaborations
5. Enhancement of consultancy and research project executions.

Achievements

**Received Grants from
AICTE MODROB
Amount Rs.15,97650/-**

**Amount generated by
Consultancy
Rs 10,44000/-**

**Completed DRDO
research Project
Amount Rs.10,32000/-**

Papers Published 60+

Technical Talks 20

Awards Received 10



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Facilities @ 5G

The 5G CoC has been procured NI USRP 2844 from the research fund from the Department of Electronics and Telecommunication Engineering. It is used for analysis of various experiments, like Spectrum sensing, evaluating the Bit error rate and Probability of error in Modulation, equalization and Coding Techniques. The USRP supports both NI Labview and Matlab and GNU Radio.

Specialized Equipment

1. NI USRP 22944R : The NI USRP-2944R provides an integrated hardware and software solution for rapidly prototyping high-performance wireless communication systems, built on the LabVIEW reconfigurable I/O (RIO) architecture.
2. Tektronix Signal Analyzer: USB real time signal analyser : 9 kHz-6.2 GHz with licenses and real time signal analysis capability, WLAN Testing Bluetooth, AM/FM/PM Modulation,+20 dBm to -160 dBm measurement range, with System Vue software license.
3. Tektronix Mixed Domain Oscilloscope : 3-Series MDO; 4 Analog Channels,1GHZ integrated spectrum analyser with N-Type input connector RF Measurements-Channel Power, Adjacent Channel power ratio and OBW DVM and frequency counter with 250 MHz bandwidth, 10X, 3.9 pF. One passive voltage probe per Analog channel.
4. Tektronix Arbitrary Waveform Generator : 2Channel: 60MHz Bandwidth: 300MSa/s sampling rate: 1M points arbitrary waveform memory: 14-bits vertical resolution: 3.9 Color LCD: 2U half rack: USB Host/Device.
5. Facility is available for analysing the characteristics of the Antenna Design and simulation for the 5G and 6G application. RF Anechoic Chamber with operation range 700-40GHz with a turntable with $\pm 0.1^\circ$ positional accuracy.

Mixed Domain Oscilloscope



USB Spectrum Analyzer



Arbitrary / Function Generator



Current Research Themes

Various advanced modulation, coding, equalization, MIMO systems, 5G and SDR related projects are supported and many publications out of these areas are the outcome of the activities. Internship is provided for UG and PG students. Antenna and sub systems of current relevance in industry and defence are designed, optimized, fabricated and measured.

For further details contact:

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