III B.Tech II Semester

15AEC38 - DIGITAL COMMUNICATION SYSTEMS LAB

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Course Objectives:

1. To provide a real time experience for different digital modulation and demodulation schemes

Minimum of Ten experiments to be conducted (Five from each Part-A & B)

PART-A: HARDWARE EXPERIMENTS

1. Sampling Theorem – verification.
2. Time division multiplexing.
3. Pulse code modulation.
4. Differential pulse code modulation.
5. Delta modulation.
6. Frequency shift keying.
7. Differential phase shift keying.
8. QPSK modulation and demodulation.

PART-B: SOFTWARE EXPERIMENTS

(Modeling of Digital Communications using MATLAB)

1. Sampling Theorem – verification.
2. Pulse code modulation.
3. Differential pulse code modulation.
4. Delta modulation.
5. Frequency shift keying.
6. Phase shift keying.
7. Differential phase shift keying.
8. QPSK modulation and demodulation.

Equipment required for Laboratories:

1. RPS   -   0 – 30 V
2. CROs   -   0 – 20 M Hz.
3. Function Generators   -   0 – 1 M Hz
4. RF Generators (3 Nos.)   -   0 – 1000 M Hz.
5. Multimeters
6. Lab Experimental kit for Pulse Code Modulation (Experiment No.3 of part – A)
7. Required Electronic Components (Active and Passive) which include required ICs
8. Arbitrary Wave form generators/ PNS generators – 2 Nos. (to generate digital data at required data rates)
9. Licensed MATLAB software for 30 users with required tool boxes.

Course Outcomes: After completion of the course the students will be able

a. To experience real time behavior of different digital modulation schemes and technically visualize spectra of different digital modulation schemes

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