

EN2130 - Communication Design Project

Course Project

Learning outcomes

- Identify the requirements and limitations of a basic communication system.
- Select a suitable communication technology to cater to a given simple application.
- Select necessary components to build a simple communication system (wired/wireless) to solve a given problem.
- Realize a simple communication system to enable successful end-to-end connectivity.

Requirements

- Implement a point-to-point digital wireless communication system using software defined radios
- Able to transmit
 - Images
 - Voice
 - Video

Requirements

- Communications to occur in the 2.4 GHz ISM band
 - Adhere to maximum power limitations
- User interface
- Performance evaluation
 - With distance
 - End-to end delay
- Optional features
 - Security
 - Channel estimation
 - Adaptive transmission

Evaluation

- Presentation – 10 mins (40%)
 - Explaining the design methodology
 - Justification of selected techniques and parameters
 - Performance figures
- Demonstration (30%)
 - Functionality check
- Individual questioning (30%)
 - Understanding of the overall design