

1.ISRO SATELLITE CENTRE

Project Title:Design and simulation of Stacked dual band microstrip patch antenna for GPS and Navic application

Project Guide: Mr.Gurusandesh M

Project Team: Vanishree Rao K,Supreethi N,Suraksha G,Sandhya

Abstract:

In this project, a design of stacked dual band microstrip patch antenna and its simulation using CST-MW simulator is presented. The designed patch antenna has one waveguide port which is the active element of this antenna. In this design, a single antenna resonates at two different frequencies that are 1.1765GHz and 1.575GHz. This eliminates the use of two separate antennas for different applications. The two frequencies are used simultaneously for GPS and Navic (IRNSS) applications.

The antenna is designed by stacking the patches to improve the bandwidth, and return loss of greater than 15dB is obtained for both the frequencies. Since it uses circular polarization, it radiates in all the planes. The antenna is highly resistive to change in environmental conditions and atmospheric disturbances and thus it is used for satellite applications more efficiently. The radiation pattern, gain, directivity and polarization plots of the antenna are studied and observed using the CST microwave simulator software.

2.VELANKANI ELECTRONICS PRIVATE LIMITED

Project Title:Bluetooth low energy 4.2

Project Guide: Ms.Jovita Lasrado

Project Team: Lavanya U,Prekshitha,Sowmya

Abstract:

The Internet of Things (IoT) is defined as a paradigm in which objects equipped with sensors, actuators, and processors communicate with each other to serve a meaningful purpose. The communication between IoT devices is mainly wireless. Various wireless technologies from the network perspective of IoT applications includes, Wi-Fi, Bluetooth technologies (Bluetooth classic, Bluetooth Low Energy, and CSRmesh), IEEE 802.15.4 technologies (Wireless HART, Z-WAVE, and Sigfox) and Thread etc. In this project , a novel method to connect devices by using Bluetooth low energy (BLE). is discussed. This is used to deliver information in machine-to-machine (M2M) applications. BLE is applicable in many fields such as IoT, Home appliances, industry etc. This proposed method is also used to design circuits which supports Bluetooth Low Energy (BLE) interface for home applications.

3.ATRIA CONVERGENCE TECHNOLOGIES LIMITED

Project Title:Study on IPV4 depletion and CGNATing

Project Guide: Mr.Udaya Kumar S

Project Team: Rohith Shetty,Shashith S Shetty,Swasthik,Praveen

Abstract:

Carrier Grade Network Address Translation (CGN) is a large-scale NAT that translates private IPv4 addresses into public IPv4 addresses. CGN employs Network Address and Port Translation methods to aggregate multiple private IPv4 addresses into fewer public IPv4 addresses. Carrier-grade NAT has been proposed as an approach for mitigating IPv4 exhaustion. Companies that are manufacturing these devices for large Organizations are Nokia, Cisco, Huawei. With the advancement in the technology, Carrier-grade NAT has been proposed as an approach for mitigating IPv4 exhaustion. It translates private IPv4 addresses into public IPv4 addresses. As we know that CGN employs Network Address and Port Translation methods to aggregate multiple private IPv4 addresses into fewer public IPv4 addresses.

Due to recent technological development the internet has growing drastically as there is more public demand. The capacity of the internet has been used by organization such as Google, Microsoft, HP. It's being used not just for academic purposes but for everyday life, where social networking is part of a daily routine and people use websites such as facebook and twitter to communicate with one another. As a consequence, the impact of internet growth has led to a point where devices such as Microwaves, cars and TV's require internet access to operate at its full capacity. We have to consider that back then the internet which wasn't even called the internet was just meant for academics, it was definitely not meant for regular people and that's what's known today as IP version 4. The IP addresses space is managed globally by the Internet Assigned Number Authority (IANA), and by five Regional Internet Registries (RIR) responsible in their designated territories for assignment to end users and Local Internet Registries, such as Internet Service Providers (ISP).

4.YAZAKI INDIAN PRIVATE LIMITED

Project Title:LED Guidance System

Project Guide: Ms.Rashmi A V

Project Team: Shreeraksha C R,Sonali C V,Sowmya S ,Shwetha B

Abstract:

In automobile industry where wiring harness for the vehicles are manufactured, there are different steps to be followed. One among them is wire insertion operation which is very important. In wire insertion process, specific coloured wire should be inserted to specific connector cavity for the particular vehicle part. LED guidance is the technique used to guide the operators in wire insertion

process. In the existing system, the operators insert specific wires to connector cavity by referring to pallet ID. This was suitable for the connectors having minimum number of cavities. For the connectors having large number of cavities, there is a possibility of cross wire, which in result, increases scrap production. To achieve perfect harness it is important to mould the operators to skilled ones. Only if the harness is perfect, vehicle safety can be assured. The proposed LED Guidance system takes scanned barcode and CF card as the inputs. These inputs are processed through CB70, which is the main unit of this guidance system. Switches, LEDs, LCD display and buzzer are the outputs from the system. LEDs are placed in connector cavity jig and wire rack. These LEDs guide the operator in inserting the specific wires into respective cavities. The LED guidance contributes in minimizing the mistakes committed by the operators. Thus, LED GUIDANCE technique is to reduce the defects in wiring harness and increase the production.

5.DEFENCE AVIONICS RESEARCH ESTABLISHMENT

Project Title:Study of ProASIC3L FPGA and implementing traffic light using Libero SoC

Project Guide: Ms.Sowmya Anil

Project Team: Shruthi A S,Vikhyath B,Shravya B R,Shradha A P

Abstract:

Traffic lights are the signaling devices used to manage traffic on multi-way road. The traffic light sequence works on the specific switching of Red, Green and Yellow lights in a particular way with stipulated time form. The normal functions of traffic lights requires sophisticated control and coordination to ensure that traffic moves as smoothly and safely as possible and pedestrians are protected when they cross the roads. By displaying lights (red, yellow and green), they alternate the way of multi-road users. The implementation of traffic Light Controller can be through a Microcontroller, Field Programmable Gate Array or Application Specific Integrated Circuit. FPGA implementation is advantageous over ASIC and microcontroller. Some of these advantages are the speed, more number of IO ports, better performance compared to microcontroller and implementation with FPGA is less expensive compared to ASIC design. Most of the TLCs implemented on FPGA have been implemented as examples of FSM. This project presents the FPGA implemented low cost advanced TLC system using LiberoSoc. The system has been implemented in hardware using ProASIC3L FPGA and M1A3P1000L development kit.