



SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

COIMBATORE-35.



Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A+' Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai.

DEPARTMENT OF AUTOMOBILE ENGINEERING

COURSE NAME : 19AUT205 – INTERNET OF THINGS IN AUTOMOTIVE SAFETY

II YEAR /IV SEMESTER

Unit 4- Interfacing of Arduino & ESP8266 with Input / Output Devices

Topic : Serial Communication with RF Modem



1. What is Node MCU?
2. What is GPRS?





RF Modem



- Radio frequency modems, also called “RF modems” and “wireless data modems”, power an impressive array of industrial functions. RF wireless systems enable mining companies to work in remote areas
- The RF modem comprises : an antenna; an RF head coupled to the antenna and an interface.
- The RF head is configured during a receive mode to receive an electromagnetic RF signal through the antenna and to convert the RF signal into a modulated baseband analog signal for baseband processing in the host computing device.



SERIAL COMMUNICATION



- Serial communication is a communication method that uses one or two transmission lines to send and receive data.
- That data is continuously sent and received one bit at a time.



FEATURES



- ❖ Supports Multiple Baud rates (4800/9600/19200/38400).
- ❖ Supports Multiple Channel Selection (CH0/CH1/CH2/CH3).
- ❖ Works on ISM band (2.4 GHz)
- ❖ No complex wireless connection software.
- ❖ Designed to be as easy to use as cables.
- ❖ No external Antenna required.
- ❖ Plug and play device.
- ❖ Works on 5-9V DC supply.
- ❖ Standard UART Interface.



OPERATION



- This module works in half-duplex mode.
- Means it can either transmit or receive but not both at same time.
- After each transmission, module will be switched to receiver mode automatically.
- The LED for TX and RX indicates whether IC is currently receiving or transmitting data.
- The data sent is checked for CRC error if any.
- The RX LED is directly on TX OUT pin to indicate that actual data is received and it is sent to output pin.



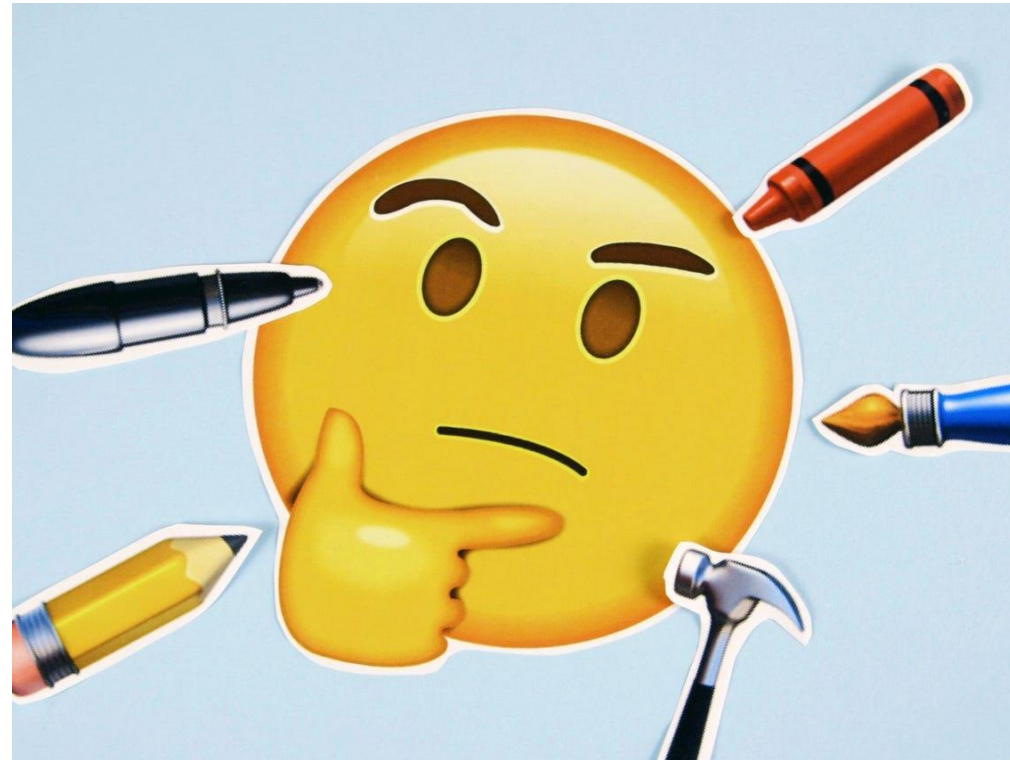
APPLICATIONS



- Consumer electronics.
- Wireless keyboard and mouse.
- Weather stations.
- Sensor Networks / Data collection.
- Wireless metering.
- RF enabled remote controls.
- Wireless data
- IT home appliance.
- Smart house products / Security Systems.



Task





REFERENCE



❖ <https://www.youtube.com/watch?v=AGlIB600i0A>



THANK YOU !!!