# Wireless control system using FreeRTOS platform.

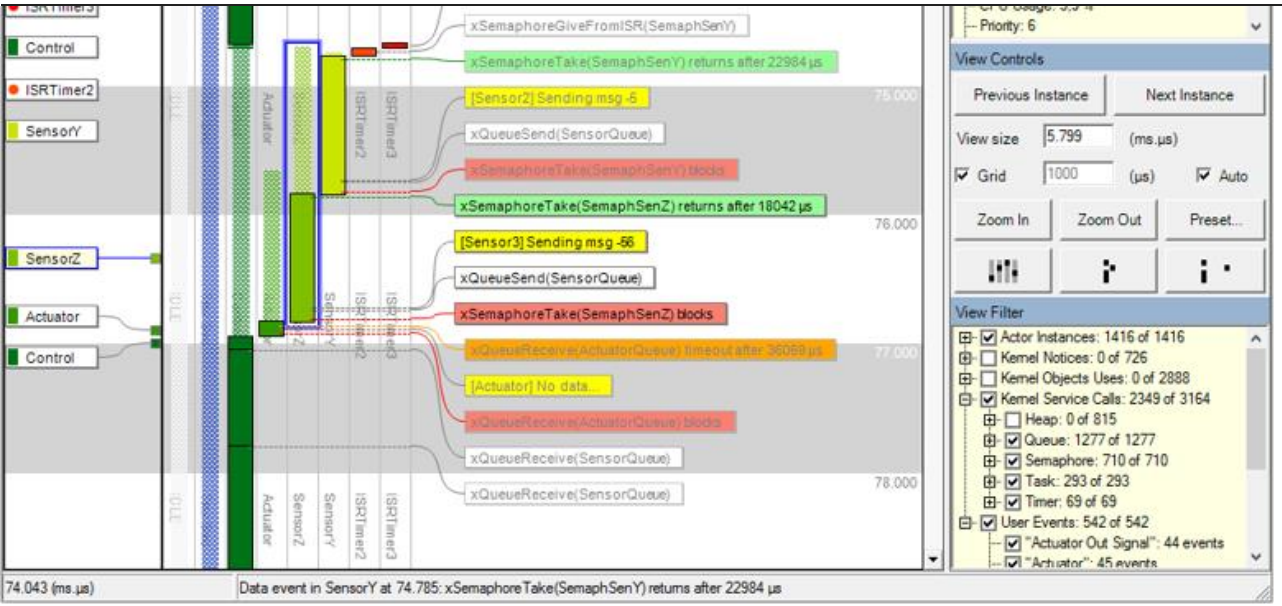
#Control #FreeRTOS #Wireless #Bluetooth5.0 #BLE

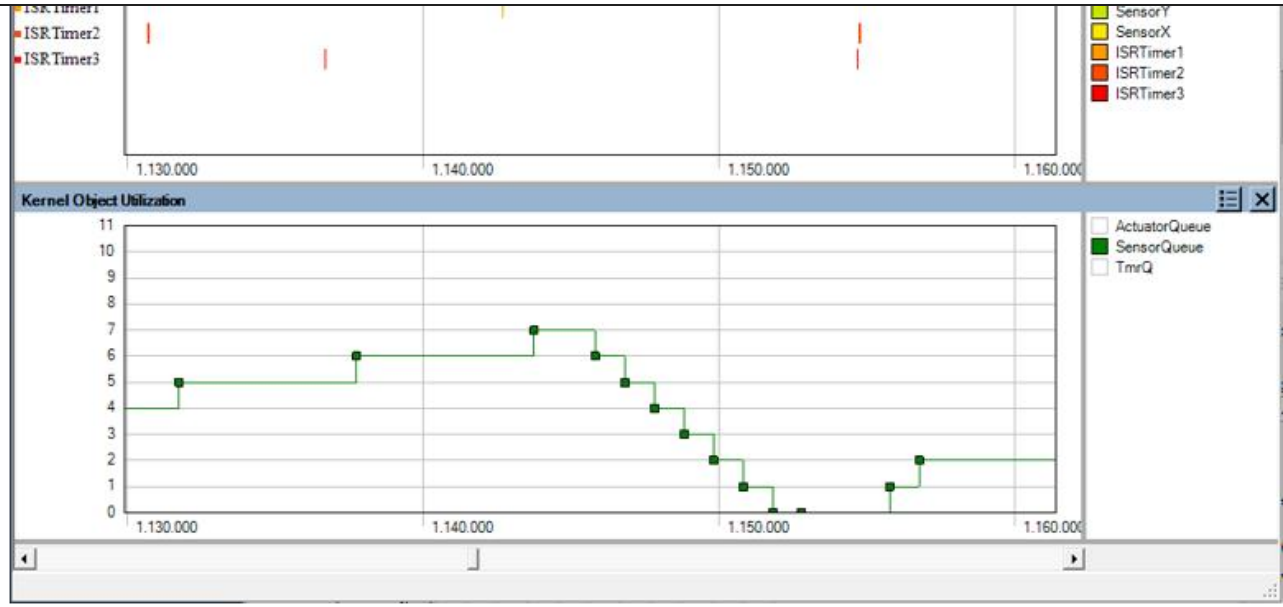
# Brief

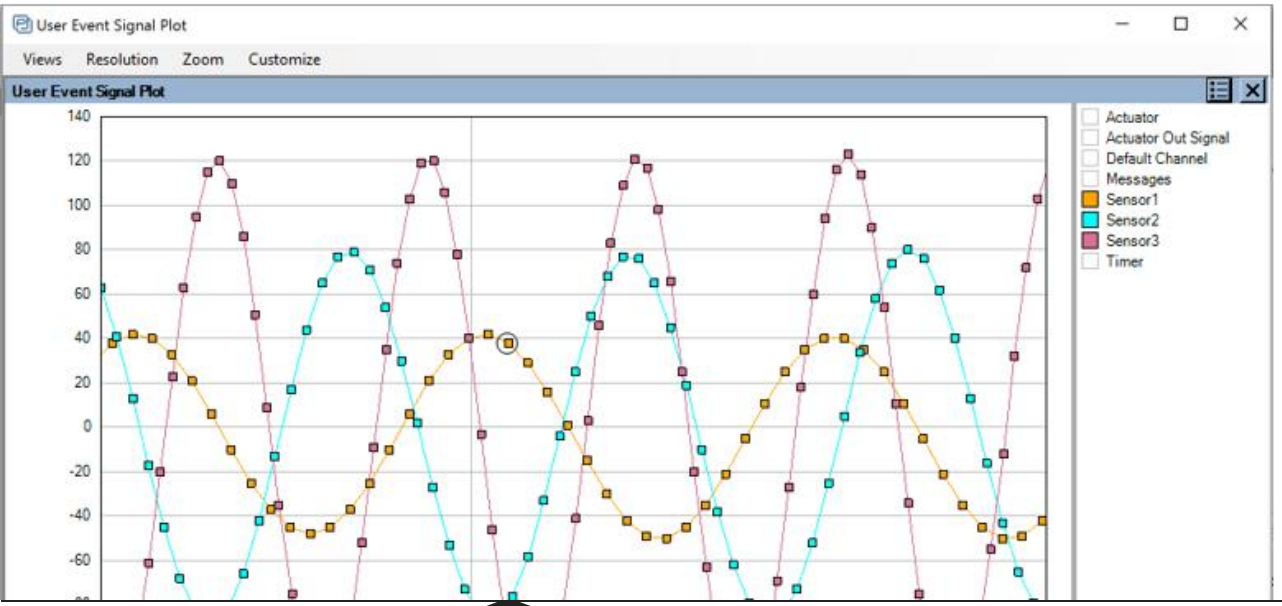
- Master's Thesis containe 3 parts:
  - -Analysis
  - -Signals aquisition & control
  - -Process

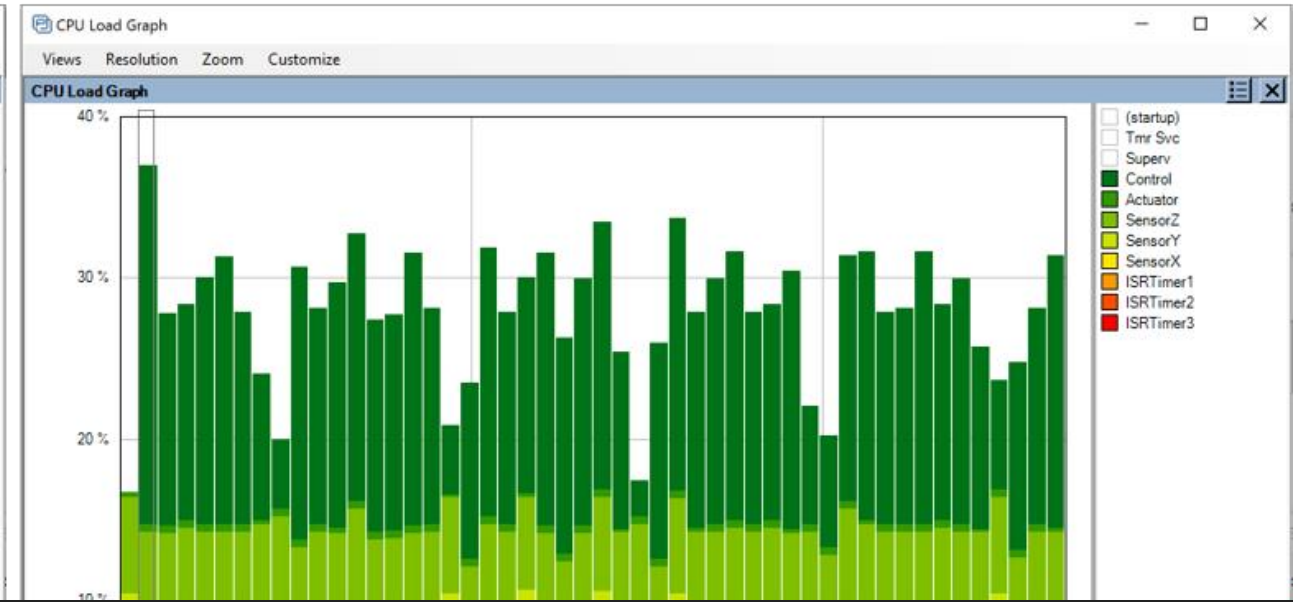
# ANALISYS

- This side – provide an option for analisys whole system by using PC or Mobile Phone.
- Mobile Phone – visualization sensor's data.
- PC option – For visualization all system's processes:
  - - Actual procesor load
  - - All tasks
  - - Data from sensor
  - - The process trajectory




# ANALISYS *Percepio Tracealyzer*

# Signal Acquisition and Control

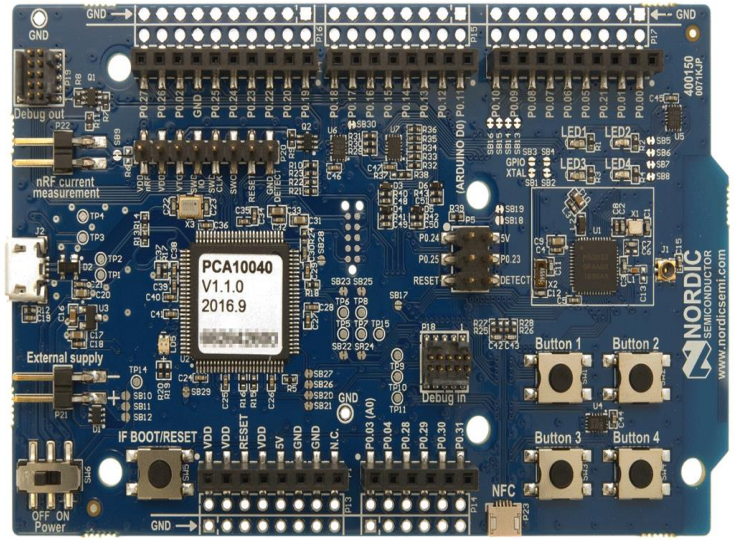
Main project's part consist of:

- Main Board – nRF52832 (Nordic Semiconductor)
- Sensor Board – Nordic Thingy :52 (Nordic Semiconductor)

# Main Board - nRF52832

- Single chip, highly flexible, 2.4 GHz multi-protocol SoC
- 32-bit ARM Cortex-M4F Processor
- 1.7v to 3.6v operation
- 512kB flash + 64kB RAM
- Supports concurrent Bluetooth low energy/ANT protocol operation
- On-chip NFC tag for Out-of-Band (OOB) pairing
- Up to +4dBm output power
- -96dBm sensitivity, Bluetooth Low Energy
- Thread safe and run-time protected
- Event driven API
- On air compatible with nRF24L and nRF24AP series
- 2 data rates (2Mbps/1Mbps)
- PPI - maximum flexibility for power-efficient applications and code simplification

- Automated power management system with automatic power management of each peripheral
- Configurable I/O mapping for analog and digital I/O
- 3 x Master/Slave SPI
- 2 x Two-wire interface (I²C)
- UART (RTS/CTS)
- 3 x PWM
- AES HW encryption
- 12-bit ADC
- Real Time Counter (RTC)
- Digital microphone interface (PDM)
- On-chip balun

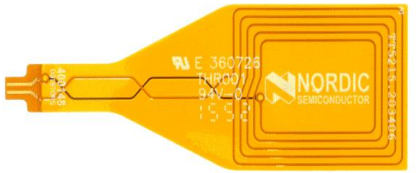


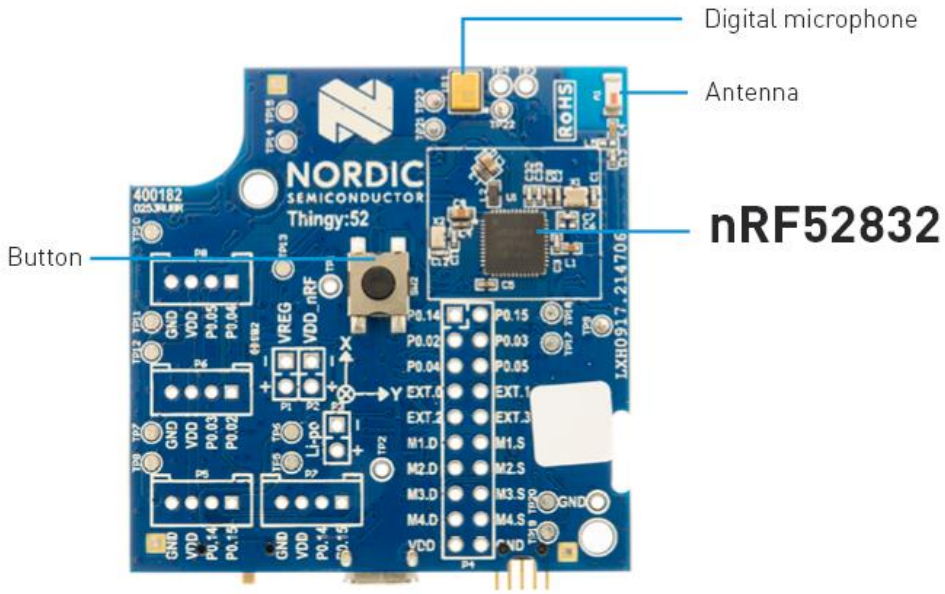

NORDIC SEMICONDUCTOR

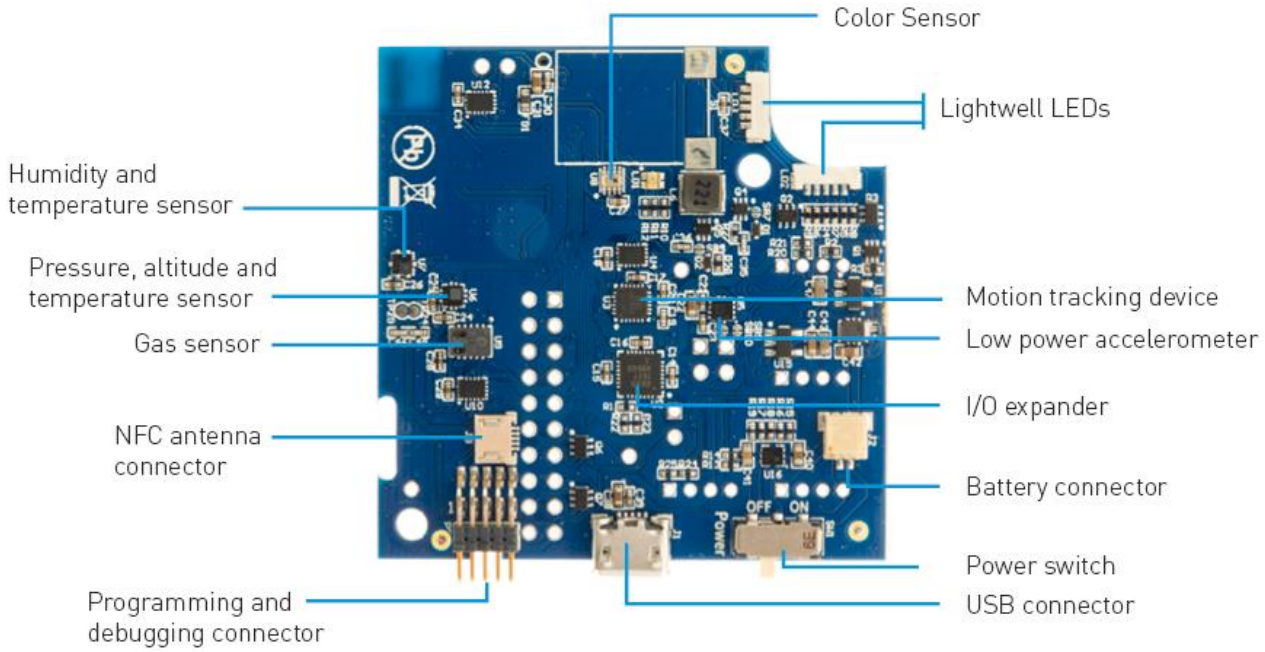
nRF 52 SERIES

Thank you for purchasing a Nordic Semiconductor product.

Please visit www.nordicsemi.com/start52dk to get started!

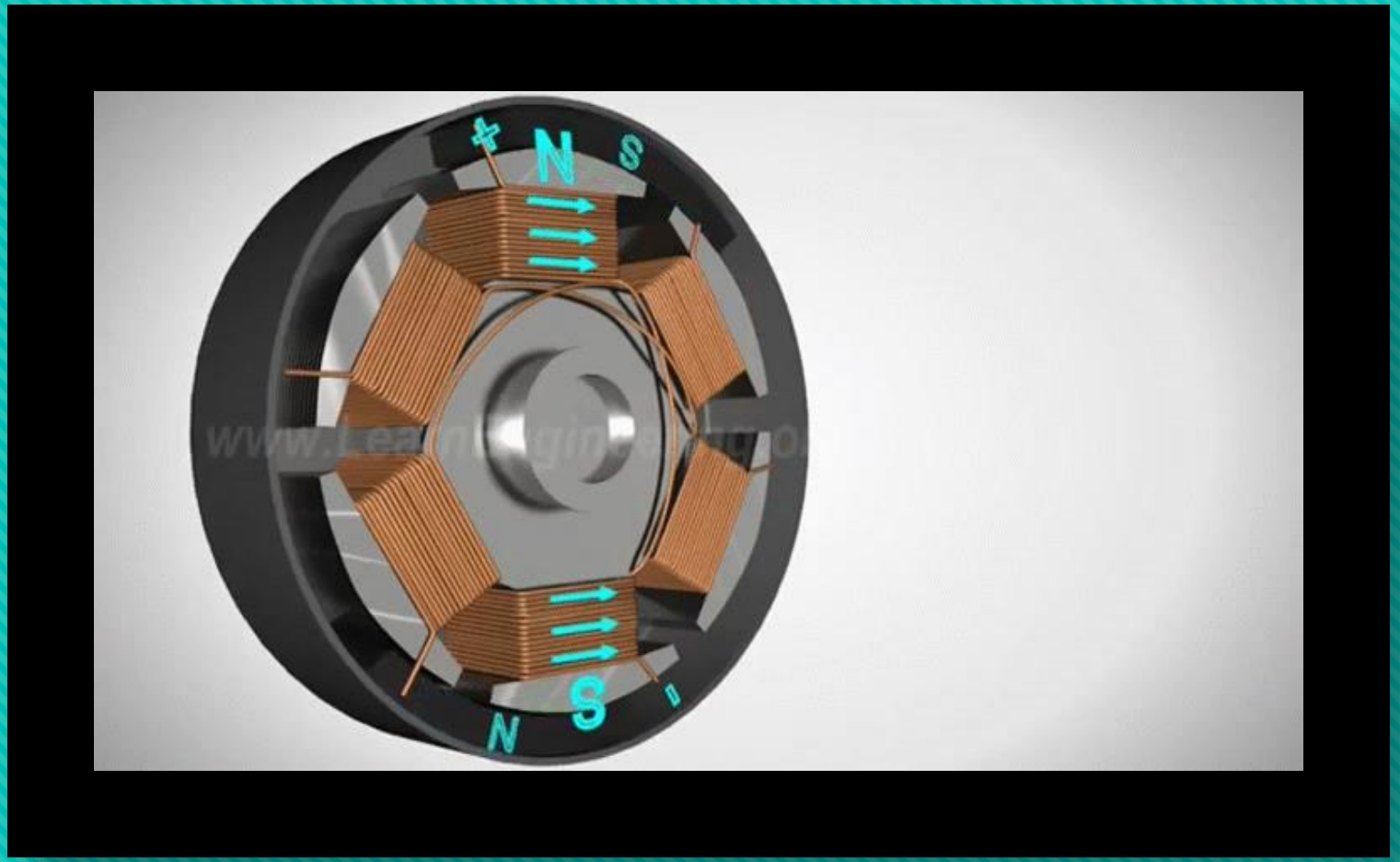





# Nordic Thingy :52

- Thingy :52 Board **features**




# Process

DC Motor control