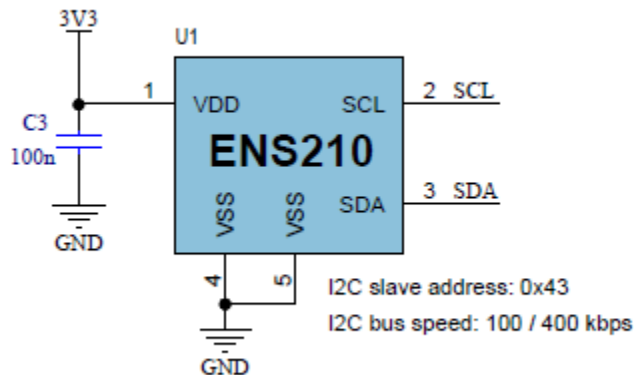


- Use the latest nRF Connect SDK tag, v1.9 as of now
- Check here which modem FW is compatible with which SDK tag
 - https://infocenter.nordicsemi.com/topic/comp_matrix_nrf9160/COMP/nrf9160/nrf9160_modem_fw.html
 - In general use the latest available nRF Connect SDK tag and corresponding MFW for development
- Download MFW v1.3.1 and show how to upload to DK
 - Show the option of downloading hex files and MFW for quicker testing
 - Explain important things in the changelog for MFW download
 - Mention AT commands reference guide, open it up and show that the latest guide shows which AT command supports which MFW
 - Do not extract the modem zip file
 - nRF Connect for Desktop
 - show where to download
 - should get a popup if there is a new version available, use newest version
 - v3.10.0 latest one as of now
- install nRF Connect SDK
 - Try to keep install path of nRF Connect SDK close to root folder
- VS Code
 - Create a new application from sample
 - Freestanding
 - Open cloud client documentation via here
 - https://developer.nordicsemi.com/nRF_Connect_SDK/doc/1.9.0/nrf/samples/nrf9160/cloud_client/README.html
 - Add a build configuration for 91 DK
 - Use the ns version of 91 DK, sets up arm trustzone using secure and non secure regions in flash for security reasons
 - Pristine build vs build
 - Pristine build done when you make changes in config files, e.g. KConfig
 - Connected devices, flash vs erase and flash
 - Flash only programs the selected application image, leaves any bootloaders or other info on the device flash
 - Erase and flash erases the entire flash and then programs app image, will erase bootloader/mbr, etc.
 - For our example, we do not use a bootloader, so not as important
 - Flash example as is first, the open programmer app and show the file memory visualization
- nRF Cloud
 - check that your iBasis SIM card has coverage in your region
 - www.nordicsemi.com/ibasis
 - Add LTE device, blur out device ID and PIN/HWID
- Link Monitor
 - Can see at commands, AT+CFUN=1 turns modem on and enables full device functionality

- Check at commands doc for more info
 - Check that your SIM card connects to NW, check logging
- Cloud client sample
 - Where is message being published in code
 - Go to KConfig settings
- Connecting to an AMS Renesas Sensor Board v1.0
 - AMS ENS210 Humidity, Temp sensor
 - <https://ajwrs.wordpress.com/category/sensors/ams-renesas-sensor-board/>



- - SCL is serial clock, SDA is serial data
- Alternative: <https://www.digikey.com/en/products/detail/sharp-socle-technology/A1DU5P2CP006B/9678558>
 - Show the data sheet and the pins
- ENS210 datasheet may also help: <https://www.sciosense.com/wp-content/uploads/documents/ENS210.pdf>
 - Download datasheet, can find pin nrs and what they signify, I2C slave address is 0x43
- Set VDD IO/SW9 to 3V, may degrade LTE RF performance with heavy load
 - VDD on 91 DK connected to Pin 6 on J3 of sensor board
 - Pin 30 on 91 DK connected to pin 2 on J3 of sensor board
 - Pin 31 on 91 DK connected to pin 3 on J3 of sensor board
 - GND pin on 91 DK connected to pin5 on J3 of sensor board
- VS Code
 - Zephyr/samples/sensor/ens210
 - Copy contents of prj.conf, main.c, no KConfig file present, do not need to add anything, no updates needed to cmakeLists.txt either
 - Dts
 - Create an overlay file
 - SDA is pin 30
 - SCL is pin 31
 - This adds extra code to the Arduino_i2c dts code in nrf9160dk_nrf9160_ns.dts file
 - Build folder/zephyr/zephyr.dts

- I2c2 is enabled
 - Debugging
 - https://infocenter.nordicsemi.com/topic/nwp_042/WP/nwp_042/intro.html
 - Do a graceful shutdown in between debugging, i.e. AT+CFUN=0
- Problems
 - Why can I not find the KConfig file in VS Code?
 - When do pristine builds?
 - If you edit dts file, prj.conf, overlay, etc
- To Do
 - Add source code to zip file
 - Include any interesting data sheets, etc in zip file
 - Include ppt file
 - QnA
 - May need to switch to NB-IoT instead of LTE-M