Avnet NB-IoT Starter Kit

Avnet NB-IoT Starter kit is combined from Quectel NB-IoT Module, STM 32bit MCU.

Kit Contents

I. NB-IoT Connectivity Testing | **Quectel** BC66-TE-B NB-IoT evaluation board
II. Application Development | **STM32** Nucleo-64 development board with STM32L476RG MCU
III. 1 x SMA Connector Rod Antenna
IV. 1 x USB Cable
V. 1 x Viettel SIM Card support NB-IoT

Software Required

1. Keil µVision IDE
2. ST-LINK, ST-LINK/V2, ST-LINK/V2-1 USB driver signed for Windows7, Windows8, Windows10
3. Tera Term or any Hyperterminal (Terminal program for RS232 Communication)
4. “Avnet_NBIoT_HelloWorld” Demo Project from Avnet

Assemble your Hardware

1. Stack BC66-TE-B NB-IoT evaluation board on top of STM32 Nucleo-64 development board
2. Modify STM MCU board to connect UART TX, RX pins to communicate with BC66 NB-IoT Module

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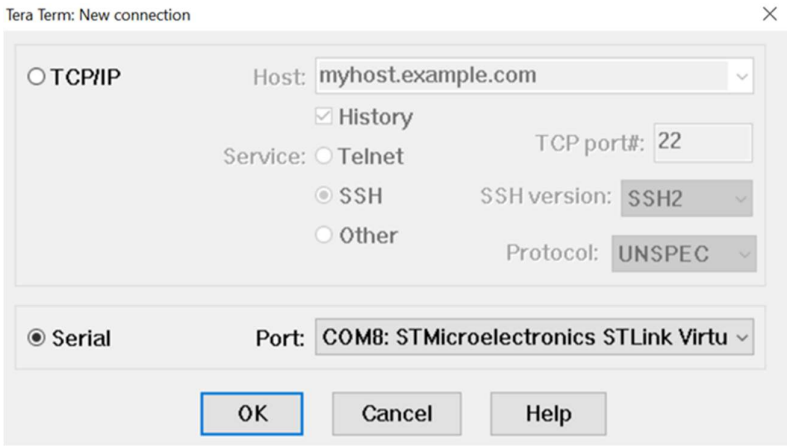
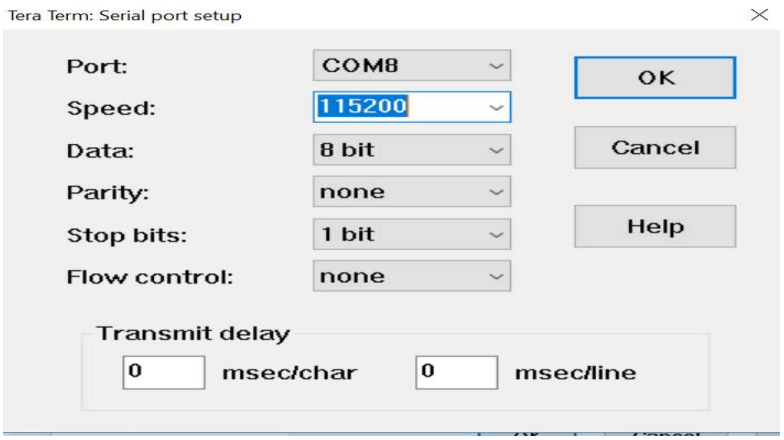
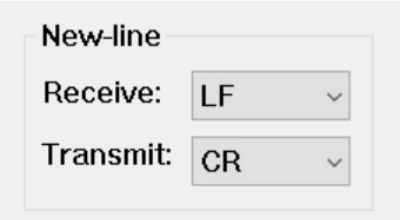
How to start our 1st demo using Viettel NB-IoT network

1. Extract the file “Avnet_NBIoT_HelloWorld.zip”
2. Open the project under the path
   …\Avnet_NBIoT_HelloWorld\src\stm32l476\MDK-ARM\Project.uvprojx
3. Change APN defined in main.c
   a. You can type “nbiot” or “v-internet”
4. Change MYDATA defined in main.c
   a. You can type “Hello to Avnet, your name”
5. Compile and build the project
6. Download the device firmware to STM32 Nucleo-64 development board
7. Open a terminal program and connect to the device port on STM32 Nucleo-64 development board



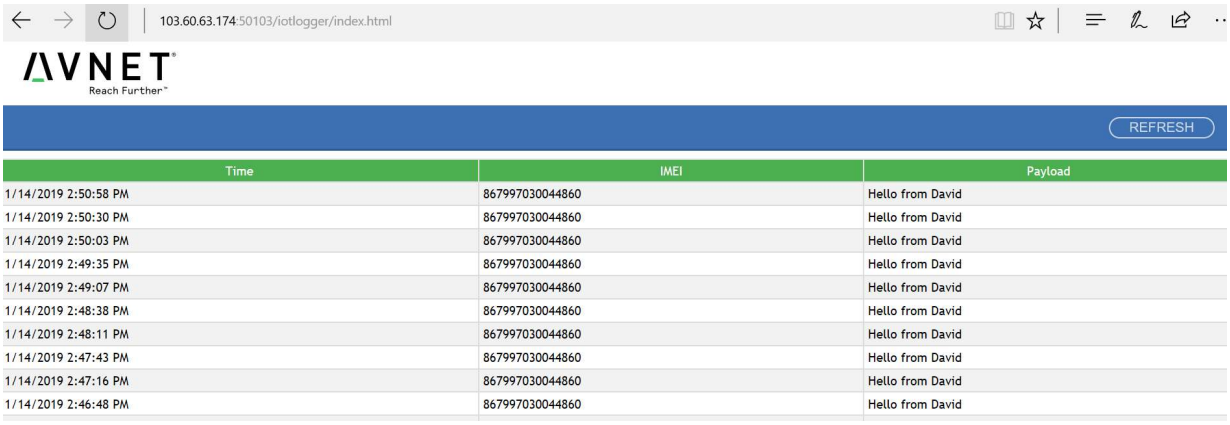




8. Press the “Reset” button on STM32 Nucleo-64 development board, Demo Start and try to register to NB-IoT Network
   (which shows you the sequence of ATCommand to control Quectel BC66 module)

```
[00000000.000 : main                                ] Demo Start
[00000000.005 : modem_init                          ] Enter
[00000000.000 : main                                ] Demo Start
[00000000.005 : modem_init                          ] Enter
[00000002.891 : bc66_ate_off                        ] TX: ATE0

[00000003.408 : bc66_ate_off                        ] ECHO off
[00000003.413 : bc66_qcgdefcont                     ] TX: AT+QCGDEFCONT="IP","","",""

[00000003.504 : bc66_qcgdefcont                     ] Success
[00000003.509 : bc66_qrst                           ] TX: AT+QRST=1

[00000006.527 : bc66_ate_off                        ] TX: ATE0

[00000007.044 : bc66_ate_off                        ] ECHO off
[00000007.049 : bc66_cmee_off                       ] TX: AT+CMEE=1

[00000007.120 : bc66_ati                            ] TX: ATI

[00000007.253 : bc66_ati                            ] ATI success
[00000007.258 : bc66_epsnwk_urc                     ] Enter
[00000007.287 : bc66_epsnwk_urc                     ] TX: AT+CEREG=0

[00000007.324 : bc66_qicfg                          ] Enter
[00000007.520 : bc66_qicfg                          ] OK
[00000007.525 : bc66_cpsms                          ] TX: AT+CPSMS=0

[00000007.585 : bc66_cpsms                          ] PSM mode set to 0
[00000007.591 : bc66_cgsn                           ] TX: AT+CGSN=1

[00000007.681 : modem_init                          ] Waiting for EPS registration...
```

9. Open Avnet NB-IoT Demo Website
   a. http://103.60.63.174:50103/iotlogger/index.html



Time	IMEI	Payload
1/14/2019 2:50:58 PM	867997030044860	Hello from David
1/14/2019 2:50:30 PM	867997030044860	Hello from David
1/14/2019 2:50:03 PM	867997030044860	Hello from David
1/14/2019 2:49:35 PM	867997030044860	Hello from David
1/14/2019 2:49:07 PM	867997030044860	Hello from David
1/14/2019 2:48:38 PM	867997030044860	Hello from David
1/14/2019 2:48:11 PM	867997030044860	Hello from David
1/14/2019 2:47:43 PM	867997030044860	Hello from David
1/14/2019 2:47:16 PM	867997030044860	Hello from David
1/14/2019 2:46:48 PM	867997030044860	Hello from David

Note: Press REFRESH and “Ctrl F” to find your text in the internet explorer

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Reference Link

- Quectel BC66 – Documentation
  https://www.quectel.com/product/bc66.htm

- STM32 Nucleo-64 development board with STM32L476RG MCU – Documentation
  https://www.st.com/en/evaluation-tools/nucleo-l476rg.html

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