NB-IOT & GNSS STARTER KIT

Starter Kit Technical Specifications & User Manual

Purpose of the Document

The purpose of this document is to explain the technical specifications and manual for using the starter kit with NB-IoT & GNSS hardware board.

Document History

Version	Author	Date	Description
A	5G HUB	04.28.2020	Initial Document
A	5G HUB	02.27.2021	Minor update and add downloadable software

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1 Package Contents

1.1 Software

Arduino software can be downloaded from the following website:
https://github.com/5ghub/5G-NB-IoT/tree/master/KitSketches

To use the board with Arduino IDE and starts running Arduino projects and sketches, install the following software:

Install Arduino IDE for Windows from the following website:
https://www.arduino.cc/en/Main/Software

Download and Install LTE&GNSS modem driver for Windows OS:
https://github.com/5ghub/5G-NB-IoT/tree/master/Driver

Download and Install QNavigator &QCOM tools for Quectel BG96 here:
https://github.com/5ghub/5G-NB-IoT/tree/master/Tools

Download and install Arduino library (**5G-NB-IoT_Arduino.zip**) here:
https://github.com/5ghub/5G-NB-IoT

All the following software can be installed from the GitHub location here:
https://github.com/5ghub/5G-NB-IoT

LTE cellular connectivity on Windows OS

YouTube tutorials:

5G NB-IoT Kit – YouTube

1.2 Hardware

Item #	Name	Quantity
1	5G NB-IoT Hardware Board	1
2	LTE & GPS Antenna	1
3	4*4 Matrix Keypad	1
4	5V Relay	1
5	Step Motor	1
6	Temperature Sensor LM35	1
7	Motor	1
8	IR Receiver	1
9	Vibration Sensor SW-520D	2
10	Jumper Cap	4
11	Key Switch(yellow)	5
12	DHT11 Module	1
13	Clock Module	1
14	Big Sound Module	1
15	Water Module	1
16	Photocell	3
17	Active Buzzer	1
18	SN74HC595	1
19	3-color LED	1
20	7 Segment	1
21	4-7 Segment	1
22	Passive Buzzer	1
23	B10K Variable	1
24	Flame	1
25	SG90 Servo	1
26	1602 Display	1
27	8*8 Matrix	1
28	830 Breadboard	1
29	Joystick	1

30	RFID Module	1
31	Remote Control	1
32	Blue LED	10
33	Red LED	10
34	Green LED	10
35	330R Resistance	10
36	220R Resistance	10
37	10K Resistance	10
38	1K Resistance	10
39	Jumper Wire	1
40	F-M Dupont Wire	1
41	2.54mm 40Pin	1

2 General Description

2.1 Overview

The is a full starter kit used with NB-IoT & GNSS hardware board. The kit includes sensors, actuators, motors, keypad, LCD and display, and motors. The Kit enables you to perform many electronics projects using Arduino. The kit includes more than 30 Arduino sketches & projects ready for running on the NB-IoT &GNSS hardware board. This kit can be used as Do-It-Yourself (DIY).

2.2 Key Features

- NB-IoT & GNSS Hardware board
- More than 40 hardware components for building different Arduino projects.
- Ready-made Arduino sketches to exercise the Arduino projects.
- Kit are packages in small firm package of size 240 x 160 x 60 mm

2.3 Overview Diagrams

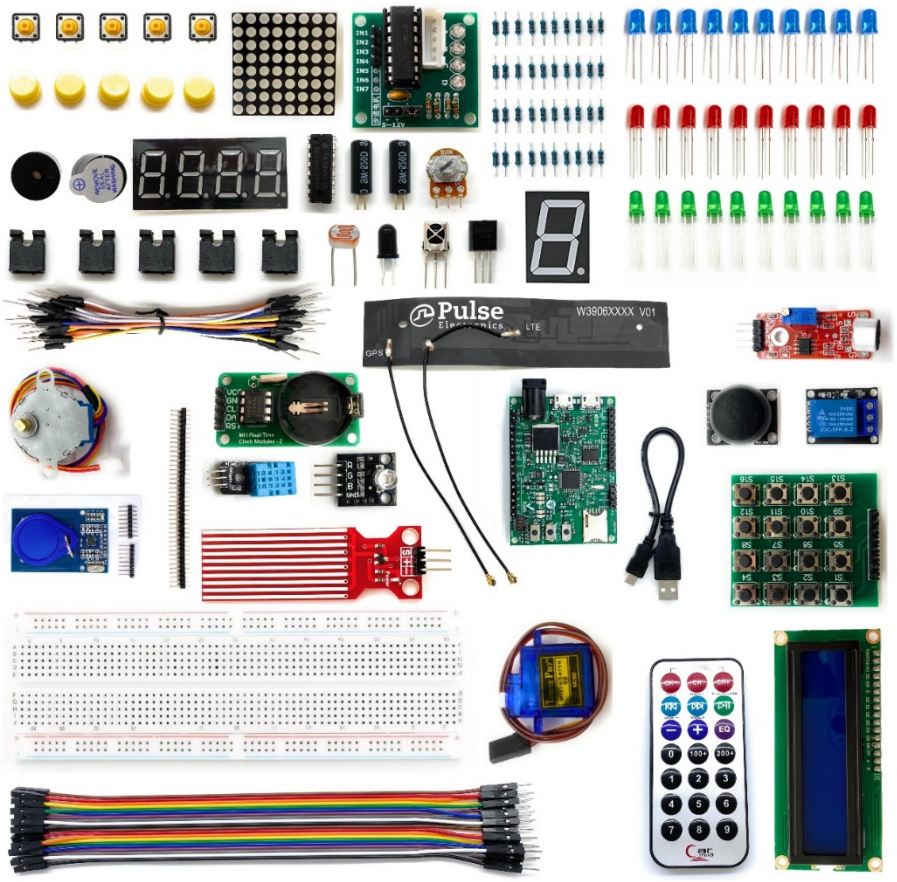

Figure 1. Kit Hardware Components

Figure 2. Firm Package for the Kit

Figure 3. Package Top View

3 References

[1] Arduino IDE, https://www.arduino.cc/en/Main/Software

[2] Arduino IDE, https://www.arduino.cc/en/Guide/ArduinoZero

[3] Microchip, “Low-Power, 32-bit Cortex-M0+ MCU with Advanced Analog and PWM”