



## AN120102

### Use of ISP091201-DK1

#### Introduction

#### Scope

This document gives details on hardware and software for using and testing Insight SiP Bluetooth Low Energy module ISP091201. The next paragraphs describe hardware and software of three different kits, two from Nordic Semiconductor and one from Insight SiP. The last paragraph presents a simple link test set-up.

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#### 1. Recommended Documentation

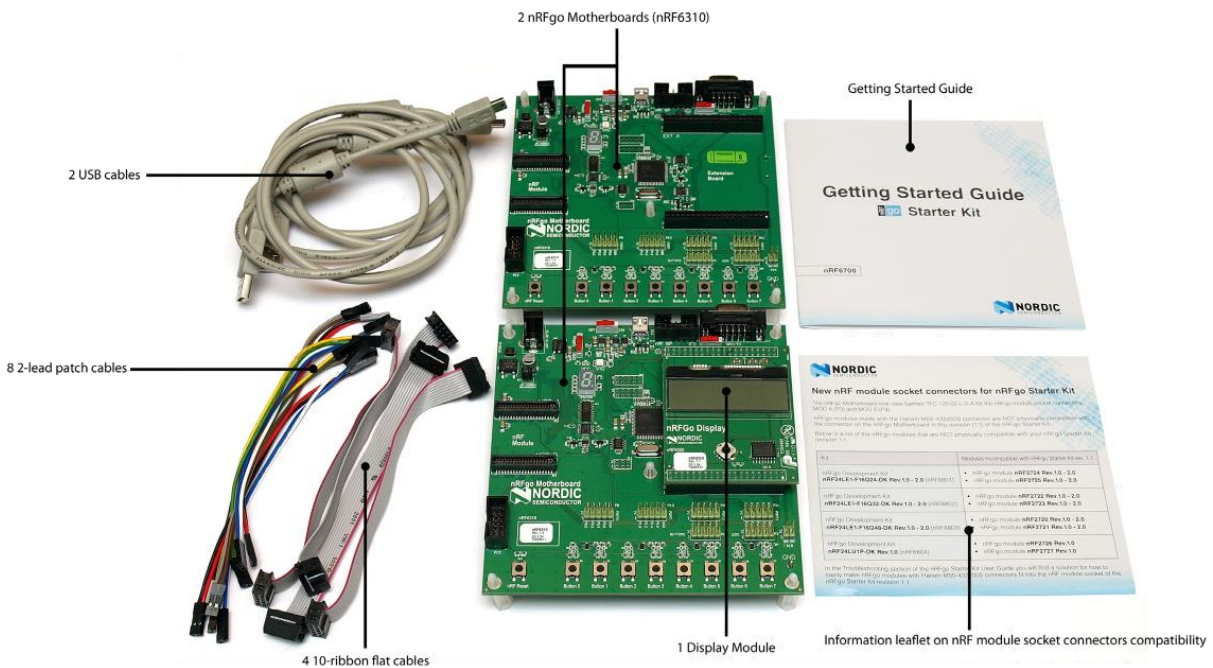
The following documents are recommended reading:

Document	Name	Remark
R1	nRF6700 User Guide v1.6.pdf	Downloaded at <a href="http://www.nordicsemi.com">www.nordicsemi.com</a>
R2	nRF8001 DK User Guide v1.1.pdf	This pdf file will be located in folder C:\Nordic Semiconductor\nRF8001 SDK v1.7\Documentation <b>after</b> installing nRF8001 SDK installer (see §3)
R3	DS091201Rxx.pdf	ISP091201D module data sheet

## 2. nRFGo Starter Kit (nRF6700)

The nRGo Starter Kit consists of hardware and software components. For more details, see Nordic Semiconductor user guide (document R1- see §1).

### nRFGo Starter Hardware Components



### Software and Documentation Components

Access to software and documentation at [www.nordicsemi.com](http://www.nordicsemi.com). Then, download and install latest version of nRFGo Studio.

### 3. nRF8001 Development Kit (nRF8001-DK)

The nRF8001 Development Kit consists of hardware and software components. For more details, see Nordic Semiconductor user guide (document R2 – see §1).

#### nRF8001-DK Hardware Components



- |   |  |   |   |
|---|--|---|---|
| ① | 5 nRF8200 samples                                    | ⑤ | <b>nRF2741:</b> nRF8001 module with SMA connector                   |
| ② | 1 patch cable  | ⑥ | <b>nRF2735:</b> Carrier board with an nRF8200 application processor |
| ③ | <b>nRF2739:</b> Bluetooth low energy master emulator | ⑦ | 5 nRF8001 samples   |
| ④ | <b>nRF2740:</b> nRF8001 module with PCB antenna      |   |   |

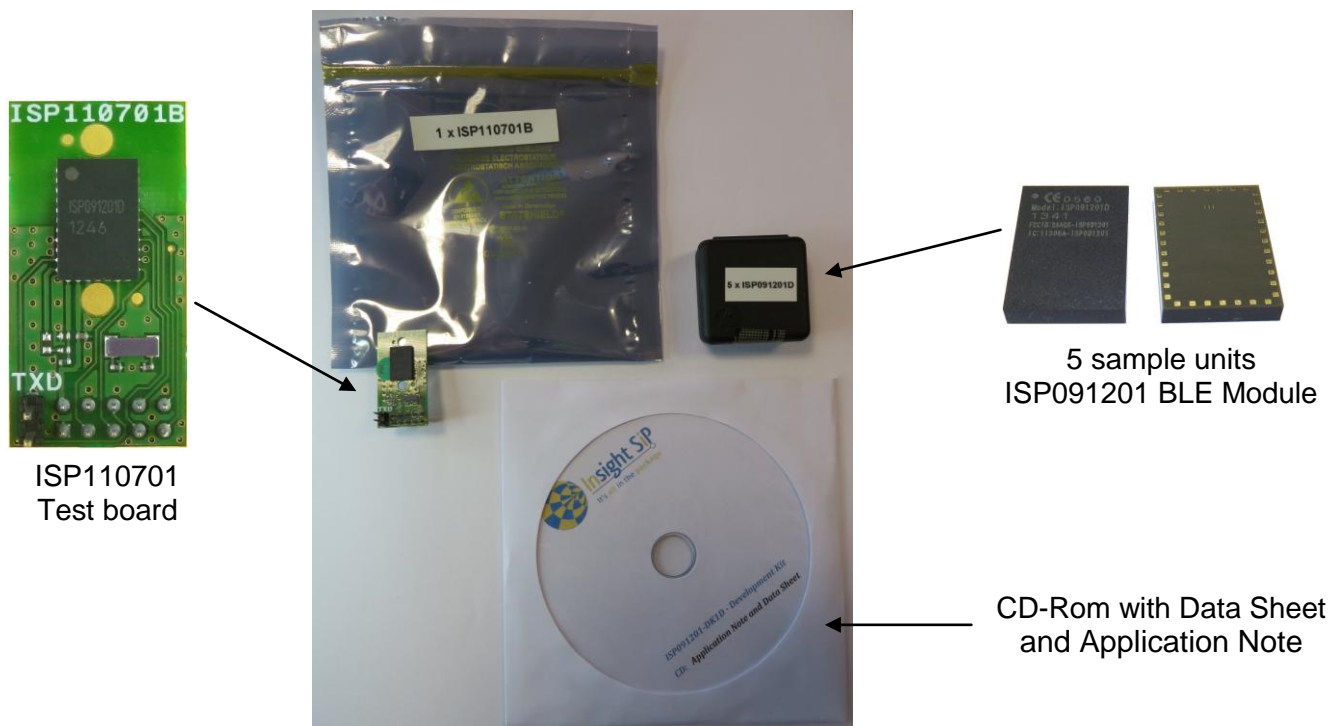
#### Software and Documentation Components

The SDK (Software Development Kit) can be downloaded from a Nordic MyPage account at [www.nordicsemi.com](http://www.nordicsemi.com). In order to access the download page, the requested Product Key is written on the nRF8001-DK package. Then, download and install latest version of nRF8001 SDK Installer. Installation will set up the software and will give access to Nordic Semiconductor user guide (document R2 – see §1).

### 4. ISP091201 Development Kit (ISP091201-DK1)

#### Hardware Components

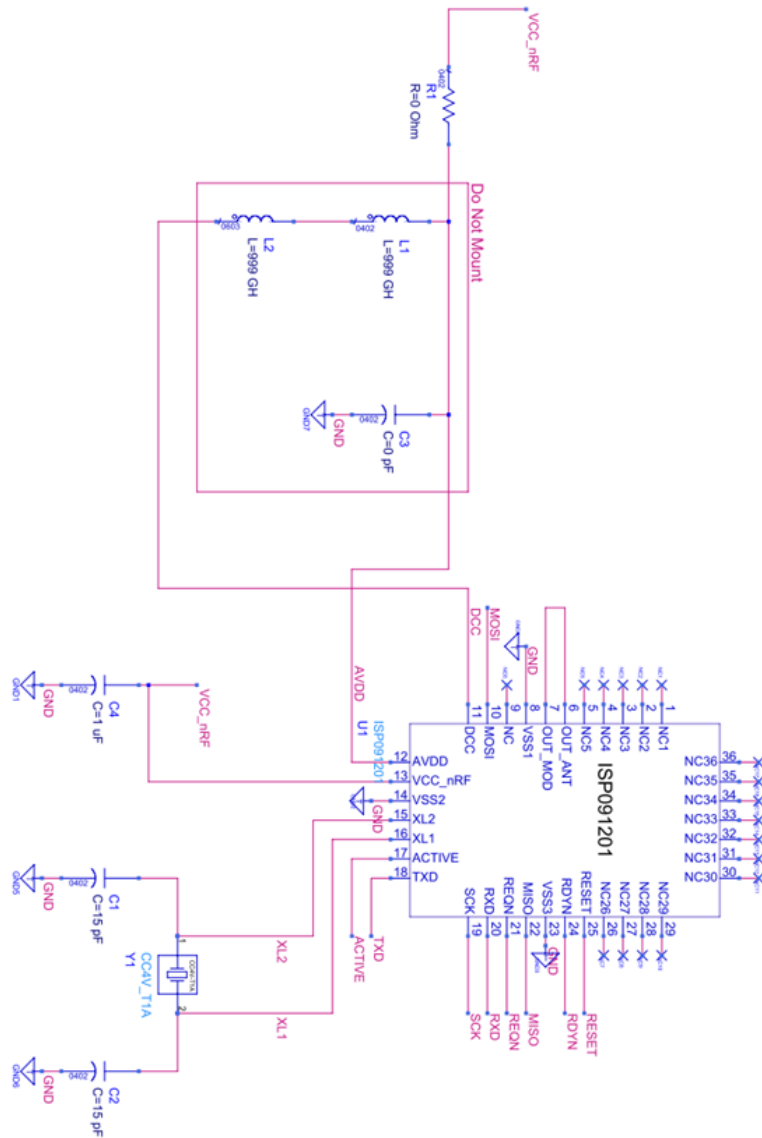
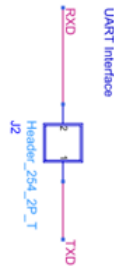
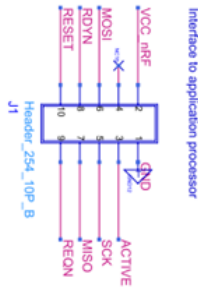
The Insight SiP ISP091201 Development Kit consists of the following hardware components.



✚ ISP091201 is the Bluetooth Low Energy module with integrated antenna. This module is based on Nordic Semiconductor nRF8001 uBlue Bluetooth Low Energy Platform. The nRF8001 is a single chip transceiver with an embedded baseband protocol engine. The ISP091201 module size measures 8 x 12 x 1.5 mm. The module integrates all the decoupling capacitors, the 16 MHz crystal and load capacitors plus the RF matching circuit and antenna in addition to the transceiver. For more details, see Insight SiP module data sheet (document R3 – see §1).

✚ ISP110701 is the application type test board. It encloses ISP091201 Bluetooth Low Energy module and has size of 18 x 35 mm. ISP110701B has the same function as Nordic Semiconductor nRF2740 board.

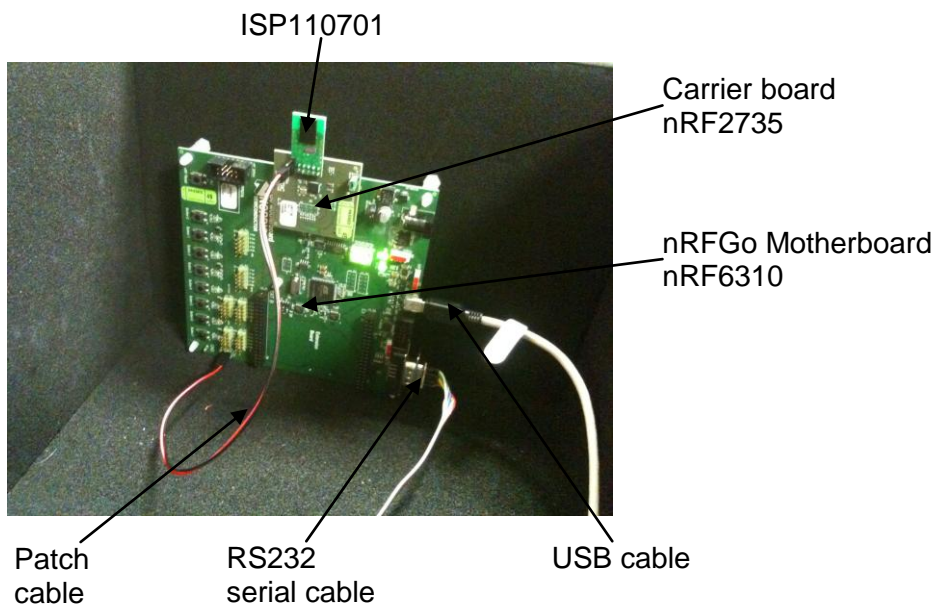
### ISP110701B Electrical Schematic



### 5. Simple Link Test Set-Up

All tests performed in Nordic Semiconductor user guide (document R2) with nRF2740 board can be carried out with ISP110701 instead. Two set-up examples are shown in the following paragraphs.

#### ISP110701B Test Board Set-Up for Testing with Direct Test Mode



#### BLE Master Emulator Set-Up

