Insight SiP
It's all in the package

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.

Contents

1. Recommended Documentation

The following documents are recommended reading:
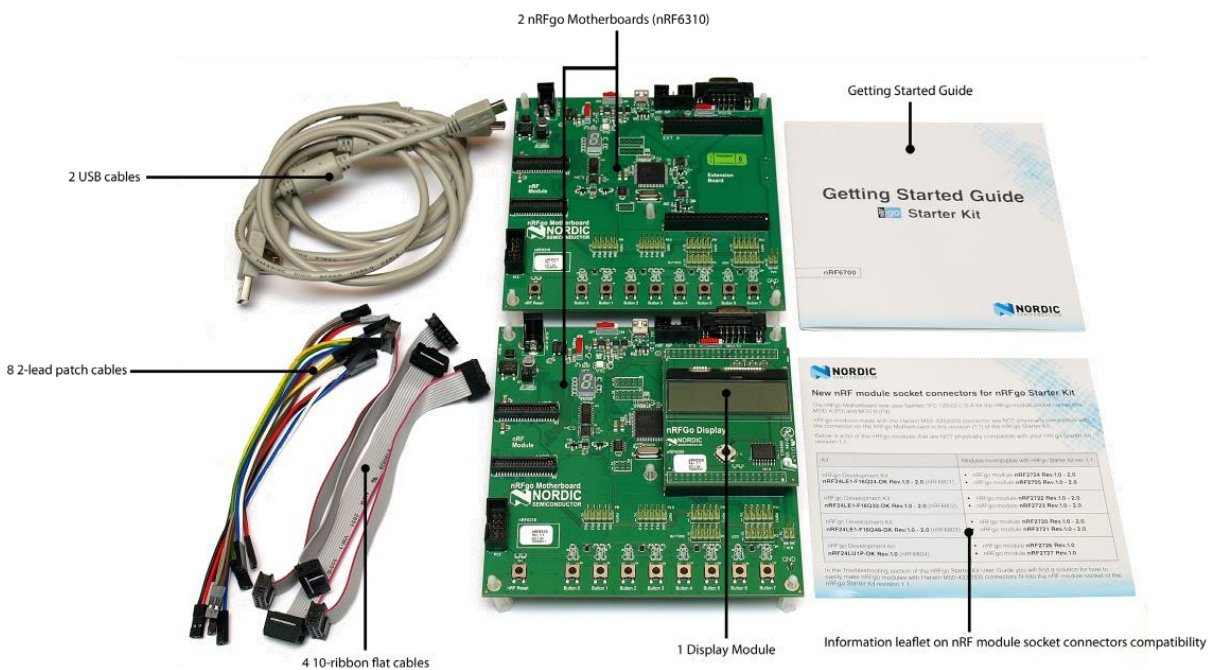
Document	Name	Remark
R1	nRF6700 User Guide v1.6.pdf	Downloaded at www.nordicsemi.com
R2	nRF8001 DK User Guide v1.1.pdf	This pdf file will be located in folder C:\Nordic Semiconductor\nRF8001 SDK v1.7\Documentation **after** installing nRF8001 SDK installer (see §3)
R3	DS091201Rxx.pdf	ISP091201D module 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. 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

②   1 patch cable

③   **nRF2739**: *Bluetooth* low energy master emulator

④   **nRF2740**: nRF8001 module with PCB antenna

⑤   **nRF2741**: nRF8001 module with SMA connector

⑥   **nRF2735**: Carrier board with an nRF8200 application processor
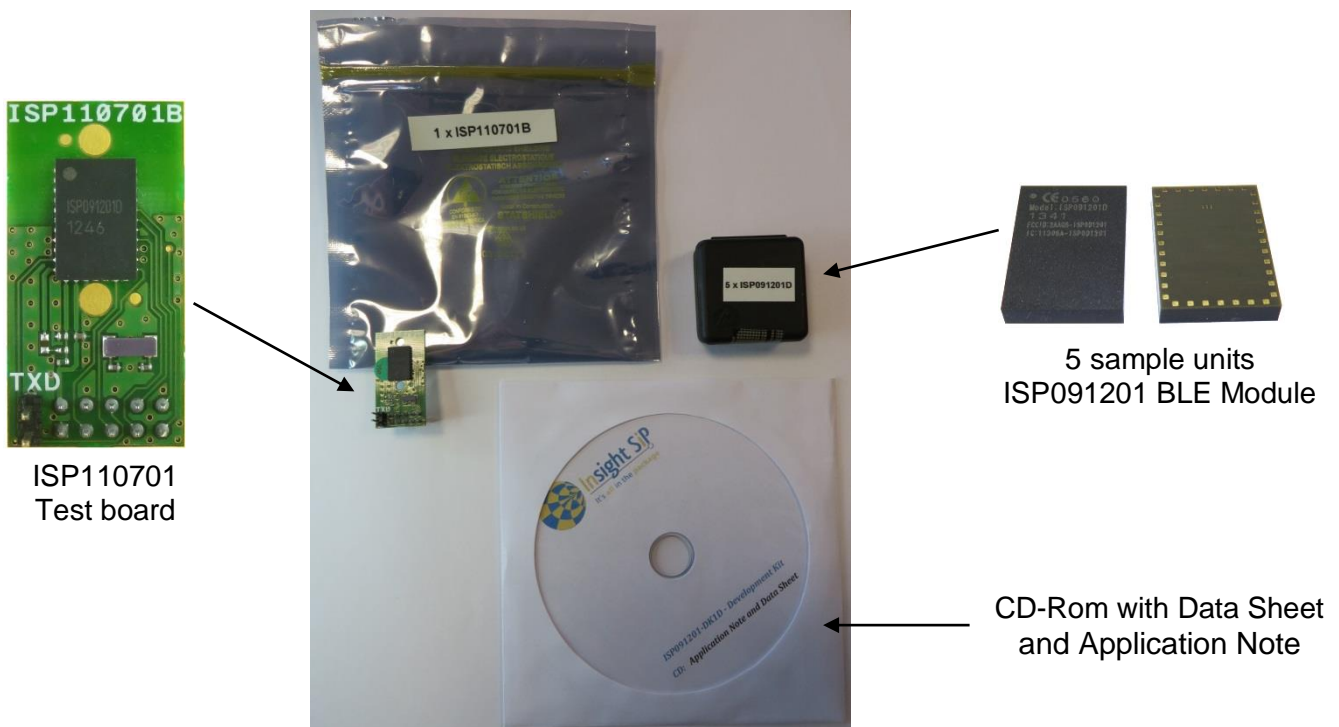
⑦   5 nRF8001 samples

Software and Documentation Components

The SDK (Software Development Kit) can be downloaded from a Nordic MyPage account at 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.

ISP110701
Test board

5 sample units
ISP091201 BLE Module

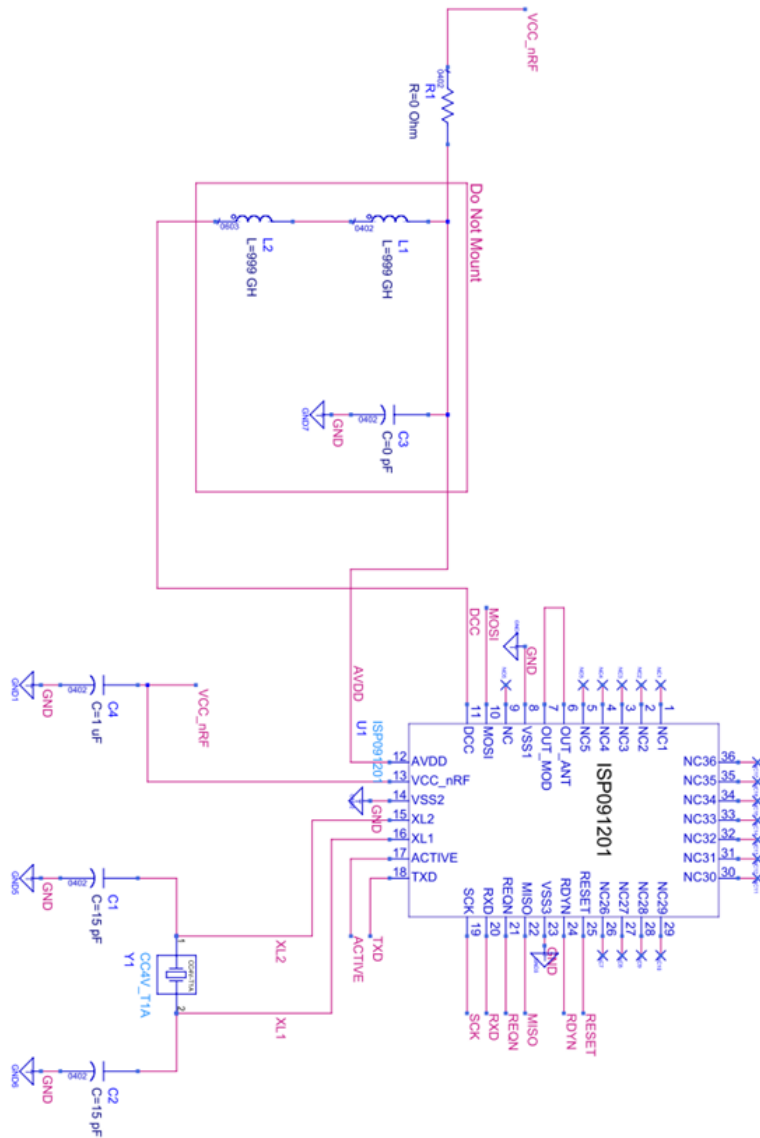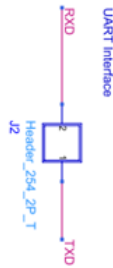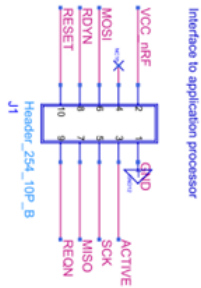CD-Rom with Data Sheet
and Application Note

✚ 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. ISP110701 has the same function as Nordic Semiconductor nRF2740 board.
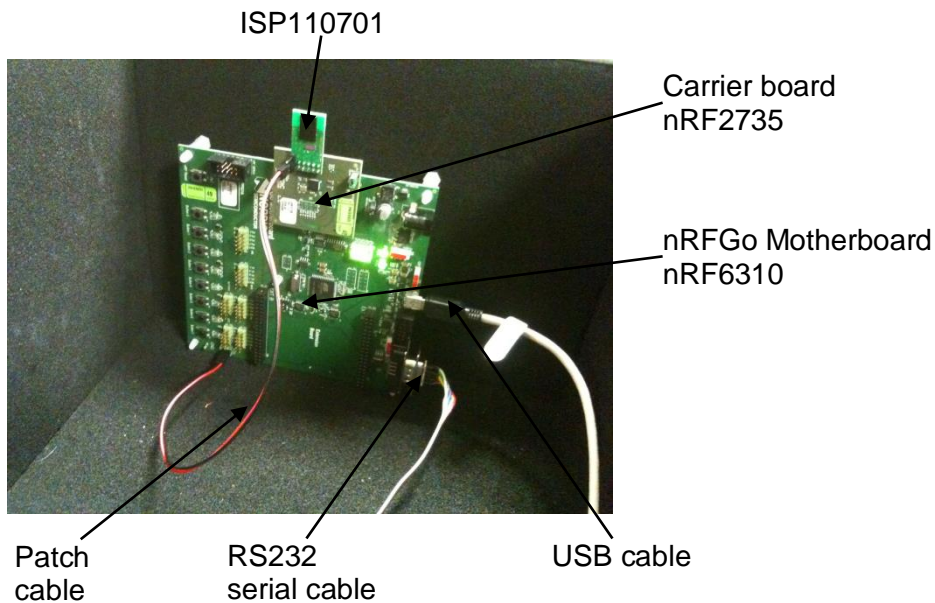
ISP110701 Electrical Schematic

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.

ISP110701 Test Board Set-Up for Testing with Direct Test Mode

ISP110701

Carrier board
nRF2735

nRFGo Motherboard
nRF6310

Patch cable

RS232 serial cable

USB cable

BLE Master Emulator Set-Up

nRF2739 BLE
Master Emulator

USB cable