nRF401 Evaluation Kit  nRF401-EVKIT

1. Introduction
The Evaluation Kit for the nRF401 Single chip 433MHz RF transceiver has been developed to enable customers to get hands-on experience with the functionality of the device in their applications.

The nRF401 Evaluation Kit is convenient for use in the prototyping phase when developing, testing and debugging PC software, microcontroller code and/or electronic circuitry for interfacing towards nRF401 and a wireless communication link.

This document specifies the usage of nRF401 Evaluation Boards as complete radio modules in customer’s development of short-range wireless communication systems.

Detailed description of the nRF401 Evaluation Board and suggestions for testbenches for evaluation of performance parameters are given in the nRF401-EVBOARD documentation.

2. Getting started
The nRF401 Evaluation Kit contains the following items:

- Two Evaluation Boards with the nRF401 transceiver
- Two 433 MHz flexible ¼ wave monopole antennas
- nRF401 datasheet
- nRF401-EVBOARD documentation
- nRF401-EVKIT documentation

Combined with the ¼ wave monopole antenna, the nRF401 Evaluation Board is a complete radio module with a digital interface for connection to the customer’s application circuitry.

Figure 1 shows a typical set-up with the nRF401 Evaluation Boards connected to the customer’s application circuitry in order to develop and debug a complete wireless communication link.
Figure 1 Set-up with the nRF401 Evaluation Boards connected to the customer’s application circuitry

The DIN, DOUT, TXEN, PWR_UP and CS signals available at header J4 on the nRF401 Evaluation Board should be connected to the customer’s application circuitry. The following precautions should be taken when connecting to the Evaluation Board:

- A twisted pair flat cable should be used to connect to header J4 on the nRF401 Evaluation Board. Each signal wire must be twisted together with a GND wire (that is DIN/GND, DOUT/GND, TXEN/GND and so on). The cable length must be kept as short as possible.

- The power supply wire and the ground wire connected to the power input connector should be twisted together.

- Ensure that the peak-to-peak voltage level of the data input signal DIN and the control signals never exceed the nRF401 device power supply level.

- If the DIN bit stream has very sharp data bit edges, this will generate harmonics that may interfere with low voltage level signals and/or power supply on the Evaluation Boards. In such instances a serial termination and/or an EMI (electromagnetic interference) filter must be inserted for suppression of radiated and conducted noise.

When using header J4, the slideswitches S2 (TXEN), S3 (PWR_UP) and S4 (CS) on the Evaluation Boards should be set to High.

Details regarding digital input/output voltage levels and timing requirements for control of the nRF401 device can be found in the nRF401 datasheet.
DEFINITIONS

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<th><strong>Product specification</strong></th>
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<td>This Evaluation Kit documentation contains final product specifications. Nordic VLSI ASA reserves the right to make changes at any time without notice in order to improve design and supply the best possible product.</td>
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<th><strong>Limiting values</strong></th>
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<td>Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Specifications sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.</td>
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Table 1. Definitions.

Nordic VLSI ASA reserves the right to make changes without further notice to the product to improve reliability, function or design. Nordic VLSI does not assume any liability arising out of the application or use of any product or circuits described herein.

**LIFE SUPPORT APPLICATIONS**

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Product specification. Revision Date : 11.05.2000.

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