Compact USB dongle for wireless peripherals

A single chip solution with the nRF24LU1+

The nRF24LU1+ is a unique single chip solution enabling ultra compact USB dongles for wireless peripherals. By integrating an USB 2.0 compliant device controller, 8 bit application microcontroller and a nRF24L01+ compatible 2.4GHz RF Transceiver it supports a wide range of application including PC peripherals, sports accessories and game peripherals.

With air data rate of up to 2 Mbps combined with full speed USB, supporting up to 12 Mbps, the nRF24LU1+ meets all the requirements of applications with stringent performance requirements such as wireless mouse, game controllers and media center remote controls with displays.

Block diagram

Highly integrated solution

Compact 5x5mm package, low cost external BOM

In addition to the main blocks the nRF24LU1+ integrates other critical functionality, saving cost and board space. Internal memory removes the need for an external EEPROM. An internal voltage regulator enables the chip to be powered directly from the USB bus; it does not require an external voltage regulator. With a fully integrated RF synthesizer and PLL for the USB no external loop filters, resonators or VCO varactor diodes is required.

Only 1 low cost ±60ppm 16MHz crystal plus passives for ESD protection, decoupling, antenna matching circuitry is required. nRF24LU1+ enables true single chip USB dongles.

SUMMARY OF BENEFITS

- Compact USB dongle for wireless peripherals
- A low cost solution is enabled by high level of integration and a minimum number of low cost external components
- Power directly from USB power removing the need for external voltage regulator
- Complete development platform for reduced development cycles and risk

Disclaimer: This product brief contains an overview of the silicon feature set and operating parameters and should not be considered as the final specification. For current and complete product specifications, please refer to the product specification, available from Nordic Semiconductor. Specifications are subject to change without notice. Trademarks are property of their respective owners.
nRFgo a complete development platform
For firmware and hardware engineers
The nRF24LU1+ is supported by a complete development platform enabling designers to easily develop hardware and firmware for the chip. The platform comprises two key elements: the nRFgo Starter Kit and the nRF24LU1+ Development Kit. Both are required to get started with nRF24LU1+ development.

The nRFgo Starter Kit provides a generic development platform for all nRF devices providing motherboards with sockets for the nRFgo development kit modules as well as the nRFgo Studio evaluation and management PC application. The nRF24LU1+ Development Kit comes in only one version, fitted with nRF24LU1P-F32Q32 (32 kbytes flash memory) devices. The kit includes nRFgo compatible nRF24LU1+ radio modules, a production ready USB dongle, complete Software Development Kit (SDK) and the nRFprobe hardware debug utility.

For more information
Please visit www.nordicsemi.com for the complete product specification and more information about this or any other ultra low power wireless products.

About Nordic Semiconductor ASA
Ultra low power RF silicon solutions
Nordic Semiconductor is fabless semiconductor company specializing in ULP short-range wireless communication. Nordic is a public company listed on the Norwegian stock exchange.

Nordic provides RF Silicon Solutions for ultra low power wireless including:
• Highly integrated RF silicon
• Sophisticated and flexible development tools
• Application specific communication software
• Complete reference designs

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