

CYPRESS

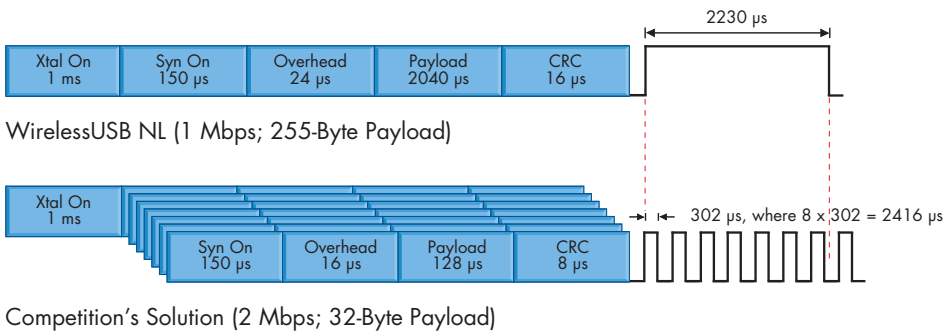
WIRELESSUSB™ NL CYRF8935



PRODUCT OVERVIEW

WIRELESSUSB™ NL - HIGH-QUALITY, LOW-POWER RF TRANSCEIVER

The CYRF8935 WirelessUSB™ NL is a third-generation offering from Cypress's WirelessUSB Radio System-on-Chip (SoC). Designed to operate in the 2.4 GHz ISM band, CYRF8935 brings the next level of low-power performance and interference immunity into a small 4 mm x 4 mm footprint. Key features include closed loop architecture to eliminate frequency drift, a power-efficient wireless protocol, and support for up to 255-byte payload. This 255-byte payload is depicted below - Cypress's WirelessUSB NL (1 Mbps) has a better throughput than the competitor's 2 Mbps solution for larger payloads.



Cypress Solution versus Competitor Solution

Closed Loop Modulation - WirelessUSB NL offers superior interference immunity and power efficiency through the use of closed loop modulation. This eliminates the need to repeatedly lock the PLL resulting in exceptional noise immunity, lower power consumption, and highest on-air throughput.

Low Current Consumption - With less than 1 μA of typical sleep current and low TX/RX current, WirelessUSB NL offers best-in-class low current consumption. This allows for longer battery life in battery-powered applications. Coin cell operated battery application is achievable without any external DC-DC regulator.

Best-in-Class Receive Sensitivity - WirelessUSB NL provides the best receive sensitivity the market has to offer. With an improved received sensitivity of -87 dBm at 1 Mbps, WirelessUSB NL offers an extremely reliable and robust link that minimizes retries during transmission and saves power.

FEATURES

LOW POWER

- Transmit power up to +1.6 dBm
- Less than 1 μA typical sleep current for $V_{IN} \geq 3.0 V$
- Quick startup and fast channel switching

ROBUST LINK

- RF transmit power of up to +1.6 dBm
- Receive sensitivity down to -87 dBm
- Operating range up to 30 m
- GFSK data rate of 1 Mbps
- Received signal strength indication

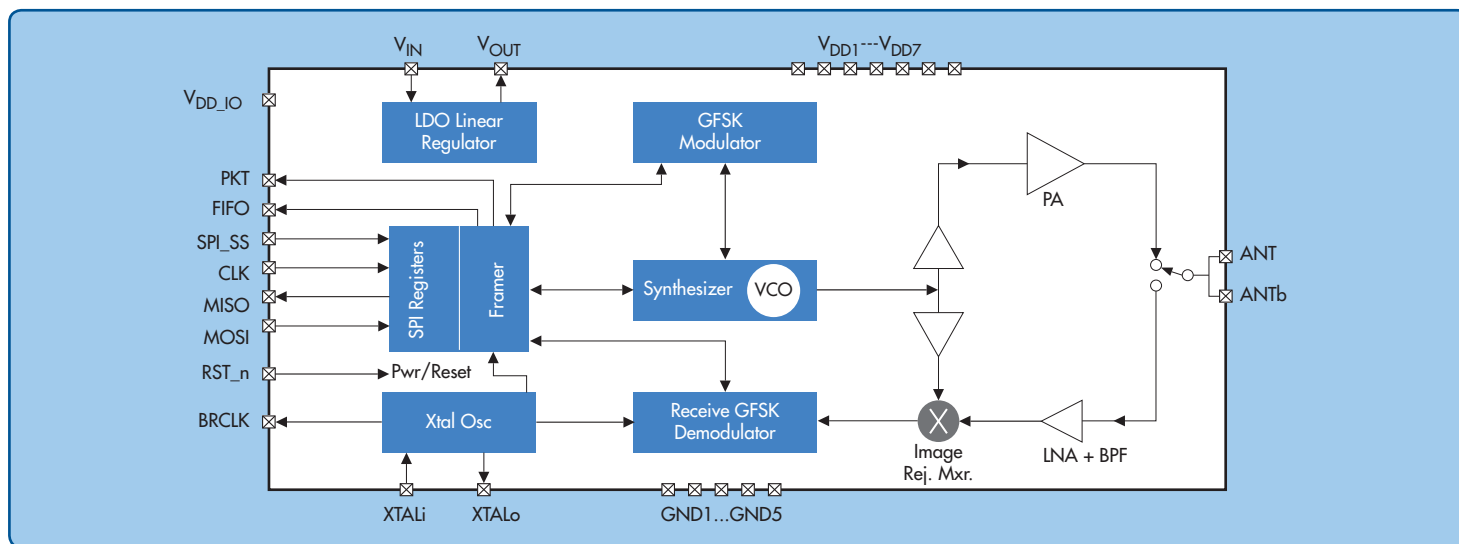
ADVANCED LOGIC FEATURES

- Closed-loop frequency synthesis
- Supports frequency hopping spread spectrum
- On-chip packet framer with 64-byte FIFO
- Built-in auto-retry-acknowledge protocol
- Built-in cyclic redundancy check (CRC), forward error correction (FEC), data whitening

PACKAGE AVAILABILITY

- Offered in 4 mm x 4 mm QFN package
- As bare dies, enabling size and cost optimization

Chip-on-Board Support - Cypress offers chip- on-board (COB) support for extremely cost-sensitive, high-volume applications such as keyboards and mice. Cypress can also link customers with third-party COB module partners that are ready to build custom design specifications using the same quality components as packaged devices.



2.4 GHz WirelessUSB NL SoC with Closed Loop Modulation

APPLICATIONS

- Wireless Keyboards and mice • Remote controls • Wireless game controllers
- Hobby craft control links • Home automation • Industrial wireless links
- Cordless audio and low-rate video



DEVELOPMENT TOOLS

Development Tool	Description
CY3668 WirelessUSB NL Development Kit	Development kit for WirelessUSB NL radio combined with enCoRe II and enCoRe V MCUs
WirelessUSB NL Driver	Driver comes along with the development kit that makes it easier for developers to access registers
Enhanced AgileHID™ Protocol	Protocol that ensures reliable data transmission

CYPRESS SYSTEM LEVEL EXPERTISE

With an extensive MCU portfolio in the enCoRe™ family and a comprehensive laser navigation SoC line-up in the Ovation family of products, Cypress is your complete HID solutions partner.

GET STARTED NOW

Go to www.cypress.com/go/wirelessusbnl for more information on CYRF8935 and all the Cypress RF products. To purchase CYRF8935 parts, visit us at www.cypress.com/buyonline.

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