

High-Performance , Low-Current Sub-GHz RF Transceiver

- RF Features and Peripherals

- Frequency Range
 - 778MHz<->1020MHz
 - 389MHz<->510MHz
 - 194.5MHz<->255MHz
 - 97.25MHz<->127.5MHz
- 4-wire SPI interface
- Separate TX and RX 128 byte FIFO
- Extendable FIFO up to 2047 byte
- Wake on RX (WOR)
- Automatic clear channel assessment for listen before talk system
- CRC filtering
- Automatic frequency control (AFC)
- Auto gain control (AGC)
- 1 dB RSSI resolution
- On-chip DC-DC bulk converter

-Multimode Wireless Protocols

- Data rate: 1.25Kbps ~2Mbps GFSK
- Data rate: 100bps ~500Kbps BPSK
- NFC ISO/IEC 14443-3 standard (Type A)

-High RF Sensitivity

- Adjacent channel selectivity
 - -50dB at 1 Channel separation
- Excellent blocking performance
 - -55 dB at 1MHz Offset
 - -60 dB at 8MHz Offset
- Best-in-class receive sensitivity
 - -122dBm at 1.25Kbps GFSK 915MHz, MI=1
 - -110dBm at 12.5Kbps GFSK 868MHz, MI=0.5
 - -102dBm at 100Kbps GFSK 868MHz, MI=0.5

- Max Output Power & Consumption

- Max output power
 - High Power PA: +23dbm (ER4110 、 ER4111)
 - Low Power PA: +10dbm (ER4100 、 ER4101)
- RF active mode
 - 13mA RX (490MHz@100Kbps)
 - High Power PA 75mA TX @ 20dBm, 160mA TX @ 23dBm
 - Low Power PA 18mA TX@ 10dBm
- RF standby mode
 - Shut Down mode: 1.1uA
 - Deep sleep mode: 1.7uA
 - Idle mode (Xtal on): 1.5mA

General Description

ER41XX is a family of high performance, high flexibility, low power RF transceiver IC for IOT applications. ER41XX covers 127/433/470/510/868/915MHz ISM bands in sub-GHz frequency spectrum. In addition to supporting Sub-GHz band for long range connectivity, the product also comes with NFC, which is compliant with ISO/IEC 14443-3 standard (Type A), to provide contactless short range connectivity to mobile device. The EliteRadio-ER41XX transceiver realizes long range wireless data communication with high data rate up to 2Mbps. Its proprietary on-chip power amplifier optimizes power consumption for applications that require either high output power up to +23dBm or low output power at 10dBm without external PA. ER41XX has excellent Rx performance in sensitivity (-102dbm sensitivity @ 100Kbps/ 915Mhz/ FSK) and is designed to provide multiple working power management modes with low RF receive current (Rx: 16mA@915MHz) as well as wake on RX (WOR) without MCU involvement to extend lifespan of battery operated devices such as electronic shelf labels, smart meters and disposable wireless sensors.

-Operating Condition

- Power supply voltage 1.8V to 3.6V
- Operating temperature range -40°C to 85°C

- Developer Friendly RF functions

- RSSI measurement
- Battery detector
- LBT(Listen Before Talk)
- Sleep timer
- Configurable FIFO packet format

-SDK

- Proprietary protocol
- NFC TAG mode and simple data link
- Application development

-Development Tool Kit

- EliteRadio Evaluation Bundle
 - EliteRadio PC UI
 - EliteRadio Evaluation Board
 - Test Fixture

-Applications

- Automated meter reader (AMR)
- Electronic shelf labels (ESL)
- Environmental monitoring devices
- Logistic tracking
- Industrial control
- Wireless sensor networks
- Building automation

-Package

- QFN24(4x4)

Product Selections

IC Product	PA Type	Max Output Power	NFC Support
ER4100	Low Power	+10dbm	No
ER4101	Low Power	+10dbm	Yes
ER4110	High Power	+23dbm	No
ER4111	High Power	+23dbm	Yes