BlueNRG-MS
Bluetooth® smart network processor

Among a plethora of Bluetooth® 4.1 compliant devices, the BlueNRG-MS IC, exhibiting an unparalleled low current consumption, is the ideal solution for all applications (Bluetooth® smart devices) that need to operate for months or even years while being powered from a small coin cell battery. The BlueNRG-MS IC runs the complete Bluetooth® low energy stack on an embedded Cortex®-M0 core and it is also connected through a proprietary SPI-based interface to a host MCU running the application. Supporting both master and slave roles, the BlueNRG-MS can operate as central (managing up to 8 peripherals) or peripheral device without any change in the firmware. The Bluetooth® profiles are provided separately and meant to run in the host MCU.

KEY FEATURES

- Bluetooth® 4.1 compliant master and slave roles simultaneously
- Embedded Bluetooth® Low Energy protocol stack: GAP, GATT, SM, L2CAP, LL and RF-PHY
- On-chip non-volatile upgradable memory
- 7.3 mA RX current consumption
- 8.2 mA TX current consumption at 0 dBm
- 96 dB of RF link budget
- Up to +8 dBm available output power (at antenna connector)
- 16- or 32-MHz low-cost crystal oscillator
- 32-kHz crystal oscillator or integrated low frequency ring oscillator
- Battery monitoring and temperature sensor
- Operating supply voltage from 1.7 V up to 3.6 V
- Available in QFN32 5 x 5 mm and WCSP34 2.66 x 2.56 mm packages

KEY BENEFITS

- Significantly extends battery life
- Long communication range in real environment
- Excellent co-existence performance in crowded 2.4 GHz bandwidth
- Single firmware for supporting master and slave roles
- Easy firmware upgrades in the field to maintain compliance with future releases of the Bluetooth® specification

www.st.com/bluetoothlowenergy
BLOCK DIAGRAM

Power management
Bluetooth Low energy processor and memories
AES co-processor
RF transceiver

16/32 MHz crystal osc.
16 MHz RC osc.
32 KHz crystal osc.
32 KHz RC osc.

Clock management

JTAG
UART
GPIO

Test mode

Temperature sensor
Battery monitor
Application controller interface

AVAILABLE TOOLS AND TECHNICAL DOCUMENTATION

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