

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 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 BENEFITS

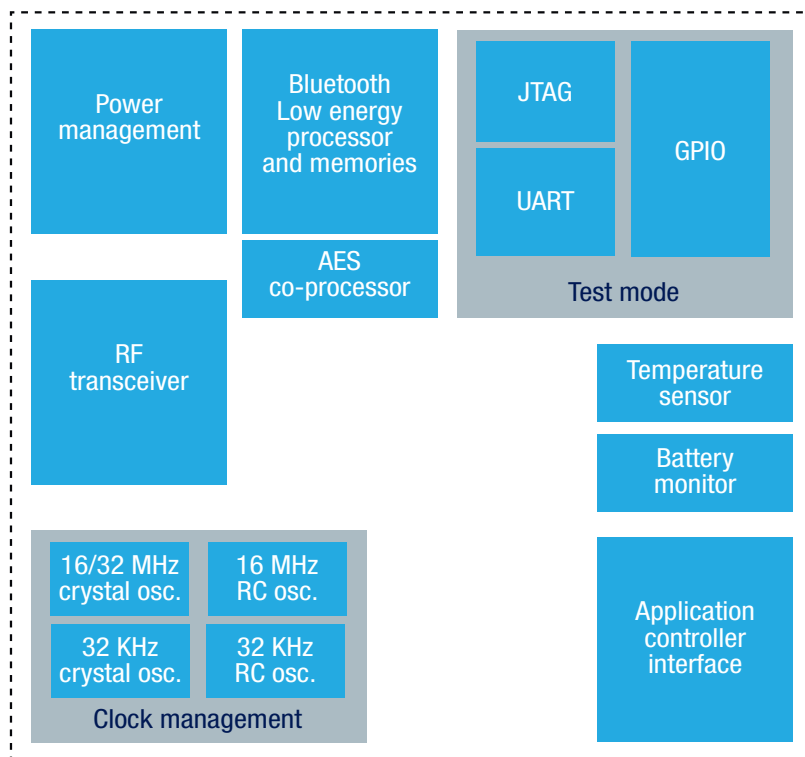
- Significantly extends battery life
- Long communication range in real environment
- Excellent co-existence performance in crowded 2.4 GHz bandwidth
- Single firmware for supporting master and slave roles
- Easy firmware upgrades in the field to maintain compliance with future releases of the Bluetooth®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



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 WSP34 2.66 x 2.56 mm packages

BLOCK DIAGRAM



AVAILABLE TOOLS AND TECHNICAL DOCUMENTATION

Evaluation kit	STEVAL-IDB005V1	BlueNRG-MS Full Kit
	STEVAL-IDB005V1D	BlueNRG-MS Daughter board
	STEVAL-IDB006V1	BlueNRG-MS USB Dongle
HW resources	Schematic pack	Evaluation kit: schematics
	BOM	Evaluation kit: bill of material
	Gerber pack	Evaluation kit: board manufacturing specification
SW resources	GUI	Graphical user interface for driving by PC evaluation kit
	Sensor Demo	Demonstration software for establishing communication between BlueNRG-MS and smartphone
	OTA BOOTLOADER	Software for enabling the over-the-air firmware updates
	Beacon Demo	Demonstration software showing BlueNRG-MS beacon functionality
Documentation	AN4378	Using the BlueNRG/BlueNRG-MS transceiver under FCC title 47 part 15 in the 2400 – 2483.5 MHz band
	AN4387	Using the BlueNRG/BlueNRG-MS transceiver under ETSI EN 300 328 in 2400 – 2483.5 MHz band
	AN4392	Using the BlueNRG/BlueNRG-MS transceiver under ARIB STD-T66 in the 2400 – 2483.5 MHz band
	AN4486	BlueNRG/BlueNRG-MS over-the-air bootloader
	UM1870	BlueNRG-MS development kit
	UM1868	BlueNRG/BlueNRG-MS IFR user manual
	UM1865	BlueNRG-MS ACI user manual
	AN4494	Bringing up BlueNRG/BlueNRG-MS devices application note
PM0237	BlueNRG/ BlueNRG-MS stack programming guidelines	

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