BLUENRG-2 AND BLUENRG-2N

life.augmented

IoT-ready Bluetooth® Low Energy processors



BlueNRG-2 and BlueNRG-2N boost RF performance and ensure reliable connectivity in Smart Things

Compliant with Bluetooth LE 5.0 specifications, ST's BlueNRG-2 and BlueNRG-2N Bluetooth LE application and network processors ensure interoperability with the latest generation of smartphones and offer ultra-low current consumption with robust RF performance, increasing the battery lifetime of applications.

ST's Bluetooth LE stack adds state-of-the-art communication, security and privacy along with an Data Packet Length Extension for a faster data transfer.

KEY FEATURES & BENEFITS

- Bluetooth LE 5.0 certification to ensure interoperability with the latest generation of smartphones and tablets
- State-of-the-art security and privacy features to protect against eaves dropping attacks during pairing stage
- Faster data transfer rate with data packet length extension to boost Over-The-Air firmware update in the field
- Extended battery life thanks to very high efficiency combined with ultra-low latency technology
- Excellent RF link budget (up to 96 dB)
- Accurate RSSI for power control
- Up to 8 dBm maximum output power
- Operating temperature up to 105 °C

KEY APPLICATIONS

- Smart watches, fitness, wellness and sport wearables
- Consumer medical
- Security/proximity
- Remote control
- Home and industrial automation
- Assisted living
- Mobile phone peripherals
- Lighting
- PC peripherals

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BLUENRG-2 AND BLUENRG-2N PROCESSORS

The BlueNRG-2 and BlueNRG-2N processors offer excellent RF performance, robustness and connection reliability. The integrated high-efficiency DC/DC converter enables ultra-low power figures with an enhanced sleep mode, extending battery lifetime. The BlueNRG-2 and BlueNRG-2N come with a full-featured eco-system of tools, evaluation boards and software development kits (SDKs). Suitable for 9-axis Sensor Fusion (MotionFX library), ADPCM audio compression (BlueVoice library), and Bluetooth SIG Mesh-ready. The Navigator PC GUI allows users to quickly run examples and start developing new projects out-of-the-box. BlueNRG-2 and BlueNRG-2N are part of ST's 10-year longevity program.

Bon deripsen vider	BlueNRG-2	BlueNRG-2N
Device	Bluetooth LE 5.0 single-mode SoC	Bluetooth LE 5.0 single-mode network processor
Core	32-bit Cortex-M0 up to 32MHz	MCU Companion
Memory	256 Kbytes upgradable Flash (both Bluetooth LE stack and application code)	24 Kbytes ultra-low-leakage RAM with full-data retention Pre-loaded and upgradable Bluetooth LE stack
Peripherals	SPI, UART, I²C, PDM stream processor, ADC, RTC, Timers, Watchdog and DMA controller	Selectable SPI or UART interface (via 1 GPIO)
Package	QFN48, 26 GPIOs, 6 x 6 mm QFN32, 15 GPIOs, 5 x 5 mm WLCSP34, 14GPIOs, 2.56 x 2.66 mm	QFN32, 5 x 5 mm WLCSP34, 2.56 x 2.66 mm

AVAILABLE TOOLS AND TECHNICAL DOCUMENTATION

Evaluation kits	BlueNRG-2	STEVAL-IDB008V2	BlueNRG-232 evaluation kit
		STEVAL-IDB009V1	BlueNRG-248 evaluation kit
		STEVAL-BCN002V1B	BlueNRG-Tile Bundle Kit: multi-sensor board based on BlueNRG-232
	BlueNRG-2N	X-NUCLEO-BNRG2A1	Bluetooth LE expansion board for STM32 Nucleo based on BLUENRG M2SP module
SW tools	BlueNRG-2	STSW-BNRGUI	GUI - Graphical user interface for driving by PC evaluation kit
		STSW-BLUENRG1-DK	Navigato -PC application providing interface to demonstration and peripheral driver example
		STSW-BNRG001	Power Estimator - PC application for current consumption estimation
		STSW-BNRG-MESH	Bluetooth SIG Mesh - Comprehensive software solution for connecting multiple BlueNRG-2 in Mesh networks
		STSW-BLEPROFILES	Bluetooth Profiles - BlueNRG-2 BLE Profiles package
		STSW-BNRG1STLINK	ST-LINK Utility - ST-LINK utility for BlueNRG-2 MCU
		STSW-BNRGFLASHER	Flasher - PC application allowing BlueNRG-2 programming
	BlueNRG-2N	X-CUBE-BLE2	Bluetooth LE software expansion for STM32Cube
		X-CUBE-BLEMESH1	Bluetooth Mesh software expansion for STM32Cube
User Manuals (*)	BlueNRG-2	UM2058	BlueNRG GUI SW package
		UM2109	BlueNRG-1 ST-LINK Utility software description
		UM2379	The BlueNRG-1, BlueNRG-2 radio driver
		UM2406	The BlueNRG-1, BlueNRG-2 Flasher software package
	BlueNRG-2N	UM2667	Getting started with the X-NUCLEO-BNRG2A1 BLE expansion board

(*) Browse BlueNRG-2 and BlueNRG-2N online to access the full list of documents (Application Notes, Programming Manuals)

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