

Ultra-low-power Bluetooth® 5 SIP

QN9080-001-M17: Fully certified module supporting Bluetooth and NFC

The QN9080SIP, an ultra-small module based on the QN9080 Bluetooth MCU and NT3H2211 NTAG®, delivers industry-leading low power consumption along with a rich feature set and FCC/CE/IC/MIC certification making it an ideal solution for wearables and battery powered applications.

TARGET APPLICATIONS

- Wearables and consumer accessories
- Health and medical devices
- Sports and fitness trackers
- Building and home automation
- Retail and advertising beacons

OVERVIEW

Supporting Bluetooth 5, the QN9080SIP module is designed to power the next generation of ultra-small, portable connected wireless devices, providing easy pairing with NFC NTAG.

Designed to be a well-suited enabler for NFC in home-automation and consumer applications, this feature-packed, second-generation connected NFC tag is the fastest, least expensive way to add tap-and-go connectivity to just about any electronic device.

The QN9080SIP integrates NTAG for out-of-band pairing. By tapping an IoT device based on the QN9080SIP with an NFC reader embedded device, a Bluetooth Low Energy connection can be established quickly simplifying the pairing process.

The module is based on the QN9080 Bluetooth MCU powered by an Arm Cortex-M4F, and integrates a dedicated fusion sensor co-processor (FSP) to further reduce power consumption by offloading complex math computations from the CPU. The 512 KB onboard flash and 128 KB SRAM provide enough room and flexibility for complex applications and the connectivity stacks.

The module also integrates NFC NTAG, 32 MHz & 32 kHz Crystals, RF matching and 2.4 GHz antenna, and a DC-DC converter circuit and is certified to FCC, CE, IC, and MIC regulations offering a complete and ready-to-use solution solution for applications requiring Bluetooth Low Energy wireless connectivity and simple pairing with NFC NTAG. This level of integration reduces overall system size, complexity and shortens the development time. Fully qualified and certified module eliminates the time for design, development and certification processes

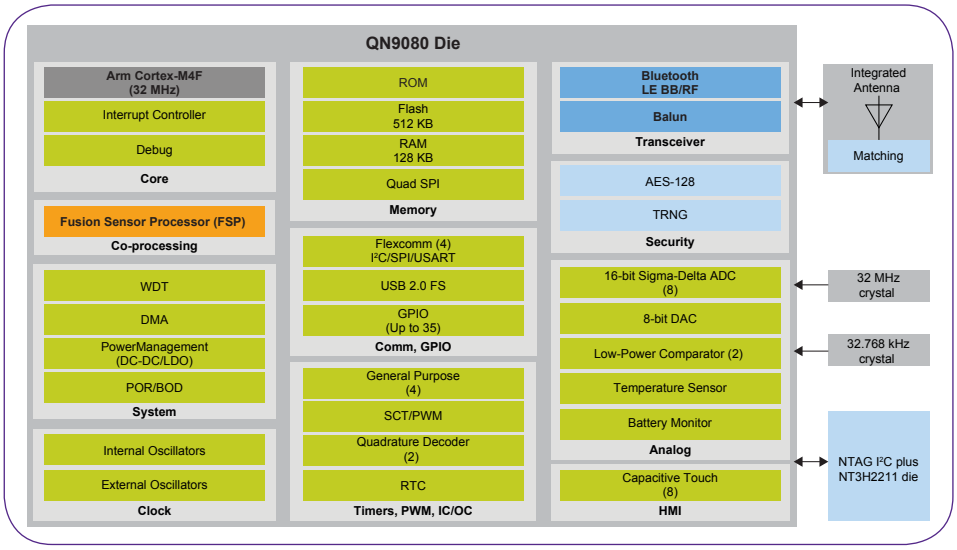
ENABLEMENT

NXP offers a Development Kit containing one development board and one USB dongle to speed time to market and reduce development costs.

The QN9080SIP reuses the software development platform of the QN9080 Bluetooth Low Energy MCU and includes a rich suite of example applications and software in a complete software development kit (SDK) compatible with the latest toolchains from Arm-Keil, IAR, and NXP's MCUXpresso. MCUXpresso provides a seamless software portfolio among all NXP devices as well as a fast path to add Bluetooth Low Energy capability to existing code based on another NXP device. The software is fully compitable with QN9080.

A reference example for Bluetooth Low Energy pairing using NFC is also offered on NXP website.

QN9080SIP BLOCK DIAGRAM



QN9080SIP BLUETOOTH SMART WIRELESS MODULE FEATURES AND BENEFITS

Features	Benefits
4 mA TX / 4.4 mA RX peak current, DC-DC enabled	Extends battery life and allows for smaller form-factors
-92.7 dB RX sensitivity -20 dBm to +2 dBm TX output power	High sensitivity allows for a more robust link budget
32 MHz Arm Cortex® –M4F core 512 KB flash memory 128 KB SRAM	High-performance Arm core with ample room for user applications
32 MHz Fusion Sensor Processor (FSP)	Co-processor allows for hardware acceleration of complex sensor fusion algorithms
Compatible with Keil, IAR and MCUXpresso SDKs	Example projects support industry standard Keil and IAR toolchains. MCUXpresso support allows for easy code migration based on other NXP devices.
LE 2M PHY with Bluetooth 5 qualified Supports up to 16 simultaneous links	Doubles data throughput for more use cases, lowers average power consumption, and allows for the creation of large, complex BLE sensor networks
6 x9.7x1.11 mm SIP packaging	Small packages with low component count reduces overall system size and cost
Integrates NFC Forum Type 2 Tag - NT3H2211	Simplifies Bluetooth Low Energy device paring, improves the user experience
Certified to FCC, CE, IC, MIC regulations	Fully qualified and certified module eliminates the time for design, development and certification processes

PART NUMBERS

Part Number	2.4 GHz RF Capability	Flash / RAM (KB)	Package (mm)
QN9080-001-M17	Bluetooth 5, 2.4 GHz proprietary	512 / 128	6 x 9.71 x 1.1 LGA

Part Number	Description
QN9080SIP-DK	Development Kit

www.nxp.com/QN9080SIP

NXP, the NXP logo and NTAG are trademarks of NXP B.V. All other product or service names are the property of their respective owners.
© 2020 NXP B.V.

Document Number: QN9080SIPFS REV 1