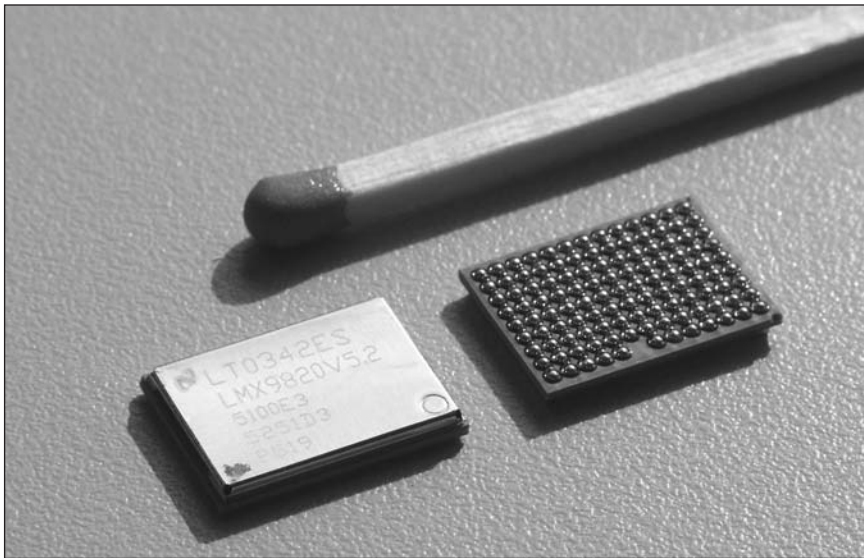


# LMX9820 Simply Blue Bluetooth Serial Port Module

from National Semiconductor



## Features

### Digital Hardware

- CompactRISC core with integrated Flash memory and RAM
- UART command/data port with up to 921.6 kbaud rate
- Auxiliary host interface ports for link status, transceiver status, configuration inputs and in-system programming

### Firmware

- Complete Bluetooth stack including baseband and link manager, L2CAP, RFCOMM, SDP and GAP, SDAP, SPP profiles
- Additional profile support on host for DUN, FAX, FTP OPP and SYNC
- On-chip application including command interface for:
  - Link setup and configuration (also multipoint)
  - Configuration of the module
  - In-system programming
  - Service database modifications
  - Default connections
- UART transparent mode
- Different operating modes

The LMX9820 Bluetooth serial port module is a highly integrated radio and baseband controller and memory device implemented on a LTCC (low temperature co-fired ceramic) substrate in a BGA-116 package. All hardware and firmware is included to provide a complete solution – from the antenna, through the complete lower and upper layers of the Bluetooth stack, to the application, including the Generic Access Profile (GAP), the Service Discovery Application Profile (SDAP), and the Serial Port Profile (SPP). The LMX9820 is pre-qualified as a Bluetooth integrated component. Conformance testing through the Bluetooth qualification program means

a short time to market after system integration by ensuring a high probability of compliance and interoperability. Based on National's CompactRISC™ 16-bit processor architecture and Digital Smart Radio technology, the LMX9820 is optimized to handle the data and link management processing requirements of a Bluetooth node. The firmware supplied within this device offers a complete Bluetooth (v1.1) stack including profiles and command interface. This firmware features point-to-point and point-to-multipoint link management supporting data rates up to 723 kbps. The internal memory supports up to three active Bluetooth links.

### Digital Smart Radio

- External clock or crystal input: 12 MHz, 20 ppm cumulative clock error required
- Synthesizer with integrated VCO and loop filter, for radio and baseband functions
- 50  $\Omega$  antenna port with embedded front-end filter
- Integrated transmit/receive switch (full duplex operation via antenna port)
- Better than -77 dBm input sensitivity
- 0 dBm typical output power (Class 2 device, 10...15 m distance)

### General

- Supply voltage: 2.85...3.6 V
- Supply current: 60 mA (typ.) in continuous transmission mode
- Many power-down modes
- Package: 14.0 x 10.1 x 1.9 mm BGA-116, including metal shield

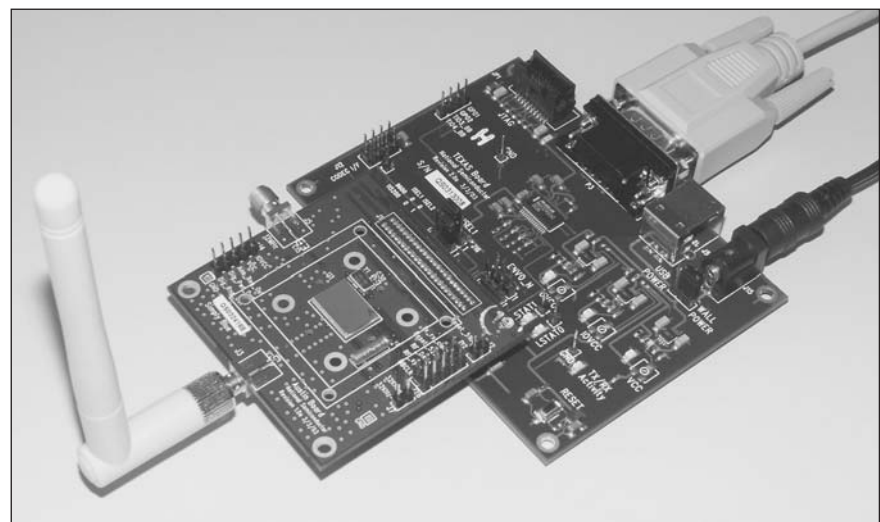
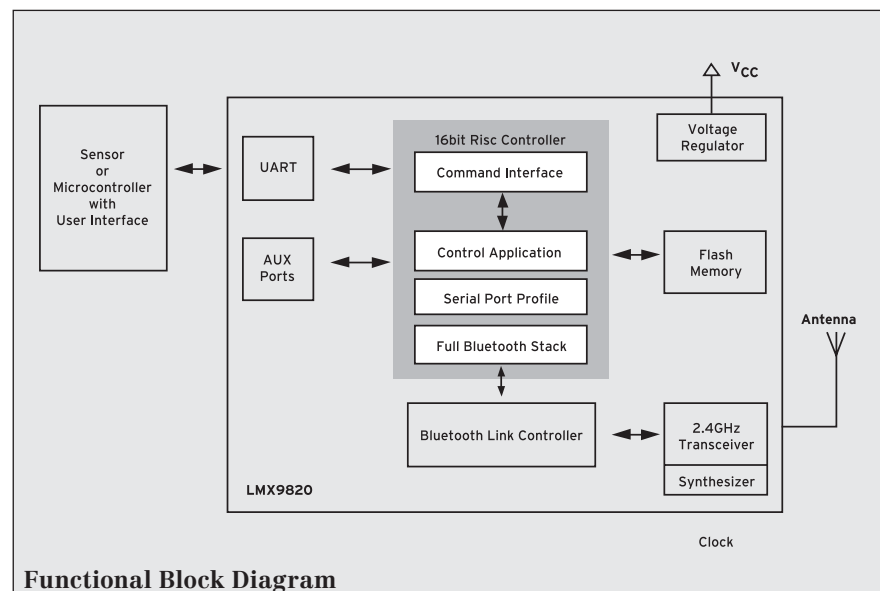
### Typical Applications

- Service tools for industrial control
- Potential-free data transmission for medical devices
- POS terminals
- Data logging systems
- Any serial data transmission

### Tools

For evaluation and development, the Simply Blue BT-TXA-KT1-0-01 evaluation kit includes a hardware platform, detailed

documentation and the “Simply Blue Commander” configuration software for setting up all important module parameters (module name, PIN code, UART speed, operating mode, etc.).



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