

LMX9814 Bluetooth™ WPAN Module

National Semiconductor. Powering the Wireless World

The LMX9814 Bluetooth Wireless Personal Area Network (WPAN) Module is a highly integrated radio and baseband system that represents today's leading-edge Bluetooth wireless technologies. Due to its exceptionally small size (10.1 x 14.0 x 1.9 mm), low power consumption and ability to function from a wide range of externally available system clocks, the WPAN Module is ideally suited for rapid development in portable products. With metal can shielding and radio front-end filtering the LMX9814 also offers effective immunity to close proximity radio noise (commonly experienced in mobile phones and today's portable devices).

National Semiconductor's LMX9814 supports full Bluetooth V1.1 functionality, including full data-rate asynchronous and communication over up to 7 active links and synchronous support for audio. It comes with embedded firmware to either support USB and UART Host Control Interface Transport mediums or a fully embedded Bluetooth Wireless Stack (including RFCOMM, L2CAP and SDP) with documented API and a suite of development tools to enable application embedding.

While offering exceptionally small size, the LMX9814 also includes non-volatile memory, to support all Bluetooth wireless parameter storage needs, as well as supporting customer application embedding and firmware upgrades in the field.

To compliment the LMX9814, National Semiconductor is enabling a 'Stack Partners Program' to ensure the availability of a wide range of quality Bluetooth Wireless Host Stacks, offering proven compatibility with the LMX9814 right from the start.



LMX9814 WPAN Module

Bluetooth

National Semiconductor Bluetooth Wireless Solutions

Everyone wants to be connected. At home. At work. At play. And National Semiconductor is pioneering wireless solutions across the board.

From high-performance, optimized ICs to modules, from fully developed accessories to complete reference designs—National's Bluetooth technology is enabling wireless communications anytime, anywhere.

Bringing you a world of fast and secure wireless connectivity between consumer electronics, information appliances, cellular phones, PCs and peripherals—National is at the forefront of Bluetooth technology and innovation. And with the recent addition of innoCOMM and Wireless Solutions Sweden to the National family—National is making tomorrow's technology a reality today.

Technical Specifications

Suitable Markets and Applications

- Mobile phones
- Laptop PCs
- PDAs
- PCs
- Peripherals, etc

Fully Integrated Module (10.1 x 14.0 x 1.9 mm) including:

- Low-IF CMOS Radio and Baseband processor (including Flash and BD address storage, etc.)
- USB Slave port
- USART port (≤ 921.6 Kbps and hardware flow control)
- Additional HCI transports: CAN2.0b, ACCESS Bus, μ Wire/SPI (future firmware support)
- CODEC Interface (including CVSD/PCM/ μ -A-law Converter)
- Monitor/Control signals including Bluetooth Link Status, Host System Wake-Up, Module Reset, JTAG
- Advanced Power Management features
- Radio front-end filtering and switching
- Supply voltage decoupling capacitors
- Metal Can radio shielding

Functionality

- Bluetooth V1.1 pre-qualified
- Class 2/3 TX Power
- Receive sensitivity better than -77 typical dBm
- Very low power consumption
- Support for synchronous connection oriented (SCO) links for voice communications with HV1, HV2, HV3, DM1, DV1 packets

- Support for asynchronous connection-less (ACL) links for data communications with DM1, DM3, DM5, DH1, DH3, DH5 packets
- Support for asymmetric ACL links with data rates up to 721 KB/s and symmetric ACL links with data rates up to 432.6 KB/s
- Support for sniff and idle modes of operation
- Flexible formats per host and over air audio (CVSD, μ -A-law)
- Point-to-multipoint support for up to 7 active links
- Master/Slave switch
- Scatternet
- Operates from external system clocks between 10 MHz - 26 MHz
- Very low transmit jitter

Complete Software Solutions

- Stack Partner Program – offering strategic development and support for customers
 - Microsoft Win98, ME, 2000 and XP
 - Microsoft WinCE
 - Linux
 - GUI
 - Support for all Bluetooth profiles
- Turnkey full-custom solutions from National's system design partners
- Embedded Host Solutions full suite of development tools for embedded applications and OEM design

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