SN260-2SK/RAIS, STZB-SK/RAIS SNRCM-260

Low-cost REva starter kits for incorporation of ZigBee® connectivity in microcontroller applications

Data Brief

Features

- SNRCM-260 ZigBee® module
  - SIF/PTI connector for InSight Adapter
- EmberZnet™ ZigBee compliant networking stack
- Ember EZSP SPI-based serial interface for accessing EmberZNet APIs
- ST7, STM32, STR7 and STR9 libraries for EZSP and HAL[a]
- SPI bootloader application for updating the SN260 stack image through the STM32 microcontroller
- RF sample applications and C source code
- InSight USB Link and EM2USB command line interface (with SN260-2SK/RAIS only)
- REva mother board featuring:
  - Headers for connection of SNRCM-260 module
  - Standard SO-DIMM connector to plug in microcontroller daughter boards
  - Microcontroller digital and analog I/O evaluation features (LEDs, buttons, switches, external analog connector, temperature sensor, potentiometer)
  - I²C EEPROM and bus
  - VDD settings for 1.8V, 3.3V and 5V MCUs
- Embedded RLink:
  - In-circuit debugging (ICD) for microcontroller applications
  - In-circuit programming (ICP) the daughter board mounted microcontroller
  - USB interface to host PC
- 2 microcontroller daughter boards featuring:
  - STM32F103RB (ARM Cortex™-M3 core-based) MCU and mini-USB connector for user applications

  - ST7-LITE3 microcontroller
- Raisonance software toolset
  - Ride7 and RIDE integrated development environments
  - GNU C/C++ compiler for ARM

Description

The SN260-2SK/RAIS and STZB-SK/RAIS REva ZigBee starter kits are Raisonance's low-cost solutions designed to help developers add wireless connectivity to their ST7, STM32, STR7[a] and STR9[a] microcontroller-based applications using STMicroelectronics' SN260 single-chip ZigBee wireless networking device.

With the included SNRCM-260 module, EmberZnet ZigBee advanced wireless protocol stack and EZSP plug-and-play SPI interface, developers can turn their REva mother boards into wireless application nodes and explore the possibilities of networking their microcontroller applications.

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a. Contact ST sales office for STR7 and STR9 daughter boards not included in package.

For further information contact your local STMicroelectronics sales office.

www.st.com

1 Device overview

The REva ZigBee starter kit adds ZigBee wireless connectivity to a proven platform for ST7, STM32, STR7 and STR9 microcontroller application development. For RF connectivity, each kit includes a preprogrammed SNRCM-260 module and the EmberZnet wireless protocol stack, which interfaces with the developer's microcontroller application via Ember's EZSP serial interface.

Note: *Starter kit only contains software for STR7 and STR9 devices. STR7 and STR9 daughter boards must be purchased separately. Please contact ST sales office for more information*

Even though preprogrammed with the necessary firmware, the SNRCM-260 modules can be also updated using the SPI bootloader application through the STM32 microcontroller. (The SN260 must be loaded with a stack version supporting the bootloader: EmberZNet 3.0.1 or more recent.)

The SNRCM-260 modules also include an SIF/PTI connector that allows reprogramming using the Ember InSight USB Link and EM2USB command line interface (included in the SN260-2SK/RAIS) or an Ember InSight Adapter (not included)

For developing, refining and debugging the STM32 or ST7 microcontroller application, developers benefit from the proven Raisonance REva evaluation platform and toolset, which includes:

● Embedded RLink for in-circuit debugging and programming of STM32 and ST7 applications with USB connection to the host PC.

● REva motherboard universal evaluation board for ST microcontroller applications. It is powered from the RLink's USB connection to the host PC.

● REva daughter boards - interchangeable boards featuring different target microcontrollers, make it easy to evaluate and develop applications for a range of MCUs from a single evaluation platform.

● Ride7 and RIDE toolsets - Raisonance's integrated development environments drive the RLink and offers seamless control of all software development tools (compiler, assembler, linker, debugger, etc.) from an intuitive graphical interface. Fully integrates control of the GNU C/C++ compiler for ARM and Cosmic C Compiler for ST7 (RIDE toolset).

Note: *For ARM application development, the starter kit contains a 32K code size limited version of Ride7 (used for ARM microcontrollers). The previous RIDE toolset is used only for the ST7 microcontroller. The starter kit also does not support Flash debugging.*

Software overview

The ZigBee REva kit library package contains the necessary software to perform the following applications used to evaluate library package functions:

1. Version application

    The Version application is a simple application that uses basic ZigBee operations to obtain the EmberZnet stack version and the Eui64 node address of the SN260 ZigBee network processor.

2. Sensor and sink application

    Sensor and sink applications can be used to implement a distributed sensors network.

3. Light and switch application

    These applications control the switching on/off of a light source.

For more information, please refer to User manual *UM0389: ZigBee REva kit library package*.

2   Ordering information

Kits are available from STMicroelectronics (see order codes below) and ST distributors, or from Raisonance and their distributors.

Table 1.   Ordering information

Order code	Description
Kits	
STZB-SK/RAIS	Starter kit with: – SNRCM-260 module – EmberZnet stack – ST EZSP and HAL libraries – REva mother board & embedded RLink – STM32F103RB daughter board – ST7FLITE3 daughter board – Raisonance Ride7 – GNU C/C++ compiler for ARM
SN260-2SK/RAIS	Starter kit with: – 2 SNRCM-260 modules – 2 REva mother boards & embedded RLink – 2 STM32F103RB daughter board – 2 ST7FLITE3 daughter board – InSight USB Link – EmberZnet stack – ST EZSP and HAL libraries – Raisonance Ride7 – GNU C/C++ compiler for ARM
Spare parts and accessories	
SNRCM-260	SN260 ZigBee module

For more information

For additional information about STMicroelectronics' SN260 devices including datasheets, user manuals, downloads and support, as well as development kit contents and ordering, please refer to www.st.com.

For details about REva starter kit characteristics, user documentation and software downloads, please refer to www.raisonance.com.

3   Revision history

Table 2.   Document revision history

Date	Revision	Changes
14-May-2007	1	Initial release.
21-June-2007	2	SNRCM-260 added in header. SN-260 ZigBee® module replaced by SNRCM-260 in entire document.
14-Jan-2008	3	Added reference to the STM32 microcontroller provided with the new SN260-2SK/RAIS and STZB-SK/RAIS ZigBee kits.

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