



# 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<sup>(a)</sup>
- 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)
  - I<sup>2</sup>C 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<sup>(a)</sup> and STR9<sup>(a)</sup> 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.

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

# 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
<b>Kits</b>	
STZB-SK/RAIS	Starter kit with: <ul style="list-style-type: none"> <li>– SNRCM-260 module</li> <li>– EmberZnet stack</li> <li>– ST EZSP and HAL libraries</li> <li>– REva mother board &amp; embedded RLink</li> <li>– STM32F103RB daughter board</li> <li>– ST7FLITE3 daughter board</li> <li>– Raisonance Ride7</li> <li>– GNU C/C++ compiler for ARM</li> </ul>
SN260-2SK/RAIS	Starter kit with: <ul style="list-style-type: none"> <li>– 2 SNRCM-260 modules</li> <li>– 2 REva mother boards &amp; embedded RLink</li> <li>– 2 STM32F103RB daughter board</li> <li>– 2 ST7FLITE3 daughter board</li> <li>– InSight USB Link</li> <li>– EmberZnet stack</li> <li>– ST EZSP and HAL libraries</li> <li>– Raisonance Ride7</li> <li>– GNU C/C++ compiler for ARM</li> </ul>
<b>Spare parts and accessories</b>	
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](http://www.st.com).

For details about REva starter kit characteristics, user documentation and software downloads, please refer to [www.raisonance.com](http://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.

**Please Read Carefully:**

Information in this document is provided solely in connection with ST products. STMicroelectronics NV and its subsidiaries ("ST") reserve the right to make changes, corrections, modifications or improvements, to this document, and the products and services described herein at any time, without notice.

All ST products are sold pursuant to ST's terms and conditions of sale.

Purchasers are solely responsible for the choice, selection and use of the ST products and services described herein, and ST assumes no liability whatsoever relating to the choice, selection or use of the ST products and services described herein.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted under this document. If any part of this document refers to any third party products or services it shall not be deemed a license grant by ST for the use of such third party products or services, or any intellectual property contained therein or considered as a warranty covering the use in any manner whatsoever of such third party products or services or any intellectual property contained therein.

**UNLESS OTHERWISE SET FORTH IN ST'S TERMS AND CONDITIONS OF SALE ST DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY WITH RESPECT TO THE USE AND/OR SALE OF ST PRODUCTS INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION), OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT.**

**UNLESS EXPRESSLY APPROVED IN WRITING BY AN AUTHORIZED ST REPRESENTATIVE, ST PRODUCTS ARE NOT RECOMMENDED, AUTHORIZED OR WARRANTED FOR USE IN MILITARY, AIR CRAFT, SPACE, LIFE SAVING, OR LIFE SUSTAINING APPLICATIONS, NOR IN PRODUCTS OR SYSTEMS WHERE FAILURE OR MALFUNCTION MAY RESULT IN PERSONAL INJURY, DEATH, OR SEVERE PROPERTY OR ENVIRONMENTAL DAMAGE. ST PRODUCTS WHICH ARE NOT SPECIFIED AS "AUTOMOTIVE GRADE" MAY ONLY BE USED IN AUTOMOTIVE APPLICATIONS AT USER'S OWN RISK.**

Resale of ST products with provisions different from the statements and/or technical features set forth in this document shall immediately void any warranty granted by ST for the ST product or service described herein and shall not create or extend in any manner whatsoever, any liability of ST.

ST and the ST logo are trademarks or registered trademarks of ST in various countries.

Information in this document supersedes and replaces all information previously supplied.

The ST logo is a registered trademark of STMicroelectronics. All other names are the property of their respective owners.

© 2008 STMicroelectronics - All rights reserved

STMicroelectronics group of companies

Australia - Belgium - Brazil - Canada - China - Czech Republic - Finland - France - Germany - Hong Kong - India - Israel - Italy - Japan - Malaysia - Malta - Morocco - Singapore - Spain - Sweden - Switzerland - United Kingdom - United States of America

[www.st.com](http://www.st.com)

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [Zigbee / 802.15.4 Development Tools](#) category:*

*Click to view products by [STMicroelectronics](#) manufacturer:*

Other Similar products are found below :

[USB-KW41Z](#) [FRDM-KW41Z](#) [STEVAL-IFS013V2](#) [STM32W108B-KEXT](#) [A2530R24A-LPZ](#) [ATRCB256RFR2-XPRO](#) [ATREB233-XPRO](#)  
[ATZB-A-233-XPRO](#) [ATZB-X-233-USB](#) [ATZB-X-233-XPRO](#) [XB24-DKS](#) [XB24-DKS-INT](#) [XB24-DKSJ](#) [XBP09-DMDK](#) [XBP24-DKS](#)  
[XKA2C-Z7T-W](#) [XKB2-A2T-WWC](#) [XKB2-AT-WWC](#) [XKB2-Z7T-WTZM](#) [XKB2-Z7T-WZM](#) [XKP9-DM-0](#) [XKP9-DM-2](#) [XKP9-DMB0](#)  
[XK-Z11-M](#) [XK-Z11-M-W](#) [XK-Z11-M-WA](#) [XK-Z11-S](#) [XK-Z11-S-W](#) [XK-Z11-S-WA](#) [410-201P-KIT](#) [ATREB231ED-EK](#) [ATZB-X-233-USB](#)  
[MIKROE-1599](#) [MIKROE-290](#) [MIKROE-987](#) [EM35X-BBRD](#) [EM35X-DEV](#) [EM35X-DEV-IAR](#) [RD-0039-0201](#) [RD-0085-0401](#) [STEVAL-](#)  
[IDZ301V1](#) [STEVAL-IDZ302V1](#) [STZB-SK/RAIS](#) [CC2430DB](#) [CC2520EMK](#) [CC2538-CC2592EMK](#)