STRX2 (ZigBee™ technology) Wireless Mesh Networking Module

The Telegesis STRX2 module is a low power, 2.4GHz ISM band transceiver, based on the ST Microelectronics SN250 single chip ZigBee/IEEE802.15.4 solution. It has been designed to be integrated into any device without the need for RF experience and expertise. Utilising EmberZNet meshing technology, the STRX2 enables you to add powerful wireless networking capability to your products and quickly bring them to market. The module's unique AT-style command line interface allows you to quickly integrate meshing radio technology without complex software engineering.

Image not shown actual size; enlarged to show detail.

Module Features

- Small form factor, SMT module 37.75 x 20mm
- Optional board-to-board or board-to-cable connector
- 3 antenna options: Integrated ceramic antenna, Hirose U.FL coaxial connector or single port 50Ω pad
- XAP16b microcontroller with non-intrusive debug interface (SIF)
- 128k flash and 5kbytes of SRAM
- UART interface with DMA, optional software support for hardware I^{2}C and SPI
- Wide supply voltage range (2.1 to 3.6V)
- Module ships with standard Telegesis AT-style software interface based on the mesh stack of EmberZNet.
- Can act as an End Device, Router or Coordinator
- 12 general-purpose I/O lines and 2 analogue inputs (all 17 GPIOs of the SN250 are accessible)
- Supports 4 different power modes for extended battery life
- Current consumption below 1uA in deep sleep mode with self wakeup
- Firmware upgrades via RS232 or over the air (password protected)
- Hardware supported encryption (AES-128)
- Tested for CE and FCC compliance (with integrated antenna), FCC modular approval
- Operating temperature range: -40°C to +85°C
- Future Options: On board, low power voltage regulator, DC/DC regulator and watch crystal

Radio Features

- Based on ST Microelectronics SN250 single chip ZigBee/IEEE802.15.4 solution
- 2.4GHz ISM Band
- 250kbit/s over the air data rate
- 16 channels (802.15.4 Channel 11 to 26)
- +3dBm output power (+5dBm in boost mode)
- High sensitivity of -98dBm typ. At 1% packet error rate
- Hardware acceleration for IEEE 802.15.4 compliant transmissions

Suggested Applications

- AMR – Automatic Meter Reading
- Wireless Alarms and Security
- Home/Building Automation
- Wireless Sensor Networks
- M2M Industrial Controls
- Future ZigBee systems
- PC Peripherals
- IEEE 802.15.4 Systems
- Item Tracking

Development Kits

- Two or three STRX2 modules are supplied, depending upon the kit selected, includes a development board with USB connectivity and I/O break-outs.
- AT-style software interface command dictionary can be modified for high volume customers.
- Custom software development available upon request.

Example AT-Style Commands

AT+BCAST	Sends a Broadcast
AT+UCAST:<address>	Sends a Unicast
AT+EN	Establish PAN network
AT+JN	Join PAN

At power-up the last configuration is loaded from non-volatile S-Registers, which can eliminate the need for an additional host controller.