



Image not shown actual size; enlarged to show detail.

The Telegesis ETRX351-LRS and ETRX357-LRS modules are low power 2.4GHz ZigBee® modules with an added front-end module (SiGe SE2432) containing both PA and LNA for highest possible link budget.

Based on the latest Ember EM351 and EM357 single chip ZigBee® solution the new long range modules are footprint compatible to the ETRX351 and ETRX357, thus representing a drop-in replacement for all applications where a high link budget is required.

The module's unique AT-style command line interface allows designers to quickly integrate ZigBee technology without complex software engineering. For custom application development the ETRX35x series integrates with ease into Ember's InSight development environment.

Module Features

- Small form factor, SMT module 25mm x 19mm
- 2 antenna options: Integrated chip antenna or U.FL coaxial connector
- Industry's first ARM® Cortex-M3 based family of ZigBee modules
- Industry standard JTAG Programming and real time network level debugging via the Ember InSightPort
- 192kB (ETRX357-LRS) and 128kB (ETRX351-LRS) flash and 12kB of RAM
- Lowest Deep Sleep Current of sub 1µA and multiple sleep modes
- Wide supply voltage range (2.1 to 3.6V)
- Module ships with standard Telegesis AT-style command interface based on the ZigBee PRO feature set
- Can act as an End Device, Router or Coordinator
- 22 general-purpose I/O lines including analogue inputs
- Firmware upgrades via RS232 or over the air (password protected)
- Hardware supported encryption (AES-128)
- CE and FCC compliance, FCC modular approval
- Approvals for Canada, S Africa, Australia & NZ
- Operating temperature range: -40°C to +85°C
- Standard version without LNA and PA available in the same form factor

Radio Features

- Based on the Ember EM351 and EM357 single chip ZigBee® solutions
- 2.4GHz ISM Band
- 16 channels (802.15.4 Channel 11 to 26)
- SiGe SE2432 integrated PA and LNA
- +20dBm output power (adjustable down to -21dBm)
- High sensitivity of -106dBm typ. @ 1% packet error rate
- RX Current: 31.5mA, TX Current: approx. 140mA at 20dBm
- Robust Wi-Fi and Bluetooth coexistence
- Over-the-air compatible with the ETRX2

Suggested Applications

- AMR – ZigBee smart energy applications
- Wireless Alarms and Security
- Home/Building Automation
- Wireless Sensor Networks
- M2M Industrial Controls
- Lighting and ventilation control
- Remote monitoring
- Environmental monitoring and control

Development Kit

- New Development kit containing everything required to set up a mesh network quickly and evaluate range and performance of the ETRX35x and its long range version.
- 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.

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