



Image not shown actual size; enlarged to show detail.

The Telegesis ETRX351-LR and ETRX357-LR modules are low power 2.4GHz ZigBee modules with an added 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 Embers InSight development environment.

## Module Features

- Small form factor, SMT module 25mm x 19mm
- 2 antenna options: Integrated chip antenna or U.FL coaxial connector
- Industries 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) and 128kB (ETRX351) flash and 12kbytes of RAM
- Lowest Deep Sleep Current of sub 1uA and multiple sleep modes
- Wide supply voltage range (2.7 to 3.5V)
- 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
- 24 general-purpose I/O lines including analogue inputs (all GPIOs of the EM35x are accessible)
- Firmware upgrades via RS232 or over the air (password protected)
- Hardware supported encryption (AES-128)
- CE and FCC compliance, FCC modular approval pending
- 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™/IEEE802.15.4 solutions
- 2.4GHz ISM Band
- 250kbit/s over the air data rate
- 16 channels (802.15.4 Channel 11 to 26)
- +18dBm output power (adjustable down to -21dBm)
- High sensitivity of -105dBm typ. @ 1% packet error rate
- RX Current: 28mA, TX Current: approx. 100mA at 18dBm

## 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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