



ETRX3 Module

The ETRX3 series is the 3rd generation of advanced ZigBee modules from Telegesis and the first module family on the market to feature the EM357 and EM351 – the latest ARM® Cortex M-3 SoC's from Ember.

As with all Telegesis modules, ETRX3 series devices are designed to be easily integrated into designs without the need for RF or embedded expertise. Using the latest version of Ember's Znet PRO meshing technology ETRX3 family modules allows designers to add ZigBee meshing wireless technology without complex software engineering.



The Telegesis ETRX351 and ETRX357 modules are low power 2.4GHz ZigBee modules, based on the latest Ember EM351 and EM357 single chip ZigBee™ / IEEE 802.15.4 solution.

They have been designed to be integrated into any device without the need for RF experience and expertise. Utilizing the EmberZNet ZigBee stack, the ETRX35x 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 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

Industries first ARM® Cortex-M3 based family of ZigBee modules

Small form factor, SMT module 25mm x 19mm

Side castellations for easy soldering

2 antenna options: integrated chip antenna or U.FL coaxial connector

JTAG programming and real time network level debugging via the Ember InSight port

Up to 192KB (ETRX357) flash and 12KB of RAM

Up to 128KB (ETRX351) flash and 12KB of RAM

Wide supply voltage range (2.1 to 3.6V)

Module ships with Telegesis AT-style command interface based on the ZigBee PRO feature set

Can act as a ZigBee end device, router or coordinator

24 general-purpose I/O lines including analogue inputs (all GPIOs of the EM35x are accessible)

Firmware upgrades via serial port or over the air (password protected)

Hardware supported encryption (AES-128)

CE, IC and FCC approved

Operating temperature range: -40°C to +85°C

Long range version with a link budget of up to 123dB available in the same form factor

Radio Features

Based on the Ember EM351 and EM357 single chip ZigBee™ / IEEE 802.15.4 solutions

2.4GHz ISM band

250kbit/s over the air data rate

16 channels (802.15.4 Channel 11 to 26)

+3dBm output power (+8dBm in boost mode)

High sensitivity of -99dBm (-101dBm in boost mode) typ.
@ 1% packet error rate

RX Current: 25mA, TX Current: 31mA at 3dBm

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

Development Kit

The ETRX357DVKA Development Kit is the ideal starting point for development and evaluation of the ETRX3 Module family. The Development Kit allows a ZigBee mesh network to be set up in a few minutes without the need for any embedded software.

The kit is supplied with eight ETRX357 ZigBee Modules mounted on carrier boards – two of each variant both standard and long range 'LR' versions and also with integrated antenna and Hirose connector for attaching external antennae. This allows all possible combinations of antenna and power output to be tested.

Modules can be controlled using the AT command line interface from a host PC. Please see our web site or product catalogue for more detailed information.

Example AT-Style Commands

AT+BCAST	Sends a broadcast
AT+UCAST:<address>	Sends a unicast
AT+EN	Establish PAN network
AT+JN	Join PAN*