



ETRX3 Modules



The ETRX3 series is the 3rd generation of advanced ZigBee modules from Telegesis and was the first module family on the market to feature the EM357 ARM Cortex M-3 SoC from Silicon Laboratories.

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 ZigBee compliant platform the ETRX3 family of modules allows designers to add ZigBee wireless mesh networking technology without complex software engineering.



Modules overview

The Telegesis ETRX3xx modules are low power 2.4GHz ZigBee modules, based on the EM357 single chip ZigBee solution.

Available both in standard and power amplified form, Telegesis modules have been designed to be integrated into any device without the need for RF experience and expertise. Utilising the Ember ZNet ZigBee stack, the ETRX3xx enables you to add powerful wireless networking capability to your products and quickly bring them to market.

The Telegesis unique AT-style command line interface allows designers to quickly integrate ZigBee technology without complex software engineering. For custom application development the ETRX3xx series integrates with ease into Ember's proven development environment.

Example AT-style commands	Suggested applications
AT+BCAST Sends a broadcast	ZigBee Smart Energy applications
AT+UCAST:<address> Sends a unicast	Wireless alarms and security
AT+EN Establish Personal Area Network	Home/building automation
AT+JN Join Personal Area Network	M2M industrial controls
	Lighting and ventilation control

Module features

Small form factor, SMT module 25mm x 19mm	Can act as a ZigBee end device, router or coordinator
JTAG programming and real time network level debugging via the Ember packet trace port	24 general-purpose I/O lines including analogue inputs (all GPIOs of the EM35x are accessible)
2 antenna options: integrated chip antenna or U.FL coaxial connector	Firmware upgrades via serial port or over the air (password protected)
Up to 192KB (ETRX3xx) flash and 12KB of RAM	Wide supply voltage range (2.1 to 3.6V)
With forthcoming ETRX358x up to 512KB flash and 64KB RAM	Operating temperature range: -40°C to +85°C
Module ships with Telegesis AT-style command interface based on the ZigBee PRO feature set	Radio approvals - CE, IC, FCC, ICASA, ANATEL, C-TICK and TELECOM (last on selected modules only)

Radio features

	STANDARD	LONG RANGE
Based on the 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)	✓	
+20dBm output power (adjustable down to -21dBm)		✓
High sensitivity of -100dBm (-102dBm in boost mode) typ. @ 1% packet error rate	✓	
High sensitivity of -106dBm typ. @ 1% packet error rate		✓
RX Current: 25mA, TX Current: 31mA at 3dBm	✓	
RX Current: 31.5mA, TX Current: approx. 140mA at 20dBm		✓

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 'LRS' 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.

