

RANGE TESTER

ZigBee™ Range Tester model ZS24-RGR-001

The ZigSense Range Tester model ZS24-RGR-001 was designed to assist System Integrators, Engineers and Electricians-Installers to reliably conduct wireless site surveys prior to installing fully functional ZigBee™ networks systems. The Range Tester kit will assist the user in optimizing communication paths and identifying the best possible installation positions for ZigBee™ based wireless nodes.

Model ZS24-RGR-001 contains a pair of wireless network nodes (Coordinator + End Point) that were matched during production. Model ZS24-RGR-001 communicates using ZigBee™ radios over 2.4GHz license free frequency band. Two models are available: ZS24-RGR-001-LP supporting

2mW TX power for short range communications and ZS24-RGR-001-HP supporting 50mW TX power for longer range communications. The end point node is a portable and light weight device powered by two AA 1.5VDC Lithium batteries. It is designed to be carried around during the site survey process. The portable node conserves battery power through built-in sleep mode. The Range Tester Kit is very simple to use and no PC software is required.

End Point

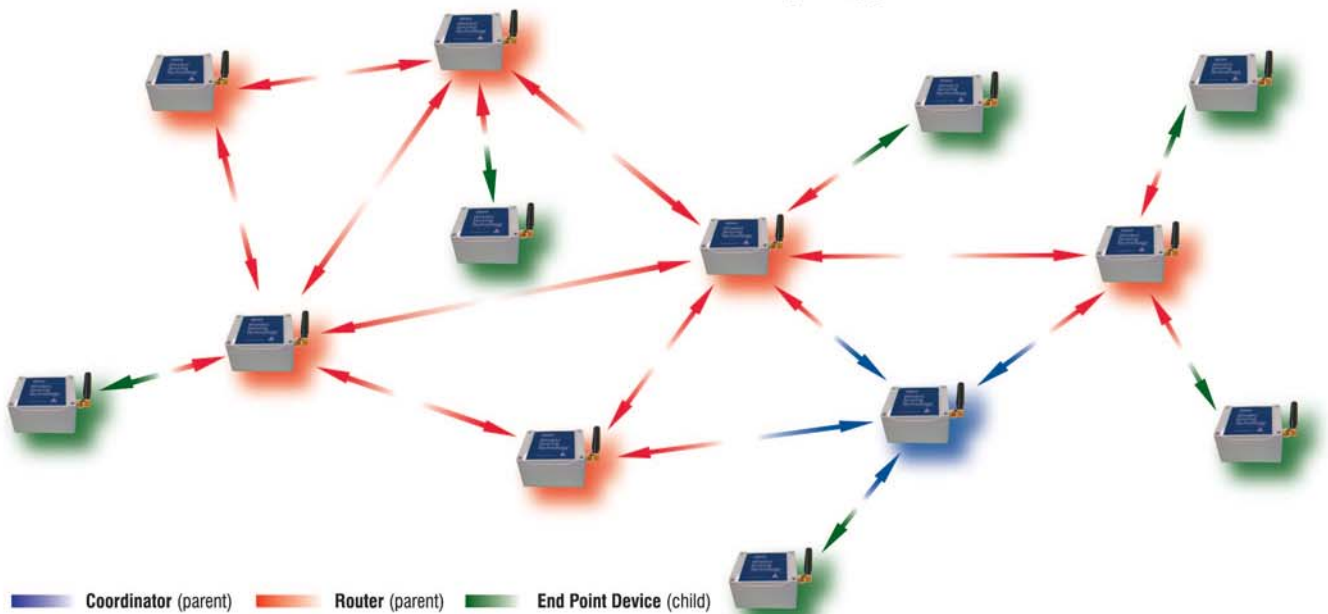


R A N G E T E S T I N G

Coordinator



Mesh network topology



Mesh Networks Topology

A mesh network enables each individual node operating in the network to communicate and transfer data to other nodes by 'hopping' from one node to the other whether through a direct link or 'around' a broken link until the data packet reaches its designated destination. In a mesh network, individual nodes can all connect to each other via multiple paths or 'hops'.

Mesh networks are designed for self healing – the network can still operate when a communication link is broken due to fault or a node breakdown. In a standard mesh network there is more than one path between a source node and a destination node and a 'Parent' 'Child' relationship exists between specific nodes.

A ZigBee mesh network is made of the following building blocks:

ZigBee Coordinator (CO)

A coordinator is considered the network 'manager' as it forms the root of the network. There is only one coordinator in a network. A coordinator supports both routers and end points directly. Being a fully functional device the coordinator must be powered continuously.

ZigBee Router (RO)

Routers pass data in between nodes e.g. End Point to Coordinator or End Point to End Point (via the router). A router is able to run its own application. Multiple Routers can exist in the same network. A router can support multiple end points. Being a fully functional device it must be powered continuously.

ZigBee End Point (EP)

An End Point 'Child' can only talk to a Coordinator or a Router i.e. its 'Parents' An End Point is not allowed to relay data to or from other End Points. End Point is a reduced functionality device. It is a low power device that is allowed to go to "sleep" thereby conserving battery power.

Range Tester Specifications

RF Network topology	ZigBee mesh	
Radio Frequency	2.4GHz	
Radio technology	DSSS, ISM	
RF Data Rate	250Kbps	
TX Power LO	+3dBm MAX	ZS24-RGR-001-LP
TX Power Hi	+17dBm MAX	ZS24-RGR-001-HP
Signal level indicator	-42dBm to -91dBm	
Sleep mode	End Point only	Current < 20µA
Supply Coordinator	+6VDC external PS 2 x AA 1.5VDC Lithium batteries 2.9 A/h each	TX current 20mA AVG
Supply End Point	2 x AA 1.5VDC Lithium batteries 2.9 A/h each	No sleep mode TX current 20mA AVG Sleep current < 20µA
Dimensions (mm)	105(L) X 75(W) X 25(D)	
Weight (Grams)	50	With batteries
FCC ID	Low power: OUR-XBEE2	Hi power: MCQ-XBEEPRO2
Europe	ETSI	ETSI
Australia	C-Tick	C-Tick



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