What is Zigbee?

For some who noted the use of ZigBee in our SmartRoom Network, you might have the titled question that needs answering. ZigBee is a specification for a suite of high level communication protocols using small, low-power digital radios based on the IEEE 802.15.4-2003 standard for wireless personal area networks (WPANs), such as wireless headphones connecting with cell phones via short-range radio. The technology defined by the ZigBee specification is intended to be simpler and less expensive than other WPANs, such as Bluetooth.

ZigBee is targeted at radio-frequency (RF) applications that require a low data rate, long battery life, and secure networking. This adapts well to IntraLAN technology that includes ZigBee radio and is in our Remote Power Management capability that offers ZigBee as the control point (access method) for gaining control of the device.

The ZigBee Alliance is a group of companies that maintain and publish the ZigBee standard.

Zigbee has rapidly gained market share since the release of its specification in June of 2005. With the an open global standard and a path to certification ensuring interoperability Zigbee will soon dominate the market for devices requiring monitoring and control.

The unique advantages of Zigbee include:

o **Cost-effective:** Zigbee provides a cost breakthrough that means wireless technology can be more widely deployed in wireless control and monitoring applications

o **Low power:** Zigbee power requirements are so low that devices can have extremely long battery life and use smaller "coin cell" type batteries.

o **Low latency:** A Zigbee node can wake up, check in, send data, and shut down in less than 30 ms

o **Multi-vendor support:** ZigBee is an open standard that is supported by a large number of vendors.

ZigBee is the best option if your application requires small size, low cost, low latency, low power, and interoperability.

There are three different types of ZigBee devices:

ZigBee coordinator (ZC): The most capable device, the coordinator forms the root of the network tree and might bridge to other networks. There is exactly one ZigBee coordinator in each network since it is the device that started the network originally. It is able to store information about the network, including acting as the Trust Centre & repository for security keys.

ZigBee Router (ZR): As well as running an application function, a router can act as an intermediate router, passing on data from other devices.

ZigBee End Device (ZED): Contains just enough functionality to talk to the parent node (either the coordinator or a router); it cannot relay data from other devices. This relationship allows the node to be asleep a significant amount of the time thereby giving long battery life. A ZED requires the least amount of memory, and therefore can be less expensive to manufacture than a ZR or ZC.