

## **Enhanced protocol for home and building automation: KNX-RF Multi**

The only European Norm for Home and Building Automation, the EN 50090 series of KNX protocol specifications, is now enhanced with a new wireless protocol.

The main benefit of KNX-RF Multi is the enhanced reliability. This is achieved by using acknowledge/retransmissions and increasing the range by use of repeaters. All-in-all the new KNX-RF Multi is a huge improvement in establishing wireless technology as the preferred solution for Home- and Building Automation.

The development of energy metering and monitoring systems, using the related Wireless M-Bus technology, provides the necessary energy consumption data for intelligent energy control systems. By adding room sensors for temperature, humidity, CO<sub>2</sub> and light, a complete Energy management system can be made. Actuators controlling heating, lighting and ventilation complete the system. KNX-RF Multi is the perfect technology for such systems, ensuring high reliability in the sensor and actuator communication.

The main features of the KNX-RF Multi protocol is the use of LBT (Listen Before Talk), and a multi-channel scheme using up to 5 radio frequencies. The protocol support fast acknowledgement messages from up to 64 receivers and automatic retransmission if some receivers do not receive the signal at the first attempt. The automatic retransmission is done in a few milliseconds. Further, up to two-hop repetition can be used.

The advantages are that LBT avoids radio packet collisions, and that fast acknowledgement and automatic retransmission ensure the signal will reach the receiver even if it is lost in the first attempts. The multi-channel scheme means that the radio system will work even when some radio channels are completely blocked by other transmitters. Repeaters, with up to two-hop repetitions, help to reach nodes in larger distances, and to reach difficult “dead-spots” in buildings.

The KNX-RF Multi support battery operated nodes which further ease the installation of such a wireless system.

All in all KNX-RF Multi provide a very high reliability wireless system. Combined with the benefits of easy installation of a wireless device compared to wired, KNX-RF Multi should be the first choice for new Energy Management systems.

Radiocrafts is the first to launch a compact radio module with the complete KNX\_RF Multi protocol stack embedded.