

## **RC2200AT-SPPIO PRODUCT BRIEF**

### **Zigbee™-ready RF Module with Serial Port Profile and I/O Mapping**

Radiocrafts AS, a leading provider of compact RF modules, now expand their product line with a compact Zigbee™-ready module with embedded Serial Port Profile and I/O mapping (SPPIO™) software.

The RC2200AT-SPPIO is a complete off-the-shelf Zigbee-ready module with a fully embedded application profile and mesh networking protocol stack supporting Full Function Device (FFD) and Reduced Function Device (RFD) operation. The tiny module is only 16.5 x 35.6 x 3.5 mm including the integrated antenna. The module acts like a serial port modem, and in addition it offers up to 16 digital and analogue I/Os that can be mapped to any other module within the mesh network. All configuration of the module is done through an easy-to-use AT-command interface using the serial port.

In a practical network one module is configured as the PAN Coordinator, whereas the others are Routers or End Devices. The Routers will take part in the mesh network routing, whereas the End Devices can exploit the built-in power save features for battery applications. Once the modules are deployed they automatically organize in a multi-hop mesh network. Based on their unique addresses the modules can be paired for I/O mapping or data collection to one central unit.

The SPPIO is built on the Airbee-ZNS ZigBee-ready stack implementation and has the built-in test-agent to be used with the ZigBee Network Management System (ZNMS) offered by Airbee. The ZNMS is a powerful tool for commissioning and network management.

The modules offer a serial port (UART), digital I/O and analogue I/O. The serial port supporting data rates up to 115.2 kBd can be configured for different message length, timeouts and end characters. The digital I/O ports can be configured to inputs or outputs, transmission on level change, interrupts, or timer based. Up to 8 analogue inputs with 10 bit ADC are provided.

The module can be configured to operate at one of 16 RF channels, up to 0 dBm output power in 5 steps, and gives a receiver sensitivity of -94 dBm at 250 kbit/s. Based on DSSS technology the module offer increased performance in sensitivity, selectivity, data integrity and range compared to other 2.45 GHz technologies. Line-of-sight ranges of more than 100 m can be achieved and these modules offer exceptional performance even in a crowded and noisy environment.

Typical applications include sensor networks, building and industrial automation, process control, wireless security and alarm systems, automatic meter reading, remote control and telemetry, fleet and asset management. The module operates in the 2.45 GHz licence free band for world-wide usage.

OEM manufacturers without RF design knowledge can now easily add high performance wireless ZigBee mesh network capability to their space limited products, and significantly reduce time-to-market and development cost. No software development or license is required to use the product.

The modules are suitable for pick and place automatic assembly for volume production and are available in tape&reel.