

Cloud example

This example demonstrates how to connect the RIIM development kit to the cloud.

- A child node reads its temperature and sends it directly to the cloud
- The Border Router uses DHCP to connect to a local LAN, it sends status of the network to the cloud
- The example uses Thingsboard.io as example cloud solution

Large Network example

This example is made to see the formation, topology and status of a large (or small) network

- Child nodes connect to the Border Router and periodically sends CoAP packages where the payload is a counter
- The Border Router periodically prints out the whole network topology and also the received CoAP messages it gets from the child nodes

Localsensors example

This example demonstrates how to interface sensors via various interfaces

- A child node (running on a Radiocrafts SB) reads one of the following sensors and sends the data as a JSON object (as a CoAP payload) to the Border Router: ADC, Sensirion SHT35 Temperature/Humidity-sensor, ST LIS3DE Accelerometer
- The Border Router prints out the received CoAP message

OTA example

This example demonstrates the OTA functionality of RIIM

- The Border Router uses CoAP towards the /ota resource on a child node to send a new user application
- The receiving node does nothing except periodically writing out a string indicating which application is running
- After OTA transmission is complete, the receiving node is reset, and the new user application is running

Sensorboard example

This example interfaces all functions on the Radiocrafts SB

- The application reads data from all sensors present on the SB
 - Sensirion SHT35
 - TI HDC2010
 - Sensirion SGPC3
 - ST LIS3DE
 - Analog Light Sensor
 - ADC
 - Honeywell SL353LT
 - User push button
- It also controls the LEDs
- Periodically, all the measured values are output to the UART and one measurement is transmitted to the Border Router
- The Border Router prints out the received CoAP messages

UART example

This example demonstrates the use of the UART

- UART setup
- UART transmission with callback function
- UART reception with callback function and timeout