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Respeck System Design

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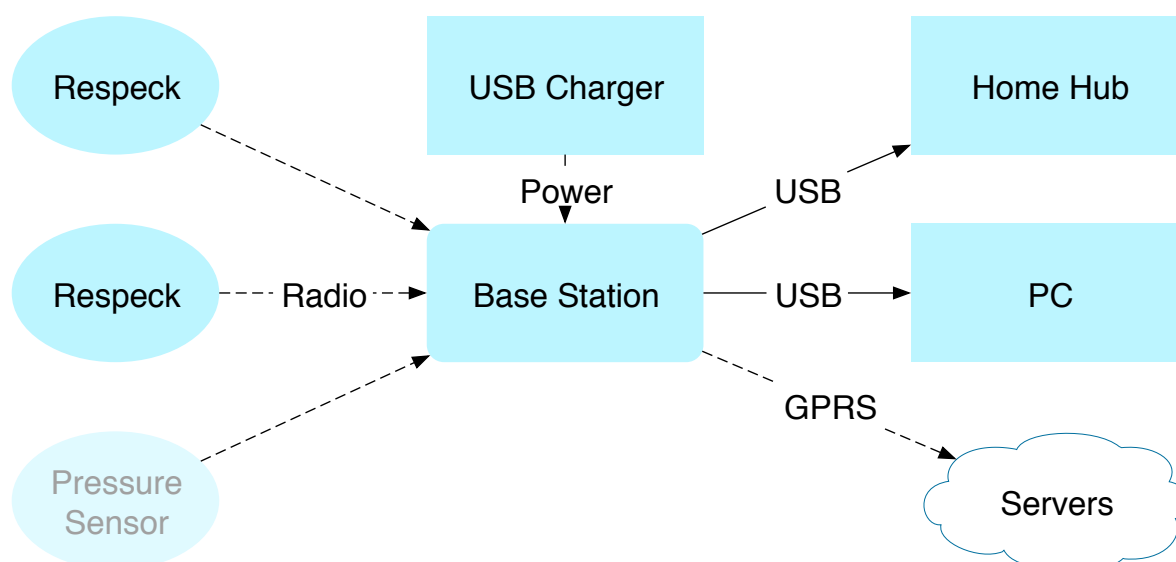**26 January 2012**

System Design

Objective

The Respeck wireless respiratory monitoring system is design to monitor respiratory rate and activity in a non-obtrusive fasion.
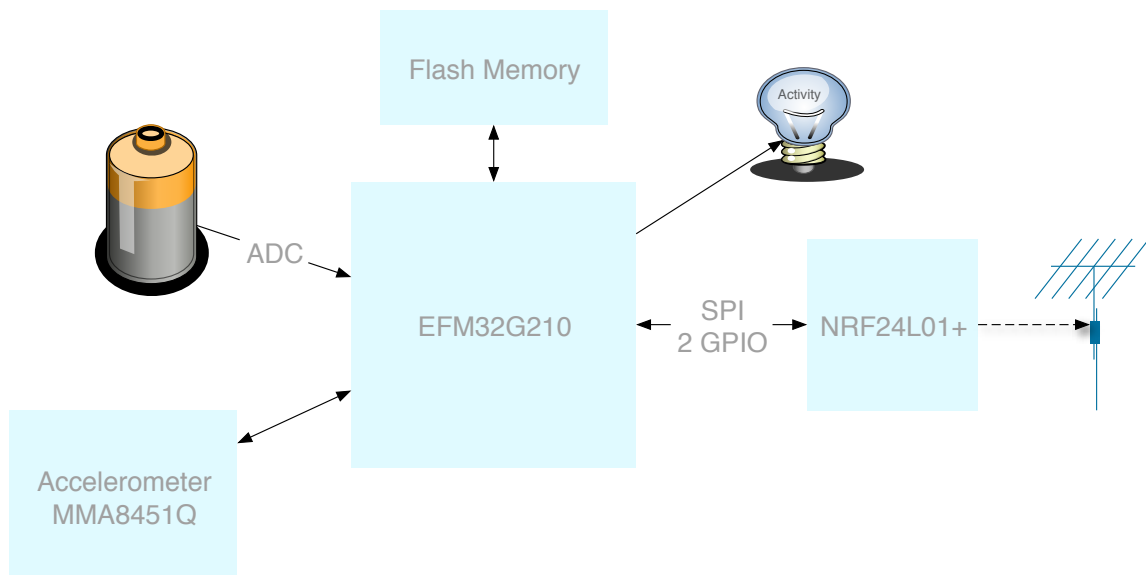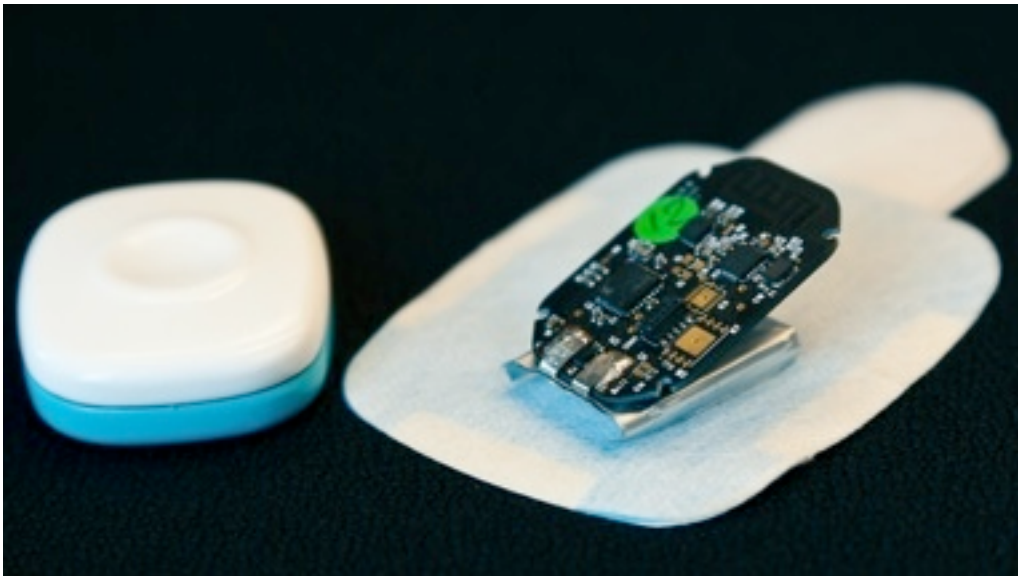
Overall System

The Respeck system consists of one or a small number of Respeck wireless patches connected via 2.4GHz radio to a basestation. The basestation can either operate independently powered from a standard USB charger (microUSB connector) sending data to remote servers via GPRS or storing to microSD card, or with a USB connection to a Home Health Hub or PC.
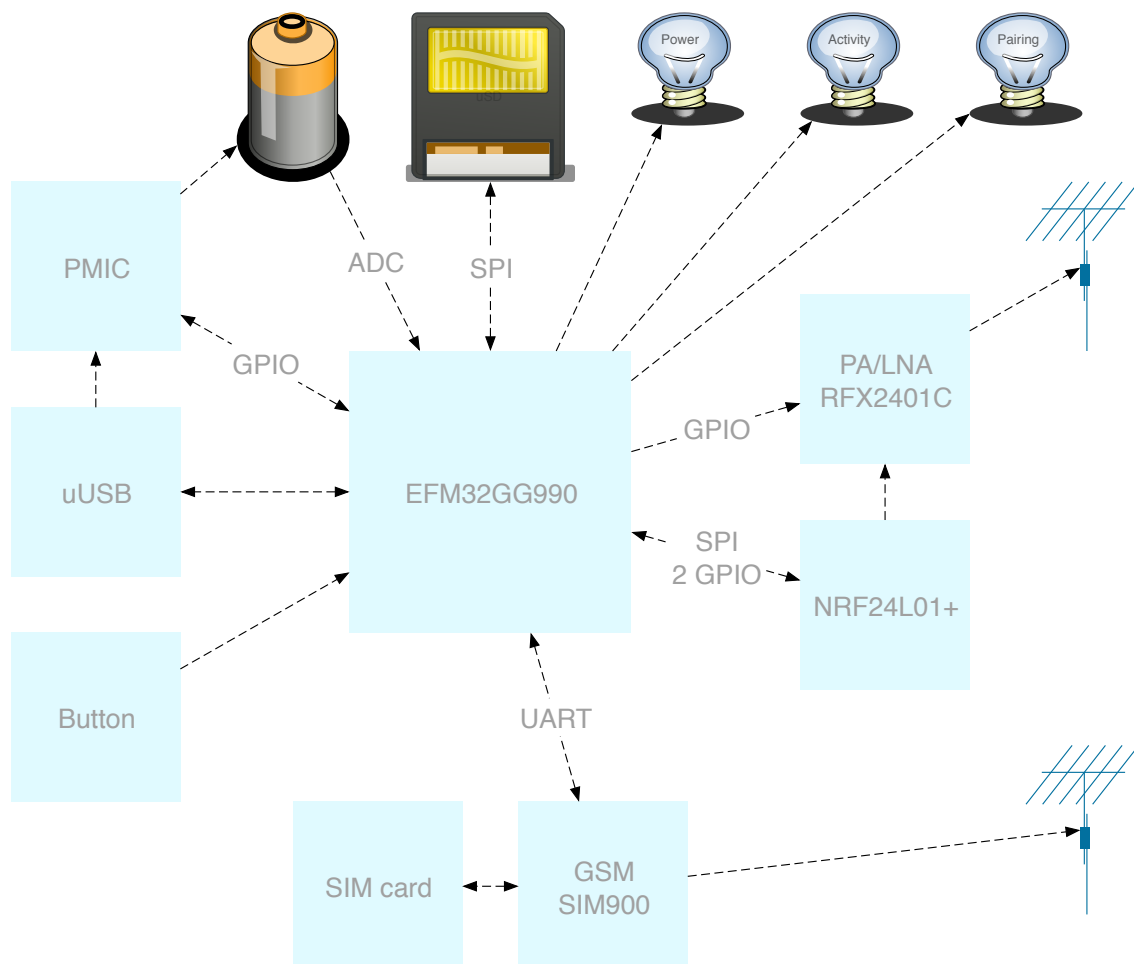
Respeck Patch

The Respeck Patch consists of an ARM microcontroller, a non-rechargeable Lithium polymer battery, an accelerometer and a low-power 2.4GHz radio.

Basestation

The Respeck basestation consists of an ARM core microcontroller, power management unit with battery charger, microUSB socket for charging and data exchange, microSD card interface (non user serviceable), SIM card socket (non user serviceable), GSM/GPRS modem, 2.4GHz low-power radio, RF PA and LNA (combined package), button and indicator lights.

Two antennas are used (for GSM bands and 2.4GHz). Connection to the antennas is via u.FL connectors.