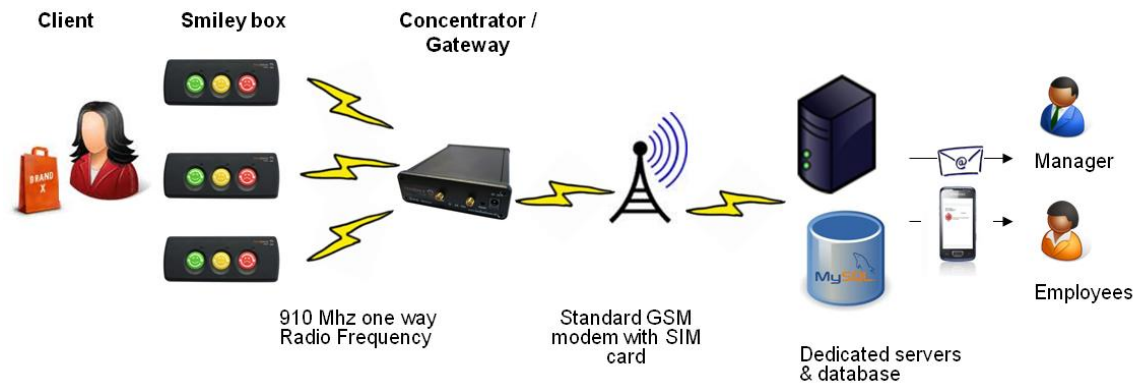


FeedbackNow solution Operational description



CAPABILITIES

Solution capability

- Overall solution offers the possibility to collect client feedback on the spot and real-time. Solution is totally independent from client's IT and combined 3 main technologies: Radio Frequency, GSM, IT capabilities

Smiley box capabilities

- Smiley box is a simple, wireless, low power, short range voting device. It communicates by 910 Mhz Radio Frequency mono-directional in a range less than 1'500 feet

Concentrator / Gateway capabilities

- Concentrator / Gateway works as a hub collecting Smiley boxes emissions and forwarding them through GSM. Concentrator/Gateway has no radio Frequency emission capabilities. Concentrator/Gateway has only Radio Frequency reception capabilities, GSM/GPRS standard modem capabilities and information storage capabilities

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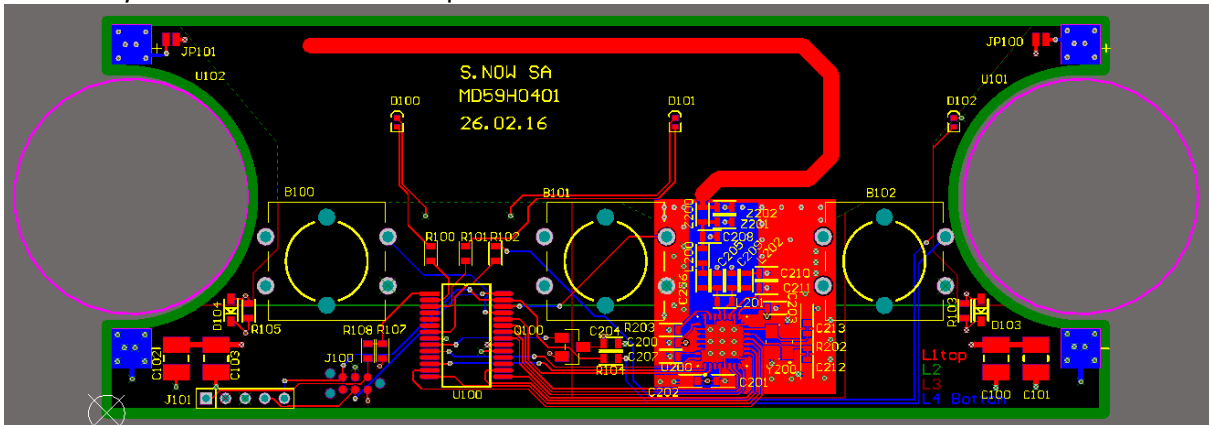


RF DESCRIPTION

The smiley box and the concentrator use the same integrated circuit from Nordic Semiconductors. (nRF905). The part is able to work as a transceiver, but the smiley box uses it only for transmission and the concentrator only for reception. Each time a button is pressed, a short RF message is sent to the concentrator. The chip allows the selection of the output power and the carrier frequency. The power used for the emission is set to -2dBm. The frequency is set to 910 MHz.

ANTENNA DATA

The smiley uses a PCB antenna. The picture shows the form of the antenna.



The concentrator uses 2 type of external antenna depending on installation

Ref: SmartEQ VPD90 – See product sheet attached

Ref: Welotec WAO-GULOL-2C000-SMAMO Art670602002541 – See product sheet attached

CIRCUIT DESCRIPTION

The nRF905 chip is used as prescribed in the related documentation. A ballun adapt the impedance of the antenna for the chosen frequency. A crystal oscillator gives the correct frequency reference to the internal PLL.

See Schematics

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