

Frequency Components and Antennas for Diabetes Control Applications



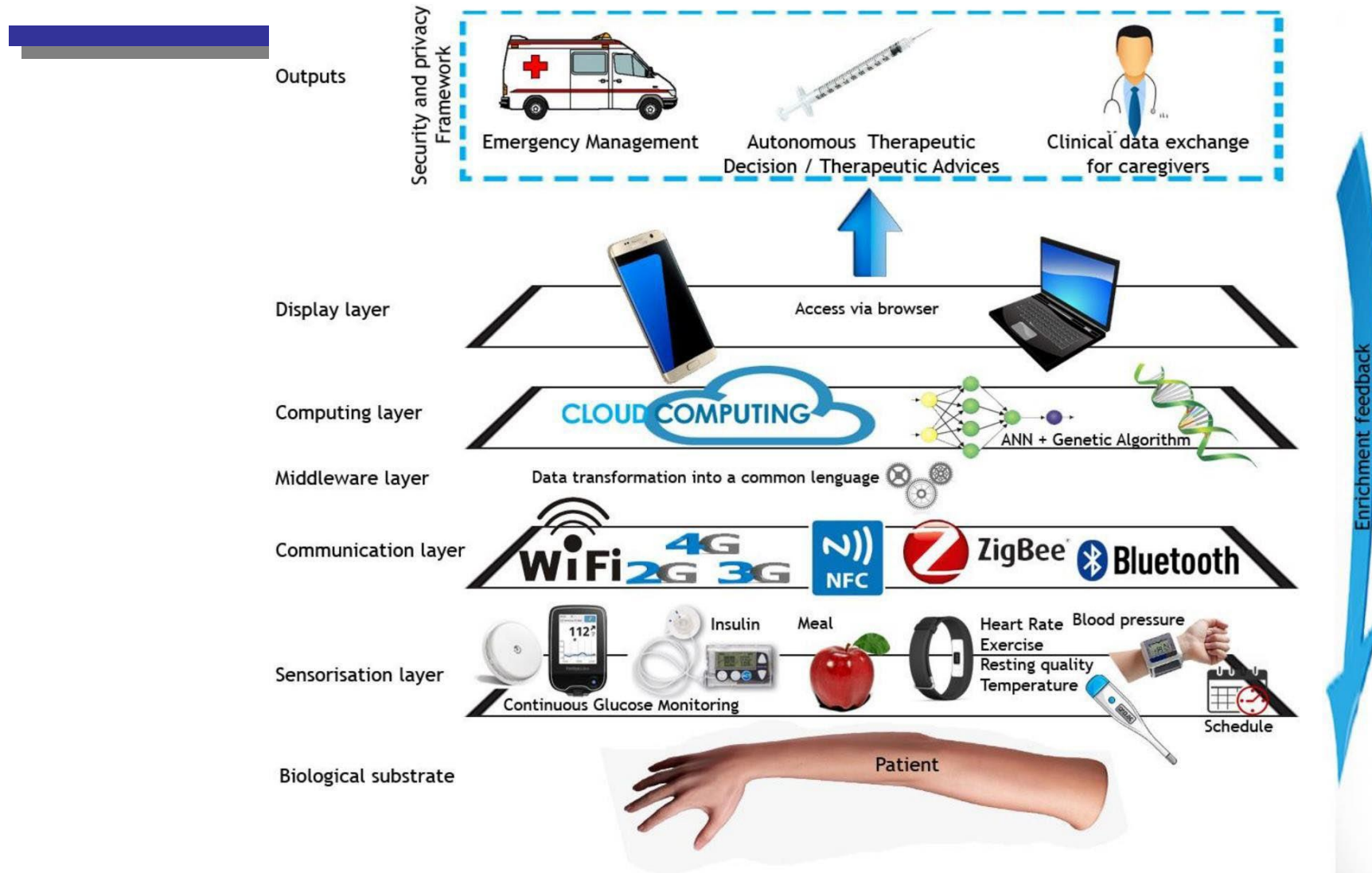
RALTRON

Introduction



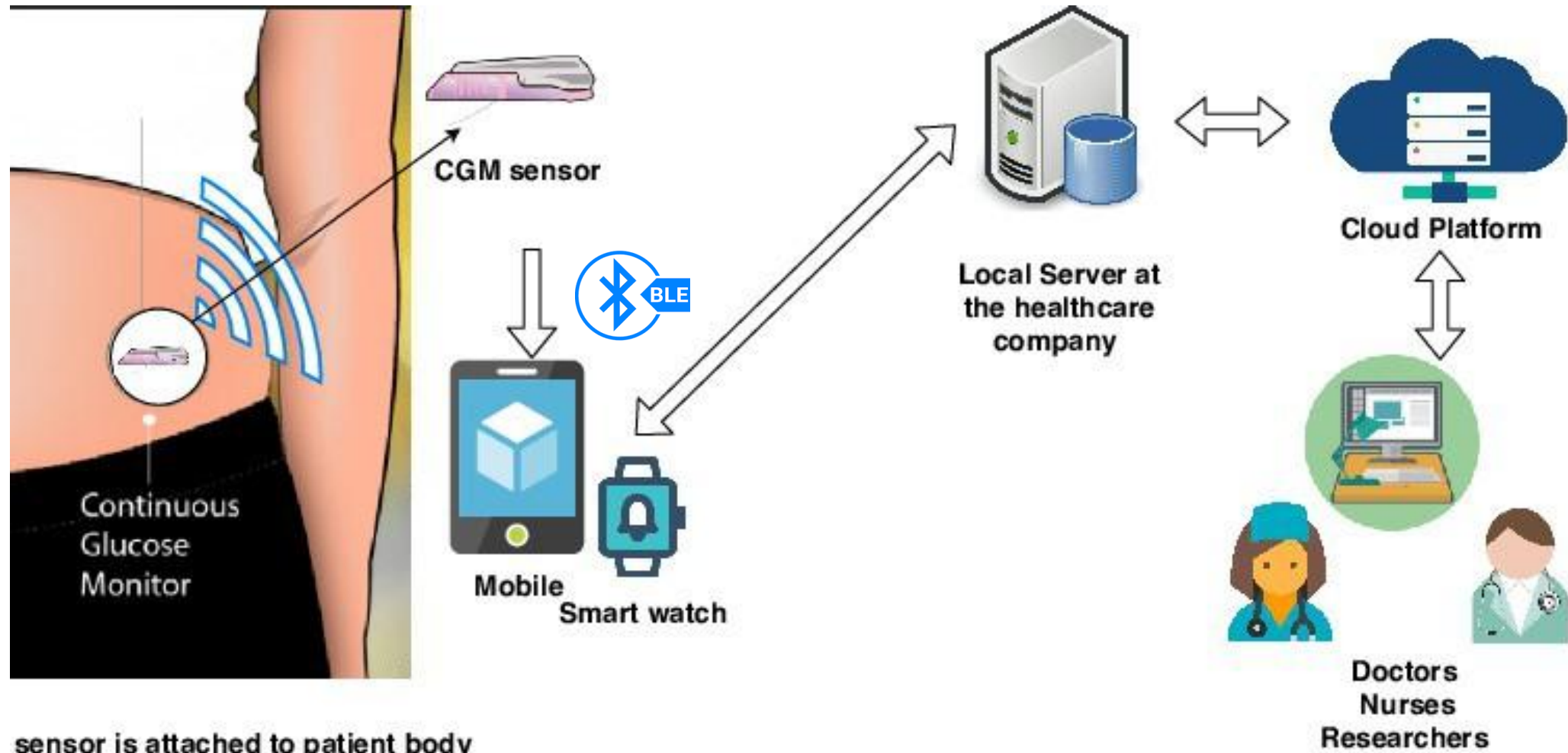
Raltron offers the most comprehensive line of frequency management components for Diabetes Control industry, from simple tuning fork crystals to high stability temperature compensated crystal oscillators and antennas. These products are designed to satisfy the ultra-low power, small footprint, and low-cost requirements of this growing market.

Integral Diabetes Management Platform



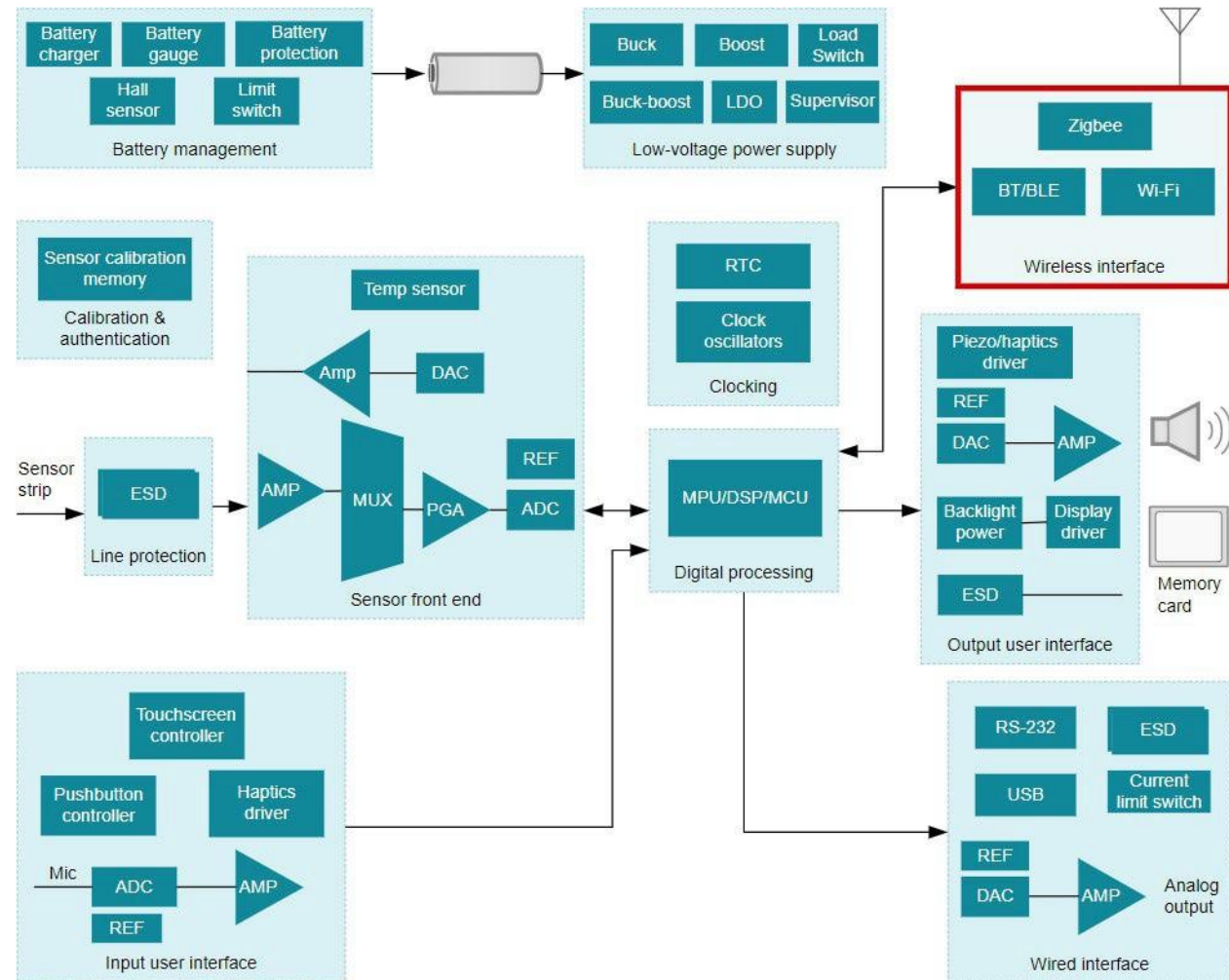
Source: <https://www.mdpi.com/2076-3417/8/4/511>

IoT Application for Continuous Glucose Monitor



Source: https://www.researchgate.net/figure/loT-application-to-support-diabetes-treatment-monitoring_fig2_348948142

Blood Glucose Monitor Integrated Circuits and Reference Designs



From Texas Instruments

Solutions for Bluetooth & BLE Protocol

Bluetooth Low Energy uses the same 2.4 GHz radio frequencies as classic Bluetooth
Some Typical Crystal or TCXO frequencies for **Bluetooth & BLE** Diabetes Control ICs:

Infineon - PSoC 6 MCU: CY8C63x6, CY8C63x7 - 16 MHz/32 MHz Crystal Oscillator
16 to 35 MHz, 32.768 kHz On-chip Crystal Oscillators
- 2.4 GHz Chip Antenna

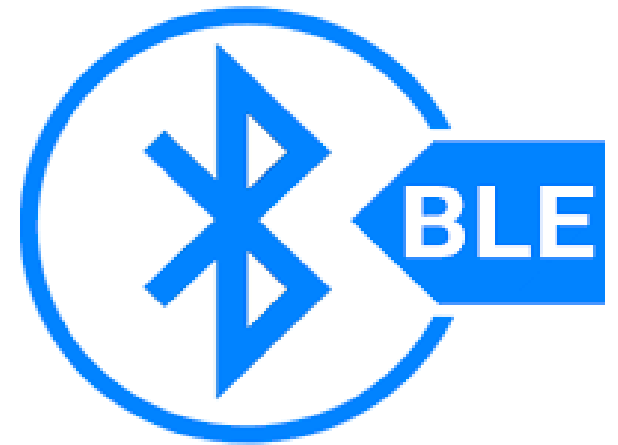
Nordic Semiconductor - nRF52810 - 64 MHz Crystal Oscillator, 32 MHz Crystal
32.768 kHz Crystal Oscillator, 32.768 kHz Crystal
1 MHz/16 MHz/32 MHz Peripheral Clock
- 2.4 GHz Antenna

Texas Instruments - CC2640R2F - 32.8 kHz/48 MHz RC Oscillator, 24 MHz Crystal Oscillator
32.768 kHz Crystal Oscillator
- 2.4 GHz Antenna

NXP Semiconductors - MKW39/38/37 - 26 MHz/32 MHz Crystal, 32.768 kHz Crystal Oscillator
- 2.4 GHz Antenna

Dialog Semiconductor - DA1469x - 32 MHz Crystal, 32.768 kHz Crystal Oscillator
- 2.4 GHz Antenna

STMicroelectronics - BlueNRG-LPS - 32 MHz Crystal, 32.768 kHz Crystal
- 2.4 GHz Antenna



[See All Crystal Products](#)

[See Antenna Products for Bluetooth](#)

Raltron Solutions - MHz Crystals

Available Crystal Packages











Part #	Size(mm)
R1210-37.400-8-F-1010-TR	1.20 x 1.00 x 0.35
R1612-32.000-10-F-1530-TR	1.60 x 1.25 x 0.32
R2016-48.000-8-F-1030-EXT-TR	2.00 x 1.60 x 0.50
R2520-16.000-10-1020-EXT-TR	2.50 x 2.00 x 0.65
RH100-24.000-9-1010-TR	3.20 x 2.50 x 0.70

[See All Crystal Products](#)

Typical Frequencies:

16 MHz, 26 MHz, 32 MHz, 37.4 MHz, 38.4 MHz, 48 MHz, 59.97 MHz, 64 MHz

Stock at our Distributors

Product Series	Datasheet	Image	Contact Us / Buy Now
R1210 View products in stock	 PDF		Buy Now
R1612 View products in stock	 PDF		Buy Now
R2016 View products in stock	 PDF		Buy Now
R2520 View products in stock	 PDF		Buy Now
RH100 View products in stock	 PDF		Buy Now



Raltron Solutions - Tuning Fork 32.768 kHz

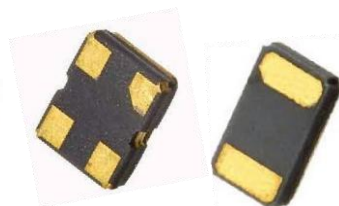
Available Tuning Fork Crystal Packages

Part #	SIZE(mm)
RT1210B-32.768-6-TR-NS2	1.2 x 1.0
RT1210-32.768-9-TR	1.2 x 1.0
RT1610-32.768-12.5-TR	1.6 x 1.0
RT2012-32.768-7-20-EXT-TR	2.0 x 1.2
RT3215-32.768-12.5-TR	3.2 x 1.5
RSE-32.768-12.5-H14-TR	6.9 x 1.4
RSM200S-32.768-12.5-TR	8.0 x 3.8

[See All Crystal Products](#)

Load capacitance values: 6 pF, 7 pF, 9 pF and 12.5 pF

Frequency Tolerances: ± 20 ppm and ± 10 ppm



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Product Series	Datasheet	Image	Contact Us / Buy Now
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RT1210 View products in stock			Buy Now
RT1610 View products in stock			Buy Now
RT2012 View products in stock			Buy Now
RT3215 View products in stock			Buy Now

Typical example of IC for Diabetes Control using a 32.768 kHz crystal as frequency reference:

Texas Instruments - CC1352P7

Using 32.768 kHz crystal

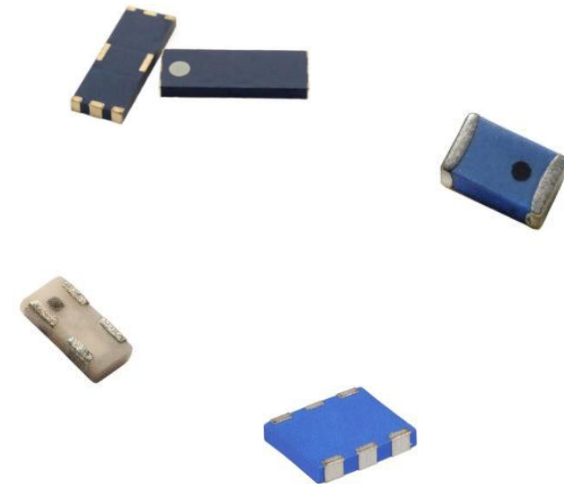
CL: 6, 7 or 12 pF

ESR: 90 k Ω max

Raltron Solutions – Antennas

Raltron Chip Antennas Solutions

Part #	Frequency(MHz)
RCA-W2A0-7020-ZP-001	2450
RCA-3216-A1-TR	2450
RCA-W2A1-1005-W-001	2400~2500
RCA-W2A1-2012-W-004	2400~2500
RCA-W2A1-3216-Z-040	2400~2500



Raltron Solutions – Speakers

Raltron Speakers

Part #	Size
RSP-1300.000-1255-NS1	12 x 5.5 x 3
RSP-1300.000-1255-NS2	12 x 5.5 x 3.3
RSP-900.000-1306-CS-NS1	13 x 6 x 3



Contact



<http://www.raltron.com>

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