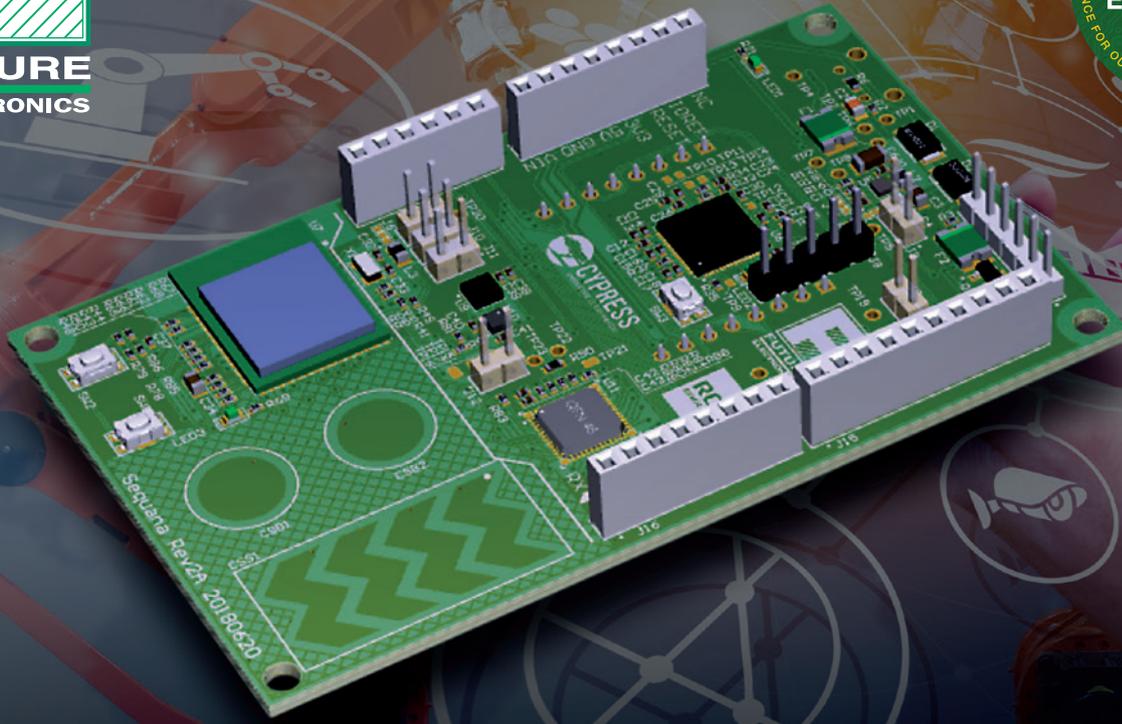




**FUTURE
ELECTRONICS**

SEQUANA



Introducing Future Electronics' new Sequana development board

A comprehensive hardware and software platform for embedded system development on the Cypress Semiconductor PSoC 6 system-on-chip

Future Electronics' Sequana provides a complete hardware and software platform for the rapid development of proofs-of-concept and prototypes of low-power, secure and connected systems.

Ideal for the IoT

The Sequana board's Cypress PSoC® 6 System-on-Chip (SoC) is the PSoC 63 variant, in the form of the CYBLE-416045-02 module with antenna. The PSoC 63 dual-core SoC includes an on-chip Bluetooth® 5.0 radio operating in Bluetooth Low Energy mode. Maximum output power of 4dBm and -95dBm Receive sensitivity provide a robust link budget for use in challenging environments such as inside buildings, or in electrically noisy environments such as factories. Arm® Mbed™ enablement supports fast software prototyping all the way to production and provides advanced security and connectivity functions.

Ideal for factory automation and Industry 4.0

The board includes compact, low-power MEMS motion sensors. Preventive maintenance relies on accurate measurement of parameters such as vibration in industrial machines, and the application of analytics to detect unusual or unwanted patterns. The Sequana board's combination of ROHM Semiconductor MEMS sensors and a high-performance SoC provides the capabilities needed for this and many other Industry 4.0 applications.

Ideal for prototyping

Sequana supports expansion through Arduino- or Mikrobus-compatible add-ons. Debug and programming, I/O configuration and power measurement interfaces are provided on the board.



APPLY FOR A FREE SEQUANA DEVELOPMENT SYSTEM

Sequana development system boards are supplied free-of-charge to pre-qualified customers of Future Electronics. To apply for your board, contact your local branch or visit: www.my-boardclub.com.

Arm® Mbed™ official web page: <https://os.mbed.com/platforms/Future-Sequana>

High-performance, low-power hardware. Secure and connected OS. Sensor peripherals and Arduino/Mikrobus compatibility

Sequana: the platform for tomorrow's embedded development projects

Future Electronics' Sequana board provides a comprehensive hardware and software platform for embedded system development.

The **central hardware component** of the Sequana main board is the Cypress Semiconductor PSoC[®] 6 programmable system-on-chip. This device features two cores:

- High performance is provided by the 150MHz **Arm[®] Cortex[®]-M4F core**, which draws as little as 22µA/MHz
- Low-power operation is provided by the 100MHz **Arm[®] Cortex[®]-M0+ core**, which draws as little as 15µA/MHz. Optimizing the partitioning of software code between the two cores enables system designers to achieve remarkably low power consumption at the system level.

The PSoC 6 family is designed for connectivity through technologies such as Bluetooth[®] wireless and USB. The Sequana board features a PSoC 63 with on-chip Bluetooth radio. The security of code, data and users' privacy is assured by the **rich set of security capabilities embedded in the PSoC 6**. These include secure boot, authentication, secure execution, cryptography accelerators such as AES, 3DES, RSA and ECC, support for hash functions, and a true random number generator.

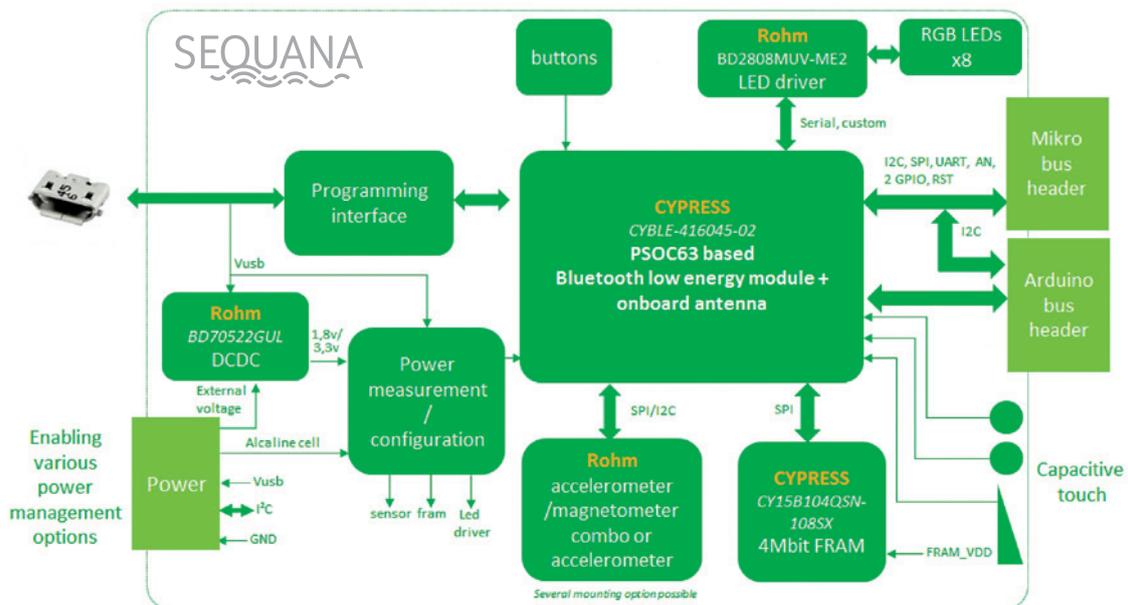
The PSoC 6 runs from a 1.7V to 3.3V power rail, and is **ideal for use in battery-powered applications** such as sensor hubs and IoT edge nodes. Many configurable digital and analog peripherals give great flexibility to optimize the system design to meet individual application requirements. PSoC 6 includes built-in **CapSense[®] touch-sensing capability**.

The Sequana board's software platform is provided by the **Arm[®] Mbed[™]** operating system, which provides native multi-layer security features and a range of built-in firmware modules for Internet Protocol (IP) and non-IP connectivity. Mbed is widely supported by vendors of third-party software development tools and also by the Future Electronics Centre of Excellence team, which implemented the PSoC 6 port.

Alongside the SoC, Sequana features MEMS motion sensors from **ROHM Semiconductor**: options include a three axis accelerometer or a six-axis accelerometer/magnetometer. The **KMX65** industrial combined accelerometer/magnetometer is mounted by default but many options are possible thanks to a dual footprint.

Embedded system operation is supported by the provision of a high-speed **Cypress Excelon[™] Ferroelectric RAM (FRAM)** non-volatile memory, which offers unlimited Read/Write capability for use in data-logging applications.

A highly efficient DC-DC converter, the **BD70522GUL** from ROHM Semiconductor, provides an output current of up to 500mA at any of nine selectable output voltages from 1.2V to 3.3V, from a 2.5V to 5.5V input.



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