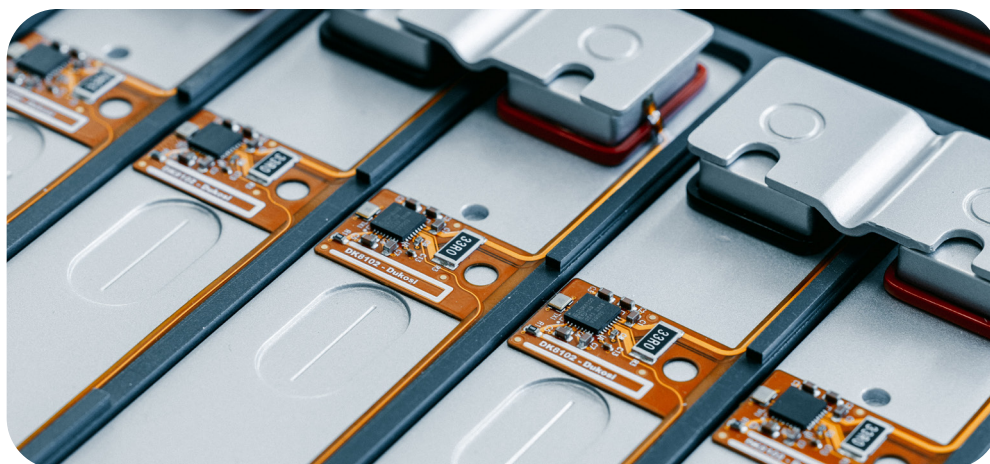


# Tech Brief

## Chip-on-cell monitoring solution for optimal battery management



The Dukosi DK8102 Cell Monitor incorporates precise, synchronous, on-cell measurements and uses C-SynQ<sup>®</sup> communication protocol to send the data to a DK8202 System Hub, which communicates seamlessly to the BMS main processor using Dukosi's API. On-cell data storage provides full traceability throughout a cell's lifecycle.

## Applications



Electric vehicles



Battery Energy Storage Systems



Industrial Transportation

## Key Benefits

- Enables design flexibility and scalability
- Optimized performance
- Highest safety standards
- 24/7 monitoring and event logging
- Lifetime traceability



## What is C-SynQ<sup>®</sup>?

C-SynQ<sup>®</sup> is Dukosi's proprietary communication protocol that is designed specifically for large networks in safety-critical environments, i.e. large battery-packs. It offers robust communications with essential data synchronization, yet also with the capacity to be configured for any number of battery cells without additional design overhead.

# Tech Brief



## DK8102 Cell Monitor

The Cell Monitor is an intelligent device mounted directly on the cell, which integrates sensing and passive cell balancing. It reports to the System Hub using C-SynQ which ensures superior immunity to external interference. With inherent electrical isolation and security throughout the near field network, Dukosi's contactless solution delivers wired-like performance and star-network behavior.

### Key Features

- Hundreds of Cell Monitors supported in single or multiple integrated networks with System Hubs
- AEC-Q100 (Grade 2) qualified, with ISO26262 ASIL D functional safety attributes\*
- Per-cell, high accuracy voltage measurement with limit checking and fault reporting
- Integrated die temperature sensor for per-cell thermal monitoring, with additional inputs for external thermistors
- Integrated passive cell balancing
- Cell passport with lifetime data and event logging



## DK8202 System Hub

The System Hub manages the bidirectional communication network formed by a system of Cell Monitors, and it interfaces with the BMS main processor via SPI.

### Key Features

- Facilitates inherently electrically isolated communication between the host and the DK8102 Cell Monitor network using C-SynQ communication protocol.
- AEC-Q100 (Grade 2) qualified, with ISO26262 ASIL D functional safety attributes\*
- Adaptive channel hopping, offering industry leading robustness against interference
- Dukosi API included for seamless configuration and reporting

\*Targeted to be AEC-Q100 (Grade 2) certified and intended for use as a safety element out of context as part of an ISO26262 ASIL D-rated battery management system.



Dukosi Ltd develops revolutionary technologies that dramatically improve the performance, safety, and efficiency of battery systems, and enable a more sustainable battery value chain. The company provides a unique cell monitoring platform based on chip-on-cell technology and C-SynQ® communications protocol for electric vehicles (EV), industrial transportation and stationary battery energy storage markets.

For more information, email [info@dukosi.com](mailto:info@dukosi.com) or visit [www.dukosi.com](http://www.dukosi.com).