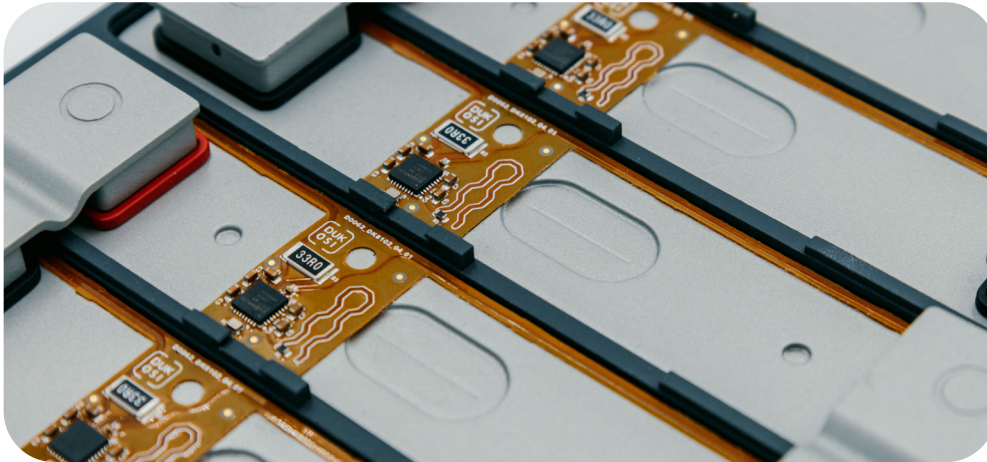


Tech Brief





Chip-on-cell monitoring solution for higher performing smart cells



The Dukosi Cell Monitoring System (DKCMS[®]) consists of DK8102 Cell Monitors, a DK8202 System Hub, and the Dukosi Library API. The Cell Monitors make accurate, synchronous, on-cell voltage and temperature measurements and send the data with deterministic latency using Dukosi's proprietary C-SynQ[®] communication protocol to the BMS Host via the System Hub. C-SynQ[®] provides bidirectional communication between the System Hub and the Cell Monitor network via a single bus antenna using near field RF, which is managed by the System Hub and Dukosi's API.

Applications

 Electric Vehicles  Battery Energy Storage Systems  Industrial Transportation  Marine

Key Benefits

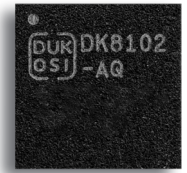
- Industry-leading voltage accuracy
- Per-cell temperature measurement provides higher safety standards
- Advanced measurements for analytics
- Design flexibility, reliability and scalability
- Supports digital product passports



What is C-SynQ[®] ?

C-SynQ[®] is Dukosi's proprietary communication protocol, designed specifically for large networks in safety-critical environments, i.e. large battery packs. It offers robust communication with essential data synchronization and deterministic latency. It is **configurable up to 216 cells** with no 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 exceptional 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

- 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 functionality with on-chip storage of cell data and unique ID
- AEC-Q100 qualified



DK8202 System Hub

The System Hub manages the synchronous capture of cell data and the bidirectional communication network formed by a system of Cell Monitors. It interfaces with the BMS Host via SPI.

Key Features

- Facilitates inherently electrically isolated communication between the Host and the DK8102 Cell Monitor network using the C-SynQ communication protocol
- Adaptive channel hopping, offering industry-leading robustness against interference
- Dukosi's Library API included for seamless configuration and reporting
- AEC-Q100 qualified



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 solution based on chip-on-cell technology and C-SynQ® communication protocol for electric vehicles (EV), industrial transportation and stationary battery energy storage markets.

For more information, email info@dukosi.com or visit www.dukosi.com.