
DK-NFLNK™ System Hub

Dukosi's DK-NFLNK™ solution consists of the DK8203 System Hub, up to 100 DK8503 DK-NFLNK Nodes, and the DK-NFLNK library. The DK8203 System Hub synchronizes measurement requests and transfers data to and from the DK-NFLNK Nodes with the BMS Host controller. Communication between the Nodes and the System Hub is near field contactless communication based on Dukosi's proprietary C-SynQ® communication protocol and a single bus antenna. The System Hub has a suite of features to ensure robust and reliable communication even in the presence of interfering signals. Communication between the System Hub and the BMS Host controller is through SPI.



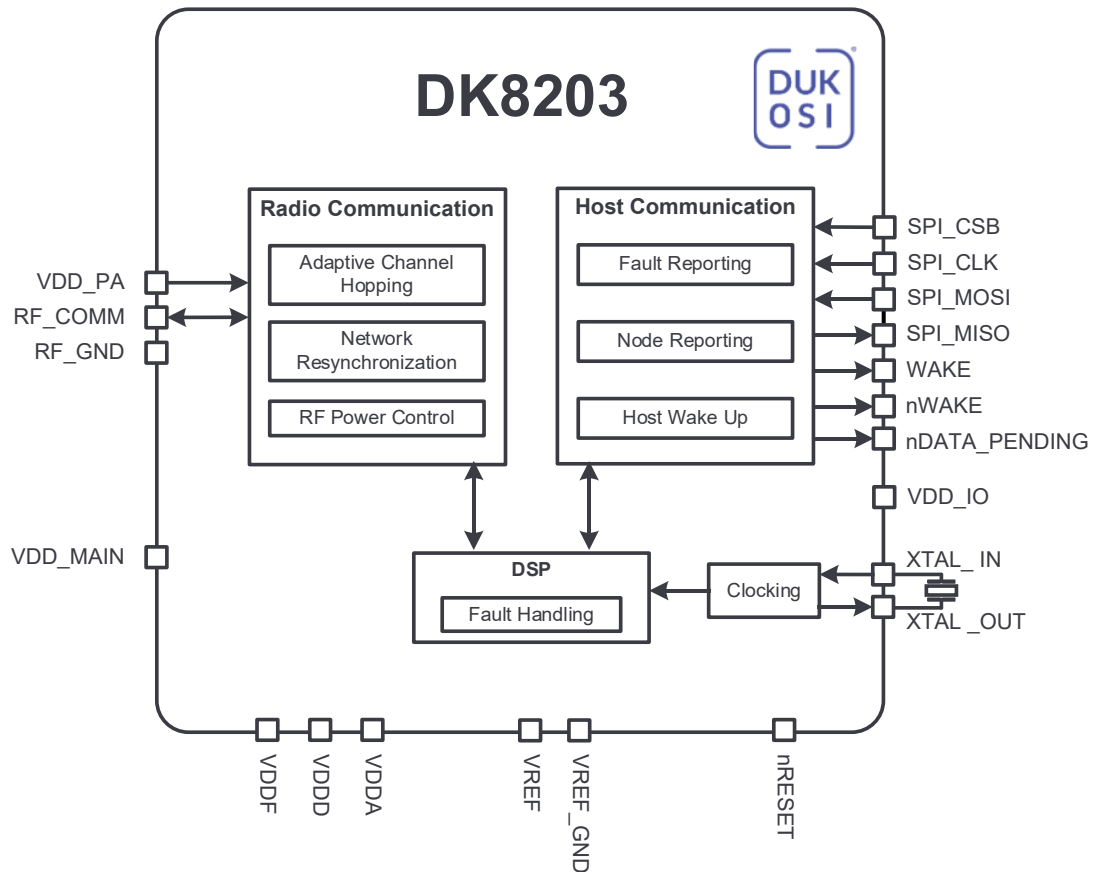
Features

- ◆ Each DK8203 System Hub can manage up to 100 DK8503 Nodes
- ◆ Robust, near field contactless communication based on the C-SynQ protocol to the DK8503 Nodes through a single RF bus antenna
 - ❖ Synchronized measurements across all Nodes
 - ❖ Adaptive channel hopping, with static or dynamic channel masking
 - ❖ Automatic network recovery
 - ❖ RF diagnostics and configurable transmit power levels
- ◆ Industry standard SPI connection to the BMS Host controller
- ◆ Wake-on-fault notifications enabling fault flagging while the BMS is in a Low Power state
- ◆ Unique Device ID
- ◆ AEC-Q100 qualified
- ◆ ASIL C compliant

Benefits

- ◆ Communication architecture addresses the needs of most battery packs across multiple applications
- ◆ BMS Host agnostic, enabling integration with a wide range of suppliers
- ◆ Highly reliable and scalable contactless communication solution:
 - ❖ Wired-like performance in a star-network configuration with predictable communication latency
 - ❖ Inherent isolation of the communications from the pack HV simplifying the BMS design
 - ❖ Optimized BOM, with common points of failure designed out as complexities associated with wire harnesses and connectors are eliminated
 - ❖ Simplified pack design and manufacturing
- ◆ Adaptive channel hopping minimizes disruption caused by RF interference, giving inherent robustness ensuring high data integrity
 - ❖ Dynamic channel masking is used to temporarily mask channels
 - ❖ Static masking of channels is possible in advance to avoid known system interferers

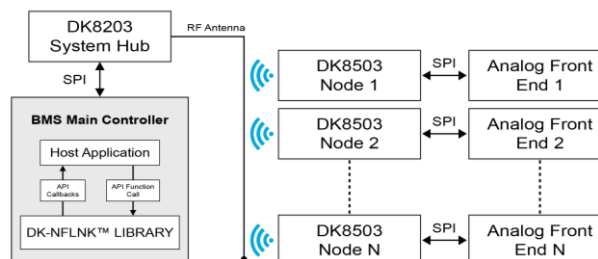
DK-NFLNK™ System Hub

Block Diagram

DK-NFLNK™ System Hub

Use Case

The DK8203 System Hub is integrated into the BMS and communicates through SPI with the main controller. Communication through an RF bus antenna routed over the DK8503 Nodes in the pack enables the formation of a contactless star-network. The System Hub manages the bi-directional communication between the Nodes and the BMS Host controller, ensuring all Node measurements are synchronized.



Applications

- Battery systems based on multi-channel AFEs
 - Automotive
 - Grid scale utility, commercial and industrial, and residential BESS
 - Industrial power systems and robotics
 - Marine and rail
- Compatible with a range of cell chemistries, cell formats, and pack architectures

Key Parameters

Parameter	Typ Value (T _A = 25 °C)	Comments
Operating voltage	2.20 V to 5.0 V	Supports a wide range of cell chemistries
No. of Nodes supported	100	With 100 ms data reporting period
RF Band	2.402 GHz to 2.480 GHz	Near-field communication, employing adaptive channel hopping for robustness and EMC performance
RF Data Rate	2 Mbit/s	
Operating Temperature Range	-40 °C to +105 °C	

Ordering Table

Part Number	Description	Packaging	MOQ
DK8203-AR/C	DK-NFLNK System Hub, AEC-Q100 qualified, 40-pin, 6 mm x 6 mm QFN package	Cut Tape	1
DK8203-AR/R		13" Reel	4000

DK-NFLNK™ System Hub

Distribution and Confidentiality

Material presented here may not be copied, reproduced, modified, merged, translated, stored or used without prior consent from the copyright owner. All products and groups mentioned are trademarks or registered trademarks of their respective organizations.

Information presented here by Dukosi Limited is believed to be correct and accurate. Dukosi Limited shall not be liable to any recipient or third part for any damages, including (but not limited to) personal injury, property damage, loss of profits, loss of business opportunity, loss of use, interruption of business, or indirect, special, incidental or consequential damages of any kind in connection with, or arising from, the use or performance of the data herein.

No obligation or liability to the recipient or third party shall arise from Dukosi Limited providing technical or other services.

Copyright © 2026 Dukosi Limited. Trademarks Registered®. All rights reserved.

Contact Dukosi

 www.dukosi.com

 info@dukosi.com

