L9961/L9962

Industrial BMS ICs

L9961
Targeted applications

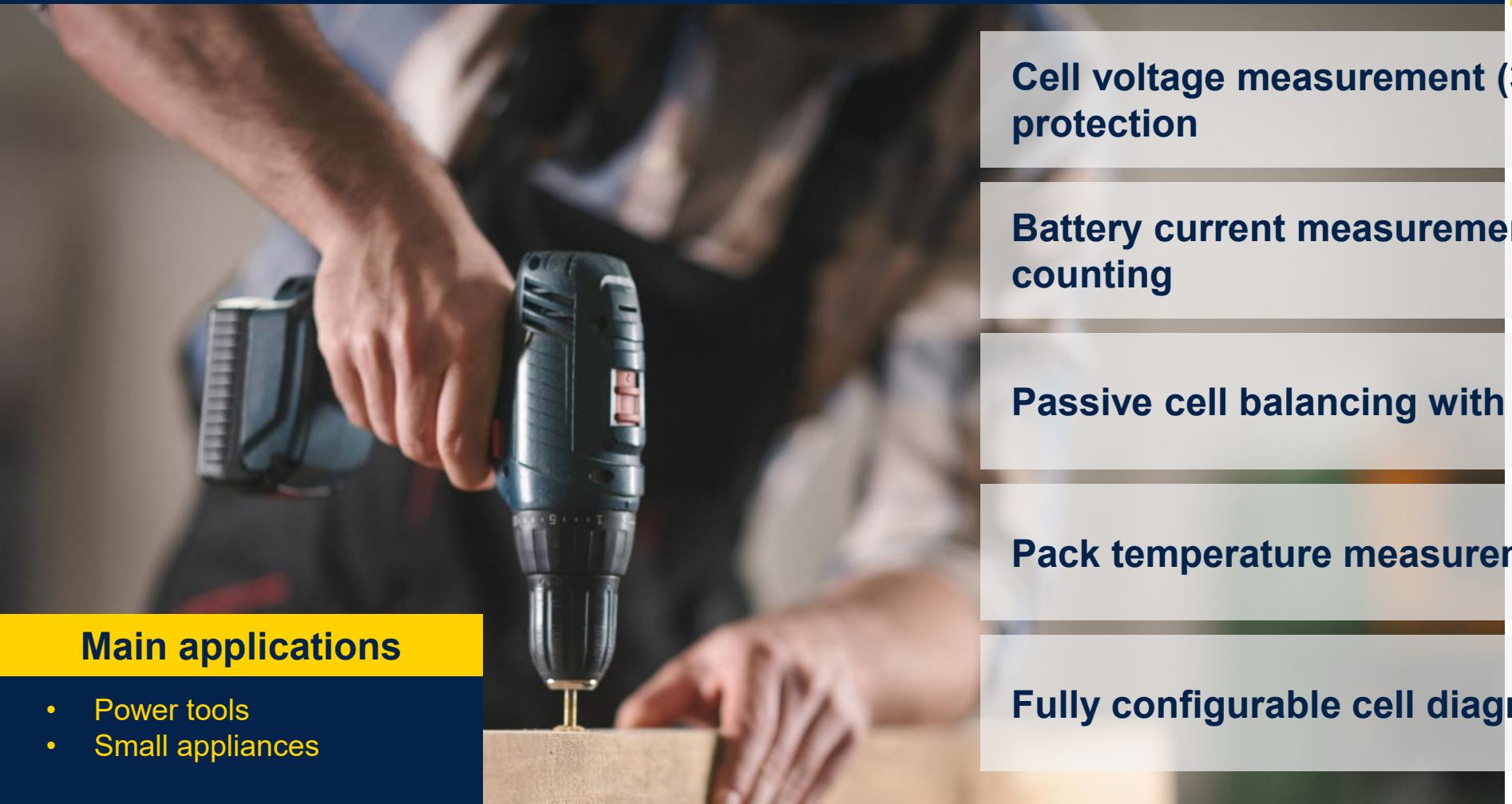
Power tools

Gardening tools

Drones and appliances

L9961
3-5 channel battery monitoring/balancing IC

Accurate, real-time measurement of battery cell voltage, temperature and current



QFPN 32 5X5X1

LONGEVITY 10 YEARS COMMITMENT

- **Cell voltage measurement (3 to 5 cells) and protection**
- **Battery current measurement with Coulomb counting**
- **Passive cell balancing with internal MOSFET**
- **Pack temperature measurement using NTC**
- **Fully configurable cell diagnostics (via I2C)**

Main applications

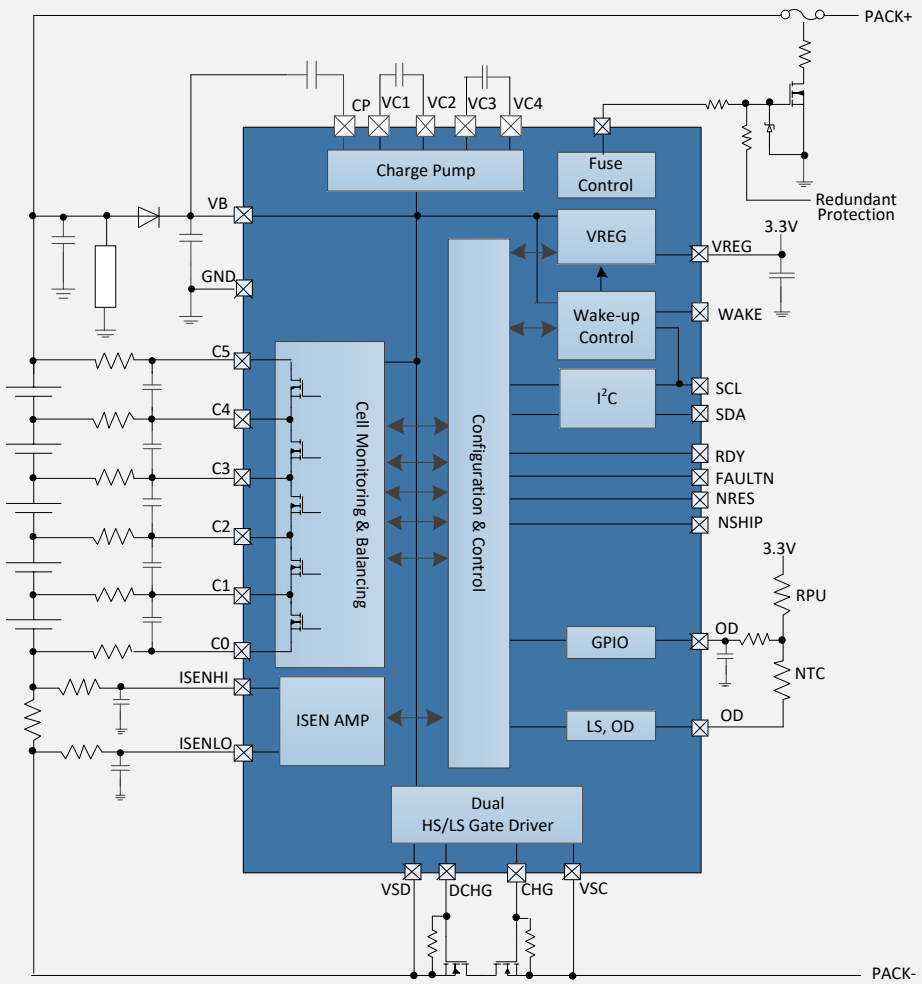
- Power tools
- Small appliances

STBMIC

L9961
Product overview

3-5 cell battery monitor and balancer with integrated protections

QFPN 32 5X5X1



Electrical parameters

- Cell voltage measurement from 3 to 5 cells
- 12-bit ADC for cell voltage measurement with maximum error of ±15 mV
- 16-bit ADC for battery pack current measurement with maximum error of 0.1% full scale
- Cell balancing, 70mA/cell
- Stack voltage measurement
- Integrated VREG system regulator 3.3 V ±3% @ 30 mA
- 2 µA SHIP mode and 5 µA standby mode current consumption

Protections

- Cell over/under voltage detection and balance undervoltage protection
- Pack fuse management
- Dual protector HS/LS configurable

Diagnostics

- I2C peripheral for device programming and data transfer
- Battery current measurement with coulomb counting and overcurrent detection
- NTC ratiometric temperature measurement (±0.8% max. gain error)

Addressing developer needs

PC software

Ready-to-use GUI showing L9961 device performances

Cell monitoring

Coulomb counter

Switch control

Diagnostics

Scripting language

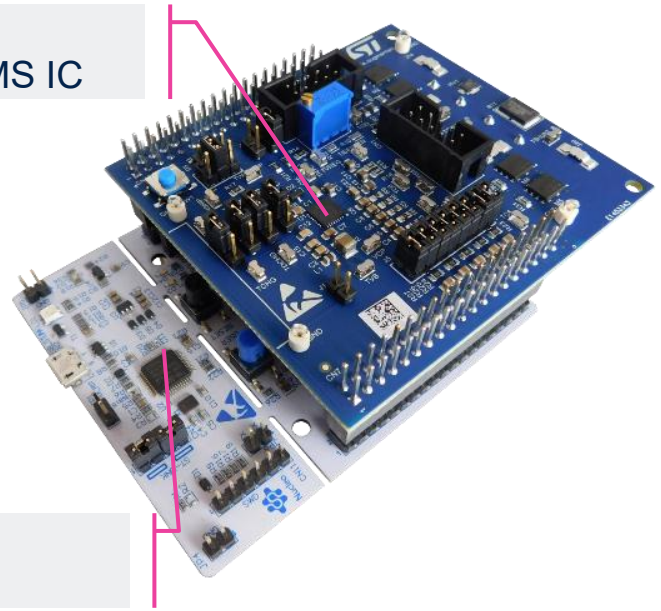
Data logging

STSW-L99615C

Hardware

Complete system for quick evaluation of device features

L9961
5-cell BMS IC



NUCLEO-G071RB

STEVAL-L99615C

Firmware

Package with standalone firmware driver and application examples

5-cell voltage, current, temperature, and stack voltage monitoring

Coulomb counting mechanism for state-of-charge estimation

Applications examples

Passive battery cell balancing for cell energy equalization

Extended Kalman filter implementation for state-of-charge estimation

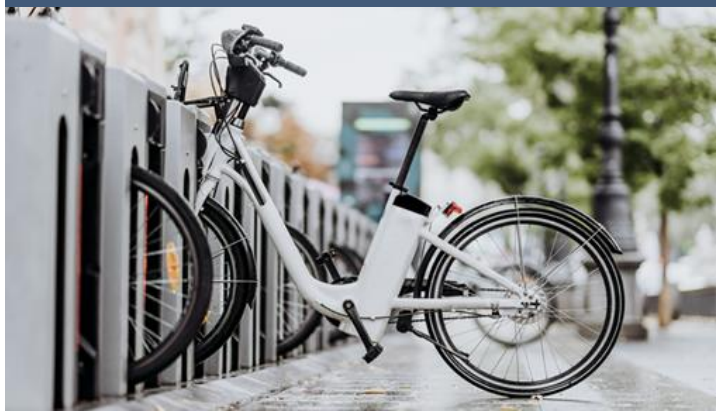
STSW-L9961BMS

L9962
Targeted applications

Power & gardening tools

Urban mobility

Drones and appliances



L9962
10 channel battery monitoring/balancing IC

Accurate, real-time measurement of battery cell voltage, temperature and current

TQFP48 7x7

- **Cell voltage measurement (4 to 10 cells) and protection**
- **Battery current measurement with Coulomb counting**
- **Passive cell balancing with internal MOSFET**
- **Pack temperature measurement using NTC**
- **Fully configurable cell diagnostics (via I2C)**

Main applications

- Outdoor products
- UPS
- Light EV

STBMIC

L9962
Product overview

4-10 cell battery monitor and balancer with integrated protections

TQFP48 7x7

LONGEVITY 10 YEARS COMMITMENT

Electrical parameters

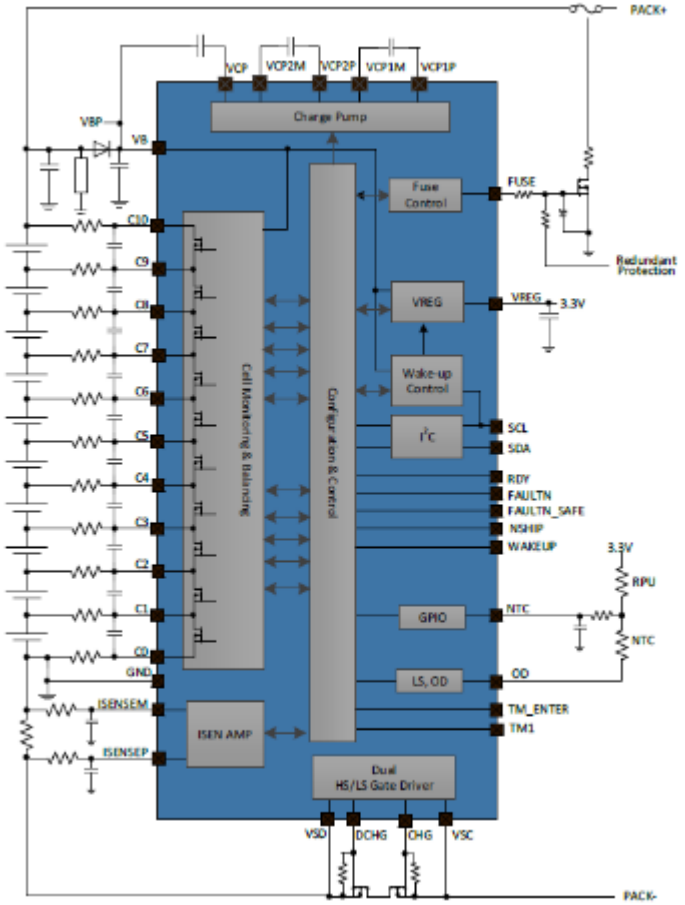
- Measures series cell voltages for up to 10 cells configurations
- 12-bit ADC for cell voltage measurement with maximum error of ±7.5 mV
- 16-bit ADC for battery pack current measurement with maximum error of 0.1% full scale
- Dual configurable HS/LS gate drivers for charge/discharge control
- Failsafe fuse driver
- Cell balancing, 70mA/cell
- Stack voltage measurement
- Integrated VREG system regulator 3.3 V ±3% @ 30mA
- 2 µA SHIP mode and 5 µA standby mode current consumption

Protections

- Cell over/under voltage detection and balance undervoltage protection
- Pack fuse management

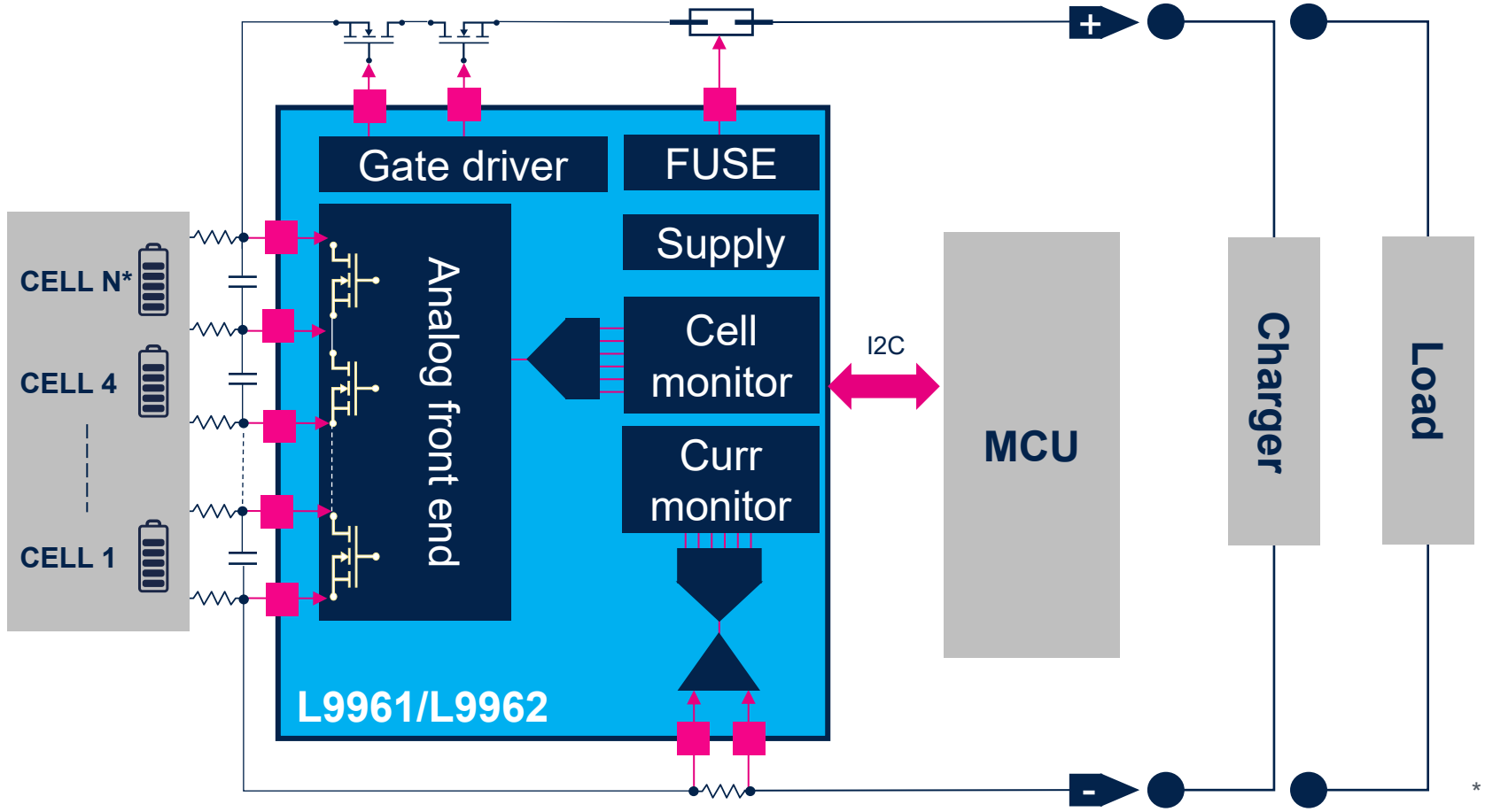
Diagnostics

- I2C peripheral for device programming and data transfer
- Battery current measurement with coulomb counting and overcurrent detection
- NTC ratiometric temperature measurement (±0.8% max. gain error)



L9961/L9962
Typical application block diagram

Best-in-class performance along with a lean external BOM



* N=5 for L9961 and N=10 for L9962

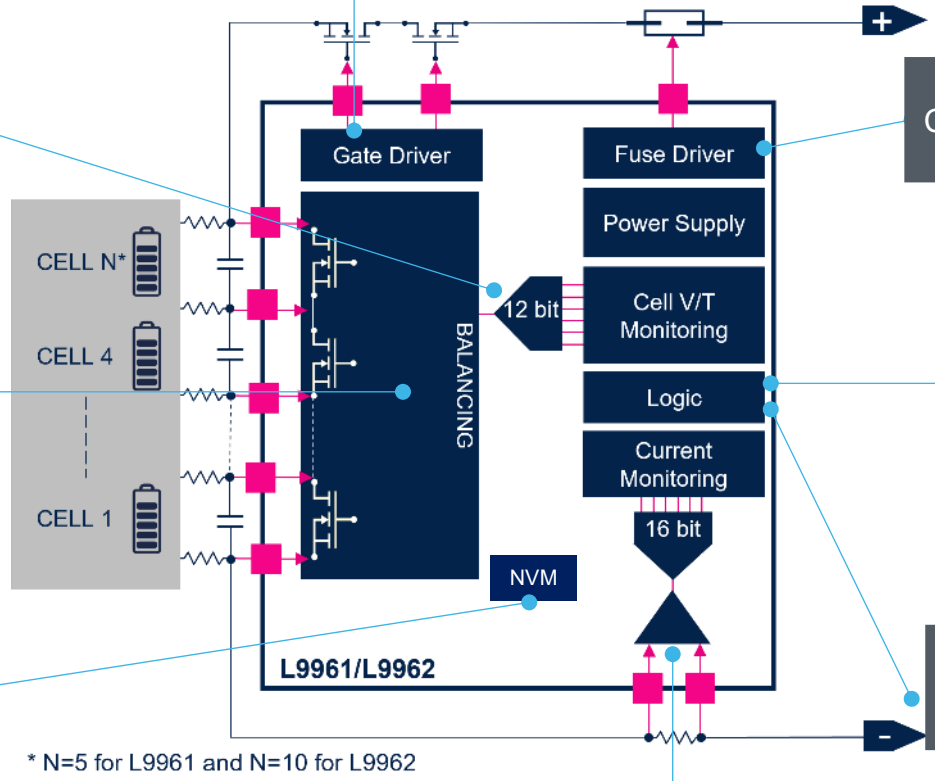
L9961/L9962
Our value proposition for your needs

Configurable HS/LS protector → Maximum flexibility and safety

15 mV (L9961) 7.5mV (L9962) accuracy → Superior performance in battery protection

70 mA internal balancing → Battery optimization and extended lifetime

Embedded NVM* → To store customer information and configurations



* N=5 for L9961 and N=10 for L9962

Critical fault quick reaction ← Integrated fuse driver

Enhances and simplify system safety management ← MCU emergency reset

Enhances MCU fault management ← Easy fault notification

Current sense with Coulomb counter → Battery protection and state estimation

* Nonvolatile memory

ST BMS takeaways

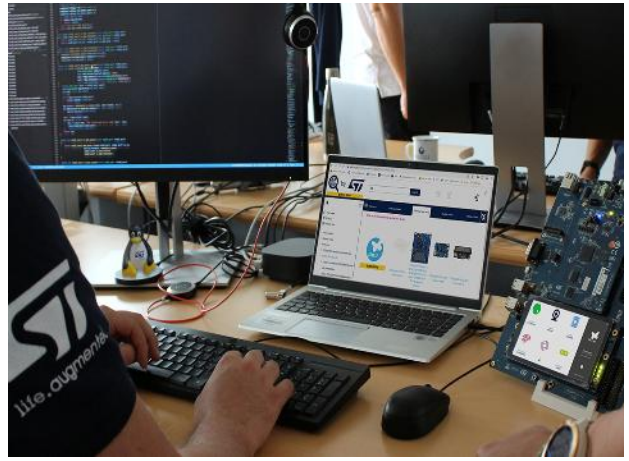
The BMS ICs that your batteries need

Maximize battery life

Optimize BOM

Rich set of protections

Ease design journey



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