

# Battery Fuel Gauge IC Starter Kit

## Complete evaluation system for Li-ion Battery Management

Renesas offers easy-to-use Starter Kit for Battery Fuel Gauge IC (FGIC) evaluation. It includes an evaluation board and sample firmware for fast prototyping of Li-ion battery management system.

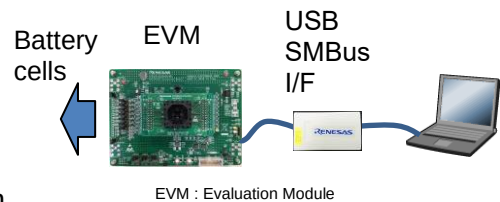


### Features:

- Populated circuit module for quick setup
- Include driver code to ease customer development
- Resistor cell simulator for quick setup with only a power supply
- GUI base PC software for battery parameter configuration

### Contents:

- FGIC circuit module
- SMBus communication interface and its cable
- Driver code (CS+ project format)
- GUI base PC software (RSB\_TOOL2)
- Documents for quick setup and software specification



### Driver code's functions:

- Current, voltage and temperature measurement.
- Calculate remaining capacity and relative state-of-charge.
- Capacity correction by cell voltage
- Battery status monitor.
- Operating mode transition.
- Initial calibration.
- SMBus communication

Measurement

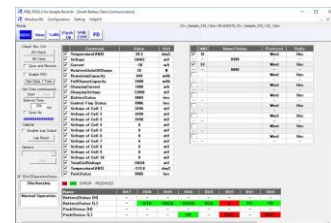
Calculation

Protection

|                    |                            |                        |                          |
|--------------------|----------------------------|------------------------|--------------------------|
| Voltage            | Current                    | Temperature            | FET Control              |
| Remaining Capacity | Relative State-Of-Charge   | Full Charge Capacity   | SMBus I/F                |
| Over/Under Voltage | Over Current Short-Circuit | Over/Under Temperature | Calibration              |
|                    |                            |                        | Cell Balancing           |
|                    |                            |                        | Battery State Estimation |

### GUI base PC software (RSB\_TOOL2):

- Status monitor and data logging
- Parameter configuration
- Board level calibration
- F/W programming
- SMBus command read/write



| Starter Kit Lineup | Series Cells (#) | Board Type                        | Main Target Application      |
|--------------------|------------------|-----------------------------------|------------------------------|
| RAJ240045          | 2 to 4 Cells     | Mother board + IC socket board    | Laptop PC, Robot Cleaner     |
| RAJ240075          | 2 to 5 Cells     | Surface mounted board (Small PCB) | Power Tool, Drone            |
| RAJ240080          | 2 to 5 Cells     | Surface mounted board (Small PCB) | Power Tool, Drone            |
| RAJ240090          | 3 to 8 Cells     | Mother board + IC socket board    | E-Bike, Cleaner, Industrial  |
| RAJ240100          | 3 to 10 Cells    | Mother board + IC socket board    | E-Bike, Cleaner, Industrial  |
| RAJ240310          | 3 to 10 Cells    | Mother board + IC socket board    | E-Bike, Cleaner, Garden Tool |

To request the starter kit, please contact your regional sales channel.

For detail of each product, please see each [product's webpage](#).