Battery Super Reviver
BSR – Brief Overview

Support / Repair Kit

ULTRA

SRK-3 - SRK-3 PLUS

DGB International (www.dgbint.com) in Melbourne, Australia, manufactures an instrument known as "Battery Super Reviver" (BSR).

The BSR is designed specifically to revive Segway (www.segway.com) format Li-ion battery packs. The BSR is an intelligent microprocessor based product.

This Support / Repair Kit will enable a skilled electronics technician to perform factory style diagnostics and repairs to a BSR.

In addition, all source code and manufacturing information is included.
Substantial technical skills will be needed to make full use of this information.
Nevertheless, with these skills and this information it will be possible to build BSR devices or to tailor a custom variant to the standard DGB product.

Users may optionally purchase either:

- SRK-3 (just this support / repair kit)
- SRK-3 PLUS (this support / repair kit PLUS a BSR)

Purchase of a SRK-3 kit from DGB International grants the purchaser a license to use the information.

The IP provided by DGB International is copyright and confidential, and remains so in perpetuity.
All rights remain with DGB International.

- The purchaser may not under any circumstances release the confidential IP to the public domain.
- The purchaser may not on-sell, distribute or in any manner duplicate the licensed information for the benefit of any other party.

In addition to this SRK-3, a user will need:

- Substantial technical skills.
  The PIC microprocessor is coded in Assembler for optimum control.
  The source code is well commented, but extensive technical skills and experience in this arena are required to make use of this information.
- A computer.
  We suggest and support a Windows 10 PC.
- Standard lab tools, screwdrivers etc.

This SRK-3 contains:

Item	Description	SRK-3	SRK-3 PLUS
1	Documentation (both hard copy and soft copy). Test modes. Diagnostics Factory Reset. Assign S/N. Add tokens. Hardware detailed notes.	☑	☑
2	Terminal Hardware 2x sets Documentation.	☑	☑
3	Development Suite Link to Microchip MPLAB. MICROCHIP ICD3 toolset.	☑	☑
4	Miscellaneous Items 20 x Spare shunts (to set options) 20x Void stickers 2x PIC Controllers (programmed) 4x Matched Peltier Devices 2x NTC Thermistors 2x Spare Power Connectors 2x Spare T handle 1x Spare Power Unit 1x Blank PCB 1x Blank Enclosure (Drilled) Miscellaneous minor items that will be handy during prototyping	☑	☑
5	Battery Super Reviver (BSR)		☑

Code Development:

This DGB International product was developed some time ago.
The tool-set is a little dated now, but it remains fully functional.

Microchip offers a FREE suite of development tools.
DGB International used MPLAB IDE 8.92
It may be downloaded here: https://pic-microcontroller.com/mplab-ide-v8-92-free-download/

This is a large and complex suite.
DGB International can offer basic guidance to a purchaser of this SRK, but we do not include and cannot offer detailed support.

Users will require detailed knowledge of and experience with microprocessors in general, PIC microprocessors in particular, and specifically the Microchip PIC18F24K50 device (a data sheet is attached).
For reference, this data sheet is nearly 500 pages in length, and is commensurately complex.

The MPLAB IDE can work with a target microprocessor via a number of interface options.
DGB International uses an ICD 3 package.
This provides both an In-Circuit-Debugger and a device programmer capability.
An ICD 3 package is included with this SRK 3 kit.

Code and Disclaimer:

DGB International's source code (assembler level) is included with this SRK3 kit.
DGB International believes their code to be bug-free.
However it may contain errors or omissions that have not been detected.
The code has been developed on the abovementioned suite of tools.
It may or may not translate error-free to any other suite of tools.

PCB:

DGB International designed and prepared the Printed Circuit Board (pcb) deployed in this BSR product.

Post-design, the manufacturing files were translated to the industry standard Gerber format. DGB International has successfully used these Gerber files to have pcbs fabricated by https://www.pcbway.com/

DGB International expects (but cannot guarantee) that these Gerber files will work elsewhere.

DGB International chose to manufacture pcbs without a solder resist or component overlay. This easily allows the pcb copper areas to become integral parts of the thermal design of the BSR.

The resist and overlay information is untested by DGB International.
Any changes in this area, are the sole responsibility of the party making those changes.