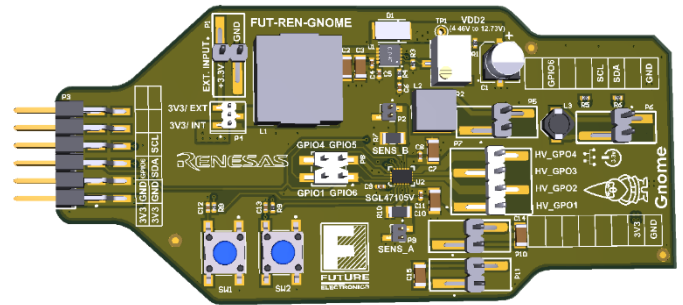


# Gnome Evaluation Board

## Overview

Gnome ([FUT-REN-GNOME](#)) is an easy to use evaluation board designed by Future Electronic to evaluate the Renesas' HVPAK™ Programmable Mixed-Signal Matrix (SLG47105). The SLG47105 combines mixed-signal logic and high-voltage H-bridge functionality in a tiny 2 x 3 mm QFN package. One-time programmable (OTP) Non-Volatile Memory (NVM) stores user-defined solutions in the form of interconnections of internal logic, I/O pins, and macrocells. Integrated dual H-Bridge/quad Half-Bridge functionality allows driving different loads up to 2A per output with up to 13.2V voltage.



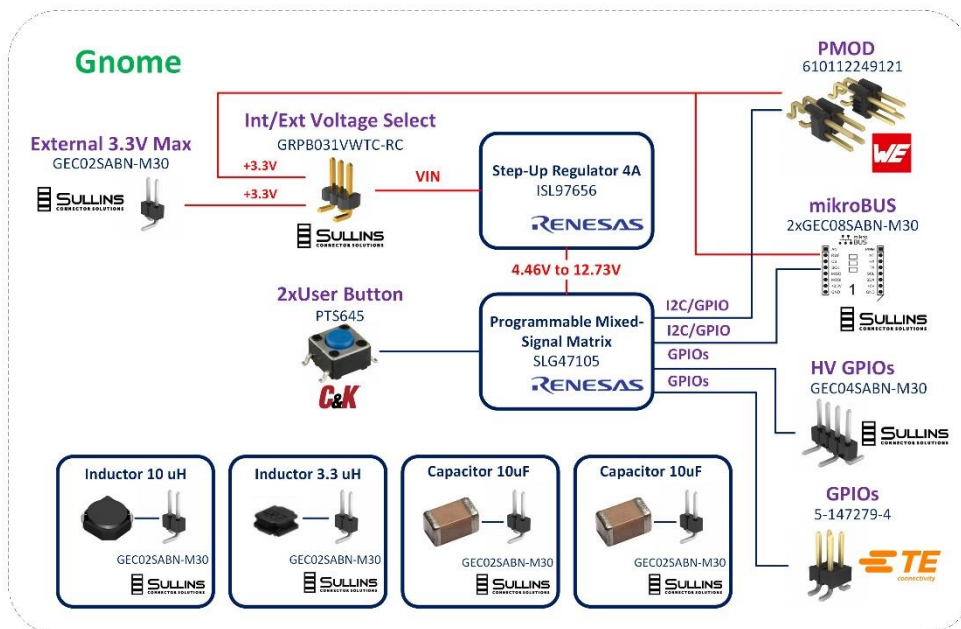
**Ordering Part Number:**  
**FUT-REN-GNOME**

The Gnome board can be used as a standalone evaluation tool with any MCU platform via PMOD connector, GPIOs or Click/mikroBUS™ expansion boards. It can also be used in conjunction with Future's Gizmo and Gremlin evaluation boards to evaluate multiple IC solutions from Renesas Electronics in an application specific setting.

## Features

- GreenPAK Programmable Mixed-Signal Matrix with High Voltage ([SLG47105](#))
- Integrated 4A Switch PWM Step-Up Regulator ([ISL97656](#))
- Flexible configurations
- Interface and Connectivity:
  - Two user buttons
  - GPIOs
  - I<sup>2</sup>C via:
    - PMOD Connector
    - mikroBUS™ Socket

## System Block Diagram



## Renesas GreenPAK Overview

[GreenPAK™](#) is a broad family of cost-effective non-volatile memory (NVM) configurable hardware devices that enable innovators to integrate many system functions into a single custom circuit, and in the process minimize component count, board space, and power consumption. Each GreenPAK device offers a unique makeup of predefined macrocells, such as LUTs, flip-flops, oscillators, and more that can be easily configured. This reduces the time required for designing and implementing complex functions. Using the free GUI [Go Configure Software Hub](#) and GreenPAK Development Kit, designers can create and configure their perfect custom circuit in minutes.

GreenPAK benefits go beyond the integration of discrete and passive components into a single customized IC solution. Overall design improvements include, but are not limited to:

- Lower design costs
- Reduced power consumption
- Improved thermal performance
- Decreased probability of failure
- Unique custom part number
- No production programming cost
- Shrink PCB footprint
- Enhanced design security
- Lower noise performance
- Quick and adaptable design changes
- No coding – No software development cost
- Custom datasheet

The [Go Configure Software Hub](#), a user-friendly GUI interface that simplifies the circuit design process, provides development support for:

- GreenPAK™ Programmable Mixed-Signal Products under the GreenPAK Designer Built-In Software Tool
- ForgeFPGA Low-density FPGAs under the ForgeFPGA Workshop Built-In Software Tool

In each case, the specific development software package enables a completely graphical design process, requiring no programming language or compiler, allowing a designer to configure, program, and test custom samples in minutes. The ForgeFPGA Workshop, aside from the graphical macrocells mode, also allows the HDL language programming mode.

## Out of the Box Demonstration with Gnome

The Gnome evaluation board comes with pre-programmed demo software that can help user emulates the behavior of the HVPAK IC (SLG47105) on the board. The embedded software is based on the Renesas RA0E1 MCU. Once loaded on the FPB-RA0E1 RA0E1 Fast Prototyping Board or the Future Gizmo board, user can run demos that controls (start, stop and reverse) the motor connected to the Gnome board with single button. Through menu options, user can also reset I<sup>2</sup>C interface, read memory of the HVPAK IC (SLG47105) on the Gnome board, and finally, user can load the hex file generated by the Go Configure Software tool to the HVPAK IC (SLG47105) on the Gnome board and parse the NVM String data.

