

## Z1 Senior Embedded Software Engineer

The Senior Embedded Software Engineer position is critical to the success of Z1's growing engine calibration program. This position is responsible for the conceptualization, design, and implementation of Z1's in-house software delivery and calibration suite. This will be a phased roll out of tools and utilities that will include the ability to extract a complete binary from a Nissan/Infiniti engine control unit, organize and modify the separate sections of that binary, provide a deciphered and modifiable calibration section, reflash the control unit with our modified code, and more. Though the use of outside toolsets and contractors will be permitted, it is vital that this position have a senior level understanding of electrical hardware, firmware, and software. A passion for automotive technology and electronics is required and the ability to fit in culturally with an enthusiastic group of mechanical engineers, engine calibrators, and technicians is paramount. While there will be no direct reports initially, strong leadership skills are expected in this position and the requirement to build a team will follow.

A wide degree of creativity and latitude is expected of this position. This position requires exercising independent judgement to perform the responsibilities described herein. This job description is not designed to cover or contain a comprehensive listing of activities, duties, or responsibilities that are required by the employee.

### Responsibilities:

- Develop or source the following tools/utilities
  - OBD-II interface capable of meeting our data transfer needs
  - Utility for extracting complete binaries from Nissan/Infiniti engine control units
  - Utility for organizing extracted binaries by their individual sections and viewing the data in an easy to interpret manner
  - Calibration user interface that displays the calibration section data in appropriate single values, 2D curves, and 3D maps all in physical values
  - Flashing routines for modified binaries back onto OE controllers.
  - Other associated utilities for data management, read/write routines, and related tasks
- Work with Director of Product Development to create and implement a strategy for software resource expansion.
- Assist other in-house developers with the design of purpose-built electrical hardware and associated software/firmware.
- Work daily with engine calibration staff to support their calibration efforts

### Required Qualifications:

- Bachelor's degree in Software Engineering or equivalent credentials/experience.
- 10+ years of software engineering experience
- 5+ years of automotive electronics experience

- Senior level understanding of automotive software communication protocols and SAE J2534 diagnostics and reprogramming
- Familiarity with all major variants of C-family programming languages
- Experience writing and modifying existing assembly level code
- Experience reverse engineering read/write routines and developing creative “back door” write methods
- Understanding of advanced encryption techniques and experience in searching for vulnerabilities.
- Experience with Renesas, PowerPC, Infineon Tricore, and other micro processors
- Familiarity with gasoline engine operation and calibration

**Preferred Qualifications:**

- Experience with Hitachi engine control units
- Experience with transmission control units
- Experience calibrating gasoline engines