

## **Manual PCB-RE: The Essentials**

### **Foreword**

*Drop by drop is the water pot filled. - Buddha*

Reverse engineering a piece of hardware is like a puzzle that only makes sense once you take it apart. It begins as an assembled product and ends with a breakdown of its individual elements: Bill-of-materials, PCB layout, schematic, and potentially even system functionality. As with a puzzle, it can sometimes be overwhelming and confusing. That's where this book comes in. KT brings you through reverse engineering a real-world, complex design from start to finish. Even though your board will likely be different from his, the outlook, process, and techniques are what matter.

One of my earliest reverse engineering memories was figuring out how an 82S123 PROM (programmable read-only memory) was implemented inside of a "transportable" cellular phone from the 1980s, designed into a literal briefcase with a small port for the antenna to stick through. After determining the pinout and connectivity, I created a small piece of circuitry to cycle through all possible address locations and display the data bits with a series of LEDs. It was simple, yet effective, and reinforced skills that have continued to serve me well through many more years of reverse engineering.

As you begin your own journey into reverse engineering, let this book be your guide. Anything can be "undesigned" with patience, focus, and determination. And, the more you do it, the better you'll get. Little by little, drop by drop.

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