



## 1. Introduction

Thank you for purchasing the **Enigma-E** DIY kit. You are about to start building your own Enigma machine and we can imagine the excitement you must be feeling at this very moment. Please read this manual carefully before you start building your machine; this will help to avoid problems, questions and dissatisfaction later.

You don't have to be an experienced electronics engineer to build this kit. However, some basic knowledge and practice, especially with soldering of electronic components, is most welcome. If you lack this experience, or if you don't feel confident to build this kit, please ask someone with the required skills. There are many electronics enthusiasts around and in particular radio HAMS may be willing to help you out.

The next chapter explains in great detail how the **Enigma-E** is best built up. Before you start, you should check if all components have been delivered. If any item is missing, please contact us immediately on our e-mail address **enigma-e@xat.nl** and tell us which item you can't find and where you purchased your kit. The best way to check whether all components are present is to use the next chapter as a guide. Each component is separately listed and two check boxes are available: one should be ticked if the item has been located, the other one should be ticked when the item has been mounted on the PCB (Printed Circuit Board). Please note that we've checked and re-checked every kit prior to packing, so please look twice before reporting a component as missing.

Once your **Enigma-E** is built, you need to test it. Chapter 3 describes how to do this. Please follow the procedure carefully, to ensure that your device is working properly. If it passes the test, you may want to decode your first message. Chapter 3 describes a real message with a simplified setup procedure, so if you really can't wait...

By buying this **Enigma-E** DIY kit you are actually contributing to restoration and conservation of old WWII equipment. In the UK the project will support the Bletchley Park Museum, which is *the* place for all Enigma enthusiasts. In The Netherlands, we will be supporting the Museum Jan Corver, named after one of the first radio HAMS in that country. Other projects may be supported in different countries.

We wish you good luck and a lot of fun when building your own **Enigma-E**.

September 2003,  
*Paul Reuvers & Marc Simons*

### 1.1 How it all started

You may wonder how the idea was born to create an electronic variant of the famous Enigma coding machine. Well, it all started in the summer of 2001. After having read the book *Enigma*, by Robert Harris, we got intrigued by the mysteries of this secret little machine. Shortly after, we attended a lecture on WWII radio equipment and the presenter briefly touched the subject of the Enigma and... Bletchley Park.

After searching the Internet, we discovered that Bletchley Park actually existed and had just opened as a museum. A destination for our summer holidays was found. In our busy schedules, we both managed to allocate a week in August. At Bletchley Park we found the answers to most of our questions and we were overwhelmed by the quantity and quality of the information presented there. Not only can you see the Enigma behind glass, there is actually a device available for you to touch and type your own message!

Once you've seen the Enigma in action, you are likely to be contaminated with the Enigma Virus. It seems that there is no cure to this disease. The more we read about the Enigma, the more we wanted to possess such a machine. The only problem is that they are rare these days and the few machines around really cost a fortune. We then decided to build our own machine. Since we are both electronic engineers, the decision was made to create an electronic equivalent, using modern components and built around a small micro processor.