Inside the Dongle

The electronic dongles of the Guardant family feature the latest achievements in the area of software/hardware protection.

The core element of Guardant dongles is a microcontroller. Its program processes the information and runs the driver's exchange protocol.

All Guardant dongles have non-volatile memory of various sizes depending on the dongle model.

Types of dongles

Local dongle	Local dongle works on a stand-alone computer. It serves for protection of only standalone (non-network) software. Local dongles are Guardant Sign, Guardant Time, Guardant Code и Guardant Code Time.
Network dongle	A network dongle has a wider range of features. It can work both on stand-alone computers and on workstations and servers of a Local Area Network (LAN). Therefore, it can be used to protect standalone as well as network software. Network dongles are Guardant Sign Net и Guardant Time Net.

Dongle's ID

Each dongle of the Guardant family contains a special 4-byte number – dongle's ID. This ID is unique. It is recorded into the dongle as a factory setting and cannot be copied or changed by anyone including the developers of Guardant. The value of the ID can be used for establishing a fixed link between the protected application and this particular dongle. Use the diagnostics utility to view the dongle's ID, or the utility for programming the dongles called **GrdUtil.exe.**

Memory and Memory Fields

All types of Guardant dongles have non-volatile memory for storing data. We use EEPROM type memory, which provides for the data integrity during around 100 years not requiring any power supply. The dongle supports an unlimited number of reading sessions and up to 1,000,000 writing sessions into the dongle's memory.

The memory is split into fields for the convenience of use. Generally, these fields are divided into three types: special purpose, general purpose and free purpose.

The Guardant dongle's memory map is described in details in the next part of the documentation.

Dongle Diagnostics

The Guardant software includes diagnostics utilities **GrdDiag.exe.**

The utility designed to detect Guardant dongles that are connected to the computer, verify their operational status and collect diagnostics on the system on which they run. The utilities generate a report for the technical support team based on the data collected.

GrdDiag.exe is used if there is a need to perform advanced diagnostics of dongles with developer's access codes.

See more: