# Encrypt Storage On U3VCamera

This user guide described the method to put information on the U3V camera storage for software encryption or other purpose.

## 1 Principle

Camera have flash memory to store the program,    camera parameters and more.

The customer can use storage locate at 0x07200000-0x073FFFF to store the customized content. The storage space is divided to many sectors, every sector have 512 bytes space. User should write or read content sector by sector.

```
#define SECTOR_SIZE_BYTE 512
#define MEM_BASE_ADDR 0x07200000   //0x07200000-0x073FFFF
```

*Warning: Don't try to write other part of the storage except addressed above, otherwise it may break the function of the camera.*

## 2 Tool and Example

We provided a open source example to demonstrate the usage. The example is based on Qt5.9 and MVS SDK3.2.1, it use the MV_CC_WriteMemory and MV_CC_ReadMemory to write to camera storage or read from the camera storage.

The first part use users' **fixed content**(*salt*) and the camera serial number to create some **encrypted content**, which will be differ camera to camera as every camera have different serial number.



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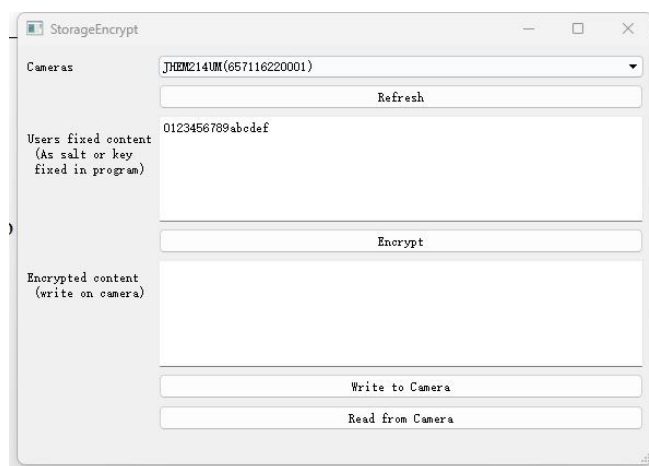
Then there are commands to **write** the encrypted content to camera, or **read** back from the camera.

In your own software, you should keep the *salt* in your code, and use the same *algorithm* to compute the encrypted content, then compare with the content read back from the camera. Take your action based on the compare result. *Salt* and *algorithm* are your secret, take care of them.

With a brand new camera, the first step is use this tool to generate the encrypted content and write to the camera storage. Then you can test if it is work with your software which only start to work after encryption checking.