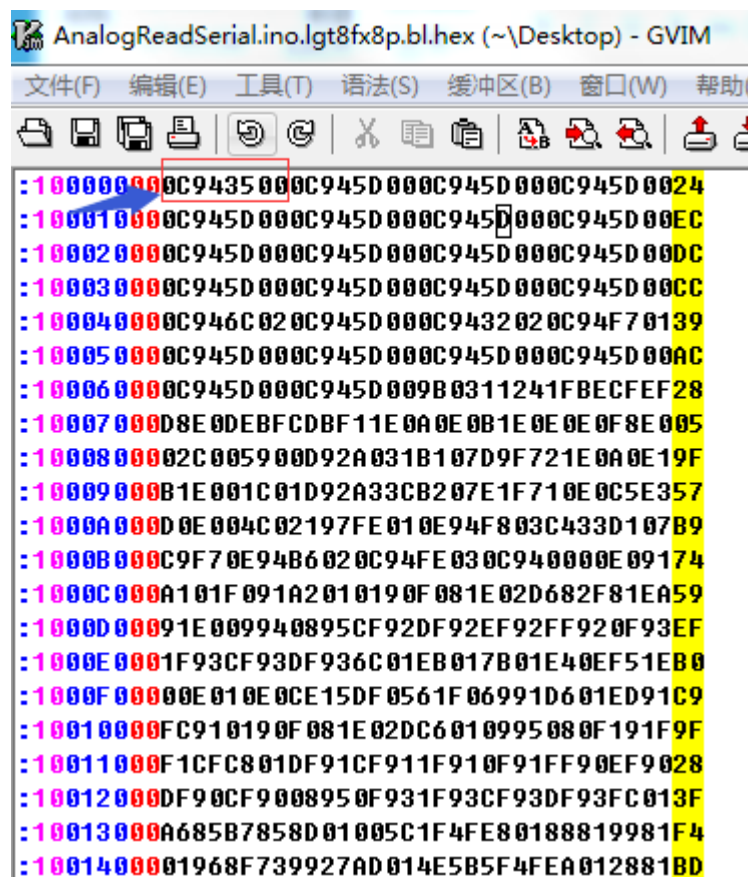


将arduino程序与bootloader合并方法:

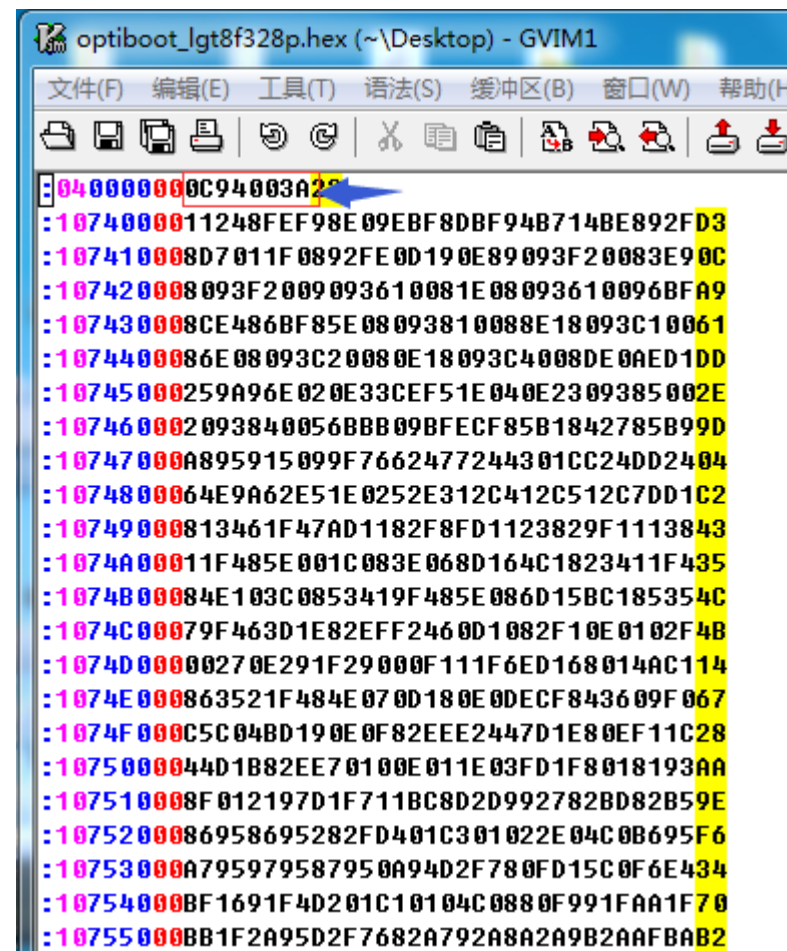
1. 记录arduino程序的复位向量代码(位于0地址的32位的长跳转指令) 和bootloader的复位向量;

Arduino程序复位向量: 0C 94 35 00



The screenshot shows a hex editor window titled 'AnalogReadSerial.ino.lgt8fx8p.bl.hex (~\Desktop) - GVIM'. The menu bar includes '文件(F)', '编辑(E)', '工具(T)', '语法(S)', '缓冲区(B)', '窗口(W)', and '帮助(H)'. The toolbar contains various icons for file operations and editing. The main text area displays a list of hexadecimal addresses and their corresponding values. The first line is highlighted in yellow and shows the address ':10000000' followed by the value '0C943500', which is the reset vector. A red box highlights the value '0C943500'.

bootloader复位向量: 0C 94 00 3A



The screenshot shows a hex editor window titled 'optiboot\_lgt8f328p.hex (~\Desktop) - GVIM1'. The menu bar includes '文件(F)', '编辑(E)', '工具(T)', '语法(S)', '缓冲区(B)', '窗口(W)', and '帮助(H)'. The toolbar contains various icons for file operations and editing. The main text area displays a list of hexadecimal addresses and their corresponding values. The first line is highlighted in yellow and shows the address ':04000000' followed by the value '0C94003A', which is the reset vector. A red box highlights the value '0C94003A'.

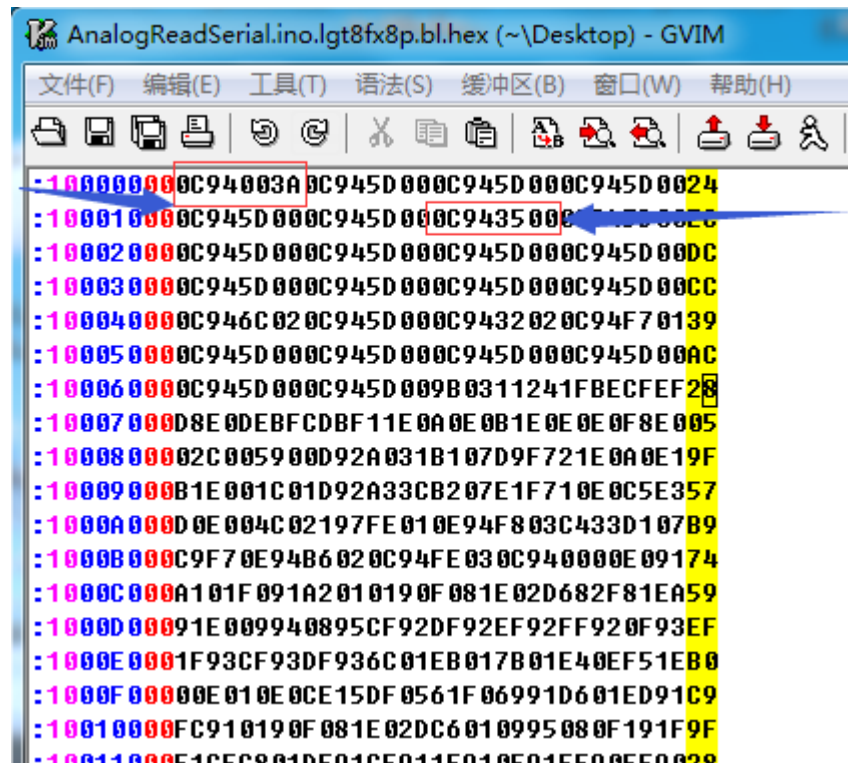
2. 将bootloader代码部分(不包括复位向量和HEX结束行)复制到arduino程序文件中
- = bootloader的复位向量是第一行， HEX结束行是最后一行
  - = 注意需要保留原先arduino程序的最后一行结束行

```
:1007B000AA1BBB1BFD010DC0AA1FBB1FEE1FFF1F05
:1007C000A217B307E407F50720F0A21BB30BE40B55
:1007D000F50B661F771F881F991F1A9469F760959C
:1007E0007095809590959B01AC01BD01CF01089556
:1007F000EE0FFF1F0590F491E02D0994F894FFCFC0
:100800000000000093006B001C01E0000001D50017
:1074000011248FEF98E09EBF8DBF94B714BE892FD3
:107410008D7011F0892FE0D190E89093F20083E90C
:107420008093F2009093610081E08093610096BFA9
:107430008CE486BF85E08093810088E18093C10061
:1074400086E08093C20080E18093C4008DE0AED1DD
:10745000259A96E020E33CEF51E040E2309385002E
:107460002093840056BBB09BFECF8B1842785B99D
:10747000A895915099F7662477244301CC24DD2404
:1074800064E9A62E51E0252E312C412C512C7DD1C2
:10749000813461F47AD1182F8FD1123829F1113843
:1074A00011F485E001C083E068D164C1823411F435
:1074B00084E103C0853419F485E086D15BC185354C
:1074C00079F463D1E82EFF2460D1082F10E0102F4B
:1074D00000270E291F29000F111F6ED168014AC114
:1074E000863521F484E070D180E0DEC843609F067
:1074F000C5C04BD190E0F82EEE2447D1E80EF11C28
:1075000044D1B82EE70100E011E03FD1F8018193AA
:107510008F012197D1F711BC8D2D992782BD82B59E
:1075200086958695282FD401C301022E04C0B695F6
-10753000A7050705R705BA0uN?F7RBFN15C8F6F434
```

以下为bootloader部分

2. 将arduino程序的复位向量改为bootloader的复位向量，将原本arduino的复位向量改到WDT的复位向量中。  
LGT8F328P的WDT复位向量是第7个复位向量(从1计数，一个复位向量占用4个字节)

改为bl的复位向量



保存原先arduino程序的复位向量

由于LGTMix\_ISP工具读HEX时不检查校验字节，因此不用更新最后的校准字