后台想把相关人对应的卡信息发送给设备端。并考虑12个字节长度过长，使用crc32对数据进行优化。

具体算法如下：

static const unsigned int crc32tab[] = {

0x00000000L, 0x77073096L, 0xee0e612cL, 0x990951baL,

0x076dc419L, 0x706af48fL, 0xe963a535L, 0x9e6495a3L,

0x0edb8832L, 0x79dcb8a4L, 0xe0d5e91eL, 0x97d2d988L,

0x09b64c2bL, 0x7eb17cbdL, 0xe7b82d07L, 0x90bf1d91L,

0x1db71064L, 0x6ab020f2L, 0xf3b97148L, 0x84be41deL,

0x1adad47dL, 0x6ddde4ebL, 0xf4d4b551L, 0x83d385c7L,

0x136c9856L, 0x646ba8c0L, 0xfd62f97aL, 0x8a65c9ecL,

0x14015c4fL, 0x63066cd9L, 0xfa0f3d63L, 0x8d080df5L,

0x3b6e20c8L, 0x4c69105eL, 0xd56041e4L, 0xa2677172L,

0x3c03e4d1L, 0x4b04d447L, 0xd20d85fdL, 0xa50ab56bL,

0x35b5a8faL, 0x42b2986cL, 0xdbbbc9d6L, 0xacbcf940L,

0x32d86ce3L, 0x45df5c75L, 0xdcd60dcfL, 0xabd13d59L,

0x26d930acL, 0x51de003aL, 0xc8d75180L, 0xbfd06116L,

0x21b4f4b5L, 0x56b3c423L, 0xcfba9599L, 0xb8bda50fL,

0x2802b89eL, 0x5f058808L, 0xc60cd9b2L, 0xb10be924L,

0x2f6f7c87L, 0x58684c11L, 0xc1611dabL, 0xb6662d3dL,

0x76dc4190L, 0x01db7106L, 0x98d220bcL, 0xefd5102aL,

0x71b18589L, 0x06b6b51fL, 0x9fbfe4a5L, 0xe8b8d433L,

0x7807c9a2L, 0x0f00f934L, 0x9609a88eL, 0xe10e9818L,

0x7f6a0dbbL, 0x086d3d2dL, 0x91646c97L, 0xe6635c01L,

0x6b6b51f4L, 0x1c6c6162L, 0x856530d8L, 0xf262004eL,

0x6c0695edL, 0x1b01a57bL, 0x8208f4c1L, 0xf50fc457L,

0x65b0d9c6L, 0x12b7e950L, 0x8bbeb8eaL, 0xfcb9887cL,

0x62dd1ddfL, 0x15da2d49L, 0x8cd37cf3L, 0xfbd44c65L,

0x4db26158L, 0x3ab551ceL, 0xa3bc0074L, 0xd4bb30e2L,

0x4adfa541L, 0x3dd895d7L, 0xa4d1c46dL, 0xd3d6f4fbL,

0x4369e96aL, 0x346ed9fcL, 0xad678846L, 0xda60b8d0L,

0x44042d73L, 0x33031de5L, 0xaa0a4c5fL, 0xdd0d7cc9L,

0x5005713cL, 0x270241aaL, 0xbe0b1010L, 0xc90c2086L,

0x5768b525L, 0x206f85b3L, 0xb966d409L, 0xce61e49fL,

0x5edef90eL, 0x29d9c998L, 0xb0d09822L, 0xc7d7a8b4L,

0x59b33d17L, 0x2eb40d81L, 0xb7bd5c3bL, 0xc0ba6cadL,

0xedb88320L, 0x9abfb3b6L, 0x03b6e20cL, 0x74b1d29aL,

0xead54739L, 0x9dd277afL, 0x04db2615L, 0x73dc1683L,

0xe3630b12L, 0x94643b84L, 0x0d6d6a3eL, 0x7a6a5aa8L,

0xe40ecf0bL, 0x9309ff9dL, 0x0a00ae27L, 0x7d079eb1L,

0xf00f9344L, 0x8708a3d2L, 0x1e01f268L, 0x6906c2feL,

0xf762575dL, 0x806567cbL, 0x196c3671L, 0x6e6b06e7L,

0xfed41b76L, 0x89d32be0L, 0x10da7a5aL, 0x67dd4accL,

0xf9b9df6fL, 0x8ebeeff9L, 0x17b7be43L, 0x60b08ed5L,

0xd6d6a3e8L, 0xa1d1937eL, 0x38d8c2c4L, 0x4fdff252L,

0xd1bb67f1L, 0xa6bc5767L, 0x3fb506ddL, 0x48b2364bL,

0xd80d2bdaL, 0xaf0a1b4cL, 0x36034af6L, 0x41047a60L,

0xdf60efc3L, 0xa867df55L, 0x316e8eefL, 0x4669be79L,

0xcb61b38cL, 0xbc66831aL, 0x256fd2a0L, 0x5268e236L,

0xcc0c7795L, 0xbb0b4703L, 0x220216b9L, 0x5505262fL,

0xc5ba3bbeL, 0xb2bd0b28L, 0x2bb45a92L, 0x5cb36a04L,

0xc2d7ffa7L, 0xb5d0cf31L, 0x2cd99e8bL, 0x5bdeae1dL,

0x9b64c2b0L, 0xec63f226L, 0x756aa39cL, 0x026d930aL,

0x9c0906a9L, 0xeb0e363fL, 0x72076785L, 0x05005713L,

0x95bf4a82L, 0xe2b87a14L, 0x7bb12baeL, 0x0cb61b38L,

0x92d28e9bL, 0xe5d5be0dL, 0x7cdcefb7L, 0x0bdbdf21L,

0x86d3d2d4L, 0xf1d4e242L, 0x68ddb3f8L, 0x1fda836eL,

0x81be16cdL, 0xf6b9265bL, 0x6fb077e1L, 0x18b74777L,

0x88085ae6L, 0xff0f6a70L, 0x66063bcaL, 0x11010b5cL,

0x8f659effL, 0xf862ae69L, 0x616bffd3L, 0x166ccf45L,

0xa00ae278L, 0xd70dd2eeL, 0x4e048354L, 0x3903b3c2L,

0xa7672661L, 0xd06016f7L, 0x4969474dL, 0x3e6e77dbL,

0xaed16a4aL, 0xd9d65adcL, 0x40df0b66L, 0x37d83bf0L,

0xa9bcae53L, 0xdebb9ec5L, 0x47b2cf7fL, 0x30b5ffe9L,

0xbdbdf21cL, 0xcabac28aL, 0x53b39330L, 0x24b4a3a6L,

0xbad03605L, 0xcdd70693L, 0x54de5729L, 0x23d967bfL,

0xb3667a2eL, 0xc4614ab8L, 0x5d681b02L, 0x2a6f2b94L,

0xb40bbe37L, 0xc30c8ea1L, 0x5a05df1bL, 0x2d02ef8dL

};

static unsigned int crc32( const unsigned char \*buf, unsigned int size)

{

unsigned int i, crc;

crc = 0xFFFFFFFF;

for (i = 0; i < size; i++)

crc = crc32tab[(crc ^ buf[i]) & 0xff] ^ (crc >> 8);

return crc^0xFFFFFFFF;

}

具体协议

1. 后台下发对应人和卡号

上位机发送：

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| HEAD | Command\_flag | Index | card1（crc） | card2（crc） | crc | End |
| { | 1个字节 | 1个字节 | 4个字节 | 4个字节 | 2个字节 | } |

HEAD — 命令头，固定为2字节“{”

Command\_flag-命令标志 0x01

index — 对应人在数据表的位置.先一个字节，视情况而定。

card1—卡1对应的crc32 值 （小端模式）

card2—卡1对应的crc32 值

CRC—校验码，2个字节，暂时不使用

下位机回复

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| HEAD | Command\_flag | RET | CRC | End |
| { | 1个字节 | 1个字节 | 2个字节 | } |

Ret —是否正确接收，0x0F表示正确接收，0xF0表示需要重发。

Command\_flag-命令标志 0x02

1. 下位机发送：
   1. 请求命令

|  |  |  |  |
| --- | --- | --- | --- |
| HEAD | Command\_flag | CRC | End |
| { | 1个字节 | 2个字节 | } |

HEAD — 命令头，固定为2字节“{”

Command\_flag-命令标志 0x03

CRC—校验码，2个字节，暂时不使用

上位机回复

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| HEAD | Command\_flag | RE | CRC | End |
| { | 1个字节 | 1个字节 | 2个字节 | } |

Command\_flag-命令标志 0x02

2.2 上报

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| HEAD | Command\_flag | Index | In | CRC | End |
| { | 1个字节 | 1个字节 | 1个字节 | 2个字节 | } |

HEAD — 命令头，固定为2字节“{”

Command\_flag-命令标志 0x04

Index — 由后台给出

IN—老人移动信息，1字节，0x0F表示进，0xF0表示出

CRC—校验码，2个字节，暂时不使用

上位机回复

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| HEAD | Command\_flag | RE | CRC | End |
| { | 1个字节 | 1个字节 | 2个字节 | } |

Command\_flag-命令标志 0x02