INS401 BOOTLOADER 设计概述与版本说明

本文档包括INS401 BootLoader通信协议和工作流程两部分。

# 通信协议详细内容

BootLoader通信协议遵循Aceinna协议数据包格式，格式如下：

表 ACEINNA协议数据包格式

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 起始1 | 起始2 | 帧类型1 | 帧类型2 | 数据长度1 | 数据内容 | 校验1 | 校验2 |

说明：

* 起始：每一帧数据都以此开始，2字节：0x55 0x55。
* 帧类型：2字节，高字节在前。
* 数据长度：1字节，指数据内容的字节长度。
* 数据内容：最大255字节。

校验：crc16校验，2字节，低字节在前，从帧类型开始到数据内容结束计入校验计算

BootLoader具体通信命令如下所示：

1）UCB\_PING\_PRODUCT

发送：

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 0x55 | 0x55 | “pG”  (0x7047) | 数据长度1 | NULL | 校验1 | 校验2 |

返回

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 0x55 | 0x55 | “pG”  (0x7047) | 数据长度1 | Prodect\_name，unit\_version,，part\_number，serial\_num | 校验1 | 校验2 |

2）UCB\_GET\_APPVERSION

发送：

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 0x55 | 0x55 | “gV”  (0x6756) | 数据长度1 | NULL | 校验1 | 校验2 |

返回

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 0x55 | 0x55 | “gV”  (0x6756) | 数据长度1 | APP\_VERSION | 校验1 | 校验2 |

3）UCB\_J2IAP

发送：

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 0x55 | 0x55 | “JI”  (0x4A49) | 数据长度1 | NULL | 校验1 | 校验2 |

返回

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 0x55 | 0x55 | “JI”  (0x4A49) | 数据长度1 | NULL | 校验1 | 校验2 |

注：发送此命令后MCU跳转至BOOT模式

4）UCB\_J2APP

发送：

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 0x55 | 0x55 | “JA”  (0x4A41) | 数据长度1 | NULL | 校验1 | 校验2 |

返回

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 0x55 | 0x55 | “JA”  (0x4A41) | 数据长度1 | NULL | 校验1 | 校验2 |

注：发送此命令后MCU跳转至BOOT模式

5）UCB\_CORE\_SET

发送：

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0x55 | 0x55 | “CS”  (0x4353) | 数据长度1 | “C0”or“C1” | | Bin\_size | 校验1 | 校验2 |
| ‘C’ | ‘0’or‘1’ | 4 Bytes |

返回

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0x55 | 0x55 | “CS”  (0x4353) | 数据长度1 | 同上 | 同上 | 校验1 | 校验2 |

注：C0表示 CORE\_CM7\_0，C1表示CORE\_CM7\_1

bin\_size: 4bytes 按照从高到低排布

6）UCB\_CORE\_SET

发送：

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0x55 | 0x55 | “WA”  (0x5741) | 数据长度1 | StartAddr | numbytes | Bin data | 校验1 | 校验2 |
| 4 Bytes | 1 Bytes | xxx |

返回

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 0x55 | 0x55 | “WA”  (0x5741) | 数据长度1 | 同上 | 校验1 | 校验2 |

注：需保证 “数据长度” == Bin data长度 + 5 bytes,否则返回NAK帧

startAddress为0时，会先进行擦除，待擦除完成后再进行写入

7）UCB\_NAK

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 0x55 | 0x55 | 0x1515 | 0x02 | 0x0006 | 校验1 | 校验2 |

# BootLoader工作流程

# BootLoader 版本说明

V 1.0 BootLoader基本开发，实现通过M0 Uart和Eth烧录M7\_0和M7\_1。