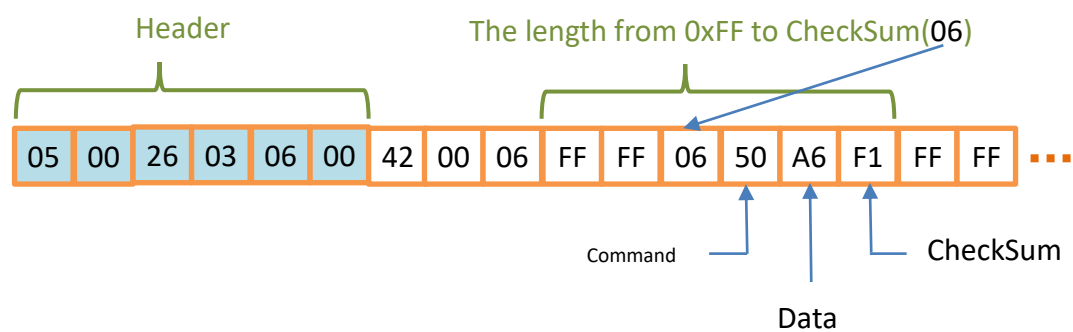


## Focal TP Read Write Steps ◦

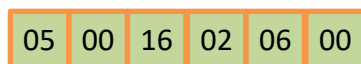
There are 3 steps for each Read/Write process are listed below:

- ① Write Request.
- ② Write Read Request .
- ③ Read Response.

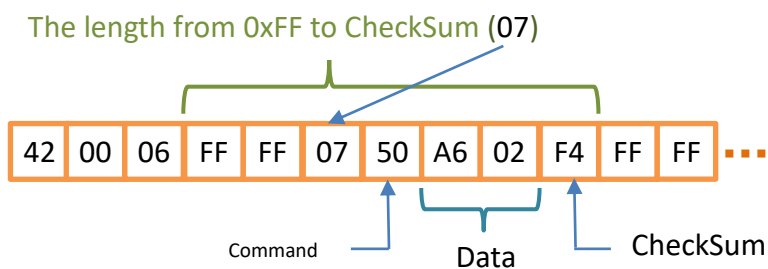
1. The total length of “Write Request Packet” are 72Bytes , Padding 0xFF after “Checksum” byte:



2. The length for “Write Read Request Packet” is 6 Bytes , the data are fixed:



3. The length of “Read Response Packet” is 66Bytes , Padding 0xFF after “Checksum” byte:



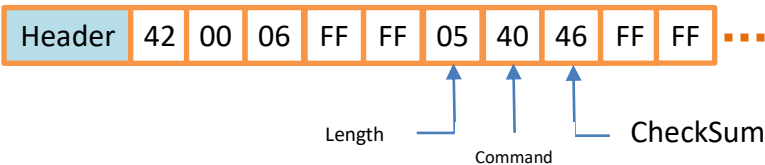
### Command List :

|     |                         |      |
|-----|-------------------------|------|
| 1.  | CMD_ENTER_UPGRADE_MODE  | 0x40 |
| 2.  | CMD_CHECK_CURRENT_STATE | 0x41 |
| 3.  | CMD_READY_FOR_UPGRADE   | 0x42 |
| 4.  | CMD_SEND_DATA           | 0x43 |
| 5.  | CMD_UPGRADE_CHECKSUM    | 0x44 |
| 6.  | CMD_EXIT_UPGRADE_MODE   | 0x45 |
| 7.  | CMD_USB_READ_UPGRADE_ID | 0x46 |
| 8.  | CMD_USB_ERASE_FLASH     | 0x47 |
| 9.  | CMD_READ_REGISTER       | 0x50 |
| 10. | CMD_WRITE_REGISTER      | 0x51 |

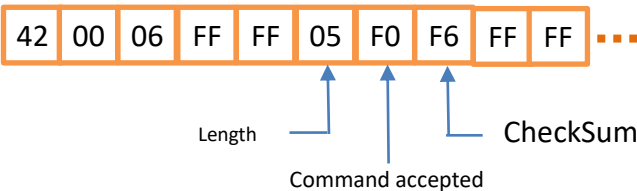
Focal Command Package Format :

1. CMD\_ENTER\_UPGRADE\_MODE      0x40

Send Packet:

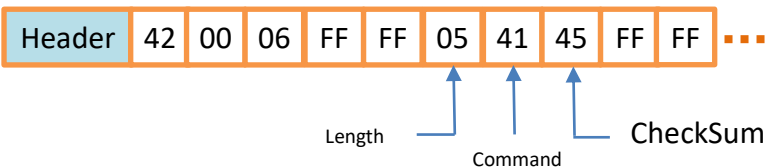


Return Packet:

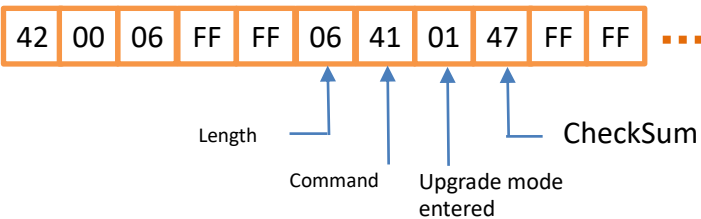


2. CMD\_CHECK\_CURRENT\_STATE      0x41

Send Packet:

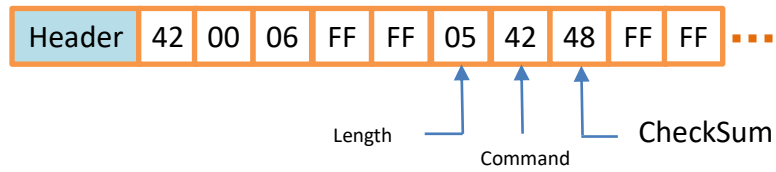


Return Packet:

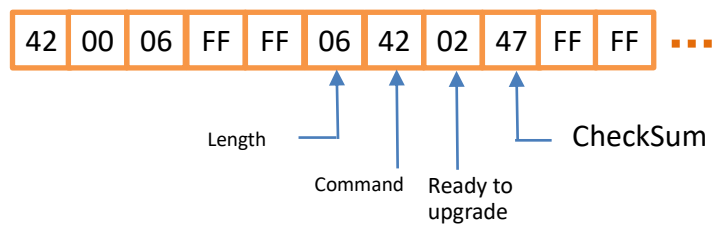


### 3. CMD\_READY\_FOR\_UPGRADE 0x42

Send Packet:

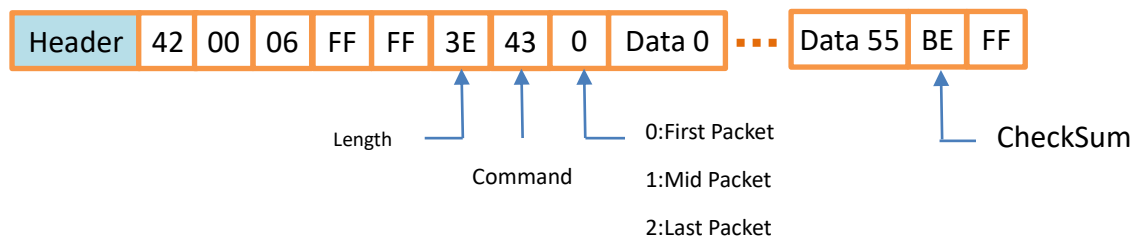


Return Packet:

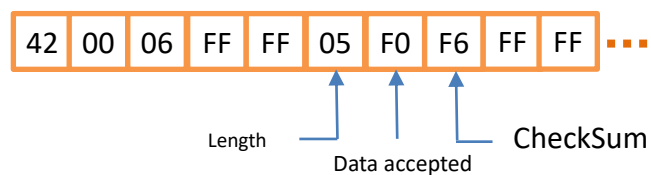


### 4. CMD\_SEND\_DATA 0x43

Send Packet:

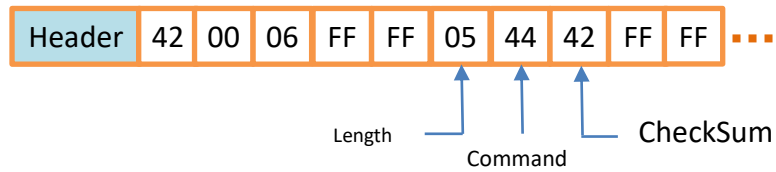


Return Packet:

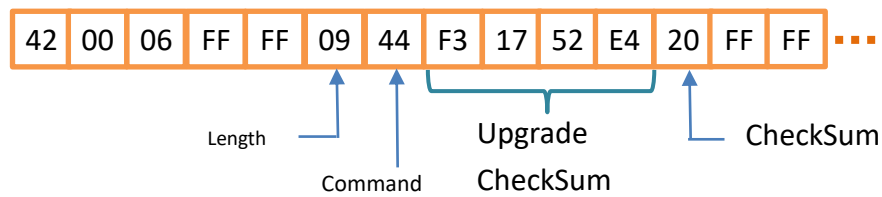


## 5. CMD\_UPGRADE\_CHECKSUM 0x44

Send Packet:



Return Packet:

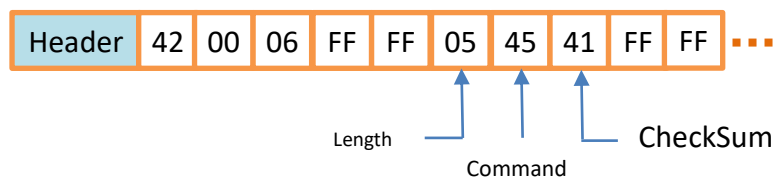


Upgrade Checksum =

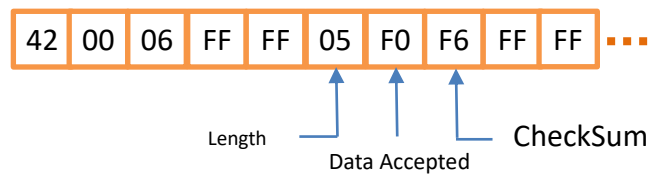
$(\text{RePacket}[10] \ll 24) + (\text{RePacket}[9] \ll 16) + (\text{RePacket}[8] \ll 8) + \text{RePacket}[7];$

## 6. CMD\_EXIT\_UPRADE\_MODE 0x45

Send Packet:

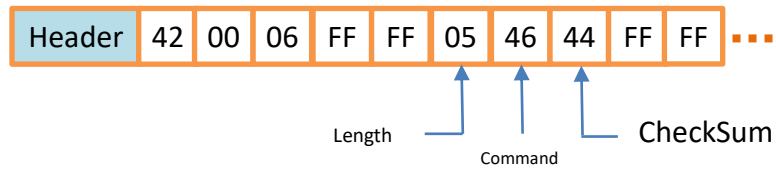


Return Packet:

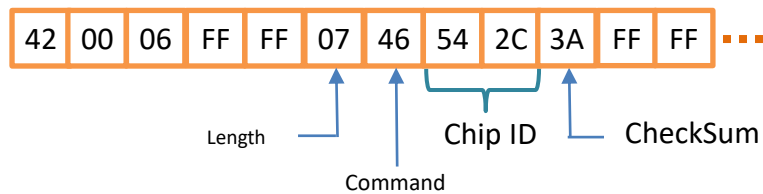


## 7. CMD\_USB\_READ\_UPGRADE\_ID 0x46

Send Packet:



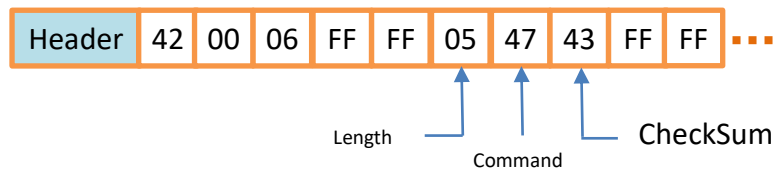
Return Packet:



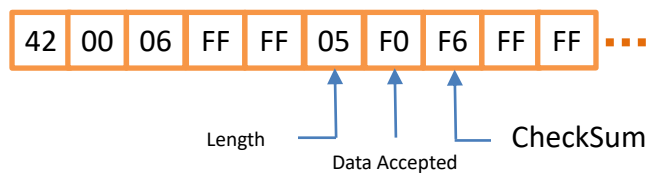
Chip ID = ((RePacket[7])<<8) + RePacket[8];  
= 542C

## 8. CMD\_USB\_ERASE\_FLASH 0x47

Send Packet:



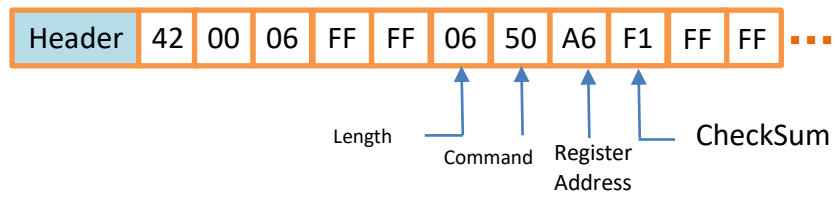
Return Packet:



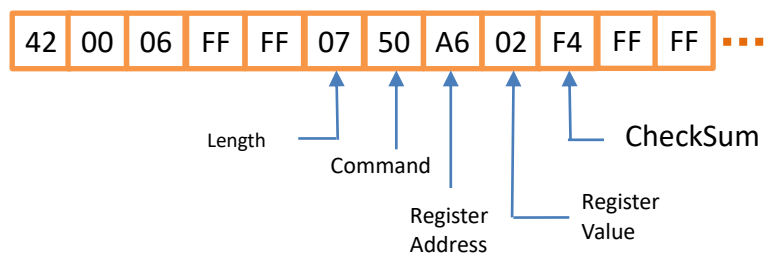
## 9. CMD\_READ\_REGISTER

0x50

Send Packet:



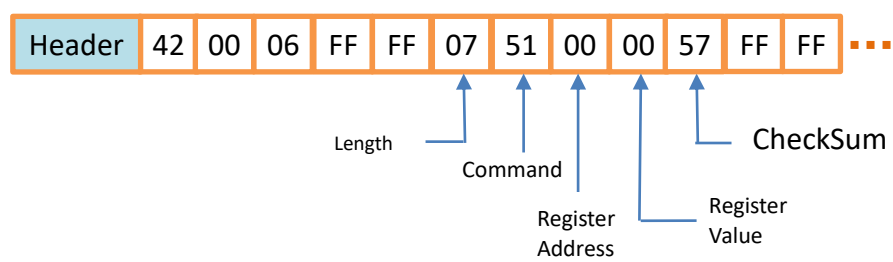
Return Packet:



## 10. CMD\_WRITE\_REGISTER

0x51

Send Packet:



Return Packet:

