## **Cloud\_Init**

|  |  |  |  |
| --- | --- | --- | --- |
| ID | 0XCD | Data Length | 1 |
| Dir | STM32 🡪Cloud | Checksum Length | 1 |

### Structure

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 0 | Cloud\_Init\_Data | | | | | | | |

## **IO\_cmdData\_Cloud**

|  |  |  |  |
| --- | --- | --- | --- |
| ID | 0XCD | Data Length | 8 |
| Dir | Cloud 🡪 STM32 | Checksum Length | 1 |

### Structure

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 0 | IO8 | IO7 | IO6 | IO5 | IO4 | IO3 | IO2 | IO1 |
| 1 | IO16 | IO15 | IO14 | IO13 | IO12 | IO11 | IO10 | IO9 |

## **IO\_cmdData\_AVR**

|  |  |  |  |
| --- | --- | --- | --- |
| ID | 0XCD | Data Length | 2 |
| Dir | STM32 🡪 AVR | Checksum Length | 1 |

### Structure

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 0 | IO8 | IO7 | IO6 | IO5 | IO4 | IO3 | IO2 | IO1 |
| 1 | IO16 | IO15 | IO14 | IO13 | IO12 | IO11 | IO10 | IO9 |

## **AVR\_IO\_Status**

|  |  |  |  |
| --- | --- | --- | --- |
| ID | 0X5D | Data Length | 2 |
| Dir | AVR 🡪 STM32 | Checksum Length | 1 |

### Structure

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 0 | IO8 | IO7 | IO6 | IO5 | IO4 | IO3 | IO2 | IO1 |
| 1 | IO16 | IO15 | IO14 | IO13 | IO12 | IO11 | IO10 | IO9 |

## **IO\_Status\_Cloud**

|  |  |  |  |
| --- | --- | --- | --- |
| ID | 0x5D | Data Length | 8 |
| Dir | STM32 🡪Cloud | Checksum Length | 1 |

### Structure

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 0 | IO8 | IO7 | IO6 | IO5 | IO4 | IO3 | IO2 | IO1 |
| 1 | IO16 | IO15 | IO14 | IO13 | IO12 | IO11 | IO10 | IO9 |

## **ADC\_Values\_AVR**

|  |  |  |  |
| --- | --- | --- | --- |
| ID | 0Xad | Data Length | 6 |
| Dir | AVR 🡪 STM32 | Checksum Length | 1 |

### Structure

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 0 | Voltage Phase 1 - (MSB) | | | | | | | |
| 1 | V1 – (LSB) | | Current Phase - 1 | | | | | |
| 2 | Voltage Phase 2 - (MSB) | | | | | | | |
| 3 | V2 – (LSB) | | Current Phase – 2 | | | | | |
| 4 | Voltage Phase 3 - (MSB) | | | | | | | |
| 5 | V3 – (LSB) | | Current Phase – 3 | | | | | |

**Current**: Resolution 🡪 1 bit = 0.25A

**Voltage**: Resolution 🡪 1 bit = 1V

## **ADC\_Values\_Cloud**

|  |  |  |  |
| --- | --- | --- | --- |
| ID | 0xAD | Data Length | 6 |
| Dir | STM32 🡪 Cloud | Checksum Length | 1 |

### Structure

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 0 | Voltage Phase 1 - (MSB) | | | | | | | |
| 1 | V1 – (LSB) | | Current Phase - 1 | | | | | |
| 2 | Voltage Phase 2 - (MSB) | | | | | | | |
| 3 | V2 – (LSB) | | Current Phase – 2 | | | | | |
| 4 | Voltage Phase 3 - (MSB) | | | | | | | |
| 5 | V3 – (LSB) | | Current Phase – 3 | | | | | |

## **DTMF Command Data**

|  |  |  |  |
| --- | --- | --- | --- |
| ID | 0xDC | Data Length | 2 |
| Dir | STM32 🡪 AVR | Checksum Length | 1 |

### Structure

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 0 | DTMF\_MN\_Index | | | | | | | |
| 1 | DTMF\_Data | | | | | | | |

## **AVR\_Message**

|  |  |  |  |
| --- | --- | --- | --- |
| ID | 0x51 | Data Length | 51 |
| Dir | AVR 🡪STM32 | Checksum Length | 1 |

### Structure

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 0 | Msg\_MN\_Index | | | | | | | |
| 1 | Message[50] | | | | | | | |

**MN Index**: This bit is used to Point the array index, which mobile to send the message.

**Message**: To store the message.

## **AVR\_Call**

|  |  |  |  |
| --- | --- | --- | --- |
| ID | 0xCA | Data Length | 1 |
| Dir | AVR 🡪 STM32 | Checksum Length | 1 |

### Structure

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 0 |  |  |  |  | Call | Call\_MN\_Index | | |

## **Stored Mobile Numbers**

|  |  |  |  |
| --- | --- | --- | --- |
| ID | 0xC0 | Data Length | 78 |
| Dir | STM32 🡪 AVR | Checksum Length | 1 |

### Structure

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 0 | DTMF\_MN\_Index | | | | | | | |
| 1 | Mobile Numbers | | | | | | | |