NEEY BATTERY PROTOCOL MESSAGE

# General Message Frame

|  |  |  |  |
| --- | --- | --- | --- |
| **NUM** | **Frame unit** | **Length** | **Remarks** |
| 1 | STX | 2 | Start frame：0x4E(78"N") 0x57(87"W") |
| 2 | LENGTH | 2 | Frame length |
| 3 | BMS terminal number | 4 | 4 byte ID |
| 4 | Command word | 1 | Refer to command word description, |
| 5 | Frame source | 1 | 0. BMS, 1. Bluetooth, 2. GPS, 3. PC upper computer |
| 6 | Transmission type | 1 | 0. Read data, 1. Reply frame, 2. BMS active upload |
| 7 | Frame information unit | N | Information field BMS setting data identification code |
| 8 | Record number | 4 | The upper 1 byte is random code, meaningless (reserved for encryption), and the lower 3 bytes are random code record number |
| 9 | End identification | 1 | 0X68 |
| 10 | Checksum | 4 | Accumulated Checksum (High 2 bytes for CRC not enabled fill 0, Low 2 |

## **Frame Starter Field**

Two bytes.The first byte is 0x4e and the second byte is 0x57

## **Length Domain**

L: Two bytes, all data bytes except the first two characters include the checksum and the length field itself.

## **BMS terminal number**

Four bytes in total: FF FF FF FF FF has a maximum 8-bit administrative backup number and a low 24-bit terminal number. (The highest byte is the default 00 and the low 3-byte is the one-dimensional ID number.

## **Command word description**

A byte that defines the transmission capabilities of this frame.

| **Command Code** | **Command Items** | **Remarks** |
| --- | --- | --- |
| 0x01 | Activation directive | When the BMS hibernates, the control side must activate the command first to communicate with the BMS. Received Do other things after you reply. |
| 0X02 | Write instructions | Configure BMS parameter instructions, |
| 0X03 | Read instructions | Read BMS ID data, |
| 0x05 | Password directives | To modify a parameter, the first command must be correct before it can be changed |
| 0x06 | Read all data | Read the ID table all at once |

## **Frame Source Description**

1 byte. 0.BMS, 1.Bluetooth, 2.GPS, 3, PC upper computer relative to both receiver and receiver

## **Transport type**

1 byte: 0 for request frame and 1 for answer frame.2 Represents voluntary reporting.As long as 5-Bluetooth, 2-GPS, 3-PC host and 4-BMS are launched first, the reply is 1.

## **Record number**

One byte high is a random code and three bytes low is a record code

## **End Code Field**

One byte 0x68

## **Check Code Domain**

High 2-byte CRC16 is temporarily not used, and the checksum identifies the sum of all data from the start to the end.

# Example Message Analysis

send→ **4E 57 00 13 00 00 00 00 06 03 00 00 00 00 00 00 68 00 00 01 29**

|  |  |  |  |
| --- | --- | --- | --- |
| **NUM** | **Frame unit** | **Length** | **Value** |
| 1 | STX | 2 | **4E 57** |
| 2 | LENGTH | 2 | **00 13** |
| 3 | BMS terminal number | 4 | **00 00 00 00** |
| 4 | Command word | 1 | **06** |
| 5 | Frame source | 1 | **03** |
| 6 | Transmission type | 1 | **00** |
| 7 | Frame information unit (Read all data and fill in 0x00) | 1 | **00** |
| 8 | Record number | 4 | **00 00 00 00** |
| 9 | End identification | 1 | **68** |
| 10 | Checksum | 4 | **00 00 01 29** |

recieve← 4E 57 01 0B 00 00 00 00 06 00 01 **79 3C 01 0E F9 02 0E F8 03 0F 01 04 0F 03 05 0F 02 06 0F 05 07 0F 02 08 0F 05 09 0E FB 0A 0E C8 0B 0E CB 0C 0E 9A 0D 0E C5 0E 0E C6 0F 0E CB 10 0E C1 11 0E CD 12 0E CB 13 0E BC 14 0E C2 80 00 1B 81 00 1E 82 00 1E 83 1D BC 84 27 10 85 47 86 02 87 00 01 89 00 00 00 00 8A 00 14 8B 00 00 8C 00 0B 8E 20 D0 8F 15 E0 90 10 68 91 10 36 92 00 04 93 0A F0 94 0B 54 95 00 04 96 01 2C 97 00 28 98 00 04 99 00 14 9A 00  
04 9B 10 36 9C 00 64 9D 00 9E 00 64 9F 00 50 A0 00 50 A1 00 46 A2 00 14 A3 00 64 A4 00 64 A5 FF EC A6 FF F6 A7 FF EC A8 FF F6 A9 14 AA 00 00 00 28 AB 00 AC 00 AD 03 E8 AE 01 AF 01 B0 00 0A B1 14 B2 00 00 00 00 00 00 00 00 00 00 B3 01 B4 36 30 33 30 30 30 30 31 B5 32 30 30 34 B6 00 00 00 01 B7 4E 57 5F 31 5F 30 5F 30 5F 32 30 30 34 32 38** 00 00 00 00 68 00 00 49 23

|  |  |  |
| --- | --- | --- |
| **Value** | **Length** | **Unit** |
| 4E 57 | 2 | Start Frame |
| 01 0B | 2 | Length = 267 |
| 00 00 00 00 | 4 | Terminal number |
| 06 | 1 | Command word: read all |
| 00 | 1 | Frame source |
| 01 | 1 | Transport type: answer frame |
| **79** 3C **……** |  | 3C: length 60 bytes = Single battery voltage: 3(bytes) x 20 Battery.  each set of three bytes represents the battery voltage. |
| 80 00 1B |  | Power Tube Temperature 1B-27 |
| 81 00 1E |  | Balance plate temperature 1E-30 |
| 82 00 1E |  | Battery temperature 1E-30 |
| 83 1D BC |  | Total battery voltage 76.12 |
| 84 27 10 |  | Current data 10000 free |
| 85 47 |  | SOC 71% |
| 86 02 |  | Number of sensors 2 |
| 87 00 01 |  | Number of battery cycles 1 |
| 89 00 00 00 00 |  | Total battery cycle cap acity |
| 8A 00 14 |  | Total numb er o f batter y strings 20 |
| 8B 00 00 |  | No alarm information |
| 8C 00 0B |  | Charge discharge MOS tube open |
| 8E 20 D0 |  | Total voltage o vervoltage protection 84.00V |
| 8F 15 E0 |  | Total voltage undervoltage p rotection 56.00V |
| 90 10 68 |  | Single overvoltage protection voltage 4200mV |
| 91 10 36 |  | Monomer overvoltage recovery voltage 4150Mv |
| 92 00 04 |  | Single over voltage p rotection delay of 4 seconds |
| 93 0A F0 |  | Single undervoltage protection voltage 2800MV |
| 94 0B 54 |  | Monomer undervo ltage r eco very voltage 2900MV |
| 95 00 04 |  | The single undervoltage protection is delayed for 4 seconds |
| 96 01 2C |  | Differential voltage p rotection valu e o f cell 300mV |
| 97 00 28 |  | Disch ar ge o vercurr ent protection value 40A |
| 98 00 04 |  | 4 seconds for discharge over castin g |
| 99 00 14 |  | Chargin g overcurr ent protection value 20 A |
| 9A 00 04 |  | 4 seconds wh en ch arging o ver str eamer |
| 9B 10 36 |  | Balanced starting voltage 4150mv |
| 9C 00 64 |  | Equalizing opening differential pr essure 100 mV |
| 9D 00 |  | Equalizin g switch o ff |
| 9E 00 64 |  | Power tube temperature protection value 100 |
| 9F 00 50 |  | Power tube temp erature recovery valu e 80 |
| A0 00 50 |  | Equalizing temperature protection value 80 |
| A1 00 46 |  | Equilibrium temperature recovery value 70 |
| A2 00 14 |  | Battery temperature difference protection value 20 ° |
| A3 00 64 |  | Battery charging high temperature protection value 100 |
| A4 00 64 |  | Battery discharge high temperature protection value 100 |
| A5 FF EC |  | Charging low temp erature protection value – 20 |
| A6 FF F6 |  | Recovery valu e o f charging lo w temp er atur e protection - 10 |
| A7 FF EC |  | Discharge low temperature protection value – 20 |
| A8 FF F6 |  | Recover y value o f discharge lo w temp erature protection – 10 |
| A9 14 |  | Battery string number setting 20 |
| AA 00 00 00 28 |  | Battery cap acity settin g 40 AH |
| AB 00 |  | Charging MOS Switch Write Control Bit 0 Close 1 On (Trigger) |
| AC 00 |  | Discharge MOS Switch Write Control Bit 0 Close 1 On (Trigger) |
| AD 03 E8 |  | Current Calibration 1000MA |
| AF 01 |  | Battery Type Default Li-ion |
| B0 00 0A |  | Hibernation wait time initialization default 10 seconds |
| B1 14 |  | Low capacity alarm 20% |
| B2 00 00 00 00 00 00 00 00 00 00 |  | Modify p arameter password default 0 |
| B3 01 |  | Private Charger Switch Default 1 |
| B4 36 30 33 30 30 30 30 31 |  | Device ID code initialization 60300001 |
| B5 32 30 30 34 |  | Factory Date 2004 |
| B6 00 00 00 01 |  | System wo rking time 1 min ute |
| B7 4E 57 5F 31 5F 30 5F 30 5F 32 30 30 34 32 38 |  | version number：NW\_1\_0\_0\_200428 |
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