

**Dynapack International Technology Corporation**

**LEV Aurola EEPROM DATA**

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| **Customer** | **:** | **Ananda** |
| **Project Name** | **:** | **Aurola\_36100** |
| **Product P/N** | **:** |  |
| **Assemble** | **:** | **10S4P** |
| **Cell Type** | **:** | **SDI Li-i ICR18650-26H** |
| **Version** | **:** | **13.0** |
| **F/W Version** | **:** | **V2.5** |
| **Chemistry ID** | **:** |  |
| **Date** | **:** | **2013/07/11** |
| **Owner** | **:** | **Hsinmo.Lin** |
| **Approver** | **:** |  |

**EEPROM CHANGE HISTORY**

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| --- | --- | --- |
| **DATE** | **VERSION** | **CHANGE MARK** |
| **2013/07/11** | **13.0** | **NEW PROJECT** |
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| **LI-ION EEPROM** | **Value** | **Remark** |
| RECORDING\_ADC\_OVER\_VOLTAGE\_TH | 2771 | 42.1V; unit: mV; check charging > over voltag for a long time |
| RECORDING\_ADC\_DSG\_OVER\_CURRENT\_TH | 2482 | 10A=10000mA; unit: mA; check > discharging TH current for recording |
| RECORDING\_ADC\_CHG\_FASTER\_CHARGING\_CURRENT\_TH | 1117 | 2500mA; unit: mA; check > charging TH current for detecting faster charging and recording |
| RECORDING\_ADC\_HIGH\_TEMP\_TH\_FOR\_CHARGING | 1350 | 45 Celcius; unit: mV; check > high temp for recording |
| RECORDING\_ADC\_LOW\_TEMP\_TH\_FOR\_CHARGING | 2815 | 5 Celcius; unit: mV; check < low temp for recording |
| RECORDING\_ADC\_LOW\_TEMP\_GRADE\_TH1 | 2628 | 10 Celcius; unit: mV; check < temp for recording |
| RECORDING\_ADC\_LOW\_TEMP\_GRADE\_TH2 | 2992 | 0 Celcius; unit: mV; check < temp for recording |
| RECORDING\_ADC\_LOW\_TEMP\_GRADE\_TH3 | 3301 | -10 Celcius; unit: mV; check < temp for recording |
| RECORDING\_ADC\_LOW\_TEMP\_GRADE\_TH4 | 3548 | -20 Celcius; unit: mV; check < temp for recording |
| RECORDING\_ADC\_HIGH\_TEMP\_GRADE\_TH1 | 953 | 60 Celcius; unit: mV; check > temp for recording |
| RECORDING\_ADC\_HIGH\_TEMP\_GRADE\_TH2 | 750 | 70 Celcius; unit: mV; check > temp for recording |
| RECORDING\_ADC\_HIGH\_TEMP\_GRADE\_TH3 | 590 | 80 Celcius; unit: mV; check > temp for recording |
| RECORDING\_ADC\_HIGH\_TEMP\_GRADE\_TH4 | 466 | 90 Celcius; unit: mV; check > temp for recording |
| RECORDING\_ADC\_HIGH\_TEMP\_GRADE\_TH5 | 369 | 100 Celcius; unit: mV; check > temp for recording |
|  |  |  |
|  |  |  |
| float\_CHG\_mA\_To\_ADC\_Factor | 0.446836364f | 4 bytes; |
| float\_DSG\_mA\_To\_ADC\_Factor | 0.248242424f | 4 bytes; |
| float\_VBAT\_mV\_To\_ADC\_Factor | 0.065821855f | 4 bytes; |
| float\_Thermistor\_mV\_To\_ADC\_Factor | 1.241212f | 4 bytes; = 1/ADC\_Step |
| char\_DSG\_OP\_ADC\_OFFSET | 0 | 1byte ; 實際值-理論值 (signed char) //used |
| char\_CHG\_OP\_ADC\_OFFSET | 0 | 1byte ; 實際值-理論值 (signed char) //used |
| char\_VBAT\_ADC\_OFFSET | 0 | 1byte ; 實際值-理論值 (signed char) //used |
| char\_NTC1\_ADC\_OFFSET | 0 | 1byte ; 實際值-理論值 Thermistor (signed char) //used |
| char\_NTC2\_ADC\_OFFSET | 0 | 1byte ; 實際值-理論值 Thermistor (signed char) //used |
| char\_SOC\_ADC\_OFFSET | 0 | 1byte ; 實際值-理論值 (signed char) |
| ulong\_RESERVED\_CAL\_FOR\_OFFSET1 | 0 |  |
| ulong\_RESERVED\_CAL\_FOR\_OFFSET2 | 0 |  |
| uint\_RESERVED\_CAL\_FOR\_OFFSET3 | 0 |  |
| uint\_MAX\_DSG\_C\_ADC\_RECORD\_EEPROM | 0 |  |
| uint\_MAX\_CHG\_C\_ADC\_RECORD\_EEPROM | 0 |  |
| uint\_MAX\_VBAT\_ADC\_RECORD\_EEPROM | 0 |  |
| uint\_MIN\_VBAT\_ADC\_RECORD\_EEPROM | 65535 |  |
| uint\_MAX\_VBAT\_SocLo\_ADC\_RECORD\_EEPROM | 0 |  |
| uint\_MAX\_VBAT\_SocHi\_ADC\_RECORD\_EEPROM | 0 |  |
| uint\_DSG\_MAX\_TH1\_ADC\_RECORD\_EEPROM | 0 |  |
| uint\_DSG\_MIN\_TH1\_ADC\_RECORD\_EEPROM | 65535 |  |
| uint\_DSG\_MAX\_TH2\_ADC\_RECORD\_EEPROM | 0 |  |
| uint\_DSG\_MIN\_TH2\_ADC\_RECORD\_EEPROM | 65535 |  |
| uint\_RECORD\_DATA\_COUNT\_EEPROM | 0 |  |
| uint\_CHG\_Cycle\_Count\_RECORD\_EEPROM | 0 |  |
| ulong\_CHG\_ADC\_AccumulatingQ\_RECORD\_EEPROM | 0 | max = 4,294,967,295 = 0xffff ffff ffff ffff |
| ulong\_DSG\_ADC\_AccumulatingQ\_RECORD\_EEPROM | 0 | max = 4,294,967,295 = 0xffff ffff ffff ffff |
| uint\_DSG\_Cycle\_Count\_RECORD\_EEPROM | 0 |  |
| uint\_RESERVED\_Recording\_FOR\_OFFSET1 | 0 | Reserved |
| uint\_CHG\_MAX\_TH1\_ADC\_RECORD\_EEPROM | 0 |  |
| uint\_CHG\_MIN\_TH1\_ADC\_RECORD\_EEPROM | 65535 |  |
| uint\_CHG\_MAX\_TH2\_ADC\_RECORD\_EEPROM | 0 |  |
| uint\_CHG\_MIN\_TH2\_ADC\_RECORD\_EEPROM | 65535 |  |
| uint\_G\_OVP\_TIMES\_RECORD\_EEPROM | 0 |  |
| uint\_G\_UVP\_TIMES\_RECORD\_EEPROM | 0 |  |
| uint\_G\_COCP\_TIMES\_RECORD\_EEPROM | 0 |  |
| uint\_G\_DOCP\_TIMES\_RECORD\_EEPROM | 0 |  |
| uint\_G\_TH1\_UTP\_TIMES\_RECORD\_EEPROM | 0 |  |
| uint\_G\_TH2\_UTP\_TIMES\_RECORD\_EEPROM | 0 |  |
| uint\_G\_CHG\_TH1\_OTP\_TIMES\_RECORD\_EEPROM | 0 |  |
| uint\_G\_CHG\_TH2\_OTP\_TIMES\_RECORD\_EEPROM | 0 |  |
| uint\_RECORD\_2nd\_DATA\_COUNT\_EEPROM | 0 | Reserved |
| uint\_RESERVED\_Recording\_FOR\_OFFSET3 | 0 | Reserved |
| uint\_RESERVED\_FOR\_OFFSET2 | 160 | 2 bytes // no used //NUMBER\_OF\_USED\_EEPROM\_BYTES |
| uchar\_System\_Control\_Bit\_EEPROM | 12 | 1 byte |
| uchar\_RESERVED\_FOR\_OFFSET1 | 0 |  |
| uchar\_VERSION | 255 | (don't change), has to be define at FW\_Version\_Define, 1 bytes//for main function addition and EEPROM Format changing |
| uchar\_MINOR\_VERSION | 255 | (don't change), has to be define at FW\_Version\_Define, 1 bytes//only for minor functions changing |
| uchar\_EEPROM\_VERSION | 4 | 1 bytes //only for EEPROM values changing |
| uchar\_RESERVED\_VERSION | 255 | (don't change),has to be define at FW\_Version\_Define, 1 bytes//0x00: Protuction, 0x01: Samples |
| uchar\_NUMBER\_OF\_PARALLEL\_CELLS | 4 | 1 bytes |
| uchar\_NUMBER\_OF\_SERIES\_CELLS | 10 | 1 bytes |
| uint\_MANUFACTURE\_DATE | 16950 | (MANUFACTURE\_DATE\_YEAR - 1980) \* 512 + MANUFACTURE\_DATE\_MONTH \* 32 + MANUFACTURE\_DATE\_DAY // 2 bytes |
| uint\_SERIAL\_NUMBER | 10 | 2 bytes |
| str\_len\_CELL\_TYPE\_LENGTH | 8 |  |
| str\_CELL\_TYPE | SDI 26H\_ |  |
| str\_len\_MANUFACTURE\_NAME\_LENGTH | 8 |  |
| str\_MANUFACTURE\_NAME | Dynapack |  |
| uint\_ADC\_CURRENT\_DETECT\_FOR\_DSG\_STATUS | 30 | 120mA; unit: mA; 2bytes; if current > the define, in discharging status |
| uint\_ADC\_CURRENT\_DETECT\_FOR\_CHG\_STATUS | 54 | 120mA; unit: mA; 2bytes; if current > the define, in charging status |
| uint\_ADC\_DOC\_PROTECTION | 10178 | 50A; unit: 1mA; (OVER) discharging current protection is positive |
| uint\_ADC\_COC\_PROTECTION | 2011 | 4.5A; unit: 1mA; charging current protection |
| uint\_ADC\_DSG\_HIGH\_CURRENT\_DETECT | 1986 | 8000mA; 2bytes; for switch High/Low OT Protection |
| uint\_ADC\_CHG\_CHARGER\_TAPE\_CURRENT | 670 | 1500mA; 2bytes; |
| ulong\_ADC\_AccQ\_FOR\_CHG\_TH | 26769600 | one Cycle Count Threshold; //long int => max = 4,294,967,295 = 0xffff ffff ffff ffff |
| uint\_Cycle\_Count\_FOR\_CHG\_1st\_TH | 150 | 150 times; unit: times; 2byte; Cycle Count times for charger to set CHG voltage |
| uint\_Cycle\_Count\_FOR\_CHG\_2nd\_TH | 500 | 500 times; unit: times; 2byte; Cycle Count times for charger to set CHG voltage |
| uint\_ADC\_BATTERY\_OV\_PROTECTION | 2791 | 42.4V(cell:4.24); unit: 1mV; 2bytes; 2nd level BATTERY OV PROTECTION |
| uint\_ADC\_BATTERY\_OV\_RELEASE | 2732 | 41.5V(cell:4.15); unit: 1mV; 2bytes; 2nd level BATTERY OV RELEASE |
| uint\_ADC\_BATTERY\_UV\_PROTECTION | 1843 | 28V(cell:2.8); unit: 1mV; 2bytes; 2nd level BATTERY UV PROTECTION |
| uint\_ADC\_BATTERY\_UV\_RELEASE | 2205 | 33.5V;For Delay reach Vol while UVP ; (org) 32V(cell:3.2);unit: 1mV; 2bytes; 2nd level BATTERY UV RELEASE |
| uint\_ADC\_DSG\_OT\_HIGH\_PROTECTION | 590 | unit: 80 Celcius; mV;Over temperature protection for discharging(High current) |
| uint\_ADC\_DSG\_OT\_HIGH\_RELEASE | 846 | unit: 65 Celcius; mV; Over temperature release for discharging(High current) |
| uint\_ADC\_DSG\_OT\_LOW\_PROTECTION | 750 | unit: 70 Celcius; mV; Over temperature protection for discharging(Low current) |
| uint\_ADC\_DSG\_OT\_LOW\_RELEASE | 846 | unit: 65 Celcius; mV; Over temperature release for discharging(Low current) |
| uint\_ADC\_CHG\_OT\_PROTECTION | 909 | unit: 62 Celcius; mV; Over temperature protection for charging() |
| uint\_ADC\_CHG\_OT\_RELEASE | 1000 | unit: 58 Celcius; mV; Over temperature release for charging() |
| uint\_ADC\_UT\_PROTECTION | 3155 | unit: -5 Celcius; mV; Under temperature protection() |
| uint\_ADC\_UT\_RELEASE | 2992 | unit: 0 Celcius; mV; Under temperature release() |
| uint\_ADC\_INITIAL\_CHARGING\_TEMP\_RANGE\_HI | 909 | unit: 62 Celcius; mV; initial start charging High temperature range |
| uint\_ADC\_INITIAL\_CHARGING\_TEMP\_RANGE\_LO | 3155 | unit: -5 Celcius; mV; initial start charging Low temperature range |
| uint\_ADC\_LOW\_TEMP\_SOC\_CHARGING\_RANGE\_HI | 2628 | unit: 10 Celcius; mV; At Low temperature, High temperature range for setting SOC signal High for charging |
| uint\_ADC\_LOW\_TEMP\_SOC\_CHARGING\_RANGE\_LO | 3155 | unit: -5 Celcius; mV; At Low temperature, Low temperature range for setting SOC signal High for charging |
| uint\_CELL\_OV\_VOLTAGE\_FOR\_SOC | 4240 | mv |
| uint\_CELL\_UV\_VOLTAGE\_FOR\_SOC | 2800 | mv |
| uint\_DSG\_CAPACITY\_DISPLAY\_TH\_1 | 18 |  |
| uint\_DSG\_CAPACITY\_DISPLAY\_TH\_2 | 36 |  |
| uint\_DSG\_CAPACITY\_DISPLAY\_TH\_3 | 54 |  |
| uint\_DSG\_CAPACITY\_DISPLAY\_TH\_4 | 72 |  |
| uint\_DSG\_CAPACITY\_DISPLAY\_TH\_5 | 90 |  |
| uint\_CHG\_CAPACITY\_DISPLAY\_TH\_1 | 16 |  |
| uint\_CHG\_CAPACITY\_DISPLAY\_TH\_2 | 37 |  |
| uint\_CHG\_CAPACITY\_DISPLAY\_TH\_3 | 58 |  |
| uint\_CHG\_CAPACITY\_DISPLAY\_TH\_4 | 79 |  |
| uint\_\_ADC\_LOOKUP\_DSG\_TEMP\_1\_TH\_ | 2992 | 0 Celcius; |
| uint\_\_ADC\_LOOKUP\_DSG\_TEMP\_2\_TH\_ | 2628 | 10 Celcius; |
| uint\_\_ADC\_LOOKUP\_DSG\_TEMP\_3\_TH\_ | 2241 | 20 Celcius; |
| uint\_\_ADC\_LOOKUP\_CHG\_TEMP\_1\_TH\_ | 2628 | 10 Celcius; |
| uint\_\_ADC\_LOOKUP\_CHG\_TEMP\_2\_TH\_ | 2241 | 20 Celcius; |
| uint\_\_ADC\_DSG\_CURRENT\_LOOKUP\_OCV\_TABLE\_TH1\_ | 1316 | <= 5300mA; 2bytes; |
| uint\_\_ADC\_DSG\_CURRENT\_LOOKUP\_OCV\_TABLE\_TH2\_ | 1663 | <= 6700mA; 2bytes; |
| uint\_\_ADC\_DSG\_CURRENT\_LOOKUP\_OCV\_TABLE\_TH3\_ | 2309 | <= 9300mA; 2bytes; |
| uint\_\_ADC\_DSG\_CURRENT\_LOOKUP\_OCV\_TABLE\_TH4\_ | 2979 | <= 12000mA; 2bytes; |
| uint\_\_ADC\_DSG\_CURRENT\_LOOKUP\_OCV\_TABLE\_TH5\_ | 3724 | <= 15000mA; 2bytes; |
| uint\_\_ADC\_DSG\_CURRENT\_LOOKUP\_OCV\_TABLE\_TH6\_ | 4319 | <= 17400mA; 2bytes; |
| uint\_AUTO\_ENTRY\_SLEEPING\_DELAY\_MINUTES | 720 | 720 minutes = 12 hours |
| uint\_CAPACITY\_DIFFERENCE\_VALUES | 10 | % ; 2bytes; |
| str\_len\_PROJECT\_NAME\_MAX\_LENGTH | 24 |  |
| str\_PROJECT\_NAME | Aurola\_36100 |  |
| str\_len\_MCU\_UID\_MAX\_LENGTH | 12 |  |
| str\_MCU\_UID | ----- |  |
| uchar\_BAR\_CODE\_REAL\_STORE\_LENGTH | 24 |  |
| str\_len\_BAR\_CODE\_MAX\_LENGTH | 24 |  |
| str\_BAR\_CODE | ----- |  |
| uint\_DESIGN\_CAPACITY\_mAH | 7800 | mAH, |
| uint\_RESERVED\_NoUsed\_\_User\_Define\_FOR\_OFFSET1 | 0 |  |
| uint\_REAL\_FCC\_UPDATE\_TIMES\_RECORD\_EEPROM | 0 |  |
| uint\_REAL\_FCC\_mAH\_RECORD\_EEPROM | 7800 | mAH, |
| uint\_STATIC\_OVER\_VOLTAGE\_HOURS\_TIMES\_RECORD\_EEPROM | 0 | record over voltage hours in static |
| uint\_CHG\_OVER\_VOLTAGE\_HOURS\_TIMES\_RECORD\_EEPROM | 0 | record over voltage hours in chg |
| uint\_OVER\_LOADING\_MINUTES\_TIMES\_RECORD\_EEPROM | 0 | record over loading minutes |
| uint\_FASTER\_CHARGING\_MINUTES\_TIMES\_RECORD\_EEPROM | 0 | record over voltage hours in chg |
| uint\_CHARGING\_IN\_HIGH\_TEMP\_HOURS\_TIMES\_RECORD\_EEPROM | 0 | record charging in high temp hours |
| uint\_CHARGING\_IN\_LOW\_TEMP\_HOURS\_TIMES\_RECORD\_EEPROM | 0 | record charging in low temp hours |
| uint\_STORE\_IN\_LOW\_TEMP1\_HOURS\_TIMES\_RECORD\_EEPROM | 0 | record store in low temp 1 hours |
| uint\_STORE\_IN\_LOW\_TEMP2\_HOURS\_TIMES\_RECORD\_EEPROM | 0 | record store in low temp 2 hours |
| uint\_STORE\_IN\_LOW\_TEMP3\_HOURS\_TIMES\_RECORD\_EEPROM | 0 | record store in low temp 3 hours |
| uint\_STORE\_IN\_LOW\_TEMP4\_HOURS\_TIMES\_RECORD\_EEPROM | 0 | record store in low temp 4 hours |
| uint\_G\_DSG\_TH1\_LOW\_CURRENT\_OTP\_TIMES\_RECORD\_EEPROM | 0 |  |
| uint\_G\_DSG\_TH1\_HIGH\_CURRENT\_OTP\_TIMES\_RECORD\_EEPROM | 0 |  |
| uint\_G\_DSG\_TH2\_LOW\_CURRENT\_OTP\_TIMES\_RECORD\_EEPROM | 0 |  |
| uint\_G\_DSG\_TH2\_HIGH\_CURRENT\_OTP\_TIMES\_RECORD\_EEPROM | 0 |  |
| uint\_STORE\_IN\_HIGH\_TEMP1\_MINUTES\_TIMES\_RECORD\_EEPROM | 0 | record store in high temp 1 minutes |
| uint\_STORE\_IN\_HIGH\_TEMP2\_MINUTES\_TIMES\_RECORD\_EEPROM | 0 | record store in high temp 2 minutes |
| uint\_STORE\_IN\_HIGH\_TEMP3\_MINUTES\_TIMES\_RECORD\_EEPROM | 0 | record store in high temp 3 minutes |
| uint\_STORE\_IN\_HIGH\_TEMP4\_MINUTES\_TIMES\_RECORD\_EEPROM | 0 | record store in high temp 4 minutes |
| uint\_STORE\_IN\_HIGH\_TEMP5\_MINUTES\_TIMES\_RECORD\_EEPROM | 0 | record store in high temp 5 minutes |
| uint\_RECORD\_3rd\_TRACKING\_DATA\_COUNT\_EEPROM | 0 |  |
| uchar\_EEPROM\_END\_DATA\_POSITION | 85 | EEPROM/Flash End code = 85 = 0x55 |
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**Note 1:**

**Electronic CT Label Data Storage Requirements**

Batteries shall electronically store the CT Label data in the fuel gauge EEPROM using SBS command 0x70. The first 16 bytes of 0x70 data shall be reserved for CT label data. Current CT label data consists of 14 digits. Command 0x70 reserves 2 bytes for growth of future CT label data. The CT label data shall be stored in byte offsets 0 -13, with the reserved byte offsets 14 and 15 populated with 00h. The detail of CT label, please refer to EPM’s definition.

**Example:**

CT Label: **6AWQP01BBVK001**

Command 0x70 contents:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Offset | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| ASCII | C | A | 0 | 5 | 1 | B | 1 | 0 | 0 | 0 | 2 | 4 | 1 | A | NUL | NUL |
| Hex | 43 | 41 | 30 | 35 | 31 | 42 | 31 | 30 | 30 | 30 | 32 | 34 | 31 | 41 | 00 | 00 |