内网通讯协议

ID: 0x18F000A0			Name: BMU System Status				
Duty Cycle: 100ms DLC: 8 Format: Baud Rate: 250kbps							Tx: BMU Rx:
Byte	Bit	Description	Data Length	Res.	offset	Remark	
1	0-3	**System Running Status**	4	1	0	0x00: Power Up 0x01: Stand By 0x02: Pre-charge 0x03: Ready 0x04: Discharging 0x05: Charging 0x06: Contactors Opening 0x07: Power off 0x08-0x14: Reserved 0x15: Error	
	4-7	**System Running Mode**	4	1	0	0x00: Normal Mode 0x01: Service Mode 0x02 -0x15: Reserved	
2	0-7	**Error Code**	8	1	0	0-255	
3	0-7	**Failure Level**	8	1	0	0x01: No Trouble 0x02: First Level Failure 0x03: Secondary Level Failure 0x03: Third Level Failure 0x08: Prompt Protection	
4	0-7	~					
5	0	**Input Control Status**	16	1	0	Contactor 1 Detection	
	1					Contactor 2 Detection	
	2	**0: OFF**				Contactor 3 Detection	
	3	**1: ON**				Contactor 4 Detection	
	4					MMU Power State	
	5					High Level Detection, pre-stay	
	6					Low Level Detection Charge Motor Signal	
	7					D14 Low Level Detection, pre-stay	
6	0					Hardware mutual	
	1					VMS KEY Status	
	2					CHG KEY Status	
	3					CC2 Shape State	
	4					Reserved	
	5					Reserved	
	6					Reserved	
	7					Reserved	
7	0	**Output Control Status**	16	1	0	Contactor 1 Enable	
	1	**0: OFF**				Contactor 2 Enable	
	2	**1: ON**				Contactor 3 Enable	
	3					Contactor 4 Enable	

	4				3	Contactor 5 Enable	
	5					Contactor 6 Enable	
	6					Contactor 7 Enable	
	7					MMU Power Enable	
8	0					Low Side Drive Move 1 Enable	
	1					Low Side Drive Move 2 Enable	
	2					BMU PWR Lock Make can	
	3					VCC Make can	
	4					Sensor PWR ENABLE	
	5					GPRS PWR ENABLE	
	6					Reserved	
	7					Reserved	

ID: 0x18F001A0			Name: BMU System Message 1				
Duty Cycle: 1000ms DLC: 8 Format: Baud Rate: 500kbps							Tx: BMU Rx:
Byte	Bit	Description	Data Length	Res.	offset	Range	
1-2	0-7	**Battery Insulation Resistance**	16	1	0	0-10000 KΩ	
	0-7						
3-4	0-7	**Load Insulation Resistance**	16	1	0	0-10000 KΩ	
	0-7						
5-6	0-7	**Total Battery SOH**	16	0.1	0	0-100%	
	0-7						
7-8	0-7	**Nominal Battery Capacity**	16	0.1	0	0-1000Ah	
	0-7						

ID: 0x18F002A0		Name: BMU System Message 2					
Duty Cycle: 1000ms DLC: 8 Format: Baud Rate: 500kbps						Tx: BMU Rx:	
Byte	Bit	Description	Data Length	Res.	offset	Range	
1	0-7	**BMU Supply Voltage**	16	0.1	0	0-50V	
2	0-7						
3	0-7	~					
4	0-7	~					
5	0-7	~					
6	0-7	~					
7	0-7	~					
8	0-7	~					

ID: 0x18F003A0		Name: BMU System Message 3				
Duty Cycle: 100ms DLC: 8 Format: Baud Rate: 500kbps						Tx: BMU Rx:
Byte	Bit	Description	Data Length	Res.	offset	Range
1-2	0-7	**Total Battery Voltage**	16	0.05	0	0-3200V
	0-7					
3-4	0-7	**Total Battery Current**	16	0.05	-1600	-1600-1600A
	0-7					
5-6	0-7	**Single Cumulative Sum**	16	0.05	0	0-3200V
	0-7					
7-8	0-7	**Total Battey Capacity (SOC)**	16	0.1	0	0-100%
	0-7					

ID: 0x18F004A0			Name: BMU Information 1				
Duty Cycle: 100ms DLC: 8 Format: Baud Rate: 500kbps							Tx: BMU Rx:
Byte	Bit	Description	Data Length	Res.	offset	Range	
1-2	0-7	**Maximum Cell Voltage**	16	0.001	0	0-5V	
	0-7						
3	0-7	**Highest Monomer Serial Number**	8	1	0	0-250	
4-5	0-7	**Lowest Cell Voltage**	16	0.001	0	0-5V	
	0-7						
6	0-7	**Lowest Monomer Serial Number**	8	1	0	0-250	
7-8	0-7	**Average Cell Voltage**	16	0.001	0	0-5V	
	0-7						

ID: 0x18F005A0			Name: BMU Information 2				
Duty Cycle: 100ms DLC: 8 Format: Baud Rate: 500kbps							Tx: BMU Rx:
Byte	Bit	Description	Data Length	Res.	offset	Range	
1-2	0-7	**Maximum Monomer Temperature**	16	0.1	-40	-40 ~ 125°C	
	0-7						
3	0-7	**Maximum Temperature Serial Number**	8	1	0	0-250	
4-5	0-7	**Minimum Monomer Temperature**	16	0.1	-40	-40 ~ 125°C	
	0-7						
6	0-7	**Minimum Temperature Serial Number**	8	1	0	0-250	
7-8	0-7	**Average Monomer Temperature**	16	0.1	-40	-40 ~ 125°C	
	0-7						

ID: 0x18F007A0			Name: BMU Information 3				
Duty Cycle: 100ms DLC: 8 Format: Baud Rate: 500kbps							Tx: BMU Rx:
Byte	Bit	Description	Data Length	Res.	offset	Range	
1-2	0-7	**Single Pressure Difference**	16	0.001	0	0-5V	
	0-7						
3-4	0-7	**Cell Temperature Difference**	16	0.1	0	0 ~ 250°C	
	0-7						
5	0-7	~					
6	0-7	~					
7-8	0-7	**The Total Voltage of the load**	16	0.05	0	0-3200V	
	0-7						

ID: 0x18F008A0			Name: BMU Statistical Data 1					
Duty Cycle: 100ms DLC: 8 Format: Intel Baud Rate: 500kbps								Tx: BMU Rx:
Byte	Bit	Description		Data Length	Res.	Offset	Range	
1-4	0-7	**Charge Accumulation Ampere Hour**		32	0.1	0	0-100,000,000Ah	
	0-7							
	0-7							
	0-7							
5-8	0-7	**Charge Accumulation Watt Hour**		32	0.1	0	0-100,000,000Wh	
	0-7							
	0-7							
	0-7							

ID: 0x18F009A0			Name: BMU Statistical Data 2				
Duty Cycle: 5000m DLC: 8 Format: Baud Rate: 500kbps							Tx: BMU Rx:
Byte	Bit	Description	Data Length	Res.	Offset	Range	
1-4	0-7	**Accumulated Discharge Ampere Hour**	32	0.1	0	0-100,000,000Ah	
	0-7						
	0-7						
	0-7						
5-8	0-7	**Accumulated Discharge Watt Hour**	32	0.1	0	0-100,000,000Wh	
	0-7						
	0-7						
	0-7						

ID: 0x18F00AA0			Name: BMU Version Data				
Duty Cycle: 5000ms DLC: 8 Format: Baud Rate: 500kbps							Tx: BMU Rx: PC
Byte	Bit	Description	Data Length	Res.	offset	Range	
1-4	0-7	**BMU Serial Number**	32	1	0	0~4,294,967,295	
	0-7						
	0-7						
	0-7						
5	0-7	**Software Version Number Section 1**	8	1	0	0~255	
6	0-7	**Software Version Number**	8	1	0	0~255	
7	0-7	**Software Version Number**	8	1	0	0~255	
8	0-7	**Software Version Number**	8	1	0	0~255	

ID: 0x18F011A0			Name: BMU Current Information					
Duty Cycle: 200ms DLC: 8 Format: Baud Rate: 500kbps								Tx: BMU Rx:
Byte	Bit	Description	Data Length	Res.	Offset	Range		
1-2	0-7	**10s Recharge Current Prediction**	16	0.05	-1600	-1600 ~ 1600A +: Charge -: Discharge		
	0-7							
3-4	0-7	**10s Discharge Current Prediction**	16	0.05	-1600	-1600 ~ 1600A +: Charge -: Discharge		
	0-7							
5	0-7							
6	0-7	**~**						
7	0-7							
8	0-7							

ID: 0x18F014A0			Name: BMU Total Pressure Collection				
Duty Cycle: 1000ms DLC: 8 Format: Baud Rate: 500kbps							Tx: BMU Rx:
Byte	Bit	Description	Data Length	Res.	offset	Range	
1-2	0-7	**HV1 Voltage**	16	0.05	0	0~3200V	
	0-7						
3-4	0-7	**HV2 Voltage**	16	0.05	0	0~3200A	
	0-7						
5-6	0-7	**Charging Current Requires Evaluation (Choose fast, slow charging mode and report separately)**	16	0.05	-1600	-1600~1600A Charge is positive put electricity is negative	
	0-7						
7-8	0-7	**Charging Voltage Requires Evaluation (Choose fast, slow charging mode and report separately)**	16	0.05	0	0~3200V	
	0-7						

ID: 0x18F100(0x00~0x1F)			Name: MMU System Status				
Duty Cycle: 100ms DLC: 8 Format: Baud Rate: 500kbps							Tx: MMU Rx: BMU
Byte	Bit	Description	Data Length	Res.	offset	Range	
1	0-7	~					
2	0-7	~					
3	0-7	~					
4	0-7	~					
5	0-7	~					
6	0-7	~					
7-8	0-7	**MMU High Pressure Electrical Status**	1	1	0	0: High Voltage Disconnect	
	0-7						

注：此报文定义有问题，第一字节长度是 7byte？第二，关于 MMU 状态的定义，只需一个 bit.

ID: 0x18F102(0x00~0x1F)		Name: MMU Information 1				
Duty Cycle: 100ms DLC: 8 Format: Baud Rate: 500kbps						Tx: MMU Rx: BMU
Byte	Bit	Description	Data Length	Res.	offset	Range
1-2	0-7	**Total Battery voltage (Single Cumulative Sum)**	16	0.05	0	0~3200V
	0-7					
3-4	0-7	**Total Battery Current**	16	0.05	-1600	-1600~1600A +: Charge -: Discharge
	0-7					
5-6	0-7	**Total Battery SOC**	16	0.1	0	0~100%
	0-7					
7-8	0-7	**~**				
	0-7					

ID: 0x18F103(0x00~0x1F)			Name: MMU Information 2				
Duty Cycle: 100ms DLC: 8 Format: Baud Rate: 500kbps							Tx: MMU Rx: BMU
Byte	Bit	Description	Data Length	Res.	offset	Range	
1-2	0-7	**Maximum Cell Voltage**	16	0.001	0	0~5V	
	0-7						
3	0-7	**Highest Voltage Serial Number**	8	1	0	0~250	
4-5	0-7	**Lowest Cell Voltage**	16	0.001	0	0~5V	
	0-7						
6	0-7	**Lowest Voltage Serial Number**	8	1	0	0~250	
7-8	0-7	**Average Cell Voltage**	16	0.001	0	0~5V	
	0-7						

ID: 0x18F104(0x00~0x1F)			Name: MMU Information 3				
Duty Cycle: 100ms DLC: 8 Format: Baud Rate: 500kbps							Tx: MMU Rx: MMU
Byte	Bit	Description	Data Length	Res.	offset	Range	
1-2	0-7	**Maximum Monomer Temperature**	16	0.1	-40	-40~125 °C	
	0-7						
3	0-7	**Maximum Temperature Serial Number**	8	1	0	0~250	
4-5	0-7	**Maximum monomer Temperature**	16	0.1	-40	-40~125°C	
	0-7						
6	0-7	**The Lowest Temperature Serial Number**	8	1	0	0~250	
7-8	0-7	**Average Monomer Temperature**	16	0.1	-40	-40~125°C	
	0-7						

ID: 0x18F200(0x00~0x1F)			Name: MMU Cell Voltage Data 1					
Duty Cycle: 1000ms DLC: 8 Format: Baud Rate: 500kbps								Tx: MMU Rx: BMU
Byte	Bit	Description	Data Length	Res.	offset	Range	
1-2	0-7	**Cell Voltage 1**	16	0.001	0	0~5V	
	0-7						
3-4	0-7	**Cell Voltage 2**	16	0.001	0	0 ~ 5V	
	0-7						
5-6	0-7	**Cell Voltage 3**	16	0.001	0	0 ~ 5V	
	0-7						
7-8	0-7	**Cell Voltage 4**	16	0.001	0	0 ~ 5V	
	0-7						

ID: 0x18F201(0x00~0x1F)			Name: MMU Cell Voltage data 2					
Duty Cycle: 1000ms DLC: 8 Format: Baud Rate: 500kbps							Tx: MMU Rx: BMU	
Byte	Bit	Description	Data Length	Res.	offset	Range	
1-2	0-7	**Cell Voltage 5**	16	0.001	0	0~5V	
	0-7						
3-4	0-7	**Cell Voltage 6**	16	0.001	0	0~5V	
	0-7						
5-6	0-7	**Cell Voltage 7**	16	0.001	0	0~5V	
	0-7						
7-8	0-7	**Cell Voltage 8**	16	0.001	0	0~5V	
	0-7						

ID: 0x18F202(0x00~0x1F)			Name: MMU Cell Voltage data 3					
Duty Cycle: 1000ms DLC: 8 Format: Baud Rate: 500kbps								Tx: MMU Rx: BMU
Byte	Bit	Description	Data Length	Res.	offset	Range		
1-2	0-7	**Cell Voltage 9**	16	0.001	0	0~5V		
	0-7							
3-4	0-7	**Cell Voltage 10**	16	0.001	0	0~5V		
	0-7							
5-6	0-7	**Cell Voltage 11**	16	0.001	0	0~5V		
	0-7							
7-8	0-7	**Cell Voltage 12**	16	0.001	0	0~5V		
	0-7							

ID: 0x18F203(0x00~0x1F)			Name: MMU Cell Voltage Data 4					
Duty Cycle: 1000ms DLC: 8 Format: Baud Rate: 500kbps								Tx: MMU Rx: BMU
Byte	Bit	Description	Data Length	Res.	offset	Range	
1-2	0-7	**Cell Voltage 13**	16	0.001	0	0~5V	
	0-7						
3-4	0-7	**Cell Voltage 14**	16	0.001	0	0~5V	
	0-7						
5-6	0-7	**Cell Voltage 15**	16	0.001	0	0~5V	
	0-7						
7-8	0-7	**Cell Voltage 16**	16	0.001	0	0~5V	
	0-7						

ID: 0x18F204(0x00~0x1F)			Name: MMU Cell Voltage Data 5					
Duty Cycle: 1000ms DLC: 8 Format: Baud Rate: 500kbps							Tx: MMU Rx: BMU	
Byte	Bit	Description	Data Length	Res.	offset	Range	
1-2	0-7	**Cell Voltage 17**	16	0.001	0	0~5V	
	0-7						
3-4	0-7	**Cell Voltage 18**	16	0.001	0	0~5V	
	0-7						
5-6	0-7	**Cell Voltage 19**	16	0.001	0	0~5V	
	0-7						
7-8	0-7	**Cell Voltage 20**	16	0.001	0	0~5V	
	0-7						

ID: 0x18F205(0x00~0x1F)			Name: MMU Cell Voltage Data 6					
Duty Cycle: 1000ms DLC: 8 Format: Baud Rate: 500kbps							Tx: MMU Rx: BMU	
Byte	Bit	Description	Data Length	Res.	offset	Range	
1-2	0-7	**Cell Voltage 21**	16	0.001	0	0~5V	
	0-7						
3-4	0-7	**Cell Voltage 22**	16	0.001	0	0~5V	
	0-7						
5-6	0-7	**Cell Voltage 23**	16	0.001	0	0~5V	
	0-7						
7-8	0-7	**Cell Voltage 24**	16	0.001	0	0~5V	
	0-7						

ID: 0x18F206(0x00~0x1F)			Name: MMU Cell Voltage Data 7					
Duty Cycle: 1000ms DLC: 8 Format: Baud Rate: 500kbps								Tx: MMU Rx: BMU
Byte	Bit	Description	Data Length	Res.	offset	Range	
1-2	0-7	**Cell Voltage 25**	16	0.001	0	0~5V	
	0-7						
3-4	0-7	**Cell Voltage 26**	16	0.001	0	0~5V	
	0-7						
5-6	0-7	**Cell Voltage 27**	16	0.001	0	0~5V	
	0-7						
7-8	0-7	**Cell Voltage 28**	16	0.001	0	0~5V	
	0-7						

ID: 0x18F207(0x00~0x1F)			Name: MMU Cell Voltage Data 8					
Duty Cycle: 1000ms DLC: 8 Format: Baud Rate: 500kbps								Tx: MMU Rx: BMU
Byte	Bit	Description	Data Length	Res.	offset	Range		
1-2	0-7	**Cell Voltage 29**	16	0.001	0	0~5V		
	0-7							
3-4	0-7	**Cell Voltage 30**	16	0.001	0	0~5V		
	0-7							
5-6	0-7	**Cell Voltage 31**	16	0.001	0	0~5V		
	0-7							
7-8	0-7	**Cell Voltage 32**	16	0.001	0	0~5V		
	0-7							

ID: 0x18F208(0x00~0x1F)			Name: MMU Cell Voltage Data 9					
Duty Cycle: 1000ms DLC: 8 Format: Baud Rate: 500kbps								Tx: MMU Rx: BMU
Byte	Bit	Description	Data Length	Res.	offset	Range		
1-2	0-7	**Cell Voltage 33**	16	0.001	0	0~5V		
	0-7							
3-4	0-7	**Cell Voltage 34**	16	0.001	0	0~5V		
	0-7							
5-6	0-7	**Cell Voltage 35**	16	0.001	0	0~5V		
	0-7							
7-8	0-7	**Cell Voltage 36**	16	0.001	0	0~5V		
	0-7							

ID: 0x18F209(0x00~0x1F)			Name: MMU Cell Voltage Data 10					
Duty Cycle: 1000ms DLC: 8 Format: Baud Rate: 500kbps								Tx: MMU Rx: BMU
Byte	Bit	Description	Data Length	Res.	offset	Range	
1-2	0-7	**Cell Voltage 37**	16	0.001	0	0~5V	
	0-7						
3-4	0-7	**Cell Voltage 38**	16	0.001	0	0~5V	
	0-7						
5-6	0-7	**Cell Voltage 39**	16	0.001	0	0~5V	
	0-7						
7-8	0-7	**Cell Voltage 40**	16	0.001	0	0~5V	
	0-7						

ID: 0x18F20A(0x00~0x1F)			Name: MMU Cell Voltage Data 11					
Duty Cycle: 1000ms DLC: 8 Format: Baud Rate: 500kbps								Tx: MMU Rx: BMU
Byte	Bit	Description	Data Length	Res.	offset	Range	
1-2	0-7	**Cell Voltage 41**	16	0.001	0	0~5V	
	0-7						
3-4	0-7	**Cell Voltage 42**	16	0.001	0	0~5V	
	0-7						
5-6	0-7	**Cell Voltage 43**	16	0.001	0	0~5V	
	0-7						
7-8	0-7	**Cell Voltage 44**	16	0.001	0	0~5V	
	0-7						

ID: 0x18F20B(0x00~0x1F)			Name: MMU Cell Voltage Data 12					
Duty Cycle: 1000ms DLC: 8 Format: Baud Rate: 500kbps							Tx: MMU Rx: BMU	
Byte	Bit	Description	Data Length	Res.	offset	Range	
1-2	0-7	**Cell Voltage 45**	16	0.001	0	0~5V	
	0-7						
3-4	0-7	**Cell Voltage 46**	16	0.001	0	0~5V	
	0-7						
5-6	0-7	**Cell Voltage 47**	16	0.001	0	0~5V	
	0-7						
7-8	0-7	**Cell Voltage 48**	16	0.001	0	0~5V	
	0-7						

ID: 0x18F300(0x00~0x1F)			Name: MMU Cell Temperature Data 1					
Duty Cycle: 1000ms DLC: 8 Format: Baud Rate: 500kbps							Tx: MMU Rx: BMU	
Byte	Bit	Description	Data Length	Res.	offset	Range	
1-2	0-7	**Monomer Temperature 1**	16	0.1	0	-40~125°C	
	0-7						
3-4	0-7	**Monomer Temperature 2**	16	0.1	0	-40~125°C	
	0-7						
5-6	0-7	**Monomer Temperature 3**	16	0.1	0	-40~125°C	
	0-7						
7-8	0-7	**Monomer Temperature 4**	16	0.1	0	-40~125°C	
	0-7						

ID: 0x18F301(0x00~0x1F)			Name: MMU Cell Temperature Data 2					
Duty Cycle: 1000ms DLC: 8 Format: Baud Rate: 500kbps								Tx: MMU Rx: BMU
Byte	Bit	Description	Data Length	Res.	offset	Range	
1-2	0-7	**Monomer Temperature 5**	16	0.1	0	-40~125°C	
	0-7						
3-4	0-7	**Monomer Temperature 6**	16	0.1	0	-40~125°C	
	0-7						
5-6	0-7	**Monomer Temperature 7**	16	0.1	0	-40~125°C	
	0-7						
7-8	0-7	**Monomer Temperature 8**	16	0.1	0	-40~125°C	
	0-7						

ID: 0x18F302(0x00~0x1F)			Name: MMU Cell Temperature Data 3					
Duty Cycle: 1000ms DLC: 8 Format: Baud Rate: 500kbps								Tx: MMU Rx: BMU
Byte	Bit	Description	Data Length	Res.	offset	Range		
1-2	0-7	**Monomer Temperature 9**	16	0.1	0	-40~125°C		
	0-7							
3-4	0-7	**Monomer Temperature 10**	16	0.1	0	-40~125°C		
	0-7							
5-6	0-7	**Monomer Temperature 11**	16	0.1	0	-40~125°C		
	0-7							
7-8	0-7	**Monomer Temperature 12**	16	0.1	0	-40~125°C		
	0-7							

ID: 0x18F303(0x00~0x1F)			Name: MMU Cell Temperature Data 3					
Duty Cycle: 1000ms DLC: 8 Format: Baud Rate: 500kbps							Tx: MMU Rx: BMU	
Byte	Bit	Description	Data Length	Res.	offset	Range	
1-2	0-7	**Monomer Temperature 13**	16	0.1	0	-40~125°C	
	0-7						
3-4	0-7	**Monomer Temperature 14**	16	0.1	0	-40~125°C	
	0-7						
5-6	0-7	**Monomer Temperature 15**	16	0.1	0	-40~125°C	
	0-7						
7-8	0-7	**Monomer Temperature 16**	16	0.1	0	-40~125°C	
	0-7						

ID: 0x18FA00			Name: MMU Version Data				
Duty Cycle: 5000ms DLC: 8 Format: Baud Rate: 500kbps							Tx: MMU Rx: PC
Byte	Bit	Description	Data Length	Res.	offset	Range	
1-4	0-7	**MMU Numbering**	32	1	0	0~4,294,967,295	
	0-7						
	0-7						
	0-7						
5	0-7	**Software Version Number Section 1**	8	1	0	0~255	
6	0-7	**Software Version Number Section 2**	8	1	0	0~255	
7	0-7	**Software Version Number Section 3**	8	1	0	0~255	
8	0-7	**Software Version Number Section 4**	8	1	0	0~255	