CAN Bus Communication Specification

1. Communication specification

Principles for Data Link Layer

The bus communication rate is：250Kbps.

The specification of data link layer refers mainly to the relevant provisions of CAN2.0B and J1939.

Using 29-bit identifier of CAN extended frame and redefining. The following allocation table for 29 identifiers

IDENTIFIER 11BITS											SRR	IDE	IDENTIFIER EXTENSION 18BITS															
PRIORITY			R	DP	PDU FORMAT(PF)						SRR	IDE	PF		PDU SPECIFIC(PS)								SOURCE ADDRESS(SA)							
3	2	1	1	1	8	7	6	5	4	3			2	1	8	7	6	5	4	3	2	1	8	7	6	5	4	3	2	1
28	27	26	25	24	23	22	21	20	19	18			17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Among them, the priority is 3 bits, which can have 8 priorities: R is generally fixed to 0; DP is fixed to 0; 8 bits of PF is the code of the message; 8 bits of PS is the target address or group extension; 8 bits of S A is the source address of sending this message;

〉 Each node in the access network has a name and address. Name is used to identify the function of the node and arbitrate the address. Address is used for data communication of the node.

〉 Each node has at least one function. There may be multiple nodes with the same function, or one node with multiple functions.

CAN Network Address Assignment Table:

The CAN bus node address is obtained from the J1939 standard:

Node name	SOURCE ADDRESS(SA)
Motor Controller	239(0xEF)
Battery Management System (BMS)	244(0XF4）
Charger Control System（CCS）	229（0xE5）
Broadcast address（BCA)	80（0x50)

Message format:

message 1：（Charger receiving CAN ID：0x1806E5F4)

OUT	IN	ID				周期 cycle（ms)
BMS	CCS	P	R	DP	PF	1000
		6	0	0	6	
Data						
position	Data name					
BYTE1	Maximum allowable charging terminal voltage high bytes	0.1V/bit Offset ： 0 example ： Vset=3201, The corresponding voltage is 320.1V.				
BYTE2	Maximum allowable charging terminal					

	voltage low bytes	
BYTE3	Maximum permissible charging current high bytes	0.1V/bit Offset ： 0 example ： Iset=582, The corresponding Electric current is 58.2A。
BYTE4	Maximum permissible charging current low bytes	
BYTE5	control	0: Battery charger Open charging. 1: Battery protection, Charger Close Output
BYTE6	control	0：Charging mode。1：Heating mode。
BYTE7	Retain	
BYTE8	Retain	

Message2：（Charger send out CAN ID：0x18FF50E5)

OUT	IN	ID				周期 cycle（ms)
CCS	BCA	P	R	DP	PF	1000
		6	0	0	0xFF	
Data						
position	Data name					
BYTE1	Output voltage high byte			0.1v/bit offset: 0 example: Vout = 3201, the corresponding voltage is 320.1v.		
BYTE2	Output voltage low byte					
BYTE3	Output current high byte			0.1a/bit offset: 0 example: IOUT = 582, corresponding current is 58.2a.		
BYTE4	Output current low byte					
BYTE5	Status flag STATUS					
BYTE6	Retain					
BYTE7	Retain					
BYTE8	Retain					

STATUS	Identification	describe
Bit0	Hardware failure	0：Normal. 1：Hardware failure.
Bit1	Charger temperature	0：Normal. 1：Charger temperature too highprotection.
Bit2	input voltage	0：Normal input voltage. 1：Input voltage error, charger stop working.
Bit3	Startup state	0：Battery Access Normal. 1：Batteries are not connected or reversed.
Bit4	Communication state	0：Communications is normal. 1：Communication reception timeout.
Bit5		
Bit6		
Bit7		

work mode

1.BMS Fixed Interval Time 1S Sends Control Information (Message 1) to Charger. The charger receives the information and then works according to the voltage and current settings of the message data. If the message is not received in 5 seconds, it enters the communication error state and closes the output.

2.The charger sends broadcasting information (message 2) every 1S. The display instrument can display the status of the charger according to the information.