

□□□□□□□□ID□ 01

0000							0000						0000	0000
0000	0000	0000~1F00	0000~FF00	0000~FF00	0000~FF00		0000~1F00	0000~FF00	0000~FF00	0000~FF00	0000	0000	0000	0000
0000	0000	01	xx	xx	11		01	xx	xx	B1	0000	0000	00	
	0000	01	xx	xx	12		01	xx	xx	B2	0000	0000	00	
	/	/	/	/	/		01	xx	xx	B3	0000	0000	00	
	/	/	/	/	/		01	xx	xx	B4	0000	0000	00	0000
	0000	01	xx	xx	15		01	xx	xx	B5	0000	0000	00	
	0000	01	xx	xx	16		01	xx	xx	B6	0000	0000	00	
	0000	01	xx	xx	17		01	xx	xx	B7	0000	0000	00	
	0000	01	xx	xx	18		01	xx	xx	B8	0000	0000	00	
	0000	01	xx	xx	19		01	xx	xx	B9	0000	0000	00	0000
	/	/	/	/	/		01	xx	xx	BA	0000	0000	00	
	00RTC	01	xx	xx	1B		01	xx	xx	BB	RTC00	0000	00	0000
	00RTC	01	xx	xx	1C		01	xx	xx	BC	00RTC	0000	00	

byte[2]	8bits	unsigned int16	0.1V
byte[3]	8bits		
byte[4]	4bits	unsigned int8	0x00: 00 / 0x01: 0000 00000000
byte[5]	4bits	unsigned int8	0: 00 / 1: 00
byte[6]	4bits	unsigned int8	0x00: 00 / 0x01: 00000000
byte[7]	5bits	unsigned int8	0x00: 00000 / 0x01: 00

CAN
SWA
CAN

0x00

“ 0x02 0x03 CAN CANID 0x 01 02 03 11 02 01 00 00

	CAN ID				L->H
	0x01 02 03 11			4	02 01 00 00
	0x01 02 03 B1			7	00 02 XX XX 01 00 00

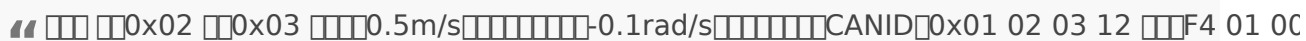
2. /

		CAN ID		ms

		0x 01 XX XX 12	8	/
byte[0]	x	signed int16	mm/s	
byte[1]	x			
byte[2]	y	signed int16	mm/s	
byte[3]	y			
byte[4]		signed int16		
byte[5]				
byte[6]		signed int16		
byte[7]				

		CAN ID		ms
		0x 01 XX XX B2	8	20
byte[0]	x	signed int16	mm/s	
byte[1]	x			
byte[2]	y	signed int16	mm/s	
byte[3]	y			
byte[4]		signed int16	mrad/s	
byte[5]				
byte[6]		signed int16		
byte[7]				

Y



3.

--	--	--	--	--

CAN 2.0B				
Header	Header	CAN ID	Header	Header
Header	Header	0x 01 XX XX B3	8	20
Header	Header	Header	Header	
byte[0]	Header [7:0]	signed int32	Headermm	
byte[1]	Header [15:8]			
byte[2]	Header [23:16]			
byte[3]	Header [31:24]			
byte[4]	Header [7:0]	signed int32	Headermm	
byte[5]	Header [15:8]			
byte[6]	Header [23:16]			
byte[7]	Header [31:24]			

XXXXXXXXXXXXXXXXXXXXXXXXXXXX

XXXXXXXXXX				
XXX	XXX	CAN ID	XXX	ms
XX	XXX	0x 01 XX XX 15	1	/
XXX	XX	XXXX	XX	
byte[0]	XXXXXX	unsigned int8	0: XXXXXX / 1~20:20ms / 20~255:XXX	
byte[1~7]	/	/	/	

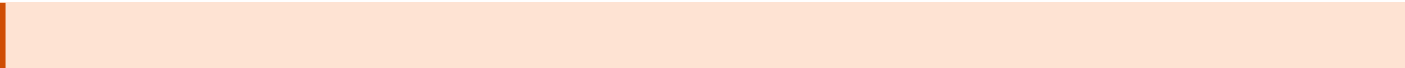
XXXXXXXXXX				
XXX	XXX	CAN ID	XXX	XXXms
XXX	XX	0x 01 XX XX B5	7	20~255XXXXXX
XXX	XX	XXXX	XX	
byte[0]	XXXX	unsigned int8	XXXXXXXXXX	
byte[1]	XXXXXX	signed int8	XX:-100~100	
byte[2]	XXXXXX	signed int8	XX:-100~100	
byte[3]	XXXXXX	signed int8	XX:-100~100	
byte[4]	XXXXXX	signed int8	XX:-100~100	
byte[5]	XXXVRA	signed int8	XX:-100~100	
byte[6]	XXXVRA	signed int8	XX:-100~100	
byte[7]	/	/	/	

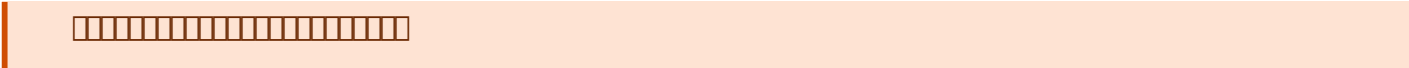
XXXXXX		
X	X	XX
bit[0]	0: XX 1: XX 2: XX 3: XX	SWA
bit[1]		

byte[1~7]	/	/	/
-----------	---	---	---

CAN ID				
CAN ID	Length	CAN ID	Length	Unit
0x 01 XX XX B6	7			20~255cm
byte[0]	bit	data type	range	
byte[0]	0	unsigned int8	0~255	
byte[1]	1	unsigned int8	0~255cm	
byte[2]	2	unsigned int8	0~255cm	
byte[3]	3	unsigned int8	0~255cm	
byte[4]	4	unsigned int8	0~255cm	
byte[5]	5	unsigned int8	0~255cm	
byte[6]	6	unsigned int8	0~255cm	
byte[7]	/	/	/	

CAN ID		
bit	data type	range
bit[0]	0~1	0
bit[1]	0~1	1
bit[2]	0~1	2
bit[3]	0~1	3
bit[4]	0~1	4
bit[5]	0~1	5
bit[6]	0~1	6
bit[7]	0~1	7





“ 0x02 0x03 100ms CANID 0x01 02 03 16 64 ”

	CAN ID				L->H
	0x01 02 03 16			1	64
	0x01 02 03 B6			7	XX XX XX XX XX XX XX

6. /



		CAN ID		ms
		0x 01 XX XX 17	1	/
byte[0]		unsigned int8	0: / 1~20:20ms / 20~255:	
byte[1~7]	/	/	/	

		CAN ID		ms
		0x 01 XX XX B7	7	20~255
byte[0]		unsigned int8	01234567	
byte[1]	8	signed int16	Rpm	

byte[2]	8		
byte[3]	[7:0]	signed int32	
byte[4]	[15:8]		
byte[5]	[23:16]		
byte[6]	[31:24]		
byte[7]	/	/	/

“ 0x02 0x03 100msCANID0x01 02 03 17 64 ”

	CAN ID				L->H
	0x01 02 03 17			1	64
	0x01 02 03 B7			7	XX XX XX XX XX XX XX

7. /

		CAN ID		ms
		0x 01 XX XX 18	1	/
byte[0]		unsigned int8	0: / 1~100: 100ms / 100~255:	
byte[1~7]	/	/	/	

CAN 2.0B 数据帧格式				
帧类型	标识符	CAN ID	数据长度	数据长度单位
标准帧	11位	0x 01 XX XX B8	8	100~255字节
扩展帧	29位	标识符	数据	
byte[0]	8位	unsigned int8	bit0~bit7	
byte[1]	8位	unsigned int16	0.1V	
byte[2]	8位			
byte[3]	8位	unsigned int16	0.1A	
byte[4]	8位			
byte[5]	8位	signed int8	1°C	
byte[6]	8位	signed int8	1°C	
byte[7]	8位	unsigned int8	0~255	

CAN 2.0B 数据帧格式		
位	位	位
bit[0]	0: 0 / 1: 1	0~1
bit[1]	0: 0 / 1: 1	2~3
bit[2]	0: 0 / 1: 1	4~5
bit[3]	0: 0 / 1: 1	6~7
bit[4]	0: 0 / 1: 1	8~9
bit[5~7]	/	/


 帧类型 0x02 标识符 0x03 数据长度 100ms CAN ID 0x01 02 03 18 数据 64

CAN ID					
CAN ID	CAN ID	Length	Direction	Priority	Header
0x01 02 03 18	0x01 02 03 18	1	64		
0x01 02 03 B8	0x01 02 03 B8	8	XX XX XX XX XX XX XX XX		

8. CAN ID / CAN ID

Header

CAN ID				
Header	Header	CAN ID	Length	Header
Header	Header	0x 01 XX XX 19	8	/
Header	Header	Header	Header	
byte[0]	Header1	int32	Headermrad	
byte[1]				
byte[2]				
byte[3]				
byte[4]	Header2	int32	Headermrad	
byte[5]				
byte[6]				
byte[7]				

CAN ID				
Header	Header	CAN ID	Length	Headerms
Header	Header	0x 01 XX XX B9	8	/

000	00	0x 01 XX XX BA	5	500
000	00	0000	00	
byte[0]	0000	unsigned int8	000000	
byte[1]	0000	unsigned int8	000000	
byte[2]	0000	unsigned int8	000000	
byte[3]	0000	unsigned int8	000000	
byte[4]	0000	unsigned int8	000000	
byte[5]	/	/	/	

00000		
0	0	00
bit[0]	0: 00 / 1:00	000000
bit[1]	0: 00 / 1:00	000000
bit[2]	0: 00 / 1:00	00000
bit[3]	0: 00 / 1:00	0000000
bit[4~7]	/	/

00000		
0	0	00
bit[0]	0: 00 / 1:00	000000
bit[1]	0: 00 / 1:00	000000
bit[2~7]	/	/

00000		
0	0	00
bit[0]	0: 00 / 1:00	1000000
bit[1]	0: 00 / 1:00	2000000
bit[2]	0: 00 / 1:00	3000000

bit[3]	0: 00 / 1:00	4000000
bit[4~7]	/	/

0000		
0	0	00
bit[0]	0: 00 / 1:00	000000 (<15%) (00000000)
bit[1]	0: 00 / 1:00>	000000 (<5%)(00000000)
bit[2]	0: 000 / 1:00	000000
bit[3]	0: 000 / 1:00	0000
bit[4~7]	/	/

0000		
0	0	00
bit[0]	0: 00 / 1:00>	000000
bit[1]	0: 00 / 1:00>	0000
bit[2]	0: 00 / 1:00>	000000
bit[3]	0: 00 / 1:00>	000000
bit[4]	0: 00 / 1:00>	000000
bit[5~7]	/	/

“ 00 000x02 000x03 0000000000

0000					
0000	CAN ID	000	000	0000	0000L->H0
00	/	/	/	/	/
000	0x01 02 03 BA	000	000	5	00 00 00 04 00

10. CAN RTC

CAN RTC

CAN RTC				
byte	byte	CAN ID	ms	ms
0x01XXXX1B	0	/		
byte	byte	byte	byte	
byte[0~7]	/	/	/	

CAN RTC				
byte	byte	CAN ID	ms	ms
0x01XXXXBB	4	/		
byte	byte	byte	byte	
byte[0]	unix[0:7]	unsigned int32	unix[1970:01:01:00:00:00:00:00]	
byte[1]	unix[8:15]			
byte[2]	unix[16:23]			
byte[3]	unix[24:31]			
byte[4~7]	/	/	/	

CAN RTC

“ 0x02 0x03 2024-01-01 00:00:30 ”

CAN RTC					
byte	CAN ID	byte	byte	ms	ms[L->H]
0x0102031B	0	/			
0x010203BB	4	1E909165			

11. RTC

RTC				
Frame	Header	CAN ID	Length	Unit
Header	Header	0x 01 XX XX 1C	4	/
Frame	Header	Header	Header	
byte[0]	unix[0:7]	unsigned int32	unix[0:31] 1970-01-01 00:00:00	
byte[1]	unix[8:15]			
byte[2]	unix[16:23]			
byte[3]	unix[24:31]			
byte[4~7]	/	/	/	

RTC				
Frame	Header	CAN ID	Length	Unit
Header	Header	0x 01 XX XX BC	1	/
Frame	Header	Header	Header	
byte[0]	RTC	unsigned int8	0:00:00 1:00:00:00	
byte[1~7]	/	/	/	

“ 0x02 0x03 RTC 2024-01-01 00:00:30 ”

Header					
Header	CAN ID	Header	Header	Header	Header->H
Header	0x01 02 03 1C	Header	Header	4	1E 90 91 65
Header	0x01 02 03 BC	Header	Header	1	00

12. 数据帧

帧头RTC数据

帧头				
帧类型	帧标识	CAN ID	长度	标志
数据帧	0x01	0x01XXXX1D	4	/
字节	数据	数据类型	数据范围	
byte[0]	unix时间[0:7]	unsigned int32	unix时间戳 1970-01-01 00:00:00 ~ 2106-01-01 00:00:00	
byte[1]	unix时间[8:15]			
byte[2]	unix时间[16:23]			
byte[3]	unix时间[24:31]			
byte[4~7]	/	/	/	

帧数据				
帧类型	帧标识	CAN ID	长度	标志
数据帧	0x01	0x01XXXXBD	5	/
字节	数据	数据类型	数据范围	
byte[0]	0~255	unsigned int8	0~255	
byte[1]	0~255[0:7]	unsigned int32	unix时间戳 1970-01-01 00:00:00 ~ 2106-01-01 00:00:00	
byte[2]	0~255[8:15]			
byte[3]	0~255[16:23]			
byte[4]	0~255[24:31]			
byte[5]	/	/	/	

“ 0x02 0x03 2024-01-01 00:00:30 ”

数据内容

“ 0x02 0x03 00000000

0000					
0000	CAN ID	000	000	0000	0000L->H
00	0x01 02 03 1E	000	000	1	00
000	0x01 02 03 BE	000	000	2	00 01

[illegible]

CAN 2.0B 数据帧格式				
帧类型	标识符	CAN ID	数据长度	数据
标准帧	11位	0x 01 XX XX 1F	2	/
扩展帧	29位	标识符	数据	
byte[0]	数据	uint16	0: 标识符 数据mm	
byte[1]				
byte[2~7]	/	/	/	

CAN ID				
CAN ID	CAN ID	CAN ID	CAN ID	CAN IDms
0x 01 XX XX BF	0x	01 XX XX BF	7	/
0x 01 XX XX BF	0x	0x 01 XX XX BF	0x	

01	0x01 02 03 1F	01	01	1	C8 00
02	0x01 02 03 BF	01	01	7	01 F4 01 2C 01 C8 00

15. odom

odometer data and IMU data

odometer data				
Byte	Bit	CAN ID	Length	Unit
01	01	0x 01 XX XX 20	2	/
Byte	Bit	Length	Unit	
byte[0]	odometer	uint8	0: 0 / 1	
byte[1]	IMU	uint8	0: 0 / 1 IMU	
byte[2~7]	/	/	/	

odometer-IMU				
Byte	Bit	CAN ID	Length	Unit
01	01	0x 01 XX XX C0	8	20
Byte	Bit	Length	Unit	
byte[0]	odom_x [7:0]	signed int32	mm	
byte[1]	odom_x[15:8]			
byte[2]	odom_x[23:16]			
byte[3]	odom_x[31:24]			
byte[4]	odom_y[7:0]	signed int32	mm	

byte[5]	odom_y[15:8]
byte[6]	odom_y[23:16]
byte[7]	odom_y[31:24]

odom- 				
 	 	CAN ID	 	 ms
 	 	0x 01 XX XX C1	4	20
 	 	 	 	
byte[0]	odom_th [7:0]	signed int32	 mrad	
byte[1]	odom_th [15:8]			
byte[2]	odom_th [23:16]			
byte[3]	odom_th [31:24]			
byte[4~7]	/	/	/	

IMU IMU

“ 0x02 0x03 IMU odom odom x=1m y= 1m

 					
 	CAN ID	 	 	 	 L->H
 	0x01 02 03 20	 	 	2	01 01
 	0x01 02 03 C0	 	 	8	E8 03 00 00 E8 03 00 00
 	0x01 02 03 C1	 	 	4	00 00 00 00

☐☐ #11

☐ Yixuan Jiang ☐☐ 16 ☐ 2024 08:53:57

☐ Yixuan Jiang ☐☐ 28 ☐ 2024 12:06:19