

faro_can_sdk_demo_obd2.c

This document build base on faro_can_sdk_demo_obd2.c function:

-h --help description

command	Value(First)	Value(Second)
-h	N/A	N/A
Description: Showing functions list description		
Syntax: sudo ./bin/faro_can_sdk_demo_obd2 -p <UART Device> -h		
Example : sudo ./bin/faro_can_sdk_demo_obd2 -p /dev/ttyUSB0 -h		
Receive: functions list description		

-s--scan port

Command	Value(First)	Value(Second)
-s	N/A	N/A
Description : Scan available Com Port in computer.		
Example : sudo ./bin/faro_can_sdk_demo_obd2 -p /dev/ttyUSB0 -s		
Receive: /dev/ttyUSB1 /dev/ttyUSB0		

-p – open port

Command	Value(First)	Value(Second)
-p	Port name	N/A
Description: Set comport. Using Seliconlab comport, port name will be “ttyUSBx” Syntax: sudo ./bin/faro_can_sdk_demo_obd2 -p <UART Device> <UART Device> Seliconlab comport, port name will be “ttyUSBx”		
Example sudo ./bin/faro_can_sdk_demo_obd2 -p /dev/ttyUSB0		

-d-- deinit time

Command	Value(First)	Value(Second)
-d	Program run time(seconds)	N/A
Description: Set Demo program running time. If not set this command, Demo program will be set default time in 30 seconds, when running time out, demo program will stop and exit automatically. If set value is -1, then demo program will not stop, until user using “ctrl-c”to manure stop demo program. Syntax: sudo ./bin/faro_can_sdk_demo_obd2 -p <UART Device> <DemoAP command> <deinit time> <DemoAP command> <deinit time> Set value for close demo function, unit second. Default value is 30 second. If set value -1, then demo program will not stop, until user using “ctrl-c”to manure stop demo Value : -1 ~ 65535		
Example : sudo ./bin/ faro_can_sdk_demo_obd2 -p /dev/ttyUSB0 -g -d 40		

Receive:

Firmware version and thread will stop in 40 second.

-g – get firmware version

Command	Value(First)	Value(Second)
-g	N/A	N/A
Description : Get module firmware version.		
Syntax: sudo ./bin/faro_can_sdk_demo_obd2 -p <UART Device> -g		
Example : sudo ./bin/faro_can_sdk_demo_obd2 -p /dev/ttyUSB0 -g		
Receive: fw_ver: 04.01.10.20.14		

-c – can config

Command	Value(First)	Value(Second)
-c	Can Port value	Can speed
Description : Set module can speed value.		
Syntax: sudo ./bin/faro_can_sdk_demo_obd2 -p <UART Device> -c <port> <can speed>		
<port> Set can port 0 : port 0 1 : port 1		
<can speed> Set can speed 0 : 1M 1 : 800K 2 : 500K 3 : 250K		

4 : 200K

5 : 125K

Example :

```
sudo ./bin/faro_can_sdk_demo_obd2 -p /dev/ttyUSB0 -c 0 2
```

Receive :

port = 0, speed = 2

-m – mode active

Command	Value(First)	Value(Second)
-m	Can Port value	Mode active value

Description:

Set can port mode active value.

* If open J1708 and J1708_21 mode, command will ignore Can port value setting.

* if open CAN2ADR_OBD2 and CAN2ADR_J1939, Port value need to set in port 1.

Syntax:

```
sudo ./bin/faro_can_sdk_demo_obd2 -p <UART Device> -m <port> <mode>
```

<port>

Set can port

0 : port 0

1 : port 1

<mode>

Set module active mode

0 : Raw CAN

1 : OBD2

2 : J1939

3 : J1708_27byte

4 : CAN2ADR_OBD2

5 : CAN2ADR_J1939

8 : J1708_21

9 : J1708_21_OFF

Example :

```
sudo ./bin/faro_can_sdk_demo_obd2 -p /dev/ttyUSB0 -m 0 1
```

Receive:

mode_active argument : 1 success.

-t – test cnt

Command	Value(First)	Value(Second)
-t	Set time value	N/A
Description: Set counter for test loop.		
Syntax: sudo ./bin/faro_can_sdk_demo_obd2 -p <UART Device> <DemoAP command> -t <count> <DemoAP command> Set Demo Option: Value : according -h -- help description <count> Set Demo or test loop count: Value : counter value		
Example : sudo ./bin/faro_can_sdk_demo_obd2 -p <UART Device> -g -t 10 Receive: get FW count = 1, can_fw_ver: 04.01.10.20.14 get FW count = 2, can_fw_ver: 04.01.10.20.14 get FW count = 3, can_fw_ver: 04.01.10.20.14 get FW count = 4, can_fw_ver: 04.01.10.20.14 get FW count = 5, can_fw_ver: 04.01.10.20.14 get FW count = 6, can_fw_ver: 04.01.10.20.14 get FW count = 7, can_fw_ver: 04.01.10.20.14 get FW count = 8, can_fw_ver: 04.01.10.20.14 get FW count = 9, can_fw_ver: 04.01.10.20.14 get FW count = 10, can_fw_ver: 04.01.10.20.14		

-v-- SDK version

Command	Value(First)	Value(Second)
-v	N/A	N/A
Description: Get SDK version.		
Syntax sudo ./bin/faro_can_sdk_demo_obd2 -p <UART Device> -v		
Example : sudo ./bin/faro_can_sdk_demo_obd2 -p /dev/ttyUSB0 -v		
Receive: Version v5.0.2		

-w – filter config raw

Command	Value(First)	Value(Second)	Value(3)	Value(4)	Value(5)
-w	Filter type	Port	bank	mode	Filter ID
	Value(6)	Value(7)	Value(8)		
	Filter ID	Filter Mask	Filter		
	Filter Mask		Mask		

Description:

Set CAN bus controller filters configuration.

Syntax:

```
sudo ./bin/faro_can_sdk_demo_obd2 -p <UART Device> -w <filter type> <port> <bank> <mode> <data1> <data2> <data3> <data4>
```

<filter type>

Set raw can filter type

- 0 : ID Mask
- 1 : ID List
- 2 : Remove
- 3 : Reset

<port>

Set can port

- 0 : port 0
- 1 : port 1

<bank>

Set filter bank
Value 0 ~ 13

<mode>

Set CAN filter frames mode:
0 : 2.0A (Standard Format)
1 : 2.0B (Extended Format)

<data1>

Set filter data, if mode is 2.0A, this item is 4 byte data.
Set filter data, if mode is 2.0B, this item is 8 byte data.
ex : (2.0A) 0x1234
ex : (2.0B) 0x12345678

<data2>

Set filter data, if mode is 2.0A, this item is 4 byte data.
Set filter data, if mode is 2.0B, this item is 8 byte data.
ex : (2.0A) 0x5678
ex : (2.0B) 0x87654321

<data3>

Set filter data, mode is 2.0A, item is 4 byte data.
ex : (2.0A) 0x8765

<data4>

Set filter data, mode is 2.0A, item is 4 byte data.
ex : (2.0A) 0x4321

Example :

```
sudo ./bin/faro_can_sdk_demo_obd2 -p /dev/ttyUSB0 -w 0 0 7 0 0x1234 0x5678 0x8765 0x4321  
sudo ./bin/faro_can_sdk_demo_obs2 -p /dev/ttyUSB0 -w 0 0 7 1 0x12345678 0x87654321
```

Receive:

Set filter success.

-x--get_filter_config

Command	Value(First)	Value(Second)
-x	Can Port value	Bank value
Description : Get filter config. Syntax: sudo ./bin/faro_can_sdk_demo_obd2 -p <UART Device> -x <port> <bank> <port> Set can port 0 : port 0 1 : port 1 <bank> Set filter bank Value 0 ~ 13		
Example : sudo ./bin/faro_can_sdk_demo_obd2 -p /dev/ttyUSB0 -x 0 0 Receive: set port = 0, bank = 0 type = 0, port = 0, bank = 0, mode = 5 filterId = 0x00000000, filterMask = 0x00000000		

-o – OBD2 Demo

Command	Value(First)	Value(2 ~ 14)
-o	OBD2 demo command	OBD2 command setting parameters
description: Do OBD2 Demo. Set command and parameter to run OBD2 demo function.		
Command -o 0 Description: Read OBD2 data. Syntax: sudo ./bin/faro_can_sdk_demo_obd2 -p <UART Device> -o 0		
Command -o 0 Example : sudo ./bin/faro_can_sdk_demo_obd2 -p /dev/ttyUSB0 -o 0 Receive : OBD2 read size = 16 receive cnt = 1 port = 0 id = 0x7E8 service = 0x01 pid = 0x0D can_mode = 0x00 dlc = 0x08 data[0] = 0x64 data[1] = 0x00 data[2] = 0x00 data[3] = 0x00 data[4] = 0x00 data[5] = 0x00 data[6] = 0x00 data[7] = 0x00		
Command -o 1 Description: Send obd2 data and receive. Syntax: sudo ./bin/faro_can_sdk_demo_obd2 -p <UART Device> -o 1 <port> <can id> <can mode> <dlc> <PID> <4/8 data1> <4/8 data2> <port> set port, 0 : port0 1 : port1 <Can id> Set Can data ID(3byte), Value : 0x7DF ~ 0x7E7 <can mode> Set CAN Data Frames Mode: 0 : 2.0A (Standard Format) 1 : 2.0B (Extended Format) <dlc> Set OBD2 data format data length code(DLC): Value : 0 ~ 8.		

<PID>

Set OBD2 Parameter ID, base on SAE J1979 OBD2-PIDs:

Value : 0x00 ~ 0xFF.

<4/8 data1>

Set OBD2 data format data byte 0 ~ byte 3:

Ex : 0x01020304.

<4/8 data2>

Set J1708 data format data byte 4 ~ byte 7:

Ex : 0x05060708.

Command -o 1 Example :

```
sudo ./bin/faro_can_sdk_demo_obd2 -p /dev/ttyUSB0 -o 1 0 0x7DF 0 8 0x0D 0x02010C00  
0x00000000
```

Receive:

Calling AZ_VC_OBD2_Write done

OBD2 read size = 16 receive cnt = 1

port = 0 id = 0x7E8 service = 0x01 pid = 0x0D can_mode = 0x00 dlc = 0x08

data[0] = 0x64 data[1] = 0x00 data[2] = 0x00 data[3] = 0x00 data[4] = 0x00 data[5] = 0x00

data[6] = 0x00 data[7] = 0x00

Command -o 2 Description:

Send obd2 PID sample and receive data.

Receive data is OBD format, will be hexadecimal value.

Syntax:

```
sudo ./bin/faro_can_sdk_demo_obd2 -p <UART Device> -o 2 <port> <sample PID>
```

<port>

set port,

0 : port0

1 : port1

<sample PID>

Set OBD2 PID:

Value :

1 : 0x0D - (VSS)Vehicle Speed

2 : 0x0C - (RPM)Vehicle RPM

3 : 0x2F - (FLI)Fuel Tank Level Input

4 : 0x46 - (AAT)Ambient air temperature

5 : 0x5E - (EFR)Engine fuel rate

6 : 0x42 - (VEP)Control module voltage

7 : 0x04 - (PCT)Calculated engine load

8 : 0x05 - (ECT)Engine coolant temperature

9 : 0x10 - (MAF)Mass Air Flow
10 : 0x45 - (ETP)Throttle Position
11 : 0x33 - (ABP)Absolute Barometric Pressure
12 : 0x0F - (IAT)Intake air temperature
13 : 0x0A - (ERP)Fuel pressure
14 : 0x5C - (EOT1)Engine oil temperature
15 : 0x5A - (APP)Relative Accelerator Pedal Position
16 : 0x02 - (VIN)Vehicle identification Number

Command -o 2 Example:

```
sudo ./bin/faro_can_sdk_demo_obd2 -p /dev/ttyUSB0 -o 2 0 1
```

Receive

obd2 send ID = 0x0D

receive cnt = 1

id = 0x7E8

service = 0x01

pid = 0x0D

data = 0x64

receive cnt = 2

id = 0x7E9

service = 0x01

pid = 0x0D

data = 0x64

Command -o 3 Description:

Send obd2 PID sample and receive decode data.

Receive data will be Decimal value.

Syntax:

```
sudo ./bin/faro_can_sdk_demo_obd2 -p <UART Device> -o 3 <port> <sample PID>
```

Command -o 3 Example:

```
sudo ./bin/faro_can_sdk_demo_obd2 -p /dev/ttyUSB0 -o 3 0 1
```

Receive

obd2 send ID = 0x0D

receive cnt = 1

pid = 0x0D

Speed = 100 km

receive cnt = 2

pid = 0x0D

Speed = 100 km

-q – quiet mode

Command	Value(First)	Value(Second)
-q	N/A	N/A
Description : Set DemoAP no receive any data syntax: sudo ./bin/faro_can_sdk_demo -p <UART Device> -q		
Example: sudo ./bin/faro_can_sdk_demo -p /dev/ttyUSB0 -j 0 -q Receive: N/A		