

FINTEK

CAN FD Series

Windows Tools Guide

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1. Introduction

1.1 Overview

Currently the tools package contains CAN FD GUI tool (FCANBUSFD.exe) and command line burnin tool (FitCANBusFdBurnIn.exe).

1.2 FitCANBusFdBurnIn.exe Command Syntax

FitCANBusFdBurnIn offers a set of command-line tools for Windows. Open windows command prompt and type the FitCANBusFdBurnIn to run and type any key then press ENTER to exit. This tool provides some parameters, command syntax is as below:

```
FitCANBusFdBurnIn.exe <ComPortNumber> <CAN_nominal_baudRate> <CAN_data_baudRate> <CANID>
<CANID_Bits> <CANFD_nominal_initial[HEX]> <CANFD_data_initial[HEX]> <CANFD_Initial[HEX]> <TxDelay>
<TxDiffIdNums> <CAN_option> <TxRxMode> <FilterPatten0> <FilterMask0> ... <FilterPatten15> <FilterMask15>
```

Parameters:

<ComPortNumber>	Indicate the CAN controller, depends on com port occupied from Fintek driver.
<CAN_nominal_baudRate>	Unit is k, 250 means 250k bps.
<CAN_data_baudRate>	Support nominal baudrate: [10 20 50 100 125 250 500 800 1000] Support data(BRS) baudrate: [1000 2000 4000 5000]
<CANID>	CANID with hex format.
<CANID_Bits>	11 or 29 to indicate 11bit or 29bit
<CANFD_nominal_initial>	CANFD_nominal_initial with hex format. [13:0]: nominal brp; [15:14]: nominal sjw; [31:16]: nominal sample point; The sample point is configured as a percentage value multiplied by 100. For example, 7500 (0x1D4C) represents a sample point of 75% and 8750 (0x222E) represents a sample point of 87.5%.
<CANFD_data_initial>	CANFD_data_initial with hex format. [13:0]: data brp; [15:14]: data sjw; [31:16]: data sample point;

<CANFD_initial>	CANFD_initial with hex format. [0]: CAN fd enable; [1]: CAN fd BRS enable; [2]: CAN fd ISO enable; [3]: CAN fd SSP; [7:4]: data length; [11:8]: BRP divisor, set to 1; [22:16]: SSP offset, set to 4;
<TxDelay>	Indicate the interval after write messages. CAN2.0 Minimum: 1M: 140us / 800K: 165us / 500K: 265us / 250K: 530us / 125K: 1100us / 100K: 1350us / 50K: 2650us / 20K: 6550us / 10K: 13100us CAN FD Minimum: 500us
<TxDiffIdNums>	Indicate the message numbers to send out. Maximum: 65536
<CAN_option>	Default: 1200; [17]: tx/rx message log disable; [19]: tx wait mode, for CAN1 to CAN2 loopback test
<TxRxMode>	0: TX+RX mode 1: RX mode, 2: TX mode, others: not support
<FilterPatten>	Filter CANID pattern with hex format.
<FilterMask>	Filter mask with hex format

1.3 FitCANBusFdBurnIn.exe Command Example

```

命令提示字元
03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 10 11 12 13 14 15 16 17 18 19 1A 1B 1C 1D 1E 1F 20 21 22 23 24 25 26 27 28 29 2A
2B 2C 2D 2E 2F
2024-02-21 02:13:18:332:040:200 84 => 305419899(1234567Bh)[64] F0 F1 F2 F3 F4 F5 F6 F7 F8 F9 FA FB FC FD FE FF 00 01 02
03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 10 11 12 13 14 15 16 17 18 19 1A 1B 1C 1D 1E 1F 20 21 22 23 24 25 26 27 28 29 2A
2B 2C 2D 2E 2F
2024-02-21 02:13:18:352:328:900 84 => 305419900(1234567Ch)[64] F0 F1 F2 F3 F4 F5 F6 F7 F8 F9 FA FB FC FD FE FF 00 01 02
03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 10 11 12 13 14 15 16 17 18 19 1A 1B 1C 1D 1E 1F 20 21 22 23 24 25 26 27 28 29 2A
2B 2C 2D 2E 2F
2024-02-21 02:13:18:372:729:600 84 => 305419901(1234567Dh)[64] F0 F1 F2 F3 F4 F5 F6 F7 F8 F9 FA FB FC FD FE FF 00 01 02
03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 10 11 12 13 14 15 16 17 18 19 1A 1B 1C 1D 1E 1F 20 21 22 23 24 25 26 27 28 29 2A
2B 2C 2D 2E 2F
2024-02-21 02:13:18:393:119:800 84 => 305419902(1234567Eh)[64] F0 F1 F2 F3 F4 F5 F6 F7 F8 F9 FA FB FC FD FE FF 00 01 02
03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 10 11 12 13 14 15 16 17 18 19 1A 1B 1C 1D 1E 1F 20 21 22 23 24 25 26 27 28 29 2A
2B 2C 2D 2E 2F
2024-02-21 02:13:18:413:517:900 84 => 305419903(1234567Fh)[64] F0 F1 F2 F3 F4 F5 F6 F7 F8 F9 FA FB FC FD FE FF 00 01 02
03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 10 11 12 13 14 15 16 17 18 19 1A 1B 1C 1D 1E 1F 20 21 22 23 24 25 26 27 28 29 2A
2B 2C 2D 2E 2F
2024-02-21 02:13:18:433:911:300 84 => 305419904(12345680h)[64] F0 F1 F2 F3 F4 F5 F6 F7 F8 F9 FA FB FC FD FE FF 00 01 02
03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 10 11 12 13 14 15 16 17 18 19 1A 1B 1C 1D 1E 1F 20 21 22 23 24 25 26 27 28 29 2A
2B 2C 2D 2E 2F
2024-02-21 02:13:18:454:299:500 84 => 305419905(12345681h)[64] F0 F1 F2 F3 F4 F5 F6 F7 F8 F9 FA FB FC FD FE FF 00 01 02
03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 10 11 12 13 14 15 16 17 18 19 1A 1B 1C 1D 1E 1F 20 21 22 23 24 25 26 27 28 29 2A
2B 2C 2D 2E 2F
2024-02-21 02:13:18:474:377:300 TX frame/sec = 961
2024-02-21 02:13:18:474:434:400 TX total frame = 13460 / RX total frame = 236
C:\FPC\BECANFD_20240220.01\tools\240221.00_FitCANBusFdBurnIn\x64>FitCANBusFdBurnIn.exe COM29 1000 5000 12345678 29 1D4CC0
09 1D4CC000 000401FF 1000 10 1200 0 0 0

```

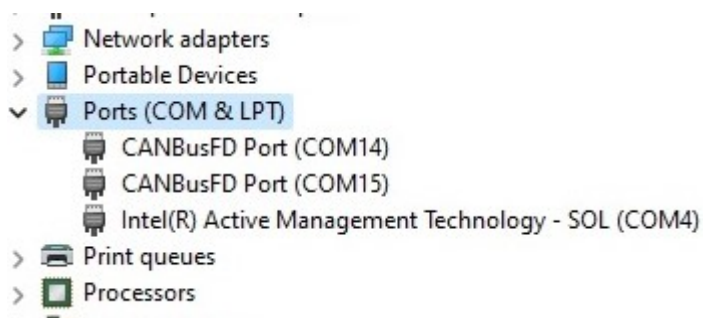


Figure 1. CANFD Port show in Device Manager

EX1:

```
FitCANBusFdBurnIn.exe COM14 1000 5000 18EA5678 29 1D4CC009 1D4CC000 000401FF 500 10 1200 0 0 0
```

Means CAN FD baud rate 1000/5000kbps(nominal/data), start CANID 18EA5678, 29bit protocol, wait 500us after write one messages, one cycle write 10 messages, 1200 is dummy parameter. CANFD nominal initial value is 75% sample point, SJW 3, BRP 9, BRP divisor 1, data length 8 and CAN fd/BRS/ISO enabled.

EX2:

```
FitCANBusFdBurnIn.exe com14 1000 5000 12345678 29 1D4CC009 1D4CC000 000401FF 1000 10 20000 0 0 0
```

CAN_option gives 20000, means to do cycle test without tx/rx message log.

EX3:

```
FitCANBusFdBurnIn.exe COM3 250 5000 123 11 222EC009 222EC000 000401FF 3000 10 1200 0 0 0
```

Means CAN FD baud rate 250/5000kbps(nominal/data), start CANID 123, 11bit protocol, wait 3000us after write one messages, one cycle write 10 messages, receive only mode, 1200 is dummy parameter. CANFD nominal initial value is 87.5% sample point, SJW 3, BRP 9, BRP divisor 1, data length 64 and CAN fd/BRS/ISO enabled.

EX4:

```
FitCANBusFdBurnIn.exe COM14 1000 5000 18EA5678 29 1D4CC009 1D4CC000 000401F0 500 10 1200 0 0 0
```

Means CAN 2.0 baud rate 1000kbps, start CANID 18EA5678, 29bit protocol, wait 500us after write one messages, one cycle write 10 messages, 1200 is dummy parameter. CAN2.0 is 75% sample point, SJW 3, BRP 9, BRP divisor 1, data length 8.

1.4 FCANBUSFD.exe GUI

Fintek CANFD tool Version 24.03.04.00

CANBus Connect

CANBus Device: COM41

☒ CAN FD
 ☒ BRS
 ☒ ISO
 ☒ SSP

1.

Connect Start

Send Cycle Interval (us) 1000

Baudrate Filter Setting Log Setting

Nominal BaudRate

1Mbps

SamplePoint 75

SJW(hex) 3

BRP(hex) 9

Data BaudRate

5Mbps

SamplePoint 75

SJW(hex) 3

BRP(hex) 0

BRP divisor 1

SSP offset 4

2.

Send

☐ Extended Mode (EFF)
 Length (DLC): 8
 ID (HEX): 00000713
 ☒ CAN FD
 ☒ BRS
 ☐ RTR Enable

3.

Data (HEX): 1122334455667788 0910111213141516 1718192021222324 2526272829303132

3334353637383940 4142434445464748 4950515253545556 5758596061626364

Send Send Cycle

Log

Send Log

4.

Send Flow

Current Flow 0

Total Flow 0

Receive Log

Receive Flow

Current Flow 0

Total Flow 0

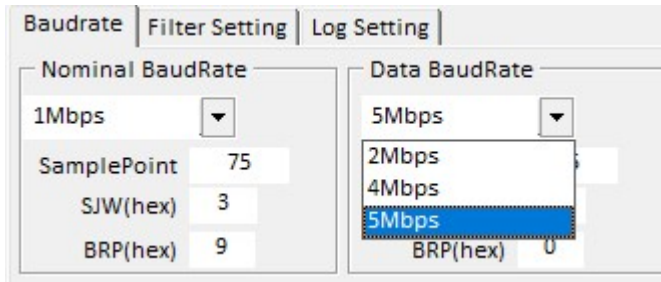
	Error Code	REC	TEC	Arb Lost	Error Pass	Overrun	Err Warn	SW Overrun
Count	0	0	0	0	0	0	0	0

5.

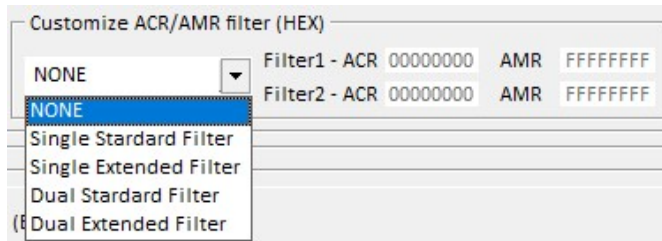
Description :

I. CanBus setting : Configure Baud Rate and Customize ACR/AMR Filters

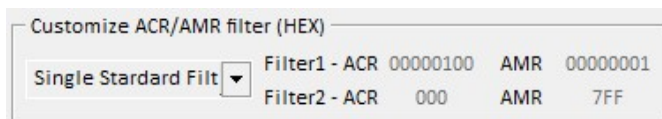
- BaudRate : As shown in BLOCK2, configure the nominal baud rate and the data baud rate.



- Customize ACR/AMR filter (HEX)

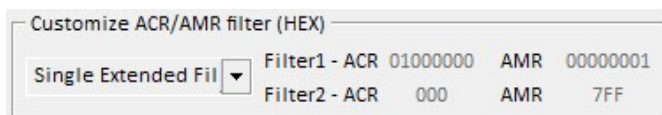


(1) Single standard filter example :



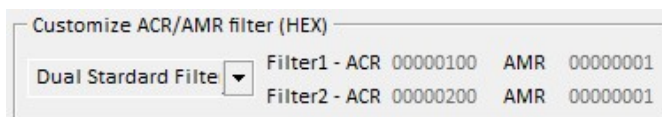
receive CAN ID : 100/101

(2) Single extended filter example :



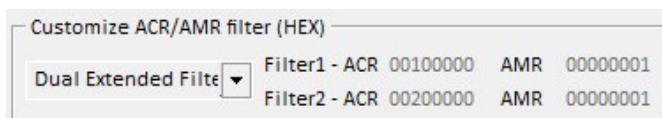
receive CAN ID : 01000000/01000001

(3) Dual standard filter example :



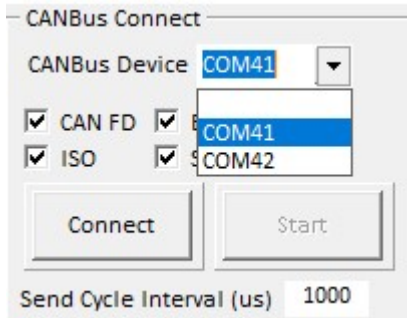
receive CAN ID : 100/101/200/201

(4) Dual extended filter example :



Receive CAN ID : 00100000~00100FFF and 00200000~00200FFF

- II. CanBus Connect : As shown in BLOCK1, select the COM number. If using CAN 2.0, do not check the "CAN FD" option. BRS, ISO, and SSP are initial settings for CAN FD — please configure them as needed After completing the settings.



CANBus Connect

CANBus Device: COM41

☒ CAN FD ☒ BRS ☒ ISO ☒ SSP

COM41
COM42

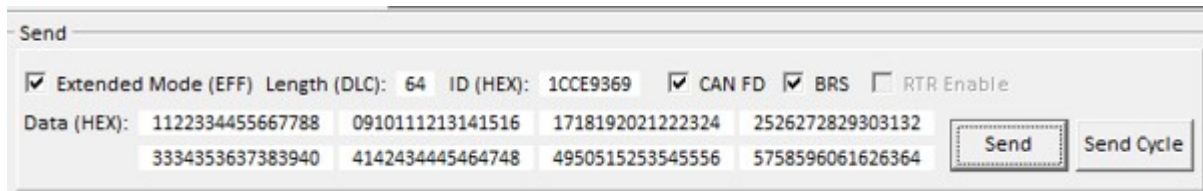
Connect Start

Send Cycle Interval (us) 1000

III. Send :

- Click 「Send」 button to send once CAN message.

(1) Setting CAN mode/data length/canfd option/ID/data



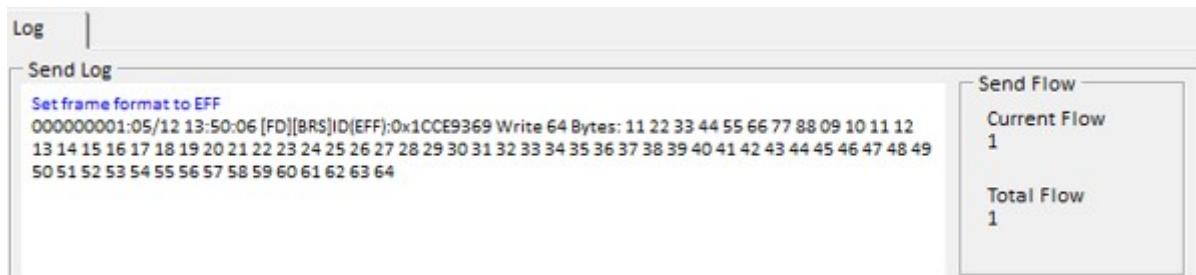
Send

☒ Extended Mode (EFF) Length (DLC): 64 ID (HEX): 1CCE9369 ☒ CAN FD ☒ BRS ☐ RTR Enable

Data (HEX): 1122334455667788 0910111213141516 1718192021222324 2526272829303132
3334353637383940 4142434445464748 4950515253545556 5758596061626364

Send Send Cycle

(2) Display transmission data



Log

Send Log

Set frame format to EFF

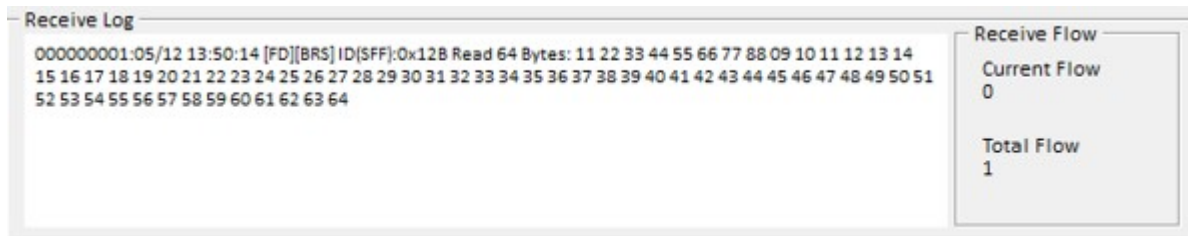
000000001:05/12 13:50:06 [FD][BRS] ID(EFF):0x1CCE9369 Write 64 Bytes: 11 22 33 44 55 66 77 88 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64

Send Flow

Current Flow 1

Total Flow 1

(3) Display receive data



Receive Log

000000001:05/12 13:50:14 [FD][BRS] ID(SFF):0x12B Read 64 Bytes: 11 22 33 44 55 66 77 88 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64

Receive Flow

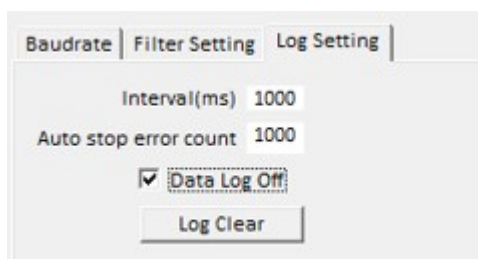
Current Flow 0

Total Flow 1

IV. Error Count : count error status

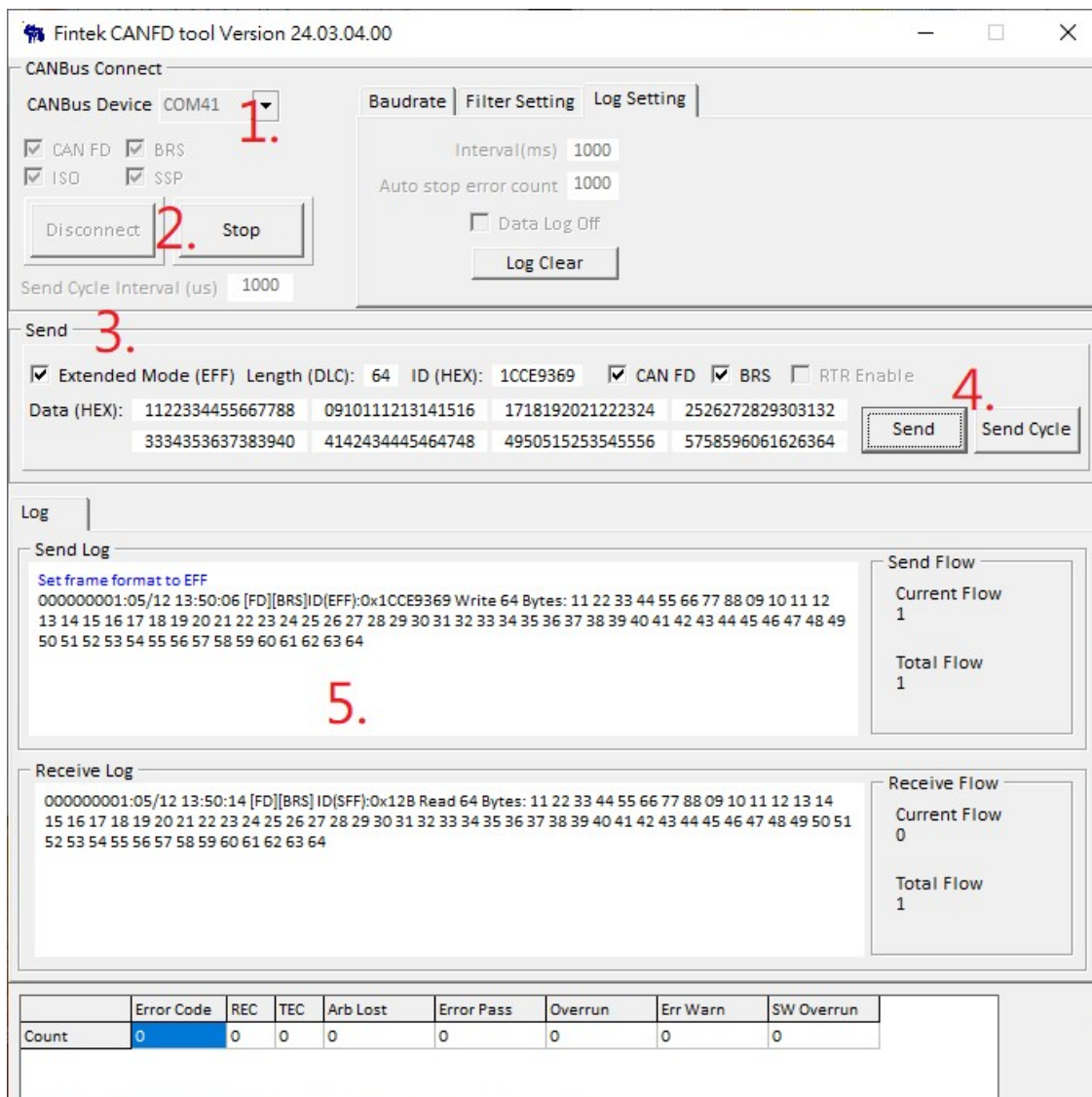
	Error Code	REC	TEC	Arb Lost	Error Pass	Overrun	Err Warn	SW Overrun
Count	0	0	0	0	0	0	0	0

- V. As shown in BLOCK2, after selecting **Log Setting**, you can set the log interval time in the **Interval** field and configure the system to automatically stop CAN operation after a specified number of errors occur. Check **Data Log Off** to disable the display in BLOCK4. Press **Log Clear** to clear the logs in the BLOCK.



1.5 Step of connection

- Send example :



Fintek CANFD tool Version 24.03.04.00

CANBus Connect

CANBus Device: **COM41** (1.)

☒ CAN FD ☒ BRS ☒ ISO ☒ SSP

Interval(ms): 1000
Auto stop error count: 1000
☐ Data Log Off
Log Clear

Send Cycle Interval (us): 1000

Send (3.)

☒ Extended Mode (EFF) Length (DLC): 64 ID (HEX): 1CCE9369 ☒ CAN FD ☒ BRS ☐ RTR Enable

Data (HEX): 1122334455667788 0910111213141516 1718192021222324 2526272829303132 3334353637383940 4142434445464748 4950515253545556 5758596061626364

Send (4.) **Send Cycle**

Log

Send Log

Set frame format to EFF
000000001:05/12 13:50:06 [FD][BRS] ID(EFF):0x1CCE9369 Write 64 Bytes: 11 22 33 44 55 66 77 88 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 (5.)

Send Flow

Current Flow: 1
Total Flow: 1

Receive Log

000000001:05/12 13:50:14 [FD][BRS] ID(SFF):0x12B Read 64 Bytes: 11 22 33 44 55 66 77 88 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64

Receive Flow

Current Flow: 0
Total Flow: 1

	Error Code	REC	TEC	Arb Lost	Error Pass	Overrun	Err Warn	SW Overrun
Count	0	0	0	0	0	0	0	0

(1) Select canbus port, setting baudrate and ACR/AMR filter

(2) Connect and start device

(3) Setting data length, ID, and data

(4) Click send button

(5) Display transmission or receive data

* NOTICE: The "Send Cycle" button is primarily used for performance testing. It is recommended to disable data log when using this function to ensure accurate performance data.