

INSTRUCTION MANUAL

DCS-105A

OPTIONAL FUNCTION OF DCS-100A

[For Loading CANdb File]

Thank you for purchasing KYOWA's product DCS-105A Optional Function of DCS-100A (For Loading CANdb File).

Read this Instruction Manual carefully in order to make full use of the high performance capabilities of the product.

Do not use the product in methods other than described in this Manual.

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NOTATIONS USED IN THE INSTRUCTION MANUAL

For your convenience, the following notes and memos are stated in this Instruction Manual to attract customer's attention to informative reference items when using the DCS-105A Optional Function of the DCS-100A for loading CANdb file (hereinafter referred to as the DCS-105A).

Examples of Notations

NOTE

Essential precautions required when handling the DCS-105A.

MEMO

Reference items required when handling the DCS-105A.

1 OUTLINE

The DCS-105A is optional software for the DCS-100A. The main functions are as follows.
In this manual, setting conditions for CAN-40A/41A are defined as CAN conditions, and setting conditions for ECAN-40A, EGPC-40A, and EGPC-50A are defined as ECAN conditions.

- Capable of loading information from the CANdb file (DBC format) and capable of setting the information into the DCS-100A CAN conditions.
- Capable of setting the CAN communication conditions of the DCS-100A.

MEMO

The DBC format is the quasi-standard for the description of CAN communication data by Vector Informatik GmbH.

1-1 CONTROL TARGET MEASURING INSTRUMENTS AND AVAILABLE CONDITIONER CARDS

Capable of using the DCS-105A with the following measuring instruments.

EDX-100A

EDX-200A

EDX-3000A/B

EDX-5000A

To valid the Load CANdb File..., mount the following conditioner cards in the measuring instrument.

CAN-40A

CAN-41A

ECAN-40A

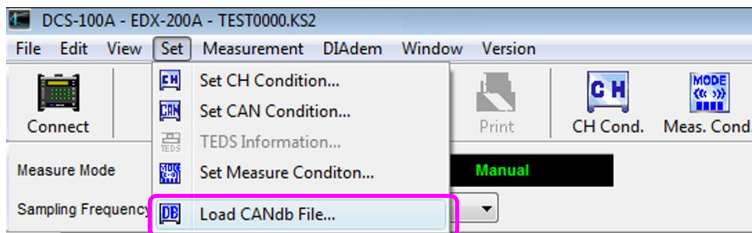
EGPC-40A

EGPC-50A

1-2 CHECK THE DCS-105A INSTALLATION

After the installation of the DCS-105A, the following items appear on the DCS-100A.

- Set - Load CANdb File...
- CANdb icon



NOTE

The DCS-105A is invalid under the following conditions.

- When not mounting the CAN-40/41A or ECAN-40A, EGPC-40A, EGPC-50A.
- When the sampling frequency of the DCS-100A exceeds the available sampling frequency of CAN data.

The available sampling frequency

EDX-3000A/B	:	10kHz and under
EDX-200A	:	2kHz and under
EDX-100A	:	1kHz and under

If you cannot find the Load CANdb File..., re-install the DCS-105A again.

1-3 RESTRICTIONS

1-3-1 Loadable CANdb files

Loadable CANdb files with the DCS-105A are as follows.

- File format DBC format
- The number of "Network Node" Maximum 1024
- The number of "Message" Maximum 2048
- The number of "Signal" Maximum 4096

1-3-2 Restrictions on setting the CAN-40A/41A

- The number of "Message": Maximum 16 for the CAN-40A, the number of "Message": Maximum 32 for the CAN-41A
- The number of "Signal": Maximum 8 per one "Message" for the DCS-100A
- One original "Message" per one measuring instrument. You cannot set the same "Message" items.
- If the "Byte Order" of the "Signal" is not unified within one "Message", select either Big or Little "Signal" within one "Message".

1-3-3 Restrictions on setting the ECAN

- The number of "Message": Maximum 512
The number of "Signal": Maximum 512
- You cannot set the same "Message" twice.
However, you can set the same "Message" for different port No.

2 BASIC OPERATON FLOW

This chapter explains the basic operating procedure by using the DCS-105A.

Start up the DCS-105A.

- (1) Click the Set - Load CANdb File... or click the CANdb icon from the toolbar to open the Load CANdb File window.
(For details, see 3-1 DISPLAY THE LOAD CANDB FILE WINDOW.)

Load CANdb files.

- (2) Click the **Select file** button on the Load CANdb File window to open the Open window.
(3) Click the target DBC file. Click the **OK** button to close the window.
After the loading succeeded, contents in the DBC file appear on the table.
(For details, see 3-2 SELECT DBC FILES.)

Select the "Message" and "Signal" to be set in the CAN conditions.

- (4) Select the "Message" and "Signal" to be set in the CAN conditions from the table.
(For details, see 3-3 SELECT THE "MESSAGE" AND "SIGNAL" TO BE SET IN THE CAN CONDITIONS.)

Set the CANdb file information into the CAN conditions.

- (5) Click the **Setting>** button to set the CANdb file information into the CAN conditions or the ECAN conditions.
(For details, see 3-4 SET THE CANDB FILE INFORMATION INTO THE CAN CONDITIONS.
(For details, see 5-1 SET THE CANDB FILE INFORMATION INTO THE ECAN CONDITIONS)

CAN communication conditions

- (6) Click the CAN comm tab.
Set the CAN communication conditions or the ECAN communication conditions.
(For details, see 4 CAN COMMUNICATION CONDITIONS and 5-3 ECAN COMMUNICATION CONDITION.)

Exit the DCS-105A.

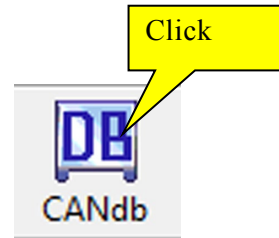
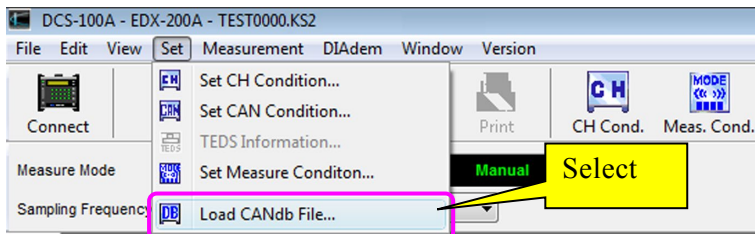
- (7) Click the **OK** button to close the window.
(For details, see 6 REFLECT THE CANDB FILE INFORMATION IN THE DCS-100A.)

3 LOAD CANdb FILES

3-1 DISPLAY THE LOAD CANDB FILE WINDOW

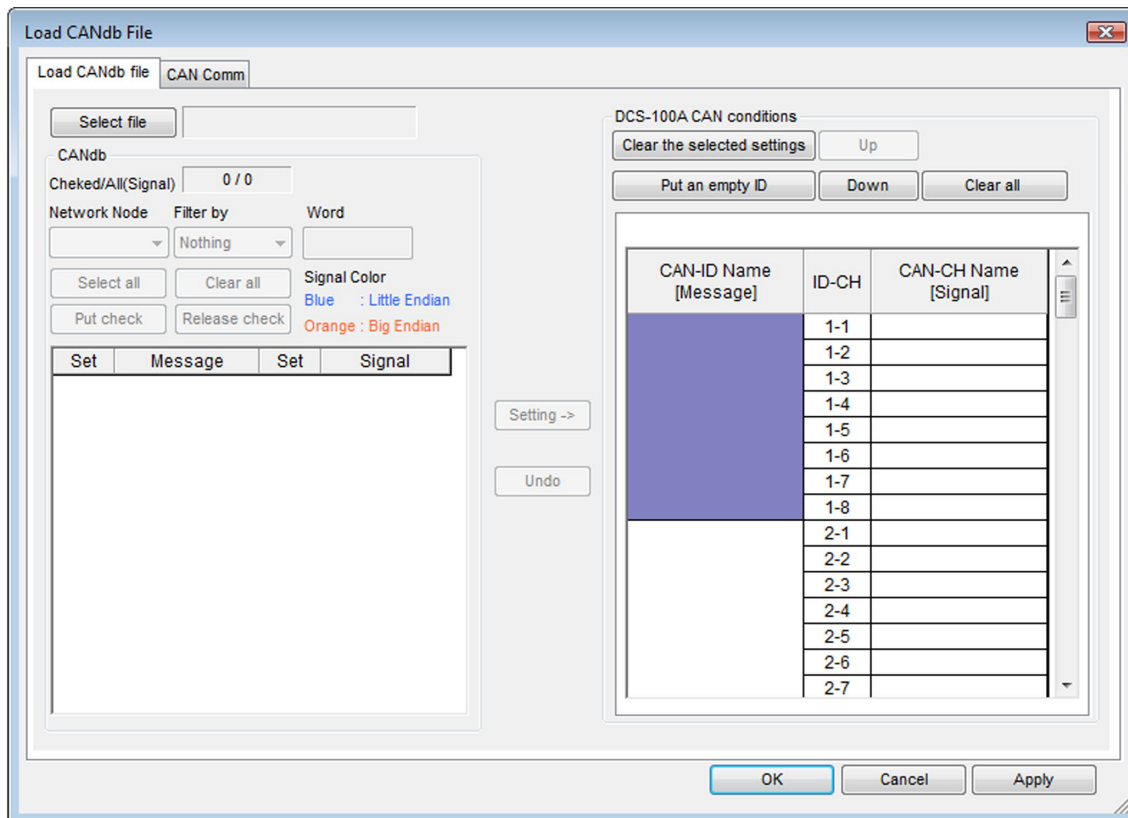
Click the Set - Load CANdb File....

Click the CANdb icon from the toolbar to open the Load CANdb File window.



Set - Load CANdb File...

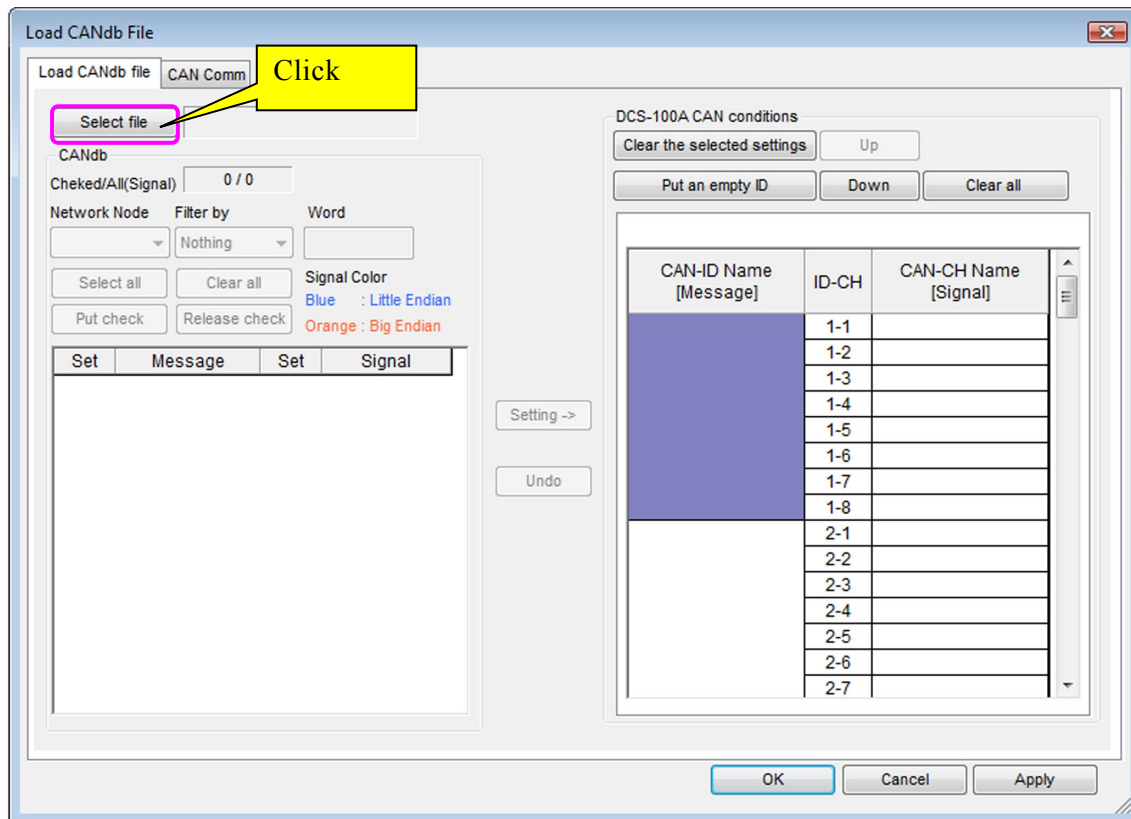
CANdb icon



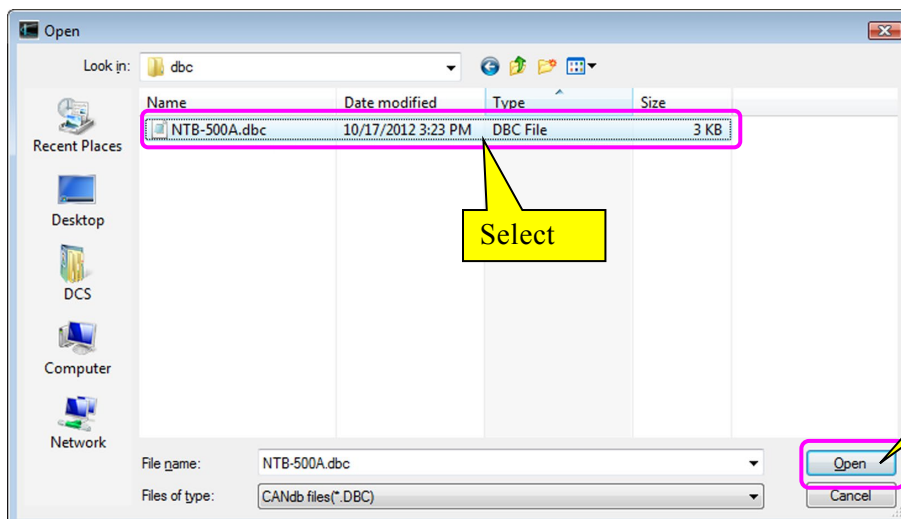
Load CANdb File window

3-2 SELECT DBC FILES

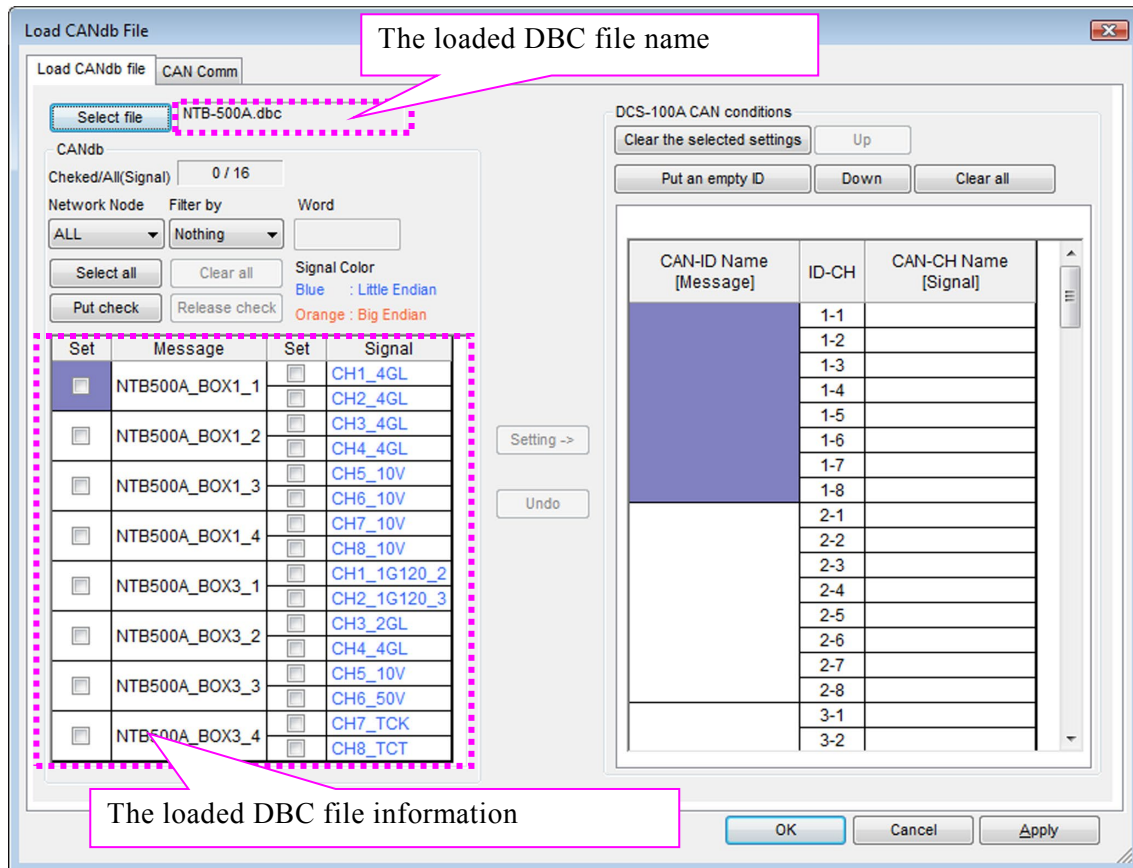
(1) Click the **Select file** button on the Load CANdb File window to open the Open window.



(2) Click the target file (DBC format, extension: .dbc). Click the **Open** button.



(3) After the loading succeeded, contents in the DBC file appear.



3-3 SELECT THE "MESSAGE" AND "SIGNAL" TO BE SET IN THE CAN CONDITIONS

Select the CANdb file information to be set in the CAN conditions. Use check boxes to select items. Items with check marks are set in the CAN conditions.

Note that the character color of "Signal" items in the CANdb file information vary with the "Byte Order". Little: Blue, Big, Orange

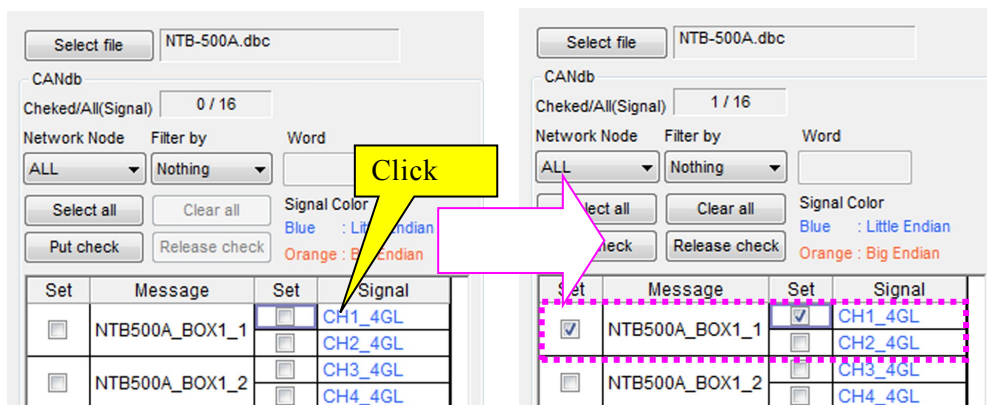
☐	NTB500A_BOX1_1	☐	CH1_4GL	} Little
		☐	CH2_4GL	
☐	NTB500A_BOX1_2	☐	CH3_4GL	} Big
		☐	CH4_4GL	

NOTE

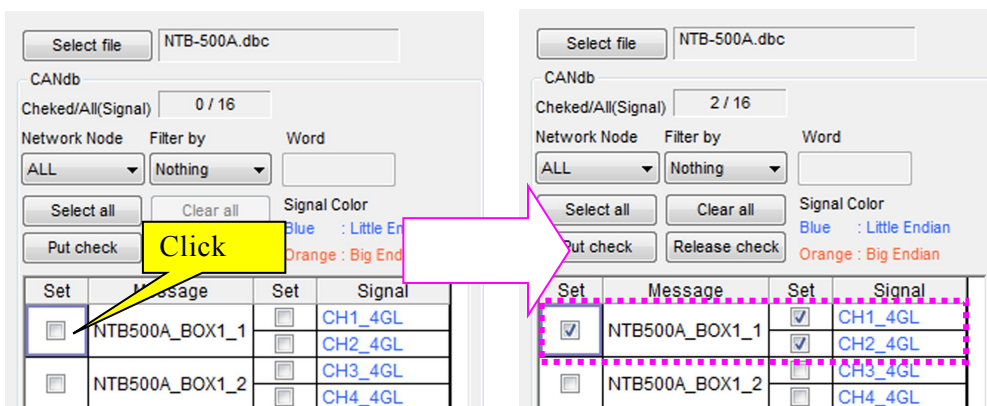
You cannot set "Message", including both "Byte Order": Little and "Byte Order": Big, in the CAN conditions.

3-3-1 Direct Selection

Click the check box next to the target "Message" or next to the target "Signal" to be set in the CAN conditions.



If you put a check mark in front of the target "Signal", a check mark will appear next to the "Message" including the "Signal".



If you put a check mark in front of the target "Message", a check mark will appear next to the "Signal" included in the "Message".

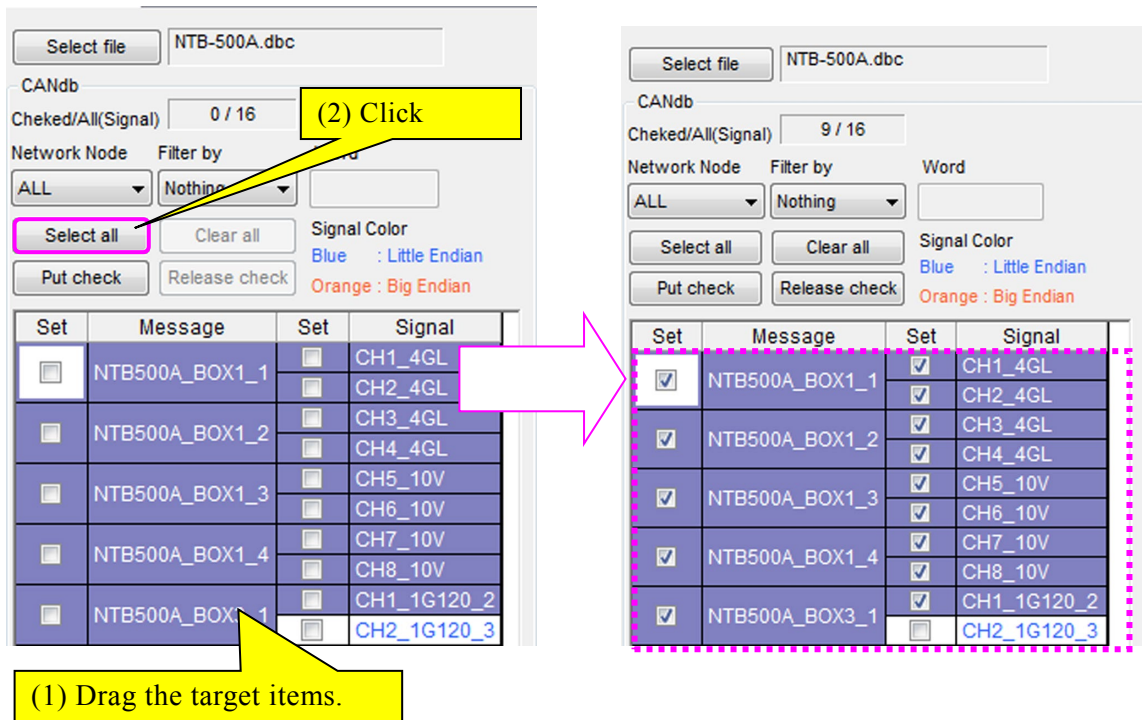
To release the check mark, click the check box.

3-3-2 Multiple Selection

There are 2 ways to put multiple check marks on multiple check boxes; by using buttons and by using right-click.

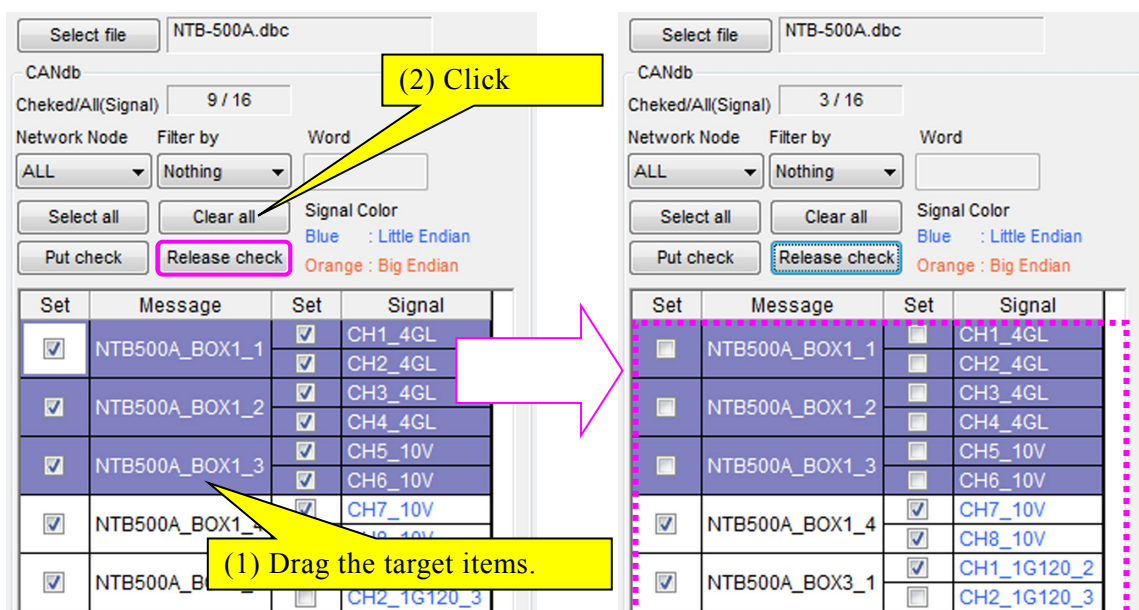
3-3-2-1 Multiple selection by using buttons

- (1) Drag the target items.
- (2) Click the **Select all** button.



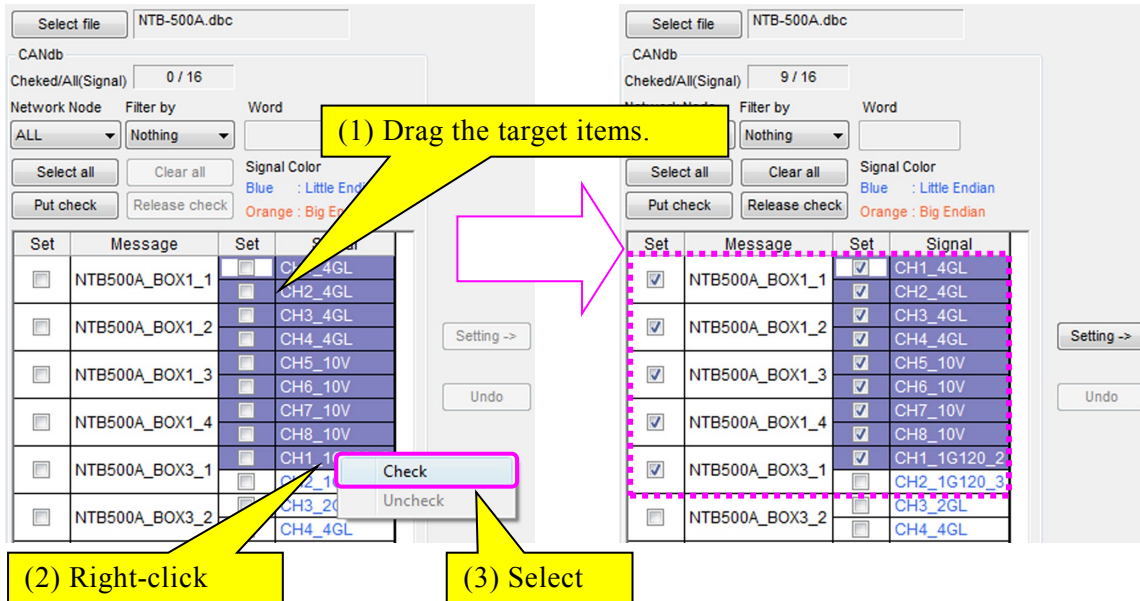
3-3-2-2 Cancellation by using buttons

- (1) Drag the target items.
- (2) Click the **Release check** button.



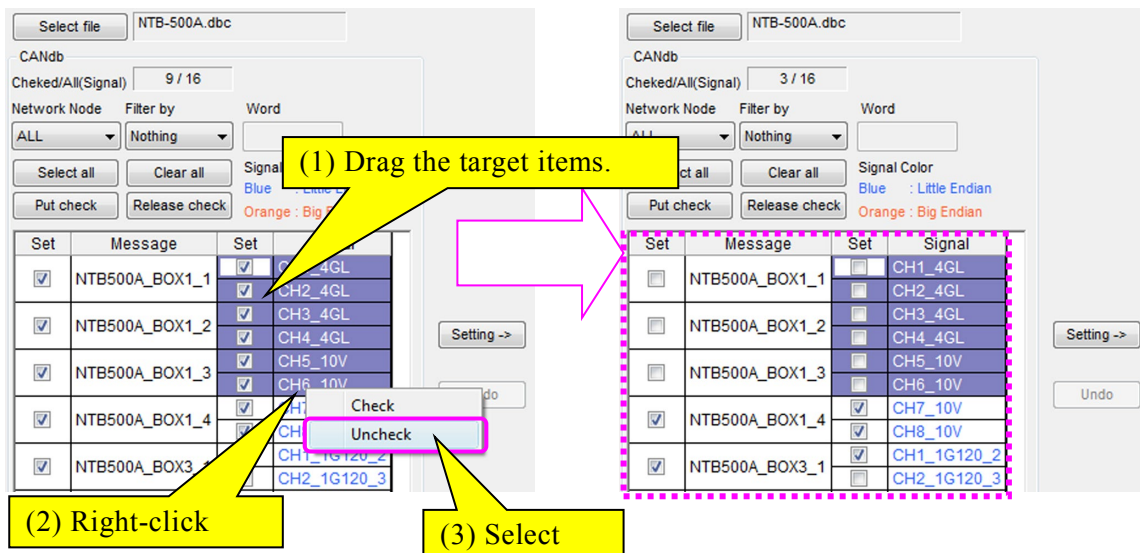
3-3-2-3 Multiple selection by using right-click

- (1) Drag the target items.
- (2) Click the right mouse button on the window.
- (3) Select Check on the pop-up-menu.



3-3-2-4 Cancellation by using right-click

- (1) Drag the target items.
- (2) Click the right mouse button on the window.
- (3) Select Check on the pop-up-menu.

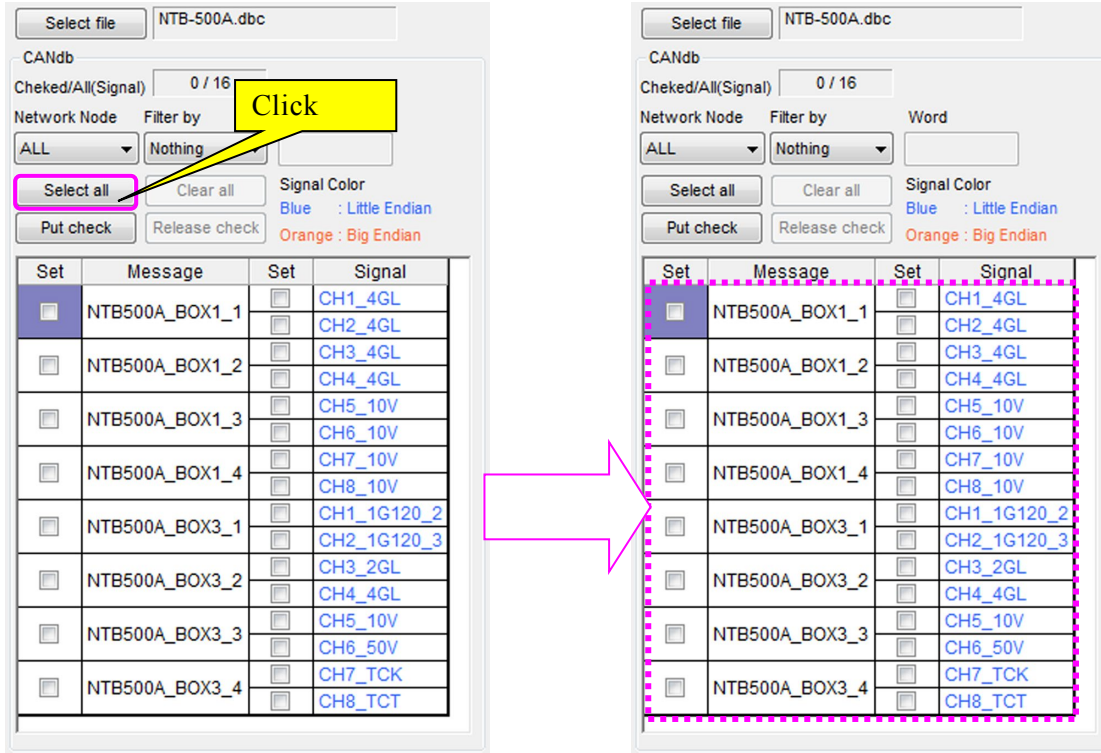


3-3-3 Select All

You can put/release check marks on all boxes by one-click operation.

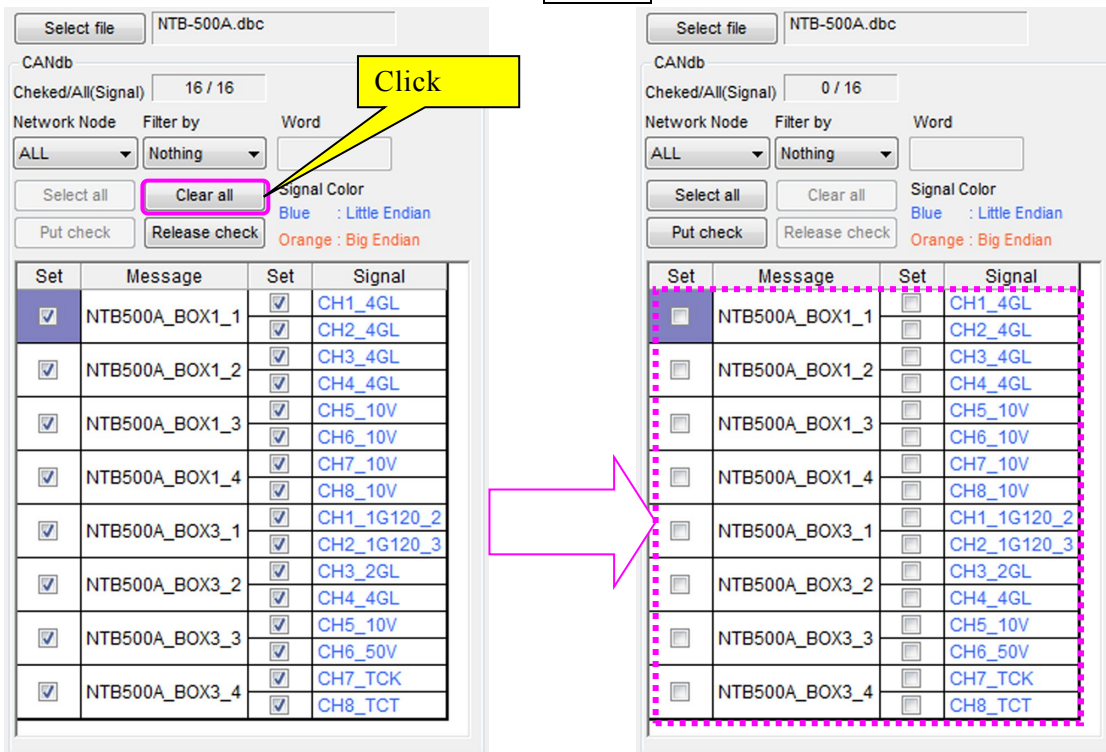
3-3-3-1 Put check marks on all boxes

To put check marks on all boxes, click the **Select all** button.



3-3-3-2 Release check marks on all boxes

To release check marks on all boxes, click the **Clear all** button.



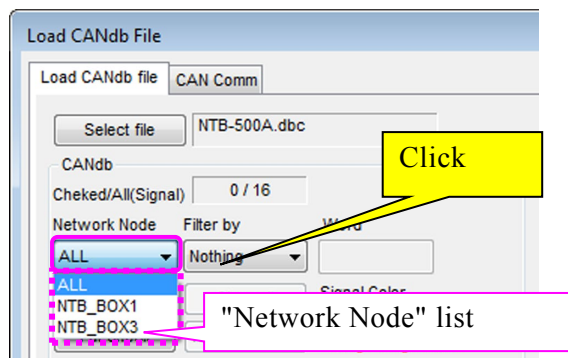
3-3-4 Search Items on the CANdb File

This section describes how to display the target items easily by selecting the "Network Node" or by searching words included in the "Message" or "Signal".

3-3-4-1 Select the "Network Node"

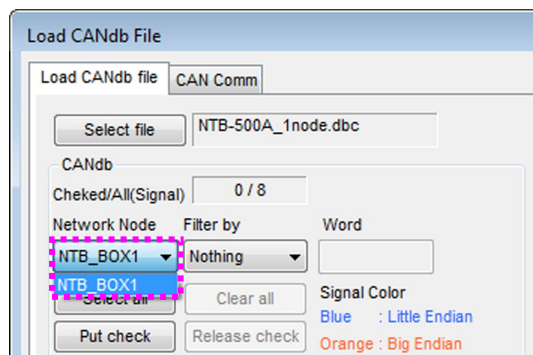
Select the "Network Node" to display "Message".

Click on the drop-down arrow in the Network Node combo box, list of Network Node items included in the loaded CANdb file appear. Select the target "Network Node" from the "Network Node" list.

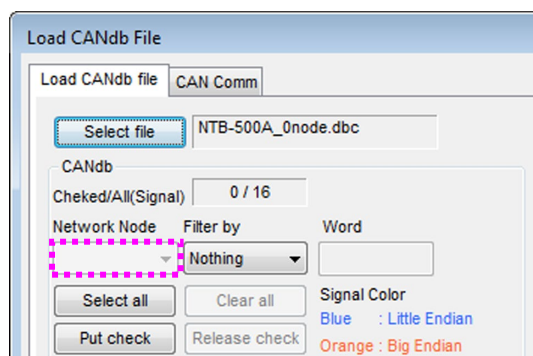


To display all "Message" items of all the "Network Node" items, click "ALL".

If there is only one "Network Node", "ALL" does not appear.



If there is no "Network Node" in the file, the "Network Node" combo box is invalid.



Example: When changing the "Network Node" from All to NTB500A_BOX1.

Network Node	Message	Signal
NTB500A_BOX1	NTB500A_BOX1_1	CH1_4GL
		CH2_4GL
	NTB500A_BOX1_2	CH3_4GL
		CH4_4GL
	NTB500A_BOX1_3	CH5_10V
		CH6_10V
	NTB500A_BOX1_4	CH7_10V
		CH8_10V
NTB500A_BOX3	NTB500A_BOX3_1	CH1_1G120_2WL
		CH2_1G120_3WL
	NTB500A_BOX3_2	CH3_2GL
		CH4_4GL
	NTB500A_BOX3_3	CH5_10V
		CH6_50V
	NTB500A_BOX3_4	CH7_TCK
		CH8_TCT

When changing the "Network Node" from All to NTB500A_BOX1 with the above DBC file, information of the NTB500A_BOX1 will appear.

The image shows two side-by-side screenshots of the CANdb software interface, demonstrating the effect of changing the "Network Node" filter. Both screenshots show the "NTB-500A.dbc" file loaded.

Left Screenshot (Network Node: ALL):

- Checked/All(Signal): 0 / 16
- Network Node: ALL (highlighted with a pink dashed box)
- Filter by: Nothing
- Word: (empty)
- Buttons: Select all, Clear all, Put check, Release check
- Signal Color: Blue : Little Endian, Orange : Big Endian
- Table (16 rows):

Set	Message	Set	Signal
☐	NTB500A_BOX1_1	☐	CH1_4GL
☐		☐	CH2_4GL
☐	NTB500A_BOX1_2	☐	CH3_4GL
☐		☐	CH4_4GL
☐	NTB500A_BOX1_3	☐	CH5_10V
☐		☐	CH6_10V
☐	NTB500A_BOX1_4	☐	CH7_10V
☐		☐	CH8_10V
☐	NTB500A_BOX3_1	☐	CH1_1G120_2
☐		☐	CH2_1G120_3
☐	NTB500A_BOX3_2	☐	CH3_2GL
☐		☐	CH4_4GL
☐	NTB500A_BOX3_3	☐	CH5_10V
☐		☐	CH6_50V
☐	NTB500A_BOX3_4	☐	CH7_TCK
☐		☐	CH8_TCT

Right Screenshot (Network Node: NTB_BOX1):

- Checked/All(Signal): 0 / 8
- Network Node: NTB_BOX1 (highlighted with a pink dashed box)
- Filter by: Nothing
- Word: (empty)
- Buttons: Select all, Clear all, Put check, Release check
- Signal Color: Blue : Little Endian, Orange : Big Endian
- Table (8 rows):

Set	Message	Set	Signal
☐	NTB500A_BOX1_1	☐	CH1_4GL
☐		☐	CH2_4GL
☐	NTB500A_BOX1_2	☐	CH3_4GL
☐		☐	CH4_4GL
☐	NTB500A_BOX1_3	☐	CH5_10V
☐		☐	CH6_10V
☐	NTB500A_BOX1_4	☐	CH7_10V
☐		☐	CH8_10V

A pink arrow points from the "ALL" filter in the left screenshot to the "NTB_BOX1" filter in the right screenshot, with the text "Change the 'Network Node'" written next to it.

3-3-4-2 Search "Message" or "Signal"

This section describes how to search and display "Message" or "Signal" which includes words input in the "Word" box.

Select the target item by using the Filter by combo box.

MEMO

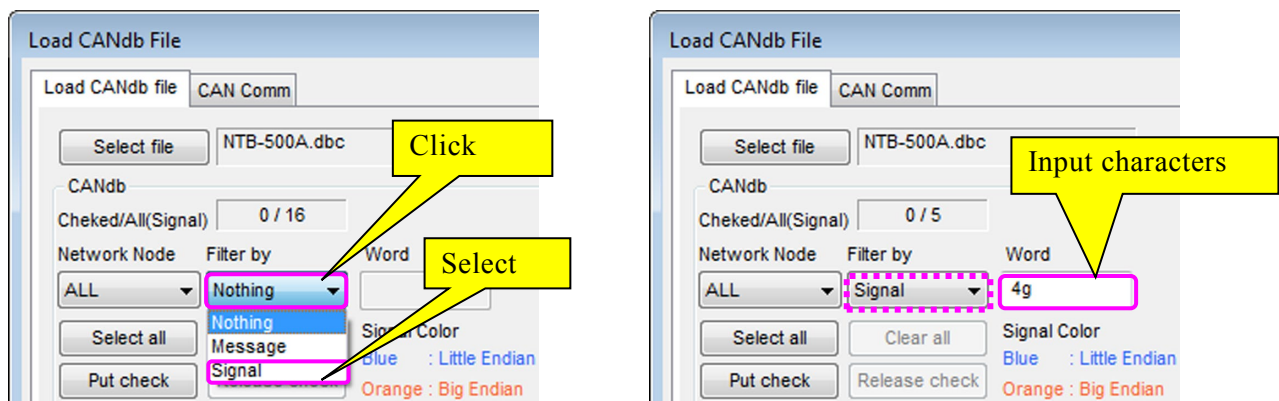
The system does not distinguish between uppercase and lowercase letters, input in the "Word" box.

Click on the drop-down arrow in the Filter by combo box, list of items appear.

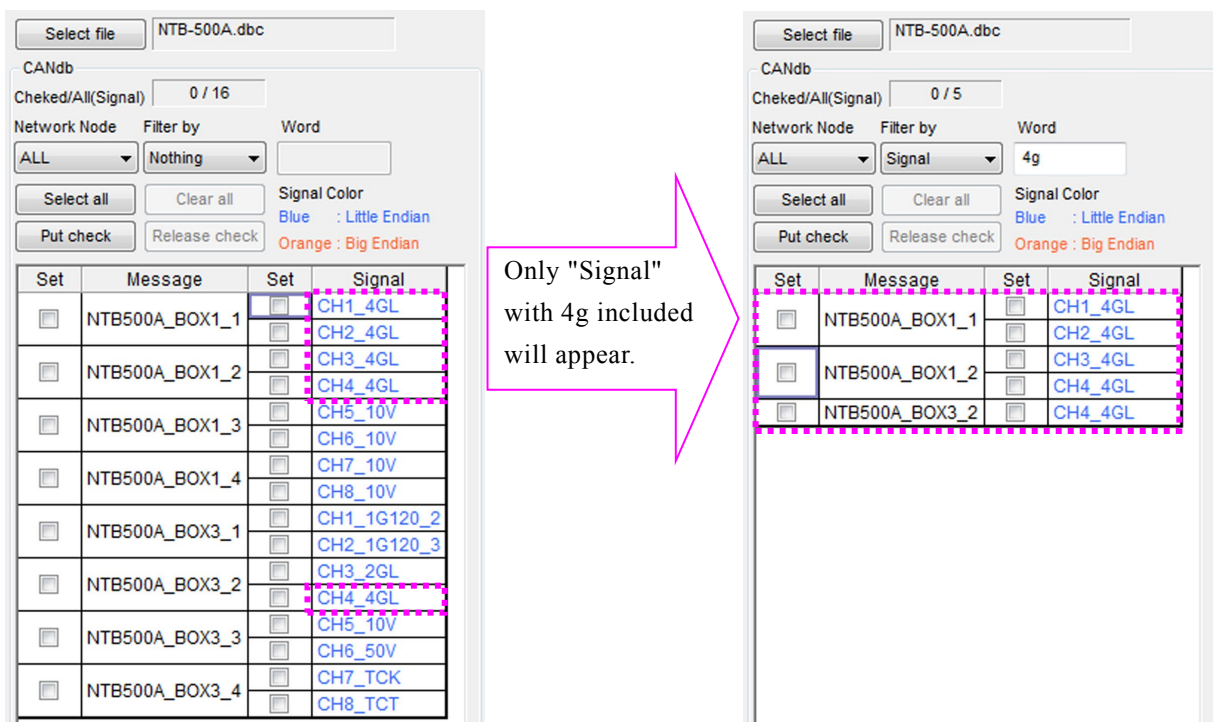
The following items will appear.

- "Nothing": Not search
- "Message": Search the character string from "Message".
- "Signal": Search the character string from "Signal".

Example: When selecting the "Signal" in the Filter by combo box and inputting "4g" in the "Word" box.

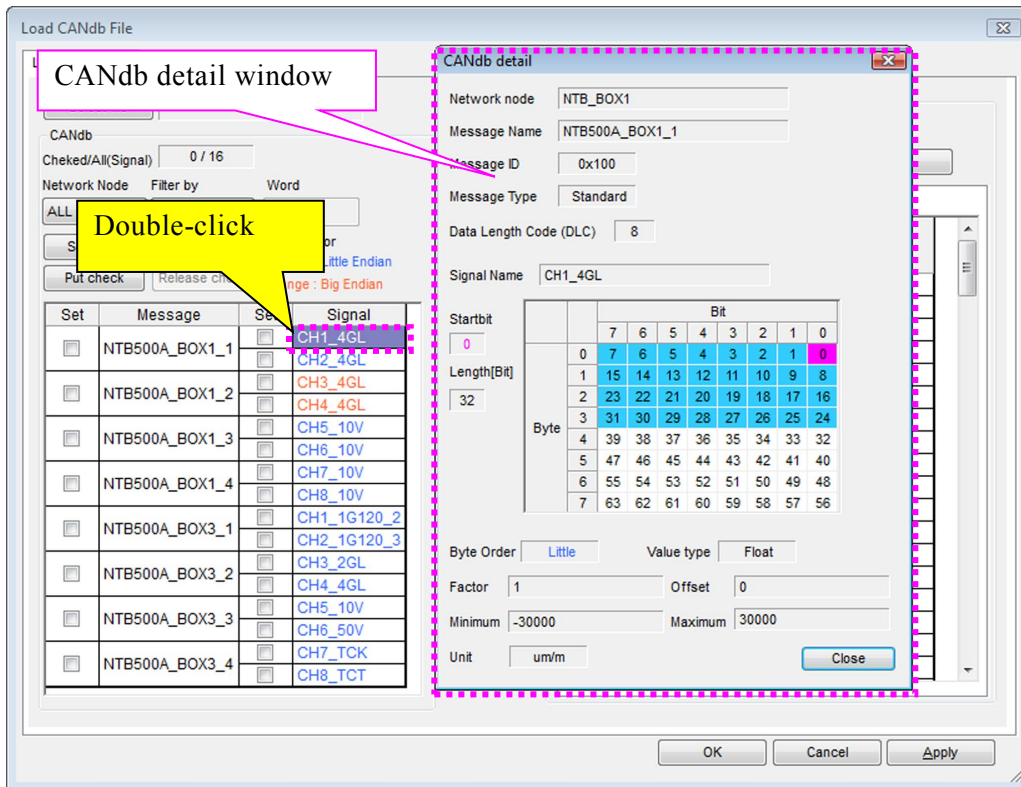


Only "Signal" with 4g included will appear.

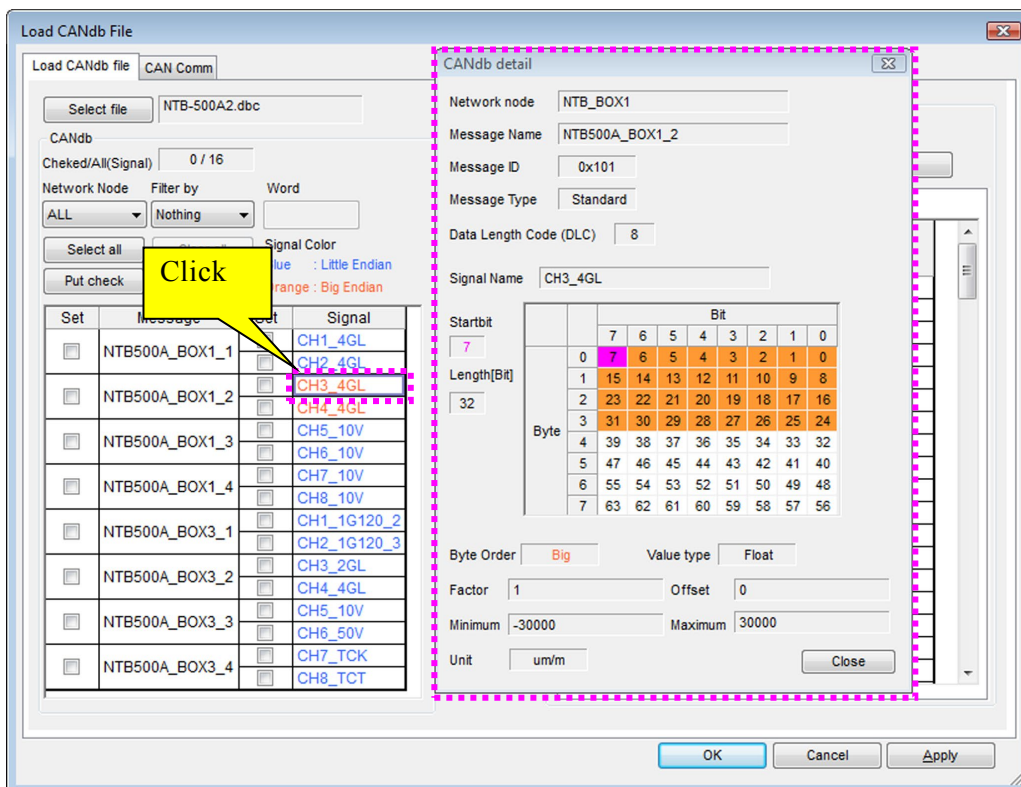


3-3-5 Display Details

Double-click the item in the "Signal" column. The CANdb detail window appears.



To display other detail information, click the item in the "Signal" column with the CANdb detail window appeared.



Signal Name: CH1_4GL

Startbit: 0

Length[Bit]: 32

Byte	Bit							
	7	6	5	4	3	2	1	0
0	7	6	5	4	3	2	1	0
1	15	14	13	12	11	10	9	8
2	23	22	21	20	19	18	17	16
3	31	30	29	28	27	26	25	24
4	39	38	37	36	35	34	33	32
5	47	46	45	44	43	42	41	40
6	55	54	53	52	51	50	49	48
7	63	62	61	60	59	58	57	56

"Startbit" points to bit 0 of byte 0.

"Signal" usage bit points to bit 0 of byte 0.

"Message" usage bit points to bit 0 of byte 0.

The table in the CANdb detail window indicates the number of "Signal" usage bit in the "Message". The blue cells indicate the "Signal" usage bit. The pink cell indicates the "Startbit".

Signal Name: CH1_4GL

Startbit: 0

Length[Bit]: 32

Byte	Bit							
	7	6	5	4	3	2	1	0
0	7	6	5	4	3	2	1	0
1	15	14	13	12	11	10	9	8
2	23	22	21	20	19	18	17	16
3	31	30	29	28	27	26	25	24
4	39	38	37	36	35	34	33	32
5	47	46	45	44	43	42	41	40
6	55	54	53	52	51	50	49	48
7	63	62	61	60	59	58	57	56

"Byte Order": Little

Signal Name: CH3_4GL

Startbit: 7

Length[Bit]: 32

Byte	Bit							
	7	6	5	4	3	2	1	0
0	7	6	5	4	3	2	1	0
1	15	14	13	12	11	10	9	8
2	23	22	21	20	19	18	17	16
3	31	30	29	28	27	26	25	24
4	39	38	37	36	35	34	33	32
5	47	46	45	44	43	42	41	40
6	55	54	53	52	51	50	49	48
7	63	62	61	60	59	58	57	56

"Byte Order": Big

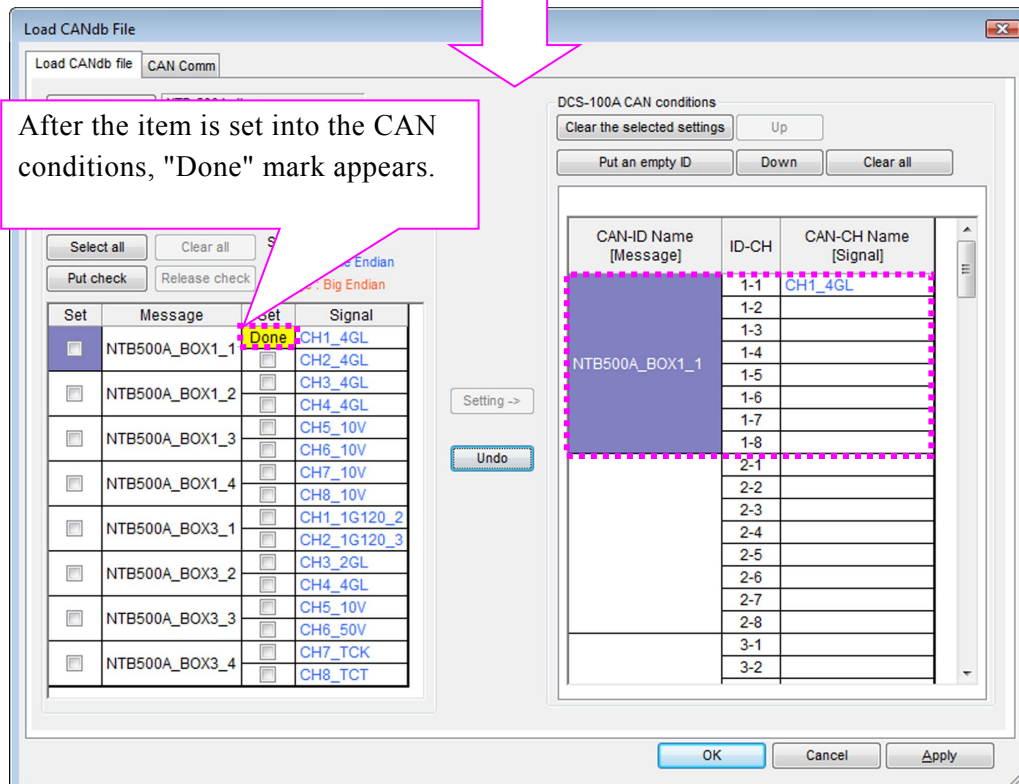
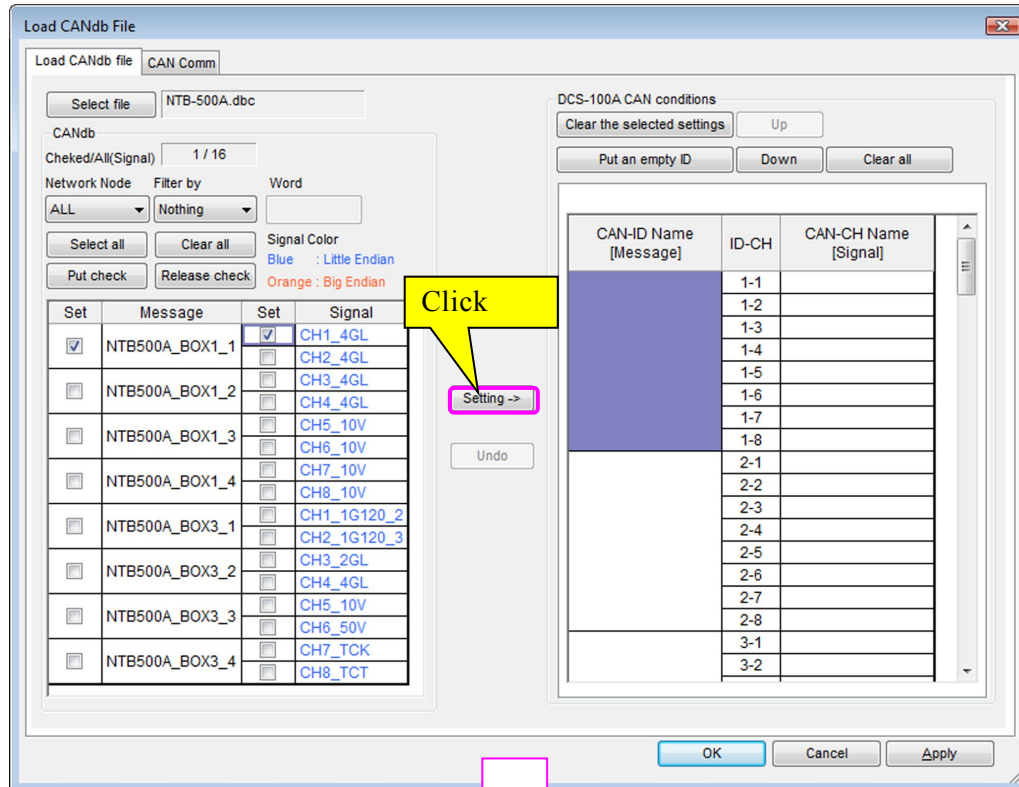
Note that the table color vary with the "Byte Order" of the "Signal".

Little: Blue, Big, Orange

3-4 SET THE CANDb FILE INFORMATION INTO THE CAN CONDITIONS

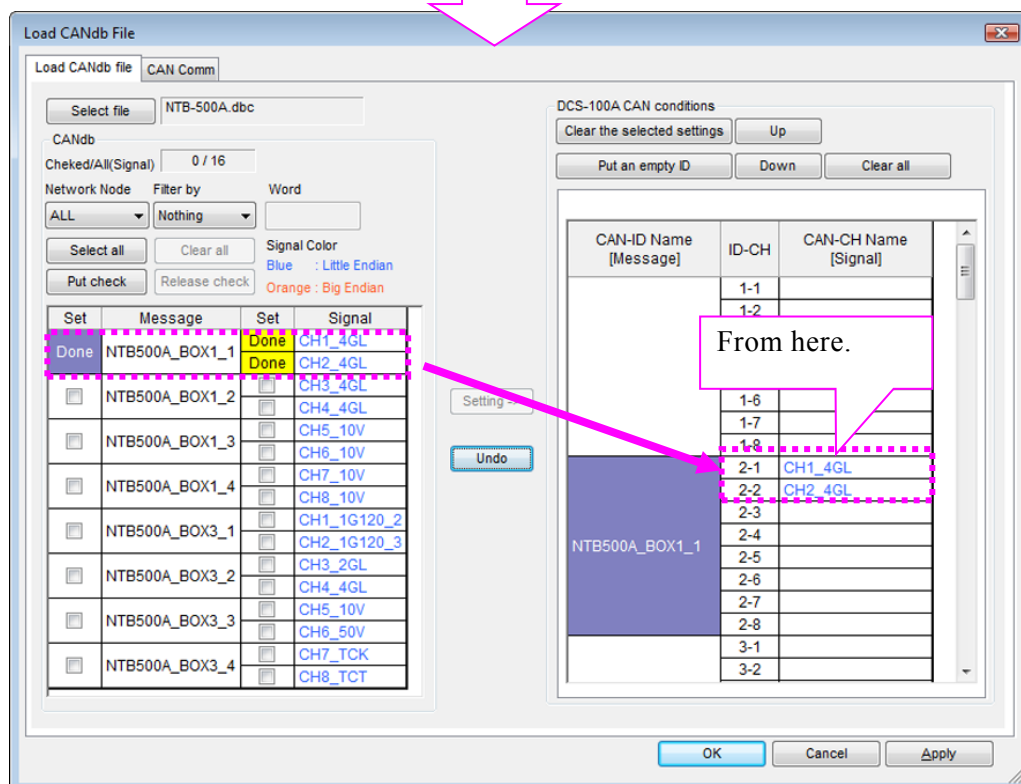
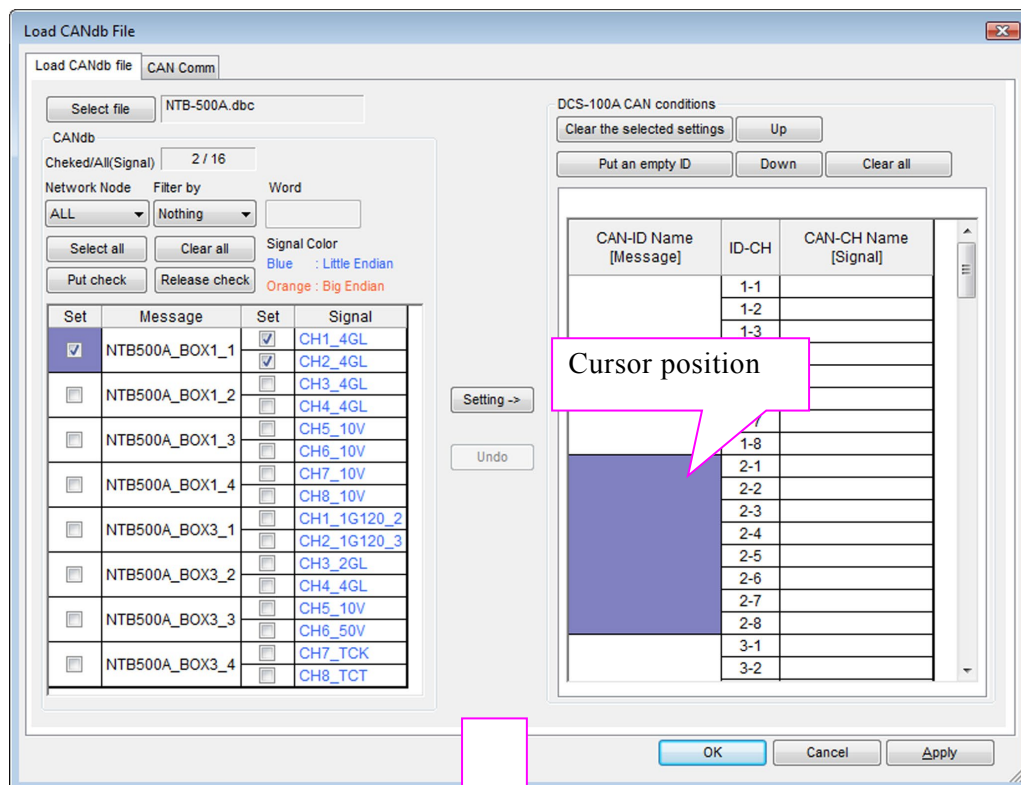
CONDITIONS

Click the **Setting>** button to set the CANDb file information with checkmarks into the CAN conditions.

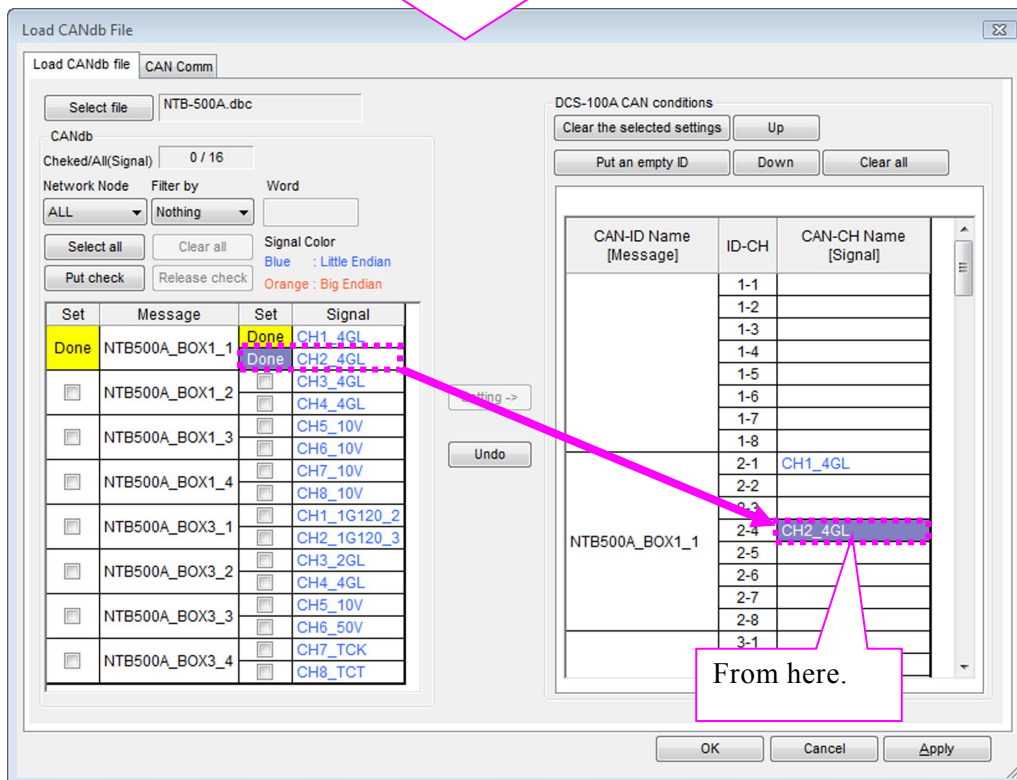
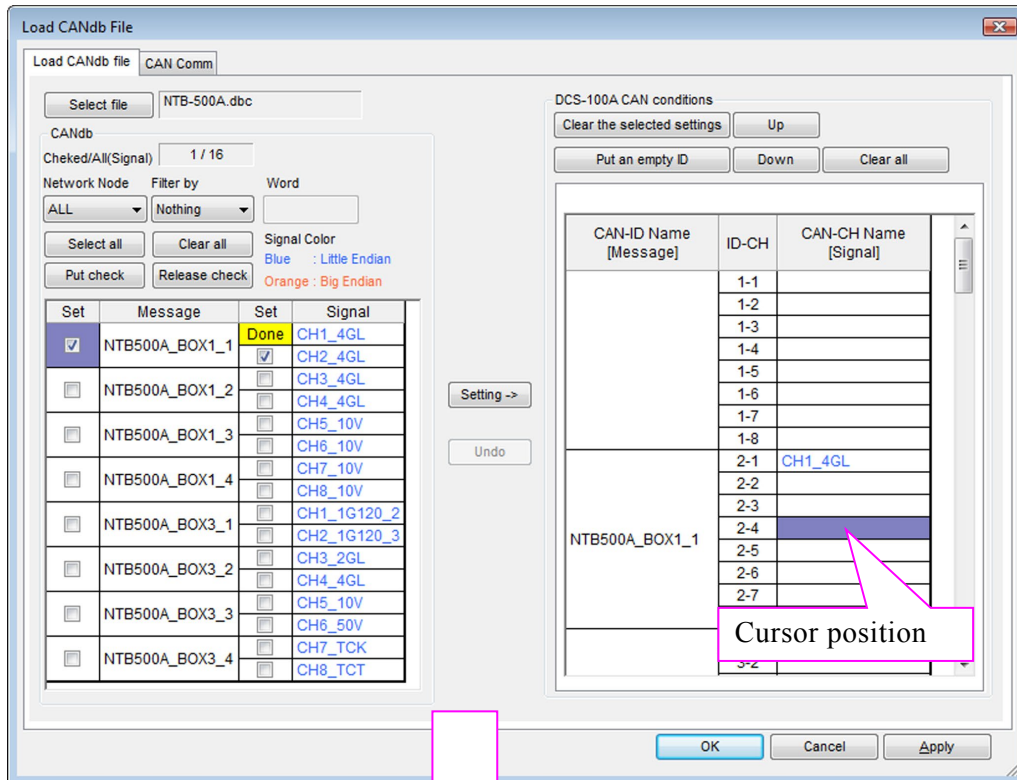


3-4-1 Position of the CAN Condition

When the cursor locates at the CAN-ID position, "Signal" items are set from the CH1 of the CAN-CH.



When the cursor locates at the CAN-CH position, "Signal" items are set from the CAN-CH.



MEMO

The Frame ID (Message ID), Format (Message Type), and Endian (Byte Order) in the target CAN conditions and the selected "Message ID", "Message Type", and "Byte Order" should be the same.

3-4-2 Overwrite the CAN Conditions

This section describes how to overwrite CAN conditions.

The overwriting operation is as follows.

Since the "Message" is already set in the CAN conditions, there is "Done" mark.

Click

Setting ->

Set the "Message" to the cursor position in the CAN conditions.

There are already-set CAN conditions in the cursor position.

The overwrite confirmation message appears.
(For details, see 7 ERROR MESSAGES.)

Since the item is cleared from the CAN conditions of the DCS-100A by overwriting, the "Done" mark is cleared also.

After the item is set into the CAN conditions, "Done" mark appears.

The CAN conditions are correctly overwritten.

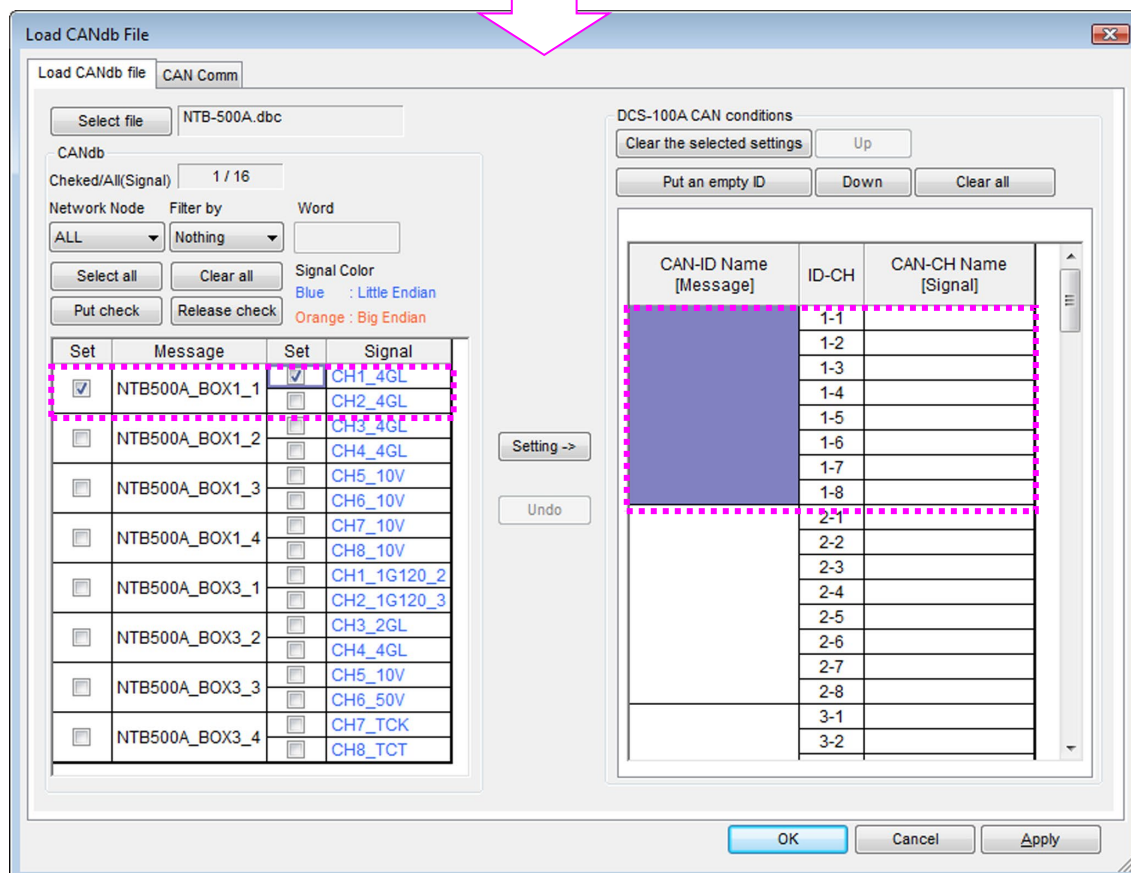
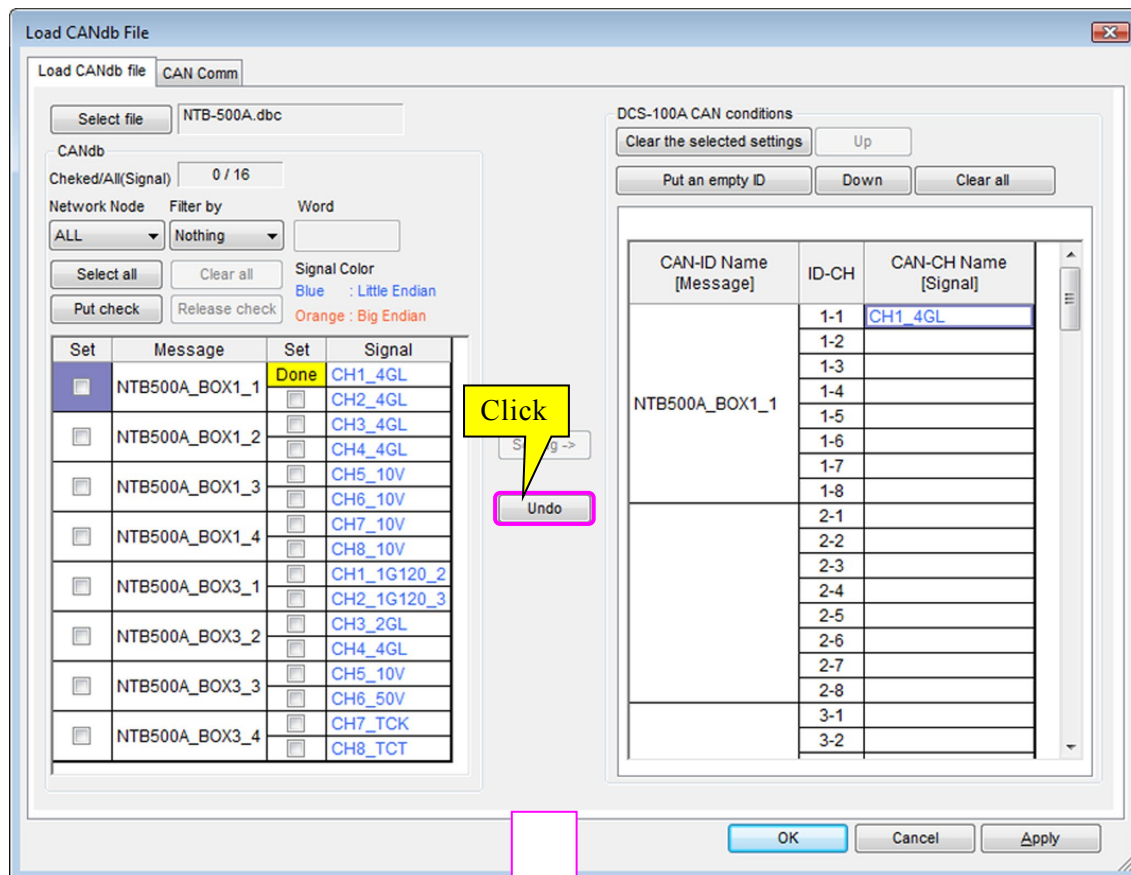
CAN-ID Name [Message]	ID-CH	CAN-CH Name [Signal]
NTB500A_BOX1_1	1-1	CH1_4GL
	1-2	CH2_4GL
	1-3	
	1-4	
	1-5	
	1-6	
	1-7	
	1-8	

CAN-ID Name [Message]	ID-CH	CAN-CH Name [Signal]
NTB500A_BOX1_2	1-1	CH3_4GL
	1-2	CH4_4GL
	1-3	
	1-4	
	1-5	
	1-6	
	1-7	
	1-8	

3-4-3 Cancel the Pre-set CAN conditions

To cancel the last setting action, click the **Undo** button. (Undo function)

You can only undo once.



3-5 EDIT THE CAN CONDITIONS

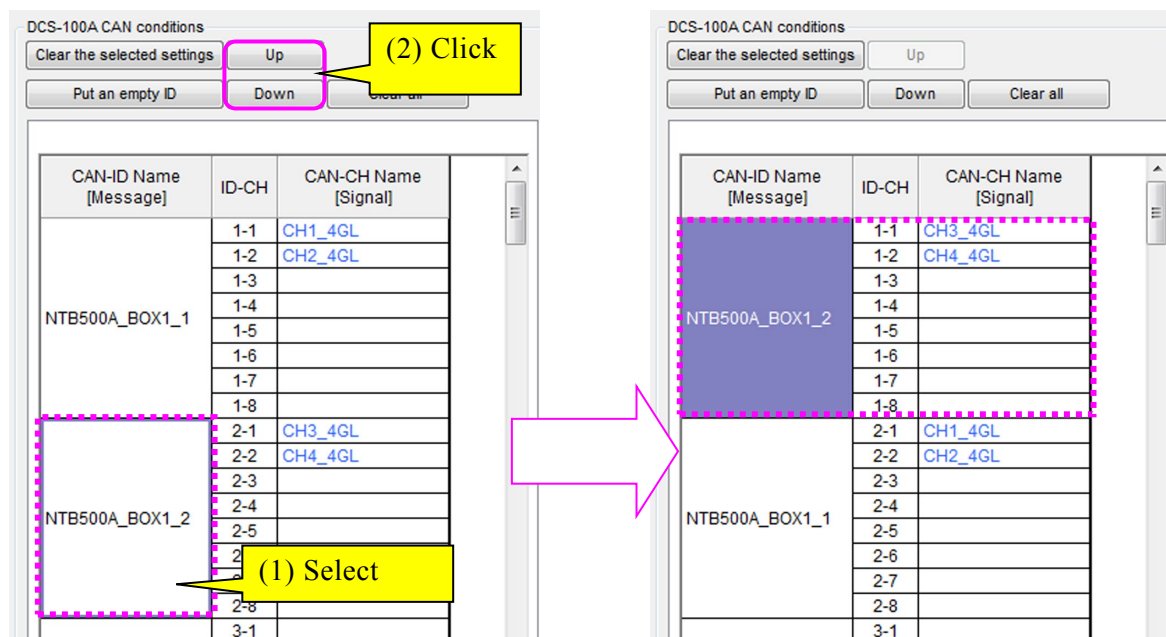
3-5-1 Sort Items

This section describes how to sort CAN condition items.

Sort the CAN condition items by using the **Up** button and **Down** button.

3-5-1-1 Sort the CAN-ID

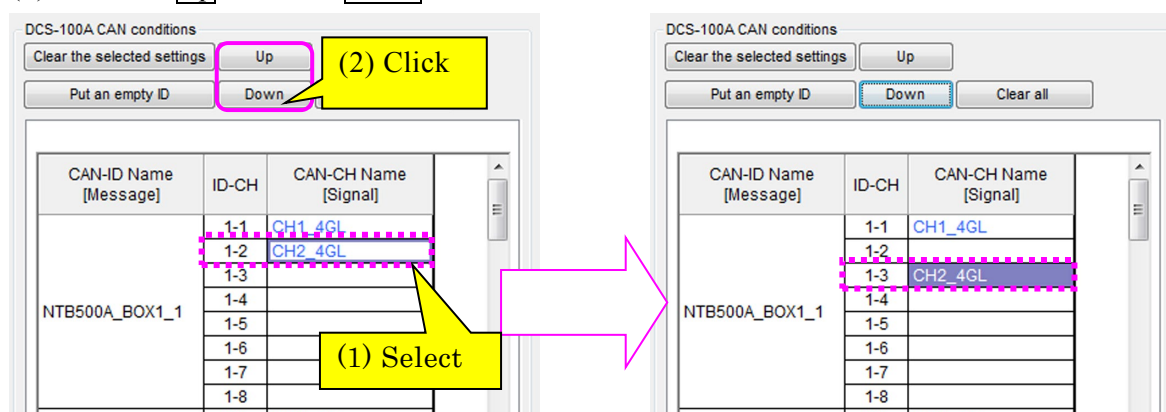
- (1) Select the CAN-ID.
- (2) Click the **Up** button or **Down** button.



You can move CAN-ID one by one.

3-5-1-2 Sort the CAN-CH

- (1) Select the CAN-CH.
- (2) Click the **Up** button or **Down** button.



You can move CAN-CH one by one.

MEMO

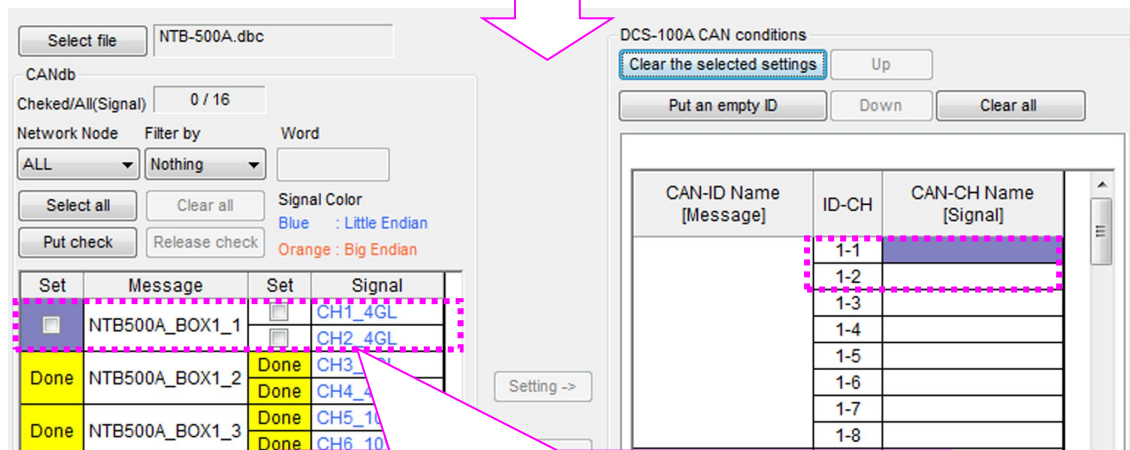
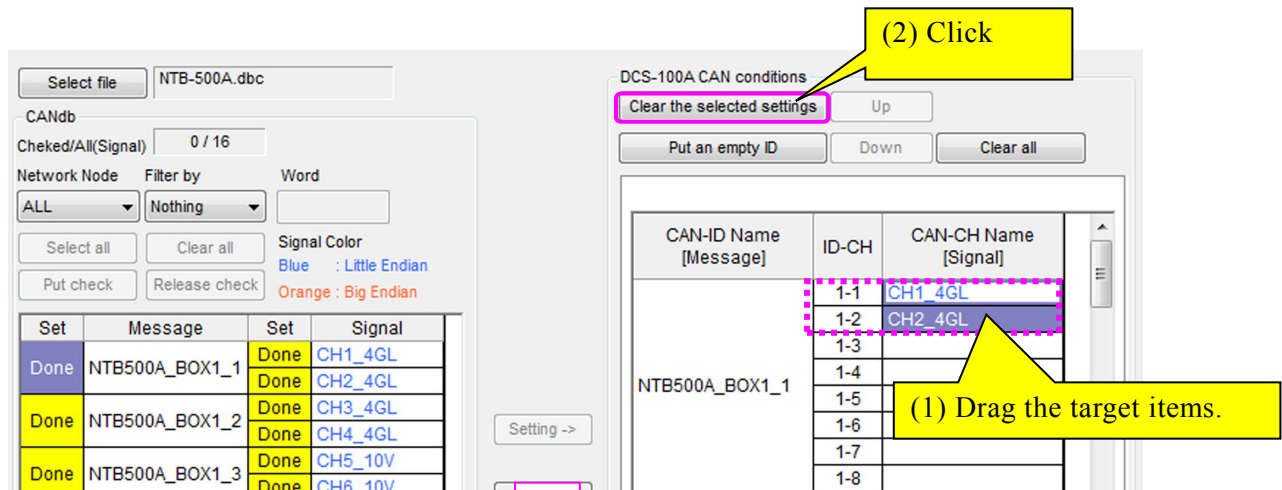
You can move CAN-CH in the CAN-ID.

3-5-2 Clear Items

This section describes how to clear conditions by using the **Clear the selected settings** button and **Clear all** button.

3-5-2-1 Clear the selected items

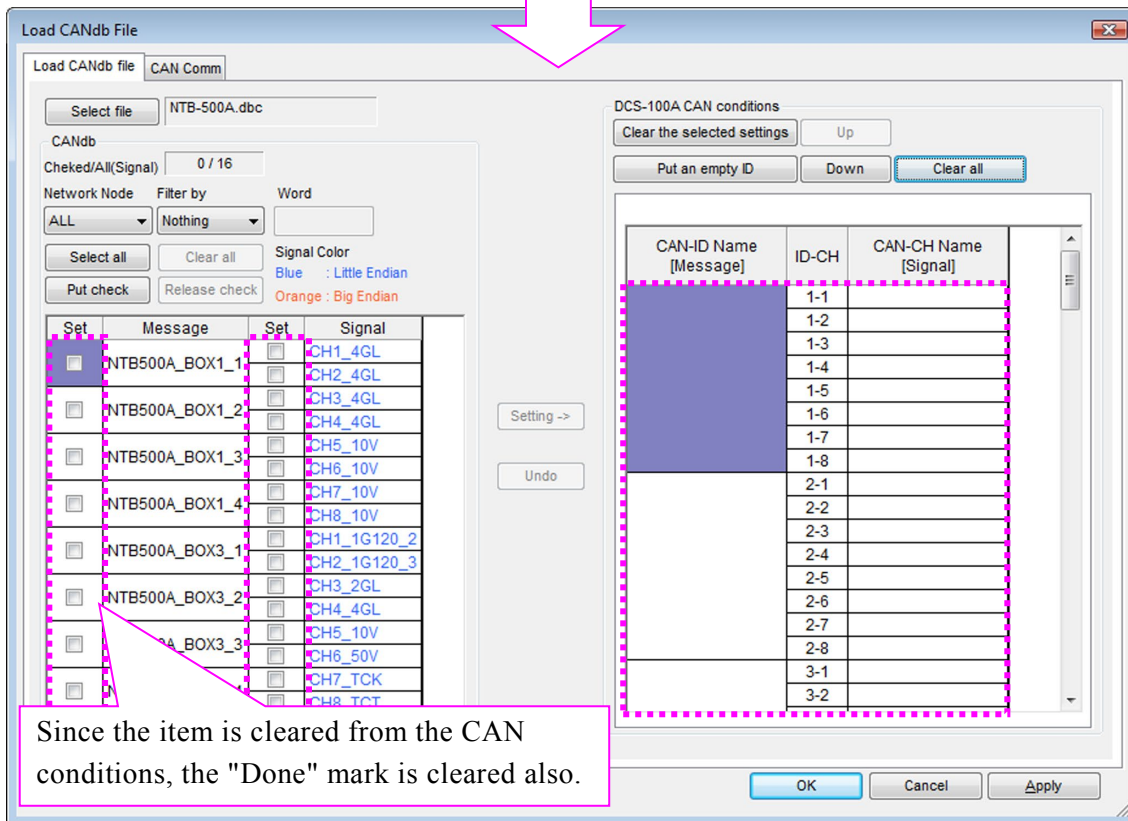
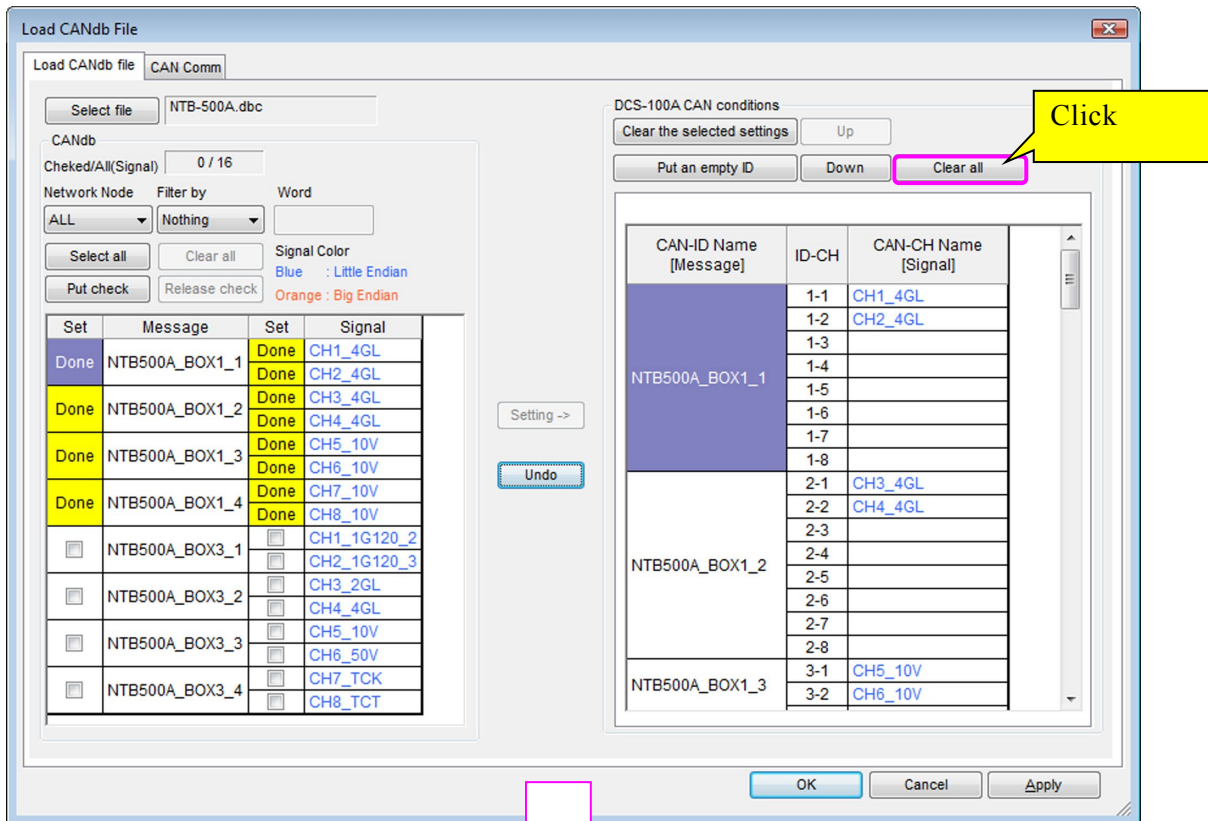
- (1) Drag the target items.
- (2) Click the **Clear the selected settings** button.



Since the item is cleared from the CAN conditions, the "Done" mark is cleared also.

3-5-2-2 Clear all items

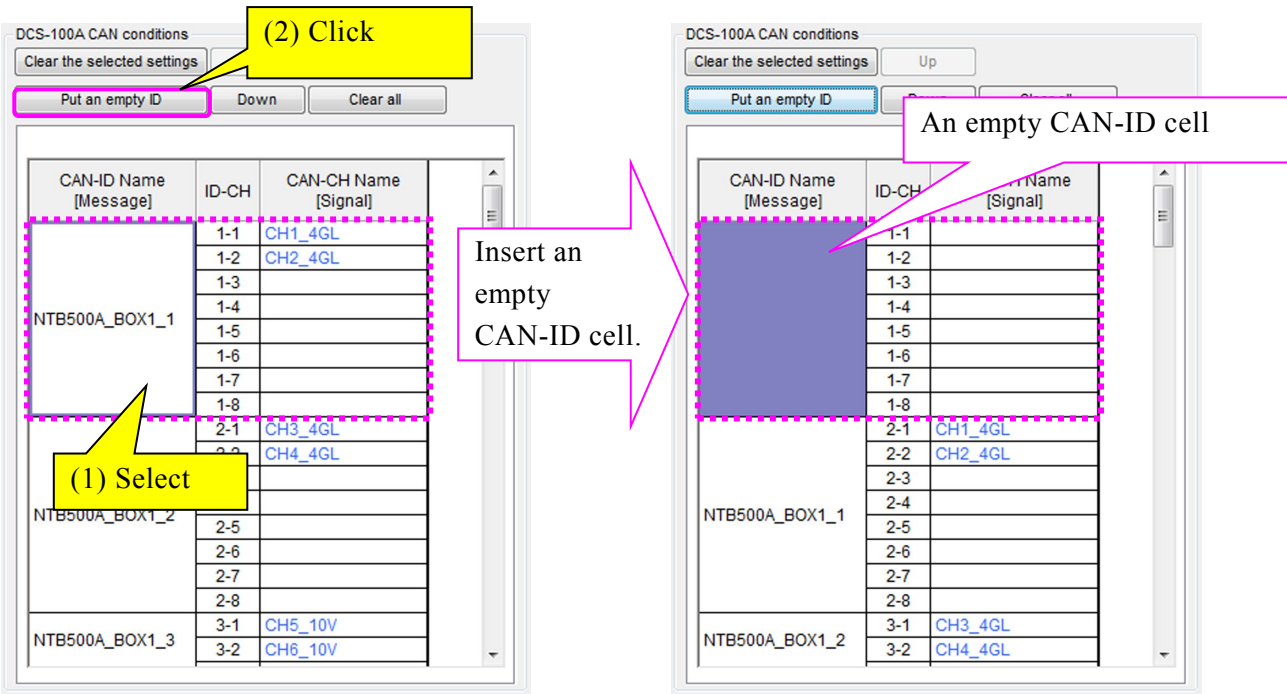
To clear all CAN conditions, click the **Clear all** button.



3-5-3 Insert an Empty CAN-ID Cell

To insert an empty CAN-ID cell, click the **Put an empty ID** button.

- (1) Select the cell above which you want to insert the new CAN-ID cell.
- (2) Click the **Put an empty ID** button.



An empty CAN-ID cell is inserted above the selected CAN-ID cell.

After inserting the empty CAN-ID cell, the bottom-most CAN-ID cell is deleted.

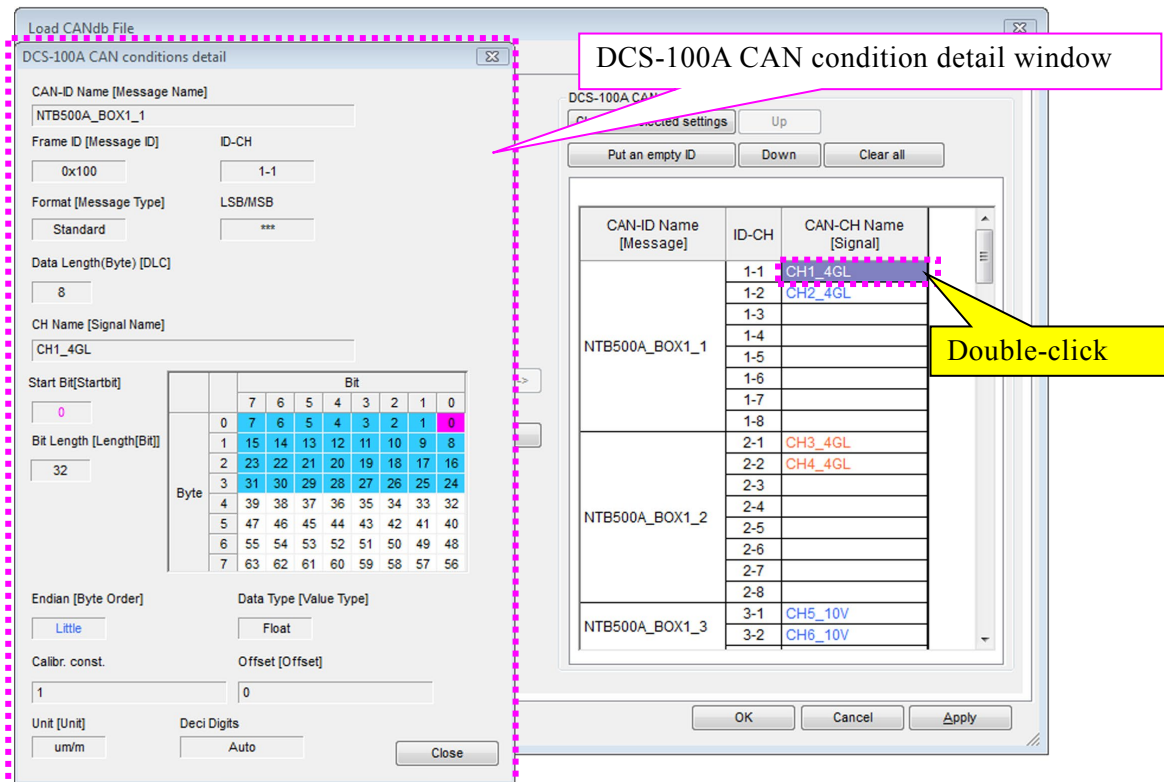
CAN-ID		CAN-ID
1		
2		1
3		2
4		3
5		4
6		5
7		6
8		7
9		8
10		9
11		10
12		11
13		12
14		13
15		14
16		15

Insert an empty CAN-ID cell.

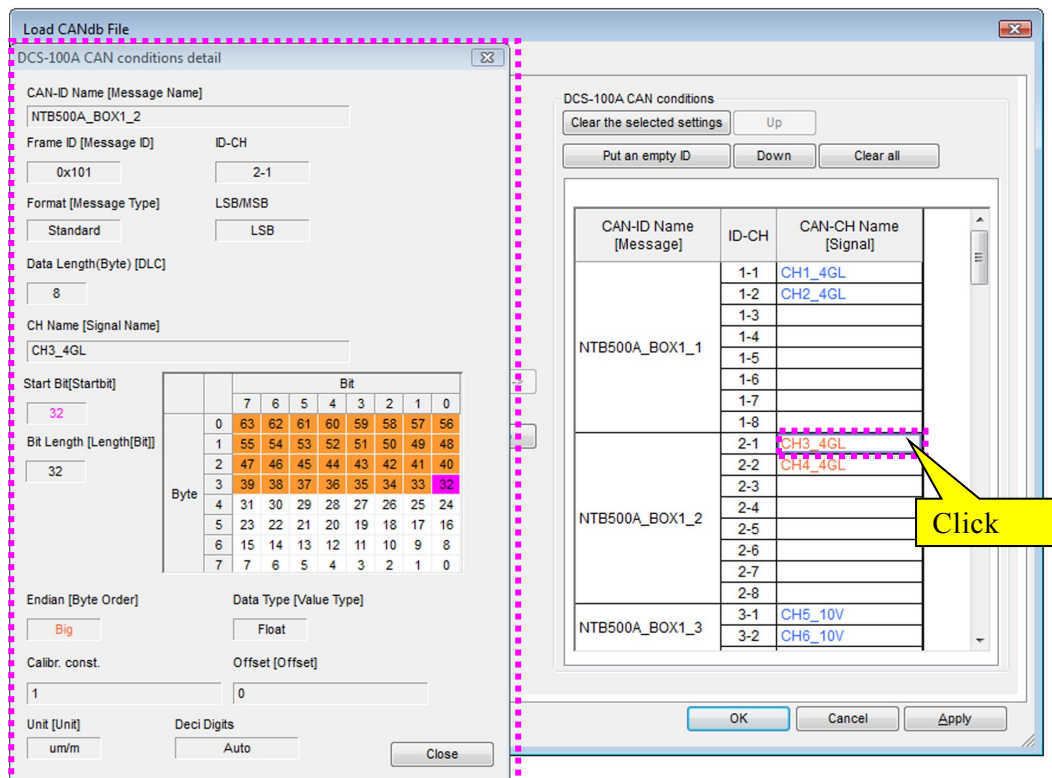
The CAN-ID16 is deleted.

3-5-4 Display Details

Double-click the item in the "CAN-CH Name" column. The DCS-100A CAN conditions detail window appears.



To display other detail information, click the item in the "CAN-CH Name" column with the DCS-100A CAN conditions detail window appeared.



CH Name [Signal Name]
CH1_4GL

Start Bit[Startbit]
0

Bit Length [Length[Bit]]
32

	Bit							
	7	6	5	4	3	2	1	0
0	7	6	5	4	3	2	1	0
1	15	14	13	12	11	10	9	8
2	23	22	21	20	19	18	17	16
3	31	30	29	28	27	26	25	24
4	39	38	37	36	35	34	33	32
5	47	46	45	44	43	42	41	40
6	55	54	53	52	51	50	49	48
7	63	62	61	60	59	58	57	56

Byte

Start Bit

"CAN-CH" usage bit

"CAN-ID" usage bit

The table in the DCS-100A CAN conditions detail window indicates the number of "CAN-CH" usage bit in the CAN-ID.

The blue cells indicate the "CAN-CH" usage bit. The pink cell indicates the "Startbit".

Note that the table color vary with the "Endian (Byte Order)".

Little: Blue, Big, Orange

CH Name [Signal Name]
CH1_4GL

Start Bit[Startbit]
0

Bit Length [Length[Bit]]
32

	Bit							
	7	6	5	4	3	2	1	0
0	7	6	5	4	3	2	1	0
1	15	14	13	12	11	10	9	8
2	23	22	21	20	19	18	17	16
3	31	30	29	28	27	26	25	24
4	39	38	37	36	35	34	33	32
5	47	46	45	44	43	42	41	40
6	55	54	53	52	51	50	49	48
7	63	62	61	60	59	58	57	56

Byte

CH Name [Signal Name]
CH3_4GL

Start Bit[Startbit]
32

Bit Length [Length[Bit]]
32

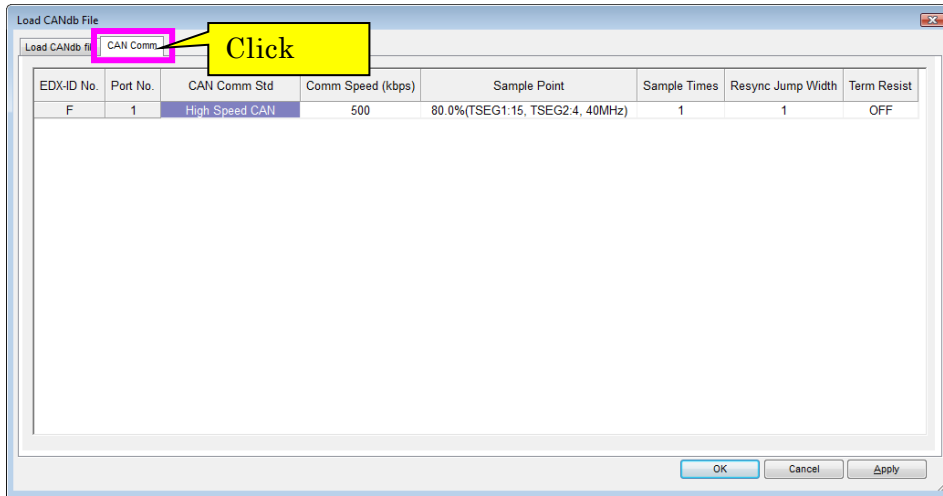
	Bit							
	7	6	5	4	3	2	1	0
0	63	62	61	60	59	58	57	56
1	55	54	53	52	51	50	49	48
2	47	46	45	44	43	42	41	40
3	39	38	37	36	35	34	33	32
4	31	30	29	28	27	26	25	24
5	23	22	21	20	19	18	17	16
6	15	14	13	12	11	10	9	8
7	7	6	5	4	3	2	1	0

Byte

4 CAN COMMUNICATION CONDITIONS

This section describes how to set the CAN communication conditions.

Click the CAN comm tab.



■ Setting Items

● EDX-ID No.

Displays the ID No. of the measuring instrument with a CAN card.

● Port No.

Displays the communication port No.

Communication port No. varies with the CAN card.

CAN-40A: 1 (High Speed CAN)

2 (Low Speed CAN)

CAN-41A: 1 to 2

● CAN Comm Std

Select the CAN communication standard from the following.

High Speed CAN or Low Speed CAN

After changing the CAN communication standard, communication conditions are set as follows at first.

	High Speed CAN	Low Speed CAN
Communication speed (kbps)	500	125
Sample Point	80.0%(TSEG1:15, TSEG2:4, 40MHz)	
Sample Times	1	
Resync Jump Width (SJW)	2	

● Comm Speed (kbps)

Select the communication speed.

The communication speed shall be as follows according to the pre-set CAN communication standard.

High speed CAN: 1000, 800, 500, 250, 125, 100, 83.3, 62.5, 50, 33.3, 25, 20, 10 (kbps)

Low speed CAN: 125, 100, 83.3, 62.5, 50, 33.3, 25, 20, 10 (kbps)

● Sample Point

Select the sample point.

The sample point varies with the pre-set communication speed.

The TSEG1 value and TSEG2 value are automatically set by setting the sample point.

The (40 MHz) and (32 MHz) are values of the operation clock of the CAN controller.

Communication speed: Other than 800 kbps

- 85.0% (TSEG1:16, TSEG2:3, 40MHz)
- 80.0% (TSEG1:15, TSEG2:4, 40MHz)
- 75.0% (TSEG1:14, TSEG2:5, 40MHz)
- 70.0% (TSEG1:13, TSEG2:6, 40MHz)
- 65.0% (TSEG1:12, TSEG2:7, 40MHz)
- 60.0% (TSEG1:11, TSEG2:8, 40MHz)
- 80.0% (TSEG1: 7, TSEG2:2, 40MHz)
- 70.0% (TSEG1: 6, TSEG2:3, 40MHz)
- 60.0% (TSEG1: 5, TSEG2:4, 40MHz)
- 87.5% (TSEG1:13, TSEG2:2, 32MHz)
- 81.3% (TSEG1:12, TSEG2:3, 32MHz)
- 75.0% (TSEG1:11, TSEG2:4, 32MHz)
- 68.8% (TSEG1:10, TSEG2:5, 32MHz)
- 62.5% (TSEG1: 9, TSEG2:6, 32MHz)
- 56.3% (TSEG1: 8, TSEG2:7, 32MHz)
- 75.0% (TSEG1: 5, TSEG2:2, 32MHz)
- 62.5% (TSEG1: 4, TSEG2:3, 32MHz)

Communication speed: 800 kbps

- 85.0% (TSEG1:16, TSEG2:3, 32MHz)
- 80.0% (TSEG1:15, TSEG2:4, 32MHz)
- 75.0% (TSEG1:14, TSEG2:5, 32MHz)
- 70.0% (TSEG1:13, TSEG2:6, 32MHz)
- 65.0% (TSEG1:12, TSEG2:7, 32MHz)
- 60.0% (TSEG1:11, TSEG2:8, 32MHz)
- 80.0% (TSEG1: 7, TSEG2:2, 32MHz)
- 70.0% (TSEG1: 6, TSEG2:3, 32MHz)
- 60.0% (TSEG1: 5, TSEG2:4, 32MHz)

NOTE

The sample point vary with the current resynchronous jump width (SJW).

If the target sample point is not displayed, check the resynchrous jump width (SJW).

● Sample Times

Select the number of samples from the following.

1 time or 3 times

- **Resync Jump Width (SJW)**

Select the resynchronous jump width (SJW) from the following.

(Unit: Time Quanta)

1, 2, 3, or 4

NOTE

The resyncheouns jump width (SJW) varies with the current sample point.

If the target resynchronous jump width (SJW) is not displayed, check the sample point.

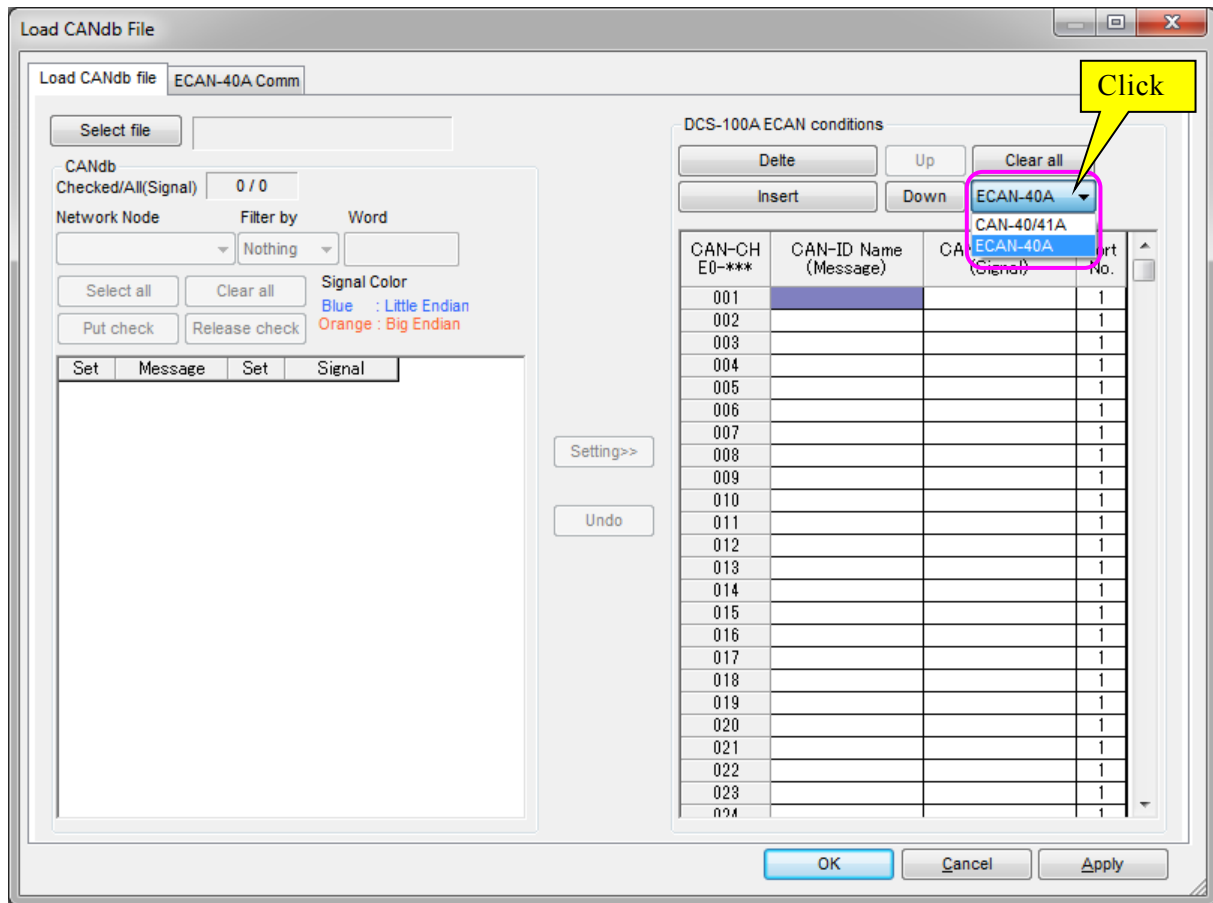
- **Term resist**

Select whether or not to use the termination resistor from the following.

OFF or ON

5 ECAN-40A, EGPC-40A, EGPC-50A

When mounting the ECAN-40A, EGPC-40A, EGPC-50A, the DCS-105A sets the CANdb information into the ECAN conditions of the DCS-100A.



5-1 SET THE CANDb FILE INFORMATION INTO THE ECAN CONDITIONS

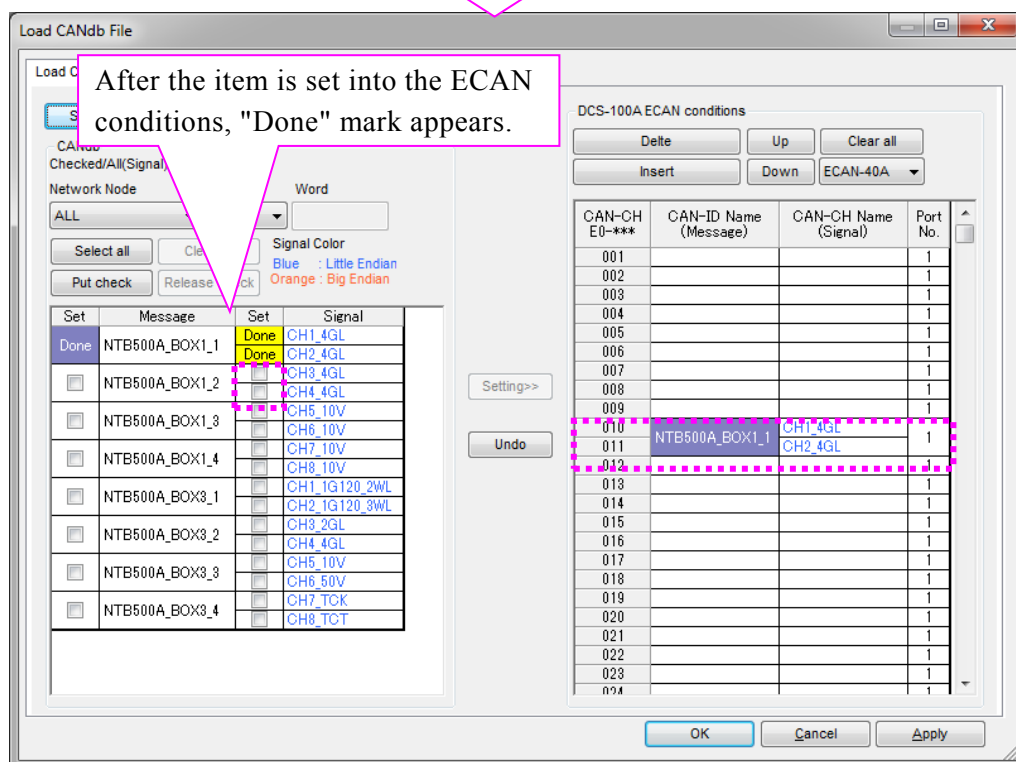
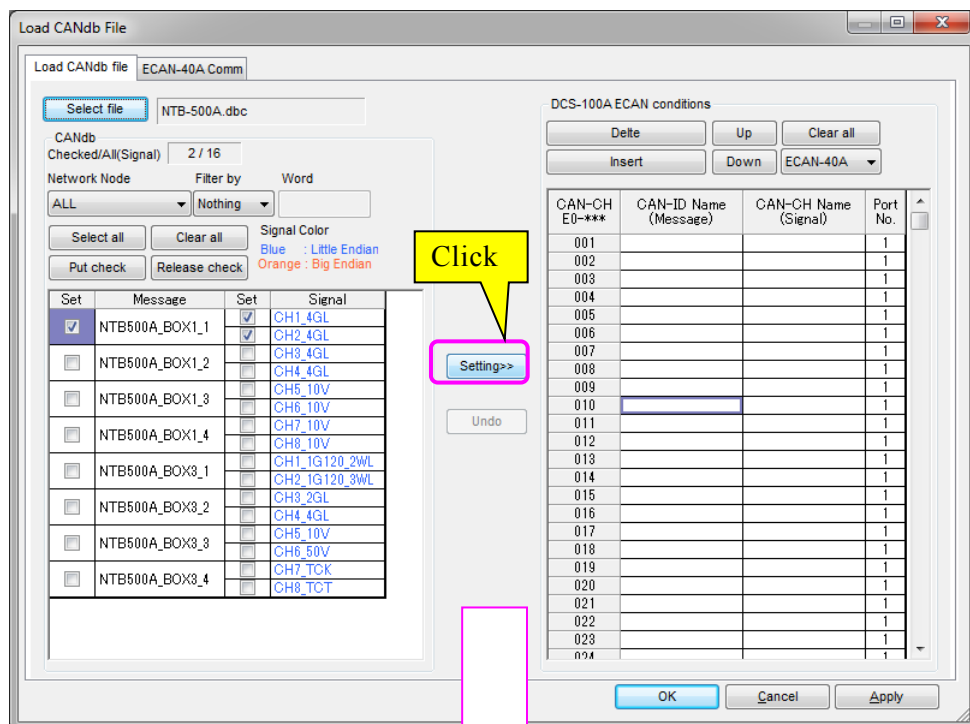
CONDITIONS

This section describes how to set the CANDb information into the ECAN conditions.

For details, see 3-3 SELECT THE "MESSAGE" AND "SIGNAL" TO BE SET IN THE CAN .

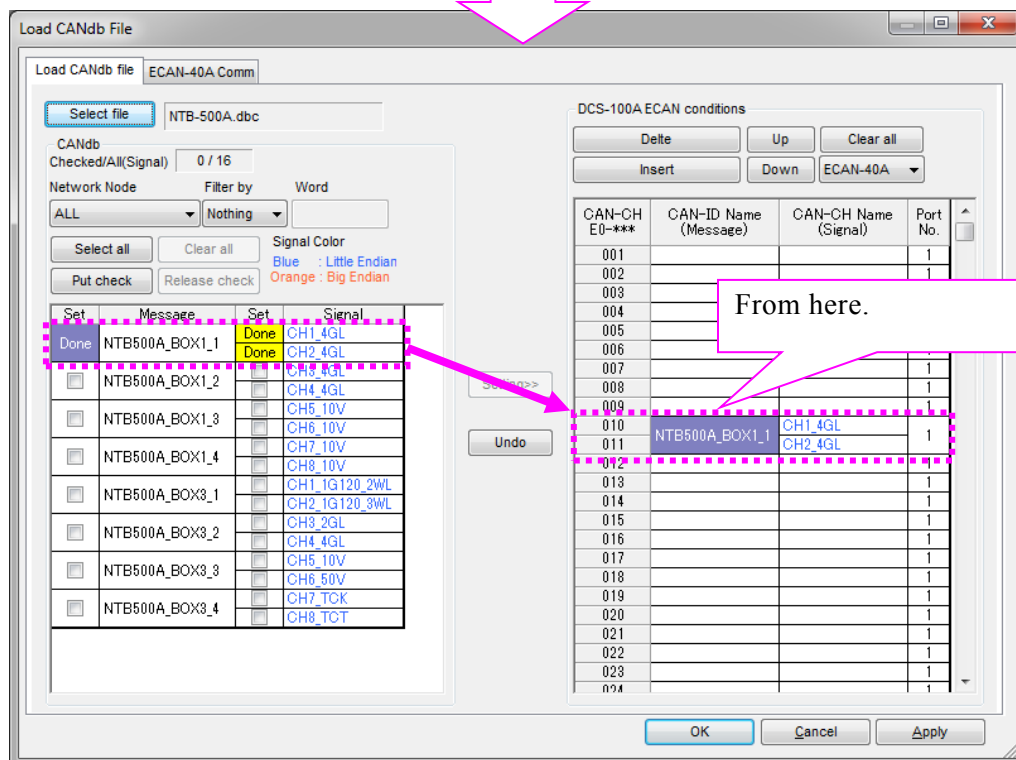
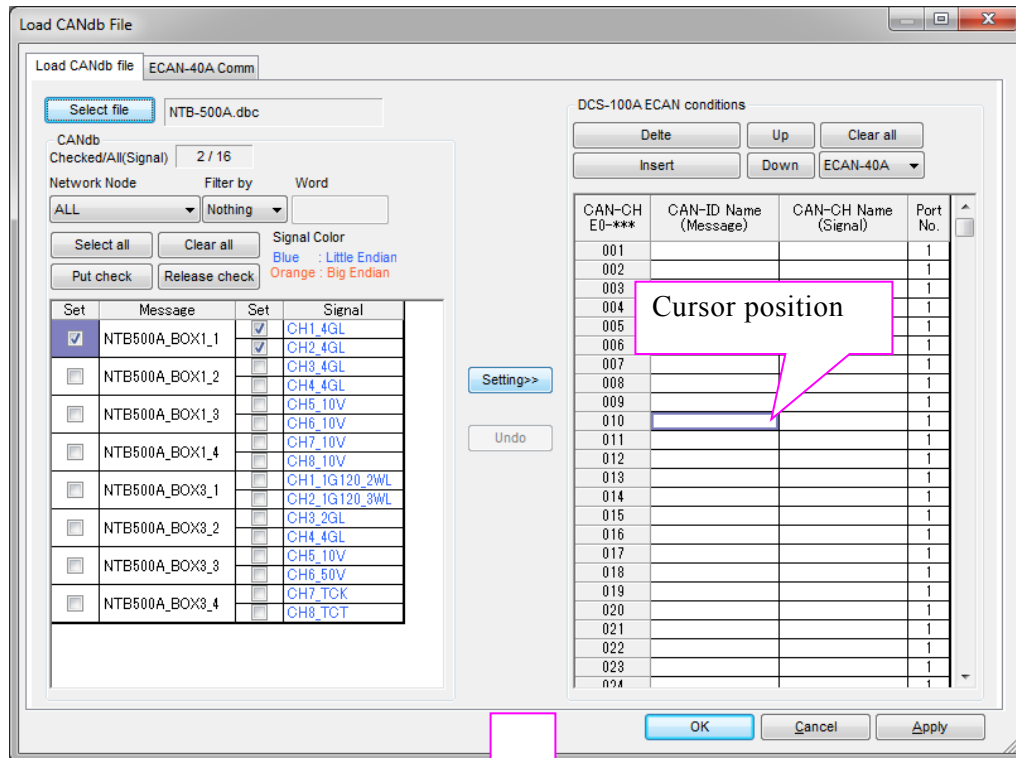
Note that the CANDb information is set into the ECAN conditions as described in 3-4 SET THE CANDb FILE INFORMATION INTO THE CAN .

Click the **Setting>>** button to set the CANDb information, with checkmarks, into the ECAN conditions. After the item is set into the ECAN conditions, "Done" mark appears.

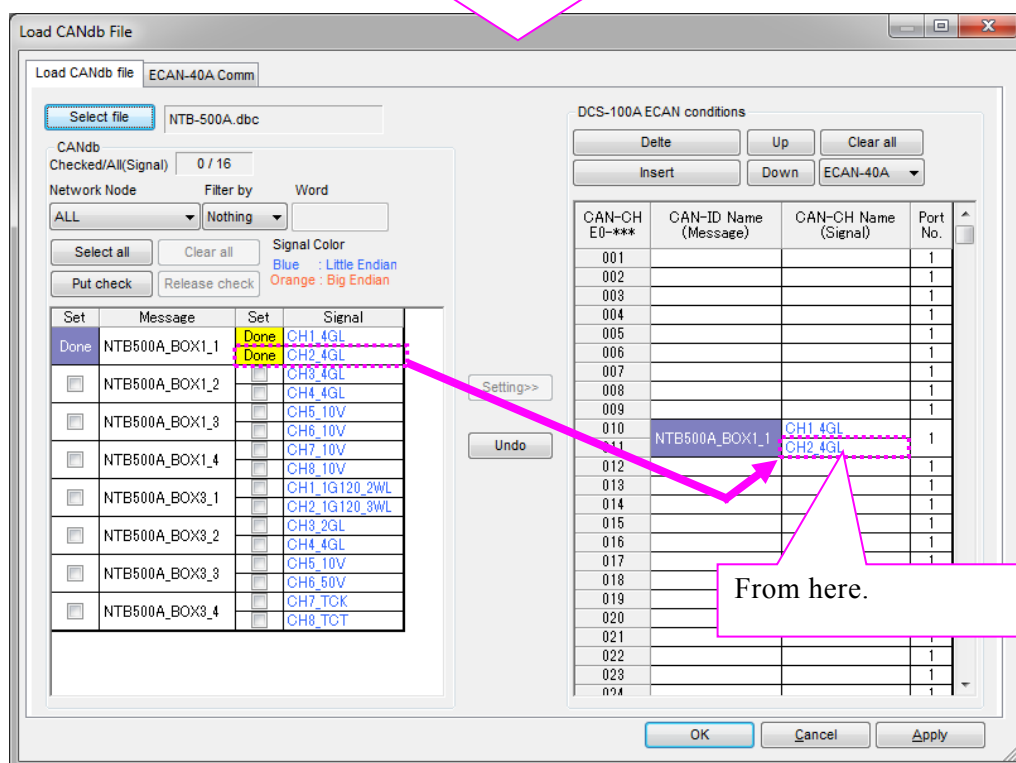
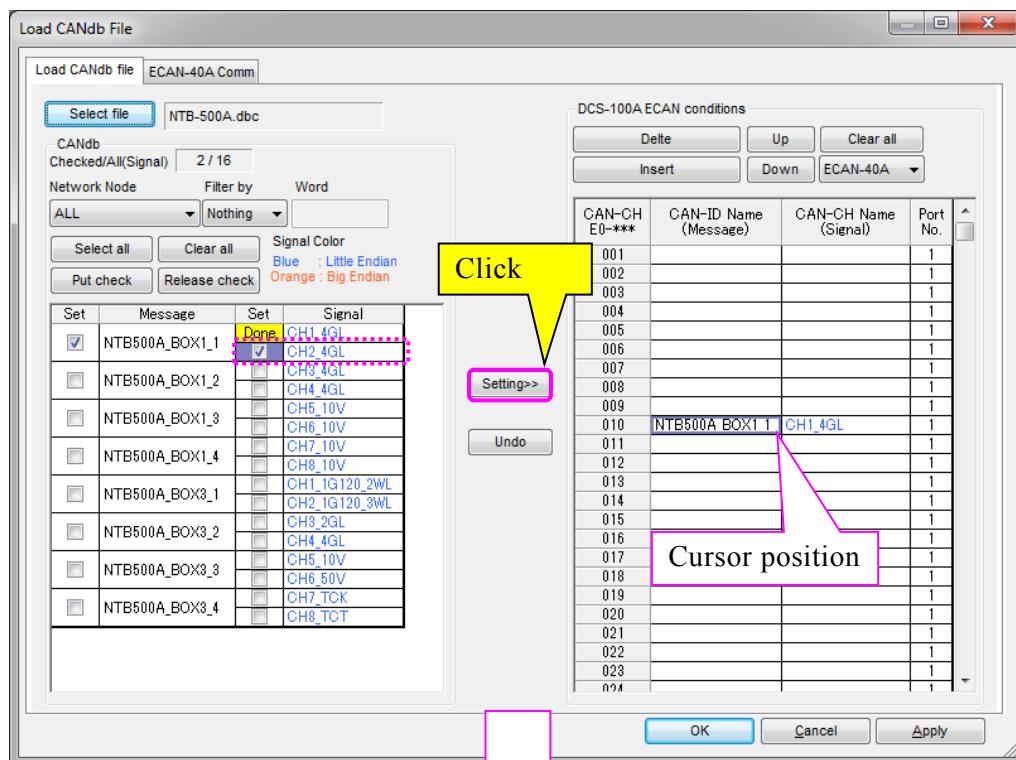


5-1-1 ECAN Conditions and Cursor Position

The DCS-105A sets the CANdb information into the ECAN conditions, from the cursor position described on the right table.



To add the "Signal" in the "MessageID", place the cursor on the CAN-ID.



MEMO

To add the "Signal", the Frame ID (Message ID) and Format (Message Type) in the ECAN conditions and the selected "Message ID" and "Message Type" in the CANdb should be the same.

5-1-1-1 Precautions

The DCS-105A sets the CANdb information into the ECAN conditions, from the cursor position. In the following table, the DCS-105A sets 4 CANdb information items.

The number of selected CANdb information is 16 channels.

In this case, the top 4 channels of the selected CANdb information will be set on the ECAN conditions.

Load CANdb File

Load CANdb file: ECAN-40A Comm

Select file: NTB-500A.dbc

CANdb Checked/All(Signal): 16 / 16

Network Node: ALL Filter by: Nothing Word:

Signal Color: Blue : Little Endian, Orange : Big Endian

Buttons: Select all, Clear all, Put check, Release check

Set	Message	Set	Signal
☒	NTB500A_BOX1_1	☒	CH1_4GL
☒	NTB500A_BOX1_2	☒	CH2_4GL
☒	NTB500A_BOX1_3	☒	CH3_4GL
☒	NTB500A_BOX1_4	☒	CH4_4GL
☒	NTB500A_BOX3_1	☒	CH5_10V
☒	NTB500A_BOX3_2	☒	CH6_10V
☒	NTB500A_BOX3_3	☒	CH7_10V
☒	NTB500A_BOX3_4	☒	CH8_10V
☒	NTB500A_BOX3_1	☒	CH1_1G120_2WL
☒	NTB500A_BOX3_2	☒	CH2_1G120_3WL
☒	NTB500A_BOX3_2	☒	CH3_2GL
☒	NTB500A_BOX3_3	☒	CH4_4GL
☒	NTB500A_BOX3_3	☒	CH5_10V
☒	NTB500A_BOX3_3	☒	CH6_50V
☒	NTB500A_BOX3_4	☒	CH7_TCK
☒	NTB500A_BOX3_4	☒	CH8_TCT

Buttons: Setting>>, Undo

DCS-100A ECAN conditions

Buttons: Delete, Up, Clear all, Insert, Down, ECAN-40A

CAN-CH E0-***	CAN-ID Name (Message)	CAN-CH Name (Signal)	Port No.
490			1
491			1
492			1
493			1
494			1
495			1
496			1
497			1
498			1
499			1
500			1
501			1
502			1
503			1
504			1
505			1
506			1
507			1
508			1
509			1
510			1
511			1

Buttons: OK, Cancel, Apply

Selected CANdb information
The number of "Message": 8
The number of "Signal": 16 (for 16 channels)

Cursor position

4 channels

Set

Load CANdb File

Load CANdb file: ECAN-40A Comm

Select file: NTB-500A.dbc

CANdb Checked/All(Signal): 12 / 16

Network Node: ALL Filter by: Nothing Word:

Signal Color: Blue : Little Endian, Orange : Big Endian

Buttons: Select all, Clear all, Put check, Release check

Set	Message	Set	Signal
Done	NTB500A_BOX1_1	Done	CH1_4GL
Don...	NTB500A_BOX1_2	Done	CH2_4GL
☒	NTB500A_BOX1_3	☒	CH3_4GL
☒	NTB500A_BOX1_4	☒	CH4_4GL
☒	NTB500A_BOX3_1	☒	CH5_10V
☒	NTB500A_BOX3_2	☒	CH6_10V
☒	NTB500A_BOX3_3	☒	CH7_10V
☒	NTB500A_BOX3_4	☒	CH8_10V
☒	NTB500A_BOX3_1	☒	CH1_1G120_2WL
☒	NTB500A_BOX3_2	☒	CH2_1G120_3WL
☒	NTB500A_BOX3_2	☒	CH3_2GL
☒	NTB500A_BOX3_3	☒	CH4_4GL
☒	NTB500A_BOX3_3	☒	CH5_10V
☒	NTB500A_BOX3_3	☒	CH6_50V
☒	NTB500A_BOX3_4	☒	CH7_TCK
☒	NTB500A_BOX3_4	☒	CH8_TCT

Buttons: Setting>>, Undo

DCS-100A ECAN conditions

Buttons: Delete, Up, Clear all, Insert, Down, ECAN-40A

CAN-CH E0-***	CAN-ID Name (Message)	CAN-CH Name (Signal)	Port No.
490			1
491			1
492			1
493			1
494			1
495			1
496			1
497			1
498			1
499			1
500			1
501			1
502			1
503			1
504			1
505			1
506			1
507			1
508			1
509	NTB500A_BOX1_1	CH1_4GL	1
510	NTB500A_BOX1_2	CH2_4GL	1
511		CH3_4GL	1
512		CH4_4GL	1

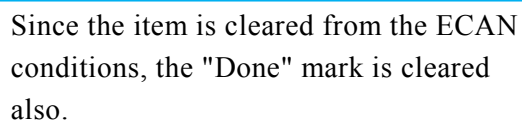
Buttons: OK, Cancel, Apply

4 channel data will be set.

When the ECAN conditions have pre-set data as follows, the last ECAN conditions will be deleted.



Set



Newly set CANdb information

Since the ECAN conditions were shifted downward, the "NTB500A_BOX1_3" and "NTB500A_BOX1_4" were deleted.

5-1-2 Overwrite the ECAN Conditions

To overwrite the ECAN conditions, set the new "Message" to the CAN-ID which has the pre-set ECAN conditions.

Since the item is already set on the ECAN conditions, "Done" mark exists.

Set the "Message" to the cursor position in the ECAN conditions.

There are already-set ECAN conditions in the cursor position.

CAN-CH	CAN-ID Name (Message)	CAN-CH Name (Signal)	Port No.
001			
002	NTB500A_BOX1_1	CH1_4GL	1
003		CH2_4GL	1
004			1
005			1
006			1
007			1
008			1

Since the item is overwritten, the "Done" mark is cleared also.

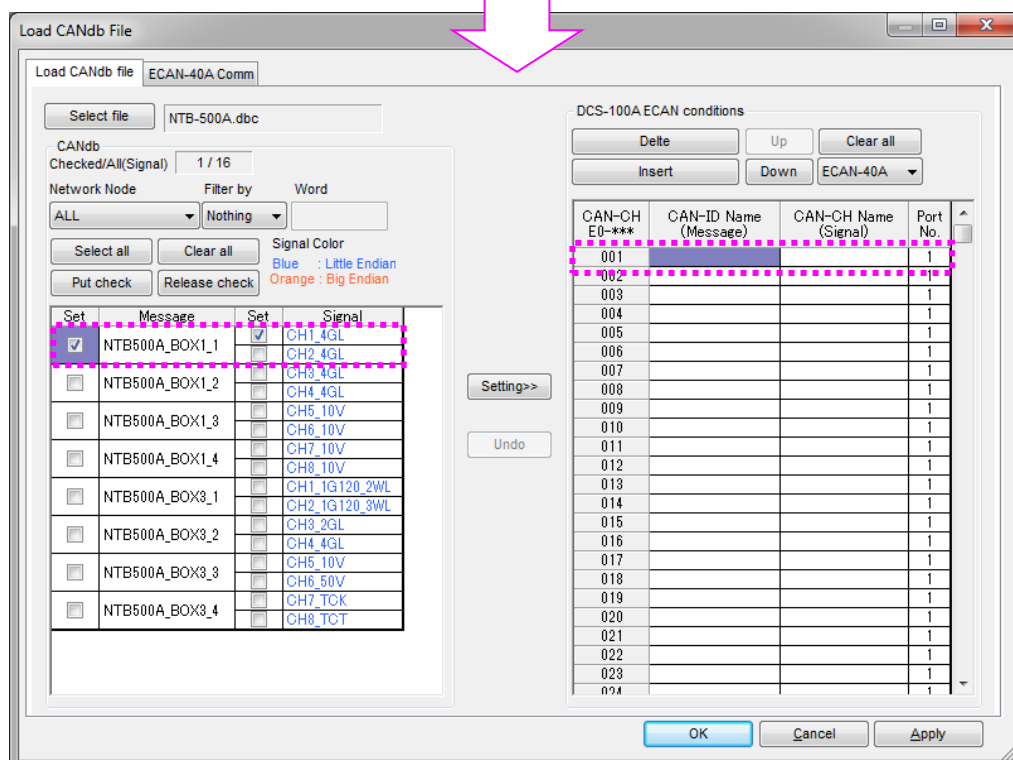
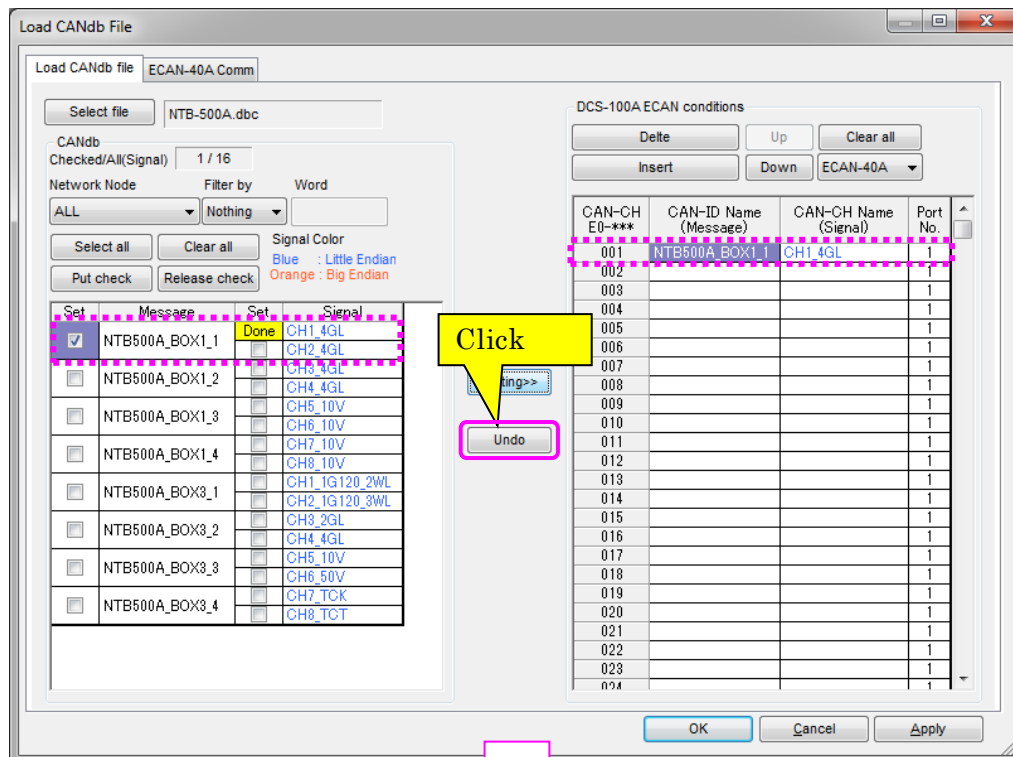
After the item is set into the ECAN conditions, "Done" mark appears.

The ECAN conditions were correctly overwritten.

CAN-CH	CAN-ID Name (Message)	CAN-CH Name (Signal)	Port No.
001			
002	NTB500A_BOX1_2	CH3_4GL	1
003		CH4_4GL	1
004			1
005			1
006			1
007			1
008			1

5-1-3 Cancel the Pre-set ECAN Conditions

To cancel the last setting action, click the **Undo** button. (Undo function)
You can only undo once.



5-2 EDIT THE ECAN CONDITIONS

This section describes how to sort, delete, or clear the ECAN conditions.

5-2-1 Sort Items

Move the ECAN condition items by using the **Up** button and **Down** button.

The operations are the same as that in 3-5-1 Sort Items.

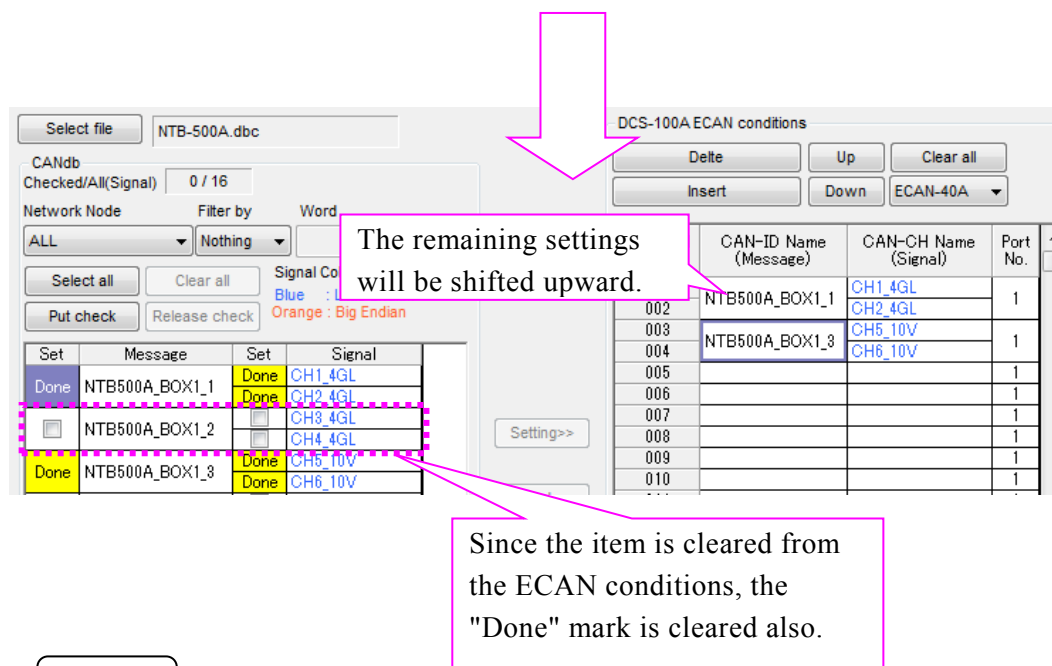
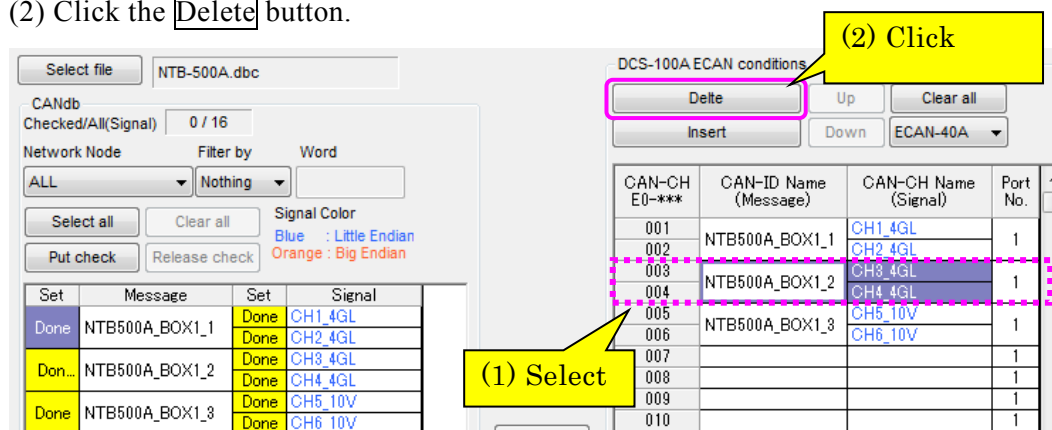
5-2-2 Clear Items

This section describes how to delete or clear ECAN conditions by using the **Delete** button and **Clear all** button.

5-2-2-1 Clear the target items

(1) Drag the target CAN-CH or CAN-ID.

(2) Click the **Delete** button.



NOTE

The ECAN conditions will be shifted upward for the number of deleted rows.
Note that the CAN-CH No. will be changed.

5-2-2-2 Clear all items

To clear all ECAN conditions, click the **Clear all** button.

The operations are the same as that in 3-5-2-2 Clear all items.

5-2-3 Insert Row

To insert a row, click the **Insert** button.

(1) Select the cell above which you want to insert the new row.

(2) Click the **Insert** button.

DCS-100A ECAN conditions

(2) Click

Insert

Down

ECAN-40A

CAN-CH E0-***	CAN-ID Name (Message)	CAN-CH Name (Signal)	Port No.
001			
002	NTB500A_BOX1_1	CH1_4GL	1
003	NTB500A_BOX1_2	CH2_4GL	1
004	NTB500A_BOX1_3	CH3_4GL	1
005		CH4_4GL	1
006		CH5_10V	1
007		CH6_10V	1
008			1
009			1
010			1
011			1

(1) Select

DCS-100A ECAN conditions

Inserted rows

Insert

Down

ECAN-40A

CAN-CH E0-***	CAN-ID Name (Message)	CAN-CH Name (Signal)	Port No.
001			
002	NTB500A_BOX1_1	CH1_4GL	1
003			1
004			1
005			1
006			1
007	NTB500A_BOX1_2	CH3_4GL	1
008		CH4_4GL	1
009	NTB500A_BOX1_3	CH5_10V	1
010		CH6_10V	1
011			1

A row is inserted above the selected CAN-ID cell.

NOTE

After clicking the **Insert** button, the ECAN conditions will be shifted downward, from the cursor position, for the number of rows to be inserted.

Note that the last channel settings will be deleted.

DCS-100A ECAN conditions

Delte

Up

Clear all

Insert

Down

ECAN-40A

CAN-CH E0-***	CAN-ID Name (Message)	CAN-CH Name (Signal)	Port No.
490			1
491			1
492			1
493			1
494			1
495			1
496			1
497	NTB500A_BOX1_1	CH1_4GL	1
498		CH2_4GL	1
499	NTB500A_BOX1_2	CH3_4GL	1
500		CH4_4GL	1
501		CH5_10V	1
502	NTB500A_BOX1_3	CH6_10V	1
503		CH7_10V	1
504	NTB500A_BOX1_4	CH8_10V	1
505	NTB500A_BOX3_1	CH1_1G120_2WL	1
506		CH2_1G120_3WL	1
507	NTB500A_BOX3_2	CH3_2GL	1
508		CH4_4GL	1
509	NTB500A_BOX3_3	CH5_10V	1
510		CH6_50V	1
511	NTB500A_BOX3_4	CH7_TCK	1
512		CH8_TCT	1

Insert

DCS-100A ECAN conditions

Delte

Up

Clear all

Insert

Down

ECAN-40A

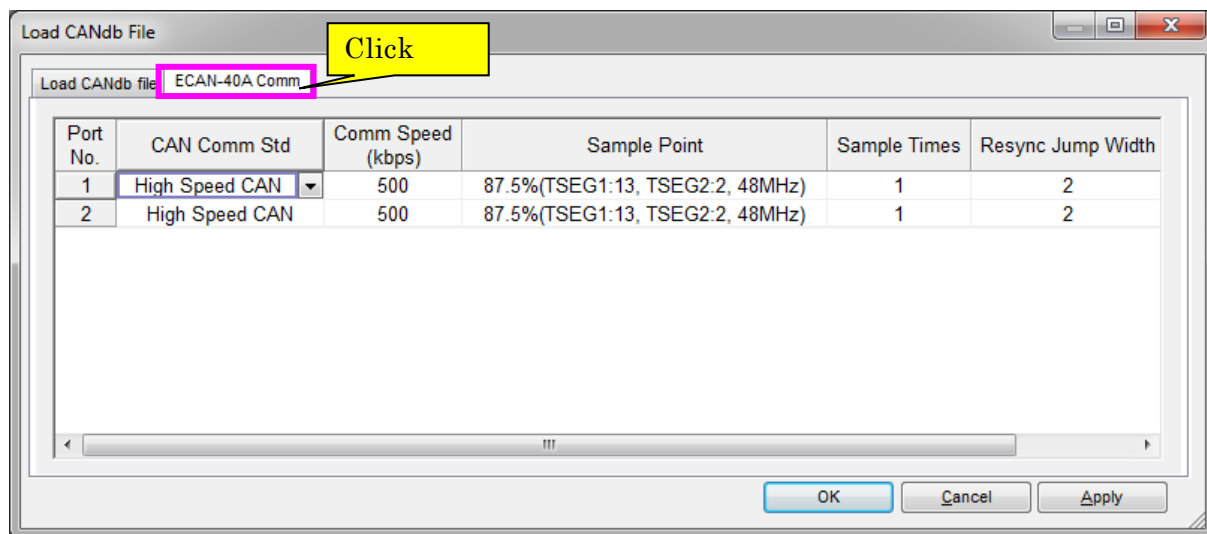
CAN-CH E0-***	CAN-ID Name (Message)	CAN-CH Name (Signal)	Port No.
490			1
491			1
492			1
493			1
494			1
495			1
496			1
497	NTB500A_BOX1_1	CH1_4GL	1
498		CH2_4GL	1
499	NTB500A_BOX1_2	CH3_4GL	1
500		CH4_4GL	1
501		CH5_10V	1
502	NTB500A_BOX1_3	CH6_10V	1
503		CH7_10V	1
504	NTB500A_BOX1_4	CH8_10V	1
505			1
506			1
507	NTB500A_BOX3_1	CH1_1G120_2WL	1
508		CH2_1G120_3WL	1
509	NTB500A_BOX3_2	CH3_2GL	1
510		CH4_4GL	1
511	NTB500A_BOX3_3	CH5_10V	1
512		CH6_50V	1

Since the ECAN conditions were shifted downward, the "NTB500A_BOX3_4" was deleted.

5-3 ECAN COMMUNICATION CONDITIONS

This section describes how to set the ECAN communication conditions.

Click the ECAN-40A_Comm tab.



■ Setting Items

- EDX-ID No. Displays the ID No. of the measuring instrument with a CAN card.
- Port No. Displays the communication port No.
- CAN Comm Std High Speed CAN or Low Speed CAN
After changing the CAN communication standard, communication conditions are set as follows at first.

CAN Comm Std	High Speed CAN	Low Speed CAN
Communication Speed (kbps)	500	125
Sample Point	87.5%(TSEG1:13, TSEG2:2, 48MHz)	
Sample Times	1	
Resync Jump Width (SJW)	2	

- Comm Speed (kbps) Select the communication speed.
The communication speed shall be as follows according to the pre-set CAN communication standard.
 - High Speed CAN:
1000,800, 500,250,125,100, 83.3, 62.5, 50, 33.3, 25, 20, 10
 - Low Speed CAN:
125, 100, 83.3, 62.5, 50, 33.3, 25, 20, 10

- Sample Point Displays the sample point.

The Sample Point and communication speed are as follows.

Communication speed	Sample point
1000kbps	75% (TSEG1:11, TSEG2:4, 48MHz)
800kbps	80% (TSEG1:15, TSEG2:4, 48MHz)
Others	87.5%(TSEG1:13, TSEG2:2, 48MHz)

- Sample times Displays the sample times.

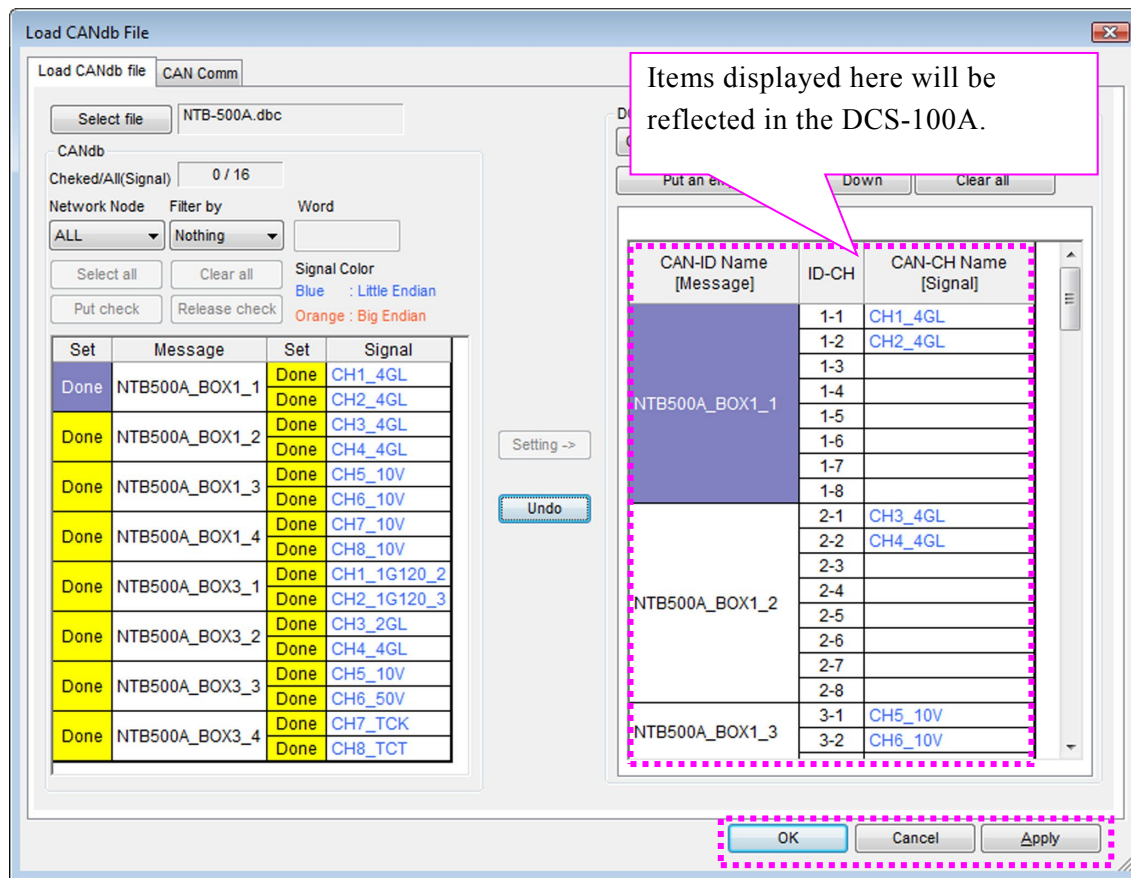
The Sample Times is fixed value.

- Resync Jump Width Displays the Resynch Jump Width.

The Resync Jump Width is the fixed value.

- Term Resist OFF or ON

6 REFLECT THE CANDB FILE INFORMATION IN THE DCS-100A



OK button: The CAN conditions and CAN communication conditions will be reflected in the DCS-100A and the Load CANdb File window will be closed.

Cancel button: The Load CANdb File window will be closed. The CAN conditions and CAN communication conditions will not be reflected in the DCS-100A.

Apply button: The CAN conditions and CAN communication conditions will be reflected in the DCS-100A. The Load CANdb File window will not be closed.

7 ERROR MESSAGES

Error messages when using the DCS-105A

No.	Card	Error messages	Contents
1	Common	Failed to load the CANdb file.	Failed to load the selected DBC format file. Check the file.
2		You have selected too many Message. Some settings were not reflected.	The number of selected "Message" exceeds the CAN card's available number of CAN-IDs. The "Message" items, exceeding the CAN card's available number of CAN-IDs, will not be reflected. To delete, see 3-5-2 Clear Items and 5-2-2-1 Clear the target items.
3	CAN-40A CAN-41A	You have selected too many Signal. Some settings were not reflected.	The number of selected "Signal" items within one "Message" is 9 or more. Be sure to set 8 "Signal" items per one CAN-ID. The 9th "Signal" and after will not be reflected.
4		You have selected too many Message, Signal. Some settings were not reflected.	The number of selected "Message" and the number of selected "Signal" exceed the CAN card's available settings.
5		Frame ID (Message ID) do not match. Do you want to overwrite it?	The target Frame ID (Message ID) and selected "Message ID" of the "Message" do not match.
6		Endian (Byte Order) do not match. Do you want to overwrite it?	The target Endian (Byte Order) and selected "Byte Order" of the "Message" do not match. To overwrite, see 3-4-2 Overwrite the CAN Conditions.
7		Frame ID (Message ID) do not match. Do you want to overwrite it?	The target Format (Message Type) and selected "Message Type" of the "Message" do not match. To overwrite, see 3-4-2 Overwrite the CAN Conditions.

8	CAN-40A CAN-41A	The Message ID of the *** are already set. (*** is the repeating Message Name)	The selected "Message ID" of the "Message" is already set. Delete the same Frame ID (Message ID) and re-set it. To overwrite, see 3-4-2 Overwrite the CAN Conditions.
9		“Byte Order”of “Signal” in *** (Message) is not unified. You cannot set it. (*** is the Message Name that Byte Order is not unified)	When “Byte Order”of “Signal” in one “Message” is not unified, this is displayed. Change the "Message" and "Signal". For the "Byte Order", see 3-5-4 Display Details.
10		If you put an empty ID, the last ID will be deleted. Do you want to put an empty ID?	After clicking the Put an empty ID button. For details, see 3-5-3 Insert an Empty CAN-ID Cell.
11	ECAN-40A	Because your setting exceeded a configurable number CH, Some CH at the end will be deleted. Do you carry out it?	The ECAN conditions of the last channel will be deleted since the ECAN conditions will be shifted downward for the number of rows to be inserted. For details, see 5-2-3 Insert Row.
12		If you insert CHs, Some Chs of last will be deleted. Do you carry out it?	After setting the CANdb information into the ECAN information, the last channel will be deleted since the ECAN conditions will be shifted downward. The message appears when the last channel has the pre-set ECAN conditions. For details, see 5-1-1-1 Precautions.
13		Because your setting exceeded 512 CH, Some CH were not reflected.	The message appears when the selected CANdb information exceeds the available number of channels, when setting the CANdb information into the ECAN conditions. For details, see 5-1-1-1 Precautions.

8 SPECIFICATIONS

8-1 AVAILABLE CANdb FILE

File	DBC format
The number of "Network Node"	Maximum 1024
The number of "Message"	Maximum 2048
The number of "Signal"	Maximum 4096

8-2 CONTROL TARGET MEASURING INSTRUMENT

EDX-100A
EDX-200A
EDX-3000A/B
EDX-5000A

8-3 AVAILABLE CONDITIONER CARDS

CAN-40A
CAN-41A
ECAN-40A
EGPC-40A
EGPC-50A

8-4 OPERATION ENVIRONMENT

CPU	Core i5 2 GHz or more
OS	Windows 8.1, Window 10, Windows 11 Japanese/English, 32-bit/64-bit version (Windows11 is 64-bit Only)
Memory	For 32-bit OS, 2 Gbytes or more For 64-bit OS, 4 Gbytes or more
Display	Resolution: 1024 × 768 dots or more