

# DTC /

# Freeze Frame Data

# Operator's Manual

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**DENSO CORPORATION**

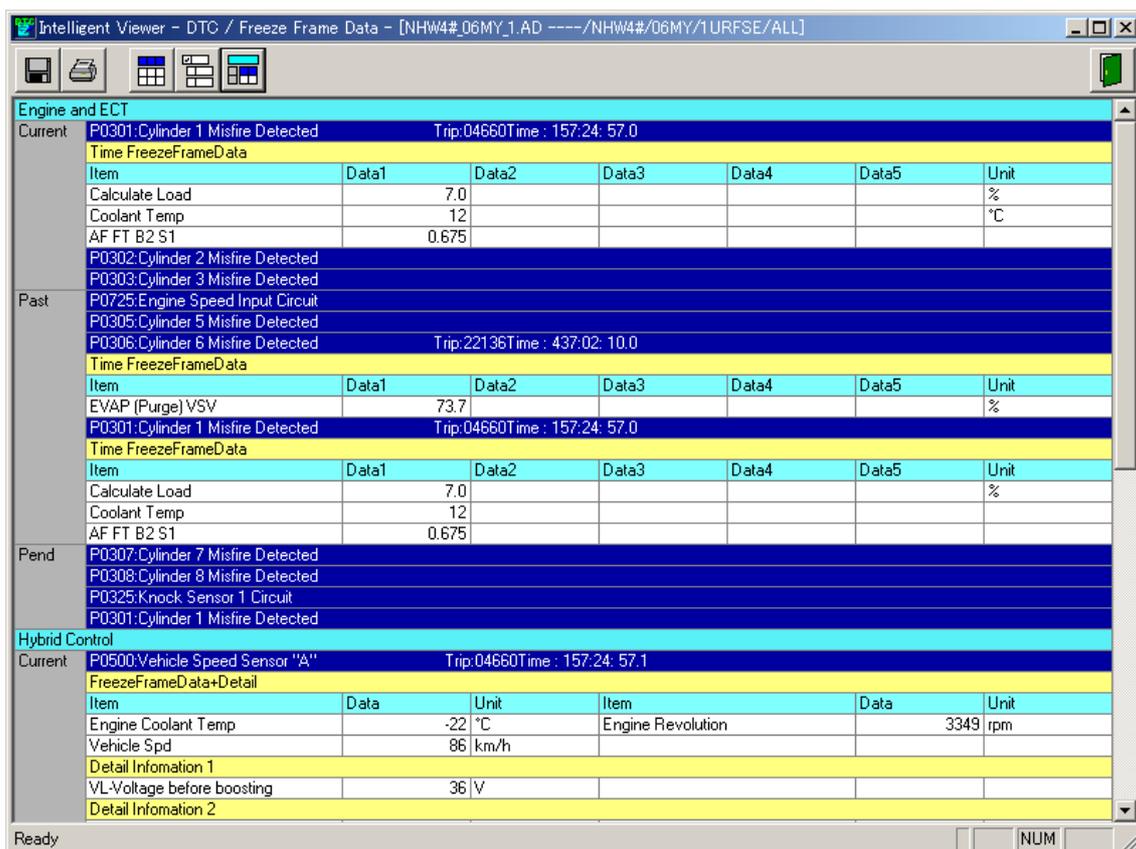
# Contents

<b>1. Outline of DTC / Freeze Frame Data</b> .....	<b>3</b>
<b>2. Setup</b> .....	<b>4</b>
<b>3. DTC / Freeze Frame Data Startup Method</b> .....	<b>5</b>
<b>4. DTC / Freeze Frame Data Menu</b> .....	<b>6</b>
<b>5. Diagnosis Freeze</b> .....	<b>7</b>
5.1. File data selection.....	7
5.2. Double-click data file .....	9
5.3. Outline of the freeze data display screen .....	10
<b>6. All Diagnosis Freeze</b> .....	<b>13</b>
6.1. File data selection.....	13
6.2. Outline of the all diagnosis display screen.....	15
6.3. Outline of the diagnosis code selection screen .....	16
6.4. Outline of the freeze data display screen .....	17
<b>7. Arrangement of Files</b> .....	<b>18</b>
7.1. Arrangement of files .....	18
<b>8. Quit</b> .....	<b>21</b>

# 1. Outline of DTC / Freeze Frame Data

With DTC / Freeze Frame Data, you can use a PC to display and print diagnosis codes, freeze data, and detailed information stored on Intelligent Tester II. Therefore, you can perform data processing operations, such as analysis of data or preparation of reports, in a more efficient manner.

- You can transfer diagnosis codes, freeze data, and detailed information from Intelligent Tester II to a PC.
- You can display and print screen different types of data stored on a PC.
- Direct access to different types of data stored on Intelligent Tester II will be available with a PC, making it possible to display and print the data.



## 2. Setup

This section describes how to connect Intelligent Tester II to a PC.

This will make it possible to analyze diagnosis freeze data with the DTC / Freeze Frame Data stored on Intelligent Tester II.

### 1 Connect Intelligent Tester II to the PC.

Connect Intelligent Tester II to the AC/DC adapter.

(If the internal battery is fully charged, you can perform these operations without connecting the AC/DC adapter.)

Bring a suitable USB Cable. Connect one end of the cable to the USB port of Intelligent Tester II and the other to one of the USB ports on the PC.

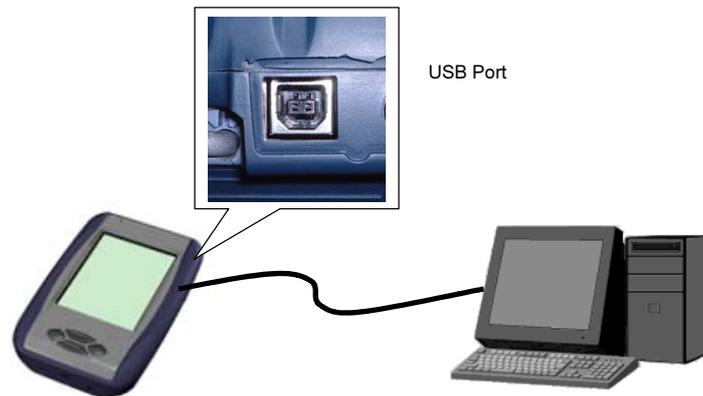


Fig. 2-1: Intelligent Tester II - PC Connection

**Note:** You will need to install the USB driver for Intelligent Tester II before you can use USB communications.

### 3. DTC / Freeze Frame Data Startup Method

This section describes how to start the DTC / Freeze Frame Data program.

- 1 Start the Intelligent Viewer program and click the  button to activate DTC / Freeze Frame Data.

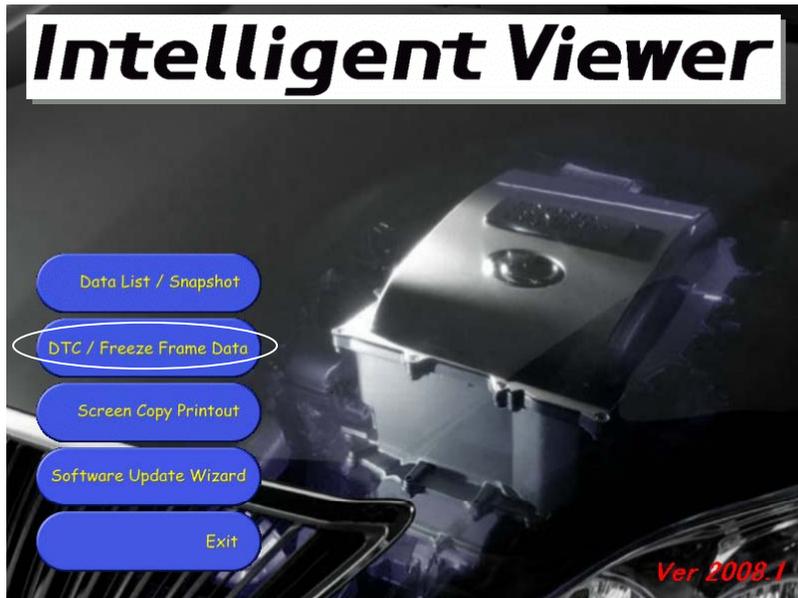


Fig. 3-1: Intelligent Viewer Program

- 2 The DTC / Freeze Frame Data main screen appears.

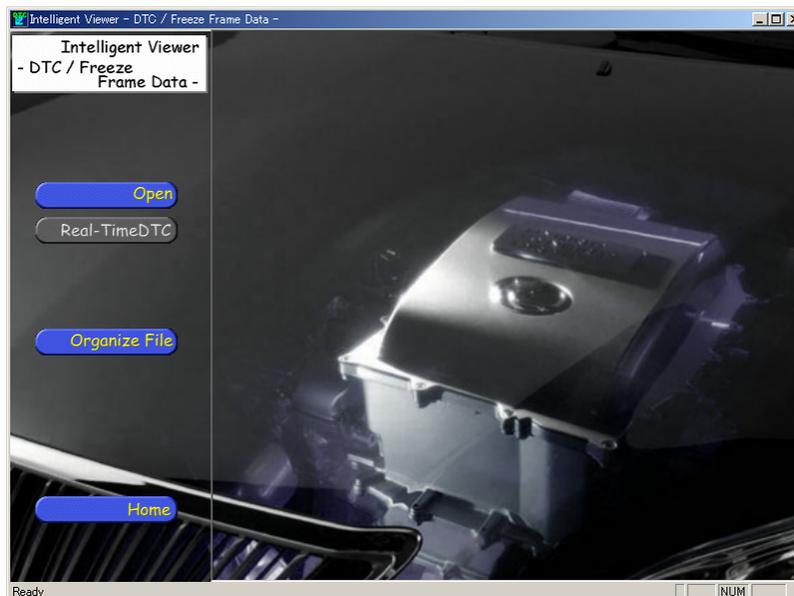


Fig. 3-2: DTC / Freeze Frame Data Main Screen

## 4. DTC / Freeze Frame Data Menu

This menu is used to execute functions available with DTC / Freeze Frame Data.

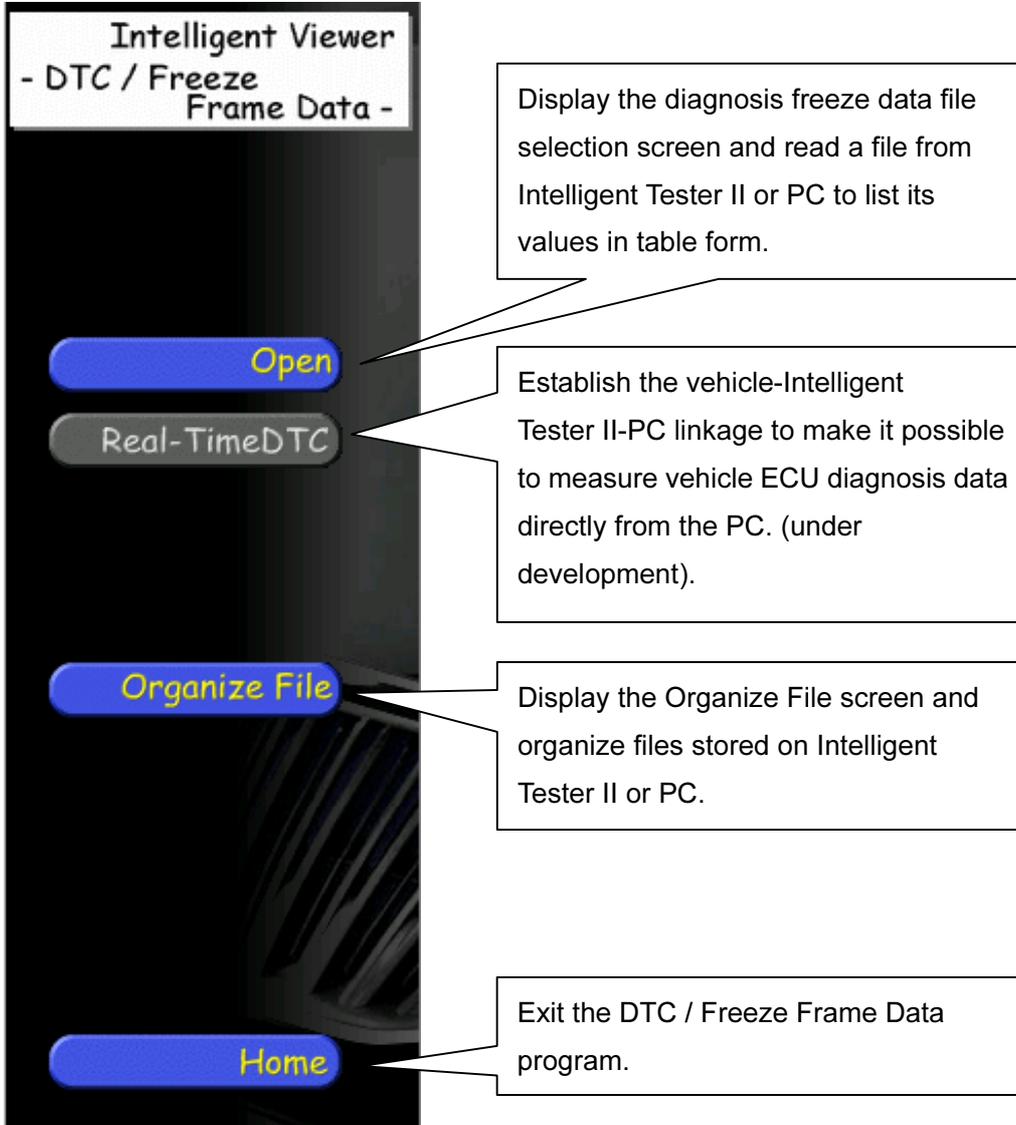


Fig. 4-1: DTC / Freeze Frame Data Menu

## 5. Diagnosis Freeze

You can use the file data function to display freeze data files (diagnosis freeze) and detailed information (HV only) stored on Intelligent Tester II or PC.

### 5.1. File data selection

- 1 Select a file.

Click the  button in the DTC / Freeze Frame Data menu area to display the freeze data file selection screen.

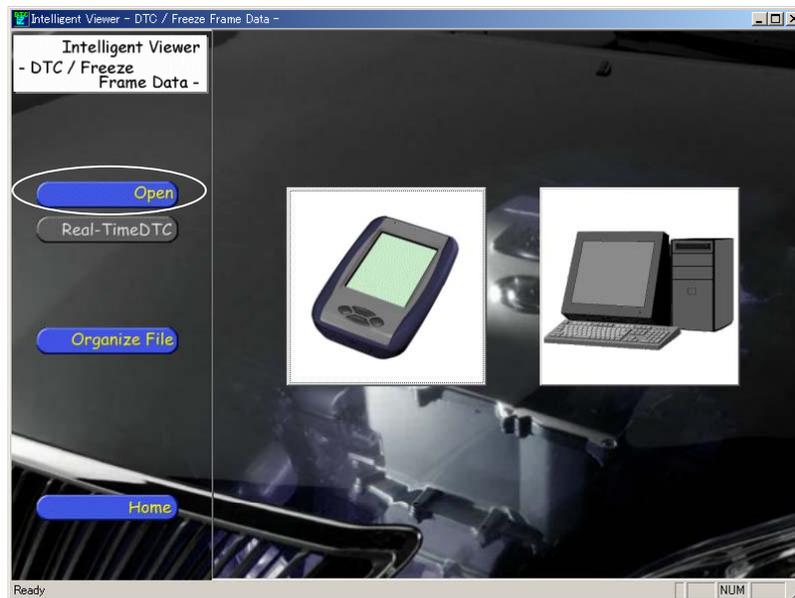
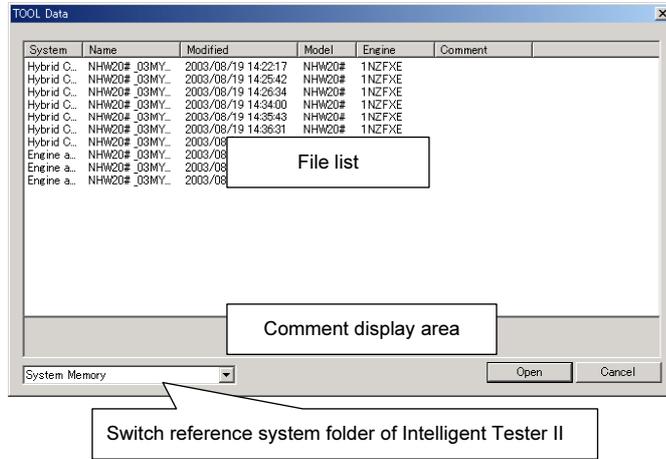


Fig. 5-1-1: Freeze Data File Selection Screen

**2-1 Display freeze data files stored on Intelligent Tester II.**

Click the Intelligent Tester II button to display the file selection dialog box.



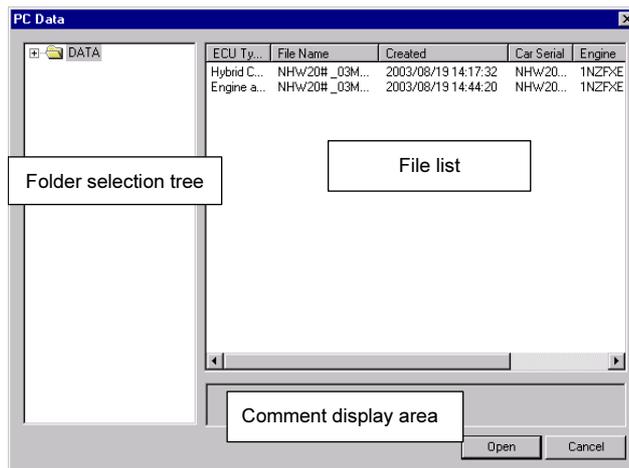
**Fig. 5-1-2: Intelligent Tester II Button**      **Fig. 5-1-3: Intelligent Tester II File Selection Dialog Box**

Select the desired file from the Intelligent Tester II file selection dialog list and then click the Open button.

You can switch the Intelligent Tester II reference system folder to either “System Memory” (built-in CF) or “Storage Card” (external CF) from the list box at the bottom left of the dialog box.

**2-2 Display file data stored on the PC.**

Click the PC button to display the file selection dialog box.



**Fig. 5-1-4: PC Button**      **Fig. 5-1-5: PC File Selection Dialog Box**

Select the desired file from the PC file selection dialog list and then click the Open button.

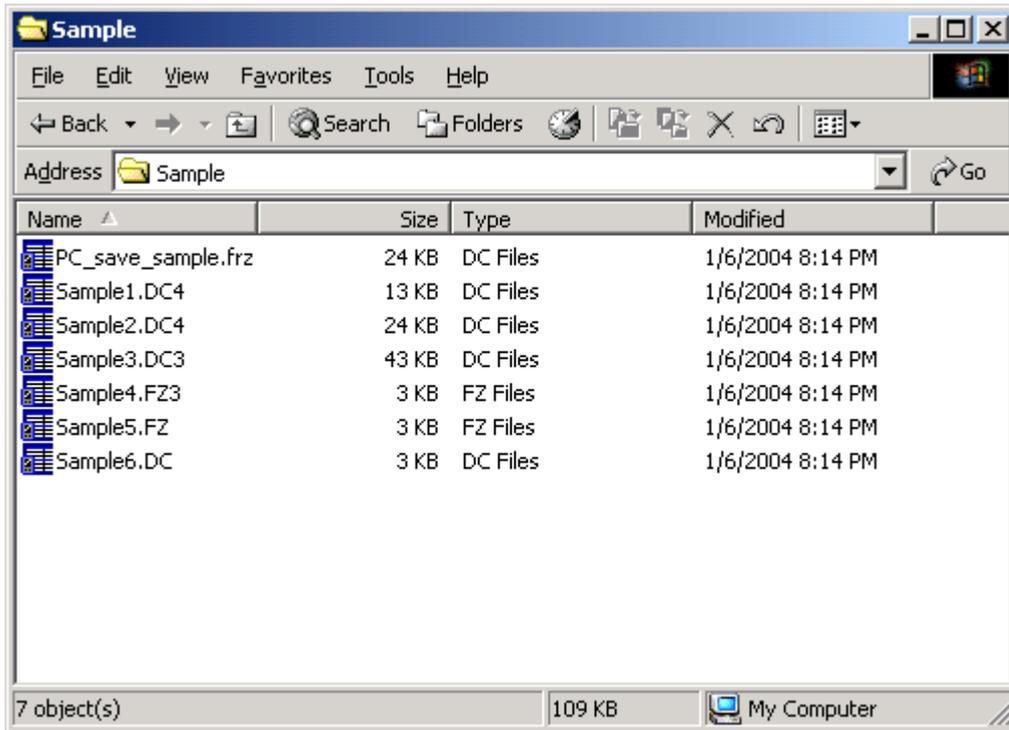
The comment on the selected file is displayed in the comment display area.

## 5.2. Double-click data file

Double-click directly on the freeze data file to display the DTC / Freeze Frame Data.

### 1 Display the file.

Display the freeze data file using an application such as Windows Explorer.



**Fig. 5-2-1: Windows Explorer Screen**

There are five kinds of data file extensions: DC3, DC4, DC, AD, and FRZ. Files are indicated by the  icon.

(File extensions are not shown if “Do not show registered file extensions” is checked in Explorer’s optional settings.)

“DC3” and “DC4” : Freeze data files saved with Intelligent Tester II Ver.1.2 or earlier.

“DC” : Freeze data files saved with Intelligent Tester II Ver.2.0 or later.

“AD” : The All diagnosis files contain all the diagnostic information saved with Intelligent Tester II Ver.2008.1 or later.

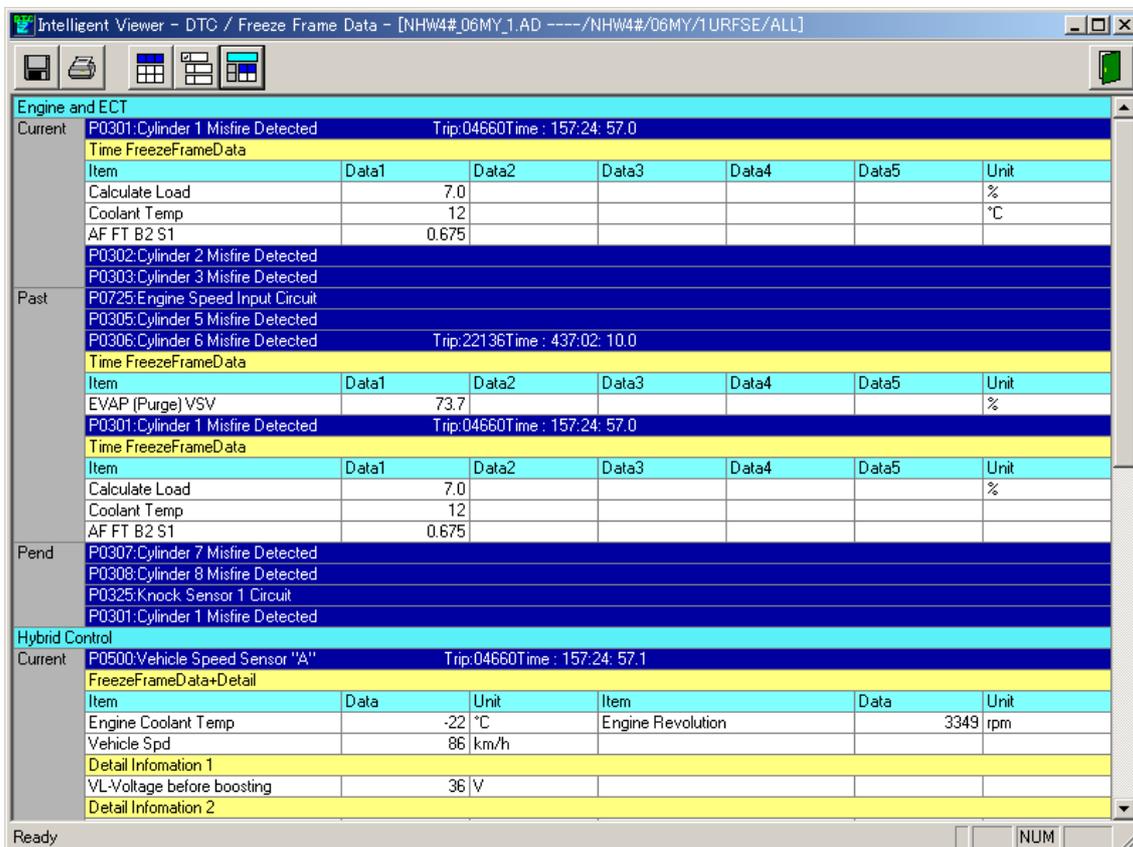
“FRZ” : Freeze data files saved as DTC / Freeze Frame Data (binary form)

### 2 Double-click the file to be displayed.

Double-clicking the file brings up the graph display screen.

### 5.3. Outline of the freeze data display screen

After selection of the desired file, the freeze data display screen appears, displaying the selected freeze data.



**Fig. 5-3-1: Freeze Data Display Screen**

Description of the shortcut icons:

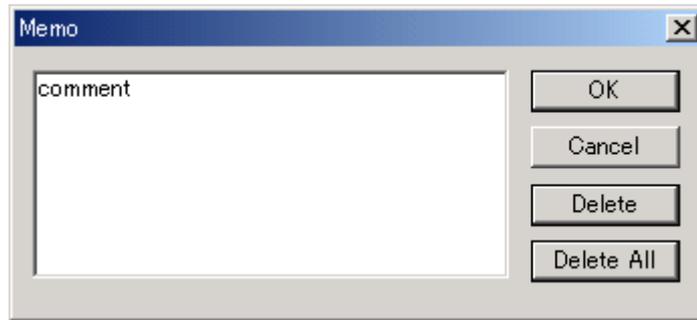
Icon	Function	Description
	Save	Save the data being displayed as a CSV file or binary file.
	Print	Prints freeze list data.
	Return	Closes the freeze data display screen and returns to the main screen.
	All Diagnosis Display	Displays the all diagnosis display screen, which lists all the systems and indicates the total number of diagnosis codes for each system.
	Selection Screen Display	Displays the diagnosis code selection screen from which the diagnosis code to be displayed on the freeze data display screen can be selected.

	<b>Freeze Data Screen Display</b>	Displays the freeze data display screen which shows the details of the diagnosis codes.
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**1 Add comments to the cell.**

Double-click on the cell you want to add a comment to. The Memo dialog appears. Enter your comment and click the **OK** button. To delete your comment, click the **Delete** button.

Clicking the **Delete All** button deletes all comments.



**Fig. 5-3-2: Memo Dialog**

You can see a red triangle in the top right corner of a cell with comments **Coolant Temp**. Moving the mouse close to the triangle displays the comments in a pop-up box.



**Fig. 5-3-3: Tool Chip Display of Memo Contents**

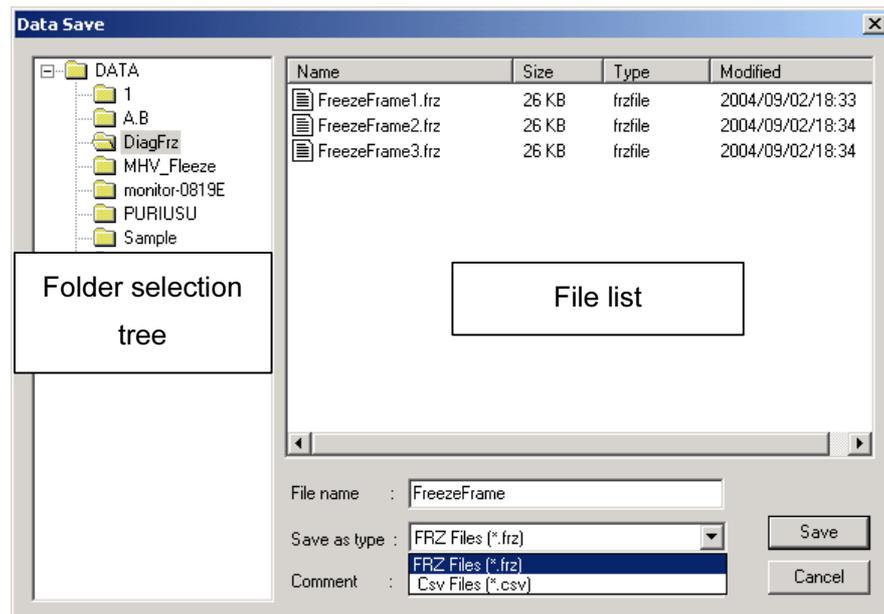
**2 Save the data being displayed in a binary or CSV file.**



Click the  (Save) button to display the Data Save dialog box.

You can then save it by specifying a file name, save destination folder, and CSV or binary and clicking the Save button.

Memo data is not saved in CSV format.



**Fig. 5-7: Data Save Dialog Box**

**3 Print freeze data.**

You can print the freeze data being displayed on the screen.



Click the  (Print) button to display the print dialog box.

Perform the necessary settings such as the paper size and number of copies and then execute the print command.

**4 Exit the freeze data display screen.**



Click the  (Return) button to exit the freeze data display screen.

The main screen will reappear.

## 6. All Diagnosis Freeze

You can use the file data function to display freeze data files (“All Diagnosis Freeze”) saved in the Intelligent Tester II or on the PC.

### 6.1. File data selection

- 1 Select a file.

Click  in the DTC / Freeze Frame Data menu to display the freeze data file selection screen.

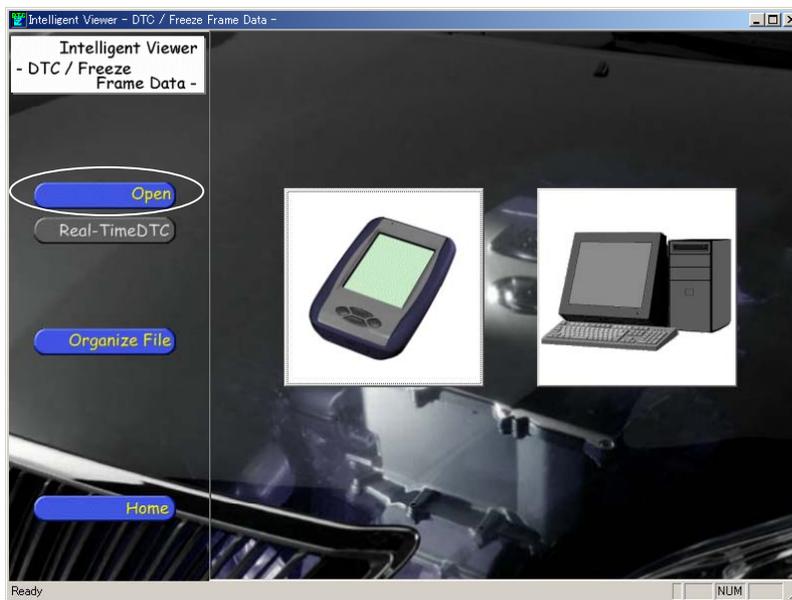
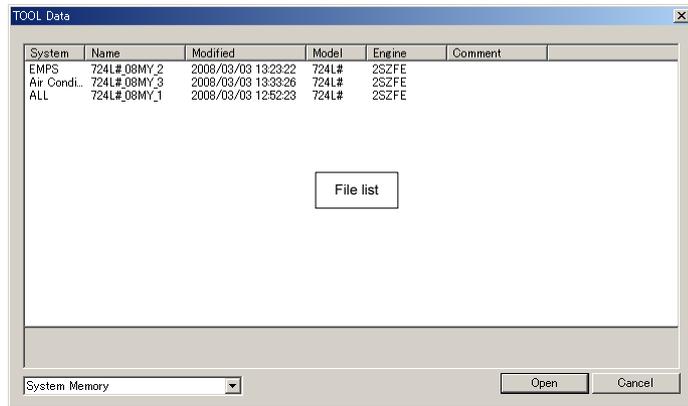


Fig. 6-1-1: Freeze Data File Selection Screen

**2-1 Display freeze data files saved in the Intelligent Tester II.**

Click the Intelligent Tester II button to display the File Selection dialog box.



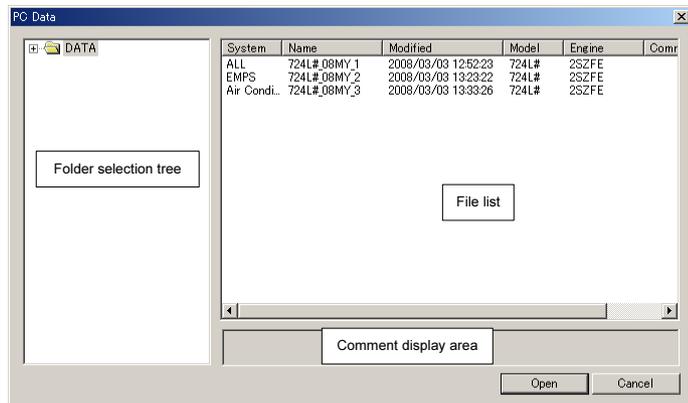
**Fig. 6-1-2: Intelligent Tester II Button**

**Fig. 6-1-3: Intelligent Tester II File Selection Dialog Box**

Select the desired file from the Intelligent Tester II File Selection dialog box list, and then click the Open button.

**2-2 Display file data saved on the PC.**

Click the PC button to display the File Selection dialog box.



**Fig. 6-1-4: PC Button**

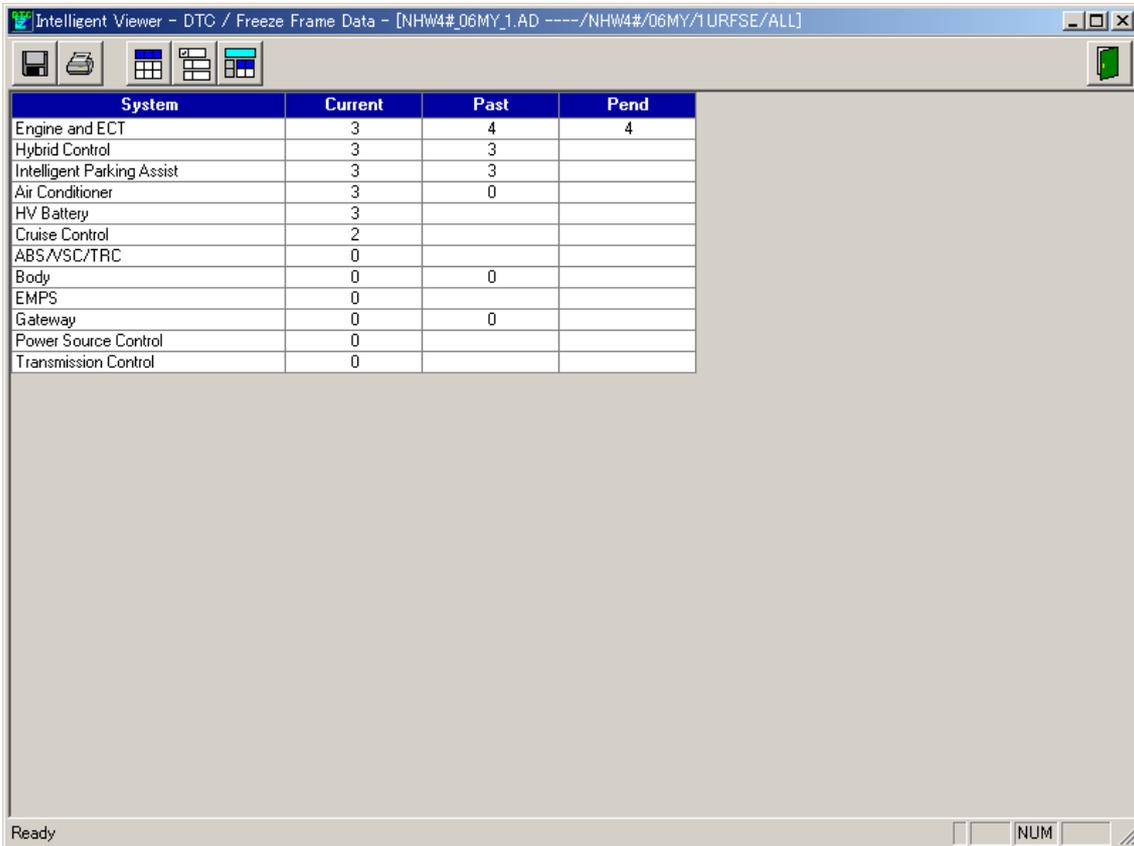
**Fig. 6-1-5: PC File Selection Dialog Box**

Select the desired file from the PC File Selection dialog box list, and then click the Open button.

Comments regarding the selected file are displayed in the comment display area.

## 6.2. Outline of the all diagnosis display screen

If the file selected is an ALL Diagnosis (AD) file, the screen changes to the all diagnosis display screen, which lists the systems and indicates the total number of diagnosis codes for each system.



System	Current	Past	Pend
Engine and ECT	3	4	4
Hybrid Control	3	3	
Intelligent Parking Assist	3	3	
Air Conditioner	3	0	
HV Battery	3		
Cruise Control	2		
ABS/VSC/TRC	0		
Body	0	0	
EMPS	0		
Gateway	0	0	
Power Source Control	0		
Transmission Control	0		

Fig. 6-2-1: All Diagnosis Display Screen

### 1 Select a diagnosis code to display its details.

Click  (Select) button to change the screen to the diagnosis code selection screen, from which the diagnosis data to be displayed on the details display screen can be selected.

The diagnosis code selection screen also displays a list of the diagnosis codes.

### 2 Display freeze data.

Click  (Details) button to change the screen to the freeze data display screen, which displays the details of the diagnosis codes selected on the diagnosis code selection screen.

For details, see “5.3 Outline of the freeze data display screen”

### 6.3. Outline of the diagnosis code selection screen

A list of the diagnosis codes is displayed on the diagnosis code selection screen.

Choice	System	DTC	DTCName	Current/History	Trip	After IG-On Time
<input checked="" type="checkbox"/>	Engine and ECT	P0301	Cylinder 1 Misfire Detected	Current	04660	157:24: 57.0
<input checked="" type="checkbox"/>	Engine and ECT	P0302	Cylinder 2 Misfire Detected	Current		
<input checked="" type="checkbox"/>	Engine and ECT	P0303	Cylinder 3 Misfire Detected	Current		
<input checked="" type="checkbox"/>	Engine and ECT	P0725	Engine Speed Input Circuit	Past		
<input checked="" type="checkbox"/>	Engine and ECT	P0305	Cylinder 5 Misfire Detected	Past		
<input checked="" type="checkbox"/>	Engine and ECT	P0306	Cylinder 6 Misfire Detected	Past	22136	437:02: 10.0
<input checked="" type="checkbox"/>	Engine and ECT	P0301	Cylinder 1 Misfire Detected	Past	04660	157:24: 57.0
<input checked="" type="checkbox"/>	Engine and ECT	P0307	Cylinder 7 Misfire Detected	Pend		
<input checked="" type="checkbox"/>	Engine and ECT	P0308	Cylinder 8 Misfire Detected	Pend		
<input checked="" type="checkbox"/>	Engine and ECT	P0325	Knock Sensor 1 Circuit	Pend		
<input checked="" type="checkbox"/>	Engine and ECT	P0301	Cylinder 1 Misfire Detected	Pend		
<input checked="" type="checkbox"/>	Hybrid Control	P0500	Vehicle Speed Sensor "A"	Current	04660	157:24: 57.1
<input checked="" type="checkbox"/>	Hybrid Control	P0A08	DC/DC Converter Status Circuit	Current	48351	281:41: 29.4
<input checked="" type="checkbox"/>	Hybrid Control	P0A09	DC/DC Converter Status Circuit Low In	Current	00001	00:00: 0.1
<input checked="" type="checkbox"/>	Hybrid Control	P0560	System Voltage	Past		
<input checked="" type="checkbox"/>	Hybrid Control	P0571	Brake Switch "A" Circuit	Past		
<input checked="" type="checkbox"/>	Hybrid Control	P0607	Control Module Performance	Past		
<input checked="" type="checkbox"/>	Intelligent Parking	C1612	IG Voltage is Low or High	Current		
<input checked="" type="checkbox"/>	Intelligent Parking	U0293	Lost Communication with Hybrid Control	Current		
<input checked="" type="checkbox"/>	Intelligent Parking	U1000	CAN Communication Failure(Message R	Current		
<input checked="" type="checkbox"/>	Intelligent Parking	C1613	ACC Voltage is Low or High	Past		
<input checked="" type="checkbox"/>	Intelligent Parking	C1621	Back Camera Power Supply Failure	Past		
<input checked="" type="checkbox"/>	Intelligent Parking	U1106	Lost Communication with Electric Parkin	Past		
<input checked="" type="checkbox"/>	Air Conditioner	B1400	Normal	Current		
<input checked="" type="checkbox"/>	Air Conditioner	B1411	Room Temperature Sensor Circuit	Current		
<input checked="" type="checkbox"/>	Air Conditioner	B1412	Ambient Temperature Sensor Circuit	Current		
<input checked="" type="checkbox"/>	HV Battery	P1300	???	Current		
<input checked="" type="checkbox"/>	HV Battery	P0560	System Voltage	Current		
<input checked="" type="checkbox"/>	HV Battery	P0A80	Replace Hybrid Battery Pack	Current		
<input checked="" type="checkbox"/>	Cruise Control	P0571	Brake Switch "A" Circuit	Current		
<input checked="" type="checkbox"/>	Cruise Control	P0607	Control Module Performance	Current		

Fig. 6-3-1: Diagnosis Code Selection Screen

- 1 Select a diagnosis code.

**Choice**

The diagnosis code for each item whose () box is checked will be displayed on the freeze data display screen.

## 6.4. Outline of the freeze data display screen

The details of the diagnosis codes selected on the diagnosis code selection screen are displayed on this screen.

**Engine and ECT**

**Current** P0301:Cylinder 1 Misfire Detected Trip:04660Time : 157:24: 57.0

Time FreezeFrameData

Item	Data1	Data2	Data3	Data4	Data5	Unit
Calculate Load	7.0					%
Coolant Temp	12					°C
AF FT B2 S1	0.675					

P0302:Cylinder 2 Misfire Detected  
P0303:Cylinder 3 Misfire Detected

**Past** P0725:Engine Speed Input Circuit  
P0305:Cylinder 5 Misfire Detected  
P0306:Cylinder 6 Misfire Detected Trip:22136Time : 437:02: 10.0

Time FreezeFrameData

Item	Data1	Data2	Data3	Data4	Data5	Unit
EVAP (Purge) VSV	73.7					%

P0301:Cylinder 1 Misfire Detected Trip:04660Time : 157:24: 57.0

Time FreezeFrameData

Item	Data1	Data2	Data3	Data4	Data5	Unit
Calculate Load	7.0					%
Coolant Temp	12					°C
AF FT B2 S1	0.675					

**Pend** P0307:Cylinder 7 Misfire Detected  
P0308:Cylinder 8 Misfire Detected  
P0325:Knock Sensor 1 Circuit  
P0301:Cylinder 1 Misfire Detected

**Hybrid Control**

**Current** P0500:Vehicle Speed Sensor "A" Trip:04660Time : 157:24: 57.1

FreezeFrameData+Detail

Item	Data	Unit	Item	Data	Unit
Engine Coolant Temp	-22	°C	Engine Revolution	3349	rpm
Vehicle Spd	86	km/h			

Detail Information 1  
VL-Voltage before boosting 36 V

Detail Information 2

Ready NUM

Fig. 6-4-1: Freeze Data Display Screen

## 7. Arrangement of Files

### 7.1. Arrangement of files

You can organize (copy or delete) data files stored on Intelligent Tester II or PC.

Click **Organize File** button in the DTC / Freeze Frame Data menu area to display the Organize File screen.

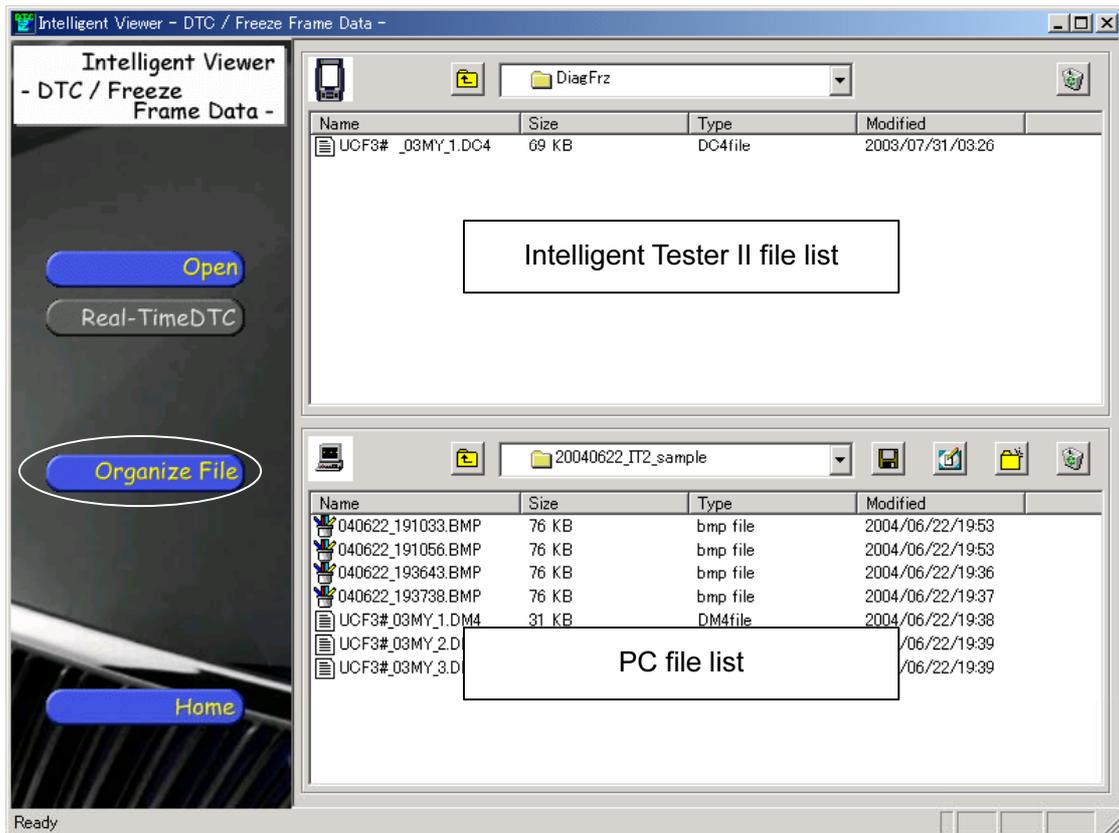


Fig. 7-1-1: Organize File Screen

Description of the shortcut icons:

Icon	Function	Description
	Up one level	Displays the next level up in the folder structure.
	Save on floppy disk	Copies selected files to floppy disks.
	Save on desktop	Copies selected file to the desktop.
	Create new folder	Creates new folders.
	Delete file	Deletes selected files.
	Select folder	Moves to another folder.

**1 To delete a file from Intelligent Tester II:**

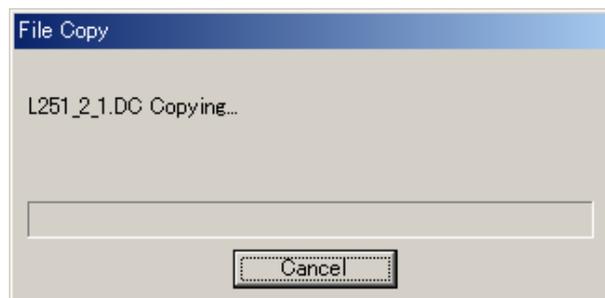
Select the file to be deleted and click the  (Delete file) button above the Intelligent Tester II file list to delete it. Please note that a file cannot be recovered once you delete it.

**2 To copy a file from Intelligent Tester II to the PC:**

Select the file in Intelligent Tester II to be copied and drag and drop it to the PC file list.

The progress indicator will appear and the file copying operation from Intelligent Tester II to the PC will start. (The time required to copy varies according to the file size and the Intelligent Tester II connection method.)

After the file has been copied, the copying progress indicator will disappear and the file will be displayed on the PC file list.



**Fig. 7-1-2: Progress Indicator**

**3 To delete a file from the PC:**

Select the file to be deleted and click the  (Delete file) button above the PC file list to delete it. Please note that a file cannot be recovered once you delete it.

**4 To copy a file from the PC to a floppy disk:**

Select the file to be copied and click the  (Save on floppy disk) button above the PC file list to copy it.

After operation of the floppy disk, check its contents to make sure that the file has been copied successfully.

**5 To copy a file from the PC to the desktop:**

Select the file to be copied and click the  (Save on desktop) button above the PC file list to copy it.

Make sure that the file is displayed on the desktop.

**6 To create a new folder on the PC:**

Click the  (Create new folder) button above the PC file list.

The Create New Folder dialog box will appear; input a folder name and then click the OK button to create the folder.



**Fig. 7-1-3: Create New Folder Dialog Box**

**Note: Files cannot be copied from the PC to Intelligent Tester II.**

## 8. Quit

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Click  button in the DTC / Freeze Frame Data menu area to exit.

(You can also exit the DTC / Freeze Frame Data program by clicking the  (Close) button in the upper right corner of the screen.)