TEAC

Wave Monitor

TX-View

Instructions for Use

Read this manual before using the TX-View software.
After reading it, keep it in a safe place for future reference.
This manual explains you how to install the software and to use it.

Revision History

Revision	Date	Description
3.20	June 2013	First edition
3.20b	July 2013	Supports WX-7000
3.37	February 2016	Supports VR-24
3.63	December 2016	Adds real-time display (time/datetime) to horizontal axis (time axis) scale selection
3.70	April 2018	Changes not to execute with administrator privileges
3.72	April 2020	Supports Unicode (UTF-8 without BOM)

Note:

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https://datarecorder.jp/en/inquiry/

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Chapter 1 Overview

1.1. Introduction

The TX-View is data viewer software to display the waveform of the data and to extract and store the data, which are recorded with TEAC data recorders (*), such as LX-1000 and WX-7000 series.

- As of April 2020, the TX-View supports the data files recorded with the LX-1000/WX-7000/LX-1000/DS/LX series, VR-24, GX-1 (except for the multi sampling data files) and es8.
- Types of supporting file formats of conversion destinations are different between those of the DS series and those of the LX-1000/WX-7000/LX-100/LX series/GX-1/es8. Refer to "4.2. Converting Data".
- This manual is compatible with the TX-View Version 3.72 or later.

Terminology used in this manual:
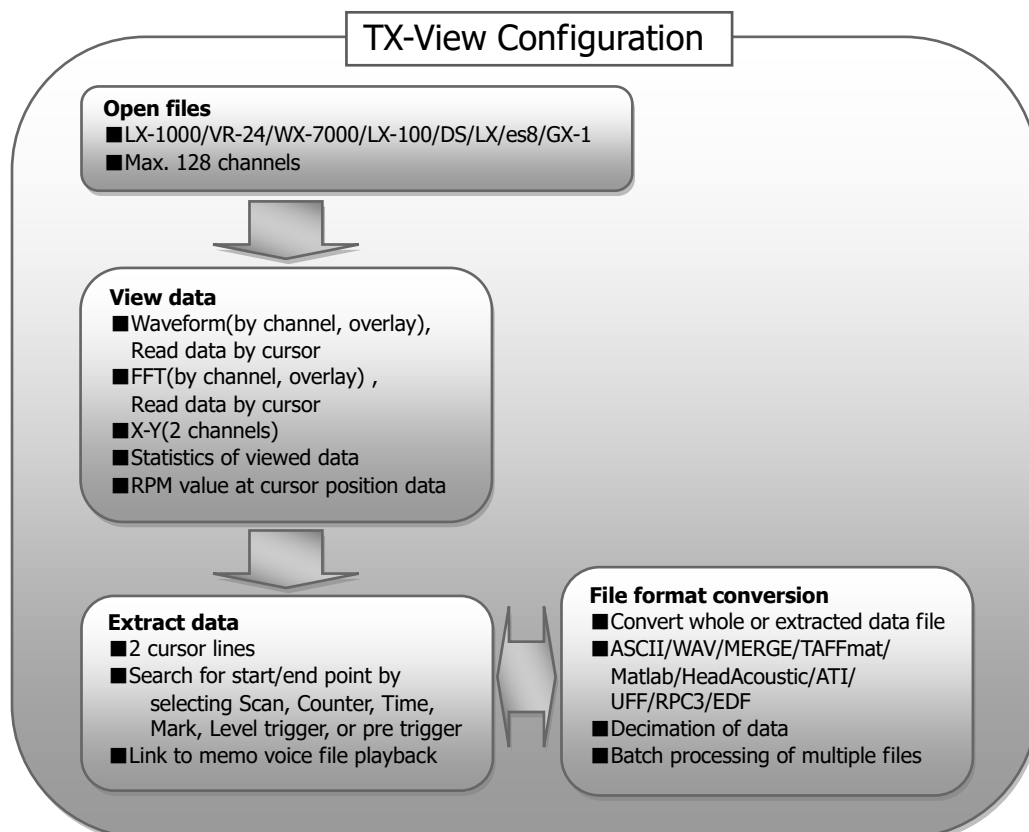"Key": A push button on the panel of the main unit.
"Cursor Display": An item selected in the display and highlighted (called "cursor") during the main unit operation.
<MENU>, <Are you sure?>: A message or dialog shown in the unit display or the PC software.
[REC]: A control button on the unit display or a selection item on the PC software.

1.2. What You Can Do

- **View a bulk data recorded by TEAC data recorders:** The program can display a maximum of 128 data channels. If the displayed data channels do not fit into a single PC display, you can see them by using a scroll bar. It reproduces recorded data of a selected data file on a T-Y graph from the start point to the stop point data on a single PC display (*), to browse the trend of the data file. Data plot in overlay is also possible. (*Depends on the installed memory capacity of your PC. You can use a horizontal scroll bar if the data display does not fit into a single PC display.)
- **Extract data, specify the extracting section by browsing a voice memo waveform:** The program lets you specify the data points to extract data by using two cursors and it can read maximum, minimum, and difference values between the cursors. You can see the voice memo waveform recorded by the LX-1000/WX-7000/LX-100/LX series and VR-24 and then extract by using the cursors by listening to your PC. The program can display the event points and information of the data recorded by the LX-1000/WX-7000/LX-100/LX-series/VR-24/GX-1/es8.
- **File conversion on the extracted data:** The program converts the extracted data to ASCII that general analysis software can import, and other file formats (DADiSP, MATLAB, ATI(IDEAS), WAV, Universal File (UFF58 TEXT), RPC3 and TAFFmat) with decimation if necessary.
- **File conversion in batch operation:** The program can process a series of pre-registered conversion tasks in batch operation. You can register the series of conversion tasks to a spread sheet list, and you can also save and load them.
- **Processing a waveform data:** The program computes the displayed waveform data to FFT and X-Y display.

TX-View Configuration

Open files
■LX-1000/VR-24/WX-7000/LX-100/DS/LX/es8/GX-1
■Max. 128 channels

View data
■Waveform(by channel, overlay),
  Read data by cursor
■FFT(by channel, overlay) ,
  Read data by cursor
■X-Y(2 channels)
■Statistics of viewed data
■RPM value at cursor position data

Extract data
■2 cursor lines
■Search for start/end point by selecting Scan, Counter, Time, Mark, Level trigger, or pre trigger
■Link to memo voice file playback

File format conversion
■Convert whole or extracted data file
■ASCII/WAV/MERGE/TAFFmat/ Matlab/HeadAcoustic/ATI/ UFF/RPC3/EDF
■Decimation of data
■Batch processing of multiple files

1.3. Important Notice

Please note the followings on using the software.

⚠ **CAUTION**

- The software supports NTFS file format to open and view a bulk data file exceeding 4GB.
- Depending on the free memory size per the installed memory size of your PC, the horizontal scale of view area will be specified.
- There is no limitation on the data file size can be opened except for the memory size.
- The data file size can be converted shall be 2GB or less.
- The length of memo voice file can be viewed shall be one hour or less.

Chapter 2 Software Installation, Launching and Closing Software

2.1. Software Installation

Required PC specifications

CPU:	Pentium4 2 GHz or more (Windows Vista or earlier)
	2nd Generation Intel® Core™ i5 3.0GHz or higher (Windows 7 or later)
Screen Resolution:	1024×768 dpi or better
Memory:	512 MB or more (Windows Vista or earlier)
	4 GB or more (Windows 7 or later)
Free space on hard disk:	2 GB or more (Windows Vista or earlier)
	10 GB or more (Windows 7 or later)
CD-ROM drive:	Present (for the program installation)
OS Requirements:	Windows XP Service Pack3
	Windows Vista Service Pack2 or later
	Windows 7
	Windows 8
	Windows 8.1
	Windows 10

The version of OS except above listing is out of guaranteed OS for normal operation.

⚠

- There is no guarantee that, if the PC fulfills the above necessary requirements, it will operate properly.
- File sizes or the total number of files, which can be handled on PC, may be limited depending on the file systems.
- The more memory you have, you can view at the wider time scale.
- Windows sound system to listen to the voice memo
- A drive to support the type of the recorded media to reproduce the media.
- CD-ROM drive or equivalent to run the program installation.

The installation software is on the CD.   Follow the generic Windows software installation.
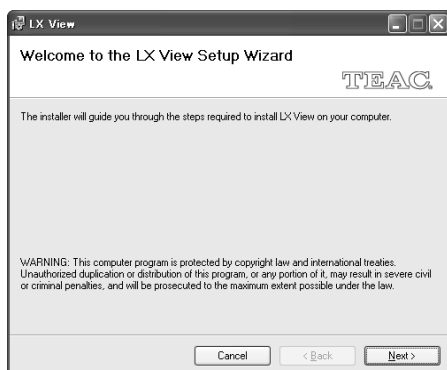
1. Insert the installation CD into the drive of the PC.   The installation program automatically starts running.

2. If it does not start, run the "setup.exe" on the root directory of the installation CD.

3. Follow the messages displayed.

4. The installation automatically adds an icon to your start up menu.   Program installation default is
\Program Files\TEAC\LXView.exe.
(However, in case of no optional module.)

2.2. Launching and Closing Software

Follow the generic Windows software operation to launch and close the application.
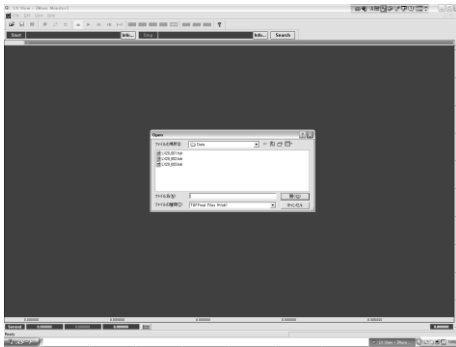
1. Double click the icon on your start up menu.

<Open> dialog is displayed to select a file to view.

2. <Open> file dialog displayed at the launching software is from the previously opened folder.

3. Click ⊠ on the top right corner or click [Cancel] button to close <Open> file dialog.

4. To close the software, click ⊠ on the top right corner of the view window or click [File] -> [Exit] on the menu bar after closing <Open> dialog.


2.3. Open File to View

⚠️

- The software supports NTFS file format to open and view a bulk data file exceeding 4GB.
- Depending on the free memory size per the installed memory size of your PC, the horizontal scale of view area will be specified.
- There is no limitation on the data file size can be opened except for the memory size.
- After opening a file, press Ctrl-Alt-N keys to open the next file recorded with a sequence number in the same folder.
  (e.g.: When the currently open file is LX10_005.dat/hdr, if there is LX10_006.dat/hdr in the same folder, "006" will be opened)
- After opening a file, press Ctrl-Alt-P keys to open the previous file with a sequence number recorded in the same folder.
  (e.g.: When the currently open file is LX10_005.dat/hdr, if there is LX10_004.dat/hdr in the same folder, "004" will be opened))

1. Select a file at <Open> dialog appeared at launching the software or click [File] -> [Open...] to display <Open> dialog to select the file.
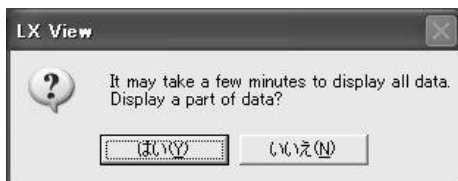
When the file size is more than free size on memory, display the message box.
Click [Yes(Y)], you can view the time scale corresponding to free memory space.
Click [No(Y)], you can view the all time scale. (It takes a long time to view the wave.)
When the file size is more 4GB, you can view the time scale corresponding to 4GB.

2. Select the file and click [Open(O)] to display the waveform view window.
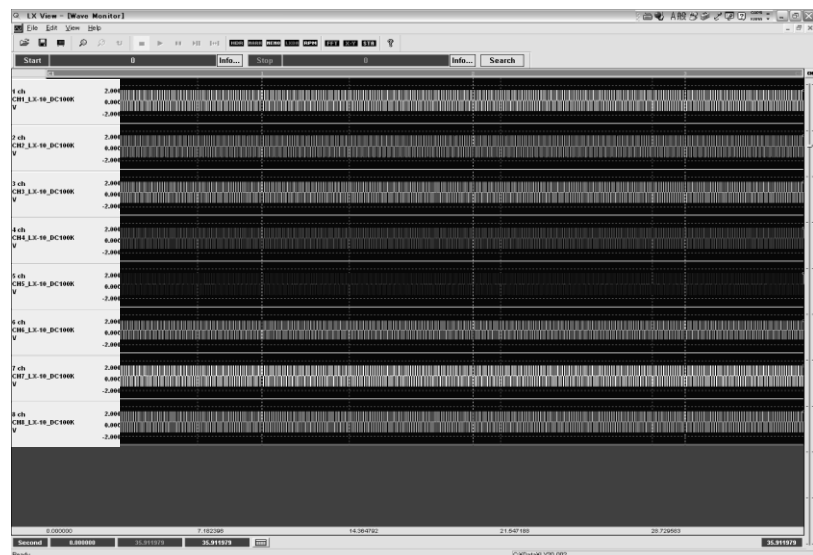
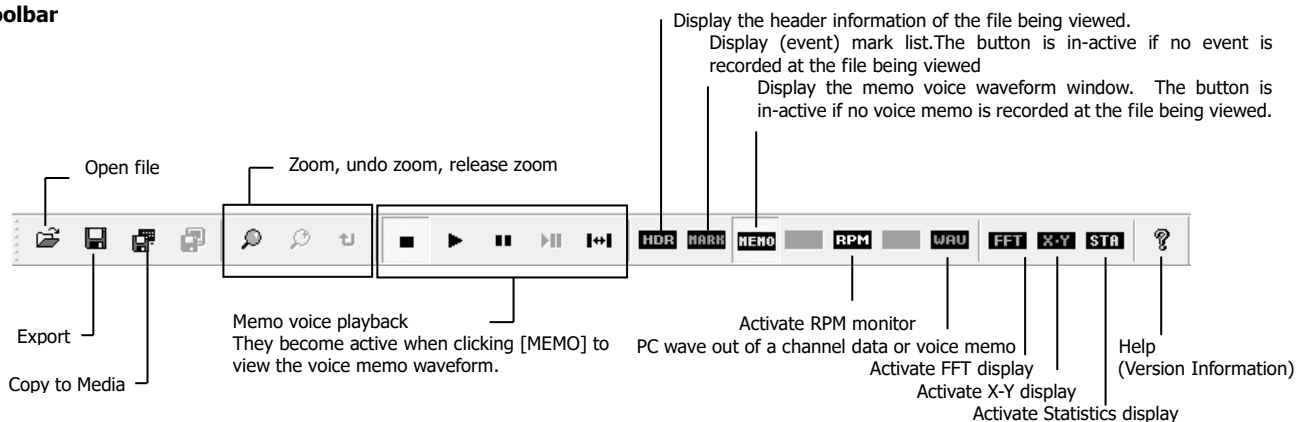# Chapter 3 Basic Operations at Waveform View Window

3.1. Basic Operations

The following operations are available at the waveform view window.

Menu bar

File:	Open file, export file (extracting data), Exit
Edit:	Zoom, undo zoom, release zoom
View:	Set display properties
Help:	Version information

Toolbar

Display the header information of the file being viewed.

Display (event) mark list.The button is in-active if no event is recorded at the file being viewed

Display the memo voice waveform window. The button is in-active if no voice memo is recorded at the file being viewed.

Open file

Zoom, undo zoom, release zoom

Export

Copy to Media

Memo voice playback
They become active when clicking [MEMO] to view the voice memo waveform.

Activate RPM monitor
PC wave out of a channel data or voice memo
Activate FFT display
Activate X-Y display
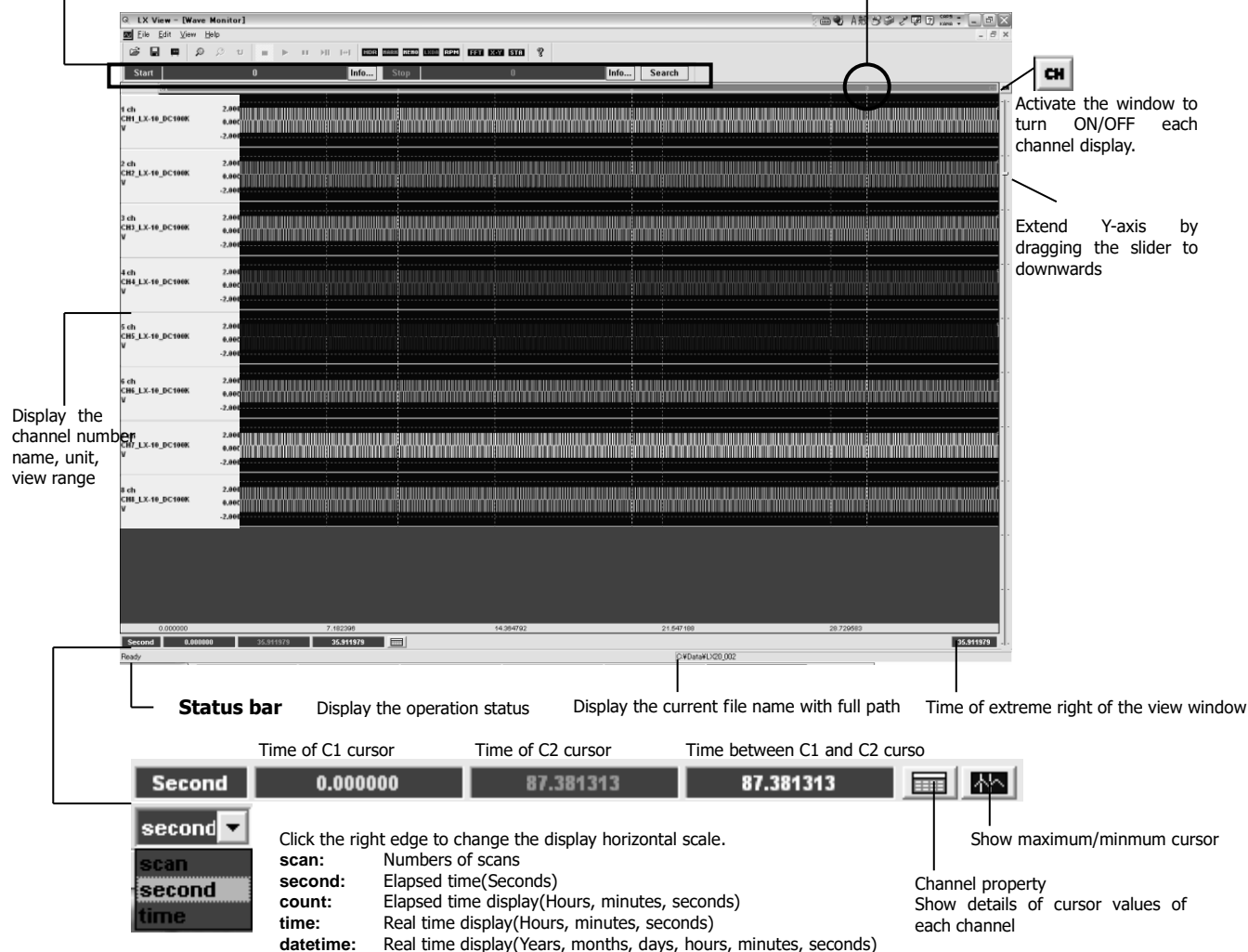Activate Statistics display

Help
(Version Information)

Search bar

Set parameters to extract data

Show event mark position at event mark number with a vertical line on the graph.

Activate the window to turn ON/OFF each channel display.

Extend Y-axis by dragging the slider to downwards

Display the channel number name, unit, view range

Status bar   Display the operation status

Display the current file name with full path

Time of extreme right of the view window

Time of C1 cursor   Time of C2 cursor   Time between C1 and C2 curso

Click the right edge to change the display horizontal scale.

scan:	Numbers of scans
second:	Elapsed time(Seconds)
count:	Elapsed time display(Hours, minutes, seconds)
time:	Real time display(Hours, minutes, seconds)
datetime:	Real time display(Years, months, days, hours, minutes, seconds)

Show maximum/minmum cursor

Channel property
Show details of cursor values of each channel

3.2. Use Scroll Bar to Expand and to Move View Area

Move the slider control located at the right edge of the waveform view window downwards to expand Y-axis scale.
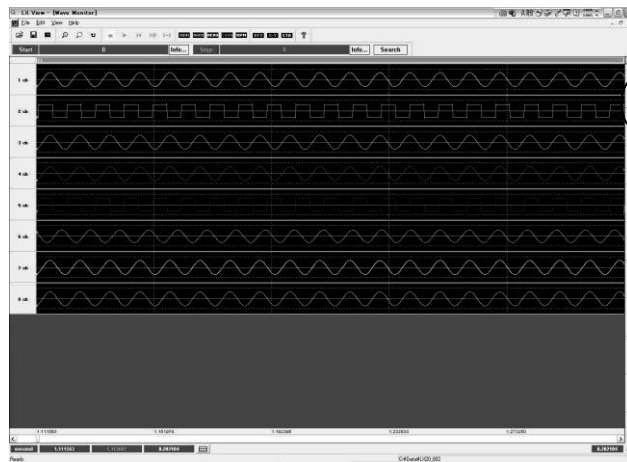
Drag the slider control downwards to expand whole Y-axis scale.
When all channels cannot be viewed by fitting to a single screen, the scroll bar will be appeared to move among the channels.
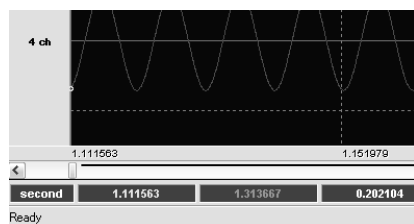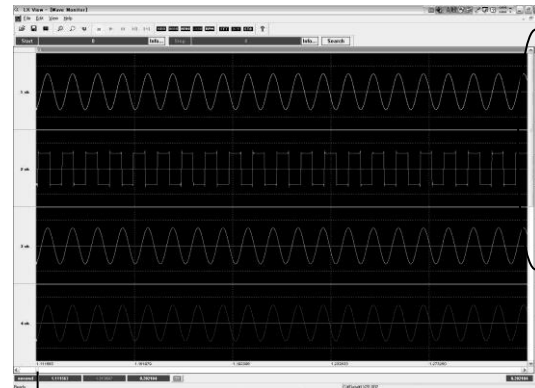
Use the left/right scroll bar to move the time scale.
The scroll bar is not appeared when the data has been fitted into a single screen.

The size of each scroll bar represents the size of the current display area against the whole data area.

3.3. Turn ON/OFF of View Channels

Click **CH** on the top right corner of the waveform view window to display the channel selection panel to turn ON/OFF of each channel display.
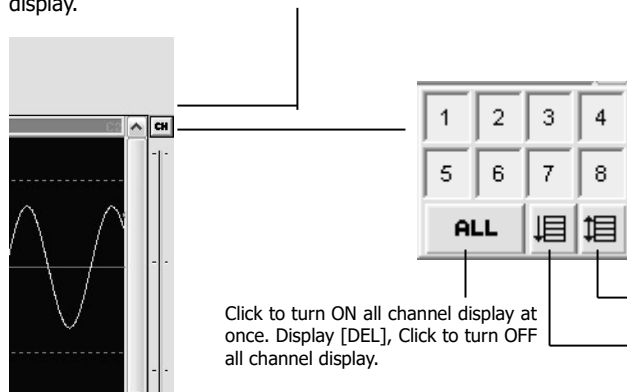
Click each number to turn ON/OFF the correspondent channel display. (Gray for OFF)

Click to fit all channels to a single screen.
If all channel display is not fitted to it due to the display resolution of the PC, the software automatically aligns the display to appear the up/down scroll bar.

Click to turn ON all channel display at once. Display [DEL], Click to turn OFF all channel display.

Click to sort the channel display in ascend order of the channels.

Click **CH** again to close the channel selection panel.

3.4. Zoom and Read Data Value by Using Cursors

Use C1 and C2 cursor to read the data value, and to zoom the view area.

3.4.1. Zoom Time-axis
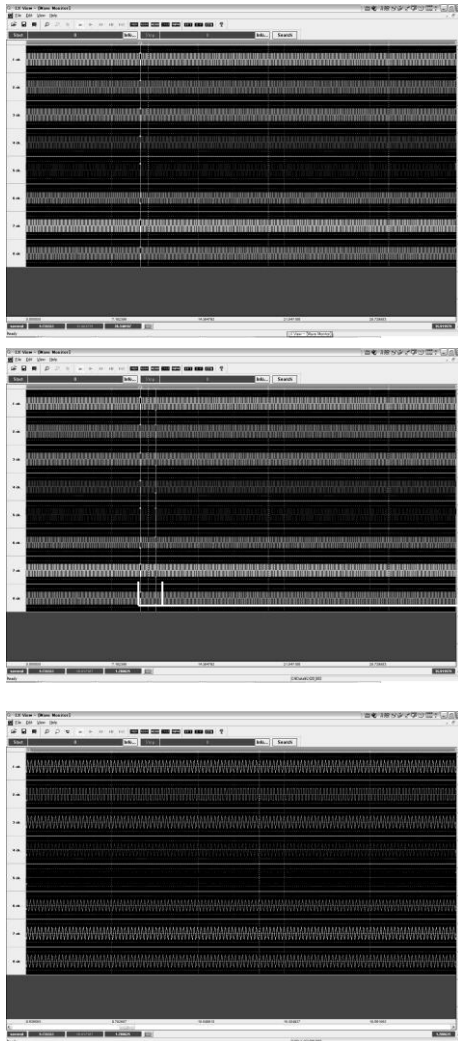
1. C1 and C2 cursor are located at the extreme left and right of the waveform view window when opening the file.

2. Locate the mouse pointer to the extreme left to change the pointer to <⇔>.

3. Drag the mouse to draw out the C1 cursor and drop at the start zoom point.

4. Draw out the C2 cursor as well, to drag and drop at the end zoom point.

Area between C1 and C2 cursor can be zoomed.

5. Click 🔍 on the tool bar.

6. Area between cursors will be zoomed.

7. Release the zoom mode to click the following buttons on the tool bar.

🔍 : Returns to previous

↩ : Releases zoom

3.4.2. Display Cursor Position Data Value
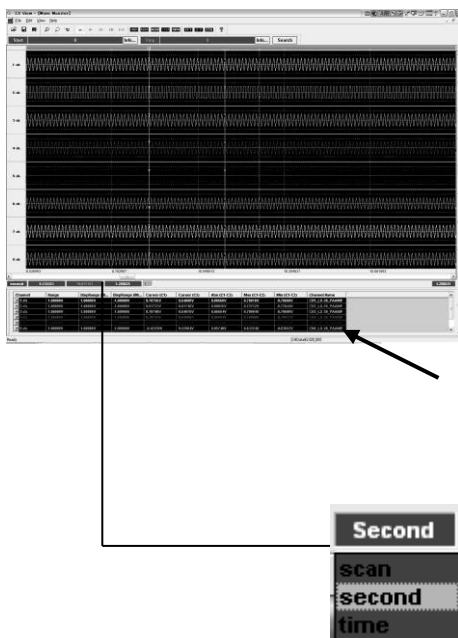
1. Click ▦ on the bottom of the waveform view window to see the data value details by using C1 and C2 cursor.

2. <Wave Parameter> is displayed on the bottom of the window.
Channel: Displays the channel number.
Range: Displays the input range setting at recording.
DispRange(Max)/DispRange(Min): Displays maximu and minimum graph scale value in X-axis, which represents as horizontal dot lines. Maximum and minimum of the input range are used as the graph scale default. They can be specified manually at the display range settings of <Channel Property> explained later.
**Cursor(C1)/Cursor(C2) :** Data values at C1 and C2 cursor.
Abs (C1-C2) : Difference between the data values of C1 and C2 cursor. (Absolute value)
Max (C1-C2) : Maximum data value between C1 and C2 cursor.
Min (C1-C2) : Minimum data value between C1 and C2 cursor.
Channel Name: Displays the channel name.

Times of the cursor positions are displayed at the bottom of the window. (Yellow : C1 time, Green : C2 time, White : Delta-T between C1 and C2)

| Second | 0.000000 | 87.381313 | 87.381313 | ▦ | 〜 |

Click the right edge to change the display horizontal scale.
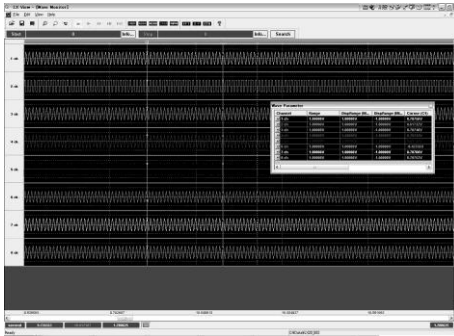**scan:** Numbers of scans
second: Elapsed time(Seconds)
count: Elapsed time display (Hours, minutes, seconds)
time: Real time display(Hours, minutes, seconds)
**datetime:** Real time display (Years, months, days, hours, minutes, seconds)

3. Dragging the left corner of <Wave Parameter> can locate <Wave Parameter> at any position of the waveform view window, such as within, left, or top of the window. Drag and drop it the bottom of the window to return it to the original position
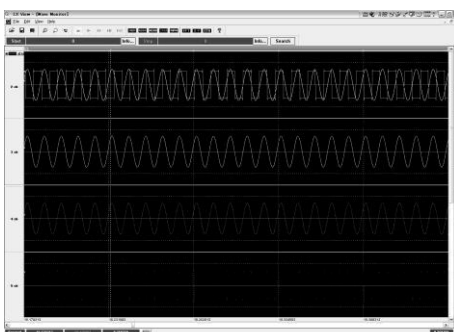
3.5. Overlay View

View the channels in the overlay mode.   Multiple channels can be overlaid.
Use <Channel Property> explained later to change the display maximum and minimum scale of Y-axis of each channel.
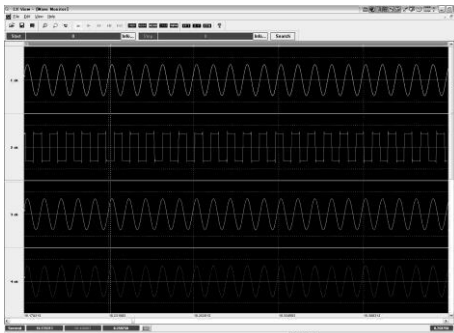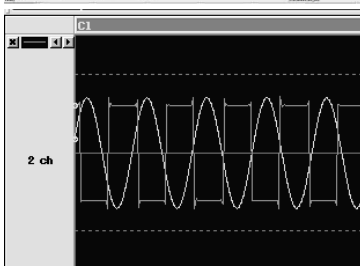

1. View the waveform display.

2. Drag the channel information section located left of the channel waveform display to be overlaid to other channel.   The channel information section being dragged turns dark gray.
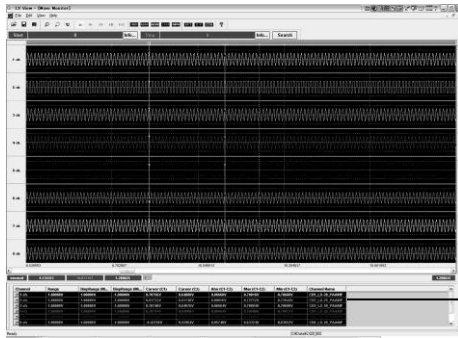

3. Drop it to other channel to overlay view.

4. Channel information section of the overlaid channels is changed to the left shown. Click X to release the overlay view.   Click < > to change the overlaid channel turns.

3.6. Set Graph View Style and Y-axis Scale (Channel Property)

Use <Channel Property> to change the graph view style and Y-axis display scale.


1. Click [image] on the bottom of the waveform view window to display <Wave Parameter>.

2. Double click the mouse button while the mouse pointer is locating at the channel row of <Wave Parameter> to open <Channel Property> of that channel.

Item	Description
channel name	Displays the channel name set at recording.
unit	Displays the physical unit set at recording.
range	
range	Displays the slope value set at recording.
offset	Displays the offset value set at recording.
display range	Sets Y-axis display scale.
max	Enters the maximum display scale. Range maximum value set at recording is used as default.
min	Enters the minimum display scale. Range minimum value set at recording is used as default.
same	Checks "all" and then click it to apply the entered value here to all other channels.
auto	Checks to display in auto range mode by following the maximum and minimum value of the data.
reset	Resets the graph scale entered to the default set at recording.
all	Apply the settings to all other channels after checking it.
color	Selects the colors of the graph line and the background.
line	Selects the graph line color.
▼	Click to open the color selection pallet.
same	Apply the color selected to all other channels.
reset	Resets the color to default.
back	Selects the graph background color.
▼	Click to open the color selection pallet.
same	Apply the color selected to all other channels.
reset	Resets the color to default.

3.7. Zoom in or out Y-Axis Scale

Click upper or lower parts of each wave area to zoom in twice or one half times.

(Zoom in)   (Zoom out)
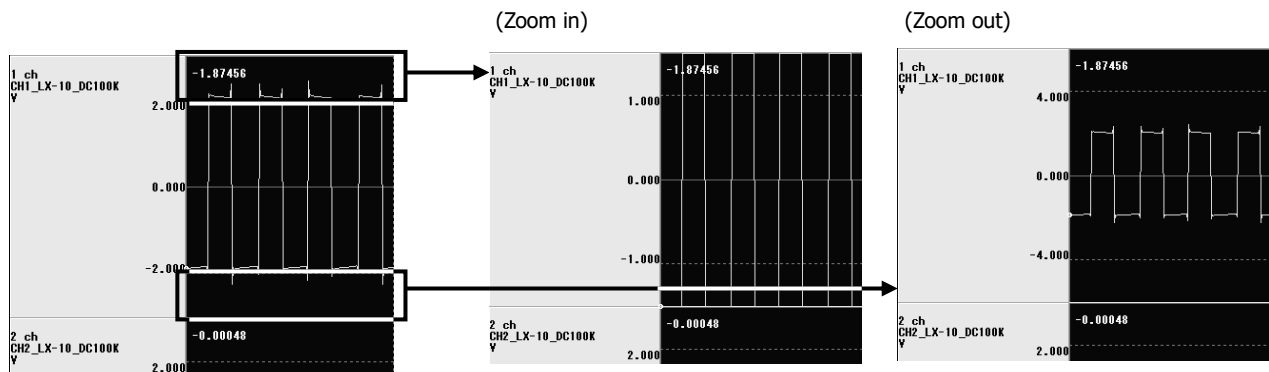
3.8. View Menu

View Menu

To turn ON/OFF displaying the tool bar and the status bar, click [View] -> [Toolbar], [Statusbar], [Searchbar].

Click [View] -> [View property] to display <View property>

<Reset view information whenever importing file>
  If you do not keep the display information whenever closing the software, check the box located at the left of it.
<Set auto range whenever reading file>
 If you set Y-axis scale automatically whenever reading the data file, check the box located at the left of it.
<Use Japanese font>
 If you do not display the Japanese fonts correctly, check the box located at the left of it.

● When you select to keep the display information, the information of the channels to be displayed is also kept.   Please note that all channels of a newly opened file will not be displayed if the fewer channels have been selected for display.
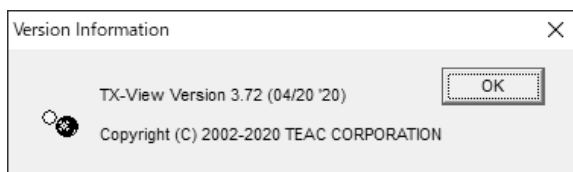

3.9. Browse Contents of Header File

Click to browse the contents of the header file.
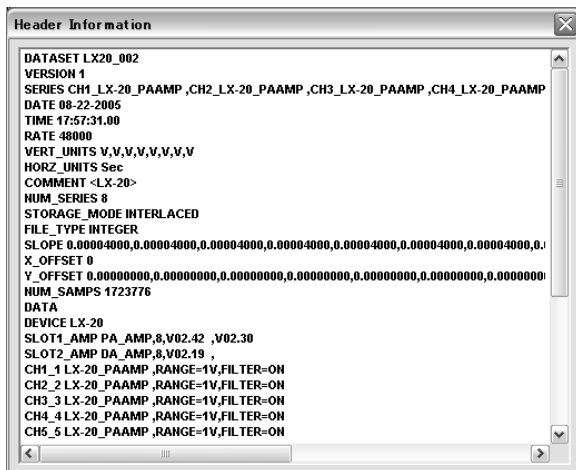
3.10. Check Software Version

Click to check the software version.

Click [OK] to close the display.
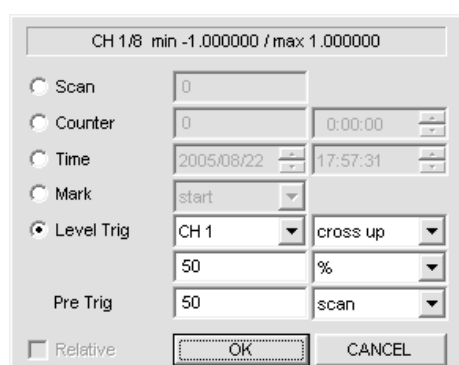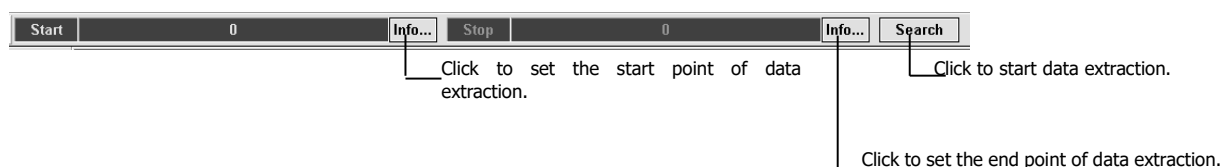
Chapter 4 Advanced Operations

4.1. Search

Set the search conditions to extract the part of the data.   The start and end point can be specified.

⚠️

- Depending on the memory capacity installed in the PC, the search section may not be displayed on a single screen.

1. Use the buttons locating upper part of the waveform view window.

| Start | 0 | Info... | Stop | 0 | Info... | Search |

Click to set the start point of data extraction.

Click to start data extraction.

Click to set the end point of data extraction.

2. Click [Info…] to display the search condition dialog for the following settings. There is <Relative> check box available at the dialog at Stop to link the conditions set to those set at the dialog at Start.

CH 1/8 min -1.000000 / max 1.000000

- Scan: 0
- Counter: 0 / 0:00:00
- Time: 2005/08/22 / 17:57:31
- Mark: start
- Level Trig: CH 1 / cross up
  50 / %
- Pre Trig: 50 / scan
- Relative / OK / CANCEL

Item	Description
Scan	Specifies the extracting point with number of scans.
Counter	Specifies the extracting point with the elapsed time from the start recording.
Time	Specifies the extracting point with the absolute time.
Mark	Specifies the extracting point with the (event) mark number.
Level Trig	Extracts the data at a specified signal level change point (level trigger). Selects an objective channel and sets a threshold for cross up or cross down. Sets the threshold in % or voltage level. Sets the pre-trigger points with number of scans or seconds at <Pre Trig>.
Relative	Only for the dialog at Stop: Links to the conditions set at the dialog at Start.
OK	Confirm the entered conditions at the dialog to set for the extracting point.
CANCEL	Cancels the entered conditions to return to previous.

3. Click [Search] to start extracting to view.

4.2. Converting Data File

Click [File] -> [Export...] to display <Export> to convert the data currently being viewed.   The default conversion part is one which is currently viewed at the waveform view window.
In order to convert any part, use the cursor zoom function, or the search function to specify the view part.

⚠️

- Types of supporting file format conversions are different from those of the DS series and those of the LX/GX/es8 series.
- When newly opening the file to view, the cursors are located at the extreme left and right.   The data in the current view part will be converted.

4.2.1. Converting Data File Recorded with LX-1000/WX-7000/LX-100/LX series, VR-24, GX-1 and es8

If the original data file is a data file recorded by a recorder of LX-1000/WX-7000/LX-100/LX series, VR-24, GX-1, and es8 (other than DS series), activate "PL-S1002 AFC NEO."
When you are using PL-S1002 only, the software does not have any data view function and opens the dialog by executing [AFCNEO.EXE].

⚠

- Use only alphanumeric characters allowed for Windows for a file name and a folder name, do not use Japanese characters.
- The data file size can be converted shall be 2GB or less.
- Types of supporting file format conversions are different from the data type.
  SHORT Type   TAFFmat/Text/Wav（16bit mono）/Merge（two files）/Matlab/Head Acoustics/ATI/Universal/EDF/RPC3

DADiSP	DADiSP（TAFFmat）format（.dat/.hdr）
	In the case of GX-1, the data recorded in the multi-sample format is converted to the single sample format.
ASCII-A/D (TAB)	Text format, A/D value output, TAB delimiter（.txt）
ASCII-A/D (CSV)	Text format, A/D value output, CSV delimiter（.csv）
ASCII-A/D (SPACE)	Text format, A/D value output, SPACE delimiter（.txt）
ASCII-Volt (CSV)	Text format, voltage value output, CSV delimiter（.csv）
	However, depending on the HDR information, it may be EU (physical) value conversion.
ASCII-EU (CSV)	Text format, voltage value output, CSV delimiter（.csv）
16-bit Wave file (mono)	16bit Wave format（.wav）
	However, only any 1ch in the recording channel is converted.
Merge	Merge join of two TAFFmat files（.wav）
	Used to combine two synchronously recorded data files into one file.
TAFFmat	DADiSP（TAFFmat）format（.wav）
	In the case of GX-1, the data recorded in the multi-sample format is converted to the multi-sample format.
MATLAB (Ver.4.x)	Matlab version 4 format（.mat）
MATLAB (Ver.6.x)	Matlab version 6 format（.mat）
Head Acoustics	Head Acoustics format（.hdf）
ATI-Volt (I-DEAS)	I-DEAS voltage value output format（.ati）
	However, depending on the HDR information, it may be EU (physical) value conversion.
ATI-EU (I-DEAS)	I-DEAS physical value output format（.ati）
Universal	UFF58 text format（.uff）
EDF	EDF format（.rec）
RPC3	RPC3 format（.tim）

LONG Type   TAFFmat/Text/Wav（32bit mono）/Merge（two files）/Matlab
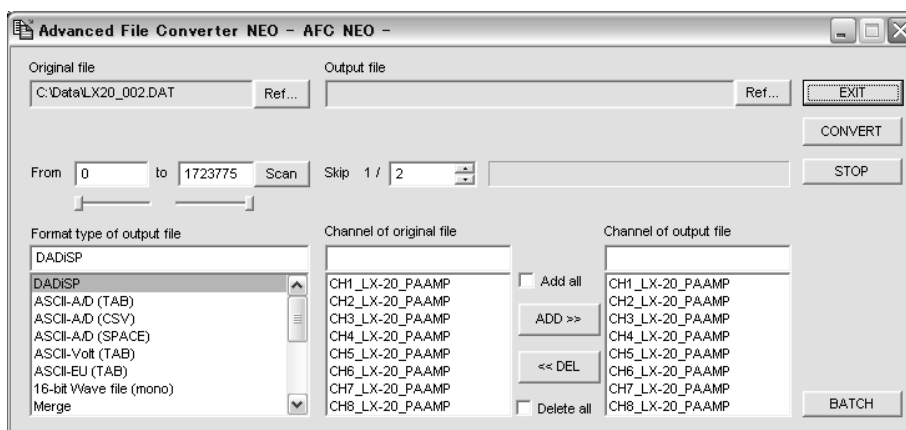
TAFFmat	DADiSP（TAFFmat）format（.dat/.hdr）
ASCII-A/D (CSV)	Text format, A/D value output, CSV delimiter（.csv）
ASCII-Volt (CSV)	Text format, voltage value output, CSV delimiter（.csv）
ASCII-EU (CSV)	Text format, physical value output, CSV delimiter（.csv）
32-bit Wave file (mono)	32bit Wave format（.wav）
	However, only any 1ch in the recording channel is converted.
Merge	Merge join of two TAFFmat files（.wav）
	Used to combine two synchronously recorded data files into one file.
MATLAB (Ver.6.x)	Matlab version 6 format（.mat）

1. View the data part to be converted by using the cursor zoom function or the search function.
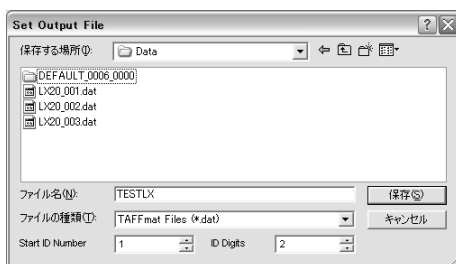
2. Click [File] -> [Export...] on the menu bar or 💾 on the tool bar.

3. <AFC NEO> is displayed. While displaying <AFC NEO>, the waveform view window will be disappeared once, however; it will be appeared automatically when closing <AFC NEO>.

Item	Description
Original file	Displays the file to be converted with a full path. Click [Ref...] to select the data folder.
Output file	Click [Ref...] to set the folder and the file name to save the converted data file.
From	Displays the data conversion start point with number of scans. Enter the number manually or use the slider control to change the start point number.
to	Displays the data conversion end point with number of scans. Enter the number manually or use the slider control to change the start point number.
Skip	Enters a data decimation parameter. For example, enter [10] if you want decimate the data each one out of 10 scans. <1/1> will be shown if you select the data file format not supported decimation.
Format type of output file	Selects a file format to convert. If you select the file format other than one selected at <Output file> -> <Set Output File> <Type of File (T)>, the file extension specified at <Output file> is used.
Channel of original file	<Channel of original file> displays the channels of the original file. Enter or remove the channel(s) to convert by using [Add all], [ADD>>], [<<DEL], [Delete all].
Channel of output file	At the default view, it displays all the channels of the original file at <Channel of original file>. Click the channel and [ADD>>] to enter to <Channel of output file> from <Channel of original file>, click the channel and [<<DELL] to delete. Check [Add all] to enter all channels to <Channel of output file> and check [Delete all] to delete them. The channels displayed at <Channel of output file> are those selected at the channel selection panel.
EXIT	Closes the dialog.
CONVERT	Starts converting the selected data part. <Now converting...> will be shown while conversion. Click [STOP] to terminate conversion.
BATCH	Displays the batch processing menu explained later.

4. Click [Ref...] of <Output File> to display <Set Output File>.
Set a directory name, a file name, and a type of the file to convert.
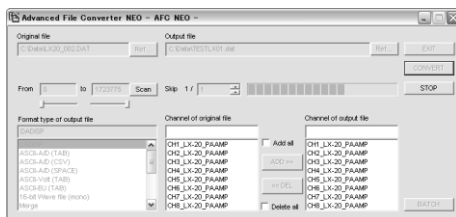Enter the start ID number at <Start ID Number> to attach to the last of the file name entered, and enter the number of digits of ID number at <ID Digits>. <TESTLX01.dat> will be created at this example.
The start ID number and the number of digits will be useful at the batch processing explained later.
The file extension selected at <Format type of output file> is used.

5. Set the necessary items at <Set Output File>, and then click [Save(S)] to confirm the file name settings.

6. Set other parameters at <AFC NEO>, if necessary.

7. Click [CONVERT] to start the file conversion.
The processing status of the file conversion is displayed at <Progress bar> on the left of [STOP].   Click [STOP] to suspend the conversion.
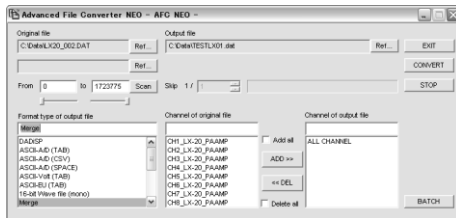

Merge Data Files
Merge the data files recorded by using the synchronizing recording function of the LX-1000/WX-7000/LX-100/LX series, VR-24, and GX-1 to create a single data file.

- 128 channels on a single file is a maximum number of channels for the merge result.
- At the merge case of the data files recorded at the LX series, the tachometer data channel is treated as data channel, if it sets to ON. One tachometer data channel of 16 bits mode will be counted as one channel, one tachometer data channel of 32 bits mode will be counted as two channels.
- The part of the slave data file to be merged follows where the master data file is displayed.
- The merge function does not support individually selected channels.

1. Display the master data file.

2. Select and click [Merge] at <Format type of output file> of <AFC NEO> to display the slave file selection under <Original file>.

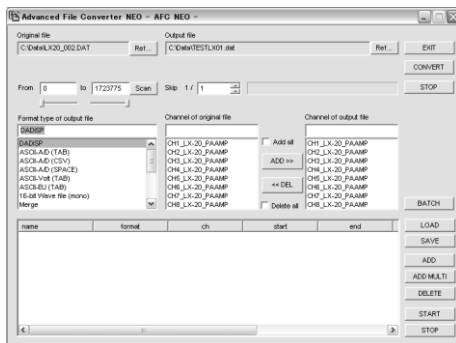**3.** Click [Ref…] located the right of the file selection displayed to display <Select File>.

4. Select the slave file at <Select File>, and then click [Open(O)].

5. The selected slave file is displayed at the file selection.

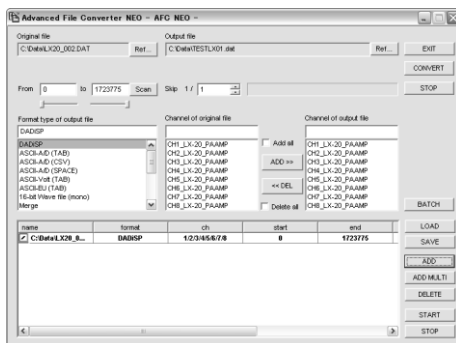**6.** Follow the same procedures of the file conversion to execute the file merge.

Batch Processing of File Conversion

Enter the sequence of the file conversions to convert the multiple files at a time.

1. Click [BATCH] of <AFC NEO>.

2. The batch processing window will be appeared under the file conversion menu.

3. Set a file to convert by following the file conversion procedures explained previously, and then click [ADD] to enter the current conversion parameters.

4. You can see the following fields by moving the slider control at the bottom of the batch processing window:
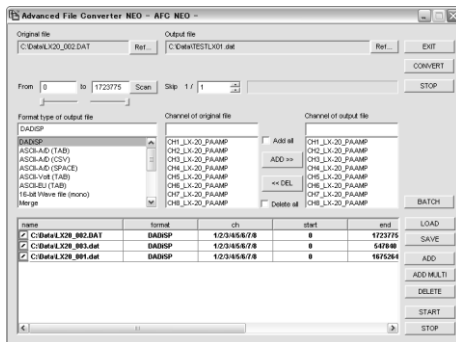
name Name of <Original file> to be converted
format File format selected at <Format type of output file>
ch Channels of the file to convert, being displayed separately by slash symbol
start Start scan number at <from>
end End scan number at <to>
skip Number of decimation at <Skip>
output Name of <Output file> to convert
status Shows the progress status of conversion in percentages

5. Continually, set the file to convert, and then click [ADD] to enter the conversion parameters until you complete the entry of the files to convert.
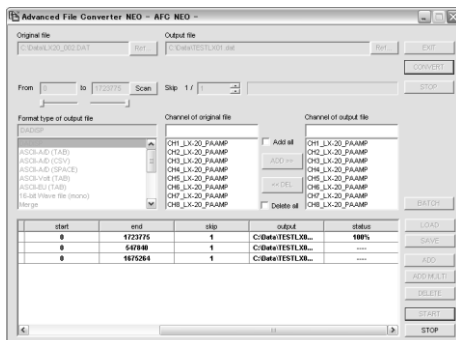
6. Move the cursor to highlight the file entered, and click [DELETE] to remove it from the entry. The file entered with the check mark removed in the box next to the file name will not be processed to convert.

7. Click [ADD MULTI] to display <Select Files>. Multiple files to be converted can be selected by using the standard Windows key operations (Shift key + Arrow key, or Ctrl key + right click). Check [ALL Channels] and [All Data] to make all channels of all selected files to the targets for conversion. Click [Open(O)] to confirm the entry.

8. Incremental ID numbers to the file name entered at <Set Output File> will be given in the sequence of the file selections.

9. Click [START] to start the file conversion in batch mode.
[status] shows the progress status of conversion in percentages.
Click [STOP] to suspend the file conversion.

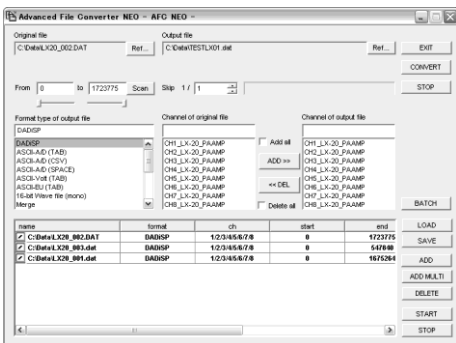You can save and load the entered file conversion parameters as a parameter file.
Edit the saved parameter file to easily modify the parameters by using a text editor, and load it to change the file conversion procedures.

Save the entered parameters
Click [SAVE] to display <Save by changing the file name> dialog to put a file name to be saved. The file extension is fixed at <prm>.

Load the entered parameters
Click [LOAD] to display <Open file> dialog to load the parameter file previously saved.

View the contents of entered parameters
The parameter file shows the entered parameters with texts and comma separated.

4.2.2. Converting Data File Recorded at DS Series
<Export> will be automatically activated to convert the data file recorded at the DS series.

- The file type of the target file to convert can be either TAFFmat or Text.
- Use only alphanumeric characters allowed for Windows for a file name and a folder name, do not use Japanese characters.
- The data file size can be converted shall be 2GB or less.

1. View the data part to be converted by using the cursor zoom function or the search function.

2. Click [File] -> [Export...] on the menu bar, or click 💾 on the tool bar.

3. <Export> is displayed.

Item		Description
Span		Selects the part of the data file to be converted with <from> and <to>.
	from	Displays the data conversion start point of data conversion. Enter the number manually to change the point. Click [scan] to change to [sec] to set the point in seconds, or reverse to set the point in numbers of scans.
	to	Displays the data conversion end point of data conversion. Enter the number manually to change the point. Click [scan] to change to [sec] to set the point in seconds, or reverse to set the point in numbers of scans.
	scan	Each click to toggle between [scan] and [sec] to set the start and stop point in either numbers of scans or seconds.
	skip	Enter a data decimation parameter. For example, enter [10] if you want decimate the data each one out of 10 scans.
Channel		The left filed shows the channels of the original file to be converted. The right field shows the channel to be selected for the file to convert. Enter or remove the channel(s) to convert by using [Add all], [ADD>>], [<<DEL], [Delete all].
Output		Click [Ref...] to set the folder and the file name to save the converted data file.
Slave		Use it to merge the data files recorded at the synchronization recording mode of the DS series. Check the box, and click [...] in the right to select the slave data file to be merged.
OK		Starts converting the selected data part. <Now converting...> will be shown while conversion. Click [STOP] to terminate conversion.
CANCEL		Closes the dialog without conversion.

⚠️

About merging data of the DS series
- You can merge data files to a single file recorded by the synchronization recording function of two sets of the DS units. (As of August 2003)
- Maximum channel number for the merged data file is 128.
- The part of the slave data file to be merged follows where the master data file is displayed.
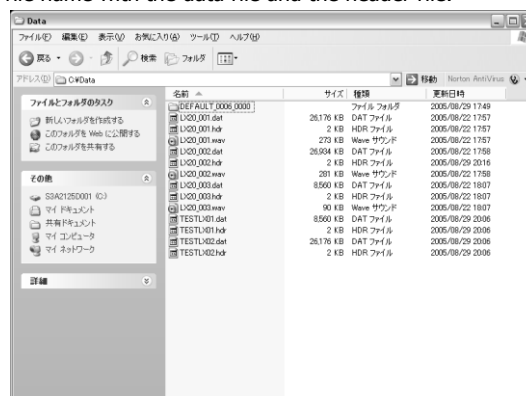- The merge function does not support individually selected channels.

4.3. Extracting Data with Voice Memo Playback

With the data recorded with the voice memo recording turned on in the LX-1000/WX-7000/LX-100/LX series, and VR-24, the voice memo can be played on the PC and the necessary part of the data can be extracted.

Example: Browse the recorded data file associated with the voice memo in your Windows explorer.
The voice memo file has the same file name with the data file and the header file.
*.dat   Data file
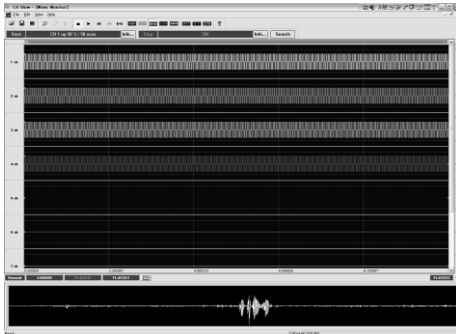*.hdr   Header file
*.wav   Voice memo file

⚠️
- Voice memo files to use this function must be shorter than one hour of recordings.

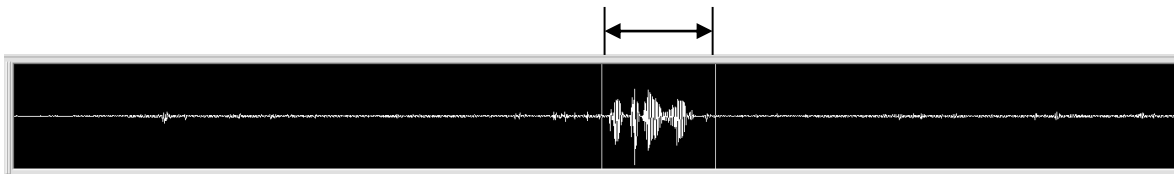**1.** Open the file with the voice memo recorded with LX-1000/WX-7000/LX-100/LX series, and VR-24.

2. Click [View] -> [Memobar], or click [MEMO] on the tool bar.

If the data file does not have the voice memo file, you cannot operate it.
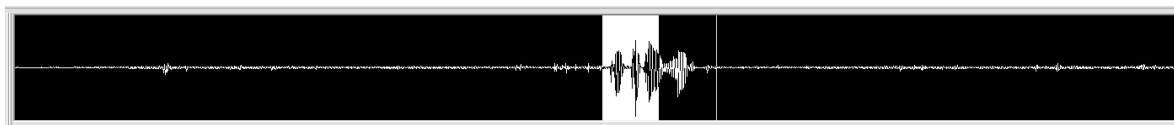

3. The waveform of the voice memo file will be displayed at the bottom of the display(Voice memo waveform window).

4. Select the zoom view section on the waveform of the voice memo file by using the cursors located at the extreme left and right. Move a mouse to the cursor position at the extreme left to see the cursor pointer change to <⇔>. Use the left button to drag the cursor line to the position of the zoom start point (the left edge). Use the same mouse operation on the cursor located at the extreme right to move the cursor line to the zoom end point (the right edge).

5. Click [▶] to listen to the voice memo on the specified part by using the cursors. The current playback point can be shown in highlight. Listen to the voice memo to check.

6. Click one of the control buttons on the tool bar to stop, play or pause playback. Stop, Play, and Pause from left to right. Release the pause state to click Pause again.

7. Click [▶II] to locate the data point of the current pause position to the left edge the waveform data display.

8. Click [I↔I] on the tool bar to zoom the waveform data display to specify the data extracting part according to the current part between two cursors of the voice memo waveform.

9. Click [MEMO] again to close the window.

4.4. Move to Event Mark Position by Showing Event Mark List

You can see a list of events if the event marks are recorded and can zoom the part between the event marks.
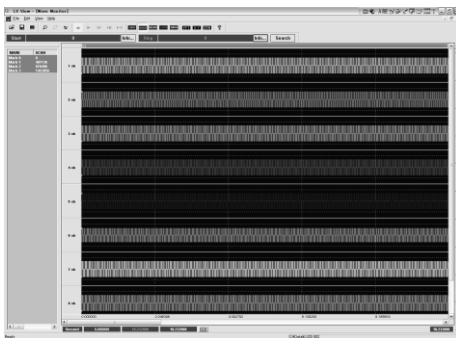
⚠️

- No event mark information is recorded at the file recorded by the PC direct recording of the WX-7000/LX series.
- Depending on the memory capacity installed in the PC, the event section may not be displayed on a single screen.

1. Open the file recorded the event marks. Each event number and its position will be displayed on the top of the wave form data display.
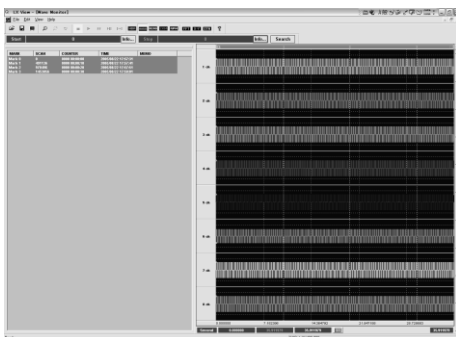
2. Click [View] -> [Markbar] or click [MARK] on the tool bar.

If the data file has no event mark, you cannot operate it.

3. The list of the event mark numbers and corresponding numbers of scans is displayed on the left of the waveform window.

4. Locate the mouse pointer to change to <⇔> at a separation line between the event mark list and the waveform data display. Drag the pointer to the right to widen the event mark list area to see <COUNTER> and <TIME>.

5. Double click the event number on the list to zoom the waveform display to the next event number. You can see the clicked event number data at the extreme left of the wave form display and the next event number data at the extreme right of the wave form display.

6. Click [MARK] again to close the list.
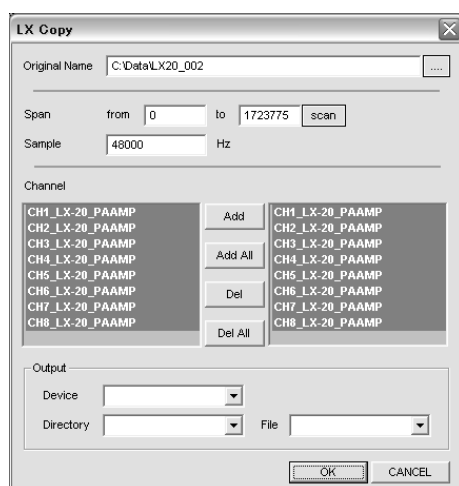

4.5. Copy Data to Media

You can use the copy function to extract the data and copy it to the media which the LX main unit can playback.

⚠️

- No event mark information is recorded at the file recorded by the PC direct recording of the LX series.
- To create the media playback on the LX main unit, specify the number of channels to be copied within 2, 4, 8, or 8 x according to the analog output channels of the LX main unit to be used. The channel number is automatically selected in ascending order from the channels extracted.
- This function does not support the low speed sampling frequencies of the LX series.
- The data file recorded other than 96 kHz sampling series of the LX-10F/LX-20/LX-110F/LX-120 can not played back at the LX-10/LX110.
- The function only supports the data file recorded at the LX series.

1. Click [⌨] on the tool bar

2. \<LX Copy\> is displayed.

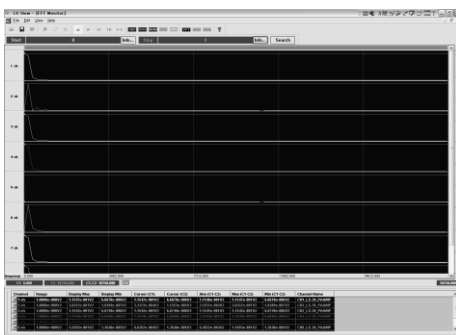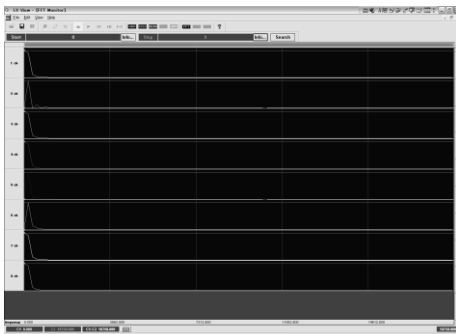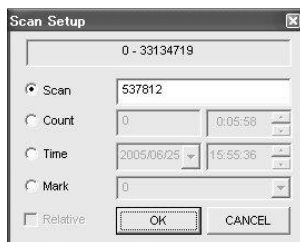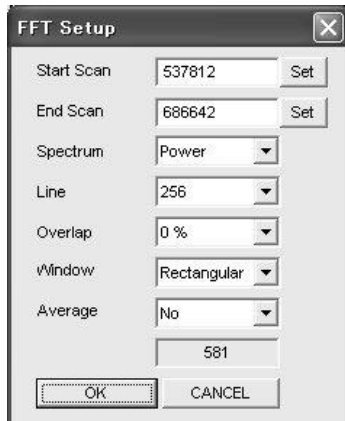| Item		Description
Original Name		Indicates the directory name and the file name of the displayed data in a full path. Click [...] on the right to change.
Span		Enters the copy start point to \<from\> and the copy end point to \<to\>.
	from	Displays the copy start point. You can manually enter the point to change. Click [scan] to change the display to [sec], to set the point either numbers of scans or seconds.
	to	Displays the copy end point. You can manually enter the point to change. Click [scan] to change the display to [sec], to set the point either numbers of scans or seconds.
	scan	Each click to toggle the display between [scan] and [sec] to specify the point by using either numbers of scans or seconds.
Sample		Displays the sampling rate of the data file. You can change the sampling rate within the same sampling frequency series when creating the copy file. Refer to the LX main unit instruction manual on the sampling frequency series you can select.
Channel		In the left, the channels of the source file are displayed. Enter or remove the necessary channels for the copy target file by using [Add], [Add All], [Del], or [Del All}.
Output		Sets the copy target file name and the folder name to save by clicking [...] on the right.
	Device	Indicates the root directory name of the copy target media. (MO or PC card in your PC)
	Directory	Enter the directory name to be used for the data file copy. The root directory named TEAC_LX is automatically created. The directory you enter is created under the TEAC_LX root directory.
	File	Enter the copy target file name. You can use only up to 8 alphanumeric characters with the extension ".dat" for the file name.
OK		Stars data copy of the specified part.
CANCEL		Close the dialog without copy operation.

Note:

Chapter 5 View Analyzed Data

You can see the FFT, X-Y view, or other analyzed results of the waveform display data by clicking the corresponding icons on the menu bar.

5.1. View FFT

You can see the FFT view of the waveform display data.   This FFT will be valid to the data part of the current displaying waveform.

1. Click **FFT** on the tool bar.

2. <FFT Setup> is displayed.   Select each FFT parameter from the pull down list.

Item	Description
Start Scan	Input the start scan point. The default position is the start(left) view one. Click to [set] button to set the point using <scan>, <Count>, <Time> and <Mark>.
End Scan	Input the end scan point. The default position is the end(right) view one. Click to [set] button to set the point using <scan>, <Count>, <Time> and <Mark>.
Spectrum	Select the type of the FFTs Power/Linear/RMS/PSD(Power Spectrum Density)
Line	Specify the resolution of the frequency axis. 256/512/1024/2048/4096/8192/16386/32768 The maximum value is limited by the recorded channel number. 128ch:2048、64ch:4096、32ch:8192、16ch:16386、8ch or less:32768
Overlap	Select the overlap. 0%/25%/50%/75%
Window	Select the window function. Rectangular/Hanning/Hamming/Kaiser-Bessel/Flat Top Because of no amplitude correction, the peak value is calculated low, except for [Rectangular].
Average	Select the averaging method. No/Linear/Exponential/Max
(Average Count)	If the bottom box for average indicates "0", change the combinations of the selected parameters. It is calculating if there are enough existing data points to implement the selected Line/Overlap parameters.

3. Click [OK] of <FFT Setup>.

4. The FFT result of each channel will be displayed.

Click **FFT** to change the FFT parameter while displaying.

5. Use the cursors located both extreme left and right of the display by moving to a point to read the peak value.   Move the mouse to the cursor position at the extreme left to see the cursor pointer change to <⇔>.   Use the left button to drag the C1 cursor line to the position of the peak point for which you want to read its value.   Use the same mouse operation for the cursor located at the extreme right to move the C2 cursor line to the peak point.

6. Click the channel property button to display values of the C1 cursor and the C2 cursor point.

7. Double click your mouse cursor at a row of channel information for which you want to change the display scales.   This will open <Channel Property>.

Item	Description
Channel name	Displays the channel name at recording.
Unit	Displays the physical unit at recording.
x axis/y axis	Sets the X and Y-axis scale information.
Lin	Displays at a linear scale.
Log	Displays at a log scale.
Min	Enter a minimum value for the display scale.
Max	Enter a maximum value for the display scale.
Reset	Sets to the default value.
DC Cut	Eliminate the DC component from the display.
Same	Click to apply the current settings to all other channels.
Color	Selects the graph line and back ground color.
Line	Sets the graph line color.
▼	Click to open the color pallet to select the display color.
Same	Apply the current color to all other channels.
Reset	Sets to the default color.
Back	Sets the back ground line color.
▼	Click to open the color pallet to select the display color.
Same	Apply the current color to all other channels.
Reset	Sets to the default color.

8. Click [View] -> [1 Wave Monitor] on the menu bar to switch to the waveform display.   Click [View] -> [2 FFT Monitor] at the waveform display to return to the FFT.
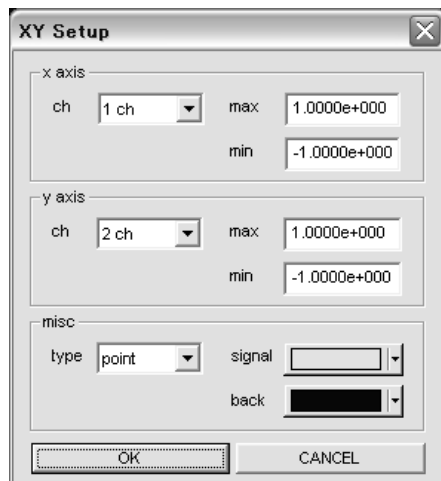
9. To close the FFT display, click [X] on the top right corner of the FFT display.

5.2. View X-Y Graph

You can select two channels out of the waveform display channels to see their X-Y graph.

1. Click [X·Y] on the tool bar.
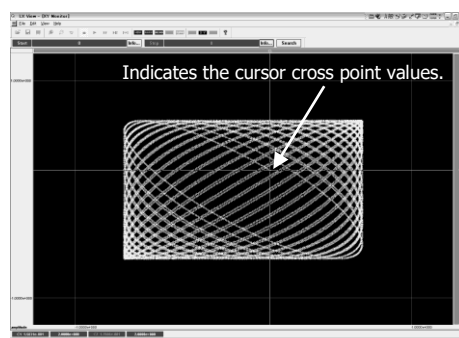
2. <XY Setup> is displayed.   Select the parameters.

Item	Description
x axis/y axis	
ch	Select the channels for X-Y view from the pull down menu.
max	Enter the maximum value for the display scale. The default value is the maximum value of each channel.
min	Enter the minimum value for the display scale. The default value is the minimum value of each channel.
Misc	
type	Plot type, fixed to [point].
signal	Select the plot color.
back	Select the back ground color of the X-Y graph.

3. Click [OK] of <XY Setup>.

4. The X-Y graph is displayed.

Click [X·Y] to change the display parameter during displaying.

5. To read the value of a plot data, use the vertical cursor located at the extreme left and the horizontal cursor located at the extreme top.   Cross two cursors at the plot data you want to read its value.   Move the mouse to the cursor position at the extreme left/top to see the cursor pointer change to <⇔>.   Use the left button to drag the cursor line to the position of the point you want to read its value.   The cross point values are displayed at the left bottom of the window.

6. Click [View] -> [1 Wave Monitor] on the menu bar to switch to the waveform display. Click [View] -> [2 XY Monitor] at the waveform display to return to the X-Y graph.

7. To close the X-Y graph, click [X] on the top right corner of the X-Y graph display.

5.3. View Statistical Data

You can see the statistical data (Maximum, Minimum, Average, and RMS) of the displayed segment.

1. Click [STA] on the tool bar.

2. <Statistics> is displayed.

3. Click [Save] to output the displayed statistical data as a "csv" file.

ch	max	min	mean	rms
CH 1	0.708320	-0.707280	0.000611	0.499958
CH 2	0.727520	-0.720600	0.003664	0.613183
CH 3	0.708200	-0.707160	0.000588	0.499895
CH 4	0.708200	-0.707080	0.000630	0.499873
CH 5	0.728440	-0.721440	0.003712	0.613163
CH 6	0.633880	-0.638800	-0.002361	0.448019
CH 7	0.708360	-0.707280	0.000632	0.499990
CH 8	0.708320	-0.707360	0.000542	0.500011

Save   Exit

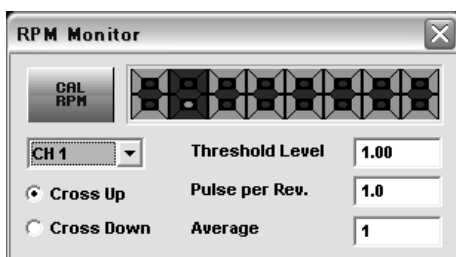**4.** Click [Exit] to close the display.

5.4. View RPM Value

You can see the cursor position data of the selected single channel as RPM (Rotations Per Minute).

⚠

- This function cannot be used when a large amount of data is displayed on one screen. This function can be used by shortening the waveform display time.

1. Click [RPM] on the tool bar.

2. <RPM Monitor> is displayed.

Item	Description
CAL RPM	Click to calculate RPM value.
Channel Selection	Selects the channel to display its RPM value.
Cross Up	Selects to RPM pulse detection at rising edge.
Cross Down	Selects to RPM pulse detection at falling edge.
Threshold Level	Specifies the threshold level to detect the RPM pulse.
Pulse per Rev.	Enter number of pulses per revolution.
Average	Enter number of averaging pulses.

3. Click [CAL RPM] to display the RPM value of the current C1 position based on the calculation over the current displayed part.
When the C1 cursor position outstrips the C2 cursor one on the axis of time, display the RPM value of the current C2 position.

4. Move the C1 cursor with dragging the mouse to read the RPM values of each cursor position.

5. Click [RPM] on the tool bar again to close the display.

5.5. PC wave out of a channel data or voice memo（WaveOut）

Reproduce one channel of the data or voice memo on PC.

1. Click ██ on the tool bar.

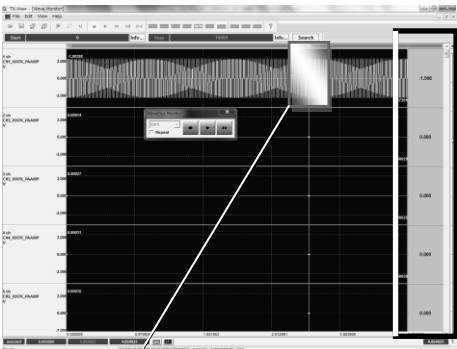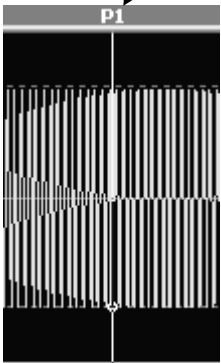Select one channel of the data or voice memo.

Stop　Play　Pause

2. <WaveOut Monitor> is displayed.

項目	説明
Channel Selection	Select one channel of the data or voice memo.
Repeat	Check the box, Repeat reproduction in the data part of the current displaying waveform.
Stop button	Stop reproduction.
Play button	Start reproduction.
Pause button	Pause reproduction. Release the pause state to click Pause again.

3. The sound reproduction is controlled by the Stop/Play/Pause buttons.
The P1 cursor show the current reproduction's point.
The value in the right window show the current point one.

4. Click ██ on the tool bar again to close the display.

Note:

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