SONY

Application Software for Compact High-Speed Data Recorders

EX-RS05

Read all the instructions in the manual carefully before use and strictly follow them.
Keep the manual for future references.

PCscan IV EZY

Software Instruction Manual

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Note

The text and display screens of this instruction manual, with some exceptions, assume the use of a computer running Windows XP. For other operating systems, there might be cases such as restricted functionalities and or different displays.

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Contents

1. Outline

1-1. Introduction

PCscan IV EZY is an application software for EX series, an advanced data acquisition and analysis system designed and produced by Sony Manufacturing Systems Corporation. This software enables the EX Series product to act as a compact high-speed data recorder, using simple commands to record and replay control data on it.

1-2. Major Functions and Features of the PCscan IV EZY

Functions

- Data recording and replay
- Signal monitoring with bar meter
- Saving and collective recall of EX Series hardware settings
- List display and management of recorded data

Features

- Data recorder-like screen display and operations
- Screen configuration for compact laptop computer
- Data recording and replay with simple operations
- Compatible with many types of recording media connected to your computer

1-3. Data File Format and Compatibility

Data file format

The format of the data recorded with the EX Series will vary depending on the software used.
In some cases, compatibility may be an issue.

Software	Format of recorded data
PCscan IV EZY	PCscan III format
PCscan IV STD	XMX data file format

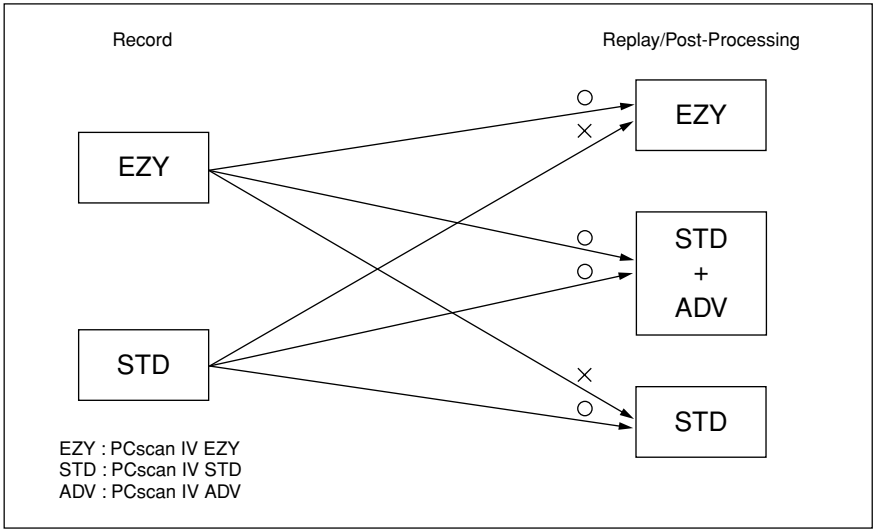
Post-Processing

It is recommended to use PCscan III Streamer for any post-processing.
(PCscan III Streamer is included in the Post folder on the PCscan IV EZY CD-ROM.)
The separately sold PCscan IV ADV is required to post-analyze data files of PCscan III format in PCscan IV.
For inquiries about PCscan IV ADV, contact Sony's sales and service representative.

Replay

PCscan IV EZY can only replay data files created by PCscan IV EZY.
The following files cannot be replayed.

- PCscan II/III data files recorded with SIR/PC Series data recorders
- XMX data files recorded with PCscan IV STD



2. Operating Environment and Setup

2-1. PCscan IV EZY-compatible System Environment

2-1-1. Compatible EX Series Hardware

Interface Unit

EX-UT10 i.LINK interface unit

Input Modules and Function Modules

EX-MI10 IEPE/Direct Module

EX-FA10 Analog Output Module

2-1-2. Computer Environment

Computer	IBM/PC-AT personal computer or compatible
Operating System (OS)	Windows2000 Professional, Windows XP Professional/Home edition, of Japanese or English versions.
CPU*, Memory	Pentium M 900 MHz, 512 MB or higher Pentium 4 2.4 GHz or higher, 768 MB or higher recommended (if using with a laptop computer, Intel Pentium M 1.8 GHz or higher)
Hard Disk Drive (HDD)	Windows-compatible hard disk At least 50 MB free installation space for software
CD-ROM Drive	For software installation
Display, Graphics	5" or greater, 800 × 600 pixels or higher, 32-bit color
Input Devices	Mouse and keyboard of Windows compatible. However wheel scrolling operation is not supported.
i.LINK Port (IEEE1394)	OHCI complied
Recommended i.LINK IEEE1394 Card	Manufactured by RATOC System, Inc. PCIFW3U, REX-PFW4H (PCI, Low Profile PCI) for Desktop Computer PCIFW3U (Card Bus) for Notebook Computer

* Neither multiprocessor operation based on a multiple number of CPUs nor HyperThreading technology is supported. Refer to the instruction manual accompanying your computer, and disable these functions.

Note

Hard disk

If the hard disk has low writing performance*, the computer may not be able to keep with the processing, depending on the number of measurement channels and settings used.

* Increased fragmentation on the hard disk:
  ..... This may reduce the speed at which data is written onto the hard disk.

  Use of a small notebook computer:
  ..... The writing speed of the computer's hard disk may be slow.

Software running concurrently

- Since other software running concurrently will interfere with processing, do not start up or close other software while measurements are underway. Also disable any screen savers and power-saving modes.
- The real-time monitoring functions of anti-virus software may downgrade the PCscan IV analysis operation and reduce the speed at which data is written onto the hard disk, and they may make it impossible for the computer to keep up with the processing.*

[Action to take when the computer fails to keep up with processing]

It may not be possible to perform normal measurements if the computer is failing to keep up with processing. Lower the aggregate data transfer speed by using a faster computer, decreasing the number of measurement channels, or reducing the recording range.

File size limitations

This software does not create files greater than 2 GB in size. Therefore a new ID will be automatically assigned just before 2 GB is exceeded.

As with ID increments, recorded data will be divided into multiple computer files, but can still be played back in continuous succession during replay.

PCscan IV EZY time control and daylight savings time (summer time)

Customers living in countries with daylight savings time (summer time) should pay close attention to the following. (As of April 2005, this information does not apply to Japan.)

In Source mode, the Timecode information uses and displays Windows' internal time information, so adjustments for daylight savings time will be made automatically, depending on the settings made in Windows.

The Timecode information in Source mode is saved in the Log file as the recording start time.

The Timecode displayed in File mode is derived from the elapsed time from the recording start time; no adjustments for daylight savings time can be made within the same ID.

Doing Timecode searches of data affected by the switch to or from daylight savings time may yield search results that are off by one hour. In these cases, it is recommended to use a RecTime search using the recording start time.

2-1-3. Hardware Settings

When connecting the EX hardware, settings will be automatically changed at startup if the settings do not match the software specifications.

Item	Setting
Quantization bit number	16 bits
Sampling frequency	Uniform for all modules (If not, set to highest value setting)
Single-ended/Differential	Uniform for all channels (If not, set to Single-ended)
LPF	No setting
HPF	No setting
Weighting filter	No setting
IEPE Turn On	Release settings
Enabled modules	Set continuously (Disabled modules between enabled modules will be changed to enabled.)
EX-FA10 FG/A-OUT mode	A-OUT mode

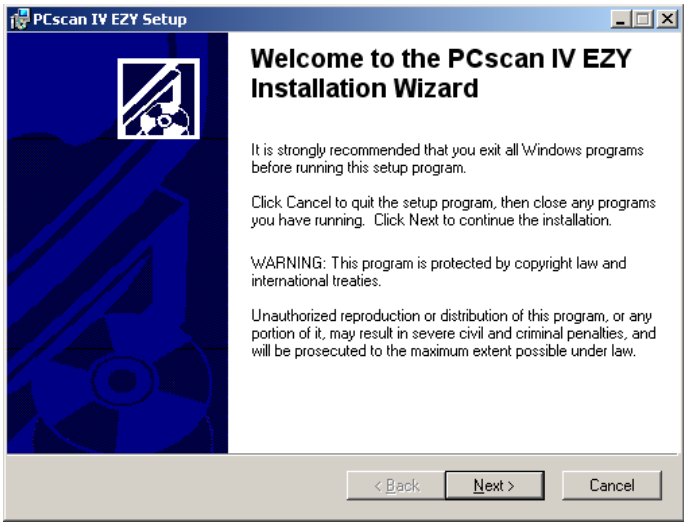
2-2. Software Installation

2-2-1. Installing PCscan IV EZY

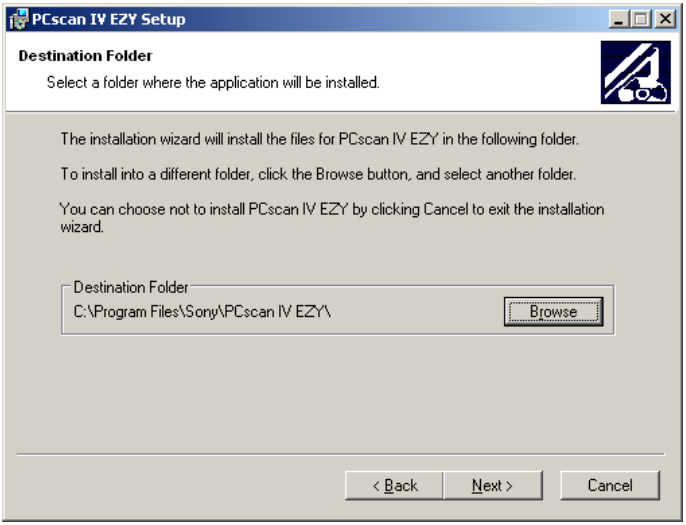
1 Insert the CD-ROM for the product into your computer's CD-ROM drive.
The installer starts up automatically.

∗ If the installer does not start up automatically, the AUTO PLAY function of your computer's CD-ROM drive may be disabled.
If this happens, refer to your computer's instruction manual to enable the AUTO PLAY function, or use Windows Explorer, etc. to run the file Setup.exe, which may be found in the English folder on your CD-ROM drive, to start up the installer.

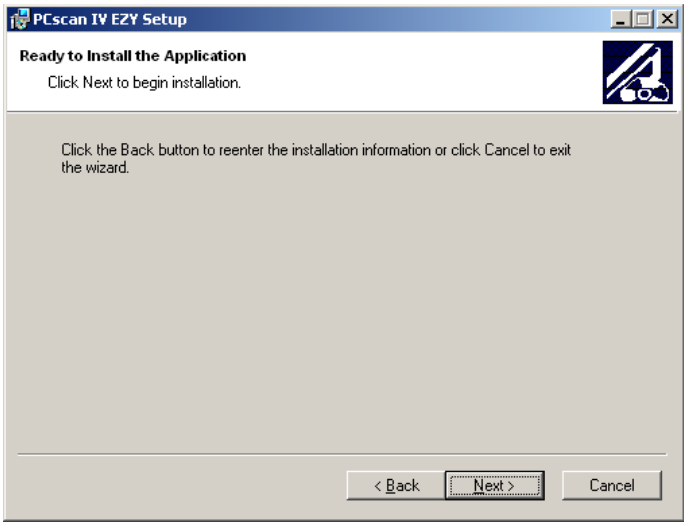
2 Click "Next."



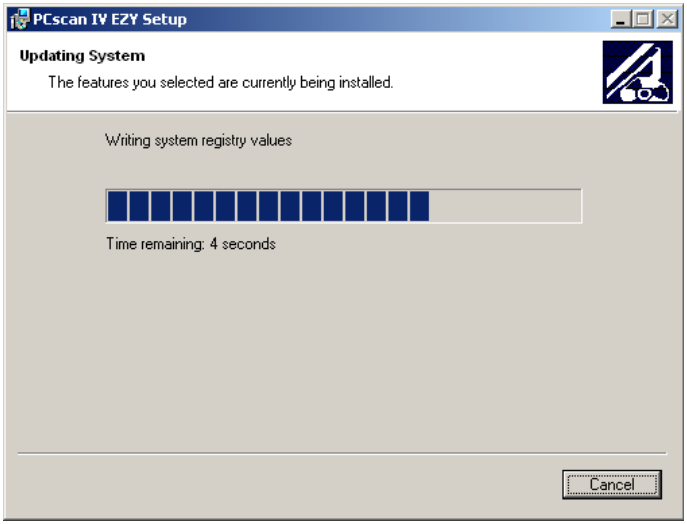
3 Choose the destination folder. In most cases, there is no need to change the folder shown.



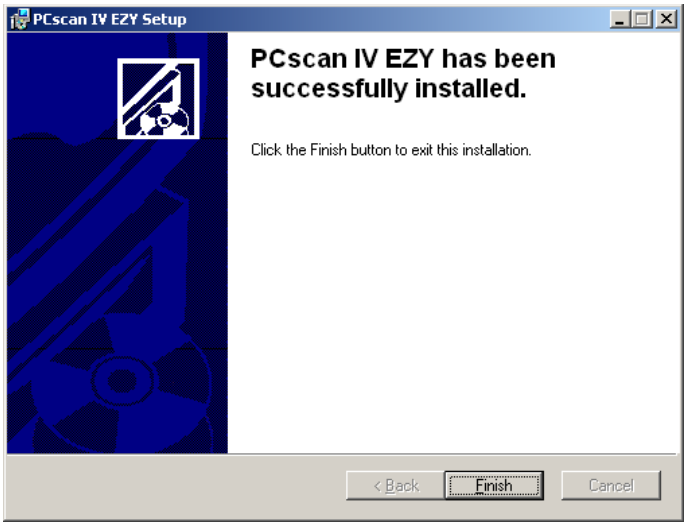
4 Click “Next.”



The progress bar is displayed during installation. Please wait.



5 Click “Finish.”
The installation process is complete.

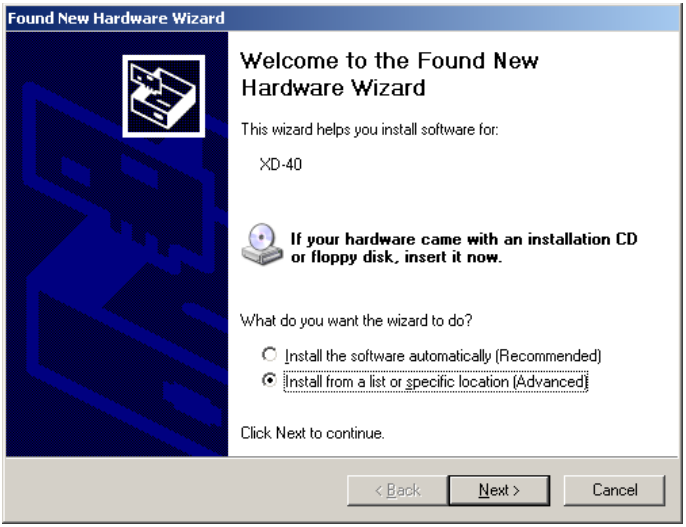


2-2-2. Installing the EX Drivers

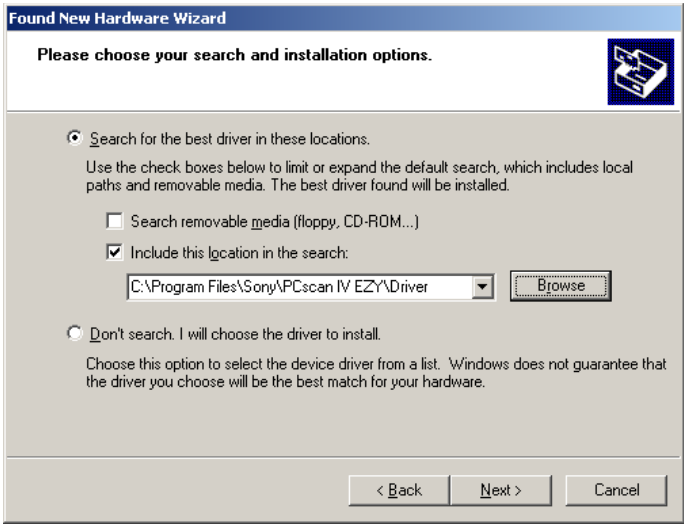
The first time an EX Series product is used on any computer, the drivers need to be installed. If the following dialogue comes up the first time the power is turned on after the EX Series product has been connected to your computer, follow the procedures shown in the dialogue to install the drivers.

With Windows XP

1 Select “Install from a list or specific location (Advanced)” and click “Next.”



2 Select “Search for the best driver in these locations” and select C:\Program Files\Sony \PCscan IV EZY\Driver. (Example shows installation of software to C: drive.)



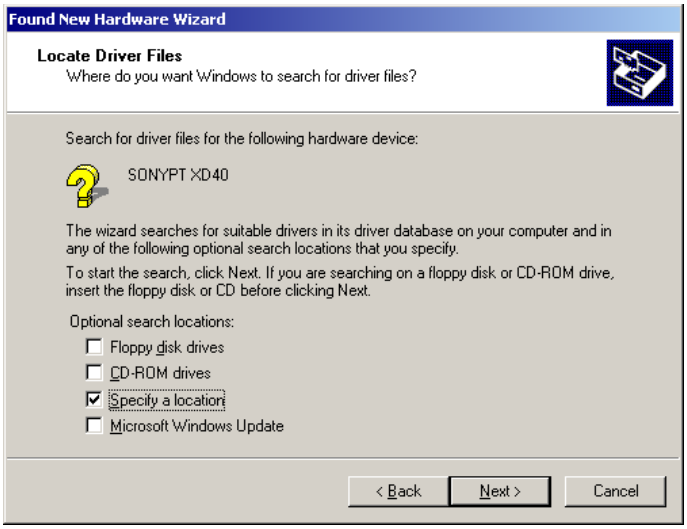
3 Installation is complete when the following screen appears.

The driver search screen will come up if another EX product is connected to the same computer, but drivers will be installed automatically.

With Windows2000

1 Select “Search for a suitable driver for my device (recommended)” and click “Next”.

2 Select “Specify a location” and click “Next.” Then select C:\Driver (if installing the software to the C drive.)



3 Installation is complete when the following screen appears.

The driver search screen will come up if another EX product is connected to the same computer, but drivers will be installed automatically.

2-2-3. Installing PCscan III Streamer

Install PCscan III Streamer if post-processing data recorded with PCscan IV EZY.
PCscan III Streamer is not required if only running PCscan IV EZY. Install it only if needed.

The CD-ROM for this product contains PCscan III Streamer, the software that is used for post-processing data recorded with PCscan IV EZY.
To install PCscan III Streamer, open the Post folder on the CD-ROM with Windows Explorer, etc. and run the file Setup.exe.

- During installation, a window opens in which the language of the Help file to be copied is selected. Select either English ("English Help Topics") or Japanese ("Japanese Help Topics").
- When installing PCscan III, the DLL on your system will be replaced by the most up to date DLL. As a result, when installation is finished, your computer may need to be restarted. Restart your computer as instructed.
- If your computer already has a version of PCscan III earlier than Ver. 3.0, first uninstall it and then install the new version. To save the earlier settings, save the existing SUK330.CNG or SUK300.CNG before uninstalling, install the new version, and then perform the following operation.

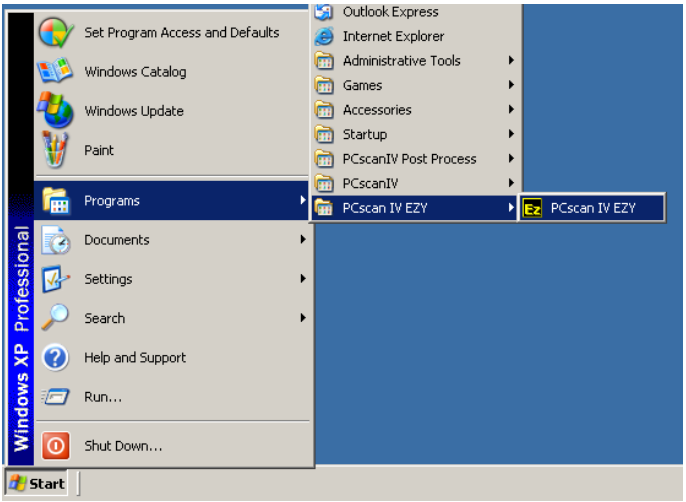
  Streamer Pack: Overwrite SUK300.CNG and reset videotape replay password.

Refer to the Help File that comes with the software for more information about using PCscan III Streamer.
We do not provide support for the PCscan III Streamer functions for SIR data recorders and AIT tape streamer drives. Use PCscan III Streamer for post-processing data recorded with PCscan IV EZY.

3. Starting up PCscan IV EZY

1 Make sure that the EX Series product is connected to your computer and that the power is on to both.

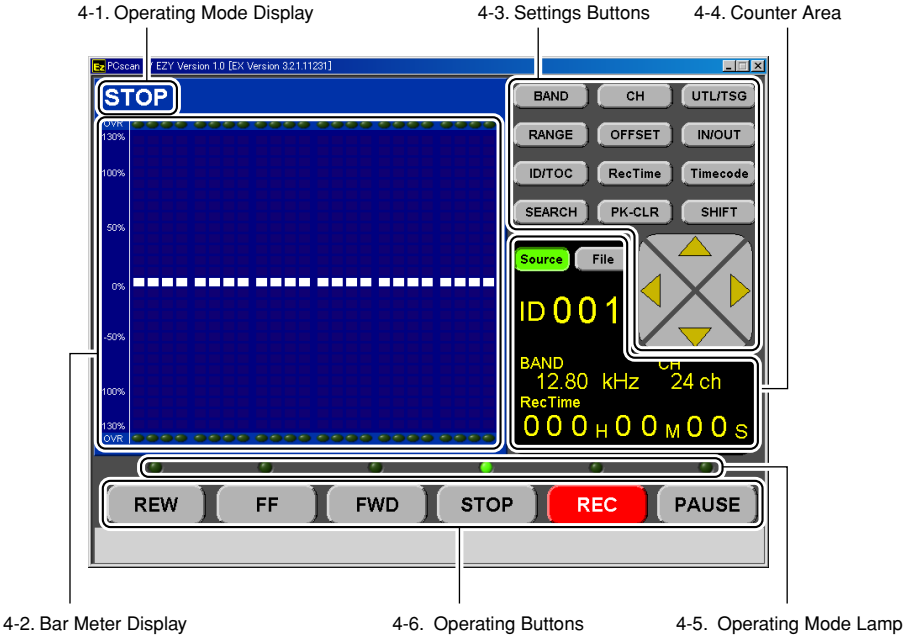
2 Click the “Start” button on the computer screen’s task bar, then select “Programs,” “PCscan IV EZY” and “PCscan IV EZY.”



4. Name and Functions of Each Part

Main Panel

The main panel is displayed when the software starts up.



4-1. Operating Mode Display

This display shows the current operating mode.
(Refer to section 5 for detailed information about operating modes.)

4-2. Bar Meter Display

A bar meter is displayed for each channel.
Each bar meter represents one channel. Up to 24 channels can be displayed, going from left to right.

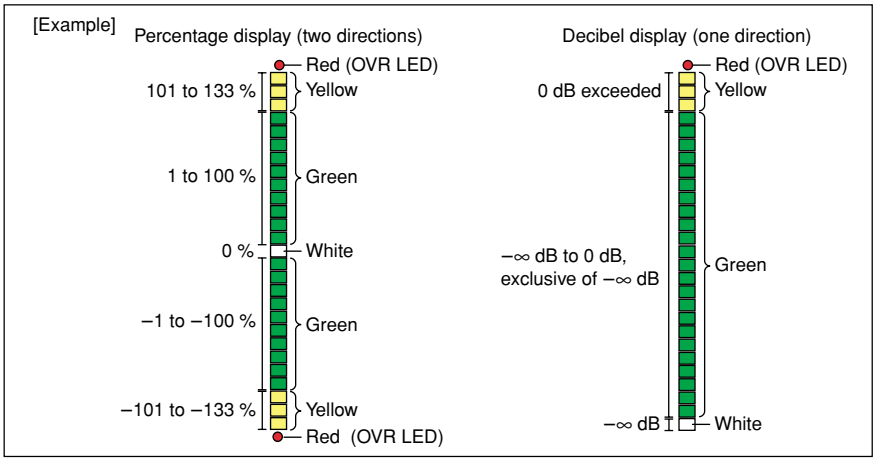
Using percentage scale

The scale displays readings in two directions (the 0 % level at the center is set as the boundary for signal polarity, with the upper end being + and the lower end being −). The data signal level is displayed as a percentage (e.g. +100 %, 0 %, −100 %) relative to the reference level (±100 %) set for the RANGE.

Using dB scale

The scale displays readings in one direction, (readings are displayed in one direction, regardless of signal polarity). The data signal level is displayed as a dB value relative to the reference level (0 dB) set for the range.

- Switch between the percentage scale and dB scale from the Utility screen. (Refer to section 7-2-5.)
  The percentage scale is appropriate for measurements relating to the data signal, which contains a DC component, i.e. stress and distortion, while the dB scale is appropriate for acoustic measurements.
- The OVR LED lights up for any data channel that goes over range. If the bar meter is showing the percentage scale, the + side, − side or both will light up, depending on the signal level. The lighting mode can be switched between real-time and peak hold display. Switch between them from the Utility screen. (Refer to section 7-2-6.)
- A white dot is displayed for enabled channels set in the Channel mode.



4-3. Settings Buttons

In Source mode, the settings buttons can be used to make settings for the EX product.
In File mode, the settings when recording data can be confirmed. The settings cannot be changed in File mode.
(Refer to section 6 for information about Source mode and File mode.)

BAND button
Use this button to set the bandwidth.

CH button
Use this button to set the recording channel mode.

UTL/TSG button
Use this button to set the Utility screen display or test signal.

RANGE button
Use this button to set or confirm range values.

OFFSET button
Use this button to set or confirm offset value.

IN/OUT button
Use this button to set or confirm the input mode or coupling mode, or to set or confirm output range values. Output range values cannot be confirmed in File mode.

ID/TOC button
Use this button to perform an ID search or display the TOC screen.

RecTime button
Use this button to display the RecTime in the counter area or to perform a RecTime search.

Timecode button
Use this button to display the time in the counter area or to perform a Timecode search.

SEARCH button
Use this button when performing a data search.

PK-CLR button
This button clears the bar meter display of the peak holding.

SHIFT button
Use this button to switch between button functions.

▲, ▼, ◄, ► buttons
Use these arrow keys when selecting items and values.
Solid yellow light : Button enabled
Blinking yellow light : Value being changed or operation being executed
Dark yellow : Button disabled

4-4. Counter Area

Source button
The system is in Source mode while this button is pressed.

File button
The system is in File mode while this button is pressed.

The content displayed in the counter area will vary between Source mode and File mode.

In Source mode

ID
Displays the ID currently being recorded while in REC mode. The ID that will start to be recorded next is displayed in STOP, E-E or REC-P mode.

BAND
Displays the bandwidth currently set for the EX product.

CH
Displays the channel mode currently set for the EX product.

Counter display
Displays the RecTime or Time. The settings buttons can be used to switch between them.

RecTime
Displays an actual time counter, with the ID starting point set at zero.

Time
Displays the time currently set on your computer.

In File mode

ID

Displays the currently replaying ID in FWD, Cue or Review mode. The ID that will start to be replayed next is displayed in STOP or FWD-P mode.

BAND

Displays the bandwidth of the ID displayed in the ID display area.

CH

Displays the channel mode of the ID displayed in the ID display area.

Counter display

Displays the RecTime or Time. The settings buttons can be used to switch between them.

RecTime

Displays an actual time counter, with the ID starting point set at zero.
In FWD, Cue or Review mode, displays an actual time counter for position of data currently being replayed.
In STOP or FWD-P mode, displays an actual time counter for position of data that will start to be replayed next.

Time

In FWD, Cue or Review mode, displays the time of the position of data currently being replayed. In STOP or FWD-P mode, displays the time of the position of data that will start to be replayed next.

4-5. Operating Mode Lamp

The lamp displays the current operating mode.
Lamps light up as follows, depending on operating mode.

Operating mode	Lamp					
	REW (Green)	FF (Green)	FWD (Green)	STOP (Green)	REC (Red)	PAUSE (Green)
STOP				●		
FWD			●			
FWD-P			●			●
E-E					●	
REC			●		●	
REC-P			●		●	●
Cue		●	●			
Review	●		●			

● : Lamp lit -P: Pause

If changing operating modes requires more than one second, the operating mode lamp of the new mode will be blinking.

4-6. Operating Buttons

Refer to section 5 for specific instructions on how to use operating buttons.

REW button
Use this button to rewind data when replaying. Do not use when recording data.

FF button
Use this button to fast-forward data when replaying. Do not use when recording data.

FWD button
Use this button to replay data.

STOP button
Use this button to stop replay or recording. If this button is pressed while on the settings screen, the system returns to the bar meter display of the main panel.

REC button
Use this button to perform recording operations, in E-E or REC mode, etc.

PAUSE button
Use this button to pause recording or replay, or press again to release paused status.

Performing operations with the keyboard

Your computer keyboard's function keys can be used to perform the same operations as with the operating buttons.

Assignment of function keys

Button	REW	FF	FWD	STOP	REC	PAUSE
Function key	F5	F6	F7	F8	F9	F10

5. Operations

5-1. Overview of Operating Buttons

Refer to section 4-6.

5-2. Overview of Operating Modes

Mode name	Explanation
STOP	The mode of the system when it is stopped. The application starts up in this mode. When ending the application, always do so in this mode.
E-E	In this mode the range and offset can be adjusted while confirming the signal on the screen before actually recording.
REC	The mode in which data is recorded to a disk; monitoring may be performed at the same time.
REC-P	A pause during recording. When the pause is released, an ID will be sent for subsequent recording data and treated as the next ID.
FWD	The mode in which data recorded to disk is replayed.
FWD-P	A pause during replay. When the pause is released, data replay begins from the point where the pause was initiated.
Cue	Fast-forwards during replay. During fast-forward, only the bar meter and counter are updated; no signal is output from the output module.
Review	Rewinds data during replay. During rewind, only the bar meter and counter are updated; no signal is output from the output module.

5-3. Examples of Basic Operations

The "+" sign in button explanations represents the sequence of operations.

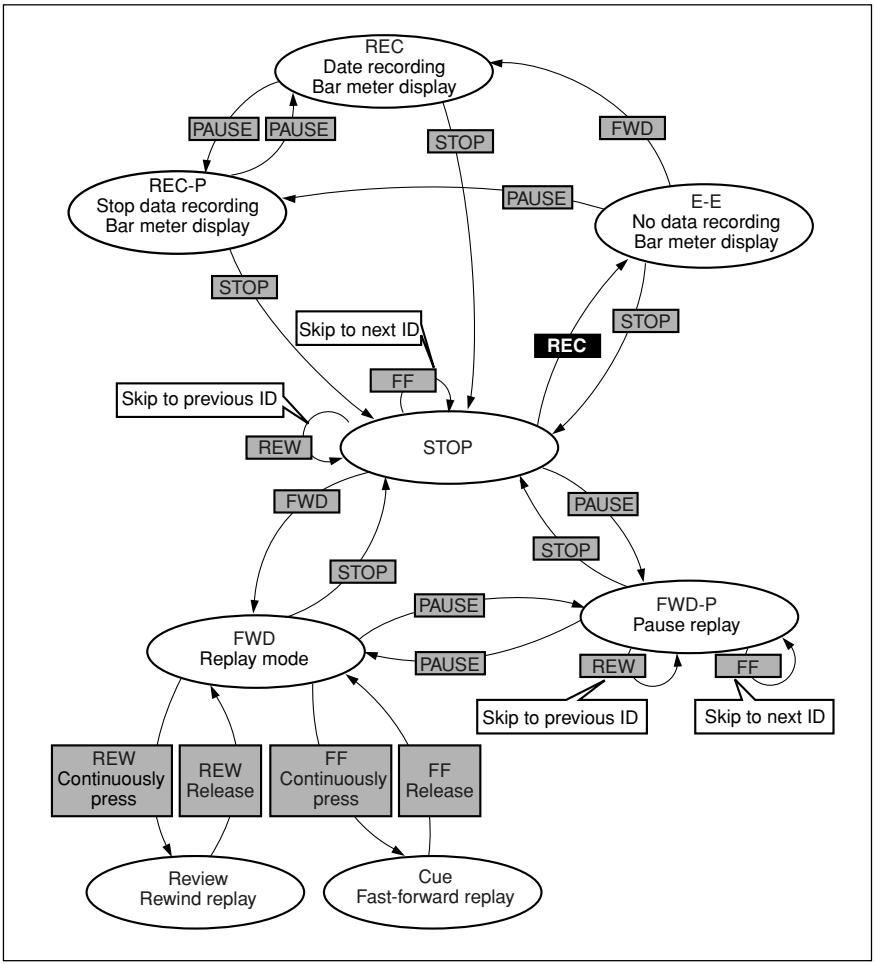
[Example]

REC + FWD : Press the REC button, then press the FWD button.

Action	Button
Return to STOP mode from record/replay/settings screen.	STOP
Go from STOP mode to E-E mode, confirm signal before recording and adjust	REC
Go from E-E mode to recording status (REC mode)	PAUSE + PAUSE or FWD
Go from STOP mode to recording status (REC mode)	REC + FWD or REC + PAUSE + PAUSE
Pause (REC-P mode) while in REC mode	PAUSE
Release pause in REC-P mode and resume recording	PAUSE
Go into replay from STOP mode	FWD
Pause (FWD-P mode) while in FWD mode	PAUSE
Fast-forward replay (Cue) while in FWD mode	FF (while continuously pressing)
Rewind replay (Review) while in FWD mode	REW (while continuously pressing)
Skip current replay ID while in FWD mode and replay from next ID	FF
Begin replay from start of current replay ID while in FWD mode	REW (if this operation is performed at the start of the ID, replay begins from the start of the previous ID.)

5-4. Moving between Operating Modes

Mode change diagram



Mode change table

Current mode	Operating button					
	REW	**FF**	**FWD**	**STOP**	**REC**	**PAUSE**
STOP	ID goes back STOP	ID advances STOP	FWD	Close settings STOP	E-E	FWD-P
E-E	–	–	REC	STOP	–	REC-P
REC	–	–	–	STOP	–	REC-P
REC-P	–	–	–	STOP	–	REC
FWD	Continuously press Review	Continuously press Cue	–	STOP	–	FWD-P
FWD-P	ID goes back FWD-P	ID advances FWD-P	–	STOP	–	FWD
Cue	–	When released FWD	–	–	–	–
Review	When released FWD	–	–	–	–	–

ID goes back : Goes to previous ID if current address is at start of ID, or to start of current ID if ID is already in progress

ID advances : Goes to start of next ID

Close settings : Closes the current settings screen when it is open

Continuously press : Goes into the mode shown below this phrase when the button is continuously pressed

When released : Goes into the mode shown below this phrase when the button is released

6. Setting Recording Conditions

The settings button changes color when pressed. When the button is yellow-green, it means that the setting function is ON and is ready to make settings. To turn OFF, either press the button that is ON or press the STOP button.

Setting	Button color	Screen
ON	Yellow-green	Changes to the settings screen, which is turned ON.
OFF	Gray	Returns to the original screen.

Settings can be in two modes: Source and File.

Source

The recorder's current status.
The settings system is in Source mode when the Source button in the counter area is being pressed.

File

This shows information about the current ID.
The settings system is in File mode when the File button in the counter area is being pressed.

The settings can be changed when the system is in Source mode. When it is in File mode, the settings can only be confirmed.
When moving among the REC, REC-P or E-E operating modes, the system automatically changes to Source mode.

Settings when using pull-down menus

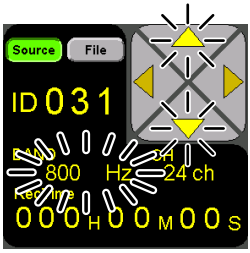
This instruction manual explains how to make settings by pressing selection buttons, but PCscan IV EZY settings can also be made by using pull-down menus and clicking them with the mouse.
To make settings through the pull-down menus, click the text of the item to be set. A pull-down menu will appear, and the desired settings value can be selected.

6-1. Setting the Bandwidth (BAND)

Follow these instructions to set the recording/replay bandwidth.

Operating mode when making setting: STOP

1 Press the BAND button.



The band value in the counter area will be blinking.

2 Use the ▲ and ▼ buttons to select the band.
The bands will vary by frequency type.
(Refer to section 7-2-2 for information about changing the frequency type.)

(Units: Hz)

Type1	Type2	Type3
20.48 k	25.6 k	4 k
10.24 k	12.8 k	2 k
5.12 k	6.4 k	800
2.56 k	3.2 k	400
1.28 k	1.6 k	200
640	800	80
320	400	40
160	200	20
80	100	8
40	50	4
20	25	
10	13	
	6	
	3	

3 Press the STOP button or BAND button.
The command is transmitted to the EX side. When the change is finished, the system returns to the original screen.

Precautions when making settings

When the bandwidth (BAND) has been changed, the system will need about the time shown below to change EX's internal settings. The time it takes depends on the new bandwidth. However, the change will be finished in less than 1.0 s if making changes within a range indicated with an asterisk (∗).

Type1

	20.48 kHz	Less than 1.0 s
	10.24 kHz	Less than 1.0 s
	5.12 kHz	About 1.5 s
	2.56 kHz	About 3.0 s
	1.28 kHz	About 5.6 s
∗	640 Hz to 10 Hz	From outside this range : about 12 s From within this range : less than 1.0 s

Type2

	25.6 kHz	Less than 1.0 s
	12.8 kHz	Less than 1.0 s
	6.4 kHz	About 1.1 s
	3.2 kHz	About 2.2 s
	1.6 kHz	About 4.4 s
	800 Hz	About 8.8 s
∗	400 Hz to 3 Hz	From outside this range : about 18 s From within this range : less than 1.0 s

Type3

	4 kHz	About 1.8 s
	2 kHz	About 3.6 s
	800 Hz	About 9.0 s
∗	400 Hz to 4 Hz	From outside this range : about 18 s From within this range : less than 1.0 s

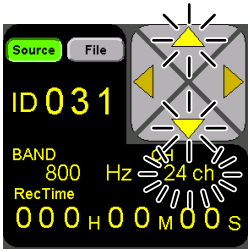
During this time, the bandwidth display is dark yellow and the operating mode cannot be changed.
It is still possible to make other settings (including resetting of the bandwidth) and perform searches.

6-2. Setting Channel Mode (CH)

Follow these instructions to set the channel to be used for recording.

Operating mode when making setting: STOP

1 Press the CH button.
The display changes to the channel mode screen.



The channel display will be blinking.

2 Use the ▲ and ▼ buttons to select the channel mode.
This setting is made every time a channel mode is selected.
A setting in excess of the number of connected modules cannot be made.

Mode	Number of changeable channels
Single Ended	4 ch, 8 ch, 12 ch, 16 ch, 20 ch, 24 ch
Differential	2 ch, 4 ch, 6 ch, 8 ch, 10 ch, 12 ch

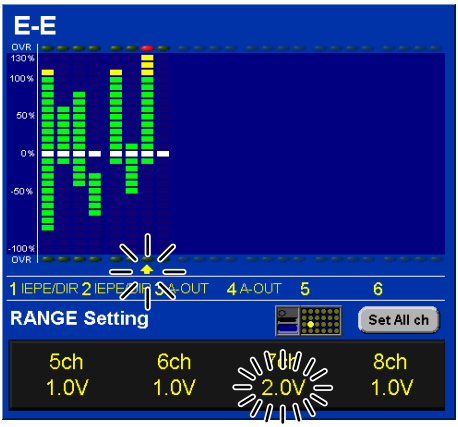
3 Press the STOP button or CH button.
The system returns to the original screen.

6-3. Setting Range Values (RANGE)

Follow these instructions to set the range values for each channel.

Operating mode when making setting: STOP/E-E/REC-P

1 Press the RANGE button.
The display changes to the range values settings screen.



2 The channel and range values that are being set will be blinking.
Use the ◀ and ▶ buttons to select the channel, then use the ▲ and ▼ buttons to select the range values.
This setting is made every time a value is changed.

The changeable range values vary according to input mode.

Input mode	Range (V)	Changeable values
Direct	±0.1 to ±20.0	0.1, 0.2, 0.5, 1.0, 2.0, 5.0, 10.0, 20.0
IEPE	±0.1 to ±10.0	0.1, 0.2, 0.5, 1.0, 2.0, 5.0, 10.0

Note

When the input mode is IEPE, the value will not change from 10.0 V even if the ▲ button is pressed. A message will be displayed in the Help area.

To use the selected channel's settings for all channels, press the Set All ch button.

3 Press the STOP button or RANGE button.
The system returns to the original screen.

6-4. Setting Offset Value (OFFSET)

An offset value is set by setting a percentage, based on each channel's range values.

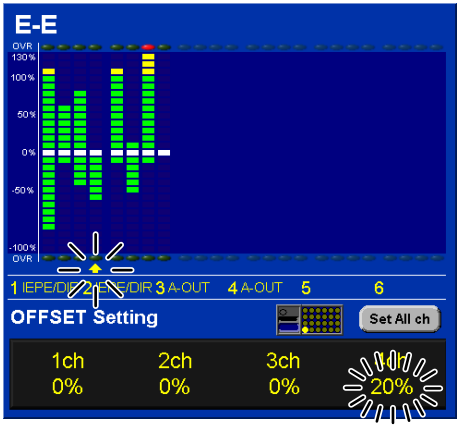
Note

The only offset setting value available in the following cases is 0 %. If an attempt is made to change the setting, a message will be displayed in the Help area.

- When the input mode is IEPE
- When the coupling mode is AC

Operating mode when making setting: STOP/E-E/REC-P

1 Press the OFFSET button
The system changes to the offset value setting screen.



2 Use the ◀ and ▶ buttons to select the channel, then use the ▲ and ▼ buttons to select the offset value (in increments of 1 %).
This setting is made every time a channel and value is selected.
The channel and offset values that are being set will be blinking.
The value being selected can be changed in increments of 10 % by pressing the ▲ or ▼ button long enough.

Range of offset values: −100 % to 100 %

To use the selected channel's settings for all channels, press the Set All ch button.

3 Press the STOP button or OFFSET button.
The system returns to the original screen.

6-5. Setting Input Mode and Coupling Mode (IN)

Note

The following values are disabled.

- The range value 20.0 V when the input mode is IEPE
- Offset values other than 0 % when the coupling mode is AC

If values are disabled, they are changed internally and a message is displayed in the Help area.

Operating mode when making setting: STOP

1 Press the IN/OUT button.
The system changes to the input/coupling mode setting screen.

2 Use the ◀ and ▶ buttons to select the channel, then use the ▲ and ▼ buttons to select the setting value.
The value that is being set will be blinking.

Setting values: Direct/DC, Direct/AC, IEPE/AC

To use the selected channel's settings for all channels, press the Set All ch button.

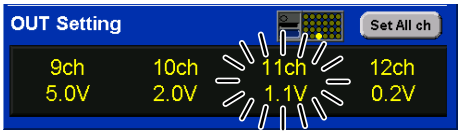
3 Press the STOP button or IN/OUT button.
The command is transmitted to the EX side. When the change is finished, the system returns to the original screen.

6-6. Setting Output Range Values (OUT)

Operating mode when making setting: STOP

1 Press the SHIFT button.

2 Press the IN/OUT button.
The system changes to the output range value setting screen.



3 Use the ◀ and ▶ buttons to select the channel, then use the ▲ and ▼ buttons to select the setting value (in increments of 0.1 V).
This setting is made every time a channel and value are selected.
The channel and output range value that are being set will be blinking.
The value being selected can be changed in increments of 0.5 V by pressing the ▲ or ▼ button long enough.

Range of output range values: ±0.1 V to ±5.0 V

To use the selected channel's settings for all channels, press the Set All ch button.

4 Press the STOP button.
The system returns to the original screen.

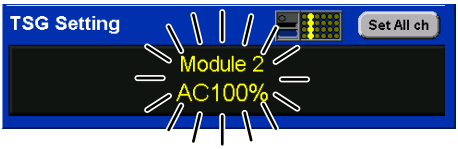
6-7. Setting the Test Signal (TSG)

This sets the module that emits the test signal.

Operating mode when making setting: E-E/REC/REC-P

1 Press the SHIFT button.

2 Press the UTL/TSG button.
The system changes to the test signal setting screen.



3 Use the ◀ and ▶ buttons to select the module, then use the ▲ and ▼ buttons to select the test signal value.
This setting is made every time a channel and value are selected.
The module and test signal value being set will be blinking.

Test signal setting values: AC ±100 %, DC +100 %, DC −100 %, 0 %, OFF

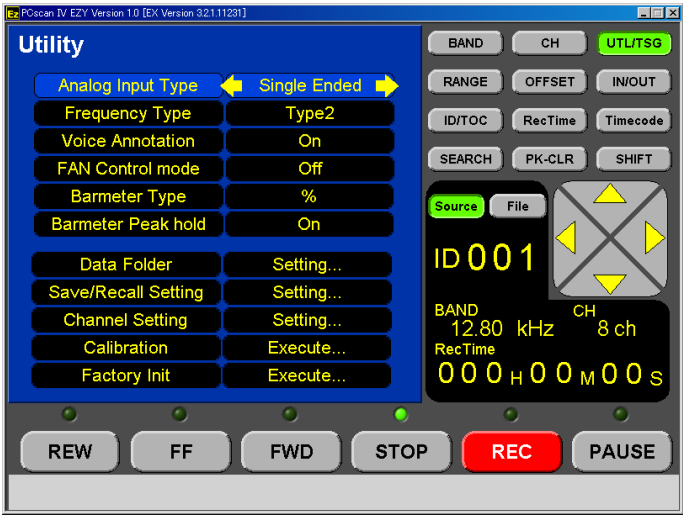
To use the selected module's settings for all modules, press the Set All ch button.

4 Press the STOP button.
The system returns to the original screen.

7. Advanced Settings (Utility Screen)

The Utility screen can be used to make advanced settings.
Press the UTL/TSG button to display the utility settings screen.
To return to the original screen, press the STOP button or press the UTL/TSG button again.

7-1. Utility Screen



Operating mode when making setting: STOP

Selecting setting items

Use the ▲ and ▼ buttons to select items. The item selected will be highlighted.

Selecting or executing setting values

Use the ◀ and ▶ buttons.
This setting is made every time a value is selected.

Analog Input Type	Input type settings
Frequency Type	Frequency type settings
Voice Annotation	Microphone settings
FAN Control mode	Fan settings
Barmeter Type	Bar meter display type settings
Barmeter Peak hold	Bar meter display peak hold function settings
Data Folder	Data folder settings
Save/Recall Setting	Settings save and recall
Channel Setting	Channel settings
Calibration	Calibration
Factory Init	Restore to factory default settings

7-2. Settings

Default settings are indicated in bold print in sections 7-2-1 through 7-2-6.

7-2-1. Input Type Settings

Setting item : Analog Input Type
Setting values : **Single Ended**, Differential

7-2-2. Frequency Type Settings

Setting item : Frequency Type
Setting values : Type 1, **Type 2**, Type 3

When the type has been changed, the bandwidth will be as follows.
Type1: 10.24 kHz, Type2: 12.8 kHz, Type3: 4 kHz

7-2-3. Microphone Settings

Setting item : Voice Annotation
Setting values : **On**....(in use), Off....(not in use)

7-2-4. Fan Settings

Setting item : FAN Control mode
Setting values : On....(stop), **Off**....(run)

The cooling fan can be stopped if its noise affects data collection. After the cooling fan has been stopped, it will come on automatically if the internal temperature of the system rises.

Note

Be careful about touching the casing of the system when the cooling fan is stopped, because the case may be very hot.

7-2-5. Bar Meter Display Type Settings

Setting item : Barmeter Type
Setting values : **%** (two directions), dB (one direction)

7-2-6. The Bar Meter Display Peak Hold Function Settings

Setting item : Barmeter Peak hold
Setting values : **On:** Peak hold display

- This function keeps the maximum and minimum bar meter readings for each channel.
- It also keeps a display of the over-range indicator.
- The only dot held and constantly lit is the dot for the greatest reading.
- To clear the display, press the PK-CLR button.

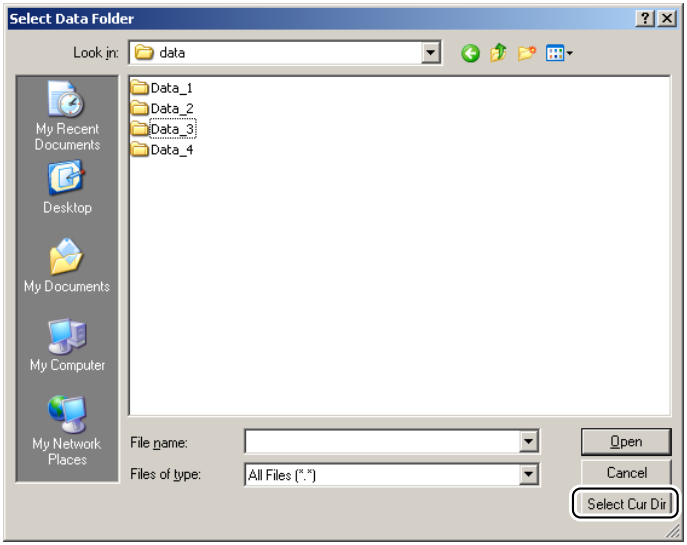
Off: Real-time display

7-2-7. Data Folder Settings (Data Folder)

The data folder is the folder to which the data files described in section 10-2. “Data files” is saved. The data folder in the folder where this software is installed is the default folder. To change it, follow the procedures below.

1 Use the ▲ and ▼ buttons to select the data folder.

2 Press the ▶ button.
The directory settings screen is displayed.



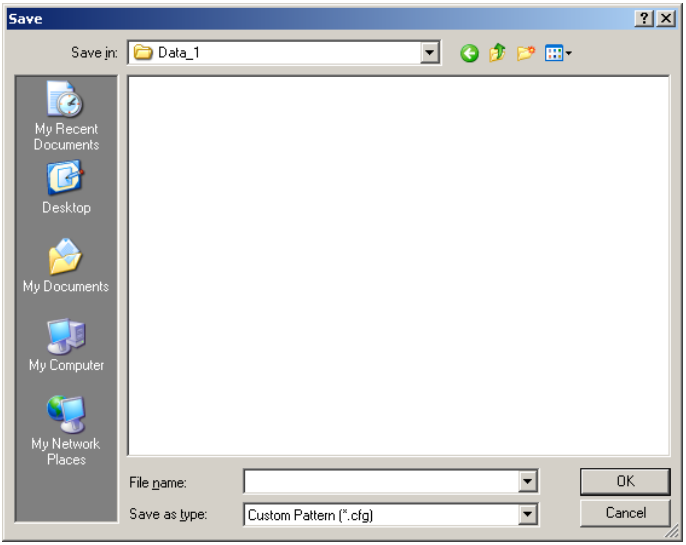
3 Create a new directory, or select an existing folder, and click the Select button.

7-2-8. Settings save and recall (Save/Recall Setting)

1 Use the ▲ and ▼ buttons to select Save/Recall Setting.

2 Press the ► button.
The screen to select Save or Recall is displayed.

3 Press the Save button or Recall button.
The file settings screen is displayed.

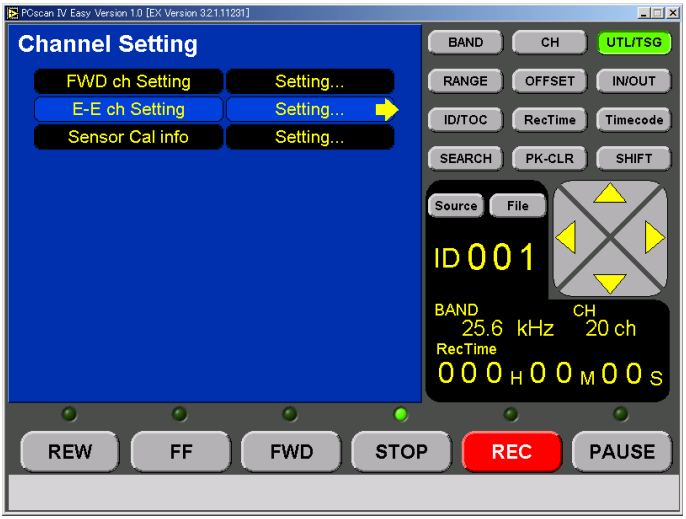


4 If saving settings, enter a file name and save.
If recalling settings, select a file.

7-2-9. Channel settings (Channel Setting)

1 Use the ▲ and ▼ buttons to select Channel Setting.

2 Press the ► button.
The Channel Setting screen is displayed.



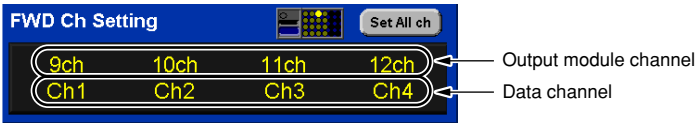
3 Use the ▲ and ▼ buttons to select the settings item.

Item	Setting content
FWD ch Setting	Setting replay data output channel
E-E ch Setting	Setting signal output module during recording
Sensor Cal info	Setting calibration information

4 Press the ► button.
The corresponding settings screen is displayed.

Setting replay data output channel (FWD ch Setting)

This sets the channel for the output of read data files during replay.
A bar meter display area and channel setting display area appear on this settings screen.



1 Use the ◀ and ▶ buttons to select the channel of the output module, then use the ▲ and ▼ buttons to select the channel number of the data to be output.
The channel value being set will be blinking.
When the setting is OFF, 0 V will be output.

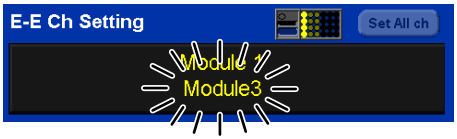
Setting values range: OFF, ch 1 to ch 24

To use the selected channel's settings for all channels, press the Set All ch button.

2 Press the STOP button or UTL/TSG button.
The command is transmitted to the EX side. When the change is finished, the system returns to the original screen.

Setting signal output module during recording (E-E ch Setting)

This sets the output module for the recording module signal as it is during recording.
A bar meter display area and module setting display area appear on this settings screen.



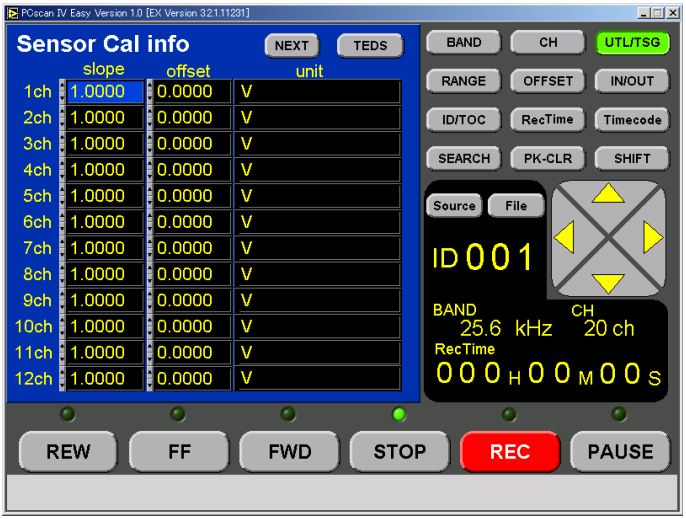
1 Use the ◄ and ► buttons to select the input module, then use the ▲ and ▼ buttons to select the number of the output module.
The output module number being set will be blinking.

Setting values range: OFF, Module 1 to Module 6

2 Press the STOP button or UTL/TSG button.
The command is transmitted to the EX side. When the change is finished, the system returns to the original screen.

Setting calibration information (Sensor Cal info)

Slope, offset and unit values are set for each channel as sensor calibration information saved in the Log file.
When Sensor Cal info is selected on this settings screen, a list of Sensor Cal info settings appears. Click the NEXT button to change the channel display.



1 Use the ▲ and ▼ buttons to select setting item, then use the ◄ and ► buttons to select the channel.
The item selected will be highlighted in blue.

2 Enter the setting value from the keyboard.

<When acquiring information from TEDS sensor>
Press the TEDS button. The value is automatically embedded.

3 Press the STOP button or UTL/TSG button.
The setting is executed. When the change is finished, the system returns to the original screen.

7-2-10. Calibration

These instructions are for the calibration of hardware with which the EX main unit is equipped.
The process takes up to about 10 minutes at most to finish.

1 Use the ▲ and ▼ buttons to select Calibration.

2 Press the ▶ button.
A dialogue box is displayed.

3 Press the Start button.
Calibration is performed.
A dialogue box saying “Execution” is displayed during calibration.

7-2-11. Restore to factory default settings (Factory Init)

These instructions are for returning the EX main unit to its factory default settings.

1 Use the ▲ and ▼ buttons to select Factory Init.

2 Press the ▶ button.
All factory default settings are restored.

8. Data Search

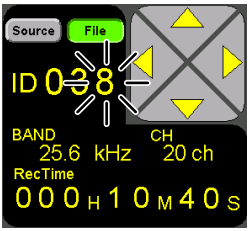
Data search is a function for finding the portion of a data file already recorded from which to begin replay.
There are three types of searches: ID search, RecTime search and Timecode search.

8-1. ID Search

These instructions are for performing a search based on IDs.

1 Press the SEARCH button.
The system changes to the search settings screen.

2 Press the ID/TOC button.



3 Use the ▲ and ▼ buttons (for numbers) and ◀ and ▶ buttons (for digits) to set the ID from which to start replay.

4 Press the ID/TOC button.
The search is performed and the original display returns.

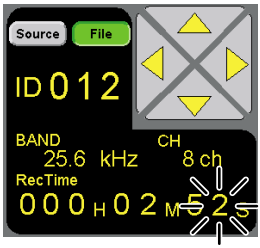
If the ID being looked for does not exist in the data folder, an error message will be displayed in the Help area.

8-2. RecTime Search

These instructions are for performing a search based on actual times from start of recording (defined as 0) for each ID.

1 Press the SEARCH button.
The system changes to the search settings screen.

2 Press the RecTime button.



3 Use the ▲ and ▼ buttons (for numbers) and ◄ and ► buttons (for digits) to set the recording time from which to start replay.

4 Press the RecTime button.
The search is performed and the original display returns.

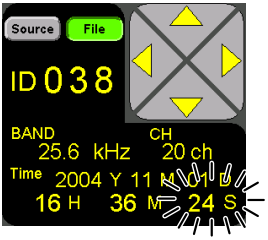
If the RecTime being looked for does not exist for the ID, an error message will be displayed in the Help area.

8-3. Timecode Search

These instructions are for performing a search based on replay starting time (year/month/day and hour/minute/second).
Doing Timecode searches of data affected by the switch to or from daylight savings time may yield search results that are off by one hour. If searching for data affected this way, it is recommended to use a RecTime search.

1 Press the SEARCH button.
The system changes to the search settings screen.

2 Press the Timecode button.



3 Use the ▲ and ▼ buttons (for numbers) and ◀ and ▶ buttons (for year/month/day/hour/minute/second) to set the time from which to start replay.

4 Press the Timecode button.
The search is performed and the original display returns.

Note

If there is more than one set of data with the same time stamp in one data folder (because of changes to the computer's internal clock, time zones, adjustments for daylight savings time, etc.), the data with the smallest ID number will be searched for.

If the Timecode being looked for does not exist in the data folder, an error message will be displayed in the Help area.

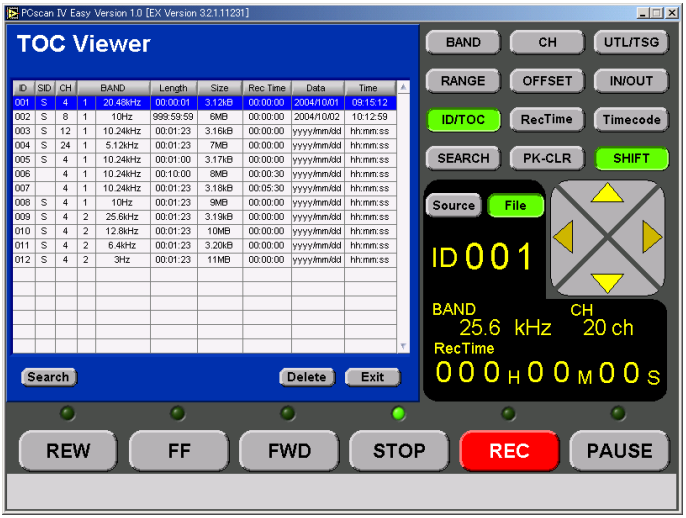
9. Checking Disk Content (TOC)

"TOC" means "table of contents." This function brings up a list of disk contents.

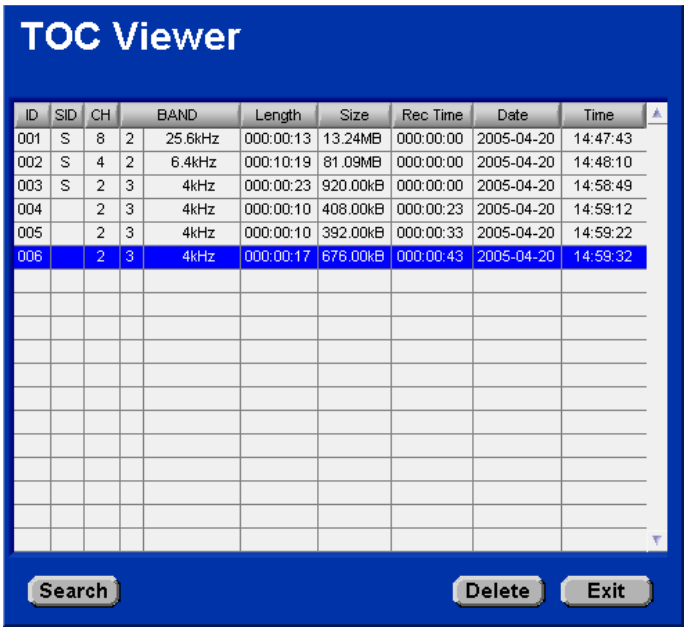
9-1. TOC Screen Display

1 Press the SHIFT button.

2 Press the ID/TOC button.
The bar meter display changes to the TOC screen.



9-2. List of TOC Screen Items



ID	Displays the data ID.
SID	Start ID (The system will display “S” at ordinary start of recording or recording from Pause, and will display nothing when using ID increments.)
CH	Channel mode during recording
BAND	Type information and bandwidth during recording
Length	Time of data acquisition
Size	Data file size
RecTime	Start RecTime (will always be 0 when SID is “S”)
Date	Recording start date (year-month-day)
Time	Recording start time (hour:minute:second)

9-3. Functions of Buttons on TOC Screen

When Search button pressed or operating by ID (double click)

A search is performed for the ID where the cursor is currently located, then the system returns to the main panel.

When Delete button pressed

The file for the ID where the cursor is currently located is deleted.
A dialogue box appears asking for confirmation of deletion.

Note

Be very careful about the delete function. Deleted data cannot be restored.

Exit button

Closes the TOC screen and returns the system to the main panel.

10.Files

There are two main types of files, as below.

10-1. Settings Files

These are data files, containing EX settings, data folder names, and so on.

(1) Settings files

Extension: cfg

Settings files are files where settings (EX settings items, data folder names, etc.) are saved; these files are saved and recalled by using Save/Rec all Setup.

10-2. Data Files

These are files associated with data, including TOC information.
There are four categories of data files, as below.
These files are saved in the folder that was set as indicated in section 7-2-7.

(1) Binary files

Extension : BIN
Units in which created : One for each ID

These are binary data files that have been A/D converted in keeping with recording conditions.
There is one binary file for each ID.
The format is the same as that of PCscan III.

(2) Log files

Extension : LOG
Units in which created : One for each ID

These are text files in which settings information at the time of recording is noted.
For every binary (BIN) file, there will always be one log (LOG) file with the same file name.

(3) Announcement data files

Extension : ANN
Units in which created : One for each ID (although this depends on the Voice Annotation settings)

When Voice Annotation is ON, a file is created together with a binary file. A file is not created when Voice Annotation is OFF.

(4) TOC files

File name : TocCont.txt
Units in which created : One for each data folder
These are text files that serve as a table of contents of data.
There will be one TOC file in each data folder; they are automatically updated when the application is started up or a file is added or deleted.
When the application is first started up or a data folder is changed, a new TOC file will be created in the folder if such a file does not already exist.

Sony Manufacturing Systems Corporation
1-10 Kiyoku-cho, Kuki-shi, Saitama 346-0035 Japan

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