Instruction Manual

Dosimeter Setting Device

For Electric Personal Dosimeter

Dose-i

(Unit:rem, Version:1.05 English)

Issued on March 2015

Fuji Electric Co., Ltd.

Foreword

Thank you for purchasing the Dosimeter Setting Device; a product by Fuji Electric Co., Ltd. This User's Manual is intended to provide the descriptions of name of parts, functions, and operational instructions for proper use of this product. Please read this manual carefully before operating.

Notes on Safety

	**Do not use the Setting Device if any smoke, odor, or noise is present.**
	**Do not insert not designated socket.**
	**Do not use cables other than provided.**
	**Do not disassemble, repair, or alter the Dosimeter Setting Device.**
 **CAUTION**	
	**Use the dosimeters with power ON.** **May lost data if power turned OFF.**

Table of Contents

1. Introduction

1.1 Overview

The Dosimeter Setting Device displays and updates the dosimeter information via infrared data communication interface with Electric Personal Dosimeter Dose-i.

The data trend read out from the dosimeter can be exported.

The Dosimeter Setting Device Program supplied with the Dosimeter Setting Device is based on the Microsoft® Windows® operating system.

1.2 Product Package

(1) Program for setting device and installation CD	1
(2) Infrared Data Communication Device	1
(3) Instruction manual (This document)	1

2. Mechanical characteristics

2.1 General

(1) Basic functions:

a. Reading out setting value and measurement data from dosimeters

b. Displaying data trend in table on screen or graph on EXCEL sheet.

c. Writing user-edited setting value to dosimeters

(2) Communicate with : Electric Personal Dosimeter Dose-i

(3) Temperatures : 0 to 40℃

(4) Humidity : 30 to 85%

(5) Power supply : DC4.5 to 6.0 V (supplied from connected computer)

2.2 Required Environment

The following hardware of (1) and software of (2) are required

(1) Hardware

Personal Computer (hereinafter, PC) that meet the following specifications

- CPU : Pentium 2GHz, or more
- Memory : 1GB, or more
- Hard Drive : Free disc space of 20 MB, or more
- Display : Resolutions 800 × 600, or more
- Communications Interface : USB × 1ch
- Others : Mouse and keyboard

(2) Software

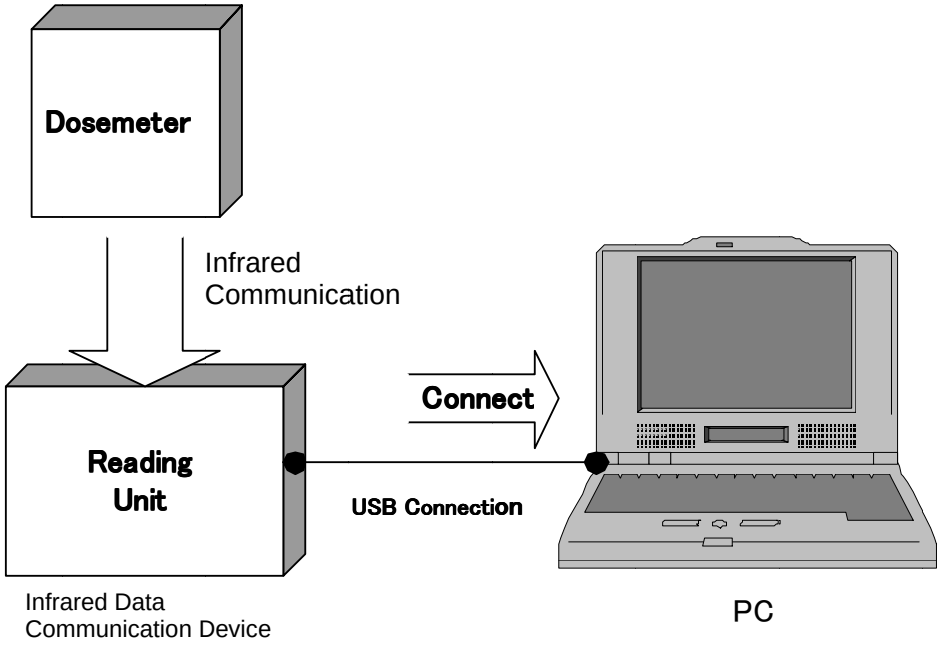
The PC mentioned in (1) should have the following software installed.

- Operating system : Windows® XP/7/8/8.1 operating system
- Others : Microsoft® Office (EXCEL)

3. Descriptions and setting-ups

3.1 System Configuration

Dosimeter Setting Device are consist of infrared communication device (hereinafter “IR communication device”) and PC which installed the Dosimeter Setting Device Program.



System Configuration

3.2 Product configuration

The configuration of the IR Communication Device

USB Connector
Insert to serial port on your computer.

Dosimeter reading IR HEAD
This IR HEAD only use power supply from your computer, and not external power required.

Configuration of the IR Communication Device

3.3 Setting up

IR communication driver and Dosimeter Setting Device Program are needed for using this software.

3.3.1 Installation procedure for IR communication driver

The installation procedure for IR communication driver is as follows.

(1) Insert the Program installation CD into the CD-ROM drive of PC.

(2) Click “**Drivers**” folder.

(3) Select following installer matching your computer and start it.

Windows XP/7 :“**Windows7**”

Windows 8/8.1 :“**Windows8**”

(4) Please install according to installation manual in each folder.

3.3.2 Installation procedure for Dosimeter Setting Device Program

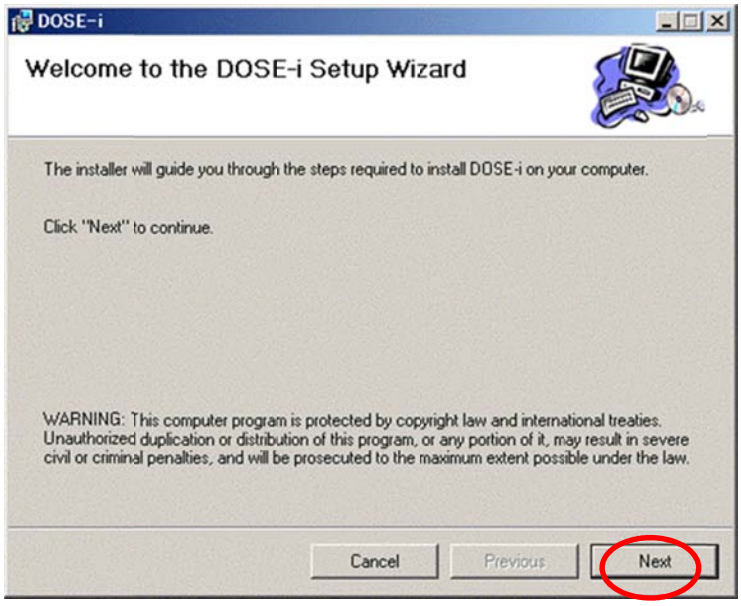
The installation procedure for Dosimeter Setting Device Program is as follows.

(1) Insert the Program installation CD into the CD-ROM drive of PC.

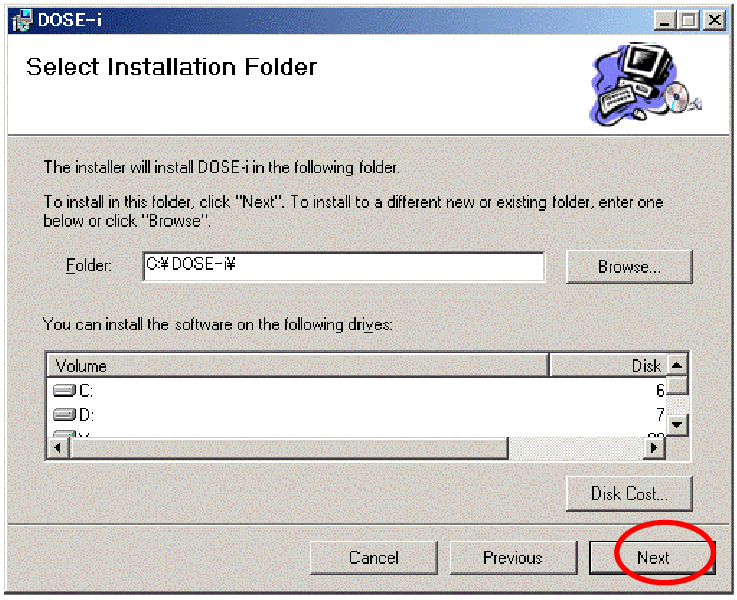
(2) Click “Dose-i_Tool” folder.

(3) Execute ”**Setup.exe**” file

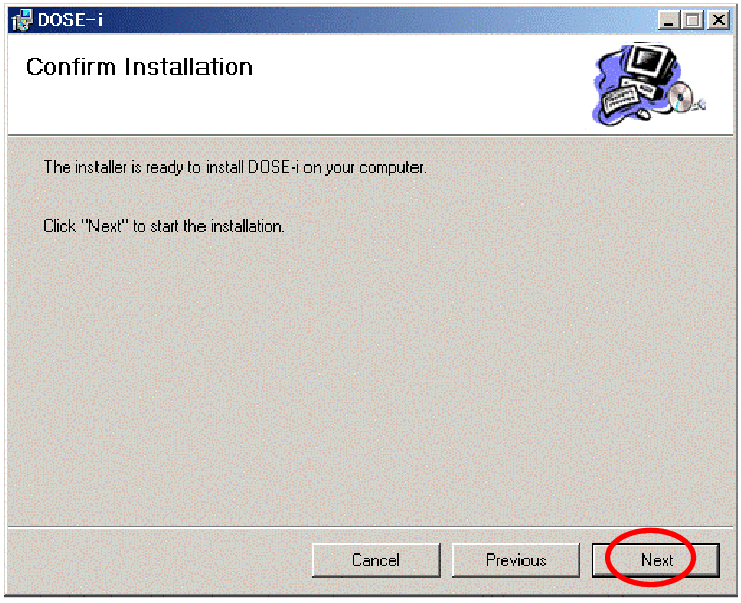
Click “Next”.



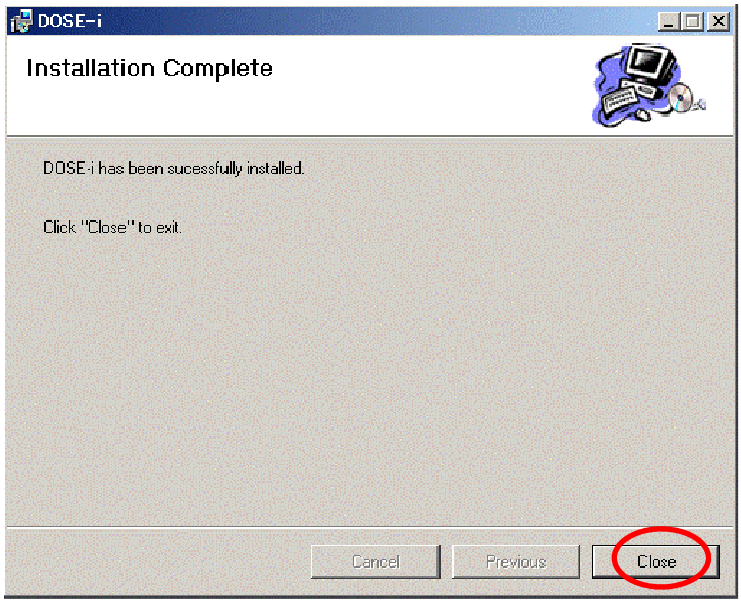
Choose an installation directory, and then click “**Next**”



Click “Next”.



Click “Close”.



3.3.3 Hardware setup procedure

The Hardware setup procedure is as follows.

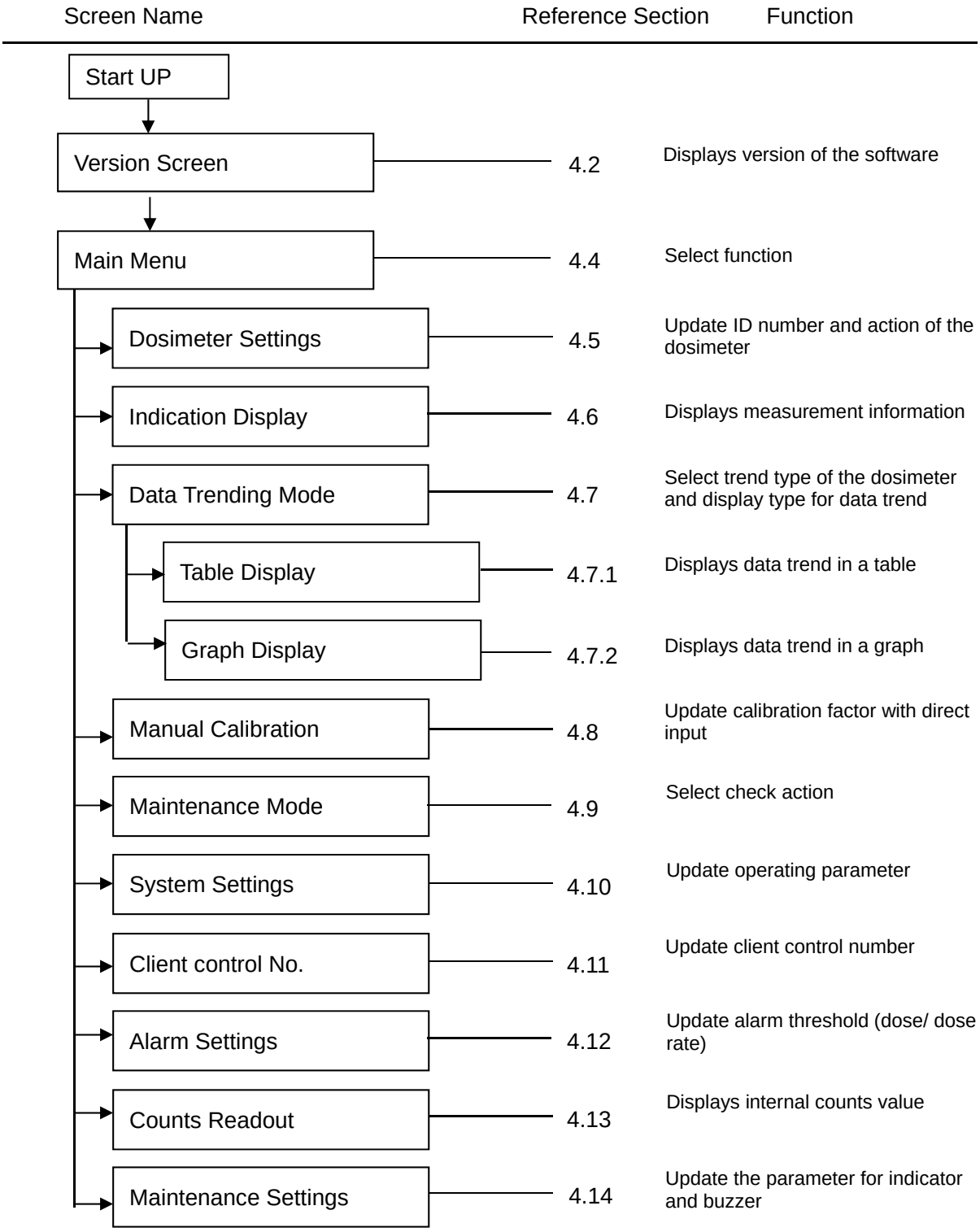
(1) Insert the USB connector of IR Communication Device into USB port of PC.

(2) Wait for a few second by recognition in PC.

4. Operational Instructions

4.1 Functional Outline of Program

Functional Outline of The Dosimeter Setting Device Program is shown below:



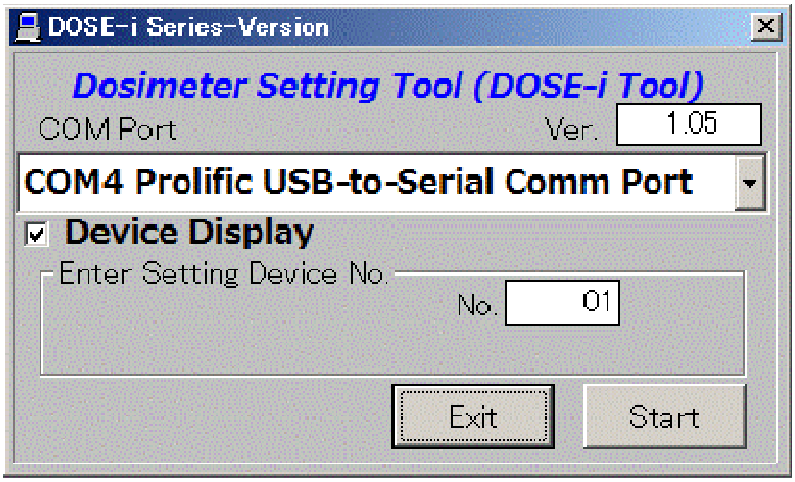
4.2 Starting the Program

(1) Select the icon [Dose-i]

Start icon of the Program

(2) The software, dosimeter setting device program, starts running, then the Version window will appear.

Check the COM port and click “Start”.

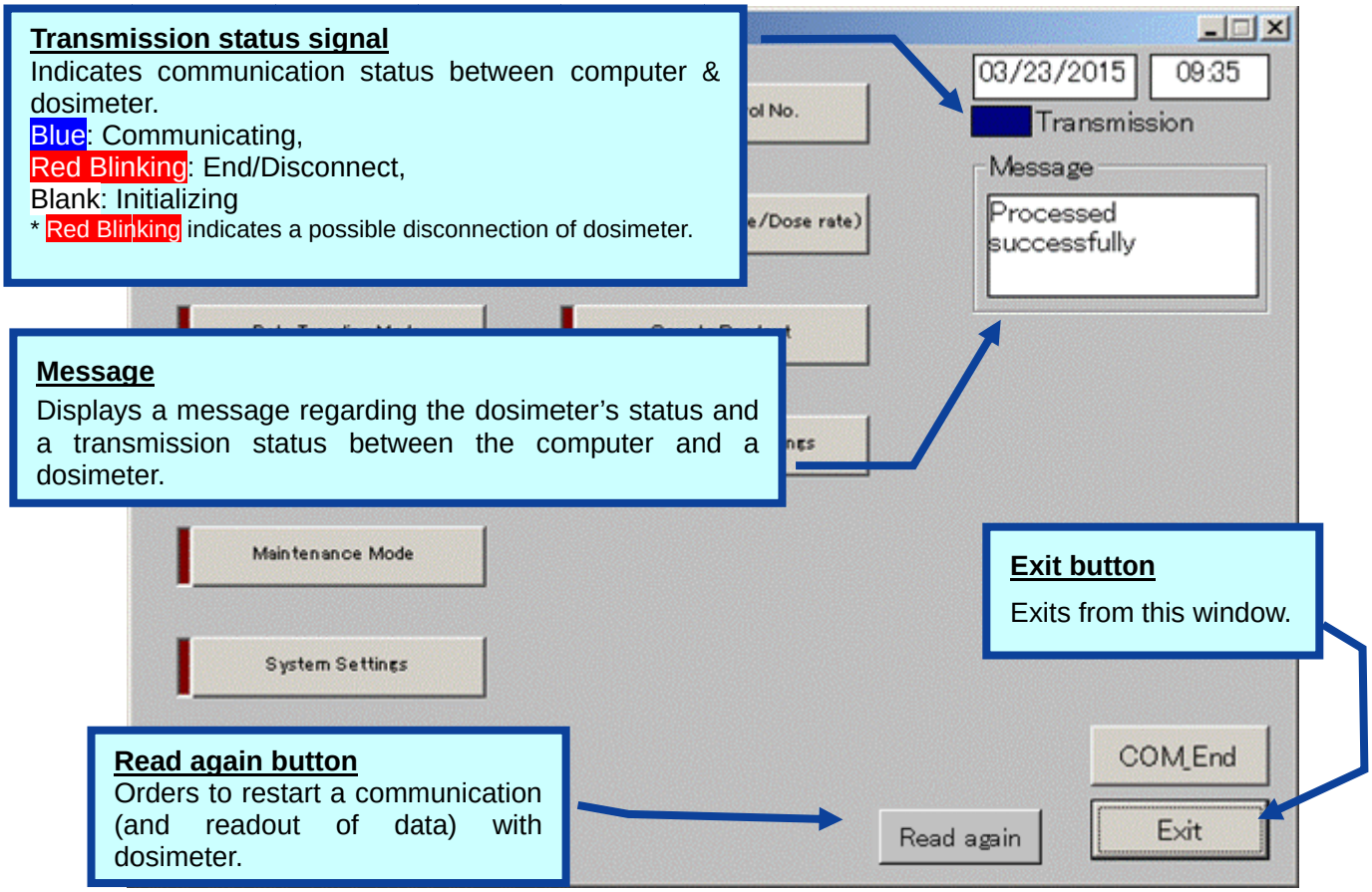


Version window

⚠ **Caution!**	For IrDA COM port number on USB-serial, serial port number following to serial port number on your computer (COM1, COM2) will be assigned. (e.g. from COM3)

4.3 Screen interface

The fields and buttons on the following screen are common to all Screens. See the following sections for details of each Screen.



Common features of the menu Screen (functions and layout)

These messages will be indicated in the Message box. The message severity is as follows;

Severity	Messages	Descriptions
1	LOW Battery	Dosimeter's battery power is critically low.
2	Please place Dosimeter into Reader	Communication with dosimeter has not been established yet.
3	Maintenance mode	Dosimeter is in Maintenance mode.
4	Processed Successfully	Communication between the setting device and dosimeter has been established.
5	Initializing...	In the process of establishing communication between the setting device and a dosimeter.

*** Note:** Features on the menu will function only when the dosimeter is in communication. If "Transmission" is Red blinking, place/replace the dosimeter, and then click "Read again" button. Data communication will be started/resumed, and "Transmission" will be Blue.

4.4 Main Menu

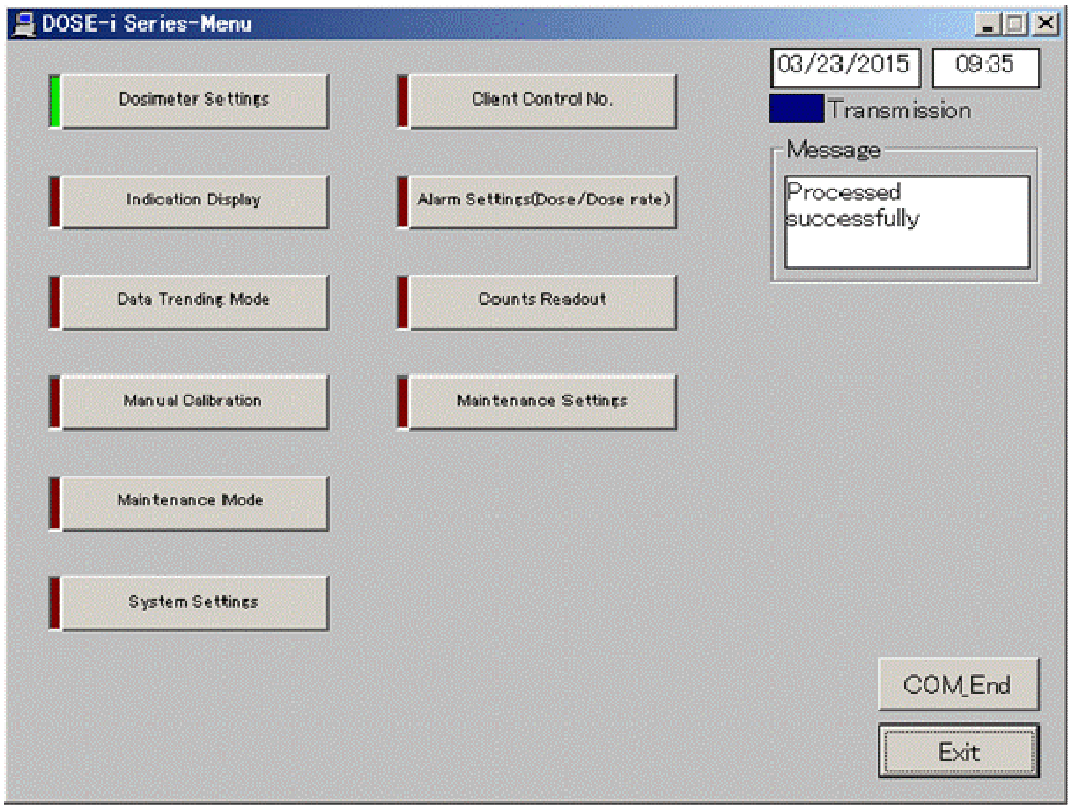


Fig. 4-1 Main Menu Screen

-- All functions that are performed via data communication with dosimeters are displayed.

-- Turned into green by first click and go to the screen of the selected function by second click.

<Menu Button>

Dosimeter Settings	Goes to the next Screen: Fig. 4-2
Indication Display	Goes to the next Screen: Fig. 4-3
Data Trending Mode	Goes to the next Screen: Fig. 4-4-1
Manual Calibration	Goes to the next Screen: Fig. 4-5
Maintenance Mode	Goes to the next Screen: Fig. 4-6
System Settings	Goes to the next Screen: Fig. 4-7
Client Control No.	Goes to the next Screen: Fig. 4-8
Alarm Settings	Goes to the next Screen: Fig. 4-9
Counts Readout	Goes to the next Screen: Fig. 4-10
Maintenance Settings	Goes to the next Screen: Fig. 4-11

<Command Button>

COM_End	Finishes the communication with a dosimeter.
Exit	Exit from Dosimeter Setting Device Program
Read again*	Re-starts communication with a dosimeter. If it starts communication by establishing transmission, it processes data read out automatically. *: This is indicated while communication is not established.

4.5 Dosimeter Settings

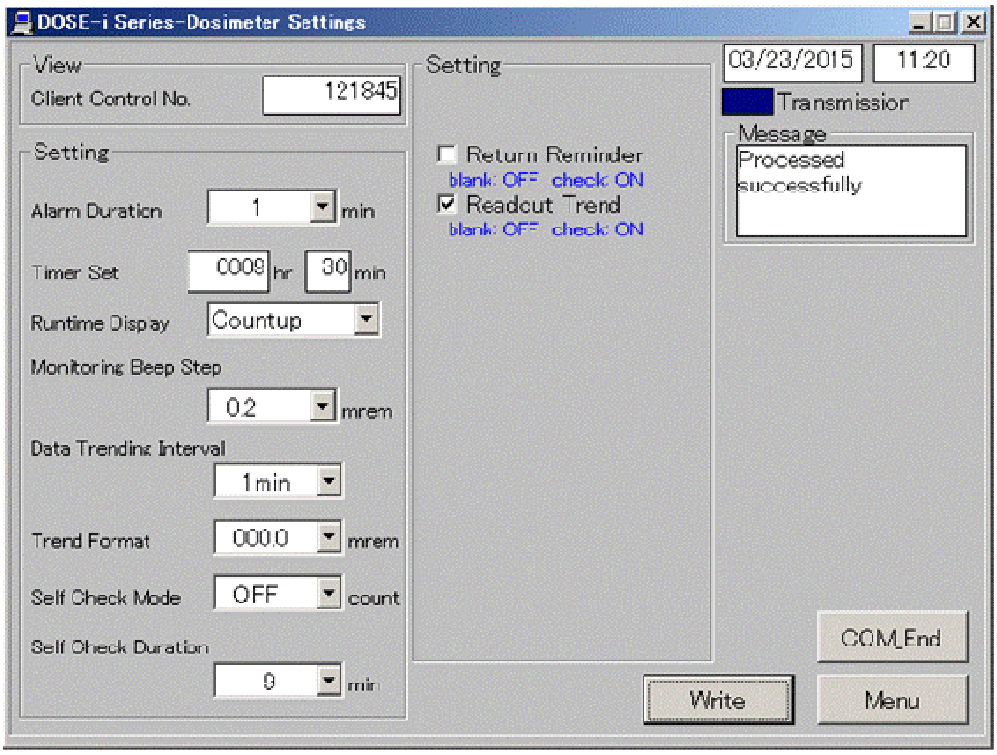


Fig. 4-2 Dosimeter Settings Screen

-- Display the Dosimeter Settings data read out from the dosimeter.

-- Write the edited settings data to the dosimeter by click “Write” button.

<View>

Name	Definition, range and unit of the functions	
Client Control No.	Dosimeter ID. number	000001 to 999999

<Setting>

Name	Definition, range and unit of the functions	
Alarm Duration	Alarm duration length	1 to 9 min
Timer Set	Alarm threshold for operation time	0000h:01min to 9999h:59min
Runtime Display	Mode selection for indicating operation time.	Count down Count up
Monitoring Beep Step	Beep activation intervals according to the dose increment.	OFF / 0.1 / 0.2 / 1 / 10 mrem
Data Trending Interval	Data Trending intervals	15 sec/ 30sec/ 1 min/ 5 min/ 10 min/ 30 min/ 60 min/ 90 min
Trend Format	Shifts the decimal point for data trending.	000.0 / 0000 mrem

Self Check Mode	Enables/ disables Self check, and sets the check count value.	OFF / 1/3/5/10/20/40/80/100 count
Self Check Duration	Decision time for Self check.	1 to 10 minutes (Note) The time is displayed except when the feature is disabled.
Return Reminder	Alarm not to forget to get a dosimeter back.	ON / OFF
Readout Trend	Enables/ disables data acquisition through a dedicated external device.	ON / OFF

<Command Button>

COM_End	Finishes the communication with a dosimeter.
Write	Write the data displayed on the screen to the dosimeter by USB communication.
Menu	Back to the Main Menu screen: Fig. 4-1
Read again*	Re-starts communication with a dosimeter. If it starts communication by establishing transmission, it processes data read out automatically. *: This is indicated while communication is not established.

4.6 Indication Display

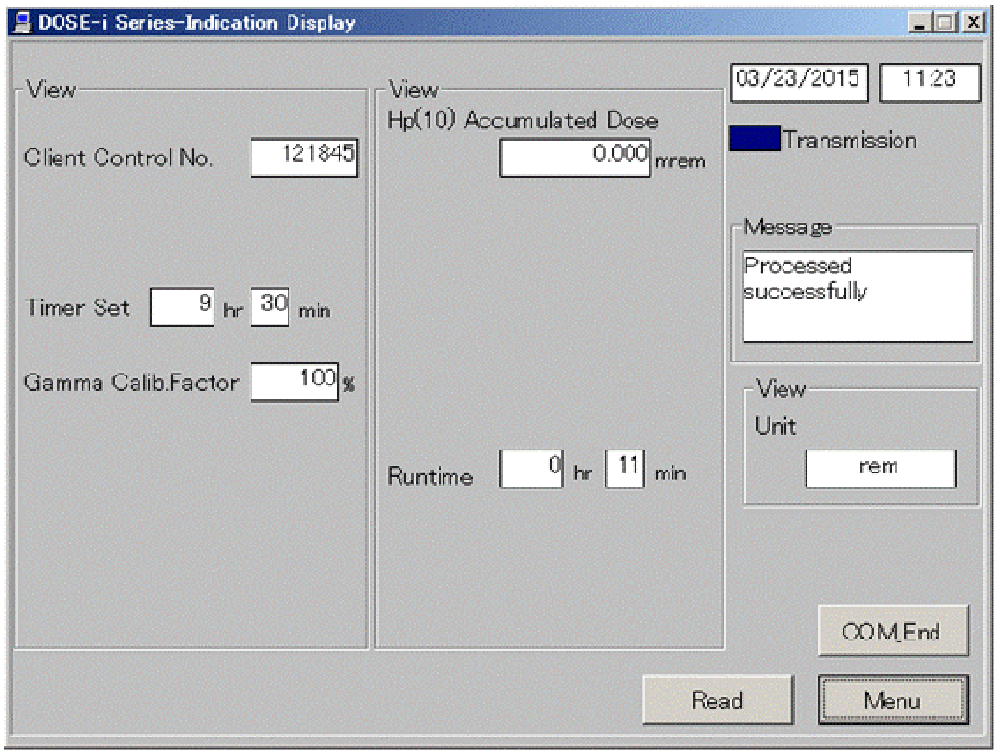


Fig. 4-3 Indication Display Screen

-- Display the measured values read out from the dosimeter.

<View>

Name	Definition, range and unit of the functions	
Client Control No.	Dosimeter ID. number	000001 to 999999
Timer Set	Alarm threshold for operation time	0000h:01min to 9999h:59min
Gamma Calib. Factor.	Calibration Factor for gamma-ray	Gamma: 60 to 160%
Hp(10) Accumulated Dose	Accumulated dose of gamma-ray.	0.0 to 999999.9 mrem
Runtime	Operation time length of the dosimeter.	0000 h 00 min to 99 h 59 min

<Command Button>

COM_End	Finishes the communication with a dosimeter.
Read	Starts reading out for data display. This will be executed from initializing the already established communication even during transmission.
Menu	Back to the Main Menu screen: Fig. 4-1
Read again*	Re-starts communication with a dosimeter. If it starts communication by establishing transmission, it processes data read out automatically. *: This is indicated while communication is not established.

4.7 Data Trending Mode

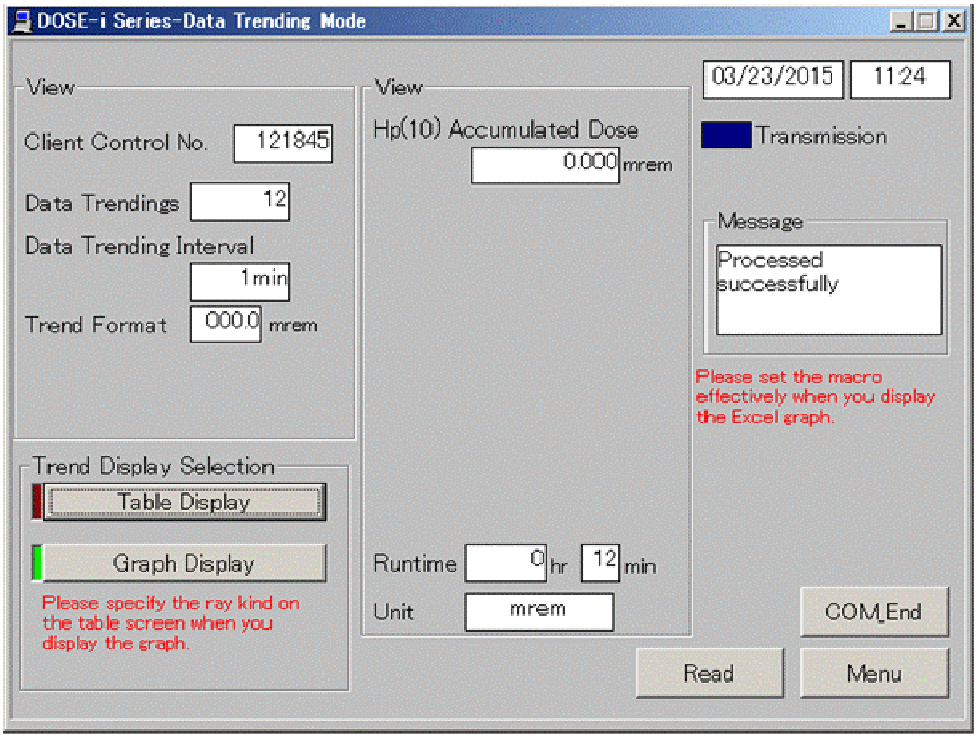


Fig. 4-4-1 Data Trending Mode Screen

-- Display the trend setting data read out from the dosimeter.

-- Select the display type of data trend.

<View>

Name	Definition, range and unit of the functions	
Client Control No.	Dosimeter ID. number	000001 to 999999
Data Trendings	Data trending counts.	1 to 600
Data Trending Interval	Data Trending intervals	15 sec/ 30sec/ 1 min/ 5 min/ 10 min/ 30 min/ 60 min/ 90 min
Trend Format	Shifts the position of decimal point for data trending.	000.0 / 0000 mrem
Hp(10) Accumulated Dose	Accumulated dose of gamma-ray	0.0 to 999999.9 mrem
Runtime	Operation time of the dosimeter	0000 h 00 min to 9999 h 59 min
Unit	Measurement unit	mSv, mrem

<Command Button>

Table Display	Reads out the Data Trend, and then goes to the next Screen: Fig. 4-4-2
Graph Display	Reads out the Data Trend, and then goes to the next Screen: Fig. 4-4-3
COM_End	Finishes the communication with a dosimeter.
Read	Starts reading out for data display. This will be executed from initializing the already established communication even during transmission.
Menu	Back to the Main Menu screen: Fig. 4-1
Read again*	Re-starts communication with a dosimeter. If it starts communication by establishing transmission, it processes data read out automatically. *: This is indicated while communication is not established.

Attention	The prompt window <Communication error> will appear during data readout if a new trend does not exist. You need to wait until a data trending step given in the Dosimeter Settings window has passed, and then start data readout.

4.7.1 Table Display

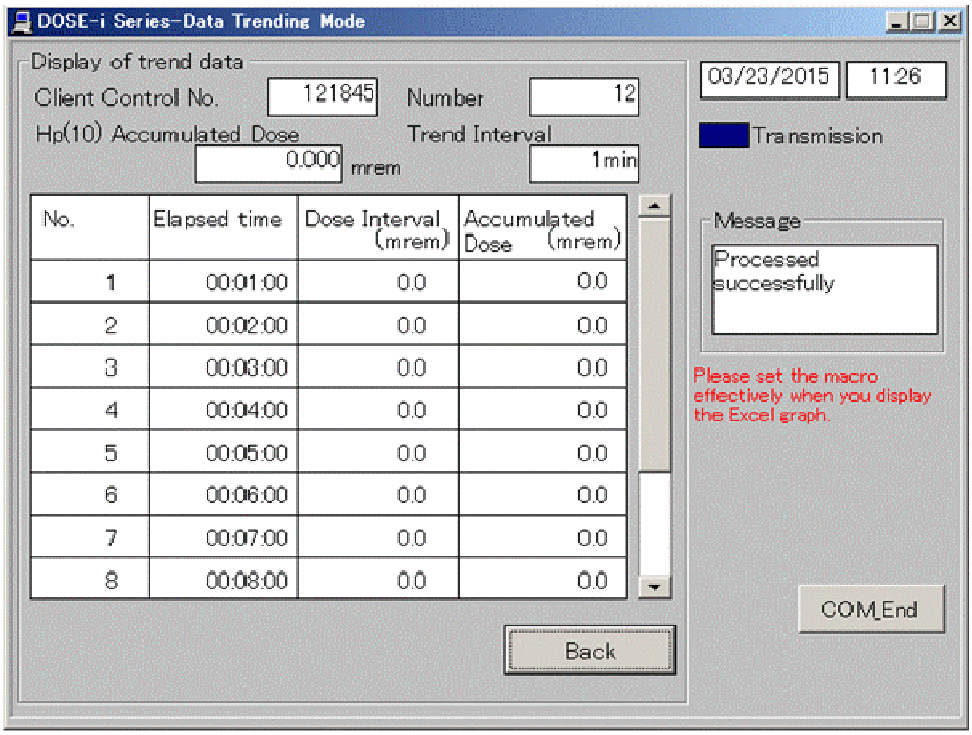


Fig. 4-4-2 Table Display Screen

-- Display the Trend data read out from a dosimeter in table.

<View>

Name	Definition, range and unit of the functions	
Client Control No.	Dosimeter ID. number	000001 to 999999
Hp(10) Accumulated Dose	Accumulated dose of gamma-ray.	0.0 to 999999.9 mrem
Number	Data trending counts.	1 to 600
Trending Interval	Data trending intervals	15 sec/ 30sec/ 1 min/ 5 min/ 10 min/ 30 min/ 60 min/ 90 min
Elapsed Time	Elapsed time	00:00:00 to 99:99:99
Dose Interval	Dose per trend interval duration	0 to 9999 mrem or 0.0 to 999.9 mrem
Accumulated Dose	Accumulated value of time dose	0.0 to 999999.9 mrem

<Command Button>

COM_End	Finishes the communication with a dosimeter.
Back	Back to the Starts reading out for data display. This will be executed from initializing the already established communication even during transmission.
Menu	Back to the Main Menu screen: Fig. 4-1
Read again*	Re-starts communication with a dosimeter. If it starts communication by establishing transmission, it processes data read out automatically. *: This is indicated while communication is not established.

4.7.2 Graph Display

Fig. 4-4-3 Graph Display Window

-- Display the trend data read out from a dosimeter in EXCEL window.

<Command Button>

End	Close this Graph Display window.

4.8 Manual Calibration

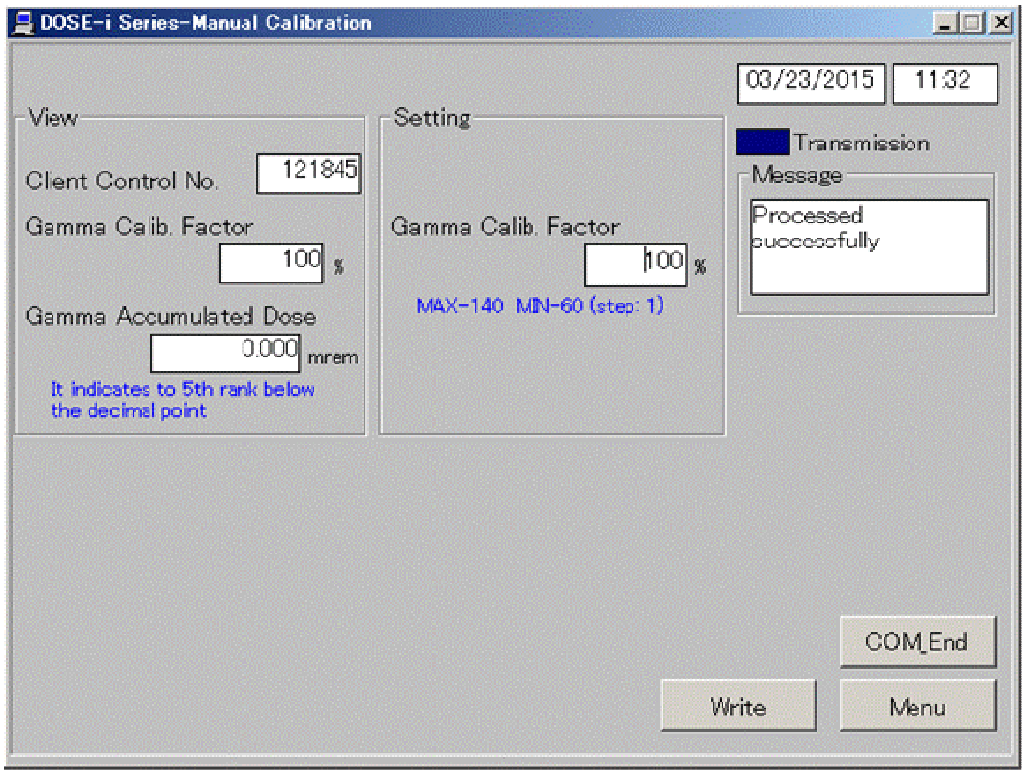


Fig. 4-5 Manual calibration Screen

-- Display accumulated dose and calibration factor read out from the dosimeter.

-- Write the edited calibration factor to the dosimeter by click “Write” button.

<View>

Name	Definition, range and unit of the functions	
Client Control No.	Dosimeter ID. number	000001 to 999999
Gamma Calib. Factor	Calibration Factor read out from a dosimeter.	60 to 140% (1 Pitch)
Gamma Accumulated Dose	Accumulated dose	0.0 to 999999.9mSv

<Setting>

Name	Definition, range and unit of the functions	
Gamma Calib. Factor	Calibration Factor for gamma-ray	60 to 140% (1 Pitch)

<Command Button>

COM_End	Finishes the communication with a dosimeter.
Write	Write the date displayed on the screen to the dosimeter by USB communication.
Menu	Back to the Main Menu screen: Fig. 4-1
Read again*	Re-starts communication with a dosimeter. If it starts communication by establishing transmission, it processes data read out automatically. *: This is indicated while communication is not established.

4.9 Maintenance Mode

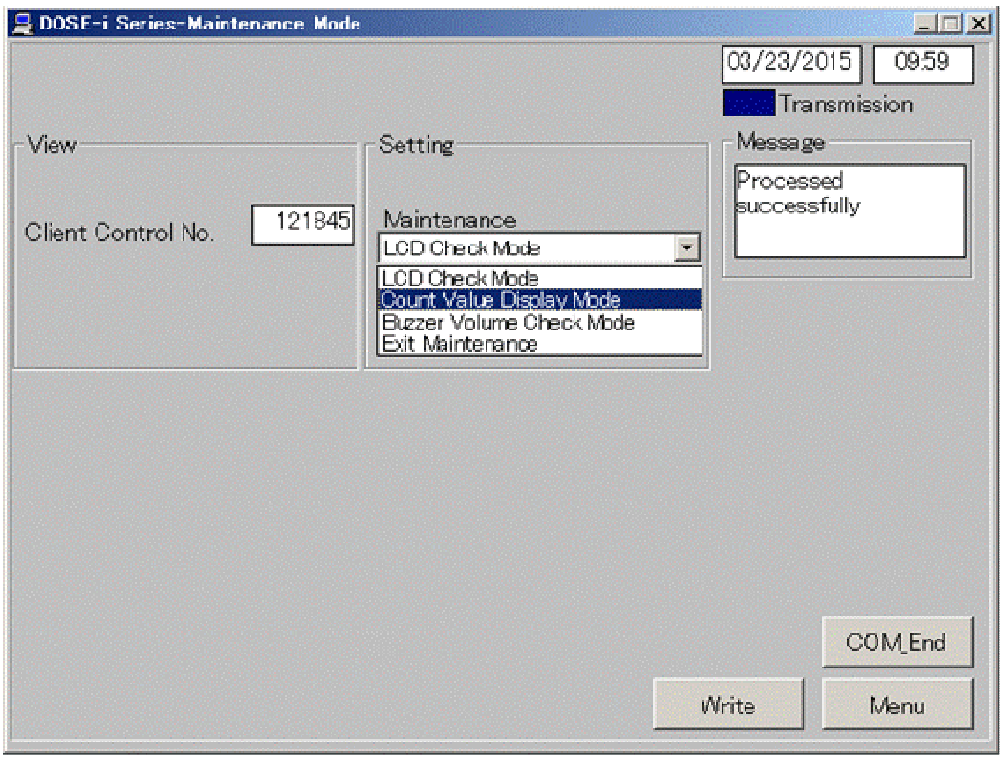


Fig. 4-6 Maintenance Mode Screen

-- For dosimeter maintenance and checking work, you can write (switched mode of Maintenance mode and selected mode) to a dosimeter.

<View>

Name	Definition, range and unit of the functions	
Client Control No.	Dosimeter ID. number	000001 to 999999

<Setting>

Name	Definition, range and unit of the functions
Maintenance	LCD Check Mode : Turn on all of LCDs. Count Value Display Mode: : Indication of internal counter Buzzer Volume Check Mode:: Activation of continuous buzzer. Exit Maintenance : Exit from Maintenance mode.

<Command Button>

COM_End	Finishes the communication with a dosimeter.
Write	Write the data displayed on the screen to the dosimeter by USB communication.
Menu	Back to the Main Menu screen: Fig. 4-1
Read again*	Re-starts communication with a dosimeter. If it starts communication by establishing transmission, it processes data read out automatically. *: This is indicated while communication is not established.

4.10 System Setting

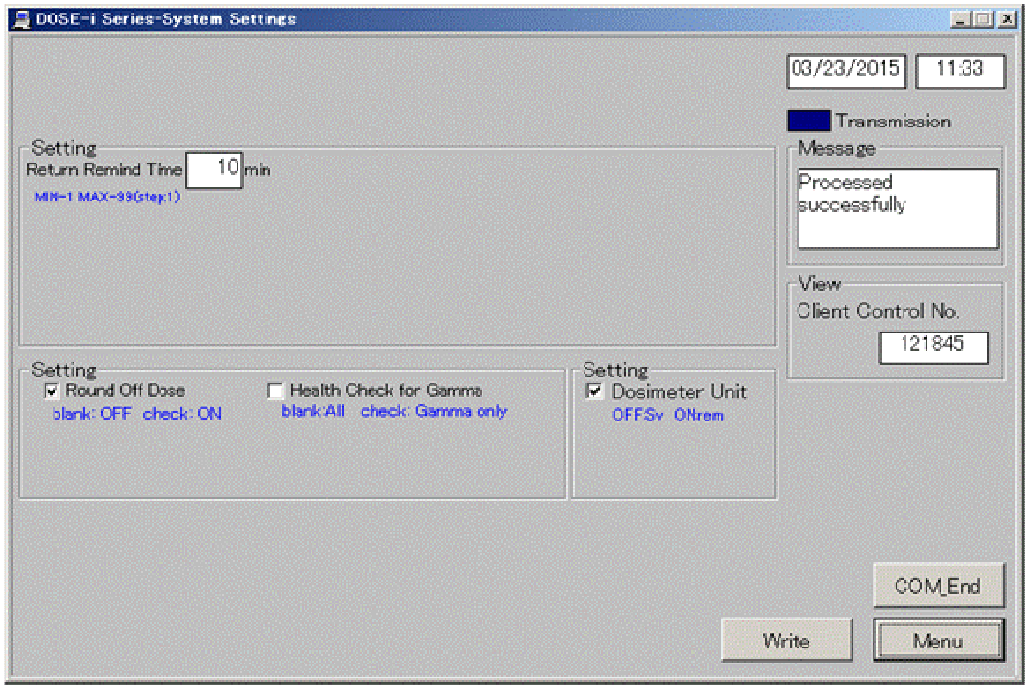


Fig. 4-7 System Setting Screen

-- Display the operating parameter read out from the dosimeter.

-- Write the edited operating parameter to the dosimeter by click “Write” button.

<View>

Name	Definition, range and unit of the functions	
Client Control No.	Dosimeter ID. number	000001 to 999999

<Setting>

Name	Definition, range and unit of the functions	
Return Remind Time	Reminder time not to forget to get the dosimeter back	1 to 99 (1 Pitch)
Round Off Dose	ON/OFF of rounding off for integrated dose.	OFF / ON
Health Check for Gamma	Enable/disable soundness check for gamma detector	OFF / ON
Dosimeter Unit	Switches display unit of the display between Sv and rem.	OFF / ON (Sv) (rem)

<Command Button>

COM_End	Finishes the communication with a dosimeter.
Write	Write the data displayed on the screen to the dosimeter by USB communication.
Menu	Back to the Main Menu screen: Fig. 4-1
Read again*	Re-starts communication with a dosimeter. If it starts communication by establishing transmission, it processes data read out automatically. *: This is indicated while communication is not established.

4.11 Client Control Number

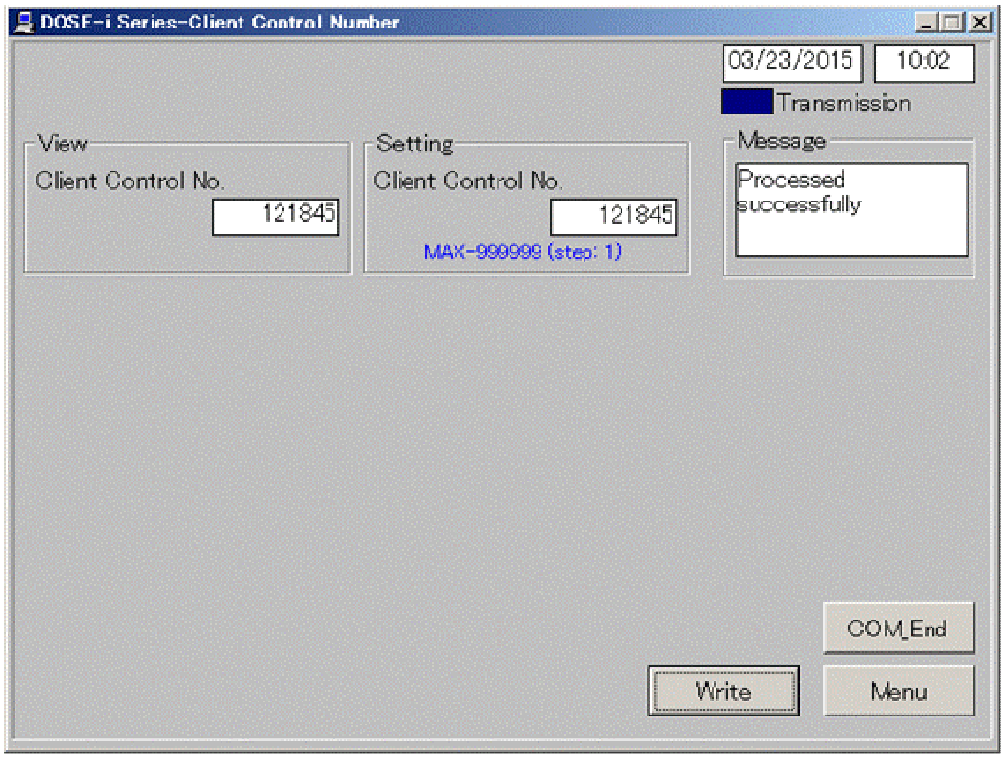


Fig. 4-8 Client Control Number Screen

-- Display the Client Control Number read out from the dosimeter.

-- Write the edited Client Control Number to the dosimeter by click “Write” button.

<View>

Name	Definition, range and unit of the functions	
Client Control No.	Dosimeter ID. number	000001 to 999999

<Setting>

Name	Definition, range and unit of the functions	
Client Control No.	Dosimeter ID. number	000001 to 999999

<Command Button>

COM_End	Finishes the communication with a dosimeter.
Write	Write the data displayed on the screen to the dosimeter by USB communication.
Menu	Back to the Main Menu screen: Fig. 4-1
Read again*	Re-starts communication with a dosimeter. If it starts communication by establishing transmission, it processes data read out automatically. *: This is indicated while communication is not established.

4.12 Alarm Settings (Dose/Dose rate)

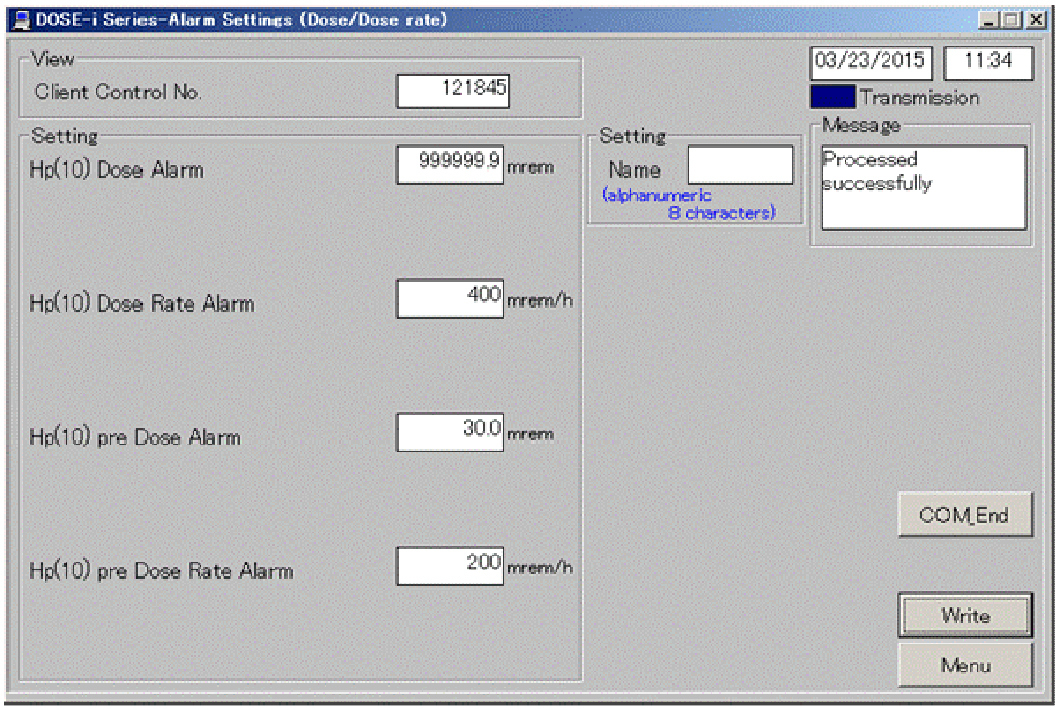


Fig. 4-9 Alarm settings (Dose/Dose rate) Screen

-- Display the alarm threshold read out from the dosimeter.

-- Write the edited alarm threshold to the dosimeter by click “Write” button.

<View>

Name	Definition, range and unit of the functions	
Client Control No.	Dosimeter ID. number	000001 to 999999

<Setting>

Name	Definition, range and unit of the functions	
Hp(10) Dose Alarm	Hp(10) integrated dose alarm threshold	0.1 to 999999.9 mSv
Hp(10) Dose Rate Alarm	Hp(10) dose rate alarm threshold	1 to 999999 mSv/ h
Hp(10) Pre Dose Alarm	Hp(10) integrated dose pre alarm threshold	0.1 to 999999.9 mSv
Hp(10) Pre Dose Rate Alarm	Hp(10) dose rate pre alarm threshold	1 to 999999 mSv/ h
Name	User name	8 alphanumeric characters (capital) Note) Indicates up to 8 characters on dosimeter’s display.

<Command Button>

COM_End	Finishes the communication with a dosimeter.
Write	Write the data displayed on the screen to the dosimeter by USB communication.
Menu	Back to the Main Menu screen: Fig. 4-1
Read again*	Re-starts communication with a dosimeter. If it starts communication by establishing transmission, it processes data read out automatically. *: This is indicated while communication is not established.

4.13 Counts Readout

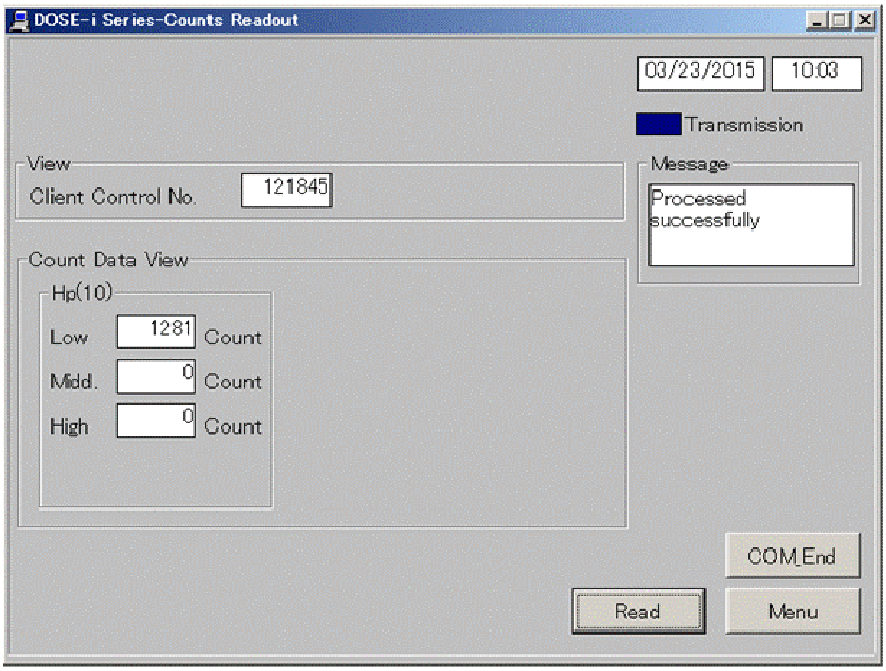


Fig. 4-10 Counts Readout Screen

-- Display the count values read out from the dosimeter.

<View>

Name	Definition, range and unit of the functions	
Client Control No.	Dosimeter ID. number	000001 to 999999
Hp(10)Low	Count of Hp(10)Low	000000 to 999999 count
Hp(10)Mid	Count of Hp(10)Mid	000000 to 999999 count
Hp(10)High	Count of Hp(10)High	000000 to 999999 count

<Command Button>

COM_End	Finishes the communication with a dosimeter.
Read	Starts reading out for data display. This will be executed from initializing the already established communication even during transmission.
Menu	Back to the Main Menu screen: Fig. 4-1
Read again*	Re-starts communication with a dosimeter. If it starts communication by establishing transmission, it processes data read out automatically. *: This is indicated while communication is not established.

4.14 Maintenance Settings

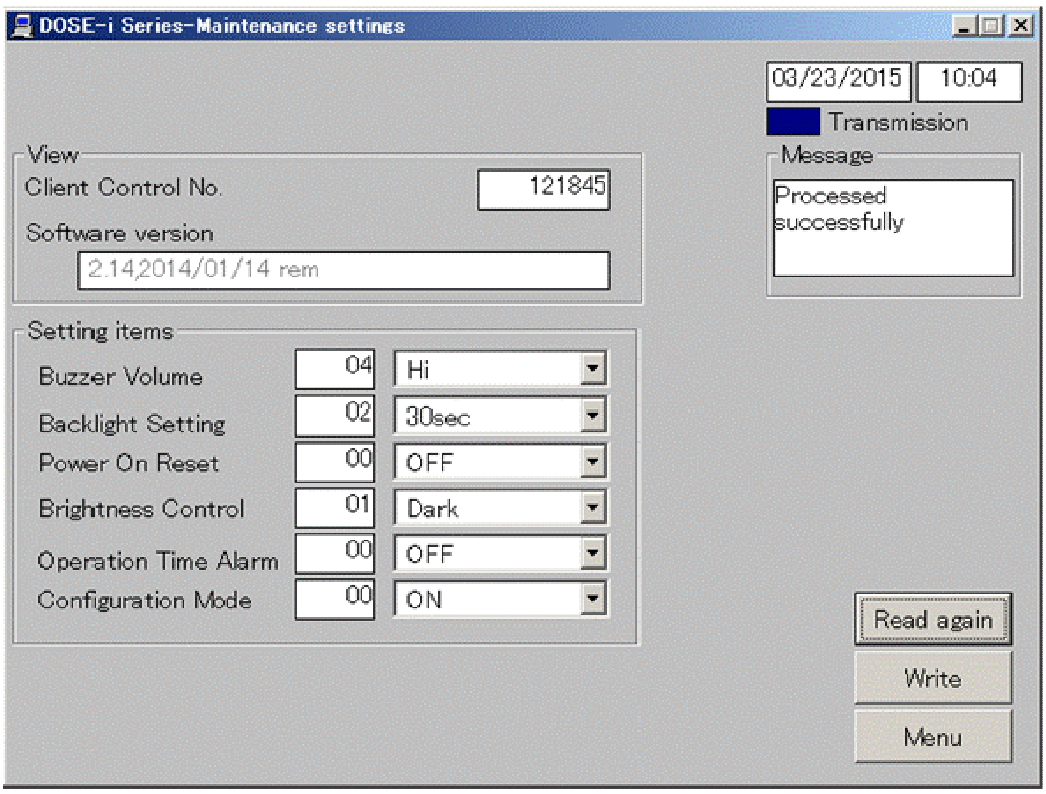


Fig. 4-11 Maintenance Settings Screen

-- Display the maintenance settings data read out from the dosimeter.

-- Write the edited setting data to the dosimeter by click “Write” button.

<View>

Name	Definition, range and unit of the functions	
Client Control No.	Dosimeter ID. number	000001 to 999999
Software version	Software version of dosimeter	N/A

<Setting>

Name	Definition, range and unit of the functions	
Buzzer Volume	Volume of dosimeter buzzer	Hi/Mid/Low/OFF
Backlight Setting	Backlight duration	Continuity/10sec/30sec/60sec
Power On Reset	Dosimeter action at powered on	ON/OFF Reset/Not reset
Brightness Control	Brightness of display	Bark/Middle/Bright
Operation Time Alarm	ON/OFF of alarm mode by operation time	ON/OFF
Configuration Mode	ON/OFF of setting on dosimeter display	ON/OFF

<Command Button>

Read again	Orders to restart a communication (and readout of data) with dosimeter.
Write	Write the data displayed on the screen to the dosimeter by USB communication.
Menu	Back to the Main Menu screen: Fig. 4-1
Read again*	Re-starts communication with a dosimeter. If it starts communication by establishing transmission, it processes data read out automatically. *: This is indicated while communication is not established.

5. Troubleshooting

5.1 Errors and Solutions

(1) Communication Error

Communication error between a computer and a Dosimeter Setting Device.

- During computer start up, processing, or data communication:

Error	Suggested Solution
<Establishing communication> Reading unit, or cable abnormal	Check the cable connection.
<Status process> No response	Check the cable connection.

- During data readout from a dosimeter:

Error	Suggested Solution
<Reading Process (Trend data acquisition)> Dosimeter Not Communicating	Retry reading out.
<Reading Process (Trend data acquisition)> Dosimeter communication error	Retry reading out.
<Reading Process (Trend data acquisition)> No response	Check the IR Communication Device. Check the connection with USB cable.
<Trend data reading process> Trend data does not exist	No Trend data. Create Trend data first, and then read out.

-During writing configurations to the dosimeter.

Error	Suggested Solution
<Writing Process> Dosimeter Not Communicating	Process reading out, first
<Writing Process> Dosimeter communication error	Process reading out, first
<Writing Process> No response	Process reading out, first. Check the cable connection.

★ Please restart PC if the errors not listed in this section occurred.

(2) Internal Error:

-Errors detected by an internal check.

- At starting of writing / Occurrence of abnormality on configuration range:

Error	Suggested Solution
Input Error of xxxx	Re-enter the value within the valid range.

(3) Error during at communication start:

-Errors detected by a computer internal check when attempted to write, or to readout trend data.

-When attempting writing process.

Error	Suggested Solution
Dosemieter Not Communicating Cannot write.	Start reading process, first.

- Error when attempted to reading out trend data:

Error	Suggested Solution
Dosemieter Not Communicating	Cancel the trend data readout, and then start regular reading process.

★ Please restart PC if the errors not listed in this Instruction Manual occurred.

6. Abnormalities

Problem	Solution
Cannot establish communication.	May not connected properly. Check the cable connection. Please contact Fuji Electric if experiencing frequent transmission errors.

7. Maintenance

Check the Dosimeter Setting Device as specified below to ensure its performance.

To be checked:	Procedure
External Appearance	Visual check for any foreign objects such as dirt or dust balls. Check every six months, or every time a transmission error occurs. Check point; Inside of USB port.
Cable connection	Check any looseness on connection of cables. Check every six months, or every time a transmission error occurs. Check point; Cables
Infrared communication	Put close dosimeter to the IR Head and check the transmission. Check every six months, or every time a transmission error occurs.