BT-W Series Technical Document
BT Series Edition Data Transfer Software
Connection Manual (Version 4.11)

Preface

This manual is an explanatory document for performing communication with the BTW Series unit (hereinafter referred to as the terminal) by using the BT Series edition data transfer software (BTNaviDTS.exe), not by using the BTW Series edition data transfer software (BTWDTS.exe).
Using the BT Series edition data transfer software enables communication with the terminal through a LAN communication unit or over a wireless LAN.
In detail, this document contains the following information.

1. Summary
2. Setup Preparation
3. Function Explanation
4. Setup Procedure

Supported versions

The BT Series edition data transfer software is supported by the following versions.

• BTW Series unit firmware Version 4.110 or later (version 4.210 or later for the BT-W85T)

Usable functions

The BT Series edition data transfer software has been created for the KEYENCE BT-1000 Series and similar units, so this software has functions that cannot be used in connecting to a BTW Series unit. Use this software according to the information written in this manual.

Implementation in programs

Applications on terminals must be programmed to use the terminal library to transmit and receive files.
For details on this implementation, see the "Terminal Library References (Communication Control)."

If you want to connect directly to the terminal from an application on the PC and transmit and receive files without using the data transfer software, you will have to use a specialized communication library that KEYENCE makes available separately.
For details on this implementation, see the "Communication Library Reference."

Contents

1. Summary

Main Functional Differences Compared to the BT-W Series Edition Data Transfer Software

Summary	BT-W Series edition data transfer software (BTWDTS.exe)	BT Series edition data transfer software (BTNaviDTS.exe)
Supported communication methods	Wait for communication from terminal (terminal → PC) Manual communication (PC → terminal)	Wait for communication from terminal (terminal → PC) Manual communication Automatically start communication (PC → terminal)
Supported communication paths	Through USB communication unit	Through USB communication unit Through LAN communication unit Over wireless LAN
Transmission destination folder during manual communication	Folder selected on the terminal	Selected from drive 1, drive 2, and the SD card When drive 1 is selected: \FlashDisk\BT_Files\drv1 When drive 2 is selected: \RamDisk\BT_Files\drv2 When the SD card is selected: \SDCard\BT_Files\drv5(*1)

*1 You have to create the folder "BT_Files\drv5" on the SD card in advance.

Limitations

- The BT Series edition data transfer software has been created for the KEYENCE BT-1000 Series and similar units, so this software has functions that cannot be used in connecting to a BTW Series unit. Use this software according to the information written in this manual.
- Three types of communication paths are supported: through a USB communication unit, through a LAN communication unit, and over a wireless LAN.
- Connections by way of a host name (functions using NIResolver) are not supported.
- When waiting for communication using the data transfer software, use the PASV mode setting to connect from the terminal through a LAN communication unit or over a wireless LAN. In this situation, you have to enable the "Listening in PASV mode" setting in the data transmission software.
- To perform manual communication with an SD card, you have to create the folder "BT_Files\drv5" on the SD card in advance.
- One USB (COM) driver must be installed for each USB communication unit.

2. Setup Preparation

Advance Preparation

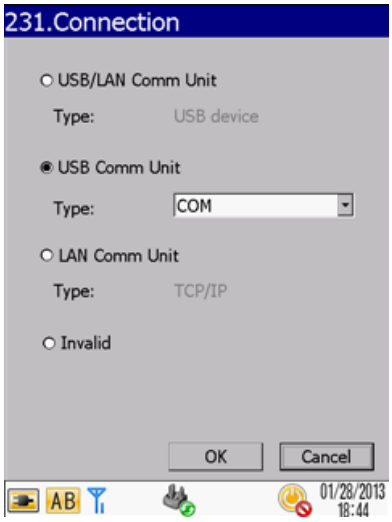
1. Copy the downloaded "DataTransferSoftware" folder to your desktop or another local location.
2. Install the redistributable package of Visual C++ 2005 SP1 from "VC++2005SP1 Redistributable Package\vcredist_x86.exe" in the folder.

Installing the USB (COM) Driver

A USB (COM) driver must be installed to enable the data transfer software to connect to the terminal.

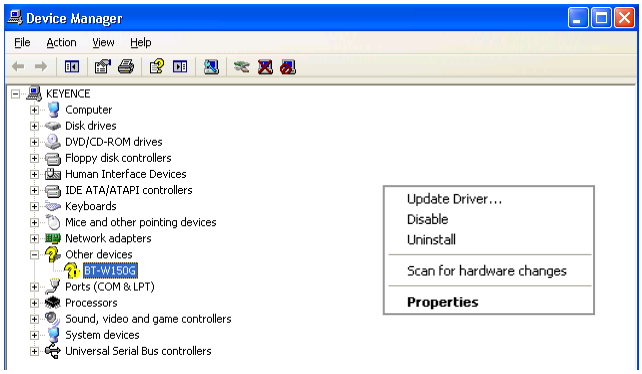
1. Change the terminal's "USB Comm Unit" setting to "COM."

   On the terminal's desktop screen, on the Start menu, click "All Programs," and then click "BT System Menu" to start the system menu.
   On the system menu, click "2.Network Setting," "3.Comm Unit," and then click "1.Connection" to display the "231.Connection" screen. Select "USB Comm Unit," set "Type:" to "COM," and then click "OK."



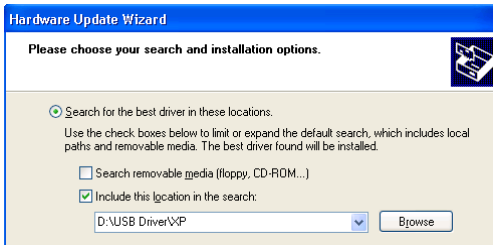
2. Place the terminal in the USB communication unit, and then use a USB cable to connect the USB communication unit and the PC.

3. In Device Manager, "BT-Wxxx" (xxx: model name) is displayed under "Other devices." Right-click "BT-Wxxx" and then click "Update Driver…" on the menu that appears.

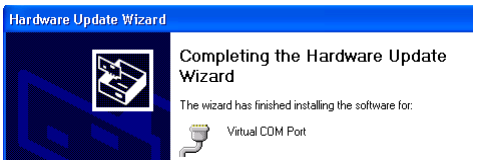


4. Select "Browse my computer for driver software."

5. Press the "Browse" button and select the "USB Driver" folder in the BT-WHD1 CD. Then press "Next >".

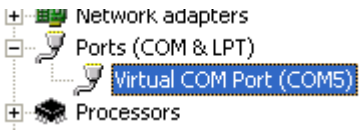


6. When the installation is complete, the following screen is displayed. Click "Close."



Uninstalling the USB driver

1. Place the terminal in the USB communication unit, and then connect the USB communication unit and the PC.
2. Start Device Manager.
3. In Device Manager, "Ports (COM & LPT)\Virtual COM Port (COMx)" is displayed. Right-click this, and then click "Uninstall" on the menu that appears.

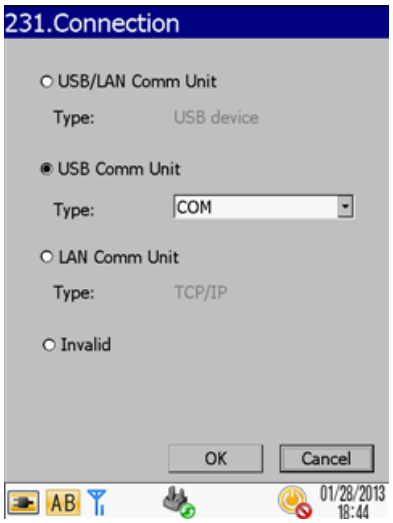


4. If a message is displayed prompting you to restart the PC, do so.

Terminal-Side Operations

1. Before the data transfer software can be used to perform communication, the terminal's "USB Comm Unit" setting must be changed to "COM."

   On the terminal's desktop screen, on the Start menu, click "All Programs," and then click "BT System Menu" to start the system menu.
   On the system menu, click "2.Network Setting," "3.Comm Unit," and then click "1.Connection" to display the "231.Connection" screen. Select "USB Comm Unit," set "Type:" to "COM," and then click "OK."



PC-Side Operations

1. Follow the procedure below to start the data transfer software.

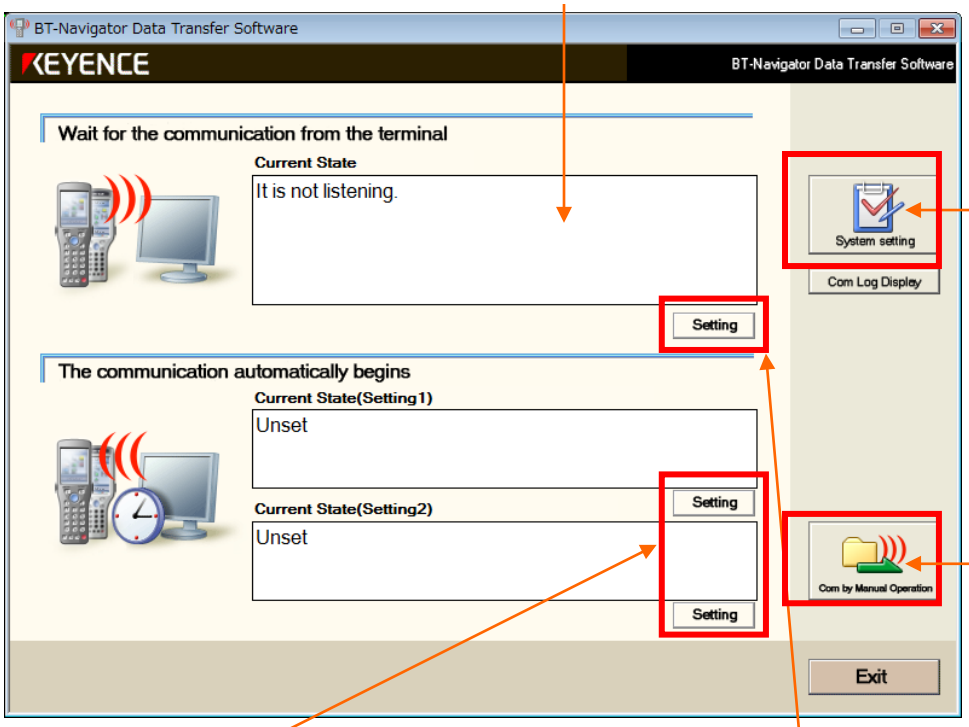
   Start BTNaviDTS.exe in the "DataTransferSoftware" folder that you have saved to a location such as the desktop.

3. Function Explanation

Screen Displayed When the Software Starts

When the data transfer software starts, the following screen is displayed.

Displays whether the software is currently listening for communication



Configure various system settings. (See the system setting screen.)

Connect to the terminal manually. (See "Manual CommuScreen")

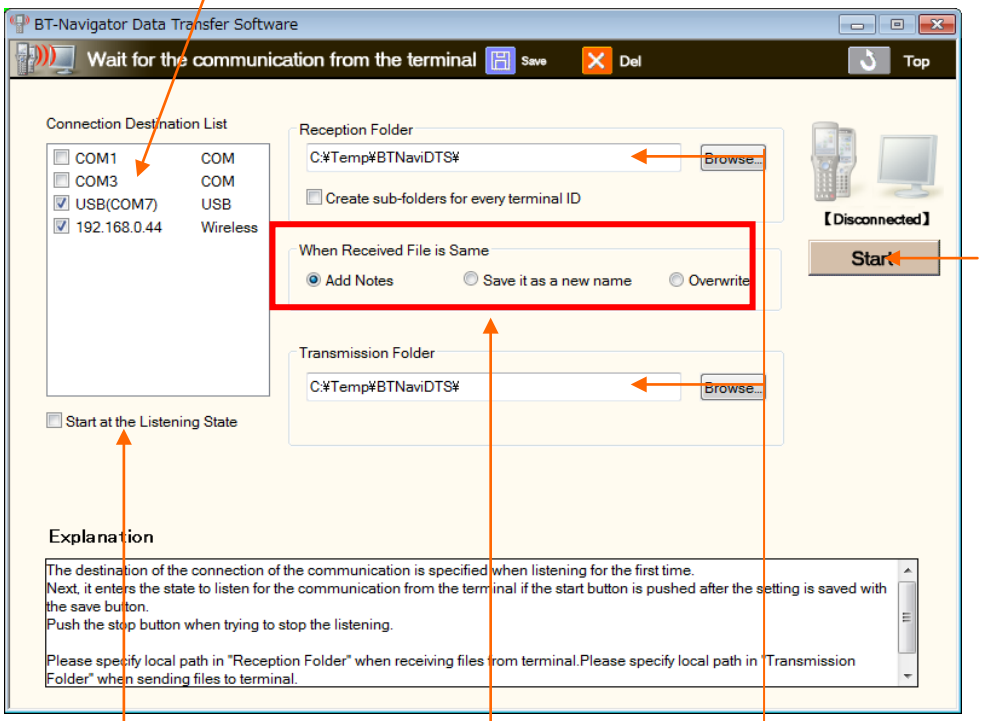
Configure the settings for automatically connecting to the terminal and performing communication. (See the automatic communication settings screen.)

Configure the listening for communication settings. (See the wait for communication from the terminal screen.)

Wait for Communication from the Terminal Screen

You can use the wait for communication from the terminal screen to configure settings such as the transmission folder, reception folder, method to use when writing files to the PC, and terminals from which to listen for connections. When you start listening, you enable the data transmission software to receive connections from terminals.

The USB (COM) ports registered on the "System setting" screen are displayed here. Select the check boxes that you want to make the targets for listening.



Start listening for communication. When the software starts listening, the label

Select this check box to start the data transfer software in the listening state next time.

Reception Folder: **the folder that contains the files transmitted from the terminal to the PC**

Transmission Folder: **the folder that contains the files that the terminal will retrieve from the PC**

When an existing file is received

Specify the way to handle received files that are the same as existing files on the PC.

- **Overwrite:** **Overwrite the existing file.**
- **Save it as a new name:** **Add a number to the end of the file name, and save the data as a new file. If the file name is "Data.LOG," new files are saved with numbers appended in order as "Data~1.LOG," "Data~2.LOG," "Data~3.LOG," and so on.**
- **Add Notes:** **Append the new data to the end of the data in the existing file, and then save the updated file. The amount of data in the file increases each time that the file is saved.**

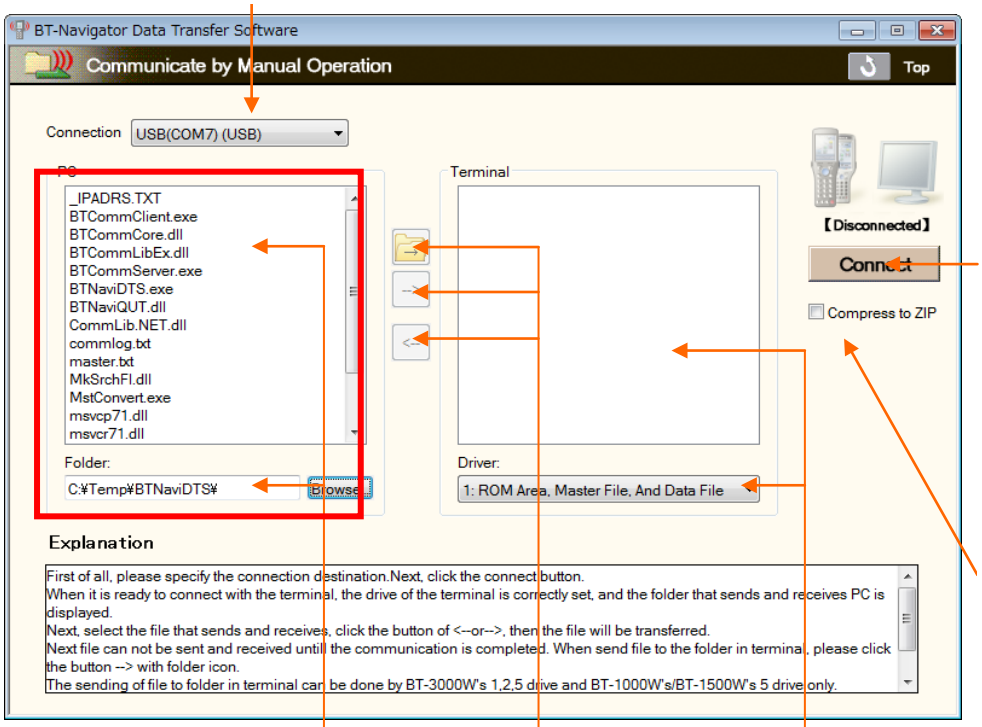
Manual Connection Screen

Connect from the PC to the terminal to send and receive files.

Set the PC/terminal folders, and then specify the connection target to connect to the terminal.

When connected to the terminal, files can be sent and received between the PC and terminal.

Lists the USB (COM) ports registered on the "System setting" screen. Select the target.



Connect to the terminal. When connected, the description changes to "Connecting".

Perform ZIP compression on the files before transmitting them. You can use this setting to reduce communication time when transmitting large amounts of data such as the master file.

Folder path referred to in the PC, and files in the folder.

The drives on the terminal and the files contained within the folders in these drives are displayed here. The drive paths are shown below.

When 1 is selected: \FlashDisk\BT_Files\drv1
When 2 is selected: \RamDisk\BT_Files\drv2
When 5 is selected: \SDCard\BT_Files\drv5
* This can only be used when an SD card is inserted.
* Drives 0, 3, and 4 are not used.

Send and receive files between the PC and terminal.

Send files to the specified folder in the terminal. If the specified folder does not exist in the terminal, a folder under the specified name will be newly created.

Send files selected on the PC to the folder in the terminal.

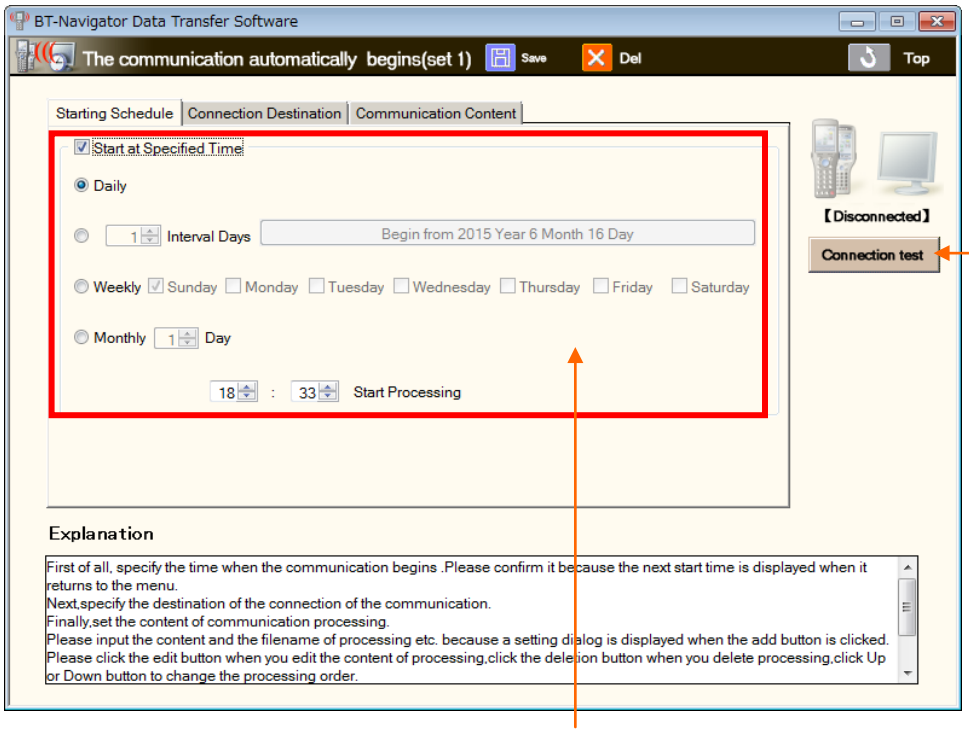
Send files selected on the terminal to the folder in the PC.

- **In addition, as a shortcut function, you can send files to the terminal by dragging & dropping the files into the terminal's folder area.**

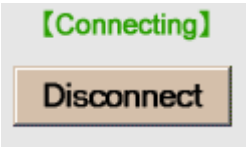
Automatic Communication Settings Screen

Use the automatic communication screen to configure the settings for connecting to the terminal from a PC according to a schedule and sending and receiving files.
The connection method is the same as for manual communication, but you can register the communication start time and the communication content according to a schedule.
You can register two types of schedules (set1 and set2) at the same time.

Starting Schedule settings

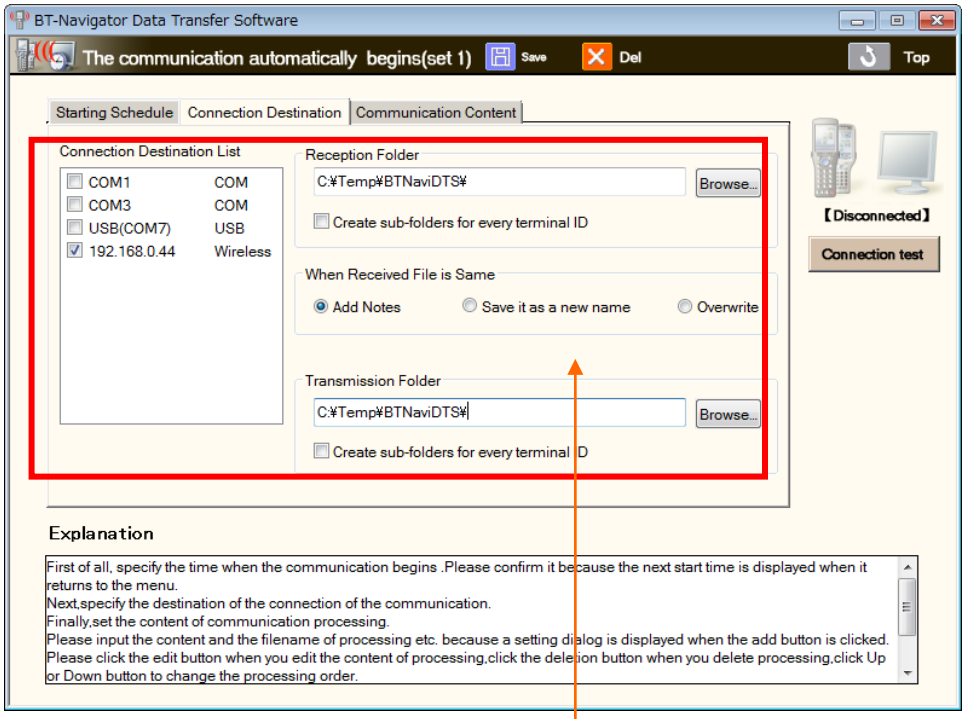


Connect to the terminal.
When connected, the description changes to "Connecting," and the setting details are immediately executed.



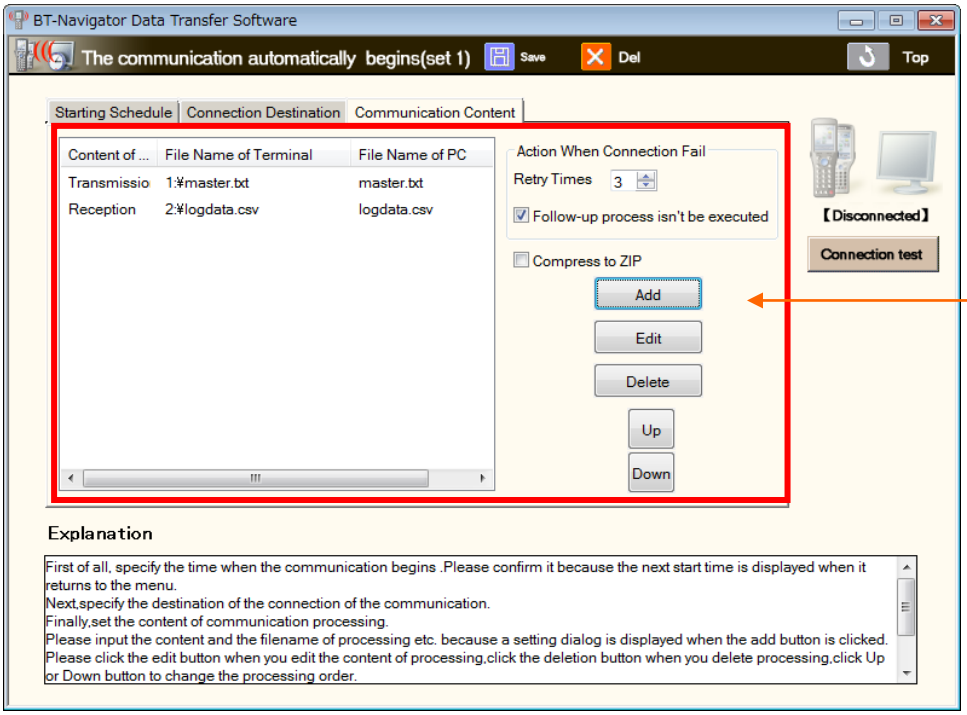
Set the communication start time and frequency here.

Connection Destination settings



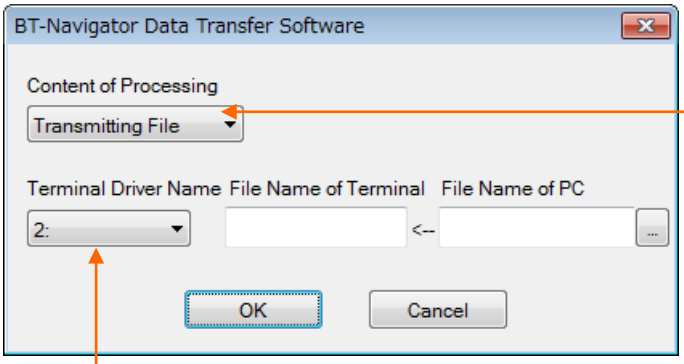
Configure settings such as the terminal to connect to and the transmission and reception folders. The settings are configured in the same manner as the wait for communication from the terminal screen.

Communication Content settings



Add, edit, or delete the content of processing after the communication connection is established. Added processing content is displayed in the list on the left side of the screen.

When you click Add or Edit



Select the content of processing.

Transmitting File	Transmit the specified file to the terminal.
Receiving File	Receive the specified file from the terminal.
Changing File Name	Change the name of a file on the terminal.
Deleting File	Delete the specified file on the terminal.

* Do not use this to receive log files.

Specify the folder to process by its drive name.

When 1 is selected: \FlashDisk\BT_Files\drv1

When 2 is selected: \RamDisk\BT_Files\drv2

When 5 is selected: \SDCard\BT_Files\drv5

* This can only be used when an SD card is inserted.

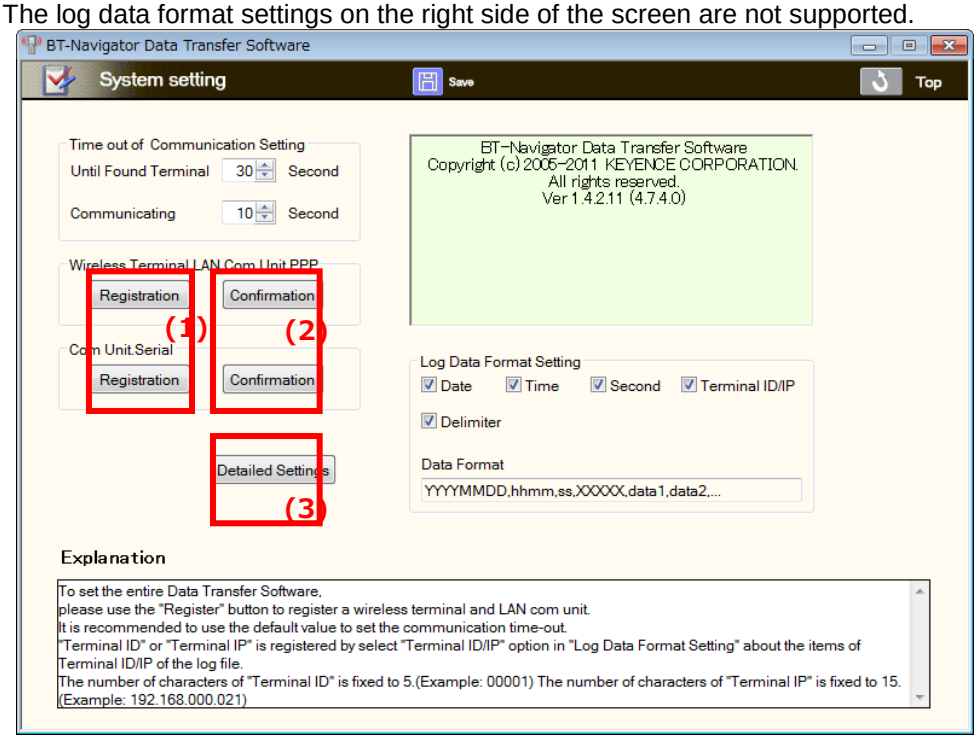
* Drives 0, 3, and 4 are not used.

* To perform manual communication with an SD card, create the folder "BT_Files\drv5" on the SD card in advance.

System Setting Screen

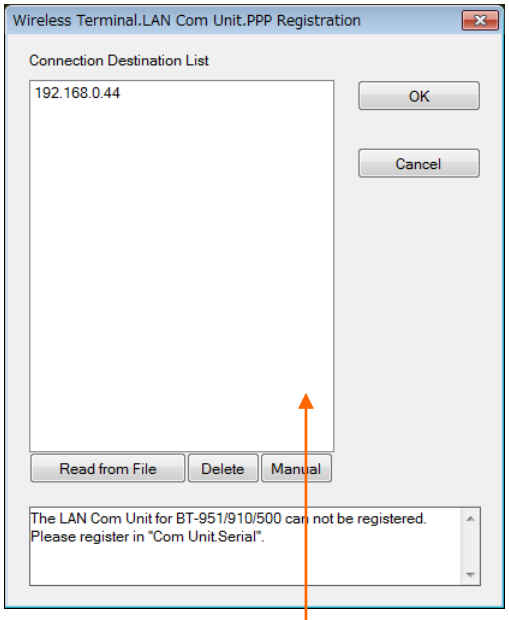
You can use the system setting screen to register terminals and configure the general settings of the data transfer software.

The log data format settings on the right side of the screen are not supported.

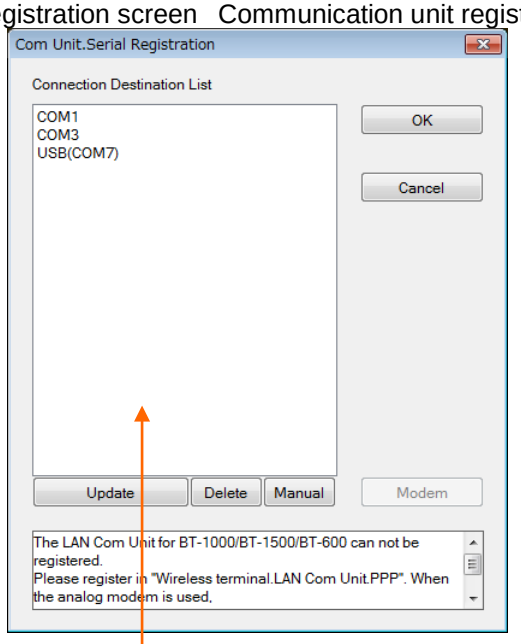


1. Wireless terminal and communication unit registration screens

Wireless terminal and LAN communication unit registration screen　Communication unit registration screen



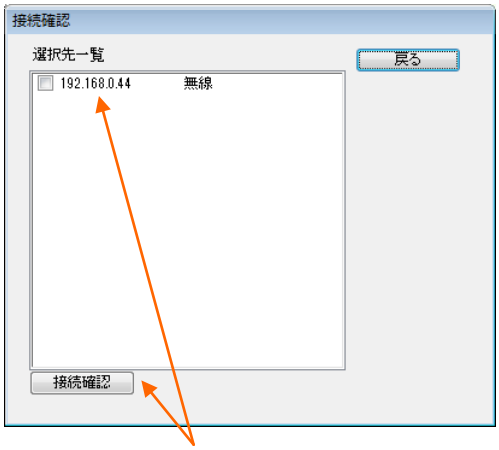
Register a list of wireless terminals and LAN communication units.



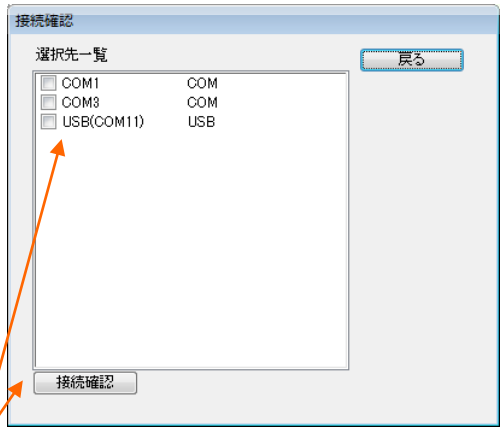
COM ports recognized by the PC are the targets for USB communication units, so click “Update” to reacquire the list of communication units that can be connected to.
(Do not click “Delete” or “Manual”.)
The connection destination targets for screens such as the wait for connection screen and the manual connection screen are the terminals displayed here.

2. Check connection screen

Wireless terminal and LAN communication unit check connection screen



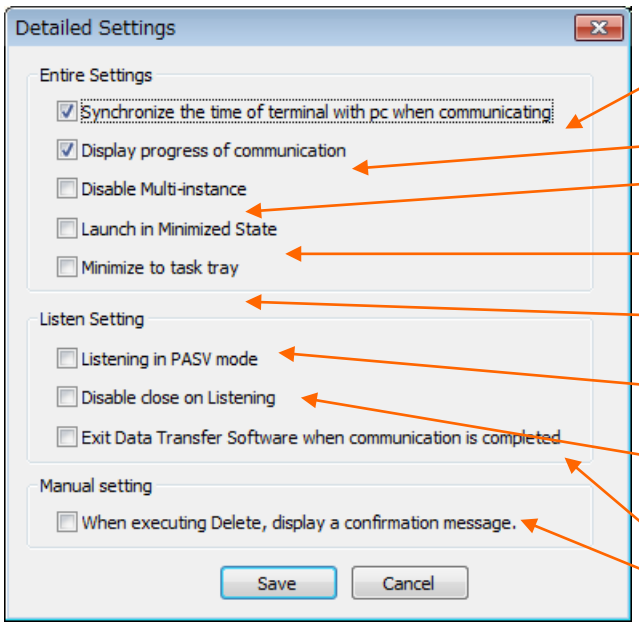
Communication unit check connection screen



Select the connection destinations to check, and then check these connections.
When establishing a connection, the terminal must be waiting for communication.

* The connection check is a function that connects from the PC to the terminal, and then performs simple communication.
You have to click "Start standby" on the system menu "6.Receive file" in advance to set the terminal to standby.

3. Detailed settings screen



- **Select this to synchronize the time of the terminal with the time of the PC during communication.**
- **Select this to use a dialog box to display the communication status.**
- **Select this to prevent multiple instances of the data transmission software from starting.**
- **Select this to display the software minimized the next time that it starts.**
- **Select this to make the software resident in the task tray when minimized.**
- **Select this to start connecting a session in the data transmission software from the terminal.**
- **Select this to prevent the data transfer software from closing while it is listening.**
- **Select this to exit the data transfer software when the connection is terminated by the terminal.**
- **Select this to display a confirmation message when deleting data.**

* When waiting for communication using the data transfer software, use the PASV mode setting to connect from the terminal through a LAN communication unit or over a wireless LAN. In this situation, you have to enable the "Listening in PASV mode" setting in the data transmission software.

4. Setup Procedure

Waiting

This section explains the setup procedure of using the data transfer software to connect from the terminal to the PC and then send and receive files.
The data transfer software's setup details are saved in the "BTWDTS.ini" setup file.

1. Perform the following preparations to make it possible to connect to the terminal.

- Set the terminal's " Comm Unit" setting to "COM."
- Connect the USB communication unit to the PC, and then place the terminal in the USB communication unit.
- Install the USB (COM) driver on the PC.

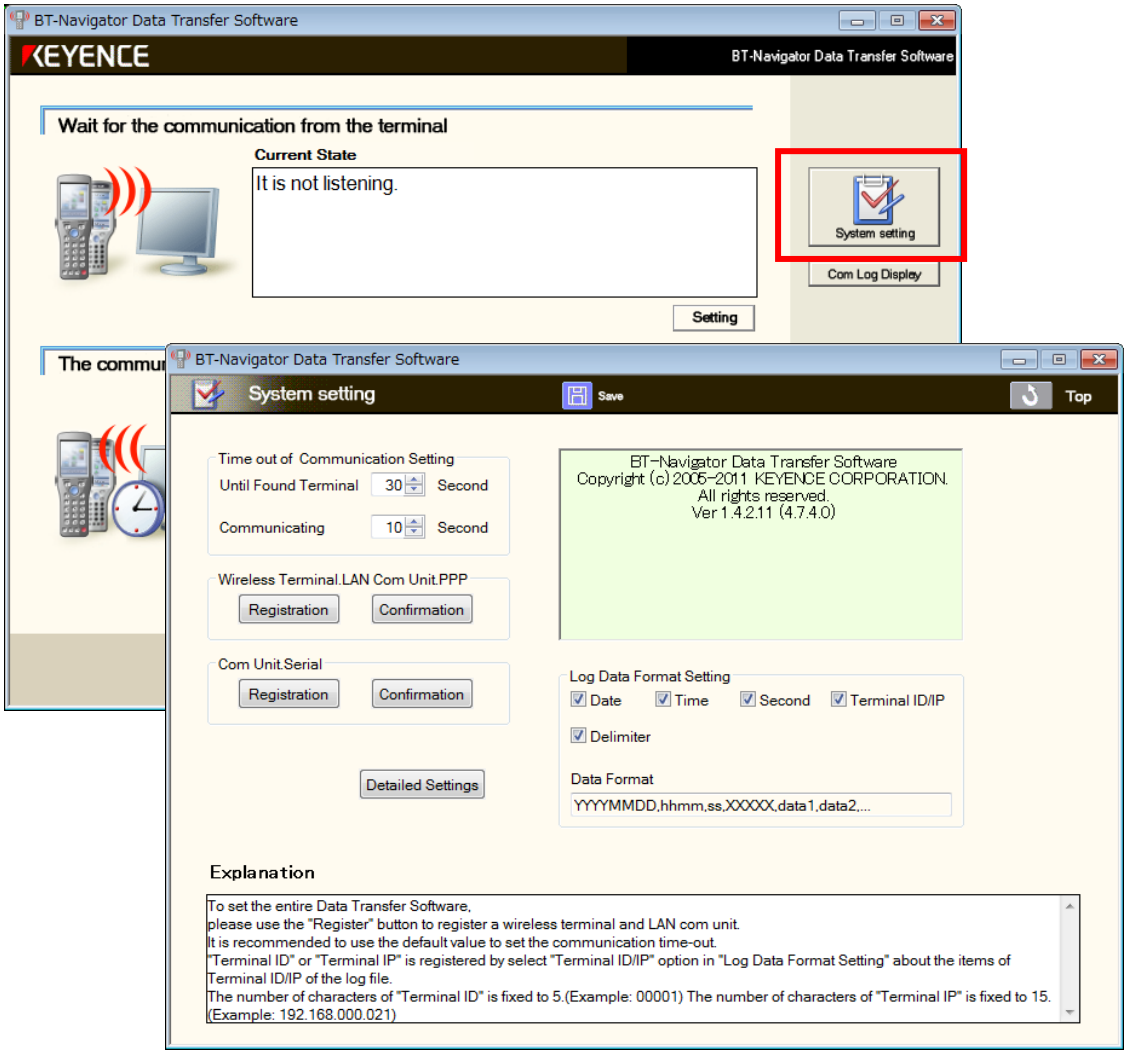
LAN communication unit

- Configure the LAN communication unit settings on the terminal.
- Set the terminal's communication unit setting to LAN.
- Connect the LAN communication unit to the PC, and then place the terminal in the LAN communication unit.

Wireless LAN

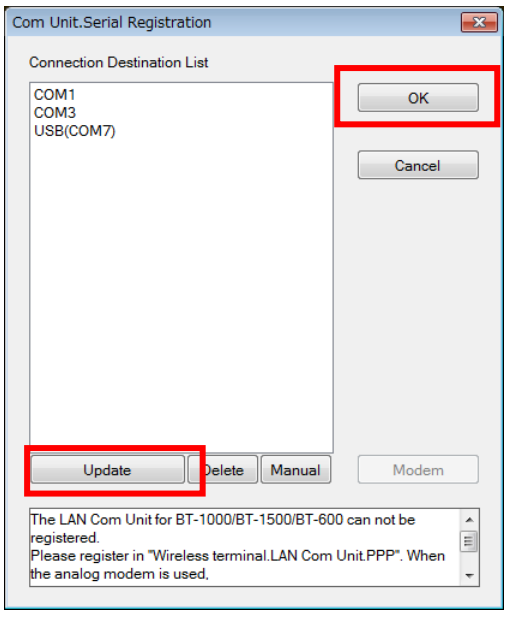
- Configure the wireless LAN communication settings on the terminal.
- Start the wireless LAN, and then connect to an access point so as to enable communication.

2. From the start screen of the data transfer software, open the "System setting" screen, and then open the registration dialog box.



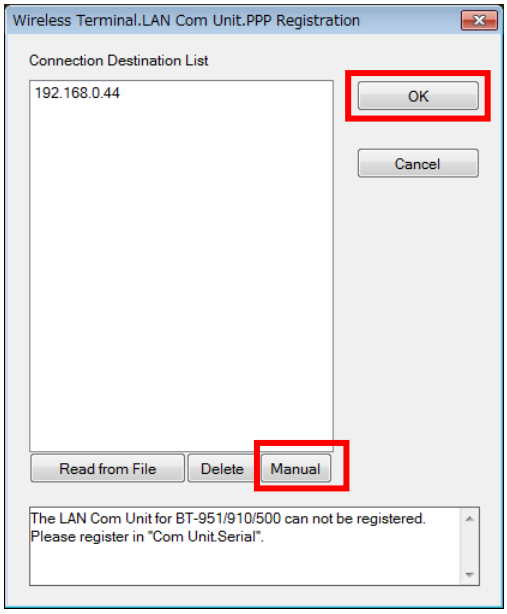
USB communication unit

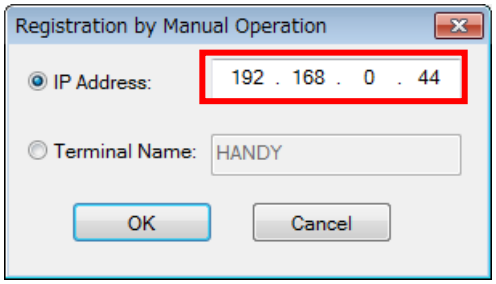
In the "USB communication unit registration" dialog box, click "Update," and check that the list of USB(COMx) units is populated. After you have checked the list of units, click "OK."



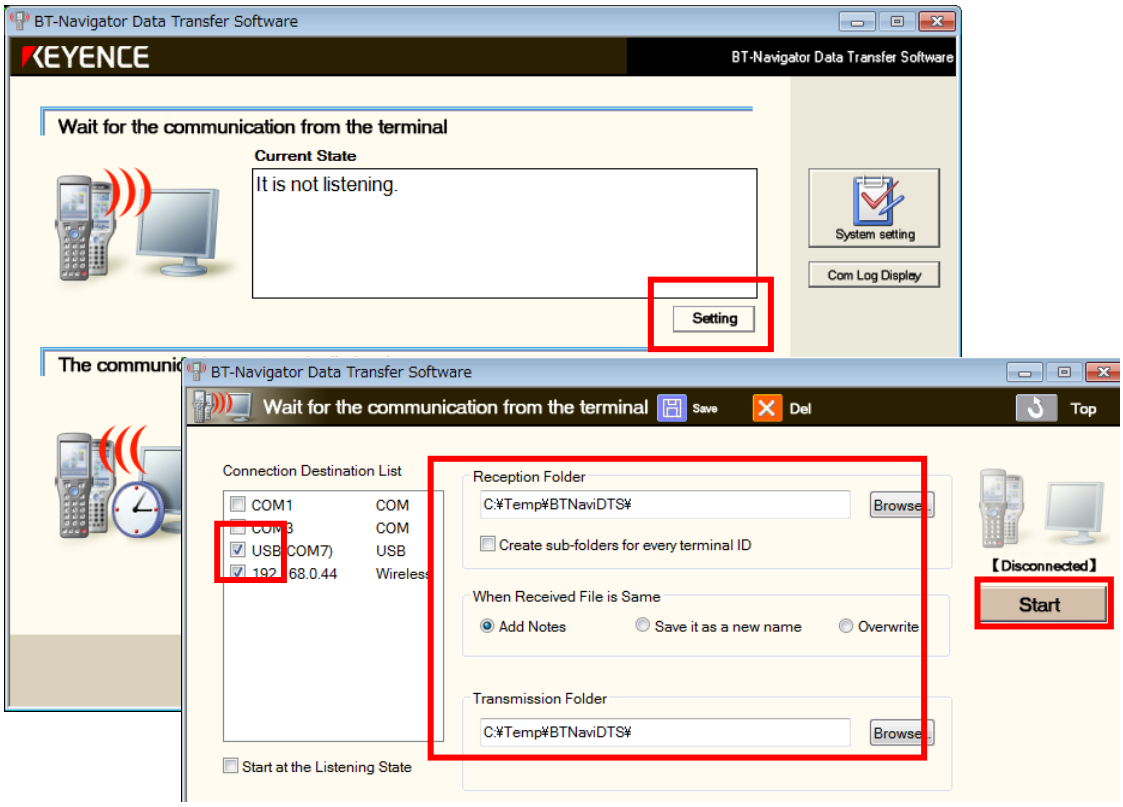
LAN communication unit/wireless LAN

In the "Wireless Terminal.LAN Com Unit.PPP Registration" dialog box, click "Manual," register the IP address, and then check that the target IP address is displayed in the list. After you have checked the list, click "OK."





4. Return to the start screen, click "Setting" to open the "Wait for the communication from the terminal" screen, and then configure the settings as shown below.
   - Select the check boxes of the COMx or IPaddress shown in the list of connection destinations.
   - Change the "Reception Folder" and "Transmission Folder" paths and the "When Received File is Same" setting as necessary.
   - Finally, click "Start" to change the software to the [Listening] state.



5. Connect to the data transfer software from the terminal, and then send and receive files.

   * An application for sending and receiving files is required on the terminal.

Setup Procedure (Manual Communication)

This section explains the setup procedure of using the data transfer software to connect from the PC to the terminal and then send and receive files manually.

1. Perform the following preparations to make it possible to connect to the terminal.

- Set the terminal's " Comm Unit" setting to "COM."
- Connect the USB communication unit to the PC, and then place the terminal in the USB communication unit.
- Install the USB (COM) driver on the PC.

LAN communication unit

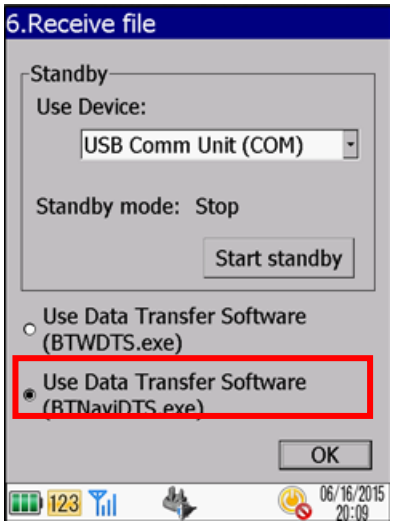
- Configure the LAN communication unit settings on the terminal.
- Set the terminal's communication unit setting to LAN.
- Connect the LAN communication unit to the PC, and then place the terminal in the LAN communication unit.

Wireless LAN

- Configure the wireless LAN communication settings on the terminal.
- Start the wireless LAN, and then connect to an access point so as to enable communication.

2. Click "Start standby" on the system menu "6.Receive file" to set the terminal to standby.

USB communication unit

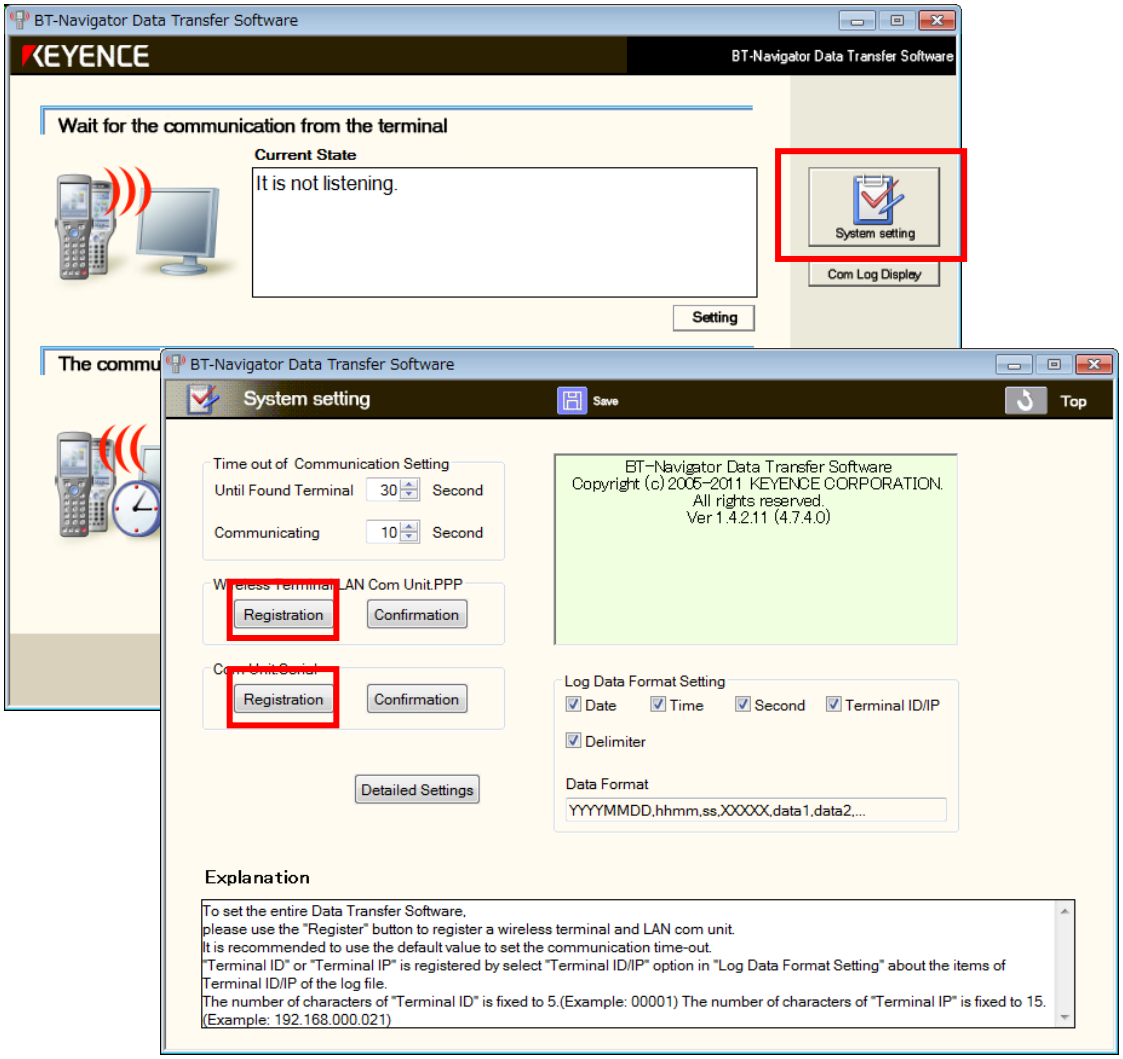


LAN communication unit

Wireless LAN

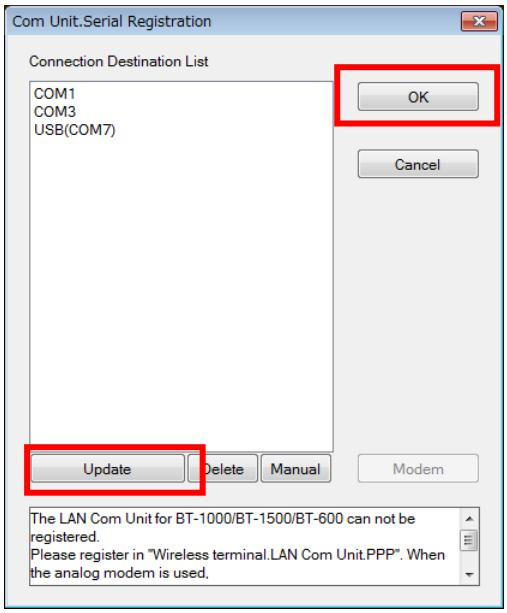
* When using a USB communication unit, select "Use Data Transfer Software (BTNaviDTS.exe)."

3. From the start screen of the data transfer software, open the "System setting" screen, and then open the registration dialog box.



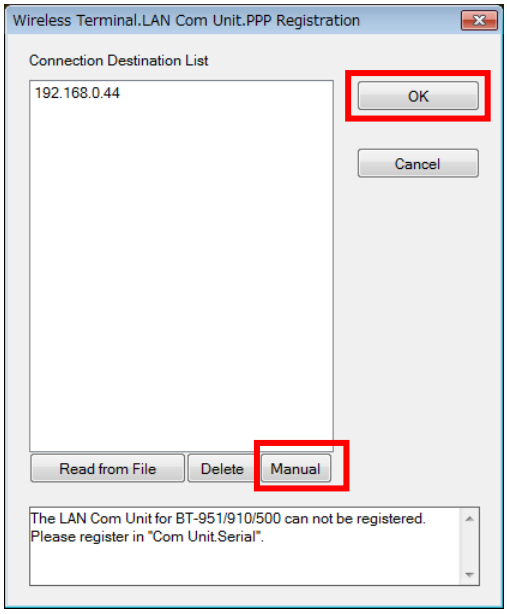
USB communication unit

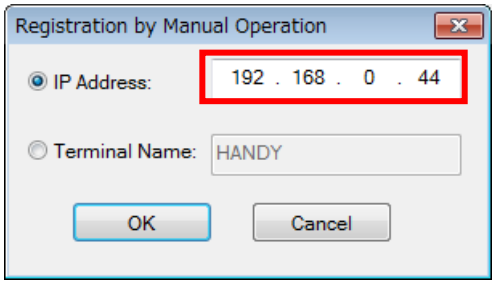
In the "USB communication unit registration" dialog box, click "Update," and check that the list of USB(COMx) units is populated. After you have checked the list of units, click "OK."



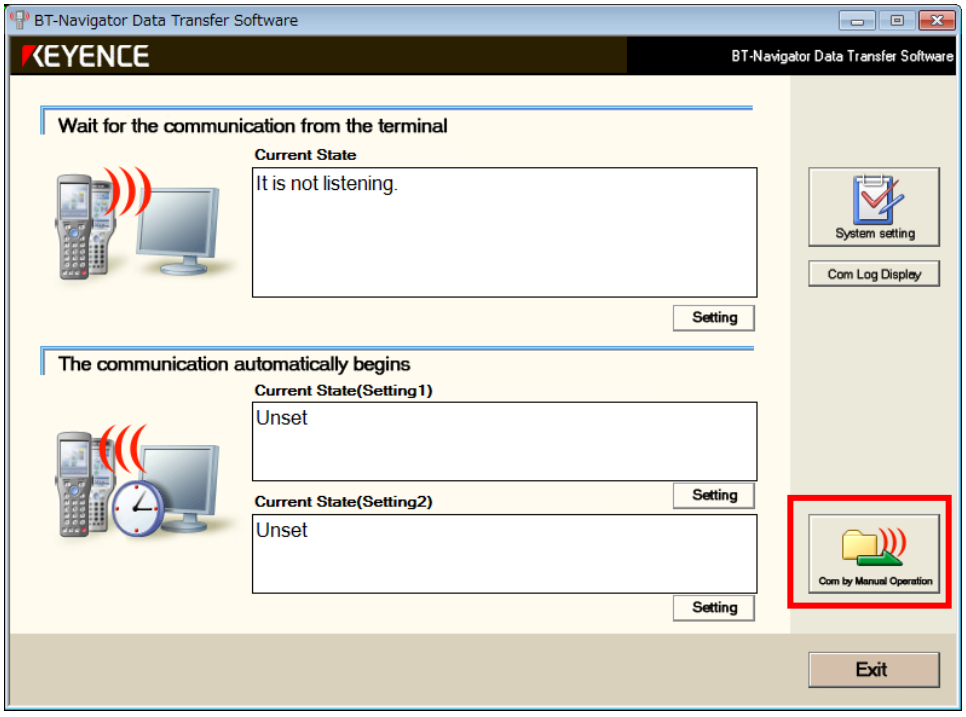
LAN communication unit/wireless LAN

In the "Wireless Terminal.LAN Com Unit.PPP Registration" dialog box, click "Manual," register the IP address, and then check that the target IP address is displayed in the list. After you have checked the list, click "OK."

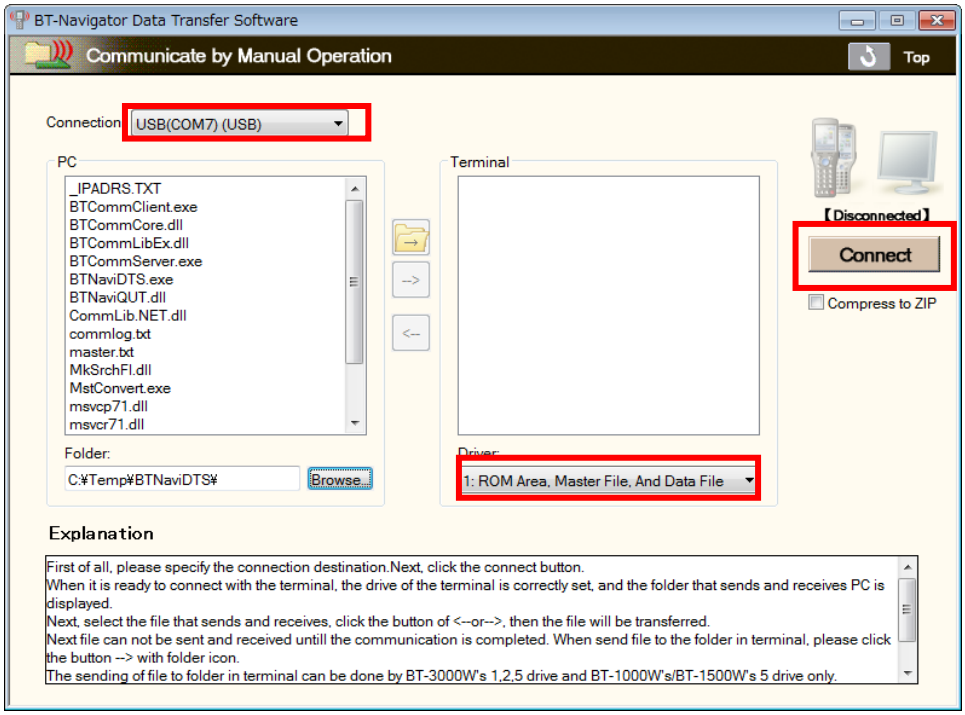




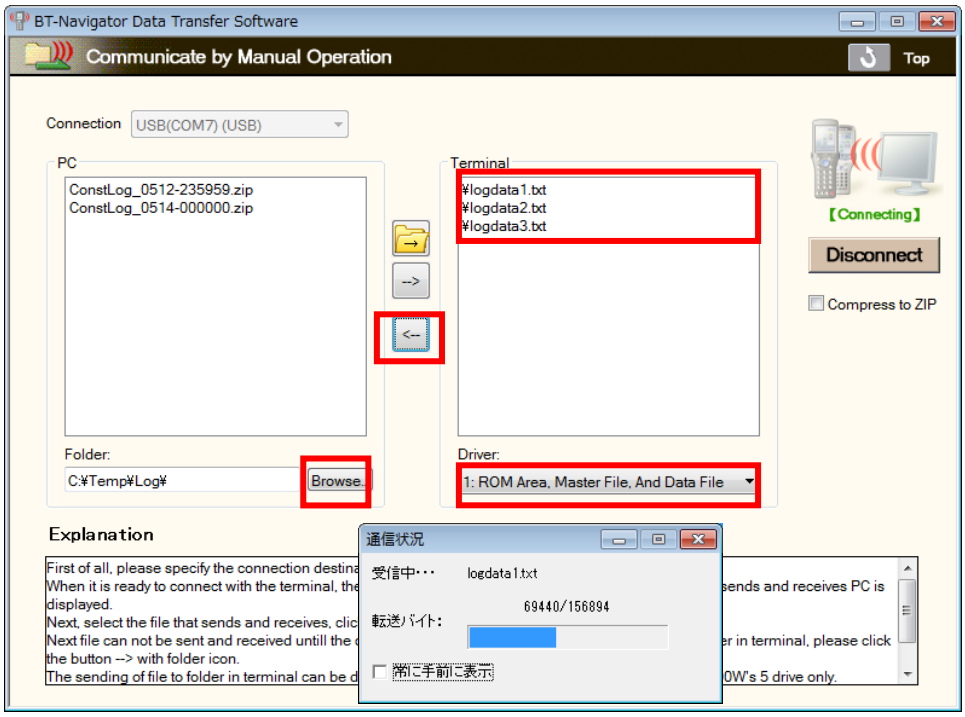
4. Return to the start screen, and then click "Manual connection" to open the "Manual connection" screen.



5. On the "Manual connection" screen, configure the settings as shown below
   - Select the target COM port or IP address.
   - Connect to the terminal. When connected, the description changes to "Connecting".



6. Follow the procedure below to send and receive files.
   - Select a folder in the PC and terminal respectively.
   - Press the  buttons to send and receive files between the PC and terminal.



* To perform manual communication with an SD card, create the folder "BT_Files\drv5" on the SD card in advance.

5. SUPPLEMENT

Viewing the Communication Log

The communication log of the data transfer software is saved in the file "commlog.txt" in the start folder of the data transmission software.
View this log as necessary.

Viewing the Setup File

The data transfer software's setup details are saved in the "C:\ProgramData\KEYENCE\BT\BT-H10W\BTNaviDTS.ini" file.
Delete this file to start the terminal with the default settings.

Received File Recovery Function

The data transfer software saves the files that it receives from the handy terminal into the specified reception folder in the specified format ("Add Notes," "Save it as a new name," or "Overwrite"). Even if the received file cannot be saved in the specified reception folder in the specified format, if the file reception processing is completed, the handy terminal considers the transmission to have been completed correctly.

This section explains the recovery operation of the data transfer software that is used when, for some reason, the received file could not be saved in the specified reception folder in the specified format.

(1) When the received file could not be saved in the specified reception folder in the specified format

A backup folder is created in the same directory as the data transfer software, and the received file is saved in the backup folder. The backup folder is named as shown below.

• Backup folder name

Year + month + day + hour + minute + second + "_" (underscore) + tick count

What's more, when the file is backed up, a message box like the one described below is displayed. The backed up file can be retrieved from the folder explained above.

• Displayed message

"Failed to copy. The file is saved to (backed up file name)."

(2) When the attempt to copy the file to the backup folder also fails

If the attempt to save the file to the backup folder fails, the following message is displayed, and the file is saved in a Windows temporary folder. In this situation, the received file can be retrieved from the following folder.

• Folder name

The folder is named as shown below.

"get" + process ID + thread ID + tick count + internal count

• Displayed message

"Failed to copy. The file is saved to (backed up file name)."

*** Key point to check when the received file could not be saved.**

When file recovery is performed, check the rights of the logged on user, the file access rights, the status of the file being written to, and other similar aspects that might have caused the problem.