



WB1F Fix Linear CCD Scanner

# WB1F Support Tool User's Manual



# Introduction

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Before using the WB1F support tool, please read this manual and understand the specifications of the software so that it can be used correctly.

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## Version up information



New function has been added to WB1F. Please check Software Version and Database Version before using. Method for version acquisition refer to  [Version information] on page 3-13 of [3. 2. 5 Help].

In addition, the initial release version of software is "1.0.0.0 (001.000.00)" and the initial release version of database is "1.0.0.0 (001.000.00)".

Details	WB1F Support Tool Version	
	Software Version	Database Version
WB1F type Firmware A-002.010.00 Correspondence	001.010.00	001.010.00
WB1F type Firmware A-002.020.00 Correspondence	001.020.00	001.020.00
Speedup of upload and download of a setting value		
Speedup of update of firmware	001.030.00	001.030.00
WB1F type Firmware A-002.030.00 Correspondence		
Addition of Communication speed 600bps	001.040.00	001.040.00
WB1F type Firmware A-002.040.00 Correspondence		
WB1F type Firmware A-002.050.00 Correspondence	001.050.00	001.050.00
WB1F type Firmware A-002.060.00 Correspondence	001.060.00	001.060.00

## General terms, abbreviations, and terminology used in this manual



The general terms, abbreviations, and terminology used in this manual are as follows.

Item	Definition
Communication unit	Refers to the Communication Unit WB9Z-CU100 available for purchase separately.
Control characters	ASCII codes 00H - 1FH and 7FH. In this manual, they are expressed using  . For details, refer to  [4. 2 ASCII Code Table] on page 4-4.
Our website	<a href="http://www.idec.com/japan/">www.idec.com/japan/</a>

## Graphic Symbol Glossary

This manual uses the following graphic symbols to simplify explanations:

### Notes

Graphic symbols	Meaning
	Notes information that should be carefully noted. Failure to operate the product in accordance with the information provided may affect the performance of the main unit as well as any connected peripheral devices.
	Denotes additional information that may prove useful for using a given function.

## Related manuals

Manuals related to the WB1F are as follows. Refer to them together with this manual.

Type	Manual name	Details
B-1768	WB1F Fix Linear CCD Scanner Support Tool User's Manual (this manual)	Included with the support tool. Explains about the support tool.
B-1741	Instruction Sheet WB1F series	Included with the product.
B-1775	WB1F Fix Linear CCD Scanner User's Manual	Gives an overview of the functions and capabilities of the WB1F, and instructions on its use.
B-1780	WB1F Fix Linear CCD Scanner PLC Connection User's Manual	Explains the communication unit-based PLC connection function.
B-1782	WB1F Fix Linear CCD Scanner Menu Sheet	Explains about menu sheet.

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# 1 Overview

This chapter provides an overview of the WB1F Support Tool and usage precautions.

## 1.1 Overview

The WB1F Support Tool is software for configuring the WB1F and checking its operation.

## 1.2 Usage precautions

In order to use the support tool correctly, please be aware of the following precautions.

- When the WB1F and the WB1F Support Tool are connected, do not turn off the WB1F power supply.  
The WB1F Support Tool may be forcibly terminated.  
After stopping the connection between the WB1F and the WB1F Support Tool, turn off the WB1F power supply.
- When the WB1F and the WB1F Support Tool are connected, do not allow the computer to enter sleep mode. The WB1F Support Tool may be forcibly terminated.  
If the WB1F and the WB1F Support Tool are connected and left for a long period of time, configure the computer so that it does not enter sleep mode.
- Do not run multiple instances of the WB1F Support Tool at the same time. The support tool may not operate correctly.

# 2 Operational Check

This chapter describes the system requirements, setup, and how to test operation of the WB1F Support Tool.

## 2.1 System requirements

This table shows the WB1F Support Tool system requirements.

Item	Details
PC	PC-AT or compatible
OS	Windows 7 (32-/64-bit), Windows 8 (32-/64-bit), Windows 8.1 (32-/64-bit), Windows 10 (32-/64-bit)
CPU	1.0 GHz or higher
Memory	1 GB or higher
Hard disk	100 MB or higher
Screen resolution	XGA (1024x768) or higher
Communication port	RS-232 port (For directly connect the RS-232 type) USB port (For directly connect the USB type, or to connect the RS-232 type using a RS-232-to-USB conversion cable)

\*Microsoft and Windows are registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

## 2.2 Setup

### 2.2.1 Installing the support tool

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To use the support tool, it must be installed on a computer. Do so with the following procedure.

Unzip the compressed “wb1f\_support\_tool\_100.zip” file to the desktop or any desired location.

After you unzip the file, double-click “wb1f\_support\_tool.exe” in the “wb1f\_support\_tool\_100” folder to run the support tool. The support tool may not run correctly if the files in the folder are deleted or moved.

### 2.2.2 Uninstalling the support tool

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When you no longer need the support tool, it must be uninstalled from the computer. Do so with the following procedure.

Delete the entire folder (including the files) that was created by unzipping the compressed “wb1f\_support\_tool\_100.zip” file. The support tool does not use the registry, so you will not need to delete any registry entries.



The number “100” in the “wb1f\_support\_tool\_100” file name will vary depending on the version of the tool being used.

## 2.3 Operation confirmation method

In this section you will read barcodes with the WB1F using the WB1F Support Tool.

The example here shows the WB1F in its factory default state when no settings have been changed.

Note that the operation of the WB1F may be different if the settings have been changed.

### 2.3.1 Checking the interface

If you are using the WB1F-100S1S (USB type), proceed to [\[2.3.2 Installing the device driver\]](#) on page 2-3.

If you are using the WB1F-100S1B (RS-232 type), proceed to [\[2.3.3 Connecting the WB1F to the computer\]](#) on page 2-3.

### 2.3.2 Installing the device driver

A device driver must be installed to use the WB1F-100S1S.

Download the latest device driver installer from the IDEC website and use it to install the device driver. For details on the installer, check the readme that is included with the installer.

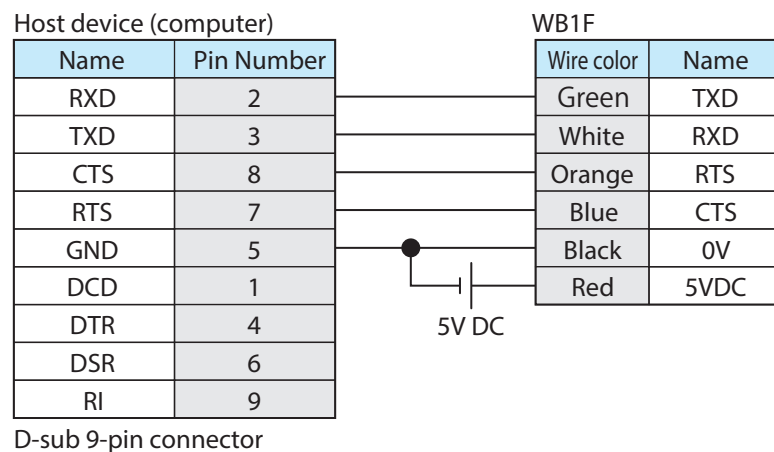
IDEC website: <http://www.idec.com/>

### 2.3.3 Connecting the WB1F to the computer

#### ● WB1F-100S1B

Wire the WB1F to the computer as shown in the diagram. After you finish wiring the WB1F and computer, turn on the 5VDC power supply.

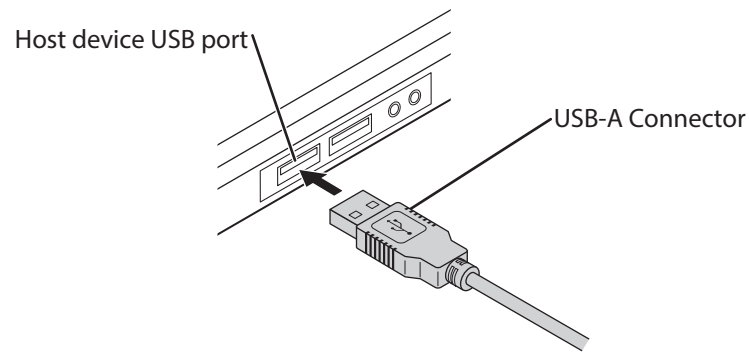
If the computer is not equipped with a RS-232 port, please use a RS-232-to-USB conversion cable.



Do not reverse the power supply connections under any circumstances. Doing so may result in damage. Carefully read the user's manual for the WB1F before wiring the WB1F.

**● WB1F-100S1S**

Firmly insert the USB connector straight into the USB port on the computer in the correct orientation.



Do not extend the cable. Doing so may result in malfunction or damage.

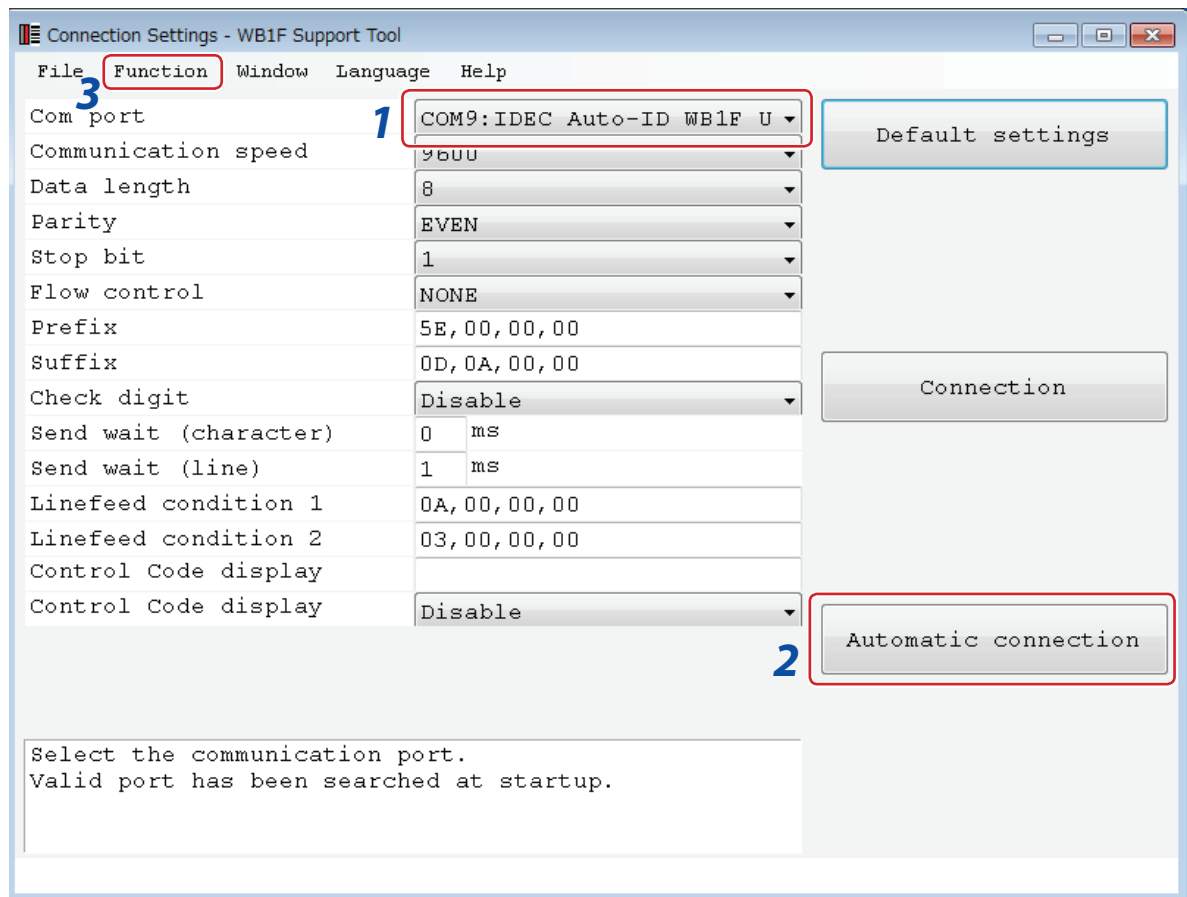
## 2.3.4 Starting the WB1F Support Tool

Double-click "wb1f\_support\_tool.exe".

When you double-click the file, the **Connection Settings** window is displayed.

## 2.3.5 Reading a barcode

- 1 Select the communication port that the WB1F is connected to.



### How to check the communication port

#### •For Windows 7

- (1) Click **Start**, right-click **Computer**, and click **Properties** on the displayed menu.  
The **System** screen is displayed.
- (2) Click **Device Manager** at the top left of the screen.  
The **Device Manager** screen is displayed.
- (3) Double-click **Ports (COM & LPT)**.
- (4) For the USB type, check the port number for the port that is displayed as "IDEC Auto-ID WB1F USB CDC (COM\*\*)".  
For the RS-232 type, check the port number for the port that the RS-232-to-USB conversion cable is connected to. \*\* indicates the port number.

• For Windows 8, 8.1/10

- (1) Press the **Windows** key and the **X** key.
- (2) Click **Device Manager** on the displayed menu.
- (3) The **Device Manager** screen is displayed. Double-click **Ports (COM & LPT)**.
- (4) For the USB type, check the port number for the port that is displayed as "IDEC Auto-ID WB1F USB CDC (COM\*\*)".  
For the RS-232 type, check the port number for the port that the RS-232-to-USB conversion cable is connected to. \*\* indicates the port number.

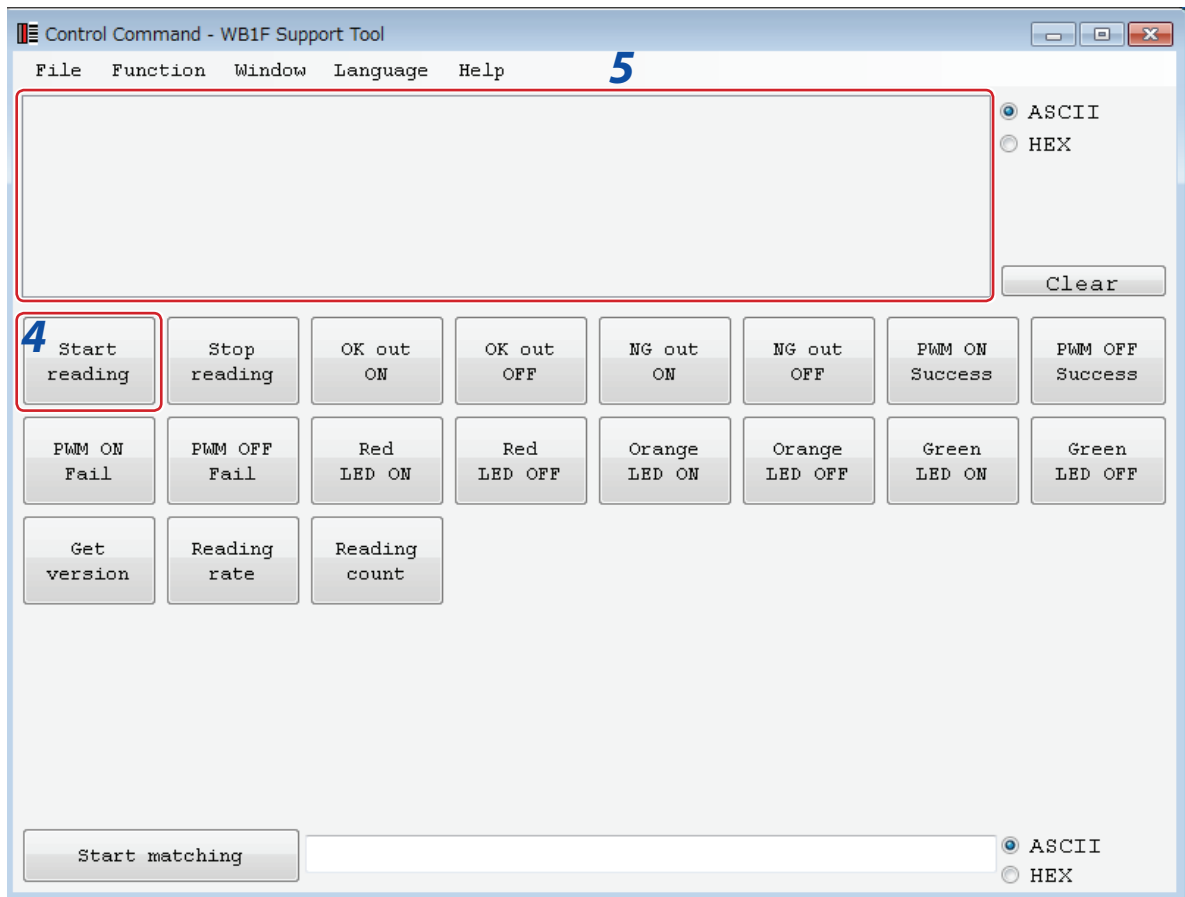


**If the port number checked in "How to check the communication port" is not displayed in the communication port on the Connection Settings screen**

Close the WB1F Support Tool, cycle the power supply to the WB1F, and then start the WB1F Support Tool again.

**2** After you select the communication port, click **Automatic connection**.

**3** After the connection is established, click **Function - Control command** on the menu bar. The **Control Command** screen is displayed.



**4** Click **Start reading** and the WB1F enters the reading operation state for two seconds (emitter LED turns on).  
Have the WB1F read an actual barcode at this time.

**5 The reading results are displayed.** “Requests (computer → WB1F)” are displayed as blue text. “Responses (WB1F → computer)” are displayed as red text. When a barcode is successfully read, the reading results are returned as the response. When reading fails, “?” is returned as the response. The following shows an example of reading a barcoded.

Example: ASCII display example

^get·↵

Click **Start reading**

1234567890·↵

Barcode reading results “1234567890” (reading successful)

^get·↵

Click **Start reading**

?·↵

Barcode reading results “?” (reading failure)

- ↵: Represents the ASCII code control characters **CR** **LF**. Since the control characters cannot be displayed as characters, they have been replaced with other characters. **LF** alone is displayed as “↵”, and the other control characters are displayed as “·”. Check the control characters by switching to the HEX display mode.



# 3 Menu

This chapter describes the WB1F Support Tool menu items.

## 3.1 Menu items list

This table shows the WB1F Support Tool menu items.

	Menu items	Details
File	Load settings of tool	Loads WB1F Support Tool settings from a file.
	Save settings of tool	Saves WB1F Support Tool settings to a file.
	Exit	Exits the WB1F Support Tool.
Function	Connection settings	Opens the configuration screen for connecting the WB1F and the computer.
	Control commands	Opens the screen for transmitting control commands to the WB1F.
	Scanner settings	Opens the screen for checking and changing WB1F settings.
	Firmware version up	Opens the screen for updating the WB1F firmware.
Window	Console	Opens the console screen.
Language	日本語 (Japanese)	Sets the WB1F Support Tool display language to Japanese.
	English	Sets the WB1F Support Tool display language to English.
	Chinese (Simplified)	Sets the WB1F Support Tool display language to Chinese (Simplified).
Help	User's Manual	Opens the user's manual (this manual).
	Version information	Opens the version information.

## 3.2 Menu item descriptions

### 3.2.1 File

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- **Load connection settings**

This menu item loads a saved connection settings file.  
Only XML files are supported.

- **Save connection settings**

This menu item saves the current connection settings to a file.  
The file extension is XML.

- **Exit**

This menu item exits the WB1F Support Tool.

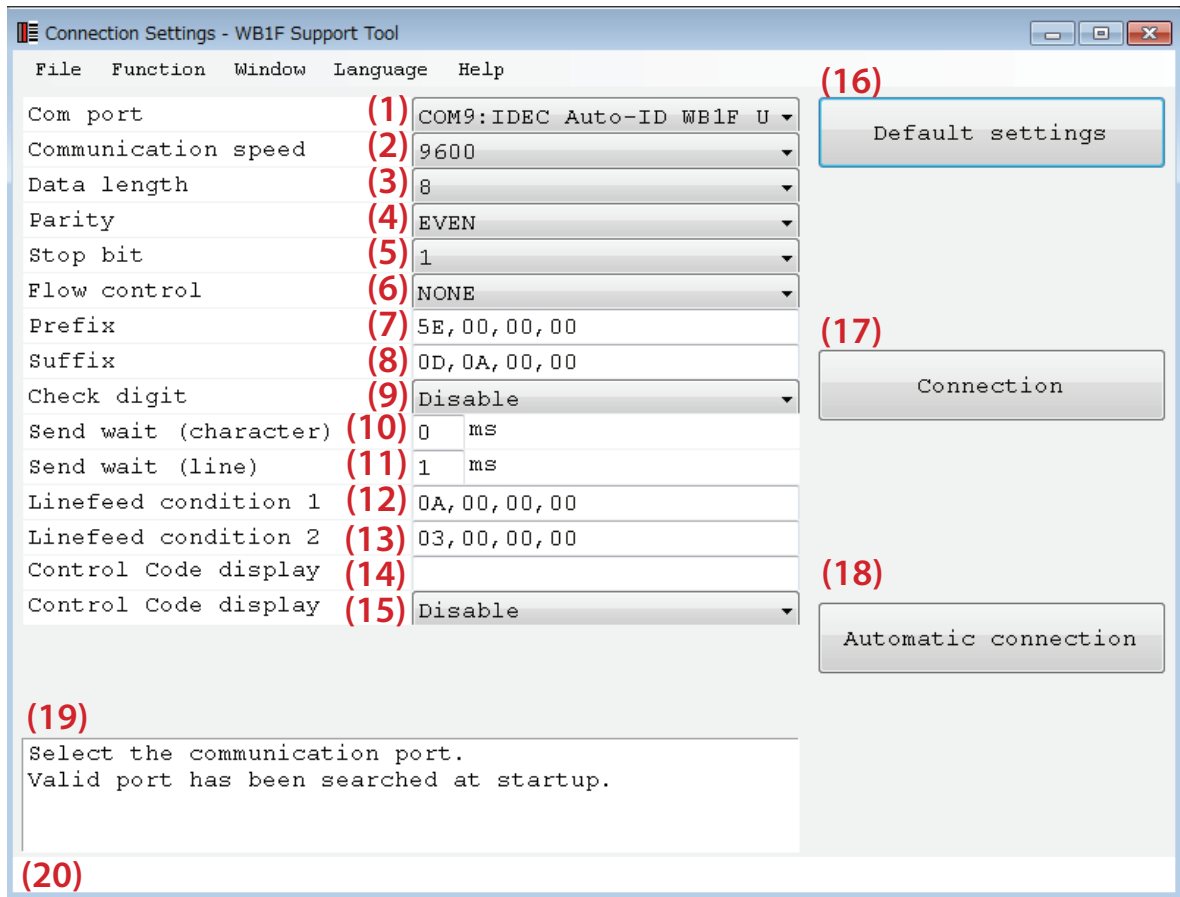
## 3.2.2 Function

### ● Connection settings

This configuration screen is for connecting the WB1F and the computer.

Here you can configure the computer settings.

When the WB1F Support Tool is started, the following Connection Settings screen is first displayed.



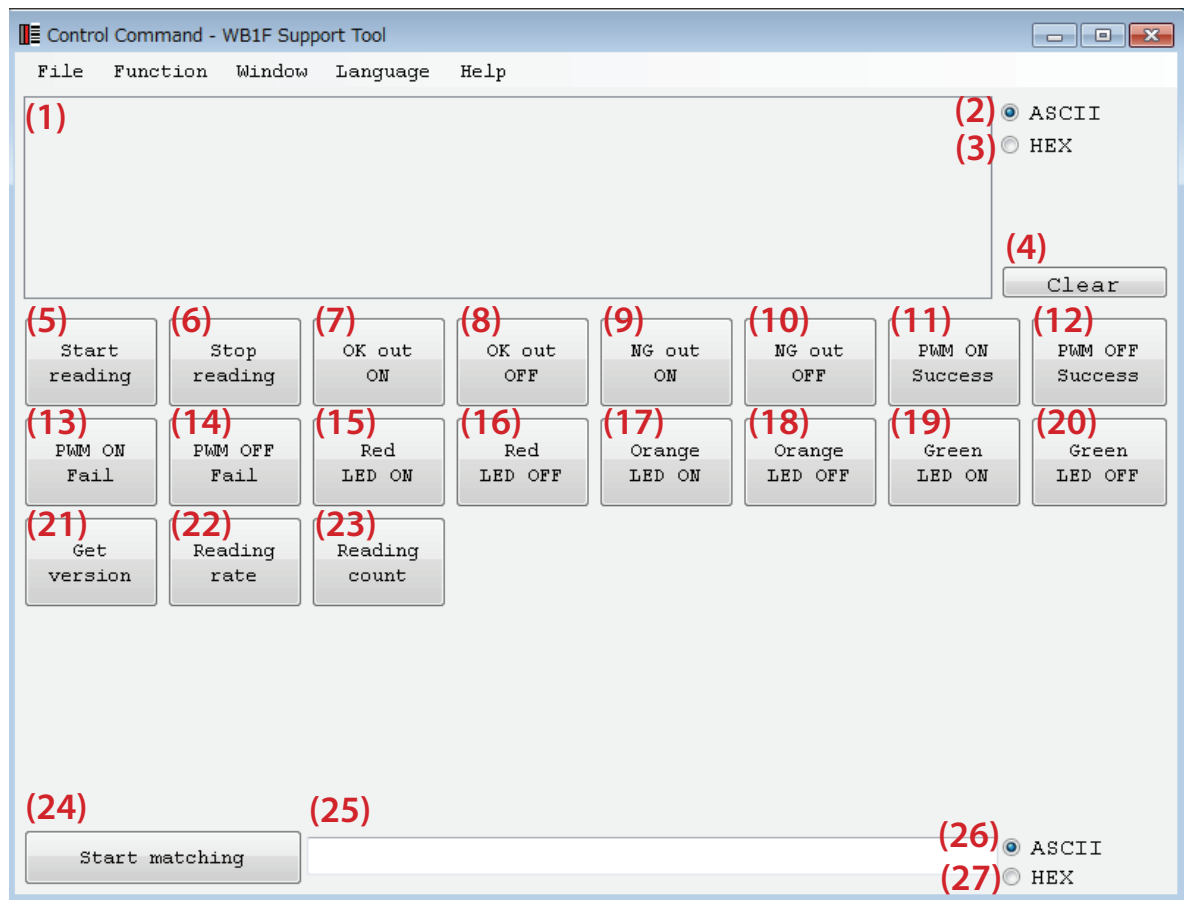
No.	Name	Function
(1)	Com port	Selects the communication port. You can select a valid port.
(2)	Communicaiton speed	Sets the communication speed.
(3)	Data length	Sets the data length.
(4)	Parity	Sets the parity bits.
(5)	Stop bit	Sets the stop bits.
(6)	Flow control	Sets flow control (handshake).
(7)	Prefix	Sets the string to add to the beginning of the communication command.
(8)	Suffix	Sets the string to add to the end of the commnuication command.
(9)	Check digit	Sets whether or not to add a check digit to the set command.
(10)	Send wait (character)	Sets the delay time to be inserted between characters when transmitting.
(11)	Send wait (line)	Sets the delay time to be inserted after the command suffix when transmitting.
(12)	Linefeed condition 1	Sets the condition to perform a linefeed for the console screen. A linefeed is performed when either linefeed condition 1 or linefeed condition 2 is satisfied.
(13)	Linefeed condition 2	

No.	Name	Function
(14)	Control Code display1	Replaces the control character with the specified character. When a blank space is specified, the display will include a combination of "·" and "↵".
(15)	Control Code display 2	Converts the control character into the <XXXX> format.
(16)	Default settings	Resets the communication settings to the WB1F factory default settings.
(17)	Connection	Starts the connection between the WB1F and the computer.
(18)	Automatic connection	Automatically starts the connection between the WB1F and the computer.
(19)	Message output 1	Displays a description of the selected item.
(20)	Message output 2	Displays the communication results and communication settings when starting an automatic connection.

## ● Control commands

This screen is for transmitting control commands to the WB1F.

Actions can be executed such as barcode reading and turning the indicator LEDs on and off.



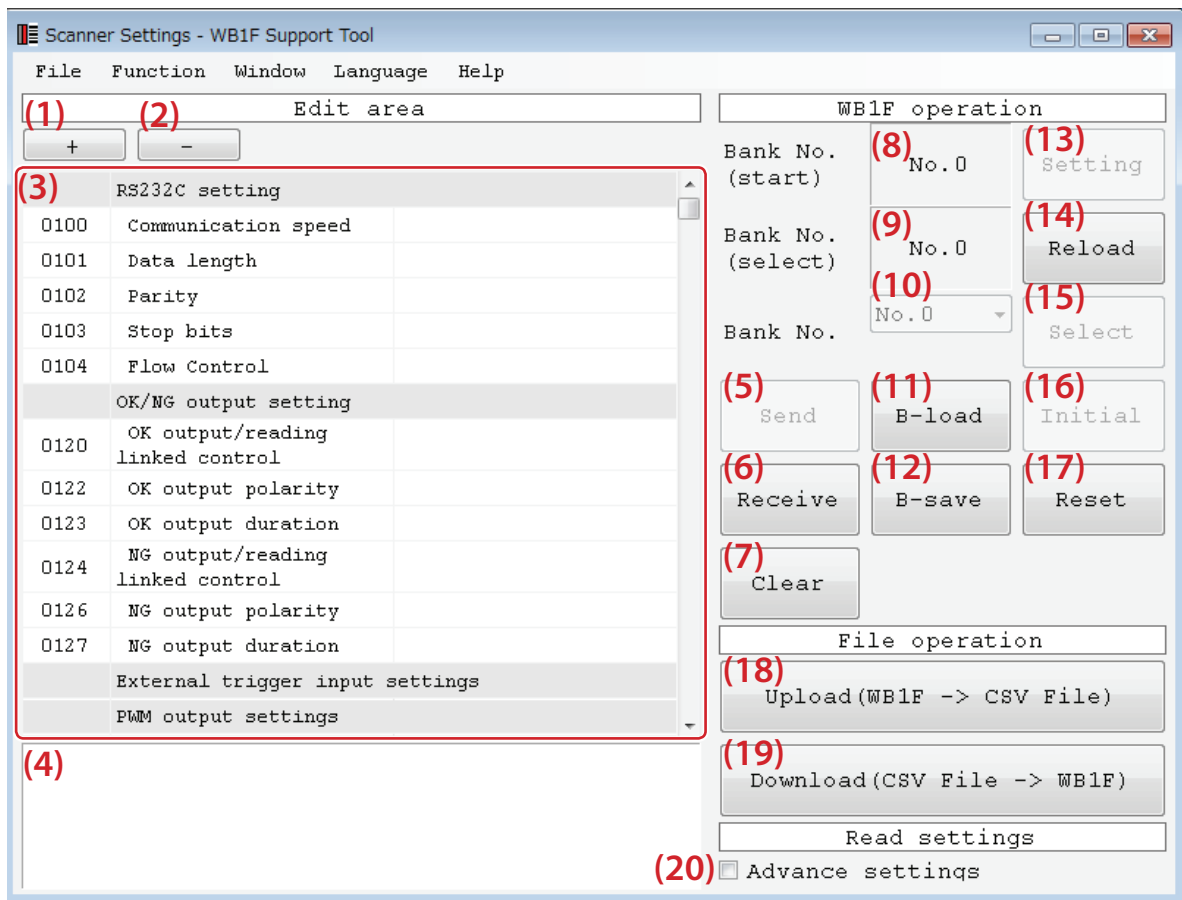
No.	Name	Description
(1)	Communication monitor	Displays communication requests and responses. Blue text: request, Red text: response
(2)	ASCII	Sets the communication monitor to the ASCII display mode.
(3)	HEX	Sets the communication monitor to the hexadecimal display mode.
(4)	Clear	Clears the communication monitor.
(5)	Start reading	Starts reading barcodes.
(6)	Stop reading	Stops reading barcodes.
(7)	OK out ON	Turns on the OK output. (RS-232 type only)
(8)	OK out OFF	Turns off the OK output. (RS-232 type only)
(9)	NG out ON	Turns on the NG output. (RS-232 type only)
(10)	NG out OFF	Turns off the NG output. (RS-232 type only)
(11)	PWM ON Success	Turns on PWM output for when reading is successful. (RS-232 type only)
(12)	PWM OFF Success	Turns off PWM output for when reading is successful. (RS-232 type only)
(13)	PWM ON Fail	Turns on PWM output for when reading fails. (RS-232 type only)
(14)	PWM OFF Fail	Turns off PWM output for when reading fails. (RS-232 type only)
(15)	Red LED ON	Turns on the indicator LED (red). The illumination time follows the setting value.
(16)	Red LED OFF	Turns off the indicator LED (red).
(17)	Orange LED ON	Turns on the indicator LED (orange). The illumination time follows the setting value.

No.	Name	Description
(18)	Orange LED OFF	Turns off the indicator LED (orange).
(19)	Green LED ON	Turns on the indicator LED (green). The illumination time follows the setting value.
(20)	Green LED OFF	Turns off the indicator LED (green).
(21)	Get version	Gets the WB1F firmware version.
(22)	Reading rate	WB1F outputs the reading success rate each time 100 barcodes are read.
(23)	Reading count	WB1F outputs the count of consecutively read barcodes.
(24)	Start matching	Starts reference data sequential input.
(25)	Reference data entry field	Enter the reference data.
(26)	ASCII	Displays the reference data as ASCII characters.
(27)	HEX	Displays the reference data as hexadecimal values.

## ● Setting modifications

This screen is for checking and modifying WB1F settings.

The settings can be configured in detail, such as those for the WB1F reading operation and data output method.



### ■ Edit area

No.	Name	Description
(1)	+	Displays the major and minor items on the configuration items list (3).
(2)	-	Displays only the major items on the configuration items list (3)..
(3)	Configuration items list	This list is for checking and changing WB1F settings. For details, check the configuration items table in the user's manual.
(4)	Message output	Displays a description of the configuration item.

### ■ WB1F operation

No.	Name	Description
(5)	Send	Reflects the changed setting values in WB1F operation.
(6)	Receive	Displays the setting values set on the WB1F on the screen.
(7)	Clear	Clears the setting values displayed on the screen from the screen.
(8)	Bank number display 1	Displays the bank number selected at start.
(9)	Bank number display 2	Displays the currently selected bank number.
(10)	Bank number selection	Selects the bank number. (When advanced settings are enabled)
(11)	B-load	Loads the setting values for the bank that is selected in bank number display 2.
(12)	B-save	Saves the setting values to the bank that is selected in bank number display 2.

No.	Name	Description
(13)	Setting	Sets the bank that is selected in bank number display 2 as the bank at start. (When Advanced settings (20) are enabled)
(14)	Reload	Reloads the selected bank. Use this when the currently selected bank becomes unknown due to resetting the WB1F.
(15)	Select	Confirms the bank selected by Bank number selection (10) for bank number display 2. (When advanced settings are enabled)
(16)	Initial	Resets the WB1F to the factory defaults.
(17)	Reset	Resets the WB1F power supply.

- File operation

No.	Name	Description
(18)	Upload	Uploads all WB1F setting values to a CSV file.
(19)	Download	Downloads a CSV file created by uploading to the WB1F.

- Read settings

No.	Name	Description
(20)	Advance settings	When this checkbox is selected, you can switch the Bank number selection (10) and Initial (16).

A bank is a region where setting values are saved. The WB1F has eight banks.

You can configure setting values for bank number 0 to bank number 7, which allows you to switch between and use a maximum of eight patterns of settings.

The procedures to send and receive setting values and to switch the bank number (selected/start) are as follows.

- Procedure to receive setting values

- 1 Click **Receive (6)**.

The setting values for the bank that is displayed in Bank number display 2 (9) are displayed on the computer.

- Procedures to transmit setting values

- 1 After receiving the setting values, edit them in the edit area.

- 2 Click **Send (5)** after you have finished editing the setting values.

The current values are applied to the WB1F.

- 3 Click **B-save (12)**.

The current values are saved to the currently selected bank number.



If you turn off the WB1F power supply without performing the procedure to Send the setting values, the changed settings will not be applied to the WB1F. The setting values will also be applied for RS-232 configuration items after B-save (12) is clicked and the unit is reset.



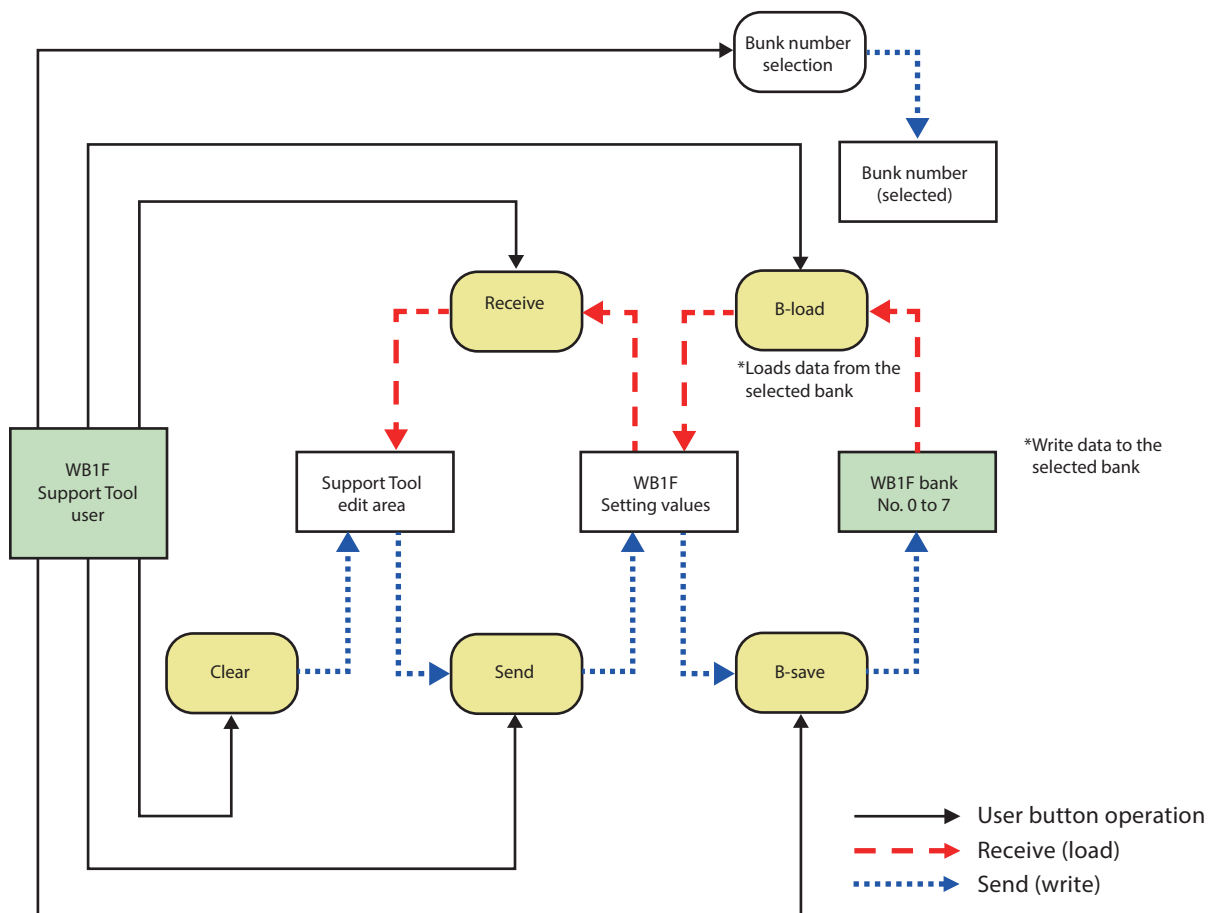
▪ Procedures to switch the bank number (selected)

- 1 Select the **Advanced settings (20)** checkbox.
- 2 Select the bank you want to change to with the **Bank number selection (10)**.
- 3 Click **Select (15)**. This confirms the bank number selected in step 2 for **Bank number display 2 (9)**.
- 4 Click **B-load (11)**. The setting values are switched to the selected bank.

▪ Procedures to switch the bank number (start)

- 1 Select the **Advance settings (20)** check box.
- 2 Select the bank you want to change to with the **Bank number selection (10)**.
- 3 Click **Select (15)**. This confirms the bank number selected in step 2 for **Bank number display 2 (9)**.
- 4 Click **Setting (No. 13)**. This confirms the bank number selected in step 2 for **Bank number display 1 (8)**.
- 5 The next time the WB1F starts, it does so with the bank number displayed in **Bank number display 1 (8)**.

A conceptual diagram of sending/receiving setting values and switching banks is shown next.



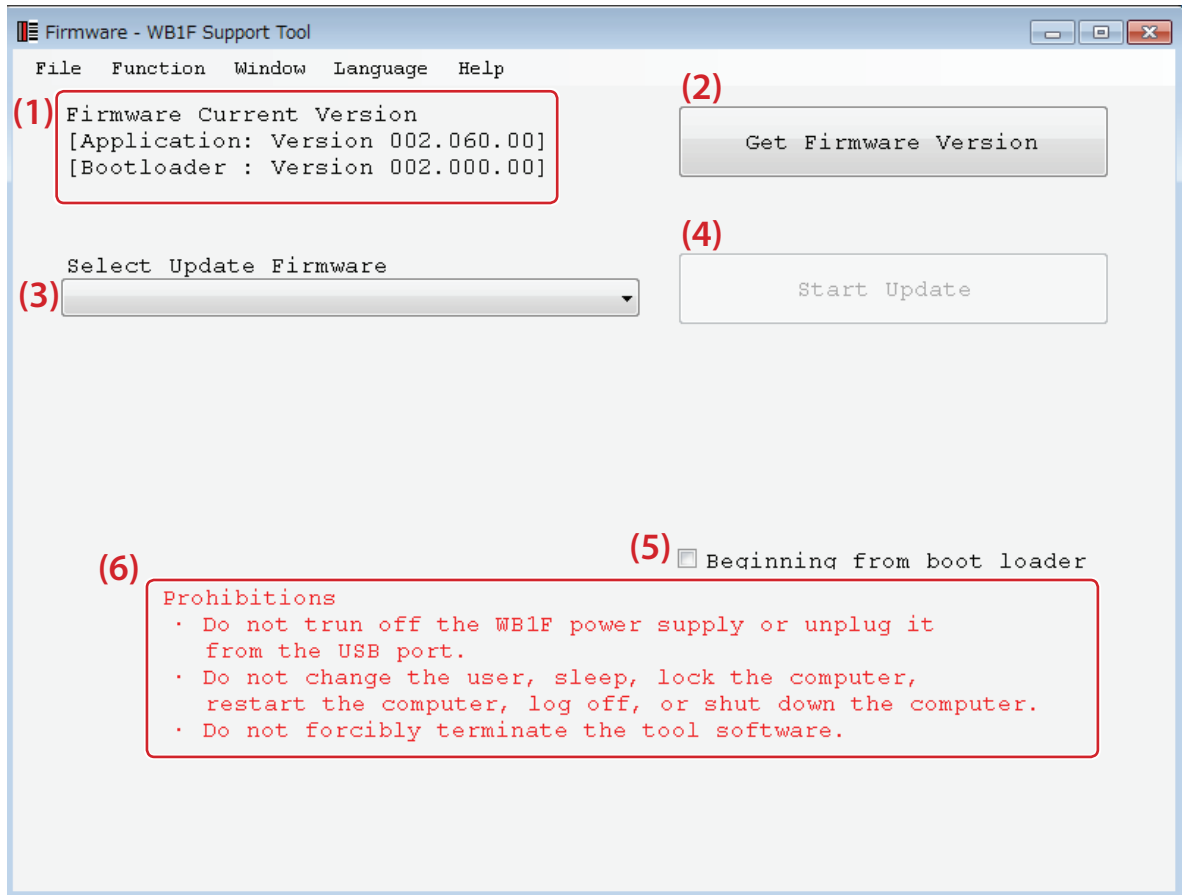
## ● Firmware version up

This screen is the WB1F firmware update screen.

The WB1F can be made to support new functions and to increase performance and product reliability by updating the firmware.

IDEC recommends that you use the WB1F with the latest firmware.

The firmware is available on the IDEC website (<http://www.idec.com/>). Please check there for the latest version.



No.	Name	Description
(1)	Firmware Current Version	Reacquires the versions related to the WB1F unit.
(2)	Get Firmware Version	You can get the WB1F version.
(3)	Select Update Firmware	Select the firmware that you want to update with.
(4)	Start Update	Starts updating the firmware.
(5)	Beginning from boot loader	Uncheck this box before use.
(6)	Prohibitions	Describes the prohibitions when using this function.

\*1 Start Update (4) is only available when the firmware that you want to update with is selected.

\*2 Pay careful attention to the Prohibitions (6) before updating the firmware.

## Updating the firmware



When the firmware is updated, all setting value of WB1F returns in the factory shipment state. Please upload the setting value from Scanner Setting Form as necessary. For details, refer to [\[Setting modifications\]](#) on page 3-7.

The firmware updating method is as follows.

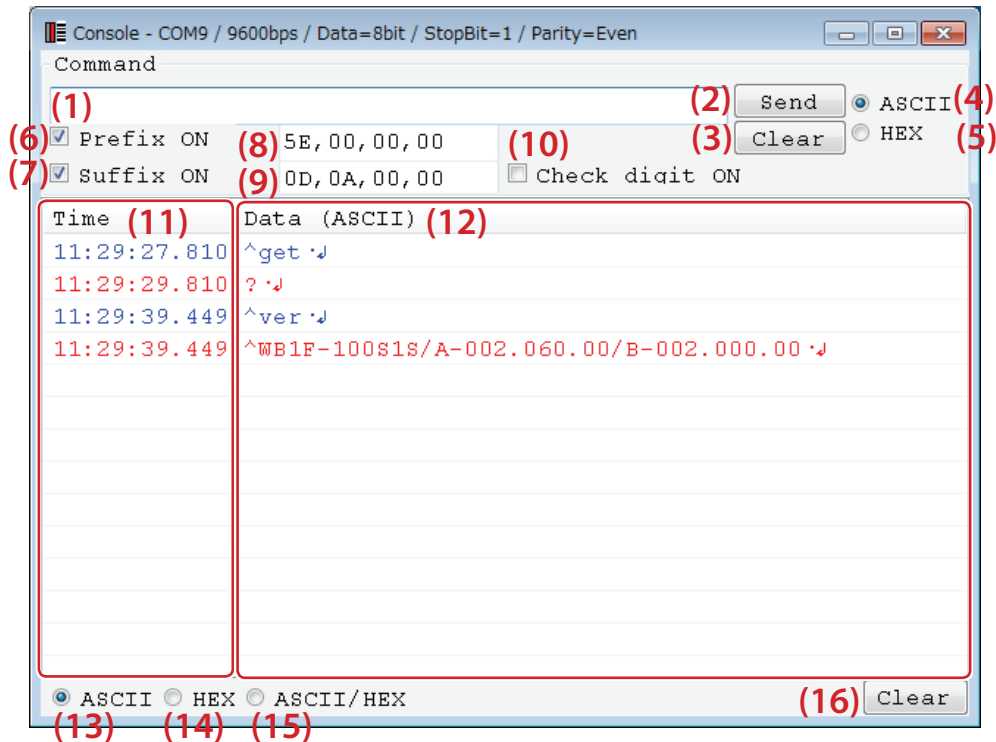
- 1** Select the firmware that you want to update with in **Select Update Firmware (3)**.
- 2** Click **Start Update (4)**.
- 3** The firmware update will start.  
Follow the on-screen instructions.

### 3.2.3 Window

#### ● Console

Displays the console screen.

Use this screen when you want to enter commands yourself or when you want to check detailed communication information.



No.	Name	Description
(1)	Command entry field	Enter the desired command.
(2)	Send	Sends the string in the command entry field.
(3)	Clear	Clears the string in the command entry field.
(4)	ASCII	The command entry field is entered in ASCII.
(5)	HEX	The command entry field is entered in hexadecimal values.
(6)	Prefix ON	Automatically adds the communication command prefix.
(7)	Suffix ON	Automatically adds the communication command suffix.
(8)	Prefix entry field	Enter the prefix to set.
(9)	Suffix entry field	Enter the suffix to set.
(10)	Check digit ON	Adds the check digit to the command.
(11)	Time	Displays the time of the communication requests and responses. Blue text: request, Red text: response
(12)	Communication monitor	Displays communication requests and responses. Blue text: request, Red text: response
(13)	ASCII	Displays the communication monitor as ASCII values.
(14)	HEX	Displays the communication monitor as hexadecimal values.
(15)	ASCII/HEX	Displays the communication monitor as ASCII and hexadecimal values.
(16)	Clear	Clears the communication monitor.

### 3.2.4 Language

- **日本語 (Japanese)**

This menu item changes the WB1F Support Tool display language to Japanese.

- **English**

This menu item changes the WB1F Support Tool display language to English.

- **Chinese (Simplified)**

This menu item changes the WB1F Support Tool display language to Chinese (Simplified).

### 3.2.5 Help

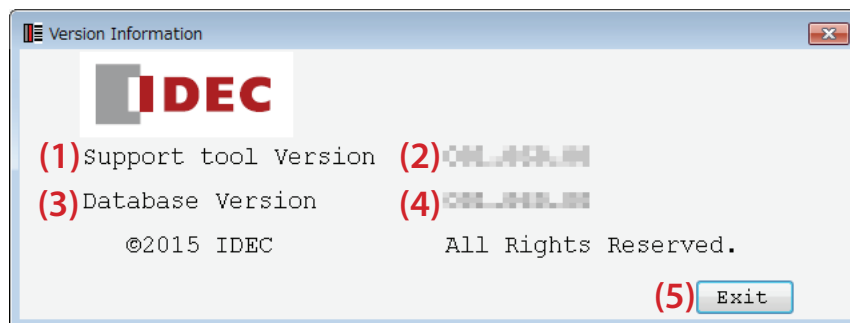
- **User's Manual**

This menu item displays the WB1F Support Tool user's manual (this manual).

- **Version information**

This menu item displays the version information.

The following screenshot shows an example of the Version Information screen.



No.	Name	Description
(1)	Software Version	The version name.
(2)	Version display 1	Displays the software version.
(3)	Database version	The version name.
(4)	Version display 2	Displays the database version.
(5)	Exit	Closes the version information screen.

# 4 Appendix

This chapter gives troubleshooting information and the ASCII code table.

## 4.1 Troubleshooting

If a problem occurs while using the WB1F Support Tool, please check the following items.  
If you cannot resolve the problem, contact our technical support.

### 4.1.1 Cannot connect to the WB1F Support Tool

---

#### ■ Are the WB1F and WB1F Support Tool communication conditions the same?

Open the WB1F Support Tool connection settings screen and check the communication conditions.

### 4.1.2 Communication port is not displayed

---

#### ■ Is the WB1F correctly connected?

Check if the computer and the WB1F are correctly connected.

#### ■ Has the communication port been recognized in Device Manager?

Check the communication port that the WB1F is connected to in Device Manager.

#### ■ When using the USB type, has the device driver been installed?

Check that the device driver has been correctly installed.

#### ■ When the RS-232 type is connected using a RS-232-to-USB conversion cable, has the device driver for the RS-232-to-USB conversion cable been installed?

Check that the device driver has been correctly installed.

#### ■ If the problem is not resolved by trying the above

Try the following procedure.

- 1** Exit the WB1F Support Tool.
- 2** Turn on the power supply for the WB1F again.  
(Turn off the power supply, then turn it back on again.)
- 3** Start the WB1F Support Tool.

### 4.1.3 Cannot connect to the WB1F Support Tool because the WB1F RS-232 settings were forgotten

- On the Connection Settings screen, select the communication port to which the WB1F is connected, and then click Automatic connection.

The support tool automatically searches for the communication settings that the WB1F is set to. This may take some time. (The maximum time: About 1 min 30 sec.)

- Check the communication settings from maintenance mode.

#### 1 Switch to maintenance mode.

(Refer to the WB1F user's manual.)

#### 2 Start the WB1F Support Tool and click Connection with the default settings.

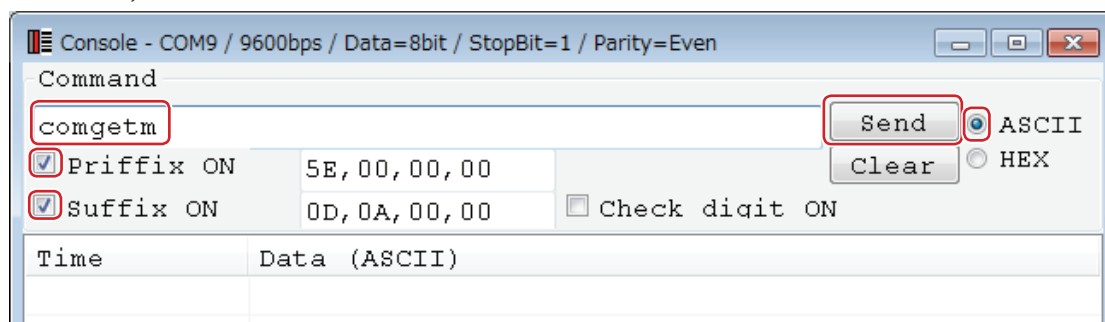
• Default settings

Communication speed	9600 bps	Flow control	None
Data length	8	Prefix	5E,00,00,00
Parity	EVEN	Suffix	0D,0A,00,00
Stop bits	1	Check digit	None

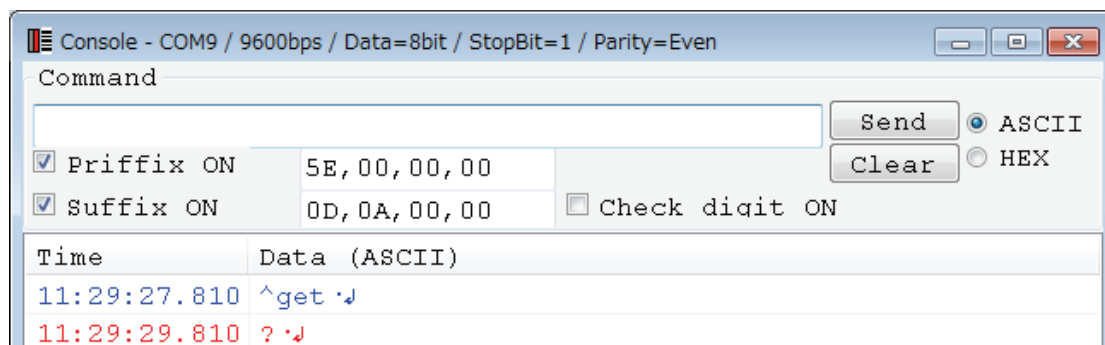
#### 3 Double-click Console to open the Console screen.

#### 4 Enter "comgetm" and click Send.

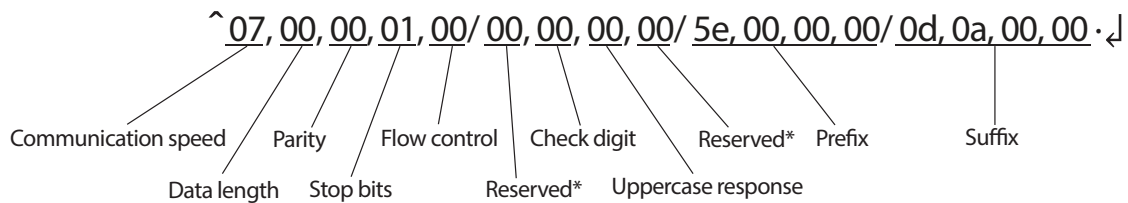
\* Select only the Prefix ON and Suffix ON check boxes.



#### 5 Check the communication settings that are set on the WB1F from the response results (red).



### ■ Response results format



\* Reserved indicates unused areas which are always "00".

When the setting values for each item from the response results format are compared, they will be as shown in the following table.

Item	Setting value	Detailed setting value	Item	Setting value	Detailed setting value
Communication speed	07	115200 bps	Check digit	00	Disabled
Data length	00	7 bit	Uppercase response	00	Disabled (lowercase)
Parity	00	NONE	Prefix	5e,00,00,00	^
Stop bits	01	2 bit	Suffix	0d,0a,00,00	<b>CR</b> <b>LF</b>
Flow control	00	None			

\* Check each of the detailed setting values from the setting values by referring to the WB1F user's manual.

- 6** Exit the WB1F Support Tool and then turn off the power supply for the WB1F.
- 7** Turn on the power supply for the WB1F, and then run the WB1F Support Tool.
- 8** On the Connection Settings screen, set the detailed setting values that were determined in step 5, and then click Connection.

\* At this time, the uppercase response is not used.



## 4.2 ASCII Code Table

Character	Decimal	Hexadecimal	Binary
<b>NUL</b>	0	00	00000000
<b>SOH</b>	1	01	00000001
<b>STX</b>	2	02	00000010
<b>ETX</b>	3	03	00000011
<b>EOT</b>	4	04	00000100
<b>ENQ</b>	5	05	00000101
<b>ACK</b>	6	06	00000110
<b>BEL</b>	7	07	00000111
<b>BS</b>	8	08	00001000
<b>HT</b>	9	09	00001001
<b>LF</b> / <b>NL</b>	10	0A	00001010
<b>VT</b>	11	0B	00001011
<b>FF</b> / <b>NP</b>	12	0C	00001100
<b>CR</b>	13	0D	00001101
<b>SO</b>	14	0E	00001110
<b>SI</b>	15	0F	00001111
<b>DLE</b>	16	10	00010000
<b>DC1</b>	17	11	00010001
<b>DC2</b>	18	12	00010010
<b>DC3</b>	19	13	00010011
<b>DC4</b>	20	14	00010100
<b>NAK</b>	21	15	00010101
<b>SYN</b>	22	16	00010110
<b>ETB</b>	23	17	00010111
<b>CAN</b>	24	18	00011000
<b>EM</b>	25	19	00011001
<b>SUB</b>	26	1A	00011010
<b>ESC</b>	27	1B	00011011

Character	Decimal	Hexadecimal	Binary
<b>FS</b>	28	1C	00011100
<b>GS</b>	29	1D	00011101
<b>RS</b>	30	1E	00011110
<b>US</b>	31	1F	00011111
(SP)	32	20	00100000
!	33	21	00100001
"	34	22	00100010
#	35	23	00100011
\$	36	24	00100100
%	37	25	00100101
&	38	26	00100110
'	39	27	00100111
(	40	28	00101000
)	41	29	00101001
*	42	2A	00101010
+	43	2B	00101011
,	44	2C	00101100
-	45	2D	00101101
.	46	2E	00101110
/	47	2F	00101111
0	48	30	00110000
1	49	31	00110001
2	50	32	00110010
3	51	33	00110011
4	52	34	00110100
5	53	35	00110101
6	54	36	00110110
7	55	37	00110111
8	56	38	00111000
9	57	39	00111001
:	58	3A	00111010
;	59	3B	00111011
<	60	3C	00111100
=	61	3D	00111101
>	62	3E	00111110
?	63	3F	00111111

Character	Decimal	Hexadecimal	Binary
@	64	40	01000000
A	65	41	01000001
B	66	42	01000010
C	67	43	01000011
D	68	44	01000100
E	69	45	01000101
F	70	46	01000110
G	71	47	01000111
H	72	48	01001000
I	73	49	01001001
J	74	4A	01001010
K	75	4B	01001011
L	76	4C	01001100
M	77	4D	01001101
N	78	4E	01001110
O	79	4F	01001111
P	80	50	01010000
Q	81	51	01010001
R	82	52	01010010
S	83	53	01010011
T	84	54	01010100
U	85	55	01010101
V	86	56	01010110
W	87	57	01010111
X	88	58	01011000
Y	89	59	01011001
Z	90	5A	01011010
[	91	5B	01011011
\	92	5C	01011100
]	93	5D	01011101
^	94	5E	01011110
_	95	5F	01011111
`	96	60	01100000
a	97	61	01100001
b	98	62	01100010
c	99	63	01100011
d	100	64	01100100
e	101	65	01100101
f	102	66	01100110
g	103	67	01100111

Character	Decimal	Hexadecimal	Binary
h	104	68	01101000
i	105	69	01101001
j	106	6A	01101010
k	107	6B	01101011
l	108	6C	01101100
m	109	6D	01101101
n	110	6E	01101110
o	111	6F	01101111
p	112	70	01110000
q	113	71	01110001
r	114	72	01110010
s	115	73	01110011
t	116	74	01110100
u	117	75	01110101
v	118	76	01110110
w	119	77	01110111
x	120	78	01111000
y	121	79	01111001
z	122	7A	01111010
{	123	7B	01111011
	124	7C	01111100
}	125	7D	01111101
~	126	7E	01111110
<b>DEL</b>	127	7F	01111111

 represents control characters.

(SP) represents a space character.

Other characters are represented using graphic characters.

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Number of editions	Issued	Revised content	
		Page	Points
1st	2015.04	-	
2rd	2016.03	5	Addition of Version up information
		14, 15	7.2.2 Control command Addition of the explanation of a screen
		19	Addition of a notice of Updating the firmware
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4th	2017.07	5	Addition of Version up information
5th	2018.03	5	Addition of Version up information
6th	2019.09		Change to document format
		iii	Addition of Version up information
		2-1	2.1 System requirements Addition of Windows 10
		2-2	2.2 Setup Addition of tool version description
		3-1	3.1 Menu items list Addition of Chinese (Simplified) display language support
		3-3 ~ 3-13	3.2 Menu item descriptions Addition of updated screen and function description

**WB1F Fix Linear CCD Scanner**

# **WB1F Support Tool User's Manual**

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