



Wireless Hand-held Barcode Reader BL-N90 Series

User's Manual

Read this manual before using the system in order to achieve maximum performance.

Keep this manual in a safe place after reading it so that it can be used at any time.

Introduction

This manual contains information about procedures for handling, operations, warnings, and precautions about the "Wireless Hand-held Barcode Reader BL-N90 Series".

Be sure to read this section thoroughly before use. Keep this manual in a safe place for future reference.

● Symbols

The following symbols and conventions alert you to important messages.

Be sure to read these messages carefully.

 WARNING	Failure to follow instructions may lead to physical injury, such as electric shock or burns.
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 CAUTION	Failure to follow instructions may lead to product damage.
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Note	Provides additional information on proper operations.
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Reference	Provides advanced and useful information for operation.
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 Indicates reference pages in this or another manual.

● General Cautions

- At startup and during operation, be sure to monitor the functions and performance of the BL-N90 series.
- We recommend that you take substantial safety measures to avoid any damage in the event of a problem occurring.
- Do not modify the BL-N90 series, or use it in any way other than described in the specifications.
- When the BL-N90 series is used in combination with other devices, functions and performance may be degraded, depending on the operating conditions and surrounding environment.
- Do not use the BL-N90 series for the purpose of protecting the human body.

● Applications that Need Special Attention

When using the BL-N90 series under the following conditions, be sure to use the BL-N90 series under the specified rating or within the provided functions, or take sufficient safety precautions such as providing a failsafe, and consult with KEYENCE sales staff.

- Under the conditions or environment not described in this manual
- For atomic controls, railway facilities, aviation facilities, vehicles, combustion devices, medical equipment, amusement machines, or safety equipment
- For the applications that may affect human life or properties and particularly require safety

Safety Precautions

● Safety Precautions on Laser Products

The "Wireless Hand-held Barcode Reader BL-N90 Series" employs a visible light semiconductor laser for its light source. The BL-N90 Series is classified as a Class 1 laser under IEC standards (IEC 60825-1: "Safety of Laser Products").



WARNING

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Item	BL-N90/N90K
Wavelength	650 nm
Maximum output	350 μ W
Pulse width	1.5 ms
Class	Class 1 (IEC 60825-1)



WARNING

- Do not look directly at laser light or reflected laser light from a mirrored surface. Otherwise, eye injury may result. Laser light will not cause damage if it strikes exposed skin, but laser light should not deliberately be aimed towards a human body.
- Do not disassemble the BL-N90 Series. The BL-N90 Series does not automatically stop emitting the laser when the reader is disassembled. Therefore, if someone disassembles the reader, he/she may be exposed to the laser beam and may suffer eye injury.
- Be sure to stop the laser emission before cleaning the portion of the laser scanner where laser light is generated and received (emitter/receiver). Otherwise, exposure to the laser may cause eye injury.
- Be careful of the path of the laser beam.
Be especially careful of reflected laser light from a mirrored surface.
Do not use the BL-N90 Series where the path of the laser beam is at the same height as that of the human eye.

Handling the BL-N90 Series

WARNING

- When recharging the BL-N90/N90K with BL-N9R, BL-N9UB, or BL-N9V, make sure to check whether foreign materials have entered the charging terminal. The presence of foreign materials may generate high heat or ignition, which may cause fires.
- Check whether dust covers the power plug of the AC adapter that connects to BL-N9R, BL-N9UB, or BL-N9V, and clean it regularly. There is a danger that a fire will start due to tracking. Also, remove the plug from the electrical outlet when not using the BL-N90 Series for a long period of time.
- Always use the included AC adapter with BL-N9R, BL-N9UB, or BL-N9V. Using another AC adapter may cause fire, electrical shock, or damage to the equipment.

CAUTION

- Do not modify or disassemble the BL-N90 Series. Doing so may cause damage.
- The BL-N90 Series is a precision instrument. Dropping it or applying strong shock may cause damage to the instrument. Take appropriate precautions when transporting the BL-N90 Series.
- Do not place the BL-N90 Series in locations with large amounts of moisture or dust. Also, do not leave small metallic objects, such as paperclips, near the instrument. Doing so may cause fire or damage.
- Do not use the BL-N90 Series in the following locations. Usage in these locations may cause damage or malfunctions.
 - Locations where the ambient temperature exceeds the rated range.
 - Locations where the ambient humidity exceeds the rated range.
 - Locations exposed to direct sunlight.
 - Locations where temperatures may increase greatly, such as within a vehicle with the windows closed.
 - Locations where sharp temperature changes may cause condensation.
 - Locations with corrosive or flammable gases.
 - Locations with a large amount of dust, salt, iron, or greasy fumes.
 - Locations that are directly affected by vibrations or shock.
 - Locations where the unit may be splashed by water, oil, or chemicals.
 - Locations with strong magnetic or electrical fields.

● Notes about the default number of digits for reading

The number of digits of barcode for reading is set to three digits or more by default to prevent misreading. How to count the digits varies depending on the barcode type, but the minimum number of digits for reading by default is as follows.

Barcode type	Example of barcode with three digits or more
CODE39	*123*
NW-7	A1A
ITF	1234
CODE128	123

If you read a barcode with less than three digits, change the setting with the Limit read digits function.

Wireless Communication

The BL-N90 Series contains an internal wireless function based on Bluetooth wireless technology.

 CAUTION	Disassembly or modification of the BL-N90 Series is prohibited under the Japanese Electrical Appliance and Material Safety Law (DENAN). Do NOT disassemble or modify the product. The BLN90 Series is specified as specified low power radio equipment according to DENAN, and the appropriate certification has been obtained
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● Precautions for wireless communication

- Using the BL-N90 Series near wireless LAN equipment that operates in the same frequency band may cause radio interference, reduce the communication speed, and make communication impossible.
- Using the BL-N90 Series near equipment that operates in the same frequency band, such as microwave ovens, industrial heaters, or high frequency medical equipment, may make communication impossible.
- The BL-N90 Series may not be able to communicate in the following types of locations.
 - Locations close to metallic substances or with large amounts of metallic powder
 - Locations surrounded by metallic walls
 - Locations that are subject to strong vibrations
- The guideline for communication distance is a visible range of about 10 m, but there are some environments where communication is not possible even within this range. Make sure to check communication before installation.
- The BL-N90 Series employs the working frequency band used by premise radio stations for identification of moving objects (radio station license is required) and specified low-power radio stations (radio station license is not required) that are used by production lines for factories that make industrial, chemical, or medical equipment.
 - Before using the BL-N90 Series, confirm that premise radio stations for identification of moving objects and specified low-power radio stations are not operated nearby.
 - In the unlikely event that waves from the BL-N90 Series cause radio interference with premise radio stations for identification of moving objects, stop the equipment and contact KEYENCE at the number below. Our representatives can help provide more information about methods for avoiding interference, such as the installation of a partition.
 - If other problems occur, such as waves from the BL-N90 Series causing radio interference with specified low power radio stations for identification of moving object, contact KEYENCE at the number below.

Contact: KEYENCE, TEL +81-6-6379-1151

2.4	FH	1
☐	☐	☐

2.4 : Indicates that the wireless device is used in a 2.4 GHz band.

FH : Indicates that the modulation system is FH-SS.

1 : Indicates the estimated interference distance (≤10 m).

☐☐☐ : Indicates that the equipment uses the full bandwidth and identification of moving object equipment area cannot be avoided.

Precautions on Safety Standards

■ Europe

● Precautions on CE Marking

The BL-N90 series complies with the R&TTE Directive.

- Applicable standard ESTI EN300 328 V1.6.1
ESTI EN301 489-17 V1.2.1
EN60950-1
EN60825-1, Laser Class1
- Overvoltage category I (BL-N90/N90K)
II (BL-N9R/N9UB/N9V)
- Pollution degree 2

● Countries where the BL-N90 Series can be used

Among the EU member states, the BL-N90 Series can be used in the following countries.

- | | | | |
|---------------------------------|-----------------------------------|-----------------------------------|-------------------------------------|
| ☐ Austria | ☐ Belgium | ☐ Denmark | ☐ Estonia |
| ☐ Finland | ☐ France | ☐ Germany | ☐ Greece |
| ☐ Iceland | ☐ Ireland | ☐ Italy | ☐ Liechtenstein |
| ☐ Luxemburg | ☐ Netherlands | ☐ Norway | ☐ Portugal |
| ☐ Spain | ☐ Sweden | ☐ Switzerland | ☐ England |
| ☐ Poland | | | |

■ North America

● Precautions on FCC

The BL-N90 Series complies with the following FCC requirements.

- Approved standard FCC Part 15 Subpart B, Class B Digital Device
 FCC Part 15 Subpart C
- FCC ID RF40823A (BL-N90/N90K)
 RF40823B (BL-N9R/N9UB/N9V)

FCC WARNING

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules and RSS-Gen of the IC Rules.

Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

● Precautions on UL and CSA certificate

The BL-N90 Series complies with the following UL and CSA standards. The equipment has received UL and C-UL certificate.

- Approved standard UL60950-1
 CAN/CSA C22.2 No.60950-1-03
- UL File No. E167973
- UL category NWGQ/NWGQ7
- Pollution degree 2
- Overvoltage category I (BL-N90/N90K)
 II (BN-N9R/N9UB/N9V)

Be sure to use the power supply that has the Class 2 output specified by NEPA70 (NEC: National Electric Code).

● Precautions on IC (Industry Canada)

The BL-N90 Series complies with the following IC regulation.

- Approved standards: RSS-210-Low Power License-Exempt Radio Communication Devices
 ICES-003, Issue 4, Class B Digital Apparatus
- IC No. 5798A-0823A (BL-N90/N90K)
 5798A-0823B (BL-N9R/N9UB/N9V)

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules and RSS-Gen of the IC Rules.

Operation is subject to the following two conditions:

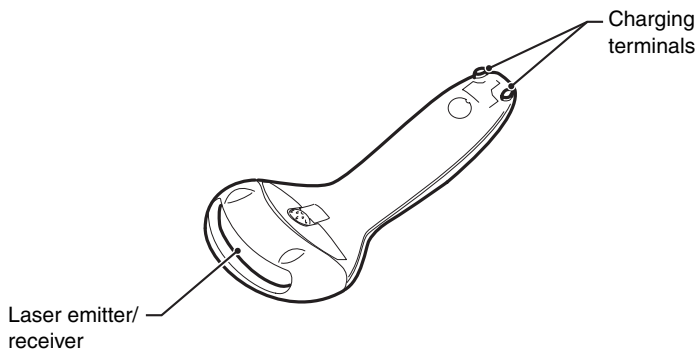
(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Maintenance

Clean the following parts on the BL-N90/N90K and the communication unit periodically.

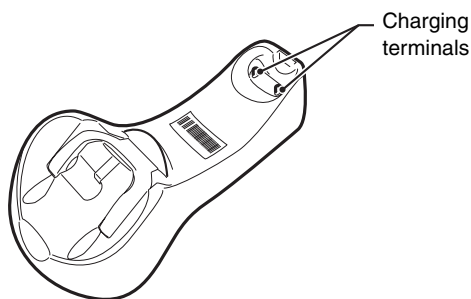
- BL-N90/N90K

Clean the laser emitter/receiver and the charging terminals.



- Communication unit

Clean the charging terminals.



● Cleaning method

Laser emitter/receiver : Clean the surface using an eyeglass cleaning cloth or a soft cloth that has been dampened with a specialty cleaner for plastics.

Charging terminals : Wipe the surface gently using a soft cloth moistened with alcohol.

1

Overview

This chapter describes names and functions of each part of the items in the package.

1-1	Checking the Package Contents	1-2
1-2	Part Names.	1-5

1-1

Checking the Package Contents

The BL-N90/N90K series comes with the following items. Check that all of the items are included.

1

Overview

Wireless Hand-held Barcode Reader BL-N90/N90K

● BL-N90/N90K barcode reader: 1

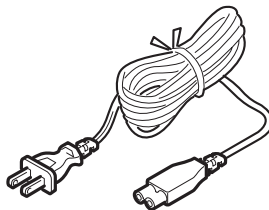


● Strap: 1



● AC cable: 1

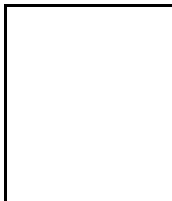
Supplies power by using the AC adapter of the communication unit.



* This cable is not included in the BL-N90K.
Please prepare one separately.

* This cable can be used in Japan only.

● User's Manual: 1



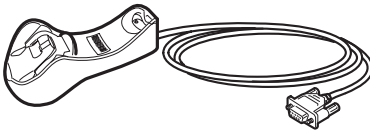
Communication Unit BL-N9R/N9V/N9UB

The following models are available for each communication interface:

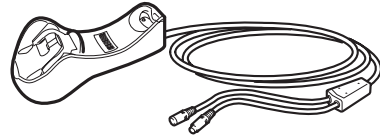
Model	Communication interface
BL-N9R	RS-232C communication unit
BL-N9V	Keyboard interface communication unit
BL-N9UB	USB communication unit

● Communication unit: 1

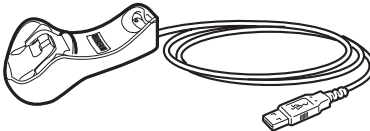
◆ BL-N9R



◆ BL-N9V

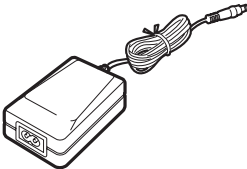


◆ BL-N9UB

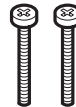


● AC adapter: 1

Used to mount the communication unit on a wall.

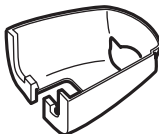


● Wall mount screw: 2



● Cup holder

Attach this holder to the communication unit to secure the BL-N90/N90K when the communication unit is used on a wall.



● Instruction Manual: 1

Option

● Stand OP-82191

Used to fix the BL-N90/N90K on a desktop to read barcodes by bringing them close to it.



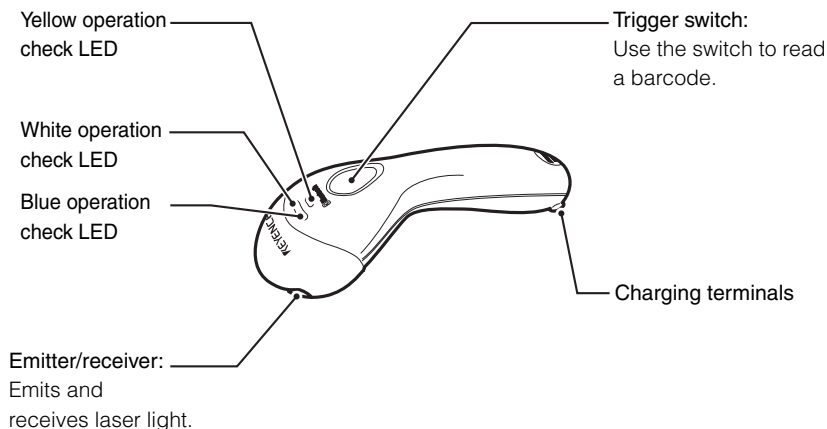
1

Overview

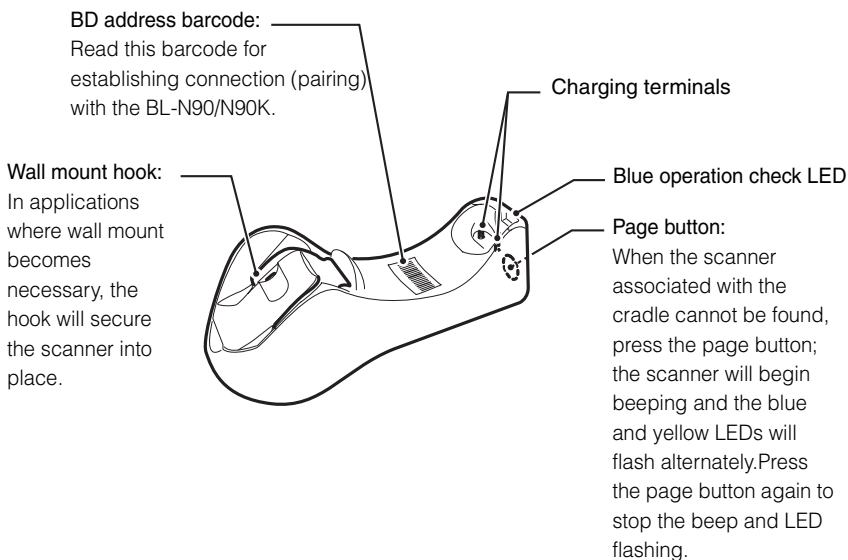
1-2 Part Names

This chapter describes names and jobs of each part of the BL-N90/N90K Series.

● BL-N90/N90K



● Communication unit



Operation check LEDs

The LEDs illuminate or flash for each operation as shown in the following table.
A beep may sound at the same time for some operations.

● BL-N90/N90K

LED lighting/flashing	BL-N90/N90K status	Beep*
Lights in blue 	Emitting laser.	—
Flashes in blue 	• Not wirelessly connected with the communication unit. • Out of the wireless communication range.	—
	Wireless communication is cut.	 2
Lights in white. 	Sending data to the communication unit.	 1
Flashes in white. 	Establishing wireless communication (flashes three times).	 3
Lights in yellow. 	Charging complete.	—
Flashes in yellow. 	Mounted on the communication unit: Being charged.	—
Flashes in blue, white, and yellow. 	When checking the association using the page button on the communication unit. Press the page button again to stop.	 Repeat

* The number beside the beep mark indicates the number of beeps.

● Communication unit

LED lighting/flashing	Communication unit status
Lights in blue	The wireless connection is established and the unit can be used.
Flashes in blue	• Wireless connection is not established with the BL-N90/N90K. • Out of the wireless communication range.

2

First Steps

2

This chapter describes the procedures for connecting the BL-N90/N90K to use for the first time.

2-1	The Setup Procedure	2-2
2-2	Connecting the Power Cable to the Communication Unit	2-3
2-3	Connecting the Communication Unit	2-5
2-4	Charging the BL-N90/N90K.	2-11
2-5	Establishing a Connection	2-13
2-6	Initial Setup for the BL-N90/N90K	2-15
2-7	Reading a Barcode	2-16
2-8	Wireless Connection Environment	2-18

2-1 The Setup Procedure

Before using the BL-N90/N90K, the following connections must be set up. Performing these connections establishes the following communications, enabling the BL-N90/N90K for use.

- Communication unit to PC connection: Wired transmission
- BL-N90/N90K to communication unit connection: Wireless transmission (Bluetooth)

Note

After connecting the communication unit to the computer, be sure to charge the BL-N90/N90K before use.

● First steps

1 Connect the power cable to the communication unit. (📖 page 2-3).



2 Connect the communication unit to your computer (📖 page 2-5).



3 Charge the BL-N90/N90K (📖 page 2-11).



4 Establish a connection between the BL-N90/N90K and the communication unit (📖 page 2-13).

Use the BL-N90/N90K to read the BD address barcode attached to the communication unit.



5 Initialize settings for the BL-N90/N90K. (📖 page 2-15).
Read the initialization barcode using the BL-N90/N90K.

2-2

Connecting the Power Cable to the Communication Unit

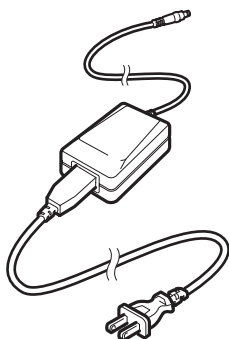
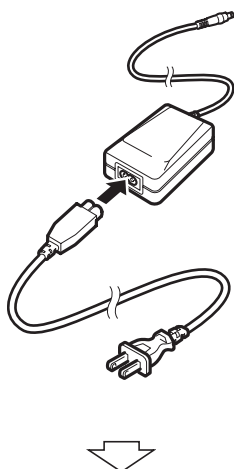
Connect the power cable to the communication unit before use.

● Included parts

- AC cable for the BL-N90
(The AC cable for the BL-N90K is not included. Please prepare one separately.)
- Communication unit
- AC adaptor for the communication unit

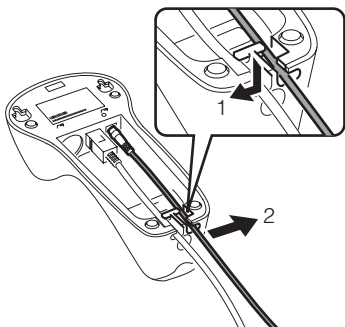
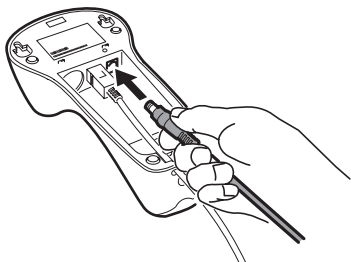
Procedure

- 1 Connect the AC cable to the AC adaptor.

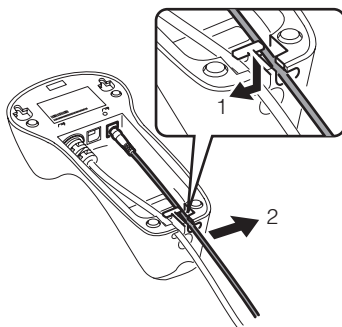
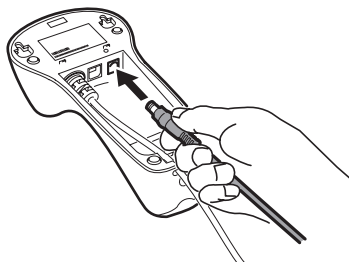


- 2** Connect the AC adapter to the AC connector on the back of the communication unit.
After connecting the AC adaptor, snap the cable behind the hook.

BL-N9UB



BL-N9V/N9R



2-3 Connecting the Communication Unit

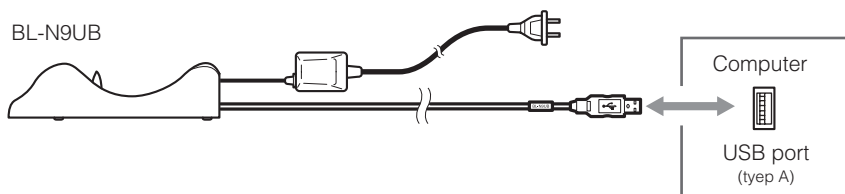
After connecting the power cable to the communication unit, connect the communication unit to your computer using the interface provided.

Connecting the BL-N9UB to your Computer

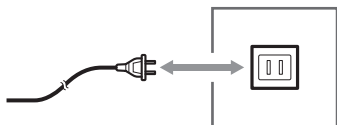
Use the USB cable to connect the communication unit to your computer.
The barcode reader is compatible with Windows XP/2000/98.

Procedure

- 1 Turn on your computer.
- 2 Connect the communication unit's interface cable to the USB port on your computer.



- 3 Connect the power cable to an AC outlet, and turn on the communication unit.



The blue LED on the communication unit will flash.



CAUTION

- Be sure to use the AC adaptor provided with the device. Connecting to other power sources may cause electric shock, fire or product damage.

After connecting the device to your computer for the first time, install the USB driver ( page 2-6).

Installing the USB Driver

When BL-N9UB is first connected to a computer running Windows 98, the USB driver installation screen appears. Install the driver by following the directions given on the screen. (This procedure is not necessary when using a computer running Windows XP/2000).

Note

Connect the barcode reader after turning on the computer. If the barcode reader is connected with the power off, turn the computer on.

Procedure

- 1 The "Add New Hardware Wizard" dialog appears and the message "This window searches for new drivers for:USB human interface device" is displayed. Click on the [Next] button.
- 2 The message "What do you want Windows to do?" is displayed. Select [Search for the best driver for your device (Recommended).] and click on the [Next] button.
- 3 Click on the [Next] button. "USB human interface device" is displayed and the message "Windows driver search for the device:" appears. Click on the [Next] button.

Note

The CD-ROM (Windows) may be required depending on the computer environment.

- 4 Windows begins installing the driver. When installation is complete, the message "Windows has finished installing the software that your new hardware device requires." appears. Click on the [Finish] button.

Connecting the BL-N9V to your Computer

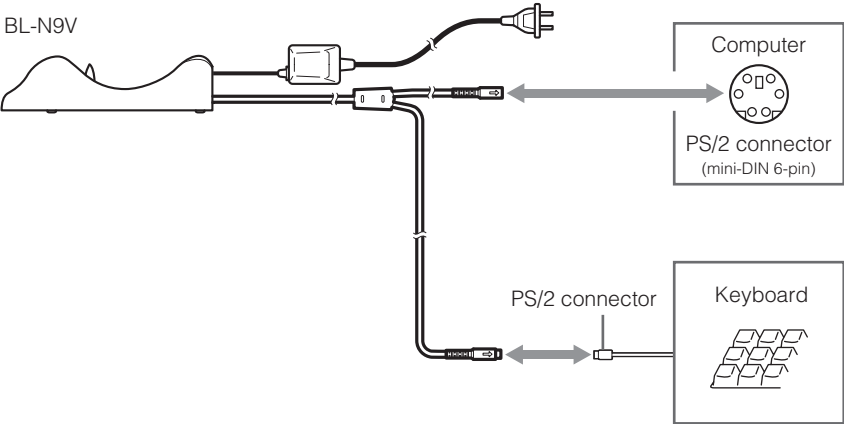
Use the keyboard interface to connect the communication unit to your computer. Compatible computers include PC/AT (DOS/V) machines.

Procedure

1 Turn off the computer.

 CAUTION	Do not remove the cables while the computer is turned on. This could cause damage to the computer and the barcode reader.
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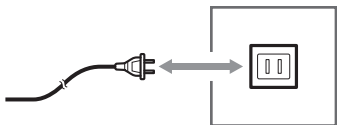
2 Connect the communication unit's interface cable to your computer's keyboard connector, as indicated in the diagram.



Reference	When connecting a keyboard connector plug to an AT connector, use a commercial keyboard conversion adapter for the connection.
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2
First Steps

- 3** Connect the power cable to an AC outlet, and turn on the communication unit.



The blue LED on the communication unit will flash.



CAUTION

- Be sure to use the AC adaptor provided with the device. Connecting to other power sources may cause electric shock, fire or product damage.

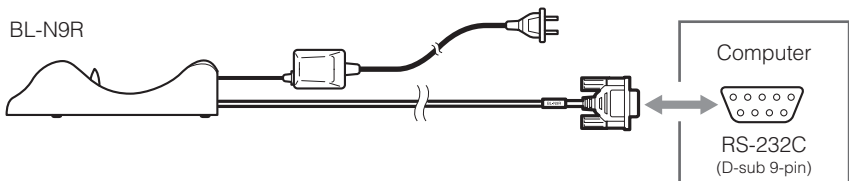
- 4** Turn on your computer.

Connecting the BL-N9R to your Computer

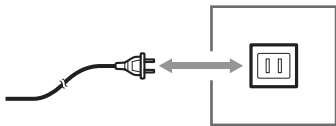
A communication unit with an RS-232C interface may be used in conjunction with an RS-232C enabled device. This section explains procedures for connecting the barcode reader to a computer, as well as connecting the barcode reader to an AutoID data controller DV-90 (page 2-10).

Procedure

- 1 Turn on your computer.
- 2 Connect the communication unit's interface cable to the RS-232C port on your computer.



- 3 Connect the power cable to an AC outlet, and turn on the communication unit.



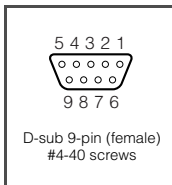
The blue LED on the communication unit will flash.



CAUTION

- Be sure to use the AC adaptor provided with the device. Connecting to other power sources may cause electric shock, fire or product damage.

● RS-232C pin configuration of the BL-N9R



Pin No.	Symbol	Description	Signal direction
2	SD (TXD)	Sends data	Output
3	RD (RXD)	Receives data	Input
4	-	Do not make any connection	-
5	SG	Signal ground	-
6	-	Do not make any connection	-
7	CS (CTS)	Send OK	Input
8	RS (RTS)	Send request	Output

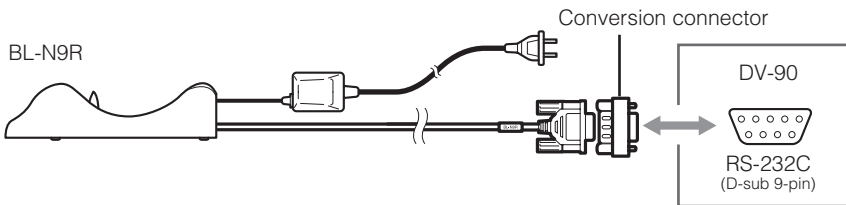
● Communication settings

Factory settings for the BL-N90 are given below. The settings can be changed. Make sure that the settings for BL-N90/N90K and the connected computer are the same.

- Baud rate : 9600 bit/s
- Data length : 7 bits
- Parity : Even
- Stop bit : 1 bit
- Communication protocol: No protocol

Connecting the DV-90

To connect the device to a DV-90, an adaptor like the diagram below is required.



The following adaptor is recommended.

- Manufacturer : Elecom
- Product Name : Serial Reverse Adaptor
- Model : AD-R9



CAUTION

- Be sure to use the AC adaptor provided with the device. Connecting to other power sources may cause electric shock, fire or product damage.
- Power is supplied by the AC adaptor. The D-sub connector does not supply power.

2-4 Charging the BL-N90/N90K

The communication unit is used to charge the BL-N90/N90K.

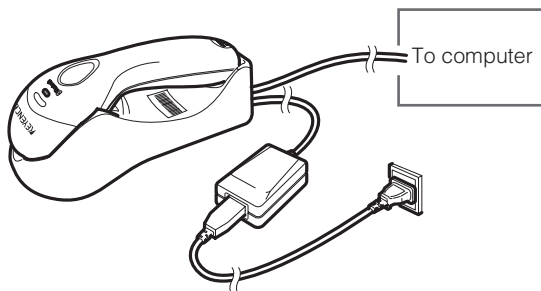
Note

The barcode reader is shipped with zero charge. Please charge the device before use.
The barcode reader may be used to scan (📖 page 2-13) after a charge of just 10 minutes.

● How to charge

Procedure

- 1 Connect the communication unit to your computer using the appropriate connection method, and make sure both sides are powered on.
For details on connection methods, refer to 📖 "Connecting the Communication Unit" on page 2-5.
- 2 Set the BL-N90/N90K into the communication unit securely, to ensure that the charging terminals stay in place.
As the unit begins to charge, the yellow LED on the scanner begins to flash 📡 .



Charging is complete once the yellow LED stops blinking 📡 .
A full charge takes approximately 4 hours.

Note

- Please periodically clean the charging terminals on the BL-N90/N90K and the communication unit (📖 "Maintenance" (Page 6)).
Dirt in the terminals may interfere with charging.
- The BL-N90/N90K can be configured to sound an alarm when it is unable to charge properly, such as when the charging terminals are misaligned.

Rechargeable Batteries for the BL-N90/N90K

The BL-N90/N90K sounds an alarm when the battery is low.

When using the scanner, be mindful of the alarm and always maintain a charge.

● Battery low alarm

When the BL-N90/N90K battery level gets low, the following alarms are sounded.

- Each time a barcode is read, a beep sounds two times  2

Reference	• If the "Trigger" switch is pressed but the laser light is short, or if the laser does not light when reading a barcode, the battery may be low. • If the laser does not light even when pressing the "Trigger" switch, then the battery is completely depleted.
------------------	--

● Continuous use capacity

The following table offers estimates of how long the BL-N90/N90K can be used continuously on a full charge.

Usage Condition	Estimated Continuous Use Length
One scan every 10 seconds	Approx. 10 hours
One scan every 5 seconds	Approx. 8.5 hours
Idle with full charge *	Approx. 12 hours
Sleep mode with full charge *	Approx. 54 hours

* Since the BL-N90/N90K scanner and the communication unit are continuously communicating wirelessly, battery power is depleted even when the BL-N90/N90K is not in use.

- When not in use, it is recommended that you set the BL-N90/N90K in the communication unit.
- When not using the device for long periods, enabling sleep mode interrupts the wireless communication, thereby saving battery power.

Note	• The continuous use times listed above are estimates. Actual times may vary. • If the continuous use times decrease remarkably, then it is time to replace the batteries. Contact your nearest KEYENCE office.
-------------	--

● Charging time

A fully depleted (no charge) battery takes approximately 4 hours to fully charge.

2-5 Establishing a Connection

The BL-N90/N90K and the communication unit communicate as a pair. This section describes how to establish a connection between the BL-N90/N90K and the communication unit.

Note

Perform the following operation with the communication unit connected to your computer (📖 page 2-5).

Procedure

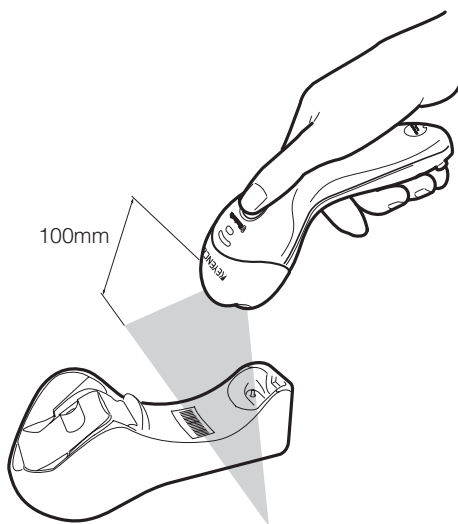
Note

The following symptoms indicate that a connection is not established.

- The blue LED on the scanner is flashing
 - The blue LED on the communication unit is flashing
- At this stage, perform the following steps.

Note that even when using multiple BL-N90/N90K scanners, each scanner can only communicate with its pair communication unit (📖 page 2-14).

- 1 Press the "Trigger" switch to activate the laser.
- 2 Scan the barcode attached to the communication unit.



After 10 to 30 seconds, a connection will be established. Once a connection is established, the devices will be in the following state:

- The blue LED on the scanner is lit.
- The blue LED on the communication unit is lit.

Notes About Establishing a Connection Between the Scanner and the Communication Unit

● Reading a barcode

The BL-N90/N90K cannot read a barcode unless a connection has been established with the communication unit.

(A beep will sound twice.)

● Using multiple BL-N90/N90K barcode readers

- Only the connected barcode reader and communication unit pair can communicate with one another.
- If multiple BL-N90/N90K barcode readers scan the same communication unit barcode, only the first barcode reader to scan the communication unit can communicate with it. To change the pairing, follow the procedure below entitled "Swapping out the BL-N90/N90K".

● Swapping out the BL-N90/N90K

When swapping one BL-N90/N90K barcode reader for another, follow the procedure below.

Procedure

- 1** Hold down the trigger switch on the paired BL-N90/N90K for about 10 seconds to enable sleep mode.

A beep will sound as sleep mode is enabled. (📖 page 1-6)

During sleep mode, the wireless connection is disabled, causing the blue LED on the communication unit to blink. This connection must be disabled in order for the communication unit to pair with another BL-N90/N90K.

- 2** Use the second BL-N90/N90K to scan the barcode of the communication unit.

- 3** Scan the initialization barcode. (📖 page 2-15)

2-6 Initial Setup for the BL-N90/N90K

After establishing a connection between the BL-N90/N90K and the communication unit, be sure to initialize its configuration. This ensures that the scanner's configuration is initialized to match the interface type of the communication unit.

Procedure

- 1** Press the "Trigger" switch to activate the laser.
- 2** With the laser light about 100 mm from the page, scan the "Initialization" barcode below. Once scanning of the "Initialization" barcode is complete, a beep will sound 3 times.



<Initialize>

2

First Steps

2-7 Reading a Barcode

This section describes the basic barcode scanning operations.

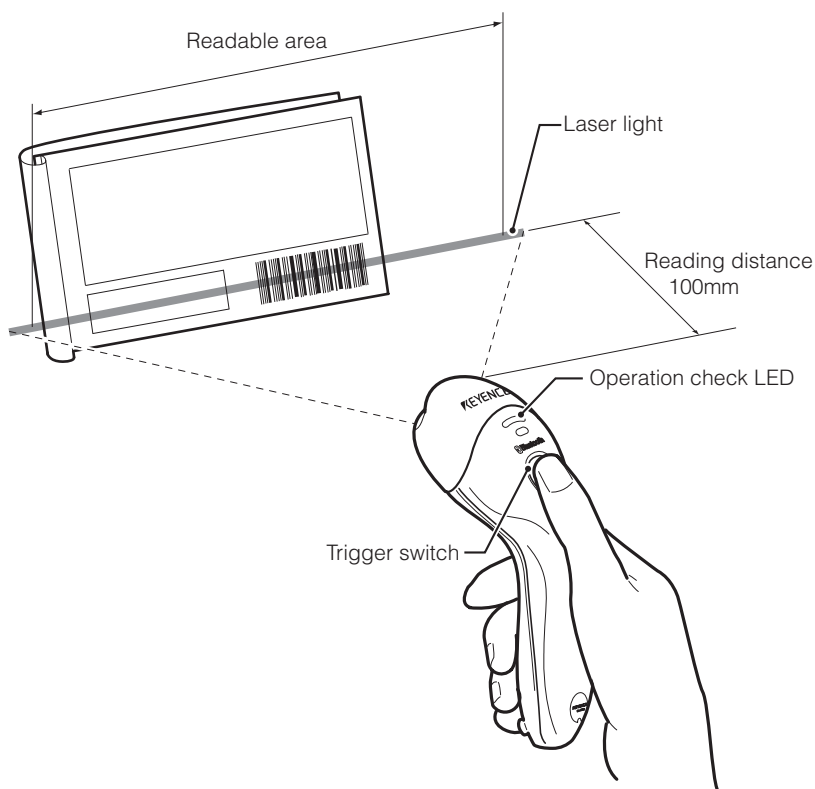
Scanning a Barcode

The BL-N90/N90K is able to read barcodes when it is connected wirelessly to the communication unit. The wireless connection can be verified by checking that the blue LED on the communication unit is lit (📖 page 1-6).

1 Press the "Trigger" switch to activate the laser.

As the laser is activated, the blue LED on the BL-N90/N90K lights up 📶 .

2 Aim the laser to cover the entire barcode.



3 Once scanning is complete, the white LED lights up 📶 , a beep will sound once 🔊¹, and data is transmitted to your computer.

● Precautions for reading

- If the BL-N90/N90K communicate with the communication unit wirelessly, then the barcode will not be read.
(A low-pitched beep will sound twice.)
- Be sure to aim the laser to scan the entire length of the barcode.

○ Correct scan



✗ Incorrect scan

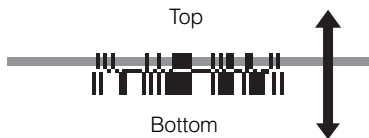


- Only shine the laser light on one barcode at a time. Scanning multiple barcodes at once can lead to scan errors, or barcodes being scanned out of order.

✗ Incorrect scan



- Depending on the laser reflection, interior lighting, or barcode label angle, light reflected from the label may be partially reflected, resulting in scan errors.
In such situations, adjust the label and laser angle or distance.
- When scanning an RSS Stacked barcode, aim the laser and scan from the top of the barcode to the bottom, or from the bottom to the top.



● Caution when using the BL-N9UB/N9V

When using the BL-N9UB/N9V, barcode data read by the BL-N90/N90K is treated as data entered through the keyboard. In this way, data may be input directly into the running application, without the need for special drivers.

When using the BL-N9UB/N9V, please note the following:

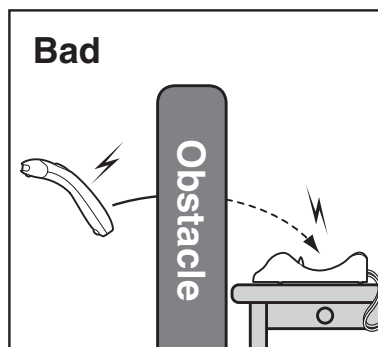
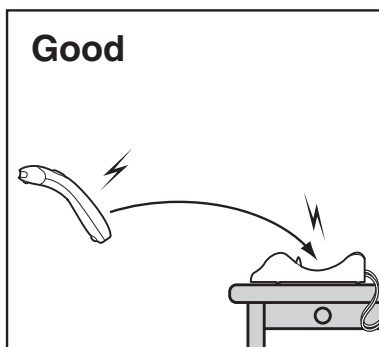
- Do not try to read a barcode while pressing down a key on the computer's keyboard. Do not press a key while receiving the data. Data input will not be read correctly.
- If the computer has multiple language settings, make sure that the input mode is set for single-byte alphanumeric characters.

The BL-N90/N90K and the communication unit use Bluetooth Version 1.2 for their wireless communication. Please use in the following environment.

● Transmission range and surrounding conditions

The BL-N90/N90K and the communication unit have a line-of-sight range of approximately 10 meters.

However, obstacles placed between the BL-N90/N90K and the communication unit, such as concrete or metal, may interrupt the wireless connection. Please use the device in an environment free of these obstacles.



Also read the notes regarding wireless communication (📖 Page 3).

● When the wireless connection is interrupted

The following occur when the wireless connection is interrupted:

- The blue LED on the BL-N90/N90K flashes .
- The blue LED on the communication unit flashes.

Once a connection can be established again, the BL-N90/N90K and communication unit automatically reconnect.

- Reconnection may take between 10 to 30 seconds.
- During this time, barcodes cannot be read.
(A low-pitched beep will sound twice.)

Appendices

This chapter describes the specifications and outer dimensions.

A-1 SpecificationsA-2
A-2 DimensionsA-4

● BL-N90/N90K

Model		BL-N90/N90K
Light source		Visible semiconductor laser (Wavelength: 650 nm)
	Maximum output	350 μ W
	Pulse width	1.5 ms
	Class	Class 1 (IEC 68025-1)
Scan rate		72 scans per second
Minimum resolution		0.127 mm
Reading distance		25 to 250 mm (Narrow bar width: 0.5 mm) 0 to 165mm (Narrow bar width: 0.25mm)
PCS		0.35 or more
Supported code		JAN/EAN/UPC (A, E), CODE39, CODE128/EAN128, NW-7, CODE93, ITF, 2of5, RSS-14, RSS-14 Truncated, RSS-14 Stacked, RSS-14 Stacked Omnidirectional, RSS Limited, RSS Expanded, RSS Expanded Stacked
Number of digits for reading		Maximum 40 digits (Maximum 80 digits with CODE128 or CODE-C)
Wireless communication unit	Wireless standard	Bluetooth Ver1.2
	Frequency	2.4 GHz
	Transmission output	Class 2 (2.5 mW max.)
	Communication distance	10 m visible
Internal battery		Internal lithium ion battery Continuous use time: 10 hours *1 Cycle life: 500 times
Environmental condition	Operating ambient light	4800 lx
	Operating ambient temperature	0 to 40°C (32 to 104°F), No freezing
	Operating ambient humidity	35 to 85% RH (No condensation)
	Operating atmosphere	No dust or corrosive gas
Outside Dimensions		199 x 77 (44) x 53 mm * Value inside () is the grip
Weight		Approx. 200g

*1 The continuous use time with wireless communication reading data once every 10 seconds.

● Communication unit

Model		BL-N9R	BL-N9V	BL-N9UB
Wired communication unit	Communication standard	RS-232C	Keyboard Interface	USB-HID Ver1.1 ^{*1}
	Connector shape	D-Sub 9-pin (female)	Mini DIN 6-pin	USB (A type)
Wireless communication unit	Wireless standard	Bluetooth Ver1.2		
	Wireless frequency	2.4 GHz		
	Transmission output	Class 2 (2.5 mW max.)		
	Communication distance	10 m visible		
Charger	Charging method	Constant current, constant voltage (CCCV) method		
	Charging time	Approx. 4 hours		
Environmental condition	Operating ambient temperature	0 to 40°C (32 to 104°F), No freezing		
	Operating ambient humidity	35 to 85% RH (No condensation)		
	Operating atmosphere	No dust or corrosive gas		
Outside Dimensions		204 x 103 x 51 mm		
Weight		Approx. 230 g (Excluding cable)		
AC adapter specifications	Input	100-240 V AC, 50/60 Hz		
	Output	5 V DC, Max 2 A		
	Outside Dimensions	72 x 47 x 27 mm (Excluding cable)		
	Weight	Approx. 140g		

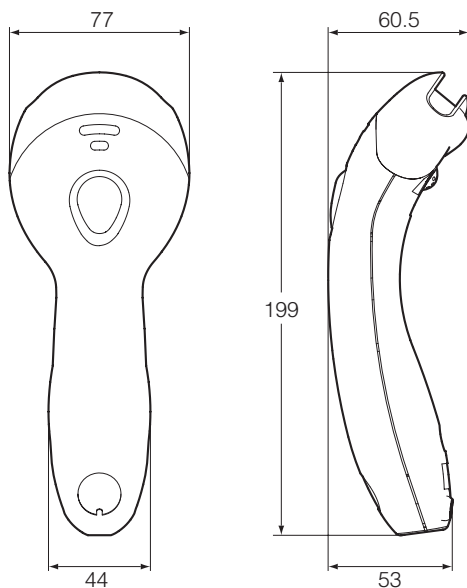
*1 Compatible OS: Windows98, 2000, XP

A-2

Dimensions

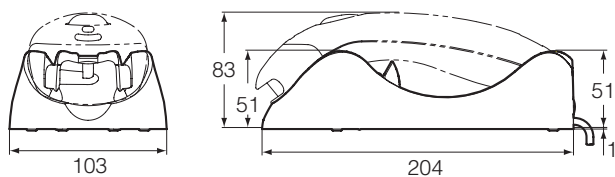
● BL-N90/N90K

(units: mm)



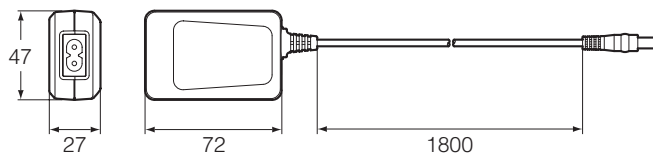
● Communication unit

(units: mm)



● AC adapter

(units: mm)



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