

DENSO

RF Tag Handy Scanner

SE1-BUB-C

User's Manual

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Preface

Thank you for using the SE1-BUB-C DENSO WAVE RF Tag Handy Scanner.

Please READ through this manual carefully. It will enable you to operate your scanner correctly.

After you have finished reading this manual, keep it handy for speedy reference.

Note: Do not use this scanner in an environment with electrical noise that can trigger malfunction.

Note: Specifications described in this manual are supported by SE1-BUB Firmware version 1.02 or later.

- DENSO WAVE INCORPORATED does not assume any product liability arising out of, or in connection with, the application or use of any product, circuit, or application described herein.
- If it is judged by DENSO WAVE INCORPORATED that malfunction of the product is due to the product having been dropped or subjected to impact, repairs will be made at a reasonable charge even within the warranty period.
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Customer Registration and Inquiries

Customer Registration

To allow us to provide our customers with comprehensive service and support, we request that all customers complete a Member Registration Form. Registered members will be offered the following privileges.

- Latest upgrade information
- Free exhibition and event information for new products
- Free web-information service “QBdirect”

QBdirect Service Contents

Information search service (FAQ)	Offers detailed information on each product.
Download service	Offers downloads of repair modules for the latest SE1 Series systems or software, and sample programs.
E-mail inquiries	Allows customers to send product-related queries by e-mail.

Please note that these privileges may be subject to change without prior notice.

How to Register

Access the URL below and follow the instructions provided.

<https://www.denso-wave.com/>

SAFETY PRECAUTIONS

Be sure to observe all these safety precautions.

- Please READ through these instructions carefully. They will enable you to use the scanner correctly.
- Always keep this manual nearby for speedy reference.

Strict observance of these warnings and cautions is a **MUST** for preventing accidents that could result in bodily injury and substantial property damage. Make sure you fully understand all definitions of these terms and symbols given below before you proceed to the text itself.



WARNING Alerts you to those conditions that could cause serious bodily injury or death if the instructions are not followed correctly.



CAUTION Alerts you to those conditions that could cause minor bodily injury or substantial property damage if the instructions are not followed correctly.

Meaning of Symbols



A triangle (▲) with a picture inside alerts you to a warning of danger. Here you see the warning for electrical shock.



A diagonal line through a circle (⊘) warns you of something you should not do; it may or may not have a picture inside. Here you see a screwdriver inside the circle, meaning that you should not disassemble.



A black circle (●) with a picture inside alerts you to something you **MUST** do. This example shows that you **MUST** unplug the power cord.

WARNING



To System Designers:

- When introducing the scanner in those systems that could affect human lives (e.g., medicines management system), develop applications carefully through redundancy and safety design which avoids the feasibility of affecting human lives even if a data error occurs.

Handling the battery

Wrong handling of the battery could result in a heat, smoke, explosion, or fire. Be sure to observe the following.



- Never disassemble or heat the battery, nor put it into fire or water; doing so could cause battery-rupture or leakage of battery fluid, resulting in a fire or bodily injury.
- Do not carry or store the battery together with metallic ballpoint pens, necklaces, coins, hairpins, etc.
Doing so could short-circuit the terminal pins, causing the batteries to rupture or the battery fluid to leak, resulting in a fire or bodily injury.
- Never put the battery into a microwave oven or high-pressure container.
Doing so could cause the batteries to break, generate heat, rupture or burn.
- Avoid dropping the battery or letting it undergo any shock or impact.
Doing so could cause the batteries to break, generate heat, rupture or burn.
- Never charge the battery where any inflammable gases may be emitted; doing so could cause fire.
- If any abnormality is detected—smoking, abnormal odors, discoloration or deformation when the battery is in use, in storage or being charged, remove the battery from the scanner or charger.





- Only use the dedicated charger for charging the battery.
Using a different type of charger could cause battery-rupture or leakage of battery fluid and result in a fire, bodily injury, or serious damage to property.
- The battery contains strong alkaline liquid (electrolyte).
If battery liquid leaks from the battery and it gets into your eyes, rinse them with clean water thoroughly without rubbing and consult a doctor as soon as possible. Otherwise, you may damage your eyes.

WARNING

Handling the scanner




Wrong handling of the scanner could result in a heat, smoke, or scanner failure. Be sure to observe the following

	<ul style="list-style-type: none">• If smoke, abnormal odors or noises come from the scanner, immediately remove the battery and contact your nearest dealer. Failure to do so could cause fire or electrical shock.• If foreign material or water gets into the scanner, immediately remove the battery and contact your nearest dealer. Failure to do so could cause fire or electrical shock.• If you drop the scanner so as to affect the operation or damage its housing, remove the battery and contact your nearest dealer. Failure to do so could cause fire or electrical shock.• Do not use the scanner where any inflammable gases may be emitted. Doing so could cause fire.• Do not subject the scanning window of the scanner to direct sunlight for extended periods. Doing so could damage the scanner, resulting in a fire.• Stop charging if it cannot be completed within the specified time.• Never put the scanner into a microwave oven or high-pressure container. Doing so could cause the batteries to break, generate heat, rupture or burn.
	<ul style="list-style-type: none">• Never use the scanner on the line voltage other than the specified level. Doing so could cause the charger to break or burn. <ul style="list-style-type: none">• Use the dedicated battery only. Failure to do so could result in fire.

CAUTION

Handling the scanner



Wrong handling of the scanner could result in a heat, smoke, or scanner failure. Be sure to observe the following

 <p>Never disassemble</p>	<ul style="list-style-type: none">• Never disassemble or modify the scanner; doing so could result in an accident such as break or fire. Doing so could result in a fire or electrical shock.
	<ul style="list-style-type: none">• If you are not using the scanner for a long time, be sure to remove the battery for safety. Failure to do so could result in a fire.• Do not use the scanner with discharged batteries. If used, the scanner may not function properly.
	<ul style="list-style-type: none">• Do not put the scanner on an unstable or inclined plane. The scanner may drop, creating injuries.• Never put the scanner in places where there are excessively high temperatures, such as inside closed-up automobiles, or in places exposed to direct sunlight. Doing so could affect the housing or parts, resulting in a fire.• Avoid using the scanner in extremely humid areas, or where there are drastic temperature changes. Moisture will get into the scanner, resulting in malfunction, fire or electrical shock.• Do not place the scanner anywhere where it may be subjected to oily smoke or steam, e.g., near a cooking range or humidifier. Doing so could result in a fire or electrical shock.• Never cover or wrap up the scanner in a cloth or blanket. Doing so could cause the unit to heat up inside, deforming its housing, resulting in a fire. Always use the scanner in a well-ventilated area.• Do not insert or drop foreign materials such as metals or anything inflammable through the openings (vents or scanning window) into the scanner. Doing so could result in a fire or electrical shock.• Do not scratch or modify the scanner. Doing so could damage the scanner, creating a fire hazard.• Do not put heavy material on the scanner, or allow the scanner to get pressed under heavy material.• Do not look into the light source from the scanning window or do not point the scanning window at other people's eyes. Eyesight may be damaged by direct exposure to this light.• Do not use the scanner if your hands are wet or damp. Doing so could result in an electrical shock.

CAUTION

Handling the scanner

Wrong handling of the scanner could result in a heat, smoke, or scanner failure. Be sure to observe the following

	<ul style="list-style-type: none">• Never use chemicals or organic solvents such as benzine and thinner to clean the housing. Do not apply insecticide to the scanner. Doing so could result in a marred or cracked housing, electrical shock or fire.• Do not use the scanner with anti-slip gloves containing plasticizer. The scanner housing may be broken, creating injuries, electrical shock, or fire.
	<ul style="list-style-type: none">• When taking care of the scanner, remove the battery. Failure to do so could result in an electrical shock.• Do not drop the scanner. The housing may be broken, creating injuries. Using the scanner whose housing is broken could result in smoke or fire. Remove the battery from the scanner. Then contact your nearest dealer.

Components Required

The scanner (SE1-BUB-C) requires the following components that differ depending upon whether the communications adapter is used and which interface is selected.

■ When using the BA series communications adapter

Basic components

The table below lists the basic components required for the use of the communications adapter.

(1) Scanner	SE1-BUB-C	
(2) Communications adapter	BA series	
(3) Charger	CH-SE11, CH-SE14	
(4) AC adapter	AD2-1005/3000	For charger

Components required for individual interfaces

- For RS-232C interface

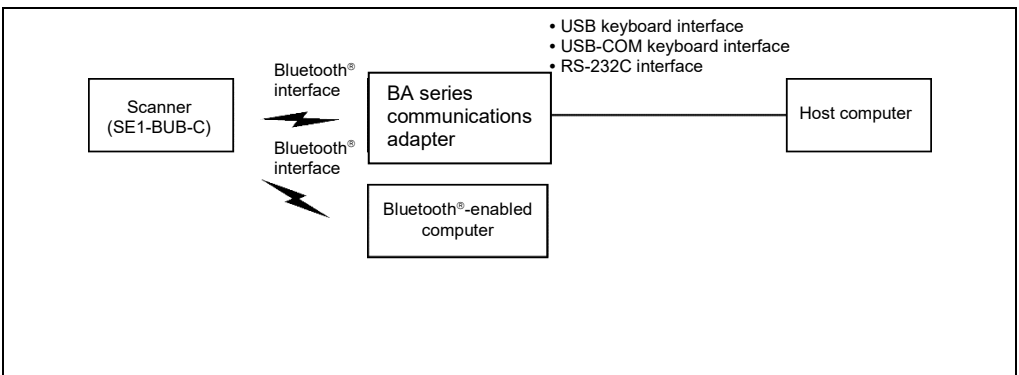
(5) RS-232C interface cable	CBBA-RS2000/9	
(6) AC adapter	AD2-1005/3000	For communication adapter

- For USB keyboard or USB-COM interface

(7) USB interface cable	CBBA-US2000/4	
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■ When directly communicating with Bluetooth®-enabled equipment (no BA series communications adapter is used)

(1) Scanner	SE1-BUB-C	
(2) Charger	CH-SE11, CH-SE14	
(3) AC adapter	AD2-1005/3000	For charger



Bluetooth® Wireless Communication Link

The scanner SE1-BUB-C uses Bluetooth® wireless networking technology.

Item	Specifications
Standard	Bluetooth® Specification Ver. 2.1+EDR
Radio output	Class 2 (maximum 2.5 mW)
Profile(s) supported	SPP (Serial Port Profile), HID (Human Interface Device Profile)
Communications range (reference value*1)	Max. 10 m, with no obstructions

*1 This value is for wireless networking between the scanner and the BA series communications adapter. The communications range varies with the equipment used and the operating environment.

Wireless networking requires a stable radio environment. Not all operating environments provide this. In particular, note that

- Using the scanner in close proximity to other wireless LAN equipment operating in the same frequency band (2.4 GHz) risks radio interference that can reduce throughput or even entirely block wireless networking.
- Microwave ovens, industrial heating equipment, high-frequency medical equipment, and other equipment using the 2.4 GHz band can sometimes block wireless networking.
- Electromagnetic noise from computers, refrigerators, and other home appliances can sometimes block wireless networking.
- The following environments can sometimes block wireless networking.
 - Metal objects or particles in the vicinity
 - Metal walls around the area
 - Excessive vibration
- The communications range of 10 m given above is merely a reference value assuming a clear line of sight. Reliable wireless networking is by no means guaranteed at 10 m for all combinations of equipment used and operating environments. Some combinations might even work for greater distances, but be sure to confirm that the scanner link operates properly before introducing the link operation.

NOTE: To System Designers:

- Before developing applications, make sure that the intended environment is free of the interference factors above and thus actually capable of supporting link operation.
- When introducing the scanner into an environment where equipment using radio waves in the 2.4 GHz band operates or when introducing such equipment after the introduction of the scanner, be sure to confirm that the scanner radio link operates properly with all equipment being in operation beforehand.
- If the environment of the radio communications system is changed after the introduction (e.g., newly installed household appliances and movement/addition of shelves or objects), then confirm that the radio link operates properly again before the actual use.

Care and Maintenance

■ Proper Care of the reading window

Dust or dirt accumulating on the clear plate of the code reading window will affect reading performance. If you use the scanner in dusty areas, therefore, periodically check the clear plate and clean it if dusty.

- To clean the plate, first blow the dust away with an airbrush. Then wipe the plate with a cotton swab or the similar soft one gently.
- If sand or hard particles have accumulated, never rub the plate; doing so will scratch or damage it. Blow the particles away with an airbrush or a soft brush.

■ Proper Care of the Scanner body

Wipe any dirt from the Scanner body with a dry, soft cloth.

Note

- Never use substances such as benzine or alcohol, as this may cause the housing to be marred or paint to peel off.
- If excessively dirty, wipe a soft cloth that has been soaked in soapy water (always use neutral detergent) and wrung out thoroughly.

Indicator LED

Illuminates in blue when the scanner has scanned a code successfully. If any error occurs, this LED flashes in red.

☞ Refer to Section 8.2 for details.

Indicates the Bluetooth® wireless link status.

☞ Refer to Section 3.5 for details.

Indicates the remaining battery level.

☞ Refer to Section 2.2 for details.

Trigger switch

Press this switch to start scanning. Also, establishes a Bluetooth® wireless link when the Bluetooth® wireless link is broken with the scanner turned on.

The reading modes are available to match the needs of the intended application.

☞ Refer to Section 5.1 for details.

Magic key

When this key is pressed while the scanner is turned off, the scanner is turned on and the Bluetooth® wireless link is started.

Holding this key down while the Bluetooth® wireless link is established breaks the link.

Pressing this key quickly while the scanner is turned on allows the operator to check the remaining battery level.

Beep hole

The beeper sounds when the scanner has scanned a code successfully.

Strap hole

Use this hole for attaching the optional strap.

Battery cover

Remove this cover to replace the batteries.

RF Tag Antenna

Communicates with RF tags.. This antenna should not be modified or covered by hand.

Built-in antenna

Performs wireless communication according to the Bluetooth® standard. Do not modify this antenna section or cover it by hand.

Reading window

Bring this window to a code to be scanned.

Chapter 2 Basic Operations

2.1 Loading the Batteries

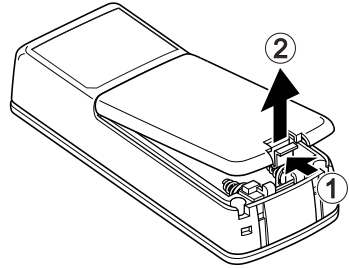
Batteries are not included in the package. Have batteries compliant with the IEC 60086-2 standard on hand, such as LR6 (AA) rechargeable nickel-metal hydride batteries.

Before replacing the batteries, first turn the scanner off.

Be sure to set the type of battery.

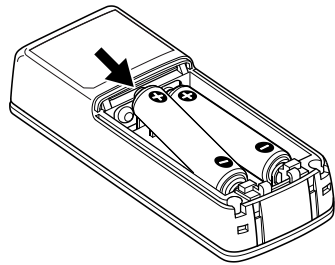
Load the batteries correctly by the following procedure.

- (1) Unlock the battery cover lock (1) and remove the battery cover (2).

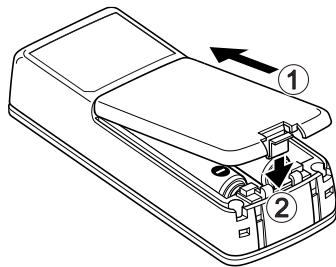


- (2) Make sure that the new batteries are in the correct orientation when inserting them. Insert the new batteries in the direction indicated by the arrow. The scanner will not function if the batteries are inserted incorrectly.

When removing batteries, remove them from the plus (+) end.



- (3) Insert the battery cover tab (1), and then close the battery cover (2). The battery cover is now locked in position.



Note:

- When not using the scanner for a long time, remove the batteries from the scanner and store the scanner body in a safe place.
- For the SE1-BUB-C, the use of LR6 (AA) rechargeable nickel-metal hydride battery. When using commercially available rechargeable nickel-metal hydride batteries, be sure to thoroughly read the User's Manual for the batteries and follow written instructions to ensure correct use. A rechargeable nickel-metal hydride battery enloop® (battery capacity 1900 mAh or equivalent) is recommended.
- The battery cover should be attached when using the scanner.
- Do not use or charge the AA alkaline batteries with the scanner.

2.2 Remaining Battery Level Indications

The remaining battery level can be checked by lighting of the indicator LED by pressing the magic key quickly.

The remaining battery level is displayed in three stages.

Battery level 40% or more	Lights in green.
39% to 10%	Lights in orange.
Less than 10%	Lights in red.

Note:

- The remaining battery level is not an accurate indicator.
Use this purely as an approximate indicator.

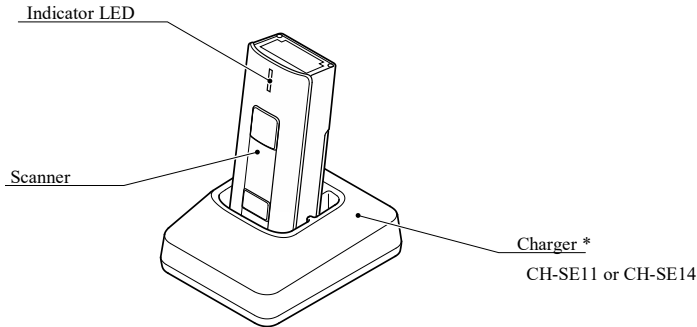
2.3 Charging the Batteries

Rechargeable NiMH batteries can be recharged using the scanner and the charger (CH-SE11 or CH-SE14).

Place the scanner in the charger.

The scanner's LED indicator turns red, indicating the start of charging.

When charging is complete, the charge goes off and the LED indicator turns green.



* The figure is "CH-SE11".

Charging time is approximately 11 hours for the recommended rechargeable batteries. (Charging time varies depending on the battery usage conditions).

Charging is not possible if the LED indicator flashes in red or orange. Please refer to the troubleshooting section to solve the problem.

Note :

- When using the optional silicone cover, attach the cover correctly to the scanner as instructed in the manual that comes with the cover.
- When using the optional strap, place the strap until it fits into the strap guide groove on the charger. Charging may fail if the strap contacts with the charging terminals. Refer to the charger Operator's Guide for details of the strap guide.
- The scanner is capable of charging the commercial rechargeable NiMH batteries, but does not guarantee that all types of batteries can be charged. A genuine charger for each battery manufacturer is recommended in order to get the best performance of the battery. eneloop® (1900 mAh battery capacity) is recommended for the rechargeable NiMH battery.
- Do not use or charge the AA alkaline batteries with the scanner.
- The batteries are consumable part. Battery service life varies depending on the usage conditions and the battery type. The performance of the NiMH battery will deteriorate gradually with repeated charging and discharging, even during normal use. When the batteries operation time becomes shorter even after charging for the specified length of time, replace the battery with a new one. Refer to the battery manual for details.

2.4 Turning the Scanner On and Off

Turning the scanner on

When the scanner is turned off, pressing the magic key will start the Bluetooth® wireless link.

* Using the scanner when “End operation” is selected requires first reading the “Start operation” Bar Code symbol given in Section 11.2 according to the procedure in Section 11.1. (When the scanner is turned on, pressing the trigger switch will start the Bluetooth® wireless link.)

Turning the scanner off

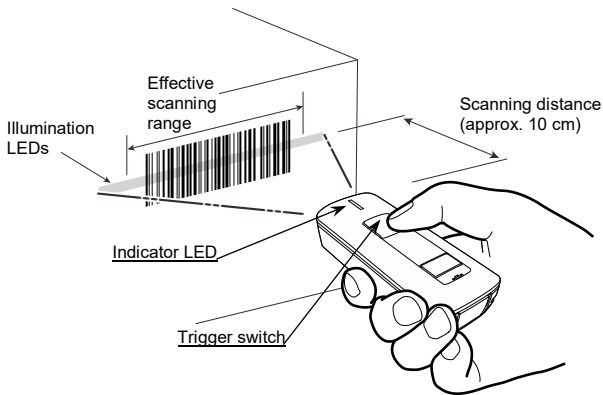
When the scanner is not used for a long time, turn the scanner off by holding the trigger switch and the magic key down for three seconds or more.

Auto power-off

The timeout period for automatically turning the scanner off when it has not been used for a long time can be set within the range 5 to 640 minutes in 5-minute increments. Auto power-off can also be set to disabled. This function can be set up only on the configuration software (Scan Tune App).

2.5 Scanning Barcodes

- (1) Bring the reading window to a target code and press the trigger switch.
Limit the scanning distance to about 10 cm.
* Barcodes can be scanned with their left and right sides reversed.
* The double-read prevention enabled time can be specified with the configuration software (Scan Tune App)*.
- (2) The illumination LEDs light. Align the center of the illumination LEDs with the center of the barcode and light the entire barcode with the illumination LEDs.



- (3) Wait for the indicator LED to turn blue and the beeper to sound, indicating a successfully scanning.

Note:

- If the illumination LEDs do not light even by pressing the trigger switch, press the magic key to turn the scanner on.
- Try to keep the barcode as parallel as possible to the scanner. If barcodes are tilted at an angle or bent, they sometimes cannot be scanned.
- Barcodes sometimes cannot be scanned in the direct sunlight or in very bright locations. Either move the barcode to the shade or create shading before scanning the barcode.
- Barcodes in plastic bags sometimes cannot be scanned. In this case, remove the barcode from the plastic bag before scanning it.
- If the scanner fails to scan due to specular effects or other factors, change the scanning angle of the reading window or the distance from the barcode, and repeat the process. (Specular effects occur when the reflection of the light from the label surface is too strong, such as when the reflecting surface is polished or covered with vinyl.)

* The configuration software (Scan Tune App) is available as free downloads from our website at <https://www.denso-wave.com/>

2.6 RF Tag Communication

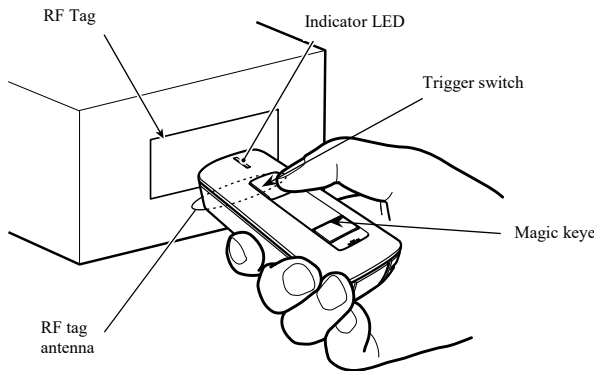
- (1) Pressing the magic key once switches the operation mode from barcode scanning to RF tag communication.
- (2) Bring the RF tag antenna area close to an RF tag then press the trigger switch. Radio waves are emitted to read and write tag data while the LED indicator illuminates in red.

The reading distance is approximately 3 cm, and the writing distance is approximately 1 cm.
(There are reference values measured by using DENSO WAVE standard tag*.)

*DENSO WAVE standard tag

Read: AD-229r6 manufactured by AVERY DENNISON

Write: AD-229r6 manufactured by AVERY DENNISON



- (3) When the RF Tag reading or writing is completed normally, the indicator LED lights blue and the buzzer sounds.

Note:

- If the indicator LED does not light when the trigger switch is pressed, press the magic key to turn on the power.
- The reading area varies depending on the RF tag type and the ambient environment.
- Radio waves are used to read RF tags. Reading performance may decrease if metal objects or radio equipment such as a cellular phone, personal radio equipment, or a microwave oven exists near the scanner. Use the scanner away from metal objects or radio equipment.
- Do not cover the RF antenna area by hand. This may result in reading failures.
- Reading may not be possible if other RFID device exists near the scanner, or is placed side by side.
- Reading performance may decrease due to the resonance frequency shift depending on the material that the tag is adhered. Select the RF tag with smaller resonance frequency shift, and make sure that the scanner communicates properly with tags before actual use.
- When the trigger switch is pressed and the illumination LED lights red, scanning codes mode is set. In that case, switch to the RF tag communication mode by short pressing the magic key.
- The operation mode is set to “Stand-alone mode” when the product is shipped.
- The stand-alone mode does not require the control from the host unit to the scanner, and supports the RF tag communication via the setting inside the scanner. When control from the host unit to the RF tag is required (RF Tag writing, etc.), the setting change to “upper control mode” and control by “RF tag control command” is required. RF Tag communication operation can be set with the setting software (Scan Tune App). For details of RF tag control commands, refer to “RF Tag Control Command Manual for SE1-BUB-C”.

When unable to successfully read and write RF tag

Cause		Countermeasure
Metal objects	When an RF tag is placed on the metal plate, the scanner may not read and write the tag.	Keep the RF tag 15 cm or more away from the metal plate.
Electromagnetic noise disruption	When the scanner is used adjacent to electrical appliances such as inverter fluorescent lights, microwave ovens, and induction cookers that generate electromagnetic noise, the scanner may not read and write the tag.	Keep away from electrical appliances such as inverter fluorescent lights, microwave ovens, and induction cookers that generate electromagnetic noise when using the scanner.
Radio interference	When any other RFID device is close to the scanner, it may not read and write the tag.	Do not use the scanner close to other RFID devices.
	When the scanner is used adjacent to other radio devices such as a ham radio transmitter, the scanner may not read and write the tag.	Do not use the scanner close to the radio devices such as a ham radio transmitter.
Distance from an RF tag	When the RF tag is too close to or too far away from the scanner, it may not read and write the tag. Distance for writing may become shorter than that for reading.	Move the scanner slowly toward or away from the RF tag and try again because the reading and writing distances vary according to the type of RF tag.

Chapter 3 Bluetooth® Interface

For terms relating to Bluetooth® wireless communication in this manual, refer to Appendix 3 “Bluetooth® Glossary.”

3.1 Enabling the Bluetooth® Interface

Using the scanner for the first time requires pressing the magic key to turn the scanner on. This enables the connection via the Bluetooth® interface.

Note:

- Always disable this scanner’s Bluetooth® interface in hospitals, aircraft, and other environments where the Bluetooth® radio waves (2400 to 2483.5 MHz, maximum 2.5 mW) present a potential safety risk. This scanner interprets the “End operation” Bar Code symbol given in Section 12.2 according to the procedure in Section 12.1 as a command to disable the Bluetooth® interface.
- When the “End operation” Bar Code symbol is set to the scanner after it is used last time, it can no longer scan codes except the “Start operation” Bar Code symbol and the barcode on the back of the BA series communications adapter. The Bluetooth® interface is enabled by scanning the “Start operation” Bar Code symbol given in Section 12.2 according to the procedure in Section 12.1.

3.2 Establishing Bluetooth® Wireless Links

After enabling the Bluetooth® interface, establish a Bluetooth® wireless link between the scanner and the BA series communications adapter (or a commercially available Bluetooth® equipment) using the following procedures.

Use the HID or SPP profile.

- * Both the scanner and the BA series communication adapter have slave as their default configuration. For details on setting the scanner as the master, see page 10 “Scanner as Master.”

Note: The communication link is sometimes broken depending on the radio wave reception status. If the communication link is broken during data transmission, the data being sent may be lost. For this reason, if such a phenomenon occurs, study the following methods for each of the profiles in use.

SPP Profile: Transmit data using the ACK/NAK mode procedure (refer to Section 9.2).

HID Profile: Check data input from the scanner using the application running on the connection target (to check the number of input digits and data integrity), and adopt measures such as correcting the erroneous input data.

When connecting the scanner to an iPhone, iPad, Android or Windows device

The scanner can be connected to an iPhone, iPad, Android or other PC device equipped with a Bluetooth® module that is compatible with Bluetooth® Specification Ver. 2.1+EDR.

- (1) Turn the scanner and connected device on. Initiate the Bluetooth® wireless link.
- (2) Set the scanner communication settings.
Scan the “Easy connection setup” barcode corresponding to the connected device and the compatible profile.

Easy connection setup

To set the connection corresponding to the connected device, simply scan the barcodes below.

(The connected device should be equipped with a Bluetooth® module that is compatible with Bluetooth® Specification Ver. 2.1+EDR.)

To set the parameters, simply scan the barcodes below. Scanning the “Start setting” Bar Code symbol and “End setting” Bar Code symbol is not required.

The Easy connection setup bar code, please perform reading after setting completion in other items. It may be overwritten connection setting when I set other items after Easy connection setup bar code reading.



iPhone, iPad
(HID Profile)



Android
(HID Profile)



Android, Windows PC
(SPP Profile)



Windows PC
(HID Profile)

If the scanner beeps three times, this indicates that it is standing by for the wireless link.

(3) Start up the Bluetooth® wireless link of the connected device and connect the device to the scanner.

iOS

- (1) Start up the iOS “Setup” icon.
- (2) Select “Bluetooth”.
- (3) Select “SE1”.

The scanner beeps twice when a successful connection is made.

* The setting of the software keyboard function can be changed only when connecting the scanner to an iPhone or iPad. Whether or not to display the software keyboard can be switched by pressing the magic key for approx. 500 msec.

Android (HID Profile)

- (1) Start up the Android “Setup” icon.
- (2) Select “Bluetooth”.
- (3) Select “SE1”.
- (4) When the “PIN” code confirmation is displayed, enter “1234”.

The scanner beeps twice when a successful connection is made.

Android (SPP Profile)

- (1) Start up the Android “Setup” icon.
- (2) Select “Bluetooth”.
- (3) Select “SE1”.
- (4) When the “PIN” code confirmation is displayed, enter “1234”.
- (5) When the scanner is successfully connected, “SE1” is displayed on the paired device.
* “Connect” is displayed on the screen; however, at this time, the LED does not light and the scanner does not beep.
- (6) In the operation app, perform “Connect” and select “SE1”. This initiates the link and the scanner sounds the beep twice.

Windows (HID Profile)

- (1) The Bluetooth icon is displayed in the notification area at the bottom right of the screen. Right click the icon and then click [Add a Device].
- (2) From the list of devices, select “SE1”.
Drive installation starts.
- (3) When the “PIN” code confirmation is displayed, enter “1234”.
Drive installation starts.
- (4) Select “Skip obtaining driver software from Windows Update”.
After a while, the Bluetooth HID device is installed and a link is established.
The scanner beeps twice when a successful connection is made.

Windows (SPP Profile)

- (1) The Bluetooth icon is displayed in the notification area at the bottom right of the screen. Right click the icon and then click [Add a Device].
 - (2) From the list of devices, select “SE1”.
Drive installation starts.
 - (3) When the “PIN” code confirmation is displayed, enter “1234”.
 - (4) Select “Skip obtaining driver software from Windows Update”.
After a while, the standard serial interface via the Bluetooth wireless link is readied.
 - (5) From the Windows toolbar, select “Open settings” under “Bluetooth Devices”.
 - (6) Click on the “COM Ports” tab, and check the COM port No. assigned to SE1.
 - (7) In the operation app, open the assigned COM port. This completes pairing and the wireless link is established. After a while, the scanner sounds the beep twice.
- (4) The next time connecting to the device, simply press the trigger switch. (Only when connecting with the same device)

When using the configuration software (Scan Tune App)*

- (1) Select the SPP profile for the scanner and connect it to the BA series communication adapter or the host computer equipped with Bluetooth®.
- (2) In the configuration software (Scan Tune App)*, configure the following items to match the connected device.
 - Connected device (Android, PC/iPhone, iPad)
 - Profile (SPP/HID)
 - Mode (master/slave)
 - Local device ID (other device/peripheral device keyboard)
- (3) Select the scanner from the connected device list and connect it to the device.
The scanner beeps twice if successfully connected.
- (4) The next time connecting to the device, repeat the step (3).

* The configuration software (Scan Tune App) is available as free downloads from our website at <https://www.denso-wave.com/>

Scanner as Master

To configure the scanner as a master and the BA series communications adapter (or a commercially available Bluetooth® device) as a slave, follow the sample procedures given below and specify the slave's Bluetooth® address to the scanner. The scanner and slave device should be connected in a 1:1 configuration.

Using the BA series communications adapter (example)

- (1) Use the scanner to scan the barcode (BA series communications adapter's Bluetooth® address) on the back of the BA series communications adapter.

Wait for the scanner to configure itself as a master and establish a Bluetooth® wireless link with the BA series communications adapter.

- (2) Wait for the scanner to beep twice and the indicator LED to turn green (for 0.5 second), indicating a successful connection.

Note: The BA series communications adapter automatically selects the SPP profile to connect to the scanner. The BA series communications adapter cannot be connected to the scanner by the HID profile.

Using a commercially available Bluetooth® device (example)

- (1) Confirm the device's Bluetooth® address.

For instructions on how to confirm the Bluetooth® address, refer to the instructions in the User's Manual for the device.

- (2) With the configuration software (Scan Tune App)*, generate a "Bluetooth® address" code that specifies the equipment's Bluetooth® address to the scanner.

When using a commercially available code generator, generate it in the following format.

Code type	Data format
Code 128 Code Set A	ADDRXXXXXXXXXXXX

(Note) XXXXXXXXXXXXXXX should be a Bluetooth® address in hexadecimal.

Example: Bluetooth® address 000AF1234567



- (3) Set the profile to be used and the local device ID.
For setting the profile and local device ID, use the configuration software (Scan Tune App). (When the scanner leaves the factory, the default settings for the profile and local device ID are "SPP profile" and "Unclassified device", respectively.)
- (4) Use the scanner to scan the "Bluetooth® address" code.
- (5) Wait for the scanner as a master to establish a Bluetooth® wireless link with the specified Bluetooth® device.
- (6) Wait for the scanner to beep twice and the indicator LED to turn green (for 0.5 second), indicating a successful connection.

Note:

- Some Bluetooth® devices that have not been connected even once sometimes cannot be connected as the master. If this happens, use the bar-coded parameter menu "Easy connection setup". Use of "Easy connection setup" enables the scanner to be connected as the slave only at the first connection. From connections after this, the scanner is connected as the master.
- When the scanner is connected to a commercially available Bluetooth® device by the SPP profile, the wireless link connection sometimes is not established until the COM port is opened on the device side after identification. Open the COM port after identification is completed.

Scanner as Slave

To return a scanner to a slave after it has been used as the master, perform the following procedure.

- (1) Use the scanner to scan the “Configure as slave” Bar Code symbol given in Section 11.2 and its procedure in Section 11.1 to set the scanner as a slave.
- (2) Set the profile to be used. Use the scanner to scan the “SPP profile” or “HID profile” Bar Code symbol given in Section 11.2 and its procedure in Section 11.1. (When the scanner leaves the factory, the default setting is “SPP profile”.)
- (3) Wait for the scanner to beep three times after configuration is completed, and press the scanner’s trigger switch. Then, wait approximately two minutes (default) for the master device to connect to this slave.
- (4) When connecting to the BA series communications adapter, set the BA series communications adapter as the master and specify the scanner’s Bluetooth® address. In the case of the BA series communications adapter, set the scanner’s Bluetooth® address using the configuration software (BA Setting).
When connecting to a commercially available Bluetooth® device, search for the scanner from the commercially available Bluetooth® device to establish a wireless link. For operations on other Bluetooth® devices, use the procedures given in the User’s Manual for the respective device.
- (5) Wait for the BA series communications adapter (or commercially available Bluetooth® equipment) to establish a Bluetooth® wireless link with the scanner as a slave.
- (6) Wait for the scanner to beep twice and the indicator LED to turn green (for 0.5 second), indicating a successful connection.

Tip: In addition to “As a master” and “As a slave” parameters, the configuration software (Scan Tune App) provides a choice of “No slave/master configuration change” that prevents the Bluetooth® wireless link from being broken when you change other parameters with the configuration software or batch-process Bar Code symbols (see Chapter 4).

Note:

- If the master device cannot find a scanner available in the vicinity, set a longer inquiry time and let the master device search it again.
- When the scanner is connected to a commercially available Bluetooth® device by the SPP profile, the wireless link connection sometimes is not established until the COM port is opened on the device side after identification. Open the COM port after identification is completed.
- The BA series communications adapter can be connected to the scanner by only the SPP profile.

* The configuration software (Scan Tune App) is available as a free download from our website at <http://www.denso-wave.com/>.

Switching to Ready state

After the wireless link is established, the scanner switches to the Ready state when the trigger switch is turned off in the auto-off or momentary switching mode or when the scanner is on standby in the alternate switching mode.

Switching to sleep mode for power saving

When the scanner is in standby, it is switched to the sleep mode to save power.

The transition period from standby to the sleep mode is 30 seconds in the ordinary current mode. In the power saving mode (default), the scanner immediately switches to sleep mode. Only the configuration software (Scan Tune App) provides a choice of these two modes.

The scanner in the sleep mode takes more time (approx. 100 ms) to start and complete a scanning operation sequence than on standby.

3.3 Breaking Bluetooth® Wireless Links

Holding down the magic key for at least five seconds or scanning the “Break Bluetooth® wireless link” Bar Code symbol forcibly breaks the scanner’s Bluetooth® wireless link. (The Bar Code symbol is given in Section 11.2 and its procedure in Section 11.1.)

Note: Breaking the Bluetooth® wireless link does not disable the Bluetooth® interface. To disable it, scan the “End operation” Bar Code symbol given in Section 11.2 and its procedure in Section 11.1.

3.4 Re-establishing Bluetooth® Wireless Links

When the scanner’s Bluetooth® wireless link has been broken by any of the following events, pressing the trigger switch or the magic key reestablishes the Bluetooth® wireless link. The scanner as a slave waits for a connection request from the master; the scanner as a master connects to a target slave.

- When “Scan w/ Bluetooth® link broken” is set, scan the “Scan w/ Bluetooth® link broken” Bar Code symbol given in Section 11.2 and its procedure in Section 11.1, scan the Cancel “Scan w/ Bluetooth® link broken” Bar Code symbol to set cancel and then press the trigger switch.
- When the scanner was turned off by an auto power-off, press the magic key.
- When the Bluetooth® communications parameters are modified in the configuration software (Scan Tune App), press the trigger switch.
- When the “Reconnect request” dialog box is displayed by the configuration software (Scan Tune App), press the trigger switch.
- When the battery is replaced, press the magic key.

3.5 Indication of Bluetooth® Wireless Link Status

The scanner’s indicator LED and beeper together indicate the status of the scanner’s Bluetooth® wireless link.

When the trigger switch is held down:

Indicator LED	Beeper	Scanner Status
Red, flashing	Silent	Scanning was performed when there was a Bluetooth® wireless link on enabling the link.
Red, flashing twice repeatedly		The scanner has scanned the “End operation” Bar Code symbol.
Not turn on		Scanner power is off

When the trigger switch is pressed and released:

Indicator LED	Beeper	Scanner Status
Blue, flashing rapidly	Silent	The scanner, as a master, is searching for a connection target.
Blue, flashing slowly		The scanner, as a slave, is waiting for the master to connect.

When the Bluetooth® wireless link is established or broken:

Indicator LED	Beeper	Scanner Status
Green for 0.5 second	Two short beeps	The Bluetooth® wireless link is successfully connected.
Red for 0.5 second	Long beep	The Bluetooth® wireless link no longer exists.

3.6 Scanning When the Bluetooth® Wireless Link is Broken

The scanner can scan codes even with the Bluetooth® wireless link broken. Use this scanning way when scanning codes is required but data transfer is not.

This function can be switched only with the Bar-coded parameter menu.

“Scan w/ Bluetooth® link broken”	Allows the scanner to scan codes with the Bluetooth® wireless link <u>broken</u> . It also disables the Bluetooth® interface, making data transfer with the host computer <u>impossible</u> .
Cancel “Scan w/ Bluetooth® link broken” Bar Code symbol	Cancels the “Scan w/ Bluetooth® link broken” setting. Allows the scanner to scan codes with the Bluetooth® wireless link <u>established</u> . It also enables the Bluetooth® interface, making data transfer with the host computer <u>possible</u> .

Note: The “Scan w/ Bluetooth® link broken” parameter setting is retained even the scanner scans the “End operation” and “Start operation” Bar Code symbols in this order with “Scan w/ Bluetooth® link broken” enabled. To cancel the setting, the Cancel “Scan w/ Bluetooth® link broken” Bar Code symbol given in Section 11.2 and its procedure in Section 11.1 must be scanned.

Chapter 4 Configuring Scanner Parameters

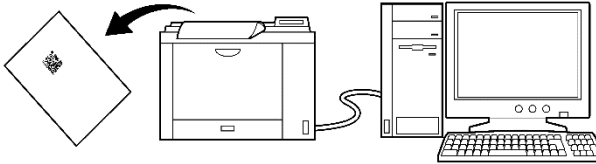
You can customize the scanner by modifying communications, code type, and other scanner parameters in two ways, either with the Bar-coded parameter menu or the configuration software Scan Tune App*. These parameters retain their settings even when the power is off.

- (1) The Bar Code symbols in the Bar-coded parameter menu can be scanned to set scanner parameters by pressing the trigger switch.

(The Bar-coded parameter menus for scanners are given in Chapter 11.)

- (2) Settings are possible on your computer using the configuration software (Scan Tune App)*. It is recommended that the scanner be configured as a master.

(This software also offers batch-process Bar Code symbols ready for scanning by scanners in the field.)



Note:

- Customizing the scanner with the configuration software or batch-process Bar Code symbols breaks the Bluetooth® wireless link, so it is necessary to establish the link again after customizing. To prevent the Bluetooth® wireless link from getting broken, select the “No slave/master configuration change” parameter for the item “Configure the scanner as master or slave.”
- When the “End operation” parameter is selected with the scanner, parameters cannot be set. So, before starting parameter setup, be sure to scan the “Start operation” Bar Code symbol. See Chapter 3 for details on the “Start operation” and “End operation” parameters.
- The configuration software is not available via the HID (Human Interface Device) Profile.
- If the battery voltage drops, an error beep is sounded to indicate that parameters are not retained. Replace with a fully charged rechargeable battery before setting the parameters.

*The configuration software (Scan Tune App) is available as free downloads from our website at <http://www.denso-wave.com/>.

Chapter 5 Scanning Control

Scanning is controlled by trigger switch control. (Section 5.1)

5.1 Trigger Switch Control (When scanning barcodes)

Pressing the trigger switch when the scanner is turned on turns on the illumination LEDs and readies the scanner for scanning. The scanner supports the following three trigger switch operating modes. Select the one that best meets your needs using the Bar-coded parameter menu or the configuration software (Scan Tune App).

(1) Auto-off mode

When the trigger switch is pressed, the scanner is brought to the Active state for approximately five seconds.

The scanner automatically returns to the Ready state when scanning is successfully completed, or after approximately five seconds elapsed with the trigger switch pressed.

The scanner goes to the Ready state if the trigger switch is released before five seconds elapses.

(2) Momentary switching mode

The scanner is brought to the Active state only when the trigger switch is pressed, and returns to the Ready state when the trigger switch is released.

(3) Alternate switching mode

The scanner alternates between the Active state and the Ready state every time the trigger switch is pressed.

Note:

- When you are setting parameters using the Bar-coded parameter menu, the scanner is always in the auto-off mode regardless of the trigger switch operating mode selected.
- Establishing the Bluetooth® wireless link or selecting the “Scan w/ Bluetooth® link broken” parameter enables the trigger switch control.

5.2 Trigger Switch Control (When reading RF tags)

When performing RF tag communication while the power is on, pressing the trigger switch enables communication with RF tags. The indicator LED lights in red during radio wave output. There are the following five types of trigger switch operation modes for RF tag communication. Control commands or setting software (Scan Tune App) can be selected according to the application. Some modes can also be set in the Bar-coded parameter menu.

The continuous reading mode 1 and the continuous reading mode 2 can be used in the upper control mode. For details, refer to "RF Tag Control Manual for SE1-BUB-C". For the stand-alone mode / upper control mode, refer to "2.6 How to read and write RF tags".

	Stand-alone mode	Upper control mode	Bar-coded parameter menu
Auto-off mode	Enabled	Enabled	Available
Momentary switching mode			
Alternate switching mode			
Continuous reading mode 1	Disabled		Not available
Continuous reading mode 2			

(1) Auto-off mode

This mode is available in both Stand-alone mode and Upper control mode.

As a reading mode, either “normal” or “one-shot” can be selected.

When “normal” is selected as a reading mode, the RF tag communication is enabled only for approximately 5 seconds after the trigger switch is pressed.

The scanner automatically enters the RF tag communication ready state when the RF tag communication is successfully completed with the trigger switch pressed and approximately 5 seconds elapses, or when the trigger switch is released within approximately 5 seconds after the trigger switch is pressed.

When “one-shot” is selected as a reading mode, the RF tag communication is enabled within the specified time from when the trigger switch is pressed. Even if the trigger switch is released, the RF tag communication is enabled within the specified time. The scanner automatically enters the RF tag communication ready state when the RF tag communication is successfully completed with the trigger switch pressed, or when the specified time elapses.

(2) Momentary switching mode

This mode is available in both Stand-alone mode and Upper control mode.

The RF tag communication is enabled only when the trigger switch is pressed. While the trigger switch is released, the scanner enters the RF tag communication ready state.

(3) Alternate switching mode

This mode is available in both Stand-alone mode and Upper control mode.

The scanner alternates between active and ready state every time the trigger switch is pressed.

(4) Continuous reading mode 1

This mode is available in Upper control mode.

All trigger switch functions are ignored.

The RF tag communication is enabled after a command controlling an RF tag (a command that has had an RF tag response) is received. When a command “RFUS” is received, the scanner enters the RF tag communication ready state. When a command controlling an RF tag (a command that has had an RF tag response) is received, the RF tag communication is enabled.

(5) Continuous reading mode 2

This mode is available in Upper control mode.

All trigger switch functions are ignored.

The RF tag communication is enabled after a command controlling an RF tag (a command that has had an RF tag response) is received. After the RF tag control is completed, the scanner enters the RF tag communication ready state and waits for receiving a command “RFUS.” By receiving a command controlling an RF tag (a command that has had an RF tag response) again after receiving “RFUS”, the RF tag communication is enabled.

Note:

- RF tag communication cannot be used when Bluetooth® wireless communication is not established. Even if “Scan w/ Bluetooth® link broken” is set, RF tag communication cannot be used if switching of the operation mode with the magic key is disabled.

Chapter 6 Magic Key Control

When the scanner is turned off, pressing the magic key will start the Bluetooth® wireless link. Using the scanner when “End operation” is selected requires first scanning “Start operation” Bar Code symbols given in Section 12.2 according to the procedure in Section 12.1. (When the scanner is turned on, pressing the trigger switch will start the Bluetooth® wireless link.)

To end the Bluetooth® wireless link, hold down the magic key for at least five seconds. Breaking of the Bluetooth® wireless link by using the magic key can be disabled in the configuration software.

Only when connecting the scanner to iPhone or iPad, setting of the software keyboard function can be changed. Whether or not to display the software keyboard can be switched by pressing the magic key for approx. 500 msec.

When the scanner is not used for a long time, turn the scanner off by holding the trigger switch and the magic key down for three seconds or more.

Chapter 7 Scanning Functions (for Barcodes)

7.1 Editing Data

You can edit and output code data read, —“data extraction mode.” This data edit mode can be selected with the configuration software (Scan Tune App). The default is “No editing.”

7.1.1 Extracting AI (Application Identifier)-prefixed strings

If the scanner reads any of GS1-128 (EAN-128), GS1 DataBar (RSS), and EAN. UCC Composite symbols (excluding linear components in a UPC/EAN Composite symbol), it edits the data according to AIs and outputs it in the data transmission format selected in the scanner (see Section 9.3).

The “AI-prefixed string” extraction is available in two modes—AI-delimited mode and AI parenthesizing mode. AIs to be used for data editing are listed in [\(3\) AI table](#) later.

(1) AI-delimited mode

In this mode, the scanner extracts strings prefixed with AIs specified (up to three types of AIs) and separates them with the specified delimiters (selectable from headers/terminators, commas and tabs) instead of AIs to output them.

■ Extraction conditions

Extraction conditions	Choices
“Data transfer regardless of error result”	Permit/Prohibit

If the scanner fails to extract an AI-prefixed string when the “Data transfer regardless of error result” is permitted, it outputs the data read as is without editing.

■ Delimiters

- Header/terminator

Specifying a header/terminator as delimiters prefixes a header and suffixes a terminator to each element string separated.

A scanner ID, code ID mark, the number of digits, prefix, and suffix can be also added to each element string if their transmissions are enabled. The number of digits is the count of each element string edited.

Example Data read: (01)94901234567894(11)030808(13)030810
Header: STX, Terminator: ETX, Code ID mark: Disable,
Transmission of the number of digits: Enable

AIs specified	Output data
01, 11, 13	[STX]1494901234567894[ETX][STX]06030808[ETX][STX]06030810[ETX]

- Comma

Specifying a comma as delimiters outputs comma-delimited data. No comma follows the tail of the data.

A header and terminator are added to the full string. None of a code ID mark and the number of digits is added even if their transmissions are enabled.

Example Data read: (01)94901234567894(11)030808(13)030810
Header: STX, Terminator: ETX, Code ID mark: Disable,
Transmission of the number of digits: Disable

AIs specified	Output data
01, 11, 13	[STX]94901234567894,030808,030810[ETX]

- Tab (ASCII 09H (HT))

Specifying a tab as delimiters outputs tab-delimited data. No tab follows the tail of the data.

A header and terminator are added to the full string. None of a code ID mark and the number of digits is added even if their transmissions are enabled.

Example Data read: (01)94901234567894(11)030808(13)030810
 Header: STX, Terminator: ETX, Code ID mark: Disable,
 Transmission of the number of digits: Disable

Als specified	Output data
01, 11, 13	[STX]94901234567894[TAB]030808[TAB]030810[ETX]

Example Data read: (01)94901234567894(11)030808(13)030810(17)040208(17)040305
 Header: STX, Terminator: ETX, Code ID mark: Disable,
 Transmission of the number of digits: Disable

Extraction conditions	Als specified	Delimiter	Output data
"Data transfer regardless of error result": Prohibit	01, 11, 17	Comma	[STX]94901234567894,030808,040208[ETX]
	17, 11		[STX]040208,030808[ETX]
	17, 17		[STX]040208,040305[ETX]
	12		Error
	01, 12		Error
	01, 01		Error
"Data transfer regardless of error result": Permit	01, 11, 17		[STX]94901234567894,030808,040208[ETX]
	17, 11		[STX]040208,030808[ETX]
	17, 17		[STX]040208,040305[ETX]
	12		[STX]019490123456789411030808130308101704020817040305[ETX]
	01, 12		
	01, 01		

(Note 1) Element strings will be output in the order of AIs specified.

(Note 2) If data read contains two or more element strings prefixed with the same AI, those element strings will be output in the order arranged in that data read.

(Note 3) If data read does not contain a string prefixed with the specified AI or it contains such data but its number of digits is more or less than the one defined for that AI, an error will result when the "Data transfer regardless of error result" is prohibited.

(2) AI parenthesizing mode

In this mode, the scanner parenthesizes AIs contained in data read and outputs the edited data according to the extraction conditions.

■ Extraction conditions

Extraction conditions	Choices
“Data transfer regardless of error result”	Permit/Prohibit

If the scanner fails to extract an AI-prefixed element string when the “Data transfer regardless of error result” is permitted, it outputs the data read as is without editing.

Example Header: STX, Terminator: ETX, Code ID mark: Disable,
Transmission of the number of digits: Disable

Extraction conditions	Data read	Output data
“Data transfer regardless of error result”: Prohibit	0194901234567894110308081303 081017040208	[STX](01)94901234567894(11)030808(13)030810(17)040208[ETX]
	0194901234567894110308081303 081061704020817040305	Error (Note 1)
“Data transfer regardless of error result”: Permit	0194901234567894110308081303 081017040208	[STX](01)94901234567894(11)030808(13)030810(17)040208[ETX]
	0194901234567894110308081303 081061704020817040305	[STX]0194901234567894110308081303081061704020817040305[ETX]

(Note 1) Data from the head to element string 030810 prefixed with AI (13) can be normally extracted, but the following data (as underlined below) causes an error since it starts with 6 that cannot start any AI.

(01)94901234567894(11)030808(13)03081061704020817040305

(3) AI table

In the AI-prefixed string extraction, the scanner edits data according to the Application Identifiers (AIs) defined below.

AI	Format	Description
00	n2+n18	Serial Shipping Container Code (SSCC)
01	n2+n14	Global Trade Item Number (GTIN)
02	n2+n14	GTIN of Trade Items Contained in a logistic unit (For Use with AI 37 Only)
03	n2+n14	Reserved.
04	n2+n16	Reserved.
10	n2+an..20	Batch or Lot Number
11	n2+n6	Production Date (YYMMDD) (*)
12	n2+n6	Due Date (YYMMDD) (*)
13	n2+n6	Packaging Date (YYMMDD) (*)
15	n2+n6	Best Before Date (YYMMDD) (*)
17	n2+n6	Expiration Date (YYMMDD) (*)
20	n2+n2	Product Variant
21	n2+an..20	Serial Number
22	n2+an..29	HIBCC (Health Industry Business Communication Council)—Quantity, Date, Batch, and Link
23n	n3+n..19	Batch or Lot Number (Transitional Use) (**)
240	n3+an..30	Additional Product Identification Assigned by the Manufacturer
241	n3+an..30	Customer Part Number
250	n3+an..30	Secondary Serial Number
251	n3+an...30	Reference to Source Entity
252	n3+n27	Global Serial Number
30	n2+n..8	Quantity
310n	n4+n6	Net Weight, Kilograms
311n	n4+n6	Length or 1st Dimension, Meters
312n	n4+n6	Width, Diameter, or 2nd Dimension, Meters
313n	n4+n6	Depth, Thickness, Height, or 3rd Dimension, Meters
314n	n4+n6	Area, Square Meters (***)
315n	n4+n6	Volume, Liters (***)
316n	n4+n6	Volume, Cubic Meters (***)
320n	n4+n6	Net Weight, Pounds (***)

AI	Format	Description
321n	n4+n6	Length or 1st Dimension, Inches (***)
322n	n4+n6	Length or 1st Dimension, Feet (***)
323n	n4+n6	Length or 1st Dimension, Yards (***)
324n	n4+n6	Width, Diameter, or 2nd Dimension, Inches (***)
325n	n4+n6	Width, Diameter, or 2nd Dimension, Feet (***)
326n	n4+n6	Width, Diameter, or 2nd Dimension, Yards (***)
327n	n4+n6	Depth, Thickness, Height, or 3rd Dimension, Inches (***)
328n	n4+n6	Depth, Thickness, Height, or 3rd Dimension, Feet (***)
329n	n4+n6	Depth, Thickness, Height, or 3rd Dimension, Yards (***)
330n	n4+n6	Gross Weight, Kilograms (***)
331n	n4+n6	Length or 1st Dimension, Meters, Logistics (***)
332n	n4+n6	Width, Diameter, or 2nd Dimension, Meters, Logistics (***)
333n	n4+n6	Depth, Thickness, Height, or 3rd Dimension, Meters, Logistics (***)
334n	n4+n6	Area, Square Meters, Symbology (***)
335n	n4+n6	Gross Volume, Liters (***)
336n	n4+n6	Gross Volume, Cubic Meters (***)
337n	n4+n6	Kilograms per Square Meter (pressure) (***)
340n	n4+n6	Gross Weight, Pounds (***)
341n	n4+n6	Length or 1st Dimension, Inches, Logistics (***)
342n	n4+n6	Length or 1st Dimension, Feet, Logistics (***)
343n	n4+n6	Length or 1st Dimension, Yards, Logistics (***)
344n	n4+n6	Width, Diameter, or 2nd Dimension, Inches, Logistics (***)
345n	n4+n6	Width, Diameter, or 2nd Dimension, Feet, Logistics (***)
346n	n4+n6	Width, Diameter, or 2nd Dimension, Yards, Logistics (***)
347n	n4+n6	Depth, Thickness, Height, or 3rd Dimension, Inches, Logistics (***)
348n	n4+n6	Depth, Thickness, Height, or 3rd Dimension, Feet, Logistics (***)
349n	n4+n6	Depth, Thickness, Height, or 3rd Dimension, Yards, Logistics (***)
350n	n4+n6	Area, Square Inches (***)
351n	n4+n6	Area, Square Feet (***)
352n	n4+n6	Area, Square Yards (***)
353n	n4+n6	Area, Square Inches, Logistics (***)
354n	n4+n6	Area, Square Feet, Logistics (***)

AI	Format	Description
355n	n4+n6	Area, Square Yards, Logistics (***)
356n	n4+n6	Net Weight, Troy Ounces (***)
357n	n4+n6	Net Volume, Ounces (***)
360n	n4+n6	Volume, Quarts (***)
361n	n4+n6	Volume, Gallons (***)
362n	n4+n6	Gross Volume, Quarts (***)
363n	n4+n6	Gross Volume, Gallons (***)
364n	n4+n6	Volume, Cubic Inches (***)
365n	n4+n6	Volume, Cubic Feet (***)
366n	n4+n6	Volume, Cubic Yards (***)
367n	n4+n6	Gross Volume, Cubic Inches (***)
368n	n4+n6	Gross Volume, Cubic Feet (***)
369n	n4+n6	Gross Volume, Cubic Yards (***)
37	n2+n..8	Quantity (For Use with AI 02 Only)
390n	n4+n15	Amount Payable—Single Monetary Area
391n	n4+n3+n15	Amount Payable and ISO Currency Code
392n	n4+n15	Amount Payable for a Variable Measure Trade Item—Single Monetary Area
393n	n4+n3+n15	Amount Payable for a Variable Measure Trade Item and ISO Currency Code
400	n3+an..30	Customer's Purchase Order Number
401	n3+an..30	Consignment Number
402	n3+n17	Shipment Identification Number
403	n3+an..30	Routing Code
410	n3+n13	Ship to (Deliver to) EAN.UCC Global Location Number
411	n3+n13	Bill to (Invoice to) EAN.UCC Global Location Number
412	n3+n13	Purchased from EAN.UCC Global Location Number
413	n3+n13	Ship for (Deliver for) EAN.UCC Global Location Number
414	n3+n13	Identification of a Physical Location—EAN.UCC Global Location Number
415	n3+n13	EAN.UCC Global Location Number of the Invoicing Party
420	n3+an..20	Ship to (Deliver to) Postal Code Within a Single Postal Authority
421	n3+n3+an..9	Ship to (Deliver to) Postal Code with Three-Digit ISO Country Code Prefix
422	n3+n3	Country of Origin of a Trade Item
423	n3+n15	Country of Initial Processing

AI	Format	Description
424	n3+n3	Country of Processing
425	n3+n3	Country of Disassembly
426	n3+n3	Country of Final Processing
43	n2+n4+n7+an..10+n1	Carrier Assigned Tracking Number
7001	n4+n13	NATO Stock Number (NSN)
7002	n4+an..30	UN/ECE Meat Carcasses and Cuts Classification
7003	n4+n10	Effective term (YYMMDDHHMM)
7030	n4+n3+an..27	Approval Number of Processor with Three-Digit ISO Country Code, Butchery
7031	n4+n3+an..27	Approval Number of Processor with Three-Digit ISO Country Code, 1st Processing Place
703n	n4+n3+an..27	Approval Number of Processor with Three-Digit ISO Country Code, 2nd to 9th Processing Places
8001	n4+n14	Roll Products—Width, Length, Core Diameter, Direction, and Splices
8002	n4+an..20	Cellular Mobile Telephone Identifier
8003	n4+n14+an..16	EAN.UCC Global Returnable Asset Identifier (GRAI)
8004	n4+an..30	EAN.UCC Global Individual Asset Identifier (GIAI)
8005	n4+n6	Price Per Unit of Measure
8006	n4+n14+n2+n2	Identification of the Component of a Trade Item
8007	n4+an30	International Bank Account Number (IBAN)
8008	n4+n6+n6	Date and Time of Production (YYMMDDHHMMSS)
8018	n4+n18	EAN.UCC Global Service Relation Number (GSRN)
8020	n4+an25	Payment Slip Reference Number
8100	n4+n1+n5	UPC Coupon Extended Code—Number System Character and Offer Code
8101	n4+n1+n5+n4	UPC Coupon Extended Code—Number System Character, Offer Code, and End of Offer Code
8102	n4+n1+n1	UPC Coupon Extended Code—Number System Character Preceded by Zero
90	n2+an..30	FACT Data Identifiers
91	n2+an..30	Company Internal Information—Company
92	n2+an..30	Company Internal Information—Company
93	n2+an..30	Company Internal Information—Company
94	n2+an..30	Company Internal Information—Company
95	n2+an..30	Company Internal Information—Carrier

AI	Format	Description
96	n2+an..30	Company Internal Information—Carrier
97	n2+an..30	Company Internal Information—Company
98	n2+an..30	Company Internal Information—Company
99	n2+an..30	Company Internal Information

(*) To indicate only year and month, DD must be filled with “00.”

(**) n indicates the length of data.

(***) n indicates the decimal point position.

a	Alphabetic characters
a3	3 alphabetic characters, fixed length
a..3	Up to 3 alphabetic characters
n	Numeric characters
n3	3 numeric characters, fixed length
n..3	Up to 3 numeric characters
an	Alphanumeric characters
an3	3 alphanumeric characters, fixed length
an..3	Up to 3 alphanumeric characters

(Note 1) If the specified AI is variable in length and the number of digits in data read is less than the maximum number of digits defined for the AI, then the output contains data read up to a GS (1Dh).

The AI definition is continuously updated via GS1.

Therefore, depending on the effective date of the definition, the scanner might not support the specification.

7.2 Scanning a Black-and-white Inverted Code

The scanner can scan a black-and-white inverted barcode (white cells/bars on a black background). You can switch the scanner to automatically detect a normal code or black-and-white inverted code (white cells/bars on a black background) during scanning using the Bar-coded parameter menu or the configuration software (Scan Tune App). Note that the automatic detection during scanning may take more time than a normal code scanning.

A black-and-white inverted code (white cells/bars on a black background) requires a black margin next to the code which is larger than the size of a cell defined in the code specifications.

Chapter 8 RF Tag Communication Function

8.1 Method of Reading

The RF tag communication is enabled when the Bluetooth wireless communication link is established.

The RF tag communication is disabled when the Bluetooth wireless communication is disconnected even if the RF tag is ready for communication. In this case, only reading the barcode menu and the Bluetooth link labels is enabled. Even though the Bluetooth wireless communication is disconnected, communication with the RF tag is enabled if the scanner is set in the Non Wireless Link reading.

RF tag communication has two types; one is “Stand-alone mode” that does not require the control from the host unit to the scanner, and the other is “Upper control mode” that requires it. This RF tag communication mode can be modified with the setting software.

8.1.1 Stand-alone Mode

This mode does not require the control from the host unit to the scanner, and supports the RF tag communication via the setting inside the scanner. This setting inside the scanner can be modified with the setting software.

In the Stand-alone mode, the scanner can support “Inventory” and “Read” communication for RF tags. To execute “Read”, the settings of “Bank”, “Size (to be specified by the Byte)”, “Ptr (to be specified by the Byte)”, and “Access Password” for the RF tag communication can be modified with the setting software.

8.1.2 Upper Control Mode

This mode supports the RF tag control upon sending/receiving the control command from the host unit to the scanner. As for the control with the RF tag, refer to the Appendix “Manual for RF Tag Control Command for SE1-BUB-C.”

8.2 Prevention of Double Reading of the Same RF Tag

When RF tag exists in the communication range of the RF tag of the scanner, this RF tag is allowed to be read only once. This function is called the prevention of double reading of the same RF tag. This double reading prevention can be set either while reading or during the RF tag operation. It can also be set so that the prevention of double reading is disabled. This function can be set using the setting software.

8.3 Q value, Session Flag and Write Verification Setting

The Q value setting, the session flag setting and write verification setting which is a parameter for RF tag communication, can be set using the setting software (Scan Tune App) or control commands.

By implementing the RF tag communication to “Write” to the RF tag and then implementing the RF tag communication to “Read” the tag automatically by the scanner, whether writing is correctly implemented can be verified. When the verification is implemented while writing, however, the RF tag communication time for “Writing” to the tag may be longer than the one when the verification for writing is not implemented.

For details, refer to "RF Control Command Manual for SE1-BUB-C".

8.4 Output Frequency Setting

To communicate with RF tag, it is possible to set the unit channel number corresponding to the center frequency of radio wave to be output. More than one channel number corresponding to communication frequency can be set. Communicate with RF tag, it is possible to set the unit channel number corresponding to the center frequency of radio wave to be output.

8.5 Precautions

- (1) There may be a case where data cannot be written in the RF tag according to the type of RF tag or the ambient environment.
- (2) Continuous RF tag communication in the places where there are excessively high temperature or in the places exposed to direct sunlight may decline the reading speed temporarily for maintaining the terminal functions.
- (3) Holding position or holding style of a scanner may affect the communication distance.

Chapter 9 Beeper, Indicator LED, and Illumination LEDs

9.1 Beeper

(1) Beeping

The scanner emits a short or long beeps, once or a couple of times as described below.

The beeper emits a short beep when:

- the scanner has scan a code successfully,
 - the scanner has read or written RF tags successfully,
 - the “Start setting” or “End setting” code is scanned (3 beeps) or the parameter setting Bar Code symbols are scanned (1 beep) from the Bar-coded parameter menu (given in Chapter 11),
 - the configuration software (Scan Tune App) starts up or accepts new settings (3 beeps), writing to the unsupported item (6 beeps),
 - the scanner is turned on (4 beeps),
 - the master connection code has been read (3 short beeps),
 - the pairing is successfully done (1 short beep),
 - a Bluetooth® wireless link is established (2 beeps),
 - the battery voltage has dropped, turning the scanner off (5 beeps, slightly longer), or
 - the software keyboard ON/OFF switching function is used. (only at iPhone/iPad connection. 2 beeps)
-

The beeper emits a long beep when:

- a transmission error or timeout occurred when the scanner was communicating with the configuration software (Scan Tune App),
 - three minutes have elapsed since the reading of “starting the setting” menu without reading the menu,
 - a communications error has occurred,
 - an invalid control command is received,
 - the menu for starting the pairing has been read,
 - a Bluetooth® wireless link is broken,
 - you press the trigger switch and the magic key for three seconds or more and the power of the scanner is turned off,
 - the scanner has failed to save the parameter settings entered with the Bar-coded parameter menu or the configuration software.
 - the response from the RF tag has expired or
 - the command for starting communication with the RF tag has expired.
-

You can disable the beeper using the Bar-coded parameter menu or configuration software (Scan Tune App). In any of the following cases, however, the beeper sounds regardless of that beeper setting:

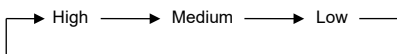
- when the scanner is being customized with the Bar-coded parameter menu,
- when the scanner receives a beeper-ON command from the host computer,
- when the configuration software (Scan Tune App) starts up or any setting is newly reflected,
- when the parameter values are saved by a PW command (refer to Appendix 2),
- when the Bluetooth® wireless link is established or broken,
- when the battery voltage has dropped,
- when the scanner has failed to save the parameter settings, or
- when you press the trigger switch and the magic key for three seconds or more and the power of the scanner is turned off.

(2) Adjusting the beeper volume

You can adjust the beeper volume to three levels - high, medium and low - using the Bar-coded parameter menu or configuration software (Scan Tune App).

Note: Enabling the Bluetooth® interface with the “Start operation” Bar Code symbol allows the beeper volume to be adjusted.

Each time the “Beeper volume” Bar Code symbol is scanned, the beeper volume cycles as shown below.



Even if the scanner is turned off, this setting will be retained.

The factory default is “High”.

9.2 Indicator LED

The indicator LED lights or flashes in blue, green, red or orange as described below.

The indicator LED lights in blue when:

- the scanner has scanned a code successfully.
 - the scanner has read or written RF tags successfully, or
 - the remaining battery level is found to be 40% or more as a result of performing the battery level check.
-

The indicator LED lights in green when:

- the charge is completed.
-

The indicator LED lights in red when:

- Bluetooth® Wireless Links breaks.
 - the scanner is being charged, or
 - during the communication with RF tag.
-

The indicator LED flashes in red when:

- the scanner has received an abnormal control command,
 - the scanner has failed to save parameter values specified with the configuration software (Scan Tune App), Bar-coded parameter menu, or control commands,
 - three minutes have elapsed since the reading of “starting the setting” menu without reading the menu,
 - a transmission error or timeout occurred when the scanner was communicating with the configuration software (Scan Tune App),
 - the trigger switch is pressed when a Bluetooth® wireless link is broken,
 - the trigger switch is pressed when “End operation” is set,
 - a battery error is detected while charging,
 - the remaining battery level is found to be less than 10% as a result of performing the battery level check,
 - the response from the RF tag has expired,
 - the command for communication with the RF tag has expired,
 - the pairing is successfully done,
 - Bluetooth connection is disconnected,
 - the scanner is turned OFF, or
 - the trigger switch is pressed when “completing operation” or “enabling operation.”
-

The indicator LED flashes in orange when:

- the battery voltage has dropped (flashing at long intervals),
 - the scanner turns itself off due to low voltage of the battery, or
 - the remaining battery level is found to be between 10% to 39% as a result of performing the battery level check.
-

The indicator LED flashes in blue when:

- the “Start setting” or “End setting” code is scanned from the Bar-coded parameter menu (given in Chapter 11),
 - the parameter values are saved by a PW command (refer to Appendix 2),
 - the scanner as master is establishing the Bluetooth wireless link, or
 - the scanner as slave is establishing the Bluetooth wireless link.
-

The indicator LED flashes in green when:

- the remaining battery level is found to be 40% or above as a result of performing the battery level check, or
 - the scanner is in the process of pairing.
-

The indicator LED flashes in orange when:

- the scanner is being charged in the forced charging mode.
-

The indicator LED can be disabled with the Bar-coded parameter menu or configuration software (Scan Tune App). In any of the following cases, however, the indicator LED turns on regardless of the current LED setting:

- when the scanner is being customized with the Bar-coded parameter menu,
- when the scanner receives an LED-ON command (LB, LG or LR) from the host computer (refer to Appendix 2),
- when the configuration software (Scan Tune App) starts up or any setting is newly reflected,
- when the parameter values are saved by a PW command (refer to Appendix 2),
- when the scanner failed to save parameter values specified with the configuration software (Scan Tune App), Bar-coded parameter menu, or control commands,
- when the Bluetooth® wireless link status is displayed,
- when the battery voltage has dropped,
- when the battery voltage status is displayed, or
- when the scanner failed to save the settings.

9.3 Illumination LEDs

When the scanner is ready to scan, the illumination LEDs are turned on.

Chapter 10 Communication

10.1 Bluetooth® Interface

The Bar-coded parameter menu and the configuration software (Scan Tune App) provide a choice of various communications conditions. Under the communications conditions you choose, scan code data can be transferred to the external equipment or computer.

The scanner, as a slave, waits for a connection request from the master for the specified timeout period - 2 (default), 4, 10, or 30 minutes.

If the scanner cannot receive a connection request from the master within the specified timeout period, it switches to standby, the same status as a broken Bluetooth® wireless link.

10.2 SPP Profile

The scanner supports the Serial Port Profile (SPP) that enables connecting to an Android, PC or other device equipped with a Bluetooth® module that is compatible with Bluetooth® Specification Ver. 2.1+EDR.

When the scanner is in the SPP profile, you can select either the non-acknowledge mode or the ACK/NAK mode.

Non-acknowledge mode (default)

The scanner transfers scanned code data regardless of the CTS signal status.

ACK/NAK mode

The scanner transfers scanned code data regardless of the CTS signal status. After that, however, it waits for the response from the host and processes it. The configuration software (Scan Tune App) only provides ACK/NAK timeout settings from 100 ms to 9.9 s in 100 ms increments.

ACK: Normal end

NAK: Resend

10.3 HID Profile

The scanner supports the Human Interface Device Profile (HID) that enables connecting to an iPhone, iPad, Android or other PC device equipped with Bluetooth® that is compatible with Bluetooth® Specification Ver. 2.1+EDR.

(1) CAPS Lock state

Select the CAPS Lock ON or OFF to match the state of the host computer.

(Default: CAPS Lock OFF)

(2) Keyboard type

Select the type of the connected keyboard. (Default: U.S. English (101 key type))

(3) Numeric data transmission format

Select the “inboard numeric keys” or “numeric keyboard” on the connected keyboard.

(Default: inboard numeric keys)

10.4 Communication Format

The data transmission format is as follows.

Header	Code ID mark	Number of digits		Code data	Terminator
		n1	n2		

The following describes each field in detail.

(1) Header/Terminator

The following choices are available.

SPP profile

Header: None (default), STX, or User Selection

Terminator: CR (default), None, LF, CR/LF, ETX, or User Selection

HID profile

Header: None (default), TAB, ESC, or ENTER

Terminator: None, TAB, ESC, or ENTER (default)

☞ For details, refer to Chapter 11

(2) Code ID mark

This optional field specifies the code system.

You can also select whether or not to transmit the code ID mark. (The default is “Disable”)

Code type		Code ID mark	
UPC-A	Without add-on		A
	With 2-digit add-on	Linear component	A
		Add-on	None
	With 5-digit add-on	Linear component	A
		Add-on	None
UPC-E	Without add-on		C
	With 2-digit add-on	Linear component	
		Add-on	
	With 5-digit add-on	Linear component	C
		Add-on	None
EAN-13	Without add-on		A
	With 2-digit add-on	Linear component	
		Add-on	
	With 5-digit add-on	Linear component	A
		Add-on	None
EAN-8	Without add-on		B
	With 2-digit add-on	Linear component	
		Add-on	
	With 5-digit add-on	Linear component	B
		Add-on	None
Standard 2 of 5 (short)		H	
Standard 2 of 5 (normal)		H	
Interleaved 2 of 5		I	
Code 39		M	
Code 39 Full ASCII		M	
Code 32		M	
Codabar (NW-7)		N	
Code 93		L	
Code 128		K	
GS1-128 (EAN-128)		W	
MSI		P	
Plessey		T	
GS1 DataBar (RSS) (Note 1)		R	
RF Tag (Note 2)		U	

(Note 1) “GS1 DataBar (RSS)” refers to all of the following codes: GS1 DataBar Omnidirectional (RSS-14), GS1 DataBar Truncated (RSS-14 Truncated), GS1 DataBar Limited (RSS-14 Limited), GS1 DataBar Stacked (RSS-14 Stacked), GS1 DataBar Expanded (RSS Expanded), GS1 DataBar Stacked Omnidirectional (RSS-14 Stacked Omnidirectional), GS1 DataBar Expanded Stacked (RSS Expanded Stacked)

(Note 2) Code marks of RF tags are valid only when the barcode type conversion setting is enabled.

(3) Number of digits

This optional field specifies whether or not to transmit the number of digits (2 bytes) of code data to transmit or disables the transmission (default). Note that UPC and EAN codes (except GS1-128 (EAN-128)) skip this field.

n1: tens (0 to 9)

n2: units (0 to 9)

(4) Code data

The transmission data format for each set of codes is described below.

UPC-A

You can select whether or not to transmit the padding character “0”, number system character “S”, and the check digit to the host. Disabling the transmission of the number system character “S” automatically disables the transmission of the padding character “0”.

0 S X₁ X₂ X₃ X₄ X₅ X₆ X₇ X₈ X₉ X₁₀ C/D

0: Padding character for adjustment of the data length

S: Number system character

UPC-A with add-on

With 2-digit add-on:

0 S X₁ X₂ X₃ X₄ X₅ X₆ X₇ X₈ X₉ X₁₀ C/D X₁₁ X₁₂

With 5-digit add-on:

0 S X₁ X₂ X₃ X₄ X₅ X₆ X₇ X₈ X₉ X₁₀ C/D X₁₁ X₁₂ X₁₃ X₁₄ X₁₅

0: Padding character for adjustment of the data length

S: Number system character

X₁₁₋₁₅: Add-on code data

UPC-E

You can select whether or not to transmit the padding character “0”, number system character “S”, and the check digit to the host. The conversion to the UPC-A is selectable. Disabling the transmission of the number system character “S” automatically disables the transmission of the padding character “0”.

- Conversion to UPC-A disabled

0 X₁ X₂ X₃ X₄ X₅ X₆ C/D

- Conversion to UPC-A enabled

X₆=0-2 0 S X₁ X₂ X₆ 0 0 0 0 X₃ X₄ X₅ C/D

X₆=3 0 S X₁ X₂ X₃ 0 0 0 0 0 X₄ X₅ C/D

X₆=4 0 S X₁ X₂ X₃ X₄ 0 0 0 0 0 X₅ C/D

X₆=5-9 0 S X₁ X₂ X₃ X₄ X₅ 0 0 0 0 X₆ C/D

0: Padding character for adjustment of the data length

S: Number system character

UPC-E with add-on

With 2-digit add-on:

- Conversion to UPC-A disabled

0 X₁ X₂ X₃ X₄ X₅ X₆ C/D X₇ X₈

- Conversion to UPC-A enabled

X₆=0-2 0 S X₁ X₂ X₆ 0 0 0 0 X₃ X₄ X₅ C/D X₇ X₈

X₆=3 0 S X₁ X₂ X₃ 0 0 0 0 0 X₄ X₅ C/D X₇ X₈

X₆=4 0 S X₁ X₂ X₃ X₄ 0 0 0 0 0 X₅ C/D X₇ X₈

X₆=5-9 0 S X₁ X₂ X₃ X₄ X₅ 0 0 0 0 X₆ C/D X₇ X₈

With 5-digit add-on:

- Conversion to UPC-A disabled

0 X₁ X₂ X₃ X₄ X₅ X₆ C/D X₇ X₈ X₉ X₁₀ X₁₁

- Conversion to UPC-A enabled

X₆=0-2 0 S X₁ X₂ X₆ 0 0 0 0 X₃ X₄ X₅ C/D X₇ X₈ X₉ X₁₀ X₁₁

X₆=3 0 S X₁ X₂ X₃ 0 0 0 0 0 X₄ X₅ C/D X₇ X₈ X₉ X₁₀ X₁₁

X₆=4 0 S X₁ X₂ X₃ X₄ 0 0 0 0 0 X₅ C/D X₇ X₈ X₉ X₁₀ X₁₁

X₆=5-9 0 S X₁ X₂ X₃ X₄ X₅ 0 0 0 0 X₆ C/D X₇ X₈ X₉ X₁₀ X₁₁

0: Padding character for adjustment of the data length

S: Number system character

X₇₋₁₁: Add-on code data

EAN-13

You can select whether or not to transmit the two prefix characters “P₁” and “P₂” and the check digit to the host. The conversion to the ISBN/ISSN format is selectable. Enabling the conversion to the ISBN/ISSN format allows EAN-13 code with prefix characters 978 or 979 to be converted into the ISBN format, and EAN-13 code with prefix characters 977, into the ISSN format.

- Conversion to ISBN/ISSN disabled

P₁ P₂ P₃ X₁ X₂ X₃ X₄ X₅ X₆ X₇ X₈ X₉ C/D

P_n: Prefix characters

- Conversion to ISBN/ISSN enabled

To the ISBN format

X₁ X₂ X₃ X₄ X₅ X₆ X₇ X₈ X₉ C/D (*1)

To the ISSN format

X₁ X₂ X₃ X₄ X₅ X₆ X₇ C/D (*1)

(*1) Check digits in the ISBN/ISSN format are calculated (MOD-11) and transferred to the host.

EAN-13 with add-on

With 2-digit add-on:

P₁ P₂ P₃ X₁ X₂ X₃ X₄ X₅ X₆ X₇ X₈ X₉ C/D X₁₀ X₁₁

With 5-digit add-on:

P₁ P₂ P₃ X₁ X₂ X₃ X₄ X₅ X₆ X₇ X₈ X₉ C/D X₁₀ X₁₁ X₁₂ X₁₃ X₁₄

P_n: Prefix characters

X₁₀₋₁₄: Add-on code data

EAN-8

You can select whether or not to transmit the check digit to the host. The conversion to EAN-13 is selectable.

- Conversion to EAN-13 disabled

P₁ P₂ P₃ X₁ X₂ X₃ X₄ C/D

- Conversion to EAN-13 enabled

0 0 0 0 0 P₁ P₂ P₃ X₁ X₂ X₃ X₄ C/D

P_n: Prefix characters

EAN-8 with add-on

With 2-digit add-on:

P₁ P₂ P₃ X₁ X₂ X₃ X₄ C/D X₅ X₆

With 5-digit add-on:

P₁ P₂ P₃ X₁ X₂ X₃ X₄ C/D X₅ X₆ X₇ X₈ X₉

P_n: Prefix characters

X₅₋₉: Add-on code data

Code 39

Read code data will be transmitted as is.

You can select whether or not to transmit the start/stop codes. Start/stop codes are “**”.

Interleaved 2 of 5 and Standard 2 of 5

The scanner transmits read code data, starting from the character following the start code to the one preceding the stop code.

No start/stop codes will be transmitted.

Codabar (NW-7)

The scanner transmits read code data including the start/stop codes.

You can select whether or not to transmit the start/stop codes.

Code 128 (GS1-128 (EAN-128))

The scanner transmits read code data, starting from the character following the start code to the one preceding the check digit.

Start/stop codes, FNC codes, or the check digit will not be transmitted.

Note that FNC1 placed in character positions other than the 1st and 2nd ones from the start code will be converted to GS (1Dh) and transferred.

Code 93

The scanner transmits read code data, excluding start and stop codes and the check digit.

GS1 Databar (RSS)

Read code data will be transmitted as is.

MSI and Plessey

The scanner transmits read code data, starting from the character following the start pattern to the one preceding the stop code.

(5) RF Tag communication data

The RF tag communication format is as shown below.

Header	RF tag communication type	UII	PC	RSSI	Terminator
	RFUGI				

The explanation of each item is shown below.

RF tag communication type

Communication type sorted by RF tag

UII

UII data of RF tag

PC

Protocol control

RSSI

Received signal strength indicator

Error code

Result of the RF tag communication

Refer to Manual for RF Tag Control Command for SE1-BUB-C

Read data

Data read from an RF tag

Chapter 11 Parameters and Defaults

The tables below list the parameters and their defaults. These parameters can be changed with the Bar-coded parameter menu or configuration software (Scan Tune App), except shadowed ones only with the configuration software. When the scanner leaves the factory, all of these parameters are set to defaults.


(1) Communications modes

Items	Parameters	Defaults	Refer to:
Scanning with Bluetooth® wireless link broken	Scan w/ Bluetooth® link broken		Section 3.6
	Cancel “Scan w/ Bluetooth® link broken”	*	
Connection target of scanner	BA	*	Section 3.2
	Windows PC/Android		
	iOS (iPhone/iPad)		
Profile	SPP	*	Section 3.2
	HID		
Easy connection setup (See Note 1.)	iOS (iPhone/iPad) (HID Profile)		Section 3.2
	Android (HID Profile)		
	Android, Windows PC (SPP Profile)		
	Windows PC (HID Profile)		

(Note 1): Can be changed only with the Bar-coded parameter menu.

(2) Bluetooth® communications parameters for SPP Profile

Items	Parameters	Defaults	Refer to:
Procedure	Non-acknowledge mode	*	Section 10.2
	ACK/NAK mode (host)		
ACK/NAK timeout	0.1 to 9.9 sec	1 sec	

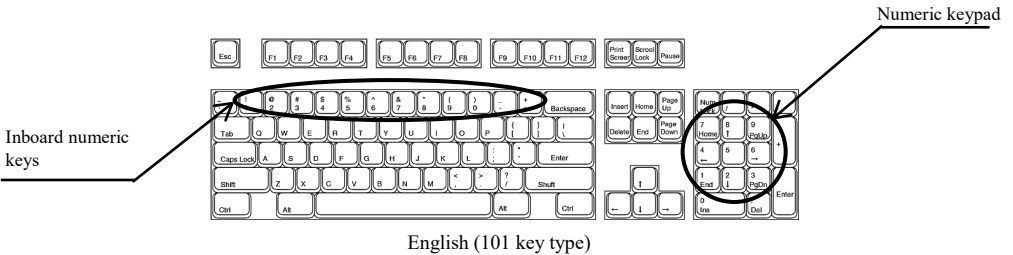
: Can be changed only with the configuration software.

(3) Bluetooth® communications parameters for HID Profile

Items	Parameters	Defaults	Refer to:
CAPS mode	Manual	*	Section 10.3 (1) (See Note 1.)
	Auto		
Host's CAPS LOCK status	OFF (Lowercase letter)	*	Section 10.3 (1) (See Note 1.)
	ON (Uppercase letter)		
Keyboard type	U.S. English (101 key type)	*	Section 10.3 (2)
	Germany (102 key type)		
	French (102 key type)		
	U.K. English (102 key type)		
	Italian (102 key type)		
	Swedish (102 key type)		
Numeric key selection (0 to 9) transmission format	Inboard numeric keys	*	Section 10.3 (3) (See Note 2.)
	Numeric keypad		

(Note 1) Select the Caps Lock state that matches the host's keyboard state.

(Note 2) When selecting "Numeric keypad" for the numeric data transmission format, set the host's NUM LOCK to ON.



■ : Can be changed only with the configuration software.

Items	Parameters	Defaults	Refer to:
Special key transfer mode	Enable		(See Note 3.)
	Disable	*	

(Note 3) Special key transfer applies to the fields except header and terminator in the data transmission format. Enabling this function substitutes E5h to FDh data with the special keys as listed below and transmits the substituted data to the host.


The Left SHIFT, Left CTRL, and Left ALT are transmitted as a simultaneous depression with the subsequent character or key.

Upper Lower	E	F
0		↓
1		F1
2		F2
3		F3
4		F4
5	HOME	F5
6	END	F6
7	Left SHIFT	F7
8	Left CTRL	F8
9	Left ALT	F9
A	TAB	F10
B	ESC	F11
C	ENTER	F12
D	←	Right CTRL
E	↑	
F	→	

Special Key Substitution Table


(4) Bluetooth® communications parameters

Items	Parameters	Defaults	Refer to:
Configure the scanner as master or slave	As a master		Section 3.2
	As a slave	*	
Connection target of scanner as master	Bluetooth® address	*	Section 3.2
	Local name		
Specification of connection target's address	Connection target's address	None	Section 3.2
Timeout period for slave to wait for a connection request	2 minutes	*	Section 10.1
	4 minutes		
	10 minutes		
	30 minutes		
Clear the transfer buffer when the Bluetooth link is broken	Enable	*	
	Disable		
Bluetooth® interface	Start operation	*	Section 3.1
	End operation		
PIN code	1 to 8 digits alphanumeric characters or symbols	1234	
Local Class of Device	Unclassified device	*	
	Keyboard		

 : Can be changed only with the configuration software.

(5) Data transmission format for SPP Profile

Items	Parameters	Defaults	Refer to:
Header	None	*	Section 10.4 (1)
	STX		
	User-defined		
Terminator	None		
	ETX		
	CR	*	
	LF		
	CR LF		
	User-defined		

: Can be changed only with the configuration software.

(6) Data transmission format for HID Profile

Items	Parameters	Defaults	Refer to:
<u>Header</u>	None	*	Section 10.4 (1)
	STX		
	ETX		
	CR		
	LF		
	CR LF		
	TAB		
	ESC		
	ENTER		
	Right CTRL		
	←		
	↑		
	→		
	↓		
	User-defined		
Terminator	None		
	STX		
	ETX		
	CR		
	LF		
	CR LF		
	TAB		
	ESC		
	ENTER	*	
	Right CTRL		
	←		
	↑		
	→		
	↓		
	User-defined		


: Can be changed only with the configuration software.

(7) Data transmission format common to all interfaces

Items	Parameters	Defaults	Refer to:
Transmission of code ID mark	Enable		Section 10.4 (2)
	Disable	*	
Transmission of the number of digits (not applicable to UPC/EAN codes)	Enable		Section 10.4 (3)
	Disable	*	

(8) Barcode reading mode parameter selections

Items	Parameters	Defaults	Refer to:
Edit mode	Unedit mode	*	Section 7.1
	AI extraction mode		
Period of double-read prevention	Double-read enabled		Section 2
	Period of double-read prevention 0.1 to 9.9 sec	0.3 sec	
Reading black-and-white inverted codes	Black cells/bars on a white background	*	Section 7.2
	Auto detection of black and white inverted codes		


: Can be changed only with the configuration software.

(9) Barcodes

UPC-A/E, EAN-13/8

Items	Parameters	Defaults	Refer to:	
Scanning UPC-A and EAN-13	Enable	*	Section 12.2	
	Disable			
UPC-A transmission of check digit	Enable	*	Section 12.2	
	Disable			
UPC-A transmission of number system character	Enable	*		
	Disable			
UPC-A transmission of the leading character	Enable	*		
	Disable			
EAN-13 transmission of check digit	Enable	*		Section 12.2
	Disable			
EAN-13 transmission of country code	Enable	*		(See Note 1.)
	Disable			
EAN-13 conversion to the ISBN / ISSN format	Enable			
	Disable	*		
Reading UPC-E	Enable	*	Section 12.2	
	Disable			
UPC-E transmission of check digit	Enable	*	Section 12.2	
	Disable			
UPC-E transmission of number system character	Enable	*		
	Disable			
UPC-E transmission of the leading character	Enable			
	Disable	*		
UPC-E conversion to the UPC-A format	Enable			
	Disable	*		

(Note 1) A country code is in the upper two digits of the prefix character field in EAN-13.

: Can be changed only with the configuration software.

Items	Parameters	Defaults	Refer to:
Reading EAN-8	Enable	*	Section 12.2
	Disable		
EAN-8 transmission of check digit	Enable	*	Section 12.2
	Disable		
EAN-8 Conversion to the EAN-13 format	Enable		Section 12.2
	Disable	*	
Reading UPC/EAN with 2-digit add-on	Enable		Section 12.2
	Disable	*	
Reading UPC/EAN with 5-digit add-on	Enable		
	Disable	*	
Reading UPC/EAN with add-on only	Enable		
	Disable	*	
Add-on check level	Disable	*	
	Levels 1 to 3		

Interleaved 2 of 5


Items	Parameters	Defaults	Refer to:
Reading Interleaved 2 of 5	Enable, without the check digit	*	Section 12.2
	Enable, with the check digit		
	Disable		
Interleaved 2 of 5 transmission of check digit	Enable	*	Section 12.2
	Disable		
Minimum number of readable digits for Interleaved 2 of 5	4 to 99 digits	4 digits	(See Note 1.)
Maximum number of readable digits for Interleaved 2 of 5		99 digits	

(Note 1) The parameter setting ranges are different from the numbers of digits that the scanner can actually read.

Standard 2 of 5

Items	Parameters	Defaults	Refer to:
Reading Standard 2 of 5	Enable, without the check digit		Section 12.2
	Enable, with the check digit		
	Disable	*	
Standard 2 of 5 transmission of check digit	Enable	*	Section 12.2
	Disable		
Minimum number of readable digits for Standard 2 of 5	3 to 99 digits	3 digits	(See Note 1.)
Maximum number of readable digits for Standard 2 of 5		99 digits	

(Note 1) The parameter setting ranges are different from the numbers of digits that the scanner can actually read.

 : Can be changed only with the configuration software.

Codabar (NW-7)


Items	Parameters	Defaults	Refer to:
Reading Codabar (NW-7)	Enable, without the check digit	*	Section 12.2
	Enable, with the check digit		
	Disable		
Codabar (NW-7) transmission of check digit	Enable	*	Section 12.2
	Disable		
Minimum number of readable digits for Codabar (NW-7)	3 to 99 digits (including start/stop codes)	4 digits	(See Note 1.)
Maximum number of readable digits for Codabar (NW-7)		99 digits	
Transmission of Start/Stop codes for Codabar (NW-7)	Transmit a/b/c/d	*	Section 12.2
	Transmit A/B/C/D		
	Disable		
Check digit method for Codabar (NW-7)	MOD-16	*	Section 12.2
	7-check method		

(Note 1) The parameter setting ranges are different from the numbers of digits that the scanner can actually read.

Code 39

Items	Parameters	Defaults	Refer to:
Reading Code 39	Enable, without the check digit	*	Section 12.2
	Enable, with the check digit		
	Disable		
Code 39 transmission of check digit	Enable	*	Section 12.2
	Disable		
Minimum number of readable digits for Code 39	1 to 99 digits (including start/stop codes)	1 digit	(See Note 1.)
Maximum number of readable digits for Code 39		99 digits	
Transmission of Start/Stop codes for Code 39	Enable		Section 12.2
	Disable	*	
Conversion to FULL ASCII	Enable		Section 12.2
	Disable	*	
Conversion from Code 39 to Code 32	Enable		Section 12.2
	Disable	*	
Transmission of the leading “A” of Code 32	Enable		Section 12.2
	Disable	*	
C/D confirmation of Code 32	Yes		Section 12.2
	No	*	

(Note 1) The parameter setting ranges are different from the numbers of digits that the scanner can actually read.

: Can be changed only with the configuration software.

Code 128, GS1-128 (EAN-128)

Items	Parameters	Defaults	Refer to:
Reading Code 128	Enable	*	Section 12.2 (See Note 2.)
	Disable		
Reading GS1-128 (EAN-128)	Enable	*	
	Disable		
Minimum number of readable digits for Code 128	1 to 99 digits (excluding start/stop codes and 1-digit check digit)	1 digit	(See Note 1.)
Maximum number of readable digits for Code 128		99 digits	
Minimum number of readable digits for GS1-128 (EAN-128)	1 to 99 digits (excluding start/stop codes and 1-digit check digit)	1 digit	(See Note 1.)
Maximum number of readable digits for GS1-128 (EAN-128)		99 digits	
Transmission of FNC1 for Code 128	Disable		Section 12.2
	Transmit GS	*	
Transmission of FNC1 for GS1-128 (EAN-128)	Disable		
	Transmit GS	*	

(Note 1) The setting ranges are different from the numbers of digits that the scanner can actually read.

(Note 2) Using the Bar-coded parameter menu enables or disables reading of both Code 128 and GS1-128 (EAN-128) at the same time.

Code 93

Items	Parameters	Defaults	Refer to:
Reading Code 93	Enable		Section 12.2
	Disable	*	
Minimum number of readable digits for Code 93	1 to 99 digits (excluding start/stop codes and 2-digit check digit)	1 digit	(See Note 1.)
Maximum number of readable digits for Code 93		99 digits	

(Note 1) The parameter setting ranges are different from the numbers of digits that the scanner can actually read.

MSI

Items	Parameters	Defaults	Refer to:
Reading MSI	Enable without C/D		Section 12.2
	Enable with C/D (1 digit)		
	Enable with C/D (2 digits)		
	Disable	*	
C/D transmission of MSI	Enable	*	Section 12.2
	Disable		
Minimum number of readable digits for MSI	3 to 99 digits (incl. C/D)	3 digits	(See Note 1.)
Maximum number of readable digits for MSI		99 digits	

(Note 1) The parameter setting ranges are different from the numbers of digits that the scanner can actually read.

Plessey

Items	Parameters	Defaults	Refer to:
Reading Plessey	Enable		Section 12.2
	Disable	*	
Mode of reading Plessey	Single		Section 12.2
	Dual	*	
Minimum number of readable digits for Plessey	4 to 99 digits (incl. 2-digits C/D)	4 digits	(See Note 1.)
Maximum number of readable digits for Plessey		99 digits	

(Note 1) The parameter setting ranges are different from the numbers of digits that the scanner can actually read.

GS1 Databar (RSS)

Items	Parameters	Defaults	Refer to:	
Reading GS1 DataBar Omnidirectional & GS1 DataBar Truncated (Note 1)	Enable		Section 12.2	
	Disable	*		
Reading GS1 DataBar Stacked & GS1 DataBar Stacked Omnidirectional (Note 2)	Enable			
	Disable	*		
Reading GS1 DataBar Limited (Note 1)	Enable			
	Disable	*		
Reading GS1 DataBar Expanded (Note 1)	Enable			
	Disable	*		
Reading GS1 DataBar Expanded Stacked (Note 2)	Enable			
	Disable	*		
FNC1 transmission of GS1 DataBar Expanded	Convert to GS before Transmission	*		
	Disable			
Minimum number of readable digits for GS1 DataBar Expanded & GS1 DataBar Expanded Stacked (Note 1) (Note 2)	1 to 99 digits	1 digit		(See Note 3.)
Maximum number of readable digits for GS1 DataBar Expanded & GS1 DataBar Expanded Stacked (Note 1) (Note 2)		99 digits		

(Note 1) These show GS1 DataBar Omnidirectional (RSS-14), GS1 DataBar Truncated (RSS-14 Truncated), GS1 DataBar Limited (RSS Limited), and GS1 DataBar Expanded (RSS Expanded).

(Note 2) These show GS1 DataBar Stacked (RSS-14 Stacked), GS1 DataBar Stacked Omnidirectional (RSS-14 Stacked Omnidirectional), and GS1 DataBar Expanded Stacked (RSS Expanded Stacked).


(Note 3) The setting ranges are different from the numbers of digits that the scanner can actually read.

(10) Trigger switch control

Items	Parameters	Defaults	Refer to:
Trigger switch control mode (When scanning barcodes)	Auto-off mode	*	Section 5.1
	Momentary switching mode		
	Alternate switching mode		
Trigger switch control mode (When reading RF tags)	Auto-off mode	*	Section 5.2
	Momentary switching mode		
	Alternate switching mode		
Break Bluetooth® wireless link	Enable	*	Section 3.3
	Disable		
Operation after Bluetooth® disconnection	Press the trigger switch to reconnect the Bluetooth® wireless link	*	Section 3.3
	Waiting connection from the host		


(11) Magic key control

Items	Parameters	Defaults	Refer to:
Break Bluetooth® wireless link	Enable	*	Section 3.3
	Disable		
Operation after disconnecting Bluetooth by pressing the magic key	Press the trigger switch to reconnect the Bluetooth® wireless link	*	
	Waiting connection from the host		
Operation mode change with the magic key	With out function		
	With operation mode change function	*	
Initial operation	Barcode scanning	*	
	RF Tag communication		

: Can be changed only with the configuration software.

(12) Beeper, indicator LED and illumination LEDs

Items	Parameters	Defaults	Refer to:
Beeper control	Enable	*	Section 9.1
	Disable		
Beeping tone	Low beeping tone (approx. 1.5 kHz)		
	Medium beeping tone (approx. 2.2 kHz)		
	High beeping tone (approx. 4.3 kHz)	*	
Beeper beep time	Short (approx. 60 ms)		
	Medium (approx. 80 ms)	*	
	Long (approx. 120 ms)		
Beeper volume	High	*	
	Medium		
	Low		
Scan complete sound	Single beep	*	Section 9.1
	Multiple beep		
Power-on beeper control	Enable	*	
	Disable		
Indicator LED control	Enable	*	Section 9.2
	Disable		

: Can be changed only with the configuration software.

(13) Data verification conditions and data editing conditions

Items	Parameters	Defaults	Refer to:
AI mode	AI split mode	*	Section 7.1
	AI parenthesis mode		
AI split mode - Availability of AI #1	Enable	*	
	Disable		
AI split mode - Availability of AI #2	Enable		
	Disable	*	
AI split mode - Availability of AI #3	Enable		
	Disable	*	
AI split mode - AI #1	Selectable from AI candidates (Note 1)	00	
AI split mode - AI #2	Selectable from AI candidates (Note 1)	00	
AI split mode - AI #3	Selectable from AI candidates (Note 1)	00	
AI split mode- Delimiter	Header/Terminator	*	
	Comma		
	Tab (09h)		


(Note 1) For details about AI candidates, refer to Chapter 7, Section 7.1.1, “(3) AI table.”

(14) Switching to sleep mode for power saving and auto power-off

Items	Parameters	Defaults	Refer to:
Switching to sleep mode for power saving	After 30 seconds (Ordinary current mode)		Section 2.3
	Immediately (Power saving mode)	*	
Auto power-off	5 to 640 minutes	60 min.	Section 2.3
	Disable		

(15) Battery

Items	Parameters	Defaults	Refer to:
Remaining battery level check	Enable	*	Section 2.2
	Disable		

: Can be changed only with the configuration software.

(16) RF tag Data transmission format selection

Items	Parameters	Defaults	Refer to:
PC output	Enabled		Section 10.4
	Disabled	*	
RSSI outoput	Enabled		
	Disabled	*	

(17) RF Tag data transmission format conversion

Items	Parameters	Defaults	Refer to:
Barcode type conversion	Enabled		Section 10.4
	Disabled	*	
Conversion from SGTIN -96 to EAN/UPC	Enabled		
	Disabled	*	

(18) RF Tag communication operation settings


Items	Parameters	Defaults	Refer to:
Operation mode	Stand-alone mode	*	Section 8.1
	Upper control mode		

(19) Stand-alone mode setting

Items	Parameters	Defaults	Refer to:
RF tag communication type	Inventory	*	Section 8.1.1
	Read		


(20) Stand-alone mode settings (When reading RF Tags)

Items	Parameters	Defaults	Refer to:
Bank	Reserved Bank		Section 8.1.1
	UII Bank		
	TID Bank		
	User Bank	*	
Size(Byte)	2 - 256 (by 2bytes)	2	
Ptr(Byte)	0 - 256 (by 2bytes)	0	
Access password	00000000~FFFFFFF (Hex)	00000000	

: Can be changed only with the configuration software.

(21) RF Tag communication settings

Items	Parameters	Defaults	Refer to:
Output frequency (for Europe model)	1 ch (866.3MHz) - 4 ch (865.7MHz) (4 channels in total)	1ch - 4ch	Section 8
Q value	0 - 7	4	
Session flag	S0/S1/S2/S3	S0	
Session flag initialization	To initialize	*	
	Not to initialize		
Prevention of double reading	None		
	While scanning	*	
	During RF Tag operation		

 : Can be changed only with the configuration software.

Chapter 12 Bar-coded Parameter Menu

12.1 Customizing the Scanner with the Bar-coded Parameter Menu

Start setting

↓Three beeps

Scan parameter setting
Bar Code symbols

↓

End setting

Three beeps

Use the scanner to scan the “Start setting” Bar Code symbol.

Note: Setting the “Beeper volume” does not require this step; however, it requires enabling the Bluetooth® interface with the “Start operation” Bar Code symbol.

If the Bluetooth® interface is disabled with the “End operation” Bar Code symbol, scan the “Start operation” barcode symbol to enable the interface.

Scan the necessary parameter setting Bar Code symbols.

Scan the “End setting” Bar Code symbol.

Scanning the “All defaults” Bar Code symbol from the Bar-coded parameter menu makes all items in the menu revert to the factory defaults.

Tip:

“Beeper volume” Bar Code symbol in the Bar-coded parameter menu

The beeper volume can be set even if the above procedure is omitted. No “Start setting” or “End setting” Bar Code symbol is required to be scanned.

Each time the “Beeper volume” Bar Code symbol is scanned, the beeper volume cycles through High, Medium and Low. The factory default is High.

“Easy connection setup” Bar Code symbol in the Bar-coded parameter menu

The easy connection setup can be set even if the above procedure is omitted. No “Start setting” or “End setting” Bar Code symbol is required to be scanned.

12.2 Bar-coded Parameter Menu

The beeper volume can be set by scanning the following Bar Code symbol only. No “Start setting” or “End setting” Bar Code symbol is required to be scanned.

Adjusting the beeper volume

Scanning this Bar Code symbol cycles the beeper volume through High, Medium and Low.
The factory default is High.



Beeper volume

To set the parameters, simply scan the Bar codes below. Scanning “Start setting” Bar Code symbol and “End setting” Bar Code symbol is not required.

Easy connection setup

To set the connection corresponding to the connected device, simply scan the barcodes below.

(The connected device should be equipped with a Bluetooth® module that is compatible with Bluetooth® Specification Ver. 2.1+EDR.)

The Easy connection setup bar code, please perform reading after completing setting other items. Connection setting may be overwritten when you set other items after reading Easy connection setup bar code.



iPhone, iPad
(HID Profile)



Android (HID Profile)

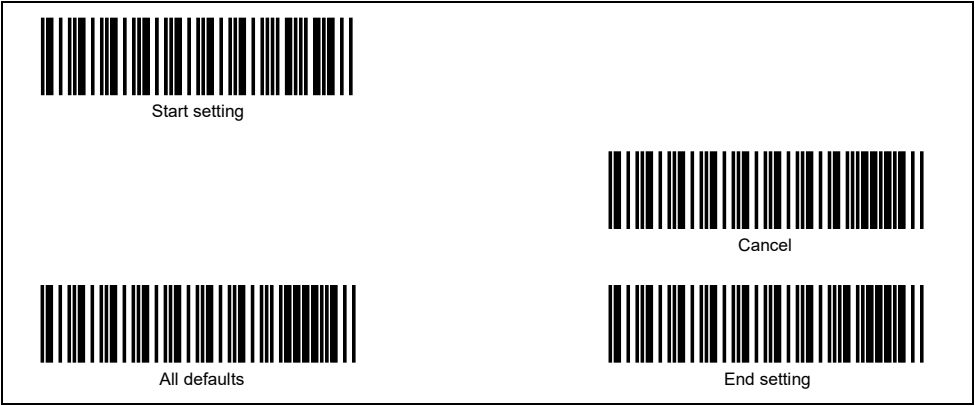


Android, Windows PC (SPP Profile)



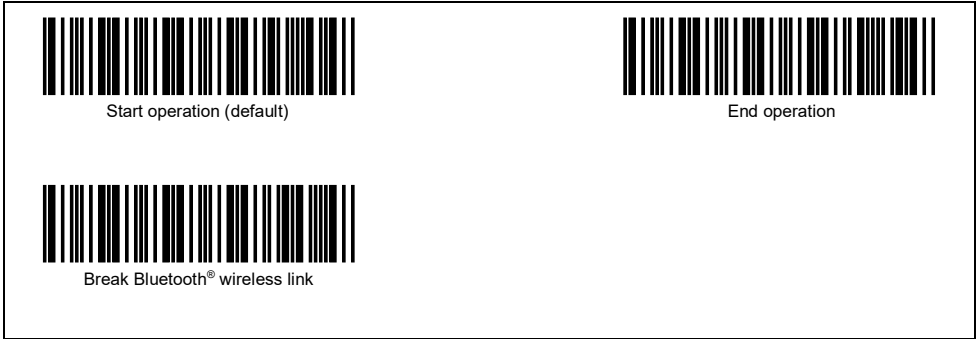
Windows PC (HID Profile)

■ Menu control (Starting/Ending the Setting Procedure and Reverting to Defaults)



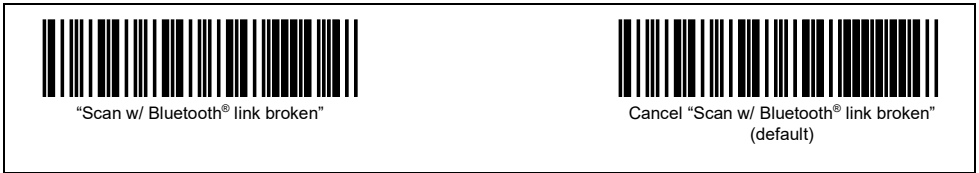
■ Bluetooth® interface and link

Enabling/disabling Bluetooth® interface and breaking the Bluetooth® wireless link



Scanning with Bluetooth® wireless link broken

Scanning the “Scan w/ Bluetooth® link broken” Bar Code symbol allows the scanner to scan codes with the Bluetooth® wireless link broken. With this setting selected, data transfer with the host computer is impossible.



Configuring the scanner as slave

Scanning the following Bar Code symbol configures the scanner as a slave.



■ Bluetooth® wireless communications parameters

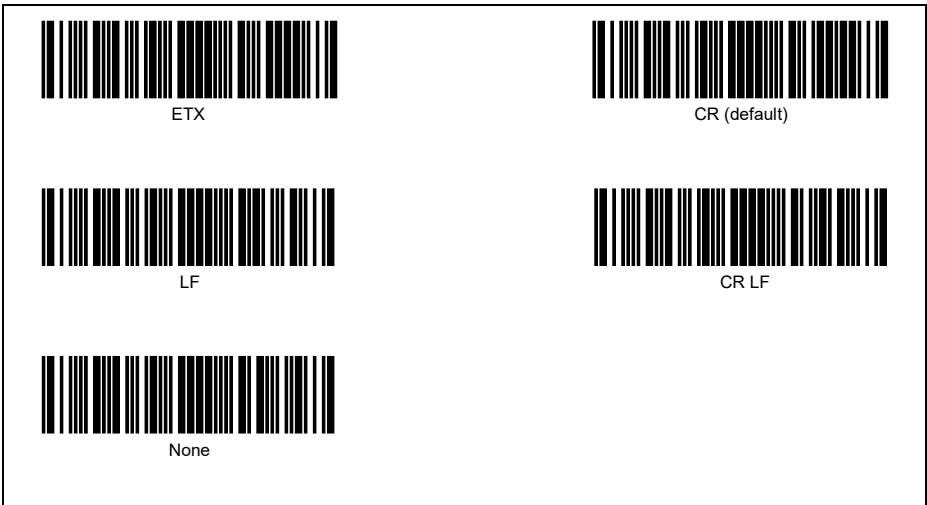
Procedure



Header (SPP Profile)



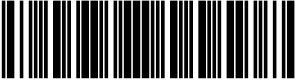
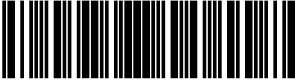

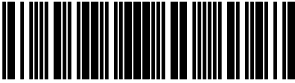

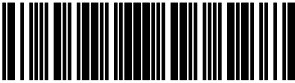

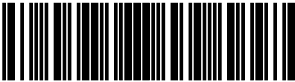

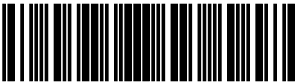



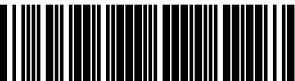
Terminator (SPP Profile)



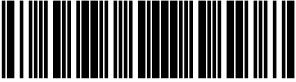
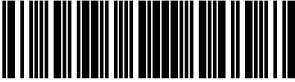
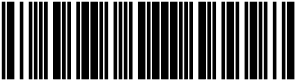
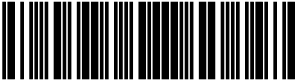

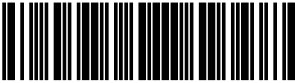
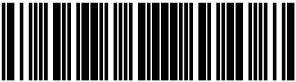
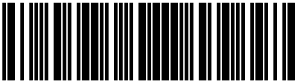
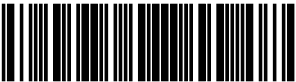
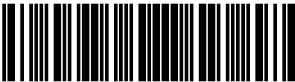

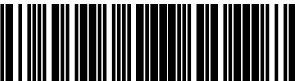
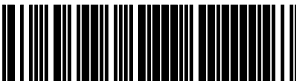

Keyboard type (HID Profile)



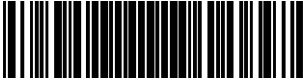
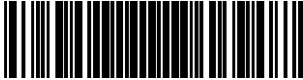
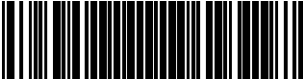
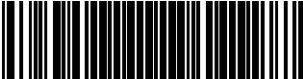
Header (HID Profile)

 <p>None (default)</p>	 <p>STX</p>
 <p>ETX</p>	 <p>CR</p>
 <p>LF</p>	 <p>CR LF</p>
 <p>TAB</p>	 <p>ESC</p>
 <p>ENTER</p>	 <p>Right CTRL</p>
 <p>←</p>	 <p>↑</p>
 <p>→</p>	 <p>↓</p>

Terminator (HID Profile)

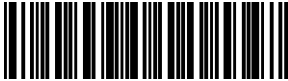
 None	 STX
 ETX	 CR
 LF	 CR LF
 TAB	 ESC
 Enter (default)	 Right CTRL
 ←	 ↑
 →	 ↓

Timeout period for slave to wait for a connection request

 2 minutes (default)	 4 minutes
 10 minutes	 30 minutes

■ Data transmission format

Transmission of code ID mark

 Disable (default)	 Enable
--	---

Transmission of the number of digits

 Disable (default)
 Enable

■ Barcodes

Scanning UPC-A, UPC-E, EAN-13 and EAN-8

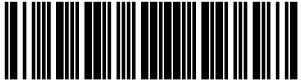

 <p>Disable</p>	 <p>Enable (default)</p>
--	---

Scanning UPC/EAN with add-on

 <p>Enable with add-on 2 digits</p>	 <p>Disable with add-on 2 digits (default)</p>
--	---

 <p>Enable with add-on 5 digits</p>	 <p>Disable with add-on 5 digits (default)</p>
--	---

Scanning Standard 2 of 5

 <p>Enable, without the check digit</p>	 <p>Enable, with the check digit</p>
 <p>Disable (default)</p>	

Transmission of Standard 2 of 5 check digit

 <p>Enable (default)</p>	 <p>Disable</p>
---	--



Scanning Interleaved 2 of 5

 <p>Enable, without the check digit (default)</p>	 <p>Enable, with the check digit</p>
 <p>Disable</p>	

Transmission of Interleaved 2 of 5 check digit

 <p>Enable (default)</p>	 <p>Disable</p>
---	--

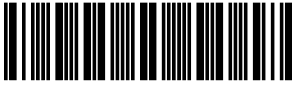
Scanning Codabar (NW-7)

 <p>Enable, without the check digit (default)</p>	 <p>Enable, with the check digit</p>
 <p>Disable</p>	

Transmission of Codabar (NW-7) check digit

 <p>Enable (default)</p>	 <p>Disable</p>
---	--

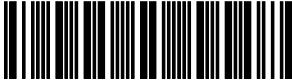
Transmission of start/stop codes for Codabar (NW-7)



Transmission of a/b/c/d enabled (default)



Transmission of A/B/C/D enabled



Disable

Conversion from Code 39 to Code 32



Enable

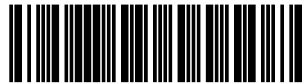


Disable (default)

Transmission of the leading “A” of Code 32

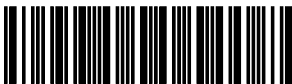


Enable



Disable (default)

Checking of Code 32 check digit



Enable



Disable (default)

Scanning Code 39

 <p>Enable, without the check digit (default)</p>	 <p>Enable, with the check digit</p>
 <p>Disable</p>	

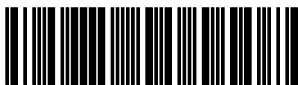
Transmission of Code 39 check digit

 <p>Enable (default)</p>	 <p>Disable</p>
---	--


Transmission of start/stop codes for Code 39

 <p>Enable (default)</p>	 <p>Disable</p>
---	--

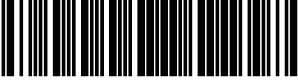

Conversion to Code 39 Full ASCII

 <p>Enable</p>	 <p>Disable (default)</p>
---	--

Scanning Code 93

 <p>Enable</p>	 <p>Disable (default)</p>
---	--

Scanning Code 128/GS1-128 (EAN-128)

 Enable (default)	 Disable
---	--

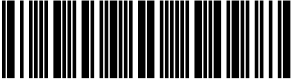
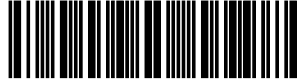
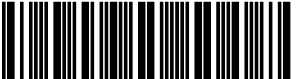
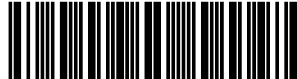
Transmission of FNC1 for Code 128

 Convert to GS1 before Transmission (default)	 Disable
--	--

Transmission of FNC1 for GS1-128 (EAN-128)

 Convert to GS1 before Transmission (default)	 Disable
--	--

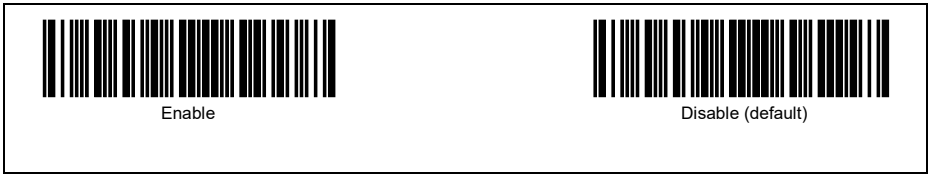
Scanning MSI

 Enable without C/D	 Enable with C/D (1 digit)
 Enable with C/D (2 digits)	 Disable (default)

Transmission of MSI check digit

 Enable (default)	 Disable
---	--

Scanning Plessey



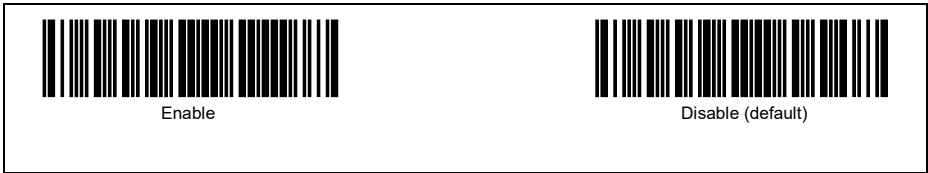
Scanning Plessey



Scanning GS1 DataBar Omnidirectional, GS1 DataBar Truncated



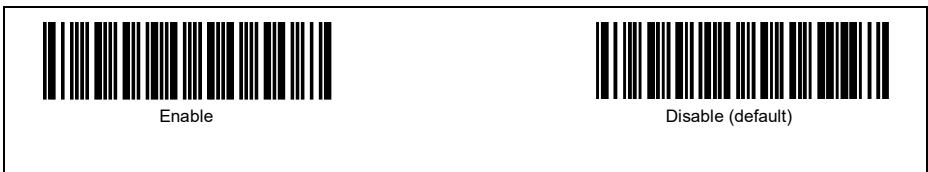
Scanning GS1 DataBar Stacked, GS1 DataBar Stacked Omnidirectional



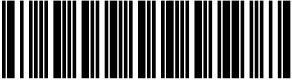

Scanning GS1 DataBar Limited



Scanning GS1 DataBar Expanded



Scanning GS1 DataBar Expanded Stacked

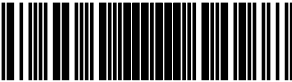
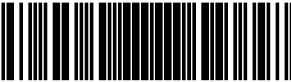
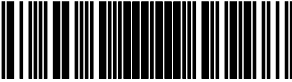
 Enable	 Disable (default)
---	--

FNC1 transmission of GS1 DataBar Expanded




 Convert to GS1 before Transmission (default)	 Disable
--	--

■ Other settings


Trigger switch control (When scanning Barcodes)

 Auto-off mode (default)	 Alternate switching mode
 Momentary switching mode	


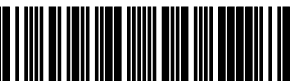

Trigger switch control (When reading RF Tags)

 Auto-off mode (default)	 Alternate switching mode
 Momentary switching mode	


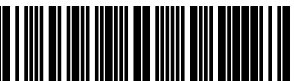

Beeper control

 <p>Enable (default)</p>	 <p>Disable</p>
---	--

Beeper frequency

 <p>Low beeping tone</p>	 <p>Medium beeping tone</p>
 <p>High beeping tone (default)</p>	

Beeper beep time

 <p>Short (60 ms)</p>	 <p>Medium (80 ms) (default)</p>
 <p>Long (120 ms)</p>	

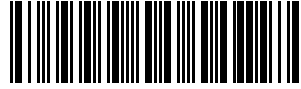
Indicator LED control

 <p>Enable (default)</p>	 <p>Disable</p>
---	--

Remaining battery level check



Enable (default)



Disable

Chapter 13 Troubleshooting

Problem 1: Low reading efficiency.

Probable cause	What to do:
A target code is not within the scan range of the reading window.	Bring a code within the scan range.
The code may be smeared.	Wipe off the dirt from the code.
The code may be blurred.	Use a clearly printed code.
The keyboard type is not set correctly, such as U.S. English (101 key type) or Japanese (106 key type).	Set correctly by referring to Section 9.3 (2).

Problem 2: Cannot read 2D codes or barcodes.

Probable cause	What to do:
The type of the code to be scanned has not been set as a readable code.	Enable the type of the code to be scanned as a readable code.
The scanned barcode contains no check digit, while the “Enable, with the check digit” parameter is selected.	Select the “Enable, without the check digit” parameter.
The check digit contained in the scanned barcode is wrong.	Use a correct barcode.
The Bluetooth® wireless link is not established.	Establish the Bluetooth® wireless link with the target Bluetooth® device.

Problem 3: Code data not displayed on the computer screen correctly.

Probable cause	What to do:
The target Bluetooth® device is not ready for communication.	Refer to the User’s Manual of the target Bluetooth® device.
The target Bluetooth® device is located too far from your scanner.	Bring the target Bluetooth® device and your scanner close to each other.
The Bluetooth® wireless link with the target Bluetooth® device is not established.	Establish the Bluetooth® wireless link with the target Bluetooth® device.
The “Scanning w/ Bluetooth® wireless link broken” parameter is selected.	Cancel the setting. (See Chapter 3.)

Problem 4: Scanner does not turn on.

Probable cause	What to do:
The battery is not loaded correctly.	Load the battery correctly.
The remaining battery level is insufficient.	Charge the battery if the remaining level is low.
The battery electrodes on the battery and scanner body are dirty.	Wipe the electrodes clean if they are dirty.
The type of battery is incorrect.	Check that a rechargeable nickel-metal hydride battery is surely used. Do not use or charge the AA alkaline batteries with the scanner.

Problem 5: Scanner immediately is turned off.

Probable cause	What to do:
A fully charged rechargeable battery is not loaded.	Load a fully charged rechargeable battery.
Memory effect is occurring when the AA rechargeable nickel-metal hydride battery is used.	Discharge the AA rechargeable nickel-metal hydride battery using the dedicated charger, for example, and then recharge the battery before using it again. For details, refer to the User's Manual for the AA rechargeable nickel-metal hydride battery or the dedicated charger for the AA rechargeable nickel-metal hydride battery.
Check the auto power-off setting.	If auto power-off is set, the scanner is automatically turned off if it is not used for the preset time. The auto power-off setting can be changed only on the configuration software (Scan Tune App).

Problem6: Unable to charge the scanner

Probable cause	What to do
The scanner is not correctly installed in the charger.	Install the scanner in the charger correctly.
A battery to be charged or a charging terminal of the scanner may be dirty.	Wipe off any dirt from the scanner.
Repeatedly charged and old battery is used.	If a repeatedly charged and old battery is used, replace it with a new one.
The indicator LED while charging needs to be checked.	If the indicator LED is not turned ON, check that the scanner is correctly installed in the charger. Red flashing light means the warning of battery error. A battery other than the rechargeable nickel-metal hydride battery may be used. Check that a rechargeable nickel-metal hydride battery is surely used. When a rechargeable nickel-metal hydride battery is used, it may be able to be charged in the forced charging mode. Install the scanner in the charger and press and hold the trigger switch for five seconds or more to start the forced charging mode. If the indicator LED flashes in orange, stop charging. Resume charging with the power turned OFF. If the LED still flashes in orange after resuming charging, the charging circuit may be damaged. Stop using the scanner immediately and contact your dealer.

Problem 7: Unable to read an RF tag

Probable cause	What to do
An RF tag is not located at the reading/writing position.	Move the RF tag position. If the RF tag distance is too far, it may disable reading and writing. Distance for writing may become shorter than that for reading.
An RF tag is inclined against an antenna.	Make an RF tag surface in parallel with the reading surface. If these surfaces are not in parallel, tags may not be read easily or may be thoroughly unreadable.
There is a metal object or a radio device around the scanner.	Keep the scanner away from metal objects and radio devices.
There is a metal object around the RF tag installed area.	Keep the RF tag 15 cm or more away from the metal object.
An RF tag or an RF tag installed area gets wet.	Dry the RF tag or the RF tag installed area and then verify the reading.
The indicator LED momentarily flashes in red.	Register the RF communication command because it may be set as the upper control mode. If it is set as the upper control mode inadvertently, set it as the stand-alone mode using the configuration software (Scan Tune App).
There are other RFID devices around the scanner.	Keep the scanner away from other RFID devices to prevent radio interference.

If the scanner does not operate normally after going through all the above measures, contact your dealer.

Appendix 1 Specifications

Item		SE1-BUB-C	
Scanning specifications	RF Tag	Output frequency (for Europe model)	865.7 MHz, 866.3 MHz, 866.9 MHz, 867.5 MHz (4 channels in total)
		Applicable standard	Compliance to ISO/IEC 18000-63 (GS1 EPC Gen2)
	Bar Code	Readable codes	EAN-13, EAN-8, UPC-A, UPC-E, UPC/EAN with add-on, Interleaved 2 of 5, Standard 2 of 5, Code 32, Code 39, Codabar (NW-7), Code 93, Code 128, GS1-128 (EAN-128), MSI, Plessey, GS1 DataBar Omnidirectional (RSS-14), GS1 DataBar Truncated (RSS-14 Truncated), GS1 DataBar Stacked (RSS-14 Stacked), GS1 DataBar Stacked Omnidirectional (RSS-14 Stacked Omnidirectional), GS1 DataBar Limited (RSS Limited), GS1 DataBar Expanded (RSS Expanded), GS1 DataBar Expanded Stacked (RSS Expanded Stacked)
		Scanning direction	Barcodes can be read in both forward and reverse directions.
		Scanning resolution	0.125 mm min.
		Elevation angle (skew)	±50° (*1)
		Tilt angle (pitch)	±50° (*1)
		Light source	LED (red)
		Reading confirmation	Blue LED, and beeper
Interface	Bluetooth®	Built-in Bluetooth® wireless device compliant with Bluetooth® Specification Ver. 2.1+EDR	
	Profile(s) supported	SPP (Serial Port Profile) HID (Human Interface Device Profile)	
Input power requirements	Main power	AA rechargeable nickel-metal hydride battery (× 2) (A rechargeable nickel-metal hydride battery enloop® (battery capacity 1900 mAh or equivalent) is recommended. Make sure that the rechargeable nickel-metal hydride battery is the correct capacity before use.)	
Operating time		12 hours (*2)	
Environmental conditions	Operating temperature range	-5 to 50°C	
	Charging temperature range	0 to 40°C (10 to 30°C location recommended)	
	Operating humidity range	10% to 90% RH (*3)	
	Storage temperature range	-10 to 60°C	
	Storage humidity range	5% to 95% RH (*3)	
	Ambient illuminance range	10,000 lux or less	
Dimensions (W) × (D) × (H)		100 × 41 × 27 mm (3.9 × 1.6 × 1.1 inches)	
Weight		Approx. 70 g (excluding the batteries)	

(*1) When EAN-13, EAN-8 labels meeting EAN SYMBOL SPECIFICATIONS (1.0×, space reflectance 0.8, bar reflectance 0.1) are used

(*2) Reference values obtained by in-house measurement

· Battery in use: AA rechargeable nickel-metal hydride battery enloop® battery capacity 1900 mAh. Fresh batteries are fully charged after refreshing by the dedicated charger.

· Connection target: BA series communications adapter

· RF tag (AVERY DENNISON, AD-229r6) reading is repeated every five seconds.

(*3) Sharp temperature change, dewing or freezing not allowed, wet-bulb temperature 30°C max.

[1] Radio wave specifications

Item	Specifications
RF interface	
Applicable standard	Compliance to ISO/IEC 18000-63 (GS1 EPC Gen2)
Output frequency	865.7 MHz, 866.3 MHz, 866.9 MHz, 867.5 MHz (4 channels in total)
Transmission output	10 mW max.
Antenna	
Gain	-6 dBi max.
Polarization	Linear polarization

[2] Communicable RF tag specifications

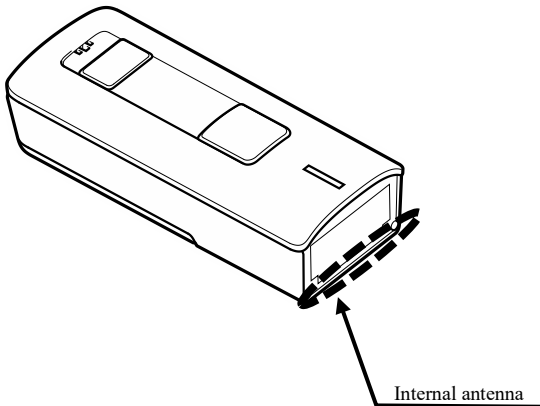
Item	Specifications: Compliance to ISO/IEC 18000-63 (GS1 EPC Gen2)
Communication frequency	865 MHz to 868 MHz
Communication system	Half duplex
Scanner → RF Tag	
Modulation	PR – ASK 80 to 100%
Encoding	Pulth interval encoding [PIE]
Communication speed	40 kbps
RF Tag → Scanner	
Modulation	Backscatter ASK
Encoding	Mirror Subcarrier 250 kHz
Communication speed	50 kbps (M=4)

[Precautions at RFID communication]

Note 1: Even if the RF tag under the above specifications is used, it could result in “unstable communication” or “disabled communication.” Taking it into account, thoroughly check the operation under the environment of the actual RF tag operation.

Note 2: Do not touch the internal antenna and its periphery by hand. Doing so could result in the impaired radio wave status.

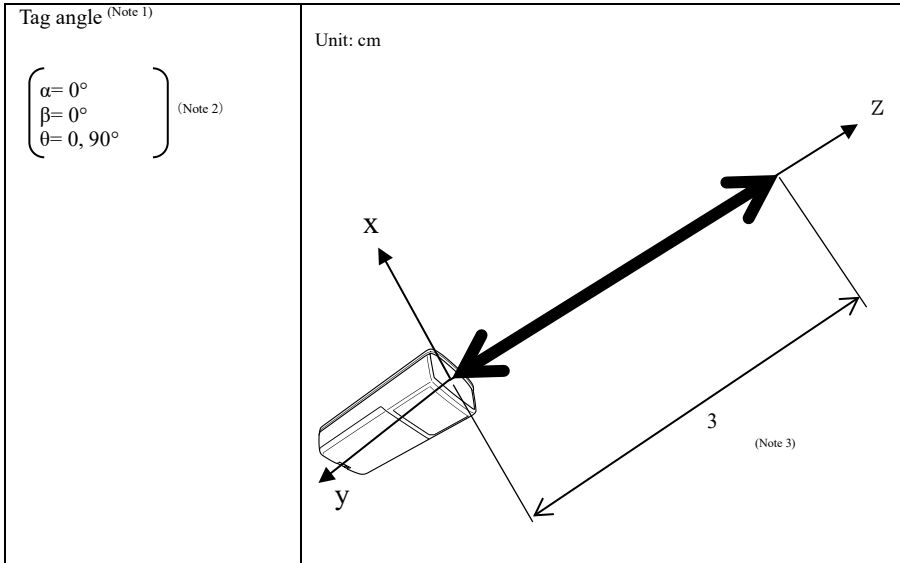
Note 3: Operation in an area adjacent to metallic objects may impair communication performance.



[3] Reading range

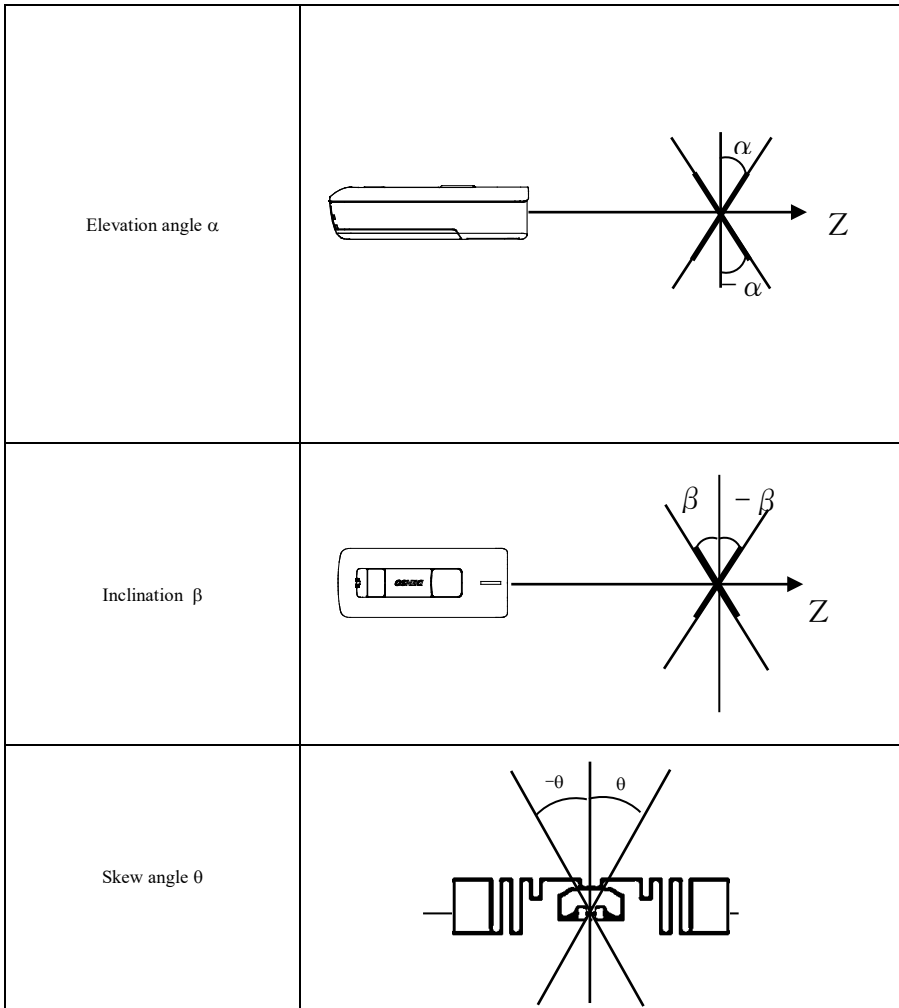
The reading range is specified through the measurement under the conditions below:

Temperature: 25±5°C
Operation RF Tag: DENSO WAVE's standard tag
Read: AD-229r6 manufactured by AVERY DENNISON
Write: AD-229r6 manufactured by AVERY DENNISON
Operation mode: Reading within 5 seconds in the Auto-off mode.
Ambient environment: There are not any objects or radio stations of mobile phone within 1 meter in circumference. There is no radio reflection from peripheral objects.



(Note 1) These values are not guaranteed values but reference values measured by using DENSO WAVE standard tag. It is measured when the center of RF tag is within the range shown with arrows in the above figures.

(Note 2) α , β and θ are defined as follows;



(Note 3) Communicable range when writing RF tag memory When writing in RF tag, more power that RF tag consumes is required than that for reading, which results in the narrow communication range. Generally, the writable range becomes approximately a half to a quarter of the readable range.

[5] Precautions

- (1) There may be a case where data cannot be written in the RF tag according to the type of RF tag or the ambient environment.
- (2) If some devices are used in the vicinity, they may have difficulty in reading or cannot read data due to the interference. use a device fully apart from the others.
- (3) Continuous RF tag communication in the places where there are excessively high temperature or in the places exposed to direct sunlight may decline the reading speed temporarily for maintaining the terminal functions.
- (4) Holding position or holding style of a scanner may affect the communication distance.

Appendix 2 Control Commands

Control commands refer to commands that are exchanged between the host computer and the scanner via the communications line.

Control commands can be used only when a connection using SPP profile is established.

Some of the control commands that the host computer issues are functionally equivalent to some parameters that can be set with the Bar-coded parameter menu (refer to Chapter 10). Control command settings have priority over settings made with the Bar-coded parameter menu.

Note that turning off the scanner will clear control command settings so that settings made with the Bar-coded parameter menu will take effect unless the PW command is sent to the scanner for saving control command settings into the FLASH ROM.

If commands other than ones listed below are sent to the scanner, the scanner operation is not assured.

Common control command

Control Commands	Transfer Direction		Function
	Scanner	←→ Host	
B1 B2 B3 (Note 1) (Note 2)	←		Sound the beeper Within 100 ms from the receipt of any of the B1, B2 and B3 commands, the scanner beeps for the period specified below. B1: Beep for approx. 60, 80, 120 or 140 ms once. B2: Beep for approx. 120 ms B3: Beep for approx. 240 ms Even if the beeping is prohibited or the scanner is on standby, the beeper will be able to sound.
BH1, BM1, BL1 BH2, BM2, BL2 BH3, BM3, BL3 (Notes 1, 2)	←		Specifies the beeper tone. Adding this command to the B1, B2 and B3 commands allows the scanner to beep at the specified frequency. H: High (approx. 4.3 kHz) M: Medium (approx. 2.2 kHz) L: Low (approx. 1.5 kHz)
LB (Note 1)	←		Light the blue indicator LED Within 100 ms from the receipt of the LB command, the blue indicator LED lights for approx. 500 ms.
LG (Note 1)	←		Light the green indicator LED Within 100 ms from the receipt of the LG command, the green indicator LED lights for approx. 500 ms.
LR (Note 1)	←		Light the red indicator LED Within 100 ms from the receipt of the LR command, the red indicator LED lights for approx. 500 ms.
CMB	←→		Mode change Set the barcode reading mode. <Scanner response> "CMB,eeeeeee" eeeeeee: Error code
CMU	←→		Mode change Set the RF tag communication mode. <Scanner response> "CMU,eeeeeee" eeeeeee: Error code

Control Commands	Transfer Direction		Function
	Scanner	Host	
BZR1 BZR2 BZR3 (Note 1) (Note 2)	↔		<p>Sound the beeper</p> <p>Within 100 ms from the receipt of any of the B1, B2 and B3 commands, the scanner beeps for the period specified below.</p> <p>B1: Beep for approx. 60, 80, 120 or 140 ms once. B2: Beep for approx. 120 ms B3: Beep for approx. 240 ms</p> <p>Even if the beeping is prohibited or the scanner is on standby, the beeper will be able to sound.</p> <p><Scanner response> "BZRn,eeeeeeee" n: Duration of beep eeeeeeee: Error code Example: BZR1,00000000</p>
BZRH1 BZRM1 BZRL1 BZRH2 BZRM2 BZRL2 BZRH3 BZRM3 BZRL3 (Note 1) (Note 2)	↔		<p>Specifies the beeper tone.</p> <p>Adding this command to the B1, B2 and B3 commands allows the scanner to beep at the specified frequency.</p> <p>H: High (approx. 4.3 kHz) M: Medium (approx. 2.2 kHz) L: Low (approx. 1.5 kHz)</p> <p><Scanner response> "BZRpn,eeeeeeee" p: Tone option n: Duration of beep eeeeeeee: Error code Example: BZRH1,00000000</p>
LEDB (Note 1)	↔		<p>Light the blue indicator LED</p> <p>Within 100 ms from the receipt of the LB command, the blue indicator LED lights for approx. 500 ms.</p> <p><Scanner response> "LEDB,eeeeeeee" eeeeeeee: Error code</p>
LEDG (Note 1)	↔		<p>Light the green indicator LED</p> <p>Within 100 ms from the receipt of the LG command, the green indicator LED lights for approx. 500 ms.</p> <p><Scanner response> "LEDG,eeeeeeee" eeeeeeee: Error code</p>
LEDR (Note 1)	↔		<p>Light the red indicator LED</p> <p>Within 100 ms from the receipt of the LR command, the red indicator LED lights for approx. 500 ms.</p> <p><Scanner response> "LEDR,eeeeeeee" eeeeeeee: Error code</p>
VBAT (Note 4)	↔		<p>Remaining battery level acquisition</p> <p><Scanner response> "VBAT,eeeeeeee,n" eeeeeeee: Error code n=0: The battery level is less than 10%. n=1: 10% or more n=2: 40% or more</p>
PWOFF (Note 5)	↔		<p>Scanner power OFF</p> <p><Scanner response> "PWOFF,eeeeeeee" eeeeeeee: Error code</p>

Control Commands	Transfer Direction		Function
	Scanner	Host	
VER	←→		Request for software version <Response from the scanner> Ver. n.nn where n.nn is version No. (Ex: Ver. 1.00)
VERF	←→		Request for the parameter setting version This command checks the version of the parameter settings made in the scanner when the scanner is linked with the configuration software (Scan Tune App). <Response from the scanner> Ver. n.nn.mm where n.nn.mm is version number (Ex. Ver.1.00.00) and mm is parameter setting version.e
ID	←→		Request for scanner ID (serial number) <Response from the scanner> ID. nnnnnn where nnnnnn is a serial number (Ex. ID.000001)
IDF	←→		Request for ASSY part number and scanner ID (serial number) <Scanner response> "ID. Aaaaaaaaaannnnn" aaaaaaaa: ASSY part number nnnnnn: Serial number Example: ID. 4548009690000001

(Note 1) After receipt of one of the B1 to B3, LB, LG and LR commands, the scanner may need a maximum of 100 ms to execute the command.

(Note 2) Beeping specified by control commands B1, BH1, BM1, and BL1 is dependent on the reading completion sound and its length.

(Note 3) The next command is not executed until execution of the current command ends.

(Note 4) The correct remaining battery level may not be able to be acquired during the barcode reading or the RF tag communication.

(Note 5) This command cannot be used while charging due to the occurrence of an error.

Barcode control command

The barcode control command is stored in the built-in FLASH ROM.

Control Commands	Transfer Direction		Function
	Scanner	Host	
U1 U2 U3 (Notes 3)	←		Trigger switch control U1: Auto-off mode U2: Momentary switching mode U3: Alternate switching mode
BARU1 BARU2 BARU3 (Notes 3)	←→		Trigger switch control setting when reading barcodes 1: Auto-off mode 2: Momentary switch mode 3: Alternate switch mode <Scanner response> "BARUn,eeeeeeee" n: Trigger switch control eeeeeeee: Error code Example: BARU1,00000000

(Note 3) Rewriting is enabled up to 10⁶ times depending on the limited number of rewrites in the FLASH ROM.

Error code of common control command/barcode control command

List of error codes of the scanner response to the transmitted commands

Commands	Value	Contents
CMB	00000000	Normal end
	0000AA00	Error while charging
CMU	00000000	Normal end
	0000AA00	Error while charging
BZR1 - 3 (Including tone specifications of H, M, L)	00000000	Normal end
LEDB, LEDG, LEDR	00000000	Normal end
VBAT	00000000	Normal end
PWOFF	00000000	Normal end
	0000AA00	Error while charging
BARU1~3	00000000	Normal end
	0000A300	Operation mode error
	0000A400	Execution error
	0000AA02	Low battery error

Actions to be taken when error end codes are returned are described below.

Class	Value	Contents	Actions
Normal end	00000000	Normal end	-
Abnormal end	0000A300	Operation mode error	Command not executable in the current mode. Change the operation mode with the CMB command.
	0000A400	Execution error	The command processing has not been completed normally. If this often occurs, there may be something wrong with the hardware. Contact your nearest dealer.
	0000AA00	Error while charging	This may occur while charging. Be sure to remove the scanner from the charger before using it.
	0000AA02	Low battery error	The remaining battery level is low. Fully recharge the battery or replace the battery with new one.

RF tag control command

The RF tag control command is not stored in the built-in FLASH ROM.

All RF tag control commands have acquired responses and can check the results of receiving commands. For details of commands, refer to the Appendix “Manual for RF tag control command for SE1-BUB-C.”

Control command	Transfer Direction		Contents
	Scanner	↔ Host	
RFUPG	←	→	RF tag communication related parameter acquisition
RFUPS	←	→	RF tag communication related parameter settings
RFUPW	←	→	RF tag communication related parameter storage
RFUU	←	→	RF tag communication trigger settings
RFUFS0	←	→	RF tag filter settings (In units of bit)
RFUFS1	←	→	RF tag filter settings (In units of byte)
RFURF	←	→	RF tag communication data format settings
RFURC	←	→	UII response conversion settings
RFUFM	←	→	UII response format settings
RFUI	←	→	“Inventory” communication to the RF tag
RFUR	←	→	“Read” communication to the RF tag
RFUW	←	→	“Write” communication to the RF tag
RFUL	←	→	“Lock” communication to the RF tag
RFULP	←	→	“Lock Payload” communication to the RF tag
RFUK	←	→	“Kill” communication to the RF tag
RFUIU	←	→	“Inventory” communication to the UII specified RF tag
RFURU	←	→	“Read” communication to the UII specified RF tag
RFUWU	←	→	“Write” communication to the UII specified RF tag
RFULU	←	→	“Lock” communication to the UII specified RF tag
RFULPU	←	→	“Lock Payload” communication to the UII specified RF tag
RFUKU	←	→	“Kill” communication to the UII specified RF tag
RFUS	←	→	Suspension of control to RF tag
RFUC	←	→	RF tag communication

Appendix 3 Bluetooth® Glossary

The table below lists Bluetooth® terms used in this manual.

Bluetooth® Address (Bluetooth® Device Address) (BD_ADDR)	Bluetooth® Device Address. Each Bluetooth® device is allocated a unique 48-bit device address defined by the Bluetooth® SIG.
Bluetooth® Passkey (Bluetooth® Passkey) (PIN)	Bluetooth® Personal Identification Number. This is a passkey maximum of 16 bytes long used to authenticate two Bluetooth® devices in pairing. Once authentication is performed, no Bluetooth® passkey input is required for the next authentication.
Local Name (Bluetooth® Device Name.)	This is a user-friendly name for the Bluetooth® device to identify itself.
Bluetooth® Wireless Link	Wireless communications line connecting the master and slave devices. When the Bluetooth® wireless link is established, data can be sent to and from the master and slave devices.
Master	Master device that initiates and requests operations and controls slave devices.
Slave	Slave device that is network-controlled by the master device in Bluetooth® wireless communication.

RF Tag Handy Scanner
SE1-BUB-C

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