

Handheld Terminal

DX Series

Instruction Manual

Be sure to read this instruction manual carefully prior to operating this product. After reading, keep this manual in a safe place so that you can refer to it at any time.

In this instruction manual, DX Series means the DX-A600/A600GE/A400/A400GE/W600.

Symbols

The following symbols alert you to important messages. Be sure to read these messages carefully.

	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
	Indicates a situation which, if not avoided, could result in product damage as well as property damage.

Indicates cautions and limitations that must be followed during operation.

Indicates additional information on proper operation.

Indicates tips for better understanding or useful information.

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DX-A600/A400: From the app list screen, Settings → Device information → Legal information
DX-W600: From the Start menu (All apps), DX setup tool → Device information → Legal information

Such open source software files are provided on an "AS IS" basis to the maximum extent permitted by applicable law.

You may obtain a copy of the source code corresponding to the binaries for GPL/LGPL-licensed files by sending a request to Keyence customer service at "soft-license@keyence.co.jp."

There will be a charge to cover the costs of providing the source code.

Safety Precautions on Laser Product

The DX Series uses a visible semiconductor laser as a light source. Follow the instructions mentioned in this manual. Otherwise, injury to the human body (eyes and skin) may result.

	Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure. - Do not disassemble this product. Laser emission from this product is not automatically stopped when it is disassembled. Class 1 Laser Product - Do not stare into the direct or specularly reflected beam. - Complies with 21 CFR 1040.10 and 1040.11 except for conformance with IEC 60825-1 Ed. 3., as described in Laser Notice No. 56, dated May 8, 2019.
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The DX Series is classified as below in accordance with IEC 60825-1: 2014.

Item	DX-A600/A600GE/A400/A400GE/W600
Wavelength	655 nm
Output	390 μW
Laser class	Class 1 laser product (IEC60825-1, FDA(CDRH) Part 1040.10*)

* The laser classification for FDA (CDRH) is implemented based on IEC 60825-1: 2014 in accordance with the requirements of Laser Notice No. 56.

Safety Precautions on LED Product

The degree of risk of this product is shown below.

- Risk group 1
 - LED product is classified as shown below according to IEC 62471.
 - Exempt group: Does not pose any photobiological hazard.
 - Risk Group 1 (Low-Risk): Does not pose a hazard due to normal behavioral limitations on exposure.
 - Risk Group 2 (Moderate-Risk): Does not pose a hazard due to the aversion response to very bright light sources or due to thermal discomfort.
 - Risk Group 3 (High-Risk): May pose a hazard even for momentary or brief exposure.

Follow the instructions mentioned in this manual. Otherwise, injury to the human body (eyes and skin) may result.

	Possibly hazardous optical radiation emitted from this product. Do not stare at operating lamp. May be harmful to the eyes.
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Safety Precautions

General cautions

	- Do not use this product for the purpose of protecting a human body or a part of a human body. - This product is not intended for use as an explosion-proof product. Do not use this product in a hazardous location and/or potentially explosive atmosphere. - Do not use this product in an application that may cause death, serious injury, or serious property damage due to a failure with this product occurring, such as nuclear power plants, on aircraft, trains, ships, or vehicles, used within medical equipment, playground equipment, roller coasters and other rides, etc.
	If the product is used in a manner not specified by the manufacturer, the protection provided by the product may be impaired.
	- Be sure to check that this product performs properly before starting the work or operation. - We recommend that you take substantial safety measures to avoid any damage in the event of a problem occurring. - Do not use this product in a manner not specified herein. Doing so may result in fire, electric shock, or malfunction.
	- Do not modify this product or use it in any way other than described in the specifications. Otherwise, the functions and performance cannot be guaranteed. - Microscopic spots (black/bright spots), uneven brightness, or crosstalk (a phenomenon where non-existent lines or patterns are displayed) may occur on the LCD panel depending on the conditions. - If the same display remains on the screen for a long time, afterimage may occur due to the characteristics of LCD.

Handling of DX Series

	Using batteries other than those specified by KEYENCE may cause fire or explosion. Be sure to use the specified battery.
	- Use or store this product within the temperature range described in "Specifications" (page 3). Do not leave the product inside a closed car or at a place exposed to direct sunlight. Doing so may damage the unit or change its reading performance. - Use within the humidity range described in "Specifications" (page 3). Do not use the product at locations where condensation occurs due to the rapid temperature change. Doing so may damage the unit. - This is a precision instrument. Dropping this product or subjecting it to shock may cause damage. Be careful when carrying or using this unit. - Do not place the DX Series in a location with high humidity or a dusty area. Doing so may damage the unit. - Do not insert a sharp object such as a needle into the buzzer hole on the back side of the DX Series. The tarpaulin may be damaged.

Handling of main battery (DX-BP6/BP3) and communication unit with built-in main battery (DX-BS6/BS3/BQ6/BQ3)

	Observe the following precautions during use. Failure to do so may result in heat generation, smoke generation, fire, explosion, battery leakage, gas leakage, etc. of the main battery pack. - Only use the specified battery. - Do not charge, use, or store the main battery at locations of high temperature above the specified range—such as near fire, in a heated car, and under the scorching sun—or at locations of low temperature below the specified range. - Do not put it into fire or subject to heat. If there is battery leakage or abnormal smell, immediately take it away from fire. - Do not drop the main battery or subject it to strong pressure (such as by crushing, bending, deforming, making holes in, cutting, or throwing it).
	Do not charge when conductive material is affixed to the charging/communication contact. Clean this contact prior to charging.

Precautions on Regulations and Standards

■ Precautions on wireless LAN

	Remove the main battery of the DX Series near locations where using wireless devices is banned at medical institutions or near electric devices for medical purposes. Carry and use the product away from an implanted cardiac pacemaker.
	- Communication may be impossible at locations near metallic objects, locations surrounded with metallic walls, where there is a lot of metallic powder, and in similar usage environments. Be sure to check whether communication is possible prior to installation. - If this product is used near devices with the same frequency band, radio wave interference may occur and the communication speed may become slow or communication may become impossible. [Japan] - Never disassemble or modify this device. Doing so is prohibited by the Radio Act. This device is specified radio equipment according to the Radio Act. Follow the criteria defined within this act to obtain construction design certification. - This device may be used outdoors when communicating with registered stations in the 5.2 GHz band.

■ Electromagnetic display of technical standards compliance mark

This terminal complies with technical standards based on the Radio Act and Telecommunications Business Act of Japan. The mark indicating this compliance can be viewed as indicated below.

DX-A600/A400: From the app list screen, Settings → About phone → Regulatory
DX-W600: From the Start menu (All apps), DX setup tool → Device information → Regulatory

■ CE and UKCA Markings

KEYENCE Corporation has confirmed, on the basis of the following specifications, that this product complies with the essential requirements of the applicable EU Directive(s) and UK regulations. Be sure to consider the following specifications when using this product in the Member States of the European Union and in the United Kingdom.

- RE Directive (CE) and Radio Equipment Regulations (UKCA)
- The full text of the EU declaration of conformity is available at the following internet address: <http://www.keyence.com/cedoc>
- Frequency band of operation: Maximum radio-frequency power
 - DX-W600
 - WLAN
 - 2400 to 2483.5 MHz: 20 dBm (100 mW)
 - 5200 to 5690 MHz: 23 dBm (199.5 mW)
 - Bluetooth
 - 2400 to 2483.5 MHz: 9 dBm (7.9 mW)
 - NFC:
 - 13.56 MHz: 17 dBuA/m
 - DX-A600GE
 - WLAN
 - 2400 to 2483.5 MHz: 20 dBm (100 mW)
 - 5120 to 5350 MHz: 23 dBm (199.5 mW)
 - Bluetooth
 - 2400 to 2483.5 MHz: 13 dBm (20 mW)
 - NFC:
 - 13.56 MHz: -10 dBuA/m
 - WWAN
 - WCDMA
 - Band 1: 20.5 dBm (112.2 mW)
 - Band 8: 24.5 dBm (281.8 mW)
 - LTE
 - Band 1: 20 dBm (100 mW)
 - Band 3: 21 dBm (125.9 mW)
 - Band 7: 20 dBm (100 mW)
 - Band 8: 24 dBm (251.2 mW)
 - Band 38: 24 dBm (251.2 mW)
 - DX-A400GE
 - WLAN
 - 2400 to 2483.5 MHz: 17 dBm (50.1 mW)
 - 5120 to 5350 MHz: 22 dBm (158.5 mW)
 - Bluetooth
 - 2400 to 2483.5 MHz: 10 dBm (10 mW)
 - NFC:
 - 13.56 MHz: -12 dBuA/m
 - WWAN
 - WCDMA
 - Band 1: 22.5 dBm (177.8 mW)
 - Band 8: 24 dBm (251.2 mW)
 - LTE
 - Band 1: 22.5 dBm (177.8 mW)
 - Band 3: 24 dBm (251.2 mW)
 - Band 7: 18.5 dBm (70.8 mW)
 - Band 8: 24 dBm (251.2 mW)
 - Band 38: 20.5 dBm (112.2 mW)

Remarks: These specifications do not give any guarantee that the end-product with this product incorporated complies with the essential requirements of RE Directive and Radio Equipment Regulations. The manufacturer of the end-product is solely responsible for the compliance on the end-product itself according to this directive and these UK regulations. The device is restricted to indoor use only when operating in the 5150 to 5350 MHz frequency range.

AT	BE	BG	HR	CY	CZ	DK
EE	FI	FR	DE	EL	HU	IE
IT	LV	LT	LU	MT	NL	PL
PT	RO	SK	SI	ES	SE	UK(NI)
IS	LI	NO	CH	TR		

■ UL certification

The DX Series complies with the following UL/CSA standards and has obtained the UL/C-UL certifications.

- UL File No. E167973
- UL category AZOT/AZOT7
- Applicable standards
 - UL 62368-1
 - CAN/CSA-C22.2 No. 62368-1
- This product is intended to be supplied by an UL Listed power supply and power cord suitable for use at 55°C min., the power supply output is rated: 5 Vdc, 2 A with marked Class II, L.P.S. or PS2, if need further assistance, please contact KEYENCE CORPORATION for further information.

- Ce produit est destiné à être alimenté par une alimentation et un cordon d'alimentation homologués UL adaptés à une utilisation à 55°C min., la sortie d'alimentation est nominale : 5 Vdc, 2 A avec marqué Class II, L.P.S. ou PS2, si vous avez besoin d'aide supplémentaire, veuillez contacter KEYENCE CORPORATION pour plus d'informations.

Be sure to consider the following specifications when using this product as a UL certified product. Use this product in combination with the DX-BS*/BQ*/BP*/KE1, which has obtained UL certification.

	RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.
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■ FCC Regulations

- This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions; (1) This device may not cause harmful interface, and (2) this device must accept any interference received, including interference that may cause undesired operation.
- Application regulation
 - FCC Part 15 Subpart B Class A
 - FCC Part 15 Subpart C
 - FCC Part 15 Subpart E
- 5150-5350MHz band is restricted to indoor operations only.
- Regulatory information page is located at:
 - DX-A600/A400: From the app list screen, Settings → About phone → Regulatory
 - DX-W600: From the Start menu (All apps), DX setup tool → Device information → Regulatory

• Hearing Aid Compatibility (HAC)

The device is hearing aid compatible as determined by ANSI C63.19-2011. This standard has two ratings: M (for reduced radio-frequency interference to enable acoustic coupling) and T (for inductive coupling with hearing aids operating in telecoil mode) on a scale from 1-4, where 4 is most compatible. The device is rated M4/T4.

The device has been tested and certified for use with hearing aids for some of the wireless technologies that it uses. However, there may be some newer wireless technologies used in the device that have not been tested yet for use with hearing aids. It is important to try the different features of the device thoroughly and in different locations, using your hearing aid or cochlear implant, to determine if you hear any interfering noise. If need further assistance, please contact KEYENCE CORPORATION for further information.

	- This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense. - Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. - The product comply with the US portable RF exposure limit set forth for an uncontrolled environment and are safe for intended operation as described in this manual. The further RF exposure reduction can be achieved if the product can be kept as far as possible from the user body or set the device to lower output power if such function is available. - This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter. - This equipment should be installed and operated at least 10 mm away from your body.
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■ ISED Regulations

- This device complies with the following regulations specified by the ISED.
- Applicable regulation
CAN ICES-003 (A) / NMB-003 (A)
RSS-247
RSS-102
 - The device for operation in the band 5150–5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems.
 - Operations in the 5250-5350 MHz band are restricted to indoor usage only.
 - 5600-5650 MHz band is not allowed at Canada.
 - Les dispositifs fonctionnant dans la bande de 5150- 5250 MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux.
 - Les opérations dans la bande de 5250-5350 MHz sont limitées à un usage intérieur seulement.
 - La bande de 5600-5650 MHz n'est pas autorisée au Canada.

- This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.
- The product comply with the Canada portable RF exposure limit set forth for an uncontrolled environment and are safe for intended operation as described in this manual. The further RF exposure reduction can be achieved if the product can be kept as far as possible from the user body or set the device to lower output power if such function is available.
- This equipment should be installed and operated at least 10 mm away from your body.
- Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.
- Le produit est conforme aux limites d'exposition pour les appareils portables RF pour les Etats-Unis et le Canada établies pour un environnement non contrôlé. Le produit est sûr pour un fonctionnement tel que décrit dans ce manuel. La réduction aux expositions RF peut être augmentée si l'appareil peut être conservé aussi loin que possible du corps de l'utilisateur ou que le dispositif est réglé sur la puissance de sortie la plus faible si une telle fonction est disponible.
- Cet équipement doit être installé et utilisé à une distance d'au moins 10 mm de votre corps.

Precautions for Proper Use

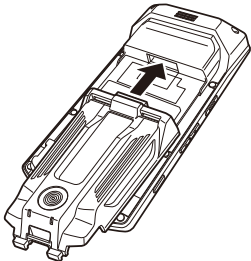
■ Handling of packing

- If units such as the DX-BS6 are not properly attached, the enclosure rating of the DX Series cannot be guaranteed. When using this product in environments where water or dust is present, check if these units are properly attached.
- Dropping the DX Series or subjecting it to extreme shock may lead to the loss of water-proofing. Take adequate care when handling this product.

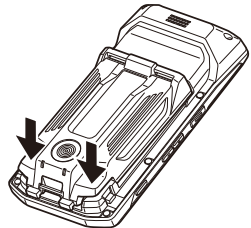
Unit Installation

As an example, the installation of the DX-BS6 is explained below.

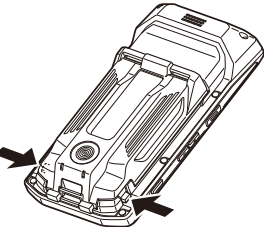
1 Insert the tip of the unit into the back of the main unit.



2 Attach the unit to the main unit by using two fingers to push the two parts of the unit indicated with arrows until they click.



* To remove the unit, press the tabs on the back of the main unit from the left and right, and then pull the unit up from the main unit.

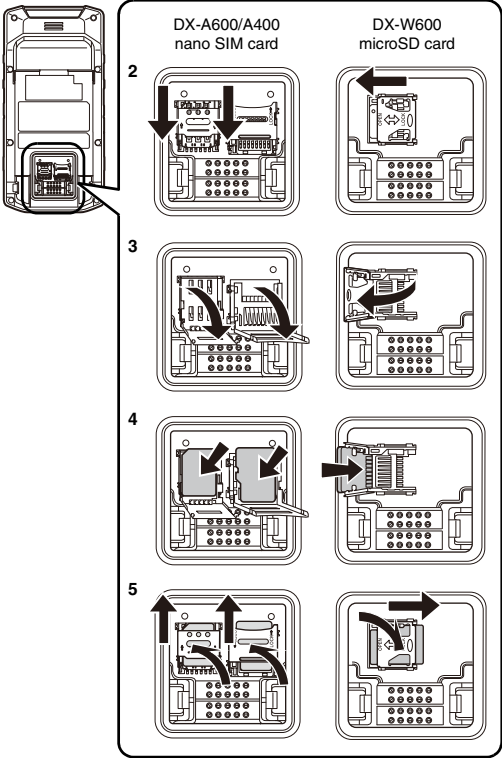


■ microSD / nano SIM card installation

The DX-A600/A400 has a microSD slot and a nano SIM slot. The DX-W600 has a microSD slot.

- 1 Turn off the main unit and remove the main battery.
- 2 Slide the desired slot cover in the direction of the arrow to unlock it, allowing the card to be inserted.
- 3 Open the slot cover.
- 4 For the DX-A600/A400, orient the card with its terminals at the bottom, and then place it in the slot.

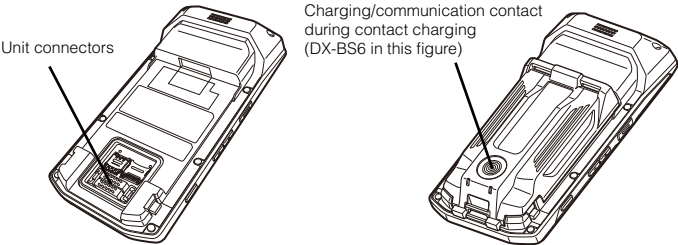
For the DX-W600, insert the card into the slot cover so the terminals are at the bottom when the slot cover is closed, as shown in the figure.
- 5 Close the slot cover and lock it by sliding it in the direction of the arrow.



Even when not using a microSD or nano SIM card, be sure to close and lock the slot cover(s).
The slot cover(s) may be damaged if unlocked.

Cleaning

Clean the following parts with compressed air periodically.
If removing dirt is difficult, use a dry cotton swab to clean the unit connectors and charging/communication contact.
(Use absolute ethanol if dirt is stuck on them.)
When using an expansion unit, also clean its charging/communication contact.



If dirt or dust is attached, contact failure may occur on the unit connectors or charging/communication contact. This may cause charging function deterioration and instantaneous interruption.
Make sure that textile waste is not attached to the unit connectors or charging/communication contact when cleaning.

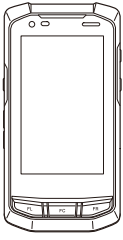
Checking the Package

When opening the package, check that the following items are all included.
In the event of missing, defective, or damaged items, contact your nearest KEYENCE sales office.

■ DX-A600/A600GE/A400/A400GE/W600

Main unit...1

Instruction Manual...1



Specifications

Model	DX-A600/A600GE	DX-A400/A400GE	DX-W600
Controller	CPU	ARM® Penta Core	
	OS	Android	
Main memory	Internal memory	3/4 GB RAM, 16/64 GB ROM	
Display	LCD	6.0-inch, 720 × 1440	4.0-inch, 480 × 800
	Operation confirmation LED	3-color LED	
Operations	Hard keys	Trigger keys × 2, volume up and down keys, power key, side Fn keys × 2	Trigger keys × 2, volume up and down keys, power key, front Fn keys × 3
	Touch panel	Electrostatic capacitance method (reinforced glass specifications)	
Scanner	Reading light source	High-intensity white LED	
	Pointer light source	Visible light semiconductor laser (655 nm) Output 390 μW Class 1 laser product (IEC 60825-1)	
	Minimum resolution	2D code: 0.169 mm, barcode: 0.076 mm	
	Field range	186 × 114 mm (reading distance: 200 mm)	
	Supported codes	UPC/EAN/JAN (add-on code supported), CODE128, GS1-128, CODE39, Codabar (NW-7), CODE93, ITF, COOP2of5, industrial 2of5, QR code, micro QR, DataMatrix (ECC200), PDF417, GS1 DataBar, composite symbol, Postal	
Communication	Wireless LAN	IEEE802.11 a/b/g/n/ac 2.4 GHz (b,g,n: 1 to 11 ch) 5.2 GHz, 5.3 GHz (a/n/ac) *1	IEEE802.11 a/b/g/n/ac 2.4 GHz (b,g,n: 1 to 13 ch) 5.2 GHz, 5.3 GHz, 5.6 GHz, 5.8 GHz (a/n/ac)*1*2
	Bluetooth	Bluetooth® V5.1 BR/EDR/LE	
	WWAN	4G LTE / 3G, SIM-free, 1 nano SIM slot	
	GNSS	GPS, A-GPS, GLONASS, Beidou, Galileo, SBAS	
	NFC	ISO14443 Type A, B, FeliCa, ISO15693	
Power supply	Main battery	Dedicated lithium ion battery pack	
	Clock	Built-in lithium ion secondary battery, time: approx. 1 month*3	
Others	Microphone	2, noise canceling	1
	Speaker	1 speaker, 1 receiver	
	Vibrator	Built in	
	Color camera	Rear camera: 8MP-AF, front camera: 5MP	
	Sensor	Accelerometer, gyroscope, digital compass, ambient light, proximity, temperature and humidity, air pressure	Accelerometer, gyroscope, ambient light, proximity, temperature and humidity, air pressure

Environmental resistance	Operating ambient temperature	-20°C to +50°C, When charging 0°C to +40°C*4	
	Operating ambient humidity	20% to 85% RH (no condensation)	
	Storage ambient temperature	-20°C to +60°C (no freezing)	
	Storage relative humidity	20% to 85% RH (no condensation)	
Dimensions		175.5 × 85.9 × 31.5 mm	143.5 × 73.7 × 31.8 mm
Weight		Approx. 220 g	Approx. 165 g

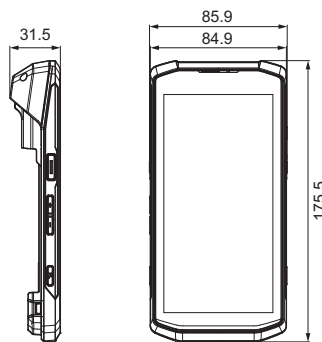
- *1 Outdoor use of 5.2/5.3 GHz band wireless LAN is prohibited. This does not include communication with access points / relay stations of 5.2 GHz band high-output data communication systems.
- *2 The usable frequency band varies depending on the region.
- *3 When the main battery is not attached or has no remaining charge.
- *4 Due to the added load in sub-zero environments, the continuous usage time may be reduced significantly. Be sure to test the device before use in these environments.

Model		DX-BS6	DX-BS3 ^{*2}	DX-BS3H ^{*2}	DX-BC6 ^{*1}	DX-BQ6	DX-BQ3 ^{*2}
Display	Charging confirmation LED	2-color LED			-	2-color LED	
Power supply	Type	Dedicated lithium ion battery pack					
	Capacity	6060 mAh	3030 mAh		6270 mAh	6060 mAh	3030 mAh
	Charging time	Approx. 7 hours	Approx. 4 hours		-	Approx. 7.5 hours (non-contact charging), approx. 6 hours (USB)	Approx. 5 hours (non-contact charging), approx. 4 hours (USB)
Interface	Magnetic connector	Supported (charging/communication) * Connected to DX-UC4, DX-UC4E, DX-UC1UL, DX-UC1M, or OP-88604 (magnetic charging cable)			-		
	USB	-				Supported (charging/communication) * Connected to USB micro B, USB 2.0 OTG, or OP-88603 (USB micro B cable) ^{*3}	
	Non-contact charging	-				Built in (charging) * Charger compliant with Qi 1.1 standard	
Dimensions		122.3 x 66.1 x 27.2 mm	117.6 x 66.1 x 17.3 mm	117.6 x 66.1 x 22.5 mm	78.7 x 40.6 x 22.4 mm	117.6 x 66.1 x 22 mm	117.6 x 66.1 x 15.5 mm
Weight		Approx. 155 g	Approx. 100 g		Approx. 115 g	Approx. 155 g	Approx. 105 g
Accessories		Hand strap back cover	-	Hand strap back cover	-	-	-

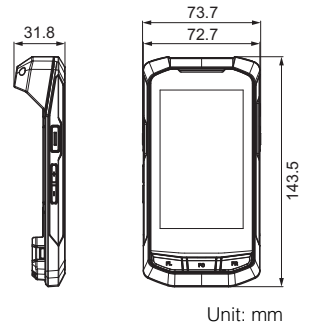
- *1 The DX-BC6 can only be used when an expansion unit is installed. The DX-BC6 interface and charging confirmation LED are on this unit.
- *2 It is not recommended to use the DX-W600 with the DX-BS3/BQ3.
- *3 OTG conversion cable required with USB Host mode specifications.

Outline Dimensional Drawings

■ DX-A600/A600GE/W600



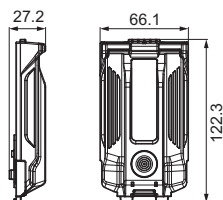
■ DX-A400/A400GE



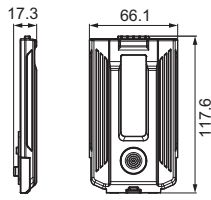
Unit: mm

* With DX-BS3 installed

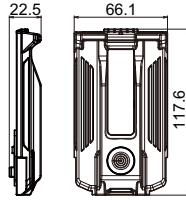
■ DX-BS6



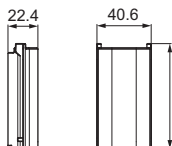
■ DX-BS3



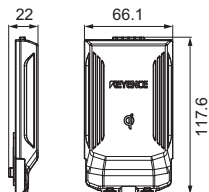
■ DX-BS3H



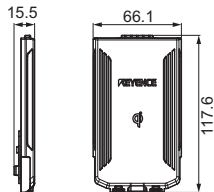
■ DX-BC6



■ DX-BQ6



■ DX-BQ3



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